PRE-MEETING AGENDA
MOUNTAIN BROOK CITY COUNCIL

CITY HALL PRE-COUNCIL ROOM (A106)
56 CHURCH STREET
MOUNTAIN BROOK, AL 35213

June 27, 2016 6:00 PM

1. **Ordinance designating "No Use of Wireless Telecommunication Devices while operating a motor vehicle in School Zones -Dale Wisely of the Mountain Brook School System. (See attached information. This item could be added to the formal agenda.)**

2. **Sain Associates contract for the design of the roundabouts project in Mountain Brook Village-Alicia Bailey of Sain Associates (See attached information. With the blessing of the City, this contract will be sent to ALDOT before being executed.)**

3. **Authorize Mayor or City Manager to apply for funding from the Metropolitan Planning Organization (MPO) for engineering design to replace one bridge and rehab another in the City-Sam Gaston (See attached information. This item may be added to the formal agenda.)**

4. **Consultant's report on the Library roof window leak/water damage study. (See attached information.)**

5. **Executive Session**

AN ORDINANCE TO PROHIBIT THE USE OF WIRELESS TELECOMMUNICATION DEVICES WHILE OPERATING A MOTOR VEHICLE IN SCHOOL ZONES BETWEEN THE HOURS OF 7:30 A.M. AND 8:00 A.M. AND BETWEEN THE HOURS OF 2:30 P.M. AND 3:30 P.M.

BE IT ORDAINED by the City Council of the City of Mountain Brook, Alabama, as follows:

1. **Provisions.** It shall be unlawful for the driver of a motor vehicle in a School Zone to operate a wireless telecommunication device between the hours of 7:30 A.M. and 8:00 A.M. and between the hours of 2:30 P.M. and 3:30 P.M. Operating a wireless telecommunication device shall include engaging in a call; writing, sending, or reading text-based communications; accessing, reading, or posting to a social network site or accessing or adding any information to the wireless telecommunication device. The provisions of this Section shall only apply within a school zone upon a public road or highway during posted hours when signs are located in a visible manner in each direction that indicate the use of a hand-held wireless telecommunication device is prohibited while operating a motor vehicle.
2. **"Wireless telecommunication device" defined.** "Wireless telecommunication device" means a cellular telephone, a text- messaging device, a personal digital assistant, a stand-alone computer, or any other substantially similar wireless device that is readily removable from the vehicle and is used to write, send, or read text or data through manual input. A "wireless telecommunication device" shall not include any device or component that is permanently affixed to a motor vehicle. It does not include a hands-free wireless telephone, an electronic communication device used hands-free, citizens band radios, citizens band radio hybrids, commercial two-way radio communications devices, two-way radio transmitters or receivers used by licensees of the Federal Communication Commission in the Amateur Radio Service, or electronic communication devices with a push-to-talk function.
3. **Violations.**
   (1) Violations of this ordinance shall constitute a moving violation.
   (2) The first violation of the provisions of this ordinance shall be punishable for a fine of not more than **$XX**.
   (3) Each subsequent violation shall be punishable by a fine of not more than **$XX.**
   (4) If a person is involved in a collision at the time of the violation, then the fine shall be equal to double the amount of the standard fine imposed in this ordinance and the law enforcement officer investigating the collision shall indicate on the written report that the person was using a wireless telecommunication device at the time of the collision.

4. **Exceptions:** The provisions of this ordinance shall not apply to a person who uses a wireless telecommunication device and does any of the following:

   (1) Reports a traffic collision, medical emergency, or serious road hazard.

   (2) Reports a situation in which the person believes his personal safety is in jeopardy.

   (3) Reports or averts the perpetration or potential perpetration of a criminal act against the driver or another person.

SIGN ASSEMBLIES FOR THE BEGINNING OF SCHOOL ZONES

WITH NO SPEED LIMIT CHANGE

S1-1
36"x36"

S4-3
24"x8"

S-SPECIAL
24"x30"

S4-1
24"x10"

WITH SPEED LIMIT CHANGE/ NO ACTIVE DEVICES

S4-3
24"x8"

R2-1
24"x30"

S-SPECIAL
24"x30"

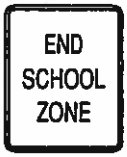
S4-1
24"x10"

WITH SPEED LIMIT CHANGE AND ACTIVE DEVICES

S5-1
24"x48"

S-SPECIAL
24"x30"

SIGN ASSEMBLY FOR THE END OF SCHOOL ZONES



S5-2
24"x30"

(4) Operates a wireless telecommunication device while the motor vehicle is lawfully parked.

(5) Uses a wireless telecommunication device in an official capacity as an operator of an authorized emergency vehicle.

5. **Repealer.** All ordinances or parts of ordinances heretofore adopted by the City Council of the City of Mountain Brook, Alabama that are inconsistent with the provisions of this ordinance are hereby expressly repealed.

6. **Severability.** If any part, section or subdivision of this ordinance shall be held unconstitutional or invalid for any reason, such holding shall not be construed to invalidate or impair the remainder of this ordinance, which shall continue in full force and effect notwithstanding such holding.

7. **Effective Date.** This ordinance shall become effective immediately upon adoption, publication as provided by law, and the installation of appropriate traffic signage indicating that such turns are prohibited.

Handheld Device Usage Statistics

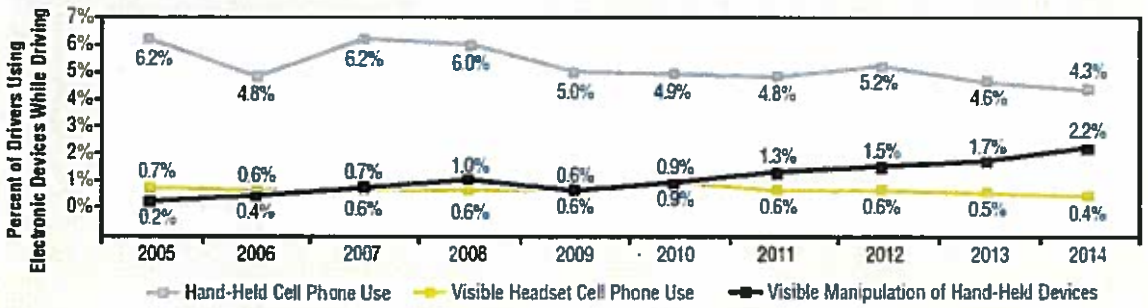
School	Period	Minutes Observed	Using Device	Usage Per minute	Estimated Sample	Device Use Rate	Conflicts	Distracted
Mountain Brook High School	Morning	35	16	0.46	800	2.0%	0	5 (0.6%)
	Afternoon	53	33	0.62	600	5.5%	0	2 (0.3%)
Mountain Brook Junior High School	Morning	44	18	0.41	815	2.2%	0	3 (0.4%)
	Afternoon	49	18	0.37	630	2.9%	1	3 (0.5%)
Brookwood Forest Elementary School	Morning	30	9	0.30	450	2.0%	0	3 (0.7%)
	Afternoon	53	21	0.40	275	7.6%	1	1 (0.4%)
Cherokee Bend Elementary School	Morning	32	4	0.13	120	3.3%	0	1 (0.8%)
	Afternoon	50	12	0.24	120	10.0%	0	3 (2.5%)
Crestline Elementary School	Morning	35	19	0.54	900	2.1%	1	3 (0.3%)
	Afternoon	30	50	1.67	675	7.4%	1	12 (1.8%)
Mountain Brook Elementary School	Morning	28	9	0.32	120	7.5%	0	5 (1.8%)
	Afternoon	54	4	0.07	120	3.3%	0	0 (0.0%)

"Conflicts" were noted whenever a driver using a handheld device either took an action which may have resulted in a crash or caused other drivers to take action which may have resulted in a crash

"Distracted" was noted when the driver was visibly texting or looking down at a handheld device

The chart below shows the national trend on handheld device usage from 2005 to 2014. The cells above with RED entries denotes where the observation was above national average.

Figure 1
Driver Use of Electronic Devices, 2005–2014



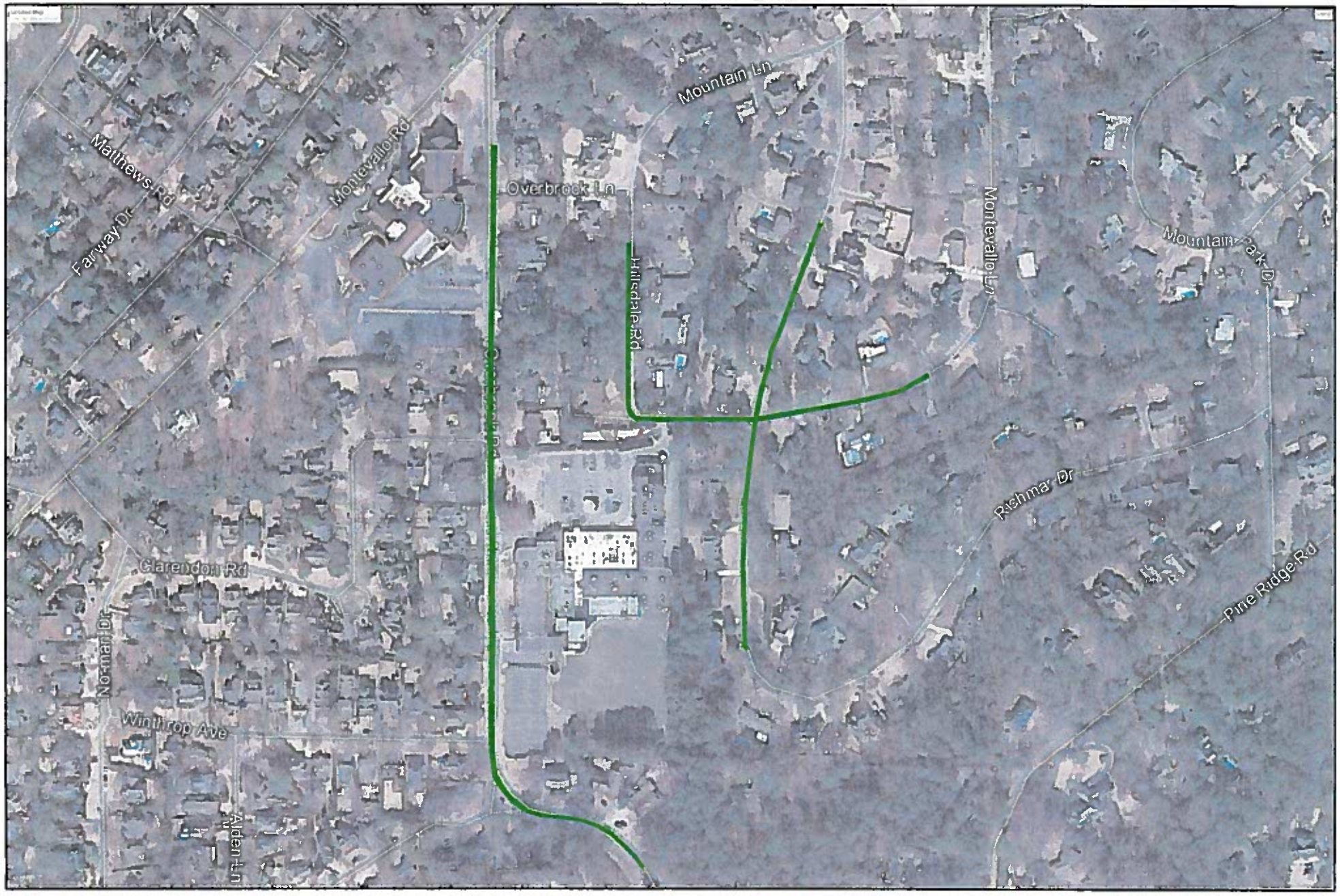
Source: NHTSA "Traffic Safety Facts Research Note", September 2014

PROPOSED SCHOOL ZONE
MOUNTAIN BROOK HIGH SCHOOL

7:30-8:00 AM
2:30-3:30 PM

PROPOSED SCHOOL ZONE
MOUNTAIN BROOK JUNIOR HIGH SCHOOL

7:30-8:00 AM
2:30-3:30 PM



PROPOSED SCHOOL ZONE
BROOKWOOD FOREST ELEM. SCHOOL

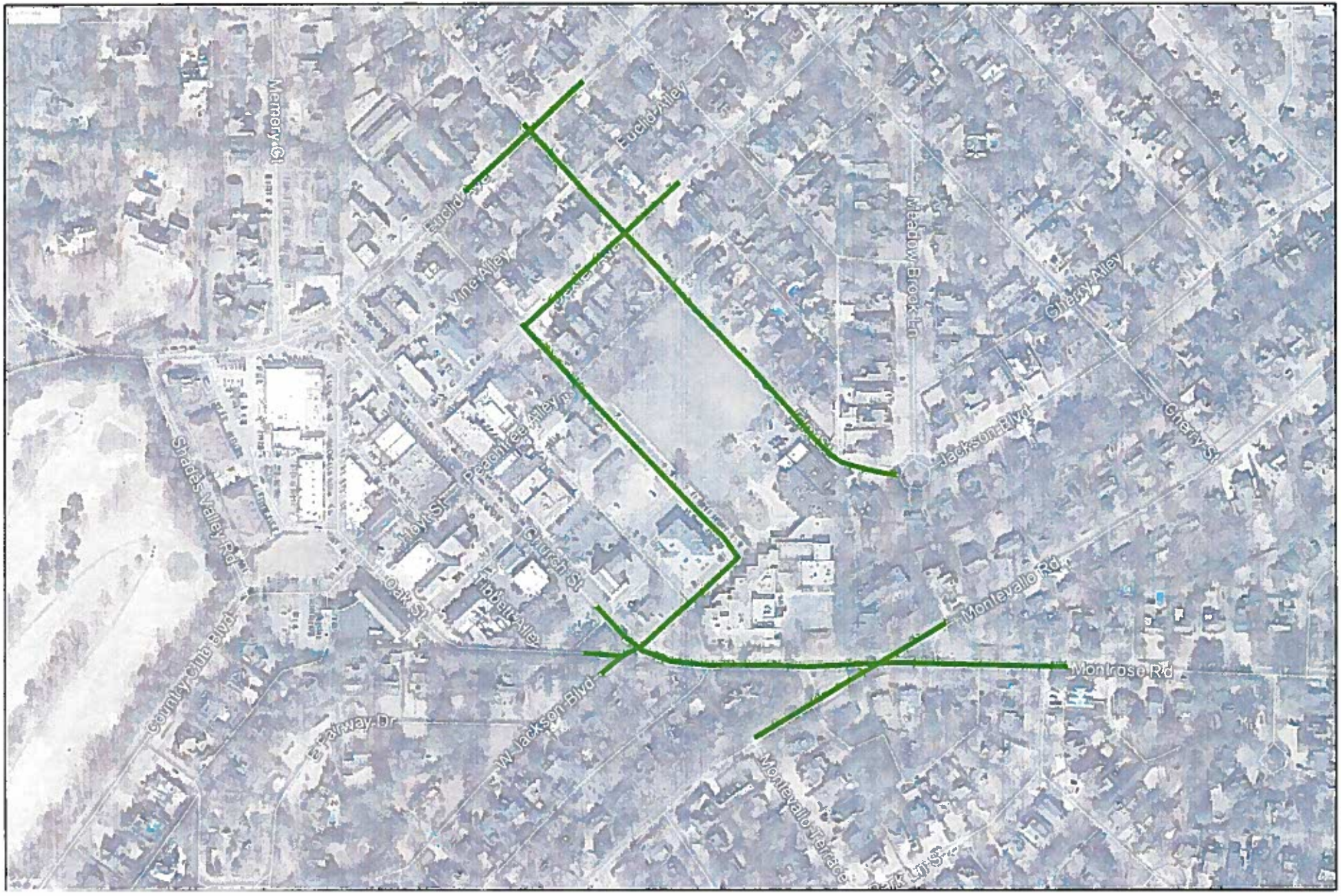
7:30-8:00 AM
2:30-3:30 PM

PROPOSED SCHOOL ZONE
CHEROKEE BEND ELEMENTARY SCHOOL

7:30-8:00 AM
2:30-3:30 PM

PROPOSED SCHOOL ZONE
CRESTLINE ELEMENTARY SCHOOL

7:30-8:00 AM
2:30-3:30 PM



PROPOSED SCHOOL ZONE
MOUNTAIN BROOK ELEM. SCHOOL

7:30-8:00 AM
2:30-3:30 PM

PROPOSED SCHOOL ZONE
HIGHLANDS SCHOOL

7:30-8:00 AM
2:30-3:30 PM

SAIN associates
ENGINEERING BETTER PARTNERSHIPS

March 1, 2016
REVISED June 16, 2016

Mr. Sam Gaston
City Manager
City of Mountain Brook
56 Church Street
Mountain Brook, AL 35213

Subject: **Cahaba Road/Hwy 280/Lane Park Road/Culver Road Roundabout**
Mountain Brook, Alabama
SA#15-0034

Dear Sam,

Please accept this letter as a general understanding of the scope of work for the above referenced project. Attached are the estimated mandays for your review and approval.

General Project Understanding
As part of Sain's feasibility study prepared for the City of Birmingham, City of Mountain Brook, and ALDOT, Sain prepared several alternatives to improve the capacity and operations at the Cahaba Road/Hwy 280/Lane Park Road/Culver Road intersection. The alternative with the most efficient operations was Alternative 1 (concept is attached to this proposal), a large roundabout at the Cahaba Road/Hwy 280/Lane Park Road intersection and a mini-roundabout at Culver Road. At the completion of the feasibility study, we deemed Alternative 1 to most adequately address the purpose and need of the project.

In our recent discussions with ALDOT, we understand Alternative 1 can proceed forward as the "preferred alternative"; however there is a certain amount of risk in doing so as we discussed with you in our meeting on February 2, 2016. The environmental phase of the project will begin with a kick-off meeting with FHWA and ALDOT. FHWA is the approving agency and will determine the level of environmental document for this project. Based on ALDOT's guidance, the project is being scoped for a Categorical Exclusion environmental document. If FHWA deems an Environmental Assessment and additional alternative evaluations be performed, the project will be required to be re-scoped. Sain Associates and our subconsultants are scoping this project based on the Alternative 1 concept attached to this proposal. In the event the public rejects the proposed roundabout layout that result in either changes to this concept or further evaluation of other alternatives, additional services or re-scoping of this project may be necessary. Neither ALDOT nor Sain feels these risks are great enough to warrant a different approach to scoping this project.

Our understanding is as follows:

- The project will progress on the typical path for a City sponsored project with ALDOT. Reviews will be performed by ALDOT, although a sit-down 30% review meeting will not be conducted and is not included in this scope of work.

- A concept overlaid on the topographic survey will be prepared for the public involvement meeting. This concept will be reviewed by the City and ALDOT and will serve as the 30% submittal.
- Since the roundabout will cause impact to the Zoo and Botanical Gardens properties, which are considered Section 4(f) properties, the environmental document must satisfy the requirements of Section 4(f) environmental permitting. At this time we believe there is adequate support for a De Minimus finding and approval by FHWA. It is expected to take 3-12 months to obtain approval of the Section 4(f) De Minimus.
- The roundabout will be designed using AASHTO standards and the ALDOT Roundabout Manual.
- The roundabout will include accommodations for bicycles and pedestrians and will connect these accommodations to other planned projects adjacent to the intersection. Sain will coordinate with the other consultants performing work in the area, including Gresham Smith and Partners on the sidewalk along the Highway 280 ramp, Goodwyn Mills and Cawood and Skipper Consulting on the Lane Parke development, and Walter Shoel Engineering on the drainage design as it relates to the FEMA study they prepared as it is our understanding the closed storm sewer pipe network and culverts require upsizing to meet the flows calculated in their study.
- Sain will contract Michael Wallwork, Roundabout Expert, to assist with the layout of the roundabout. His services will include updating the traffic analysis originally performed in the feasibility study, assisting with updating the conceptual layout, phasing of the construction, and providing quality control throughout the course of the design.
- The roundabout will have impact to existing utilities and will require relocations to be coordinated with the associated utility companies. It is typical for utility companies to prepare their own relocation plans; therefore, we have not included utility design in this scope of work. Once the utility companies provide Sain with their relocation plans, their relocations will be drawn on our plans to confirm all conflicts are addressed.
- The roundabout will require additional Right of Way to be acquired. It is estimated 6 tracts of either permanent Right of Way or temporary construction easement will be acquired.

Our charge under this project includes preparation of an environmental document, surveying services, Right of Way documents, and roadway plans. The design will include the following:

Environmental Document

Sain Associates will prepare a Categorical Exclusion Checklist. In the event it is determined a more comprehensive level of document is required for environmental clearance, a supplemental agreement will need to be executed as part of the scope of this project. Preparation of the Categorical Exclusion Checklist shall include the preparation for and attendance at the Federal Highway Administration Kickoff meeting. The Categorical Exclusion Checklist document shall consist of evaluating:

A. Project Area Description, Project Purpose and Need, and Proposed Project Description
B. Land Use
C. Socioeconomic Impacts
D. Ecological Impacts
    a. A threatened and endangered species study will be performed. A copy of the letter from U.S. Fish and Wildlife stating the threatened and endangered species which might exist in the project is attached to this proposal. If this initial study identifies that a suitable habitat for any of the listed species exists in the project area, further study will be

required under a supplemental agreement to this contract. A sub consultant will be required to evaluate threatened and endangered species (see attached proposal from Bhate Environmental)

E. Natural Features/Resources Impacts
   a. A sub consultant will be required to evaluate Wetland Impacts (see attached scope and mandays from Bhate Environmental)
   b. A sub consultant will be required to evaluate Air Quality (see attached scope from Bhate Environmental)
   c. A sub consultant will be required to evaluate Noise Impacts (see attached proposal from ATC)

F. Cultural Resources Impacts/Section 4(f) Findings
   a. A sub consultant will be required to evaluate Historic Properties and Archaeological Sites (see attached proposal from MRS Consulting)
   b. Right of Way will be acquired from publically owned properties (the Birmingham Zoo and the Birmingham Botanical Gardens). These properties are considered Section 4(f) properties. Discussions with ALDOT indicate that this project is considered a De Minimus use and further evaluation of various improvement alternatives is not required. In the event it is determined otherwise, a supplemental agreement will need to be executed as part of the scope of this project.

G. Hazardous Materials
   a. A sub consultant will be required to evaluate Hazardous Materials sites (see attached scope from Bhate Environmental)

H. Permits Required

I. Public Involvement Phase
   a. A project informational packet along with mapping will be provided to ALDOT-ETS for their use in performing Early Coordination with all applicable parties.
   b. A public involvement meeting will be prepared for and attended by Sain. Sain will prepare a flyer for the City's use in advertising the meeting. ALDOT will be responsible for advertising the meeting in the newspaper. The purpose of this meeting is to show the project layout and seek public comment. The Alternative 1 concept overlaid on the topographic survey will be presented at the meeting. This concept will be referred to as the "preferred" layout as it best satisfies the purpose and need of the project. Comments submitted at this meeting will be summarized and analyzed.

Surveying Services

Sain Associates will perform a Topographic and Right-of-Way survey at the intersection of Lane Park Road, Culver Road, and Cahaba Road, in the City of Mountain Brook, Jefferson County, Alabama. The limits of topographic survey are listed as follows and depicted on the attached Site Map.

- Beginning at the intersection of Cahaba Road and Lane Park Road and running Northwesterly along Cahaba Road for approximately 650' (feet). The coverage area will extend to the Northeast and Southwest Right-of-Way of Cahaba Road.
- Beginning at the intersection of Cahaba Road and Lane Park Road and running Southeasterly along Cahaba Road for approximately 350' (feet). The coverage area will extend to the Northeast and Southwest Right-of-Way of Cahaba Road.
- Beginning at the intersection of Cahaba Road and Lane Park Road and running Northerly along Lane Park Road for approximately 450' (feet). The coverage area will extend to the East and West Right-of-Way of Lane Park Road.

- Beginning at the intersection of Cahaba Road and the Entrance Ramp to Highway 280/Elton B. Stephens Expressway and running Southwesterly along Entrance Ramp for approximately 800' (feet). The coverage area will extend to the North and South Right-of-Way of the Entrance Ramp to Highway 280/Elton B. Stephens Expressway.
- Beginning at the intersection of Cahaba Road and Culver Road and running Easterly along Culver Road for approximately 200' (feet). The coverage area will extend to the North and South Right-of-Way of Culver Road
- In the Northwest corner of the intersection of Cahaba Road and the Entrance Ramp to Highway 280/Elton B. Stephens Expressway the limits will extend Northwesterly for approximately 125' (feet) outside the Right-of-Way. (The Birmingham Zoo Property).

The scope of work for the above limits will include the following:

Prior to beginning work, property owner notification letters will be sent to any property owner within or adjacent to the project corridor.

A basic control survey will be performed by the CONSULTANT to locate and identify horizontal and vertical control points which will provide control in the project corridor and will be the basis of subsequent work. Since this is a City sponsored project, the horizontal and vertical control to be utilized during this survey will not be established using ALDOT procedures as described in the ALDOT survey manual. In addition benchmarks will be monumented at intervals not to exceed 1000 feet along the project corridor.

Contours will be shown at 1-foot intervals and based from USGS datum. Spot elevations will be shown in flat areas. A benchmark will be set on site. We will show visible utilities as marked by the Alabama One Call System. Please note that utility locators contracted with the Alabama One Call System often refuse to mark utilities outside the limits of public Right-of-Way. We will coordinate with the Zoo to provide utility plans or mark their utilities that may exist in the project area on their property. Visible drainage structures will be shown indicating top and invert elevations as well as type and size of pipes. Visible improvements will be shown including buildings, walls, fences, sidewalks, curbs, parking areas, paved areas, and landscaped areas. Please note that in wooded areas tree lines will be shown in place of individual trees.

Sain Associates will perform the necessary courthouse research and tie sufficient front property corners of properties within the project corridor in order to graphically plot property lines. The survey will show ownership, deed book, and page number(s) from the latest recorded deed, and any property monumentation located in the field.

In addition, prior to construction beginning, we will stake the project centerline in the field (one (1) time). Rebar with plastic caps or nails with plastic washers will be set on the centerline cardinal points (PCs, PTs, PIs...) and wood stakes or paint will be marked at 50' Stations.

Sain Associates will also collect the coordinates of the bore hole locations performed by Bhate Geosciences for inclusion in their geotechnical report.

Right of Way Services
Upon completion of the survey and the completion of design plans, we will prepare a Right-of-Way map, legal descriptions and tract sketches, for Right-of-Way acquisitions and / or temporary construction easements. The Right-of-Way acquisitions and/or temporary construction easements will be for a maximum of six (6) properties situated within the project corridor. The Right-of-Way map, tract sketches, and deeds will be prepared to ALDOT standards and will be provided to ALDOT and City of Mountain Brook for their use in preparing Right-of-Way estimates, appraisals, and obtaining the required takings and / or temporary construction easements.

Traffic
Sain Associates will collect intersection turning movement traffic counts on a typical weekday during the morning, midday, and afternoon peak hours (7am-9am, 11am-1pm, and 4pm-6pm) at the intersection of US-280 connector and Cahaba Road/Lane Park Road/Culver Road. We will also collect 96-hour bidirectional traffic information (volume, classification, and speed) on US-280 connector, Lane Park Road, Culver Road, and Cahaba Road (north and south of the intersection). The cost to collect traffic information is included in our fee proposal.

Sain Associates will determine historical traffic volume growth from available traffic information (traffic counts, travel demand model output, etc.) at or near the intersection, and use the information to develop an annual growth rate. We will coordinate with the reviewing agencies to gain concurrence on our growth rate determination methodology and results. We will apply the annual growth rate to the traffic volumes we collected in order to forecast 20-year design traffic volumes for the roundabout intersection.

An updated capacity analysis will be conducted with the traffic volumes.

Roadway Contract Plans

Sain Associates will provide contract plans for the above mentioned intersection modification. Our scope of work is as follows:

A. The development of the plans will follow the procedure as outlined by the Alabama Department of Transportation for a City Transportation project.
B. Sain Associates will prepare Hydraulic Designs and Supporting Calculations according to approved chapters of the STATE Hydraulic Manual, otherwise, in the absence of direction for the STATE Hydraulic Manual, in conformity with provisions of the Federal Highway Administration (FHWA) Hydraulic Circulars.
C. Sain Associates will, without compromising safety, select the hydraulic design that is most cost effective from a selection of practicable design alternatives. Designs will comply with the requirements of the FHWA, STATE, City, or Local Community, whichever is most stringent.
D. The project Plan Assembly will include title, summary of quantities, typical sections, cross sections, drainage sections, plan and profile sheets, and all other sheets required for receipt of bids for work including grading, drainage, base and paving, signing, striping, and erosion and sediment control. Plans will also include a traffic control plan. Drainage structure information will be placed on the plans according to Chapter 2 of the STATE Hydraulic Manual, unless otherwise specified. The plans will show all existing topographical features, natural and man-made, surface and subsurface facilities for the proposed project limits. The contract plans will be completed in detail for all construction in accordance with current design practices of the STATE. Basic computations will be made for alignment and for layout of intersections.
E. Drainage Section drawings will be provided for all proposed drains, along the project centerline and within the project work limits. Stream bed data acquired from a field survey should be used where applicable to establish and depict the stream bed slope, the drain inlet, the drain outlet, and the profile configuration of the ditch or channel as it ties in to the drain.
F. Prepare designs and detailed contract plans at a horizontal scale of 1"=50' and vertical scale of 1"=5', or as otherwise approved, completely dimensioned for roadway construction, together with drainage and intersection layouts.
G. Sain Associates will provide existing utility base sheets to be a part of the respective final plan assembly. Sain Associates has not included relocation plans for any utilities. If other plans are required, these can be provided under a supplemental services agreement.
H. ALDOT will prepare appraisals and acquire any required easements or R.O.W. for the City.
I. Prepare estimates of quantities and construction cost for contract plans, itemized and properly symbolized in accordance with the Standard Specifications using unit prices as supplied or approved by the STATE on projects of comparable work in the general area of the property, if available.
J. Sain Associates will prepare plans according to the ALDOT Plans Preparation Manual.

K. A concept plan of the roundabout will be submitted to the City and ALDOT for approval. This submittal will serve as the 30% review and a formal meeting at this stage will not be conducted.
L. A Plan in Hand and PS&E plan review meetings will be conducted with the Client and the Alabama Department of Transportation. Construction cost estimates will be furnished with PS&E, Construction Bureau, and Office Engineer plan submittals.
M. The applicable provisions of ALDOT Standard Specifications for Highway Construction, Latest Edition, will apply to all work performed by Sain Associates under this AGREEMENT and Sain Associates will prepare supplemental specifications and special provisions for any needed items not covered by ALDOT Standard Specifications for Highway Construction, Latest Edition.
N. Sain Associates will prepare a storm water permit and CBMPP document for the City to obtain a permit from ADEM.

Geotechnical Services
See attached proposal from Bhate Geosciences.

Landscaping Design Plans
Nimrod Long and Associates will assist in the conceptual layout of the sidewalk and preparation of the landscaping plans. See attached proposal from Nimrod Long and Associates.

Lighting Design Plans
See attached proposal from SSOE Group.

Exclusions
The following services are not included, but can be performed under a supplemental agreement if deemed necessary: preparation of educational material for how to drive a roundabout or warning of a changed driving condition, calculating or setting of property corners, researching or drawing existing easements, staking or setting of right of way points or irons, setting of metal caps for control or centerline points, ALTA/ACSM or Boundary survey, potholing of utilities, subsurface utility exploration (SUE), additional reviews by ALDOT other than those cited in this proposal, or acquisition or appraisals.

Anticipated cost for design of intersection improvements: <u>$509,580</u>
Fee breakdown is as follows:
Environmental Document (including subconsultants).....$74,388
Topographic Survey..... $41,960
Right of Way Map, Tract Sketches, and Deeds..... $12,765
Roadway Contract Plans (including subconsultants)..... $380,467
Reimbursable expenses are included in the fee.

DRAFT

At the request of the Cities, the project will be authorized in phases, with Phase 1 being the Environmental Phase and Preliminary Design. During this Phase 1, we will perform the following services:

- Prepare for and attend a kick off meeting with ALDOT and FHWA for determination of the level of environmental document

Upon receipt of FHWA's approval that the roundabout concept described herein can move forward, the next tasks in this environmental phase will include:

- Collecting traffic counts, updating the traffic model, and making any necessary revisions to the roundabout layout
- Performing the environmental technical studies
- Performing minimal survey on the Zoo and gas station properties to adequately estimate earthwork quantities and Right of Way impacts
- Obtaining available mapping and GIS information of utilities
- Estimating the impacts to Right of Way and utilities based on GIS and mapping (not field verified information)
- Preparing opinion of costs for construction, Right of Way, and utilities
- Meeting with affected property owners to confirm support of the project
- Preparing for and facilitating the public involvement meeting and summarizing the public comments
- Meeting with the Cities (and Stakeholders if deemed necessary), 2 meetings assumed

This phase does not include preparing the environmental document, topographic survey, design, or Right of Way documents as we understand those will be authorized following this Phase 1 and determination of the layout. If FHWA requires additional alternatives or layouts to be evaluated, this project will have to be re-scoped accordingly.

The fee for Phase 1 is $122,000.00. We understand the City may elect to only authorize Phase 1 initially to confirm the layout. The remainder of the contract would be authorized following approval of the concept by the Cities, ALDOT, and FHWA.

If this scope meets with your approval, please forward to ALDOT for their review and approval. If you require any further information, please do not hesitate to contact us.

Sincerely,

Alicia Bailey

Alicia Bailey, P.E.
Project Manager/Team Leader

James A. Meads, P.E.
President/CEO

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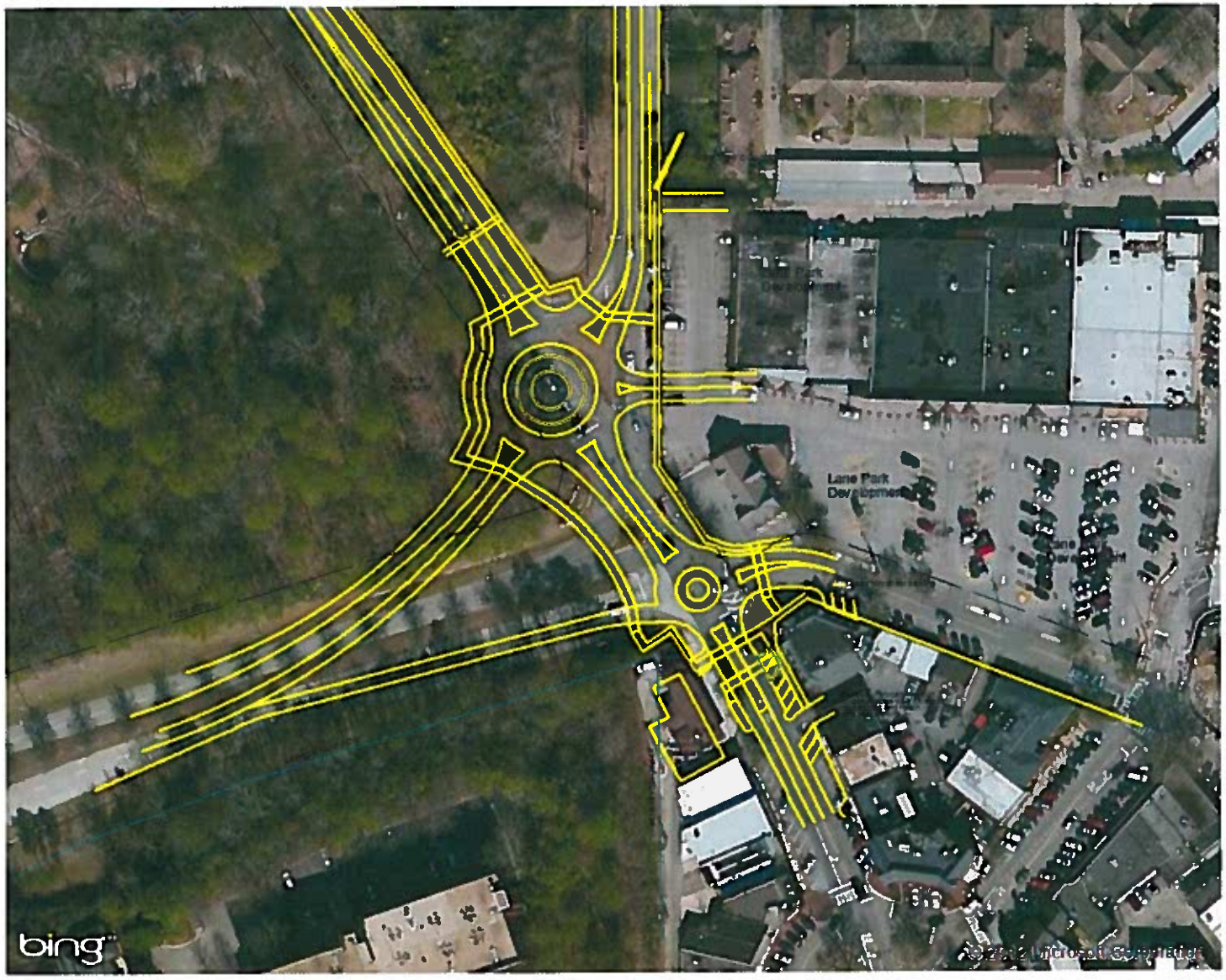
Lane Park
Development
bing

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Project No.	
County	Jefferson
Description	Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work	Intersection Improvement
Project Length	0.30 Miles
Consultant	Sain Associates

GRAND TOTAL OF FEE PROPOSAL

Categorical Exclusion	$74,388
Field Surveys	$41,960
Preliminary Roadway Plans	$0
Preliminary Bridge Plans	$0
Right-of-Way Map, Tract Sketches and Deeds	$12,765
Roadway Plans	$380,467
Bridge Plans	$0
GRAND TOTAL FEE	**$509,580**

Combined overhead rate (%) >>>>>>>>>>>>>>> 183.62

Facilities Capital Cost of Money (if used) >>>>>> 0.56

LABOR RATES

Classification	Daily Rate
Project Manager	$360.96
Engineer	$434.88
Environmental	$446.80
Engineering Technician/CADD	$266.06
Environmental Technician	$250.00
Clerical	$188.98
PLS	$313.84
Survey Crew	$474.56

**Certification of Out-of-Pocket Expenses:
If Out-of-Pocket Expenses are included in this proposal, we hereby certify that these costs are not included in the Combined Overhead Rate and are typically invoiced to all clients as a direct job cost.

Signed _____ Date _____

Position/Title _____

Project No.
County Jefferson
Description Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work Intersection Improvement
Project Length 0.30 Miles

Consultant Sain Associates

CATEGORICAL EXCLUSION	Engineer	Engineer. Tech.	Environment	Environ. Tech.	Clerical
Task A: Mapping and Background Information					
A-1 Coordination with Various Agencies	0.25	0.00	0.25	0.25	0.00
A-2 Prepare Purpose and Need Statement and Project Description	0.25	0.00	0.50	0.25	0.00
A-3 Create Project Location Map for Early Coordination	0.25	0.00	0.25	0.25	0.00
A-4 Review Alternatives (Build and No Build)	1.00	0.00	1.00	0.25	0.00
A-5 Prepare Narrative Discussing Preferred Alternative	0.50	0.00	0.50	0.25	0.00
A-6 Prepare for and Attend FHWA kick-off meeting	0.25	0.00	1.25	1.25	0.25
Task A Totals	**2.50**	**0.00**	**3.75**	**2.50**	**0.25**
Task B: Section 4(f) De Minimis					
B-1 Prepare Section 4(f) De Minimis Narrative	0.50	0.00	2.00	1.50	0.00
B-2 Submit for Review and Approval by Agencies	0.00	0.00	0.25	0.25	0.25
B-3 Address Comments and Submit Final	0.25	0.00	0.50	0.25	0.25
	0.00	0.00	0.00	0.00	0.00
Task B Totals	**0.75**	**0.00**	**2.75**	**2.00**	**0.50**
Task C: Public Involvement					
C-1 Prepare Information for Public Involvement Meeting	1.00	0.50	1.50	2.50	1.50
C-2 Attend Public Involvement Meeting	1.00	1.00	1.00	1.00	0.00
C-3 Summarize and Analyze Public Involvement Meeting Comments	0.50	0.00	0.50	1.00	0.50
Task C Totals	**2.50**	**1.50**	**3.00**	**4.50**	**2.00**
Task D: Categorical Exclusion					
D-1 Prepare Categorical Exclusion Checklist/Submit for Review	0.50	0.00	2.00	1.00	0.25
D-2 Address Review Comments/Submit for Final Review and Approval	0.25	0.00	1.00	0.50	0.25
Task D Totals	**0.75**	**0.00**	**3.00**	**1.50**	**0.50**
TOTALS	**6.50**	**1.50**	**12.50**	**10.50**	**1.25**

Project No.	
County	Jefferson
Description	Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work	Intersection Improvement
Project Length	0.30 Miles
Consultant	Sain Associates

Fee Proposal (Categorical Exclusion)

PERSONNEL COST	Man-days	x	Daily Rate		
Project Manager (10% of Eng. & Env.)	1.90	$	360.96	$	685.82
Engineer	6.50	$	434.88	$	2,826.72
Engineering Technician/CADD	1.50	$	266.06	$	399.09
Environmental	12.50	$	446.80	$	5,585.00
Environmental Technician	10.50	$	250.00	$	2,625.00
Clerical	1.25	$	188.98	$	236.23
	Total Direct Labor			$	12,357.86
Combined Overhead (%)	183.62			$	22,691.50
Out-of-Pocket Expenses**				$	584.05
			Sub-Total	**$**	**35,633.41**
Operating Margin (10%)				$	3,563.34
			Sub-Total	**$**	**39,196.75**
SUB-CONSULTANTS (attach man-day & fee FROM each sub-consultant; show total fee for each here)					
MRS, Inc (Cultural Resources)				$	5,100.00
Bhate Environmental (T&E, Stream/Wetland, Haz Mat, Air)				$	16,500.00
ATC (Noise)				$	11,850.00
				$	-
				$	-
				$	-
Subconsultant Administration Expense (5%)				$	1,672.50
			Sub-Total	**$**	**74,319.25**
Facilities Capital Cost of Money (% of Direct Labor)	0.56			$	69.20
			TOTAL FEE	**$**	**74,388.45**

**See Grand Total Fee sheet

Project No.
County Jefferson
Description Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work Intersection Improvement
Project Length 0.30 Miles

Consultant Sain Associates

Out-of-pocket Expenses (Categorical Exclusion)

TRAVEL COST

Mileage Cost	Trips	Miles/Trip	$/Mile	Total
FHWA Kickoff Meeting	1	195	$0.540	$ 105.30
Site Visit	2	20	$0.540	$ 21.60
Public Involvement Meeting	1	10	$0.540	$ 5.40
	0	0	$0.540	$ -
			Total Mileage Cost	**$ 132.30**

Subsistence Cost	Days	# People	$/Day	Total
Travel allowance (6 hour trips)	1	2	$11.25	$ 22.50
Travel allowance (12 hour trips - meal provided by others)	0	0	$20.00	$ -
Travel allowance (12 hour trips)	0	0	$30.00	$ -
Travel allowance (overnight)***	0	0	$75.00	$ -
				$ -
			Total Subsistence Cost	**$ 22.50**
			Total Travel Cost	**$ 154.80**

PRINTING / REPRODUCTION COST

Type of printing/reproduction	# of Sets	Sheets/Set	Total Sheets	Cost/Sheet	Total
Color Roll Maps for FHWA Kickoff Meeting	2	1	2	$ 12.00	$ 24.00
Section 4(f) De Minimis Submittal	15	5	75	$ 0.25	$ 18.75
CE Checklist Draft Submittal	15	15	225	$ 0.25	$ 56.25
CE Checklist Final Submittal	15	15	225	$ 0.25	$ 56.25
Color Roll Maps for Public Involvement Meeting	2	1	2	$ 12.00	$ 24.00
	0	0	0	$ -	$ -
			Total Printing/Reproduction Cost		**$ 179.25**

Communication Cost (telephone, fax, etc.)	Total
	$ -

Postage Cost (overnight, stamps, etc.)	Total
Shipping and Handling for Submittals	$ 250.00

Other (provide description on next line)	Total
	$ -

Total Out-of-pocket Expenses $ 584.05

Comments:

*****You must have ALDOT approval for ANY overnight trips of less than 100 miles.**

Project No.
County Jefferson
Description Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work Intersection Improvement
Project Length 0.30 Miles

Consultant Sain Associates

FIELD SURVEY	PLS	Crew	Tech/CADD	Clerical
Based on a 0 Man Crew				
Task A: Mobilization and Basic Control Survey				
A-1 Mobilize/Demobilize	0.25	0.50	0.00	0.00
A-2 Contact Property Owners	1.00	0.00	0.00	0.50
A-3 Perform Basic Control Survey and set capped rebar	0.25	1.50	0.00	0.00
~~A-4 Conduct On-site Inspection~~				
Task A Totals	**1.50**	**2.00**	**0.00**	**0.50**
Task B: Project Alignment and Profile				
B-1 Run Closure of Basic Control Survey/~~Prepare Closure Diagram~~	0.50	0.00	0.00	0.00
B-2 Establish Centerline and set PIs, PCs, and PTs/~~Obtain Ground Profile~~	1.00	1.50	0.25	
B-3 Obtain Topographic Data	1.00	8.00	4.00	0.00
Task B Totals	**2.50**	**9.50**	**4.25**	**0.00**
Task C: Supplemental Control Surveys and Data Gathering				
~~C-1 Traverse Cross-Roads and Railroads~~				
C-2 ~~Stream Topography & Cross Sections~~/Complete HYD-100 & 101 Forms	0.25		1.00	
~~C-3 Define Drainage Areas/Prepare Schematic Drainage Map~~				
~~C-4 Obtain Cross-Sections at 20 Meter Intervals and Ground Break Points~~				

FIELD SURVEY	PLS	Crew	Tech/CADD	Clerical
Task C Totals	**0.25**	**0.00**	**1.00**	**0.00**
Task D: Utility Surveys, Drainage Sections and Compilation of Data				
D-1 Identify/Locate Utilities	0.50	1.50	0.50	0.00
D-1 Coordination with Zoo for identification of utilities on their property	0.25	0.50	0.25	
~~D-2 Obtain Hydrological Location Survey~~				
D-3 ~~Tie All Available Section Corners &~~ All Available Front Corners of Affected Properties to Project Centerline	2.00	2.00	1.00	0.00
D-4 Obtain Copies of Latest Deeds	1.00	0.00	0.00	0.00
~~D-5 Set & Reference PIs, PCs, POTs, POCs, & other critical points~~				
D-6 Reduce Survey Field Notes	1.00	0.00	0.50	0.00
~~D-7 Submit Work for Review/Sealed Mylar Plot of Accepted Field Map~~				
D-8 Collect bore holes performed by geotech	0.25	1.00	0.50	
Task D Totals	**5.00**	**5.00**	**2.75**	**0.00**
TOTALS	**9.25**	**16.50**	**8.00**	**0.50**

Project No.	
County	Jefferson
Description	Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work	Intersection Improvement
Project Length	0.30 Miles
Consultant	Sain Associates

Fee Proposal (Field Survey)

PERSONNEL COST	Man-days	x	Daily Rate		
Project Manager (10% of PLS)	0.93	$	360.96	$	335.69
PLS	9.25	$	313.84	$	2,903.02
Survey Crew (see man-day sheet)	16.50	$	474.56	$	7,830.24
Engineering Technician/CADD	8.00	$	266.06	$	2,128.48
Clerical	0.50	$	188.98	$	94.49
	Total Direct Labor			$	13,291.92
Combined Overhead (%)	183.62			$	24,406.62
Out-of-Pocket Expenses**				$	379.60
			Sub-Total	$	**38,078.14**
Operating Margin (10%)				$	3,807.81
			Sub-Total	$	**41,885.95**
SUB-CONSULTANTS (attach man-day & fee FROM each sub-consultant; show total fee for each here)					
				$	-
				$	-
				$	-
Subconsultant Administration Expense (5%)				$	-
			Sub-Total	$	**41,885.95**
Facilities Capital Cost of Money (% of Direct Labor)	0.56			$	74.43
			TOTAL FEE	$	**41,960.38**

Project No.
County Jefferson
Description Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work Intersection Improvement
Project Length 0.30 Miles

Consultant Sain Associates

Out-of-pocket Expenses (Field Survey)

TRAVEL COST

Mileage Cost	Trips	Miles/Trip	$/Mile	Total
	12	20	$0.540	$ 129.60
	0	0	$0.540	$ -
	0	0	$0.540	$ -
	0	0	$0.540	$ -
			Total Mileage Cost	$ 129.60

Subsistence Cost	Days	# People	$/Day	Total
Travel allowance (6 hour trips)	0	0	$11.25	$ -
Travel allowance (12 hour trips - meal provided by others)	0	0	$20.00	$ -
Travel allowance (12 hour trips)	0	0	$30.00	$ -
Travel allowance (overnight)***	0	0	$75.00	$ -
				$ -
			Total Subsistence Cost	$ -
			Total Travel Cost	$ 129.60

PRINTING / REPRODUCTION COST

Type of printing/reproduction	# of Sets	Sheets/Set	Total Sheets	Cost/Sheet	Total
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
				Total Printing/Reproduction Cost	$ -

Communication Cost (telephone, fax, etc.)	Total
	$ -

Postage Cost (overnight, stamps, etc.)	Total
	$ -

Other (provide description on next line)	Total
Courthouse Research, Field Supplies (Rebar, Stakes, Paint...)	$ 250.00

Total Out-of-pocket Expenses	$ 379.60

Comments:

***You must have ALDOT approval for ANY overnight trips of less than 100 miles.**

Project No.	
County	Jefferson
Description	Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work	Intersection Improvement
Project Length	0.30 Miles
Consultant	Sain Associates

Supporting Documentation for ROW Fee Proposal

Date of Research	Parcel Tax ID #	# of Tracts
2/16/2016	3 00 08 2 002 001.0	1
2/16/2016	3 00 08 2 002 010.0	1
2/26/2016	3 00 08 2 001 007.0	1
2/26/2016	3 00 08 2 001 006.0	1
2/26/2016	3 00 08 2 003 004.0	1
2/26/2016	3 00 08 2 003 005.0	1
	Total Tracts:	6

Project No.
County Jefferson
Description Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work Intersection Improvement
Project Length 0.30 Miles

Consultant Sain Associates

ROW Map, Tract Sketches and Deeds	Engineer	Tech/CADD	Clerical
Estimated number of tracts= **6**			
Task A: Right-of-Way Map	2.00	2.50	0.00
Task B: Tract Sketches	1.50	2.00	0.00
Task C: Deeds	1.50	2.00	0.00
	0.00	0.00	0.00
	0.00	0.00	0.00
TOTALS	**5.00**	**6.50**	**0.00**

Note: A "Tract" is all property of a single owner acquired by ALDOT. This includes all parcels, drainage easements, construction easements, etc.

Project No.	
County	Jefferson
Description	Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work	Intersection Improvement
Project Length	0.30 Miles
Consultant	Sain Associates

Fee Proposal (ROW Map, Tract Sketches & Deeds)

PERSONNEL COST	Man-days	x Daily Rate		
Project Manager (10% of Eng.)	0.50	$ 360.96	$	180.48
Engineer	5.00	$ 434.88	$	2,174.40
Engineering Technician/CADD	6.50	$ 266.06	$	1,729.39
Clerical	0.00	$ 188.98	$	-
	Total Direct Labor		$	4,084.27
Combined Overhead (%)	183.62		$	7,499.54
Out-of-Pocket Expenses**			$	-
		Sub-Total	$	**11,583.81**
Operating Margin (10%)			$	1,158.38
		Sub-Total	$	**12,742.19**
SUB-CONSULTANTS (attach man-day & fee FROM each sub-consultant; show total fee for each here)				
			$	-
			$	-
			$	-
Subconsultant Administration Expense (5%)			$	-
		Sub-Total	$	**12,742.19**
Facilities Capital Cost of Money (% of Direct Labor)	0.56		$	22.87
		TOTAL FEE	$	**12,765.06**

**See Grand Total Fee sheet

Project No.
County Jefferson
Description Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work Intersection Improvement
Project Length 0.30 Miles

Consultant Sain Associates

Out-of-pocket Expenses (ROW Map, Tract Sketches & Deeds)

TRAVEL COST

Mileage Cost	Trips	Miles/Trip	$/Mile	Total
	0	0	$0.540	$ -
	0	0	$0.540	$ -
	0	0	$0.540	$ -
	0	0	$0.540	$ -
			Total Mileage Cost	$ -

Subsistence Cost	Days	# People	$/Day	Total
Travel allowance (6 hour trips)	0	0	$11.25	$ -
Travel allowance (12 hour trips - meal provided by others)	0	0	$20.00	$ -
Travel allowance (12 hour trips)	0	0	$30.00	$ -
Travel allowance (overnight)***	0	0	$75.00	$ -
				$ -
			Total Subsistence Cost	$ -
			Total Travel Cost	$ -

PRINTING / REPRODUCTION COST

Type of printing/reproduction	# of Sets	Sheets/Set	Total Sheets	Cost/Sheet	Total
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
				Total Printing/Reproduction Cost	$ -

Communication Cost (telephone, fax, etc.)	Total
	$ -

Postage Cost (overnight, stamps, etc.)	Total
	$ -

Other (provide description on next line)	Total
	$ -

Total Out-of-pocket Expenses	$ -

Comments:

***You must have ALDOT approval for ANY overnight trips of less than 100 miles.**

Project Number _____ **CPMS #** _____
County Jefferson
Description Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of work Intersection Improvement
Length 0.30 miles

Consultant Sain Associates

ROADWAY PLANS SHEET TITLE	NO OF SHEETS	ESTIMATED MAN-DAYS ENGINEER SHEET	ENGINEER TOTAL	TECHNICIAN SHEET	TECHNICIAN TOTAL
ROADWAY PLANS SHEET TITLE	**NO OF SHEETS**	**ESTIMATED MAN-DAYS ENGINEER SHEET**	**ENGINEER TOTAL**	**TECHNICIAN SHEET**	**TECHNICIAN TOTAL**
TITLE SHEET	1.00	0.07	0.07	0.13	0.13
INDEX SHEET	1.00	0.07	0.07	0.13	0.13
GEOMETRIC LAYOUT/SURVEY CONTROL	2.00	0.07	0.14	0.13	0.26
PROJECT NOTE SHEET (Project)	1.00	0.13	0.13	0.50	0.50
PROJECT NOTE SHEET (TCP)	1.00	0.07	0.07	0.13	0.13
PROJECT NOTE SHEET (Signage)	1.00	0.13	0.13	0.25	0.25
PROJECT NOTE SHEET (Signals)	0.00	0.00	0.00	0.00	0.00
PROJECT NOTE SHEET (ITS)	0.00	0.00	0.00	0.00	0.00
PROJECT NOTE SHEET (Lighting)	1.00	0.07	0.07	0.06	0.06
PROJECT NOTE SHEET (Traffic Loops)	0.00	0.00	0.00	0.00	0.00
PLANS LEGEND & ABBREVIATIONS	2.00	0.07	0.14	0.13	0.26
TYPICAL SECTIONS					
Main Roadway	6.00	0.50	3.00	1.00	6.00
Cross Roads	2.00	0.50	1.00	1.00	2.00
Detour & Misc.	1.00	0.25	0.25	1.00	1.00
Ramps	0.00	0.00	0.00	0.00	0.00
Ditches	1.00	0.25	0.25	1.00	1.00
Roundabout typical details	2.00	0.25	0.50	1.00	2.00
SUMMARY SHEET					
Main Summary	2.00	0.50	1.00	1.00	2.00
SUMMARY BOX SHEETS					
Roadway Drainage (non-culvert)	1.00	0.50	0.50	1.00	1.00
Culvert Extension, New Culvert	0.50	0.25	0.13	0.50	0.25
Bridge Culvert Extension, New Bridge Culvert	0.00	0.00	0.00	0.00	0.00
Guardrail/End Anchors	0.25	0.13	0.03	0.25	0.06
Slope Paving (Under Bridges)	0.00	0.00	0.00	0.00	0.00
Side Drain Pipe	0.25	0.05	0.01	0.25	0.06
Signing	0.75	0.13	0.10	0.50	0.38
Base & Pavement	0.50	0.13	0.07	0.25	0.13
Bridge	0.00	0.00	0.00	0.00	0.00
Striping & Pavement Markings	0.75	0.25	0.19	1.00	0.75
Curb & Gutter	0.50	0.13	0.07	0.25	0.13
Bridge End Slabs	0.00	0.00	0.00	0.00	0.00
Roadway Lighting	1.00	0.13	0.13	0.25	0.25
Signals	0.00	0.00	0.00	0.00	0.00
ITS	0.00	0.00	0.00	0.00	0.00
Sidewalk	0.50	0.50	0.25	1.00	0.50
Slope Paving (Ditches)/Ditch Summary	0.50	0.25	0.13	1.00	0.50
Concrete Safety Barrier	0.00	0.00	0.00	0.00	0.00
Retaining Wall	0.50	0.50	0.25	1.00	0.50
Misc. Boxes	1.00	0.25	0.25	1.00	1.00
Erosion Control	0.50	0.25	0.13	1.00	0.50
Removal Items	1.00	0.13	0.13	0.50	0.50
Utility Relocation	0.50	0.13	0.07	0.50	0.25
Roundabout truck apron	0.50	0.25	0.13	0.50	0.25
PLAN & PROFILE					
Main Roadway	1.00	1.00	1.00	2.00	2.00
Crossroads	2.00	1.00	2.00	2.00	4.00

ROADWAY PLANS SHEET TITLE	NO OF SHEETS	ESTIMATED MAN-DAYS			
		ENGINEER		TECHNICIAN	
		SHEET	TOTAL	SHEET	TOTAL
Roundabouts details	2.00	1.50	3.00	2.50	5.00
Detours	0.00	0.00	0.00	0.00	0.00
Sidewalks	1.00	0.75	0.75	1.50	1.50
Retaining Walls	1.00	1.00	1.00	2.00	2.00
PAVING LAYOUT (includes striping)					
Main Roadway	1.00	0.50	0.50	1.00	1.00
Crossroads	2.00	0.50	1.00	1.00	2.00
Intersections details	2.00	0.50	1.00	1.00	2.00
	0.00	0.00	0.00	0.00	0.00
INTERCHANGES					
Geometrics	0.00	0.00	0.00	0.00	0.00
Ramps Profiles	0.00	0.00	0.00	0.00	0.00
Site Grading	0.00	0.00	0.00	0.00	0.00
Cross Sections	0.00	0.00	0.00	0.00	0.00
Signing	0.00	0.00	0.00	0.00	0.00
Ramp Gore Details	0.00	0.00	0.00	0.00	0.00
TRAFFIC CONTROL					
Sequence of Construction	1.00	0.25	0.25	0.50	0.50
Summary & Items	1.00	0.25	0.25	0.50	0.50
Typical Section Sketches	9.00	0.25	2.25	1.00	9.00
Layout Sheets (signs, devices, shifts, etc.)	9.00	0.75	6.75	1.25	11.25
Special Drawings	5.00	0.07	0.35	0.13	0.65
	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00
SIGNING					
Sign Layout	2.00	0.50	1.00	1.00	2.00
Sign X-Section	0.00	0.00	0.00	0.00	0.00
Sign Panel Details	0.00	0.00	0.00	0.00	0.00
Soils Data Sheets (provided by ALDOT)	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00
SIGNALIZATION					
Signal Layout and Traffic Analysis (1 per site)	0.00	0.00	0.00	0.00	0.00
Traffic Counts (1 per site)	0.00	0.00	0.25	0.00	0.50
Signal Warrant Analysis (1 per site)	0.00	0.00	0.00	0.00	0.00
Soils Data Sheets (provided by ALDOT)	0.00	0.00	0.00	0.00	0.00
Capacity Analysis review	0.00	0.00	1.50	0.00	1.00
Traffic Forecasts	0.00	0.00	0.50	0.00	2.00
ITS					
Systems Engineering	0.00	0.00	0.00	0.00	0.00
Special Study	0.00	0.00	0.00	0.00	0.00
Legend	0.00	0.00	0.00	0.00	0.00
Special Details	0.00	0.00	0.00	0.00	0.00
ITS Layouts	0.00	0.00	0.00	0.00	0.00
Optical Fiber Splice Charts	0.00	0.00	0.00	0.00	0.00
Fiber - Cable Routing Diagram	0.00	0.00	0.00	0.00	0.00
Specifications	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00
LIGHTING					
Plan Layout	0.00	0.00	0.00	0.00	0.00

ROADWAY PLANS SHEET TITLE	NO OF SHEETS	ESTIMATED MAN-DAYS			
		ENGINEER		TECHNICIAN	
		SHEET	TOTAL	SHEET	TOTAL
Demo Plans	0.00	0.00	0.00	0.00	0.00
Special Details	0.00	0.00	0.00	0.00	0.00
Soils & Passive Pressure (provided by ALDOT)	0.00	0.00	0.00	0.00	0.00
	0.00	0.00	0.00	0.00	0.00
UTILITY SHEETS					
Utility Locations - Existing	3.00	0.130	0.39	0.25	0.75
Utility Locations - Proposed	3.00	0.130	0.39	1.00	3.00
Coordination with Utility Owners (5 Owners) - 30%			2.00		1.50
Coordination with Utility Owners (5 Owners) - 65%			2.00		1.50
Meeting with Utility Owners - 65%			2.50		2.00
Coordination with Utility Owners (5 Owners) - 90%			2.00		1.50
Utility Coordination Letter			2.00		1.00
DRAINAGE SECTIONS					
Pipe & Culvert X-Sect./Hydraulic Computations	6.00	2.50	15.00	1.50	9.00
Hydraulic Data Sheet	1.00	0.50	0.50	0.50	0.50
Details	1.00	0.50	0.50	1.00	1.00
Coordination with FEMA study	0.00	0.00	2.00	0.00	1.00
SOIL SHEETS					
Soil Boring Logs	2.00	0.06	0.12	0.13	0.26
Soil Profile	1.00	0.06	0.06	0.13	0.13
	0.00	0.00	0.00	0.00	0.00
EROSION CONTROL					
Legend & Sequence	1.00	0.13	0.13	0.25	0.25
Phased Sheets (Phase I)	2.00	0.50	1.00	1.00	2.00
Phased Sheets (Phase II)	2.00	0.50	1.00	1.00	2.00
Phased Sheets (Phase III)	2.00	0.50	1.00	1.00	2.00
CBMPP & NOI	1.00	0.00	1.50	0.00	5.00
	0.00	0.00	0.00	0.00	0.00
ROADWAY CROSS SECTIONS					
Main Roadway	7.00	0.50	3.50	0.75	5.25
Crossroads	7.00	0.50	3.50	0.75	5.25
Earthwork Balancing (Phased)	2.00	0.75	1.50	1.50	3.00
	0.00	0.00	0.00	0.00	0.00
REVIEW COMMENTS					
30% Review			0.00		0.00
Concept layout review and address comments			2.00		4.00
Plan-in-Hand Inspection			2.00		2.00
PS&E Inspection			2.00		2.00
Cost Estimates			1.00		1.50
Design Hearing			0.00		0.00
Concept Layout update			1.50		3.00
Revisions following Public Involvement			1.50		3.00
Site Visits (3)			3.00		3.00
Meeting with Zoo (2)			2.00		1.00
Meeting with Botanical Garden			1.00		0.50
Meeting with Ray Poyner			1.00		0.50
Meeting with Lane Park development			1.00		0.50
Meeting with Chamber for Village stores			1.00		0.50
Meeting with gas station			1.00		0.50
Coordination with consultants in area			4.00		2.00
Meeting with subconsultants			2.00		2.00
Meetings with City (3)			3.00		3.00
SUB-TOTAL	114.50		104.33		146.52
10% Supervision			10.43		
TOTALS	**114.50**		**104.33**		**146.52**

Project No.	
County	Jefferson
Description	Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work	Intersection Improvement
Project Length	0.30 Miles
Consultant	Sain Associates

Fee Proposal (Roadway Plans)

PERSONNEL COST	Man-days	x Daily Rate		
Project Manager (10% of Eng.)	10.43	$ 360.96	$	3,764.81
Engineer	104.33	$ 434.88	$	45,371.03
Engineering Technician/CADD	146.52	$ 266.06	$	38,983.11
Clerical	10.00	$ 188.98	$	1,889.80
	Total Direct Labor		$	90,008.75
Combined Overhead (%)	183.62		$	165,274.07
Out-of-Pocket Expenses**			$	9,176.38
		Sub-Total	**$**	**264,459.20**
Operating Margin (10%)			$	26,445.92
		Sub-Total	**$**	**290,905.12**
SUB-CONSULTANTS (attach man-day & fee FROM each sub-consultant; show total fee for each here)				
Bhate Geosciences Corporation (Geotech)			$	25,681.00
Michael Wallwork (Roundabout Expert)			$	9,300.00
Southern Traffic Services (Traffic Counts)			$	7,400.00
Nimrod Long and Associates (Landscape Plans)			$	36,436.00
SSOE Group (Lighting Plans)			$	6,000.00
Subconsultant Administration Expense (5%)			$	4,240.85
		Sub-Total	**$**	**379,962.97**
Facilities Capital Cost of Money (% of Direct Labor)	0.56		$	504.05
		TOTAL FEE	**$**	**380,467.02**

**See Grand Total Fee sheet

Project No.
County Jefferson
Description Cahaba Road/Hwy 280/Lane Park Road roundabout
Scope of Work Intersection Improvement
Project Length 0.30 Miles

Consultant Sain Associates

Out-of-pocket Expenses (Roadway Plans)

TRAVEL COST

Mileage Cost	Trips	Miles/Trip	$/Mile	Total
Site Visits	3	20	$0.540	$ 32.40
Plan in Hand	1	26	$0.540	$ 14.04
PS&E	1	26	$0.540	$ 14.04
Meetings with property owners, City, consultants	10	20	$0.540	$ 108.00
			Total Mileage Cost	**$ 168.48**

Subsistence Cost	Days	# People	$/Day	Total
Travel allowance (6 hour trips)	5	2	$11.25	$ 112.50
Travel allowance (12 hour trips - meal provided by others)	0	0	$20.00	$ -
Travel allowance (12 hour trips)	0	0	$30.00	$ -
Travel allowance (overnight)***	0	0	$75.00	$ -
				$ -
			Total Subsistence Cost	**$ 112.50**
			Total Travel Cost	**$ 280.98**

PRINTING / REPRODUCTION COST

Type of printing/reproduction	# of Sets	Sheets/Set	Total Sheets	Cost/Sheet	Total
Plan in Hand	25	100	2500	$ 0.52	$ 1,300.00
PS&E	25	115	2875	$ 0.52	$ 1,495.00
Quality Control	12	115	1380	$ 0.52	$ 717.60
Construction Bureau	11	115	1265	$ 0.52	$ 657.80
Office Engineer	1	115	115	$ 15.00	$ 1,725.00
	0	0	0	$ -	$ -
				Total Printing/Reproduction Cost	**$ 5,895.40**

Communication Cost (telephone, fax, etc.)	Total
	$ -

Postage Cost (overnight, stamps, etc.)	Total
	$ 1,500.00

Other (provide description on next line)	Total
ADEM Permit	$ 1,500.00

Total Out-of-pocket Expenses $ 9,176.38

Comments:

*****You must have ALDOT approval for ANY overnight trips of less than 100 miles.**

MRS Consultants, LLC.

Cultural Resource Specialists Phase I Assessments Section 106 Compliance

February 24, 2016

Jennifer G. Brown
Sain Associates, Inc.
Two Perimeter Park South
Suite 500 East
Birmingham, Alabama 35243

Re: Phase I Cultural Resources Survey for Proposed Improvements to the Cahaba Road and Highway 280 Intersection in Mountain Brook, Jefferson County, Alabama

Dear Ms. Brown:

Thank you for contacting MRS Consultants, LLC regarding the above referenced project. A cost proposal is attached for MRS to conduct a Phase I cultural resources assessment survey for the proposed project. The project involves improvements at the intersection of Cahaba Road and Highway 280. Improvements are proposed along the Highway 280 Exit road, Cahaba Road, Lane Park Road, and Culver Road, and will acquire additional right-of-way. The current project encompasses approximately 3,415 linear feet within an area measuring approximately 10-12 acres. All phases of the research will be conducted in compliance with the guidelines set forth by the Alabama Historical Commission (AHC) and will consider both archaeological and historic structural resources. The project will require that an Area of Potential Effect (APE) be investigated, which will extend beyond the limits of the direct construction impacts.

Preliminary research has determined that there are two potential issues for this project. First, the project encompasses a portion of downtown Mountain Brook. Therefore, there will be several buildings that are older than 50 years of age, which will need to be documented. Second, the old Red Mountain Cemetery, also known as South-Side Cemetery, is located beneath the Birmingham Zoo. The cemetery originated in 1893 as a "Potter's field," or paper's cemetery. The cemetery was used for only a few decades, but is said to contain over 4,700 graves. Research will need to be conducted to try to determine where the cemetery exists in relation to the project area.

This contract will entail a Phase I cultural resources assessment of the survey area. There will be three general stages to this project: 1) Background Research; 2) Field Research; and 3) Analysis and Reporting. Following is a brief description of each stage of research.

Stage 1: This stage of research includes the background research conducted before the field investigation. Background research will be conducted to identify any known cultural resources within the study area, especially archaeological sites, cemeteries, historic structures, and historic communities. This research will also serve to identify the potential for such resources. Several sources will be consulted during the research, including but not necessarily limited to the Alabama State Site File (ASSF), the National Register of Historic Places (NRHP), the Alabama Register of Landmarks & Heritage (ARLH), and the Online Archaeological GIS website for Alabama.

Stage 2: This stage will include the field assessment of the project area, and will document archaeological sites, cemeteries, and historic structures. The project area will receive a pedestrian review. Standard archaeological techniques will be employed during the survey, especially visual observation of the ground surface and subsurface shovel testing. The majority of the study corridor exists within disturbed, industrial and urban environments; therefore, subsurface testing will be limited. No shovel

tests will be placed within residential yards. Environmental conditions and shovel tests will be documented on field maps. Shovel tests generally will measure 30 cm in diameter and will be excavated into subsoil. Soils will be sifted through a 6 mm mesh screen to search for cultural material. Any artifacts recovered during the investigation will be bagged by provenience, and returned to the laboratory for analysis. Each discovered resource (archaeological sites, cemeteries, and historic structures) will be evaluated to a preliminary level necessary for determining its potential eligibility for inclusion on the NRHP. Standard information will be derived for each archaeological site, i.e. GPS coordinates, dimensions, vertical depth, positive/negative shovel tests, environmental context, photographs, sketch maps, etc. The architectural survey will include the direct construction zone as well as the surrounding APE. The survey will also document historic structures in the project area, which will likely include several buildings in downtown Mountain Brook.

Stage 3: This stage includes the laboratory analysis and preparation of the technical report and other documentation. Artifacts will undergo standard laboratory procedures, i.e. washing, analysis, and preparation for curation. ASSF forms will be completed for each archaeological site, which will be submitted to the ASSF for a permanent site number. Historic properties identified during the survey will be described. A technical report will be written detailing the survey and findings of the research. Recommendations of NRHP eligibility will be made for each cultural resource. Those cultural resources that are considered *Not Eligible* for the NRHP will be recommended for clearance. Those cultural resources that have an *Undetermined* or *Potentially Eligible* NRHP eligibility will be recommended for avoidance or additional research.

If you have any questions, please do not hesitate to call me on my cell phone at (205) 242-8650. We look forward to working with you, and thank you for considering MRS Consultants, LLC.

Sincerely,

Catherine C. Meyer

Catherine C. Meyer
MRS Consultants, LLC.

Enclosure

February 24, 2016

COST PROPOSAL

Phase I Cultural Resources Assessment
for the Proposed Improvements to the Cahaba Road/Highway 280 Intersection
in Mountain Brook, Jefferson County, Alabama

PERSONNEL COSTS	No. Days	Daily Rate	Costs
Background Research/Administration			
MRS Cultural Resource Specialist	2.00	$350.00	$700.00
Fieldwork			
MRS Cultural Resource Specialist	2.00	$350.00	$700.00
Archaeological Technician	2.00	$250.00	$500.00
Lab Analysis/Report/Drafting/Structure Forms			
Archaeological Technician	2.00	$250.00	$500.00
Cultural Resource Specialist	6.00	$350.00	$2,100.00
	Personnel Subtotal		**$4,500.00**
OPERATING BUDGET			
AHC Research--Per Diem ($20.00/day)	1	$20.00	$20.00
AHC Research--Mileage (.56/mile)	250	$0.540	$135.00
Fieldwork--Per Diem ($20.00/day)	4	$20.00	$80.00
Fieldwork--Mileage (.56/mile)	300	$0.540	$162.00
Miscellaneous Supplies/Equipment			$25.00
	Total Operating		**$422.00**
INDIRECT COSTS ON OPERATING (43%)			**$181.46**
TOTAL COSTS			**$5,103.46**
LUMP SUM/FIXED PRICE			**$5,100.00**

March 1, 2016

Sain Associates
Two Perimeter Park South, Suite 500 East
Birmingham, AL 35243

Attention: Ms. Alicia Baily, P.E.

Subject: Scope of Work and Proposed Budget
Proposed Mountain Brook Village Roundabout
Bhate Proposal Number 16-0023

Dear Ms. Baily:

Based on our discussions Bhate Environmental Associates, Inc. (Bhate) is please to present the following Scope of Work and Proposed Budget for environmental investigations associated with the Categorical Exclusion documentation for the Proposed Mountain Brook Village Roundabout project. The proposed work is divided into four work scopes, as follows:

Scope of Work

1 Ecological Impact Assessment

Bhate will prepared a Vegetation/Wildlife Habitat Survey Report to assess for the presence of habitat conducive to the presence of Threatened and Endangered Species identified by the US Fish and Wildlife Service (USFWS) in the their letter dated February 22, 20116. The survey and accompanying report will be conducted by a qualified degreed biologist pursuant to USFWS protocols. Bhate anticipates that this survey and accompanying report will find no suitable habitat in the project area and form the basis for a "No impact anticipated" certification and concurrence from the USFWS. If appropriate habitat is identified additional investigations beyond the scope and budget of this proposal may be required.

2 Streams and Wetlands Delineation

2.1 Wetlands Assessment Methods

The presence of potential wetlands within the project area will be assessed in accordance with the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation manual procedures and current Regional Supplements. Delineations are based on the presence of *hydrophilic vegetation, wetland hydrology, and hydric soils.* Information pertaining to vegetation, hydrology, and soil characteristics will be obtained from each assessment site and recorded on the form entitled *Wetland Determination Data Form – Eastern Mountain and Piedmont* in order to substantiate potential determinations and jurisdictional wetland line placement, if present.

In order to determine the site layout and characteristics and assist in the identification and location of potential jurisdictional wetlands and streams on the subject property, several readily-available maps and aerial photographs will be reviewed, including:

- Recent aerial photographs obtained from Terrain Navigator
- U.S. Geological Survey (USGS) 7.5 Minute topographic maps
- National Wetland Inventory (NWI) maps
- U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey reports and maps

2.2 Stream Assessment Methods

Streams in the project area will be evaluated for overall stream quality and physical integrity based on the fish population, wildlife utilization, aquatic fauna diversity, and presence of macroinvertebrates, if applicable. The streams will also be assessed for available habitat such as vegetation, roots, and other preferred aquatic habitat, as well as streambank stability, morphologic alterations, depositional bar patterns, and sedimentation.

The *Department of the Army Mobile District, Corps of Engineers Standard Operating Procedure Compensatory Stream Mitigation Guidelines* (Stream SOP) will be used as a tool to provide a basic written framework, which will provide predictability and consistency for the development, review, and approval of compensatory stream mitigation plans. A key element of the Stream SOP is the establishment of a method for evaluating the quality of streams to be impacted and calculating proposed stream mitigation credits; however it can also be used to evaluate a stream for overall quality based on the stream's overall physical attributes.

The streams will be assessed using the scoring procedure in the Stream SOP. The streams will be evaluated based on factors provided in the Stream SOP.

The hydrologic indicators of the streams will be assessed by characterizing its groundwater flow/discharge observations, and other physical constituents such as presence of leaf litter, sediment on plants, wrack lines and redoximorphic features of the substrate. Sampling and observation of biological indicators also are used in this process to correlate the presence of vegetation, aquatic species with stream type. The presence of a specific species, either flora or fauna, can be an indicator of stream flow duration, and therefore assist in the classification or type of stream being identified.

2.3 Corps of Engineers Submittal and Permitting

The wetlands and stream delineations will be submitted to the U.S. Army Corps of Engineers Birmingham Office for a permitting determination. At this time it is expected either that no permitting will be required or that the stream and wetlands impacts will fall under a Nationwide Permit. If a Nationwide Permit is appropriate for the Project Bhate intends to use Cultural Resource and Threatened and Endangered Species determinations made by others as part of the project Categorical Exclusion process to provide that information as part of the permitting process. If mitigations credits are required the extent of those credits will be determined during discussions with the Corps of Engineers and are not included in the costs for this streams and wetlands determination

3 Hazardous Materials Impact Assessment

The principal source of impact to the site associated with hazardous materials is expected to be the existing gasoline station immediately south and east of the project boundary. This service station is expected to have been the site of past releases associated with underground storage tanks and other site activities. Bhate intends to review files available from the Alabama Department of Environmental Management (ADEM) to assess past reported site activities, groundwater flow directions and residual impacts. The effects of these potential impacts on the project activities and end use will be assessed and documented and recommendations made regarding mitigation measures, as appropriate.

This information will be used to obtain an Alabama Department of Transportation (ALDOT) Materials and Testing Clearance Letter.

4 Air Quality Impact Assessment

Based on projected traffic flows and densities provided by others, Bhate will prepare a Project Air Report addressing the following criteria per ALDOT and Federal Highway Administration (FHWA) requirements:

4.1 Ozone

The Air report will demonstrate that the project is in conformance with the Statewide Transportation Improvement Plan (STIP).

4.2 Carbon Monoxide

The Air Report will assess project exemption from carbon monoxide hot spot analysis or document that no impact is anticipated due to National Ambient Air Quality Standard conformance.

4.3 PM 2.5

The Air Report will document that the PM 2.5 checklist was completed and submitted to the ALDOT Environmental Technical Section (ETS) Air Quality Coordinator to make an air quality concern determination.

4.4 Mobile Source Air Toxics

The Air Report will assess the potential for MSAT effects and document impacts pursuant to FHWA criteria.

Proposed Budget Allowance

Bhate has developed the following budget based on the project information known at this time. It should be noted, however, that, depending on information derived during these environmental investigations additional ALDOT requirements and negotiations may necessitate additional costs.

• **Ecological Impact Assessment**	**$2,000**
• **Stream and Wetlands Delineation**	**$10,000**
• **Hazardous Materials Impact Assessment**	**$2,500**
• **Air Quality Impact Assessment**	**$2,000**
Proposed Budge Allowance	**$16,500**

We trust this information is sufficient for your purposes at this time. If you have any questions regarding the information contained in this report, please contact us at 205.918.4000.

Respectfully Submitted by,

Bhate Environmental Associates, Inc.

Regulatory Director

Program Manager

ENVIRONMENTAL • GEOTECHNICAL
BUILDING SCIENCES • MATERIALS TESTING

ATC Group Services LLC

200 Wellington Manor Court
Suite 100
Birmingham, AL 35007

Phone +1 205 733 8775
Fax +1 205 733 8954
www.atcassociates.com

February 29, 2016

Alicia Bailey, P.E.
Team Leader / Transportation
Sain Associates, Inc.
Two Perimeter Park South
Suite 500 East
Birmingham, AL 35243
Direct: (205) 263-2169
Cell: (205) 910-2699
Email: abailey@sain.com

Subject: **Proposal for Traffic Noise Analysis (TNA)**
US-280 / Cahaba Road Intersection Improvement
Birmingham and Mountain Brook, Jefferson County, Alabama
ATC Proposal Number: 003-2016-0032

Ms. Bailey:

ATC Group Services LLC (ATC) appreciates the opportunity to submit to Sain Associates, Inc. (the "Client" or "Sain") this proposal to complete a Traffic Noise Analysis (TNA) at the above referenced property (the "project area").

1.0 PROJECT UNDERSTANDING

ATC understands that you have requested us to conduct a TNA at the above referenced project area[1]. Specifically, the project area includes the immediate vicinity surrounding the intersection of Cahaba Road, U.S. Highway 280, Culver Road, and Lane Park, located in Birmingham and Mountain Brook, Jefferson County, Alabama. Sain has informed us that the current intersection is to be replaced with a roundabout.[2]

2.0 TRAFFIC NOISE ANALYSIS (TNA)

2.1 Scope of Services

ATC will conduct the TNA will be conducted in accordance with the Alabama Department of Transportation (ALDOT) Highway Traffic Noise Analysis and Abatement Policy and Guidance document dated July 31, 2011.

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[1] See attached drawing and aerial photograph provided by Sain Associates, Inc.

[2] ATC understands that Sain will provide us with traffic information and plans, as well as other information necessary for the TNA. Further, Sain has indicated that while their client is the City of Mountain Brook, their contract and all plans and reports will be reviewed and approved by the Alabama Department of Transportation (ALDOT).

The TNA will include each Noise Activity Category present in the study area. The Federal Highway Administration (FHWA) Traffic Noise Model (TNM) Version 2.5 or newer will be used to perform traffic noise modeling for the project. ATC will derive the vehicular speed used in the TNM for future condition from the project design speed and average pavement type will be used. For the existing condition, the posted speed limit in the study area will be used.[3]

ATC assumes that the traffic counts used in the TNM will be provided by Sain or ALDOT (or others) and that these actual measurements, with concurrent traffic counts of existing/ambient noise levels, were taken in the field within the study area during the time of day that is perceived to be the worst hourly impact for comparison to the model results. Existing/ambient noise levels will be measured in general accordance with the current version of the FHWA's Measurement of Highway-Related Noise document. We anticipate that a maximum of six (6) measurement locations will be employed.

The FHWA accepts a tolerance of +/- 3.0 dB(A) for model validation. If the variation is greater than this, the discrepancy must be identified and the model corrected, or additional measurements must be taken. ATC anticipates that if the variation exceeds the FHWA tolerance, no additional measurements will be needed. ATC will conduct validation of traffic counts at the time of the measurement of existing/ambient noise levels for a minimum of fifteen (15) minutes. The count number will then be equated to an hourly volume. The results from the model validation will be summarized in the TNA report.

2.2 Third Party Reliance

The final TNA report will be addressed with reliance to Sain. If reliance is to be provided to another party, that party must accept the terms and limitations in the report and the Master Services Agreement will provide three (3) "reliance" letters to be issued to Sain designees over a 24-month period, if requested.

3.0 ESTIMATED FEES

ATC proposes to perform the Traffic Noise Analysis for a lump sum amount of $11,850.00. The proposed lump sum amount is based on certain Sain responsibilities that include, but are not limited to:

- Providing or arranging to provide ATC timely access to the project area;
- Submitting to ATC accurate project area information; and
- Providing or arranging to provide ATC available documentation (plans, etc.) and pertinent traffic information.

4.0 PROJECT DELIVERABLES AND SCHEDULE

Following written authorization to proceed, ATC intends to conduct the TNA and report findings as described in the table below.

[3] ATC requests that we be informed by Sain should these assumptions require revision.

Task	Deliverable Format	Schedule
Field Work	n/a	Commence within 15 business days of receipt of written authorization to proceed.[4]
Preliminary findings	Via email	Within 15 - 21 business days following completion of Field Work.
Draft report	Via email	Within 15 business days of completion of Preliminary Findings.
Final report	1 electronic copy*	Within 15 business days of receipt of Sain's comments on Draft Report.
* Hardcopies of each report can be reproduced for a fee of $75 per copy.		

5.0 CONDITIONS OF ENGAGEMENT

This proposal may be accepted by signing a copy and returning it to ATC. The Proposal for Services shall constitute the exclusive services to be completed for this project. This proposal is valid only if authorized within 60 days from the proposal date. ATC cannot initiate this scope of work without written authorization, acceptance of the Client Service Agreement, and clearance through our accounting system.

6.0 AUTHORIZATION

All work will be conducted in accordance with the attached Client Service Agreement that has been mutually agreed upon between the Client and Cardno. As stated in the Client Service Agreement, payment is due within 30 days of invoicing. If the proposal is acceptable, please sign and return one copy of the Proposal Acceptance Agreement, required for project activation and scheduling. Please contact the undersigned if you have any questions.

Respectfully submitted,

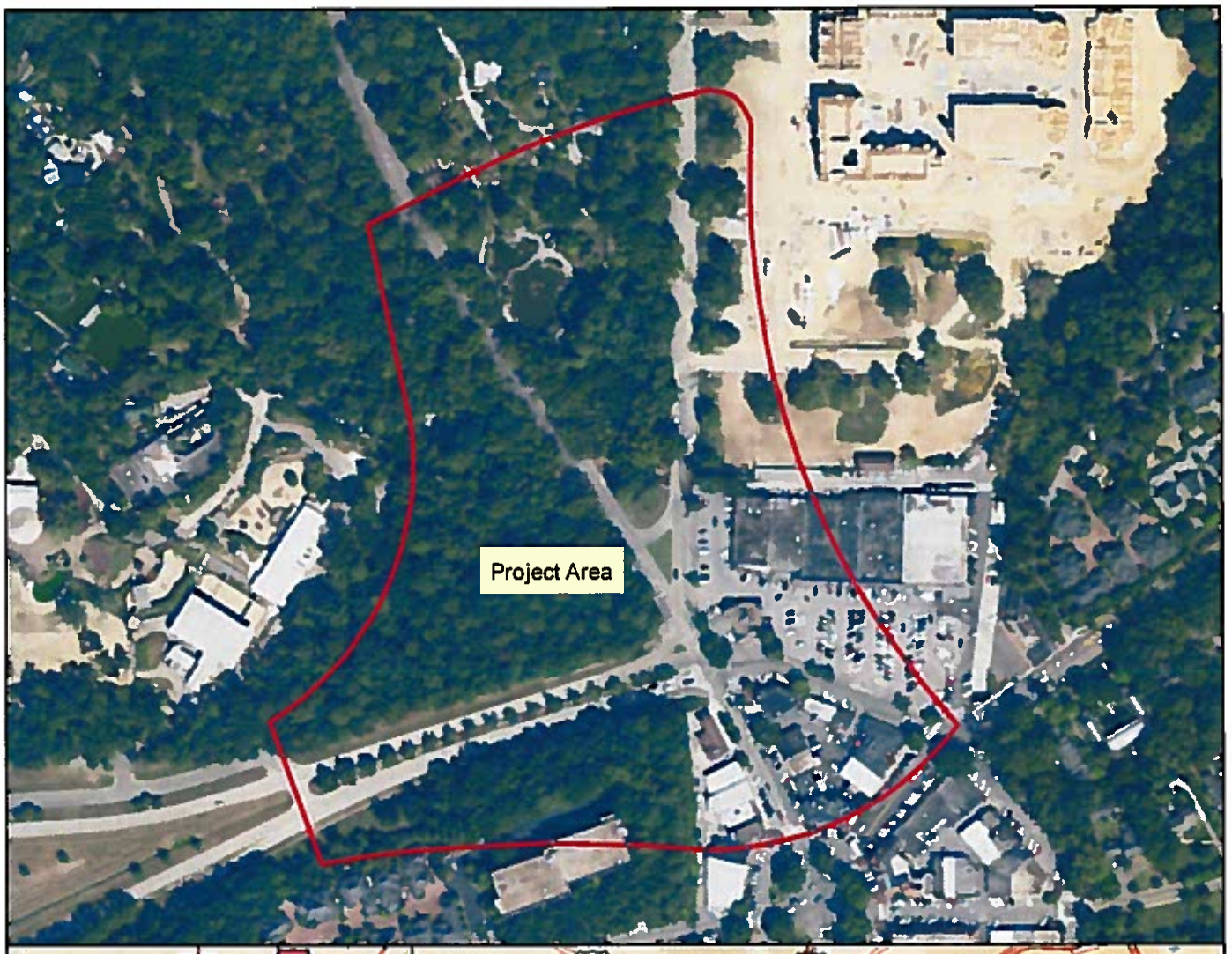
ATC Group Services LLC

Fred R. DeLeon, Jr., P.E., P.G.
Principal Engineer
Email: fred.deleon@atcassociates.com

Stephanie Pryor, P.E.
Project Engineer
Email: stephanie.pryor@atcassociates.com

Encl: Sain Supplied Information
Proposal Acceptance Agreement
Client Services Agreement

[4] The schedule can change due to weather conditions and access-related issues.



SAIN associates
consulting engineers & surveyors

NOT TO SCALE

Location Map

US-280/Cahaba Road Intersection Improvement
Birmingham and Mountain Brook, Alabama

BHATE

Bhate Geosciences Corporation
Geotechnical, Materials, Environmental Engineers

5217 5th Avenue South
Birmingham, Alabama 35212
Phone: (205) 591-7062
Fax: (205) 591-7184
Web: http://www.bhate-eng.com

February 24, 2016

Ms. Alicia Bailey, P.E.
Sain Associates, Inc.
244 West Valley Avenue, Suite 200
Birmingham, Alabama 35209

Subject: Proposal for Subsurface Exploration, Geotechnical Engineering Evaluation and Materials Report
Cahaba Road Improvements & Roundabout
Birmingham, Alabama
BHATE Reference Number: 8512-16

Dear Ms. Bailey:

BHATE Geosciences Corporation (BHATE) is pleased to submit the following proposal to conduct a subsurface exploration and geotechnical evaluation of the subject site. In this proposal, we have outlined the following:

- Our understanding of the project
- Proposed scope of services
- Geotechnical report
- Estimated budget
- Schedule

PROJECT UNDERSTANDING

Project information: Based on preliminary information provided by your office, we understand the following:

- Project Location and Description: The project site is located near the intersection of Cahaba Road and Culver Road in Mountain Brook, Alabama. It is our understanding that the road improvement project begins near the intersection of Cahaba Road and Culver Road and continues north along Cahaba Road and Lane Park Road, west along the Cahaba Road extension to US Highway 280 and south along Cahaba Road. Preliminary information provided to us indicates that two roundabouts are being considered; one near the intersection of Cahaba Road and Lane Park Road and one near the intersection of Culver Road and the Cahaba Road extension to US Highway 280. It is expected that construction of the roundabouts would require right of way from the adjacent properties. Also, additional improvements to the intersection at Cahaba Road and Culver Road will likely include some road widening work as well as lighting, landscaping, and sidewalks.

- Current Site Description: The project area contains several existing asphalt paved roadways such as Cahaba Road, Culver Road, Lane Park Road and the US 280 ramp as well as sidewalks, grass covered medians, etc.

  The west side of the proposed roundabout at Cahaba Road and Lane Park Road as well as approximately half of the new ramp alignment to be located at the US 280 intersection is currently undeveloped and covered with dense brush and mature trees. An existing stone monument sign for the Birmingham Zoo is also located in this area. In addition, much of this area is located behind an existing chain-link fence that appears to envelop the Birmingham Zoo Property. *We expect that some clearing of trees and brush will be required to create some rough cleared roads for our drilling equipment to gain access the wooded, undeveloped portion of the project site. You have also indicated that some ROW issues will have to be addressed regarding this area. We've assumed that Right of Entry will be granted to BHATE to explore this portion of the project site and that BHATE will not be responsible for restoring the disturbed portions of the property to a near-undisturbed condition.*

- ALDOT Requirements: You requested that our geotechnical report be prepared in accordance with ALDOT requirements and suitable for an ALDOT review. We have prepared the following cost estimate based on the amount of work required to meet the ALDOT standards contained in ALDOT Bureau of Materials and Tests Procedure 390-Procedure for Conducting Soil Surveys and Preparing Materials Reports, Revised February 14, 2012.

  In view of the project information provided to us, it appears that some portions of the project, such as Cahaba Road between the two roundabouts, could be considered a Short Widening Project by ALDOT standards. Other portions of the project, such as the undeveloped portion of the southernmost roundabout and the realignment of the US 280 Ramp, would be considered as Grade, Drain, Base and Pave projects. Consequently, we are proposing to perform soil test borings along the centerline of the project in the areas of the roundabouts and the new US 280 Ramp alignment. Conversely, asphalt cores to determine individual layer thicknesses will be taken at approximately six (6) to 10 locations along Cahaba Road as well as near the southernmost roundabout at Culver Road and Lane Park Road.

- Slopes: It is our understanding that a cut slope will likely be required near the west side of the roundabout planned at the intersection of Cahaba Road and Lane Park Road. We anticipate this slope will be less than 15 feet in height. According to ALDOT requirements, formal slope stability analysis is not required. However, we will perform some preliminary slope stability analyses and provide cut slope considerations in our report pertaining to this portion of the project.

- Culvert Extensions: You indicated that two existing culverts along Cahaba Road may have to be extended to accommodate the planned road widenings. Based on observations made during our February 16, 2016 visit to the site, the culvert areas are not accessible to our drilling equipment. However, we have included time in our proposal to manually explore the culvert extension areas with a steel rod and/or hand auger probes in an effort to identify the presence of near surface soft soils.

BHATE QUALITY · SERVICE · EXCELLENCE

- Site Access Conditions for Equipment: As stated above, due to the undeveloped conditions of portions of the site near the intersection of US 280 Ramp and Cahaba Road, we anticipate that some access preparation will be necessary. Although efforts will be made to avoid the large trees, there is a possibility that some trees could be damaged as a result of access road preparation. In addition, piles of vegetation debris would remain on the site. Site restoration such as restoring vegetation and ground cover is not included in our scope of services; nor is installation of erosion control measures. Also, we anticipate that traffic control will be necessary to protect our personnel from traffic during the field work at this site.

Anticipated Geology: Based on our review of the geologic publication titled "Engineering Geology of Jefferson County, Alabama (1979) it appears that the subject site is underlain by soils derived from the Floyd Shale Formation. The Floyd Shale Formation typically consists of dark gray shale, with thin beds of sandstone, siltstone, limestone and chert occurring locally. Rock outcrops are rare because the Floyd Shale readily weathers to brown or light gray clay.

The soil overburden above the bedrock typically consists of moderately plastic clay and usually ranges from approximately 7 to 15 feet in thickness. The clayey soils derived from the Floyd Shale can often exhibit high shrink swell potential and relatively low remolded shear strengths. The residual soil is typically considered moisture-sensitive because it exhibits a strength loss when wetted.

Due to the high degree of weathering to which the Floyd Shale is subjected, it is often present in low areas, which appears to be the case at the subject site. In addition, groundwater seepage and springs are also common in the Floyd Shale because it often occurs in topographic lows.

PROPOSED SCOPE OF SERVICES

Based on your request for proposal during our February 16, 2016 site meeting and our understanding of the project, our proposed scope of services includes the following:

1. Field services, including site reconnaissance, manual exploration, site access and drilling coordination, sample logging and data compilation.

2. A Pavement Evaluation and Distress Condition Survey will be performed in accordance with ALDOT Bureau of Materials and Tests Procedure 392. *Take note that Falling Weight Deflectometer (FWD) testing is not included in our proposed scope of services.*

3. Soil test borings: Four borings drilled to a depth of 20 feet or refusal, along the west side of the proposed roundabout at the intersection of Cahaba Road and Lane Park Road; including mobilization and sampling.

4. Asphalt coring: We will contract a local coring company to extract cores of the existing asphalt pavement from approximately seven (7) locations along the alignment of Cahaba Road and Lane Park Road.

5. Traffic control will be provided during the field activities in accordance with the Manual on Uniform Traffic Control Devices (MUTCD), 2003 edition. It is our understanding that the City of Mountain Brook could possibly provide a shadow vehicle during our field activities.

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6. Laboratory tests: soil moisture content, Atterberg Limits, Wash #200 sieve and sieve analysis tests will be performed on representative samples of the on-site soils.

7. Engineering evaluation and geotechnical report preparation with ten copies furnished.

GEOTECHNICAL REPORT

Based on the scope of services described, our report will address the following items:

1. A description of the project and location map.

2. Discussion of site geology and surface conditions including thickness and type of existing pavement layers.

3. A description of the subsurface conditions at the soil test boring locations.

4. Laboratory test results.

5. Asphalt coring reports (color photographic log) and pavement condition survey information.

6. Identification of unsuitable materials, soft soils, and/or muck and recommendations for treatment of such soils.

7. Locations of areas that may require subgrade stabilization, and a recommended method of stabilization.

8. Groundwater conditions, if encountered in the borings and dewatering recommendations if appropriate.

9. Pavement recommendations based on ALDOT's "equivalent build-up" method in areas where widening will occur along the project. Also, a recommended new pavement section will be provided for the proposed roundabout areas and the new ramp alignment that is to be located west of the intersection of Cahaba Road and Lane Park Road. You informed us that traffic data on which to base the new pavement section would be provided to us by your office.

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ESTIMATED BUDGET

Our services will be provided based on the indicated scope and charged on the basis of our unit-fee schedule. The following budget is prepared based on certain assumed conditions at the site.

Our services will be conducted on a unit-rate basis in accordance with our current ALDOT approved contract rates. However, based on the proposed scope of services and assuming no unusual subsurface conditions are encountered, our budget estimate is **$25,681.00**. Submittal of the written report would culminate the services to be provided under this proposal. If site conditions encountered during exploration warrant additional exploration or evaluation, then we would notify you and discuss the recommended additional services. However, the budget would not be exceeded without your authorization. In the event problem subsurface conditions are encountered near the 20' target termination depth of the borings, it would probably be necessary to extend the borings to a greater depth to gauge the magnitude of the problem soils.

Budget Notes and Allowances:

1. Our services will be provided based on our unit fees for the amount of exploration required to evaluate the subsurface conditions. If problem conditions are discovered during our initial exploration or if it appears that additional exploration is appropriate to better evaluate the subsurface conditions, we will notify you. Soil test borings have been included for evaluating proposed slopes and pavement subgrade soils. If soft soils are encountered during the field exploration, we will contact you to discuss the soil conditions and the need for additional exploration.

2. Supplementary design consultation regarding project specifications, bid documents, etc. is not included in this budget estimate and would be billed separately based on actual time spent by the personnel involved.

3. It should be acknowledged that no costs associated with surveying of boring locations have been included in this budget estimate. ALDOT requires that a certain level of accuracy be adhered to when staking the boring locations. We have assumed that Sain Associates would provide the survey services.

SITE ACCESS & UTILITY LOCATION

Taking into account the information provided to us and our observations during our visit to the site, it does not appear that the proposed boring locations would be accessible to our drilling rigs unless improvements are made to the ground. Access preparation will be necessary to permit our drilling equipment to reach the planned boring locations. We will coordinate rental/subcontract of equipment for preparation of access trails at cost+15 percent. We estimate that one full day (8 hours) will be required to perform the access preparation. We have included a cost of $1,400.00 in our base budget estimate for this function.*

We have assumed that prior to our commencing exploration operations all underground utilities are clearly marked and identified in the field by the client. Locating utilities is not included in our proposed scope of services; however, we do have the in-house ability to conduct an underground utility survey as an added service. BHATE does not assume responsibility for damage to any unknown, unidentified or uncharted utilities or underground structures at the site.

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EROSION CONTROL MEASURES

During the course of access preparation near the southernmost roundabout, some ground disturbance will occur. Our intent is to minimize the area disturbed; however, some sediment control measures will likely be required. Our intent is to stabilize any disturbed surfaces by mulching with straw and basic grass seed. We have included a cost of $1,000.00 in our base budget estimate for this purpose.*

***-Material quantities and equipment hours have been estimated based on site conditions encountered during our visit to the site on 2-16-16. Actual quantities and time spent could differ depending on site conditions encountered at the time the field exploration is performed.**

SCHEDULE OF SERVICE PERFORMANCE

We can commence our field exploration within five (5) business days after receiving written authorization to proceed. Arranging traffic control and signage, and conducting the subsurface exploration and laboratory testing are expected to require approximately three weeks to complete. We anticipate that an oral report of subsurface conditions can be provided shortly after field exploration is complete and a written report of our findings within two weeks after our field and laboratory services are complete.

GENERAL NOTES AND AUTHORIZATION

We will perform those services outlined above. Client and BHATE may subsequently agree in writing to provide additional services under this agreement for additional, negotiated compensation. Services we provide will be consistent with the engineering standards prevailing at the time and in the area that the services are performed; no other warranty is expressed or implied, is intended.

The attached General Terms and Conditions should be acknowledged as a part of this proposal. A signed copy of the attached Proposal Acceptance Sheet, returned to our office will serve as our authorization to proceed with the exploration.

CLOSING

We appreciate the opportunity to present this proposal and are available to discuss the proposed scope of services with you. If you have any questions or need modifications to our scope of services, we would be happy to consider such changes. We look forward to working with you.

Respectfully submitted,
BHATE Geosciences Corporation

Dennis Isbell
Project Professional

Charles R. Burgin

Charles R. Burgin, P.G., P.E.
Principal

BHATE QUALITY • SERVICE • EXCELLENCE

Michael Wallwork, Roundabout Expert
1516 Plainfield Avenue, Orange Park, Florida 32073
904-710-2150, Email: miwallwork@me.com

February 18, 2016

Alicia Bailey, PE
Team Leader/Transportation
Two Perimeter Park South, Suite 500 East
Birmingham, AL 35243

RE: Cahaba Rd/Hwy 280 assist with construction plan preparation for 2 roundabouts

Dear Alicia,

I am is pleased to submit this proposal to undertake the following scope of services to assist your company with developing construction plans for this project.

SCOPE OF SERVICES

1. Revise capacity analysis to confirm roundabout lane arrangements
2. Review and refine the roundabout layouts that your company prepares checking vehicle paths and speed as when as A.D.A. requirements etc.
3. Provide assistance on construction staging and maintenance of traffic
4. Undertake 2 construction plan reviews

MATERIALS TO BE PROVIDED

1. Peak hour fully directional traffic counts.
2. AutoCAD files with modified layouts
3. Construction plans for reviews

DELIVERABLES

1. A short report that includes a summary of the analysis
2. Suggestions for roundabout layout refinement as needed
3. AutoCAD files with suggested refinements
4. Construction plan reviews

PROFESSIONAL FEES:

		Hours	Rate	Fee
1	Intersection analysis and technical memo	2	$155.00	$310.00
2	Roundabout layout reviews	20	$155.00	$3,100.00
3	Construction plan reviews	8	$155.00	$1,240.00
4	Assistance with contraction staging and traffic control, ALDOT reviews, etc.	30	$155.00	$4,650.00
5	Total			$9,300.00

Additional work is invoiced at $155.00 per hour. If the above scope of work and fees meet with your approval, please indicate your acceptance of this agreement by printing two copies, signing in the space provided and returning one copy to this office for our records.

Sincerely,

Michael J. Wallwork

Michael J. Wallwork

Terms Accepted By:

Signature _____ Date _____

Name (typed or printed) _____ Title _____ Organization _____

Southern Traffic Services, Inc.
2911 Westfield Road Gulf Breeze, FL 32563
Phone: 800- 786- 3374 Fax: 850- 934- 0373

February 26, 2016

Mr. Cochran:

Thank you for considering Southern Traffic Services, Inc. for your data collection needs. If you need any additional information, please don't hesitate to contact me.

2- Up to 8 hour Turning Movements @ $500.00 per site
2- Turning Movement Counts = $1,000.00

6- 96 hour classification/speed counts @ $100.00 per lane/per day
16 lanes @ 100.00 PL/PD = $6,400.00

Grand Total- $7,400.00

Thanks,

Justin Smith
Project Manager

Project No.	
County	Jefferson
Description	Cahaba Road/Hwy280/Lane Park Road roundabout
Scope of Work	Intersection Improvement
Project Length	0.30 Miles
Consultant	Nimrod Long and Associates

GRAND TOTAL OF FEE PROPOSAL

Corridor Study	$0
Field Surveys	$0
Preliminary Roadway Plans	$0
Preliminary Bridge Plans	$0
Right-of-Way Map, Tract Sketches and Deeds	$0
Roadway Plans	$36,436
Bridge Plans	$0
GRAND TOTAL FEE	**$36,436**

Combined overhead rate (%) >>>>>>>>>>>>>>> 165.3

Facilities Capital Cost of Money (if used) >>>>>> 0

LABOR RATES

Classification	Daily Rate
Project Manager	$312.48
Landscape Architect	$289.44
Production Assistant	$125.04

**Certification of Out-of-Pocket Expenses:
If Out-of-Pocket Expenses are included in this proposal, we hereby certify that these costs are not included in the Combined Overhead Rate and are typically invoiced to all clients as a direct job cost.

Signed Date

Position/Title

Project Number #REF! **CPMS #** _____
County #REF!
Description #REF!
Scope of work Intersection Improvement
Length #REF! miles

Consultant Nimrod Long and Assoc

LANDSCAPE PLANS SHEET TITLE	NO OF SHEETS	ESTIMATED MAN-DAYS			
		ENGINEER		TECHNICIAN	
		SHEET	TOTAL	SHEET	TOTAL
TITLE SHEET	0.00	0.00	0.00	0.00	0.00
INDEX SHEET	0.00	0.00	0.00	0.00	0.00
GEOMETRIC LAYOUT/SURVEY CONTROL	0.00	0.00	0.00	0.00	0.00
PROJECT NOTE SHEET	1.00	0.50	0.50	1.00	1.00
PLANS LEGEND & ABBREVIATIONS	0.00	0.00	0.00	0.00	0.00
SUMMARY SHEET					
Main Summary	0.50	0.50	0.25	0.00	0.00
SUMMARY BOX SHEETS					
Landscape	0.50	1.00	0.50	1.50	0.75
PLAN & PROFILE					
Sidewalk Concept Layout	2.00	1.00	2.00	0.50	1.00
Roundabout Circle Concept Detail	1.00	2.00	2.00	1.00	1.00
LANDSCAPE					
Plan Layout	5.00	3.00	15.00	5.00	25.00
Special Details	1.00	1.00	1.00	2.00	2.00
REVIEW COMMENTS					
Plan-in-Hand Inspection			1.00		
Site Visits			1.50		
PS&E Inspection			1.00		2.00
Cost Estimates			1.00		1.00
Design Hearing			0.00		0.00
SUB-TOTAL	11.00		25.75		33.75
10% Supervision			2.58		
TOTALS	**11.00**		**25.75**		**33.75**

Project No.	#REF!
County	#REF!
Description	Cahaba Road/Hwy280/Lane Park Road roundabout
Scope of Work	Intersection Improvement
Project Length	0.30 Miles
Consultant	Nimrod Long and Associates

Fee Proposal (Landscape Plans)

PERSONNEL COST	Man-days	x Daily Rate	
Project Manager (10% of Eng.)	2.58	$ 312.48	$ 806.20
Landscape Architect	25.75	$ 289.44	$ 7,453.08
Production Assistant	33.75	$ 125.04	$ 4,220.10
	Total Direct Labor		$ 12,479.38
Combined Overhead (%)	165.30		$ 20,628.42
Out-of-Pocket Expenses**			$ 16.20
		Sub-Total	**$ 33,124.00**
Operating Margin (10%)			$ 3,312.40
		Sub-Total	**$ 36,436.40**
SUB-CONSULTANTS (attach man-day & fee FROM each sub-consultant; show total fee for each here)			
			$ -
			$ -
			$ -
Subconsultant Administration Expense (5%)			$ -
		Sub-Total	**$ 36,436.40**
Facilities Capital Cost of Money (% of Direct Labor)	0.00		$ -
		TOTAL FEE	**$ 36,436.40**

**See Grand Total Fee sheet

Project No. #REF!
County #REF!
Description Cahaba Road/Hwy280/Lane Park Road roundabout
Scope of Work Intersection Improvement
Project Length 0.30 Miles

Consultant Nimrod Long and Associates

Out-of-pocket Expenses (Landscape Plans)

TRAVEL COST

Mileage Cost	Trips	Miles/Trip	$/Mile	Total
Site Visits	3	10	$0.540	$ 16.20
	0	0	$0.540	$ -
	0	0	$0.540	$ -
	0	0	$0.540	$ -
			Total Mileage Cost	$ 16.20

Subsistence Cost	Days	# People	$/Day	Total
Travel allowance (6 hour trips)	0	0	$11.25	$ -
Travel allowance (12 hour trips - meal provided by others)	0	0	$20.00	$ -
Travel allowance (12 hour trips)	0	0	$30.00	$ -
Travel allowance (overnight)***	0	0	$75.00	$ -
				$ -
			Total Subsistence Cost	$ -
			Total Travel Cost	$ 16.20

PRINTING / REPRODUCTION COST

Type of printing/reproduction	# of Sets	Sheets/Set	Total Sheets	Cost/Sheet	Total
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
				Total Printing/Reproduction Cost	$ -

Communication Cost (telephone, fax, etc.)	Total
	$ -

Postage Cost (overnight, stamps, etc.)	Total
	$ -

Other (provide description on next line)	Total
	$ -

Total Out-of-pocket Expenses	$ 16.20

Comments:

***You must have ALDOT approval for ANY overnight trips of less than 100 miles.

SSOE Group
3504 7th Avenue South
Birmingham, AL 35222
205.323.2373 T
205.322.2731 F

www.ssoe.com

February 26, 2016

Sain Associates
Two Perimeter Park South
Suite 500 East
Birmingham AL 35243

Attention: Alicia Bailey, P.E
Team Leader/Transportation

RE: Cahaba Road/Hwy 280 Roundabout
Lighting Design
Project No. 016-00718-00

Dear Alicia:

We appreciate the opportunity to furnish electrical engineering services for you on this project.

Our understanding of the scope of this project is as follows: Prepare plans for electrical service for lighting and irrigation, conduit, as well as light pole locations to be installed. There are to be 5 sheets at 30 scale. Sain Associates to be lead consultant.

This is based on preliminary information furnished by you which included: Email from Alicia Bailey dated February 17, 2016, and CAD files obtained from Sain Associates.

FEE STRUCTURE

We propose to furnish engineering services for a Lump Sum Fee of Six Thousand Dollars ($6,000.00). Invoices will be sent monthly; payment is due thirty days after receipt of invoice.

Alternates are not included in this scope of work and will be negotiated as additional services.

REIMBURSABLE EXPENSES

Expenses are included in the fee of the project and are not reimbursable.

PROJECT PHASE SCHEDULE

PROJECT PHASE

30% Submittal
70% Submittal
100% Submittal

TERMS & CONDITIONS

Terms and conditions as outlined in the SAIN SubAgreement (see attached) shall apply and are part of this proposal.

ADDITIONAL SERVICES

Additional services will be furnished on an hourly basis plus expenses per your request.
The hourly rates are indicated in the table attached. These services include but are not limited to:

1. Changes in design after completion of Construction Documents.
2. Field Observations of work during construction.
3. Changes for "Value Engineering" after completion of Construction Documents.
4. Correction of Contract Documents for Record "As-Built" Drawings.
5. Phased Contract Documents (multiple-bid packages).
6. Review of Contractor Pay Requests.

BASIS OF PROPOSAL

- Drawings/models from other design disciplines will be furnished in electronic format (DXF,DWG, or RVT) for our use on the project. Drawings and documents furnished for each deliverable listed in Project Phase Description will be transmitted in electronic digital file format ready for reproduction (Adobe Acrobat .pdf).
- Requirements of the contract between Sain Associates and the Owner do not apply unless specifically included in this proposal.

ACCEPTANCE

To approve our proposal, please sign in the space provided below and return to us for our files.

We appreciate the opportunity to offer this proposal and look forward to the successful completion of the project.

Sincerely,

Anthony H. Smith
SSOE Group.

Attachment: Terms & Conditions

Copies to: Project Accounting
File: T:\16\016007180\documents\Contracts\P16-00718-00 Cahaba Road-280 Lighting Design.docx

ACCEPTED:_____ DATE:_____

Project No.	Cahaba Road/Hwy 280 Roundabout
County	Jefferson
Description	Sidewalk and Landscaping Improvements
Scope of Work	Pedestrian Lighting and Electrical
Project Length	0.30 Miles
Consultant	SSOE Group (formely CRS)

GRAND TOTAL OF FEE PROPOSAL

Corridor Study	$0
Field Surveys	$0
Preliminary Roadway Plans	$0
Preliminary Bridge Plans	$0
Right-of-Way Map, Tract Sketches and Deeds	$0
Roadway Plans	$6,000
Bridge Plans	-
GRAND TOTAL FEE	**$6,000**

Combined overhead rate (%) >>>>>>>>>>>>>>> 130

Facilities Capital Cost of Money (if used) >>>>>> 0

LABOR RATES

Classification	Daily Rate
Project Manager	$462.00
Engineer	$285.00
Environmental	
Engineering Technician/CADD	$208.70
Environmental Technician	
Clerical	$161.54
PLS	$0.00
Survey Crew	$0.00

**Certification of Out-of-Pocket Expenses:
If Out-of-Pocket Expenses are included in this proposal, we hereby certify that these costs are not included in the Combined Overhead Rate and are typically invoiced to all clients as a direct job cost.

Signed

2/26/2016
Date

Sr. Project Manager
Position/Title

Project Number Cahaba Road/Hwy 280 Roundabout
County Jefferson
Description Sidewalk and Landscaping Improvements
Scope of work Pedestrian Lighting and Electrical
Length 0.30 miles

Consultant SSOE Group (formely CRS)

ROADWAY PLANS SHEET TITLE	NO OF SHEETS	ESTIMATED MAN-DAYS			
		ENGINEER		TECHNICIAN	
		SHEET	TOTAL	SHEET	TOTAL
LIGHTING					
Plan Layout	4.00	1.00	4.00	1.00	4.00
Special Details	1.00	0.00	0.00	1.00	1.00
			0.00		0.00
SUB-TOTAL	5.00		4.00		5.00
10% Supervision			0.40		
TOTALS	**5.00**		**4.00**		**5.00**

Project No.	Cahaba Road/Hwy 280 Roundabout
County	Jefferson
Description	Sidewalk and Landscaping Improvements
Scope of Work	Pedestrian Lighting and Electrical
Project Length	0.30 Miles
Consultant	SSOE Group (formely CRS)

Fee Proposal (Roadway Plans)

PERSONNEL COST	Man-days	x Daily Rate		
Project Manager (10% of Eng.)	0.40	$ 462.00	$	184.80
Engineer	4.00	$ 285.00	$	1,140.00
Engineering Technician/CADD	4.00	$ 208.70	$	834.80
Clerical	1.00	$ 161.54	$	161.54
	Total Direct Labor		$	2,321.14
Combined Overhead (%)	130.00		$	3,017.48
Out-of-Pocket Expenses**			$	115.50
		Sub-Total	**$**	**5,454.12**
Operating Margin (10%)			$	545.41
		Sub-Total	**$**	**5,999.53**
SUB-CONSULTANTS (attach man-day & fee FROM each sub-consultant; show total fee for each here)				
			$	-
			$	-
			$	-
Subconsultant Administration Expense (5%)			$	-
		Sub-Total	**$**	**5,999.53**
Facilities Capital Cost of Money (% of Direct Labor)	0.00		$	-
		TOTAL FEE	**$**	**5,999.53**

**See Grand Total Fee sheet

Project No. Cahaba Road/Hwy 280 Roundabout
County Jefferson
Description Sidewalk and Landscaping Improvements
Scope of Work Pedestrian Lighting and Electrical
Project Length 0.30 Miles

Consultant SSOE Group (formely CRS)

Out-of-pocket Expenses (Roadway Plans)

TRAVEL COST

Mileage Cost	Trips	Miles/Trip	$/Mile	Total
	0	0	$0.500	$ -
	0	4	$0.500	$ -
	0	5	$0.500	$ -
	0	0	$0.500	$ -
			Total Mileage Cost	$ -

Subsistence Cost	Days	# People	$/Day	Total
Travel allowance (6 hour trips)	0	0	$11.25	$ -
Travel allowance (12 hour trips - meal provided by others)	0	0	$20.00	$ -
Travel allowance (12 hour trips)	0	0	$30.00	$ -
Travel allowance (overnight)***	0	0	$75.00	$ -
				$ -
			Total Subsistence Cost	$ -
			Total Travel Cost	$ -

PRINTING / REPRODUCTION COST

Type of printing/reproduction	# of Sets	Sheets/Set	Total Sheets	Cost/Sheet	Total
	6	5	30	$ 3.85	$ 115.50
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
	0	0	0	$ -	$ -
			Total Printing/Reproduction Cost		$ 115.50

Communication Cost (telephone, fax, etc.)	Total
	$ -

Postage Cost (overnight, stamps, etc.)	Total
	$ -

Other (provide description on next line)	Total
	$ -

Total Out-of-pocket Expenses	$ 115.50

Comments:

***You must have ALDOT approval for ANY overnight trips of less than 100 miles.

CITY OF MOUNTAIN BROOK

P. O. Box 130009
Mountain Brook, Alabama 35213-0009
Telephone: 205.802.2400
www.mtnbrook.org

To: Sam Gaston, Lloyd Shelton, Ronnie Vaughn
From: Steven Boone
Date: June 15, 2016
Subject: Bridge Assessment Analysis and Commentary

The bridge capital improvement program presented by Gresham, Smith & Partners (GSP) lists six of the twelve bridges in their order of priority, projected year needed, and estimated cost along with cash requirements through 2022 assuming the bridges are constructed with federal assistance. From a planning perspective, one cannot ask for more/better information. A risk of relying on the proposed schedule is generally associated with estimation errors: 1) cost estimations (generally low), year needed estimations (generally conservative), and approval and timing of federal awards.

Assuming current conditions continue, the City has the financial capacity and discipline to implement a savings strategy to accumulate the funds necessary to implement selective comprehensive rehabilitation and bridge replacements as outlined by GSP. However, the City is at risk if conditions change (e.g., real estate acquisitions for a park, related improvements and increased staffing to maintain, financial commitments to the BOE, emergencies like the Smyer Road or Rathmel slope failures, etc.)

After satisfying the $5.2 million [cash] development agreement obligations for Piggly Wiggly ($1.2 million) and Lane Parke ($4 million), the City will have approximately $1 million set aside in one of its capital project funds and approximately $800,000 in its Debt Service Fund. These funds provide a good foundation to proceed with the bridge replacements/rehabilitation combined with a systematic savings plan going forward. Currently, the City is budgeting $300,000 for annual savings from the General Fund into the Debt Service Fund for the pension or other unspecified projects. Arguably, the bridges represent a greater near term concern than does the pension plan.

The worst case scenario (assuming the cost estimates and the staging plan through 2022 are accurate) is that the City must replace each bridge without any federal financial assistance ($6,455,000 total excluding Montevallo Road-020502). Therefore, the City should be setting aside at least $130,000 annually to fund its bridge replacement program. Using the $2 million described above plus this annual savings, I estimate that the City has a shortfall of less than $1 million through 2022–an amount that can be easily overcome under current conditions but also available from other reserves.

Suggested action plan:

1. Identify the bridge projects (and distinguish comprehensive rehabilitation from replacement projects) the City intends to implement without seeking federal assistance and update the capital improvement program schedule accordingly – see page two for further analysis
2. Proceed with making application to the MPO for funding of the preliminary engineering to initiate the process of applying for federal awards
3. Re-characterize the $300,000 annual "pension" savings as "major projects"
4. Earmark a portion of the annual capital transfers from General Fund surpluses to the "major projects" reserves
5. If the BOE pursues and Council agrees to a capital or other BOE subsidies, the Council should consider adopting by way of ordinance a systematic savings and draw down plan that is sustainable in order to defend against being overwhelmed with funding requests

Rehabilitation versus replacement and whether to seek federal assistance
As a general rule, I suggest following the recommendation of the engineers with respect to comprehensive rehabilitation versus replacement. However, with respect to the Canterbury Road bridge (002873), considering that the comprehensive rehabilitation cost is estimated to be 62% of the replacement cost, replacement could be justified in my opinion especially if doing so increases the current 20 ton load limit so that fire pumpers can travel over the bridge. GSP does not recommend replacement due to its location and the impact on the village if replaced.

I see no reason not to pursue federal awards for the preliminary engineering phase of the projects considering the City has ten years to implement any construction project and can construct such projects with or without federal awards.

With respect to the three bridges on Mtn Brook Parkway (002850–002852), replacement was not recommended by GSP. However, it was noted that if the City had the funds and desired to replace any other bridges besides Caldwell Mill Road and Old Brook Trace, these should be the next to be considered. In each of these instances, the estimated construction cost is less than $200,000. Therefore, if replacement is desired, using federal awards may not be advantageous due to increased total project costs associated with the federal award plus the inevitable delays in construction due to the added stipulations. For all other bridge projects, I suggest pursuing federal awards for either comprehensive rehabilitation or replacement.

Note: Amounts reported below represent total project cost as estimated by GSP. The City's net cost for the comprehensive rehabilitation and replacement will be less due to federal awards assuming the awards are approved.

BIN	Bridge	Built	Age	Comp Rehab w/ Fed Aid	Rehab: Replace	Replace w/ Fed Aid	Replace w/o Fed Aid
000102	Overbrook Road over Shades Creek[3]	1915	101	$95,000	12%	$762,000	$642,000
002850	MB Pkwy over Watkins Crk[2]	1945	71	172,000	25%	689,000	562,000
002851	MB Pkwy over Watkins Crk[2]	1945	71	180,000	24%	757,000	617,000
002852	MB Pkwy over Watkins Crk[2]	1945	71	162,000	22%	748,000	608,000
002872	Watkins Rd over Watkins Crk	1945	71	95,000	12%	803,000	650,000
002873	Canterbury over Watkins Crk[2]	1945	71	562,000	62%	909,000	735,000
003828	Heathermoor over Furnace Br	1950	66	92,000	10%	884,000	715,000
007124	Stone River over Furnace Br[3]	1960	56	163,000	32%	514,000	416,000
007129	Wilderness over Furnace Br[3]	1960	56	114,000	22%	511,000	414,000
012869	Old Brook Trl over Little Shades Crk[1]	1883	33	29,000	4%	781,000	635,000
020502	Montevallo over Watkins Crk	2011	5	26,000	N/A	Not Recommended	Not Recommended
N/A	Caldwell Mill Rd over Little Shades Crk[1]	Unknown		Not Recommended		1,075,000	460,000
				$1,690,000		$8,433,000	$6,454,000
	Federal:Local			80:20		80:20	0:100

[1] GSP recommends replacement in its Capital Improvement Program worksheet
[2] GSP recommends comprehensive rehabilitation in its Capital Improvement Program worksheet
[3] Because this bridge has a sufficiency rating above 70, comprehensive rehabilitation is suggested over replacement

Sam Gaston

From: Perry, Blair
Sent: Tuesday, June 21, 2016 3:43 PM
To: Sam Gaston
Cc: Steve Boone
Subject: RE: Bridge report

1. On the construction cost estimates, we tried to quantify as many quantifiable work items as possible and put accurate unit prices on them. We also added in a 20% contingency, with the goal of not underestimating the costs too much.
2. We also provided total project cost estimates that include engineering, ROW acquisition (if any), utility relocation (if any), ALDOT Indirect cost (for federal aid projects), the construction engineering & inspection (CE&I). Often times, engineers and planners will only provide a construction cost estimate for a project, and the local government can be surprised by the "additional" costs for engineering, ROW acquisition, CE&I, etc.
3. Regarding the worst case scenario discussed in the fourth paragraph:
    a. All of the bridges do not need to be replaced at any time in the foreseeable future. Many of the bridges can be rehabilitated (at a lower cost than replacement) in the future to get another 10-20 years of life out of them. We tried to lay out the priorities for the next 5-6 years. After the initial replacement and rehab projects are completed over the next 5-6 years or so, the City should re-evaluate the remaining bridges and decide what replacements or rehab projects to do.
4. Regarding the Canterbury Road bridge, the major rehabilitation that we recommended would remove the current 20 ton load posting. I am confirming this with our bridge engineers now.
    a. IF the City did elect to replace this bridge, we could do what's called an accelerated bridge construction (ABC) project to replace the bridge as quickly as possible to minimize the impact to the adjacent Village and residential homes.
5. Regarding the bridges on Mountain Brook Parkway (page 2, third paragraph), there is the sentence "In each of these instances, the estimated construction cost is less than $200,000." What does this number represent? Rehab cost? I thought you might be making a case for replacing these three bridges, but the construction cost for each of these bridges is considerably more than $200K. I'm probably mis-reading this.

Blair C. Perry, P.E.

GRESHAM, SMITH AND PARTNERS
[P] 205.298.9232
[M] 205.937.5413

From: Sam Gaston [mailto:gastons@mtnbrook.org]
Sent: Tuesday, June 21, 2016 3:07 PM
To: Perry, Blair <blair_perry@gspnet.com>
Cc: Steve Boone <boones@mtnbrook.org>
Subject: Re: Bridge report

Email them to us

Sent from my iPhone
Sam Gaston

W&A
Williamson & Associates, Inc.
Building Exterior Consultants

6100 Lake Forrest Drive, Suite 375
Atlanta, Georgia 30328
Office: (404) 256-2388
Fax: (404) 256-1457

June 14, 2016

Mr. Steven Boone
City of Mountain Brook
P. O. Box 130009
Mountain Brook, AL 35213-0009
Direct: (205) 802-3825
Facsimile: (205) 874-0611
Email: *boones@mtnbrook.org*

RE: Condition Evaluation of Exterior Wall and Roof Assemblies
Mountain Brook Library
Mountain Brook, AL
(W&A-216270)

Dear Mr. Boone:

Williamson & Associates has performed a condition evaluation of the exterior wall assembly at the Emmet O'Neal Library in Mountain Brook, AL. These services were performed in accordance with our Proposal dated April 27, 2016. This report presents our findings performed June 7, 2016 with our recommendations for repair.

We appreciate the opportunity to provide our building exterior consulting services on this project.

Please contact us with any questions you have regarding the attached report, or our services in general.

Sincerely,
Williamson & Associates, Inc.

Michael C. Allen
Senior Associate

Attachments: Condition Evaluation Report
Photographs (94)
Attachments "A" – "B", Leak Map
"C", Roof Plan

EMMET O'NEAL LIBRARY
CONDITION EVALUATION
Mountain Brook, Alabama

I. Executive Summary:

W&A has determined there are several contributing factors that result in building leakage. The following was identified.

The existing windows are aluminum clad wood windows that were manufactured by Pella. Visible failures were observed in existing exterior and interior butyl glazing seals, sealing the insulated glazing unit to the perimeter sash and muntins with suspect wood deterioration at mitered corners behind the aluminum cladding at both the window sashes and perimeter frames/stops. Interior damages (wood decay) were observed at a number of units, indicating leakage through the manufactured unit. Window replacement is recommended. W&A recommends the new windows be manufactured from aluminum framing that incorporates a thermal break for improved performance. Replacement configuration must be confirmed before selecting a window, requiring probes to understand the as-built construction between the window, rough opening, and cladding construction.

At stucco clad walls, there were no visible indications of needed throughwall flashing above window heads to collect and discharge water to the exterior from water penetrating the stucco. Water trapped in the stucco could be a contributing factor to the interior damages observed at windows. The stucco should be further evaluated via exploratory probes to confirm the as-built conditions. It is likely the stucco could be improved by coating the exterior stucco with a high performance silicone elastomeric coating and sealing stucco accessories.

Suspect leakage also appears to be occurring at and around the metal roofing interface to rising masonry veneer walls. Visual indications show what appears to be reglet placed metal counterflashing in lieu of needed throughwall flashing to direct water back to the exterior of the roof. This conditions needs to be further evaluated via exploratory probes to confirm as-built construction.

Leakage below the low slope EPDM roof appears to be the result of water penetration occurring between the wall flashings and field membrane were numerous adhesion issues were present (perimeter conditions). Leakage also is likely occurring where the low sloped roofing interfaces step sloped shingled roofs. Probes are recommended to confirm as-built construction.

As indicated W&A recommends further evaluation to better understand the as-built construction as it relates to obtaining watertight and durable construction before implementing a repairs plan.

II. General:

To gather background information, we interviewed Mr. Steven Boone, with the city of Mountain Brook and Ms. Doris Young, Ms. Debra Couch, and Ms. Susan DeBrecht with Emment O,Neal Library, and performed a brief review of select documents. The following documents were reviewed:

- Architectural drawings developed by HKW Associates. The original construction documents are dated January 18, 2000. Building floor plans were marked to show locations of leaks whether existing or new, along with the roof plan.

The following general background was compiled:

- The property, Emmet O'Neal Library, is located in the city of Mountain Brook, Alabama. The structure is 3 stories in height. From the drawings the building is constructed of concrete foundation walls where construction exist below grade with the remaining structure steel framed. The exterior walls are constructed of metal stud wall framing with exterior gypsum sheathing. The exterior walls are comprised of brick masonry veneer, stucco, with limited cast stone. The windows are aluminum clad wood framed windows.

- The roofing is comprised of steep sloped asphalt shingled roofing (architectural shingles), step sloped metal roofing, and low sloped EPDM roofing. The EPDM roofing extends up and underneath the asphalt shingles on the steep sloped roof. The step sloped asphalt shingle roofs primarily drain into a gutter with downspouts. The low sloped EPDM drains via throughwall scuppers into a conductor head with downspouts. All downspouts drain into a rain leader that extends below grade and that likely connects to city storm sewer system.

- No major exterior renovations were reported to have occurred since original building construction. Some isolated window replacement and roof repairs have occurred.

- Leakage has been reported in various locations below the main roof and at the 1st floor windows. See **Attachments "A" and "B"** showing the locations of reported leakage.

- Pella windows have provided a cost estimate to replace 15 windows on the project to address interior wood damage.

- Mr. Boone reported the roof top RTU, closets to the roof hatch is slated for replacement in the near term.

III. Building Elevations:

Photos 1 through 5 show general exterior elevation views of the building. **Photo 1** shows the east elevation. **Photo 2** shows the north elevation, northeast corner. **Photo 3** shows the north elevation. **Photo 4** shows partial the west elevation. **Photo 5** shows partial the south elevation.

IV. General Observations:

Exterior

Photo 6 shows the stucco clad walls that bump out toward the east of the main building wall and house the reading rooms. The stucco appeared to be fair condition with minor cracking at window corners and dirt staining (**Photo 7**) primarily between the 1st and 2nd floor windows. At the top of the stucco cladding there is painted wood fascia covered with copper edge metal fascia with standing seam copper roof panels (**Photo 8**). The stucco cladding interfaces to masonry veneer cladding and is sealed with sealant between the differing substrates (**Photos 7 and 8**). The sealant appears to be in good condition.

Seen in **Photos 6 through 9**, there are numerous stucco control joints. The control joints were left unsealed. We were unable to determine if the control joint intersections were sealed with sealant to prevent water penetrations through joints in accessories. Open joints will challenge the installation of a weather resistant barrier behind the stucco cladding and throughwall flashings, if present.

Photo 10 shows a piece of pre-finished break metal at an outside corner bridging between window jambs on opposing wall faces. The pre-finished break metal was sealed to the stucco with sealant. **Photo 11** shows the break metal terminated with sealant to the cast stone sill. Along both jambs, and additional piece of break metal was installed that appeared to be unsealed and had splice joints that butted (**Photo 12**) and did not overlap to shed water. Water penetrating between the added break metal where lapping the corner metal and at butting splice joints could result in leakage if detailing beyond was not made watertight to handle penetrating water. The laps and splice joints should be improved with a bridge joint of silicone sealant to prevent water penetration.

Photo 13 shows a typical window head. At all locations reviewed, there was no indication of stucco throughwall flashing present (**Photos 14 and 15**). Without stucco throughwall flashing, water that penetrates the stucco above the window head has to be directed across the window head and down the jambs to grade below. If the wall and windows were not detailed to control the water, leakage could occur, and is likely based on the deterioration seen on the building interior. Probes between the stucco and windows are recommended to determine as-built construction.

Photo 16 shows a side view of the typical window installed with a perimeter frame and sash. At the base of the insulated units, clear silicone sealant was applied (**Photos 17 and 18**). Likely in an attempt to reduce or prevent water from penetrating the unit that is causing damage to the interior window trim. Later water testing revealed leakage occurs

at the sill of the insulated glazing unit. **Photos 19 and 20** show a side view at intermediate muntins and at a window jamb, where the existing butyl glazing bead is failing. **Photos 21 and 22** shows a tooth pick could be inserted through openings in the butyl glazing bead and that the tooth pick could touch the back of the glazing pocket. The voids provide a direct path for water penetration.

Photo 23 shows a mitered corner of the sash. It appears that some wood decay was present at the open mitered joints. **Photo 24** shows the tooth pick inserted through the mitered aluminum cladding and into the wood members. Water penetration through the mitered joint could lead to wood decay and leakage. This condition was also present in the perimeter frame. Durability of the frames and windows is questionable.

Photo 25 shows the 2nd floor windows on the west elevation of the building set in masonry veneer. There are 8 windows present. 5 of the 8 windows have a unknown whitish pattern (**Photos 26 and 27**) that is only visible from the exterior. Based on the visual appearance it is probable that seal failure is occurring allowing moisture into the sealed unit.

Photo 28 shows a ground level window set in masonry on the east elevation of the building. The window perimeters were sealed to the masonry veneer, cast stone sills, and steel window lintels. There were no indications of the whitish stains as seen on the west elevation. However, the conditions observed at windows set in masonry (**Photos 29 through 31**) were duplicating that seen where windows were set in stucco. Butyl seal failure and possible decay at mitered window corners.

In general the masonry veneer appeared to be in good condition with masonry control joints located 25' -30' with a joint located within 2' of building corners. The sealant appeared to be silicone and in good servable condition. **Photo 32** shows 2 hollow metal doors set in the masonry veneer. **Photo 33** shows a single door set in masonry. At the head of the doors, loose lintels were installed (**Photo 34**). Above the lintel 2 or more rope weeps were present, an indication of throughwall flashing being present. Throughwall flashing was observed above 1 loose lintel over a door. **Photo 35** shows the toe edge of the throughwall flashing. The flashing type was undetermined.

At grade, concrete sidewalks where present in various locations around the building. Settlement of the sidewalks was prevalent. **Photos 36 and 37** shows where the site sealant adhesion failure had occurred from either the sidewalk or masonry veneer cladding. In **Photo 37**, the sidewalk has settled approximately 1-1/4". The failed joint sealant along the perimeter of the building should be replaced.

Photo 38 shows the roof rake, south elevation of the building. At the roof line, there is wood fascia, typical condition where interfacing step sloped roofing. In general the wood fascia is in poor condition with noticeable decay (**Photos 39 through 41**). The decayed wood fascia should be replaced.

Photo 42 shows the 3 stucco clad walls on the east elevation of the building. As indicated the stucco clad walls bump out east of the main building wall. Above these walls the

roofing is copper standing seam metal roofing. Inside the reading rooms, 2nd floor, there were indications of water damage to indicate leakage below the roof to wall interfaces. **Photos 43 and 44** show the metal roof counter flashings. The copper counter flashing appears to be placed in a saw cut reglet, seen in clearer view (**Photo 45**) the red arrow on the photos points to the saw cut reglet in the masonry veneer. If installed as a saw cut reglet as indicated in the photo then there is likely a disconnect between the back-up wall behind the masonry and the roof flashings. Step flashings should be provided that extends through the masonry and attaches to the back-up wall to maintain watertight continuity to prevent leakage. W&A recommends a probe investigation to confirm as-built construction.

Roofing

Prior to reviewing interior conditions, W&A reviewed the low sloped EPDM roofing and step sloped architectural shingled roofing. Leakage below the low sloped EPDM roofing was reported. **Photos 46 and 47** show general views of the roof, the EPDM roofing is approximately 16 years old and is a 60 mil membrane. The roofing was manufactured by Firestone and is in serviceable condition. Since installation, isolated repairs have occurred to address seam failure and punctures. The roofing includes a fully adhered EPDM over mechanically attached poly-iso to fluted metal decking. The roof membrane turns up onto rising parapet walls and extends underneath leading edges of the step sloped architectural asphalt shingled roofing (**Photo 47**). **Photo 48** shows a fastener used to attach the sheathing to the rising wall that was not seated fully and is protruding, pressing on the back side of the EPDM. The fastener should be driven in fully and the roofing reinforced to prevent a puncture. **Photo 49** shows the drip edge flashing that covers the transition between the two roofing types. In general the drip edge flashing appeared to be installed correctly and is tight to the face of the EPDM with the shingles extending beyond the edge of the drip edge flashing with shingle starter strips provided as required.

At the base of the wall between the field membrane and the wall flashing membrane, the seaming is un-adhered (**Photos 50 and 51**). The un-adhered seams could result in leakage at laps/splices in the field membrane. The seams need to be repaired to address potential leakage. **Photo 52** shows the typical perimeter parapet wall. The top of the parapet was capped with metal coping. Seams in the coping, skyward facing, had been cap sealed with sealant. The sealant was likely installed to address past leakage. The sealant was in poor condition and needs replaced to improve watertight construction at the parapet cap. **Photo 53** again shows seam failure between field membrane and wall flashing that needs repair to prevent potential leakage. W&A recommends removing a section of coping to determine if the roofing drapes over the parapet, providing secondary watertight construction below the parapet caps and recommends improving the splices between field membrane and wall flashings to maintain a serviceable watertight roof.

Photo 54 shows a general view of the roof at the southeast corner of the roof between the RTU (scheduled for replacement) and the roof hatch. **Photos 55 and 56** show blistering in the roofing. The blistering occurred from softening of the roof membrane, likely a result of compressor oil contacting the roofing. The roofing should be replaced in this

area to maintain a serviceable roof. See **Attachment "C"** for location of roof replacement.

The main roof slopes east to southwest and drains along the southwest elevation of the building through 4 throughwall scupper openings (**Photos 57 and 58**). The water is then collected in a metal conductor head and into downspouts (**Photo 59**). The top of the conductor head was positioned above the top edge of the throughwall scupper and no overflow provisions where provided. The conductor heads should be modified by cutting an overflow through the face or side of the conductor head, providing secondary drainage if the conductor heads or downspouts become clogged.

Photo 60 shows a general view of the southwest parapet cap extending east that interfaces a masonry rising wall, seen in **Photo 61**. Visible the EPDM wall flashing was terminated/covered with metal counterflashing sealed to the face of masonry with sealant and the parapet cap terminated at the face of masonry and was also sealed with sealant. There were no indications of saddle flashing and jamb flashing installed to prevent leakage between roof and wall interfaces. Flashings are needed to maintain watertight construction. W&A recommends making a probe at the parapet interface to determine as-built construction.

Photo 62 shows a general view along the southwest elevation looking north where the EPDM roofing and parapet interfaces step sloped architectural asphalt shingles. **Photo 63** shows sealant installed between the terminations of the asphalt shingles to the EPDM wall flashing. The sealant was in poor condition. The sealant was likely installed to address leakage. **Photo 64** shows the copper ridge vent installed over the short radius roof interfacing the rising step sloped shingled roofing. Sealant was also applied and is poor condition. As visible was a loose shingle, the shingle was sliding down the roof. **Photo 65** shows a shingle tab lifted showing the shingle was torn at the 1 nail installed in the shingle. The shingle was not properly attached during installation. The shingle needs to be replaced along with the replacement of several additional shingles that were also loose to maintain a durable watertight roof. Removal of shingles is recommended to determine as-built construction and to determine if watertight transitions were provided.

Photo 66 shows shingle damage where a nail has punctured through a shingle. **Photo 67** shows a shingle tab lifted, a result of a backing out nail or and under driven nail. These nail punctures and/or protruding nails lifting shingle tabs need repair. **Photo 68** shows edge damage, exposing the fiberglass reinforcement in the shingle. The damaged shingle should be replaced. W&A recommends retaining a local roof contractor to inspect and repair/replace damaged shingles and nail pops or nail punctures to maintain a serviceable roof.

Photo 69 shows the parapet wall and coping cap interfacing the step sloped asphalt shingle roof. Some minor shingle tab damage was present along with the installation of EPDM over the top of the coping, an indication of past leakage between the roof parapet and step sloped roofing. EPDM installed on top of the coping cap should not be considered watertight. Water that penetrates the coping will challenge watertightness underneath the coping cap where the parapet intersects the step sloped shingled roofing.

W&A recommends removing shingles and the coping cap to determine as-built construction as it relates to watertight transitions.

Interior Observations

After evaluating the exterior of the building, we reviewed interior conditions and accessible rooms where leakage has occurred. A majority of the leaks occur on the 2nd floor below the low sloped EPDM, causing damage and staining of suspended ceiling tiles and interior hard finished ceilings. Leakage also occurs in the ceilings of the reading rooms below roof to wall interfaces. On both floors, leakage was reported at windows. Wood decay was observed at random window locations indicating leakage through the window assemblies. Reference **Attachments "A" & "B"** for leak locations reported.

Photo 70 shows a general view of the suspended ceiling tiles. Prior to our evaluation, a majority of the stained or damaged suspended ceiling tiles had been replaced. Along the west elevation, a stained suspended ceiling tile was found **(Photo 71)**. **Photo 72** shows additional staining of suspended ceiling tiles and **Photo 73** shows water stains in the light housing. The leaks seen in **Photos 72 and 73** occur below the interface between the low slope roofing and step slope roofing along the east side of the low slope roof. **Photo 74** shows a general view above the suspended ceiling tiles showing the fluted metal decking. The decking is run in approximately 20' lengths. Seams occur over bar joist. Leakage occurs primarily at the splice connections or ends of the decking as that occurs above the leaks seen in **Photos 72 and 73**. Water that contacts the fluted decking will migrate laterally until finding a splice **(Photo 75)** or holes in the metal decking **(Photo 76)**. Based on the locations of leakage it appears the leakage occurs along parapet walls, rising transition walls between low sloped roofing and step sloped roofing, parapet terminations, and around the RTU. It is likely the leakage is contributed to the roof findings as discussed above.

Photo 77 shows damaged interior hard finishes below the copper standing seam metal roof interface with rising masonry veneer walls. This photo was taken on the north elevation of the building at the 2 story tall bay window. Similar conditions were observed at the east elevation reading rooms.

As indicated, leakage was reported at random windows and wood decay was found. **Photos 78 through 81** show examples of the wood decay, 15 windows are slated for replacement.

Testing

Williamson & Associates performed water testing at 2 window locations on the east elevation of the building to determine watertightness of the windows and the stucco cladding surrounding the windows. Testing was performed with the use of a spray rack with spray heads spaced approximately 24" apart, held away from the face of the wall approximately 18". Water was applied to the wall until leakage occurred. If leakage occurred, the test was stopped. We also performed hand held nozzle testing at one window to duplicate a leak at the worst window decay observed.

Test Location #1

The window was selected for testing to determine if leakage occurred at a window with no indication of wood decay. **Photo 82** shows water testing of the reading room window farthest south on the east elevation of the building, south facing window. The spray bar was positioned at the head of the window. Within 25 minutes of testing, water leakage was observed at the window sill (**Photo 83**). Water percolated up from between the interior trim at the sill of the sash and the insulated glazing unit. The leakage appears to be the result of failing butyl seals. The test was stopped.

Prior to testing another window, the spray bar was positioned higher on the stucco wall (**Photo 84**) to check for leakage higher in the window system or stucco cladding. At approximately 10 minutes into the test, water leakage was observed at the intermediate horizontal mullion and the head of the lower glazing unit (**Photo 85**). The leak appears to be related to the fabrication of the horizontal mullion.

Test Location # 2

Photo 86 shows water testing of the reading room window, center section, on the east elevation of the building, north facing window. The spray bar was positioned below the intermediate mullion. The window was tested at this location for 50 minutes before leakage was observed. Leakage was observed along the window jamb (**Photo 87**), the water ran down the interior jamb and ponded at the window sill (**Photo 88**). Water was also observed penetrating at the window sill (**Photo 89**).The test was stopped.

Next, the spray rack was moved to the top of the window (**Photo 90**) to determine if there were any additional leaks as observed during test # 1. The test was performed for 1 hour with no visible signs of new leakage.

The spray rack was then moved to wet the stucco (**Photo 91**) to check for additional leakage and to attempt to create a leak were significant wood decay was observed. The test was run for 1 hour with no visible signs of leakage. To monitor for leakage, a business card (**Photo 92**) was inserted into the decayed wood, if water penetrated, the business card would become wet.

As an additional test, W&A used a Monarch B-25 testing nozzle (**Photo 93**) to introduce a greater volume of water around the perimeter of the fixed frame. At approximately 15 minutes into the test, water was observed within the decayed wood, notice the wetted business card (**Photo 94**). The leakage appears to be related to the open joint between the fixed sash and fixed frame.

Recommendations:

Based on our survey of as-built construction via visual observations while walking the grounds, from the roof, and with limited water testing performed to 2 select windows, we suspect water leakage is a result of failing seams in the EPDM roofing between the field membrane and wall flashing, roof interfaces between parapets, masonry, and step sloped roofing, failing roof patches, discontinuous EPDM draping parapet cap, and windows. We provide the following recommendations:

W&A recommends the Owner consider replacing the existing Pella aluminum clad wood windows with a new thermally broken aluminum window having insulated glazing units that incorporate a dual seal. EFCO or equal is recommended. It is our opinion that utilizing the existing windows will require ongoing maintenance and eventually replacement to address wood decay and failing butyl seals. Wet sealing the exterior of the windows, prevent water from penetrating the muntins, sash, and frame may provide a few additional years of service life before replacement, this would be an Owner risk. Before selecting a window manufacture and type, W&A recommends a few exploratory probes around the windows to gather an understanding of how the existing windows were installed and treated to the weather resistant barrier behind the claddings to obtain air/watertight installation.

As indicated, there were no visible indications of needed stucco throughwall flashing above window heads. Throughwall flashing are needed and recommended to control water within and behind the stucco cladding, discharging water above the window head. W&A recommends probes through the stucco, coordinated with the window probes to gather the as-built construction to provide best approach to maintain watertight construction. W&A also recommends that stucco cladding be improved making the surface watertight by sealing all stucco control joints and application of a high performance silicone elastomeric on its exposed face.

There is also suspect leakage at roof to rising masonry wall interfaces where it appears there is only reglet placed counter flashings in lieu of needed masonry step throughwall flashing to maintain watertight continuity between the roof and wall. W&A recommends exploratory probes through the masonry veneer above a roof to wall interface to determine as-built construction to provide best repair approach to address leakage below the roof to wall interfaces causing damage to interior finishes.

The EPDM roof is in a serviceable condition and the Owner should expect another 5 – 7 years of service before considering full replacement. As indicated a section of roofing between the RTU and roof hatch should be replaced to address membrane damage/softening from a spill. Along the roof edges, field membrane to wall flashing, the seams should be repaired continuously by cleaning the seams and placing EPDM flashing tape over the failed seam. In the field, existing patches should be inspected and repaired as needed to maintain a watertight roof. W&A recommends also that exploratory probes be made a few key locations to provide watertight transitions at the following locations:

1. Parapet walls intersecting step sloped roofing and or rising masonry walls.
2. Below coping caps to determine if the EPDM caps the parapet.
3. Between the offset rising wall covered with EPDM intersecting the rake of the step sloped asphalt shingled roof.

The existing architectural asphalt shingled roofing appeared in good serviceable condition and requires minor maintenance to address nail pops and damaged shingles to maintain a watertight roof assembly.

Both roofs will require periodic maintenance W&A recommends bi-annual inspections to service the roofs.

W&A recommends replacement of all wood fascias.

W&A recommends replacing all site sealant between building walls and sidewalls.

END OF REPORT

Photo 1

Photo 2

Photo 3

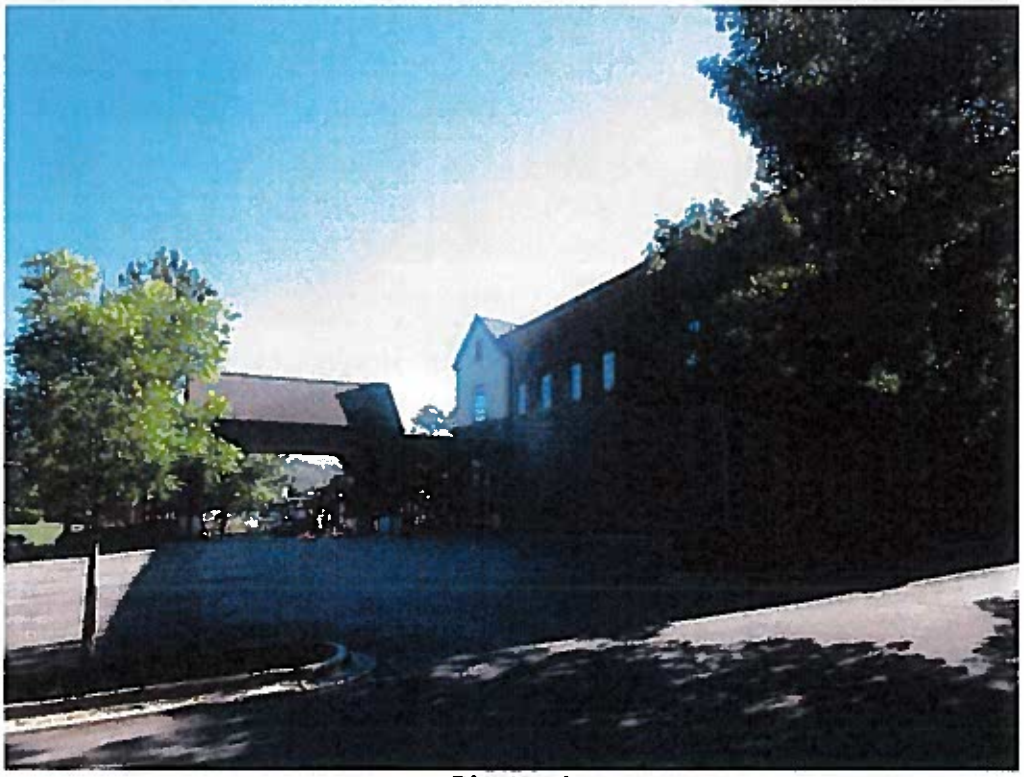


Photo 4

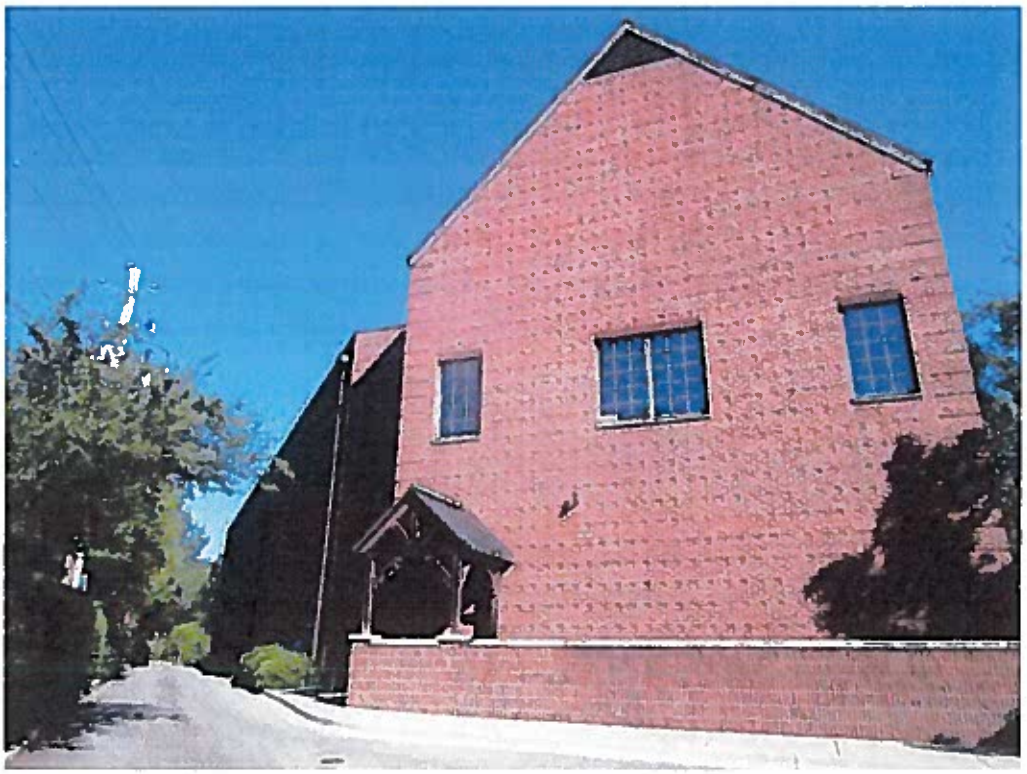


Photo 5

Photo 6

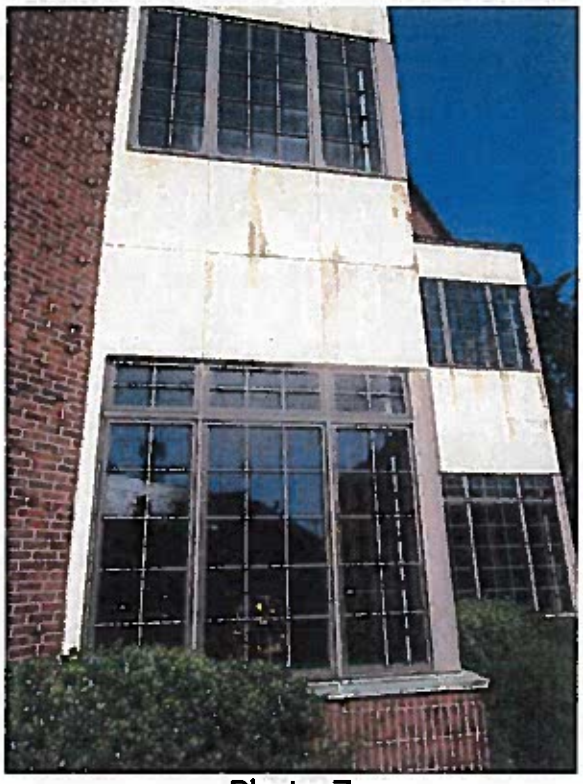


Photo 7

Photo 8

Photo 9

Photo 10

Photo 11

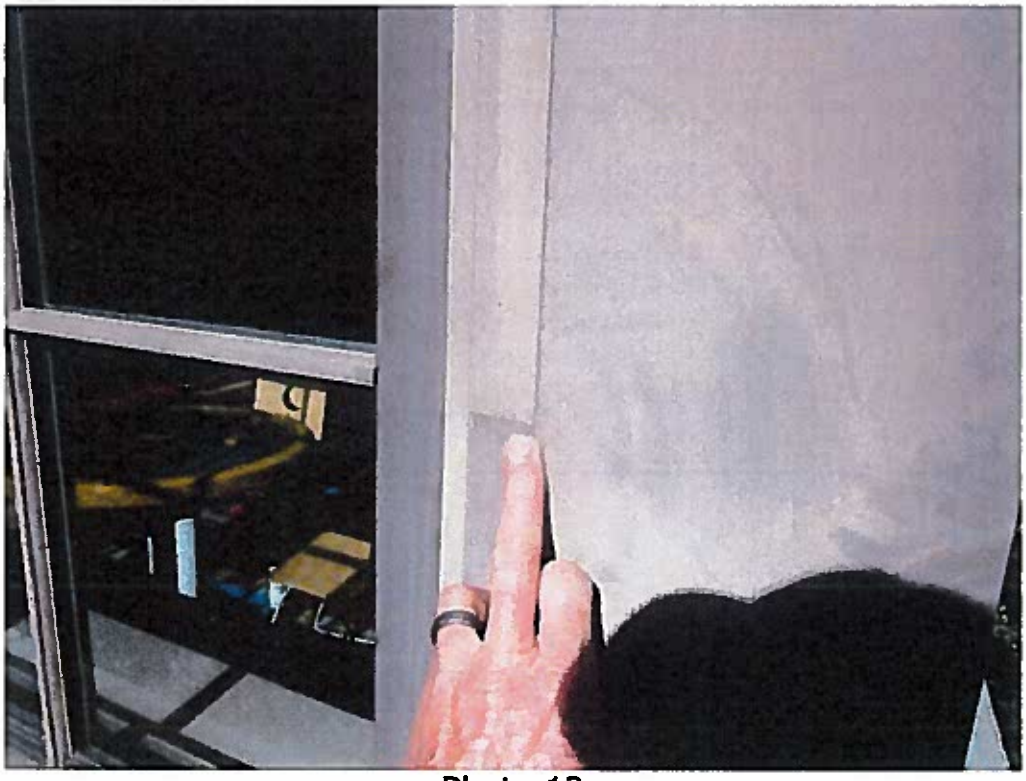


Photo 12

Photo 13

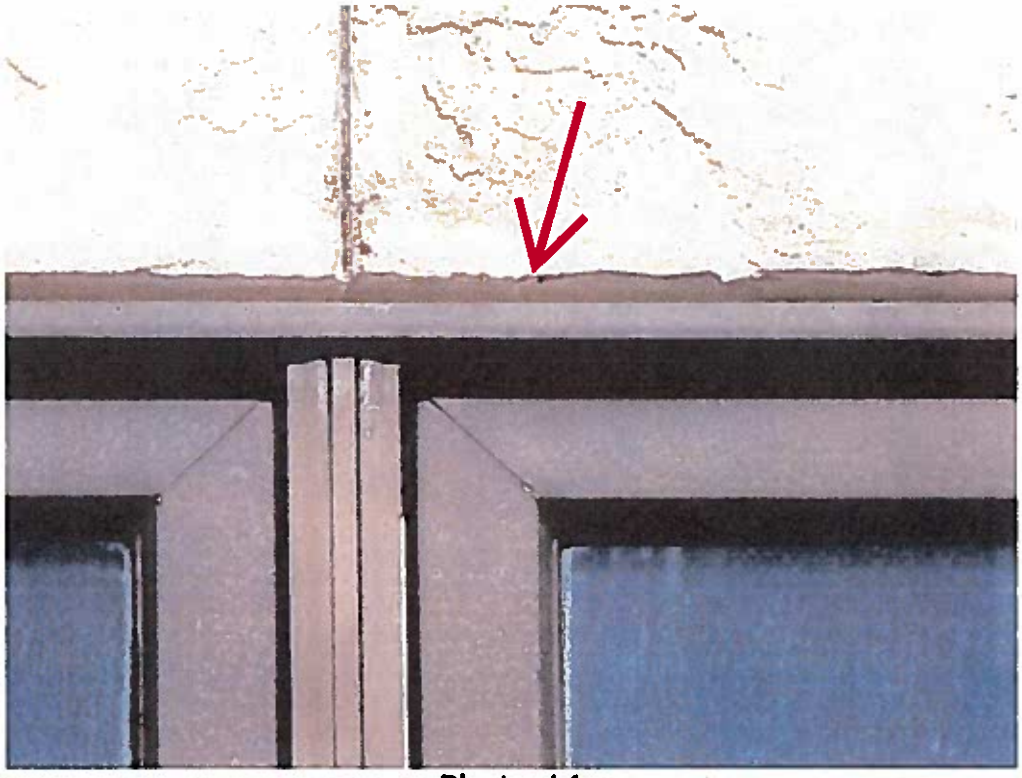


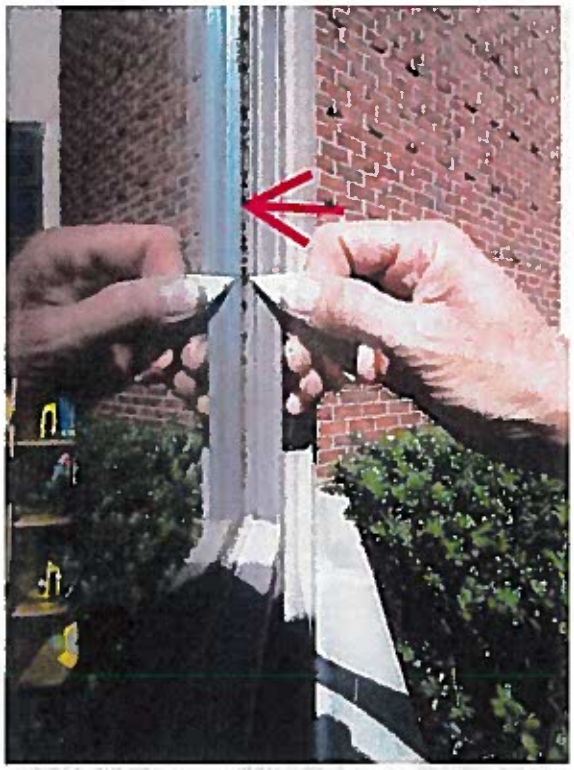
Photo 14

Photo 15

Photo 16

Photo 17

Photo 18



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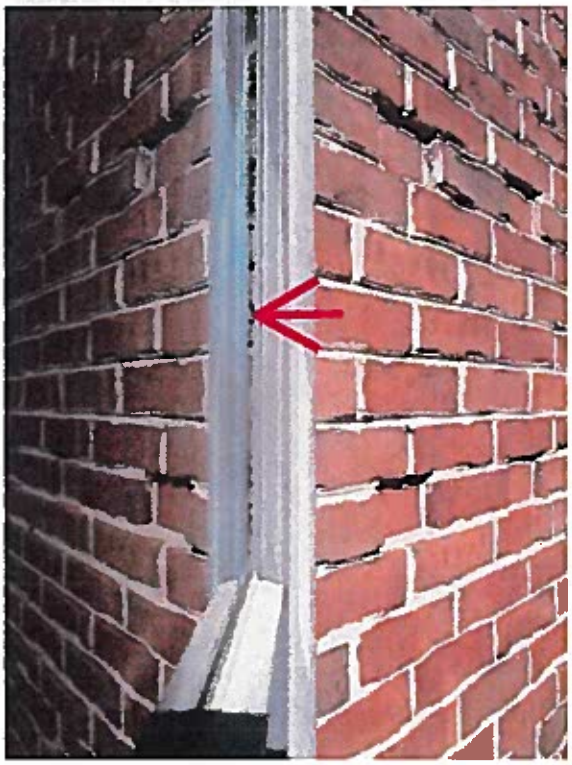


Photo 20

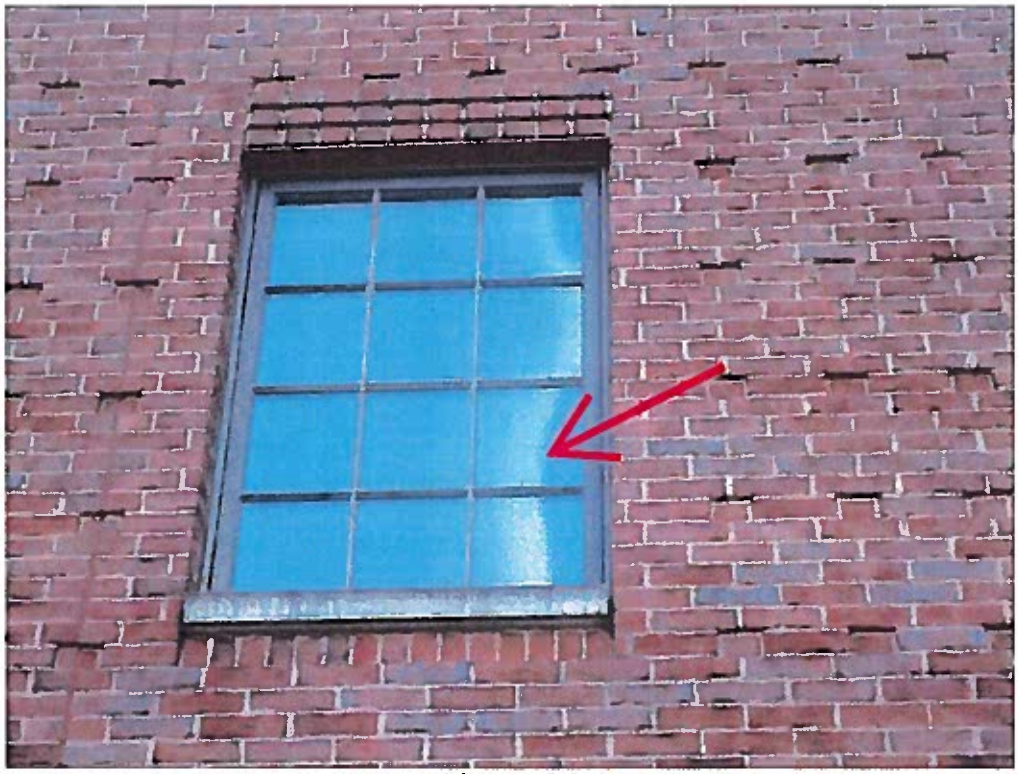
Photo 21

Photo 22

Photo 23

Photo 24

Photo 25



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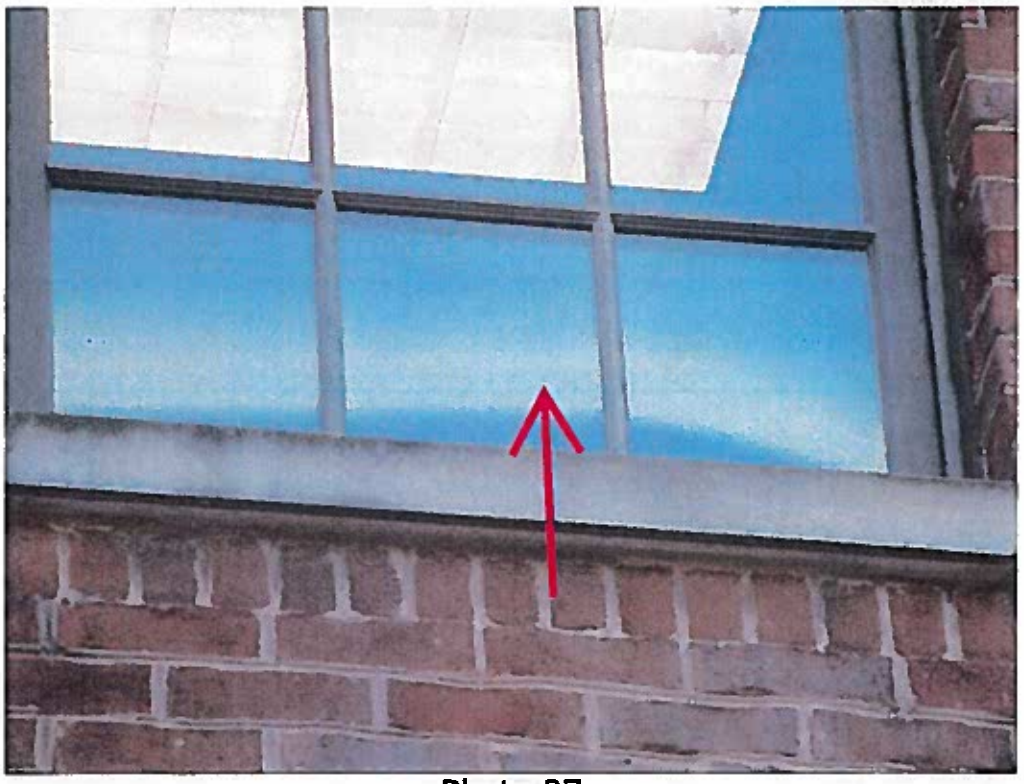
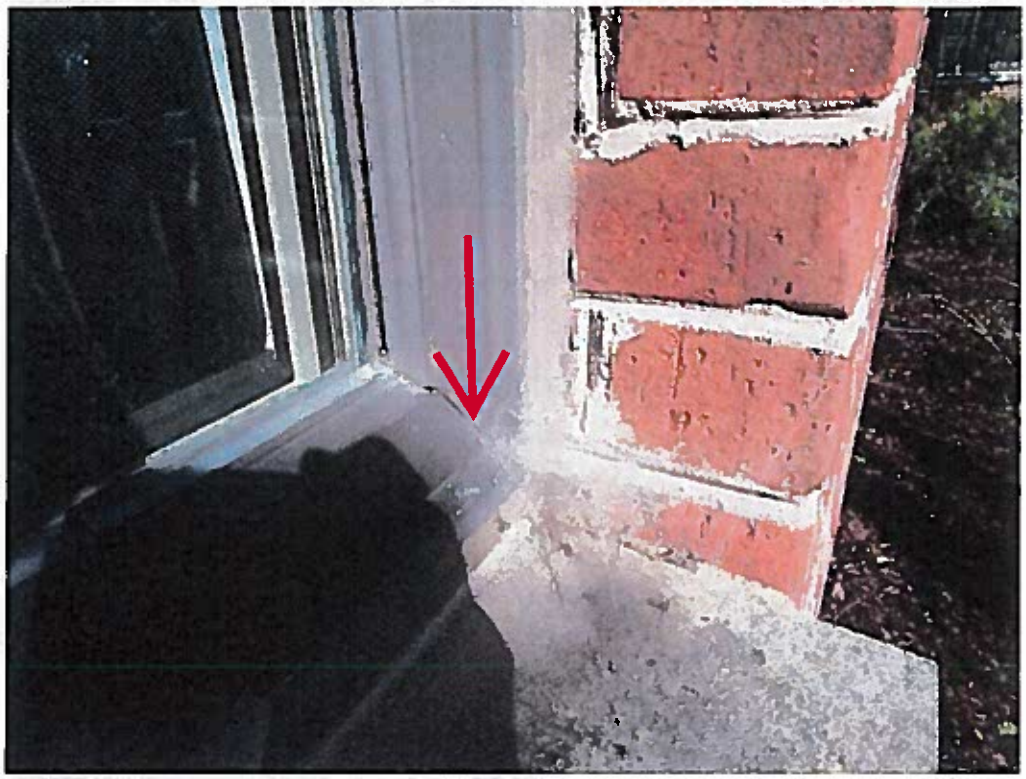


Photo 27

Photo 28

Photo 29

Photo 30



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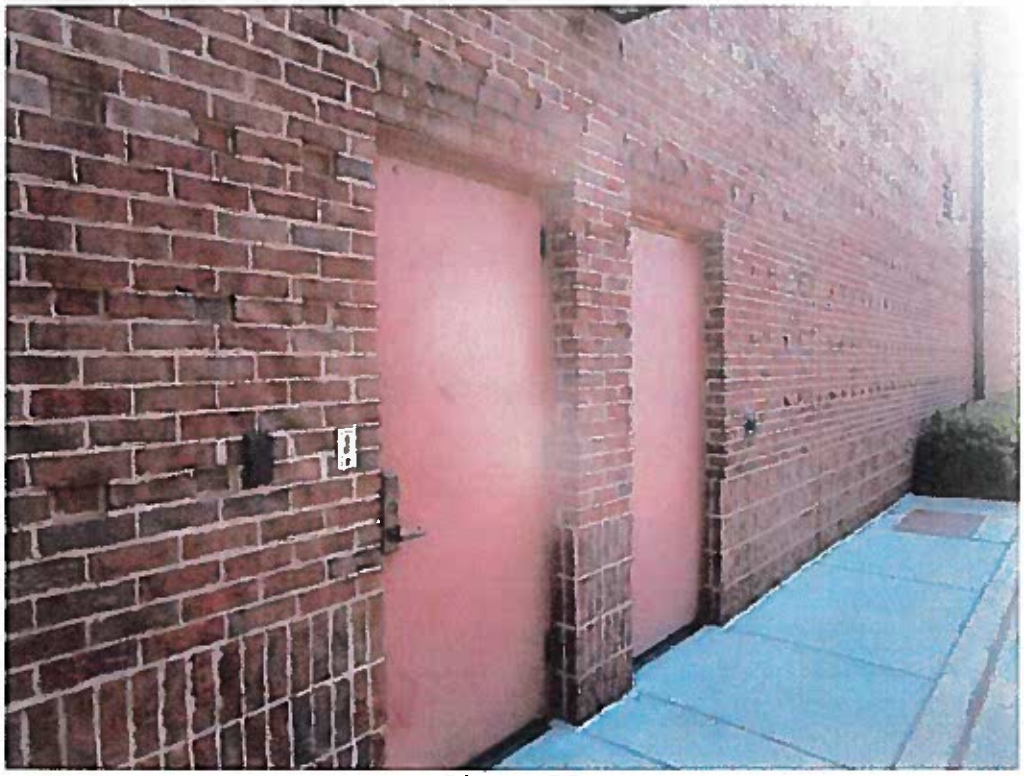


Photo 32

Photo 33

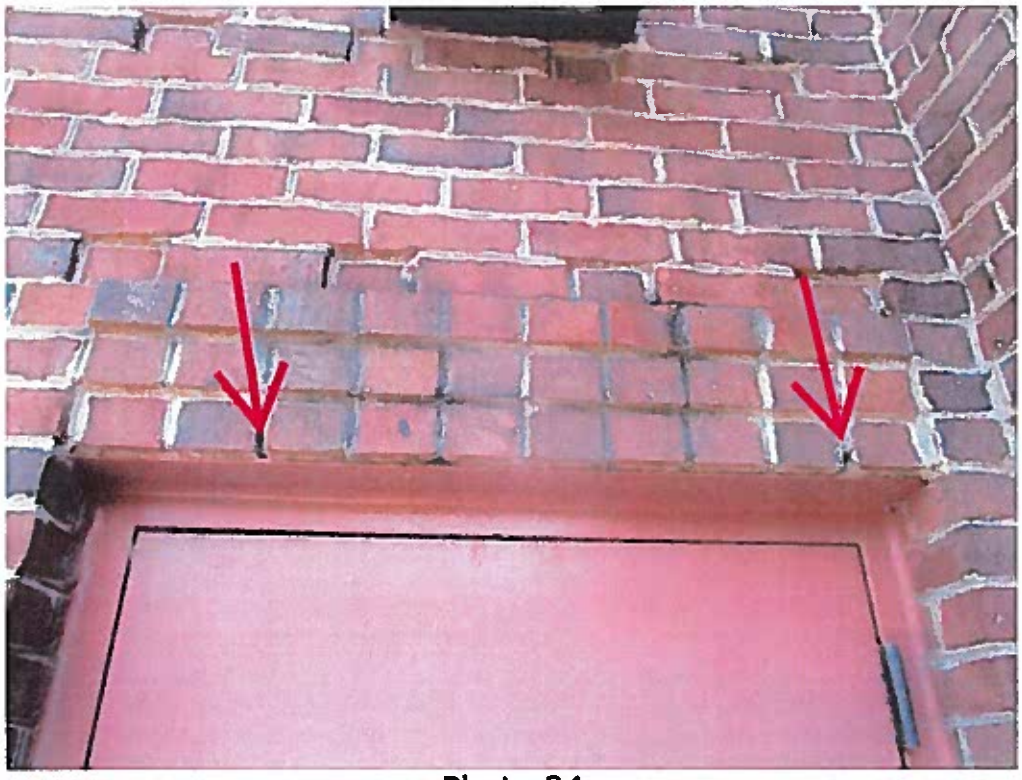
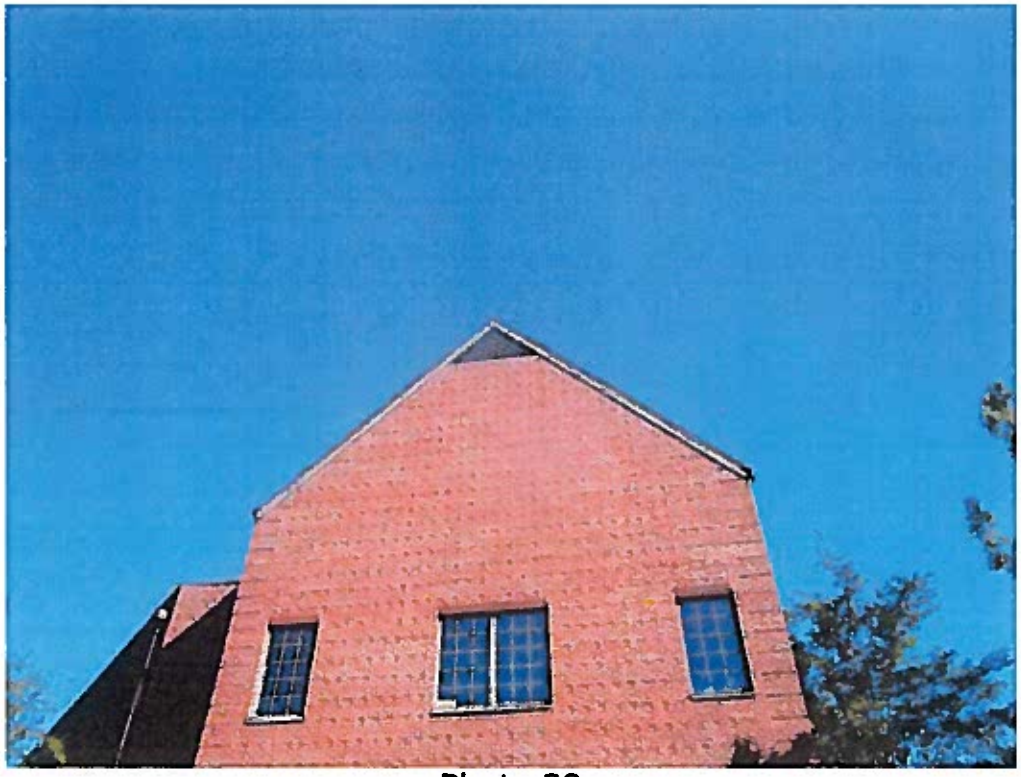


Photo 34

Photo 35

Photo 36

Photo 37



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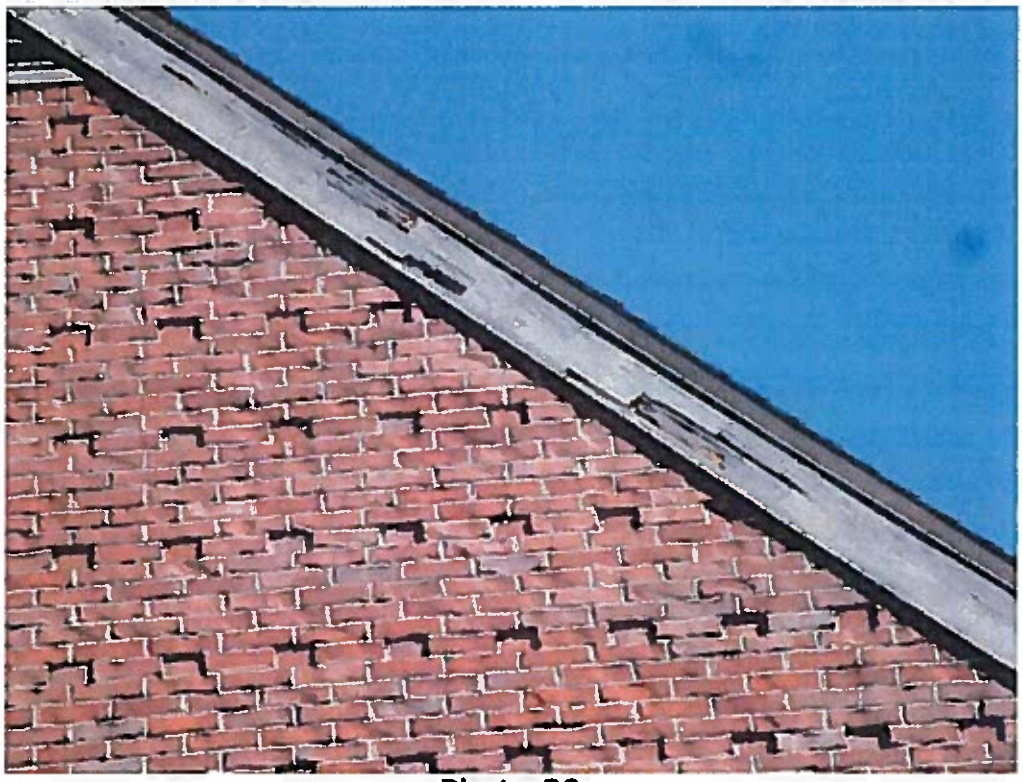


Photo 39

Photo 40

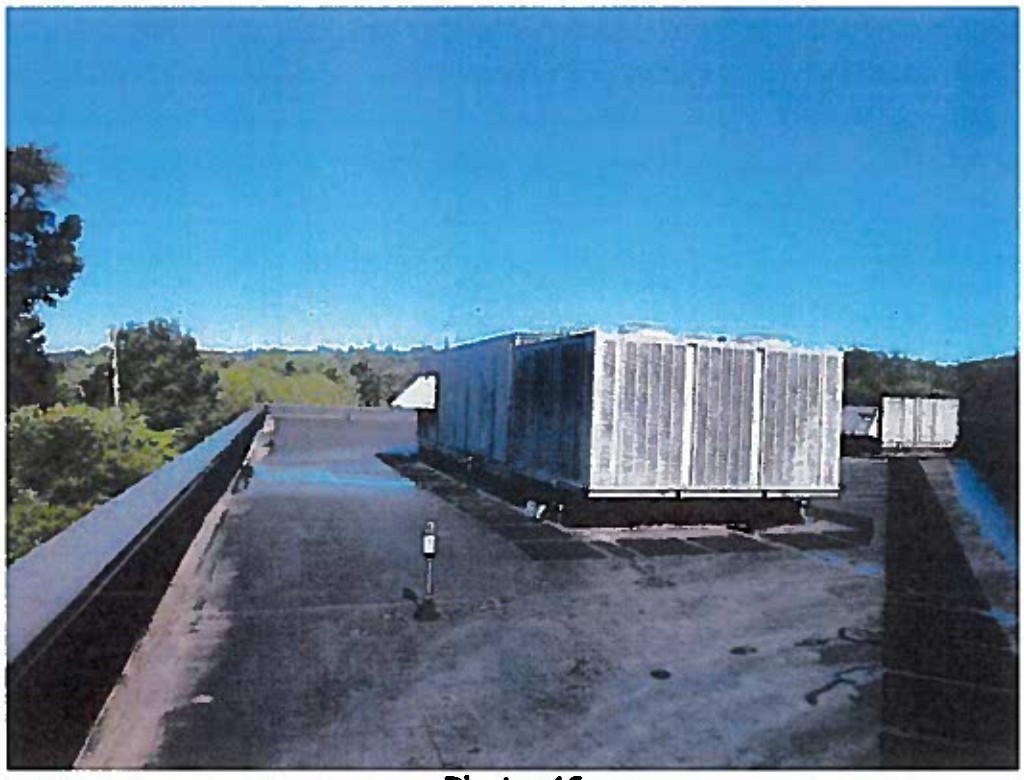
Photo 41

Photo 42

Photo 43

Photo 44

Photo 45



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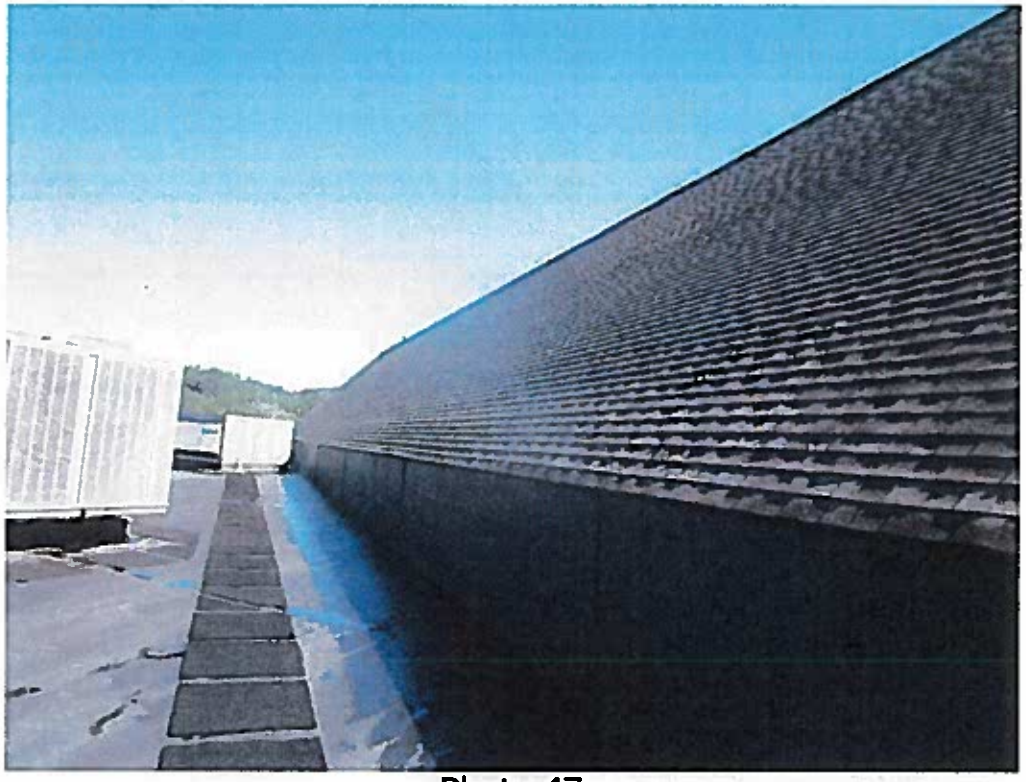

Photo 47

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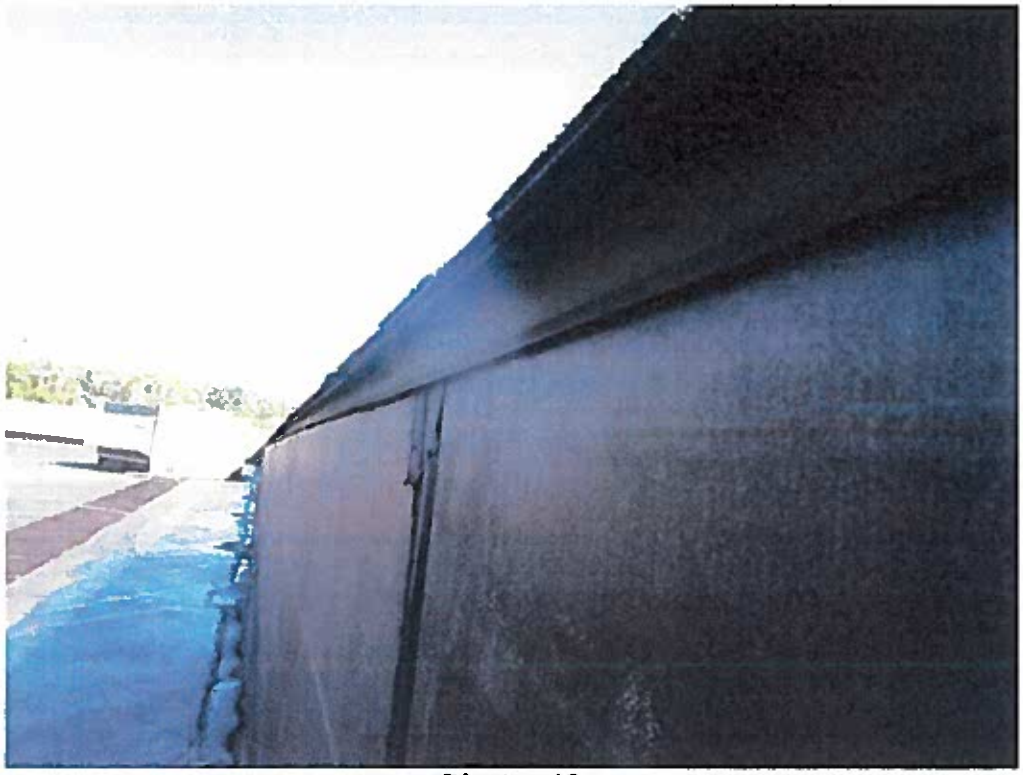

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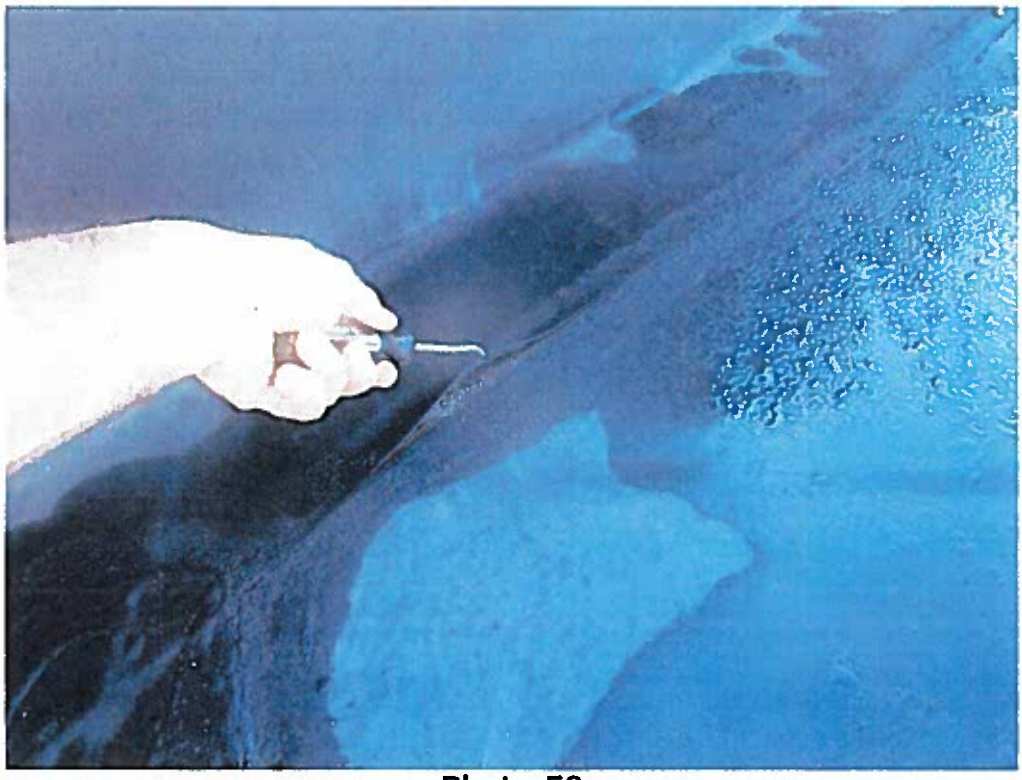

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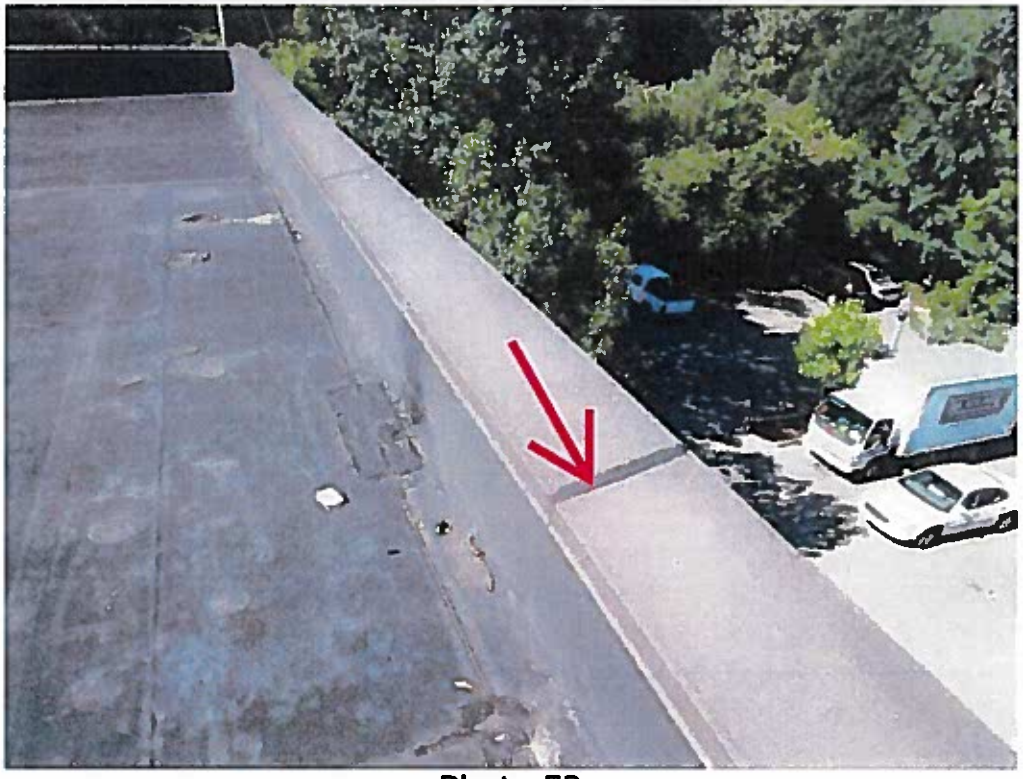

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Photo 53

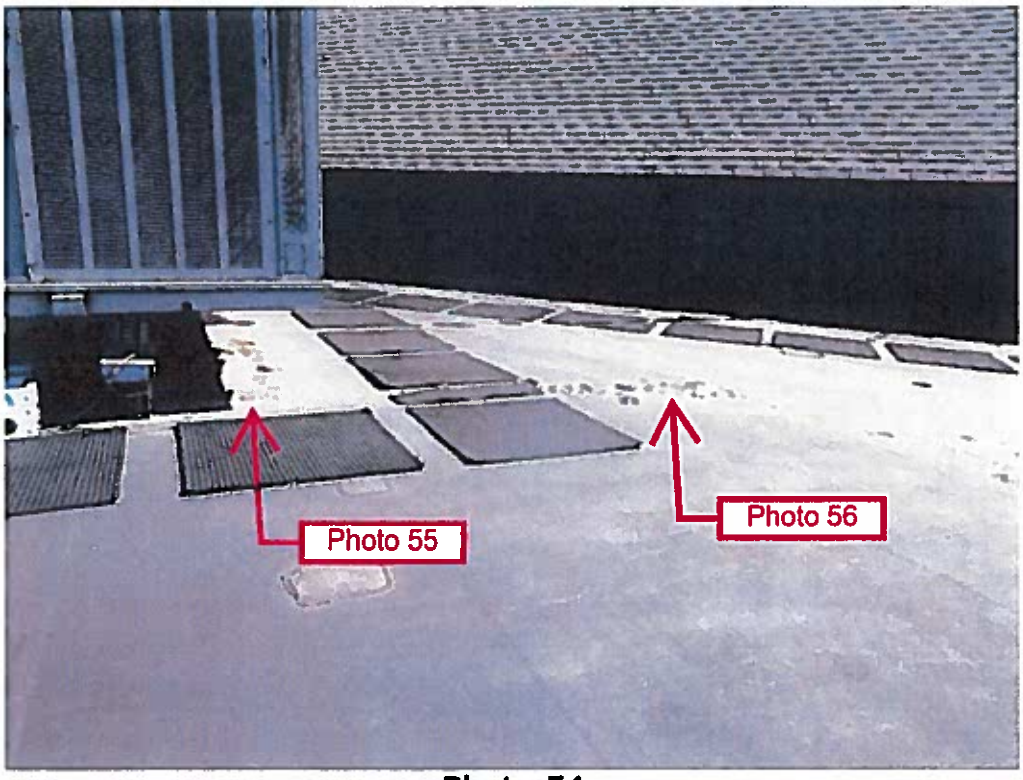


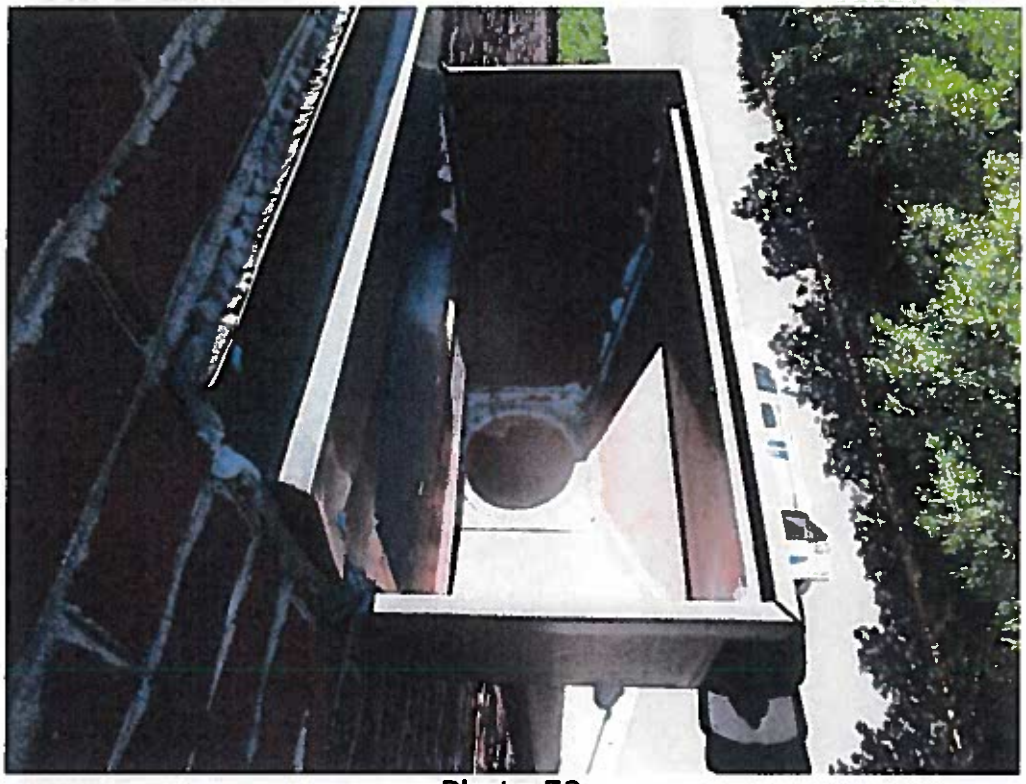
Photo 54

Photo 55

Photo 56

Photo 57

Photo 58



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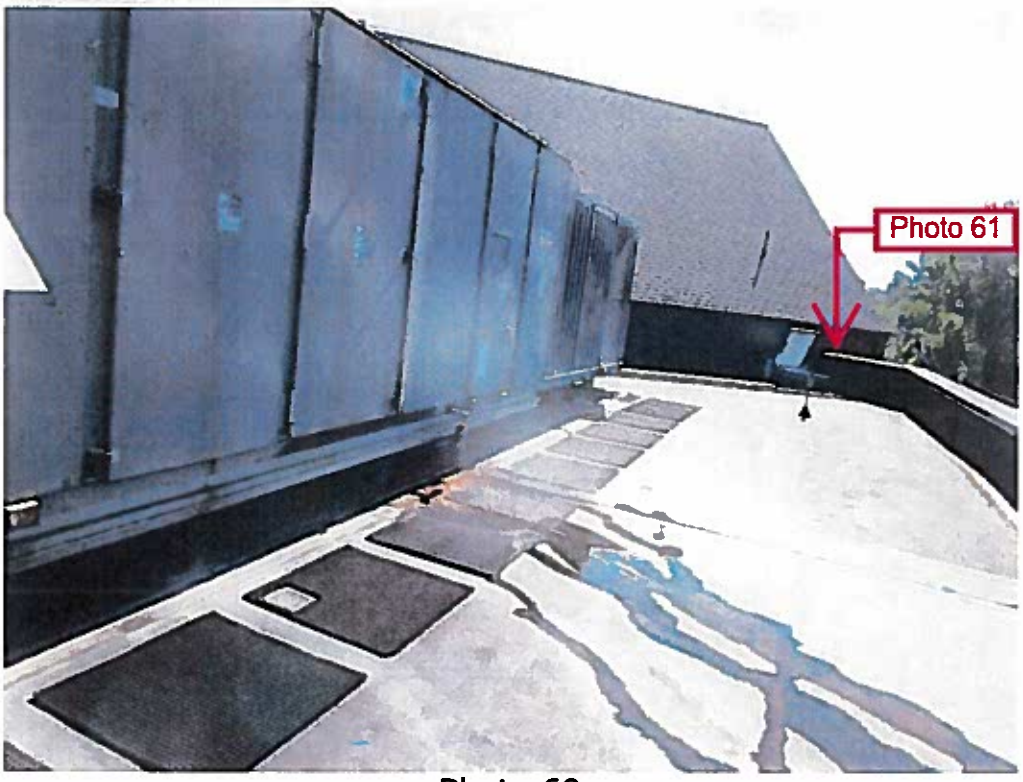

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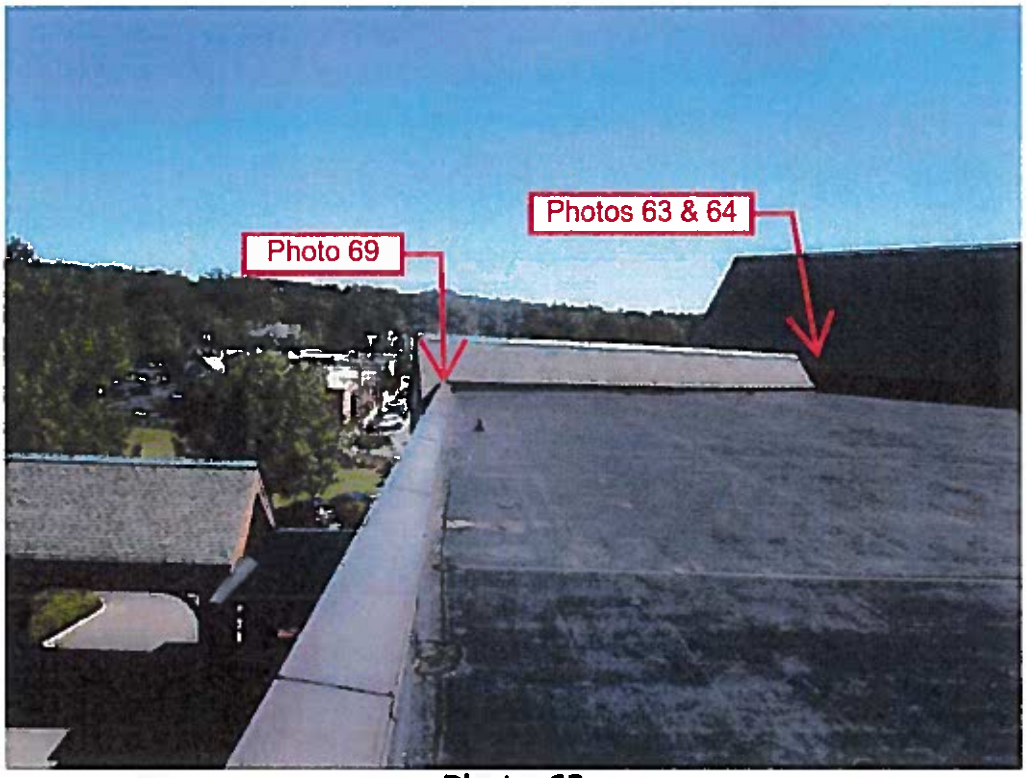


Photo 62

Photo 63

Photo 64

Photo 65

Photo 66

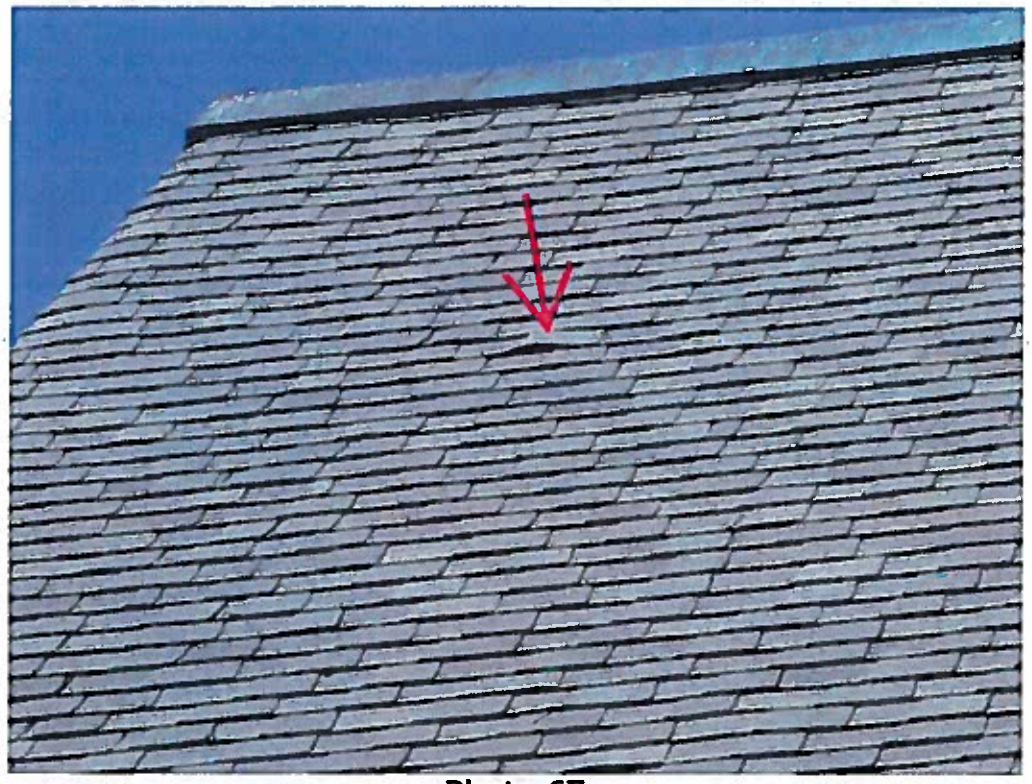


Photo 67

Photo 68

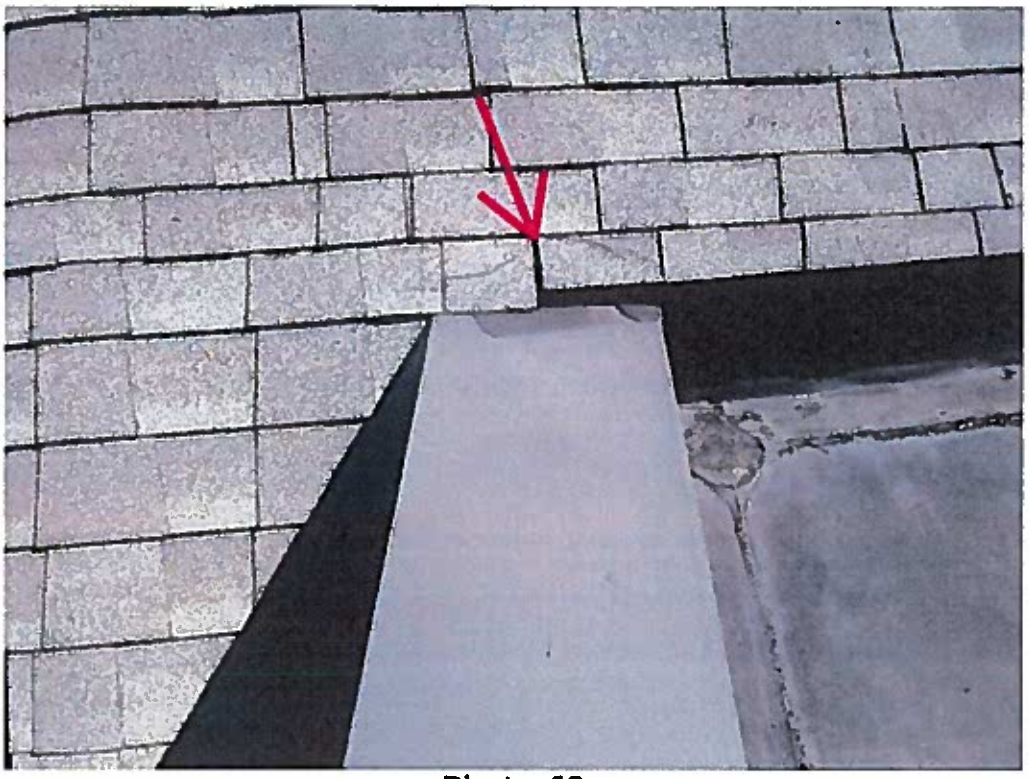


Photo 69

Photo 70

Photo 71

Photo 72

Photo 73

Photo 74

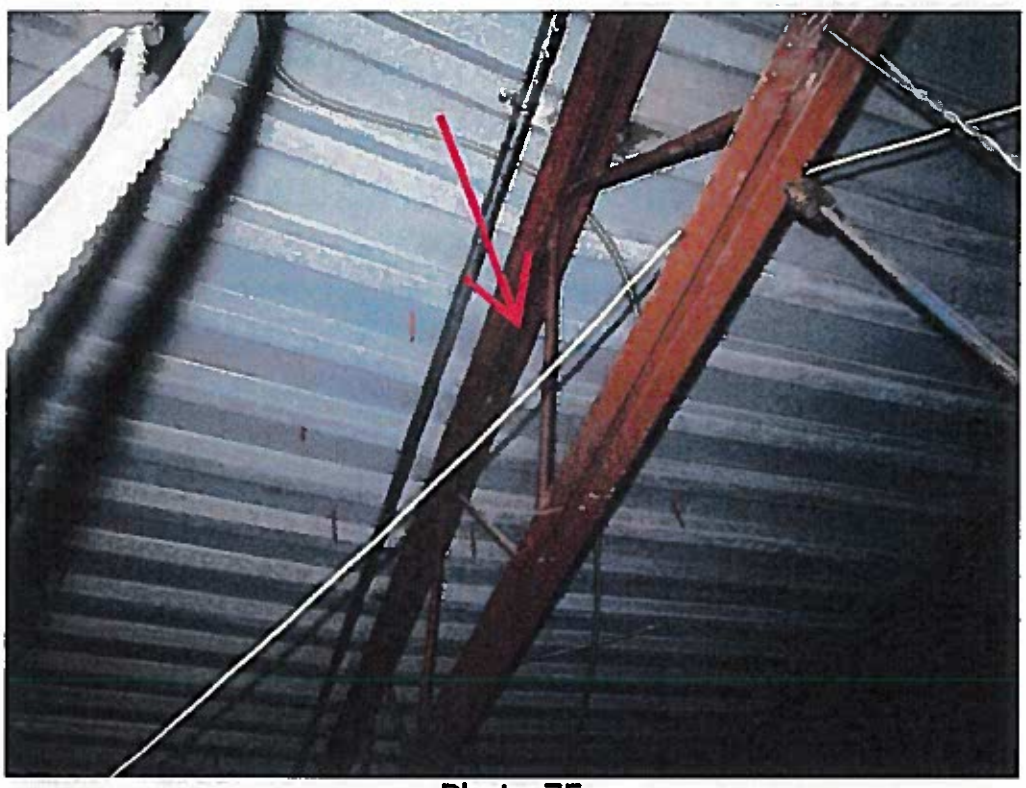


Photo 75

Photo 76

Photo 77

Photo 78

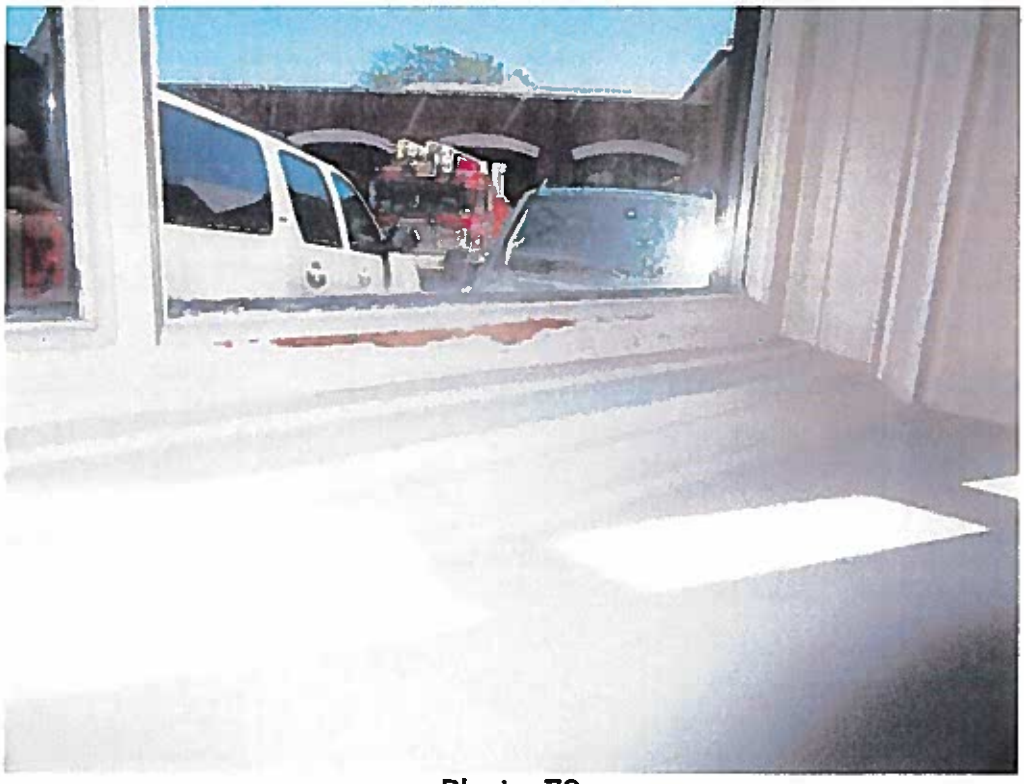


Photo 79

Photo 80

Photo 81

Photo 82

Photo 83

Photo 84

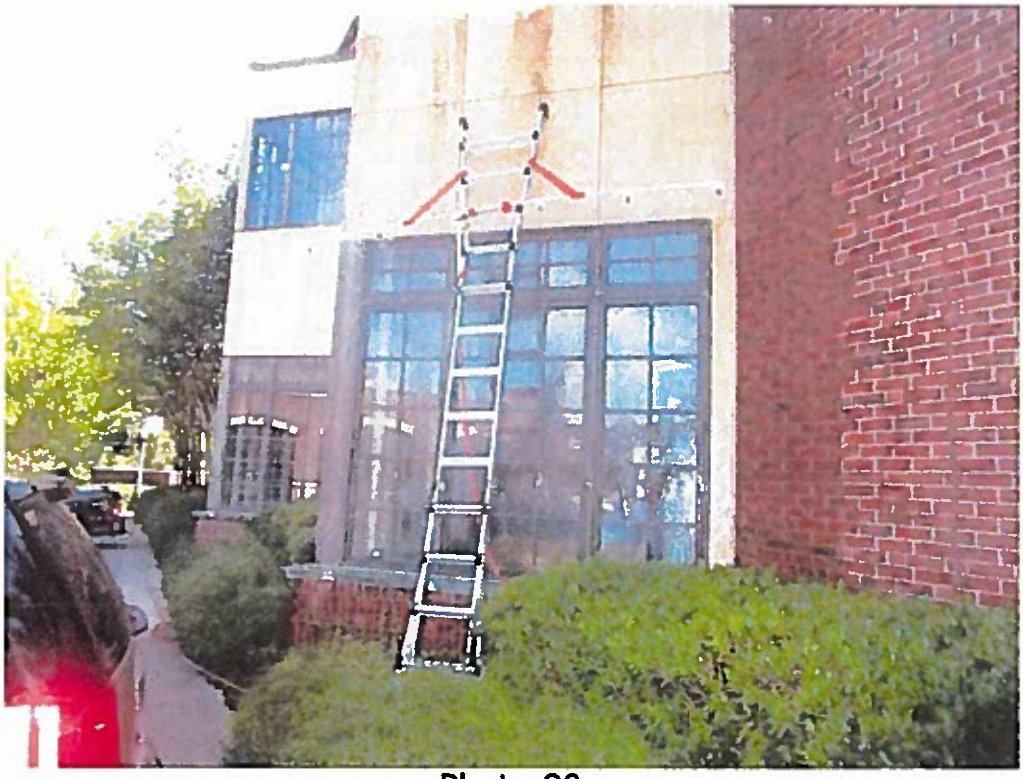
Photo 85

Photo 86

Photo 87

Photo 88

Photo 89



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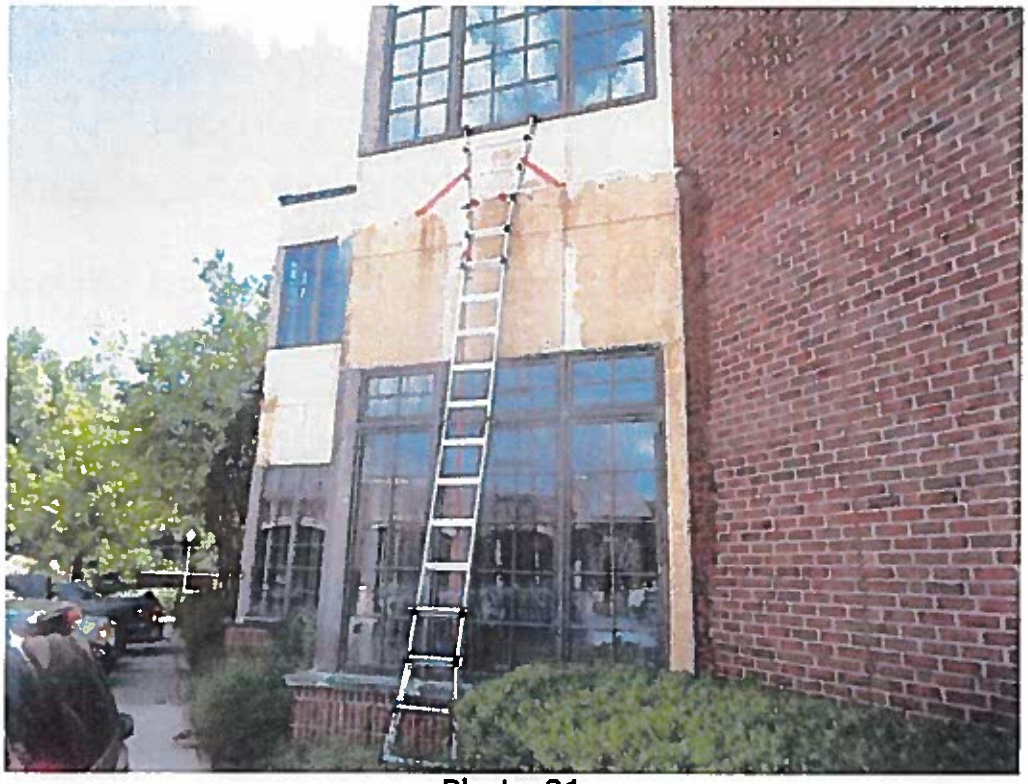


Photo 91

Photo 92

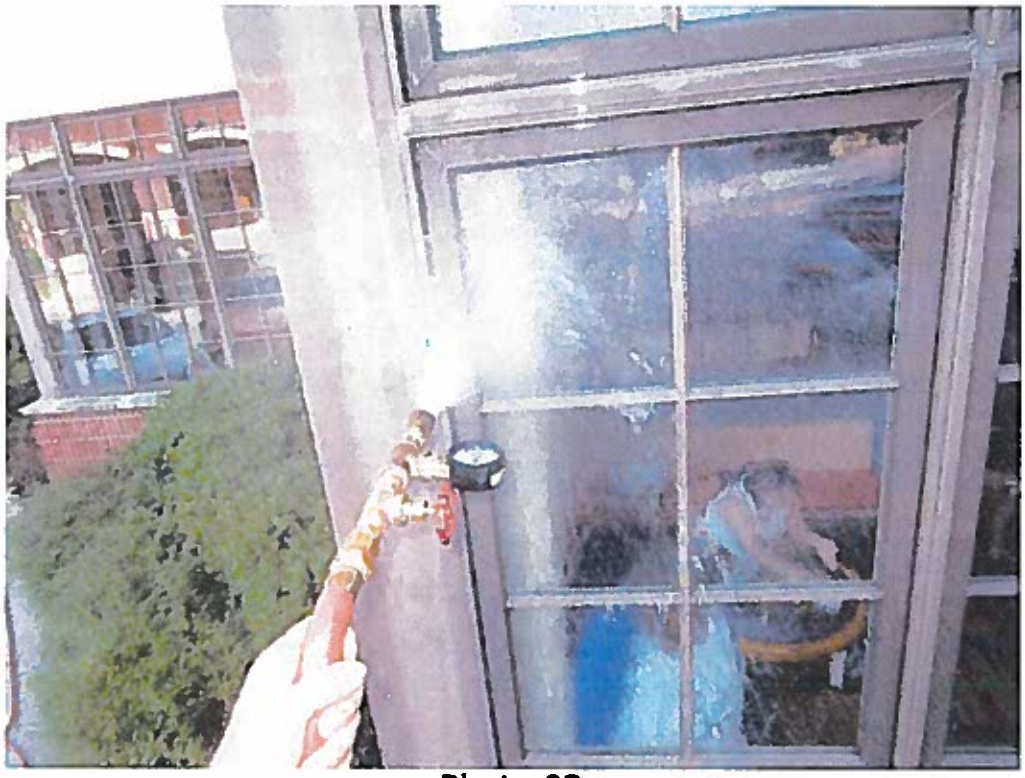
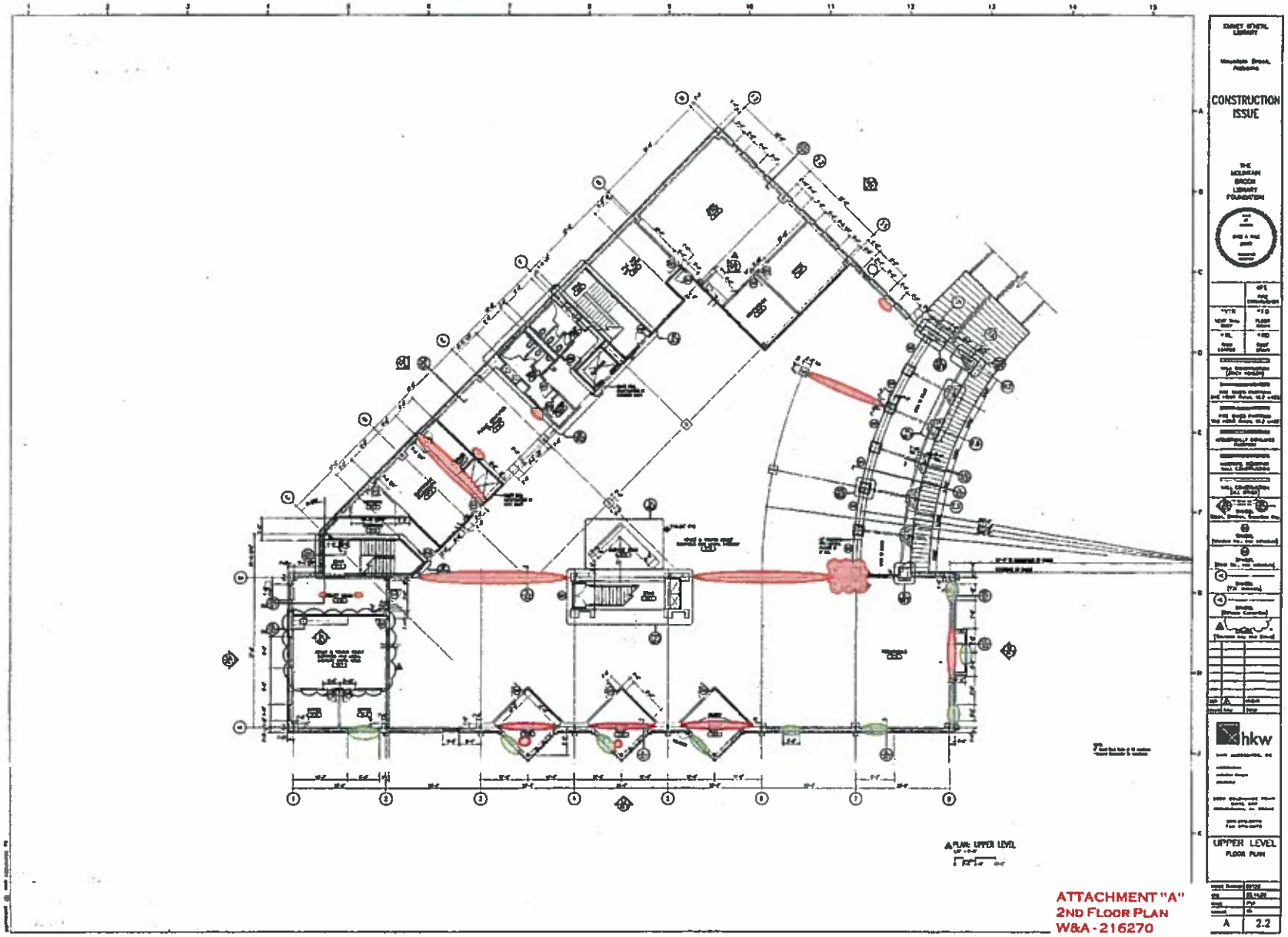
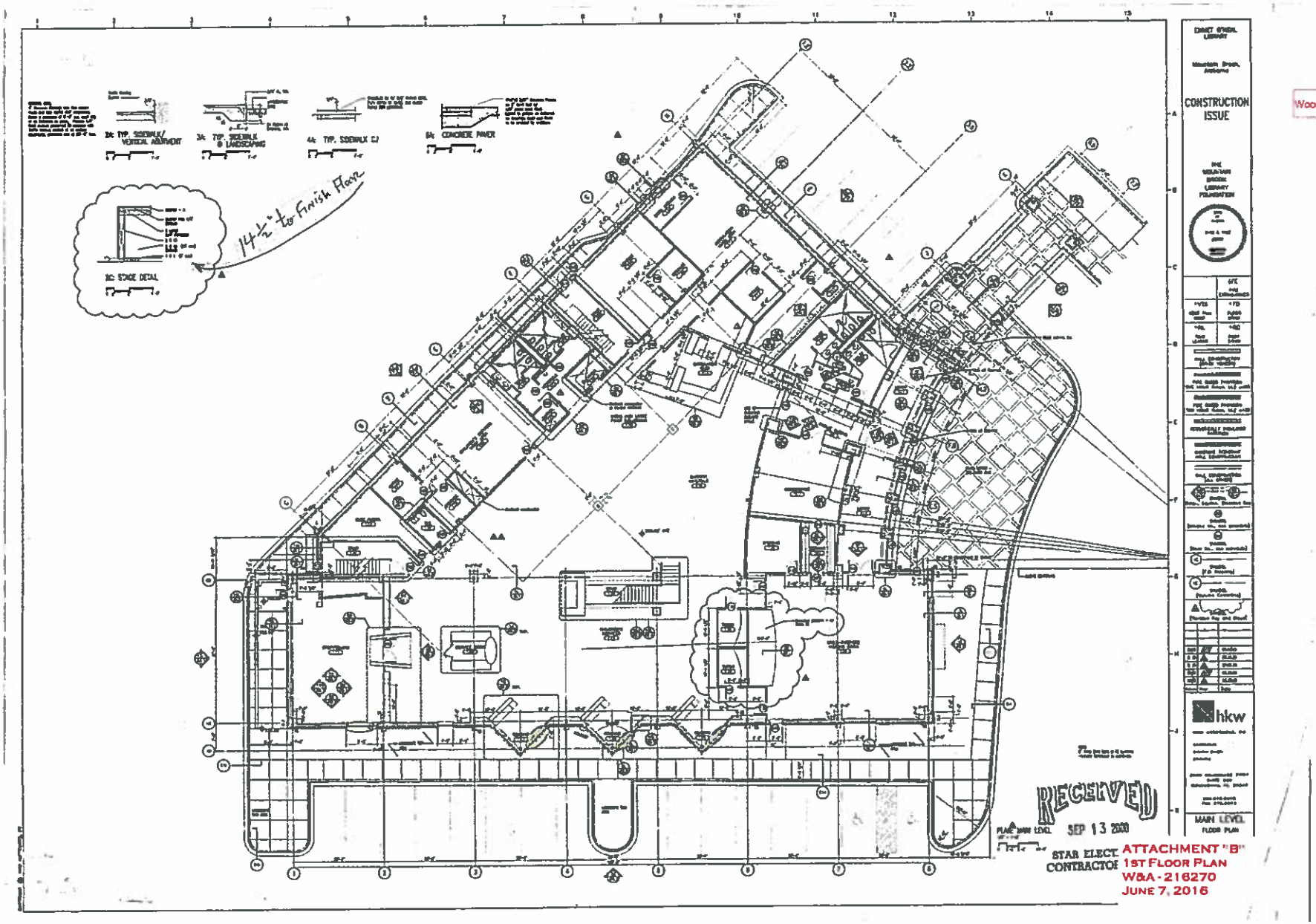


Photo 93

Photo 94

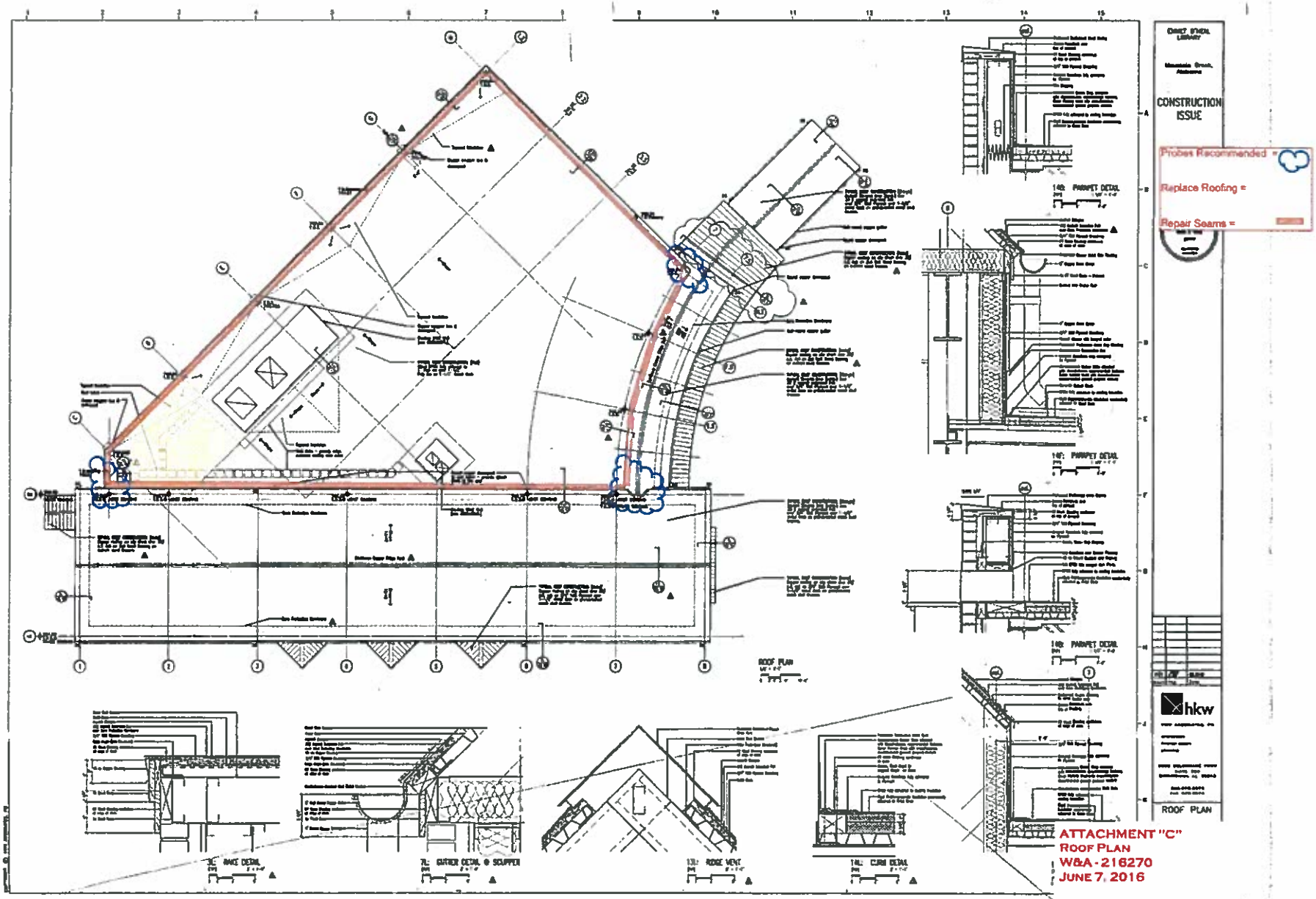


ATTACHMENT "A"
2ND FLOOR PLAN
W&A - 216270
JUNE 7, 2016



Wood Decay =

ATTACHMENT "B"
1ST FLOOR PLAN
W&A-216270
JUNE 7, 2016


CONSTRUCTION ISSUE
Probes Recommended =
Replace Roofing =
Repair Seams =
ROOF PLAN
hkw
ATTACHMENT "C"
ROOF PLAN
W&A - 216270
JUNE 7, 2016