



February 6, 2025

David Skov
City of Knoxville
3131 Morris Avenue
Knoxville, TN 37909

Dear David,

Representatives of the City of Knoxville Department of Engineering met with representatives of our company on 01/28/2025 at which meeting the City verbally requested a proposal from Gresham Smith, Inc. (GSI) to 1) subcontract for a LIDAR survey to be conducted of the lower chords of spans 2 and 4 on the east side the Gay Street bridge to expedite Modjeski & Masters completing its peer review; and 2) provide structural engineering and construction engineering and inspection (CEI) support during the construction phase.

Neither the proposed survey nor the structural engineering and CEI are part of the base scope of work of our current professional services contract, C-24-0356, and, therefore, require a contract modification.

The City will benefit in both safety and time from the additional survey work and professional construction phase services, anticipating the following benefits:

A more accurate understanding of the actual geometry of the built-up structural section of the out-of-plane deformations that were identified in the TDOT inspection report from summer 2024 will result in a more safe and reliable analysis of the structure.

Having professional CEI services in-place when a Notice-to-Proceed for construction is issued will minimize lengthy pauses in construction while contract action is undertaken for professional services.

LIDAR Survey:

GSI proposes to retain SAM, Inc. to join GSI's Gay Street Bridge Repair project design team to conduct the LIDAR survey for the not-to exceed amount of \$25,500.00 in accordance with the attached scope & fee on a time & materials basis:

Survey approach and expected cost +/-:

- 1) Setting control. In addition, we would like to have TDOTs and/or City's control (targets in place) so that we can incorporate into our survey. (1 Day – Field - \$2,500)
- 2) Begin the scanning process (3 to 4 Days – Field + Office Support - \$12,500)
 - a. Additional effort to establish control and scanning from piers.

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- 3) Begin georeferencing the point clouds (2 to 3-Days – Office - \$5,000)
- 4) BIM will begin classification and extraction (2 to 3 Days – Office - \$5,500)

This brings our total to about \$25,500 +/- (T&M), and a turnaround time of just about ten (10) business days.

Construction Phase Professional Engineering Services:

GSI proposes to provide Structural engineering and (CEI) services during the construction phase for the not-to exceed amount of \$75,000.00 on a time & materials basis, billable on an hourly basis in accordance with Gresham Smith's, Inc.'s 2025 hourly rates for professional services. NTE amount is based on a 4-month construction duration. See attachment.

Total Proposal Amount:

The total proposal amount to conduct the LIDAR survey and to provide professional services during the construction phase, therefore, is an amount not-to exceed \$100,500.00.

Thank you,

A handwritten signature in blue ink, appearing to read 'Jason Brady', with a stylized flourish at the end.

Jason Brady, PE,
Regional Transportation Leader - Cumberland

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Labor Rate Table	
Classification	Hourly Rate
Principal	\$ 225.00
Project Mgr.	\$ 210.00
Bridge Dept Leader	\$ 285.00
Senior Transportation Engineer	\$ 280.00
Senior Bridge Engineer	\$ 265.00
Bridge Load Rating Lead	\$ 219.00
Bridge Engineer	\$ 159.00
Bridge Inspector	\$ 152.00
Sr. Bridge Designer	\$ 151.00
Project Professional Eng	\$ 155.00
Sr. Structural Eng	\$ 250.00
Utility Leader	\$ 200.00
Utility Coordinator	\$ 130.00
Project Eng	\$ 140.00
QA/QC	\$ 190.00
EIT/Designer	\$ 125.00
Inspector	\$ 120.00
Asst PM	\$ 135.00
Administrative	\$ 80.00

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2095 Lakeside Centre Way / Suite 120 / Knoxville, TN 37922 / 865-521-6777 / GreshamSmith.com



Sent via Email:

patrick.fiveash@greshamsmith.com

January 31, 2025

Patrick J. Fiveash, P.E., CPESC

Gresham Smith

D: 865.299.6130

M: 865.679.9663

**RE: GS – Gay Street Bridge – Scanning Project
SAM Proposal No.: 1025096085**

Hello Patrick,

Surveying And Mapping, LLC (SAM) is pleased to provide Gresham Smith (client) with this proposal for professional surveying services in connection with the above referenced project. Based upon the information provided to SAM and our discussions concerning this project, we have prepared the attached proposed Scope of Services.

Please review and let me know if you have any questions or comments. My phone number is 865-414-1379. I may also be reached via email keith.vancampen@sam.biz. Again, thank you for the opportunity to provide this proposal. We are looking forward to working with you on this project.

Respectfully,

Surveying And Mapping, LLC (SAM)

A handwritten signature in blue ink, appearing to read 'Keith Van Campen', with a stylized, flowing script.

Keith Van Campen

Senior Project Manager

CC. Joseph M. Colvin, RLS // Associate // Vice President - Mid South Operations
Robert Sanders, RLS // Mid South Area Operations Manager
Patrick Nolan // BIM Project Manager

SAM COMPANIES

9047 Executive Park Drive / Suite 120 / Knoxville, TN 37923

865.200.4366 Office / 865.381.1942 Fax

sam.biz



Scope of Services

Surveying And Mapping, LLC (SAM) proposes to prepare an As-built Survey of a portion of the Gay Street Bridge located in Knoxville TN. The work will consist of high-definition terrestrial scanning of bridge span numbers 2 and 4 as can be seen in **Exhibit A – Scanning Limits**.

Kickoff Meeting

Participating in a kick-off meeting via conference call with Gresham Smith to introduce key staff and fully understand the project goals. The meeting will be attended by the SAM Project Manager and the field supervisor. It is requested that the designated client representative be present to facilitate coordination. If appropriate, meeting minutes will be prepared and distributed to attendees within one week.

Health & Safety

Preparing site specific Health & Safety Plan, including project specific Job Hazard Analyses (JHAs) tailored from our library of task specific templates. The Plan will include, to the extent appropriate, a call tree for emergency notification, traffic control plan, daily tailgate forms, relevant personnel certifications, and other health & safety related information.

Assumptions

The following assumptions were made for the preparation of this Scope of Services. If these assumptions do not prove correct, a modification to the scope and budget resulting in negotiation of a supplemental agreement could be required. For the basis of this scope and fee, SAM assumes the following:

- SAM will not begin work until written Notice-To-Proceed is received.
- Client/Owner will provide right-of-entry, for any areas requiring access, prior to deployment of SAM field crew(s). Access to the site will allow for the use of Trucks or ATVs in performing the survey services.
- SAM is not required to provide any permitting, negotiations, or any other service other than those listed in this proposal.
- All applicable Local, County, State and Federal taxes are not included in the fee below.
- All submittals, meetings, and fees other than those stated herein are the responsibility of the Client.
- There is no anticipated project specific special training required to perform this work.
- SAM field crews will not move any stockpiled material or debris to accomplish the survey.
- All applicable Local, County, State and Federal taxes are not included in the fee below.
- SAM shall not be restricted in its use of subcontractors and suppliers (including, but not limited to any of SAM's qualified acquisition partners or subcontractors).
- SAM in its sole discretion will determine subcontractors as necessary to meet its obligations under this agreement or any purchase order issued hereunder.
- Client/Owner will facilitate coordination with the site owners to the extent required.
- Client/Owner will facilitate work and entry forms to the extent required by the project.
- SAM is prepared to mobilize additional resources should the project schedule or unanticipated impacts



dictate that it is necessary. These additional resources would be handled as an additional service and will be billed based on the attached rate schedule.

- Client/Owner will provide complete access for SAM staff, equipment, and company vehicles, to the project site between the hours of 7:00 a.m. and 5:30 p.m. This does not state SAM staff will be on site during this time. This is inclusive of sidewalks in front of businesses and private residences and curbside parking on either side of the road.
- Client/Owner will facilitate coordination with the site owners to the extent required.
- To the extent available, client will provide files of existing survey control prior to the commencement of work.
- Client/Owner will facilitate work, excavation permits, and entry forms to the extent required by the project.
- Confined space entry is not required.
- Client/Owner will facilitate safe access for vehicles, equipment, and personnel.

Ground Control Survey

SAM will utilize GNSS and conventional survey techniques to establish up to twenty (20) Primary Survey Control Points using a combination of Static, RTK and/or VRS observations, and conventional survey techniques.

- Survey Control will be based on the Tennessee State Plane Coordinate System, NAD83 (2011), US Survey Feet, and Vertical Datum will be based on NAVD88 derived using Geoid 18 or newer.

High-Definition Terrestrial Scanning

- Utilizing a Trimble SX10, SAM field personnel will scan the bridge spans, with sufficient detail to accurately represent the structural elements. Scan data and digital imagery will be directly collected.
- SAM will perform approximately five (5) scans per overpass and bridge span.
- A LiDAR coordinator will register the point clouds together to ensure proper coverage of the bridge spans to ensure the accuracy of the data.
- SAM will then georeference the data set to the appropriate state plane coordinate system.

Terrestrial Scan to Building Information Modeling (BIM)

- **Point Cloud Data (RCS File)**
 - In discussions with the Project Team, it is understood that the Point Cloud Data is required to be a deliverable (in RCS format).
- **3D Model (Revit File)**
 - A 3D Model in Revit (architect's choice of version) format will be prepared from the acquired point cloud data. This Revit model will also be delivered in IFC format to facilitate importing into ArchiCAD. The modeled objects will be developed to a LOD 200 as defined by BIMForum's 2019 LOD guide. The purpose of the existing conditions survey of the Gay Street Bridge spans (2 and 4) is for coordination and planning purposes.



Project Deliverables

SAM will provide the following project deliverables:

- Georeferenced LAS file
- 3D Model in Revit

Project Schedule

SAM will make every effort to meet the clients schedule for these projects. The project schedules do not reflect inclement weather or work stoppage beyond the control of SAM. SAM will begin field work within ten (10) business days or less of receiving notice to proceed (NTP). SAM’s Project Manager will keep the client apprised of the progress and any delays that occur. SAM anticipates the survey field work will take approximately one (1) week and can be delivered within ten (10) days after completion of the field work.

Project Fees

SAM will provide the following services on a **Time and Material** basis. Anything outside this scope of work will be billed on a time and materials basis according to the Standard Rate Schedule attached as **Exhibit B**.

Gay Street Bridge (Spans 2 and 4) **\$ 25,500.00**
Ground Control Survey, High-Definition Scanning, and Terrestrial Scan to BIM

Invoices for fees and all charges will be submitted monthly according to work completed. The net amount shall be due and payable as of the date of the invoice. Additional Services beyond the scope of this proposal, if requested, will be quoted, and billed on a time and material basis.

This cost estimate is based on our current understanding described in the project description, the scope of services, and the assumptions listed below. In the event these items change during this project, the SAM project manager will be in touch concerning changes to the project cost and schedule.

Additional Services

In addition to the services outlined above, SAM will provide additional services as requested by the client on a time and materials basis, based upon our Contract Rate Schedule. If requested, a scope of work and estimated fee will be provided in writing prior to SAM proceeding with any additional service. These additional services include, but are not limited to, the following:

- Ongoing survey support that exceeds the estimated working days or months as specified above.
- Survey and SUE services outside of the scope defined herein.

Scanning Limits

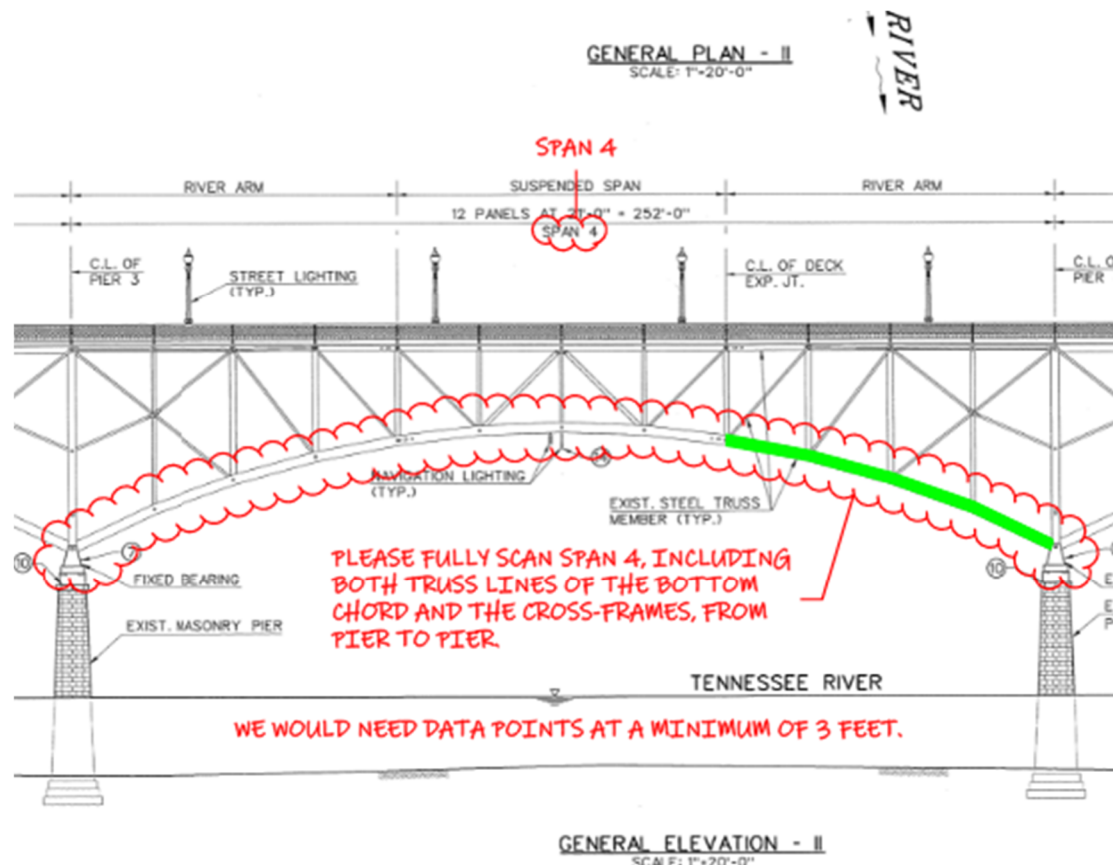
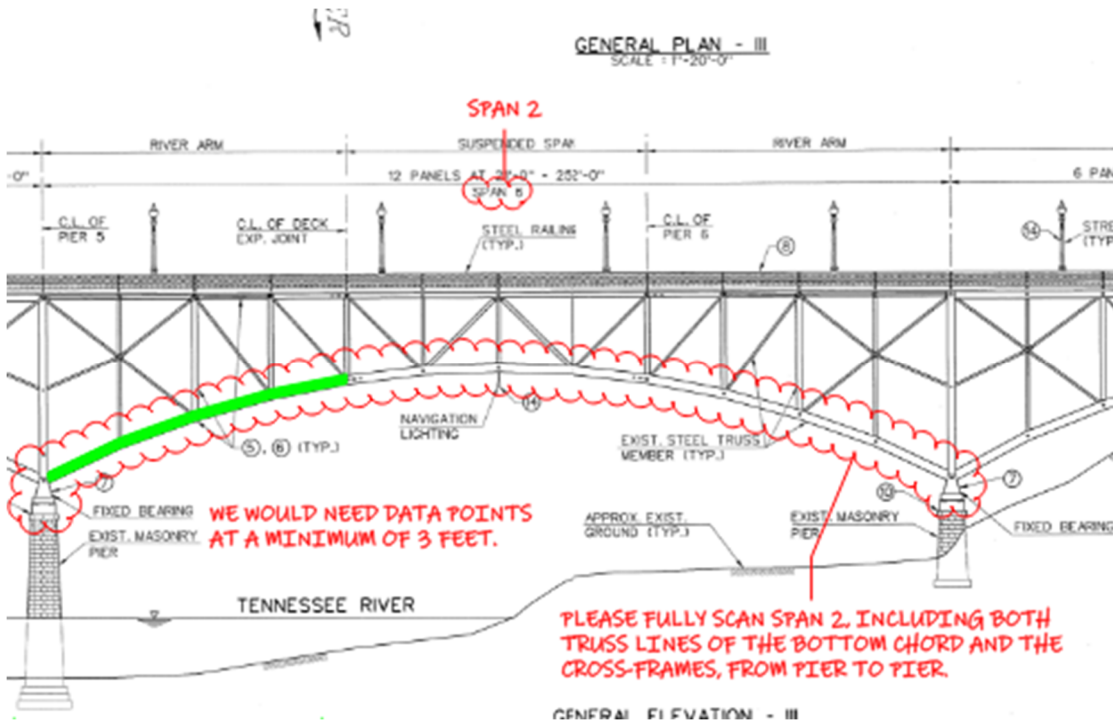




EXHIBIT B

Standard Rate Schedule

Effective January 2024

Survey Office Personnel Rates

Office / Department Manager	\$275.00	per hour
Senior Project Manager	\$250.00	per hour
Project Manager	\$205.00	per hour
Staff Surveyor	\$170.00	per hour
Phase Manager	\$170.00	per hour
Project Coordinator	\$140.00	per hour
Senior Office Technician	\$130.00	per hour
Office Technician III	\$110.00	per hour
Office Technician II	\$105.00	per hour
Office Technician I	\$100.00	per hour
Project Specialist	\$125.00	per hour
Administration / Clerical Support	\$95.00	per hour

Survey Field Crew Rates

Field Ops Manager	\$175.00	per hour
Field Coordinator/Supervisor	\$135.00	per hour
One (1) Person Survey Field Crew	\$140.00	per hour
Two (2) Person Survey Field Crew	\$200.00	per hour
Three (3) Person Survey Field Crew	\$280.00	per hour
Additional Rodperson or Flagperson	\$80.00	per hour

Utility Engineering Office Personnel Rates

Office / Department Manager	\$275.00	per hour
Senior Project Manager	\$250.00	per hour
Project Manager / Senior Engineer	\$205.00	per hour
Staff Engineer	\$170.00	per hour
Phase Manager	\$170.00	per hour
Senior Office Technician	\$130.00	per hour
Office Technician III	\$110.00	per hour
Office Technician II	\$105.00	per hour
Office Technician I	\$100.00	per hour
Project Specialist	\$125.00	per hour
Administration / Clerical Support	\$95.00	per hour



Utility Engineering Field Crew Rates

Field Ops Manager	\$175.00	per hour
Field Coordinator / Supervisor	\$130.00	per hour
Field Technician III	\$110.00	per hour
Field Technician II	\$95.00	per hour
Field Technician I	\$90.00	per hour

Utility Coordination Office Personnel Rates

Office / Department Manager	\$275.00	per hour
Project Manager / UC Manager	\$245.00	per hour
Senior Utility Coordinator	\$195.00	per hour
Utility Coordinator III	\$160.00	per hour
Utility Coordinator II	\$140.00	per hour
Utility Coordinator I	\$115.00	per hour
Project Specialist	\$125.00	per hour
Administration / Clerical Support	\$95.00	per hour

Utility Coordination Field Crew Rates

Senior Utility Construction Engineering Inspector	\$170.00	per hour
Utility Construction Engineering Inspector III	\$155.00	per hour
Utility Construction Engineering Inspector II	\$130.00	per hour
Utility Construction Engineering Inspector I	\$120.00	per hour

Fiber Engineering Personnel Rates

Office / Department Manager	\$275.00	per hour
Senior Project Manager	\$220.00	per hour
Project Manager	\$180.00	per hour
Phase Manager	\$170.00	per hour
OSP Engineer III	\$150.00	per hour
OSP Engineer II	\$120.00	per hour
OSP Engineer I	\$95.00	per hour
Drafter	\$105.00	per hour
Project Specialist	\$125.00	per hour
Administrative/Clerical Support	\$95.00	per hour

Fiber Engineering Field Crew Rates

Fielder	\$105.00	per hour
OSP Inspector	\$110.00	per hour
Senior OSP Inspector	\$120.00	per hour

Geospatial Office Personnel Rates

Director / Operations Manager	\$360.00	per hour
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Senior Project Manager	\$275.00	per hour
Acquisition Manager	\$240.00	per hour
Project Manager	\$210.00	per hour
Aircraft Pilot	\$205.00	per hour
UAS Pilot	\$130.00	per hour
Project Lead/ Sr. Office Technician/ Sensor Op Lead (SR. Tech 3)	\$140.00	per hour
Two (2) Person UAS Geo Crew- Unmanned Pilot & Observer	\$235.00	per hour
Two (2) person UAS Survey Crew- Unmanned Pilot & 2 Observers	\$200.00	per hour
Three (3) person UAS Crew- Unmanned Pilot & 2 Observers	\$365.00	per hour
Photogrammetrist/ Project Lead/ Sensor Operator (Tech 3)	\$135.00	per hour
Acquisition/ Calibration/ Aerial Triangulation Technician (Tech2)	\$120.00	per hour
LiDAR Geospatial Jr. / Photogrammetrist (Tech 1)	\$105.00	per hour

GIS Office Personnel Rates

GIS Office Manager	\$225.00	per hour
Director / Operations Manager	\$215.00	per hour
Senior Project Manager	\$185.00	per hour
Project Manager	\$142.00	per hour
Phase Manager	\$110.00	per hour
GIS Office Technician I	\$90.00	per hour
GIS Office Technician II	\$105.00	per hour
GIS Office Technician III	\$115.00	per hour
Field Coordinator	\$105.00	per hour
GIS Field Technician	\$90.00	per hour
IT / Web Administrator	\$175.00	per hour
Programmer/ Solutions Architect	\$130.00	per hour
Administration / Clerical Support	\$120.00	per hour

Survey Equipment Rates

GPS Receiver	\$10.00	per hour
Robotic Total Station S-7	\$20.00	per hour
Robotic Total Station S-9	\$20.00	per hour
SX-10	\$35.00	per hour
Tier 1 HDS Scanner BLK360 & Faro	\$33.00	per hour
Tier 2 HDS Scanner RTC 360	\$60.00	per hour
Tier 3 HDS Scanner Leica P20, P40, P50	\$312.00	per hour
Digital Level	\$5.00	per hour
UTV	\$25.00	per hour
Aluminum Boat	\$15.00	per hour
Echo Sounder- Remote Controlled Boat	\$25.00	per hour
Echo Sounder- Sonarmite	\$9.25	per hour
VM810 Survey	\$5.75	per hour



RD8000 Survey	\$11.50	per hour
IKE-IKE4	\$30.00	per hour
Tool Tracking Equipment (Hans Box & Traxall)	\$5.00	per hour
SPAR 300 Kit	\$5.00	per hour
Weather Station	\$6.00	per hour

Utility Engineering Equipment Rates

GPS Receiver	\$10.00	per hour
Robotic Total Station S-7	\$20.00	per hour
Robotic Total Station S-9	\$20.00	per hour
SX-10	\$35.00	per hour
Digital Level	\$5.00	per hour
UTV	\$25.00	per hour
SPAR 300 Kit	\$5.00	per hour
Vacuum Excavator Truck (Standard)	\$100.00	per hour
Vacuum Excavator Truck (Hybrid)	\$150.00	per hour
Vacuum Excavator Towed Trailer	\$60.00	per hour
Vacuum Excavator (Canister)	\$5.00	per hour
Single Axle Trailer (Compressor/Generator-Towed) IR185	\$17.00	per hour
Magnetometer (EM-61)	\$90.00	per hour
SUE Equipment Package	\$8.00	per hour
Ground Penetrating Radar (GPR Push Cart)	\$12.50	per hour
GPR Towed (Raptor Towed Array)	\$350.00	per hour
Confined Space Entry Package (CSE)	\$13.00	per hour
All Material Locator (AML PRO)	\$20.00	per hour

Fiber Engineering Equipment Rates

Fiber Engineering Equipment Package	\$13.50	per hour
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Geospatial Equipment Rates

Riegl VQ 1560II	\$1,300.00	per hour
Riegl 480II or 7801	\$1,000.00	per hour
Mobile Mapping System, includes 360° Camera System (Equipment Only)	\$1,000.00	per hour
Mobile Mapping Equipment Stand-by Fee (Equipment Only)	\$200.00	per hour
HDS Laser Scanner	\$100.00	per hour
High Rail Equipped Vehicle	\$10.00	per hour
Weather Station	\$10.00	per hour
FLIR Corona 350 with Quad Camera Gimbal System	\$300.00	per hour
Oblique HD Camera System- Manned Aircraft	\$30.00	per hour
Video Camera System- Manned Aircraft	\$5.00	per hour
360° Camera System-Terrestrial or Marine Stand Alone	\$100.00	per hour



Helicopter (Turbine Engine Powered)	\$1,450.00	per hour
Helicopter (Reciprocal Engine Powered)	\$850.00	per hour
Fixed Wing Twin Engine (Piston)	\$1,300.00	per hour
Fixed Wing Single Engine (Piston)	\$750.00	per hour
Fixed Wing Single Engine (Turbine)	\$1,400.00	per hour
UAS Autel Devon2/ Mavic / Phantom /Small Lift TIER 1	\$50.00	per hour
UAS Alta-X / Galaxy / SkyFront Heavy Lift w/LiDAR TIER 3	\$300.00	per hour
UAS M600 type Inspection Platform TIER 2	\$75.00	per hour
Handheld DSLR Camera	\$50.00	per hour
GPS Receiver (Unmanned)	\$10.00 per hour / \$100.00 per day	
Geospatial Work Station	\$15.00	per hour
VRS Network	\$4.20	per hour
UTV	\$10.00	per hour
Additional Vehicle	\$10.00	per hour
Total Station	\$2.85	per hour
SL RAT	\$20.00	per hour
IKE	\$28.00	per hour

Geospatial Equipment Fees

Manned Aircraft fees are incurred at the per hour rate for mobilization and acquisition with point of origin from one of our Airport Bases: Austin, TX; Atlanta, GA; Moore Co., NC and Easton, MD.

Other Direct Rates

Lodging/ Per Diem*	GSA
Mileage	\$0.93 per mile
Additional Vehicle (plus mileage)	\$20.00 per hour
Environmental Supplies	\$25.00 per day
Recording Fees	At Cost plus 10%
Permitting Fees	At Cost plus 10%
Third-Party Traffic Control	At Cost plus 10%
Metered Water	At Cost plus 10%
Backfill Material	At Cost plus 10%
Spoils Disposal	At Cost plus 10%
Coring	At Cost plus 10%
Document Reproduction	At Cost plus 10%
Records Collection Fees	At Cost plus 10%
All other services not described	At Cost plus 10%



Notes

*Per Diem based on GSA rates and may change depending on location and availability of accommodations. This is a general practice and used for estimating purposes.

All holiday, travel, per diem, etc., and all additional items not listed herein shall only be permitted where approved by Company in writing and in advance for any project.

Overtime Rates

The Overtime Rate for Field Survey Personnel shall be computed at 1.5 times the hourly rate more than 8 hours per day. The Overtime Rate for Office Survey Personnel shall be computed at 1.5 times the hourly rate more than 8 hours per day.

Travel & Subsistence

All travel and subsistence expenses for personnel are invoiced at GSA Rates or as allowed by the Client contract. Cost of mileage on company-owned vehicles is computed at \$0.93 cents per mile.

Purchased Services

All purchase services are invoiced at actual cost-plus ten percent (10%) administrative fee. These include but are not limited to reproduction, computer time, long distance telephone, consultants, subcontract services, rented or leased equipment, expendable supplies, and project required special supplies.

Taxes


Any state/local sales tax or gross receipts tax, if applicable to the services provided, are in addition to the hourly rates and will be applied on the invoice for services.

Labor Rate Adjustment

The Schedule of Rates will remain in force for a six (6) month period from the effective date of utilization and subject to an escalation on each “six (6) month anniversary date” unless otherwise agreed to by Client contract. The escalation rate shall be the most recent 6-month Employment Cost Index (ECI) as published by the United States Department of Labor (DOL), Bureau of Labor Statistics. In no event shall the next six (6) month Schedule of Rates be less than the prior period.

Surveying And Mapping, LLC

Gresham Smith

Signature: 

Signature: _____

Date: January 31, 2025

Date: _____

Printed Name: Keith Van Campen

Printed Name: _____

Title: Senior Project Manager

Title: _____