Analytical Laboratory

The regulatory structure related to the nation’s water and environmental resources is both demanding and dynamic. For this reason, ES&S has maintained a state-of-the-art analytical laboratory in Columbia since 1973 to serve our clients’ regulatory compliance needs.

ES&S’s test methods are documented and comply with requirements of a number of relevant regulatory and accrediting agencies, including EPA, APHA, AWWA, WEF, USBM, ASTM, and AASHTO. Laboratory personnel undergo internal certification to perform tests and analyses on a yearly basis, and equipment is checked and calibrated annually by outside agencies. ES&S maintains an extensive Quality Assurance Program in accordance with the EPA Handbook for Analytical Quality Control in Water and Wastewater Laboratories, as well as our own Laboratory Operations Manual, which covers every test and analysis performed in our facility. This program contributes to precise and accurate data generation by the various methods used. Standards, blanks, duplicate samples and spike samples are utilized during specified analytical runs to ensure no interference and good repeatability. Also, samples are periodically sent to other laboratories for confirmation of reproducibility. ES&S voluntarily participates in the Environmental Resource Associates (ERA; formerly Analytical Products Group) Water Pollution Proficiency Testing Program, regularly achieving a weighted ranking in the top 2% to 5% of participating labs for acceptable data reporting.

ES&S Partnering

The firm often works as a subconsultant for A/E firms that need design support services for their projects in mid-Missouri. ES&S also partners with firms that provide various design discipline services, including: environmental consulting, traffic operations analysis, structural design, mechanical & electrical engineering, etc. This allows ES&S’ local, “hands-on” project managers to deliver more complex assignments for our clients.

ES&S actively seeks to build relationships with disadvantaged business enterprise (DBE) firms to help our clients meet their internal utilization goals and to strategically structure teams for efficient, successful project delivery. To discuss strategic partnering with ES&S, contact: John Frerking (573-449-2646 / jfrerking@ess-inc.com).

ES&S Key Stats:

- **FOUNDED - 1954 - COLUMBIA, MO**
- **APPROX. 50 FULL-TIME EMPLOYEES**
- **THREE MID-MISSOURI LOCATIONS, EACH WITH FULL PRODUCTION CAPABILITIES**
- **LICENSED PROFESSIONALS IN MULTIPLE DISCIPLINES (PE, PLS, RG, PTOE)**
- **USACE-VALIDATED MATERIALS TESTING LAB**
- **STATE-OF-THE-ART ANALYTICAL LAB**

Locations

ES&S has three locations in central Missouri, each capable of efficient and effective response to your needs for design and construction support services. Each office offers production capacity for engineering design, surveying, geotechnical investigations, and onsite construction materials testing.

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Phone</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia</td>
<td>1113 Fay Street</td>
<td>573-449-2646</td>
<td><a href="mailto:dbennett@ess-inc.com">dbennett@ess-inc.com</a></td>
</tr>
<tr>
<td></td>
<td>Columbia, MO 65201</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jefferson</td>
<td>802 El Dorado Drive</td>
<td>573-636-3303</td>
<td><a href="mailto:rkasmann@ess-inc.com">rkasmann@ess-inc.com</a></td>
</tr>
<tr>
<td>City</td>
<td>Jefferson City, MO 65101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sedalia</td>
<td>1775 West Main Street</td>
<td>660-826-8618</td>
<td><a href="mailto:amcmullin@ess-inc.com">amcmullin@ess-inc.com</a></td>
</tr>
<tr>
<td></td>
<td>Sedalia, MO 65301</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ES&S Partnering

The firm often works as a subconsultant for A/E firms that need design support services for their projects in mid-Missouri. ES&S also partners with firms that provide various design discipline services, including: environmental consulting, traffic operations analysis, structural design, mechanical & electrical engineering, etc. This allows ES&S’ local, “hands-on” project managers to deliver more complex assignments for our clients.

ES&S actively seeks to build relationships with disadvantaged business enterprise (DBE) firms to help our clients meet their internal utilization goals and to strategically structure teams for efficient, successful project delivery. To discuss strategic partnering with ES&S, contact: John Frerking (573-449-2646 / jfrerking@ess-inc.com).

ES&S Key Stats:

- **FOUNDED - 1954 - COLUMBIA, MO**
- **APPROX. 50 FULL-TIME EMPLOYEES**
- **THREE MID-MISSOURI LOCATIONS, EACH WITH FULL PRODUCTION CAPABILITIES**
- **LICENSED PROFESSIONALS IN MULTIPLE DISCIPLINES (PE, PLS, RG, PTOE)**
- **USACE-VALIDATED MATERIALS TESTING LAB**
- **STATE-OF-THE-ART ANALYTICAL LAB**

Locations

ES&S has three locations in central Missouri, each capable of efficient and effective response to your needs for design and construction support services. Each office offers production capacity for engineering design, surveying, geotechnical investigations, and onsite construction materials testing.

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Phone</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia</td>
<td>1113 Fay Street</td>
<td>573-449-2646</td>
<td><a href="mailto:dbennett@ess-inc.com">dbennett@ess-inc.com</a></td>
</tr>
<tr>
<td></td>
<td>Columbia, MO 65201</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jefferson</td>
<td>802 El Dorado Drive</td>
<td>573-636-3303</td>
<td><a href="mailto:rkasmann@ess-inc.com">rkasmann@ess-inc.com</a></td>
</tr>
<tr>
<td>City</td>
<td>Jefferson City, MO 65101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sedalia</td>
<td>1775 West Main Street</td>
<td>660-826-8618</td>
<td><a href="mailto:amcmullin@ess-inc.com">amcmullin@ess-inc.com</a></td>
</tr>
<tr>
<td></td>
<td>Sedalia, MO 65301</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ES&S Partnering

The firm often works as a subconsultant for A/E firms that need design support services for their projects in mid-Missouri. ES&S also partners with firms that provide various design discipline services, including: environmental consulting, traffic operations analysis, structural design, mechanical & electrical engineering, etc. This allows ES&S’ local, “hands-on” project managers to deliver more complex assignments for our clients.

ES&S actively seeks to build relationships with disadvantaged business enterprise (DBE) firms to help our clients meet their internal utilization goals and to strategically structure teams for efficient, successful project delivery. To discuss strategic partnering with ES&S, contact: John Frerking (573-449-2646 / jfrerking@ess-inc.com).

ES&S Key Stats:

- **FOUNDED - 1954 - COLUMBIA, MO**
- **APPROX. 50 FULL-TIME EMPLOYEES**
- **THREE MID-MISSOURI LOCATIONS, EACH WITH FULL PRODUCTION CAPABILITIES**
- **LICENSED PROFESSIONALS IN MULTIPLE DISCIPLINES (PE, PLS, RG, PTOE)**
- **USACE-VALIDATED MATERIALS TESTING LAB**
- **STATE-OF-THE-ART ANALYTICAL LAB**

Locations

ES&S has three locations in central Missouri, each capable of efficient and effective response to your needs for design and construction support services. Each office offers production capacity for engineering design, surveying, geotechnical investigations, and onsite construction materials testing.

<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Phone</th>
<th>Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columbia</td>
<td>1113 Fay Street</td>
<td>573-449-2646</td>
<td><a href="mailto:dbennett@ess-inc.com">dbennett@ess-inc.com</a></td>
</tr>
<tr>
<td></td>
<td>Columbia, MO 65201</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jefferson</td>
<td>802 El Dorado Drive</td>
<td>573-636-3303</td>
<td><a href="mailto:rkasmann@ess-inc.com">rkasmann@ess-inc.com</a></td>
</tr>
<tr>
<td>City</td>
<td>Jefferson City, MO 65101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sedalia</td>
<td>1775 West Main Street</td>
<td>660-826-8618</td>
<td><a href="mailto:amcmullin@ess-inc.com">amcmullin@ess-inc.com</a></td>
</tr>
<tr>
<td></td>
<td>Sedalia, MO 65301</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ES&S Partnering

The firm often works as a subconsultant for A/E firms that need design support services for their projects in mid-Missouri. ES&S also partners with firms that provide various design discipline services, including: environmental consulting, traffic operations analysis, structural design, mechanical & electrical engineering, etc. This allows ES&S’ local, “hands-on” project managers to deliver more complex assignments for our clients.

ES&S actively seeks to build relationships with disadvantaged business enterprise (DBE) firms to help our clients meet their internal utilization goals and to strategically structure teams for efficient, successful project delivery. To discuss strategic partnering with ES&S, contact: John Frerking (573-449-2646 / jfrerking@ess-inc.com).
Built Environment: "...the human-made space in which people live, work, and recreate on a day-to-day basis."

History
Since its founding in 1954, Engineering Surveys & Services (ES&S) has been delivering solutions to support the built environment of mid-Missouri for clients in the public sector and private industry. Today, ES&S offers consulting services for the planning and design of civil infrastructure in the transportation and water industries; site preparation for vertical construction; full-service land surveying; construction observation; and laboratory facilities to perform a comprehensive list of analytical and materials testing required for regulatory compliance and quality assurance of public infrastructure and building construction.

Registration & Licensing
Engineering Surveys and Services, LLC is licensed to provide professional services in the State of Missouri as provided below:
- Registration as Professional Engineering Corporation (Certificate/License No. 2004005018)
- Registration as Professional Land Surveying Corporation (Certificate/License No. 2004004672)
- Certificate of Good Standing (LC0076100)

The Certificate of Good Standing certifies that ES&S has filed all required annual reports, met all franchise tax requirements and currently maintains a proper registered agent and/or office as required by the Office of the Missouri Secretary of State. ES&S will provide copies of these documents upon request. ES&S also maintains financial pre-qualification with the Missouri Department of Transportation (MoDOT) to provide professional services for MoDOT and/or Local Public Agencies (LPA).

Engineering Consulting & Design
The firm’s design services are focused on the practice of civil engineering, both as a prime consultant and a design partner for A/E firms on a variety of private and public sector projects. Our engineers gain extensive experience observing the construction of projects they design, and have a thorough knowledge of local/regional, state, and federal regulations pertaining to civil infrastructure and site development. This background helps ES&S to offer efficient and detail-oriented planning and design services for the engineering assignments we undertake.

Civil Engineering
- Land-Use Planning
- Transportation & Infrastructure Design
- Storm Water Management / SWPPP
- Slope & Stream Bank Stabilization / E&SC
- Water Distribution / Waste Water Collection Systems
- Conceptual Site Layout & Property Evaluations
- Site Plans for Commercial, Residential, Institutional, Educational & Industrial Developments
- Permitting for Site Development
- Construction Cost Estimating

Geotechnical Engineering
- Subsurface Exploration
- Soil Analysis
- Hydrology & Hydrogeology
- Foundation Design / Pavement Design Recommendations
- Pavement Consulting

Environmental Engineering
- Water / Waste Water Analysis
- Facility Planning/Engineering Reports
- Waste Water Treatment—Small Systems
- Surface/Ground Water Monitoring & Evaluation
- Permit Applications

Surveying
- ALTA/NSPS land title surveys
- Cadastral surveys
- Boundary surveys
- Topographic surveys
- Construction surveys & layout
- Geodetic surveys
- Hydrographic surveys

Materials Testing
- Earthwork observation & testing
- Concrete, grout & mortar testing
- Pavement & subgrade condition assessment
- Reinforcing steel placement / post-tensioned concrete tendon placement & loading documentation
- Foundation construction observation & documentation (shallow foundation, drilled shafts, driven piles, rammed aggregate piers, micropiles, auger cast piles)
- Certified welding inspector for structural steel connections
- Floor flatness / levelness observation
- Fireproofing adhesion, cohesion, applied density & intumescent paint

Construction Observation
ES&S maintains MoDOT-certified technicians for construction observation and materials testing services on state and local transportation projects. Our support staff is familiar with MoDOT’s Local Public Agency (LPA) guidelines and offer construction observation administration and oversight to meet FHWA and MoDOT requirements. These same services are applicable for a wide variety of public-sector infrastructure and vertical construction projects.

Construction Observation
- Maintenance of the construction diary
- Quality Management/Quality Assurance assistance
- Preparation of progress reports
- Wage rate interviews / Assist with EEO compliance
- Document quantities of work in place for pay estimates
- Change order documentation
- Perform semi-final observation with contractor
- Coordinate final observation with MoDOT
- Submit final observation report & applicable final documentation as required

Design & Construction Support
The firm’s history of providing design support services in central Missouri has allowed ES&S to become a preferred partner helping design architects and multi-discipline engineering firms deliver significant projects in the region. ES&S’ surveyors maintain an extensive inventory of records and project files for land corner monumentation on all types of tracts and parcels throughout the state. Our engineering technicians are full-time employees, allowing ES&S to maintain consistently-trained, high-quality personnel that respond efficiently to our clients’ QA/QC testing needs. We cross-train technicians to provide production capacity and flexibility. Critical construction activities and field observations requiring added engineering judgment are overseen by licensed professionals. For projects requiring certified materials testing, ES&S’ Columbia materials laboratory is validated by the U.S. Army Corps of Engineers for numerous soils, concrete, mortar and aggregate test procedures. Services provided routinely by ES&S are listed below:

ES&S maintains MoDOT-certified technicians for construction observation and materials testing services on state and local transportation projects. Our support staff is familiar with MoDOT’s Local Public Agency (LPA) guidelines and offer construction observation administration and oversight to meet FHWA and MoDOT requirements. These same services are applicable for a wide variety of public-sector infrastructure and vertical construction projects.

1 Roof, K; Oleru N. — Public Health: Seattle and King County’s Push for the Built Environment, 2008
Since its founding in 1954, Engineering Surveys & Services (ES&S) has been delivering solutions to support the built environment of mid-Missouri for clients in the public sector and private industry. Today, ES&S offers consulting services for the planning and design of civil infrastructure in the transportation and water industries; site preparation for vertical construction; full-service land surveying; construction observation; and laboratory facilities to perform a comprehensive list of analytical and materials testing required for regulatory compliance and quality assurance of public infrastructure and building construction.

Registration & Licensing

Engineering Surveys and Services, LLC is licensed to provide professional services in the State of Missouri as provided below:
- Registration as Professional Engineering Corporation (Certificate/License No. 2004005018)
- Registration as Professional Land Surveying Corporation (Certificate/License No. 2004004672)
- Certificate of Good Standing (LC0076100)
- Certificate of Good Standing (Certificate/License No. 2004005018)
- Registration as Professional Land Surveying Corporation (Certificate/License No. 2004004672)
- Certificate of Good Standing (LC0076100)

The Certificate of Good Standing certifies that ES&S has filed all required annual reports, met all franchise tax requirements and currently maintains a proper registered agent and/or office as required by the Office of the Missouri Secretary of State. ES&S will provide copies of these documents upon request. ES&S also maintains financial pre-qualification with the Missouri Department of Transportation (MoDOT) to provide professional services for MoDOT and/or Local Public Agencies (LPA).

Engineering Consulting & Design

The firm’s design services are focused on the practice of civil engineering, both as a prime consultant and a design partner for A/E firms on a variety of private and public sector projects. Our engineers gain extensive experience observing the construction of projects they design, and have a thorough knowledge of local/regional, state, and federal regulations pertaining to civil infrastructure and site development. This background helps ES&S to offer efficient and detail-oriented planning and design services for the engineering assignments we undertake.

Civil Engineering
- Land-Use Planning
- Transportation & Infrastructure Design
- Storm Water Management / SWPPP
- Slope & Stream Bank Stabilization / E&SC
- Water Distribution / Waste Water Collection Systems
- Conceptual Site Layout & Property Evaluations
- Site Plans for Commercial, Residential, Institutional, Educational & Industrial Developments
- Permitting for Site Development
- Construction Cost Estimating

Geotechnical Engineering
- Subsurface Exploration
- Soil Analysis
- Hydrology & Hydrogeology
- Foundation Design / Pavement Design Recommendations
- Pavement Consulting

Environmental Engineering
- Water & Waste Water Analysis
- Facility Planning/Engineering Reports
- Waste Water Treatment—Small Systems
- Surface/Ground Water Monitoring & Evaluation
- Permit Applications

Built Environment: “…the human-made space in which people live, work, and recreate on a day-to-day basis.”

Construction Observation

ES&S maintains MoDOT-certified technicians for construction observation and materials testing services on state and local transportation projects. Our support staff is familiar with MoDOT’s Local Public Agency (LPA) guidelines and offer construction observation administration and oversight to meet FHWA and MoDOT requirements. These same services are applicable for a wide variety of public-sector infrastructure and vertical construction projects.

Surveying
- ALTA/NSPS land title surveys
- Cadastral surveys
- Boundary surveys
- Topographic surveys
- Construction surveys & layout
- Geodetic surveys
- Hydrographic surveys

Materials Testing
- Earthwork observation & testing
- Concrete, grout & mortar testing
- Pavement & subgrade condition assessment
- Reinforcing steel placement / post-tensioned concrete tendon placement & loading documentation
- Foundation construction observation & documentation (shallow foundation, drilled shafts, driven piles, rammed aggregate piers, micropiles, auger cast piles)
- Certified welding inspector for structural steel connections
- Floor flatness / levelness observation
- Fireproofing adhesion, cohesion, applied density & intumescent paint

Design & Construction Support

The firm’s history of providing design support services in central Missouri has allowed ES&S to become a preferred partner helping design architects and multi-discipline engineering firms deliver significant projects in the region. ES&S’ surveyors maintain an extensive inventory of records and project files for land corner monumentation on all types of tracts and parcels throughout the state. Our engineering technicians are full-time employees, allowing ES&S to maintain consistently-trained, high-quality personnel that respond efficiently to our clients’ QA/QC testing needs. We cross-train technicians to provide production capacity and flexibility. Critical construction activities and field observations requiring added engineering judgment are overseen by licensed professionals. For projects requiring certified materials testing, ES&S’ Columbia materials laboratory is validated by the U.S. Army Corps of Engineers for numerous soils, concrete, mortar and aggregate test procedures. Services provided routinely by ES&S are listed below:

Construction Observation
- Preliminary observation
- Change order documentation
- Submit final observation report & applicable final documentation as required

1 Roof, K; Oleru N. — Public Health: Seattle and King County’s Push for the Built Environment, 2008
Analytical Laboratory

The regulatory structure related to the nation’s water and environmental resources is both demanding and dynamic. For this reason, ES&S has maintained a state-of-the-art analytical laboratory in Columbia since 1973 to serve our clients’ regulatory compliance needs.

ES&S’s test methods are documented and comply with requirements of a number of relevant regulatory and accrediting agencies, including EPA, APHA, AWWA, WEF, USBM, ASTM, and AASHTO. Laboratory personnel undergo internal certification to perform tests and analyses on a yearly basis, and equipment is checked and calibrated annually by outside agencies. ES&S maintains an extensive Quality Assurance Program in accordance with the EPA Handbook for Analytical Quality Control in Water and Wastewater Laboratories, as well as our own Laboratory Operations Manual, which covers every test and analysis performed in our facility. This program contributes to precise and accurate data generation by the various methods used. Standards, blanks, duplicate samples and spike samples are utilized during specified analytical runs to ensure no interference and good repeatability. Also, samples are periodically sent to other laboratories for confirmation of reproducibility. ES&S voluntarily participates in the Environmental Resource Associates (ERA; formerly Analytical Products Group) Water Pollution Proficiency Testing Program, regularly achieving a weighted ranking in the top 2% to 5% of participating labs for acceptable data reporting.

ES&S Partnering

The firm often works as a subconsultant for A/E firms that need design support services for their projects in mid-Missouri. ES&S also partners with firms that provide various design discipline services, including: environmental consulting, traffic operations analysis, structural design, mechanical & electrical engineering, etc. This allows ES&S’ local, “hands-on” project managers to deliver more complex assignments for our clients.

ES&S actively seeks to build relationships with disadvantaged business enterprise (DBE) firms to help our clients meet their internal utilization goals and to strategically structure teams for efficient, successful project delivery. To discuss strategic partnering with ES&S, contact: John Frerking (573-449-2646 / jfrerking@ess-inc.com).

ES&S Key Stats:
- **FOUNDED - 1954 - COLUMBIA, MO**
- **APPROX. 50 FULL-TIME EMPLOYEES**
- **THREE MID-MISSOURI LOCATIONS, EACH WITH FULL PRODUCTION CAPABILITIES**
- **LICENSED PROFESSIONALS IN MULTIPLE DISCIPLINES (PE, PLS, RG, PTOE)**
- **USACE-VALIDATED MATERIALS TESTING LAB**
- **STATE-OF-THE-ART ANALYTICAL LAB**

Locations

ES&S has three locations in central Missouri, each capable of efficient and effective response to your needs for design and construction support services. Each office offers production capacity for engineering design, surveying, geotechnical investigations, and onsite construction materials testing.

<table>
<thead>
<tr>
<th>COLUMBIA</th>
<th>JEFFERSON CITY</th>
<th>SEDALIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1113 Fay Street</td>
<td>802 El Dorado Drive</td>
<td>1775 West Main Street</td>
</tr>
<tr>
<td>Columbia, MO 65201</td>
<td>Jefferson City, MO 65101</td>
<td>Sedalia, MO 65301</td>
</tr>
<tr>
<td>573-449-2646</td>
<td>573-636-3303</td>
<td>660-826-8618</td>
</tr>
<tr>
<td>POC: Dave Bennett, PE</td>
<td>POC: Ross Kasmann, PE, CFM</td>
<td>POC: Abby McMullin, PE</td>
</tr>
<tr>
<td><a href="mailto:dbennett@ess-inc.com">dbennett@ess-inc.com</a></td>
<td><a href="mailto:rikasmann@ess-inc.com">rikasmann@ess-inc.com</a></td>
<td><a href="mailto:amcnullin@ess-inc.com">amcnullin@ess-inc.com</a></td>
</tr>
</tbody>
</table>

**Company Profile**

**Responsive & Quality Services for the Design & Construction Community**

Engineering Surveys & Services
COLUMBIA • JEFFERSON CITY • SEDALIA

www.ess-inc.com