

VOLUME 2023 – NUMBER I

JANUARY 2023

THE FIELDBOOK



INSIGHTS INTO ONE OF THE SOUTH'S
LONGEST-STANDING PROFESSIONAL SERVICE FIRMS
PROVIDING EXCELLENCE IN:

- *LAND SURVEYING*
- *AERIAL MAPPING*
- *CIVIL ENGINEERING*
- *GEOTECHNICAL ENGINEERING*
- *CONSTRUCTION MATERIALS TESTING*
- *GEOSPATIAL ENGINEERING*
- *SPECIAL INSPECTIONS*





Photo by Jeremy Brown, PE

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EDITORIAL DIRECTOR

Dennis Smith, PE, PLS, F.ASCE, F.NSPS

OWNER AND PUBLISHER

DDS ENGINEERING, PLLC

EDITOR

Gretchen Manco, ME

CONTRIBUTORS

Jeremy Brown, PE, PMP | Daniel Douglas, CE, EIT | Gail Gregory
Selma Hasancevic, CE | Gretchen Manco, ME | Ashane Netthisinghe, CE
Matt Rogers, PE, SI | Dennis Smith, PE, PLS, F.ASCE, F.NSPS

COVER PHOTOS

Front Cover - Subterranean surveying inside Mammoth Cave National Park.
Mammoth Cave, Kentucky (Ashane Netthisinghe)

Back Cover - Cutting survey line through riverine thickets along East Stones River.
Central Valley Trailhead, Murfreesboro, Tennessee (Gretchen Manco)

TABLE OF CONTENTS

Conversations with Dennis	5
Overview of Services.....	6
A Monumental Task – Resetting a State Boundary Marker Replica.....	7
Expanding Walking and Equestrian Pathways in Central Tennessee.....	8
National Corvette Museum’s Motorsports Park.....	9
Professional Development.....	10
Announcements.....	11-13
Management Team.....	14
Engineering and Survey Team Members.....	15



CONVERSATIONS WITH DENNIS



As we greet the new year, we extend our hands to you in thanks for giving us the opportunity to assist you in advancing your goals.

2023 is our 50th year in operation, and we'll have a few celebrations to share

with you. We are in the process of compiling a retrospective of our projects, and we'd like to hear how you have built upon the work that we helped you accomplish and the goals we have helped you achieve. Hopefully, they are still meaningful to you.

We remain dedicated to our professional development and to our goal of providing excellence in our product: *Client Satisfaction*. Call on us to reminisce on prior projects, and if you have a project that's been hanging around too long, let us know and we'll help you get it moved from your "To Do" list to the "Done" list in 2023!

We thank you, and we look forward to many more years of continued service to our Clients.

Rochester Dam Project



Frozen Niagara Project



Fort Campbell Bridges Project



Mammoth Cave Project

OVERVIEW OF PROFESSIONAL SERVICES

DDS ENGINEERING, PLLC (DDS) has served Clients across the Southeastern United States and west of the Mississippi River throughout the past 50 years. In that time, **DDS** has recognized the need for experienced leadership in the Land Surveying and Engineering industries and has striven to provide that leadership to each and every Client. **DDS** has become the Site Design Professional of Choice for residential home-owners, utility companies, school systems, churches, retail facilities, banks, industrial organizations, and governmental agencies. Call on us and we will help you bring your vision to life.

LAND SURVEYING	3-D Scanning	CIVIL, GEOTECHNICAL, AND GEOSPATIAL ENGINEERING	Detailed Development Plans	CONSTRUCTION MATERIALS TESTING AND SPECIAL INSPECTIONS	Aggregate Testing
	As-Built Surveys		Erosion Prevention and Sediment Control (EPSC) Design & Inspections		Concrete Anchor Testing
	Boundary Surveys		Geospatial Data Site Guides & Concept Plans		Concrete Testing
	Construction Staking		Karst Analysis and Sinkhole Remediation		Earthwork Inspections
	LiDAR Surveying		Pavement & Roadway Design		Foundation Inspections
	GPS Surveying		Site Characterizations		Grout Testing
	GIS Data Collection		Site Design		Masonry Unit Testing
	Planimetric Surveys		Site Grading & Drainage		Mortar Testing
	Property Platting		Slope Stability Analysis & Design		Reinforced Concrete Inspections
	Topographic Surveys		Storm Water Management Analysis & Design		Soils Testing
	Volume Surveys		Storm Water Quality Analysis & Design		Structural Masonry Inspections
	Watershed Studies		Utility Design		

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A MONUMENTAL TASK



Concrete Anchor by Matt Rogers, PE

demarcation had been established during the 1780 survey by Thomas Walker and Daniel Smith. Today, the original #38 state line stone resides in the South-Central Kentucky Cultural Center in Glasgow, KY.

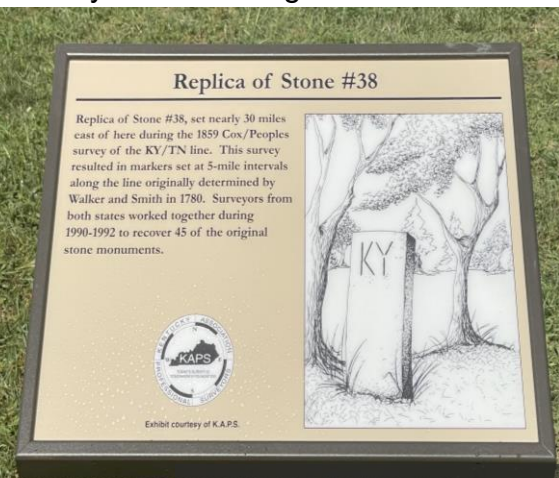
A replica of the #38 state line marker, and its associated reader board, were previously installed in 2005. In 2019, both were temporarily removed for demolition of the prior facility, which was originally built in 1974. With reconstruction of the new Welcome Center, located at Mile 1 on Interstate-65 North, the replica monument and reader board were reset on August 26th, 2022, by a crew from **DDS ENGINEERING**, Dennis Smith, PE, PLS, and Matt Rogers, PE, along with a crew from Scotty's Contracting and Stone.

Resetting Kentucky-Tennessee

Replica State Line Stone #38

DDS ENGINEERING, PLCC (DDS) was pleased to participate last August 26th in the resetting of a replica of historic state line stone #38, one of many stones that established the official line of sovereignty between the Commonwealth of Kentucky and the State of Tennessee. The stones demarcating the state line were set during the 1859 Cox/People's Kentucky-Tennessee survey. The original line of

Hydro-excavation Performed by Scotty's Contracting and Stone



View of Reader Board

Location Stakes Set by Dennis Smith, PE, PLS

EXPANDING WALKING PATHS AND EQUESTRIAN TRAILS IN MIDDLE TENNESSEE

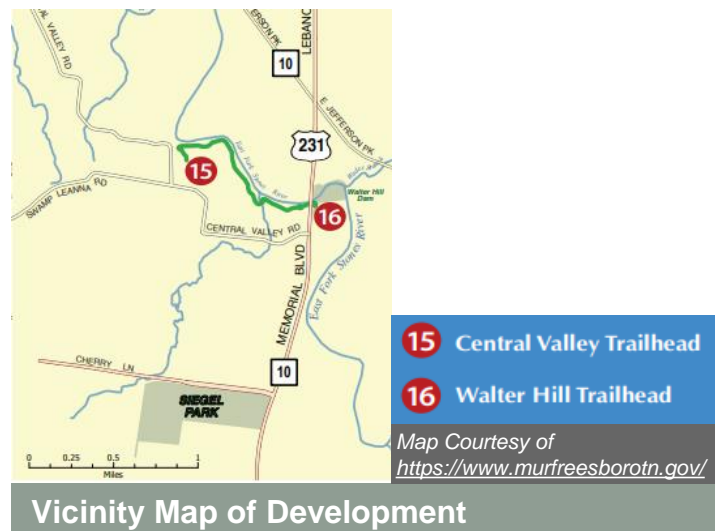
In the Spring of 2022, survey crews from **DDS ENGINEERING, PLLC (DDS)** began working with the U.S. Army Corps of Engineers (USACE) on their construction of new trails for the *North Murfreesboro Greenway Phase II Project*, located in Murfreesboro, Tennessee, at the Central Valley Trailhead.

DDS survey crews participated in field reconnaissance, locating existing survey control and benchmarks, establishing new site control as needed, and providing the construction staking necessary to develop the preliminary path through the heavily wooded area. Beginning at the Central Valley Trailhead, survey crews chopped more than one mile through the ever-greening thicket to set construction markers for the Corps of Engineers' land-clearing and construction teams.

The additional trails are being developed to expand recreational opportunities for pedestrians and equestrians. Both car and trailer parking is available at the Central Valley Trailhead parking lot. The planned waysides and overlooks will include picnic tables and benches.

DDS appreciated the opportunity to have assisted the Corps of Engineers and the City of Murfreesboro in further development of the extensive Murfreesboro Greenway System.

The new trails are scheduled to open in 2023.



NATIONAL CORVETTE MUSEUM MOTORSPORTS PARK



Aerial views, prior to receiving damage from the 2021 tornadoes, of the **National Corvette Museum's (NCM)** Motorsports Park in Bowling Green, KY. The **Kimberly A. Fast Pavilion** and the **Holley Tower** are seen in the upper photo, and the racetrack is seen from different perspectives in the lower photos. In 2022, **DDS** provided extensive historical property research, land surveying, and zoning map updating assistance for the **National Corvette Museum** in its ongoing maintenance of accurate records for all developments on its multiple Campuses.



PROFESSIONAL DEVELOPMENT

While technologies and equipment used by Engineers, Surveyors, and Technicians change, the standards for integrity, character, and knowledge remain constant. In striving for excellence, **DDS ENGINEERING, PLLC (DDS)** encourages its team members in their ongoing professional development.

Recently, two Construction Materials Testing Technicians received Grade 1 Certification as Concrete Field-Testing Technicians through the American Concrete Institute (ACI) for concrete field sampling testing.

Additionally, throughout the past year the **DDS** Engineering team expanded their professional education and field skills in the areas of Erosion Prevention/Sediment Control, Storm Water Management Design, and Site Inspections. Our Geospatial team has begun deployment of a LiDAR-capable UAV with all collected LiDAR data processed and analyzed internally. In the third quarter of 2022, the **DDS** Surveying team implemented the latest advancements in GPS survey equipment.

Surveyors and Engineers retained their professional licensures as well as memberships in their respective professional societies.



AASHTO Accreditation is granted by the AASHTO Accreditation Program (AAP) and is limited to the *DDS Engineering* Bowling Green, Kentucky laboratory and the standards outlined [here](#). United States Army Corps of Engineers Validation is based upon AASHTO Accreditation.



ANNOUNCEMENTS

DDS ENGINEERING, PLLC (DDS) is pleased to announce that we have again been selected to serve as the Surveyor and Civil Engineer of Record for the reconstruction and expansion of the Holley Control Tower and the Kimberly A. Fast Pavilion at National Corvette Museum's Motorsports Park in Bowling Green, Kentucky. We are working with Hafer Architects, who provided the concept drawing seen below.

Several years ago, **DDS** was selected as the original Surveyor and Civil and Geotechnical Engineer of Record for the entire civil design and site development for the original Motorsports Park and Track. Working with Steve Crawford, racetrack designer, we brought to life Steve's vision for the racetrack at the Motorsports Park.

On December 11, 2021, tornadoes all but totally

destroyed both the Holley Control Tower and the Kimberly A. Fast Pavilion and did destroy some of the long-term storage facilities.

For this new Project, the Survey Division at **DDS** has provided the updated ground and aerial topographic surveys. In addition, **DDS** provided the aerial photogrammetry in analyzing the extent of the damages to the Holley Control Tower and its surrounding structures. Further, **DDS** provided necessary information for the new plan submittal, and the Geotechnical and Civil Engineering Divisions have provided all site development services for reconstruction and expansion.

DDS is proud to be a part of the growing Bowling Green community and is excited to continue to assist the National Corvette Museum and the Motorsports Park in all their current and future endeavors.



Architectural Rendering by HAFER Architects

ANNOUNCEMENTS

DDS ENGINEERING, PLLC (DDS) has been selected to be the Surveyor and the Civil and Geotechnical Engineer for the reconstruction of another section of the visitor trails in Mammoth Cave's Frozen Niagara Cave Trail.

In addition to providing coordination and oversight of construction materials testing during the reconstruction, ***DDS*** will provide the full suite of professional land surveying services, 3-D scanning, field engineering layout, and the as-built land surveys.

Previous projects with Mammoth Cave National Park include multiple subterranean surveys of the cave trails, and comprehensive topographical surveys of the Wandering Woods Chapel and the Amphitheater near the Mammoth Cave National Park Visitor's Center.

We appreciate the opportunity to work again with Mammoth Cave scientists and administrators in their ongoing efforts to preserve one of the world's most fragile ecosystems.



ANNOUNCEMENTS

DDS ENGINEERING, PLLC (DDS) is very pleased to announce that in 2022 the Director of Civil Engineering, Mr. Jeremy Brown, PE, PMP, attained two additional Professional Engineering licenses in the states of **ARKANSAS** and **TEXAS**.

DDS ENGINEERING has acquired Agency licenses for practicing Engineering in **TEXAS** (Texas Firm #23819) and **ARKANSAS** (Arkansas COA #4080).

DDS utilizes the latest advancements in technology, equipment, and training to ensure that Clients are provided with the most economical and efficient solutions to their project goals or problems. Additionally, *DDS* is the only Engineering Firm in the Bowling Green, KY, area to have an in-house geotechnical and construction materials testing laboratory. Our laboratory allows *DDS* to provide standardized tests across a broad range of construction materials and it is accredited by the AASHTO Accreditation Program, the largest and most recognized accrediting body for construction materials testing laboratories. To view the full scope of our accreditations, please visit <http://www.ddsengineering.com/aashto>.



MANAGEMENT TEAM



**Dennis Smith, PE, PLS,
F.ASCE, F.NSPS**
Founder and President



Sharon Smith
CFO and Office Manager

Gail Gregory
Director of Accounting and H.R.



Josh Clemmons, CE
Division Manager of Land Surveying



Jeremy Brown, PE, PMP
Director of Civil Engineering



Matt Rogers, PE, SI
Division Manager of Geotechnical Engineering
and Construction Materials Testing



Alex Sutton, PE
Manager of Laboratory Services

CIVIL & GEOSPATIAL ENGINEERING, GEOTECHNICAL ENGINEERING & MATERIALS TESTING, AND LAND SURVEYING TEAMS

CIVIL AND GEOSPATIAL ENGINEERING

Daniel Douglas, CE, EIT Selma Hasancevic, CE Gretchen Manco, ME

GEOTECHNICAL ENGINEERING AND CONSTRUCTION MATERIALS TESTING

Chris Fort Nathan Hughes, CE Bradley Kerr
Ashane Netthisinghe, CE Cameron Sherry

LAND SURVEYING

Bernard Blakeman, PLS Gannon Minton Omar Pavon

Canoe/Kayak Launch

Pre-Construction Staking



During Construction Staking



Post-Construction Launch Viewed from Green River



Mammoth Cave Green River Canoe/Kayak Launch Project

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A person wearing a yellow safety vest and a hard hat is working in a wooded area. They are surrounded by dense brush and trees, and appear to be using a tool, possibly a chainsaw or brush cutter, to clear the area. The scene is outdoors with natural lighting.

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DDS ENGINEERING, PLLC

www.DDSENGINEERING.com

148 CHESTER COURT | BOWLING GREEN, KY 42103

TELEPHONE: 270-843-2247