Vita of
John Verlin Cabage, Jr.

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EDUCATION:

Doctor of Philosophy in Civil Engineering
University of Tennessee, August 2014
Dissertation: Behavior of Larger-Diameter Strands in the Disturbed Region of Prestressed Concrete Girders

Bachelor of Science in Civil Engineering
University of Tennessee, 1984

HONORS AND AWARDS:

Edwin G. Burdette Civil Engineering Award, 2013
Speaker at the Joint ASCE/TNSPE Joint Conference, Murfreesboro, TN, 2013
Chancellor's Honor Award – Graduate Teaching Assistant, University of Tennessee – 2012
Presenter at the Prestressed Concrete institute National Bridge Convention, "A Research Plan to Assess the Shear Behavior of Prestressed Concrete Beams with 0.7-inch Strand and Differing End Conditions" -- 2012
Bravo Zulu Award – Best Speaker – Federal Express Environmental Symposium, 1991
Perfect Attendance Awards – 6 Years with Exxon Company, USA

APPOINTMENTS:

Assistant Professor – Eastern Illinois University, 2014
Research Assistant – University of Tennessee, 2012
Graduate Teaching Assistant – University of Tennessee, 2010
President – The Home Manufacturing Plant, Inc., 1999
Vice President – Hess Environmental Services, Inc., 1995
Engineering Manager – Hess Environmental Services, Inc., 1993
Regional Safety Director – Exxon Corporation, USA, 1990
Senior Engineer – Exxon Corporation, USA, 1986

EXPERTISE AND SPECIFIC TRAINING:

Numerical Analysis with Engineering Physics Applications
Statical Concrete, Steel, and Wood Design
Computerized Engineering Application Programming using C++, MatLab®, ACAD, Revit and JAVA
Electronic Laboratory Measurements using Electronic Bridge Circuitry, LabView Control Systems Equipment and Programming, and MTS Procedural Programming
Nuclear Plant Modification Analysis and Design
NDE of Structural Components
Building Material Specification
AST/UST Design, Installation, Repair, Closure & Spill Remediation
Site Plan Development
Construction Planning, Management and Scheduling

TEACHING EXPERIENCE:

Assistant Professor – August 2014 to Present
Taught materials, architectural drafting and cost estimation courses. Additional courses to be taught in Construction Management field.

Graduate Teaching Assistant – January 2011 to May 2012
Taught introductory structural and geotechnical laboratory (CE310) classes for three semesters, fifteen undergraduates each
Taught structural laboratory testing class (CE463) for one semester

Regional Safety Manager -- Trained 1600 employees and clients of Exxon Company, USA on environmental and safety issues affecting the service station business over a 1 year time period.

RESEARCH EXPERIENCE:

Renewable and Sustainable Resource Utilization for Ash Disposal – Collaborative study through NSF and other grants at Eastern Illinois University.

Alkali-Silica Reactive Study Associating Temperature to ASR Concrete Growth – Undergraduate research study funded by the Electric Power Research Institute conducted with 5 undergraduate students.

Directional Alkali-Silica Growth and its Effect on Concrete Material Properties – Developed proposal and received funding from Oak Ridge National Laboratory to design the testing apparatus. This project is to be completed using master's-level graduate assistance where design options will be evaluated and tested. The funding was obtained through grants from the Department of Energy.

Isolation of Transfer Length Components for High-Capacity Reinforcement Strand – This testing was conducted with Xin Jiang for Z. John Ma through funding from the Tennessee Department of Transportation (TDOT). In this testing we conducted strand pull-out tests for high-capacity strand in both a pretensioned and detensioned states. Through this comparison and by changing embedment lengths components of strand transfer length were isolated and quantified.

Development Length Testing and Evaluation for High-Capacity Strand – This project is funded through TDOT in evaluating 0.62-inch, 330ksi and 0.7-inch, 270 ksi strand. A numerical model of strain distribution along the length of the strand was developed and compared with measured concrete surface strains. A model to predict the development length of this strand will be prepared upon completion of this testing.

Shear Behavior of Concrete Prestressed Girders with High Capacity Strand and Differing End Conditions – The work plan has been developed at this time and testing will begin in December of this year. This testing will involve the testing of two, 56-foot, prestressed concrete girders with high-capacity strand. A composite deck will be poured atop the girders and the girders will be tested by applying a load of approximately 350k at the end of the girder. It is anticipated that full moment capacity can be attained at the end of the beam with the appropriate strand anchorage.

RESEARCH INTEREST: Concrete and Bridge Material Studies
Engineering Student Enrichment Studies
Computerized Techniques to Undergraduate Education
Accelerated Construction Techniques

PROFESSIONAL EXPERIENCE:

THE HOME MANUFACTURING PLANT 1999 – 2010
President, 51% Owner
Business Development

- Started a new retail building materials company with over 4 million dollars in annual sales.
- Designed, manufactured and retailed over 1.2 million dollars a year in roof and floor engineered components.
- Prepared bids with material take-off for numerous construction projects.

Managerial Skills

- Recruited and trained numerous technical, sales, accounting, and production employees for the company.
- Set up office and accounting programs and computerized procedures for the company.
- Prepared financial reports for stockholders and government officials.
- Managed the activities of up to 35 company employees.

Technical Expertise

- Engineering components design and specifications
- Building materials estimation
- Construction practice expert witnessing

BLACKFOX CONSTRUCTION 1996 - 1999
100% Owner

Built and sold over 20 homes in a three-year period.

HESS ENVIRONMENTAL SERVICES, INC. (HES) 1994 – 1996
Vice President, 10% Owner
Business Development

- Solicited hundreds of companies and obtained work from dozens of new clients.
- Developed a telephone solicitation program for Clean Air Act permitting services which resulted in the development of several new clients.
- Prepared proposals, technical presentations, and mail-outs and worked trade show booths to regularly promote HES's business.
- Prepared and presented a proposal and technical presentation that resulted in HES obtaining the Environmental Services Contract for the Memphis-Shelby County Airport Authority. This contract resulted in HES receiving an additional $60,000 per month in revenue.

Managerial Skills

- Restructured and recruited technical staff. Worked with Human Resources to implement a unified hiring system which involves candidates taking prescreening tests and standardized interviews. This system has enabled the company to obtain quality individuals who perform instantly upon arrival.
- Directly supervised and managed HES' technical staff. These individuals recorded an 85% productivity rating under my supervision.
- During my tenure, HES's revenue in 1996 increased over 33% from the prior year and profits rose by $17,000 per month.

Technical Expertise

- Served as the technical editor for this firm. I was responsible for reviewing and approving the publication of each document prepared by the company.
- Project Director/Manager for the Phase II Property Assessment of the Memphis Area Transit Authority's Central Station Project. The project entailed drilling and evaluating data from six (6) groundwater monitoring wells and fifty (50) shallow borings. Findings were prepared and presented to the Tennessee Department of Conservation. We negotiated and received a "No further Action Required" finding.
- Project Director/Manager for over $600,000 of Clean Air Act-related work. Project activities included negotiating with regulators for consolidation of like source, developing PSD source applications, preparing Title V permit applications, inventorying emissions sources, negotiating emission reduction plans, and representing clients at show-cause meetings.
- Project Director for the Environmental Services Contract at the Memphis-Shelby County Airport Authority. Major projects included the emergency response clean-up of a 7,000-gallion aviation fuel spill, design and installation of a 100,000-gallon aboveground ethylene glycol/potassium acetate storage facility, numerous Phase I Property Assessments and Asbestos-related assessments.

DAMES & MOORE, INC. 1992 – 1994

Project Engineer, Office Safety Coordinator

- Assisted in the development of an RFI-type Work Plan for a chemical manufacturing plant. The Work Plan involved 34 SWMUs and 11 areas of concern. The Work Plan also included a project management plan, a sampling and analysis plan, a quality assurance plan, a data management plan, and a health and safety plan. Investigation techniques involved inspection of containment structures, video inspection of sewers, hand auger and mechanical soil borings, pond sediment sampling and volume measurements, monitoring well construction and sampling, and a radiological survey.

- Prepared Design Specification and Drawings for the removal and/or replacement of numerous UST Systems at Fort Campbell, Kentucky.
- Received a Bravo-Zulu award as the best presenter at Federal Express' Environmental Management Forum.

EXXON COMPANY, USA. **1984 – 1992**
Senior Engineer

- Holistically evaluated Exxon's Duncan Donut plant in Memphis, Tennessee and reorganized their plant reducing operational interferences. This dramatically reduced their accident incident rate at this facility.
- Trained 1600 employees and clients of Exxon Company, USA on environmental and regulatory issues affecting the service station business.
- Assisted in the planning and implementation of Exxon Company, USA's UST upgrades for leak detection, cathodic protection, overfill protection, and electronic monitoring.
- Constructed Service Station Convenience Stores in an average of 35 days per store by utilizing critical path method procedures, developing contractors and effective construction planning.
- Designed site plans and checked driveway placement plans for numerous stations built in North Texas.
- Constructed the fastest complete demolish and rebuild of a convenience store (13 days) for Exxon Company, USA, which resulted in minimizing sales and revenue losses for the company.
- Effectively managed six (6) Exxon Car Care Centers as a managerial cross-training assignment for Exxon. Improved profitability in the stores by over $5,000/store-month in two (2) years.
- Spent three (3) years as an oil well drilling engineer. Developed the drilling plans and managed the well drilling progress and assisted at the job site during critical activities.

BECHTEL POWER CORPORATION **1980 – 1983**
Project Engineering Intern

- Prepared pipe hanger drawings for Nuclear Regulatory Bulletin 79-14.
- Performed structural steel and block wall analysis for increased seismic loadings for Oconee Nuclear Power Plant in South Carolina.
- Construction Engineer for structural steel modifications at Unit 3 and Unit 4, Turkey Point Nuclear Power Plant in Florida City, Florida.

AFFILIATIONS:
American Society of Civil Engineers
Prestressed/Precast Concrete Institute
American Concrete Institute

REGISTRATIONS: Former Professional Registrations in the Following States:
Tennessee (1993), Mississippi (1994),
Arkansas (1994), Louisiana (1995), New York (1995)

SELECTED PUBLICATIONS AND REPORTS:

"Behavior of Larger-Diameter Strands in the Disturbed Region of Prestressed Concrete Girders" Doctoral Dissertation for the Doctor of Philosophy Degree in Civil Engineering, University of Tennessee, Knoxville, 2014

"Design Guidelines of CIP Joints with Accelerated Construction Features," being peer-reviewed by the ASCE Journal of Bridge Engineering – Primary Author

Investigation of Bond Performance of 18-mm-(0.7-in.-) Diameter Strand Based upon Pull-out Testing – Co-author, under Peer Review

"State-of-the-Art Report on Strand Debonding for Pretensioned Girders," currently under review

"Phase II Investigation Report of the BP Fertilizer Plant, Lima, Ohio"

"Phase II Investigation Report for Memphis Area Transit Authority's Central Station Complex"

Engineer of Record for the Design, Specifications and Drawings for the Removal/Replacement of Underground Storage Tanks at Fort Campbell, Kentucky

Engineer of Record for the Design, Specifications, and Drawing for the Above-ground Ethylene Glycol/Potassium Acetate Storage Facility for the Memphis Airport Authority