



TECHNICAL PRESENTATION

September 13, 2023



Geotechnical Considerations for Slope Stability and Erosion Protection for Ditches, Embankments, and Detention Ponds

Presented by Mr. David A. Eastwood, P.E., D.GE, DFE, C.A.P.M., F.PTI, F.FPA, F.ASCE with [Geotech Engineering and Testing](#)

BIO: Mr. Eastwood has practiced consulting engineering for about 44 years, serving in key technical project management and administrative roles. His specialties are in geotechnical, environmental, materials and geoforensic engineering. Mr. Eastwood's experience in these functions includes a wide range of project types, ranging from public infrastructure, public works,

municipal work, industrial facilities, and commercial developments to waste disposal facilities, power plants, dams, marine terminals, and underground storage tank contamination studies.

Mr. Eastwood conducts training in geotechnical, environmental, materials and geoforensic engineering for many agencies and associations. He is the President of the Houston Chapter of the Texas Council of Engineering Laboratories. Furthermore, he is the founder and past president of the Foundation Performance Association, an organization specializing in foundation failure evaluation. In addition, Mr. Eastwood has been certified as a Corrective Action Project Manager with the Texas Commission on Environmental Quality (TCEQ).

Mr. Eastwood is the past President of the Academy of Distinguished Civil & Environmental Engineers at the University of Houston, Cullen College of Engineering. Mr. Eastwood is also a 2017 Member of Distinguished Alumni of the College of Engineering at the University of Houston Cullen College of Engineering. Furthermore, Mr. Eastwood has been accepted as an Academy of Geo-Professionals (AGP) as a Diplomate, Geotechnical Engineer Fellow Member. In addition, he has been accepted as an American Society of Civil Engineers (ASCE) Fellows Member. Mr. Eastwood received his bachelor's and master's degrees in civil engineering from the University of Houston in 1977 and 1978, respectively.

PRESENTATION SUMMARY: This in-depth webinar presented information and examples of geotechnical considerations for slope stability and erosion protection for ditches, embankments, and detention ponds. The presentation discussed the geotechnical requirements as it relates to projects for embankments, channels and detention ponds. Mr. Eastwood provided science and examples that helped the audience understand the basics of geotechnical and forensic engineering as it relates to slopes. He discussed slope stability and erosion protection, houses on slopes, global stability, slope repair, retaining walls, drop/weir structures, soil nailing, channel failure, detention ponds, surface creep, etc. Mr. Eastwood's presentation also included several in-depth presentations on siltation in channels. He also discussed slopes, slope repair, and various slope-stability types. He presented slides, examples and discussions of a few slope failures, such as Buffalo Bayou, Windermere Outfall, Outfall Failure at Tidwell Street, and Raymond Ville Concrete Channel Failure. He discussed options for houses on slopes, causes for slope distress, and the associated repair techniques.



Below is a YouTube link to Mr. Eastwood's presentation.

[\(518\) Geotechnical Considerations for Slope Stability and Erosion Protection for Ditches and Embankment - YouTube](#)

PAST FPA PRESENTATIONS BY MR. EASTWOOD:

[March 2023](#)—Case History in Mobile Crane and Pump Truck Failure

[January 2020](#) – Geotechnical Considerations in Design and Construction of Tilt-Up Buildings and Parking Lots

[January 2019](#) - Geoforensic Investigation of a Storage Dome Collapse at a Plant in Louisiana

[April 2017](#) - Foundation Repair Techniques for Lightly Loaded Foundations in Texas

[July 2016](#) - Geotechnical Considerations for Soil Stability, Ditches, Embankment and Detention Ponds

[February 2014](#) - Simplified Method for Design of Shallow Drilled Shafts Subject to Light Loading in Expansive Soils

[September 2007](#) - Recommended Practices for Design and Construction of Swimming Pools in Houston

[January 2003](#) - ASCE Paper Presentation - "Recommended Practice for the Design of Residential Foundations."

[June 2001](#) - State of Practice of Geotechnical Engineering Design of Custom Homes in the Houston Area between 1990 and 200

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