Geotechnical Engineering in District 8

ODOT Geotechnical Consultant Workshop

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District 8

- Covers 7 Counties
  - Butler, Clermont, Clinton, Greene, Hamilton, Preble and Warren

- Bridges
  - 1,516 with 14,000,000 sq ft. of deck

- Pavement
  - 4,579 lane miles (4th)
  - 815 urban miles (3rd)
Geotechnical Aspects

Geotechnical Activities are involved in:

- Planning
- Production
- Construction
- Permits
Planning

• Completion of Red Flag Summary
  – Be aware of new guidelines for Red Flag Summary Submittal
  – May be modified in scope document
  – Archive boring information very useful

• Development of Scopes for Projects
  – Generally after completion of Red Flag Summary
  – Inclusion of site specific items of geotechnical concern

• Evaluation of Landslides
Landslide Evaluation

- Project manager for consultant Task Order
- Task Order to study, monitor various landslides
- Develop likely remedy and provide preliminary cost estimate
- Apply for construction funding through the Geologic Site Management Program
Production

- Majority of time spent on construction plan development
  - Includes review of geotechnical reports and drawings
- Inclusion of geotechnical recommendations into the plans
  - Limited communication between consultant and geotechnical consultants
- Answer geotechnical prebid questions
Consultant Services

• Review of each cost proposal and modification

• Overhead rate for geotechnical net Fee is 175.76% (05/01/06 Consultant Services)

• Double check Net Fee Calculation (No Direct Costs)

• Net Fee = %Net Fee [ OH @ 175.76% + Direct Salary]

• Submit modifications if true scope deviation

• Update salary rates, cost of money and overhead if needed
Proposal Preparation

- Outline the proposed boring plan clearly in the cost proposal
  - Boring number, depth, soil drilling, rock coring
- Utilize archive boring information
- Avoid drilling below the OHW level
  - Requires an environmental permit
    - May delay the work
Construction

• **Support of Construction for geotechnical items**
  – Walls, foundations, pile driving, earthwork operations

• **Review of contractor submittals**
  – Chemically stabilized subgrade
  – VE proposals for geotechnical items
Compaction Grouting

BUT-129 over Great Miami River
Compaction Grout
HAM-126-22.07
Setting BEBO
BEBO Segments
Drilled Pier Wall
Drilling of Piers
Completed Wall
Lime Stabilized Embankment
Permits

• Many developers want access to State Routes
• Perform studies for widenings, turn lanes, etc. per the SGE and GB1
• Do not have to develop geotechnical plans
• Provide a PDF of the final report
Report Submittals

• Include the County, Route and Section as well as the PID number on all submittals
  – For example HAM-71-0.00 PID: 22345

• Sampling and testing should be adequate
• Perform internal quality control review
• Provide a contact in the report or cover letter
• Provide a PDF of entire report along with hard copy. District 8 only needs 2 copies.
Report Submittals

• Provide backup calculations for piles, drilled shafts, settlement, slope stability, etc.
• No need to repeat the CMS Specifications
• Do not include the grain size curves
• Reduce conservative recommendations
  – i.e., pile load testing for rock bearing H-piles
Drawing Submittals

• Drawings are the key to ODOT projects
• Geotechnical consultant should review Stage plan submittals
  – Section 105 of SGE
• Become familiar with OGE guidelines for drawing preparation and CADD Standards
• Use the Geotechnical Checklist
Drawing Submittals

• Common Drawing deficiencies
  – No top of rock designation
  – Misuse of random fill hatching
  – Not using X/Y/Z format for SPT sampling
  – Asphalt and topsoil thickness missing
  – USCS classification on the logs
  – Scale of plan and profile
Thank You

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