

**ASCE – INDOT
STRUCTURAL/GEOTECHNICAL SUBCOMMITTEE**

MEETING NO. 37 MINUTES

September 28, 2006

The meeting was called to order at 1:30 p.m. by Steve Weintraut. Those in attendance were:

Mir Zaheer	INDOT, Planning and Production Division
Nayyar Siddiki	INDOT, Planning and Production Division
Athar Khan	INDOT, Planning and Production Division
Steve Morris	INDOT, Planning and Production Division
John Wright	INDOT, Planning and Production Division
Anne Rearick	INDOT, Planning and Production Division
Tom Harris	INDOT, Highway Management Division
Dae Hyeon Kim	INDOT, Planning and Production Division
Greg Pankow	INDOT, Greenfield District
Keith Hoernschmeyer	Federal Highway Administration
Tom Struewing	ATC Associates, Inc.
Scott Ludlow	Earth Exploration, Inc.
Elizabeth Dwyre	Parsons Brinckerhoff Quade & Douglas, Inc.
Paul Berebitsky	Indiana Constructors, Inc.
Bill Dubois	Patriot Engineering
Steve Weintraut	Butler, Fairman and Seufert, Inc.
Jon Sera	Butler, Fairman and Seufert, Inc.

In addition to the attendees, these minutes will be sent to the following:

Somanath Hiremath	INDOT, Planning and Production Division
Mark Miller	INDOT, Highway Management Division
Dennis Kuchler	INDOT, Highway Management Division
Salim Ilmudeen	Patriot Engineering

A meeting agenda had previously been distributed and the following items were discussed:

1. Scott Ludlow reported on the progress of the performance-based cut wall specification. The retaining wall committee will have one last meeting concerning the specification. Steve Weintraut mentioned it was determined at the last meeting that it was not viable to include the specification in Chapter 68 of the Design Manual. Athar Khan will leave it up to the standards committee whether the specification will be a standard specification or a recurring specification. Athar did note that he felt it was more correct to include it as a recurring specification. Steve Weintraut recommended a technical advisory be transmitted to the design community for the specification. Anne Rearick would need to gather the information to send out a design memo.
2. Athar Khan reported on a meeting he had with the geotechnical design community concerning how to minimize change orders. One topic discussed was areas of realignment and trying to address wet subgrade in the geotechnical report. Athar noted that designers have some problems coming up with areas based on specific soil borings. It has been proposed that the geotechnical engineer will specify more borings by cutting down on the spacing and specify an undistributed quantity based on the number of borings with soft soils. Steve Morris questioned what pay item to

use. Greg Pankow answered that it would depend on the size of the area. Liza Dwyre recommended reviewing soils maps for the soils survey and the proper management of site water by the contractor. Steve Morris stated that both of these issues were addressed in a previous meeting by another group. Nayyar Siddiki mentioned that contractors aren't responsible in most cases for water problems, rather it's usually attributed to rain. Nayyar stated that INDOT Division of Production Management, as well as private consultants, aren't involved enough during construction. Steve Weintraut explained that on most Local Public Agency projects, it takes the full allowed amount of the budget for Construction Inspection. Greg Pankow agreed that most projects are undermanned due to tight budgets. Athar noted that four steps are required to minimize change orders:

- 1.) Perform more borings
- 2.) Better anticipation of problem areas by geotechnical engineer
- 3.) Design consultant responsible for following recommendations
- 4.) Contractor must manage site and be aware of possible consequences

Athar is looking at putting geotechnical reports on-line. He also noted that the geotechnical engineer needs to be responsive and question the designer if quantities do not include their recommendations. Anne Rearick suggested that John Morton and Bruno Canzian be approached about getting more funds for inspection contracts. Tom Harris is going to look into this.

3. Scott Ludlow handed out a work in progress copy of a "state of the practice" memo on pile driving and accounting for negative skin friction. The memo includes how loading is applied to the rate of consolidation. He mentioned that we need to look at prestressing of piles and relative movements. Scott felt we might be able to modify how we look at skin-friction including the magnitude and rate of the problem. Mir Zaheer said that this is an issue on the JTRP (topic for research). Scott believes we can come up with a practical way to address negative skin friction on typical projects that is more cost effective than currently practiced.
4. Mir Zaheer discussed resistance factors for LRFD projects. Mir noted that Purdue is working on resistance factors for Indiana and until the research is complete, Indiana will use AASHTO recommendations. The research may take up to two and half years to complete. Athar Khan is planning on implementation of LRFD for foundation design in January of 2008. This topic will be removed from the agenda.
5. Steve Morris discussed three projects with pipe-jacking issues. Two of the projects resulted in subsidence of the pavement and the third involved embankment failure. He provided two recommendations for future projects. One is to require soil borings in locations of utility relocations as part of the utility permits. The second is to perform a thorough review of the contractor's utility relocation submittal. Steve also suggested guidance be provided to help establish criteria for review of the contractor's submittal. Steve Weintraut recommended that Steve Morris form a committee of district personnel, Matt Thomas (utilities), geotechnical consultants (Liza Dwyre and Tom Struewing), contractors (Dan Liotti), and Veolia.
6. Athar Khan discussed issues with geotechnical waivers. He mentioned that on some small projects there has been confusion at the district level concerning if geotechnical work is required. Athar provided a guideline for geotechnical waivers which is posted on the INDOT website as a Technical Advisory. See attachment.

7. The SPT hammer energy measurement topic will be discussed at the next meeting by Nayyar Siddiki due to time constraints with this meeting.
8. The group next discussed changes to INDOT specifications for geotextiles and geogrids. AASHTO has come up with testing procedures and changed the specification to reflect such. This is before the standards committee.
9. Mir Zaheer discussed an issue with the standard specifications section 701.12. He noted that the ASTM A 27 pile tip specification needs to be changed to ASTM A 48. He will submit his recommendation to the committee before the next meeting.

The next meeting for the INDOT Geotechnical Subcommittee is scheduled for Thursday, March 15th, 2007, at 1:30 p.m., at INDOT's Division of Production Management.

Individuals are invited to comment on items presented in these minutes and/or submit additional topics for discussion at the next meeting. Please fax comments to Steve Weintraut at 317-713-4616.

This meeting was adjourned at 4:00 p.m.

Prepared by,

BUTLER, FAIRMAN and SEUFERT, INC.

c: Attendees

**Indiana Department of Transportation
Office of Geotechnical Engineering**

Policy for Geotechnical Investigations / or Geotechnical Waiver

Purpose: To establish a uniform policy regarding the need for geotechnical investigations or geotechnical waivers on State and Local Public Agency (LPA) projects utilizing Federal-Aid Funds.

Policy: All projects require geotechnical investigation with a few exceptions. The Office of Geotechnical Engineering or Department approved geotechnical consultant will conduct Geotechnical Investigations. The Office of Geotechnical Engineering must approve all consultant reports before the report is used in the design.

Exceptions: Projects meeting the following conditions may qualify for a geotechnical waiver. However, subgrade recommendations may still be required.

1. Preventive Maintenance Type Projects
 - a. Chip Seal, Crack Sealing, Microsurface, Single lay HMA Mill and Overlay, and Functional HMA Overlays
 - b. PCCP Joint Sealing, Retrofit Joint Transfer, etc.
2. Rehabilitation Type Projects: Shoulder Widening up to 5 ft (1.3 m) on existing pavement with less than two feet of cut or fill
3. Bridge maintenance and repairs that do not include foundation work
4. Pipe structure smaller than 36 inches in diameter or 60 inches in length.

However, if project is in an area that contains known isolated problematic soils such as peat, marl, etc, or if the proposed project includes fills greater than 2 ft (0.6 m), no geotechnical waiver will be given.

Waiver Request: The project manager or the LPA design consultant must submit a request with the supporting data to the Office of Geotechnical Engineering no later than the preliminary field check for approval. However, if project is in an area that contains known isolated problematic soils such as peat, marl, etc, or if the proposed project includes fills or widening 5 feet or greater, no geotechnical waiver will be given.

A waiver request is to be submitted by the project manager to the Office of Geotechnical Engineering and will include the following:

1. Project Scoping Report
2. Plans and Cross-sections – one set
3. Six to ten existing pavement photographs

NO Geotechnical Investigation or Waiver is Required: The following types of projects will not require geotechnical investigations or geotechnical waivers:

Bridge painting

Pavement Marking

Landscaping/ Enhancement

Traffic signals

Guardrails

Small signs

Wedge and level

Mowing

Lighting maintenance

All other project with No Earthwork.

Approval: The Manager of the Office of Geotechnical Engineering will either approve or deny the geotechnical waiver in writing to the project manager within 5 days.