



NORTH CAROLINA
Department of Transportation



Geotechnical Engineering Unit

Matt Alexander and John Pilipchuk

January 24, 2024

Connecting people, products and places safely and efficiently with customer focus, accountability and environmental sensitivity to enhance the economy and vitality of North Carolina

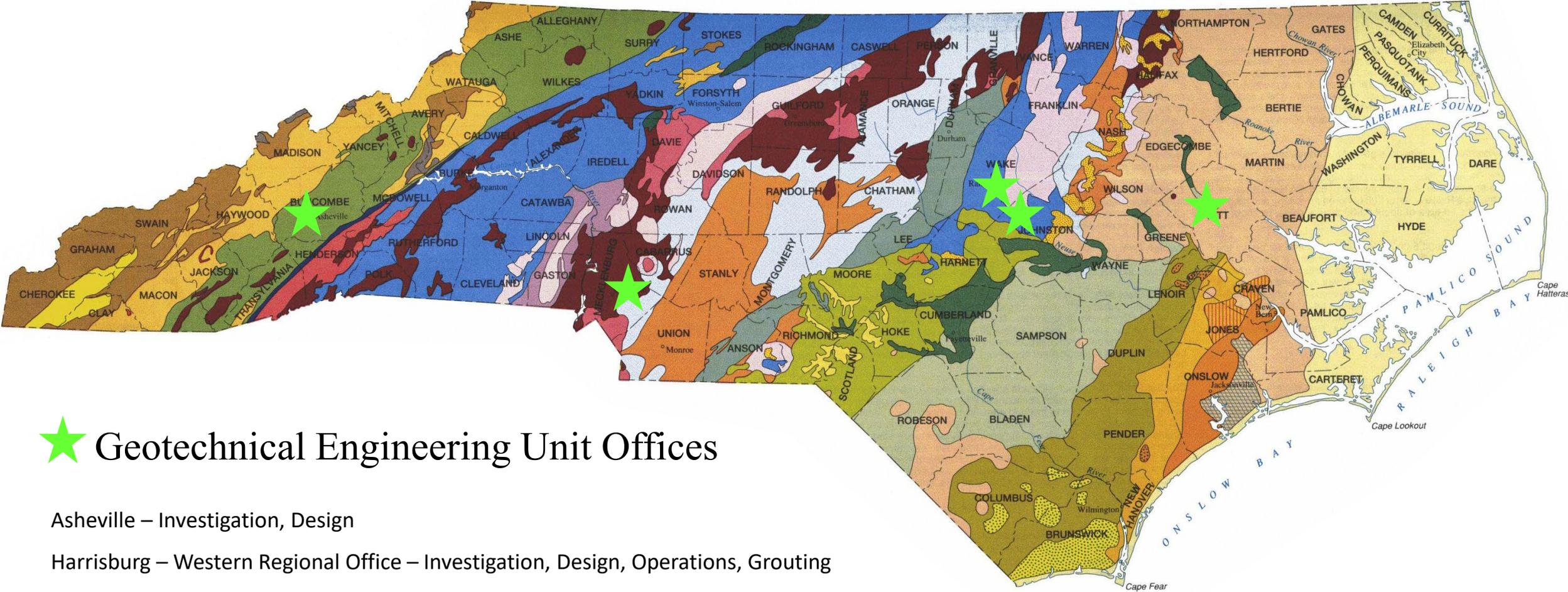
1. Organization of Geotech Staff
 - a. Who are main contacts in Geotech for PMU staff
 - b. Explain difference in the Geotech operations and engineering staff, who does what?

2. How to send in requests
 - a. General email for regions? **Yes**
 - b. Do we need to send separate requests for Pavement and Subgrade Inventory and Recommendations Reports? **Yes, the PM or Pavement Management will request. More a little later...**

3. Does Geotech prefer to scope out any Geotech work versus putting the Geotech work in the Design Firm's scope as a sub
 - a. If so can Geotech meet schedule that is set up. **Depends on project, but will work with you on schedule.**
 - b. Any situation where the Geotech work would be put in the Design scope or work...
 - c. Pros and cons of this. **Pro: Firm selection, Closer supervision of project & recommendations, review of invoicing.**
Con: You don't get a turnkey project.

We prefer to scope the Geotechnical / Geoenvironmental work

4. Deliverables that Geotech provides and when **More a little later...**
 - a. Need subsurface to start at key points, like 25% plans, BSR & PGD



★ Geotechnical Engineering Unit Offices

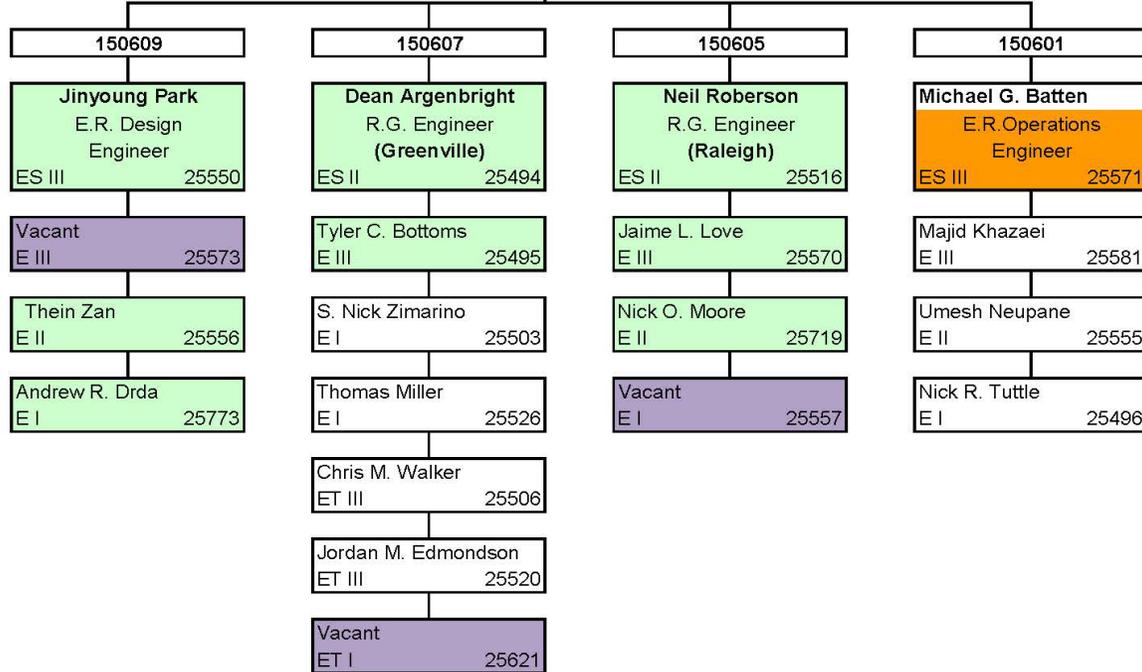
- Asheville – Investigation, Design
- Harrisburg – Western Regional Office – Investigation, Design, Operations, Grouting
- Garner – Eastern Regional Office - Investigation, Design, Operations, Grouting
- Greenville - Investigation
- Raleigh – Century center – Headquarters - Contracts Investigation and Design, Geoenvironmental (Statewide), Geopavement (Statewide), Support Services

NORTH CAROLINA
GEOLOGIC MAP

Eastern Region

Investigation & Design Divisions 1 - 6
Operations Divisions 1 - 7

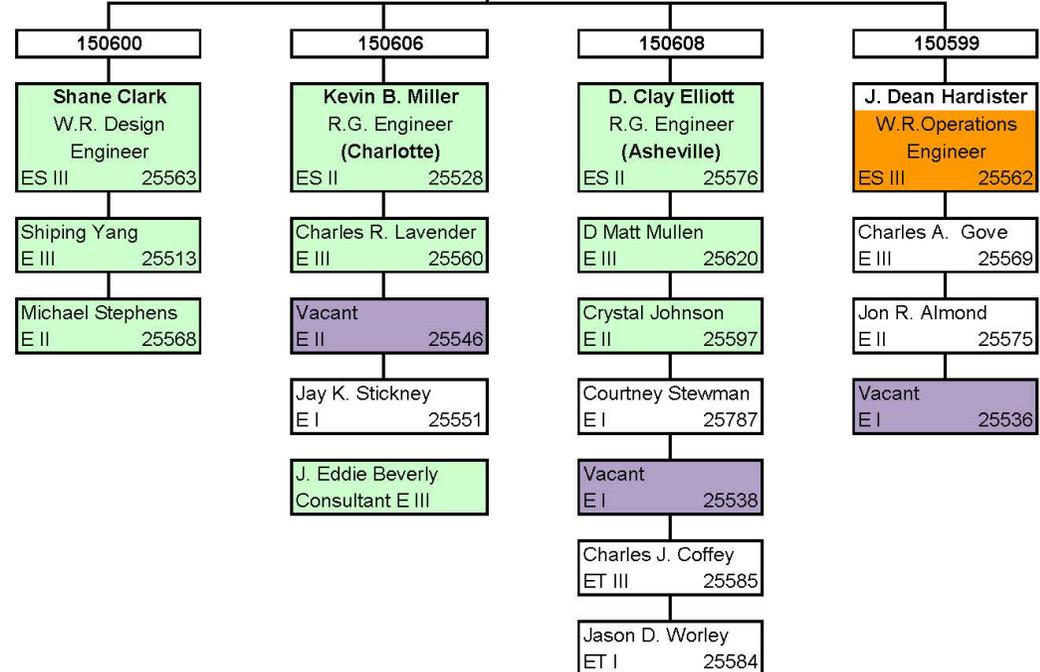
Tom Santee Assistant State Geotechnical Engineer - Eastern Region (Div. 1 through 7) EM I (Based in Raleigh) 60025610



Western Region

Investigation & Design Divisions 9 - 14
Operations Divisions 8 - 14

Eric Williams Assistant State Geotechnical Engineer - Western Region (Div. 8 through 14) EM I (Based in Charlotte) 60025549



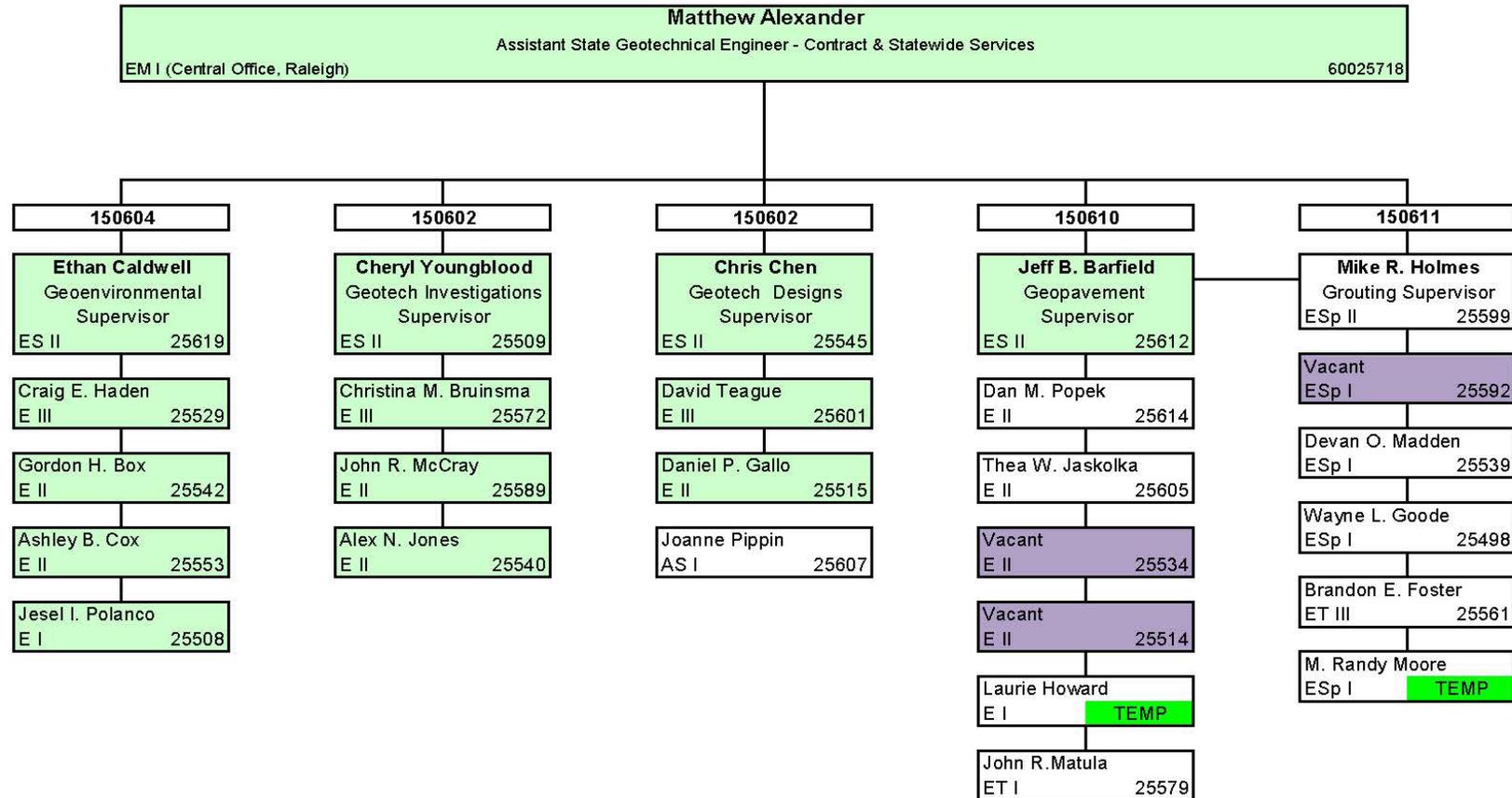
Contracts and Statewide Services

Investigation & Design Divisions 7 & 8

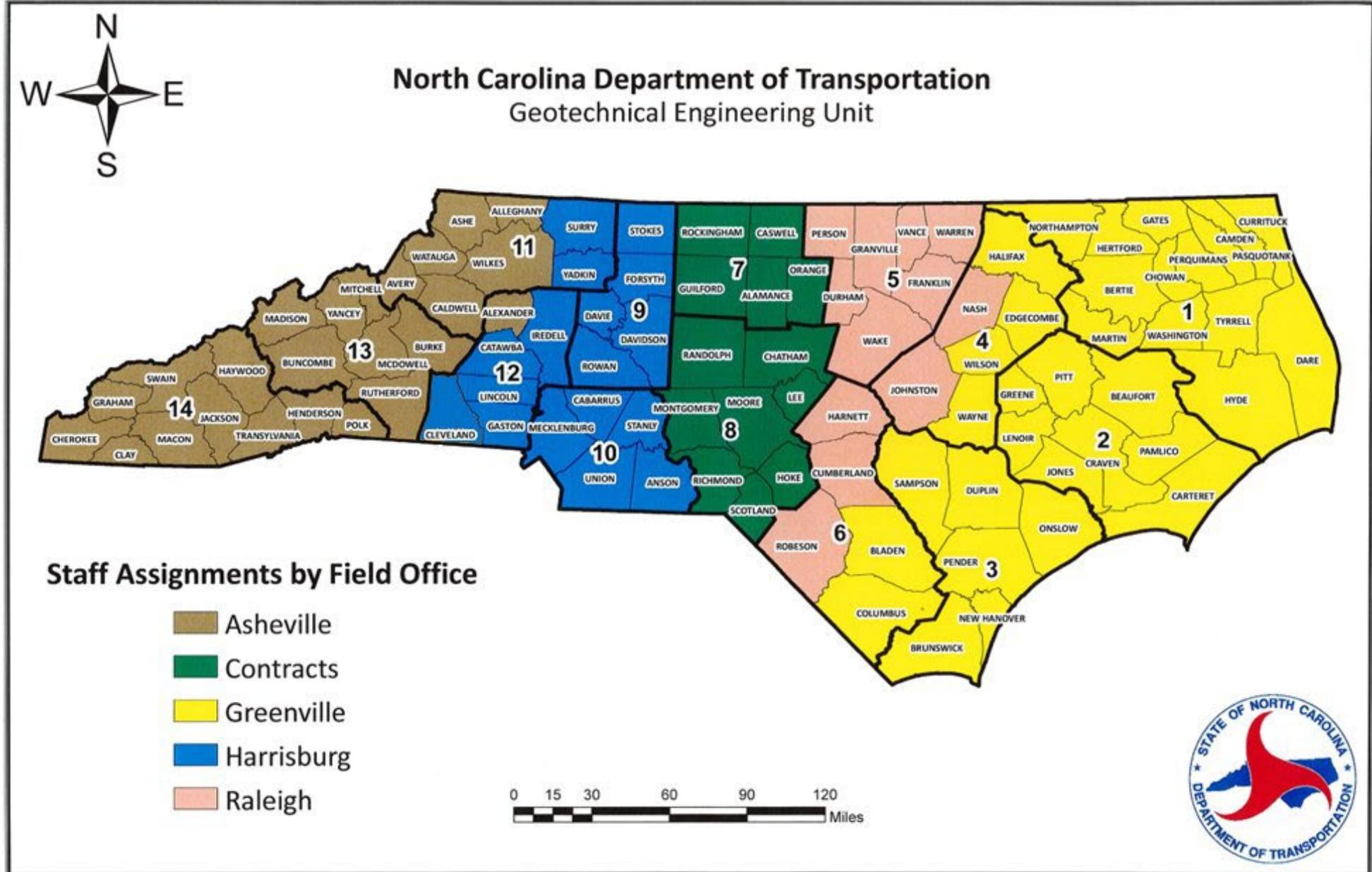
Geoenvironmental – Statewide

Geopavement – Statewide

Grouting – Maintenance and Operations Statewide

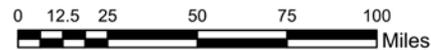
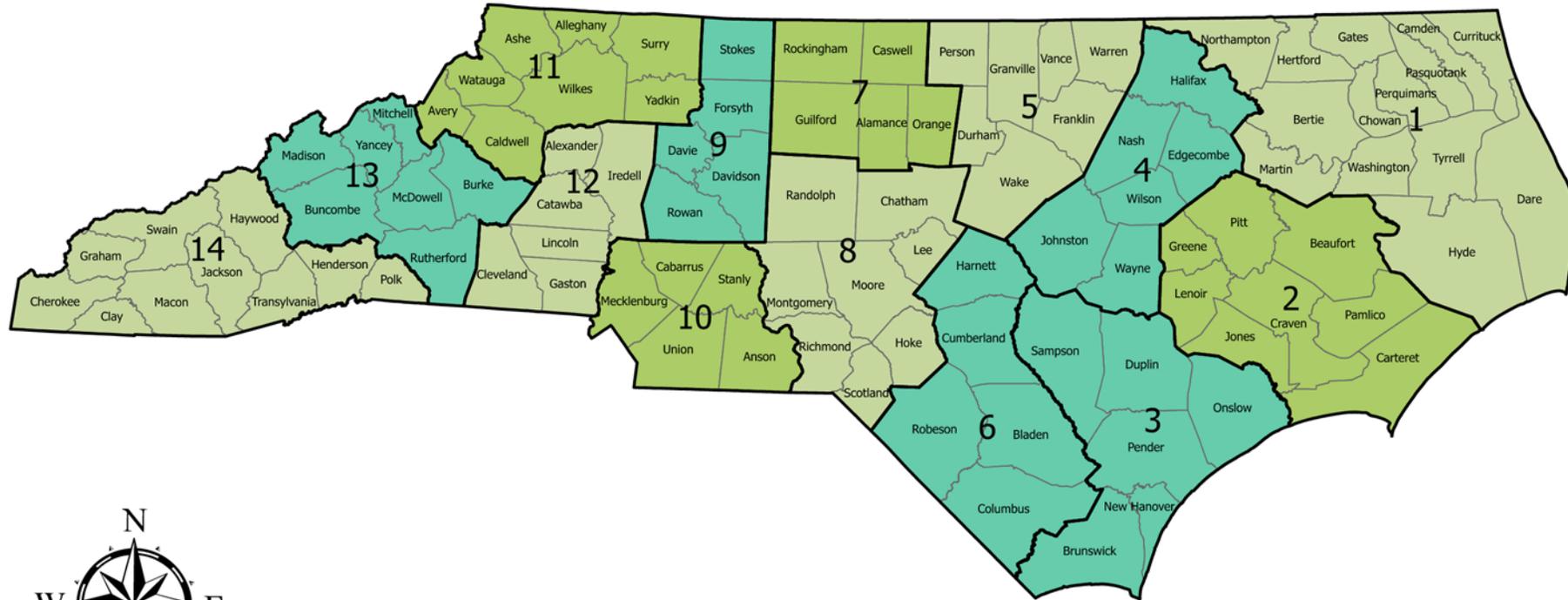


Organization



GeoEnvironmental Project Managers by Division

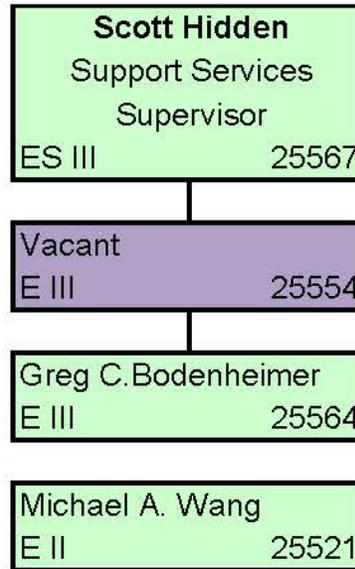
Ethan Caldwell - GeoEnvironmental Supervisor



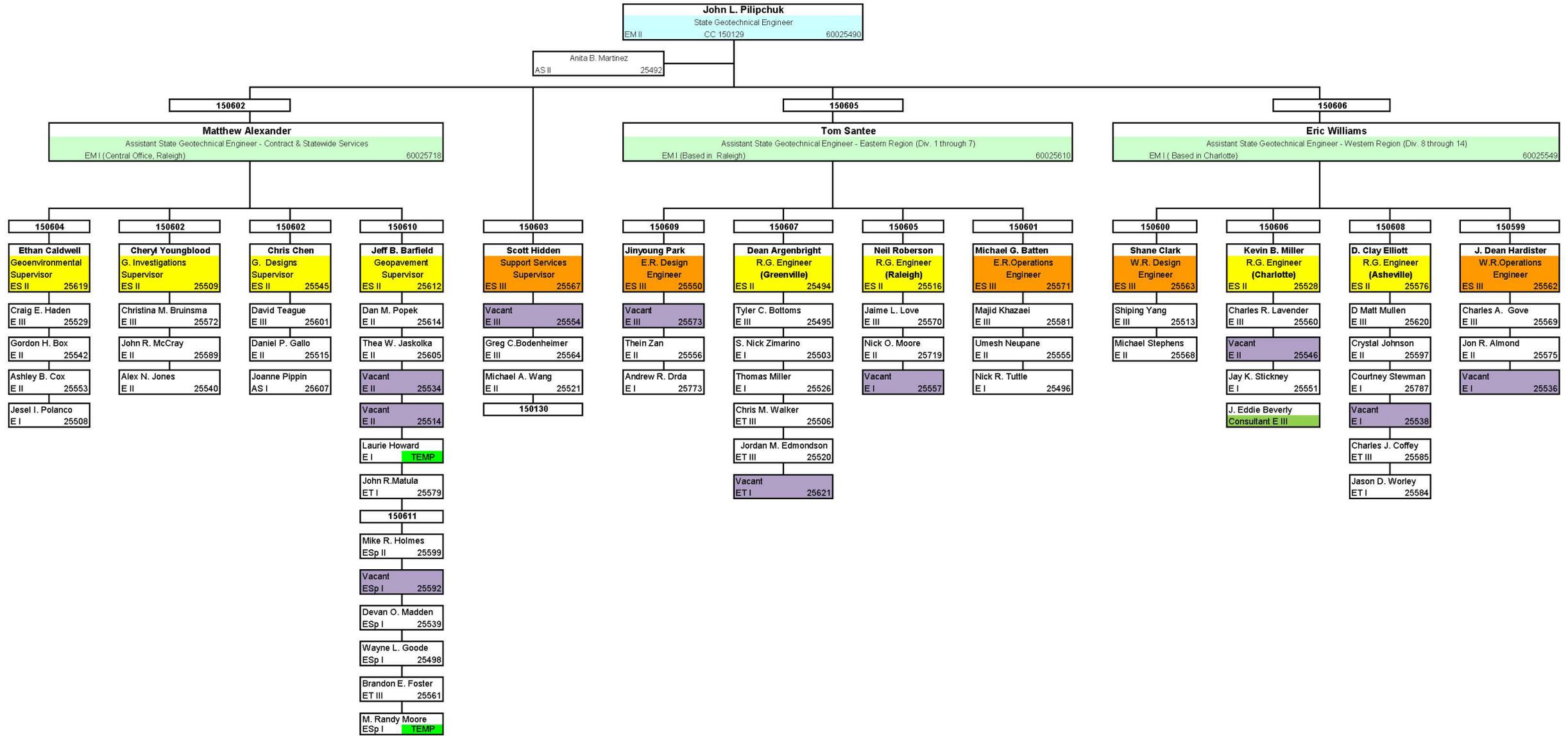
- GeoEnvironmental Project Manager
- Ashley Cox
 - Gordon Box
 - Craig Haden - Senior Project Manager

Support Services

Specifications, Standard Drawings, Project Distribution, CADD Support



Organization



Connect NCDOT
BUSINESS PARTNER RESOURCES

Home Help Site Map

Doing Business Bidding & Letting Projects **Resources** Local Governments

Asset Management Environmental **Geotechnical** GIS Hydraulics Materials & Tests Contract Standards Mapping Resources Logistics and Freight

Geotechnical Engineering

Geotechnical, geoenvironmental and geopavement resources for planning, design, construction and maintenance of the North Carolina highway systems.

Connect NCDOT > Resources > Geotechnical

Cells, Details, and Forms

Geotechnical standard cells, details, and forms for the 2024 and 2018 Standard Specifications.

[Read More](#) →

Notes and Provisions

Geotechnical standard notes and provisions for the 2024 and 2018 Standard Specifications.

[Read More](#) →

Geotechnical Resources and Consultant Information

Consultant information and geotechnical resource and reference documents including policies, guidelines, manuals, specifications, spreadsheets, examples, instructions, and procedures.

[Read More](#) →

Geoenvironmental Resources and Consultant Information

Geoenvironmental Resources and Consultant Information

[Read More](#) →

Geopavement Resources and Consultant Information

Geopavement training, resource, and reference documents.

[Read More](#) →

Geotechnical Qualified Products

Geotechnical QPLs with vendor and approval information.

[Read More](#) →

Contact Form

For questions & feedback about this area of Connect NCDOT, contact *Geotechnical Engineering*.

Employee Directory

Staff contacts for *Geotechnical Engineering Unit*.

Geotechnical, Geoenvironmental and Geopavement Work Request Form

[Geotechnical, Geoenvironmental and Geopavement Work Request Form](#)

Email Geo_Pre-let_Div1-6
Email Geo_Pre-let_Div7-8
Email Geo_Pre-let_Div9-14

Geotechnical Construction Submittals



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER GOVERNOR J.R. "JOEY" HOPKINS SECRETARY

DATE: _____

MEMORANDUM TO: John L. Pilipchuk, LG, PE
State Geotechnical Engineer

FROM: _____

TIP NO: _____

WBS: _____

COUNTY: _____

SUBJECT: Request for Geotechnical / GeoEnvironmental Services

This is a request for Geotechnical/GeoEnvironmental information for the project described above. Information concerning the proposed project is provided to assist your staff in their investigations. If you have any questions, please contact me at _____ or by email at _____.

Special Project Request (Utility proposals, Infiltration Basins, etc. please describe on next page)

Geotechnical Input Requested

Initial Screening Request (1GT1)

Geotechnical Report for Planning (1GT1)

Roadway Subsurface Investigation and Reporting (2GT2 / 2GT4 / 3GT1)

- Right-of-way Recommendation Memo (2GT2)
- Roadway Subsurface Inventory Report with graphics (2GT4 / 3GT1)
- Roadway Recommendation Report possibly with graphics (2GT4 / 3GT1)

Pavement and Subgrade Investigation (2GT3)

- Pavement and Subgrade Inventory Report
- Pavement and Subgrade Recommendations Report
- **Pavement Designs (2PD1) should be requested separately from the Pavement Design Engineer**

Structure Subsurface Investigations and Recommendations (3GT3)

- Structure Subsurface Inventory Report and Structure Foundation Recommendations (# _____ Bridges)
- Retaining Wall Recommendation (# _____ Retaining Walls)
- Sound Barrier/Noise Wall Recommendations (# _____ Noise Walls)
- Culverts (# _____ Culverts)

GeoEnvironmental Input Requested

Initial Screening Request (1GT1)

Preliminary Geoenvironmental for Alternatives Analysis (1GT1)

Phase I Detailed Geoenvironmental Data for planning document (2GT1)

Update to Geoenvironmental Data (2GT1)

Phase II Investigation(s) (3GT1)

Phase III UST removal(s) / contaminated soil removal (4GT1)

Project Information

ation: _____

chedule, and mapping location and file names. Also
EU investigation,
e of the request.

Role	Email
_____	_____
_____	_____
_____	_____

Project Schedule

ble(s): _____

Attachments/Links

pping GIS Environmental Features Map

Preliminary General Drawing

Project Charter Only One: _____

Other: _____

cc:
John L. Pilipchuk, LG, PE, State Geotechnical Engineer
Matthew J. Alexander, PE, Assistant State Geotechnical Engineer
Thomas G. Santee, PE, Assistant State Geotechnical Engineer
Eric Williams, PE, Assistant State Geotechnical Engineer
Ethan J. Caldwell, LG, PE, GeoEnvironmental Supervisor



How to Request Geotechnical and Geoenvironmental Services

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- Pavement and Subgrade Investigation(2GT3)
 - Pavement and Subgrade Inventory Report
 - Pavement and Subgrade Recommendations Report
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- Structure Subsurface Investigations and Recommendations (3GT3)
 - Structure Subsurface Inventory Report and Structure Foundation Recommendations (#_____ Bridges)
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 - Culverts (#_____ Culverts)

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- Preliminary Geoenvironmental for Alternatives Analysis (1GT1)
- Phase I Detailed Geoenvironmental Data for planning document (2GT1)
- Update to Geoenvironmental Data (2GT1)
- Phase II investigation(s) (3GT1)
- Phase III UST removal(s) / contaminated soil removal (4GT1)

Additional Project Information

Project Description and Additional Information:

Include brief project description, project schedule, and mapping location and file names. Also include information that may aid in the GEU investigation. For Special Requests, explain the objective of the request.

Project Team Contacts:

Name	Role	Email
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Project Schedule

Proposed Distribution Date(s) for Deliverable(s): _____

Attachments/Links

- Vicinity Map
- Aerial Mapping
- GIS Environmental Features Map
- Study Area Map
- BSR/CSR
- Preliminary General Drawing
- Project SharePoint Site: _____
- Other: _____

cc:
John L. Pilipchuk, LG, PE, State Geotechnical Engineer
Matthew J. Alexander, PE, Assistant State Geotechnical Engineer
Thomas G. Santee, PE, Assistant State Geotechnical Engineer
Eric Williams, PE, Assistant State Geotechnical Engineer
Ethan J. Caldwell, LG, PE, GeoEnvironmental Supervisor

Project Delivery



STAGE 1 PROJECT INITIATION

- 1GT1 - Geotechnical Report for Planning (by in-house Geotechnical Staff)
 - GeoEnvironmental Screening Report (by in-house Geoenvironmental Staff)
 - Geopavement/Pavement Screening (Not in PDN)

STAGE 2 ALIGNMENT DEFINED

- 2GT1 GeoEnvironmental Phase I Report, GeoEnvironmental Phase I Spreadsheet, and GeoEnvironmental GIS Shape File (by in-house Geoenvironmental staff)
- 2GT2 Subsurface Investigations started, may be completed, provide Preliminary ROW Recommendations Memo or Roadway Recommendations Report
- 2GT3 Pavement and Subgrade Inventory Report, Pavement and Subgrade Recommendations Report

Subsurface Investigation - Site Characterization



Subsurface Investigation - Site Characterization



Subsurface Investigation - Site Characterization



STAGE 3 PLAN-IN-HAND

- 3GT2 GeoEnvironmental Phase II Report, GeoEnvironmental Right-of-Way Recommendations, GeoEnvironmental Design and Environmental Conflict Memo
- 2GT4/3GT1 Finish Subsurface Investigations, provide Roadway Subsurface Inventory Report with graphics, Roadway Recommendation Report possibly with graphics, Special Provisions
- 3GT3 Subsurface Investigations for Structures Recommendations
 - Bridges & Box Culverts - Structure Subsurface Inventory Report with graphics, Design Scour Report, Structure Foundation Recommendation Report, Structure Special Provisions
 - Retaining Wall Subsurface Inventory Graphics, Retaining Wall Recommendation Report with Details, Retaining Wall Special Provisions
 - Sound Barrier/Noise Wall Subsurface Inventory Graphics, Sound Barrier/ Noise Wall Recommendations Report
 - Temporary Shoring Recommendations

STAGE 4 PLANS, SPECIFICATIONS, & ESTIMATES (PS&E)

- 4GT1 Prepare GeoEnvironmental Phase III Reports
 - Underground Storage Tank Closure Report – For PM, R/W and NCDEQ
 - Environmental Groundwater Monitoring Well and Closure Report – For PM, R/W and NCDEQ
 - Contaminated Soil Removal Report – For PM, R/W and NCDEQ
 - Contaminated Materials Management Plan – When not practical to remove contaminated material prior to let, develop a Materials Management Plan to describe materials handling during construction. Develop project special provision(s) to be included in the contract that describe material handling, personal protective equipment (if needed), and any other processes necessary to construct the project.

5. Tips for PMs Dealing with GeoEnvironmental Issues, Right of Way Acquisition and Earth Disturbing Activities
 - a. Are there additional costs associated with these issues and are we estimating/accounting for these? **Most should be complete before Letting, but...**
6. Tips for PMs - Wall Envelopes and Wall Designs
 - a. Who leads what: SMU, Roadway, Geotech? **It Depends...**
7. Tips for PMs – Aggregate Subgrade
8. Tips for PMs – quantities and special provisions
 - a. What Geotech can/should provide for PS&E **We provide provisions, check sheets like 3G1, Geotechnical Summary Tables**

Questions?

