

SGE Changes and Issues

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Overview

- Changes in Last Revision (10/16/09)
- Upcoming Changes (4/16/10)
- Common Issues



Changes in Last Revision (10/16/09)

- Section 403.1: If, during an SPT sample, the sampler is advanced (sinks) under the weight of the rod or rod and hammer, note the length of travel. If it sinks for a full 6-inch increment, record 0 blows for that increment.
- 702.6.3: Present blow count data on the left side of the graphical boring log if space allows; present moisture content data on right side if space allows.



Changes in Last Revision (10/16/09)

- 703.3: Present the boring logs in the same format as those presented in the sample Structure Foundation Exploration. Boring logs may be created using the boring log report forms in the OGE gINT library (ohdot.glb) found on our website.
- 703.3.1 and 703.3.2: Revised to match boring log format.



Changes in Last Revision (10/16/09)

- Sample plans (Appendix D) revised to present consistent boring logs, using the ODOT gINT library.
- Proposal and Invoice Form (Appendix E) revised to reflect current statewide overhead rate to calculate net fee and current mileage rate.



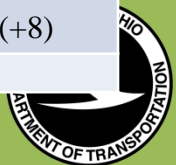
Upcoming Changes (4/16/10)

- 401.14: Provide link to Ohio Manual of Uniform Traffic Control Devices
- 410: Reiterate that unit cost for Boring, Sampling and Field Testing includes backfilling
- 607: Increase unit cost of testing based on inflation rates of 3.8% for 2008 and 0.1% for 2009



Upcoming Changes (4/16/10)

Description	Unit	Unit Price
Water Content Test and Visual Description	Each	\$11 (+0)
Classification Package, per Table 600-6, excluding Organic Content by Loss on Ignition, and including Visual Description and Hydrometer	Each	\$130 (+5)
Organic Content by Loss on Ignition	Each	\$47 (+2)
Liquid Limit Test	Each	\$29 (+1)
Plastic Limit Test	Each	\$27 (+1)
Particle Size Analysis--Sieve and Hydrometer	Each	\$68 (+3)
Particle Size Analysis--Sieve Only	Each	\$47 (+2)
Unconfined Compression Test on Soil	Each	\$60 (+2)
Direct Shear Test	Each	\$312 (+12)
Unconsolidated-Undrained Triaxial Compression Test	Each	\$208 (+8)
Consolidated-Undrained Triaxial Compression Test	Each	\$831 (+31)
One-Dimensional Consolidation Test	Each	\$494 (+19)
Specific Gravity Test	Each	\$52 (+2)
Slake Durability	Each	\$260 (+10)
Point Load Strength Index	Each	\$52 (+2)
Unconfined Compressive Strength of Intact Rock	Each	\$78 (+3)
Compressive Strength and Elastic Moduli on Rock	Each	\$208 (+8)
Misc.:	Each	



Upcoming Changes (4/16/10)

- 702: Present roadway and subgrade explorations as plan drawings in the form of a Soil Profile. *If the project includes structures, present all structure explorations in the Soil Profile as well. Do not create separate Structure Foundation Exploration plan sheets.*
- 702.3.1: Include the bridge number (i.e., FRA-71-0025) of each bridge included in the plan set, if any.



Upcoming Changes (4/16/10)

- 702.3.5: Show a summary of test data for all roadway and subgrade boring samples on the cover sheet if all the test data fits on the front sheet, otherwise, present on additional sheets. If sampling and testing for a scour analysis was performed, present this data, using metric units for the diameter, on the cover sheet in tabular form if space permits, otherwise present this data on a new sheet after the boring log sheets.



Upcoming Changes (4/16/10)

- 702.6.3.e: Complete geologic description of each bedrock unit, including unit core loss, unit RQD, SDI, and compressive strength test results. Use headings or footings for clarity as necessary. If there is not sufficient room to present these descriptions on the same sheet, present them on a subsequent(s) sheet(s). *Do not present a complete geologic description of each bedrock unit for structure borings for which this information is presented on the boring log as described in 703.3.*



Upcoming Changes (4/16/10)

- 702.6.4 Boring Logs: Show the boring logs of all structure borings and any roadway borings drilled in the vicinity of the structure on the boring log sheet(s) following the plan and profile sheet(s). Create the boring logs in accordance with Section 703.3.



Upcoming Changes (4/16/10)

- 703: Structure Foundation Exploration

Present the geotechnical exploration for explorations involving structures only (i.e., no roadway), including bridges, culverts, retaining walls, and noise walls, as plan drawings in the form of a Structure Foundation Exploration.

Structures explored as part of the same construction project may be presented together under the same cover sheet.



Common Issues

- A boring is either a subgrade boring (Type A) or a roadway boring (Type B).
 - No need to perform continuous subgrade sampling and drill a boring to 10-ft depth or greater.
- Include boring plan with all proposals with:
 - **Historic borings shown**
 - Exploration identification numbers
 - **Estimated amounts of rock and soil, and totals of each**



Common Issues

- Borings drilled by others or drilled as part of a previous (preliminary) exploration are still project borings.
 - Must be included and considered in planning additional explorations
 - Present accordingly in the soil profile
- Include historic structure borings and useful roadway borings in the soil profile/SFE



Common Issues

- Sealing and Backfilling of Borings
 - Backfilling is incidental to the cost of drilling
 - Identify sealing assumptions in the proposal
 - Identify the following on the log:
 - Condition that warranted sealing
 - Quantities and descriptions of seal materials
 - Seal placement procedure
 - Sealing does not include cuttings



Borehole Sealant Selection Chart B

(Ground water table (GWT) is known to > 3 m (10 ft.) below ground surface)

LEGEND

BCP • Bentonite Chips
or Pellets

HSB • High Solids Content
Bentonite Grout

PC • Neat Portland
Cement Grout

C/B • Neat Cement/
Bentonite Grout

From Main
Selection Chart

B

What is the nominal
borehole diameter (d)?

$d < 60$ mm
(2.4 inches)

$60 \text{ mm} \leq d < 100$ mm
(2.4 in.) (3.9 in.)

$100 \text{ mm} \leq d < 200$ mm
(3.9 in.) (7.9 in.)

$d \geq 200$ mm
(7.9 inches)

PC

C/B

What is the nominal
borehole depth (D)?

What is the nominal
borehole depth (D)?

PC

C/B

BCP below GWT; PC
or C/B above GWT

$D < 3$ m
(10 ft.)

$3 \text{ m} \leq D < 10$ m
(10 ft.) (33 ft.)

$D \geq 10 - 60$ m
(33 ft. - 200 ft.)

$D < 3$ m
(10 ft.)

$D \geq 3 - 60$ m
(10 ft. - 200 ft.)

PC

C/B

PC

C/B

BCP below GWT; PC
or C/B above GWT

PC

C/B

PC

C/B

PC

C/B

BCP below GWT; PC
or C/B above GWT



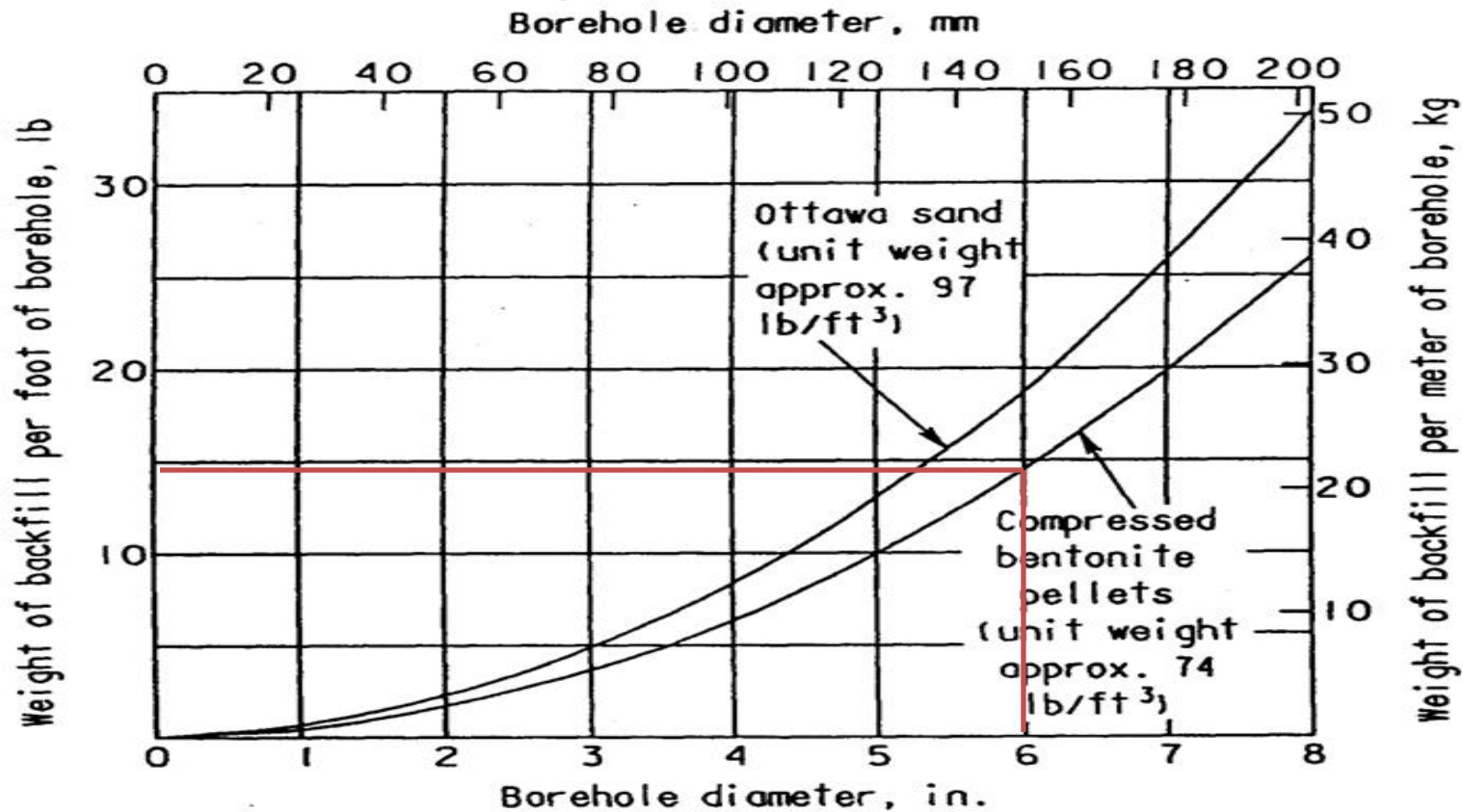


Figure 1. Required Volume of Bentonite Pellets to Seal Holes.
 (From NCHRP "Guide for Sealing Geotechnical Exploratory Holes")



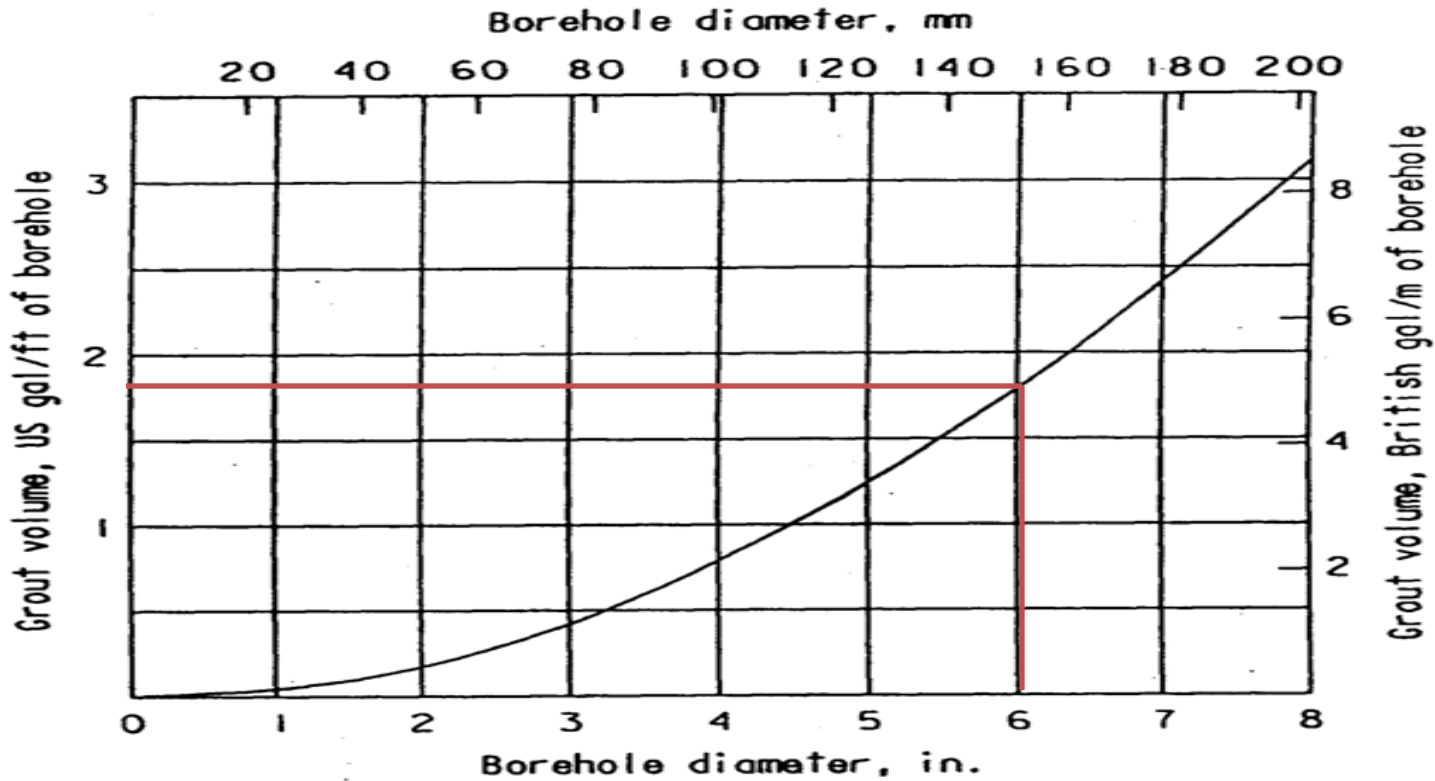


Figure 3. Required Grout Volume (including 20% allowance for waste).
 (After NCHRP "Guide for Sealing Geotechnical Exploratory Holes")



Common Issues

- For a 50-ft hole, 6-inch diameter
 - 750 lb bentonite pellets (15 bags) or
 - 88 gallons of grout
 - 12 bags cement (neat Portland cement)
 - 12 bags cement, 1 bag bentonite (neat cement/bentonite)
 - Typically see less than 4 bags of material



Common Issues

- Reconnaissance and Planning and Field Coordination are not the same.
 - Field coordination includes making arrangements for site access, procuring any necessary permits, clearing utilities, preparing damage reports, and property damage restoration oversight.
 - Field coordination tasks are expected to be mostly performed by field personnel and field personnel supervisors.



Common Issues

- Mobilization/Demobilization is not a daily travel charge.
 - Getting the necessary equipment and personnel to and from the project site. Includes crew travel time and mileage to and from the site, at the start and upon completion.
 - For long term projects, the project becomes a “place of business”
 - At ODOT, the first 40 miles are on the employee
 - Expect to be \$500 to \$1,500



Common Issues

- Include totals billed to date on invoices
- Subcontracted drilling needs to be proposed using the ODOT Proposal form.
- Direct costs are actual costs, including meals and lodging (CONUS)

PID NO.:	<PID>	ODOT Statewide Percentage for Net Fee -		172.25%
CONSULTANT:	<GEOTECHNICAL CONSULTANT>	Net Fee Percentage -		0.00%
DATE:	<DATE>	Cost of Money -		0.00%
INVOICE PERIOD:	<START DATE> TO <END DATE>			
INVOICE NUMBER:	<NUMBER>			

↓

Task	Hours Billed This Period	Direct Labor Costs	Overhead Costs	Cost of Money	Other Direct Costs	Subcon. Costs	Cost Billed This Period	Approved Total Cost	Total Billed to Date	\$ Remaining
RED FLAG SUMMARY										
Literature Search	0	\$0	\$0	\$0			\$0	\$0	\$0	\$0
Interviews	0	\$0	\$0	\$0			\$0	\$0	\$0	\$0
Site Visit	0	\$0	\$0	\$0			\$0	\$0	\$0	\$0
Report	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
RECONNAISSANCE AND PLANNING										
Office Reconnaissance	0	\$0	\$0	\$0			\$0	\$0	\$0	\$0
Field Reconnaissance	0	\$0	\$0	\$0			\$0	\$0	\$0	\$0
Exploration Plan	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
FIELD COORDINATION										
Field Coordination	0	\$0	\$0	\$0	\$0		\$0	\$0	\$0	\$0
Logging (if drilling is subcontracted)	0	\$0	\$0	\$0	\$0		\$0	\$0	\$0	\$0
Subtotal	0	\$0	\$0	\$0	\$0		\$0	\$0	\$0	\$0
FIELD EXPLORATION										
Subtotal						\$0	\$0	\$0	\$0	\$0
LABORATORY TESTING										
Subtotal						\$0	\$0	\$0	\$0	\$0
GEOTECHNICAL EXPLORATION REPORT										
Subgrade and Roadway	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Bridge	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Other Structures (describe)	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Geohazard (describe)	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
%Complete Total Previously Billed										
NET FEE							\$0	\$0	\$0	\$0
GRAND TOTAL THIS INVOICE PERIOD	Total	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0



Common Issues

- No 2-ft SPT
- Electronic submissions of completed explorations are sporadic
 - <ftp://ftp.dot.state.oh.us/pub/Geotech/transfer/>
- Presentation of Undisturbed Testing in the Soil Profile and SFE is regularly incomplete
 - See SGE 705.8.3 for guidance

SGE Changes and Issues

Questions?

