September 1, 2022
EA Project No. 1060947

TO: Bidders of Record

FROM: EA Engineering, Science, and Technology, Inc., PBC
11200 Racetrack Road, Unit 101A
Ocean Pines, MD 21811

RE: Addendum No. 01
Worcester County Department of Public Works
Snow Hill Homeowner Dropoff Area Upgrades

TO ALL BIDDERS: This Addendum No. 1 contains modifications to the Contract Documents. This Addendum No. 1 shall supplement, amend, and become part of the Contract Documents and Construction Specifications for the title project and contract.

Except as may be otherwise described, bidding requirements, materials, and workmanship for the work described herein shall conform to all requirements of the original Contract Documents, except as modified using succeeding addenda. The following Addendum to the specifications and drawings is made a part of the project and takes precedence over the section of the specifications, in part, and/or drawings, as originally written, or as modified in succeeding addenda. All bids shall be based on this addendum in accordance with the Bidding Documents.

- Modifications to the Contract Documents
- Pre-bid meeting minutes and response to questions
- Pre-bid sign-in sheet
- Geotechnical Investigation

MODIFICATIONS TO THE CONTRACT DOCUMENTS

Specifications

1. Instructions To Bidders, Section 12 Submission of Bids, DELETE “Bids shall be submitted before 1:00 PM (EDT) on September 9, 2022” and REPLACE with “Bids shall be submitted before 1:00 PM (EDT) on September 16, 2022”

WORCESTER COUNTY, MARYLAND
SNOW HILL HOMEOWNER DROPOFF AREA UPGRADES
PRE-BID MEETING MINUTES

DATE: August 30, 2022
TIME: 10:00 A.M.
LOCATION: Ocean Pines WWTP - Conference Room
1000 Shore Lane, Ocean Pines, Maryland 21811

Introductions

Owner:	Worcester County Commissioners, Department of Public Works (DPW)
Design Engineer:	EA Engineering, Science, and Technology, Inc. PBC (EA)

Attendees

Darl Kolar	EA Engineering	dkolar@eaest.com
Chris Clasing	Worcester County DPW	Cclasing@co.worcester.md.us
Nicholas Rice	Worcester County Procurements	nrice@co.worcester.md.us
David Candy	Worcester County Solid Waste	dcandy@co.worcester.md.us
Mike McClung	Worcester County Solid Waste	mmclung@co.worcester.md.us
Bruce Giordano	David A. Bramble	bgiordano@davidabrambleinc.com
Rick Mazol	Chesapeake Turf, LLC.	rick@chesapeaketurf.com
Mark Malloy	Reynolds Excavating	mark@reynoldsexcavatinginc.com

Project Description

The project upgrades generally include items performed by the CONTRACTOR as noted below.

- Coordination with Worcester County to maintain operations of the transfer station adjacent to the work areas. Setup of traffic barrels to allow public access to half of the work zone during construction. CONTRACTOR shall set up traffic barrels in the middle of the drive lane and commence work along the north side of the proposed improvements. The public shall be given access to the southern side of the work zone to access the trash compactor. When approved the CONTRACTOR shall switch public access to the north side and commence work on the south side of the work zone.
- Removal of wooden walkways, wooden framing, partial removal of wooden piles, aggregates, and soils for the installation and testing of cast in place reinforced concrete walls, slabs, testing, and all associated appurtenances.
- Furnish and install cast in place reinforced concrete pads and retaining walls. Including testing, reinforcement, chairs, ties, compounds, form work, and all associated appurtenances.
- Furnish and install 10-inch compacted CR-6 base aggregate, 2.5-inch 9.5-mm Surface Superpave asphalt, and 4-inch 19.5 Base Superpave asphalt section. Including backfill, compaction, and testing of soils, aggregates, and pavement sections.
- Furnish and install 1-inch mill and overlay of 9.5-mm Surface Superpave asphalt.
- Coordination with the County to have the existing compactor and appurtenances removed offsite.
- Coordination with the County to have their approved trash compactor installers install the new

compactor and appurtenances.
- Site restoration and repair.
- Coordination with Worcester County to return operations of the transfer station over to the completed project area.

Bonds and Bid Form

- Proposal, Performance and Payment Bonds are required.

Bid Due Date

- September 9, 2022, 1:00PM – County Commissioner's Office.
- Last day for questions September 2, 2022, no later than 4:00pm to dkolar@eaest.com.

Completion Time

- Contract Time will be 90 Calendar Days.
- Project Completion within 30 calendar days after substantial completion.
- Liquidated damages will be $500 per day for the first 30 days. Beyond 30 days, damages increase to $1,000 per day.
- Retainage will be 10% and may be reduced later in the project at the Owner's election.
- Contractor to submit proposed schedule and update as required.
- Contract time will cease to run when Certificate of Substantial Completion is issued.
- Claims for weather days must be requested by the 15th of the following month. Detailed back-up must be submitted with the request.

Warranty

- Not less than 1 year.

Pay Applications

- Contractor to submit pay application monthly.
- Pay applications to be submitted with applicable backup information in AIA G702 format or other approved form.
- Payment is typically made on an identified date each month.

Submittals

- Submittals can be provided electronically to initiate review. Two hard copies of Approved shop drawings are required.

Requests for Information

- All RFIs to be in writing or by email and numbered sequentially.
- Contractor to maintain an RFI log.

Record Drawings

- Contractor is to always maintain red line mark-ups at the site.

Erosion and Sediment Control

- No more than 5,000 square feet of disturbed area shall occur.

Progress Meetings

- Monthly – Contractor shall provide and updated schedule, submittal and RFI log.

Questions and Responses

Question No. 1: Will the County accept the cut timber piles at the Central Landfill Facility?
Response No. 1: *Yes, the County will accept the timber piles at the Central Landfill Facility at no charge.*

Question No. 2: Drawing C-201 states in two locations the wall is precast. Is the concrete wall pre-cast or cast-in-place concrete?
Response No. 2: *The concrete wall shall be cast-in-place. The precast reference on the drawings is incorrect.*

Question No. 3: Was there a geotechnical report completed and can it be available?
Response No. 3: *Yes, the geotechnical report is included in Addendum No. 1.*

Question No. 4: Is the remaining below grade timber piles require for structural support of the concrete slab and wall?
Response No. 4: *The concrete slab and wall was designed independently of the remaining timber piles. The condition of the piles shall be evaluated by the Engineer once cut to grade.*

Question No. 5: Is the existing tree behind the attendant's shed required to be removed?
Response No. 5: *The Contractor is not required to remove the tree in its entirety. The Contractor may cut roots necessary to box out the concrete slab and wall.*

Question No. 6: What is meant by the 'Contractor shall coordinate with the County for the removal of the existing compactor and installation of the new compactor?
Response No. 6: *The County will remove the existing compactor and install the new compactor. The Contractor shall coordinate their schedule with the County for the removal and installation by the County.*

Question No. 7: Is the Contractor required to post signage?
Response No. 7: *The County Roads department can assist with providing signage. Please note the requirement of the Contractor for traffic control and traffic safety barrels.*

March 30, 2022

Darl Kolar
EA Engineering, Science, and Technology, Inc., PBC
11200 Racetrack Road, Unit A101
Berlin, Maryland 21811

Reference: Geotechnical Engineering Study
Snow Hill Homeowner Drop-off Area
315 Holly Lane, Snow Hill, Maryland 21863
SGI Project Number: 22013

Dear Mr. Kolar:

Stable Ground In-Situ, LLC (SGI) is pleased to present this letter concerning the geotechnical evaluation at the homeowner dropoff area of the Snow Hill Transfer Station. Based on conversations with EA Engineering, it is understood that the existing drop-off will be rebuilt with steel sheet piling for the elevated dumping area.

On March 23, 2022, SGI was onsite to perform a geotechnical evaluation for the proposed rebuild. In order to determine soil characteristics, parameters and general subsurface information, SGI advanced two (2) Cone Penetration Test (CPT) soundings to a depth of approximately 40 feet below existing grades. Soundings were designated CPT-1 and CPT-2. Approximate locations were selected by EA Engineering and can be seen in *Figure 1: Testing Location Map.*

Sheet Piling Design Values and Retaining Wall Bearing Capacity

Our investigation and analysis finds that the structure can be constructed using sheet piling walls. A generalized geological section has been created for each sounding location and attached to this letter. This provides estimated design values in various formats. The active and at-rest earth pressure coefficients can be seen in the attached layer tabular results. Given that the sheet piling wall will likely be unrestrained, SGI recommends that an equivalent fluid pressure (EFP) of *Ka * gamma* be utilized [active earth pressure coefficient times soil bulk unit weight].

Note that any clay or silt laden soils should be avoided as drainage area fill and general fill. USCS soil types SP, SP-SM or SM are preferred fill materials behind any required aggregate drainage area against the wall.

As a general estimate for non-expansive, granular fill material in a level condition, an EFP of 40pcf can be utilized.

Should the designer choose to use a more traditional concrete retaining wall, SGI estimates that a net design soil bearing capacity of **2,500 pounds per square foot (psf)** is applicable for

construction of wall footings. This is contingent on existing soils are not disturbed below the bottom of footing.

In general, exterior footings should be placed at least 24 inches below grade for frost protection. Footing depth should never be less than the minimum applicable local building code and should comply with any coastal specific requirements.

It is important that any organic or deleterious materials be removed prior to footing construction and that any fill material (or disturbed native soils) be compacted properly. An experienced soils inspector or engineer should verify the subgrade before pouring of concrete; especially when cut or fill operations have taken place.

Note that minor changes and gradual transitions can be expected between sounding locations. Should any drastic changes be observed during construction phases, please contact SGI to determine what, if any, recommendations should be made.

All professional services were performed in accordance with generally accepted engineering practice. Should there be any questions or additional information required, please contact SGI at 410-422-4674 or 267-896-5380.

Best Regards,

Ryan C. Ward, P.E.
rward@sgi-insitu.com

Fernando Garcia, P.E., D. GE.
fgarcia@sgi-insitu.com

FIGURE 1: TESTING LOCATION MAP
Snow Hill Transfer Station
Snow Hill, Maryland 21863

Date: March 30, 2022
Scale: NTS
SGI Project Number: 22013

CPT Logs and Interpretations

Stable Ground In-Situ, LLC.
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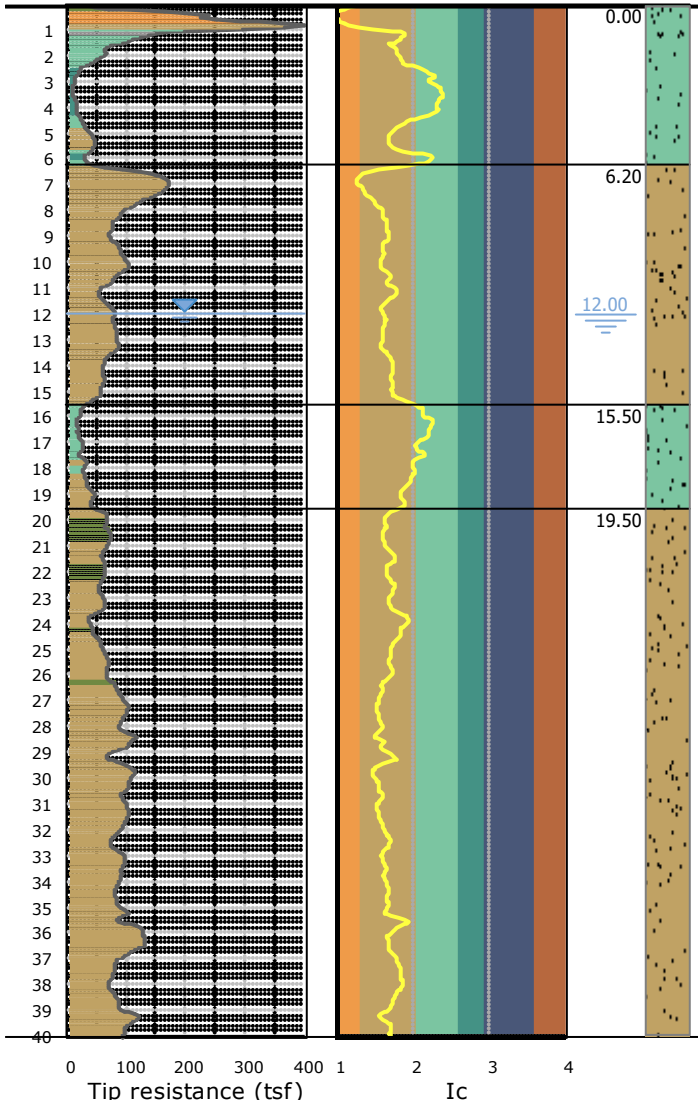
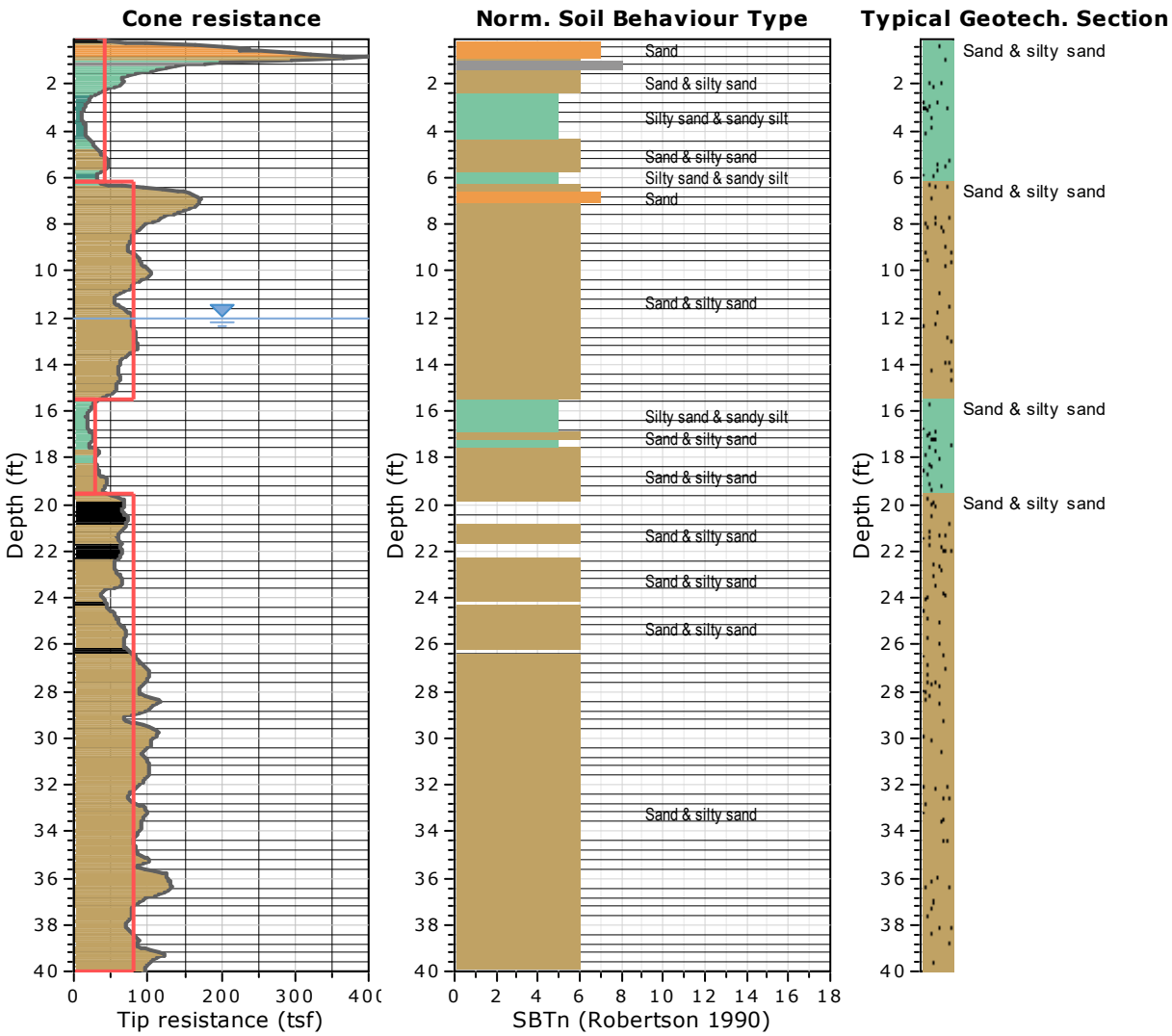
CPT: CPT-1
Total depth: 40.09 ft, Date: 3/28/2022
Surface Elevation: 13.00 ft
Coords: X:0.00, Y:0.00
Cone Type: NOVA U2
Cone Operator: F. Garcia/R. Ward, P.E.

Project: 1060947 Snow Hill Homeowner Dropoff Area Up
Location: Snow Hill, Maryland



Depth (ft)	Description	qt (tsf)	Ksbt (ft/s)	N60	Es (tsf)	Dr	Phi (°)	M (tsf)	Go (tsf)	Su (tsf)	Su ratio	OCR	Gamma (pcf)
0.00	Sand & silty sand	42.0	3.72E-5	10.0	329.0	53.6	39.3	381.9	377.7	-	-	-	112.0
6.20	Sand & silty sand	80.7	3.21E-4	16.5	454.1	54.0	37.1	569.2	529.6	-	-	-	110.8
15.50	Sand & silty sand	27.7	1.72E-5	7.4	257.5	29.7	32.1	318.1	263.1	-	-	-	97.0
19.50	Sand & silty sand	80.7	2.30E-4	16.9	487.0	46.8	35.2	595.3	535.1	-	-	-	107.1



Tabular results

.:: Layer No: 1 ::.

Code: 1 **Start depth:** 0.00 (ft), **End depth:** 6.20 (ft)

Description: Sand & silty sand

Basic results	**Estimation results**	
Total cone resistance: 42.00 ±93.75 tsf	Permeability: 3.72E-05 ±4.57E-03 ft/s	Constrained Mod.: 381.85 ±403.07 tsf
Sleeve friction: 0.35 ±1.35 tsf	N_{60}: 10.05 ±13.89 blows	Go: 377.73 ±461.89 tsf
Ic: 1.82 ±0.41	Es: 329.03 ±315.76 tsf	Su: 0.00 ±0.00 tsf
SBT_n: 6	Dr (%): 53.63 ±25.51	Su ratio: 0.00 ±0.00
SBTn description: Sand & silty sand	φ (degrees): 39.35 ±5.65 °	O.C.R.: 0.00 ±0.00
	Unit weight: 112.00 ±10.16 pcf	Ka=0.23, K0=0.37

.:: Layer No: 2 ::.

Code: 2 **Start depth:** 6.20 (ft), **End depth:** 15.50 (ft)

Description: Sand & silty sand

Basic results	**Estimation results**	
Total cone resistance: 80.75 ±31.70 tsf	Permeability: 3.21E-04 ±8.66E-04 ft/s	Constrained Mod.: 569.19 ±102.32 tsf
Sleeve friction: 0.24 ±0.14 tsf	N_{60}: 16.45 ±4.48 blows	Go: 529.59 ±116.89 tsf
Ic: 1.63 ±0.14	Es: 454.14 ±81.64 tsf	Su: 0.00 ±0.00 tsf
SBT_n: 6	Dr (%): 53.99 ±10.94	Su ratio: 0.00 ±0.00
SBTn description: Sand & silty sand	φ (degrees): 37.05 ±2.39 °	O.C.R.: 0.00 ±0.00
	Unit weight: 110.77 ±4.38 pcf	Ka=0.25, K0=0.40

.:: Layer No: 3 ::.

Code: 3 **Start depth:** 15.50 (ft), **End depth:** 19.50 (ft)

Description: Sand & silty sand

Basic results	**Estimation results**	
Total cone resistance: 27.74 ±8.36 tsf	Permeability: 1.72E-05 ±2.13E-05 ft/s	Constrained Mod.: 318.14 ±53.06 tsf
Sleeve friction: 0.05 ±0.02 tsf	N_{60}: 7.40 ±1.69 blows	Go: 263.12 ±46.15 tsf
Ic: 2.05 ±0.12	Es: 257.53 ±37.96 tsf	Su: 0.00 ±0.00 tsf
SBT_n: 6	Dr (%): 29.70 ±4.06	Su ratio: 0.00 ±0.00
SBTn description: Sand & silty sand	φ (degrees): 32.14 ±0.32 °	O.C.R.: 0.00 ±0.00
	Unit weight: 97.01 ±2.76 pcf	Ka=0.31, K0=0.47

.:: Layer No: 4 ::.

Code: 4 **Start depth:** 19.50 (ft), **End depth:** 40.00 (ft)

Description: Sand & silty sand

Basic results	**Estimation results**	
Total cone resistance: 80.66 ±21.00 tsf	Permeability: 2.30E-04 ±2.10E-04 ft/s	Constrained Mod.: 595.28 ±137.67 tsf
Sleeve friction: 0.15 ±0.16 tsf	N_{60}: 16.91 ±4.02 blows	Go: 535.07 ±155.03 tsf
Ic: 1.67 ±0.10	Es: 487.01 ±108.41 tsf	Su: 0.00 ±0.00 tsf
SBT_n: 6	Dr (%): 46.83 ±5.31	Su ratio: 0.00 ±0.00
SBTn description: Sand & silty sand	φ (degrees): 35.25 ±1.34 °	O.C.R.: 0.00 ±0.00
	Unit weight: 107.06 ±5.23 pcf	Ka=0.27, K0=0.43

Summary table of mean values

From depth To depth (ft)	Thickness (ft)	Permeability (ft/s)	SPT_{N60} (blows/ft)	E_s (tsf)	D_r (%)	Friction angle	Constrained modulus, M (tsf)	Shear modulus, G_O (tsf)	Undrained strength, S_U (tsf)	Undrained strength ratio	OCR	Unit weight (pcf)
0.00	6.20	3.72E-05	10.0	329.0	53.6	39.3	381.9	377.7	0.0	0.0	0.0	112.0
6.20		(±4.57E-03)	(±13.9)	(±315.8)	(±25.5)	(±5.7)	(±403.1)	(±461.9)	(±0.0)	(±0.0)	(±0.0)	(±10.2)
6.20	9.30	3.21E-04	16.5	454.1	54.0	37.1	569.2	529.6	0.0	0.0	0.0	110.8
15.50		(±8.66E-04)	(±4.5)	(±81.6)	(±10.9)	(±2.4)	(±102.3)	(±116.9)	(±0.0)	(±0.0)	(±0.0)	(±4.4)
15.50	4.00	1.72E-05	7.4	257.5	29.7	32.1	318.1	263.1	0.0	0.0	0.0	97.0
19.50		(±2.13E-05)	(±1.7)	(±38.0)	(±4.1)	(±0.3)	(±53.1)	(±46.1)	(±0.0)	(±0.0)	(±0.0)	(±2.8)
19.50	20.50	2.30E-04	16.9	487.0	46.8	35.2	595.3	535.1	0.0	0.0	0.0	107.1
40.00		(±2.10E-04)	(±4.0)	(±108.4)	(±5.3)	(±1.3)	(±137.7)	(±155.0)	(±0.0)	(±0.0)	(±0.0)	(±5.2)

Depth values presented in this table are measured from free ground surface

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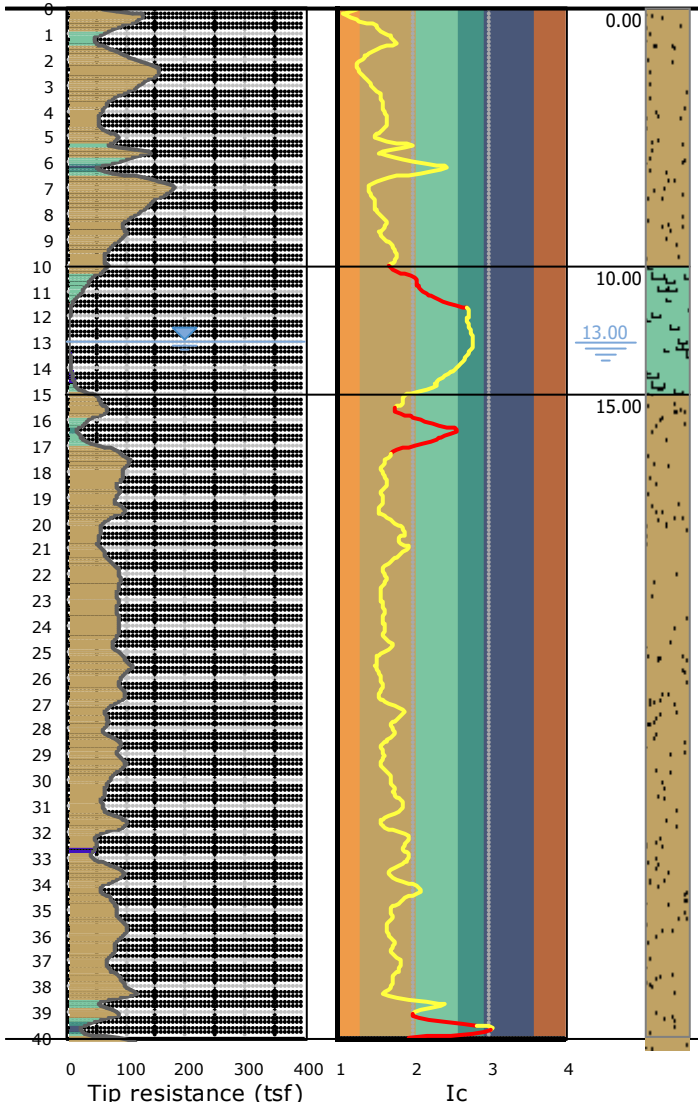
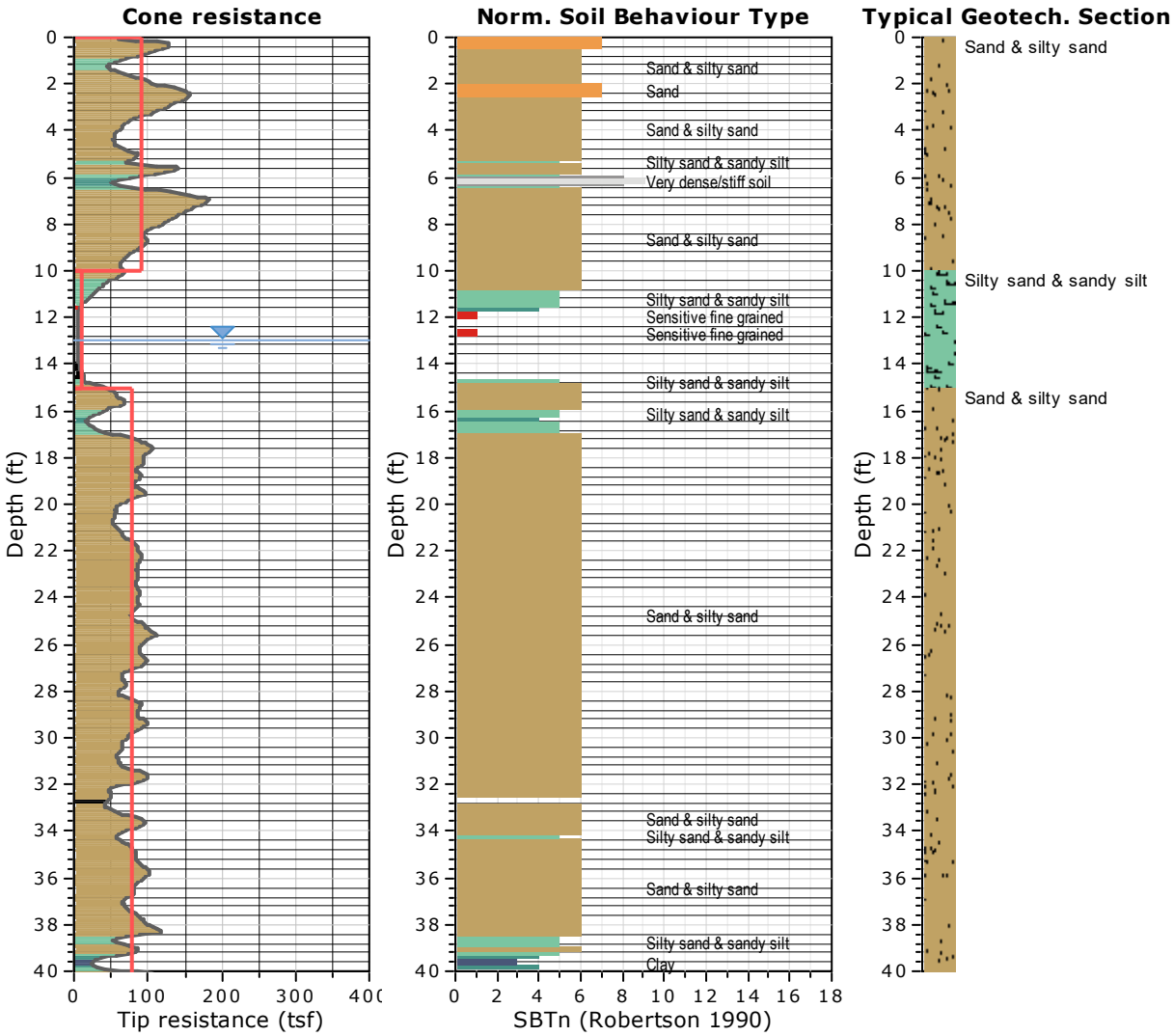
CPT: CPT-2
Total depth: 40.49 ft, Date: 3/28/2022
Surface Elevation: 14.00 ft
Coords: X:0.00, Y:0.00
Cone Type: NOVA U2
Cone Operator: F. Garcia/R. Ward, P.E.

Project: 1060947 Snow Hill Homeowner Dropoff Area Up
Location: Snow Hill, Maryland



Description	qt (tsf)	Ksbt (ft/s)	N60	Es (tsf)	Dr	Phi (°)	M (tsf)	Go (tsf)	Su (tsf)	Su ratio	OCR	Gamma (pcf)
Sand & silty sand	92.1	4.20E-4	18.2	489.8	70.8	40.8	616.9	610.4	-	-	-	116.9
Silty sand & sandy silt	10.3	2.63E-5	3.2	294.0	33.9	33.3	87.0	127.3	-	-	-	89.2
Sand & silty sand	77.3	1.57E-4	16.8	490.3	45.6	35.2	608.3	560.1	-	-	-	108.6



Tabular results

.:: Layer No: 1 ::.

Code: 1 **Start depth:** 0.00 (ft), **End depth:** 10.00 (ft)

Description: Sand & silty sand

Basic results	Estimation results	
Total cone resistance: 92.13 ±36.36 tsf	Permeability: 4.20E-04 ±2.31E-03 ft/s	Constrained Mod.: 616.87 ±192.75 tsf
Sleeve friction: 0.54 ±0.56 tsf	N_{60}: 18.21 ±5.85 blows	Go: 610.36 ±226.60 tsf
Ic: 1.58 ±0.23	Es: 489.77 ±155.59 tsf	Su: 0.00 ±0.00 tsf
SBT_n: 6	Dr (%): 70.76 ±14.25	Su ratio: 0.00 ±0.00
SBTn description: Sand & silty sand	φ (degrees): 40.82 ±2.69 °	O.C.R.: 0.00 ±0.00
	Unit weight: 116.90 ±5.03 pcf	Ka=0.22, K0=0.36

.:: Layer No: 2 ::.

Code: 2 **Start depth:** 10.00 (ft), **End depth:** 15.00 (ft)

Description: Silty sand & sandy silt

Basic results	**Estimation results**	
Total cone resistance: 10.25 ±13.50 tsf	Permeability: 2.63E-05 ±6.41E-05 ft/s	Constrained Mod.: 87.01 ±126.32 tsf
Sleeve friction: 0.02 ±0.05 tsf	N_{60}: 3.24 ±2.78 blows	Go: 127.33 ±92.05 tsf
Ic: 2.58 ±0.27	Es: 293.96 ±102.69 tsf	Su: 0.00 ±0.00 tsf
SBT_n: 5	Dr (%): 33.92 ±12.04	Su ratio: 0.00 ±0.00
SBTn description: Silty sand & sandy silt	φ (degrees): 33.25 ±1.85 °	O.C.R.: 0.00 ±0.00
	Unit weight: 89.21 ±5.43 pcf	Ka=0.29 K0=0.46

.:: Layer No: 3 ::.

Code: 3 **Start depth:** 15.00 (ft), **End depth:** 40.49 (ft)

Description: Sand & silty sand

Basic results	**Estimation results**	
Total cone resistance: 77.32 ±17.27 tsf	Permeability: 1.57E-04 ±1.88E-04 ft/s	Constrained Mod.: 608.34 ±98.73 tsf
Sleeve friction: 0.18 ±0.17 tsf	N_{60}: 16.82 ±2.82 blows	Go: 560.06 ±116.40 tsf
Ic: 1.73 ±0.18	Es: 490.33 ±79.70 tsf	Su: 0.00 ±0.00 tsf
SBT_n: 6	Dr (%): 45.62 ±5.20	Su ratio: 0.00 ±0.00
SBTn description: Sand & silty sand	φ (degrees): 35.17 ±1.09 °	O.C.R.: 0.00 ±0.00
	Unit weight: 108.61 ±3.89 pcf	Ka=0.27, K0=0.43

Summary table of mean values

From depth To depth (ft)	Thickness (ft)	Permeability (ft/s)	SPT_{N60} (blows/ft)	E_s (tsf)	D_r (%)	Friction angle	Constrained modulus, M (tsf)	Shear modulus, G_O (tsf)	Undrained strength, S_U (tsf)	Undrained strength ratio	OCR	Unit weight (pcf)
0.00	10.00	4.20E-04	18.2	489.8	70.8	40.8	616.9	610.4	0.0	0.0	0.0	116.9
10.00		(±2.31E-03)	(±5.8)	(±155.6)	(±14.3)	(±2.7)	(±192.7)	(±226.6)	(±0.0)	(±0.0)	(±0.0)	(±5.0)
10.00	5.00	2.63E-05	3.2	294.0	33.9	33.3	87.0	127.3	0.0	0.0	0.0	89.2
15.00		(±6.41E-05)	(±2.8)	(±102.7)	(±12.0)	(±1.8)	(±126.3)	(±92.1)	(±0.0)	(±0.0)	(±0.0)	(±5.4)
15.00	25.49	1.57E-04	16.8	490.3	45.6	35.2	608.3	560.1	0.0	0.0	0.0	108.6
40.49		(±1.88E-04)	(±2.8)	(±79.7)	(±5.2)	(±1.1)	(±98.7)	(±116.4)	(±0.0)	(±0.0)	(±0.0)	(±3.9)

Depth values presented in this table are measured from free ground surface

Stable Ground In-Situ, LLC.
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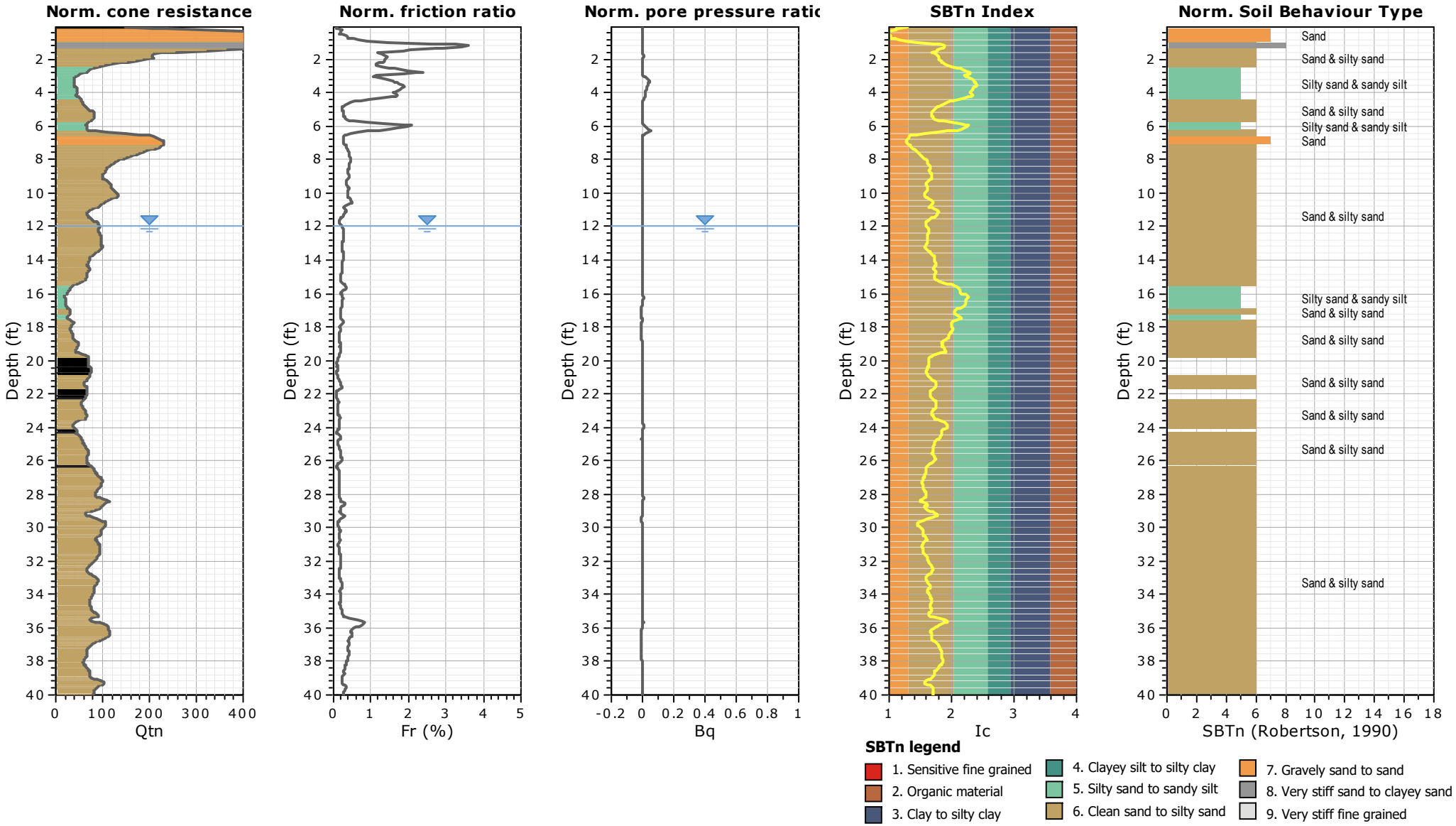
Project: **1060947 Snow Hill Homeowner Dropoff Area Up**
Location: **Snow Hill, Maryland**

CPT: CPT-1
Total depth: 40.09 ft, Date: 3/28/2022
Surface Elevation: 13.00 ft
Coords: X:0.00, Y:0.00
Cone Type: NOVA U2
Cone Operator: F. Garcia/R. Ward, P.E.



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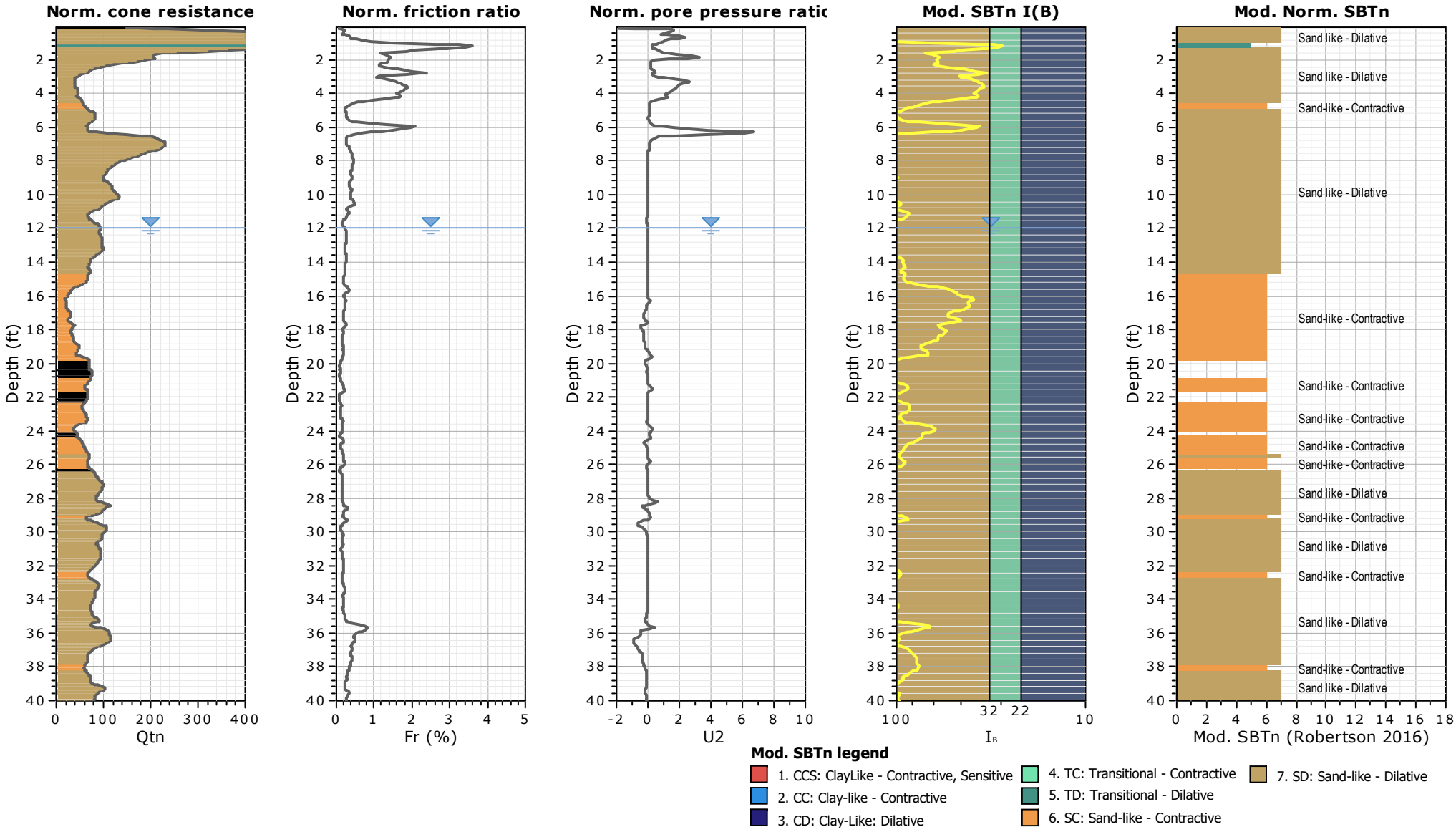

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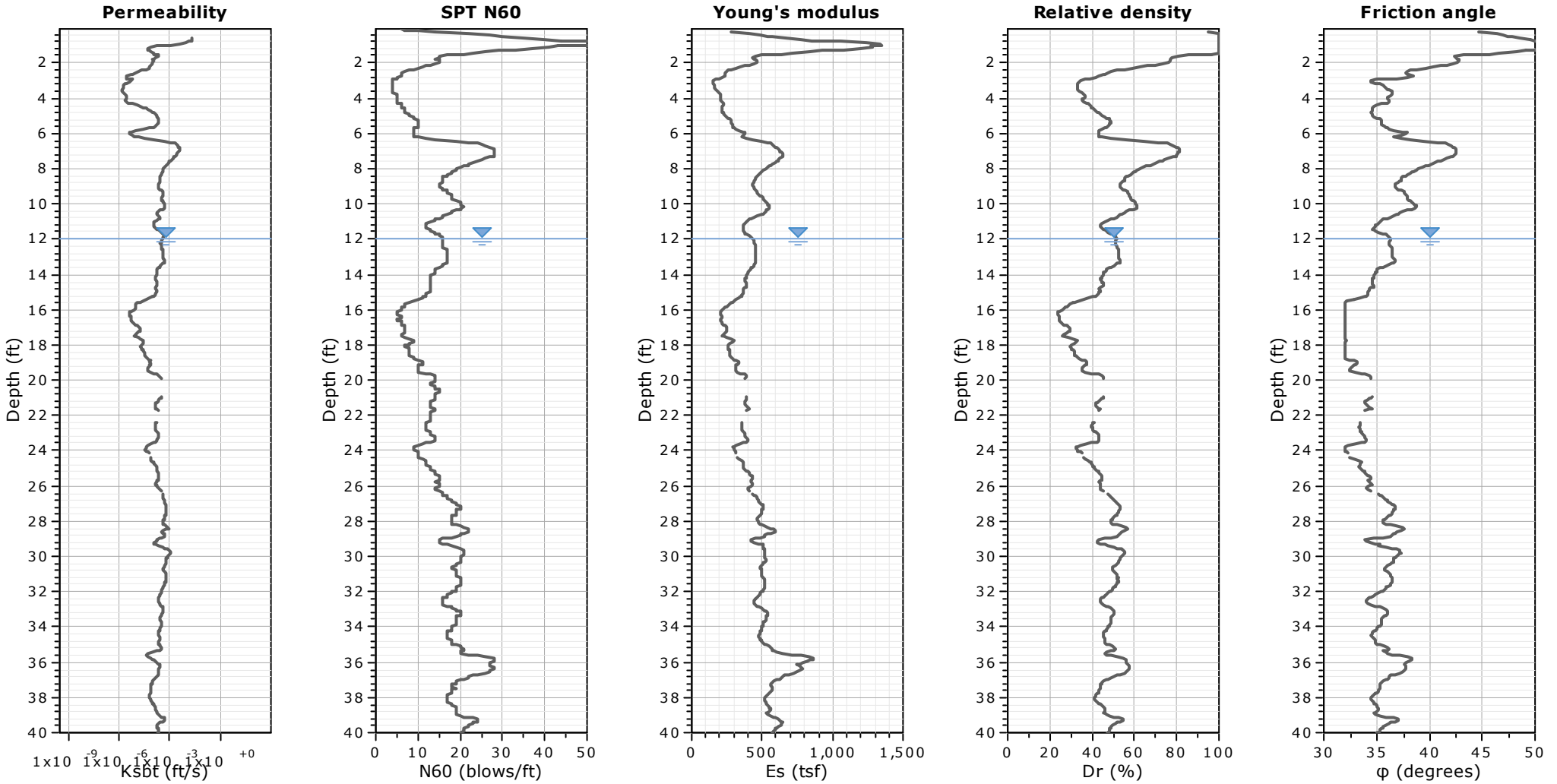

Calculation parameters

Permeability: Based on SBT_n
SPT N_{60}: Based on I_c and q_t
Young's modulus: Based on variable alpha using I_c (Robertson, 2009)
Relative density constant, C_{Dr}: 350.0
Phi: Based on Kulhawy & Mayne (1990)

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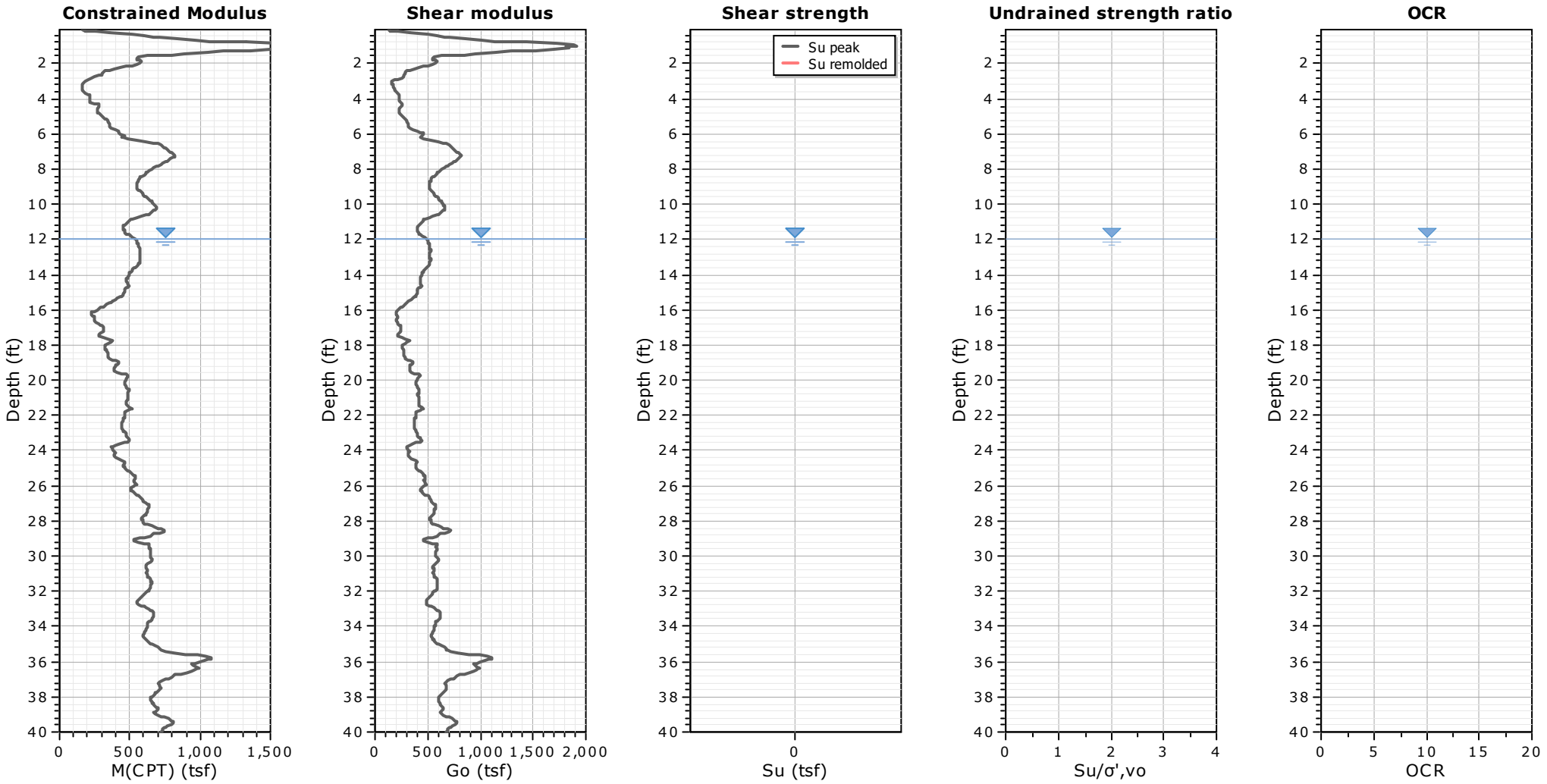
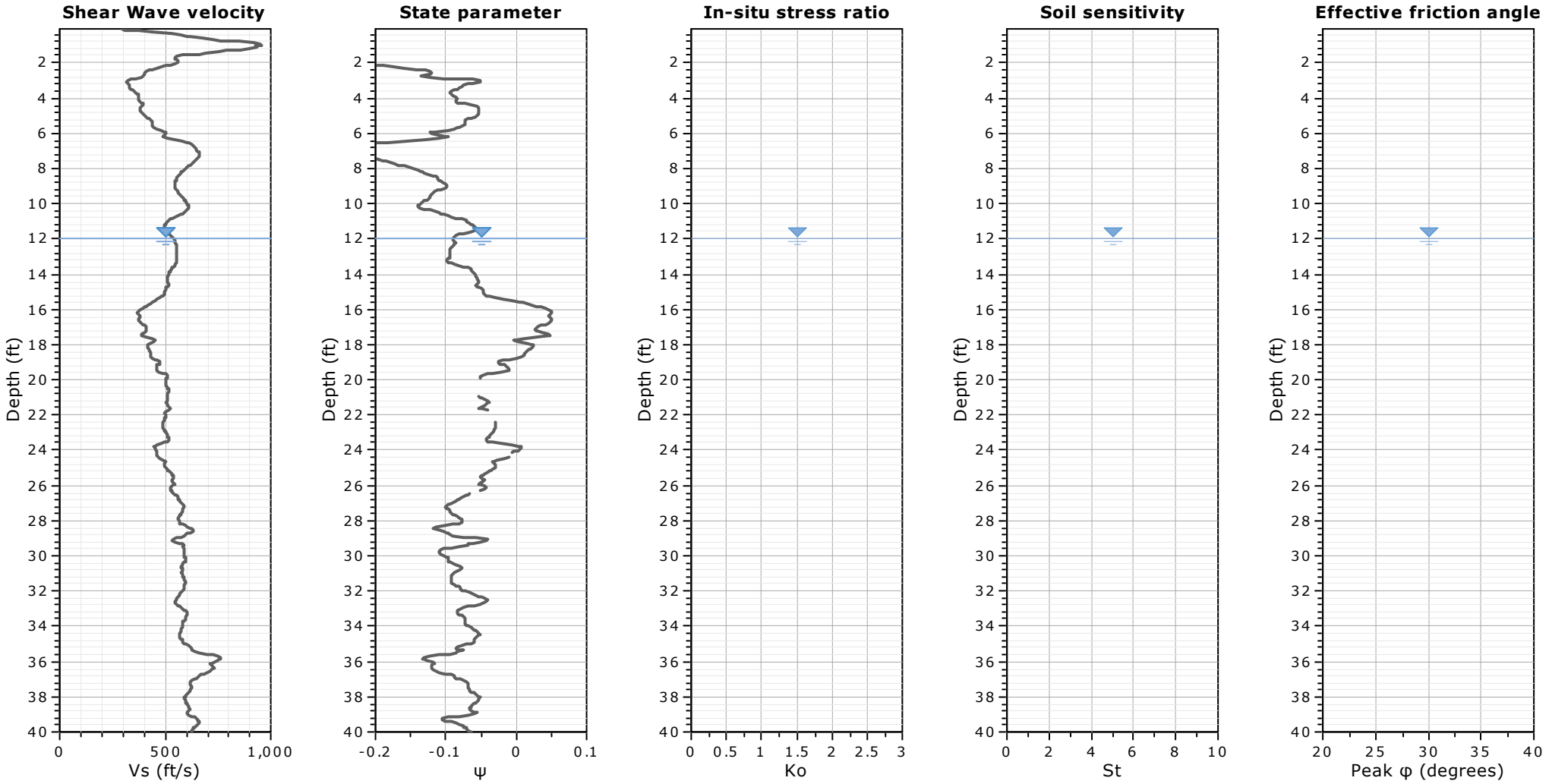
CPT: CPT-1
Total depth: 40.09 ft, Date: 3/28/2022
Surface Elevation: 13.00 ft
Coords: X:0.00, Y:0.00
Cone Type: NOVA U2
Cone Operator: F. Garcia/R. Ward, P.E.

Project: **1060947 Snow Hill Homeowner Dropoff Area Up**
Location: **Snow Hill, Maryland**



Calculation parameters

Constrained modulus: Based on variable *alpha* using I_c and Q_{tn} (Robertson, 2009)
Go: Based on variable *alpha* using I_c (Robertson, 2009)
Undrained shear strength cone factor for clays, N_{kt}: 14
OCR factor for clays, N_{kt}: 0.33
Flat Dilatometer Test data



Calculation parameters

Soil Sensitivity factor, N_S: 7.00

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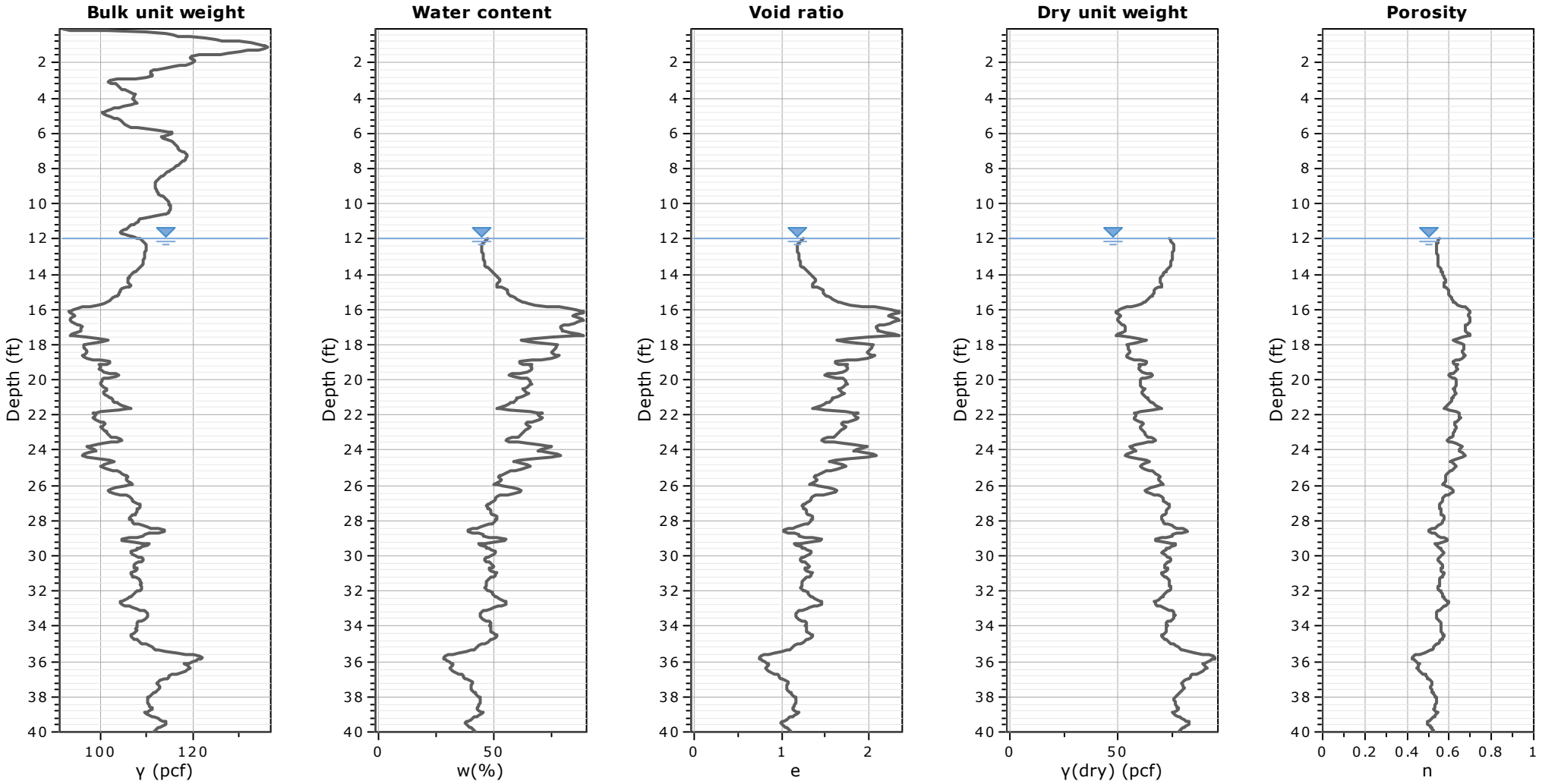

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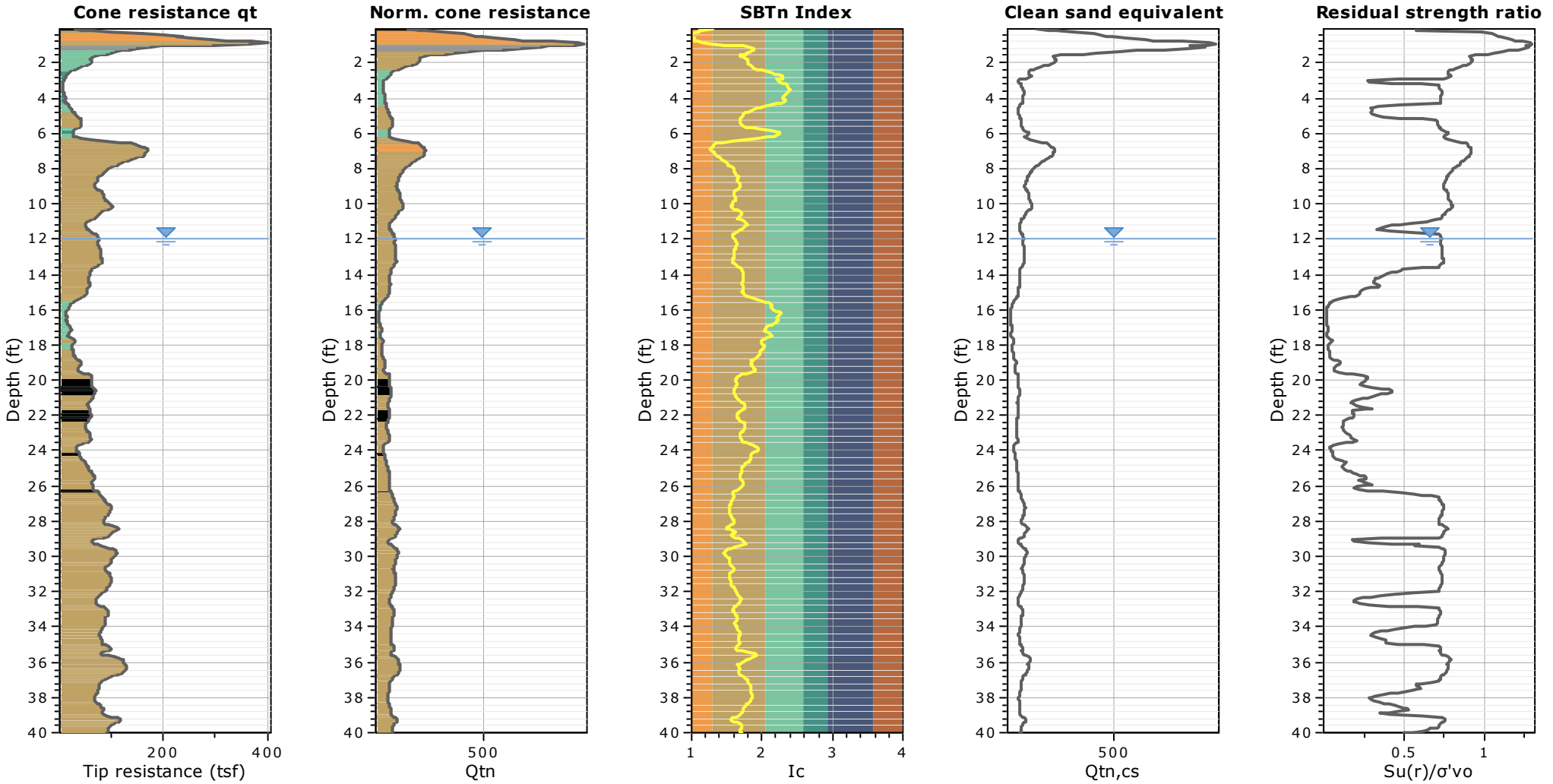

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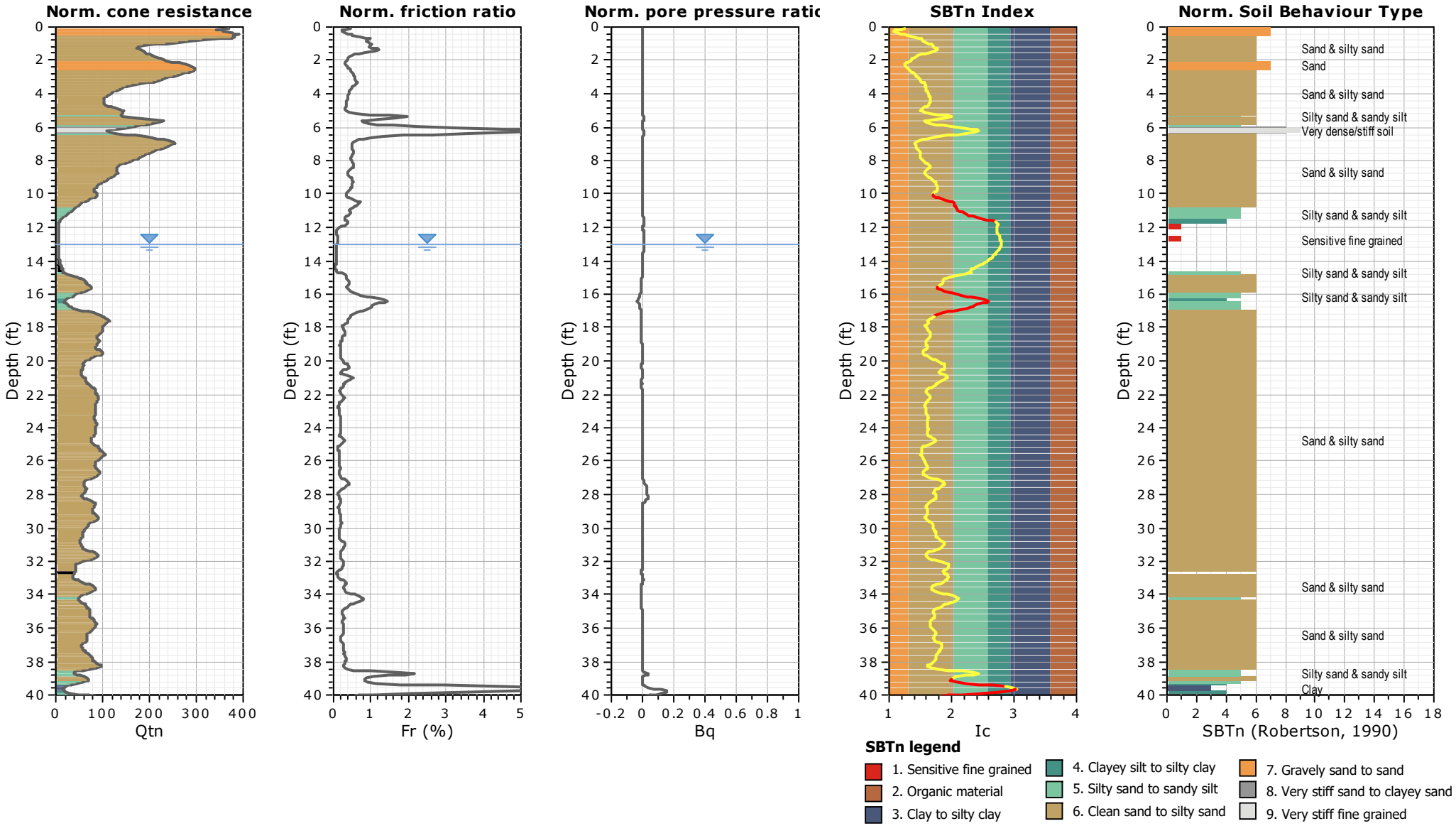

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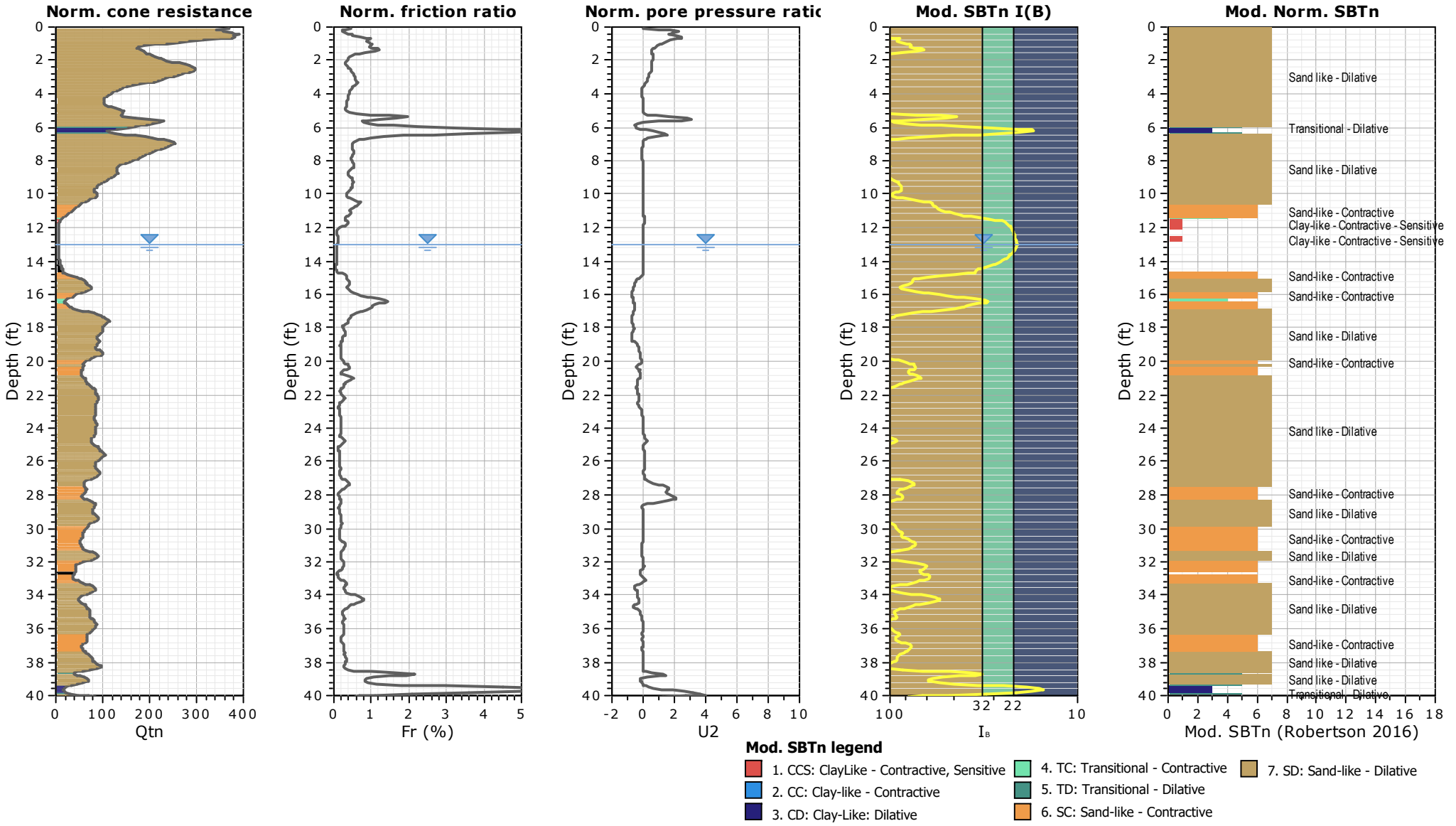

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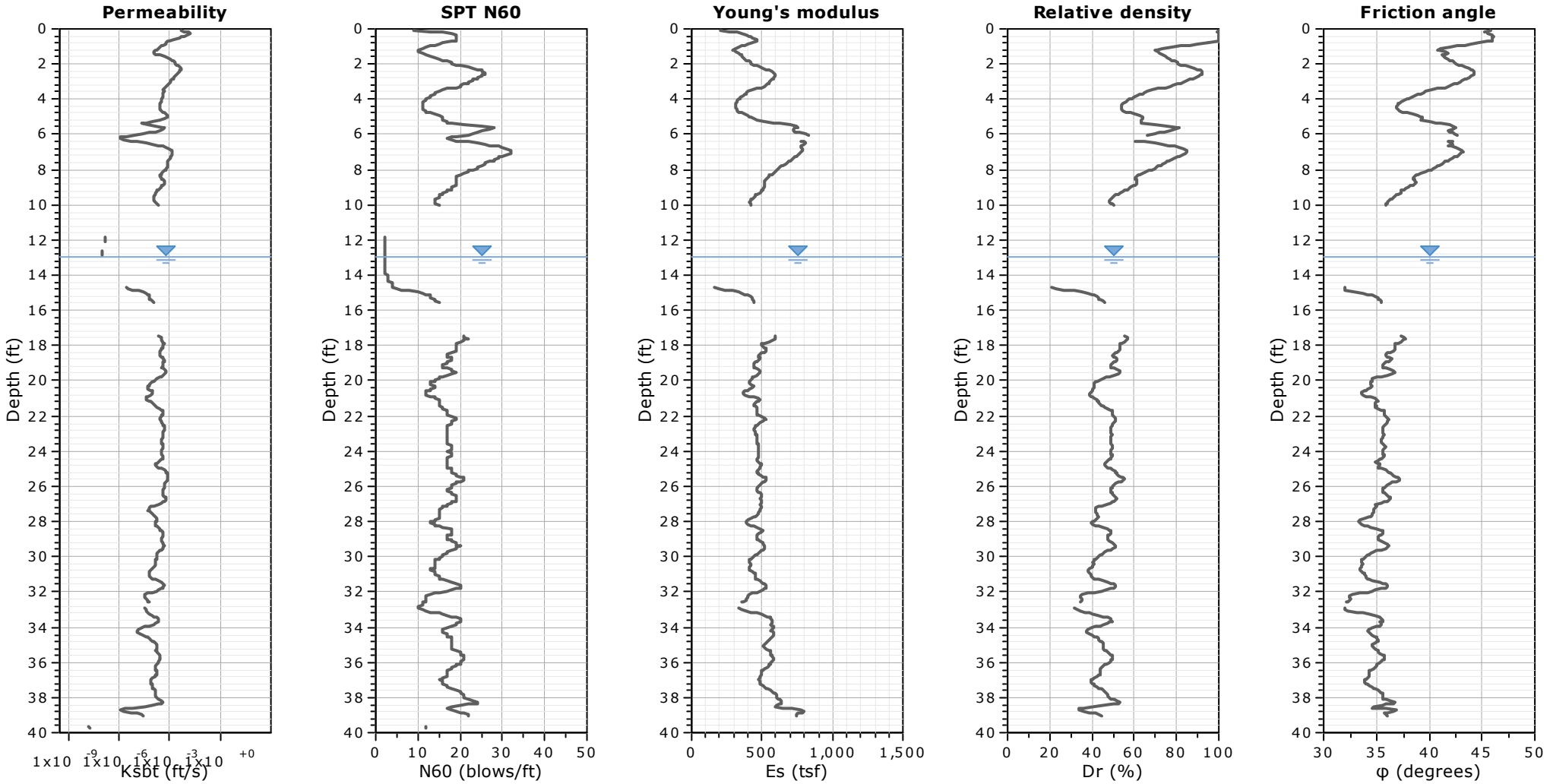

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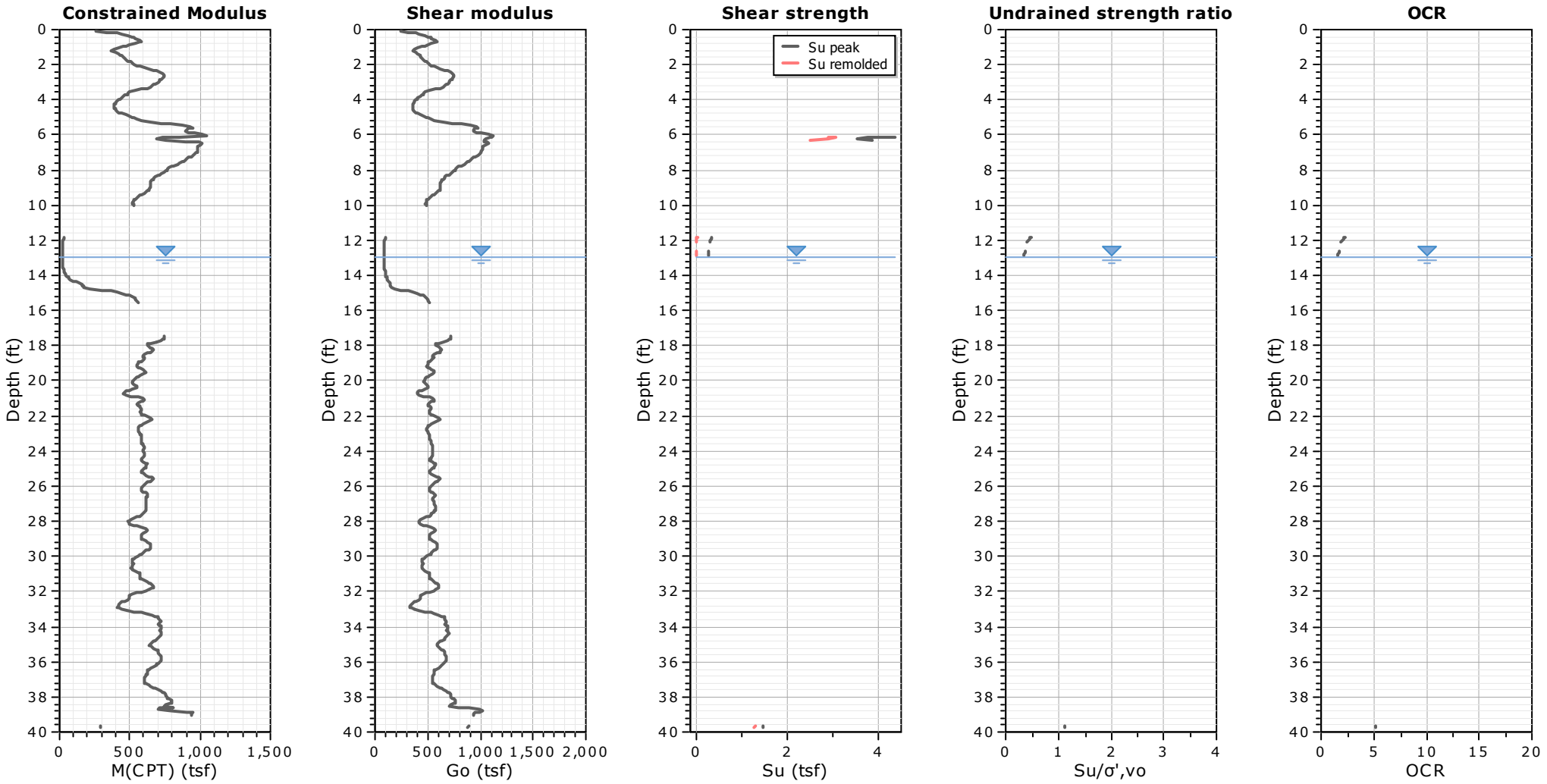

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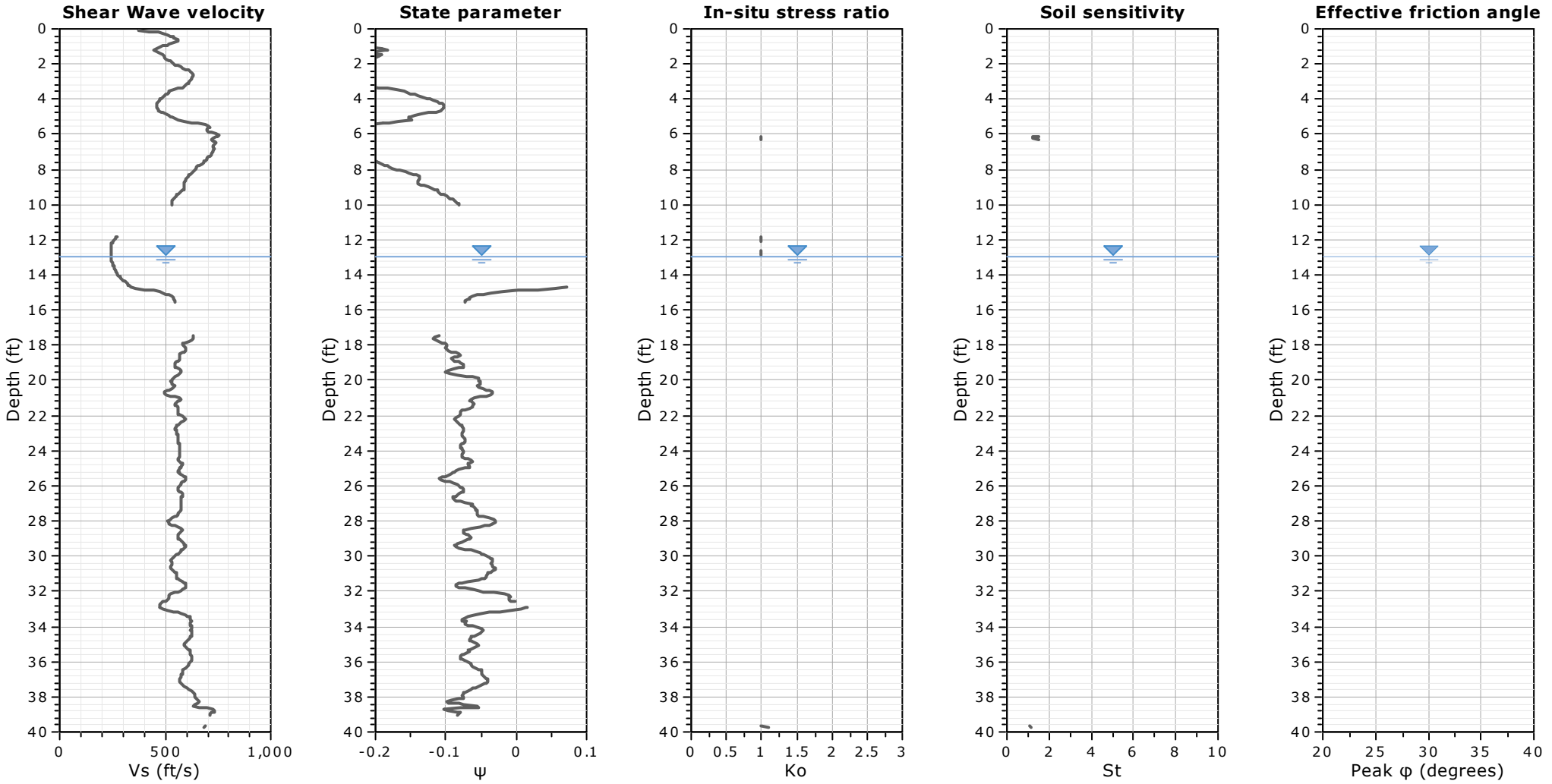

Calculation parameters

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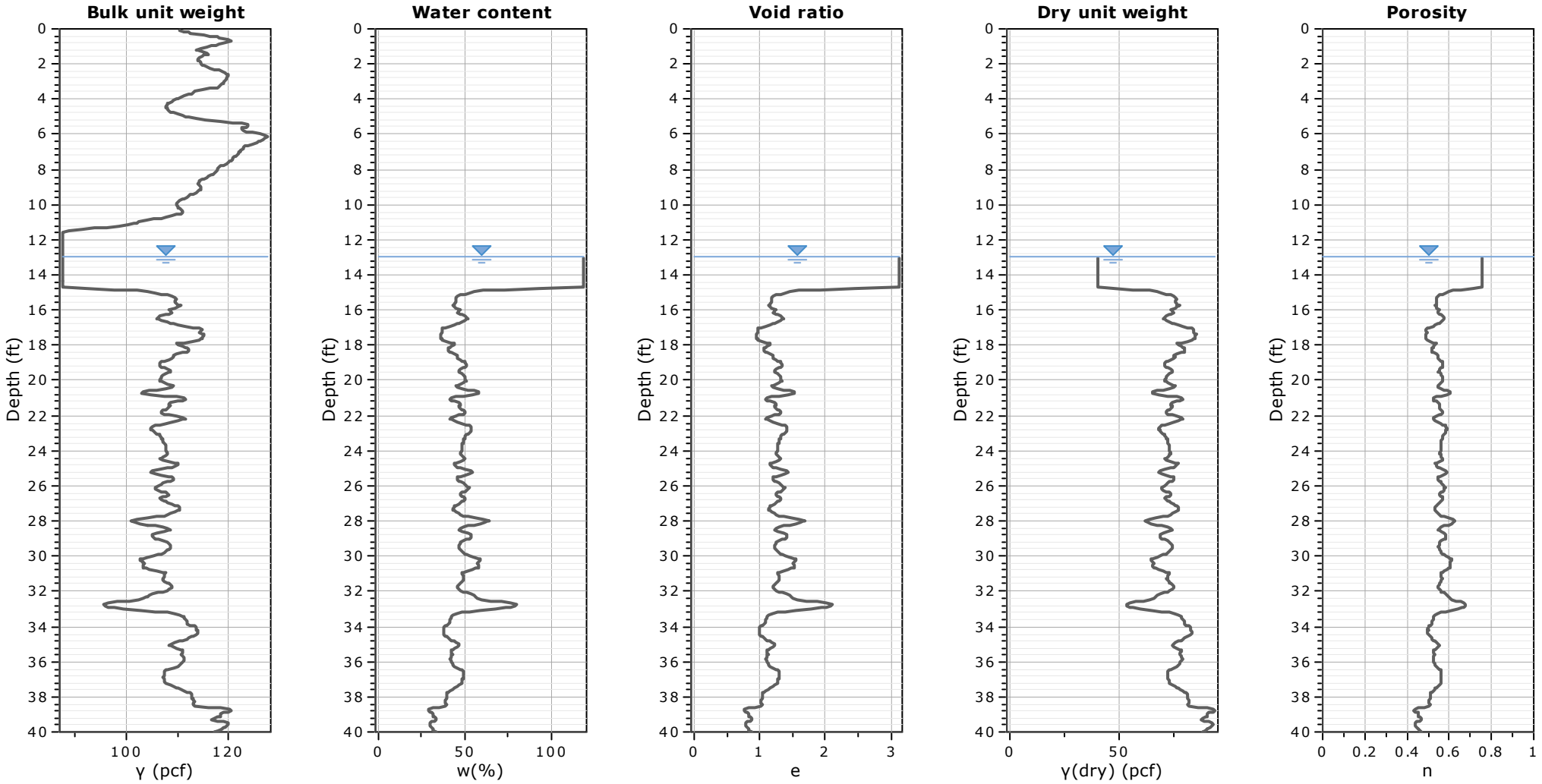

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