

REFERENCE: U-4902D

PROJECT: 40238

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STATE OF NORTH CAROLINA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 GEOTECHNICAL ENGINEERING UNIT

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY NEW HANOVER
 PROJECT DESCRIPTION US 17 BUSINESS (MARKET ST.)
FROM LENDIRE ROAD TO MARSH OAKS DRIVE

 SITE DESCRIPTION RETAINING WALL 1
RIGHT OF -L- STA. 230 + 50

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4902D	1	6

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

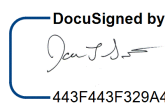
- NOTES:
- THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 - BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

S.V. HUDSON, PG
J. LEE STONE, PG
L. PUGH
W. J. MILLER, CWC

INVESTIGATED BY L. PUGH
 DRAWN BY J. L. STONE, PG
 CHECKED BY J. L. STONE, PG
 SUBMITTED BY J. L. STONE, PG
 DATE JULY 2018



DocuSigned by:  8/21/2018
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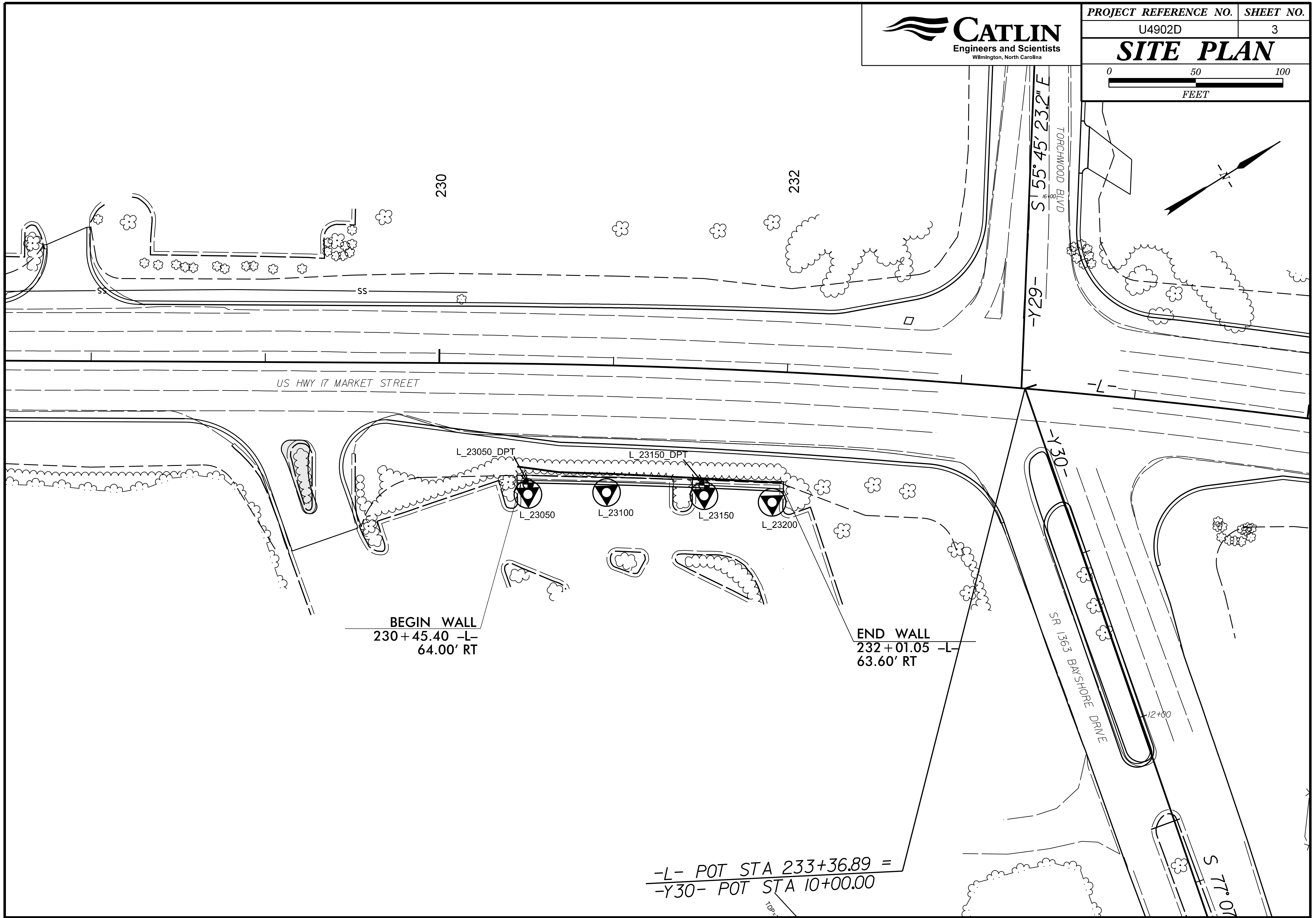
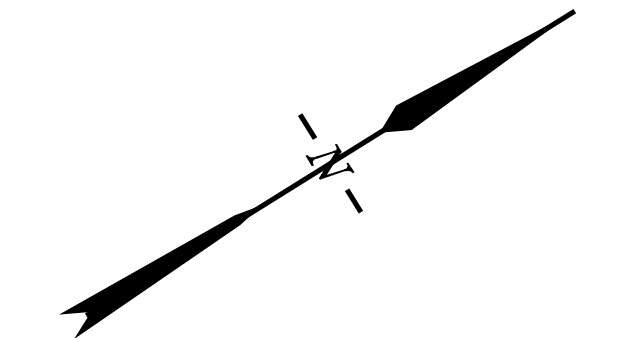
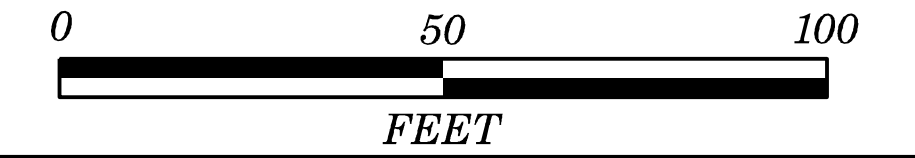
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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION: SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS... SOIL LEGEND AND AASHTO CLASSIFICATION: TABLE WITH COLUMNS FOR GENERAL CLASS., GRANULAR MATERIALS, SILT-CLAY MATERIALS, ORGANIC MATERIALS... GRADATION: WELL GRADED, UNIFORMLY GRADED, GAP-GRADED... ROCK DESCRIPTION: HARD ROCK IS NON-COASTAL PLAIN MATERIAL... TERMS AND DEFINITIONS: ALLUVIUM, AQUIFER, ARENACEOUS, ARGILLACEOUS, ARTESIAN, CALCAREOUS, COLLUVIUM, CORE RECOVERY, DIKE, DIP, DIP DIRECTION, FAULT, FISSILE, FLOAT, FLOOD PLAIN, FORMATION, JOINT, LEDGE, LENS, MOTTLED, PERCHED WATER, RESIDUAL SOIL, ROCK QUALITY DESIGNATION, SAPROLITE, SILL, SLICKENSIDE, STANDARD PENETRATION TEST, STRATA CORE RECOVERY, STRATA ROCK QUALITY DESIGNATION, TOPSOIL

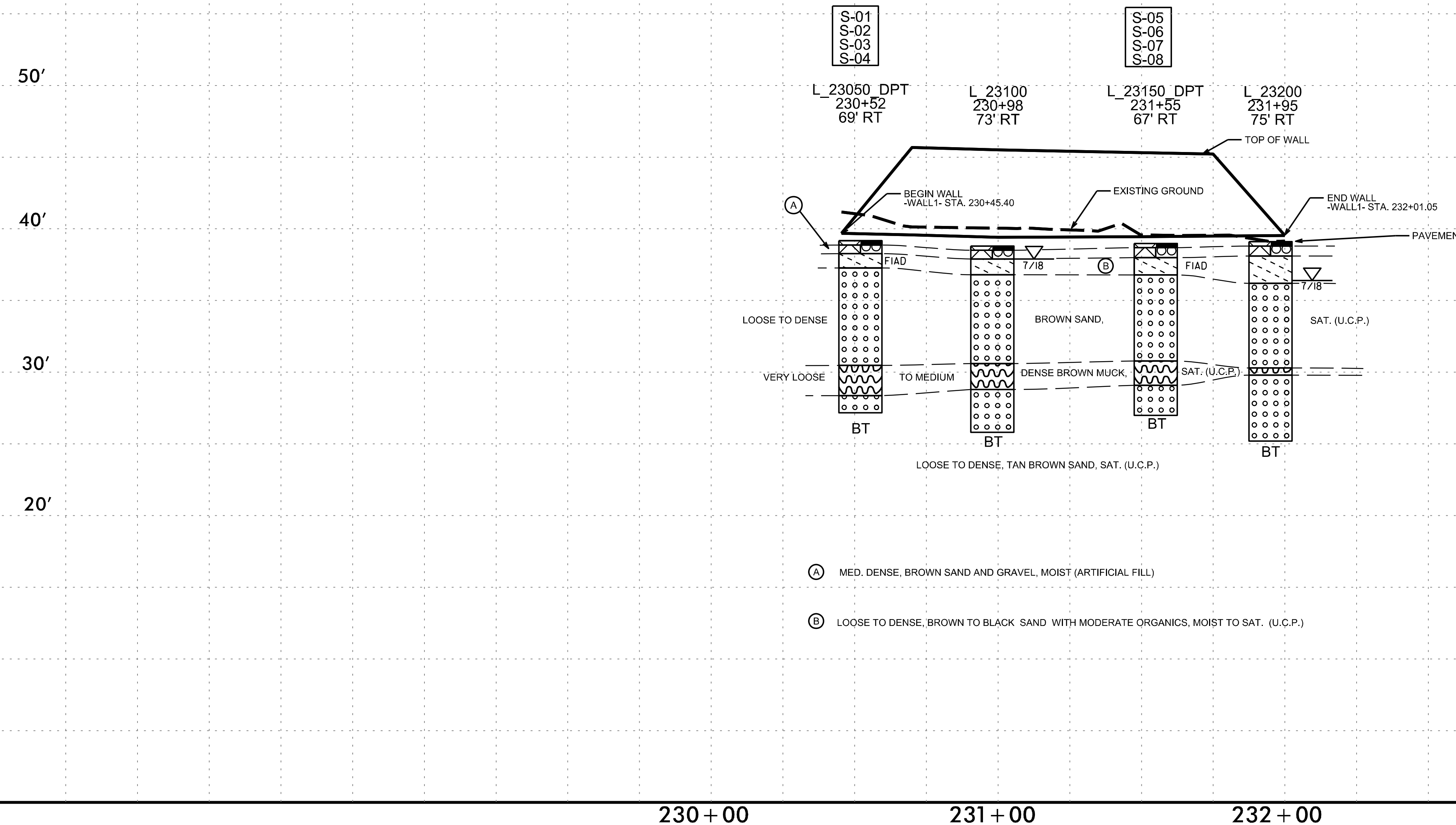
EQUIPMENT USED ON SUBJECT PROJECT: DRILL UNITS, ADVANCING TOOLS, HAMMER TYPE, CORE SIZE, HAND TOOLS, INSTRUMENTS... FRACTURE SPACING: TABLE WITH COLUMNS TERM, SPACING, THICKNESS... BEDDING: TABLE WITH COLUMNS TERM, THICKNESS... INDURATION: TABLE WITH COLUMNS TERM, THICKNESS... COLOR: PLASTICITY, COLOR... NOTES: U.C.P. = UNDIVIDED COASTAL PLAIN

SITE PLAN



PROFILE THROUGH BORINGS PROJECTED ALONG -WALL 1-

SAMPLE NUMBER	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P. I.	% BY WEIGHT				% PASSING SIEVES			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-01	69 ft RT	230+52	0.9 - 1.9	A-3(0)	15	NP	23.0	69.9	3.2	4.0	93.4	97	7	-	7.7
S-02	69 ft RT	230+52	1.9 - 8.7	A-3(0)	8	NP	26.8	71.9	0.1	1.2	100	98	1	-	-
S-03	69 ft RT	230+52	8.7 - 10.8	A-2-5(0)	82	NP	35.0	44.8	12.2	8.0	93.6	81	23	-	59.1
S-04	69 ft RT	230+52	10.8 - 12.0	A-3(0)	10	NP	34.4	63.4	0.0	2.2	98.2	91	2	-	-
S-05	67 ft RT	231+55	1.0 - 2.2	A-3(0)	17	NP	26.8	66.1	3.9	3.2	98.2	96	8	-	9.4
S-06	67 ft RT	231+55	2.2 - 8.2	A-3(0)	14	NP	28.8	69.0	0.0	2.2	99.7	98	2	-	-
S-07	67 ft RT	231+55	8.2 - 9.9	A-2-4(0)	34	NP	40.7	50.8	6.1	2.4	95.2	80	10	-	38.8
S-08	67 ft RT	231+55	9.9 - 12.0	A-3(0)	14	NP	36.4	60.4	0.8	2.3	97.2	90	3	-	-



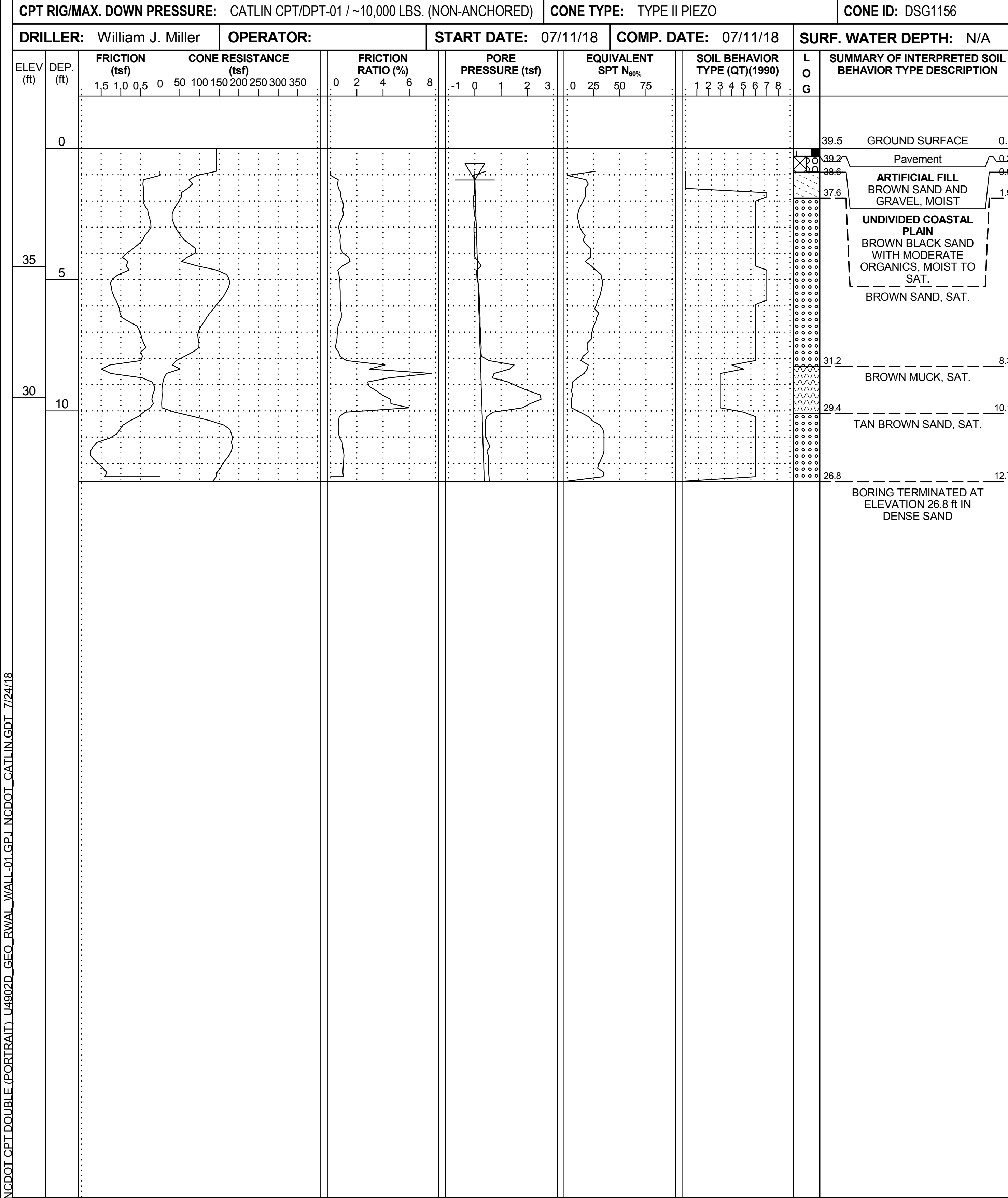
NOTES:
 GROUND LINE PROFILE ALONG -WALL 1- AND PROPOSED WALL LAYOUT
 TAKEN FROM WALL ENVELOPE DRAWINGS DATED 6/18/2018
 INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS
 WITH BOTH PROJECTED ONTO PROFILE

5/14/99
 24-JUL-2018 10:39
 C:\P\Projects\NCDOT\216032.04\NCDOT_U4902D\MARKET STREET - Retaining Wall 1\U4902D_GEO_RWAL\CADD\GEO\TECH\Plan\Prof\U4902D_GEO_PFL.dgn

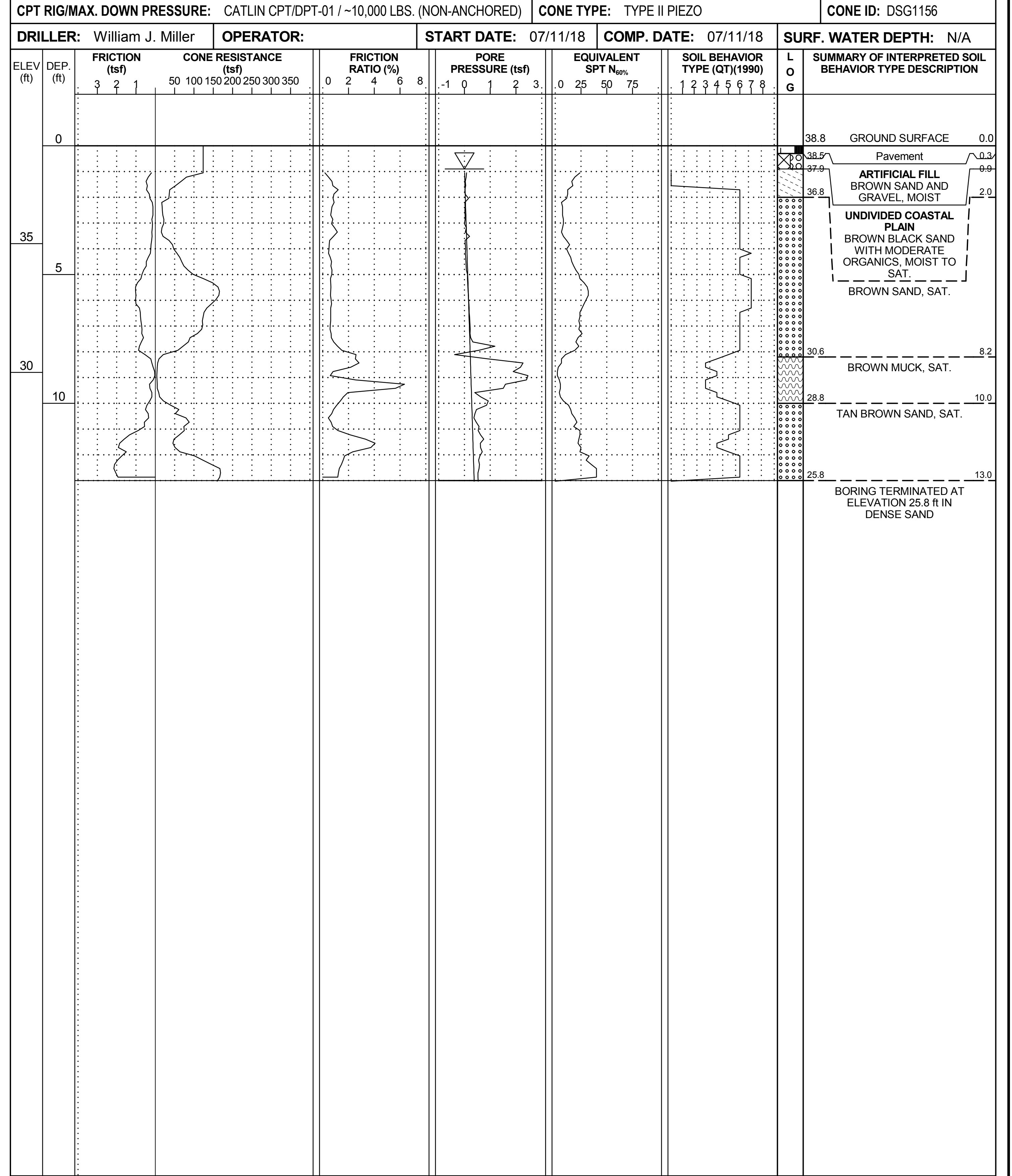
CONE PENETROMETER TEST BORING REPORT



WBS: 40238.1.4	TIP: U-4902D	COUNTY: NEW HANOVER	GEOLOGIST: L.PUGH
SITE DESCRIPTION: RETAINING WALL 1 RIGHT OF -L- STA. 230+50			GROUND WTR (ft)
BORING NO.: L_23050	STATION: 230+52	OFFSET: 75 ft RT	ALIGNMENT: -L-
COLLAR ELEV.: 39.5 ft	TOTAL DEPTH: 12.7 ft	NORTHING: 194,759	EASTING: 2,358,697
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS. (NON-ANCHORED)		CONE TYPE: TYPE II PIEZO	CONE ID: DSG1156
DRILLER: William J. Miller	OPERATOR:	START DATE: 07/11/18	COMP. DATE: 07/11/18
SURF. WATER DEPTH: N/A			



WBS: 40238.1.4	TIP: U-4902D	COUNTY: NEW HANOVER	GEOLOGIST: L.PUGH
SITE DESCRIPTION: RETAINING WALL 1 RIGHT OF -L- STA. 230+50			GROUND WTR (ft)
BORING NO.: L_23100	STATION: 230+98	OFFSET: 73 ft RT	ALIGNMENT: -L-
COLLAR ELEV.: 38.8 ft	TOTAL DEPTH: 13.0 ft	NORTHING: 194,798	EASTING: 2,358,720
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS. (NON-ANCHORED)		CONE TYPE: TYPE II PIEZO	CONE ID: DSG1156
DRILLER: William J. Miller	OPERATOR:	START DATE: 07/11/18	COMP. DATE: 07/11/18
SURF. WATER DEPTH: N/A			

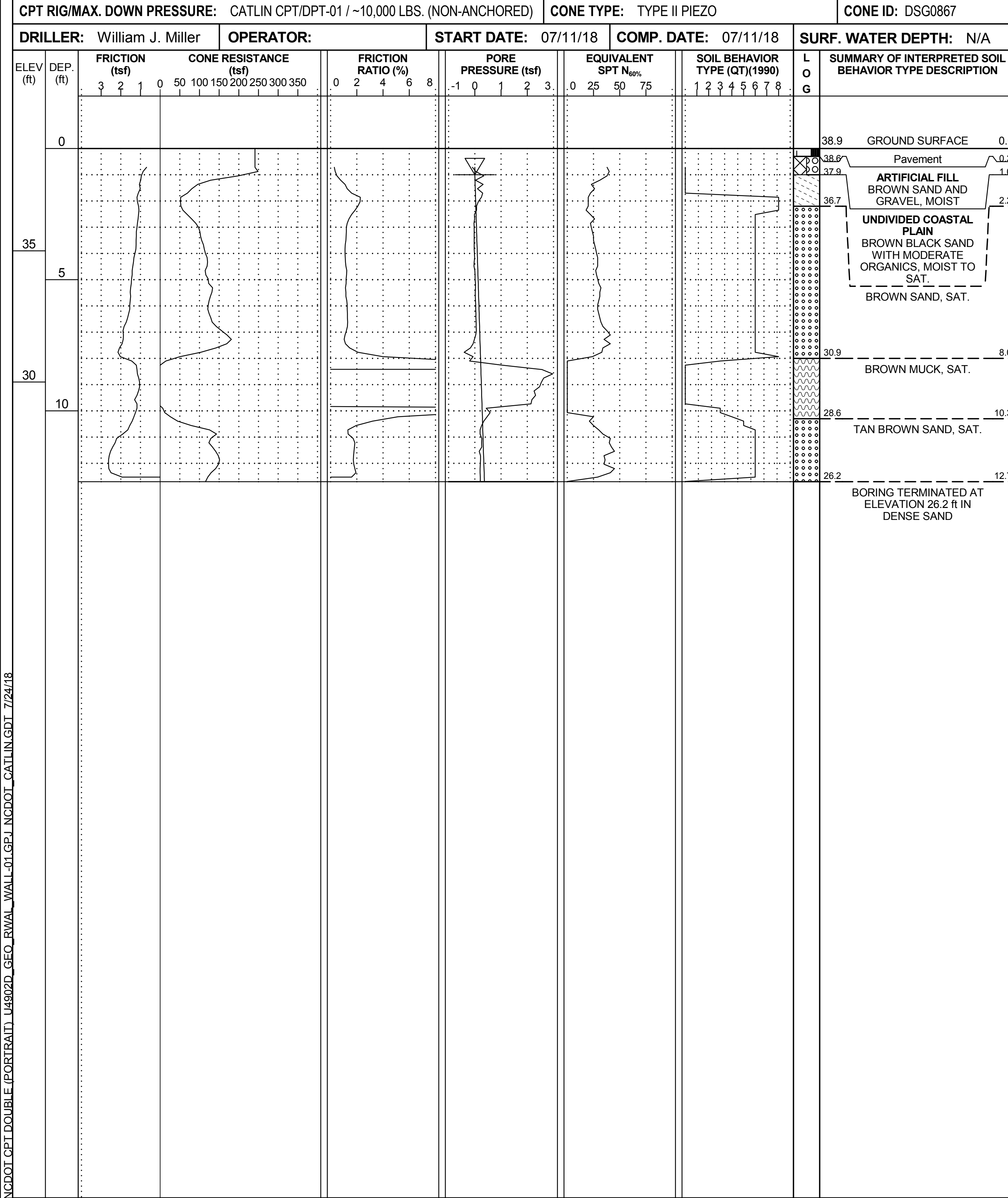


NCDOI CPT DOUBLE (PORTRAIT) U4902D_GEO_RWAL_WALL-01.GPJ NCDOI_CATLIN.GDI 7/24/18

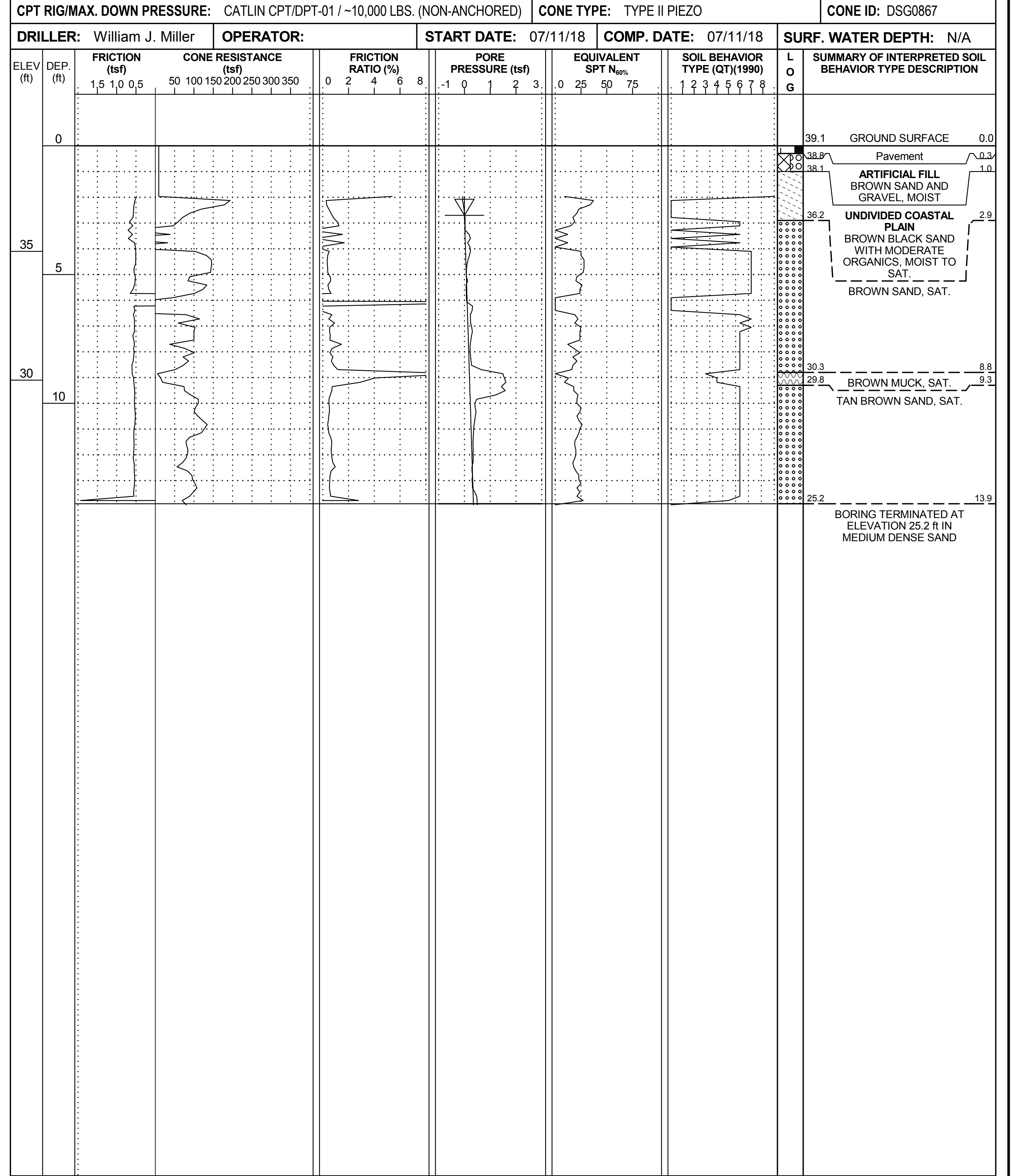
CONE PENETROMETER TEST BORING REPORT



WBS: 40238.1.4	TIP: U-4902D	COUNTY: NEW HANOVER	GEOLOGIST: L.PUGH
SITE DESCRIPTION: RETAINING WALL 1 RIGHT OF -L- STA. 230+50			GROUND WTR (ft)
BORING NO.: L_23150	STATION: 231+55	OFFSET: 73 ft RT	ALIGNMENT: -L-
COLLAR ELEV.: 38.9 ft	TOTAL DEPTH: 12.7 ft	NORTHING: 194,844	EASTING: 2,358,751
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS. (NON-ANCHORED)		CONE TYPE: TYPE II PIEZO	CONE ID: DSG0867
DRILLER: William J. Miller	OPERATOR:	START DATE: 07/11/18	COMP. DATE: 07/11/18
SURF. WATER DEPTH: N/A			



WBS: 40238.1.4	TIP: U-4902D	COUNTY: NEW HANOVER	GEOLOGIST: L.PUGH
SITE DESCRIPTION: RETAINING WALL 1 RIGHT OF -L- STA. 230+50			GROUND WTR (ft)
BORING NO.: L_23200	STATION: 231+95	OFFSET: 75 ft RT	ALIGNMENT: -L-
COLLAR ELEV.: 39.1 ft	TOTAL DEPTH: 13.9 ft	NORTHING: 194,876	EASTING: 2,358,775
CPT RIG/MAX. DOWN PRESSURE: CATLIN CPT/DPT-01 / ~10,000 LBS. (NON-ANCHORED)		CONE TYPE: TYPE II PIEZO	CONE ID: DSG0867
DRILLER: William J. Miller	OPERATOR:	START DATE: 07/11/18	COMP. DATE: 07/11/18
SURF. WATER DEPTH: N/A			



NCDOT CPT DOUBLE (PORTRAIT) U4902D_GEO_RWAL_WALL-01.GPJ NCDOT_CATLIN.GDT 7/24/18