

REFERENCE: DF18314.1075023

PROJECT: N/A

CONTENTS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND (SOIL & ROCK)
3	SITE PLAN
4-9	CROSS SECTIONS
10-12	BORELOGS

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

STRUCTURE
SUBSURFACE INVESTIGATION

COUNTY POLK
 PROJECT DESCRIPTION EMERGENCY DESIGN FOR
US 176

SITE DESCRIPTION SITE 314

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	DF18314.1075023	1	

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 PERFORM INDEPENDENT SUBSURFACE INVESTIGATIONS AND MAKE INTERPRETATIONS AS NECESSARY TO CONFIRM CONDITIONS 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

R. WELCH, G.I.T.

K. CLARK

CG2 EXPLORATION

INVESTIGATED BY CG2, PLLC

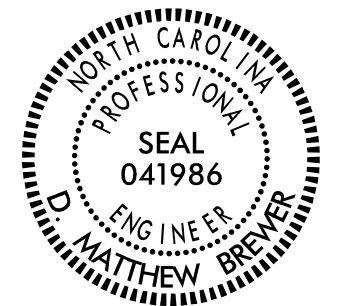
DRAWN BY P. PERRY, E.I.T.

CHECKED BY M. BREWER, P.E.

SUBMITTED BY CG2, PLLC

DATE JULY 2025

Prepared in the Office of:
 **CAROLINAS GEOTECHNICAL GROUP**
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 (980) 339-8684



DocuSigned by:
Matthew Brewer 12/2/2025
386129C0A838 SIGNATURE DATE

**DOCUMENT NOT CONSIDERED FINAL
 UNLESS ALL SIGNATURES COMPLETED**

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL ENGINEERING UNIT

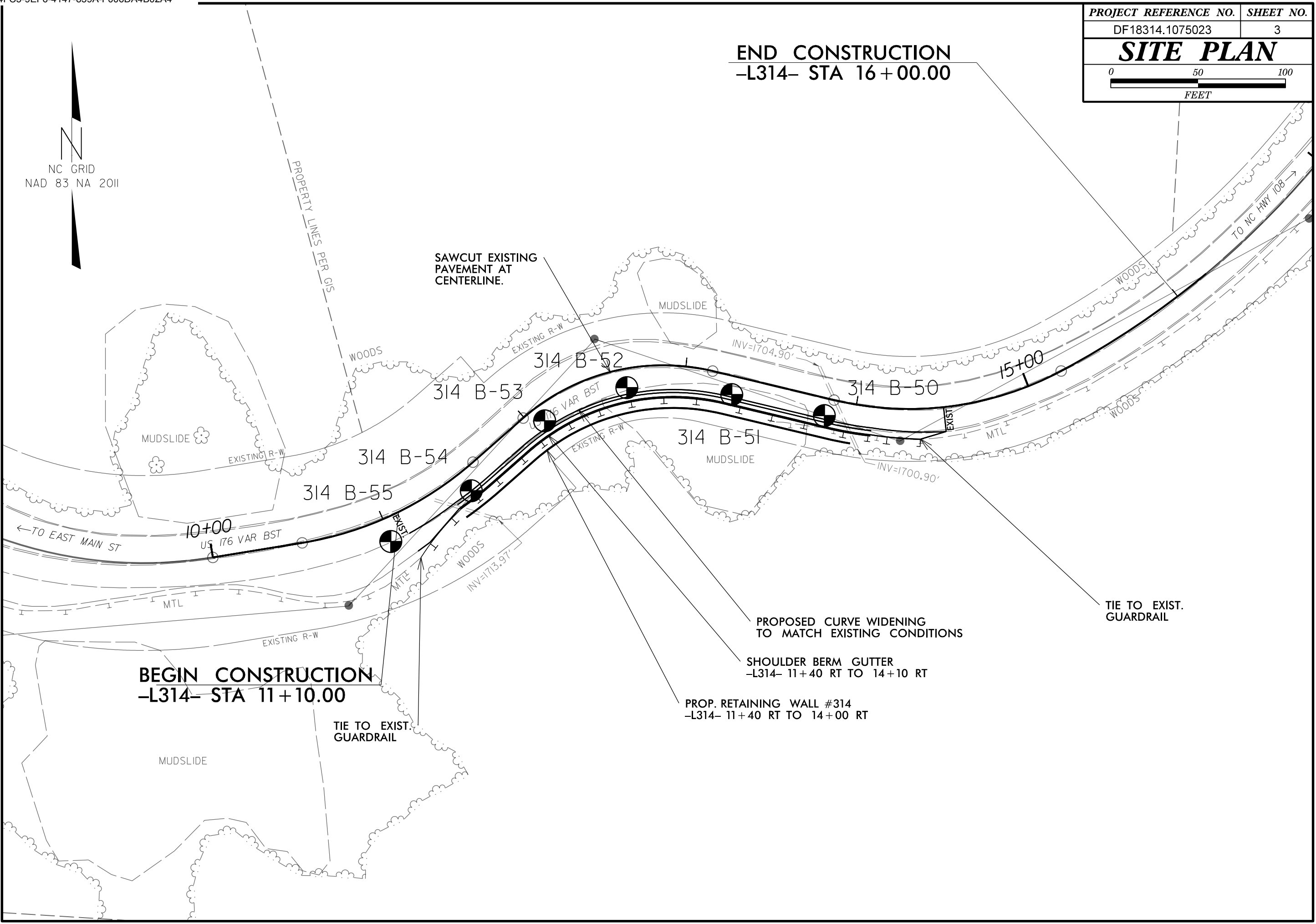
SUBSURFACE INVESTIGATION

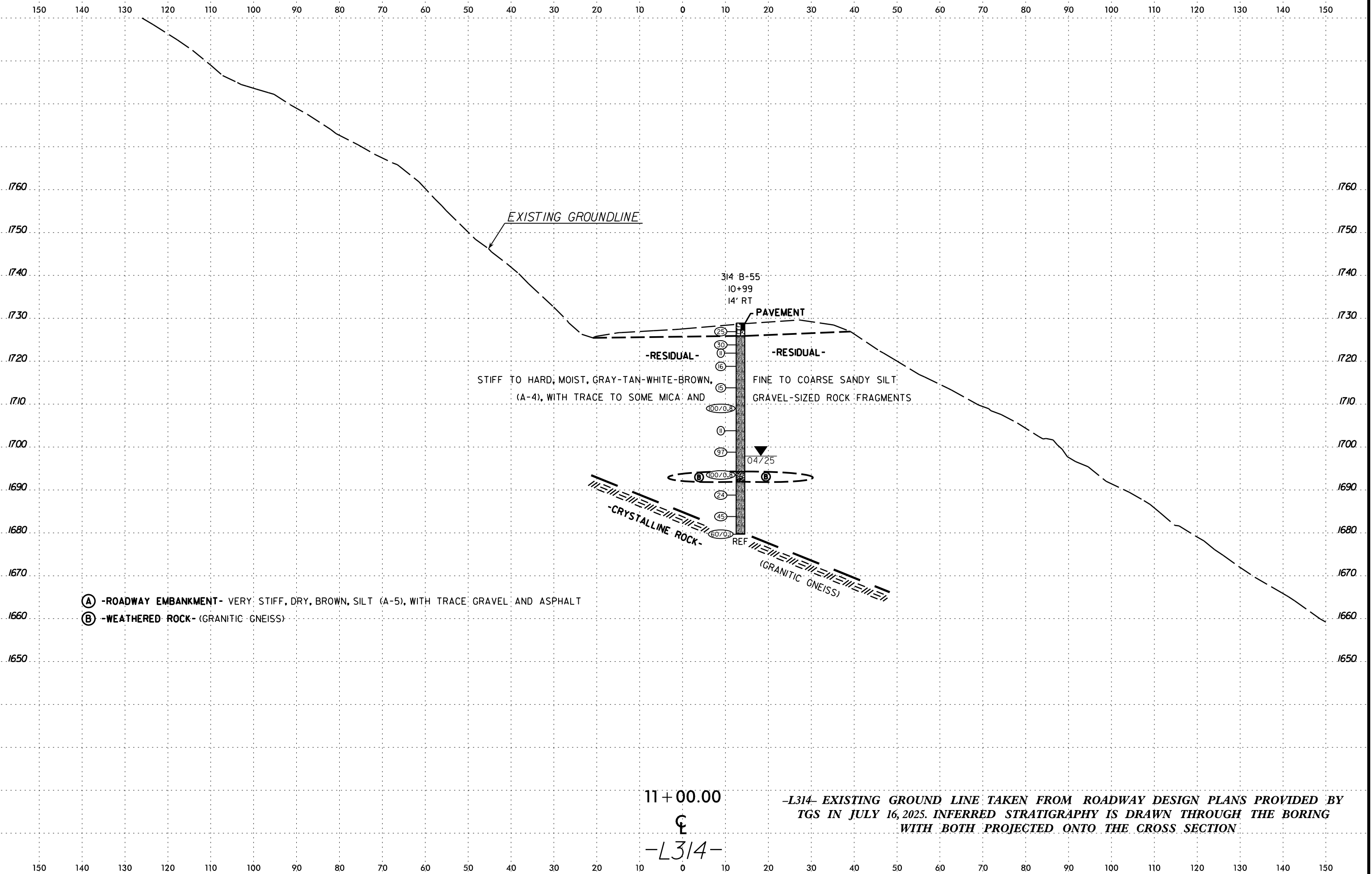
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																																																																																																																																		
<p>SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p>										<p>WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.</p>										<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:</p>										<p>ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>																																																																																																																																																																		
<p>SOIL LEGEND AND AASHTO CLASSIFICATION</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <th rowspan="2">GENERAL CLASS.</th> <th colspan="5">GRANULAR MATERIALS (≤ 35% PASSING #200)</th> <th colspan="5">SILT-CLAY MATERIALS (> 35% PASSING #200)</th> <th colspan="5">ORGANIC MATERIALS</th> </tr> <tr> <th>A-1</th> <th>A-3</th> <th>A-2</th> <th>A-4</th> <th>A-5</th> <th>A-6</th> <th>A-7</th> <th>A-1, A-2</th> <th>A-3</th> <th>A-4, A-5</th> <th>A-6, A-7</th> <th></th> <th></th> <th></th> <th></th> </tr> <tr> <td>GROUP CLASS.</td> <td>A-1-a</td> <td>A-1-b</td> <td>A-2-4</td> <td>A-2-5</td> <td>A-2-6</td> <td>A-2-7</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SYMBOL</td> <td colspan="5">[Pattern]</td> <td colspan="5">[Pattern]</td> <td colspan="5">[Pattern]</td> </tr> <tr> <td>% PASSING #10 #40 #200</td> <td>50 MX 30 MX 15 MX</td> <td>50 MX 25 MX</td> <td>51 MN 35 MX 35 MX</td> <td>40 MX 41 MN 10 MX 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> <td>40 MX 41 MN 11 MN 11 MN</td> </tr> <tr> <td>MATERIAL PASSING #40 LL PI</td> <td colspan="5">-</td> <td colspan="5">NP</td> <td colspan="5">4 MX 8 MX 12 MX 16 MX NO MX</td> </tr> <tr> <td>GROUP INDEX</td> <td colspan="5">0</td> <td colspan="5">0</td> <td colspan="5">0</td> </tr> <tr> <td>USUAL TYPES OF MAJOR MATERIALS</td> <td colspan="2">STONE FRAGS. GRAVEL, AND SAND</td> <td colspan="2">FINE SAND</td> <td colspan="2">SILTY OR CLAYEY GRAVEL AND SAND</td> <td colspan="2">SILTY SOILS</td> <td colspan="2">CLAYEY SOILS</td> <td colspan="5">SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER</td> </tr> <tr> <td>GEN. RATING AS SUBGRADE</td> <td colspan="5">EXCELLENT TO GOOD</td> <td colspan="5">FAIR TO POOR</td> <td colspan="5">FAIR TO POOR POOR UNSUITABLE</td> </tr> </table>										GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)					SILT-CLAY MATERIALS (> 35% PASSING #200)					ORGANIC MATERIALS					A-1	A-3	A-2	A-4	A-5	A-6	A-7	A-1, A-2	A-3	A-4, A-5	A-6, A-7					GROUP CLASS.	A-1-a	A-1-b	A-2-4	A-2-5	A-2-6	A-2-7										SYMBOL	[Pattern]					[Pattern]					[Pattern]					% PASSING #10 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 35 MX 35 MX	40 MX 41 MN 10 MX 11 MN	40 MX 41 MN 11 MN 11 MN	40 MX 41 MN 11 MN 11 MN	40 MX 41 MN 11 MN 11 MN	40 MX 41 MN 11 MN 11 MN	40 MX 41 MN 11 MN 11 MN	40 MX 41 MN 11 MN 11 MN	40 MX 41 MN 11 MN 11 MN	40 MX 41 MN 11 MN 11 MN	40 MX 41 MN 11 MN 11 MN	40 MX 41 MN 11 MN 11 MN	40 MX 41 MN 11 MN 11 MN	MATERIAL PASSING #40 LL PI	-					NP					4 MX 8 MX 12 MX 16 MX NO MX					GROUP INDEX	0					0					0					USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND		SILTY OR CLAYEY GRAVEL AND SAND		SILTY SOILS		CLAYEY SOILS		SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER					GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD					FAIR TO POOR					FAIR TO POOR POOR UNSUITABLE					<p>ANGULARITY OF GRAINS</p> <p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</p>										<p>WEATHERED ROCK (WR)</p> <p>NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.</p>										<p>CRYSTALLINE ROCK (CR)</p> <p>FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.</p>										<p>NON-CRYSTALLINE ROCK (NCR)</p> <p>FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.</p>									
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<p>GROUND WATER</p> <p>▽ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING ▽ PW STATIC WATER LEVEL AFTER 24 HOURS ▽ PW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA ○ SPRING OR SEEP</p>										<p>MISCELLANEOUS SYMBOLS</p> <p>ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY</p> <p>DIP & DIP DIRECTION OF ROCK STRUCTURES SPT TEST BORING AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION</p> <p>SLOPE INDICATOR INSTALLATION CONE PENETROMETER TEST SOUNDING ROD TEST BORING WITH CORE SPT N-VALUE</p>										<p>RECOMMENDATION SYMBOLS</p> <p>UNDERCUT SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL</p>										<p>ABBREVIATIONS</p> <p>AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS. - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES FRAGS. - FRAGMENTS HI. - HIGHLY</p> <p>MED. - MEDIUM MICA. - MICACEOUS MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SD. - SAND, SANDY SL. - SILT, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL w - MOISTURE CONTENT V - VERY</p> <p>VST - VANE SHEAR TEST WEA. - WEATHERED UNIT WEIGHT DRY UNIT WEIGHT</p> <p>SAMPLE ABBREVIATIONS</p> <p>S - BULK SS - SPLIT SPOON ST - SHELBY TUBE RS - ROCK RT - RECOMPACTED TRIAXIAL CBR - CALIFORNIA BEARING RATIO</p>																																																																																																																																																																		
<p>TEXTURE OR GRAIN SIZE</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <th>U.S. STD. SIEVE SIZE OPENING (MM)</th> <th>4</th> <th>10</th> <th>40</th> <th>60</th> <th>200</th> <th>270</th> </tr> <tr> <td></td> <td>4.75</td> <td>2.00</td> <td>0.42</td> <td>0.25</td> <td>0.075</td> <td>0.053</td> </tr> <tr> <td>BOULDER (BLDR.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>COBBLE (COB.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>GRAVEL (GR.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>COARSE SAND (CSE. SD.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>FINE SAND (F SD.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>SILT (SL.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>CLAY (CL.)</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>										U.S. STD. SIEVE SIZE OPENING (MM)	4	10	40	60	200	270		4.75	2.00	0.42	0.25	0.075	0.053	BOULDER (BLDR.)							COBBLE (COB.)							GRAVEL (GR.)							COARSE SAND (CSE. SD.)							FINE SAND (F SD.)							SILT (SL.)							CLAY (CL.)							<p>SOIL MOISTURE - CORRELATION OF TERMS</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <th>SOIL MOISTURE SCALE (ATTERBERG LIMITS)</th> <th>FIELD MOISTURE DESCRIPTION</th> <th>GUIDE FOR FIELD MOISTURE DESCRIPTION</th> </tr> <tr> <td>LL - LIQUID LIMIT</td> <td>- SATURATED - (SAT.)</td> <td>USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE</td> </tr> <tr> <td>PL - PLASTIC LIMIT</td> <td>- WET - (W)</td> <td>SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE</td> </tr> <tr> <td>OM - OPTIMUM MOISTURE SHRINKAGE LIMIT</td> <td>- MOIST - (M)</td> <td>SOLID; AT OR NEAR OPTIMUM MOISTURE</td> </tr> <tr> <td>SL - SHRINKAGE LIMIT</td> <td>- DRY - (D)</td> <td>REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE</td> </tr> </table>										SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION	LL - LIQUID LIMIT	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE	PL - PLASTIC LIMIT	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE	OM - OPTIMUM MOISTURE SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE	SL - SHRINKAGE LIMIT	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE	<p>EQUIPMENT USED ON SUBJECT PROJECT</p> <p>DRILL UNITS: <input type="checkbox"/> CME-45C <input type="checkbox"/> CME-55 <input checked="" type="checkbox"/> CME-550 <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> PORTABLE HOIST <input checked="" type="checkbox"/> DIEDRICH D-50</p> <p>ADVANCING TOOLS: <input type="checkbox"/> CLAY BITS <input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER <input checked="" type="checkbox"/> 8" HOLLOW AUGERS <input type="checkbox"/> HARD FACED FINGER BITS <input type="checkbox"/> TUNG-CARBIDE INSERTS <input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER <input type="checkbox"/> TRICONE * STEEL TEETH <input type="checkbox"/> TRICONE * TUNG-CARB. <input type="checkbox"/> CORE BIT</p> <p>HAMMER TYPE: <input checked="" type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL</p> <p>CORE SIZE: <input type="checkbox"/> -B <input type="checkbox"/> -H <input type="checkbox"/> -N</p> <p>HAND TOOLS: <input type="checkbox"/> POST HOLE DIGGER <input type="checkbox"/> HAND AUGER <input type="checkbox"/> SOUNDING ROD <input type="checkbox"/> VANE SHEAR TEST</p>																																																																																														
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<p>COLOR</p> <p>DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-BROWN). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.</p>										<p>INDURATION</p> <p>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</p> <p>FRIABLE - RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.</p> <p>MODERATELY INDURATED - GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.</p> <p>INDURATED - GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</p> <p>EXTREMELY INDURATED - SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>										<p>BENCH MARK:</p> <p style="text-align: right;">ELEVATION: FEET</p> <p>NOTES:</p> <p>ROADWAY DESIGN FILES PROVIDED BY TGS JULY 16, 2025. BORING COLLAR ELEVATIONS OBTAINED USING CARLSON BRX7 GPS. REF = REFUSAL</p>																																																																																																																																																																												

PROJECT REFERENCE NO.	SHEET NO.
DF18314.1075023	3
SITE PLAN	

END CONSTRUCTION
-L314- STA 16 + 00.00



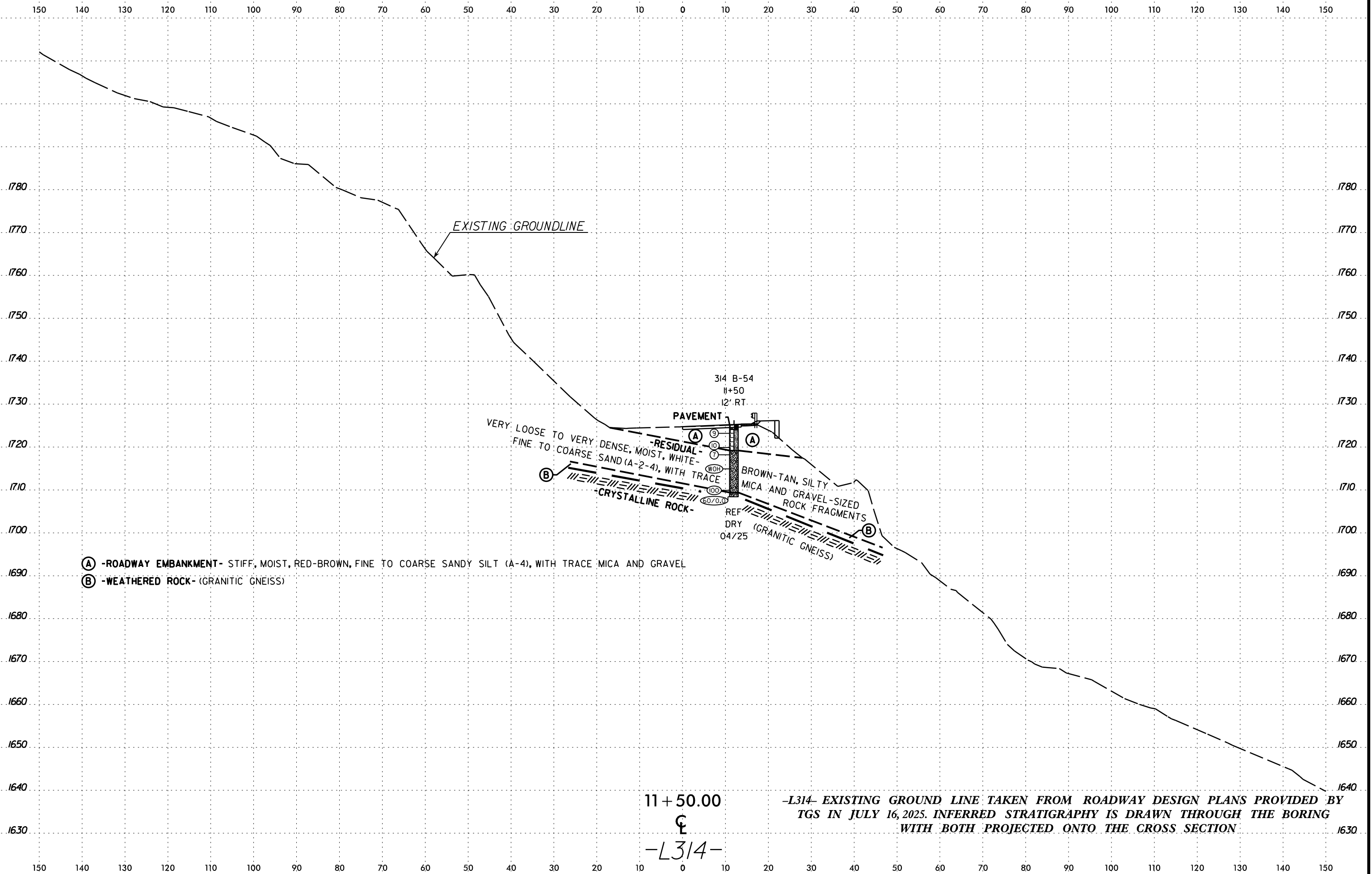


- (A) -ROADWAY EMBANKMENT- VERY STIFF, DRY, BROWN, SILT (A-5), WITH TRACE GRAVEL AND ASPHALT
- (B) -WEATHERED ROCK- (GRANITIC GNEISS)

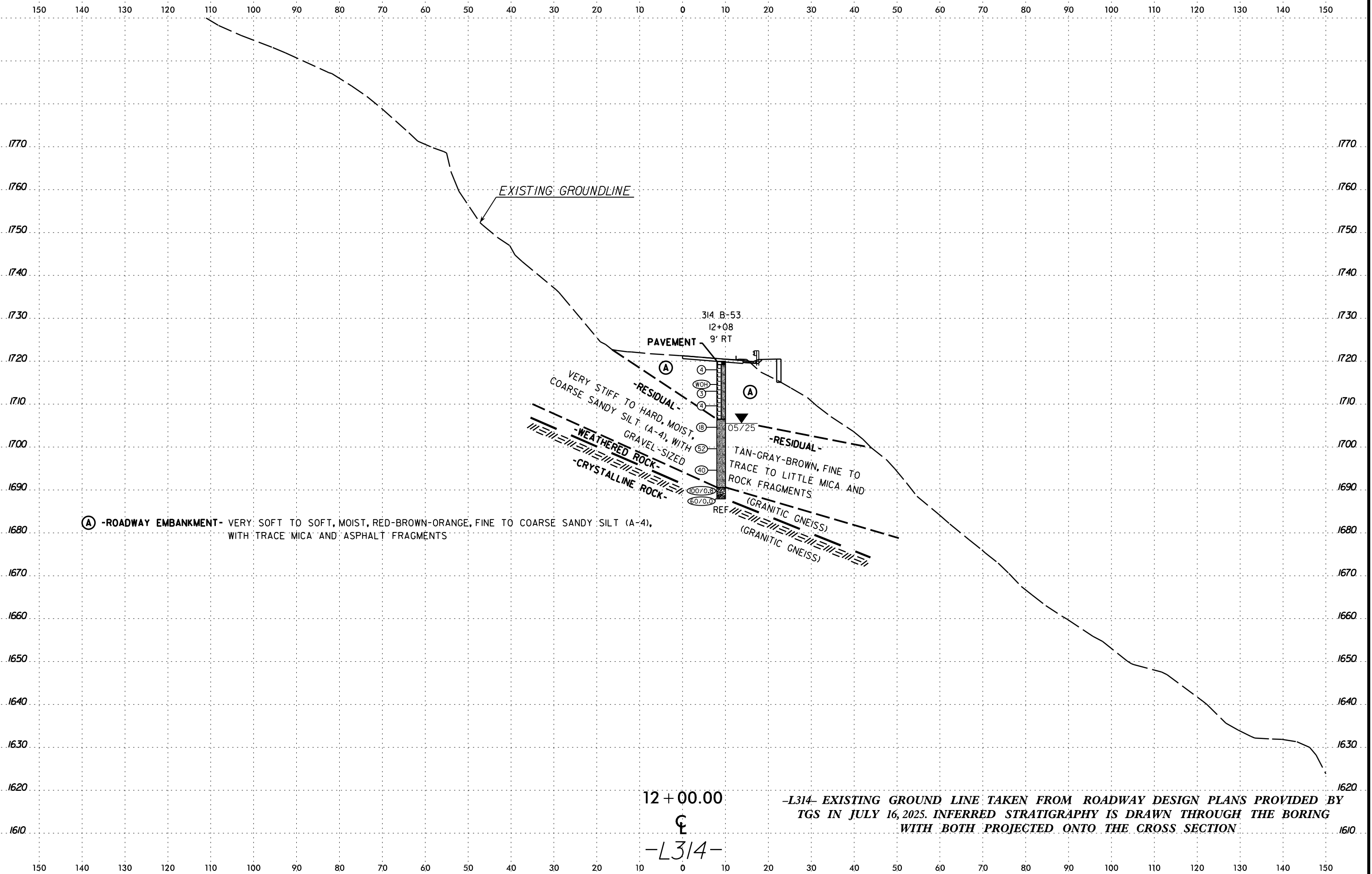
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-L314- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS IN JULY 16, 2025. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING WITH BOTH PROJECTED ONTO THE CROSS SECTION

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EXISTING GROUNDLINE

314 B-53
12+08
9' RT
PAVEMENT

VERY STIFF TO HARD, MOIST,
COARSE SANDY SILT (A-4), WITH
GRAVEL-SIZED
WEATHERED ROCK
CRYSTALLINE ROCK

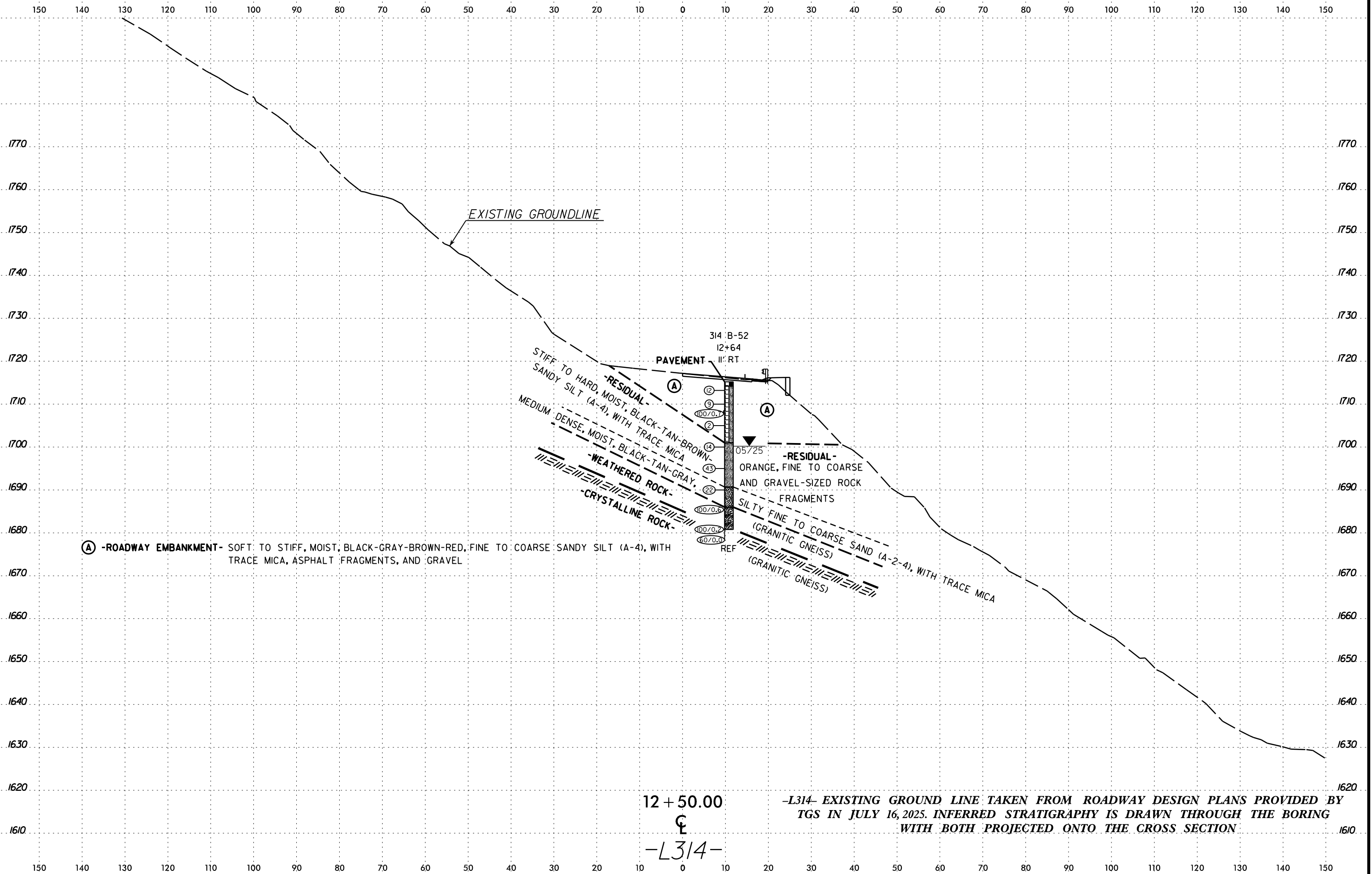
RESIDUAL
TAN-GRAY-BROWN, FINE TO
TRACE TO LITTLE MICA AND
ROCK FRAGMENTS
GRANITIC GNEISS
GRANITIC GNEISS

Ⓐ -ROADWAY EMBANKMENT- VERY SOFT TO SOFT, MOIST, RED-BROWN-ORANGE, FINE TO COARSE SANDY SILT (A-4), WITH TRACE MICA AND ASPHALT FRAGMENTS

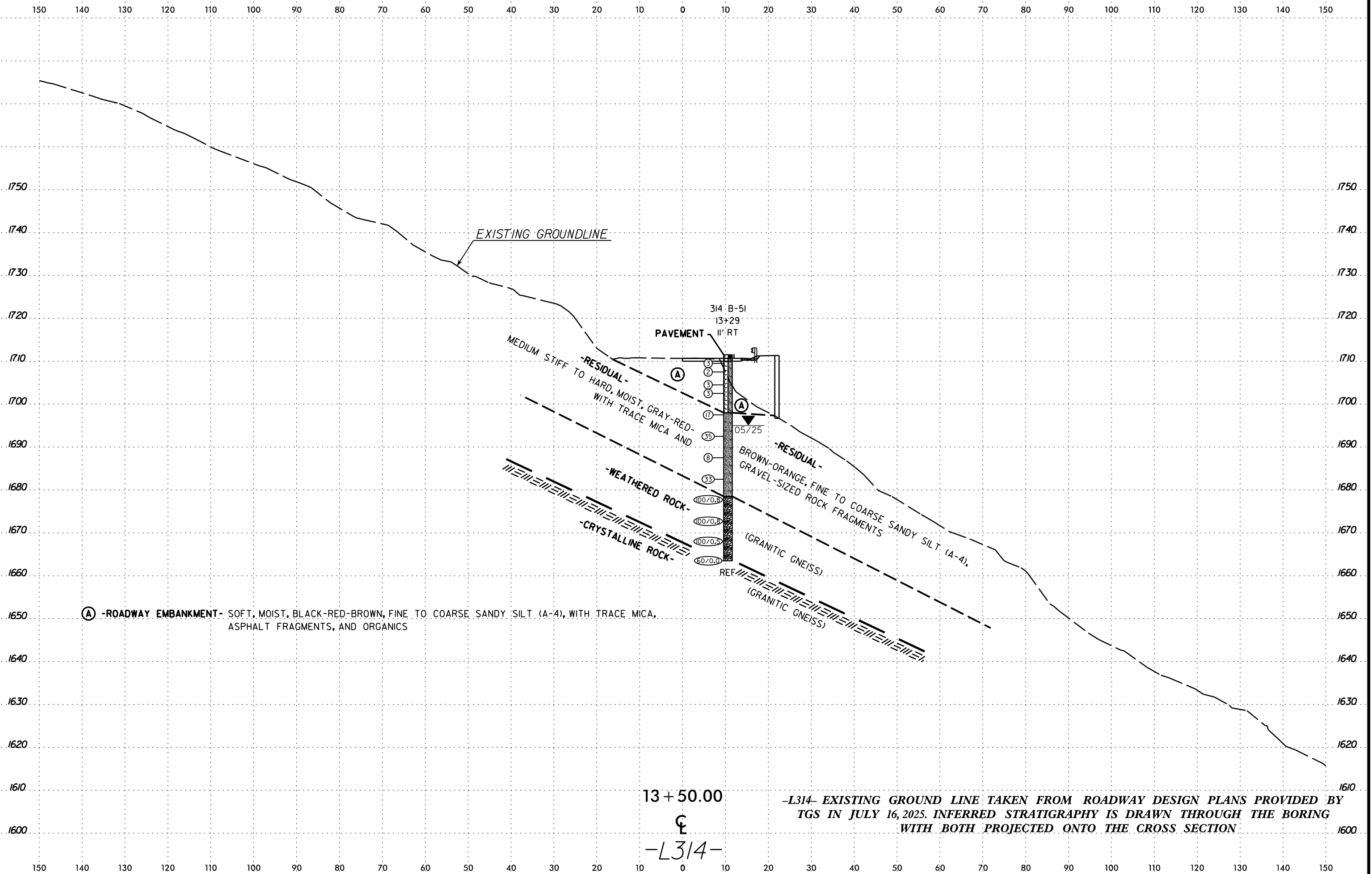
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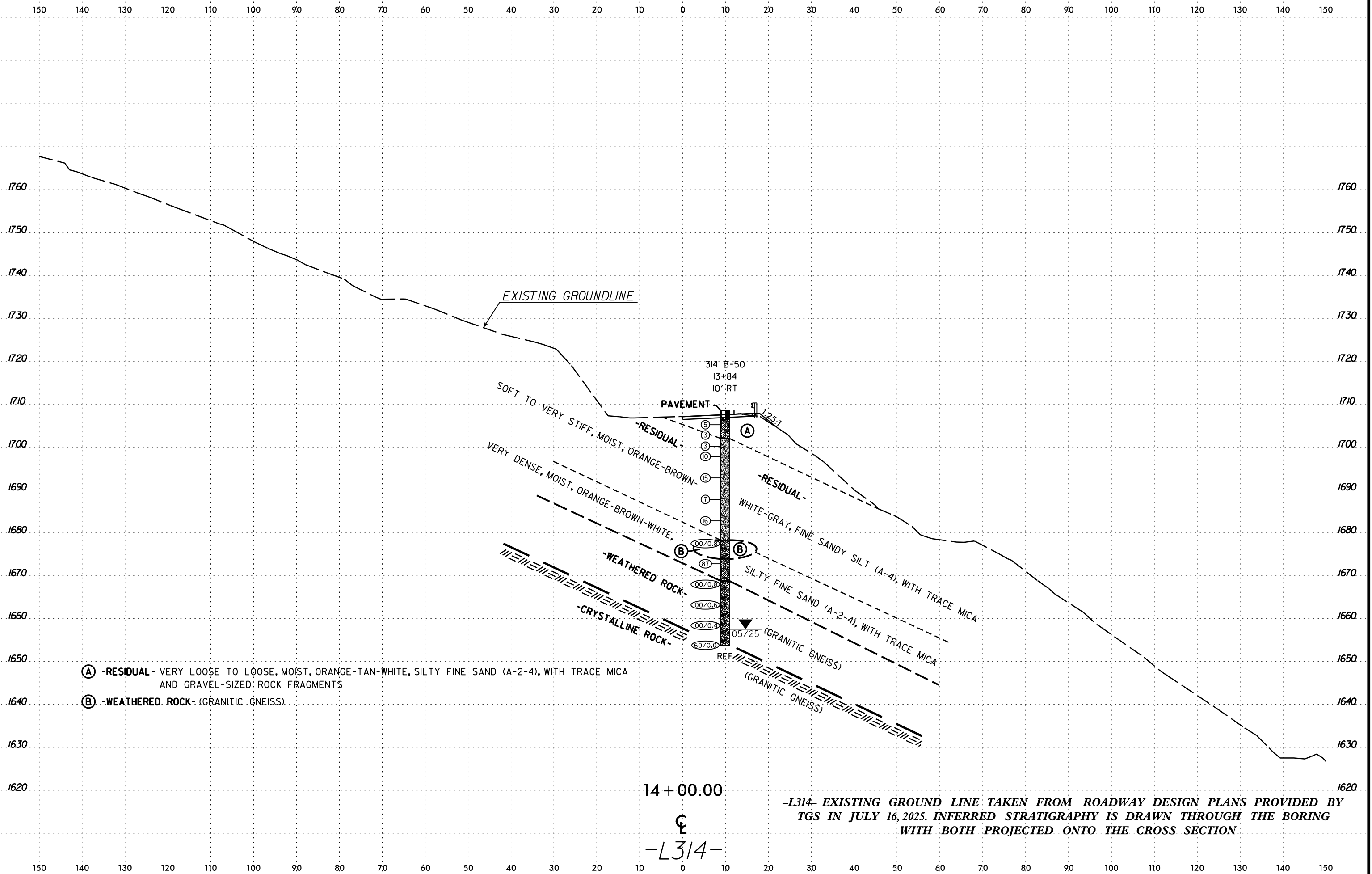
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- (A) -RESIDUAL- VERY LOOSE TO LOOSE, MOIST, ORANGE-TAN-WHITE, SILTY FINE SAND (A-2-4), WITH TRACE MICA AND GRAVEL-SIZED ROCK FRAGMENTS
- (B) -WEATHERED ROCK- (GRANITIC GNEISS).

-L314- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS IN JULY 16, 2025. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING WITH BOTH PROJECTED ONTO THE CROSS SECTION

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GEOTECHNICAL BORING REPORT

BORE LOG

WBS DF18314.1075023		TIP N/A		COUNTY POLK		GEOLOGIST K.Clark										
SITE DESCRIPTION Road Repairs along US 176 Highway							GROUND WTR (ft)									
BORING NO. 314 B-55		STATION 10+99		OFFSET 14 ft RT		ALIGNMENT -L314-										
COLLAR ELEV. 1,728.9 ft		TOTAL DEPTH 49.2 ft		NORTHING 552,175		EASTING 1,005,760										
DRILL RIG/HAMMER EFF./DATE CG24113 CME-550X 78% 05/06/2024			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER L. Ard		START DATE 04/28/25		COMP. DATE 04/28/25		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1730																
	1,727.9	1.0	13	13	12											
1725	1,724.8	4.1	34	22	8											
	1,722.9	6.0	8	5	6											
1720	1,719.8	9.1	5	7	9											
	1,714.8	14.1	4	6	9											
1715	1,709.8	19.1	5	95/0.3												
	1,704.8	24.1	4	6	5											
1705	1,699.8	29.1	15	50	47											
	1,694.8	34.1	45	65	35/0.3											
1695	1,689.8	39.1	11	10	14											
	1,684.8	44.1	8	16	29											
1685	1,679.8	49.1	60/0.1													
	1,679.7	49.1														

WBS DF18314.1075023		TIP N/A		COUNTY POLK		GEOLOGIST K.Clark										
SITE DESCRIPTION Road Repairs along US 176 Highway							GROUND WTR (ft)									
BORING NO. 314 B-54		STATION 11+50		OFFSET 12 ft RT		ALIGNMENT -L314-										
COLLAR ELEV. 1,725.2 ft		TOTAL DEPTH 16.8 ft		NORTHING 552,204		EASTING 1,005,806										
DRILL RIG/HAMMER EFF./DATE CG24113 CME-550X 78% 05/06/2024			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic											
DRILLER L. Ard		START DATE 04/30/25		COMP. DATE 04/30/25		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
1730																
	1,725.2	0.0														
1725	1,724.2	1.0	6	4	5											
	1,720.9	4.3	4	6	4											
1720	1,719.2	6.0	3	4	3											
	1,715.9	9.3	WOH	WOH	WOH											
1715	1,710.9	14.3	WOH	2	98											
	1,708.4	16.8	60/0.0													

NCDOT BORE DOUBLE GEO_US 176_SITE 314_GTM.GPJ NC_DOT.GDT 6/4/25

GEOTECHNICAL BORING REPORT

BORE LOG

WBS DF18314.1075023		TIP N/A		COUNTY POLK		GEOLOGIST K. Clark									
SITE DESCRIPTION Road Repairs along US 176 Highway							GROUND WTR (ft)								
BORING NO. 314 B-51		STATION 13+29		OFFSET 11 ft RT		ALIGNMENT -L314-									
COLLAR ELEV. 1,711.5 ft		TOTAL DEPTH 48.0 ft		NORTHING 552,259		EASTING 1,005,955									
DRILL RIG/HAMMER EFF./DATE CG24113 CME-550X 78% 05/06/2024			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER L. Ard		START DATE 04/30/25		COMP. DATE 04/30/25		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
1715															
1710	1,710.5	1.0	4	2	1										
	1,708.5	3.0	2	1	1										
1705	1,705.5	6.0	2	1	2										
	1,703.5	8.0	1	1	2										
1700	1,698.5	13.0	7	9	8										
1695	1,693.5	18.0	15	17	18										
1690	1,688.5	23.0	4	4	4										
1685	1,683.5	28.0	7	12	21										
1680	1,678.5	33.0	56	44/0.3											
1675	1,673.5	38.0	65	35/0.3											
1670	1,668.5	43.0	100/0.5												
1665	1,663.5	48.0	60/0.0												

WBS DF18314.1075023		TIP N/A		COUNTY POLK		GEOLOGIST R. Welch									
SITE DESCRIPTION Road Repairs along US 176 Highway							GROUND WTR (ft)								
BORING NO. 314 B-50		STATION 13+84		OFFSET 10 ft RT		ALIGNMENT -L314-									
COLLAR ELEV. 1,708.5 ft		TOTAL DEPTH 54.7 ft		NORTHING 552,247		EASTING 1,006,008									
DRILL RIG/HAMMER EFF./DATE CG20446 Diedrich D-50 97% 04/30/2024			DRILL METHOD H.S. Augers		HAMMER TYPE Automatic										
DRILLER C. Odom		START DATE 05/01/25		COMP. DATE 05/01/25		SURFACE WATER DEPTH N/A									
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG MOI	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100					
1710															
	1,706.2	2.3	4	2	3										
1705	1,703.8	4.7	3	2	1										
	1,701.2	7.3	1	1	2										
1700	1,698.8	9.7	2	4	6										
1695	1,693.8	14.7	5	6	9										
1690	1,688.8	19.7	3	3	4										
1685	1,683.8	24.7	4	6	10										
1680	1,678.8	29.7	12	48	52/0.3										
1675	1,673.8	34.7	17	37	50										
1670	1,668.8	39.7	67	33/0.3											
1665	1,663.8	44.7	75	25/0.1											
1660	1,658.8	49.7	100/0.4												
1655	1,653.8	54.7	60/0.0												

NCDOT BORE DOUBLE GEO_US_176_SITE_314_GTM.GPJ_NC_DOT.GDT 7/28/25