PROJECT: 32572 REFERENCE: A-0009CC /A-0009CD

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

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-L-	414+50.00 TO 474+19.52	35-39 (4-8)	N/A
-Y2-	12+60.00 TO 169+60.00	39-50 (8-19)	N/A

CROSS SECTIONS

LINE	STATION	SHEETS
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-Y2-	14+50 TO 165+00	78-213

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *GRAHAM*

PROJECT DESCRIPTION *UPGRADE NC 143 FROM 0.5 MILES NORTH OF APPALACHIAN TRAIL TO NC 28 AND UPGRADE NC 28 FROM 0.2 MILES WEST OF NC 143 TO 0.3 MILES EAST OF SR 1235 (GUNTERS GAP RD)*

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	A-0009CC /A-0009CD	1	255

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:
1. 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.
2. 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.

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SIGNATURE DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NOTE: PROJECT TIP NO. TRANSITIONS FROM A-0009CC TO A-0009CD AT -Y2- STA. 89+80.00.

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC /A-0009CD	2

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 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,
VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6

SOIL LEGEND AND AASHTO CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)							SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		
GROUP CLASS.	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	
	A-1-a	A-1-b		A-2-4	A-2-5	A-2-6	A-2-7				A-7-5, A-7-6			
SYMBOL														
% PASSING #10 #40 #200	50 MX 30 MX 15 MX	50 MX 25 MX	51 MN 10 MX	35 MX	35 MX	35 MX	35 MX	36 MN	36 MN	36 MN	36 MN	GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT
MATERIAL PASSING #40 LL PI	— 6 MX		— NP	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	40 MX 10 MX	41 MN 10 MX	40 MX 11 MN	41 MN 11 MN	SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER		HIGHLY ORGANIC SOILS
GROUP INDEX	0		0	0		4 MX		8 MX	12 MX	16 MX	NO MX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL, AND SAND		FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND				SILTY SOILS		CLAYEY SOILS				
GEN. RATING AS SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE

PI OF A-7-5 SUBGROUP IS: LL-30 ; PI OF A-7-6 SUBGROUP IS > LL-30

CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTENCE (N-VALUE)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH ($TONS/FT^2$)
GENERALLY GRANULAR MATERIAL (NON-COHESIVE)	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	< 4 4 TO 10 10 TO 30 30 TO 50 > 50	N/A
GENERALLY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30	< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4

TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	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.)

GRAIN SIZE	MM	305	75	2.0	0.25	0.05	0.005
	IN.	12	3				

SOIL MOISTURE-CORRELATION OF TERMS

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
LL — LIQUID LIMIT		
PLASTIC RANGE (PI)	- WET-(W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
PL — PLASTIC LIMIT		
OM — OPTIMUM MOISTURE SL — SHRINKAGE LIMIT	- MOIST-(M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
	- DRY-(D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY

	PLASTICITY INDEX (PI)	DRY STRENGTH
NON PLASTIC	0-5	VERY LOW
SLIGHTLY PLASTIC	6-15	SLIGHT
MODERATELY PLASTIC	16-25	MEDIUM
HIGHLY PLASTIC	26 OR MORE	HIGH

COLOR

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

GRADATION

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.

ANGULARITY OF GRAINS

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

MINERALOGICAL COMPOSITION

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.

COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LL < 31
MODERATELY COMPRESSIBLE	LL = 31-50
HIGHLY COMPRESSIBLE	LL > 50

PERCENTAGE OF MATERIAL

ORGANIC MATERIAL	GRANULAR SOILS	SILT-CLAY SOILS
TRACE OF ORGANIC MATTER	2-3%	3-5%
LITTLE ORGANIC MATTER	3-5%	5-12%
MODERATELY ORGANIC	5-10%	12-20%
HIGHLY ORGANIC	> 10%	> 20%

OTHER MATERIAL	
TRACE	1-10%
LITTLE	10-20%
SOME	20-35%
HIGHLY	35% AND ABOVE

GROUND WATER

- WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING
- STATIC WATER LEVEL AFTER 24 HOURS
- PW — PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA
- SPRING OR SEEP

MISCELLANEOUS SYMBOLS

- ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION
- SOIL SYMBOL
- ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT
- INFERRED SOIL BOUNDARY
- INFERRED ROCK LINE
- ALLUVIAL SOIL BOUNDARY
- 25/025 — DIP & DIP DIRECTION OF ROCK STRUCTURES
- SPT / DPT / DMT / VST / PMT — TEST BORING
- AUGER BORING
- CORE BORING
- MW — MONITORING WELL
- PIEZOMETER INSTALLATION
- SLOPE INDICATOR INSTALLATION
- CONE PENETROMETER TEST
- SOUNDING ROD
- TEST BORING WITH CORE
- SPT N-VALUE

RECOMMENDATION SYMBOLS

- 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

ABBREVIATIONS

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
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
VST-VANE SHEAR TEST
WEA.-WEATHERED
γ - UNIT WEIGHT
γ_d - DRY UNIT WEIGHT

SAMPLE ABBREVIATIONS

S-BULK
SS-SPLIT SPOON
ST-SHELBY TUBE
RS-ROCK
RT-RECOMPACTED TRIAXIAL
CBR-CALIFORNIA BEARING RATIO

EQUIPMENT USED ON SUBJECT PROJECT

DRILL UNITS:
- [ ] CME-45C
- [X] CME-550
- [X] CME-550X
- [ ] VANE SHEAR TEST
- [ ] PORTABLE HOIST
- [X] DIEDRICH D50
- [X] MOBILE B-29

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [X] 8" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [ ] CASING [ ] W/ ADVANCER
- [ ] TRICONE _____" STEEL TEETH
- [ ] TRICONE _____" TUNG.-CARB.
- [ ] CORE BIT
- [ ] _____

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

CORE SIZE:
- [ ] -B _____ [ ] -H _____
- [ ] -N _____

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [ ] HAND AUGER
- [ ] SOUNDING ROD
- [ ] VANE SHEAR TEST
- [ ] _____

ROCK DESCRIPTION

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:

WEATHERED ROCK (WR)	NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.
CRYSTALLINE ROCK (CR)	FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.
NON-CRYSTALLINE ROCK (NCR)	FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YEILD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.
COASTAL PLAIN SEDIMENTARY ROCK (CP)	COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.

WEATHERING

FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.
VERY SLIGHT (V SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.
SLIGHT (SLI.)	ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.
MODERATE (MOD.)	SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.
MODERATELY SEVERE (MOD. SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. *IF TESTED, WOULD YIELD SPT REFUSAL*
SEVERE (SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF*
VERY SEVERE (V SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. *IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF*
COMPLETE	ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.

ROCK HARDNESS

VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.
MODERATELY HARD	CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.
MEDIUM HARD	CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.
SOFT	CAN BE GROVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.
VERY SOFT	CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGERNAIL.

FRACTURE SPACING

TERM	SPACING
VERY WIDE	MORE THAN 10 FEET
WIDE	3 TO 10 FEET
MODERATELY CLOSE	1 TO 3 FEET
CLOSE	0.16 TO 1 FOOT
VERY CLOSE	LESS THAN 0.16 FEET

BEDDING

TERM	THICKNESS
VERY THICKLY BEDDED	4 FEET
THICKLY BEDDED	1.5-4 FEET
THINLY BEDDED	0.16-1.5 FEET
VERY THINLY BEDDED	0.03-0.16 FEET
THICKLY LAMINATED	0.008-0.03 FEET
THINLY LAMINATED	< 0.008 FEET

INDURATION

FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.

FRIABLE	RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.
MODERATELY INDURATED	GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.
INDURATED	GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.
EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

TERMS AND DEFINITIONS

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 DISLODGED 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 (SRQD)-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.

BENCH MARK: N/A

ELEVATION: FEET

NOTES:

ROADWAY DESIGN FILES DATED 04/28/22 PROVIDED BY TGS ENGINEERS

SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

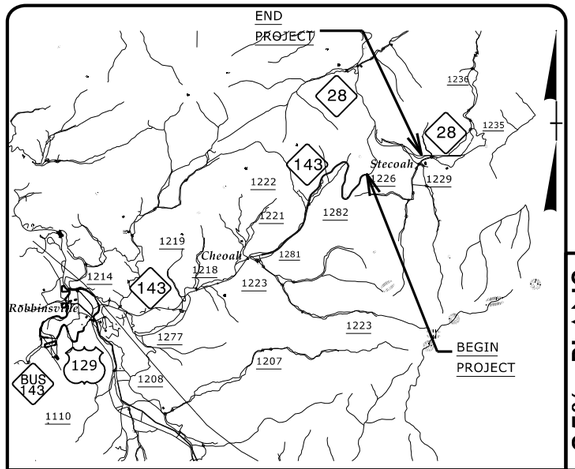
DATE: 8-15-14

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$$$$USERNAME$$$$

TIP PROJECT: A-0009CC

CONTRACT:

See Sheet 1A For Index of Sheets



VICINITY MAP

25% PLANS

3R GUIDELINES WERE USED FROM
–L– 414+50 TO –L– STA 474+20
AND FROM –Y2– 12+60± TO 23+00±
TO MINIMIZE IMPACTS TO USFS PROPERTY
AND NATURAL RESOURCES.

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

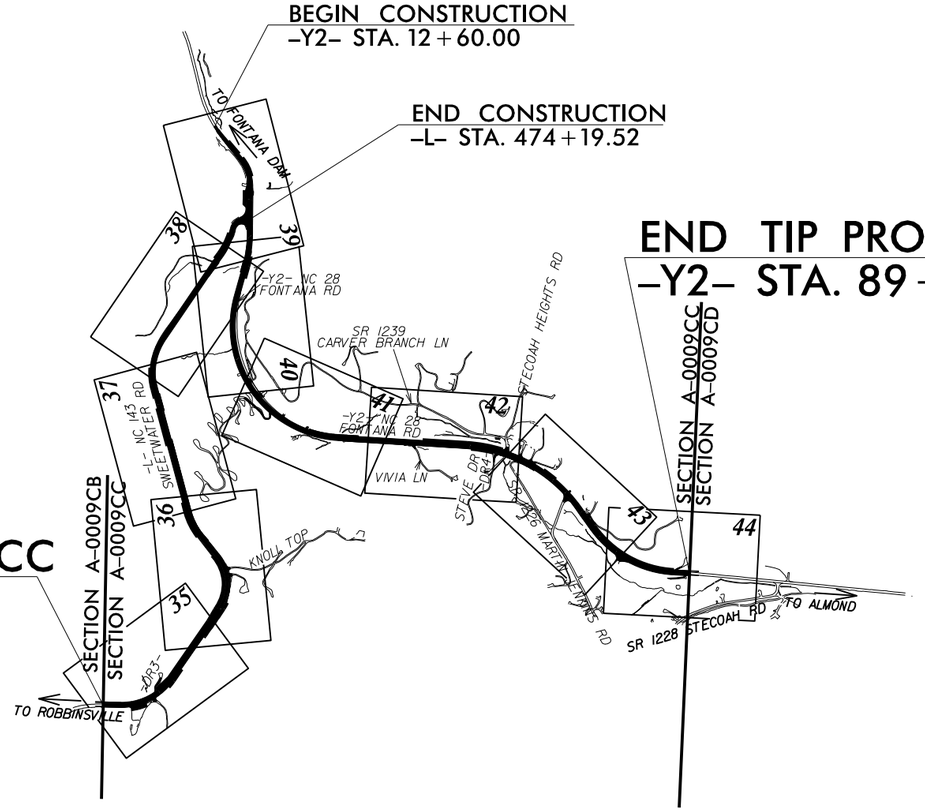
GRAHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	A–0009CC	3	255

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
32572.1.FS10	APD–0074(178)	PE
32572.2.15	0143011	ROW
32572.2.17	0143011	UTIL.
32572.3.15	0143011	CONST.

LOCATION: ***UPGRADE NC 143 FROM 0.5 MILES NORTH OF APPALACHIAN TRAIL TO NC 28***
UPGRADE NC 28 FROM 0.2 MILES WEST OF NC 143 TO 0.2 MILES WEST OF SR 1228 (STECOAH RD)

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERTS, & RETAINING WALLS



BEGIN TIP PROJECT A–0009CC
–L– STA. 414+50.00

END TIP PROJECT A–0009CC
–Y2– STA. 89+80.00

NAD 83/2011

DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVATURE AND HORIZONTAL SSD.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

–L– DESIGN DATA

ADT 2022 = 6590
ADT 2045 = 8800
K = 11 %
D = 57.5 %
T = 7 % *
V = 60 MPH
* TTST = 2% DUAL = 5%
FUNC CLASS =
RURAL ARTERIAL
REGIONAL TIER

–Y2– DESIGN DATA

ADT 2022 = 3800
ADT 2045 = 5200
K = 11 %
D = 67.5 %
T = 7 % *
V = 50 MPH
* TTST = 2% DUAL = 5%
FUNC CLASS =
RURAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP
PROJECT A–0009CC
–L– = 1.131 MILES
–Y2– = 1.462 MILES

TOTAL LENGTH TIP
PROJECT A–0009CC = 2.593 MILES

NCDOT CONTACT: WANDA H. AUSTIN, PE

PLANS PREPARED BY:
TGS ENGINEERS
201 W. MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PLANS PREPARED FOR:
NORTH CAROLINA DEPARTMENT OF TRANSPORATION
DIVISION 14
252 Webster Rd
Sylva, NC 28779

RIGHT OF WAY DATE:
AUGUST 12, 2021

LETTING DATE:
NOVEMBER 15, 2022

2018 STANDARD SPECIFICATIONS

JIMMY L. TERRY, PE
PROJECT ENGINEER

AUSTIN TURNER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

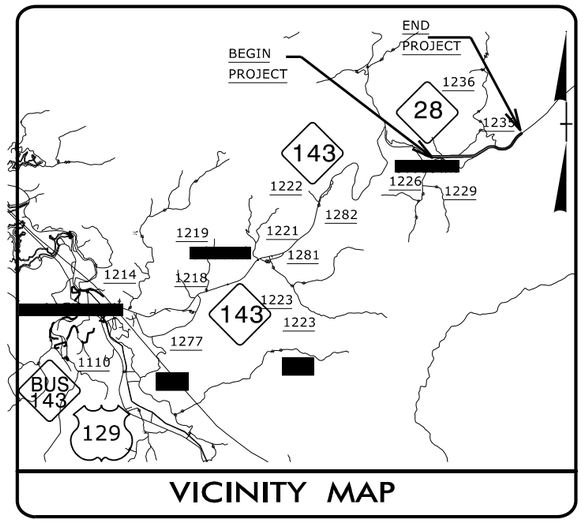
STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION ·

09/08/99
13-OCT-2022 17:34
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$$$$USERNAME$$$$

TIP PROJECT: A–0009CD

CONTRACT: C204744

See Sheet 1A For Index of Sheets



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GRAHAM COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	A–0009CD	3A	255

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
32572.1.FS10	APD–0074(178)	PE
32572.2.15	0143011	ROW
32572.2.17	0143011	UTIL.
32572.3.15	0143011	CONST.

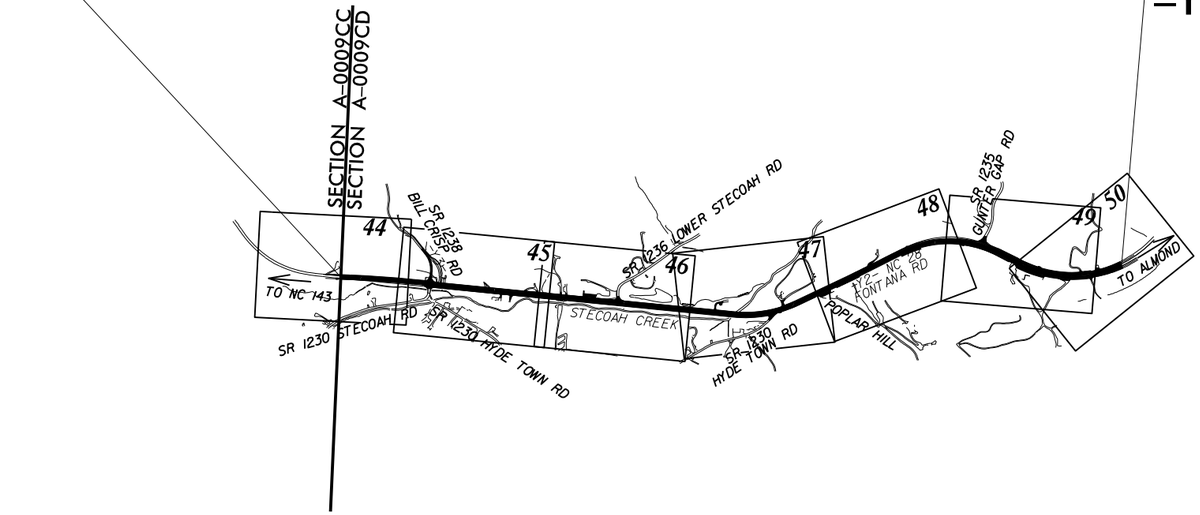
LOCATION: ***UPGRADE NC 28 FROM 0.2 MILES WEST OF SR 1228 (STECOAH RD) TO 0.3 MILES EAST OF SR 1235 (GUNTERS GAP RD)***

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CULVERTS, & RETAINING WALLS

NAD 83/2011

BEGIN TIP PROJECT A–0009CD
–Y2– STA. 89 + 80.00

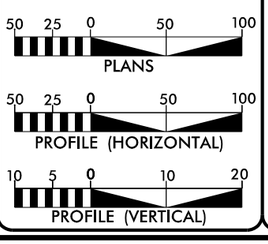
END TIP PROJECT A–0009CD
–Y2– STA. 89 + 80.00



DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVATURE AND HORIZONTAL SSD.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



–Y2– DESIGN DATA

ADT 2022 = 3800
ADT 2045 = 5200
K = 11 %
D = 67.5 %
T = 7 % *
V = 50 MPH
* TTST = 2% DUAL = 5%
FUNC CLASS =
RURAL ARTERIAL
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT A–0009CD = 1.511 MILES

TOTAL LENGTH TIP PROJECT A–0009CD = 1.511 MILES

NCDOT CONTACT: WANDA H. AUSTIN, PE

PLANS PREPARED BY:

TGS ENGINEERS
201 W. MARION ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

PLANS PREPARED FOR:

NORTH CAROLINA DEPARTMENT OF TRANSPORATION
DIVISION 14
252 Webster Rd
Sylva, NC 28779

RIGHT OF WAY DATE:
AUGUST 12, 2021

LETTING DATE:
OCTOBER 17, 2023

2018 STANDARD SPECIFICATIONS

JIMMY L. TERRY, PE
PROJECT ENGINEER

AUSTIN TURNER, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

10/17/2022

STATE PROJECT: 35272.1.FS10
TIP NUMBER: A-0009CC & A-0009CD
F/A NUMBER: APD-0074(178)
COUNTY: GRAHAM
DESCRIPTION: Upgrade NC 143 from 0.5 miles North of Appalachian Trail to NC 28
Upgrade NC 28 from 0.2 miles West of NC 143 to 0.3 miles East of SR 1235 (Gunters Gap Rd)

SUBJECT: Geotechnical Roadway Inventory Report

PROJECT DESCRIPTION

The third section of the A-0009C project is being split into 2 separate sections, A-0009CC and A-0009CD, and this report discusses both sections. This roadway widening project consists of improvements to NC 143 beginning 0.5 miles north of the Appalachian Trail and extending to NC 28 and to include improvements along NC 28 beginning 0.2 miles west of NC 143 and extending 0.3 miles east of SR 1235 (Gunters Gap Road). The project is approximately 4.104 miles in length, measured along -L- (NC 143) from Station 414+50 to 474+20 and along -Y2- (NC 28) from 12+60 to 169+60. The split between project sections occurs at Station 89+80 on -Y2- (NC 28). The construction consists of widening the existing two-lane facility to accommodate additional lanes, full depth paved shoulders, secondary roadway and driveway improvements, additional sidewalk, four reinforced concrete culverts, fifteen retaining walls, and associated infrastructure. The project alignment is not located entirely within NCDOT right-of-way. The following alignments are included as part of this investigation:

Alignment	Stations	TIP No.
-L- (NC 143)	414+50 to 474+20	A-0009CC
-Y2- (NC 28)	12+60 to 89+80	A-0009CC
-DR3-	10+20 to 11+96	A-0009CC
-DR4-	10+00 to 11+10	A-0009CC
-Y2- (NC 28)	89+80 to 169+60	A-0009CD
-Y3-	10+50 to 14+20	A-0009CD
-Y3A-	10+00 to 10+94	A-0009CD

Some boring locations were planned in archeologically sensitive areas; however, these areas could not be accessed at the time of the investigation and were excluded.

The following culverts are included as part of this investigation:

Culvert	Stations (Alignment)
Structure over Carver Branch	66+85 (-Y2-)
Structure over Edwards Branch	99+82 (-Y2-)
Structure over Stecoah Creek	128+90 (-Y2-)
Structure over Carver Branch	10+67 (-Y3A-)

The following retaining walls are included as part of this investigation:

Wall	Stations (Alignment)	Offset
Retaining wall #21	420+39 to 436+65 (-L-)	42 LT to 45 LT
Retaining wall #22	438+96 to 442+59 (-L-)	33 LT to 34 LT
Retaining wall #23	448+40 to 452+25 (-L-)	33 LT to 34 LT
Retaining wall #24	453+25 to 456+25 (-L-)	33 LT to 34 LT
Retaining wall #25	468+75 to 471+75 (-L-)	33 LT to 24 LT
Retaining wall #26	421+36 to 423+54 (-L-)	27 RT
Retaining wall #27	427+36 to 431+46 (-L-)	29 RT to 32 RT
Retaining wall #30	26+50 to 28+75 (-Y2-)	38 LT to 39 LT
Retaining wall #32	58+90 to 66+83 (-Y2-)	38 LT to 39 LT
Retaining wall #33	63+75 to 66+03 (-Y2-)	21 RT to 22 RT
Retaining wall #34	71+25 to 72+75 (-Y2-)	33 LT to 34 LT
Retaining wall #35	77+94 to 88+25 (-Y2-)	33 LT to 28 LT
Retaining wall #39	14+59 to 16+25 (-Y2-)	21 LT to 28 LT
Retaining wall #40	16+75 to 18+70 (-Y2-)	28 LT to 33 LT
Retaining wall #41	146+60 to 148+80 (-Y2-)	33 RT to 34 RT

The following sliver fill slopes oriented at 1:1 (H:V) are included as part of this investigation:

Stations (Alignment)	Offset
108+00 (-Y2-)	RT
110+50 to 111+00 (-Y2-)	RT
112+00 to 114+50 (-Y2-)	RT

The following fill slopes 1.5:1 (H:V) are included as part of this investigation:

Stations (Alignment)	Offset
103+00 to 103+50 (-Y2-)	RT
108+50 to 110+00 (-Y2-)	RT
115+50 to 116+50 (-Y2-)	RT
120+50 to 122+00 (-Y2-)	LT
118+00 to 128+00 (-Y2-)	RT

The following cut slopes oriented steeper than 2:1 (H:V) but flatter than 1.5:1 (H:V) are included as part of this investigation:

Stations (Alignment)	Offset
416+00 to 419+50 (-L-)	LT
420+00 (-L-)	RT
442+50 to 446+00 (-L-)	LT
21+00 to 22+50 (-Y2-)	LT
28+50 to 32+00 (-Y2-)	RT
33+50 to (-Y2-)	RT
34+50 to 35+00 (-Y2-)	RT

Stations (Alignment)	Offset
40+50 to 42+50 (-Y2-)	RT
43+50 to 46+00 (-Y2-)	RT
73+00 to 74+00 (-Y2-)	RT
101+00 to 102+50 (-Y2-)	LT
104+50 to 106+50 (-Y2-)	LT
149+00 (-Y2-)	RT

The following 1:1 (H:V) sliver cut slopes are included as part of this investigation:

Stations (Alignment)	Offset
133+50 (-Y2-)	RT

All other project slopes are 2:1 (H:V) or flatter.

For additional discussion on the investigation performed for the rock slopes of the project, please reference the "Final Rock Slope Design" dated February 25, 2022, and "A-0009CC_GEO_Rdy_INV_ROCK_SLOPE" dated May 3, 2022, prepared by HDR Engineering, Inc. of the Carolinas. The station intervals that were included in the HDR inventory investigation report have been omitted from this inventory investigation report. The investigation performed by HDR was for the following project stations intervals:

Stations (Alignment)	Offset
134+25 to 137+75 (-Y2-)	LT
145+25 to 148+75 (-Y2-)	RT
149+25 to 158+75 (-Y2-)	RT
156+25 to 161+75 (-Y2-)	LT

For additional information, please see those reports.

The project alignment is generally located in a rural area with existing grades ranging from relatively flat along the west of the project, becoming more mountainous along the central and eastern areas of the alignment. Due to the variation of existing conditions and proposed construction across the project alignment, the project has been divided into sections to describe the change in grades and proposed construction in a more descriptive manner.

Section No. 1: -L- Station 414+50 to 474+19

This section contains rolling hills and steep slopes along the alignment, resulting in large cut slopes and moderate fills. Existing steep slopes are present along the alignment and will require large, steep cuts and retaining walls to achieve proposed grades. Between Station 420+00 and 426+00, a large landslide occurred on the cut slope located left of the alignment. This landslide has been previously repaired. It also appears that separate slides may have occurred at the locations for Wall #26 and #27. The United States Forest Services owns a majority of the property along the left side of the alignment through this section. The proposed improvements for this section include widened travel lanes, one additional travel/passing lane, and paved shoulder on the left and right side of the alignment. Expressway gutter will be added at select locations. Select drives will be improved as part of the construction. There are seven (7) retaining wall in this section. Several borings throughout this section encountered colluvial soils within the proposed roadway and in the vicinity of retaining walls (reference Areas of Special Geotechnical Interest in this report).

Section No. 2: -Y2- Station 12+60 to 67+00

This section contains rolling hills and steep slopes along both sides of the alignment, resulting in large cut and fill slopes being required in this section of the project. Existing steep slopes are present along the alignment and will require large, steep soil cuts and retaining walls to achieve proposed grades. Large fills will also be required along both sides of the alignment to build-out existing slopes for the proposed widening. Several fill retaining walls will be utilized in this section. The proposed improvements include widened travel lanes, one additional travel/passing lane, and paved shoulder on the left and right side of the alignment. Select drives will be improved as part of the construction. This section contains Retaining Wall #39, #40, #30, #31, and #33. Several borings throughout this section encountered colluvial soils within the proposed roadway and in the vicinity of retaining walls (reference Areas of Special Geotechnical Interest in this report).

Section No. 3: -L- Station 67+00 to 155+00 (LT)

This section of the project extends through the floodplain of Sweetwater Creek, with generally steep slopes on the left side of the alignment and moderate fills on the right side where the route runs adjacent to Sweetwater Creek. The proposed improvements in this section includes widened travel lanes, one to two additional travel/passing lanes, one turn lane, pull off areas, and paved shoulder. Retaining Wall #34, #35, and #41 will be constructed in this section. Four culverts will be required in this section of the project in some of the larger fill areas. Numerous borings throughout this section encountered alluvial soils within the proposed roadway (reference Areas of Special Geotechnical Interest in this report). As previously referenced, a steepened rock cut will be constructed in this section (see "Final Rock Slope Design" report by HDR).

Section No. 4: -L- Station 153+50+00 (RT) to 169+60

This section of the project extends through Edwards Gap. As previously referenced, a steepened rock cut will be constructed at Edwards Gap on both sides of the alignment (see "Final Rock Slope Design" report by HDR). Beyond Edwards Gap, the remaining portion of the project has relatively flat grades that tie into the four-lane section of existing NC 28 (-Y2-).

The geotechnical field investigation was conducted by CG2 during the period of October 2020 through December 2021. The investigation was performed in several phases due to project schedule and other demands which required moving equipment to various sections of the project. Subcontracted drill crews were used to drill, sample, and log 173 of the borings in this report. The drill rigs used were ATV-mounted CME-550 and CME 550X, a truck-mounted Mobile B-29, and a track-mounted Diedrich D-50 equipped with automatic hammers. Standard Penetration Tests were performed at selected depths for the 173 borings. Additionally, some areas could not be accessed by the drilling equipment, and the presence of boulders and cobbles prevented obtaining subsurface information using hand sampling methods. In these instances, field staff visually identified areas of interest. Representative soil samples were collected for visual-manual classification in the field and selected samples were submitted for laboratory analysis by an approved NCDOT M&T testing facility.

Due to site constraints, archeologically sensitive areas, and stakeholder limitations, select areas were inaccessible to drilling equipment. As such, CG2 subcontracted GEL Solutions (GEL) to perform a seismic refraction investigation at various areas across the project alignment between May and September 2021. GEL performed 27 seismic refraction lines utilizing a Geometrics Geode Seismograph with up to 24 vertical geophones with a 16-pound sledgehammer as an energy source. The purpose of the seismic refraction investigation was to assist in estimating the top of weathered rock and/or bedrock which may affect the proposed construction. CG2 interpreted the top of weathered rock based on a compressional wave velocity (Vp) of 4,500 ft/sec and the top of bedrock based on a Vp of 7,500 ft/sec.

PHYSIOGRAPHY AND GEOLOGY

The project alignment is located within the Blue Ridge Physiographic Province of North Carolina (Blue Ridge). In general, the project alignments topography is consistent with the Blue Ridge, having rolling terrain that is moderately wooded with intermittent mountainous slopes and ridges at variable distances along the alignment. Towards the east along NC 28 (-Y2-), floodplains and stream terraces are present paralleling the existing roadways. The eastern end of the project alignment extends through Edwards Gap.

According to the geologic map and associated data of southwestern North Carolina from Weiner & Merschat, 1992, the project alignment mostly lies within the Murphy Syncline, a northeast-southwest trending trough fold. This now-tilted u-shaped fold has experienced multiple regional deformational events, which have overprinted the older synclinal fold with more recent foliations, faulting, and open folds. These geologic events have resulted in low to medium grade metamorphic rock (chlorite to kyanite facies). The project alignment is underlain by the Anakeesta (Wehutty) and stratigraphically overlying Ammons Formations. The bedrock under the site consists of meta-sedimentary rock including interlayers of Phyllite, Argillite, Schist, Meta-Sandstone, Meta-Siltstone, and Meta-Graywacke, and Marble of the Ammons Formation and interlayered Graphite Schist, Muscovite Schist, Meta-Sandstone and Meta-Siltstone of the Anakeesta (Wehutty) Formations. (Reference "Geological Investigation of A-9 A, B, & C (Stecoah and Tatham Gaps)" prepared by Acker & Reed, December 5, 1995). The rock encountered during this investigation was classified as Meta-Graywacke, Meta-Siltstone, and Meta-Sandstone, Mica Schist, and Schist.

Based on a review of the February 29, 2009 "Acid Producing (Hot Rock) Investigation and Potential Along Proposed Corridor" prepared by NCDOT and our experience in this region, rock with the potential to produce acidic runoff upon exposure to air and water (hot rock) may be found within the Ammons Formation and members, namely the Horse Branch Member, and the Anakeesta (Wehutty) Formation. Hot rock of the Nantahala Formation may also produce acidic conditions; however, the current proposed alignment does not appear to extend to areas underlain by this formation. As these geologic formations are known to be acid-producing, CG2 subcontracted HDR Engineering, Inc. of the Carolinas to investigate the risk for acidic potential to the project site and, if necessary, prepare a safety protocol for the handling, treatment, and disposal of the hot rock particular to this project site ("Final Rock Slope Design" dated February 25, 2022). The evaluation consisted of twenty hand samples collected by CG2 (tested for Net Neutralization Potential (NNP)), twenty rock core samples, and three split spoon samples from boreholes to investigate three proposed rock cuts along NC 28 (-Y2-) for Acid-Base Testing. We concur with the referenced report prepared by HDR, that acid-producing rock in the project area does not appear to pose a significant risk along NC 28 (-Y2-) routed through the proposed alignment.

Within the project alignment, much of the bedrock is overlain by near-surface material consisting of residual soil and transported soil deposits of varying ages. Residual soils are derived from in situ chemical and physical weathering of the rocks in the area. The residual soils in this region are typically more fine grained with a higher clay content near the surface due to advanced weathering, and typically become more coarse grained with increasing depth as the degree of weathering decreases. As the degree of weathering decreases, the residual soils generally retain the overall appearance and fabric of the parent rock (sometimes referred to as "saprolite"). The boundary between soil and rock is not always sharply defined. A transitional zone termed "weathered rock" is often found overlying the parent bedrock. Weathered rock is defined as material requiring 100 blows with less than one foot of penetration from the SPT hammer.

Transported soils within the project alignment consist of alluvial (water-transported) and colluvial (gravity-transported) deposits of varying ages. Alluvial soil deposits are primarily from Sweetwater Creek and several other smaller creeks and streams present within the project alignment. Some streams and creeks are the byproducts of numerous springs located throughout the project corridor. Older, weathered alluvial deposits were also encountered and are referred to as fans or stream terraces. In areas immediately adjacent to existing waterways, younger alluvial deposits (floodplain soils) were encountered at lower elevations than terrace deposits or residual soils.

Colluvial soil deposits were observed within portions of the project alignment on slopes and/or at the base of slopes and ridges. Colluvial soils deposits are typically the result of mass soil movement and long-term soil creep which are common in this geographical area at the base of hills, slopes, and mountain ridges. In proximity to the project alignment, there have been multiple landslide and soil creep events in the vicinity of proposed Retaining Walls #26 and #27. As previously discussed, a large landslide occurred on NC 143 (-L-) between Station 420+00 and 426+00 on the left side of the alignment.

SOIL PROPERTIES

Soils and rock encountered during this investigation include roadway embankment, artificial fill, alluvial, colluvial, residual, weathered rock, and crystalline rock.

A pavement system was encountered in four borings (CULV_Y2_14132R, CULV_Y2_6784L, Y2_5275L, and Y2_14132R) consisting of asphalt and gravel ABC up to 2.0 feet below the existing ground surface. Organic topsoil was encountered in some borings at the ground surface up to approximately 0.5 feet below the existing ground surface.

Roadway Embankment soils are similar in nature to residual soils and may be derived from nearby sources. The fine-grained roadway embankment soils consist of very soft to hard, sandy silt (A-4), sandy, clayey silt (A-5), sandy clay (A-6), and sandy, silty clay (A-7), with trace to little gravel and trace organics. The coarse-grained soils encountered consist of very loose to very dense, sandy gravel (A-1-a), silty, gravelly sand (A-1-b), and silty sand (A-2-4), with trace to little gravel and trace organics.

Artificial Fill soils are materials that have been moved and/or placed by man or mechanical means. The artificial fill soils encountered consist of very loose to dense silty, sand (A-2-4) and soft to hard, sandy silt (A-4), sandy, clayey silt (A-5), and silty clay (A-7), with trace to little gravel and organics. The soils appeared to be sourced locally.

Alluvial soils are materials transported by water and are typically found in floodplains and stream terrace environments. The fine-grained alluvial soils consist of very soft to hard, sandy silt (A-4), sandy, clayey silt (A-5), sandy, silty clay (A-7), with trace to little gravel and cobbles and organics and trace mica. The coarse-grained soils encountered consist of very loose to very dense, sandy gravel (A-1-a), gravelly, silty sand (A-1-b), and silty sand (A-2-4), with little gravel. Alluvial boulders were also encountered infrequently across the project.

Colluvial soils were encountered as semi-consolidated soil deposits beneath existing embankments and unconsolidated soils deposited at the base of hillsides by creep and/or water flow. The fine-grained colluvial soils consist of soft to hard, sandy silt (A-4), sandy, clayey silt (A-5), and sandy clay (A-6), with trace to little gravel and trace organics and mica. The coarse-grained soils consist of very loose to loose, silty sand (A-2-4), with trace gravel and organics.

Residual soils are derived from the weathering of underlying rock in the area. The residual fine-grained soils consist of soft to hard, slightly plastic sandy silt (A-4), sandy, clayey silt (A-5), sandy clay (A-6), and sandy, silty clay (A-7-5/6), with trace mica, organics, and manganese oxide and trace to little gravel-sized rock fragments. The coarse-grained soils consist of very loose to very dense, sandy gravel (A-1-a), silty, gravelly sand (A-1-b), and silty sand (A-2-4), with trace mica and manganese oxide and trace to little gravel-sized rock fragments.

Weathered rock was also encountered along the project alignment within 73 borings. The weathered rock encountered consists of Schist, Mica Schist, Meta-Sandstone, Meta-Siltstone, and Meta-Graywacke. The top of weathered rock was encountered at the existing ground surface to depths up to approximately 73.5 feet below the existing ground surface.

Crystalline rock was encountered along the project alignment within nine of the borings and 34 borings were terminated on crystalline rock. The crystalline rock encountered was classified as Schist, Mica Schist, Meta-Sandstone, Meta-Siltstone, and Meta-Graywacke and was encountered at depths ranging from approximately 2.0 to 78.0 feet below the existing ground surface. For borings terminated on crystalline rock where rock was not recovered, the rock was classified either based on materials recovered within the boring or on proximal rock outcrop type.

GROUNDWATER

Groundwater measurements were taken between the months of May to December 2021. Groundwater measurements were attempted at the completion of drilling in each boring, at which time groundwater was encountered in 54 borings at depths ranging from approximately 1.5 to 57.5 feet below the existing ground surface. Subsequent groundwater measurements were attempted after at least 24 hours following the completion of drilling, at which time groundwater was encountered in 61 of the borings at depths ranging from approximately 0.8 feet to 61.0 feet below the existing ground surface. Twenty-eight of the borings were backfilled immediately upon completion of drilling activities for safety reasons or at the request of a property owner. The remaining borings were recorded as dry at the bottom of the boring cylinder. Groundwater is expected to impact construction. The soils encountered were generally described as moist to wet above the groundwater elevation and moist to saturated below groundwater elevation.

Water wells were encountered within the project alignment. Water wells could be encountered at other locations due to the presence of dwellings and businesses.

Alignment	Stations	Offsets (ft)
-Y2-	40+30	113 LT
-Y2-	73+63	91 RT
-Y2-	89+57	172 LT
-Y2-	95+33	118 RT

Springs and seeps were encountered within the project alignment at the following locations:

Type	Alignment	Stations	Offsets (ft)
Seep	-L-	419+66	15 LT
Spring	-L-	447+22	77 LT
Spring	-Y2-	14+46	83 LT
Spring	-Y2-	16+55	32 LT
Spring	-Y2-	18+77	35 LT
Spring	-Y2-	19+20	106 LT
Seep	-Y2-	19+43	10 LT
Spring	-Y2-	23+24	39 LT
Spring	-Y2-	24+03	95 LT
Spring	-Y2-	25+49	201 LT
Spring	-Y2-	25+95	189 LT
Spring	-Y2-	44+81	196 LT
Spring	-Y2-	46+11	101 RT
Spring	-Y2-	46+37	137 RT
Spring	-Y2-	46+88	70 RT
Spring	-Y2-	52+40	83 LT
Spring	-Y2-	60+73	104 LT
Spring	-Y2-	61+11	138 LT
Spring	-Y2-	63+47	90 LT
Spring	-Y2-	75+57	120 LT
Spring	-Y2-	75+82	142 LT
Spring	-Y2-	91+80	98 LT
Spring	-Y2-	111+80	215 LT
Spring	-Y2-	153+01	141 LT

AREAS OF SPECIAL GEOTECHNICAL INTEREST

The following borehole locations encountered very soft to soft or very loose to loose soils which have the potential to cause embankment stability and/or long-term settlement problems:

Alignment	Stations	Offsets (ft)
-L-	419+67	64 LT
-L-	422+20 to 422+50	107 LT to 31 LT
-L-	423+54	30 RT
-L-	428+50	24 LT
-L-	429+00	18 RT
-L-	429+50	24 LT
-L-	430+50 to 431+50	25 LT to 18 RT
-L-	436+50 to 440+75	40 LT to 20 LT
-L-	446+00 to 448+50	40 LT to 20 LT
-L-	468+00 to 469+00	40 LT to 25 LT
-Y2-	16+25 to 16+75	40 LT to 20 LT
-Y2-	18+50	26 LT
-Y2-	23+71	57 LT
-Y2-	26+02 to 27+50	154 LT to 12 LT
-Y2-	30+60 to 37+00	CL to 199 RT
-Y2-	52+14	54 LT
-Y2-	56+66 to 61+00	63 LT to 1 LT
-Y2-	65+21 to 67+84	20 LT to 71 RT
-Y2-	76+03 to 81+00	93 LT to 27 RT
-Y2-	86+87	31 RT
-Y2-	87+98 to 99+97	24 LT to 33 RT
-Y2-	103+48 to 105+65	47 LT to 3 RT

Alignment	Stations	Offsets (ft)
-Y2-	107+75 to 113+50	3 RT to 35 RT
-Y2-	116+92 to 122+98	31 LT to 34 RT
-Y2-	124+99 to 127+40	19 LT to 34 RT
-Y2-	129+47 to 133+13	19 LT
-Y2-	140+75	58 RT
-Y3A-	10+82 to 10+87	12 LT to 29 RT
-Y3-	12+00	25 RT

Highly Plastic Soils: Highly plastic soils (PI > 25) were not encountered in the borings on the project.

Shallow groundwater was encountered within 6 feet of proposed subgrade at the following borehole locations:

Alignment	Stations	Offsets (ft)
-L-	417+94	101 LT
-L-	455+00	30 LT
-Y2-	16+75 to 17+75	40 LT to 15 LT
-Y2-	20+64	28 LT
-Y2-	26+02	154 LT
-Y2-	42+50 to 44+50	50 RT to 120 RT
-Y2-	63+78	22 RT
-Y2-	64+47	19 RT
-Y2-	76+03	27 RT
-Y2-	78+00	35 LT
-Y2-	80+00	35 LT
-Y2-	124+01 to 124+99	31 RT to 32 RT
-Y2-	125+96 to 126+88	33 RT to 34 RT
-Y2-	128+01	32 RT

In addition, shallow groundwater may be encountered within 3 feet of the existing ground at the following locations:

Alignment	Stations	Offsets (ft)
-L-	455+00	30 LT
-Y2-	16+75 to 17+75	40 LT to 15 LT
-Y2-	20+64	28 LT
-Y2-	26+02	154 LT
-Y2-	63+78	22 RT
-Y2-	67+58	71 RT
-Y2-	80+00	35 LT
-Y2-	108+75 to 109+50	35 RT
-Y2-	110+93	3 RT
-Y2-	121+13	31 LT
-Y2-	126+88	33 RT
Y2-	128+01	32 RT
-Y2-	129+01 to 129+47	37 LT to 19 LT

Alluvial soils were encountered on the project at the following borehole locations:

Alignment	Stations	Offsets (ft)
-Y2-	60+00	1 LT
-Y2-	67+58 to 67+84	5 LT to 71 RT
-Y2-	76+05	57 LT
-Y2-	99+97	7 RT
-Y2-	107+75 to 118+01	10 LT to 35 RT
-Y2-	119+03	33 RT
-Y2-	122+03	31 RT
-Y2-	128+01 to 129+00	25 LT to 35 RT
-Y2-	129+47	19 LT
-Y2-	140+75 to 141+32	97 LT to 58 RT
-Y3A-	10+82 to 10+87	12 LT to 29 RT

Artificial Fill soils were encountered on the project at the following borehole locations:

Alignment	Stations	Offsets (ft)
-L-	415+24	72 LT
-L-	419+67	64 LT
-L-	460+00 to 464+09	4 RT to 18 RT
-Y2-	23+71 to 24+21	57 LT to 35 LT
-Y2-	69+00	20 RT
-Y2-	103+48	1 RT

Colluvial soils may be detrimental to the proposed improvements due to variable consistency and character of these soils. Colluvial soils often contain deleterious materials such as boulders, gravel, organics, loose/soft soils, and can become unstable during or after construction. Colluvial soils present significant risk if they become saturated or are left exposed to continued water infiltration which may cause previously stable colluvial soils to creep, slide, or become unstable. Colluvial soils were encountered on the project at the following borehole locations:

Alignment	Stations	Offsets (ft)
-L-	422+20	107 LT
-L-	429+00	18 RT
-L-	436+50 to 448+50	40 LT to 20 LT
-L-	468+00	40 LT
-L-	471+75	31 RT
-Y2-	16+75	40 LT
-Y2-	27+50	12 LT

Alignment	Stations	Offsets (ft)
-Y2-	31+00 to 32+25	5 RT to 25 RT
-Y2-	37+00	CL
-Y2-	47+00 to 52+14	70 LT to 54 LT
-Y2-	56+66 to 62+00	63 LT to 1 LT
-Y2-	66+05	20 LT
-Y2-	75+50	20 LT
-Y2-	76+05	57 LT
-Y2-	77+50	20 LT
-Y2-	103+70	47 LT

Rock outcrops were observed on the project at the following locations:

Outcrop Number	Alignment	Stations	Offsets
26	-L-	426+57 to 428+58	LT
27	-L-	432+36 to 434+24	LT
28	-L-	455+56 to 457+20	LT
29	-L-	458+97 to 462+84	LT
30	-L-	471+60 to 472+17	LT
31	-L-	472+95 to 473+82	RT
33	-Y2-	14+80 to 16+19	LT
34	-Y2-	17+11 to 18+40	LT
35	-Y2-	20+58 to 20+77	LT
36	-Y2-	26+56 to 27+00	RT
37	-Y2-	53+07 to 54+85	RT
38	-Y2-	53+64 to 54+75	LT
39	-Y2-	56+91 to 57+53	RT
40	-Y2-	62+63 to 65+83	RT

Rock was encountered within 6 feet of the proposed cut elevation at the following borehole and/or seismic refraction investigation locations:

Alignment	Stations	Offsets (ft)
-L-	427+52	37 LT
-L-	431+00	LT
-L-	432+50 to 434+50	LT
-L-	451+50	LT
-L-	473+00 to 474+00	RT
-Y2-	17+00 to 18+00	LT
-Y2-	21+50 to 23+00	LT
-Y2-	29+50	RT
-Y2-	41+00	40 RT
-Y2-	63+78 to 66+00	RT

Alignment	Stations	Offsets (ft)
-Y2-	81+50	LT

For rock locations in other areas on the project, please see the previously referenced reports prepared by HDR.

Ponds were observed in the vicinity of the project limits at the following locations:

Alignment	Stations	Offsets
-Y2-	88+40 to 89+00	RT
-Y2-	118+50 to 123+75	LT
-Y2-	135+75 to 137+25	LT

GEOTECHNICAL TESTING

Split spoon samples were selected for laboratory testing including Atterberg limits, grain size distribution analysis with hydrometer, and natural moisture. Three relatively undisturbed thin-wall (Shelby Tubes) samples were collected during the investigation. Shelby tube samples were tested for Confined Unconsolidated Triaxial, Atterberg limits, grain size distribution analysis with hydrometer, and natural moisture testing at the following borehole locations:

Sample No.	Alignment	Stations	Offsets (ft)	Sample Depth (ft)
ST-7	-Y2-	140+69	58 RT	18.0-19.5
ST-10	-Y2-	30+60	207 RT	18.0-20.0

Sincerely,
Carolinas Geotechnical Group, PLLC

DocuSigned by:
C. Tyler Wenner
4FD0DB3B7114451...
C. Tyler Wenner, PG
Professional Geologist

DocuSigned by:
D. Matthew Brewer
386129C0A4C1462...
D. Matthew Brewer, PE
Senior Project Engineer

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	35 (4)
R/W SHEET NO.	
ROADWAY DESIGN	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

PAVEMENT REMOVAL

PROP MONOLITHIC CONC ISLAND – SURFACE MOUNTED

END SECTION A-0009CB
BEGIN SECTION A-0009CC

BEGIN TIP PROJECT A-0009CC
-L- STA. 414+50.00

-L- PC 416+23.25

-DR3- PC 10+38.28
-DR3- PT 10+98.80

BEGIN CONSTRUCTION
-DR3 STA. 10+20.00

-DR3- POT 10+00.00

-L- PT 422+13.30

MATCH LINE STA 428+00.00
MATCH TO SHEET NO. 36
-L-

-ARTIFICIAL FILL-

-RESIDUAL-

-ROADWAY EMBANKMENT-

LANDSLIDE

PROP. RETAINING WALL #21
W/CONCRETE DITCH
BEGIN -L- STA. 420+39.25
END -L- STA. 436+61.65

PROP. SINGLE FACED CONCRETE BARRIER

-COLLUVIAL-

WOODS

L-41524L
L-41794L
L-41967L
L-42016R

RWAL21.B-1
RWAL21.B-2
RWAL21.B-3
RWAL21.B-4
RWAL21.B-5
RWAL21.B-6
RWAL21.B-7
RWAL21.B-8
RWAL21.B-15
RWAL26.B-1
RWAL26.B-2
RWAL26.B-3
RWAL27.B-1

LINE 21J
LINE 21.2
LINE 21.3

BST SHOULDER
24' BST
NC 141 (SWEETWATER RD)
18" CMP
12" HDPE
RIP-RAP
MTL
GR
BL
F

MONO. CONC. ISLAND
6" CONC CURB
TIE CONCRETE TO EXISTING SIGN
ROCK SIGN
ROCK RETAINING WALL
I.S. ROCK CHURCH
CONC
GATE
WD RAIL
GPS-18
REMOVE EXIST. CONCRETE DRIVE
EXIST. DRIVE
20" MAPLE

PROP. CONCRETE DRIVE

FOR CONCRETE ISLAND & DRIVE LAYOUT SEE DETAIL SHT 2B-1

PROP. RETAINING WALL #26
BEGIN -L- STA. 421+36.10
END -L- STA. 423+54.00

PROP. RETAINING WALL #27
BEGIN -L- STA. 427+36.11
END -L- STA. 431+45.17

FOR -L- PROFILE, SEE SHEET NO.69

FOR -DR3- PROFILE, SEE SHEET NO. 77

8/17/99

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PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	36 (5)
R/W SHEET NO.	
ROADWAY DESIGN	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

-L- CURVE DATA

PI Sta 434+01.05	PI Sta 440+11.67
Δ = 75° 56' 44.8" (LT)	Δ = 26° 10' 50.5" (RT)
D = 12° 43' 56.6"	D = 8° 48' 53.0"
L = 596.48'	L = 297.01'
T = 351.24'	T = 151.14'
* R = 450.00'	R = 650.00'
SE = 0.08	SE = 0.08
DS = 40 MPH	DS = 45 MPH

NAD 83/2011

MATCH LINE STA -L- 428+00.00
MATCH TO SHEET NO. 35

MATCH LINE STA -L- 442+00.00
MATCH TO SHEET NO. 37

PROP. RETAINING WALL #21
W/CONCRETE DITCH
BEGIN -L- STA. 420+39.25
END -L- STA. 436+64.65

PROP. RETAINING WALL #22
W/CONCRETE DITCH
BEGIN -L- STA. 438+96.72
END -L- STA. 442+58.42

PROP. SINGLE FACED CONCRETE BARRIER

PROP. RETAINING WALL #27
BEGIN -L- STA. 427+36.11
END -L- STA. 431+45.17

-L- PC 430+49.81

-L- PT 436+46.29

-L- PT 441+57.53

-L- PC 438+60.52

SHOULDER BERM GUTTER
-L- STA. 438+00 TO 448+97, RT

-RESIDUAL-

-COLLUVIAL-

-ROADWAY EMBANKMENT-

ROCK OUTCROP 27

PROP. DRIVE

DO NOT DISTURB SIGN

* DESIGN EXCEPTION REQUIRED FOR HORIZONTAL CURVATURE AND HORIZONTAL STOPPING SIGHT DISTANCE.

FOR -L- PROFILE, SEE SHEET NO. 69

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	37 (6)
R/W SHEET NO.	

ROADWAY DESIGN | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

-L- CURVE DATA
PI Sta 456+91.51
Δ = 49° 15' 00.2" (RT)
D = 9° 32' 57.5"
L = 515.75'
T = 275.02'
R = 600.00'
SE = 0.08
DS = 45 MPH

NAD 83/2011

MATCH LINE STA -L- 442+00.00
MATCH TO SHEET NO. 36

445 | 450 | 455

PROP. RETAINING WALL #22
W/CONCRETE DITCH
BEGIN -L- STA. 438+96.22
END -L- STA. 442+58.42

PROP. RETAINING WALL #23
W/CONCRETE DITCH
BEGIN -L- STA. 448+40.00
END -L- STA. 452+25.00

PROP. SINGLE FACED
CONCRETE BARRIER

PROP. RETAINING WALL #24
W/CONCRETE DITCH
BEGIN -L- STA. 453+25.00
END -L- STA. 456+25.00

PROP. SINGLE FACED
CONCRETE BARRIER

-RESIDUAL-

-COLLUVIAL-

-RESIDUAL-

LINE 22.2 | LINE 22.3 | LINE 23.1 | LINE 23.2 | LINE 23.3

RWAL22-B-3 | RWAL23-B-1 | RWAL23-B-2 | RWAL23-B-3 | RWAL24-B-1 | RWAL24-B-2

TYPE B-77 | GREU TL-3 | TYPE B-77 | TYPE B-77 | GREU TL-3

L 44395L | L 44600L

NC 143 (SWEETWATER RD)

SPRING
INV=2697.80'

TOP=2730.58'
INV=2725.13'
CONC PIPE

INV=2709.42'

INV=2652.93'

24" CMP

INV=2662.87'

INV=2666.00'

INV=2642.87'

INV=2607.70'

-ROADWAY EMBANKMENT-

SHOULDER BERM GUTTER
-L- STA. 438+00 TO 448+97, RT

SHOULDER BERM GUTTER
-L- STA. 451+86 TO 453+62, RT

-L- PC 454+16.49

-COLLUVIAL-

-COLLUVIAL-

MATCH LINE STA -L- 456+00.00
MATCH TO SHEET NO. 38

FOR -L- PROFILE, SEE SHEET NO. 70

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8/17/99

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	38 (7)
R/W SHEET NO.	
ROADWAY DESIGN	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

-L- CURVE DATA

PI Sta 456+91.51	PI Sta 470+84.26
Δ = 49° 15' 00.2" (RT)	Δ = 21° 31' 55.6" (LT)
D = 9° 32' 57.5"	D = 7° 32' 20.1"
L = 515.75'	L = 285.61'
T = 275.02'	T = 144.51'
R = 600.00'	R = 760.00'
SE = 0.08	SE = 0.04
DS = 45 MPH	DS = 45 MPH

PROP. RETAINING WALL #24
W/CONCRETE DITCH
BEGIN -L- STA. 453+25.00
END -L- STA. 456+25.00

PROP. SINGLE FACED
CONCRETE BARRIER

PROP. RETAINING WALL #25
W/CONCRETE DITCH
BEGIN -L- STA. 468+75.00
END -L- STA. 471+75.00

-L- PC 469+39.75

-L- PT 459+32.23

MATCH LINE -L- 456+00.00
MATCH LINE STA -L- 470+00.00
SHEET NO. 37
MATCH TO SHEET NO. 39

-RESIDUAL-
-ROADWAY EMBANKMENT-
-ARTIFICIAL FILL-

WOODS
460
SOIL
JS
SF
SAPROLITE
ROCK OUTCROP 29
CARVER BRANCH
UT TO CARVER BRANCH (TYP.)
CONC HW
15" CMP
24" CMP
36" CMP
18" CMP
PROP. DRIVE
DIRECTION
LINE 23.4
LINE 25
BEGIN
END
L-45800L
L-46000R
L-46222R
L-46409R
L-46600L
L-46800L
RWAL24.B-3
RWAL25.B-1
V2-306R
NC 143 (SWEETWATER RD)
24' BST
N 28°14' 10.5" E
GREU TL-3
GPS-19
SIGN
DO NOT DISTURB SIGN
DO NOT DISTURB SIGNS
SODDING

FOR -L- PROFILE, SEE SHEET NO. 70

8/17/99
13-OCT-2022 17:34
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$$$$USERNAME$$$$

-Y2- CURVE DATA		
PI Sta 11+99.45	PI Sta 18+27.84	PI Sta 25+91.41
Δ = 19° 44' 48.4" (LT)	Δ = 38° 45' 19.5" (RT)	Δ = 15° 17' 06.5" (RT)
D = 5° 00' 00.0"	D = 12° 52' 31.6"	D = 4° 46' 28.7"
L = 394.94'	L = 301.00'	L = 320.13'
T = 199.45'	T = 156.51'	T = 161.02'
R = 1,145.92'	R = 445.00'	R = 1,200.00'
SE = 0.08	SE = 0.08	SE = 0.08
DS = 55 MPH	DS = 40 MPH	DS = 60 MPH

-L- CURVE DATA	
PI Sta 470+84.26	PI Sta 473+03.33
Δ = 21° 31' 55.6" (LT)	Δ = 75° 53' 24.9" (RT)
D = 7° 32' 20.1"	D = 57° 17' 44.8"
L = 285.61'	L = 132.45'
T = 144.51'	T = 77.97'
R = 760.00'	R = 100.00'
SE = 0.04	SE = 0.03
DS = 45 MPH	DS = 20 MPH

① -Y2- PC 24+30.38

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	39 (8)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS 8/17/99

-Y2- PT 13+94.94

PROP. RETAINING WALL #39
W/CONCRETE DITCH
BEGIN -Y2- STA. 14+59±
END -Y2- STA. 16+25±

PROP. RETAINING WALL #40
W/CONCRETE DITCH
BEGIN -Y2- STA. 16+75±
END -Y2- STA. 18+70±

-COLLUVIAL-
-RESIDUAL-
-ROADWAY EMBANKMENT-
-ARTIFICIAL FILL-

SINGLE FACED CONCRETE BARRIER
USE EXTRA DEPTH POSTS
70° LOWT/FOLIATION 2)
89° (FOLIATION I)
ROCK OUTCROP 33
ROCK OUTCROP 34
ROCK OUTCROP 35
RWAL39.B-1
RWAL39.B-2
RWAL39.B-3
RWAL40.B-1
RWAL40.B-2
RWAL40.B-3
RWAL25.B-3
BY27-119
BY27-120
BY27-121
Y2.2064L
Y2.2602L
Y2.231TL
Y2.242L
L.4717SR
L.4704SR
-L- PT 473+57.81
-L- PRC 472+25.36
-L- POT 474+31.52 =
-Y2- POT 23+00.94

END CONSTRUCTION
-L- STA. 474+19.52
FOR CONCRETE ISLAND LAYOUT
SEE DETAIL SHT 2B-1

BEGIN CONSTRUCTION
-Y2- STA. 12+60.00

PROP. DRIVE
-Y2- PT 19+72.33

-Y2- PC 16+71.33

FOR CONCRETE ISLAND & PARKING AREA LAYOUT SEE DETAIL SHT 2B-1

FOR CONCRETE ISLAND LAYOUT
SEE DETAIL SHT 2B-1

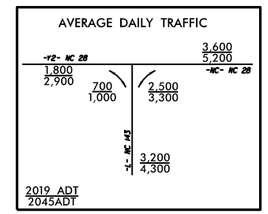
PROP. RETAINING WALL #25
W/CONCRETE DITCH
BEGIN -L- STA. 468+75.00
END -L- STA. 471+75.00

STREAM GOES U/G UNABLE TO LOCATE
STREAM GOES UNDERGROUND
2 S BRICK D
ROCK BBQ
BRICK GAR.
SEPTIC TANK
DRAIN LINES
CISTERN
U/G STREAM
SPRING
WOODS
BST PARKING
BST SHOULDER 40' R
GPS-2
LINE SGA 5
LINE SGA 8
LINE 25-2
SGA 5
SGA 8
24" CMP
18" CMP
NC 28 (FONTANA RD)
NC 143 (SWEETWATER RD)
UT TO JOHNSON GAP BRANCH (SEW)
JOHNSON GAP BRANCH
UT TO JOHNSON GAP BRANCH (SC2)
UT TO JOHNSON GAP BRANCH (SC1)
CONC HW
GATE
SIGN

MATCH LINE STA -L- 470+00.00
MATCH TO SHEET NO. 38

MATCH LINE STA -Y2- 26+00.00
MATCH TO SHEET NO. 40

AVERAGE DAILY TRAFFIC



2019 ADT
2045ADT

FOR -L- PROFILE, SEE SHEET NO. 71
FOR -Y2- PROFILE, SEE SHEET NO. 71

13-OCT-2022 17:34
C:\Users\mbruner\OneDrive - Carolinas Geotechnical Group, PLLC\Projects\0068 - A-0009C - Future US 74_TGS\A-0009CC\CADD_GEOTECH\PlanProf\A-0009CC_Rdy_psh_39.dgn
$$$$USERNAME$$$$

PAVEMENT REMOVAL

-Y2- CURVE DATA

PI Sta 25+91.41	PI Sta 44+39.36
Δ = 15° 17' 06.5" (RT)	Δ = 102° 05' 50.9" (LT)
D = 4° 46' 28.7"	D = 5° 09' 42.4"
L = 320.13'	L = 1,977.95'
T = 161.02'	T = 1,373.12'
R = 1,200.00'	R = 1,110.00'
SE = 0.08	SE = 0.08
DS = 60 MPH	DS = 55 MPH

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	40 (9)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

-RESIDUAL-

-COLLUVIAL-

-ARTIFICIAL FILL-

MATCH LINE STA -Y2- 26+00.00
MATCH TO SHEET NO. 39

MATCH LINE STA -Y2- 40+00.00
MATCH TO SHEET NO. 41

PROP. RETAINING WALL #30
BEGIN -Y2- STA. 26+50±
END -Y2- STA. 28+75±

-Y2- PC 30+66.24

-Y2- PT 27+50.52

ROADWAY EMBANKMENT

SHOULDER BERM GUTTER
-Y2- STA. 27+00
TO 28+25, RT

LINE SGA 7

LINE SGA 6

RWAL 30.B-1
RWAL 30.B-2
RWAL 30.B-3
RWAL 31.B-1
RWAL 31.B-2
RWAL 31.B-3
RWAL 31.B-4
RWAL 31.B-5

Y2.2602R
Y2.3060R
Y2.3483R
Y2.3700
Y2.3900R

CARVER BRANCH
UT TO CARVER BRANCH (SEE)

DO NOT DISTURB
ROCK OUTCROP
WOODS
ELECTRIC
DRAIN LINES
SEPTIC TANK
BECK
WD STEPS
ROCK WALL
PROP. DRIVE
2 S F BARN
42" CMP
36" CMP
CONC HW
BY27-L2
BY27-L25
GREU 27-3

FOR -Y2- PROFILE, SEE SHEET NO. 72

8/17/99
REVISIONS

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$$$$USERNAME$$$$

-Y2- CURVE DATA
PI Sta 44+39.36
△ = 102° 05' 50.9" (LT)
D = 5° 09' 42.4"
L = 1,977.95'
T = 1,373.12'
R = 1,110.00'
SE = 0.08
DS = 55 MPH

PAVEMENT REMOVAL

MATCH LINE STA -Y2- 40+00.00
MATCH TO SHEET NO. 40

MATCH LINE STA -Y2- 54+00.00
MATCH TO SHEET NO. 42

-Y2- PT 50+44.19

-RESIDUAL-
-COLLUVIAL-
-ROADWAY EMBANKMENT-

BY28-154
BY28-153
BY27-127
BY27-128

CARVER BRANCH
UT TO CARVER BRANCH (SFP)
SPRING
ROCK HW
15" CMP
24" CMP
CONC HW
CONC WALL
SHED
DECK
15 ROCK D
POSSIBLE DRAIN FIELD COULD NOT FIND TANK
WOODS
SOIL
ROCK OUTCROP 38
ROCK OUTCROP 37
8' FDPS
36" TYP
24" BST
NC 28 (FONTANA RD)
MTL
GREU TL-3
AT-1

Y2-4100R
Y2-4350R
Y2-4100R2
Y2-4450R
Y2-4600R
Y2-4700L
Y2-5214L
Y2-5275R

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	41 (10)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS

8/17/99

FOR -Y2- PROFILE, SEE SHEET NO. 72

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	42 (11)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS

8/17/99

-Y2- CURVE DATA
PI Sta 70+28.18
Δ = 50° 56' 38.0" (RT)
D = 3° 53' 51.6"
L = 1,307.03'
T = 700.27'
R = 1,470.00'
SE = 0.08
DS = 60 MPH

-DR4- CURVE DATA
PI Sta 10+77.95
Δ = 24° 42' 06.2" (LT)
D = 57° 17' 44.8"
L = 43.11'
T = 21.90'
R = 100.00'
① -DR4- PC 10+56.06
② -DR4- PRC 10+99.17
③ -DR4- PT 11+14.88

PI Sta 11+22.09
Δ = 10° 28' 29.8" (RT)
D = 22° 55' 05.9"
L = 45.71'
T = 22.92'
R = 250.00'

NAD 83/2011

MATCH LINE STA -Y2- 54+00.00
MATCH TO SHEET NO. 41

MATCH LINE STA -Y2- 68+00.00
MATCH TO SHEET NO. 43

-RESIDUAL-
-COLLUVIAL-
-ROADWAY EMBANKMENT-
-ALLUVIAL-

WOODS
BY28-155
BY28-156
BY28-157
BY28-158
BY28-159
BY27-130
BY27-131
BY27-132
BY27-134
SR 1239 CARVER BRANCH LN.
CARVER BRANCH
UT TO CARVER BRANCH (SFM)
SPRING
SPRING BOX
ROCK OUTCROP 38
ROCK OUTCROP 39
ROCK OUTCROP 40
ROCK OUTCROP 37
Y2_5666L
Y2_5485L
RWAL32.B-1
RWAL32.B-2
RWAL32.B-3
RWAL32.B-4
RWAL32.B-5
RWAL32.B-6
RWAL32.B-7
RWAL33.B-1
RWAL33.B-2
RWAL33.B-3
RWAL33.B-4
24" CMP
18" CMP
24" BST
CULV_Y2_6784L
CULV_Y2_6758R
2 SINGLE BARREL RCBC BOX CULVERT
60" ROCK WALL
2 S F BARN
1 S F BUS
CONC
MTL RAIL
ST COOM. INST.S.
ROCK HW
GR
BST
MTL
SFM
SFN
SFT
SFV
JS
JS NEU
JS SF
SF
SFK
F
C
SHOULDER BERM GUTTER -Y2- STA. 58+90 TO 63+22, LT
EXPRESSWAY GUTTER -Y2- STA. 51+25 TO 57+76±, RT
SHOULDER BERM GUTTER -DR4- STA. 10+36, LT TO -Y2- STA. 70+50, RT
PROP. DRIVE
PROP. RETAINING WALL #32
BEGIN -Y2- STA. 58+90±
END -Y2- STA. 66+83±
PROP. RETAINING WALL #33 W/CONCRETE DITCH
BEGIN -Y2- STA. 63+75±
END -Y2- STA. 66+03±
-Y2- PC 63+27.91
-Y2- POC 66+35.13 = -DR4- POT 10+00.00
-DR4- POT 12+00.26
END CONSTRUCTION -DR4- STA. 11+10.00
APPROX. LOCATION OF 4" MTL WATER PIPE
DO NOT DISTURB EXISTING WATERLINE
SINGLE FACED CONCRETE BARRIER
TYPE SC-R
TYPE SC-T
68° (JOINT 1)
70° (JOINT 2)
STEVE DR. (PVT.)
CARVER BRANCH ST
VW/A (MOD.)
R-SLOPE
100' R
20' R

FOR -Y2- PROFILE, SEE SHEET NO. 73
FOR -DR4- PROFILE, SEE SHEET NO. 77

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$$$$ISTEMPLATE$$$$

-Y2- CURVE DATA

PI Sta 70+28.18
Δ = 50° 56' 38.0" (RT)
D = 3° 53' 51.6"
L = 1,307.03'
T = 700.27'
R = 1,470.00'
SE = 0.08
DS = 60 MPH

PI Sta 83+84.46
Δ = 52° 00' 01.9" (LT)
D = 5° 24' 18.9"
L = 962.04'
T = 517.00'
R = 1,060.00'
SE = 0.08
DS = 55 MPH

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	43 (12)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

MATCH LINE STA -Y2- 68+00.00 MATCH TO SHEET NO. 42

MATCH LINE STA -Y2- 82+00.00 MATCH TO SHEET NO. 44

-RESIDUAL-

-COLLUVIAL-

-ARTIFICIAL FILL-

-ALLUVIAL- (STREAM TERRACE)

-ROADWAY EMBANKMENT-

PROP. RETAINING WALL #34 W/CONCRETE DITCH
BEGIN -Y2- STA. 71+25±
END -Y2- STA. 72+75±

PROP. RETAINING WALL #35 W/CONCRETE DITCH
BEGIN -Y2- STA. 77+94±
END -Y2- STA. 88+25±

-Y2- PC 78+67.46

-Y2- PT 76+34.95

PROP. DRIVE

DO NOT DISTURB

SINGLE FACED CONCRETE BARRIER

SHOULDER BERM GUTTER -DR4- STA. 10+36, LT TO 70+50, RT

MARTIN JENKINS RD.(PRIVATE ROAD)

SR 1226 STEDAM RD

CARVER BRANCH

RWAL34_B-1 RWAL34_B-2 RWAL34_B-3 RWAL34_B-4

RWAL35_B-1 RWAL35_B-2 RWAL35_B-3 RWAL35_B-4 RWAL35_B-5

Y2_6530R Y2_7100R Y2_7350L Y2_7550L Y2_7603R Y2_7605L

GPS-22

LINE 35.1 LINE 35.2

FOR -Y2- PROFILE, SEE SHEET NO. 73

REVISIONS

8/17/99

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$$$$USERNAME$$$$

8/17/99

REVISIONS

-Y2- CURVE DATA

PI Sta 83+84.46
Δ = 52° 00' 01.9" (LT)
D = 5° 24' 18.9"
L = 962.04'
T = 517.00'
R = 1,060.00'
SE = 0.08
DS = 55 MPH

PI Sta 93+85.36
Δ = 3° 06' 33.3" (RT)
D = 0° 29' 53.6"
L = 624.07'
T = 312.11'
R = 11,500.00'
SE = 0.02
DS = 70 MPH

SA ELIGIBLE AND UNASSESSED SITES

MATCH LINE STA -Y2- 82+00.00
MATCH TO SHEET NO. 43

PROP. RETAINING WALL #35 W/CONCRETE DITCH
BEGIN -Y2- STA. 77+94±
END -Y2- STA. 88+25±

SINGLE FACED CONCRETE BARRIER

-Y2- PT 88+29.49

PROP. DRIVE

-RESIDUAL-

-ALLUVIAL- (STREAM TERRACE)

-ROADWAY EMBANKMENT-

-COLLUVIAL-

-ALLUVIAL-

-RESIDUAL-

-Y2- PC 90+73.25

PROP. SOIL DRIVE

PROP. DRIVE

WOODEN FENCE POSTS

UT TO CARVER BRANCH (SBU)

CARVER BRANCH

STECOAH CREEK

DO NOT DISTURB CARVER BRANCH

RWAL35.B-6
RWAL35.B-7
RWAL35.B-8
RWAL35.B-9
RWAL35.B-10
RWAL35.B-11

Y2-8687R
Y2-8848R

LINE 35.3
LINE 35.4

BY27-136
BY27-137

NAD 83/2011

MATCH LINE STA -Y2- 96+00.00
MATCH TO SHEET NO. 45

END SECTION A-0009CC
BEGIN SECTION A-0009CD

FOR -Y2- PROFILE, SEE SHEET NO. 74

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC/A-0009CD	44 (13)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	45 (14)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS 8/17/99

-Y2- CURVE DATA
PI Sta 93+85.36
Δ = 3° 06' 33.3" (RT)
D = 0° 29' 53.6"
L = 624.07'
T = 312.11'
R = 11,500.00'
SE = 0.02
DS = 70 MPH

-Y3- CURVE DATA
PI Sta 10+46.10
Δ = 5° 04' 03.3" (LT)
D = 5° 30' 00.0"
L = 92.14'
T = 46.10'
R = 1,041.74'
SE = EXIST.

-Y3- CURVE DATA
PI Sta 12+06.60
Δ = 49° 12' 03.3" (RT)
D = 22° 55' 05.9"
L = 214.68'
T = 114.46'
R = 250.00'
SE = 0.02
DS = 30 MPH
Ⓓ -Y3- PT 13+06.82

NAD 83/2011

-Y3- PC 10+00.00

BEGIN CONSTRUCTION
-Y3- STA. 10+50.00

-Y3- PRC 10+92.14

-Y2- PT 96+97.32

-Y2- POT 98+65.27 =
-Y3- POT 14+20.24 =
-Y3A- POT 10+00.00

-Y3A- PC 10+97.08

-Y3A- PT 11+94.58

-Y3A- POT 13+43.69

-Y2- STA. 96+00.00 MATCH LINE STA SHEET NO. 44

-Y2- STA. 110+00.00 MATCH LINE STA SHEET NO. 46

-COLLUVIAL-

-RESIDUAL-

-ALLUVIAL-

-ROADWAY EMBANKMENT-

-ARTIFICIAL FILL-

-ALLUVIAL- (STREAM TERRACE)

LINE SGA 11

LINE SGA 10

LINE SGA 9

BEGIN SGA 11 / END SGA 11

BEGIN SGA 10 / END SGA 10

BEGIN SGA 9 / END SGA 9

Y3_1200R

Y2_10348L

Y2_10200L

Y2_10565R

Y2_10684L

Y2_10920L

CULV_Y2_9997L

CULV_Y2_9972R

CULV_Y3A_1082R

CULV_Y3A_1087L

RWAL36_B-1

RWAL36_B-2

RWAL36_B-3

BY31-160

BY31-161

BY31-162

BY27-153

BY27-154

DILAPIDATED WD SHED

2 SF D (ABAND.)

ROCK HW

F/O MARKER

PROP. DRIVE

BLOCK WALLS ONLY

10' MULTIUSE PATH W/ TIMBER RAIL FENCE

WOOD RUB RAIL
-Y2- 99+85± TO 105+00±
SEE DETAIL SHT 2C-6

ROCK EMBANKMENT
-Y2- STA. 102+75 TO 103+75, RT
SEE DETAIL SHT 2G-2

ROCK EMBANKMENT
-Y2- STA. 107+75 TO 111+25, RT
SEE DETAIL SHT. 2G-2

PROP. CONCRETE DRIVE

WOOD RUB RAIL
-Y2- 107+50± TO 110+55±
SEE DETAIL SHT 2C-6

10' MULTIUSE PATH W/TIMBER RAIL FENCE

POSSIBLE SEPTIC TANK & DRAIN LINE

U/G FUEL TANKS

MTL GARAGE

24" ROCK WALL

SEPTIC TANK

DRAIN LINES

POSSIBLE DRAIN FIELD

ISFD

SHED

WD SHED

WD DECK

CONC

GRASS

GR

BST

JS

WOODS

SA ----- SA ELIGIBLE AND UNASSESSED SITES

FOR -Y2- PROFILE, SEE SHEET NO. 74

FOR -Y3- PROFILE, SEE SHEET NO. 77

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	46 (15)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

MATCH LINE STA –Y2– 110+00.00
MATCH TO SHEET NO. 45

MATCH LINE STA –Y2– 124+00.00
MATCH TO SHEET NO. 47

REVISIONS

8/17/99

–RESIDUAL–

–ALLUVIAL–
(STREAM TERRACE)

–ROADWAY EMBANKMENT–

–ARTIFICIAL FILL–

WOODS

I SFD

MTL SHED

WD POLE SHED

WD SHED

I SF BUS

MH

SEPTIC TANK

DRAIN LINES

DRAIN FIELD

DO NOT DISTURB SEPTIC

PROP. DRIVE

SIGN

F/O MARKER

POND (PL)

POND (PH)

SR 1835 (LOWER STECOAH RD)

18' BST

2' SHLDR

24" CMP

12" CMP

24" RCP

SOIL

CONC

LIVESTOCK FENCE TO BE RESET BY CONTRACTOR

TO STECOAH CREEK RD

*OLD STECOAH RD

STECOAH CREEK

NC 28 (STECOAH RD)

24' BST (STECOAH)

CONC HWL

BY27-140

GREU TL-3

RWAL37.B-1

RWAL37.B-2

RWAL37.B-3

RWAL37.B-4

RWAL36.B-4

Y2_11692L

Y2_11697L

Y2_11702L

Y2_12298L

Y2_11692R

Y2_11702R

Y2_11801R

Y2_11903R

Y2_11992R

Y2_12098R

Y2_12203R

Y2_12292R

BM CREEK

48" CROSS TIE WALL

LARGE ROCKS

WD RAMP

CONC WALL

IRRIGATION VALVE

10' MULTIUSE PATH W/ TIMBER RAIL FENCE

WOOD RUB RAIL
–Y2– 107+50± TO 110+55±
SEE DETAIL SHT 2C-6

ROCK EMBANKMENT
–Y2– STA. 107+75 TO 111+25, RT
SEE DETAIL SHT. 2G-2

ROCK EMBANKMENT
–Y2– STA. 111+75 TO 114+75, RT
SEE DETAIL SHT. 2G-2

ROCK EMBANKMENT
–Y2– STA. 115+25 TO 116+75, RT
SEE DETAIL SHT. 2G-2

WOOD RUB RAIL
–Y2– 112+65± TO 131+55±
SEE DETAIL SHT 2C-6

10' MULTIUSE PATH W/TIMBER RAIL FENCE

ROCK EMBANKMENT
–Y2– STA. 117+75 TO 128+25, RT
SEE DETAIL SHT. 2G-2

GPS-24

PROP MONOLITHIC CONC ISLAND – SURFACE MOUNTED

FOR –Y2– PROFILE, SEE SHEET NO. 46

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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	47 (16)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

-Y2- CURVE DATA
PI Sta 132+08.73
Δ = 30° 56' 09.8" (LT)
D = 4° 48' 53.2"
L = 642.52'
T = 329.30'
R = 1190.00'
SE = 0.04
DS = 55 MPH

MATCH LINE STA -Y2- 124+00.00
MATCH TO SHEET NO. 46

MATCH LINE STA -Y2- 138+00.00
MATCH TO SHEET NO. 48

-Y2- PC 128+79.43

-Y2- PT 135+21.96

-ALLUVIAL-
(STREAM TERRACE)

-ROADWAY EMBANKMENT-

-RESIDUAL-

-COLLUVIAL-

LIVESTOCK FENCING TO BE RESET BY CONTRACTOR

DO NOT DISTURB WELL (APPROX. LOCATION)

PROP. DRIVE

10' MULTIUSE PATH W/TIMBER RAIL FENCE

WOOD RUB RAIL
-Y2- 112+65± TO 131+55±
SEE DETAIL SHT 2C-6

ROCK EMBANKMENT
-Y2- STA. 117+75 TO 128+25 RT
SEE DETAIL SHT. 2G-2

SHOULDER BERM GUTTER
-Y2- STA. 133+32 TO 133+60, RT

DOUBLE FACED CONCRETE BARRIER TYPE T-2

DRAIN LINES

POWER OUTLET BOXES

POND (PG)

UT TO STECOAH CREEK (SCG)

STECOAH CREEK

NC 28 (FONTANA RD)

SR 1230 (HYDE TOWN RD)

Y2-12508L
Y2-12498R
Y2-12401R
Y2-12499R
Y2-12596R
Y2-12688R
Y2-12806R
Y2-12801R
Y2-12906L
Y2-12901L
Y2-13100L
Y2-13313L

FOR -Y2- PROFILE, SEE SHEET NO. 75

REVISIONS

8/17/99

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$$$$ITEMNUMBER$$$$

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	48 (17)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

REVISIONS

8/17/99

-Y2- CURVE DATA

PI Sta 142+30.76
Δ = 1° 24' 23.1" (LT)
D = 0° 28' 38.9"
L = 294.56'
T = 147.29'
R = 12,000.00'
SE = NC
DS = 60 MPH

PI Sta 152+17.13
Δ = 54° 14' 50.1" (RT)
D = 5° 21' 17.1"
L = 1,013.07'
T = 548.10'
R = 1,070.00'
SE = 0.08
DS = 55 MPH

NAD 83/2011

MATCH LINE STA -Y2- 138+00.00
MATCH TO SHEET NO. 47

MATCH LINE STA -Y2- 152+00.00
MATCH TO SHEET NO. 49

-ALLUVIAL-
(STREAM TERRACE)

-ROADWAY EMBANKMENT-

-RESIDUAL-

-COLLUVIAL-

-ALLUVIAL-

LIVESTOCK FENCING TO BE RESET BY CONTRACTOR

-Y2- PC 140+83.47

-Y2- PT 143+78.03

-Y2- PC 146+69.03

PROP. DRIVE

DO NOT DISTURB

BATH HOUSE

SEPTIC TANK

DRAIN LINE

PUMP HOUSE

SF SHOP

ISFD

LEACH

2" A/G WATER LINE

SPRING

GATE

UT TO STEGOAH CREEK (SDT)

Y2_14089L

Y2_13900L

CULV_Y2_14132R

Y2_14303R

Y2_14075R

RWAL41_B-1

F/O MARKER

NC 28 (FONTANA RD.) 24' BST

BST SHOULDER

MTL SHED

CONC ISF BUS

GAS PUMP

GAS

BOLLARDS

DO NOT DISTURB PUMPS

POPLAR HILL (PVT)

DO NOT DISTURB SHED

SHOULDER BERM GUTTER -Y2- STA. 139+50 TO 142+00, RT

PROP. RETAINING WALL #41 W/CONCRETE DITCH
BEGIN -Y2- STA. 146+60±
END -Y2- STA. 148+80±

BM#35 ELEV. 2036.22'
-BY27- STA. 149+71.00 64' RT.
SPIKE NAIL IN BASE OF 12" DBL POPLAR

WOODS

FOR -Y2- PROFILE, SEE SHEET NO. 76

13-OCT-2022 17:34
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$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	49 (18)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

NAD 83/2011

REVISIONS

8/17/99

-Y2- CURVE DATA

PI Sta 152+17.13
Δ = 54°14' 50.1" (RT)
D = 5° 21' 17.1"
L = 1,013.07'
T = 548.10'
R = 1,070.00'
SE = 0.08
DS = 55 MPH

PI Sta 167+46.16
Δ = 72° 53' 32.5" (LT)
D = 4° 58' 56.1"
L = 1,463.04'
T = 849.28'
R = 1,150.00'
SE = 0.06
DS = 55 MPH

PROP MONOLITHIC CONC ISLAND – SURFACE MOUNTED

MATCH LINE STA -Y2- 152+00.00
MATCH TO SHEET NO. 48

MATCH LINE STA -Y2- 166+00.00
MATCH TO SHEET NO. 50

SR 1235 (HUNTER GAP RD) (B 1957)

BM#41 ELEV. 2063.76'
-BY27- STA. 157+23.85
N 22°12'25.4" E DIST 94.64'
SPIKE NAIL IN BASE OF 22" POPLAR

-ALLUVIAL-
(STREAM TERRACE)

-ROADWAY EMBANKMENT-

-RESIDUAL-

-ARTIFICIAL FILL-

-COLLUVIAL-

-Y2- PC 158+96.87

-Y2- PT 156+82.10

A/G WATER LINE
SPRING
18" CMP
18" HDPE
12" CMP
WOODS
GR
C
BST
GREU TL-3
TYPE B-77
DOUBLE FACED CONCRETE BARRIER TYPE T-2
SHOULDER BERM GUTTER -Y2- STA. 152+95 TO 153+25, RT
DO NOT DISTURB
FOR CONCRETE CURB & DRIVE LAYOUT SEE DETAIL SHT 2B-1
FOR CONCRETE ISLAND LAYOUT SEE DETAIL SHT 2B-1
PROP. DRIVE
PROP. GRAVEL DRIVE
WD PRIVACY
BOLLARDS
CONC BARRIER WALL
4000 GAL GAS TANK
6000 GAL DIESEL TANK
CONC WALL
MTL POLE SHED
I.S ROCK&MAS BUS
ABAND.
RED BARN (PIT)
U/C
WOLF CREEK
UT TO WOLF CREEK
Y2.16289L
Y2.16510L
160
165
155

FOR -Y2- PROFILE, SEE SHEET NO. 76

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$$$$USERNAME$$$$

-L- CURVE DATA
PI Sta 167+46.16
Δ = 72° 53' 32.5" (LT)
D = 4° 58' 56.1"
L = 1,463.04'
T = 849.28'
R = 1,150.00'
SE = 0.06
DS = 55 MPH

PROP MONOLITHIC CONC ISLAND – SURFACE MOUNTED

NAD 83/2011

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	50 (19)
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TGS ENGINEERS
804-C N. LAFAYETTE ST
SHELBY, NC 28150
PH (704) 476-0003
CORP. LICENSE NO.: C-0275

MATCH LINE STA -Y2- 166+00.00
MATCH TO SHEET NO. 49

-ROADWAY EMBANKMENT-

-COLLUVIAL-

-RESIDUAL-

PROP. DRIVE

FOR CONCRETE ISLAND LAYOUT SEE DETAIL SHT 2B-1

RETAIN ISLAND & CURB

MLL AND RESURFACE

END TIP PROJECT A-0009CD
-Y2- STA. 169+60.00

-Y2- PT 173+59.92

WOLF CREEK

WOODS

EXPRESSWAY C&G

GRASS MEDIAN

MTL

BY27-152

BST

15" HDPE

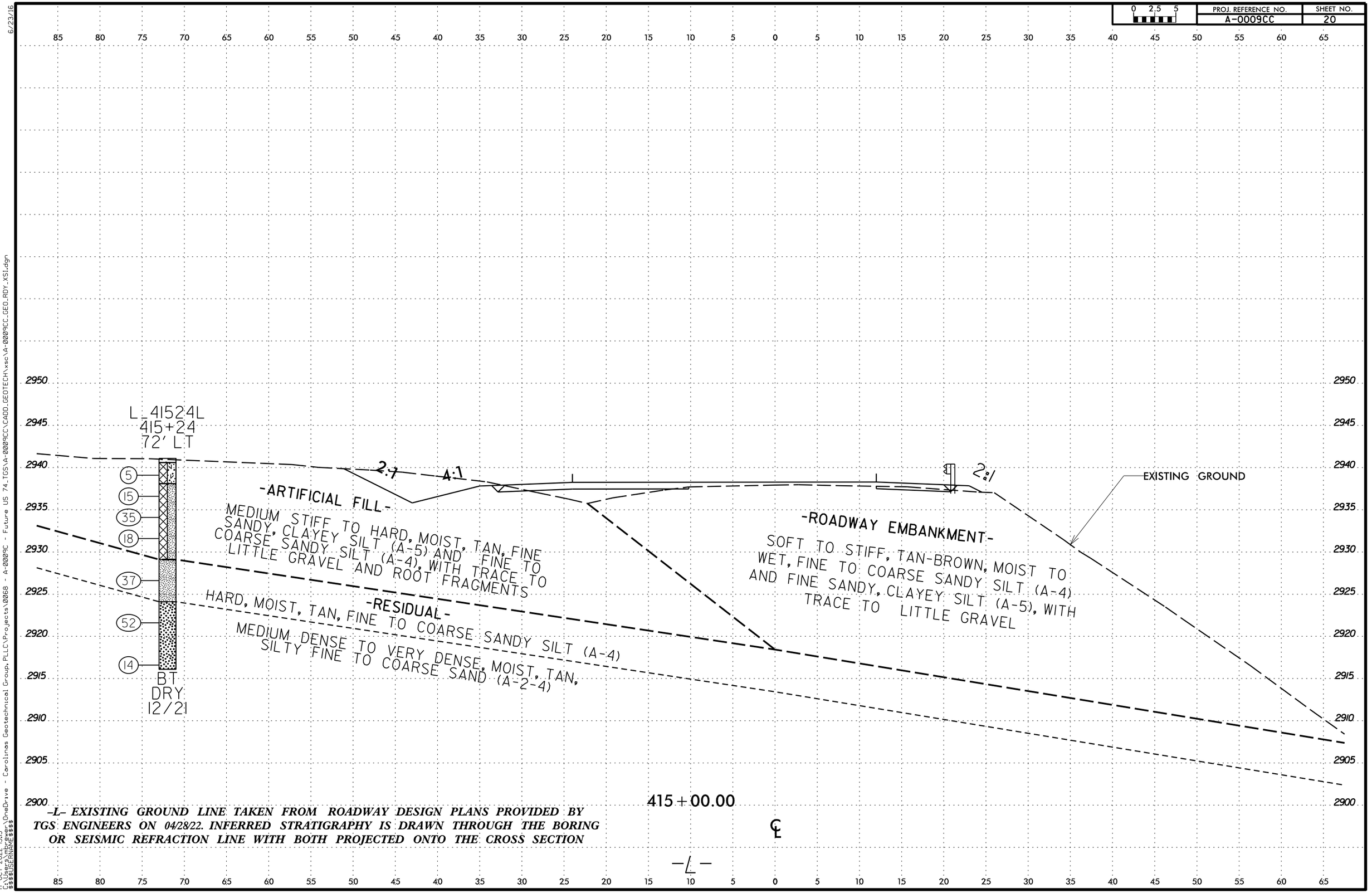
GPS-25

FOR -Y2- PROFILE, SEE SHEET NO. 77

REVISIONS

8/17/99

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$$$$STANDARD$$$$



-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
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$$$$USERNAME$$$$

L_41794L
417+94
101' LT

EXISTING GROUND

-RESIDUAL- STIFF TO HARD, MOIST, TAN, FINE TO COARSE SANDY SILT (A-4) AND FINE SANDY, CLAYEY SILT (A-5)

1.5:1

4:1

Ⓐ

-RESIDUAL- VERY DENSE, MOIST, RED-TAN, SILTY, GRAVELLY FINE TO COARSE SAND (A-1-b)

-WEATHERED ROCK- (SCHIST) VERY STIFF TO HARD, MOIST, TAN, FINE TO COARSE SANDY SILT (A-4)

STIFF TO HARD, WET, TAN, FINE SANDY SILT (A-4), WITH LITTLE GRAVEL-SIZED ROCK FRAGMENTS

11
53
74
73
96
65
56
47
26
12/21
67
100/0.9
13
52
BT

Ⓐ -ROADWAY EMBANKMENT- SOFT TO STIFF, TAN-BROWN, MOIST TO WET, FINE TO COARSE SANDY SILT (A-4) AND FINE SANDY, CLAYEY SILT (A-5), WITH TRACE TO LITTLE GRAVEL

418+00.00

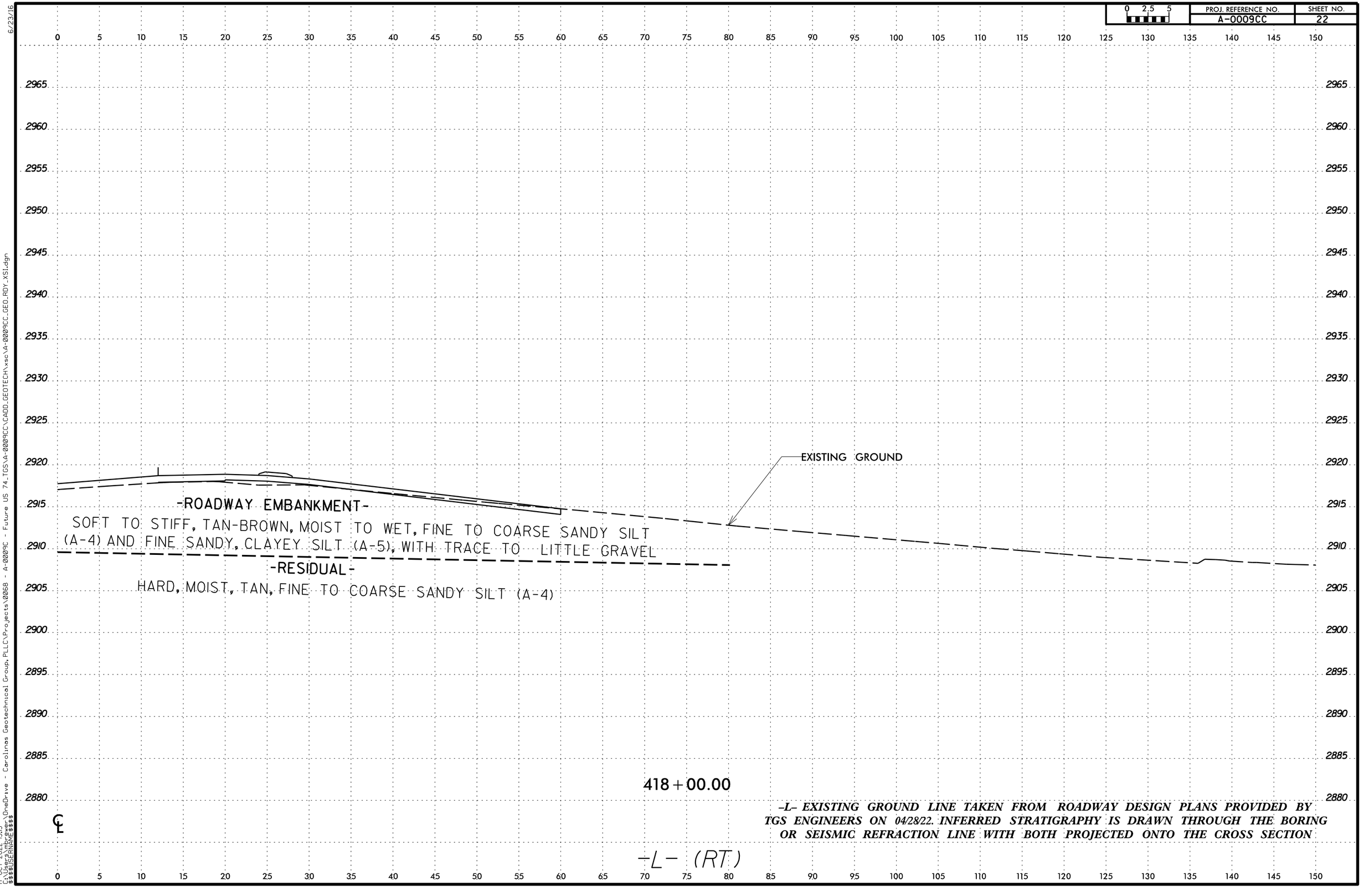
℄

-L- (LT)

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

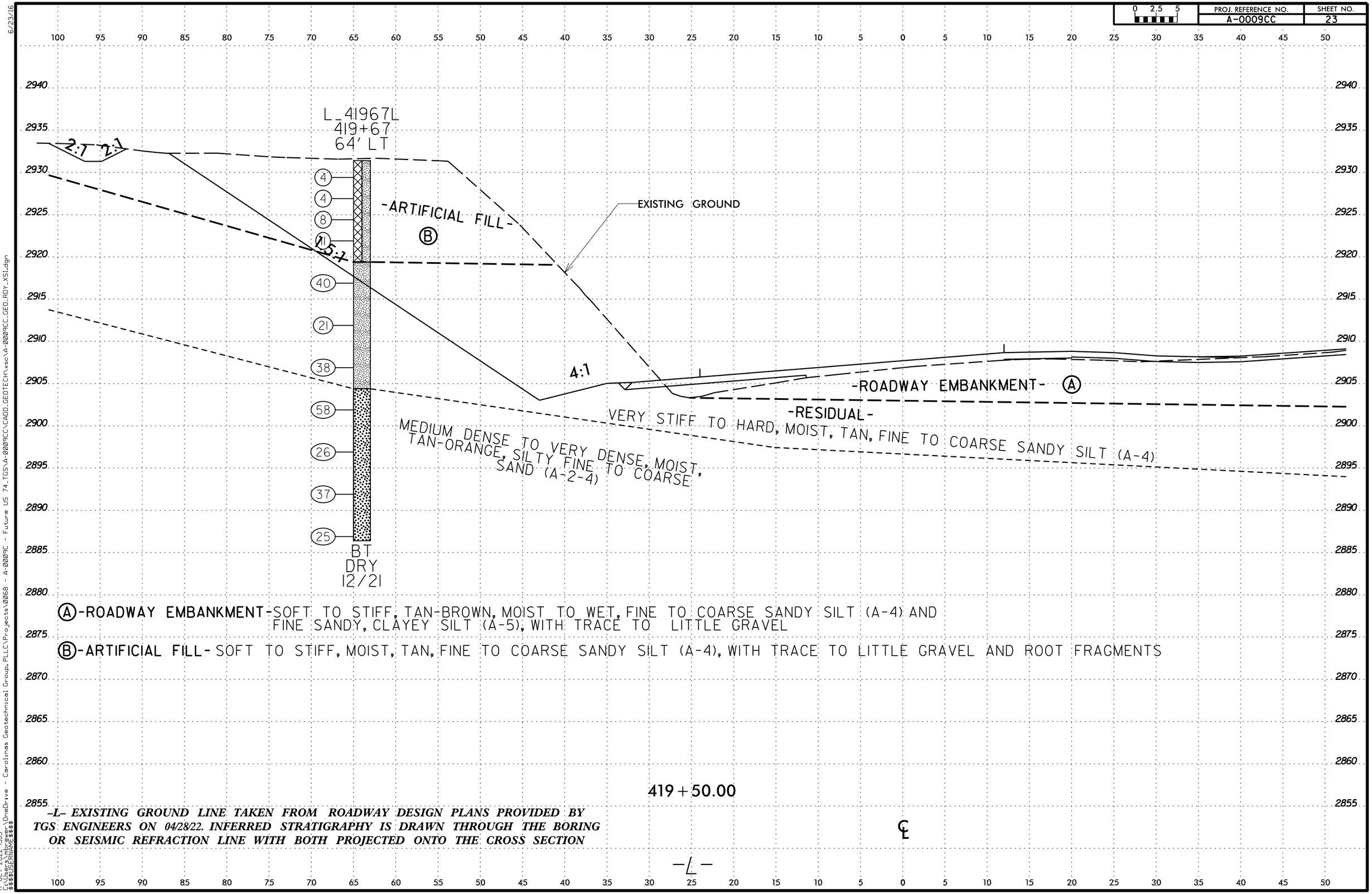
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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	22



-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$



Ⓐ-ROADWAY EMBANKMENT- SOFT TO STIFF, TAN-BROWN, MOIST TO WET, FINE TO COARSE SANDY SILT (A-4) AND FINE SANDY, CLAYEY SILT (A-5), WITH TRACE TO LITTLE GRAVEL

Ⓑ-ARTIFICIAL FILL- SOFT TO STIFF, MOIST, TAN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE TO LITTLE GRAVEL AND ROOT FRAGMENTS

419+50.00

℄

—L—

–L– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

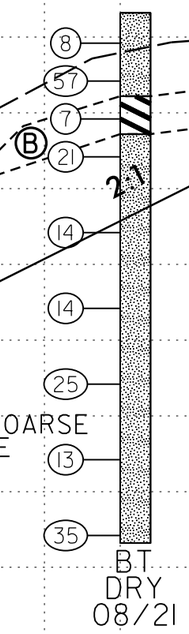
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$$$$USERNAME$$$$

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2940 2935 2930 2925 2920 2915 2910 2905 2900 2895 2890 2885 2880

EXISTING GROUND

L_42016R
420+16
51' RT



Ⓐ

4:1

-RESIDUAL-

MEDIUM STIFF TO HARD, MOIST, TAN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE TO LITTLE GRAVEL-SIZED ROCK FRAGMENTS

Ⓐ-ROADWAY EMBANKMENT- SOFT TO STIFF, TAN-BROWN, MOIST TO WET, FINE TO COARSE SANDY SILT (A-4) AND FINE SANDY, CLAYEY SILT (A-5), WITH TRACE TO LITTLE GRAVEL

Ⓑ -RESIDUAL- MEDIUM STIFF, MOIST, RED-TAN, FINE TO COARSE SANDY, SILTY CLAY (A-7), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

420+00.00

℄

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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$$$$USERNAME$$$$

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

EXISTING GROUND

RWAL21_B-1
420+50
46' LT
LINE 21.1

6.7:1

2:1

4:1

(A)

(9)
(14)
(13)
(17)
(71)
(24)
(100/0.9)
(22)
(36)
(69)
(100/0.3)
BT
DRY
FIAD
06/21

-RESIDUAL-
STIFF TO HARD, MOIST, TAN-BROWN-RED, FINE TO COARSE SANDY SILT (A-4), WITH TRACE MANGANESE OXIDE

-WEATHERED ROCK- (META-SILTSTONE)

-RESIDUAL-
VERY STIFF TO HARD, MOIST, TAN-BROWN-GRAY, FINE TO COARSE SANDY SILT (A-4), WITH TRACE MANGANESE OXIDE

-WEATHERED ROCK-
(META-SILTSTONE)

(A) -ROADWAY EMBANKMENT- STIFF TO VERY STIFF, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

420+50.00

℄

-L-

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95

2935 2930 2925 2920 2915 2910 2905 2900 2895 2890 2885 2880 2875 2870 2865 2860

6/23/16
17-OCT-2022 13:13
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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-1144	75' LT	421+50 -L-	28.5' - 30.0'	A-4(0)	29	NP	21	28	37	14	100	89	58	24	-

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

RWAL21_B-2
421+50
75' LT

SS-1144

LINE 21

EXISTING GROUND

-RESIDUAL-
STIFF TO HARD, MOIST, TAN-BROWN-GRAY, FINE TO COARSE SANDY SILT (A-4(0)), WITH TRACE MANGANESE OXIDE

-WEATHERED ROCK-
(META-SILTSTONE)

-RESIDUAL-
VERY STIFF TO HARD, MOIST, TAN-BROWN-GRAY, FINE TO COARSE SANDY SILT (A-4), WITH TRACE MANGANESE OXIDE

-WEATHERED ROCK-
(META-SILTSTONE)

BT
DRY
06/21

-CRYSTALLINE ROCK-
(META-SILTSTONE)

RWAL26_B-1
421+44
20' RT

-ROADWAY EMBANKMENT-

-RESIDUAL-
MEDIUM DENSE, MOIST, RED-YELLOW-BROWN, SILTY FINE TO COARSE SAND (A-2-4)

BT
DRY
05/21

Ⓐ -ROADWAY EMBANKMENT- STIFF TO VERY STIFF, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

421+50.00

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-L-

6/23/16
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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-1154	107' LT	422+20 -L-	3.5' - 5.0'	A-4(0)	28	2	16	23	36	25	89	80	60	13	-
SS-1160	107' LT	422+20 -L-	28.5' - 30.0'	A-4(1)	27	4	17	28	27	28	93	84	58	21	-

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

RWAL21_B-15
422+20
107' LT

SS-1154

SS-1160

3
2
2
6

5

7

3

4

41

100/0.4

100/0.2

100/0.3

60/0.0

BT
DRY
06/21

LINE 21

EXISTING GROUND

-COLLUVIAL-
SOFT TO MEDIUM STIFF, MOIST, BROWN-TAN-GRAY, FINE TO COARSE SANDY SILT (A-4(0)), WITH TRACE GRAVEL

-RESIDUAL-
SOFT TO HARD, TAN-BROWN-RED-GRAY, MOIST, FINE TO COARSE SANDY SILT (A-4(1)) AND FINE TO COARSE SANDY, CLAYEY SILT (A-5), WITH TRACE ORGANICS, WOOD, AND GRAVEL-SIZED ROCK FRAGMENTS

-WEATHERED ROCK-
(META-SILTSTONE)

-CRYSTALLINE ROCK-
(META-SILTSTONE)

-ROADWAY EMBANKMENT-
STIFF TO VERY STIFF, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

422+00.00
-L-

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	28

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

LINE 21

EXISTING GROUND

-COLLUVIAL-
SOFT TO MEDIUM STIFF, MOIST, BROWN-TAN-ORANGE, FINE SANDY SILT (A-4), WITH TRACE GRAVEL

RWAL21_B-3
422+50
31' LT

7
7
4
7
21
40
100/0.2
BT
DRY
05/21

-ROADWAY EMBANKMENT-
MEDIUM STIFF TO HARD, MOIST, TAN-ORANGE-GRAY-BROWN, FINE TO COARSE SANDY SILT (A-4) AND FINE TO COARSE SANDY, CLAYEY SILT (A-5), WITH TRACE GRAVEL AND WOOD FRAGMENTS

-RESIDUAL-
VERY STIFF TO HARD, MOIST TO WET, BROWN-TAN-ORANGE, FINE TO COARSE SANDY SILT (A-4) WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

-WEATHERED ROCK-
(META-SILTSTONE)

RWAL26_B-2
422+55
31' RT

9
9
17
27
27
100/0.8
6
5
23
BT
DRY
05/21

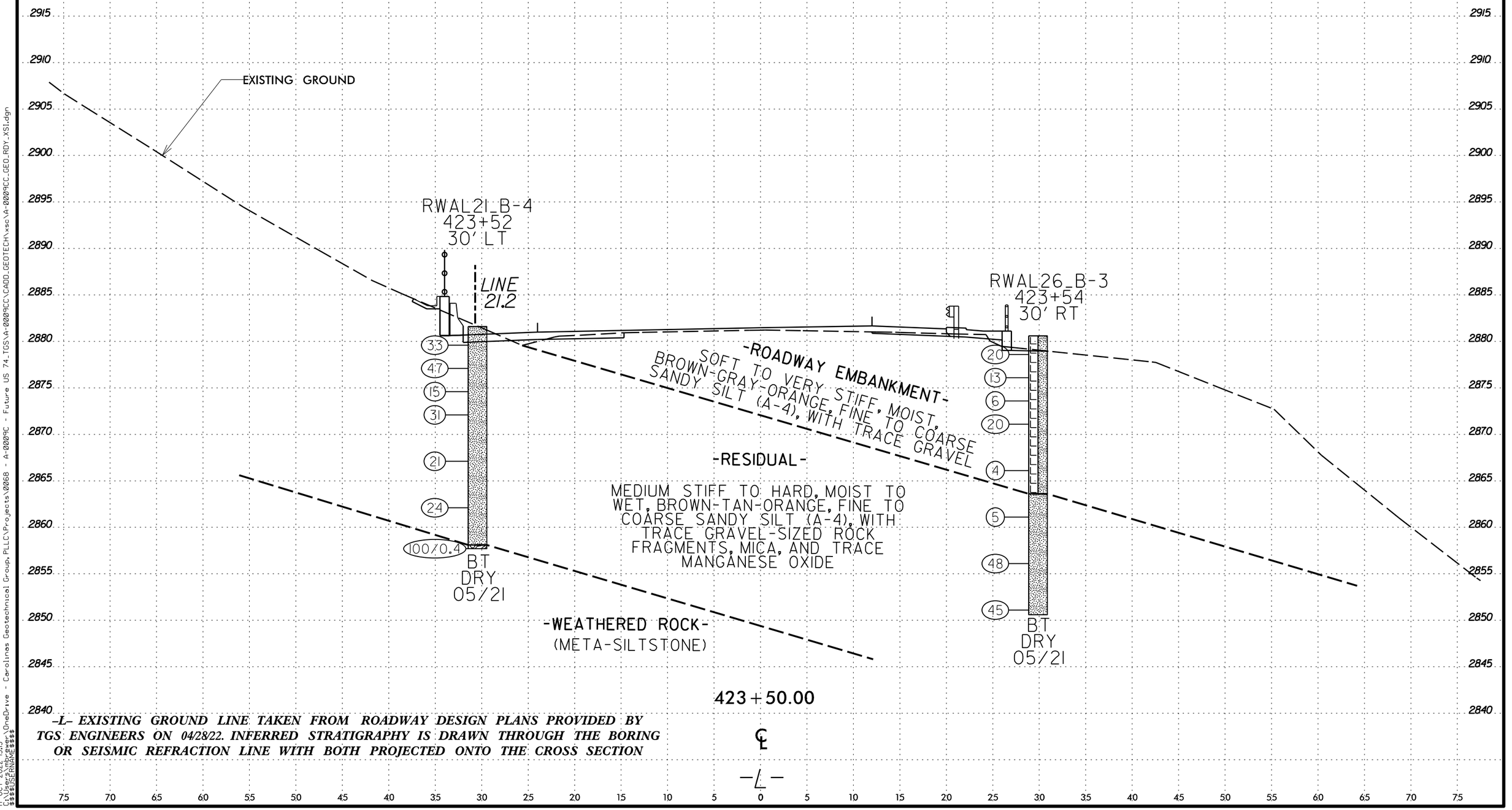
422+50.00

℄
—L—

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

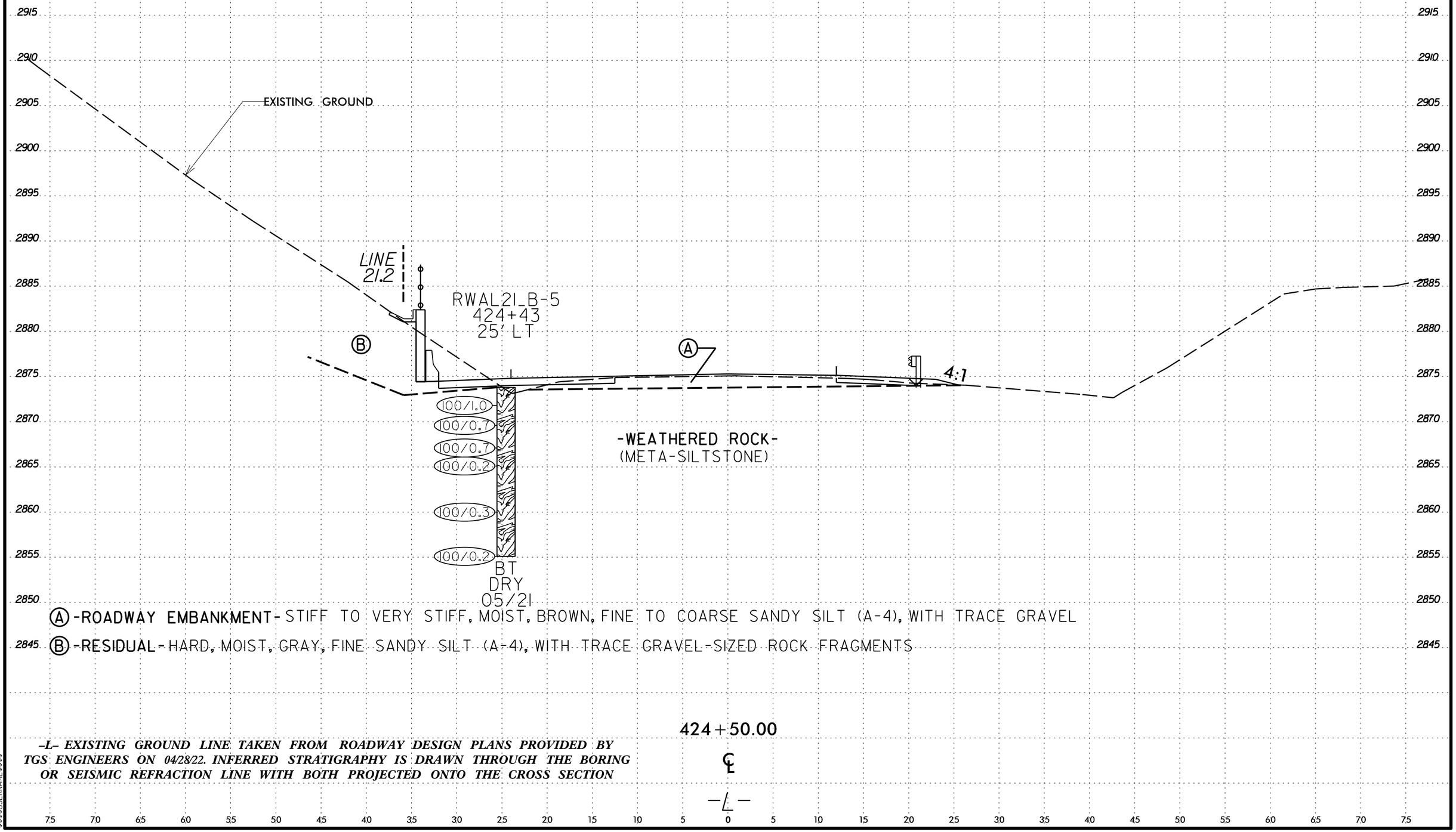


-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-L-

6/23/16
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$$$$USERNAME$$$$

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



Ⓐ **-ROADWAY EMBANKMENT-** STIFF TO VERY STIFF, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

Ⓑ **-RESIDUAL-** HARD, MOIST, GRAY, FINE SANDY SILT (A-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

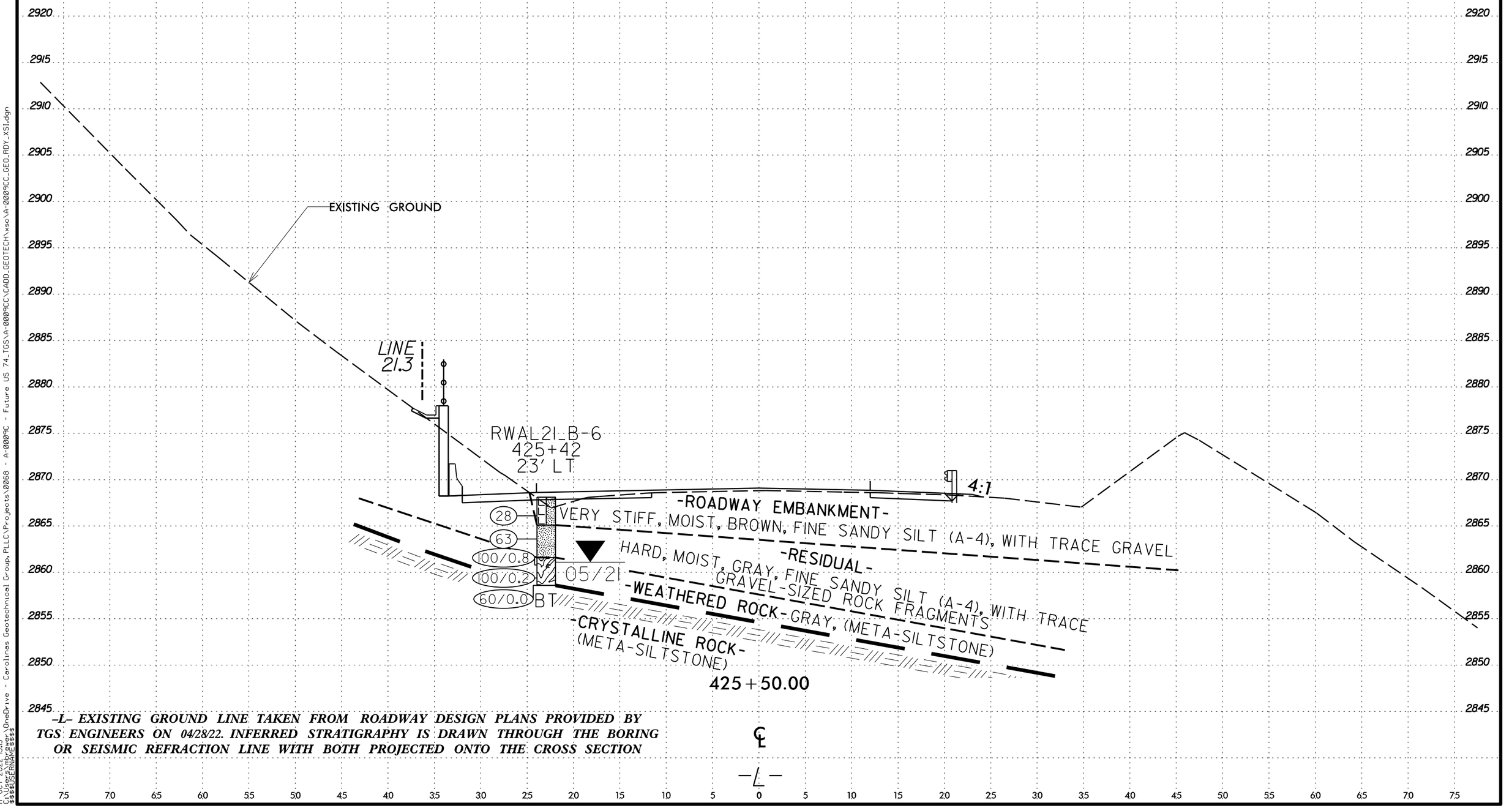
-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

424+50.00
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-L-

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	31

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	32

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

EXISTING GROUND

RWAL21_B-7
LINE 21.3
426+48
29' LT

39
26
100/0.8
100/0.2
60/0.0
BT
DRY
05/21

-ROADWAY EMBANKMENT-
VERY STIFF, MOIST, BROWN, FINE SANDY SILT (A-4), WITH TRACE GRAVEL

-RESIDUAL-
VERY STIFF TO HARD, MOIST, GRAY, FINE SANDY SILT (A-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

-WEATHERED ROCK- (META-SILTSTONE)

-CRYSTALLINE ROCK-
(META-SILTSTONE)

4:1
2:1

426+50.00
℄
—L—

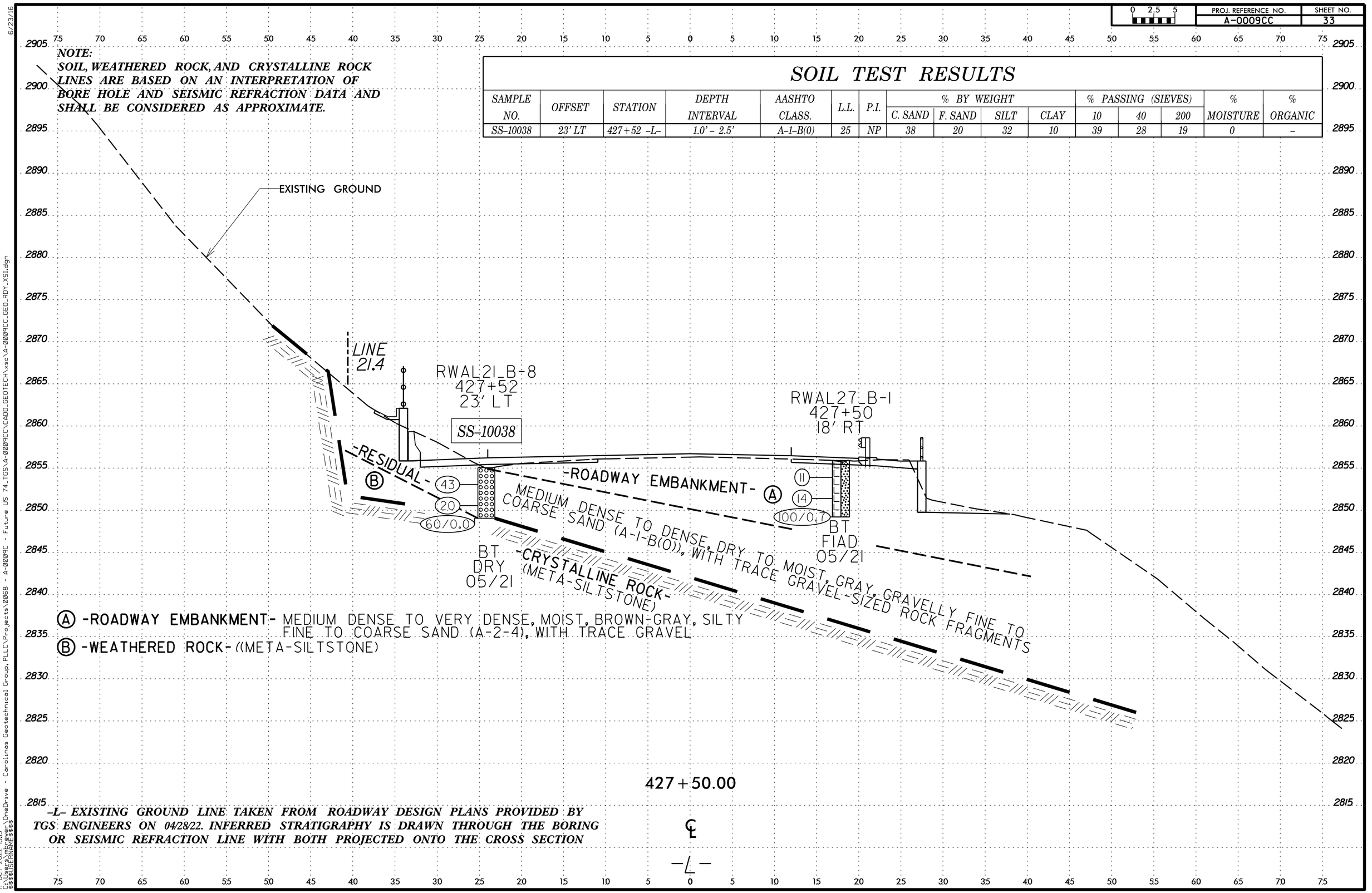
–L– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

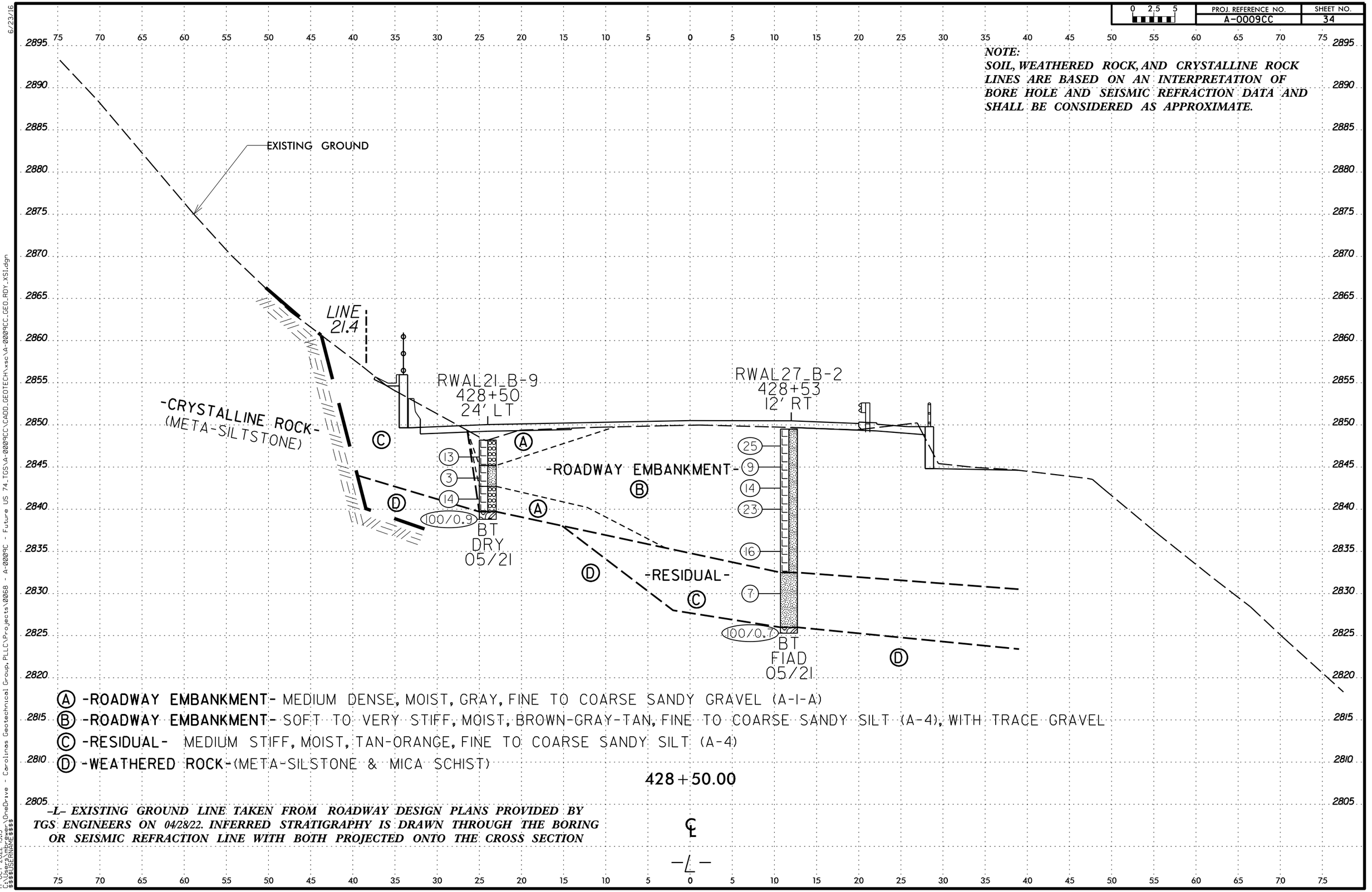
SOIL TEST RESULTS

SAMPLE NO.	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		
SS-10038	23' LT	427+52 -L-	1.0' - 2.5'	A-1-B(0)	25	NP	38	20	32	10	39	28	19	0	–



-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	35

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

EXISTING GROUND

LINE 21.4

RWAL27_B-3
429+00
18' RT

-ROADWAY EMBANKMENT-
MEDIUM STIFF TO HARD, MOIST, BROWN-GRAY, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

-COLLUVIAL- Ⓐ

-RESIDUAL- Ⓑ

-WEATHERED ROCK- (MICA SCHIST)

-CRYSTALLINE ROCK- (MICA SCHIST)

8 39 22 25 22 8 60/0.0 21 43 60/0.0

BT
FIAD
05/21

Ⓐ -COLLUVIAL- MEDIUM STIFF TO HARD, MOIST, BROWN-TAN-GRAY-BLACK, FINE TO COARSE SANDY, CLAYEY SILT (A-5) AND FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

Ⓑ -RESIDUAL- HARD, MOIST, BROWN-TAN-RED, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

429+00.00

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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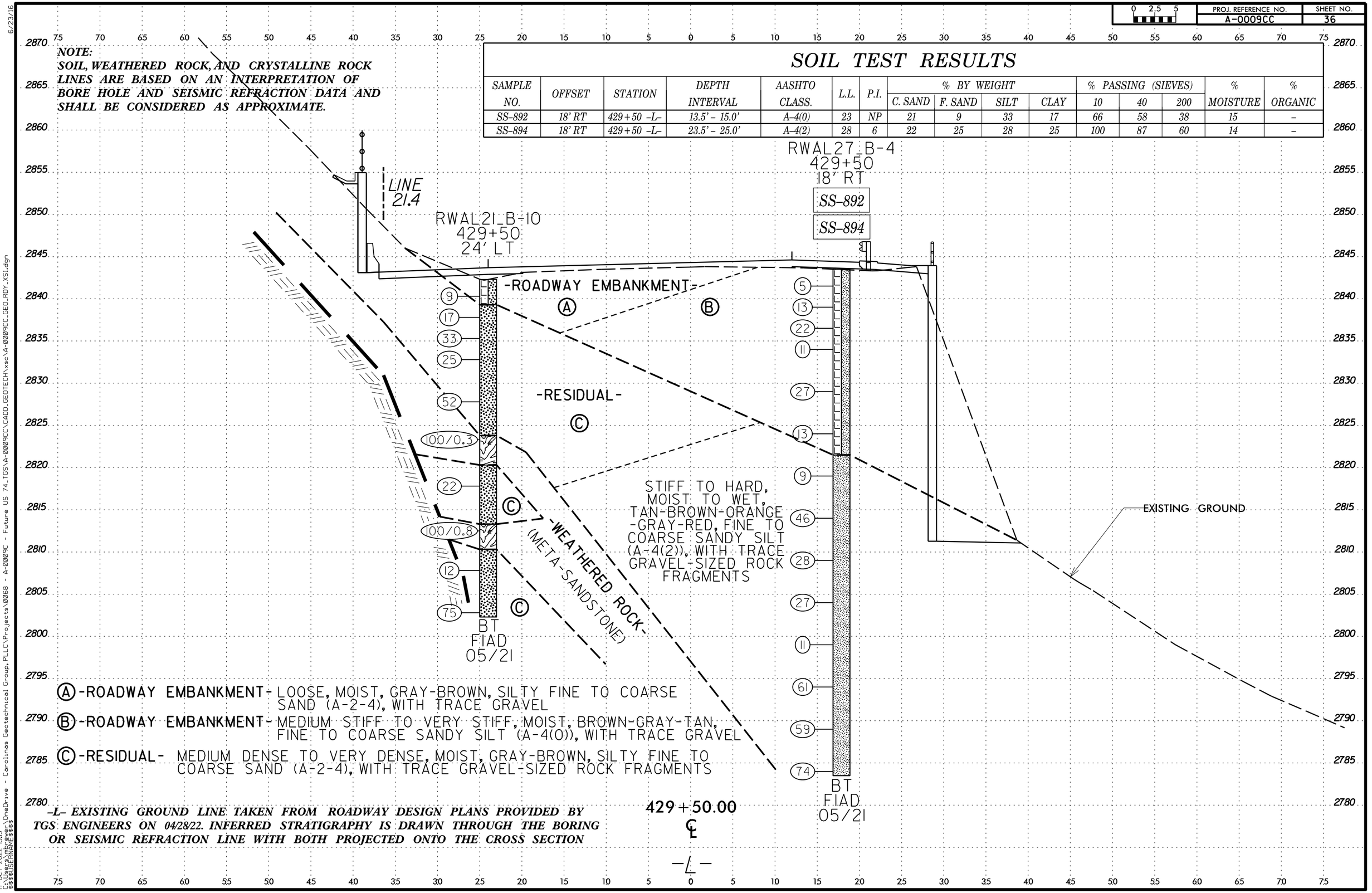
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NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-892	18' RT	429+50 -L-	13.5' - 15.0'	A-4(0)	23	NP	21	9	33	17	66	58	38	15	-
SS-894	18' RT	429+50 -L-	23.5' - 25.0'	A-4(2)	28	6	22	25	28	25	100	87	60	14	-



Ⓐ -ROADWAY EMBANKMENT- LOOSE, MOIST, GRAY-BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

Ⓑ -ROADWAY EMBANKMENT- MEDIUM STIFF TO VERY STIFF, MOIST, BROWN-GRAY-TAN, FINE TO COARSE SANDY SILT (A-4(0)), WITH TRACE GRAVEL

Ⓒ -RESIDUAL- MEDIUM DENSE TO VERY DENSE, MOIST, GRAY-BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

429+50.00
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-L-

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SOIL TEST RESULTS

SAMPLE NO.	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		
SS-8185	18' RT	430+00 -L-	33.5' - 35.0'	A-4(0)	23	NP	17	41	28	14	100	92	52	15	-

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

LINE 21.5

RWAL27_B-5
430+00
18' RT
SS-8185

-ROADWAY EMBANKMENT- Ⓐ

MEDIUM DENSE TO DENSE, MOIST, BROWN-GRAY, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

8 18 18 19 17 42 14 100/0.9 82 17 21 60

-RESIDUAL-

MEDIUM DENSE, MOIST, BROWN-GRAY, SILTY FINE TO COARSE SAND (A-2-4)

-WEATHERED ROCK-

-RESIDUAL-
VERY STIFF TO HARD, MOIST, BROWN-GRAY, FINE TO COARSE SANDY SILT (A-4(0))

-CRYSTALLINE ROCK-
META-SANDSTONE

META-SANDSTONE

EXISTING GROUND

BT
FIAD
05/21

Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF, MOIST, BROWN-GRAY, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

430+00.00

℄

—L—

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	38

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

LINE 21.5

RWAL21_B-11
430+50
25' LT

RWAL27_B-6
430+50
18' RT

-ROADWAY EMBANKMENT-

MEDIUM DENSE TO VERY DENSE, MOIST, GRAY-BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

-WEATHERED ROCK-
(META-SANDSTONE)

-RESIDUAL-
LOOSE TO VERY DENSE, MOIST, GRAY-BROWN-YELLOW-RED, SILTY FINE TO COARSE SAND (A-2-4) AND FINE TO COARSE SANDY GRAVEL (A-1-A), WITH TRACE GRAVEL

EXISTING GROUND

100/0.8 48 7 6 49 100/0.8 100/0.6

BT
DRY
05/21

12 27 29 32 26 56 26 100/0.8 9 38

05/21

BT
FIAD
05/21

Ⓐ-ROADWAY EMBANKMENT- STIFF TO VERY STIFF, MOIST, BROWN-GRAY, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

Ⓑ-RESIDUAL- MEDIUM STIFF, MOIST, GRAY-BROWN, FINE TO COARSE SANDY SILT (A-4)

Ⓒ-WEATHERED ROCK-(META-SANDSTONE)

430+50.00

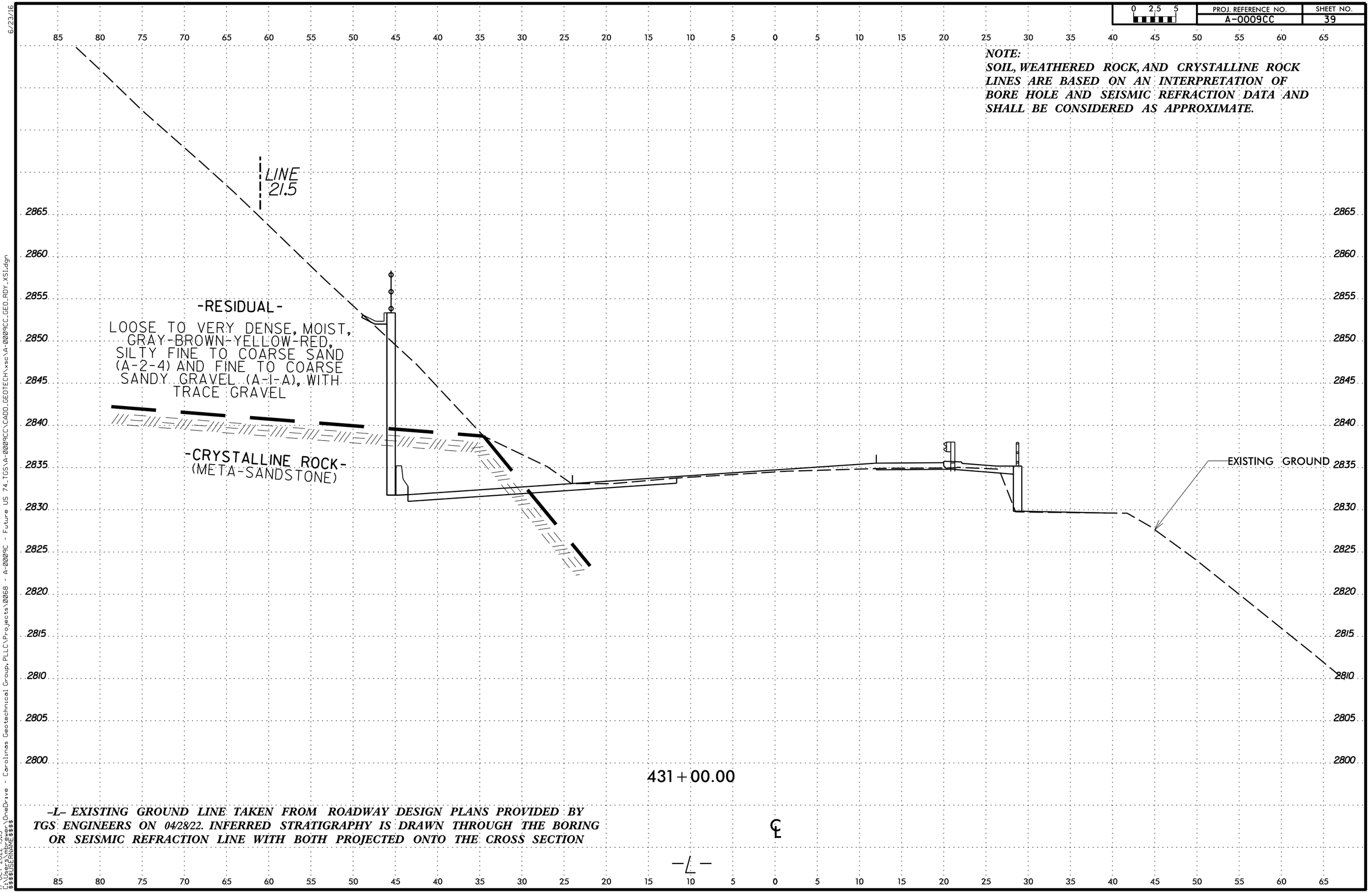
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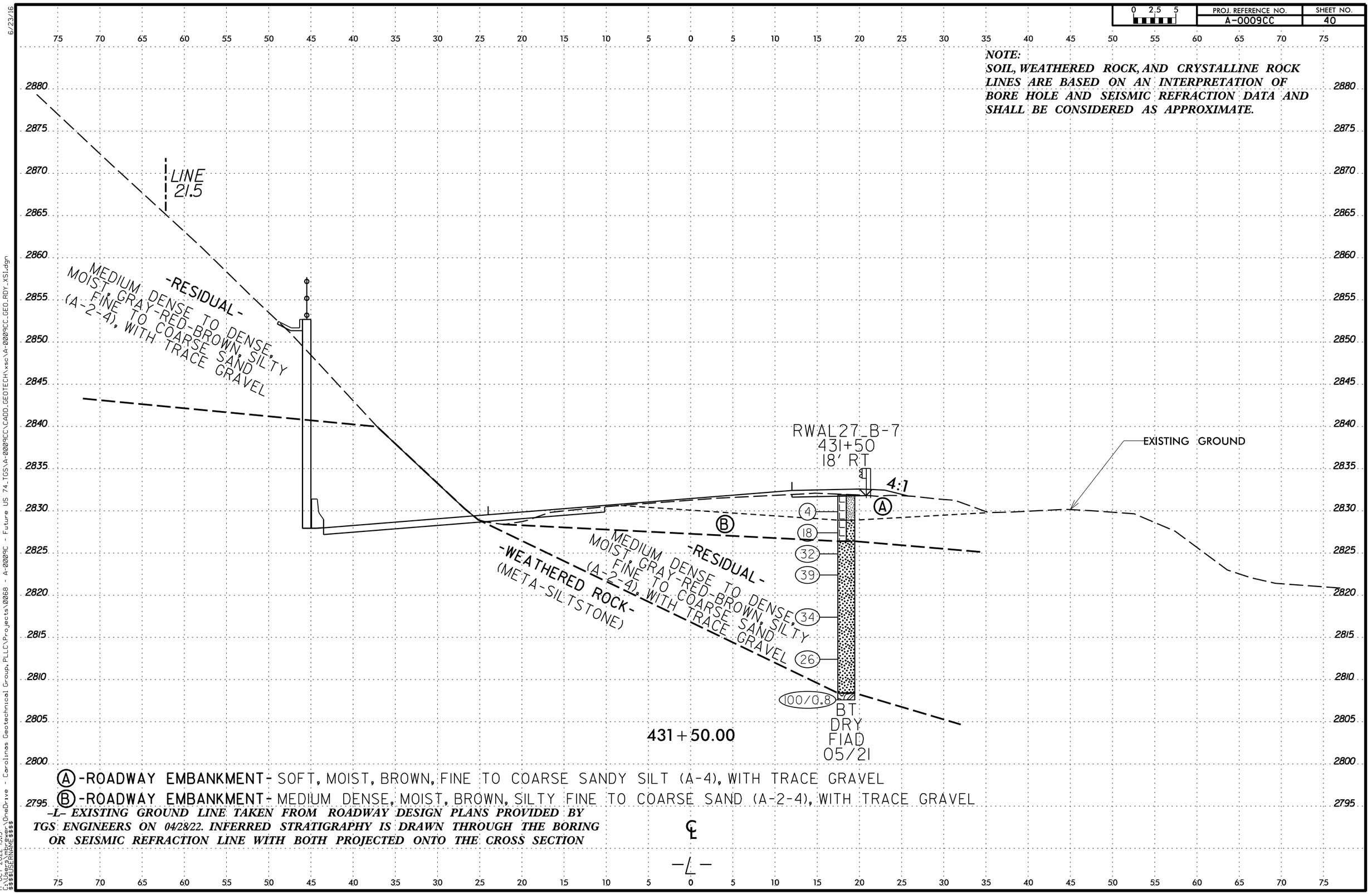
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Ⓐ-ROADWAY EMBANKMENT- SOFT, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

Ⓑ-ROADWAY EMBANKMENT- MEDIUM DENSE, MOIST, BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

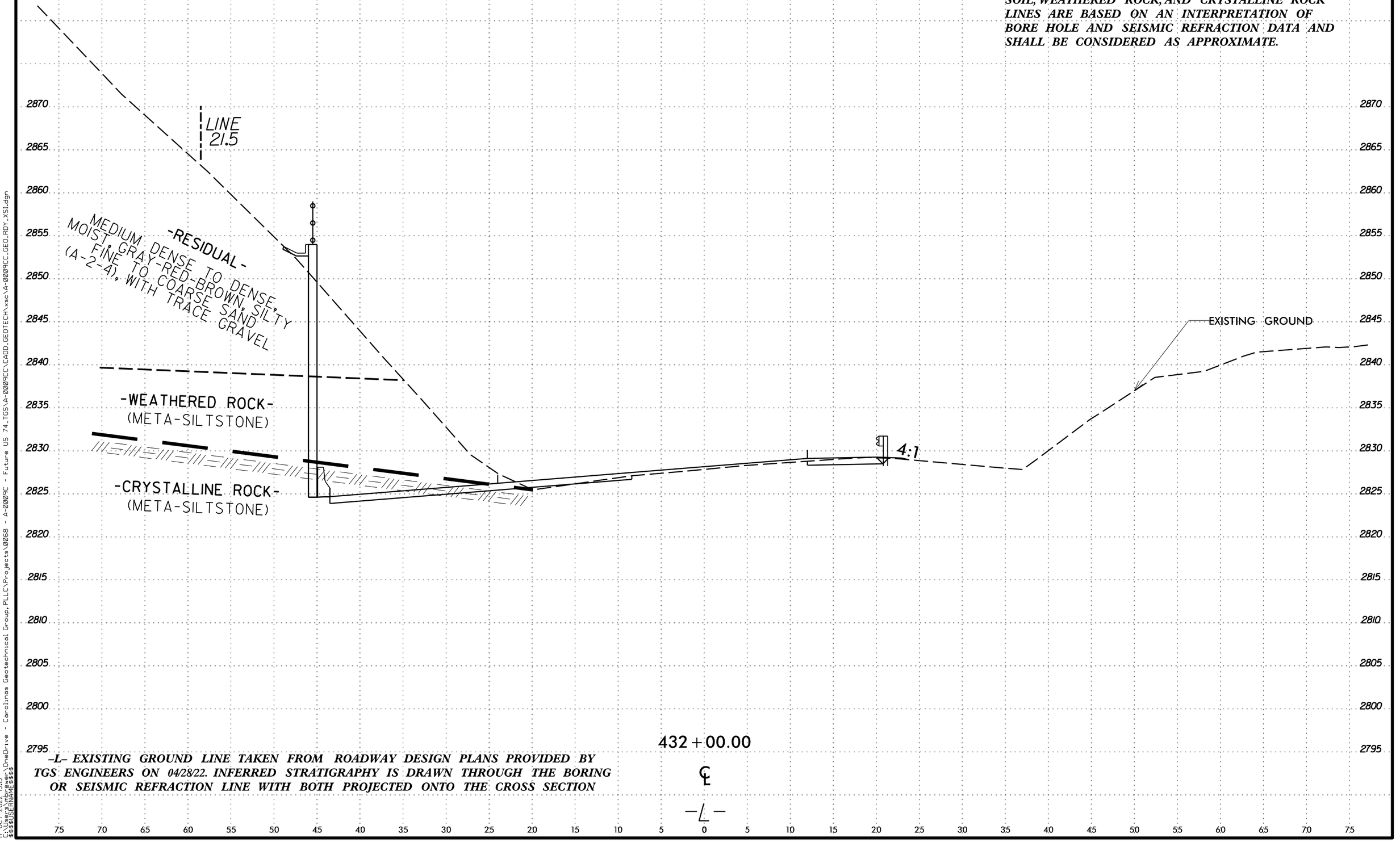
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–L– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

432+00.00

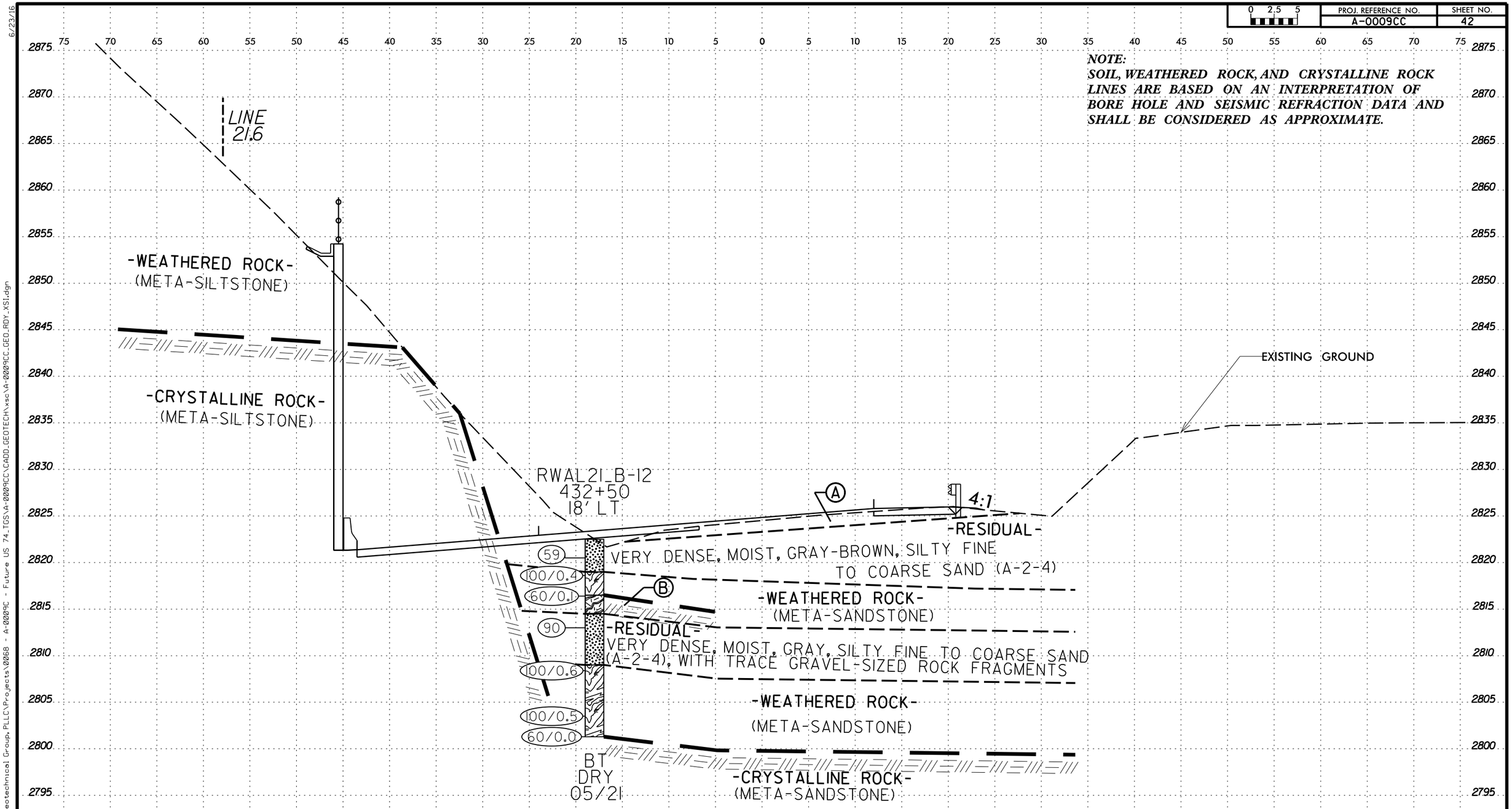
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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	42

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



Ⓐ -ROADWAY EMBANKMENT- MEDIUM DENSE, MOIST, BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

Ⓑ -CRYSTALLINE ROCK-(META-SANDSTONE)

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

432+50.00

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	43

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

LINE 21.6

-RESIDUAL-
MEDIUM DENSE TO DENSE, SILTY MOIST, GRAY-RED-BROWN, FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

-WEATHERED ROCK-
(META-SILTSTONE)

-CRYSTALLINE ROCK-
(META-SILTSTONE)

EXISTING GROUND

433+00.00

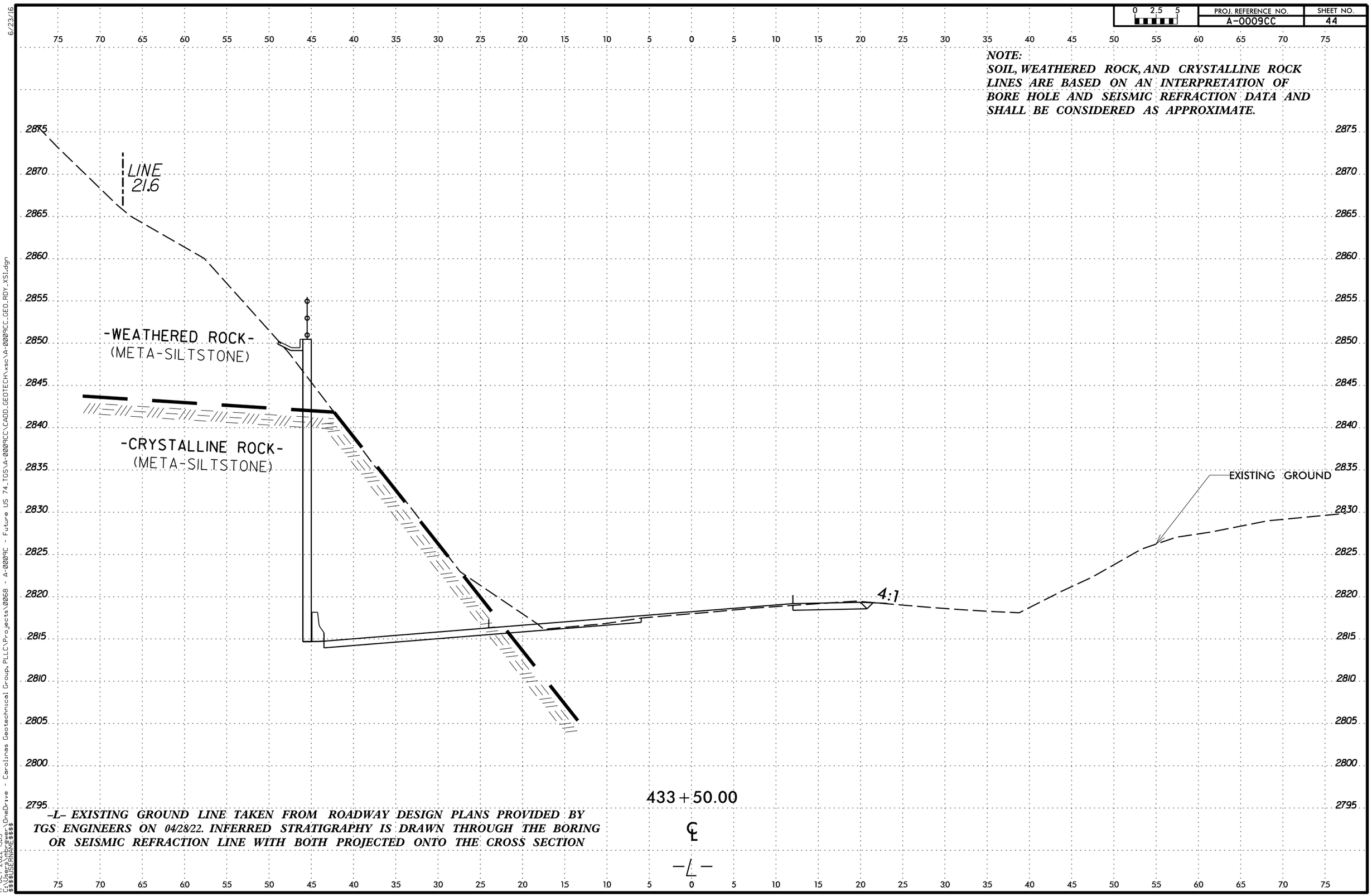
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-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	44

NOTE:
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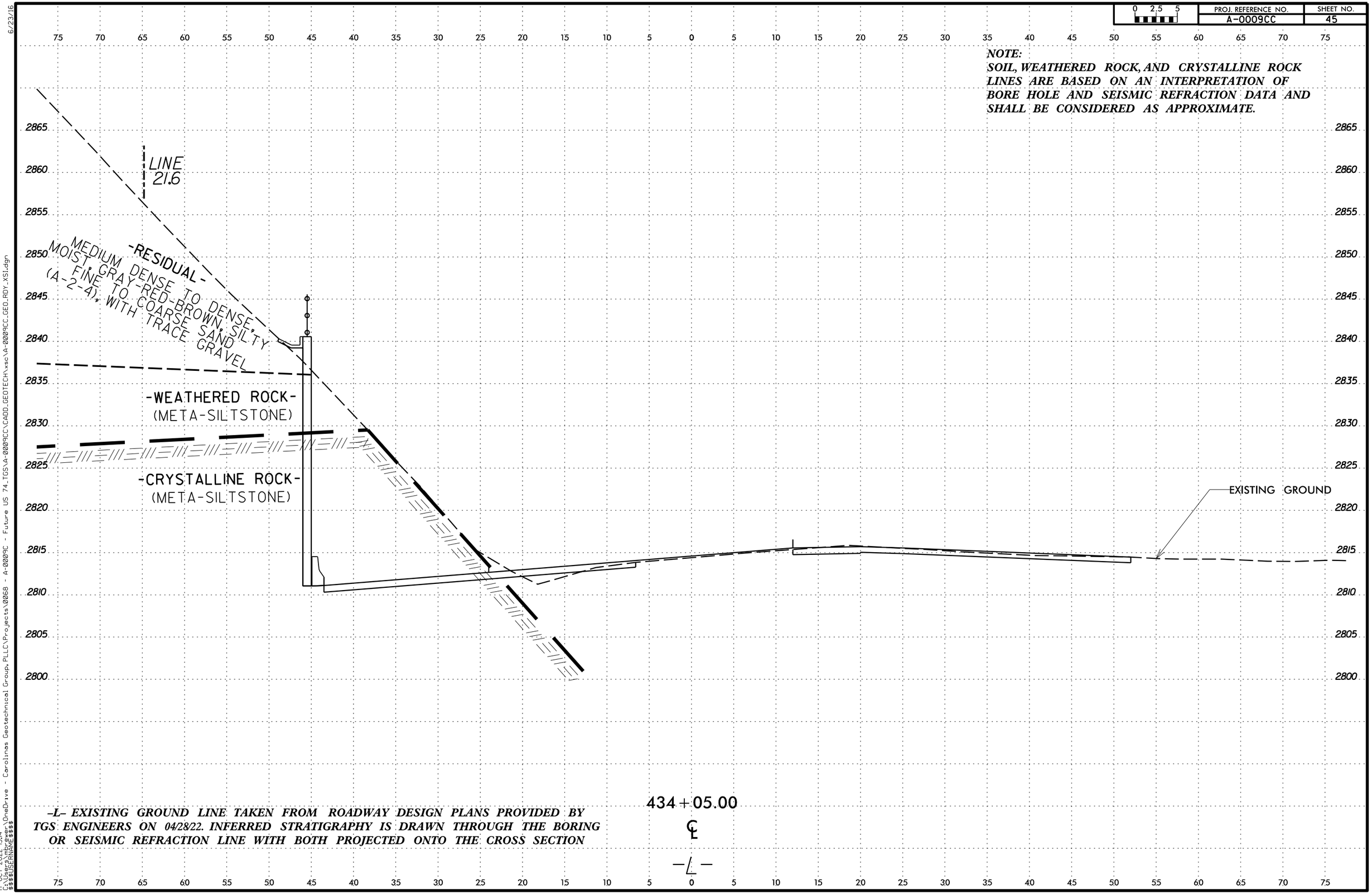


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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	45

NOTE:
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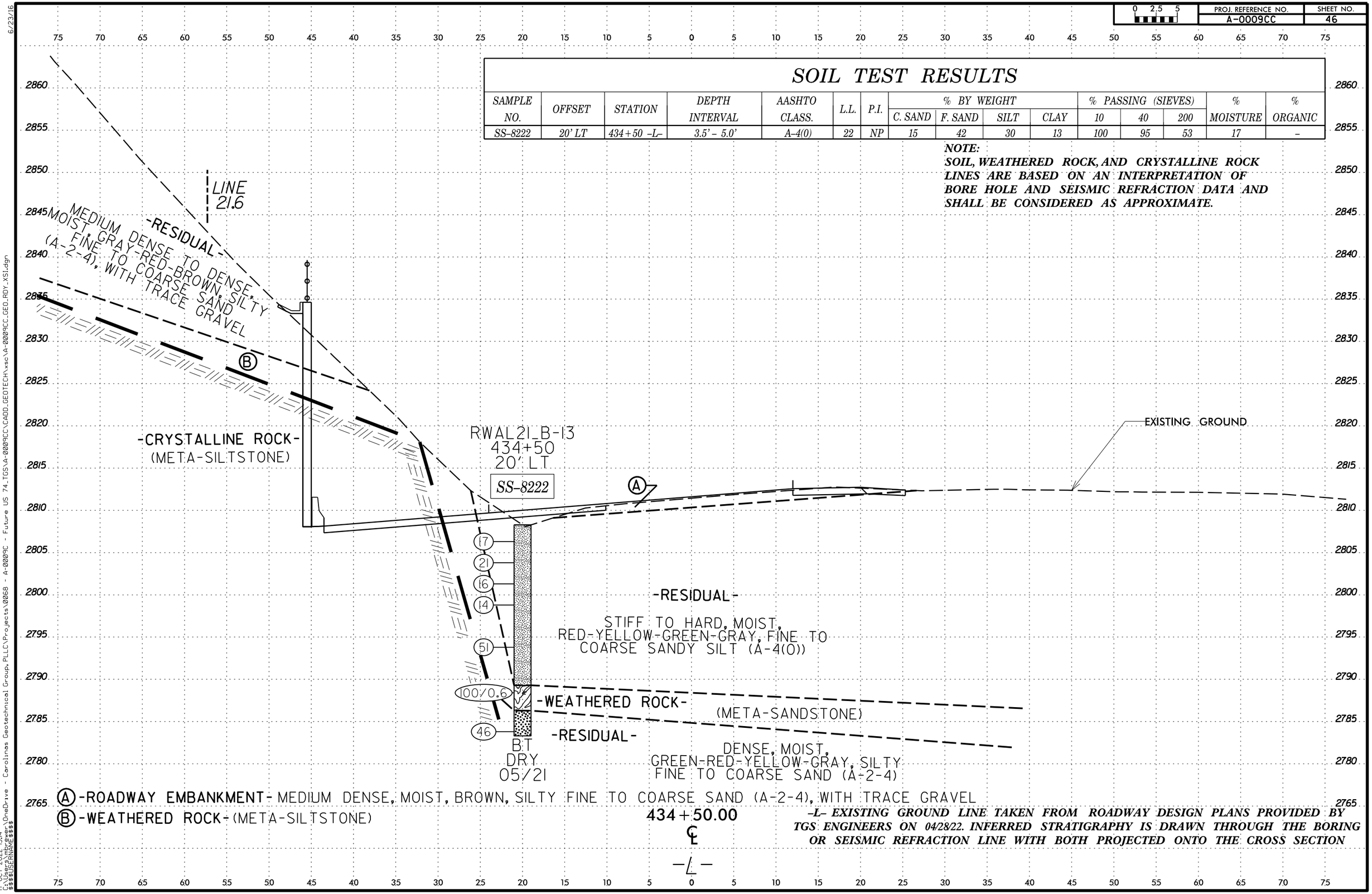
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SOIL TEST RESULTS

SAMPLE NO.	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		
SS-8222	20' LT	434+50 -L-	3.5' - 5.0'	A-4(0)	22	NP	15	42	30	13	100	95	53	17	-

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

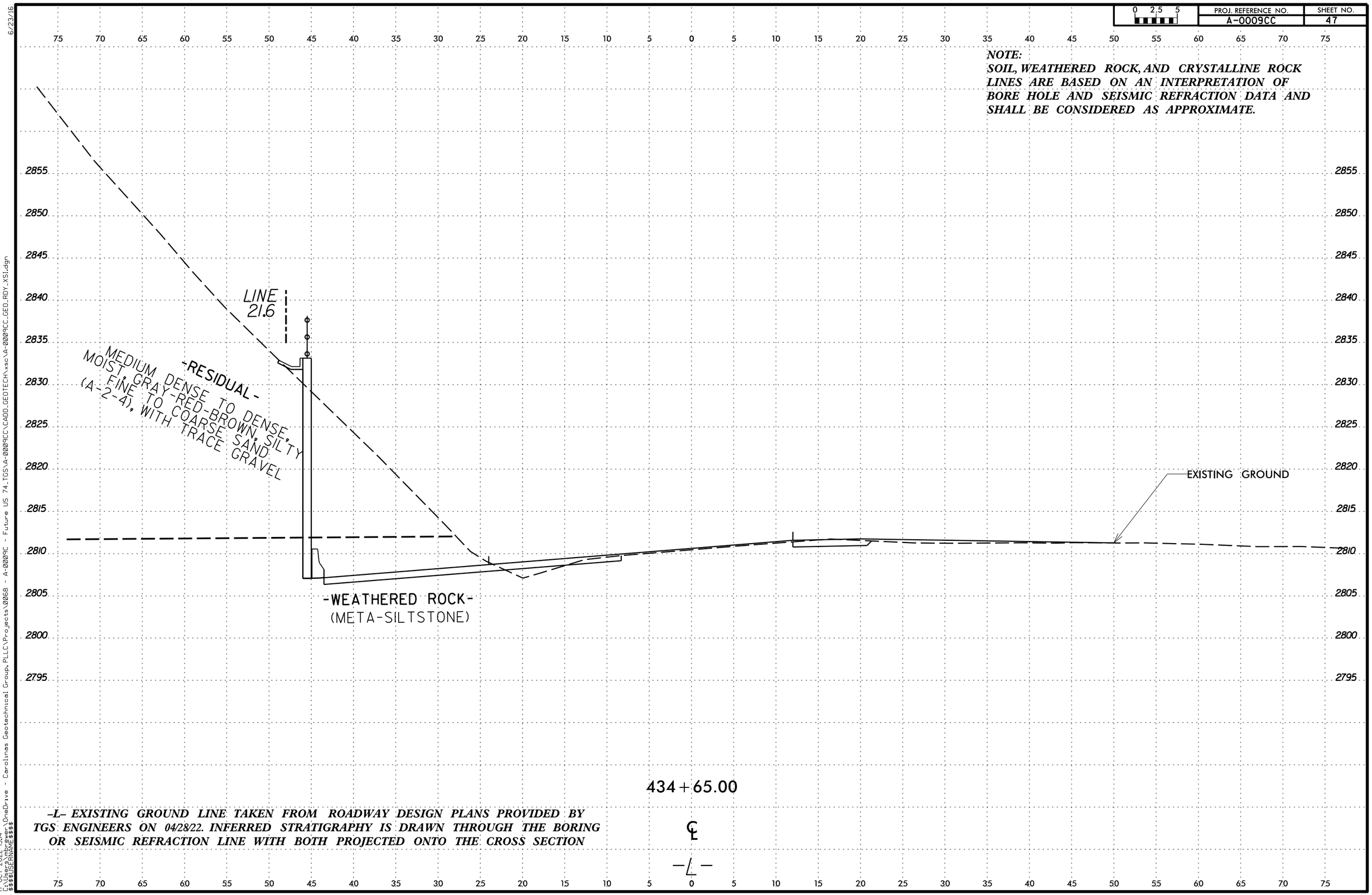


-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
17-OCT-2022 13:14
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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	47

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



–L– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

2850 2845 2840 2835 2830 2825 2820 2815 2810 2805 2800 2795 2790 2785

LINE 21.7

-RESIDUAL-
MEDIUM DENSE TO DENSE, MOIST, GRAY-RED-BROWN, SILTY FINE TO COARSE SAND, (A-2-4), WITH TRACE GRAVEL

-WEATHERED ROCK-
(META-SILTSTONE)

EXISTING GROUND

15.25:1

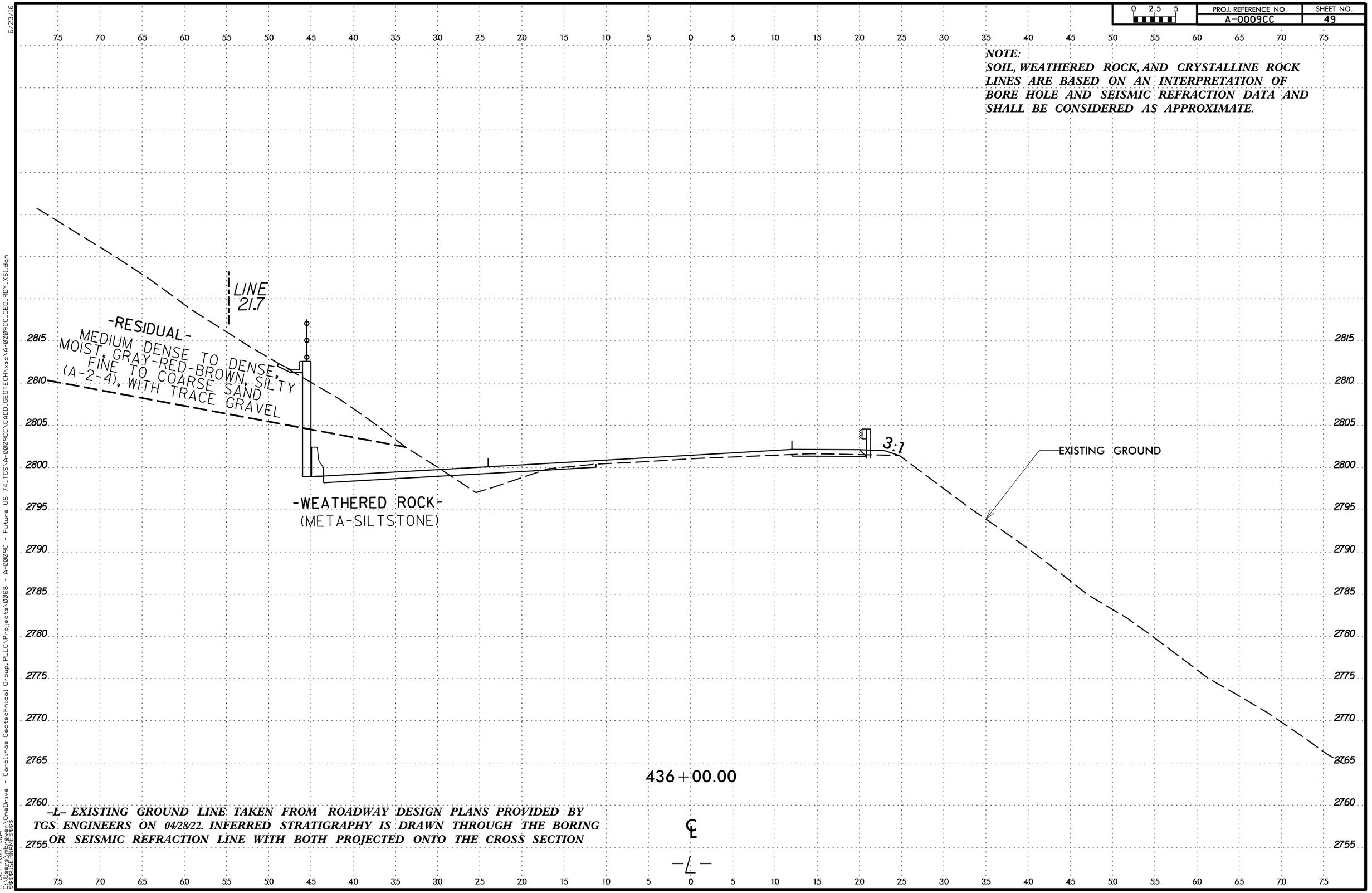
435+00.00
℄
—L—

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	49

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



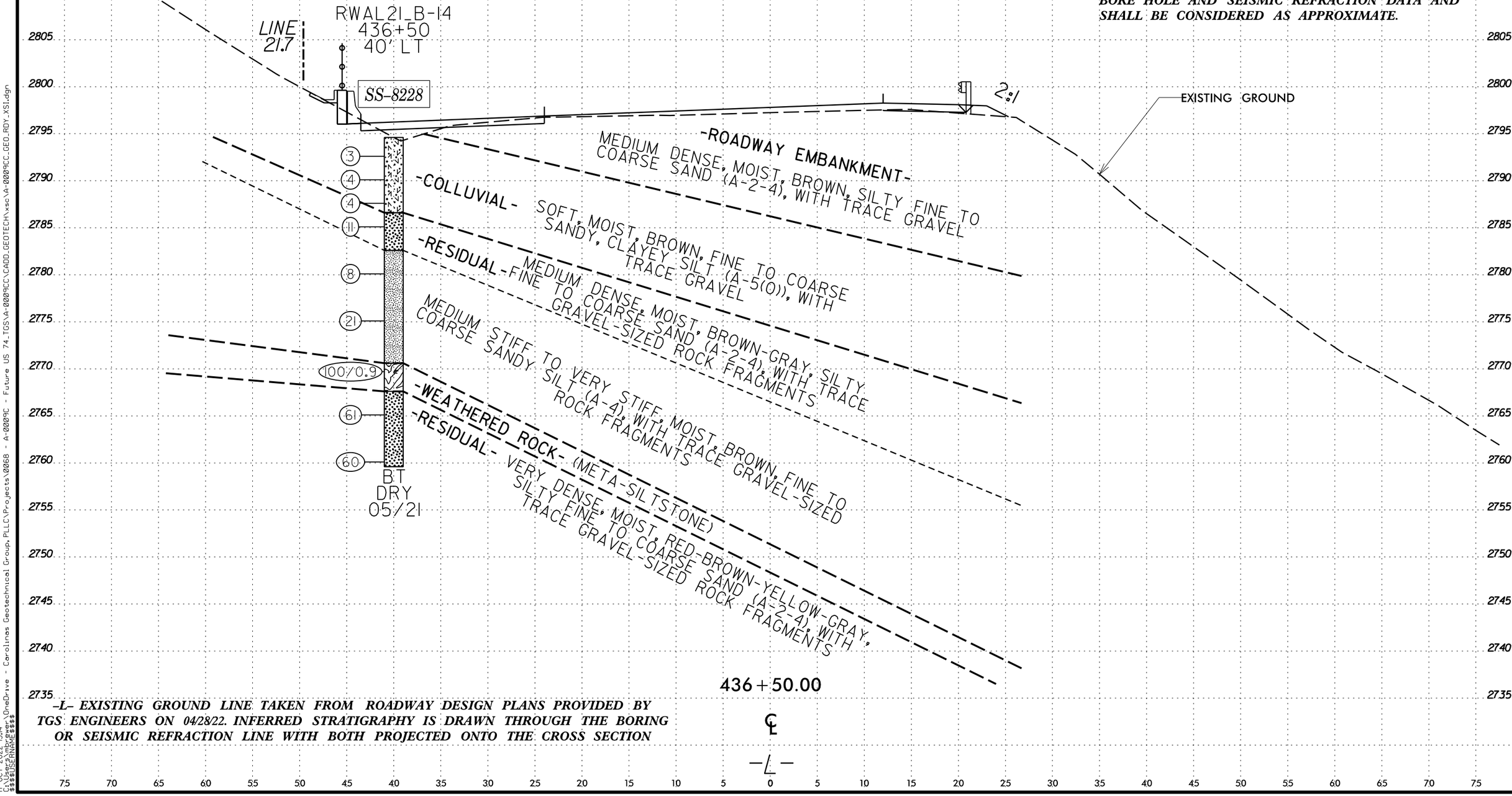
–L– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-8228	40' LT	436+50 -L-	1.0' - 2.5'	A-5(0)	42	2	30	28	23	19	96	75	47	34	-

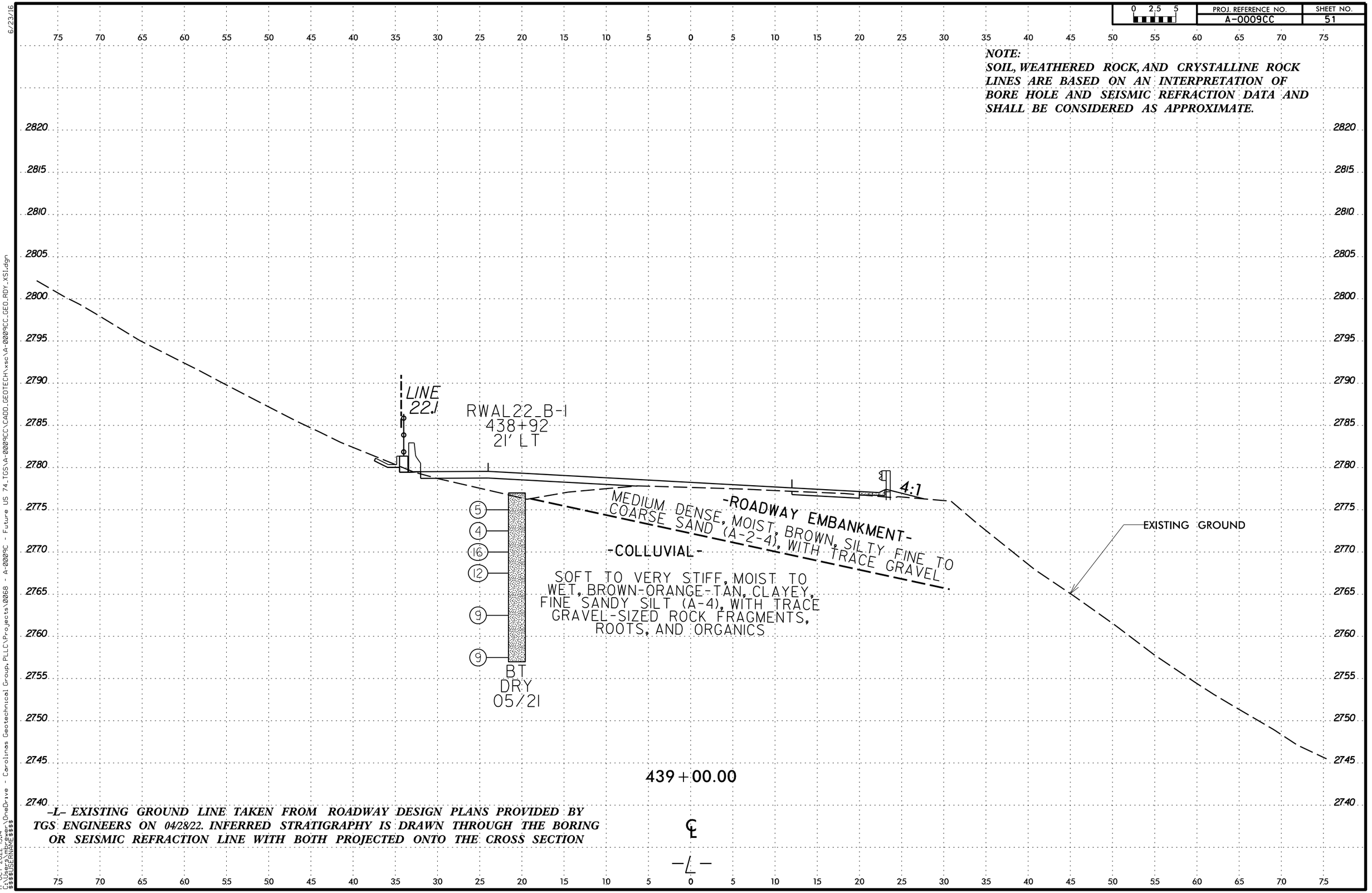
NOTE:
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-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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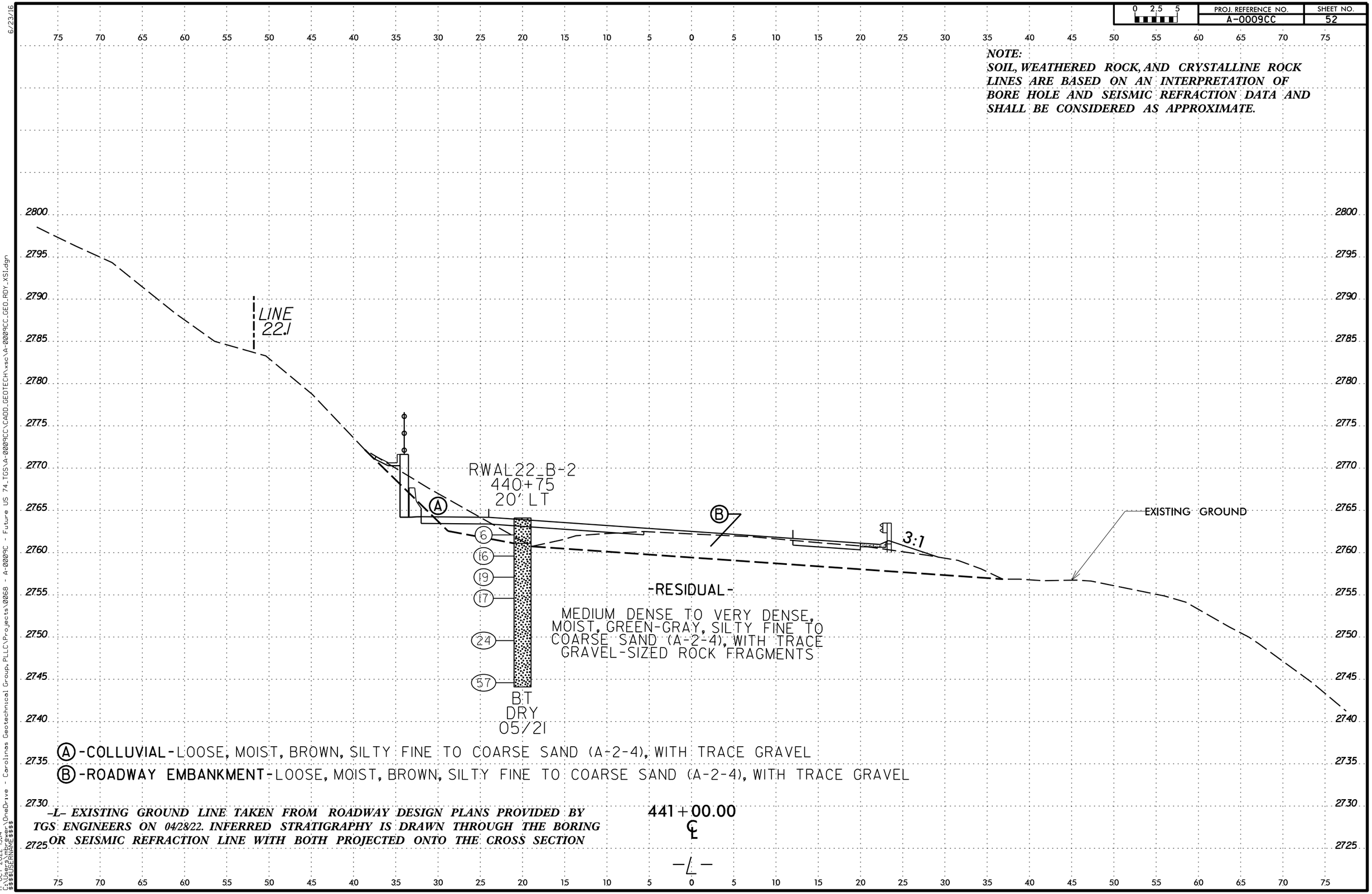
NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



Ⓐ **-COLLUVIAL-** LOOSE, MOIST, BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

Ⓑ **-ROADWAY EMBANKMENT-** LOOSE, MOIST, BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

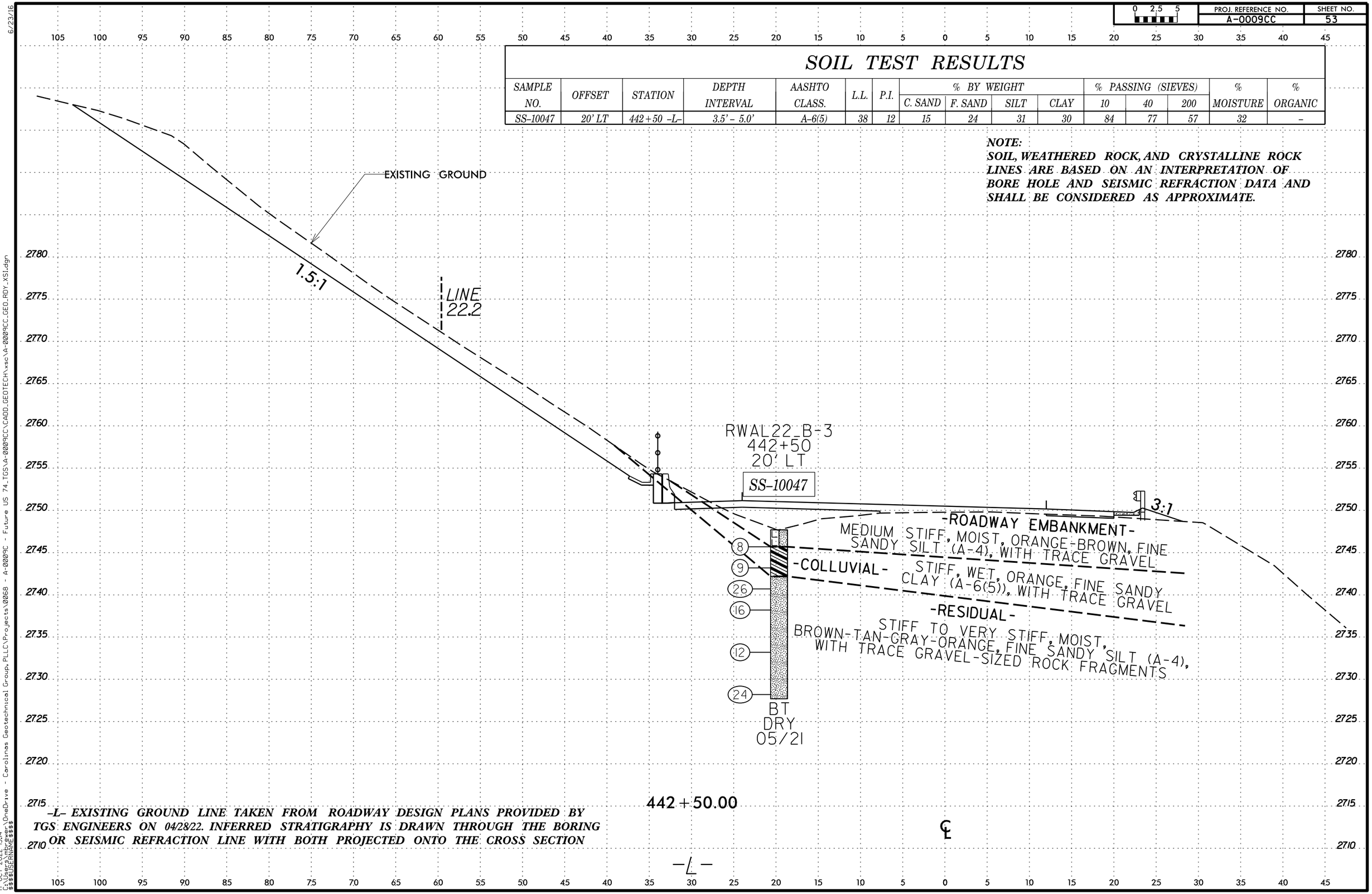
441+00.00
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-L-

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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-10047	20' LT	442+50 -L-	3.5' - 5.0'	A-6(5)	38	12	15	24	31	30	84	77	57	32	-

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

EXISTING GROUND

LINE 22.3

1.5:1

L_44395L
443+95
39' LT

4:1

3:1

-ROADWAY EMBANKMENT-
MEDIUM STIFF, MOIST, ORANGE-BROWN, FINE SANDY SILT (A-4), WITH TRACE GRAVEL

-COLLUVIAL-
SOFT TO STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY CLAY (A-6), WITH TRACE GRAVEL

-RESIDUAL-
STIFF, MOIST, TAN-ORANGE-GRAY, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

(5) (5) (3) (6) (10) (12) (15)

BT
DRY
06/21

444+00.00

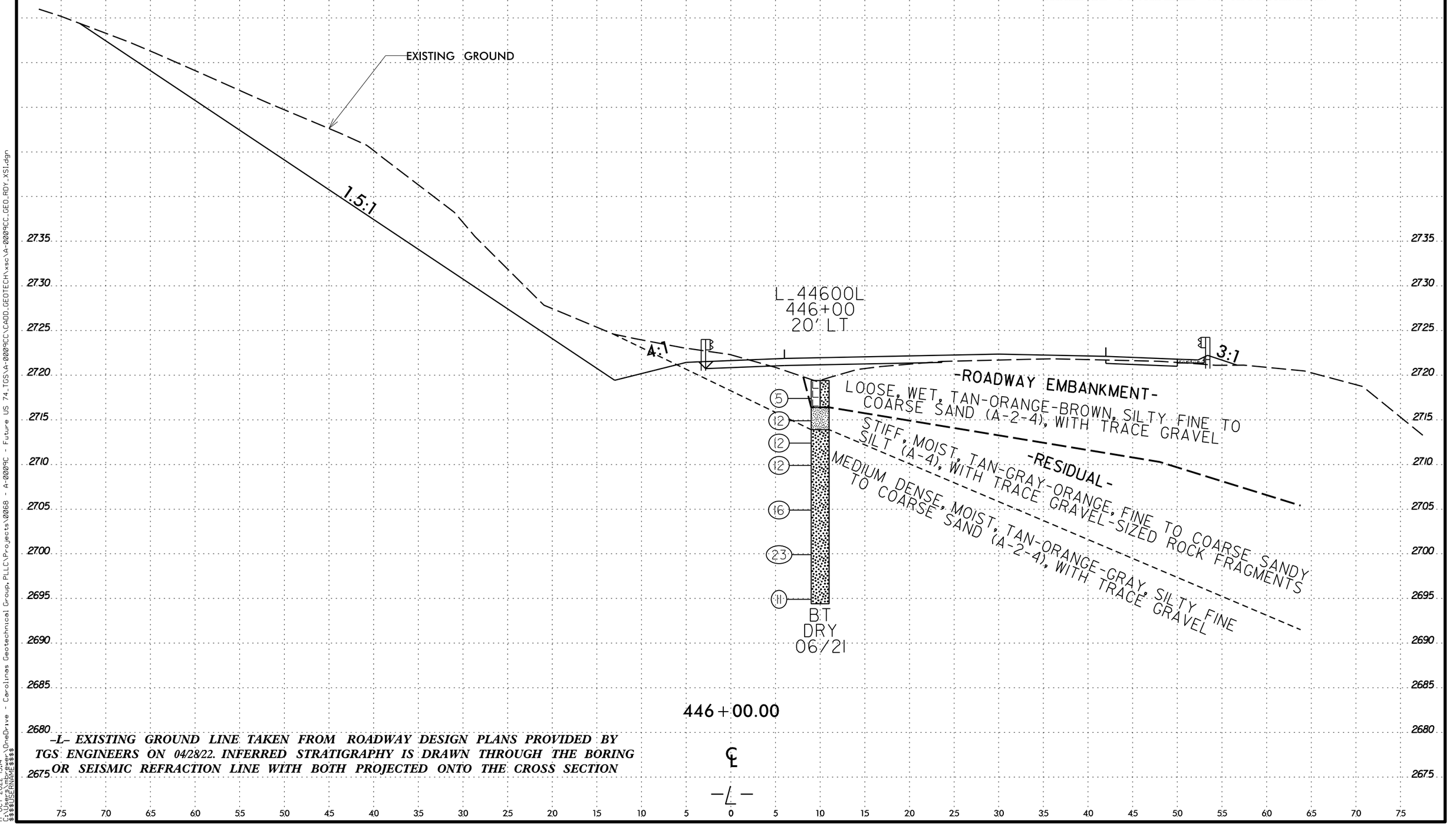
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-L-

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



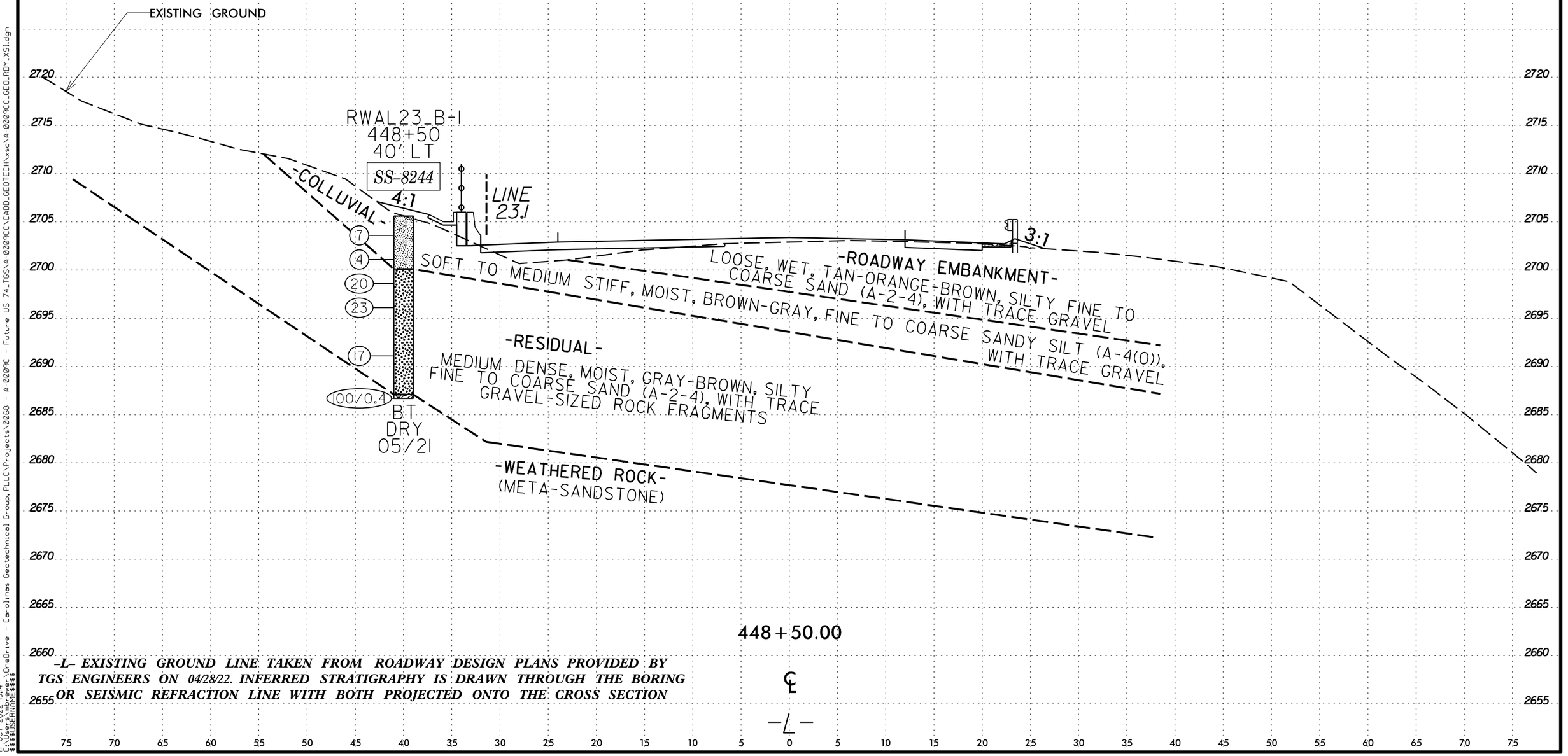
-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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17-OCT-2022 13:14
$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-8244	40' LT	448+50 -L-	3.5' - 5.0'	A-4(0)	28	NP	13	25	49	13	92	85	65	22	-

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



448+50.00

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—L—

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	57

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

EXISTING GROUND

LINE 23.1

RWAL23_B-2
450+39
22' LT

35
90
68
100/0.9
29
100/0.6
100/0.2

BT
DRY
05/21

4:1

-ROADWAY EMBANKMENT-
LOOSE, WET, TAN-ORANGE-BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

-RESIDUAL-
HARD, MOIST, GRAY-BLACK, FINE SANDY SILT (A-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

-WEATHERED ROCK- (META-SILTSTONE)

-RESIDUAL-
VERY STIFF, MOIST, GRAY, FINE SANDY SILT (A-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

-WEATHERED ROCK- (META-SILTSTONE)

450+50.00

℄

—L—

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	58

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

EXISTING GROUND

-RESIDUAL-
VERY STIFF, MOIST, GRAY, FINE SANDY SILT (A-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

LINE 23.2

-WEATHERED ROCK-
(META-SILTSTONE)

-CRYSTALLINE ROCK-
(META-SILTSTONE)

4:1

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

451+00.00
℄
-L-

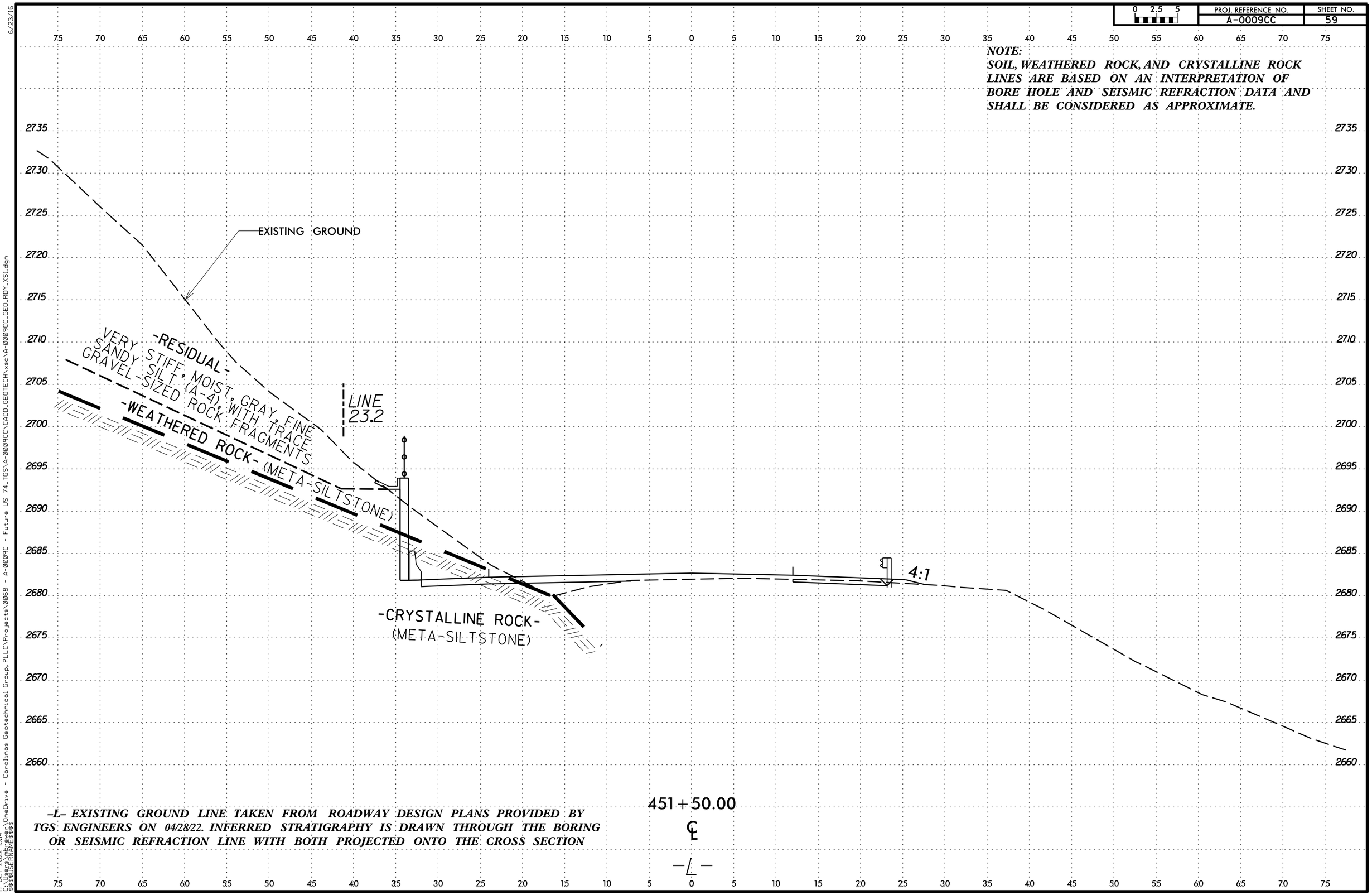
75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2740 2735 2730 2725 2720 2715 2710 2705 2700 2695 2690 2685 2680 2675 2670 2665 2660 2655 2650

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	59

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



–L– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	60

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

RWAL23_B-3
452+12
65' LT

EXISTING GROUND

LINE
23.2

52
31
52
39
100/0.4
60/0.0
BT
DRY
05/21

-RESIDUAL-
DENSE TO VERY DENSE, DRY TO MOIST, TAN-GRAY-BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

-CRYSTALLINE ROCK-
(META-SILTSTONE)

Ⓐ-WEATHERED ROCK-(META-SILTSTONE)

3:1

-ROADWAY EMBANKMENT-
LOOSE, WET, TAN-ORANGE-BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

452+00.00

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-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-L-

100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50

2710 2705 2700 2695 2690 2685 2680 2675 2670 2665 2660 2655 2650 2645 2640 2635 2630

6/23/16
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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	61

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

RWAL24_B-1
453+62
74' LT

47
27
49
77
50
32
60/0.0

BT
DRY
06/21

EXISTING GROUND

LINE
23.3

-CRYSTALLINE ROCK-
(META-SILTSTONE)

-WEATHERED ROCK-
(META-SILTSTONE)

HARD, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

MEDIUM DENSE TO VERY DENSE, DRY TO MOIST, TAN-GRAY-BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL-SIZED ROCK FRAGMENTS

-RESIDUAL-

LOOSE, WET, TAN-ORANGE-BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

-ROADWAY EMBANKMENT-

2:1

453+50.00

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-L-

2705 2700 2695 2690 2685 2680 2675 2670 2665 2660 2655 2650 2645 2640 2635 2630 2625

100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	62

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

EXISTING GROUND

LINE 23.3

RWAL24_B-2
455+00
30' LT

28
44
100/0.6
100/0.6
100/0.3
100/0.4
BT

05/21

Ⓐ 4:1

-RESIDUAL- MEDIUM DENSE TO DENSE, MOIST, GRAY, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

-CRYSTALLINE ROCK- (META-SANDSTONE)

-WEATHERED ROCK- (META-SANDSTONE)

Ⓐ -ROADWAY EMBANKMENT- LOOSE, MOIST, BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

455+00.00

℄

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

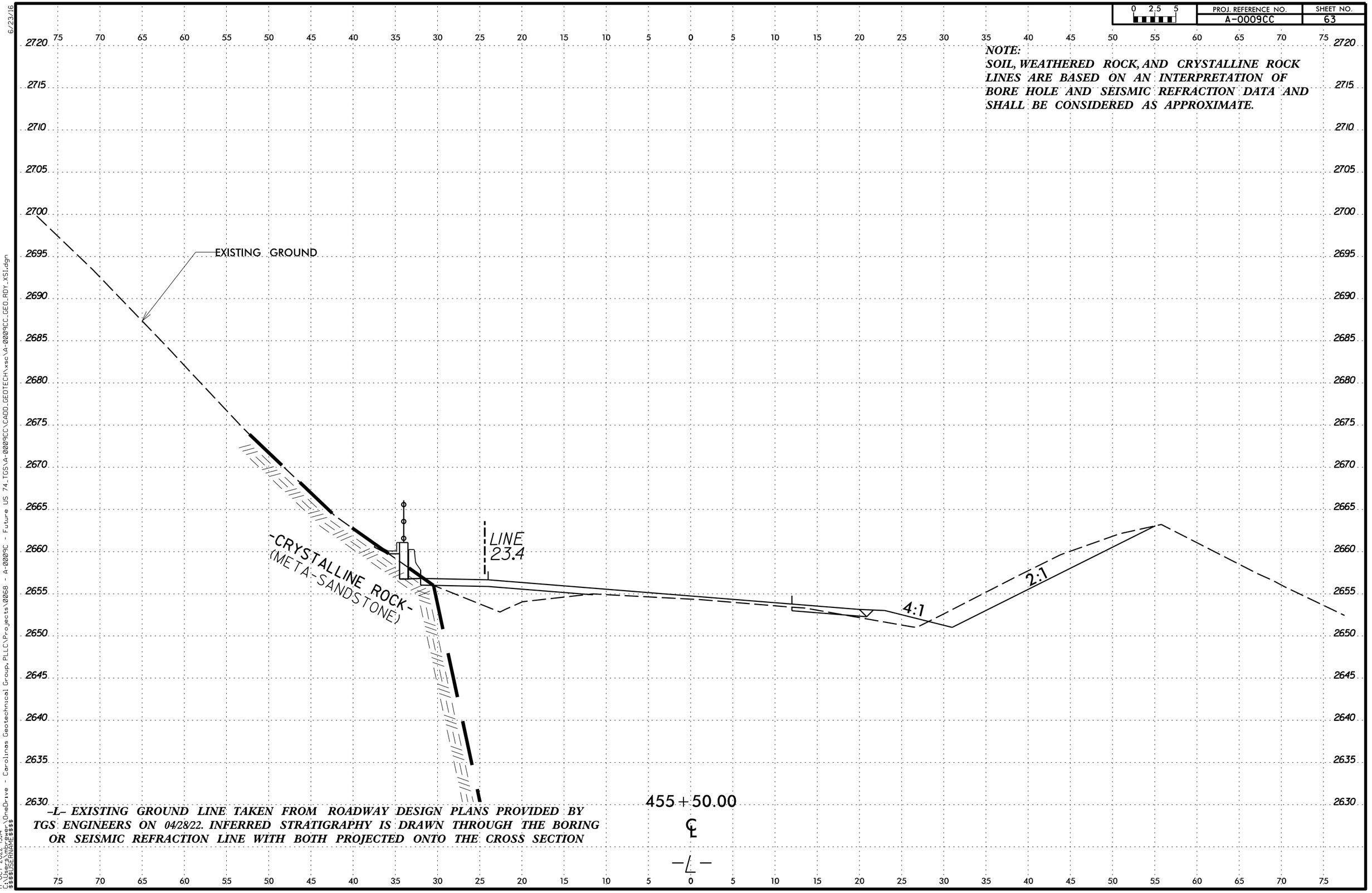
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2720 2715 2710 2705 2700 2695 2690 2685 2680 2675 2670 2665 2660 2655 2650 2645 2640 2635 2630

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	63

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

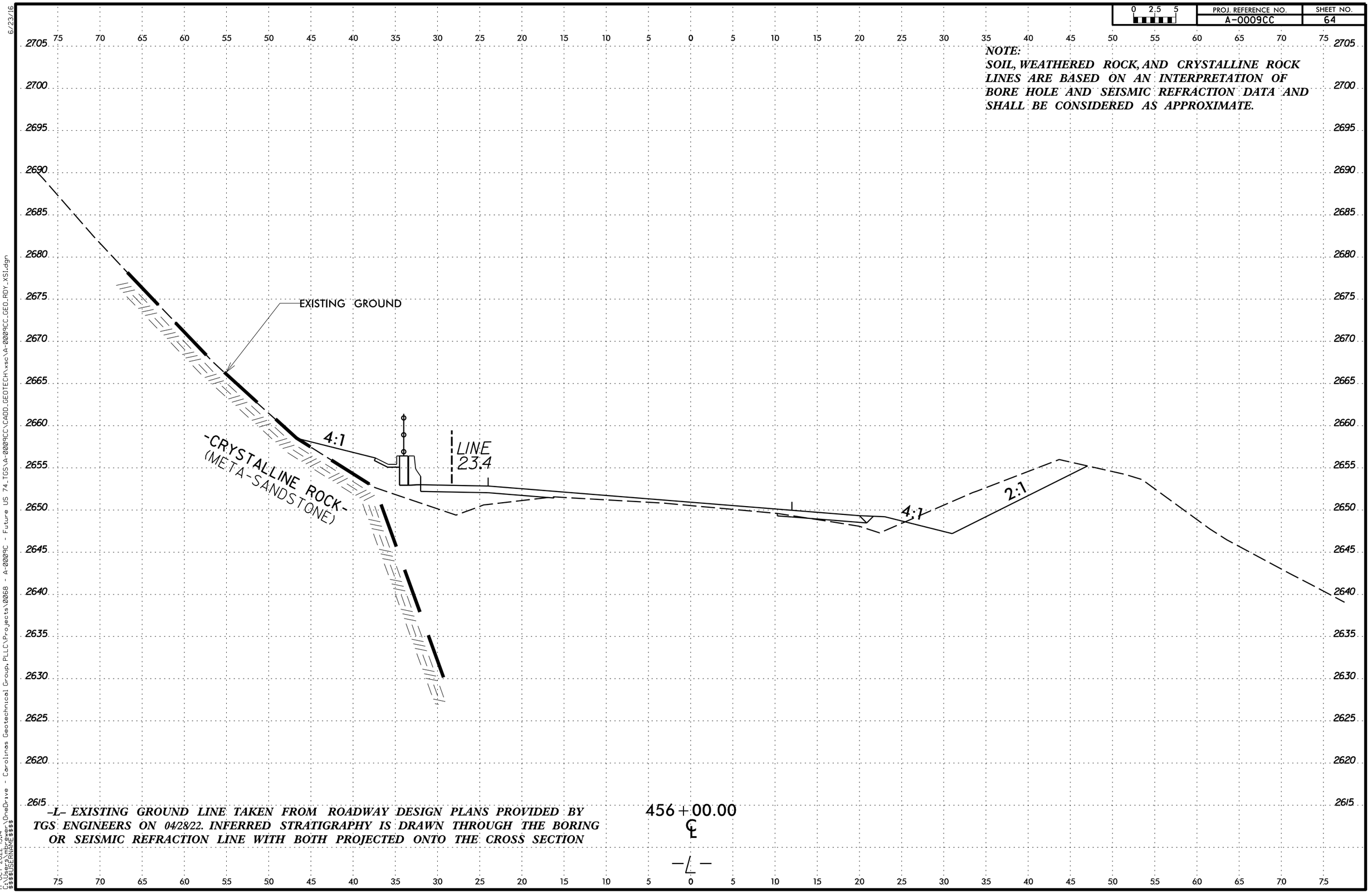


–L– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	64

NOTE:
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456+00.00
℄
-L-

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$$$$USERNAME$$$$

0 2.5 5

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

EXISTING GROUND

-CRYSTALLINE ROCK-
(META-SANDSTONE)

RWAL24_B-3
456+25
40' LT

LINE
23.4

2:1
4:1

68
25
100/0.7
100/0.4
100/0.4
100/0.3

BT
DRY
05/21

-ROADWAY EMBANKMENT- Ⓐ

-RESIDUAL-
MEDIUM DENSE TO VERY DENSE, MOIST, GRAY-BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

-WEATHERED ROCK-
(META-SANDSTONE)

Ⓐ **-ROADWAY EMBANKMENT-** VERY DENSE, MOIST, GRAY-BROWN, SILTY, GRAVELLY FINE TO COARSE SAND (A-1-B)

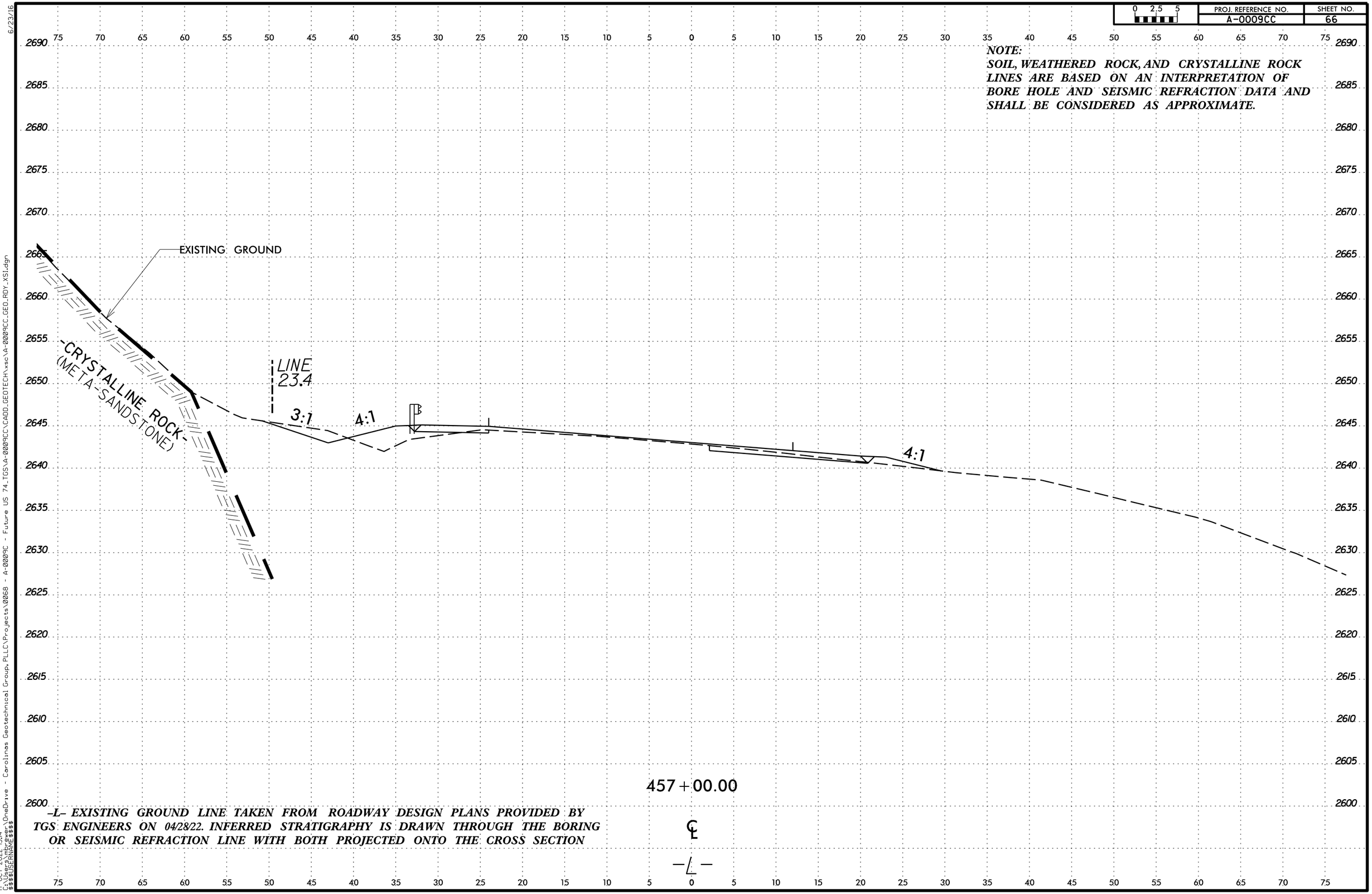
-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

456+50.00
℄
-L-

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	66

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



–L– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
A-0009CC	67

0 2.5 5

459+00.00

458+00.00

L_45800L
458+00
35' LT

-CRYSTALLINE ROCK-
(META-SILTSTONE)

4.6:1

4:1

2:1

4:1

4:1

EXISTING GROUND

EXISTING GROUND

16
83
100/0.8
60/0.0
BT
DRY
05/21

-ROADWAY EMBANKMENT-
MEDIUM DENSE TO VERY DENSE, MOIST, BROWN-GRAY, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

-CRYSTALLINE ROCK-
(META-SILTSTONE)

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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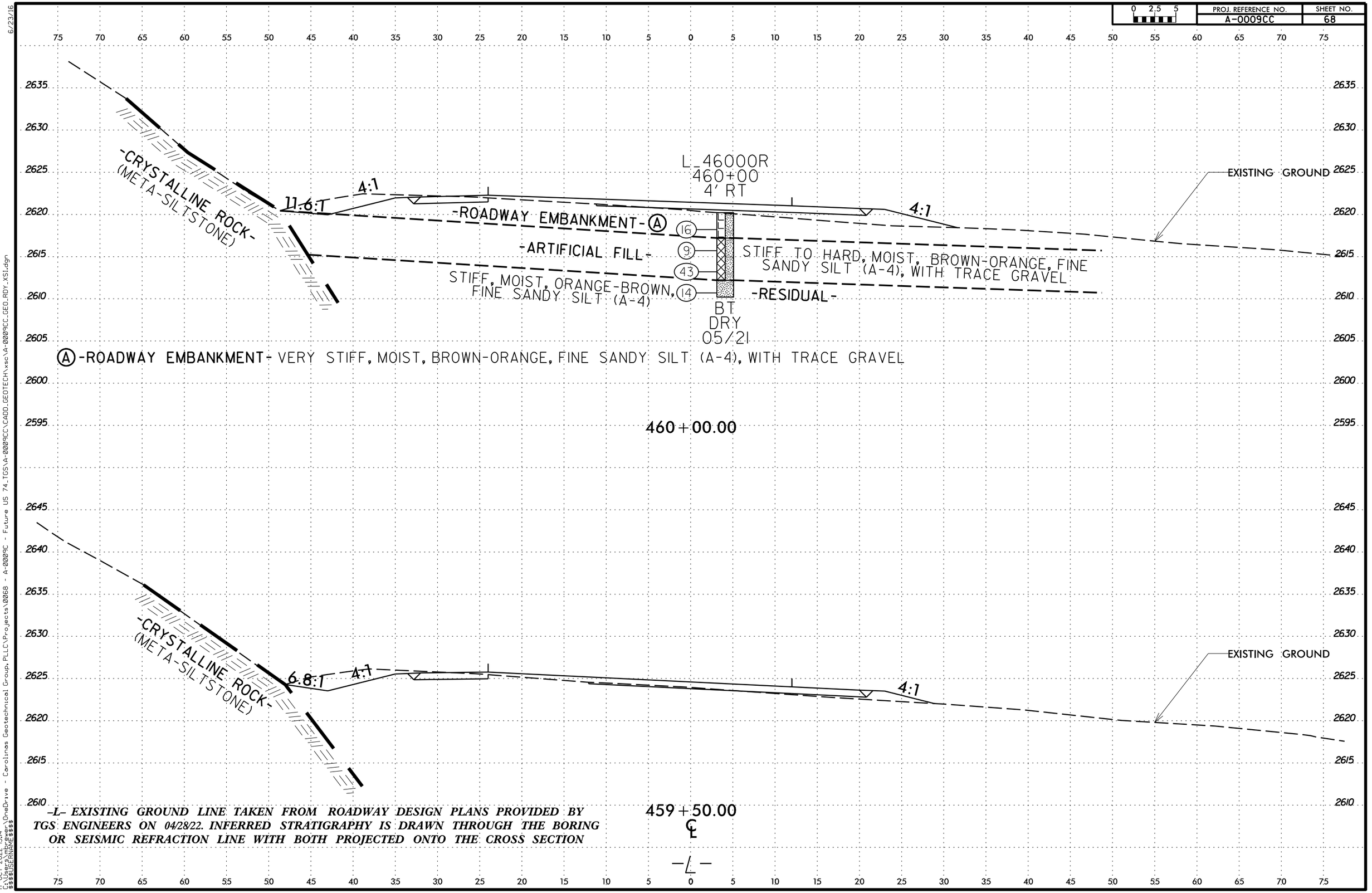
-L-

2655 2650 2645 2640 2635 2630 2625 2620 2615 2610

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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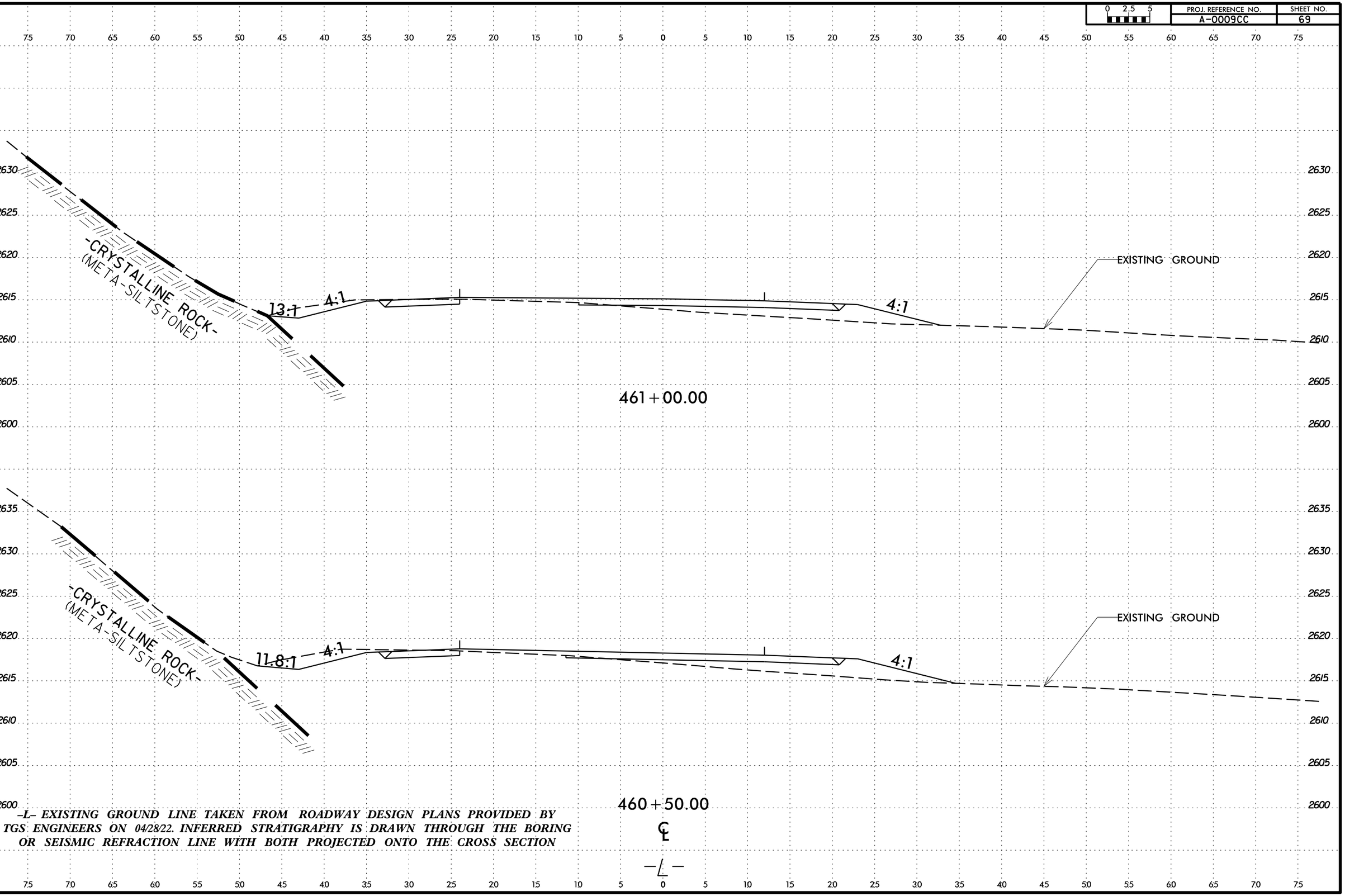
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	68



–L– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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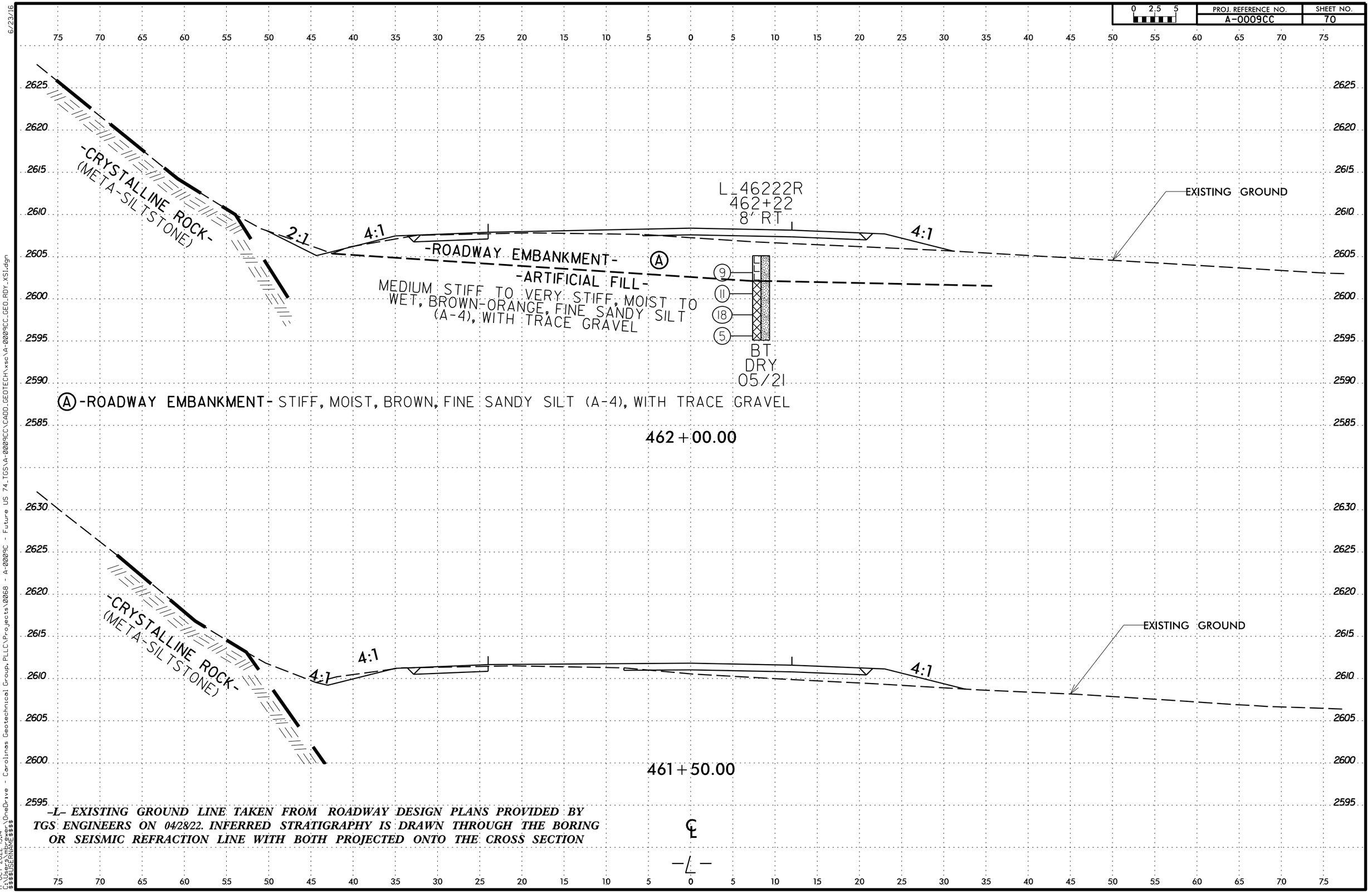
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	69



–L– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	70

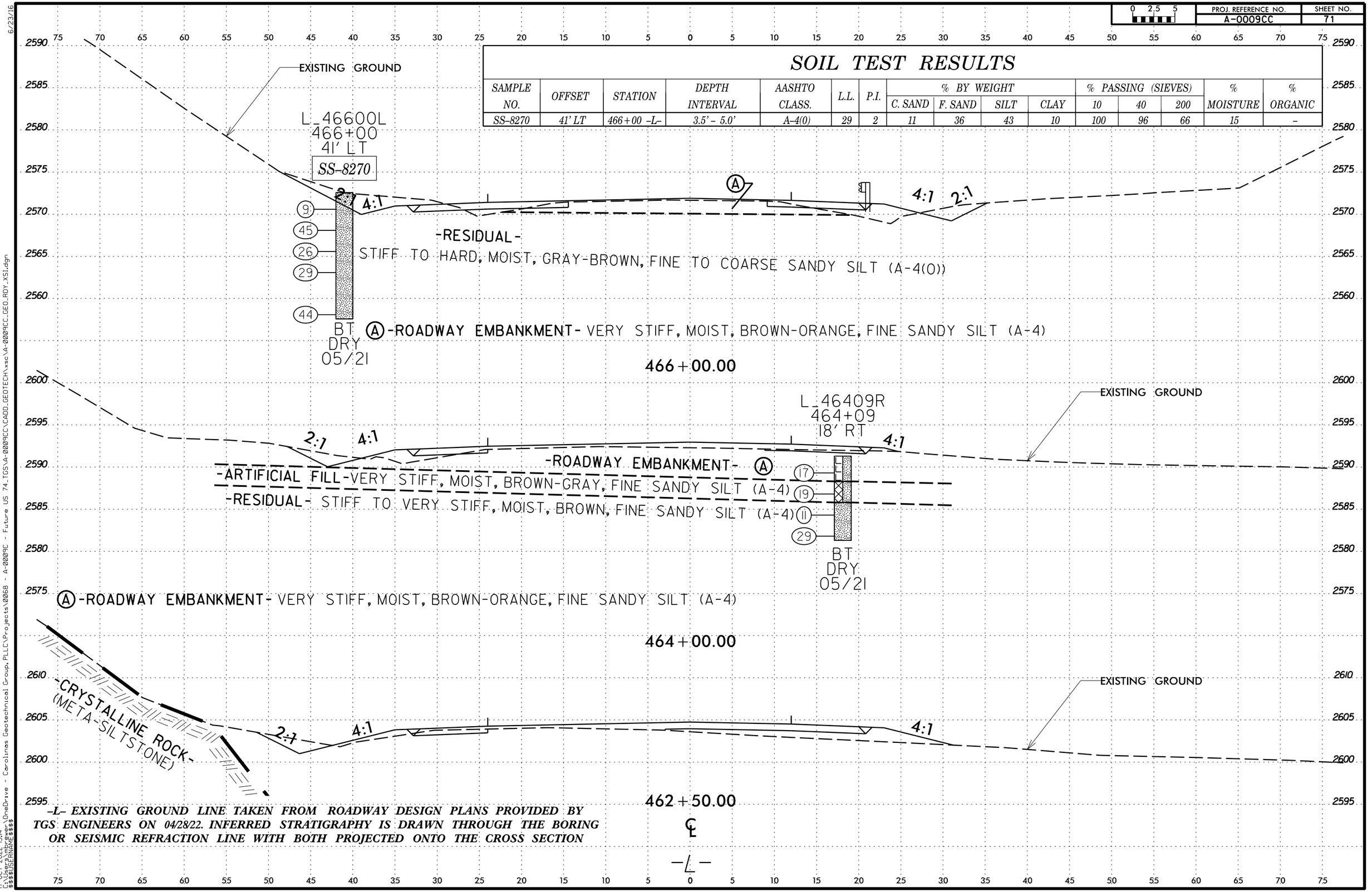


–L– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT C. SAND	F. SAND	SILT	CLAY	% PASSING (SIEVES) 10	40	200	% MOISTURE	% ORGANIC
SS-8270	41' LT	466+00 -L-	3.5' - 5.0'	A-4(0)	29	2	11	36	43	10	100	96	66	15	-

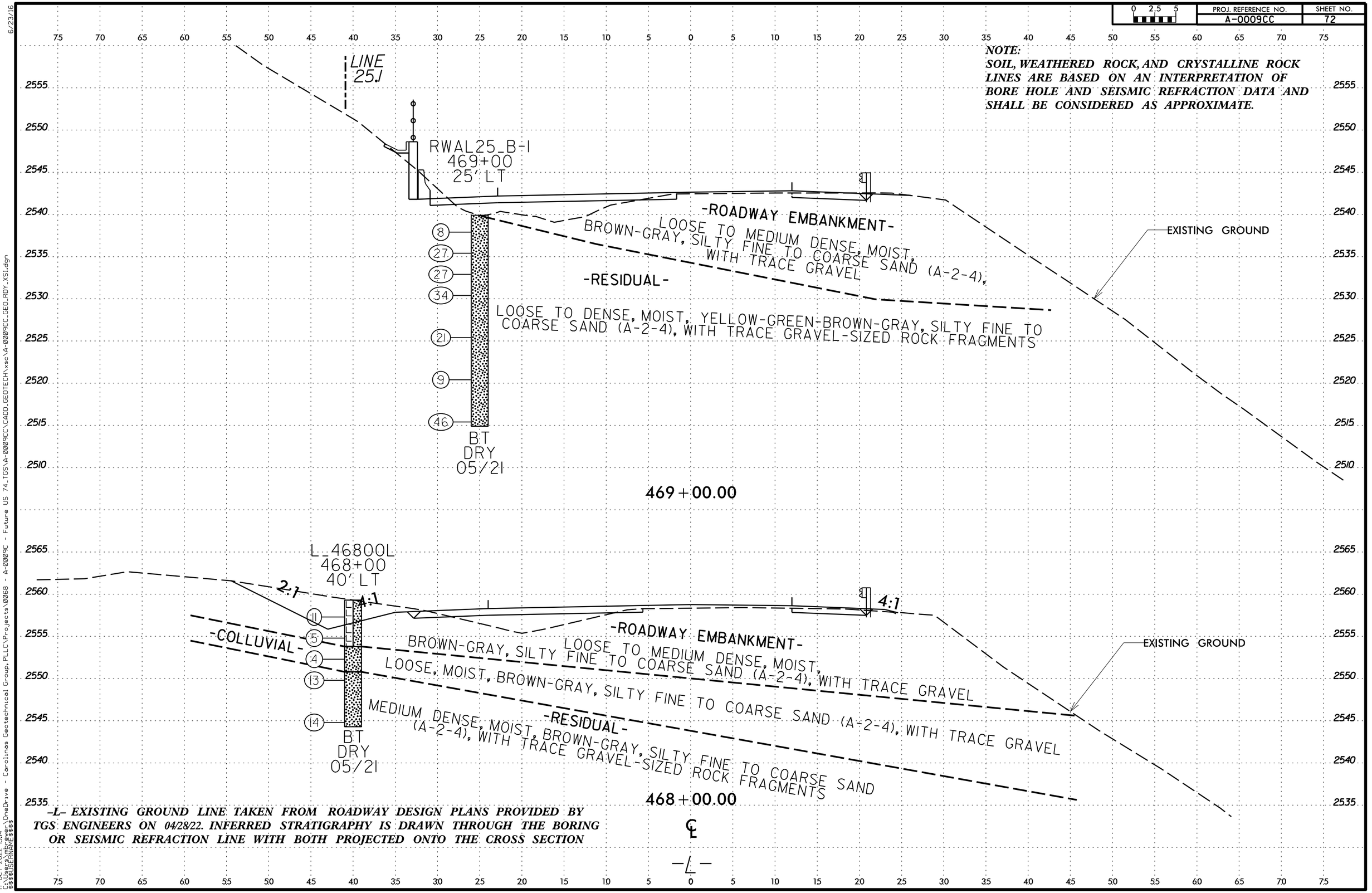


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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	72

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



–L– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-10071	15' LT	470+25 -L-	3.5' - 5.0'	A-4(0)	29	1	2	46	38	14	100	99	70	20	-

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

EXISTING GROUND

LINE 25.1

RWAL25_B-2
470+25
15' LT
SS-10071

L_47046R
470+46
22' RT

4:1 – 6.6:1

-RESIDUAL-
MEDIUM STIFF TO VERY STIFF, MOIST, GRAY-BROWN, FINE SANDY SILT (A-4(0)), WITH TRACE MANGANESE OXIDE

-WEATHERED ROCK-
(META-SILTSTONE)

-RESIDUAL-
HARD, MOIST, GRAY, FINE SANDY SILT (A-4)

BT
DRY
05/21

BT
DRY
05/21

Ⓐ -ROADWAY EMBANKMENT- VERY STIFF, MOIST, BROWN-ORANGE, FINE SANDY SILT (A-4)

-L- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

470+50.00
℄
-L-

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	74

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

EXISTING GROUND

RWAL25_B-3
471+50
25' LT

LINE
25.2

4:1

Ⓐ

L_47175R
471+75
31' RT

4:1

2:1

SHEAR LINE, SEE -Y2-

-RESIDUAL- Ⓑ

-WEATHERED ROCK-
(META-SANDSTONE)

56	97	100/0.3	100/0.2
100/0.3	100/0.2		
BT	DRY	05/21	

13	100/0.7	100/0.4	100/0.2
100/0.6			
BT	DRY	05/21	

Ⓐ **-ROADWAY EMBANKMENT-** VERY STIFF, MOIST, BROWN-ORANGE, FINE SANDY SILT (A-4)

Ⓑ **-RESIDUAL-** MEDIUM DENSE TO VERY DENSE, MOIST, BROWN-GRAY, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

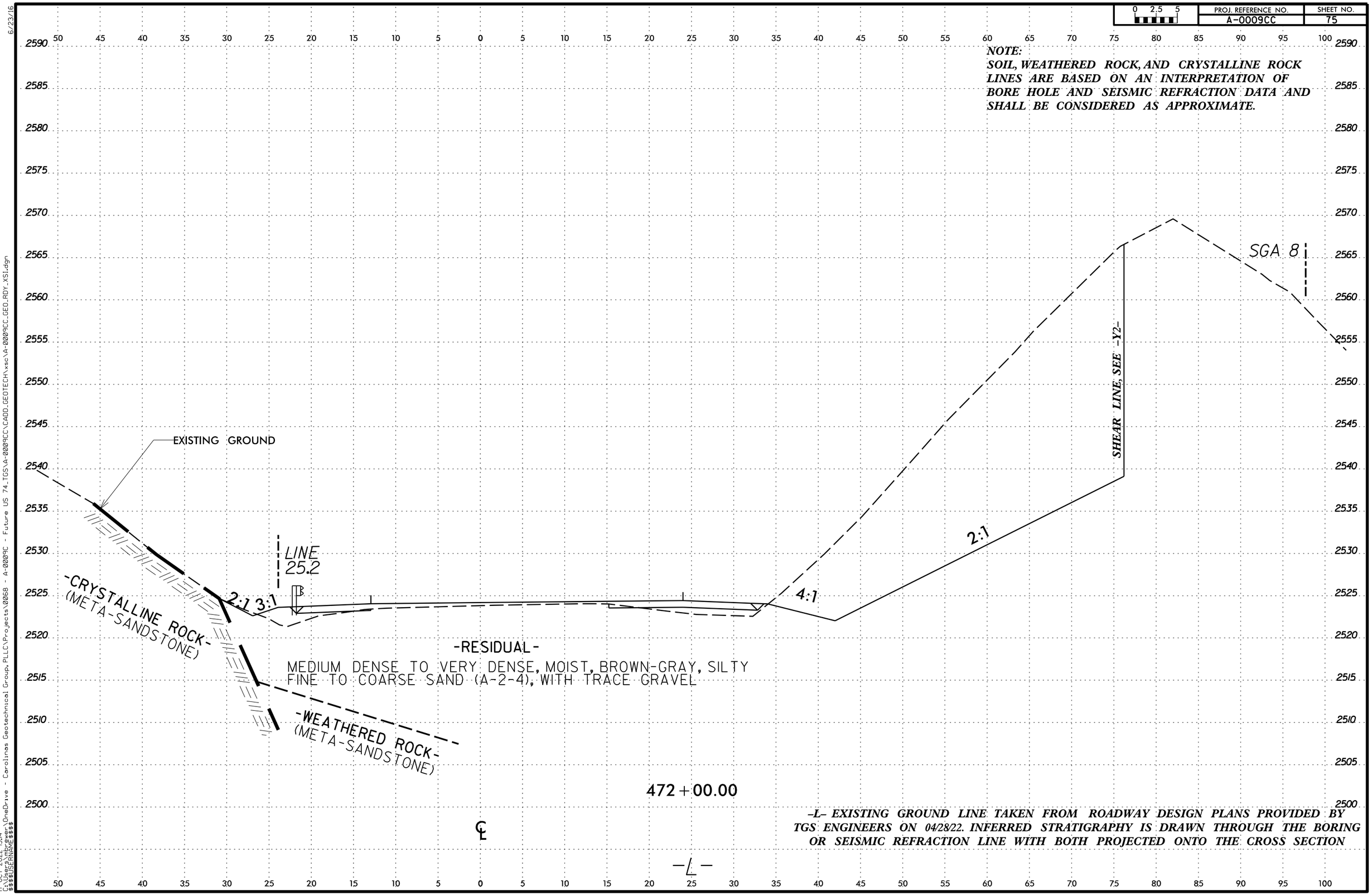
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471+50.00
℄
-L-

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	75

NOTE:
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$$$$USERNAME$$$$

55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95

NOTE:
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2565 2560 2555 2550 2545 2540 2535 2530 2525 2520 2515 2510 2505

SGA 8

SHEAR LINE, SEE -Y2-

EXISTING GROUND

-CRYSTALLINE ROCK-
(META-SANDSTONE)

4:1

-RESIDUAL-

MEDIUM DENSE TO VERY DENSE, MOIST, BROWN-GRAY, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

4:1

2:1

-CRYSTALLINE ROCK-
(META-SANDSTONE)

473+00.00

℄

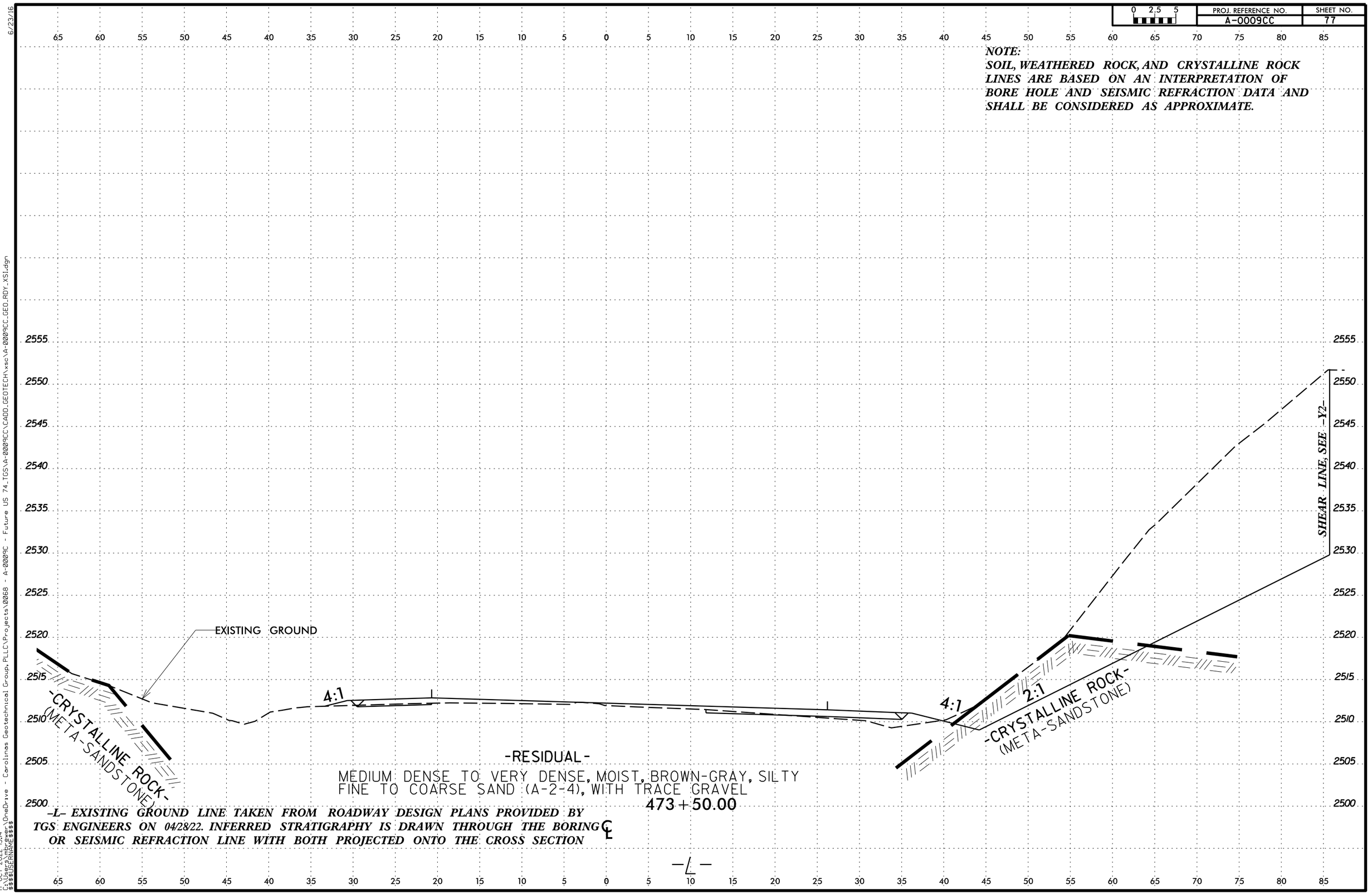
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$$$$USERNAME$$$$

0 2.5 5

NOTE:
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-L-

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	78

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2515
2510
2505
2500
2495
2490
2485
2480
2475
2470
2465
2460

EXISTING GROUND

RWAL39_B-1
14+75
16' LT

3:1 3:1 3:1

5
11
14
11

05/21

100/0.9

100/0.6

BT

Ⓐ

-RESIDUAL-
MEDIUM STIFF TO STIFF, MOIST TO WET, GRAY-BROWN-ORANGE-TAN, FINE TO COARSE SANDY SILT (A-4)

-WEATHERED ROCK-
(SCHIST)

Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF, MOIST, ORANGE-BROWN, FINE SANDY CLAY (A-6), WITH TRACE GRAVEL

14+50.00
℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	79

EXISTING GROUND

RWAL39_B-2
15+50
16' LT

-WEATHERED ROCK-
(SCHIST)

4:1

Ⓐ

6

35

-RESIDUAL- Ⓑ

100/0.6

100/0.2

05/21

-WEATHERED ROCK-
(SCHIST)

100/0.6

100/0.3

BT

Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF, MOIST, ORANGE-BROWN, FINE SANDY CLAY (A-6), WITH TRACE GRAVEL

Ⓑ -RESIDUAL- HARD, MOIST, ORANGE-BROWN-GRAY, FINE SANDY SILT (A-4), WITH TRACE MICA

15+50.00
℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	80

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2535 2530 2525 2520 2515 2510 2505 2500 2495 2490 2485 2480 2475 2470 2465

EXISTING GROUND

RWAL39_B-3
16+25
20' LT

3
30
31
28
24
31
47
BT

05/21

Ⓐ 4:1

-RESIDUAL- SOFT TO VERY STIFF, MOIST, TAN-ORANGE, FINE SANDY CLAY (A-6) AND FINE SANDY SILT (A-4)

MEDIUM DENSE TO DENSE, MOIST, BROWN-ORANGE-BLACK, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE MICA

VERY STIFF TO HARD, MOIST, BROWN-ORANGE, FINE SANDY SILT (A-4), WITH TRACE MICA

Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF, MOIST, ORANGE-BROWN, FINE SANDY CLAY (A-6), WITH TRACE GRAVEL

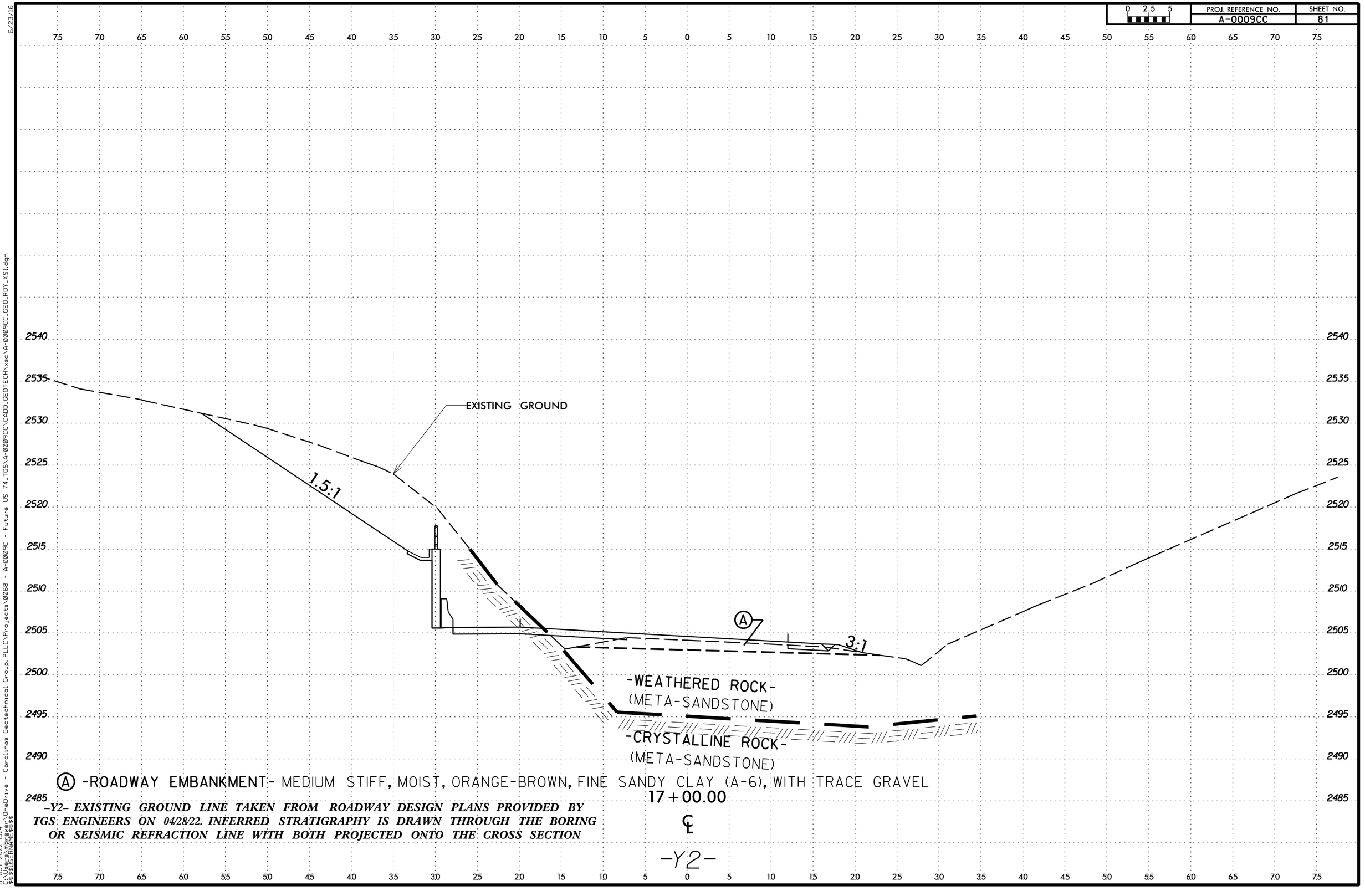
16+00.00

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-Y2-

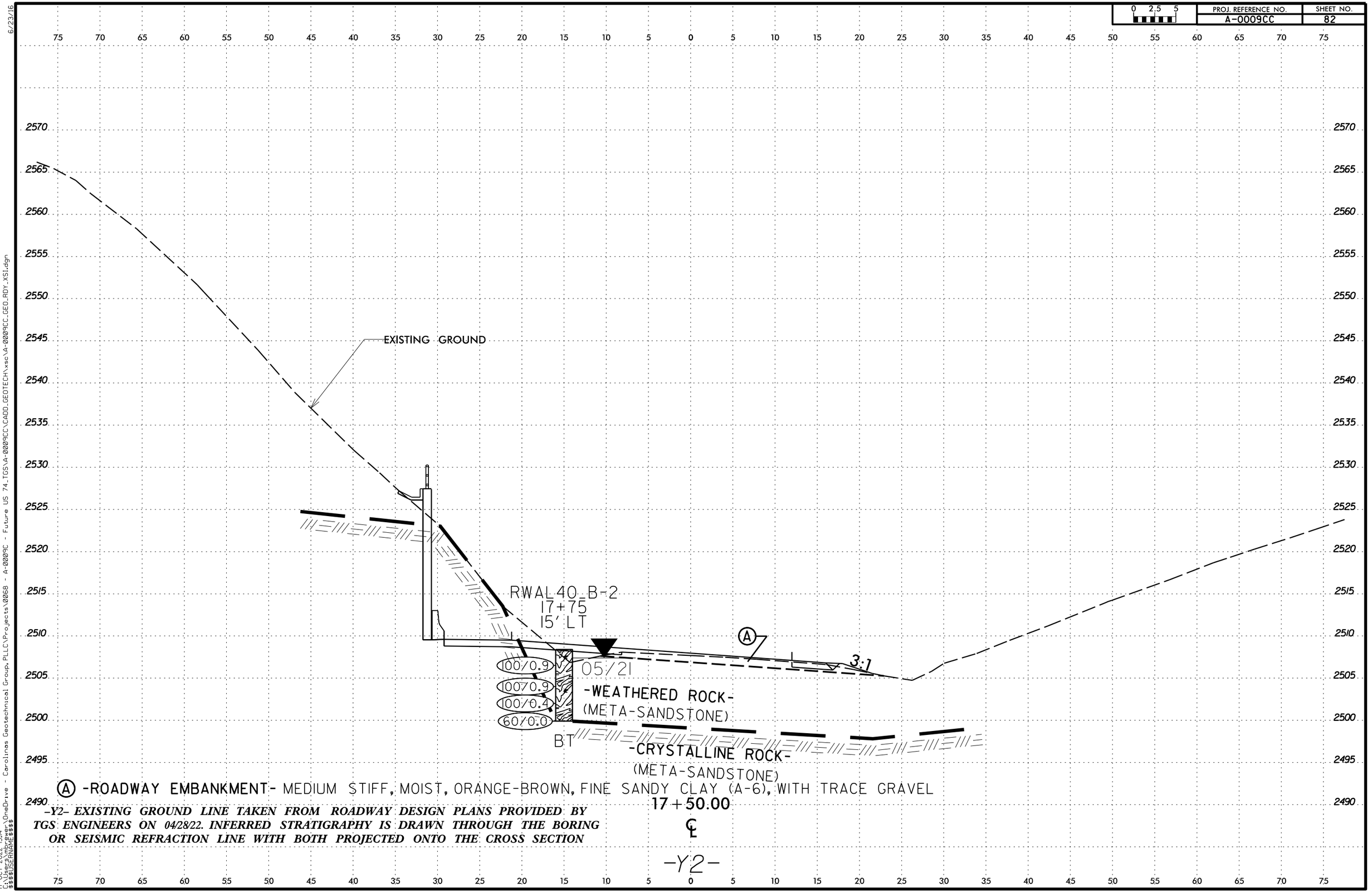
-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
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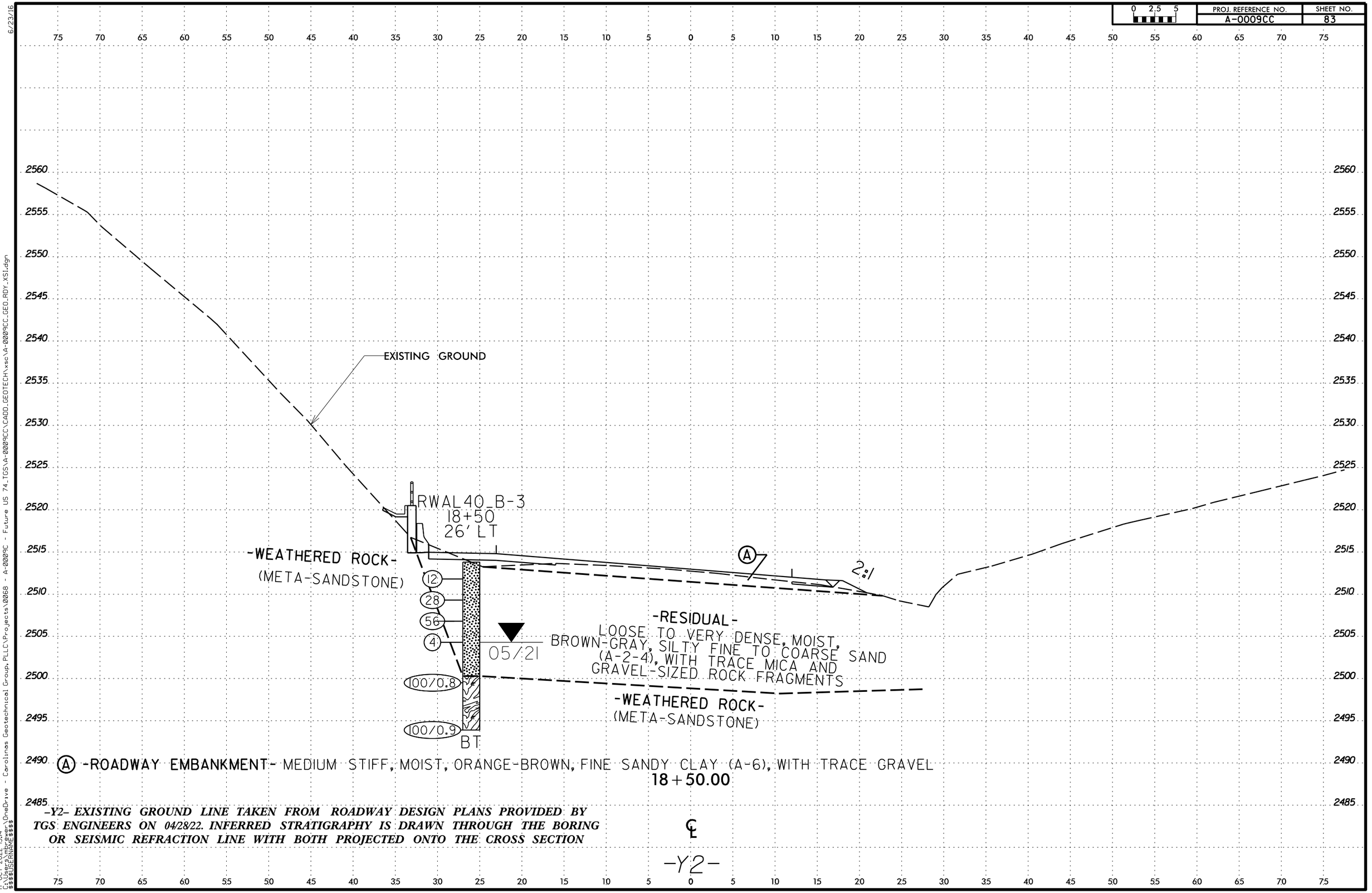
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

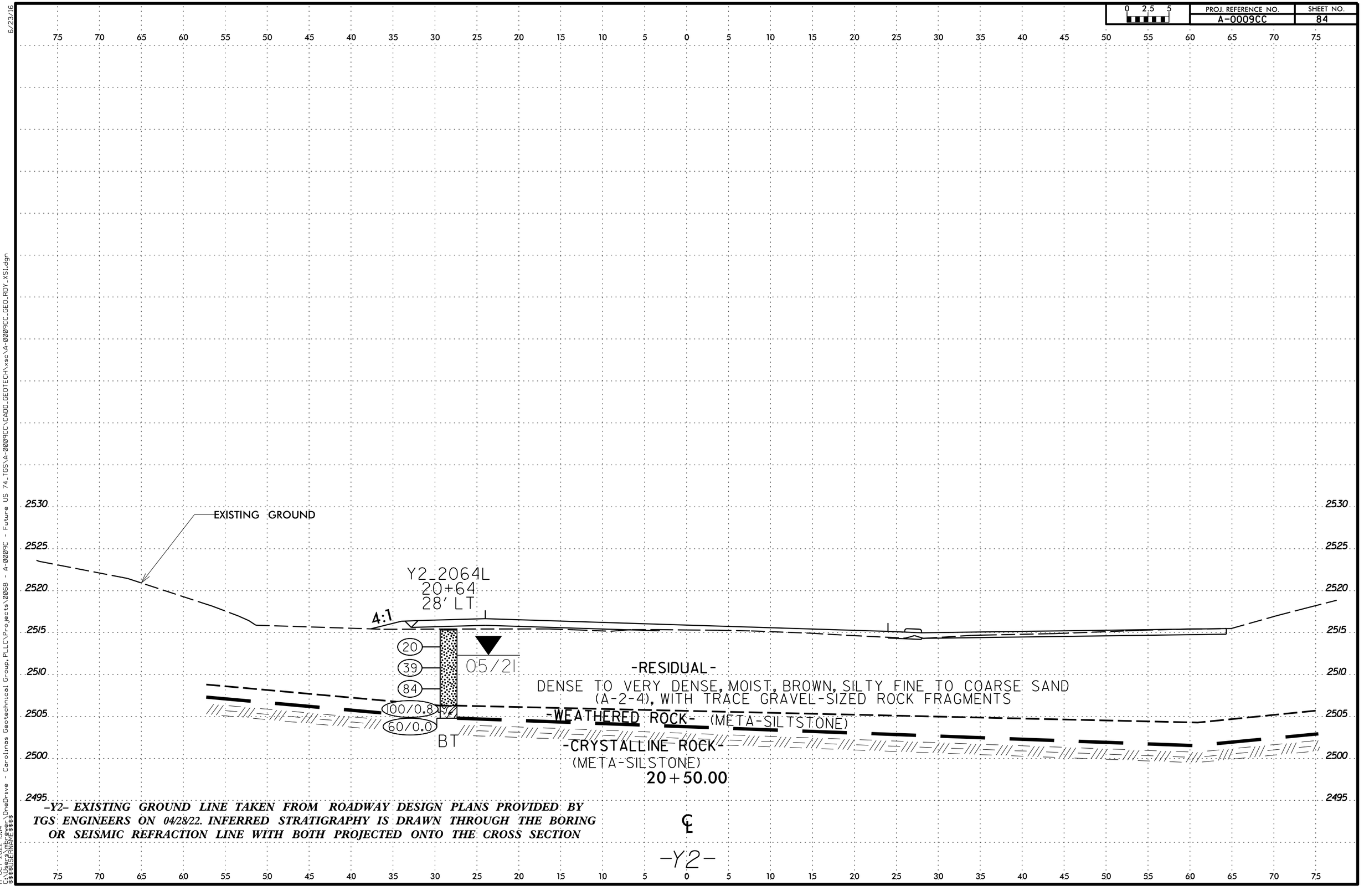
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	84



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16

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	A-0009CC	85

EXISTING GROUND

SGA 5

1.5:1

-RESIDUAL-
DENSE, MOIST, TAN-GRAY, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL-SIZED ROCK FRAGMENTS

4:1

-WEATHERED ROCK-
(META-SILTSTONE)

-CRYSTALLINE ROCK-
(META-SILTSTONE)

21+50.00

EXISTING GROUND

SGA 5

1.5:1

-RESIDUAL-
DENSE, MOIST, TAN-GRAY, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL-SIZED ROCK FRAGMENTS

4:1

21+00.00

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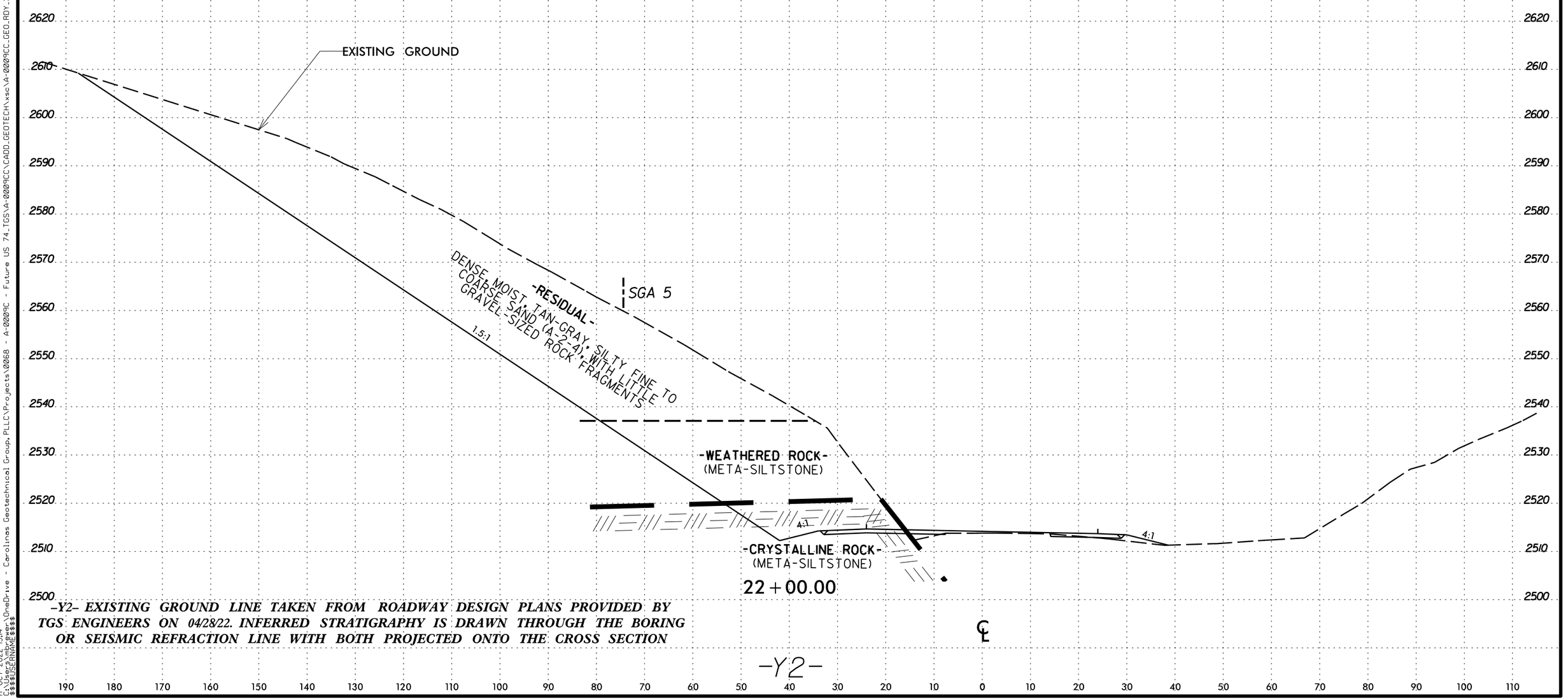
-Y2-

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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NOTE:
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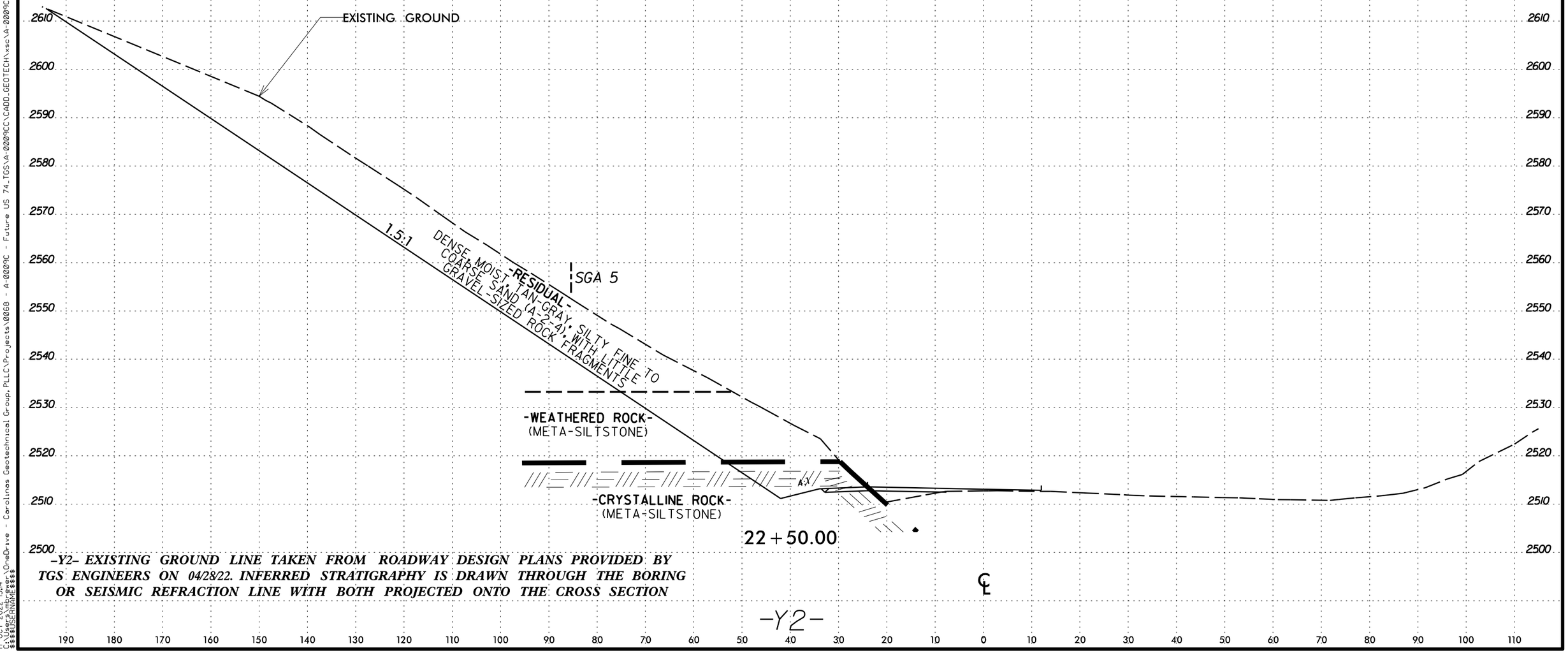


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–Y2–

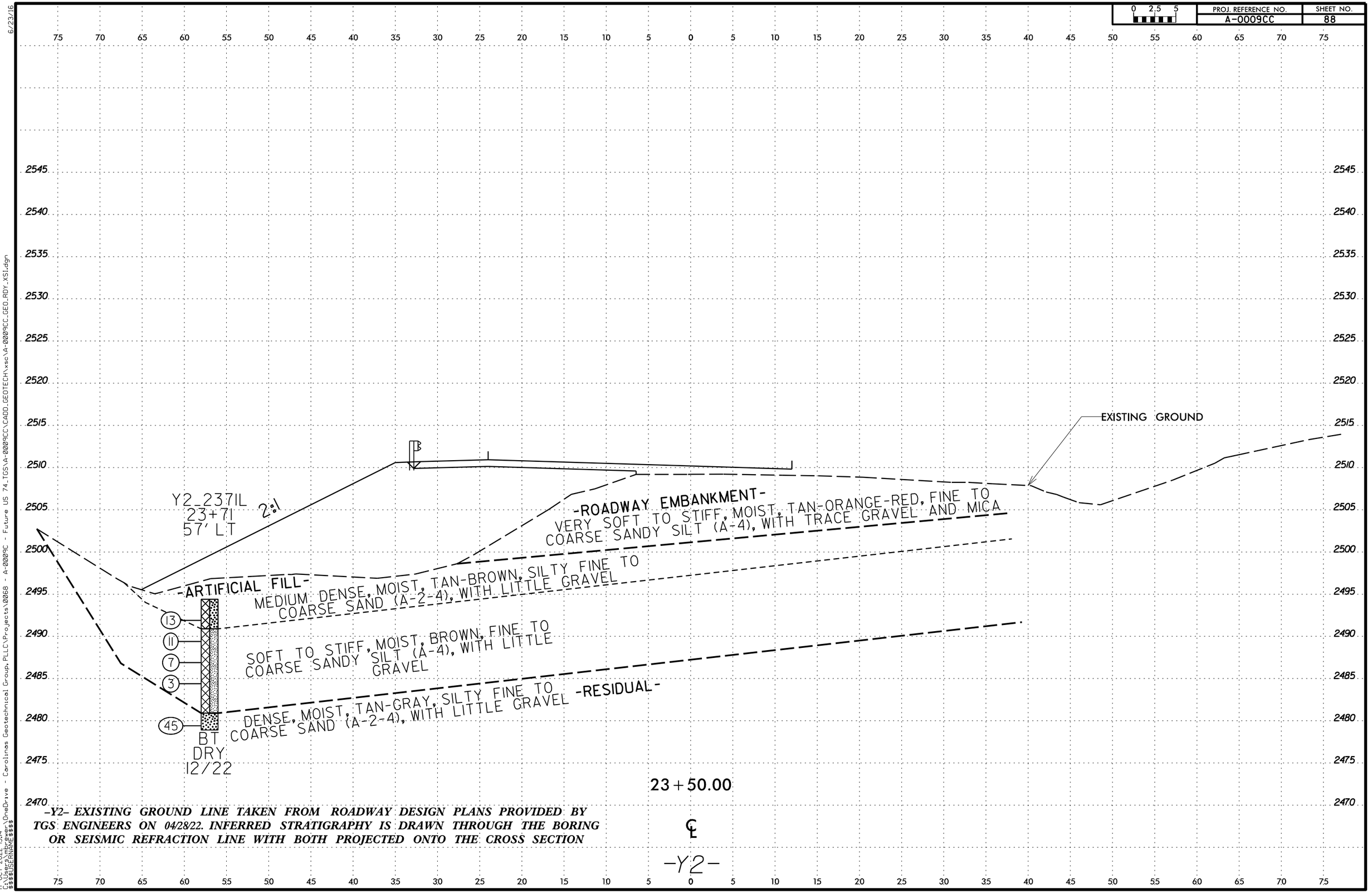
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23+50.00

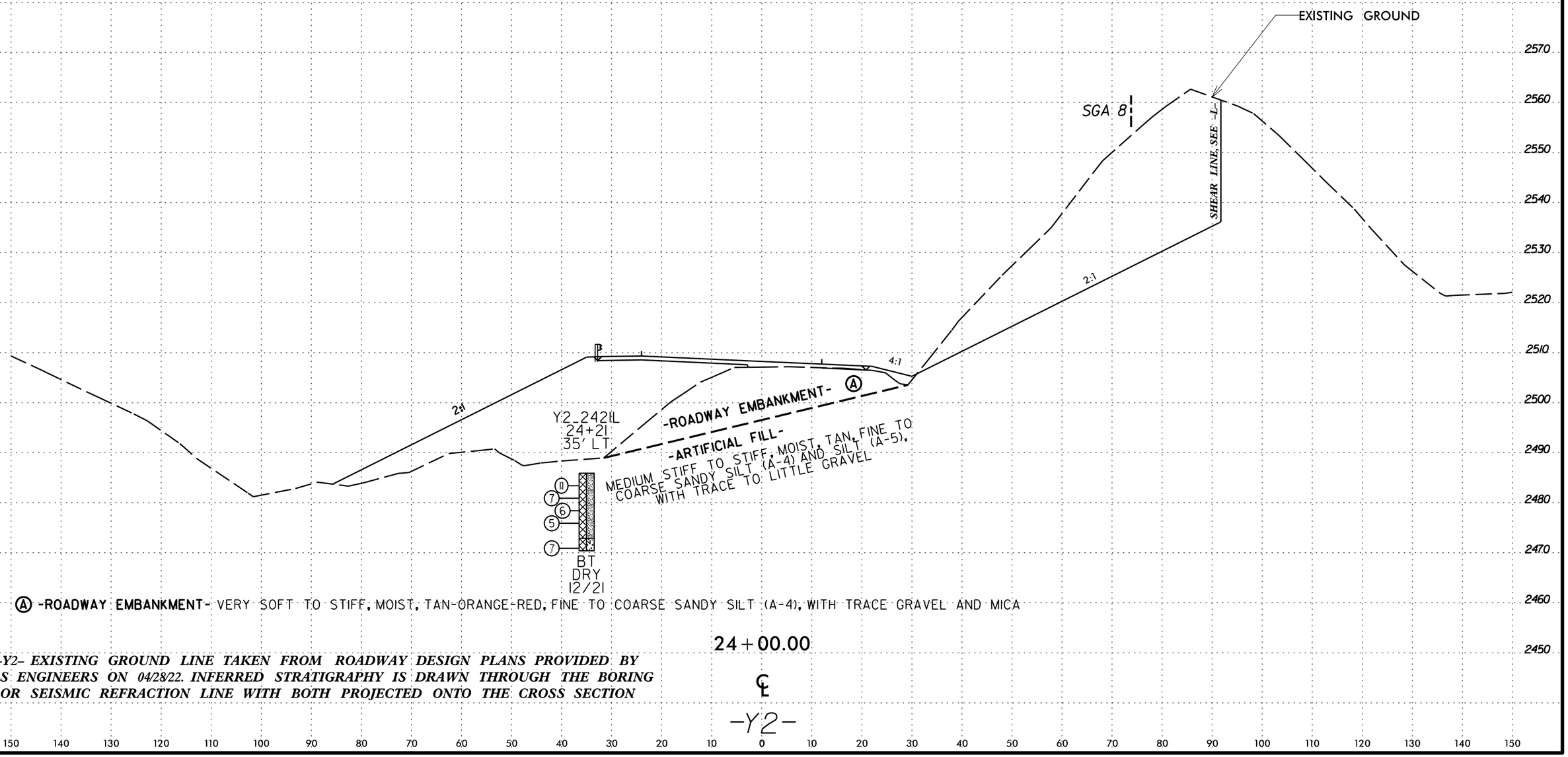
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-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



Ⓐ **-ROADWAY EMBANKMENT-** VERY SOFT TO STIFF, MOIST, TAN-ORANGE-RED, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL AND MICA

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

24+00.00

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-Y2-

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NOTE:
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EXISTING GROUND

SGA 8

-RESIDUAL- STIFF TO HARD, TAN, FINE TO COARSE SANDY SILT (A-4)

2:1

4:1

-ROADWAY EMBANKMENT- VERY SOFT TO STIFF, MOIST, TAN-ORANGE-RED, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL AND MICA

-RESIDUAL- STIFF TO HARD, TAN, FINE TO COARSE SANDY SILT (A-4)

-ARTIFICIAL FILL- SOFT TO STIFF, BROWN, FINE TO COARSE SANDY SILT (A-4) AND SILTY CLAY (A-7), WITH LITTLE GRAVEL

Y2_2602L
26+02
154' LT

3
12
9
36
12/22
BT
Ⓐ

Ⓐ -COLLUVIAL- SOFT TO STIFF, BROWN, FINE TO COARSE SANDY SILT (A-4) AND SILTY CLAY (A-7), WITH LITTLE GRAVEL

26+00.00

℄

-Y2-

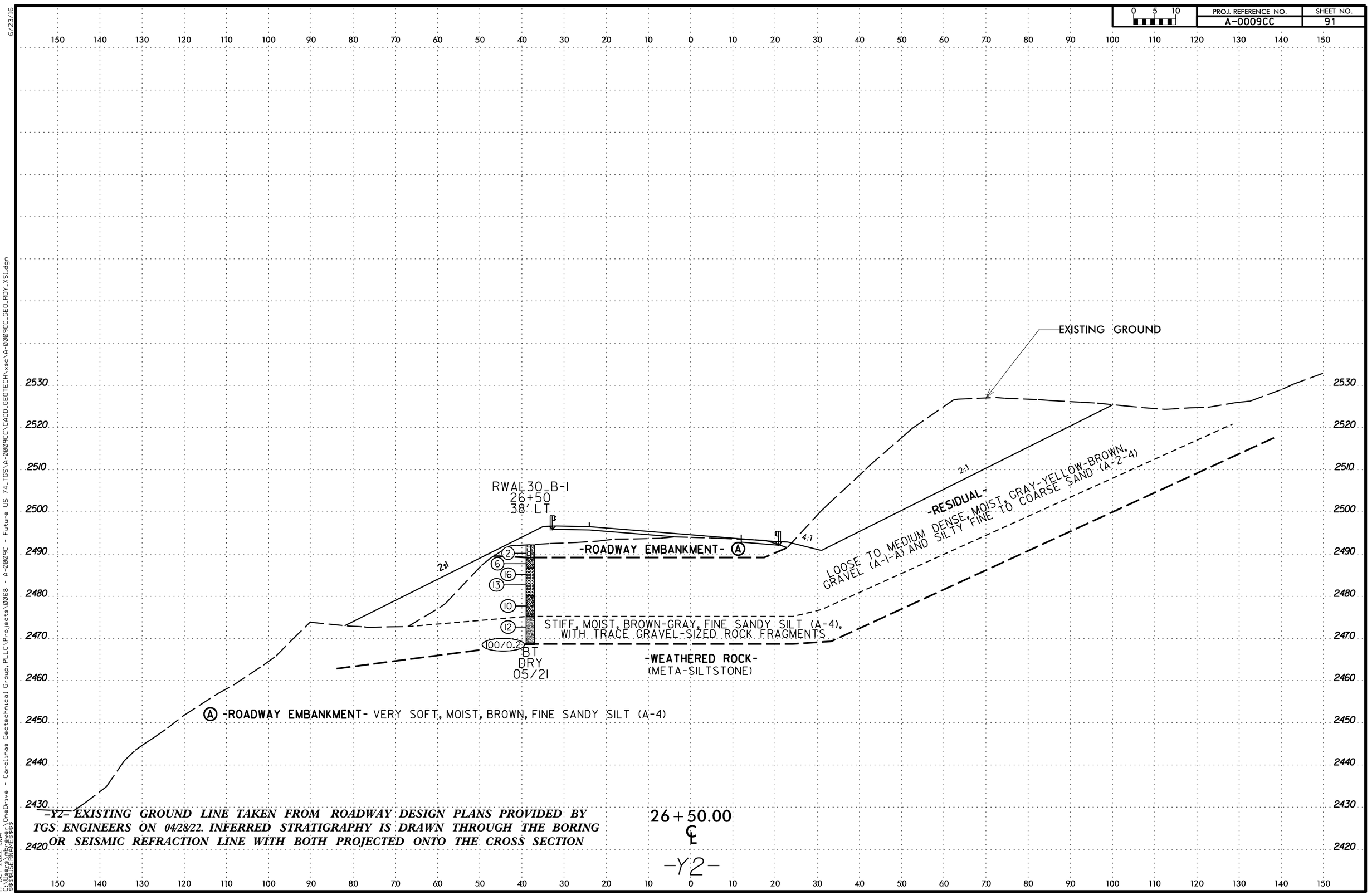
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2560 2550 2540 2530 2520 2510 2500 2490 2480 2470 2460 2450 2440 2430 2420 2410

160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

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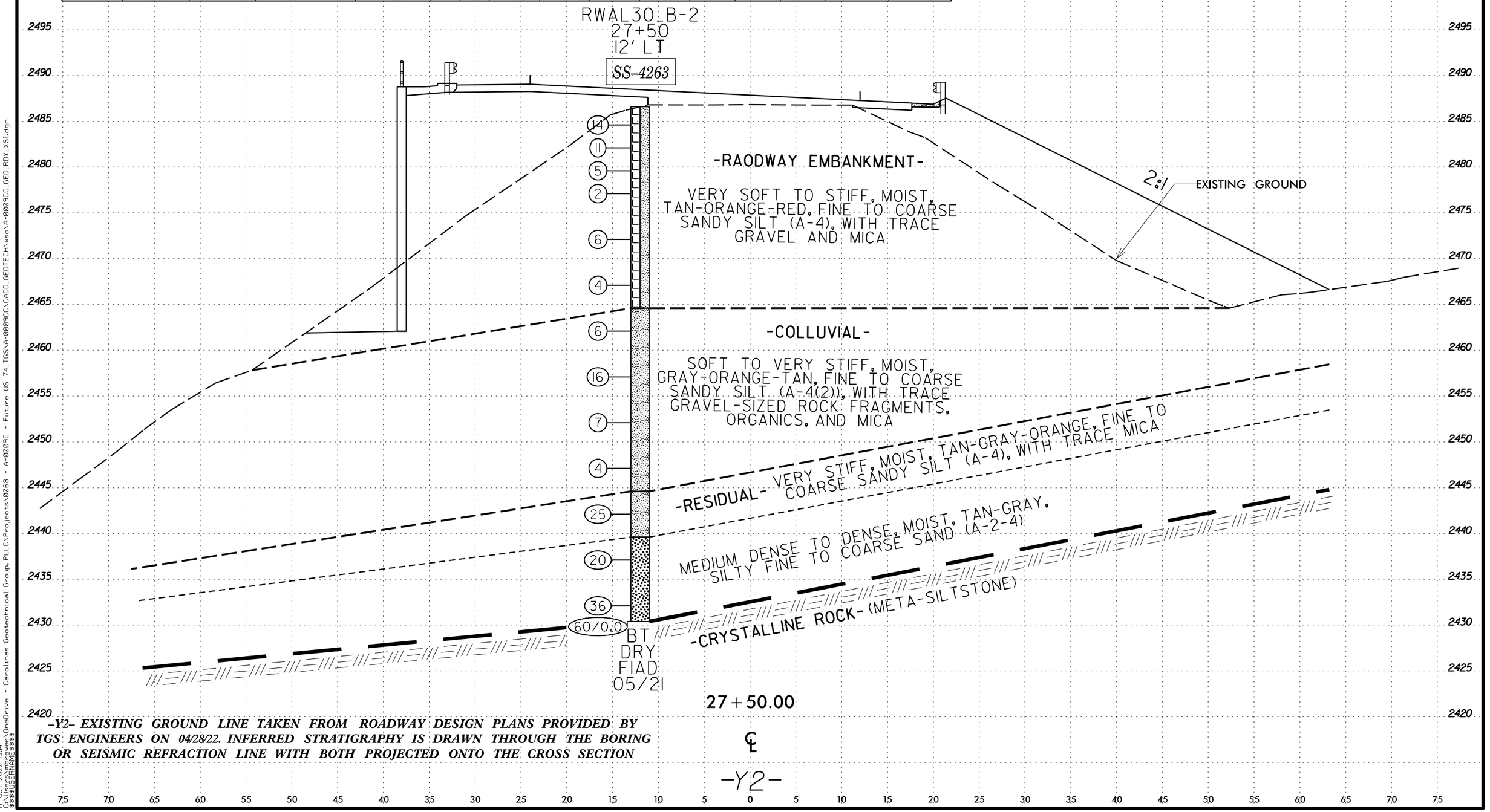
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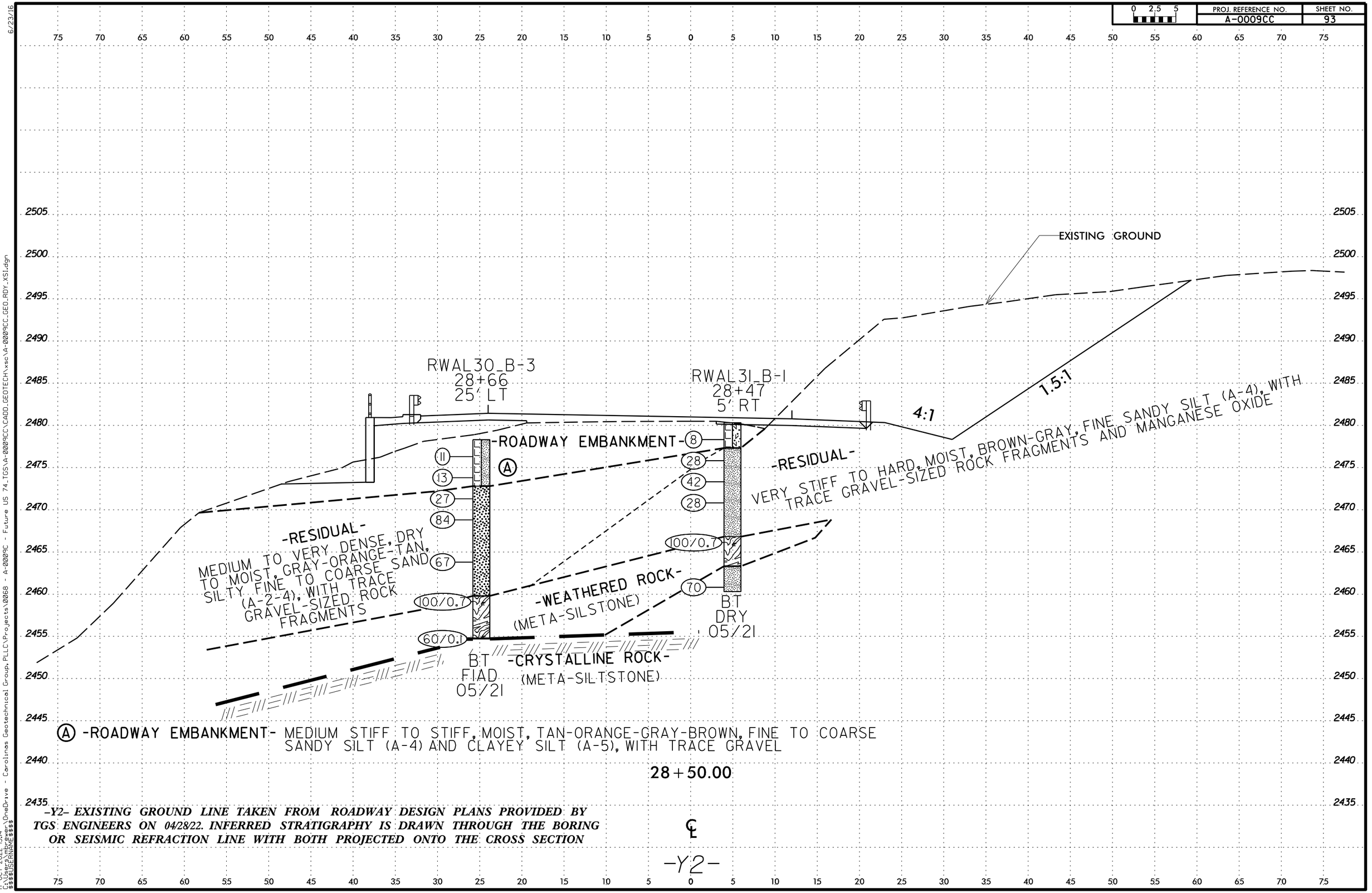
SOIL TEST RESULTS

SAMPLE NO.	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		
SS-4263	12' LT	27+50 -Y2-	38.5' - 40.0'	A-4(2)	36	2	12	25	36	27	93	85	69	36	-



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$



Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF TO STIFF, MOIST, TAN-ORANGE-GRAY-BROWN, FINE TO COARSE SANDY SILT (A-4) AND CLAYEY SILT (A-5), WITH TRACE GRAVEL

28+50.00

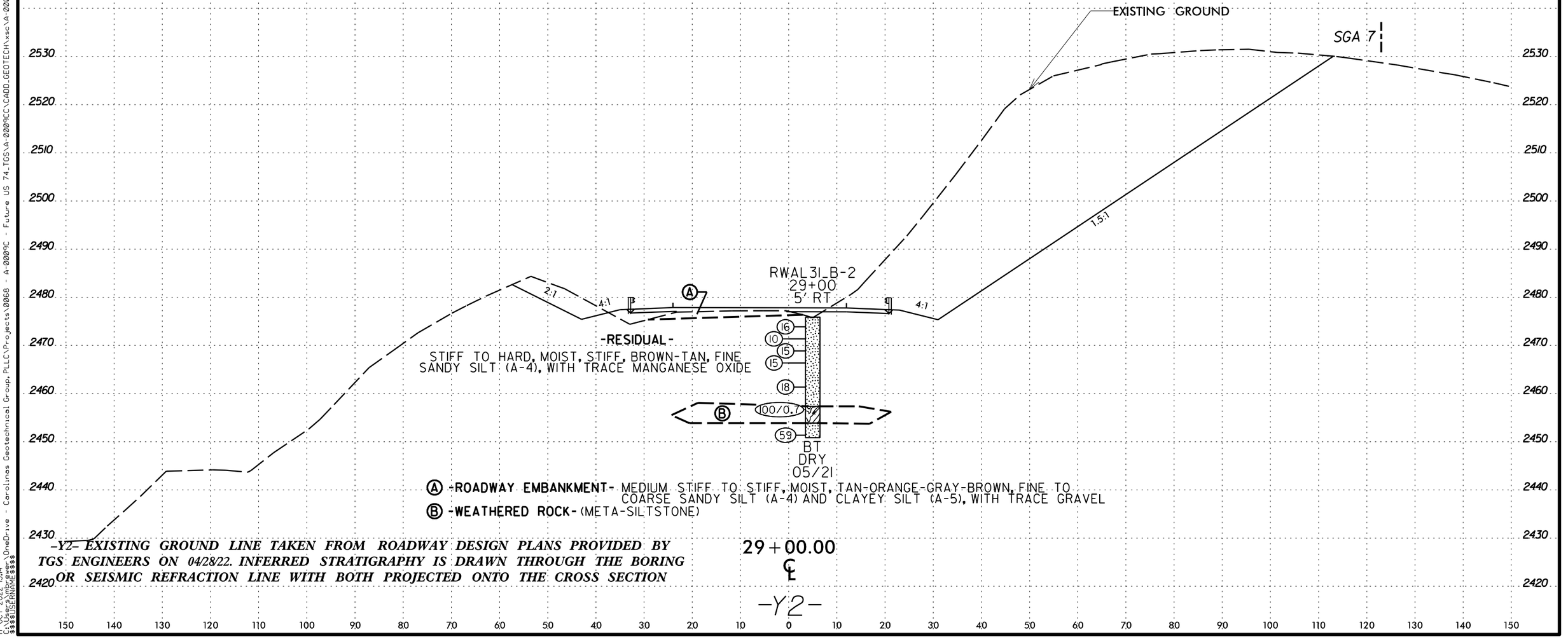
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-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



Ⓐ **-ROADWAY EMBANKMENT-** MEDIUM STIFF TO STIFF, MOIST, TAN-ORANGE-GRAY-BROWN, FINE TO COARSE SANDY SILT (A-4) AND CLAYEY SILT (A-5), WITH TRACE GRAVEL

Ⓑ **-WEATHERED ROCK-** (META-SILTSTONE)

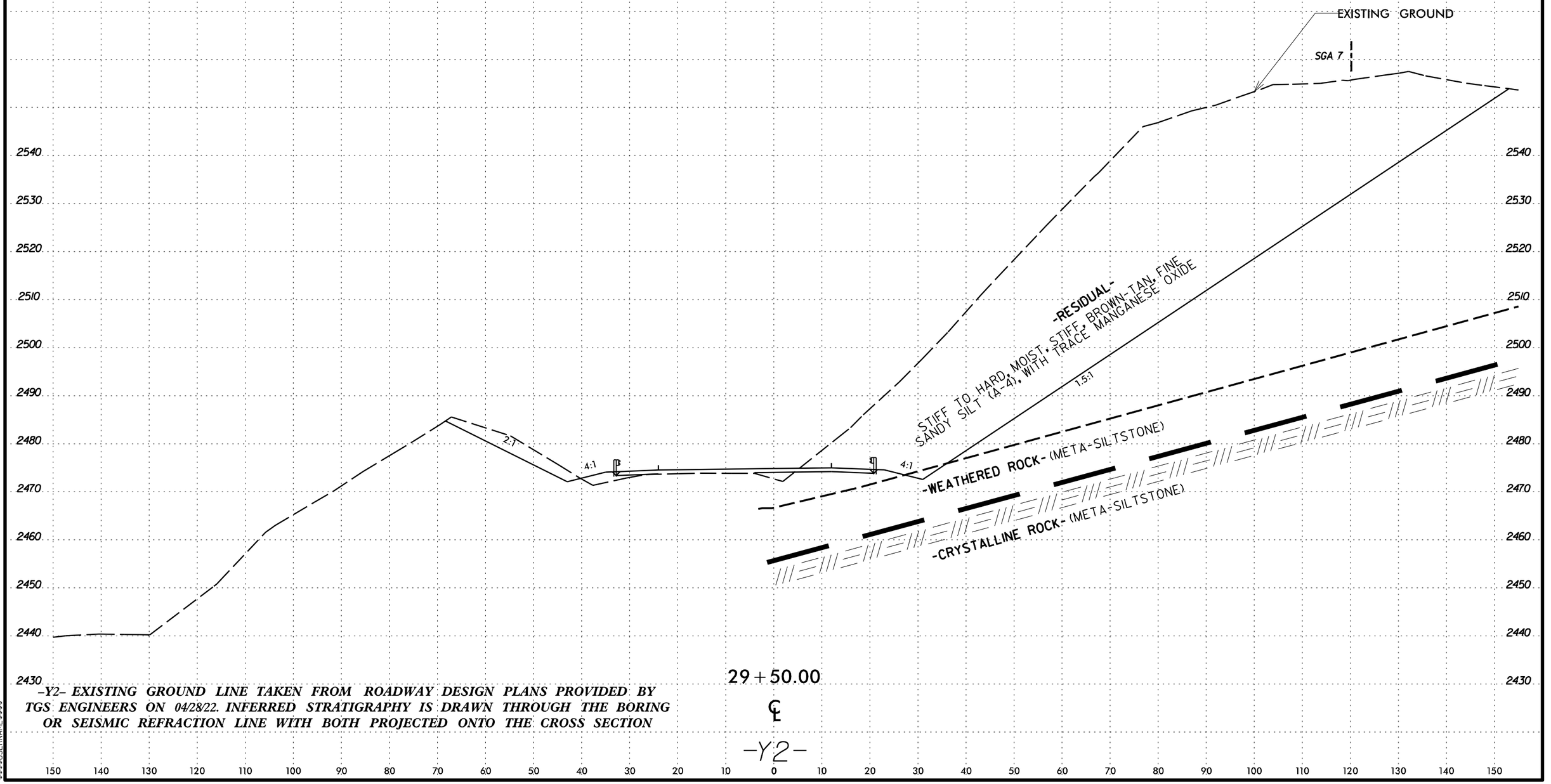
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29+00.00
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-Y2-

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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

NOTE:
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

29+50.00

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-Y2-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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NOTE:
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EXISTING GROUND

SGA 7

RWAL31_B-3
30+00
4' LT

-RESIDUAL-
MEDIUM STIFF, MOIST, BROWN-GRAY, FINE SANDY SILT (A-4), WITH TRACE MANGANESE OXIDE

-WEATHERED ROCK-
(META-SILTSTONE)

-RESIDUAL- HARD, MOIST, BROWN-GRAY, FINE SANDY SILT (A-4)

-WEATHERED ROCK-
(META-SILTSTONE)

-CRYSTALLINE ROCK-
(META-SILTSTONE)

2:1

4:1

31 | 6 | 100/0.7 | 100/0.4 | 60 | 100/0.3

BT
DRY
05/21

Ⓐ-ROADWAY EMBANKMENT-HARD, MOIST, BROWN, FINE SANDY SILT (A-4), WITH TRACE GRAVEL

30+00.00

℄

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-Y2-

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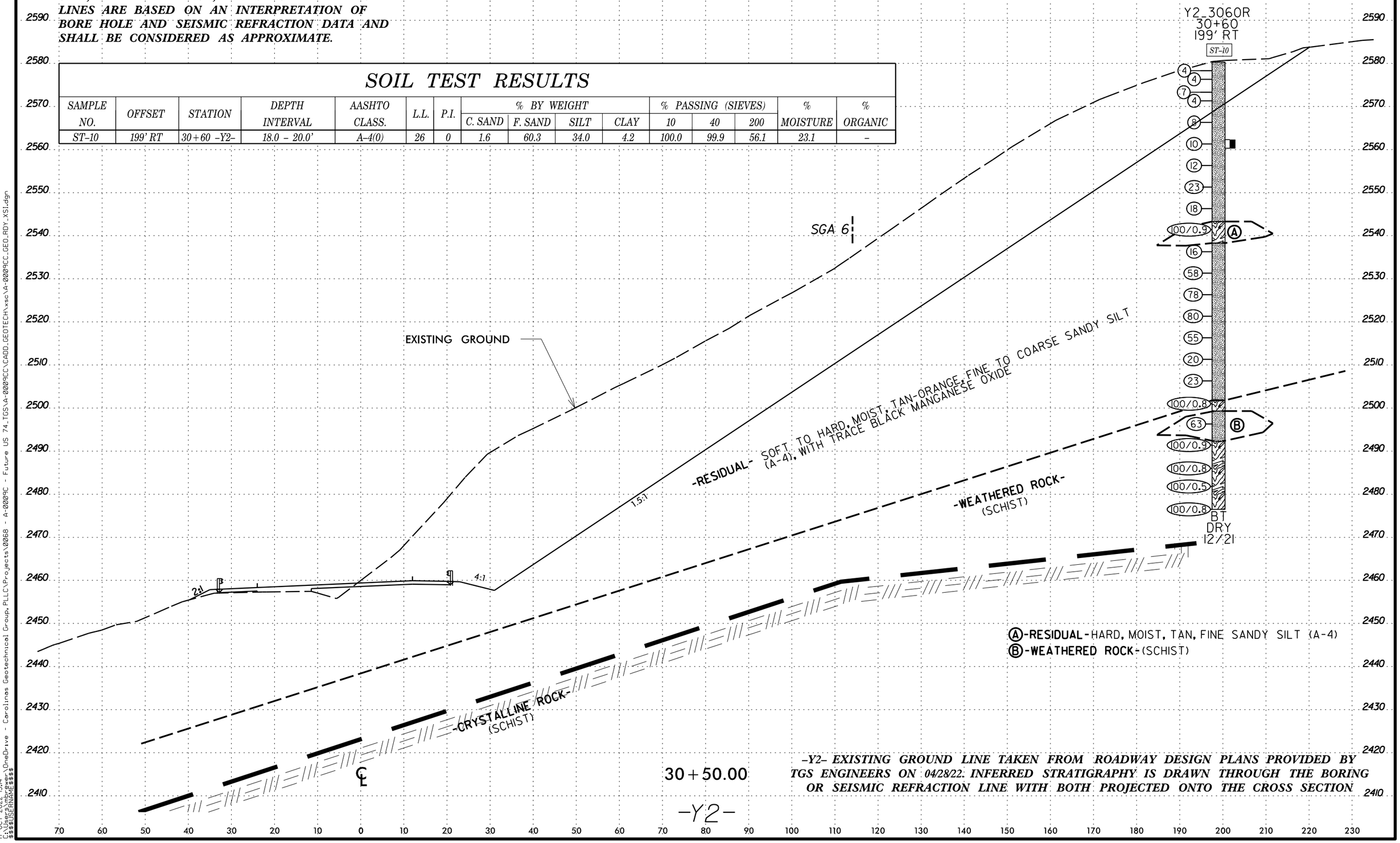
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SOIL TEST RESULTS

SAMPLE NO.	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		
ST-10	199' RT	30+60 -Y2-	18.0 - 20.0'	A-4(0)	26	0	1.6	60.3	34.0	4.2	100.0	99.9	56.1	23.1	-

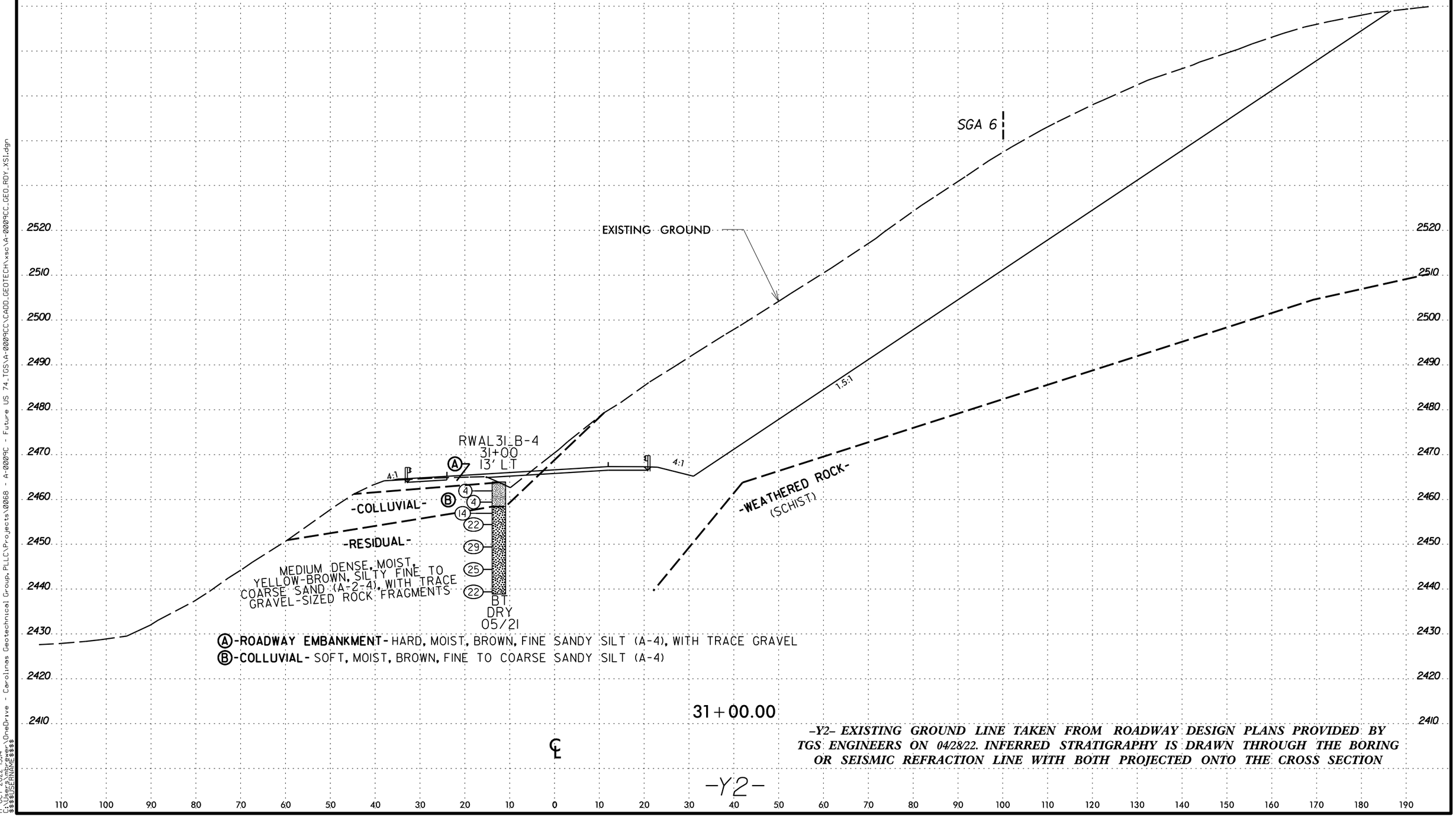


Ⓐ-**RESIDUAL-** HARD, MOIST, TAN, FINE SANDY SILT (A-4)
Ⓑ-**WEATHERED ROCK-** (SCHIST)

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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NOTE:
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Ⓐ**-ROADWAY EMBANKMENT-** HARD, MOIST, BROWN, FINE SANDY SILT (A-4), WITH TRACE GRAVEL
Ⓑ**-COLLUVIAL-** SOFT, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-4)

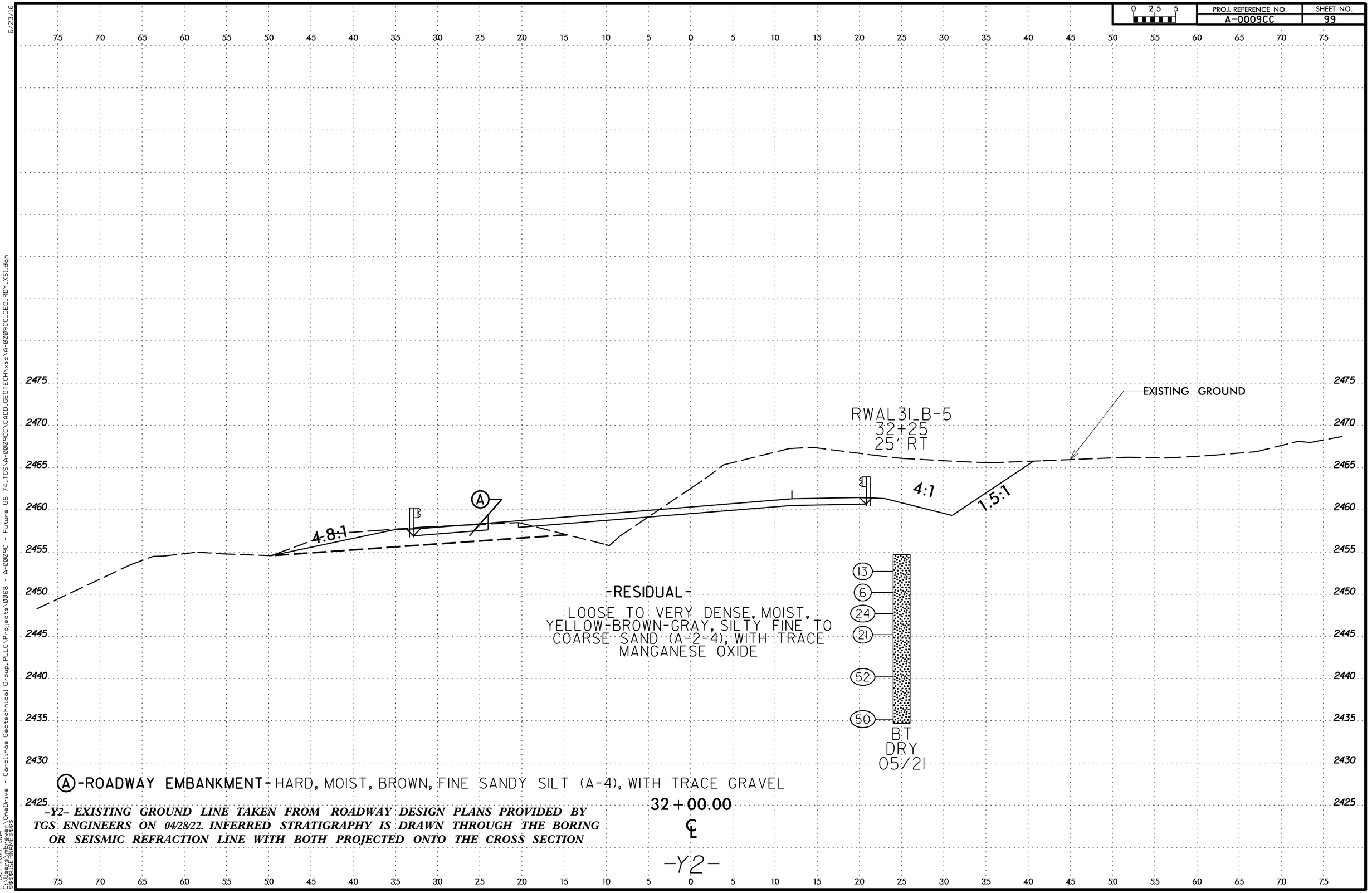
31+00.00

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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-Y2-

6/23/16
17-OCT-2022 13:14
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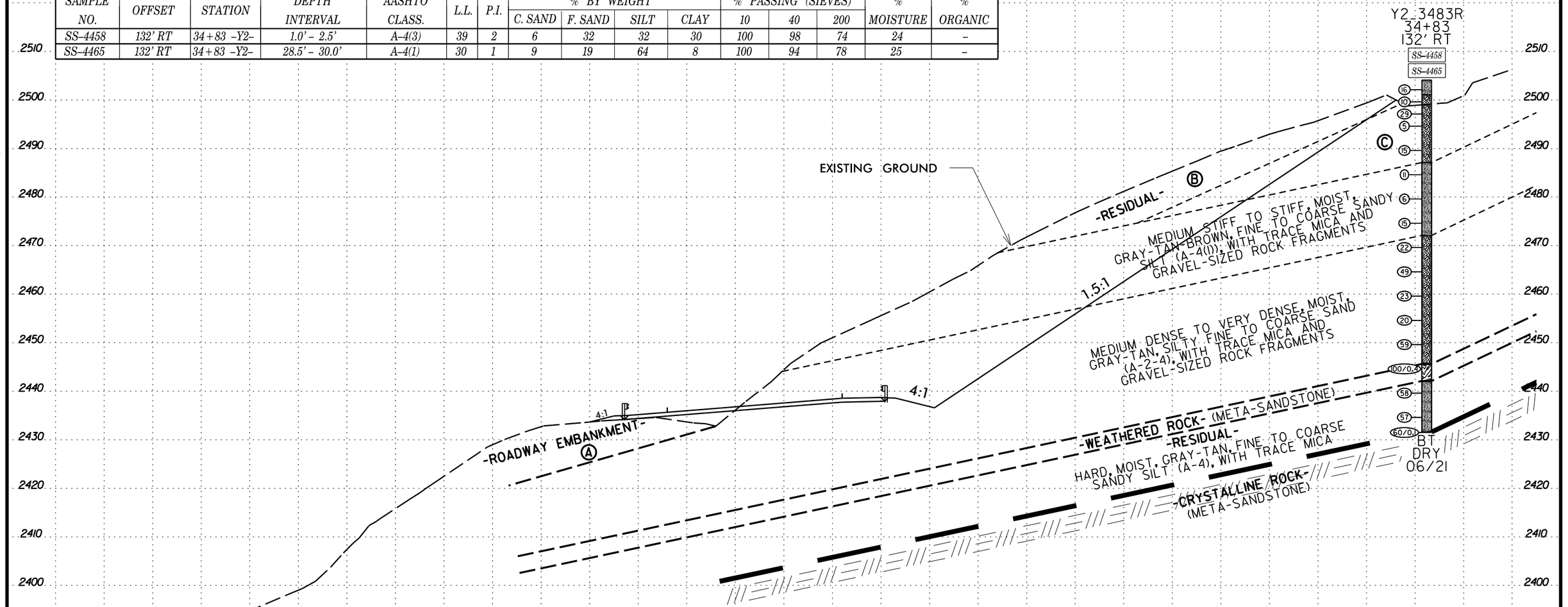


-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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17-OCT-2022 13:14
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SOIL TEST RESULTS

SAMPLE NO.	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		
SS-4458	132' RT	34+83 -Y2-	1.0' - 2.5'	A-4(3)	39	2	6	32	32	30	100	98	74	24	-
SS-4465	132' RT	34+83 -Y2-	28.5' - 30.0'	A-4(1)	30	1	9	19	64	8	100	94	78	25	-



Ⓐ-**ROADWAY EMBANKMENT-** HARD, MOIST, BROWN, FINE SANDY SILT (A-4), WITH TRACE GRAVEL
Ⓑ-**RESIDUAL-** VERY STIFF, MOIST, ORANGE-TAN, FINE SANDY SILT (A-4(3))
Ⓒ-**RESIDUAL-** LOOSE TO MEDIUM DENSE, DRY TO MOIST, TAN-GRAY-ORANGE, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

35+00.00
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-Y2-

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
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2430
2425
2420
2415
2410
2405
2400
2395

Y2_3700
37+00
CL

4:1

4:1

EXISTING GROUND

-ROADWAY EMBANKMENT-
HARD, MOIST, BROWN, FINE SANDY SILT (A-4), WITH TRACE GRAVEL

SOFT TO MEDIUM STIFF, MOIST, BROWN-TAN, FINE TO COARSE SANDY, CLAYEY SILT (A-5), WITH TRACE ORGANICS

MEDIUM STIFF TO VERY STIFF, MOIST, TAN-BROWN-GRAY, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

-COLLUVIAL-

-RESIDUAL-

3
5
5
25

BT
DRY
06/21

37+00.00

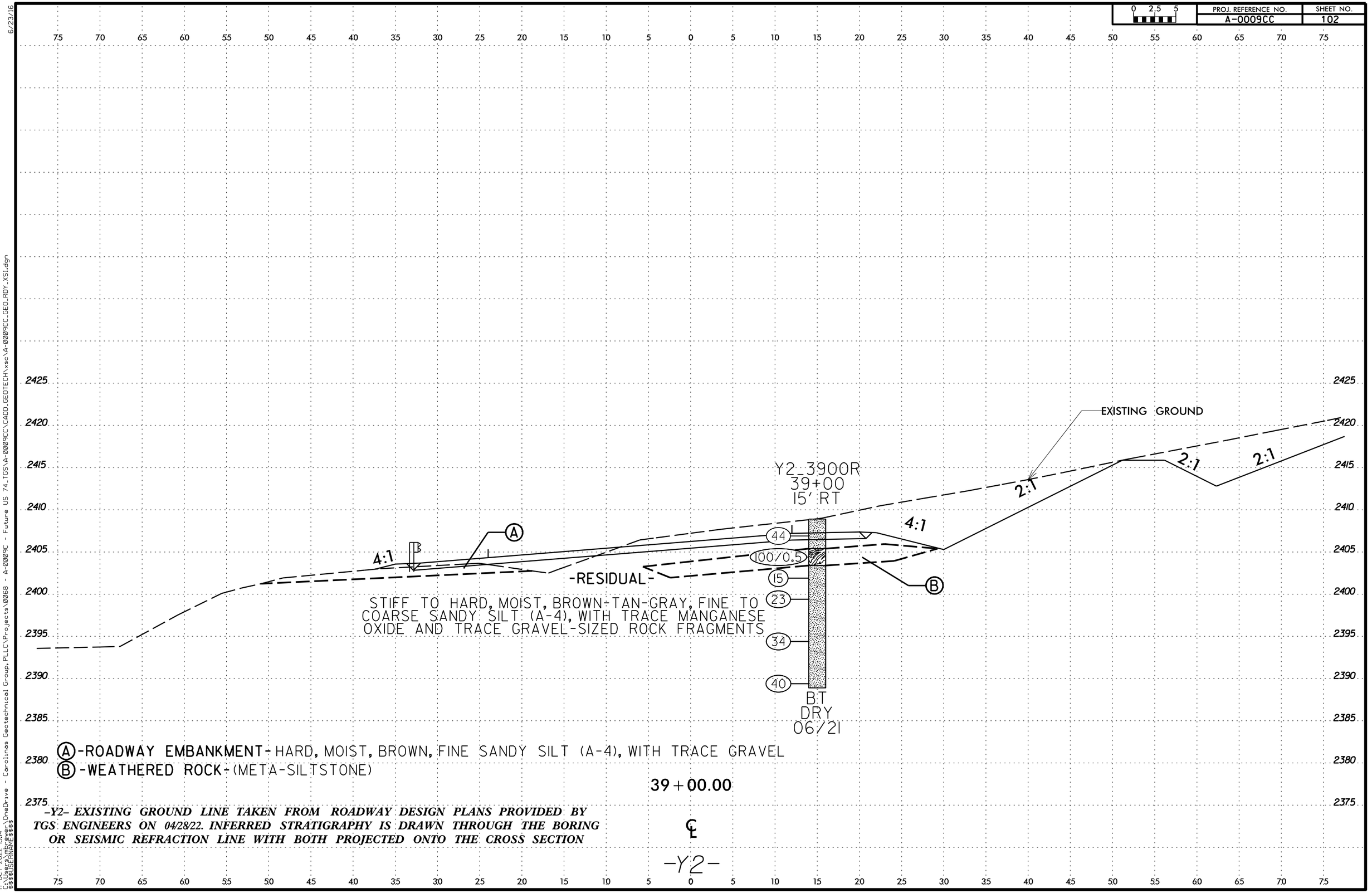
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-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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	A-0009CC	102



Ⓐ-ROADWAY EMBANKMENT- HARD, MOIST, BROWN, FINE SANDY SILT (A-4), WITH TRACE GRAVEL

Ⓑ-WEATHERED ROCK- (META-SILTSTONE)

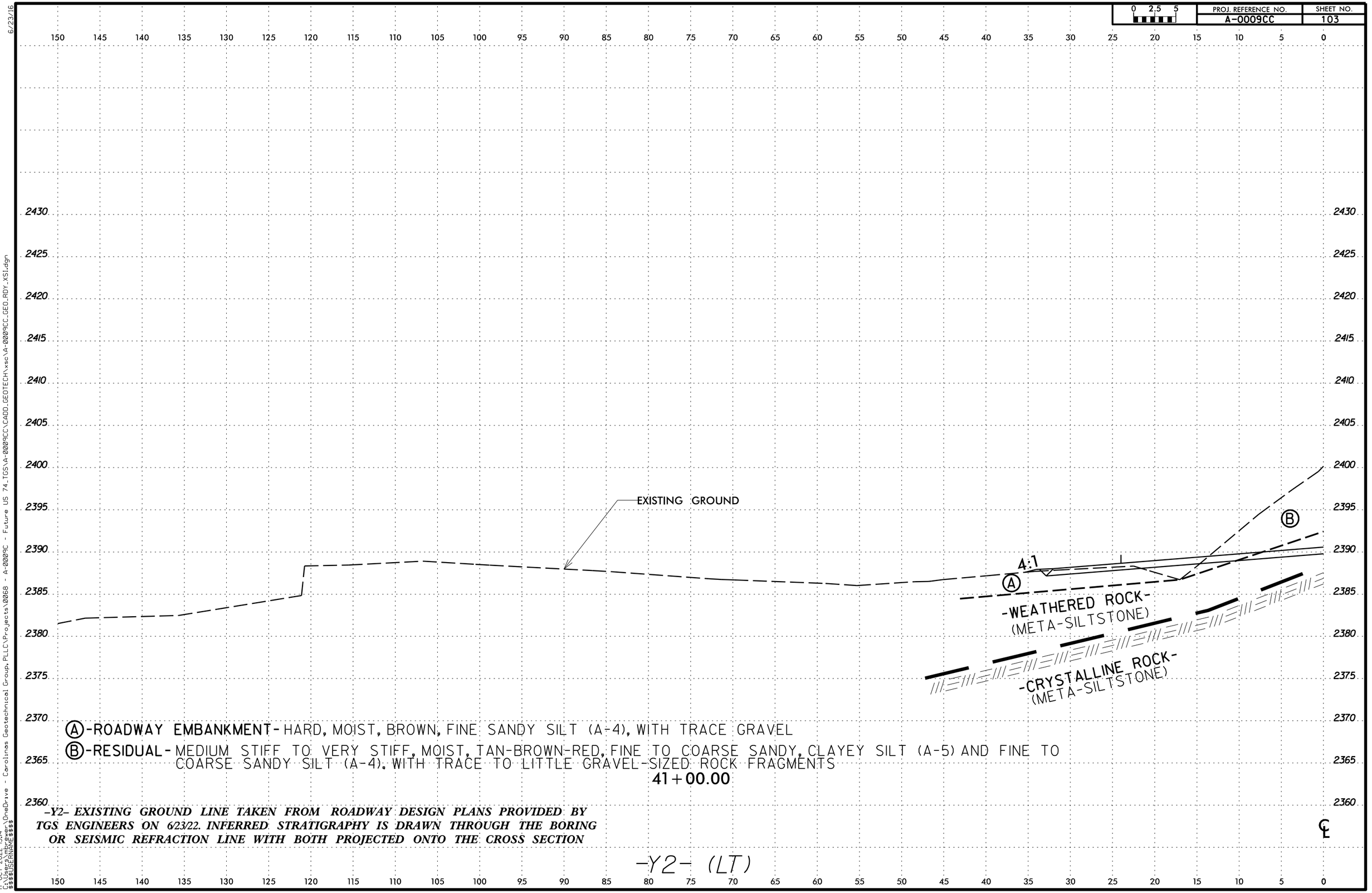
39+00.00

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-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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–Y2– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 6/23/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

–Y2– (LT)

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PROJ. REFERENCE NO.	SHEET NO.
A-0009CC	104

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-1098	130' RT	41+00 -Y2-	6.0' - 7.5'	A-4(1)	32	3	14	28	31	27	92	85	61	24	-

Y2_4100R2
41+00
130' RT
SS-1098
28
6
9
10
17
16
23
BT
DRY
06/21

EXISTING GROUND

Y2_4100R
41+00
40' RT
6
14
13
16
100/0.8
60/0.0
BT
DRY
06/21

2:1
3:1
1.5:1
4:1

-RESIDUAL-
MEDIUM STIFF TO VERY STIFF, MOIST, TAN-BROWN-RED, FINE TO COARSE SANDY, CLAYEY SILT (A-5) AND FINE TO COARSE SANDY SILT (A-4), WITH TRACE TO LITTLE GRAVEL-SIZED ROCK FRAGMENTS

-WEATHERED ROCK- (META-SILTSTONE)

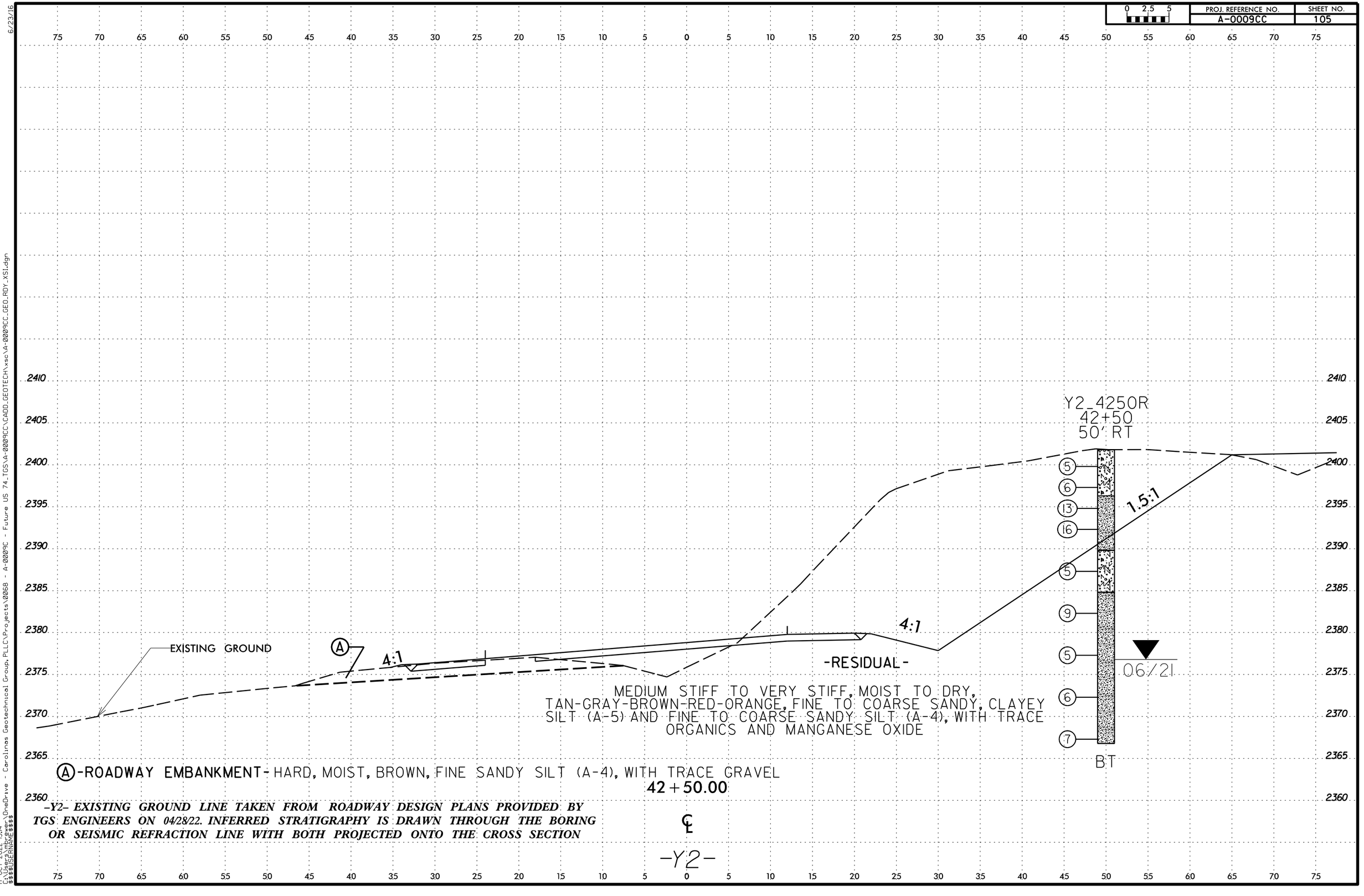
-CRYSTALLINE ROCK-
(META-SILTSTONE)

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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-Y2- (RT)

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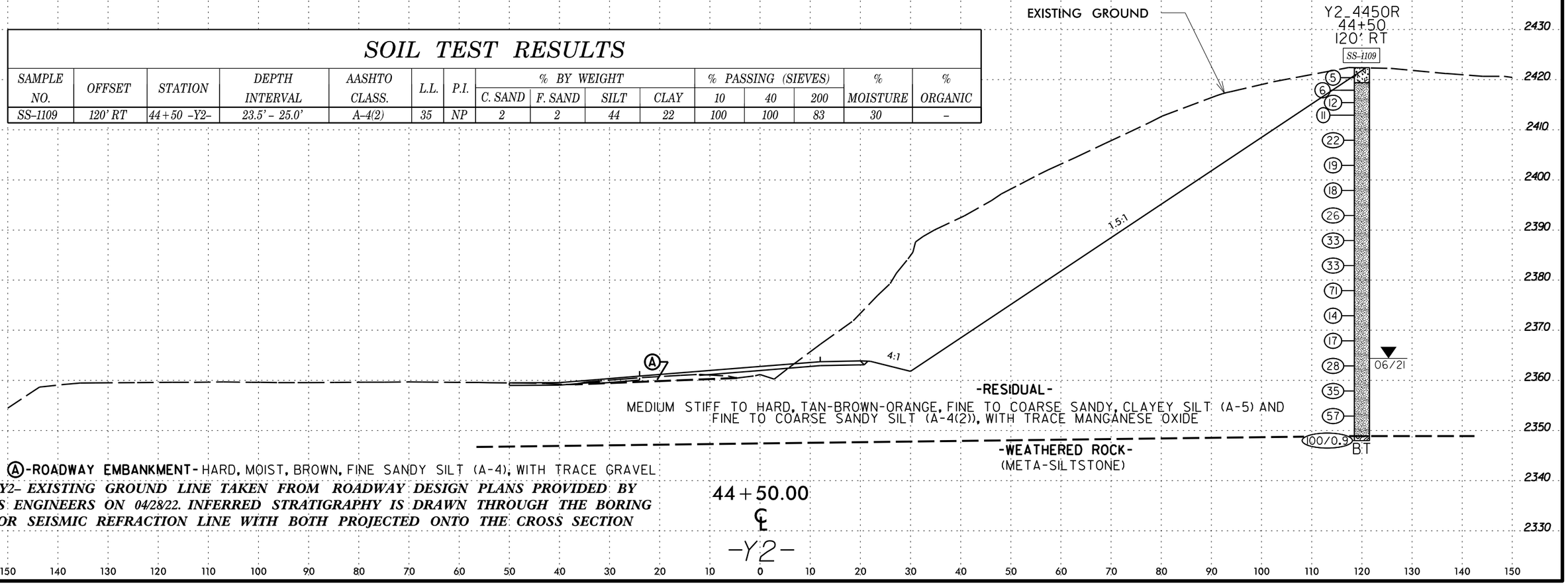


-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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SOIL TEST RESULTS

SAMPLE NO.	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		
SS-1109	120' RT	44+50 -Y2-	23.5' - 25.0'	A-4(2)	35	NP	2	2	44	22	100	100	83	30	-



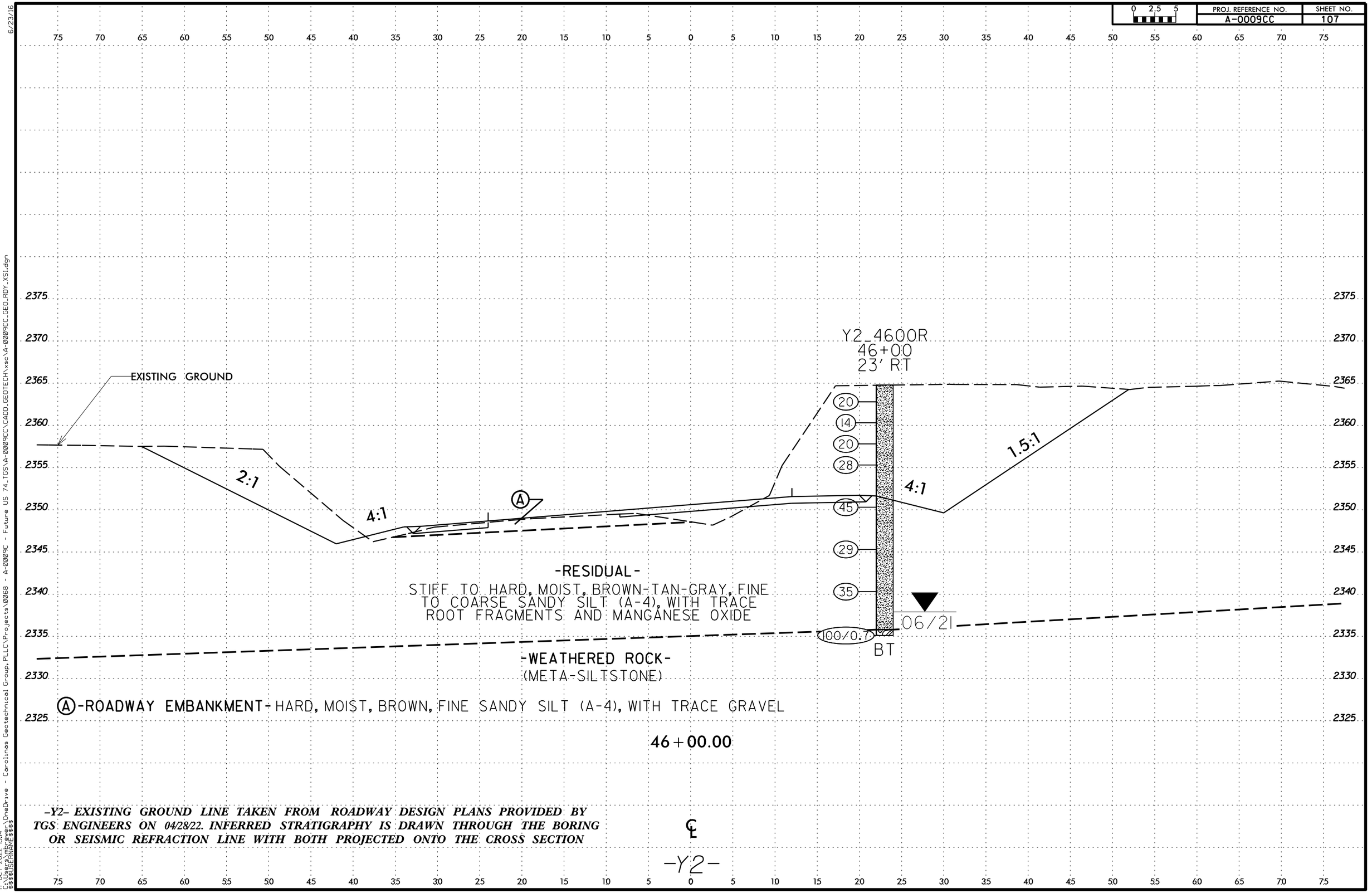
Ⓐ-ROADWAY EMBANKMENT- HARD, MOIST, BROWN, FINE SANDY SILT (A-4), WITH TRACE GRAVEL

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

44+50.00
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-Y2-

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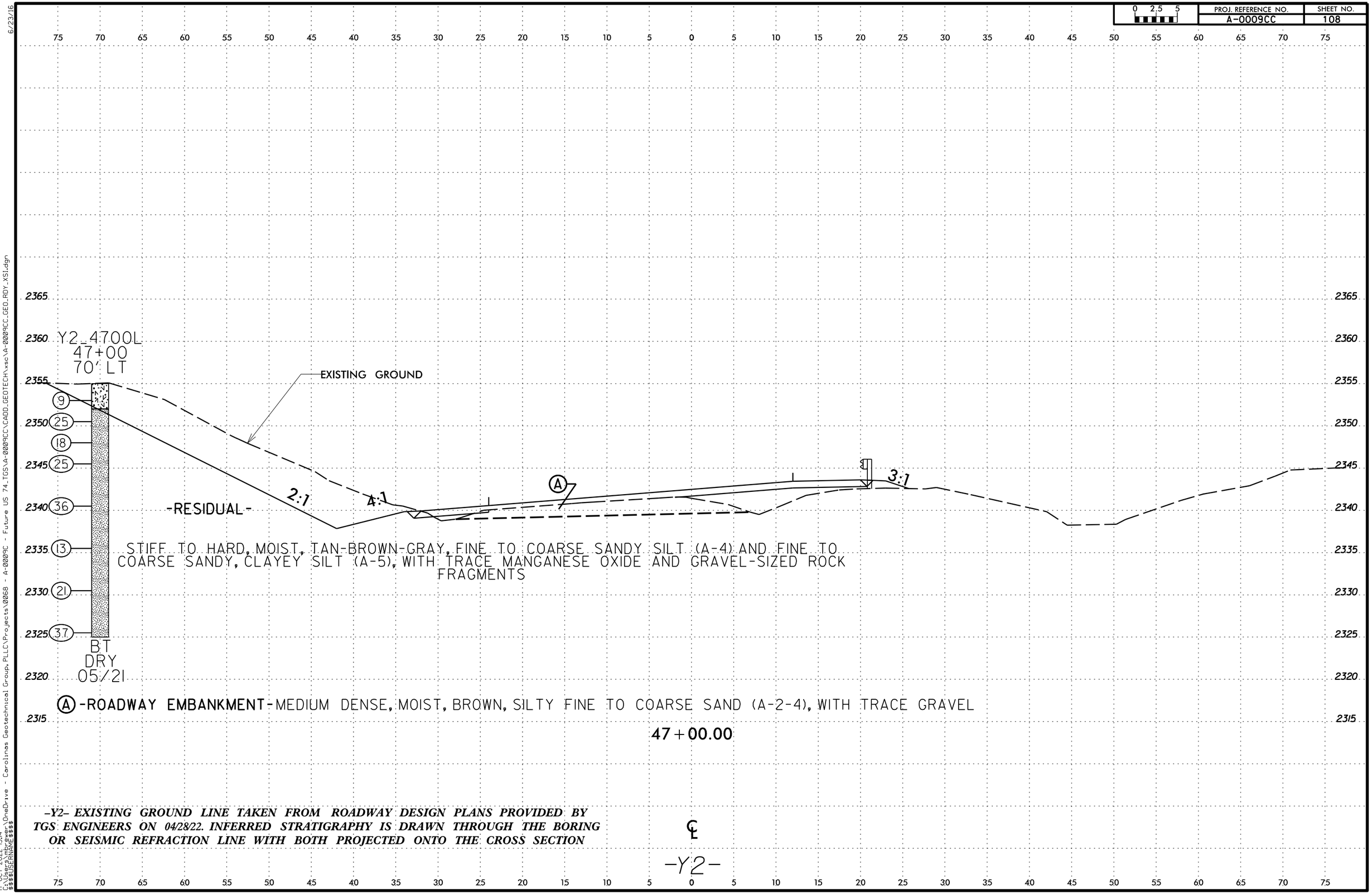
0 2.5 5



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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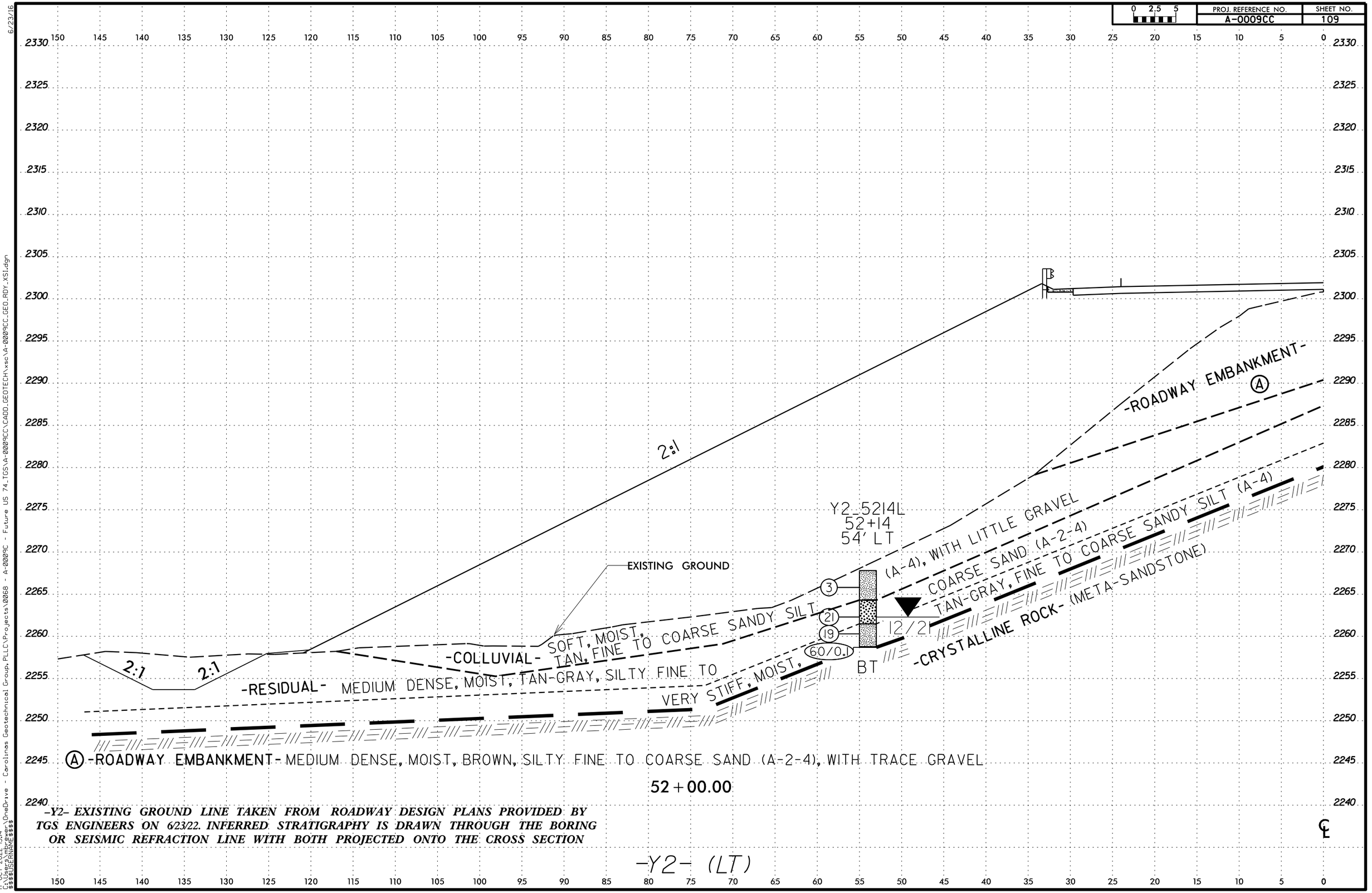
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6/23/16



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

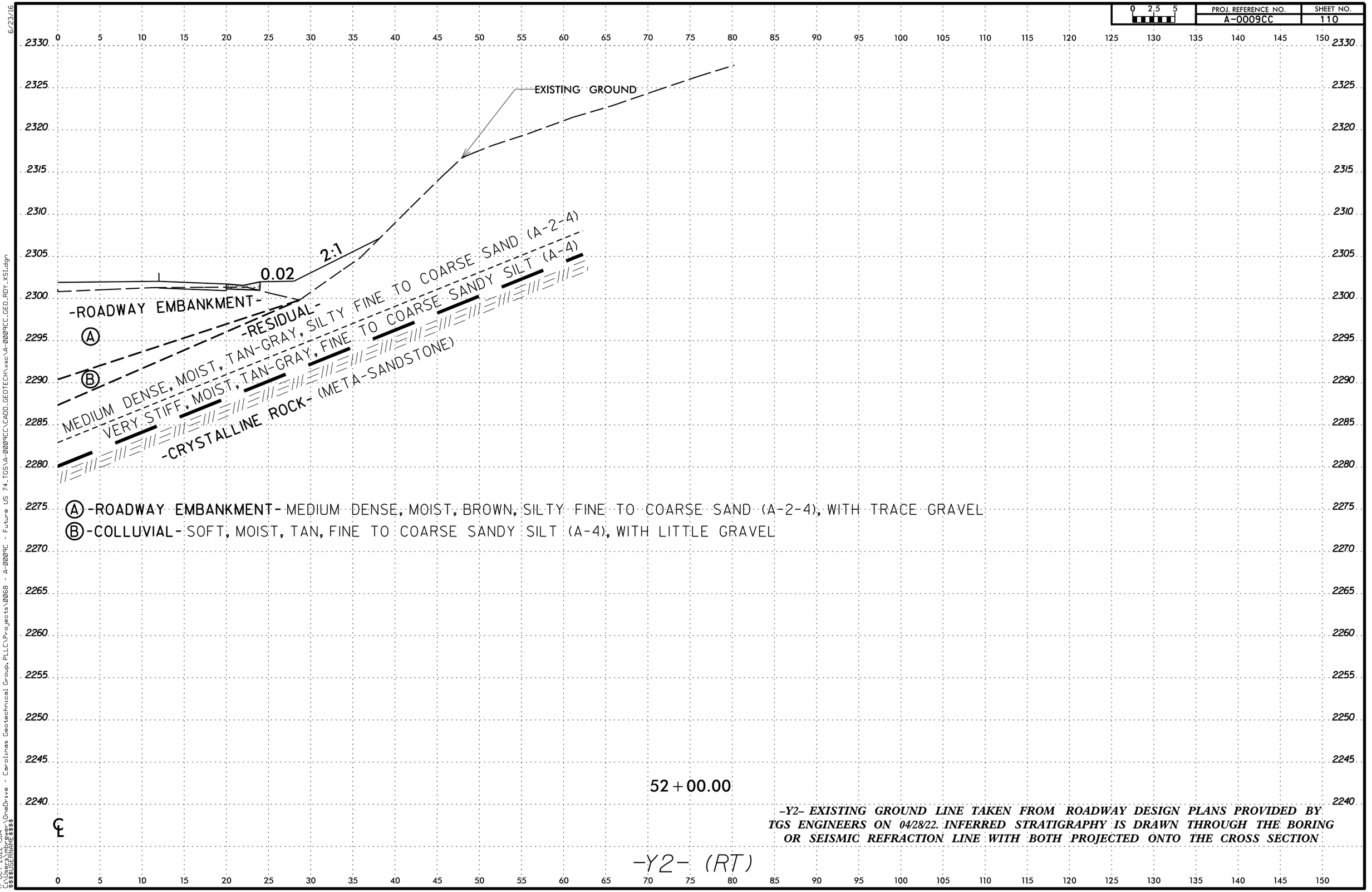
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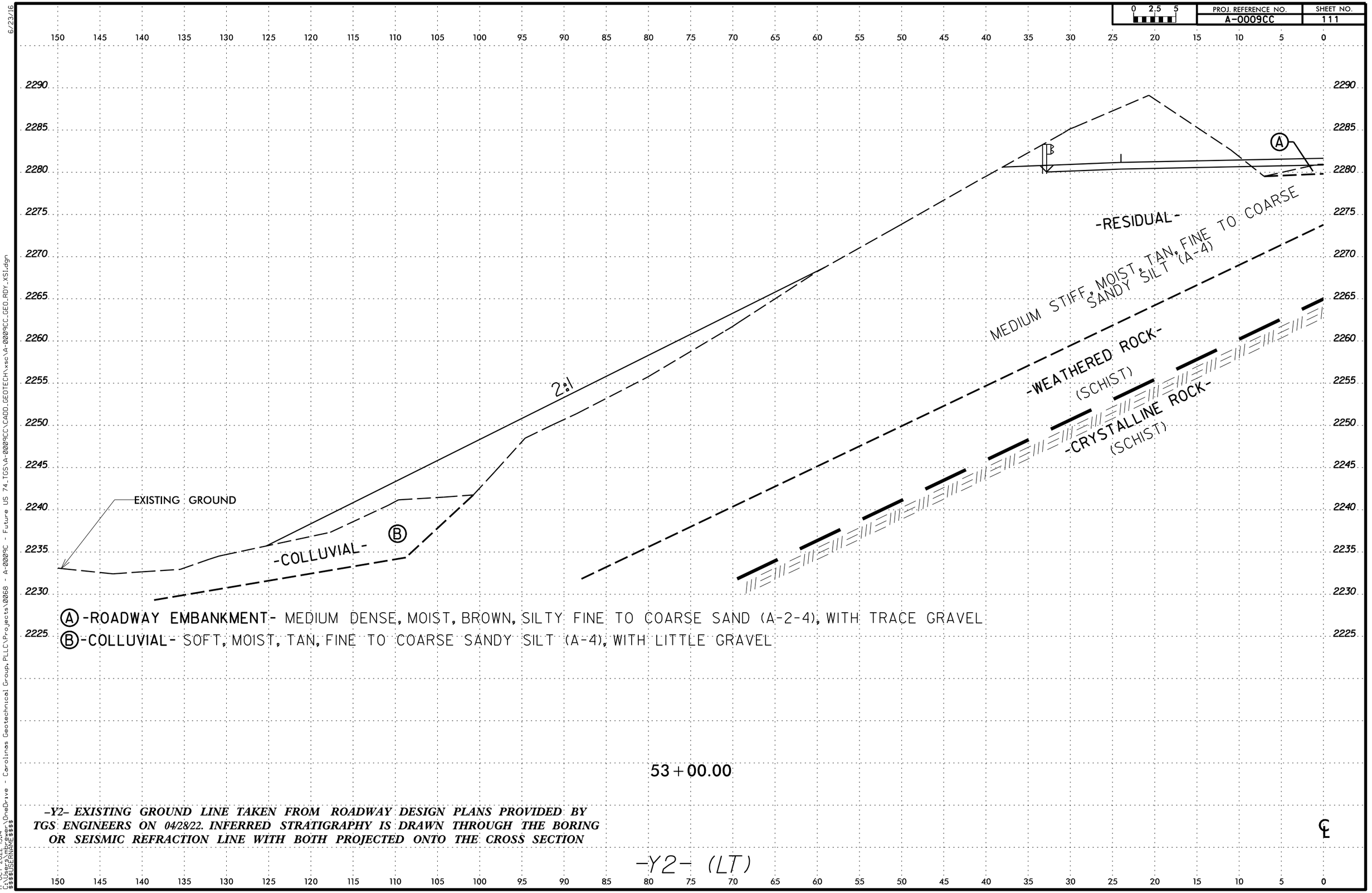
-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 6/23/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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Ⓐ-**ROADWAY EMBANKMENT**- MEDIUM DENSE, MOIST, BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

Ⓑ-**COLLUVIAL**- SOFT, MOIST, TAN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

53+00.00

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

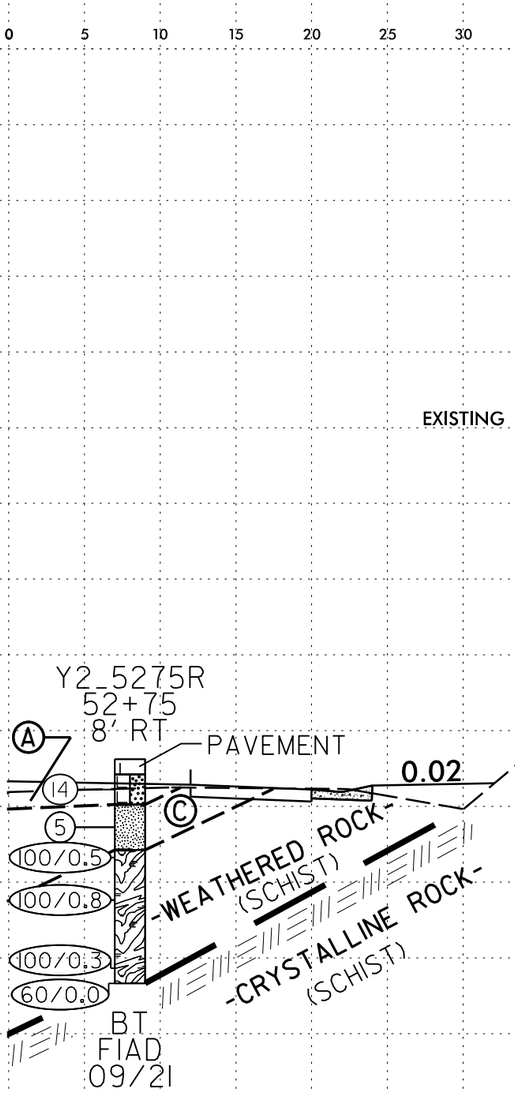
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-Y2- (LT)

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$$$$USERNAME$$$$

EXISTING GROUND

Y2_5275R
52+75
8' RT



Ⓐ-**ROADWAY EMBANKMENT**- MEDIUM DENSE, MOIST, BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

Ⓒ-**RESIDUAL**- MEDIUM STIFF, MOIST, TAN, FINE TO COARSE SANDY SILT (A-4)

53+00.00

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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-Y2- (RT)

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	113

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2335
2330
2325
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2315
2310
2305
2300
2295
2290
2285
2280
2275

EXISTING GROUND

40:1

4:1

0.02

CRYSTALLINE ROCK (SCHIST)

54+00.00

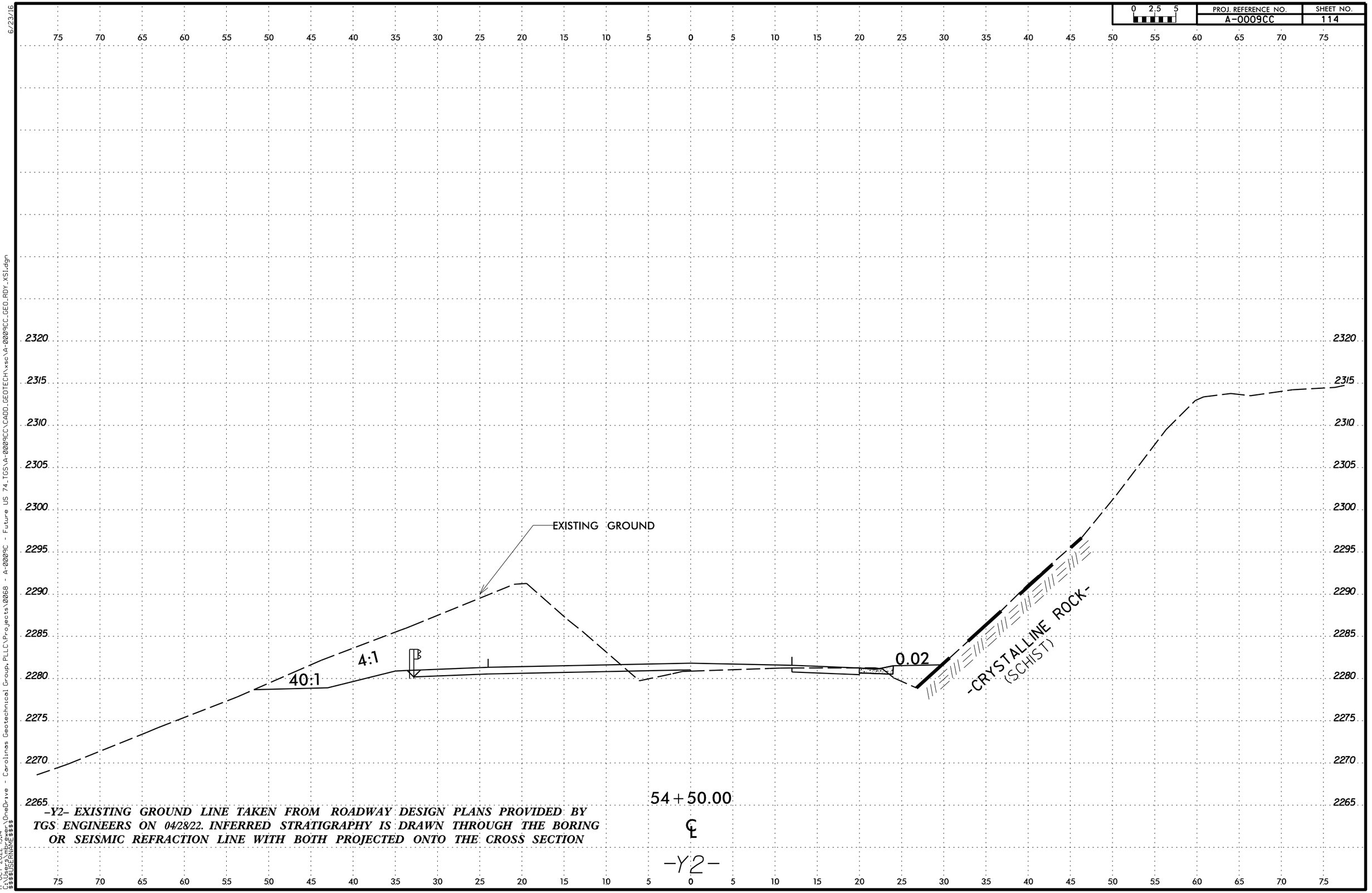
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

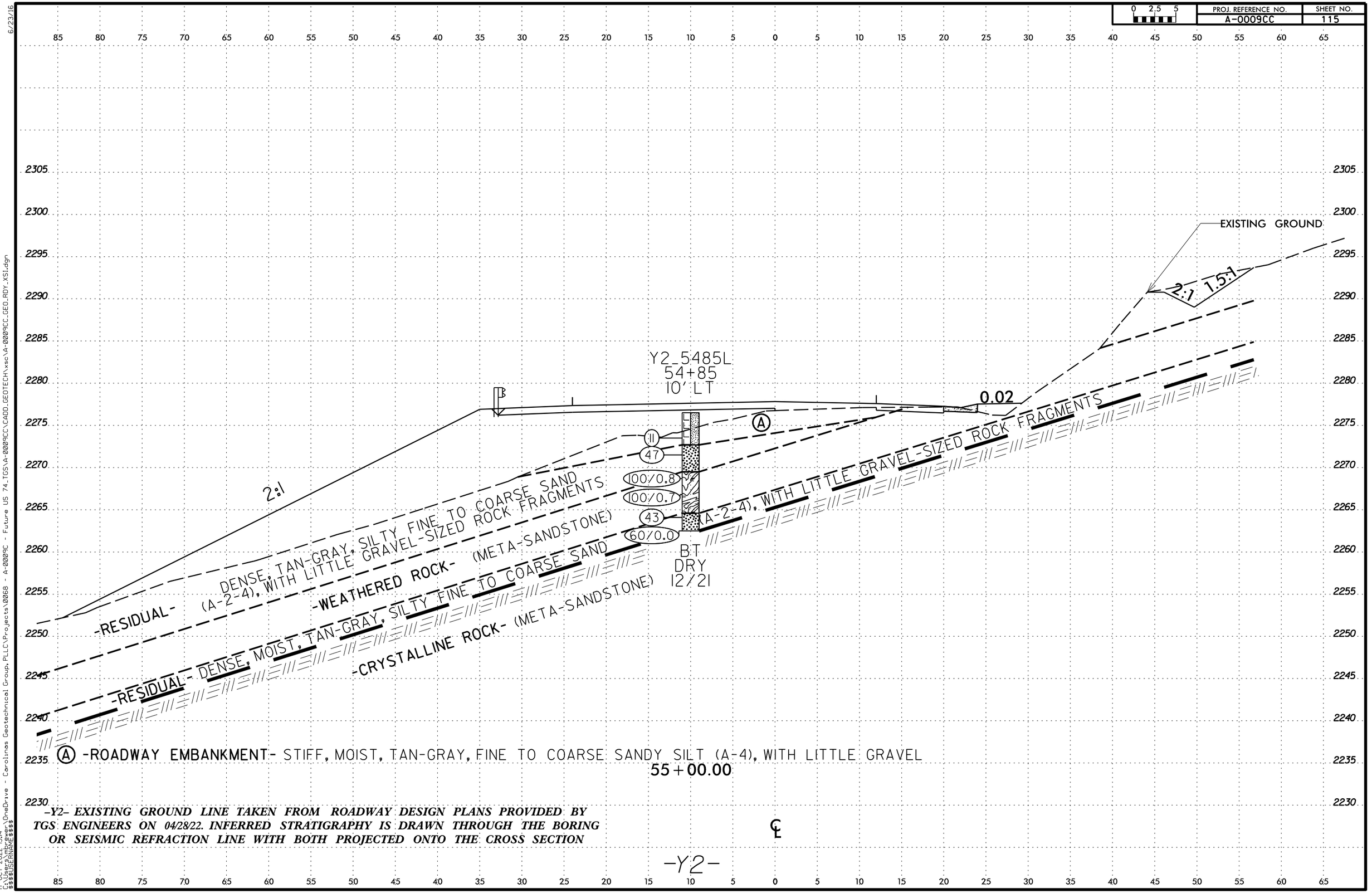
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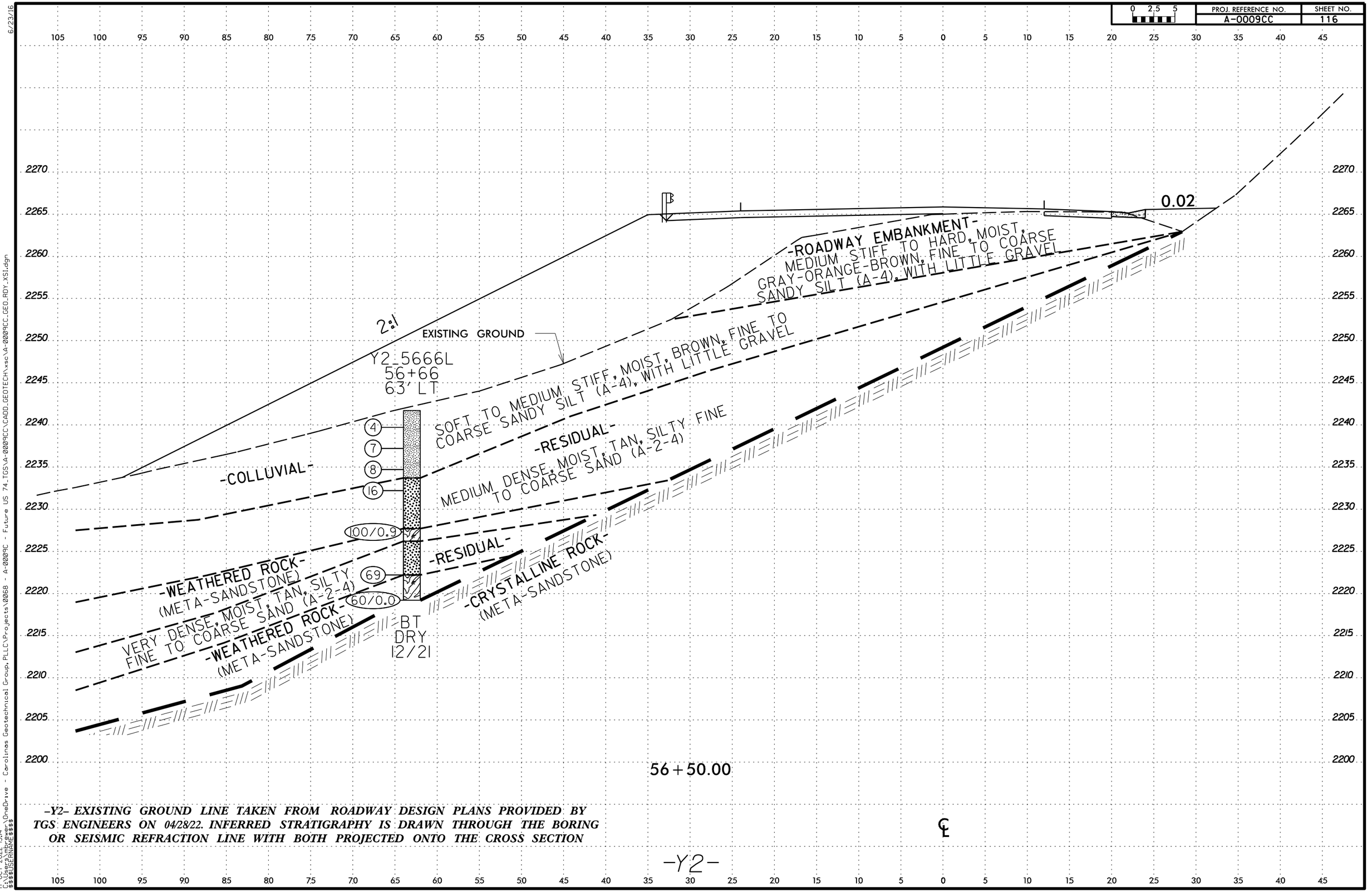
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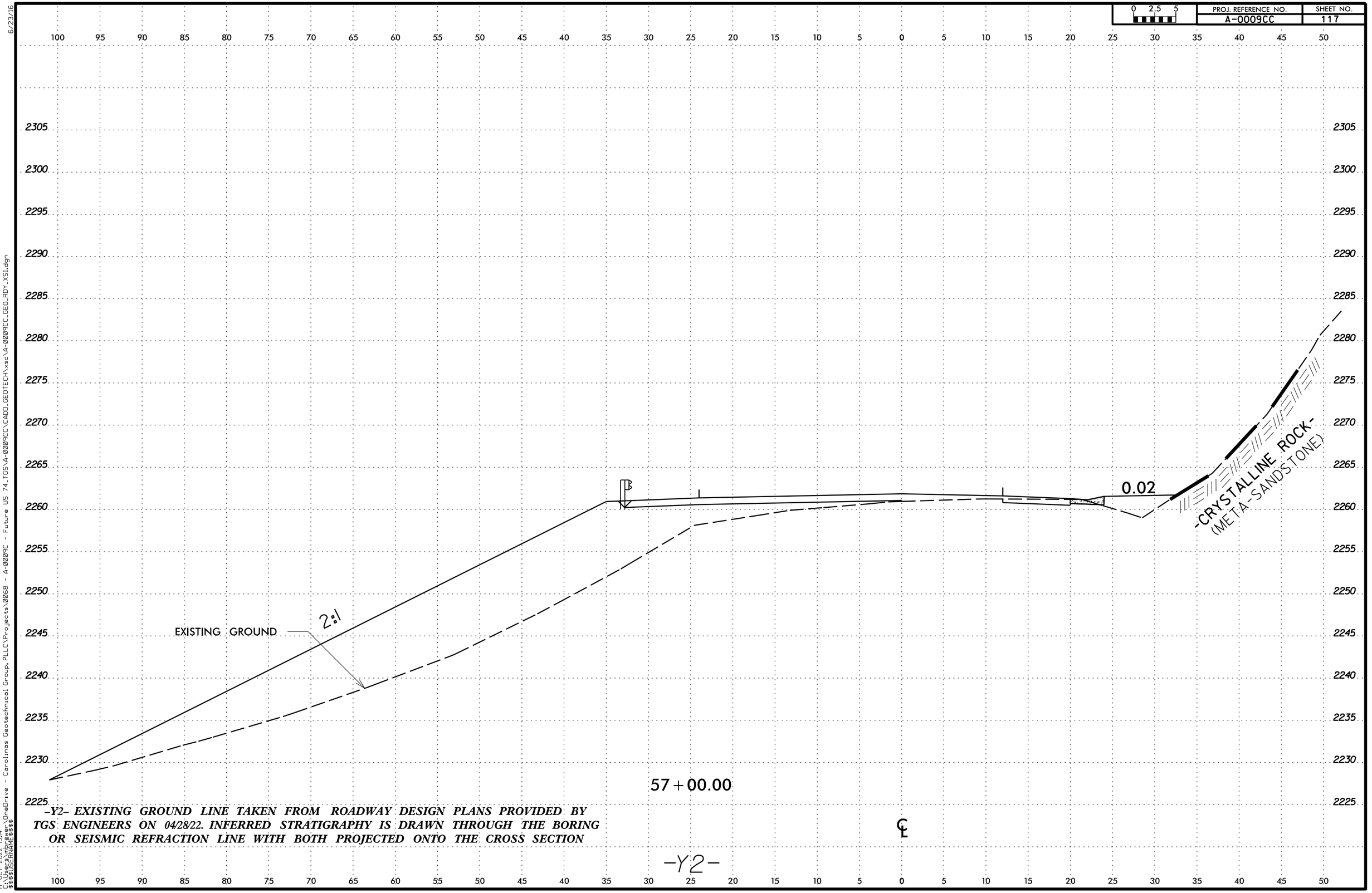
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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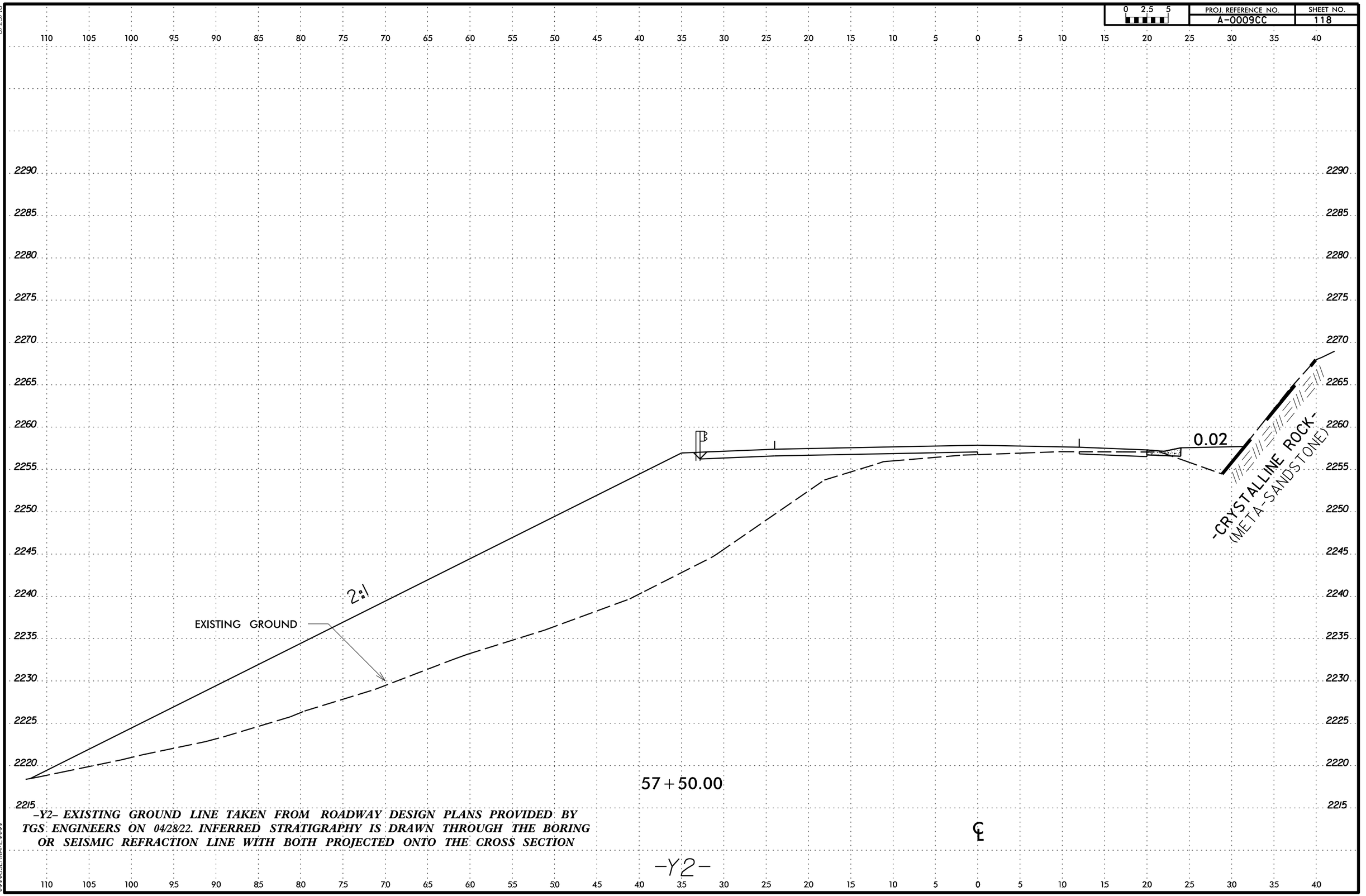


-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-4282	1' LT	58+98 -Y2-	28.5' - 30.0'	A-4(0)	30	2	15	23	37	25	68	60	47	19	-

RWAL32_B-1
58+98
1' LT

SS-4282

2:1 (NORMAL TO RADIUS)

EXISTING GROUND

-ROADWAY EMBANKMENT-
MEDIUM STIFF TO HARD, MOIST, GRAY-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

SOFT, MOIST, TAN-ORANGE-BROWN, FINE SANDY SILT (A-4(0)), WITH TRACE GRAVEL -COLLUVIAL-

-RESIDUAL-
MEDIUM STIFF TO HARD, MOIST TO WET, BROWN-TAN, FINE SANDY SILT (A-4), WITH TRACE MANGANESE OXIDE

-WEATHERED ROCK- (META-SILTSTONE)

-CRYSTALLINE ROCK- (META-SILTSTONE)

19
33
7
13
16
17
11
4
05/21
39
6
100/0.6
60/0.0

BT
FIAD
05/21

59+00.00

℄

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-Y2- (LT)

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$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
A-0009CC	120

0 2.5 5

EXISTING GROUND

2:1

-ROADWAY EMBANKMENT-

MEDIUM STIFF TO HARD, MOIST, GRAY-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

SOFT, MOIST, TAN-ORANGE-BROWN, FINE SANDY SILT (A-4(0)), WITH TRACE GRAVEL -COLLUVIAL-

-RESIDUAL-

MEDIUM STIFF TO HARD, MOIST TO WET, BROWN-TAN, FINE SANDY SILT (A-4), WITH TRACE MANGANESE OXIDE

-WEATHERED ROCK- (META-SILTSTONE)

-CRYSTALLINE ROCK-(META-SILTSTONE)

59+00.00

℄

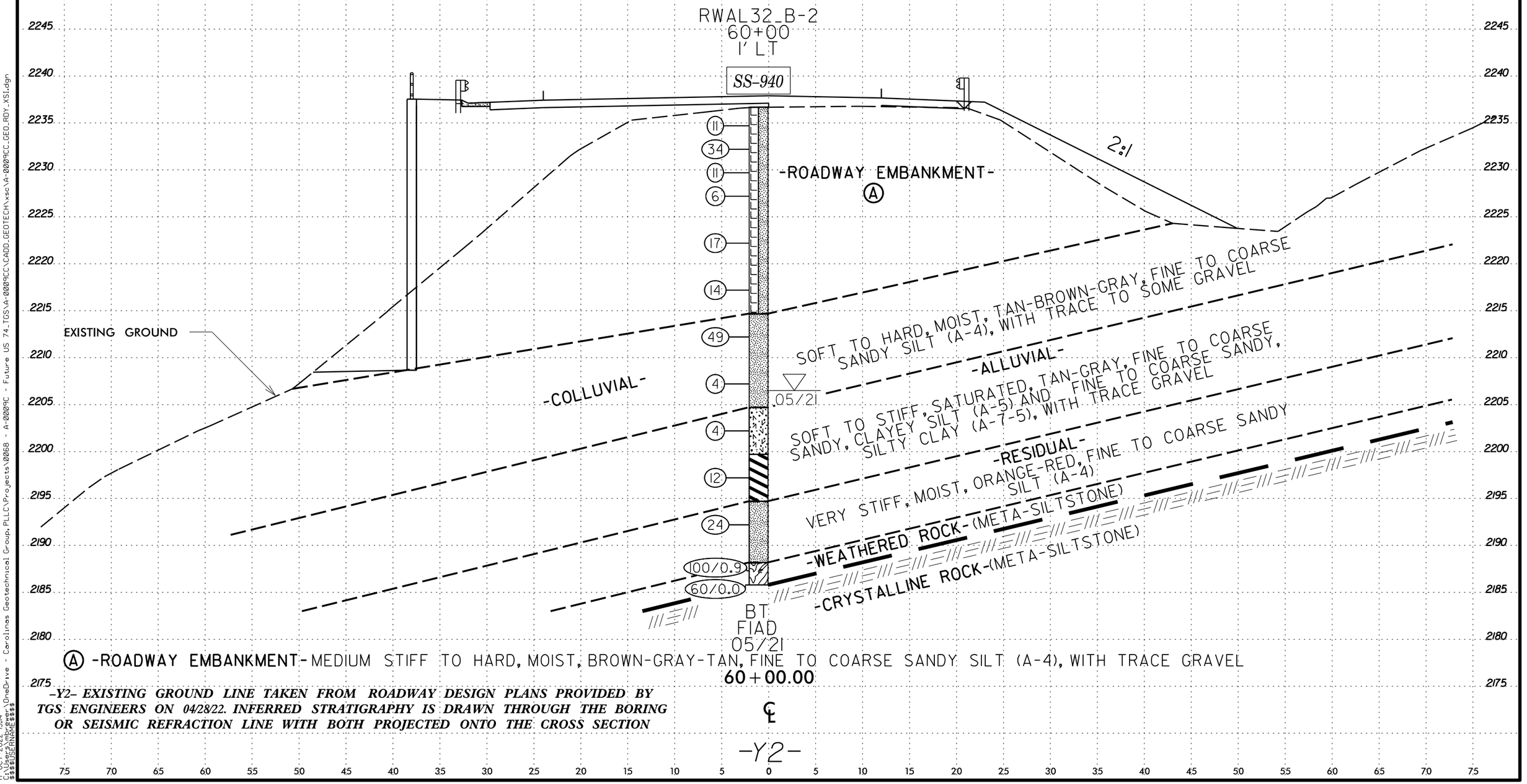
-Y2- (RT)

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-940	1' LT	60+00 -Y2-	8.5' - 10.0'	A-4(1)	30	3	13	23	34	30	92	84	66	18	-



Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF TO HARD, MOIST, BROWN-GRAY-TAN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

60+00.00

℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-984	2' LT	61+00 -Y2-	18.5' - 20.0'	A-6(10)	37	11	6	13	36	45	99	95	86	26	-

RWAL32_B-3
61+00
2' LT
SS-984

12
WOH
1
3
6
5
14
100/0.8
100/0.2
60/0.0

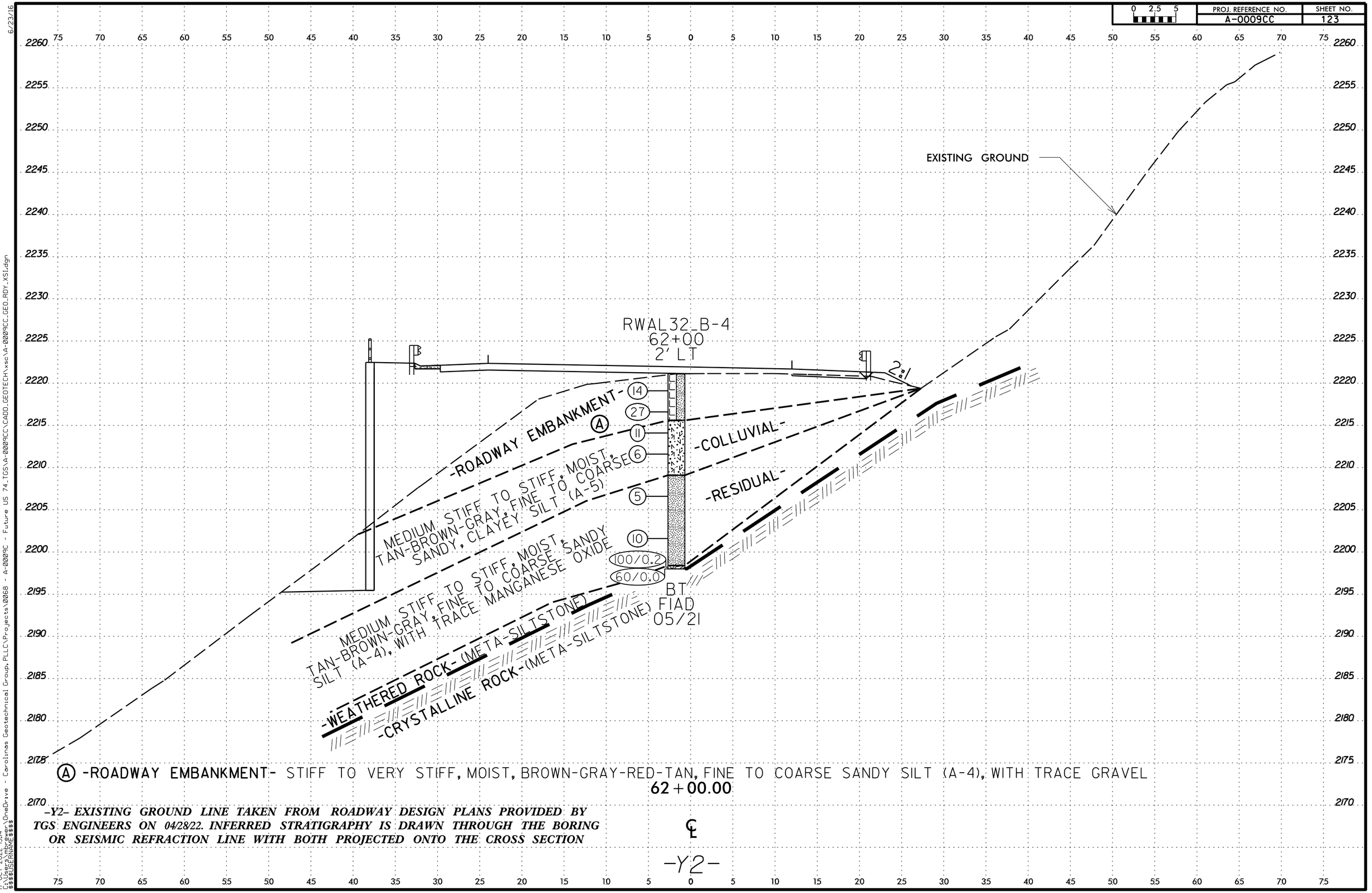
-ROADWAY EMBANKMENT-
Ⓐ
2:1
-COLLUVIAL-
SOFT TO MEDIUM STIFF, MOIST TO WET, BROWN-TAN-ORANGE, FINE SANDY CLAY (A-6) AND FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL
-RESIDUAL-
STIFF, MOIST, ORANGE-BROWN-TAN, FINE TO COARSE SANDY, CLAYEY SILT (A-5), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS
-WEATHERED ROCK-
(META-SILTSTONE)
-CRYSTALLINE ROCK-
(META-SILTSTONE)
EXISTING GROUND
BT
FIAD
05/21

Ⓐ -ROADWAY EMBANKMENT- VERY SOFT TO STIFF, MOIST, BROWN-TAN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

61+00.00
℄
-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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Ⓐ -ROADWAY EMBANKMENT- STIFF TO VERY STIFF, MOIST, BROWN-GRAY-RED-TAN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

62+00.00

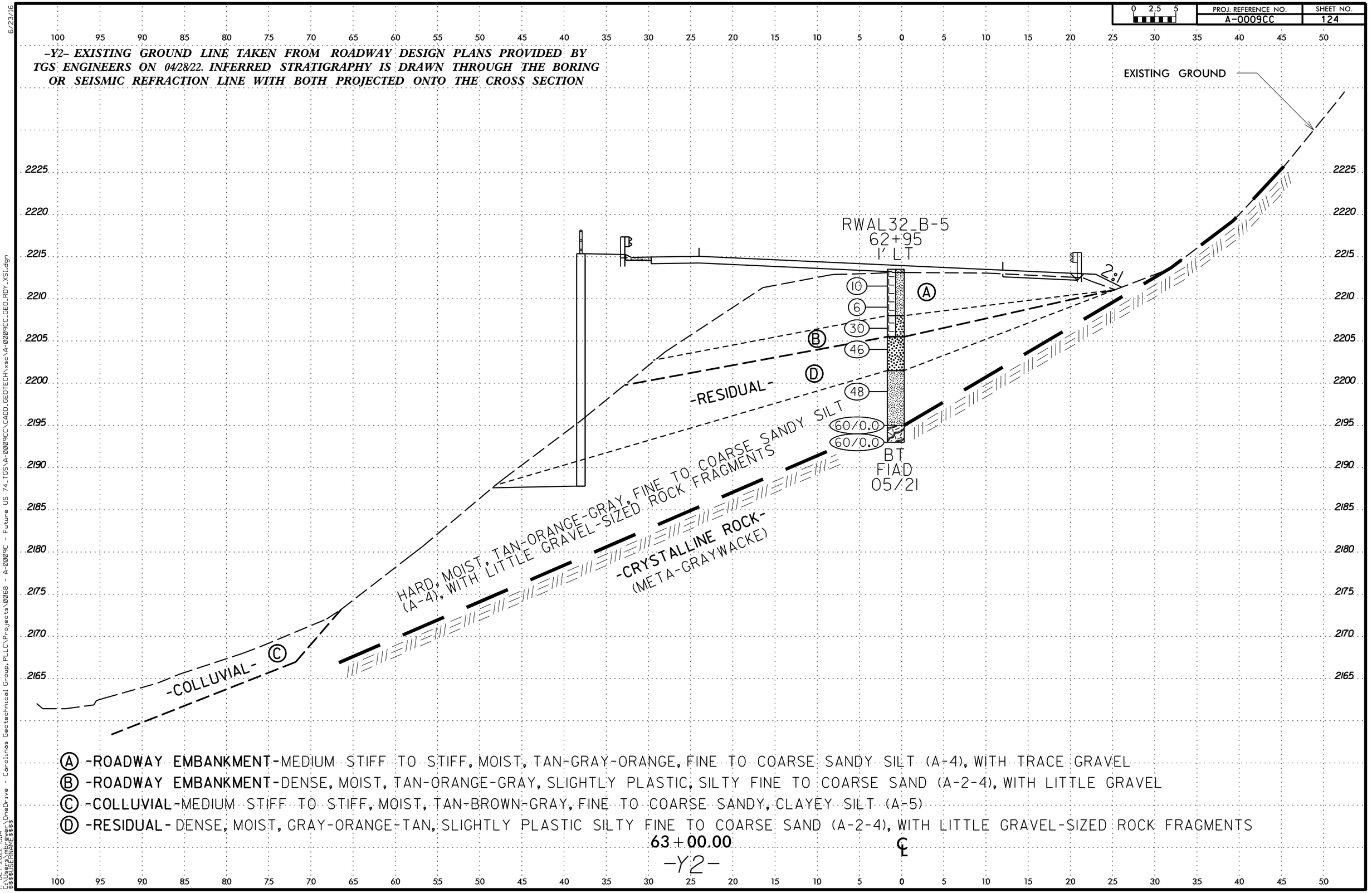
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-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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–Y2– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION



Ⓐ -**ROADWAY EMBANKMENT**-MEDIUM STIFF TO STIFF, MOIST, TAN-GRAY-ORANGE, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

Ⓑ -**ROADWAY EMBANKMENT**-DENSE, MOIST, TAN-ORANGE-GRAY, SLIGHTLY PLASTIC, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL

Ⓒ -**COLLUVIAL**-MEDIUM STIFF TO STIFF, MOIST, TAN-BROWN-GRAY, FINE TO COARSE SANDY, CLAYEY SILT (A-5)

Ⓓ -**RESIDUAL**- DENSE, MOIST, GRAY-ORANGE-TAN, SLIGHTLY PLASTIC SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL-SIZED ROCK FRAGMENTS

63+00.00 ℄

–Y2–

6/23/16
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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	125

EXISTING GROUND

-CRYSTALLINE ROCK-
(META-GRAYWACKE)

2%

63+50.00

℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

EXISTING GROUND

RWAL33_B-1
63+78
22' RT

RWAL32_B-6
63+93
CL

2:1

100/0.9
60/0.0
BT
05/21

8
52
100/0.9
100/0.2
60/0.0
60/0.0
BT
FIAD
05/21

-ROADWAY EMBANKMENT- Ⓐ
-RESIDUAL- Ⓑ
-WEATHERED ROCK-
(META-SILTSTONE) AND
(META-GRAYWACKE)
-CRYSTALLINE ROCK-
(META-GRAYWACKE)

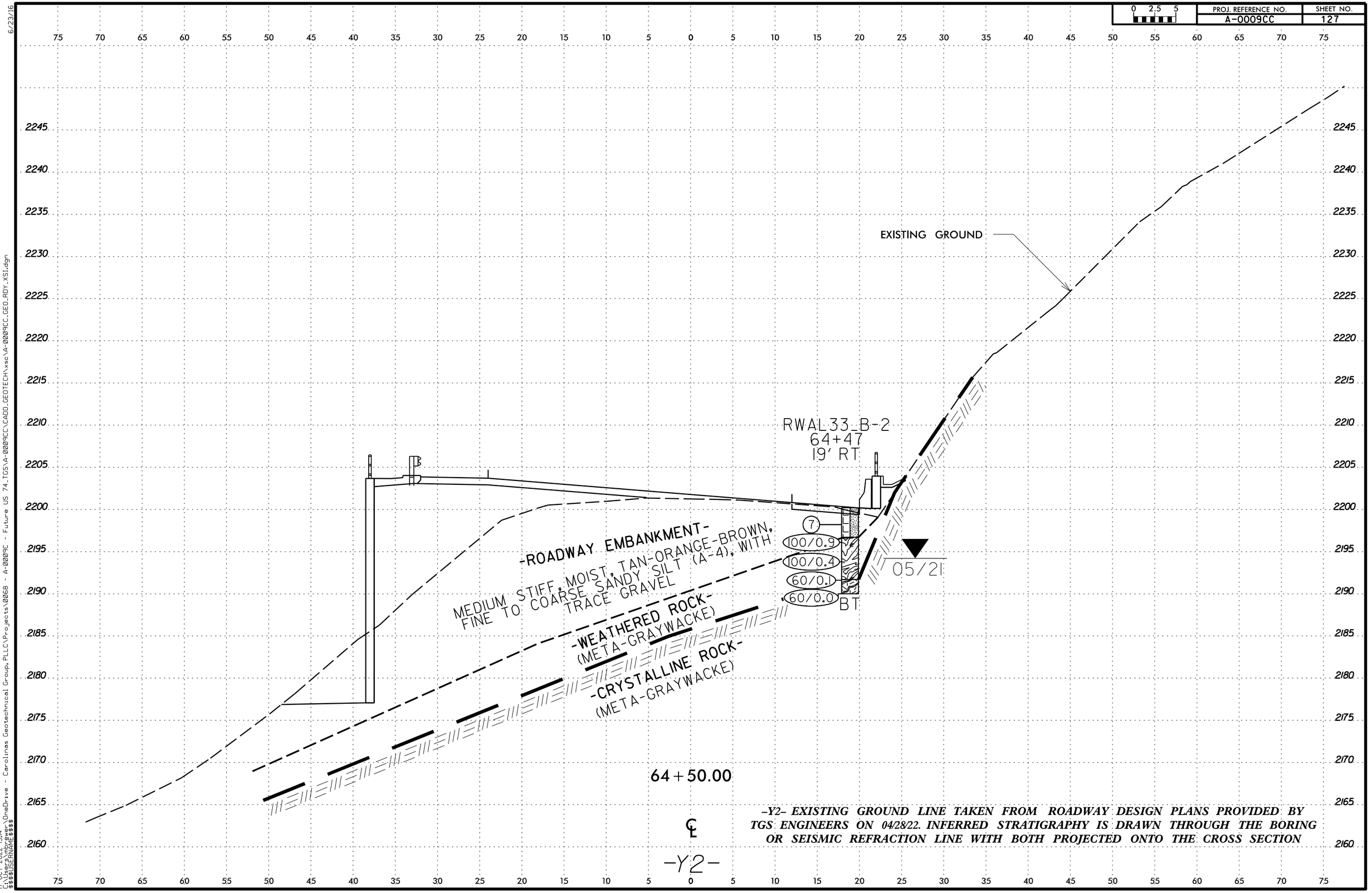
Ⓐ -ROADWAY EMBANKMENT- STIFF, MOIST, TAN-ORANGE, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

Ⓑ -RESIDUAL- VERY DENSE, MOIST, GRAY-TAN, SILTY, GRAVELLY FINE TO COARSE SAND (A-1-B)

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

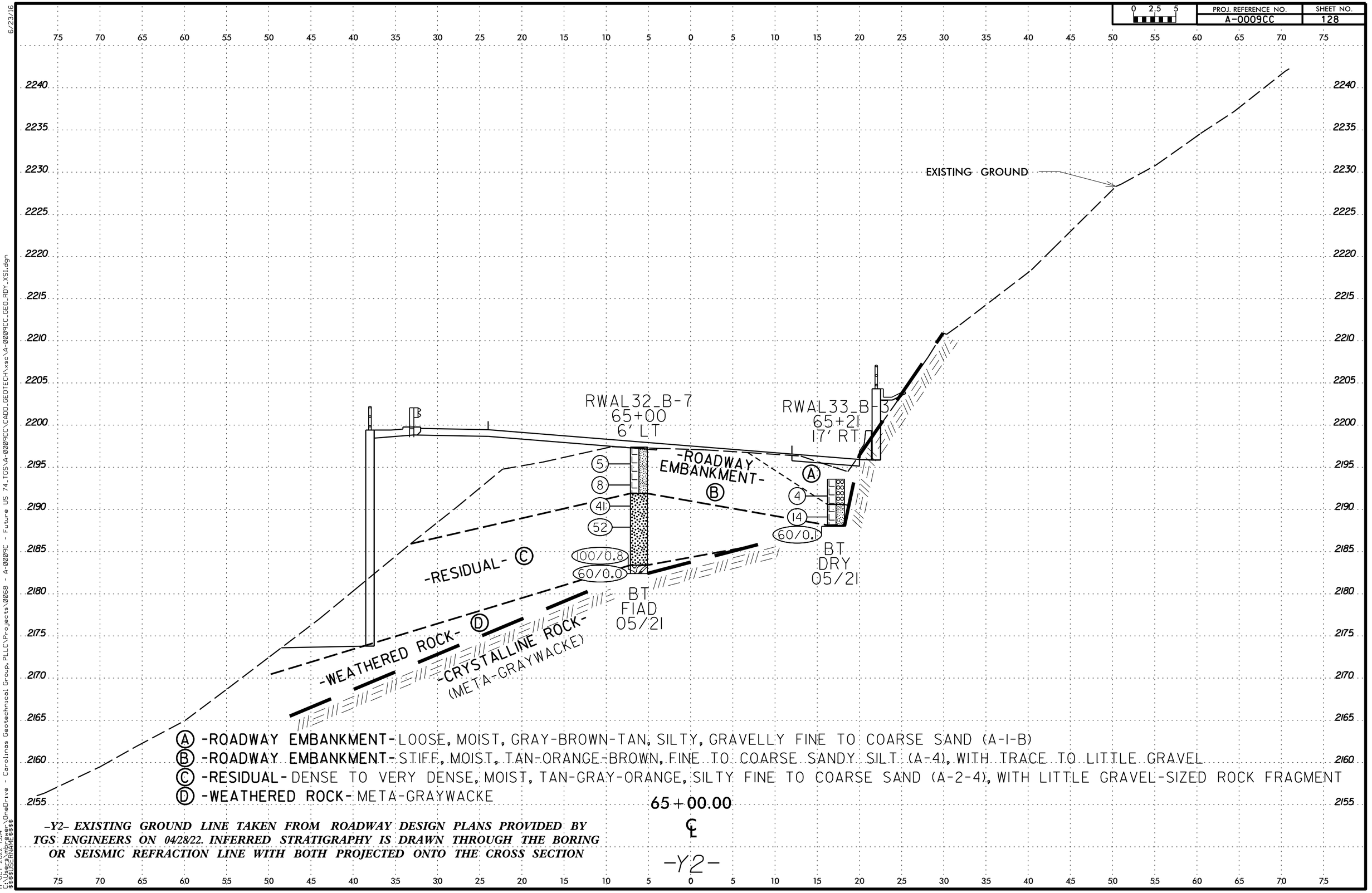
64+00.00
℄
-Y2-

6/23/16
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
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Ⓐ -ROADWAY EMBANKMENT- LOOSE, MOIST, GRAY-BROWN-TAN, SILTY, GRAVELLY FINE TO COARSE SAND (A-1-B)

Ⓑ -ROADWAY EMBANKMENT- STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE TO LITTLE GRAVEL

Ⓒ -RESIDUAL- DENSE TO VERY DENSE, MOIST, TAN-GRAY-ORANGE, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL-SIZED ROCK FRAGMENT

Ⓓ -WEATHERED ROCK- META-GRAYWACKE

65+00.00
℄
-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	129

EXISTING GROUND

-CRYSTALLINE ROCK-
(META-GRAYWACKE)

65+50.00

℄

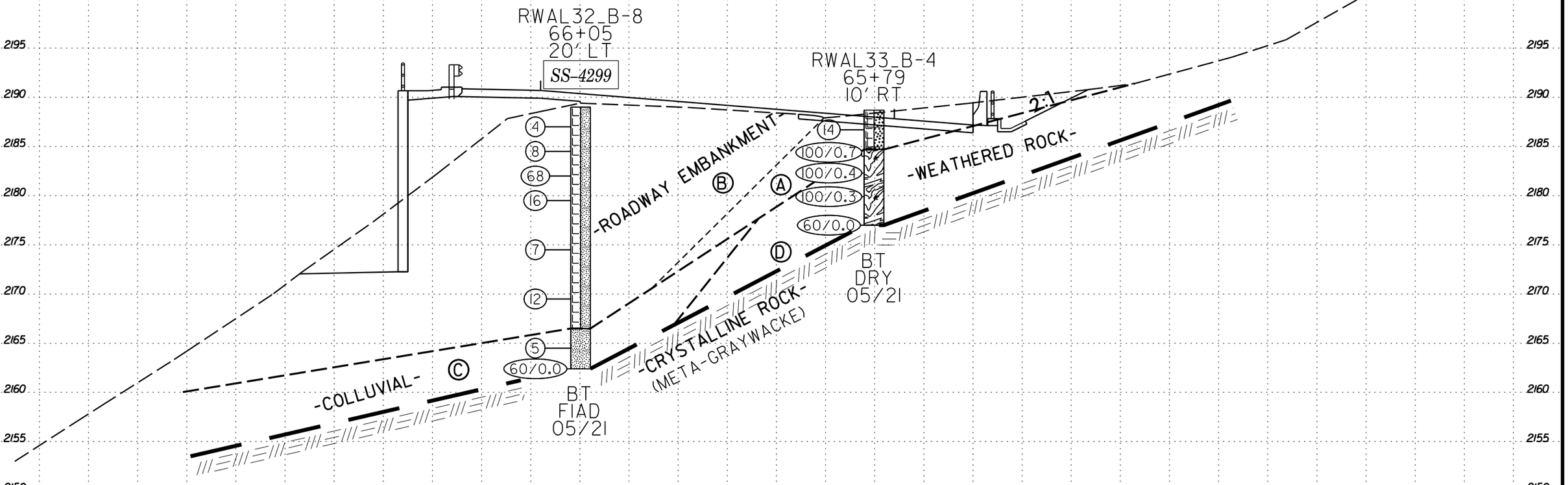
-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			%	%
							C. SAND	F. SAND	SILT	CLAY	10	40	200	MOISTURE	ORGANIC
SS-4299	20' LT	66+05 -Y2-	23.5' - 25.0'	A-4(2)	36	2	8	24	41	27	93	87	73	4	–



Ⓐ -ROADWAY EMBANKMENT- MEDIUM DENSE, MOIST, TAN-GRAY-BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL

Ⓑ -ROADWAY EMBANKMENT- SOFT TO HARD, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

Ⓒ -COLLUVIAL- MEDIUM STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4(2)), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

Ⓓ -WEATHERED ROCK- (META-GRAYWACKE)

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	131

2:1

-ROADWAY EMBANKMENT-
MEDIUM DENSE, MOIST, TAN-BROWN, SILTY FINE SAND (A-2-4), WITH LITTLE GRAVEL

EXISTING GROUND

LOOSE TO DENSE, MOIST TO WET, TAN-BROWN, SILTY FINE SAND (A-2-4), WITH LITTLE GRAVEL

-RESIDUAL-
HARD, MOIST TO WET, TAN, FINE SANDY SILT (A-4)

-WEATHERED ROCK-
(SCHIST)

CULV_Y2_6758R
67+58
71' RT

19	
23	
5	12/21
33	-ALLUVIAL-
40	
72	
100/0.8	BT

67+50.00

℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	132

CULV_Y2_6784L
67+84
5' LT

PAVEMENT

2:1

-ROADWAY EMBANKMENT-
MEDIUM STIFF TO VERY STIFF, MOIST, TAN-BROWN-GRAY-RED-ORANGE, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

-ALLUVIAL-
MEDIUM STIFF TO STIFF, MOIST TO WET, GRAY-TAN-BROWN, FINE SANDY SILT (A-4), WITH TRACE GRAVEL AND ORGANICS

-RESIDUAL-
MEDIUM STIFF TO VERY STIFF, MOIST TO WET, TAN-GRAY-BROWN, FINE SANDY SILT (A-4)

10/20

18
6
8
10
12
4
5
5
7
17
8

BT
FIAD
10/20

-ROADWAY EMBANKMENT-
MEDIUM STIFF TO VERY STIFF, MOIST, TAN-BROWN-GRAY-RED-ORANGE, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

EXISTING GROUND

2:1

-ALLUVIAL-
MEDIUM STIFF TO STIFF, MOIST TO WET, GRAY-TAN-BROWN, FINE SANDY SILT (A-4), WITH TRACE GRAVEL AND ORGANICS

-RESIDUAL-
MEDIUM STIFF TO VERY STIFF, MOIST TO WET, TAN-GRAY-BROWN, FINE SANDY SILT (A-4)

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

68+00.00
℄
-Y2-

65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85

2180 2175 2170 2165 2160 2155 2150 2145 2140 2135 2130 2125 2120 2115 2110

6/23/16
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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	133

-ROADWAY EMBANKMENT- MEDIUM STIFF TO VERY STIFF, MOIST, TAN-BROWN-GRAY-RED-ORANGE, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

-RESIDUAL- MEDIUM STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

Y2_6900R
69+00
20' RT

EXISTING GROUND

2:1

47
9
16
15
6

B.T.
DRY
05/21

STIFF TO VERY STIFF, MOIST, TAN-ORANGE-GRAY, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

Ⓐ -ARTIFICIAL FILL- DENSE, GRAY-ORANGE-TAN, MOIST, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL

69+00.00

℄

-Y2-

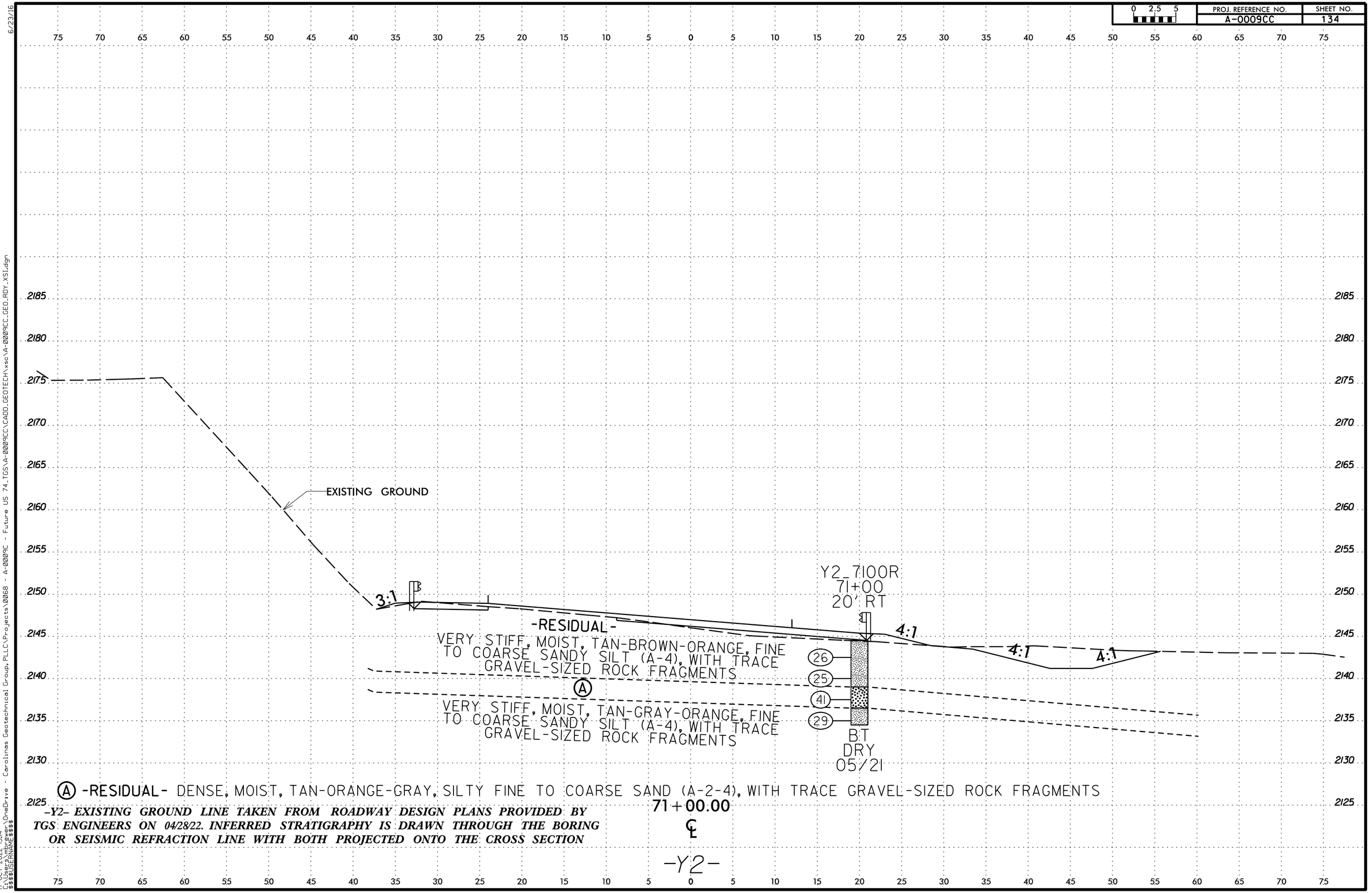
-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2170 2165 2160 2155 2150 2145 2140 2135 2130 2125 2120 2115 2110 2105 2100

6/23/16
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17-OCT-2022 13:14
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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	134



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

17-OCT-2022 13:14
C:\Users\mbrewer\OneDrive - Carolinas Geotechnical Group, PLLC\Projects\0068 - A-0009C - Future US 74_TGS\A-0009CC\CADD_GEOTECH\xsc\A-0009CC_GEO_RDY_XS1.dgn
$$$$USERNAME$$$$

EXISTING GROUND

RWAL34_B-1
71+25
35' LT

(6)
(13)
(11)
(12)
(11)
(9)

BT
DRY
05/21

(A)

4:1
4:1
4:1

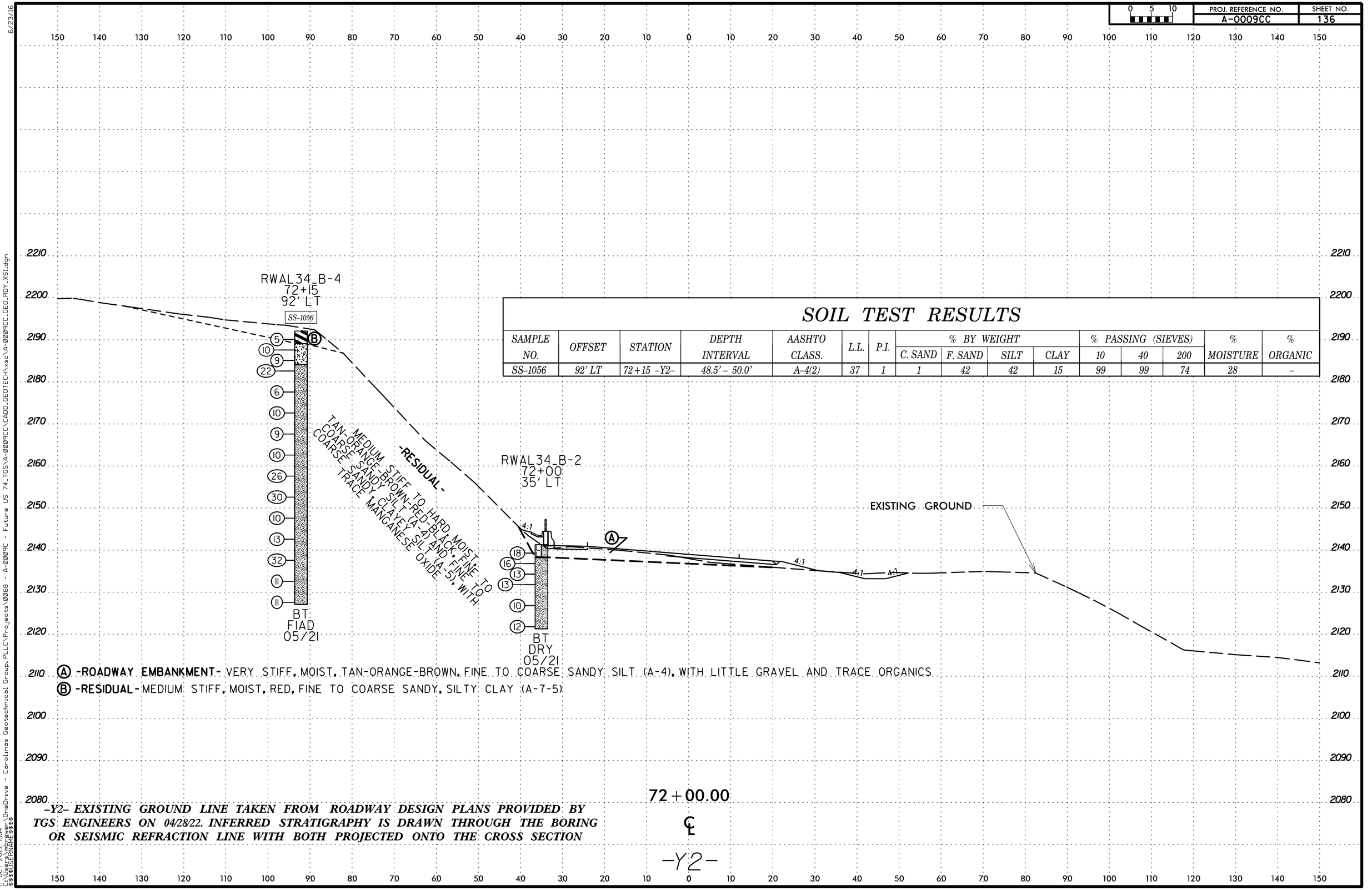
-RESIDUAL-
STIFF, MOIST, TAN-ORANGE, FINE TO COARSE SANDY SILT (A-4)

-ROADWAY EMBANKMENT- MEDIUM STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

71+50.00
℄
-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
17-OCT-2022 13:14
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$$$$USERNAME$$$$



SOIL TEST RESULTS

SAMPLE NO.	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		
SS-1056	92' LT	72+15 -Y2-	48.5' - 50.0'	A-4(2)	37	1	1	42	42	15	99	99	74	28	-

Ⓐ -**ROADWAY EMBANKMENT**- VERY STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL AND TRACE ORGANICS

Ⓑ -**RESIDUAL**- MEDIUM STIFF, MOIST, RED, FINE TO COARSE SANDY, SILTY CLAY (A-7-5)

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

72+00.00

℄

-Y2-

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	137

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2180 2175 2170 2165 2160 2155 2150 2145 2140 2135 2130 2125 2120 2115 2110 2105

EXISTING GROUND

RWAL34_B-3
72+75
35' LT

4:1

7
10
19
11
45
7

BT
DRY
05/21

-ROADWAY EMBANKMENT-Ⓐ

-RESIDUAL-
MEDIUM STIFF TO HARD, MOIST, TAN-GRAY-ORANGE, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL-SIZED ROCK FRAGMENTS

4:1 4:1 4:1

Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

72+50.00

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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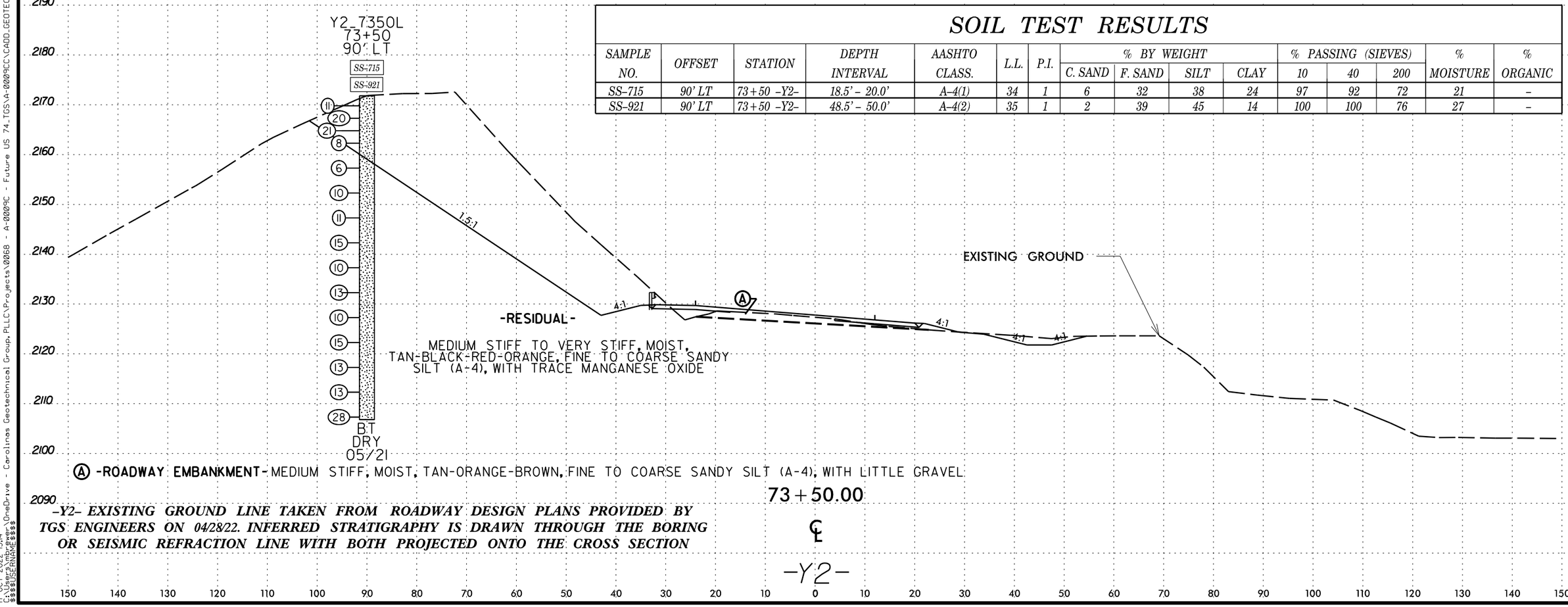
-Y2-

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

6/23/16
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SOIL TEST RESULTS

SAMPLE NO.	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		
SS-715	90' LT	73+50 -Y2-	18.5' - 20.0'	A-4(1)	34	1	6	32	38	24	97	92	72	21	-
SS-921	90' LT	73+50 -Y2-	48.5' - 50.0'	A-4(2)	35	1	2	39	45	14	100	100	76	27	-



Ⓐ **-ROADWAY EMBANKMENT-** MEDIUM STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

73+50.00

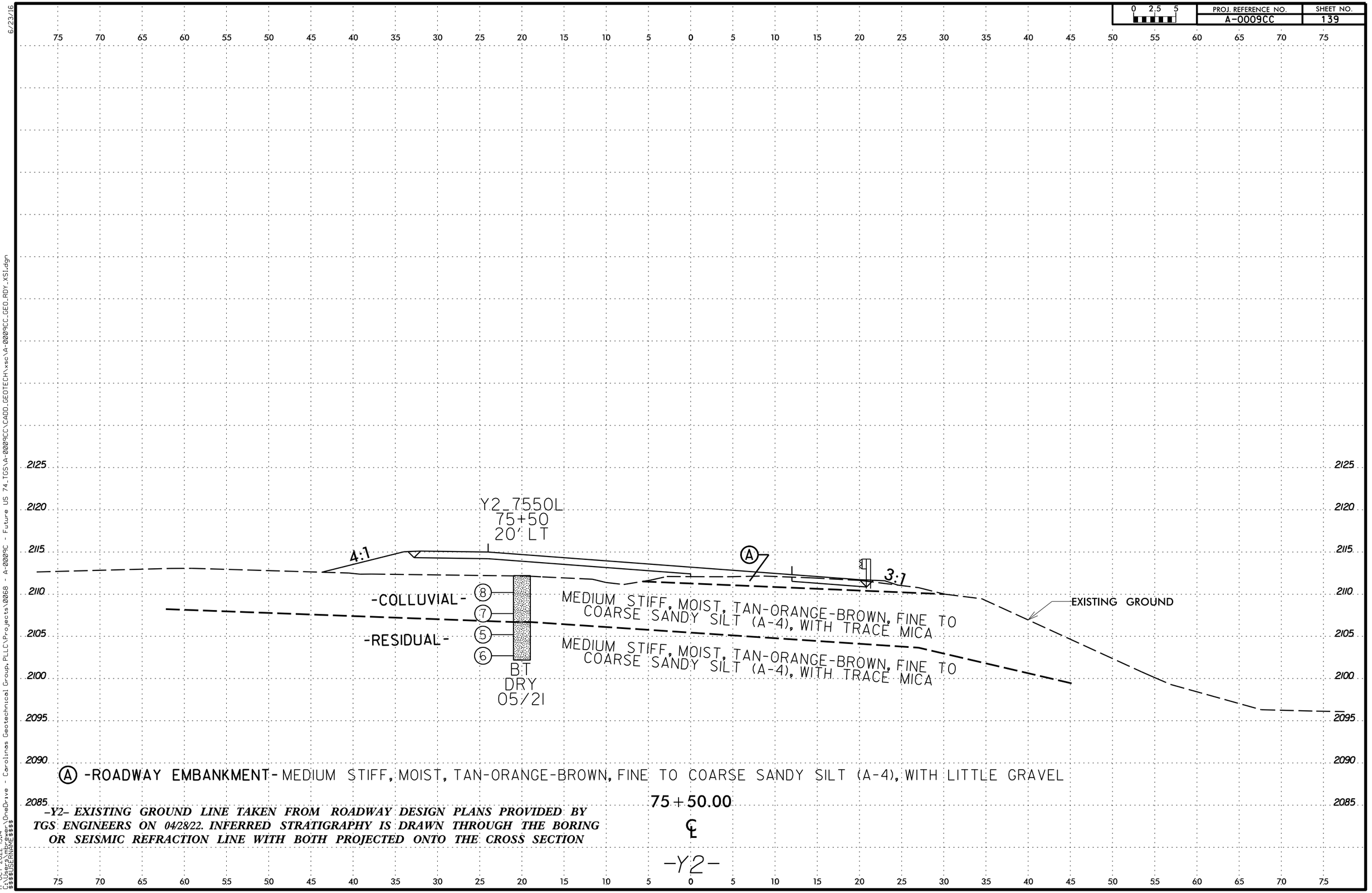
℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	139



Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

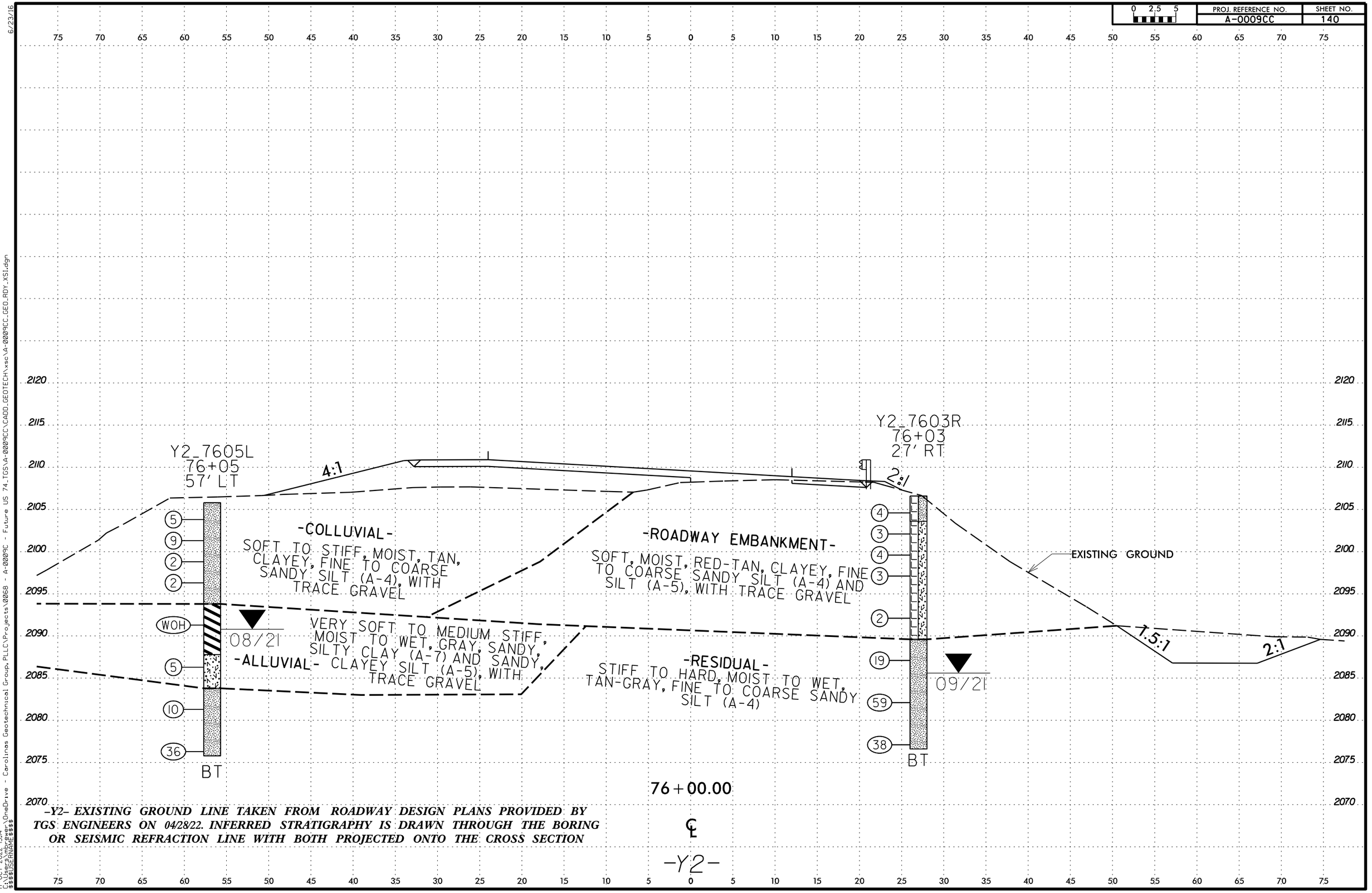
75+50.00

℄

-Y2-

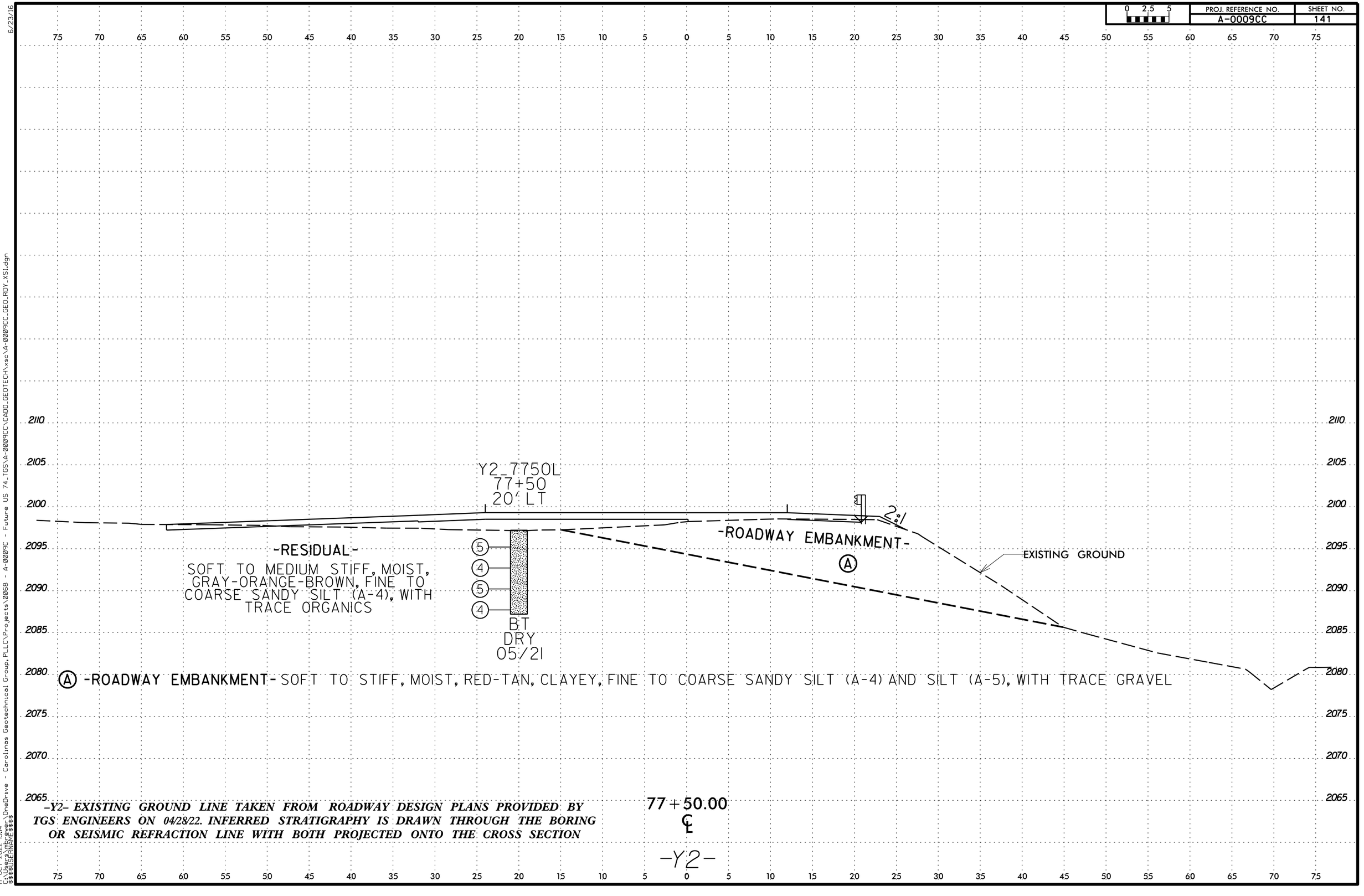
-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

RWAL35_B-1
78+00
35' LT

LINE 35.1

2:1

4:1

2:1

(6)
(3)
(3)
(8)
(6)
BT

05/21

-RESIDUAL-
SOFT TO MEDIUM STIFF, MOIST, TAN-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

-ROADWAY EMBANKMENT-
(A)

EXISTING GROUND

FLOODPLAIN BENCH

2:1

2:1

(A) -ROADWAY EMBANKMENT- SOFT TO STIFF, MOIST, RED-TAN, CLAYEY, FINE TO COARSE SANDY SILT (A-4) AND SILT (A-5), WITH TRACE GRAVEL

78+00.00

℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-1063	36' LT	79+00 -Y2-	8.5' - 10.0'	A-4(0)	27	NP	8	40	36	16	74	70	48	17	-

RWAL35_B-2
79+00
36' LT

SS-1063

LINE 35.1

2
2
5
10
7
14
14
46
20

BT
DRY
05/21

2:1

-ROADWAY EMBANKMENT-
Ⓐ

EXISTING GROUND

FLOODPLAIN BENCH

-RESIDUAL-
SOFT TO HARD, MOIST, BROWN-TAN-GRAY-WHITE, FINE TO COARSE SANDY SILT (A-4(0)), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS, QUARTZ, AND MANGANESE OXIDE

-WEATHERED ROCK-
(METASILTSTONE)

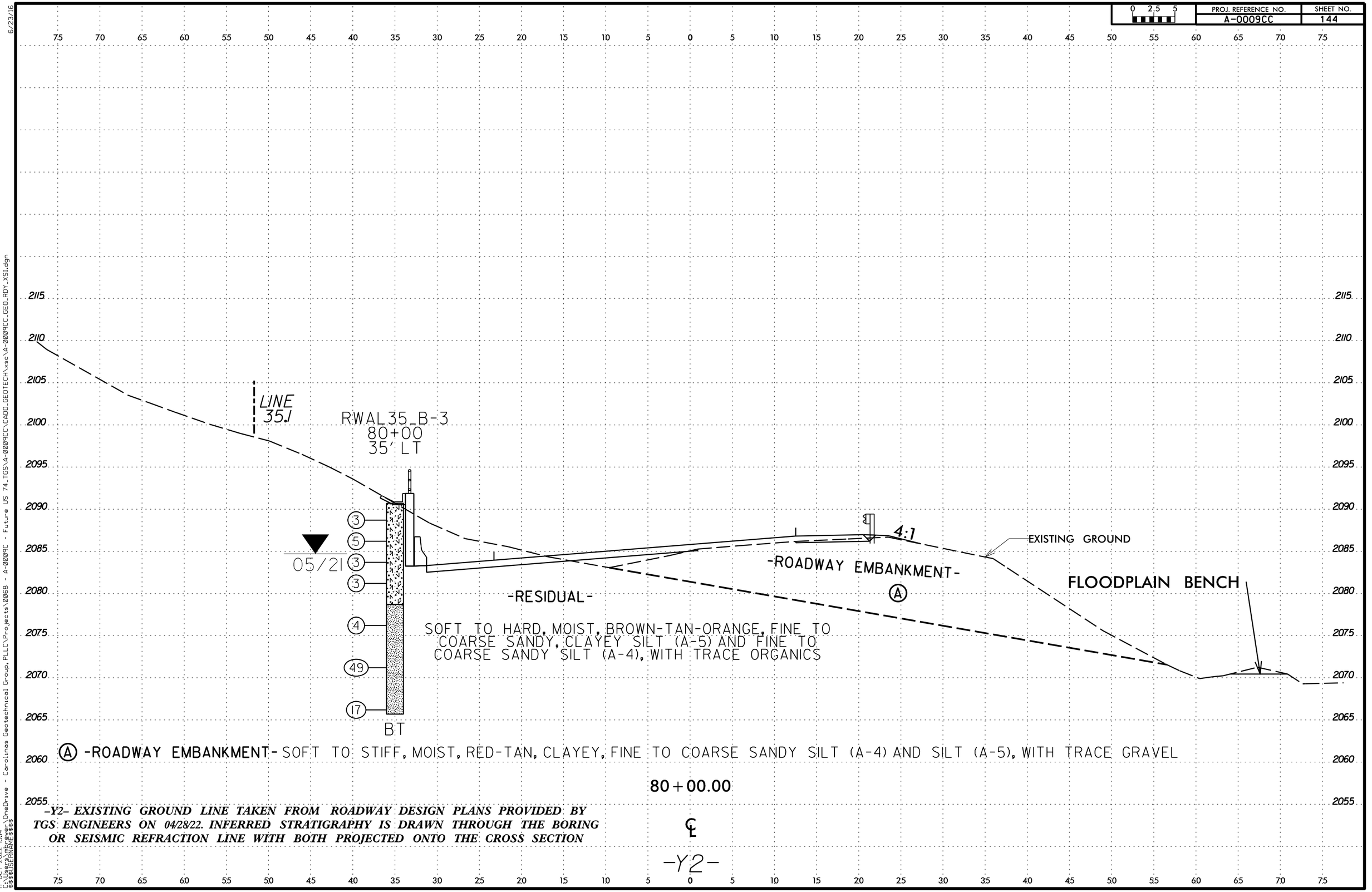
-CRYSTALLINE ROCK-
(METASILTSTONE)

Ⓐ -ROADWAY EMBANKMENT- SOFT TO STIFF, MOIST, RED-TAN, CLAYEY, FINE TO COARSE SANDY SILT (A-4) AND SILT (A-5), WITH TRACE GRAVEL

79+00.00
℄
-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
17-OCT-2022 13:14
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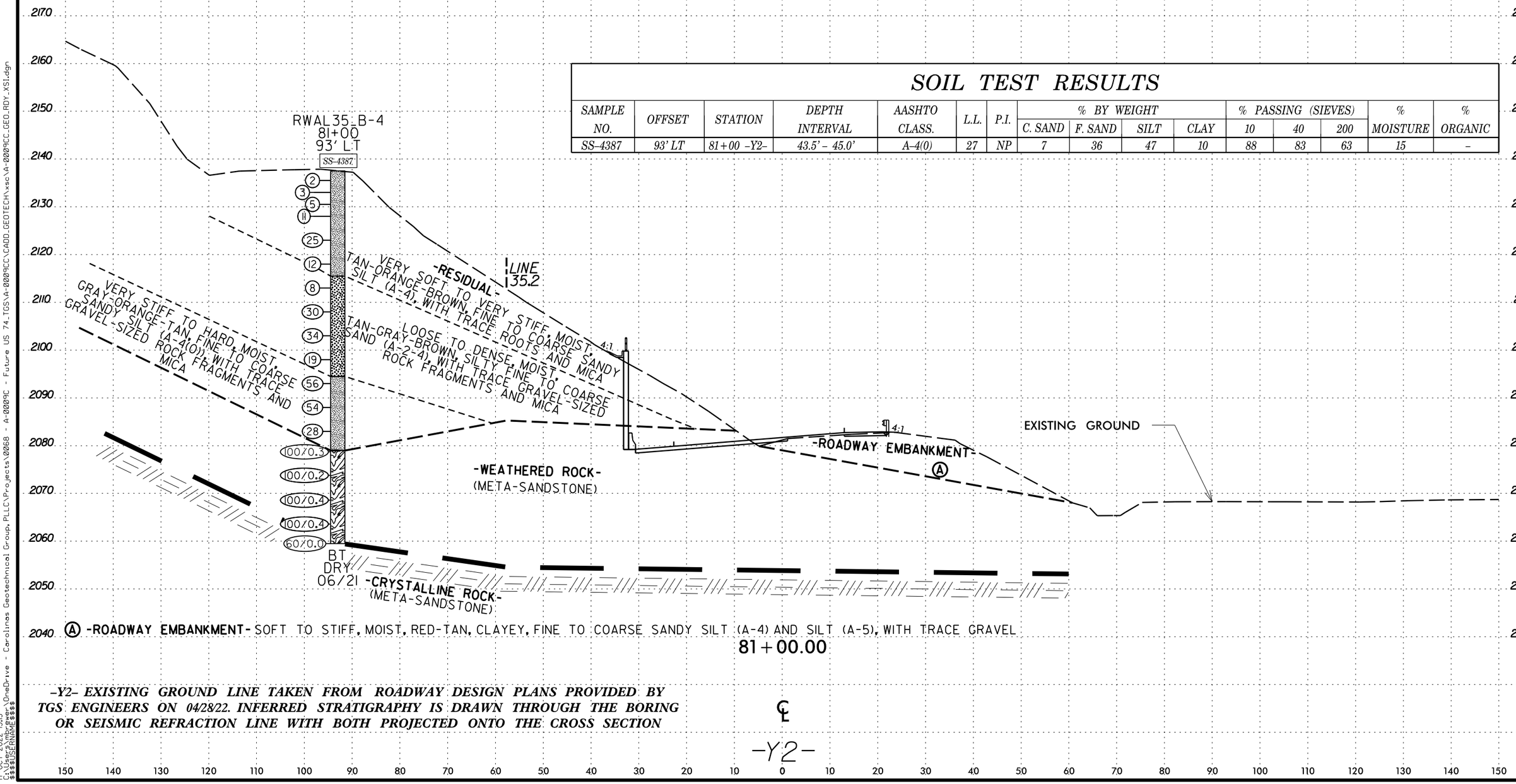


-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
17-OCT-2022 13:14
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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-4387	93' LT	81+00 -Y2-	43.5' - 45.0'	A-4(0)	27	NP	7	36	47	10	88	83	63	15	-



Ⓐ **-ROADWAY EMBANKMENT-** SOFT TO STIFF, MOIST, RED-TAN, CLAYEY, FINE TO COARSE SANDY SILT (A-4) AND SILT (A-5), WITH TRACE GRAVEL

81+00.00

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

℄

-Y2-

6/23/16
17-OCT-2022 13:15
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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	146

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2135 2130 2125 2120 2115 2110 2105 2100 2095 2090 2085 2080 2075 2070 2065 2060

LINE 35.2

-RESIDUAL-
VERY SOFT TO VERY STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE ROOTS AND MICA

-WEATHERED ROCK-
(META-SANDSTONE)

-CRYSTALLINE ROCK-
(META-SANDSTONE)

4:1

EXISTING GROUND

81+50.00

℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
17-OCT-2022 13:15
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LINE 35.2

-RESIDUAL-
STIFF TO VERY STIFF, MOIST, GRAY-TAN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL-SIZED ROCK FRAGMENTS

RWAL35_B-5
81+80
6' LT

EXISTING GROUND

4:1

-ROADWAY EMBANKMENT-
STIFF, MOIST, ORANGE-TAN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

8
-RESIDUAL- 30 MEDIUM DENSE, MOIST, GRAY-ORANGE-TAN, SILTY, GRAVELLY FINE TO COARSE SAND (A-1-B
26
15 STIFF TO VERY STIFF, MOIST, GRAY-TAN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL-SIZED ROCK FRAGMENTS

-WEATHERED ROCK- (META-GRAYWACKE)

100/0.7

-WEATHERED ROCK- (META-GRAYWACKE)

62

-RESIDUAL- HARD, MOIST, GRAY-TAN, FINE TO COARSE SANDY SILT (A-4)

100/0.8

-WEATHERED ROCK- (META-GRAYWACKE)

-CRYSTALLINE ROCK-
(META-GRAYWACKE)

BT
FIAD
05/21

82+00.00

℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

2125 2120 2115 2110 2105 2100 2095 2090 2085 2080 2075 2070 2065 2060 2055 2050 2045

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	148

LINE 35.2

VERY SOFT TO VERY STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE ROOTS AND MICA

-RESIDUAL-

-WEATHERED ROCK-
(META-SANDSTONE)

-CRYSTALLINE ROCK-
(META-SANDSTONE)

EXISTING GROUND

82 + 50.00

℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CC	149

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2135 2130 2125 2120 2115 2110 2105 2100 2095 2090 2085 2080 2075 2070

LINE 35.2

EXISTING GROUND

-RESIDUAL-
VERY SOFT TO VERY STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE ROOTS AND MICA

-WEATHERED ROCK-
(META-SANDSTONE)

82+70.00
℄
-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

EXISTING GROUND

4:1

LINE 35.3

RWAL35_B-6
83+23
9' LT

(A)

(16) (32) (24) (24) -RESIDUAL- MEDIUM DENSE TO DENSE, MOIST, TAN-GRAY-ORANGE, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE MICA

(23) 05/21 VERY STIFF, MOIST, TAN-GRAY, FINE TO COARSE SANDY SILT (A-4), TRACE MICA

(100/0.3) -WEATHERED ROCK- (META-GRAYWACKE)

(60/0.1) BT -CRYSTALLINE ROCK- (META-GRAYWACKE)

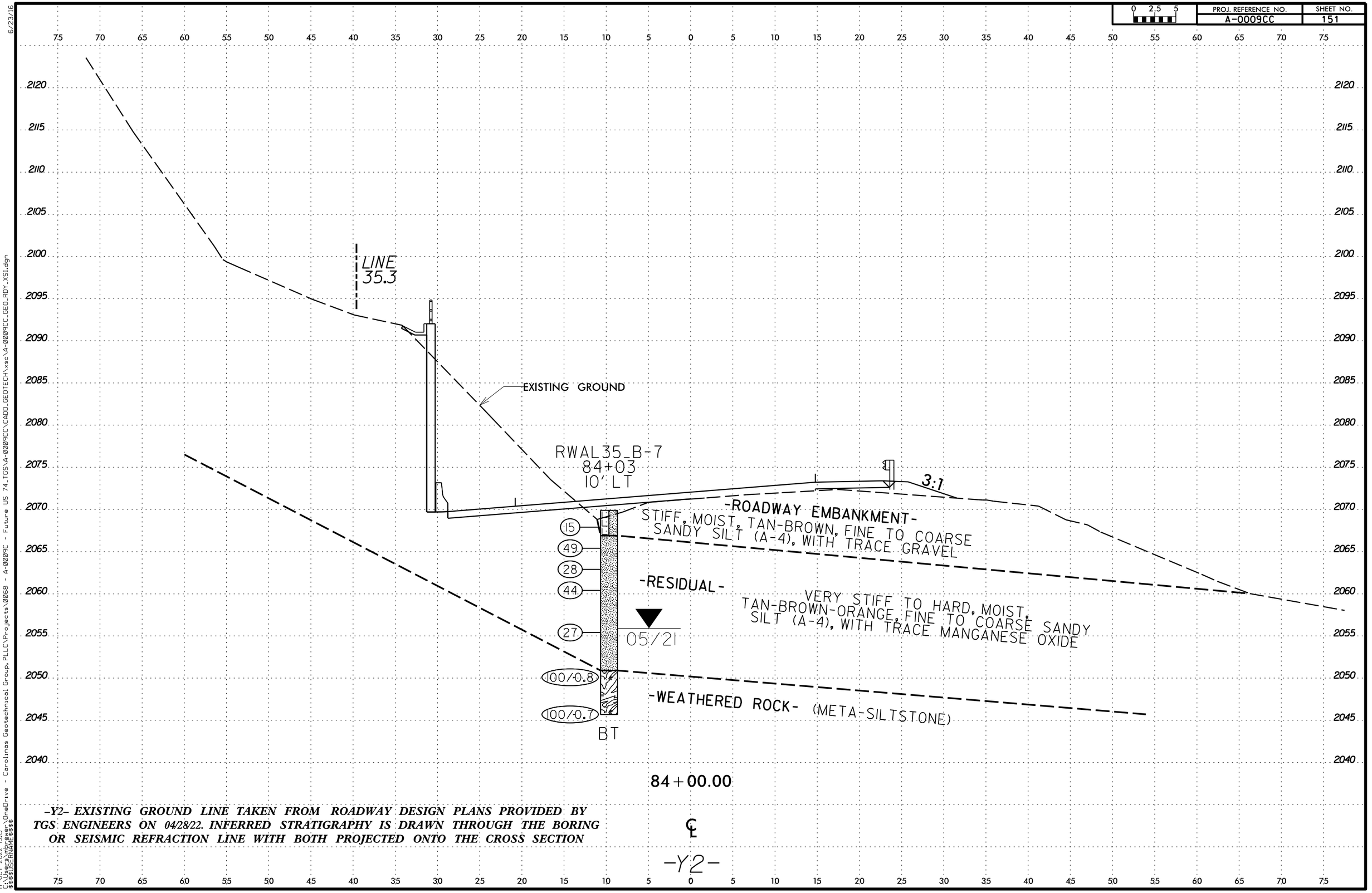
83+00.00

(A) -ROADWAY EMBANKMENT- STIFF, MOIST, ORANGE-TAN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

℄
-Y2-

6/23/16
17-OCT-2022 13:15
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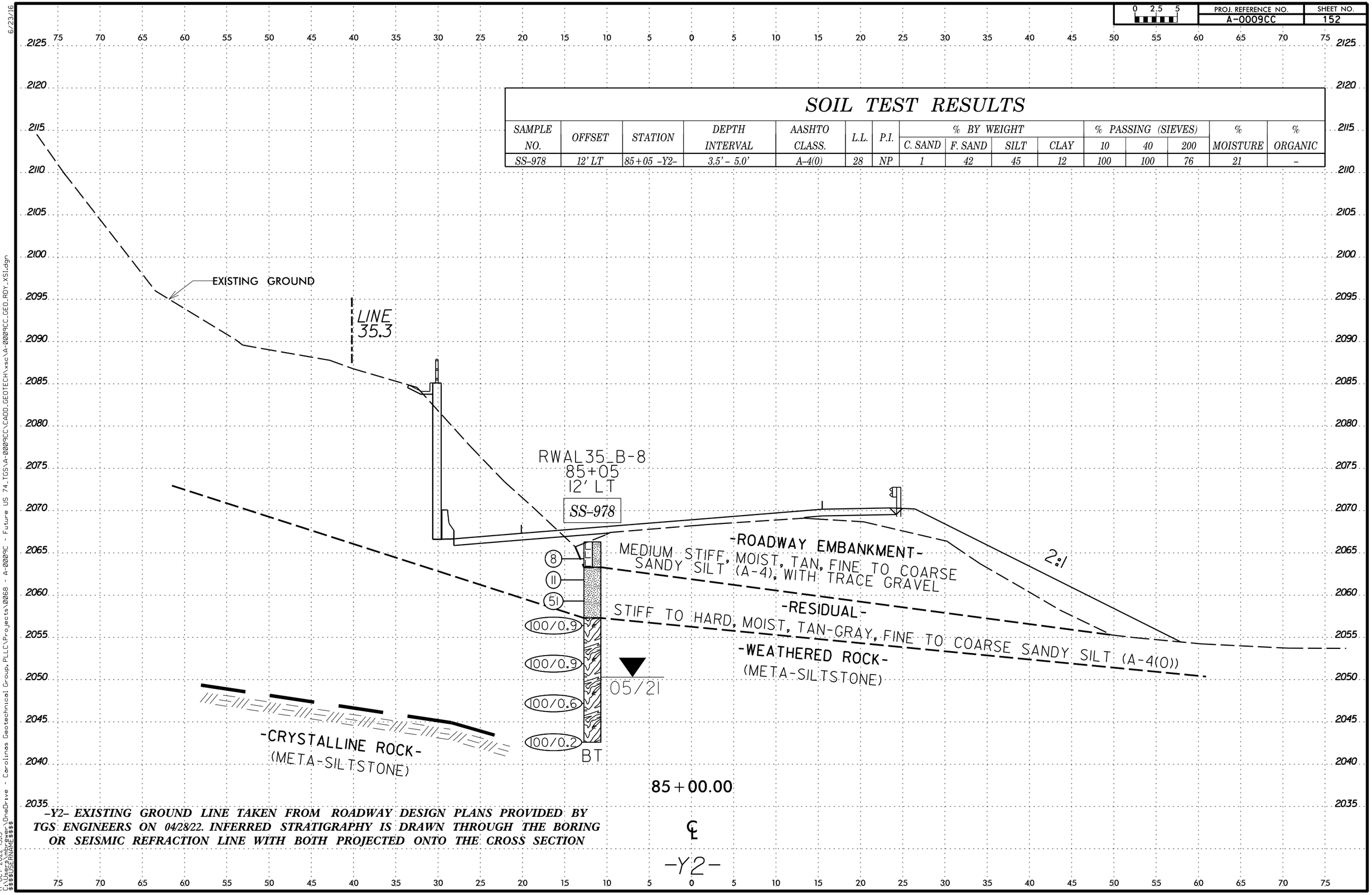


-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS–978	12' LT	85+05 –Y2–	3.5' – 5.0'	A–4(0)	28	NP	1	42	45	12	100	100	76	21	–



–Y2– EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
17-OCT-2022 13:15
C:\Users\mbeaver\OneDrive - Carolinas Geotechnical Group, PLLC\Projects\0068 - A-0009C - Future US 74_TGS\A-0009CC\CADD_GEOTECH\xsc\A-0009CC_GEO_RDY_XS1.dgn
$$$$USERNAME$$$$

EXISTING GROUND

LINE 35.4

RWAL35_B-9
86+04
16' LT

9
23
22
20
46
100/0.7
100/0.4
BT

05/21

-ROADWAY EMBANKMENT-
STIFF, MOIST, BROWN-TAN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

2:1

-RESIDUAL-
VERY STIFF TO HARD, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-4)

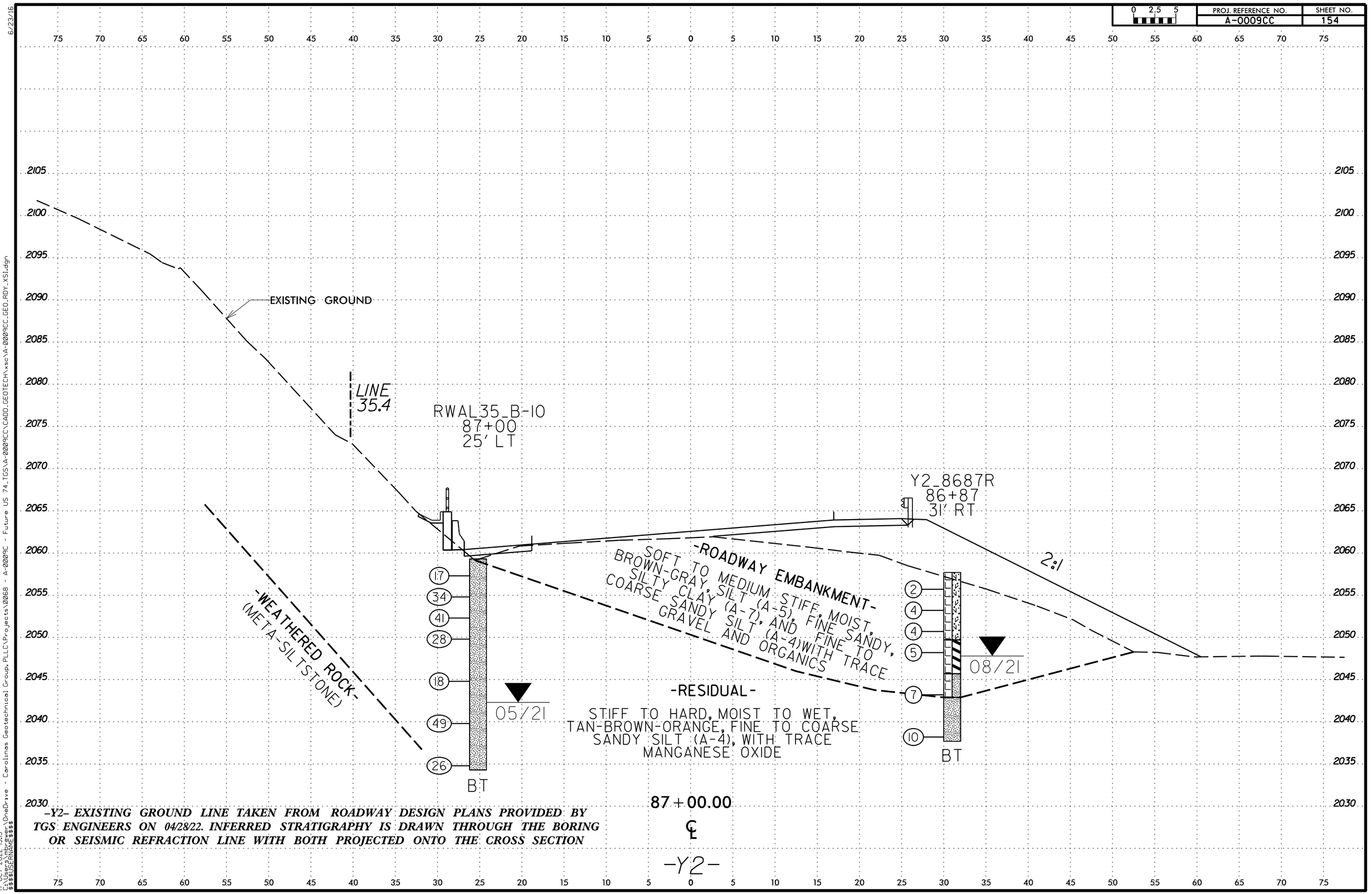
-CRYSTALLINE ROCK-
(META-SILTSTONE)

-WEATHERED ROCK-
(META-SILTSTONE)

86+00.00
℄
-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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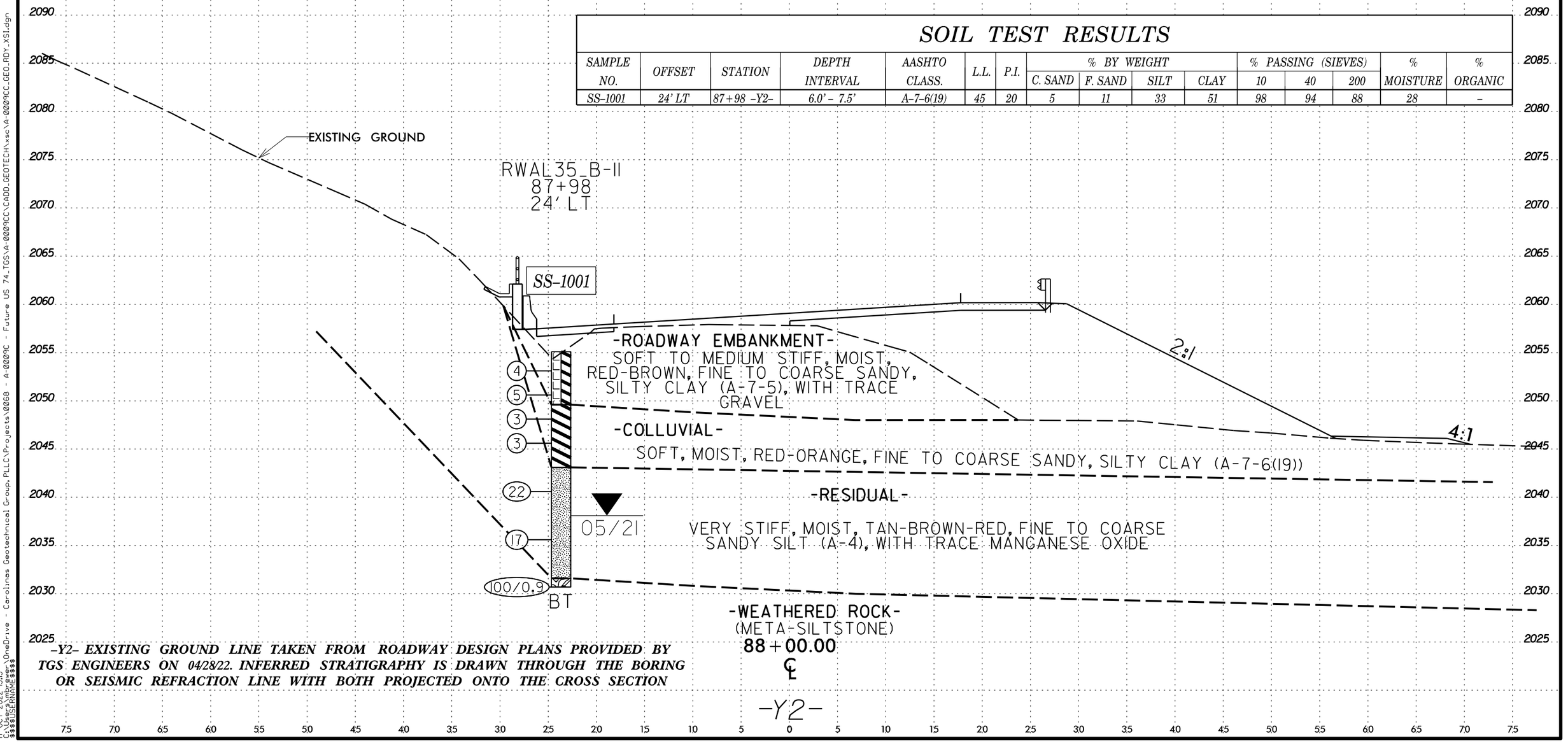


-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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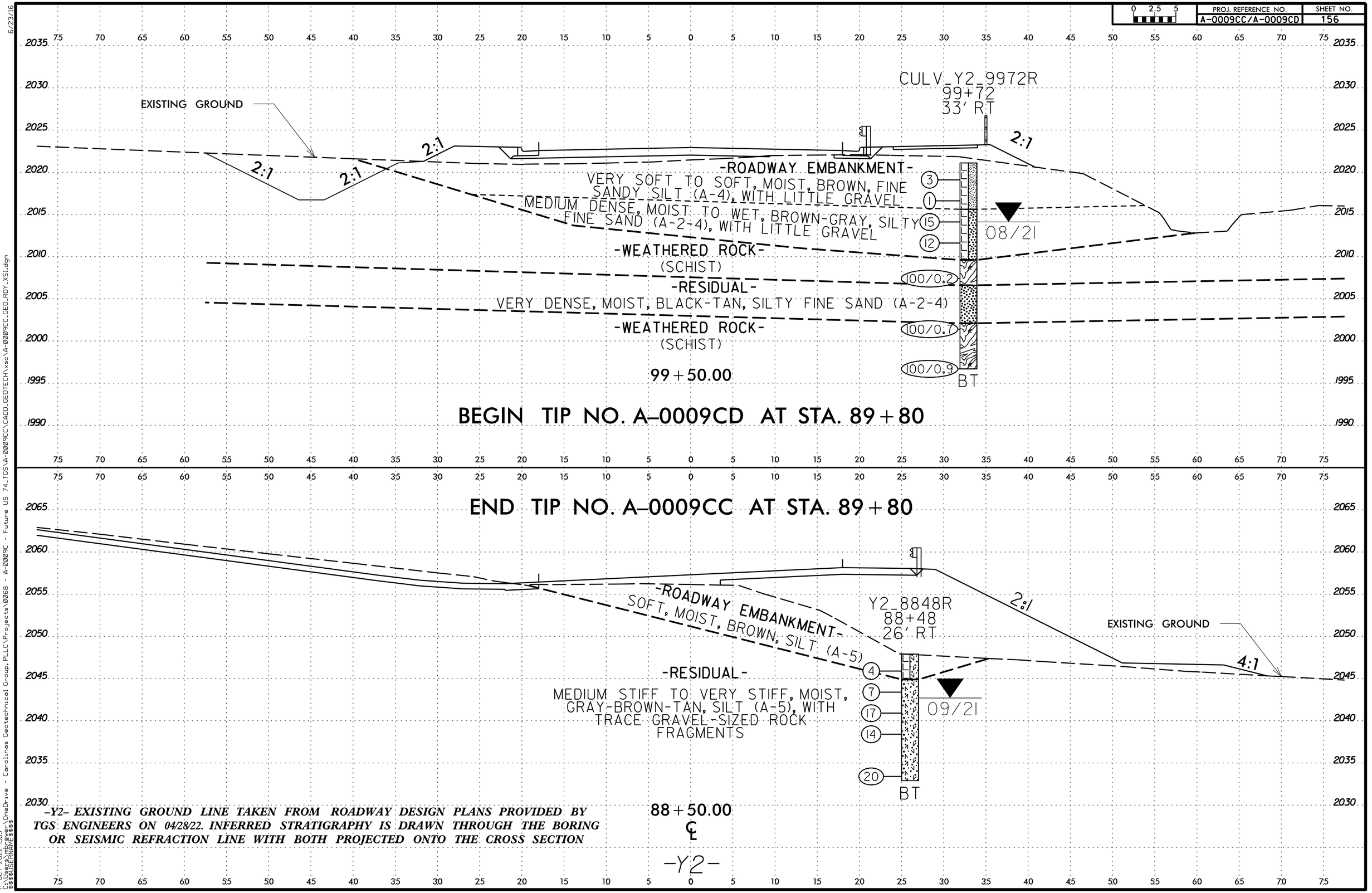
SOIL TEST RESULTS

SAMPLE NO.	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		
SS-1001	24' LT	87+98 -Y2-	6.0' - 7.5'	A-7-6(19)	45	20	5	11	33	51	98	94	88	28	-



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	157

CULV_Y2_9997L
99+97
7' RT

2:1

-ROADWAY EMBANKMENT-
LOOSE TO MEDIUM DENSE, MOIST, BROWN, SILTY FINE SAND (A-2-4) WITH TRACE GRAVEL

8
8
14
08/2L
19

-ALLUVIAL- VERY STIFF, MOIST, BROWN, FINE SANDY SILT (A-4) WITH LITTLE GRAVEL

-RESIDUAL- VERY DENSE, WET, GRAY-TAN, SILTY FINE SAND (A-2-4)

100/0.8

-WEATHERED ROCK-
(SCHIST)

100/0.4

BT

2:1

EXISTING GROUND

100+00.00

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-Y2-

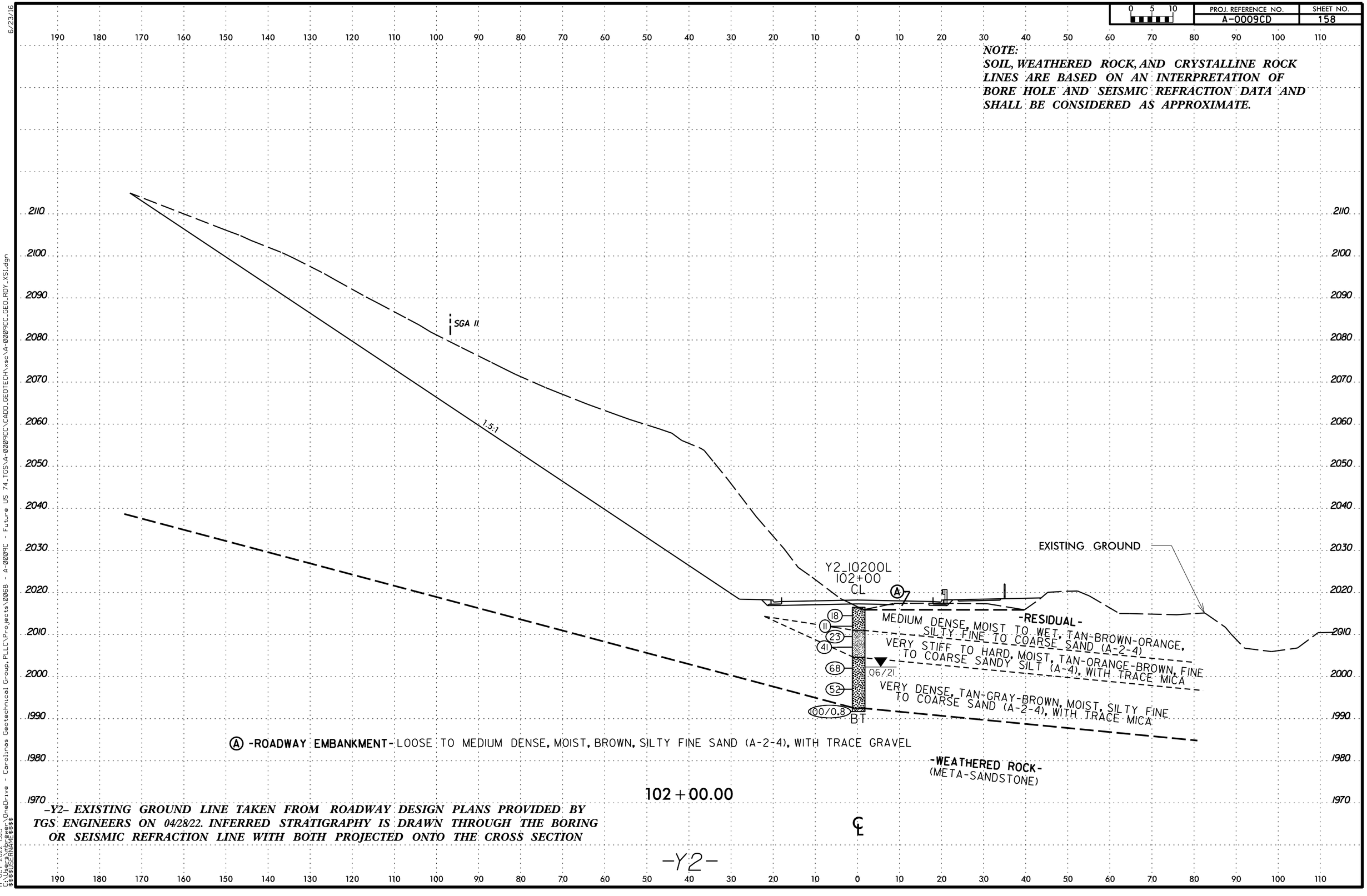
2030
2025
2020
2015
2010
2005
2000
1995

50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

6/23/16

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$$$$USERNAME$$$$

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



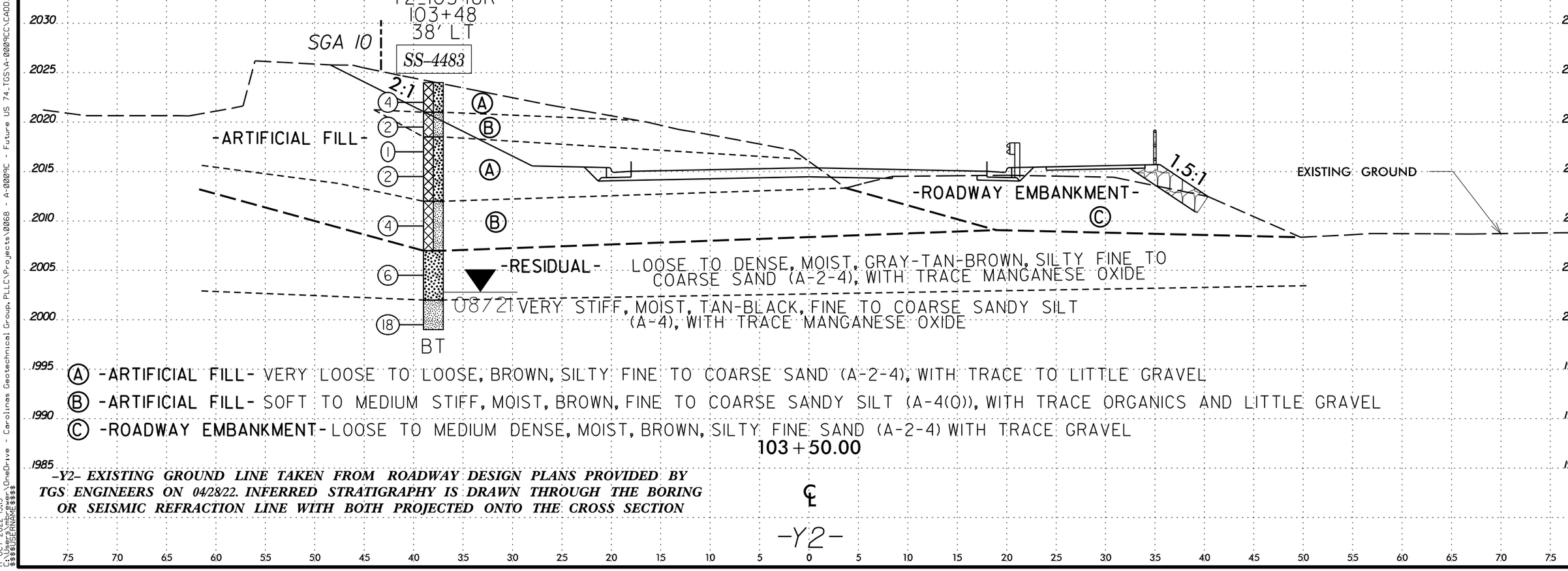
-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-4483	38' LT	103+48 -Y2-	3.5' - 5.0'	A-4(0)	28	2	32	25	24	19	96	74	49	14	-



Ⓐ -ARTIFICIAL FILL- VERY LOOSE TO LOOSE, BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE TO LITTLE GRAVEL

Ⓑ -ARTIFICIAL FILL- SOFT TO MEDIUM STIFF, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-4(0)), WITH TRACE ORGANICS AND LITTLE GRAVEL

Ⓒ -ROADWAY EMBANKMENT- LOOSE TO MEDIUM DENSE, MOIST, BROWN, SILTY FINE SAND (A-2-4) WITH TRACE GRAVEL

103+50.00

℄

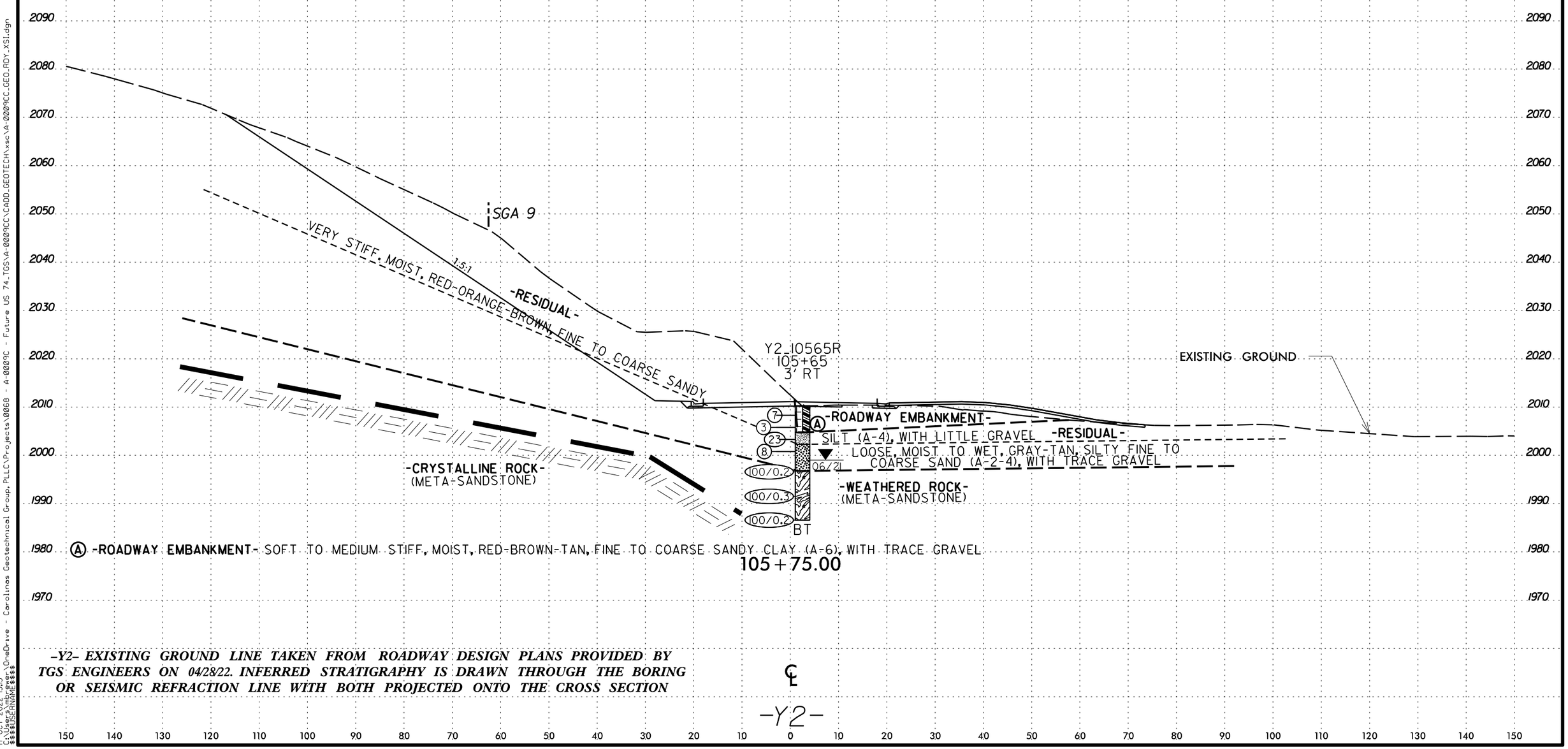
-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	160

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

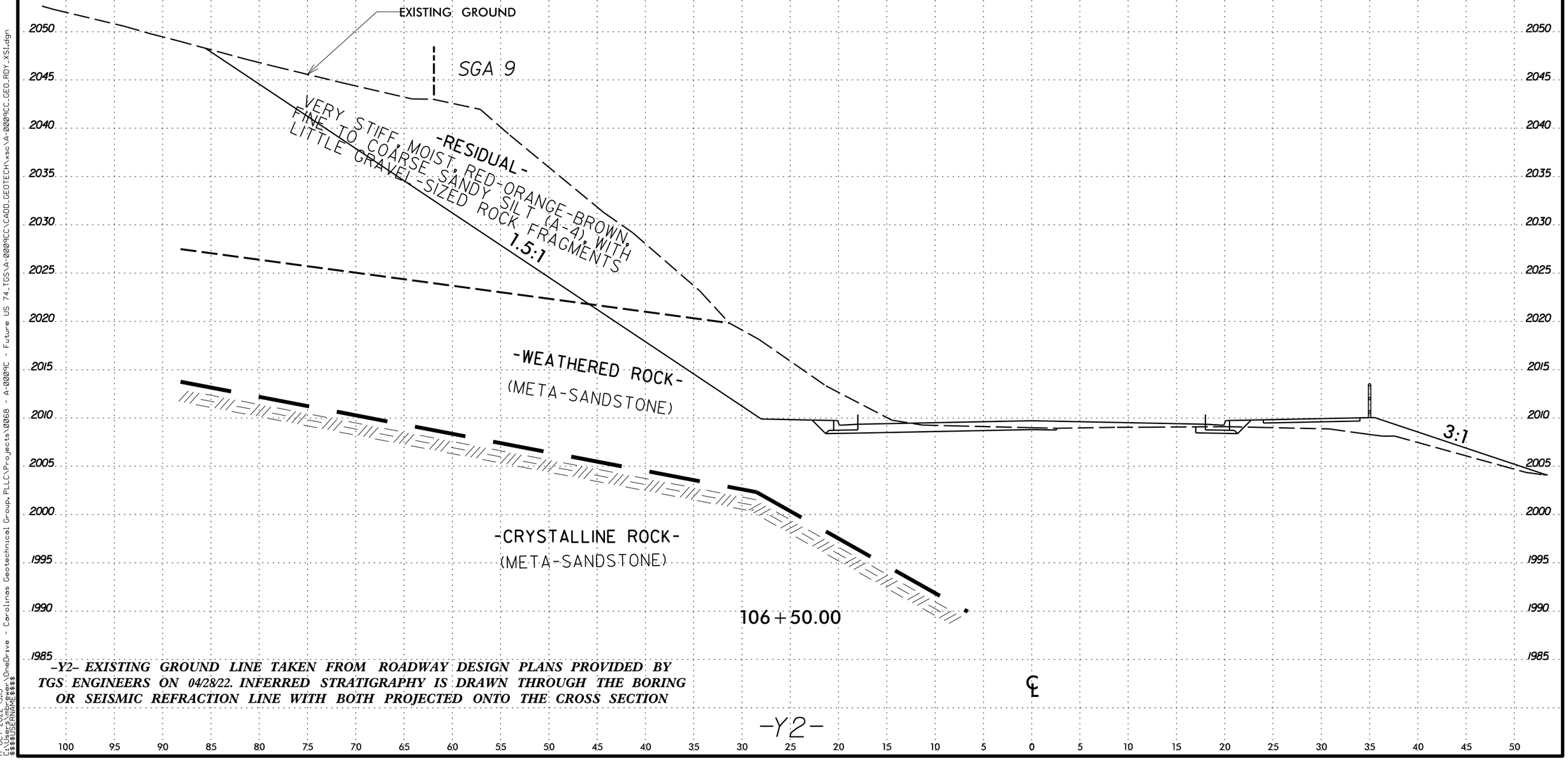
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-Y2-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

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17-OCT-2022 13:15
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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	161

NOTE:
SOIL, WEATHERED ROCK, AND CRYSTALLINE ROCK LINES ARE BASED ON AN INTERPRETATION OF BORE HOLE AND SEISMIC REFRACTION DATA AND SHALL BE CONSIDERED AS APPROXIMATE.

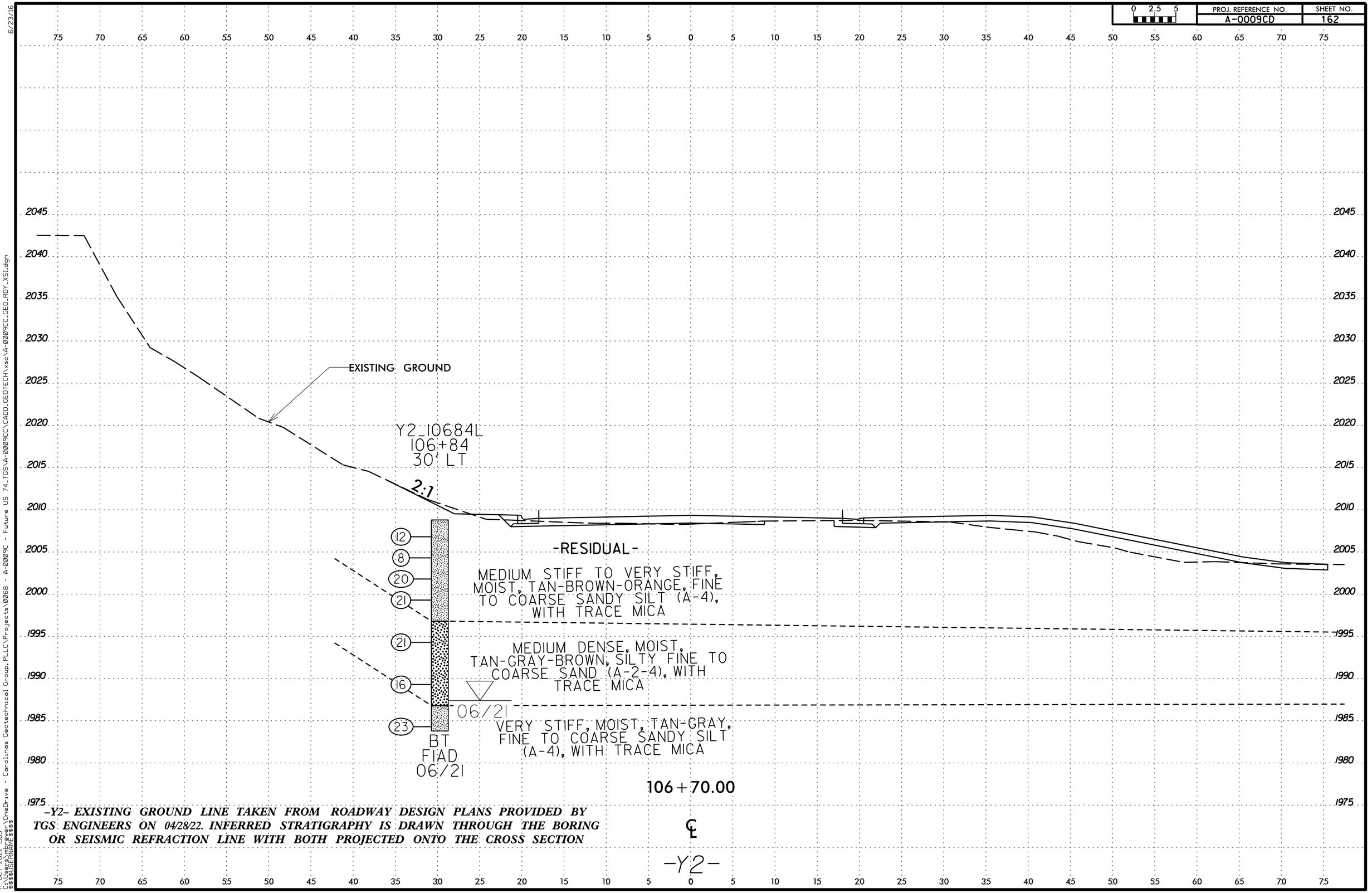


-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-Y2-

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	162



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
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$$$$USERNAME$$$$

SOIL TEST RESULTS

SAMPLE NO.	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		
SS-1009	35' RT	107+75 -Y2-	8.5' - 10.0'	A-4(0)	28	3	26	24	25	25	75	61	42	16	-

RWAL36_B-1
107+75
35' RT
SS-1009

EXISTING GROUND

4:1

3:1

-ROADWAY EMBANKMENT-

Ⓐ

13
5
2
8

-ALLUVIAL-
SOFT TO STIFF, MOIST, TAN-GRAY-ORANGE-BROWN, SILT (A-5), FINE TO COARSE SANDY SILT (A-4(0)) AND SILTY CLAY (A-7-5)

06/21

3
5
4
14
15
15
16

-RESIDUAL-
MEDIUM STIFF TO VERY STIFF, MOIST, GRAY-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE MICA

MEDIUM DENSE, WET, GRAY-TAN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE MICA

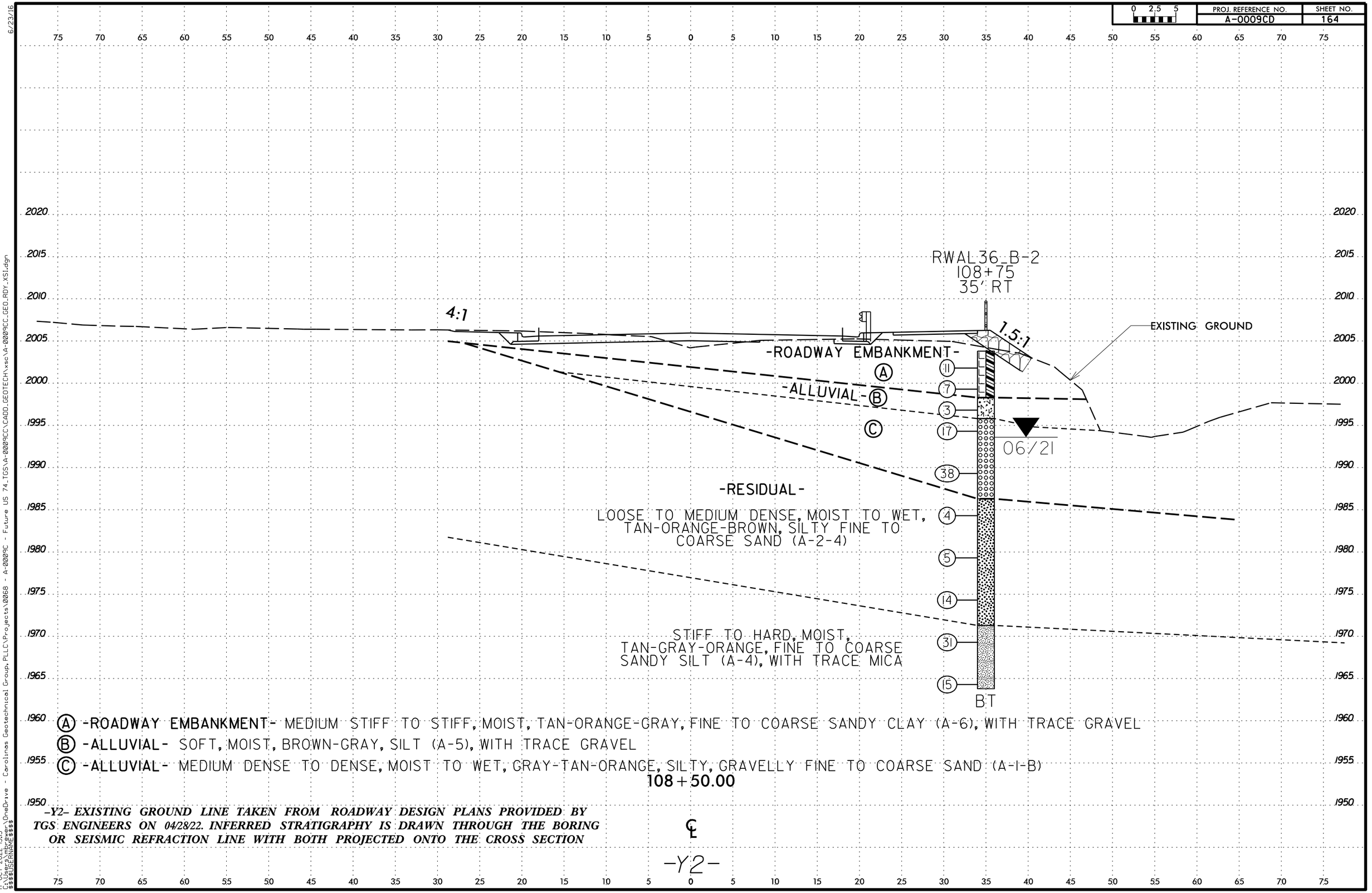
BT

Ⓐ -ROADWAY EMBANKMENT- STIFF TO MEDIUM STIFF, MOIST, TAN-ORANGE-GRAY, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL AND MICA

107+50.00
℄
-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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Ⓐ **-ROADWAY EMBANKMENT-** MEDIUM STIFF TO STIFF, MOIST, TAN-ORANGE-GRAY, FINE TO COARSE SANDY CLAY (A-6), WITH TRACE GRAVEL

Ⓑ **-ALLUVIAL-** SOFT, MOIST, BROWN-GRAY, SILT (A-5), WITH TRACE GRAVEL

Ⓒ **-ALLUVIAL-** MEDIUM DENSE TO DENSE, MOIST TO WET, GRAY-TAN-ORANGE, SILTY, GRAVELLY FINE TO COARSE SAND (A-1-B)

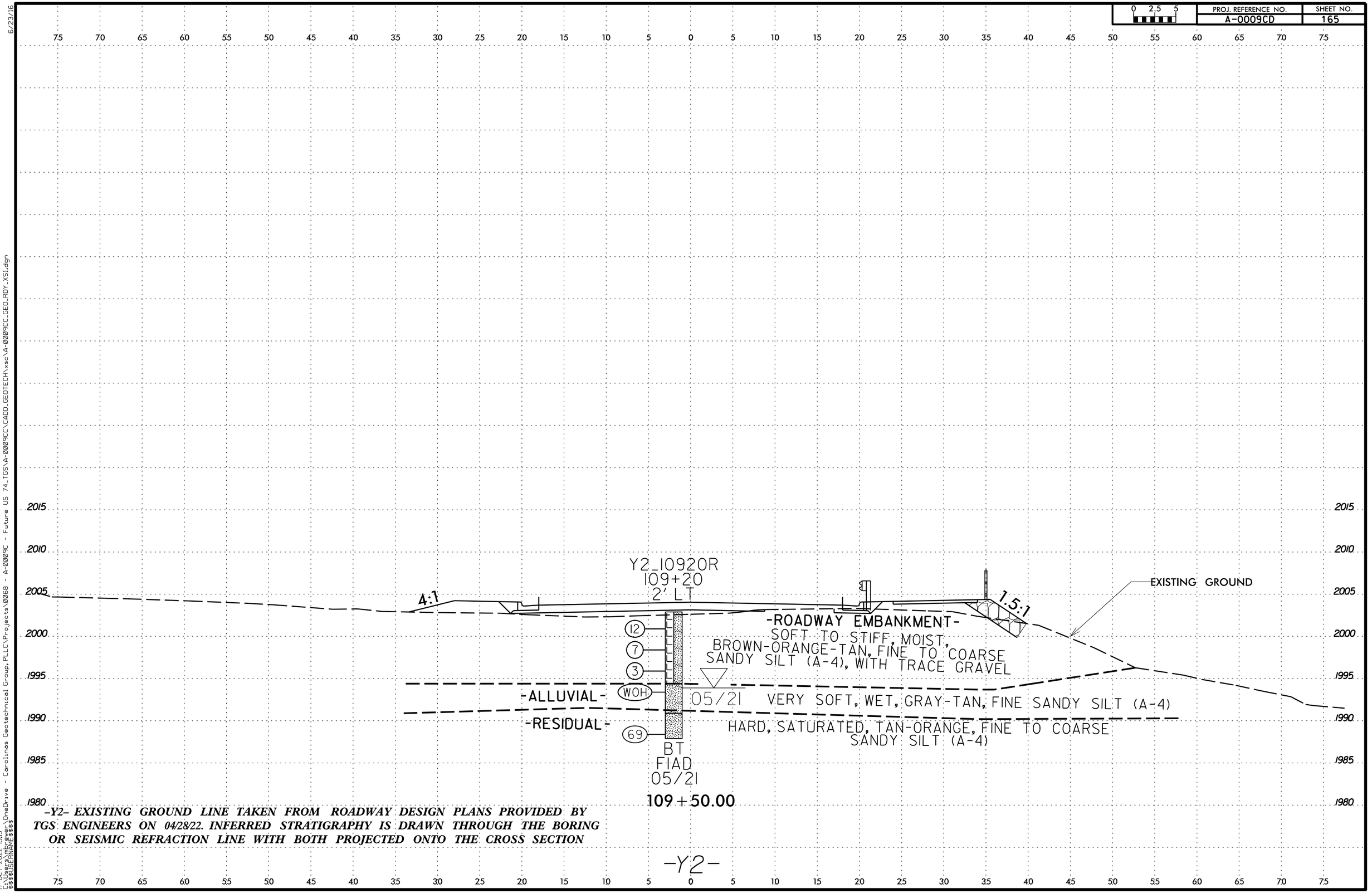
108+50.00

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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-Y2-

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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

RWAL36_B-3
109+75
35' RT

EXISTING GROUND

4:1

1.5:1

-ROADWAY EMBANKMENT-
VERY SOFT TO STIFF, MOIST, RED-ORANGE-TAN, FINE TO COARSE SANDY CLAY (A-6) AND FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

-ALLUVIAL-
MEDIUM DENSE TO VERY DENSE, SATURATED, TAN-GRAY-BROWN, FINE TO COARSE SANDY, SILTY GRAVEL (A-1-B) AND SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL

-RESIDUAL-
LOOSE TO MEDIUM DENSE, MOIST, TAN-GRAY-ORANGE, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE MICA

VERY STIFF, MOIST, TAN-BROWN-ORANGE, FINE TO COARSE SANDY SILT (A-4), WITH TRACE MICA

06/21

BT

110+00.00

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

| | | |

0 2.5 5

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2015 2010 2005 2000 1995 1990 1985 1980 1975 1970 1965 1960 1955 1950

Y2_11093R
110+93
3' RT

RWAL36_B-4
110+76
32' RT

4:1

1:1

EXISTING GROUND

-ALLUVIAL- Ⓑ

LOOSE TO MEDIUM DENSE, MOIST TO WET, BROWN-GRAY, COARSE SANDY GRAVEL (A-1-A) AND SILTY, GRAVEELY FINE TO COARSE SAND (A-1-B), WITH BOULDERS AND COBBLES

Ⓐ -ROADWAY EMBANKMENT-

4 13 12 35 60/0.0

09/21

BT

-RESIDUAL-

STIFF TO VERY STIFF, MOIST TO WET, TAN, FINE TO COARSE SANDY SILT (A-4)

11 18 7 6 26 18 15 25 29

BT
DRY
09/21

Ⓐ -ROADWAY EMBANKMENT- SOFT TO VERY STIFF, MOIST, RED-TAN-BROWN, CLAYEY, FINE TO COARSE SANDY SILT (A-4) AND FINE SANDY CLAY (A-6), WITH TRACE GRAVEL

Ⓑ -ALLUVIAL- STIFF, MOIST TO WET, BROWN-GRAY, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL AND ORGANICS

111+00.00

℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	168

RWAL37_B-1
112+75
35' RT

4:1

1:1

-ROADWAY EMBANKMENT- (A)

EXISTING GROUND

-ALLUVIAL- (B)

5
13
6
1
41
11
20
4
45
100/0.5

06/21

BT

-RESIDUAL-

VERY LOOSE TO DENSE, MOIST, TAN-ORANGE-GRAY, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE MICA

-WEATHERED ROCK-
(META-SANDSTONE)

(A) -ROADWAY EMBANKMENT- MEDIUM STIFF TO STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY CLAY (A-6), WITH LITTLE GRAVEL

(B) -ALLUVIAL- VERY SOFT TO HARD, MOIST OT WET, GRAY-TAN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL AND TRACE MICA

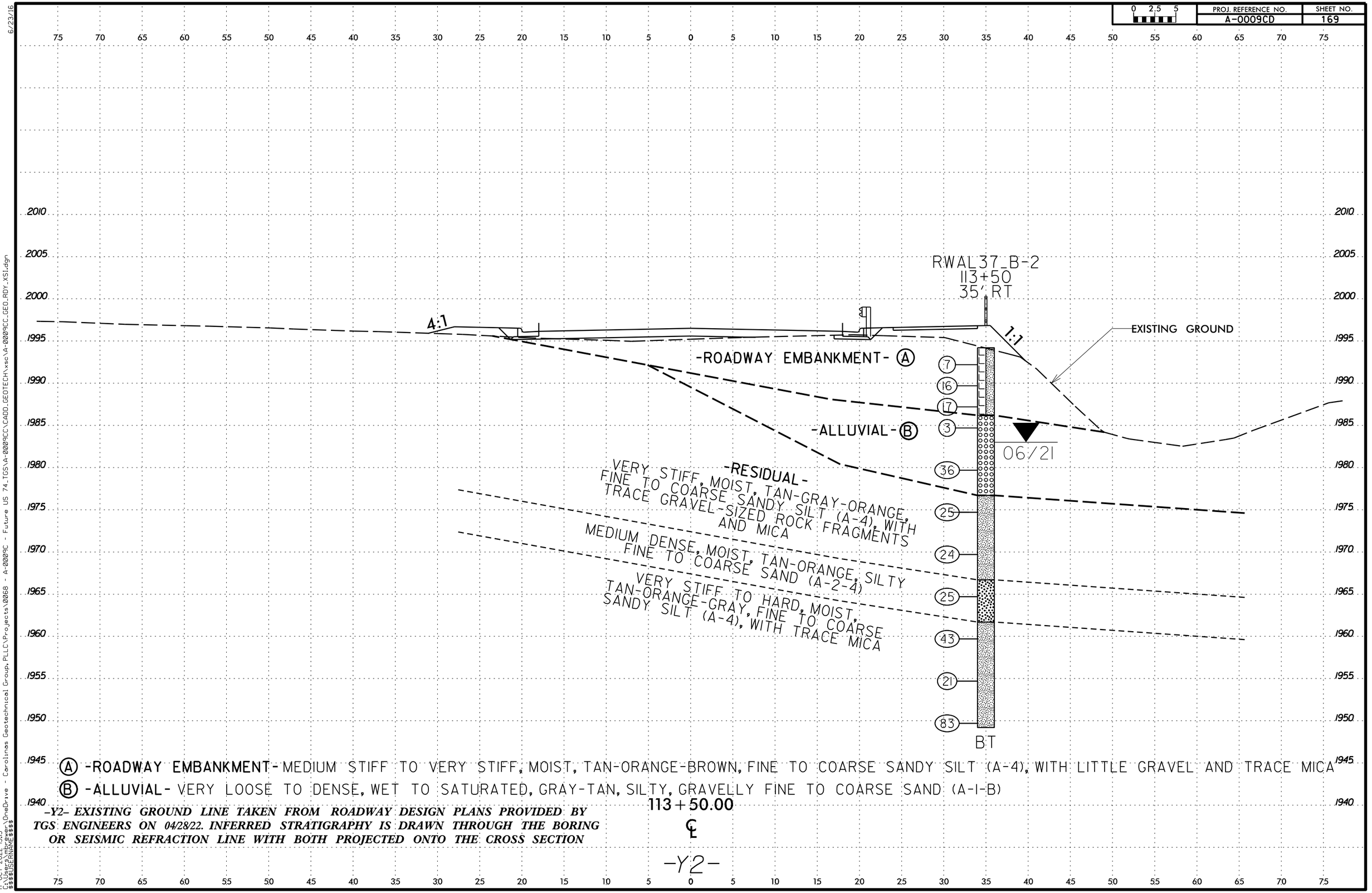
113+00.00

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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-Y2-

6/23/16
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C:\Users\mbrewer\OneDrive - Carolinas Geotechnical Group,PLLC\Projects\0068 - A-0009C - Future US 74_TGS\
$$$$USERNAME$$$$



Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF TO VERY STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL AND TRACE MICA

Ⓑ -ALLUVIAL- VERY LOOSE TO DENSE, WET TO SATURATED, GRAY-TAN, SILTY, GRAVELLY FINE TO COARSE SAND (A-1-B)

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

113+50.00

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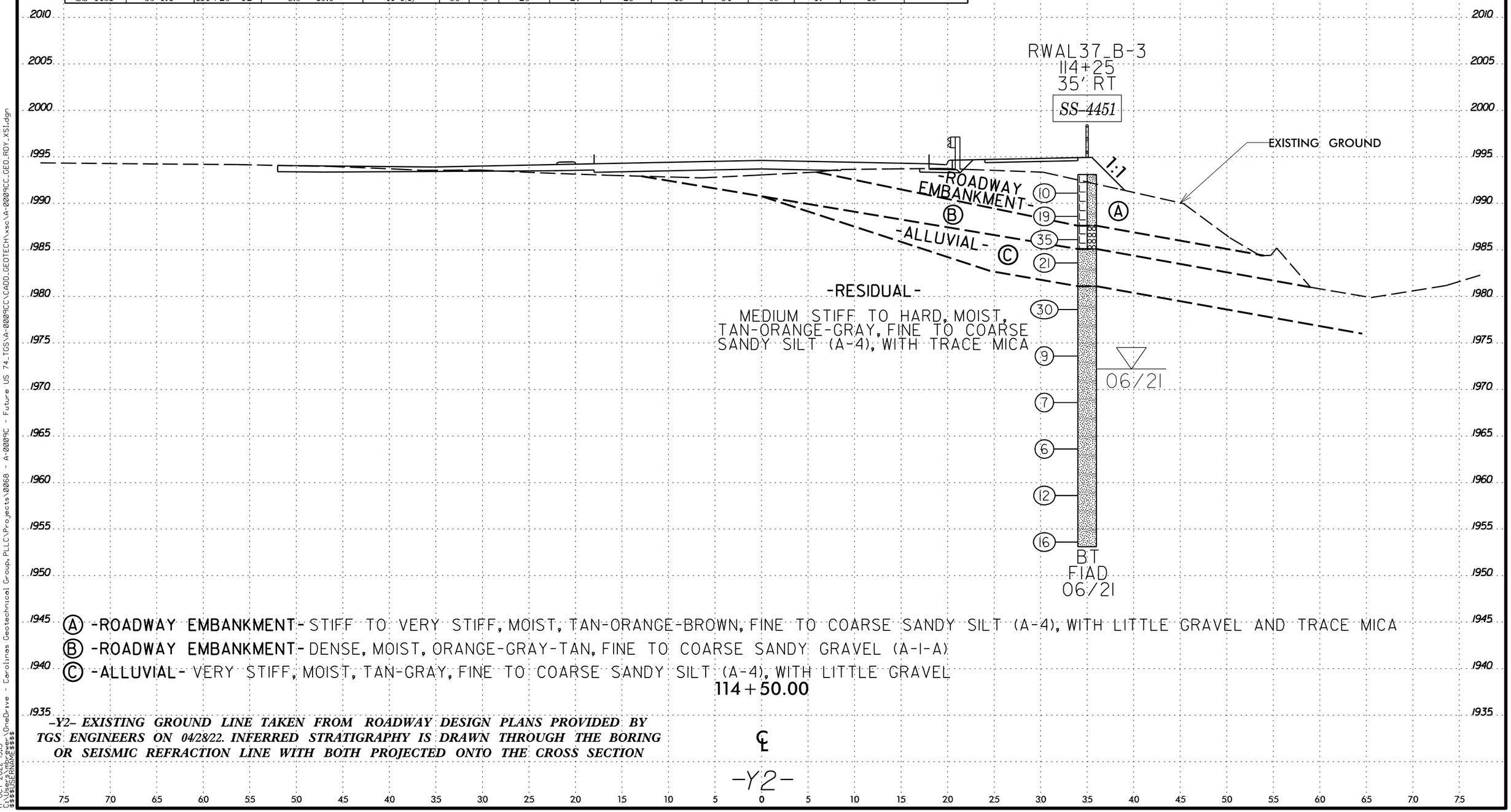
-Y2-

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	170

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			%	%
							C. SAND	F. SAND	SILT	CLAY	10	40	200	MOISTURE	ORGANIC
SS-4451	35' RT	114+25 -Y2-	8.5' - 10.0'	A-4(1)	36	5	25	27	29	19	84	69	47	15	-



Ⓐ -ROADWAY EMBANKMENT- STIFF TO VERY STIFF, MOIST, TAN-ORANGE-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL AND TRACE MICA

Ⓑ -ROADWAY EMBANKMENT- DENSE, MOIST, ORANGE-GRAY-TAN, FINE TO COARSE SANDY GRAVEL (A-1-A)

Ⓒ -ALLUVIAL- VERY STIFF, MOIST, TAN-GRAY, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

114+50.00

℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	171

RWAL37_B-4
115+00
35' RT

2:1

EXISTING GROUND

-ROADWAY EMBANKMENT-
STIFF, MOIST, BROWN-GRAY-ORANGE, FINE SANDY SILT (A-4), WITH TRACE GRAVEL

9
14
14
12

-ALLUVIAL-
VERY DENSE, WET, FINE TO COARSE SANDY, SILTY GRAVEL (A-1-A), WITH COBBLES AND BOULDERS

100/0.6
60/0.0

BT
DRY
05/21

115+00.00

℄

-Y2-

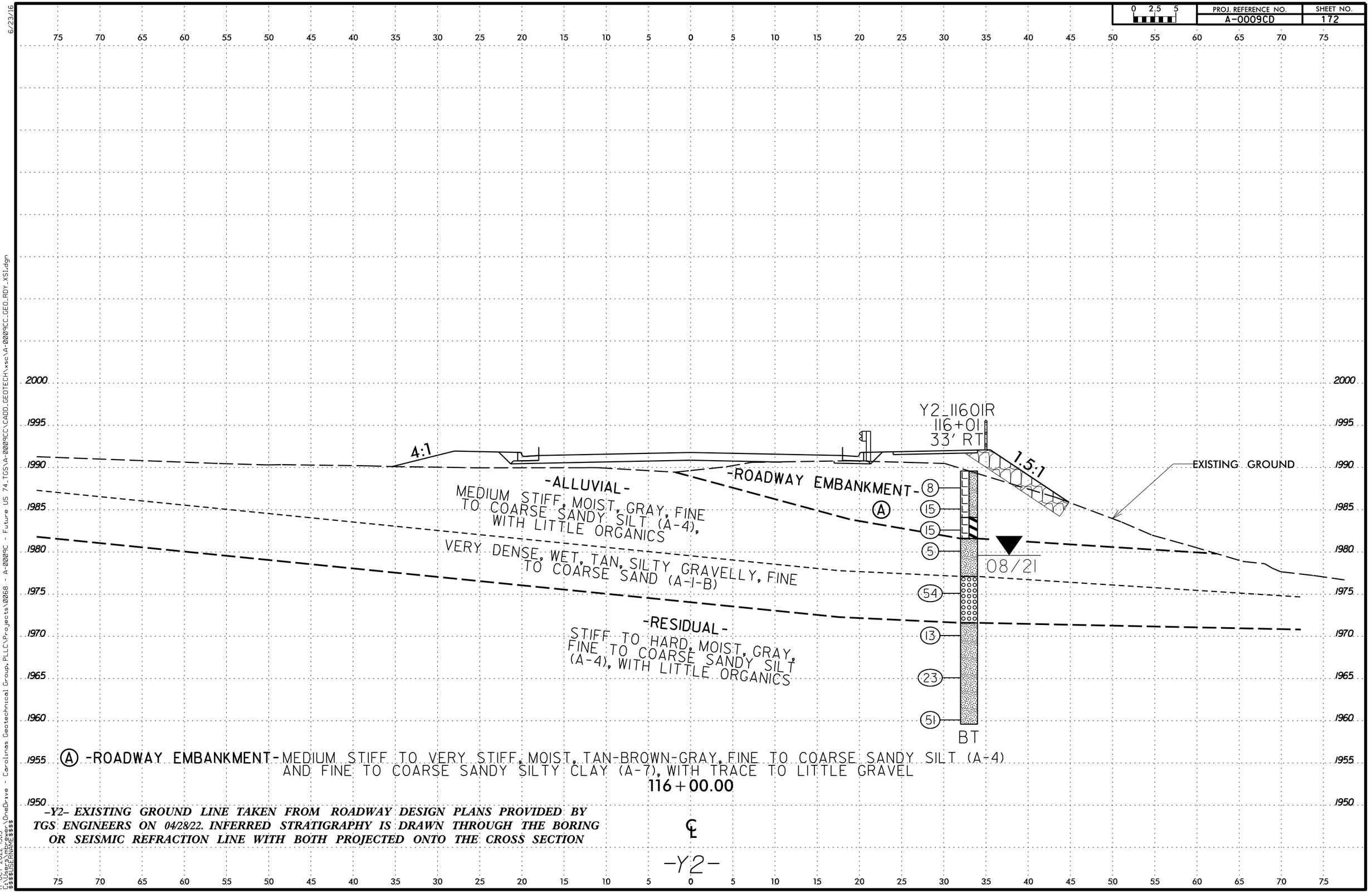
-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

2005
2000
1995
1990
1985
1980
1975
1970
1965

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

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Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF TO VERY STIFF, MOIST, TAN-BROWN-GRAY, FINE TO COARSE SANDY SILT (A-4) AND FINE TO COARSE SANDY SILTY CLAY (A-7), WITH TRACE TO LITTLE GRAVEL

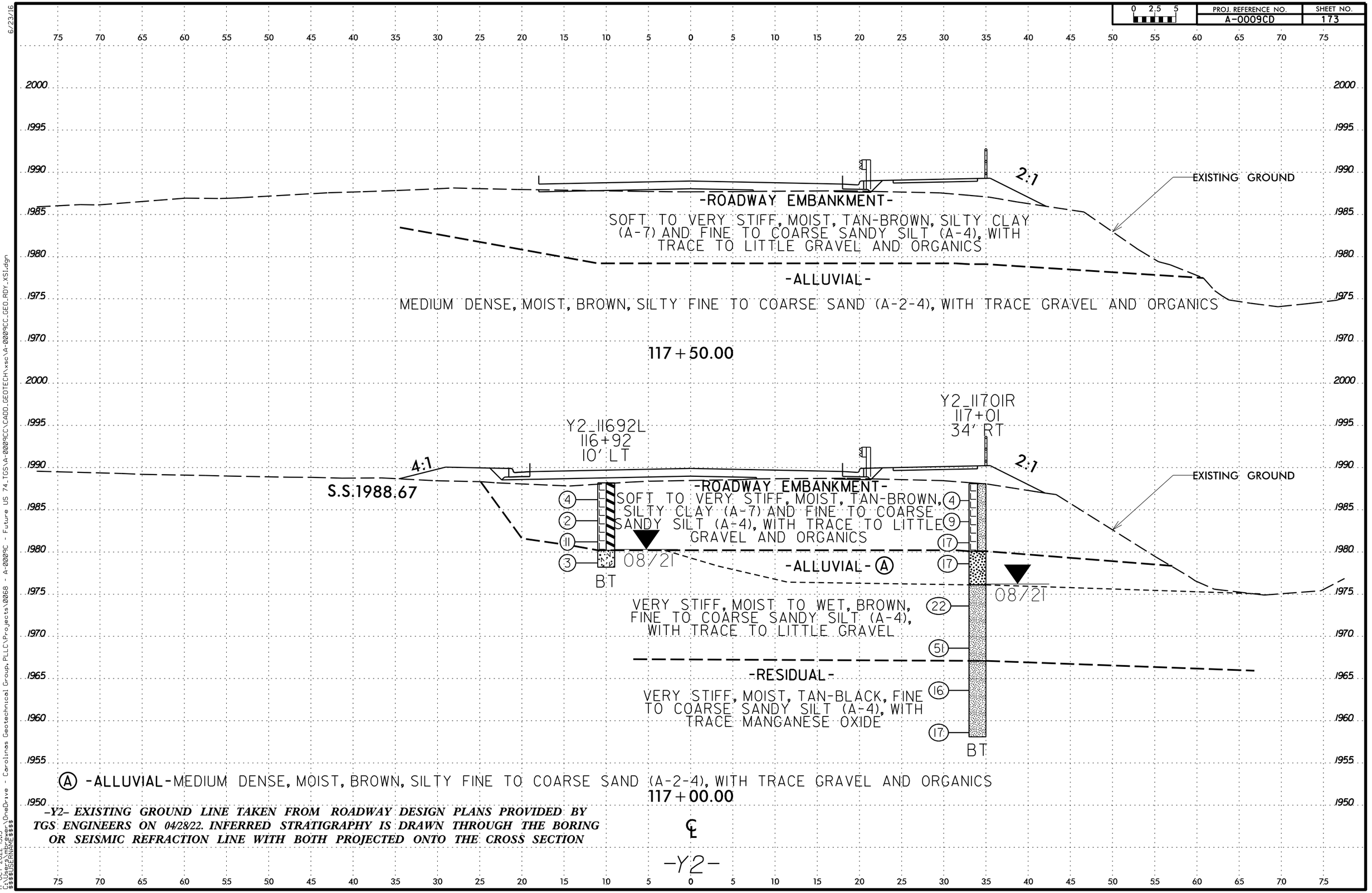
116+00.00

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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-Y2-

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	174

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

2000 1995 1990 1985 1980 1975 1970 1965 1960 1955 1950 1945 1940

Y2_1180IR
118+01
32' RT

2:1

1.5:1

-ROADWAY EMBANKMENT- Ⓐ

EXISTING GROUND

-ALLUVIAL- Ⓑ

-RESIDUAL-

SOFT TO MEDIUM STIFF, WET, TAN,
FINE TO COARSE SANDY SILT (A-4)

7	11
8	6
29	2
3	4
7	

BT
DRY

Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF TO STIFF, MOIST, TAN-RED-BROWN, FINE TO COARSE SANDY SILT (A-4) AND SILT (A-5), WITH TRACE GRAVEL

Ⓑ -ALLUVIAL- MEDIUM DENSE, MOIST, BROWN-GRAY, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL

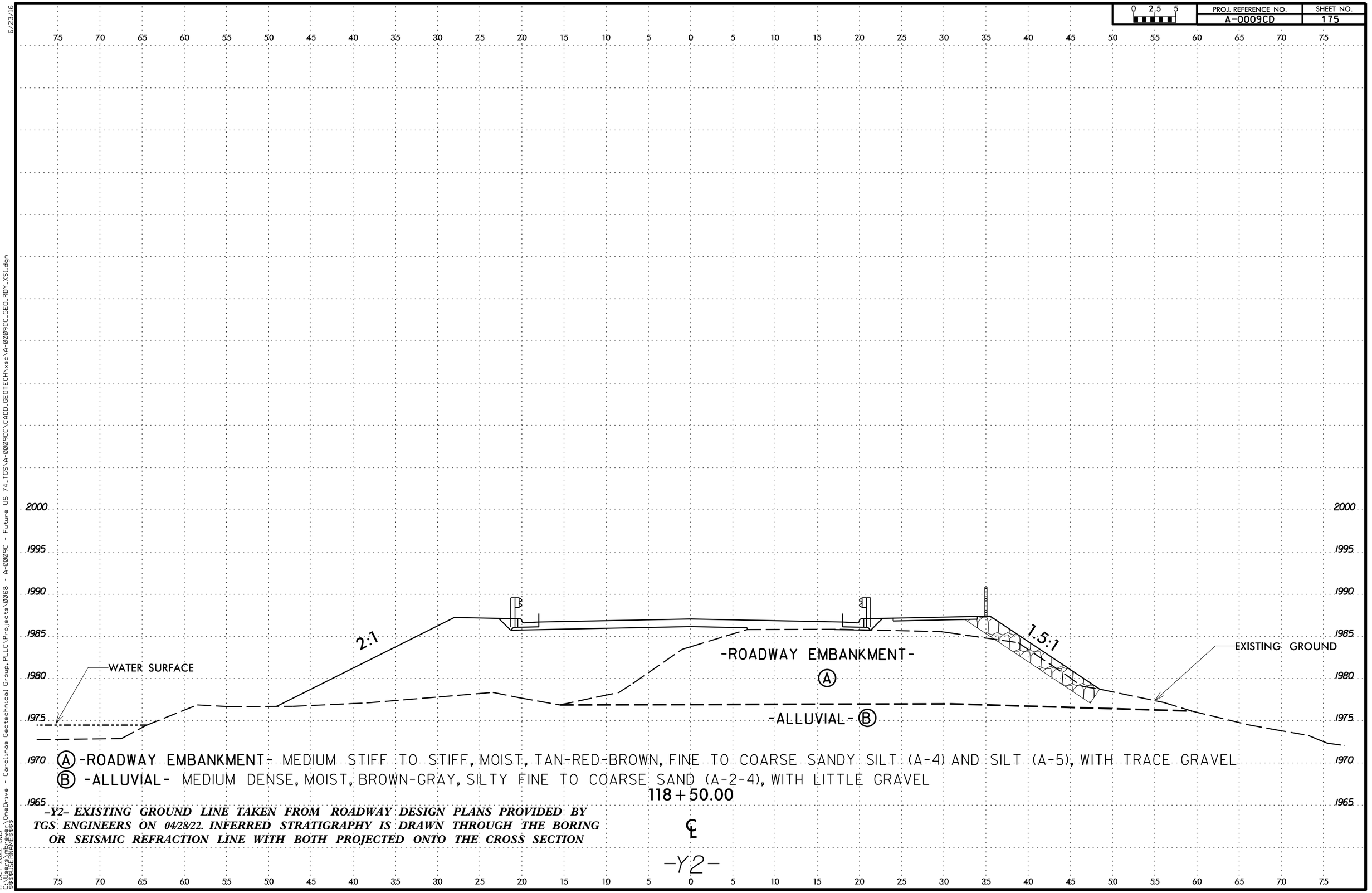
-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

118+00.00
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-Y2-

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	175



Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF TO STIFF, MOIST, TAN-RED-BROWN, FINE TO COARSE SANDY SILT (A-4) AND SILT (A-5), WITH TRACE GRAVEL

Ⓑ -ALLUVIAL- MEDIUM DENSE, MOIST, BROWN-GRAY, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL

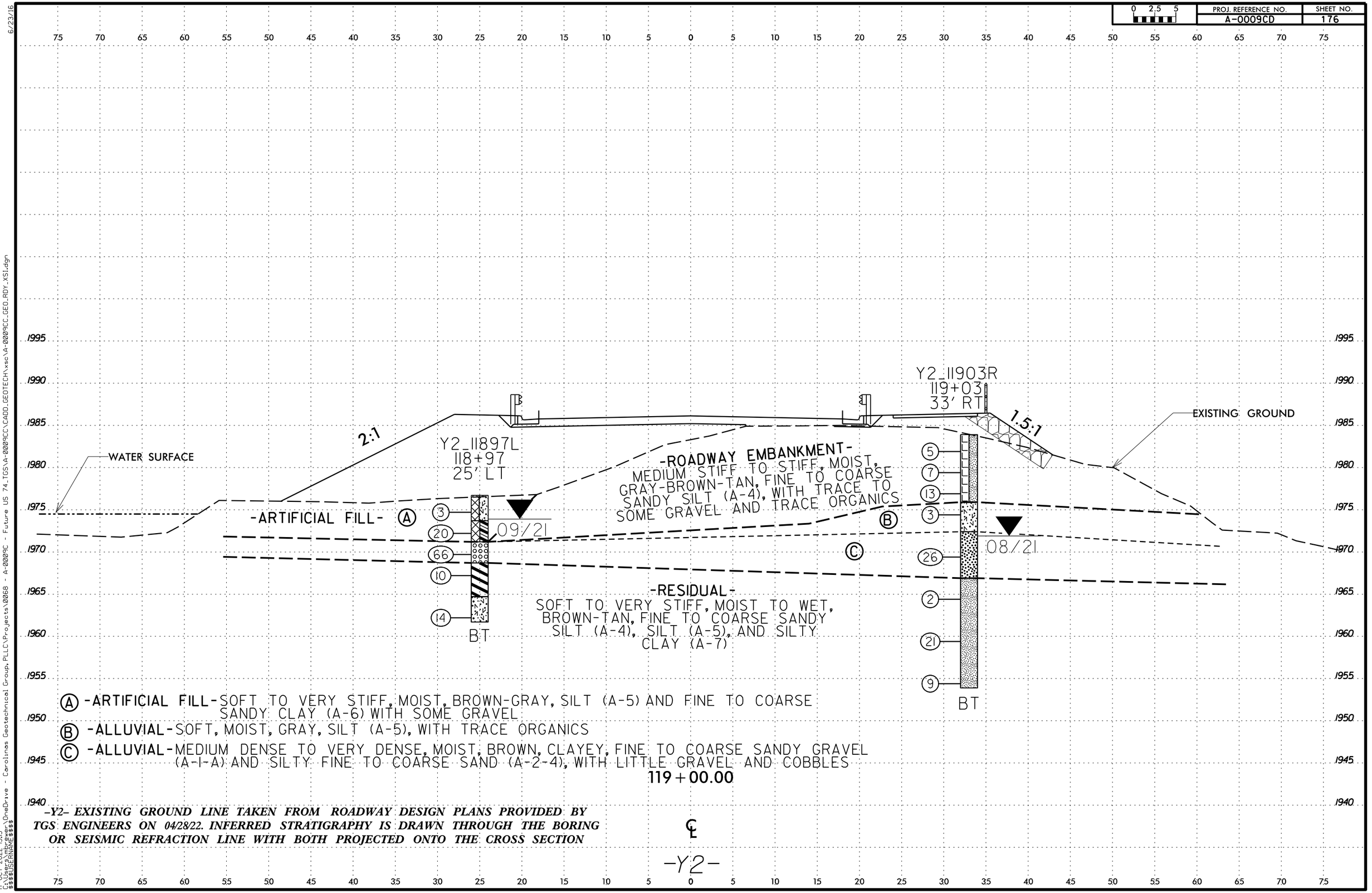
118+50.00

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-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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Ⓐ -ARTIFICIAL FILL- SOFT TO VERY STIFF, MOIST, BROWN-GRAY, SILT (A-5) AND FINE TO COARSE SANDY CLAY (A-6) WITH SOME GRAVEL

Ⓑ -ALLUVIAL- SOFT, MOIST, GRAY, SILT (A-5), WITH TRACE ORGANICS

Ⓒ -ALLUVIAL- MEDIUM DENSE TO VERY DENSE, MOIST, BROWN, CLAYEY, FINE TO COARSE SANDY GRAVEL (A-1-A) AND SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL AND COBBLES

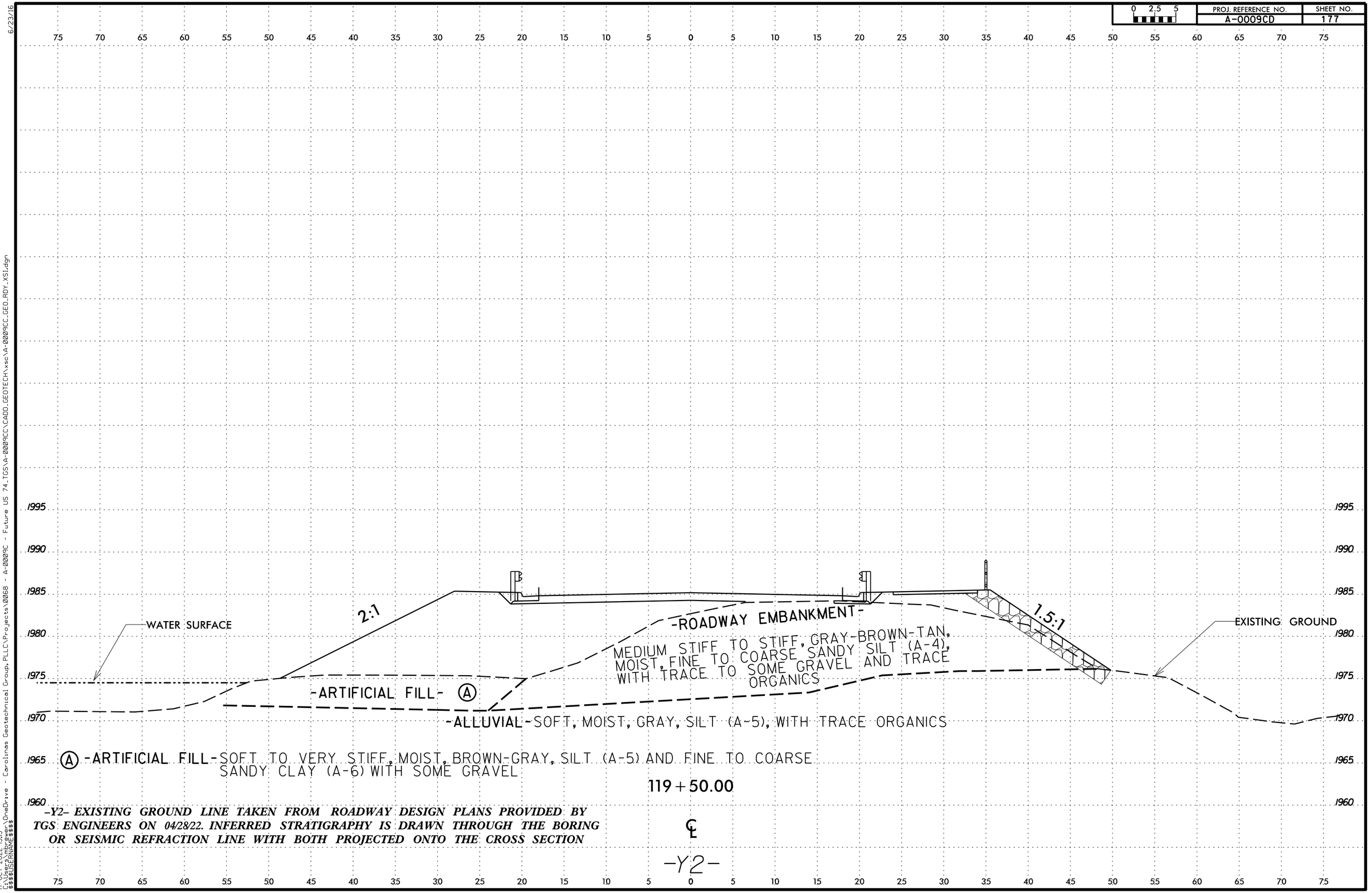
119+00.00

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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-Y2-

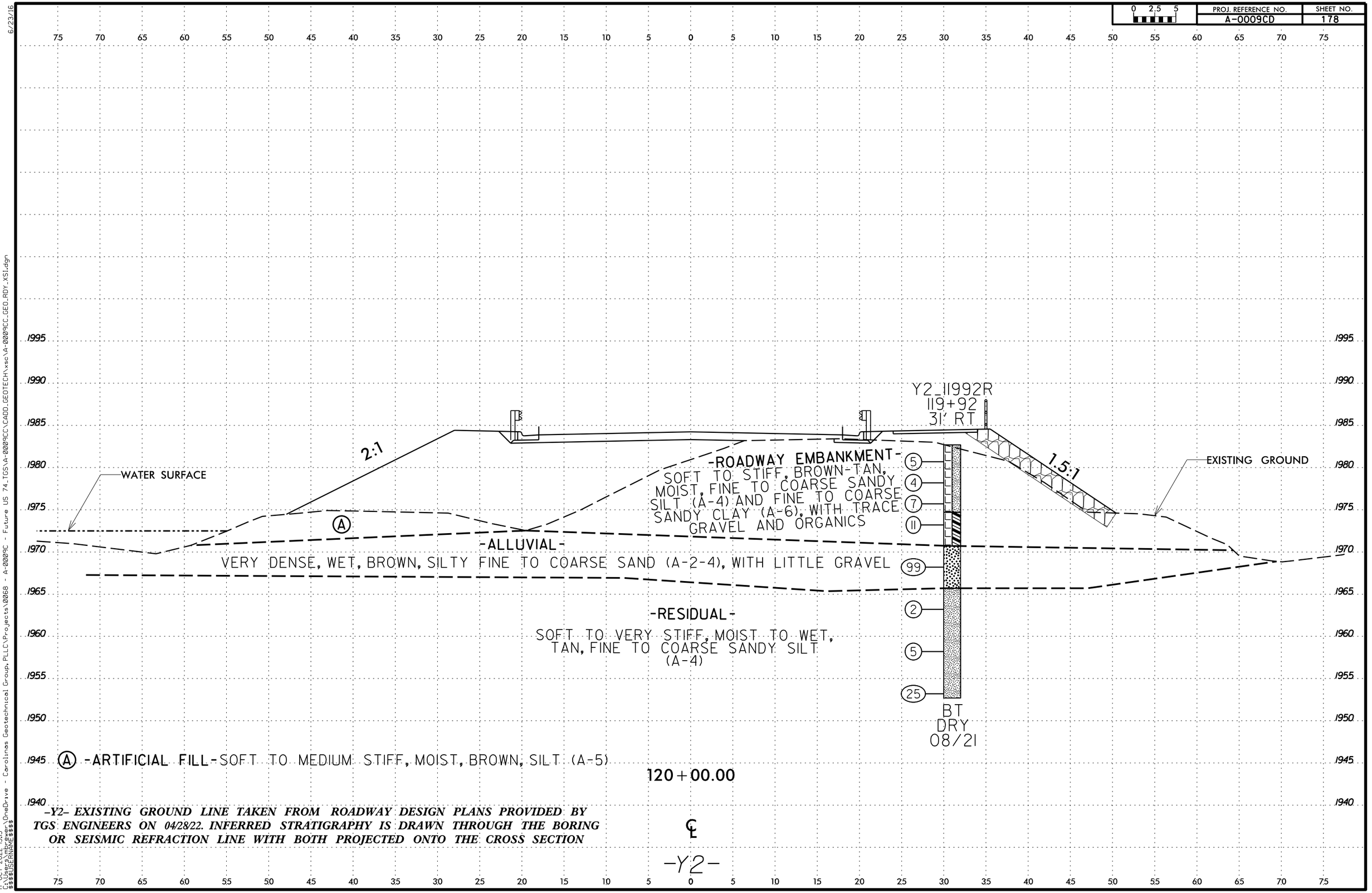
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	178

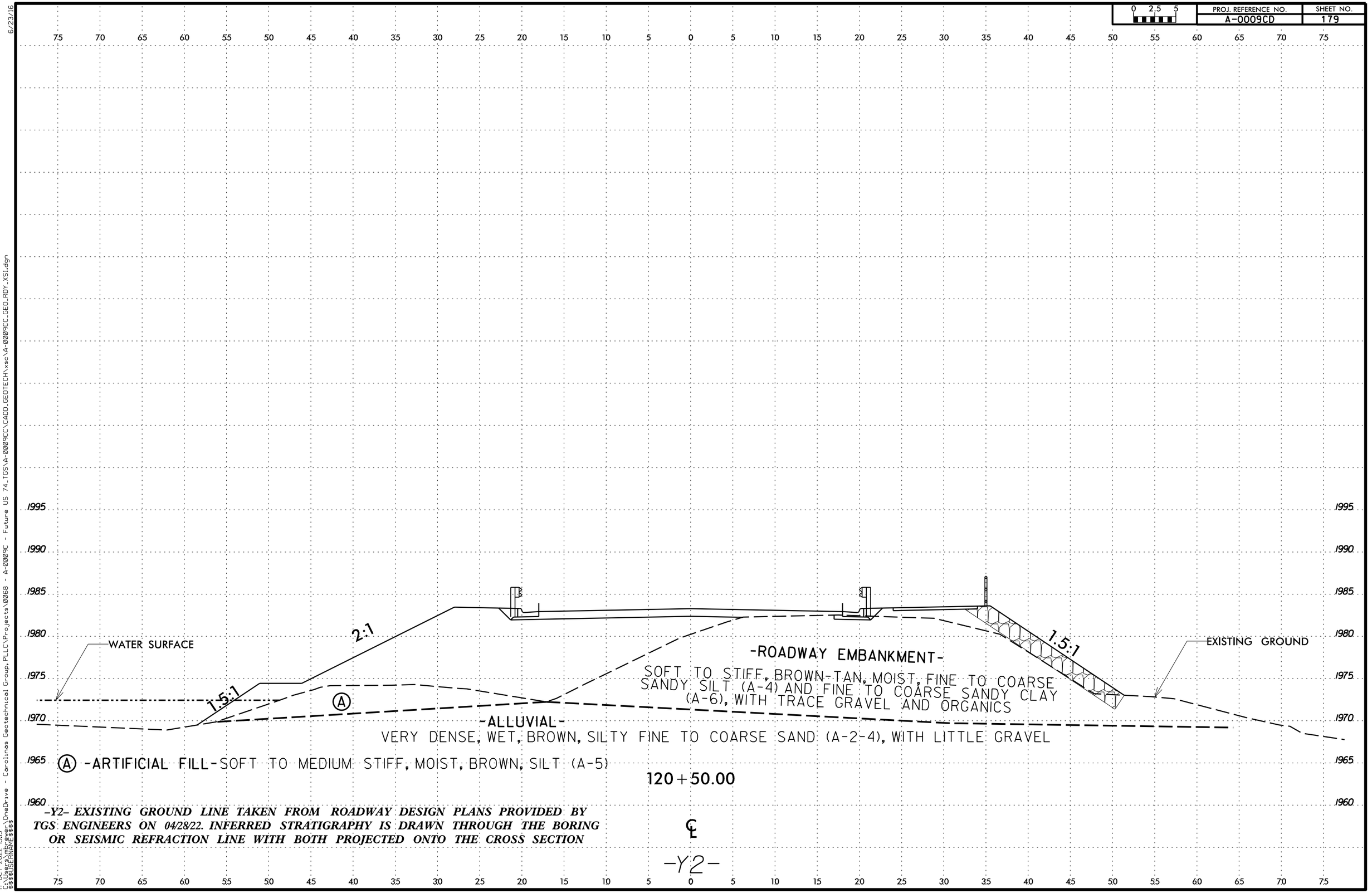


-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16

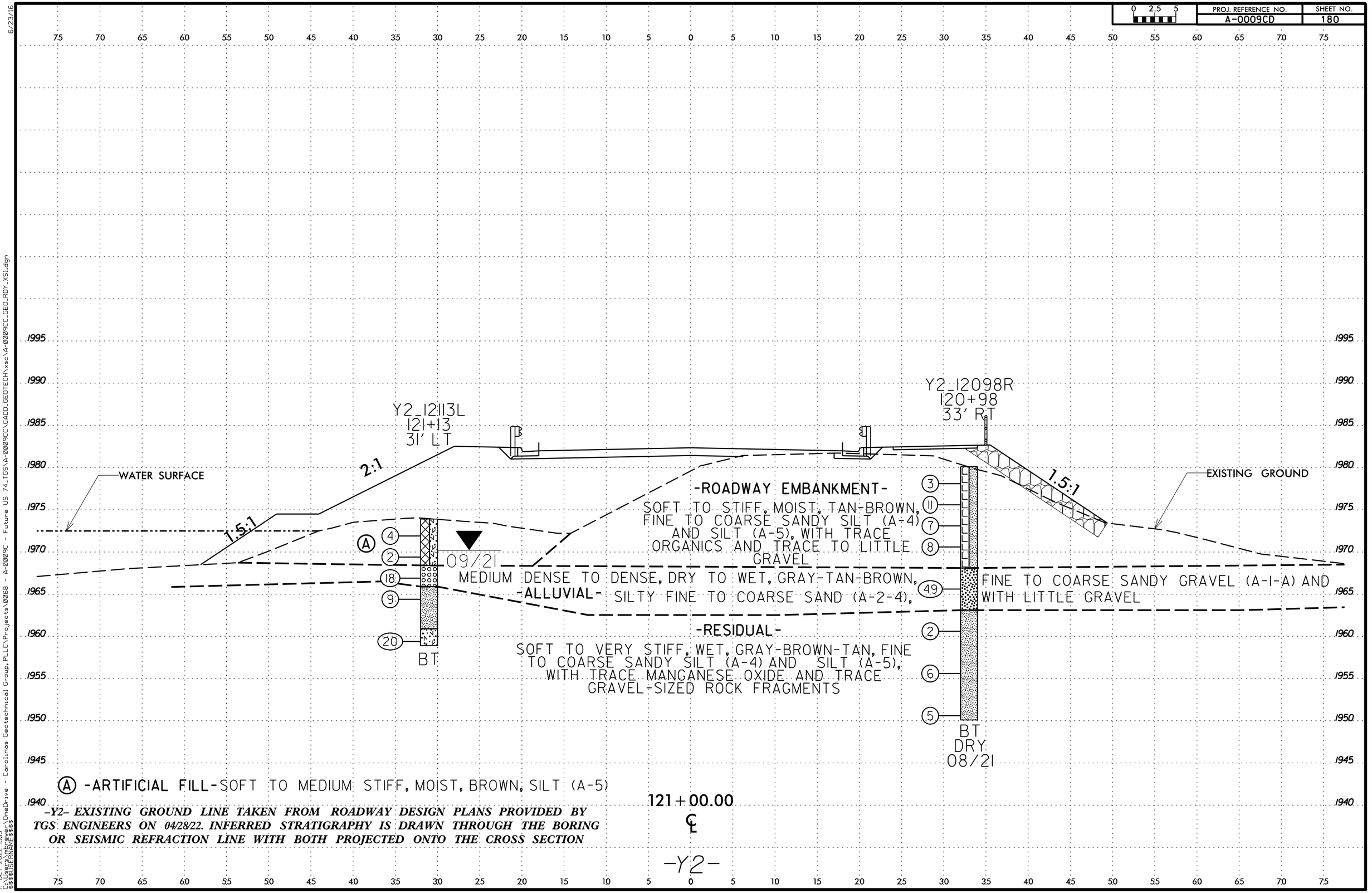
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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	179



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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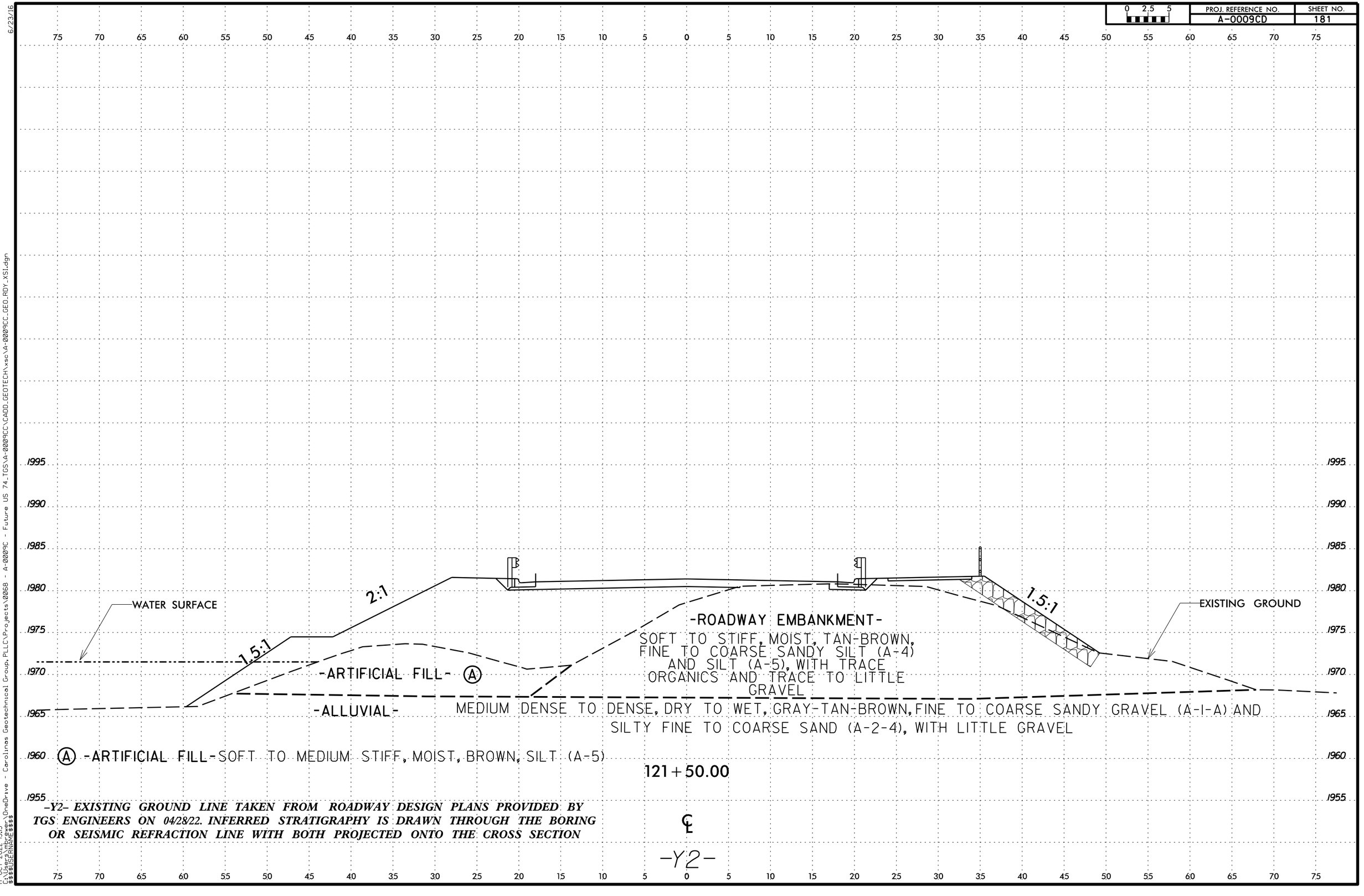
Ⓐ -ARTIFICIAL FILL- SOFT TO MEDIUM STIFF, MOIST, BROWN, SILT (A-5)

121+00.00
℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	182

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

1990
1985
1980
1975
1970
1965
1960
1955
1950
1945
1940

Y2_12203R
122+03
31' RT

WATER SURFACE

2:1

1.5:1

1.5:1

EXISTING GROUND

-ROADWAY EMBANKMENT-
Ⓐ
LOOSE TO MEDIUM DENSE, MOIST, TAN-GRAY-BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL

-ARTIFICIAL FILL-
SOFT TO MEDIUM STIFF, MOIST, BROWN, SILT (A-5)

-ALLUVIAL-
DENSE, WET, BROWN-GRAY, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL

-RESIDUAL-
HARD, MOIST, TAN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL-SIZED ROCK FRAGMENTS

-WEATHERED ROCK-
(SCHIST)

7
8
16
10
31
96
69
100/0.8
BT

08/21

Ⓐ -ROADWAY EMBANKMENT- MEDIUM STIFF, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

122+00.00

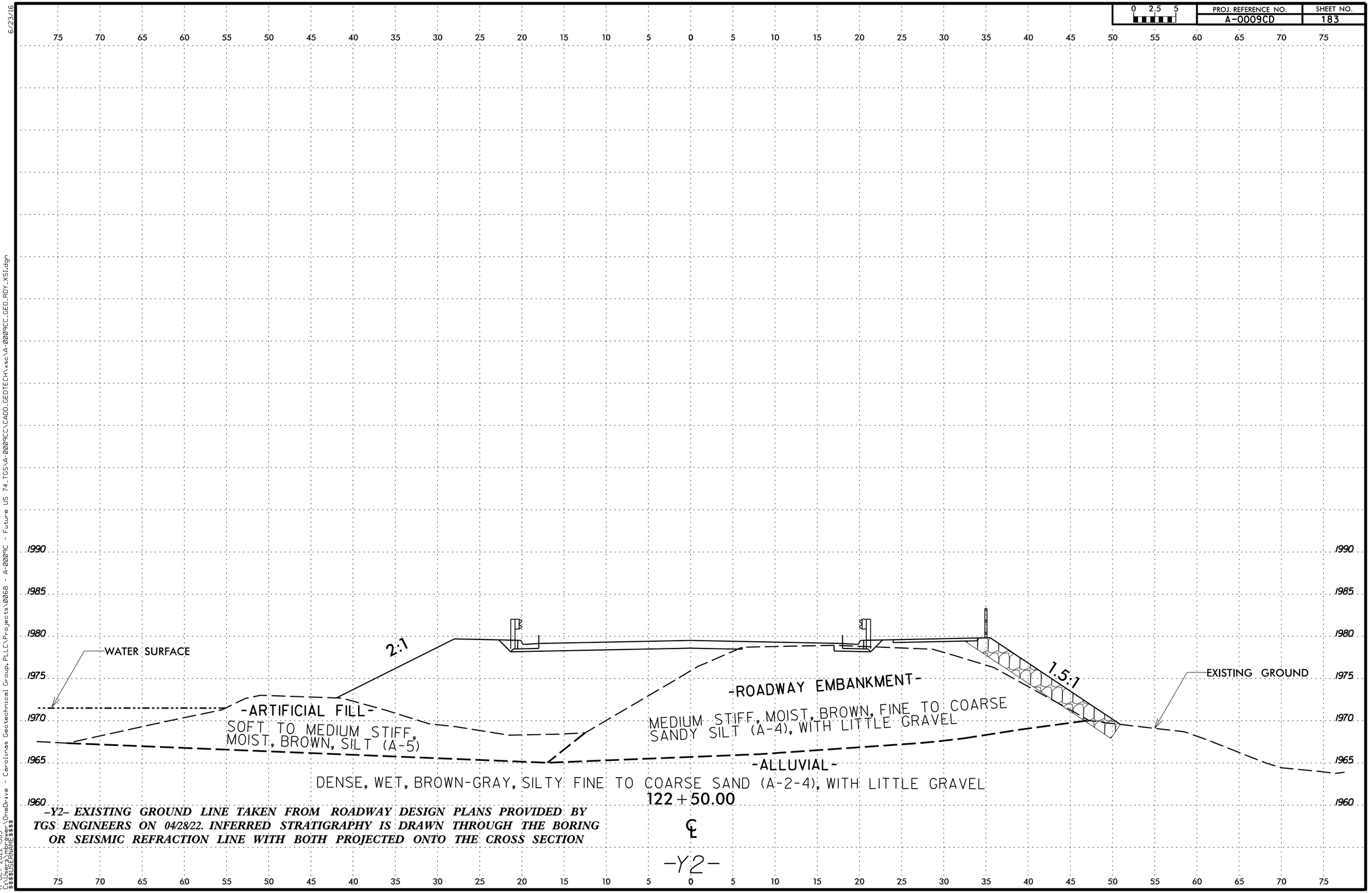
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-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

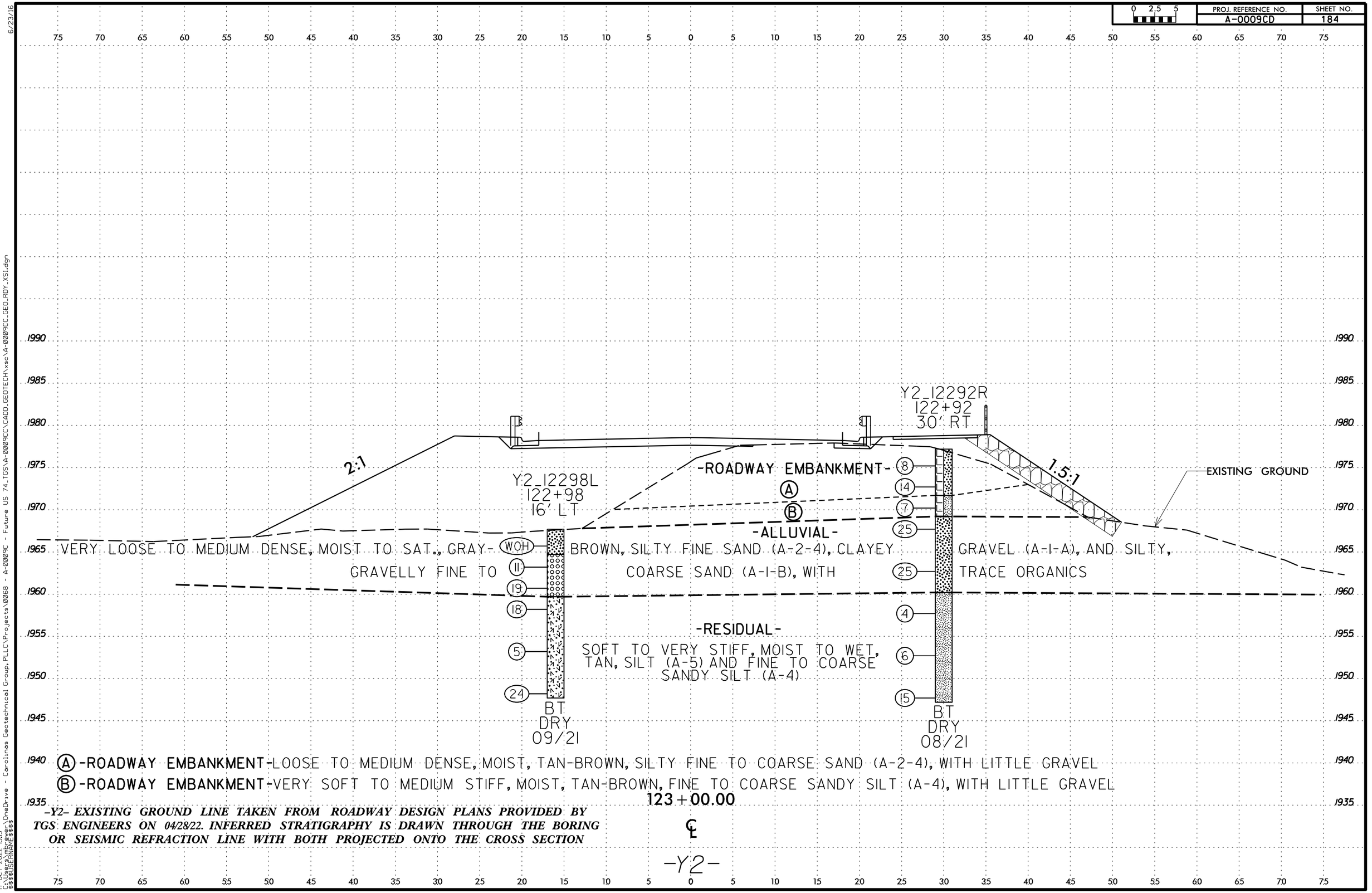
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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Ⓐ-ROADWAY EMBANKMENT-LOOSE TO MEDIUM DENSE, MOIST, TAN-BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL

Ⓑ-ROADWAY EMBANKMENT-VERY SOFT TO MEDIUM STIFF, MOIST, TAN-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH LITTLE GRAVEL

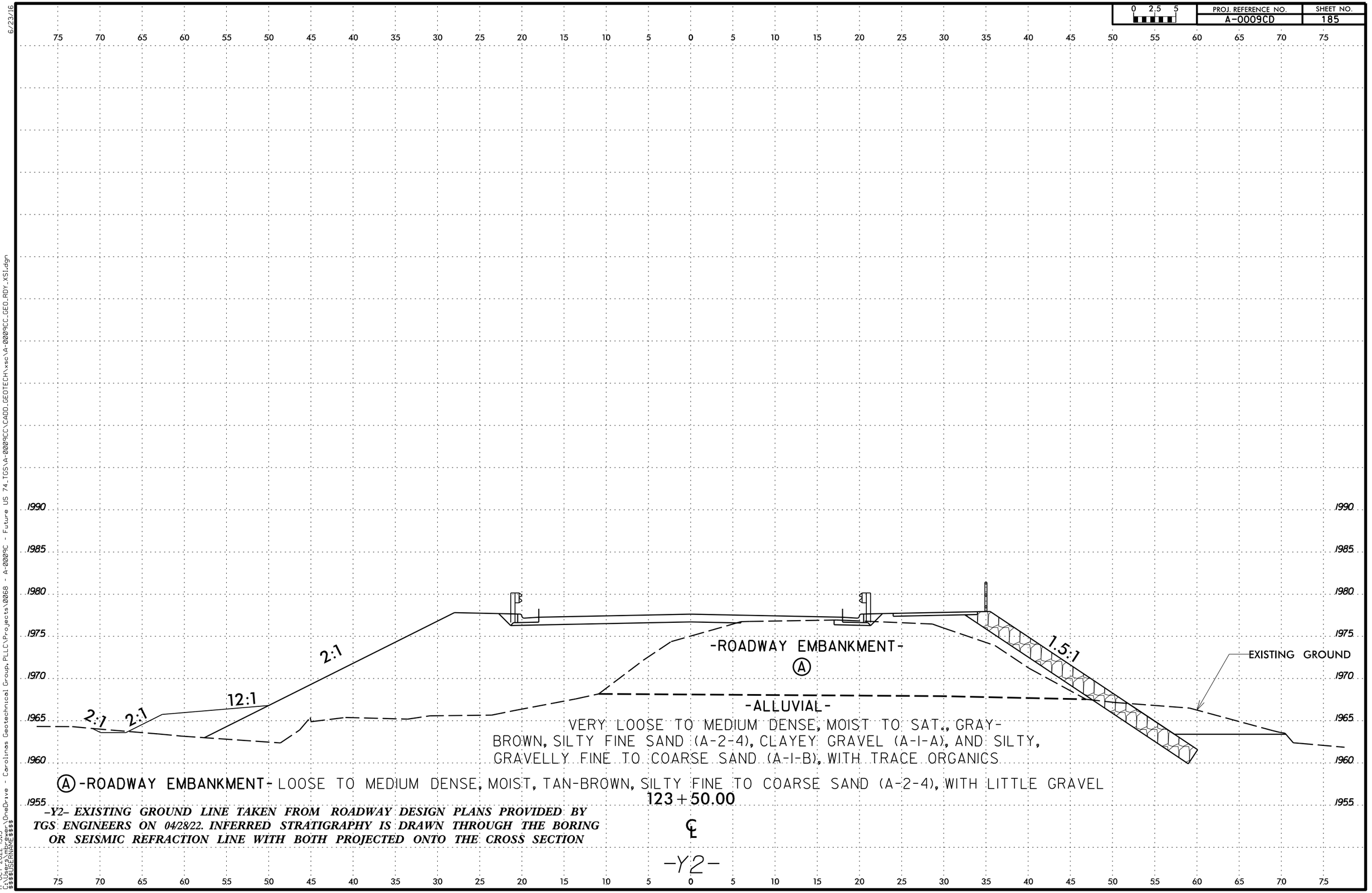
123+00.00

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-Y2-

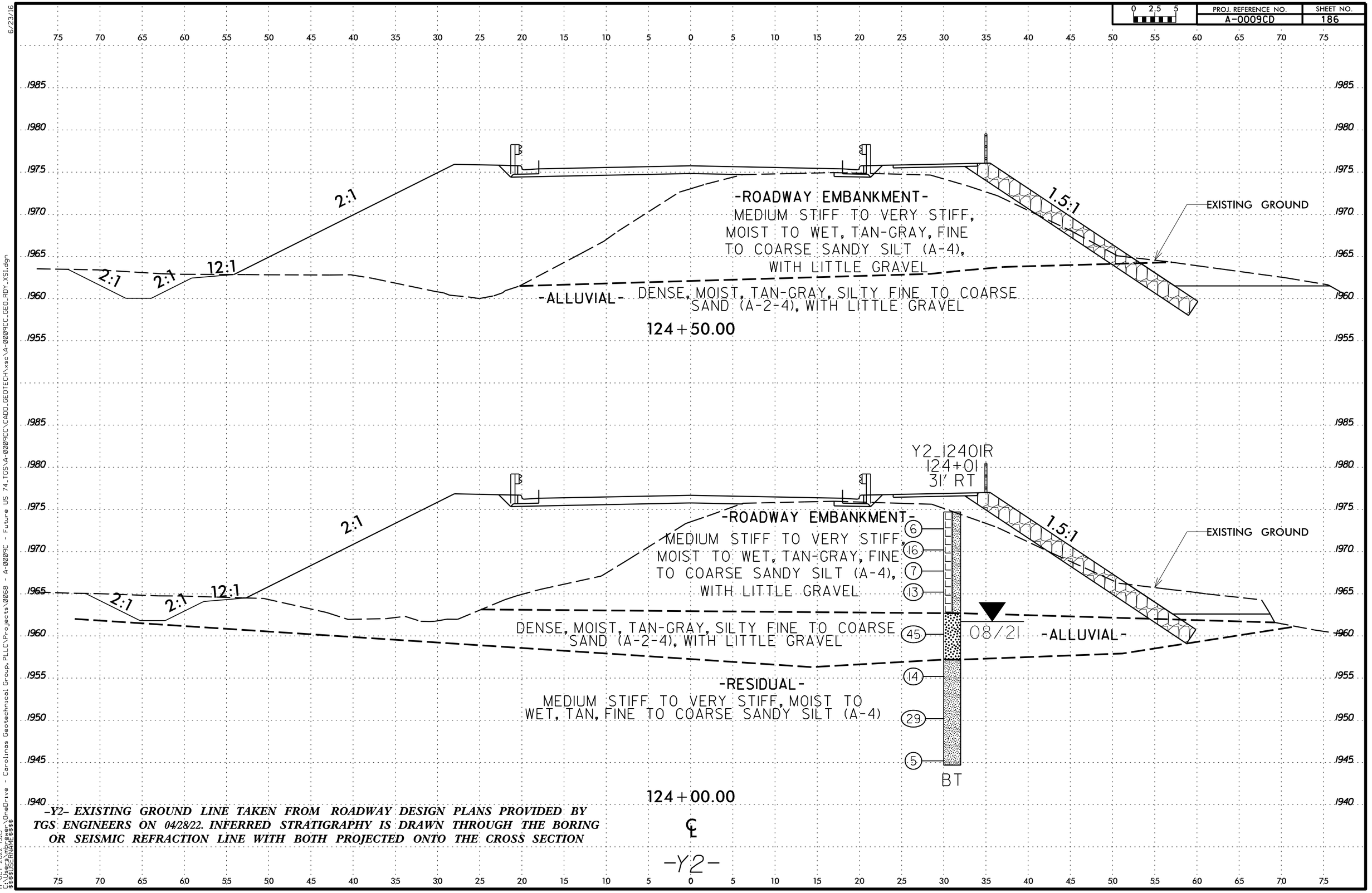
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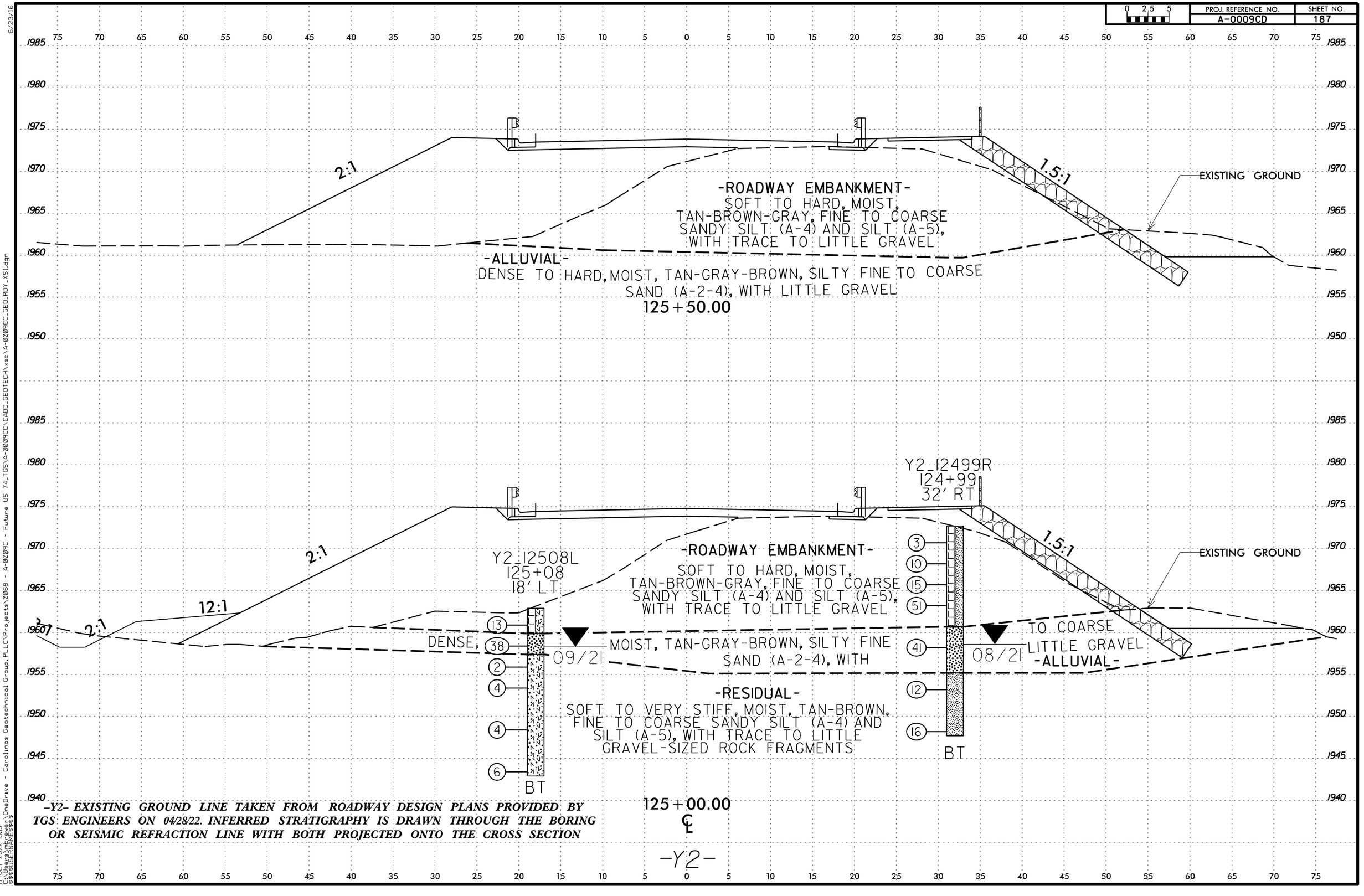
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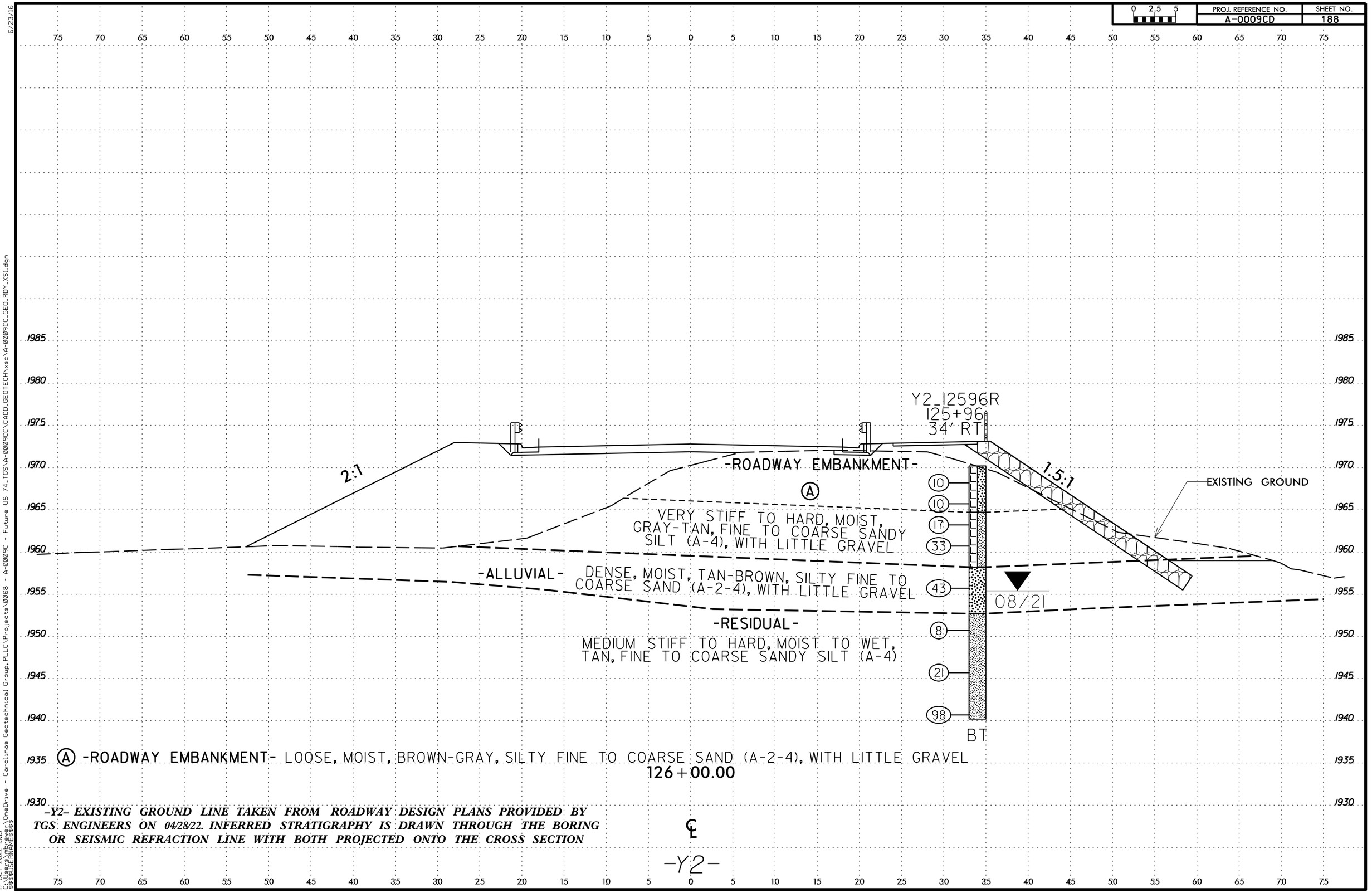
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
I7-OCT-2022 I3:I5
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Ⓐ -ROADWAY EMBANKMENT- LOOSE, MOIST, BROWN-GRAY, SILTY FINE TO COARSE SAND (A-2-4), WITH LITTLE GRAVEL

126+00.00

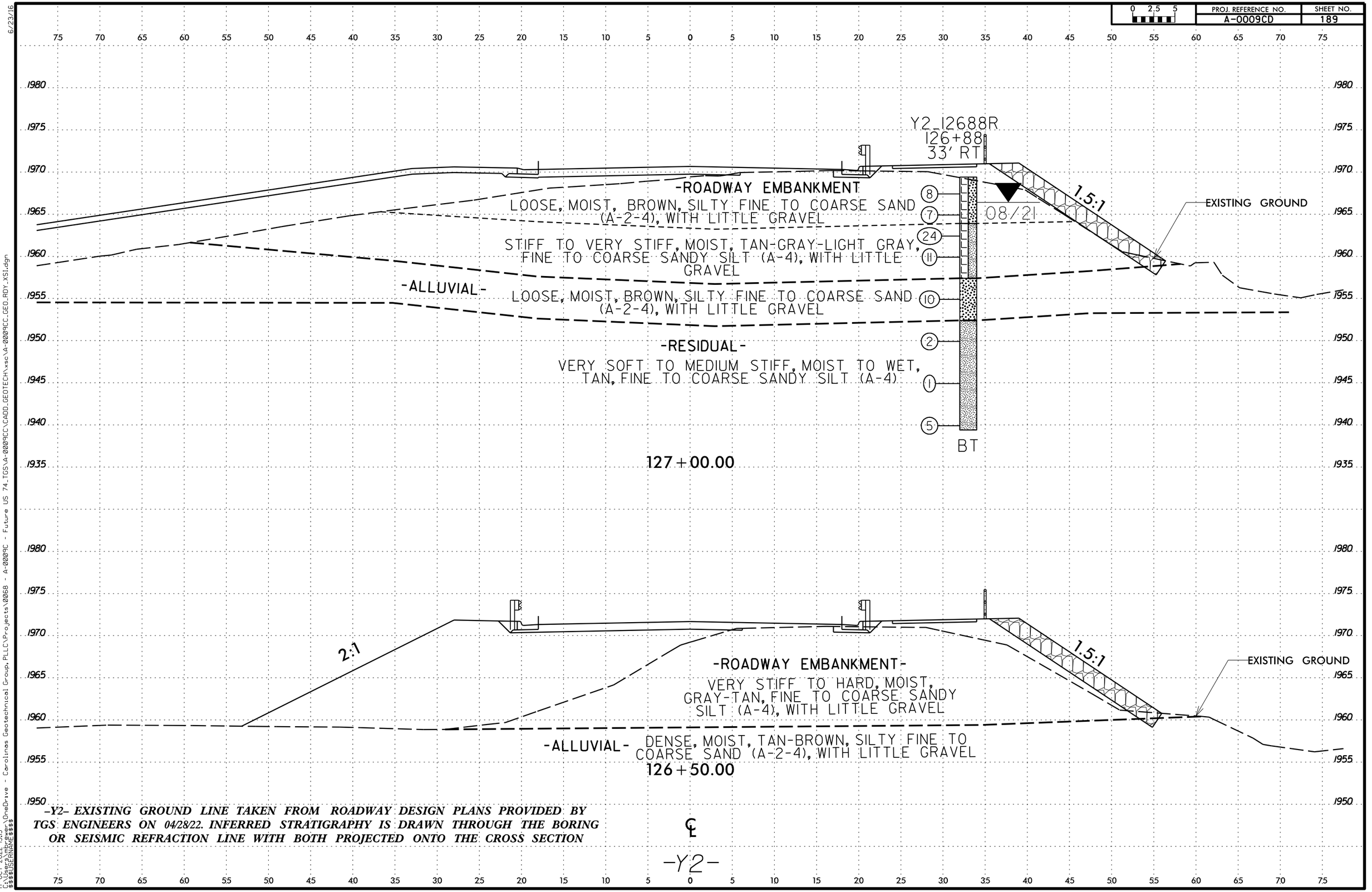
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-Y2-

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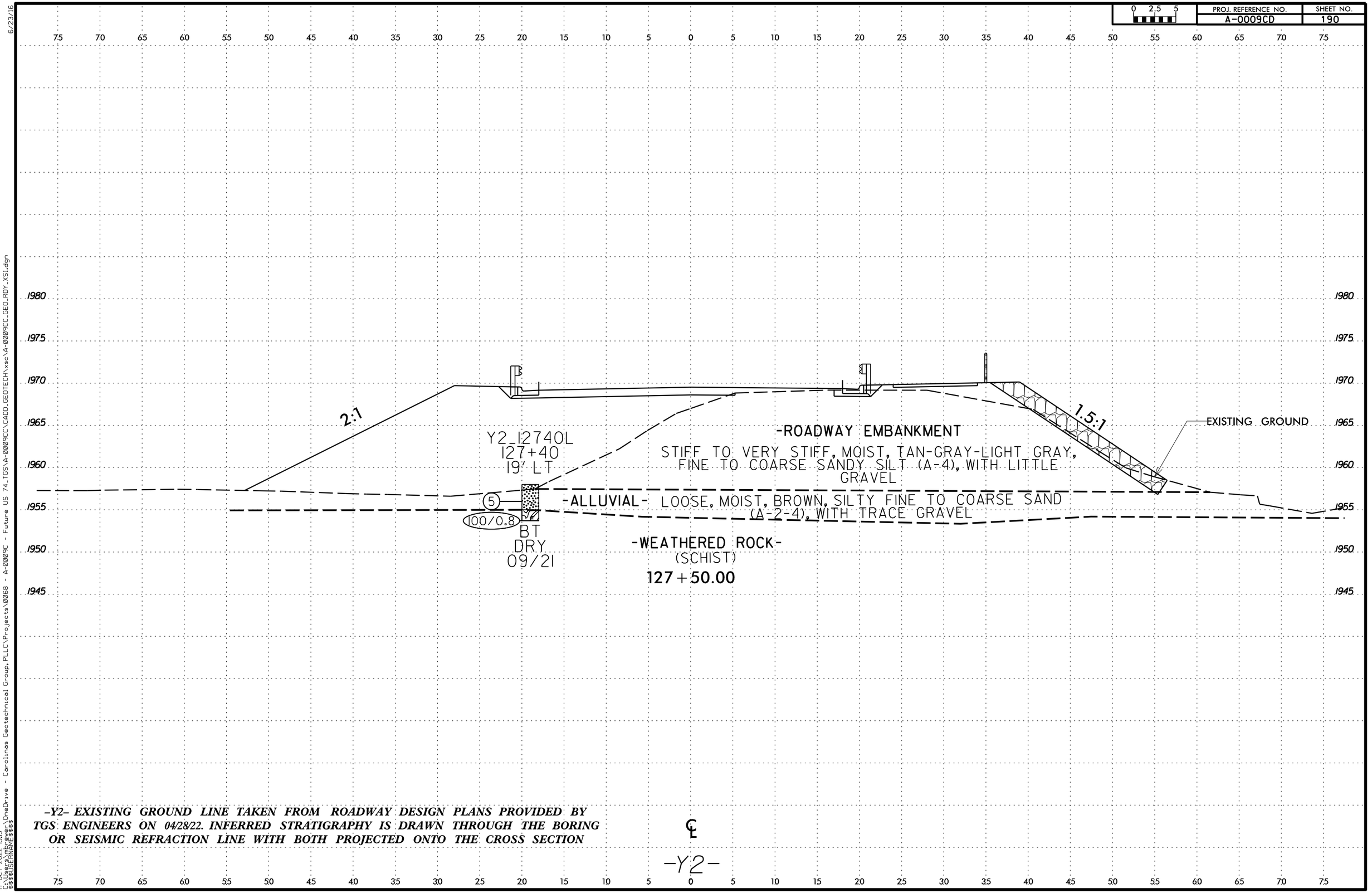


-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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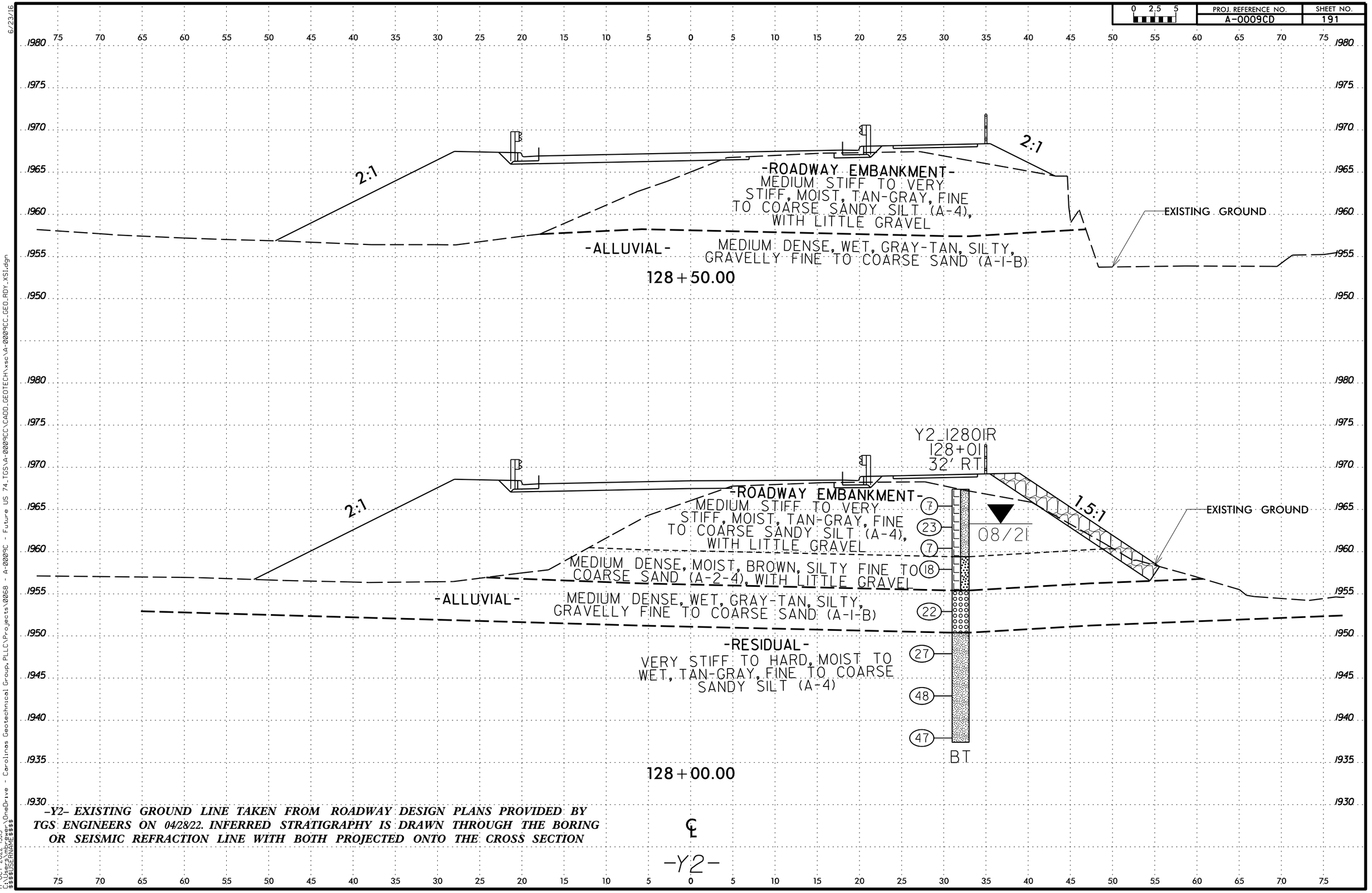
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
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$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	192

CULV_Y2_1290IL
129+01
37' LT

2:1

4:1

4:1

EXISTING GROUND

-ROADWAY EMBANKMENT-
SOFT TO MEDIUM STIFF, MOIST, BROWN, FINE SANDY, CLAYEY SILT (A-5)

15
17
09/21
100/0.7
10
19
14
BT

-ALLUVIAL- MEDIUM DENSE TO VERY DENSE, MOIST, BROWN-GRAY, GRAVELLY FINE TO COARSE SAND (A-1-B)

-RESIDUAL-
STIFF TO VERY STIFF, MOIST, TAN, SILT (A-5)

129+00.00

℄
-Y2-

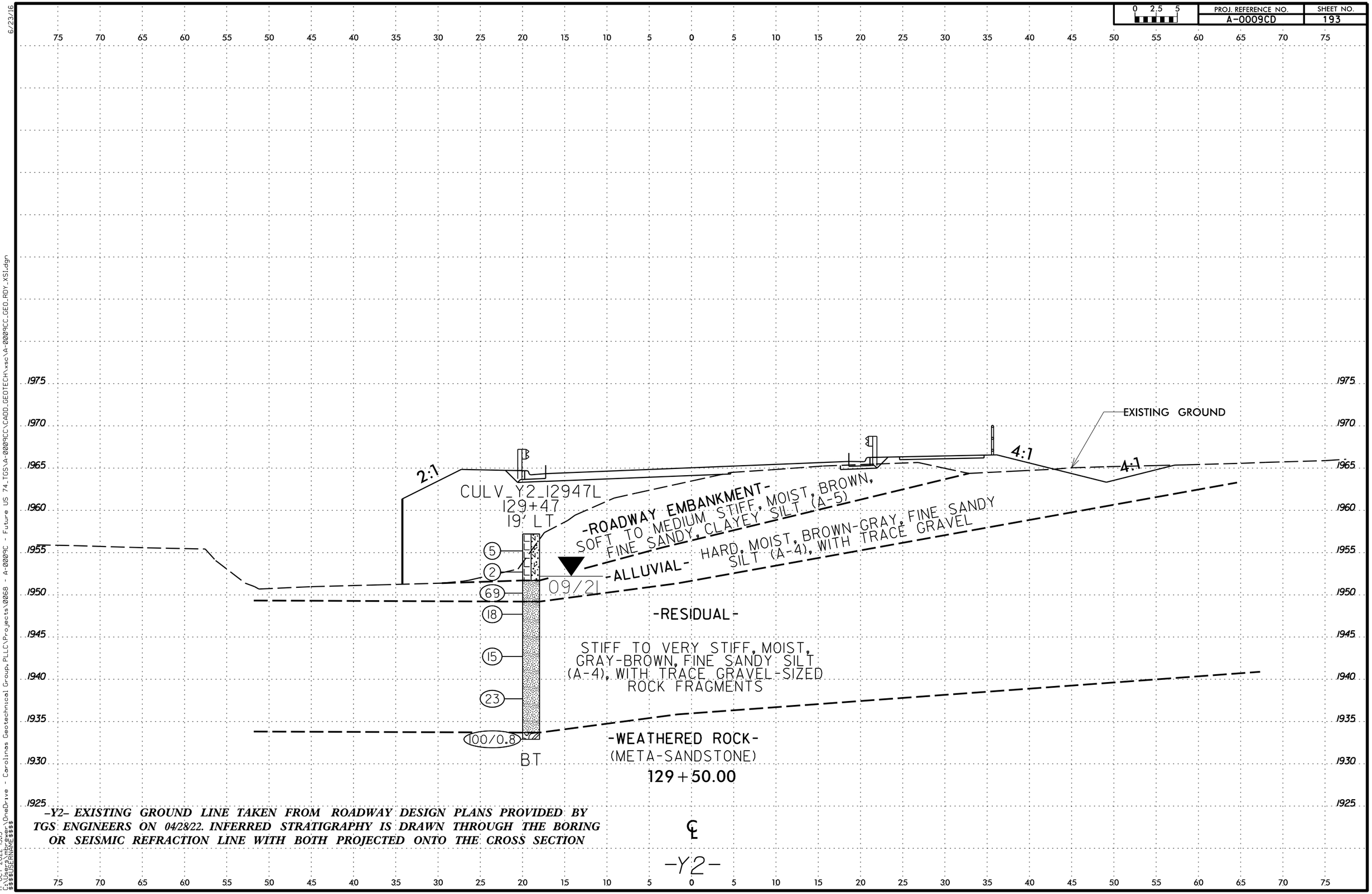
-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

1980 1975 1970 1965 1960 1955 1950 1945 1940 1935 1930

6/23/16
17-OCT-2022 13:15
C:\Users\mbrewer\OneDrive - Carolinas Geotechnical Group,PLLC\Projects\0068 - A-0009C - Future US 74_TGS\A-0009CC\CADD_GEOTECH\xsc\A-0009CC_GEO_RDY_XS1.dgn
$$$$USERNAME$$$$

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	193



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	194

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

1975 1970 1965 1960 1955 1950 1945

EXISTING GROUND

4:1 4:1 2:1 3:1 3:1

-ROADWAY EMBANKMENT- Ⓐ

-ALLUVIAL- SOFT TO VERY STIFF, MOIST, GRAY-BROWN, SILT (A-5) AND FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

Ⓐ -ROADWAY EMBANKMENT- SOFT TO MEDIUM STIFF, MOIST, BROWN, FINE SANDY, CLAYEY SILT (A-5)

130+50.00

EXISTING GROUND

4:1 4:1 2:1

-ROADWAY EMBANKMENT- SOFT TO MEDIUM STIFF, MOIST, BROWN, FINE SANDY, CLAYEY SILT (A-5)

-ALLUVIAL- HARD, MOIST, BROWN-GRAY, FINE SANDY SILT (A-4), WITH TRACE GRAVEL

130+00.00

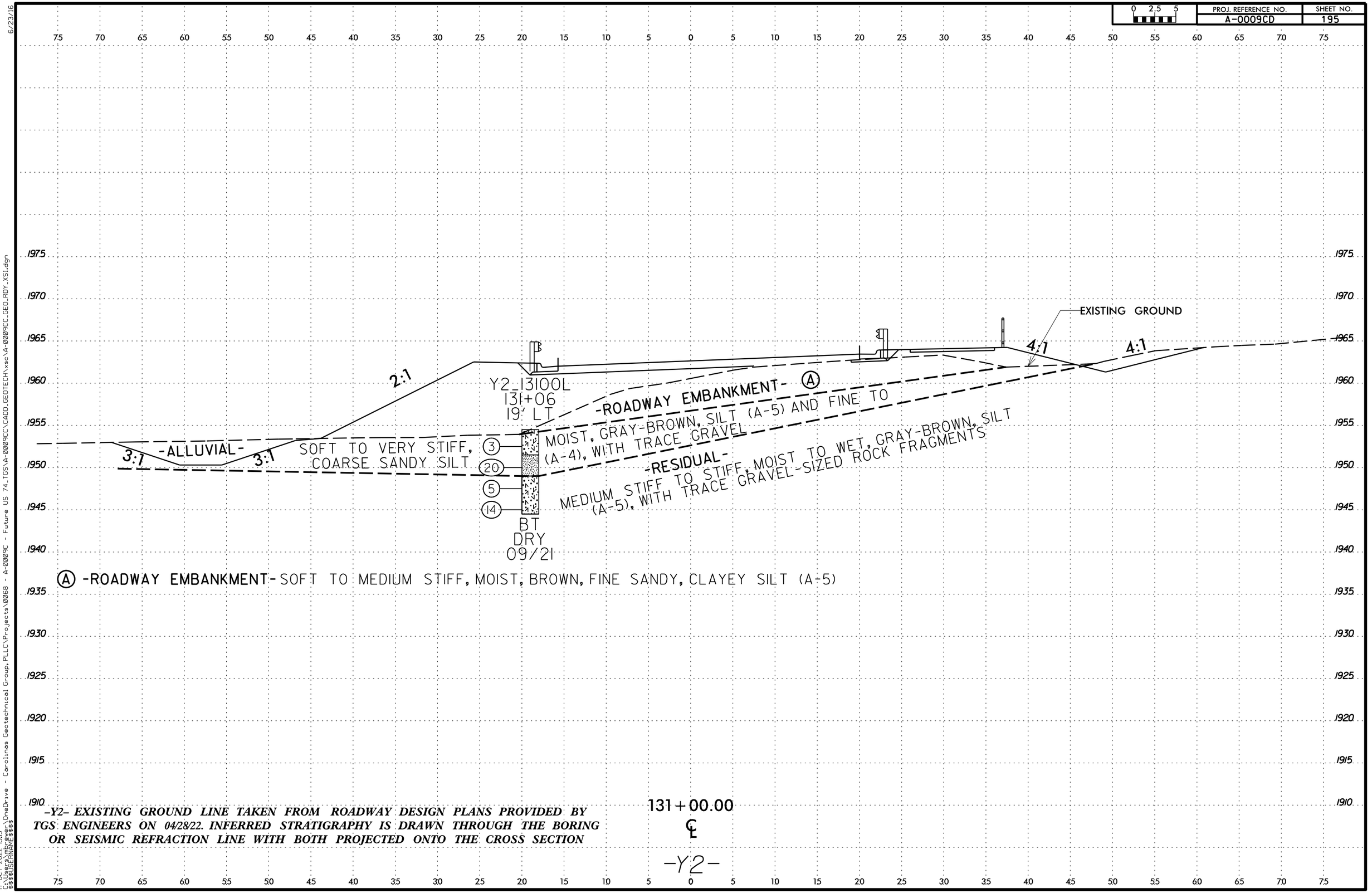
-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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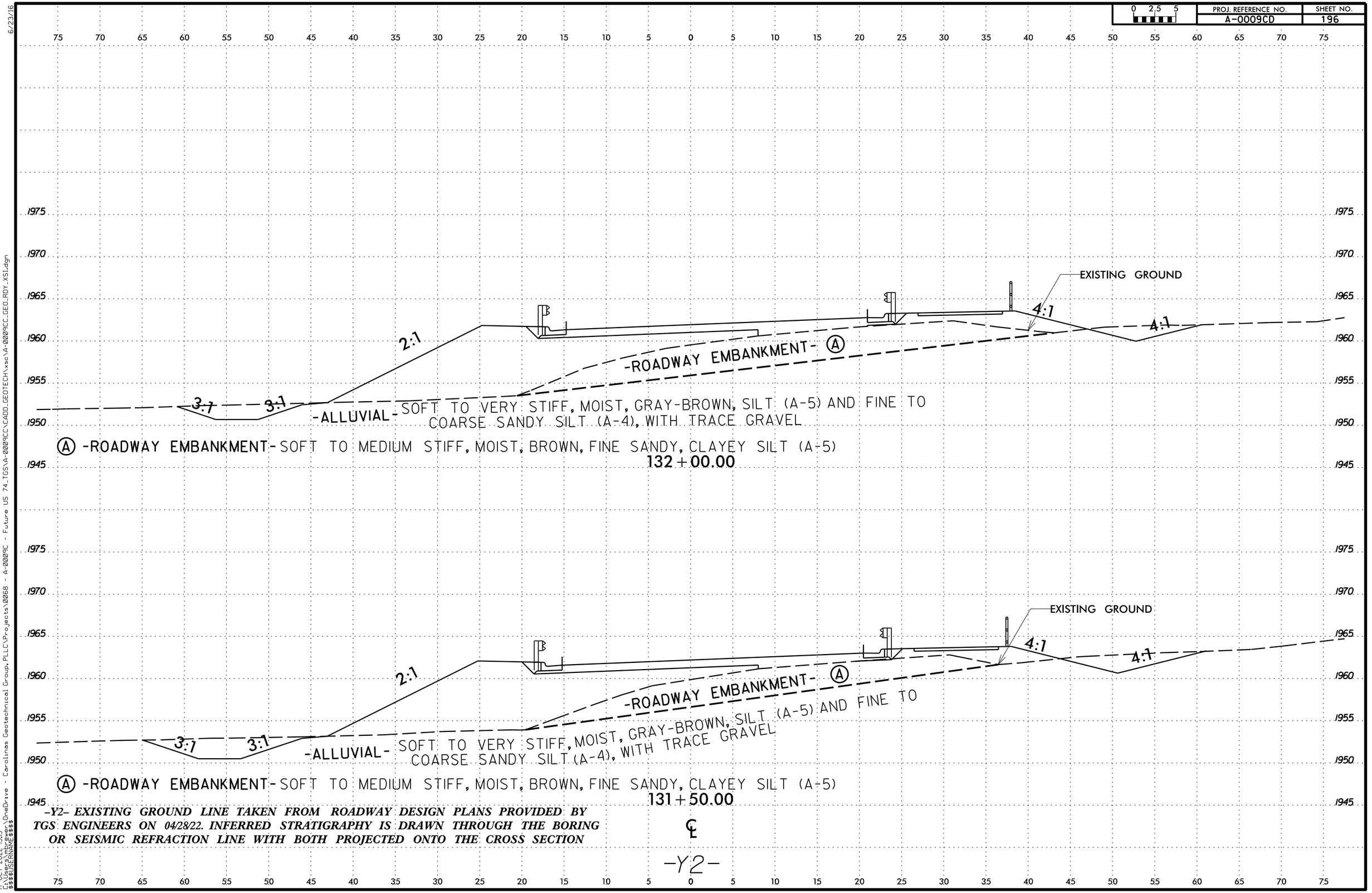


Ⓐ -ROADWAY EMBANKMENT- SOFT TO MEDIUM STIFF, MOIST, BROWN, FINE SANDY, CLAYEY SILT (A-5)

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

131+00.00
℄
-Y2-

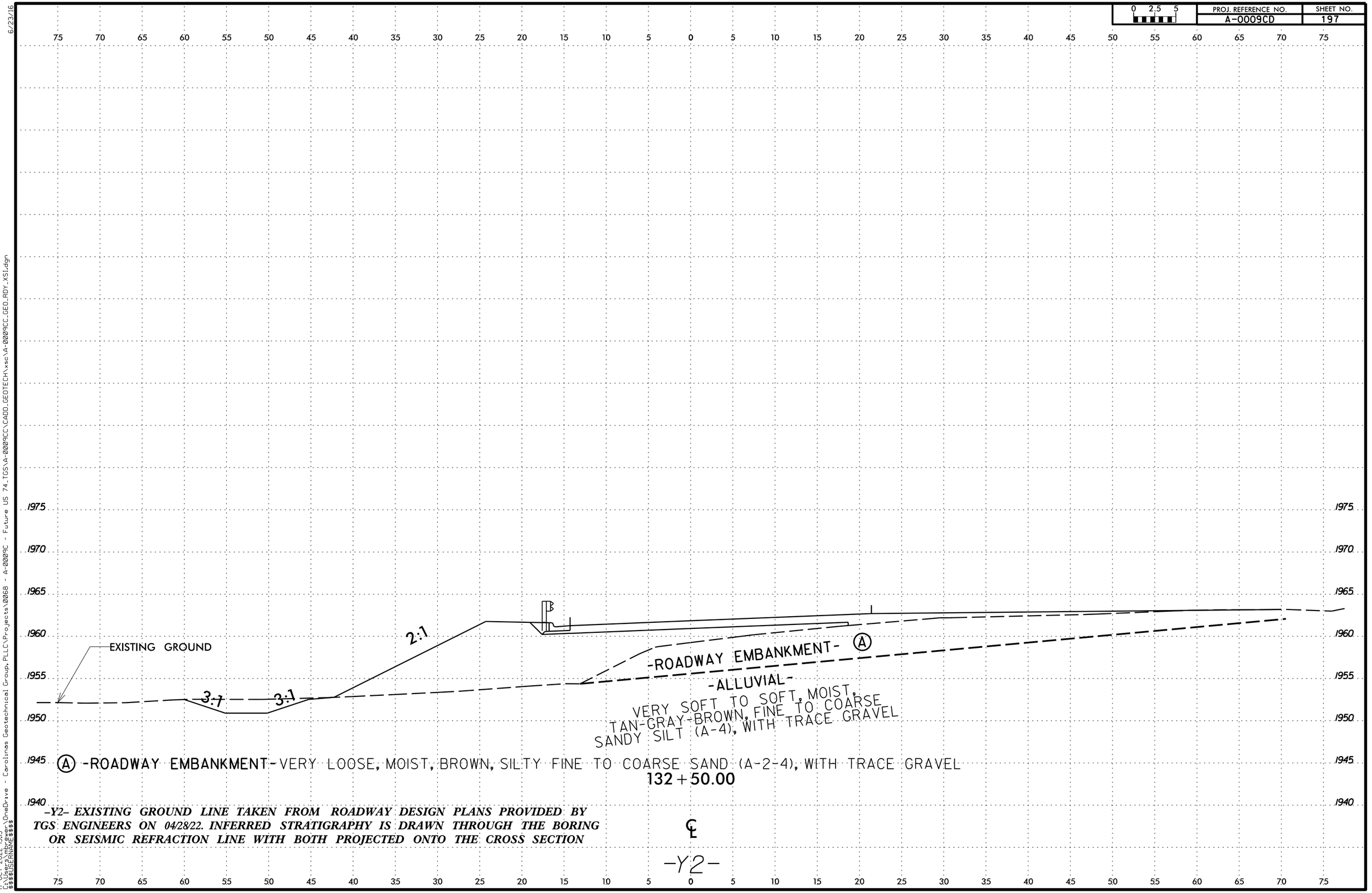
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	197



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16

17-OCT-2022 13:15
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6/23/16

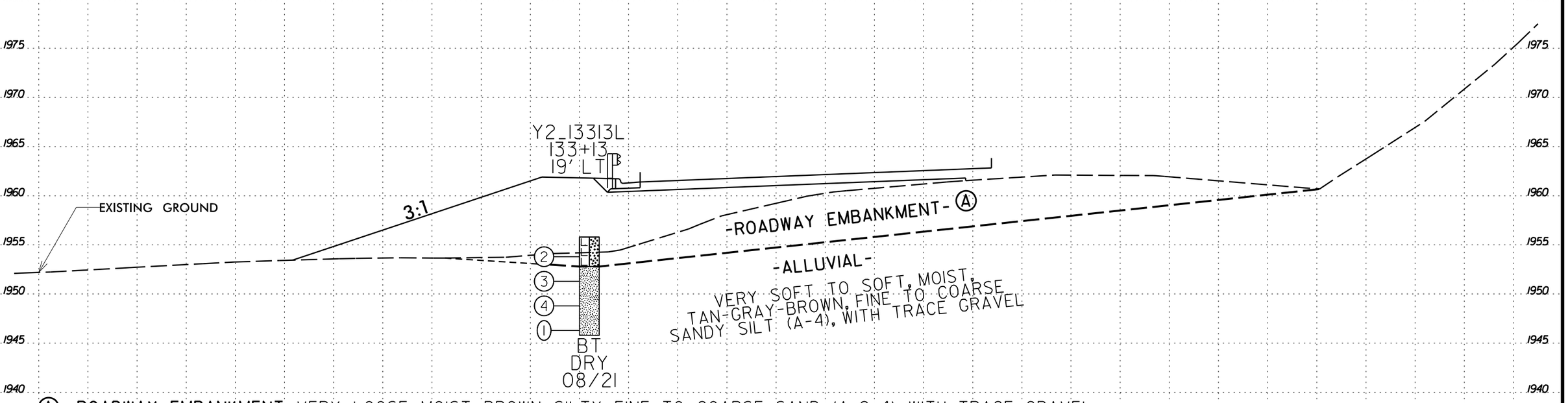
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0 2.5 5

PROJ. REFERENCE NO.	SHEET NO.
A-0009CD	198

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

1985
1980
1975
1970
1965
1960
1955
1950
1945
1940
1935



Ⓐ -ROADWAY EMBANKMENT- VERY LOOSE, MOIST, BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

133+00.00

℄

-Y2-

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75

50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

2010 2005 2000 1995 1990 1985 1980 1975 1970 1965 1960 1955 1950 1945 1940

EXISTING GROUND

3:1

4:1

1:1

-ROADWAY EMBANKMENT- Ⓐ

-ALLUVIAL-

VERY SOFT TO SOFT, MOIST, TAN-GRAY-BROWN, FINE TO COARSE SANDY SILT (A-4), WITH TRACE GRAVEL

Ⓐ -ROADWAY EMBANKMENT- VERY LOOSE, MOIST, BROWN, SILTY FINE TO COARSE SAND (A-2-4), WITH TRACE GRAVEL

133+50.00

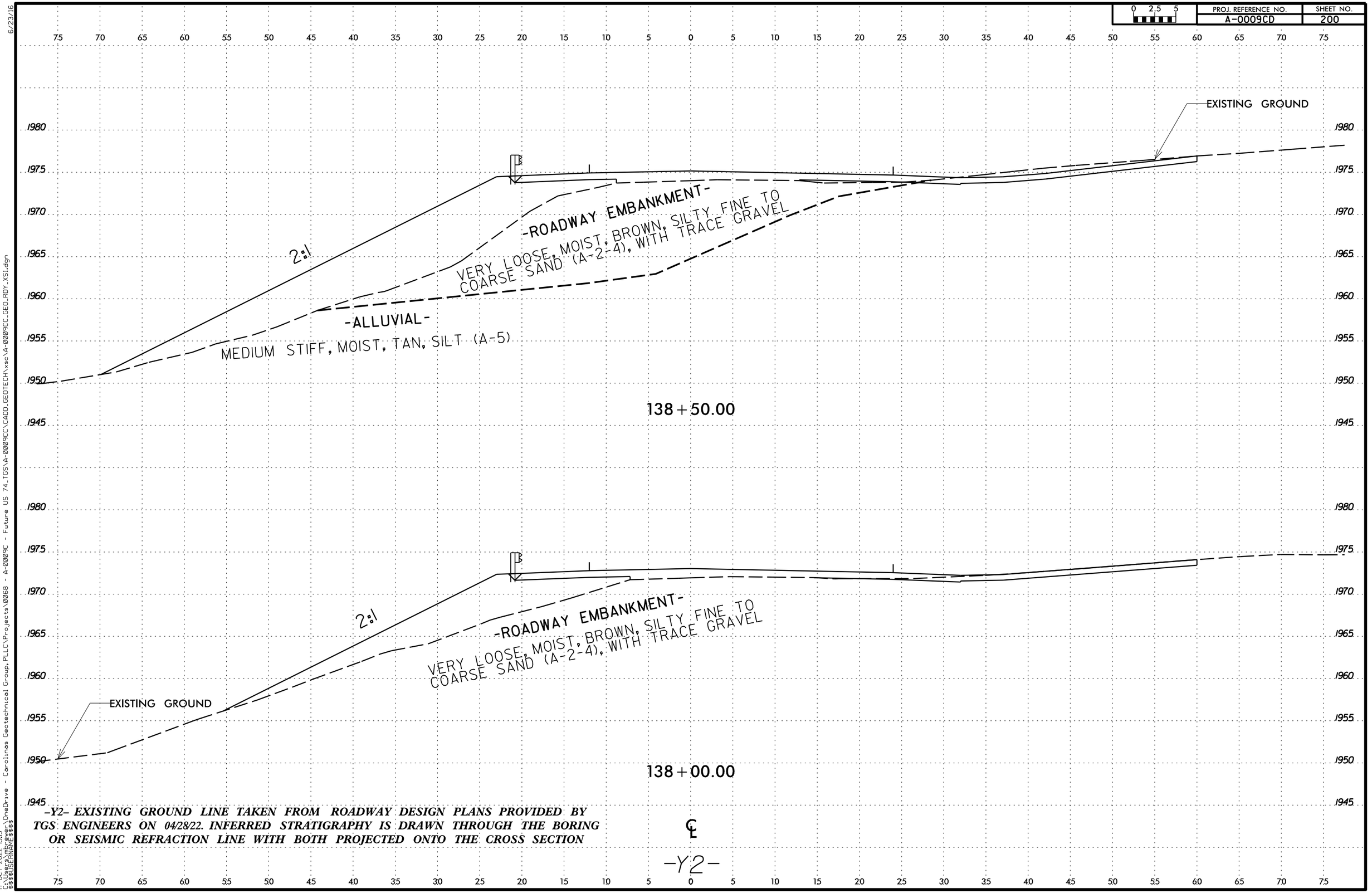
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-Y2-

6/23/16
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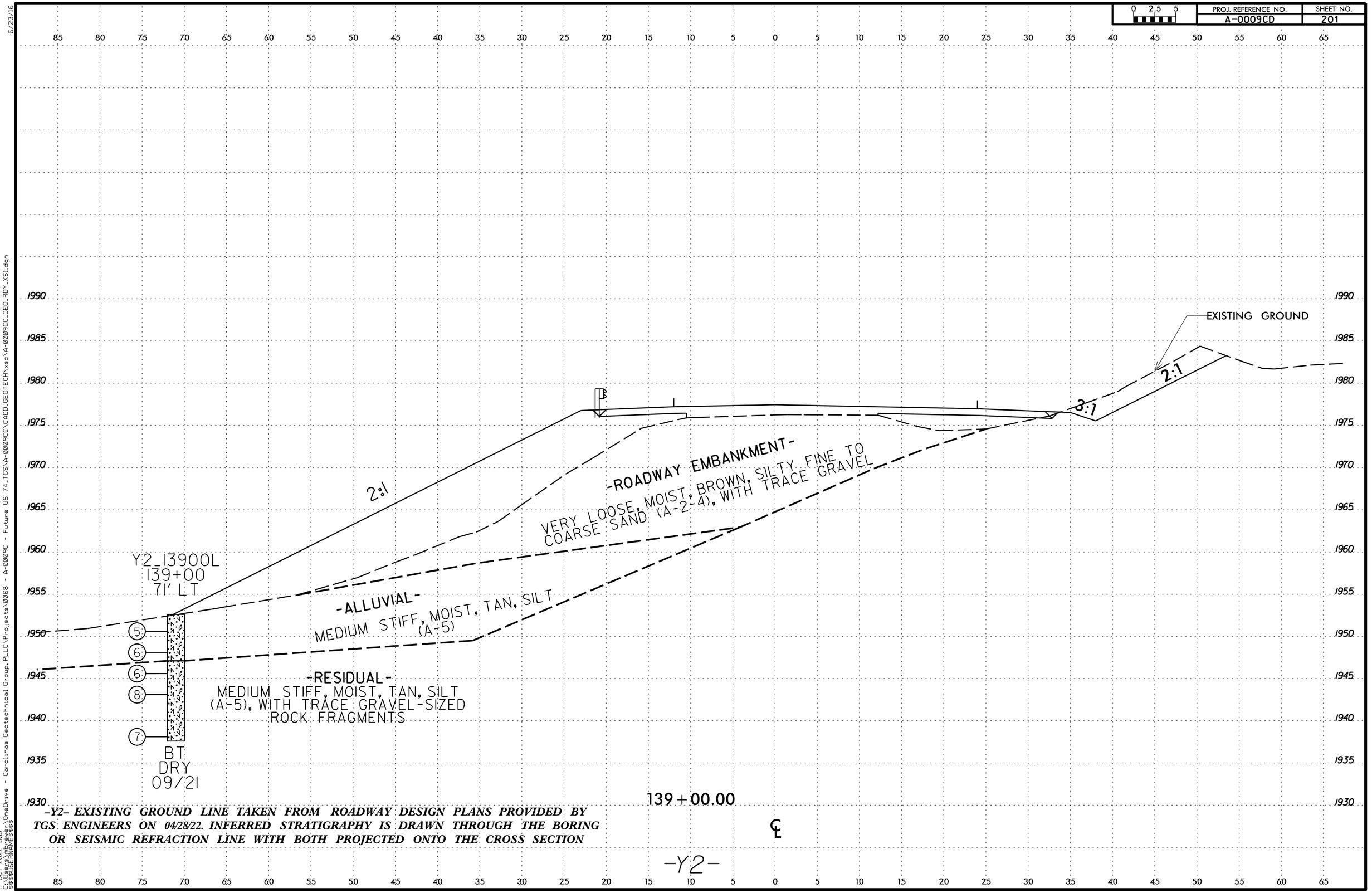
0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	200



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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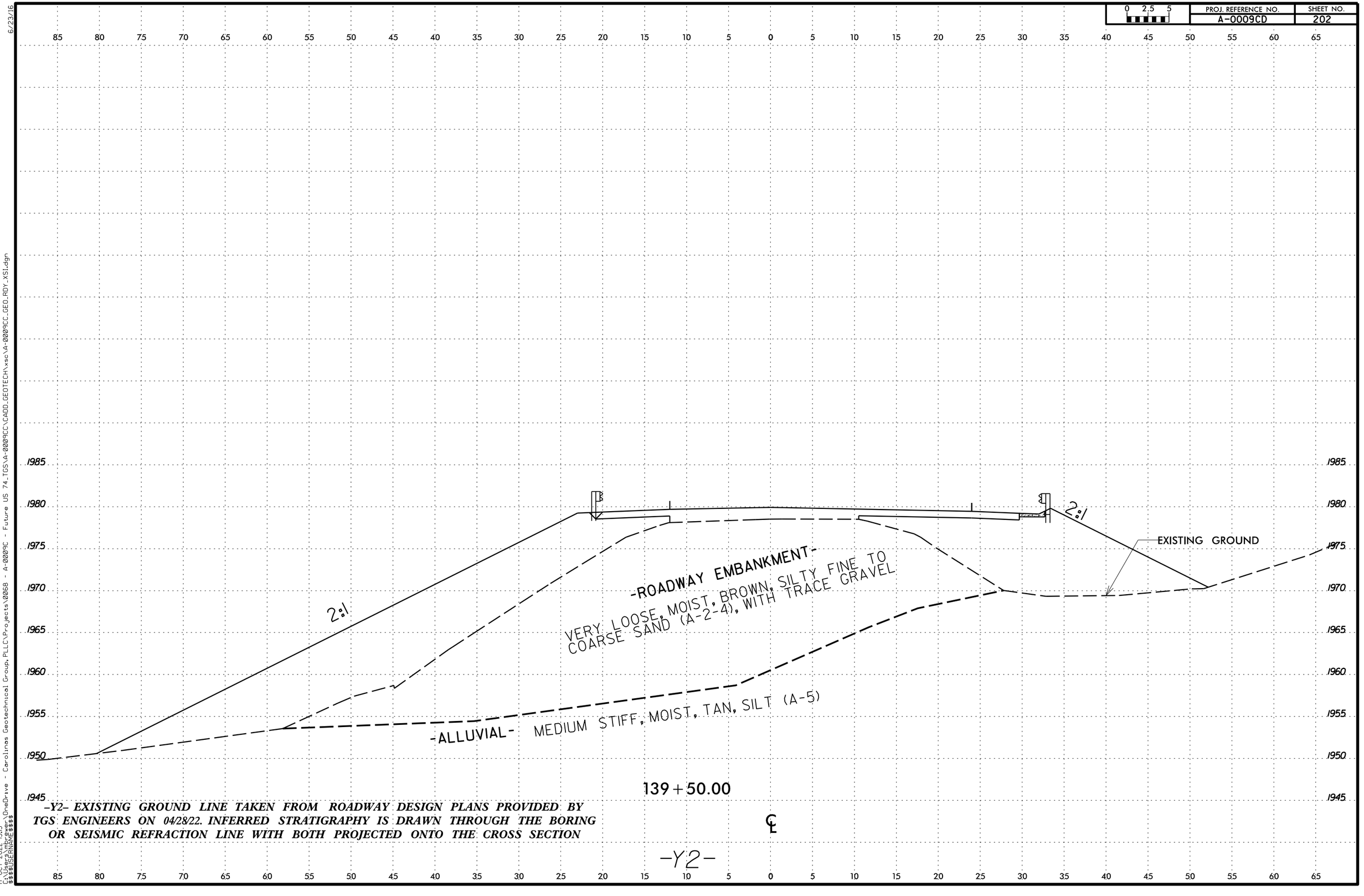
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	A-0009CD	201



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

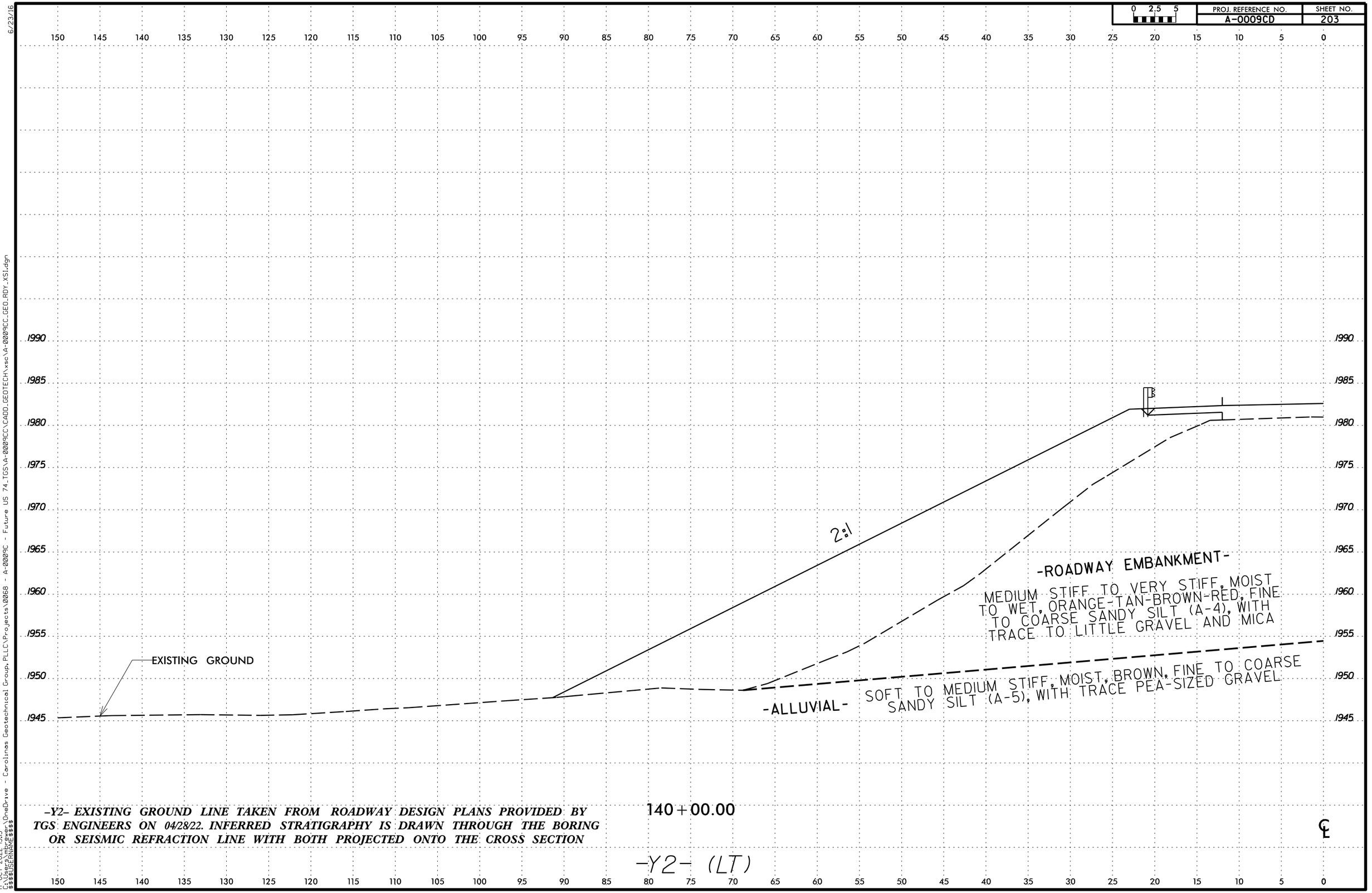
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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	202



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

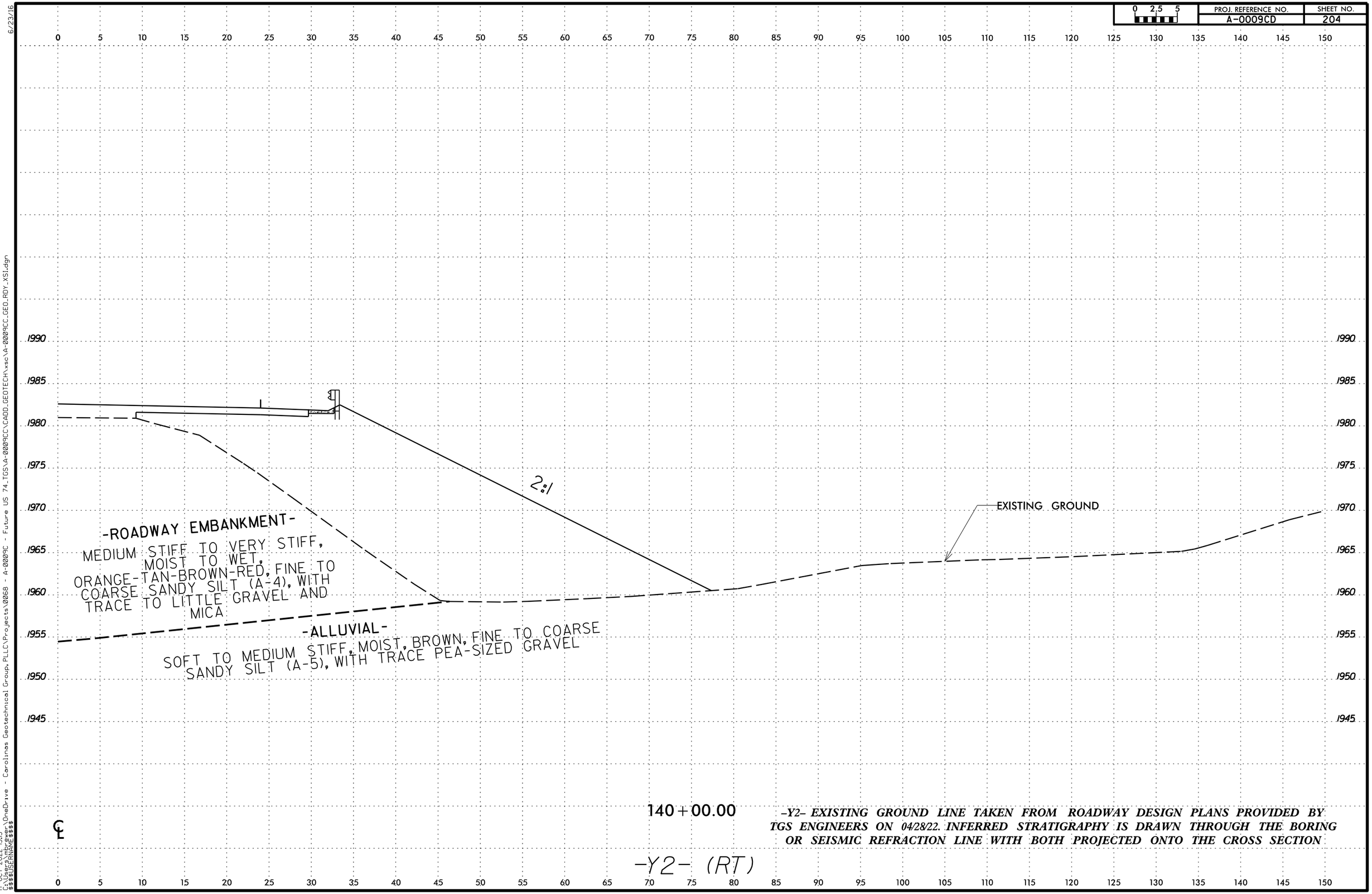
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	204



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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$$$$USERNAME$$$$

150 145 140 135 130 125 120 115 110 105 100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0

1990 1985 1980 1975 1970 1965 1960 1955 1950 1945 1940 1935 1930

2:1

EXISTING GROUND

-ROADWAY EMBANKMENT-
MEDIUM STIFF TO VERY STIFF, MOIST TO WET, ORANGE-TAN-BROWN-RED, FINE TO COARSE SANDY SILT (A-4), WITH TRACE TO LITTLE GRAVEL AND MICA

-ALLUVIAL- SOFT TO MEDIUM STIFF, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-5), WITH TRACE PEA-SIZED GRAVEL

-RESIDUAL-
VERY STIFF, MOIST, BROWN, SILT (A-5)

140+50.00

℄

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-Y2- (LT)

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$$$$USERNAME$$$$

0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 105 110 115 120 125 130 135 140 145 150

1990 1985 1980 1975 1970 1965 1960 1955 1950 1945 1940 1935 1930

2:1

EXISTING GROUND

-ROADWAY EMBANKMENT-
MEDIUM STIFF TO VERY STIFF, MOIST TO WET, ORANGE-TAN-BROWN-RED, FINE TO COARSE SANDY SILT (A-4), WITH TRACE TO LITTLE GRAVEL AND MICA

SOFT TO MEDIUM STIFF, MOIST, BROWN, FINE TO COARSE SANDY SILT (A-5), WITH TRACE PEA-SIZED GRAVEL

-RESIDUAL-
VERY STIFF, MOIST, BROWN, SILT
(A-5)

Y2_I4075R
I40+75
58' RT

-ALLUVIAL-

4
6
24
17
23

BT
DRY
09/21

140+50.00

℄

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-Y2- (RT)

0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	207

150 145 140 135 130 125 120 115 110 105 100 95 90 85 80 75 70 65 60 55 50 45 40 35 30 25 20 15 10 5 0

1995 1990 1985 1980 1975 1970 1965 1960 1955 1950 1945 1940 1935 1930 1925

2:1

-ROADWAY EMBANKMENT-
MEDIUM STIFF TO VERY STIFF, MOIST TO WET, ORANGE-TAN-BROWN-RED, FINE TO COARSE SANDY SILT (A-4) AND SILT (A-5), WITH TRACE TO LITTLE GRAVEL AND MICA

EXISTING GROUND

Y2_14089L
140+89
97' LT

7 12 31 41 40

BT
DRY
09/21

-ALLUVIAL- MEDIUM STIFF, MOIST, GRAY-BROWN, SILT (A-5), WITH TRACE PEA-SIZED GRAVEL

DENSE, MOIST, BROWN-GRAY, FINE TO COARSE SANDY, SILTY GRAVEL (A-1-A)

-RESIDUAL-
HARD, MOIST, BROWN, SILT (A-5), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

141+00.00

-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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-Y2- (LT)

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1995 1990 1985 1980 1975 1970 1965 1960 1955 1950 1945 1940 1935 1930 1925

2:1

EXISTING GROUND

-ROADWAY EMBANKMENT-
MEDIUM STIFF TO VERY STIFF, MOIST TO WET, ORANGE-TAN-BROWN-RED, FINE TO COARSE SANDY SILT (A-4) AND SILT (A-5), WITH TRACE TO LITTLE GRAVEL AND MICA

-ALLUVIAL- MEDIUM STIFF, MOIST, GRAY-BROWN, SILT (A-5), WITH TRACE PEA-SIZED GRAVEL

DENSE, MOIST, BROWN-GRAY, FINE TO COARSE SANDY, SILTY GRAVEL (A-1-A)

-RESIDUAL-
HARD, MOIST, BROWN, SILT (A-5), WITH TRACE GRAVEL-SIZED ROCK FRAGMENTS

141+00.00

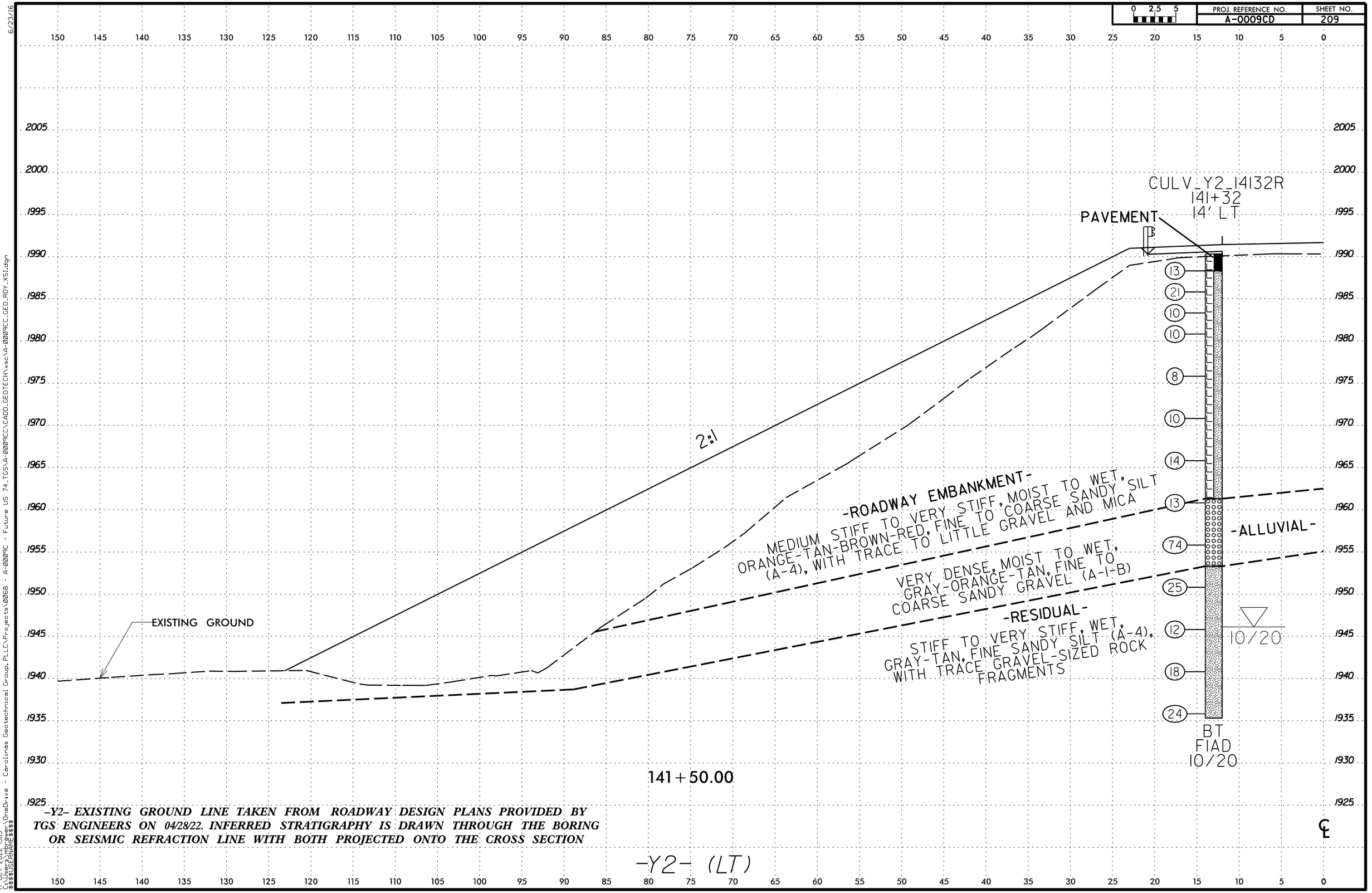
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

-Y2- (RT)

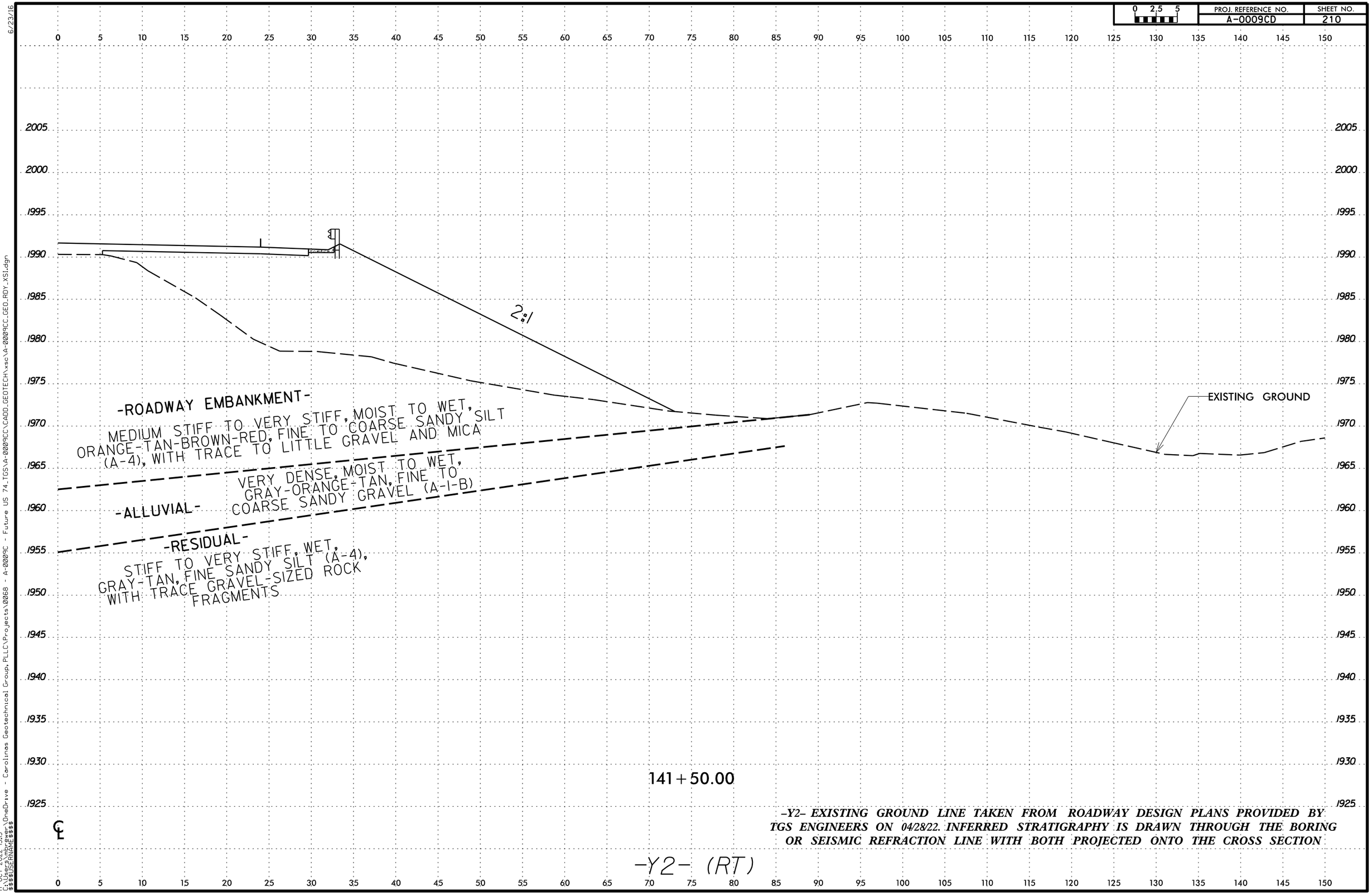
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

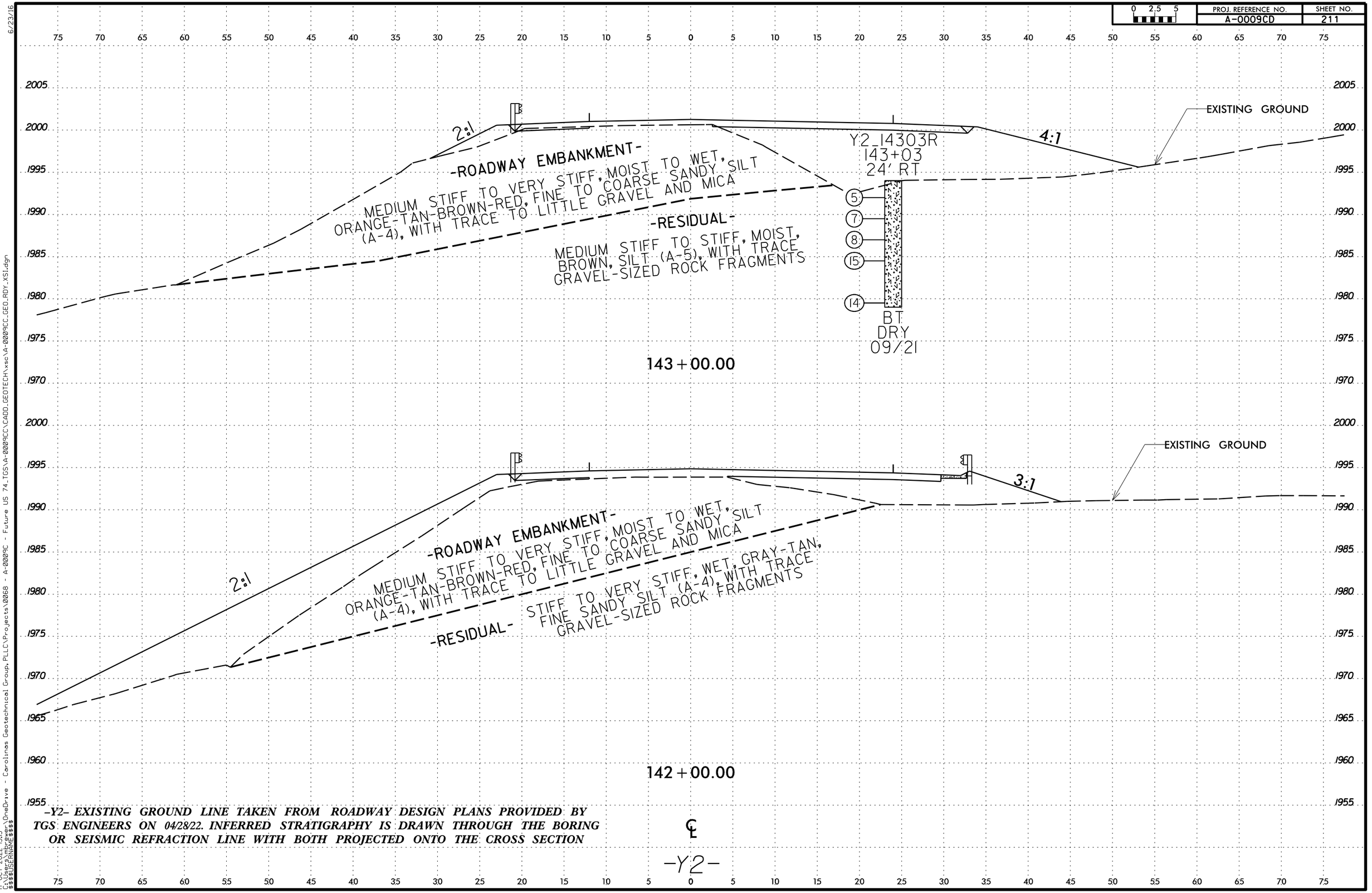
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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0 2.5 5	PROJ. REFERENCE NO.	SHEET NO.
	A-0009CD	211



-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

6/23/16
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RWAL 41_B-1
148+90
76' RT

EXISTING GROUND

-ROADWAY EMBANKMENT-
MEDIUM STIFF TO VERY STIFF, MOIST TO WET, ORANGE-TAN-BROWN-RED, FINE TO COARSE SANDY SILT (A-4), WITH TRACE TO LITTLE GRAVEL AND MICA

-RESIDUAL- VERY STIFF TO HARD, MOIST, RED-BROWN, SILT (A-5)

-WEATHERED ROCK- (SCHIST)

-RESIDUAL- HARD, MOIST, BROWN, SILT (A-5), WITH TRACE TO LITTLE GRAVEL-SIZED ROCK FRAGMENTS

-WEATHERED ROCK- (SCHIST)

6:1

1.5:1

4:1

19
39
20
31
19
100/0.7
51
100/0.5
100/0.3
BT

149+00.00

℄

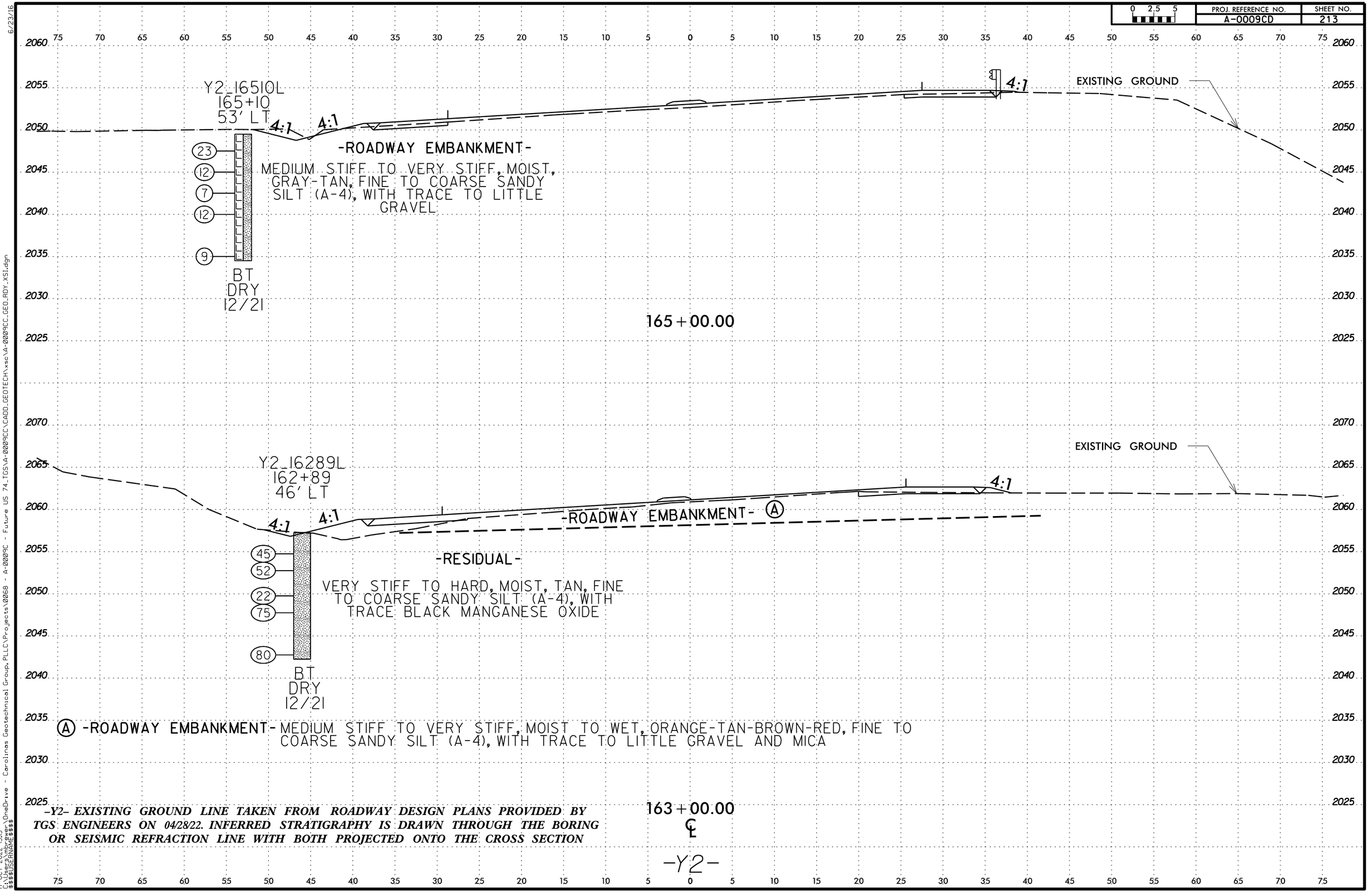
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-Y2-

60 55 50 45 40 35 30 25 20 15 10 5 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90

2075 2070 2065 2060 2055 2050 2045 2040 2035 2030 2025 2020 2015 2010 2005 2000 1995

6/23/16
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-Y2- EXISTING GROUND LINE TAKEN FROM ROADWAY DESIGN PLANS PROVIDED BY TGS ENGINEERS ON 04/28/22. INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORING OR SEISMIC REFRACTION LINE WITH BOTH PROJECTED ONTO THE CROSS SECTION

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PROJECT REFERENCE NO.	SHEET NO.
A–0009CC /A–0009CD	214

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

APPENDIX A
BORE LOGS

PROJECT: 32572 *REFERENCE: A–0009CC /A–0009CD*

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 32572.1.FS10	**TIP** A-0009CD	**COUNTY** GRAHAM	**GEOLOGIST** J. Weis	
SITE DESCRIPTION Proposed Corridor Improvements from US 129 in Robbinsville to NC 28 in Stecoah				**GROUND WTR (ft)**
BORING NO. RWAL41_B-1	**STATION** 148+90	**OFFSET** 76 ft RT	**ALIGNMENT** Y2	**0 HR.** Dry
COLLAR ELEV. 2,061.4 ft	**TOTAL DEPTH** 33.8 ft	**NORTHING** 623,781	**EASTING** 606,936	**24 HR.** Dry
DRILL RIG/HAMMER EFF./DATE BRE9533 CME-550X 78% 03/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER Phillips, J.	**START DATE** 09/24/21	**COMP. DATE** 09/24/21	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION ELEV. (ft)	DEPTH (ft)
2065											
										2,061.4 GROUND SURFACE	0.0
2060	2,060.4	1.0	4	10	9	19		M		**RESIDUAL** Very Stiff to Hard, Red-Brown, SILT (A-5)	
	2,057.9	3.5	7	13	26	39		M			
2055	2,055.4	6.0	5	9	11	20		M			
	2,052.9	8.5	10	13	18	31		M			
2050											
	2,047.9	13.5	7	9	10	19		M			
2045											
	2,042.9	18.5	33	67/0.2		100/0.7				2,042.9 **WEATHERED ROCK** Brown, (SCHIST)	18.5
2040											
	2,037.9	23.5	10	19	32	51		M		2,038.4 **RESIDUAL** Hard, Brown, SILT (A-5), with trace to little gravel-sized rock fragments	23.0
2035											
	2,032.9	28.5	19	77	23/0.0	100/0.5				2,032.4 **WEATHERED ROCK** Brown, (SCHIST)	29.0
2030											
	2,027.9	33.5	100/0.3			100/0.3				2,027.6 Boring Terminated at Elevation 2,027.6 ft In Weathered Rock (SCHIST)	33.8

WBS 32572.1.FS10	**TIP** A-0009CD	**COUNTY** GRAHAM	**GEOLOGIST** S. Braun	
SITE DESCRIPTION NC 143 from 0.5 Mi. North of Appalachian Trail to NC 28 & NC 28 from 0.2 Mi. West of NC 143 to 0.3 Mi. East of SR 1				**GROUND WTR (ft)**
BORING NO. Y3_1200R	**STATION** 12+00	**OFFSET** 25 ft RT	**ALIGNMENT** Y3	**0 HR.** 10.5
COLLAR ELEV. 2,042.7 ft	**TOTAL DEPTH** 14.4 ft	**NORTHING** 623,163	**EASTING** 602,070	**24 HR.** 10.8
DRILL RIG/HAMMER EFF./DATE RME9553 CME-550X 80% 03/12/2021		**DRILL METHOD** H.S. Augers	**HAMMER TYPE** Automatic	
DRILLER J. Phillips	**START DATE** 06/08/21	**COMP. DATE** 06/08/21	**SURFACE WATER DEPTH** N/A	

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT 0.5ft	0.5ft	0.5ft	BLOWS PER FOOT 0 25 50 75 100	SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION
2045										
										2,042.7 GROUND SURFACE 0.0
	2,041.7	1.0	3	2	1	3		M		**RESIDUAL** Soft, Brown-Tan-Red, Fine to Coarse Sandy, Clayey SILT (A-5), with trace wood 2,039.7 3.0
2040	2,039.2	3.5	9	10	13	23		M		Very Stiff to Hard, Brown-Tan, Fine to Coarse Sandy SILT (A-4), with trace gravel-sized rock fragments
	2,036.7	6.0	11	18	29	47		M		
2035	2,034.2	8.5	8	12	88/0.3	100/0.8				2,033.7 9.0
2030										**WEATHERED ROCK** Brown-Tan-Orange-Red-Gray, (META-SILTSTONE)
	2,029.2	13.5	19	81/0.4		100/0.9				2,028.3 14.4
										Boring Terminated at Elevation 2,028.3 ft In Weathered Rock (META-SILTSTONE)

NCDOT BORE DOUBLE A-0009CC_GEO_RDY_GTM.GPJ NC_DOT.GDT 6/29/22

PROJECT REFERENCE NO.	SHEET NO.
A–0009CC /A–0009CD	216

PROJECT: 32572 REFERENCE: A–0009CC /A–0009CD

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

APPENDIX B
SOIL TEST RESULTS (I)

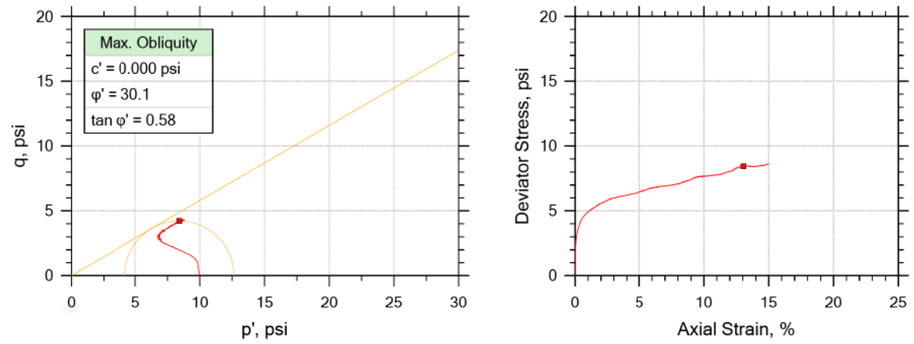
Prepared in the Office of:
F&ME CONSULTANTS, INC.
COLUMBIA, SOUTH CAROLINA
NCDOT LAB CERT. NO. 130–0212

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC / A-0009CD	217

SOIL TEST RESULTS

SAMPLE NO.	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		
ST–7	58' RT	146+90 –Y2–	18.0 – 19.5'	A–4(7)	33	8	4.4	15.6	59.8	20.2	99.0	96.5	85.7	18.4	–
ST–10	199' RT	30+60 –Y2–	18.0 – 20.0'	A–4(0)	26	0	1.6	60.3	34.0	4.2	100.0	99.9	56.1	23.1	–

Consolidated Undrained by AASHTO T297

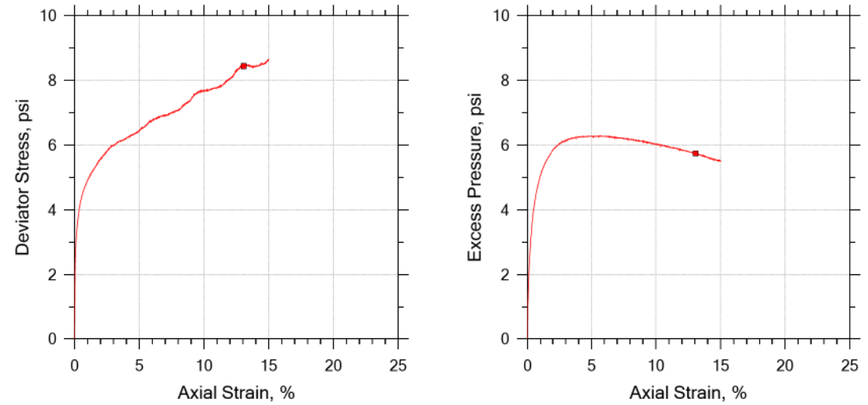


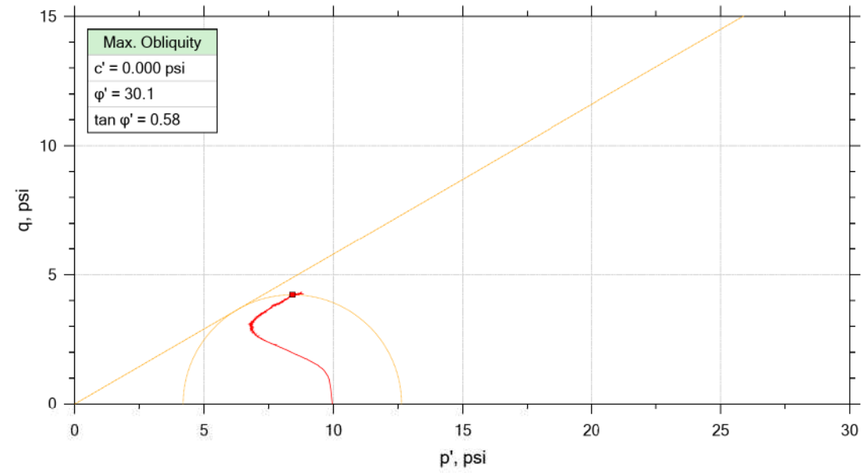
Symbol	■	
Sample ID	22-0012	
Depth	18.0' - 19.5'	
Test Number	ST-7.A	
Initial: Height, in	6.057	
Initial: Diameter, in	2.826	
Initial: Moisture Content (from Cuttings), %	18.4	
Initial: Dry Density, pcf	89.0	
Initial: Saturation (Wet Method), %	56.2	
Initial: Void Ratio	0.880	
Final: Moisture Content, %	29.6	
Final: Dry Density, pcf	93.3	
Final: Cross-Sectional Area (Method A), in²	6.058	
Final: Saturation, %	100.0	
Final: Void Ratio	0.793	
Final: Back Pressure, psi	101.0	
Vertical Effective Consolidation Stress, psi	9.880	
Horizontal Effective Consolidation Stress, psi	9.959	
Vertical Strain after Consolidation, %	1.178	
Volumetric Strain after Consolidation, %	4.363	
Time to 50% Consolidation, min	8.000	
Shear Strength, psi	4.219	
Strain at Failure, %	13.1	
Strain Rate, %/min	0.04000	
Deviator Stress at Failure, psi	8.439	
Effective Minor Principal Stress at Failure, psi	4.192	
Effective Major Principal Stress at Failure, psi	12.63	
B-Value	0.96	

Notes:
- Before Shear Saturation set to 100% for phase calculation.
- Moisture Content determined by ASTM D2216.
- Atterberg Limits determined by ASTM D4318.
- Deviator Stress includes membrane correction.
- Values for c and φ determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.

Project Name: A-0009C	Location: NC	Project Number: C8806.00005
Boring Number: Y2_14690R_ST	Tester: WAP/RMC	Checker: WAP/ WJG
Sample Number: 22-0012	Test Date: 4/22/2022	Depth: 18.0' - 19.5'
Test Number: ST-7.A	Preparation: Undisturbed	Elevation:
Description: Soil Classification: A-4(7)		
Remarks:		

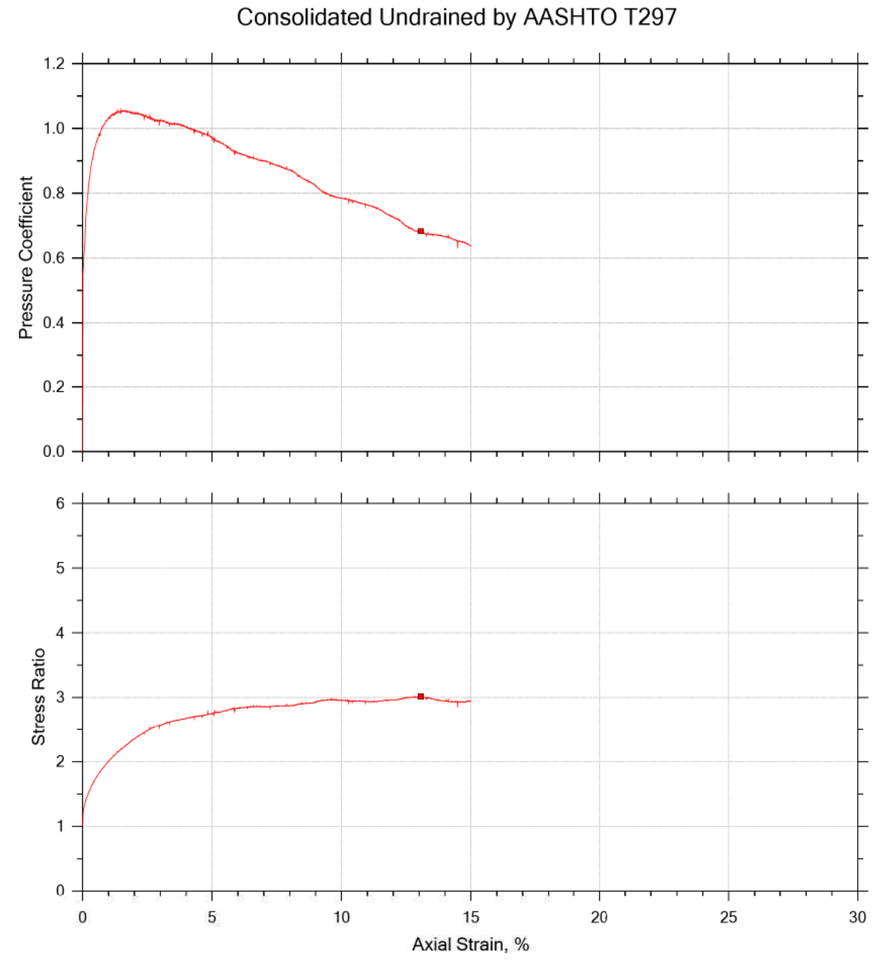
Consolidated Undrained by AASHTO T297





	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
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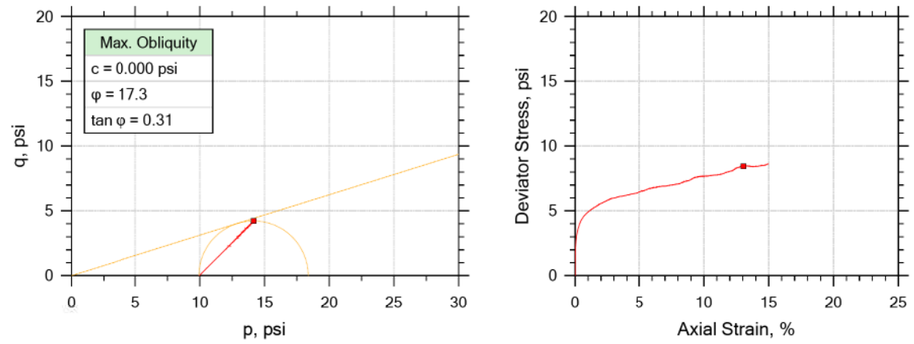
Project Name: A-0009C	Location: NC	Project Number: C8806.00005
Boring Number: Y2_14690R_ST	Tester: WAP/RMC	Checker: WAP/ WJG
Sample Number: 22-0012	Test Date: 4/22/2022	Depth: 18.0' - 19.5'
Test Number: ST-7.A	Preparation: Undisturbed	Elevation:
Description: Soil Classification: A-4(7)		
Remarks:		



	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	22-0012	ST-7.A	18.0' - 19.5'	WAP/RMC	4/22/2022	WAP/ WJG		ST-7.A.1.dat

F&ME CONSULTANTS	Project Name: A-0009C	Location: NC	Project Number: C8806.00005
	Boring Number: Y2_14690R_ST	Tester: WAP/RMC	Checker: WAP/ WJG
	Sample Number: 22-0012	Test Date: 4/22/2022	Depth: 18.0' - 19.5'
	Test Number: ST-7.A	Preparation: Undisturbed	Elevation:
	Description: Soil Classification: A-4(7)		
	Remarks:		

Consolidated Undrained by AASHTO T297

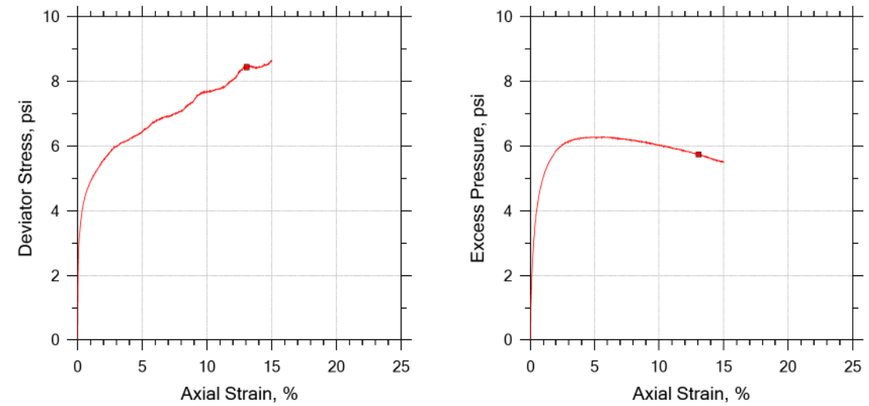


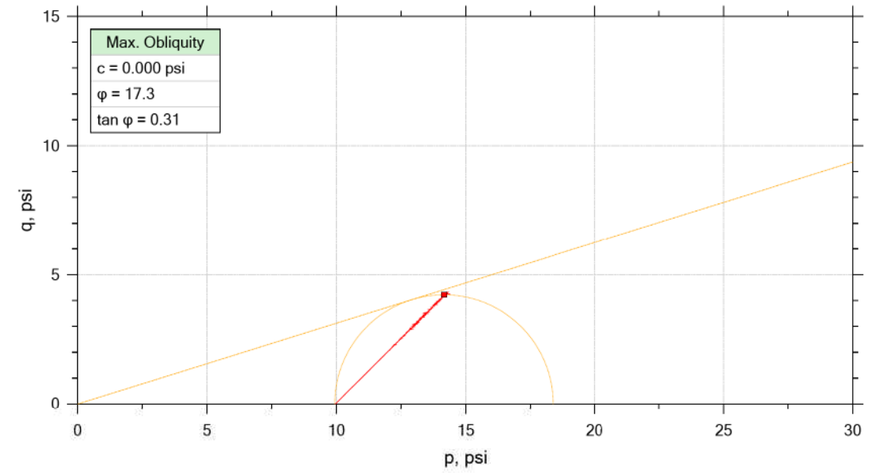
Symbol	■	
Sample ID	22-0012	
Depth	18.0' - 19.5'	
Test Number	ST-7.A	
Initial: Height, in	6.057	
Initial: Diameter, in	2.826	
Initial: Moisture Content (from Cuttings), %	18.4	
Initial: Dry Density, pcf	89.0	
Initial: Saturation (Wet Method), %	56.2	
Initial: Void Ratio	0.880	
Final: Moisture Content, %	29.6	
Final: Dry Density, pcf	93.3	
Final: Cross-Sectional Area (Method A), in²	6.058	
Final: Saturation, %	100.0	
Final: Void Ratio	0.793	
Final: Back Pressure, psi	101.0	
Vertical Effective Consolidation Stress, psi	9.880	
Horizontal Effective Consolidation Stress, psi	9.959	
Vertical Strain after Consolidation, %	1.178	
Volumetric Strain after Consolidation, %	4.363	
Time to 50% Consolidation, min	8.000	
Shear Strength, psi	4.219	
Strain at Failure, %	13.1	
Strain Rate, %/min	0.04000	
Deviator Stress at Failure, psi	8.439	
Effective Minor Principal Stress at Failure, psi	4.192	
Effective Major Principal Stress at Failure, psi	12.63	
B-Value	0.96	

Notes:
- Before Shear Saturation set to 100% for phase calculation.
- Moisture Content determined by ASTM D2216.
- Atterberg Limits determined by ASTM D4318.
- Deviator Stress includes membrane correction.
- Values for c and φ determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.

Project Name: A-0009C	Location: NC	Project Number: C8806.00005
Boring Number: Y2_14690R_ST	Tester: WAP/RMC	Checker: WAP/ WJG
Sample Number: 22-0012	Test Date: 4/22/2022	Depth: 18.0' - 19.5'
Test Number: ST-7.A	Preparation: Undisturbed	Elevation:
Description: Soil Classification: A-4(7)		
Remarks:		

Consolidated Undrained by AASHTO T297

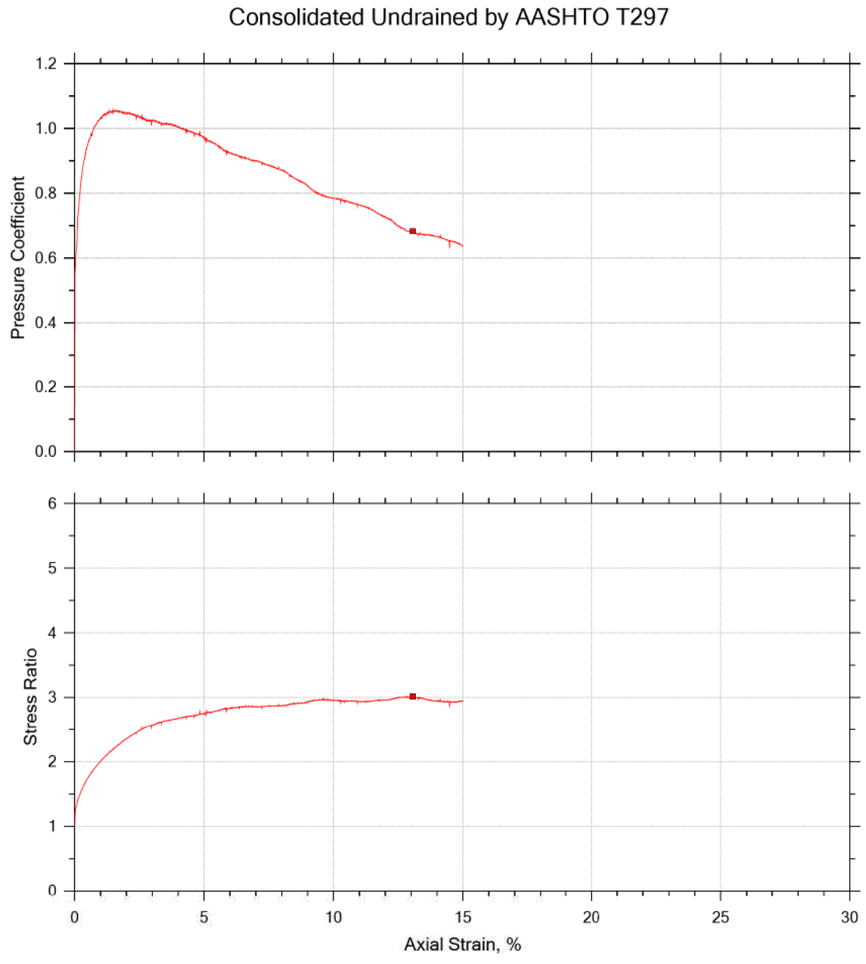




	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	22-0012	ST-7.A	18.0' - 19.5'	WAP/RMC	4/22/2022	WAP/ WJG		ST-7.A.1.dat

Project Name: A-0009C	Location: NC	Project Number: C8806.00005
Boring Number: Y2_14690R_ST	Tester: WAP/RMC	Checker: WAP/ WJG
Sample Number: 22-0012	Test Date: 4/22/2022	Depth: 18.0' - 19.5'
Test Number: ST-7.A	Preparation: Undisturbed	Elevation:
Description: Soil Classification: A-4(7)		
Remarks:		

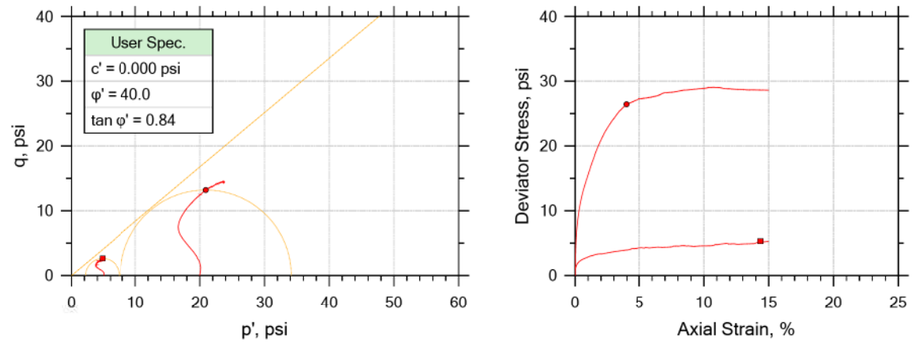
PROJECT REFERENCE NO.	SHEET NO.
A-0009CC / A-0009CD	221



	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	22-0012	ST-7.A	18.0' - 19.5'	WAP/RMC	4/22/2022	WAP/ WJG		ST-7.A.1.dat

F&ME CONSULTANTS	Project Name: A-0009C	Location: NC	Project Number: C8806.00005
	Boring Number: Y2_14690R_ST	Tester: WAP/RMC	Checker: WAP/ WJG
	Sample Number: 22-0012	Test Date: 4/22/2022	Depth: 18.0' - 19.5'
	Test Number: ST-7.A	Preparation: Undisturbed	Elevation:
	Description: Soil Classification: A-4(7)		
	Remarks:		

Consolidated Undrained by AASHTO T297

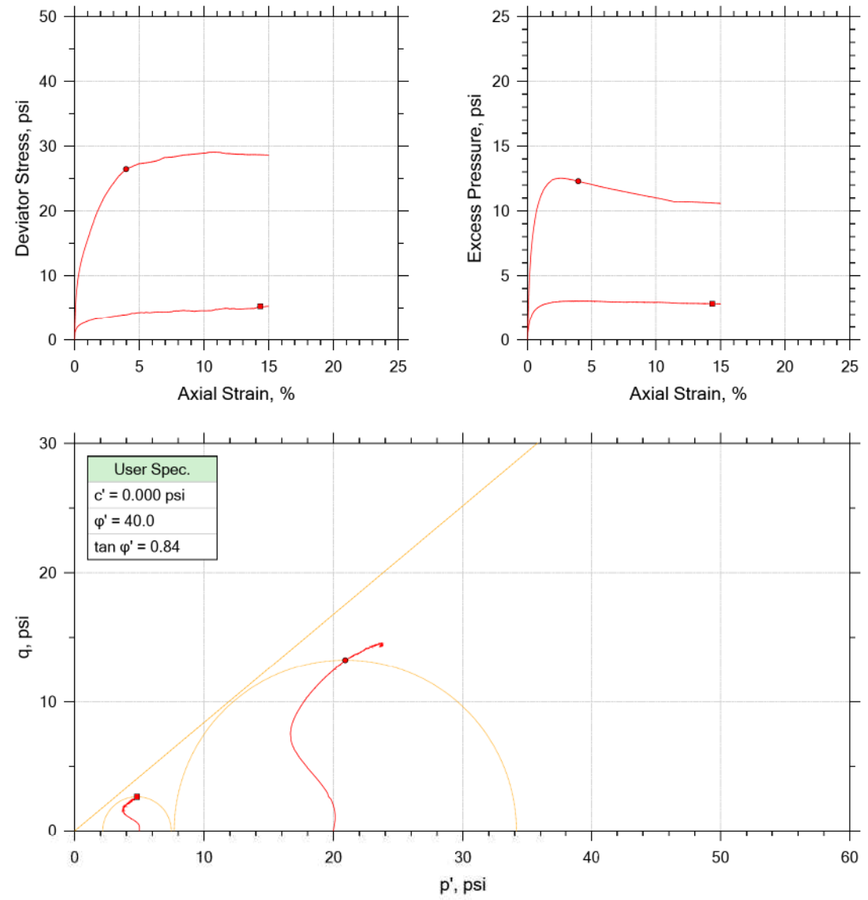


Symbol		■	●
Sample ID		22-0110	22-0110
Depth		18.0' - 20.0'	18.0' - 20.0'
Test Number		ST-10.A	ST-10.B
Initial	Height, in	6.107	6.003
	Diameter, in	2.831	2.842
	Moisture Content (from Cuttings), %	23.1	23.1
	Dry Density, pcf	83.9	79.0
	Saturation (Wet Method), %	62.4	55.5
	Void Ratio	0.993	1.12
Final	Moisture Content, %	35.0	37.5
	Dry Density, pcf	86.4	83.5
	Cross-Sectional Area (Method A), in²	6.159	6.098
	Saturation, %	100.0	100.0
	Void Ratio	0.937	1.00
	Back Pressure, psi	88.99	98.00
Vertical Effective Consolidation Stress, psi		4.968	19.91
Horizontal Effective Consolidation Stress, psi		5.005	19.99
Vertical Strain after Consolidation, %		0.6128	1.262
Volumetric Strain after Consolidation, %		2.607	4.662
Time to 50% Consolidation, min		1.800	0.3000
Shear Strength, psi		2.650	13.22
Strain at Failure, %		14.4	3.97
Strain Rate, %/min		0.07500	0.07500
Deviator Stress at Failure, psi		5.301	26.45
Effective Minor Principal Stress at Failure, psi		2.167	7.687
Effective Major Principal Stress at Failure, psi		7.467	34.13
B-Value		0.95	0.98

Notes:
- Before Shear Saturation set to 100% for phase calculation.
- Moisture Content determined by ASTM D2216.
- Atterberg Limits determined by ASTM D4318.
- Deviator Stress includes membrane correction.
- Values for c and φ determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.

Project Name: A-0009C	Location: NC	Project Number: C8806.00005
Boring Number: Y2_3060R	Tester: WAP	Checker: WAP/ WJG
Sample Number: 22-0110	Test Date: 02/22/2022	Depth: 18.0' - 20.0'
Test Number: ST-10.A	Preparation: Undisturbed	Elevation:
Description: Soil Classification: A-4(0)		
Remarks:		

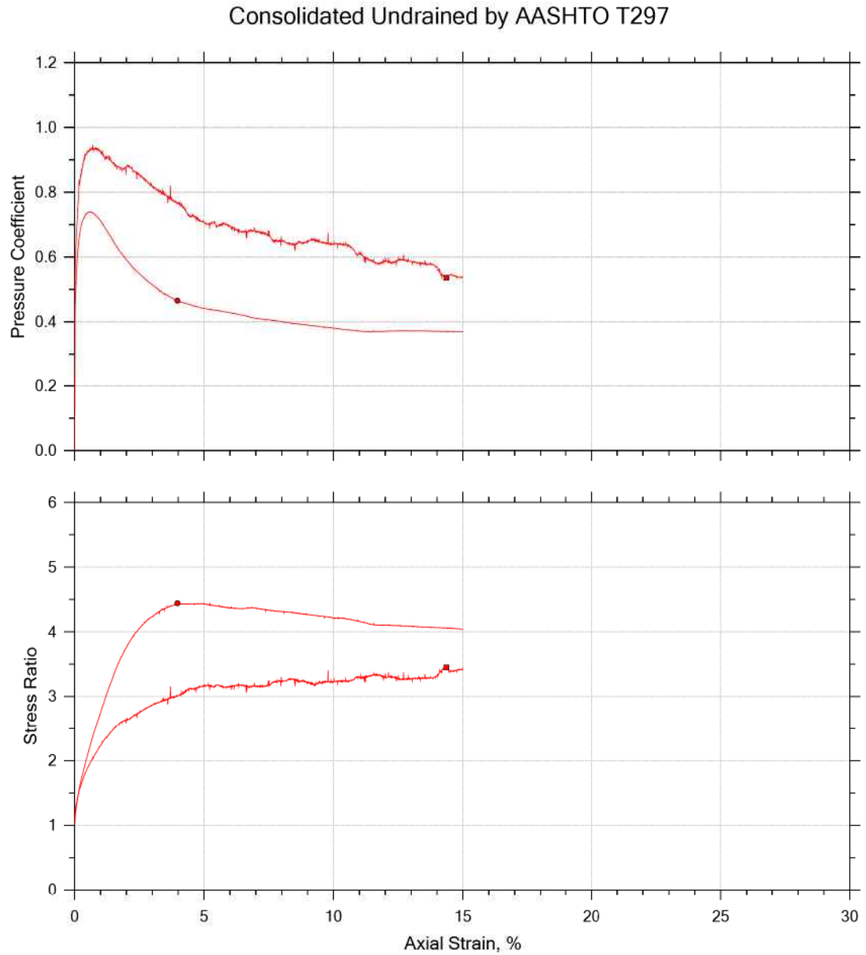
Consolidated Undrained by AASHTO T297



	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	22-0110	ST-10.A	18.0' - 20.0'	WAP	02/22/2022	WAP/ WJG		ST-10.A.dat
●	22-0110	ST-10.B	18.0' - 20.0'	WAP	02/24/2022	WAP/ WJG		ST-10.B.dat

Project Name: A-0009C	Location: NC	Project Number: C8806.00005
Boring Number: Y2_3060R	Tester: WAP	Checker: WAP/ WJG
Sample Number: 22-0110	Test Date: 02/22/2022	Depth: 18.0' - 20.0'
Test Number: ST-10.A	Preparation: Undisturbed	Elevation:
Description: Soil Classification: A-4(0)		
Remarks:		

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC / A-0009CD	223

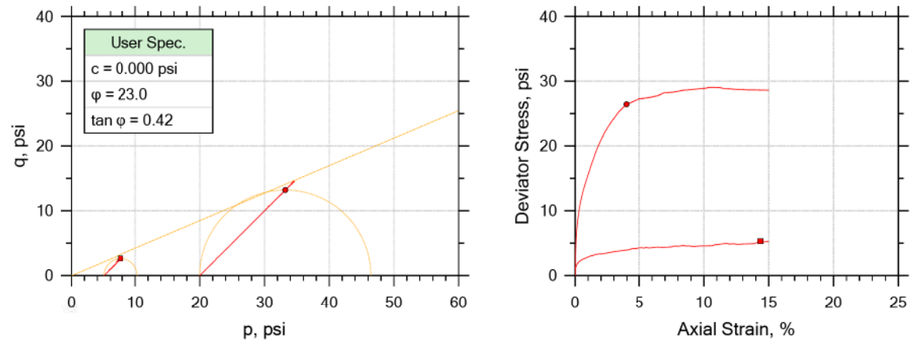


	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	22-0110	ST-10.A	18.0' - 20.0'	WAP	02/22/2022	WAP/ WJG		ST-10.A.dat
●	22-0110	ST-10.B	18.0' - 20.0'	WAP	02/24/2022	WAP/ WJG		ST-10.B.dat

F&ME CONSULTANTS

Project Name: A-0009C	Location: NC	Project Number: C8806.00005
Boring Number: Y2_3060R	Tester: WAP	Checker: WAP/ WJG
Sample Number: 22-0110	Test Date: 02/22/2022	Depth: 18.0' - 20.0'
Test Number: ST-10.A	Preparation: Undisturbed	Elevation:
Description: Soil Classification: A-4(0)		
Remarks:		

Consolidated Undrained by AASHTO T297

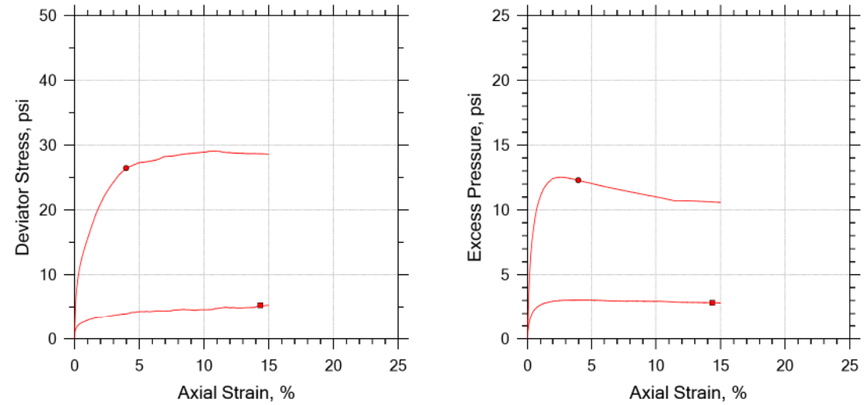


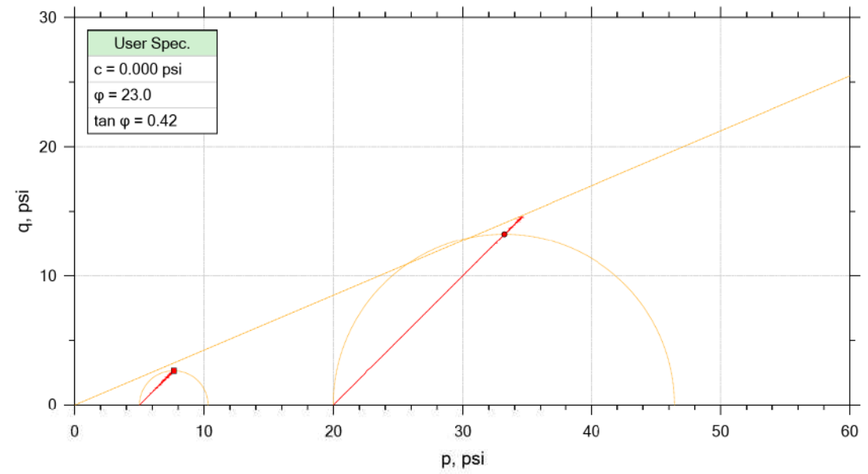
Symbol		■	●	
Sample ID		22-0110	22-0110	
Depth		18.0' - 20.0'	18.0' - 20.0'	
Test Number		ST-10.A	ST-10.B	
Initial	Height, in	6.107	6.003	
	Diameter, in	2.831	2.842	
	Moisture Content (from Cuttings), %	23.1	23.1	
	Dry Density, pcf	83.9	79.0	
	Saturation (Wet Method), %	62.4	55.5	
	Void Ratio	0.993	1.12	
Final	Moisture Content, %	35.0	37.5	
	Dry Density, pcf	86.4	83.5	
	Cross-Sectional Area (Method A), in²	6.159	6.098	
	Saturation, %	100.0	100.0	
	Void Ratio	0.937	1.00	
	Back Pressure, psi	88.99	98.00	
Vertical Effective Consolidation Stress, psi		4.968	19.91	
Horizontal Effective Consolidation Stress, psi		5.005	19.99	
Vertical Strain after Consolidation, %		0.6128	1.262	
Volumetric Strain after Consolidation, %		2.607	4.662	
Time to 50% Consolidation, min		1.800	0.3000	
Shear Strength, psi		2.650	13.22	
Strain at Failure, %		14.4	3.97	
Strain Rate, %/min		0.07500	0.07500	
Deviator Stress at Failure, psi		5.301	26.45	
Effective Minor Principal Stress at Failure, psi		2.167	7.687	
Effective Major Principal Stress at Failure, psi		7.467	34.13	
B-Value		0.95	0.98	

Notes:
- Before Shear Saturation set to 100% for phase calculation.
- Moisture Content determined by ASTM D2216.
- Atterberg Limits determined by ASTM D4318.
- Deviator Stress includes membrane correction.
- Values for c and φ determined from best-fit straight line for the specific test conditions. Actual strength parameters may vary and should be determined by an engineer for site conditions.

F&ME CONSULTANTS	Project Name: A-0009C	Location: NC	Project Number: C8806.00005
	Boring Number: Y2_3060R	Tester: WAP	Checker: WAP/ WJG
	Sample Number: 22-0110	Test Date: 02/22/2022	Depth: 18.0' - 20.0'
	Test Number: ST-10.A	Preparation: Undisturbed	Elevation:
	Description: Soil Classification: A-4(0)		
	Remarks:		

Consolidated Undrained by AASHTO T297

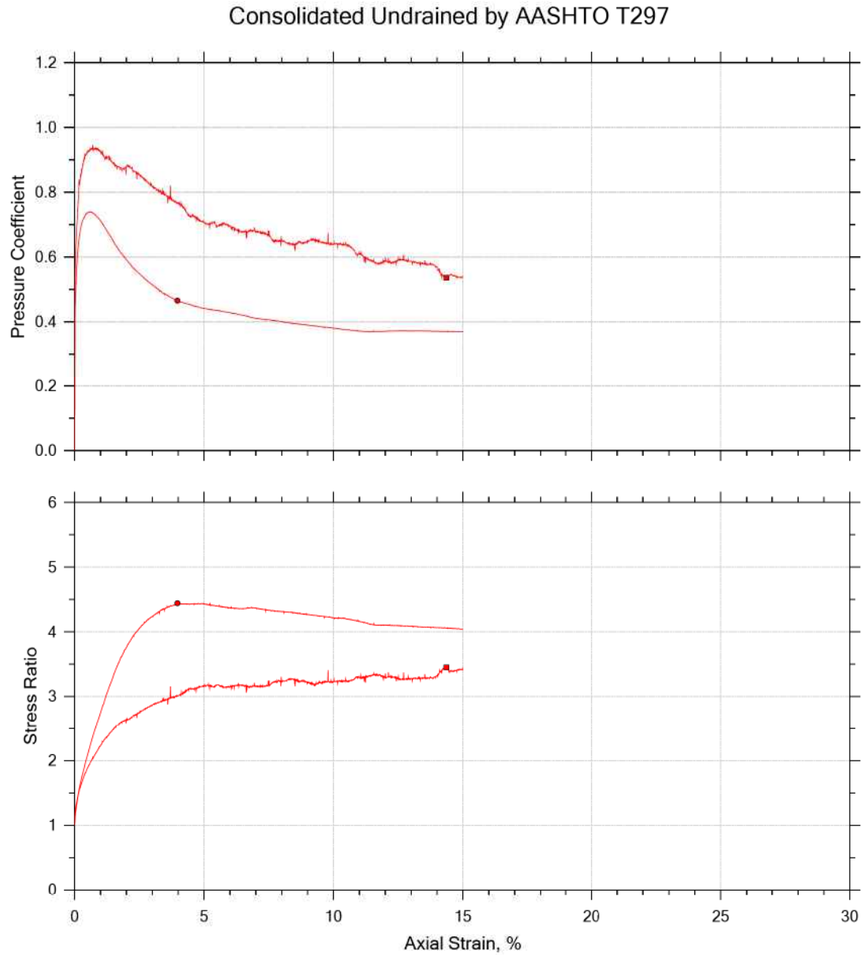




	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	22-0110	ST-10.A	18.0' - 20.0'	WAP	02/22/2022	WAP/ WJG		ST-10.A.dat
●	22-0110	ST-10.B	18.0' - 20.0'	WAP	02/24/2022	WAP/ WJG		ST-10.B.dat

F&ME CONSULTANTS	Project Name: A-0009C	Location: NC	Project Number: C8806.00005
	Boring Number: Y2_3060R	Tester: WAP	Checker: WAP/ WJG
	Sample Number: 22-0110	Test Date: 02/22/2022	Depth: 18.0' - 20.0'
	Test Number: ST-10.A	Preparation: Undisturbed	Elevation:
	Description: Soil Classification: A-4(0)		
	Remarks:		

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC / A-0009CD	225



	Sample No.	Test No.	Depth	Tested By	Test Date	Checked By	Check Date	Test File
■	22-0110	ST-10.A	18.0' - 20.0'	WAP	02/22/2022	WAP/ WJG		ST-10.A.dat
●	22-0110	ST-10.B	18.0' - 20.0'	WAP	02/24/2022	WAP/ WJG		ST-10.B.dat

F&ME CONSULTANTS

Project Name: A-0009C	Location: NC	Project Number: C8806.00005
Boring Number: Y2_3060R	Tester: WAP	Checker: WAP/ WJG
Sample Number: 22-0110	Test Date: 02/22/2022	Depth: 18.0' - 20.0'
Test Number: ST-10.A	Preparation: Undisturbed	Elevation:
Description: Soil Classification: A-4(0)		
Remarks:		

PROJECT REFERENCE NO.	SHEET NO.
A–0009CC /A–0009CD	226

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

APPENDIX C
SOIL TEST RESULTS (II)

PROJECT: 32572 REFERENCE: A–0009CC /A–0009CD

Prepared in the Office of:
FALCON ENGINEERS, INC
CARY, NORTH CAROLINA
NCDOT LAB CERT. NO. 105–0803

SOIL TEST RESULTS

SAMPLE NO.	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		
SS–1144	75' LT	421+50 –L–	28.5' – 30.0'	A–4(0)	29	NP	21	28	37	14	100	89	58	24	–
SS–1154	107' LT	422+20 –L–	3.5' – 5.0'	A–4(0)	28	2	16	23	36	25	89	80	60	13	–
SS–1160	107' LT	422+20 –L–	28.5' – 30.0'	A–4(1)	27	4	17	28	27	28	93	84	58	21	–
SS–10038	23' LT	427+52 –L–	1.0' – 2.5'	A–1–B(0)	25	NP	38	20	32	10	39	28	19	0	–
SS–892	18' RT	429+50 –L–	13.5' – 15.0'	A–4(0)	23	NP	21	9	33	17	66	58	38	15	–
SS–894	18' RT	429+50 –L–	23.5' – 25.0'	A–4(2)	28	6	22	25	28	25	100	87	60	14	–
SS–8185	18' RT	430+00 –L–	33.5' – 35.0'	A–4(0)	23	NP	17	41	28	14	100	92	52	15	–
SS–8222	20' LT	434+50 –L–	3.5' – 5.0'	A–4(0)	22	NP	15	42	30	13	100	95	53	17	–
SS–8228	40' LT	436+50 –L–	1.0' – 2.5'	A–5(0)	42	2	30	28	23	19	96	75	47	34	–
SS–10047	20' LT	442+50 –L–	3.5' – 5.0'	A–6(5)	38	12	15	24	31	30	84	77	57	32	–
SS–8244	40' LT	448+50 –L–	3.5' – 5.0'	A–4(0)	28	NP	13	25	49	13	92	85	65	22	–
SS–8270	41' LT	466+00 –L–	3.5' – 5.0'	A–4(0)	29	2	11	36	43	10	100	96	66	15	–
SS–10071	15' LT	470+25 –L–	3.5' – 5.0'	A–4(0)	29	1	2	46	38	14	100	99	70	20	–
SS–4263	12' LT	27+50 –Y2–	38.5' – 40.0'	A–4(2)	36	2	12	25	36	27	93	85	69	36	–
SS–4458	132' RT	34+83 –Y2–	1.0' – 2.5'	A–4(3)	39	2	6	32	32	30	100	98	74	24	–
SS–4465	132' RT	34+83 –Y2–	28.5' – 30.0'	A–4(1)	30	1	9	19	64	8	100	94	78	25	–
SS–1098	130' RT	41+00 –Y2–	6.0' – 7.5'	A–4(1)	32	3	14	28	31	27	92	85	61	24	–
SS–1109	120' RT	44+50 –Y2–	23.5' – 25.0'	A–4(2)	35	NP	2	2	44	22	100	100	83	30	–
SS–4282	1' LT	58+98 –Y2–	28.5' – 30.0'	A–4(0)	30	2	15	23	37	25	68	60	47	19	–
SS–940	1' LT	60+00 –Y2–	8.5' – 10.0'	A–4(1)	30	3	13	23	34	30	92	84	66	18	–
SS–984	2' LT	61+00 –Y2–	18.5' – 20.0'	A–6(10)	37	11	6	13	36	45	99	95	86	26	–
SS–4299	20' LT	66+05 –Y2–	23.5' – 25.0'	A–4(2)	36	2	8	24	41	27	93	87	73	4	–
SS–1056	92' LT	72+15 –Y2–	48.5' – 50.0'	A–4(2)	37	1	1	42	42	15	99	99	74	28	–
SS–715	90' LT	73+50 –Y2–	18.5' – 20.0'	A–4(1)	34	1	6	32	38	24	97	92	72	21	–
SS–921	90' LT	73+50 –Y2–	48.5' – 50.0'	A–4(2)	35	1	2	39	45	14	100	100	76	27	–
SS–1063	36' LT	79+00 –Y2–	8.5' – 10.0'	A–4(0)	27	NP	8	40	36	16	74	70	48	17	–
SS–4387	93' LT	81+00 –Y2–	43.5' – 45.0'	A–4(0)	27	NP	7	36	47	10	88	83	63	15	–
SS–978	12' LT	85+05 –Y2–	3.5' – 5.0'	A–4(0)	28	NP	1	42	45	12	100	100	76	21	–
SS–1001	24' LT	87+98 –Y2–	6.0' – 7.5'	A–7–6(19)	45	20	5	11	33	51	98	94	88	28	–
SS–4483	38' LT	103+48 –Y2–	3.5' – 5.0'	A–4(0)	28	2	32	25	24	19	96	74	49	14	–
SS–1009	35' RT	107+75 –Y2–	8.5' – 10.0'	A–4(0)	28	3	26	24	25	25	75	61	42	16	–
SS–4451	35' RT	114+25 –Y2–	8.5' – 10.0'	A–4(1)	36	5	25	27	29	19	84	69	47	15	–

PROJECT REFERENCE NO.	SHEET NO.
A–0009CC /A–0009CD	228

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

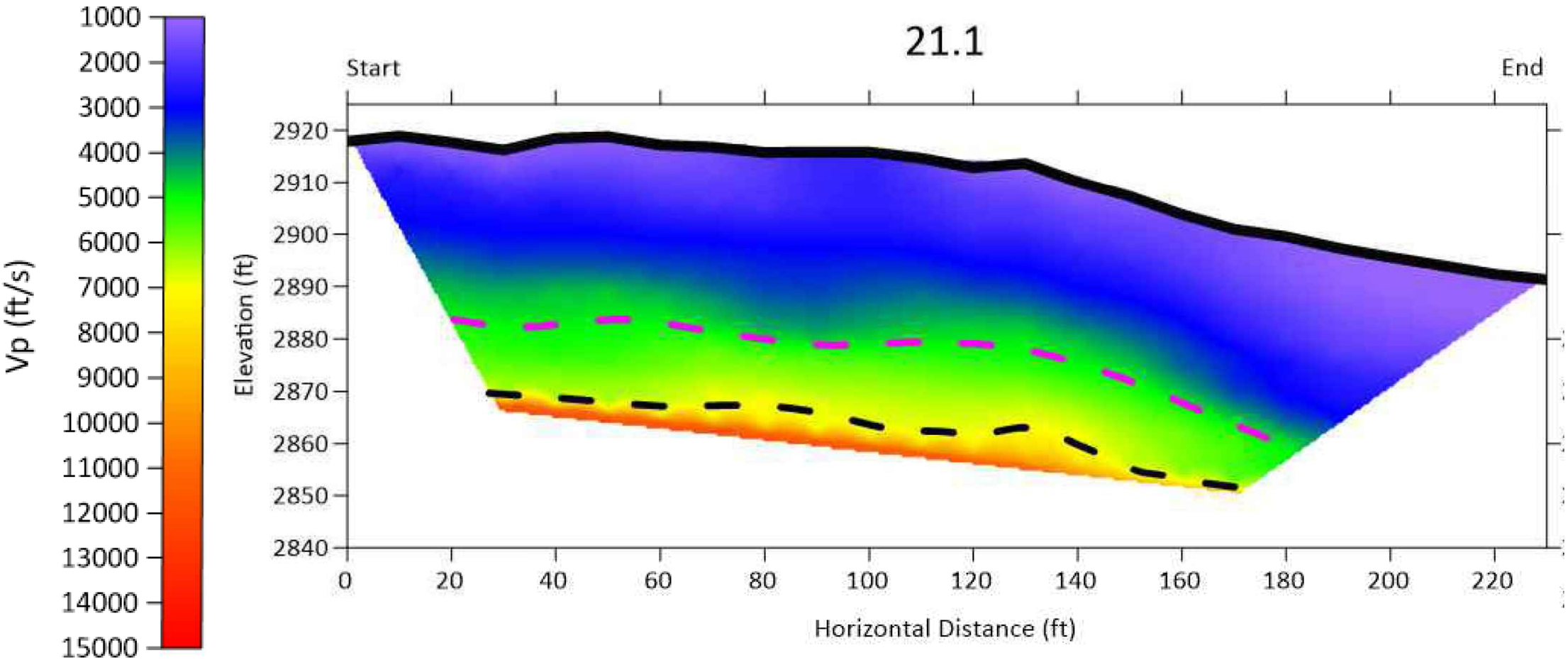
SUBSURFACE INVESTIGATION

APPENDIX D
GEOPHYSICAL TEST RESULTS

PROJECT: 32572 REFERENCE: A–0009CC /A–0009CD

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	229

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 21.1



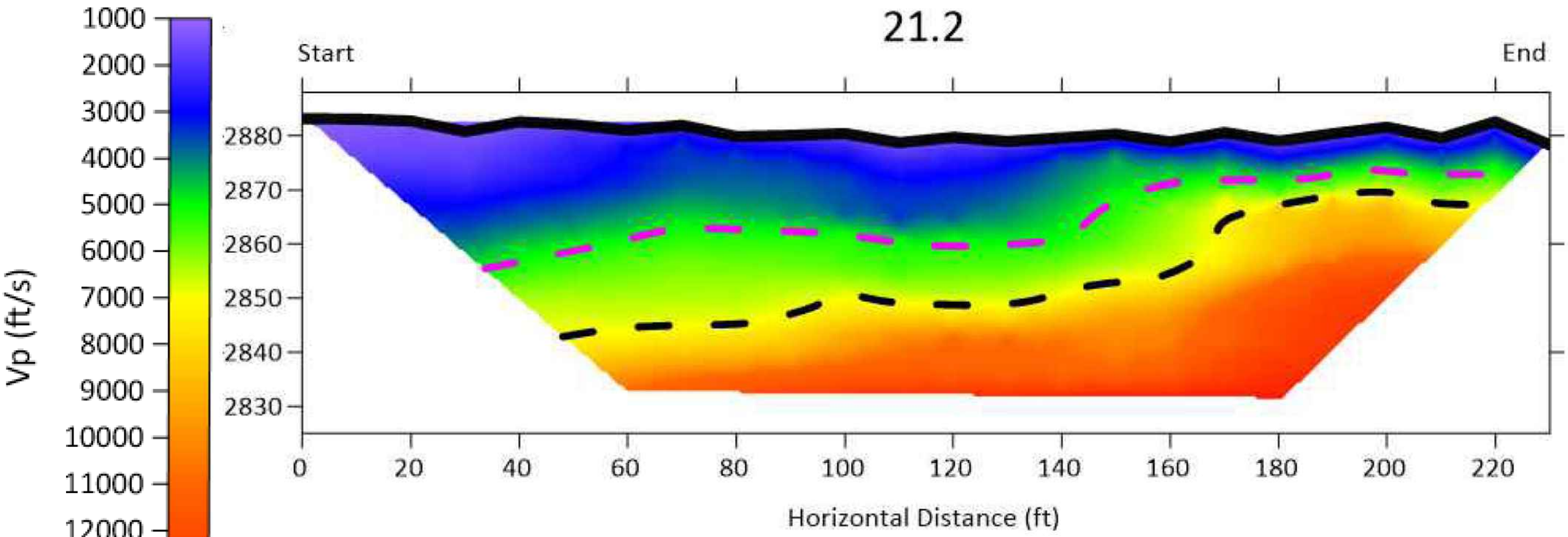
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	230

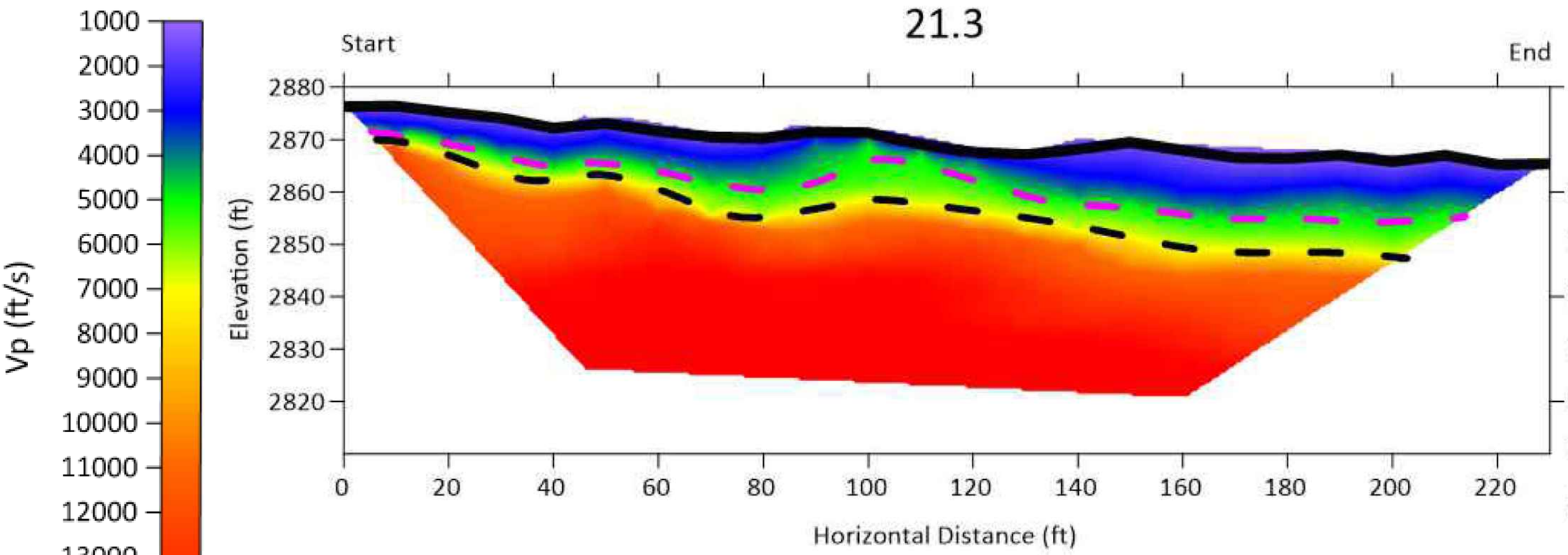
GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 21.2



GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021
CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC
CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	231

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 21.3



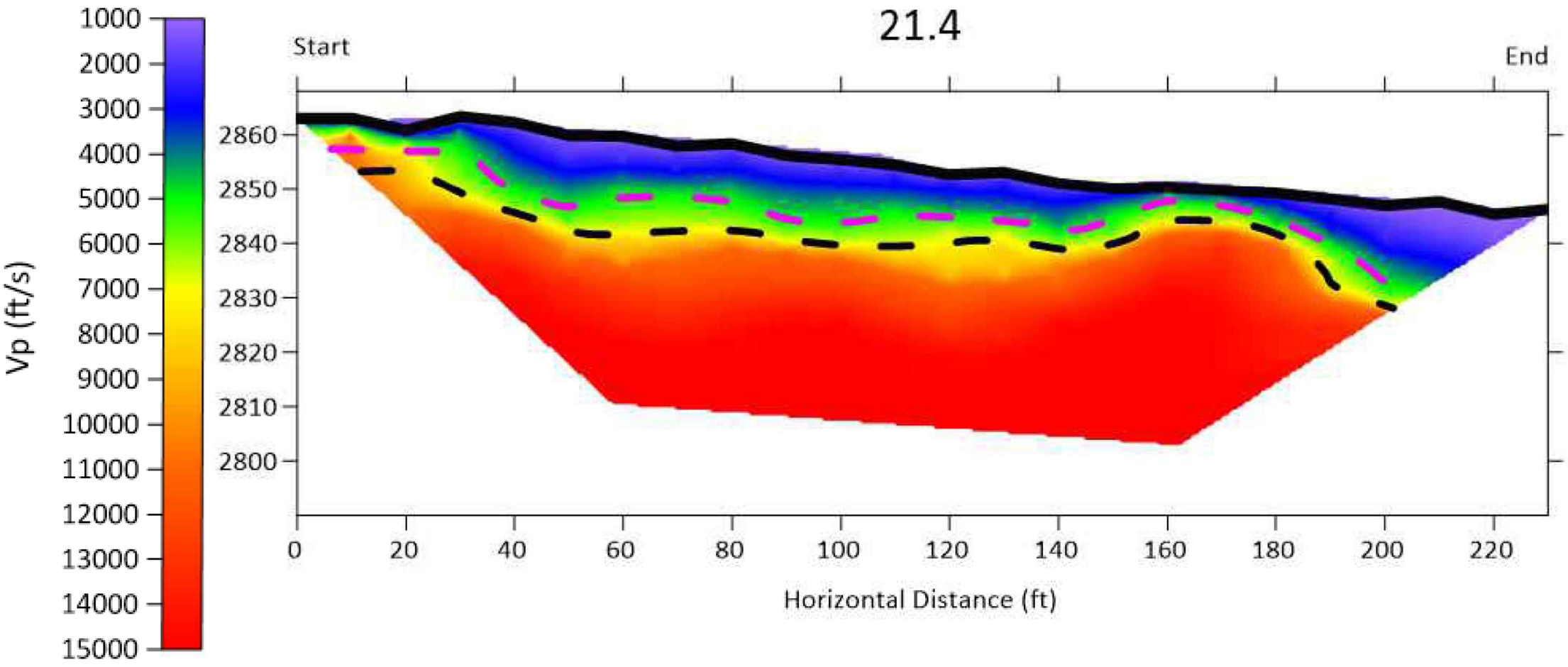
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	232

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 21.4



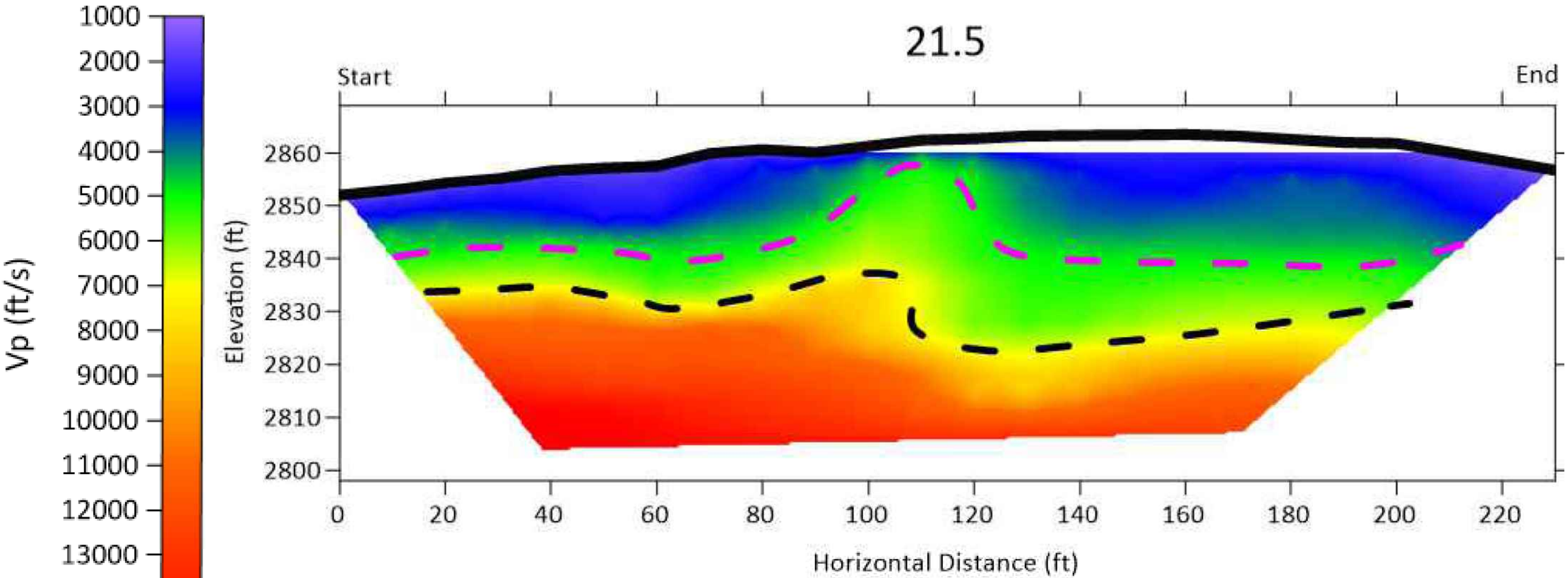
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	233

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 21.5



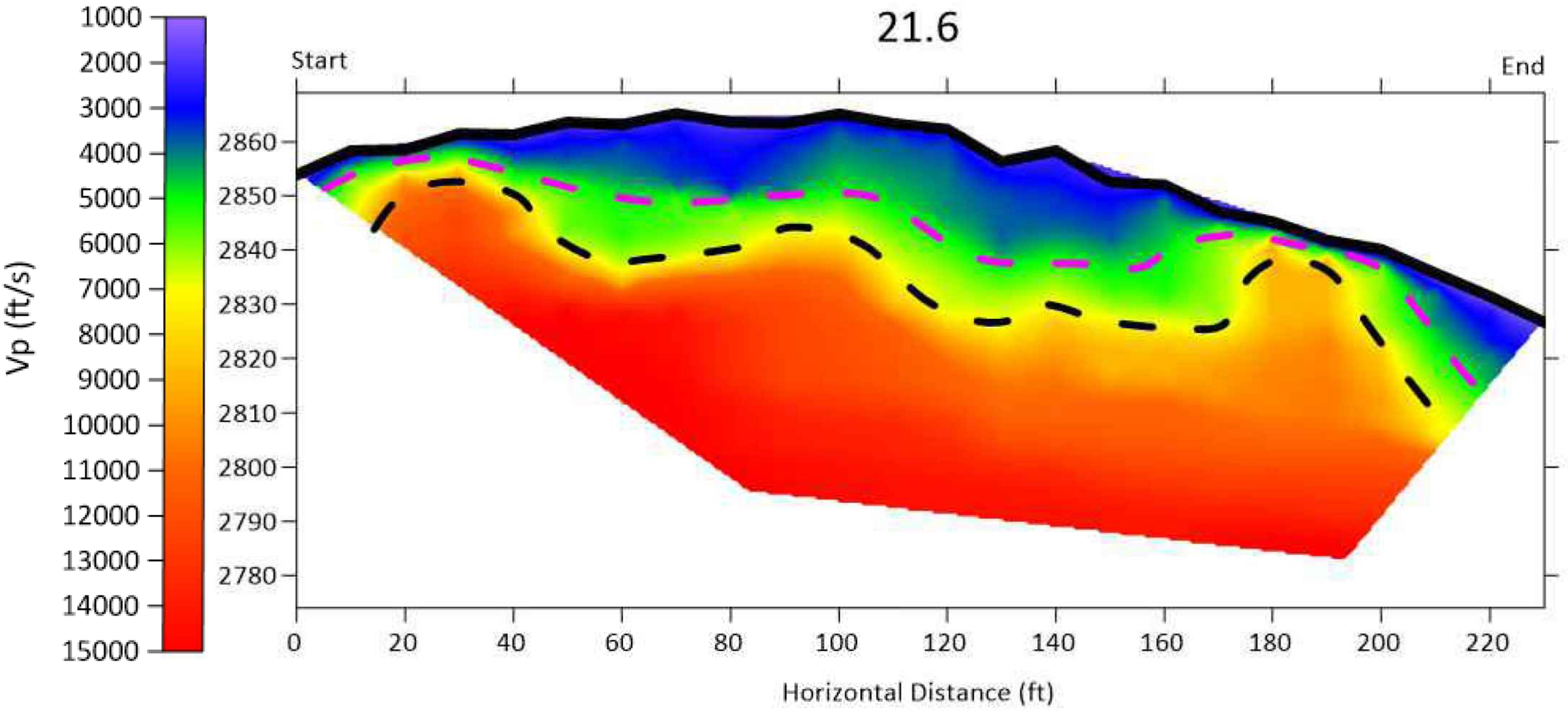
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	234

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 21.6



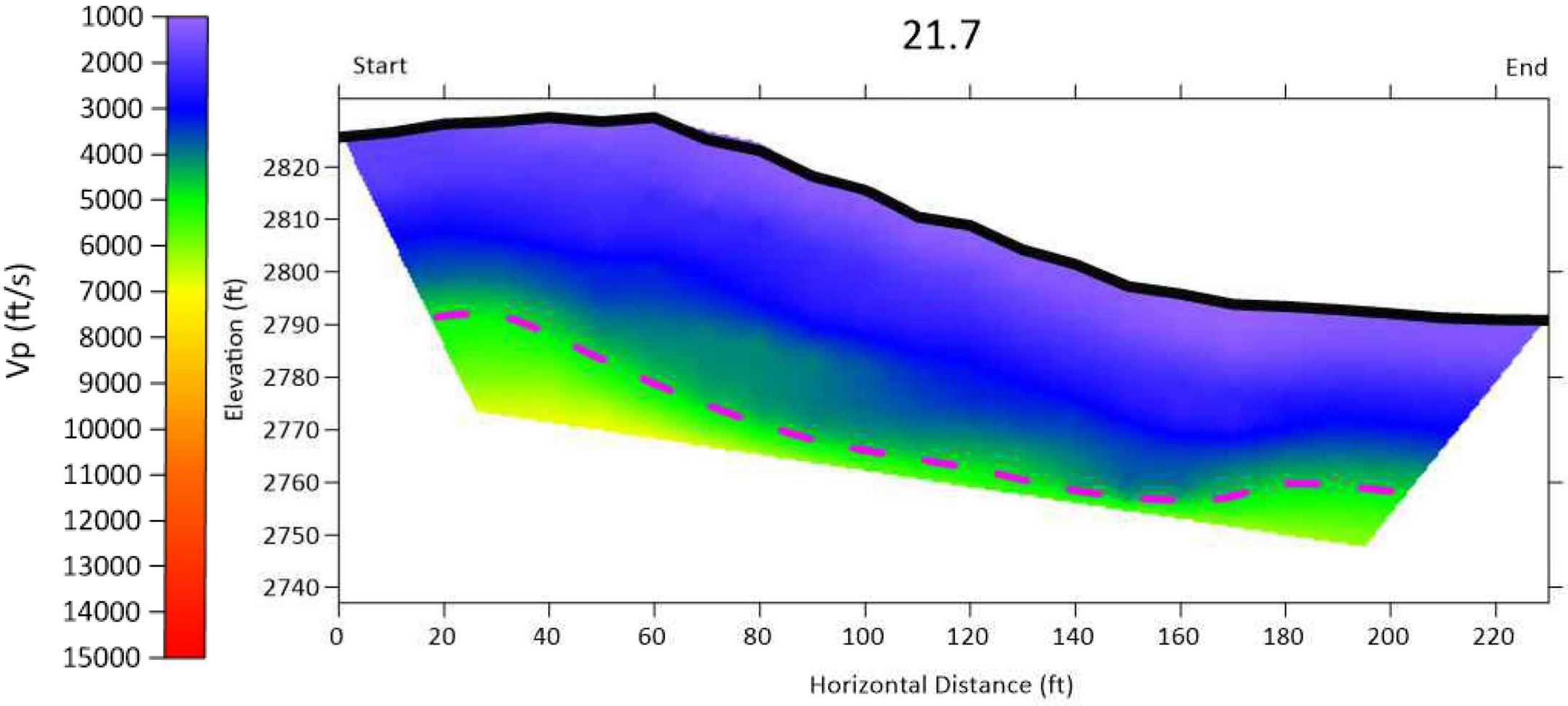
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	235

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 21.7



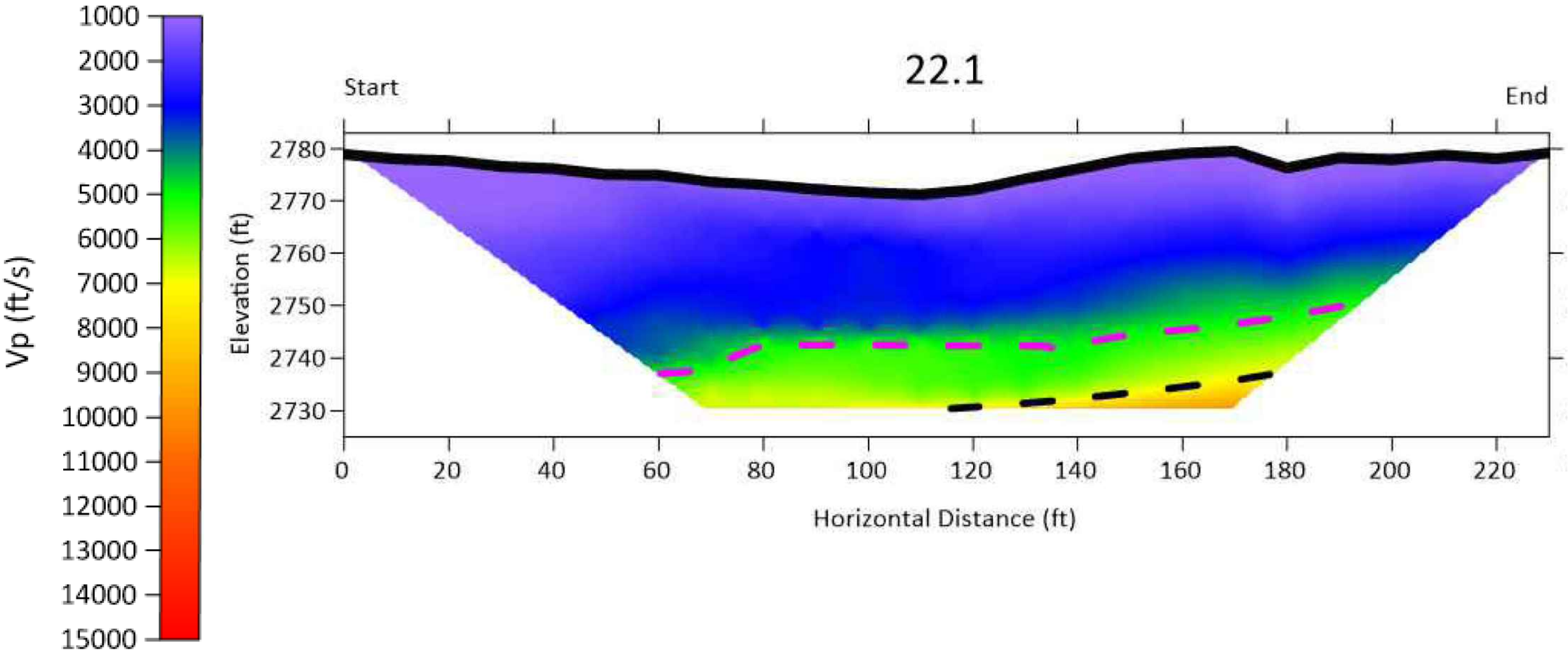
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	236

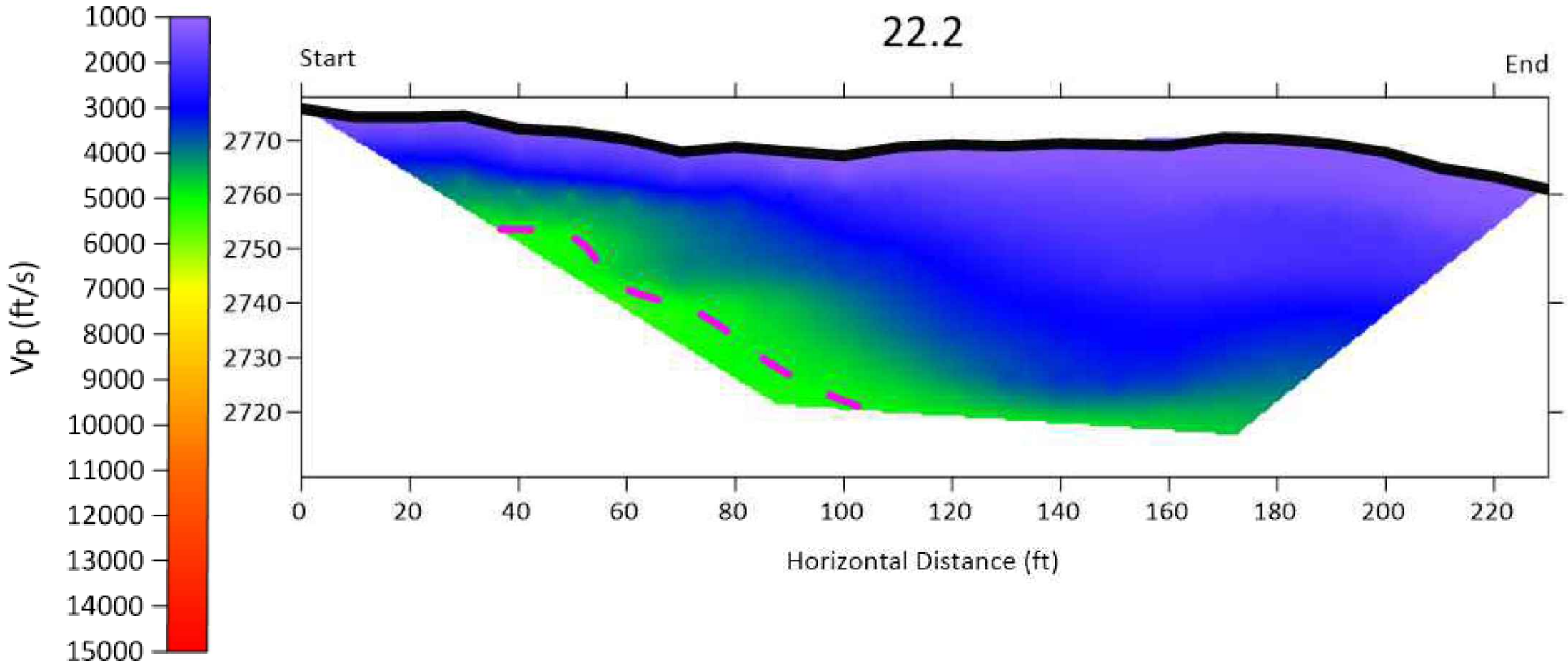
GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 22.1



GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021
CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC
CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	237

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 22.2



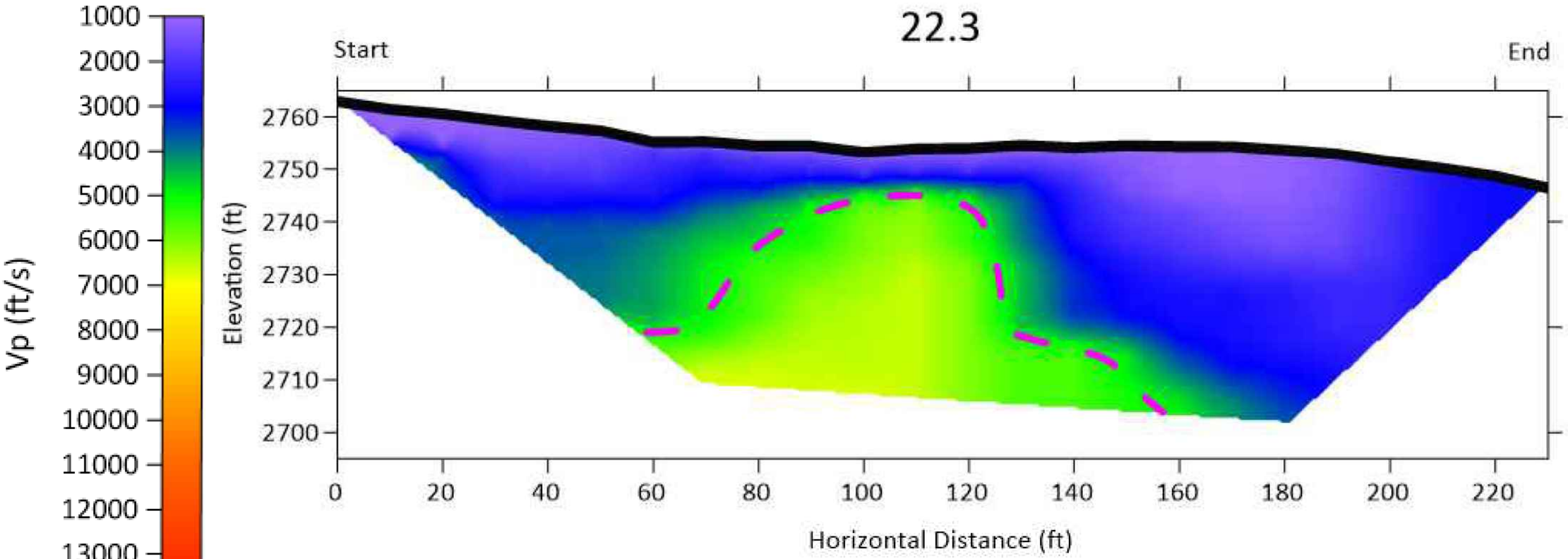
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	238

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 22.3



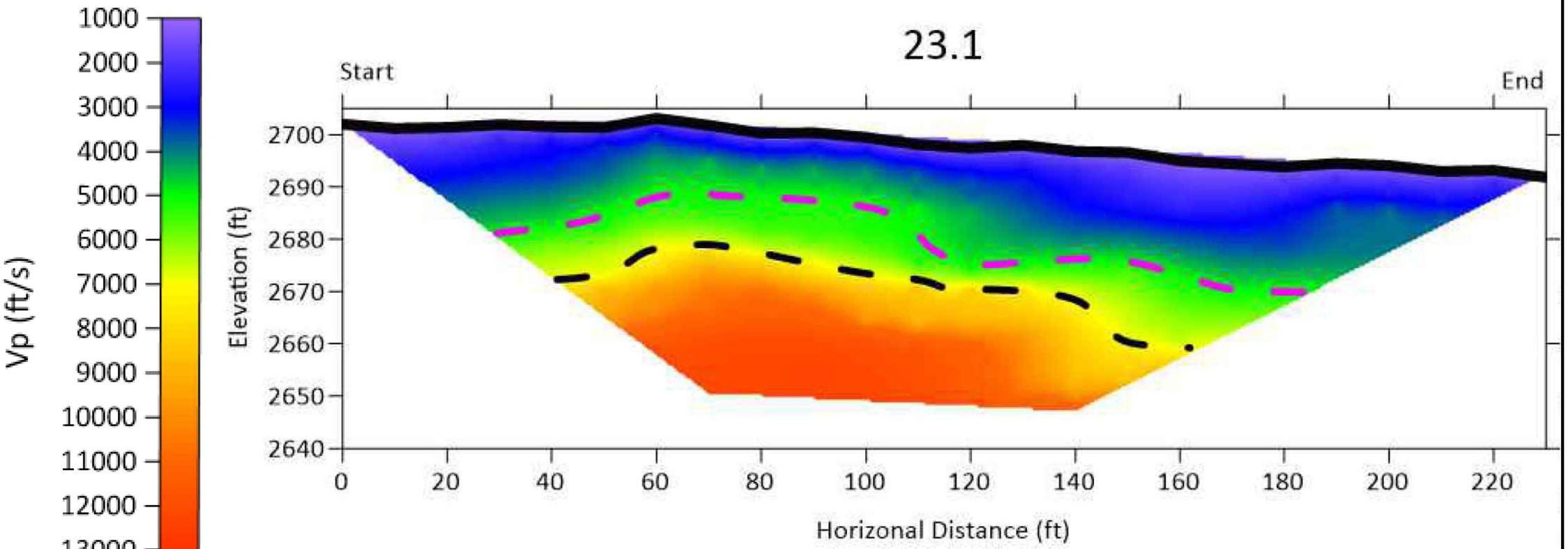
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	239

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 23.1



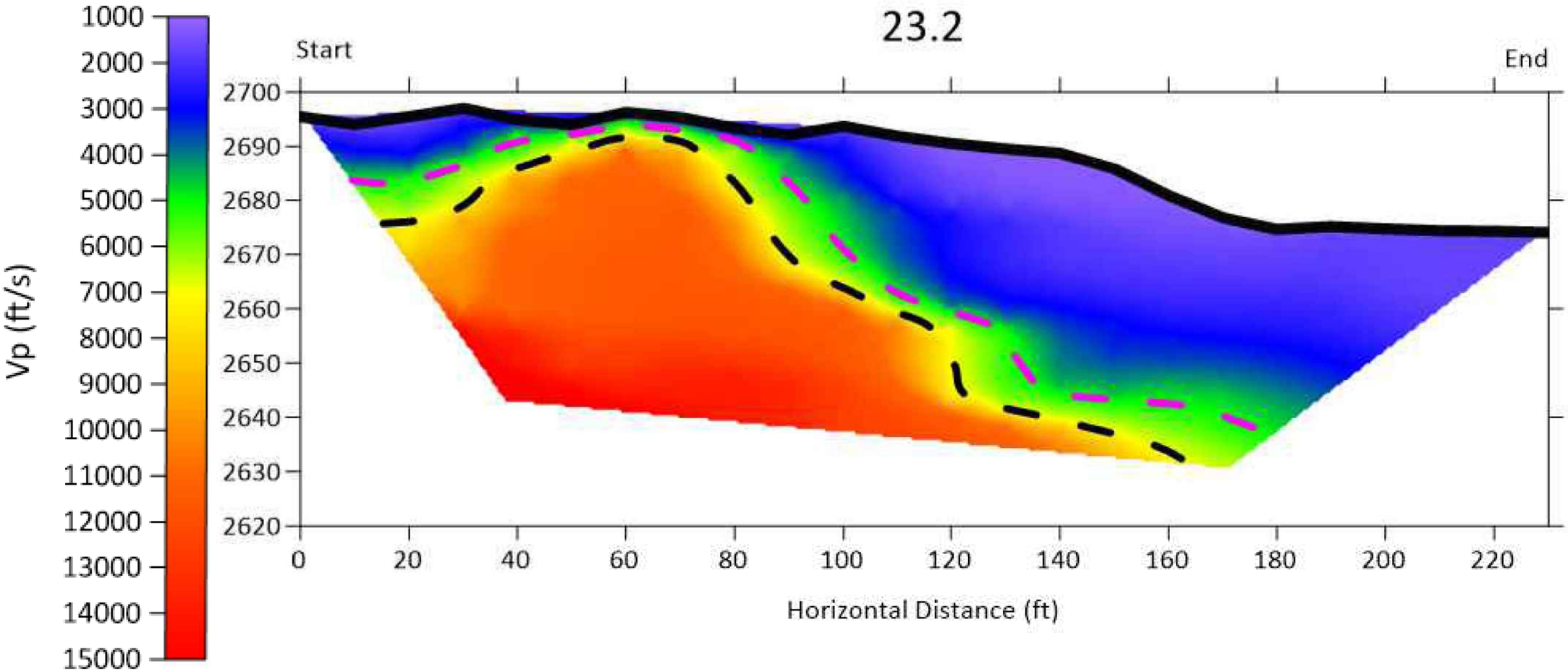
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	240

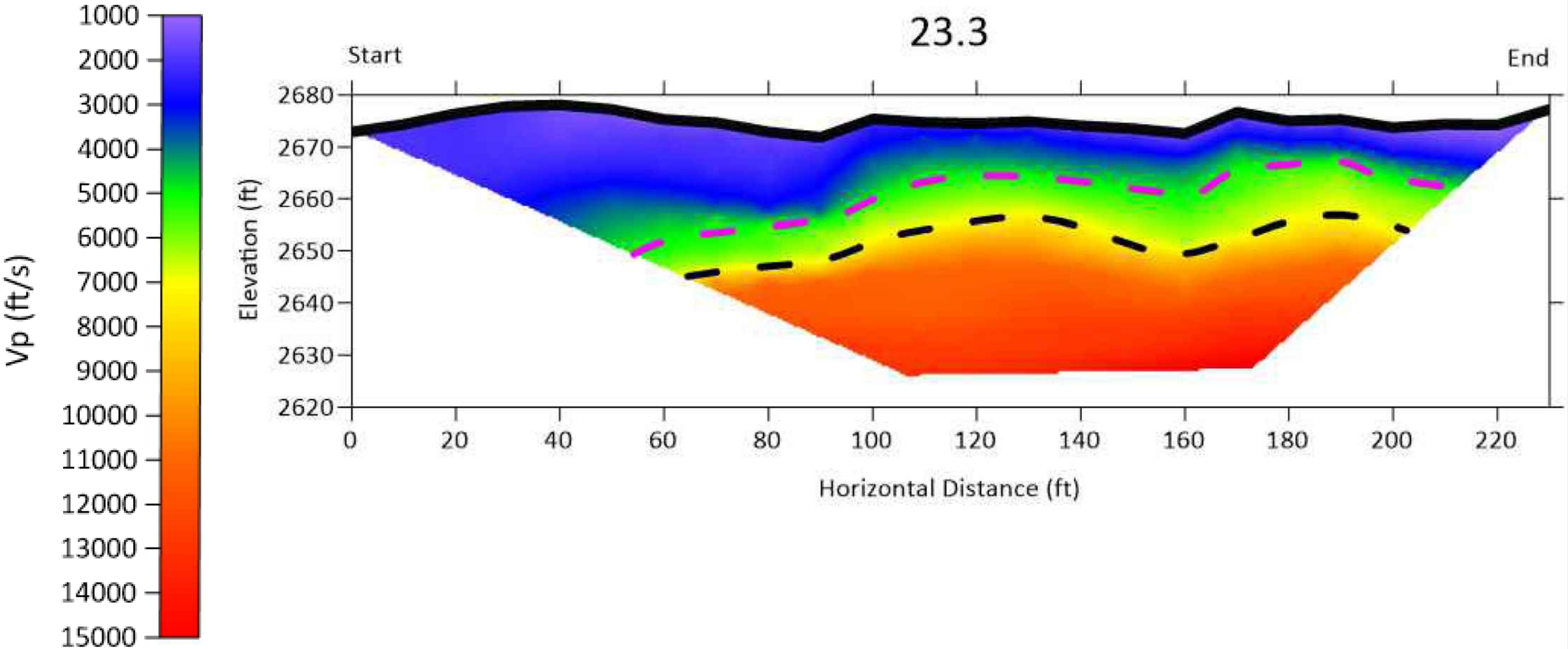
GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 23.2



GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021
CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC
CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	241

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 23.3



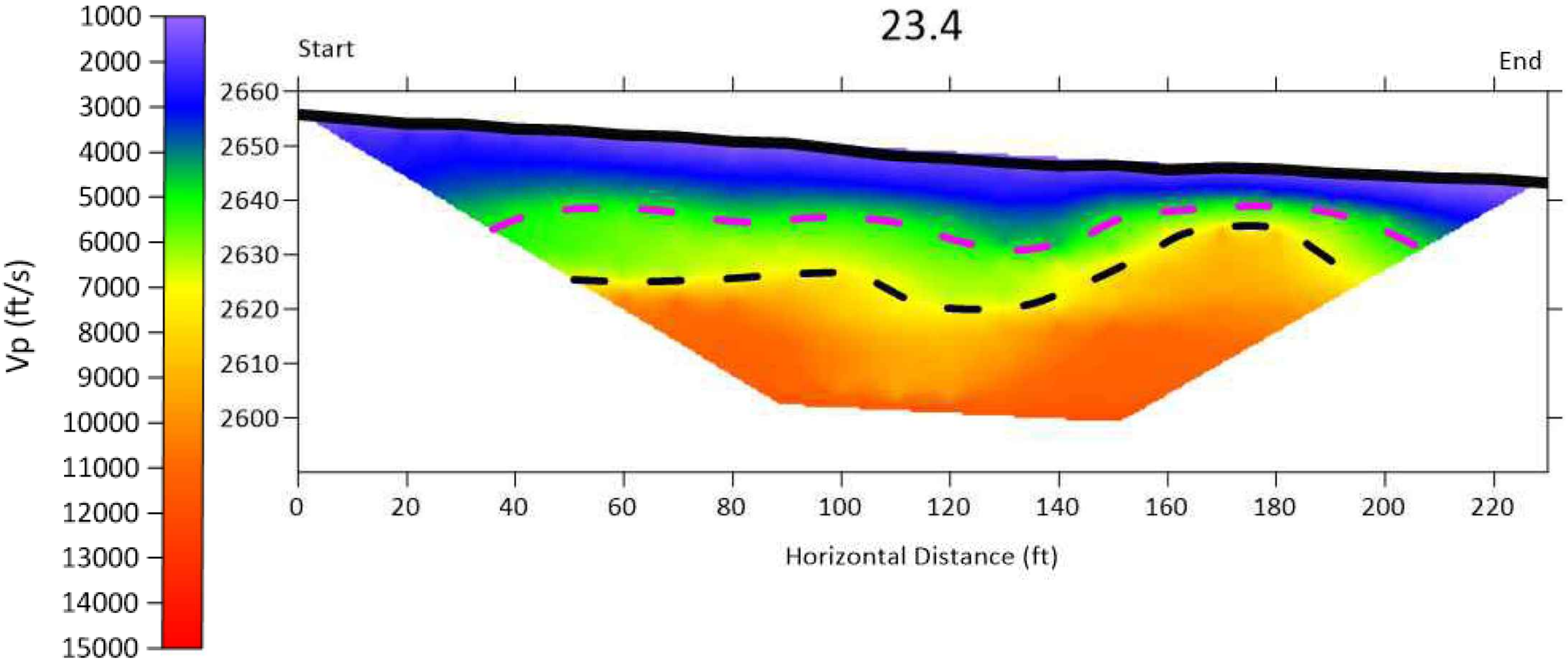
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	242

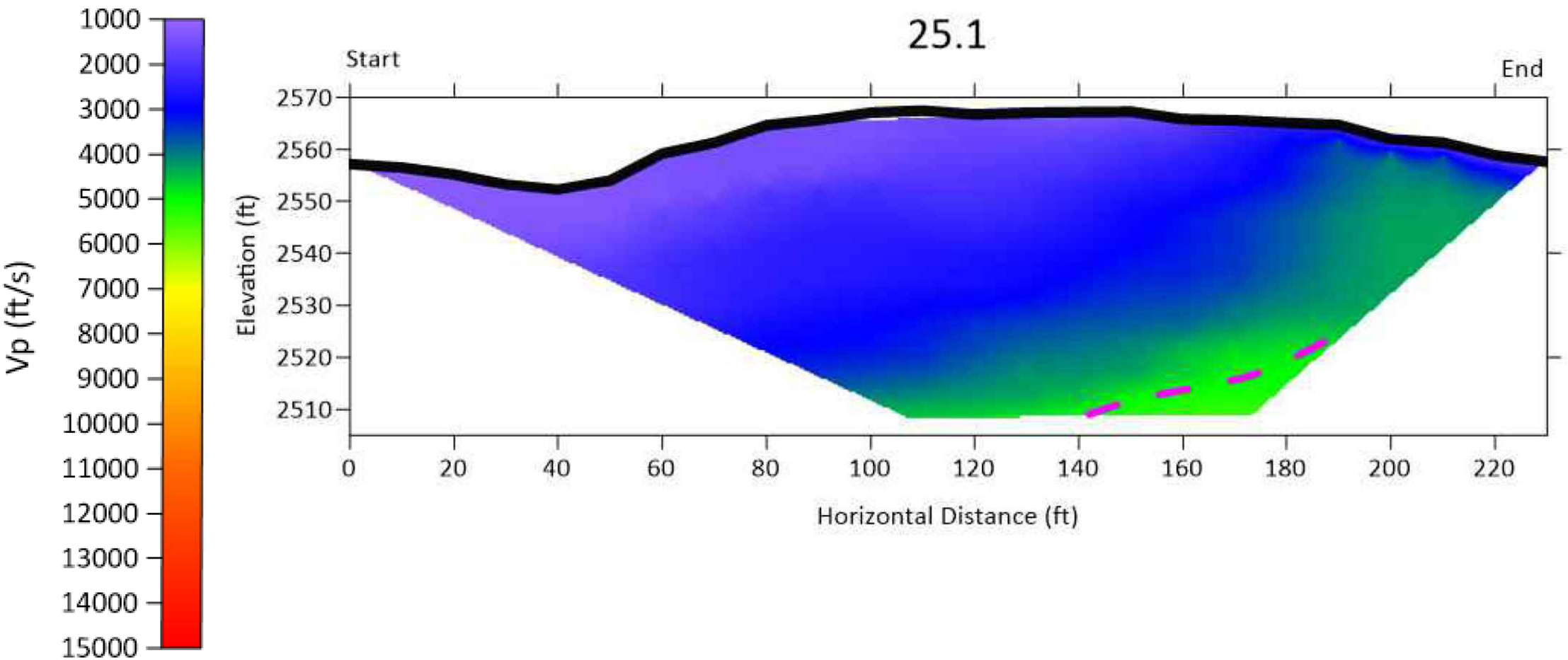
GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 23.4



GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021
CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC
CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	243

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 25.1



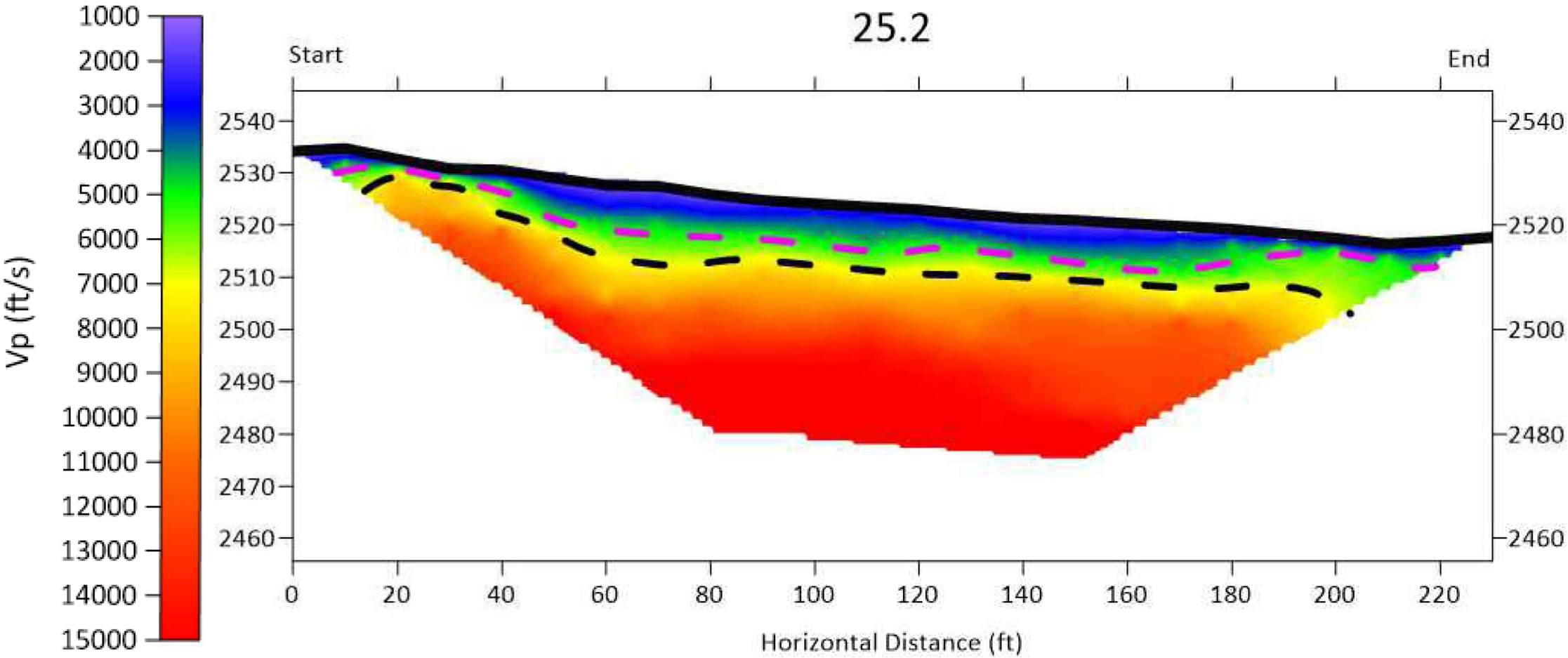
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	244

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 25.2



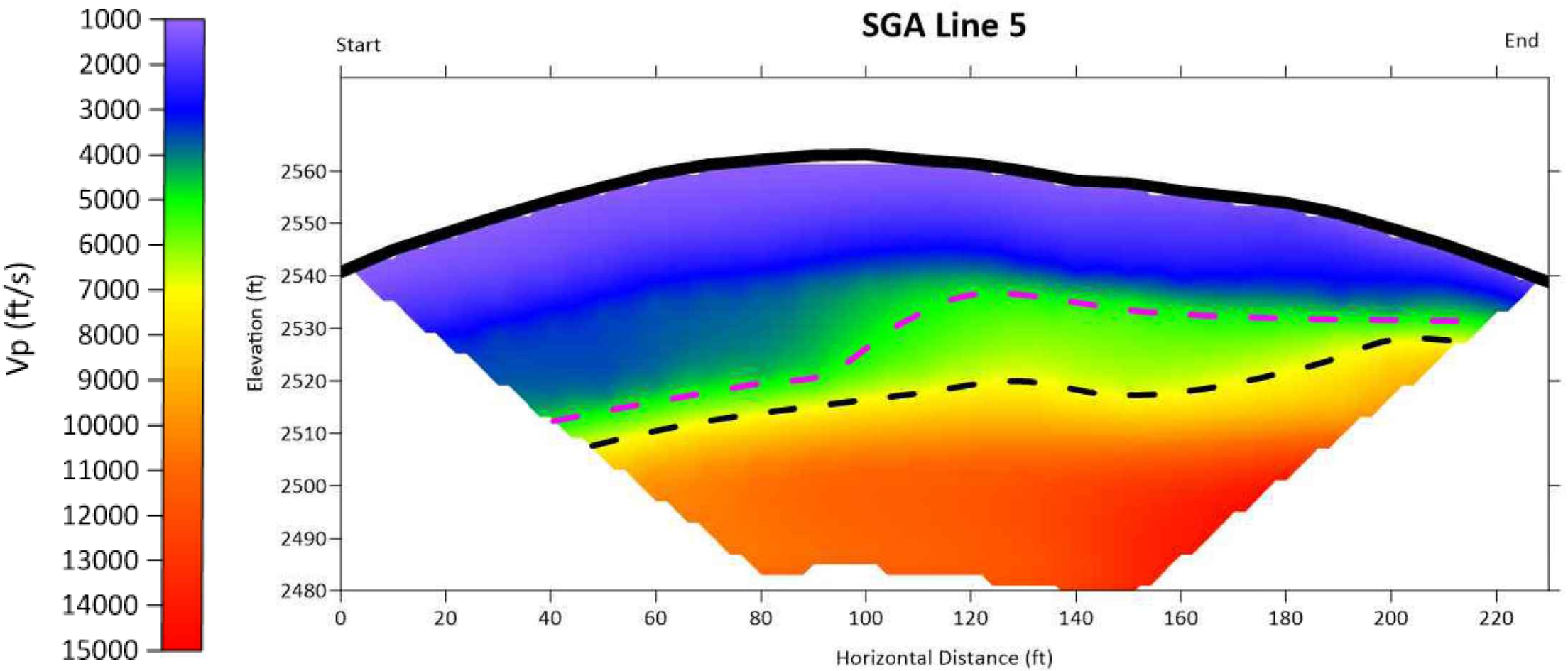
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	245

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE SGA 5



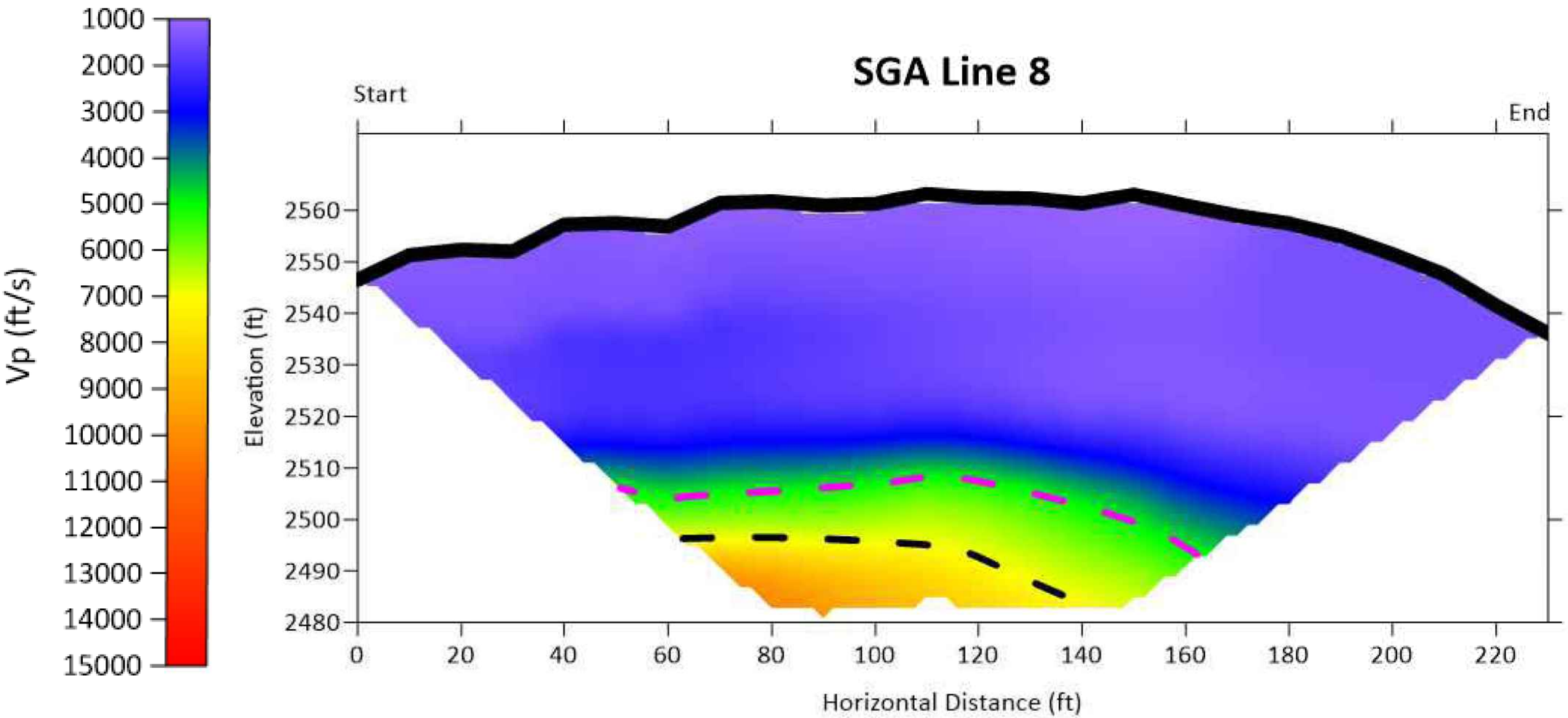
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	246

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE SGA 8



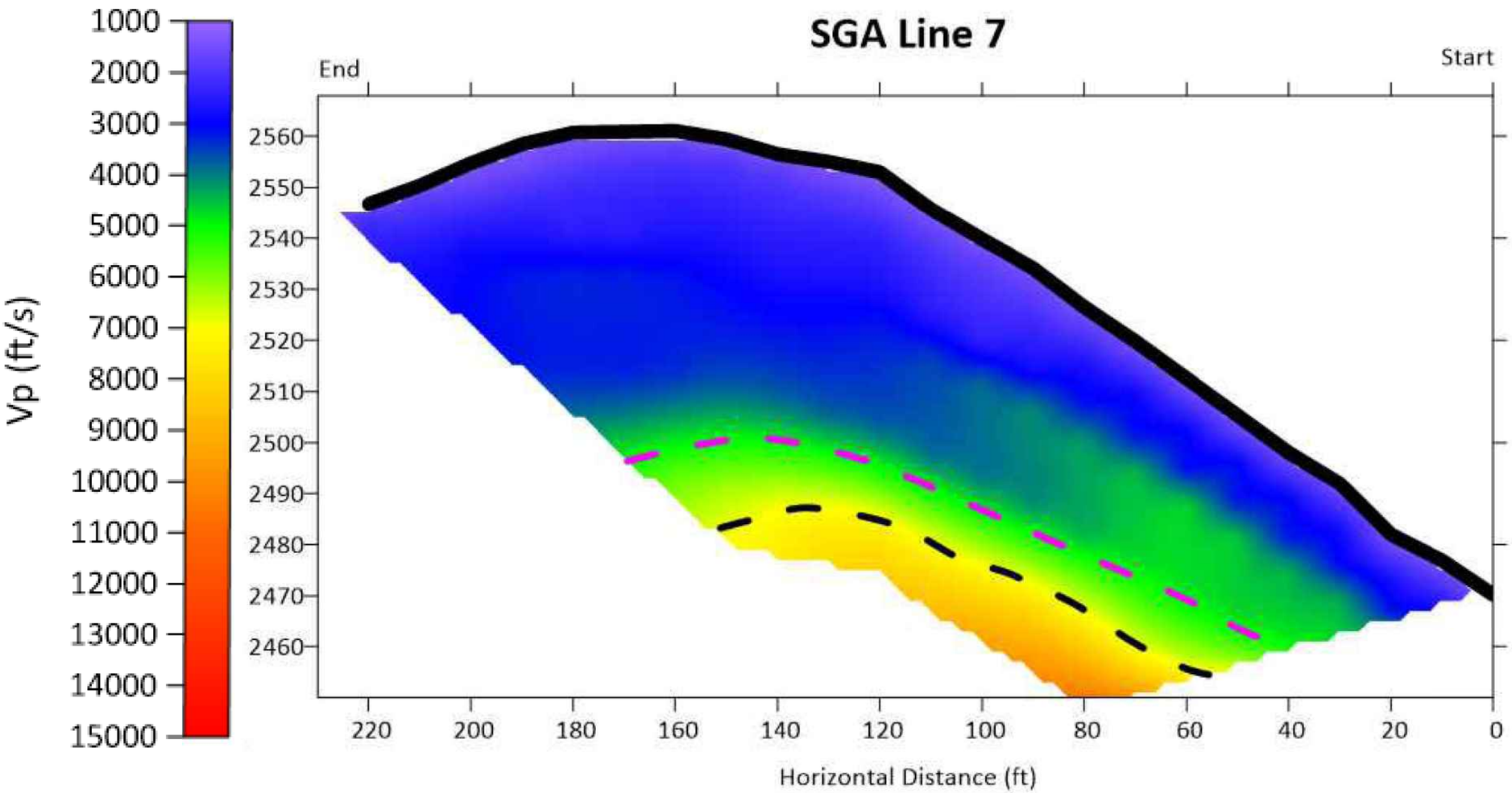
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	247

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE SGA 7



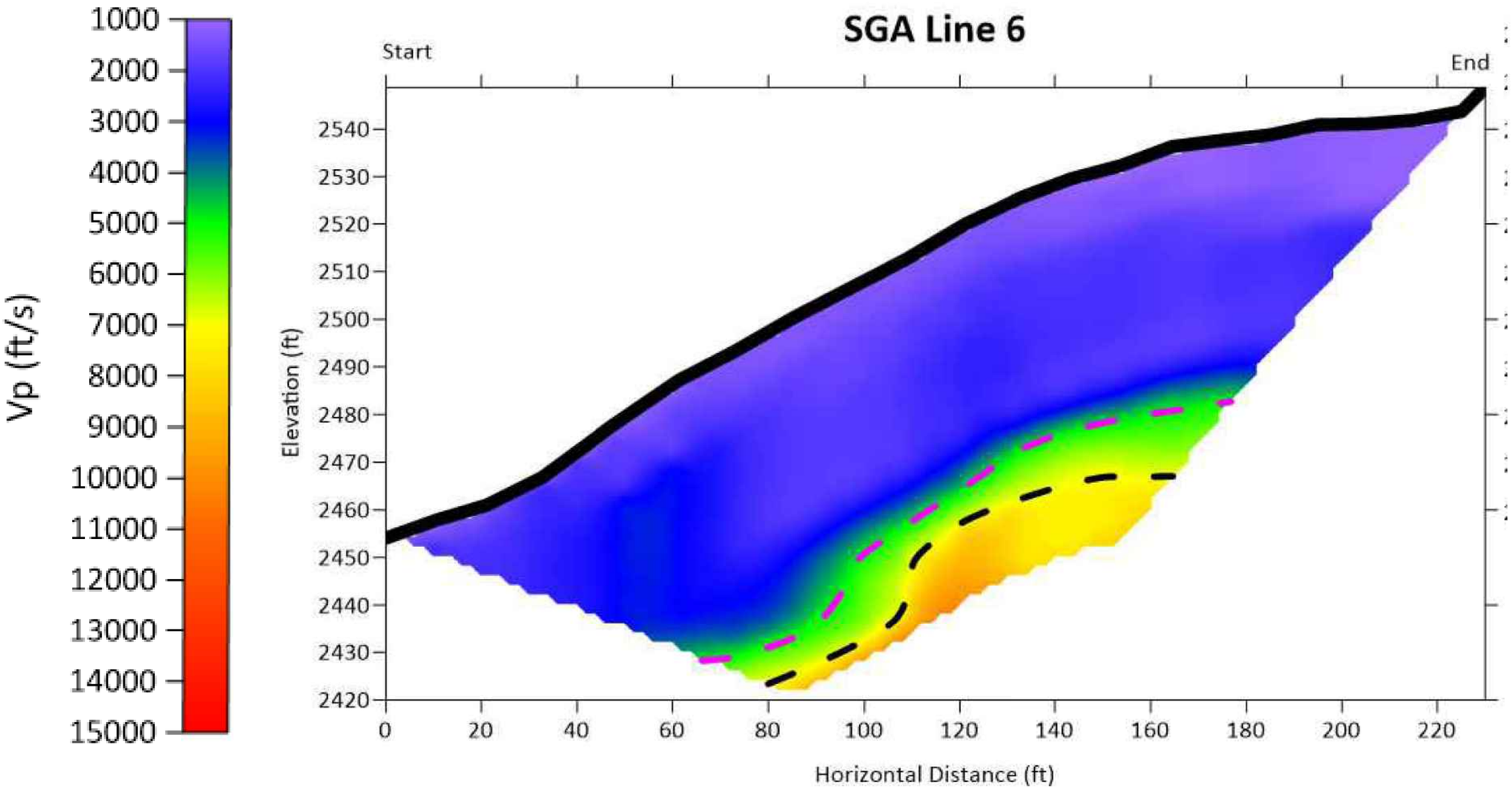
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	248

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE SGA 6



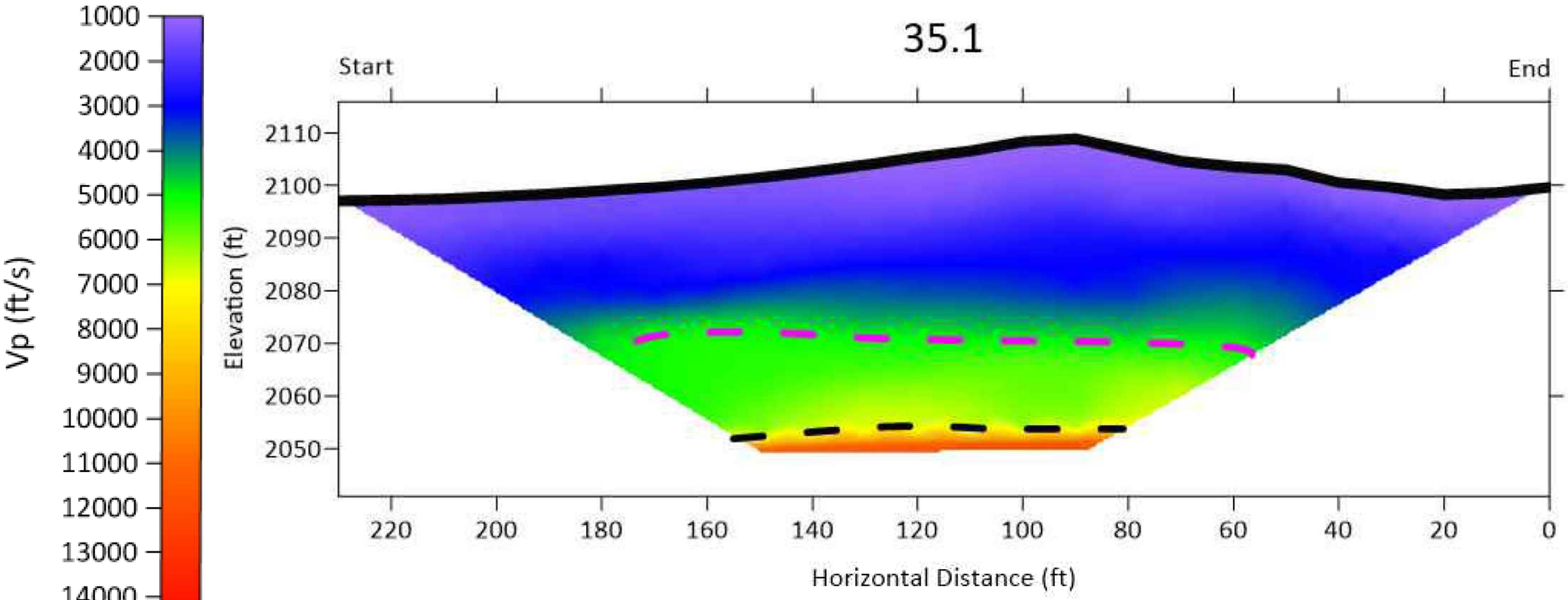
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	249

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 35.1



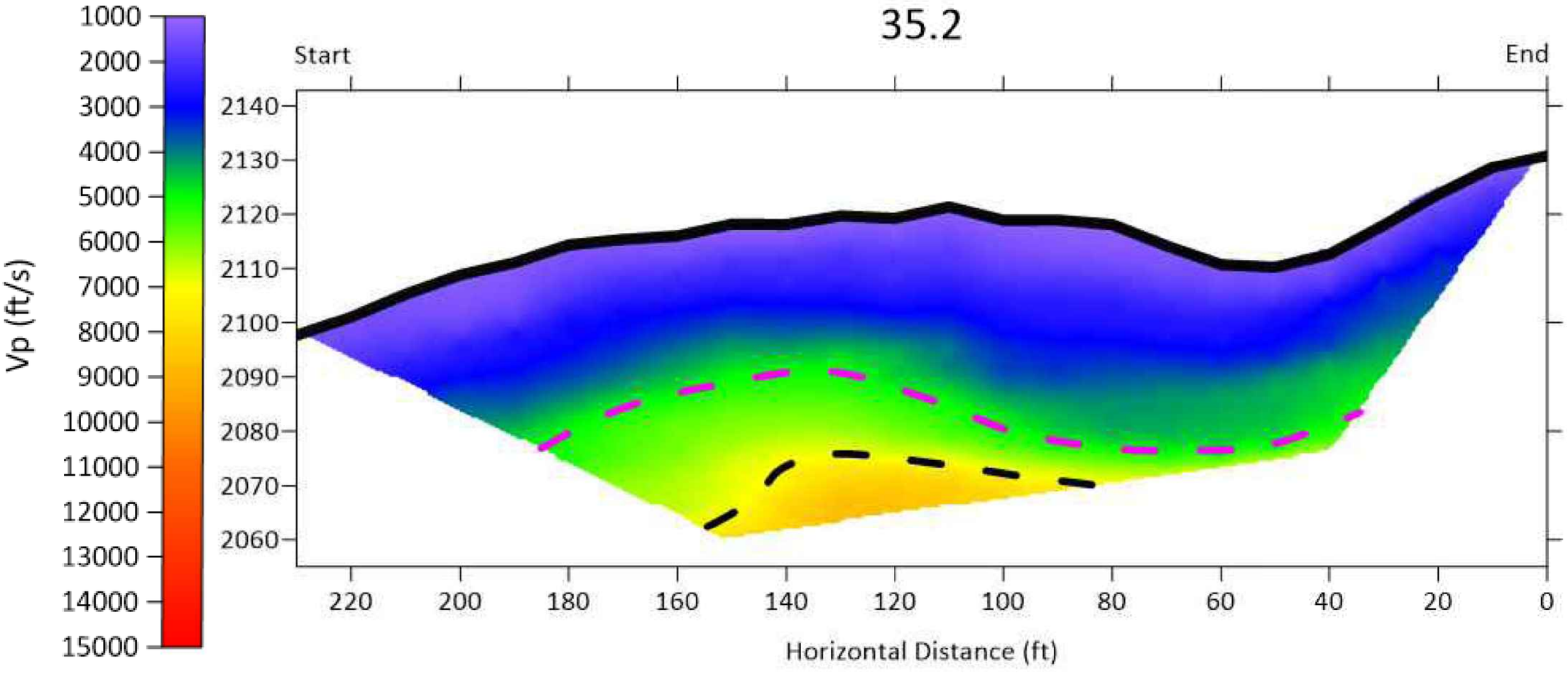
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	250

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 35.2



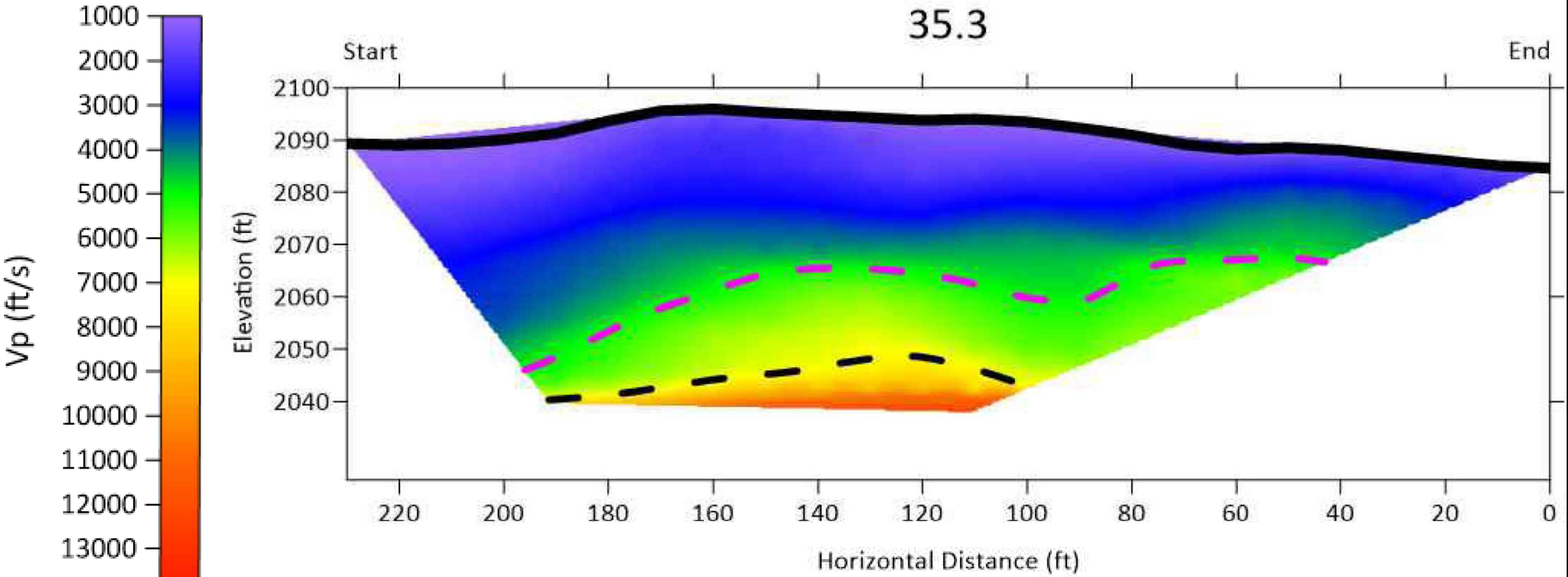
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	251

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 35.3



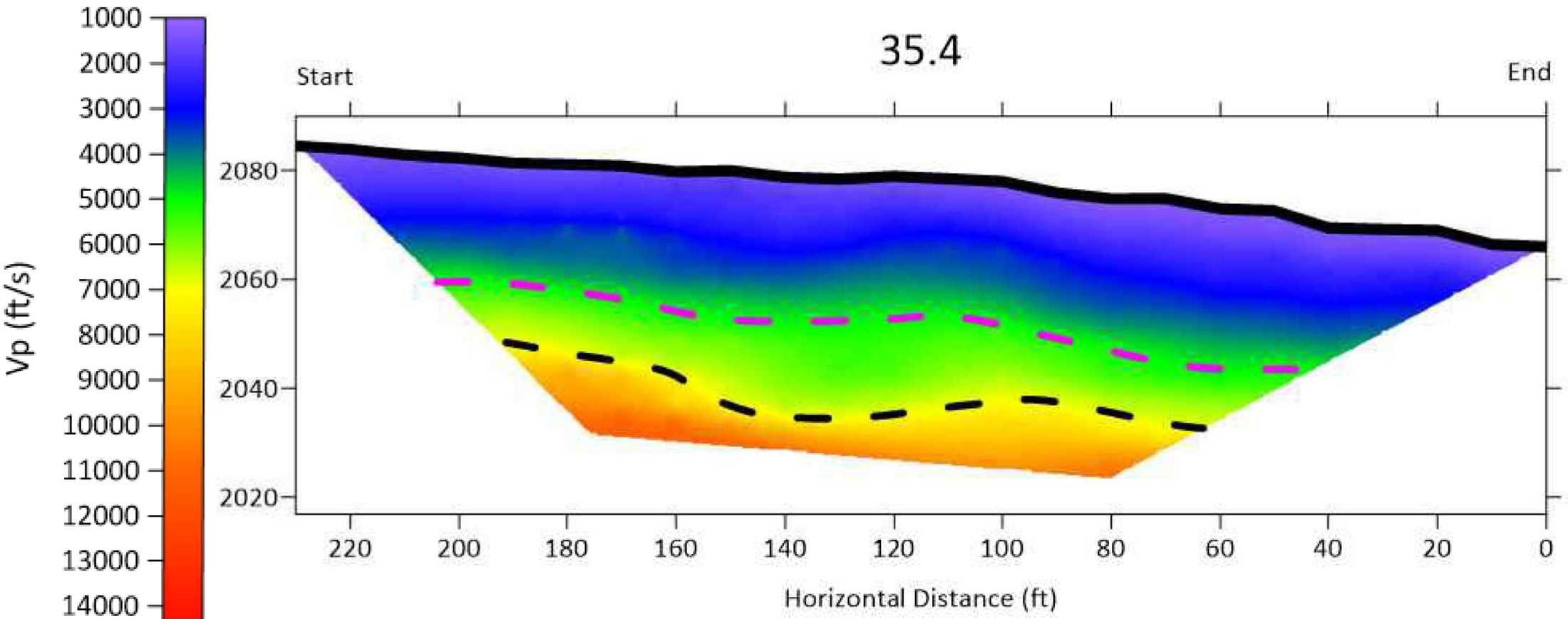
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CC	252

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE 35.4



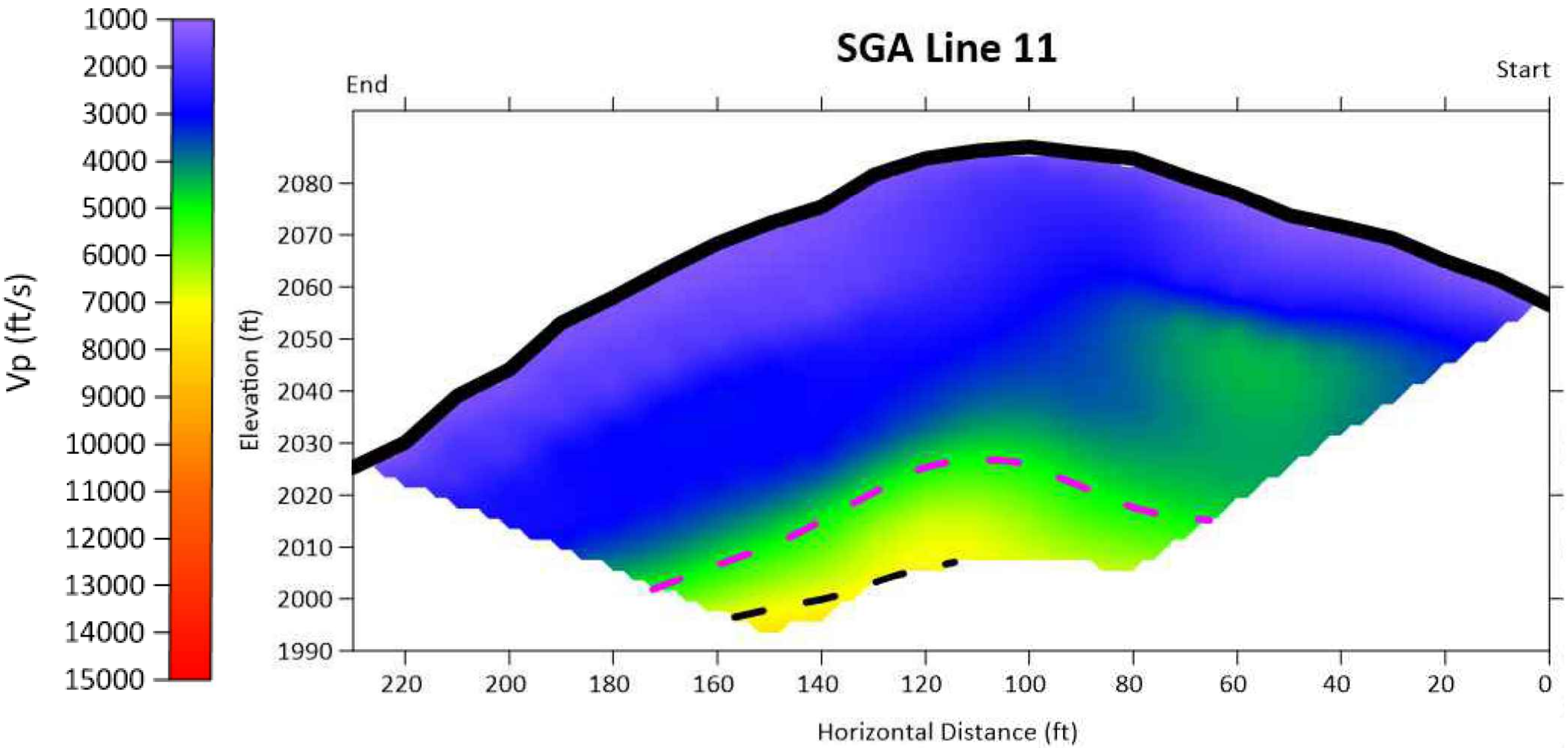
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	253

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE SGA 11



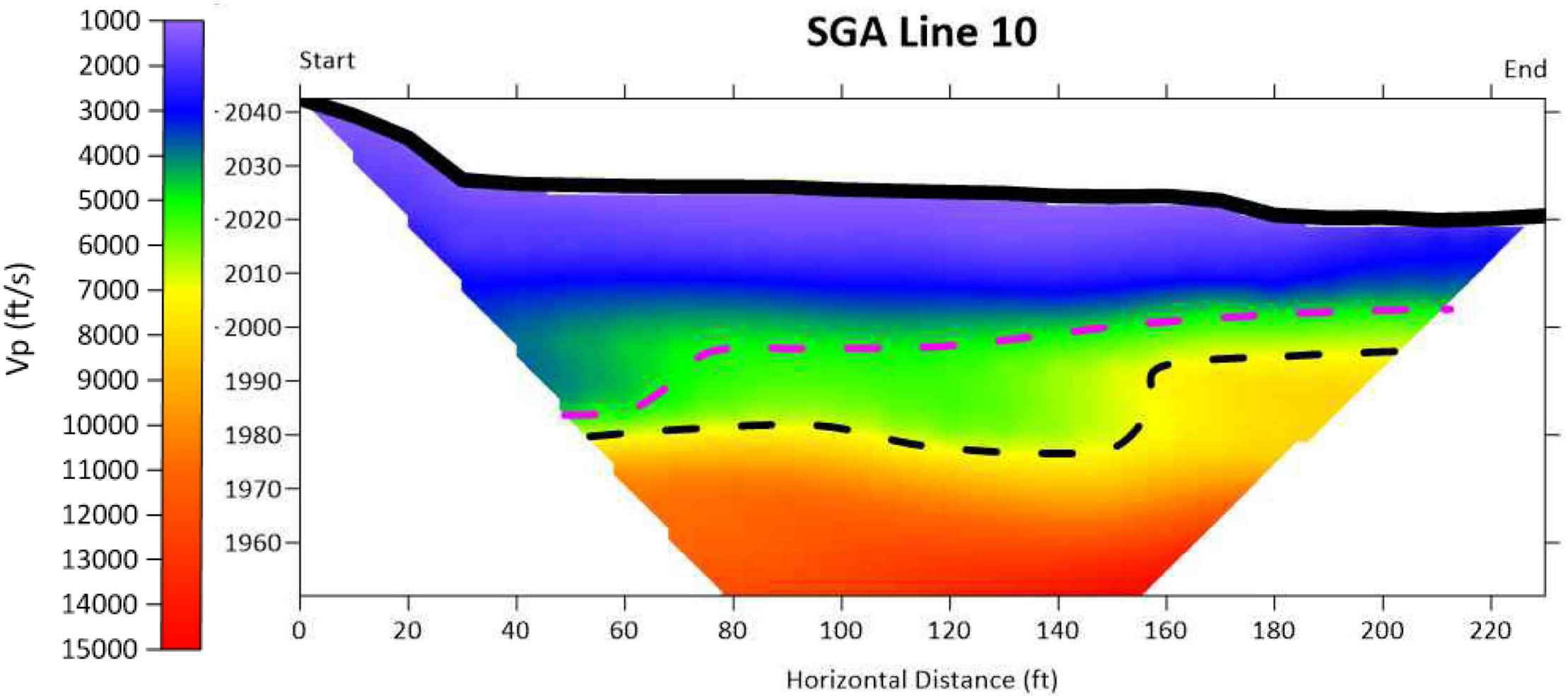
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	254

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE SGA 10



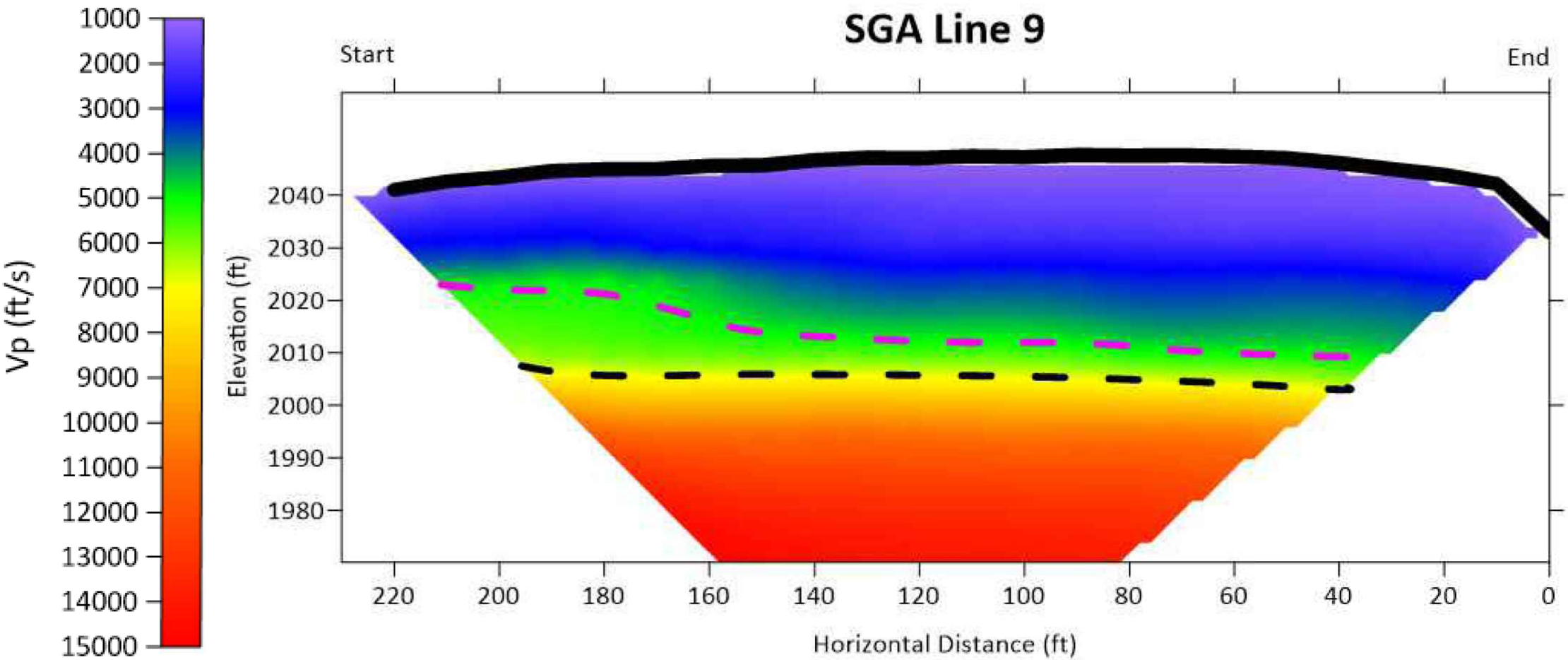
GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC

PROJECT REFERENCE NO.	SHEET NO.
A-0009CD	255

GEOPHYSICAL TEST RESULTS – SEISMIC REFRACTION LINE SGA 9



GEOPHYSICAL TESTING PERFORMED BY GEL SOLUTIONS. REFERENCE "SEISMIC REFRACTION SURVEY FOR EVALUATION OF ROCK" DATED 10/01/2021

CG2 ESTIMATED WAVE SPEED FOR WEATHERED ROCK: 4,500 FT/SEC

CG2 ESTIMATED WAVE SPEED FOR CRYSTALLINE ROCK: 7,500 FT/SEC