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REFERENCE: I-2513AC

PROJECT: 34165

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

CONTENTS

LINE	STATION	PLAN
-L-	13+60 - 121+20	4 - 13
-Y2-	11+39 - 29+50	7 - 8
-Y2A-	10+00 - 19+07	7
-Y2B-	11+50 - 22+22.18	7
-Y2C-	10+00 - 13+96.15	7 - 8
-Y2RPB-	10+00 - 29+12.55	6 - 7
-Y2RPC	10+00 - 30+33.95	5 - 7
-Y3-	10+00 - 31+50	9 - 10, 14 - 15
-Y3A-	11+00 - 15+73.18	14
-Y3B-	10+20 - 11+82.21	14
-Y3RPA-	10+00 - 24+63.84	10 - 11
-Y3RPD-	10+00 - 23+15.17	10 - 11
-Y4-	10+00 - 15+20.63	13
-Y4RPC-	10+00 - 19+54.02	12 - 13
-Y9-	10+10 - 10+78	8
-Y10-	11+75 - 12+63.71	9
-Y11-	10+50 - 11+38	10
-Y12-	10+00 - 15+82.88	10 - 11
-Y13-	11+77.38 - 11+59.22	11
-Y14-	12+15 - 15+40	11 - 12
-Y15-	21+00 - 29+65.85	12 - 13
-MUP1-	10+00 - 13+99.87	8
-RAB1-	10+00 - 13+17.30	10
-RAB2-	10+00 - 13+17.30	10
-RP23-	10+00 - 41+10.34	7 - 10
-RP32-	10+00 - 36+58.82	7 - 10

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	13+50	18
-L-	15+50	19 - 20
-L-	16+50 - 17+50	21 - 26
-L-	20+00 - 25+00	27 - 32
-L-	26+00 - 26+50	32 - 33
-L-	27+50	33
-L-	29+50 - 35+00	33 - 50
-L-	39+00	51 - 52
-L-	40+00	53 - 54
-L-	41+50	55
-L-	43+50 - 44+00	56 - 57
-L-	46+50	58
-L-	47+50	59
-L-	51+00	60
-L-	52+50	61
-L-	53+50	62
-L-	54+50	63
-L-	55+50	64
-L-	56+50	65
-L-	63+50	66
-L-	66+50	66
-L-	67+50	67
-L-	69+50	68
-L-	71+50	69 - 70
-L-	72+50	71 - 72
-L-	73+50 - 74+00	73 - 76
-L-	75+50	77 - 78
-L-	78+00	79
-L-	79+00	80
-L-	81+00	81
-L-	82+50 - 84+50	82 - 86
-L-	95+50 - 98+50	87 - 90
-L-	101+00	91
-L-	102+00	91
-L-	103+50	92
-L-	105+50	93
-L-	107+00	94
-L-	111+00	95
-L-	113+00	95
-L-	116+00	96
-L-	117+50	96
-L-	120+50	97
-Y2-	16+50	98
-Y2-	17+50	98

CROSS SECTIONS (continued)

LINE	STATION	SHEETS
-Y2-	19+00	99
-Y2-	21+50 - 22+00	99 - 100
-Y2-	24+00	101
-Y2-	26+57.89	101
-Y2-	27+16.39	102
-Y2A-	11+00	103
-Y2A-	12+50 - 13+00	103 - 104
-Y2A-	16+50	104
-Y2B-	12+00	105
-Y2B-	14+00	105
-Y2B-	17+50	106
-Y2B-	20+00	106
-Y2B-	21+00	107
-Y2C-	12+50	108
-Y2C-	13+50	108
-Y2RPB-	15+11.05	109
-Y2RPB-	17+11.03	109
-Y2RPB-	21+56.58	110
-Y2RPB-	22+06.04	110
-Y2RPB-	23+54.01	111
-Y2RPB-	24+52.22	111
-Y2RPB-	26+48.13	112
-Y2RPB-	26+98.91	112
-Y2RPB-	28+09.44	113
-Y3-	13+50 - 14+00	114 - 115
-Y3-	15+00	116
-Y3-	16+00 - 16+50	117
-Y3-	18+50	118
-Y3-	23+00	118
-Y3-	24+50 - 25+00	119 - 120
-Y3-	26+00	121
-Y3-	29+50	121
-Y3-	30+50	122
-Y3-	31+50	122
-Y3A-	12+00	123
-Y3A-	14+00	123
-Y3B-	11+30	124
-Y3RPA-	15+55.41	125
-Y3RPA-	19+44.92	125
-Y3RPD-	15+58.84	126
-Y3RPD-	17+14.71	126
-Y3RPD-	18+21.78	127
-Y3RPD-	19+84.23	127
-Y4RPC-	19+94.85	128

CROSS SECTIONS (continued)

LINE	STATION	SHEETS
-Y4RPC-	20+93.64	128
-Y4RPC-	22+86.65	128
-Y10-	11+50	129
-Y10-	12+50	129
-Y14-	12+00	130
-Y14-	13+50 - 14+00	130 - 131
-Y14-	15+00	132
-Y15-	26+48.99	133
-Y15-	27+48.81	133
-Y15-	29+29.58	134
-RAB1-	11+50	135
-RP23-	11+76.60	136
-RP23-	14+00.10	137
-RP23-	36+13.70	138
-RP23-	37+74	139
-RP23-	39+36.55	140
-RP32-	11+01.04	141
-RP32-	32+27.26	142
-RP32-	34+96.52	143

APPENDICES

APPENDIX	TITLE	SHEETS
A	ADDITIONAL BORING LOGS (OUTSIDE PROJECT LIMITS)	145 - 148
	LABORATORY TESTING SUMMARY	149 - 151

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY *BUNCOMBE*

PROJECT DESCRIPTION *I-26 CONNECTOR (I-40 TO US 19 - 23 - 70 NORTH OF ASHEVILLE)*

INVENTORY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-2513AC	1	

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DATE *FEBRUARY 2026*

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Prepared in the Office of:

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NC REGISTERED GEOLOGIC FIRM: C-367

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PROJECT REFERENCE NO.	SHEET NO.
34165.1.2	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	OTHER MATERIAL	
TRACE OF ORGANIC MATTER	2 - 3%	3 - 5%	TRACE	1 - 10%
LITTLE ORGANIC MATTER	3 - 5%	5 - 12%	LITTLE	10 - 20%
MODERATELY ORGANIC	5 - 10%	12 - 20%	SOME	20 - 35%
HIGHLY ORGANIC	> 10%	> 20%	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:
- [X] CME-450 (SUM3359)
- [X] DIEDRICH D-50 (SUM0093)
- [X] CME-550 (NCDOT)
- [X] CME-45B (TERI974)
- [X] ACKER RENEGADE (TER92-0)
- [X] DIEDRICH D-50 (TER373)
- [X] GEOPROBE DH103 (TER0329)

ADVANCING TOOLS:
- [ ] CLAY BITS
- [ ] 6" CONTINUOUS FLIGHT AUGER
- [X] 6¼" HOLLOW AUGERS
- [ ] HARD FACED FINGER BITS
- [ ] TUNG.-CARBIDE INSERTS
- [X] CASING [X] W/ ADVANCER
- [X] TRICONE 2 15/16 " STEEL TEETH
- [ ] TRICONE _____ " TUNG.-CARB.
- [X] MUD ROTARY
- [X] 3¼" HSA

HAMMER TYPE:
- [X] AUTOMATIC [ ] MANUAL

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

HAND TOOLS:
- [ ] POST HOLE DIGGER
- [X] 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: TOP OF BROING ELEVATIONS ESTIMATED USING PROJECT .TIN FILE: 12513_ls_tnl.tin; DATED JULY 20, 2021
ELEVATION: N/A FEET

NOTES:

FIAD - FILLED IMMEDIATELY AFTER DRILLING

DATE: 8-15-14

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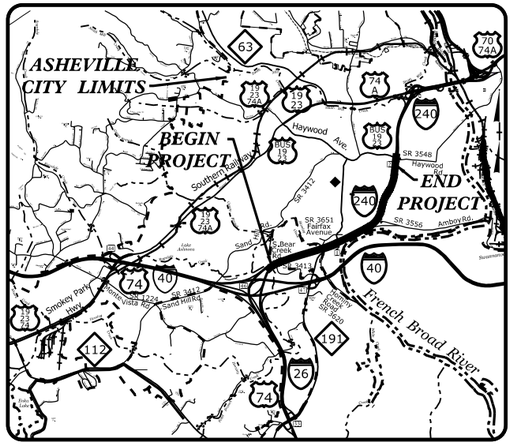
09/08/99

TIP PROJECT: I-2513AC

CONTRACT:

See Sheet 1A For Index of Sheets
See Sheet 1B For Conventional Symbols



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

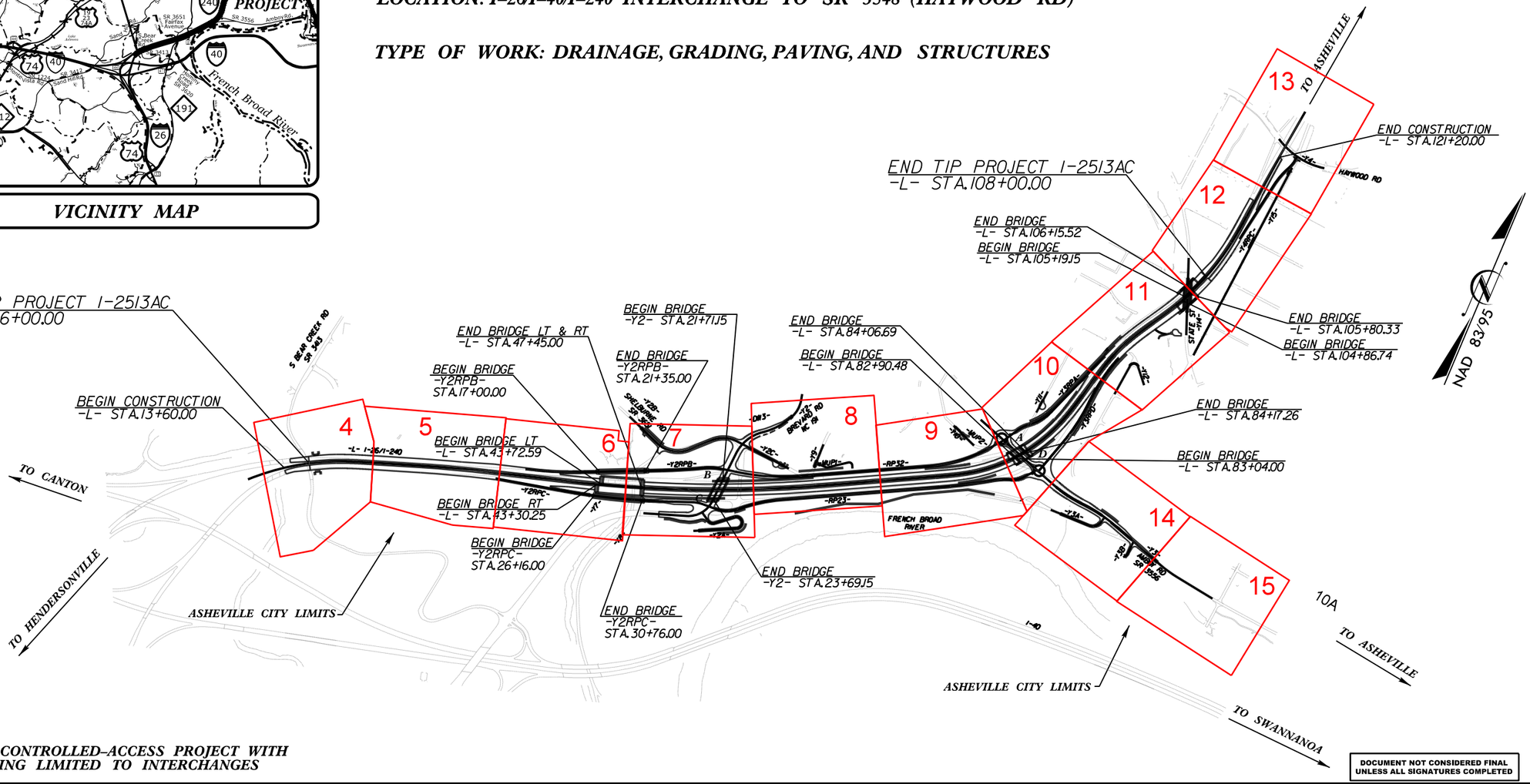
BUNCOMBE COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	I-2513AC	3	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34165.1.13		P.E.
34165.2.18		R/W
34165.2.19		UTIL.
34165.3.8		CONST.

LOCATION: I-26/I-40/I-240 INTERCHANGE TO SR 3548 (HAYWOOD RD)

TYPE OF WORK: DRAINAGE, GRADING, PAVING, AND STRUCTURES



THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2025 = NA
ADT 2040 = 101,400
K = 9 %
D = 55 %
T = 10 % *
V = 60 MPH
* TTST = 5% DUAL 5%
FUNC CLASS = INTERSTATE

STATEWIDE TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT I-2513AC = 1.615 MI

LENGTH STRUCTURE TIP PROJECT I-2513AC = 0.127 MI

TOTAL LENGTH TIP PROJECT I-2513AC = 1.742 MI

AECOM
NC FIRM LICENSE No: F-0342
5438 Wade Park Blvd., Suite 200
Raleigh, NC 27607
(919) 854-6200 - (919) 854-6259(FAX)

2024 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: DECEMBER 6, 2022

LETTING DATE: NOVEMBER 17, 2026

JOHN SLOAN, P.E.
PROJECT ENGINEER

NATHAN M. CHAPMAN, P.E.
PROJECT DESIGN ENGINEER

OLIVIA L. PILKINGTON, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

09-OCT-2025 08:27
E:\Projects\I-2513AC_GEO_RDWY_I-26 Buncombe Co\CADD_GEOTECH\PlanProf\I2513AC_RDY_TSH_REVISED.dgn
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Date: February 4, 2026

WBS Number: 34165.1.6
TIP Number: I-2513AC
County: Buncombe
Description: I-26/I-40/I-240 Interchange to SR 3548 (Haywood Road) Includes Initial Improvements at I-26/I-40/I-240 Interchange and US 19/23 (Smokey Park Highway)

Subject: Roadway Geotechnical Report - Inventory

Project Description

The project is located along I-26/I-40/I-240 for approximately 1.742 miles in Buncombe County, North Carolina. The I-2513AC section extends from South Bear Creek Road (-Y1-) to approximately 900 feet south of Haywood Road (-Y14-). We understand that the project will consist of widening I-26/I-40/I-240 and improvements to Shelburne Road with new bridge structures and realignments at the crossings of Brevard Road, State Street and Amboy Road. This will include new access ramps at Brevard Road, Amboy Road and Haywood Road. A new dual bridge structure with MSE abutment walls will be constructed on I-240 over State Street and four (4) new bridges will be constructed for ramps and the east and west bound lanes of I-240 over Hominy Creek. This work will also include several noise walls, retaining walls, roadway realignments of other SR roads and driveways and construction of two new roundabouts -RAB1- and -RAB2- west and east respectively, of the Amboy Road interchange. The project corridor is in an urban residential setting and much of the surrounding land is developed.

NCDOT has performed several geotechnical subsurface investigations along the same corridor for bridges, roadway improvements and retaining walls. Borings for the bridges over Hominy Creek and roadway improvements along Shelburne Road are included in this report. These borings were performed using the metric system for determining location and during field logging. The roadway along Shelburne Road was investigated in November of 1996 with three (3) SPT borings advanced using a CME-550 rotary drill rig turning hollow stem augers to depths of 24.2 to 30.0 feet beneath the surface. The Hominy Creek bridge site was investigated from June to September of 1999 with sixteen (16) standard penetration test (SPT) borings including rock coring at eight (8) of these locations. SPT borings were advanced using a CME-550 rotary drill rig turning hollow stem augers and utilizing wash boring and coring techniques to depths of 28.7 to 53.4 feet beneath the surface.

An initial geotechnical subsurface investigation for I-2513A was performed as part of a Design-Build letting by two firms, Summit and Terracon, in 2017 and 2018. Summit performed their geotechnical investigation along I-26/I-40/I-240 mostly south of the South Bear Creek Road bridge crossing from November 2017 to January of 2018. Six (6) of these roadway borings performed by Summit are included in this report. Standard penetration test (SPT) borings were advanced using both a CME-450 and Diedrich D-50 rotary drill rigs equipped with calibrated automatic hammers. Borings were advanced utilizing mud rotary and hollow stem auger drilling techniques to the necessary depths of 14.8 to 65.1 feet beneath the surface. Representative soil samples were collected in the field for visual classification and selected samples were submitted for laboratory analysis by Summit's soil testing laboratory. Laboratory testing was performed by a NCDOT certified laboratory in accordance with the AASHTO Soil Classification System.

Terracon performed the section of the initial geotechnical investigation for the Design-Build letting starting just north of the South Bear Creek Road bridge along I-26/I-40/I-240 to about 1400 feet past the Haywood Road bridge from December 2017 to January of 2018. This included investigating roadways, retaining walls and bridges at Brevard, State Street and Haywood Road. Seventy-one (71) of these soil test borings are included in this report. Standard penetration test (SPT) borings were advanced using an Acker Renegade and CME-45B rotary drill rigs equipped with calibrated automatic hammers. Borings were advanced utilizing mud rotary drilling and hollow stem auger drilling techniques to the necessary depths of 11.2 to 78.5 feet beneath the surface. Representative soil samples were collected in the field for visual classification and selected samples were submitted for laboratory analysis by Terracon's NCDOT certified soil testing laboratory. Laboratory testing was performed in accordance with the AASHTO Soil Classification System.

Terracon performed the most recent geotechnical subsurface investigation for the current Design Bid - Build letting from May to June of 2022. The site was investigated with a total of Fifty-nine (59) SPT borings and six (6) hand auger borings included in this report. The hand auger borings were performed at locations that could not be easily accessed by the drill rig to depths of 2.0 to 10.0 feet beneath the ground surface. SPT borings were advanced using both a Diedrich D-50 and Geoprobe 7822DH103 rotary drill rigs equipped with recently calibrated automatic hammers. SPT borings were advanced utilizing hollow stem auger and wash boring drilling techniques to depths of 2.5 to 72.8 feet beneath the surface.

Representative soil samples were collected in the field for visual classification and selected samples were submitted for laboratory analysis by Terracon's soil testing laboratory. One Shelby tube sample was obtained in soft compressible alluvial soils for classification and consolidation testing. Laboratory testing was performed by a NCDOT certified laboratory in accordance with the AASHTO Soil Classification System.

The following alignments were investigated by soil testing and visual reconnaissance:

Alignment	Stations (±)
-L-	13+60 to 121+20
-Y2-	11+39 to 29+50
-Y2A-	10+00 to 19+07
-Y2B-	11+50 to 22+22
-Y2C-	10+00 to 13+96
-Y2RPB-	10+00 to 29+13
-Y2RPC-	10+00 to 30+34
-Y3-	10+00 to 31+50
-Y3A-	11+00 to 15+73
-Y3B-	10+00 to 11+82
-Y3RPA-	10+00 to 24+64

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Alignment	Stations (±)
-Y4RPC-	10+00 to 19+54
-Y9-	10+10 to 10+78
-Y10-	11+75 to 12+64
-Y11-	10+50 to 11+38
-Y12-	10+00 to 15+83
-Y13-	11+77 to 11+59
-Y14-	12+15 to 15+40
-Y15-	21+00 to 29+66
-DWI-	10+18 to 11+53
-MUP1-	10+00 to 14+00
-RAB1-	10+00 to 13+17
-RAB2-	10+00 to 13+17
-RP23-	10+00 to 41+10
-RP32-	10+00 to 36+59

Physiography and Geology

The site is located within the Eastern Blue Ridge Physiographic Province and is part of the Tugaloo terrane just west of Asheville, North Carolina. The Tugaloo terrane is intensely deformed and metamorphosed. It spans the eastern portions of the Blue Ridge Physiographic Province into the western section of the Piedmont. Topography in the project area is rolling to steep. The existing elevations along the investigated corridor range from approximately 1,979 feet to 2,177 feet.

Geologically, the site is located within the Ashe Metamorphic Suite and Tallulah Formation. As mapped on the North Carolina Geologic Map 1985, the underlying rock formations at this site consist of metamorphic rocks of Precambrian Age (570 to 900 million) years old. Based on the recovered rock samples, previous mapping and our knowledge of the local geology, the parent rock is interpreted to be predominately gneiss with interlayered mica schist and meta-graywacke. These rocks typically weather in an irregular pattern with deep residual soils overlying saprolite to bedrock. The typical residual profile consists of finer grained clays and silts near the ground surface which gradually transition to coarser and denser material with depth and contain varying amounts of mica. Sulfide minerals may also be present.

Soil Properties

Soils encountered during this investigation are separated into four categories based on their origin. The soils encountered consist of roadway embankment fill, artificial fill, alluvial soils, and residual soil and rock materials.

Roadway embankment soils were encountered along the existing roadway of I-26/I-40/I-240 and connecting streets and roadways. The roadway embankment soils appear to be reworked near-by residual soils. The roadway embankment soils extend to a depth of at least 37.5 feet beneath the ground surface. The roadway embankment soils consist of slightly plastic to moderately plastic, soft to hard, moist to wet, fine to coarse sandy to silty clay (A-6, A-7-6, A-7-5) and non-plastic to slightly plastic, medium stiff to hard, dry to moist, fine to coarse sandy to clayey silt (A-4, A-5) Layers of very loose to very dense, dry to wet, silty to clayey fine to coarse sand (A-1-b, A-2-4, A-2-5, A-2-6) were also encountered within the roadway embankments. These materials also contain trace to little mica, trace to little gravel, quartz rock fragments, boulders along with trace amounts of roots, wood fragments and concrete pieces. The plasticity indices of the clayey soils range from 11 to 18 with 40 to 47 percent passing the #200 sieve and natural moisture contents of 15.8 to 22.5 percent based on laboratory testing.

Artificial fill soils encountered were generally associated with gravel fill at entrance driveways adjacent to the roadway pavements or parking lot fill. The artificial fill soils extend to depths of at least 13.5 feet beneath the ground surface. The artificial fill soils consist of slightly plastic to moderately plastic, soft to stiff, moist to wet, fine to coarse sandy to silty clay (A-6, A-7-6, A-7-5) and non-plastic to slightly plastic, medium stiff, moist, fine to coarse sandy silt (A-4). Layers of very loose to medium dense, dry to wet, silty to clayey fine to coarse sand (A-2-4, A-2-6) were also encountered within the artificial fill. These materials also contain trace to little mica, trace roots, trace to some gravel and quartz rock fragments along with occasional boulders, garbage debris, and brick and glass fragments. The plasticity index of the clayey soil tested was 11 with 52 percent passing the #200 sieve and a natural moisture content of 22.1 percent based on laboratory testing.

Alluvial soils are present along drainage features and Hominy Creek at the south end of the project and along the French Broad River near Amboy Road as indicated by the alluvial boundary area shown on the plan sheets. Alluvial soils were encountered at thicknesses of 2.0 to 22.0 feet and to depths of up to 42.0 feet (elevation 1963.5 feet) below the ground surface adjacent to Harmony Creek and the French Broad River. These soils consist of slightly plastic to moderately plastic, very soft to medium stiff, moist to wet, silty clay (A-7-5, A-7-6) and non-plastic to slightly plastic, very soft to stiff, moist to saturated, fine to coarse sandy to clayey silt (A-4, A-5) and granular soils consisting of very loose to very dense, moist to saturated, coarse to fine sand-gravel and silty to clayey fine to coarse sand (A-1-b, A-2-4, A-2-6). These materials also contain trace mica, trace organics, trace wood, trace to some gravel and occasional cobbles. The plasticity indices of the clayey soils range from 15 to 18 with 93 to 100 percent passing the #200 sieve and natural moisture contents of 16.2 to 53.0 percent based on laboratory testing.

Residual soils are present at the surface and beneath the roadway embankment soils, asphalt pavement sections, artificial fill, and alluvial soils. The residual soils have weathered irregularly ranging in depths from 0.4 feet to greater than boring termination depths of 74.0 feet. The residual soils can be generalized as slightly to highly plastic, soft to hard, dry to wet, fine to coarse sandy to silty clay (A-6, A-7-6, A-7-5), non-plastic to slightly plastic, very soft to hard, dry to wet, fine to coarse sandy to clayey silts (A-4, A-5) and sands consisting of very loose to very dense silty to clayey coarse to fine sands (A-1-b, A-3, A-2-4, A-2-5, A-2-6). The residual soils contain varying amounts of mica and trace to some rock and quartz fragments. The plasticity indices of the clayey soils range from 11 to 36 with 36 to 100 percent passing the #200 sieve and natural moisture contents of 15.8 to 29.5 percent based on laboratory testing. The highly plastic residual soils are indicated on the attached cross section graphics.

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Rock Properties

Weathered rock was encountered during the roadway investigation. It originates from the underlying predominate crystalline rock (gneiss and mica schist). Weathered rock is present at depths of 0.4 to 74.0 feet beneath the ground surface at elevations of approximately 1,962 to 2,106 feet.

Crystalline rock was encountered during the roadway investigation and consists predominately of gneiss and mica schist with minor amounts of amphibolite and granulite with garnets and trace amounts of pyrite. Refer to the "Areas of Geotechnical Interest" for areas of rock which may impact grading operations. Crystalline rock is present at depths of 2.5 to 78.5 feet beneath the ground surface at elevations of approximately 1,954 to 2,134 feet. Based on rock coring performed by NCDOT for the bridges over Hominy Creek, the rock Recoveries (REC) ranged from 52 to 100 percent with average recoveries per boring of at least 71 percent. The Rock Quality Designations (RDQ) ranged from 0 to 100 percent with average recoveries per boring of at least 46 percent.

Groundwater

In general, the corridor drains south and east to the French Broad River and several creeks including Hominy Creek. In these areas groundwater was encountered at depths as shallow as 0.5 feet to 61.4 feet below the existing ground surface, approximate elevations 1,963 to 2,065 feet. The depth of groundwater, beneath the ground surface, will fluctuate with seasonal precipitation and may occur at higher levels at other times of the year above less permeable clayey soils and rock materials.

Areas of Special Geotechnical Interest

1) Plastic Soils – Highly plastic soils with a Plasticity Index (PI) of 26 or greater occur throughout the project and may impact grading at the following locations:

Alignment	Stations (±)
-L-	29+75 to 35+50
-L-	96+25 to 97+75
-Y12-	12+50 to 13+50
-Y3RPD-	10+00 to 10+40

A discussion of these plastic soils is located above in the section titled "Soil Properties".

2) Soft Wet Alluvial Soils – Soft wet near surface soils which have the potential to cause embankment stability/settlement problems occur through the following sections:

Alignment	Station (±)
-L-	19+40 to 26+00
-L-	44+50 to 46+35
-L-	102+00 to 102+70
-L-	104+20 to 106+00
-Y2RPC-	21+00 to 22+70
-Y2RPB-	18+20 to 19+25
-R23-	29+00 to 35+00
-RAB1-	10+00 to 13+17
-Y3-	27+50 to 31+50
-Y3A-	11+60 to 14+50
-Y3B-	10+00 to 11+82

A discussion of these soft wet alluvial near surface soils is located above in the section titled "Soil Properties".

3) Artificial Fill Soils – Artificial fill soils placed in an unknown manner under possible uncontrolled conditions may impact grading at the following locations:

Alignment	Stations (±)
-Y2-	12+50 to 13+50
-Y2C-	10+00 to 10+40
-Y3-	29+25 to 39+25
-Y3A-	10+16 to 11+14
-Y3B-	10+20 to 11+45
-Y10-	11+75 to 12+64
-RP23-	29+00 to 33+45
-RP32-	31+90 to 34+00

4) Groundwater – High water tables, seasonal high ground water, as well as potential perched groundwater within 6 feet below grade were encountered at the following locations.

Alignment	Station (±)
-L-	19+40 to 26+25
-Y2RPB-	20+60 to 22+00
-Y3-	27+50 to 31+50
-Y3A-	11+00 to 14+50
-Y3B-	10+00 to 11+82

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5) Crystalline Rock – Crystalline rock was encountered above or within 6 feet of proposed grade at the following locations:

Alignment	Stations (±)	Offset
-L-	17+25 to 18+50	LT/RT
-L-	28+50 to 39+50	RT
-L-	37+00 to 41+00	LT
-L-	95+00 to 96+25	RT
-Y2RPB-	10+60 to 13+10	LT
-Y2RPC-	10+00 to 17+00	RT
-Y3RPD-	10+00 to 12+00	LT/RT
-Y3RPD-	16+00 to 21+00	LT/RT
-Y3RPA-	12+50 to 19+00	LT/RT

6) Groundwater Wells – Groundwater wells within the roadway right-of-way should be properly abandoned. A groundwater well was identified at the following location:

Alignment	Stations (±)	Offset (ft.)
-L-	99+48	199 LT

UNDISTURBED SAMPLES

The following “Shelby” tube sample were taken to provide data for consolidation testing.

Sample No.	Location	Depth (ft.)	Test
ST-1	24+24 -L- 147’ RT	7.5 – 9.5	Consolidation

Sincerely,
Terracon Consultants, Inc.

Signed by:
C292402FCACB445...
Matthew L. Hartman, PG
Project Geologist

DocuSigned by:
C2F6ACA84D274B1...
Abner F. Riggs, Jr., P.E.
Senior Geotechnical Engineer

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PROJECT REFERENCE NO.	SHEET NO.
I–2513AC	4

0 100 200
FEET

MATCH LINE 22+00 –L– SEE SHEET 5

T-108
22+00 -L-
50' RT

T-107
21+00 -L-
25' LT

T-62
20+63 -L-
89' LT

T-106
20+50 -L-
50' RT

T-61A
19+90 -L-
126' RT

ALLUVIAL

ALLUVIAL

RESIDUAL

RESIDUAL

ROADWAY EMBANKMENT

I26SB_10250
17+70 -L-
124' LT

I26NB_9700
17+62 -L-
140' RT

I26SB_10140
16+60 -L-
175' LT

EB1-A -Y1-
16+96 -L-
45' LT

EB2-A -Y1-
16+96 -L-
49' RT

I26NB_9590
15+48 -L-
198' RT

EB1-B -Y1-
16+42 -L-
50' LT

EB2-B -Y1-
16+38 -L-
49' RT

I26SB_10050
15+76 -L-
145' LT

T-10
15+50 -L-
192' LT

I26NB_9295
13+56 -L-
117' RT

JESSE CALLOWAY JR

ROGERS LAND COMPANY LLC

ROGERS LAND COMPANY LLC

SR 3413 BEAR CREEK RD

ASHEVILLE CITY LIMITS

295' LANE SHIFT

BEGIN TIP PROJECT I-2813AC
-L- STA.16+00.00

BEGIN CONSTRUCTION
-L- STA.13+55.39

I-26 SB 43' CONC

I-26 NB 41' CONC

EXIST

12' PS

2' PS

HOMINY CREEK

JOLENE E MOODY

144 BILTMORE AVE, LLC

HARRY LEE COATES REVOCABLE LIVING TRUST

48" MSE WALL

2SF APTS

25SF APT

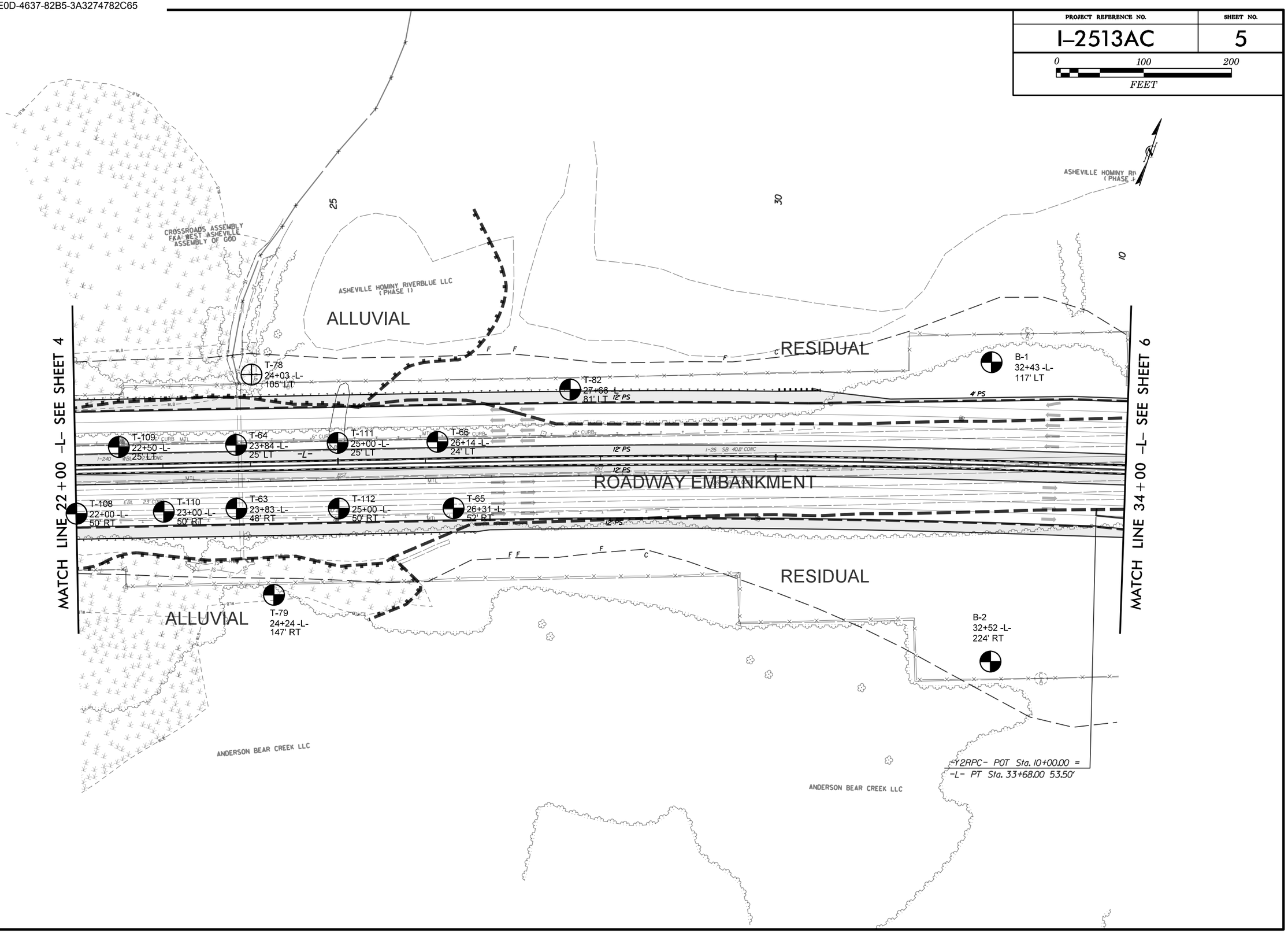
ISFD

ISF APT

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJECT REFERENCE NO.	SHEET NO.
I–2513AC	5

0 100 200
FEET



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJECT REFERENCE NO.	SHEET NO.
I-2513AC	6

0 100 200
FEET

CITY OF ASHEVILLE

ASHEVILLE CITY LIMITS

ASHEVILLE HOMINY RIVERBLUE LLC (PHASE I)

RIVERBLUE LLC

-Y2RPB- ST Sta. 10+00.00 =
-L- PT Sta. 33+36.52 65.50'

END RETAINING WALL #8
-Y2RPB- 17+00.00 (19.29' LT)

BEGIN RETAINING WALL #8
-Y2RPB- 15+90.00 (19.29' LT)

BEGIN RETAINING WALL #28
-Y2RPB- 13+45.67 (0.01' LT)

RESIDUAL

ALLUVIAL

ROADWAY EMBANKMENT

B-3
12+45 -Y2RPB-
91' LT

B-5
15+13 -Y2RPB-
24' LT

EB1-C_Y2RPB
16+88 -Y2RPB-
20' RT

EB1-A_DOT
43+61 -L-
50' LT

B1-A_DOT
44+16 -L-
61' LT

B1-C_DOT
44+17 -L-
14' LT

T-100
39+88 -L-
6' LT

B1-D_DOT
44+16 -L-
32' RT

EB1-D_DOT
43+58 -L-
75' RT

B-6
17+77 -Y2RPC-
27' LT

B-4
15+16 -Y2RPC-
64' RT

EB1-B_DOT
43+55 -L-
127' RT

B1-B_DOT
44+11 -L-
117' RT

END RETAINING WALL #27
-Y2RPC- 26+30.24 (15.38' RT)

BEGIN RETAINING WALL #27
-Y2RPC- 26+17.42 (30.68' RT)

ANDERSON BEAR CREEK LLC

ASHEVILLE CITY LIMITS

HOMINY CREEK RD

MATCH LINE 34+00 -L- SEE SHEET 5

MATCH LINE 46+00 -L- SEE SHEET 7

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJECT REFERENCE NO.	SHEET NO.
I–2513AC	7

0 100 200
FEET

ARTIFICIAL FILL

ROADWAY EMBANKMENT

RESIDUAL

ALLUVIAL

MATCH LINE 46+00 –L– SEE SHEET 6

MATCH LINE 58+00 –L– SEE SHEET 8

BEGIN RETAINING WALL #10 -Y2B- 11+57.34 (27.64' LT)

END RETAINING WALL #10 -Y2B- 14+77.78 (42.78' LT)

PROP. RETAINING WALL #10

BEGIN RETAINING WALL #9 -Y2RPB- 21+27.75 (20.63' RT)

END RETAINING WALL #9 -Y2RPB- 22+59.27 (112.76' LT)

PROP. RETAINING WALL #9

BEGIN RETAINING WALL #2 -L- 53+86.08 (81.57' LT)

PROP. RETAINING WALL #2

BEGIN RETAINING WALL #1 -L- 48+60.00 (69.00' RT)

PROP. RETAINING WALL #1

END RETAINING WALL #11 -Y2- 29+00.00 (39.90' LT)

PROP. RETAINING WALL #11

-Y2- POT Sta. 17+80.73 = -Y2B- POT Sta. 22+22.18 = -Y2C- POT Sta. 10+00.00

-RP32- POT Sta. 10+00.00 = -Y2RPB- POT Sta. 29+12.55

-RP23- POT Sta. 10+00.00 = -Y2RPC- POT Sta. 30+33.95 = -Y2- POT Sta. 24+49.23

-Y2- Sta. 25+35.00 = -Y2A- POT Sta. 10+00.00

-Y2- Sta. 22+70.15 = -L- Sta. 54+66.71

B-7 11+98 -Y2B- 7' LT

B-8 13+96 -Y2B- 11' LT

Y_1540 17+71 -Y2B- 40' LT

Y_1580 20+02 -Y2B- 39' LT

T-76 16+43 -Y2- 71' RT

Y_1640 21+79 -Y2B- 27' LT

T-12 19+18 -Y2- 2' LT

T-97 15+05 -Y2B- 26' RT

T-99 26+89 -Y2RPB- 87' LT

T-16 28+22 -Y2RPB- 8' RT

EB2-A -Y2RPB 21+41 -Y2RPB- 23' RT

T-13 22+07 -Y2RPB- 9' RT

T-14 24+28 -Y2RPB- 5' RT

T-15 26+29 -Y2RPB- 2' RT

EB2-A_DOT 47+52 -L- 112' LT

B2-A_DOT 46+28 -L- 85' LT

B2-D_DOT 46+41 -L- 45' LT

B2-C_DOT 46+42 -L- 12' LT

B2-E_DOT 46+44 -L- 55' RT

B2-B_DOT 46+43 -L- 107' RT

EB2-C_DOT 47+51 -L- 3' RT

EB2-D_DOT 47+51 -L- 46' RT

EB2-B_DOT 47+50 -L- 102' RT

B-9 25+87 -Y2RPC- 29' RT

T-86 27+53 -Y2RPC- 37' RT

T-86A 29+14 -Y2RPC- 16' RT

B-10 27+23 -Y2- 33' LT

B-11 26+33 -Y2- 41' LT

B-12 11+09 -Y2A- 8' RT

B-13 12+43 -Y2A- 1' LT

B-14 13+25 -Y2A- 36' RT

B-15 16+08 -Y2A- 25' RT

B-16 29+82 -Y2RPC- 28' LT

B-17 23+87 -Y2- 45' LT

B-18 11+82 -RP23- 67' LT

B-19 21+64 -Y2- 29' LT

B-20 11+25 -RP32- 46' RT

EB1-B 47' RT

T-98 13+85 -RP23- 18' RT

2'-6" C&G

30" C&G

14' MUP

5' SW

6' SW

GREU TL-3

GREU TL-2

4' PS

8d

12' PS

14' PS

8' PS

18" CONC

I-26 NB 38.5" CONC

I-26 SB 38.5" CONC

ICBRC BARRIER WALL

TYPE III

TYPE III 30"

CAT-1

SKEW 28°33'36"

100-YEAR FLO

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJECT REFERENCE NO.	SHEET NO.
I-2513AC	8

0 100 200
FEET

ARTIFICIAL FILL

ROADWAY EMBANKMENT -Y2-

ARTIFICIAL FILL

ROADWAY EMBANKMENT

RESIDUAL

RESIDUAL

RESIDUAL

ROADWAY EMBANKMENT

RESIDUAL

RESIDUAL

ALLUVIAL

MATCH LINE 58+00 -L- SEE SHEET 7

MATCH LINE 70+00 -L- SEE SHEET 9

BEGIN CONSTRUCTION -Y2- POC STA.11+39.00

END CONSTRUCTION -Y2C- STA.13+96.15

END CONSTRUCTION -Y9- STA.10+78.00

BEGIN CONSTRUCTION -Y9- STA.10+00.00

-Y9- POT Sta. 12+41.56

-Y2C- POT Sta. 14+95.42

-Y9- Sta.10+49.37 = -MUPI- Sta.10+00.00

-MUPI- POT Sta. 13+99.87

BEGIN RETAINING WALL #4 -RP32- 18+05.60 (8.02' LT)

END RETAINING WALL #2 -L- 63+81.00 (65.00' LT)

END RETAINING WALL #4 -RP32- 21+00.00 (63.00' LT)

BEGIN RETAINING WALL #3 -RP23- 18+65.00 (21.50' RT)

BEGIN RETAINING WALL #5 -L- 65+90.00 (65.00' RT)

END RETAINING WALL #13 -RP23- 13+29.02 (21.50' RT)

100-YEAR FLOODPLAIN

B-21 12+46 -Y2C- 64' LT

B-22 14+60 -Y2C- 9' LT

B-23 11+14 -Y9- 5' RT

T-90 20+91 -RP32- 100' LT

T-91 23+71 -RP32- 44' LT

T-22 19+98 -RP23- 32' LT

T-23 23+96 -RP23- 3' LT

TONY & ELLEN GILBERT

DAVID LINDSAY SMITH & CHRISTA SMITH

TOMMIE & CAROLYN TRANTHAM

JOHN & ROSMARY KAST

MARGARET SHAW

MANDY SCEPANIAK

CHARLES L GIEZENTANNER III

DEAN W. SALES

DEAN W. SALES

KELLI DENISE TINSLEY

HD CAPITAL MANAGEMENT LLC

SARAH S & DANIEL R SALAZAR

DAVID ZARITSKY

PRESSLEY CONSTRUCTION & DEVELOPMENT INC

CITY OF ASHEVILLE

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJECT REFERENCE NO.	SHEET NO.
I–2513AC	9

0 100 200
FEET

ARTIFICIAL FILL
RESIDUAL
ROADWAY EMBANKMENT
ALLUVIAL
ARTIFICIAL FILL
RESIDUAL
ROADWAY EMBANKMENT
RESIDUAL
ARTIFICIAL FILL
RESIDUAL
ROADWAY EMBANKMENT
RESIDUAL
ARTIFICIAL FILL

B-24
26+13 -RP32-
272' LT

B-25
27+60 -RP32-
325' LT

T-92
26+85 -RP32-
88' LT

T-93
28+16 -RP32-
87' LT

T-105
73+85 -L-
40' LT

T-24
27+00 -RP23-
8' LT

T-25
29+95 -RP23-
8' LT

T-26
32+10 -RP23-
19' LT

T-27
34+32 -RP23-
19' RT

T-28
36+03 -RP23-
1' RT

B-26
31+17 -RP23-
104' RT

B-27
32+87 -RP23-
114' RT

B-28
35+80 -RP23-
51' RT

37+41 -RP23-
149' RT

T-55
77+49 -L-
323' LT

T-42
12+32 -Y10-
49' RT

T-41
32+96 -RP32-
13' RT

T-104
79+16 -L-
60' LT

T-44
35+08 -RP32-
19' LT

T-43
34+89 -RP32-
63' RT

BEGIN CONSTRUCTION -Y10- STA 10+00.00

END CONSTRUCTION -Y10- STA 12+63.07

BEGIN RETAINING WALL #6 -RP32- 28+45.00 (21.50' RT)

BEGIN RETAINING WALL #30 -L- 74+50.00 (3.16' RT)

END RETAINING WALL #6 -RP32- 32+66.50 (21.50' RT)

END RETAINING WALL #30 -L- 81+39.00 (78.50' LT)

BEGIN BRIDGE -L- 82+90.48

BEGIN BRIDGE -L- 83+04.00

END RETAINING WALL #30 -L- 82+73.88 (3.16' RT)

END RETAINING WALL #30 -L- 81+67.80

END RETAINING WALL #3 -RP32- 37+74.00 (21.50' RT)

BEGIN RETAINING WALL #3 -RP23- 39+54.08 (3

-Y10- PC Sta. 10+00.00

-Y5- POT Sta. 10+00.00

-RAB1- PC Sta. 12+44.12

-RP32- PT Sta. 36+09.47

PROP. RETAINING WALL #30

PROP. RETAINING WALL #5

PROP. RETAINING WALL #3

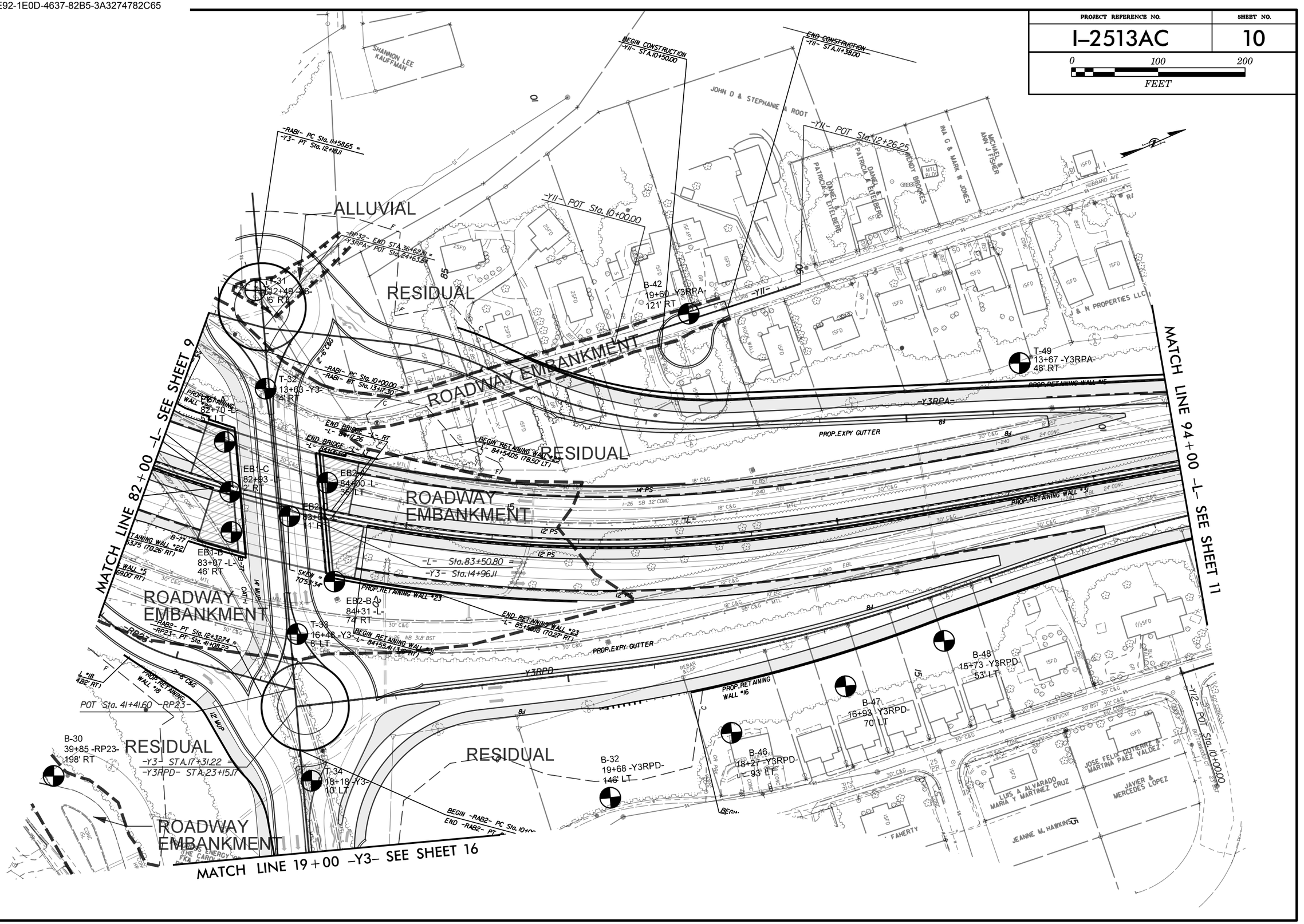
MATCH LINE 70+00 -L- SEE SHEET 8

MATCH LINE 82+00 -L- SEE SHEET 10

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJECT REFERENCE NO.	SHEET NO.
I–2513AC	10

0 100 200
FEET



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJECT REFERENCE NO.	SHEET NO.
I-2513AC	11

0 100 200
FEET

-Y3RPA- POT Sta. 10+00.00

-Y3RPA- ST Sta. 10+00.00

MATCH LINE 94+00 -L- SEE SHEET 10

MATCH LINE 106+00 -L- SEE SHEET 12

KEITH R. THOMPSON
TONYA JENKS
ELLEN PETTIGREW
THOMAS W WEBSTER ET AL & THOMAS C WEBSTER III ET AL
PAULETTE N DORION
CHRISTOPHER M WILEY
JAMES H & SHAYNA L MCGILL BRADSHAW
TAMRA L DEITZ
DIANNE S WARD
EDUARDO ARIAS
97 LANGWELL AVE LLC
ANGIE DUBBS
CATHERINE H
KONSTANTINOS A KATSIGIANNIS
BENJAMIN PUCKETT
MICHELLE K EDWARDS
INDY CLIFF KAVARA
JOHNATHAN A CRAWFORD
WESTEND COTTAGES OWNERS ASSOCIATION
BARBARA R LENSCHNER TRUST
CITY OF ASHEVILLE
CHRISTINA L TALBERT
KERRY D & SANDRA M DRYMAN
CHRISTINA L TALBERT
MISHELLE V STAPLETON & ROBERT S DETILLO
DENISE O. SUNDQUIST
JEFFREY L & JANA E MARTIN
ROY VANDERVOORT
THE PROFESSION GROUP, LLC

B-45 96+49 -L- 166' LT
T-68 98+50 -L- 83' LT
T-94 102+19 -L- 83' LT
B-51 97+87 -L- 121' RT
T-67 10+06 -Y13- 6' RT
B-50 96+99 -L- 177' RT
B-49 95+74 -L- 216' RT
B-55 11+83 -Y14- 72' LT
B-56 13+36 -Y14- 61' RT
105+55 -L- 125' LT

RESIDUAL
ROADWAY EMBANKMENT
ALLUVIAL

END RETAINING WALL #15 -L- 98+25.00 (BLOCK LT)
END RETAINING WALL #16 -L- 98+54.63 (81.00' RT)
END RETAINING WALL #3 -L- 104+51.25 (3.6' RT)
END RETAINING WALL #2 -L- 105+20.52 (82.17' LT)
BEGIN RETAINING WALL #24 -L- 103+59.17 (85.00' RT)
BEGIN CONSTRUCTION -Y13- STA 11+77.38
END CONSTRUCTION -Y13- STA 11+59.22
BEGIN CONSTRUCTION -Y14- POT Sta. 12+15

-L- Sta. 105+49.43 = -Y14 Sta. 13+76.06

-Y12- POT Sta. 15+82.88

S 40° 42' 00.0" E

-Y15- POT Sta. 10+00.00

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJECT REFERENCE NO.	SHEET NO.
I–2513AC	12

0 100 200
FEET

MATCH LINE 106+00 –L– SEE SHEET 11

MATCH LINE 118+00 –L– SEE SHEET 13

ROADWAY EMBANKMENT

RESIDUAL

B-53
106+96 -L-
54' LT

T-95
110+99 -L-
55' LT

B-54
112+98 -L-
17' LT

T-96
115+78 -L-
112' LT

B-57
117+47 -L-
189' LT

B-61
26+65 -Y15-
36' LT

BEGIN RETAINING WALL #25
-L- 107+42.50 (86.00' LT)

END RETAINING WALL #25
-L- 106+41.61 (86.00' RT)

BEGIN RETAINING WALL #32
-L- 106+18.20 (3.45' RT)

END RETAINING WALL #32
-L- 109+50.00 (10.09' RT)

PROP. RETAINING WALL #32

END TIP PROJECT I-2513AC
-L- POT STA 108+00.00

BEGIN CONSTRUCTION
-Y15- STA 21+00.00

BEGIN RETAINING WALL #7
-L- 114+52.21 (53.03' RT)

END CONSTRUCTION
-Y14- STA 15+30.00

BEGIN Y14 POT Sta. 17+30.60

POT Sta. 10+00.00

END CONSTRUCTION (LEFT)
-L- POT STA 116+50.00

-Y4RPC-

CLAUSSEN

TRUMAN W & DORETHA G WOODS

LOWELL PARRIS

MAPLE ROCK INVESTMENTS LLC

JOY POMPEO

BRIAN & MAGGI SCHEWE

DANIEL & CARLY BROWN

CHAD L COLWELL

GREGORY LITTLEJOHN
JUANITA LITTLEJOHN

JACQUELINE MARIDA BILLERA

JEANETTE M HENRY
MARK S HENRY

BOBBIE E. AMMONS

THOMAS N MASTERS II &
THOMAS N MASTERS

VITAL GREENBERG

LELA & GERALD D BROWN

ANGELA & TODD COLLEGE

RENE DANIELE CREELE

JOHN WILSON

ELIZABETH ROSE GUEST

KAITLIN M &
RANDY J REPH

THE ROBERSON GROUP LLC

SKYDUSTY LLC

RAY & FORSYTHE

JORDAN BRASCHLER

CHARLES & SARAH REISIG

BRADLEY M & KATIE E WATT

RYAN W HAYNER

RYAN & STEPHANI J BYRNE

SHARON WRIGHT

EMMA H ROGERS

DONNELLE WORKMAN

URBAN-1988 LLC

TIA B JAROWITZ

KATHRYN T ROGERO

JOHN E MCKINNEY

JOSH MCKINNEY &
REBECCA CHAMBERS

AMANDA K &
MICHAEL S HALE

OFFAC HOLDINGS LLC

HANOVER ST

ALABAMA AVE

MONTANA CIRCLE

PENNSYLVANIA AVE

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJECT REFERENCE NO.	SHEET NO.
I–2513AC	13

0 100 200
FEET

MATCH LINE 118+00 –L– SEE SHEET 12

RESIDUAL

ROADWAY

EMBANKMENT

RESIDUAL

B-58
120+60 -L-
204' LT

B-62
27+38 -Y15-
6' RT

B-63
29+15 -Y15-
12' RT

–Y4– PC Sta. 10+00.00

END CONSTRUCTION RIGHT
–L– POT STA.121+20.00

END RETAINING WALL #7
–L– 118+19.62 (51.00' RT)

–Y15– POT Sta. 30+00.00

–Y4– PT Sta. 15+20.63

END CONSTRUCTION
–Y15– STA.29+65.85

–Y4– PT STA.12+39.46
–Y4RPC– PT STA.19+54.02

POT Sta.126+17.77

TENSI TRUST AGREEMENT

WILSON AND ISRAEL'S LLC

ELDORADO PROPERTIES LLC

DAVID SHARPE WALL

DAVID E. STEVENS

WILLIAM BULFER & MELLISSA MARTINEZ

DONALD J BROWN

DENNIS HIGGINS

MICHAEL PAUL ROTTJAKOB

DONALD J & REVA C BROWN

GLADYS J BUCKNER

STEPHEN RANDALL PENLAND

NANNIE B W THOMAS

SILVER RUN HOLDINGS LLC

DONALD E. RUSSELL

DENNIS E. RUSSELL

JUSTINTIME ENTERPRISES LLC

GEORGE J. COUCH

CARL S TRAVIS SR & JANE R TRAVIS

GO STORE IT ASHEVILLE STORAGE DST

MARDELL WOODS

BURTON ST

BROOKSHIRE PL

MOBLE ST

ELIZABETH & EDWARD ZUPNIK

FIRST CHURCH OF GOD INC ASHEVILLE

ISBLK&F FIRST CHURCH OF GOD

SAW VENTURES HARWOOD II LLC

ACCUDYNE INVESTMENTS LLC

ASHEVILLE CITY BOARD OF EDUCATION

ISBK GYM

ISBK SCHOOL

HARLAN & SANDRA WILLSON

ARGILE LN

1800 PR FO CABLE (4)

600 PR FO CABLE (3)

200 PR (3)
900 PR
70 CABLE (3)

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJECT REFERENCE NO.	SHEET NO.
I-2513AC	14

0 100 200
FEET

FRED F & ALICE B CAUDLE

GR

CONC WALL

BST

ISFD

20

25

30

BEGIN RETAINING WALL #14
-Y3- 23+12.36 (53.93' LT)

HOUSING AUTHORITY OF THE CITY OF ASHEVILLE

ISBK BUS

END RETAINING WALL #14
-Y3- 26+79.84 (44.25' LT)

EAST CURB

DUKE ENERGY TRANSMISSION

BEGIN RETAINING WALL #21
-Y3- 28+48.16 (33.25' LT)

-Y3B- STA.11+82.21 =
-Y3- STA.28+50.37

B-31
19+13 -Y3-
222' LT

B-41
23+03 -Y3-
134' LT

B-40
24+37 -Y3-
127' LT

25+22 -Y3-
93' LT

B-38
25+98 -Y3-
88' LT

RIVERVIEW WEST COMPANY LLC

RESIDUAL

-Y3A- STA.15+73.18 =
-Y3- STA.24+93.50

PROP.RETAINING WALL #14

RESIDUAL

PROP.RETAINING WALL #21

MATCH LINE 19+00 -Y3- SEE SHEET 10

SR 3556 AMBOY RD 18' CONC

2'-6" C&G

12' MUP

PROP.RETAINING WALL #18

END RETAINING WALL #18
-Y3- 23+01.67 (38.75' RT)

T-38
24+76 -Y3-
9' RT

30" C&G

ROADWAY EMBANKMENT

CONC WALL

B-37
11+40 -Y3B-
16' RT

B-36
30+40 -Y3-
58' RT

ARTIFICIAL FILL

MATCH LINE 31+00 -Y3- SEE SHEET 15

PROGRESS ENERGY OF THE CAROLINAS FKA CAROLINA POWER & LIGHT

T-36
10+30 -Y3A-
74' LT

-Y3A- MURPHY RD 20' BST

B-34
13+77 -Y3A-
26' RT

-Y3B-

BEGIN CONSTRUCTION
-Y3B- STA.10+46.05

ROADWAY EMBANKMENT

B-33
11+80 -Y3A-
26' RT

ALLUVIAL

ARTIFICIAL FILL

CITY OF ASHEVILLE

ARTIFICIAL FILL

ISBK BUS

MTL BLDG

CB ANTENNA

BEGIN CONSTRUCTION
-Y3A- STA.11+00.00

FLORA J WILSON REVOCABLE TRUST

CONC WALL

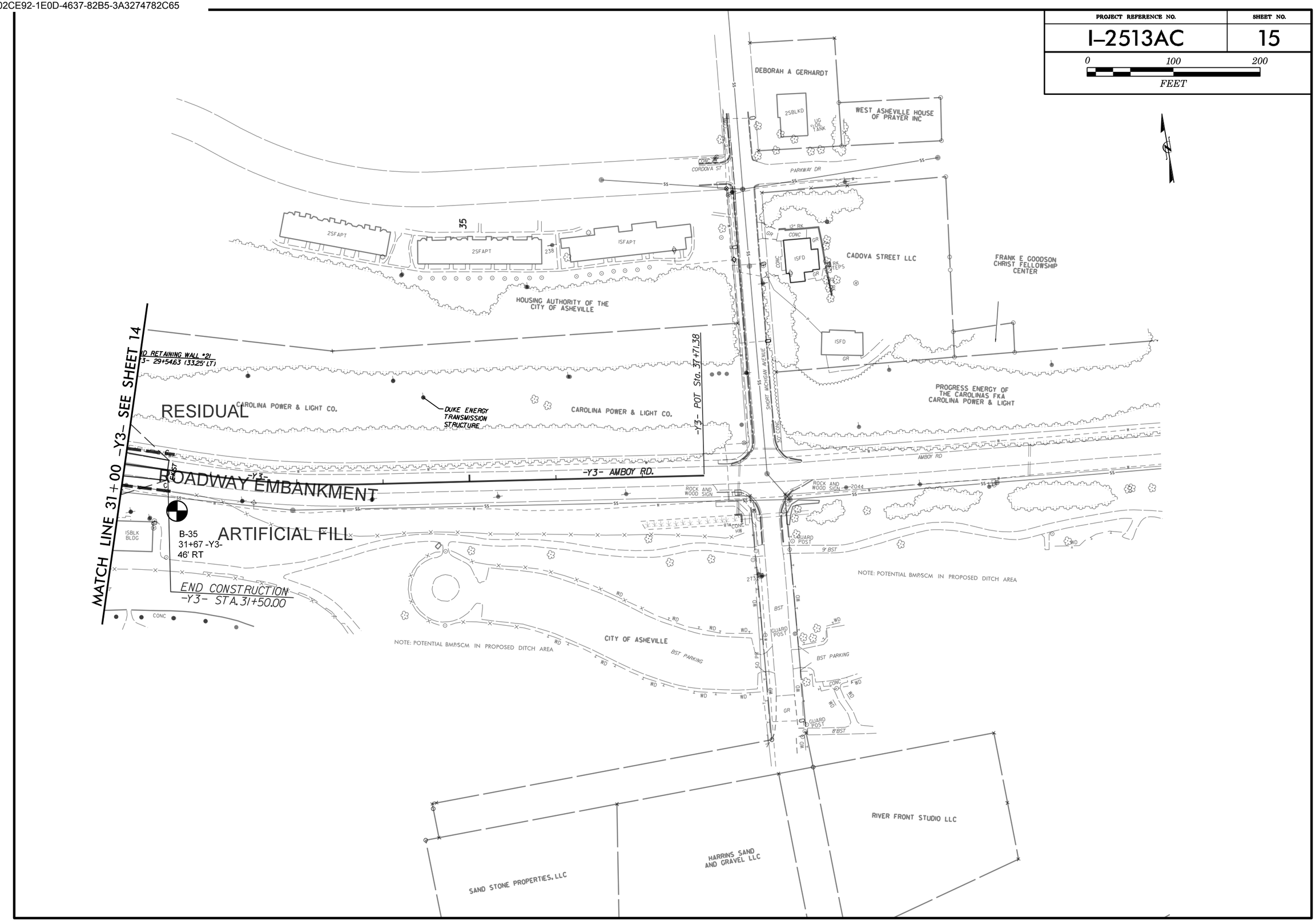
CONC WALL

CONC WALL

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJECT REFERENCE NO.	SHEET NO.
I-2513AC	15

0 100 200
FEET



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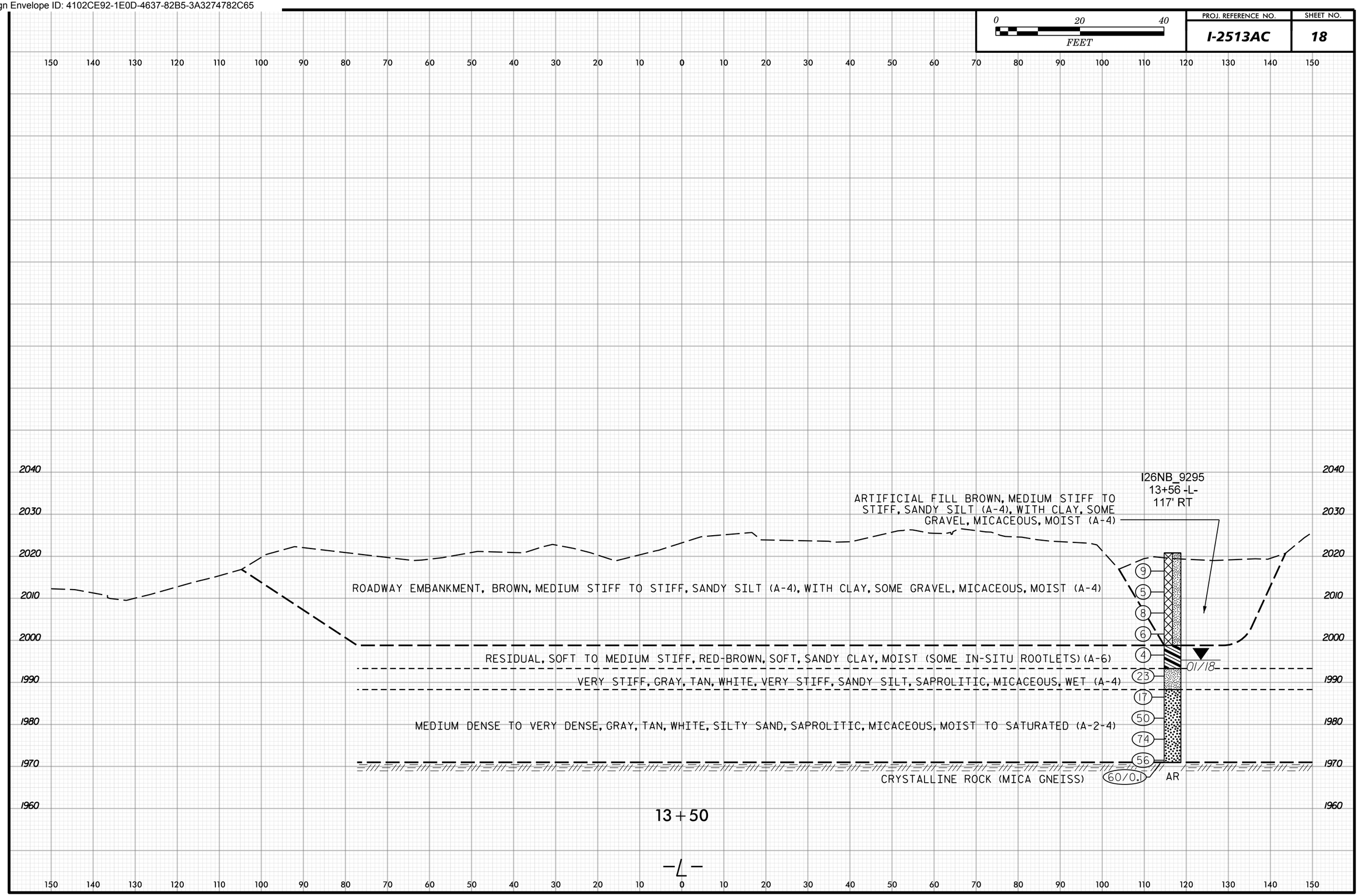
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	18



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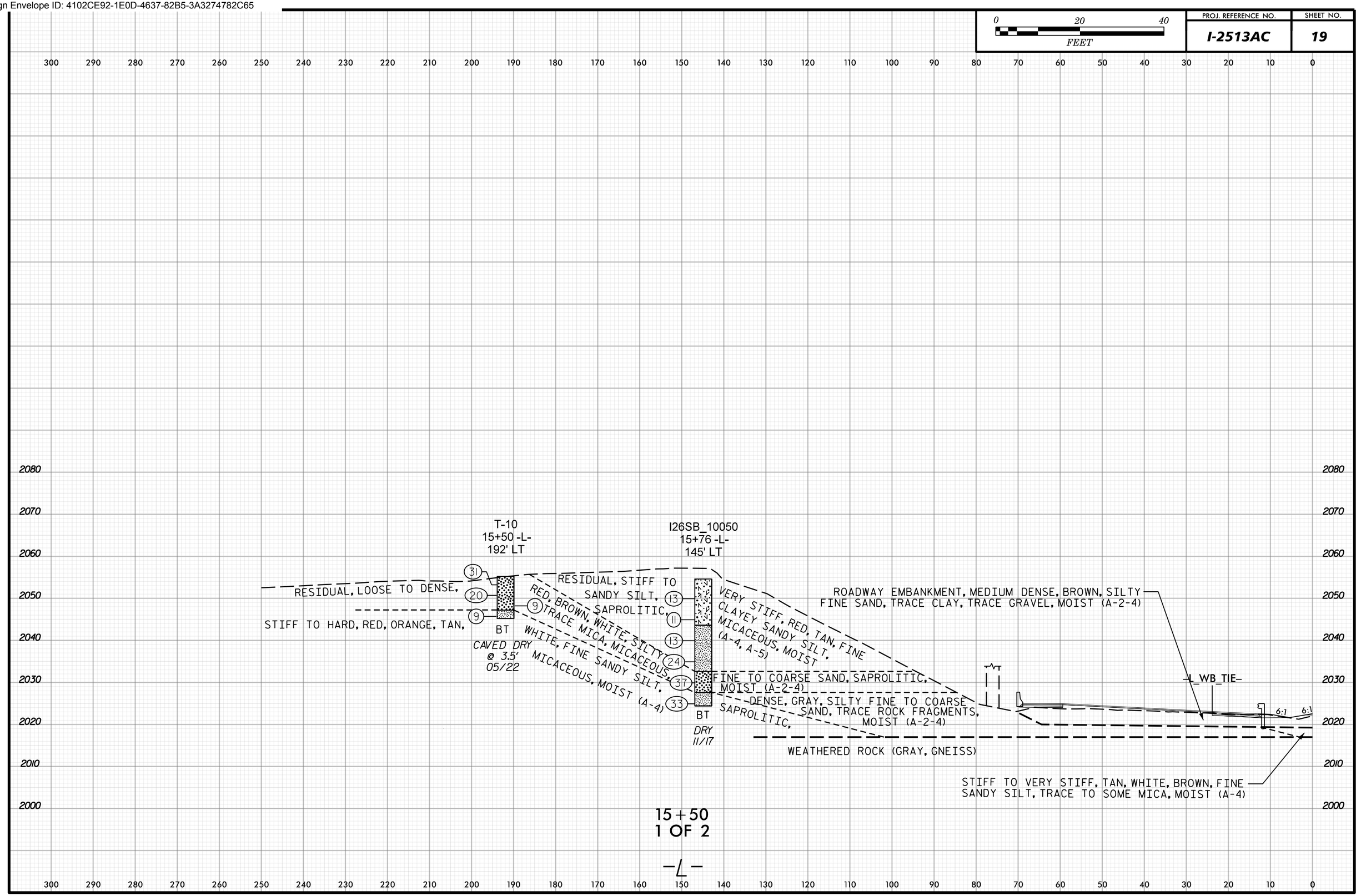
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	19



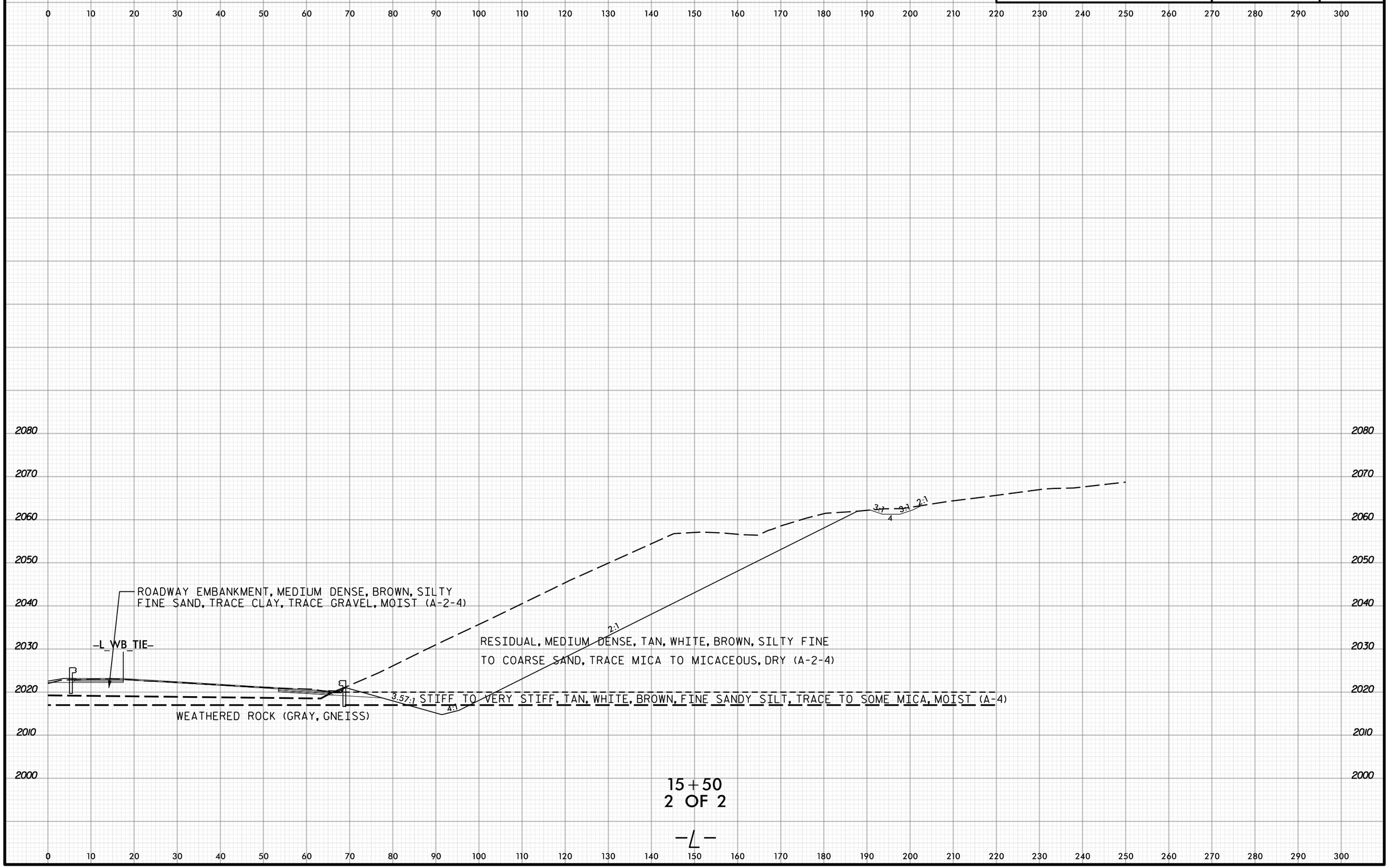
15+50
1 OF 2

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	20



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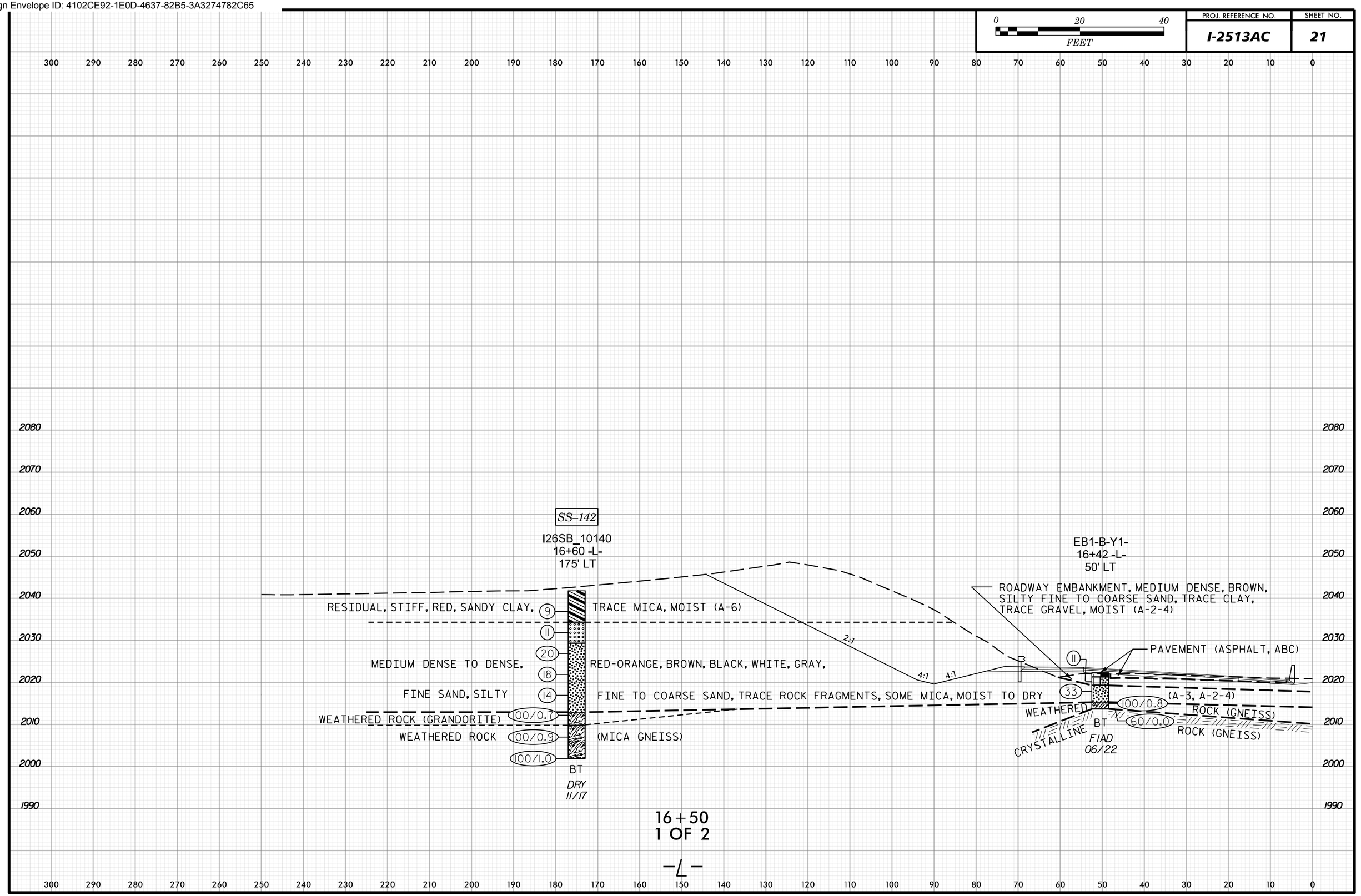
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	21



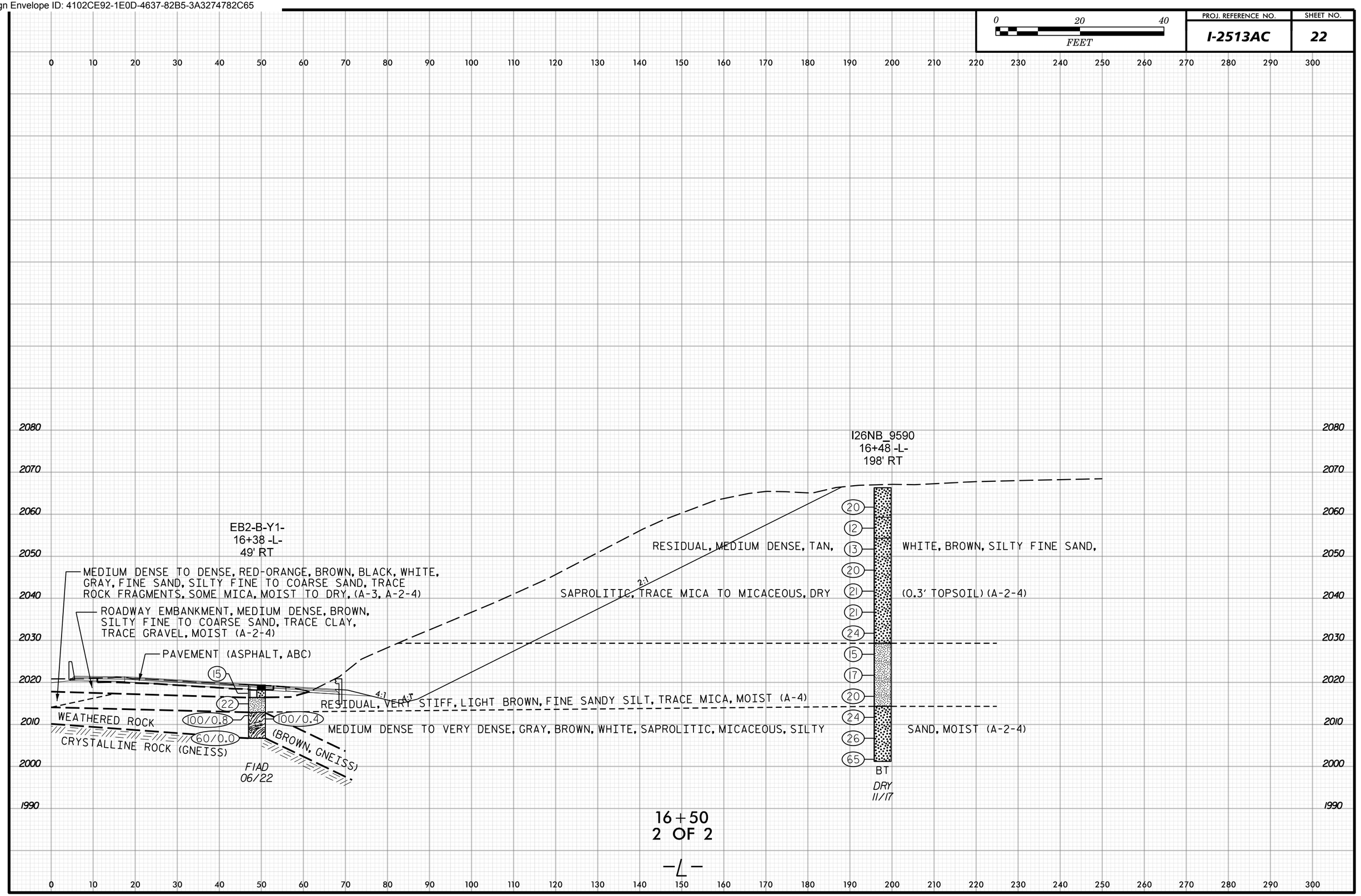
16+50
1 OF 2

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	22



16+50
2 OF 2

—L—

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	23

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

2070
2060
2050
2040
2030
2020
2010
2000
1990
1980

EB1-A-Y1-
16+96 -L-
45' LT

ROADWAY EMBANKMENT MEDIUM DENSE, LIGHT BROWN, SILTY FINE SAND, TRACE GRAVEL, TRACE MICA, MOIST (A-2-4)

PAVEMENT (ASPHALT, ABC)

RESIDUAL, STIFF, RED, SANDY CLAY, TRACE MICA, MOIST (A-6)

2:1

MEDIUM DENSE TO DENSE, RED-ORANGE, BROWN, BLACK, WHITE, GRAY, FINE SAND, SILTY FINE TO COARSE SAND, TRACE ROCK FRAGMENTS, SOME MICA, MOIST TO DRY (A-3, A-2-4)

4:1

10
19
100/0.6
60/0.0
AR

CAVED DRY
@ 6.0'
06/22

WEATHERED ROCK (GRANDORITE)

WEATHERED ROCK (GNEISS)

CRYSTALLINE ROCK (GNEISS)

17+00
1 OF 2

-L-

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	24

EB2-A-Y1-
16+96 -L-
49' RT

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

PAVEMENT (ASPHALT, ABC)

13

29

25

60/0.0

RESIDUAL, MEDIUM DENSE,

15 TAN, WHITE, LIGHT BROWN, SILTY FINE TO COARSE SAND, TRACE QUARTZ ROCK FRAGMENTS, MOIST (A-2-4)

CRYSTALLINE ROCK (TAN, GNEISS)

58

RESIDUAL, VERY DENSE,

TAN, WHITE, LIGHT BROWN, SILTY FINE TO COARSE SAND, TRACE QUARTZ FRAGMENTS, MOIST (A-2-4)

60/0.0

AR

FIAD
06/22

CRYSTALLINE ROCK (GNEISS)

2:1

4:1

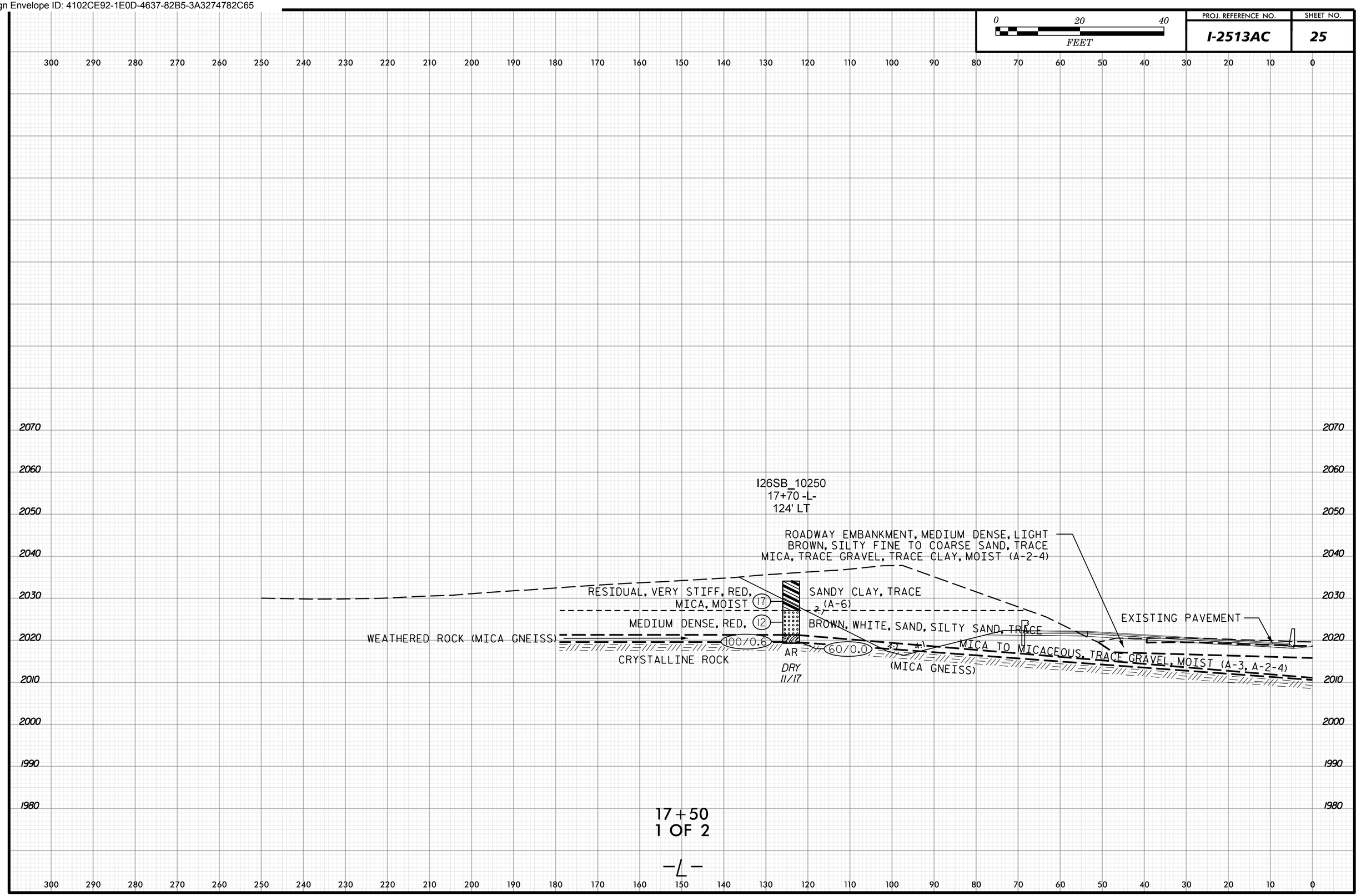
17+00
2 OF 2

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	25



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	26

SS-150

I26NB_9700
17+62 -L-
140' RT

RESIDUAL, TAN-RED, V. STIFF, SAPROLITIC, MICACEOUS, SANDY SILT (A-5) WITH CLAY

GRAVEL, MOIST (A-3, A-2-4)

RED-TAN, GRAY-TAN, SANDY SILT, MICACEOUS, MOIST (A-4)

15 15 13 12 14 25 28 39

2:1

BT
DRY
11/17

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

EXISTING PAVEMENT

MEDIUM DENSE, RED, BROWN, WHITE, SAND, SILTY TO MICACEOUS, TRACE

3.39:1

STIFF TO HARD, SAPROLITIC,

CRYSTALLINE ROCK (MICA GNEISS)

2070 2060 2050 2040 2030 2020 2010 2000 1990 1980

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300

17+50
2 OF 2

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	27

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

2030 2020 2010 2000 1990 1980

T-106
20+50 -L-
50' RT

PAVEMENT (ASPHALT, ABC)

PAVEMENT(ASPHALT, ABC)

SS-72

T-62
20+63 -L-
89' LT

2:1

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, SILTY FINE TO COARSE SAND, TRACE GRAVEL, MOIST

BROWN, (A-2-4)

2.20:1

MEDIUM STIFF BROWN, GRAY FINE SANDY CLAY, MOIST (A-6)

ALLUVIAL, VERY LOOSE TO MEDIUM DENSE, GRAY, CLAYEY FINE SAND, MOIST TO WET (A-2-6)

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

ALLUVIAL, VERY SOFT TO SOFT, BROWN, GRAY, FINE SANDY SILT, CLAYEY SILT, MOIST TO WET (A-4, A-5)

RESIDUAL, MEDIUM DENSE, BROWN, SILTY FINE SAND, TRACE MICA (A-2-4)

WEATHERED ROCK (BROWN, GRAY GNEISS)

12 13 7 6 12 2 1 21 100/0.7

06/22

BT

BT

FIAD
12/22

20+50

2030 2020 2010 2000 1990 1980

SS-38

T-61A
19+90 -L-
126' RT

PAVEMENT (ASPHALT, ABC)

RESIDUAL, SOFT, ORANGE, BROWN, FINE SANDY CLAY, MOIST (A-6)

2.89:1

ALLUVIAL, LOOSE, ORANGE, BROWN, SILTY FINE TO COARSE SAND, TRACE TO SOME GRAVEL, WET TO SATURATED (A-2-4)

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

2 14 8 3 3 1 17

05/22

BT

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

MEDIUM DENSE, ORANGE, TAN, SILTY FINE TO COARSE SAND, TRACE CLAY, MOIST (A-2-4)

20+00

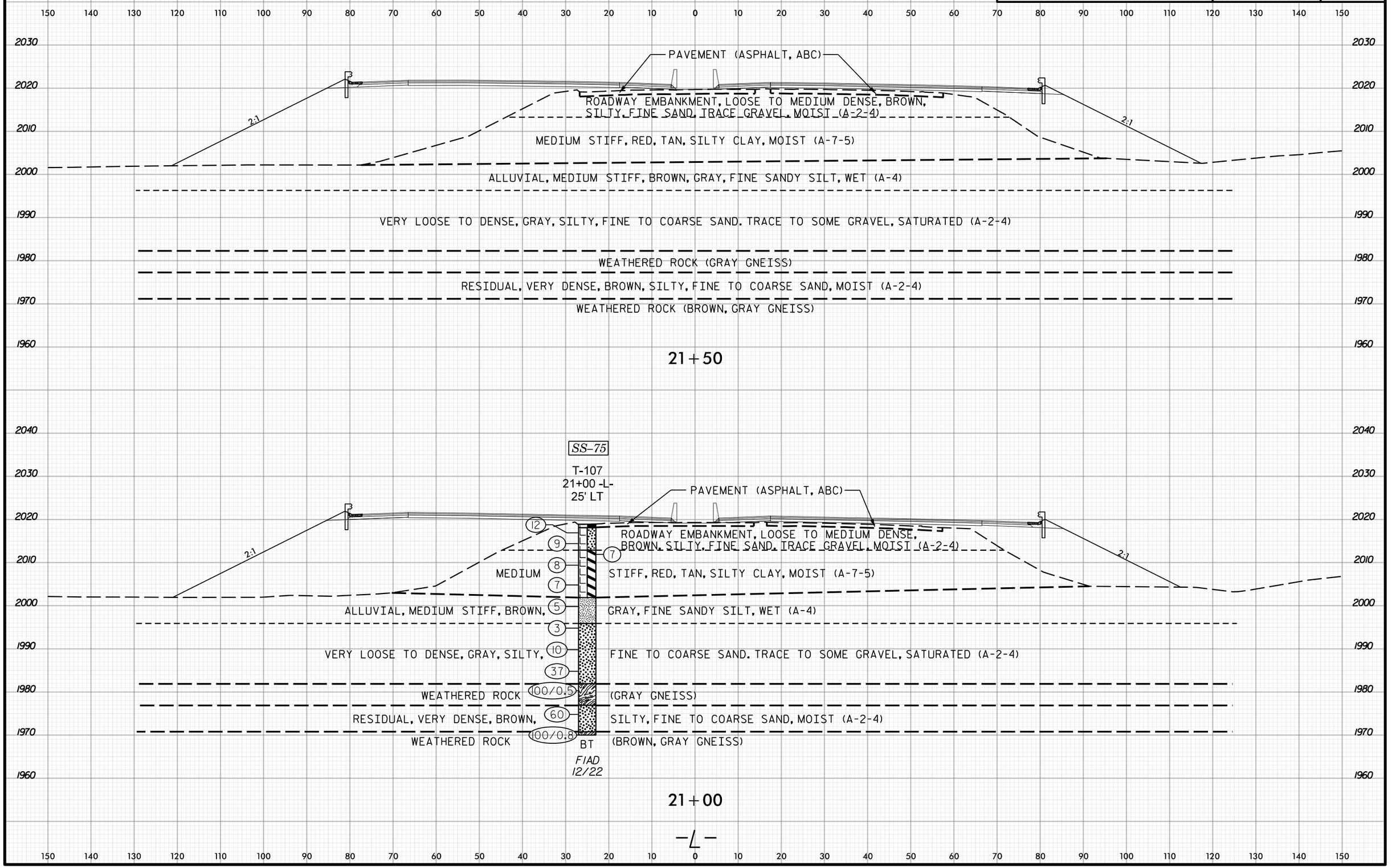
-L-

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

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

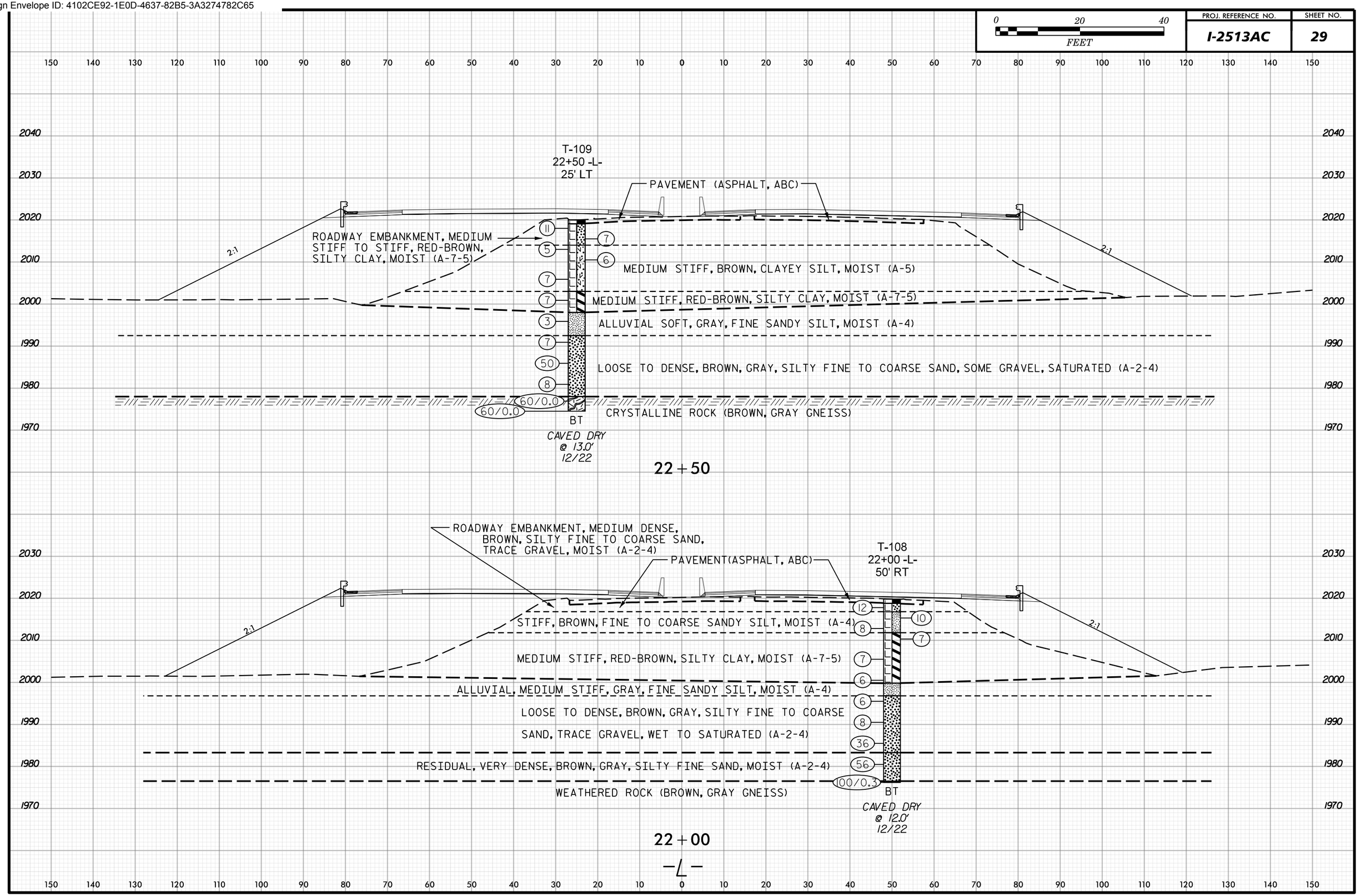
PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	28



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	29



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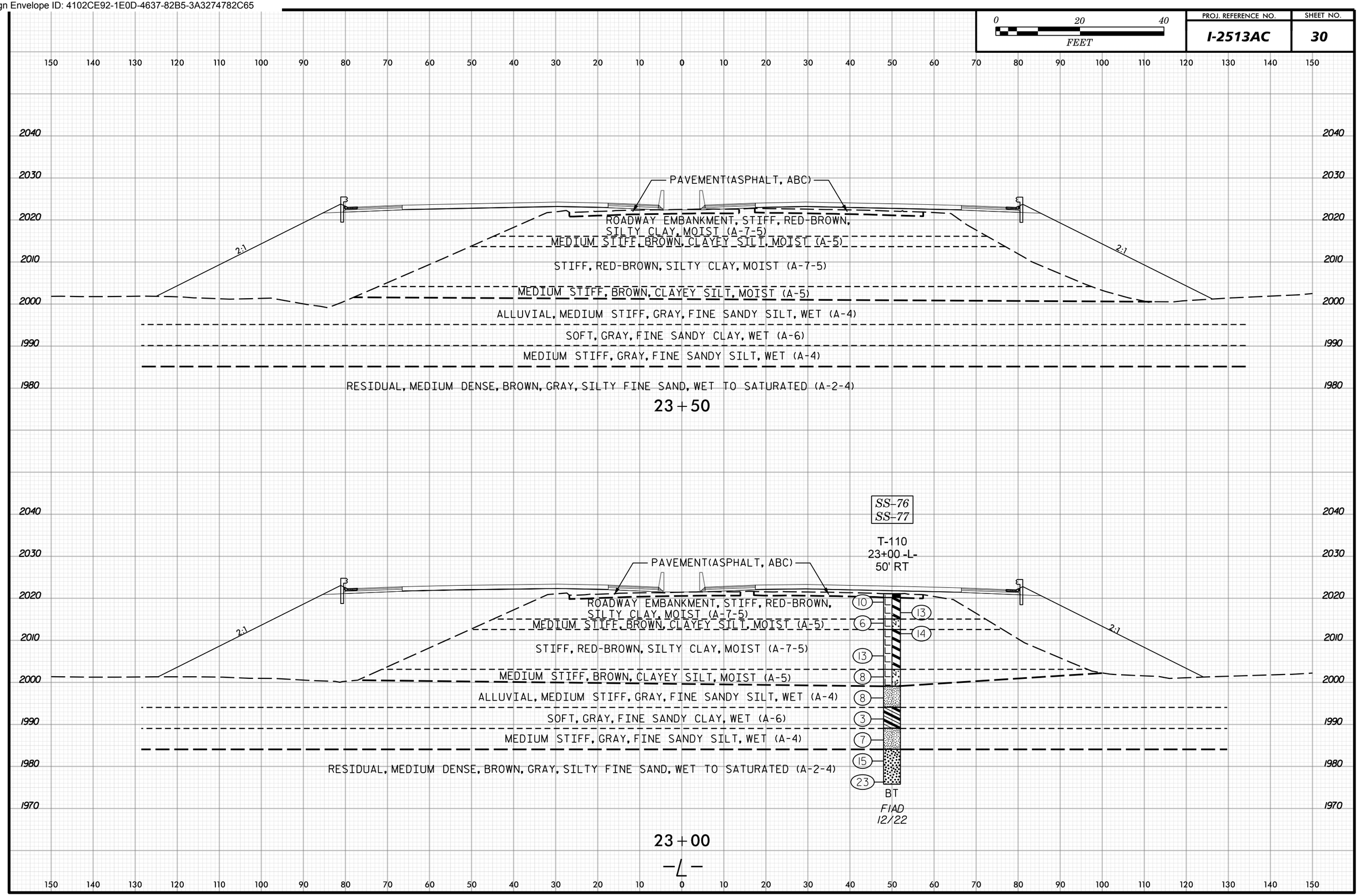
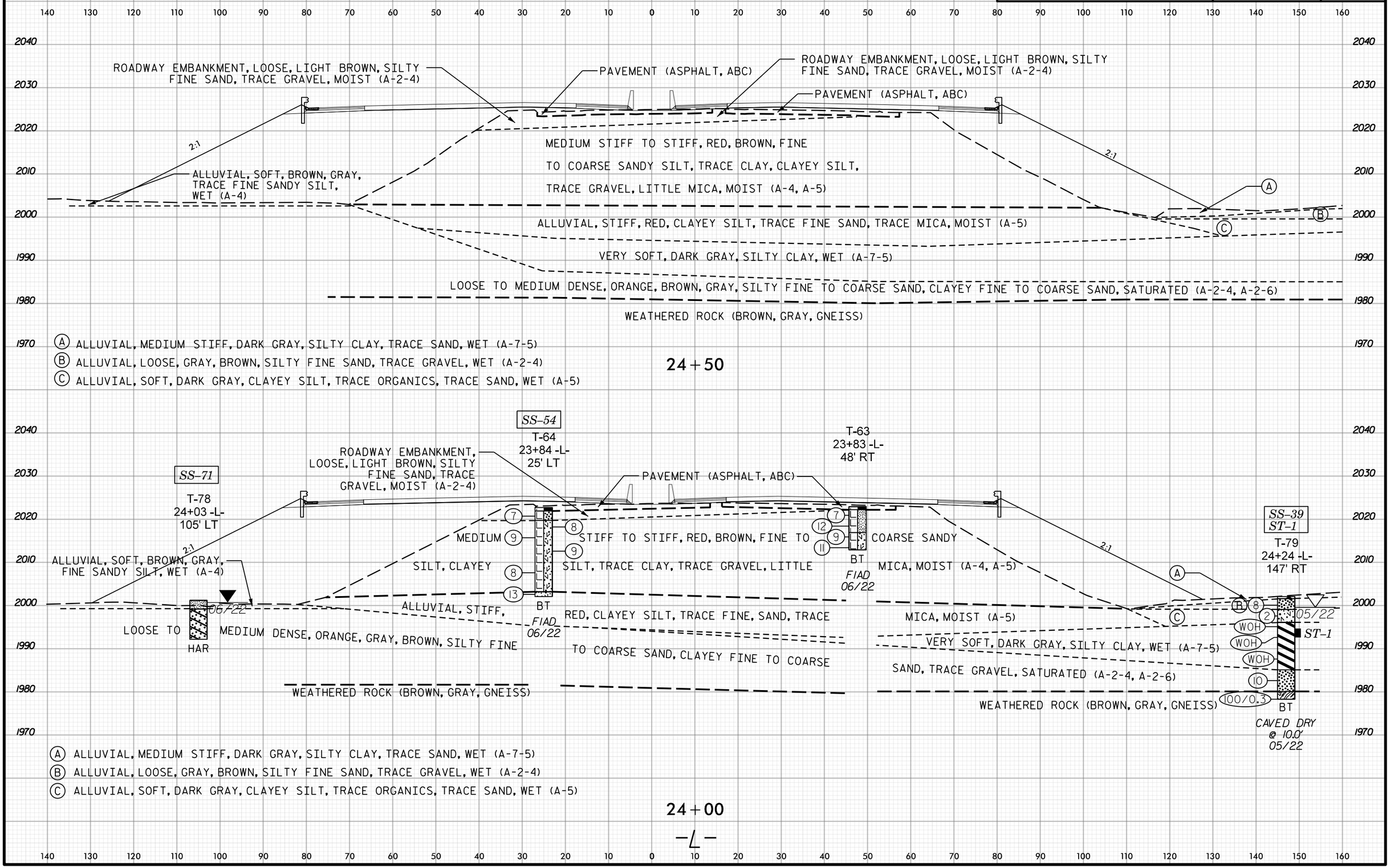
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	30



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

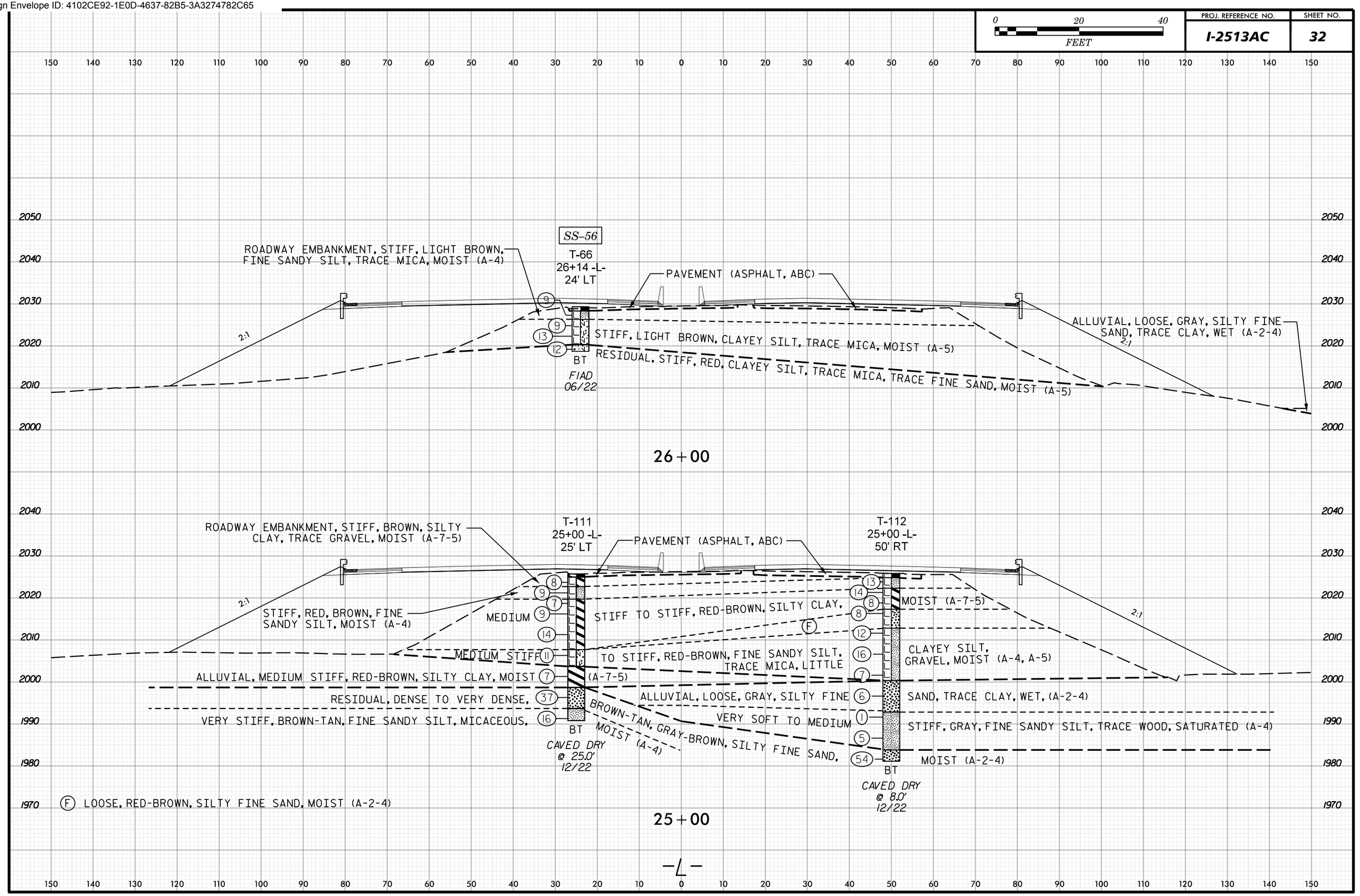
PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	31

0 20 40 FEET

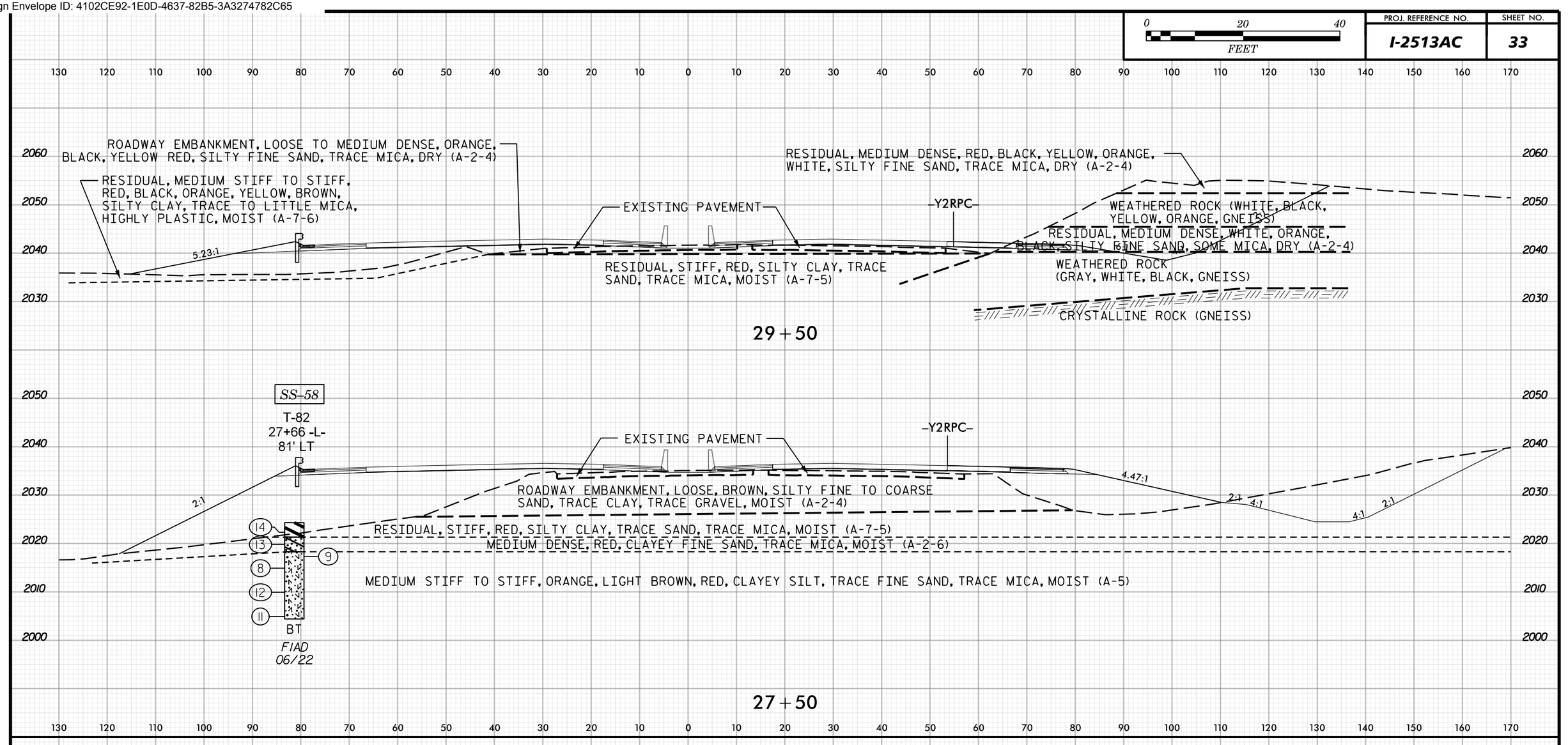


Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	32

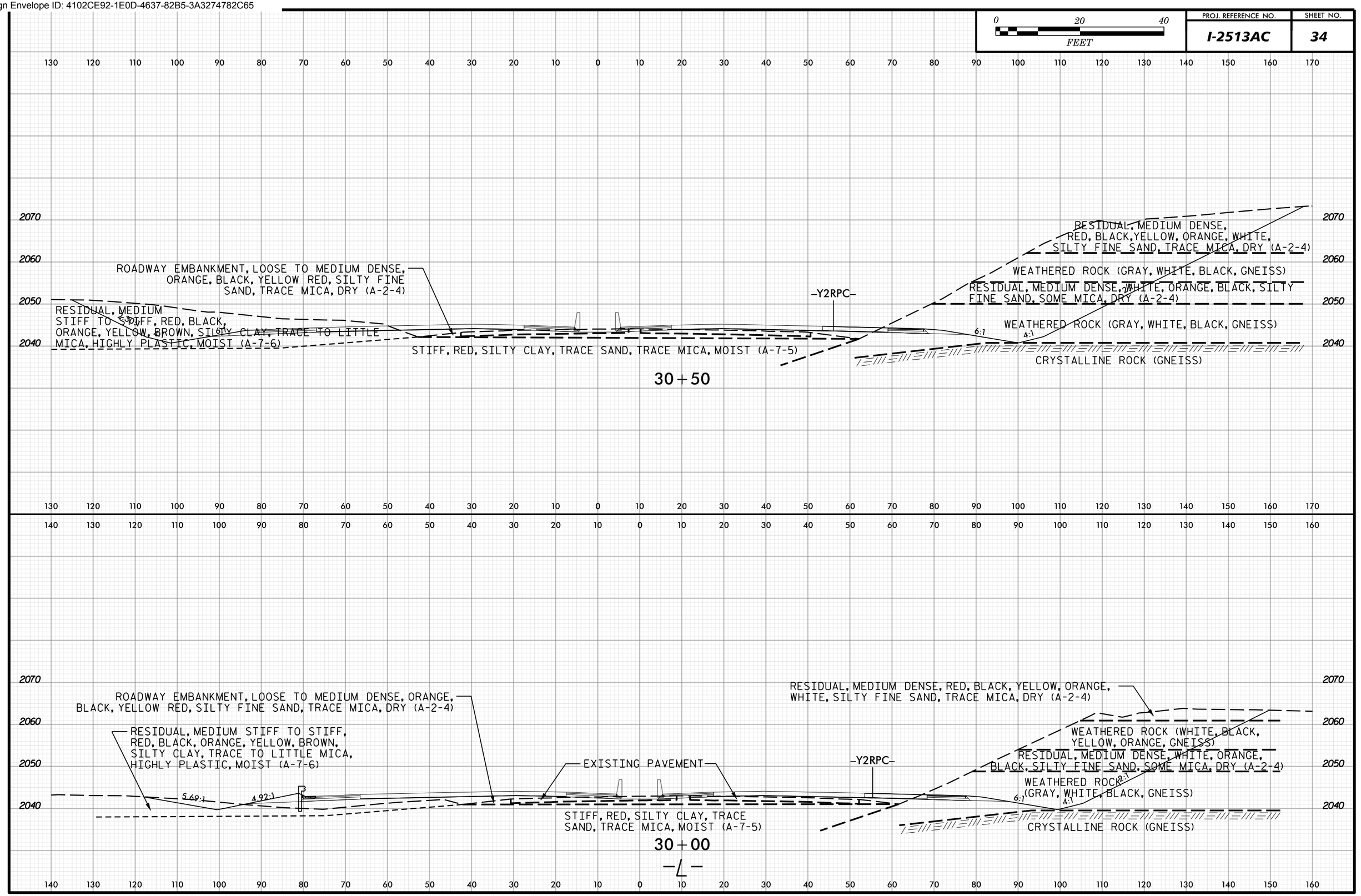


Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65



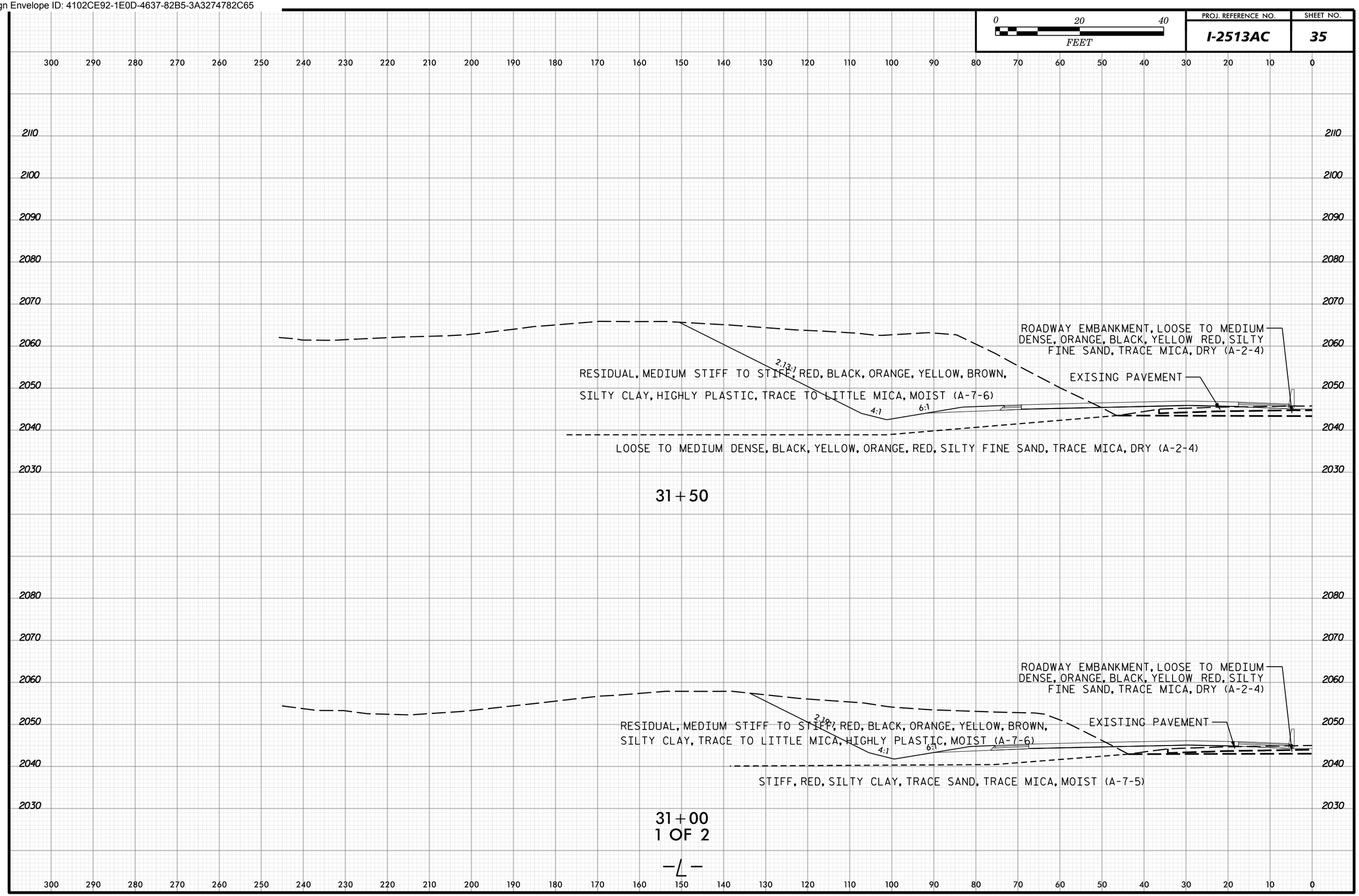
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	34



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	35



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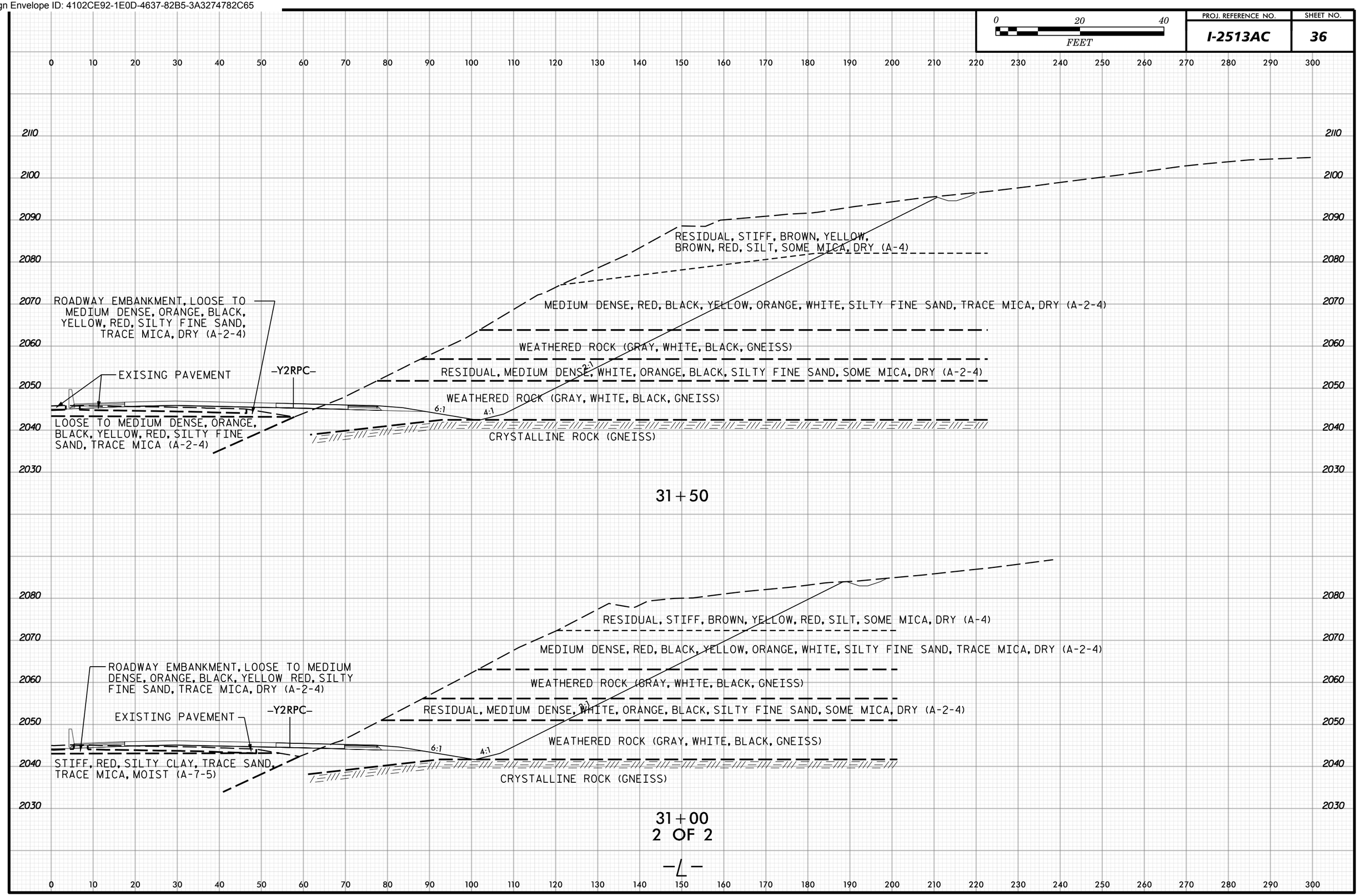
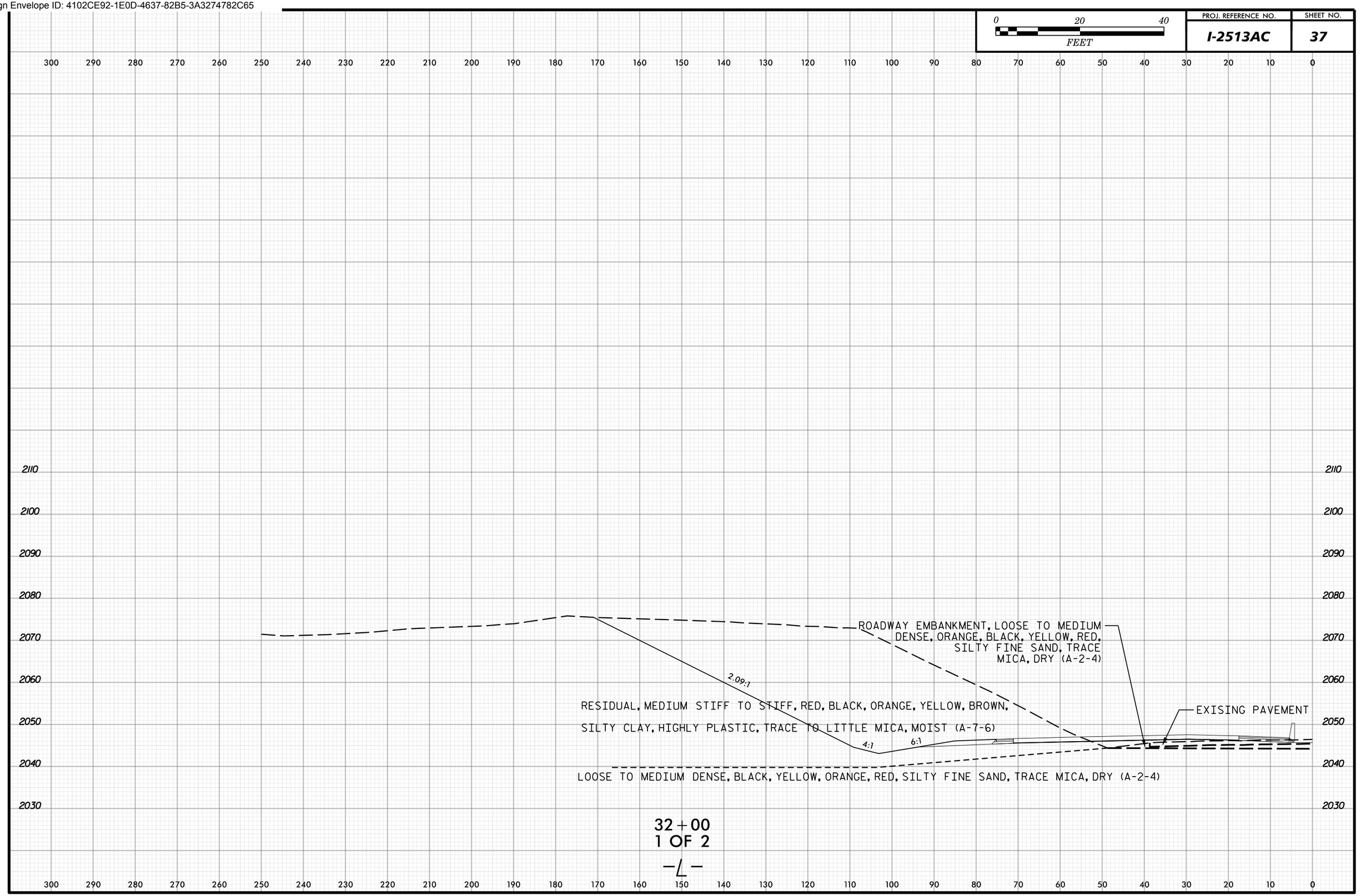
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	36



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

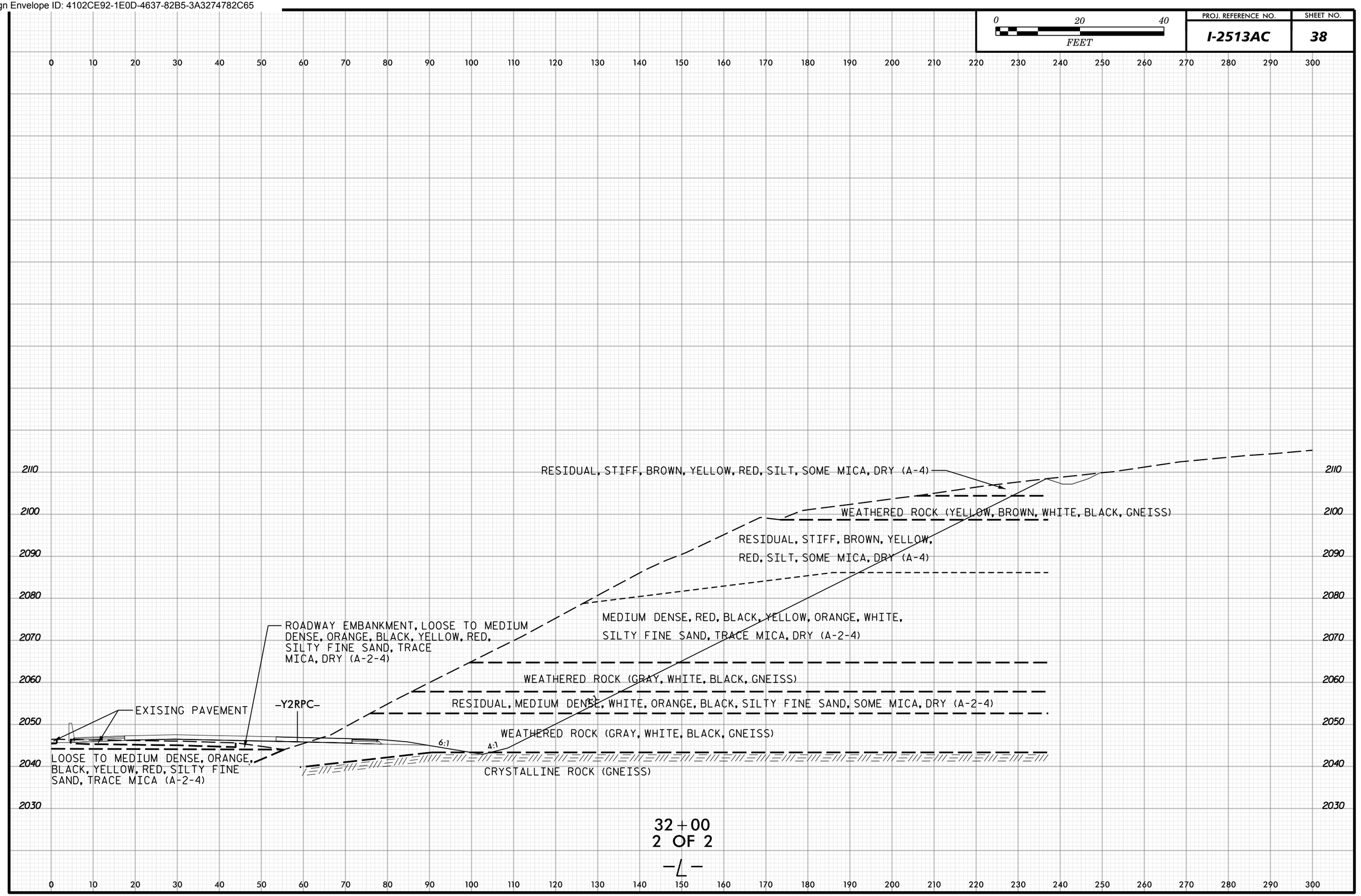
PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	37



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

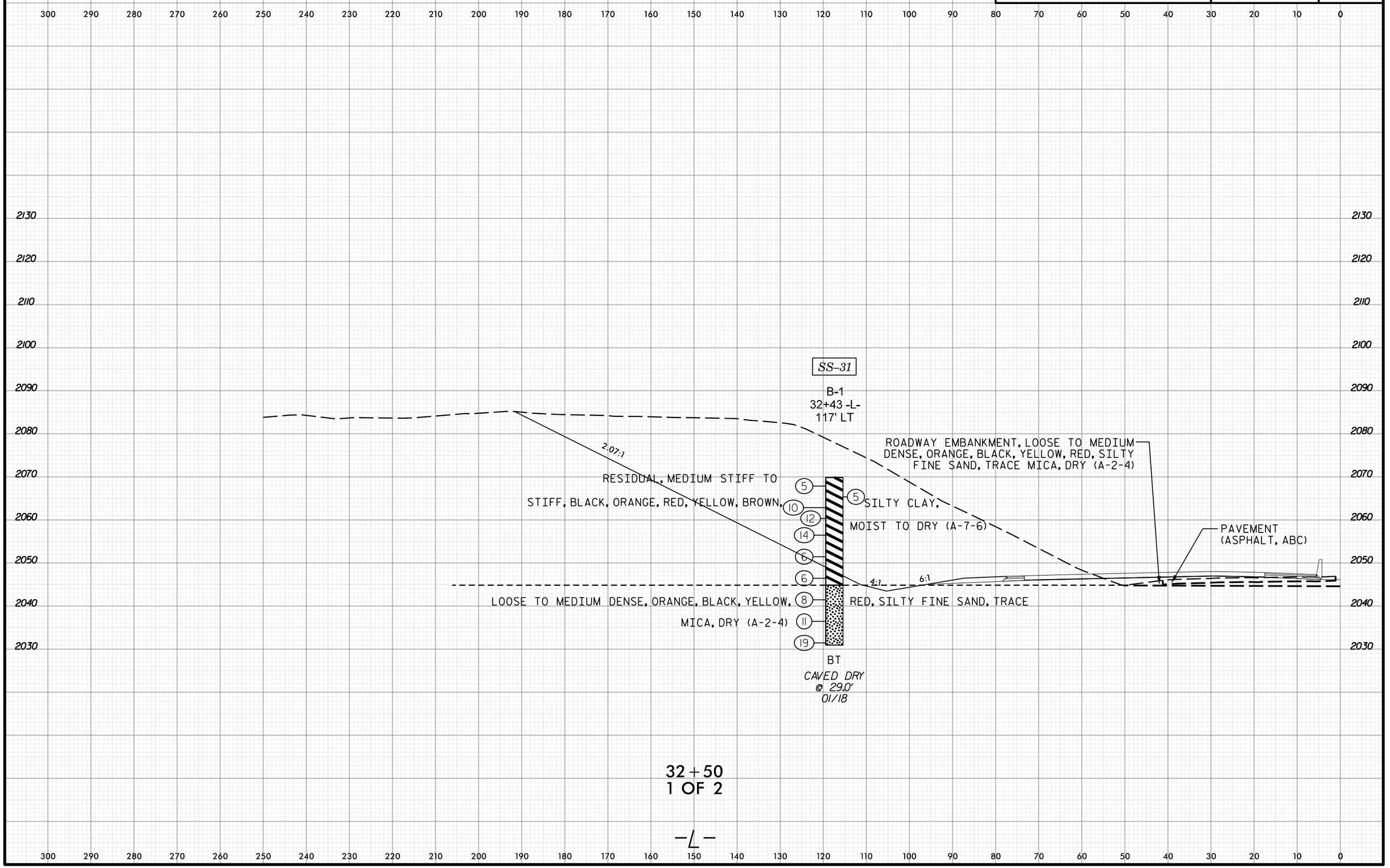
PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	38



32+00
2 OF 2
-L-

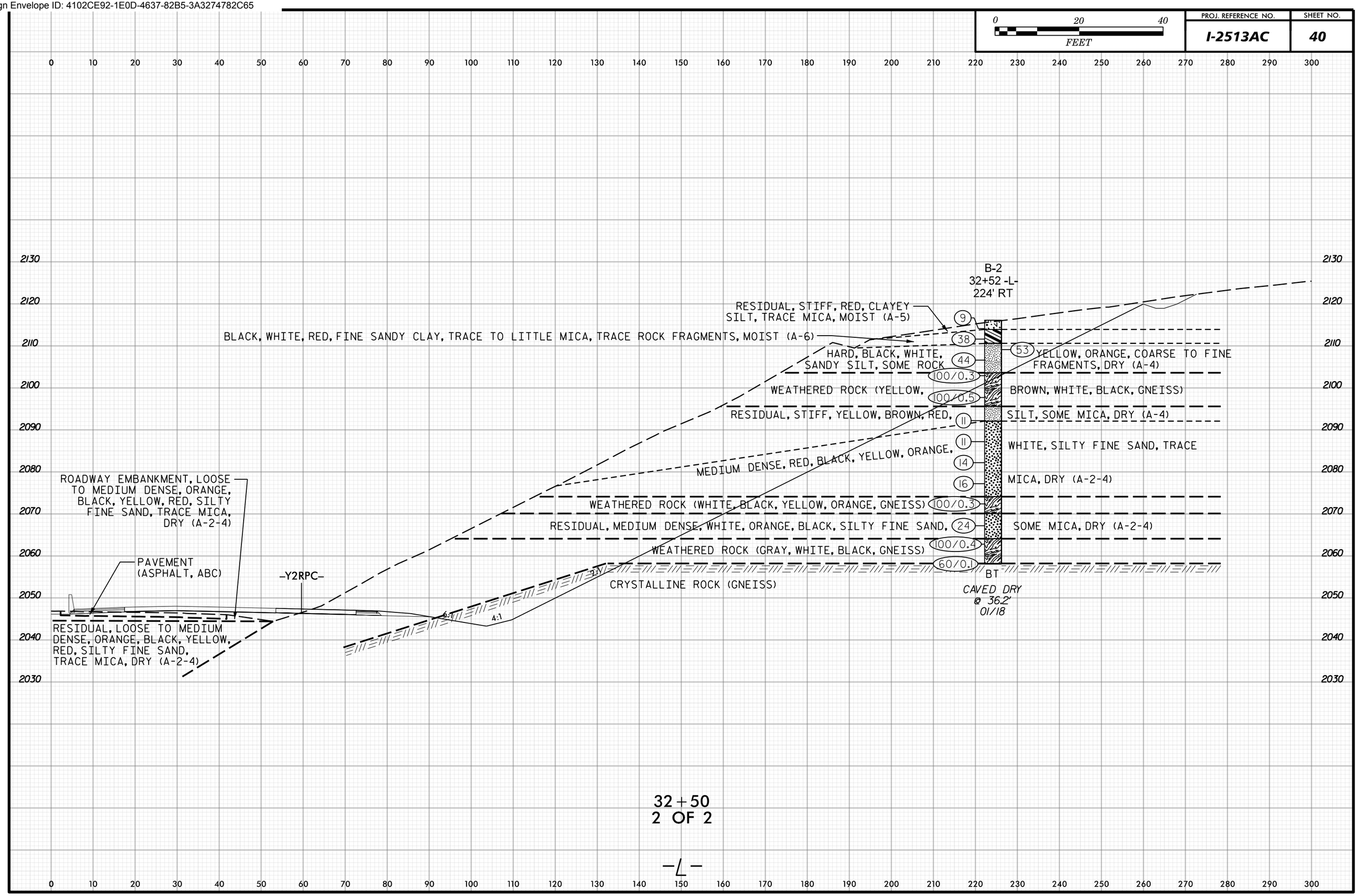
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	39



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	40



32+50
2 OF 2

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	41

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

2100
2090
2080
2070
2060
2050
2040
2030

2.07:1

RESIDUAL, MEDIUM STIFF TO STIFF, RED, BLACK, ORANGE, YELLOW, BROWN, SILTY CLAY, HIGHLY PLASTIC, TRACE TO LITTLE MICA, MOIST (A-7-6)

4:1

6:1

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, ORANGE, BLACK, YELLOW, RED, SILTY FINE SAND, TRACE MICA, DRY (A-2-4)

EXISTING PAVEMENT

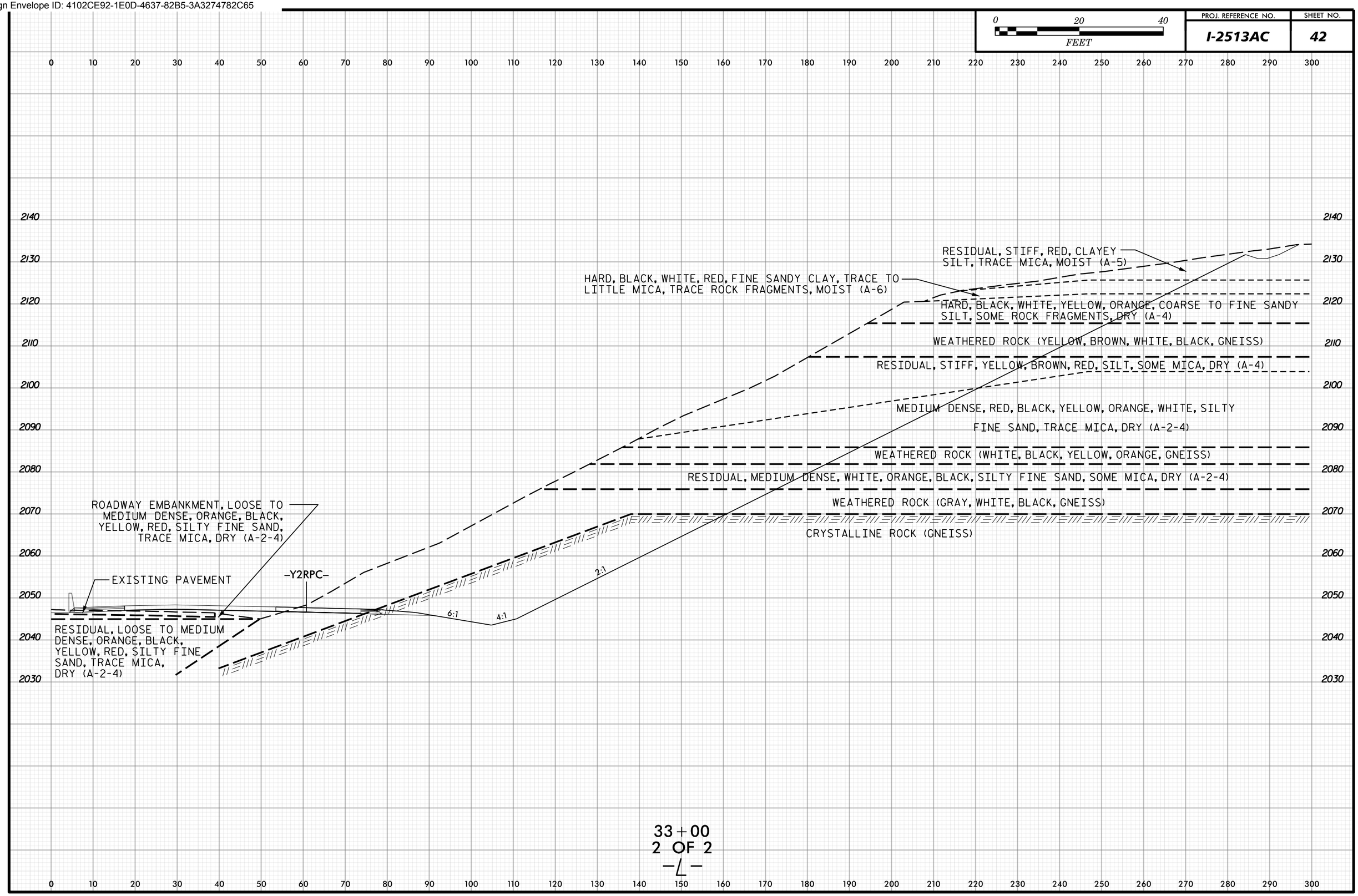
LOOSE TO MEDIUM DENSE, ORANGE, BLACK, YELLOW, RED, SILTY FINE SAND, TRACE MICA, DRY (A-2-4)

33+00
1 OF 2
-L-

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	42



33+00
2 OF 2
-L-

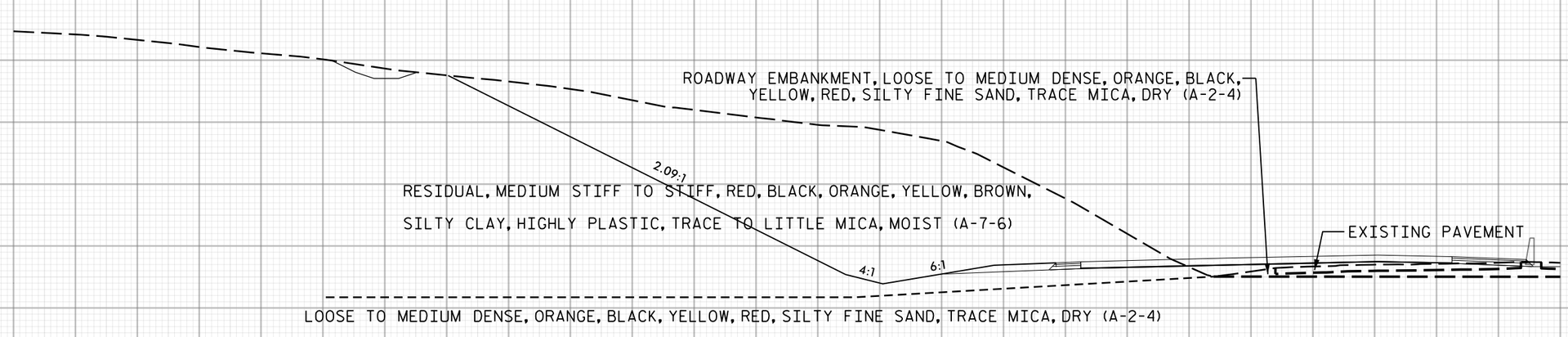
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	43

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

2140
2130
2120
2110
2100
2090
2080
2070
2060
2050
2040

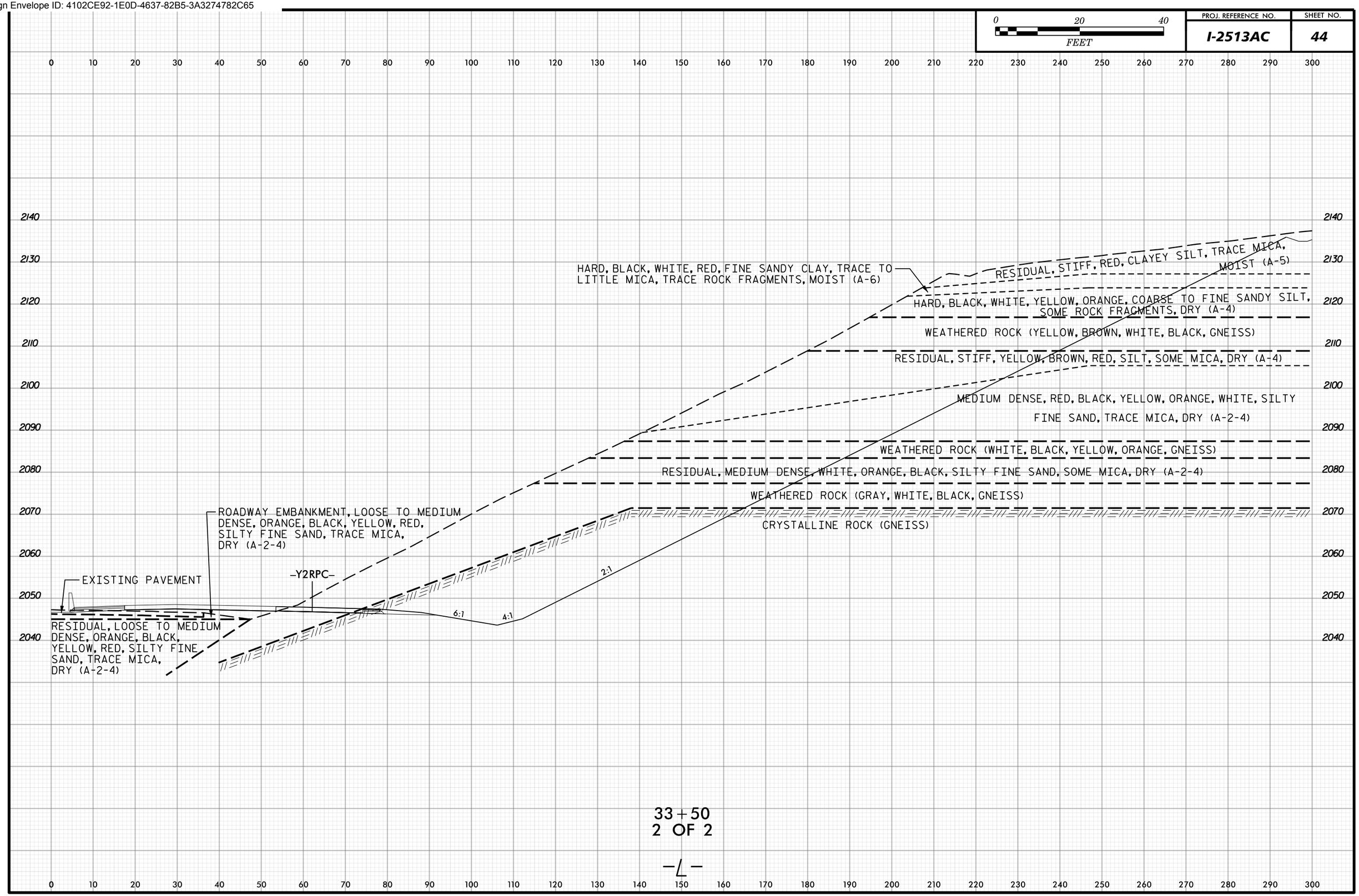


33+50
1 OF 2

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	44



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	45

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

2140
2130
2120
2110
2100
2090
2080
2070
2060
2050
2040
2030

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, ORANGE, BLACK, YELLOW, RED, SILTY FINE SAND, TRACE MICA, DRY (A-2-4)

2.15:1

RESIDUAL, MEDIUM STIFF TO STIFF, RED, BLACK, ORANGE, YELLOW, BROWN, SILTY CLAY, HIGHLY PLASTIC, TRACE TO LITTLE MICA, MOIST (A-7-6)

4:1

6:1

EXISTING PAVEMENT

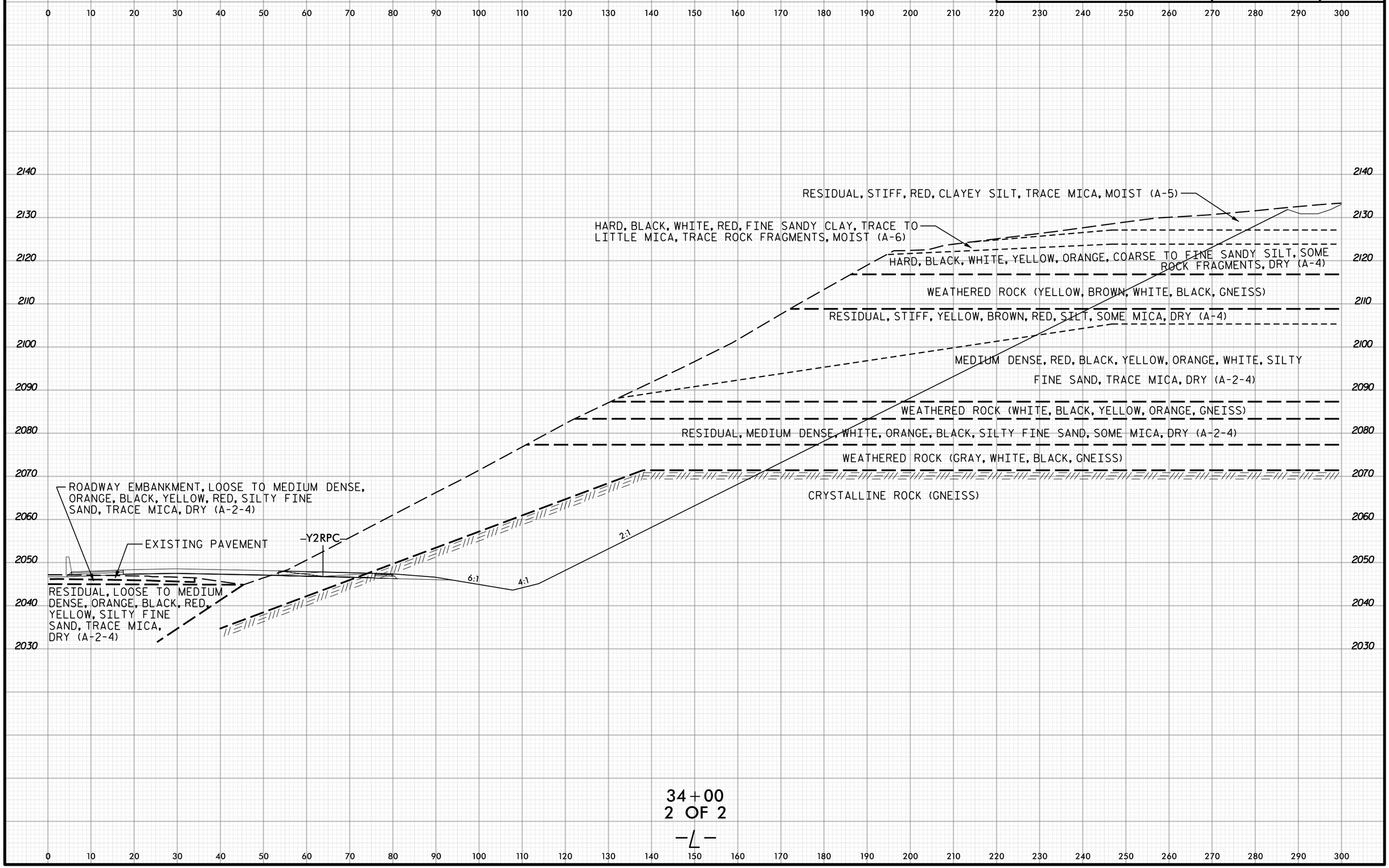
LOOSE TO MEDIUM DENSE, ORANGE, BLACK, YELLOW, RED, SILTY FINE SAND, TRACE MICA, DRY (A-2-4)

34+00
1 OF 2

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	46



34+00
2 OF 2
—L—

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	47

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

2140
2130
2120
2110
2100
2090
2080
2070
2060
2050
2040
2030

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, ORANGE, BLACK, YELLOW, RED, SILTY FINE SAND, TRACE MICA, DRY (A-2-4)

EXISTING PAVEMENT

2:1

4:1

RESIDUAL, MEDIUM STIFF TO STIFF, RED, BLACK, ORANGE, YELLOW, BROWN, SILTY CLAY, HIGHLY PLASTIC, TRACE TO LITTLE MICA, MOIST (A-7-6)

LOOSE TO MEDIUM DENSE, ORANGE, BLACK, YELLOW, RED, SILTY FINE SAND, TRACE MICA, DRY (A-2-4)

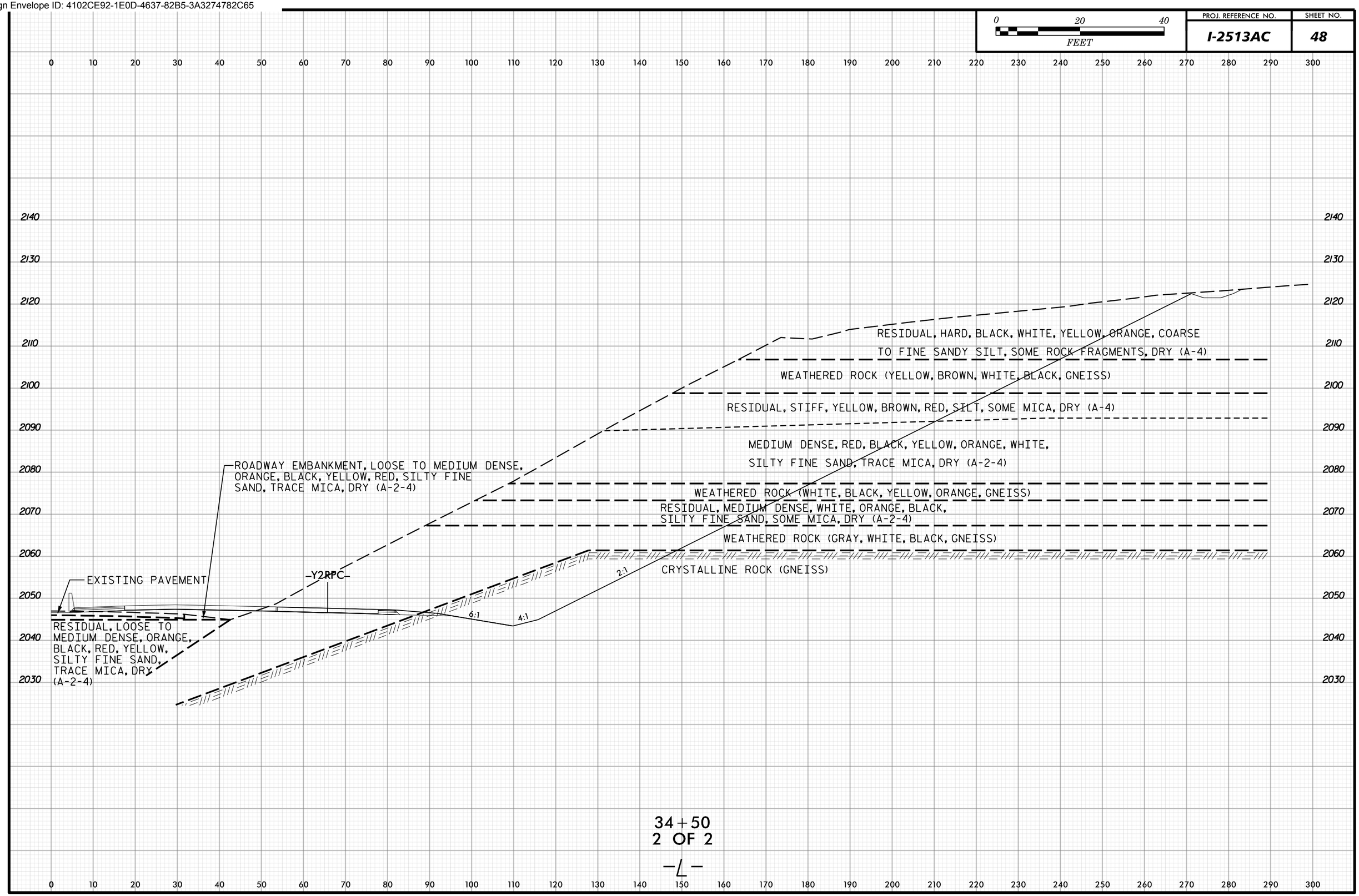
34+50
1 OF 2
-L-

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	48



34+50
2 OF 2

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	49

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

2130
2120
2110
2100
2090
2080
2070
2060
2050
2040
2030
2020

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, ORANGE, BLACK, YELLOW, RED, SILTY FINE SAND, TRACE MICA, DRY (A-2-4)

RESIDUAL, MEDIUM STIFF TO STIFF, RED, BLACK, ORANGE, YELLOW, BROWN, SILTY CLAY, HIGHLY PLASTIC, TRACE TO LITTLE MICA, MOIST (A-7-6)

EXISTING PAVEMENT

4.95:1

LOOSE TO MEDIUM DENSE, ORANGE, BLACK, YELLOW, RED, SILTY FINE SAND, TRACE MICA, DRY (A-2-4)

35+00
1 OF 2

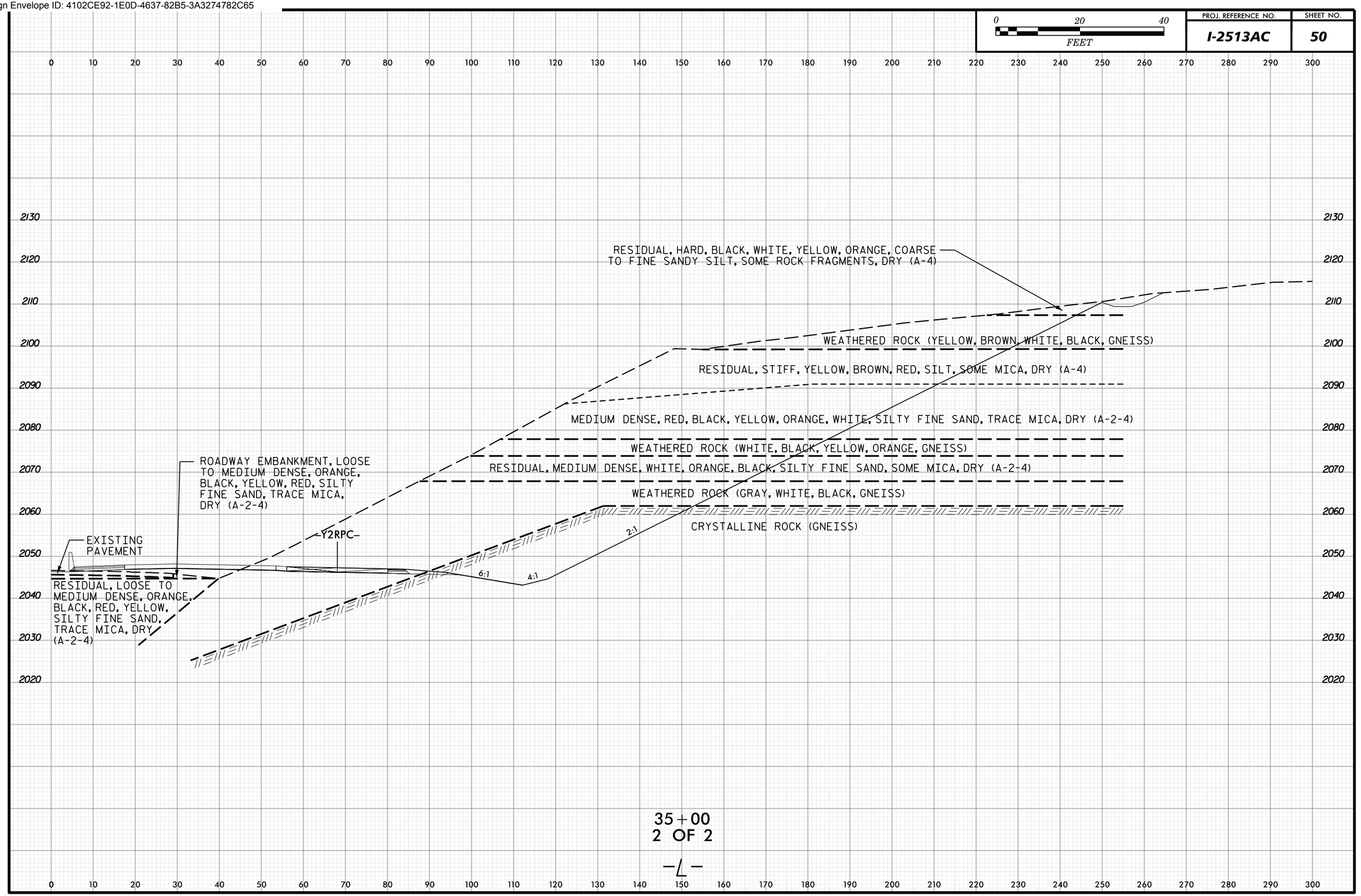
-L-

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	50

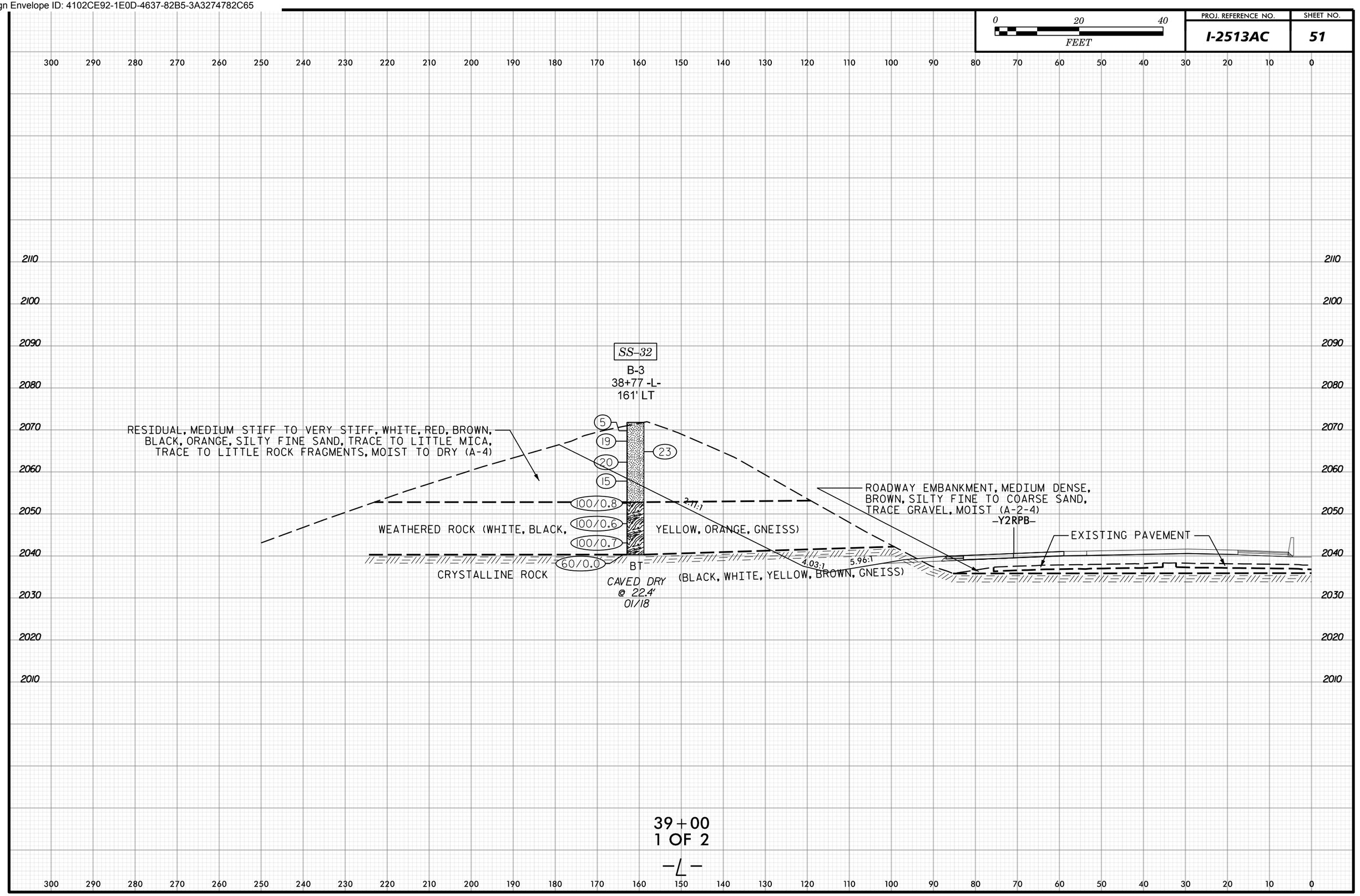


35+00
2 OF 2

—L—

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	51



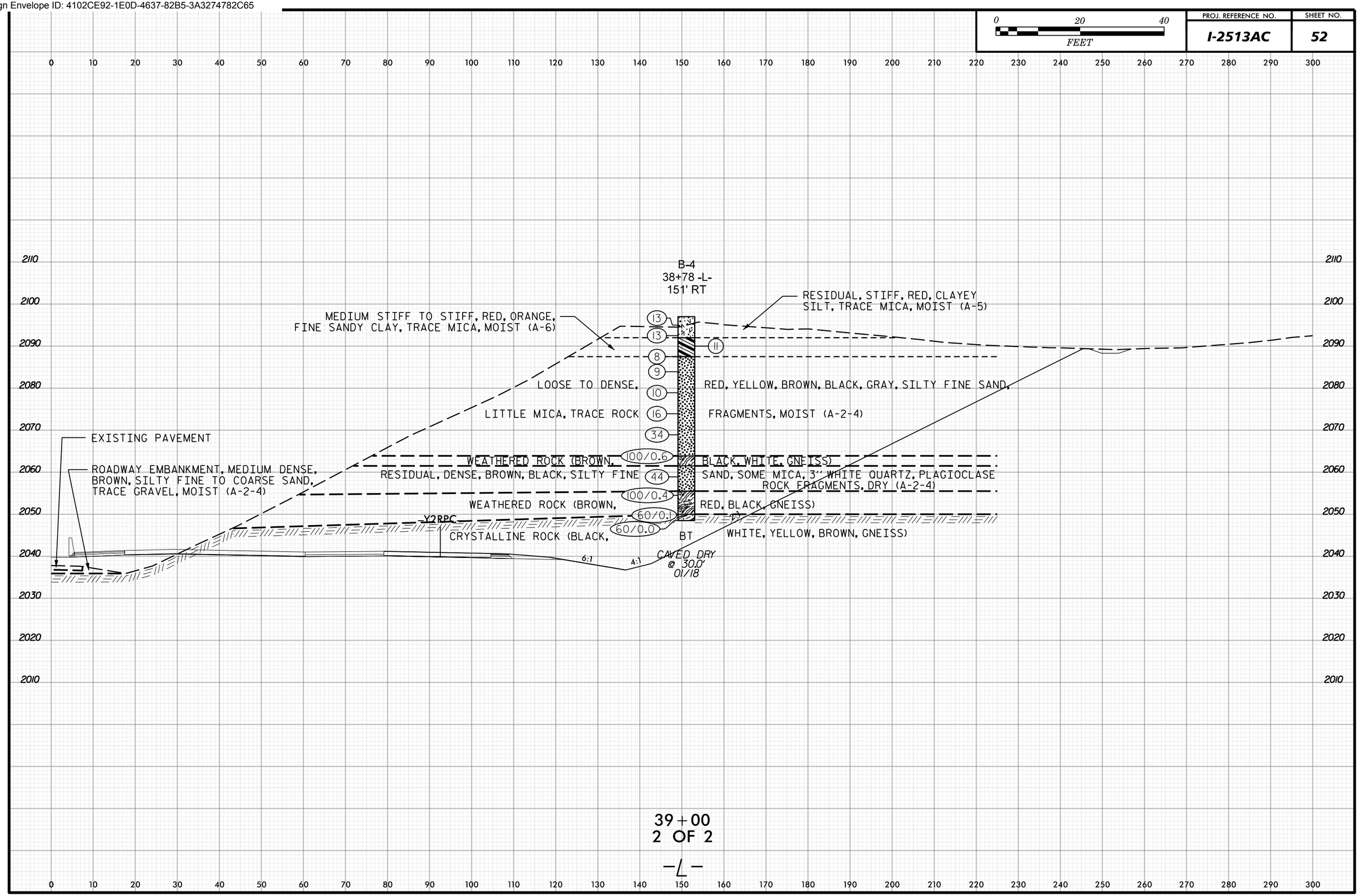
39+00
1 OF 2

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	52



39+00
2 OF 2

—L—

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	53

280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20

2090
2080
2070
2060
2050
2040
2030
2020
2010

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

2.14:1
4.05:1
5.96:1

-Y2RPB-

PAVEMENT (ASPHALT, ABC)

T-100
39+88 -L-
CL

RESIDUAL, DENSE, LIGHT BROWN, SILTY FINE TO, COARSE SAND, TRACE MICA, MOIST (A-2-4)
WEATHERED ROCK (TAN, GRAY, GNEISS)
RESIDUAL, VERY DENSE, TAN, LIGHT BROWN, SILTY FINE TO COARSE SAND, MOIST (A-2-4)
WEATHERED ROCK (TAN, GRAY, WHITE GNEISS)

18
36
51
100/0.3
100/0.2
100/0.9

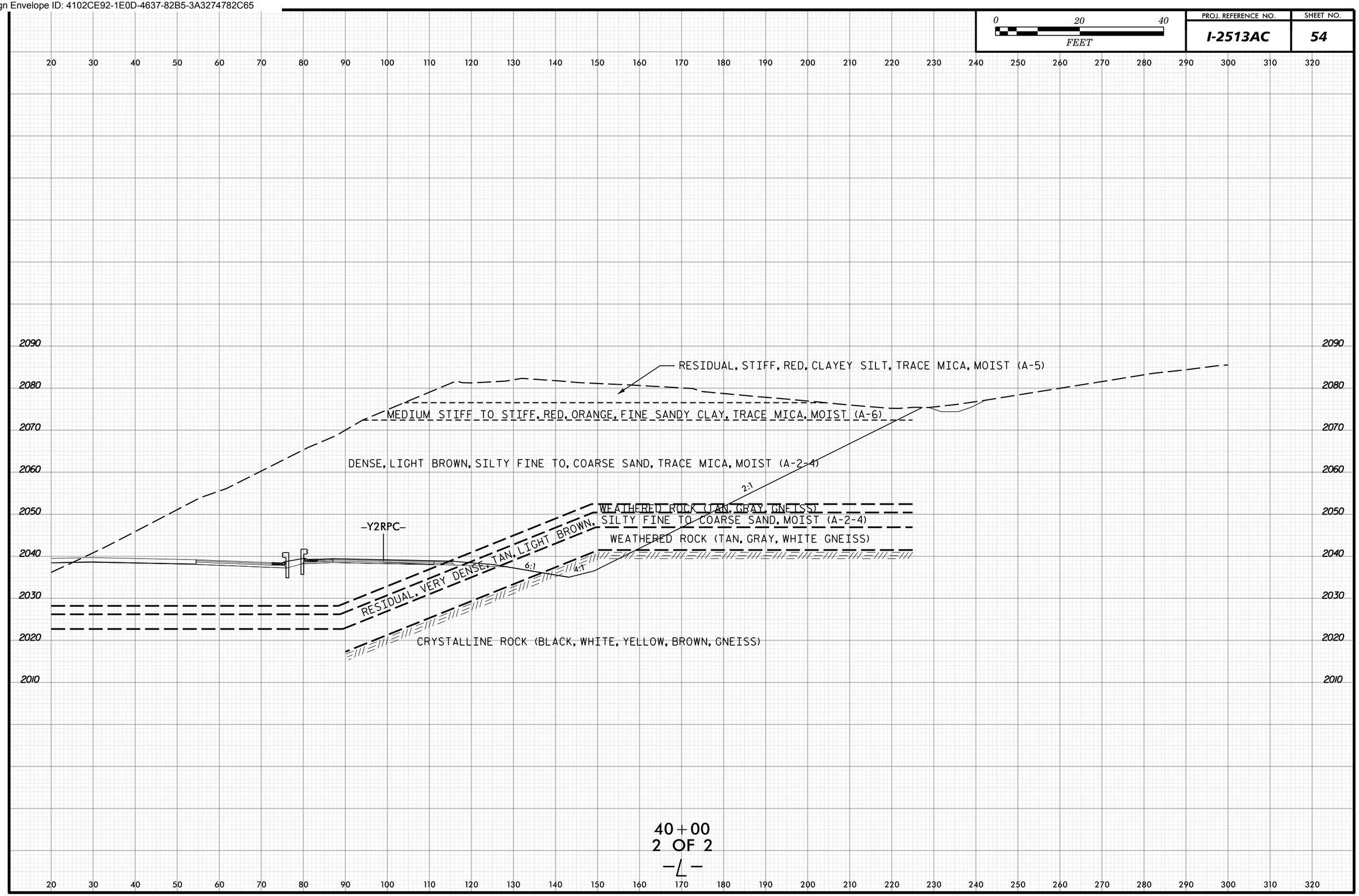
BT

FIAD
06/22

40+00
1 OF 2
-L-

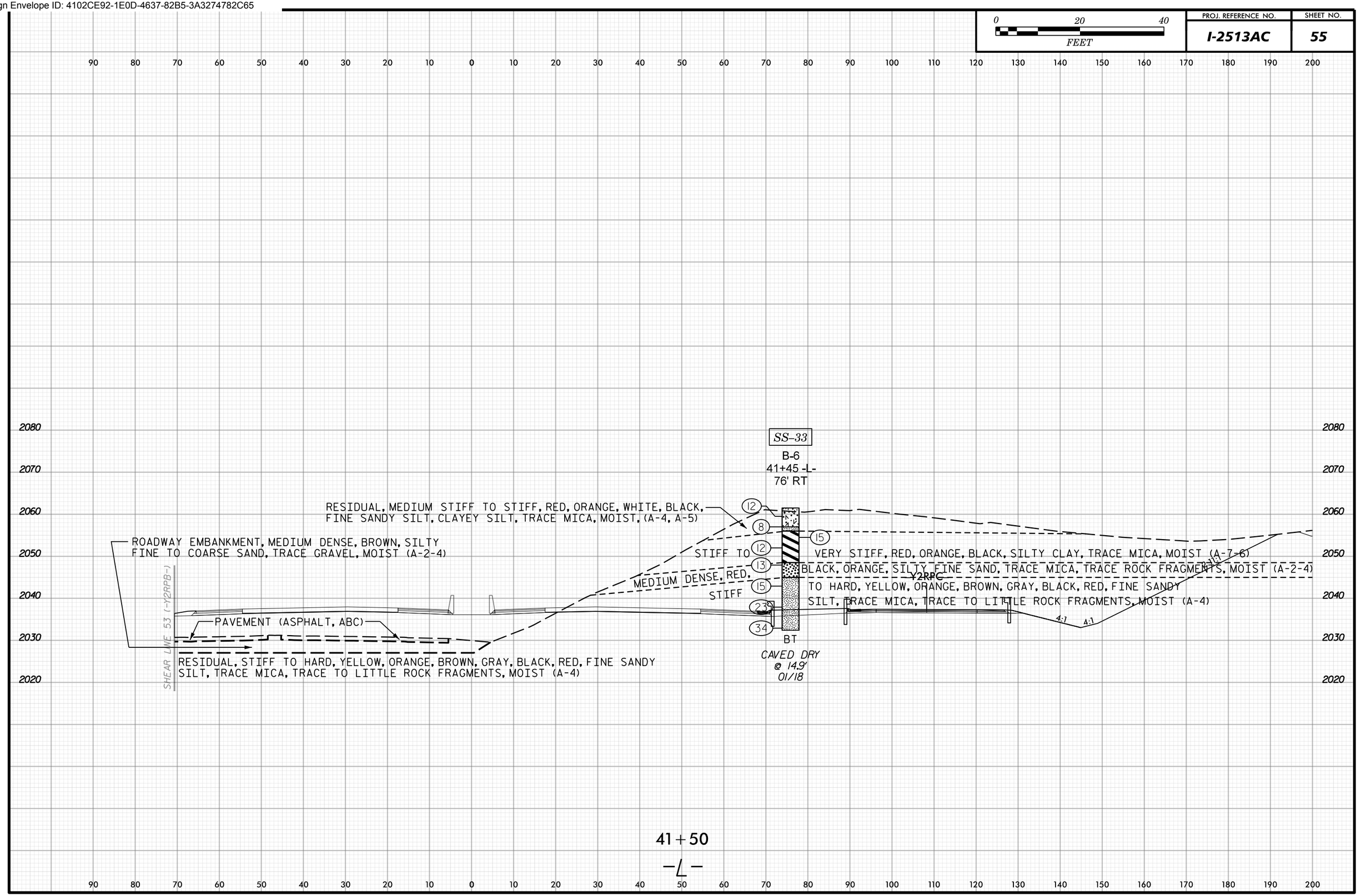
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	54



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

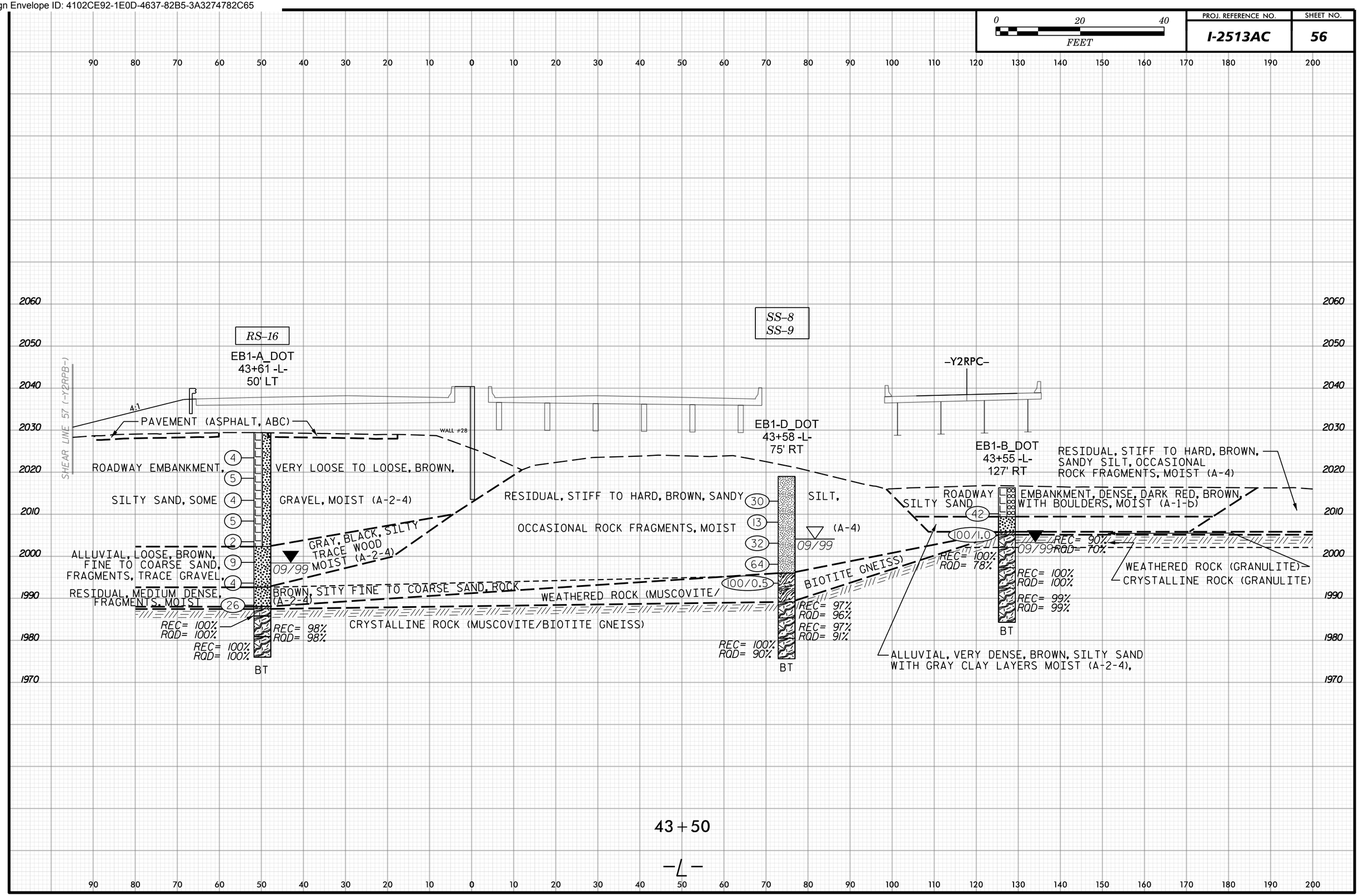
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	55



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

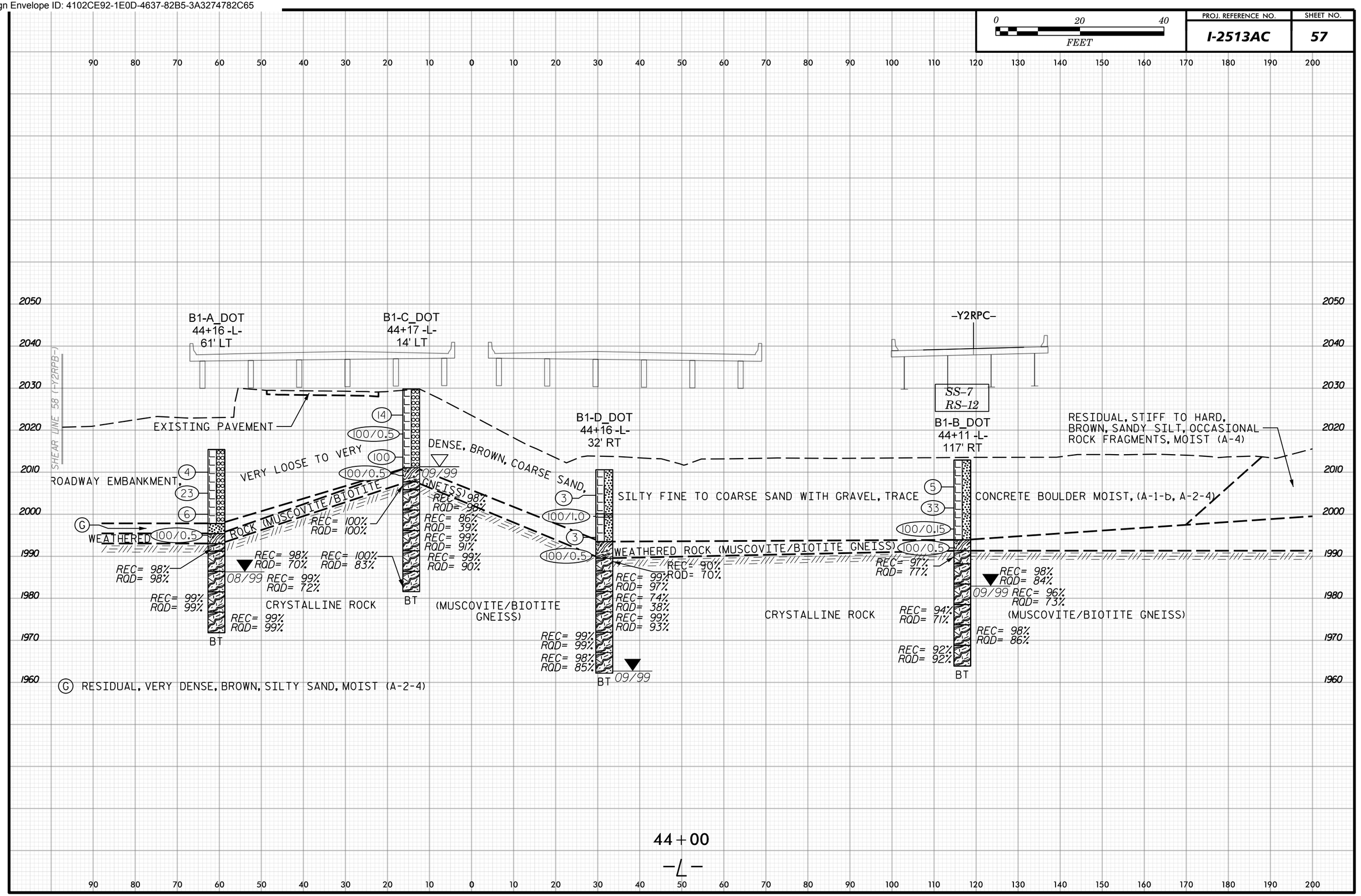
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	56



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

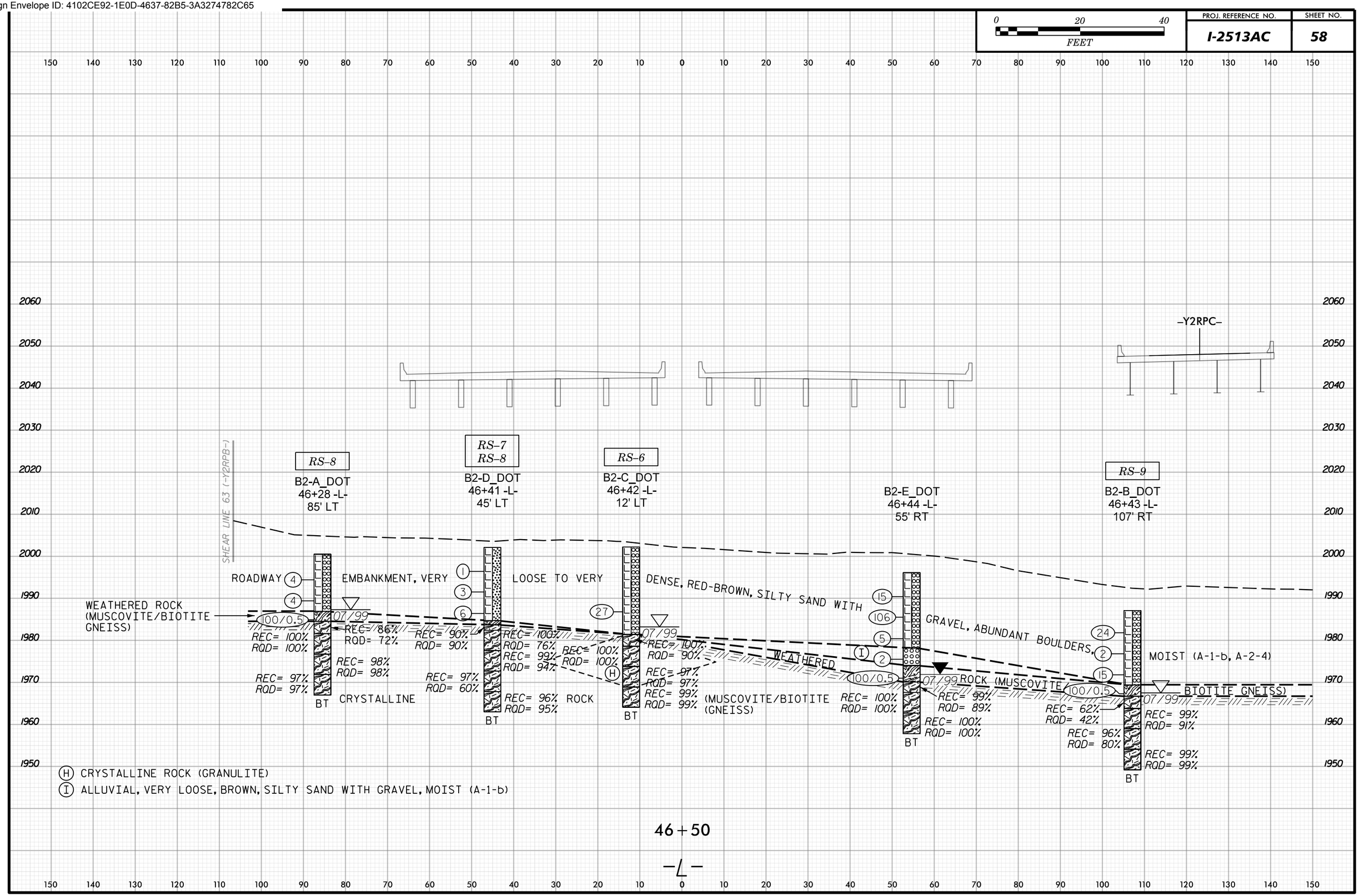
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	57



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	58



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	59

0 20 40 FEET

SS-34
B-9
49+44 -L-
148' RT

RESIDUAL, MEDIUM STIFF TO STIFF, RED, SILTY CLAY, LITTLE MICA, MOIST (A-7)

STIFF TO VERY STIFF, YELLOW-BROWN, RED, YELLOW-ORANGE, BLACK, SILTY FINE SAND, TRACE TO LITTLE MICA, TRACE ROCK FRAGMENTS, MOIST TO DRY (A-2-4)

–Y2RPC–

VERY STIFF TO HARD, BROWN, YELLOW-ORANGE, GRAY, BLACK, FINE SANDY SILT, TRACE TO LITTLE MICA, TRACE ROCK FRAGMENTS, DRY (A-4)

WALL #1

SHEAR LINE 69 (–Y2RPB–)

SHEAR LINE 2 (–Y2–)

8 11 12 14 17 15 19 20 22 23 31

BT

CAVED DRY @ 34.5' 01/18

49+50

SS-1
EB2-A_DOT
47+52 -L-
112' LT

SS-2
SS-3
SS-4
EB2-C_DOT
47+51 -L-
3' RT

SS-5
EB2-D_DOT
47+51 -L-
46' RT

SS-6
EB2-B_DOT
47+50 -L-
102' RT

–Y2RPC–

PAVEMENT (ASPHALT, ABC)

RESIDUAL, MEDIUM DENSE TO VERY DENSE, BROWN, SILTY SAND WITH QUARTZ AND SOME WEATHERED ROCK FRAGMENTS, MOIST (A-2-4, A-2-5)

WEATHERED ROCK (MUSCOVITE/BIOTITE GNEISS WITH OCCASIONAL SEAMS VERY DENSE SAPROLITE)

WEATHERED ROCK WITH SAPROLITE SEAMS (GNEISS)

WEATHERED ROCK (MUSCOVITE/BIOTITE GNEISS)

CRYSTALLINE ROCK (MUSCOVITE/BIOTITE GNEISS)

BIOTITE GNEISS)

89 WEATHERED 100 100/0.5 — REC= 52% RQD= 16% REC= 64% RQD= 36% — BT

07/99 — REC= 98% RQD= 85% CRYSTALLINE ROCK (MUSCOVITE/BIOTITE GNEISS)

34 45 30 13 100/0.5 100 100/0.5 — BT

07/99

123 75 100/0.5 28 100/0.5 — REC= 99% RQD= 99% — BT

07/99 — REC= 93% RQD= 84% REC= 95% RQD= 0%

24 11 59 106 — BT

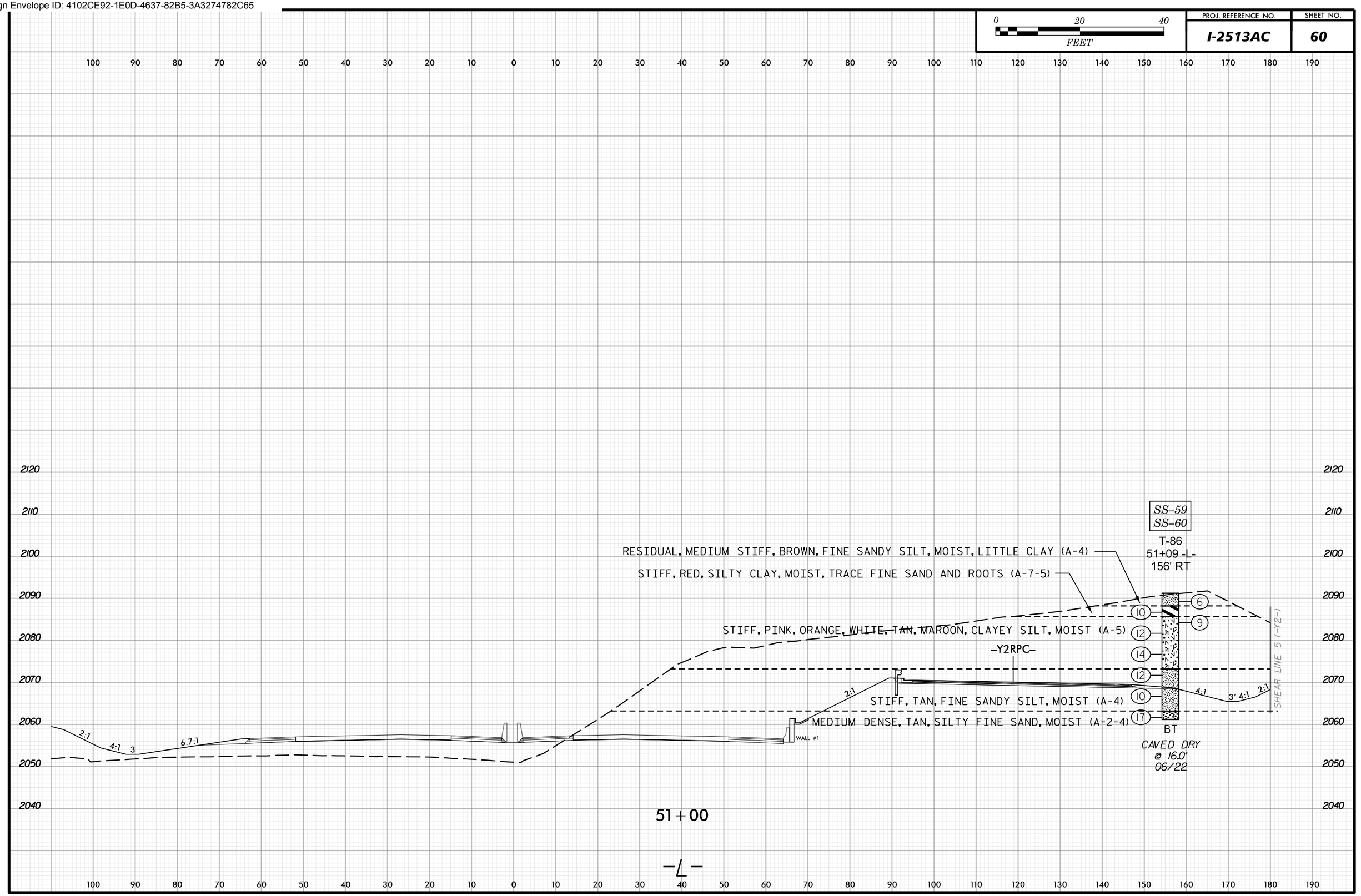
07/99 — REC= 92% RQD= 67% REC= 100% RQD= 100%

47+50
–L–

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	60



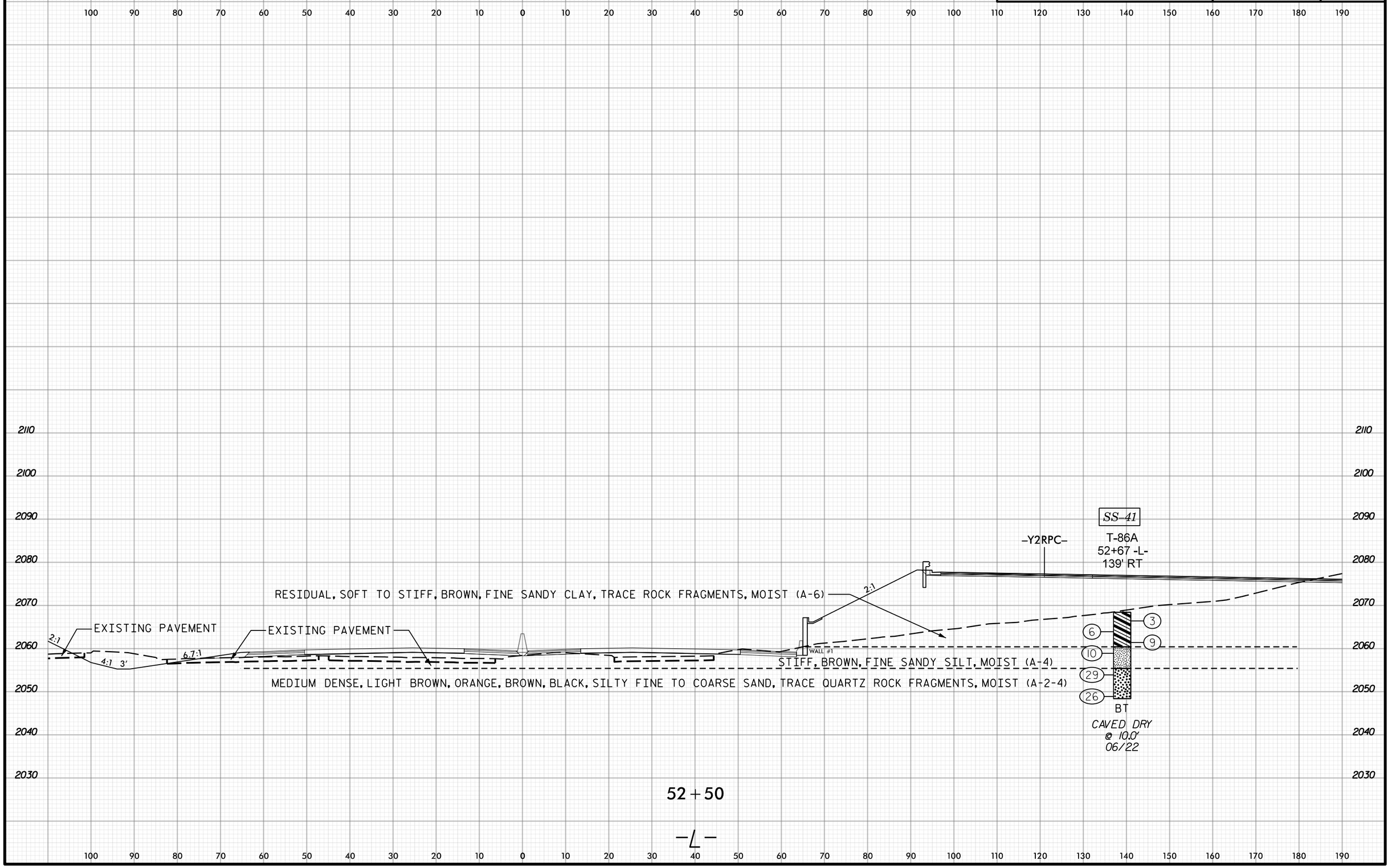
51+00

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

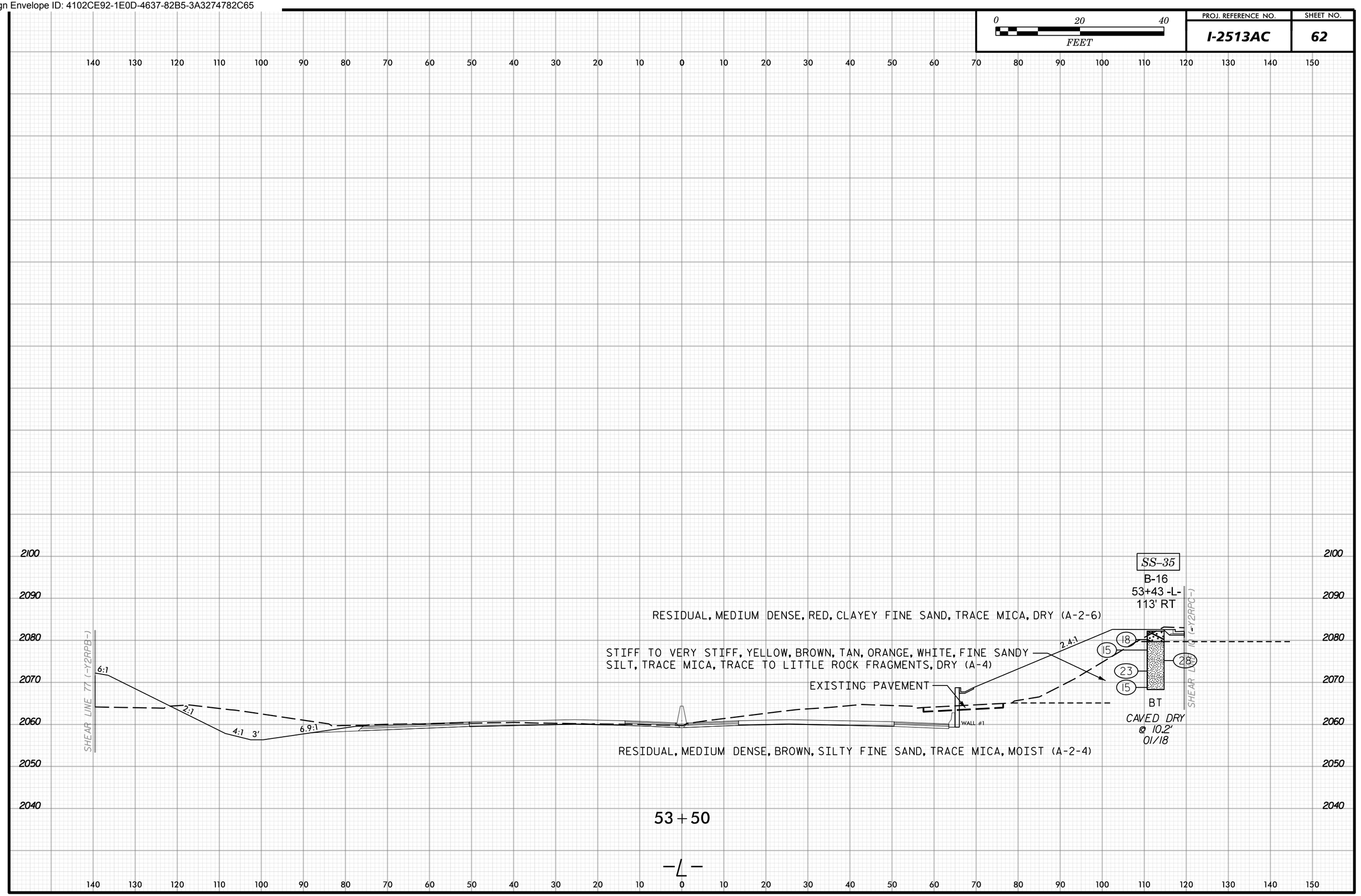
PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	61



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

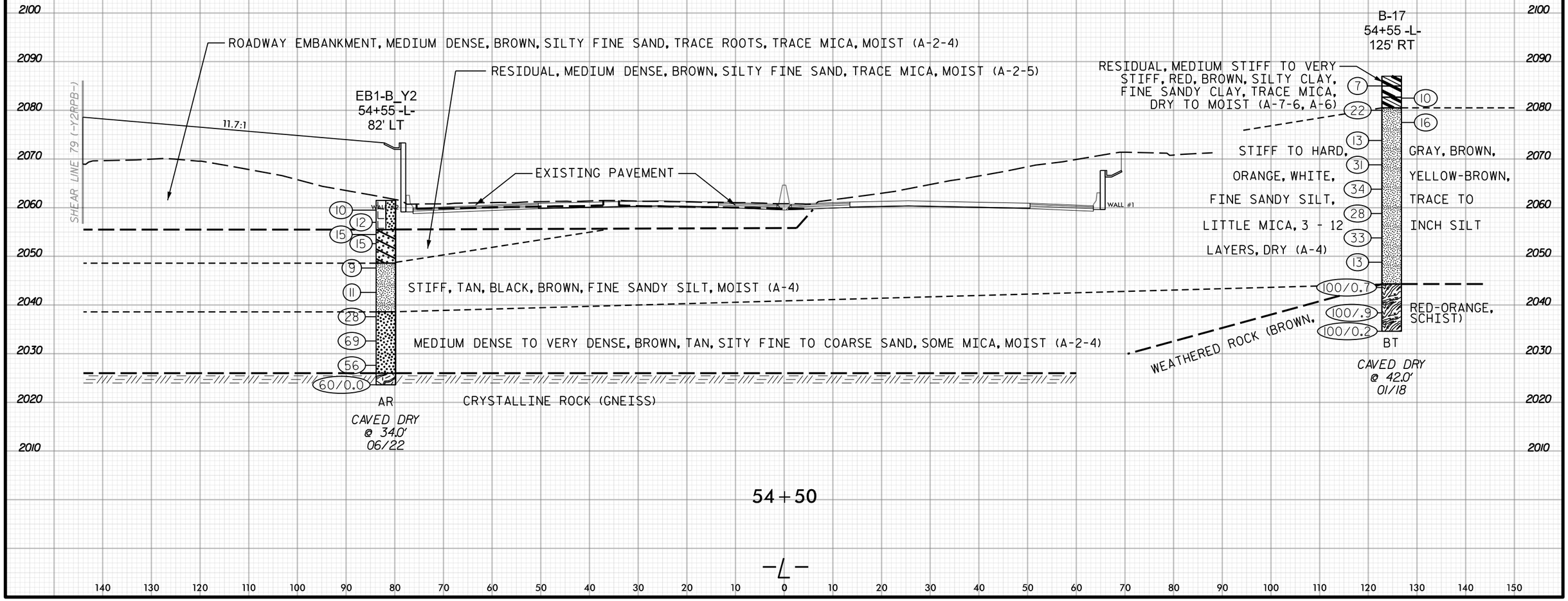
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	62



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	63

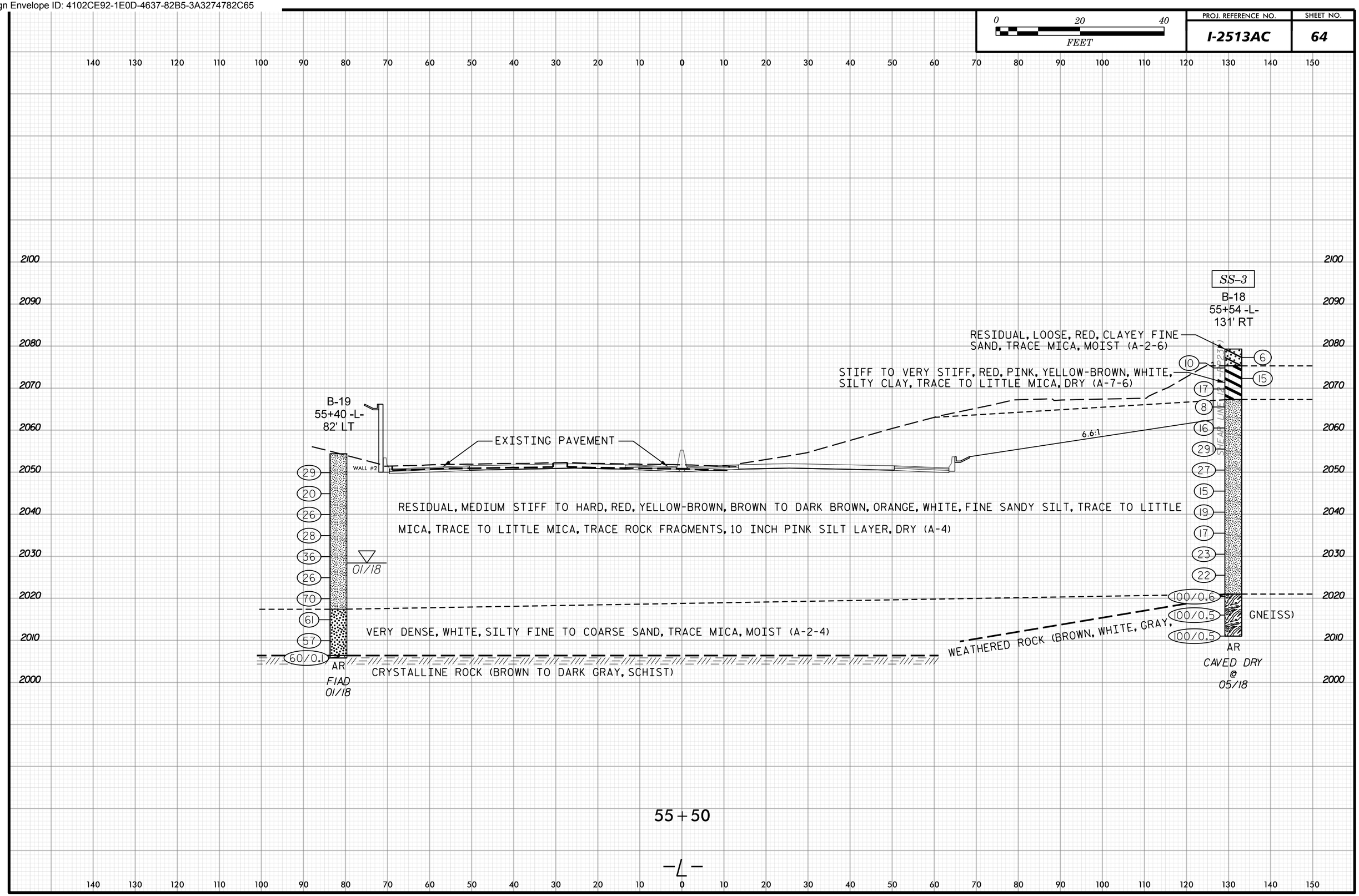


54+50

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	64



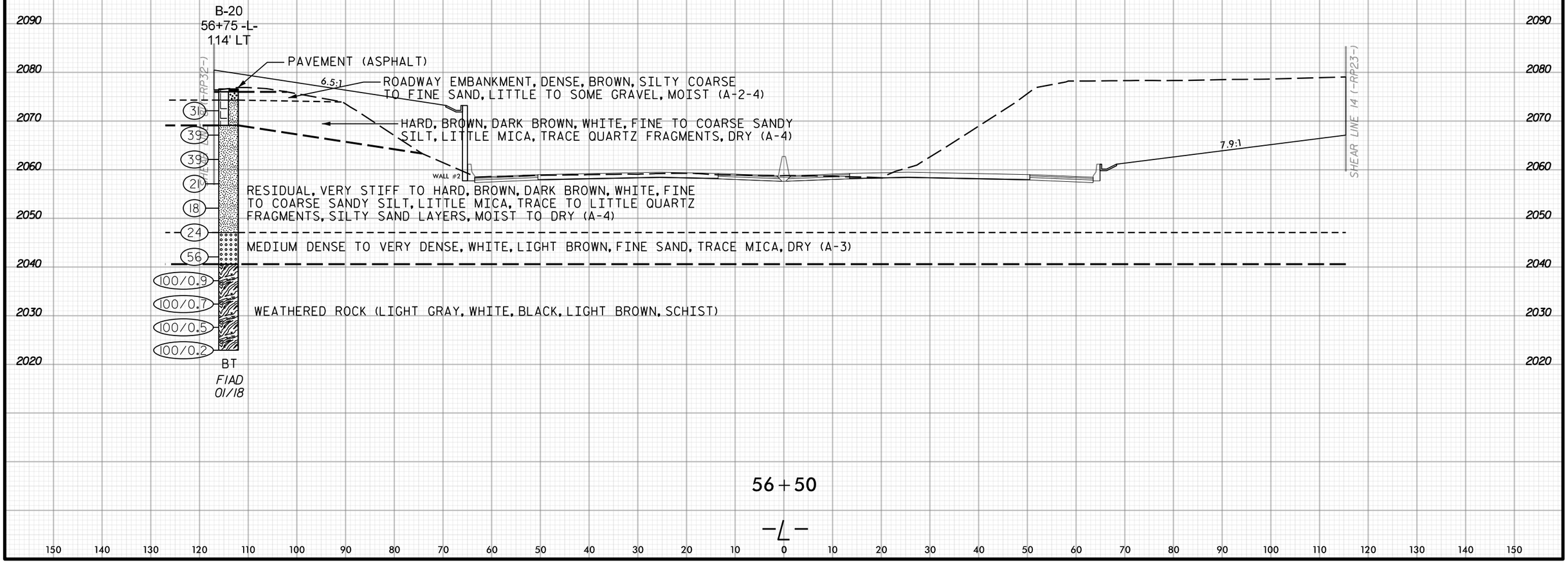
55+50

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

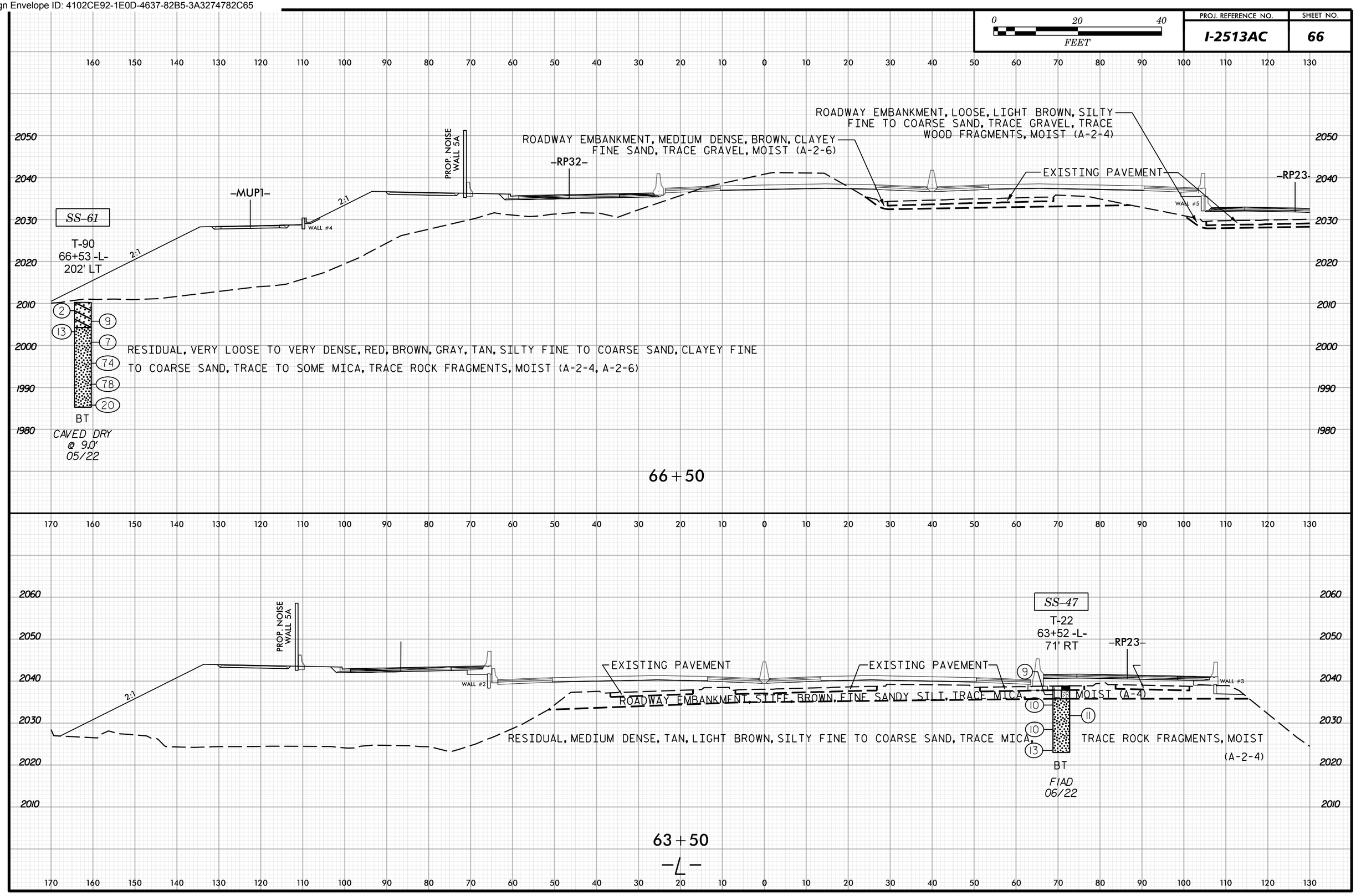
PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	65



56+50

-L-

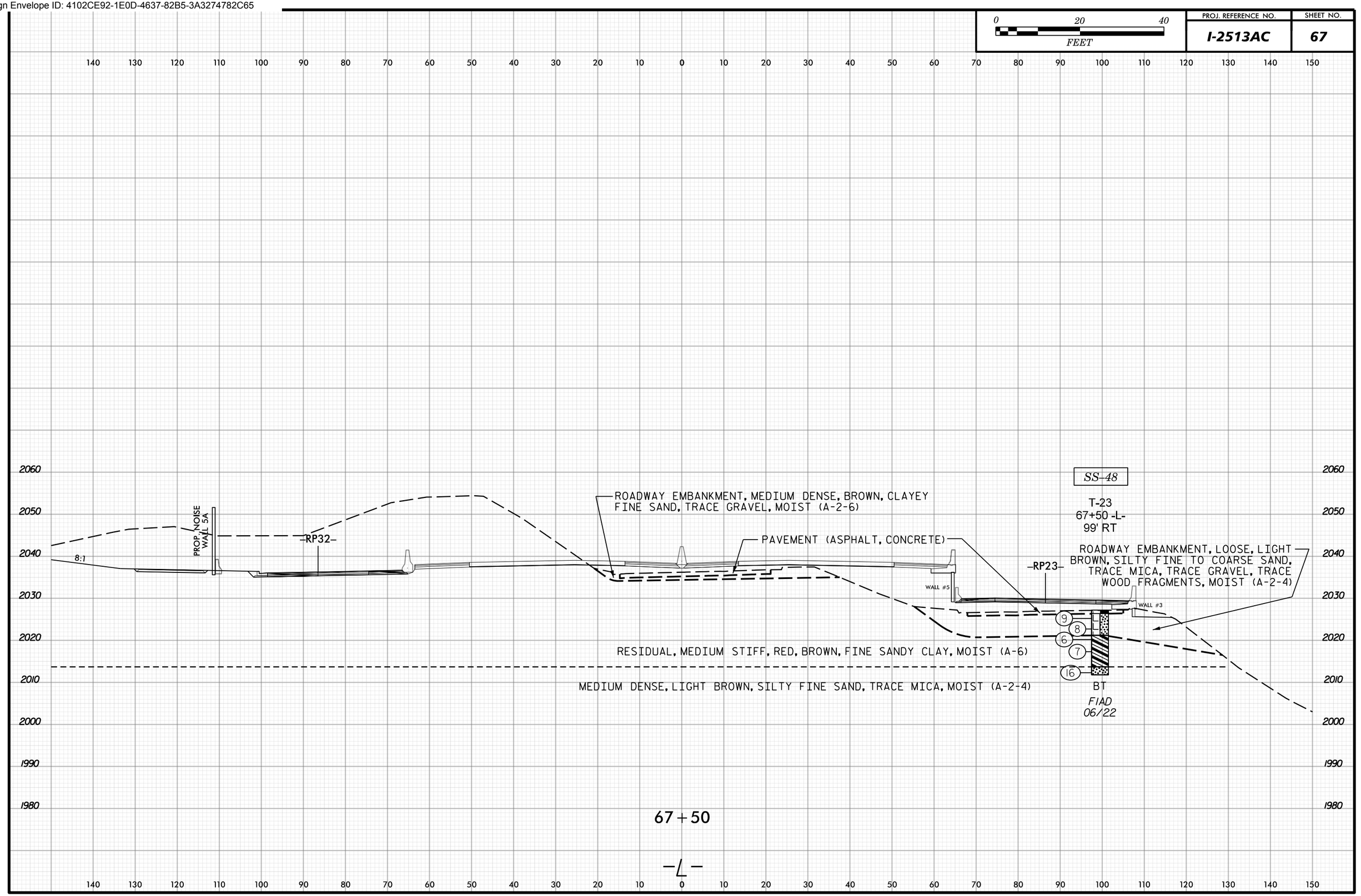
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	67



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	68

170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120

SS–62
SS–63

T-91
69+33 -L-
147' LT

2070
2060
2050
2040
2030
2020
2010

RESIDUAL,
MEDIUM STIFF, 5 10 RED, SILTY CLAY, MOIST, TRACE SAND (A-7-6)
20 15
2:1
MEDIUM DENSE 16 TO VERY DENSE, RED, BROWN, GRAY, ORANGE, TAN, WHITE, SILTY
50
35
25
FINE TO 28 COARSE SAND, MOIST, TRACE MICA, TRACE TO SOME QUARTZ ROCK FRAGMENTS (A-2-4)
40
BT

CAVED DRY
@ 24.2'
05/22

–RP32–

ROADWAY EMBANKMENT, MEDIUM DENSE, BROWN, CLAYEY FINE SAND, TRACE GRAVEL, MOIST (A-2-6)

ROADWAY EMBANKMENT, LOOSE, LIGHT BROWN, SILTY FINE TO COARSE SAND, TRACE MICA, TRACE GRAVEL, TRACE WOOD FRAGMENTS, MOIST (A-2-4)

WALL #5

–RP23–

EXISTING PAVEMENT

WALL #3

RESIDUAL, MEDIUM DENSE TO VERY DENSE, RED, BROWN, GRAY, ORANGE, TAN, WHITE, SILTY FINE TO COARSE SAND, MOIST, TRACE MICA, TRACE TO SOME GRAVEL SIZED QUARTZ FRAGMENTS (A-2-4)

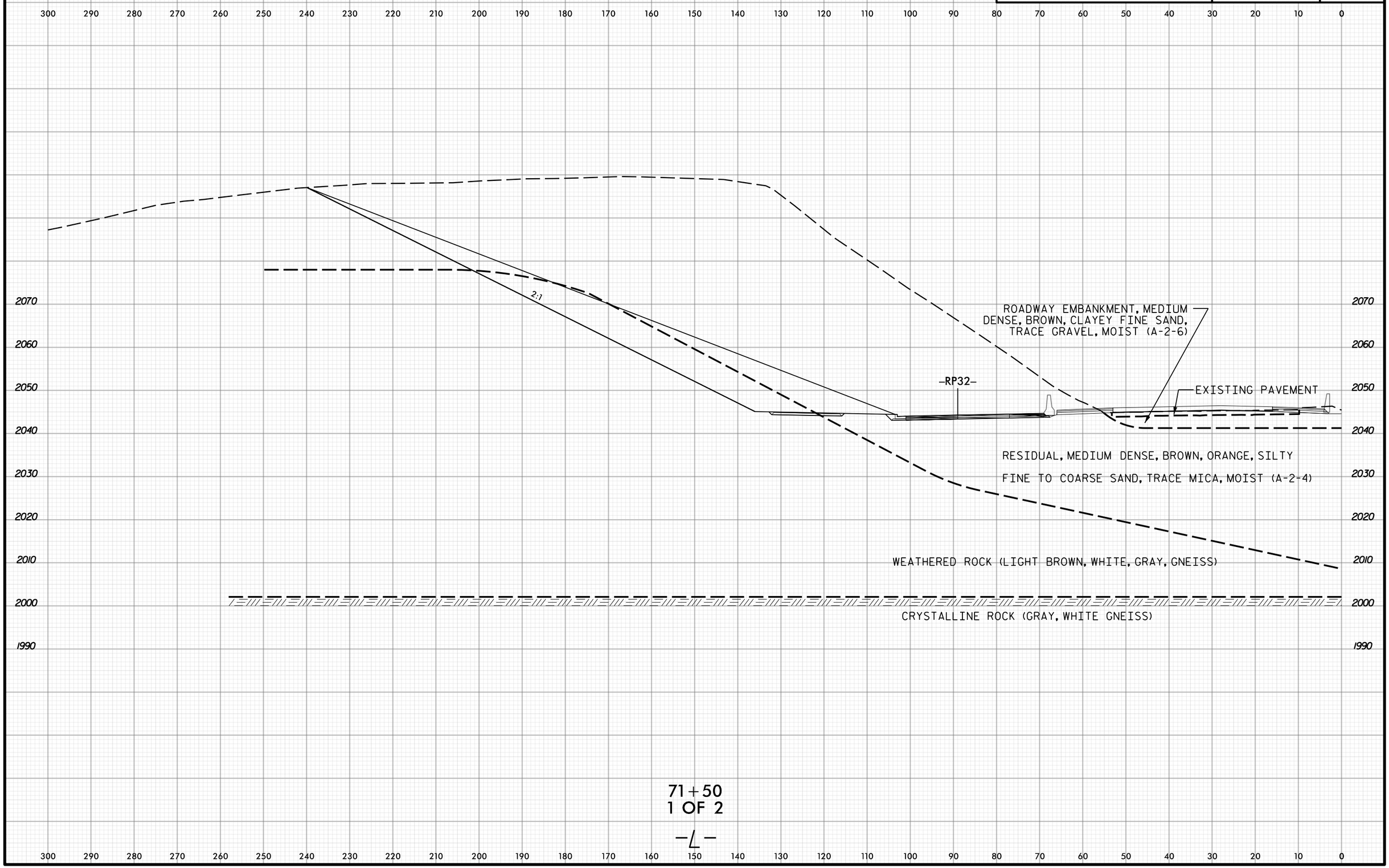
69+50
–L–

170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	69



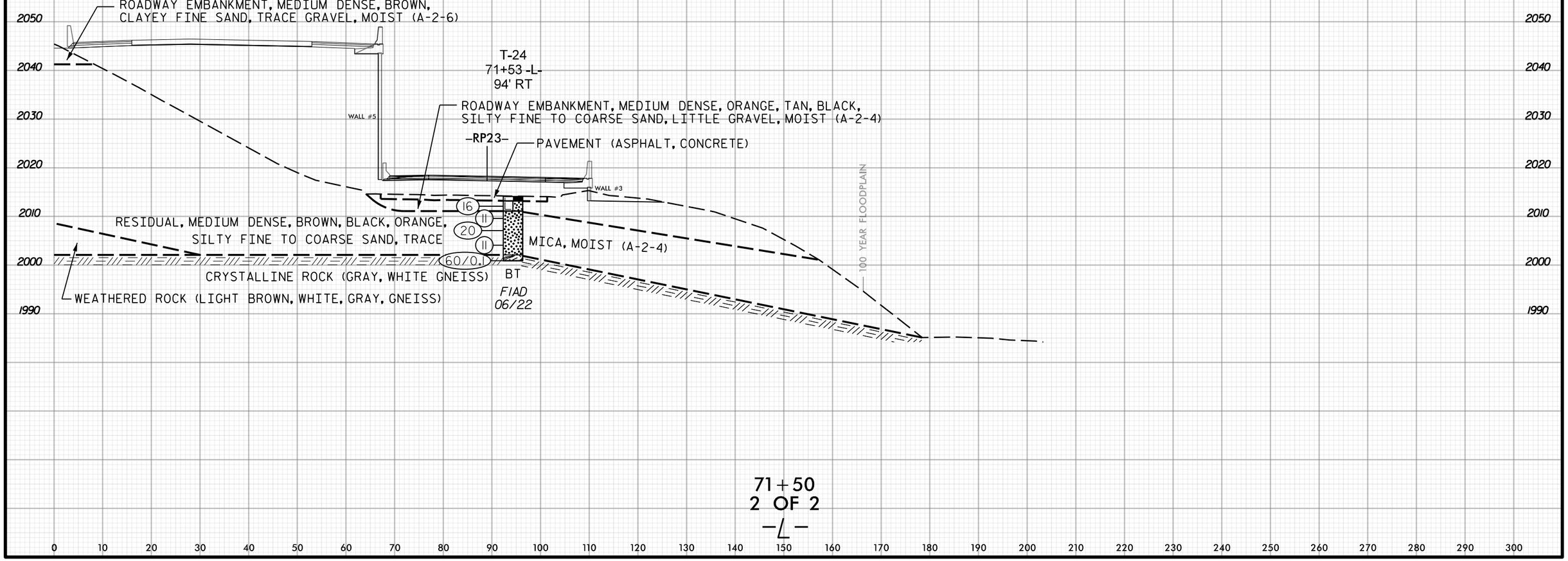
71+50
1 OF 2

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

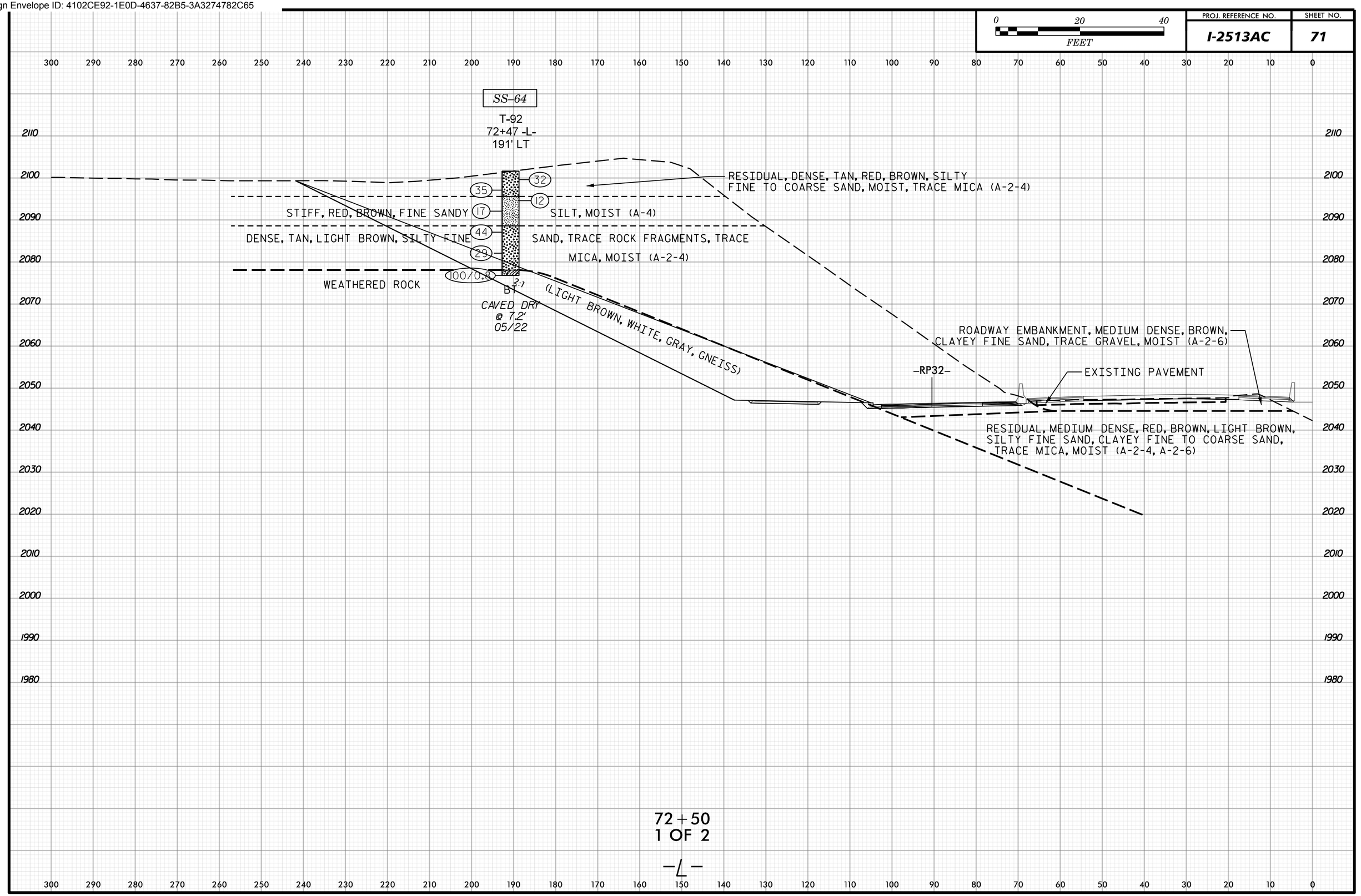
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	70



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	71



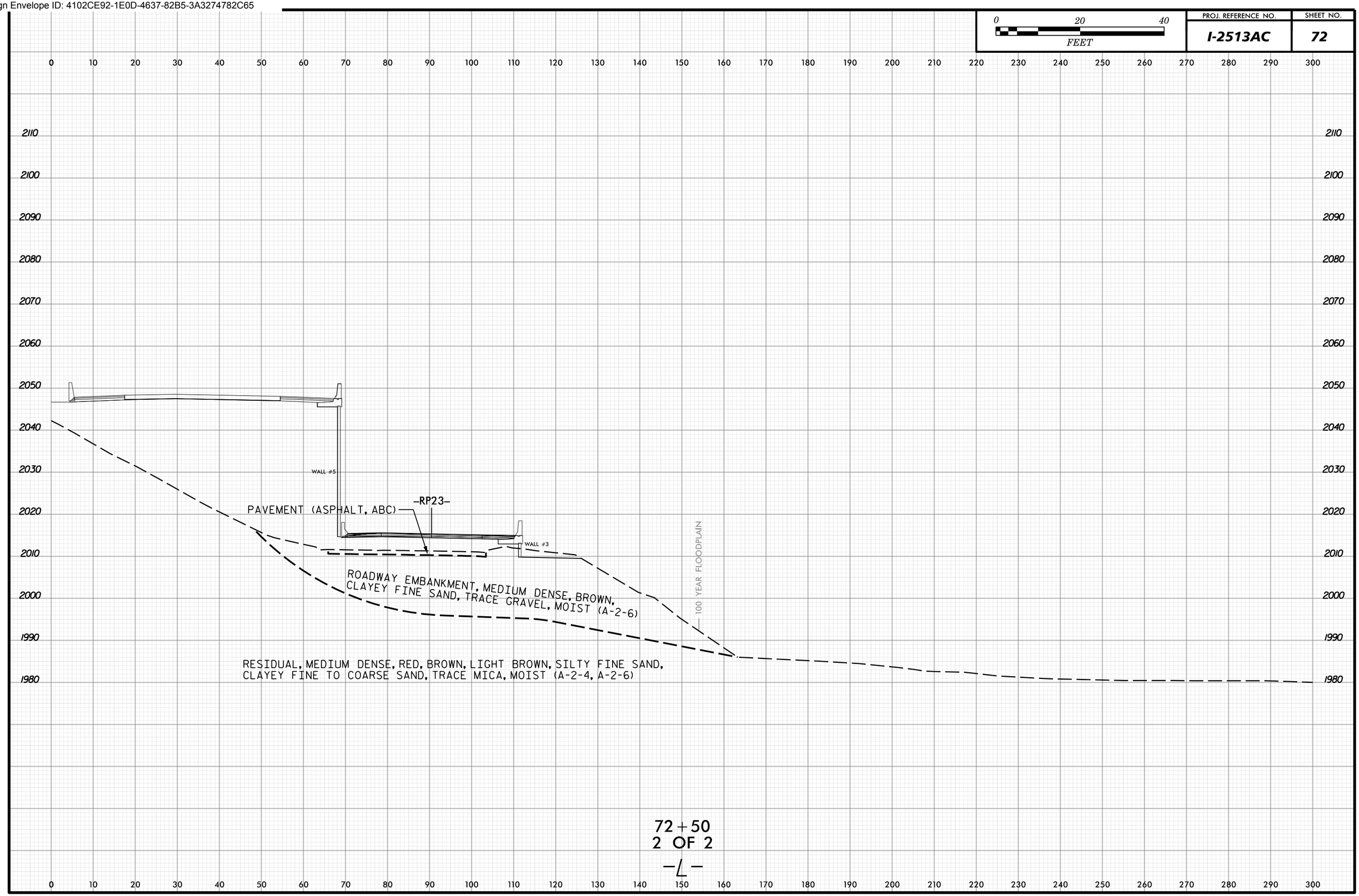
72+50
1 OF 2

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	72



72+50
2 OF 2
-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	73

0 20 40
FEET

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

2110
2100
2090
2080
2070
2060
2050
2040
2030
2020
2010
2000
1990
1980
1970

2:1
2:1
2:1

RESIDUAL, MEDIUM DENSE TO DENSE, RED, BROWN, WHITE, GRAY, SILTY FINE TO COARSE SAND, TRACE MICA TO MICACEOUS, TRACE CLAY, TRACE QUARTZ ROCK FRAGMENTS, MOIST (A-2-4)

ROADWAY EMBANKMENT, MEDIUM DENSE, BROWN, CLAYEY FINE SAND, TRACE GRAVEL, MOIST (A-2-6)

–RP32–

EXISTING PAVEMENT

RESIDUAL, MEDIUM DENSE, RED, LIGHT BROWN, BROWN, SILTY FINE TO COARSE SAND, CLAYEY FINE TO COARSE SAND, TRACE MICA, MOIST (A-2-4, A-2-6)

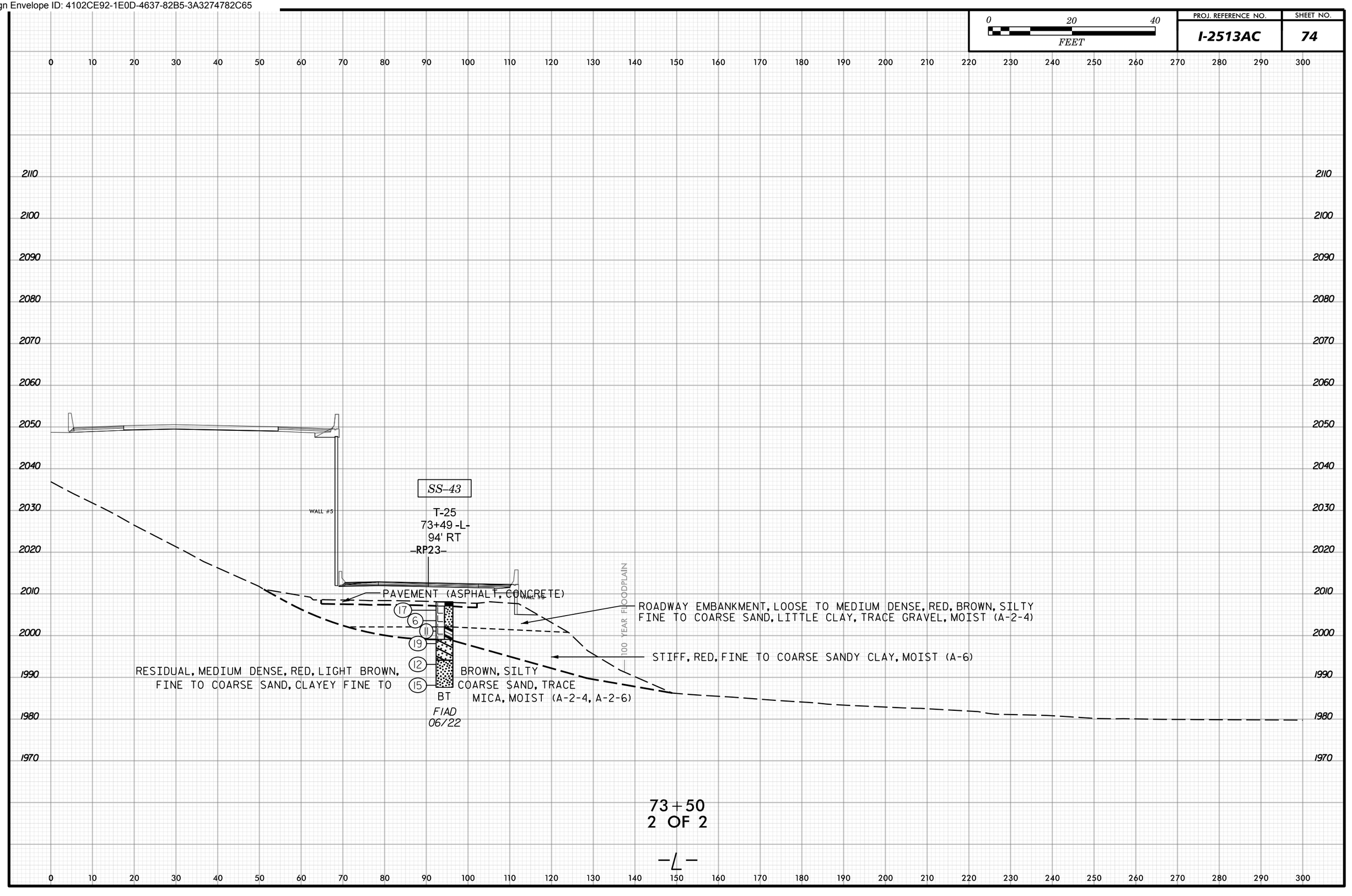
73+50
1 OF 2

–L–

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	74



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	75

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

2110 2100 2090 2080 2070 2060 2050 2040 2030 2020 2010 2000 1990 1980

SS-65
T-93
73+78 -L-
189' LT

16 11 14 14 23 40 20

RESIDUAL, MEDIUM DENSE TO DENSE, RED, BROWN, WHITE, GRAY, SILTY FINE TO COARSE SAND, TRACE MICA TO MICACEOUS, TRACE CLAY, TRACE QUARTZ FRAGMENTS, MOIST (A-2-4)

2:1 2:1 2:1

BT
DRY
05/22

SS-45
T-105
73+85 -L-
40' LT

ROADWAY EMBANKMENT, MEDIUM DENSE, BROWN, CLAYEY SAND, TRACE GRAVEL, MOIST (A-2-6)

PAVEMENT (ASPHALT, CONCRETE)

RP32-

11 6 9 13

MEDIUM STIFF TO STIFF, RED, BROWN, FINE SANDY CLAY, MOIST (A-6)

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

BT
FIAD
06/22

74+00
1 OF 2

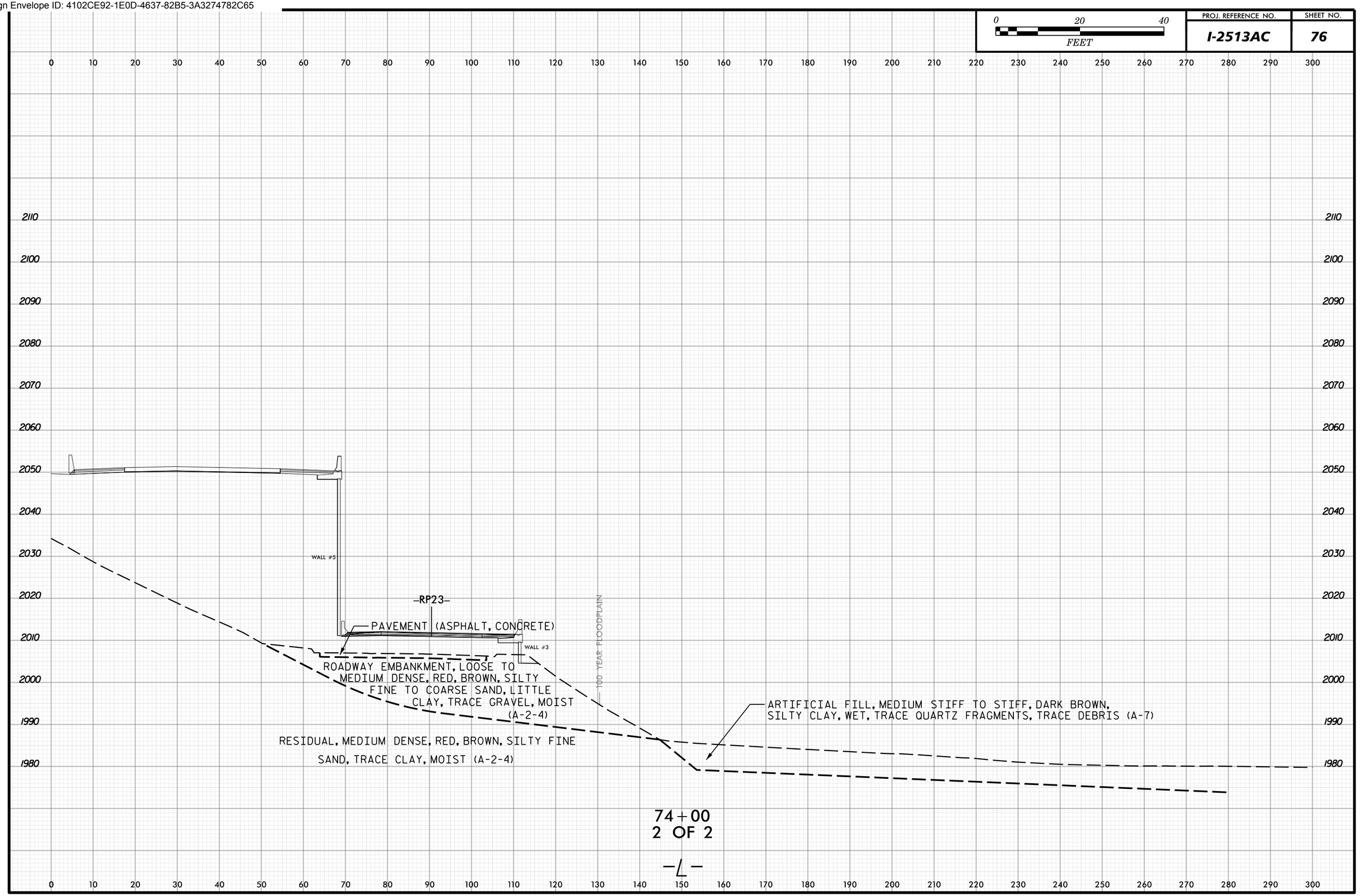
-L-

300 290 280 270 260 250 240 230 220 210 200 190 180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

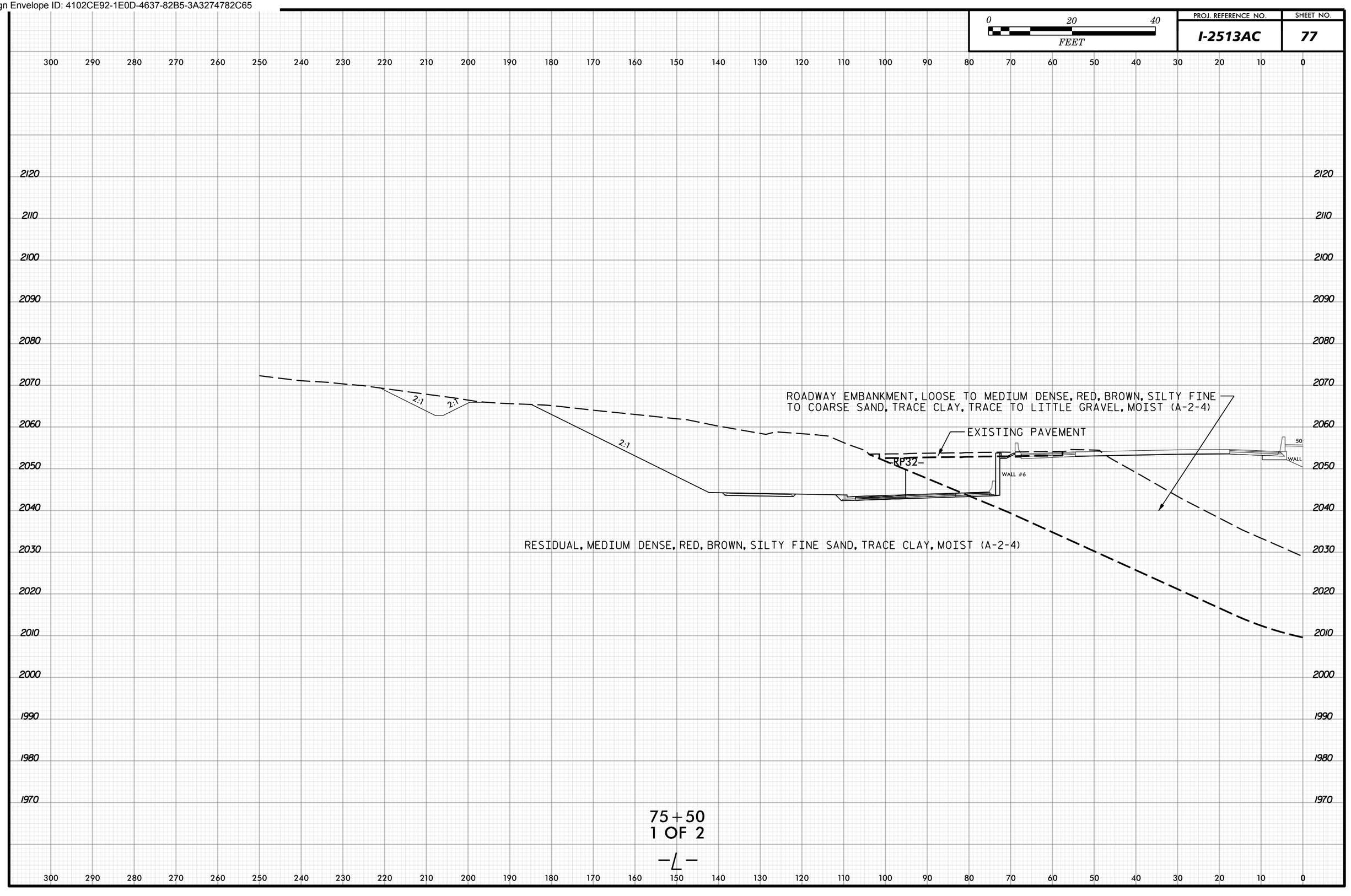
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	76



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

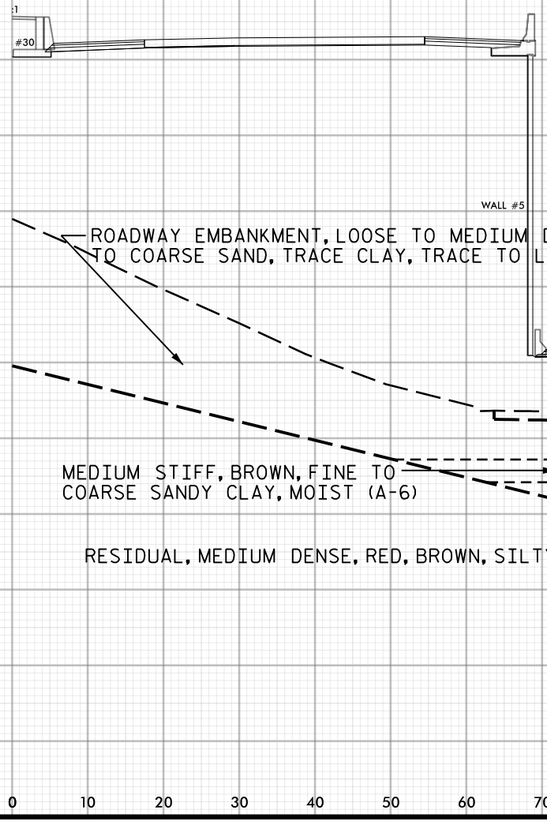
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	77



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

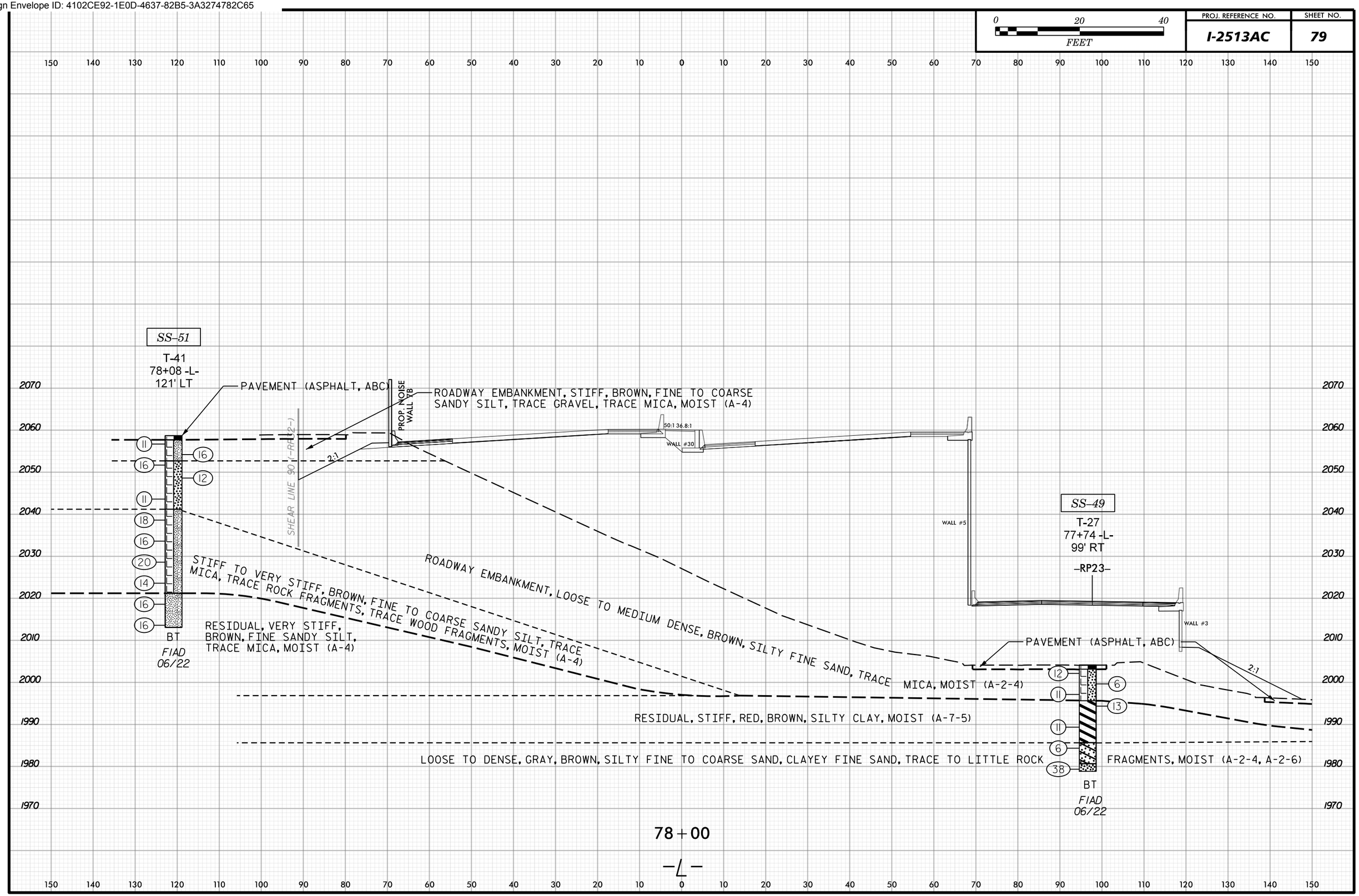
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	78



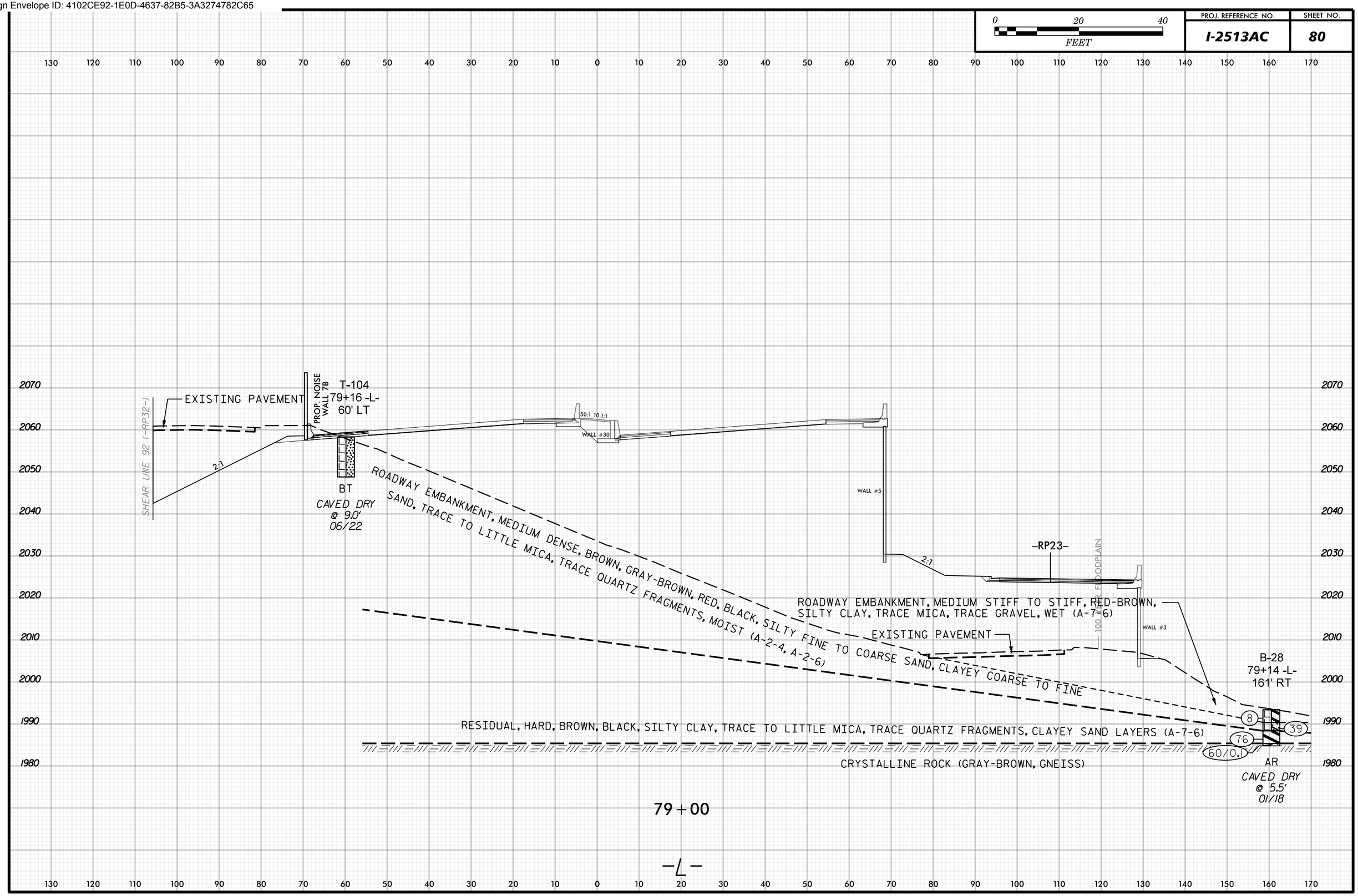
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	79



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

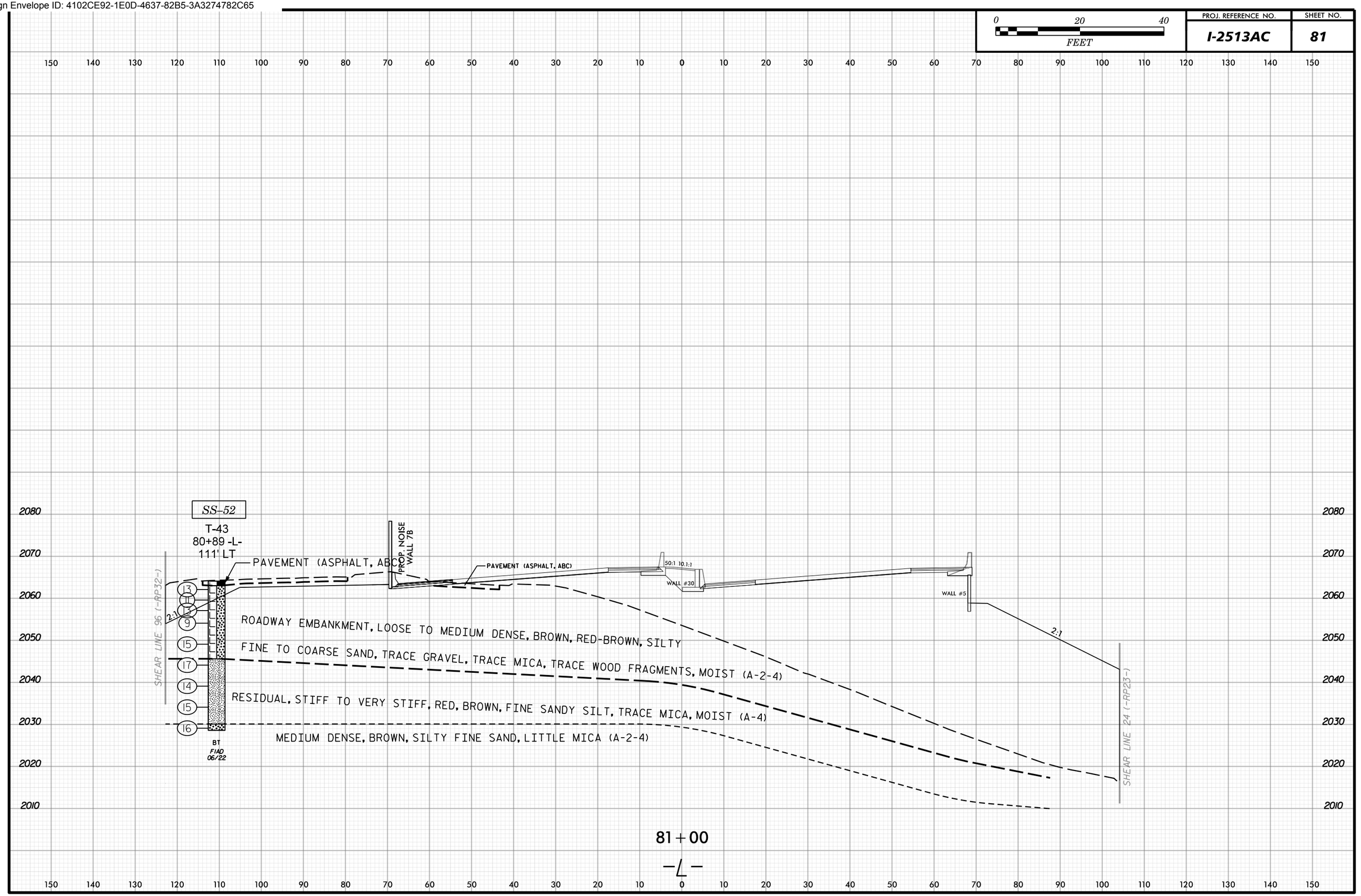
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	80



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

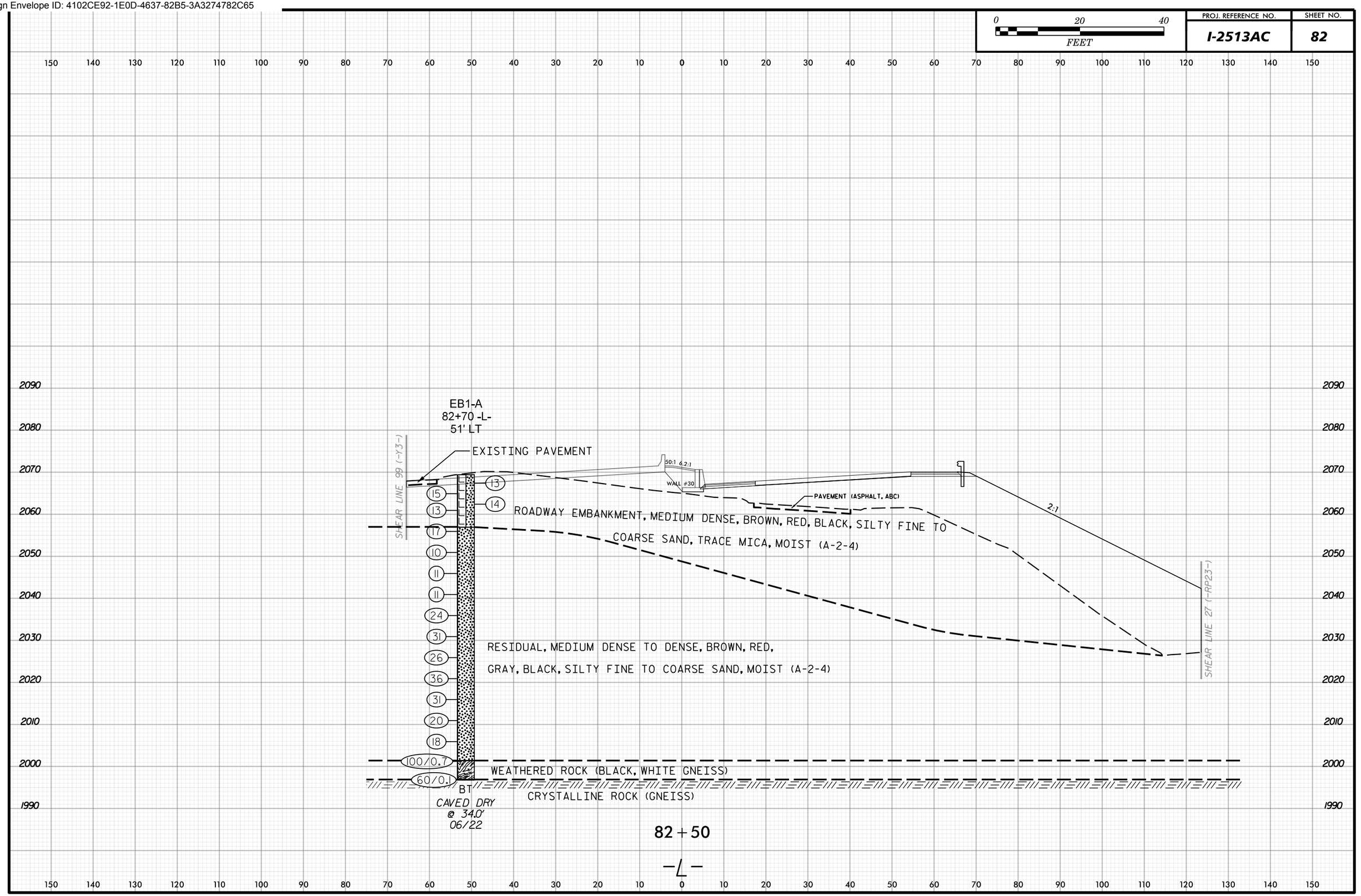
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	81



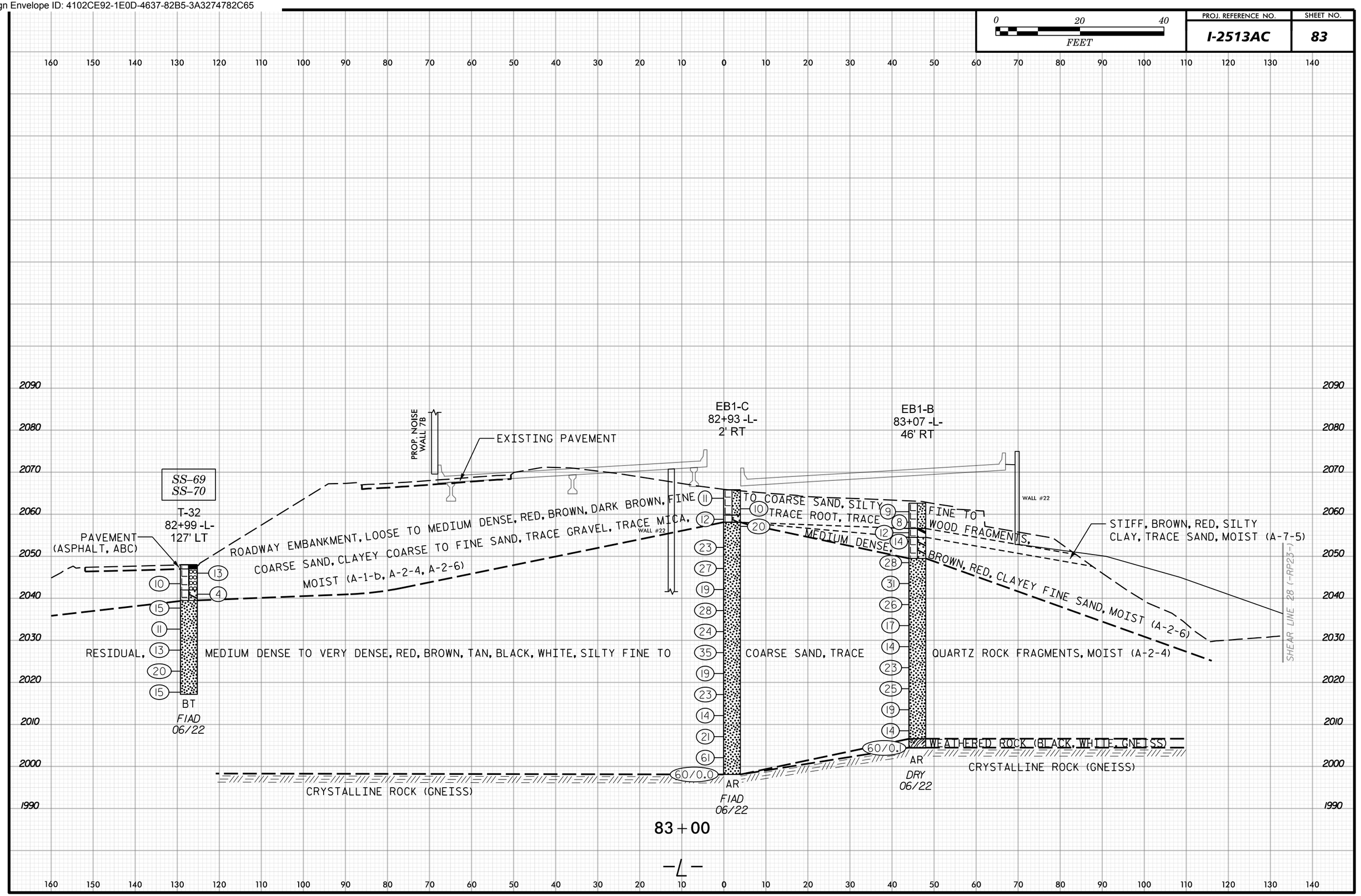
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	82



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

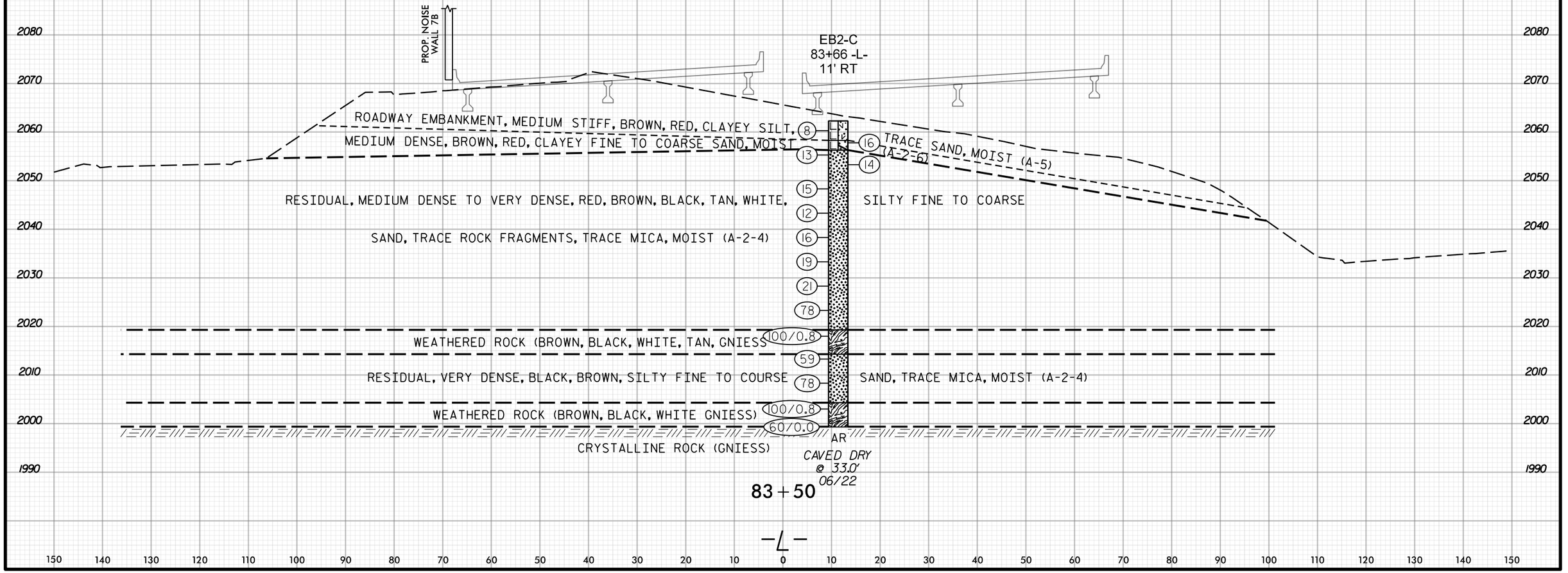
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	83



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	84



83 + 50

-L-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	85

0 20 40 FEET

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

2090
2080
2070
2060
2050
2040
2030
2020
2010
2000
1990

EB2-A
84+00 -L-
36' LT

PAVEMENT (ASPHALT, CONCRETE)

PROPOSED NOISE WALL 7B

SHEAR LINE 100 (-Y3-)

ROADWAY EMBANKMENT

WALL #23

WALL #23

11
17
8
17
23
14
18
17
27
26
18
52
43
24
100/0.9
100/0.3
60/0.1

LOOSE, TO MEDIUM DENSE, RED, TAN, BROWN, DARK BROWN, SILTY FINE TO COARSE SAND, CLAYEY FINE SAND, LITTLE GRAVEL, SOME ROCK FRAGMENTS, MOIST (A-2-4, A-2-6)

RESIDUAL, MEDIUM DENSE TO VERY DENSE, BROWN, BLACK, GRAY, RED, SILTY FINE TO COARSE SAND, TRACE MICA, TRACE TO SOME ROCK FRAGMENTS, MOIST (A-2-4)

WEATHERED ROCK (GRAY GNEISS)

CRYSTALLINE ROCK (GNEISS)

BT
FIAD
06/22

SS-50
T-33
84+03 -L-
142' RT

PAVEMENT (ASPHALT, ABC)

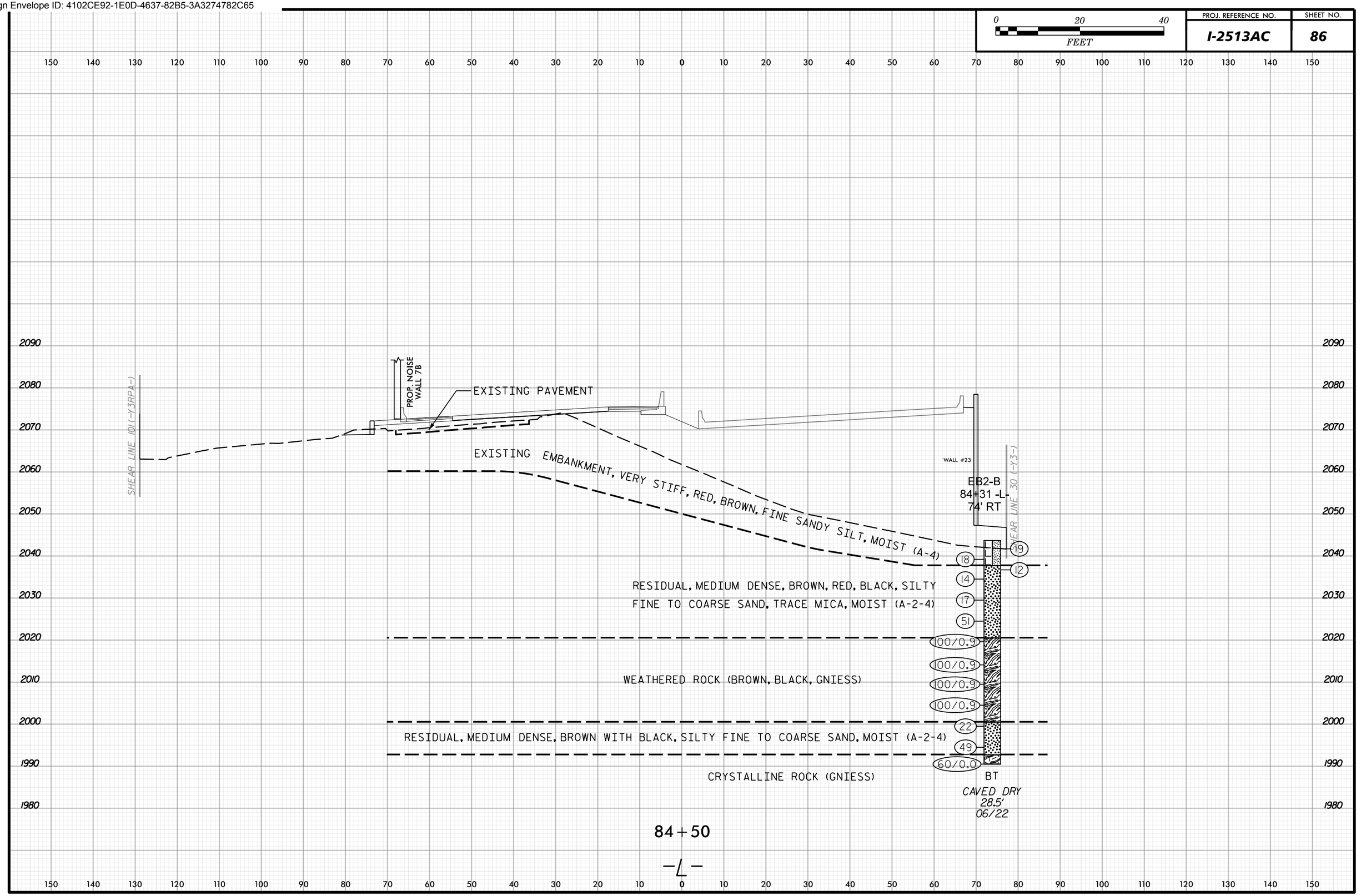
12
9
10
10
6
29

BT
FIAD
06/22

84+00
-L-

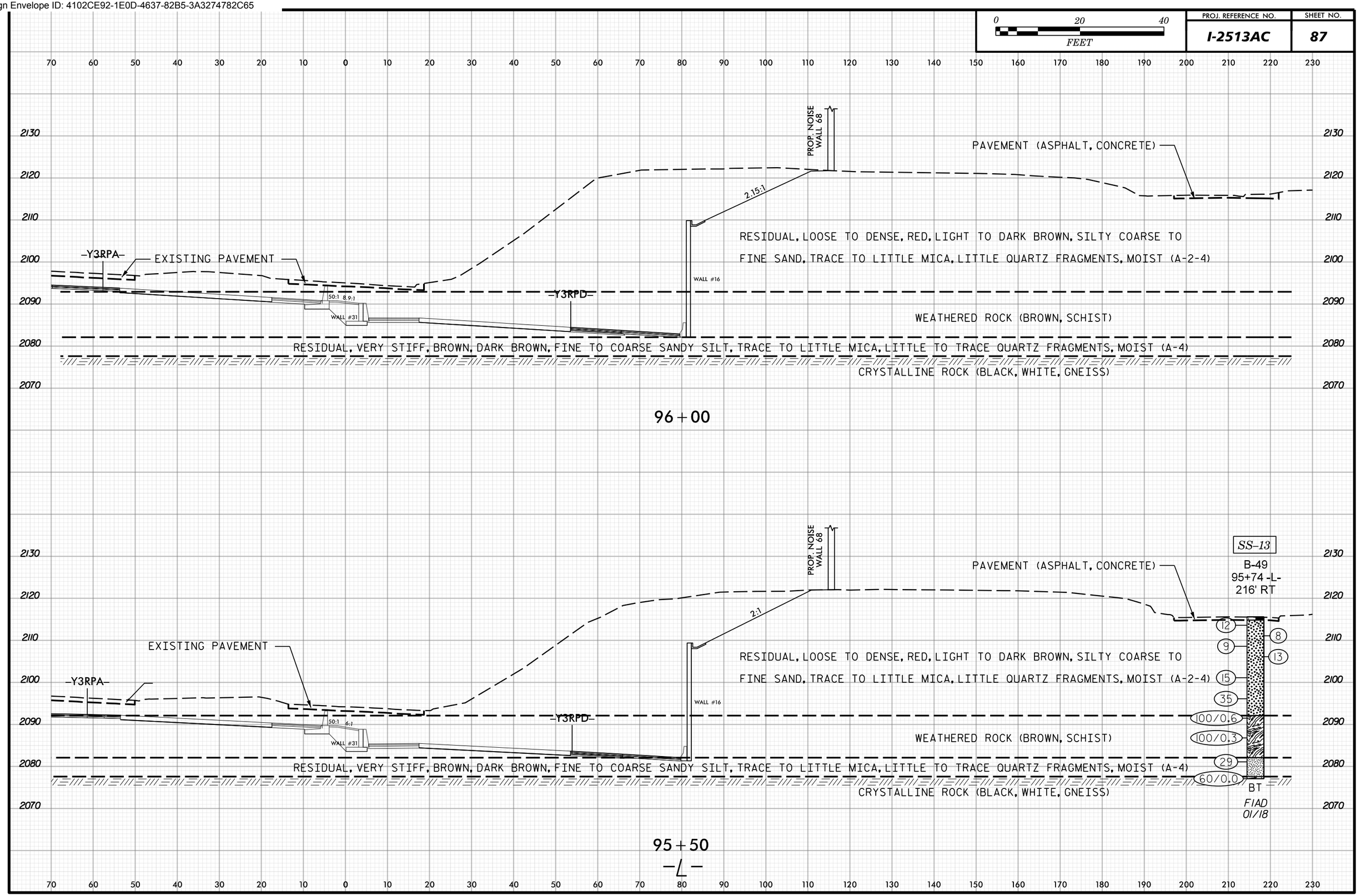
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	86



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

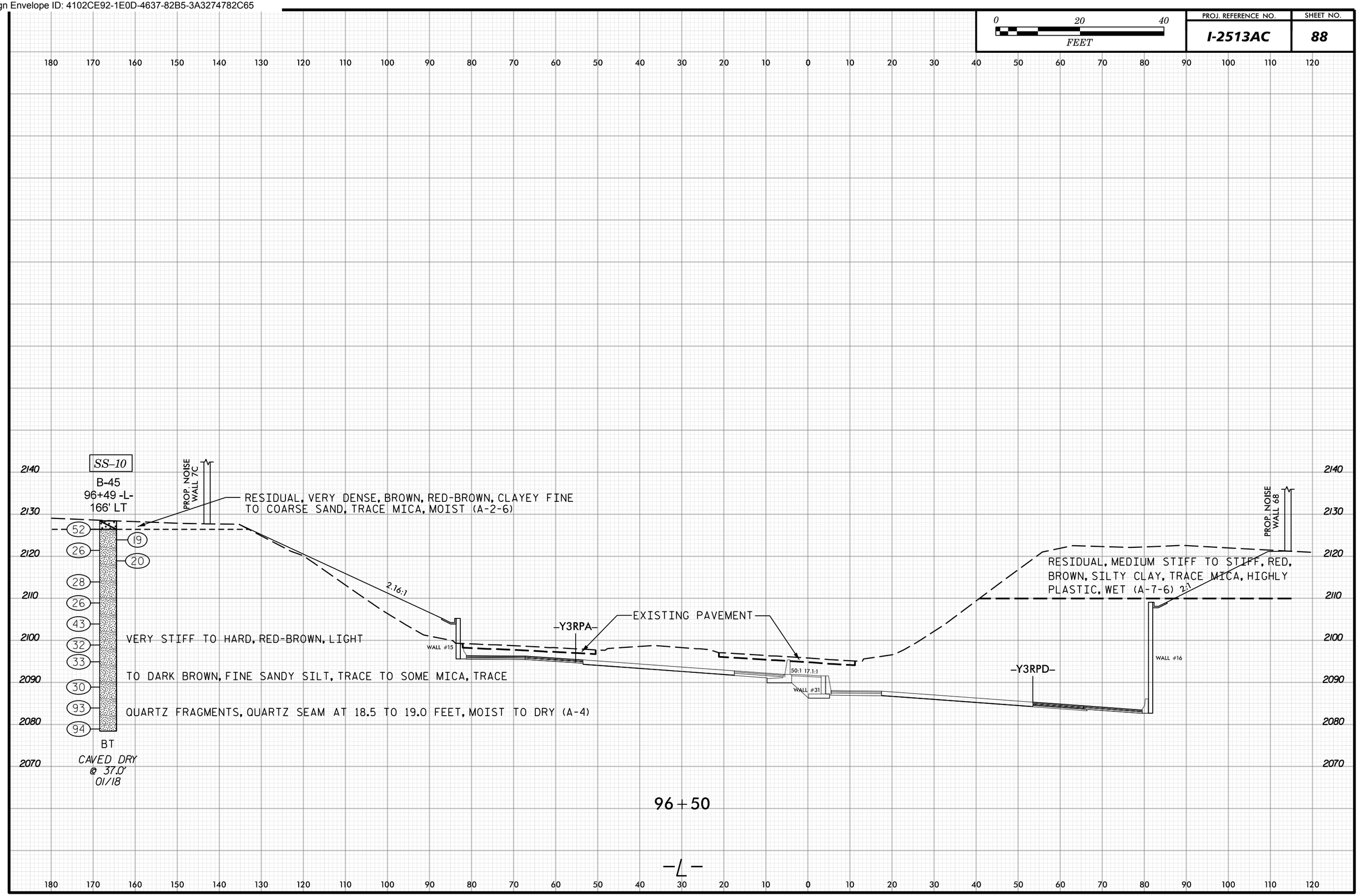
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	87



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

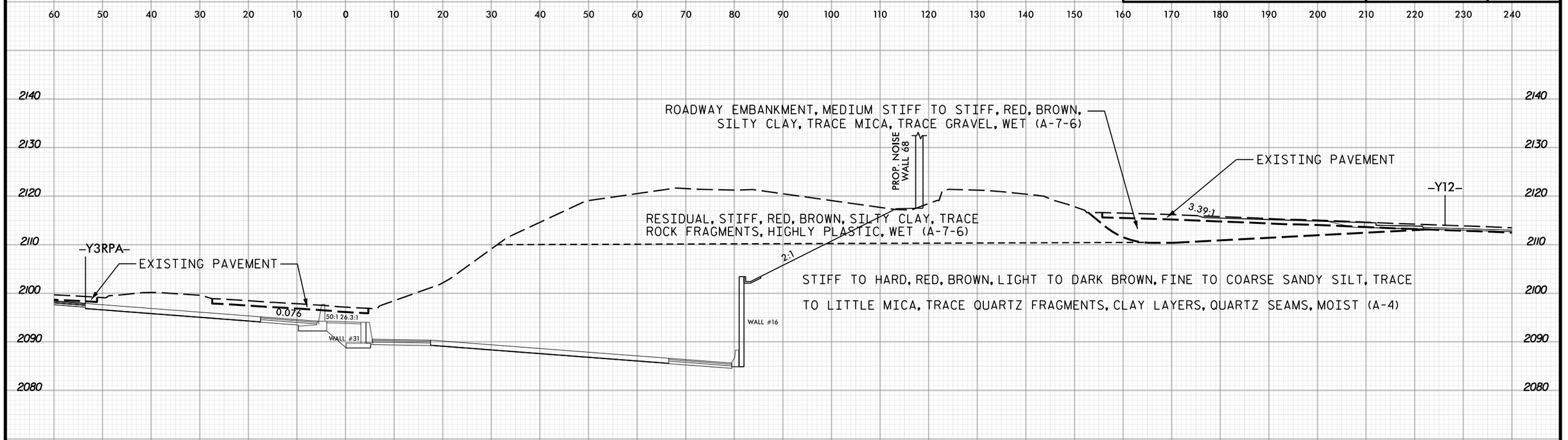
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	88

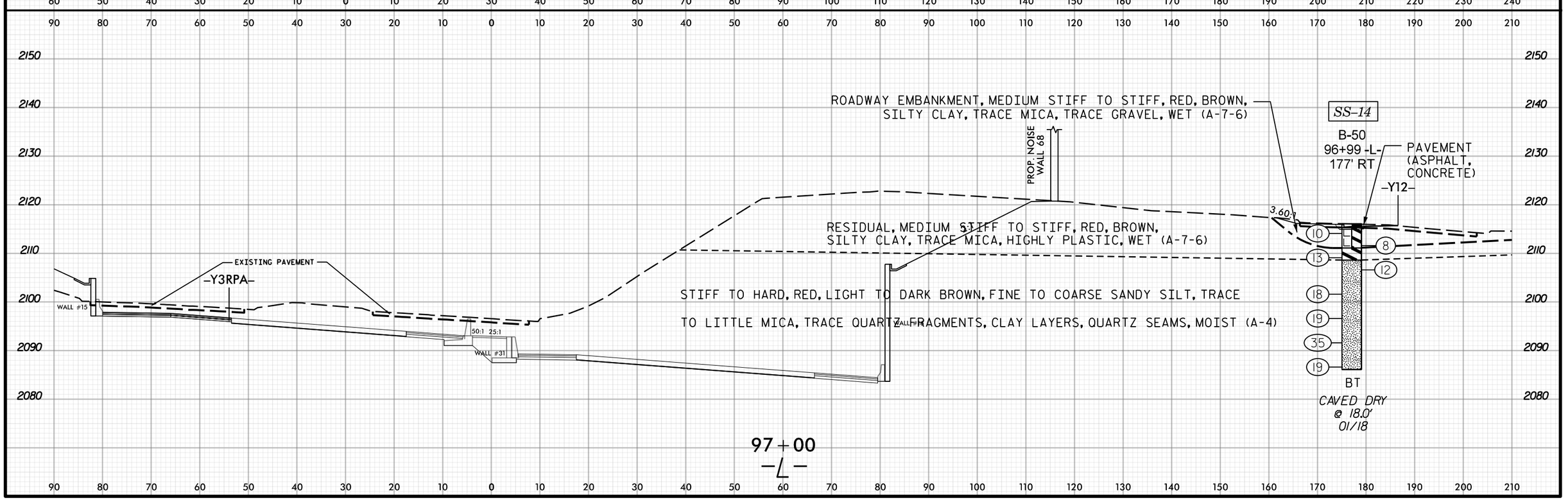


Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	89



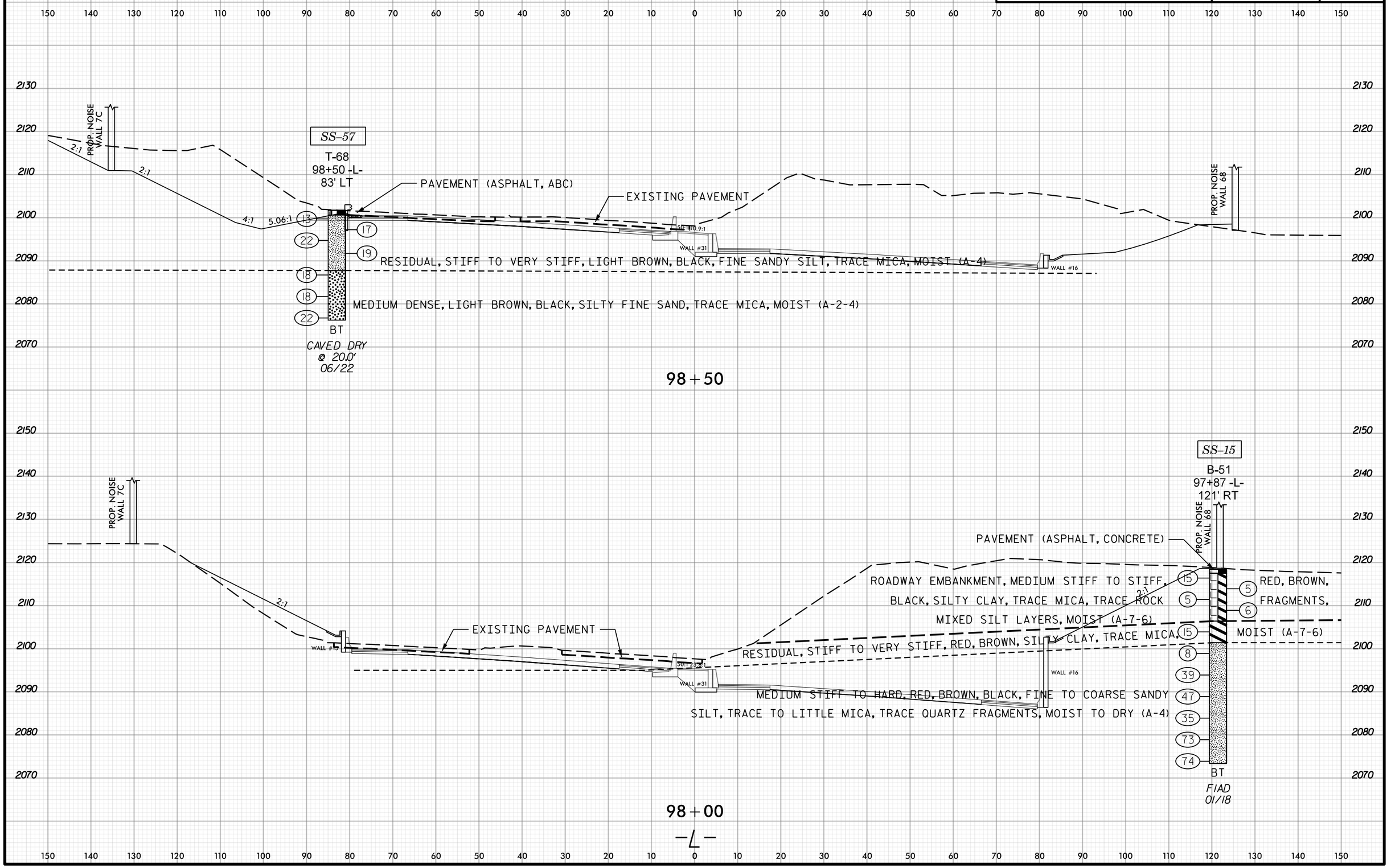
97+50



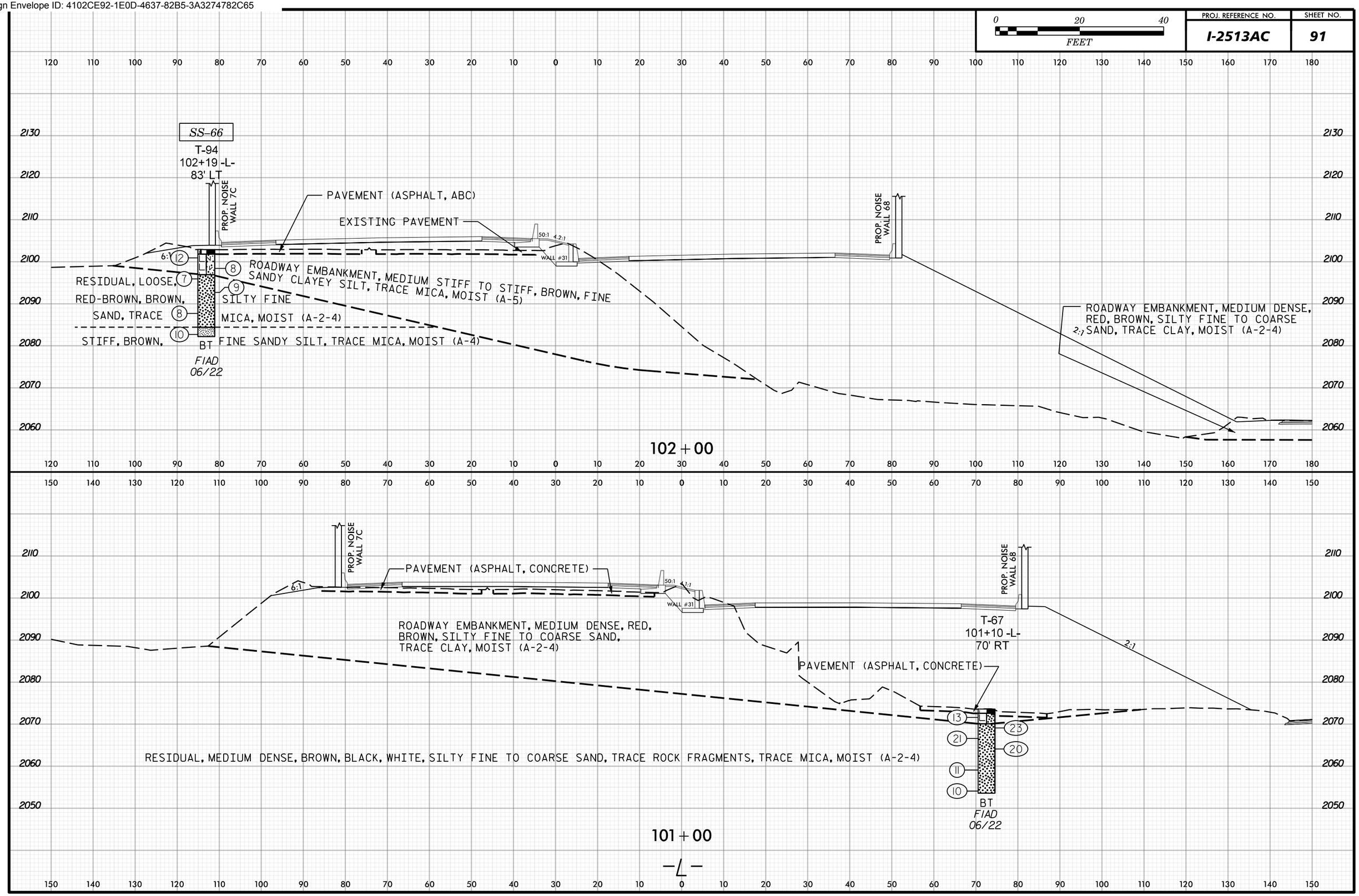
97+00
–L–

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	90



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	92

0 20 40
FEET

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

2120
2110
2100
2090
2080
2070
2060
2050
2040
2030
2020
2010

PROP. NOISE WALL 7C

EXISTING PAVEMENT

3.33:1

50:1

2.6:1

WALL 31

PROP. NOISE WALL 68

2:1

ROADWAY EMBANKMENT, MEDIUM STIFF TO STIFF, RED, ORANGE, GRAY, FINE SANDY SILT, TRACE MICA, MOIST (A-4)

B-55
103+71 -L-
96' RT

32
22
25
33
45
26
100/0.5
21
12
77
60/0.0

01/18

BT
FIAD
01/18

RESIDUAL, VERY STIFF TO HARD, LIGHT TO DARK BROWN, FINE TO COARSE SANDY SILT, TRACE TO LITTLE MICA, TRACE QUARTZ FRAGMENTS, SILTY SAND LAYERS, MOIST TO WET (A-4)

DENSE, DARK GRAY, DARK BROWN, SILTY FINE TO COARSE SAND, TRACE MICA, TRACE QUARTZ FRAGMENTS, WET (A-2-4)

VERY STIFF, DARK BROWN, BROWN, DARK GRAY, FINE TO COARSE SANDY SILT, TRACE TO LITTLE MICA, TRACE QUARTZ SEAMS, MOIST (A-4)

WEATHERED ROCK (BROWN, GRAY, MICA-SCHIST)

RESIDUAL, STIFF TO HARD, LIGHT TO DARK BROWN, LIGHT GRAY, GRAY, WHITE, FINE TO COARSE SANDY SILT, CLAYEY SILT, TRACE TO LITTLE MICA, TRACE QUARTZ FRAGMENTS, MOIST (A-4, A-5)

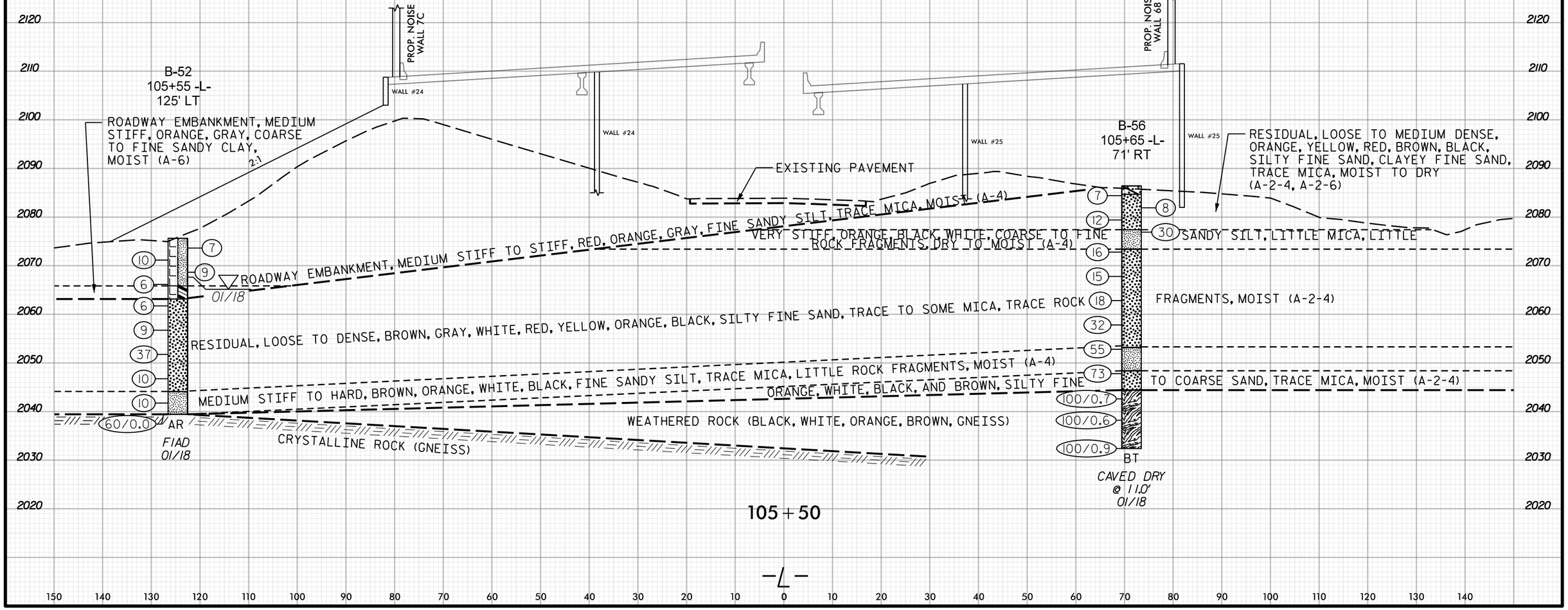
CRYSTALLINE ROCK (BLUE-BLACK AND WHITE, GNEISS)

103+50

-L-

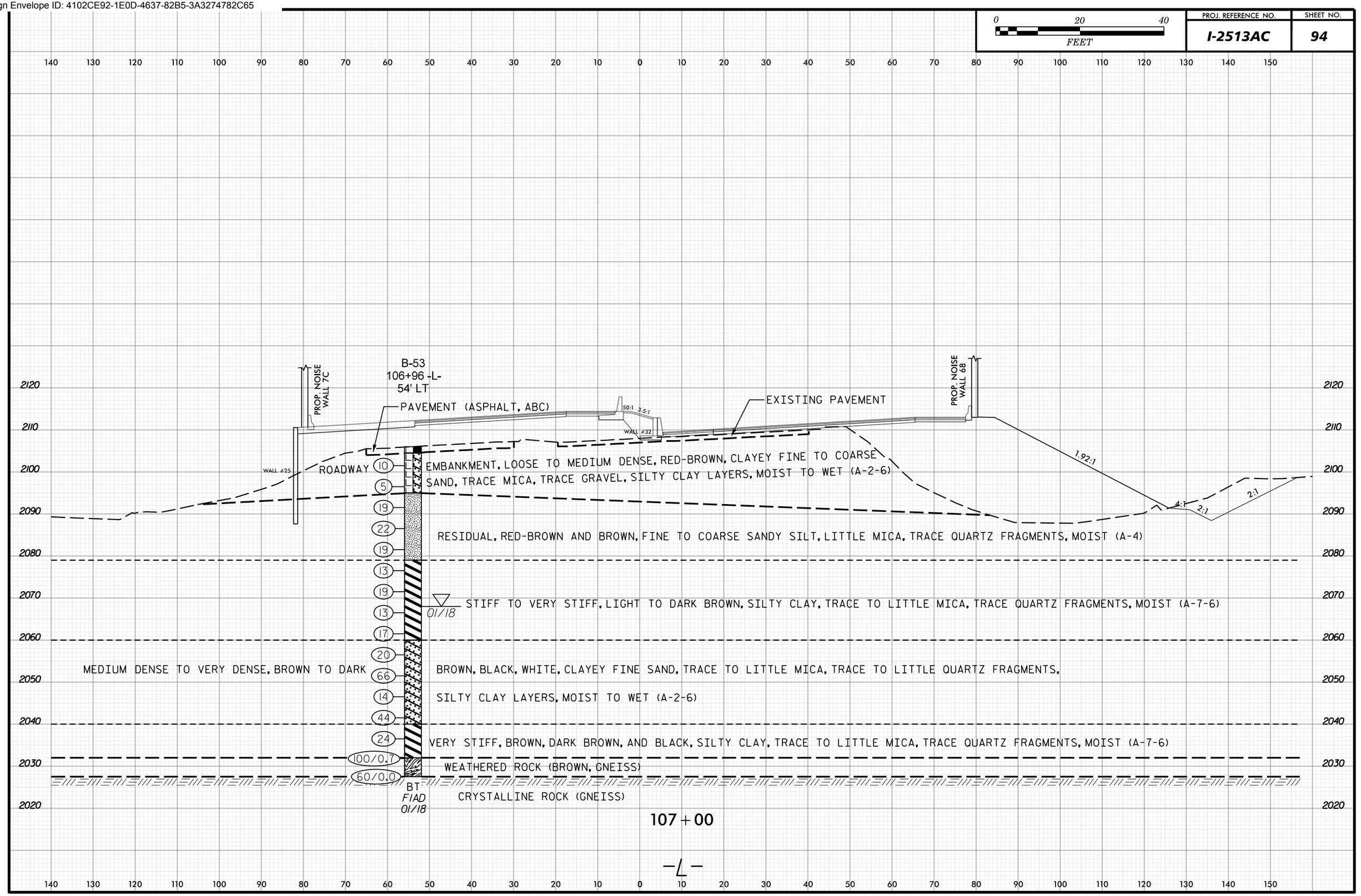
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	93



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

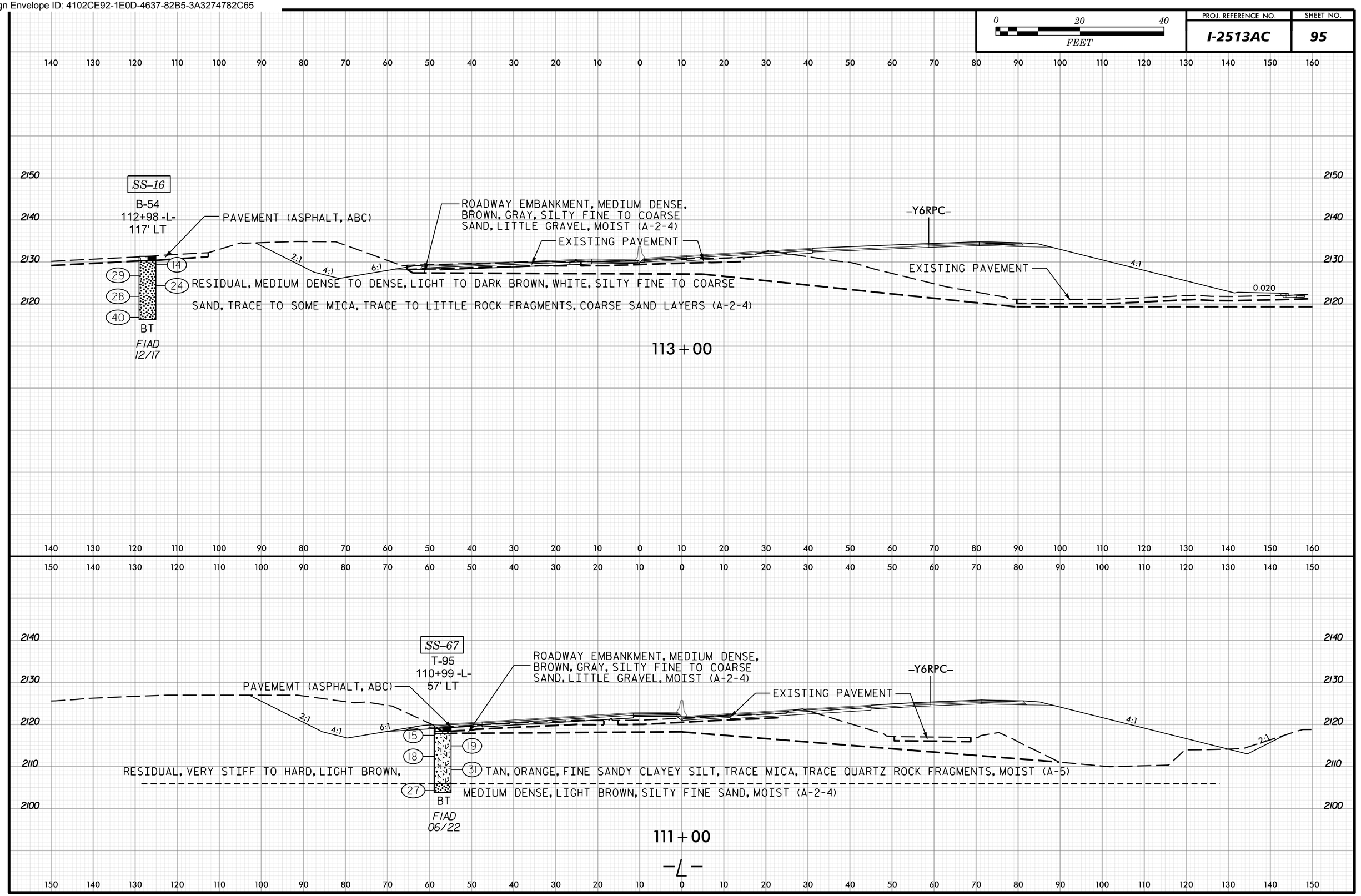
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	94



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	95

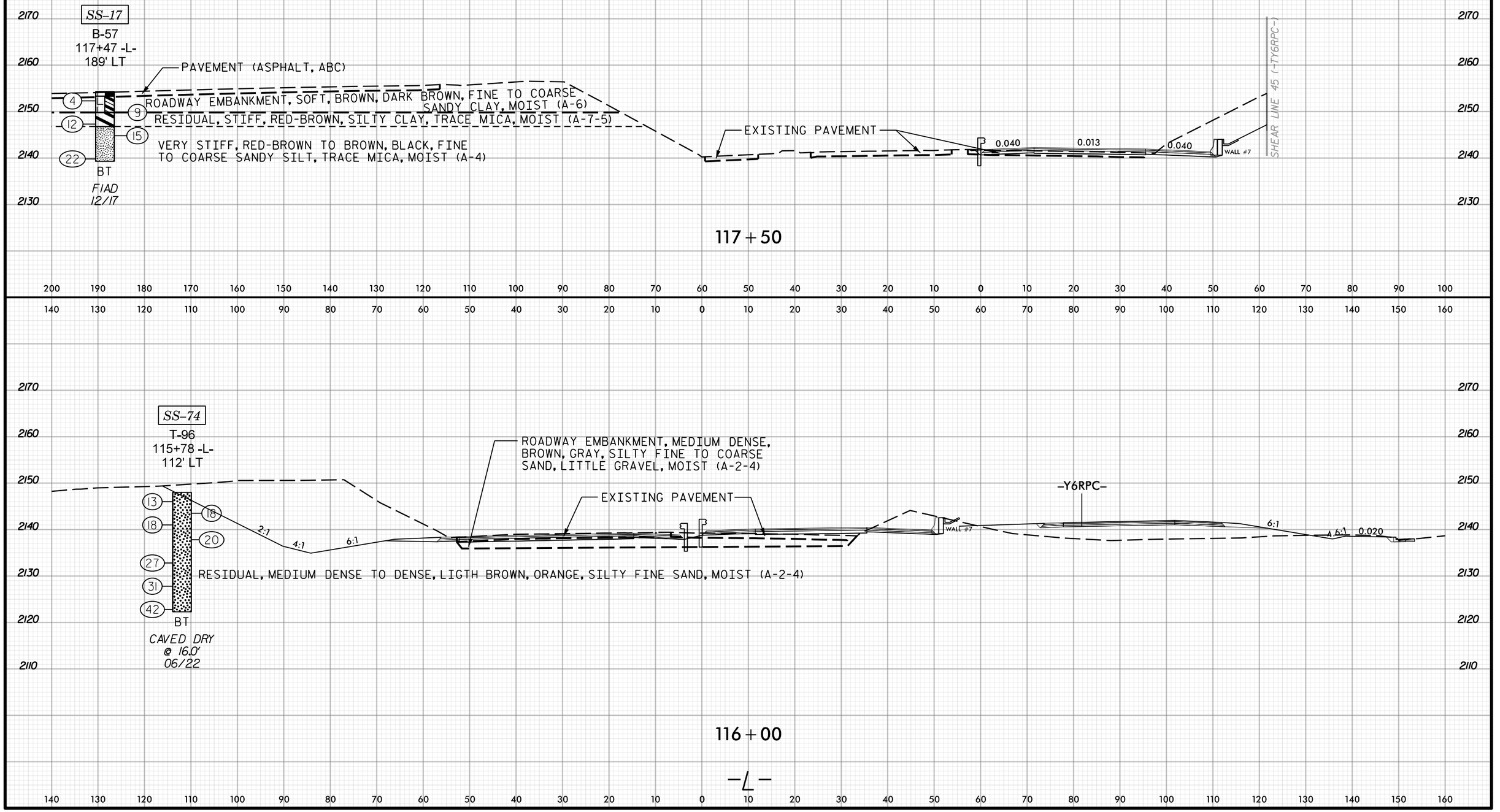
0 20 40 FEET



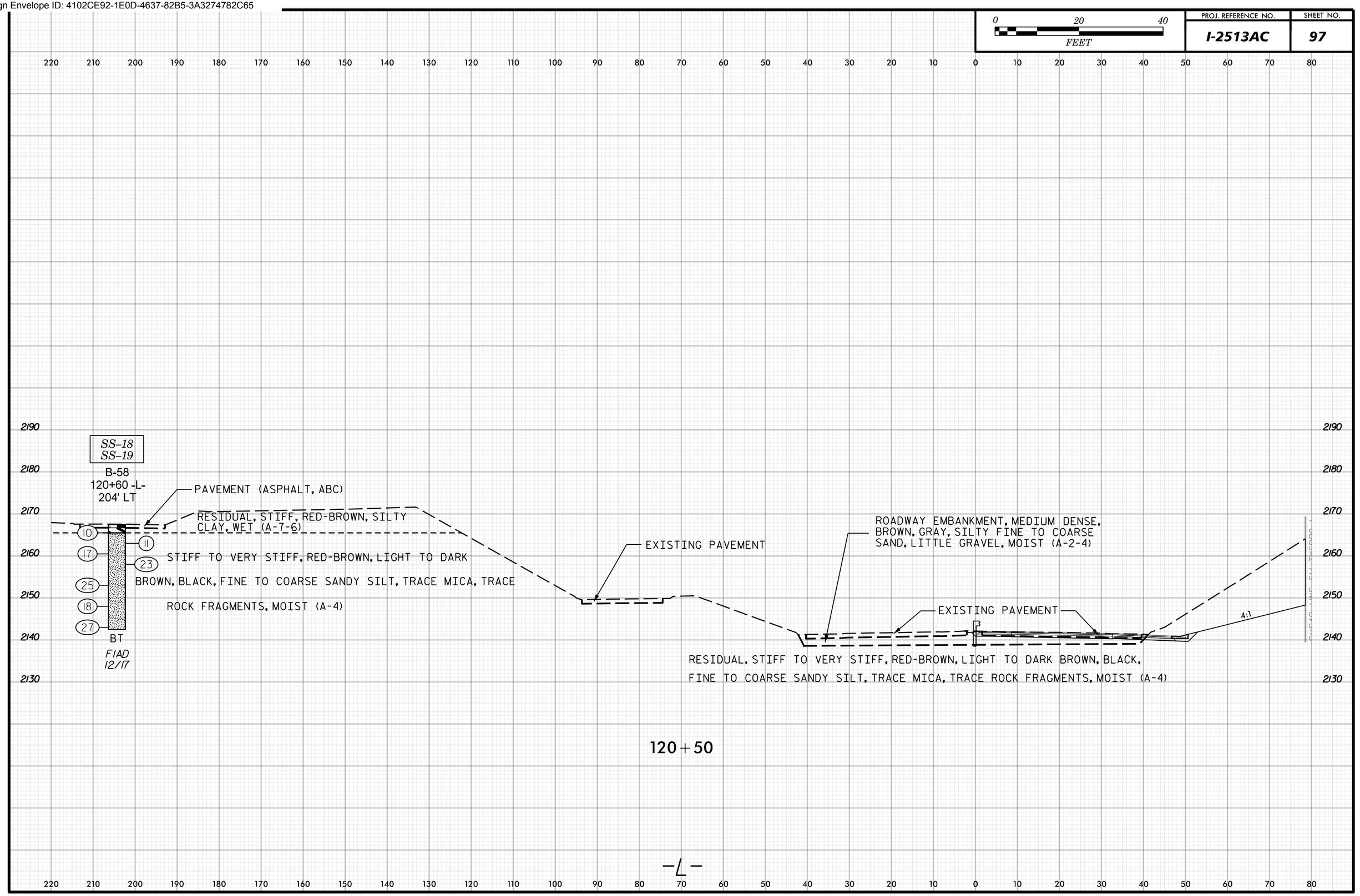
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	96

0 20 40 FEET



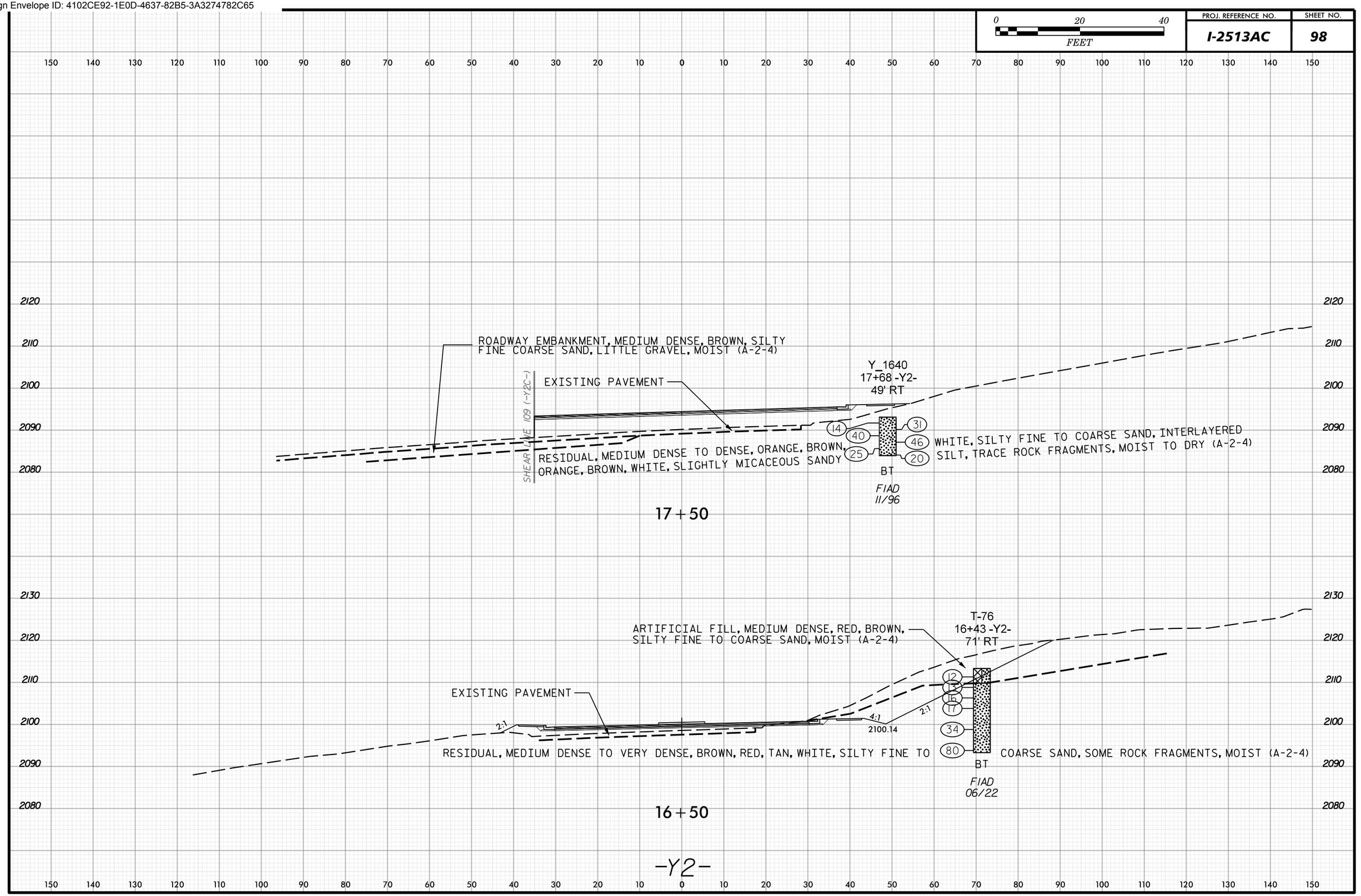
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

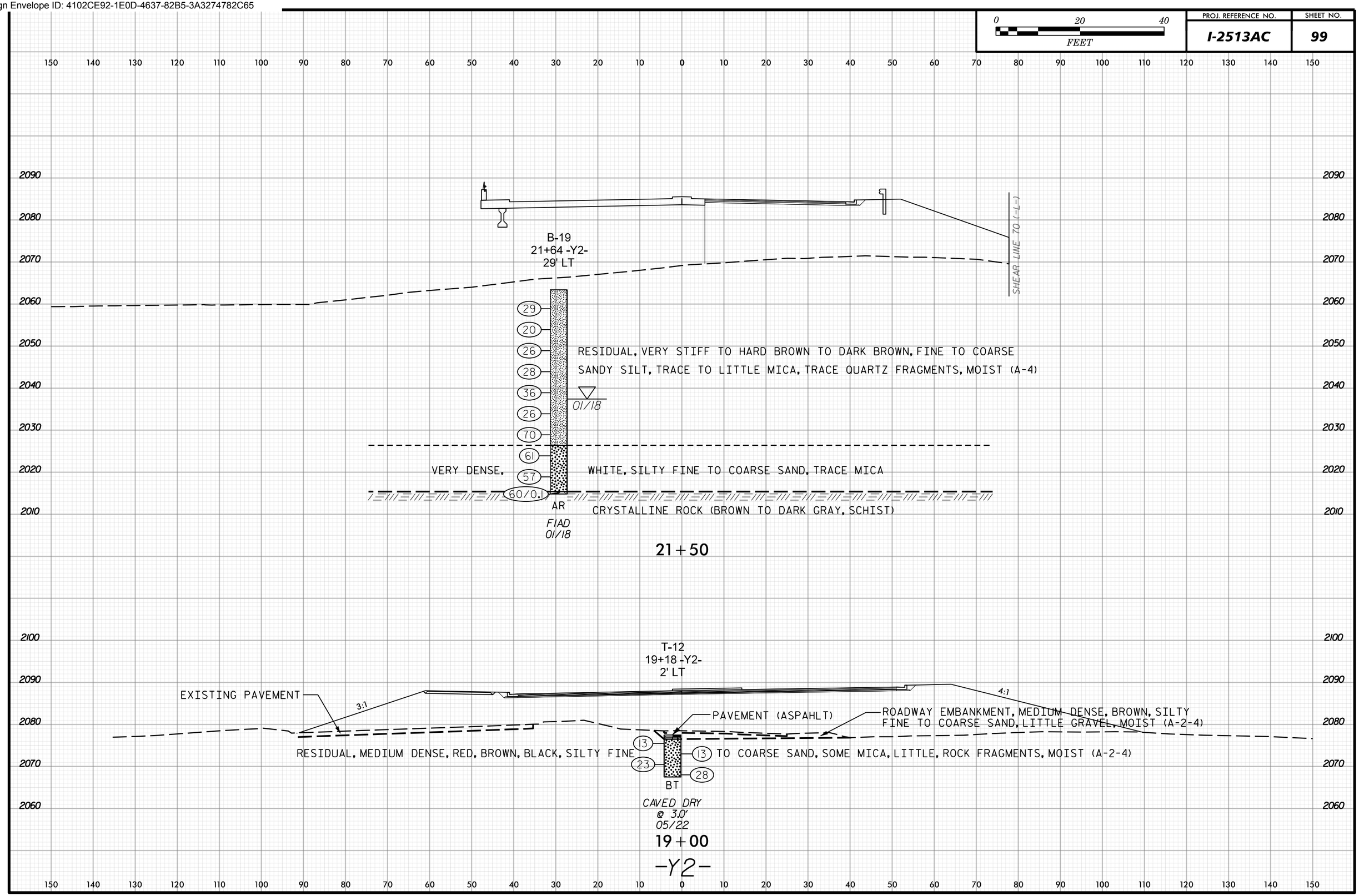
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	98



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

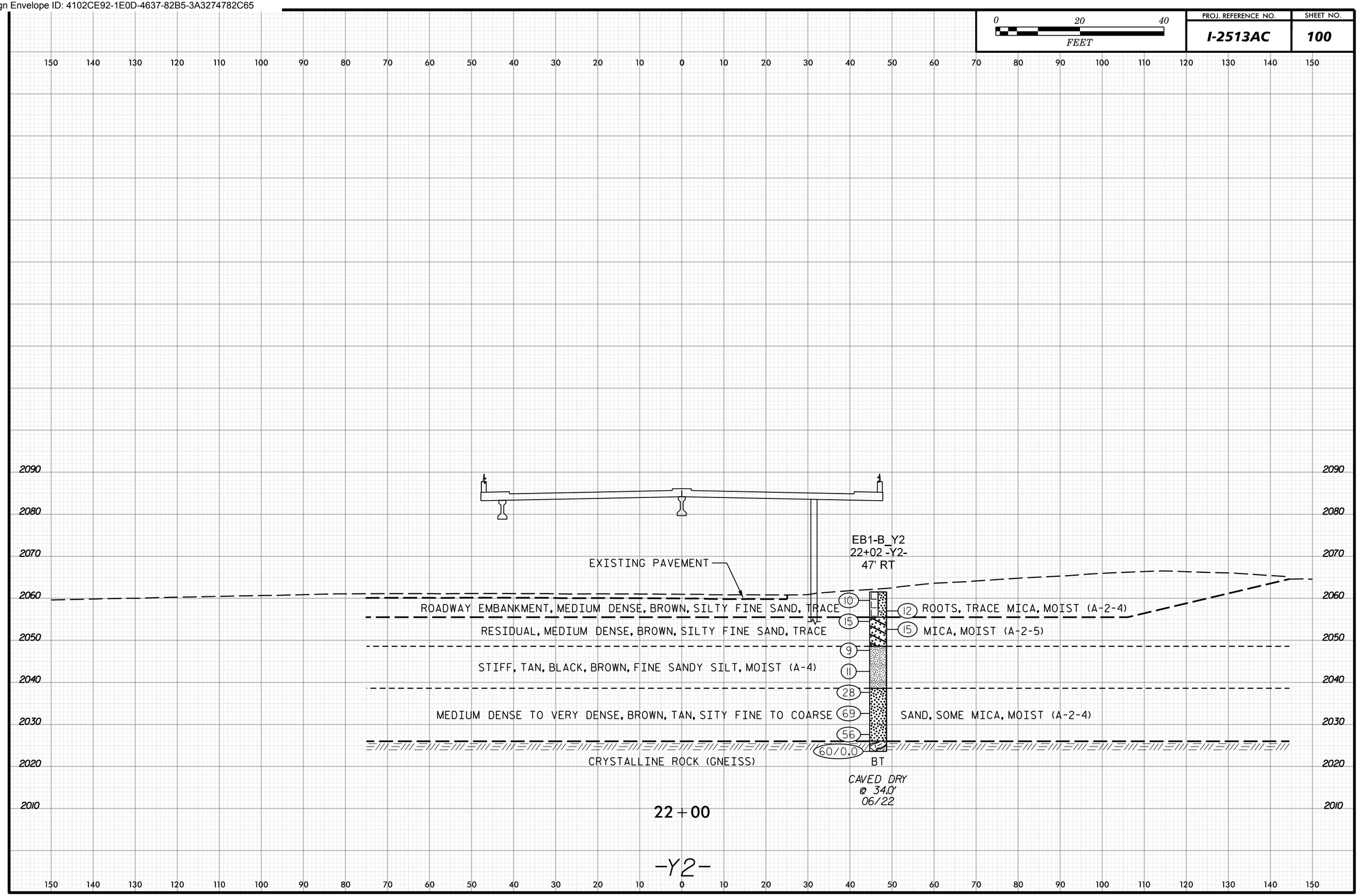
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	99



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

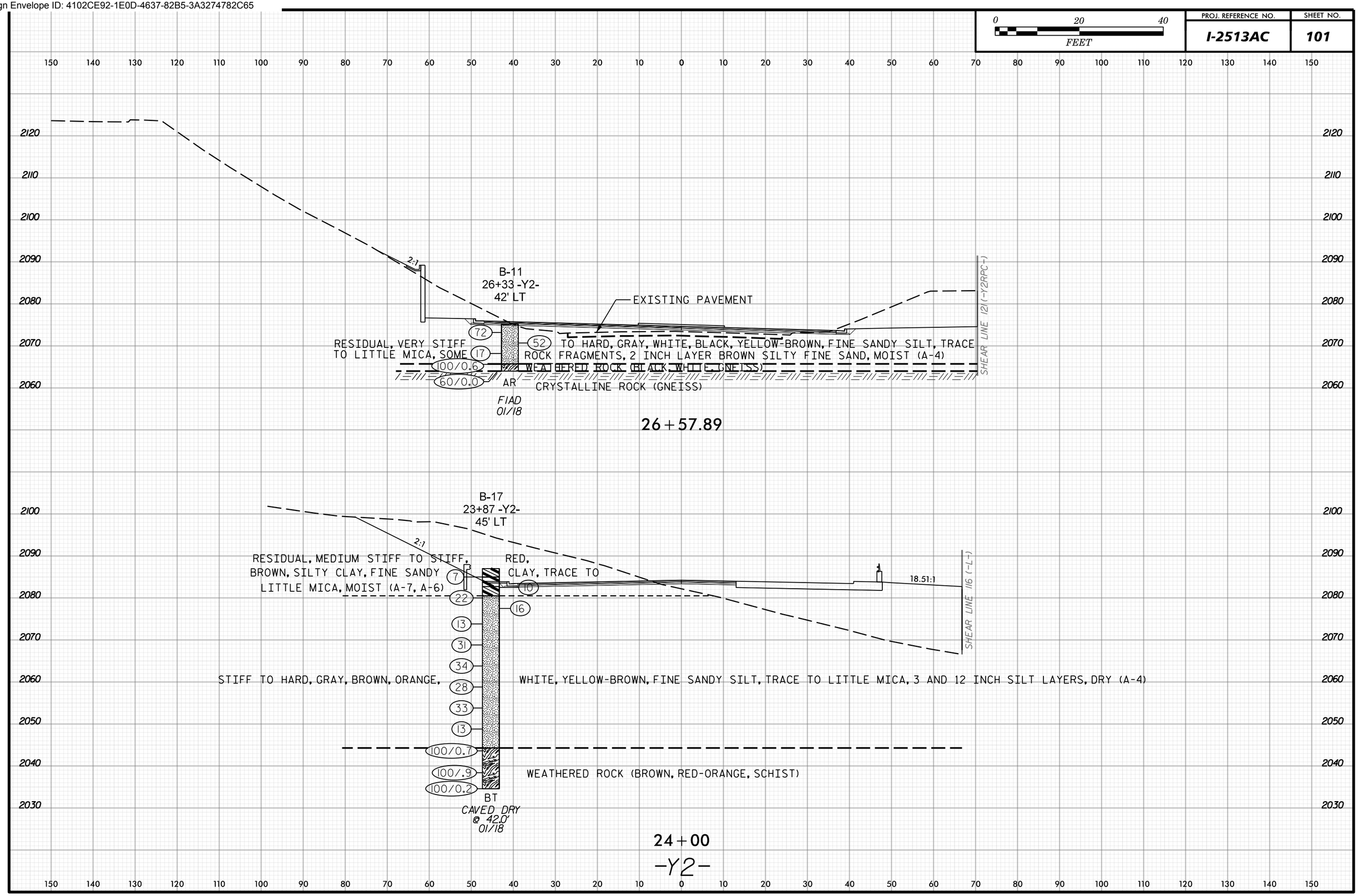
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	100



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

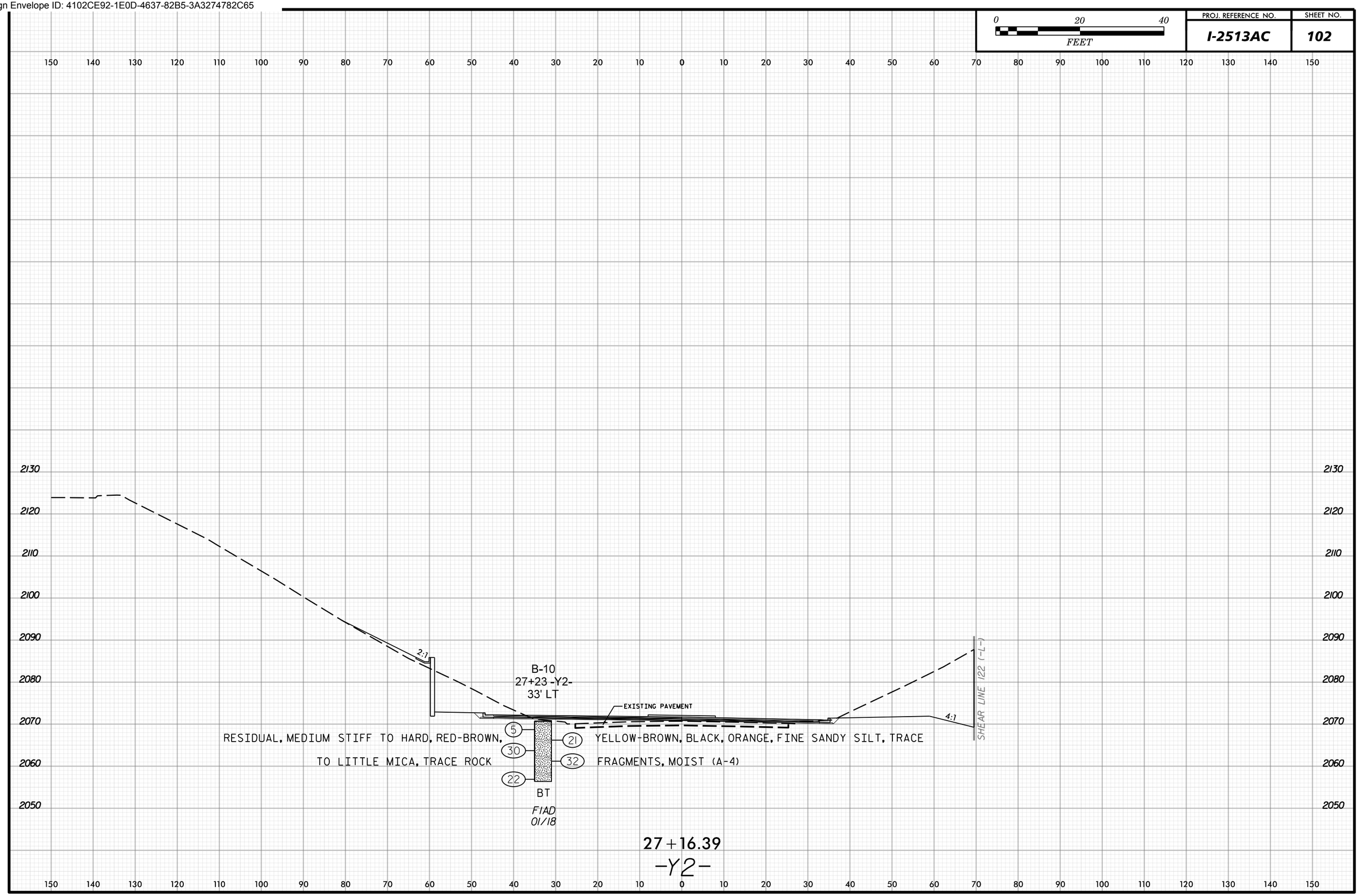
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	101



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

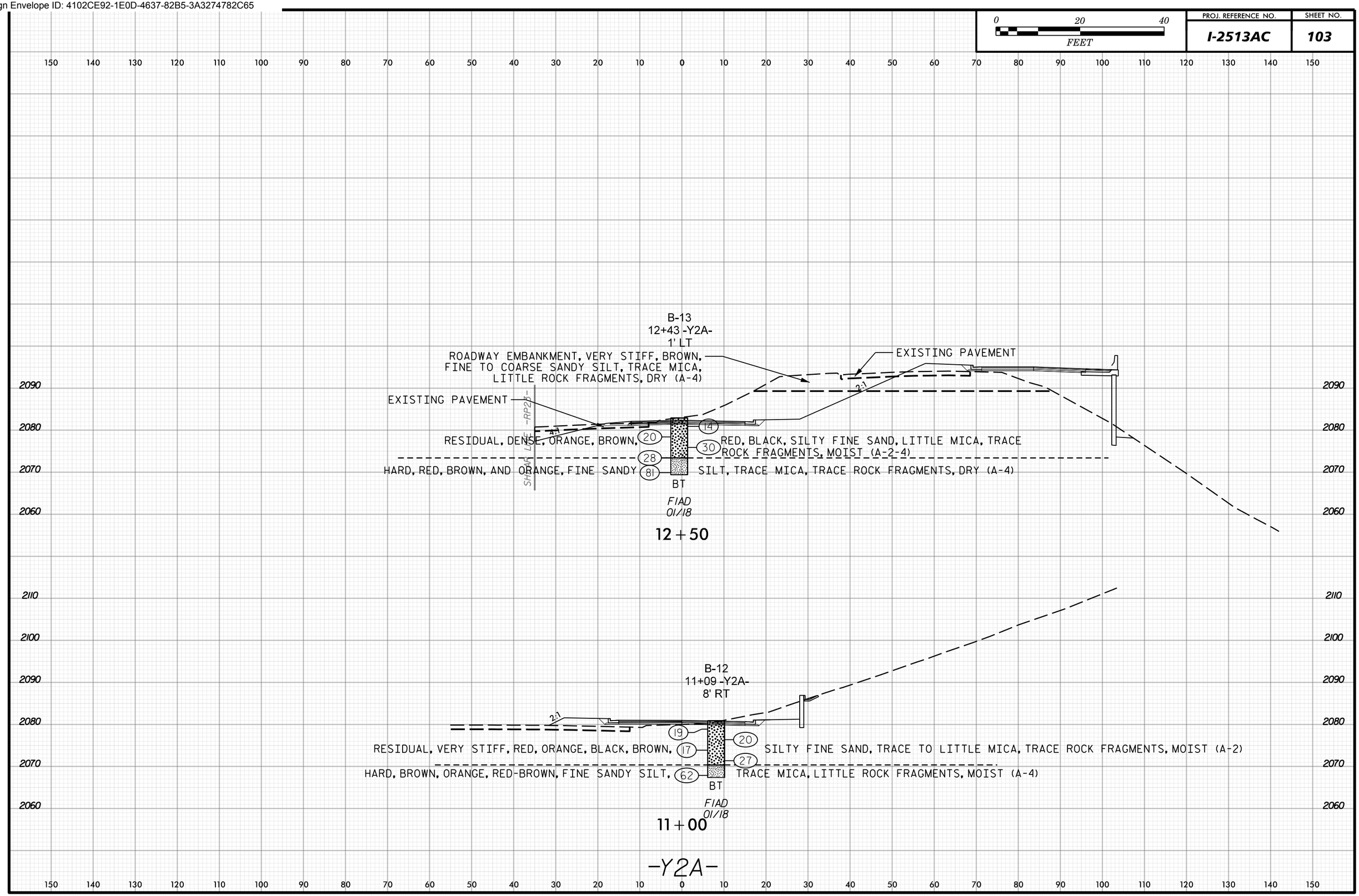
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	102



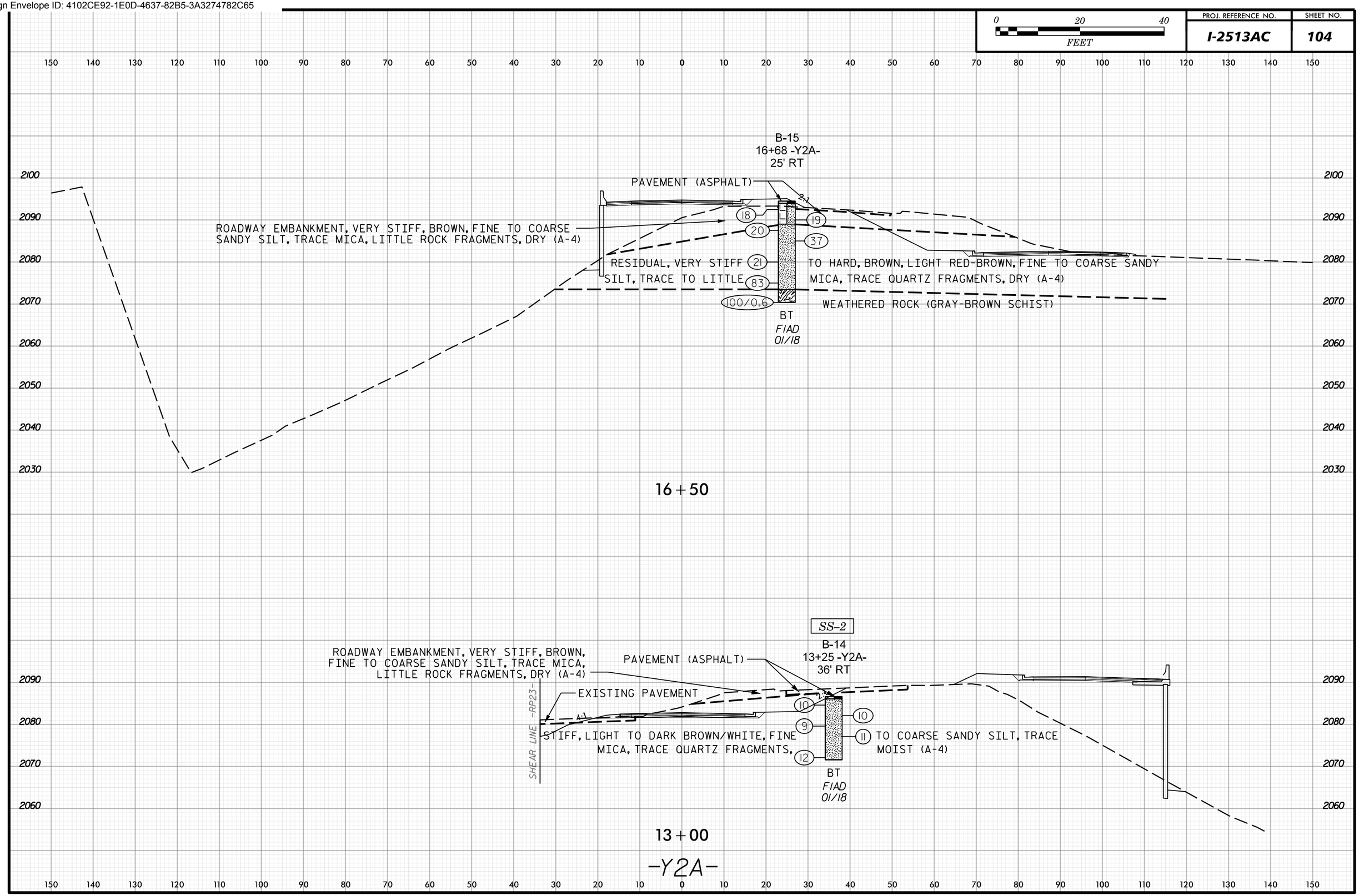
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	103



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	104



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	105

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

2040
2030
2020
2010
2000

SS-1
B-8
13+96 -Y2B-
11' LT

PAVEMENT (ASPHALT, ABC)

2:1

MEDIUM STIFF TO STIFF, RED-BROWN TO BROWN, FINE TO COARSE SANDY SILT, TRACE TO LITTLE MICA, TRACE QUARTZ FRAGMENTS, MOIST (A-4)

ROADWAY EMBANKMENT, STIFF, BROWN, SILTY CLAY, TRACE MICA, MOIST (A-7)

STIFF, RED-BROWN TO BROWN, SILTY CLAY, TRACE ROCK FRAGMENTS, TRACE MICA, MOIST (A-7)

RESIDUAL, VERY STIFF, BROWN, WHITE, BLACK, FINE TO COARSE SANDY SILT, LITTLE MICA, SILTY SAND LAYERS, MOIST (A-4)

10
8
9
18
16

BT
FIAD
12/17

14+00

B-7
11+98 -Y2B-
7' LT

PAVEMENT (ASPHALT, ABC)

RESIDUAL, VERY STIFF, RED-BROWN, SILTY CLAY, TRACE QUARTZ FRAGMENTS, WET TO MOIST (A-7-6)

MEDIUM DENSE TO VERY DENSE, LIGHT BROWN, WHITE, SILTY COARSE TO FINE SAND, TRACE MICA, TRACE ROCK FRAGMENTS, DRY (A-2-4)

21
29
90
44

BT
FIAD
12/17

12+00

-Y2B-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	106

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

2120
2110
2100
2090
2080
2070
2060

Y_1580
20+02 -Y2B-
39' LT

RESIDUAL, LOOSE TO MEDIUM DENSE, ORANGE, BROWN, SILTY FINE TO COARSE SAND, DRY (A-2-4)

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

EXISTING PAVEMENT

VERY STIFF, ORANGE, BROWN, SANDY SILT, DRY (A-4)

VERY DENSE, ORANGE, BROWN, SILTY FINE TO COARSE SAND, DRY (A-2-4)

8 20 18 16 56

BT

DRY
11/96

MEDIUM DENSE, ORANGE, BROWN, SANDY SILT (A-4)

20+00

Y_1540
17+71 -Y2B-
40' LT

EXISTING PAVEMENT

21 23 17 19 42

4:1 2:1 4:1

BT

DRY
11/96

RESIDUAL, MEDIUM DENSE TO DENSE, WHITE, ORANGE, SILTY FINE TO COARSE SAND, INTERM QUARTZ SEAMS, DRY (A-2-4)

SHEAR LINE -Y2RPB-

17+50

-Y2B-

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

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	107

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

2120
2110
2100
2090
2080
2070

Y_1640
21+79 -Y2B-
27' LT

2:1
3:1
4:1
7:1

14
40
25
31
46
20

EXISTING PAVEMENT

RESIDUAL, MEDIUM DENSE TO DENSE, ORANGE, BROWN, WHITE, SILTY FINE TOCOARSE SAND, INTERLAYERED ORANGE, BROWN, WHITE, SLIGHTLY MICACEOUS SANDY SILT, TRACE ROCK FRAGMENTS, MOIST TO DRY (A-2-4)

BT
FIAD
11/96

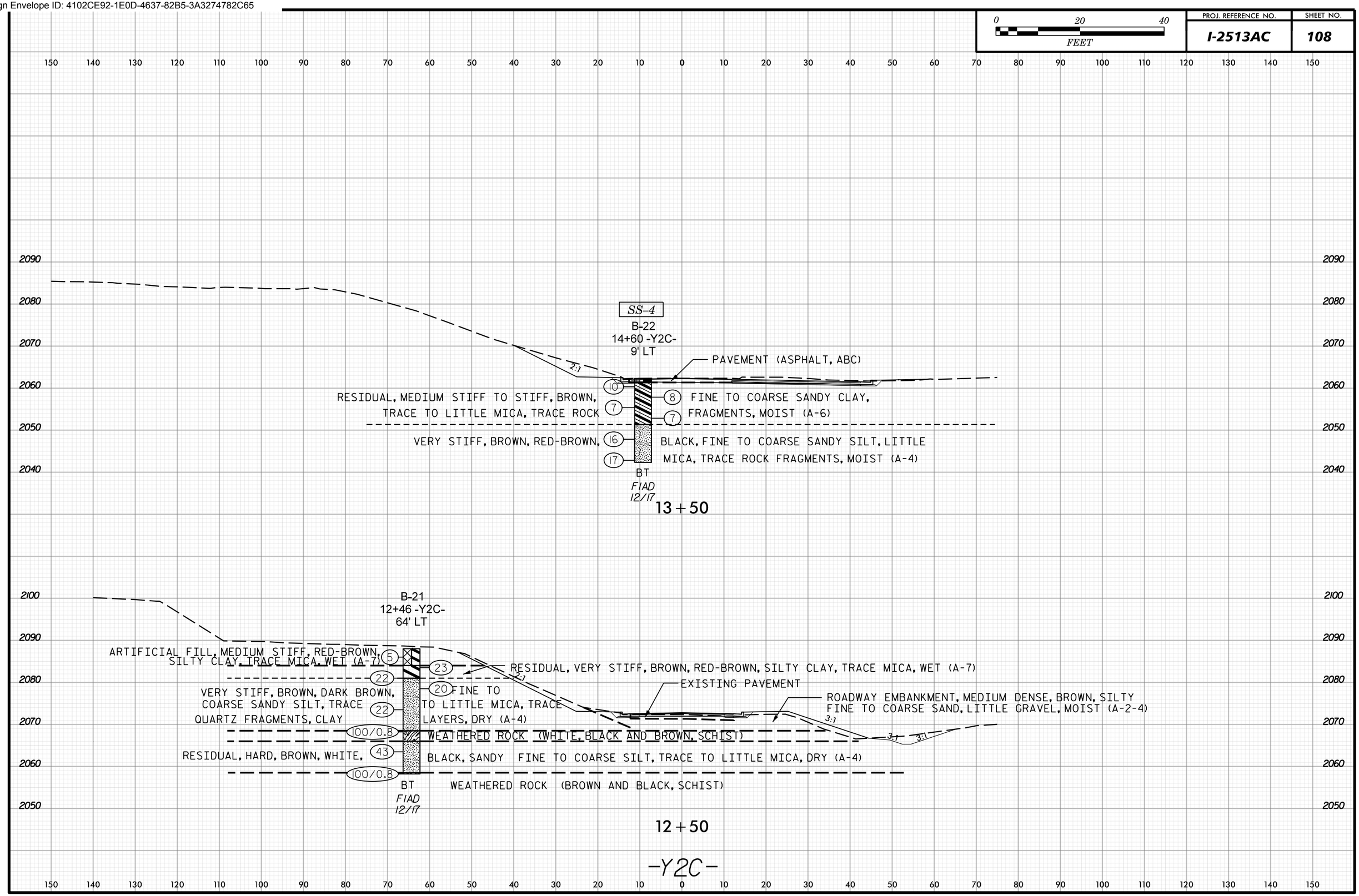
SHEAR LINE -Y2-

21+00

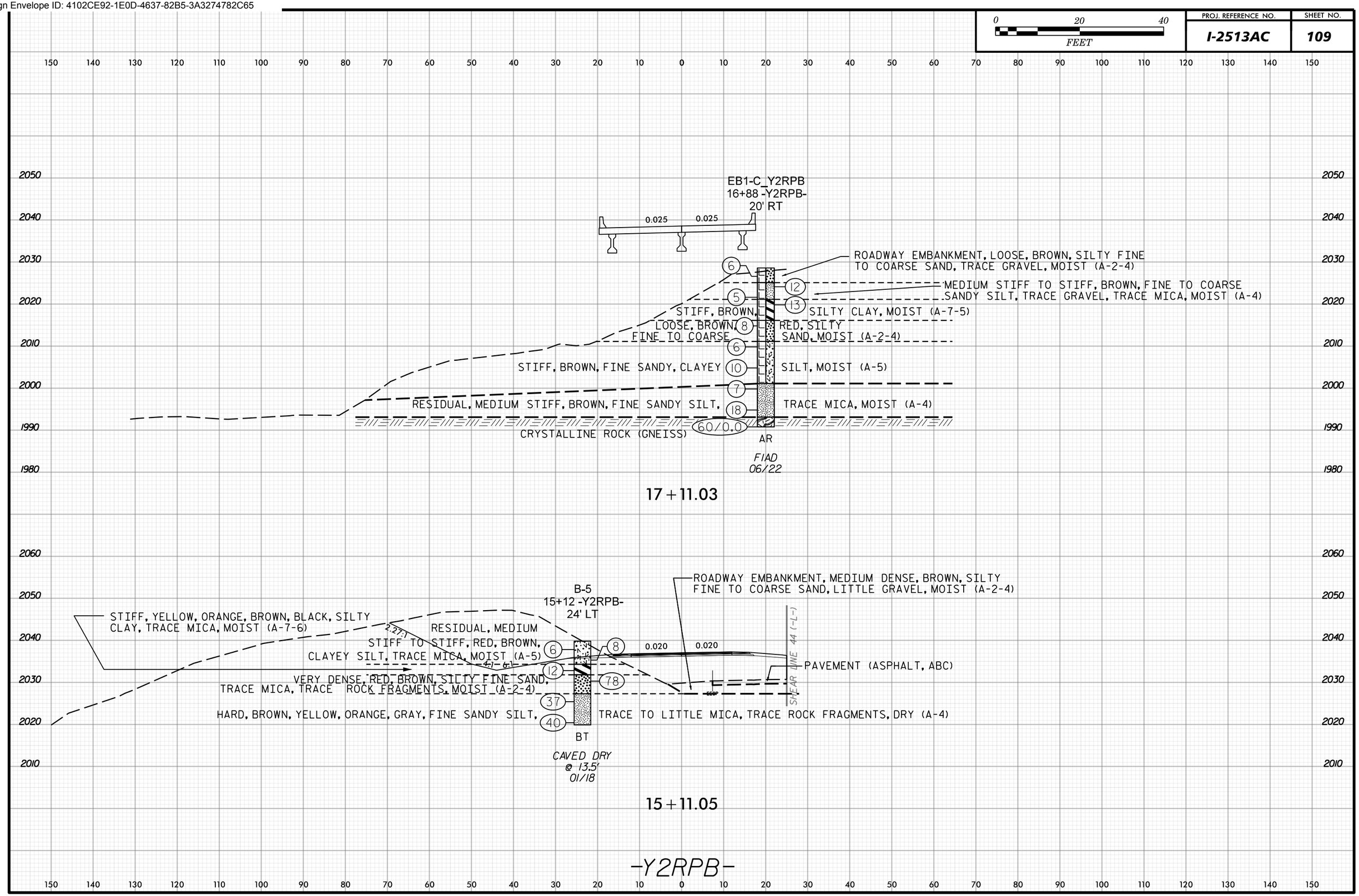
-Y2B-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	108

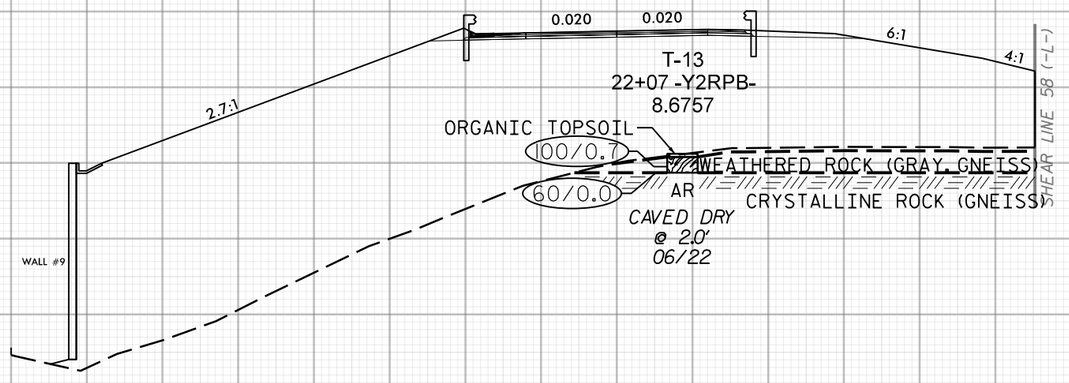


Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

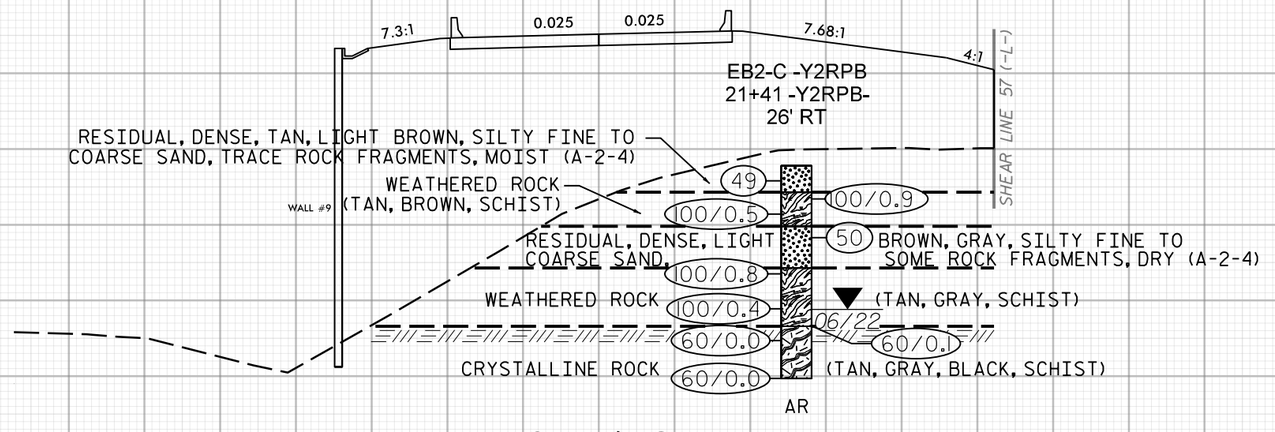


Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	110



22+06.04



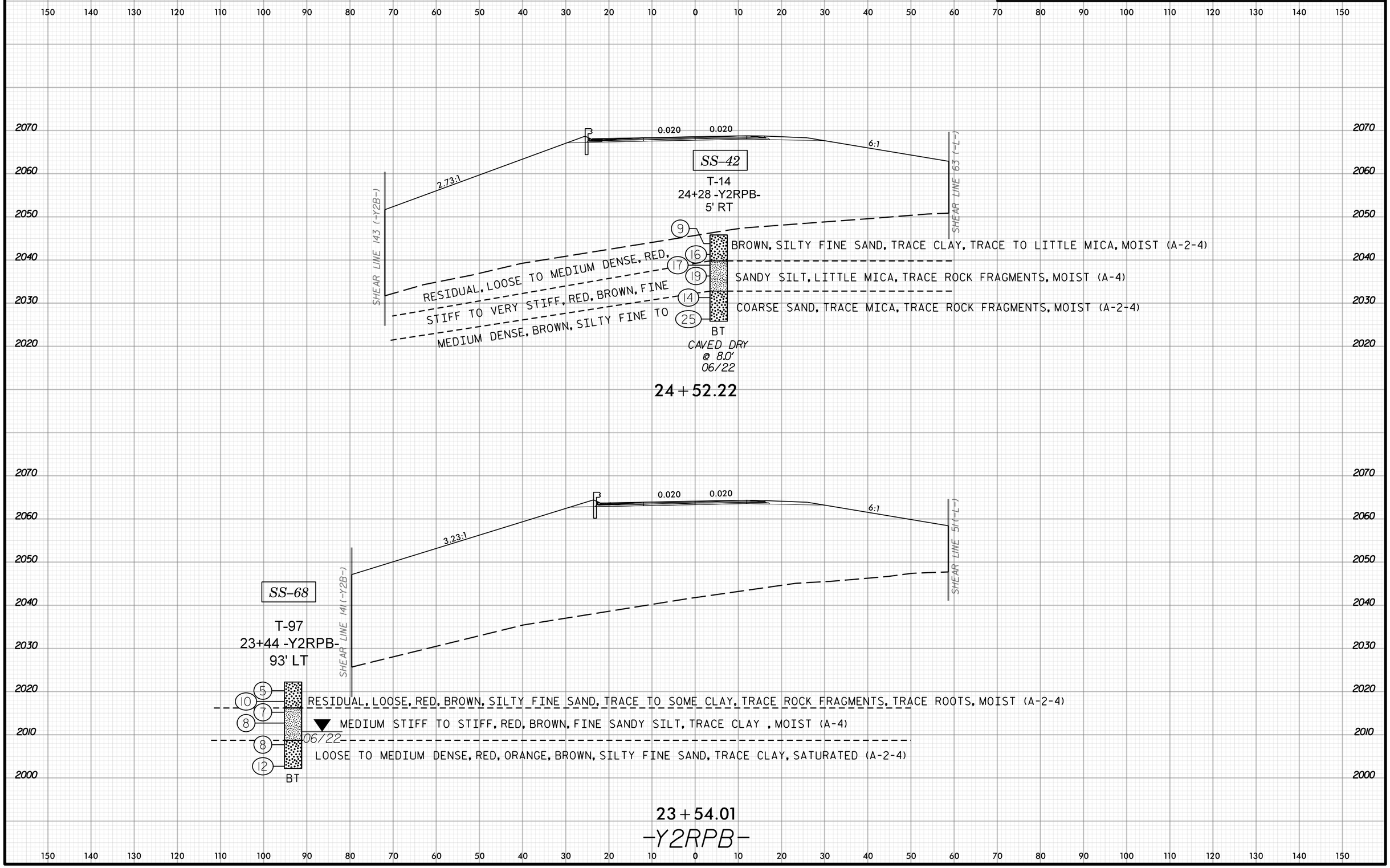
21+56.58

-Y2RPB-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	111



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

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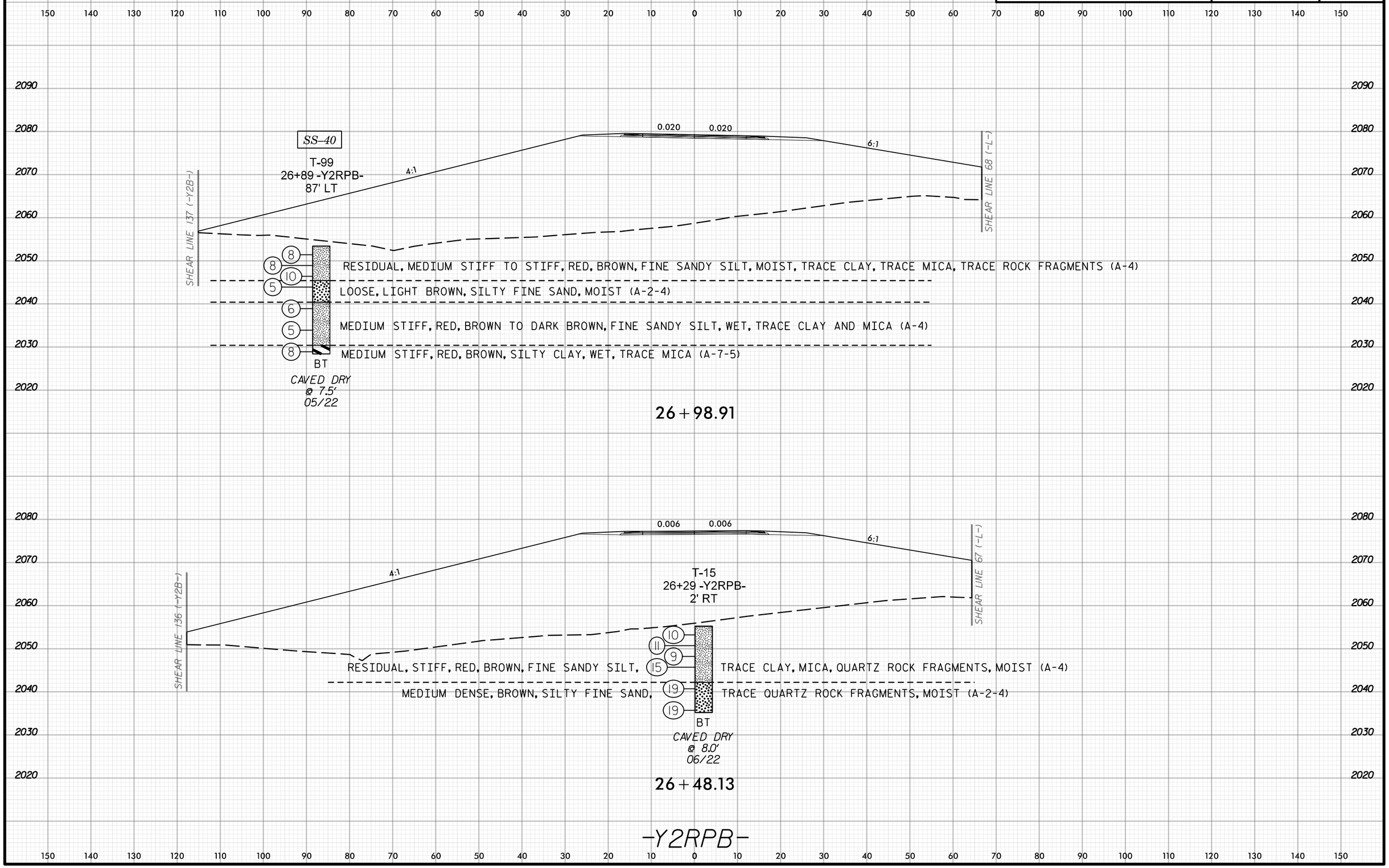
	I-2513AC	112



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

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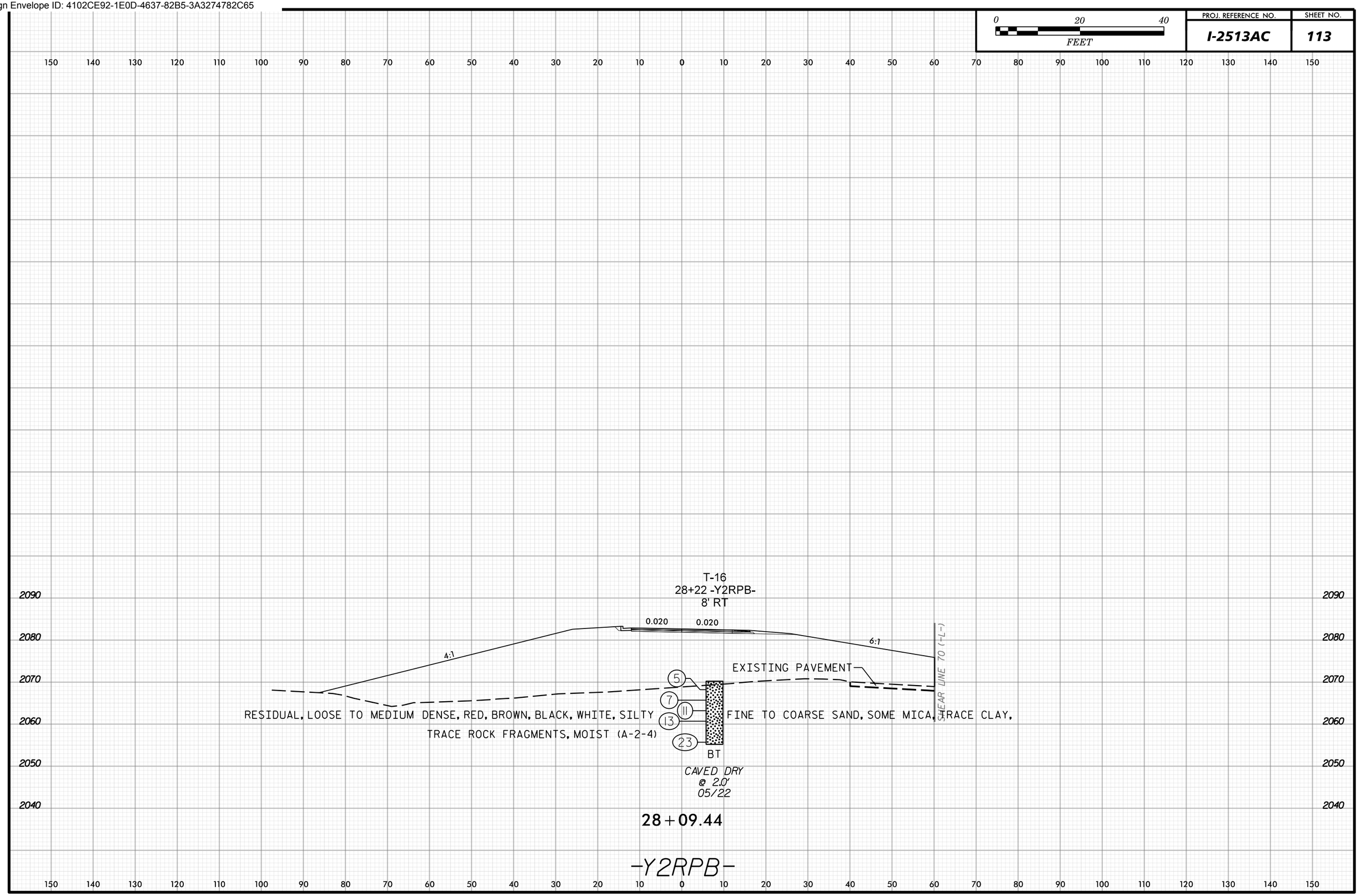
I-2513AC	113



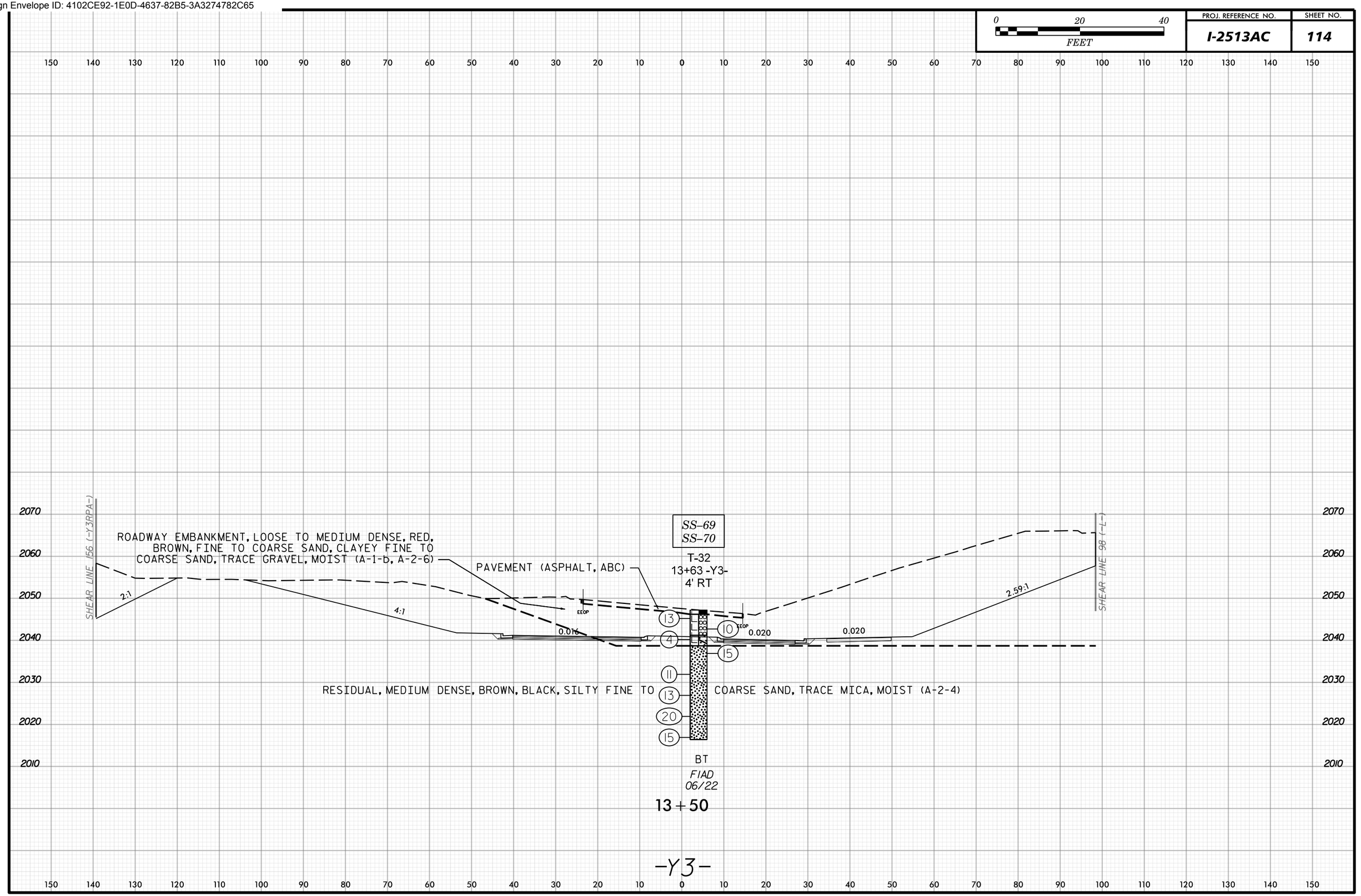
28+09.44

-Y2RPB-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	114



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

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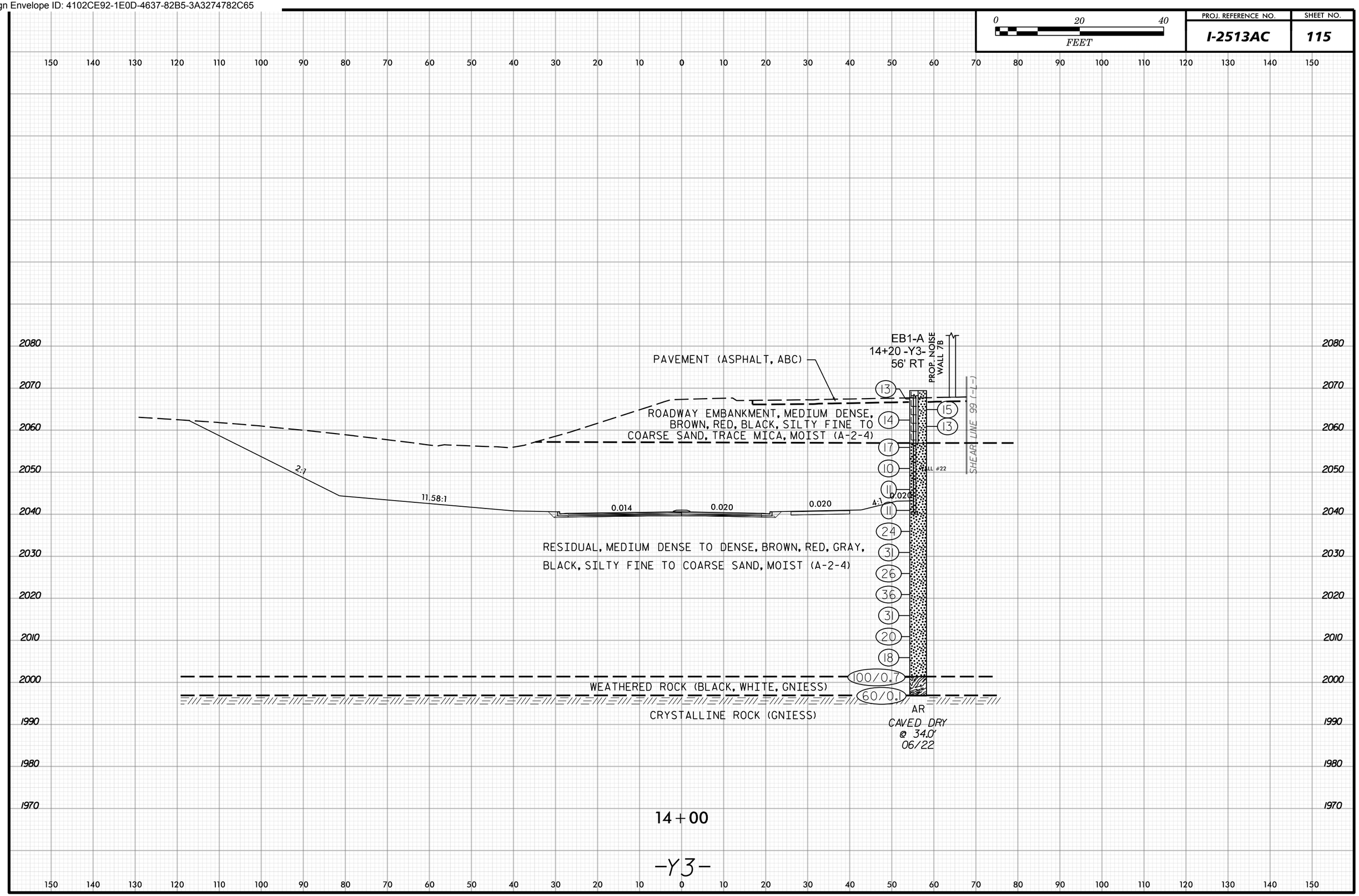

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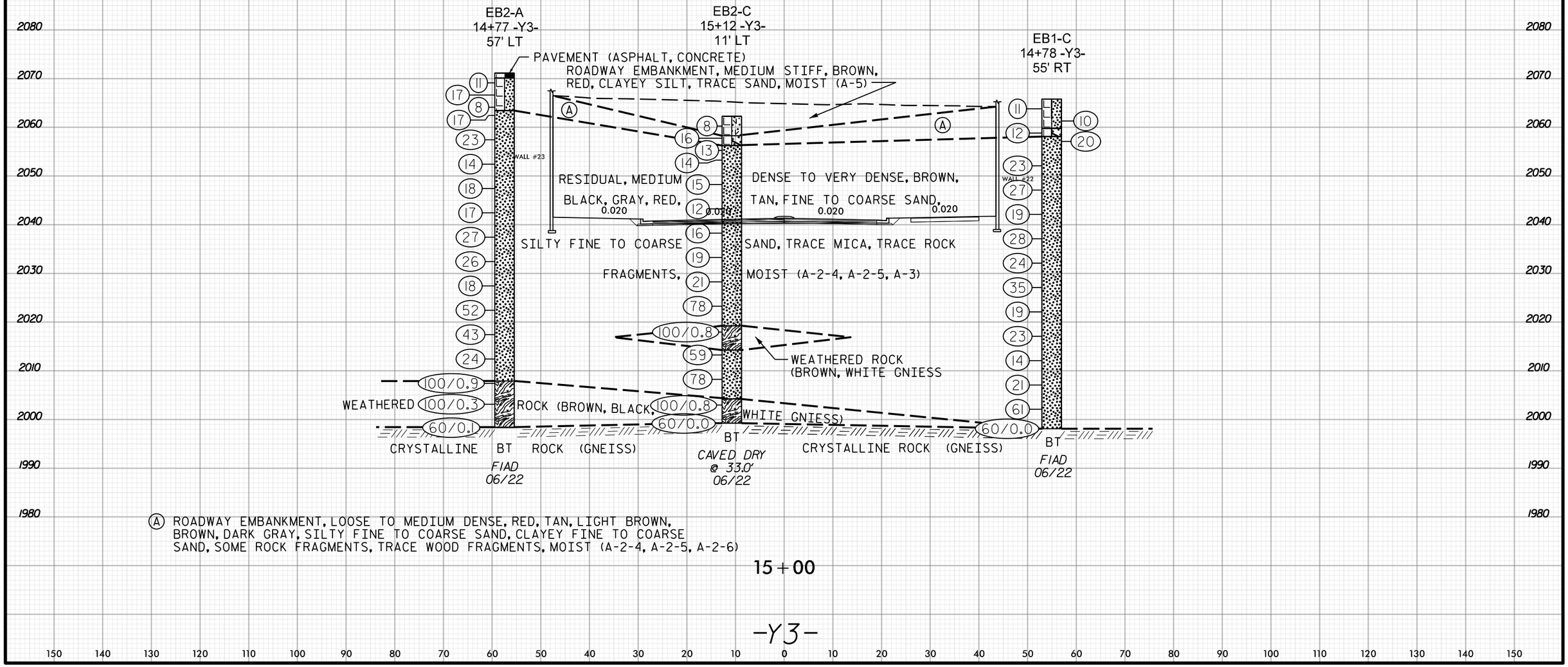
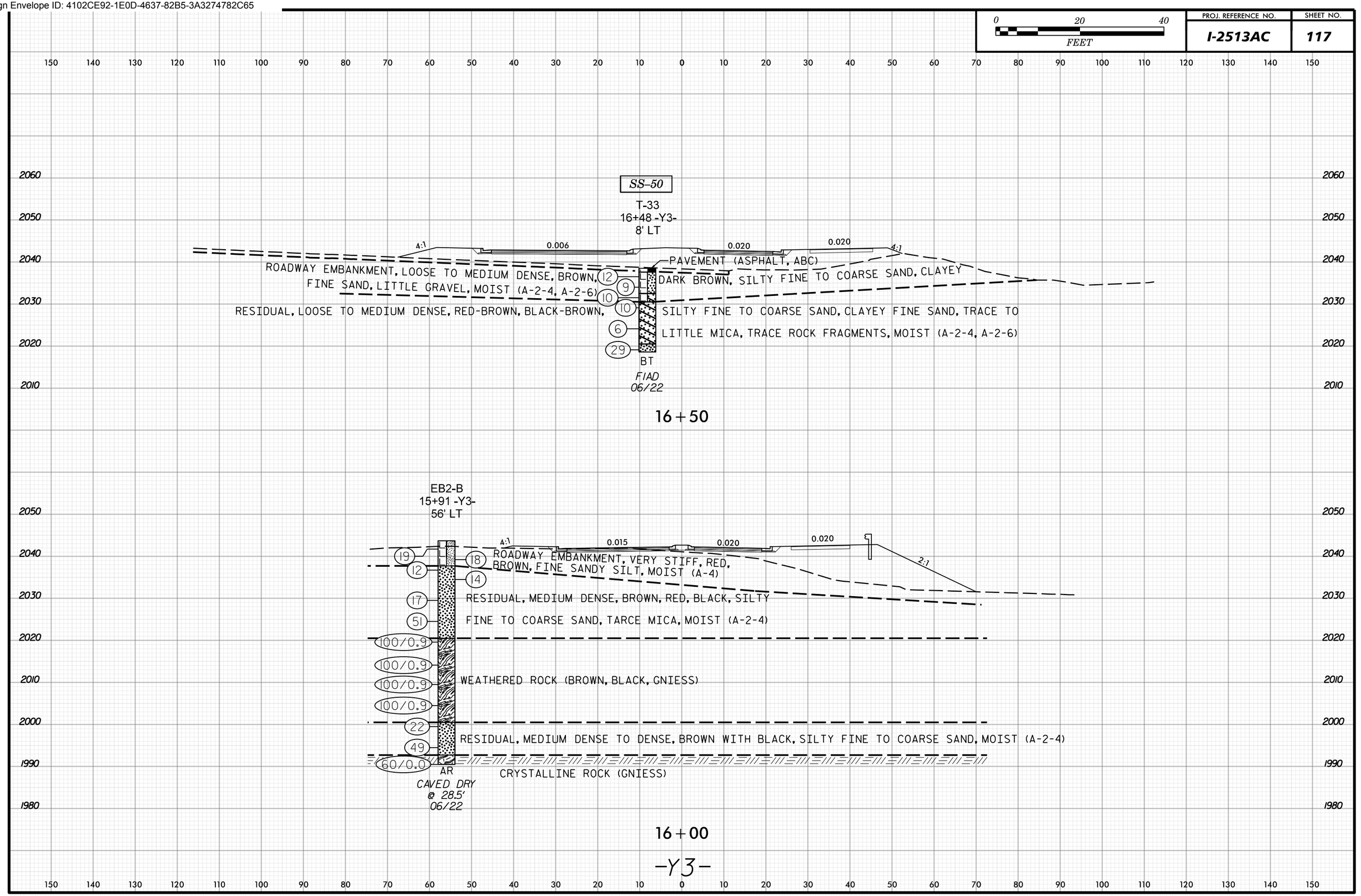


(A) ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, RED, TAN, LIGHT BROWN, BROWN, DARK GRAY, SILTY FINE TO COARSE SAND, CLAYEY FINE TO COARSE SAND, SOME ROCK FRAGMENTS, TRACE WOOD FRAGMENTS, MOIST (A-2-4, A-2-5, A-2-6)

15+00

-Y3-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	118

0 20 40 FEET

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

2060 2050 2040 2030 2020 2010 2000

B-41
23+03 -Y3-
134' LT

6 21 48 39 20 14

HARD, SANDY IRACE — PINK, RED, YELLOW-BROWN, WHITE, FINE SILT, TRACE TO LITTLE ROCK FRAGMENTS, TO LITTLE MICA, DRY (A-4)

STIFF FINE — TO VERY STIFF, RED, BLACK, WHITE, YELLOW-BROWN, SANDY CLAY, TRACE ROCK FRAGMENTS, TRACE MICA, MOIST (A-6)

BT
CAVED DRY @ 10.5' 12/17

RESIDUAL, LOOSE TO MEDIUM DENSE, RED, BROWN, CLAYEY COARSE TO FINE SAND, TRACE MICA, DRY (A-2-6)

2:1

EXISTING PAVEMENT

0.011 0.011 0.020

WALL #18

23+00

T-34
18+18 -Y3-
10' LT

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

PAVEMENT (ASPHALT, ABC)

11 16 16 10 21 18 27 69

0.020 0.006 0.006 0.020

2:1 1:1

RESIDUAL, MEDIUM DENSE TO VERY DENSE, RED, ORANGE, BROWN, SILTY FINE TO COARSE SAND, TRACE MICA, TRACE ROCK FRAGMENTS, TRACE QUARTZ ROCK FRAGMENTS, MOIST (A-2-4)

BT
DRY 06/22

WALL #18

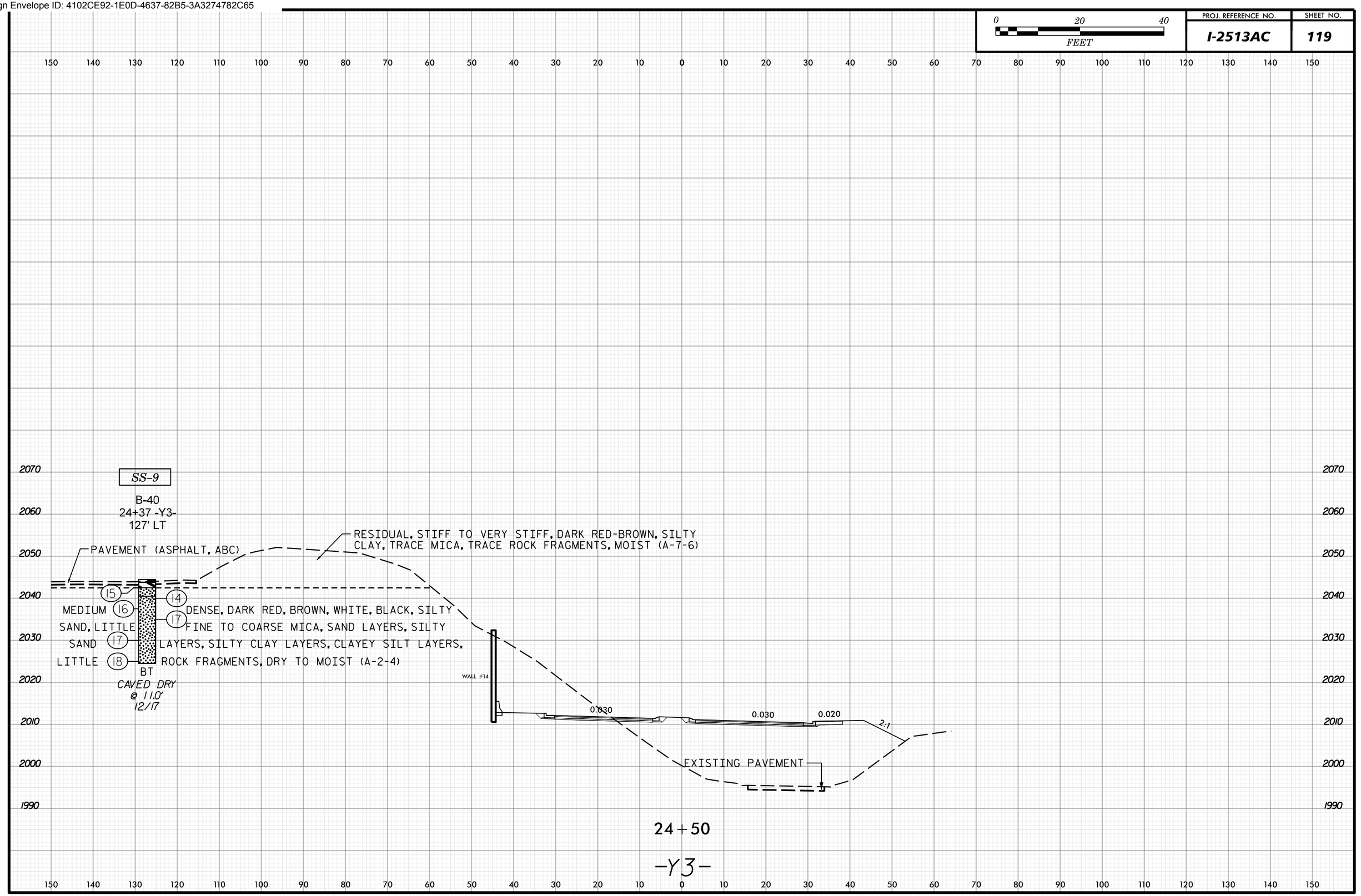
18+50

-Y3-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

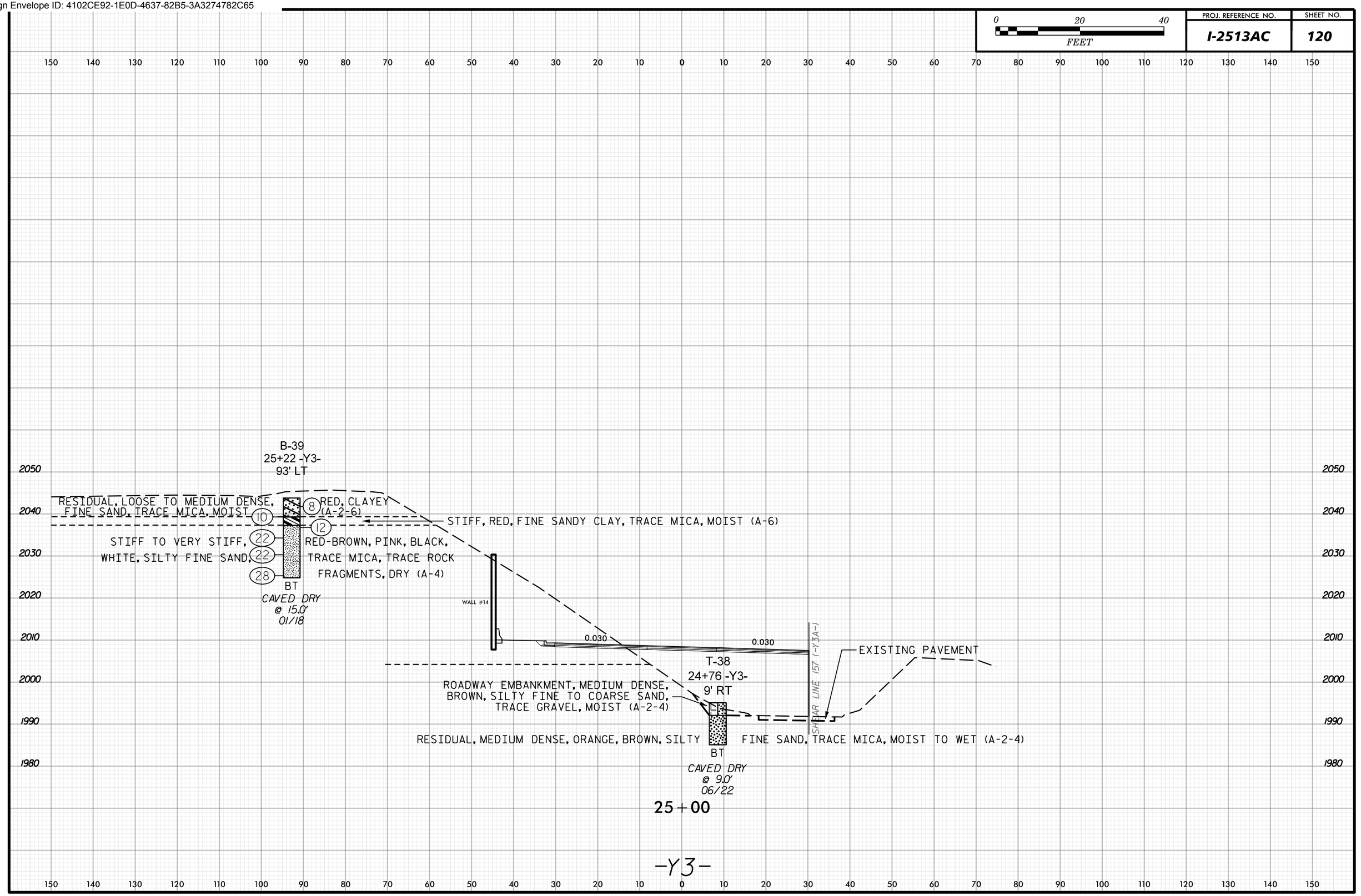
PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	119



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

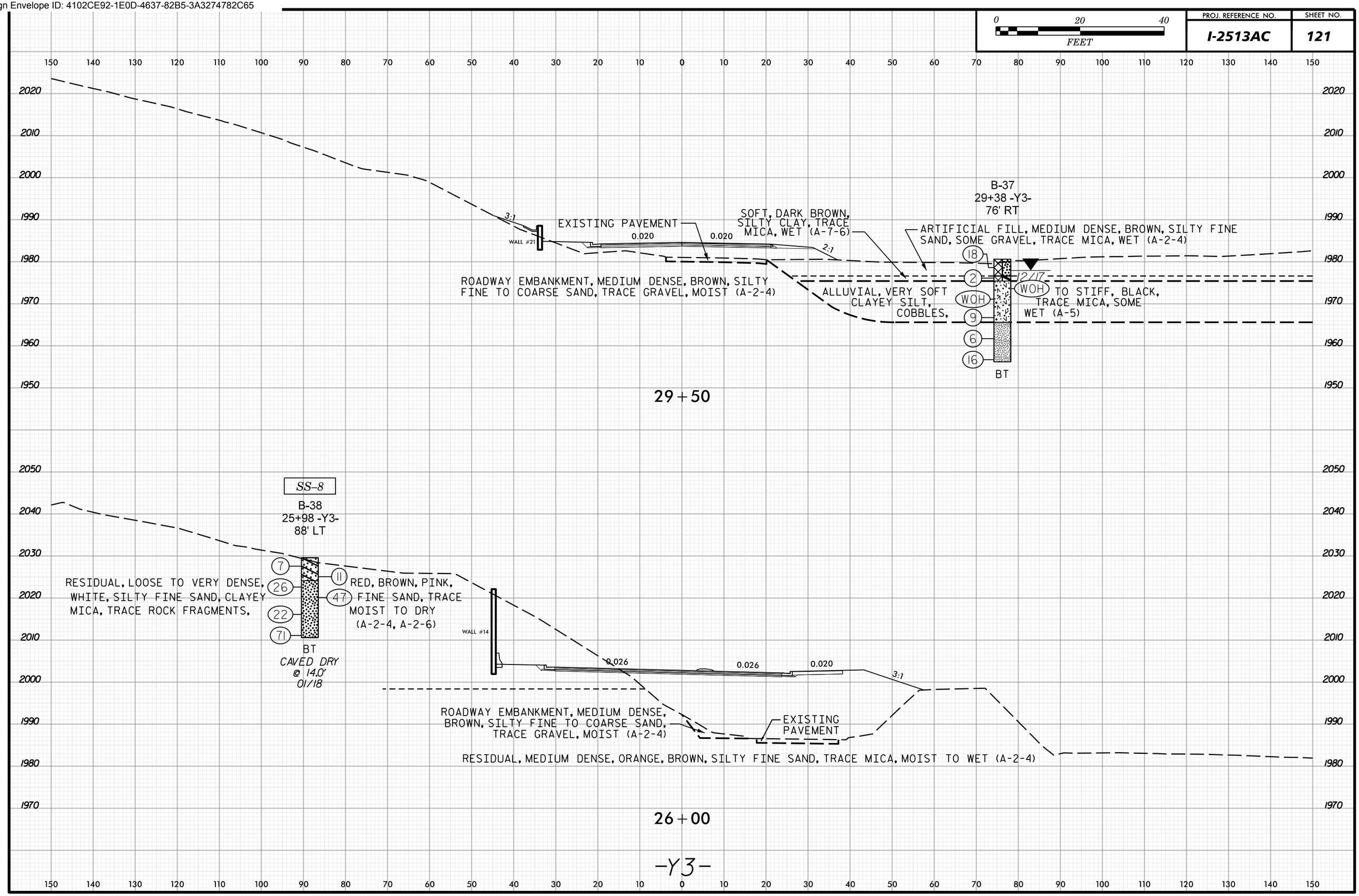
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	120



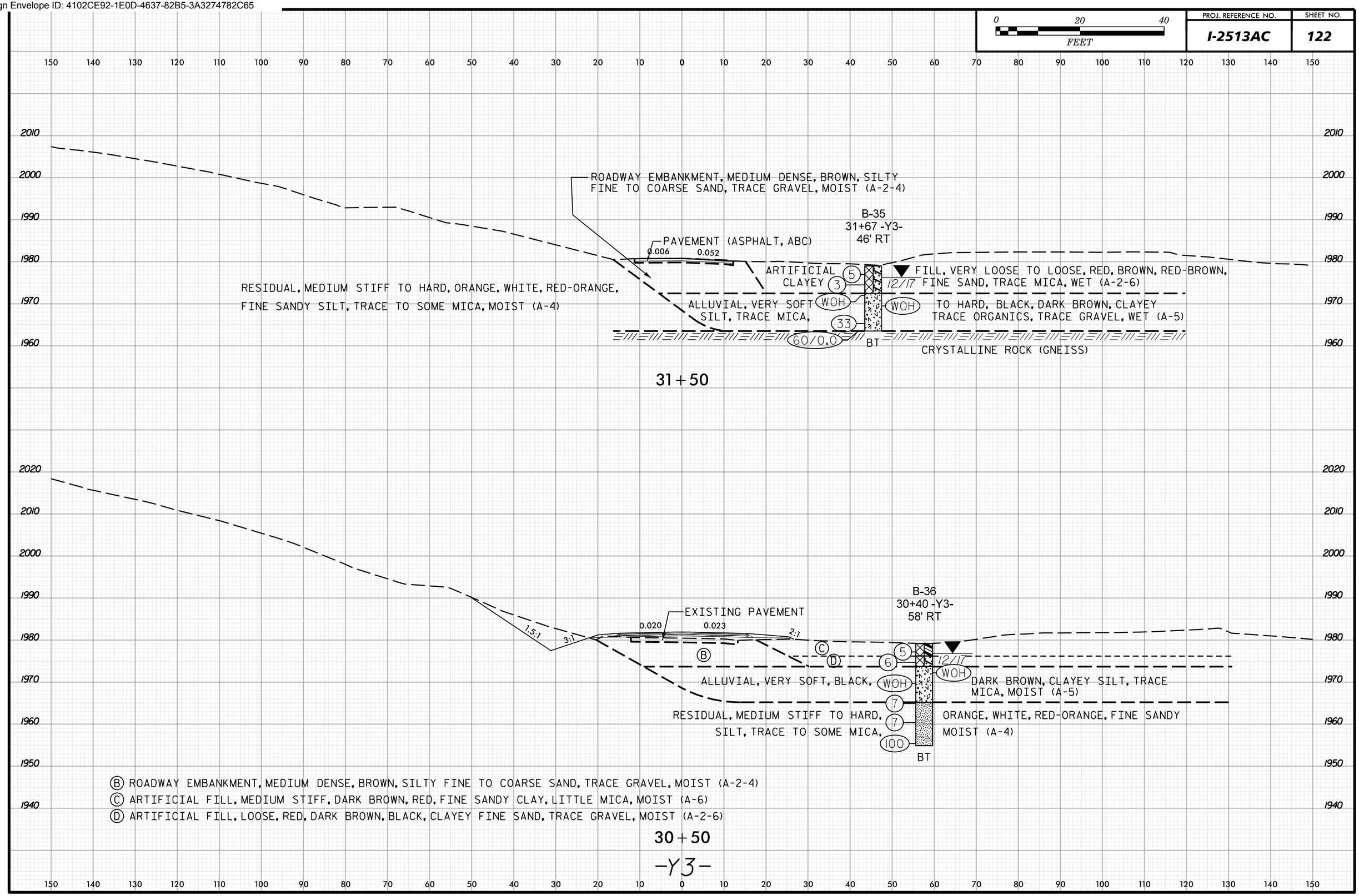
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	121



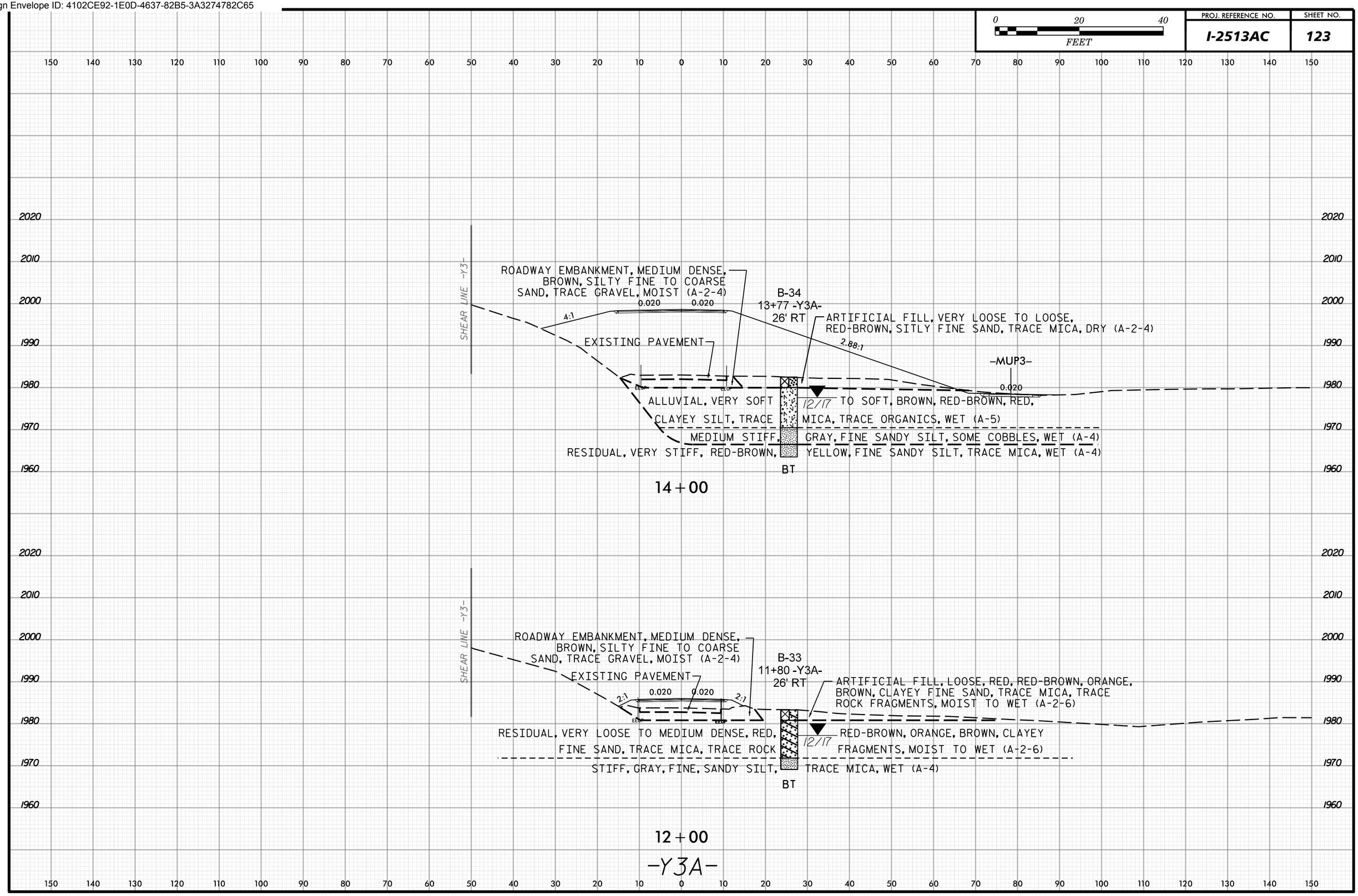
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	122



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

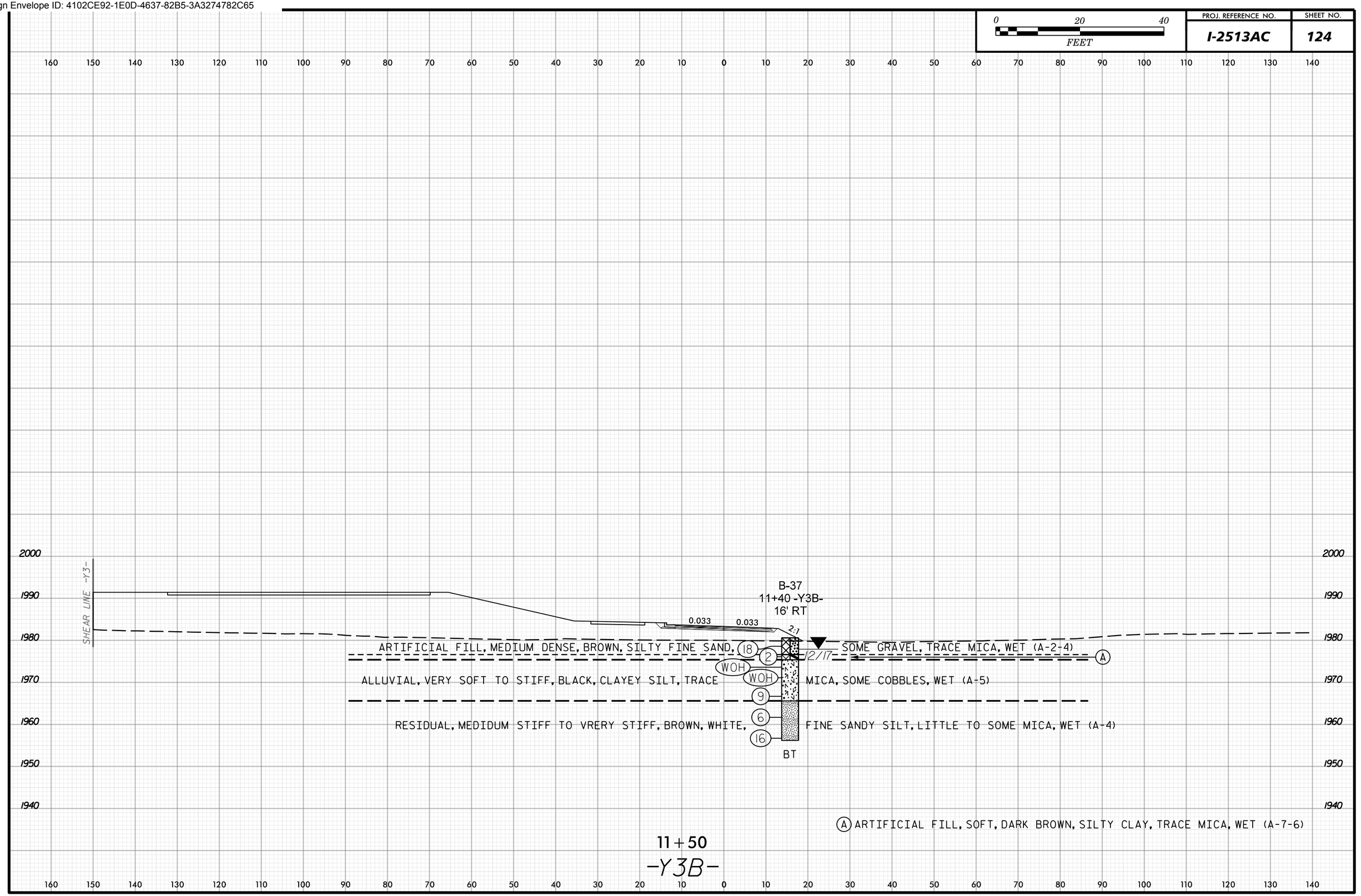
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	123



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

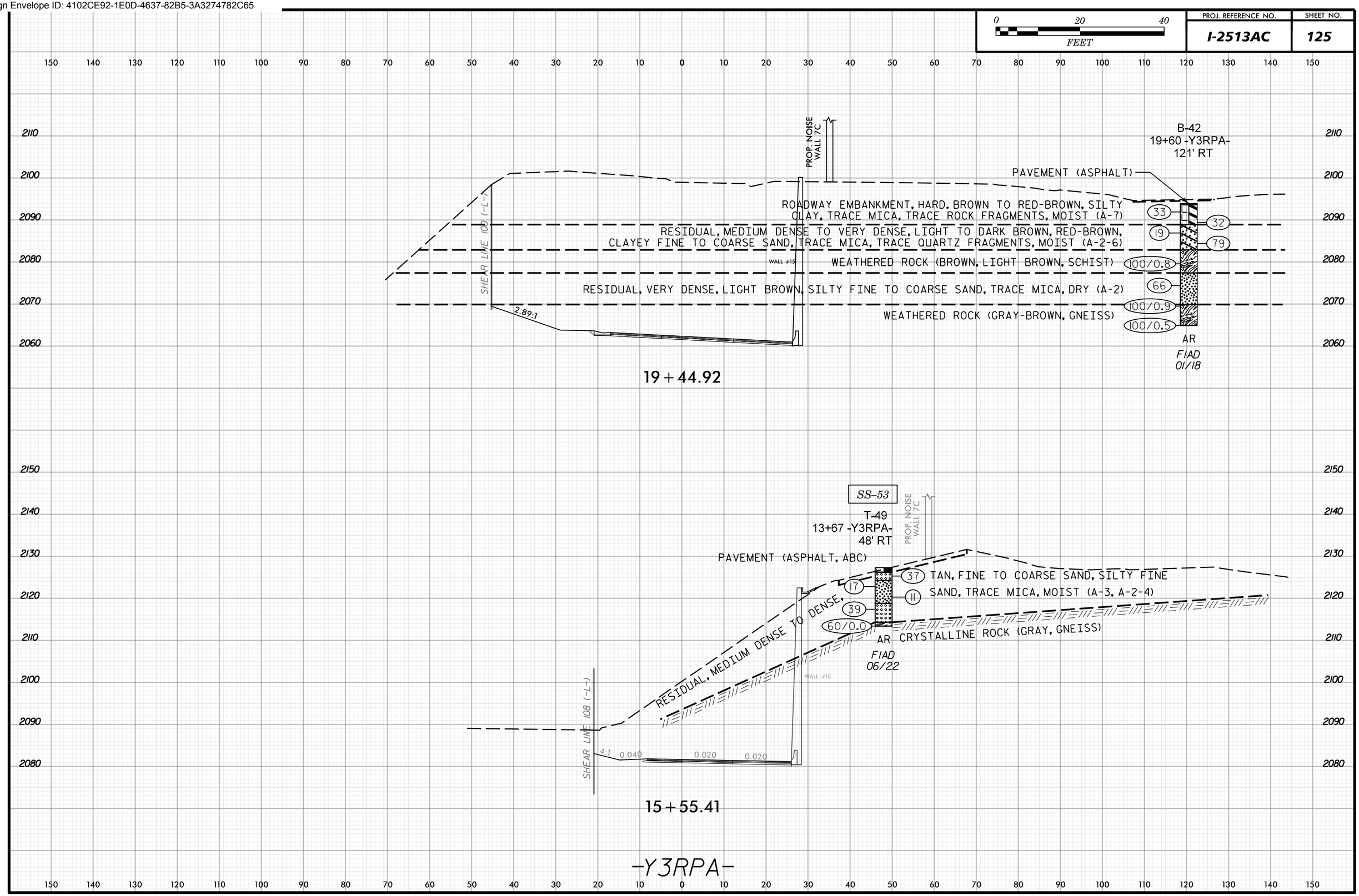
PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	124



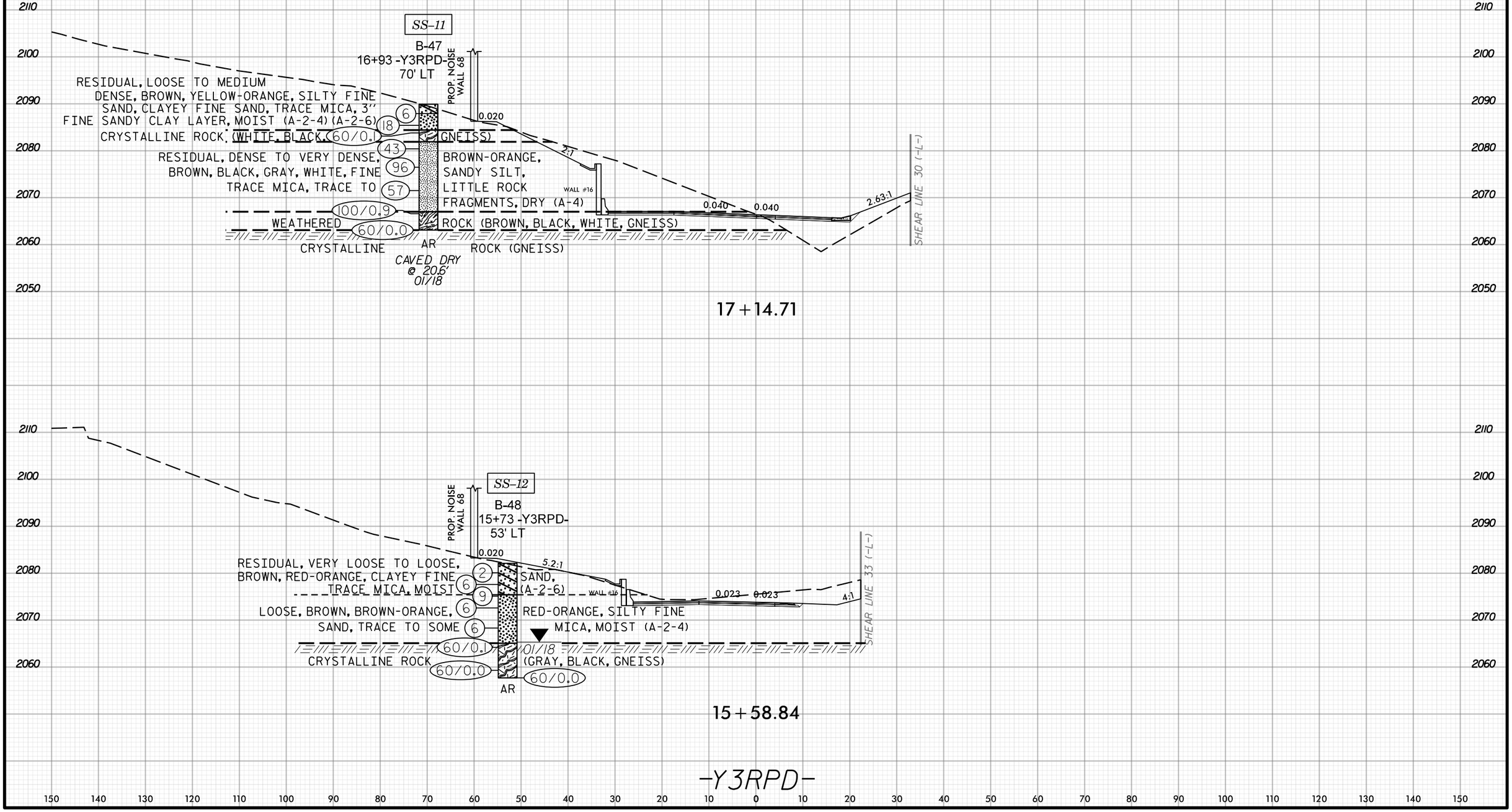
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	125

0 20 40 FEET



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

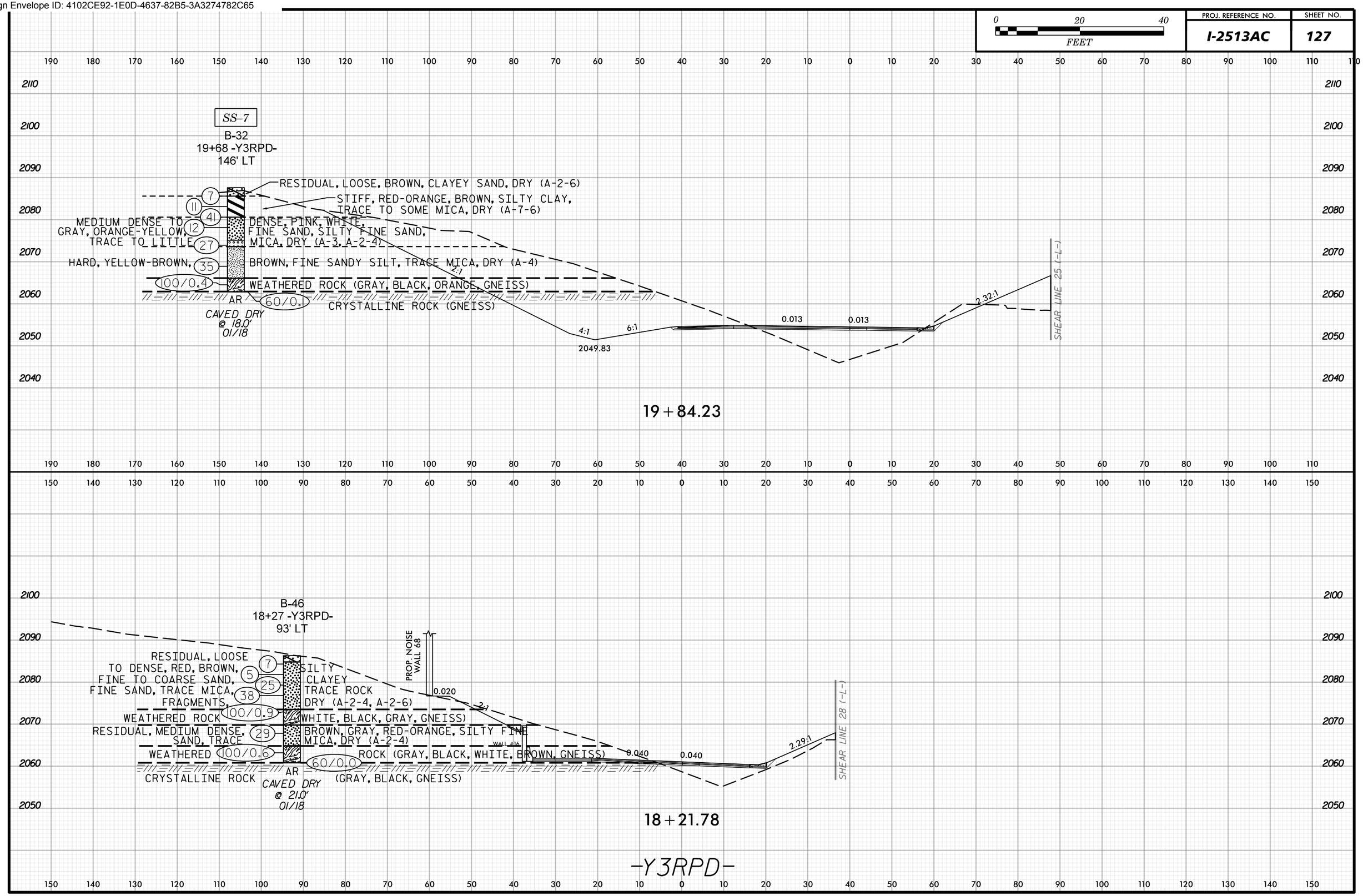


17+14.71

15+58.84

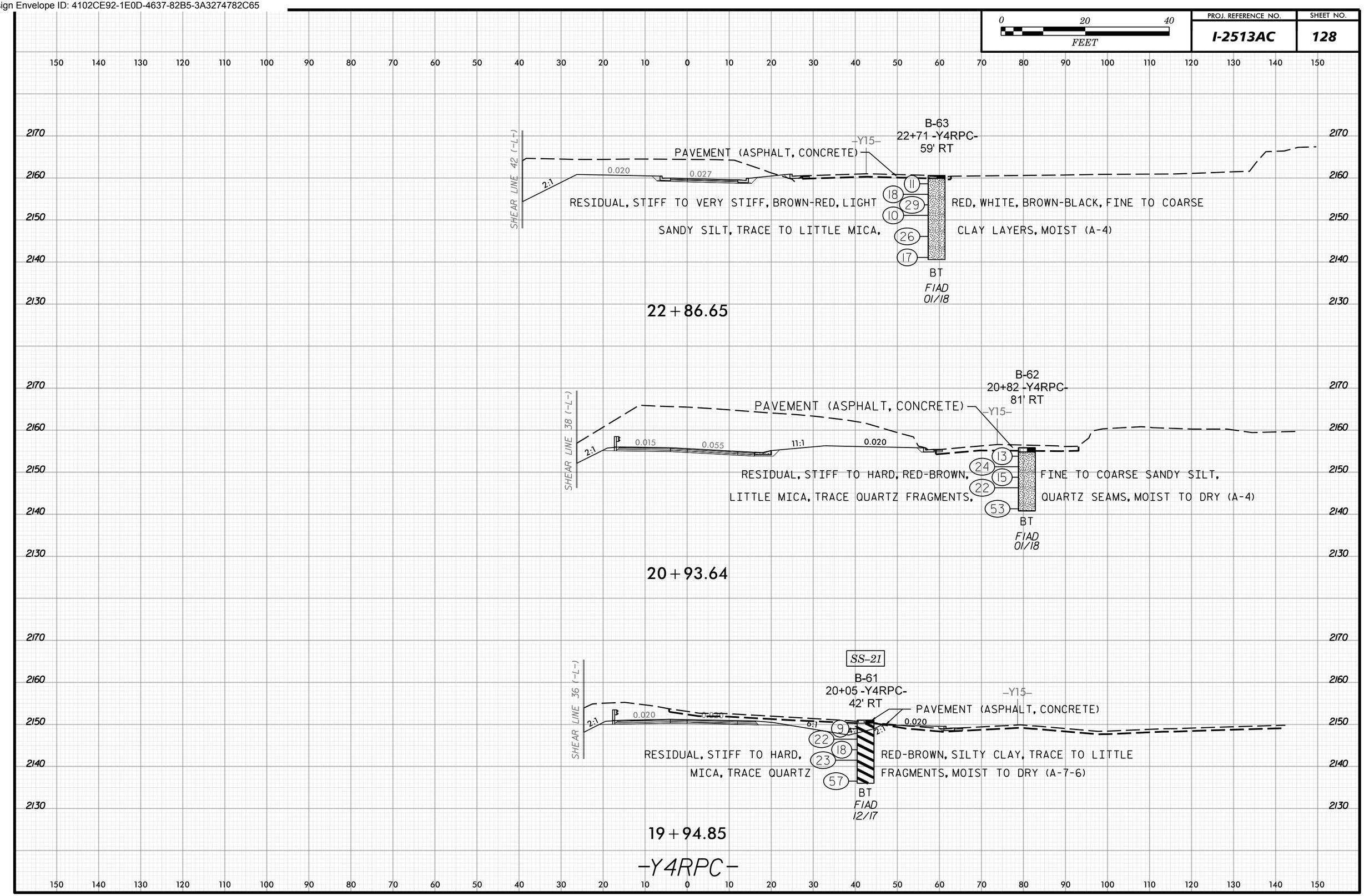
-Y3RPD-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	128



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	129

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

2050
2040
2030
2020
2010

T-42
12+32 -Y10-
49' RT

EXISTING PAVEMENT

ARTIFICIAL FILL, MEDIUM DENSE, BROWN, CLAYEY FINE TO COARSE SAND, TRACE ROOTS, MOIST (A-2-6)

2:1

3:1

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, BROWN, RED-BROWN, SILTY FINE TO COARSE SAND, TRACE GRAVEL, TRACE MICA, TRACE WOOD FRAGMENTS, MOIST (A-2-4)

RESIDUAL, MEDIUM DENSE TO DENSE, BROWN, RED, TAN, SILTY FINE TO COARSE SAND, TRACE CLAY, MOIST (A-2-4, A-2-5)

13 23 47 25 27

BT

CAVED DRT
@ 8.0'
06/21

12 + 50

T-55
11+08 -Y10-
90' RT

ARTIFICIAL FILL, LOOSE TO MEDIUM DENSE, TAN, BROWN, RED, BLACK, SILTY FINE TO COARSE SAND, TRACE CLAY, BOULDER FROM 2.0 - 3.0', TRACE ROCK FRAGMENTS, MOIST (A-2-4, A-2-5)

EXISTING PAVEMENT

ROADWAY EMBANKMENT, LOOSE TO MEDIUM DENSE, BROWN, RED-BROWN, SILTY FINE TO COARSE SAND, TRACE GRAVEL, TRACE MICA, TRACE WOOD FRAGMENTS, MOIST (A-2-4)

RESIDUAL, MEDIUM DENSE, BROWN, RED, BLACK, SILTY FINE TO COARSE SAND, TRACE MICA (A-2-4)

12 4 6 7 9 11

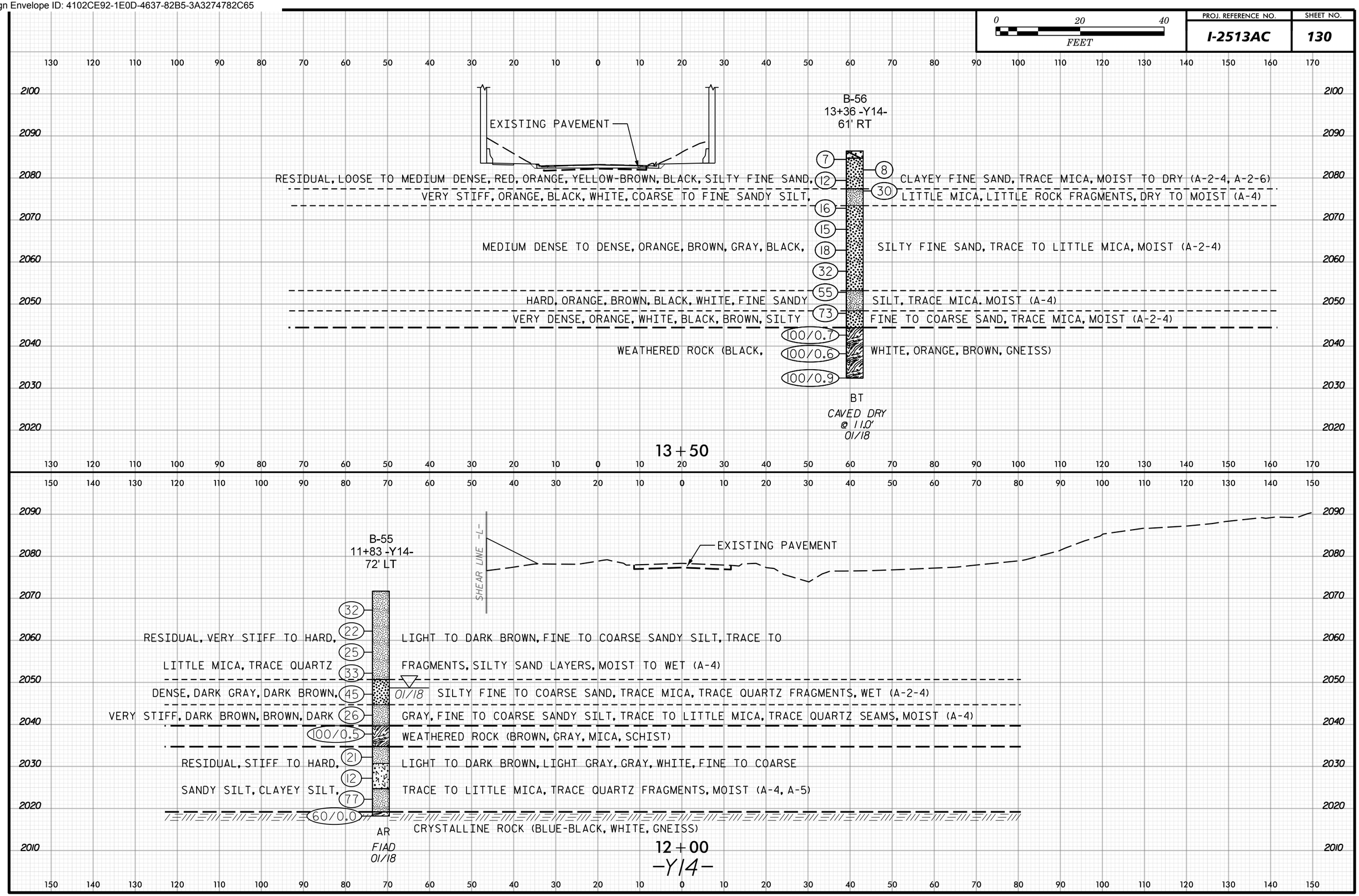
BT

CAVED DRT
@ 11.0'
06/21

11 + 50

-Y10-

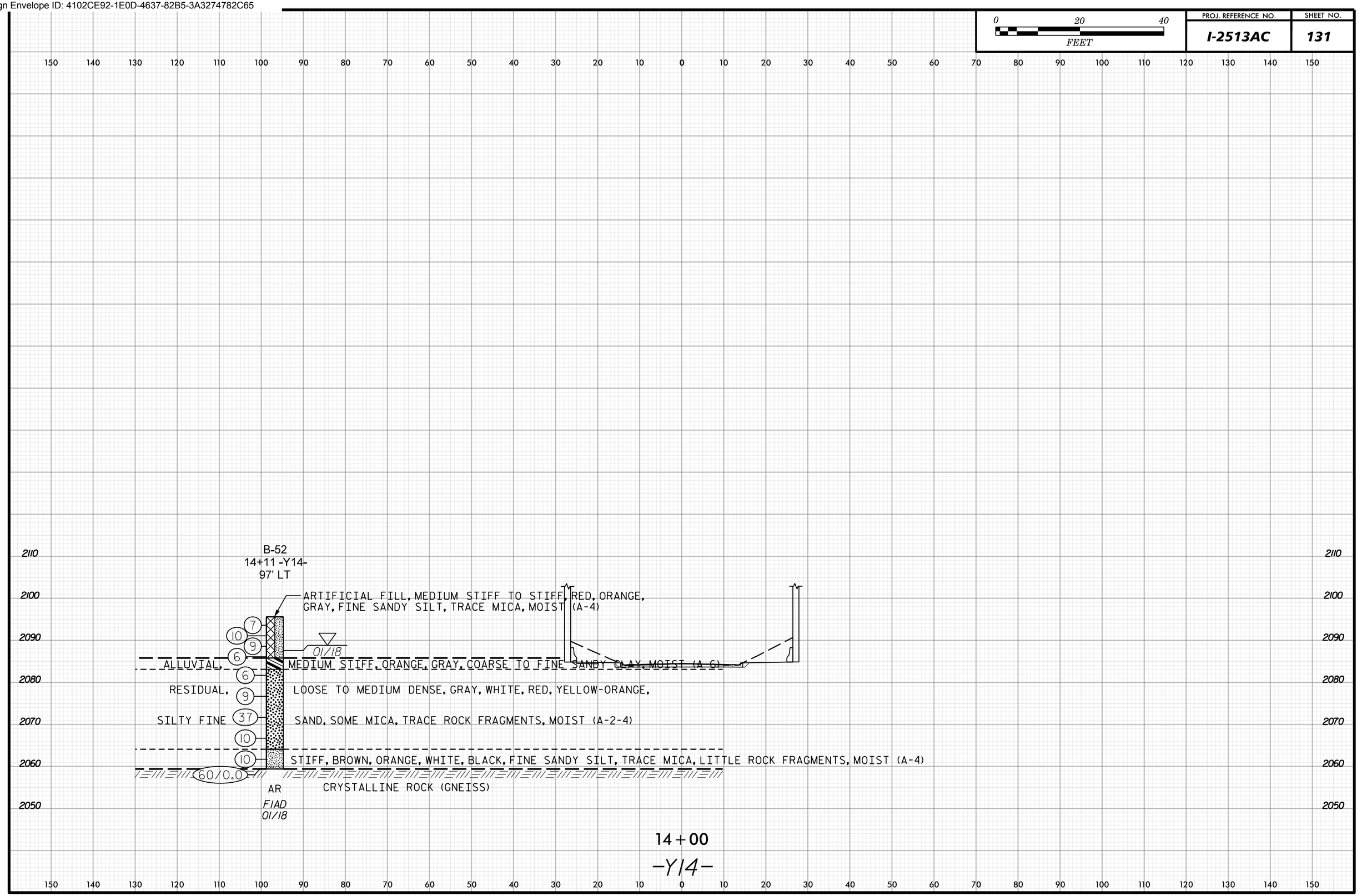
Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	131



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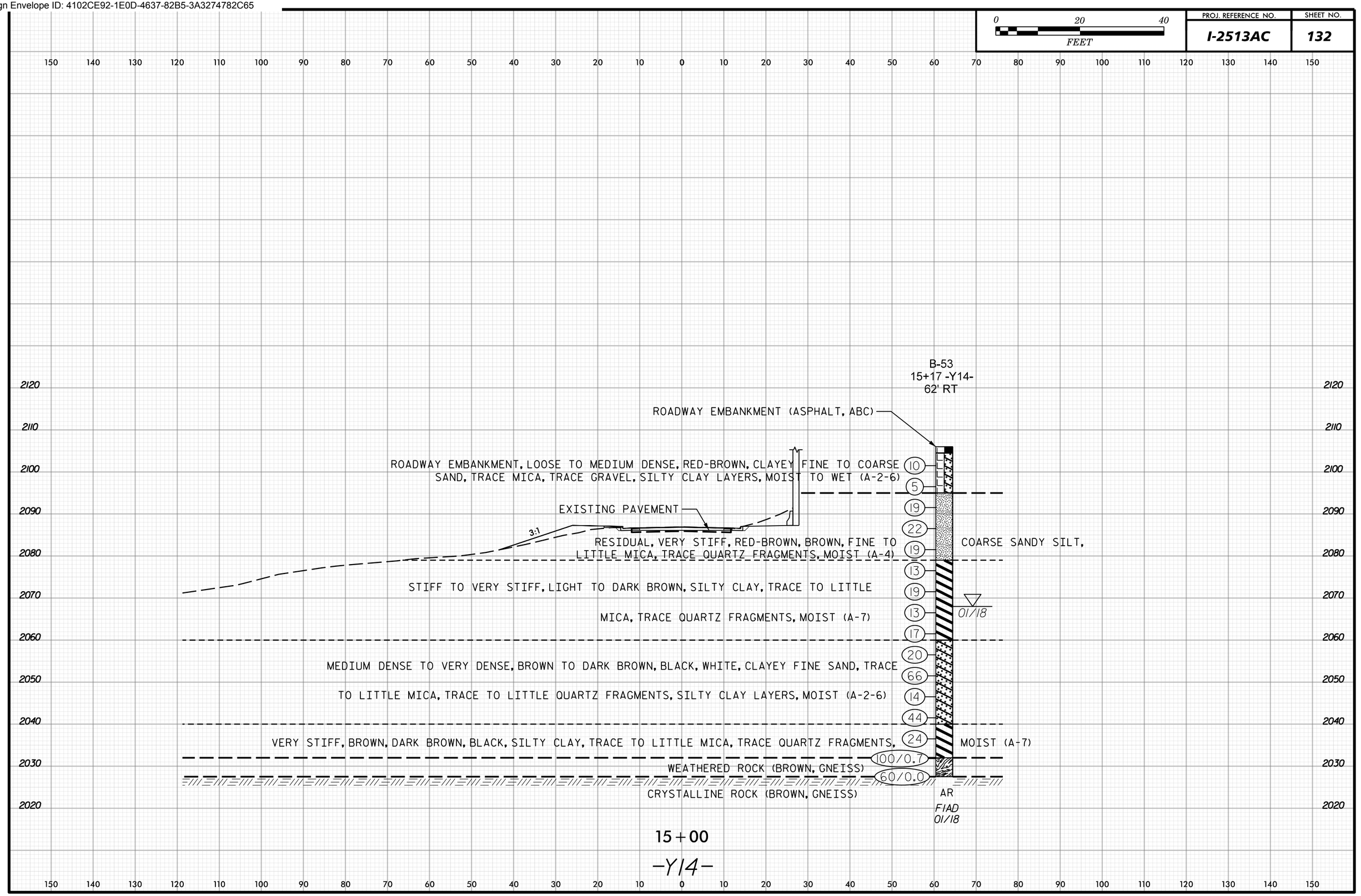
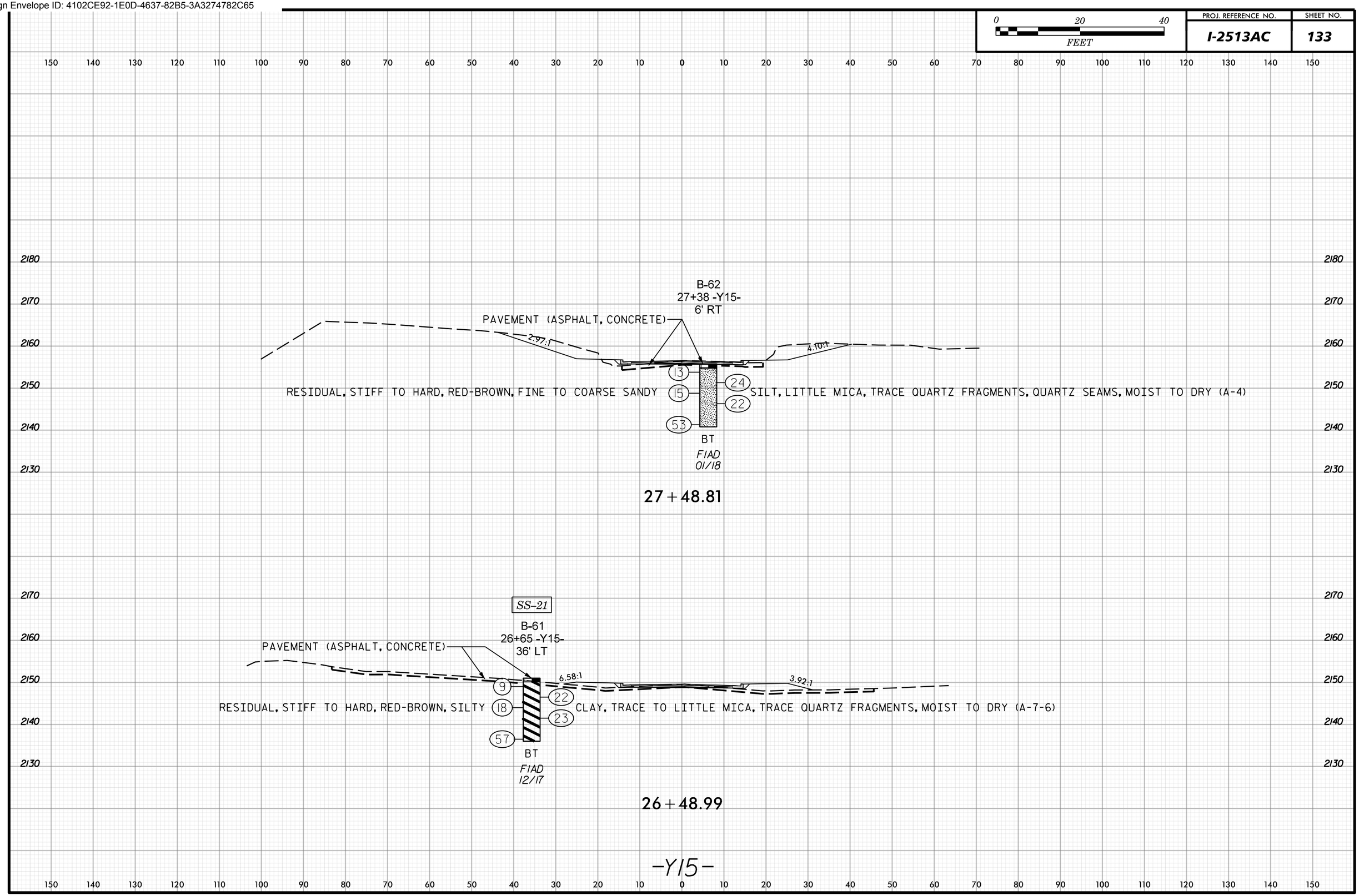
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	132



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	133



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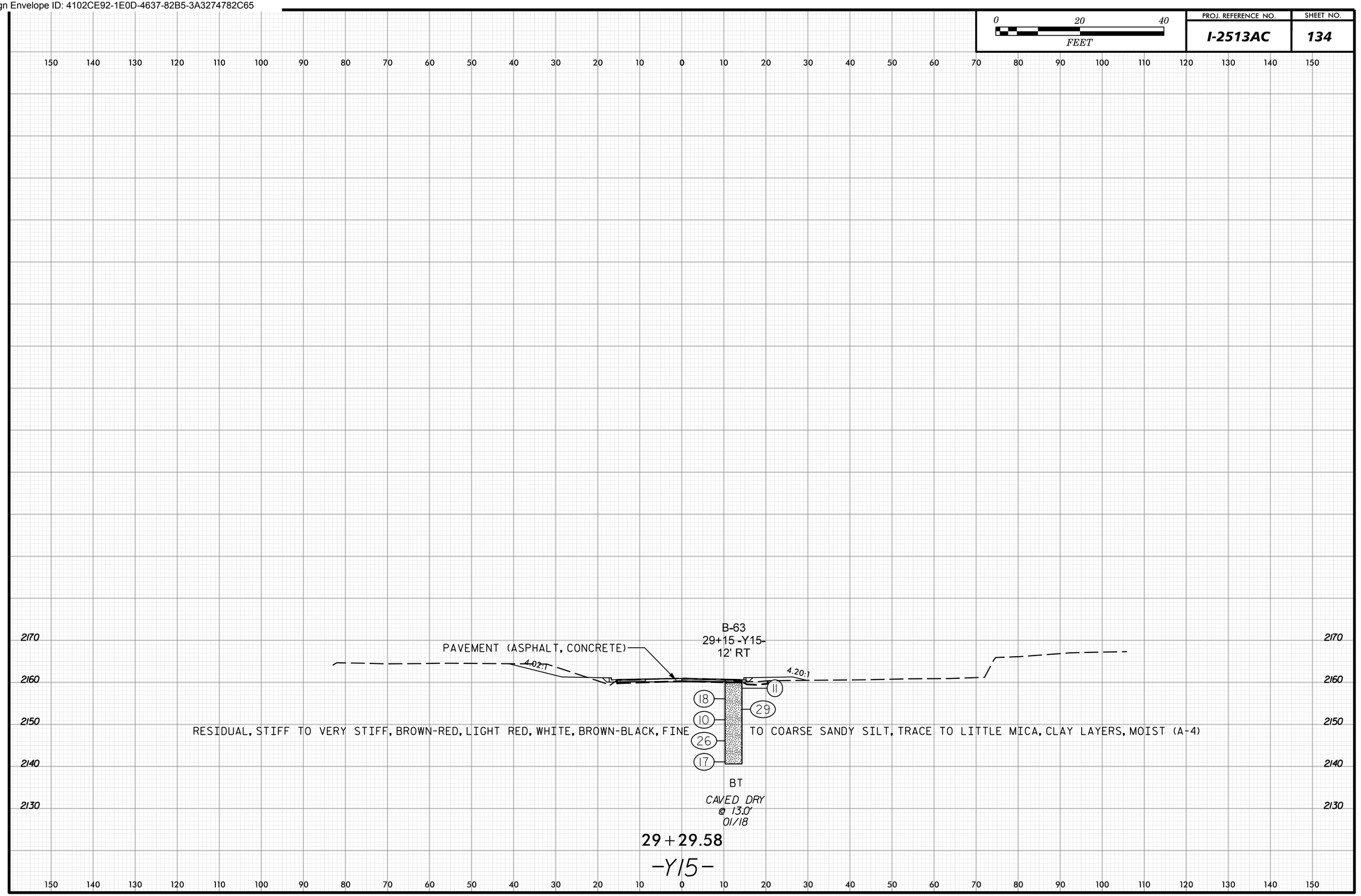
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	134



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	135

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

2060
2050
2040
2030
2020
2010

14:1

4:1

T-31
11+43 -RAB1-
30' LT

ALLUVIAL, ORANGE, LIGHT BROWN, SILTY FINE TO COARSE SAND, TRACE GRAVEL, MOIST (A-2-4)

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

BT
DRY
06/22

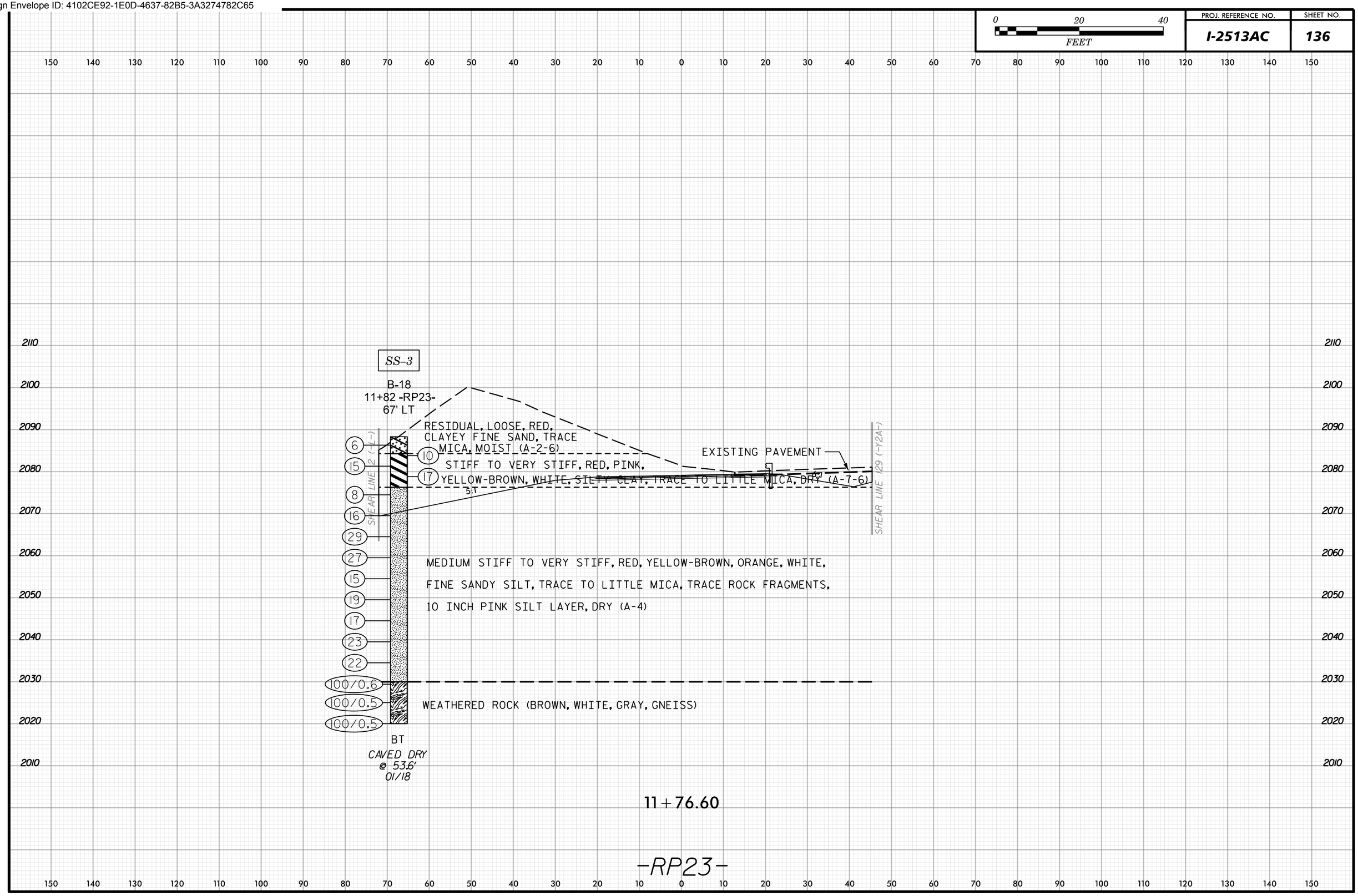
11+50

-RABI-

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

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	136



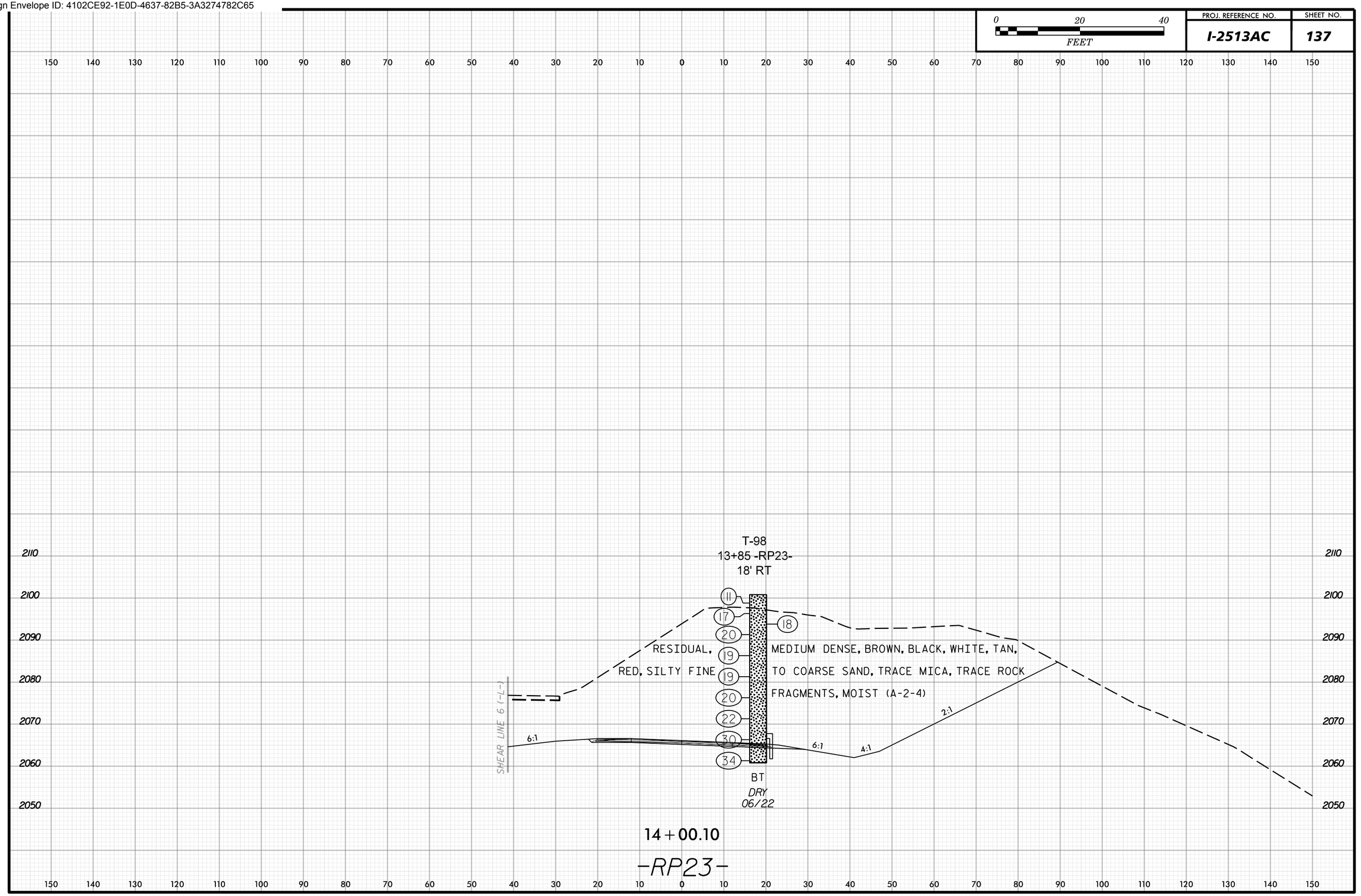
11+76.60

-RP23-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	137

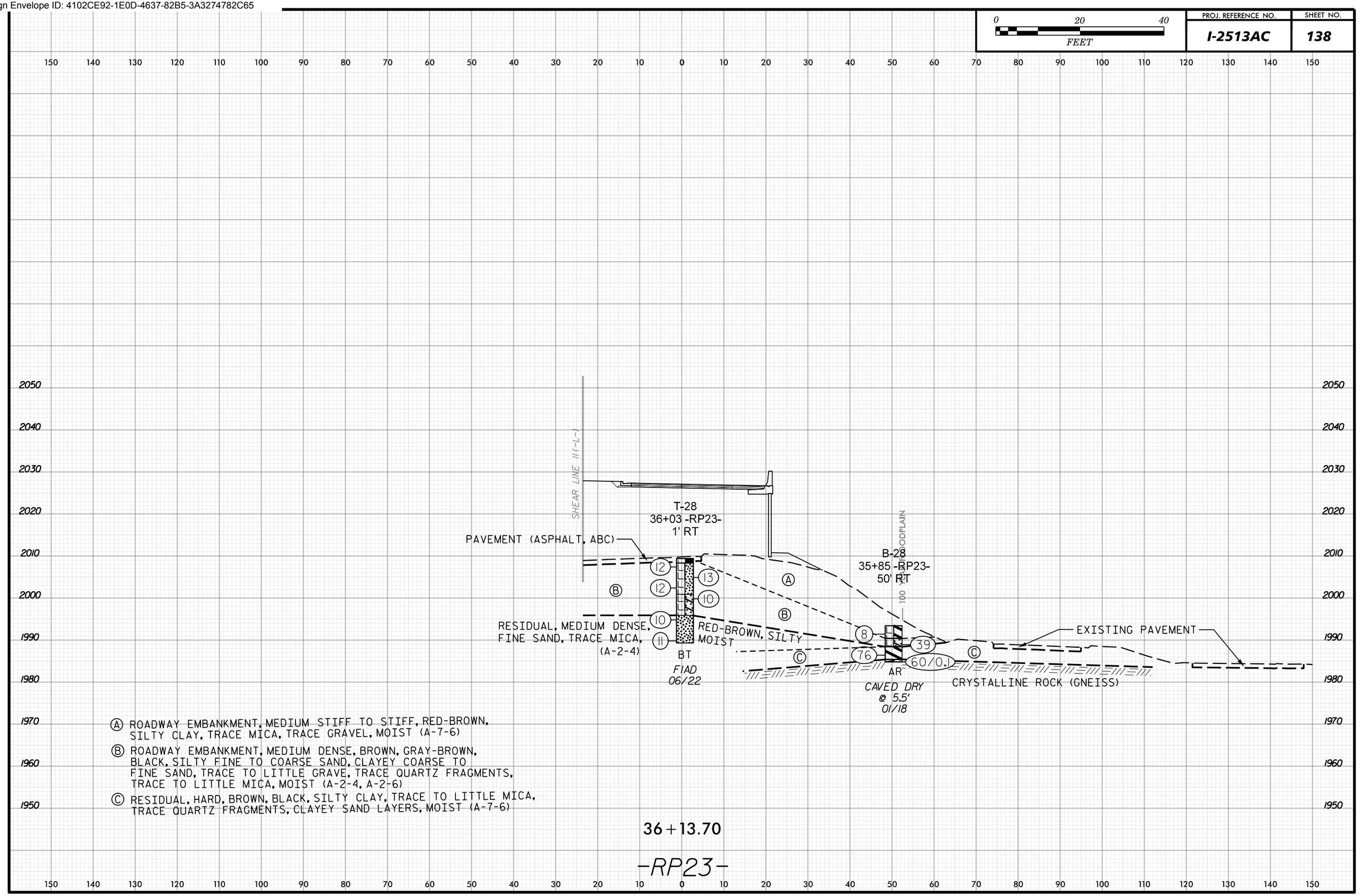


14+00.10

-RP23-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	138



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	139

130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170

2050
2040
2030
2020
2010
2000
1990
1980
1970
1960

SHEAR LINE 14 (-L-)

EXISTING PAVEMENT

ROADWAY EMBANKMENT, MEDIUM STIFF TO STIFF, RED-BROWN, SILTY CLAY, TRACE MICA, TRACE GRAVEL, MOIST (A-7-6)

100 YEAR FLOODPLAIN

B-29
37+51 -RP23-
149' RT

EXISTING PAVEMENT

RESIDUAL, MEDIUM STIFF TO VERY STIFF, BROWN, BLACK, RED-BROWN, SILTY CLAY, TRACE TO LITTLE MICA, TRACE QUARTZ FRAGMENTS, WET (A-7)

WEATHERED ROCK (GRAY, BROWN, GNEISS)

13
7 8
18
100/0.3

01/18

BT

37+74

-RP23-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	140

90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210

2060
2050
2040
2030
2020
2010
2000
1990
1980
1970
1960

SHEAR LINE 17 (-L-)

ROADWAY EMBANKMENT, SOFT TO MEDIUM STIFF, BROWN, RED-BROWN, SILTY CLAY, TRACE MICA, TRACE QUARTZ FRAGMENTS, WET (A-7)

100 YEAR FLOODPLAIN

B-30
39+57 -RP23-
198' RT

4
13
6
8
11
01/18
BT

RESIDUAL, MEDIUM STIFF TO STIFF, LIGHT BROWN, DARK BROWN, WHITE, GRAY, FINE TO COARSE SANDY CLAY, TRACE QUARTZ FRAGMENTS, SILTY CLAY LAYERS, WET (A-6)

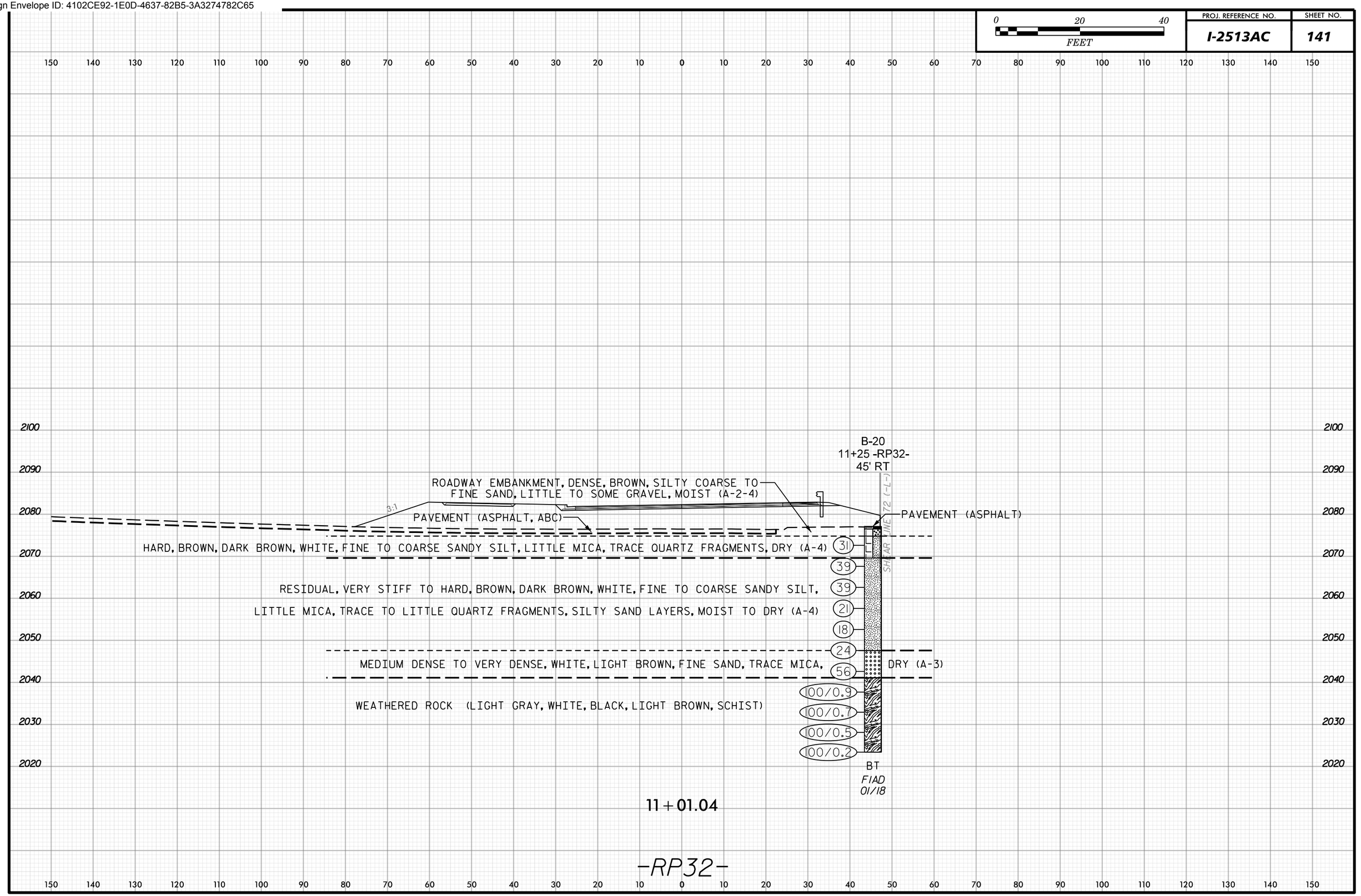
LOOSE TO MEDIUM DENSE, LIGHT BROWN, DARK BROWN, WHITE, GRAY, CLAYEY FINE TO COARSE SAND, TRACE MICA, TRACE QUARTZ FRAGMENTS, WET (A-2-6)

39+36.55

-RP23-

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

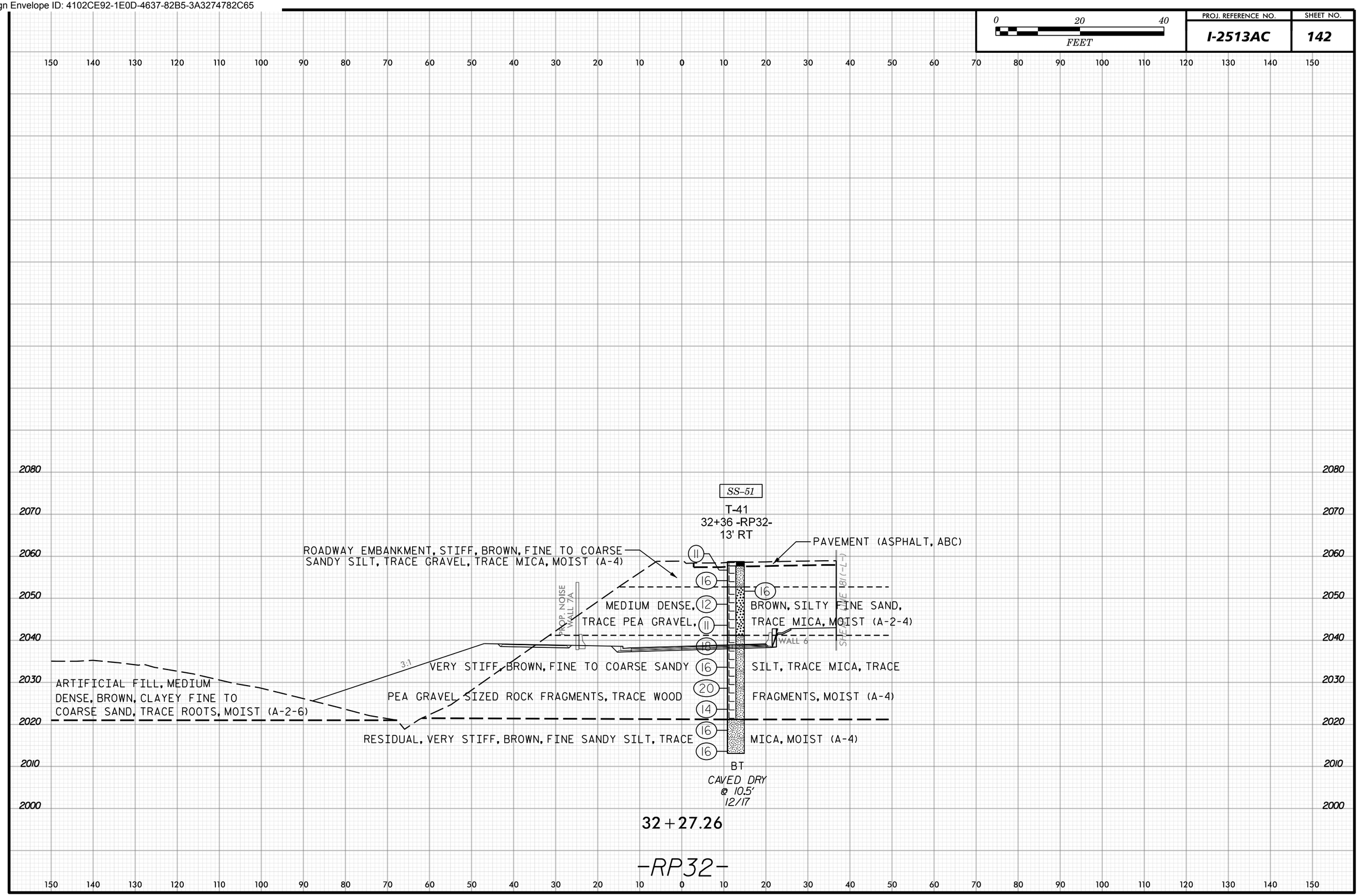
0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	141



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

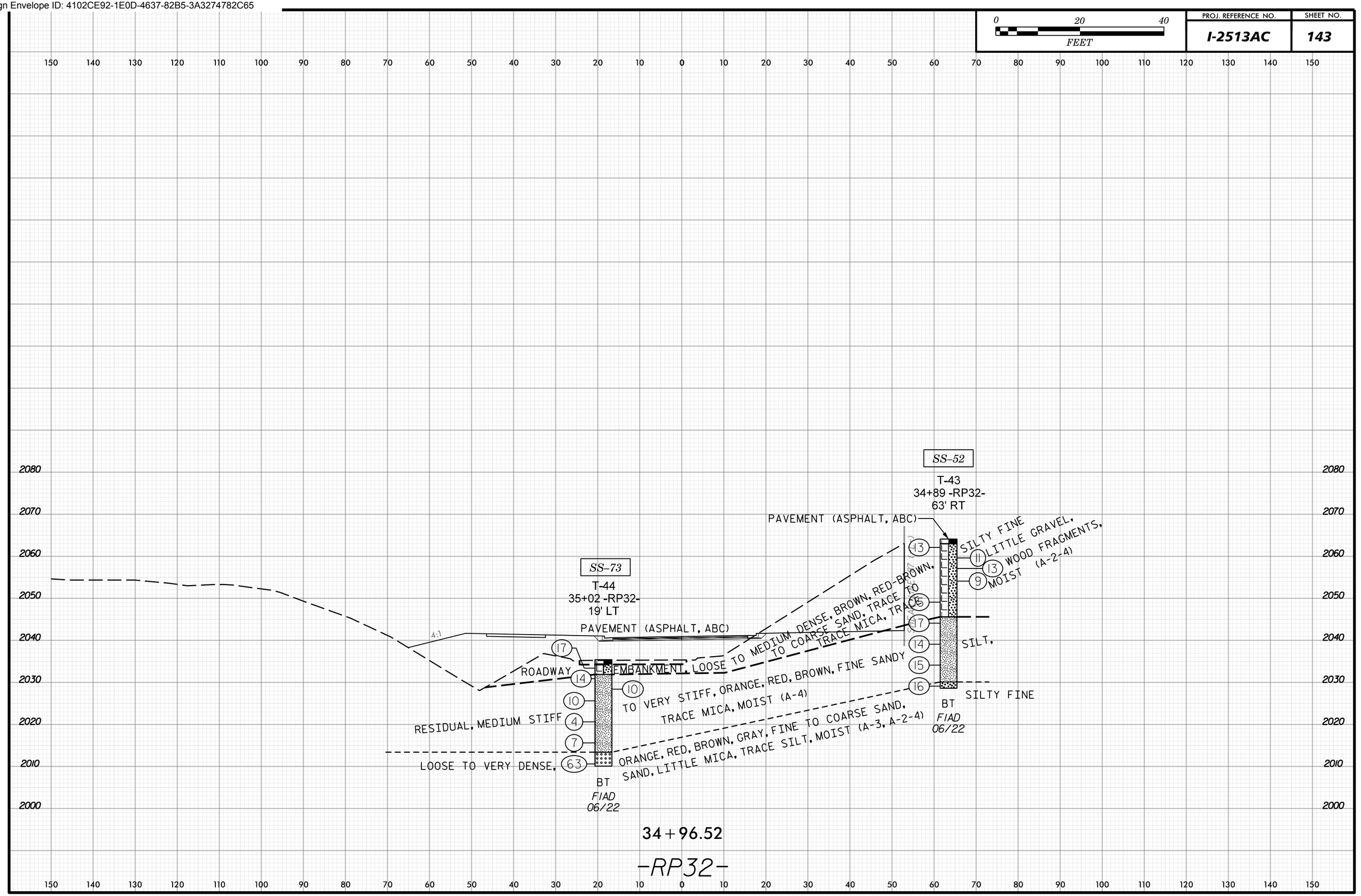
0 20 40
FEET

PROJ. REFERENCE NO.	SHEET NO.
I-2513AC	142



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

0 20 40 FEET	PROJ. REFERENCE NO.	SHEET NO.
	I-2513AC	143



Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

APPENDIX A

ADDITIONAL BORING LOGS
(OUTSIDE PROJECT LIMITS)

LABORATORY TESTING SUMMARY

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 34165.1.2	**TIP** I-2513AC	**COUNTY** BUNCOMBE	**GEOLOGIST** BRAUN, S.	
SITE DESCRIPTION I-26 CONNECTOR (I-40 TO US 19 - 23 - 70 NORTH OF ASHEVILLE)				**GROUND WTR (ft)**
BORING NO. T-36	**STATION** 10+30	**OFFSET** 74 ft LT	**ALIGNMENT** -Y3A-	**0 HR.** Dry
COLLAR ELEV. 1,992.9 ft	**TOTAL DEPTH** 10.0 ft	**NORTHING** 680,541	**EASTING** 934,221	**24 HR.** Caved
DRILL RIG/HAMMER EFF./DATE N/A		DRILL METHOD Hand Auger		HAMMER TYPE N/A
DRILLER N/A	**START DATE** 06/12/22	**COMP. DATE** 06/12/22	**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)
1995											
										1,992.9 GROUND SURFACE	0.0
										ROADWAY EMBANKMENT LOOSE ORANGE, WHITE, LIGHT BROWN, SILTY FINE TO COARSE SAND, LITTLE GRAVEL, TRACE MICA, MOIST (A-2-4)	
1990										1,989.9	3.0
										RESIDUAL MEDIUM DENSE BROWN, SILTY FINE TO COARSE SAND, TRACE MICA, MOIST (A-2-4)	
1985										1,982.9	10.0
										Boring Terminated BY HAND AUGER REFUSAL at Elevation 1,982.9 ft IN RESIDUAL, SILTY SAND	
										CAVED DRY @ 8.5'	

NCDOT BORE SINGLE I2513AC_GEO_RDWY.GPJ NC_DOT.GDT 10/1/25

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GEOTECHNICAL BORING REPORT
BORE LOG

WBS 34165.1.2	**TIP** I-2513A	**COUNTY** BUNCOMBE	**GEOLOGIST** SCHLEMM, T.S.	
SITE DESCRIPTION I-26 CONNECTOR (I-40 TO US 19 - 23 - 70 NORTH OF ASHEVILLE)				**GROUND WTR (ft)**
BORING NO. B-23	**STATION** 11+14	**OFFSET** 5 ft RT	**ALIGNMENT** -Y9-	**0 HR.** Caved
COLLAR ELEV. 2,032.8 ft	**TOTAL DEPTH** 20.0 ft	**NORTHING** 680,076	**EASTING** 931,985	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 93% 08/10/2017		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER TURNAGE, J.R.	**START DATE** 12/19/17	**COMP. DATE** 12/19/17	**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)
2035										2,032.8 PAVEMENT SURFACE	0.0
	2,031.8	1.0								2,031.8 **PAVEMENT** 0.5' ASPHALT AND 0.5' ABC STONE	1.0
2030	2,029.3	3.5	5	10	6	16		M		**ROADWAY EMBANKMENT** BROWN AND RED-BROWN, SILTY CLAY, TRACE MICA, TRACE ROCK FRAGMENTS	4.4
	2,026.8	6.0	3	7	9	16		M		**RESIDUAL** RED-BROWN AND GRAY, FINE TO COARSE SANDY SILT, LITTLE MICA, TRACE ROCK FRAGMENTS	8.0
2025	2,024.3	8.5	10	11	11	22		D		LIGHT BROWN AND LIGHT RED-BROWN, CLAYEY SILT	9.5
			4	6	7	13		M		BROWN, GRAY, AND BLACK, FINE TO COARSE SANDY SILT, LITTLE MICA	
2020	2,019.3	13.5	5	7	7	14		M			
2015	2,014.3	18.5	5	6	8	14		M		2,012.8	20.0
										Boring Terminated at Elevation 2,012.8 ft IN RESIDUAL SANDY SILT WATER LEVEL 0 HR CAVED DRY AT 11.5 FEET	

NCDOT BORE SINGLE I2513A_GEO_RDWY_DBINV.GPJ NC_DOT.GDT 10/1/25

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 34165.1.2	**TIP** I-2513A	**COUNTY** BUNCOMBE	**GEOLOGIST** SCHLEMM, T.S.	
SITE DESCRIPTION I-26 CONNECTOR (I-40 TO US 19 - 23 - 70 NORTH OF ASHEVILLE)				**GROUND WTR (ft)**
BORING NO. B-24	**STATION** 26+13	**OFFSET** 272 ft LT	**ALIGNMENT** -RP32-	**0 HR.** Caved
COLLAR ELEV. 2,088.2 ft	**TOTAL DEPTH** 50.0 ft	**NORTHING** 680,507	**EASTING** 932,588	**24 HR.** Caved
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 93% 08/10/2017		DRILL METHOD H.S. Augers	HAMMER TYPE Automatic	
DRILLER TURNAGE, J.R.	**START DATE** 01/17/18	**COMP. DATE** 01/17/18	**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)
2090										2,088.2 GROUND SURFACE	0.0
	2,087.2	1.0								**ARTIFICIAL FILL** BROWN, FINE TO COARSE SANDY SILT, TRACE MICA, TRACE QUARTZ FRAGMENTS, SOME ROCK FRAGMENTS, CLAY LAYERS	
2085	2,084.7	3.5	10	9	9	18		M		2,082.7	5.5
	2,082.2	6.0	7	7	9	16		M		**RESIDUAL** BROWN TO DARK BROWN, FINE TO COARSE SANDY SILT, TRACE TO LITTLE MICA, TRACE QUARTZ FRAGMENTS, QUARTZ VEIN AT 6.5 - 7.0 FEET	
2080	2,079.7	8.5	36	29	32	61		M		2,080.2	8.0
			13	17	27	44		M		BROWN TO DARK BROWN, BLACK AND GRAY, SILTY CLAY, TRACE TO SOME MICA, TRACE QUARTZ FRAGMENTS, QUARTZ VEINS, QUARTZ SEAM AT 9.5 FEET, FINE SAND LAYERS	
2075	2,074.7	13.5	7	7	10	17		M			
2070	2,069.7	18.5	8	10	14	24		M			
2065	2,064.7	23.5	19	17	17	34		M			
2060	2,059.7	28.5	23	26	24	50		D			
2055	2,054.7	33.5	8	12	23	35		M		2,051.7	36.5
2050	2,049.7	38.5	60	40/0.4		100/0.9				**WEATHERED ROCK** (BROWN, BLACK, AND GRAY, GNEISS)	
2045	2,044.7	43.5	100/0.5			100/0.5					
2040	2,039.7	48.5	58	42/0.2		100/0.7				2,038.2	50.0
	2,038.2	50.0	60/0.0			60/0.0				Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 2,038.2 ft ON CRYSTALLINE ROCK (GNEISS) 24 HR WATER LEVEL CAVED DRY AT 48.0 FEET	

NCDOT BORE SINGLE I2513A_GEO_RDWY_DBINV.GPJ NC_DOT.GDT 10/1/25

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GEOTECHNICAL BORING REPORT
BORE LOG

WBS 34165.1.2	**TIP** I-2513A	**COUNTY** BUNCOMBE	**GEOLOGIST** SCHLEMM, T.S.	
SITE DESCRIPTION I-26 CONNECTOR (I-40 TO US 19 - 23 - 70 NORTH OF ASHEVILLE)				**GROUND WTR (ft)**
BORING NO. B-25	**STATION** 27+60	**OFFSET** 325 ft LT	**ALIGNMENT** -RP32-	**0 HR.** Caved
COLLAR ELEV. 2,094.5 ft	**TOTAL DEPTH** 29.7 ft	**NORTHING** 680,621	**EASTING** 932,695	**24 HR.** Caved
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 93% 08/10/2017		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic
DRILLER TURNAGE, J.R.	**START DATE** 12/18/17	**COMP. DATE** 12/18/17	**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)
2095										2,094.5 GROUND SURFACE	0.0
	2,093.5	1.0	4	5	8	13		W		**RESIDUAL** 2,092.5 BROWN, SILTY CLAY, TRACE MICA	2.0
	2,091.0	3.5	9	11	13	24		D		BLACK, WHITE, AND LIGHT TO DARK BROWN, SILTY FINE TO COARSE SAND, TRACE MICA, TRACE ROCK FRAGMENTS AND QUARTZ FRAGMENTS	
2090	2,088.5	6.0	10	9	13	22	SS-5	D			
	2,086.0	8.5	13	17	21	38		D			
2085	2,081.0	13.5	20	32	22	54		D			
2080	2,076.0	18.5	15	15	32	47		D		2,073.5 **WEATHERED ROCK** (BLACK AND WHITE, GNEISS)	21.0
2075	2,071.0	23.5	100/0.3			100/0.3					
2070	2,066.7	27.8								2,066.0	28.5
	2,066.0	28.5	47	53/0.2		100/0.7				2,064.8 **CRYSTALLINE ROCK** (WHITE, BLACK, AND BROWN GNEISS)	29.7
2065	2,064.9	29.6	60/0.1			60/0.1				Boring Terminated at Elevation 2,064.8 ft IN CRYSTALLINE ROCK (GNEISS)	
			60/0.1			60/0.1				24 HR WATER LEVEL CAVED DRY AT 22.4 FEET	

NCDOT BORE SINGLE I2513A_GEO_RDWY_DBINV.GPJ NC_DOT.GDT 10/1/25

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 34165.1.2	**TIP** I-2513A	**COUNTY** BUNCOMBE	**GEOLOGIST** SCHLEMM, T.S.	
SITE DESCRIPTION I-26 CONNECTOR (I-40 TO US 19 - 23 - 70 NORTH OF ASHEVILLE)				**GROUND WTR (ft)**
BORING NO. B-26	**STATION** 31+17	**OFFSET** 104 ft RT	**ALIGNMENT** -RP23-	**0 HR.** 10.0
COLLAR ELEV. 1,982.7 ft	**TOTAL DEPTH** 28.6 ft	**NORTHING** 680,127	**EASTING** 933,118	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 93% 08/10/2017		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic
DRILLER TURNAGE, J.R.	**START DATE** 01/19/18	**COMP. DATE** 01/19/18	**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)
1985										1,982.7 GROUND SURFACE	0.0
	1,981.7	1.0	3	5	4	9		W		**ARTIFICIAL FILL** DARK BROWN AND BROWN, SILTY CLAY, TRACE QUARTZ FRAGMENTS, TRACE GARBAGE DEBRIS, GLASS, BRICK, VERY HARD DRILLING AT 7.0 TO 8.5 FEET	
1980	1,979.2	3.5	2	2	3	5		W			
	1,976.7	6.0	3	3	3	6		W			
1975	1,974.2	8.5	4	4	5	9		▽		1,974.2	8.5
	1,969.2	13.5	2	2	1	3				**ALLUVIAL** BROWN, CLAYEY FINE TO COARSE SAND, TRACE MICA, TRACE ROUNDED GRAVEL, WITH SILTY CLAY LAYER 0.4 FEET	
1970										1,970.7 DARK GRAY, SILTY FINE TO COARSE SAND, TRACE MICA, SILTY CLAY LAYERS	12.0
1965	1,964.2	18.5	11	4	4	8		W		1,965.7 GRAY AND WHITE, CLAYEY COARSE TO FINE SAND, TRACE MICA, LITTLE QUARTZ FRAGMENTS	17.0
1960	1,959.2	23.5	3	3	4	7		W		1,960.7 **RESIDUAL** BROWN AND WHITE, FINE TO COARSE SANDY CLAY, TRACE QUARTZ FRAGMENTS	22.0
1955	1,954.2	28.5	60/0.1			60/0.1				1,955.2 1,954.1 **CRYSTALLINE ROCK** (BLACK AND WHITE, GNEISS)	27.5 28.6
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 1,954.1 ft IN CRYSTALLINE ROCK (GNEISS)	

NCDOT BORE SINGLE I2513A_GEO_RDWY_DBINV.GPJ NC_DOT.GDT 10/1/25

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GEOTECHNICAL BORING REPORT
BORE LOG

WBS 34165.1.2	**TIP** I-2513A	**COUNTY** BUNCOMBE	**GEOLOGIST** SCHLEMM, T.S.	
SITE DESCRIPTION I-26 CONNECTOR (I-40 TO US 19 - 23 - 70 NORTH OF ASHEVILLE)				**GROUND WTR (ft)**
BORING NO. B-27	**STATION** 32+85	**OFFSET** 113 ft RT	**ALIGNMENT** -RP23-	**0 HR.** 8.5
COLLAR ELEV. 1,982.1 ft	**TOTAL DEPTH** 28.5 ft	**NORTHING** 680,197	**EASTING** 933,273	**24 HR.** FIAD
DRILL RIG/HAMMER EFF./DATE TER1974 CME-45B 93% 08/10/2017		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic
DRILLER TURNAGE, J.R.	**START DATE** 01/18/18	**COMP. DATE** 01/18/18	**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)
1985											
										1,982.1	GROUND SURFACE 0.0
	1,981.1	1.0						W			
1980			2	2	3	5				**ARTIFICIAL FILL** DARK BROWN, SILTY CLAY, TRACE QUARTZ GRAVEL	
	1,978.6	3.5	2	2	2	4		W		1,979.1	3.0
	1,976.1	6.0								GRAY AND BROWN, FINE SANDY CLAY, TRACE MICA, TRACE ROUNDED QUARTZ GRAVEL	
1975			2	2	3	5					
	1,973.6	8.5						▽			
			2	3	4	7		W		1,973.1	9.0
1970										**ALLUVIAL** GRAY TO DARK GRAY AND BROWN, CLAYEY FINE SAND, TRACE MICA, TRACE ROUNDED QUARTZ FRAGMENTS, TRACE COBBLES	
	1,968.6	13.5	1	2	2	4		W			
1965										1,965.1	17.0
	1,963.6	18.5	9	10	12	22		W		**RESIDUAL** GRAY AND RED-BROWN, SILTY FINE TO COARSE SAND, TRACE MICA	
										1,962.1	20.0
1960										**WEATHERED ROCK** (LIGHT GRAY AND BROWN, GNEISS)	
	1,958.6	23.5	100/0.4			100/0.4					
1955											
	1,953.6	28.5	60/0.0			60/0.0				1,953.6	28.5
										Boring Terminated WITH STANDARD PENETRATION TEST REFUSAL at Elevation 1,953.6 ft ON CRYSTALLINE ROCK (GNEISS)	

NCDOT BORE SINGLE I2513A_GEO_RDWY_DBINV.GPJ NC_DOT.GDT 10/1/25

GEOTECHNICAL BORING REPORT
BORE LOG

WBS 34165.1.2	**TIP** I-2513A	**COUNTY** BUNCOMBE	**GEOLOGIST** BUNCH, C.M.	
SITE DESCRIPTION I-26 CONNECTOR (I-40 TO US 19 - 23 - 70 NORTH OF ASHEVILLE)				**GROUND WTR (ft)**
BORING NO. B-31	**STATION** 19+13	**OFFSET** 222 ft LT	**ALIGNMENT** -Y3-	**0 HR.** Caved
COLLAR ELEV. 2,068.5 ft	**TOTAL DEPTH** 49.2 ft	**NORTHING** 680,908	**EASTING** 934,185	**24 HR.** Caved
DRILL RIG/HAMMER EFF./DATE TER92-0 ACKER RENEGADE 94% 03/09/2017		DRILL METHOD H.S. Augers		HAMMER TYPE Automatic
DRILLER DUGGINS, W.T.	**START DATE** 12/29/17	**COMP. DATE** 12/29/17	**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)
2070											
										2,068.5	GROUND SURFACE 0.0
	2,067.5	1.0	0	2	2	4		M		**RESIDUAL** RED-BROWN, CLAYEY FINE SAND, TRACE MICA, TRACE ROCK FRAGMENTS	
2065	2,065.0	3.5	2	2	4	6		M		2,062.4	6.1
	2,062.5	6.0	5	10	10	20		D		WHITE, YELLOW-BROWN AND ORANGE, FINE SANDY SILT, LITTLE MICA, LITTLE ROCK FRAGMENTS	
2060	2,060.0	8.5	5	6	2	8		D		2,059.0	9.5
										ORANGE-BROWN, WHITE, AND RED, SILTY FINE SAND, TRACE MICA	
2055	2,055.8	12.7	7	9	10	19	SS-6	D		2,053.0	15.5
	2,050.8	17.7	4	6	12	18		D		BROWN, WHITE, AND ORANGE, CLAYEY FINE TO COARSE SAND, LITTLE TO SOME MICA	
2050											
	2,045.8	22.7	8	11	12	23		D		2,042.5	26.0
2045										BROWN, RED-BROWN AND WHITE, FINE SANDY CLAY, TRACE MICA	
	2,040.8	27.7	4	8	9	17		D			
2040											
	2,035.8	32.7	17	45	55/0.1	100/0.6		D		2,035.3	33.2
2035										**WEATHERED ROCK** (GRAY, GNEISS)	
	2,030.8	37.7	9	12	17	29		D		2,033.5	35.0
2030										BROWN, ORANGE-BROWN AND GRAY, SILTY FINE TO COARSE SAND, TRACE TO SOME MICA	
	2,025.8	42.7	7	9	11	20		D			
2025											
	2,020.8	47.7	9	11	16	27		D		2,019.3	49.2
2020										Boring Terminated at Elevation 2,019.3 ft IN RESIDUAL SILTY SAND	
										24 HR WATER LEVEL CAVED DRY AT 39.2 FEET	

NCDOT BORE SINGLE I2513A_GEO_RDWY_DBINV.GPJ NC_DOT.GDT 10/1/25

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LABORATORY TESTING SUMMARY

PROJECT NUMBER: 34165.1.2 **TIP:** I-2513AC **COUNTY:** BUNCOMBE

DESCRIPTION: I-26 CONNECTOR (I-40 TO US 19 - 23 - 70 NORTH OF ASHEVILLE)

Sample No.	Alignment	Station	Offset (feet)	Northing	Easting	Depth Interval (feet)	AASHTO Class.	L.L.	P.I.	% by Weight				% Retained #4 Sieve	% Passing (sieves)			% Moisture	% Organic
										Coarse Sand	Fine Sand	Silt	Clay		#10	#40	#200		
SS-1	-Y2B-	13+96	11 LT	679,603	930,562	1.0-2.5	A-7-6 (5)	42	18	26.5	27.7	18.1	27.7	4	92	75	47	22.0	--
SS-2	-Y2A-	13+25	36 RT	679,192	931,464	1.0-2.5	A-4 (0)	36	4	26.7	41.5	24.3	7.5	0	100	86	38	6.7	--
SS-3	-RP23-	11+82	67 LT	679,335	931,360	4.0-5.0	A-7-6 (5)	44	16	19.0	37.2	15.2	28.6	0	100	93	49	26.5	--
SS-4	-Y2C-	14+60	9 LT	679,877	931,731	3.5-5.0	A-6 (1)	40	11	32.6	30.0	18.6	18.8	2	91	71	40	19.4	--
SS-5	-RP32-	27+60	325 LT	680,621	932,695	6.0-7.5	A-2-4 (0)	34	5	39.4	30.5	18.1	12.0	2	94	69	35	--	--
SS-6	-Y3-	19+13	222 LT	680,908	934,185	12.7-14.2	A-2-5 (0)	41	7	39.7	32.9	16.1	11.3	0	99	74	34	--	--
SS-7	-Y3RPD-	19+68	146 LT	681,044	934,186	3.5-5.0	A-7-5 (2)	48	16	37.8	28.3	12.4	21.5	1	93	68	36	19.5	--
SS-8	-Y3-	25+98	88 LT	680,657	934,814	6.0-7.5	A-2-4 (0)	28	3	47.2	29.5	11.8	11.5	6	90	65	25	--	--
SS-9	-Y3-	24+37	127 LT	680,736	934,655	6.0-7.5	A-2-5 (0)	46	8	53.6	26.8	10.9	8.7	1	80	46	20	--	--
SS-10	-L-	96+49	166 LT	682,094	934,013	1.0-2.0	A-2-6 (0)	39	13	42.5	27.7	12.7	17.1	1	98	76	34	--	--
SS-11	-Y3RPD-	16+93	70 LT	681,344	934,178	3.5-5.0	A-2-4 (0)	34	9	34.6	33.8	10.3	21.3	1	96	76	35	--	--
SS-12	-Y3RPD-	15+73	53 LT	681,469	934,176	6.7-7.5	A-2-4 (0)	36	8	45.7	31.2	10.4	12.7	2	92	64	26	--	--
SS-13	-L-	95+74	216 RT	681,903	934,353	6.0-7.5	A-2-5 (0)	52	7	33.4	39.4	18.4	8.8	0	99	79	34	--	--
SS-14	-L-	96+99	177 RT	682,020	934,352	6.0-7.5	A-7-6 (26)	65	36	15.4	16.1	16.4	52.1	0	99	90	71	29.0	--
SS-15	-L-	97+87	121 RT	682,115	934,332	13.5-15.0	A-7-5 (3)	50	15	32.9	28.3	13.2	25.6	3	92	73	40	17.3	--
SS-16	-L-	112+98	117 LT	683,562	934,680	3.5-5.0	A-2-5 (0)	49	NP	44.6	29.0	14.6	11.8	0	97	67	30	--	--
SS-17	-L-	117+47	189 LT	684,014	934,653	6.0-7.5	A-7-5 (5)	45	14	21.7	31.9	18.9	27.5	1	98	86	52	24.3	--
SS-18	-L-	120+60	204 LT	684,331	934,672	3.5-5.0	A-4 (0)	40	5	20.7	45.1	20.1	14.1	0	100	89	44	14.0	--
SS-19	-L-	120+60	204 LT	684,331	934,672	8.5-10.0	A-4 (3)	37	7	19.3	33.6	16.7	30.4	0	100	89	55	12.7	--
SS-21	-Y15-	26+65	36 LT	683,944	934,970	3.5-5.0	A-7-5 (4)	55	11	26.9	32.4	14.2	26.5	0	99	86	47	16.0	--
SS-31	-L-	32+43	117 LT	678,834	929,086	3.5-5.0	A-7-6 (19)	51	27	9.8	22.1	13.9	54.2	0	99	94	71	25.4	--
SS-32	-L-	38+77	161 LT	679,053	929,682	8.5-10.0	A-2-4 (0)	37	NP	38.6	41.8	11.9	7.7	1	98	74	26	--	--
SS-33	-L-	41+45	76 RT	678,901	930,006	6.0-7.5	A-7-5 (6)	50	16	22.8	31.9	25.3	20.0	0	99	84	51	23.1	--
SS-34	-L-	49+44	148 RT	679,089	930,794	8.5-10.0	A-2-5 (0)	42	8	36.7	35.3	17.1	10.9	0	99	73	35	--	--
SS-35	-L-	53+43	113 RT	679,269	931,156	1.0-2.5	A-2-6 (0)	39	16	27.3	25.2	15.4	32.1	36	53	43	27	--	--

N/D - NOT DETERMINED

Stephanie H. Huffman

Certified Lab Technician Signature

114-01-1203

Certification Number

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

LABORATORY TESTING SUMMARY

PROJECT NUME 34165.1.6 **TIP:** I-2513AC **COUNTY:** BUNCOMBE

DESCRIPTION I-26 CONNECTOR (I-40 TO US 19 - 23 - 70 NORTH OF ASHEVILLE)

Sample No.	Alignment	Station	Offset (feet)	Northing	Easting	Depth Interval (feet)	AASHTO Class.	L.L.	P.I.	% by Weight				% Retained #4 Sieve	% Passing (sieves)			% Moisture	% Organic
										Coarse Sand	Fine Sand	Silt	Clay		#10	#40	#200		
SS-38	-L-	19+90	126 RT	678,202	927,977	1.0-2.5	A-6 (5)	38	13	14.0	29.4	20.1	36.5	5	92	86	56	29.5	--
SS-39	-L-	24+24	147 RT	678,326	928,390	3.5-5.0	A-5 (4)	46	10	18.7	33.2	30.4	17.7	2	93	84	51	36.6	--
SS-40	-Y2RPB-	26+89	87 LT	679,636	930,987	3.5-5.0	A-4 (1)	38	9	25.8	30.6	18.3	25.3	9	83	70	41	22.1	--
SS-41	-Y2RPC-	29+14	16 RT	679,216	931,095	3.5-5.0	A-6 (4)	35	11	20.9	27.7	22.1	29.3	0	98	88	54	20.7	--
SS-42	-Y2RPB-	24+28	5 RT	679,437	930,798	1.0-2.5	A-2-4 (0)	38	10	28.1	30.3	23.8	17.8	25	65	53	30	--	--
SS-43	-RP23-	29+95	8 LT	680,170	932,958	6.0-7.5	A-6 (3)	36	14	22.6	24.1	25.2	28.1	7	81	69	47	15.8	--
SS-44	-RP23-	32+10	19 LT	680,278	933,144	6.0-7.5	A-6 (2)	39	11	26.3	29.5	18.0	26.2	8	85	71	42	22.6	--
SS-45	-L-	73+85	40 LT	680,299	932,932	3.5-5.0	A-6 (3)	37	14	19.4	28.3	18.6	33.7	5	81	72	46	19.8	--
SS-47	-RP23-	19+98	32 LT	679,733	932,062	1.0-2.5	A-4 (0)	39	6	25.6	35.4	30.0	9.0	9	85	73	39	16.0	--
SS-48	-RP23-	23+96	3 LT	679,890	932,428	6.0-7.5	A-6 (3)	35	13	22.6	23.8	23.7	29.9	9	78	66	45	16.0	--
SS-49	-RP23-	34+32	10 RT	680,364	933,346	8.8-10.3	A-7-5 (0)	44	11	26.0	28.7	22.8	22.5	17	72	61	36	21.1	--
SS-50	-Y3-	16+48	8 LT	680,790	933,868	6.0-7.5	A-2-6 (0)	35	12	24.7	26.3	24.9	24.1	25	64	54	34	--	--
SS-51	-RP32-	32+36	13 RT	680,574	933,255	19.1-20.6	A-4 (0)	36	6	24.3	34.0	26.7	15.0	8	85	73	42	16.0	--
SS-52	-RP32-	34+85	63 RT	680,722	933,469	19.0-20.5	A-4 (0)	35	3	30.3	37.4	24.9	7.4	3	94	78	36	13.5	--
SS-53	-Y3RPA-	13+67	48 RT	681,678	933,918	6.0-7.5	A-2-4 (0)	NP	NP	34.2	37.4	17.1	11.3	0	97	82	33	--	--
SS-54	-L-	23+84	25 LT	678,475	928,295	3.5-5.0	A-5 (1)	47	8	19.1	34.0	28.5	18.4	16	78	71	42	28.1	--
SS-55	-L-	26+31	52 RT	678,484	928,554	3.5-5.0	A-4 (1)	39	7	22.9	31.2	23.6	22.3	7	88	77	46	19.4	--
SS-56	-L-	26+14	24 LT	678,550	928,512	3.5-5.0	A-5 (3)	48	10	20.3	35.7	19.6	24.4	1	92	83	46	22.8	--
SS-57	-L-	98+50	83 LT	682,260	934,175	6.0-7.5	A-4 (0)	40	4	20.1	40.0	30.2	9.7	2	96	88	46	19.2	--
SS-58	-L-	27+66	81 LT	678,654	928,638	1.0-2.5	A-7-5 (14)	51	20	12.0	21.1	21.6	45.3	0	98	91	70	16.7	--
SS-59	-Y2RPC-	27+53	37 RT	679,141	930,953	3.5-5.0	A-7-5 (16)	53	16	5.5	18.2	30.4	45.9	2	95	92	79	29.0	
SS-60	-Y2RPC-	27+53	37 RT	679,141	930,953	6.0-7.5	A-5 (5)	44	5	1.4	39.4	39.2	20.0	0	100	99	71	23.3	--
SS-61	-RP32-	20+91	100 LT	680,114	932,204	1.0-2.5	A-2-6 (0)	39	11	29.4	27.4	23.0	20.2	32	59	47	28	--	--
SS-62	-RP32-	23+71	44 LT	680,193	932,478	1.0-2.5	A-7-6 (8)	45	16	21.1	23.7	18.8	36.4	4	95	85	58	26.5	--
SS-63	-RP32-	23+71	44 LT	680,193	932,478	13.5-15.0	A-2-4 (0)	29	3	27.8	43.0	19.9	9.3	6	88	73	32	--	--
SS-64	-RP32-	26+85	88 LT	680,376	932,737	6.0-7.5	A-4 (1)	34	7	21.3	39.9	25.7	13.1	0	98	86	46	12.8	--
SS-65	-RP32-	28+16	87 LT	680,435	932,854	8.5-10.0	A-2-4 (0)	34	3	39.7	32.7	10.2	17.4	0	98	77	31	15.4	--
SS-66	-L-	102+19	83 LT	682,584	934,364	3.5-5.0	A-5 (0)	42	4	24.4	40.6	25.6	9.4	10	84	73	36	17.1	--
SS-67	-L-	110+99	57 LT	683,363	934,709	3.5-5.0	A-5 (2)	47	7	23.6	34.5	28.9	13.0	1	93	80	46	19.6	--
SS-68	-Y2B-	15+05	96 RT	679,491	930,680	1.0-2.5	A-2-4 (0)	39	9	22.4	30.3	21.3	26.0	14	71	61	37	--	--
SS-69	-Y3-	13+63	4 RT	680,871	933,594	3.5-5.0	A-1-b (0)	46	5	40.1	28.5	15.2	16.2	17	67	47	25	--	--
SS-70	-Y3-	13+63	4 RT	680,871	933,594	9.3-10.8	A-2-4 (0)	NP	NP	32.3	41.3	14.0	12.4	7	84	70	28	--	--
SS-71	-L-	24+03	105 LT	678,557	928,287	0.0-2.0	A-4 (1)	30	7	6.8	50.6	18.4	24.2	0	100	99	50	34.3	--
SS-72	-L-	20+63	89 LT	678,429	927,970	0.0-1.5	A-5 (5)	46	10	13.1	36.2	24.7	26.0	0	100	97	57	49.7	--
SS-73	-RP32-	35+02	19 LT	680,787	933,416	3.5-5.0	A-4 (0)	36	5	24.7	36.0	20.6	18.7	5	88	75	41	17.3	--
SS-74	-L-	115+78	112 LT	683,837	934,713	3.5-5.0	A-4 (3)	31	6	5.3	37.0	36.0	21.7	3	95	93	64	13.2	--
SS-75	-L-	21+00	25 LT	678,381	928,027	18.1-19.6	A-2-4 (0)	NP	NP	35.5	47.6	1.3	15.6	0	100	90	21	21.6	
SS-76	-L-	23+00	50 RT	678,377	928,240	8.5-10.0	A-5 (3)	44	7	19.2	28.5	13.8	38.5	1	93	83	54	31.4	
SS-77	-L-	23+00	50 RT	678,377	928,240	28.8-30.3	A-7-5 (20)	50	15	0.0	2.1	41.1	56.8	0	100	100	100	53.0	
SS-142	-L-	16+60	175 LT	678,336	927,549	3.9-5.4	A-6 (5)	38	12	12.5	37.9	12.5	37.1	0	99	95	56	22.3	--
SS-150	-L-	17+62	140 RT	678,103	927,784	3.1-4.6	A-5 (1)	42	3	17.7	38.5	15.6	28.2	0	99	92	53	22.9	--
ST-1	-L-	24+24	147 RT	678,326	928,390	7.5-9.5	A-7-5 (21)	50	18	0.3	11.2	44.6	43.9	0	100	100	93	16.2	--

NP - NON-PLASTIC

Stephanie H. Huffman

Certified Lab Technician Signature

114-01-1203

Certification Number

Docusign Envelope ID: 4102CE92-1E0D-4637-82B5-3A3274782C65

LABORATORY TESTING SUMMARY

PROJECT NUMBER: 34165.1.6 **TIP:** I-2513AC **COUNTY:** BUNCOMBE

DESCRIPTION: I-26 CONNECTOR (I-40 TO US 19 - 23 - 70 NORTH OF ASHEVILLE)

Sample No.	Alignment	Station	Offset (feet)	Northing	Easting	Depth Interval (feet)	AASHTO Class.	L.L.	P.I.	% by Weight				% Retained #4 Sieve	% Passing (sieves)			% Moisture	% Organic
										Coarse Sand	Fine Sand	Silt	Clay		#10	#40	#200		
SS-1 DOT	-L-	47+52	112 LT	679,267	930,524	4.0-5.5	A-2-4 (0)	31	NP	31.0	48	13	8	ND	84	70	25	--	--
SS-2 DOT	-L-	47+51	3 RT	679,159	930,562	4.7-6.2	A-2-4 (0)	28	NP	41.0	42	7	10	ND	82	62	20	--	--
SS-3 DOT	-L-	47+51	3 RT	679,159	930,562	14.7-16.2	A-2-5 (0)	41	NP	41.0	38	11	10	ND	79	58	23	--	--
SS-4 DOT	-L-	47+51	3 RT	679,159	930,562	19.7-21.2	A-2-5 (0)	41	NP	29.0	48	9	14	ND	87	86	28	--	--
SS-5 DOT	-L-	47+51	46 RT	679,119	930,576	18.6-20.1	A-2-4 (0)	35	NP	32.0	44	10	14	ND	76	64	25	--	--
SS-6 DOT	-L-	47+50	102 RT	679,065	930,594	8.3-9.8	A-2-4 (0)	33	NP	30.0	43	11	16	ND	83	69	29	--	--
SS-7 DOT	-L-	44+11	117 RT	678,942	930,275	5.4-6.9	A-2-4 (0)	29	5	27.0	36	17	20	ND	76	64	34	--	--
SS-8 DOT	-L-	43+58	75 RT	678,965	930,211	4.9-6.4	A-2-4 (9)	30	NP	30.0	49	14	10	ND	92	80	31	--	--
SS-9 DOT	-L-	43+58	75 RT	678,965	930,211	4.9-6.4	A-2-4 (0)	39	NP	36.0	43	15	6	ND	82	65	24	--	--

NP - NON-PLASTIC
ND -NOT DETERMINED

Stephanie H. Huffman
Certified Lab Technician Signature

114-01-1203
Certification Number