

REFERENCE: R-5819/R-5820

PROJECT: 47091/47092

SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5819/R-5820	1	341

CAUTION NOTICE

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

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

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

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

ROADWAY SUBSURFACE INVESTIGATION

COUNTY COLUMBUS
 PROJECT DESCRIPTION SR 1740 (OLD LAKE ROAD)
CONVERT AT-GRADE INTERSECTION TO GRADE
SEPARATION

SR 1735 (CHAUNCEY TOWN ROAD) CONVERT
AT-GRADE INTERSECTION TO INTERCHANGE

CONTENTS

LINE	STATION	PLAN
-LEB-	18+50.00 - 39+47.20	4-6
-LWB-	18+50.00 - 39+38.57	4-6
-L-	10+00.00 - 108+00.00	6-12
-YI-	10+00.00 - 58+39.24	6, 13-15
-YIRPA-	10+00.00 - 30+80.29	6-7
-YIRPB-	10+00.00 - 32+27.89	5-6
-YIRPC-	10+00.00 - 30+82.54	5-6
-YIRPD-	10+00.00 - 32+03.25	6-7
-YIA-	10+00.00 - 16+88.71	13
-Y2-	28+10.00 - 78+50.00	11, 16-19
-Y3-	13+40.00 - 21+23.00	13
-Y7-	10+00.00 - 99+51.30	15, 19-25
-DETI-	10+00.00 - 42+19.07	6, 14-15
-DET2-	10+00.00 - 41+46.42	11, 16-17

CROSS SECTIONS

LINE	STATION	SHEETS
-LWB-	20+00.00	26
-LWB-	21+50.00	27
-LWB-	23+50.00	28
-LWB-	25+50.00	29
-LWB-	27+50.00	30
-LWB-	29+50.00	31
-LWB-	31+50.00	32
-LWB-	32+00.00 - 39+00.00	33-55
-L-	12+50.00	56
-L-	14+50.00	57
-L-	16+50.00 - 20+50.00	58-61
-L-	21+50.00 - 22+00.00	62-63
-L-	23+50.00 - 26+50.00	64-70
-L-	28+50.00	71
-L-	30+50.00	72
-L-	32+50.00 - 40+50.00	73-98
-L-	42+50.00	99
-L-	44+50.00	100
-L-	46+50.00 - 54+50.00	101-117
-L-	56+50.00	118
-L-	58+50.00	119
-L-	60+50.00	120
-L-	62+50.00	121
-L-	64+50.00	122
-L-	66+50.00	123
-L-	68+50.00	124
-L-	70+50.00	125
-L-	72+50.00	126
-L-	74+50.00	127
-L-	76+50.00	128
-L-	78+50.00	129
-L-	80+50.00	130
-L-	82+50.00	131
-L-	84+50.00	132
-L-	86+50.00 - 89+50.00	133-139
-L-	90+50.00 - 91+00.00	140-141
-L-	92+50.00	142
-L-	94+50.00	143
-L-	96+50.00	144
-L-	98+50.00	145
-L-	100+50.00 - 104+50.00	146-154
-YI-	12+00.00 - 27+50.00	155-163
-YI-	29+50.00	164
-YI-	32+50.00	165
-YI-	35+00.00	166
-YI-	37+00.00	167
-YI-	39+50.00	168
-YI-	42+50.00	169
-YI-	45+50.00	170
-YI-	47+93.29	171
-YI-	49+00.00 - 52+00.00	172-174
-YIRPA-	18+50.00 - 19+00.00	175
-YIRPA-	22+00.00	176
-YIRPA-	25+00.00	177
-YIRPA-	28+00.00	178
-YIRPB-	20+00.00	179

CROSS SECTIONS

LINE	STATION	SHEETS
-YIRPB-	22+00.00 - 26+00.00	180-181
-YIRPB-	28+00.00	182
-YIRPB-	31+00.00	183
-YIRPC-	18+00.00	184
-YIRPC-	20+00.00	185
-YIRPC-	22+00.00	186
-YIRPC-	25+00.00	187
-YIRPC-	28+00.00	188
-YIRPD-	19+50.00 - 21+00.00	189
-YIRPD-	22+50.00	190
-YIRPD-	25+50.00	191
-YIRPD-	28+50.00	192
-YIA-	13+00.00 - 16+00.00	193-194
-Y2-	26+00.00	195
-Y2-	28+10.00	196
-Y2-	31+00.00	197
-Y2-	34+00.00	198
-Y2-	36+00.00	199
-Y2-	39+00.00	200
-Y2-	42+00.00	201
-Y2-	44+00.00	202
-Y2-	47+00.00	203
-Y2-	50+00.00 - 68+00.00	204-212
-Y2-	71+00.00	213
-Y2-	74+50.00 - 79+00.00	214-216
-Y3-	14+00.00	217
-Y3-	16+00.00	218
-Y3-	18+00.00 - 21+50.00	219-221
-Y7-	10+00.00 - 20+50.00	222-226
-Y7-	22+50.00	227
-Y7-	23+50.00 - 30+00.00	228-231
-Y7-	31+50.00	232
-Y7-	34+50.00 - 39+00.00	233-235
-Y7-	40+50.00	236
-Y7-	43+50.00	237
-Y7-	46+50.00	238
-Y7-	49+50.00	239
-Y7-	52+50.00	240
-Y7-	54+00.00 - 58+50.00	241-243
-Y7-	60+00.00 - 64+50.00	244-246
-Y7-	66+50.00 - 75+50.00	247-251
-Y7-	76+50.00	252
-Y7-	79+50.00	253
-Y7-	81+00.00 - 83+50.00	254-255
-Y7-	84+50.00 - 96+50.00	256-261
-DETI-	16+00.00	262
-DETI-	17+50.00 - 25+50.00	263-269
-DETI-	26+73.98	270
-DETI-	29+00.00	271

INVENTORY

CROSS SECTIONS

LINE	STATION	SHEETS
-DETI-	32+00.00	272
-DETI-	35+00.00 - 40+50.00	273-276
-DET2-	14+00.00 - 20+00.00	277-279
-DET2-	22+00.00	280
-DET2-	23+50.00	281
-DET2-	26+00.00	282
-DET2-	28+00.00 - 39+00.00	283-287

APPENDICES

APPENDIX	TITLE	SHEETS
A	LABORATORY RESULTS	288-341

PERSONNEL

- C. DRISCOLL
- C. REYNOLDS
- N. EVANS
- TRIGON EXPLORATIONS

INVESTIGATED BY C. DRISCOLL
 DRAWN BY C. REYNOLDS/C. DRISCOLL
 CHECKED BY T. WELLS
 SUBMITTED BY KLEINFELDER, INC.
 DATE FEBRUARY 2021



DocuSigned by:
Thomas R. Wells 2/23/2021
 SIGNATURE DATE

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

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION							GRADATION							ROCK DESCRIPTION			TERMS AND DEFINITIONS																																																																																																																																																
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							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 <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>ORGANIC MATERIAL</td> <td>GRANULAR SOILS</td> <td>SILT - CLAY SOILS</td> <td>OTHER MATERIAL</td> </tr> <tr> <td>TRACE OF ORGANIC MATTER</td> <td>2 - 3%</td> <td>3 - 5%</td> <td>TRACE 1 - 10%</td> </tr> <tr> <td>LITTLE ORGANIC MATTER</td> <td>3 - 5%</td> <td>5 - 12%</td> <td>LITTLE 10 - 20%</td> </tr> <tr> <td>MODERATELY ORGANIC</td> <td>5 - 10%</td> <td>12 - 20%</td> <td>SOME 20 - 35%</td> </tr> <tr> <td>HIGHLY ORGANIC</td> <td>> 10%</td> <td>> 20%</td> <td>HIGHLY 35% AND ABOVE</td> </tr> </table>							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	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 YIELD 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.			ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MT) - 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 EMPLOYED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUSIVE ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.																																																																																																																												
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																																																																																																																																																														
SOIL LEGEND AND AASHTO CLASSIFICATION							ROCK DESCRIPTION												TERMS AND DEFINITIONS																																																																																																																																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">GENERAL CLASS.</th> <th colspan="4">GRANULAR MATERIALS (≤ 35% PASSING #200)</th> <th colspan="4">SILT-CLAY MATERIALS (> 35% PASSING #200)</th> <th colspan="2">ORGANIC MATERIALS</th> </tr> <tr> <td>GROUP CLASS.</td> <td>A-1, A-1-a, A-1-b, A-2, A-2-4, A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-1, A-1-a, A-1-b, A-2, A-2-4, A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-2-4, A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> <td>A-4, A-5, A-6, A-7, A-7.5, A-7.6</td> </tr> <tr> <td>SYMBOL</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> <td>[Pattern]</td> </tr> <tr> <td>% PASSING #10, #40, #200</td> <td>50 MX, 30 MX, 15 MX, 10 MX, 5 MN, 10 MX, 10 MX, 35 MX, 35 MX, 35 MX, 35 MX, 36 MN, 36 MN, 36 MN, 36 MN, 36 MN</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MATERIAL PASSING #40</td> <td>LL, PI</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>GROUP INDEX</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>USUAL TYPES OF MAJOR MATERIALS</td> <td>STONE FRAGS. GRAVEL, AND SAND</td> <td>FINE SAND</td> <td>SILTY OR CLAYEY GRAVEL AND SAND</td> <td>SILTY SOILS</td> <td>CLAYEY SOILS</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>GEN. RATING AS SUBGRADE</td> <td>EXCELLENT TO GOOD</td> <td></td> <td></td> <td>FAIR TO POOR</td> <td>FAIR TO POOR</td> <td>POOR</td> <td>UNSATURABLE</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td colspan="7">PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>							GENERAL CLASS.		GRANULAR MATERIALS (≤ 35% PASSING #200)				SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS		GROUP CLASS.	A-1, A-1-a, A-1-b, A-2, A-2-4, A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-1, A-1-a, A-1-b, A-2, A-2-4, A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-2-4, A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	SYMBOL	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	% PASSING #10, #40, #200	50 MX, 30 MX, 15 MX, 10 MX, 5 MN, 10 MX, 10 MX, 35 MX, 35 MX, 35 MX, 35 MX, 36 MN, 36 MN, 36 MN, 36 MN, 36 MN															MATERIAL PASSING #40	LL, PI															GROUP INDEX																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	UNSATURABLE											PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30																WEATHERING FRESH: ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE. VERY SLIGHT (V.SL.): 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 (SL.): 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. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i> 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. <i>IF TESTED, WOULD YIELD SPT N VALUES > 100 BPF</i> 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. <i>IF TESTED, WOULD YIELD SPT N VALUES < 100 BPF</i> COMPLETE: ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. FABRIC MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.												
GENERAL CLASS.		GRANULAR MATERIALS (≤ 35% PASSING #200)				SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS																																																																																																																																																							
GROUP CLASS.	A-1, A-1-a, A-1-b, A-2, A-2-4, A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-1, A-1-a, A-1-b, A-2, A-2-4, A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-2-4, A-2-5, A-2-6, A-2-7, A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6	A-4, A-5, A-6, A-7, A-7.5, A-7.6																																																																																																																																																		
SYMBOL	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]	[Pattern]																																																																																																																																																		
% PASSING #10, #40, #200	50 MX, 30 MX, 15 MX, 10 MX, 5 MN, 10 MX, 10 MX, 35 MX, 35 MX, 35 MX, 35 MX, 36 MN, 36 MN, 36 MN, 36 MN, 36 MN																																																																																																																																																																
MATERIAL PASSING #40	LL, PI																																																																																																																																																																
GROUP INDEX																																																																																																																																																																	
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	UNSATURABLE																																																																																																																																																										
	PI OF A-7-5 SUBGROUP IS ≤ LL - 30; PI OF A-7-6 SUBGROUP IS > LL - 30																																																																																																																																																																
CONSISTENCY OR DENSENESS							ROCK HARDNESS												TERMS AND DEFINITIONS																																																																																																																																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>PRIMARY SOIL TYPE</th> <th>COMPACTNESS OR CONSISTENCY</th> <th>RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE)</th> <th>RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT²)</th> </tr> <tr> <td>GENERALLY GRANULAR MATERIAL (NON-COHESIVE)</td> <td>VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE</td> <td>< 4 4 TO 10 10 TO 30 30 TO 50 > 50</td> <td>N/A</td> </tr> <tr> <td>GENERALLY SILT-CLAY MATERIAL (COHESIVE)</td> <td>VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD</td> <td>< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30</td> <td>< 0.25 0.25 TO 0.5 0.5 TO 1.0 1 TO 2 2 TO 4 > 4</td> </tr> </table>							PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE (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	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>VERY HARD</th> <th>HARD</th> <th>MODERATELY HARD</th> <th>MEDIUM HARD</th> <th>SOFT</th> <th>VERY SOFT</th> </tr> <tr> <td>CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.</td> <td>CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.</td> <td>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.</td> <td>CAN BE GROUDED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.</td> <td>CAN BE GROUDED 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.</td> <td>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 FINGER NAIL.</td> </tr> </table>												VERY HARD	HARD	MODERATELY HARD	MEDIUM HARD	SOFT	VERY SOFT	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.	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.	CAN BE GROUDED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.	CAN BE GROUDED 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.	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 FINGER NAIL.																																																																																																																							
PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE (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																																																																																																																																																														
VERY HARD	HARD	MODERATELY HARD	MEDIUM HARD	SOFT	VERY SOFT																																																																																																																																																												
CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.	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.	CAN BE GROUDED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.	CAN BE GROUDED 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.	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 FINGER NAIL.																																																																																																																																																												
TEXTURE OR GRAIN SIZE							RECOMMENDATION SYMBOLS												TERMS AND DEFINITIONS																																																																																																																																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>U.S. STD. SIEVE SIZE OPENING (MM)</th> <th>4</th> <th>10</th> <th>40</th> <th>60</th> <th>200</th> <th>270</th> </tr> <tr> <td>BOULDER (BLDR.)</td> <td>COBBLE (COB.)</td> <td>GRAVEL (GR.)</td> <td>COARSE SAND (CSE. SD.)</td> <td>FINE SAND (F. SD.)</td> <td>SILT (SL.)</td> <td>CLAY (CL.)</td> </tr> <tr> <td>GRAIN SIZE</td> <td>305 MM, 12 IN.</td> <td>75 MM, 3 IN.</td> <td>2.0 MM</td> <td>0.25 MM</td> <td>0.075 MM</td> <td>0.005 MM</td> </tr> </table>							U.S. STD. SIEVE SIZE OPENING (MM)	4	10	40	60	200	270	BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F. SD.)	SILT (SL.)	CLAY (CL.)	GRAIN SIZE	305 MM, 12 IN.	75 MM, 3 IN.	2.0 MM	0.25 MM	0.075 MM	0.005 MM	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td></td> <td>UNDERCUT</td> <td></td> <td>UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE</td> <td></td> <td>UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL</td> </tr> <tr> <td></td> <td>SHALLOW UNDERCUT</td> <td></td> <td>UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK</td> <td colspan="2"></td> </tr> </table>													UNDERCUT		UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE		UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL		SHALLOW UNDERCUT		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK																																																																																																																
U.S. STD. SIEVE SIZE OPENING (MM)	4	10	40	60	200	270																																																																																																																																																											
BOULDER (BLDR.)	COBBLE (COB.)	GRAVEL (GR.)	COARSE SAND (CSE. SD.)	FINE SAND (F. SD.)	SILT (SL.)	CLAY (CL.)																																																																																																																																																											
GRAIN SIZE	305 MM, 12 IN.	75 MM, 3 IN.	2.0 MM	0.25 MM	0.075 MM	0.005 MM																																																																																																																																																											
	UNDERCUT		UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE		UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL																																																																																																																																																												
	SHALLOW UNDERCUT		UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK																																																																																																																																																														
SOIL MOISTURE - CORRELATION OF TERMS							ABBREVIATIONS												TERMS AND DEFINITIONS																																																																																																																																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>SOIL MOISTURE SCALE (ATTERBERG LIMITS)</th> <th>FIELD MOISTURE DESCRIPTION</th> <th>GUIDE FOR FIELD MOISTURE DESCRIPTION</th> </tr> <tr> <td>LL - LIQUID LIMIT PL - PLASTIC LIMIT</td> <td>- SATURATED - (SAT.) - WET - (W)</td> <td>USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE</td> </tr> <tr> <td>OM - OPTIMUM MOISTURE SL - SHRINKAGE LIMIT</td> <td>- MOIST - (M) - DRY - (D)</td> <td>SOLID; AT OR NEAR OPTIMUM MOISTURE REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE</td> </tr> </table>							SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION	LL - LIQUID LIMIT PL - PLASTIC LIMIT	- SATURATED - (SAT.) - WET - (W)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE	OM - OPTIMUM MOISTURE SL - SHRINKAGE LIMIT	- MOIST - (M) - DRY - (D)	SOLID; AT OR NEAR OPTIMUM MOISTURE REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>AR - AUGER REFUSAL</td> <td>CL. - CLAY</td> <td>CPT - CONE PENETRATION TEST</td> <td>CSE. - COARSE</td> <td>DMT - DILATOMETER TEST</td> <td>DPT - DYNAMIC PENETRATION TEST</td> <td>e - VOID RATIO</td> <td>F - FINE</td> <td>FOSS. - FOSSILIFEROUS</td> <td>FRAC. - FRACTURED, FRACTURES</td> <td>FRAGS. - FRAGMENTS</td> <td>HI. - HIGHLY</td> <td>MED. - MEDIUM</td> <td>MICA - MICACEOUS</td> <td>MOD. - MODERATELY</td> <td>NP - NON PLASTIC</td> <td>ORG. - ORGANIC</td> <td>PMT - PRESSUREMETER TEST</td> <td>SAP. - SAPROLITIC</td> <td>SD. - SAND, SANDY</td> <td>SL. - SILT, SILTY</td> <td>SLI. - SLIGHTLY</td> <td>TCR - TRICONE REFUSAL</td> <td>TCR - TRICONE REFUSAL</td> <td>MO - MOISTURE CONTENT</td> <td>V - VERY</td> <td>VST - VANE SHEAR TEST</td> <td>WEA. - WEATHERED</td> <td>U - UNIT WEIGHT</td> <td>D - DRY UNIT WEIGHT</td> </tr> </table>												AR - AUGER REFUSAL	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	TCR - TRICONE REFUSAL	MO - MOISTURE CONTENT	V - VERY	VST - VANE SHEAR TEST	WEA. - WEATHERED	U - UNIT WEIGHT	D - DRY UNIT WEIGHT																																																																																																								
SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION																																																																																																																																																															
LL - LIQUID LIMIT PL - PLASTIC LIMIT	- SATURATED - (SAT.) - WET - (W)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE																																																																																																																																																															
OM - OPTIMUM MOISTURE SL - SHRINKAGE LIMIT	- MOIST - (M) - DRY - (D)	SOLID; AT OR NEAR OPTIMUM MOISTURE REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE																																																																																																																																																															
AR - AUGER REFUSAL	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	TCR - TRICONE REFUSAL	MO - MOISTURE CONTENT	V - VERY	VST - VANE SHEAR TEST	WEA. - WEATHERED	U - UNIT WEIGHT	D - DRY UNIT WEIGHT																																																																																																																																				
PLASTICITY							EQUIPMENT USED ON SUBJECT PROJECT												TERMS AND DEFINITIONS																																																																																																																																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">PLASTICITY INDEX (PI)</th> <th>DRY STRENGTH</th> </tr> <tr> <td>NON PLASTIC</td> <td>0-5</td> <td>VERY LOW</td> </tr> <tr> <td>SLIGHTLY PLASTIC</td> <td>6-15</td> <td>SLIGHT</td> </tr> <tr> <td>MODERATELY PLASTIC</td> <td>16-25</td> <td>MEDIUM</td> </tr> <tr> <td>HIGHLY PLASTIC</td> <td>26 OR MORE</td> <td>HIGH</td> </tr> </table>							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	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th colspan="2">DRILL UNITS:</th> <th colspan="2">ADVANCING TOOLS:</th> <th colspan="2">HAMMER TYPE:</th> </tr> <tr> <td><input type="checkbox"/> CME-45C</td> <td><input type="checkbox"/> CME-55</td> <td><input type="checkbox"/> CLAY BITS</td> <td><input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER</td> <td><input checked="" type="checkbox"/> AUTOMATIC</td> <td><input type="checkbox"/> MANUAL</td> </tr> <tr> <td><input type="checkbox"/> CME-550</td> <td></td> <td><input checked="" type="checkbox"/> 8" HOLLOW AUGERS</td> <td><input type="checkbox"/> HARD FACED FINGER BITS</td> <td colspan="2"></td> </tr> <tr> <td><input type="checkbox"/> VANE SHEAR TEST</td> <td></td> <td><input type="checkbox"/> TUNG-CARBIDE INSERTS</td> <td><input checked="" type="checkbox"/> CASING</td> <td colspan="2"><input type="checkbox"/> W/ ADVANCER</td> </tr> <tr> <td><input type="checkbox"/> PORTABLE HOIST</td> <td></td> <td><input type="checkbox"/> TRICONE _____</td> <td><input checked="" type="checkbox"/> TRICONE 2 1/2"</td> <td colspan="2">* TUNG-CARB.</td> </tr> <tr> <td></td> <td></td> <td><input type="checkbox"/> CORE BIT</td> <td></td> <td colspan="2"></td> </tr> </table>												DRILL UNITS:		ADVANCING TOOLS:		HAMMER TYPE:		<input type="checkbox"/> CME-45C	<input type="checkbox"/> CME-55	<input type="checkbox"/> CLAY BITS	<input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER	<input checked="" type="checkbox"/> AUTOMATIC	<input type="checkbox"/> MANUAL	<input type="checkbox"/> CME-550		<input checked="" type="checkbox"/> 8" HOLLOW AUGERS	<input type="checkbox"/> HARD FACED FINGER BITS			<input type="checkbox"/> VANE SHEAR TEST		<input type="checkbox"/> TUNG-CARBIDE INSERTS	<input checked="" type="checkbox"/> CASING	<input type="checkbox"/> W/ ADVANCER		<input type="checkbox"/> PORTABLE HOIST		<input type="checkbox"/> TRICONE _____	<input checked="" type="checkbox"/> TRICONE 2 1/2"	* TUNG-CARB.				<input type="checkbox"/> CORE BIT																																																																																															
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																																																																																																																																																															
DRILL UNITS:		ADVANCING TOOLS:		HAMMER TYPE:																																																																																																																																																													
<input type="checkbox"/> CME-45C	<input type="checkbox"/> CME-55	<input type="checkbox"/> CLAY BITS	<input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER	<input checked="" type="checkbox"/> AUTOMATIC	<input type="checkbox"/> MANUAL																																																																																																																																																												
<input type="checkbox"/> CME-550		<input checked="" type="checkbox"/> 8" HOLLOW AUGERS	<input type="checkbox"/> HARD FACED FINGER BITS																																																																																																																																																														
<input type="checkbox"/> VANE SHEAR TEST		<input type="checkbox"/> TUNG-CARBIDE INSERTS	<input checked="" type="checkbox"/> CASING	<input type="checkbox"/> W/ ADVANCER																																																																																																																																																													
<input type="checkbox"/> PORTABLE HOIST		<input type="checkbox"/> TRICONE _____	<input checked="" type="checkbox"/> TRICONE 2 1/2"	* TUNG-CARB.																																																																																																																																																													
		<input type="checkbox"/> CORE BIT																																																																																																																																																															
COLOR							FRACTURE SPACING												TERMS AND DEFINITIONS																																																																																																																																														
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.							<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>TERM</th> <th>SPACING</th> <th>TERM</th> <th>THICKNESS</th> </tr> <tr> <td>VERY WIDE</td> <td>MORE THAN 10 FEET</td> <td>VERY THICKLY BEDDED</td> <td>4 FEET</td> </tr> <tr> <td>WIDE</td> <td>3 TO 10 FEET</td> <td>THICKLY BEDDED</td> <td>1.5 - 4 FEET</td> </tr> <tr> <td>MODERATELY CLOSE</td> <td>1 TO 3 FEET</td> <td>THINLY BEDDED</td> <td>0.16 - 1.5 FEET</td> </tr> <tr> <td>CLOSE</td> <td>0.16 TO 1 FOOT</td> <td>VERY THINLY BEDDED</td> <td>0.03 - 0.16 FEET</td> </tr> <tr> <td>VERY CLOSE</td> <td>LESS THAN 0.16 FEET</td> <td>THICKLY LAMINATED</td> <td>0.008 - 0.03 FEET</td> </tr> <tr> <td></td> <td></td> <td>THINLY LAMINATED</td> <td>< 0.008 FEET</td> </tr> </table>												TERM	SPACING	TERM	THICKNESS	VERY WIDE	MORE THAN 10 FEET	VERY THICKLY BEDDED	4 FEET	WIDE	3 TO 10 FEET	THICKLY BEDDED	1.5 - 4 FEET	MODERATELY CLOSE	1 TO 3 FEET	THINLY BEDDED	0.16 - 1.5 FEET	CLOSE	0.16 TO 1 FOOT	VERY THINLY BEDDED	0.03 - 0.16 FEET	VERY CLOSE	LESS THAN 0.16 FEET	THICKLY LAMINATED	0.008 - 0.03 FEET			THINLY LAMINATED	< 0.008 FEET																																																																																																																			
TERM	SPACING	TERM	THICKNESS																																																																																																																																																														
VERY WIDE	MORE THAN 10 FEET	VERY THICKLY BEDDED	4 FEET																																																																																																																																																														
WIDE	3 TO 10 FEET	THICKLY BEDDED	1.5 - 4 FEET																																																																																																																																																														
MODERATELY CLOSE	1 TO 3 FEET	THINLY BEDDED	0.16 - 1.5 FEET																																																																																																																																																														
CLOSE	0.16 TO 1 FOOT	VERY THINLY BEDDED	0.03 - 0.16 FEET																																																																																																																																																														
VERY CLOSE	LESS THAN 0.16 FEET	THICKLY LAMINATED	0.008 - 0.03 FEET																																																																																																																																																														
		THINLY LAMINATED	< 0.008 FEET																																																																																																																																																														
FRACMENTS							INDURATION												TERMS AND DEFINITIONS																																																																																																																																														
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>DRILL UNITS:</th> <th>ADVANCING TOOLS:</th> <th>HAMMER TYPE:</th> <th>CORE SIZE:</th> <th>HAND TOOLS:</th> </tr> <tr> <td><input type="checkbox"/> CME-45C</td> <td><input type="checkbox"/> CLAY BITS</td> <td><input checked="" type="checkbox"/> AUTOMATIC</td> <td><input type="checkbox"/> -B</td> <td><input type="checkbox"/> POST HOLE DIGGER</td> </tr> <tr> <td><input checked="" type="checkbox"/> CME-55</td> <td><input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER</td> <td><input type="checkbox"/> MANUAL</td> <td><input type="checkbox"/> -N</td> <td><input checked="" type="checkbox"/> HAND AUGER</td> </tr> <tr> <td><input type="checkbox"/> CME-550</td> <td><input checked="" type="checkbox"/> 8" HOLLOW AUGERS</td> <td></td> <td></td> <td><input type="checkbox"/> SOUNDING ROD</td> </tr> <tr> <td><input type="checkbox"/> VANE SHEAR TEST</td> <td><input type="checkbox"/> HARD FACED FINGER BITS</td> <td></td> <td></td> <td><input type="checkbox"/> VANE SHEAR TEST</td> </tr> <tr> <td><input type="checkbox"/> PORTABLE HOIST</td> <td><input type="checkbox"/> TUNG-CARBIDE INSERTS</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/> CASING</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td><input type="checkbox"/> TRICONE _____</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/> TRICONE 2 1/2"</td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td><input type="checkbox"/> CORE BIT</td> <td></td> <td></td> <td></td> </tr> </table>							DRILL UNITS:	ADVANCING TOOLS:	HAMMER TYPE:	CORE SIZE:	HAND TOOLS:	<input type="checkbox"/> CME-45C	<input type="checkbox"/> CLAY BITS	<input checked="" type="checkbox"/> AUTOMATIC	<input type="checkbox"/> -B	<input type="checkbox"/> POST HOLE DIGGER	<input checked="" type="checkbox"/> CME-55	<input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER	<input type="checkbox"/> MANUAL	<input type="checkbox"/> -N	<input checked="" type="checkbox"/> HAND AUGER	<input type="checkbox"/> CME-550	<input checked="" type="checkbox"/> 8" HOLLOW AUGERS			<input type="checkbox"/> SOUNDING ROD	<input type="checkbox"/> VANE SHEAR TEST	<input type="checkbox"/> HARD FACED FINGER BITS			<input type="checkbox"/> VANE SHEAR TEST	<input type="checkbox"/> PORTABLE HOIST	<input type="checkbox"/> TUNG-CARBIDE INSERTS					<input checked="" type="checkbox"/> CASING					<input type="checkbox"/> TRICONE _____					<input checked="" type="checkbox"/> TRICONE 2 1/2"					<input type="checkbox"/> CORE BIT				FRACMENTS 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 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.																																																																																																								
DRILL UNITS:	ADVANCING TOOLS:	HAMMER TYPE:	CORE SIZE:	HAND TOOLS:																																																																																																																																																													
<input type="checkbox"/> CME-45C	<input type="checkbox"/> CLAY BITS	<input checked="" type="checkbox"/> AUTOMATIC	<input type="checkbox"/> -B	<input type="checkbox"/> POST HOLE DIGGER																																																																																																																																																													
<input checked="" type="checkbox"/> CME-55	<input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER	<input type="checkbox"/> MANUAL	<input type="checkbox"/> -N	<input checked="" type="checkbox"/> HAND AUGER																																																																																																																																																													
<input type="checkbox"/> CME-550	<input checked="" type="checkbox"/> 8" HOLLOW AUGERS			<input type="checkbox"/> SOUNDING ROD																																																																																																																																																													
<input type="checkbox"/> VANE SHEAR TEST	<input type="checkbox"/> HARD FACED FINGER BITS			<input type="checkbox"/> VANE SHEAR TEST																																																																																																																																																													
<input type="checkbox"/> PORTABLE HOIST	<input type="checkbox"/> TUNG-CARBIDE INSERTS																																																																																																																																																																
	<input checked="" type="checkbox"/> CASING																																																																																																																																																																
	<input type="checkbox"/> TRICONE _____																																																																																																																																																																
	<input checked="" type="checkbox"/> TRICONE 2 1/2"																																																																																																																																																																
	<input type="checkbox"/> CORE BIT																																																																																																																																																																
NOTES:							BENCH MARK: N/A												TERMS AND DEFINITIONS																																																																																																																																														
ROADWAY BORING ELEVATIONS OBTAINED FROM PROJECT TIN FILE R5819-R5820.LS.TIN, RECEIVED ON JULY 20, 2019 FIAD - FILLED IMMEDIATELY AFTER DRILLING							ELEVATION: N/A FEET																																																																																																																																																										



February 20, 2021

STATE PROJECT: 47091.1.1 / 47092.1.1 (R-5819 and R-5820)
 COUNTY: Columbus
 DESCRIPTION: SR 1740 (Old Lake Road) Convert at-grade Intersection to grade separation and SR 1735 (Chauncey Town Road) convert at-grade Intersection to Interchange
 SUBJECT: **GEOTECHNICAL REPORT - INVENTORY**

PROJECT DESCRIPTION

This project consists of a widening of existing US 74 (-L-) from west of Chauncey Town Road to east of Old Lake Road. This project will also include a widening of Chauncey Town Road (-Y1-) and Old Lake Road (-Y2-), construction of a roundabout at the intersection of Sam Potts Highway (-Y3-) and Flemington Drive (-Y1A-), several ramps (-Y1RPA-, -Y1RPB-, -Y1RPC-, -Y1RPD-) and the creation of a new alignment (-Y7-). In addition, there will be a detour of Chauncey Town Road (-DET1-) to facilitate construction of the bridge on Chauncey Town Road over US 74 as well as a detour of Old Lake Road (-DET2-) to facilitate construction of the bridge on Old Lake Road over US 74.

The geotechnical investigation was conducted between February 2020 and March 2020. The majority of borings were performed using a hand auger while additional Standard Penetration Test borings were advanced with a CME-55 drill rig with an automatic hammer. Representative soil samples were collected for visual classification in the field and selected samples were submitted for laboratory analysis by Geotechnics, Inc.

The following alignments, totaling 7.02 miles, were investigated. Plan sheets and cross sections of these alignments are included in this report.

<u>LINE</u>	<u>STATIONS</u>
-LWB-	18+50 to 39+38
-L-	10+00 to 123+71
-Y1-	10+00 to 58+39
-Y1RPA-	10+00 to 30+80
-Y1RPB-	10+00 to 32+27
-Y1RPC-	10+00 to 30+82
-Y1RPD-	10+00 to 32+03
-Y1A-	10+00 to 16+88
-Y2-	28+10 to 83+58
-Y3-	13+40 to 23+92
-Y7-	10+00 to 99+51
-DET1-	10+00 to 42+19
-DET2-	10+00 to 41+46

PHYSIOGRAPHY AND GEOLOGY

The project is located in the Coastal Plain Physiographic Province. The project corridor is comprised primarily of residential properties, agricultural land and undeveloped wooded areas. The general topography along the project is generally flat to gently sloping.

Geologically, the project area consists of Coastal Plain soils belonging to the Undivided Coastal Plain, the Waccamaw Formation, and the Peedee Formation consisting of sand, clayey sand, and clay, greenish gray to olive black, locally fossiliferous and calcareous. Patches of sandy molluscan-mold limestone from the Waccamaw Formation are found in upper part.

SOIL PROPERTIES

Soils encountered during this investigation are separated into four categories based on origin. They consist of roadway embankment, artificial fill, undivided coastal plain and formational soils.

Roadway Embankment soils are present along the existing roadways on the project. The roadway embankment encountered generally consist of moist to wet, loose to medium dense, coarse and fine sands (A-1) to silty coarse to fine sands (A-2-4) to clayey coarse to fine sands (A-2-6) and moist to wet, soft to stiff, coarse to fine sandy silts (A-4) to coarse to fine sandy clays (A-6). The plasticity index of the fine-grained soils tested ranged from non-plastic to 32. Organic contents of soils tested ranged from 3.0 to 8.9 percent.

Artificial Fill soils are present along some of the existing roadways on the project and in certain wooded areas. The artificial fill encountered generally consist of dry to moist, loose to medium dense, silty coarse to fine sand (A-2-4) to fine sand (A-3) and moist, medium stiff to stiff, moderately to highly plastic, sandy clay (A-6) to silty clay (A-7). No Artificial Fill soils were tested.

Coastal Plain soils are identified as Undivided Coastal Plain soils, the Waccamaw Formation, and the Peedee Formation. Undivided Coastal Plain soils and Peedee Formation soils generally consist of moist to saturated, very loose to medium dense, silty sands (A-2-4) with trace to little organic matter, moist to saturated, very loose to medium dense, slightly to highly plastic, clayey sands (A-2-6), moist to wet, loose to medium dense, fine sands (A-3), dry to wet, soft to stiff, non-plastic to slightly plastic, sandy silts (A-4) with trace organic matter to moderately organic soils and moist to saturated, very loose to medium dense, slightly to highly plastic, sandy clays to silty clays (A-6, A-7). The Waccamaw Formation consists of soft to medium hard, limestone with shell fragments. The plasticity index of the fine-grained soils tested ranged from non-plastic to 42. Organic contents of soils tested ranged from 1.5 to 10.6 percent.

GROUNDWATER

Groundwater was encountered at elevations ranging from 68.7 to 48.1 feet and typically ranges from 0.0 to 6.3 feet below the existing ground surface.

AREAS OF SPECIAL GEOTECHNICAL INTEREST

- 1) Moderately and Highly Plastic Clays: Moderately and highly plastic clays (PI > 16) and/or soils with more than 50% passing a 200 sieve were encountered on the project at the following locations:

<u>LINE</u>	<u>STATIONS</u>	<u>OFFSETS</u>
-LWB-	31+75 to 39+38	LT to RT
-L-	16+75 to 20+25	LT to RT
-L-	23+75 to 26+25	LT to RT
-L-	46+75 to 50+25	LT to RT
-L-	50+75 to 54+25	LT to RT
-L-	86+75 to 89+25	LT to RT
-L-	100+75 to 104+25	LT to RT

-Y1-	12+25 to 26+75	LT to RT
-Y1-	49+25 to 51+75	LT to RT
-Y1A-	13+25 to 16+25	LT to RT
-Y1RPA-	15+25 to 19+25	LT to RT
-Y1RPD-	15+25 to 20+75	LT to RT
-Y2-	50+25 to 67+75	LT to RT
-Y2-	74+75 to 78+75	LT to RT
-Y3-	18+25 to 21+40	LT to RT
-Y7-	23+75 to 29+75	LT to RT
-Y7-	54+25 to 57+75	LT to RT
-Y7-	60+25 to 64+25	LT to RT
-Y7-	87+75 to 96+25	LT to RT
-DET1-	21+25 to 21+75	LT to RT
-DET1-	22+75 to 25+75	LT to RT
-DET1-	35+25 to 36+75	LT to RT
-DET1-	37+25 to 40+40	LT to RT
-DET2-	14+75 to 19+25	LT to RT
-DET2-	28+25 to 38+51	LT to RT

-DET2-	26+25 to 27+75	LT AND RT
-DET2-	32+25 to 38+75	LT AND RT

3) Alluvial Soil: Alluvial soil was encountered on the project at the following locations:

<u>LINE</u>	<u>STATIONS</u>	<u>OFFSETS</u>
-Y2-	27+00 to 29+00	LT, RT
-DET2-	27+50 to 28+50	LT, RT

4) Organic Soil: Organic soils were encountered on the project at the following locations:

<u>LINE</u>	<u>STATIONS</u>	<u>OFFSETS</u>
-Y1-	29+50 to 35+50	RT
-Y1-	23+50 to 23+50	LT, RT
-Y2-	28+25 to 30+50	RT
-Y2-	55+00 to 56+50	RT
-Y2-	59+50 to 60+75	LT
-Y2-	61+75 to 67+75	LT
-Y7-	12+25 to 21+50	LT, RT
-Y7-	24+75 to 27+25	RT
-Y7-	33+00 to 40+00	LT, RT
-Y7-	65+50 to 74+50	LT, RT
-Y7-	80+75 to 83+00	LT, RT
-Y7-	84+50 to 93+00	LT, RT

2) Groundwater: The following areas exhibit a high water table, seasonal high groundwater or the potential for groundwater related construction problems:

<u>LINE</u>	<u>STATIONS</u>	<u>OFFSETS</u>
-LWB-	18+25 to 34+75	LT AND RT
-L-	10+00 to 87+50	LT AND RT
-L-	89+75 to 92+25	LT AND RT
-L-	95+75 to 103+75	LT AND RT
-Y1-	11+00 to 27+75	LT AND RT
-Y1-	48+25 to 52+00	LT AND RT
-Y1RPA-	18+50 to 19+75	LT AND RT
-Y1RPC-	18+00 to 21+75	LT AND RT
-Y1RPD-	19+50 to 22+75	LT AND RT
-Y1A-	11+97 to 16+25	LT AND RT
-Y2-	28+10 to 31+25	LT AND RT
-Y2-	52+75 to 57+75	LT AND RT
-Y2-	62+25 to 78+75	LT AND RT
-Y3-	13+40 to 16+75	LT AND RT
-Y3-	18+25 to 21+25	LT AND RT
-Y7-	10+25 to 96+25	LT AND RT
-DET1-	21+75 to 25+40	LT AND RT
-DET1-	26+70 to 29+25	LT AND RT
-DET1-	35+25 to 40+35	LT AND RT
-DET2-	12+25 to 23+75	LT AND RT

5) Artificial Fill: Artificial fill was encountered on the project at the following locations:

<u>LINE</u>	<u>STATIONS</u>	<u>OFFSETS</u>
-Y1-	48+70 to 49+60	LT
-Y1RPC-	27+00 to 30+30	LT AND RT
-DET1-	18+00 to 21+80	LT AND RT

Prepared by,
KLEINFELDER, INC.
NC License No. F-1312



F. Christopher Driscoll, PG
Staff Professional

FCD/TRW:cas

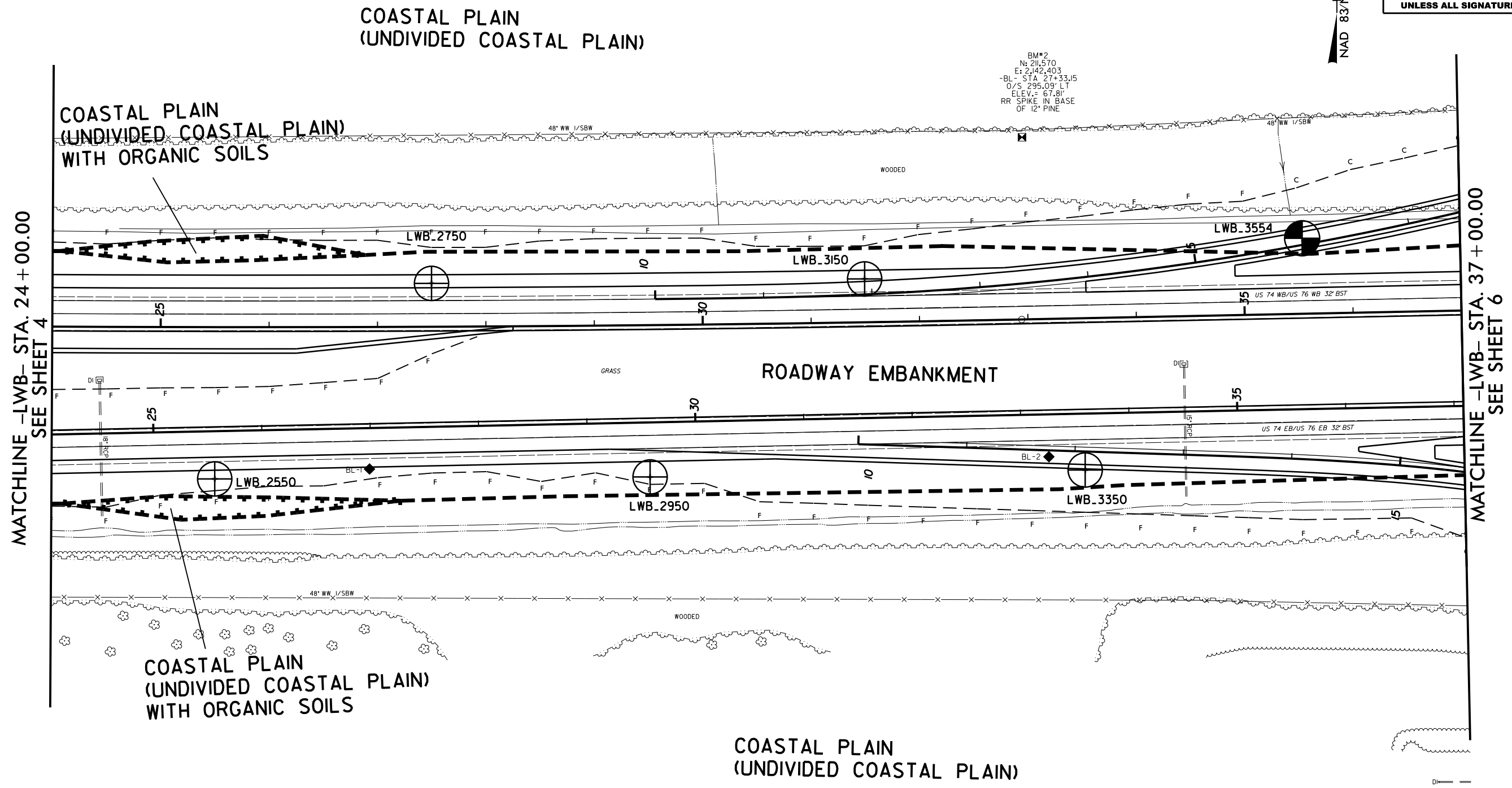


Thomas R. Wells, PE
Senior Professional

Bulk and Undisturbed Samples

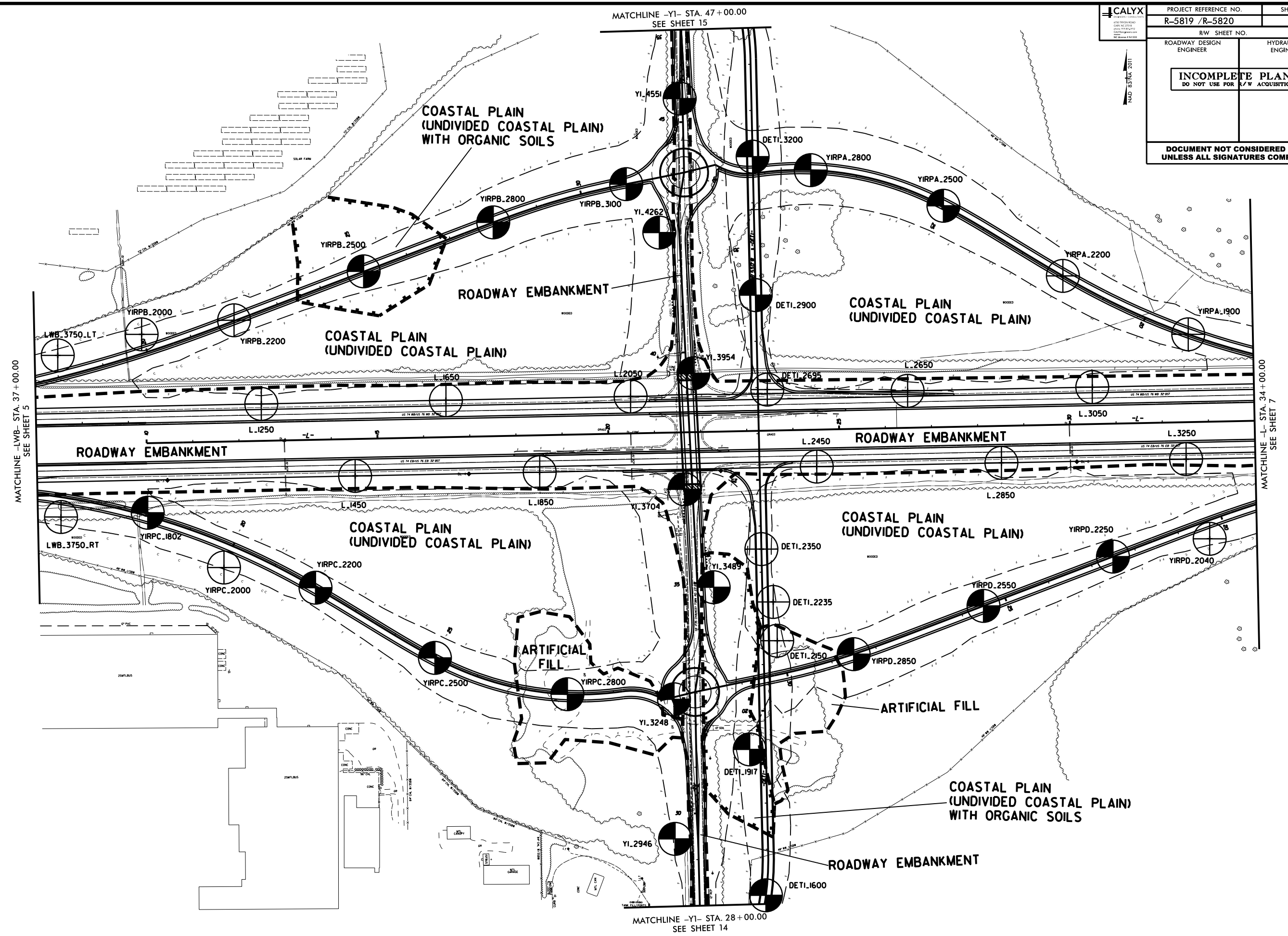
<u>Sample No.</u>	<u>Alignment</u>	<u>STA.</u>	<u>Offset</u>	<u>Depth (ft)</u>	<u>Tests Performed</u>
ST-1	-Y1-	37+04	15' LT	15.0-17.0	N/A
ST-2	-Y1-	39+54	15' RT	10.0-12.0	Consolidation, CU Triaxial
ST-3	-Y1-	42+62	43' RT	10.0-12.1	Consolidation, CU Triaxial
ST-4	-Y1RPA-	28+00	CL	5.0-7.0	Consolidation, CU Triaxial
ST-5	-Y1RPC-	28+00	CL	10.0-12.0	Consolidation, CU Triaxial
ST-6	-Y2-	35+90	3' RT	5.0-7.0	Consolidation, CU Triaxial

PROJECT REFERENCE NO. R-5819/R-5820		SHEET NO. 5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

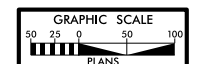


I5-FEB-2021 15:54 W:\shore\GEO\TECH\N\CAL\Projects\20190942.024A R-5819 & R-5820 Roadway\5819-R5820_GEO_RDWY\CADD_GEO\TECH\PI\mPr\of\NR5819_R5820_GEO_mv5.dgn

PROJECT REFERENCE NO. R-5819 /R-5820		SHEET NO. 6
RW SHEET NO. ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		



15-FEB-2021 15:54
 W:\shere\GEO\TECHNICAL\Projects\20190942.024A R-5819 & R-5820 Roadway\5819-R5820_GEO_RDWY_CADD_GEO\TECH\Plan\Prof\5819_R5820_GEO_mv6.dgn
 Walls - 8/14/18



8/17/99

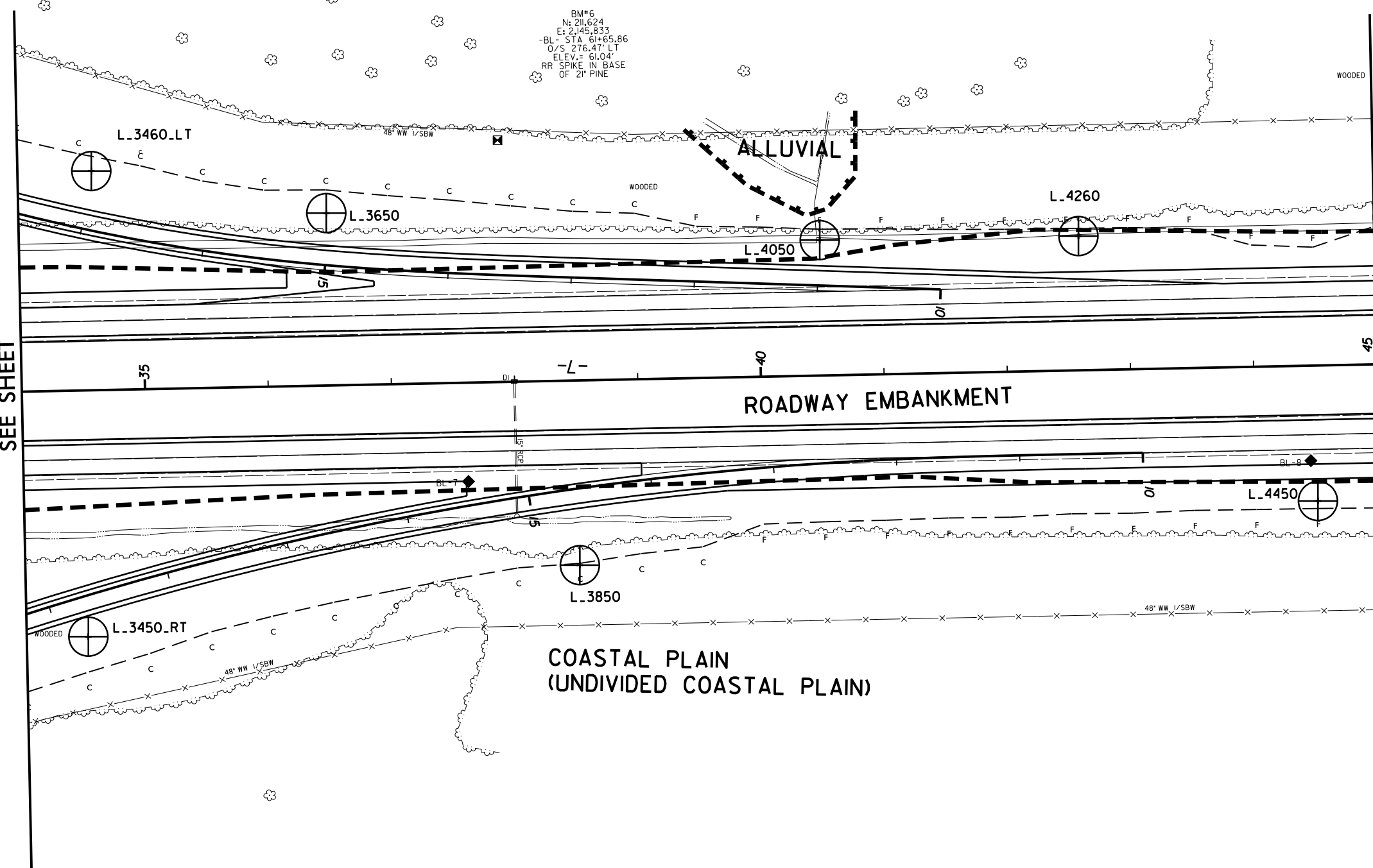
CALYX
ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333

PROJECT REFERENCE NO. R-5819/R-5820	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

I5-FEB-2021 5:54 W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO_RDWY\CADD_GEO\TECH\Plan\Prof\NR5819_R5820_GEO_rnv7.dgn

MATCHLINE -L- STA. 34 + 00.00
SEE SHEET

MATCHLINE -L- STA. 45 + 00.00
SEE SHEET 8



NAD 83/NA 2011

8/17/99

CALYX
 ENGINEERS + CONSULTANTS
 6750 TRYON ROAD
 CARY, NC 27518
 phone: 919.851.1912
 CALYXengineers.com
 NC License # F-1333

PROJECT REFERENCE NO. R-5819/R-5820		SHEET NO. 8
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

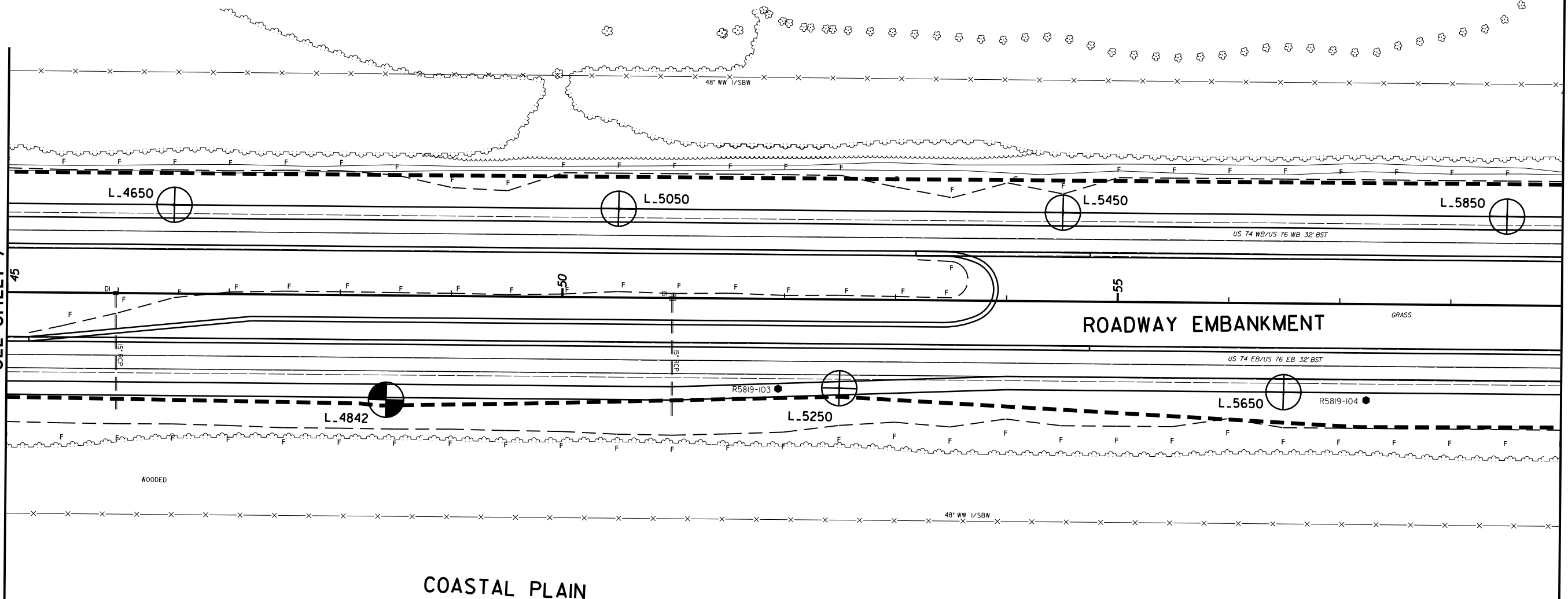
COASTAL PLAIN
(UNDIVIDED COASTAL PLAIN)

WOODED

WOODED

MATCHLINE -L- STA. 45 + 00.00
SEE SHEET 7

MATCHLINE -L- STA. 59 + 00.00
SEE SHEET 7



COASTAL PLAIN
(UNDIVIDED COASTAL PLAIN)

BM*7
 N: 214,47
 E: 2,147,536
 -BL- STA 78+60.16
 O/S- 230.78' RT
 ELEV.- 59.25'
 RR SPIKE IN BASE
 OF 48' PINE

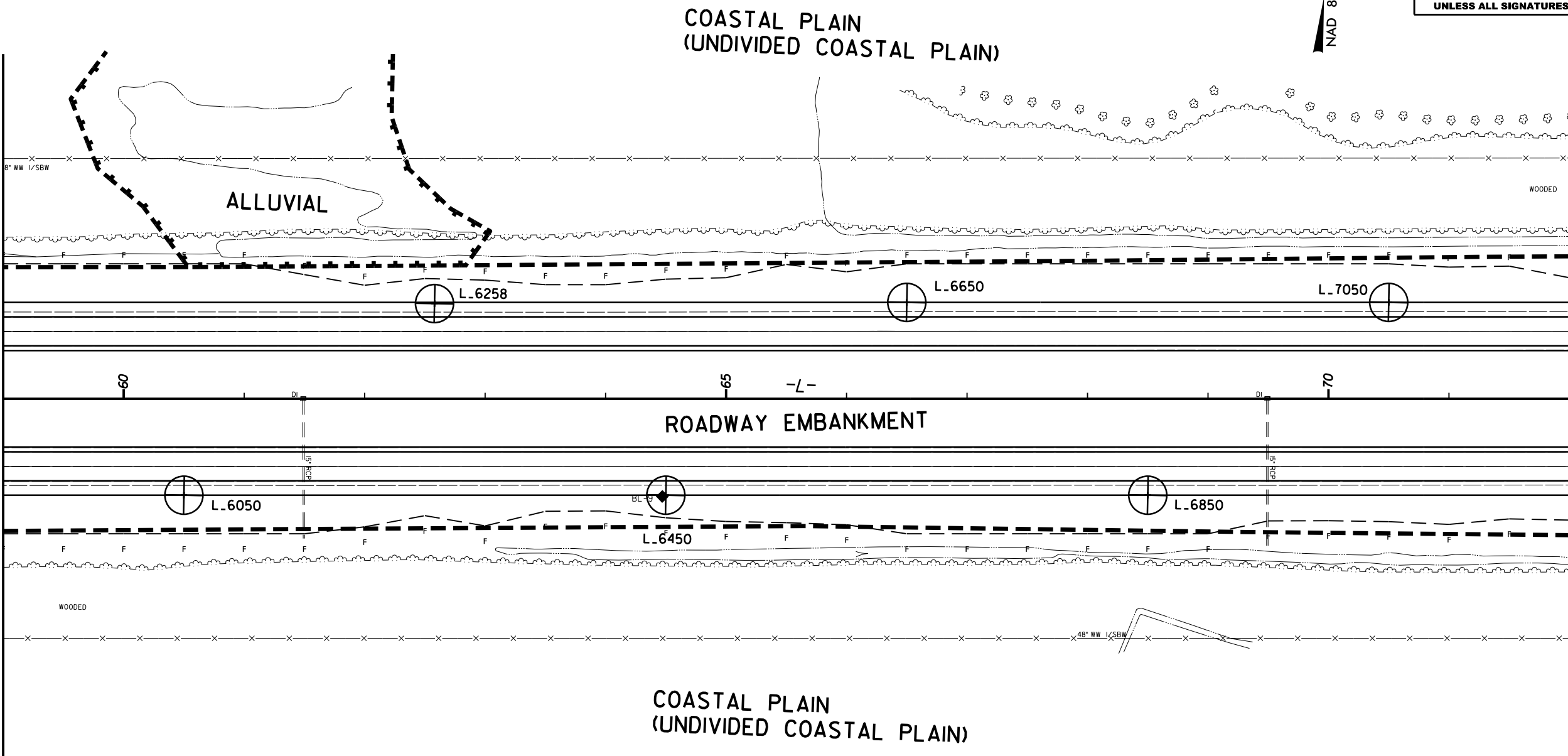
I5-FEB-2021 15:54
 W:\shere\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\5819-R5820_GEO_RDWY\CADD_GEO\TECHNICAL\Prof\NR5819_R5820_GEO_mv8.dgn
 Walls - 8/17/99

PROJECT REFERENCE NO. R-5819/R-5820		SHEET NO. 9
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION		
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED		

NAD 83/NA 2011

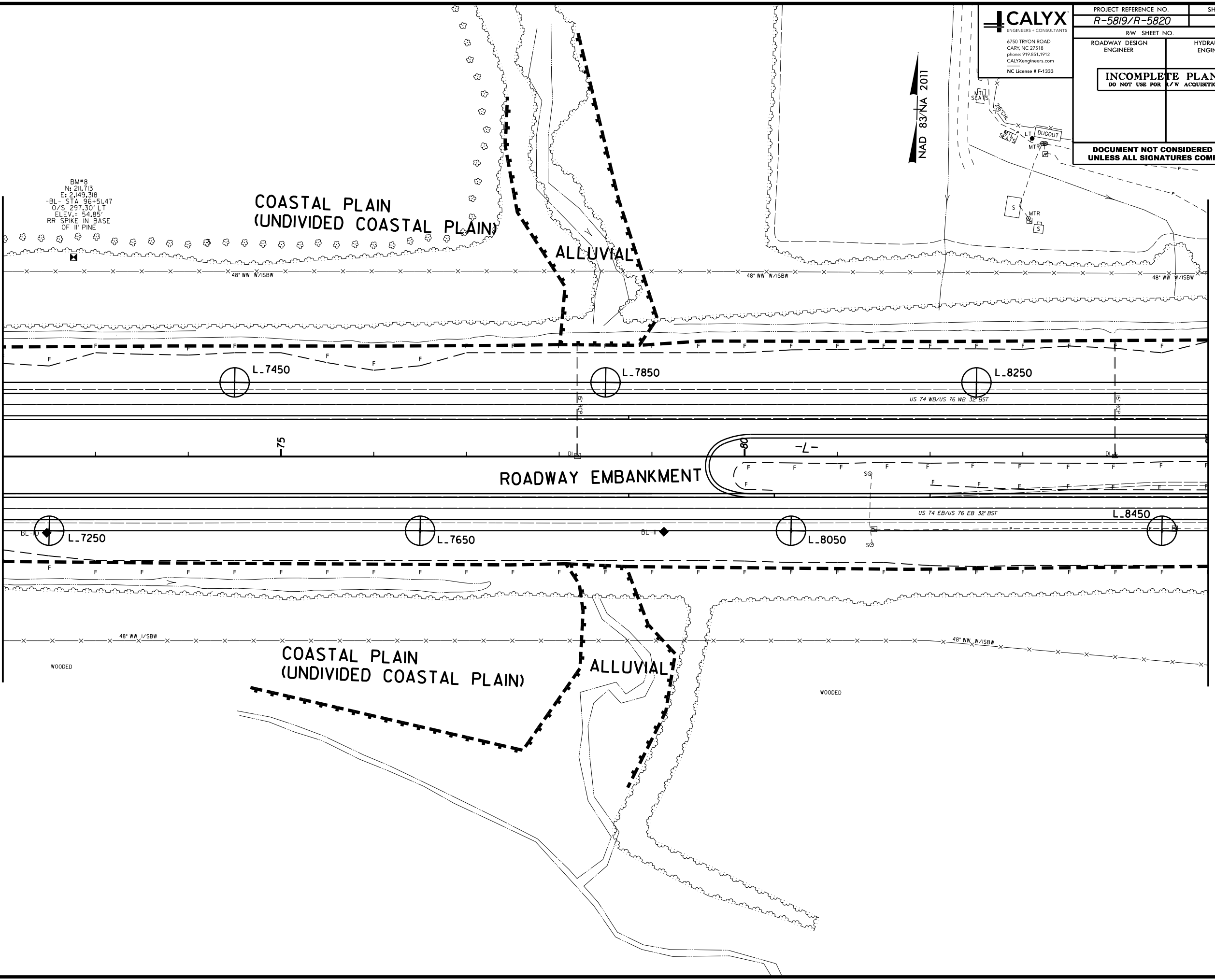
MATCHLINE -L- STA. 59 + 00.00
SEE SHEET 8

MATCHLINE -L- STA. 72 + 00.00
SEE SHEET 10





PROJECT REFERENCE NO. R-5819/R-5820	SHEET NO. 10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCHLINE -L- STA. 72 + 00.00
SEE SHEET 9

MATCHLINE -L- STA. 85 + 00.00
SEE SHEET 11

15-FEB-2021 5:55
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\5819-R5820_GEO_RDWY\CADD_GEO\TECH\Plan\Prof\NR5819_R5820_GEO_rv10.dgn
8/17/99



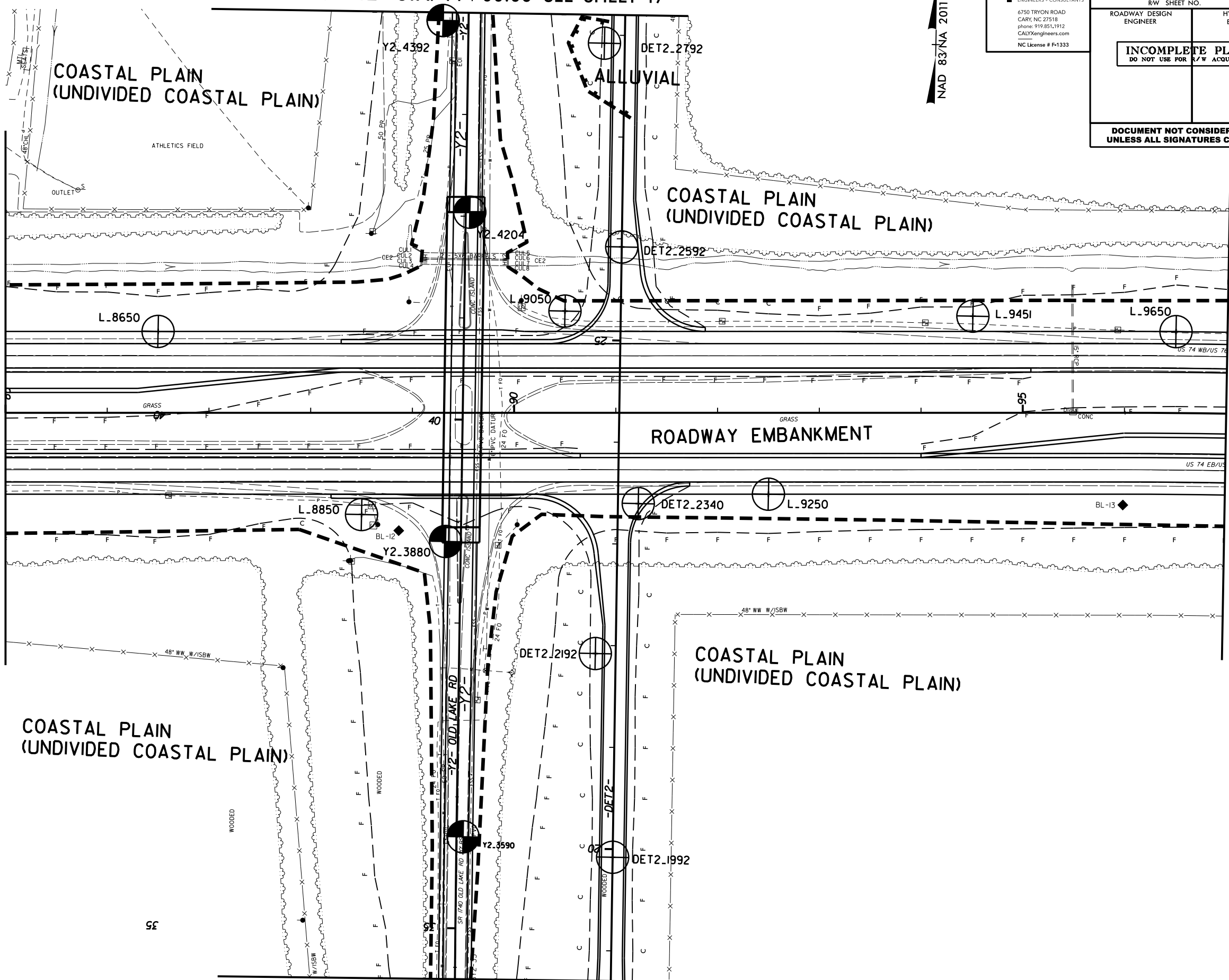
PROJECT REFERENCE NO. R-5819 /R-5820		SHEET NO. 11	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



MATCHLINE -Y2- STA. 44 + 00.00 SEE SHEET 17

MATCHLINE -L- STA. 85 + 00.00
SEE SHEET 10

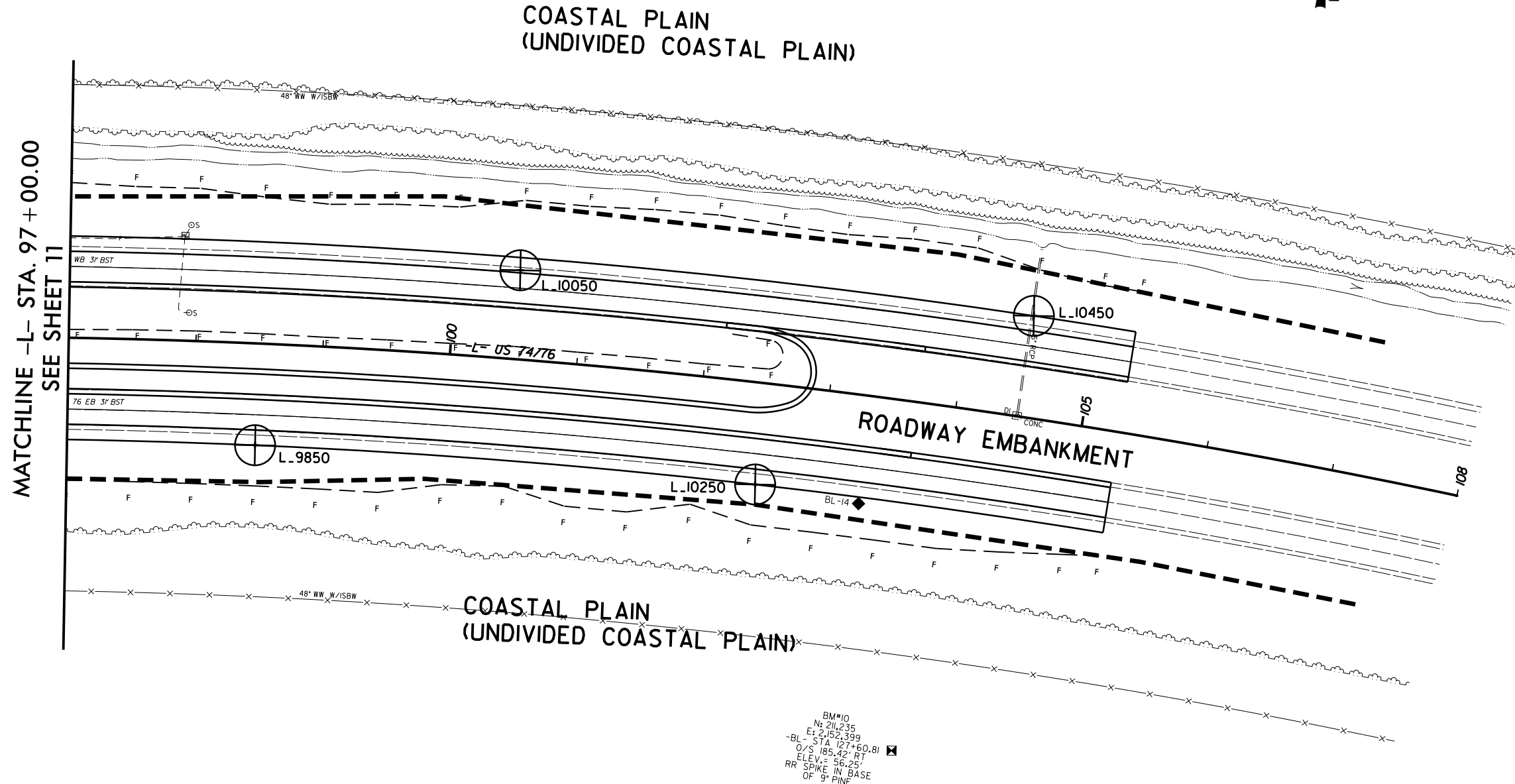
MATCHLINE -L- STA. 97 + 00.00
SEE SHEET 12



15-FEB-2021 5:55
 W:\sherey\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO_RDWY\CADD_GEO\TECH\Plan\Prof\R5819_R5820_GEO_mv11.dgn
 Walls - 8/17/99

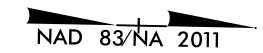
CALYX
ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333

PROJECT REFERENCE NO. R-5819/R-5820	SHEET NO. 12
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



ED

PROJECT REFERENCE NO. R-5819/R-5820	SHEET NO. 14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



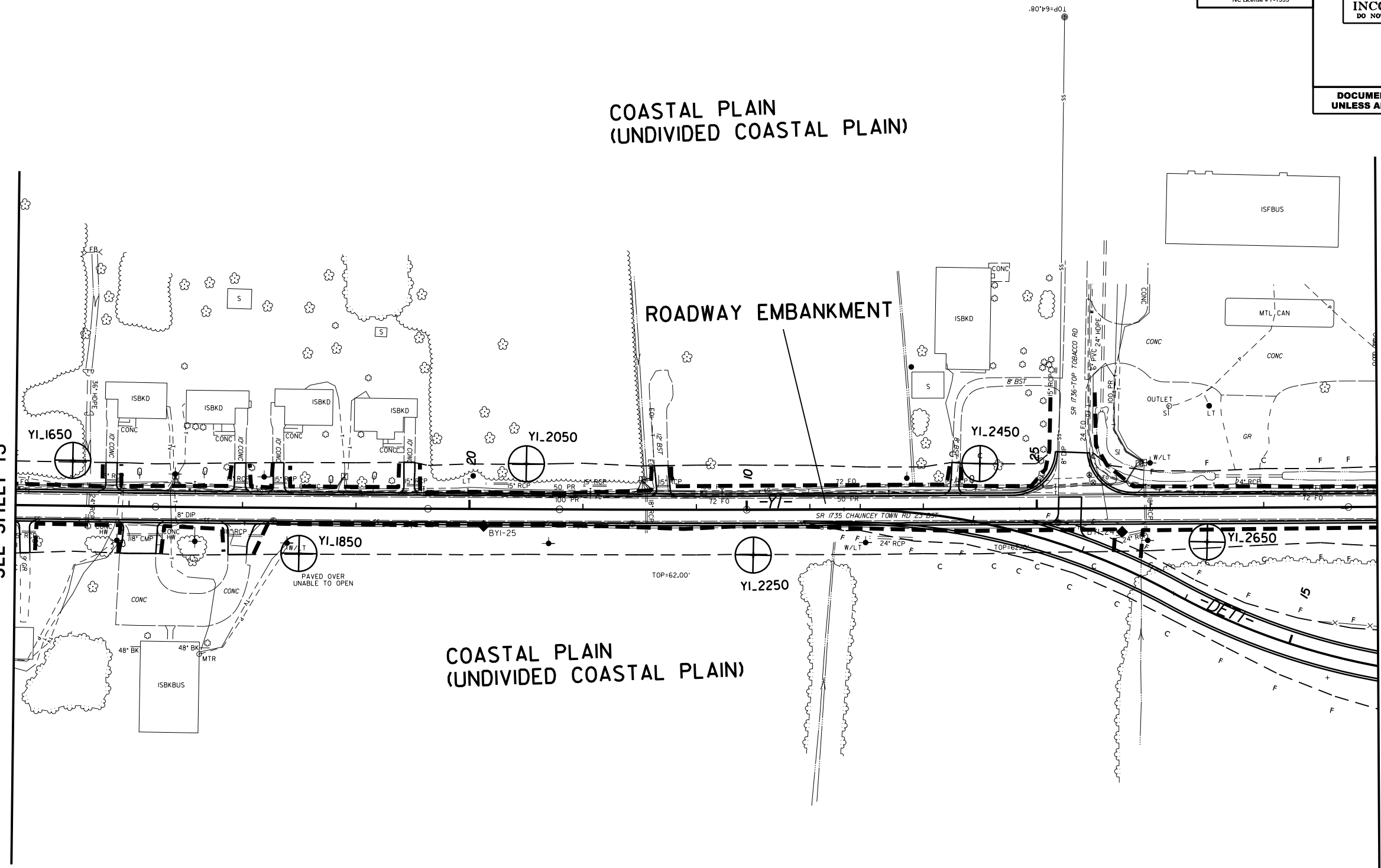
MATCHLINE -Y1- STA. 16 + 00.00
SEE SHEET 13

MATCHLINE -Y1- STA. 28 + 00.00
SEE SHEET 6

COASTAL PLAIN
(UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN
(UNDIVIDED COASTAL PLAIN)

ROADWAY EMBANKMENT



BM#4
N: 209.571
E: 2,144.683
-BYI- STA 43+34.75
O/S 405.00' LT
ELEV. = 63.28'
RR SPIKE IN BASE
OF 48\"/>

15-FEB-2021 15:55
W:\shere\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO.RDWY\CADD_GEO\TECH\Plan\Prof\NR5819_R5820_GEO.mv14.dgn
Walls - 8/17/99

8/17/99

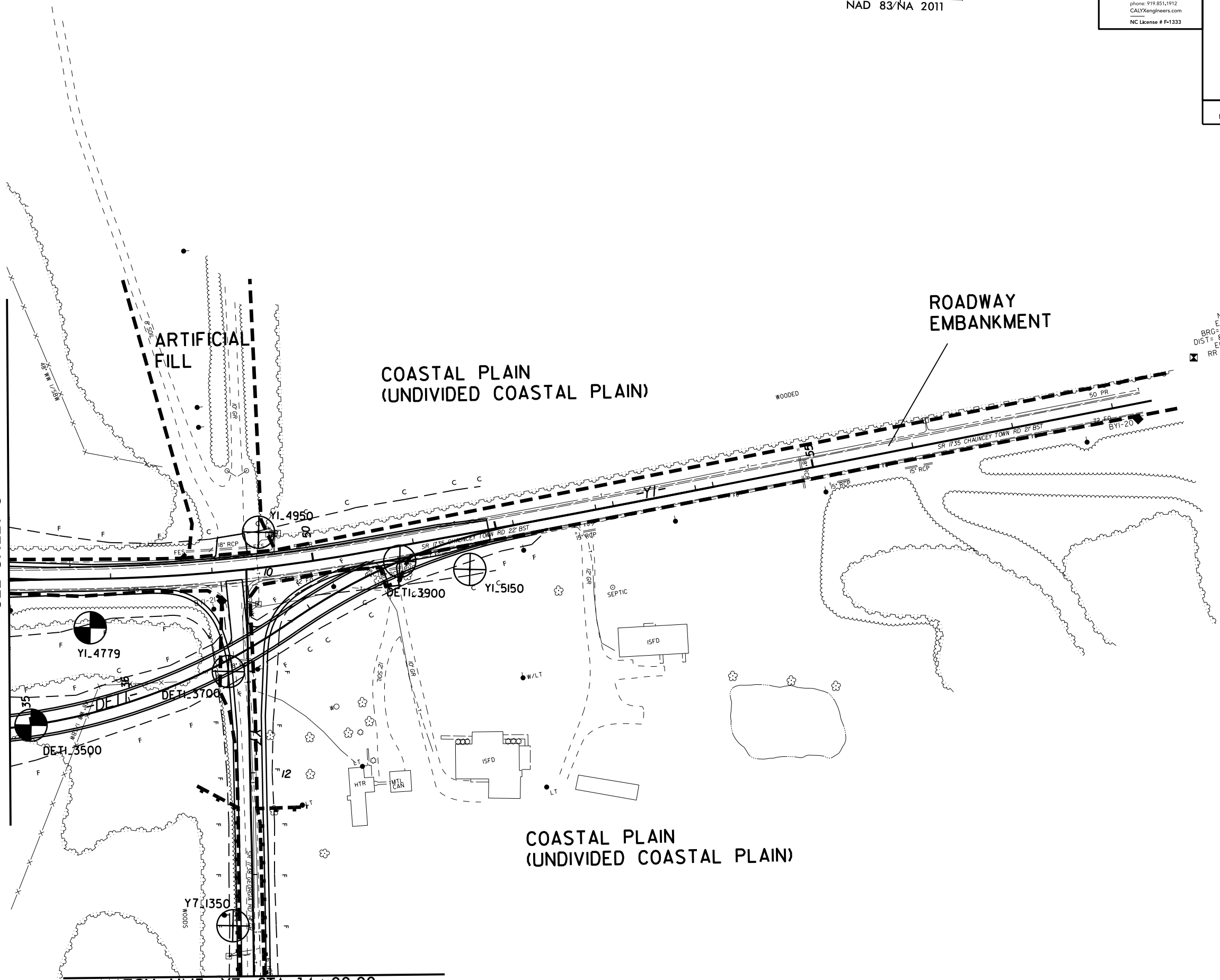
CALYX
ENGINEERS + CONSULTANTS
6750 TRYON ROAD
CARY, NC 27518
phone: 919.851.1912
CALYXengineers.com
NC License # F-1333

PROJECT REFERENCE NO. R-5819 /R-5820	SHEET NO. 15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83/NA 2011

MATCHLINE -Y1- STA. 47 + 00.00
SEE SHEET 6

MATCH LINE -Y7- STA 14 + 00.00
SEE SHEET 20



BM#3
N: 213.427
E: 2143.962
BRC = N 49°03'41" W
DIST = 81.5' FROM BYI-20
ELEV. = 65.10'
RR SPIKE IN BASE
OF 18" PINE

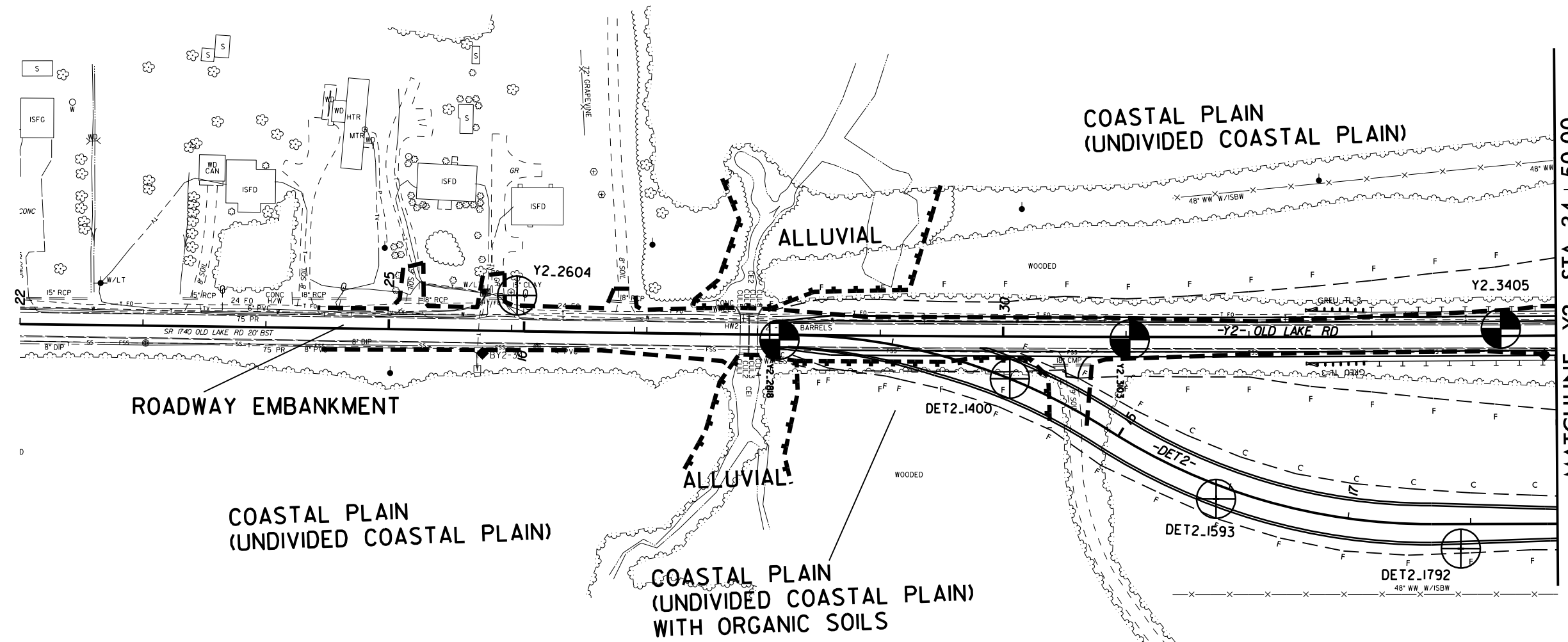
I5-FEB-2021 15:55
 W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO_RDWY_CADD_GEO\TECH\Plan\Prof\NR5819_R5820_GEO_rv15.dgn
 Walls - 8/17/99

8/17/99

CALYX
 ENGINEERS + CONSULTANTS
 6750 TRYON ROAD
 CARY, NC 27518
 phone: 919.851.1912
 CALYXengineers.com
 NC License # F-1333

PROJECT REFERENCE NO. R-5819 /R-5820	SHEET NO. 16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83/NA 2011



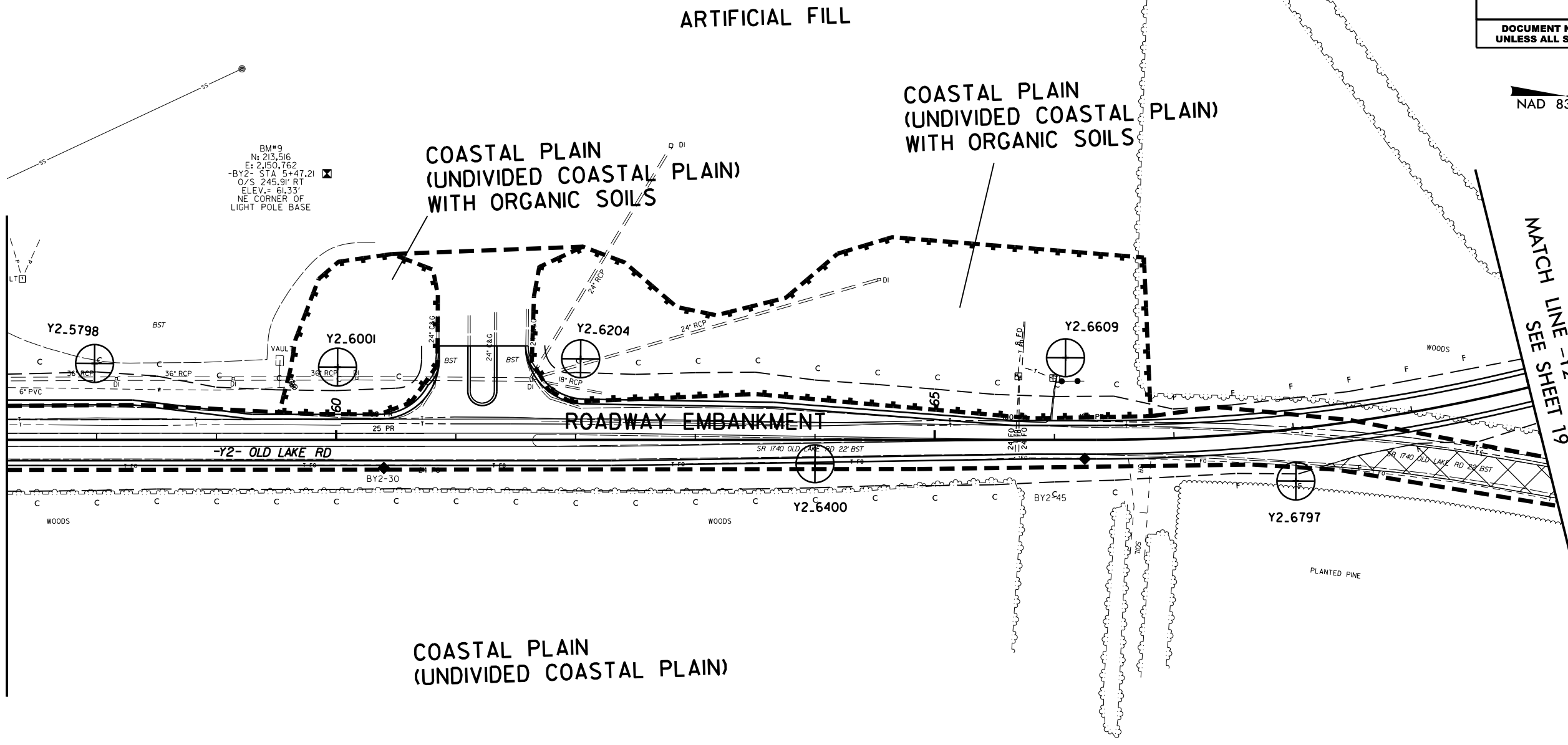
I5-FEB-2021 15:55
 W:\shere\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO_RDWY\CADD_GEO\TECH\Plan\Prof\NR5819_R5820_GEO_rv16.dgn
 Walls - 8/17/99

PROJECT REFERENCE NO. R-5819 /R-5820	SHEET NO. 18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83/NA 2011

MATCH LINE -Y2- STA 57+25.00
SEE SHEET 17

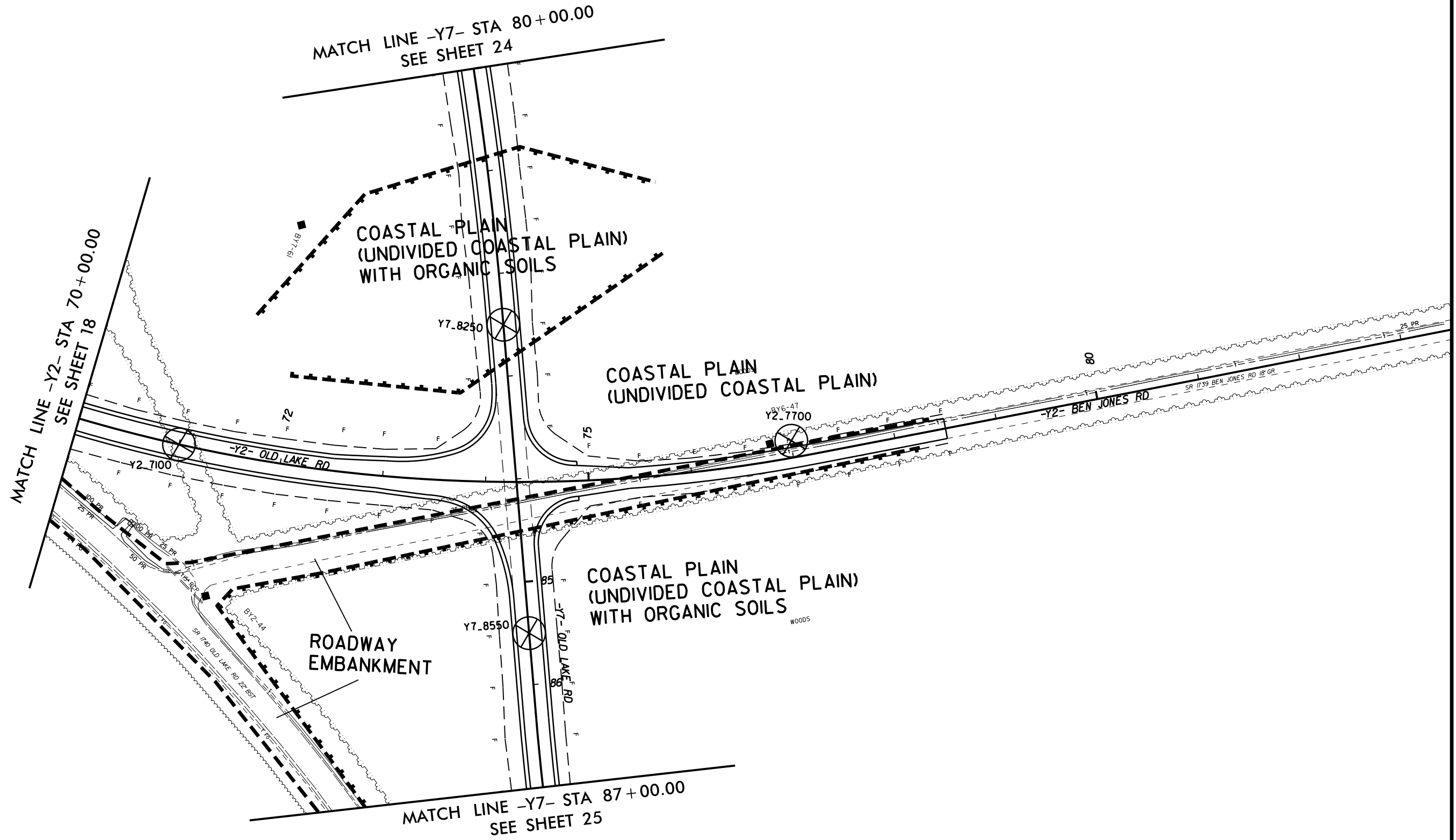
MATCH LINE -Y2- STA 70+00.00
SEE SHEET 19



BM#9
N: 213,516
E: 2,150,762
-BY2- STA 57+47.21
O/S 245.91' RT
ELEV. = 61.33'
NE CORNER OF
LIGHT POLE BASE

8/17/99
15-FEB-2021 15:55
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO_RDWY\CADD_GEO\TECH\PI\onProf\NR5819_R5820_GEO_rv18.dgn
Walls - 8/17/99

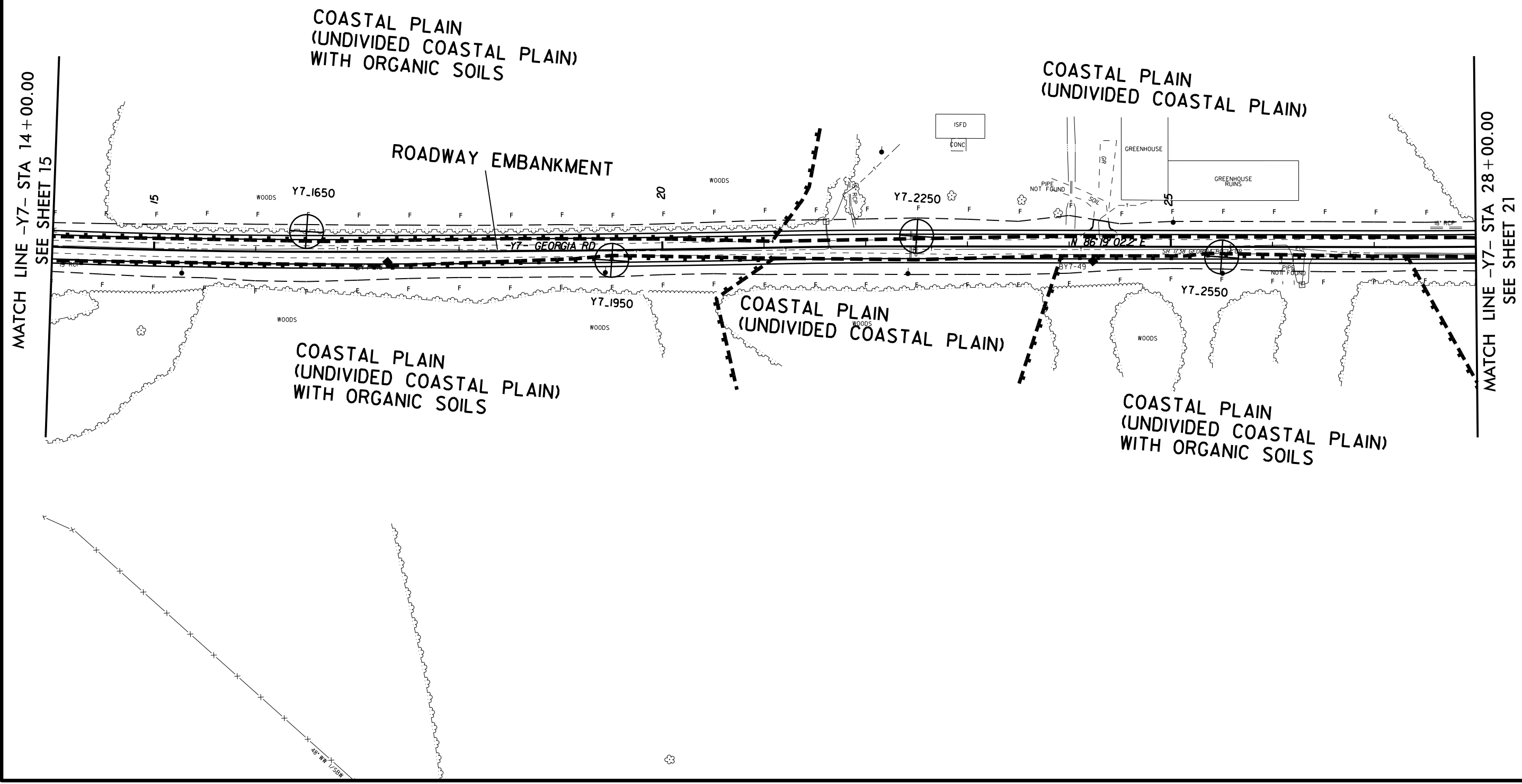
PROJECT REFERENCE NO.	SHEET NO.
R-5819 /R-5820	19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



15-FEB-2021 15:55
 W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO_RDWY\CADD_GEO\TECH\Plan\Prof\NR5819_R5820_GEO_rv19.dgn
 Walls - 8/17/99

PROJECT REFERENCE NO. R-5819 /R-5820	SHEET NO. 20
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83/NA 2011



8/17/99
 I5-FEB-2021 5:55
 W:\shere\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO_RD\WY_CADD_GEO\TECH\PI\onProf\NR5819_R5820_GEO_rv20.dgn
 Walls - 81 8421387

8/17/99

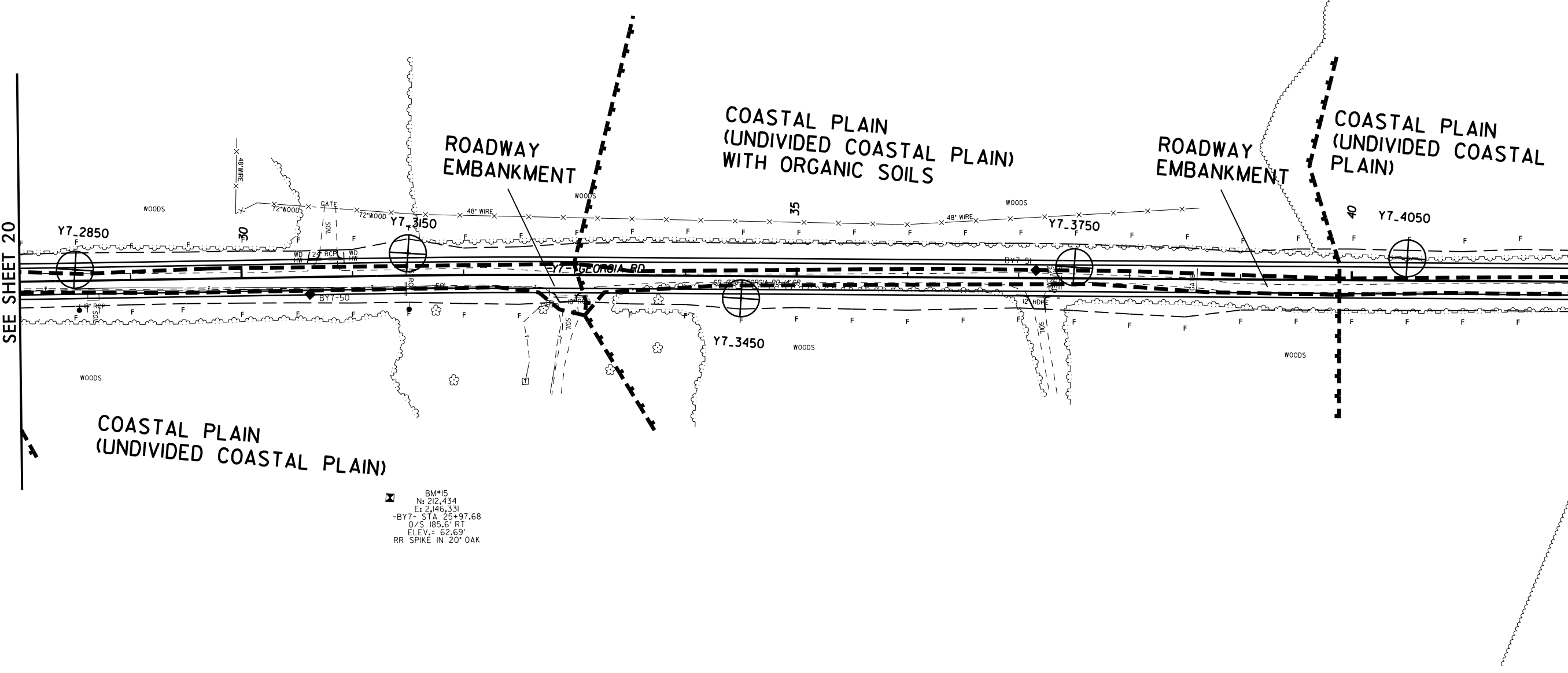
I5-FEB-2021 5:55
W:\shere\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO_RDWY\CADD_GEO\TECH\PI\bnPrOf\R5819_R5820_GEO_rv21.dgn
Walls - 8/17/99

PROJECT REFERENCE NO. R-5819 /R-5820	SHEET NO. 21
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83 NA 2011

MATCH LINE -Y7- STA 28+00.00
SEE SHEET 20

MATCH LINE -Y7- STA 42+00.00
SEE SHEET 22



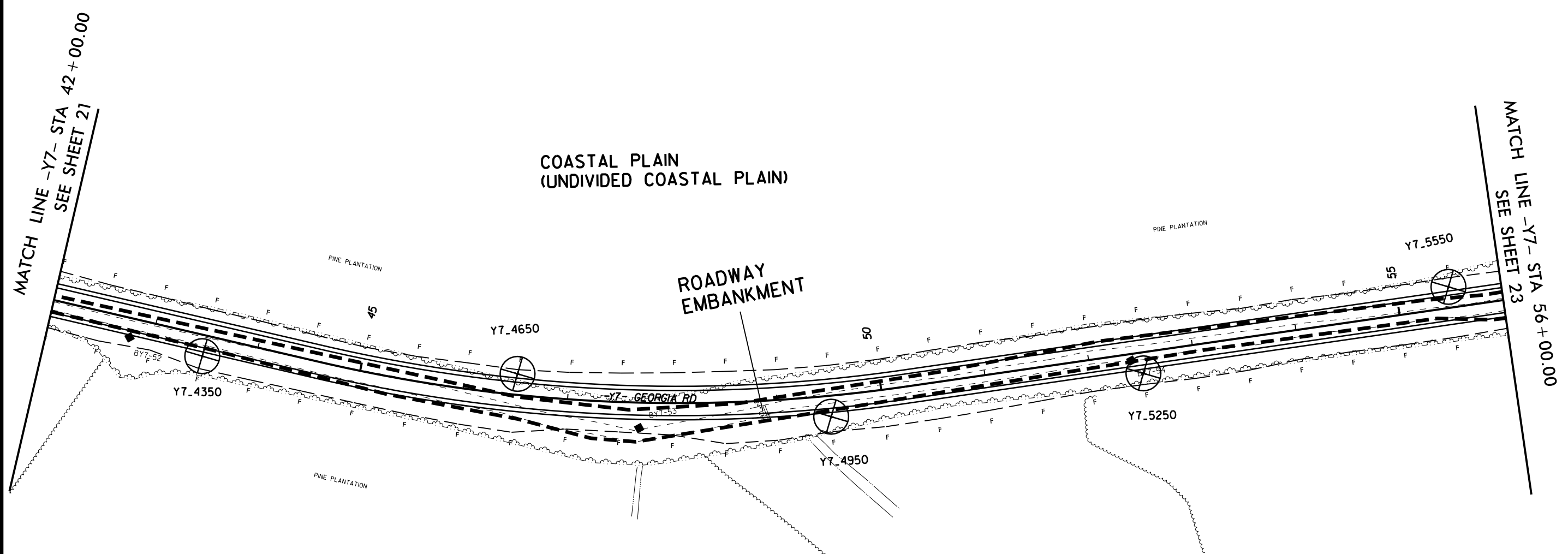
BM#15
 N: 212.434
 E: 2146.331
 -BY7- STA. 25+97.68
 O/S 185.6' RT
 ELEV. = 62.69'
 RR SPIKE IN 20' OAK

8/17/99

I5-FEB-2021 5:55
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO_RDWY\CADD_GEO\TECH\Plan\Prof\NR5819_R5820_GEO_rv22.dgn
Walls - 8/17/99

PROJECT REFERENCE NO. R-5819 /R-5820	SHEET NO. 22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NAD 83/NA 2011



MATCH LINE -Y7- STA 42 + 00.00
SEE SHEET 21

MATCH LINE -Y7- STA 56 + 00.00
SEE SHEET 23

COASTAL PLAIN
(UNDIVIDED COASTAL PLAIN)

ROADWAY
EMBANKMENT

PINE PLANTATION

PINE PLANTATION

PINE PLANTATION

Y7.4350

Y7.4650

Y7.4950

Y7.5250

Y7.5550

Y7 - GEORGIA RD

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

F

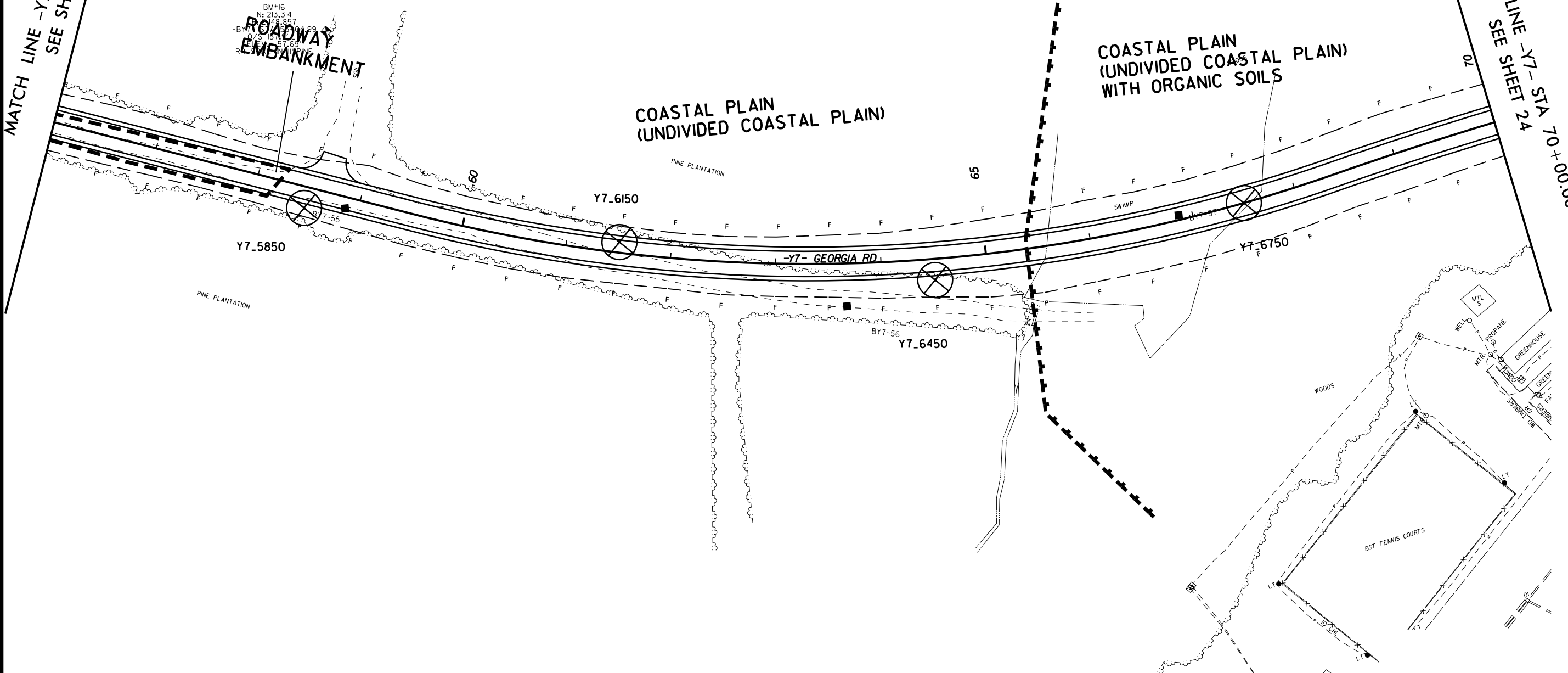
PROJECT REFERENCE NO. R-5819 /R-5820	SHEET NO. 23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



15-FEB-2021 15:55
 W:\shere\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO_RDWY_CADD_GEO\TECH\Plan\Prof\NR5819_R5820_GEO_rv23.dgn
 Walls - 8/17/99

MATCH LINE -Y7- STA 56+00.00
 SEE SHEET 22

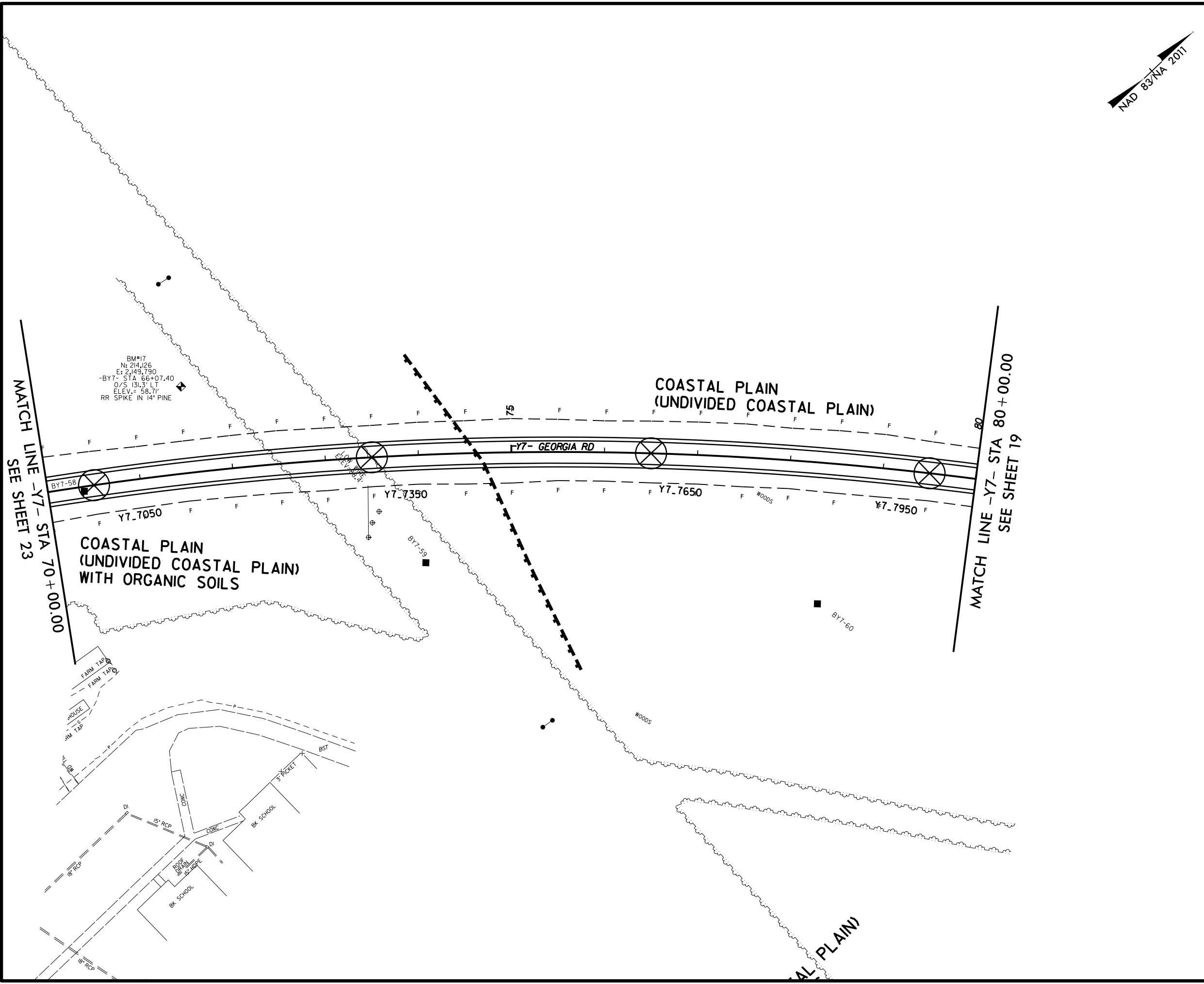
MATCH LINE -Y7- STA 70+00.00
 SEE SHEET 24



PROJECT REFERENCE NO.	SHEET NO.
R-5819 /R-5820	24
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



15-FEB-2021 15:55
 W:\shere\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO_RDWY\CADD_GEO\TECH\PI\bnPrOf\NR5819_R5820_GEO_mv24.dgn
 8/17/99



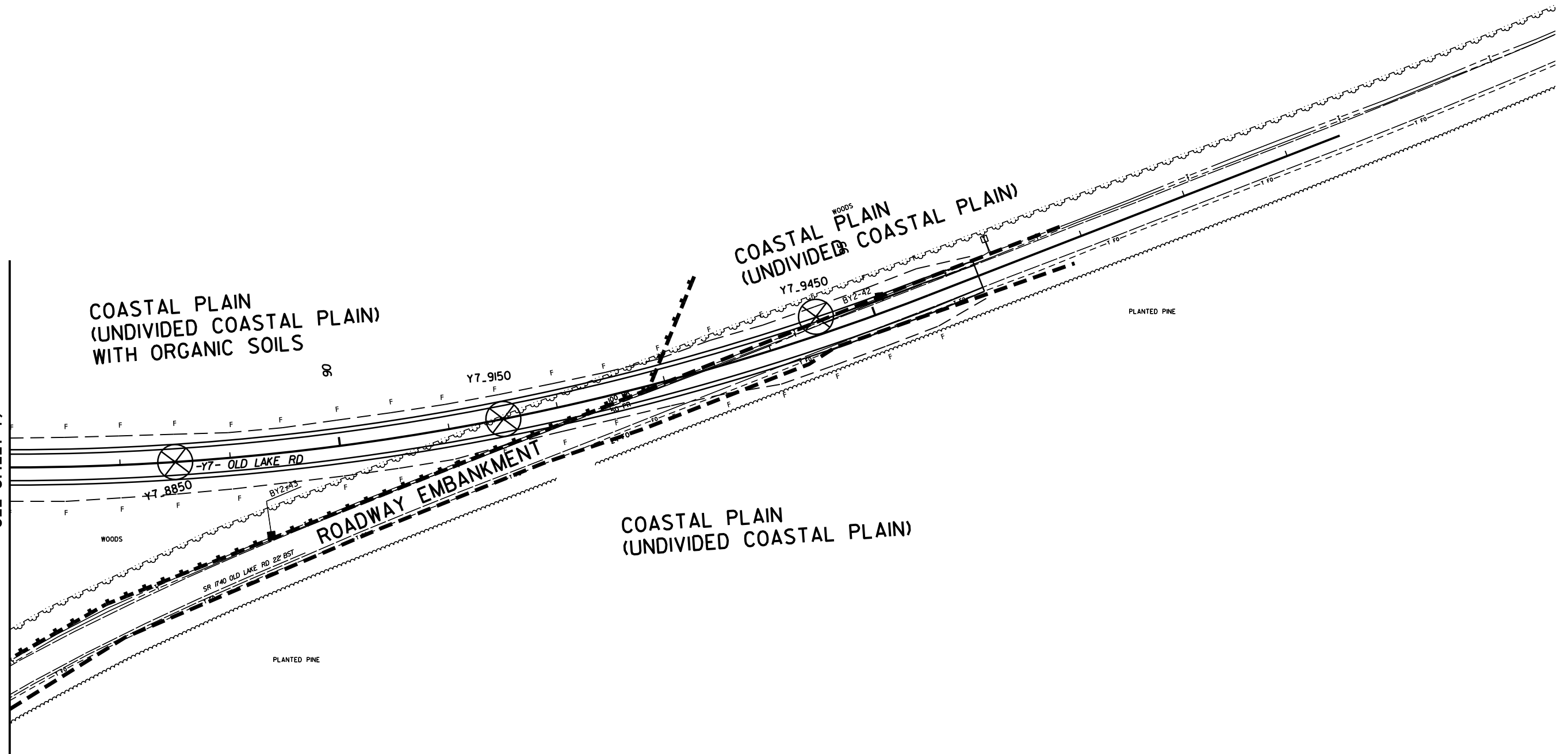
8/17/99

I:\FEB-2021\5455\Washere\GEO\TECHNICAL\Projects\Active Projects\20190942.0244 R-5819 & R-5820 Roadway\R5819-R5820_GEO_RDWY\CADD_GEO\TECH\Plan\Prof\NR5819_R5820_GEO_rv25.dgn

PROJECT REFERENCE NO. R-5819 /R-5820		SHEET NO. 25	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



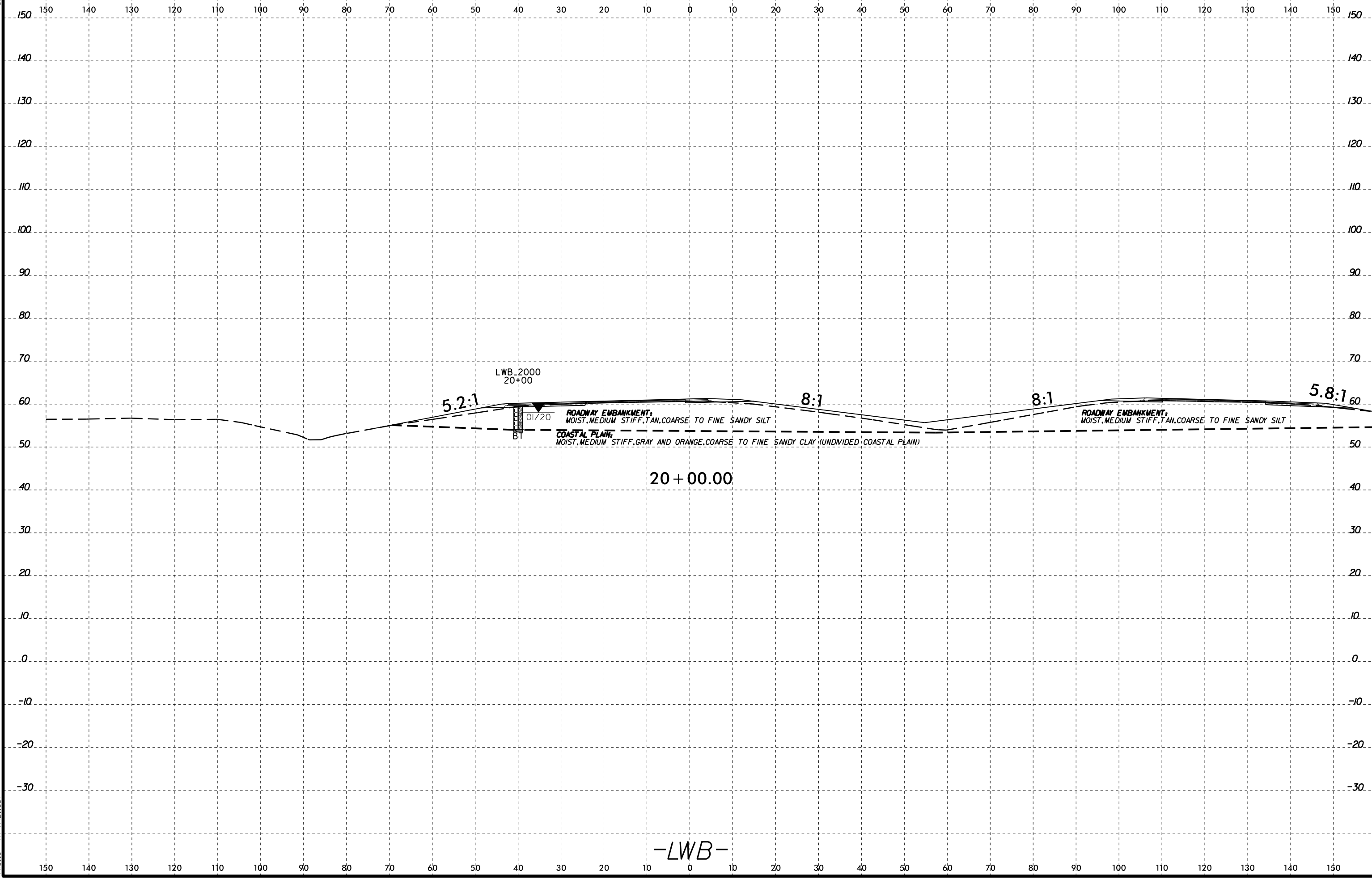
MATCH LINE -Y7- STA 87 + 00.00
SEE SHEET 19



6/23/16

I:\FEB-2015\55
W\Shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\XSI\LWB.dgn

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	26

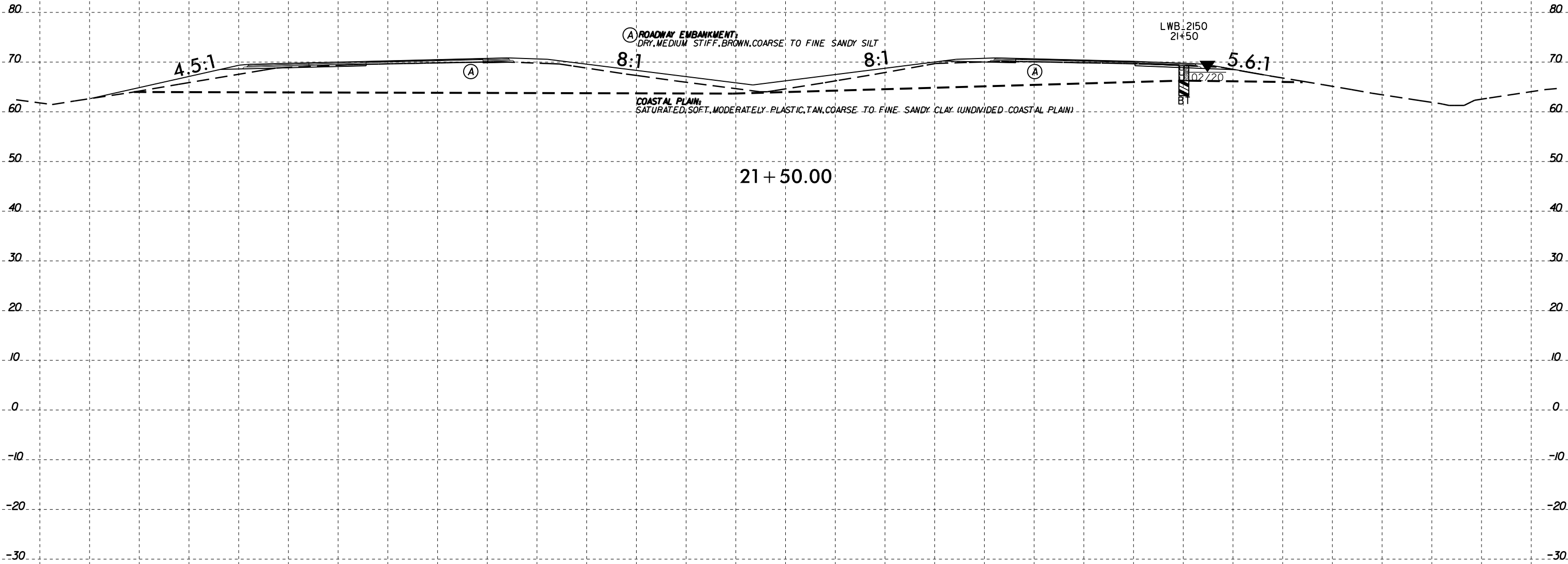


20 + 00.00

-LWB-



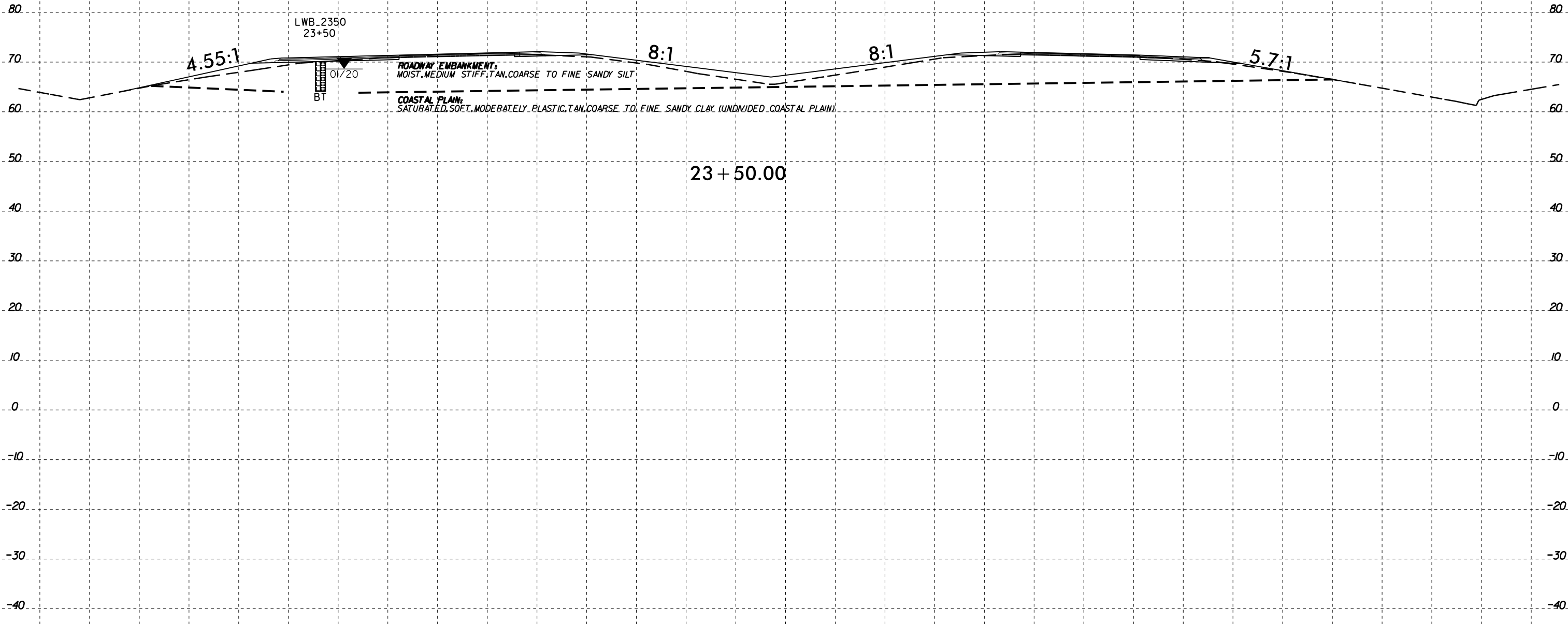
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



-LWB-



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



LWB_2350
23+50.00

4.55:1

01/20
BT

ROADWAY EMBANKMENT:
MOIST, MEDIUM STIFF, TAN, COARSE TO FINE SANDY SILT

8:1

8:1

5.7:1

23 + 50.00

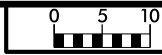
COASTAL PLAIN:
SATURATED, SOFT, MODERATELY PLASTIC, TAN, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

-LWB-

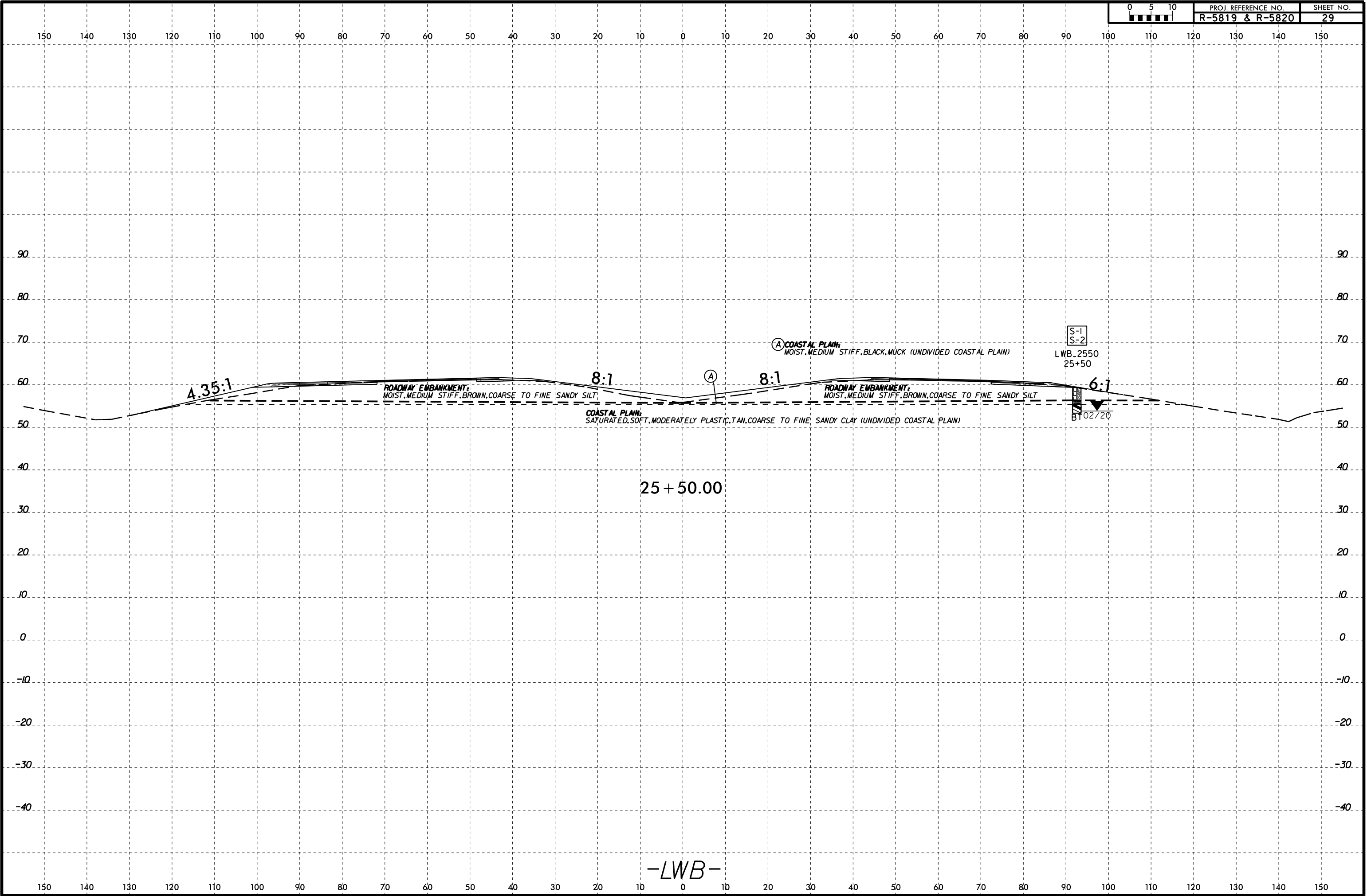
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

I:\FEB-2015\55
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSI\LWB.dgn
Wells - At KA211387

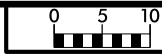
6/23/16



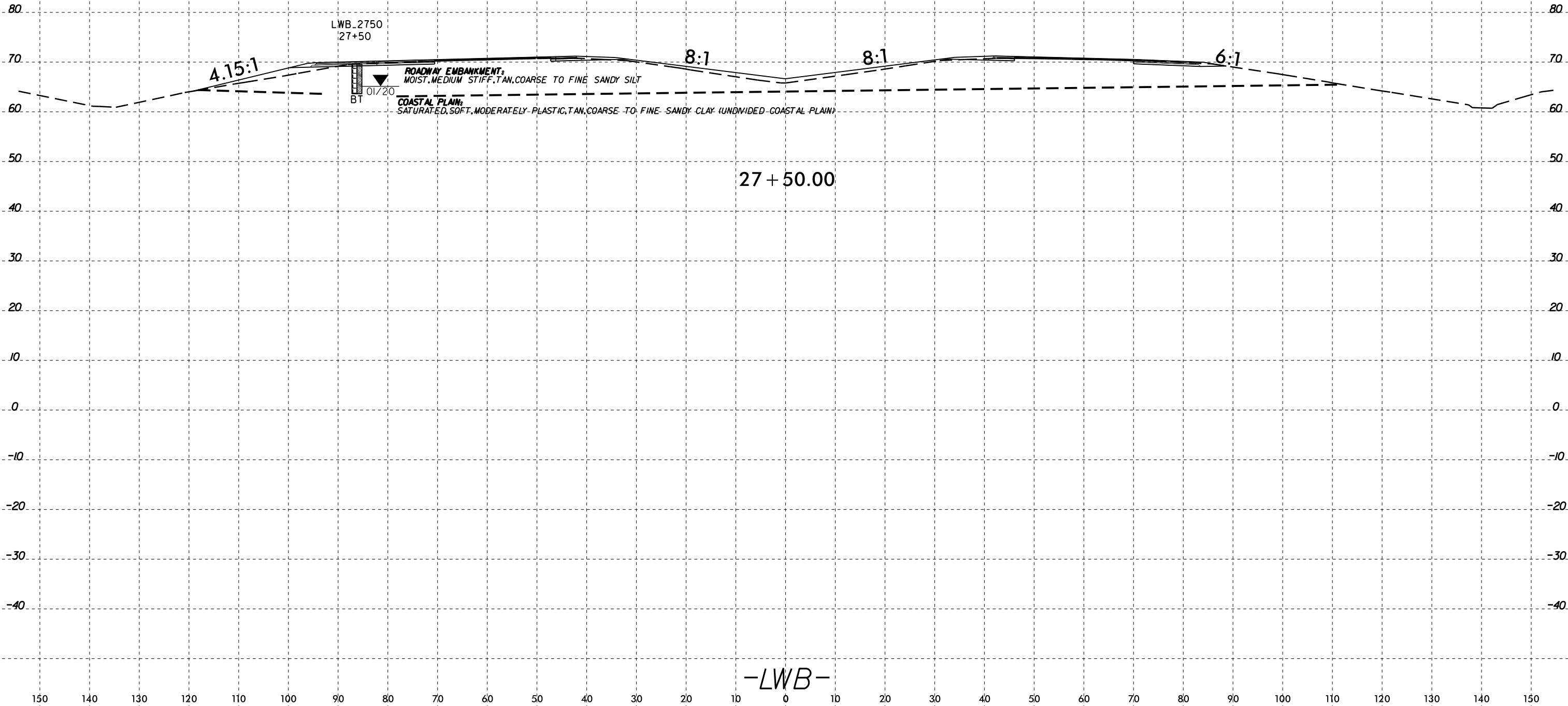
PROJ. REFERENCE NO.	SHEET NO.
R-5819 & R-5820	29



I:\FEB-2015\55
 W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS\LWB.dgn
 Wells - A1 KA211387



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



LWB_2750
27+50

4.15:1

8:1

8:1

6:1



BT
01/20

ROADWAY EMBANKMENT,
MOIST, MEDIUM STIFF, TAN, COARSE TO FINE SANDY SILT

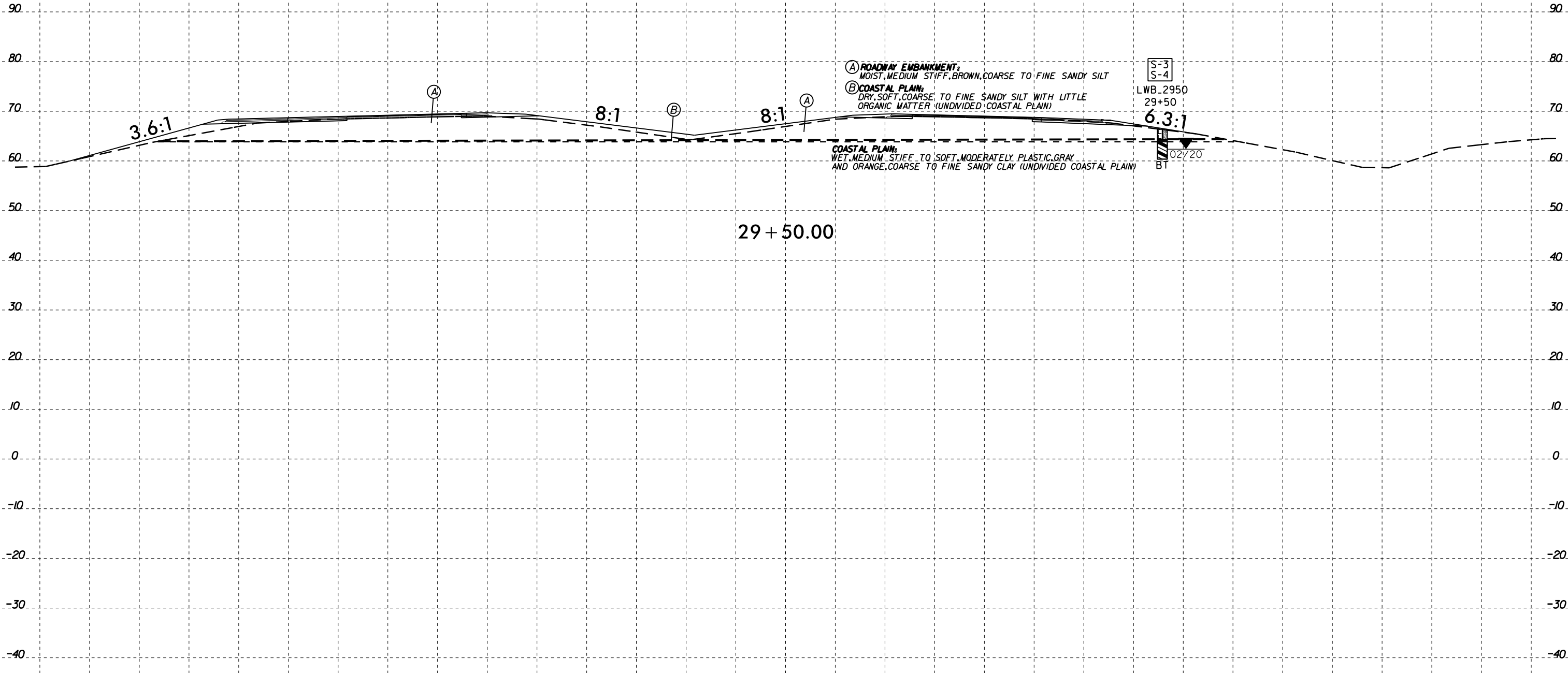
COASTAL PLAIN,
SATURATED, SOFT, MODERATELY PLASTIC, TAN, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

27 + 50.00

-LWB-



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



(A) ROADWAY EMBANKMENT:
MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT

(B) COASTAL PLAIN:
DRY, SOFT, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN:
WET, MEDIUM STIFF TO SOFT, MODERATELY PLASTIC, GRAY AND ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

S-3
S-4

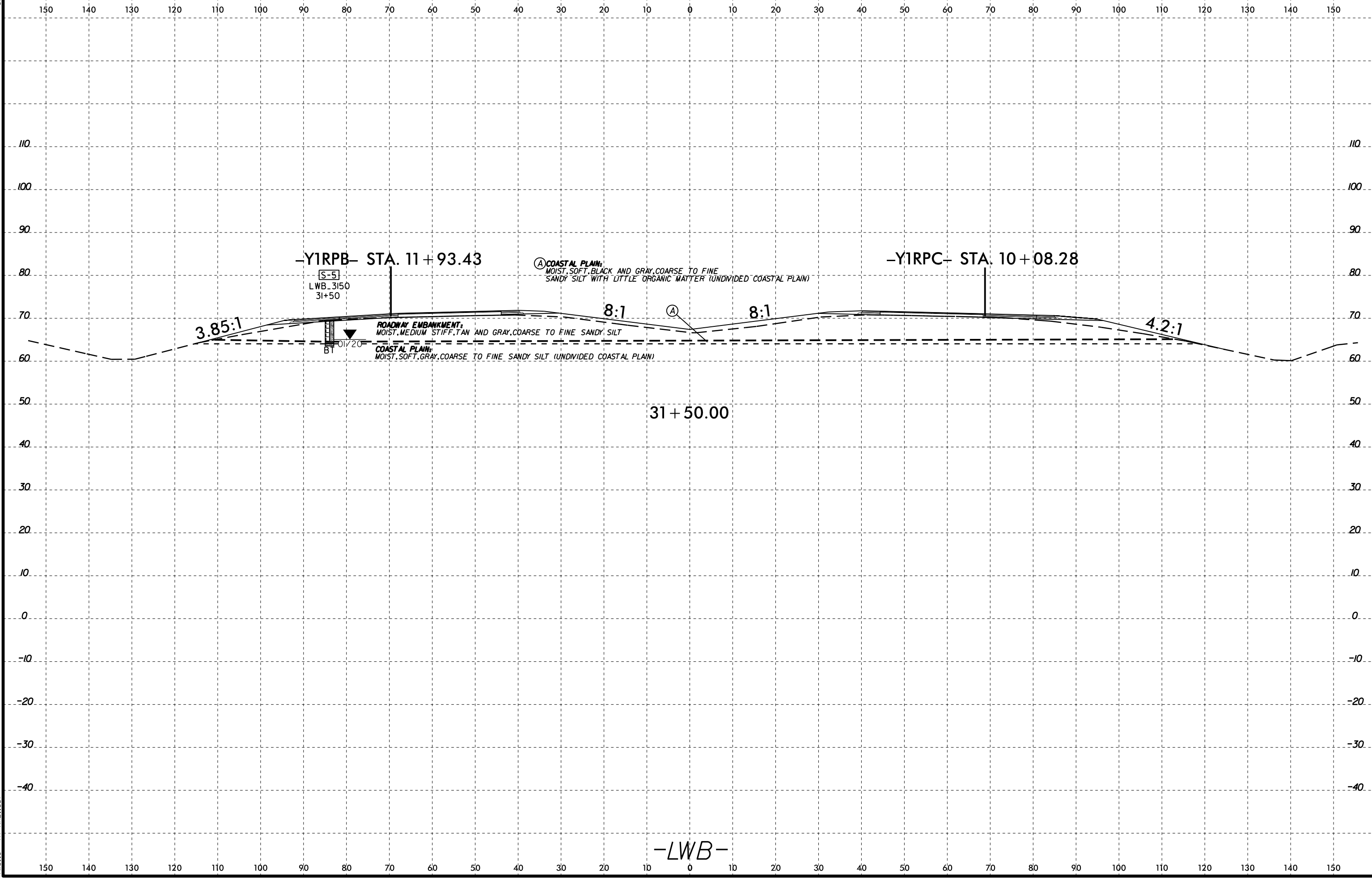
LWB.2950
29+50

BT
02/20

29 + 50.00

-LWB-

6/23/16
I:\FEB-2015\55
Washoe\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS819-RS820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS1.LWB.dgn



-YIRPB- STA. 11 + 93.43

-YIRPC- STA. 10 + 08.28

S-5
LWB_3150
31+50

ROADWAY EMBANKMENT:
MOIST. MEDIUM STIFF, TAN AND GRAY, COARSE TO FINE SANDY SILT

COASTAL PLAIN:
MOIST. SOFT, GRAY, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

A COASTAL PLAIN:
MOIST. SOFT, BLACK AND GRAY, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

8:1

8:1

4.2:1

3.85:1

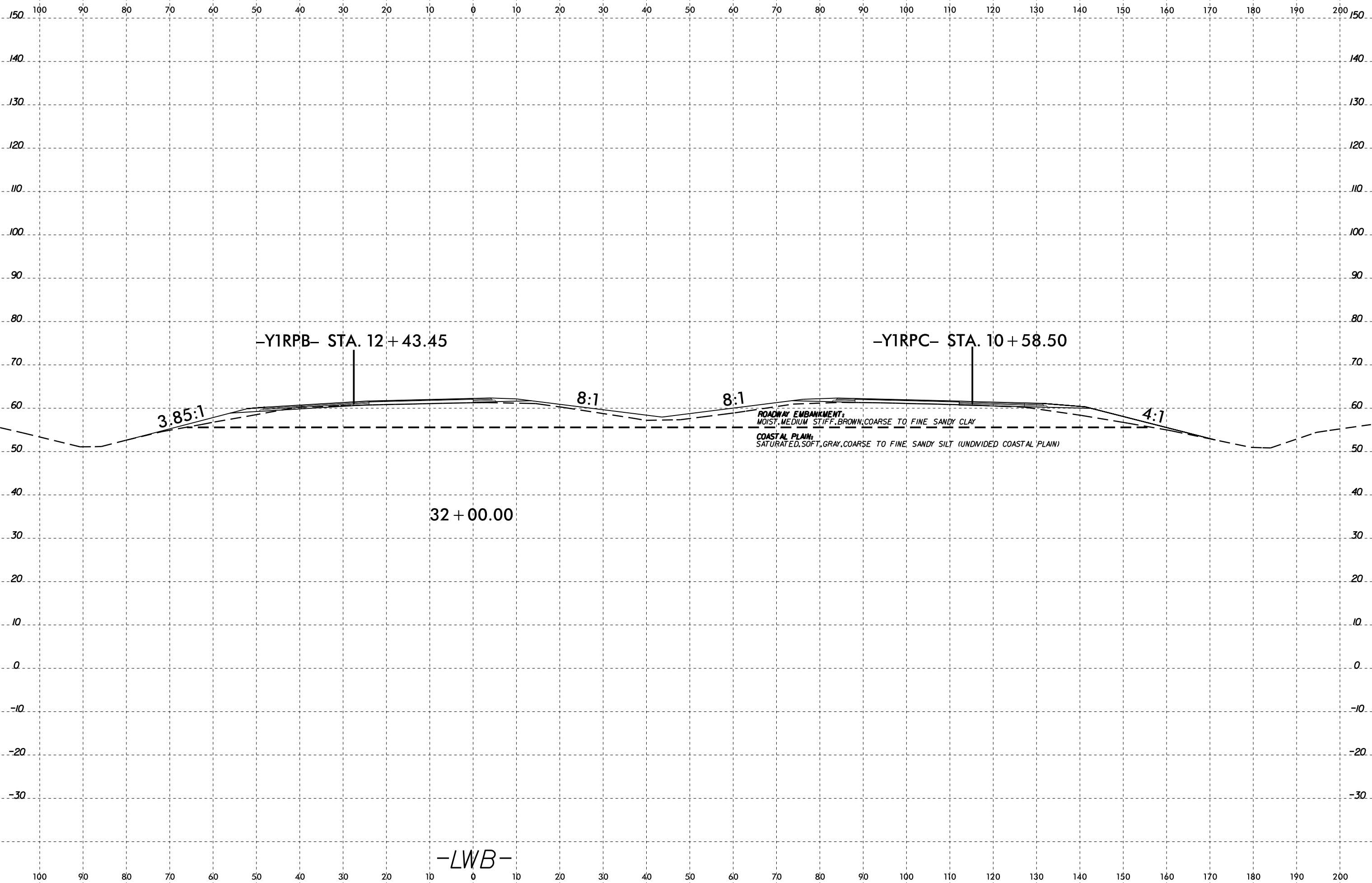
31 + 50.00

-LWB-

6/23/16

I:\FEB-2015\55
W\shp\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RS5819-R5820_GEO.XSL.LWB.dgn

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	33



-Y1RPB- STA. 12+43.45

-Y1RPC- STA. 10+58.50

3.85:1

8:1

8:1

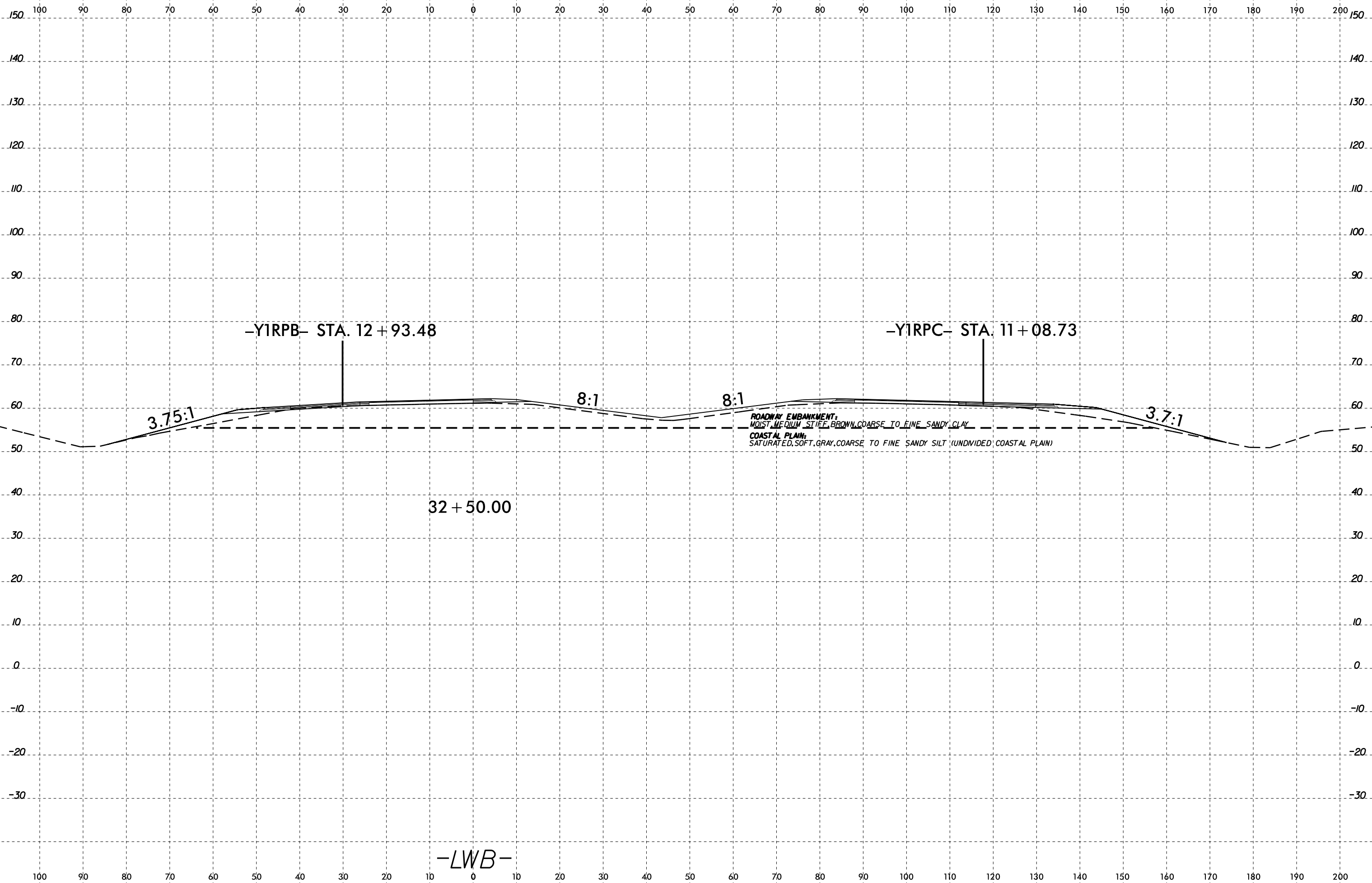
4:1

32+00.00

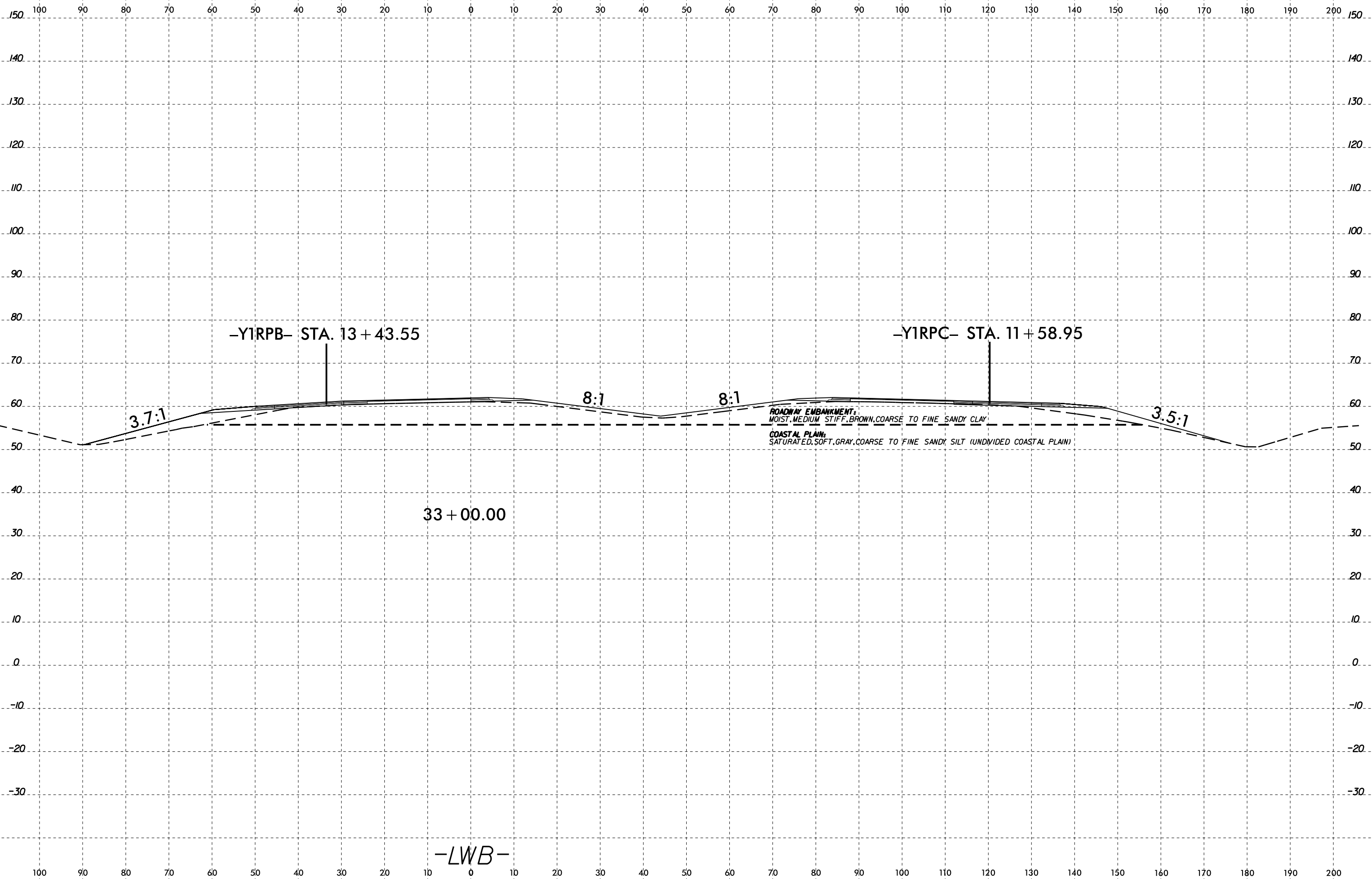
-LWB-

ROADWAY EMBANKMENT:
 MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY CLAY
 COASTAL PLAIN:
 SATURATED, SOFT, GRAY, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

6/23/16
I:\FEB-2015\55
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL\WB.dgn



6/23/16
I:\FEB-2015\55
W\Shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS819-RS820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\TECH\XSC\RS819-RS820_GEO_XS1.LWB.dgn



-Y1RPB- STA. 13 + 43.55

-Y1RPC- STA. 11 + 58.95

3.7:1

8:1

8:1

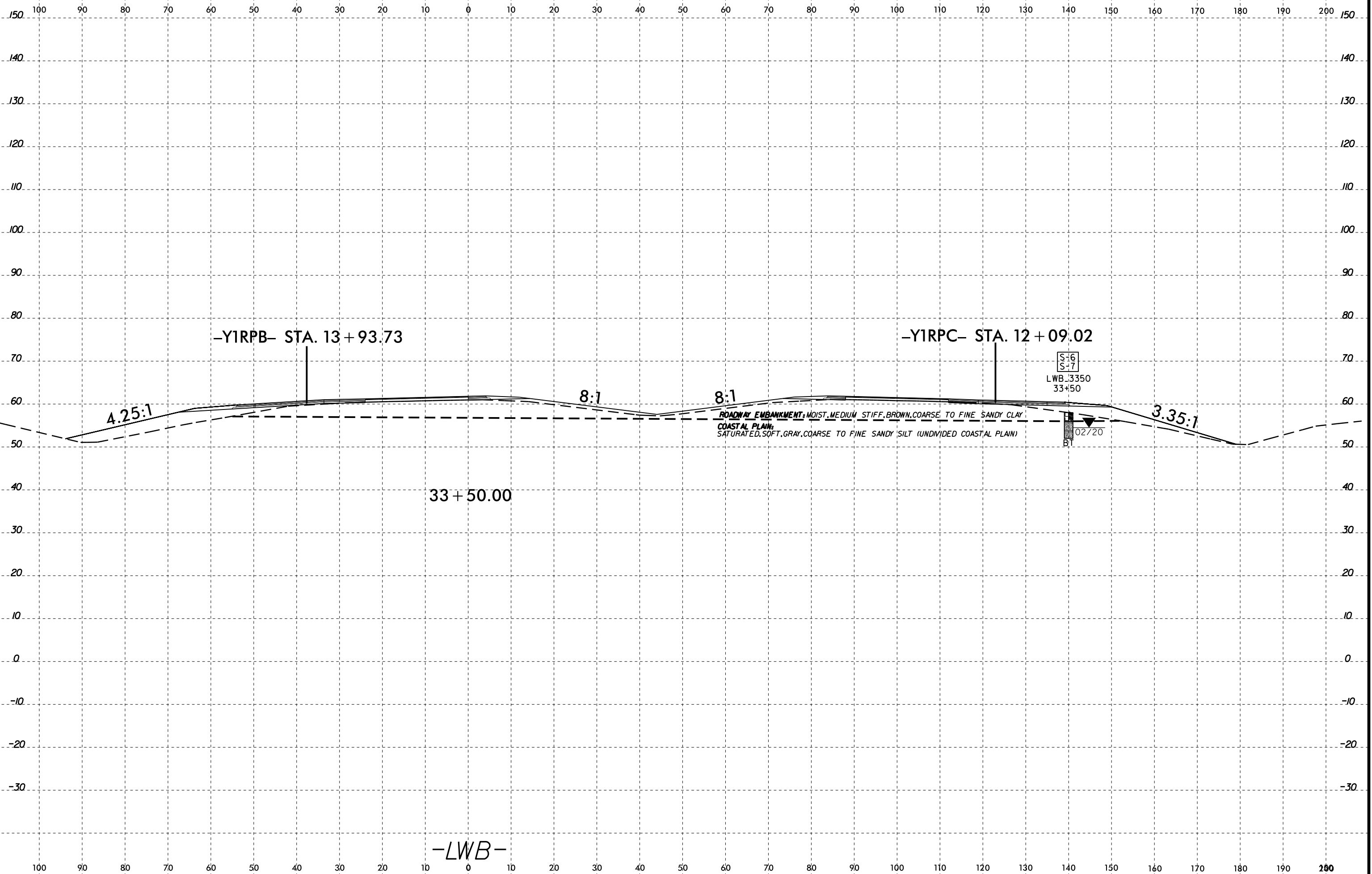
3.5:1

ROADWAY EMBANKMENT:
MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY CLAY
COASTAL PLAIN:
SATURATED, SOFT, GRAY, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

33 + 00.00

-LWB-

6/23/16
I:\FEB-2015\55
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\XSC\R5819-R5820_GEO_XS1.LWB.dgn



-YIRPB- STA. 13+93.73

-YIRPC- STA. 12+09.02

4.25:1

8:1

8:1

3.35:1

33+50.00

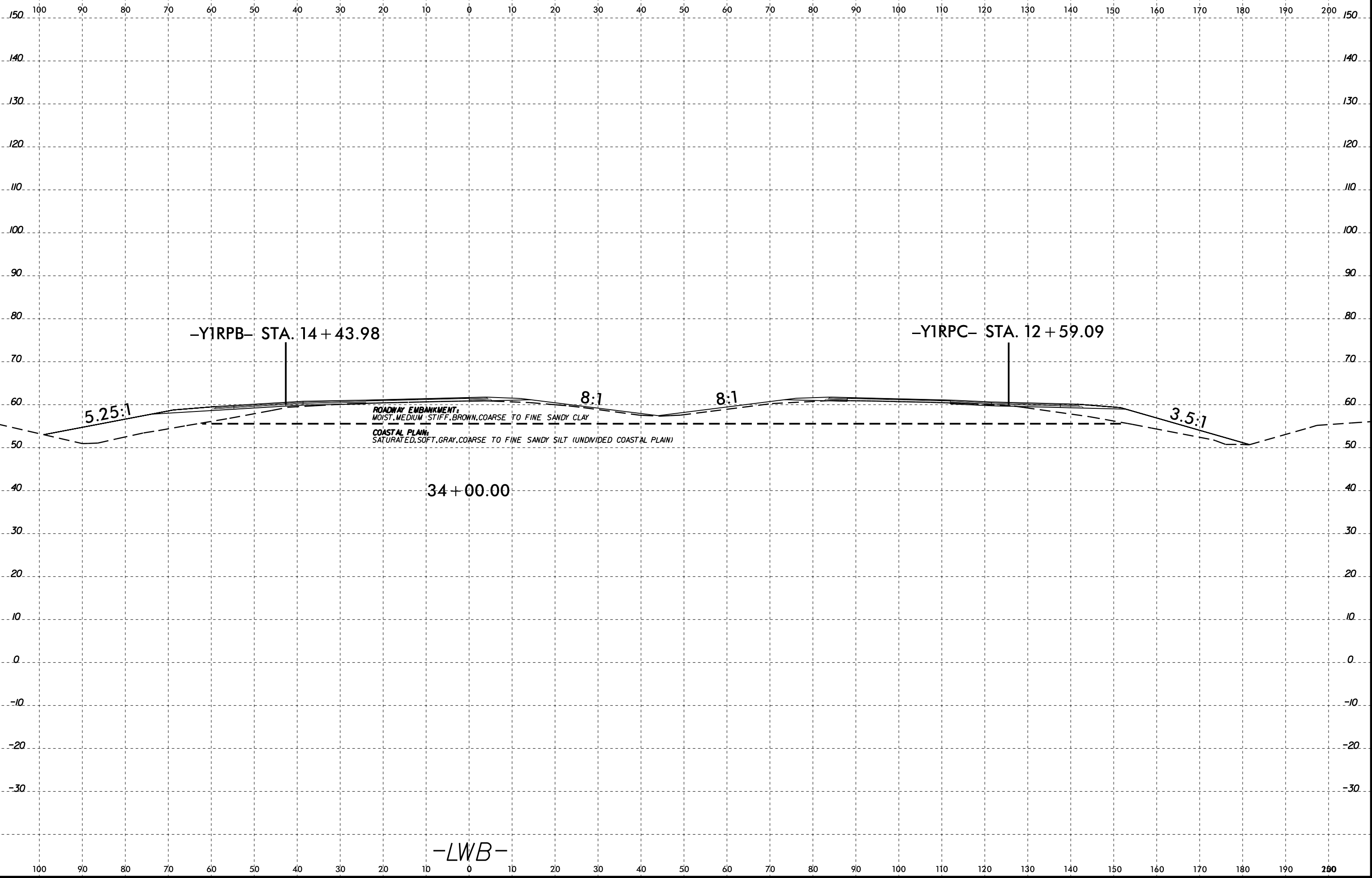
-LWB-

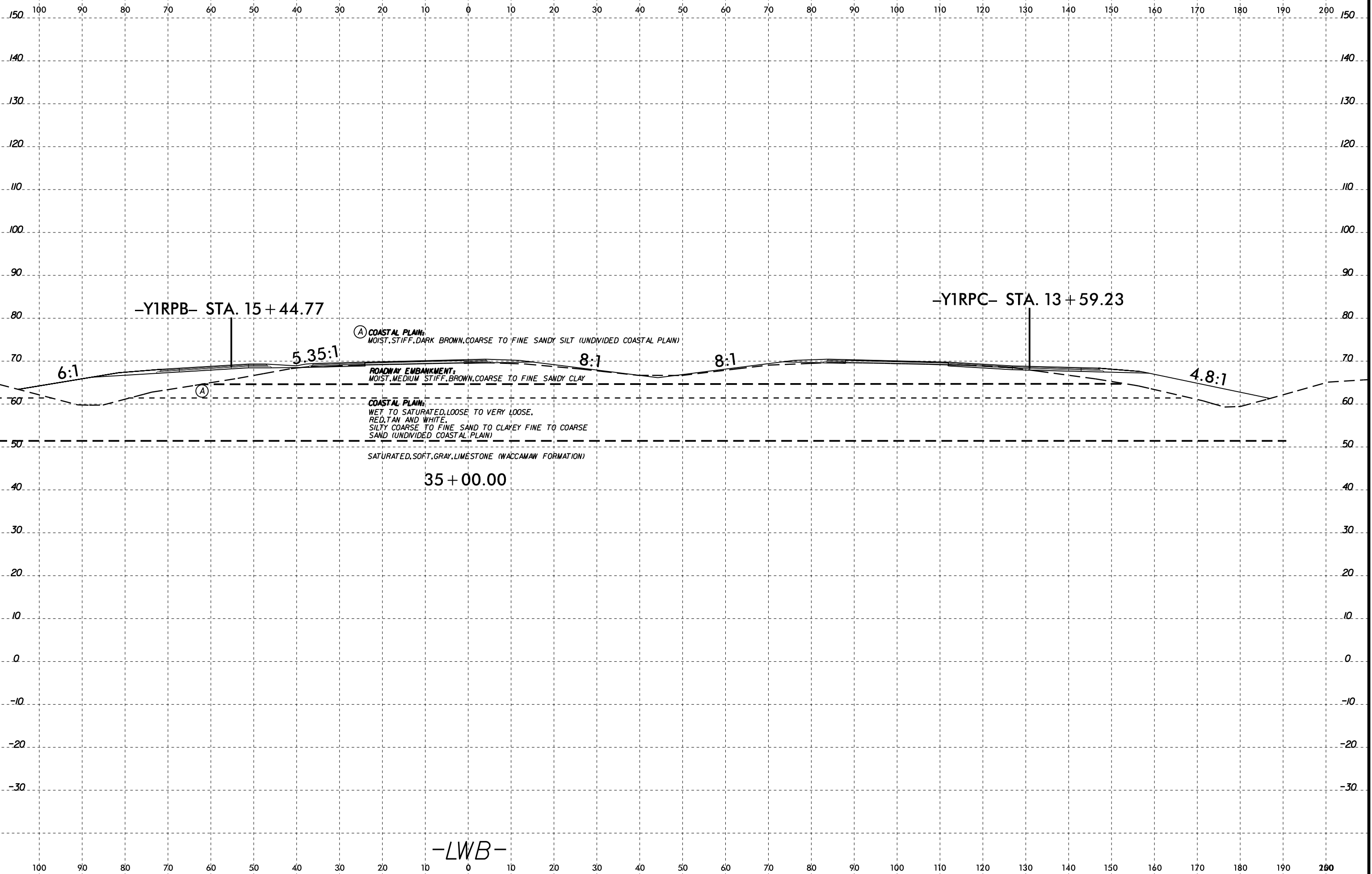
ROADWAY EMBANKMENT: MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY CLAY
COASTAL PLAIN: SATURATED, SOFT, GRAY, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

S-16
S-7
LWB_3350
33+50
02/20
BT

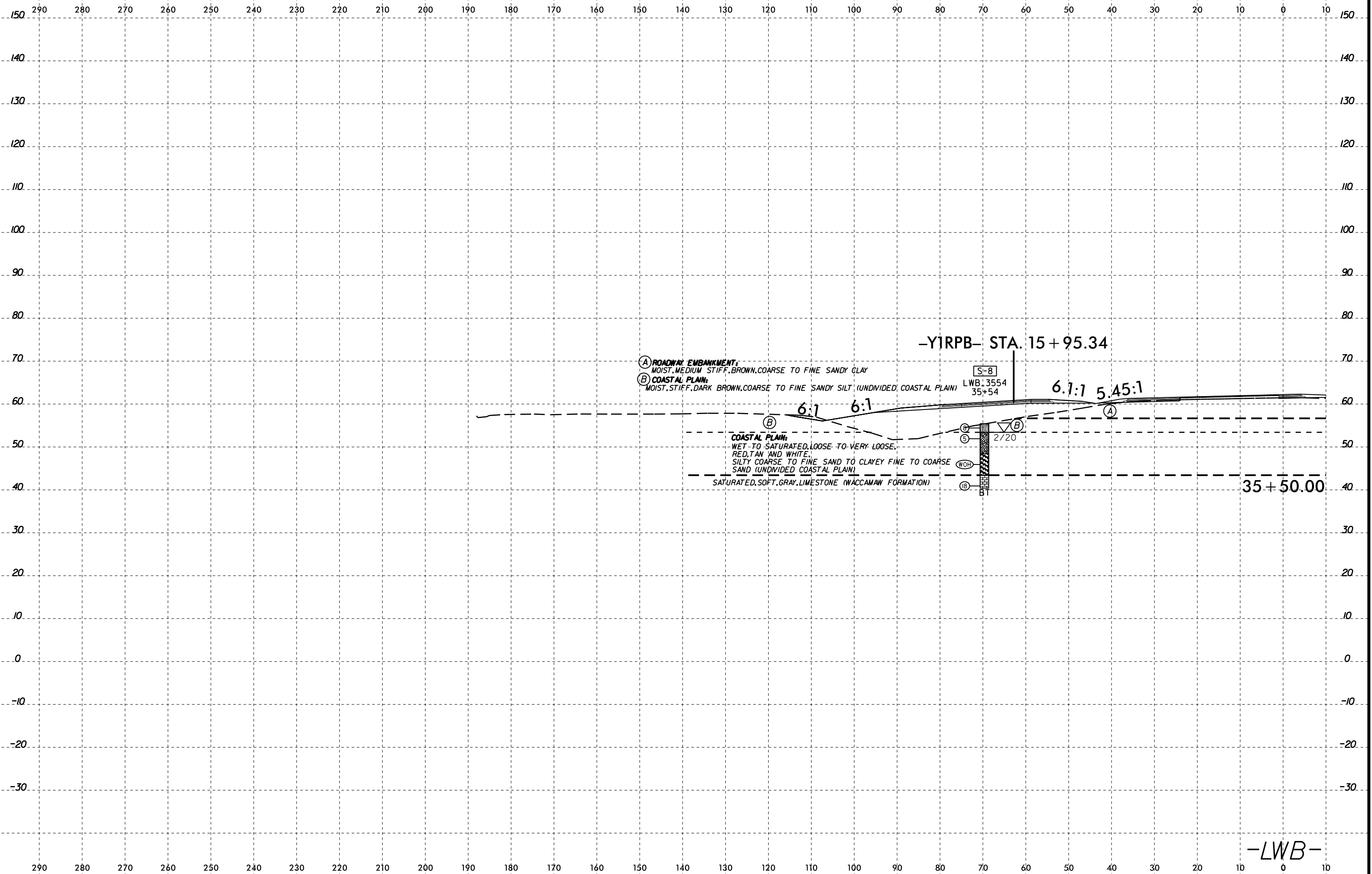
6/23/16
I:\FEB-2015\55
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL\WB.dgn

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	37

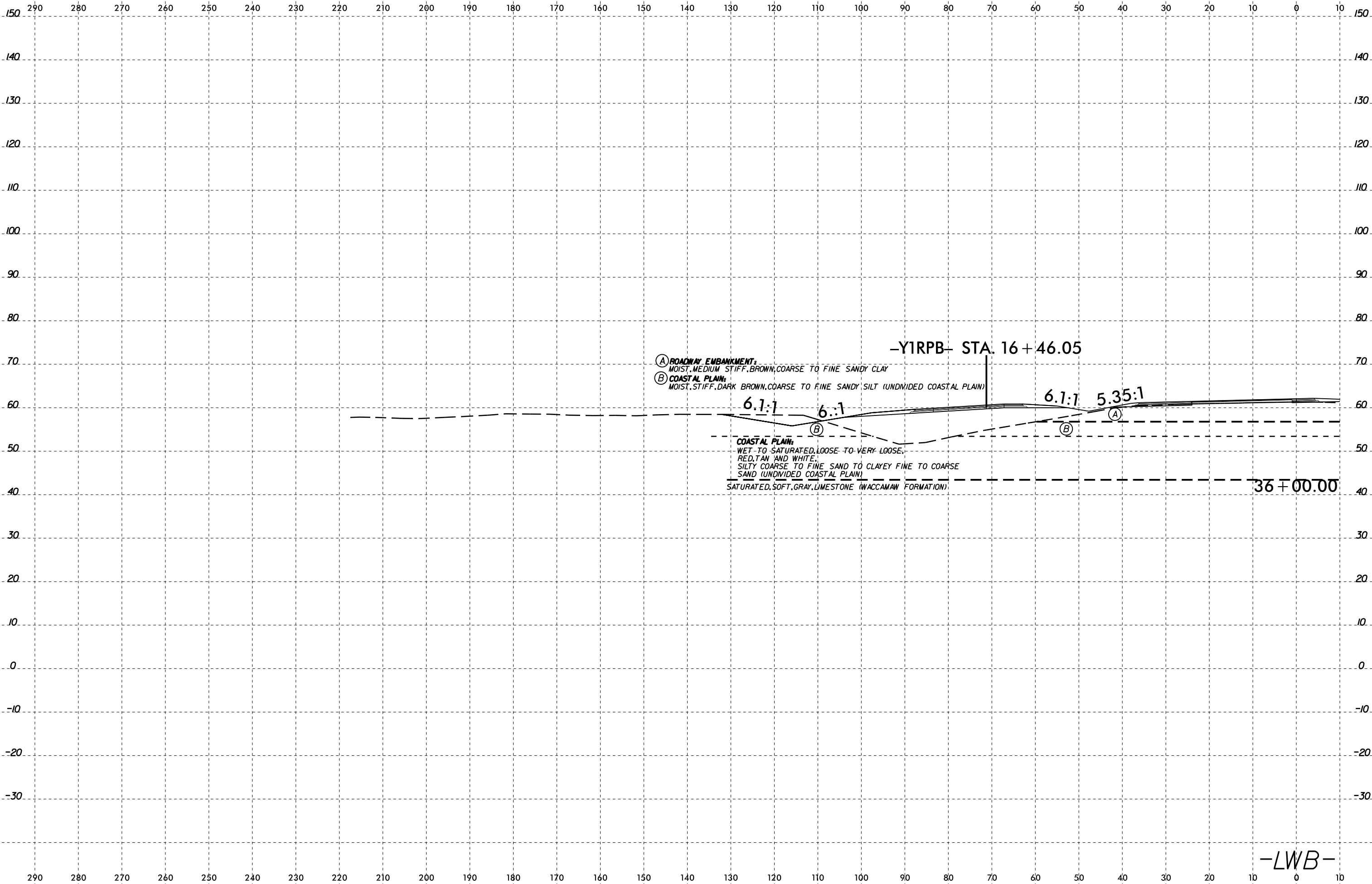


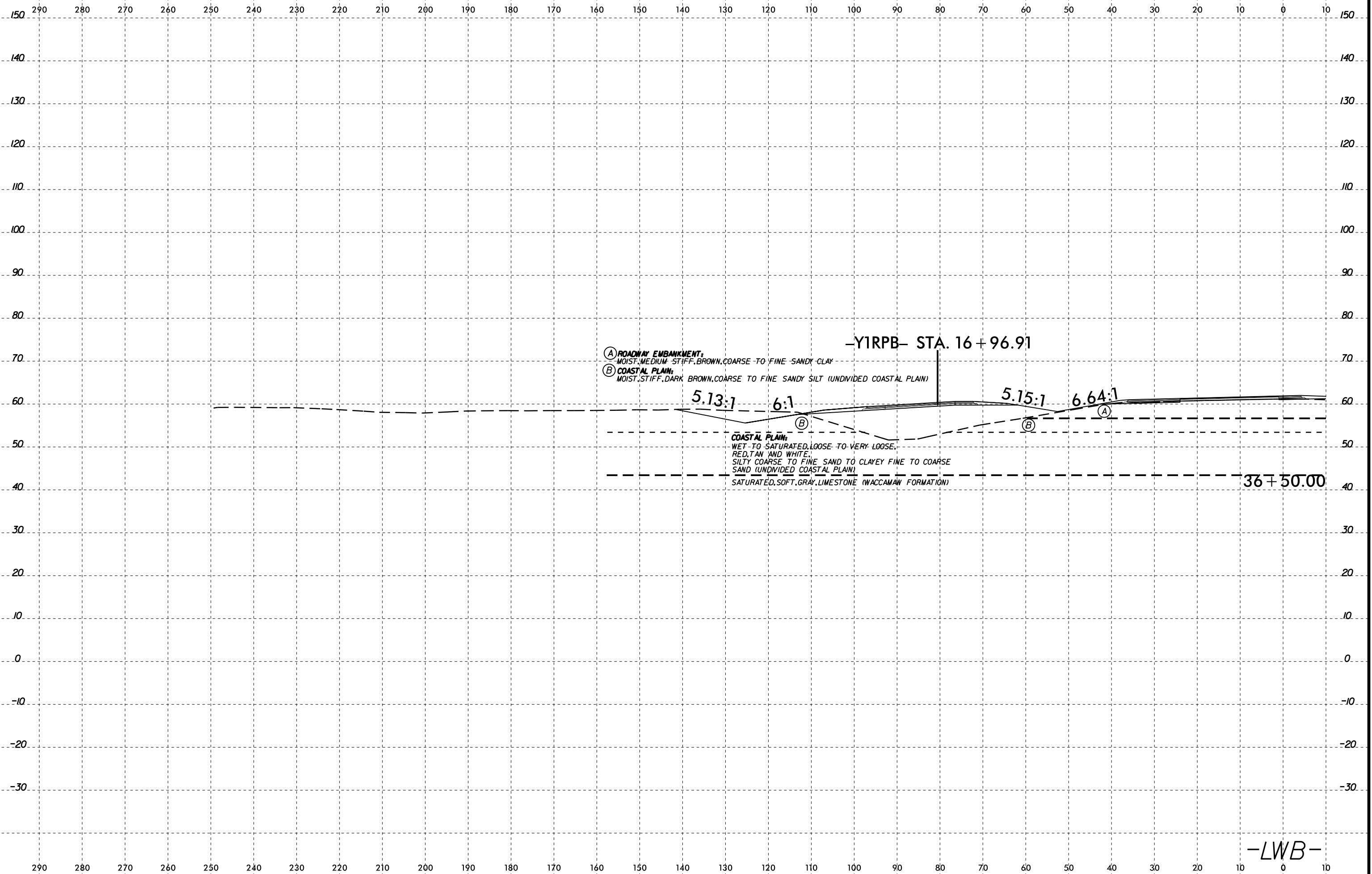


-LWB-

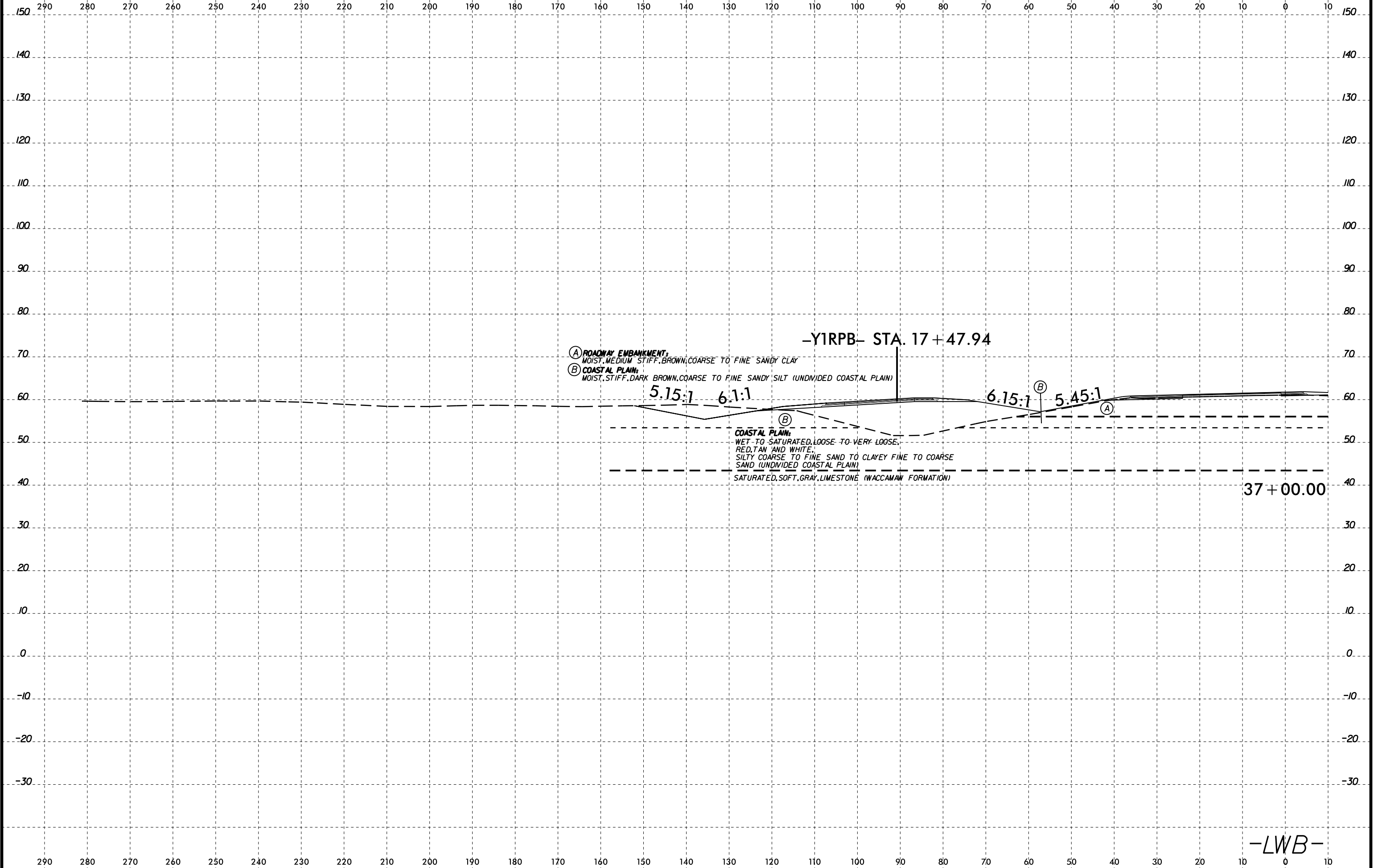


I:\FEB-2015\55
 W\... \GEO... \R5819 & R-5820 Roadway\Roadway\CADD_GEO\RDW\CADD_GEO\RDW\R5819_R5820_GEO_XS1.LWB.dgn
 I:\FEB-2015\55
 W\... \GEO... \R5819 & R-5820 Roadway\Roadway\CADD_GEO\RDW\CADD_GEO\RDW\R5819_R5820_GEO_XS1.LWB.dgn

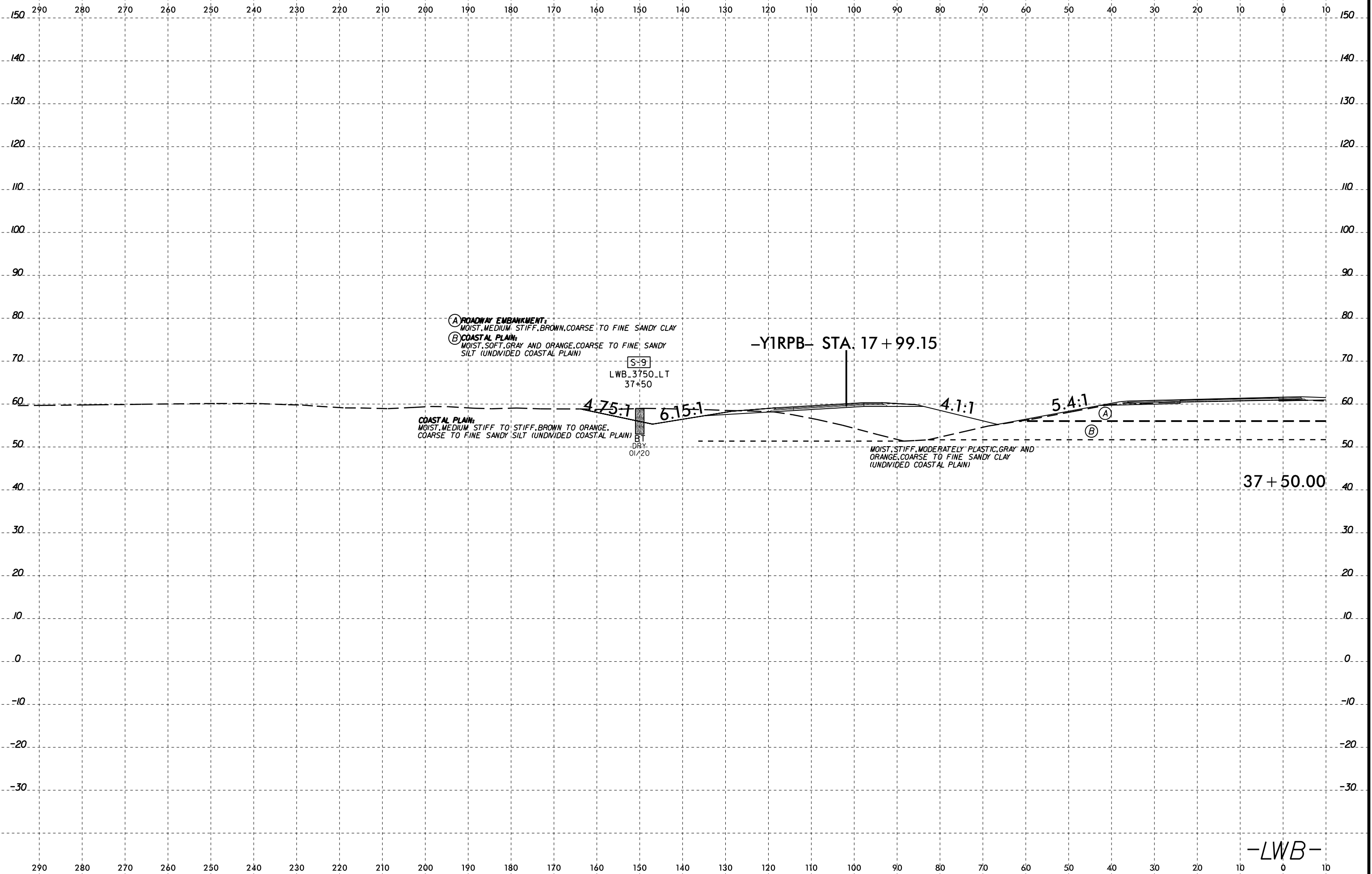




I:\FEB-2015\56
 W:\Projects\20150942_024A R-5819 & R-5820 Roadway\Projects\20150942_024A R-5819 & R-5820 Roadway\Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS1.LWB.dgn
 Wells - A1 KA211387



6/23/16
I:\FEB-2015\56
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\XSL\WB.dgn



(A) ROADWAY EMBANKMENT:
MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY CLAY
(B) COASTAL PLAIN:
MOIST, SOFT, GRAY AND ORANGE, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

S-9
LWB_3750_LT
37+50

-Y1RPB- STA. 17 + 99.15

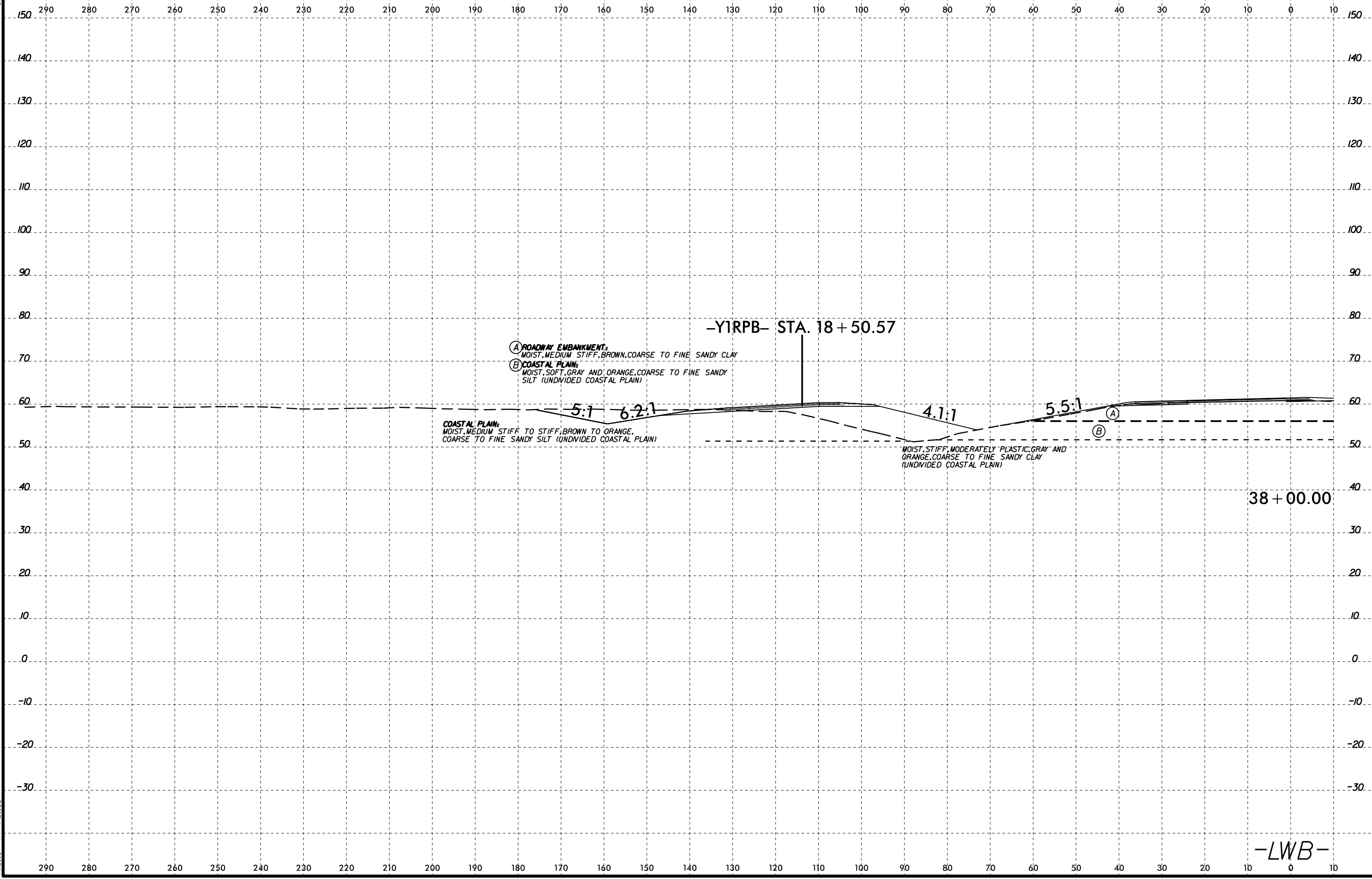
COASTAL PLAIN:
MOIST, MEDIUM STIFF TO STIFF, BROWN TO ORANGE,
COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

BT
DRY
01/20

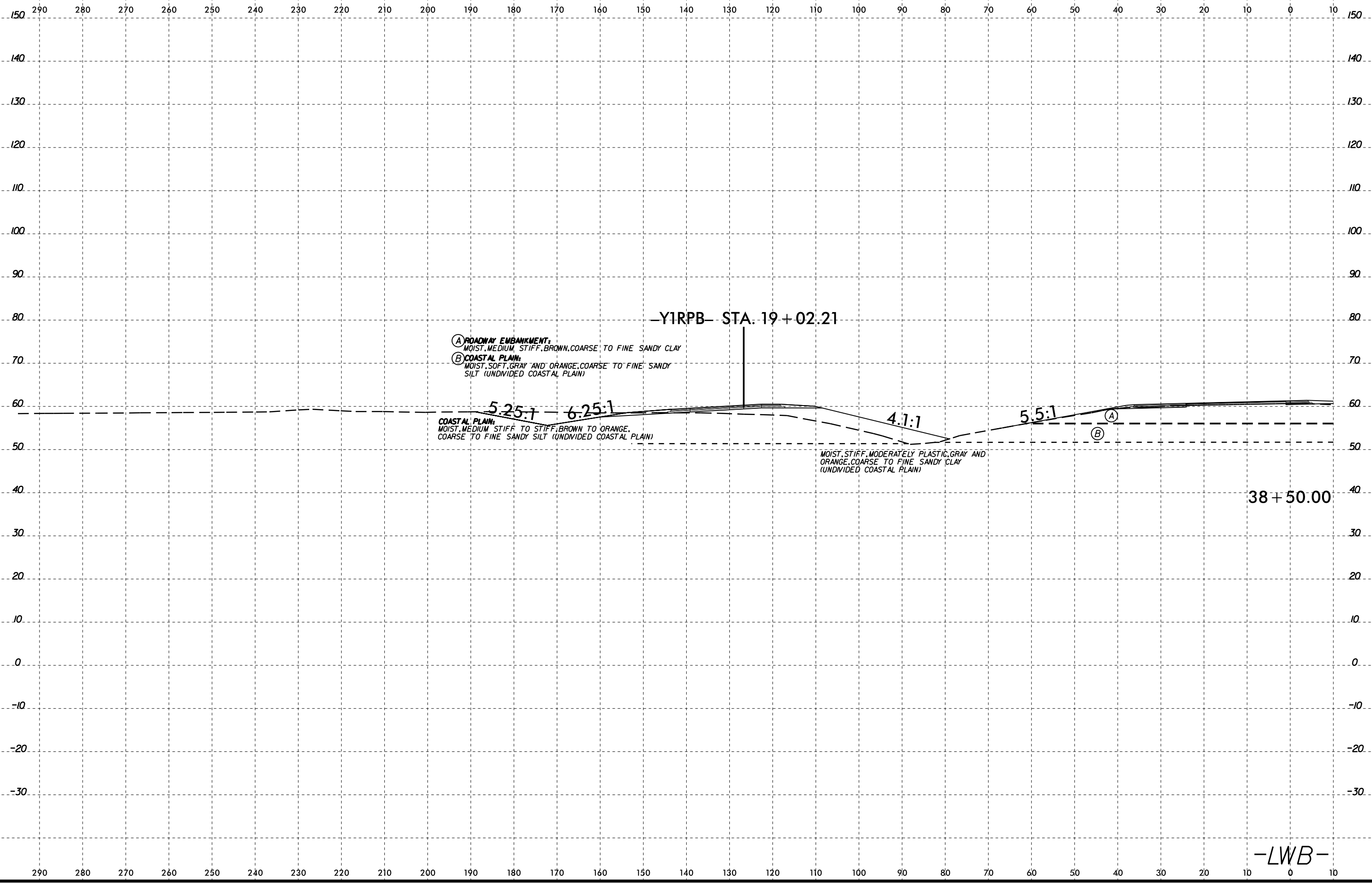
MOIST, STIFF, MODERATELY PLASTIC, GRAY AND
ORANGE, COARSE TO FINE SANDY CLAY
(UNDIVIDED COASTAL PLAIN)

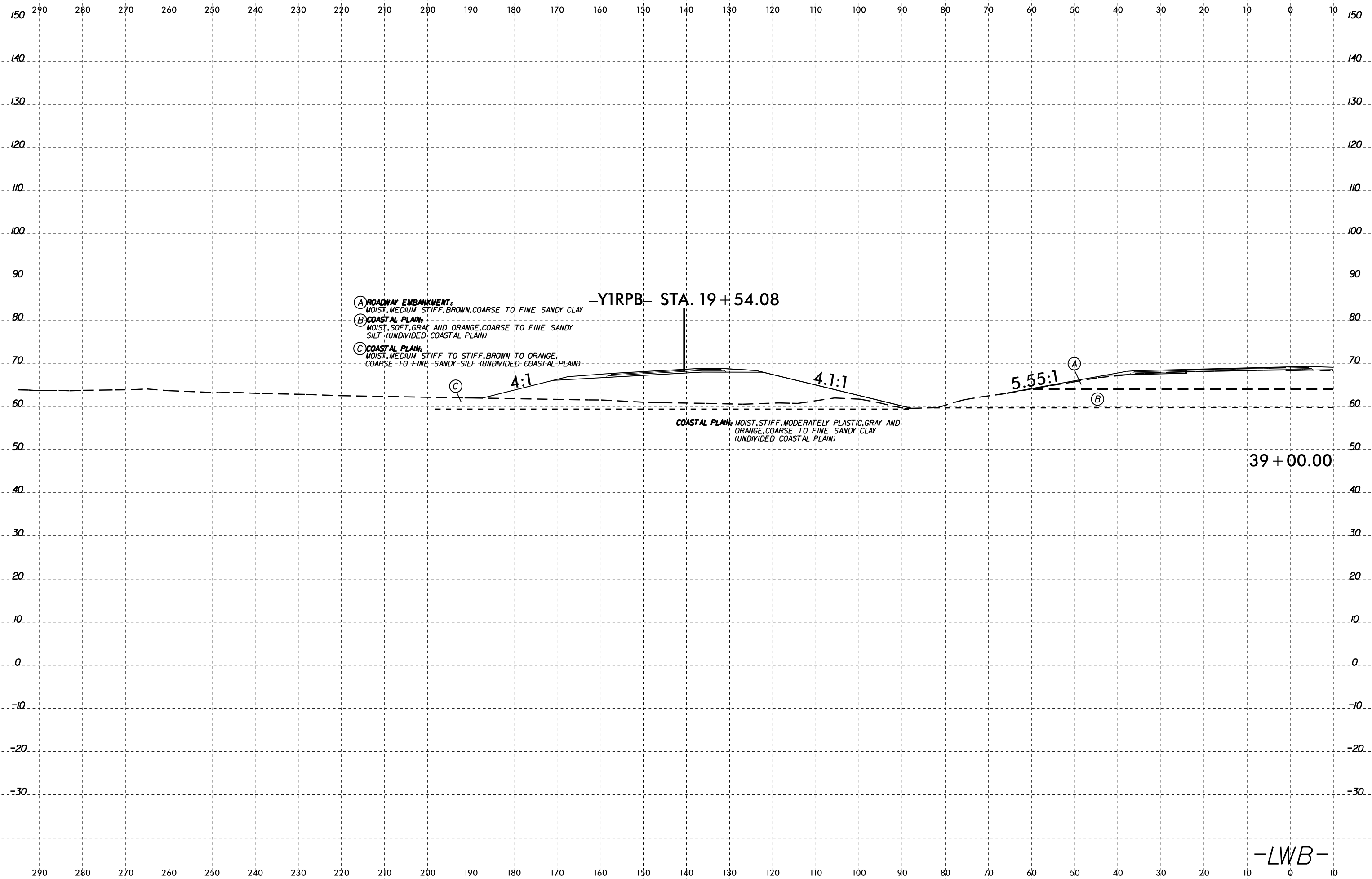
37 + 50.00

-LWB-



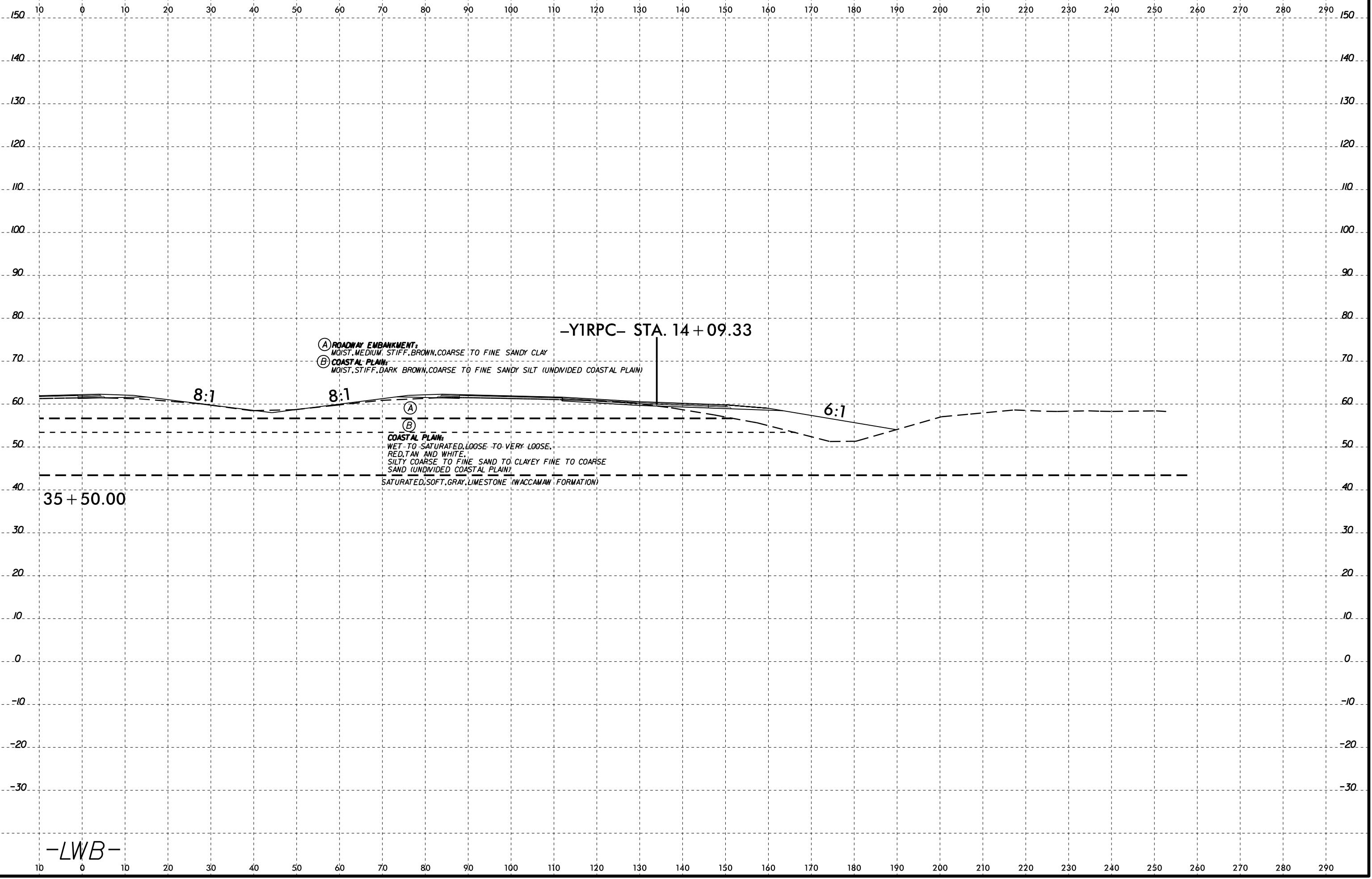
6/23/16
I:\FEB-2015\56
W:\S\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL\WB.dgn





I:\FEB-2016\56
 Master\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS1.LWB.dgn
 Wells - AT KA211387

6/23/16
I5-FEB-2015 15:56
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\XSL\LWB.dgn



- (A) ROADWAY EMBANKMENT:
MOIST, MEDIUM, STIFF, BROWN, COARSE TO FINE SANDY CLAY
- (B) COASTAL PLAIN:
MOIST, STIFF, DARK BROWN, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

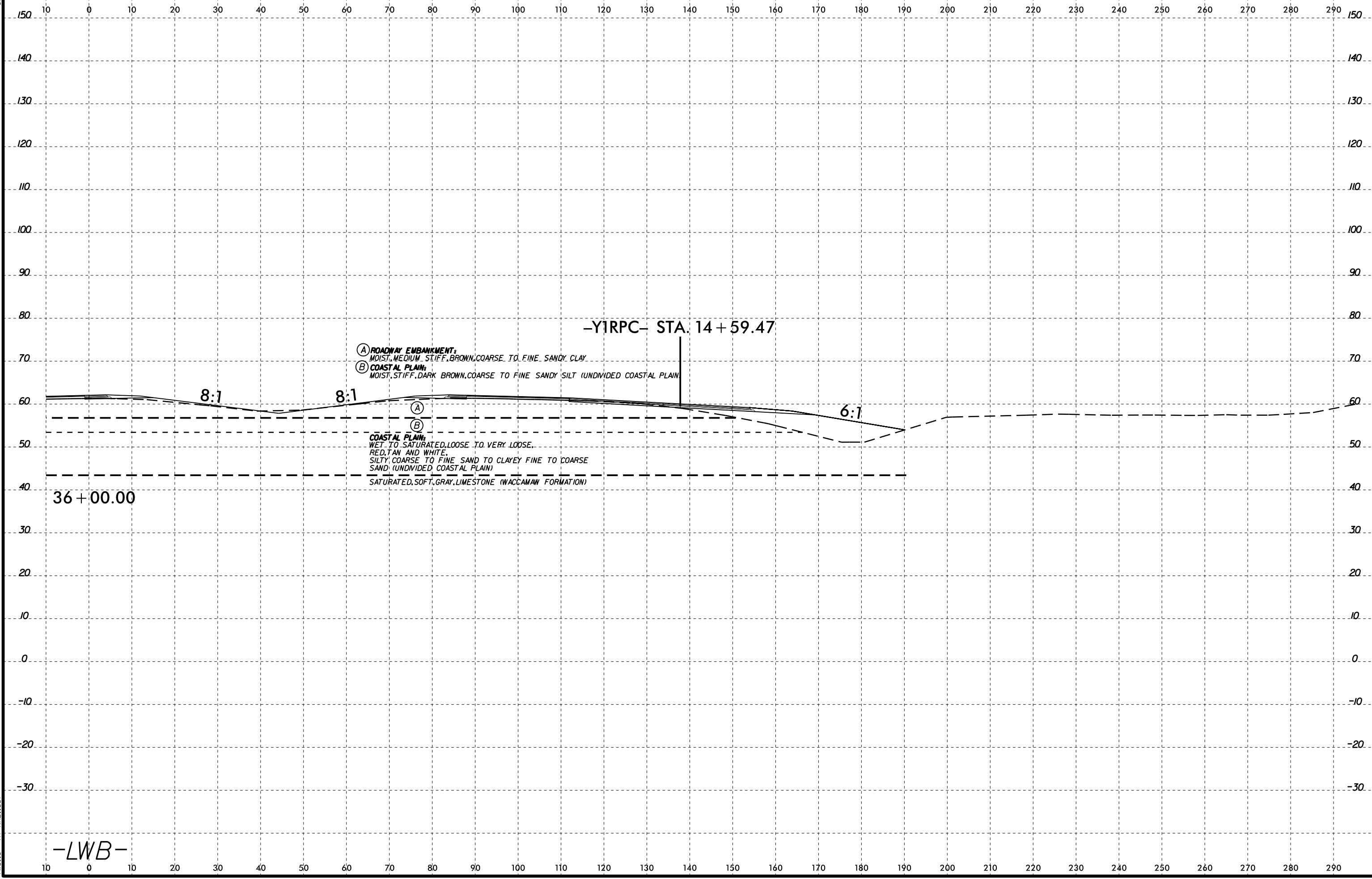
-YIRPC- STA. 14 + 09.33

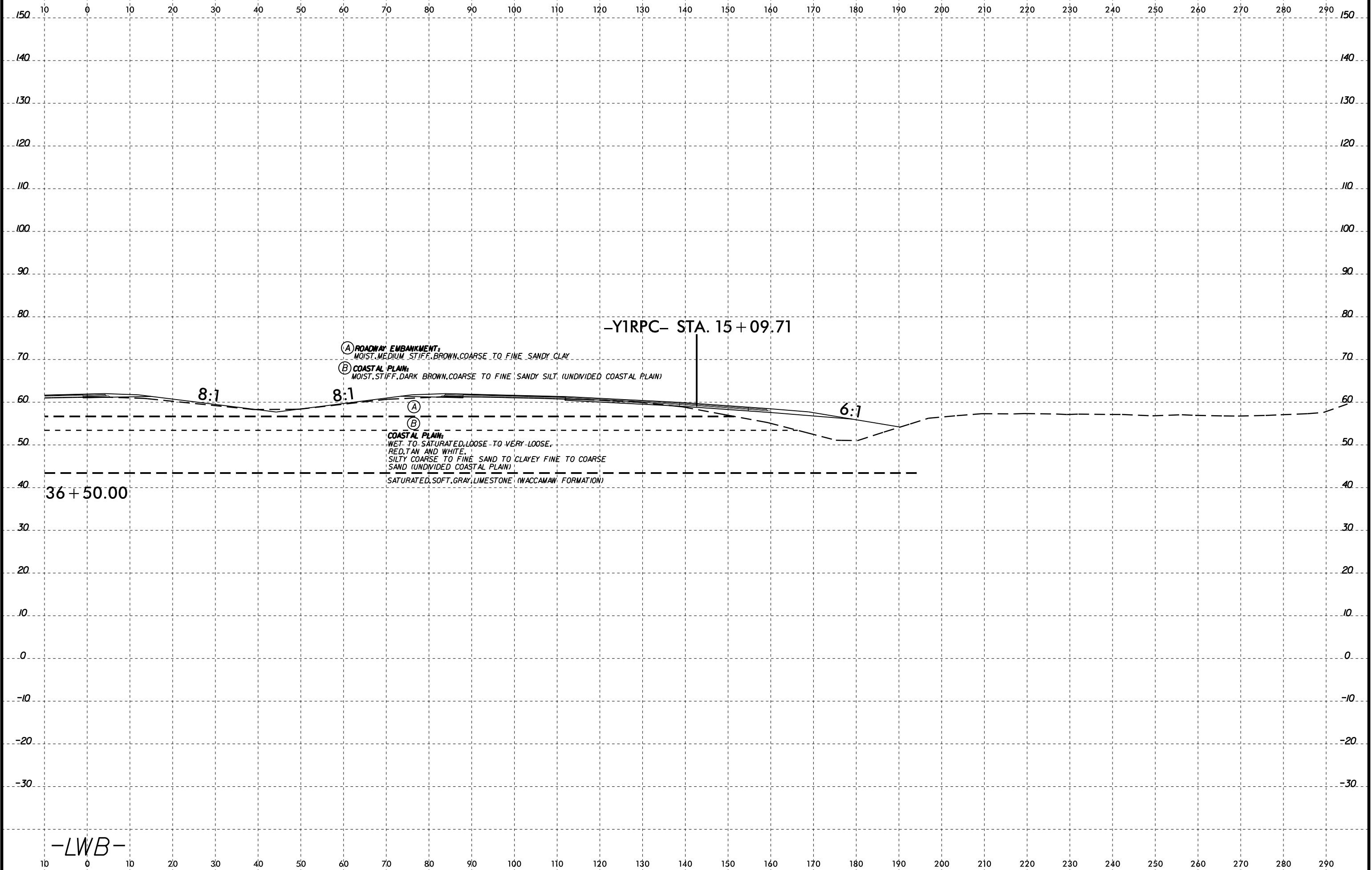
COASTAL PLAIN:
WET TO SATURATED, LOOSE TO VERY LOOSE,
RED, TAN AND WHITE,
SILTY COARSE TO FINE SAND TO CLAYEY FINE TO COARSE
SAND (UNDIVIDED COASTAL PLAIN),
SATURATED, SOFT, GRAY, LIMESTONE (WACCAMAW FORMATION)

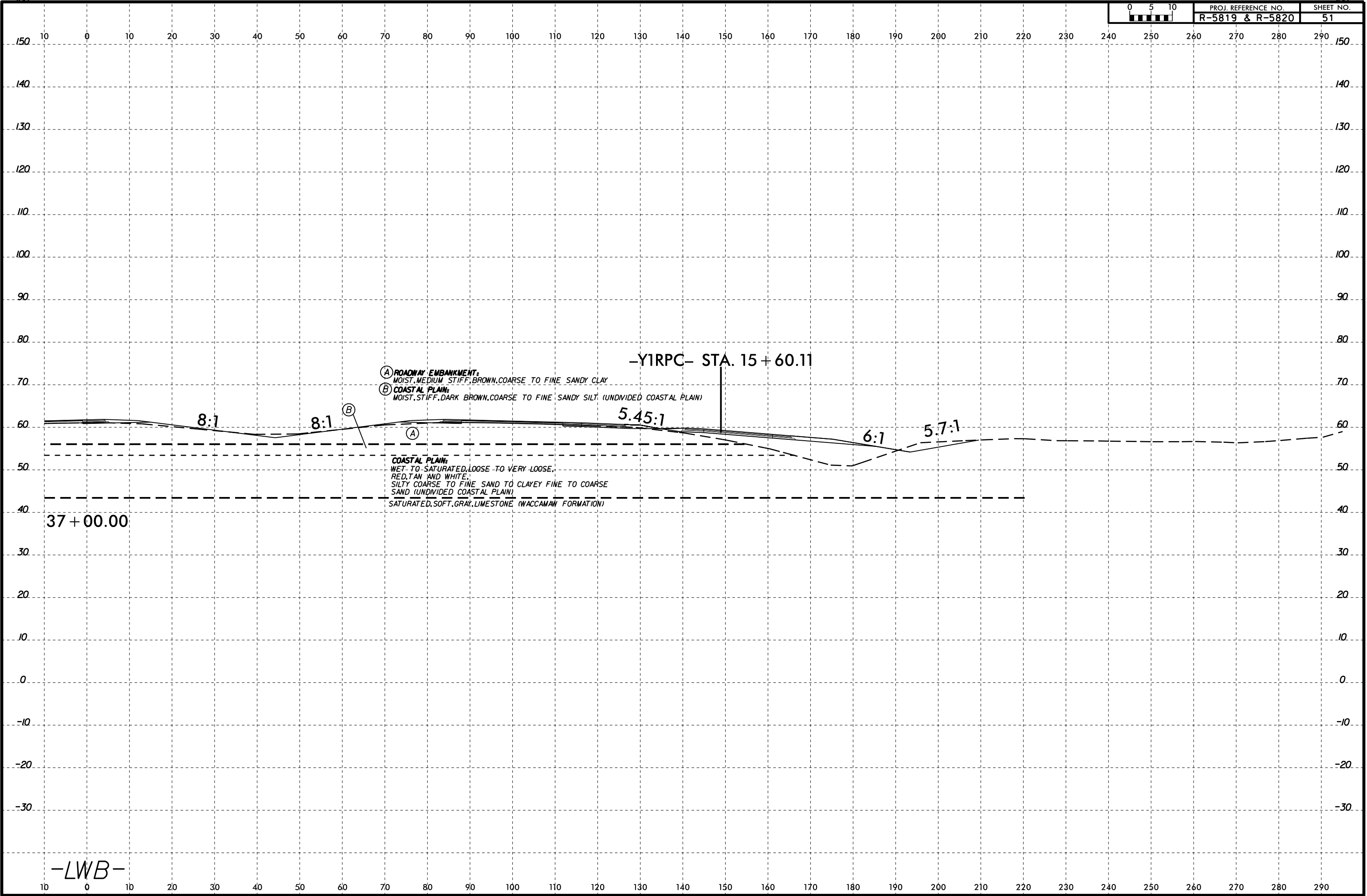
35 + 50.00

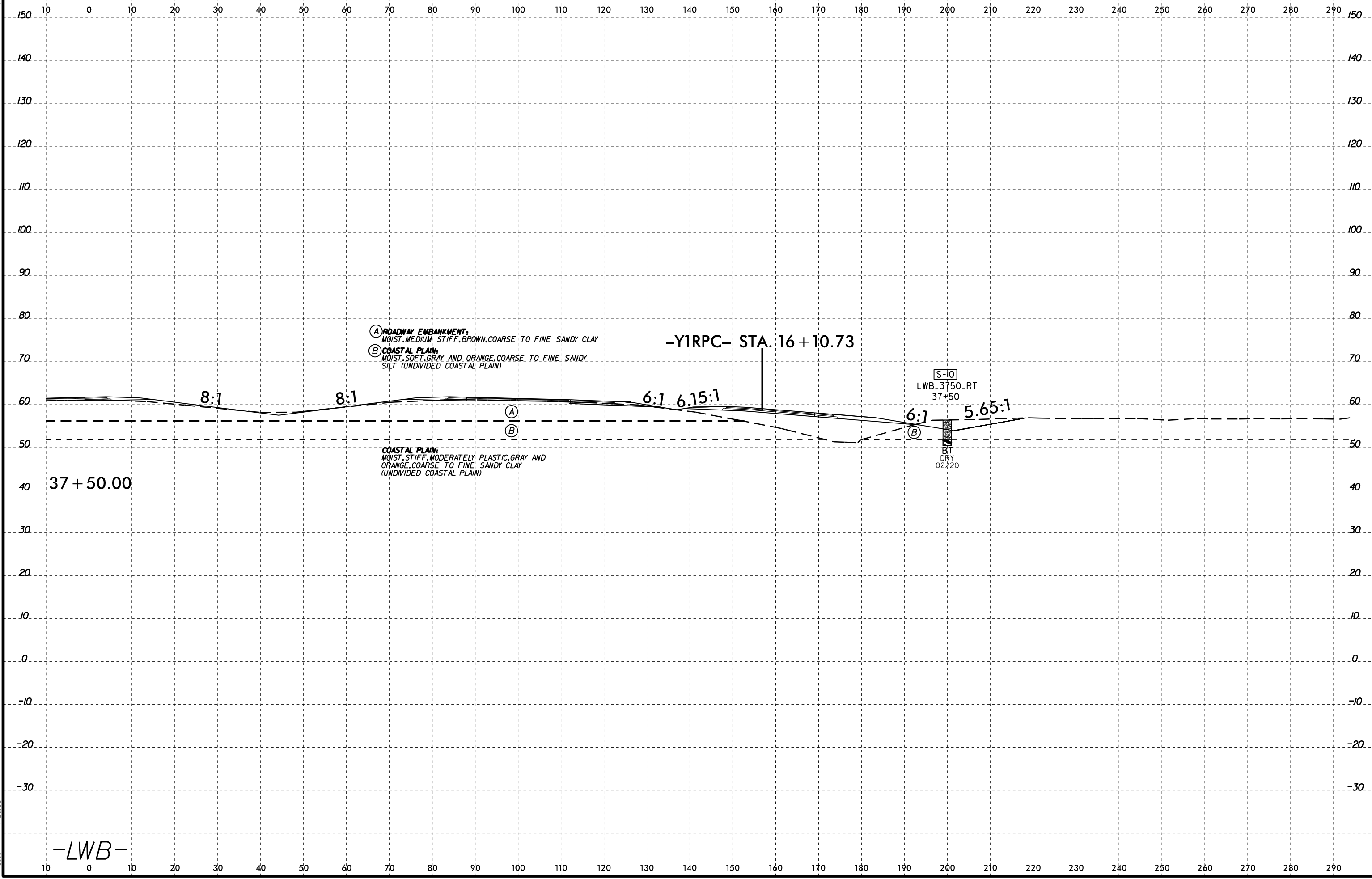
-LWB-

6/23/16
I:\FEB-2015\56
W:\Sporer\GEO
TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RS5819-R5820_GEO_XS1\LWB.dgn



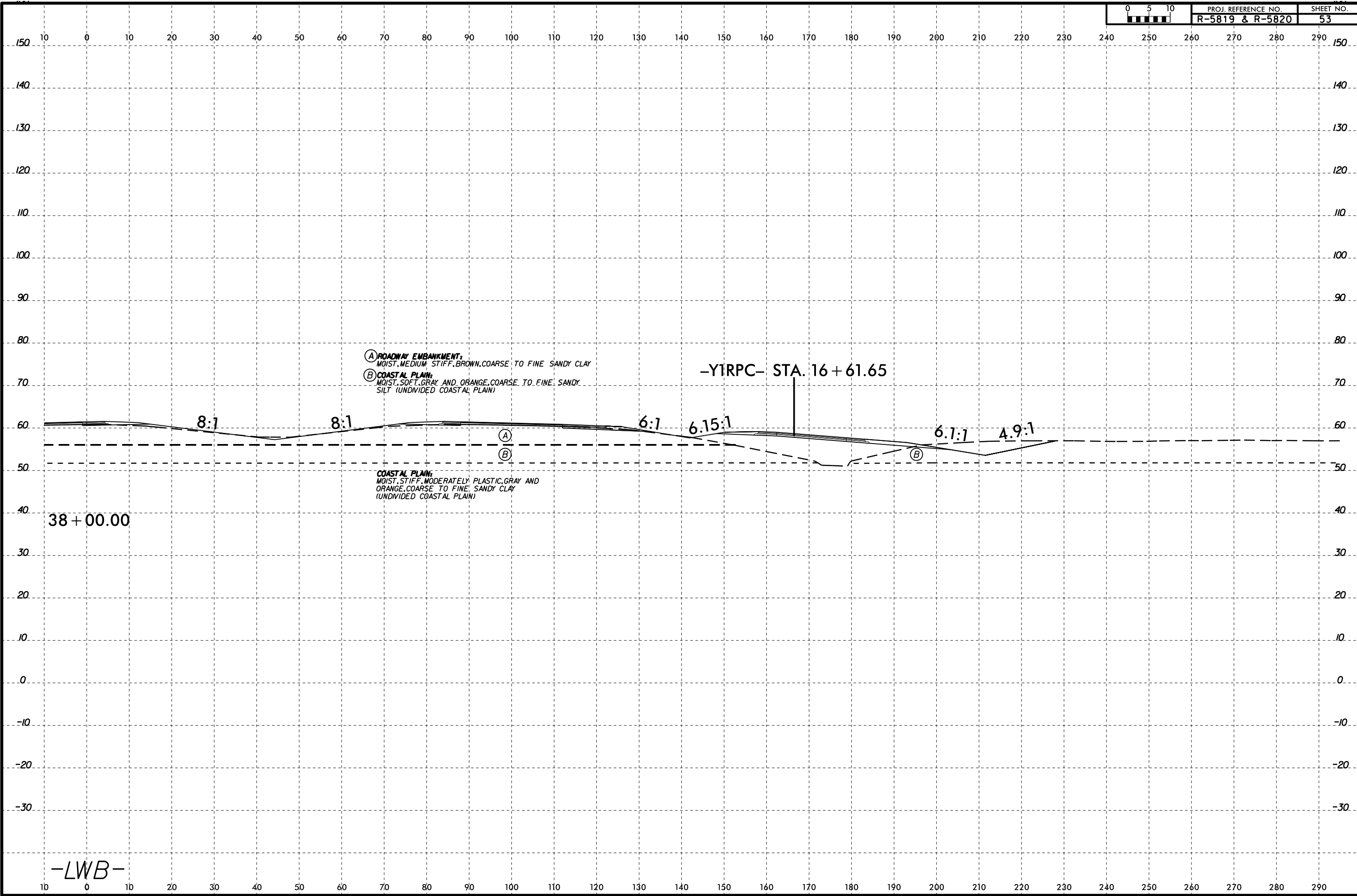


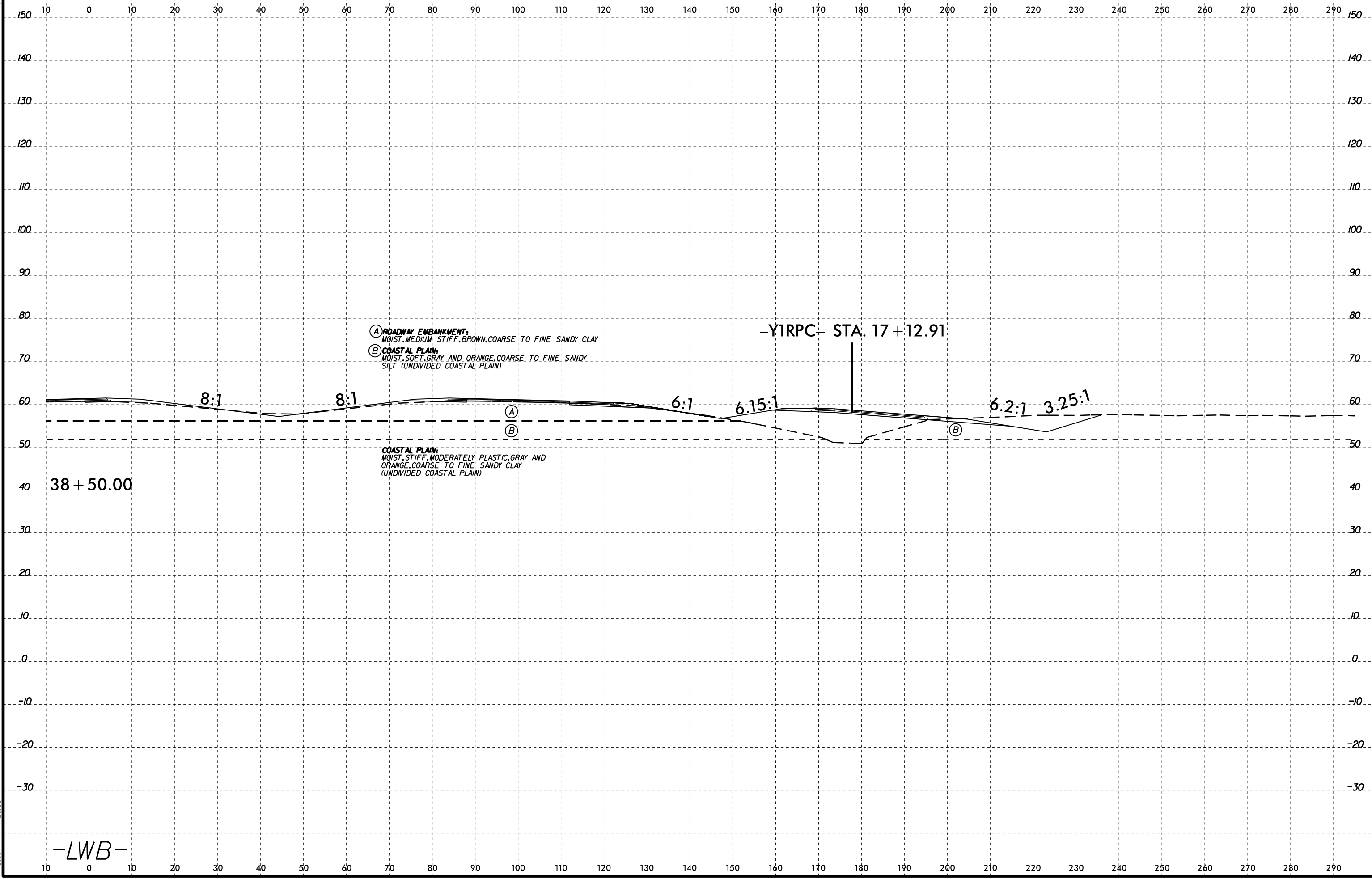




I:\FEB-2015\56
 W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\XSL\LWB.dgn
 Wells - AT KA211387

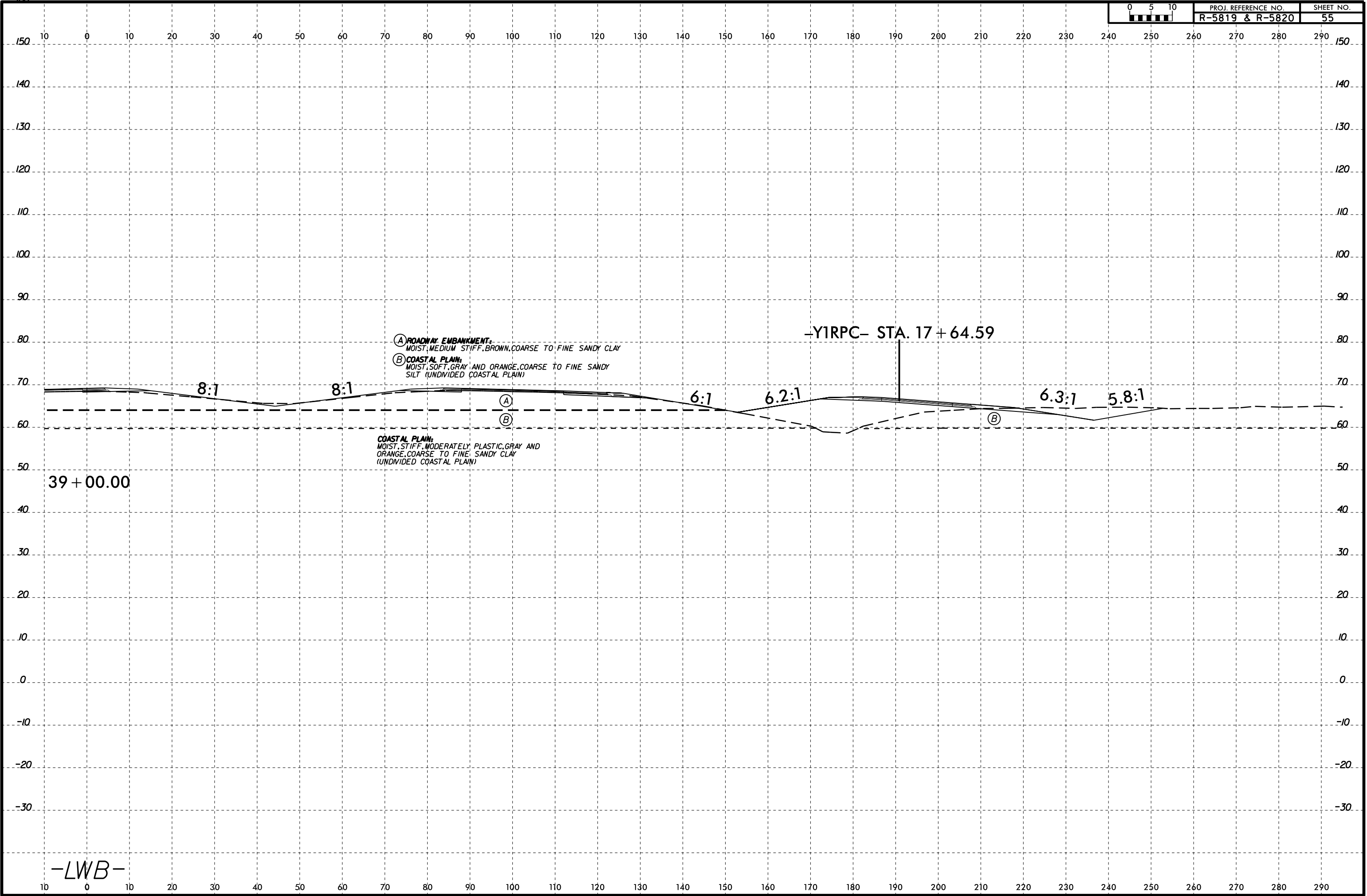
-LWB-





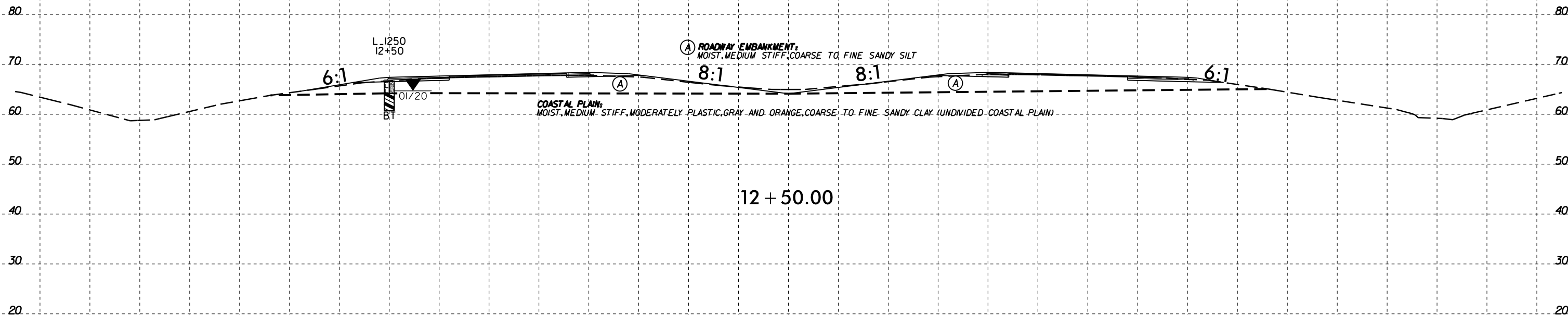
I:\FEB-2015\56
 \Master\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820-GEO\RDW\CADD_GEO\RDW\CADD_GEO\TECH\XSC\R5819_R5820_GEO_XS1.LWB.dgn
 Wells - AT KA211387

-LWB-





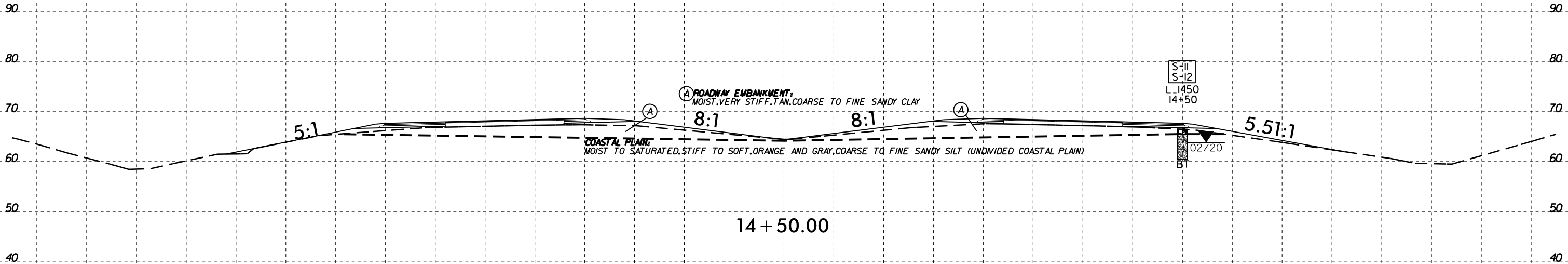
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



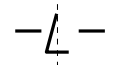
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

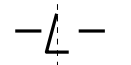
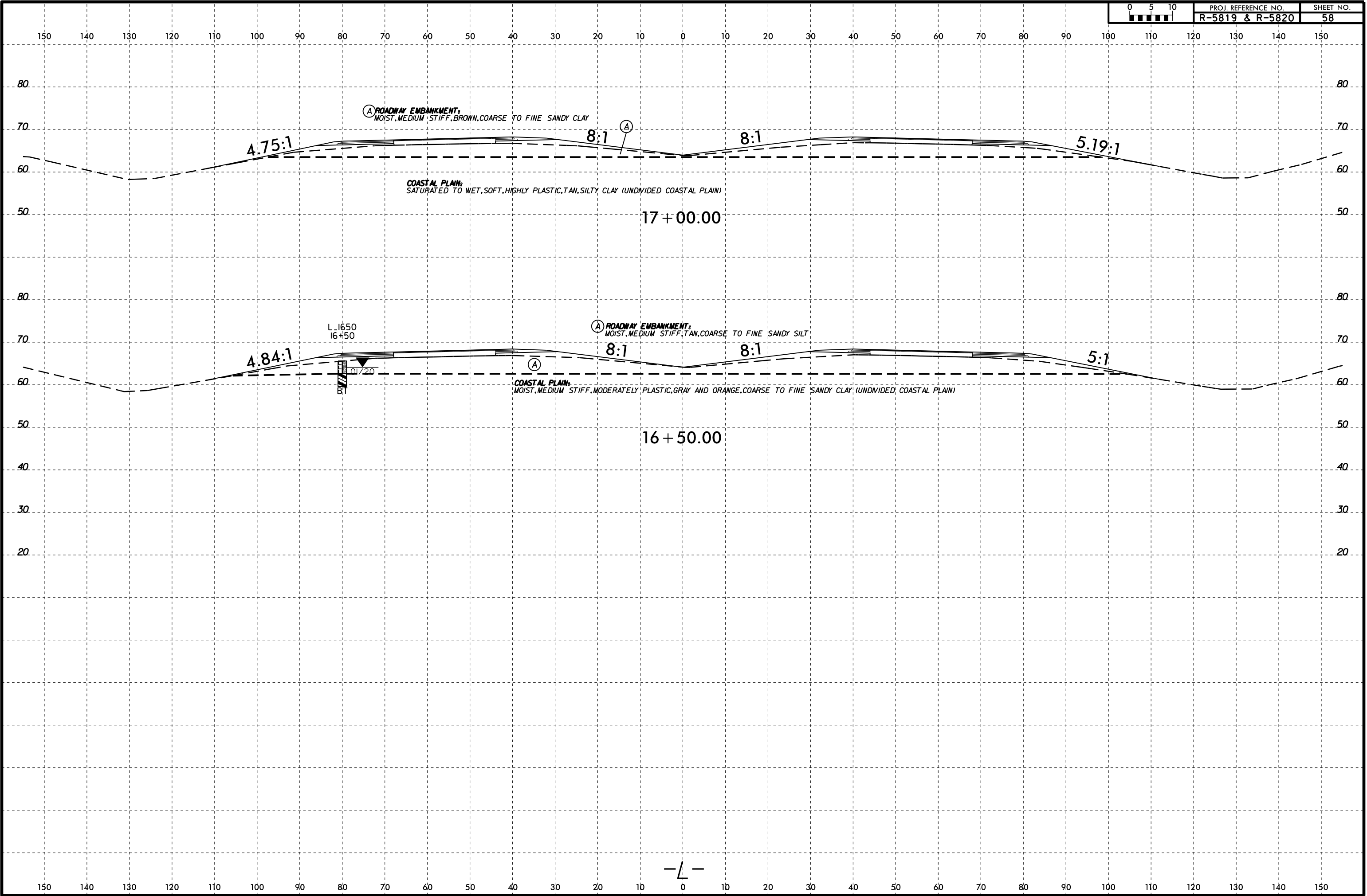


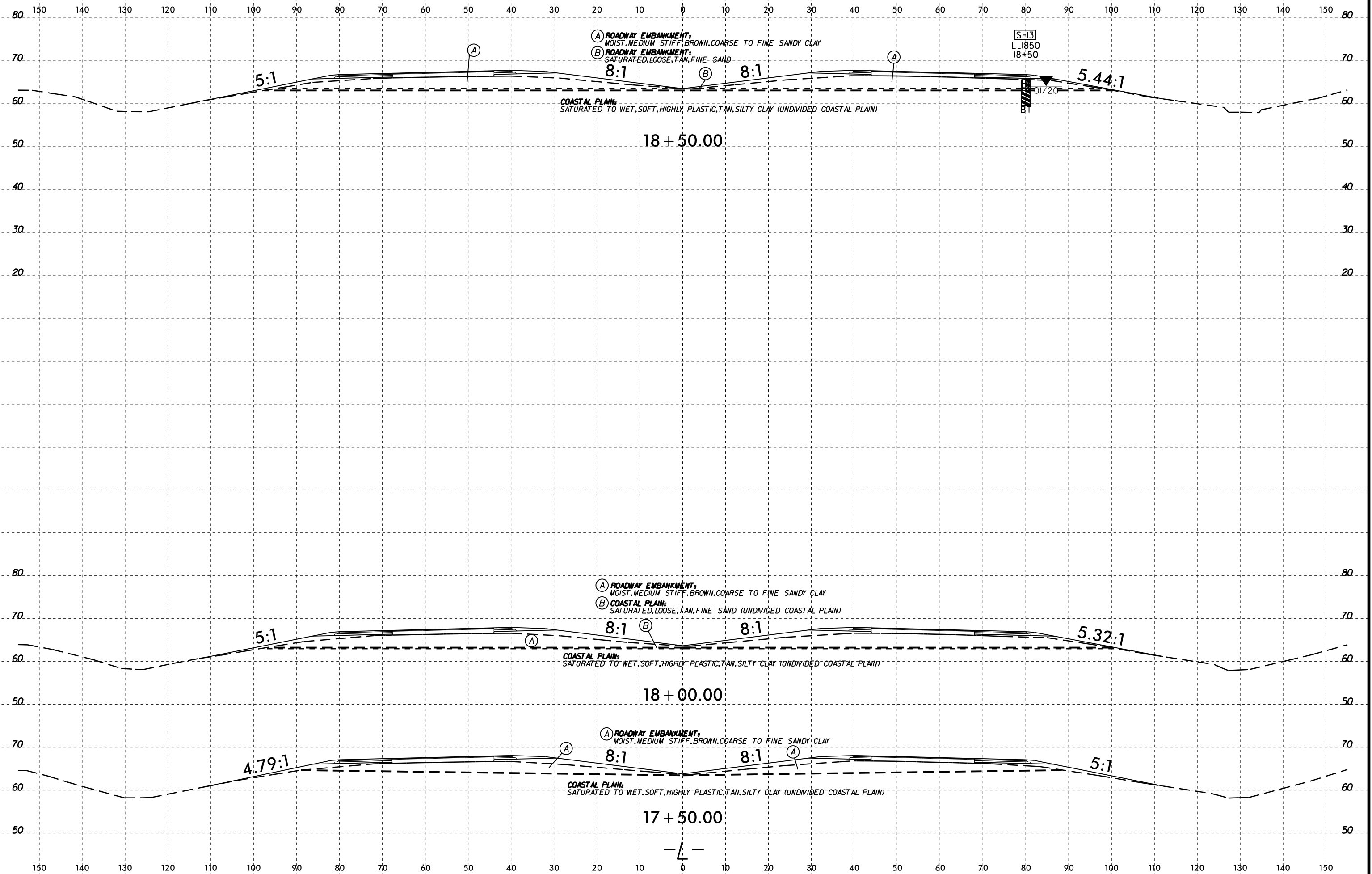
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



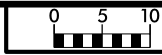
14 + 50.00





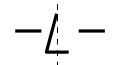
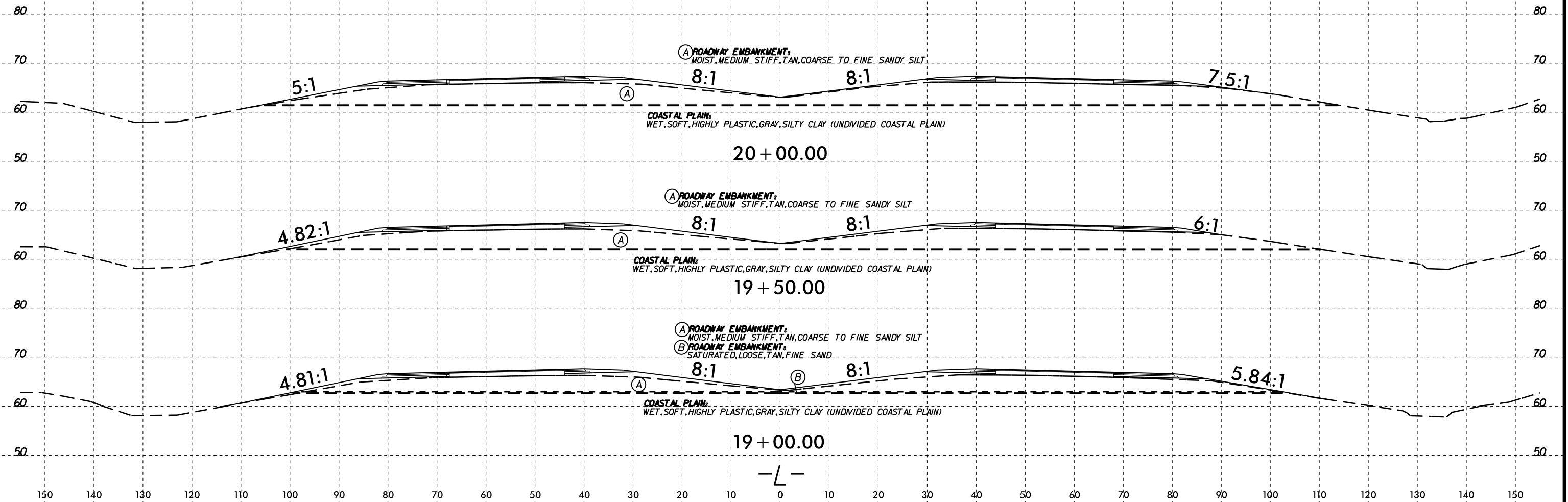


I:\FEB-2015\56
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO_RDW\CADD_GEO\RDW\CADD_GEO\RDW\GEO_XS1.L.dgn
Wells - A1 KA211387



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

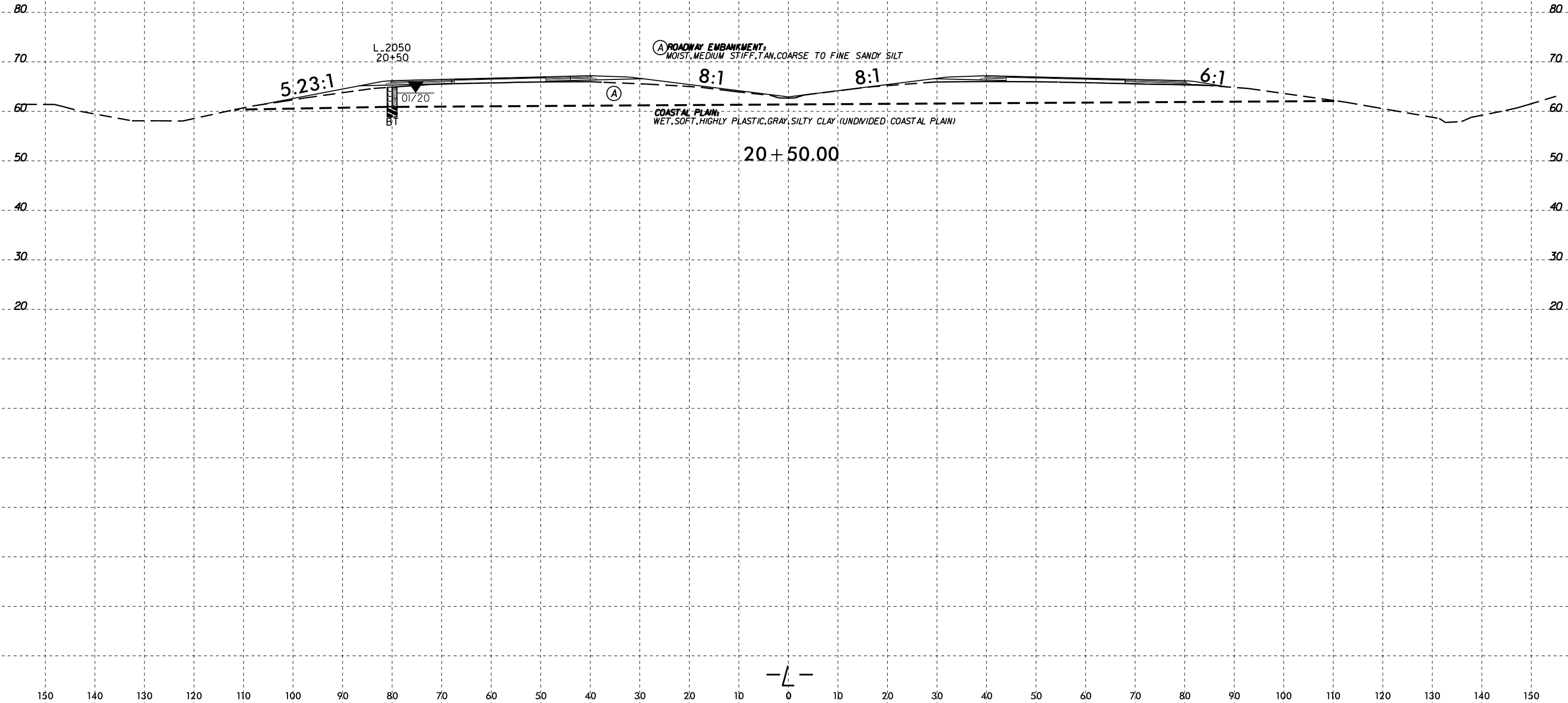
I:\FEB-2015\56
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\GEO_XS1.L.dgn
Wells - A1 KA211387





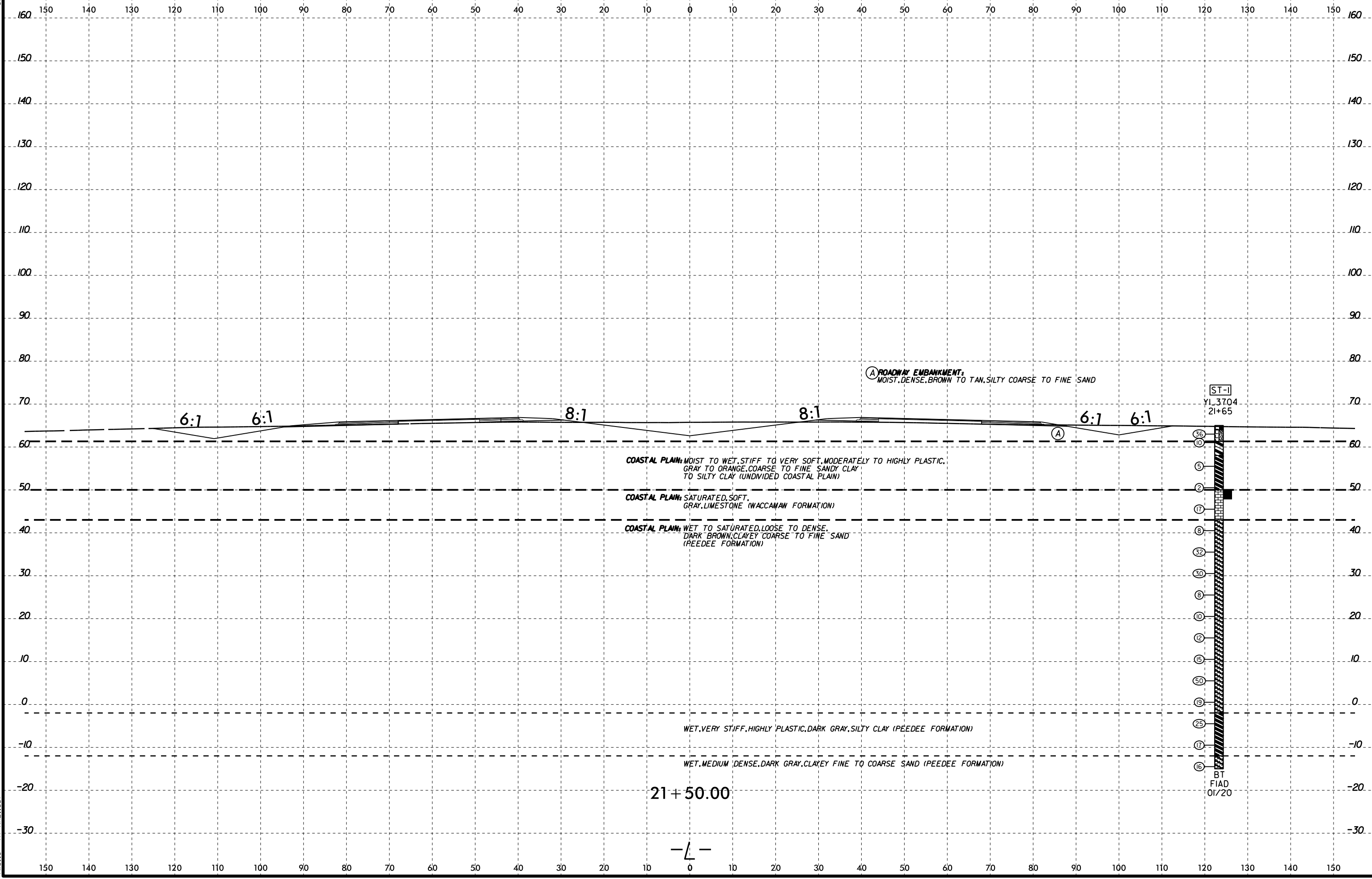
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

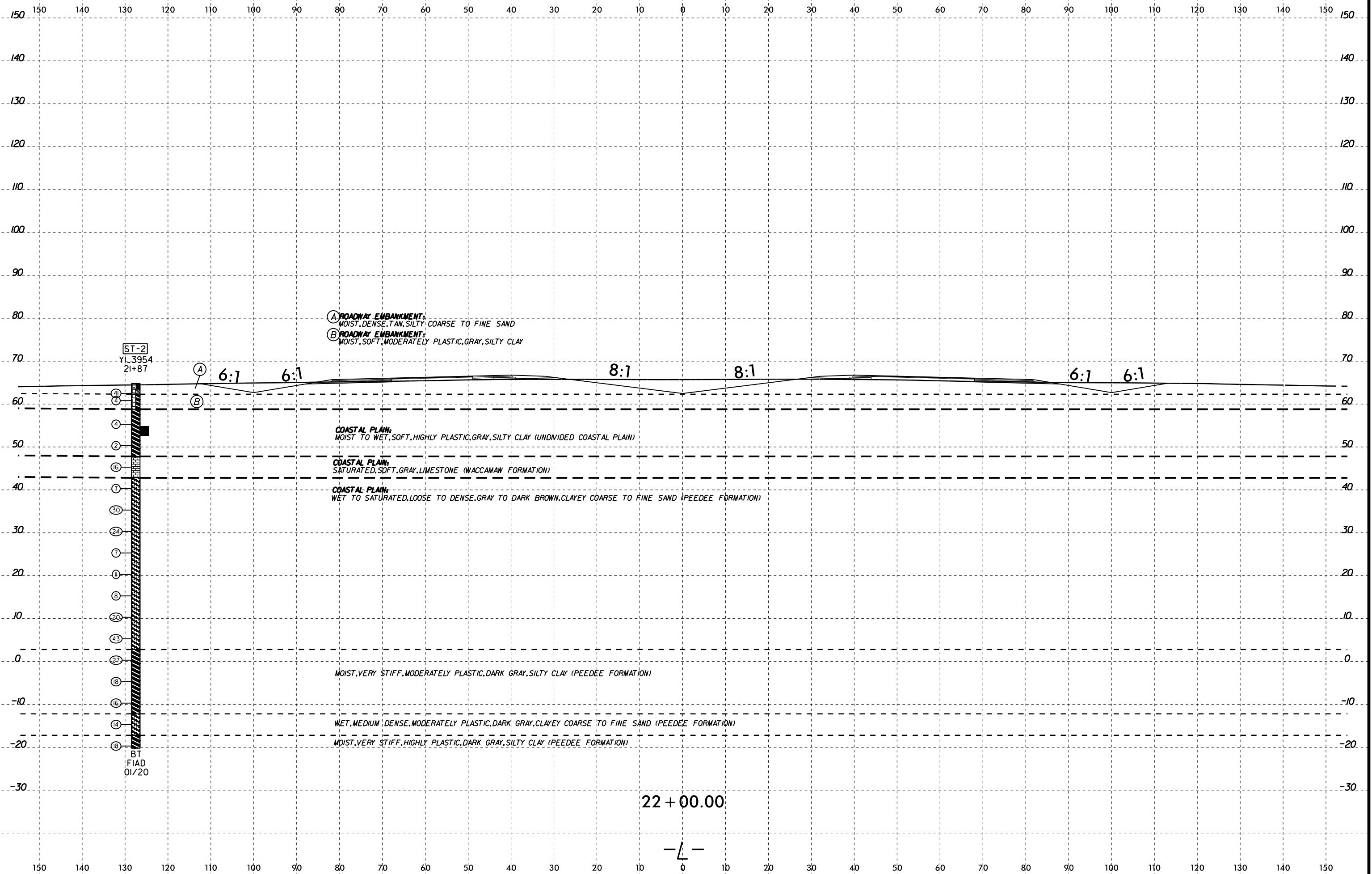
I:\FEB-2015\56
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL\...dgn



6/23/16

I:\FEB-2015\F56
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\R5819_R5820_GEO_XS1.L.dgn
Wells - At KA21387

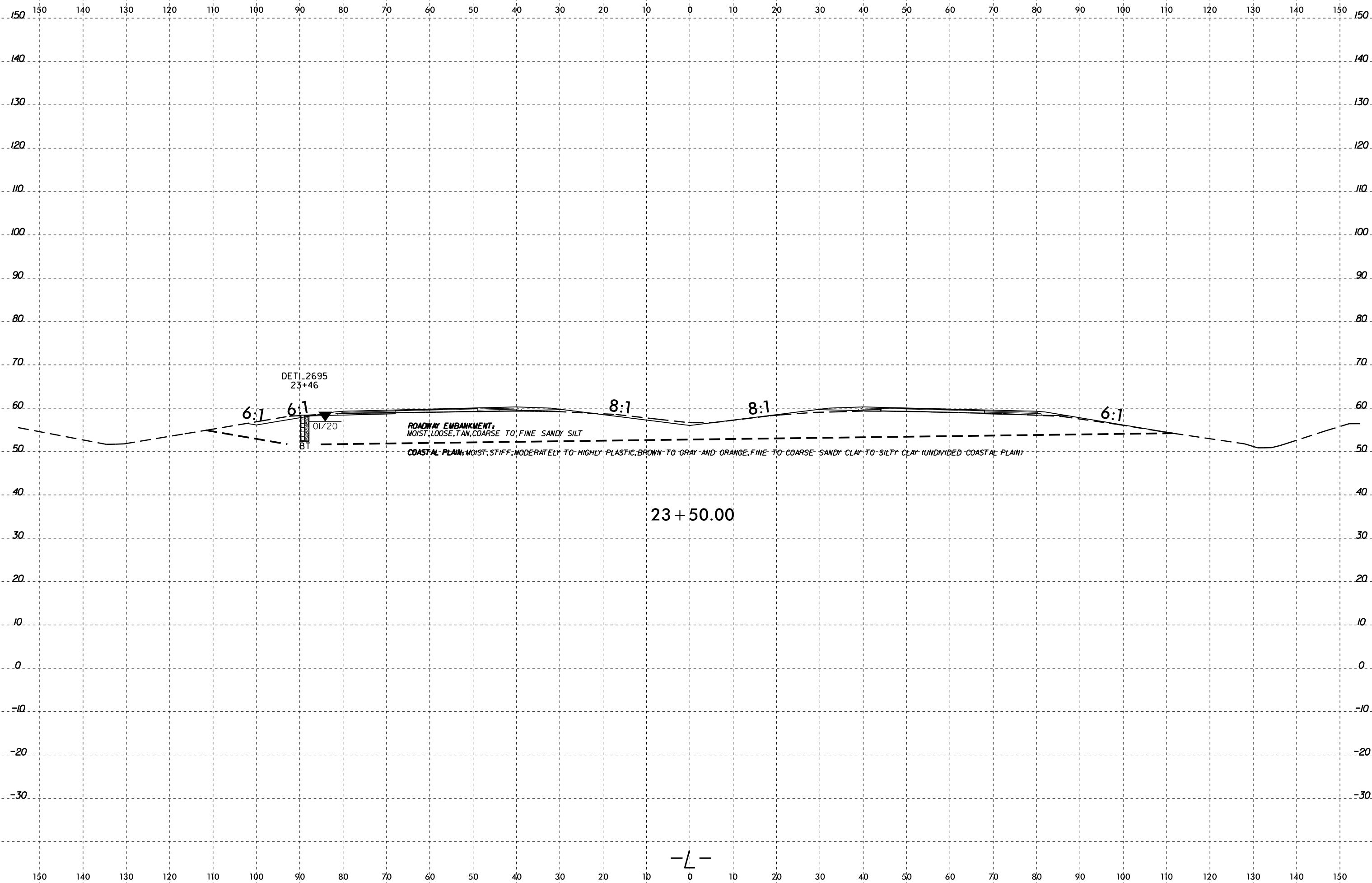




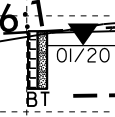
I:\FEB-2015\56
 W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL\...dgn

6/23/16

I:\FEB-2015\56
Winters\GEO
TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO_RDW\CADD_GEO\GEO\GEO_XS1.L.dgn



DET. 2695
23+46



6:1

6:1

8:1

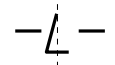
8:1

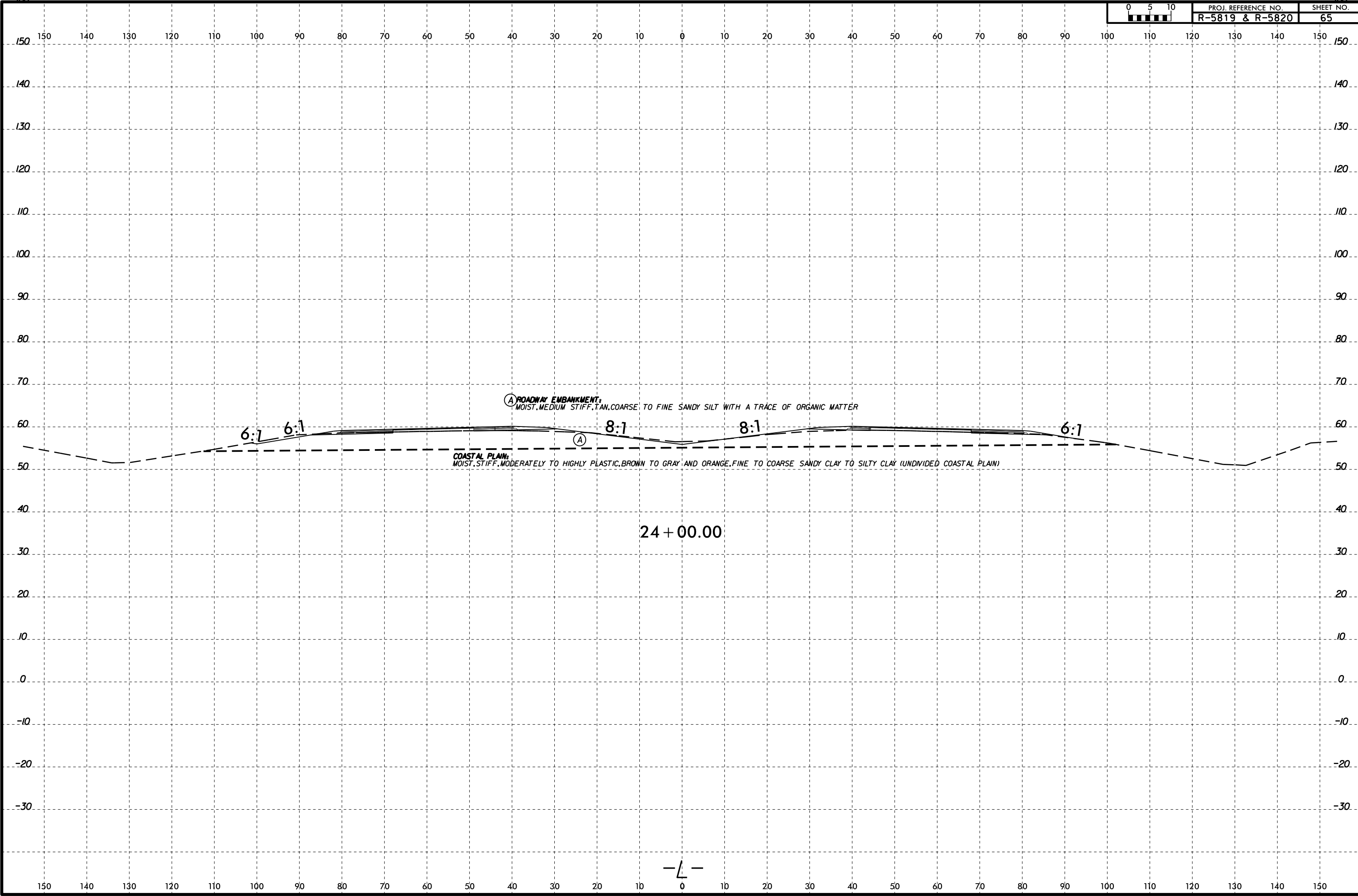
6:1

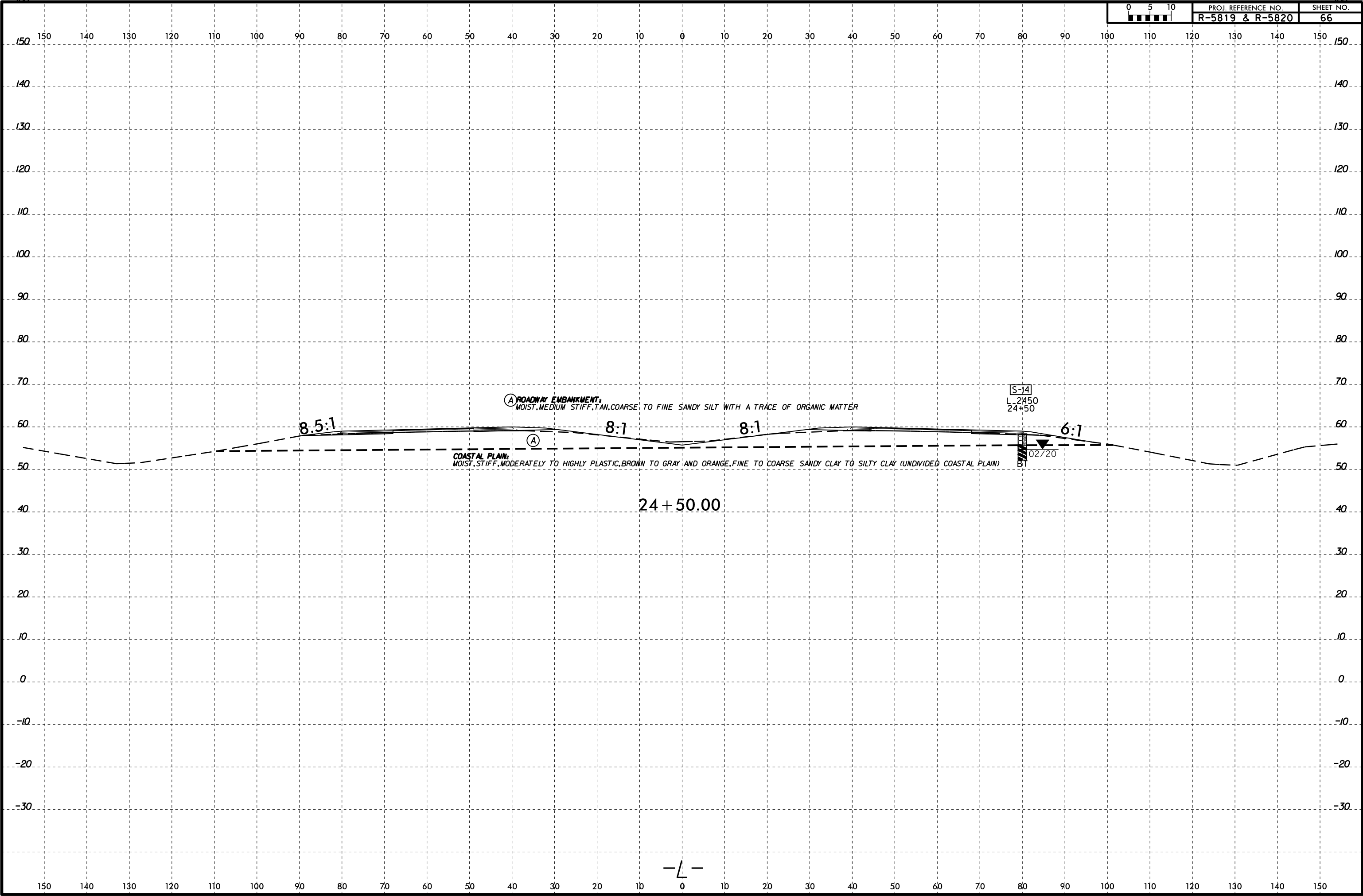
ROADWAY EMBANKMENT
MOIST, LOOSE, TAN, COARSE TO FINE SANDY SILT

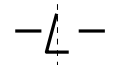
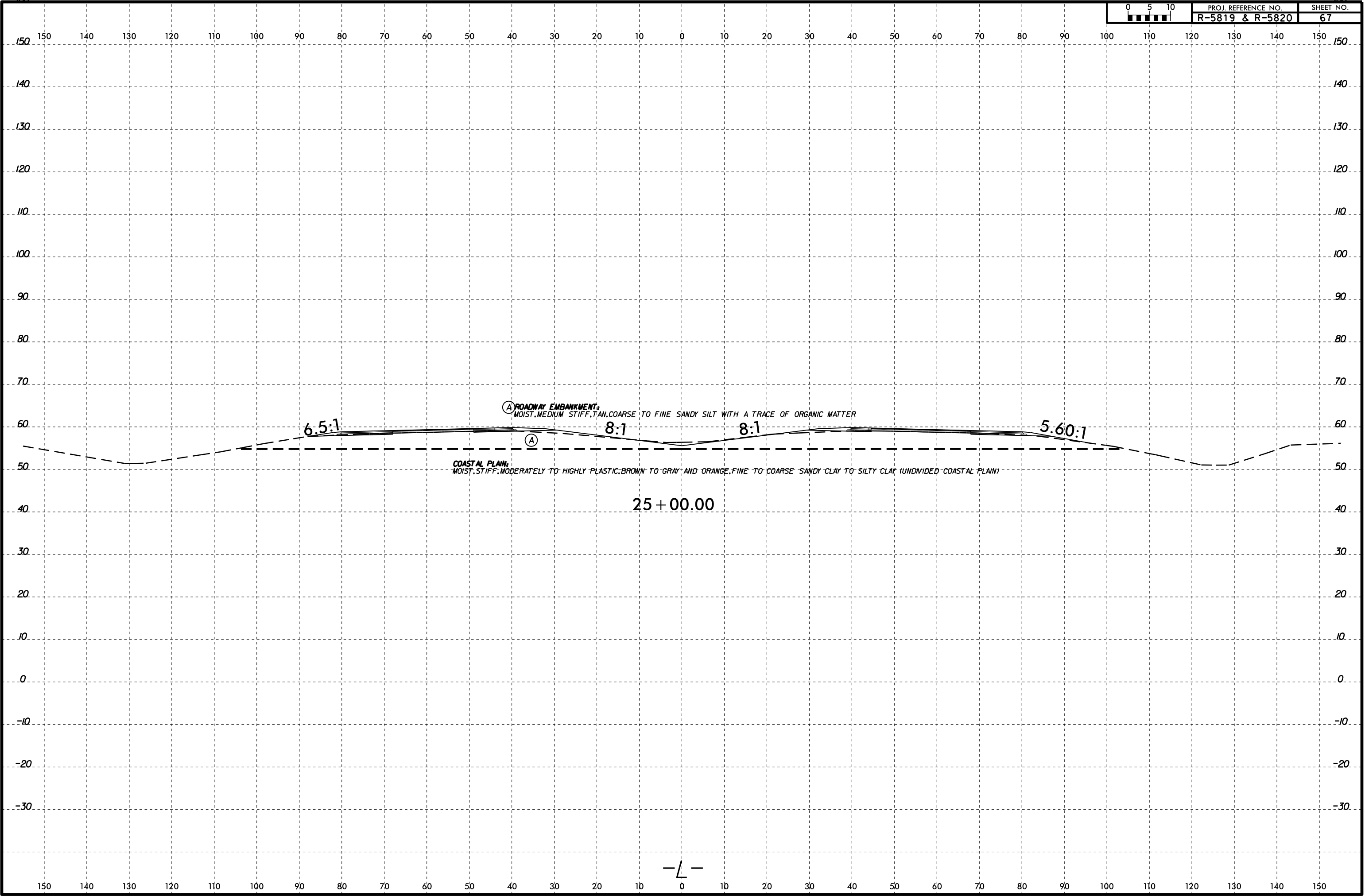
COASTAL PLAIN, MOIST, STIFF, MODERATELY TO HIGHLY PLASTIC, BROWN TO GRAY AND ORANGE, FINE TO COARSE SANDY CLAY TO SILTY CLAY (UNDIVIDED COASTAL PLAIN)

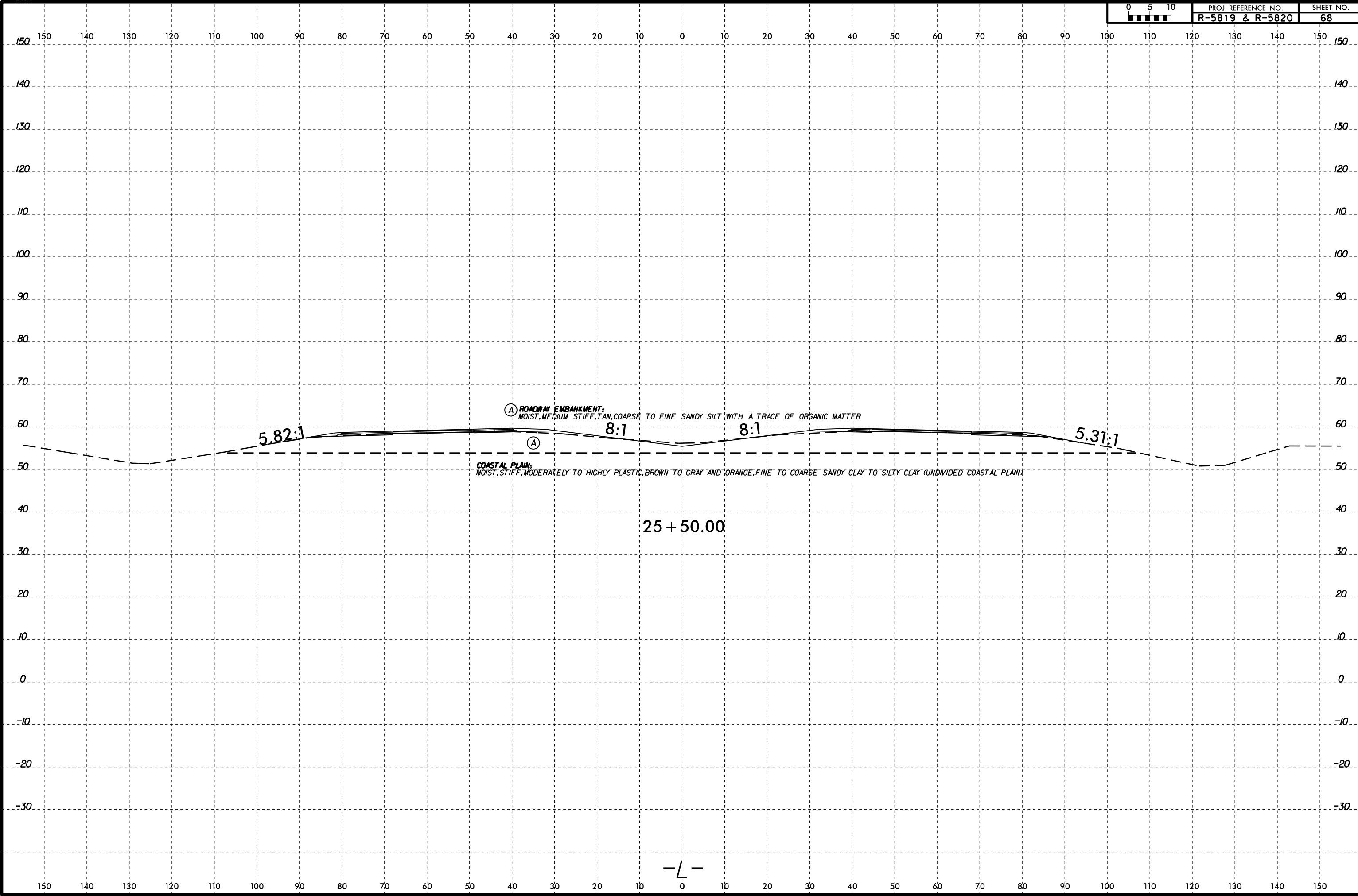
23 + 50.00

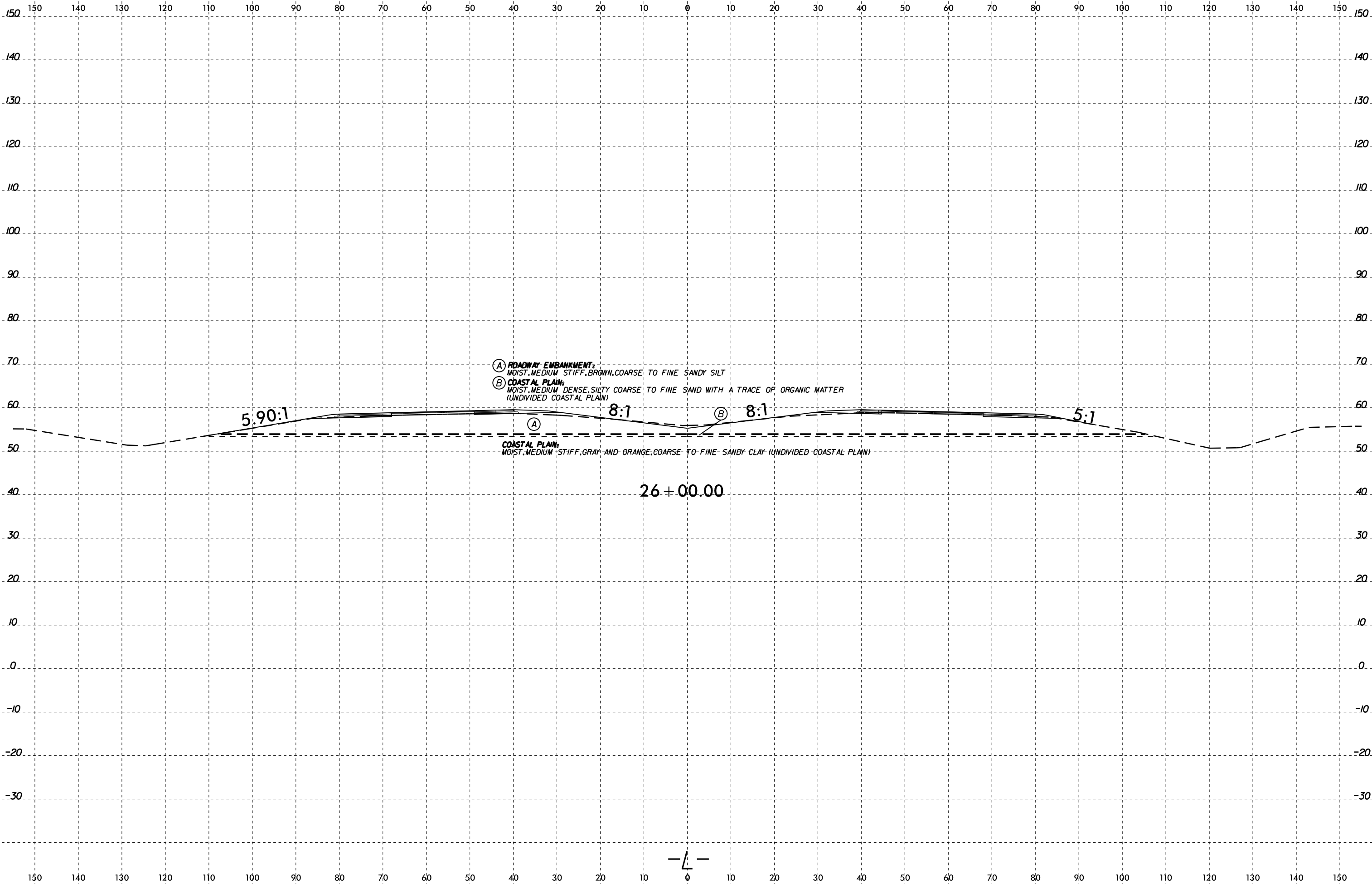


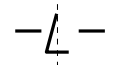
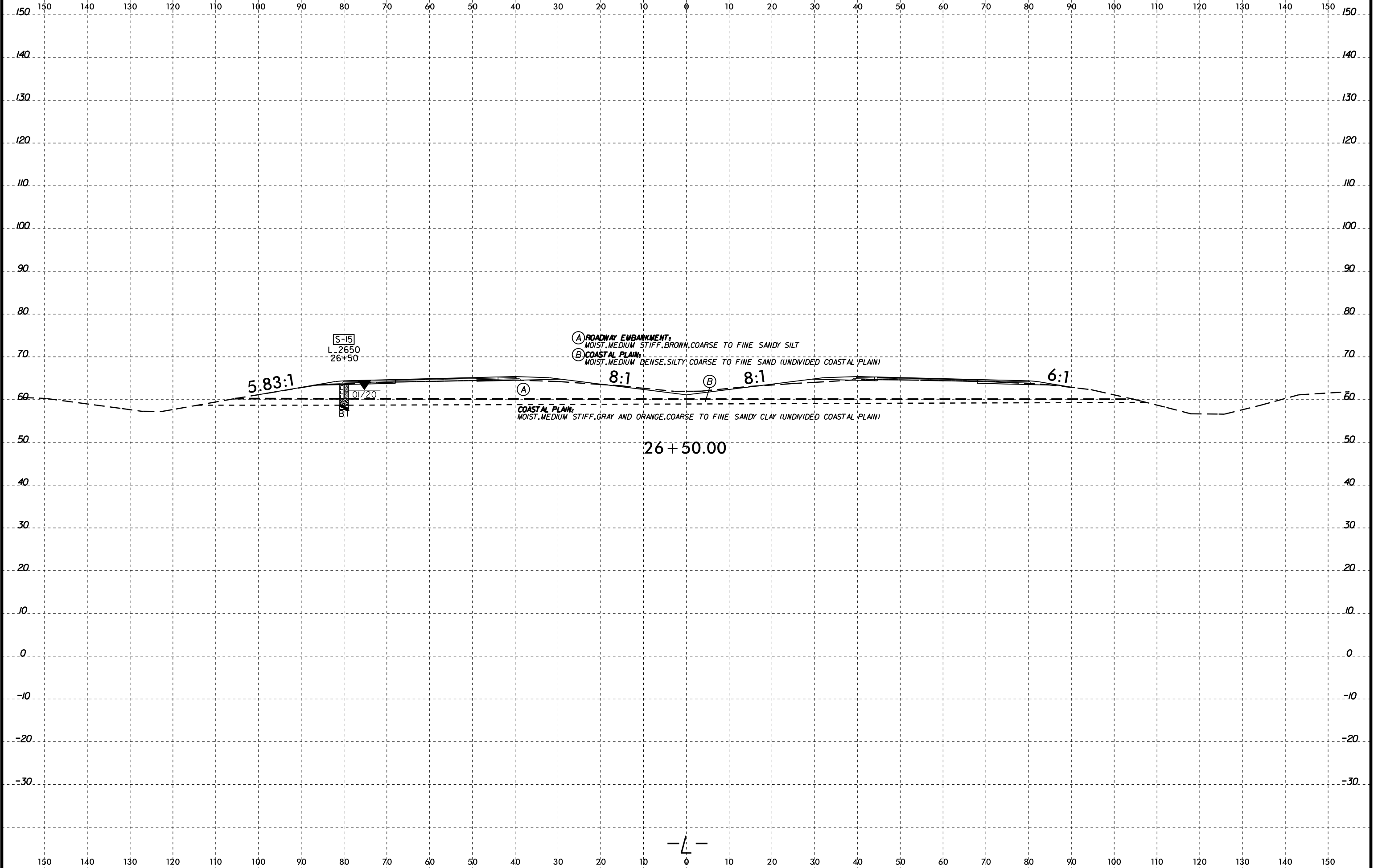








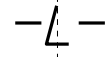
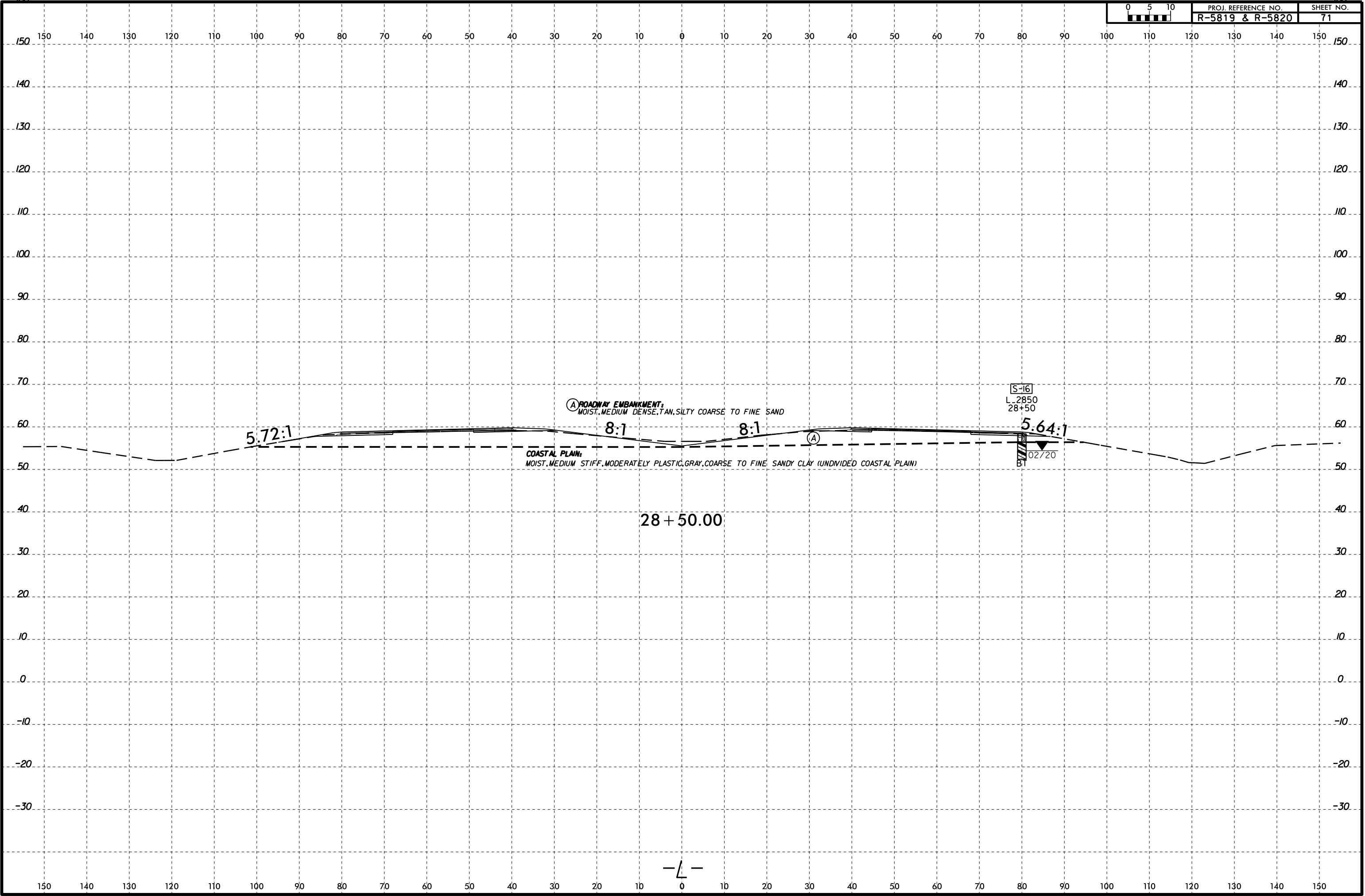




6/23/16

I:\FEB-2015\57
W\shere\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL\1387
R-5819 & R-5820 Roadway\Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL\1387

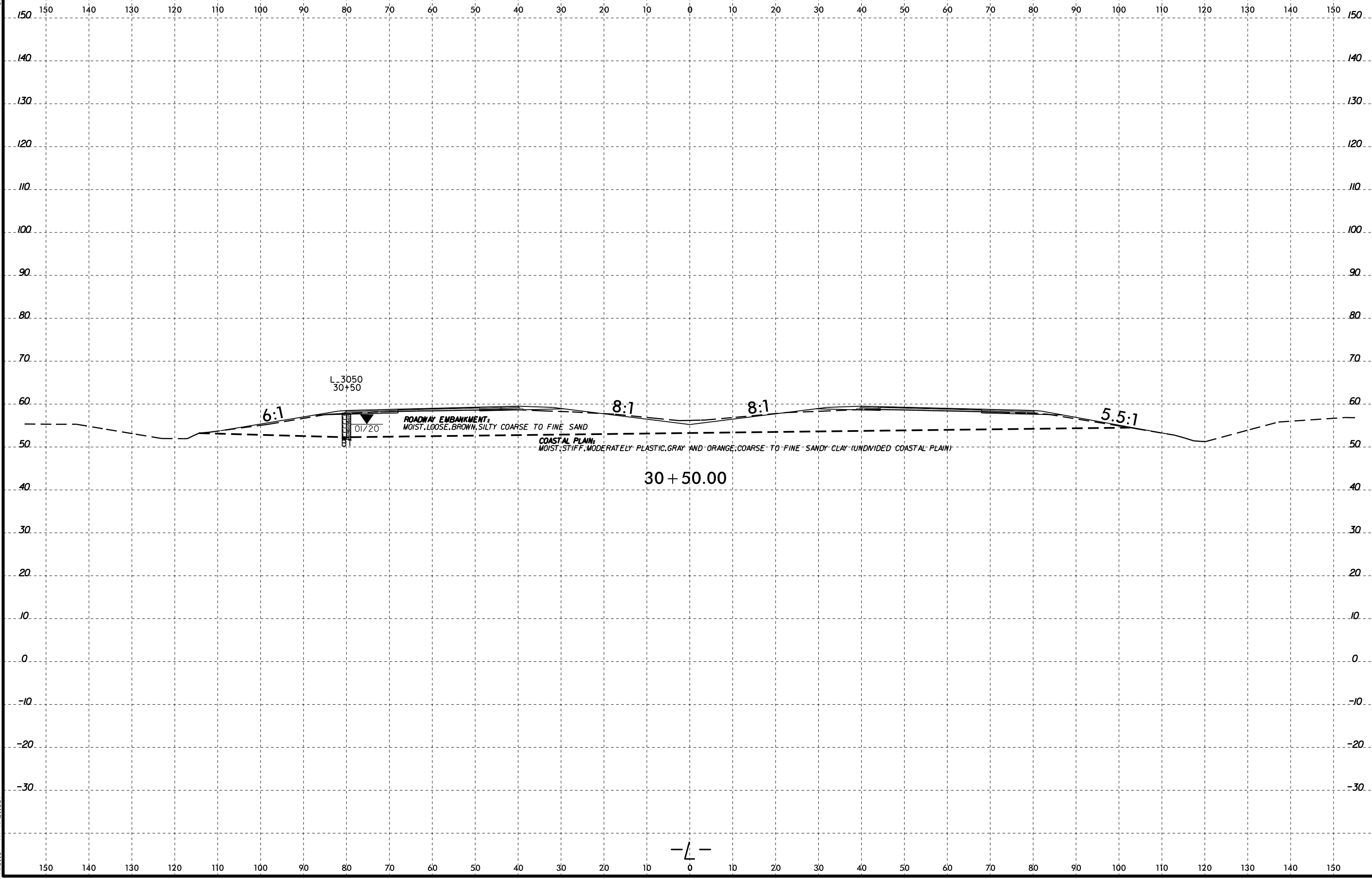
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	71



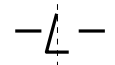
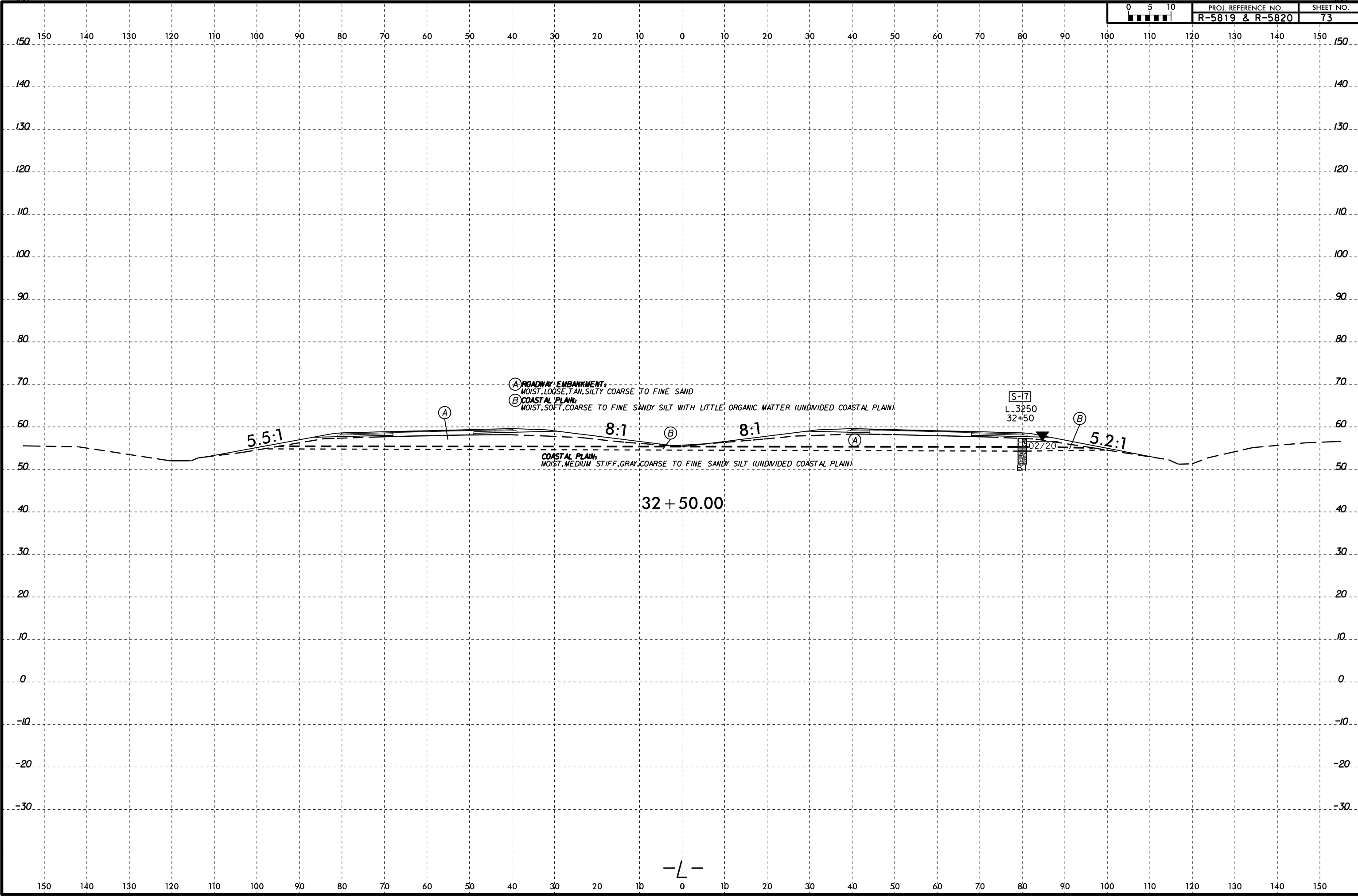
6/23/16

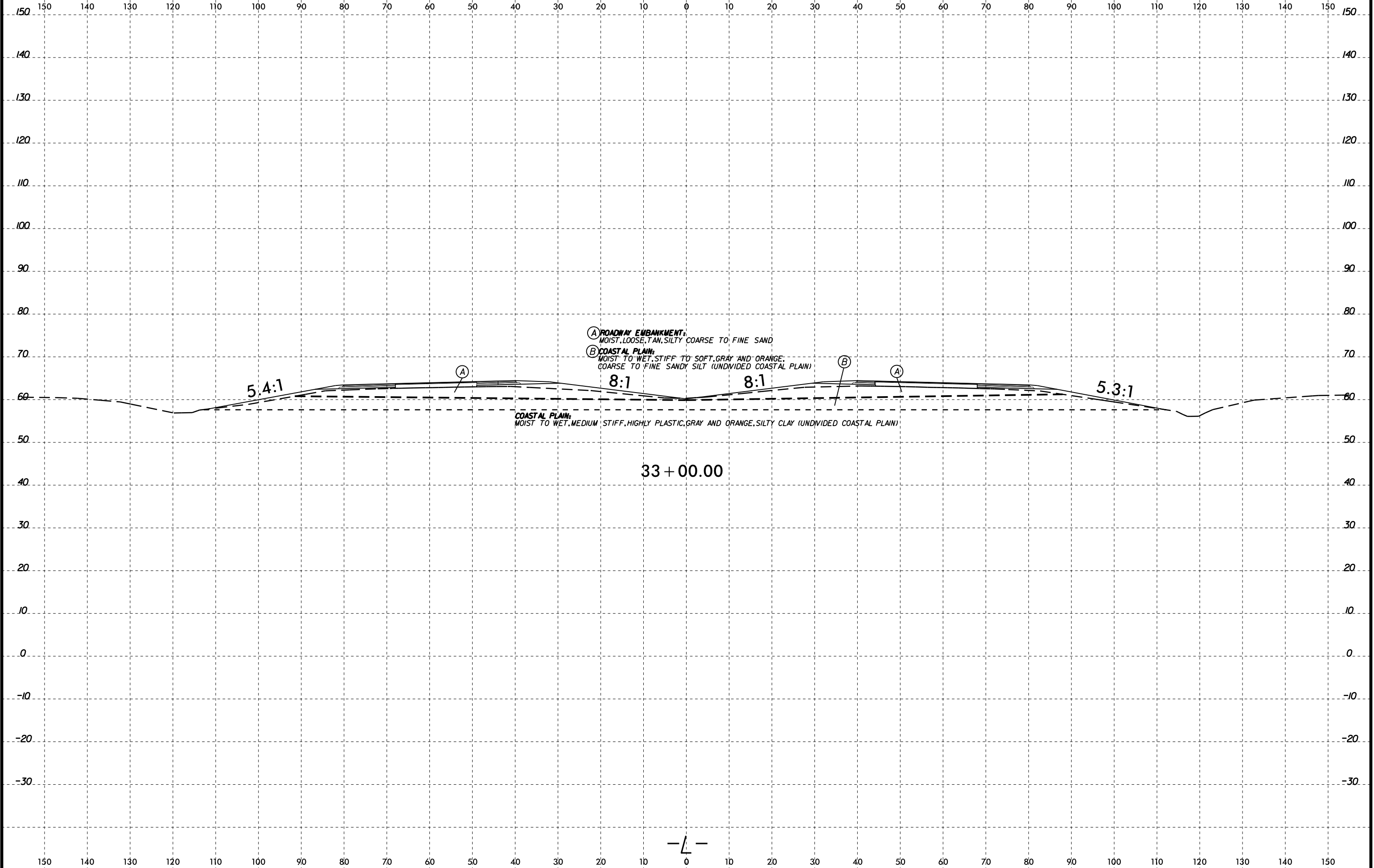
I:\FEB-2015\57
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL\1387
L_3050
30+50

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	72



—L—





(A) **ROADWAY EMBANKMENT:**
MOIST, LOOSE, TAN, SILTY COARSE TO FINE SAND

(B) **COASTAL PLAIN:**
MOIST TO WET, STIFF TO SOFT, GRAY AND ORANGE,
COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN:
MOIST TO WET, MEDIUM STIFF, HIGHLY PLASTIC, GRAY AND ORANGE, SILTY CLAY (UNDIVIDED COASTAL PLAIN)

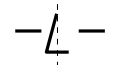
5.4:1

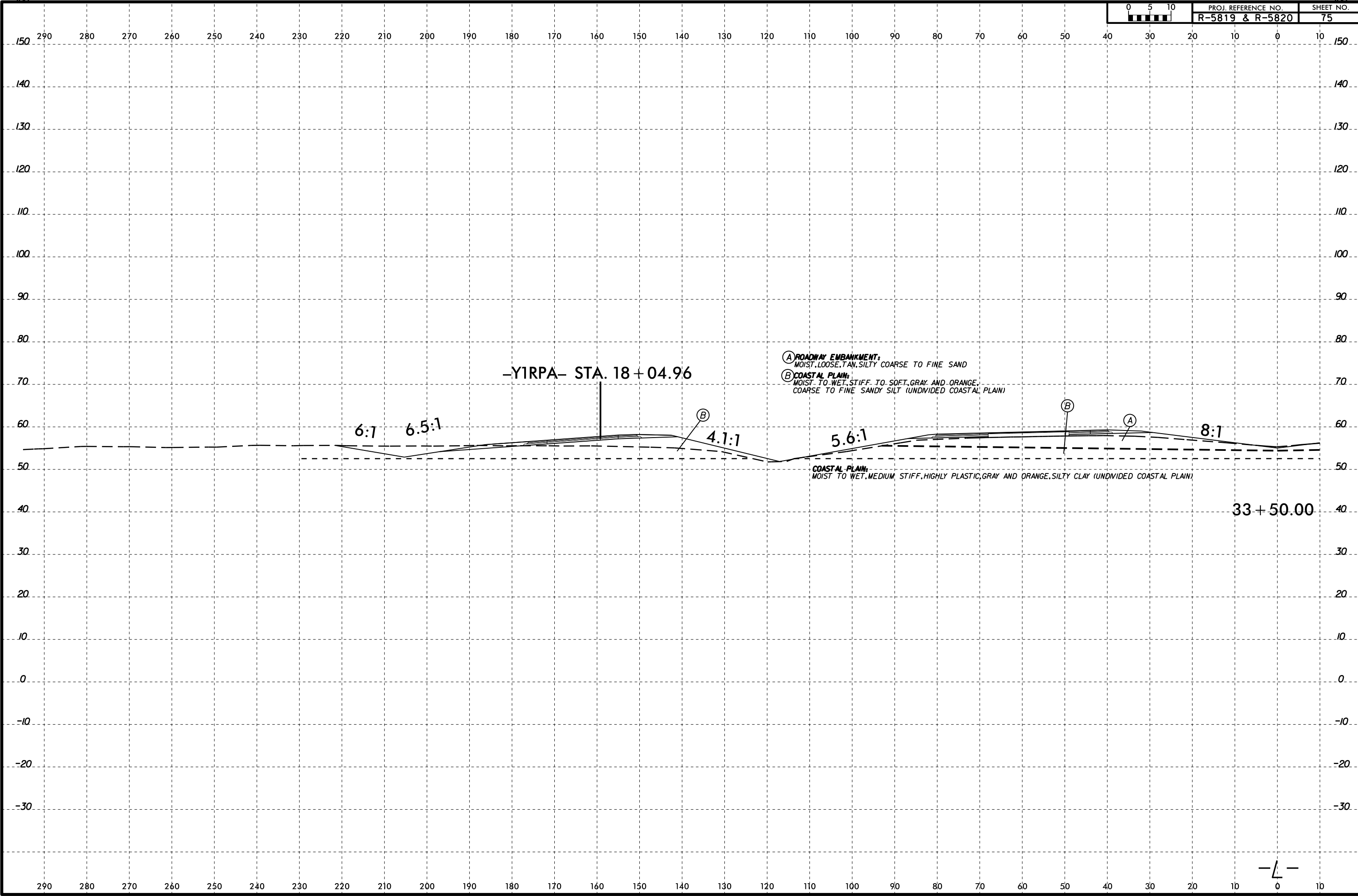
8:1

8:1

5.3:1

33+00.00



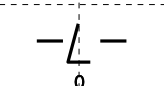


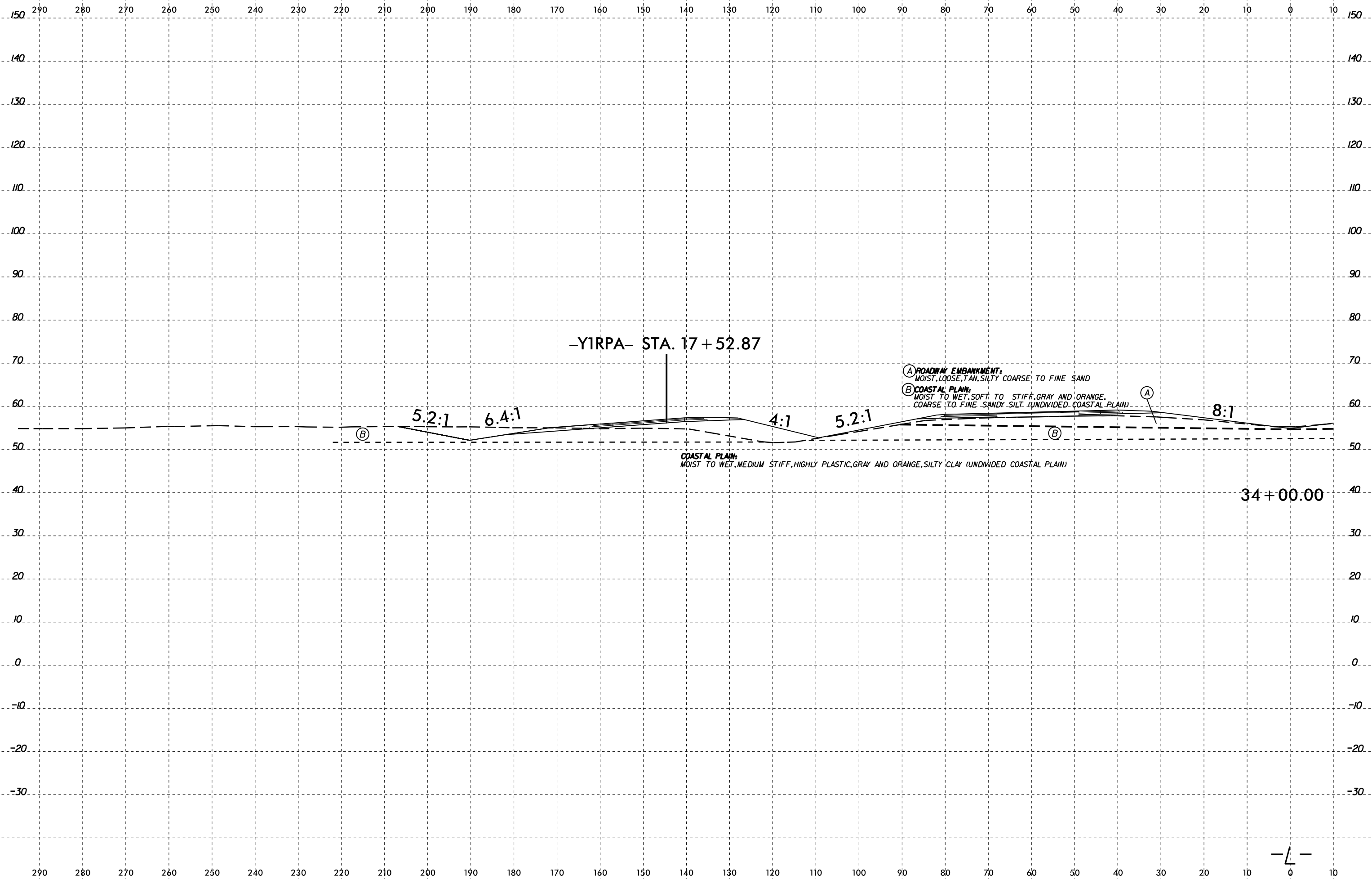
-Y1RPA- STA. 18 + 04.96

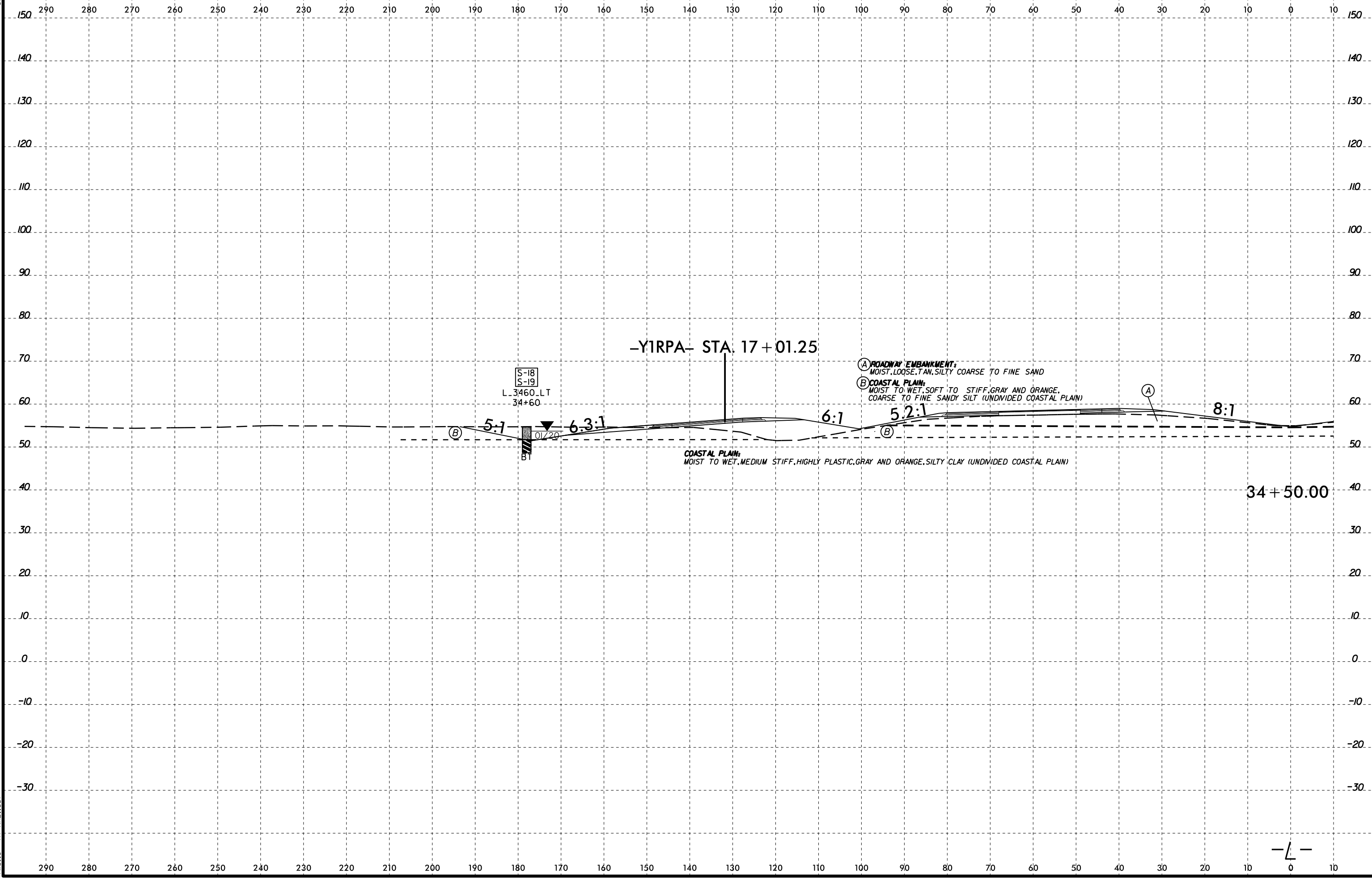
- (A) ROADWAY EMBANKMENT:
MOIST, LOOSE, TAN, SILTY COARSE TO FINE SAND
- (B) COASTAL PLAIN:
MOIST TO WET, STIFF TO SOFT, GRAY AND ORANGE,
COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN:
MOIST TO WET, MEDIUM STIFF, HIGHLY PLASTIC, GRAY AND ORANGE, SILTY CLAY (UNDIVIDED COASTAL PLAIN)

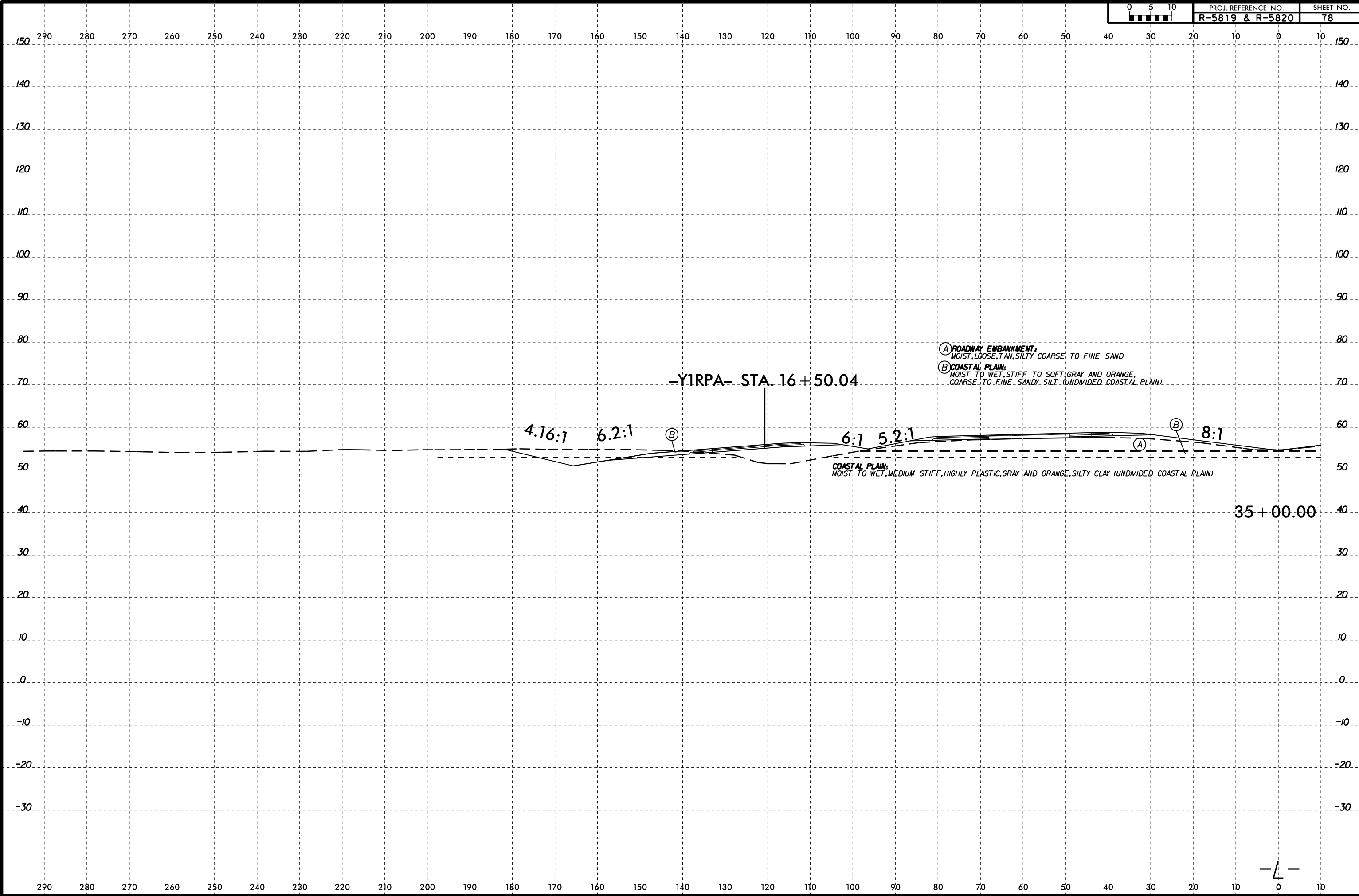
33 + 50.00

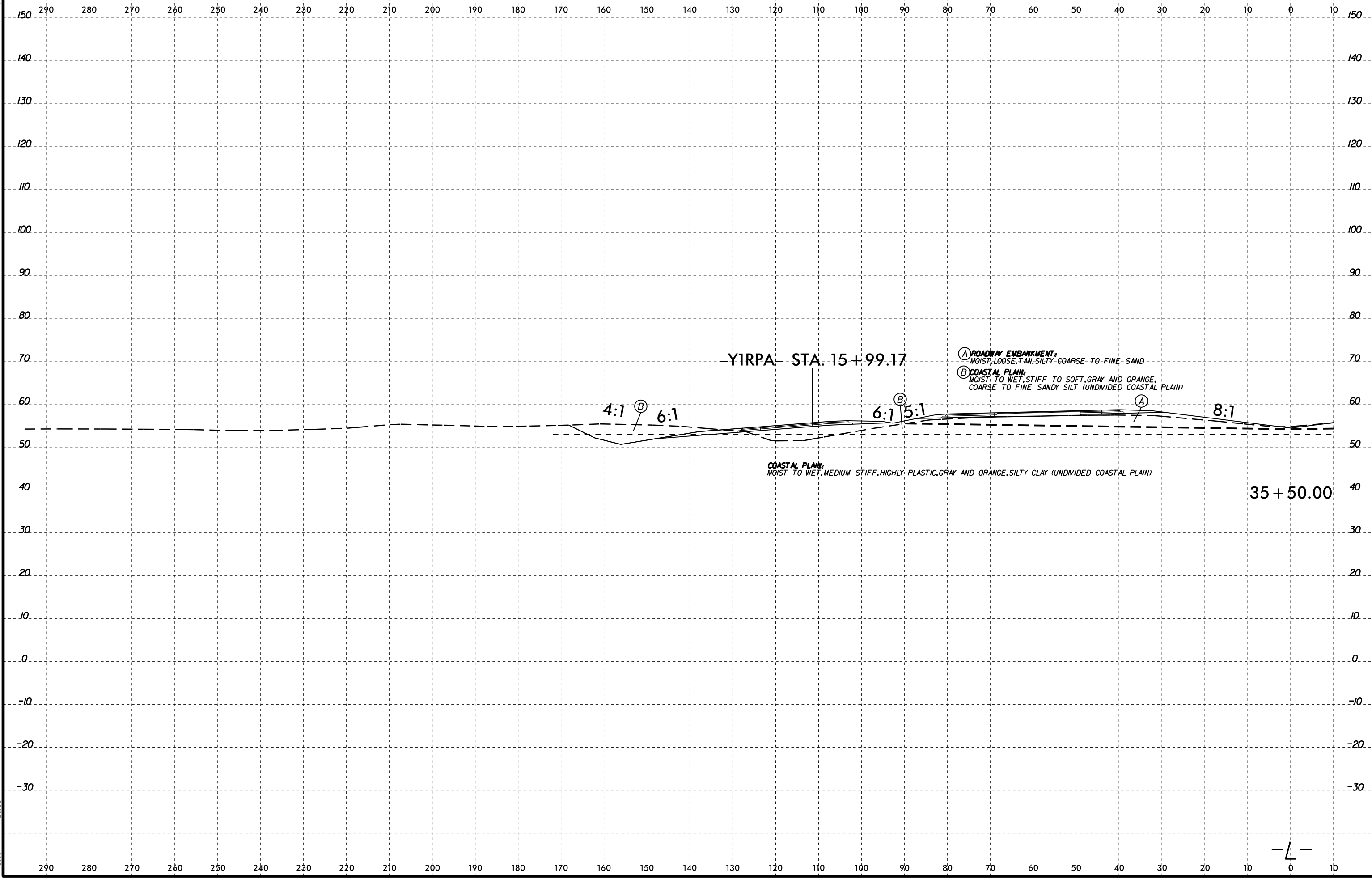






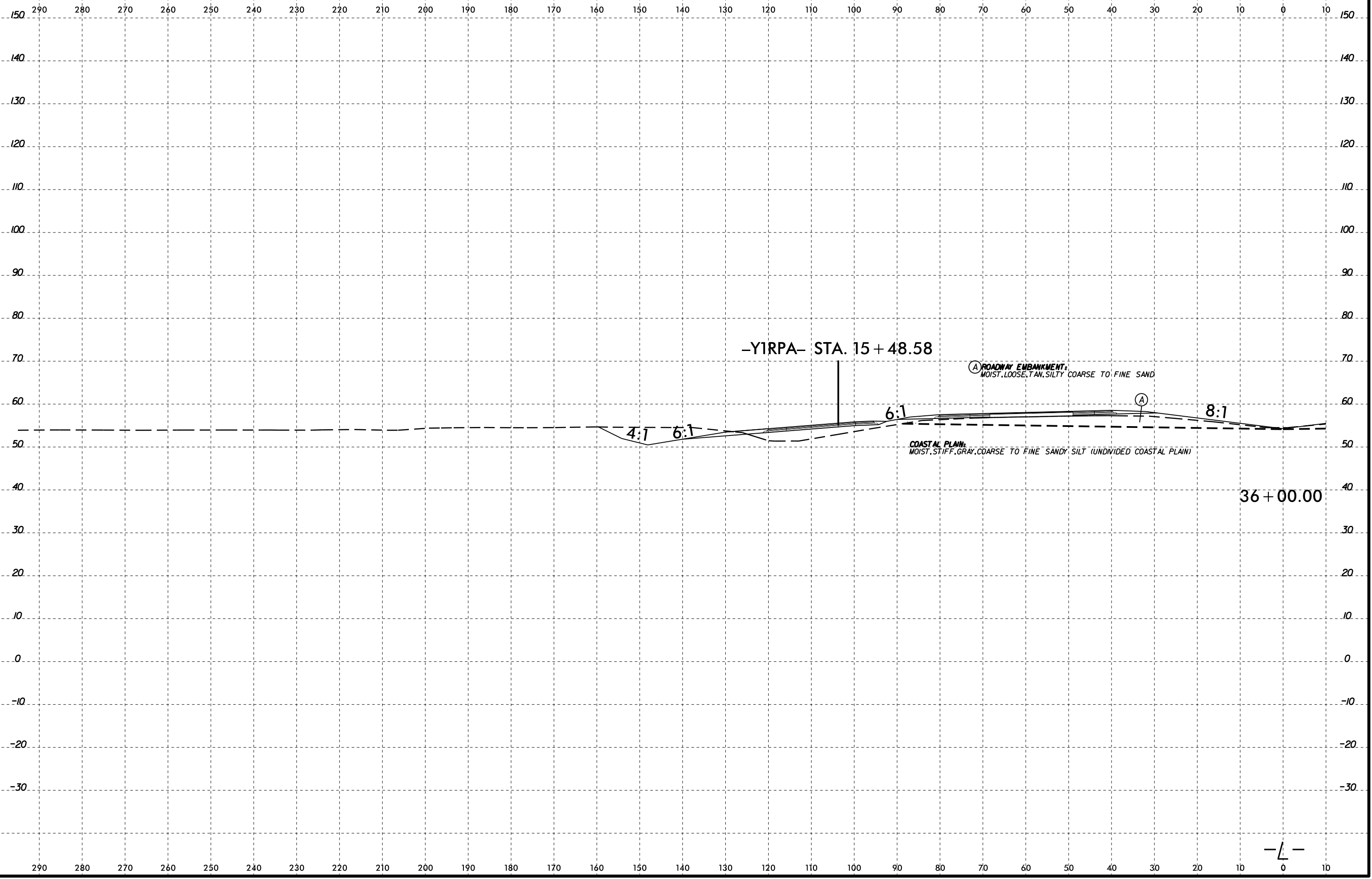
I:\FEB-2015\57
 Wells - At KA211387
 Projects\20190942.024A R-5819 & R-5820 Roadway\Projects\20190942.024A R-5819 & R-5820 Roadway\GEO\TECH\XSS\R5819_R5820_GEO_XS1.L.dgn





6/23/16
I:\FEB-2015\57
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS819-RS820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS1.L.dgn

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	80

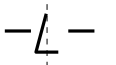


-YRPA- STA. 15 + 48.58

(A) ROADWAY EMBANKMENT
MOIST, LOOSE, TAN, SILTY COARSE TO FINE SAND

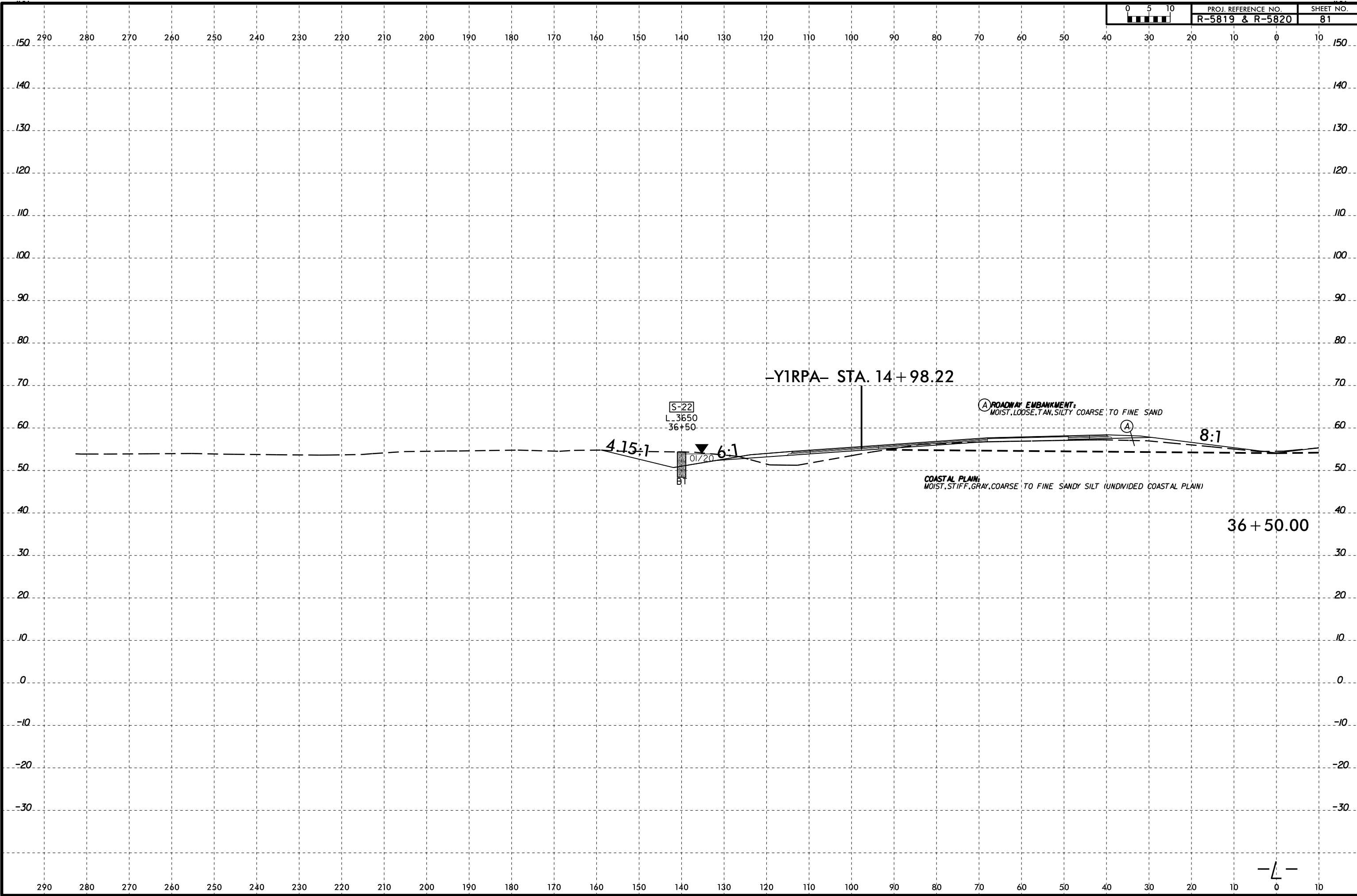
COASTAL PLAIN
MOIST, STIFF, GRAY, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

36 + 00.00



6/23/16

I:\FEB-2015\57
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL.L.dgn

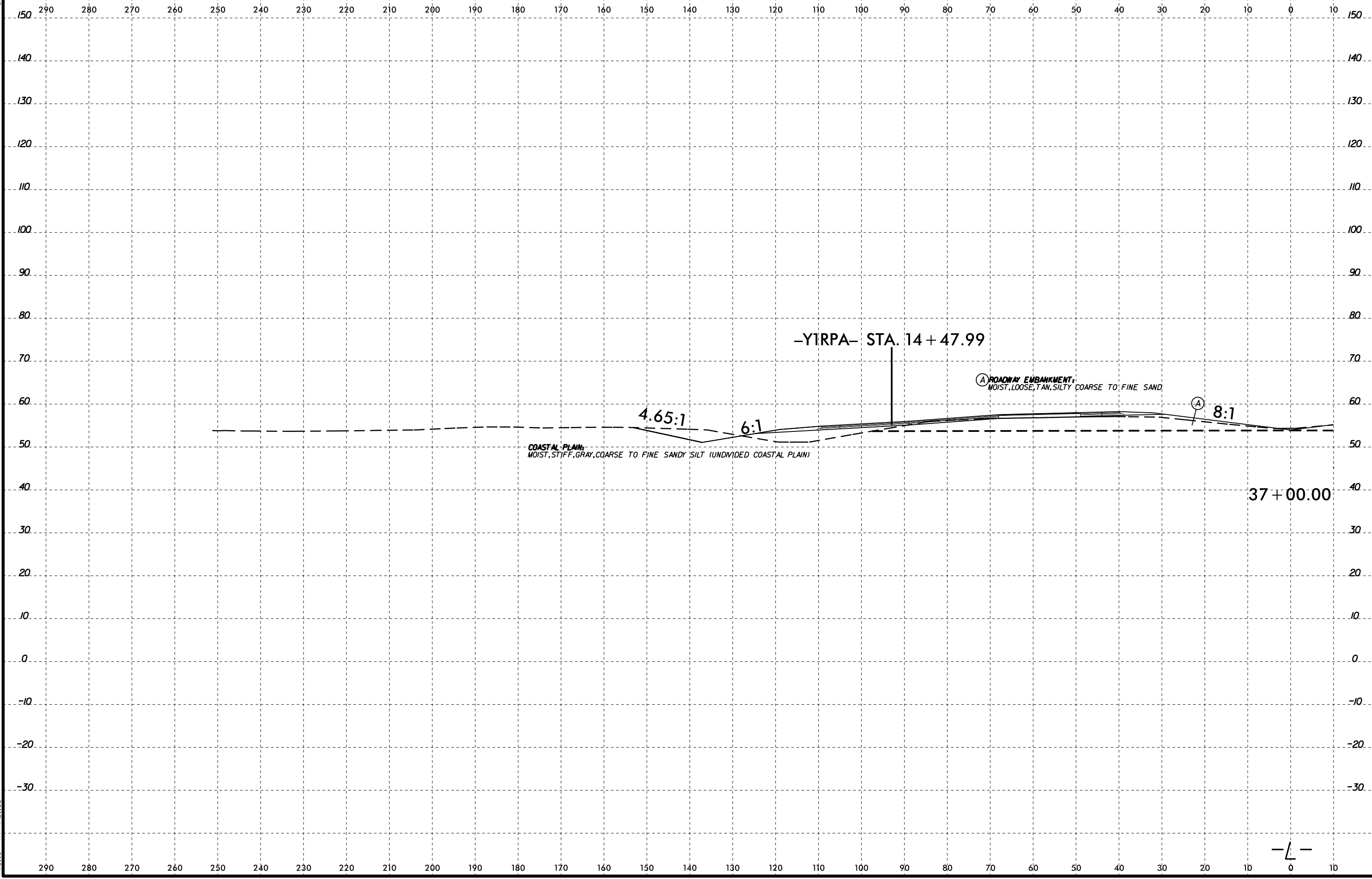


-L-

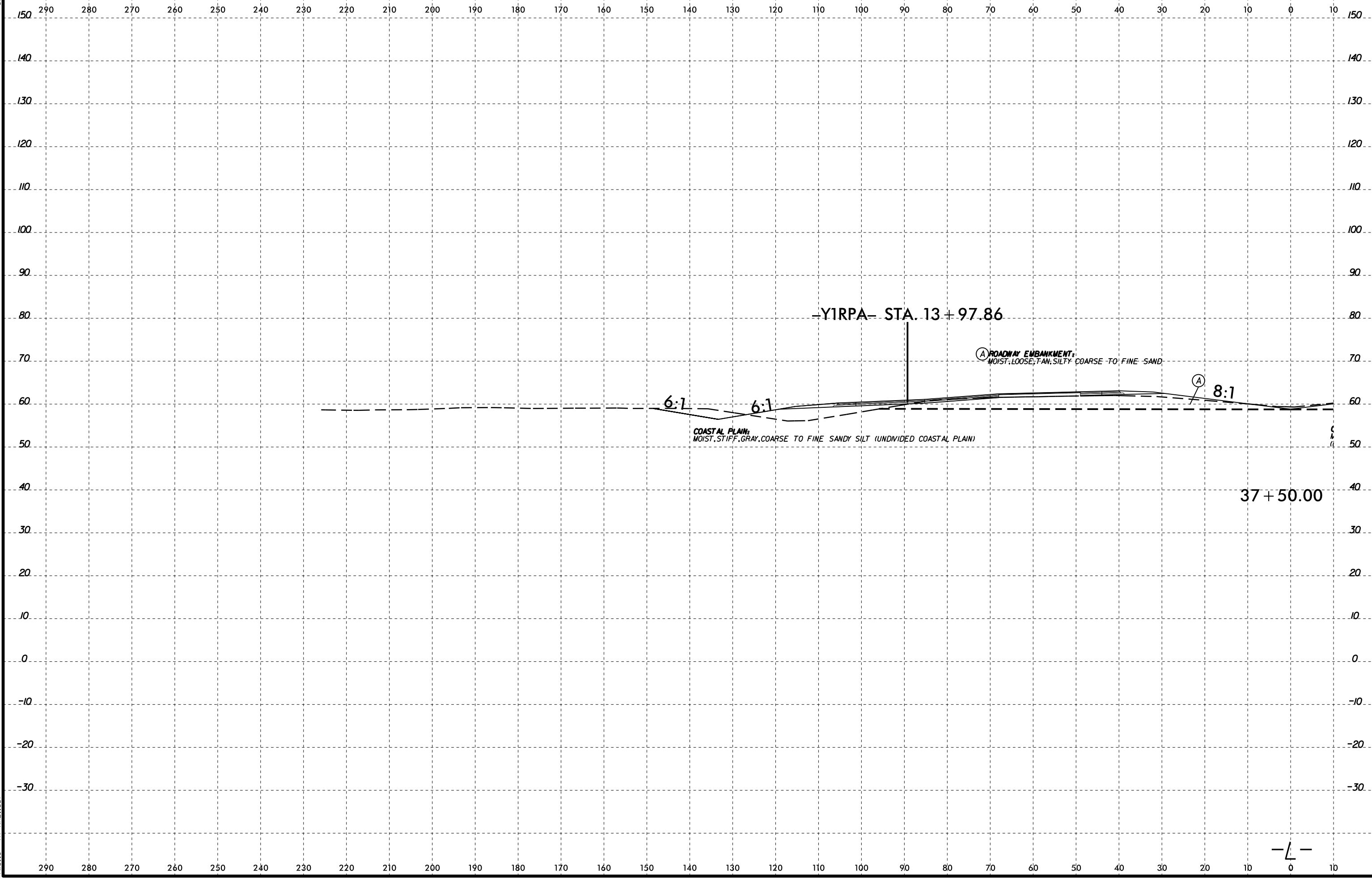
6/23/16

I:\FEB-2015\57
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\5819-R5820_GEO.XSL.dgn

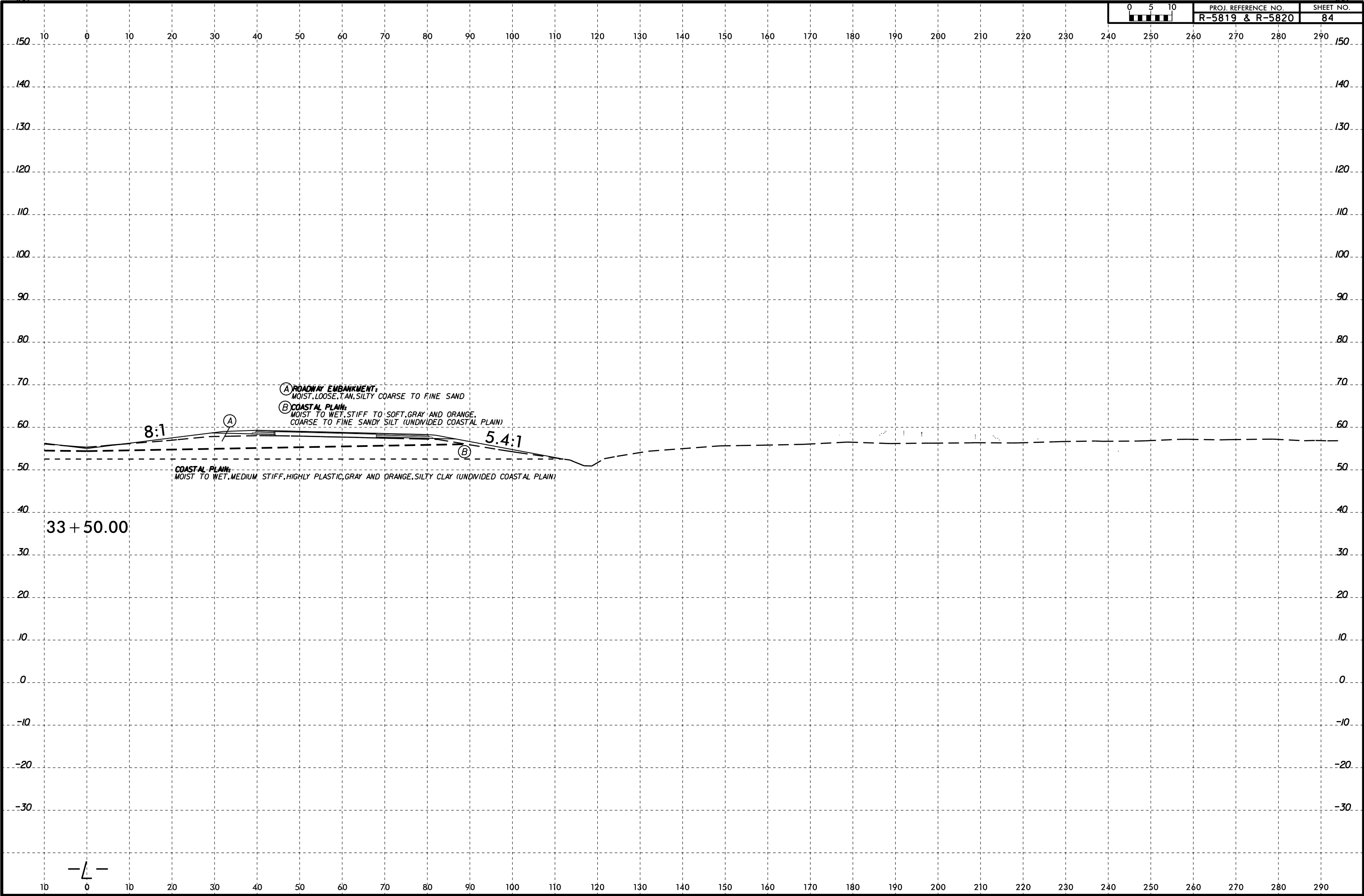
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	82



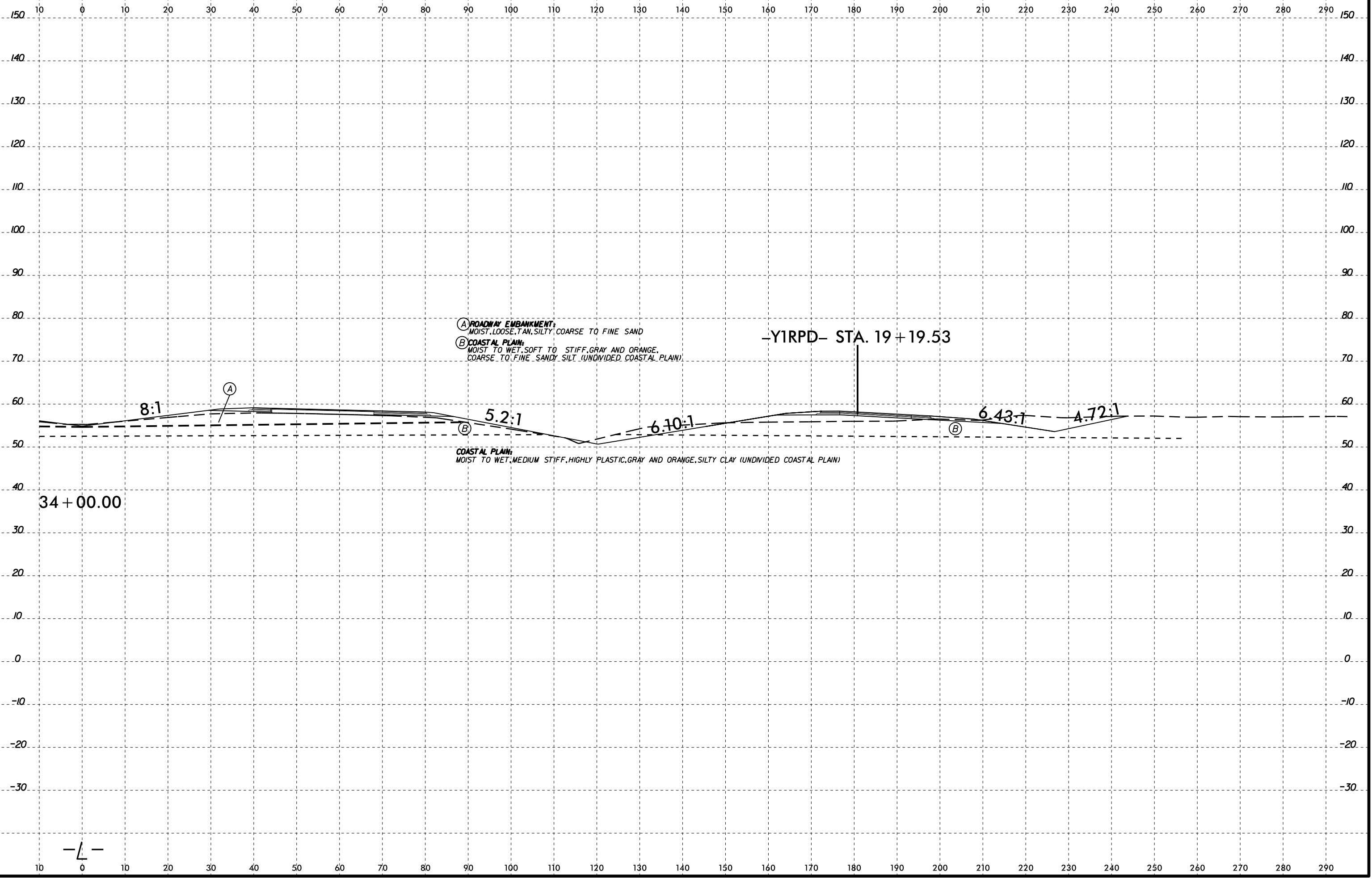
-L-



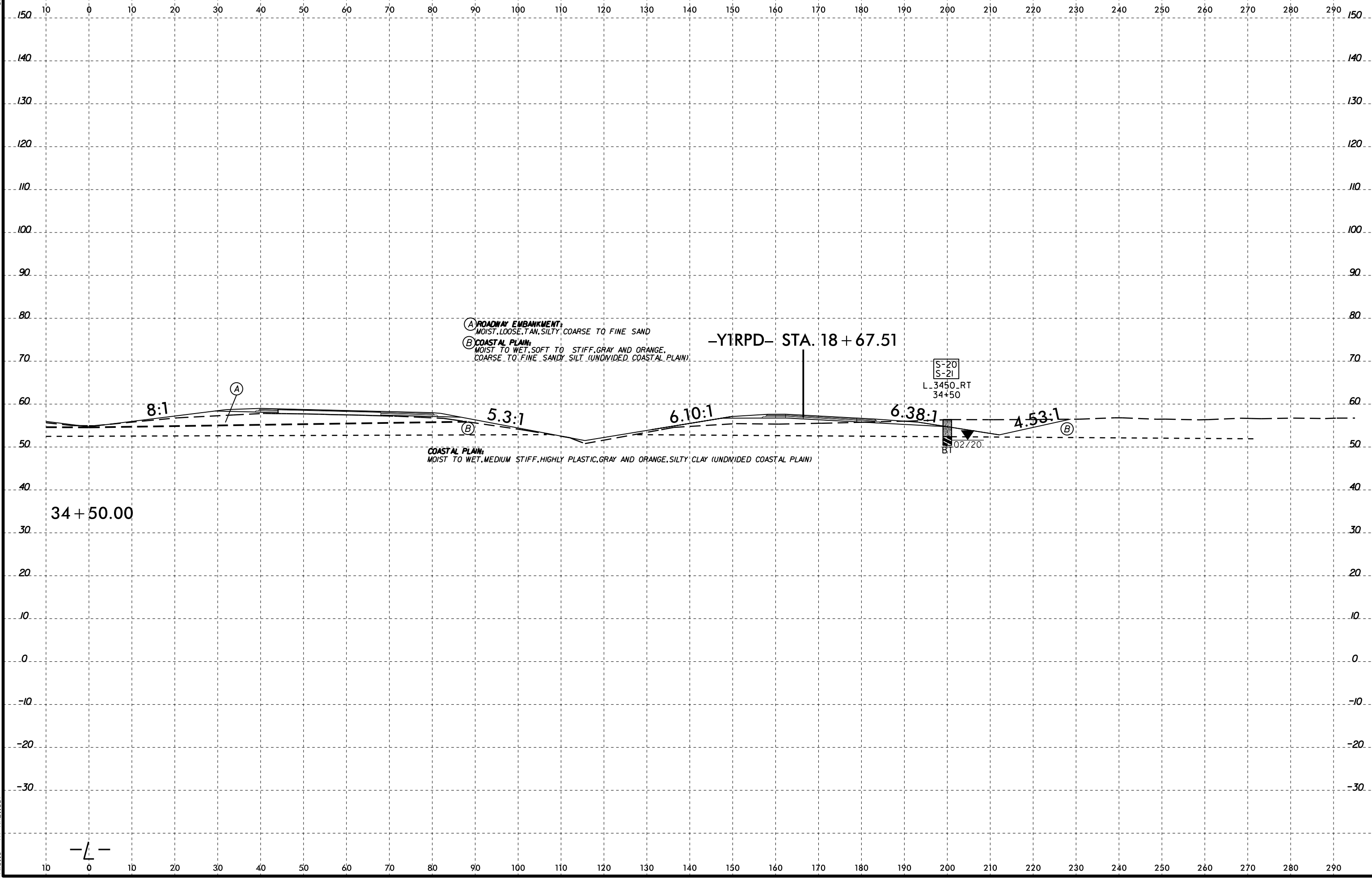
6/23/16
I:\FEB-2015\57
W\shere\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\TECH\XSS\RS5819-R5820_GEO_XS1.L.dgn

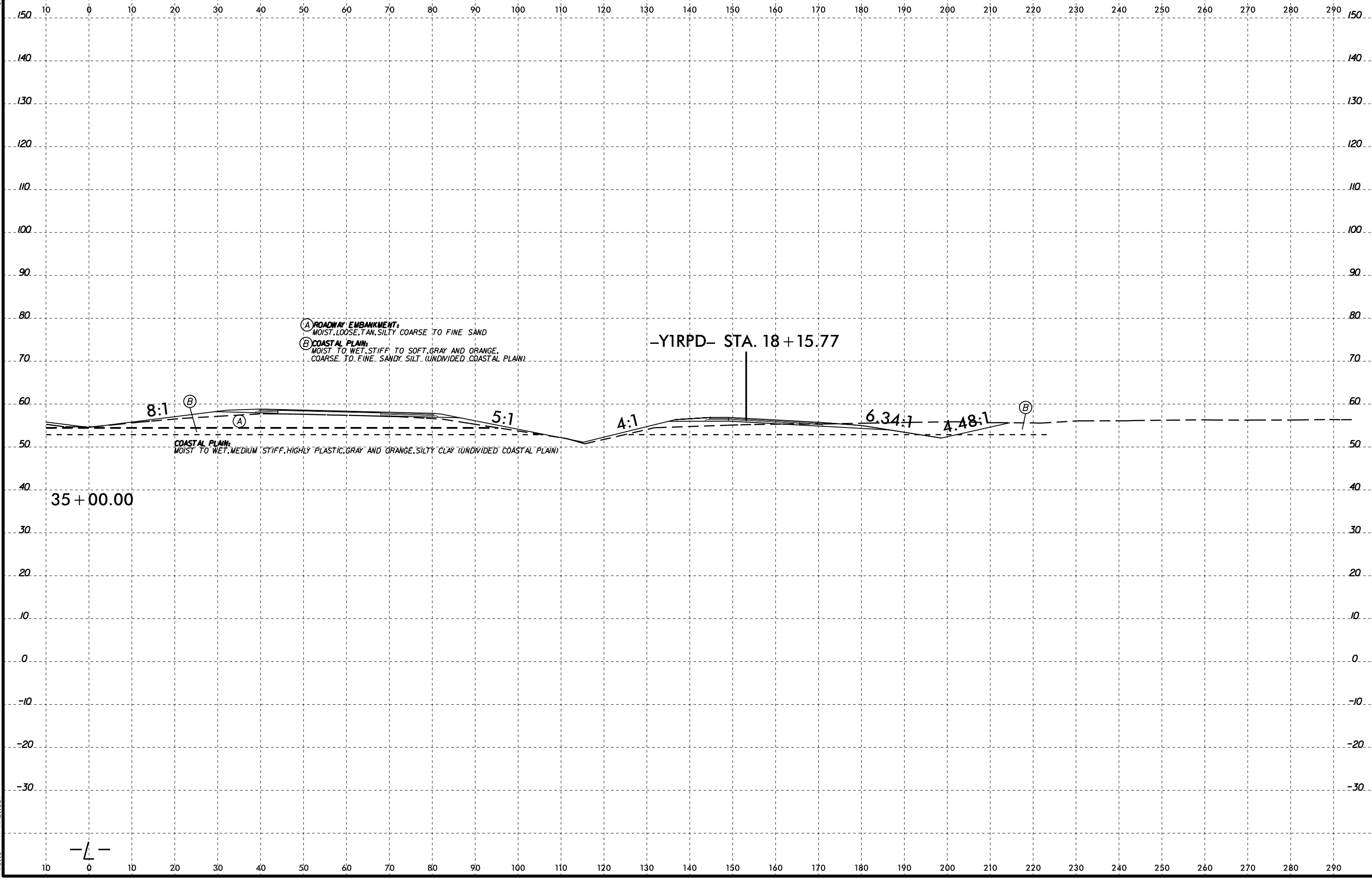


6/23/16
I:\FEB-2015\57
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\CADD_GEO.XSL.L.dgn



6/23/16
I:\FEB-2015\57
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS1.L.dgn





(A) ROADWAY EMBANKMENT:
MOIST, LOOSE, TAN, SILTY COARSE TO FINE SAND

(B) COASTAL PLAIN:
MOIST TO WET, STIFF TO SOFT, GRAY AND ORANGE,
COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

-Y1RPD- STA. 18+15.77

8:1

5:1

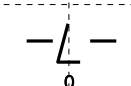
4:1

6.34:1

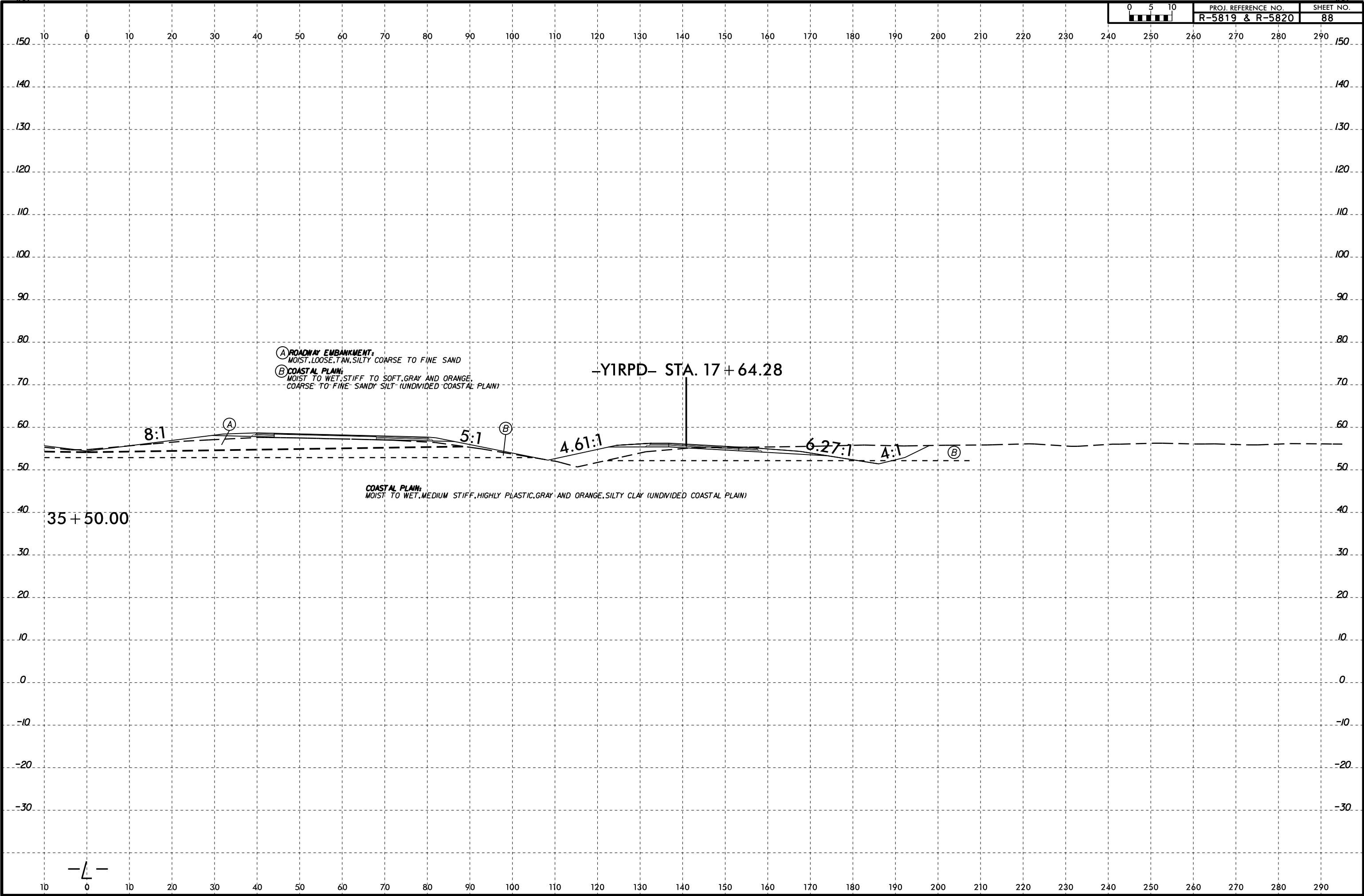
4.48:1

35+00.00

COASTAL PLAIN:
MOIST TO WET, MEDIUM STIFF, HIGHLY PLASTIC, GRAY AND ORANGE, SILTY CLAY (UNDIVIDED COASTAL PLAIN)



6/23/16
I:\FEB-2015\57
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL\L.dgn



- (A) ROADWAY EMBANKMENT;
MOIST, LOOSE, TAN, SILTY COARSE TO FINE SAND
- (B) COASTAL PLAIN;
MOIST TO WET, STIFF TO SOFT, GRAY AND ORANGE,
COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

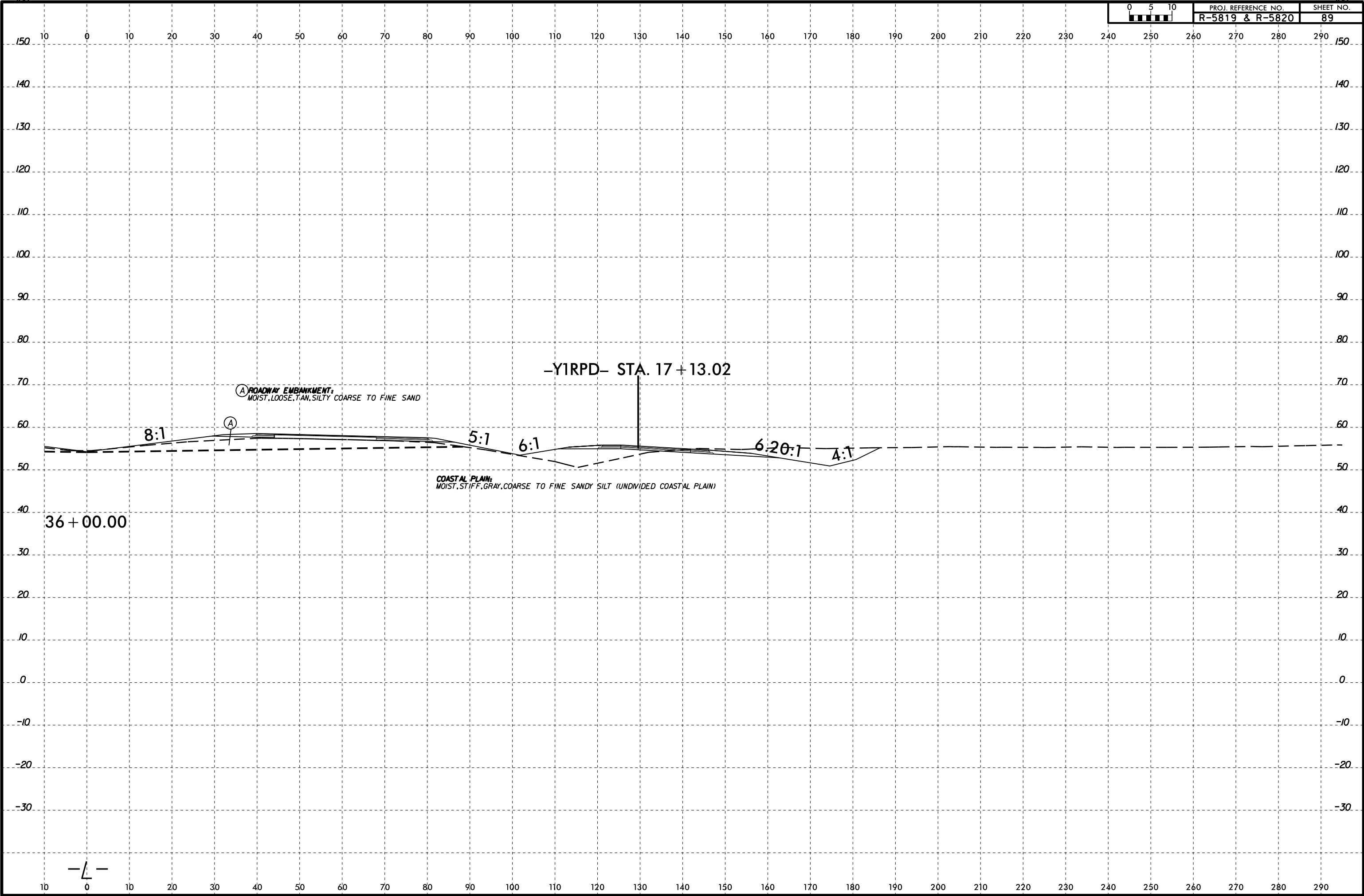
-YIRPD- STA. 17+64.28

COASTAL PLAIN;
MOIST TO WET, MEDIUM STIFF, HIGHLY PLASTIC, GRAY AND ORANGE, SILTY CLAY (UNDIVIDED COASTAL PLAIN)

35+50.00



6/23/16
I:\FEB-2015\57
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\CADD_GEO.XSL.L.dgn



-Y1RPD- STA. 17 + 13.02

ROADWAY EMBANKMENT:
MOIST, LOOSE, TAN, SILTY COARSE TO FINE SAND

COASTAL PLAIN:
MOIST, STIFF, GRAY, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

8:1

5:1

6:1

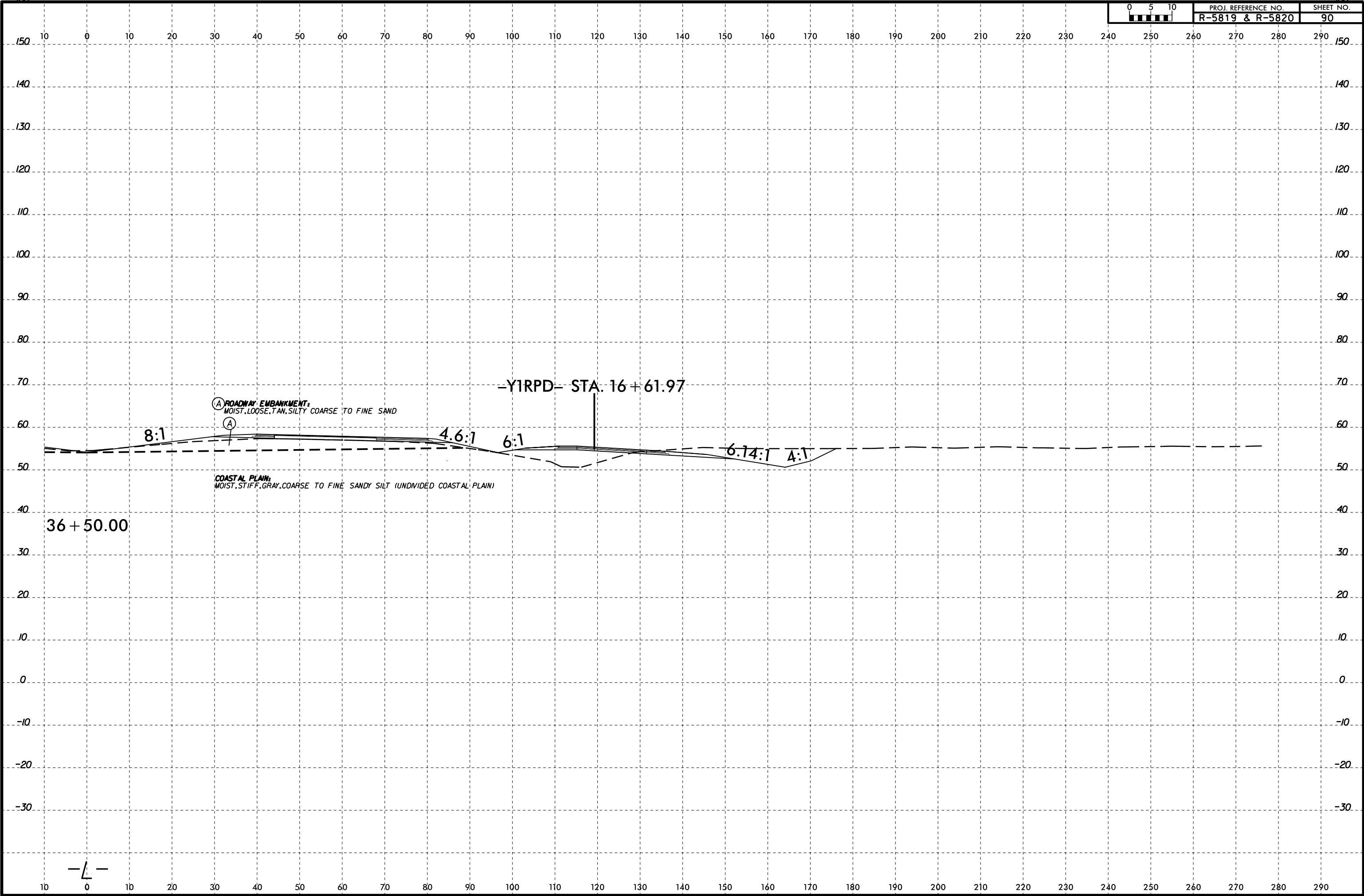
6:20:1

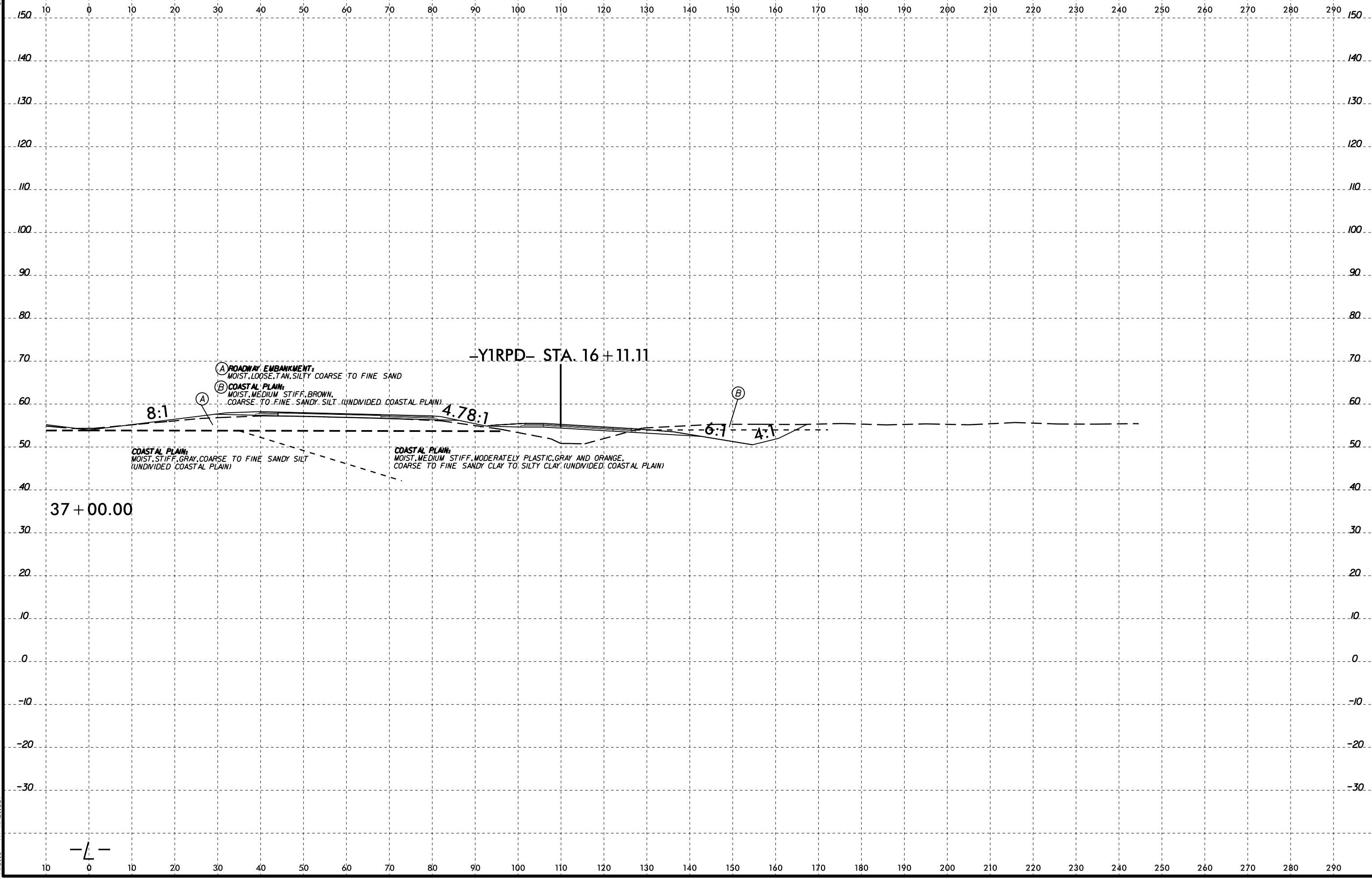
4:1

36 + 00.00



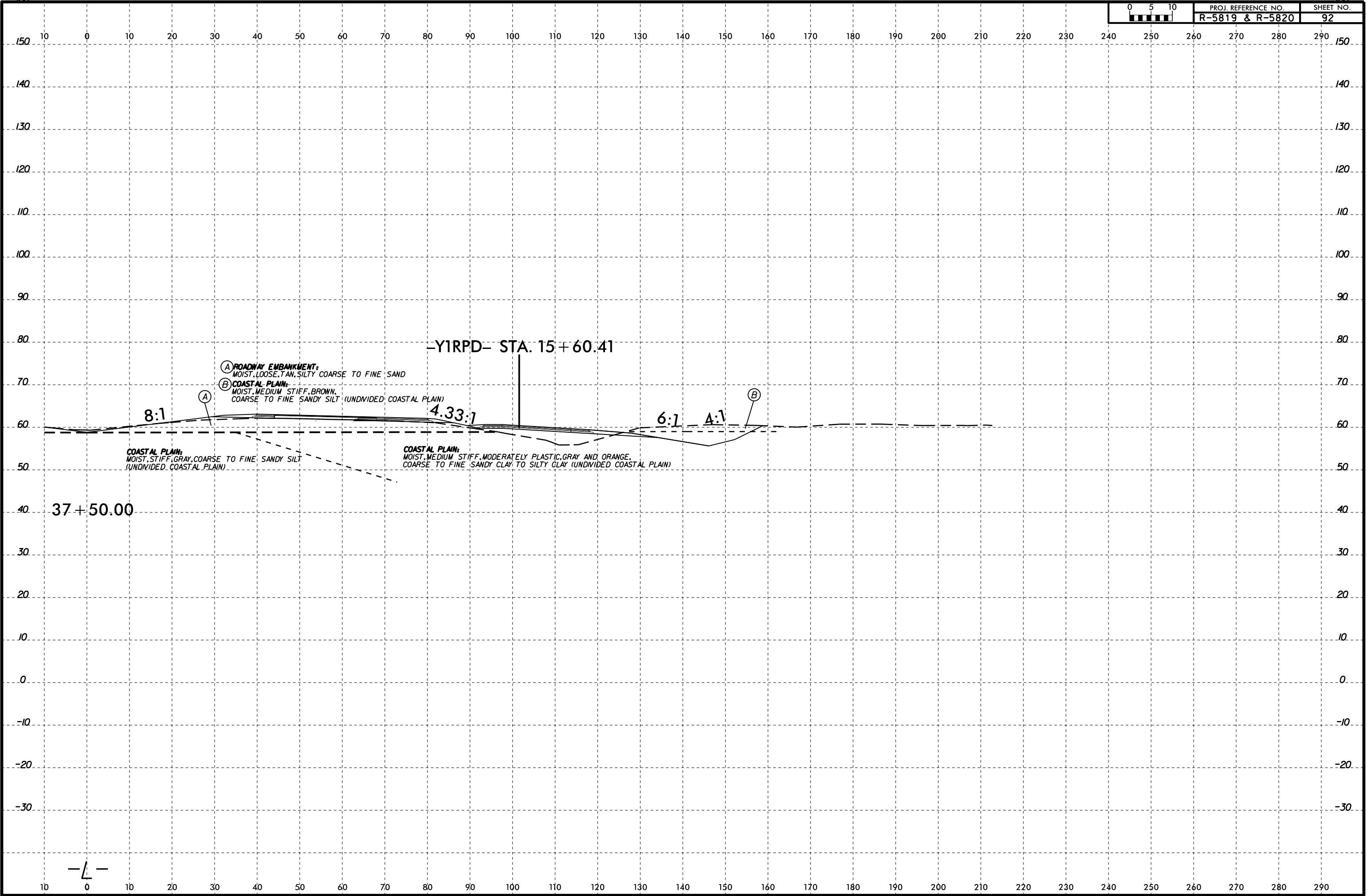
6/23/16
I:\FEB-2015\57
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS1.L.dgn

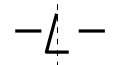
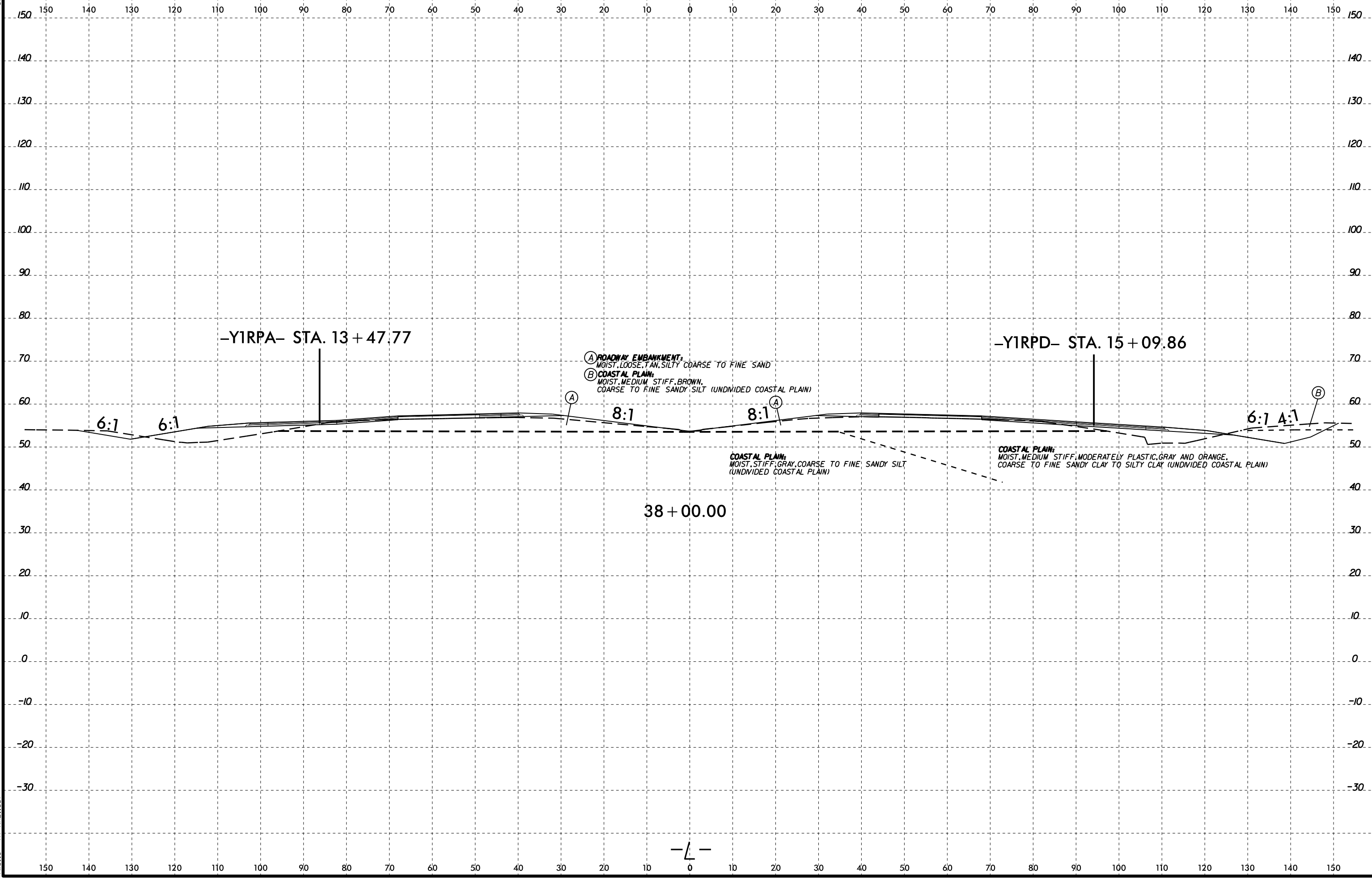




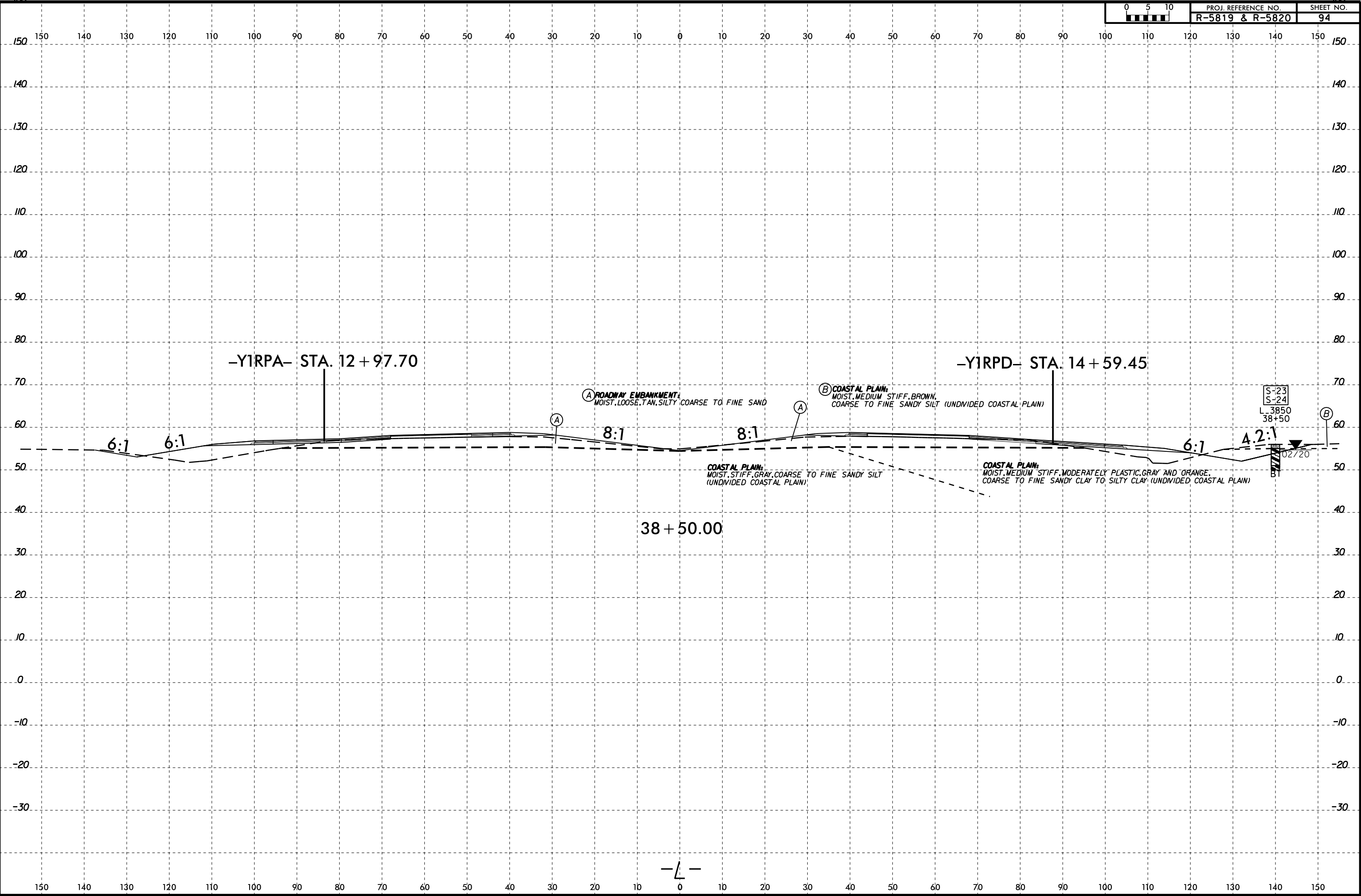
I:\FEB-2015\57
 W\shere\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\TECH\XSEC\R5819_R5820_GEO_XS1.L.dgn
 Wells - A1 KA211387



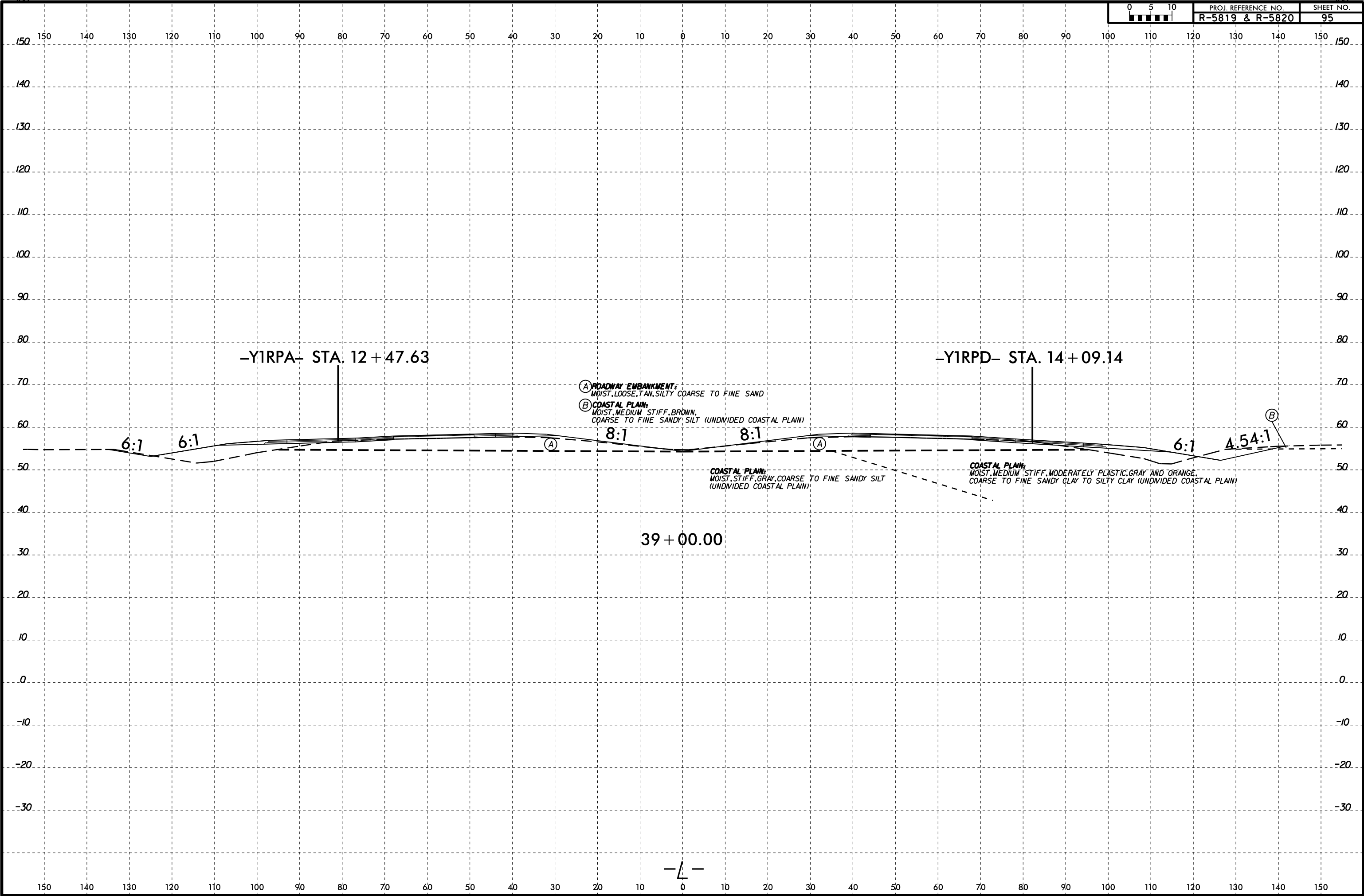




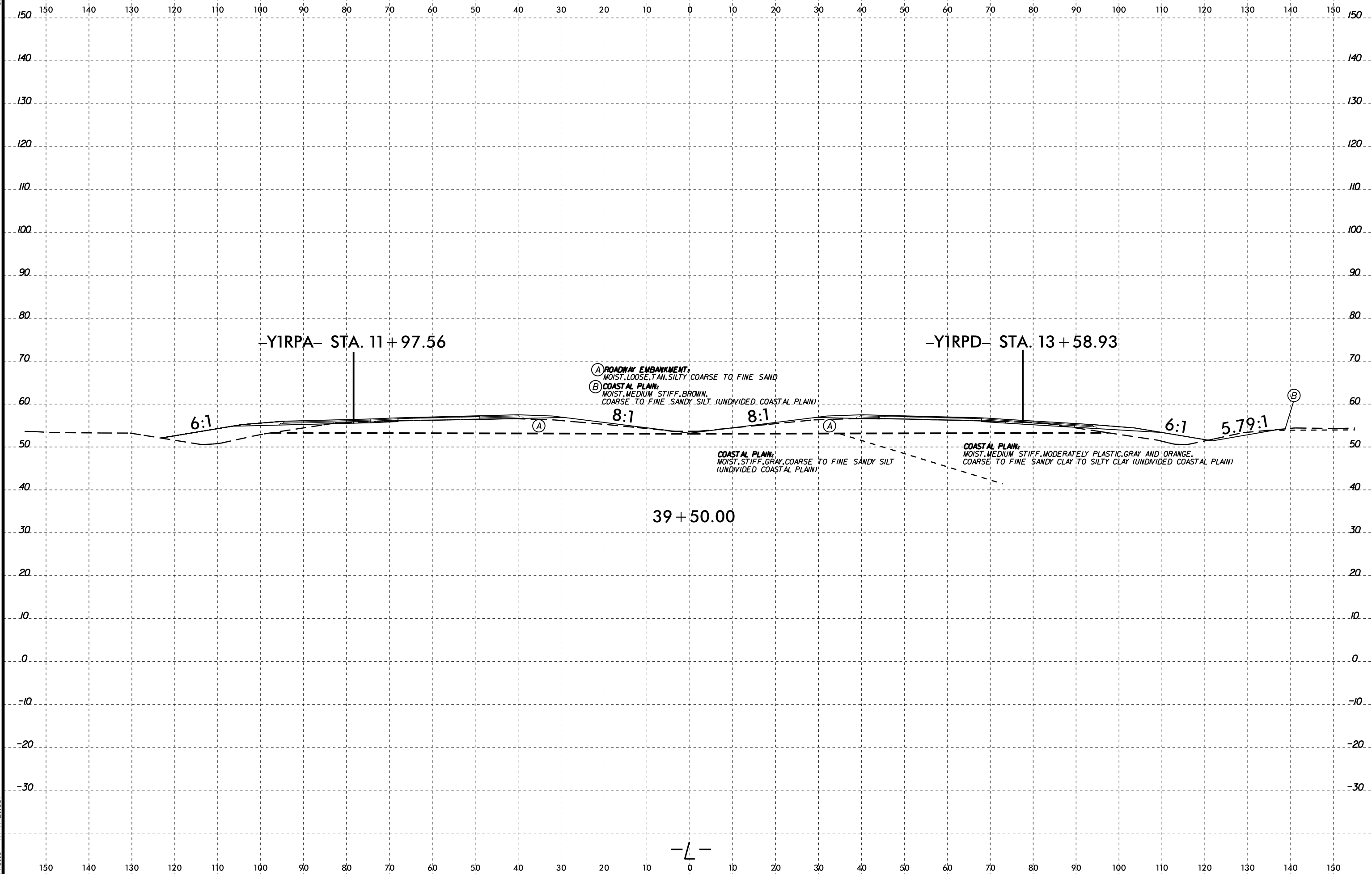
6/23/16
I:\FEB-2015\57
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\TECH\XSC\R5819_R5820_GEO_XS1.L(2).dgn

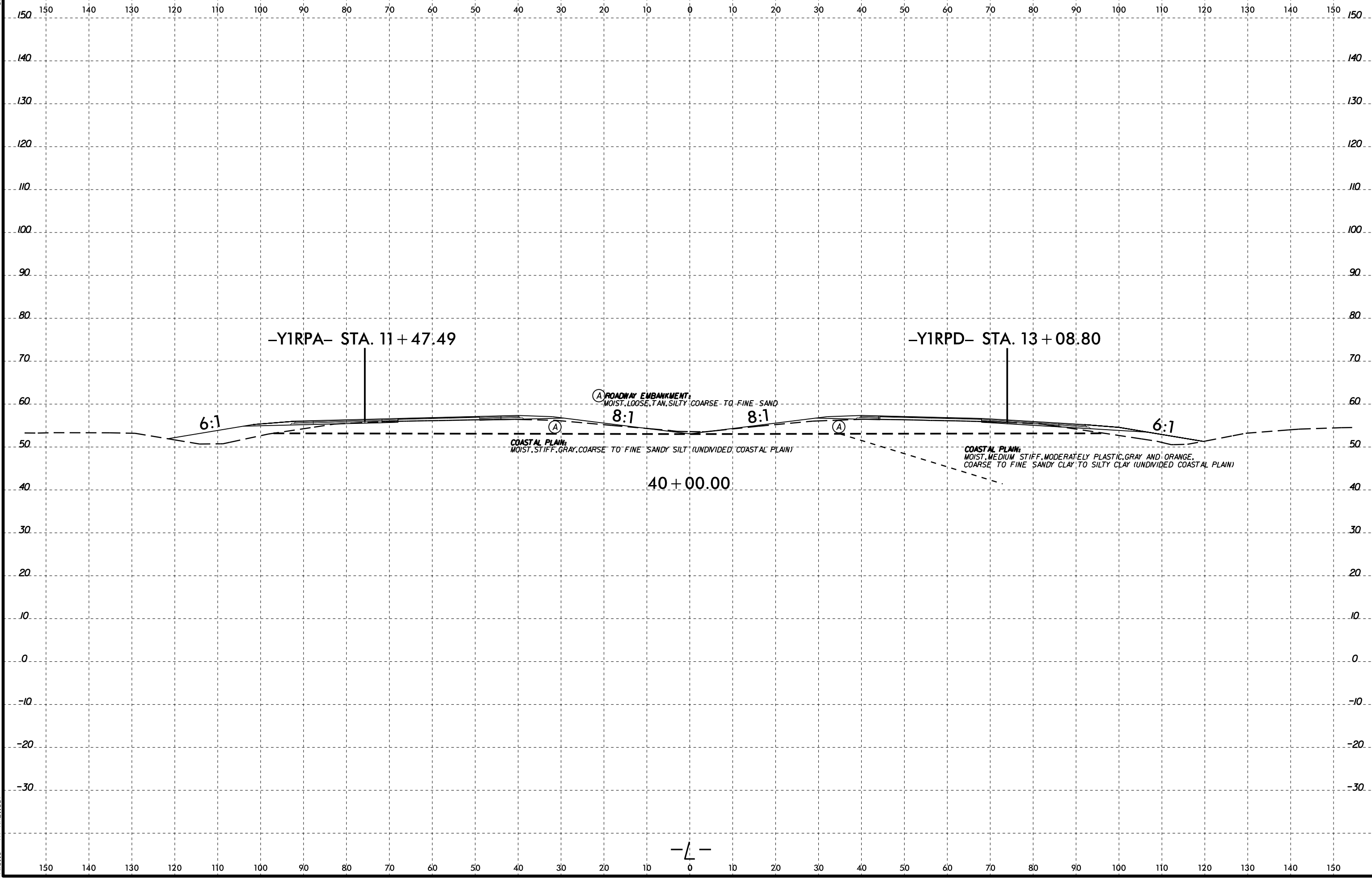


6/23/16
I:\FEB-2015\5820\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\GEO\RDW\CADD_GEO\TECH\XSEC\R5819_R5820_GEO_XS1.L(2).dgn



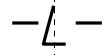
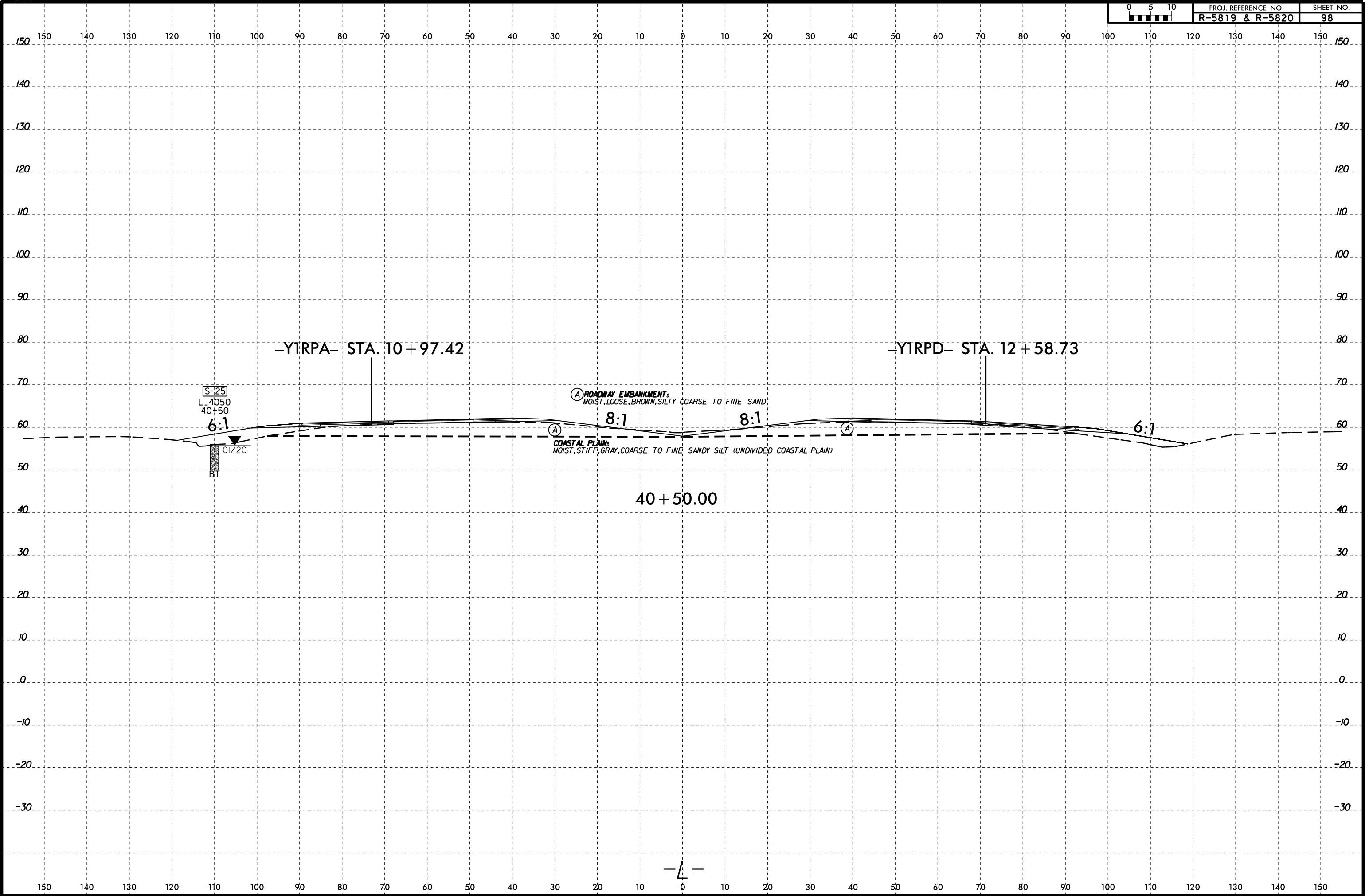
15-FEB-2021 15:58
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\TECH\XSC\R5819_R5820_GEO_XS1.L(2).dgn
6/23/16

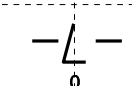
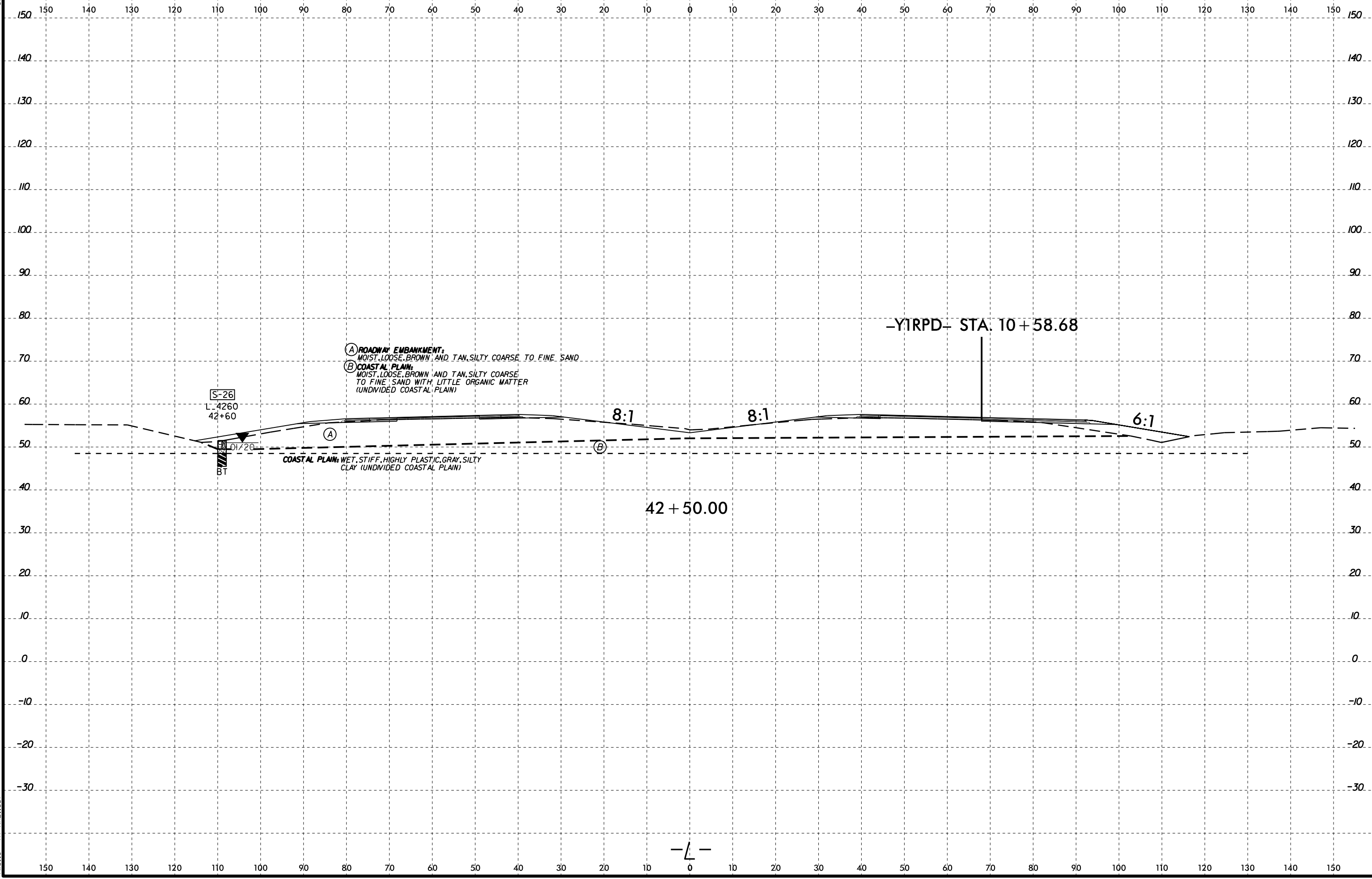


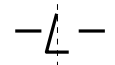
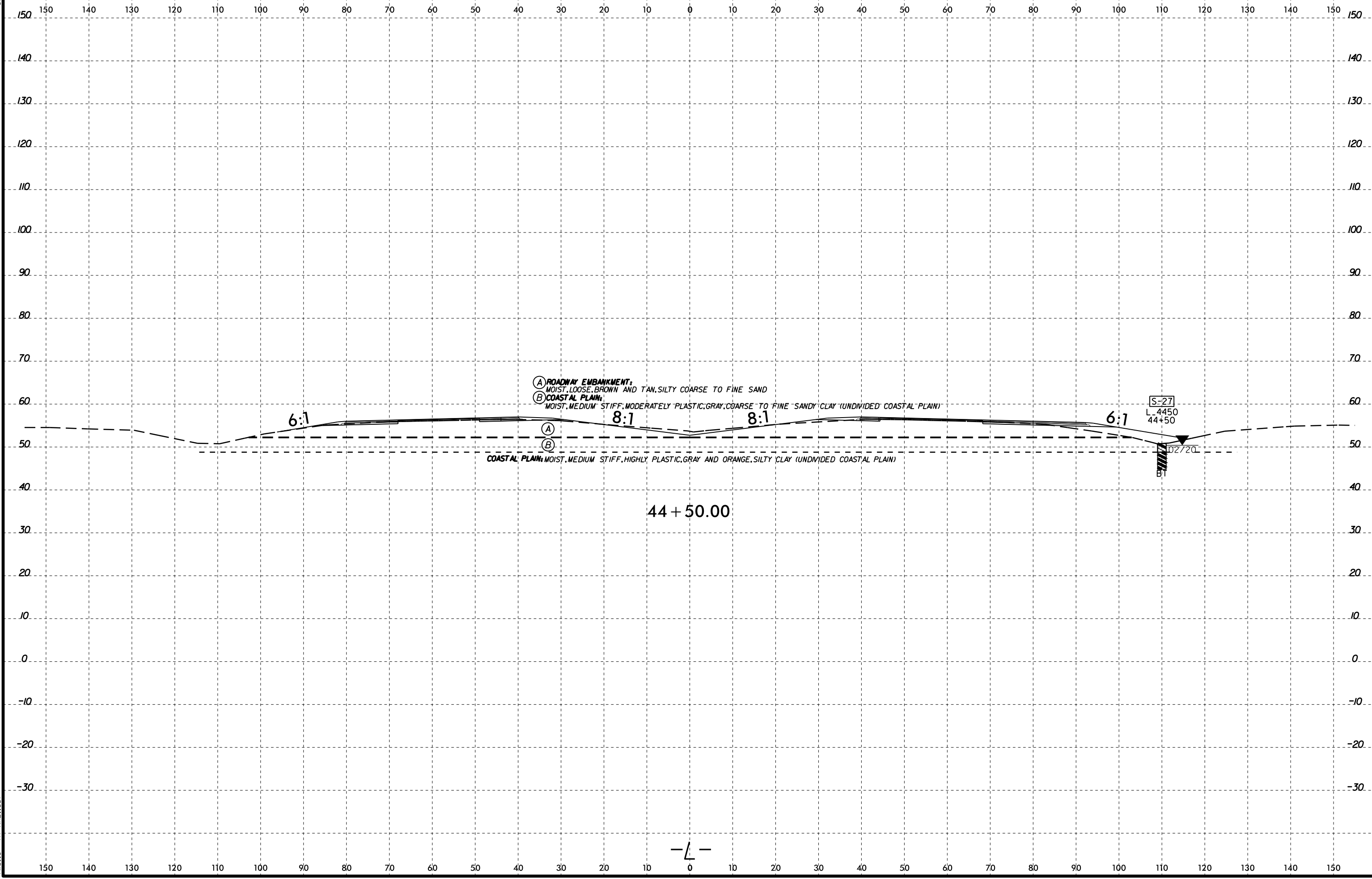


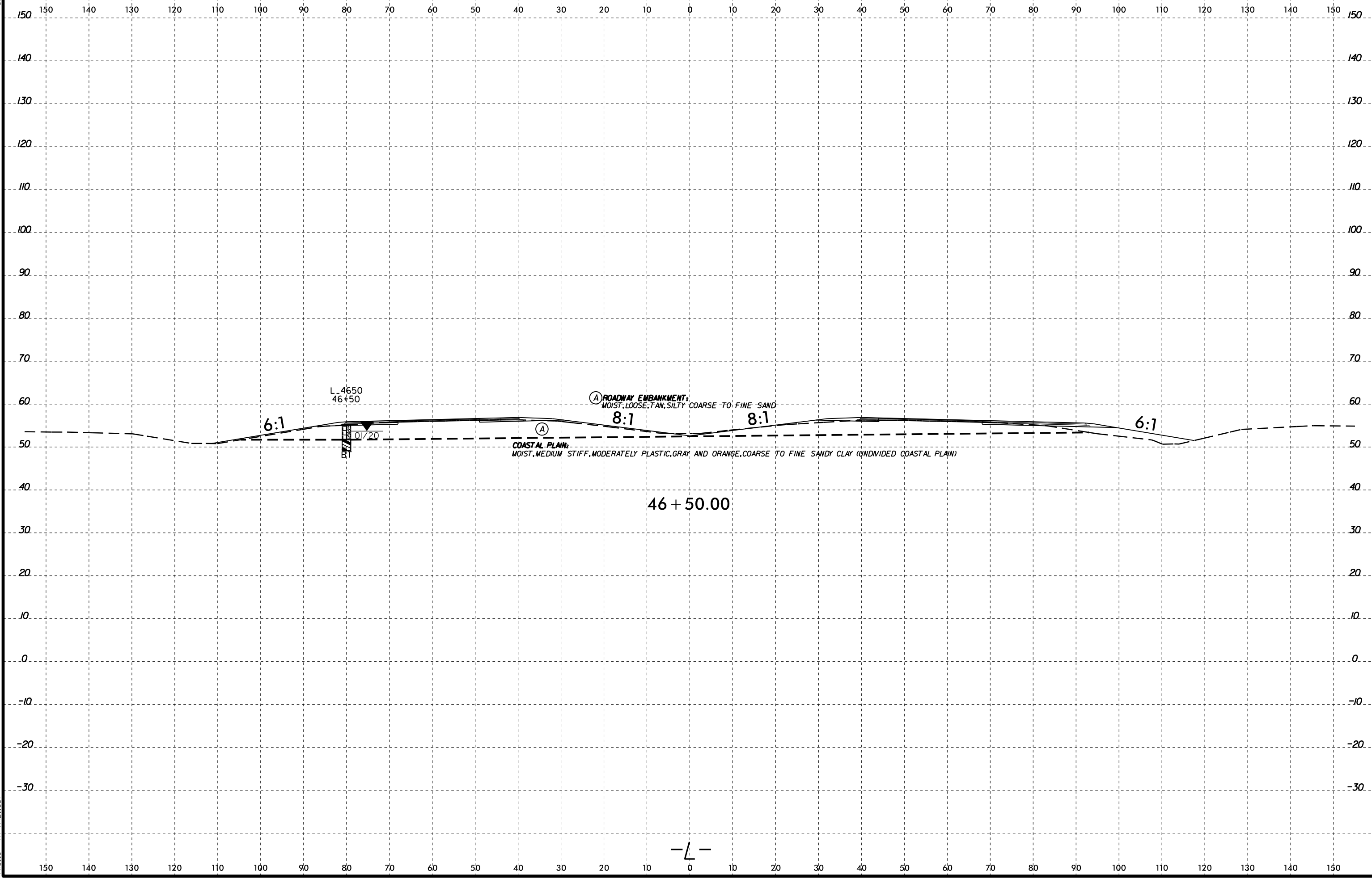
I:\FEB-2015\5819 & R-5820 Roadway\Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\GEO\RDW\CADD\GEO\TECH\XSC\R5819_R5820_GEO_XS1.L(2).dgn
 W:\shore\GEO\TECH\XSC\KAZ11387

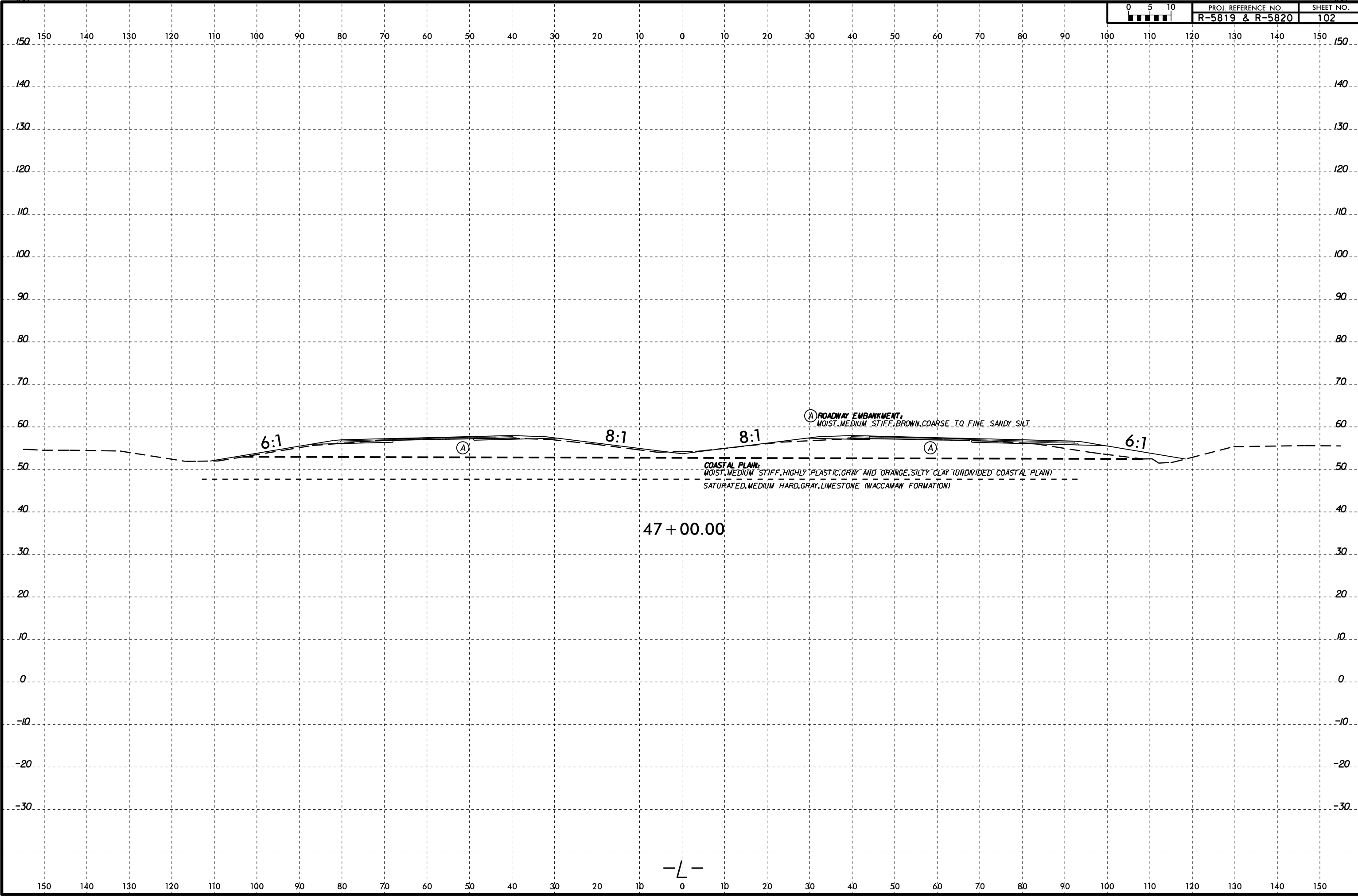
I:\FEB-2015\58-20\GEO\GEO\TECHNICAL\Projects\Active\Projects\20190942.0244 R-5819 & R-5820 Roadway\Roadway\R5819-R5820_GEO_GEO\GEO\GEO_XSI.LL(2).dgn
 6/23/16
 15-FEB-2015 15:58
 [W:\Users\A1_KA211387]

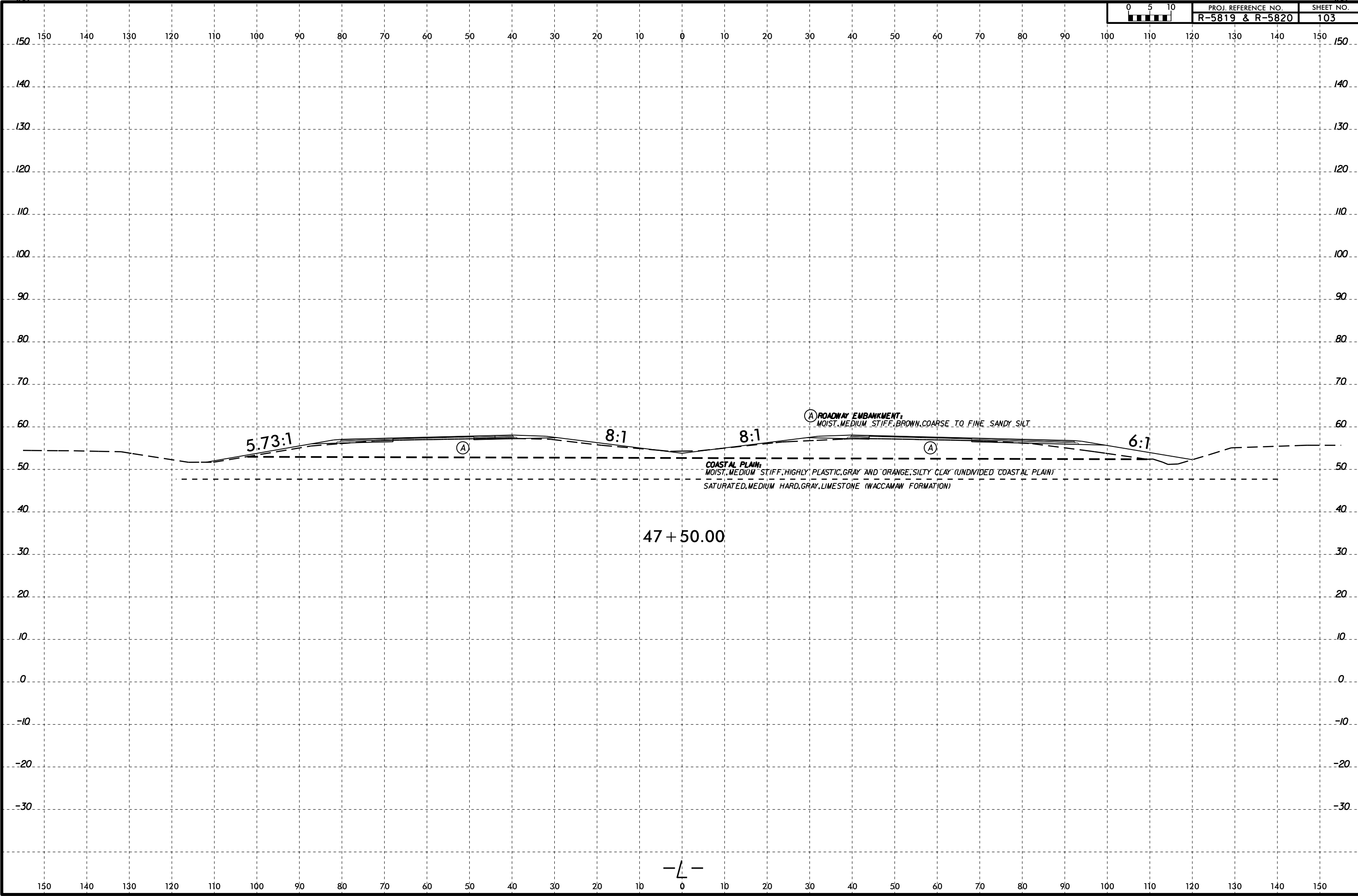


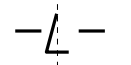
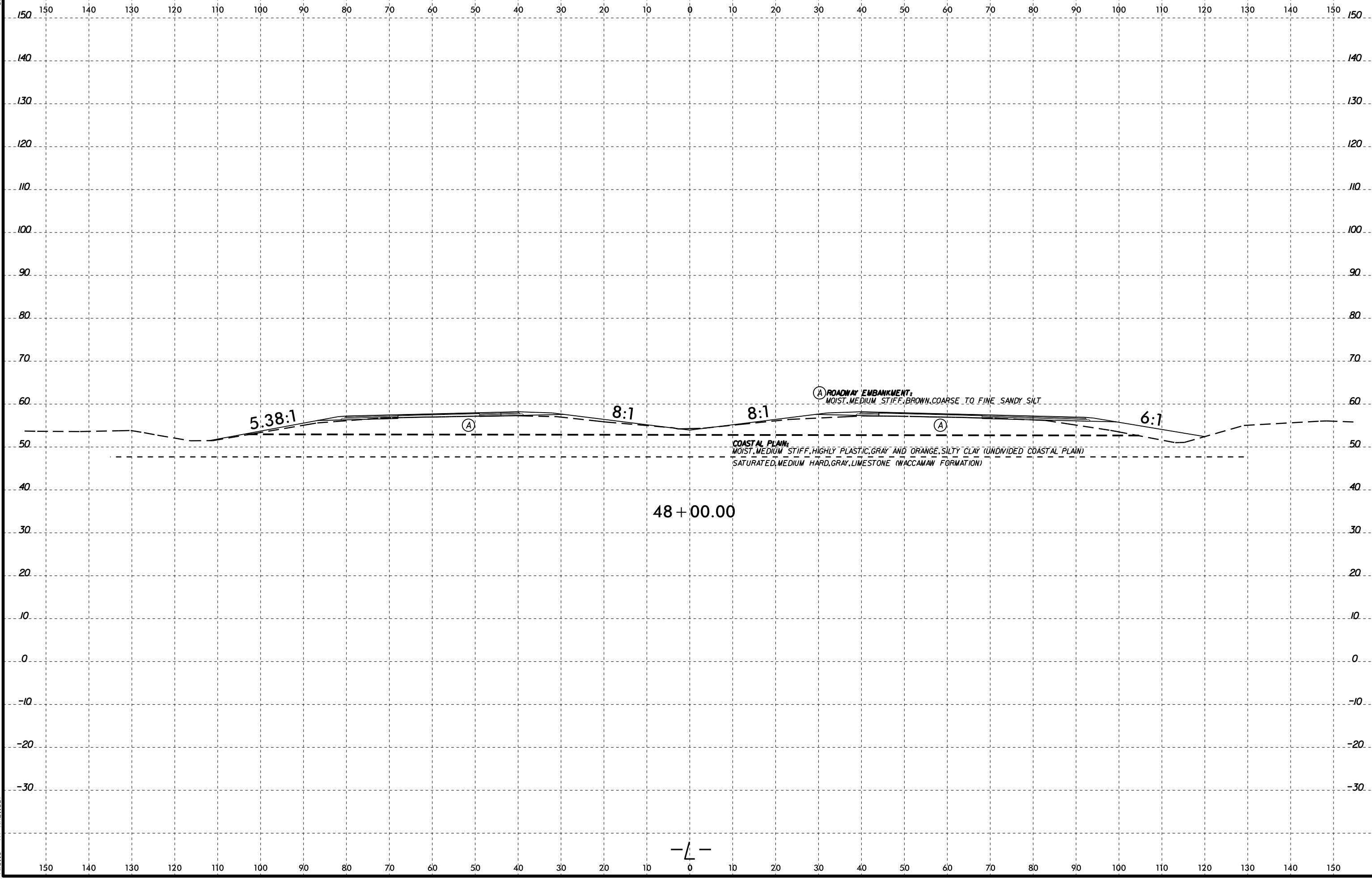


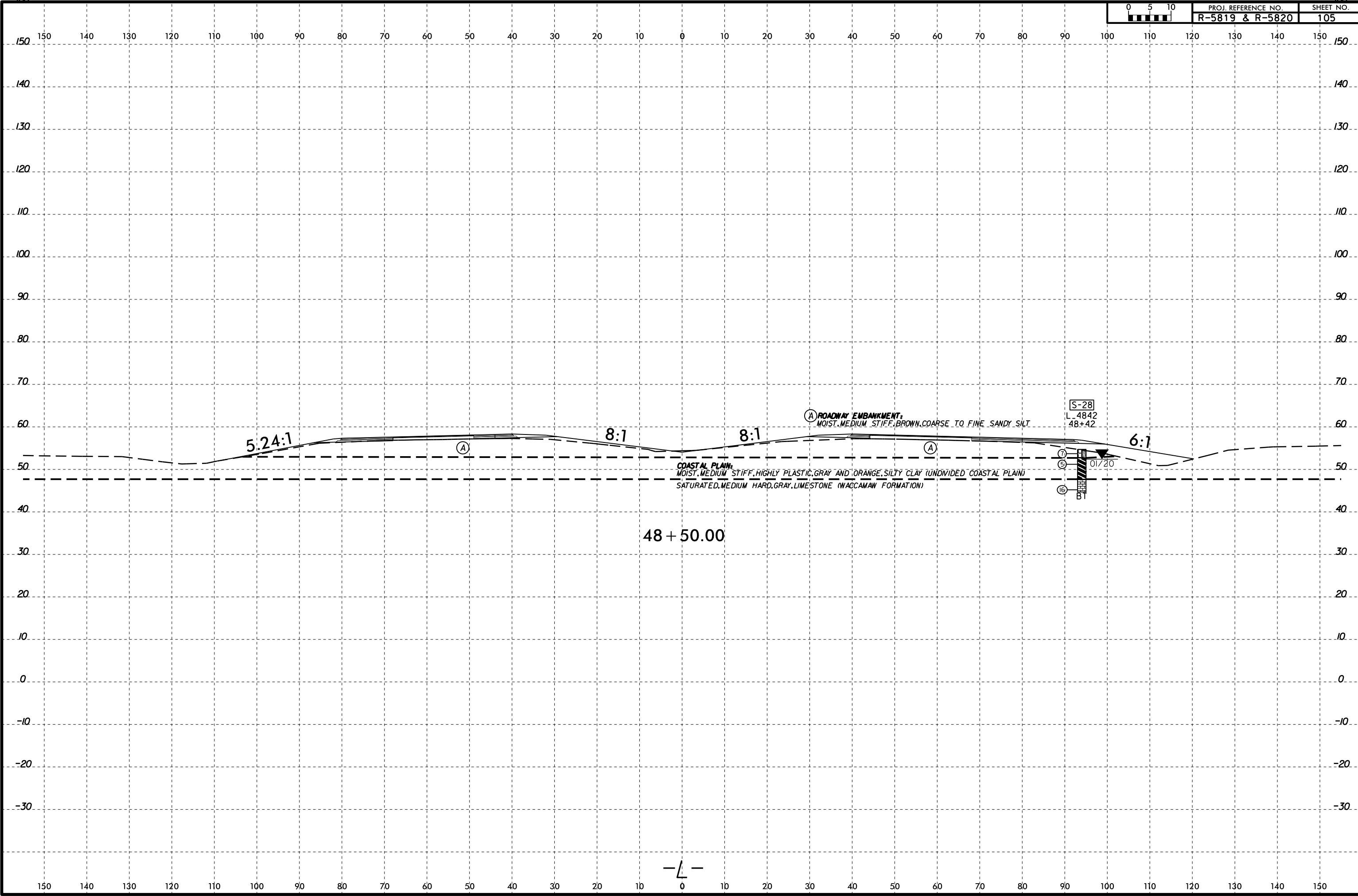


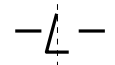
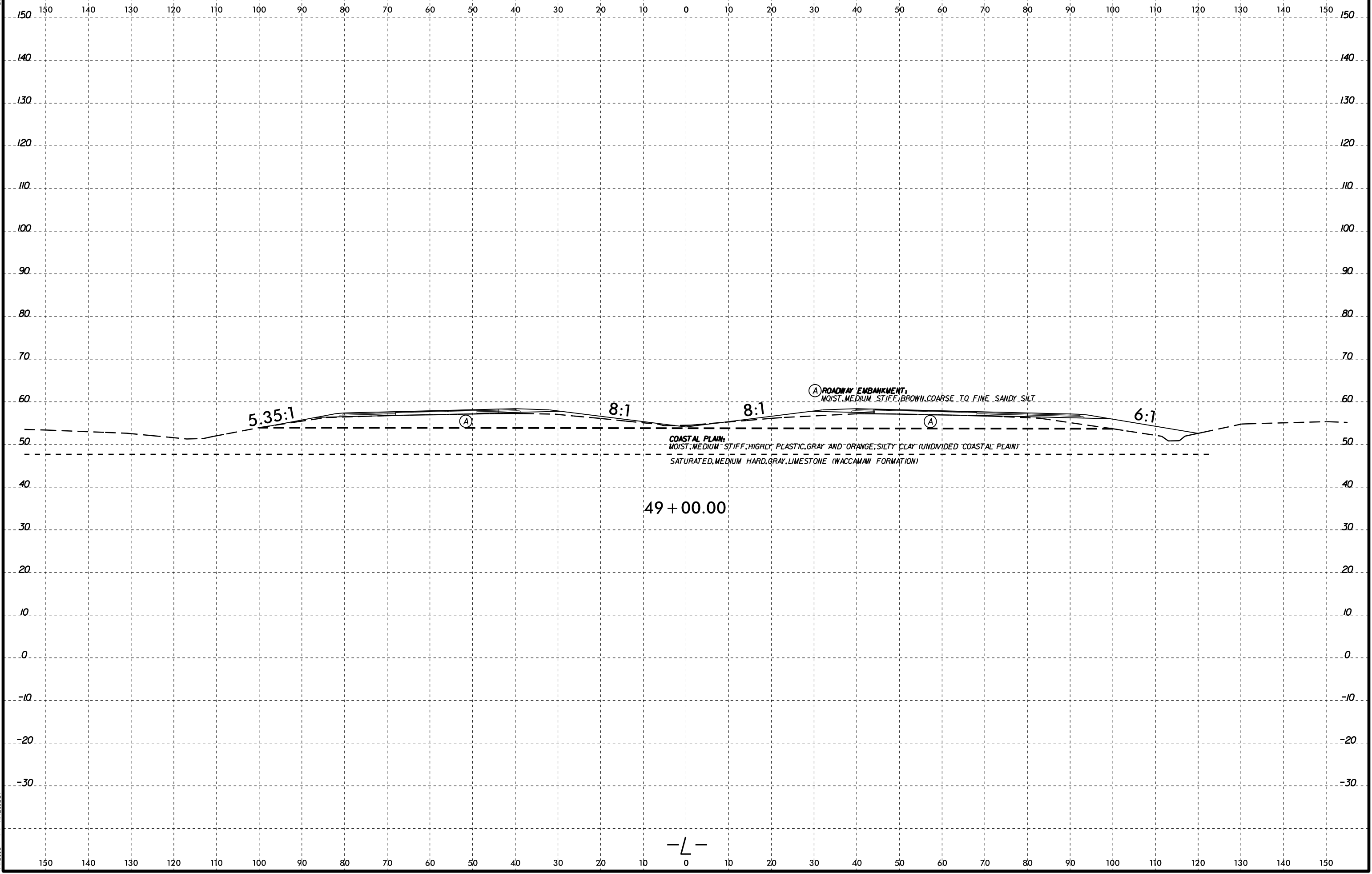


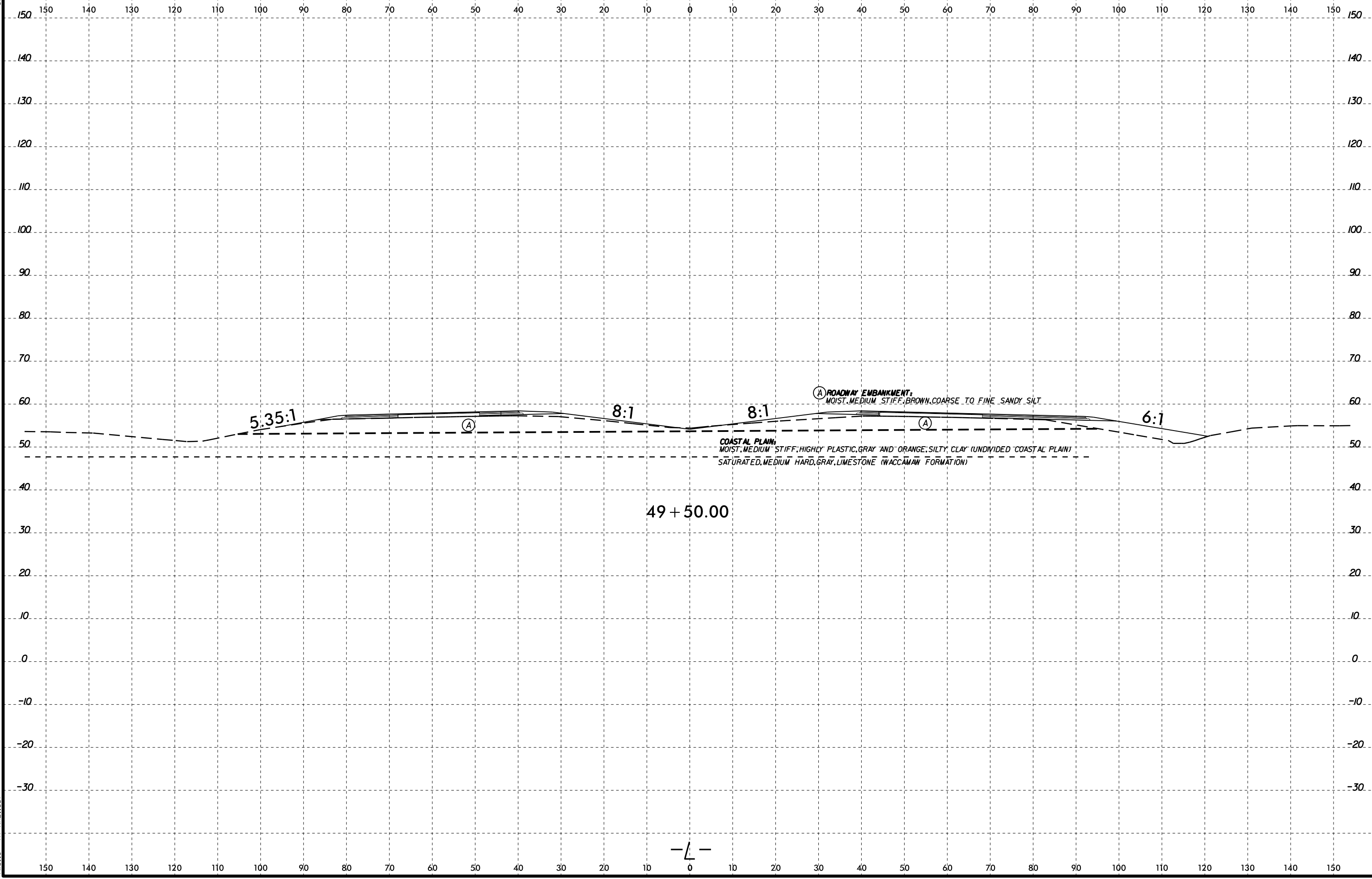












5.35:1

8:1

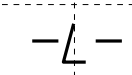
8:1

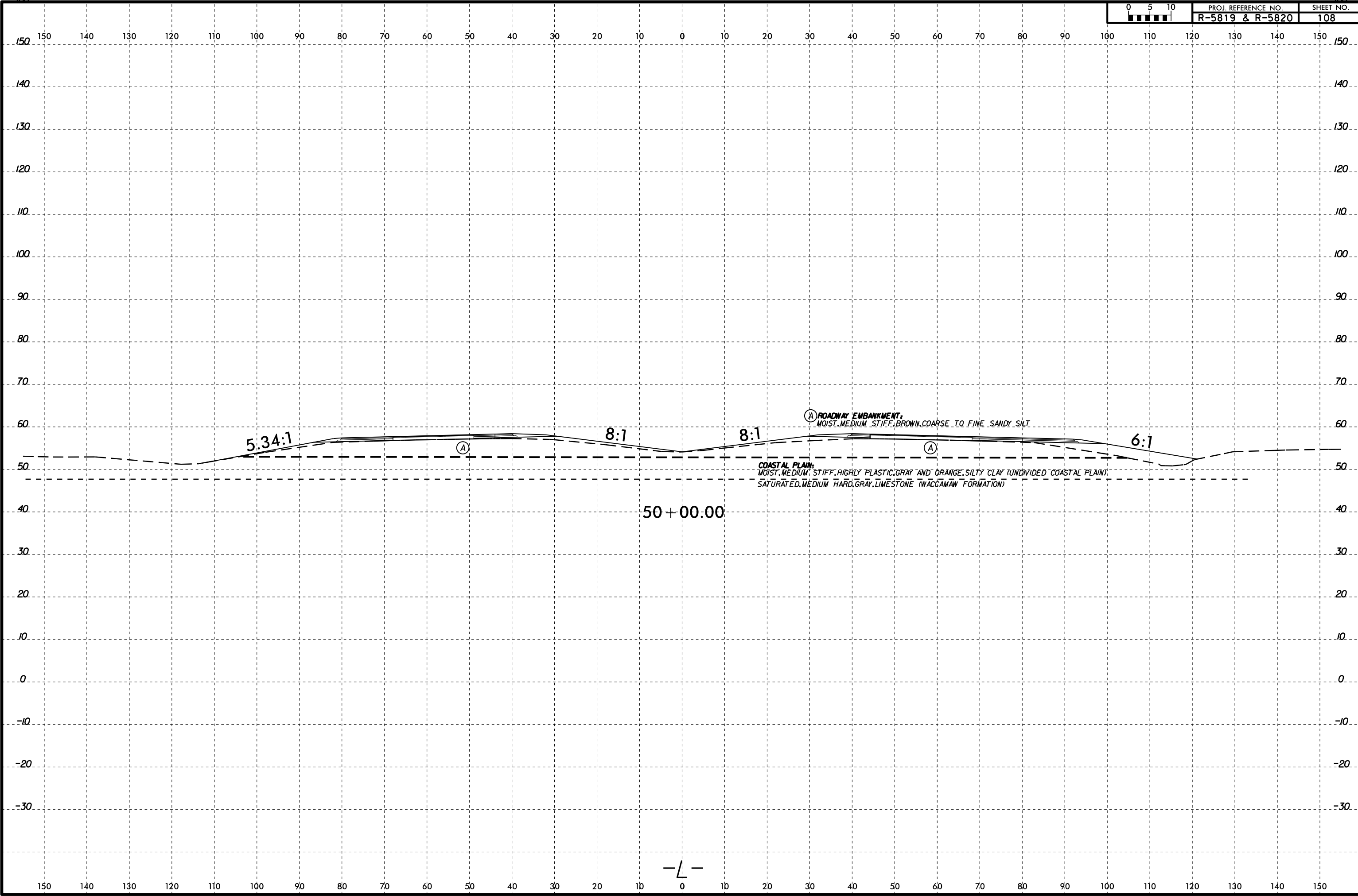
6:1

(A) ROADWAY EMBANKMENT:
MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT

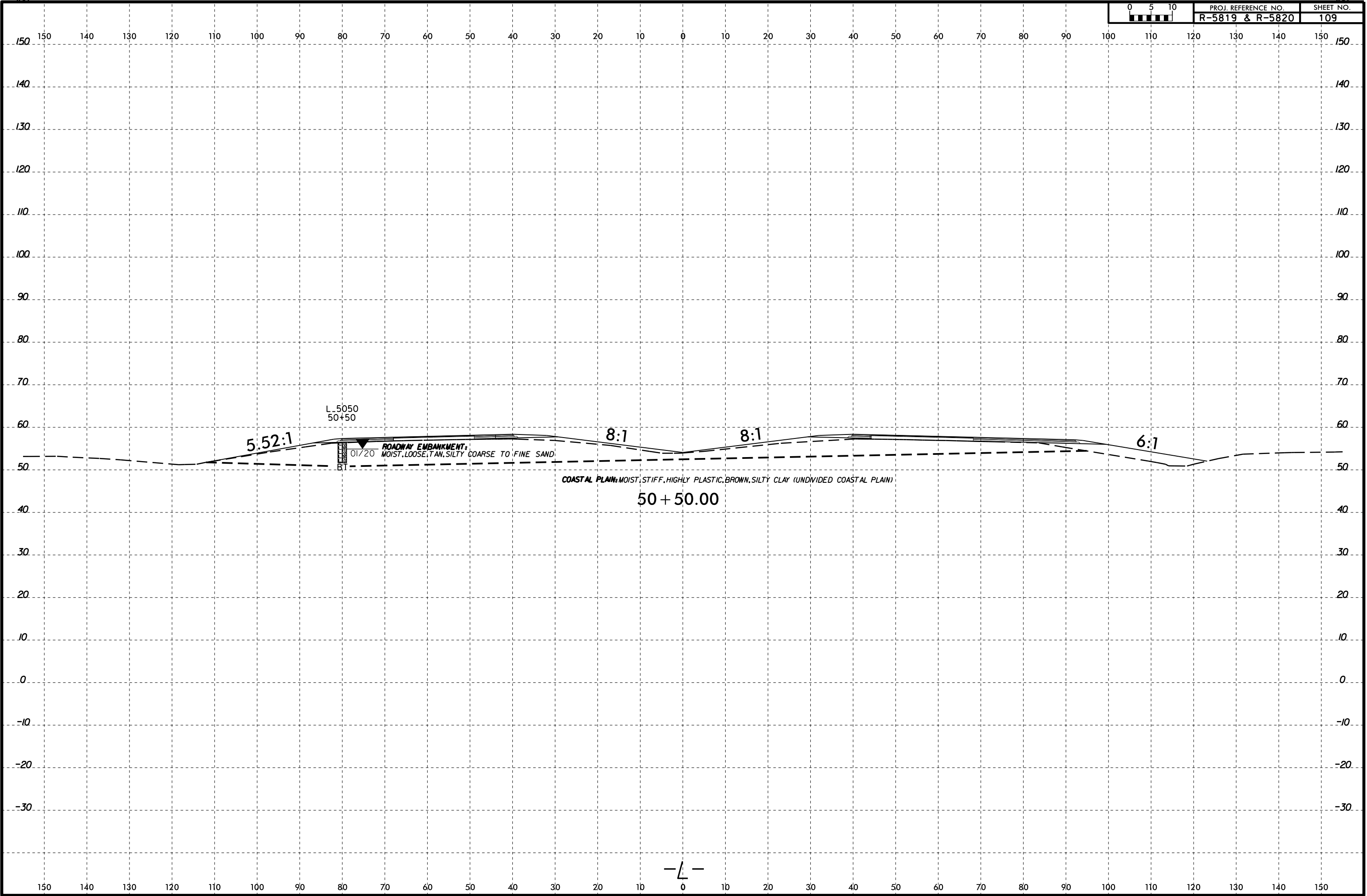
COASTAL PLAIN:
MOIST, MEDIUM STIFF, HIGHLY PLASTIC, GRAY AND ORANGE, SILTY CLAY (UNDIVIDED COASTAL PLAIN)
SATURATED, MEDIUM HARD, GRAY, LIMESTONE (WACCAMAN FORMATION)

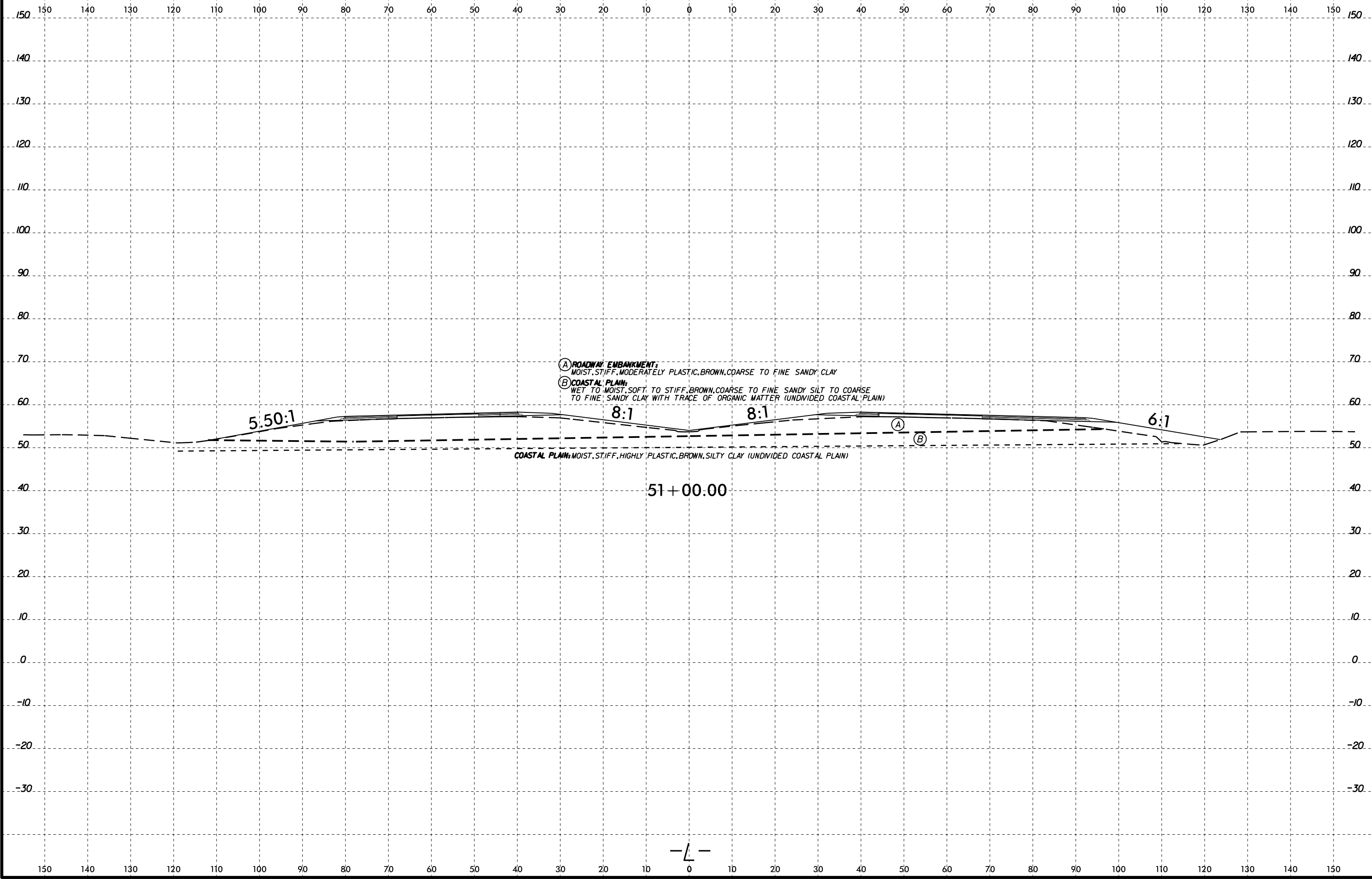
49 + 50.00

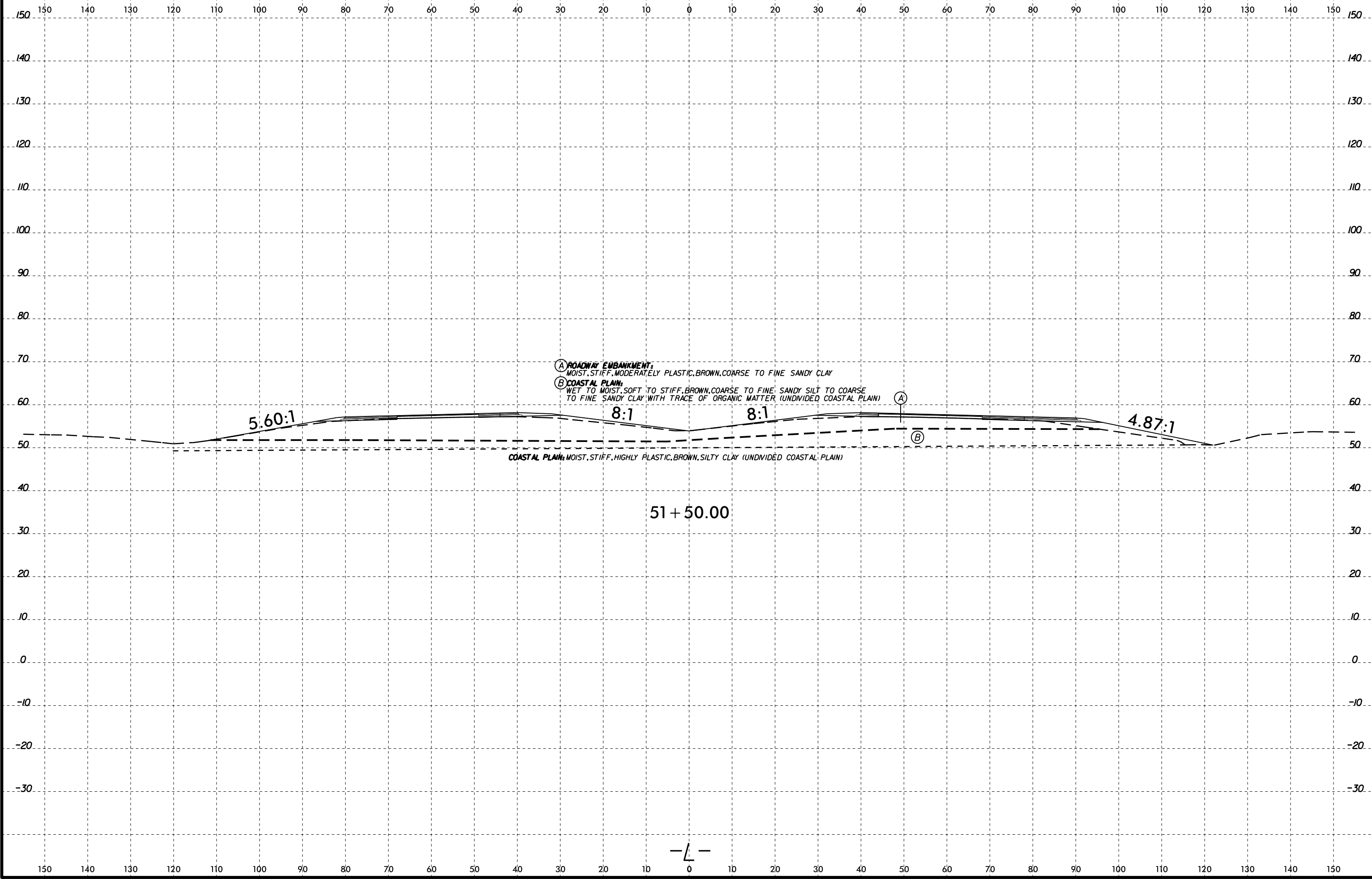


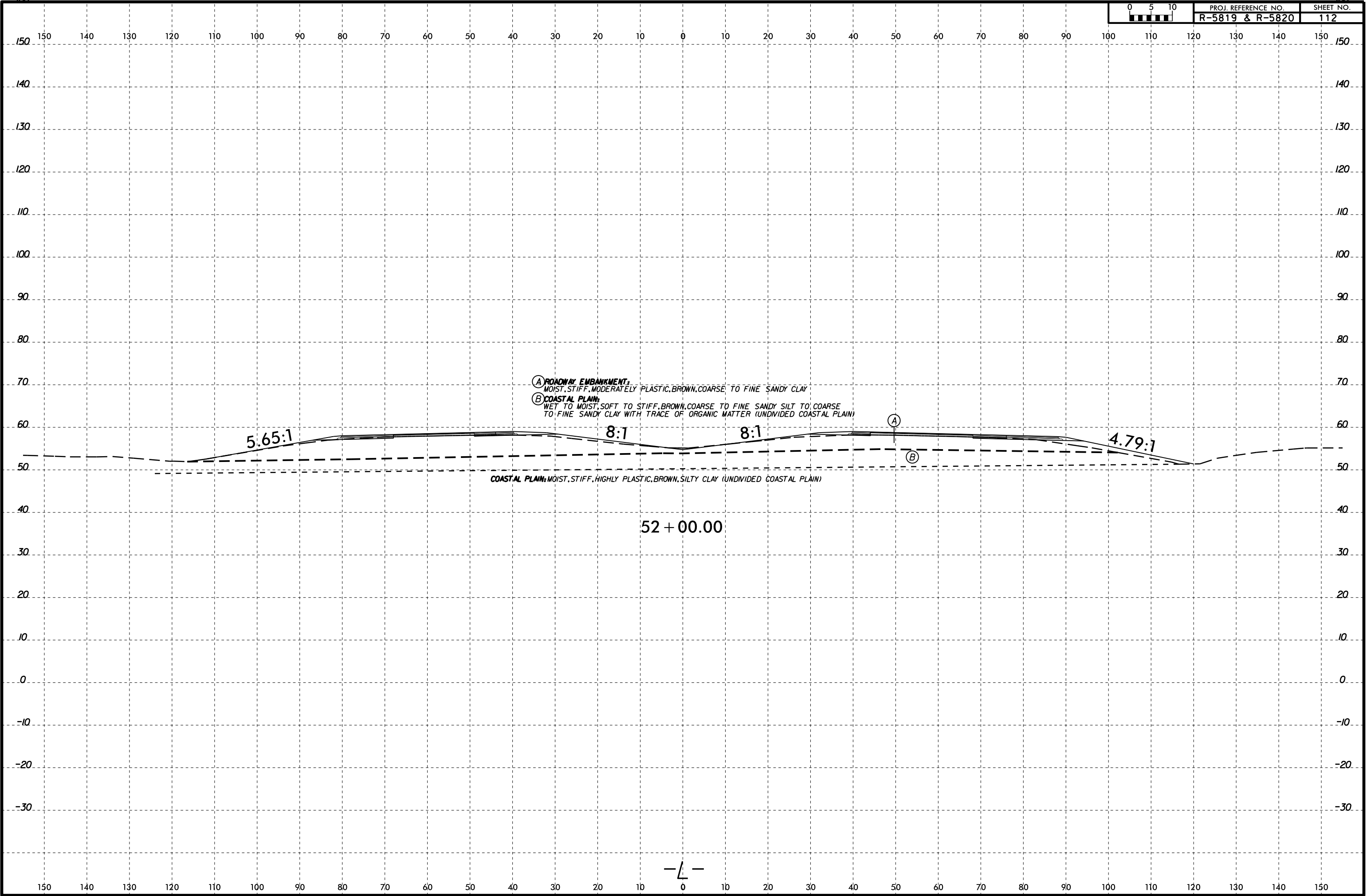


6/23/16
I:\FEB-2015\5820\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL\1(2).dgn







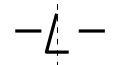


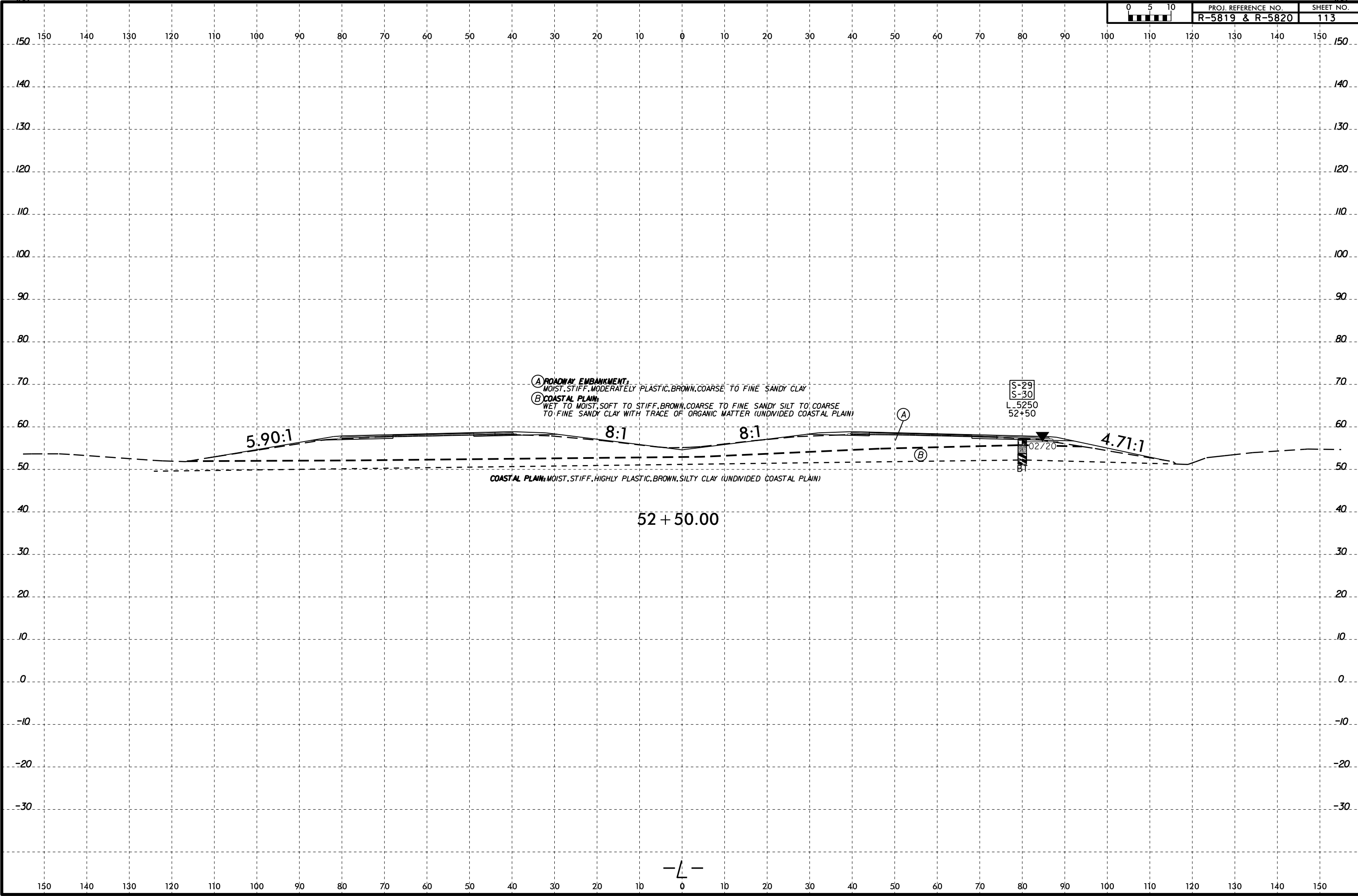
(A) **ROADWAY EMBANKMENT:**
MOIST, STIFF, MODERATELY PLASTIC, BROWN, COARSE TO FINE SANDY CLAY

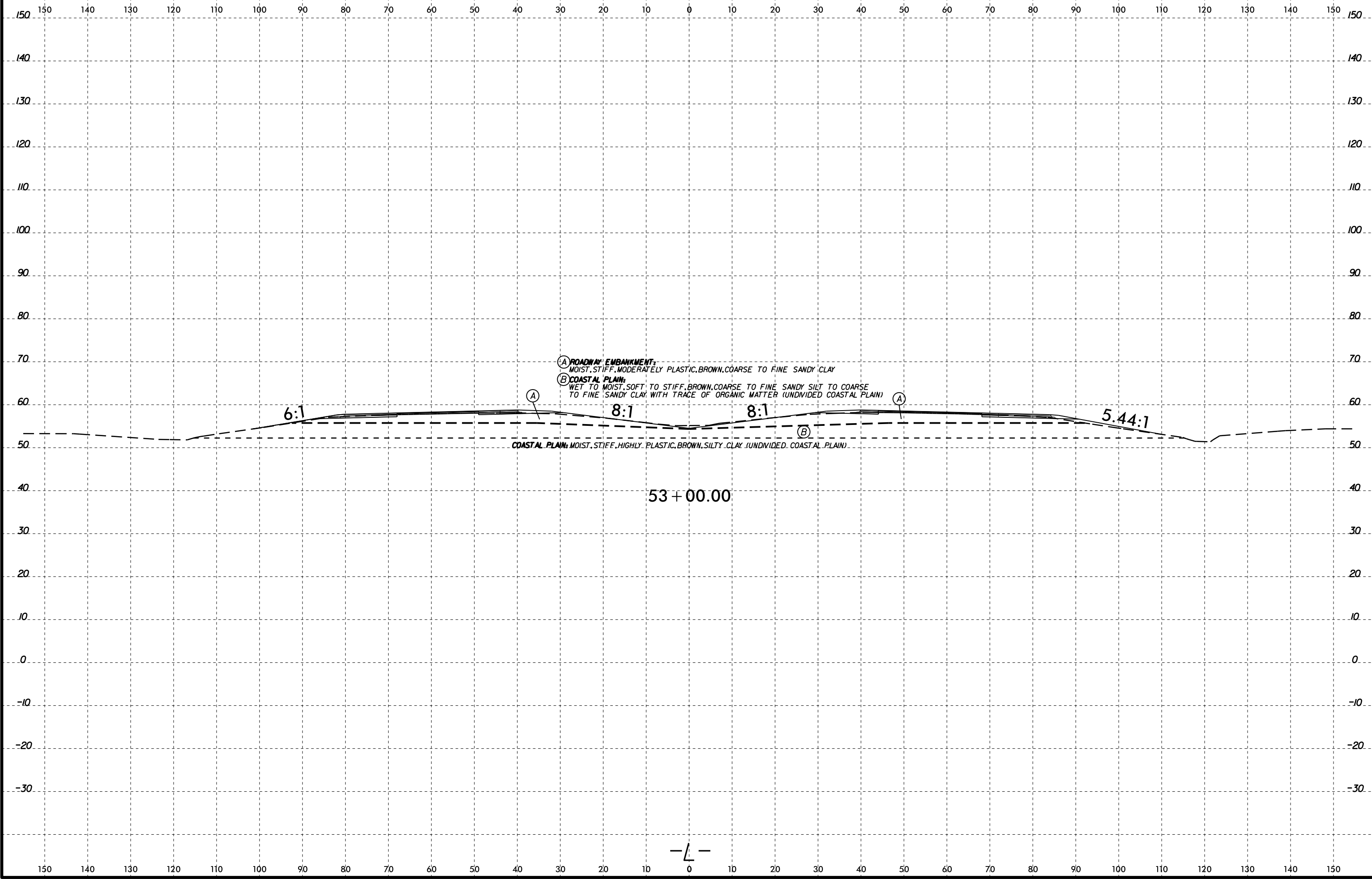
(B) **COASTAL PLAIN:**
WET TO MOIST, SOFT TO STIFF, BROWN, COARSE TO FINE SANDY SILT TO COARSE TO FINE SANDY CLAY WITH TRACE OF ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

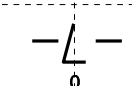
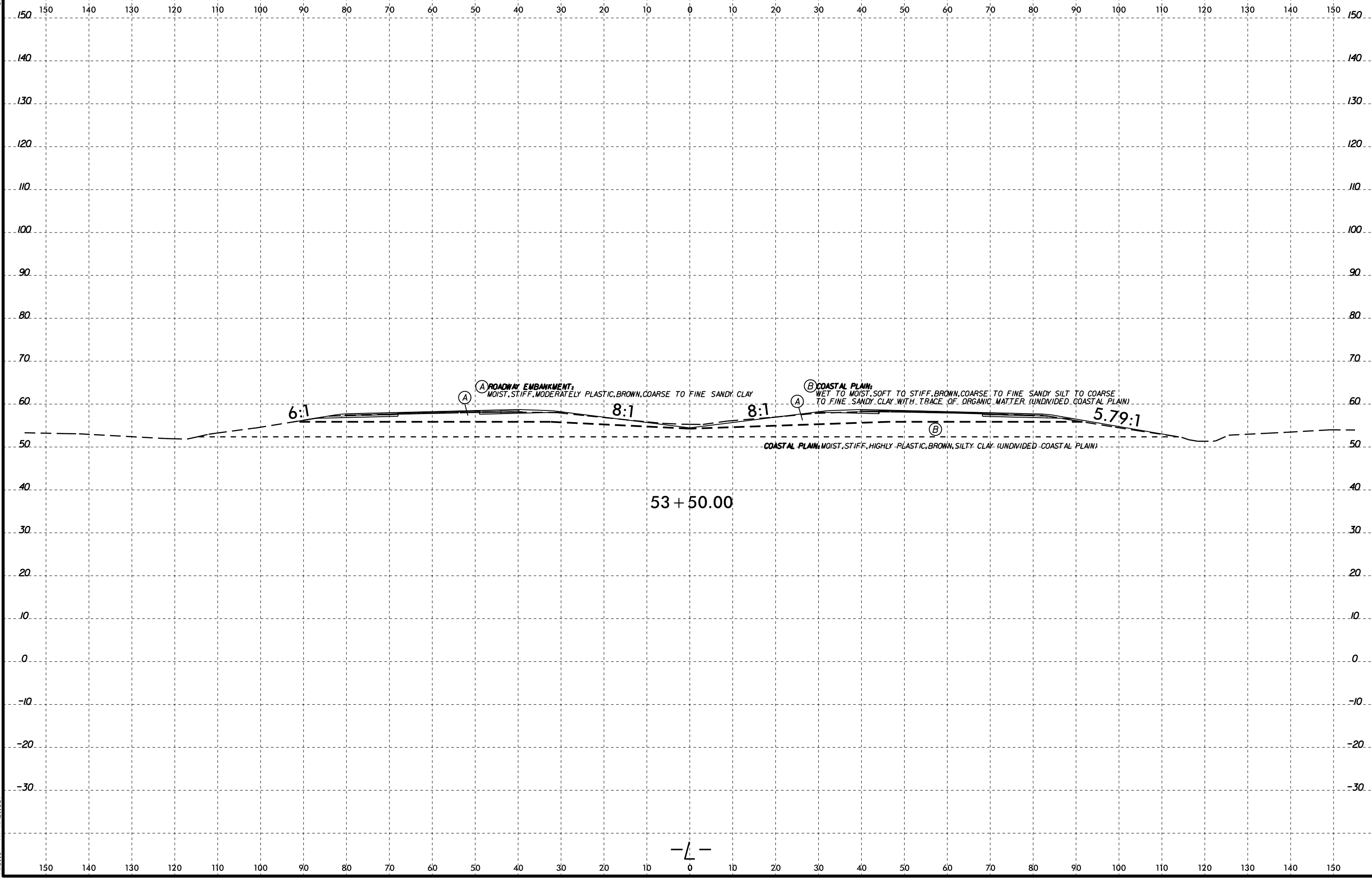
COASTAL PLAIN, MOIST, STIFF, HIGHLY PLASTIC, BROWN, SILTY CLAY (UNDIVIDED COASTAL PLAIN)

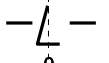
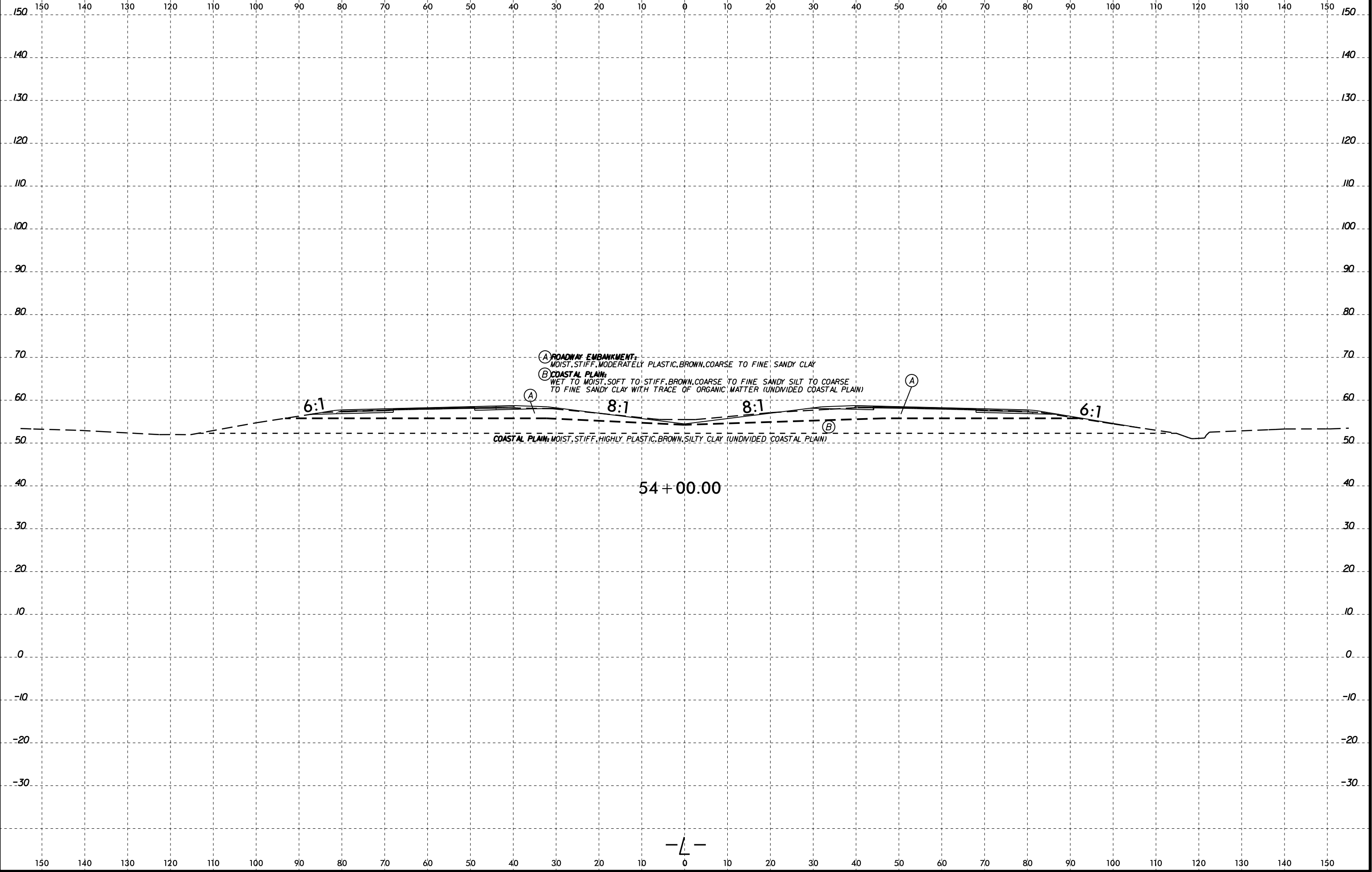
52 + 00.00

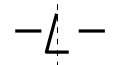
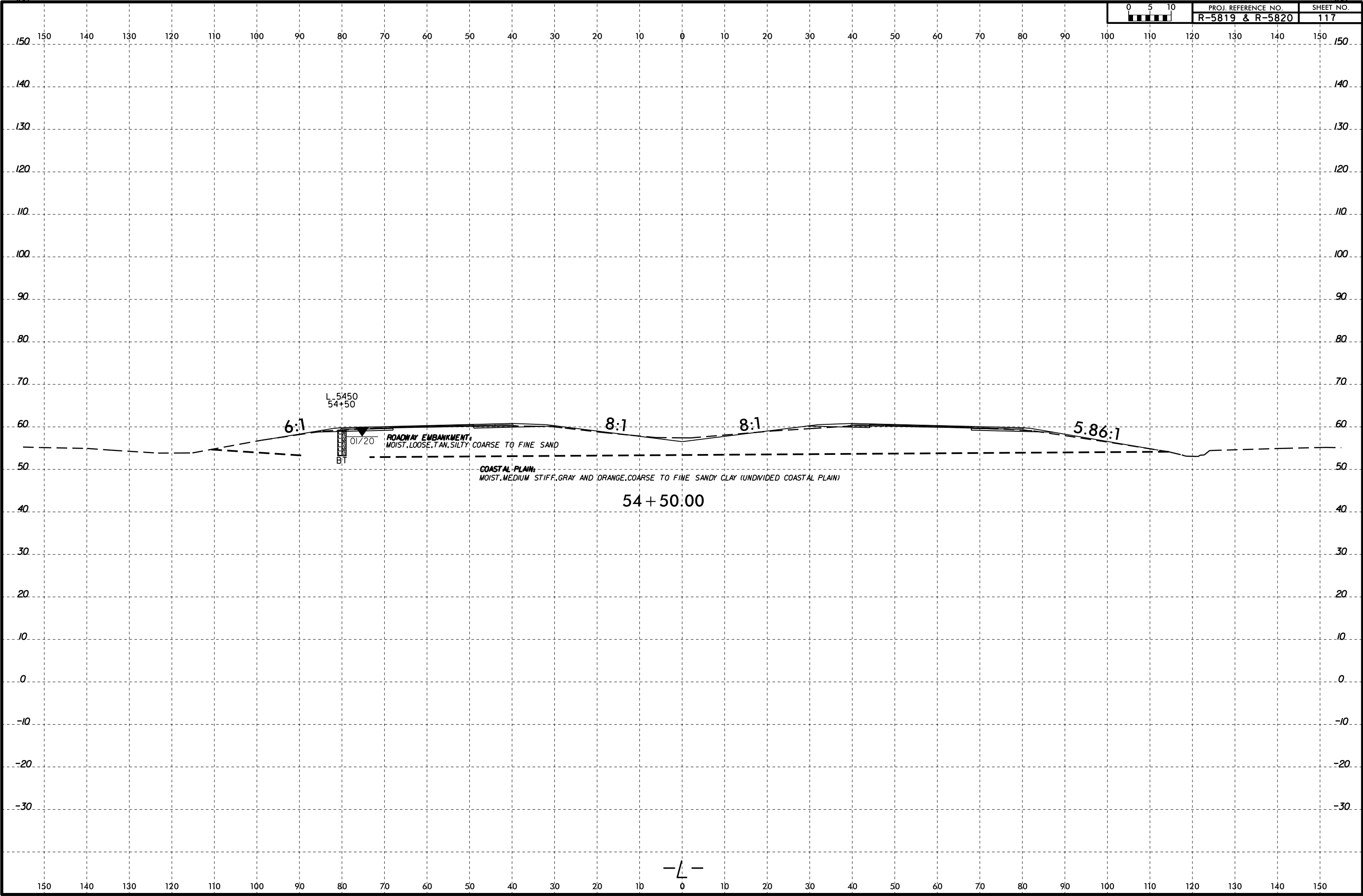








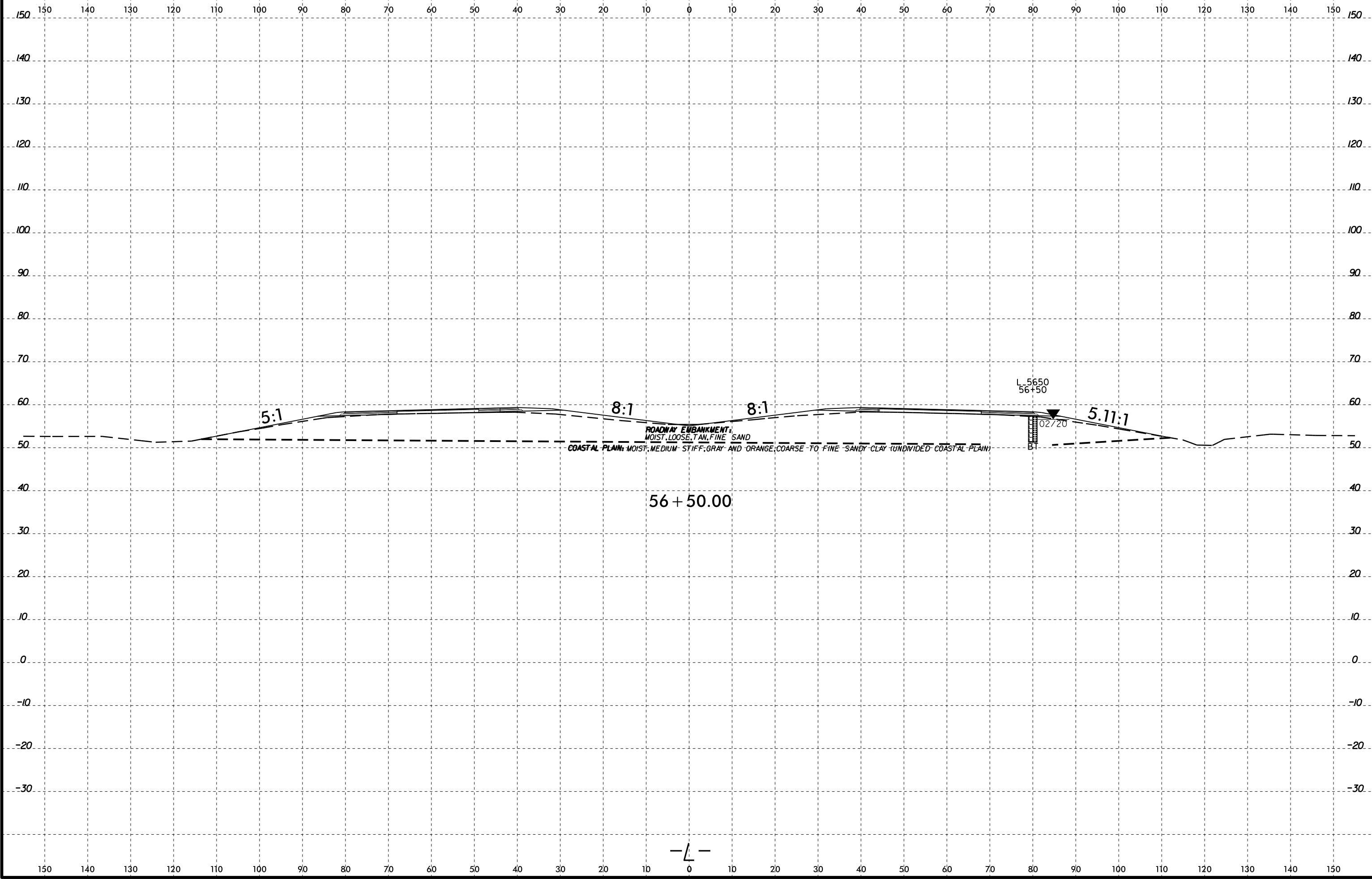




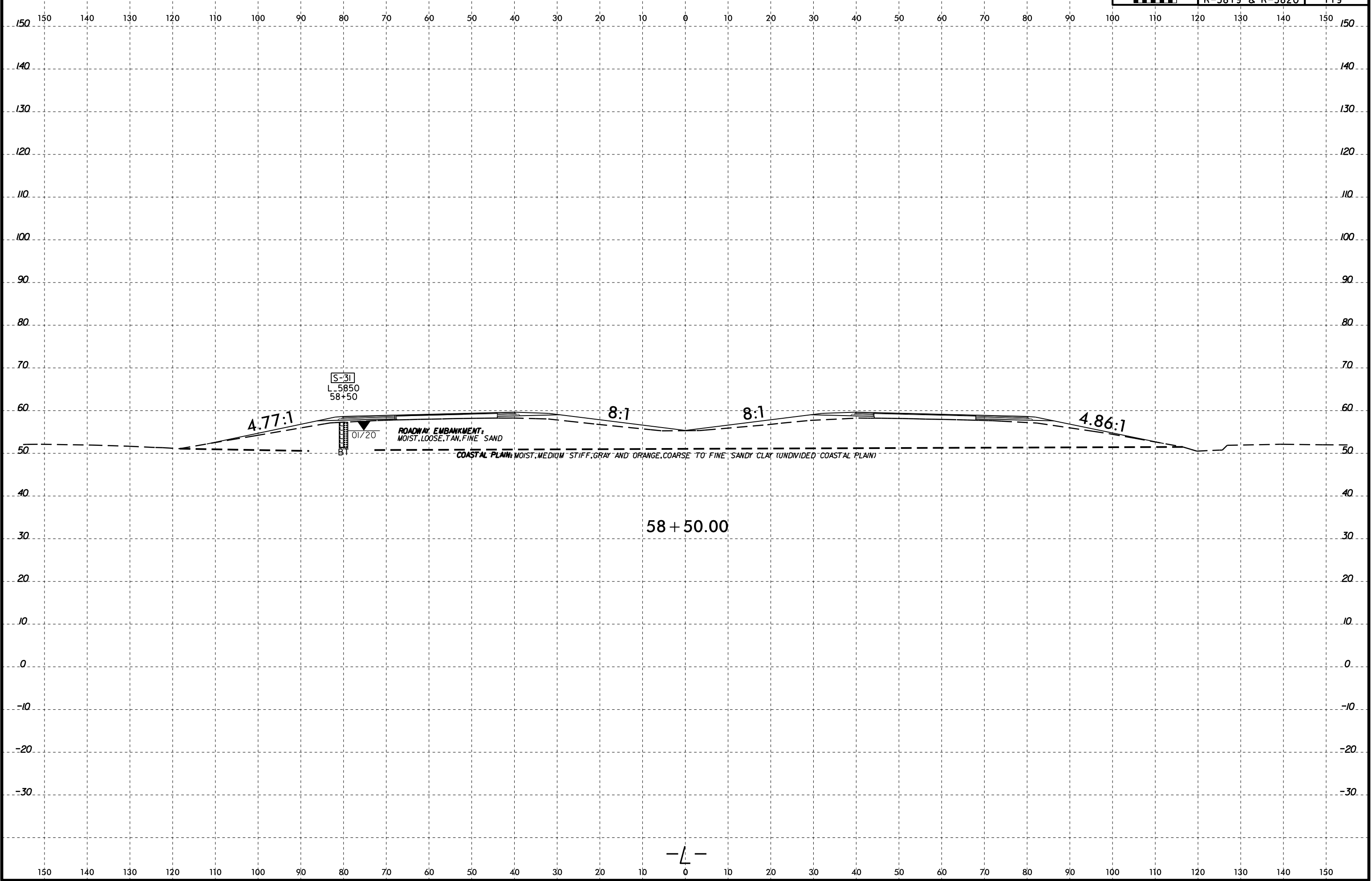
6/23/16

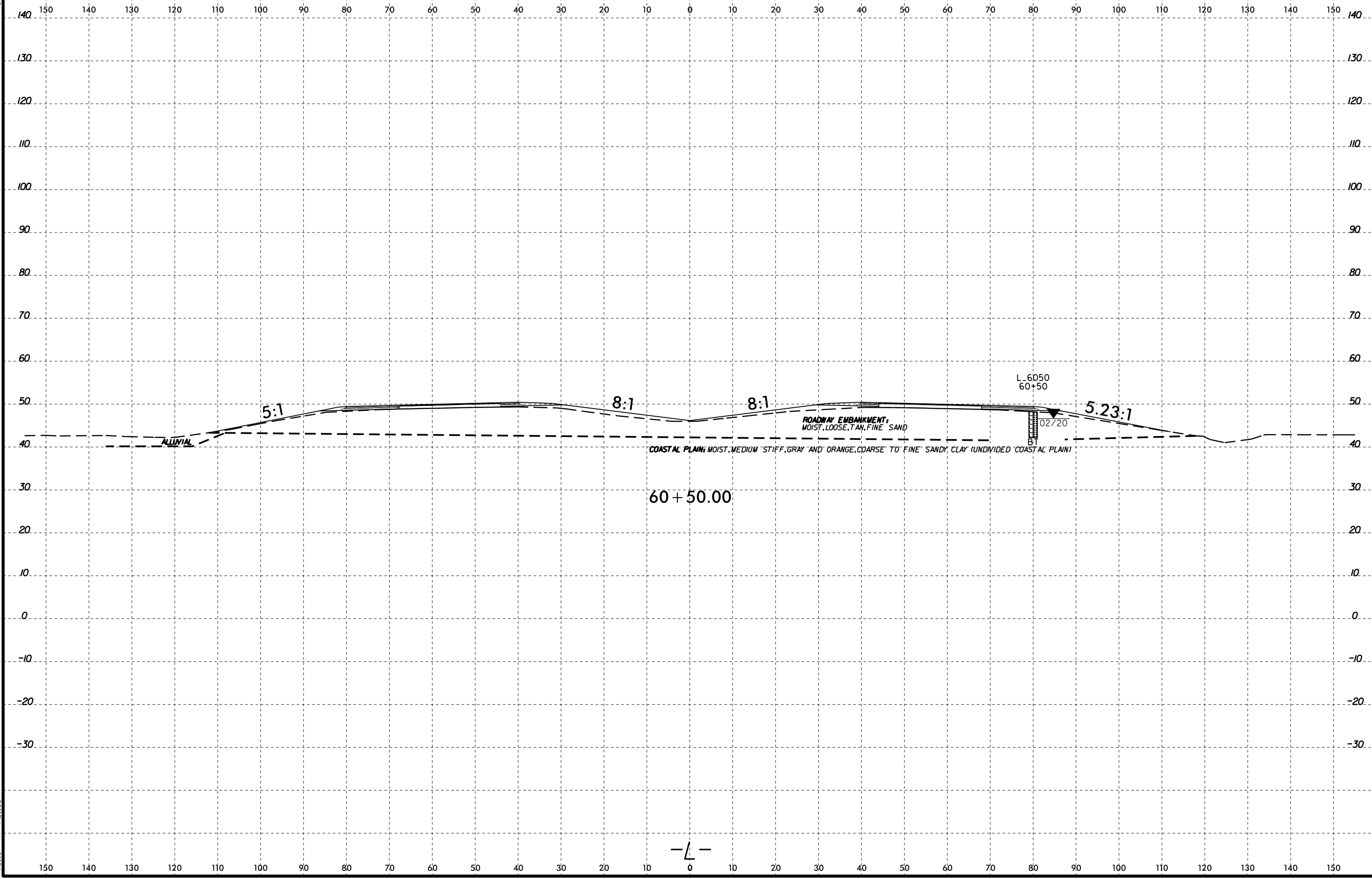
I:\FEB-2015\58
Washoe\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS820_GEO\RDW\CADD_GEO\TECH\XSC\RS5819_RS820_GEO_XS1.L(2).dgn

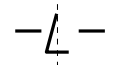
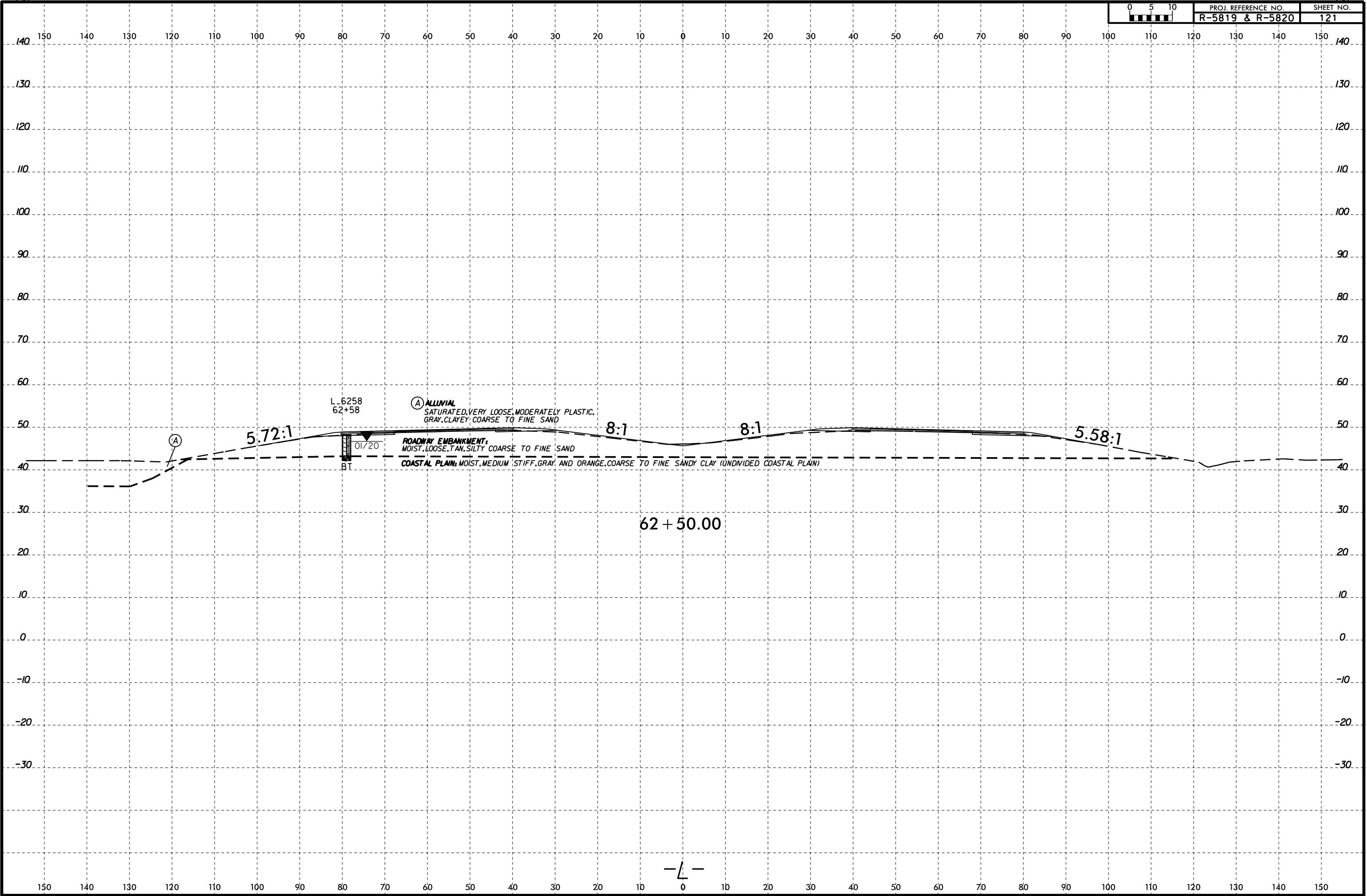
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	118



6/23/16
I:\FEB-2015\59
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\TECH\XSC\R5819_R5820_GEO_XS1.L(2).dgn



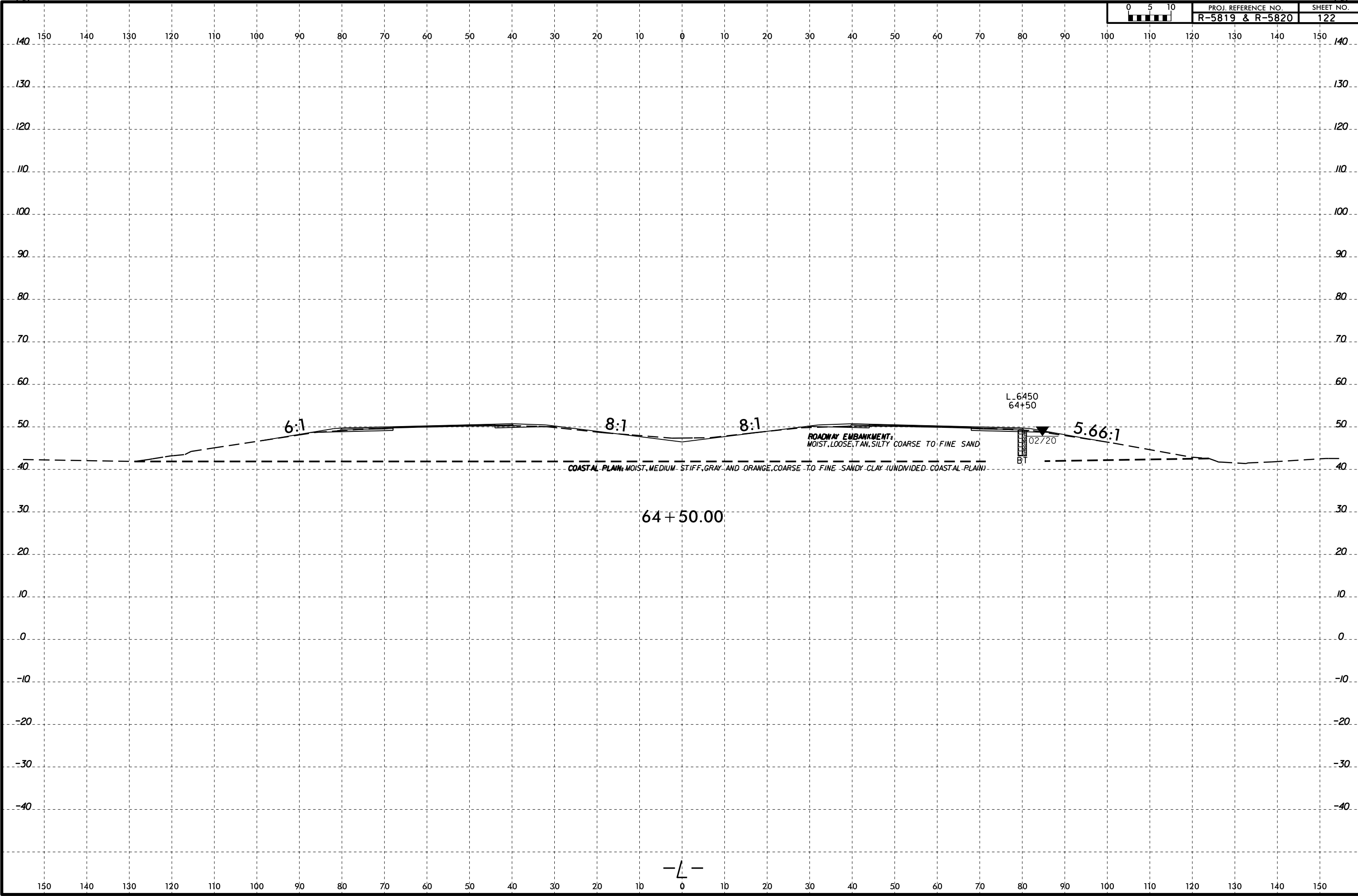


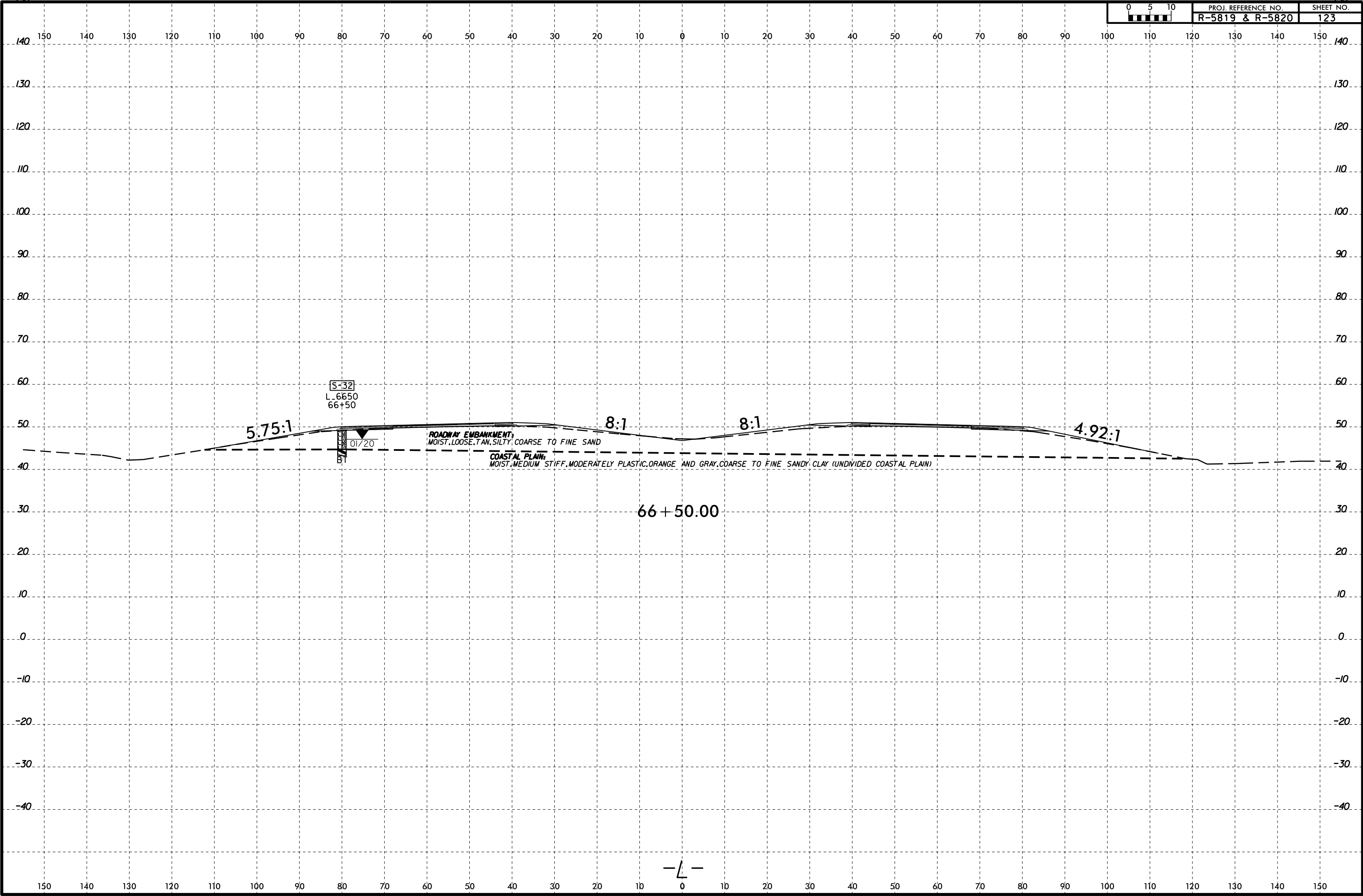


6/23/16

I:\FEB-2015\59
W\shere\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS819-RS820_GEO\RDW\CADD_GEO\TECH\XSC\RS819_RS820_GEO_XS1.L(2).dgn
Wells - At KA211387

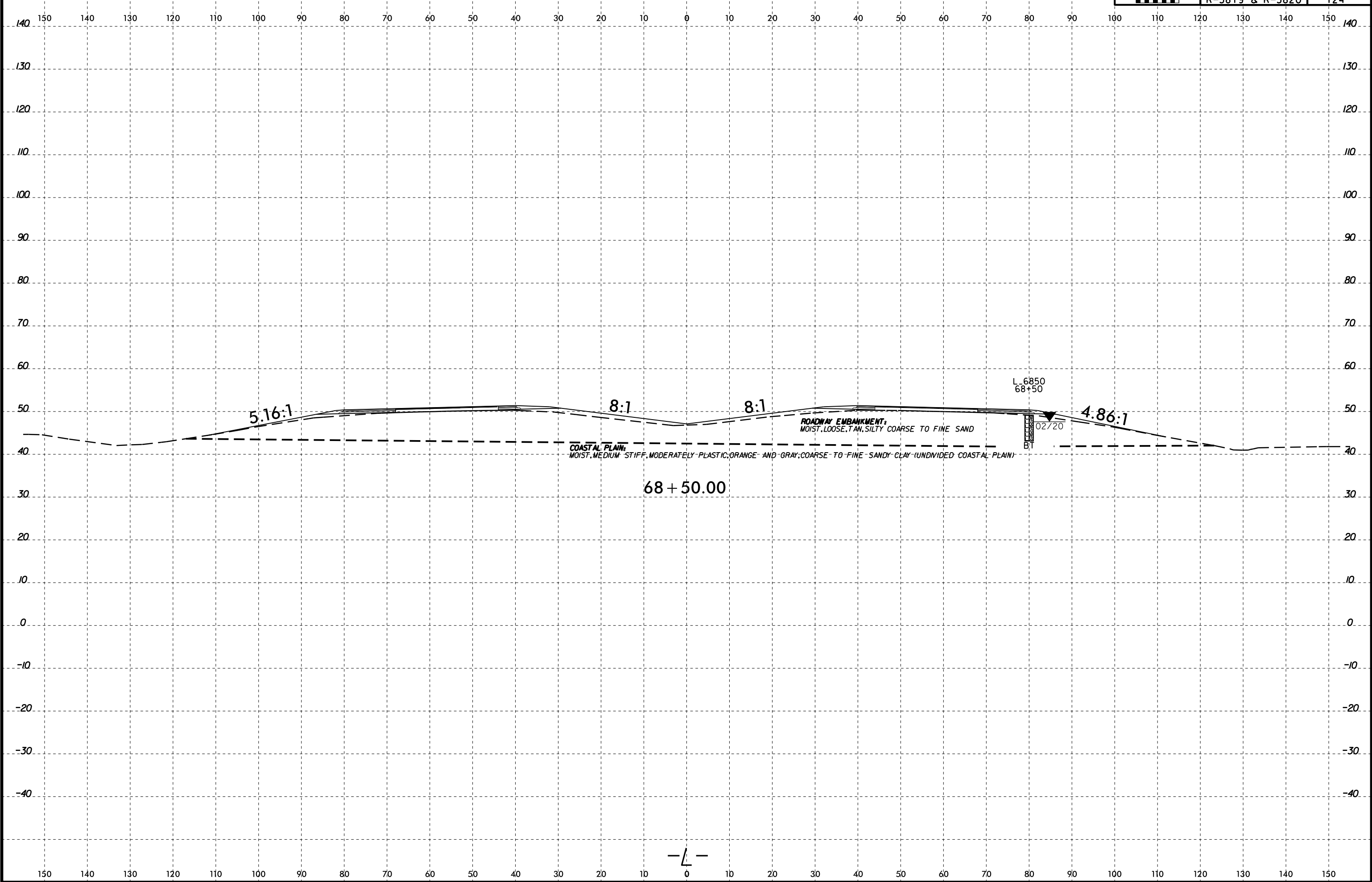
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	122



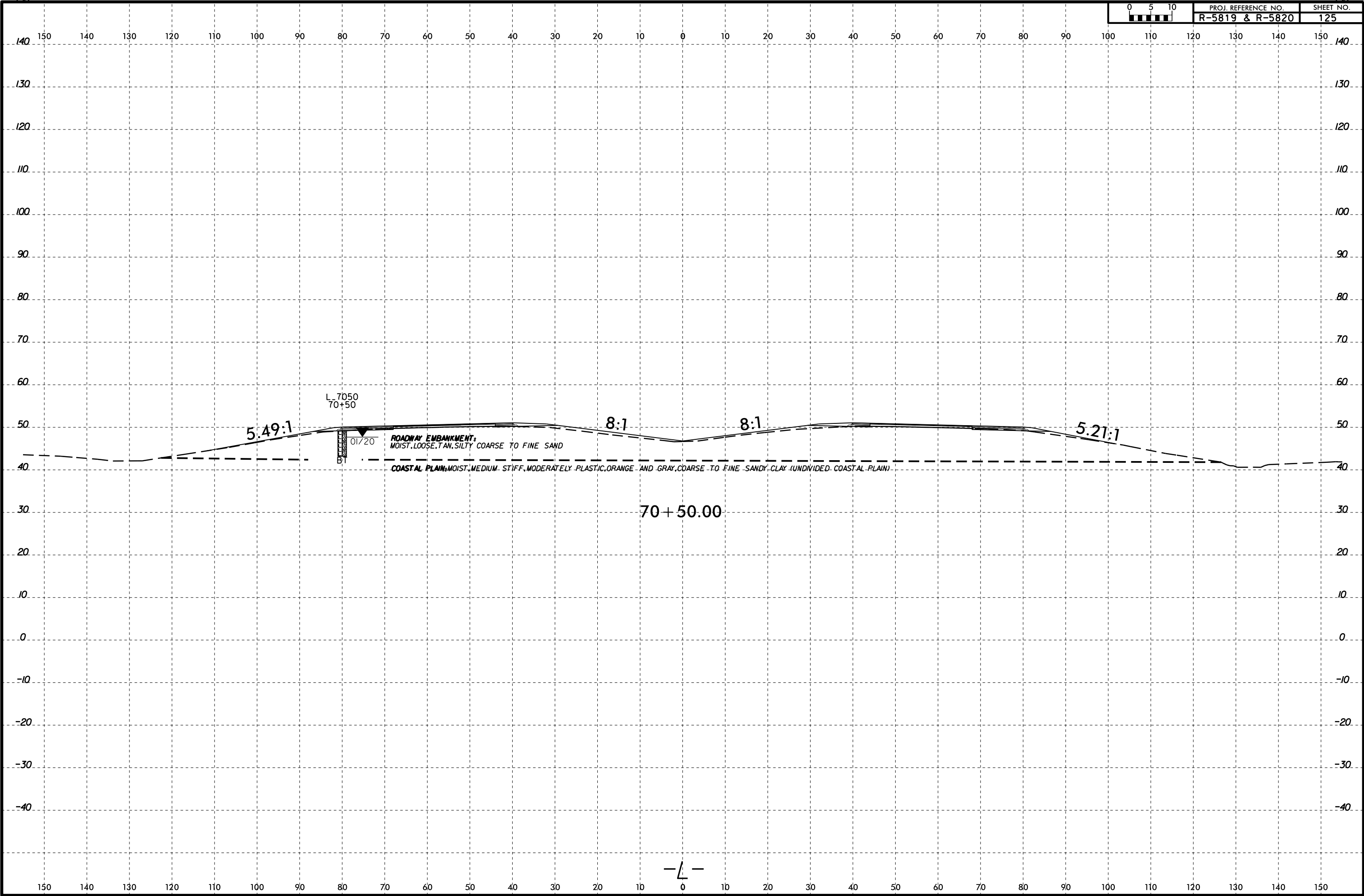


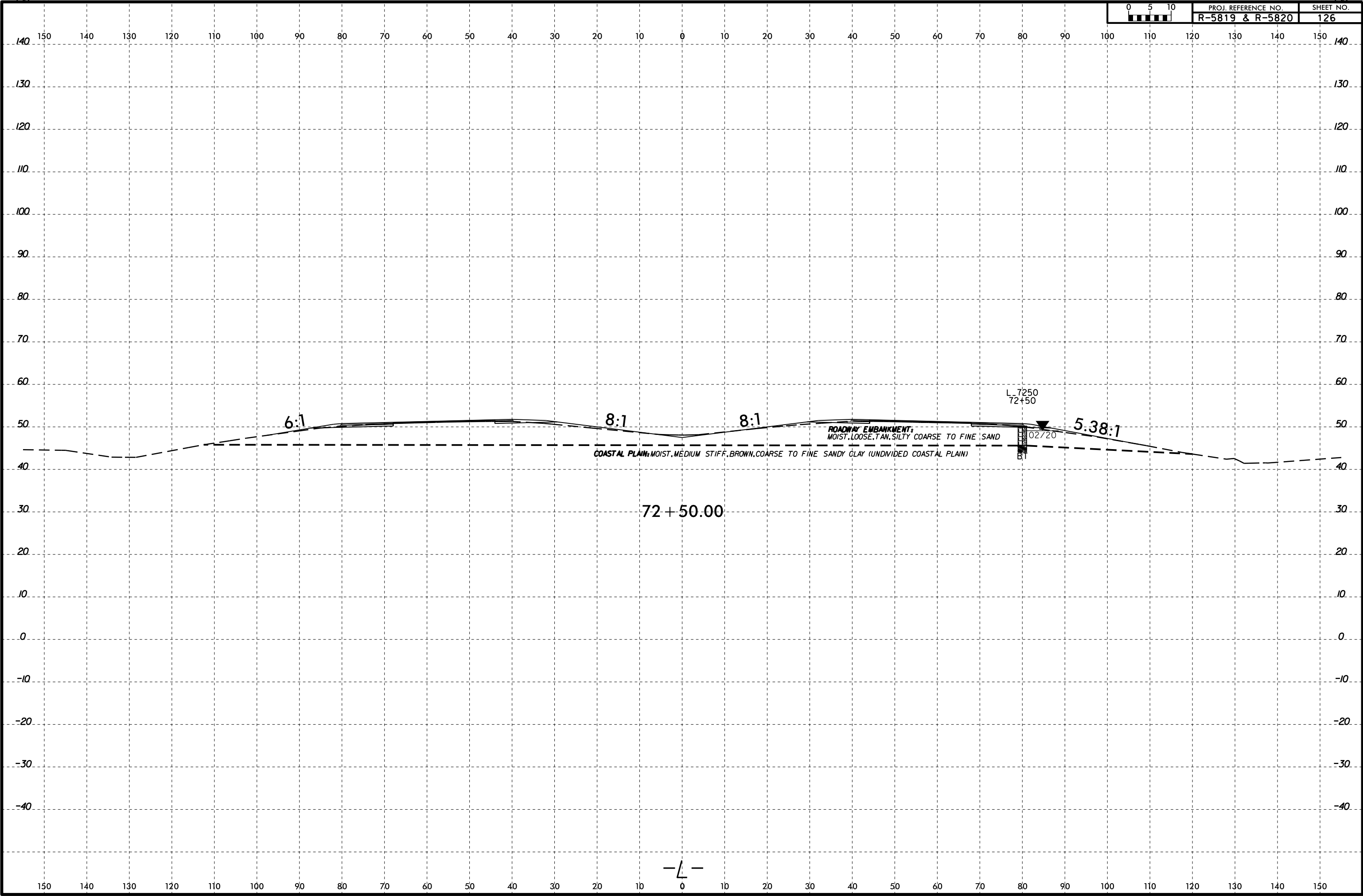
6/23/16
I:\FEB-2015\59
W\Shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\XSL\1(2).dgn

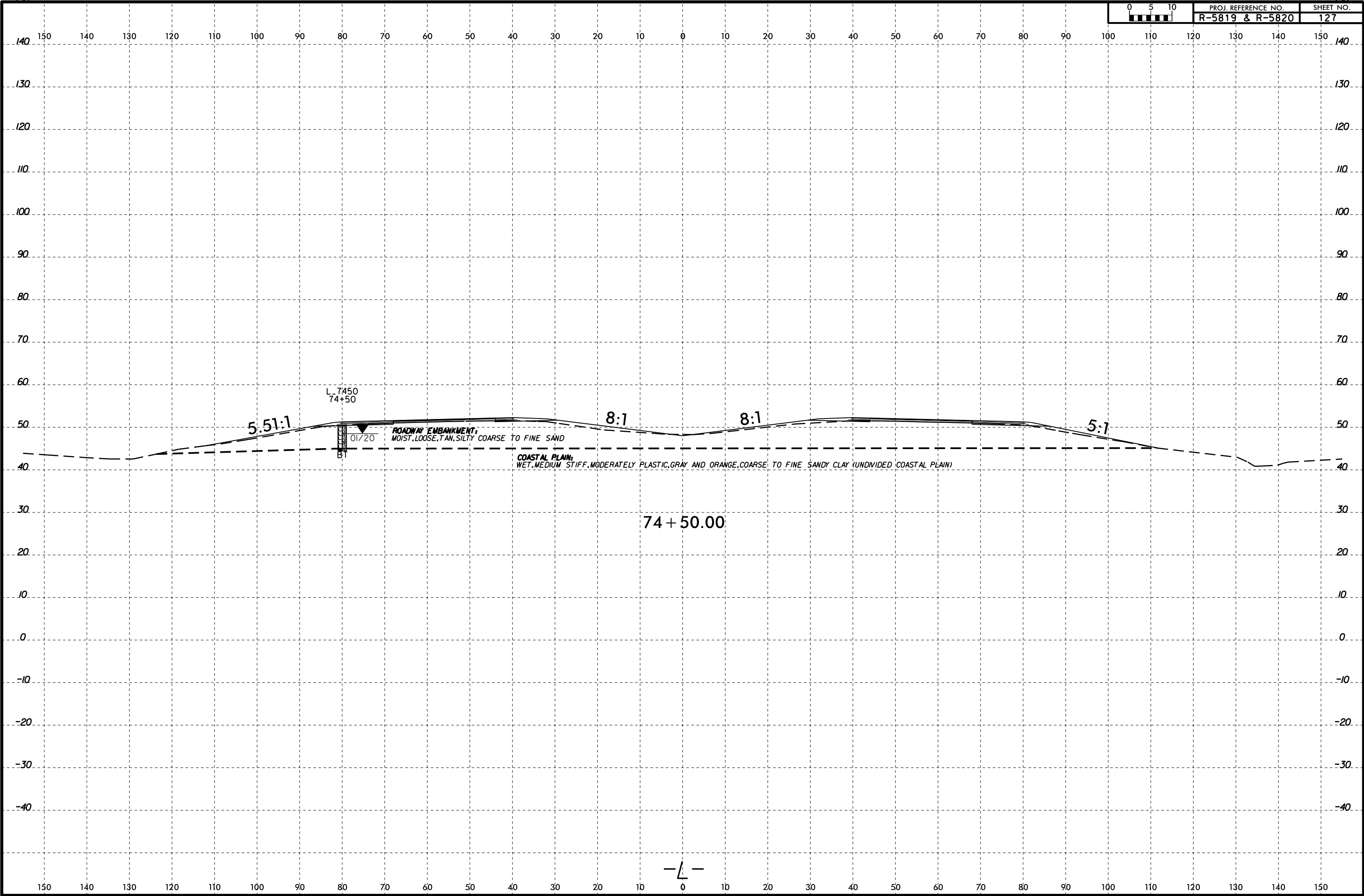
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	124



6/23/16
I:\FEB-2015\59
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS820_GEO\RDW\CADD_GEO\TECH\XSC\RS5819_RS820_GEO_XS1.L(2).dgn

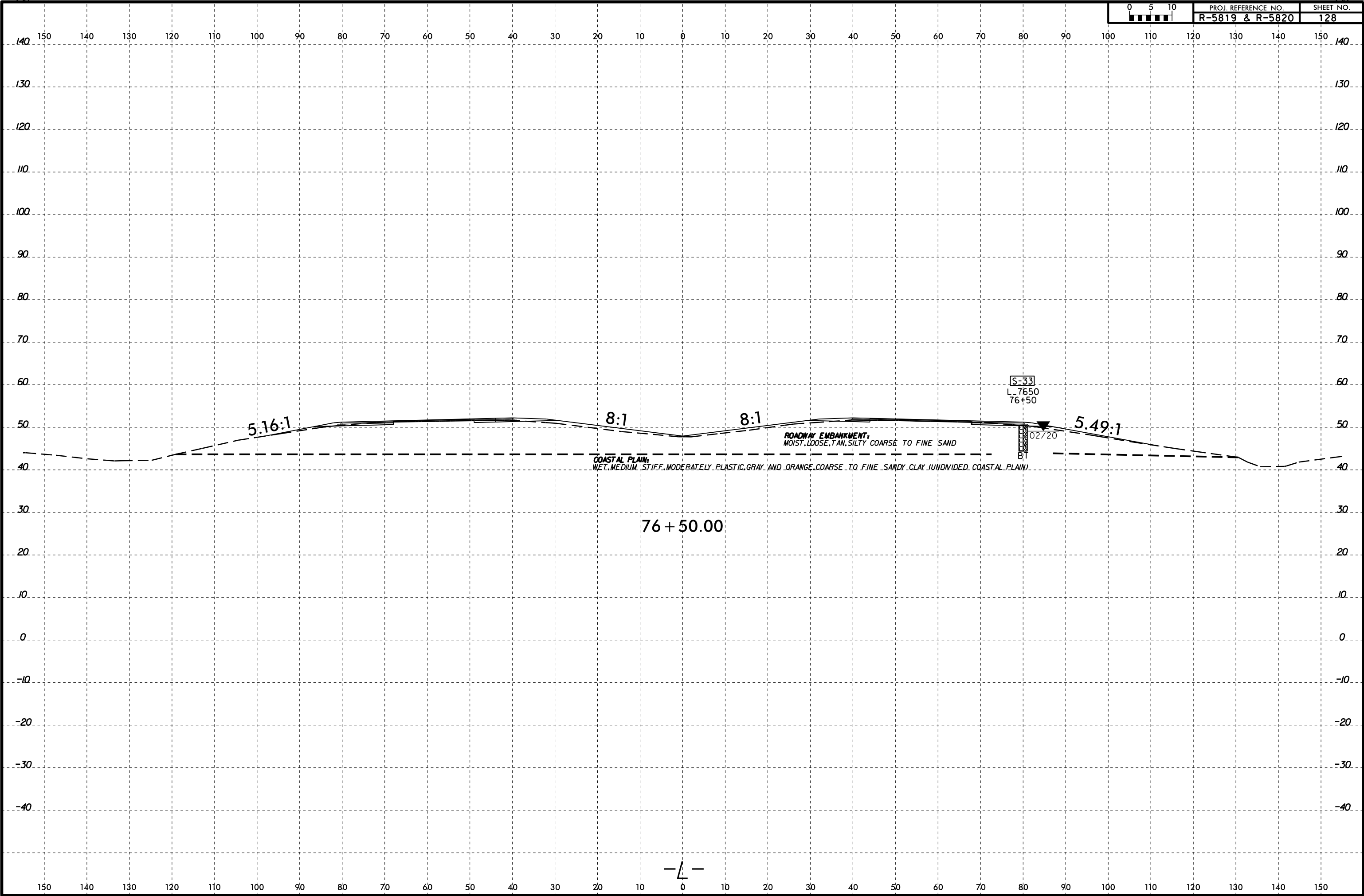






6/23/16
I:\FEB-2015\59
W\Shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS819-RS820_GEO\RDW\CADD_GEO\TECH\XSC\RS819-RS820_GEO_XS1.L(2).dgn

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	128



5.16:1

8:1

8:1

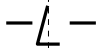
5.49:1

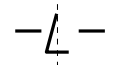
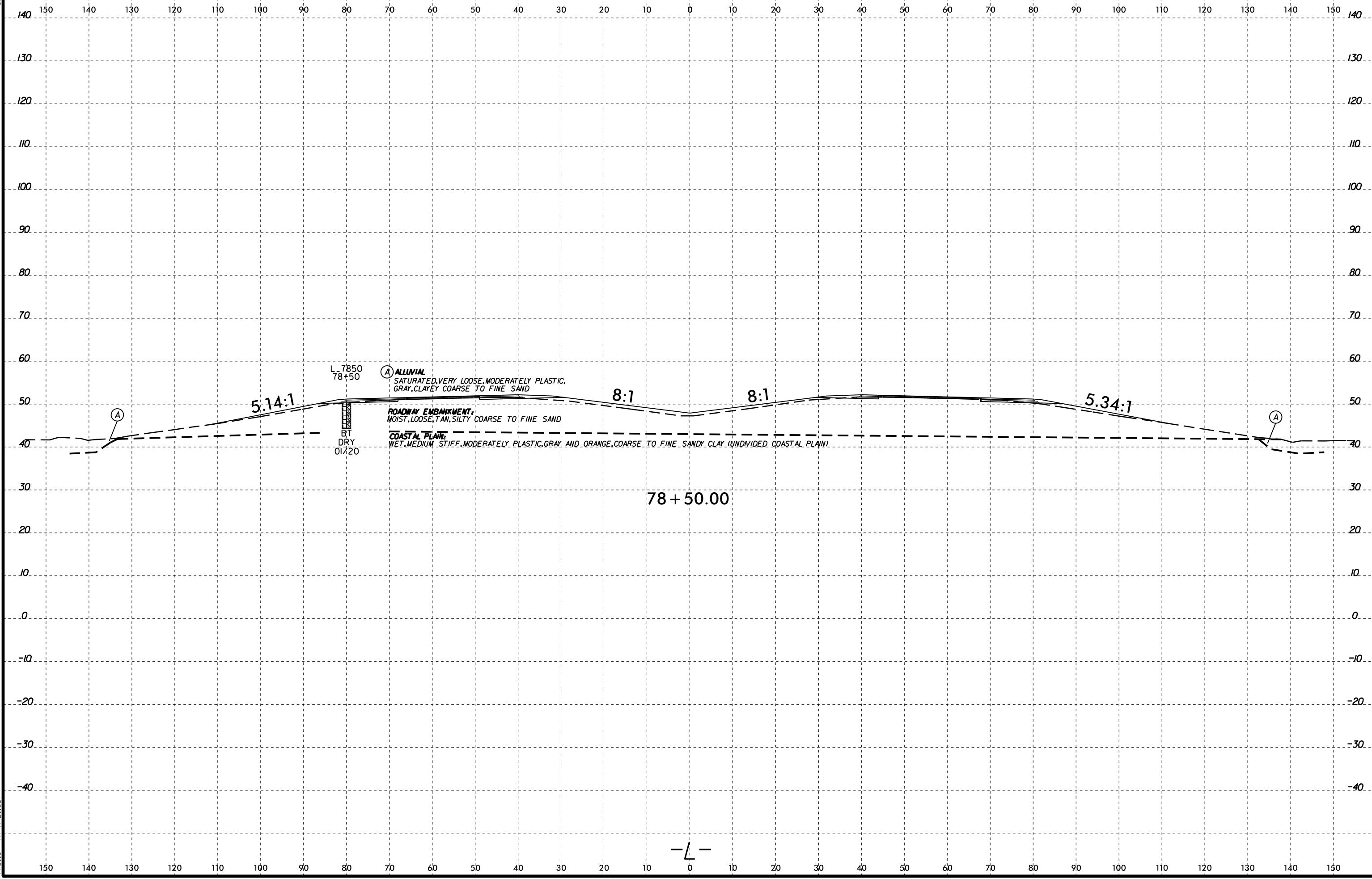
ROADWAY EMBANKMENT:
MOIST, LOOSE, TAN, SILTY COARSE TO FINE SAND

COASTAL PLAIN:
WET, MEDIUM STIFF, MODERATELY PLASTIC, GRAY AND ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

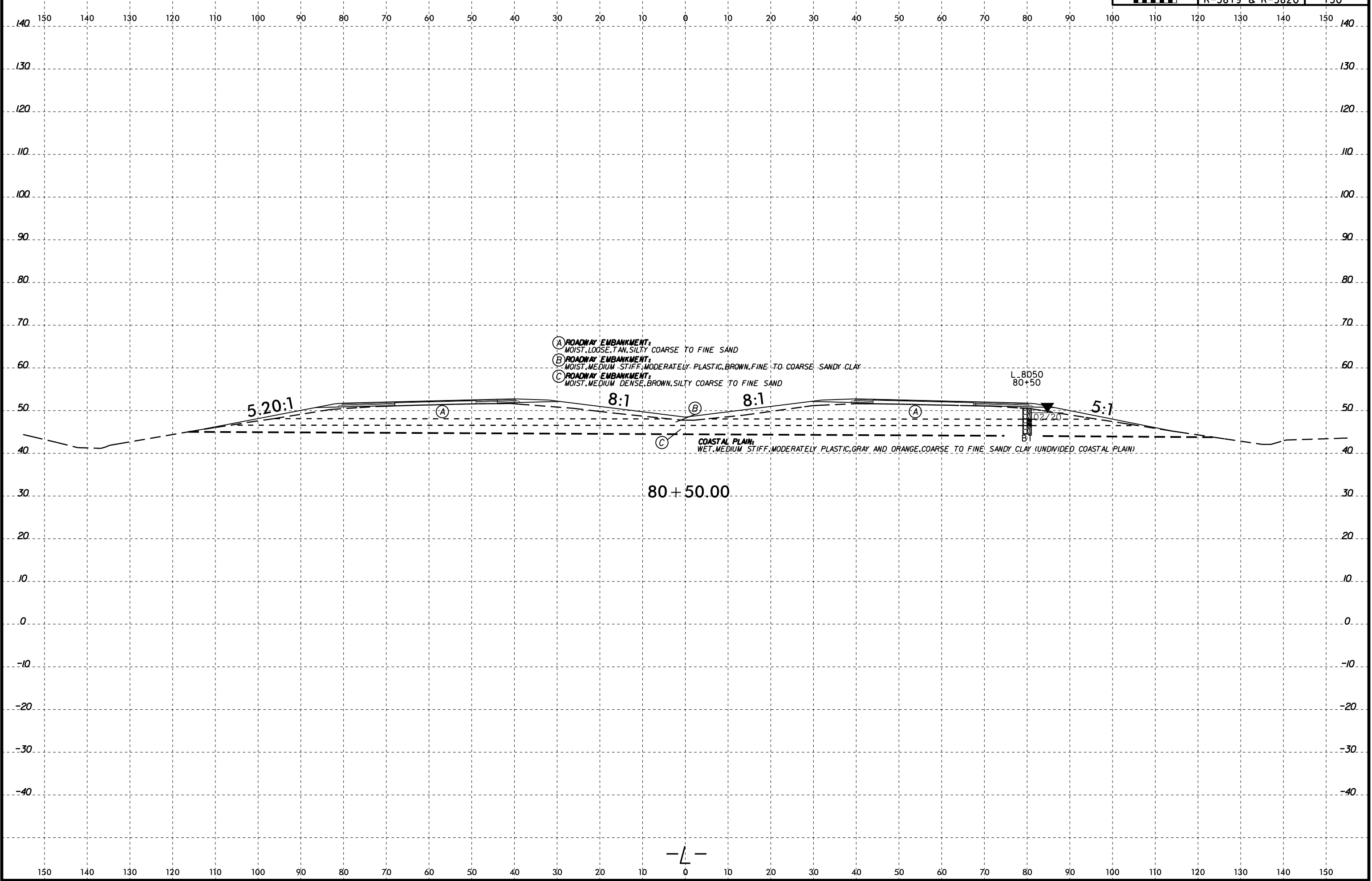
S-33
L 7650
76+50
02720

76+50.00





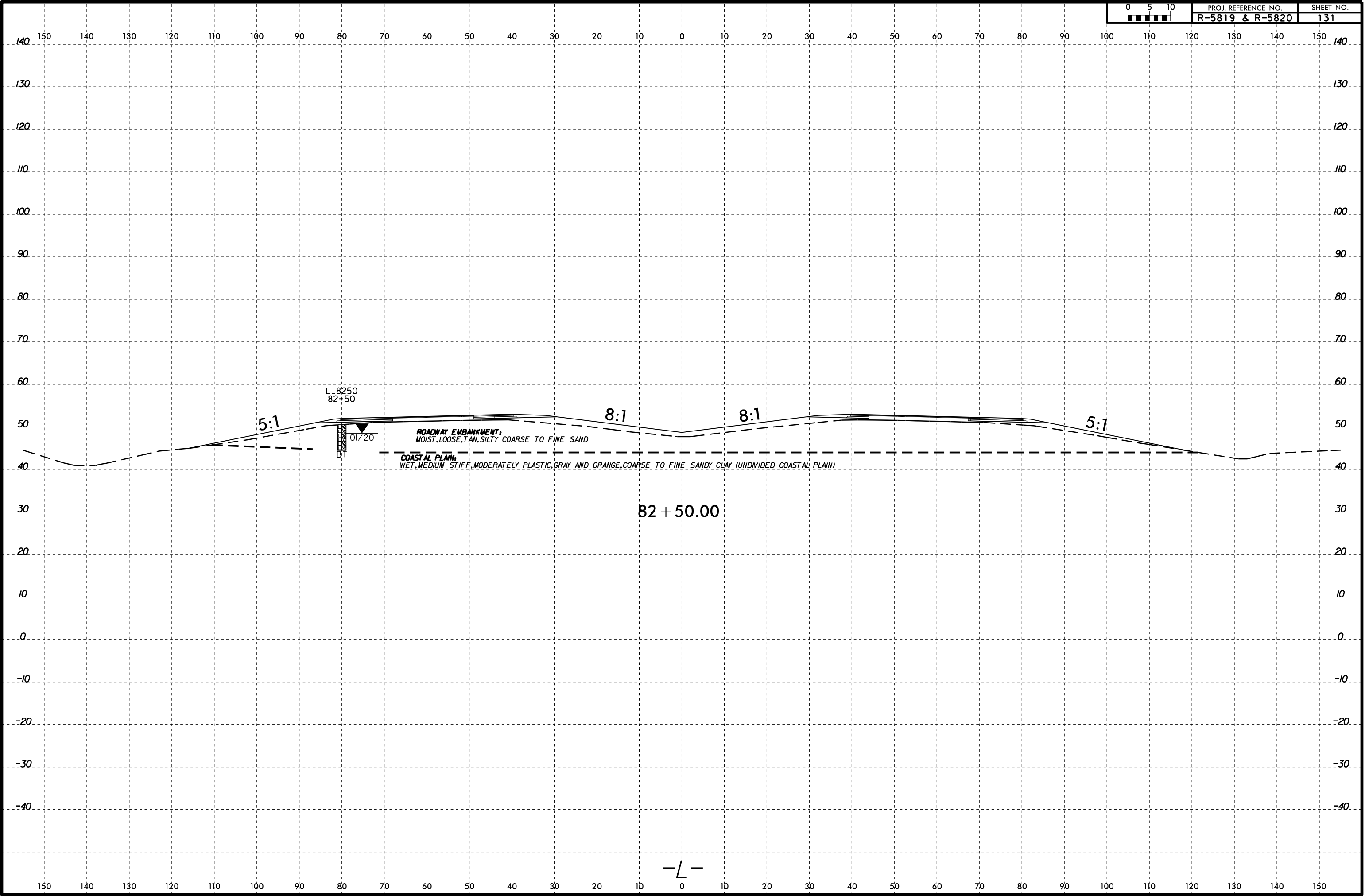
6/23/16
I:\FEB-2015\59
W\Shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\Roadway\5819-R5820-GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL\1(2).dgn



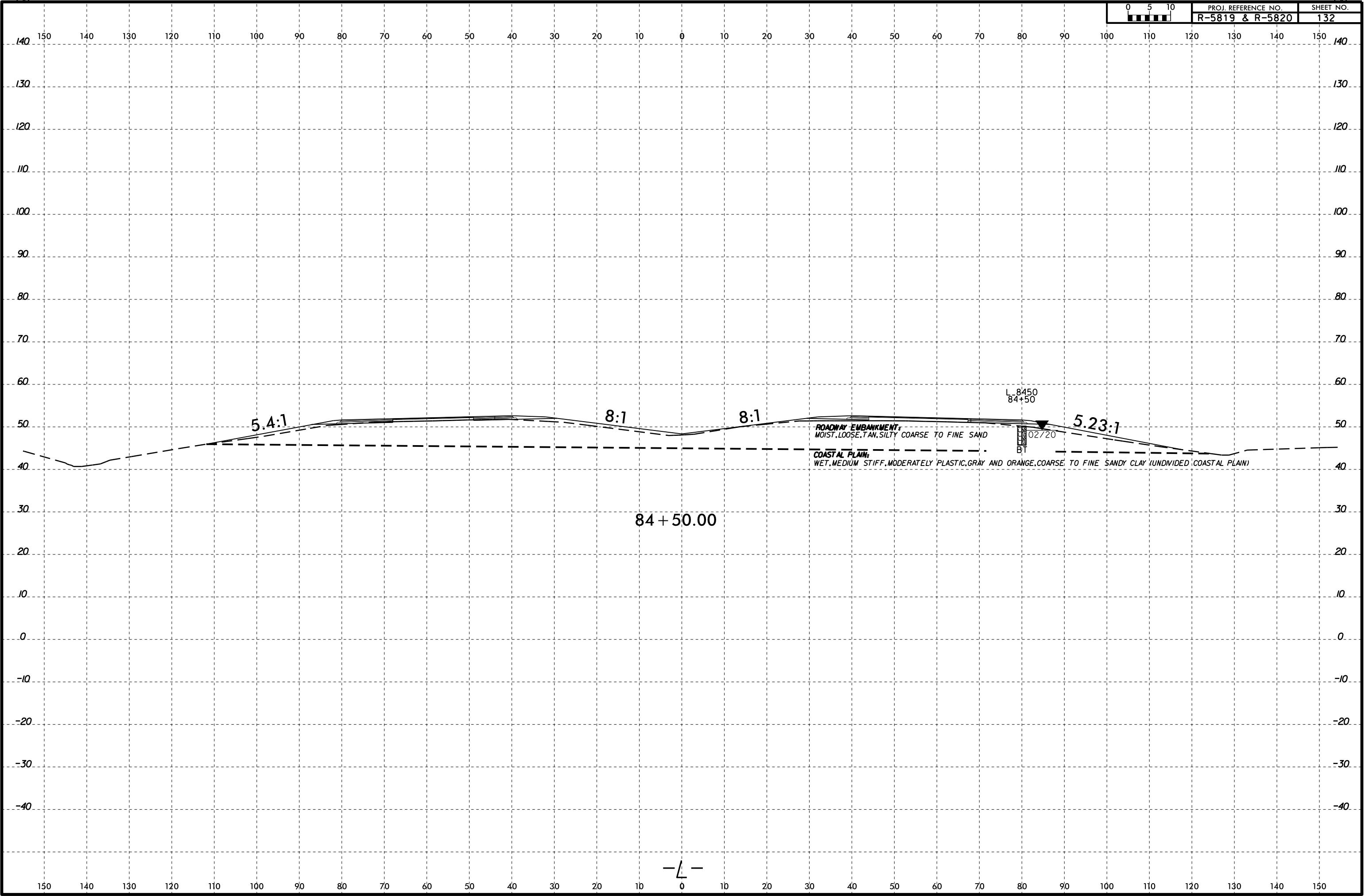
6/23/16

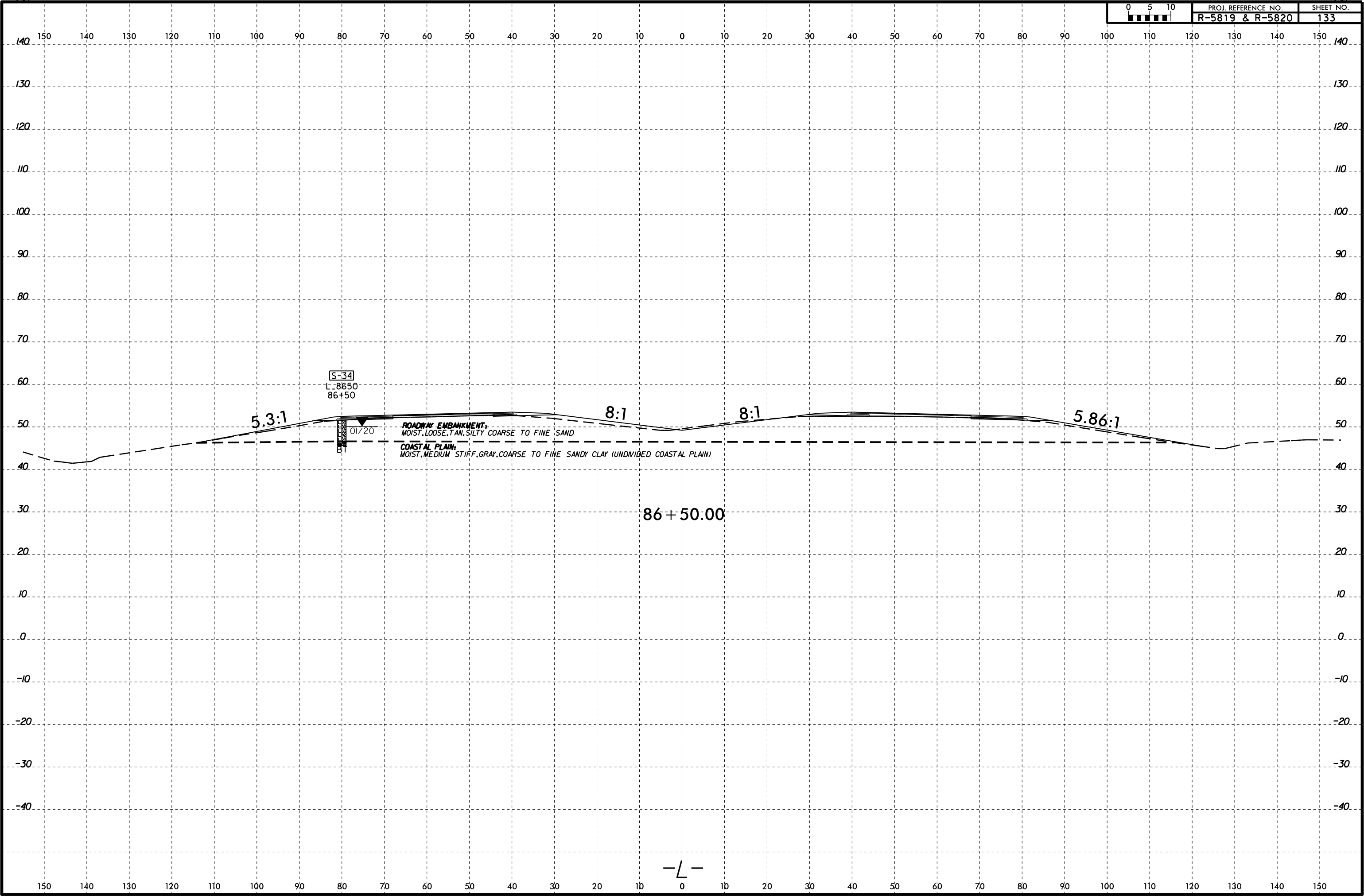
I:\FEB-2015\59
Winters\GEO\TECHNICAL\Projects\Active\Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-RS820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\TECH\XSEC\RS5819_RS820_GEO_XS1.L(2).dgn

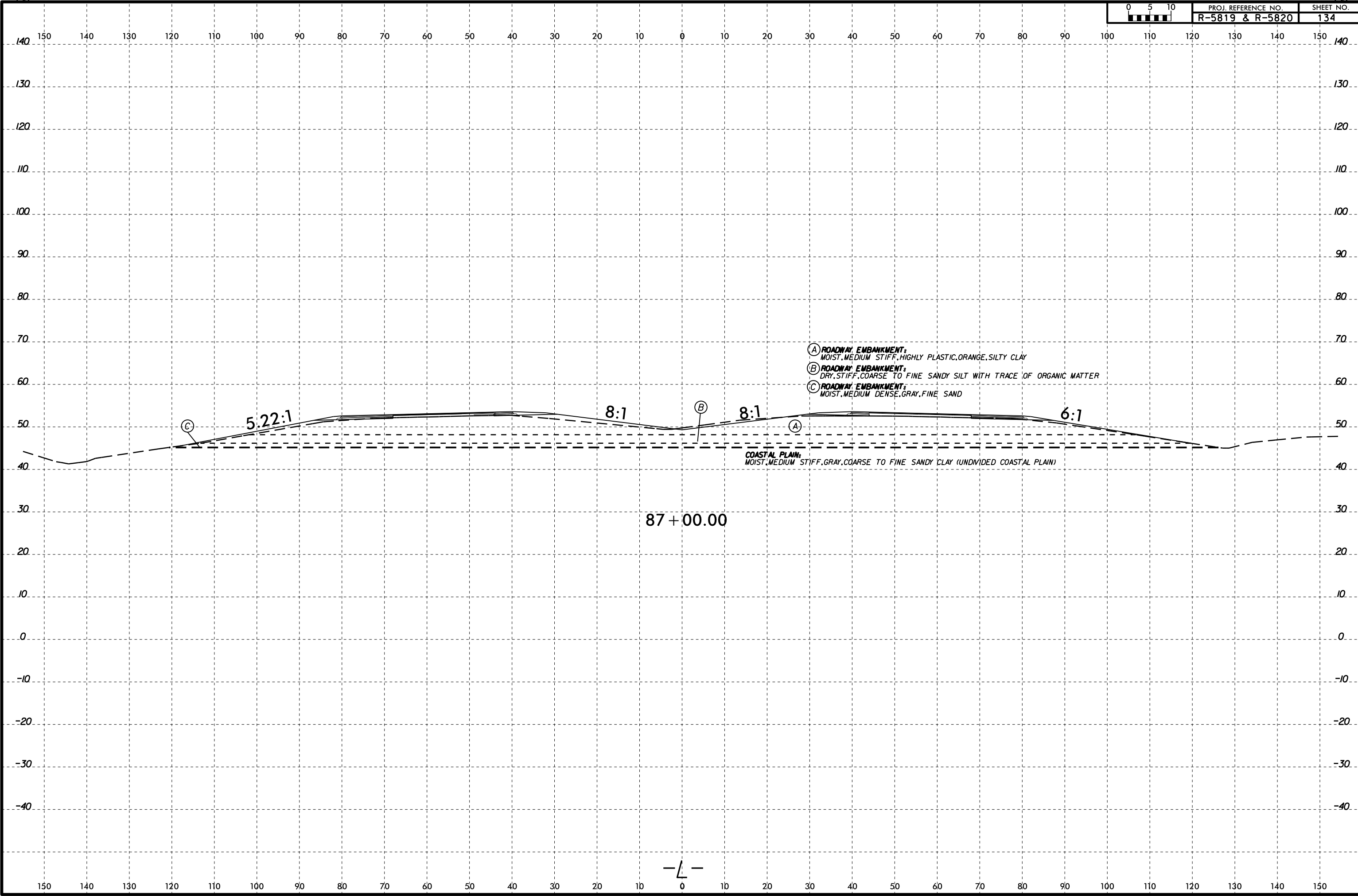
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	131



-L-



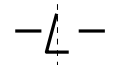


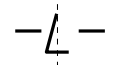
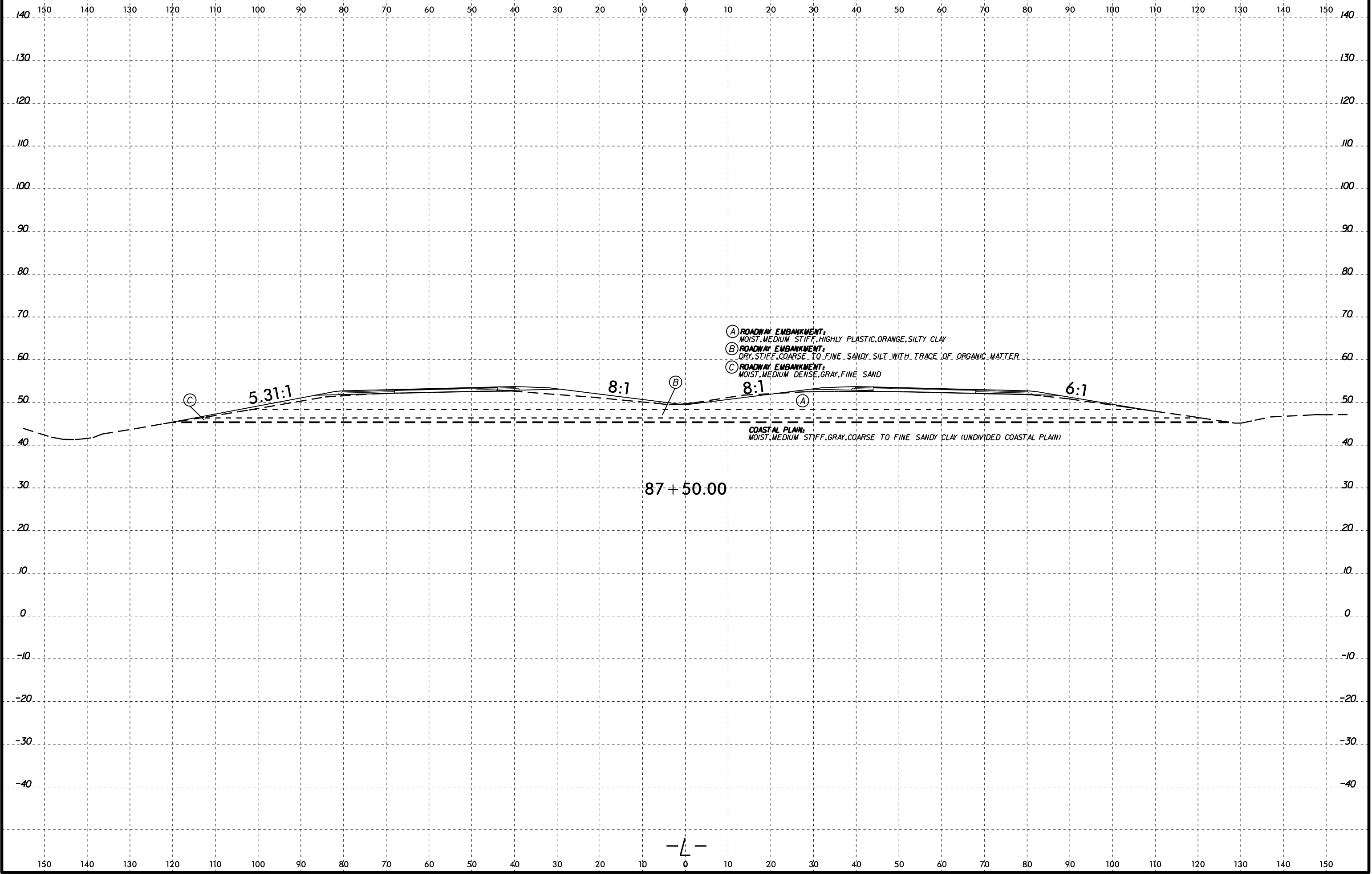


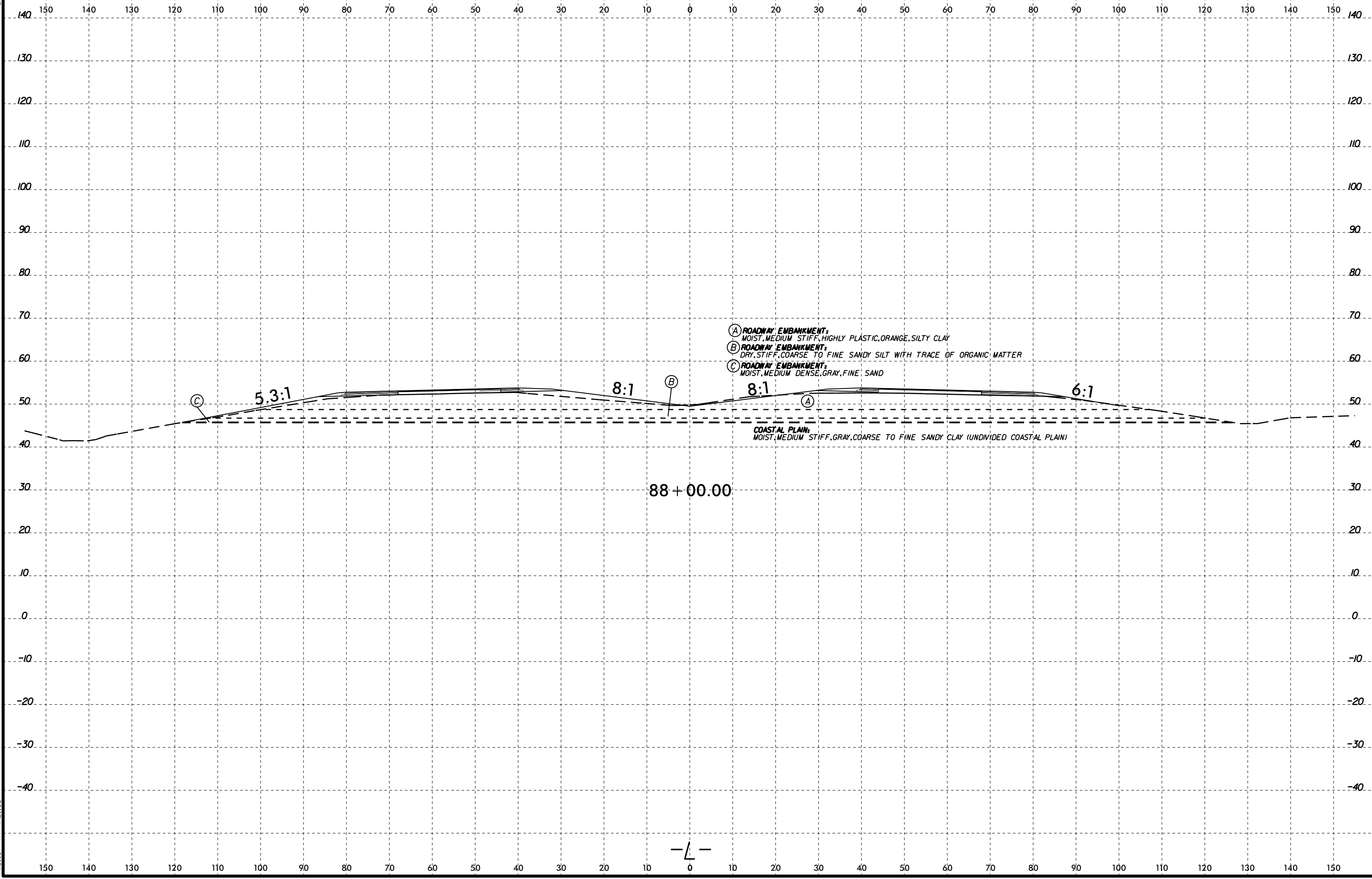
- (A) ROADWAY EMBANKMENT;
MOIST, MEDIUM STIFF, HIGHLY PLASTIC, ORANGE, SILTY CLAY
- (B) ROADWAY EMBANKMENT;
DRY, STIFF, COARSE TO FINE SANDY SILT WITH TRACE OF ORGANIC MATTER
- (C) ROADWAY EMBANKMENT;
MOIST, MEDIUM DENSE, GRAY, FINE SAND

COASTAL PLAIN;
MOIST, MEDIUM STIFF, GRAY, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

87+00.00

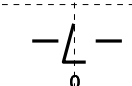


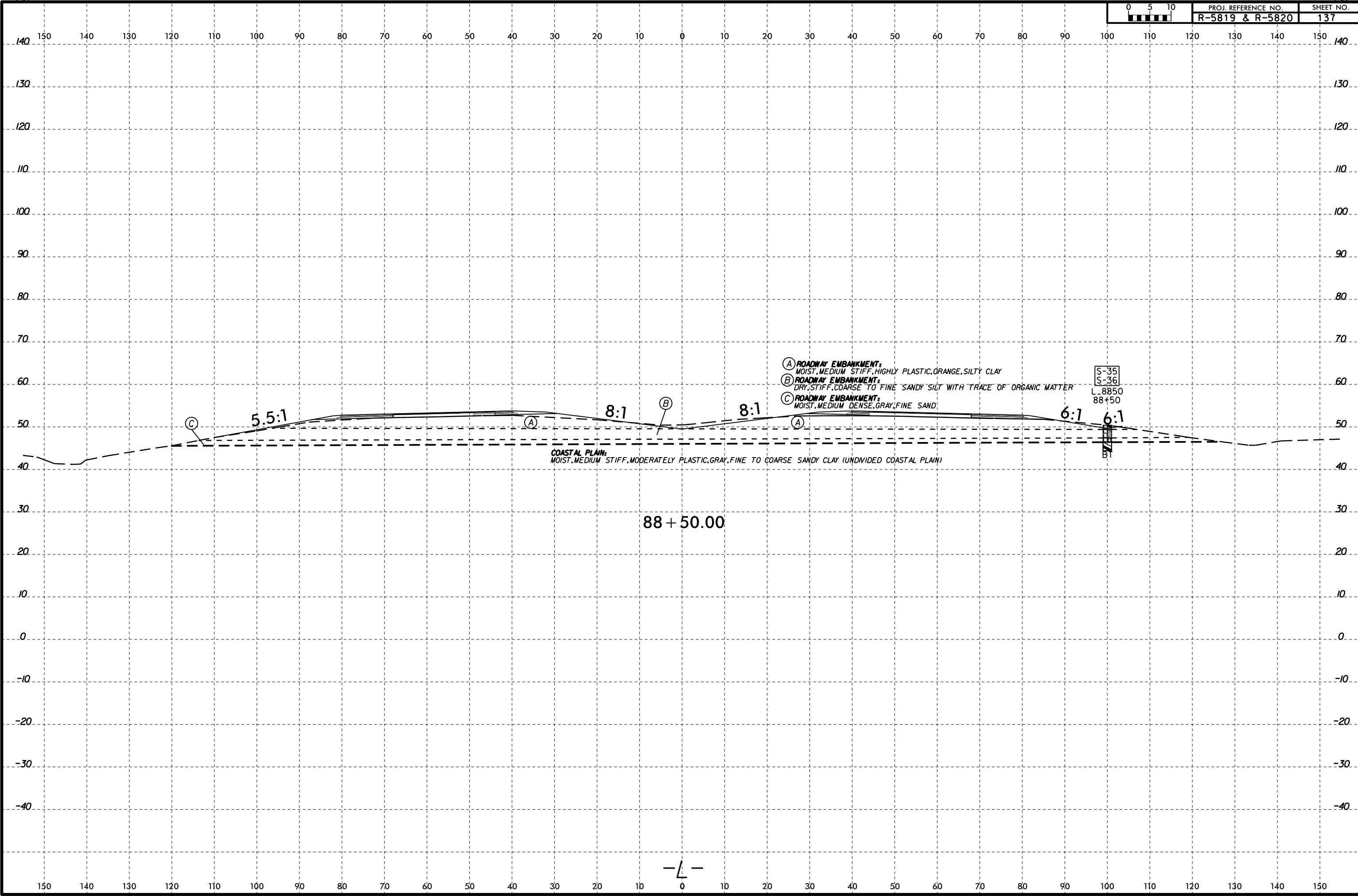


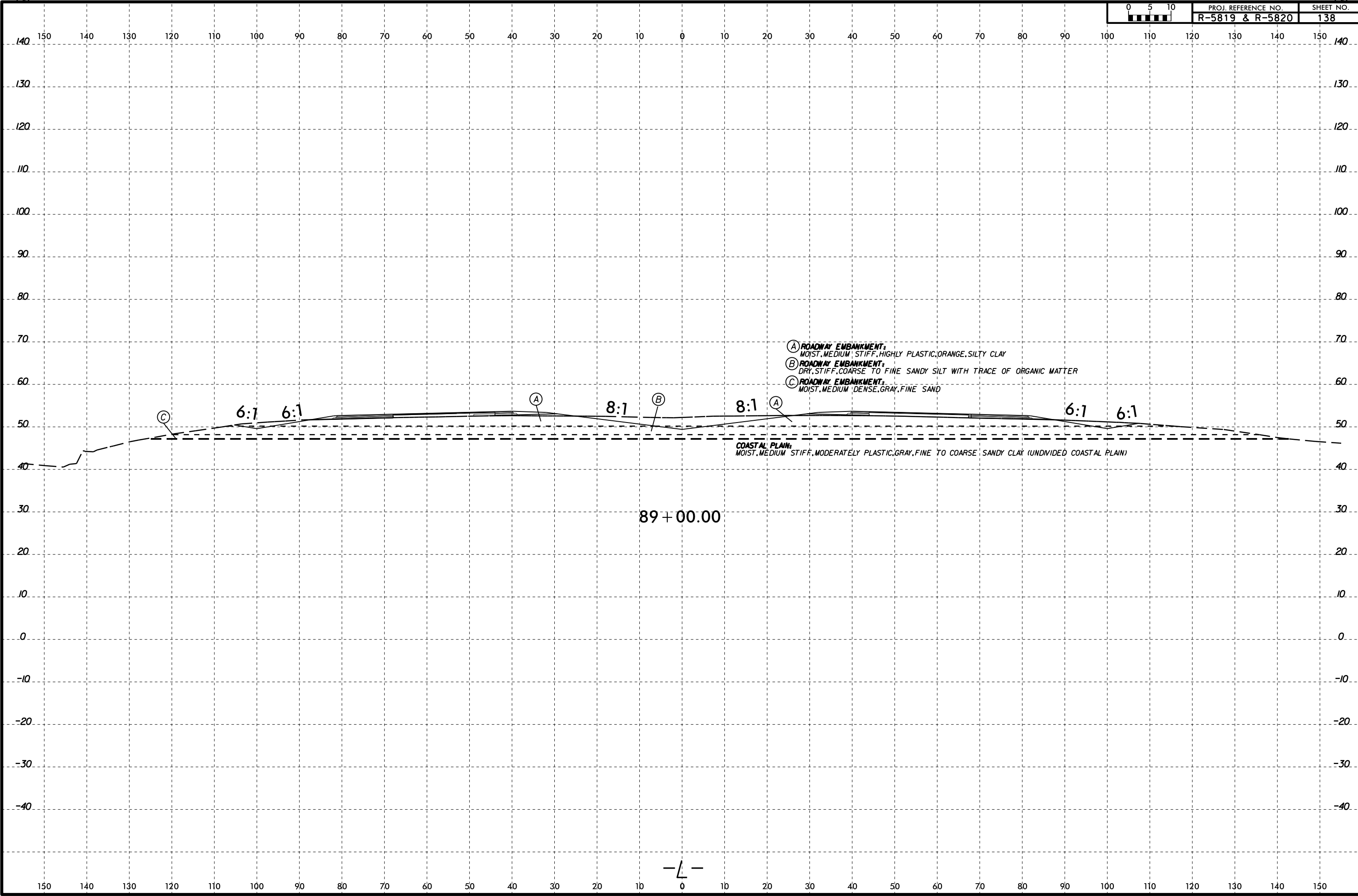


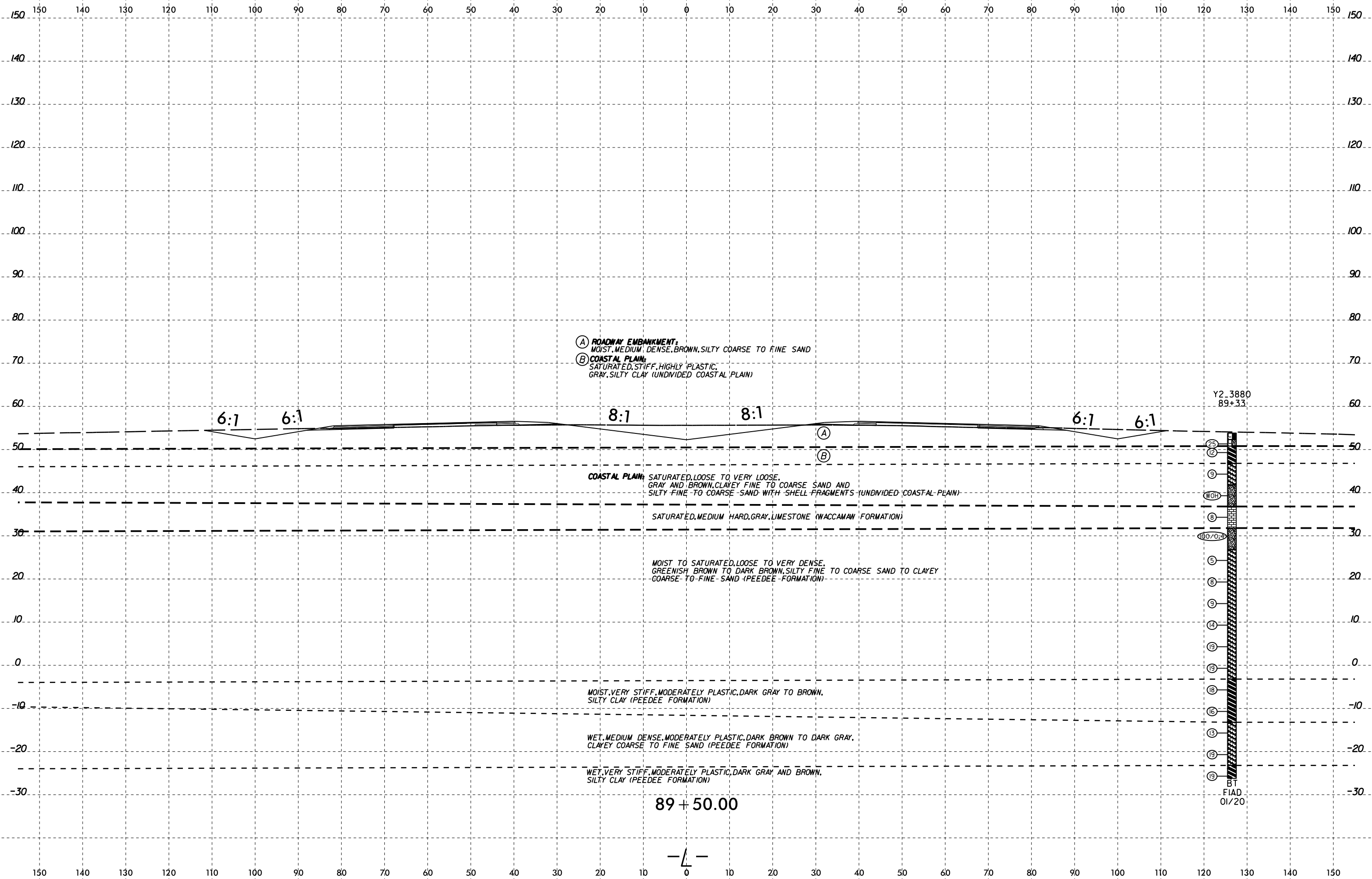
- (A) ROADWAY EMBANKMENT:
MOIST, MEDIUM STIFF, HIGHLY PLASTIC, ORANGE, SILTY CLAY
 - (B) ROADWAY EMBANKMENT:
DRY, STIFF, COARSE TO FINE SANDY SILT WITH TRACE OF ORGANIC MATTER
 - (C) ROADWAY EMBANKMENT:
MOIST, MEDIUM DENSE, GRAY, FINE SAND
- COASTAL PLAIN:
MOIST, MEDIUM STIFF, GRAY, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

88+00.00

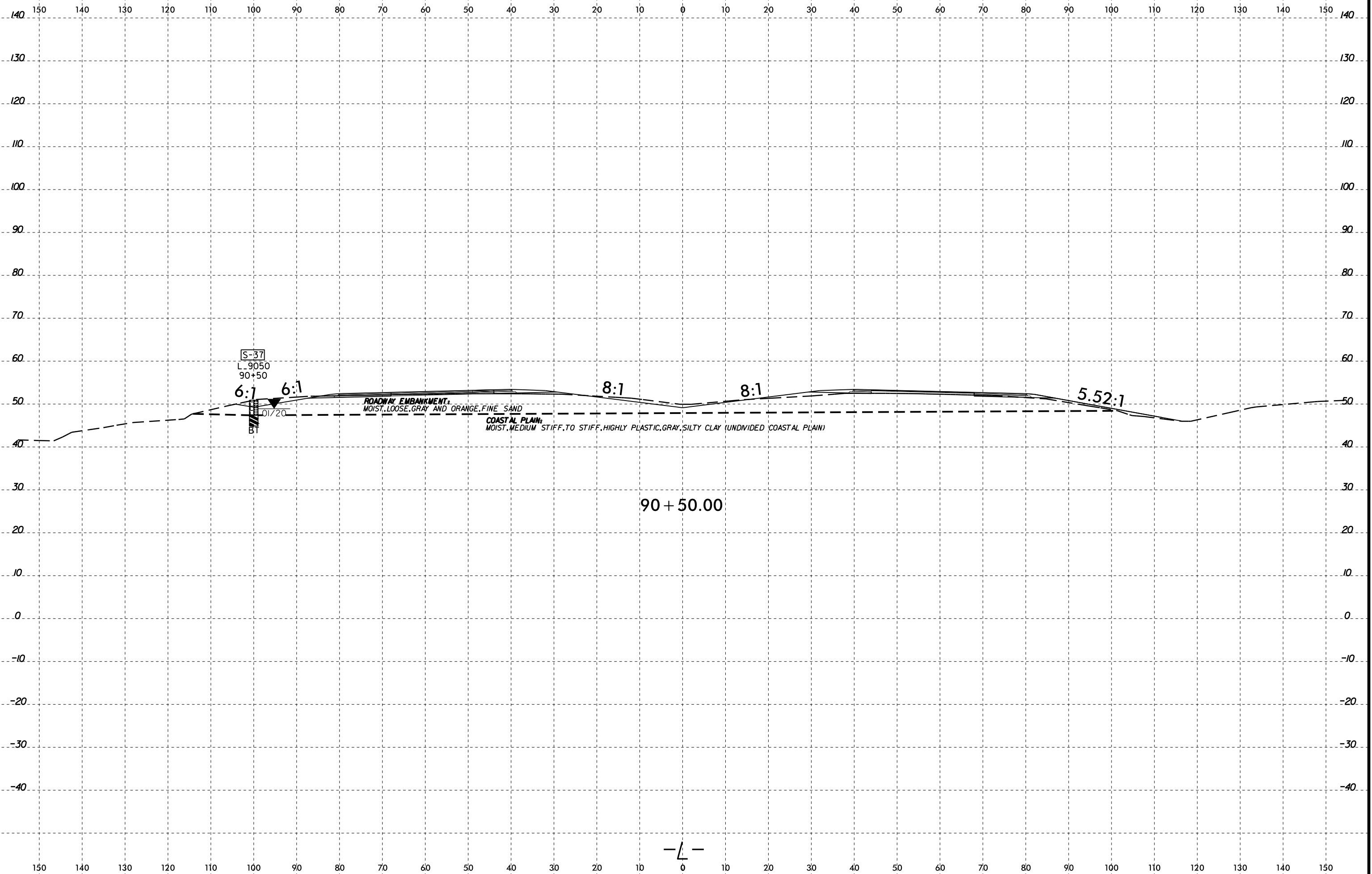








6/23/16
I:\FEB-2015\59
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\XSEC\R5819_R5820_GEO_XS1.L(3).dgn



S-37

L 9050

90+50

101/20

BT

BT

ROADWAY EMBANKMENT

MOIST, LOOSE, GRAY AND ORANGE, FINE SAND

COASTAL PLAIN

MOIST, MEDIUM STIFF TO STIFF, HIGHLY PLASTIC, GRAY, SILTY CLAY (UNDIVIDED COASTAL PLAIN)

8:1

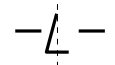
8:1

5.52:1

6:1

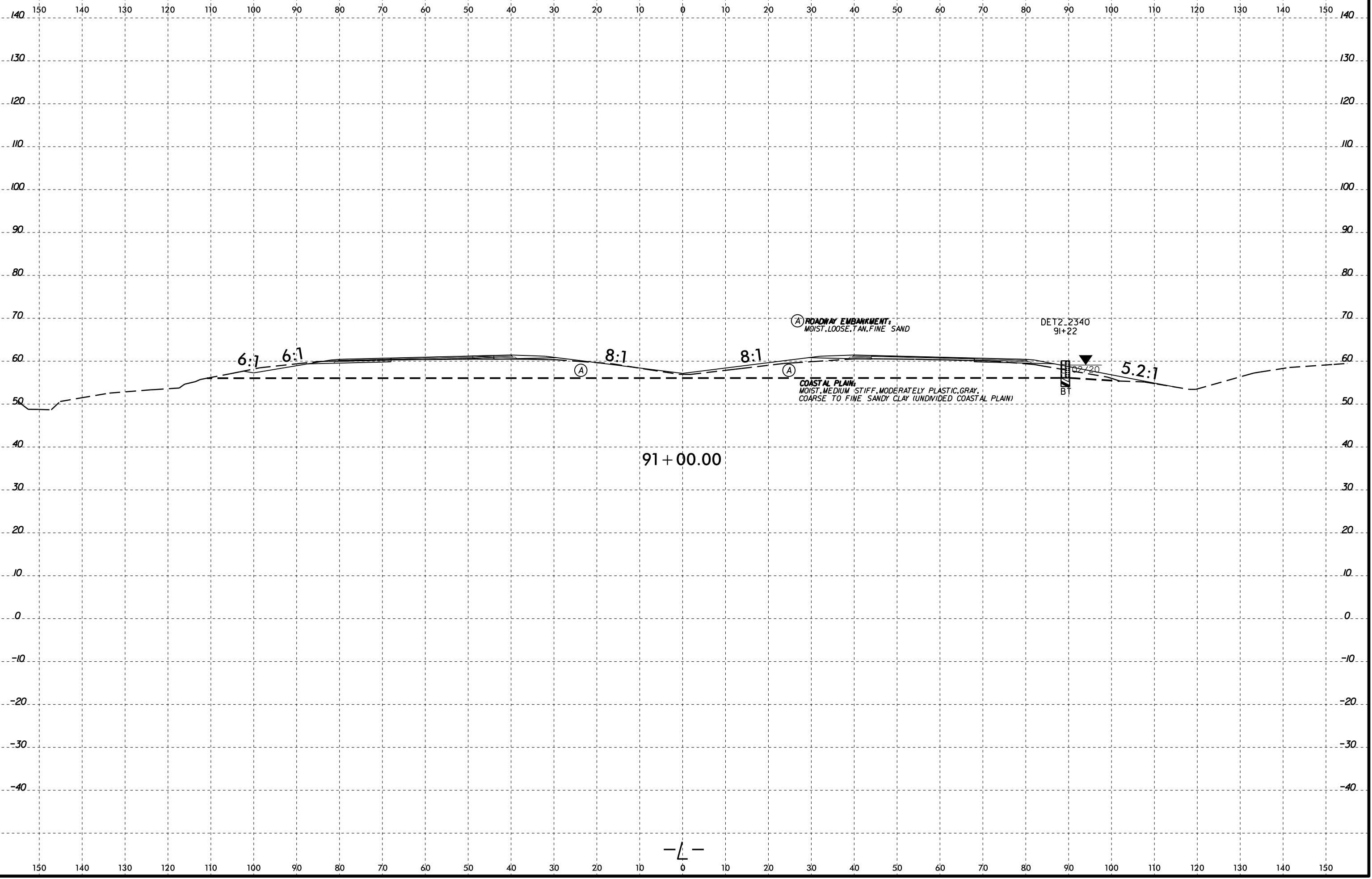
6:1

90 + 50.00

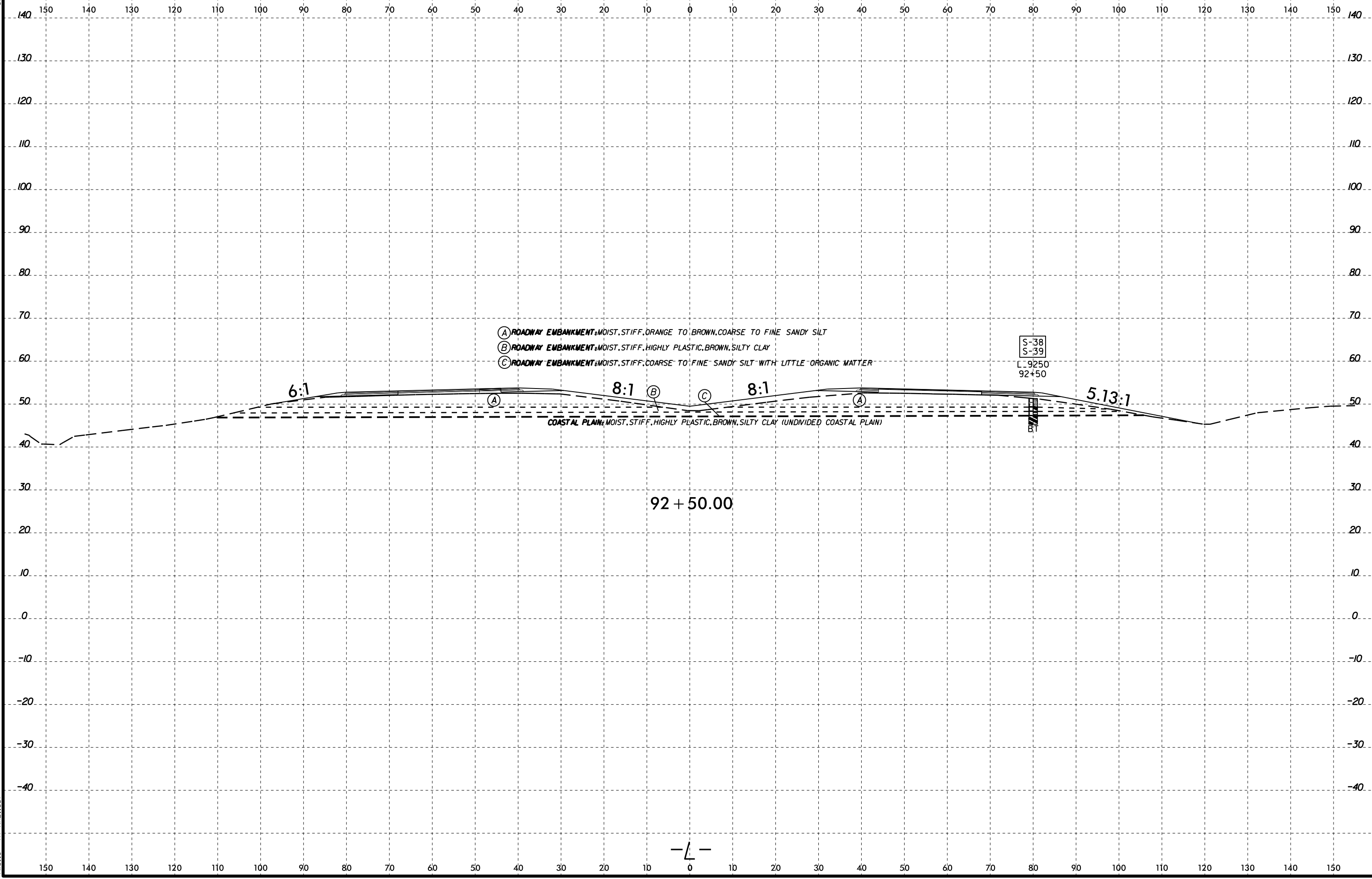


6/23/16
I:\FEB-2015\59
W\Shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS1.LL(3).dgn

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	141



6/23/16
I:\FEB-2015\59
W\Shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS1.LL(3).dgn



- (A) ROADWAY EMBANKMENT: MOIST, STIFF, ORANGE TO BROWN, COARSE TO FINE SANDY SILT
- (B) ROADWAY EMBANKMENT: MOIST, STIFF, HIGHLY PLASTIC, BROWN, SILTY CLAY
- (C) ROADWAY EMBANKMENT: MOIST, STIFF, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER

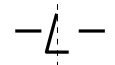
COASTAL PLAIN: MOIST, STIFF, HIGHLY PLASTIC, BROWN, SILTY CLAY (UNDIVIDED COASTAL PLAIN)

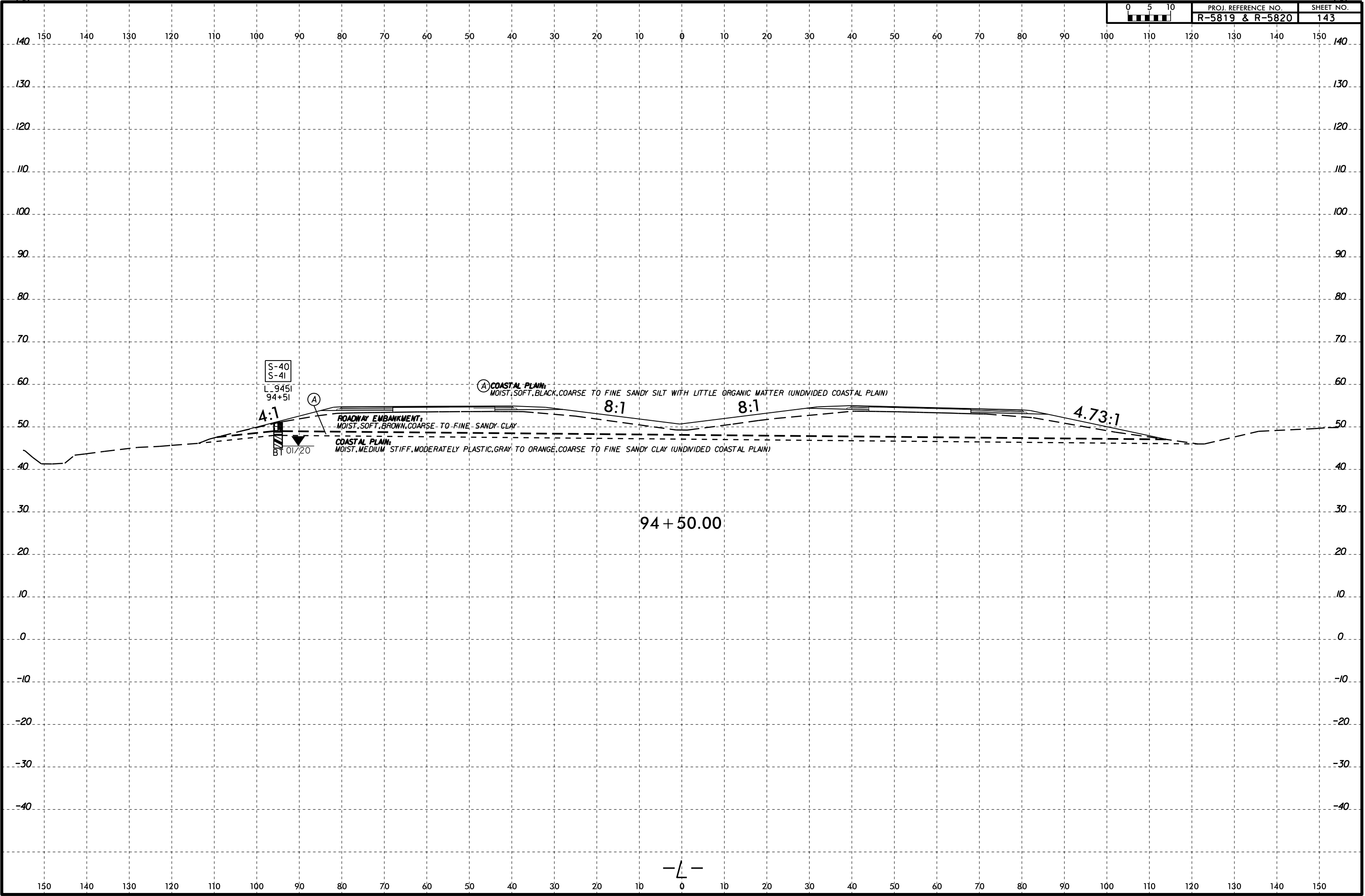
S-38
S-39

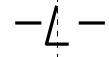
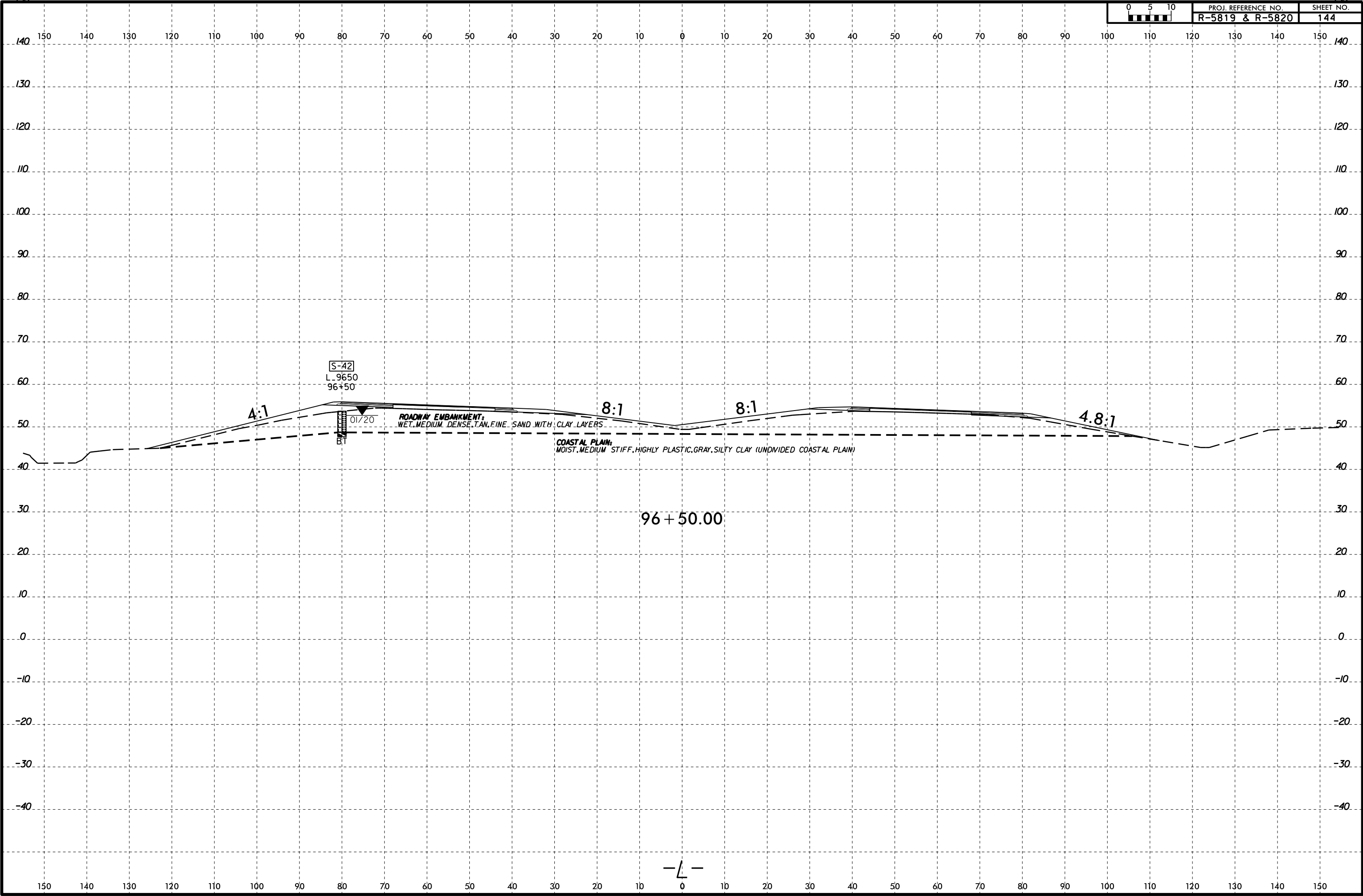
L 92+50
92+50

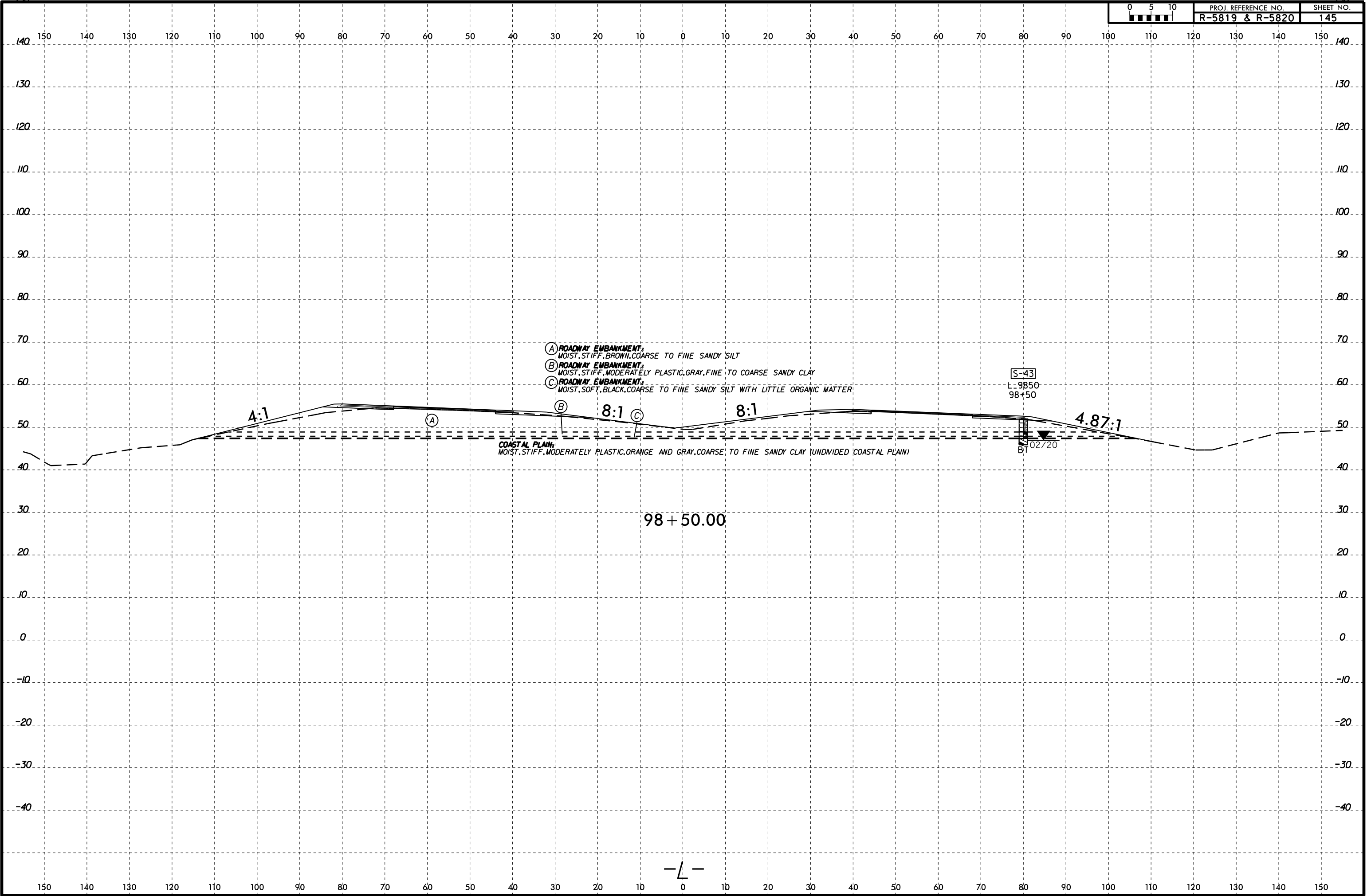
BT

92 + 50.00









- (A) ROADWAY EMBANKMENT:
MOIST, STIFF, BROWN, COARSE TO FINE SANDY SILT
- (B) ROADWAY EMBANKMENT:
MOIST, STIFF, MODERATELY PLASTIC, GRAY, FINE TO COARSE SANDY CLAY
- (C) ROADWAY EMBANKMENT:
MOIST, SOFT, BLACK, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER

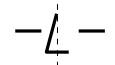
COASTAL PLAIN:
MOIST, STIFF, MODERATELY PLASTIC, ORANGE AND GRAY, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

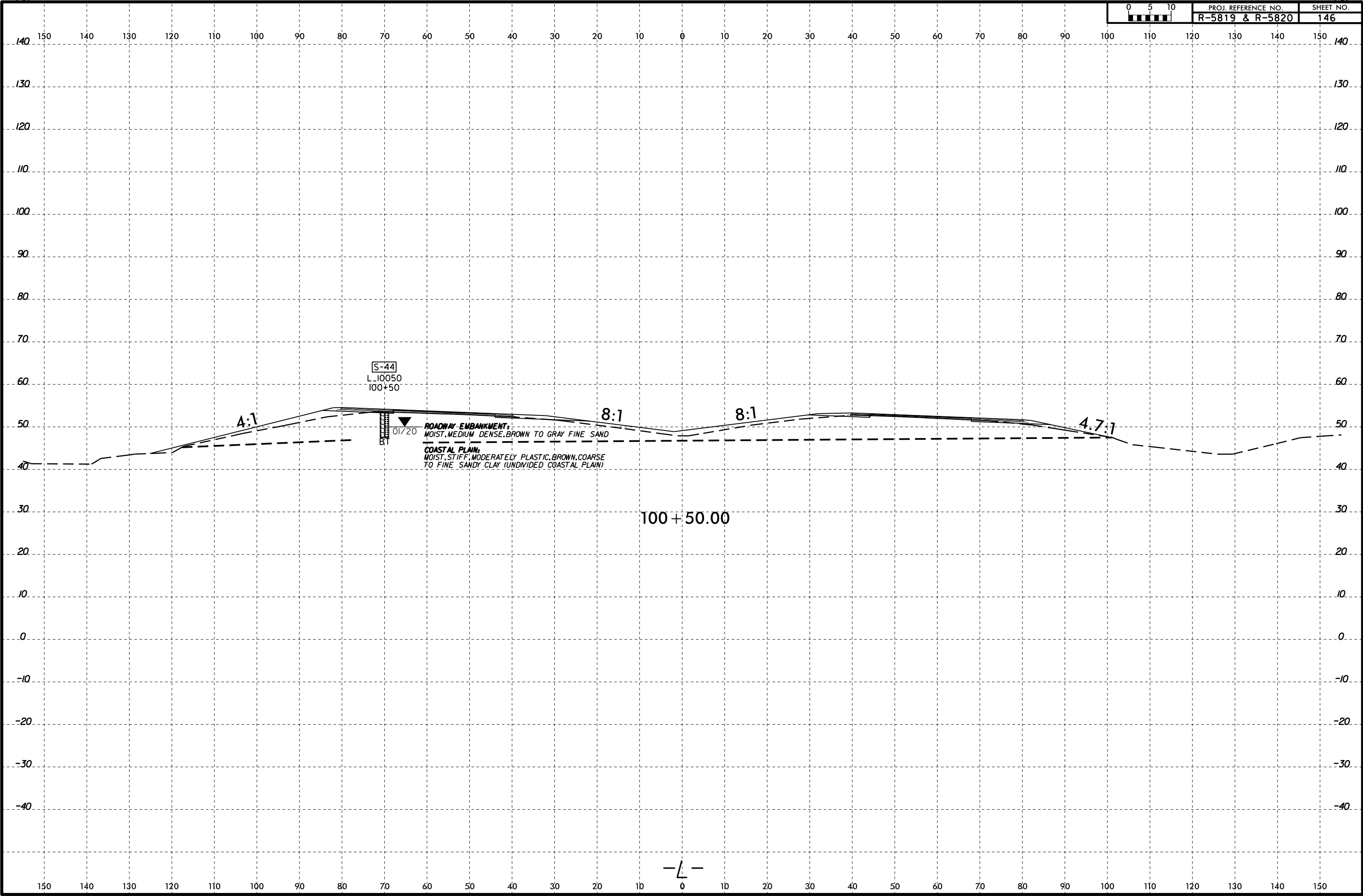
S-43

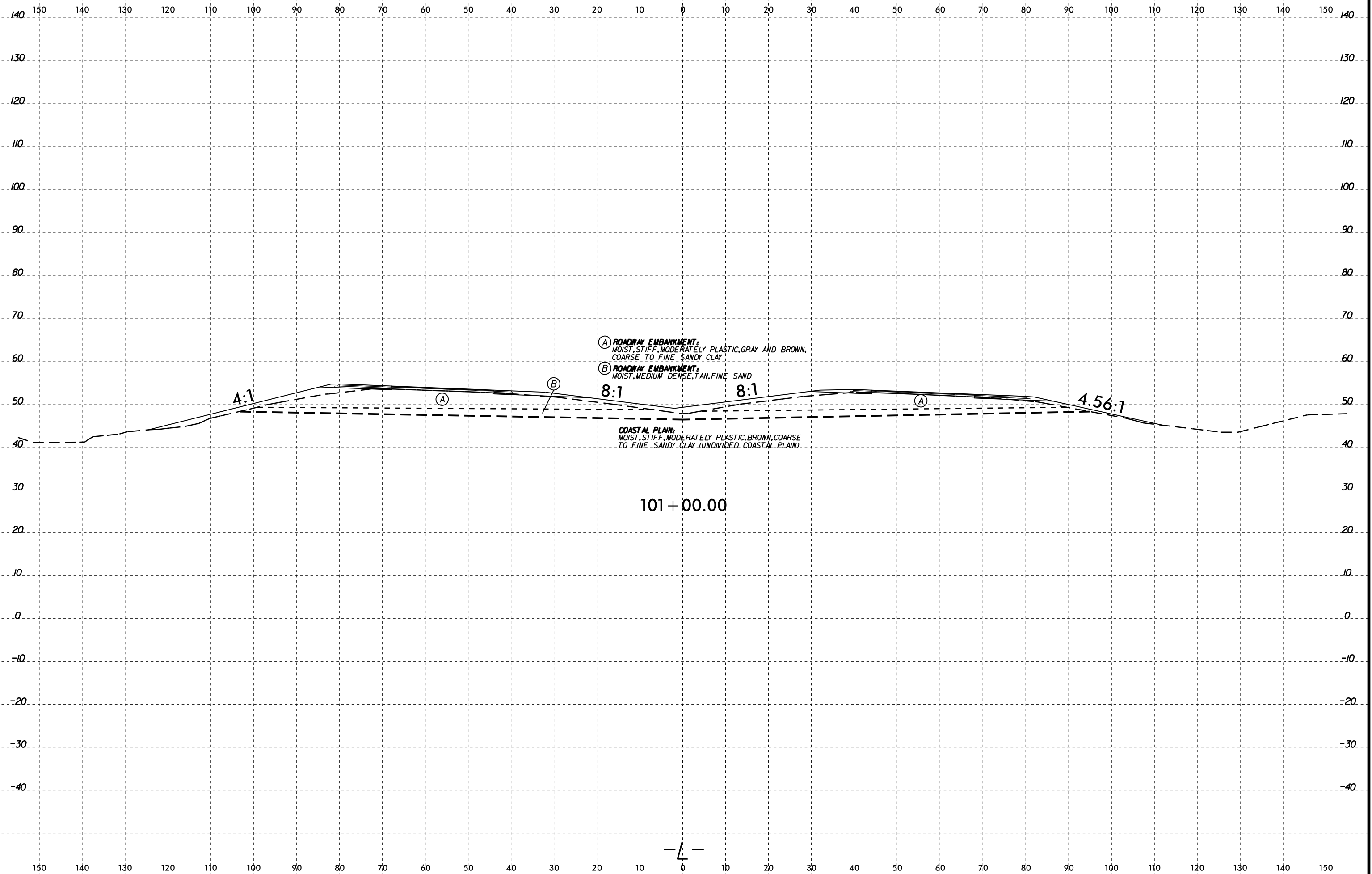
E: 9850
98+50

BT 02/20

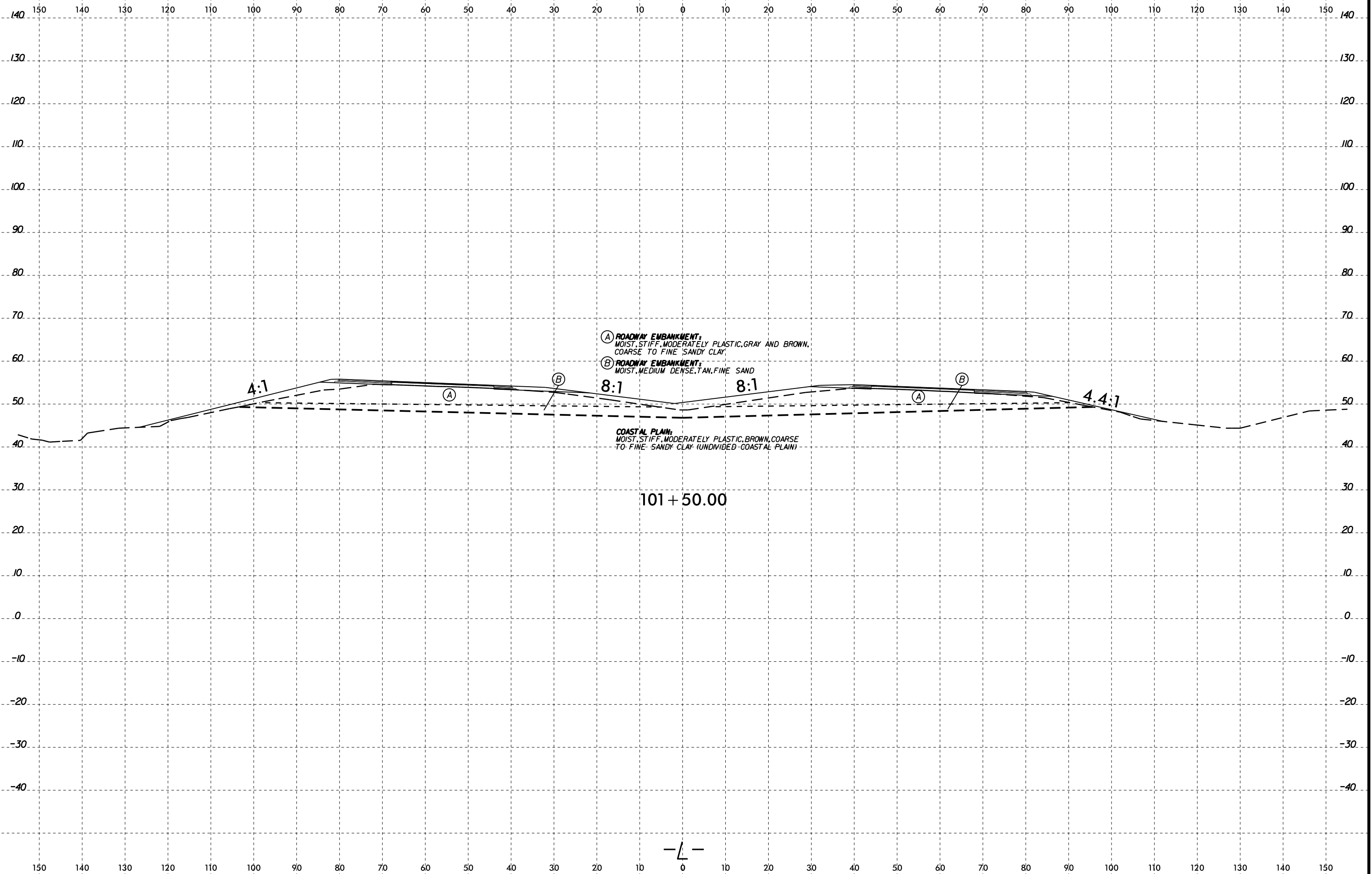
98 + 50.00







6/23/16
I:\FEB-2016\00
W\Shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS1.LL(3).dgn

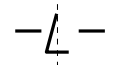


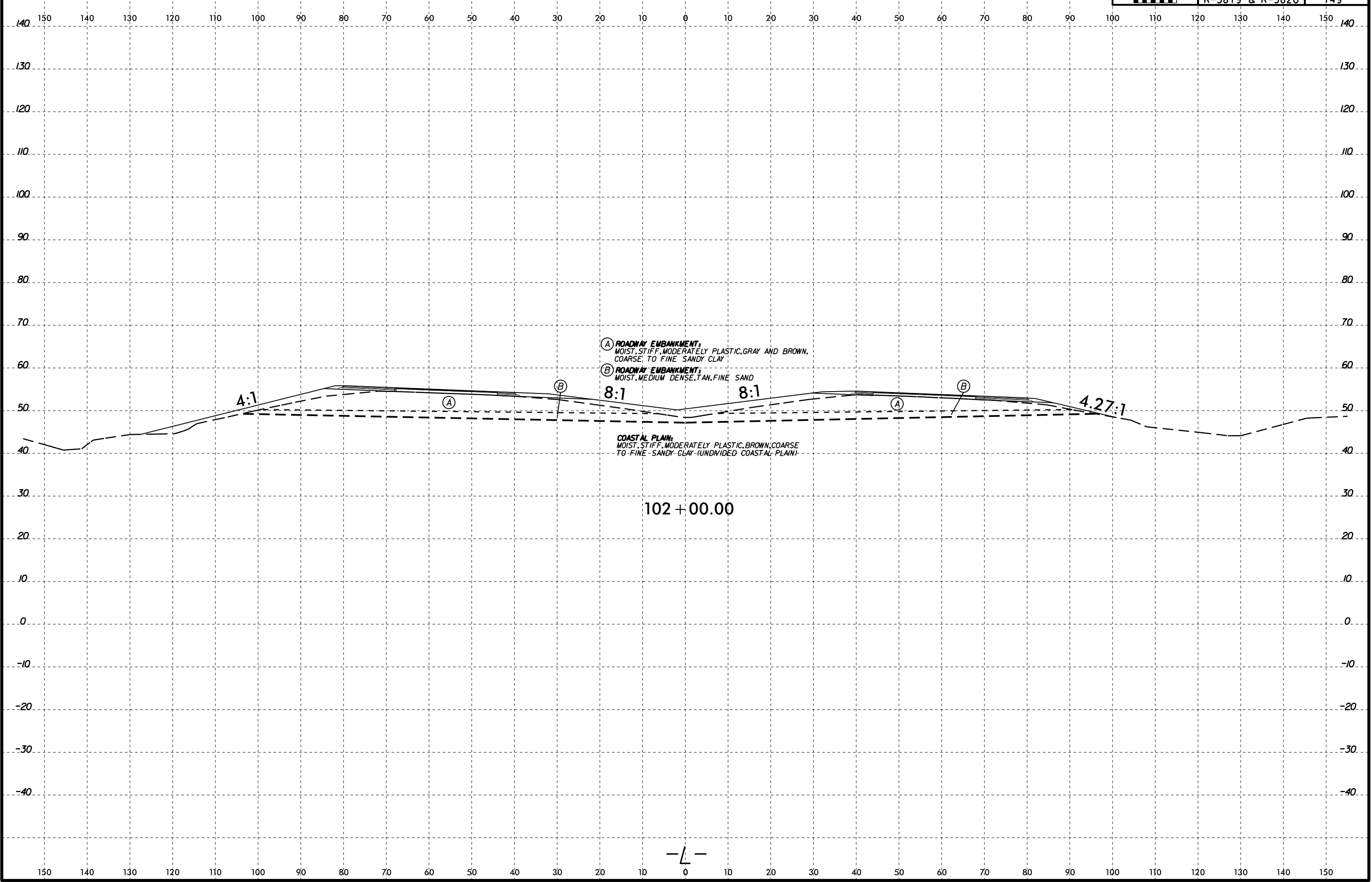
(A) ROADWAY EMBANKMENT:
MOIST, STIFF, MODERATELY PLASTIC, GRAY AND BROWN,
COARSE TO FINE SANDY CLAY

(B) ROADWAY EMBANKMENT:
MOIST, MEDIUM DENSE, TAN, FINE SAND

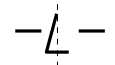
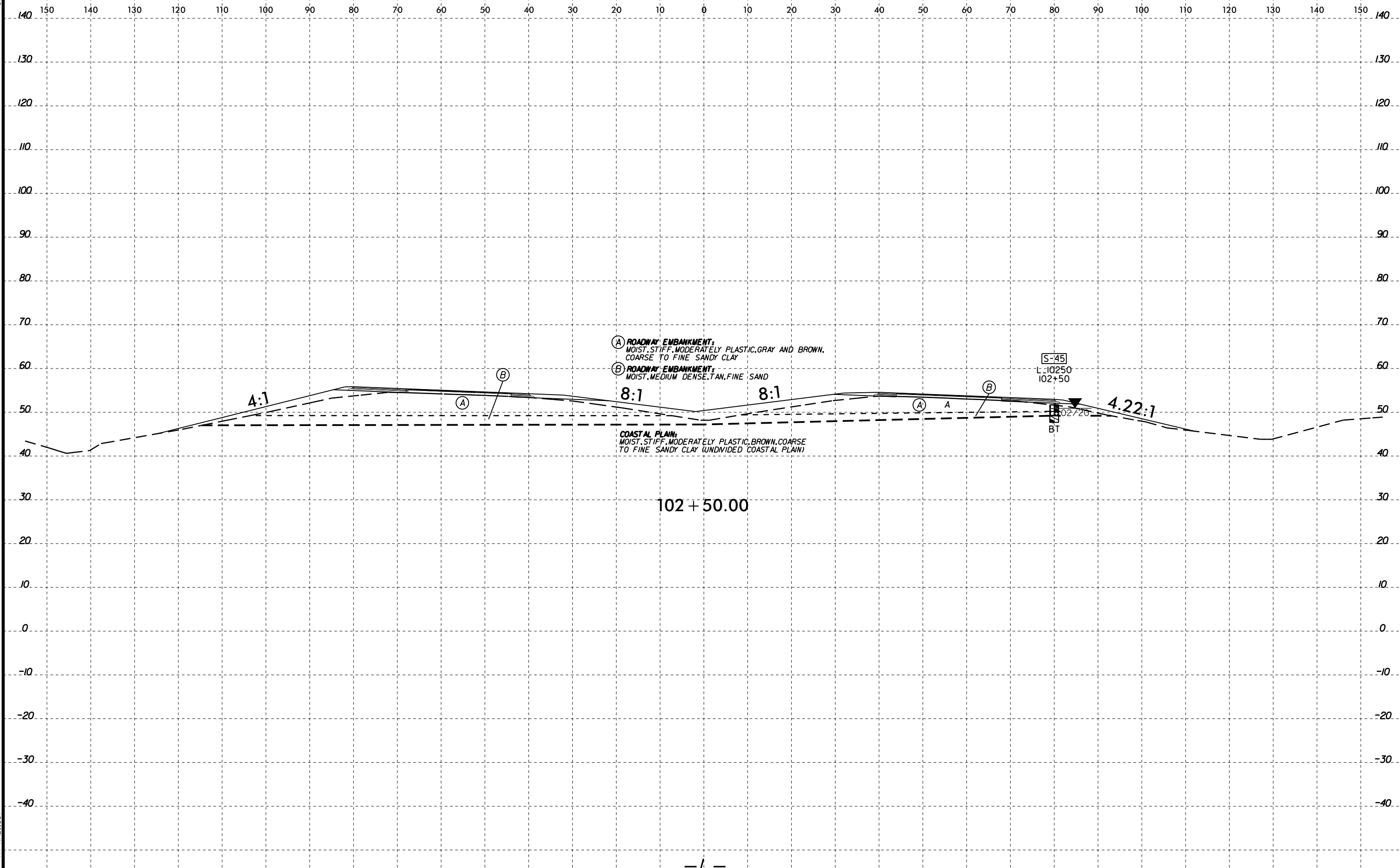
COASTAL PLAIN:
MOIST, STIFF, MODERATELY PLASTIC, BROWN, COARSE
TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

101 + 50.00

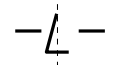
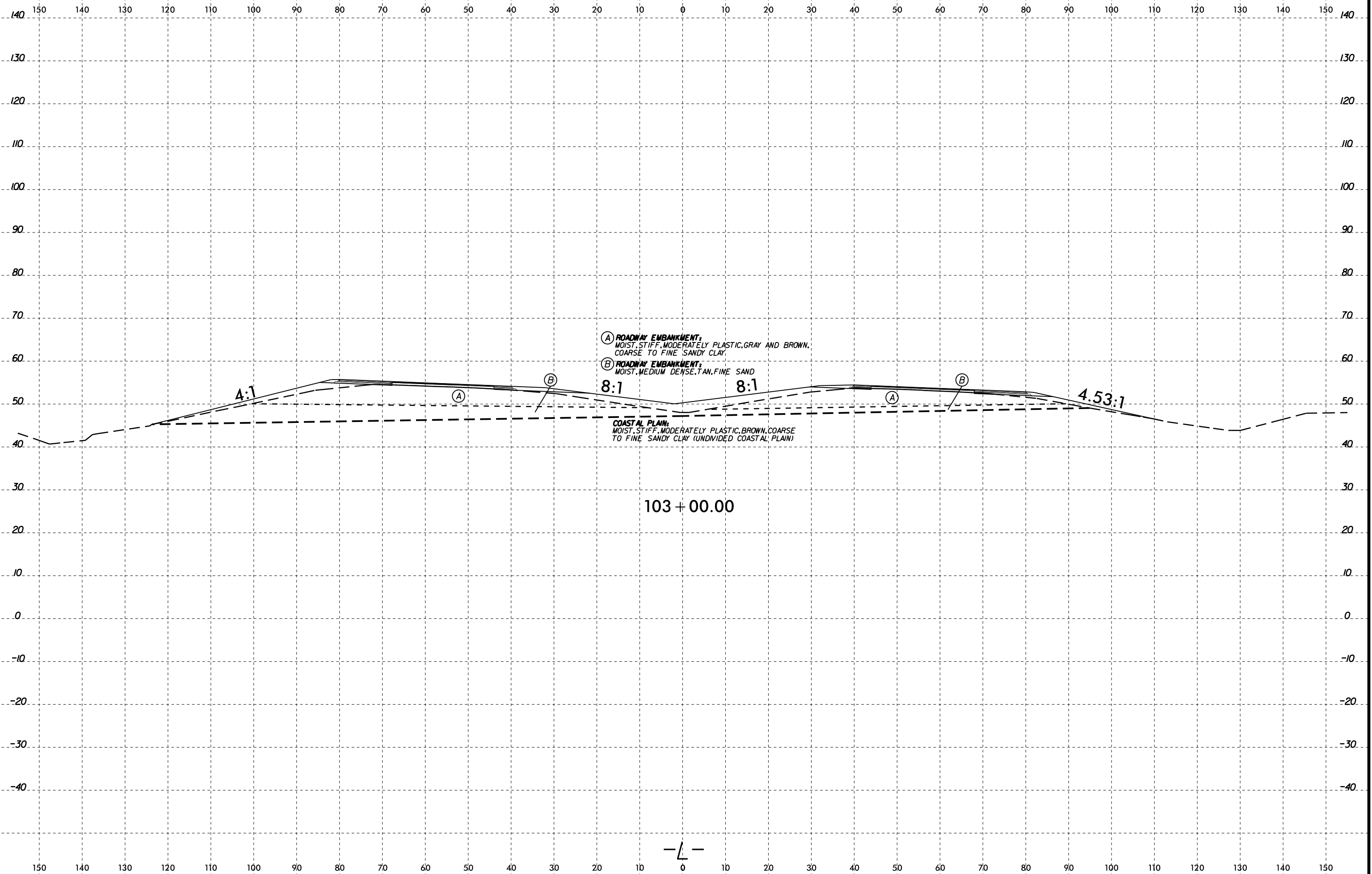




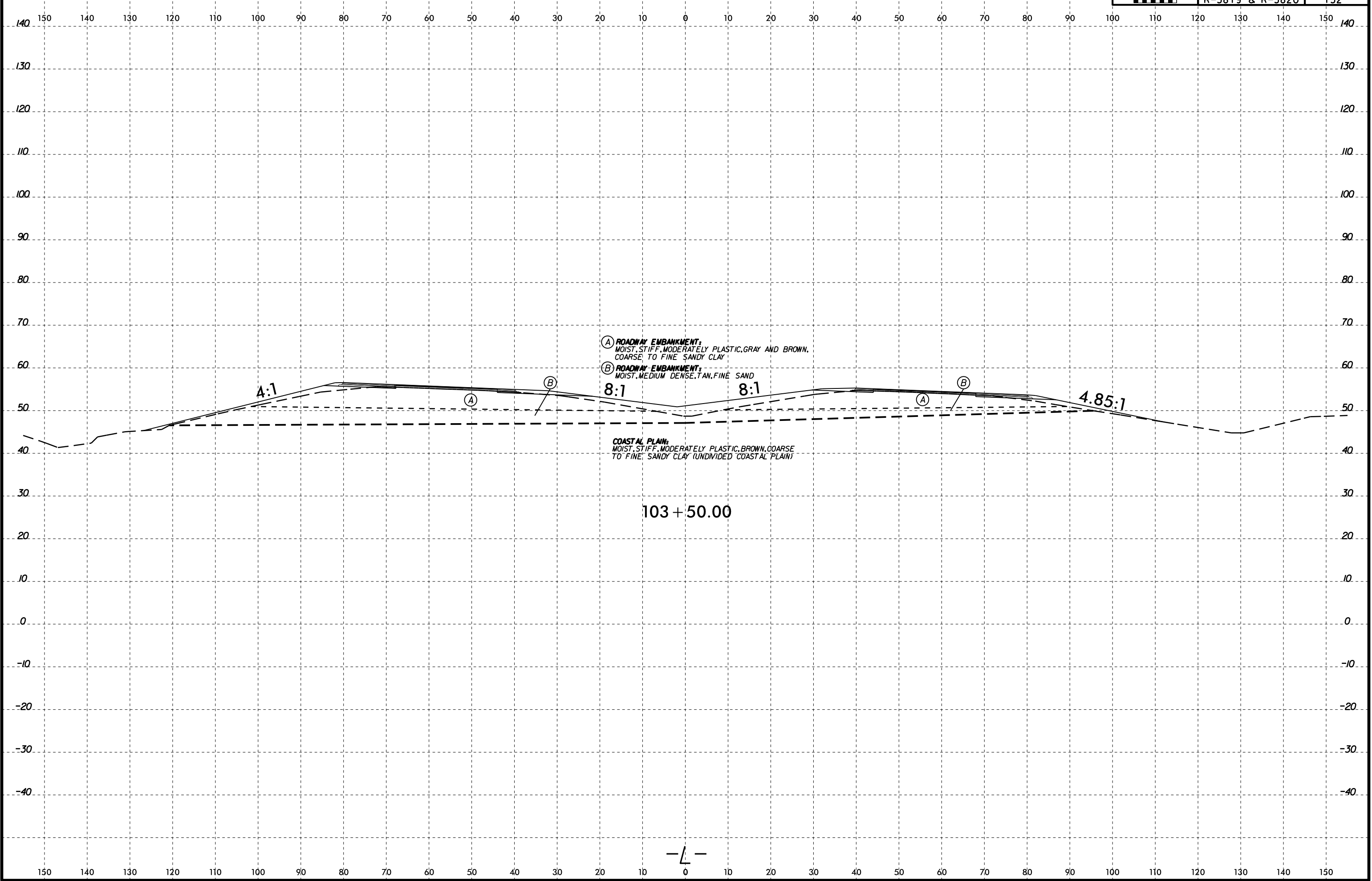
15-FEB-2016 10:00 AM
I:\Projects\2016\00-Wellis-AI-KA211387-Wellis-AI-KA211387-Projects\Active Projects\2016\0942.024A R-5819 & R-5820 Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL\1(3).dgn



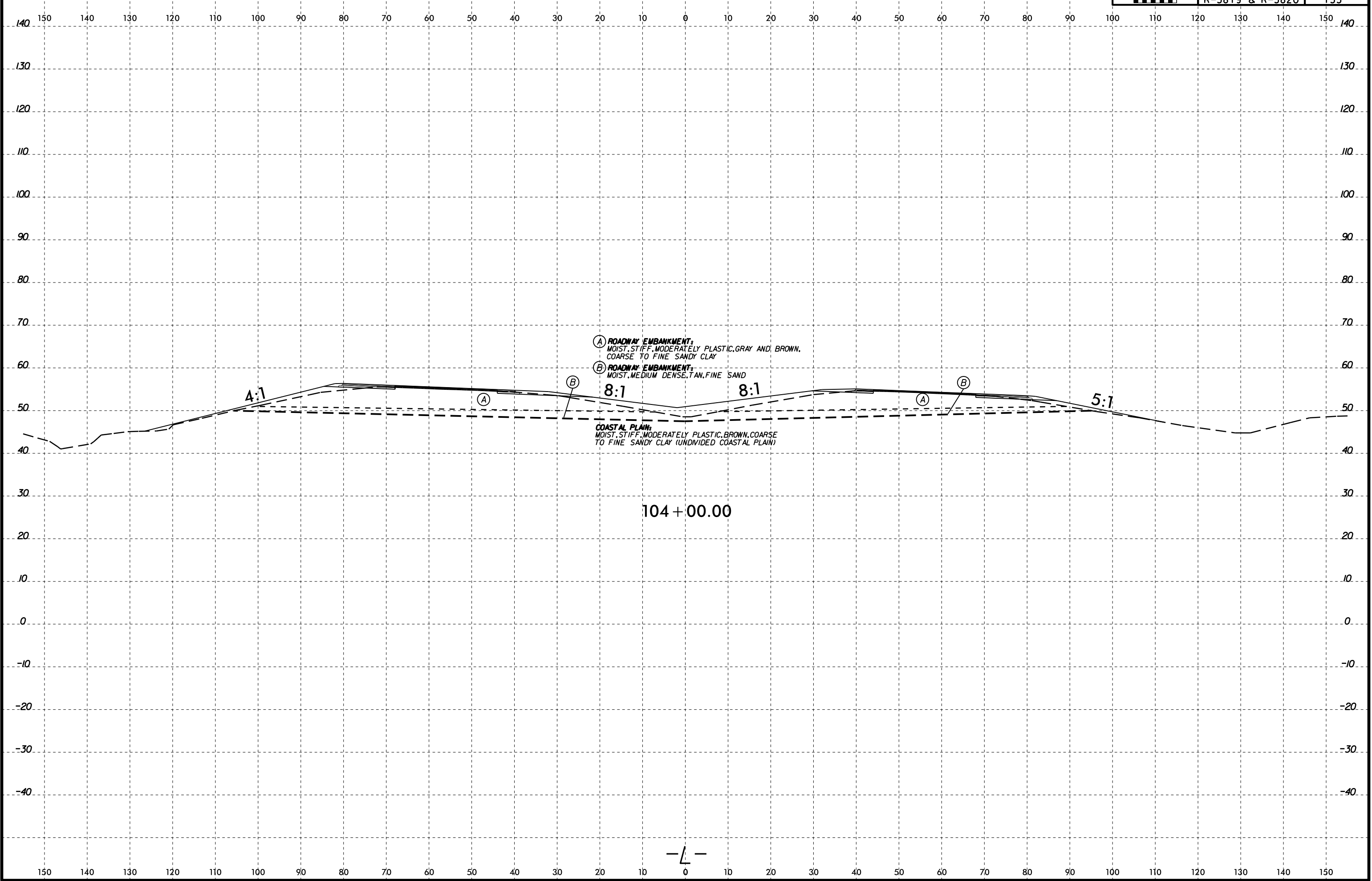
6/23/16
I:\FEB-2016\00
W\Shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\TECH\XSEC\RS5819-R5820_GEO_XS1.L(3).dgn



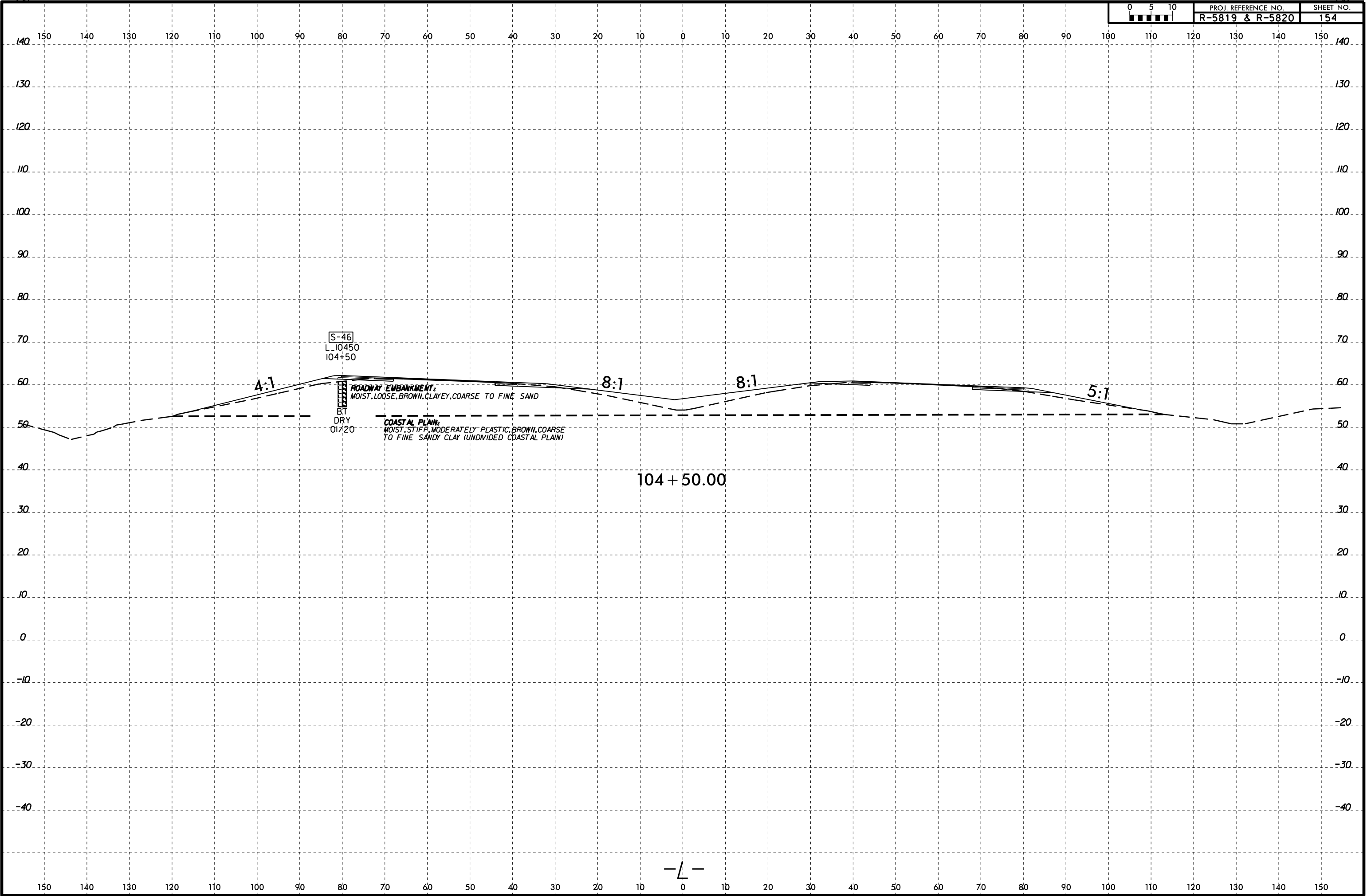
6/23/16
I:\FEB-2016\00
W\Shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS1.LL(3).dgn



6/23/16
I:\FEB-2016\00
W\Shore\GEO
TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS1.LL(3).dgn



6/23/16
I:\FEB-2016\00
W\shp\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XS1.L(3).dgn



—L—

6/23/16
I:\FEB-2016\00
W\Shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\5819-R5820-GEO-ROAD\CADD_GEO\TECH\XSEC\R5819_R5820_GEO_XSL_Y1.dgn

END UNCLASSIFIED EXCAVATION -
ACCEPTABLE, BUT NOT TO BE USED IN THE TOP
3 FEET OF EMBANKMENT OR BACKFILL AT STA. 13+75

(A) COASTAL PLAIN:
MOIST, SOFT, COARSE TO FINE
SANDY SILT (UNDIVIDED COASTAL PLAIN)
(B) ROADWAY EMBANKMENT:
MOIST, SOFT, TAN, COARSE TO FINE SANDY SILT

COASTAL PLAIN:
SATURATED, MEDIUM STIFF TO STIFF,
MODERATELY PLASTIC, ORANGE AND GRAY,
COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

13 + 50.00

(A) COASTAL PLAIN:
MOIST, SOFT, COARSE TO FINE
SANDY SILT (UNDIVIDED COASTAL PLAIN)
(B) ROADWAY EMBANKMENT:
MOIST, SOFT, TAN, COARSE TO FINE SANDY SILT

POST OFFICE
DRIVEWAY

COASTAL PLAIN:
SATURATED, MEDIUM STIFF TO STIFF,
MODERATELY PLASTIC, ORANGE AND GRAY,
COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

13 + 00.00

(A) COASTAL PLAIN:
MOIST, SOFT, COARSE TO FINE
SANDY SILT (UNDIVIDED COASTAL PLAIN)
(B) ROADWAY EMBANKMENT:
MOIST, SOFT, TAN, COARSE TO FINE SANDY SILT

POST OFFICE
DRIVEWAY

S-47
S-48
Y1, I250
I2+50

COASTAL PLAIN:
SATURATED, MEDIUM STIFF TO STIFF,
MODERATELY PLASTIC, ORANGE AND GRAY,
COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

12 + 50.00

(A) ROADWAY EMBANKMENT:
MOIST, SOFT, TAN, COARSE TO FINE SANDY SILT

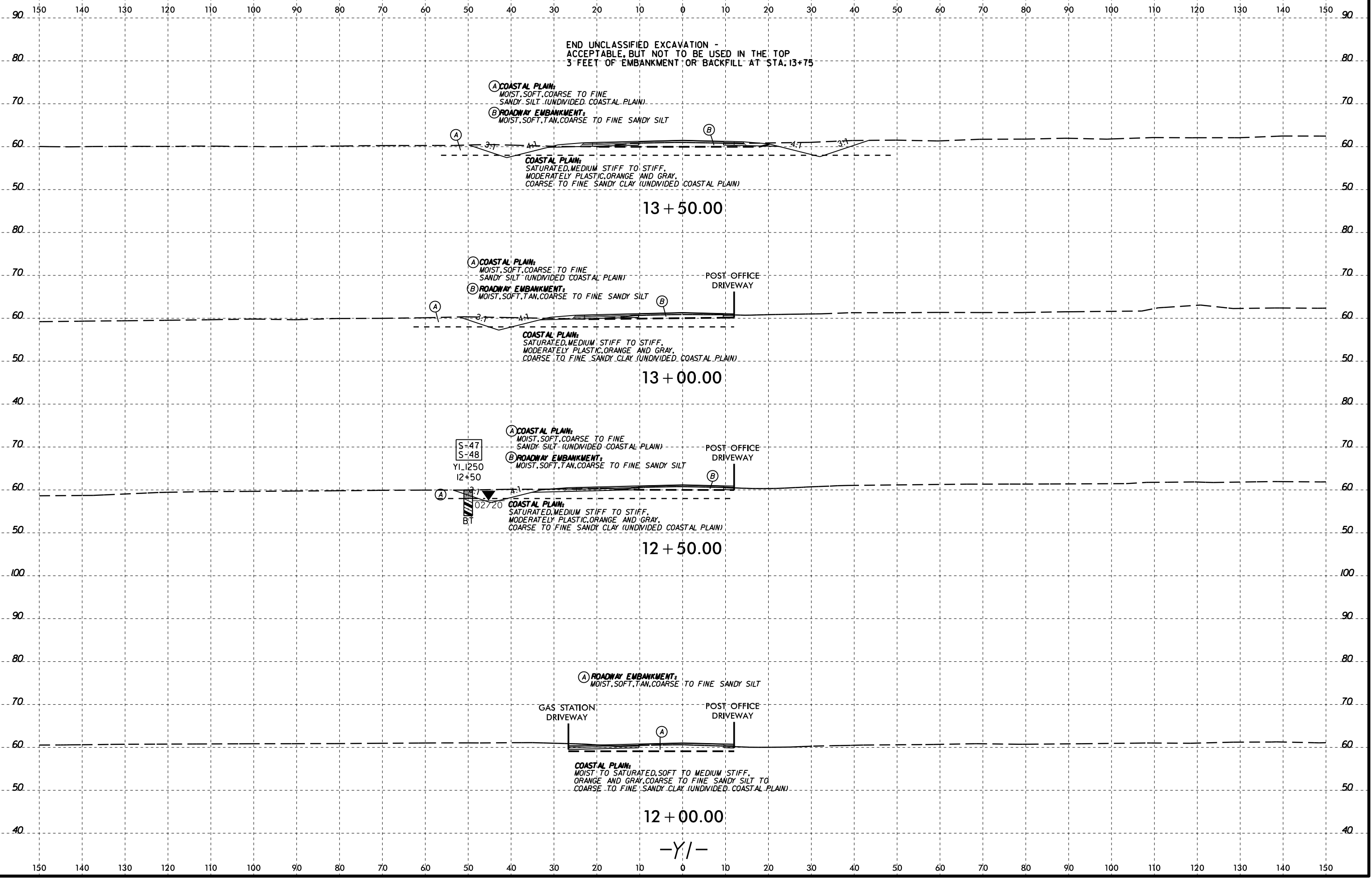
GAS STATION
DRIVEWAY

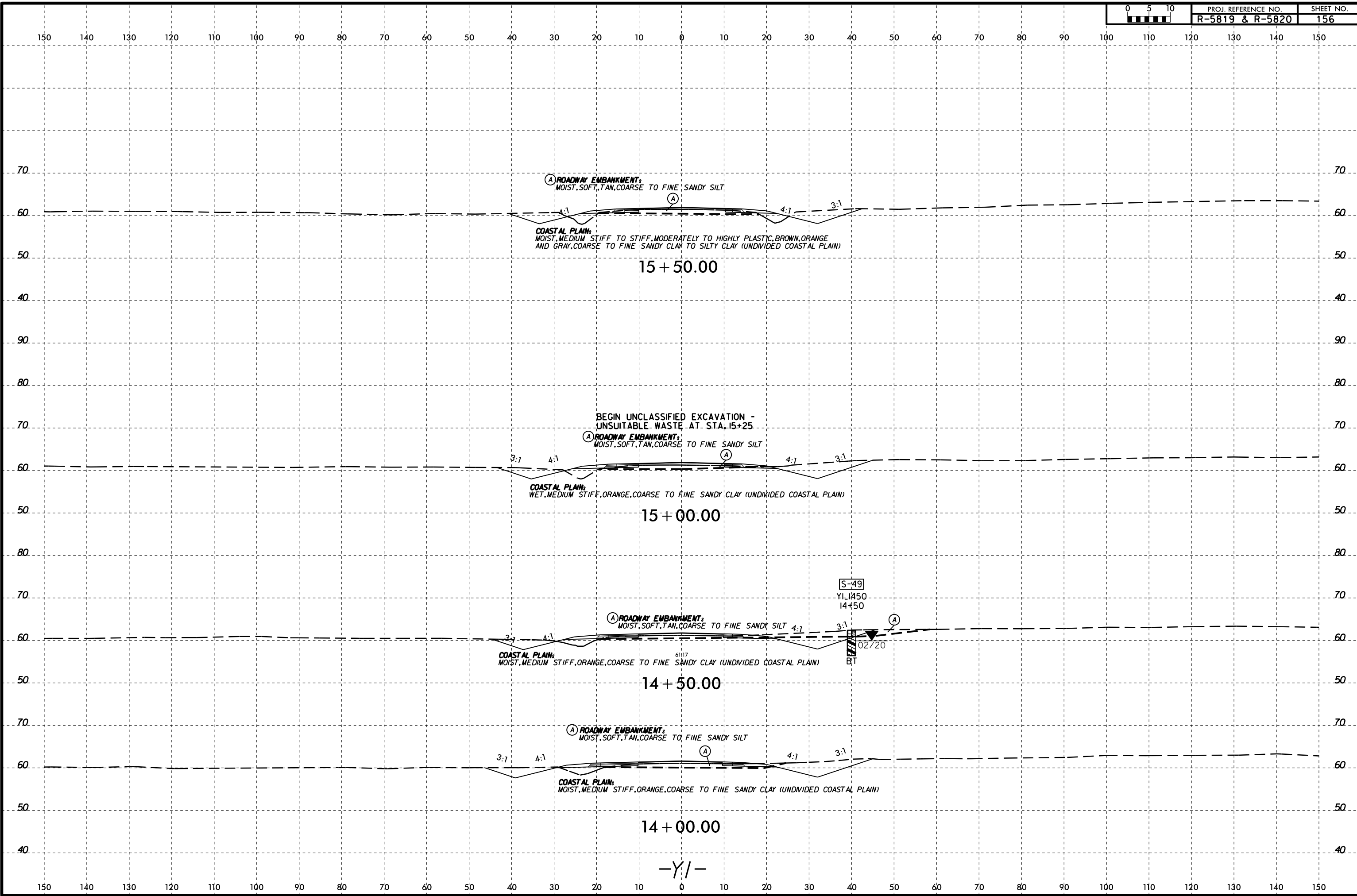
POST OFFICE
DRIVEWAY

COASTAL PLAIN:
MOIST TO SATURATED, SOFT TO MEDIUM STIFF,
ORANGE AND GRAY, COARSE TO FINE SANDY SILT TO
COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

12 + 00.00

-Y/-





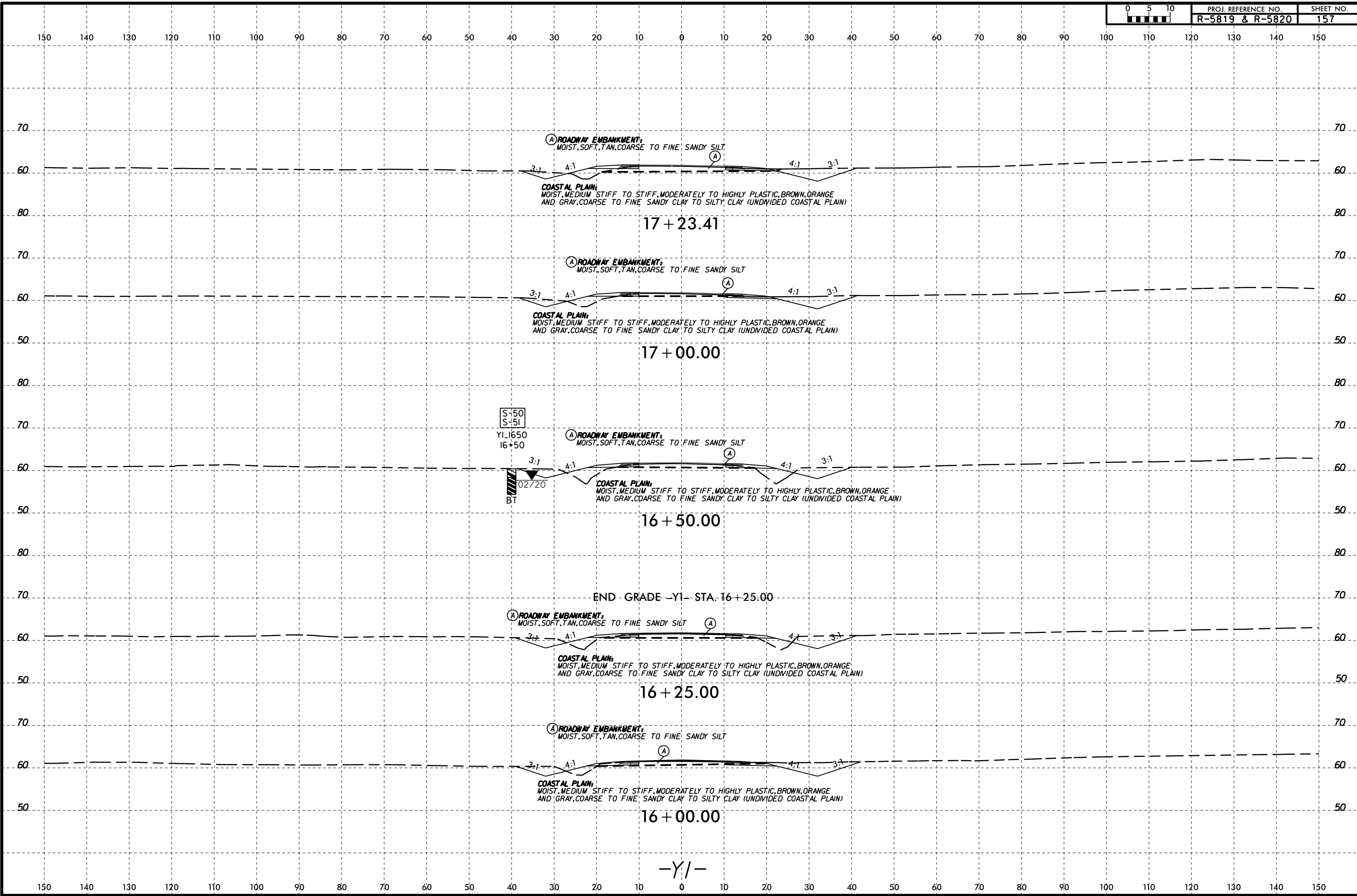
15 + 50.00

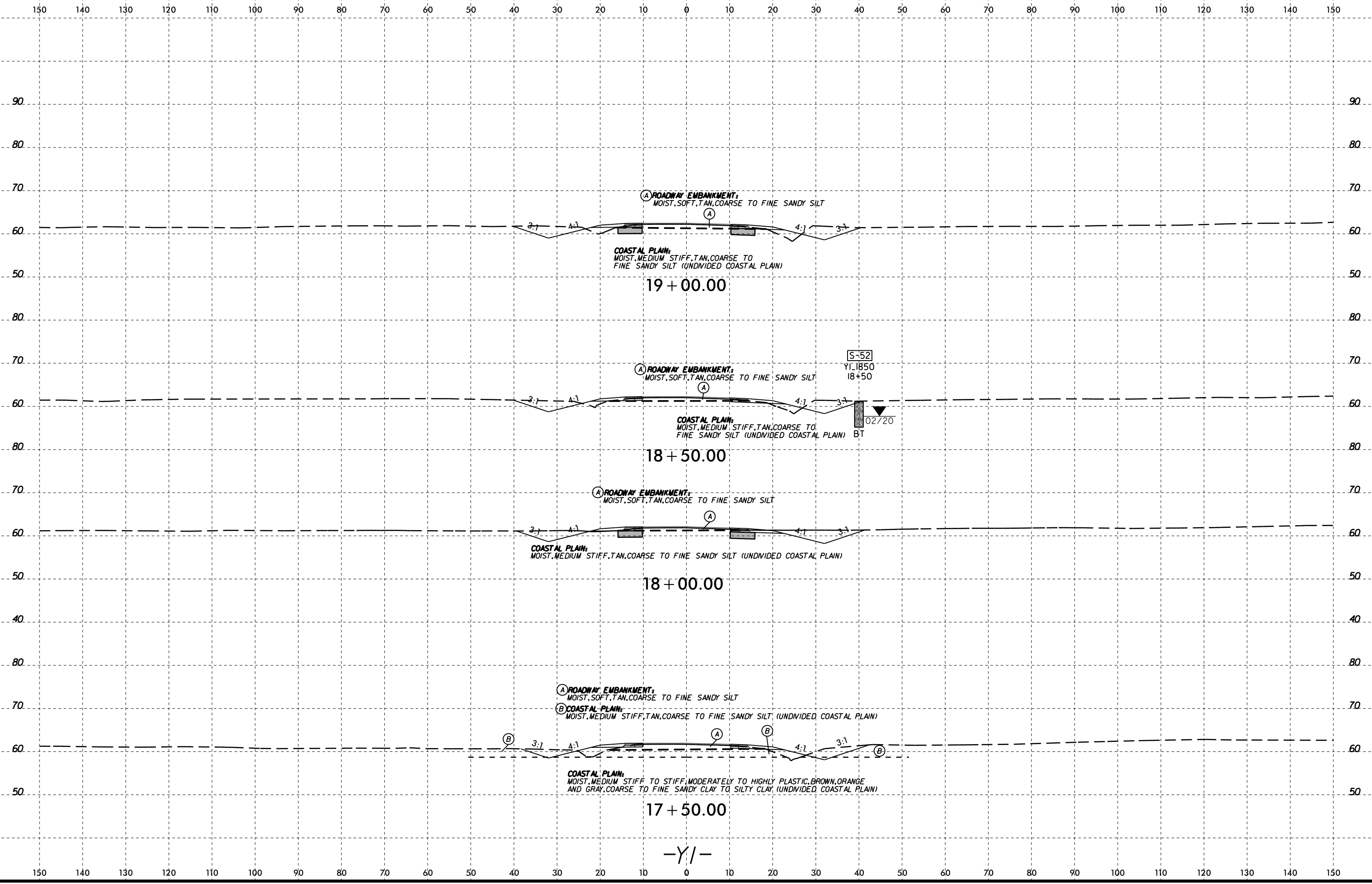
15 + 00.00

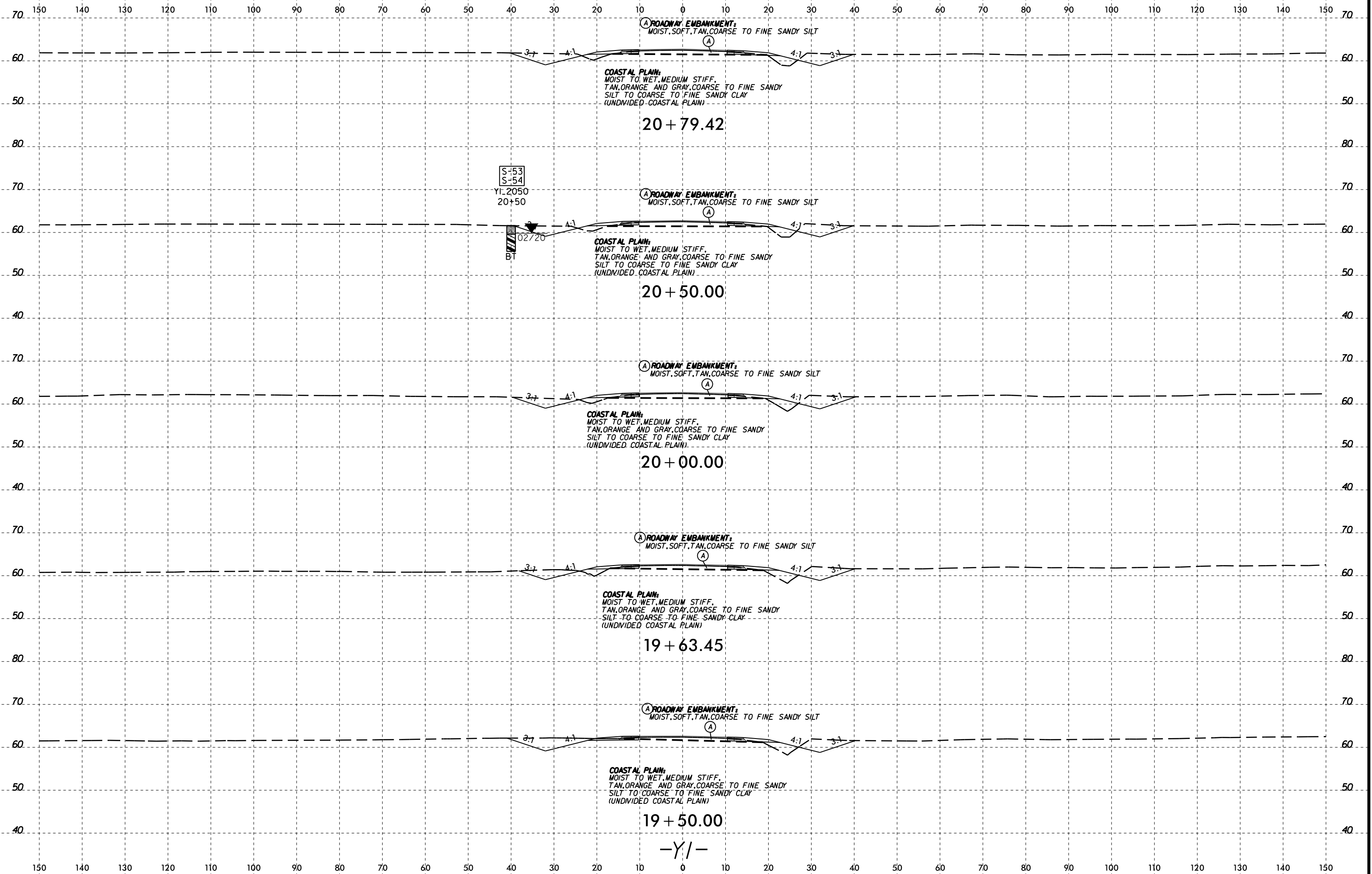
14 + 50.00

14 + 00.00

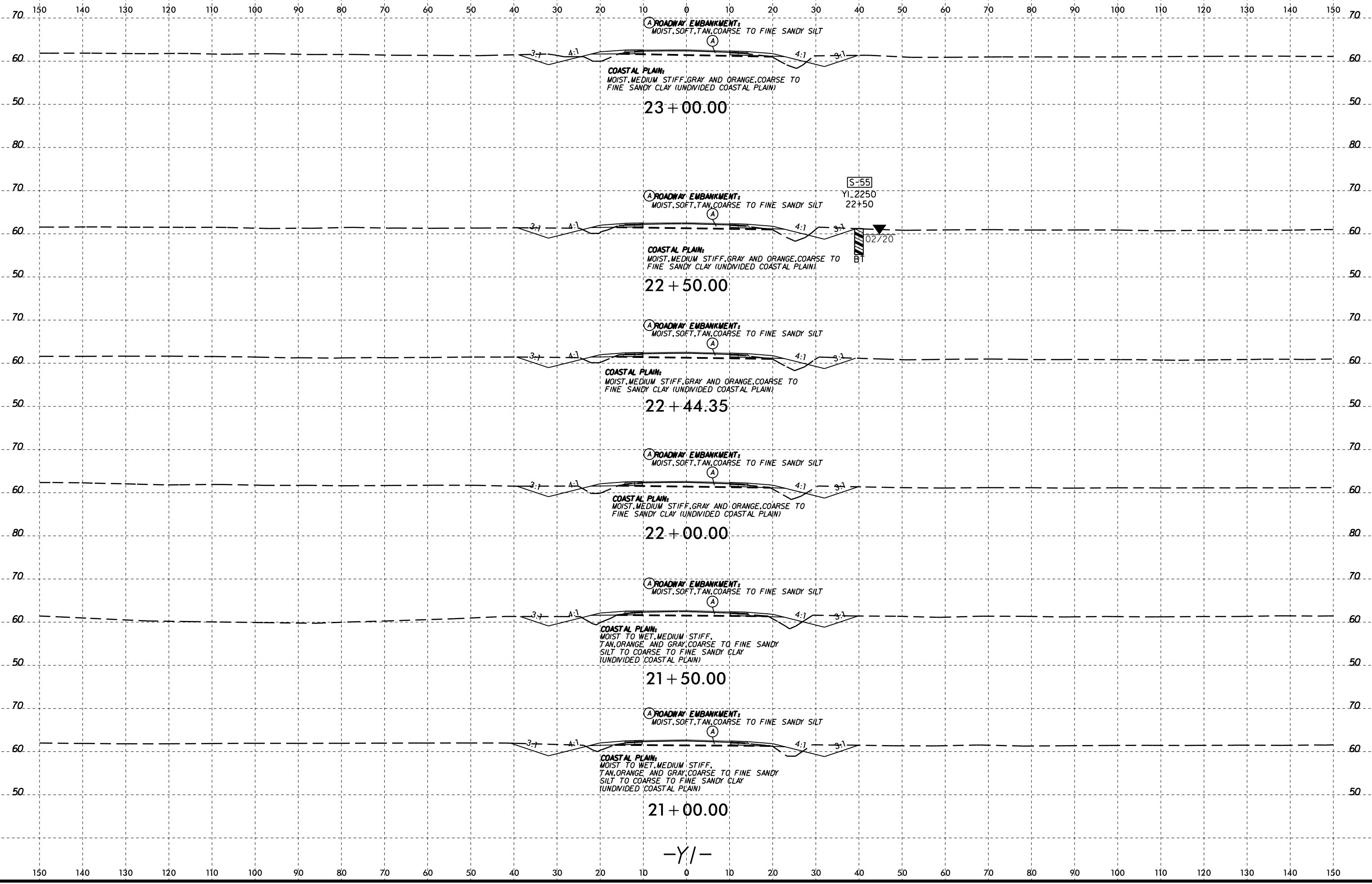
-Y/-



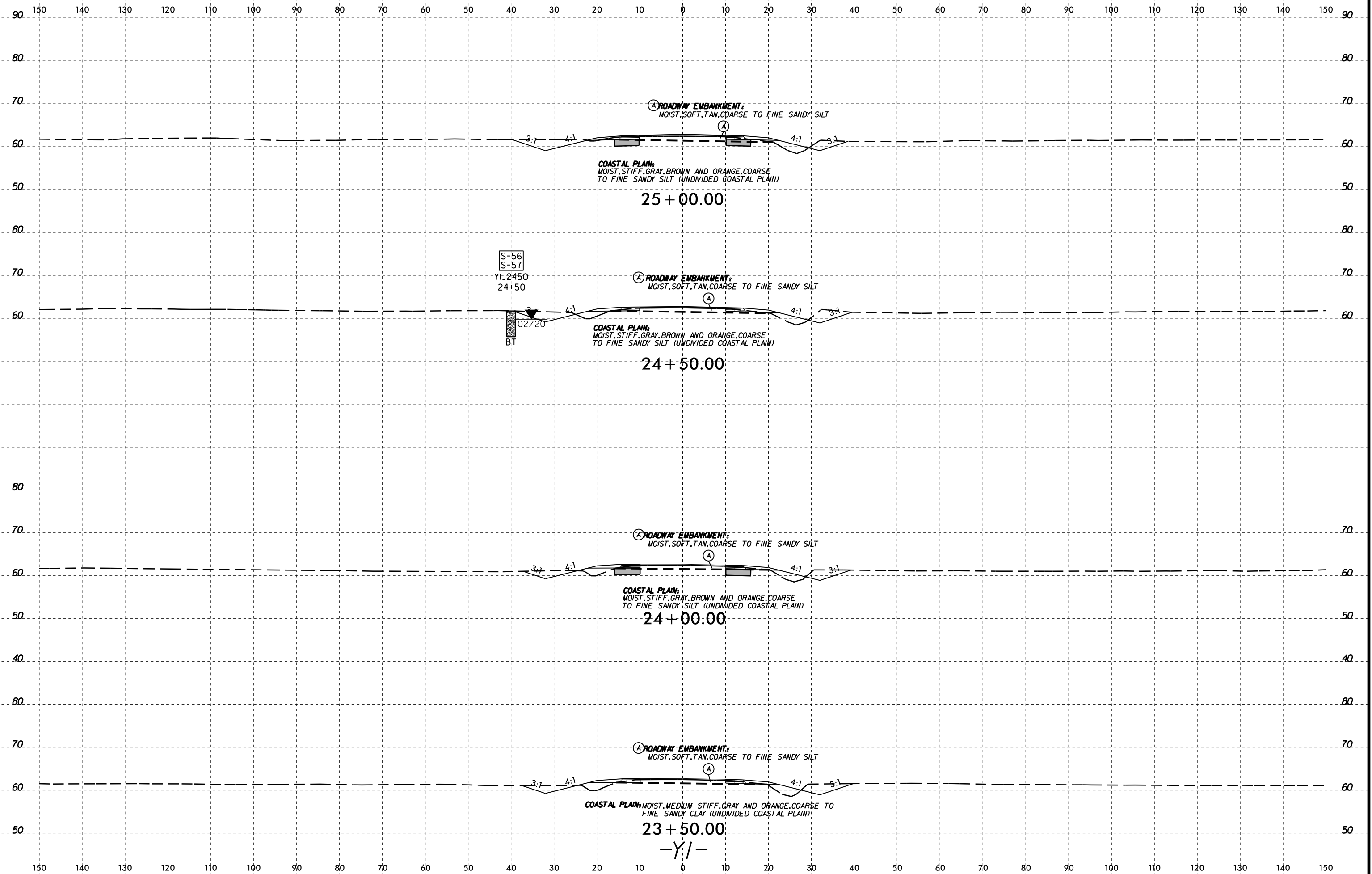




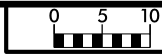
I:\FEB-2016\00-
 W\shere\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\R5819_R5820_GEO_XSL_Y1.dgn
 Wells - A1 KA211387



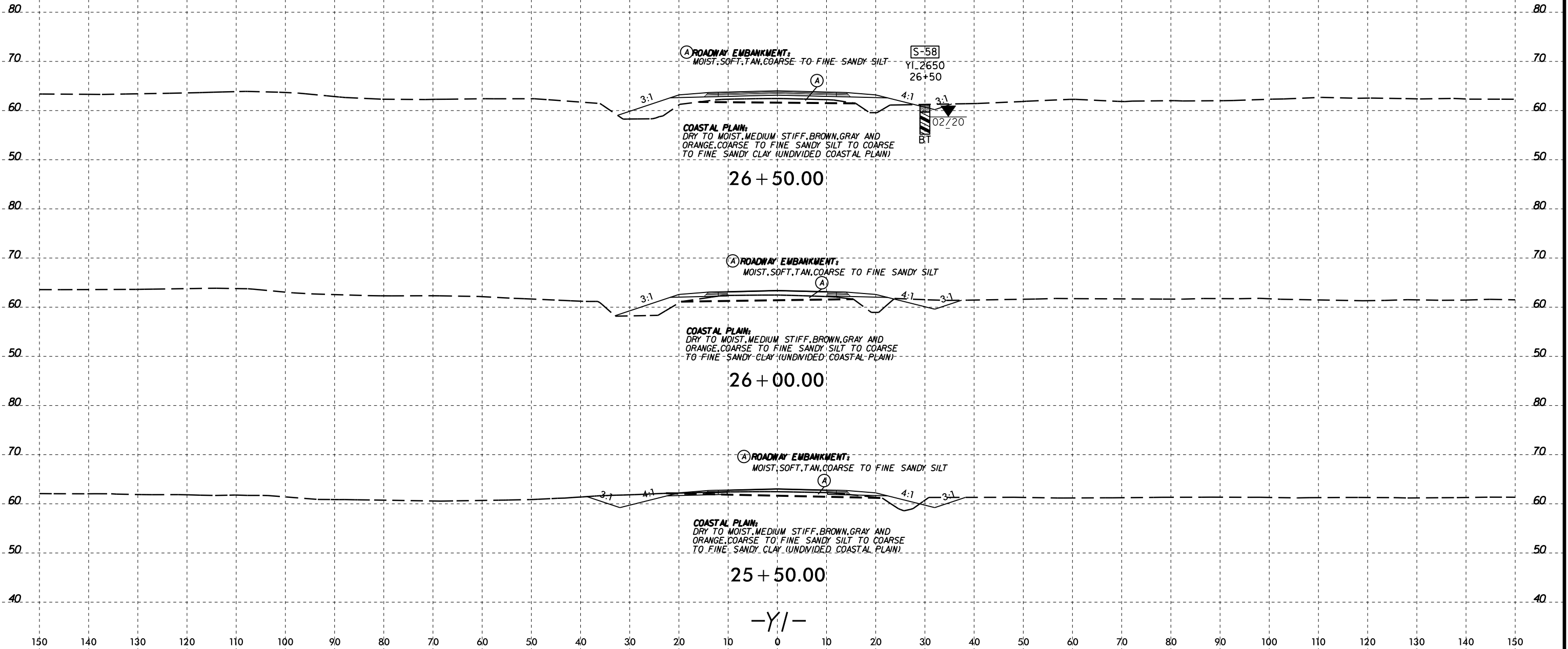
-Y/-



-Y/-

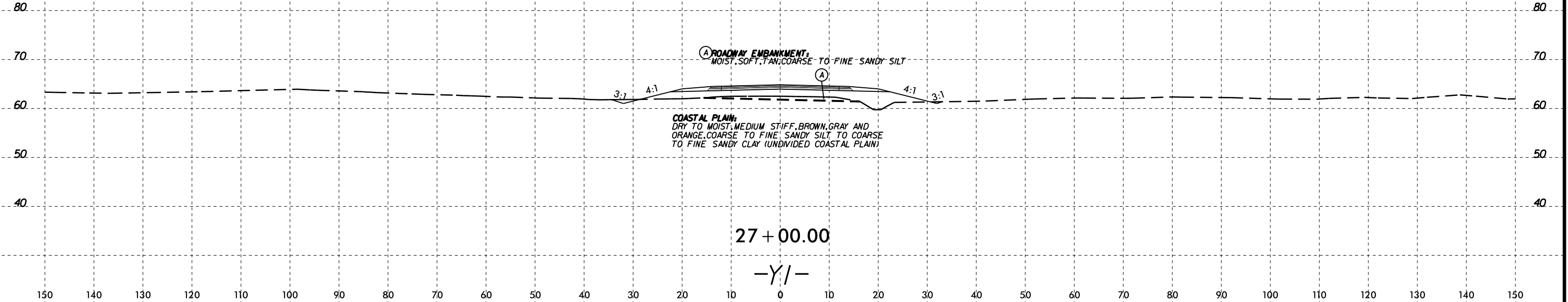


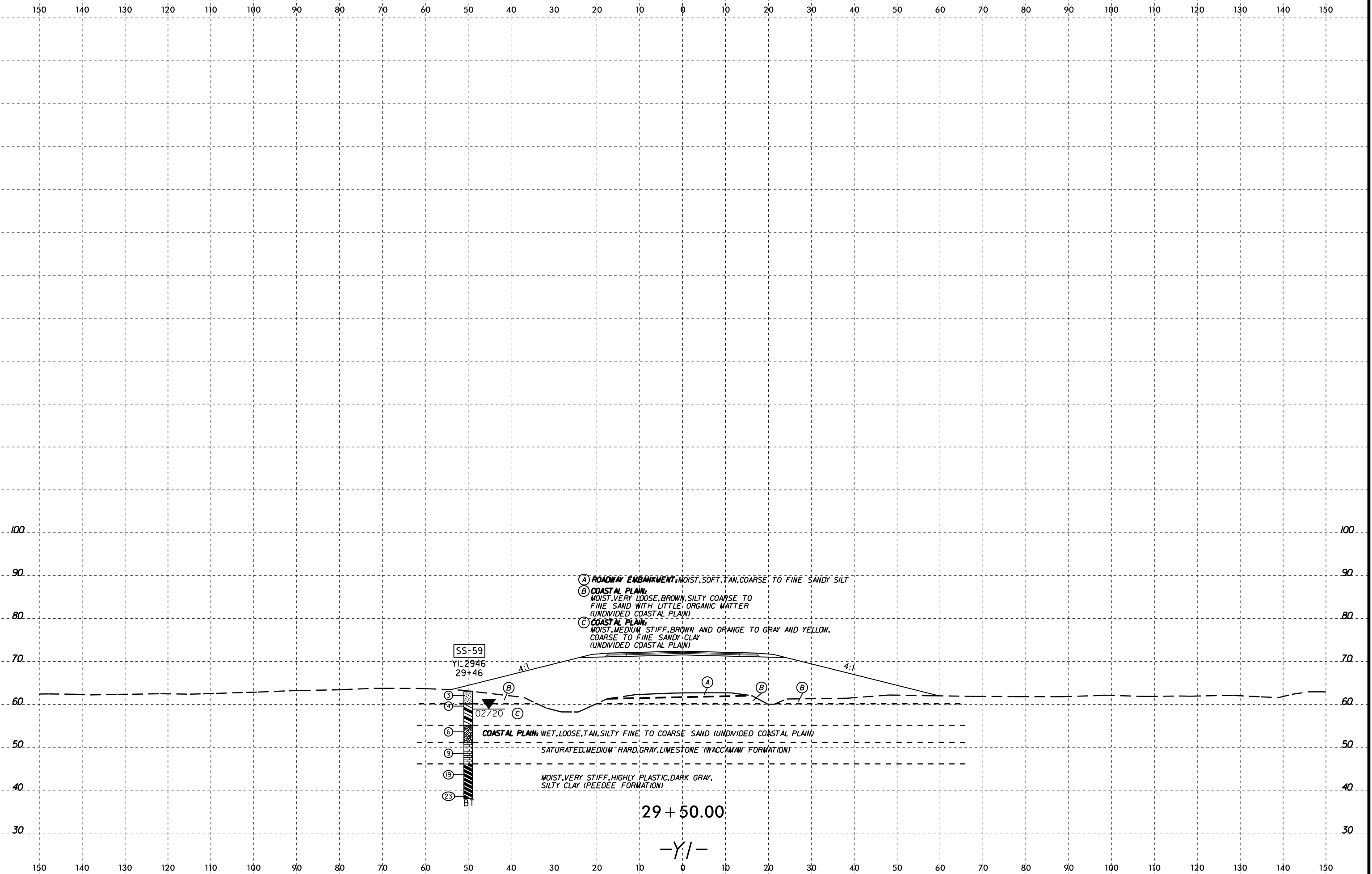
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



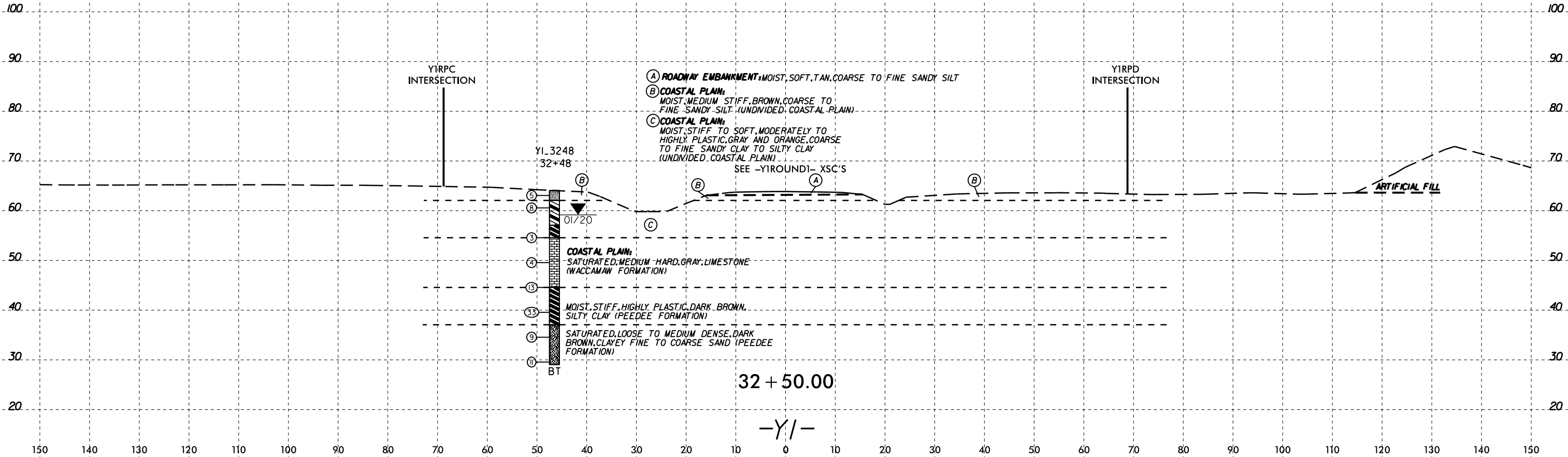


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

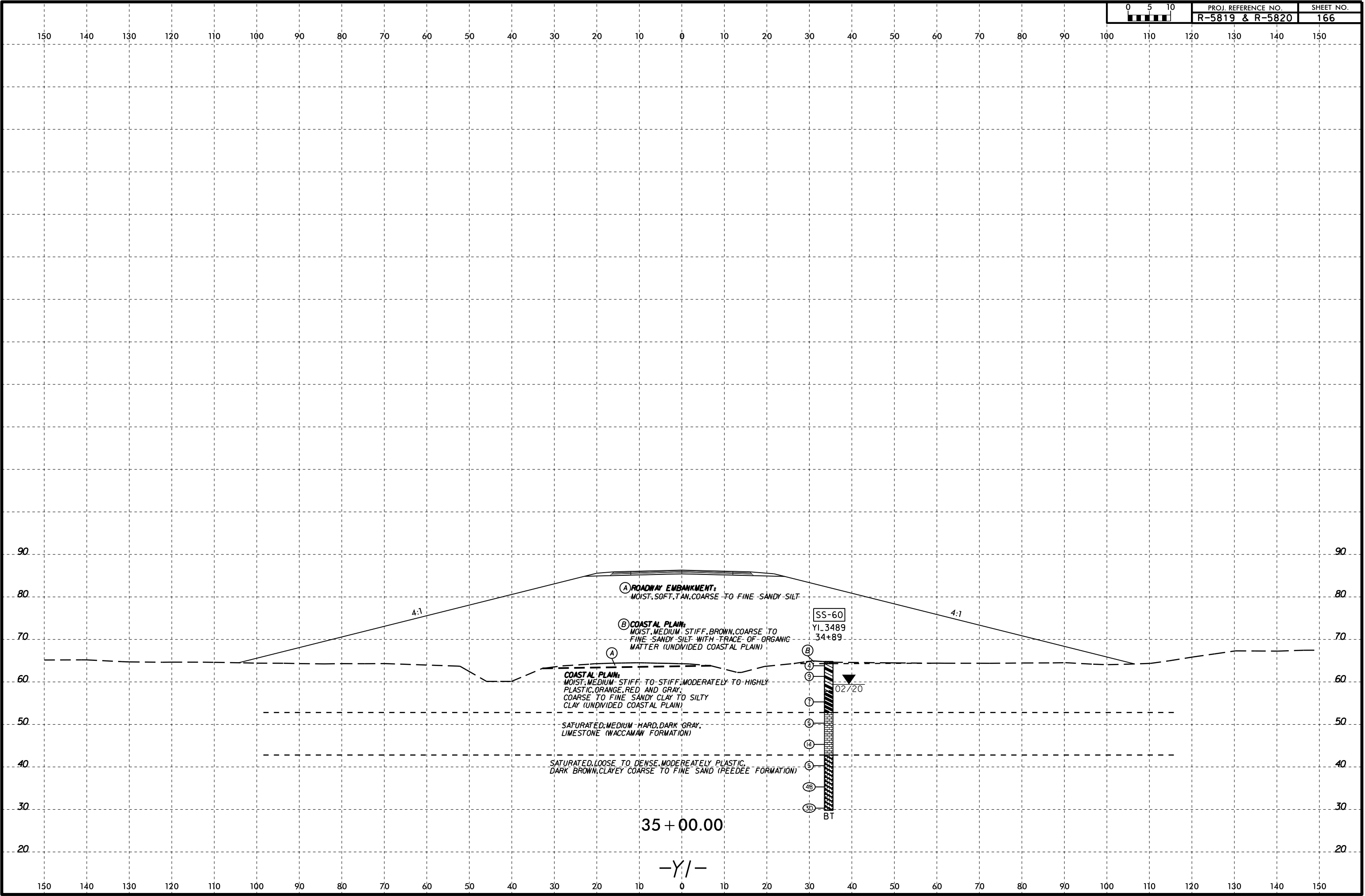




150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

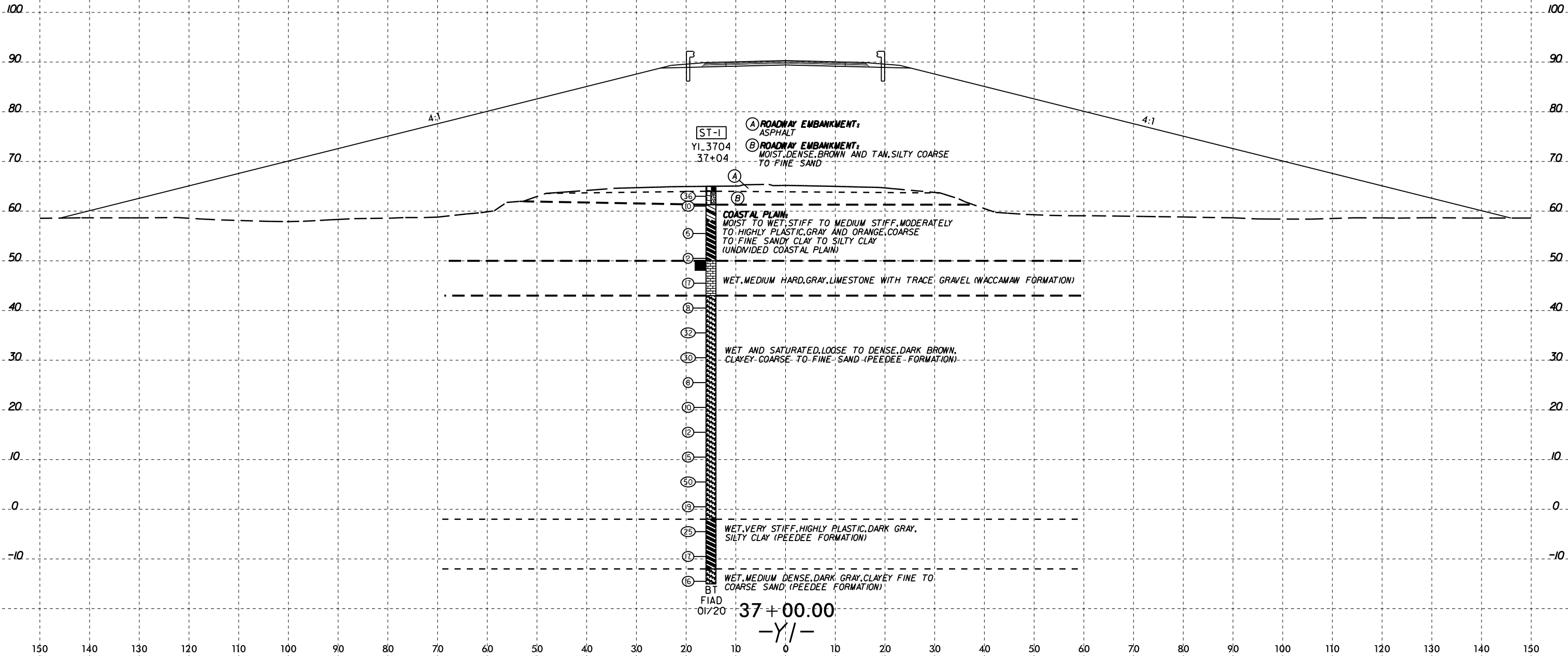


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150





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



ST-1
Y1_3704
37+04

- (A) ROADWAY EMBANKMENT:
ASPHALT
- (B) ROADWAY EMBANKMENT:
MOIST, DENSE, BROWN AND TAN, SILTY COARSE
TO FINE SAND

COASTAL PLAIN:
MOIST TO WET, STIFF TO MEDIUM STIFF, MODERATELY
TO HIGHLY PLASTIC, GRAY AND ORANGE, COARSE
TO FINE SANDY CLAY TO SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

WET, MEDIUM HARD, GRAY, LIMESTONE WITH TRACE GRAVEL (WACCAMAW FORMATION)

WET AND SATURATED, LOOSE TO DENSE, DARK BROWN,
CLAYEY-COARSE TO FINE SAND (PEEDEE FORMATION)

WET, VERY STIFF, HIGHLY PLASTIC, DARK GRAY,
SILTY CLAY (PEEDEE FORMATION)

WET, MEDIUM DENSE, DARK GRAY, CLAYEY FINE TO
COARSE SAND (PEEDEE FORMATION)

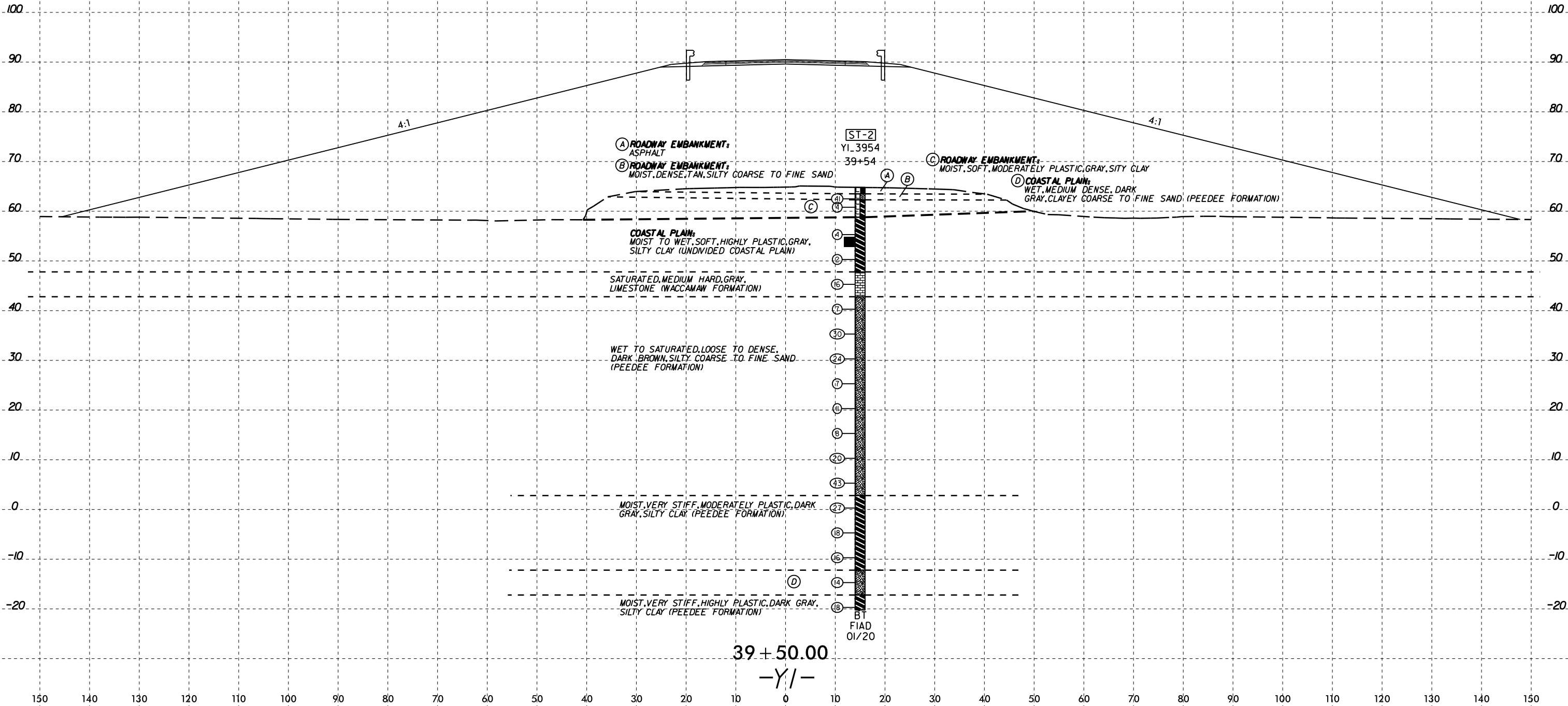
BT
FIAD
01/20

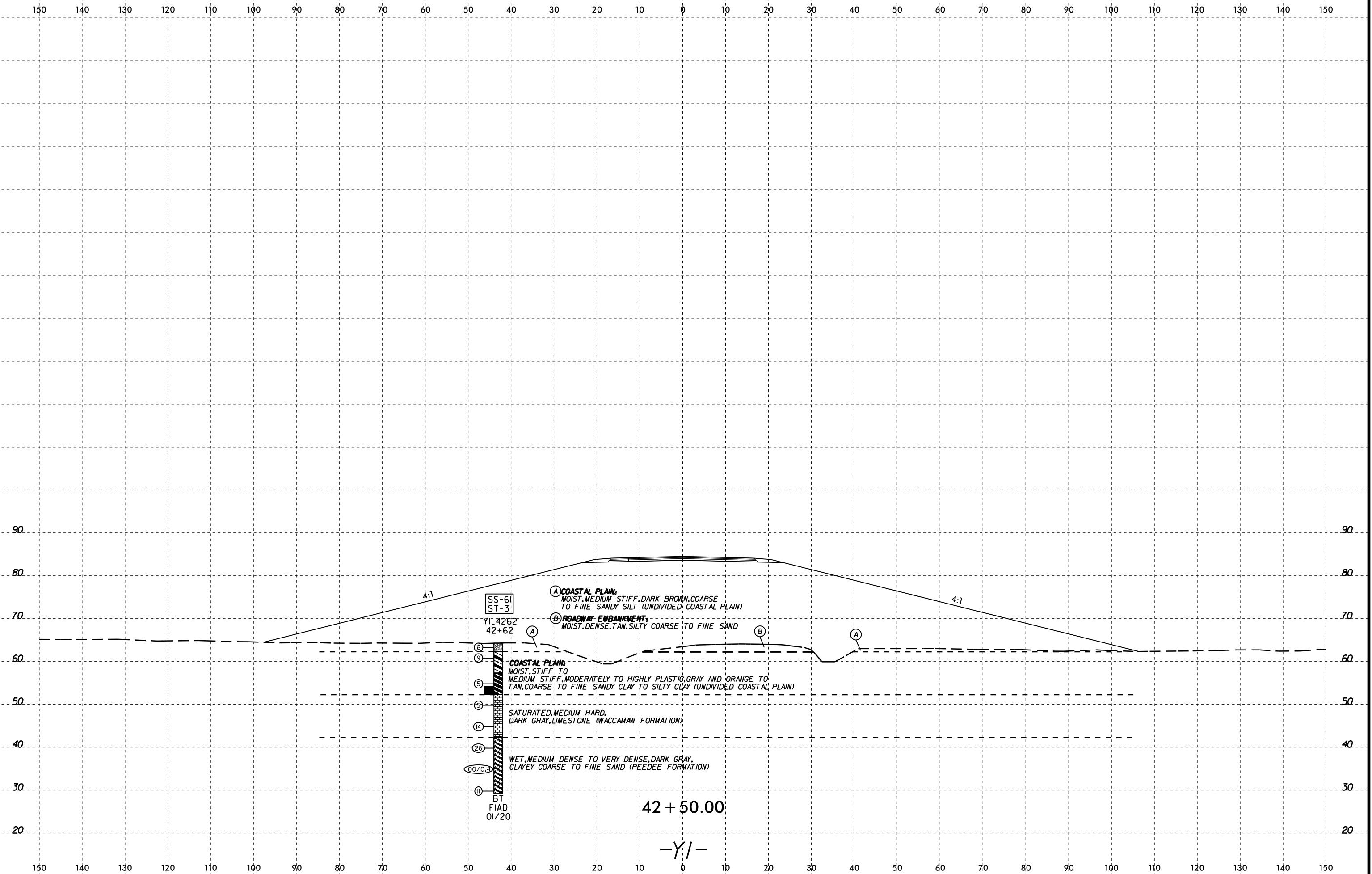
37+00.00

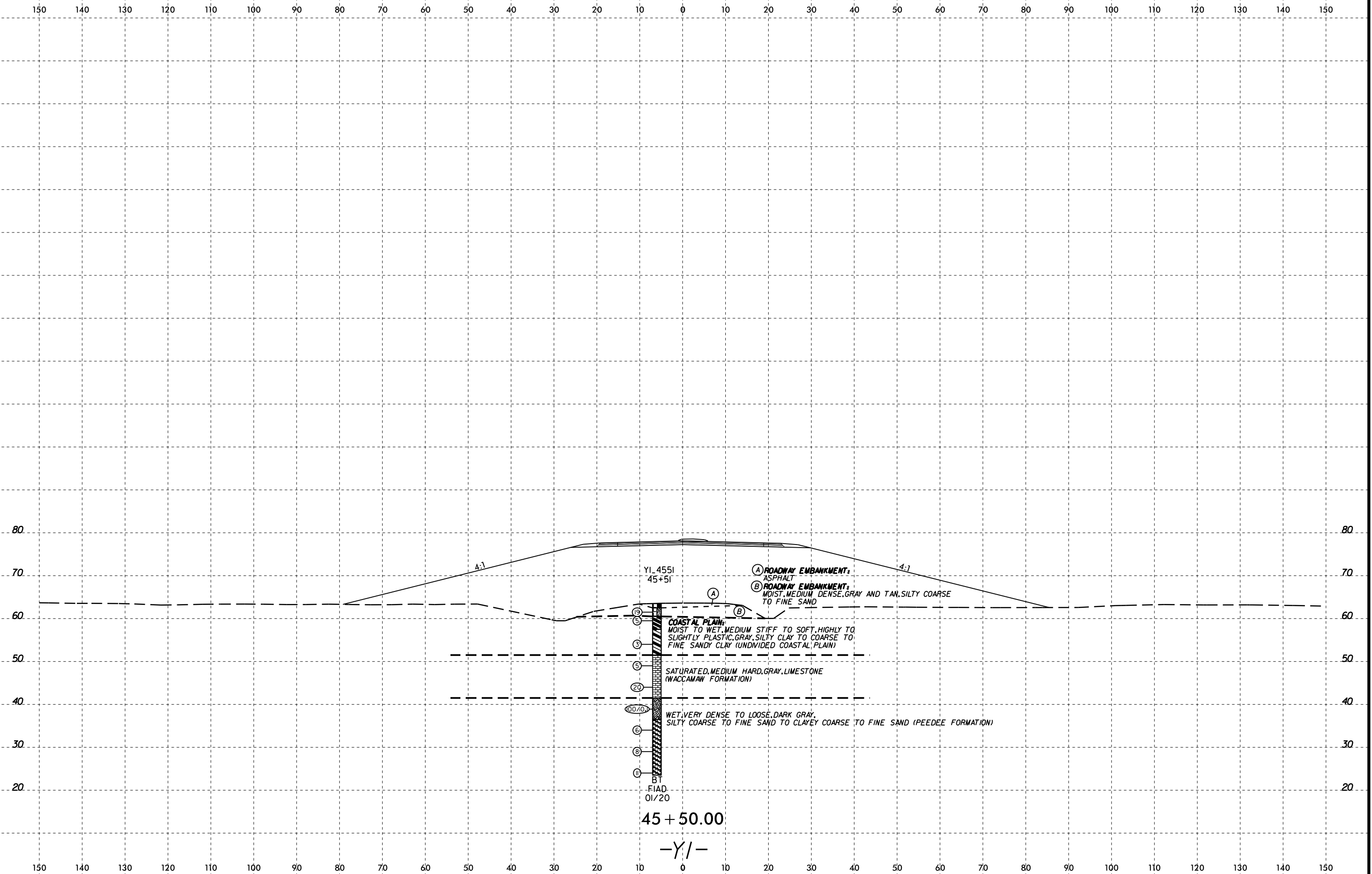
-Y/-

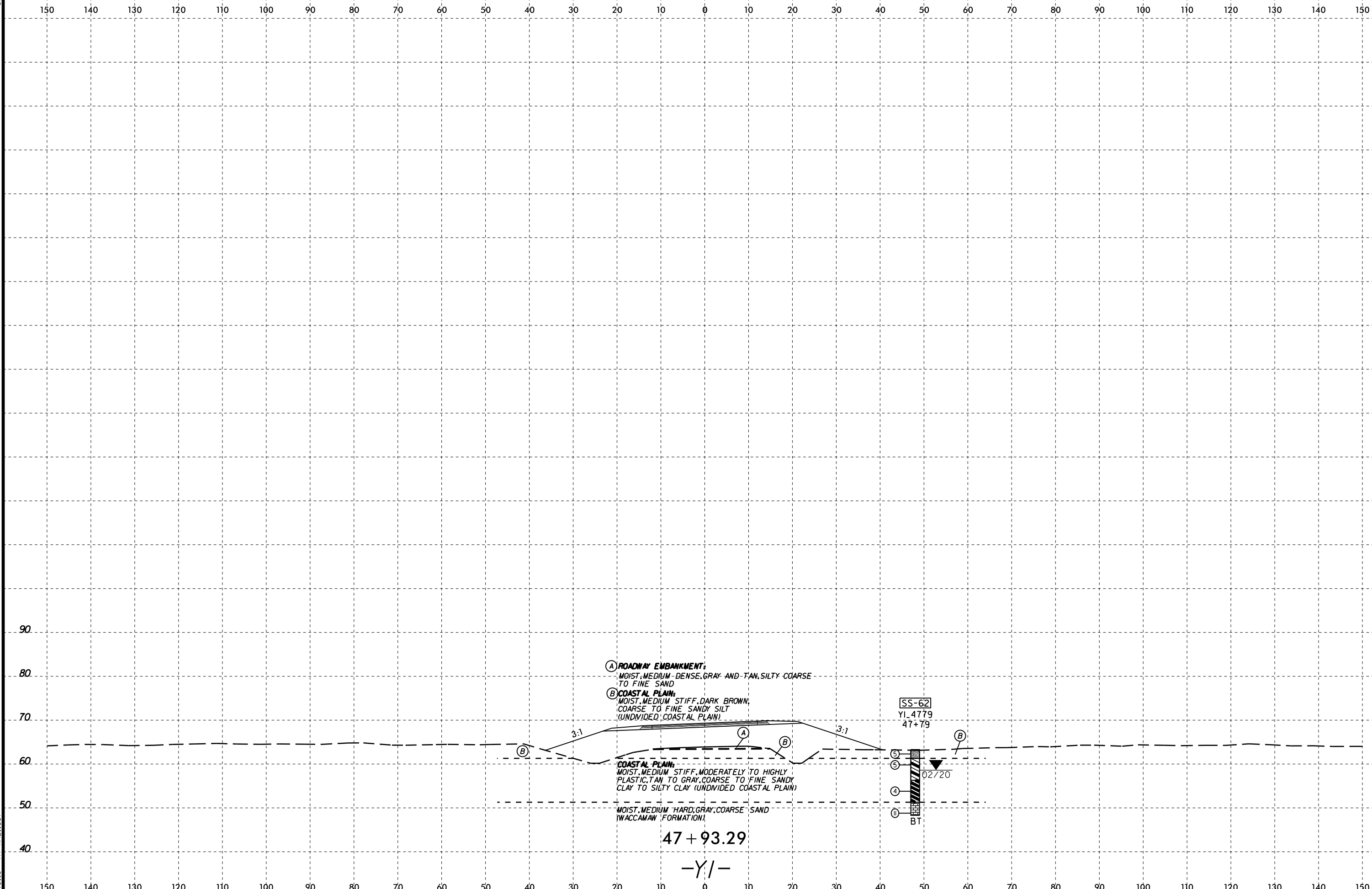


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



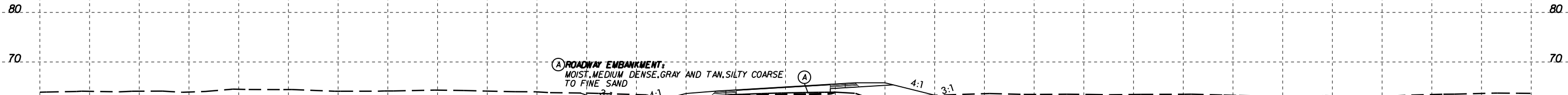








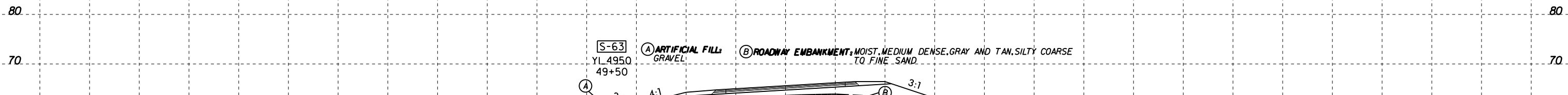
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



(A) ROADWAY EMBANKMENT:
MOIST, MEDIUM DENSE, GRAY AND TAN, SILTY COARSE
TO FINE SAND

COASTAL PLAIN:
MOIST, MEDIUM STIFF TO STIFF, MODERATELY
PLASTIC, GRAY AND ORANGE, COARSE TO FINE
SANDY CLAY (UNDIVIDED) COASTAL PLAIN

50 + 00.00



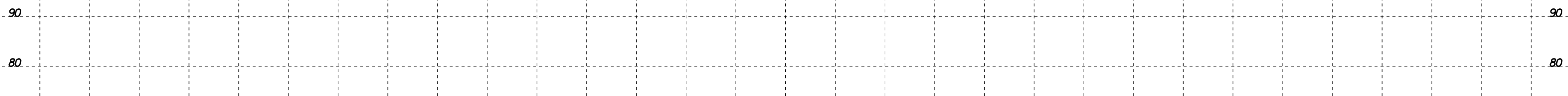
S-63
YL 4950
49+50

(A) ARTIFICIAL FILL:
GRAVEL

(B) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, GRAY AND TAN, SILTY COARSE
TO FINE SAND

COASTAL PLAIN:
MOIST, MEDIUM STIFF TO STIFF, MODERATELY
PLASTIC, GRAY AND ORANGE, COARSE TO FINE
SANDY CLAY (UNDIVIDED) COASTAL PLAIN

49 + 50.00



(A) ARTIFICIAL FILL:
GRAVEL

(B) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, GRAY AND TAN, SILTY COARSE
TO FINE SAND

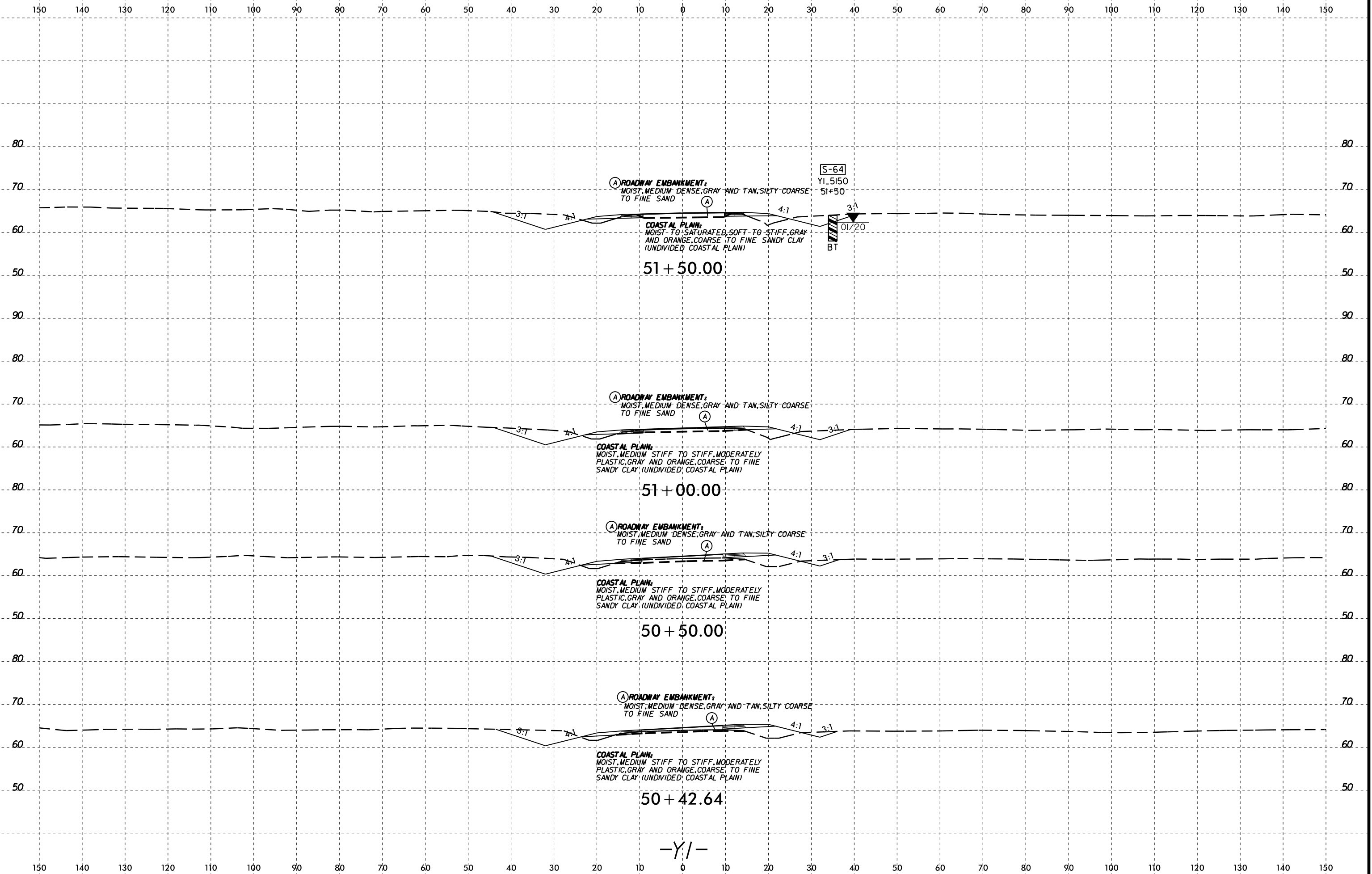
COASTAL PLAIN:
MOIST, MEDIUM STIFF TO STIFF, MODERATELY
PLASTIC, GRAY AND ORANGE, COARSE TO FINE
SANDY CLAY (UNDIVIDED) COASTAL PLAIN

49 + 00.00

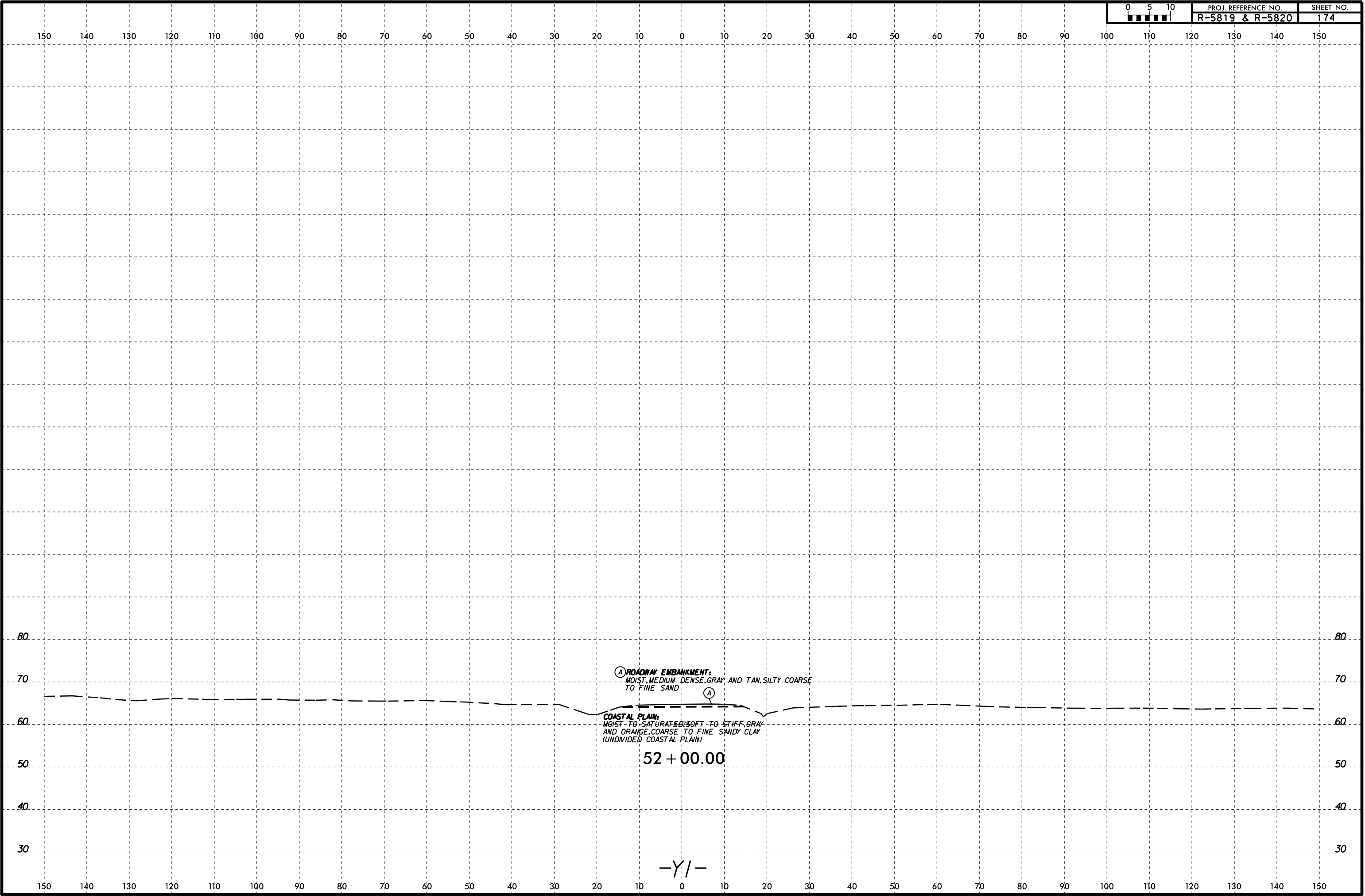
-Y/-

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

I:\FEB-2016\00...
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO_RDW\CADD_GEO\RDW\CADD_GEO_XSL_Y1.dgn
T:\wells - A\KAZ11387



I:\FEB-2016\00-1\Watershed\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO_RDM\CADD_GEO\GEO\GEO_XSL_Y1.dgn
 Wells - A1 KA211387

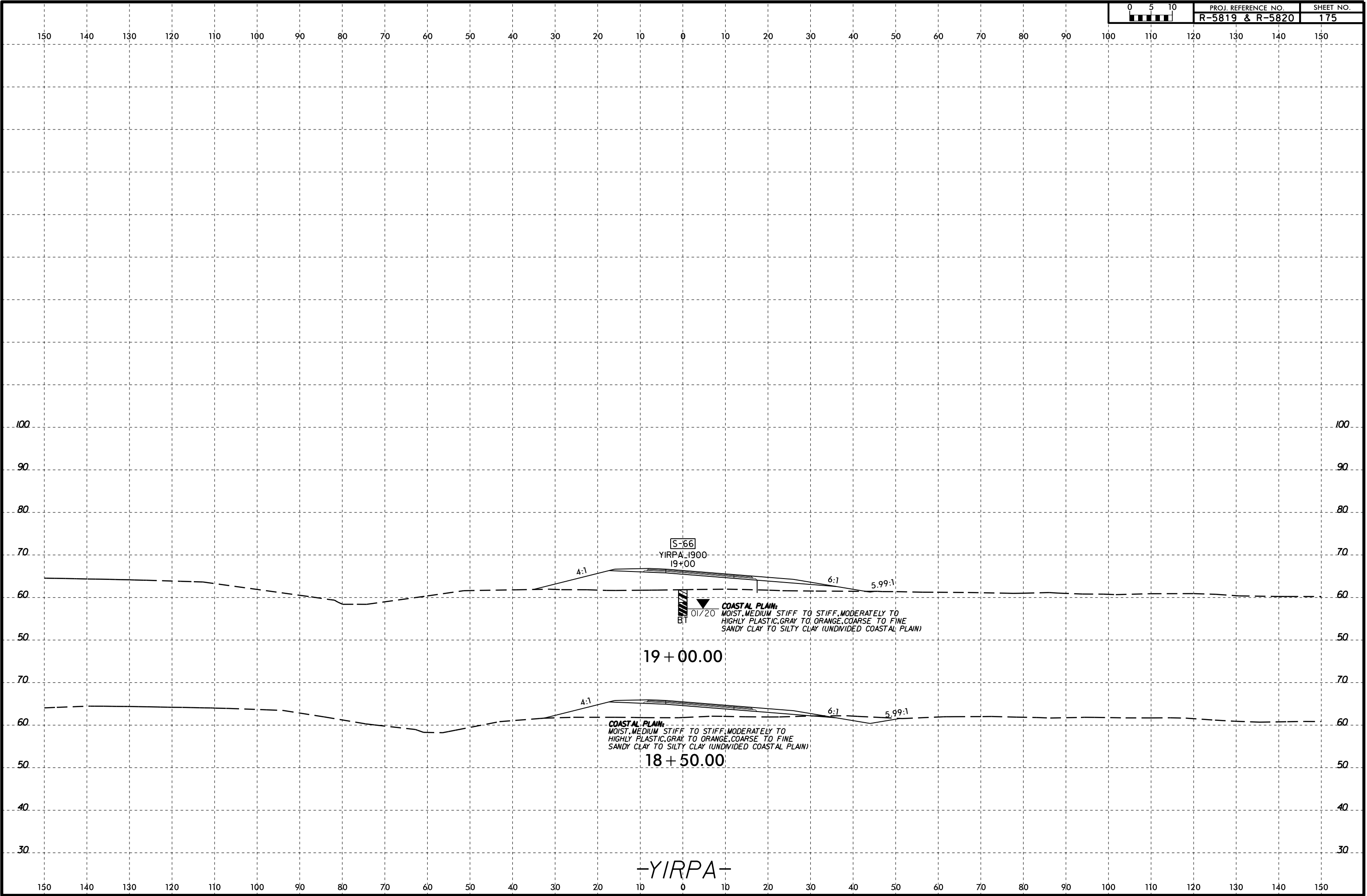


A ROADWAY EMBANKMENT:
 MOIST, MEDIUM-DENSE, GRAY AND TAN, SILTY COARSE
 TO FINE SAND

COASTAL PLAIN:
 MOIST TO SATURATED, SOFT TO STIFF, GRAY
 AND ORANGE, COARSE TO FINE SANDY CLAY
 (UNDIVIDED COASTAL PLAIN)

52 + 00.00

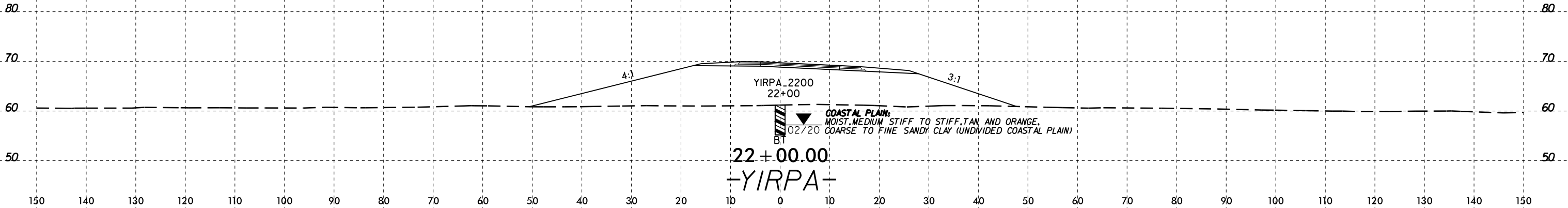
-Y/-

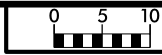




150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

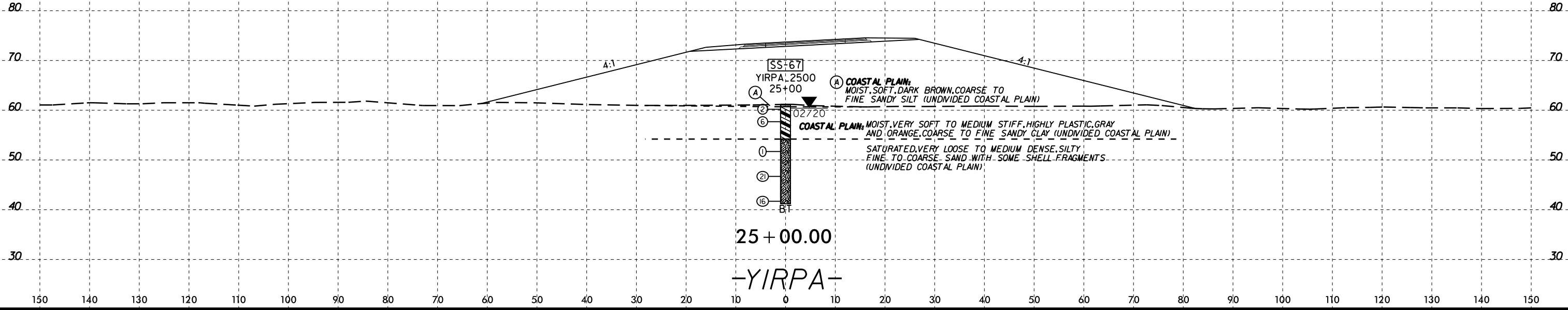
I:\FEB-2016\01\Wishner\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO.RDW\CADD_GEO\RDW\CADD_GEO\TECH\XSC\RS5819-R5820_GEO_XSL_YIRPA.dgn

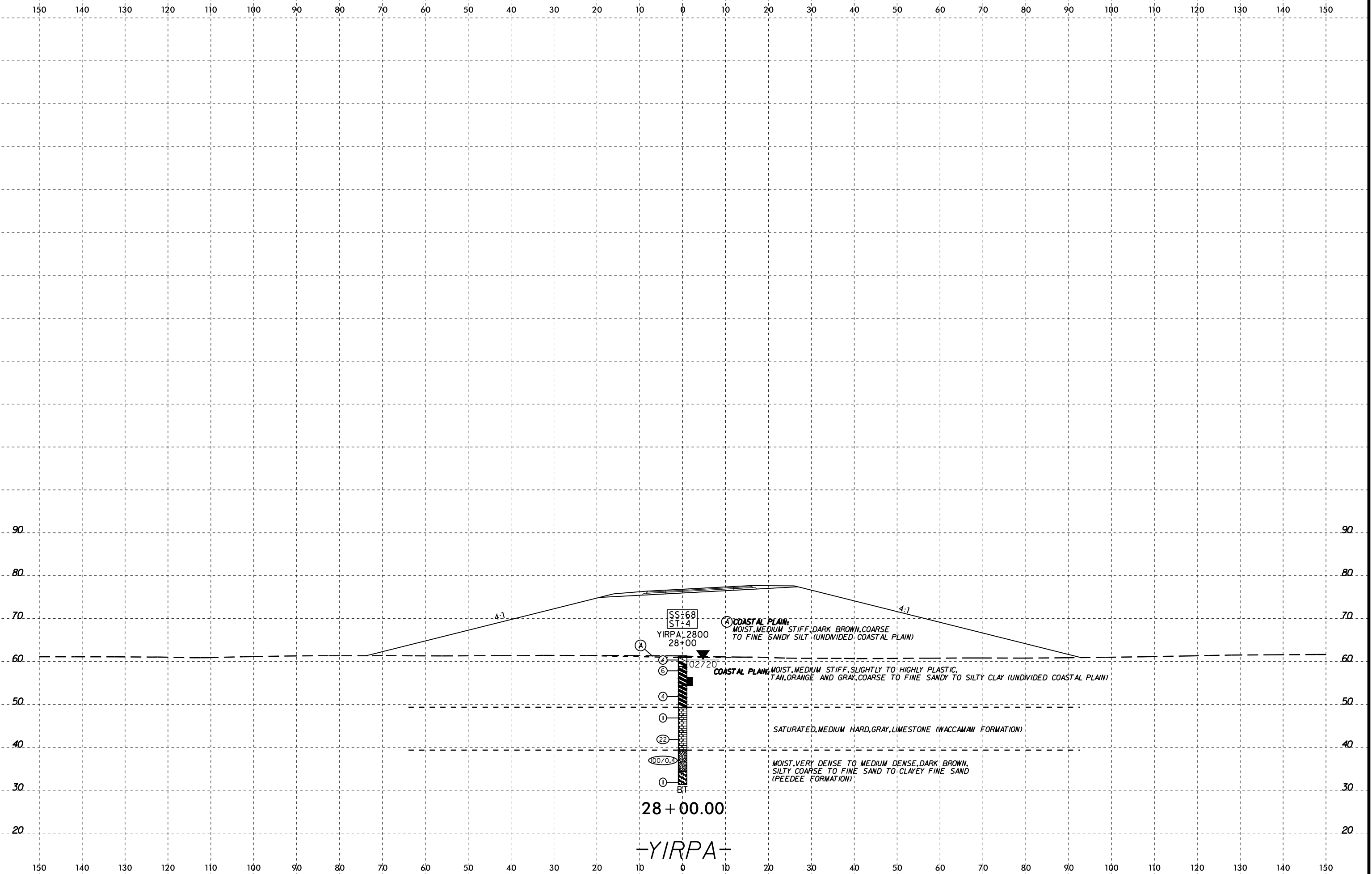




150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

I:\FEB-2016\01
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\TECH\XSC\RS5819-R5820_GEO_XSL_YIRPA.dgn
Wells - At KA211387

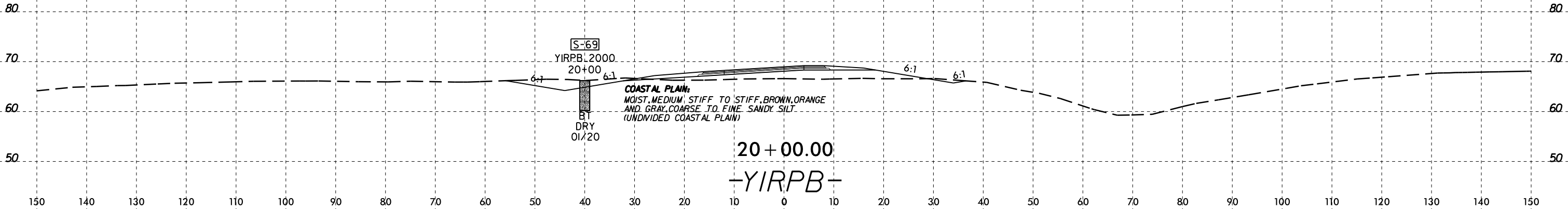


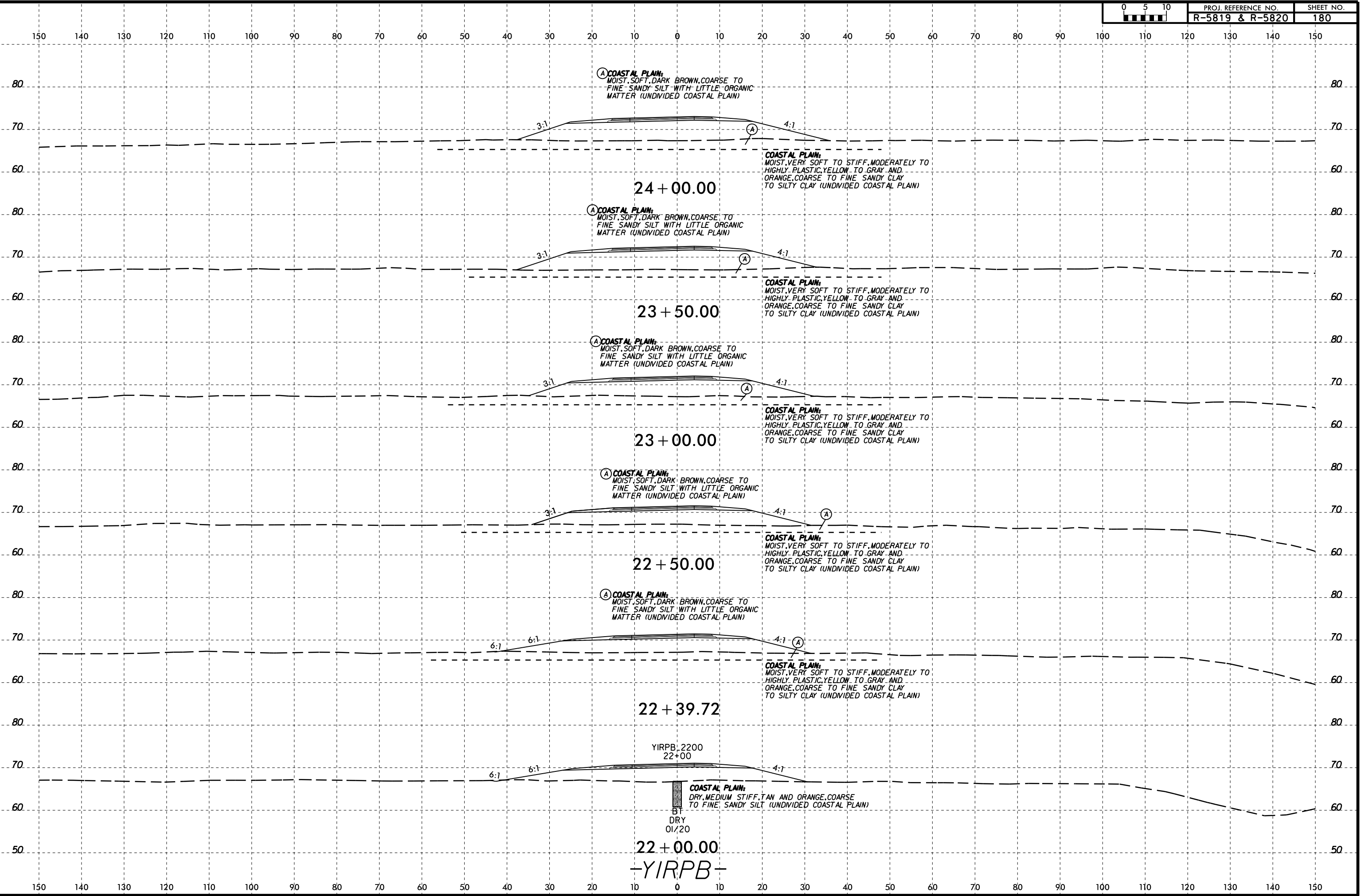




150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

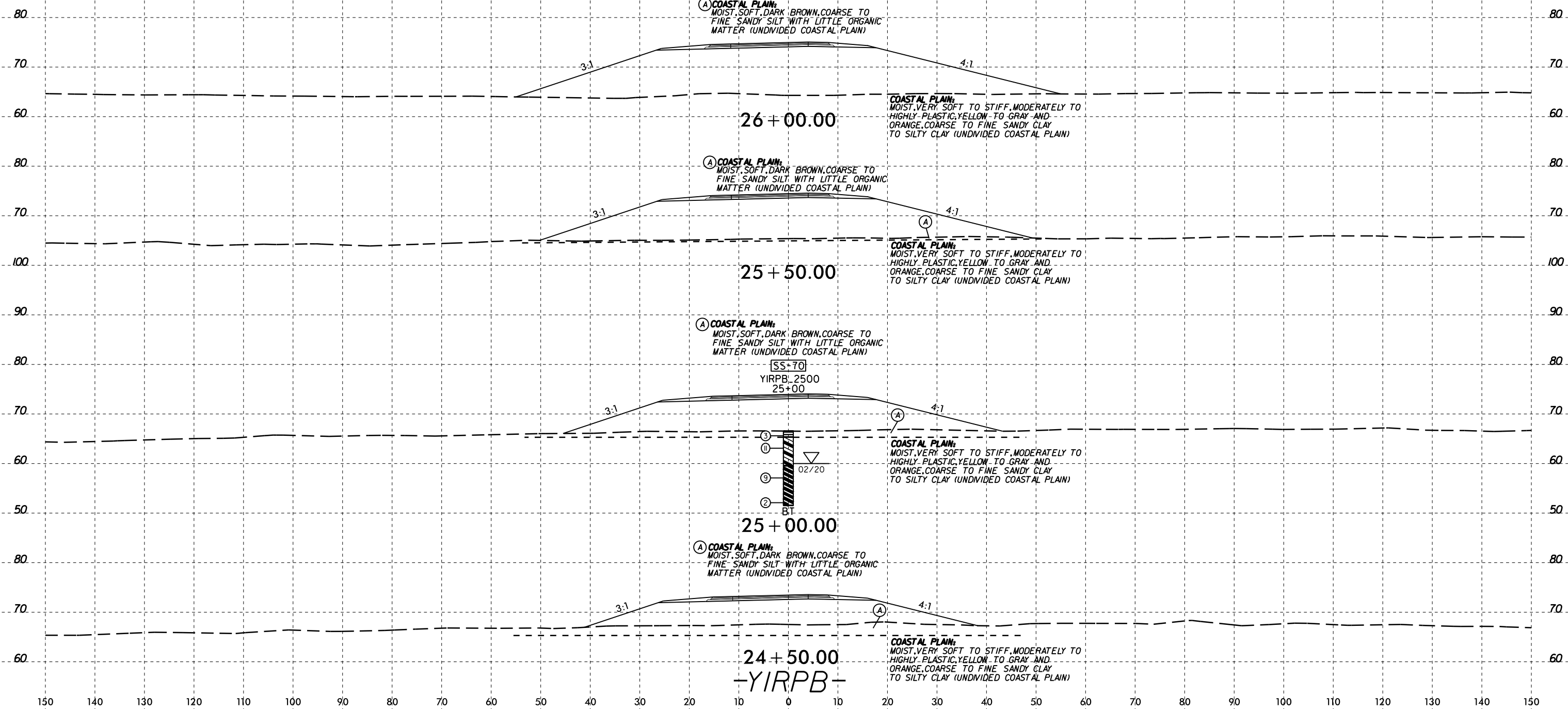
I:\FEB-2016\01\Wishner\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO.RDW\CADD_GEO\RDW\CADD_GEO\XSL_YIRPB.dgn







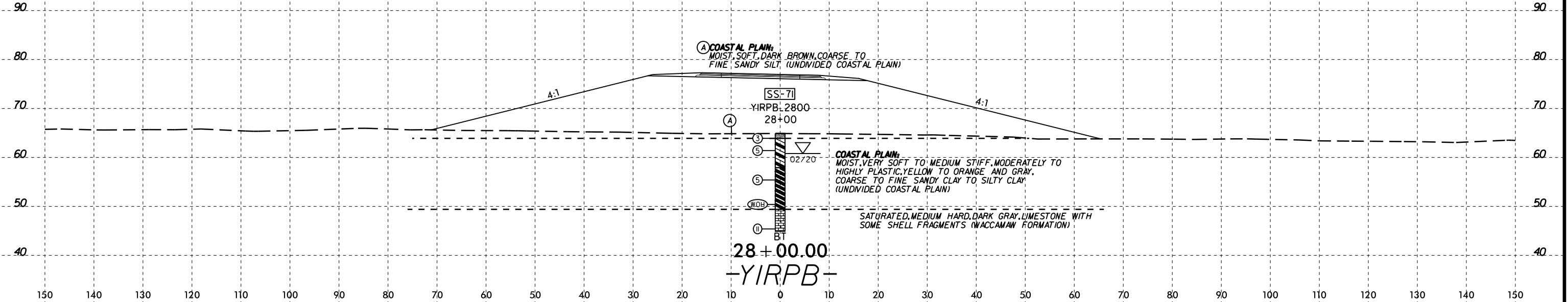
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



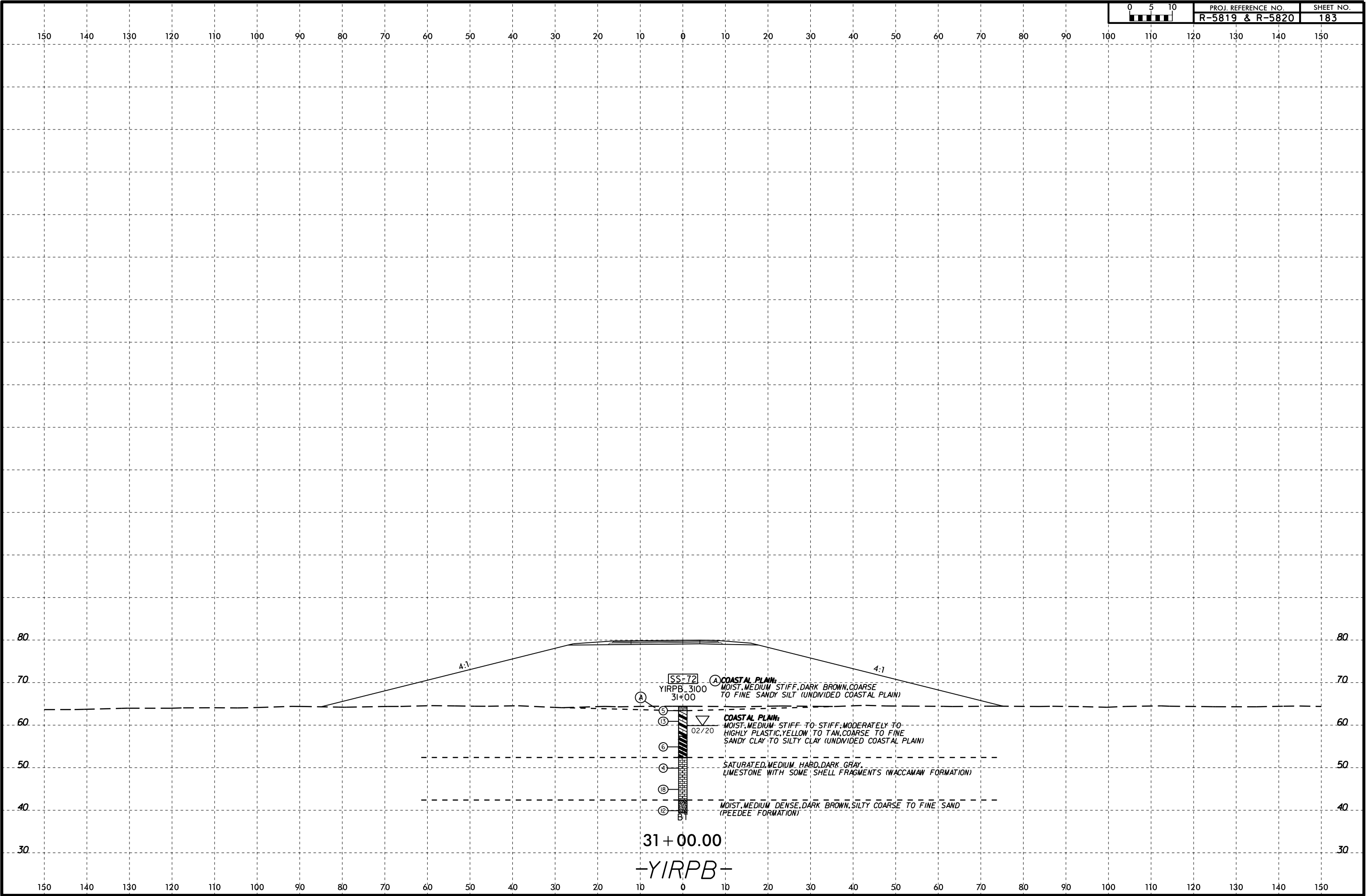


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

I:\FEB-2016\01
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO_RDW\CADD_GEO_RDW\RS5819-R5820_GEO_XSL_YIRPB.dgn
Wells - At KA211387



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



31 + 00.00
-YIRPB-

SS-72

YIRPB_3100

31+00

5

13

6

4

18

12

BT

COASTAL PLAIN
MOIST, MEDIUM STIFF, DARK BROWN, COARSE
TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN
MOIST, MEDIUM STIFF TO STIFF, MODERATELY TO
HIGHLY PLASTIC, YELLOW TO TAN, COARSE TO FINE
SANDY CLAY TO SILTY CLAY (UNDIVIDED COASTAL PLAIN)

SATURATED, MEDIUM HARD, DARK GRAY,
LIMESTONE WITH SOME SHELL FRAGMENTS (WACCAMAN FORMATION)

MOIST, MEDIUM DENSE, DARK BROWN, SILTY COARSE TO FINE SAND
(PEEDEE FORMATION)

02/20

4:1

4:1

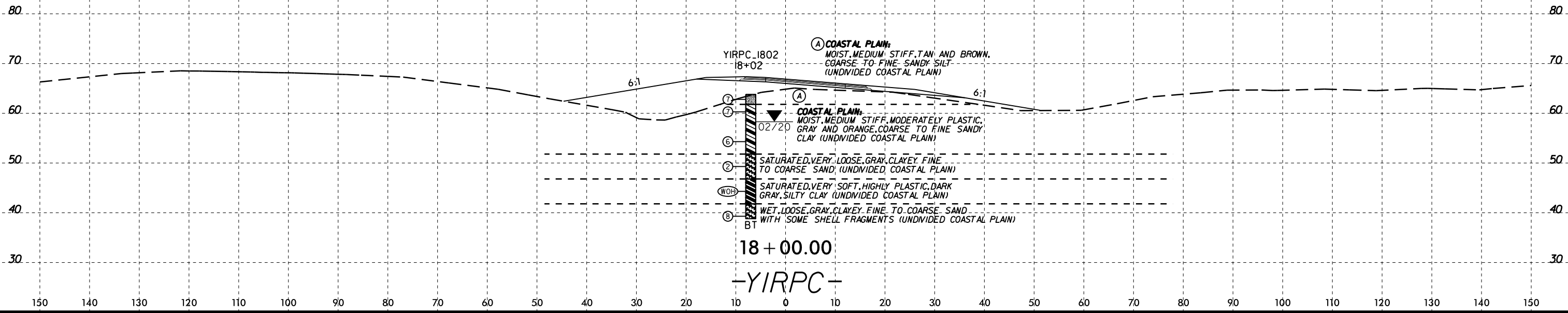
A

A



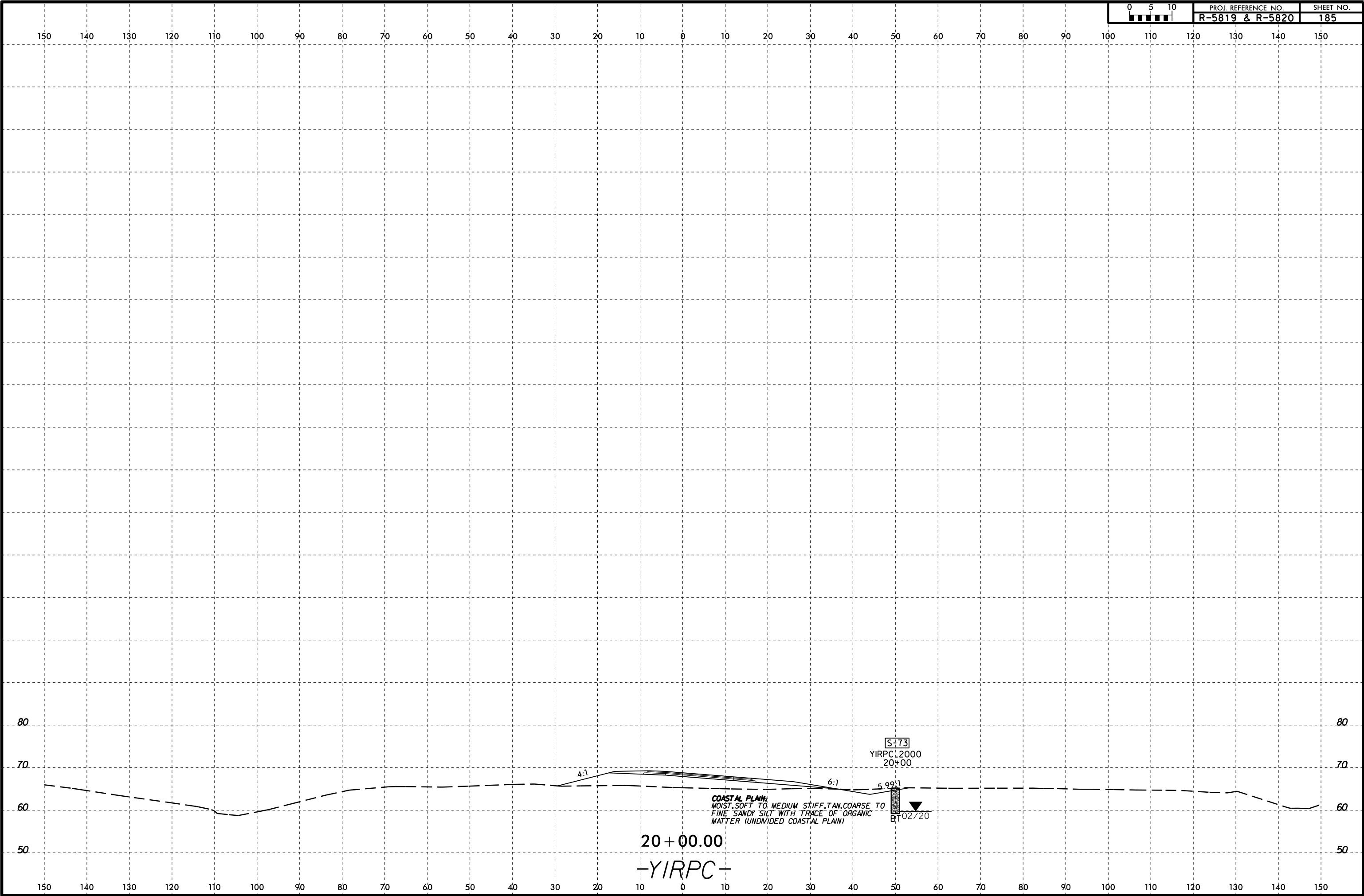
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

I:\FEB-2016\01
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO_RDW\CADD_GEO_RDW\RS5819-R5820_GEO_XSL_YIRPC.dgn

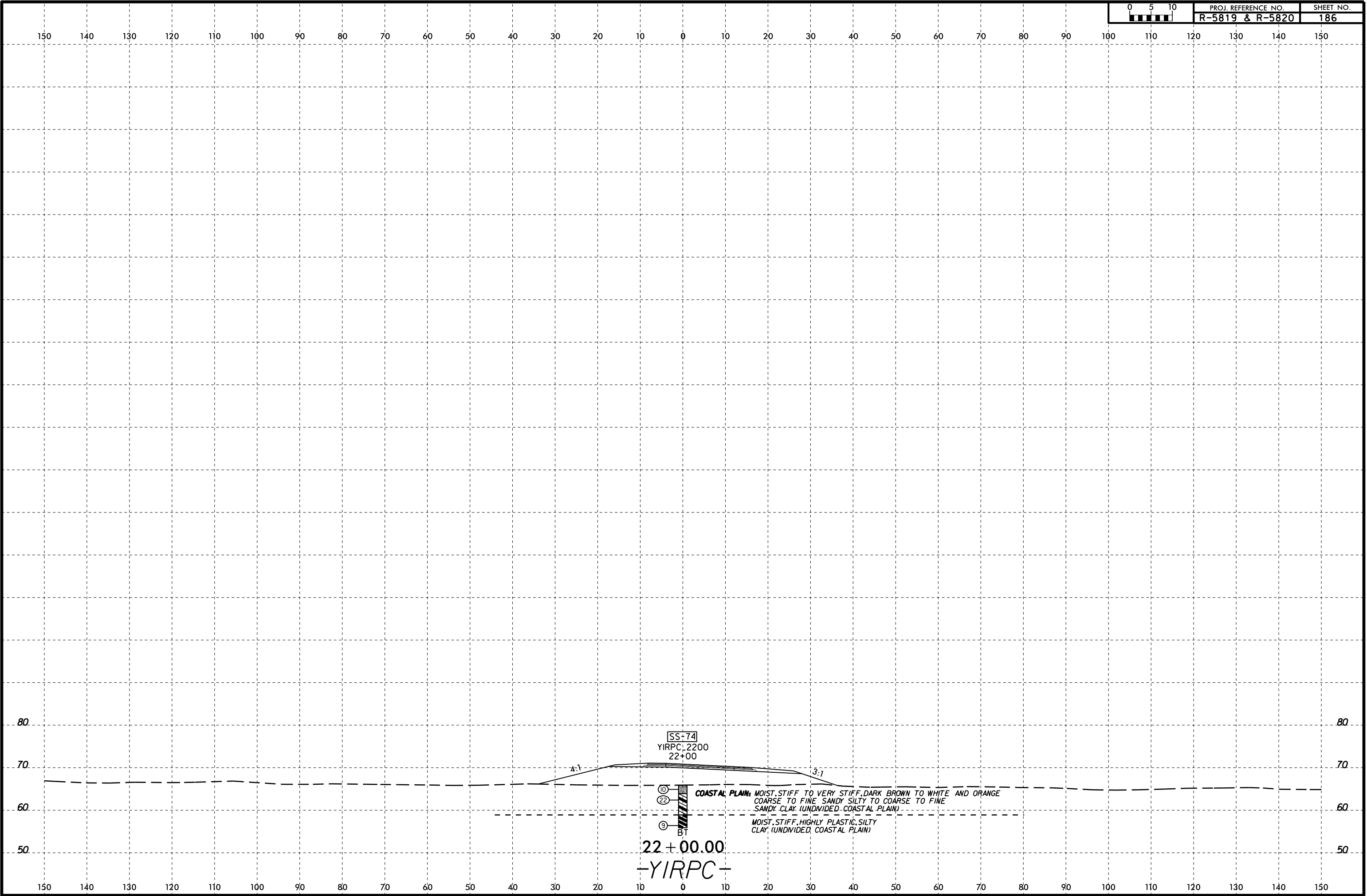


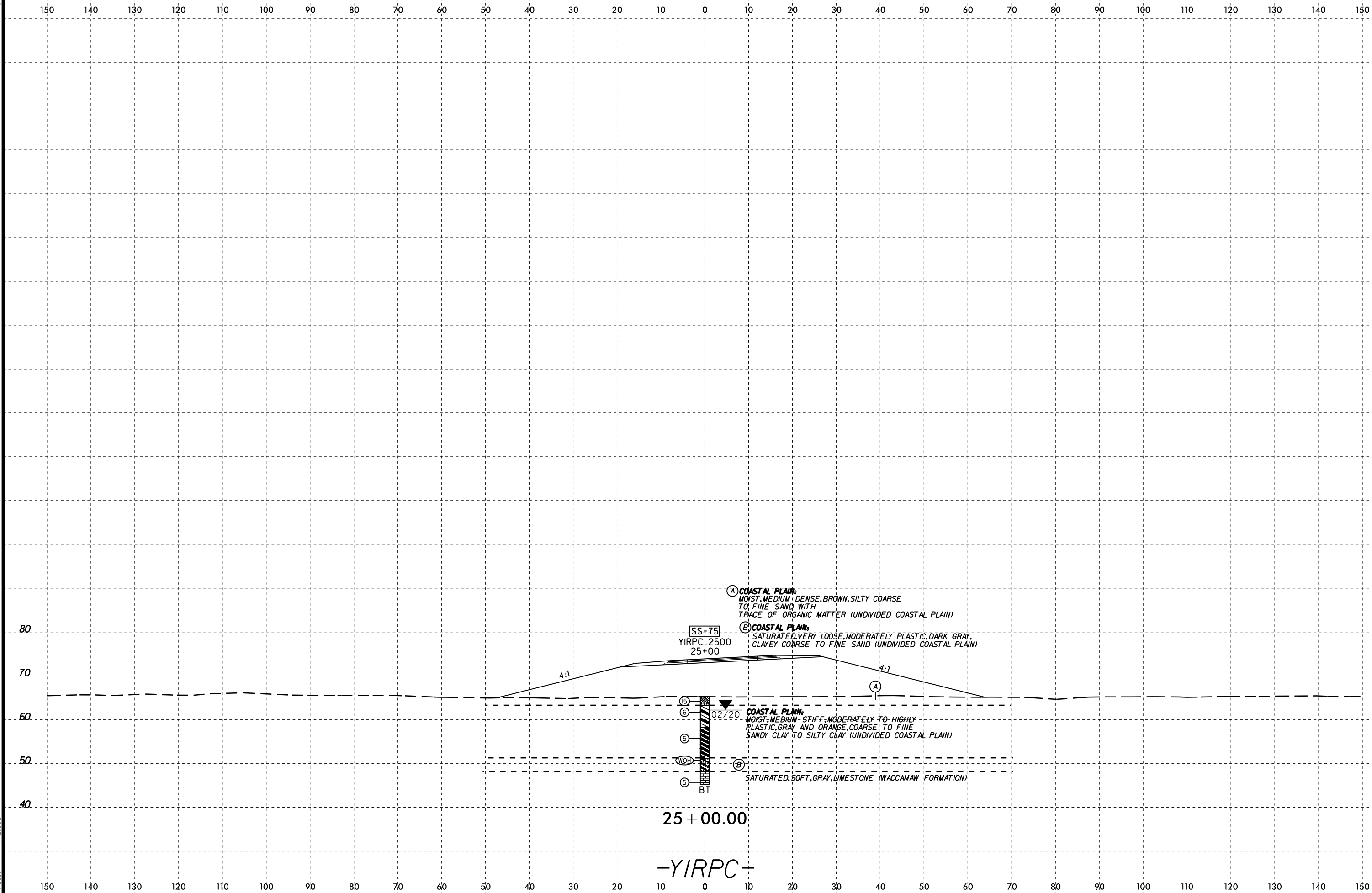
6/23/16
I:\FEB-2016\01
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\5819-R5820_GEO.XSL_YIRPC.dgn
I:\FEB-2016\01
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\5819-R5820_GEO.XSL_YIRPC.dgn

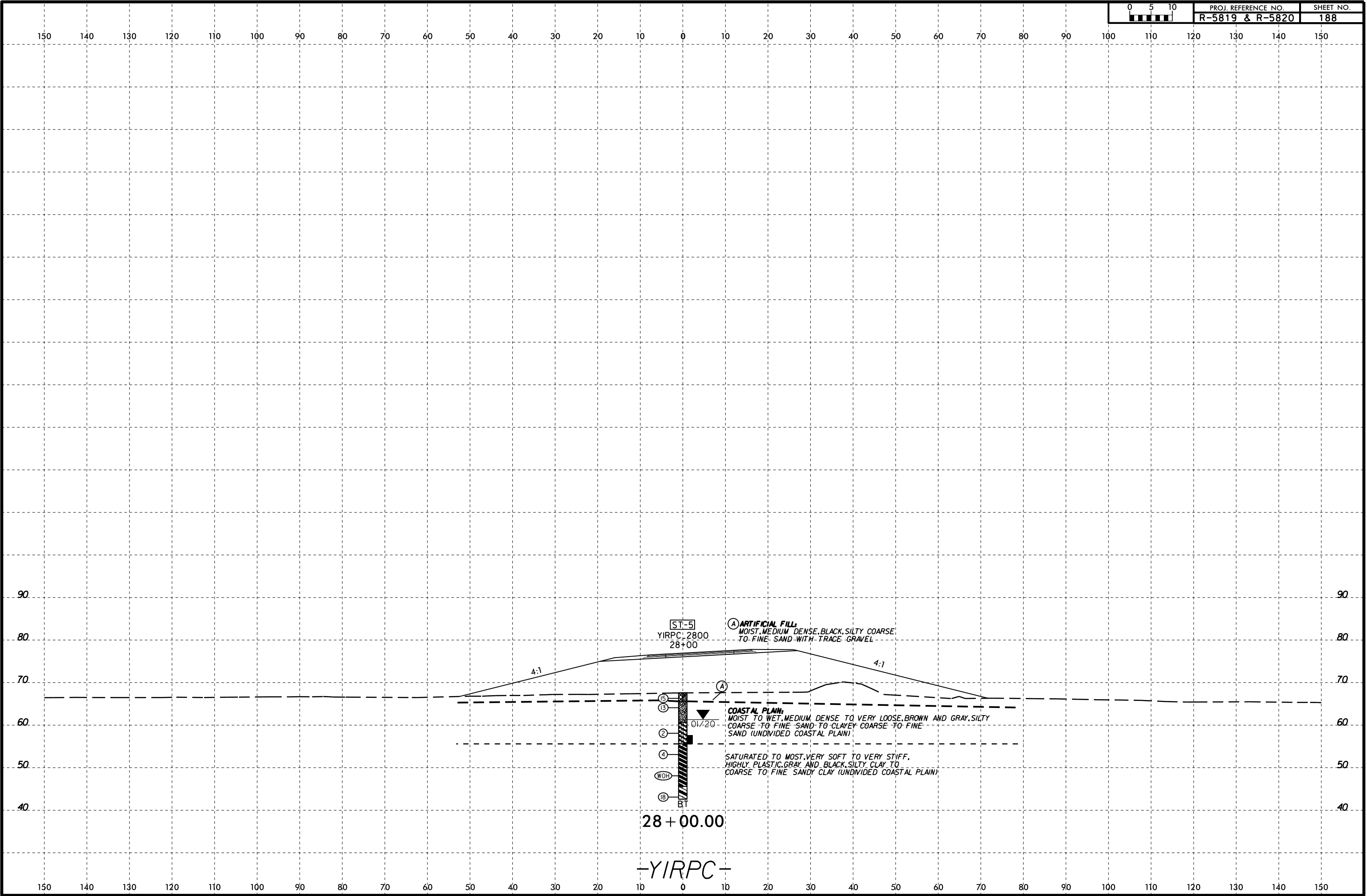
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	R-5819 & R-5820	185



6/23/16
I:\FEB-2016\01
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO.RDW\CADD_GEO\RDW\CADD_GEO\RS5819-R5820_GEO.XSL_YIRPC.dgn
Wells - At KA211387

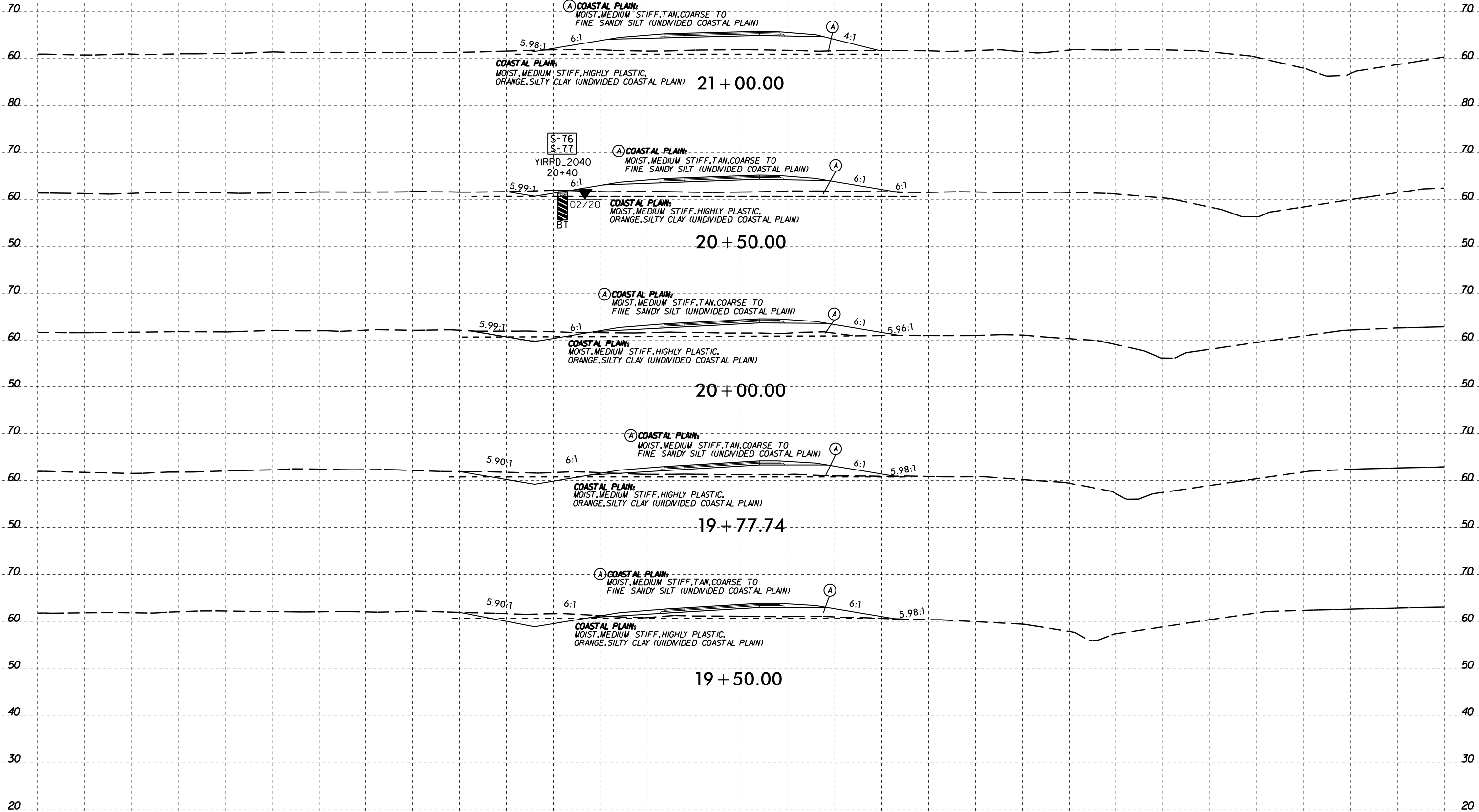








150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

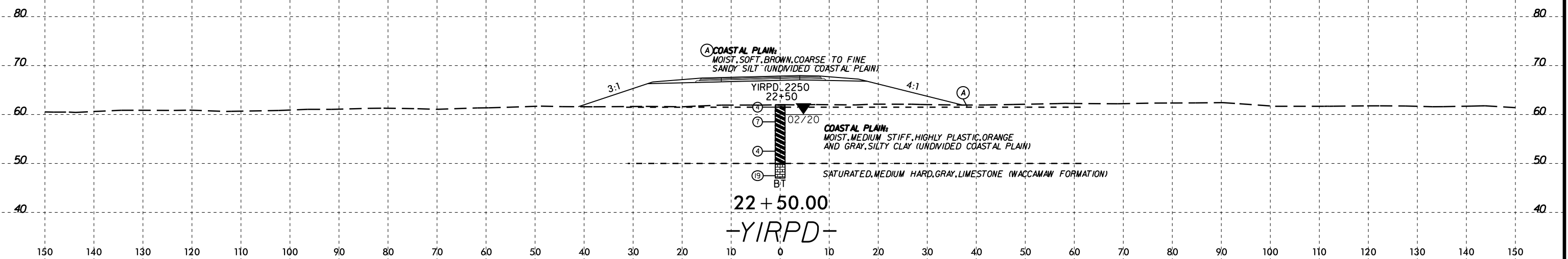


-YIRPD-

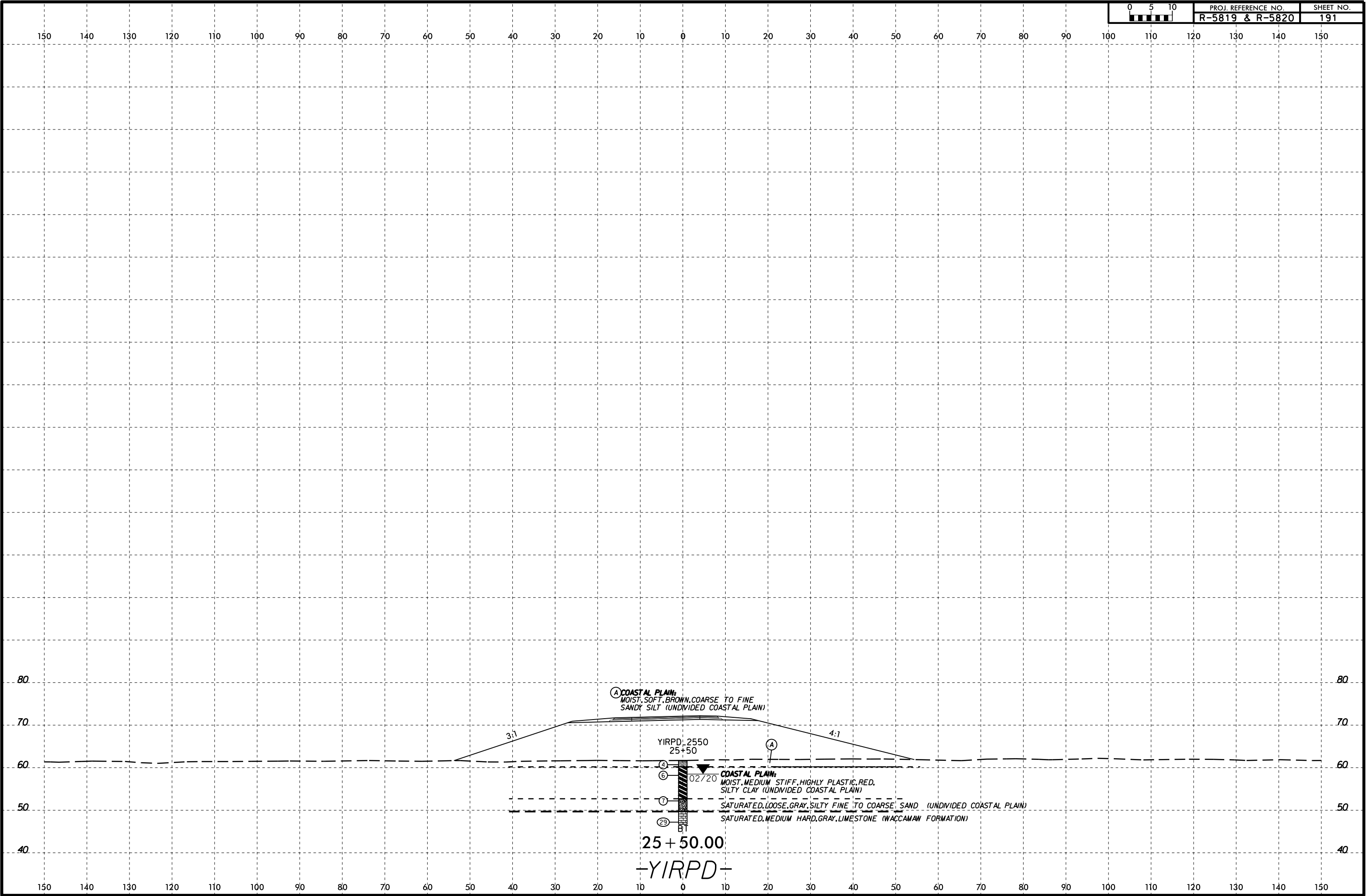
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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

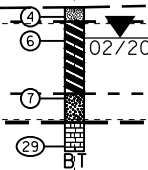


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



(A) COASTAL PLAIN:
MOIST, SOFT, BROWN, COARSE TO FINE
SANDY SILT (UNDIVIDED COASTAL PLAIN)

YIRPD-2550
25+50



COASTAL PLAIN:
MOIST, MEDIUM STIFF, HIGHLY PLASTIC, RED,
SILTY CLAY (UNDIVIDED COASTAL PLAIN)

SATURATED, LOOSE, GRAY, SILTY FINE TO COARSE SAND (UNDIVIDED COASTAL PLAIN)

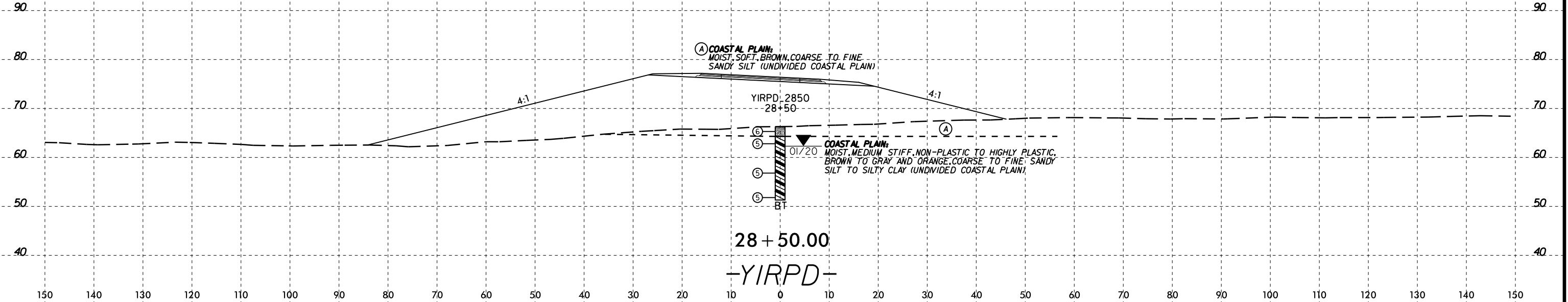
SATURATED, MEDIUM HARD, GRAY, LIMESTONE (WACCAMAW FORMATION)

25 + 50.00
-YIRPD-



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

I:\FEB-2016\01
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO_RDW\CADD_GEO_RDW\RS5819-R5820_GEO_XSL_YIRPD.dgn
Wells - At KA211387





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



ROADWAY EMBANKMENT:
MOIST, MEDIUM DENSE, TAN, FINE SAND

COASTAL PLAIN:
MOIST TO WET, MEDIUM STIFF TO VERY STIFF,
SLIGHTLY TO HIGHLY PLASTIC, GRAY AND ORANGE,
COARSE TO FINE SANDY SILT TO SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

14 + 50.00



ROADWAY EMBANKMENT:
MOIST, MEDIUM DENSE, TAN, FINE SAND

COASTAL PLAIN:
MOIST TO WET, MEDIUM STIFF, ORANGE AND BROWN,
FINE TO COARSE SANDY SILT (UNDIVIDED COASTAL PLAIN)

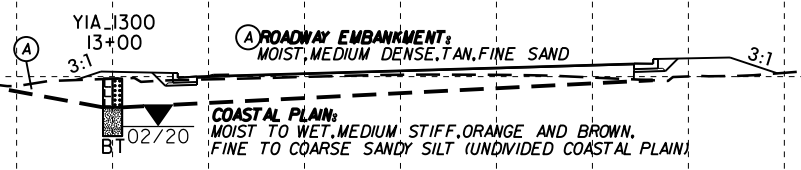
14 + 00.00



ROADWAY EMBANKMENT:
MOIST, MEDIUM DENSE, TAN, FINE SAND

COASTAL PLAIN:
MOIST TO WET, MEDIUM STIFF, ORANGE AND BROWN,
FINE TO COARSE SANDY SILT (UNDIVIDED COASTAL PLAIN)

13 + 50.00



ROADWAY EMBANKMENT:
MOIST, MEDIUM DENSE, TAN, FINE SAND

COASTAL PLAIN:
MOIST TO WET, MEDIUM STIFF, ORANGE AND BROWN,
FINE TO COARSE SANDY SILT (UNDIVIDED COASTAL PLAIN)

13 + 00.00

-Y/A-

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



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

(A) ROADWAY EMBANKMENT:
MOIST, MEDIUM DENSE, TAN, FINE SAND

COASTAL PLAIN:
MOIST TO WET, MEDIUM STIFF TO VERY STIFF,
SLIGHTLY TO HIGHLY PLASTIC, GRAY AND ORANGE,
COARSE TO FINE SANDY SILT TO SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

16 + 00.00

(A) ROADWAY EMBANKMENT:
MOIST, MEDIUM DENSE, TAN, FINE SAND

COASTAL PLAIN:
MOIST TO WET, MEDIUM STIFF TO VERY STIFF,
SLIGHTLY TO HIGHLY PLASTIC, GRAY AND ORANGE,
COARSE TO FINE SANDY SILT TO SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

15 + 50.00

(A) ROADWAY EMBANKMENT:
MOIST, MEDIUM DENSE, TAN, FINE SAND
S-65
YIA 1500
15+00
-Y5- CHURCH ST
INTERSECTION

BT
02/20
COASTAL PLAIN:
MOIST TO WET, MEDIUM STIFF TO VERY STIFF,
SLIGHTLY TO HIGHLY PLASTIC, GRAY AND ORANGE,
COARSE TO FINE SANDY SILT TO SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

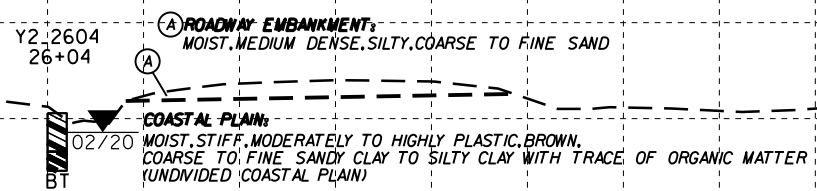
15 + 00.00

-Y/A-

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



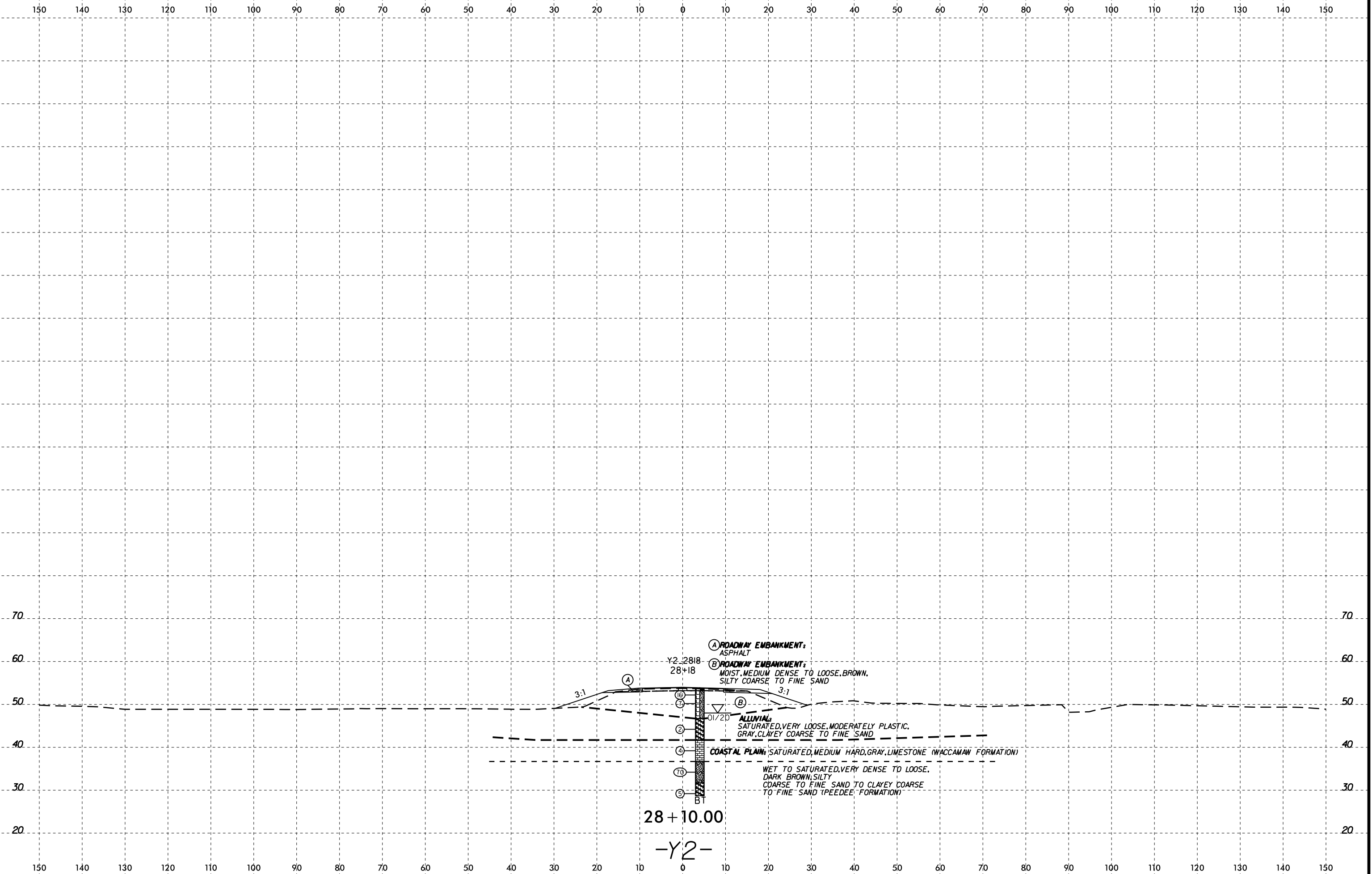
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

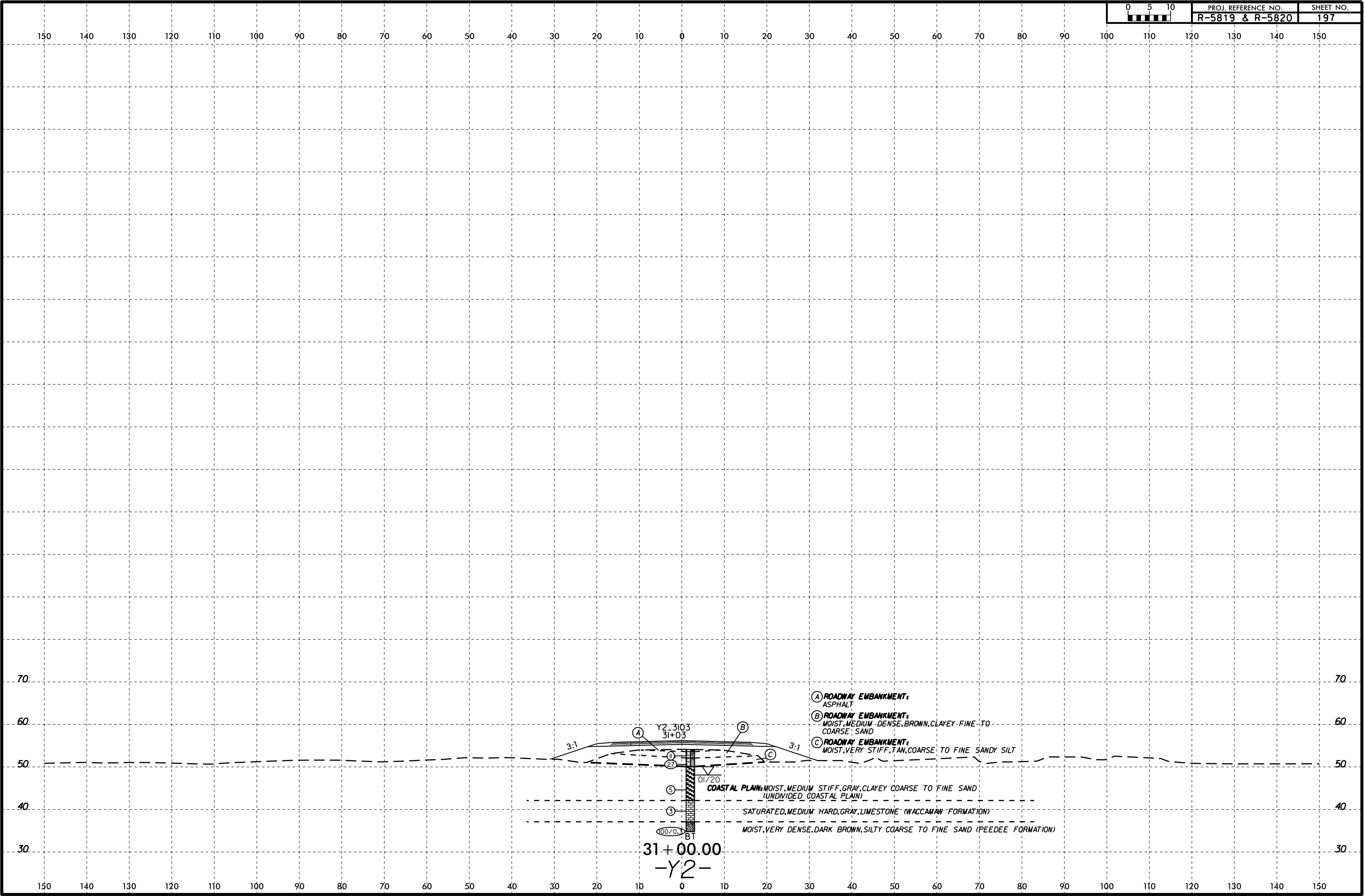


26 + 00.00

-Y2-

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



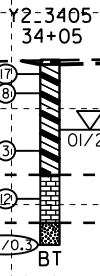
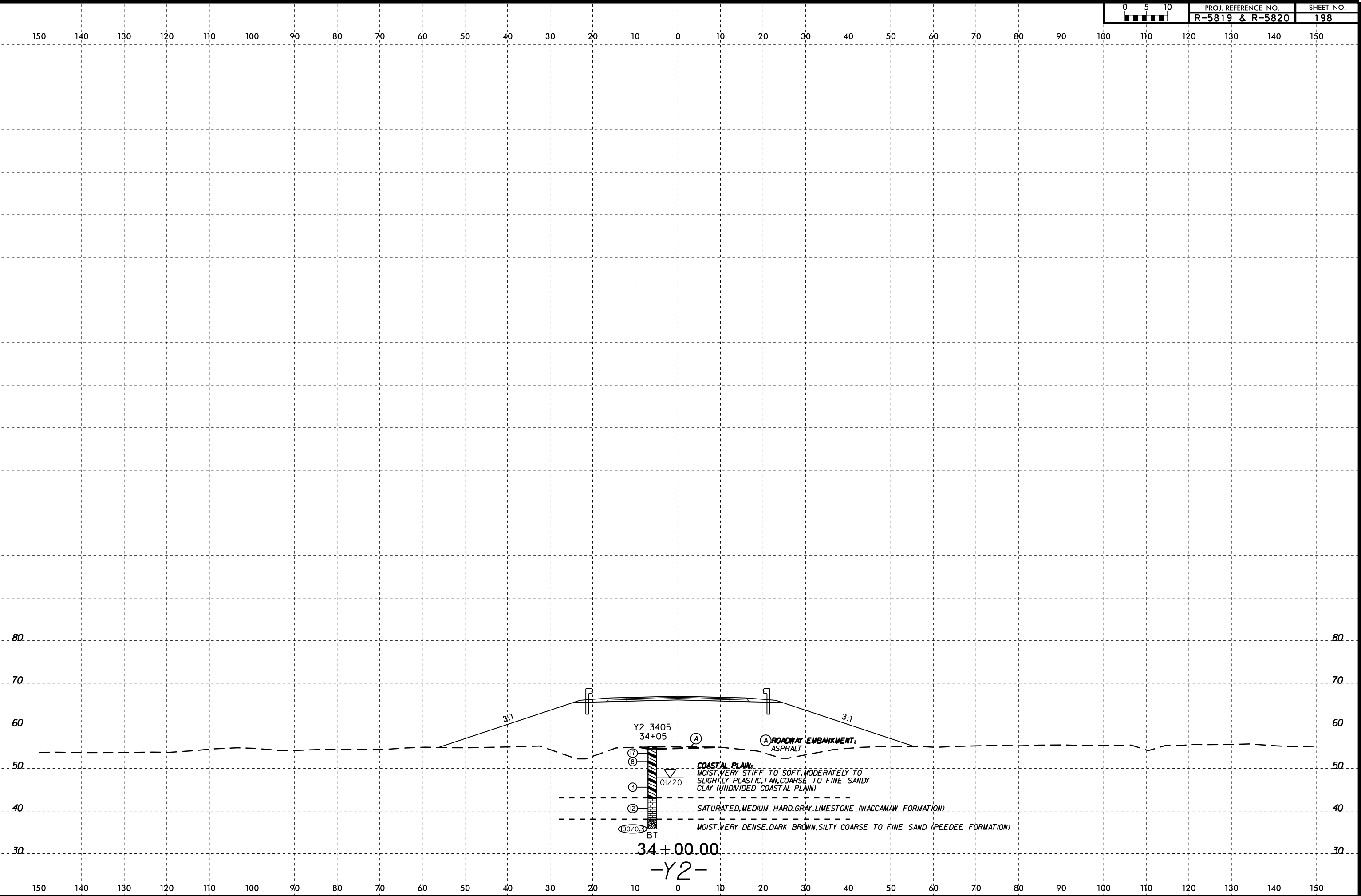


(A) ROADWAY EMBANKMENT:
 ASPHALT
 (B) ROADWAY EMBANKMENT:
 MOIST, MEDIUM-DENSE, BROWN, CLAYEY-FINE TO
 COARSE SAND
 (C) ROADWAY EMBANKMENT:
 MOIST, VERY STIFF, TAN, COARSE TO FINE SANDY SILT

COASTAL PLAIN, MOIST, MEDIUM STIFF, GRAY, CLAYEY COARSE TO FINE SAND
 (UNDIVIDED COASTAL PLAIN)
 SATURATED, MEDIUM HARD, GRAY, LIMESTONE (WACCAMAW FORMATION)
 MOIST, VERY DENSE, DARK BROWN, SILTY COARSE TO FINE SAND (PEEDEE FORMATION)

31+00.00
 -Y2-

6/23/16
I:\FEB-2016\01
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO_RDW\CADD_GEO_RDW\5819-R5820_GEO_XSL_Y2.dgn
Wells - At KA21387

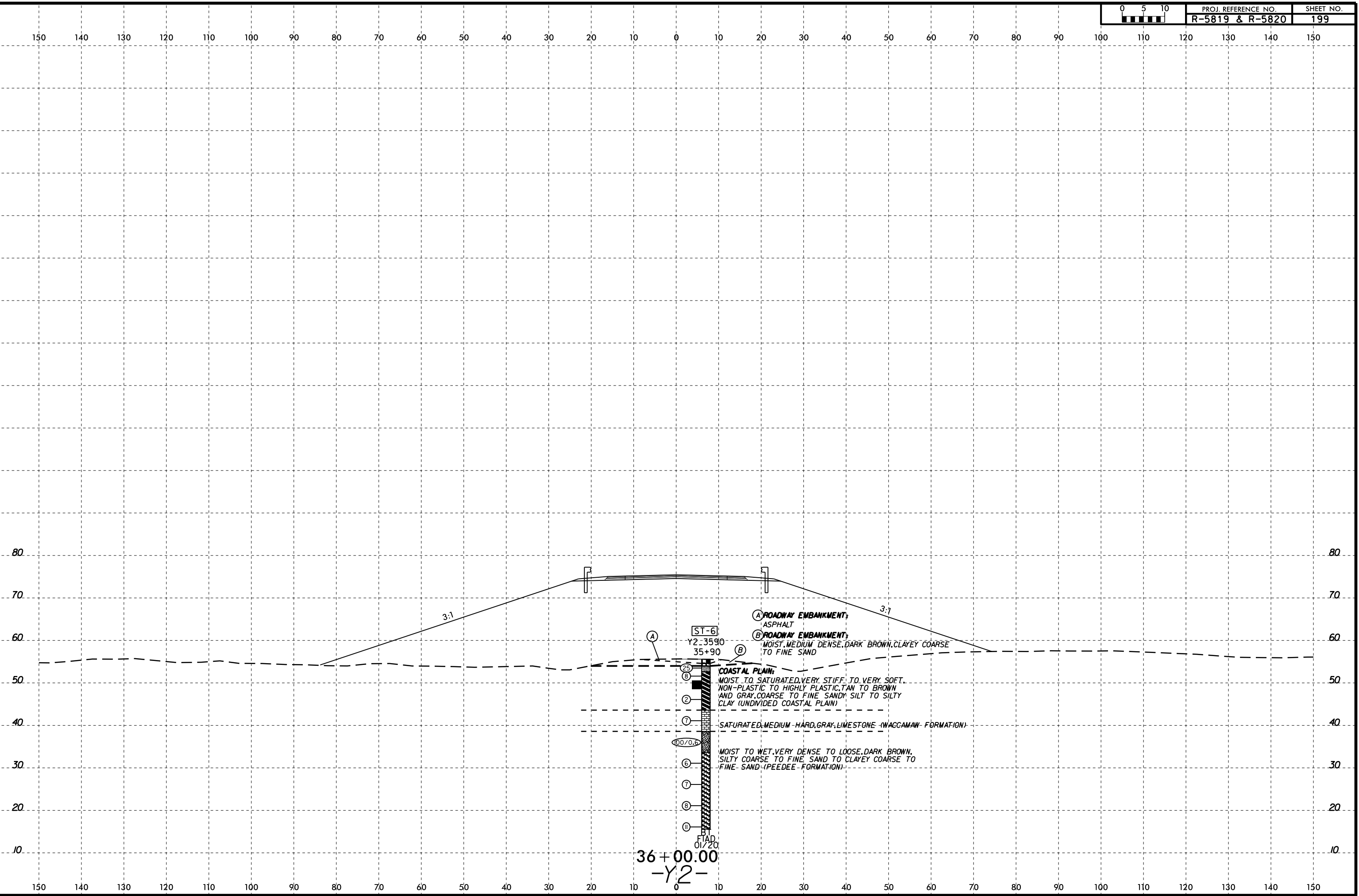


COASTAL PLAIN:
MOIST, VERY STIFF TO SOFT, MODERATELY TO
SLIGHTLY PLASTIC, TAN, COARSE TO FINE SANDY
CLAY (UNDIVIDED COASTAL PLAIN)

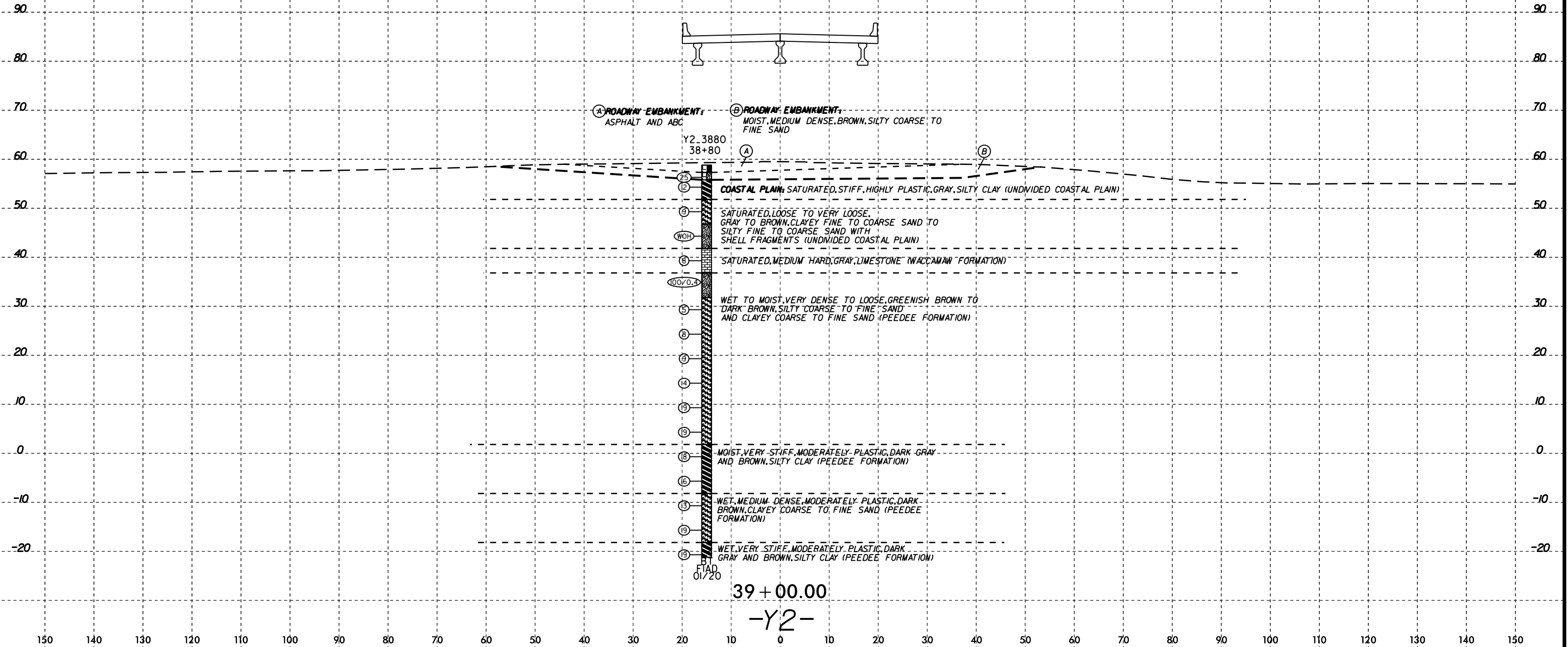
SATURATED, MEDIUM HARD, GRAY, LIMESTONE (WACCAMAN FORMATION)

MOIST, VERY DENSE, DARK BROWN, SILTY COARSE TO FINE SAND (PEEDEE FORMATION)

34 + 00.00
-Y2-

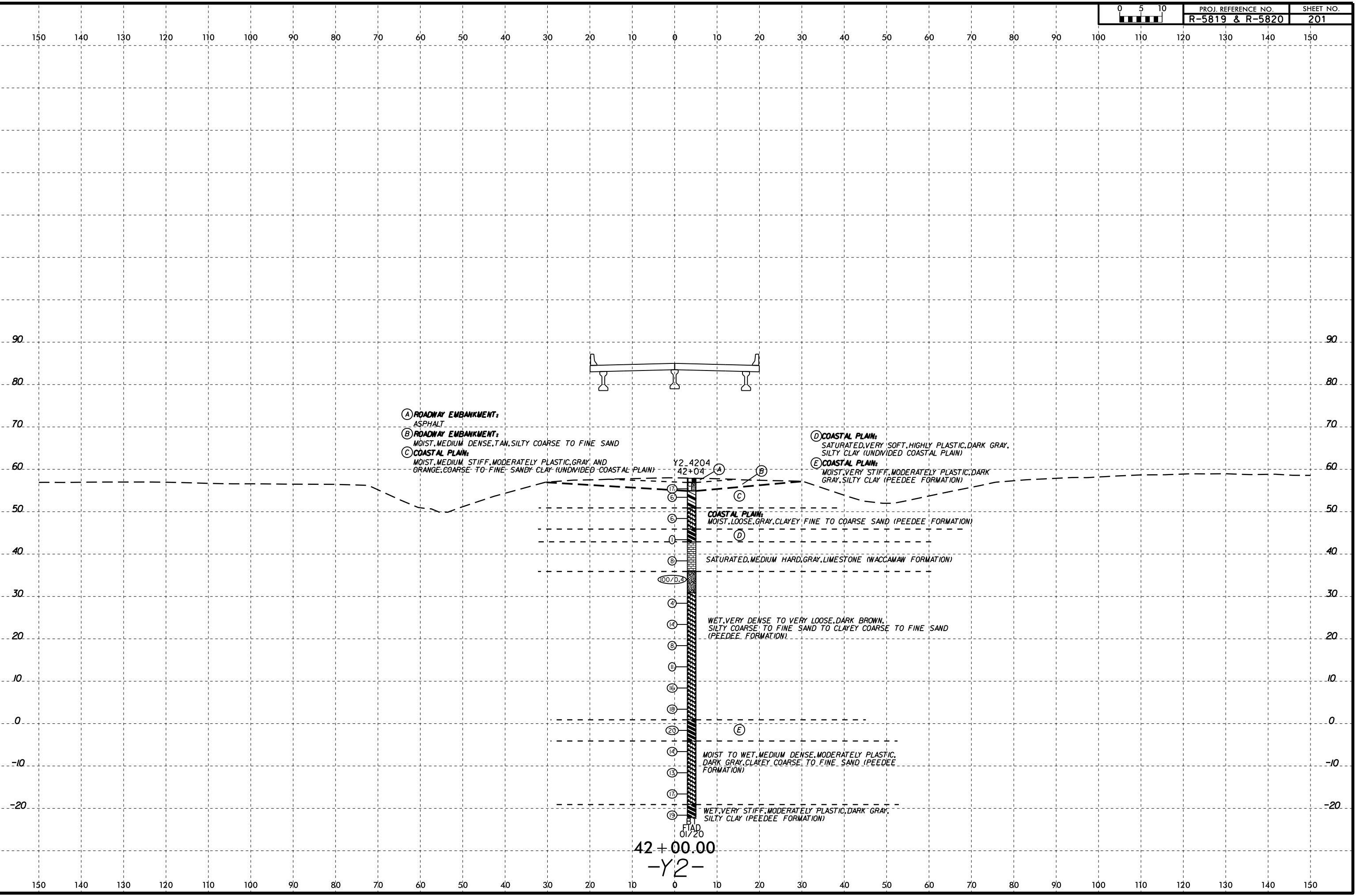


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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

I:\FEB-2016\01\W\shere\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS819-RS820-GEO\RDW\CADD_GEO\RDW\CADD_GEO\RS819-RS820-GEO_XSL_Y2.dgn



- (A) ROADWAY EMBANKMENT:
ASPHALT
- (B) ROADWAY EMBANKMENT:
MOIST, MEDIUM DENSE, TAN, SILTY COARSE TO FINE SAND
- (C) COASTAL PLAIN:
MOIST, MEDIUM STIFF, MODERATELY PLASTIC, GRAY AND ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

- (D) COASTAL PLAIN:
SATURATED, VERY SOFT, HIGHLY PLASTIC, DARK GRAY, SILTY CLAY (UNDIVIDED COASTAL PLAIN)
- (E) COASTAL PLAIN:
MOIST, VERY STIFF, MODERATELY PLASTIC, DARK GRAY, SILTY CLAY (PEEDEE FORMATION)

Y2.4204
42+0.4

COASTAL PLAIN:
MOIST, LOOSE, GRAY, CLAYEY FINE TO COARSE SAND (PEEDEE FORMATION)

SATURATED, MEDIUM HARD, GRAY, LIMESTONE (WACCAMAW FORMATION)

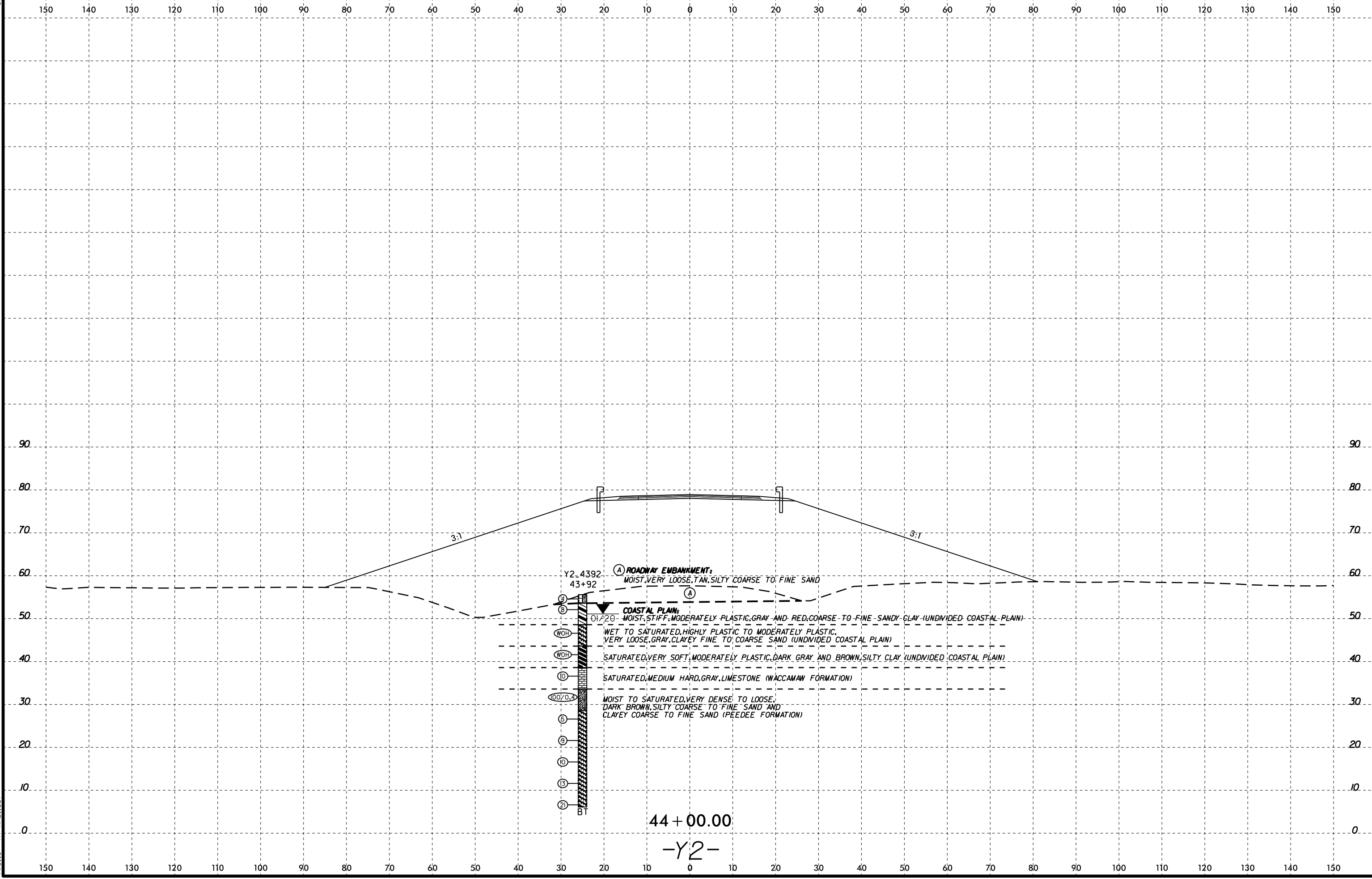
100/D.4

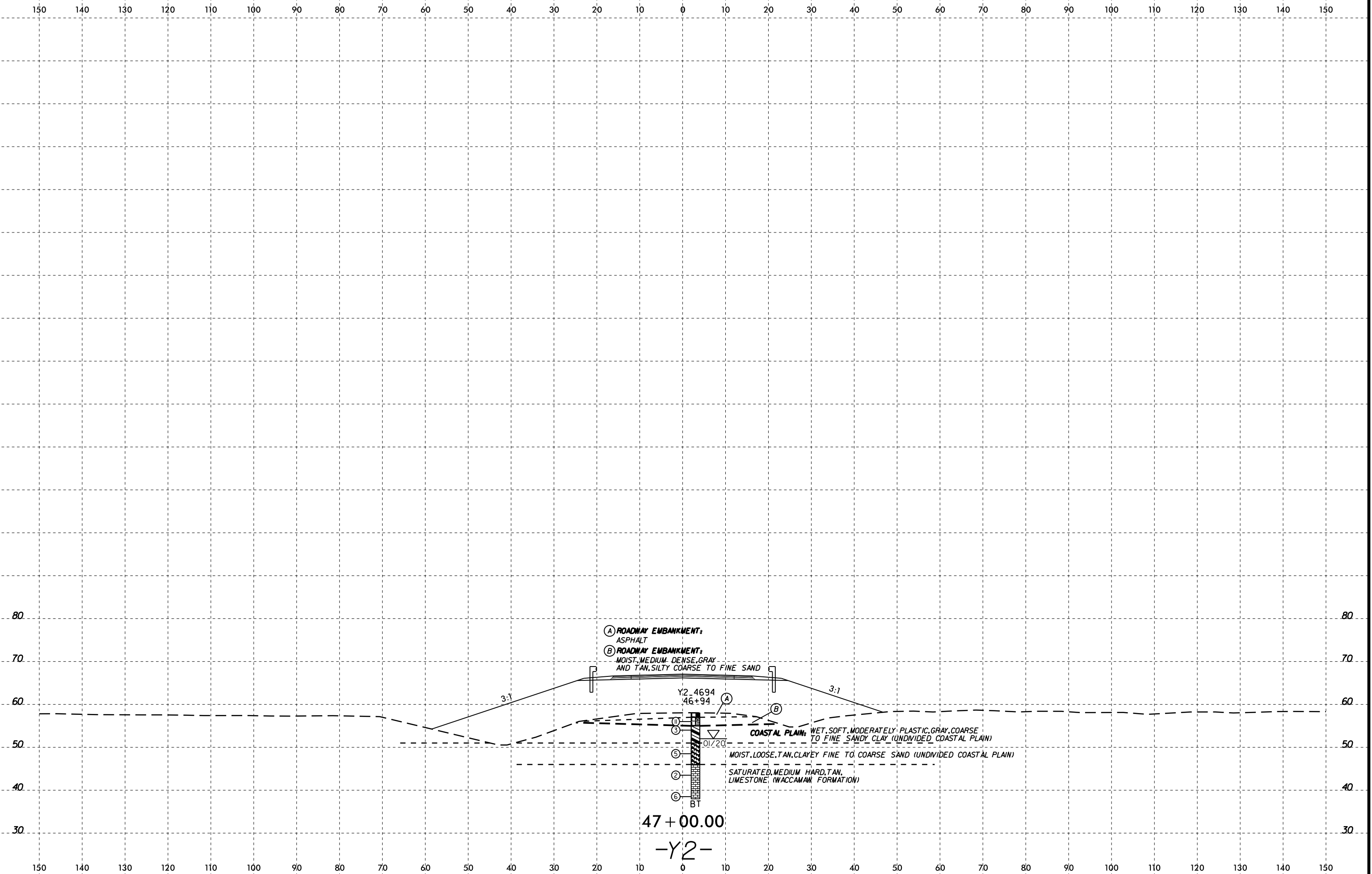
WET, VERY DENSE TO VERY LOOSE, DARK BROWN, SILTY COARSE TO FINE SAND TO CLAYEY COARSE TO FINE SAND (PEEDEE FORMATION)

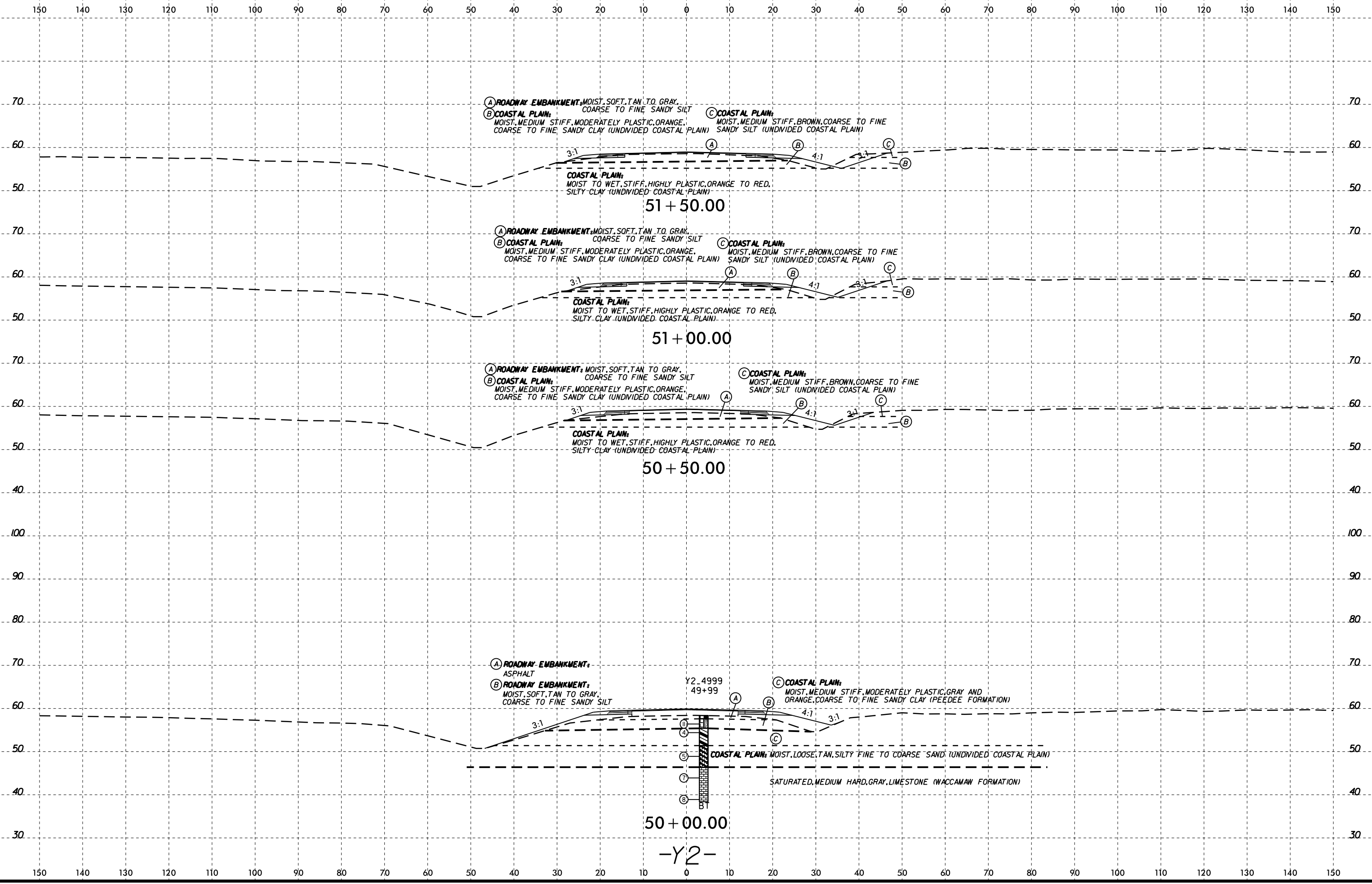
MOIST TO WET, MEDIUM DENSE, MODERATELY PLASTIC, DARK GRAY, CLAYEY COARSE TO FINE SAND (PEEDEE FORMATION)

WET, VERY STIFF, MODERATELY PLASTIC, DARK GRAY, SILTY CLAY (PEEDEE FORMATION)

42 + 00.00
-Y2-

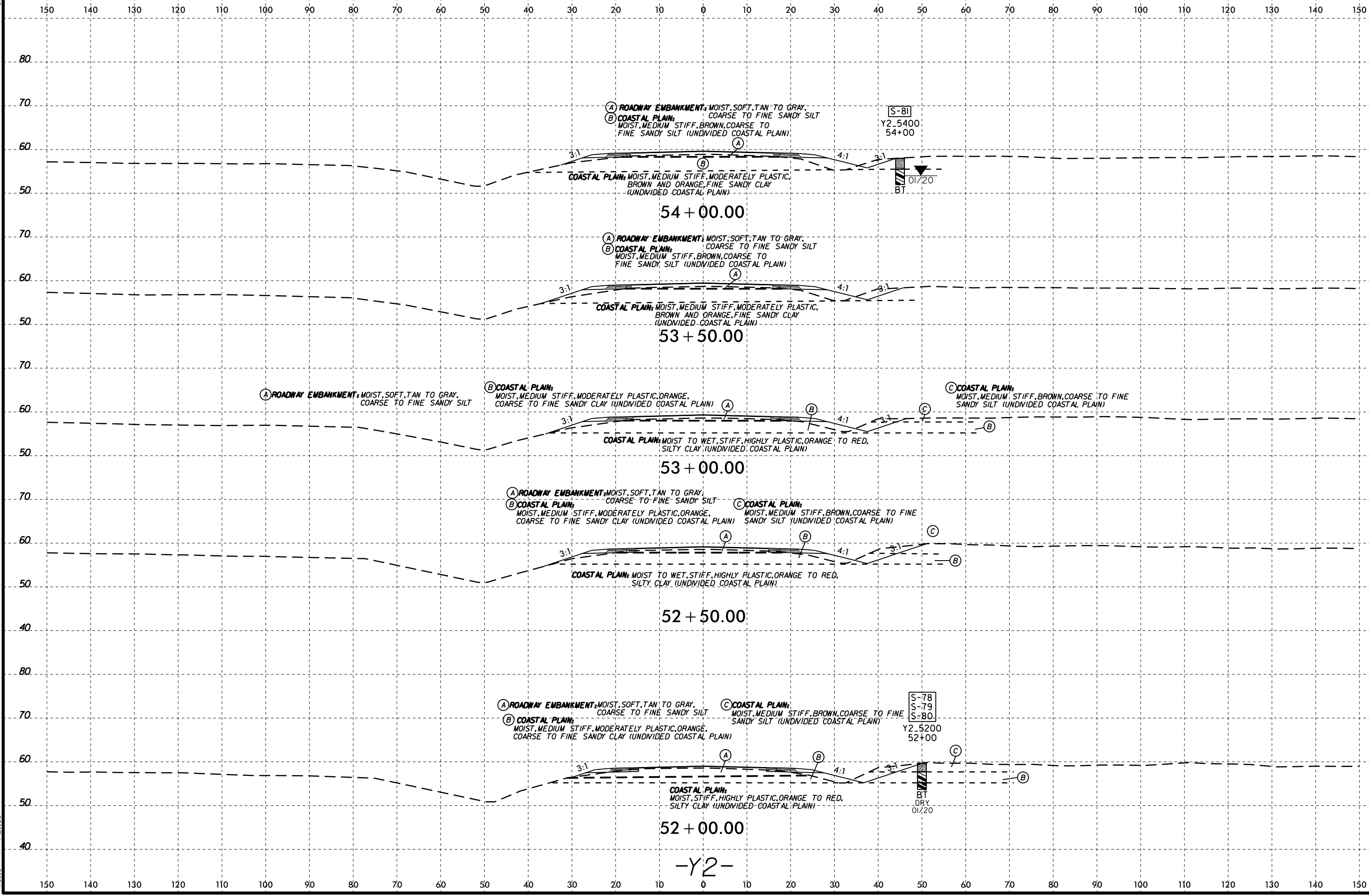


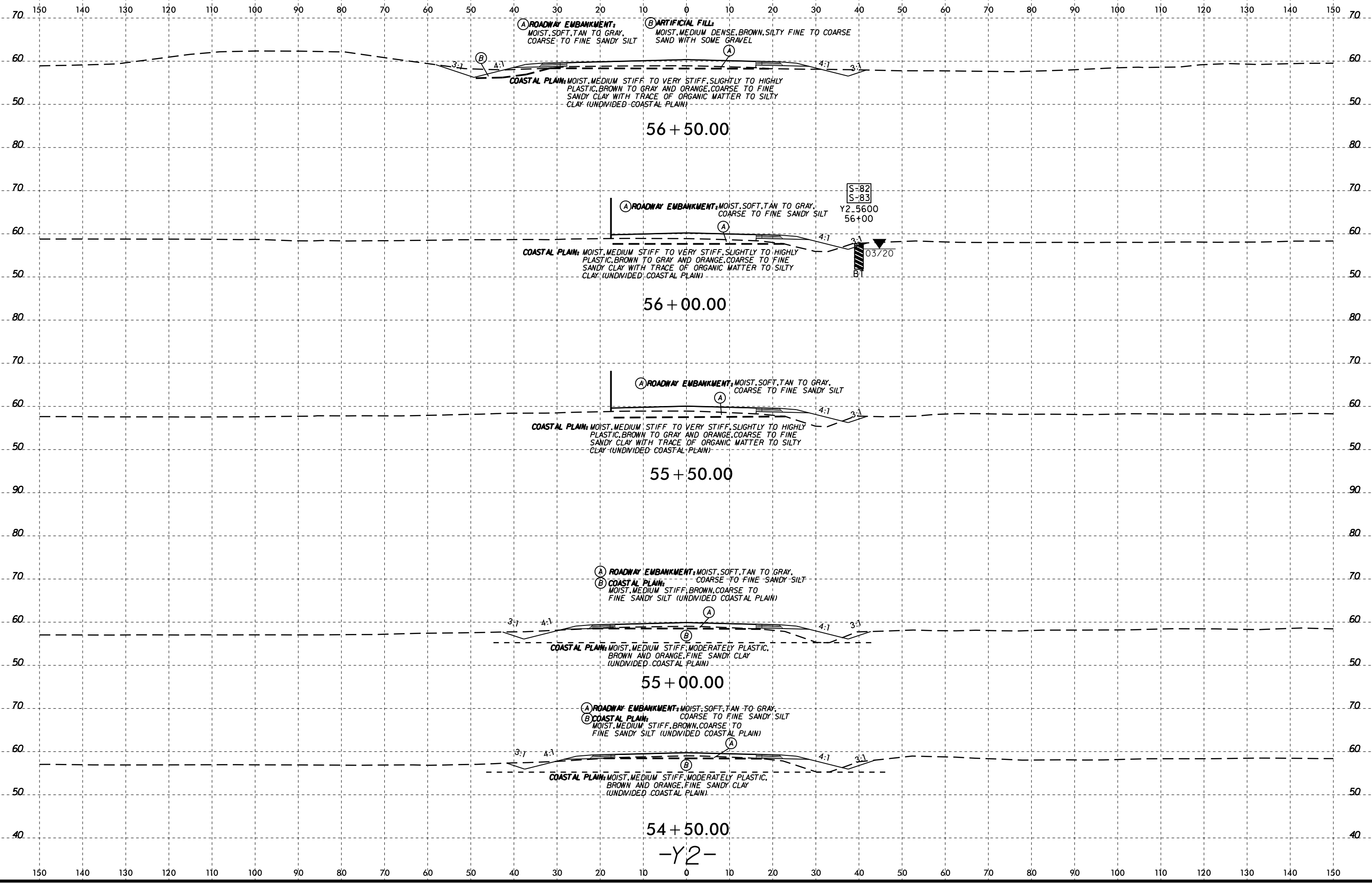


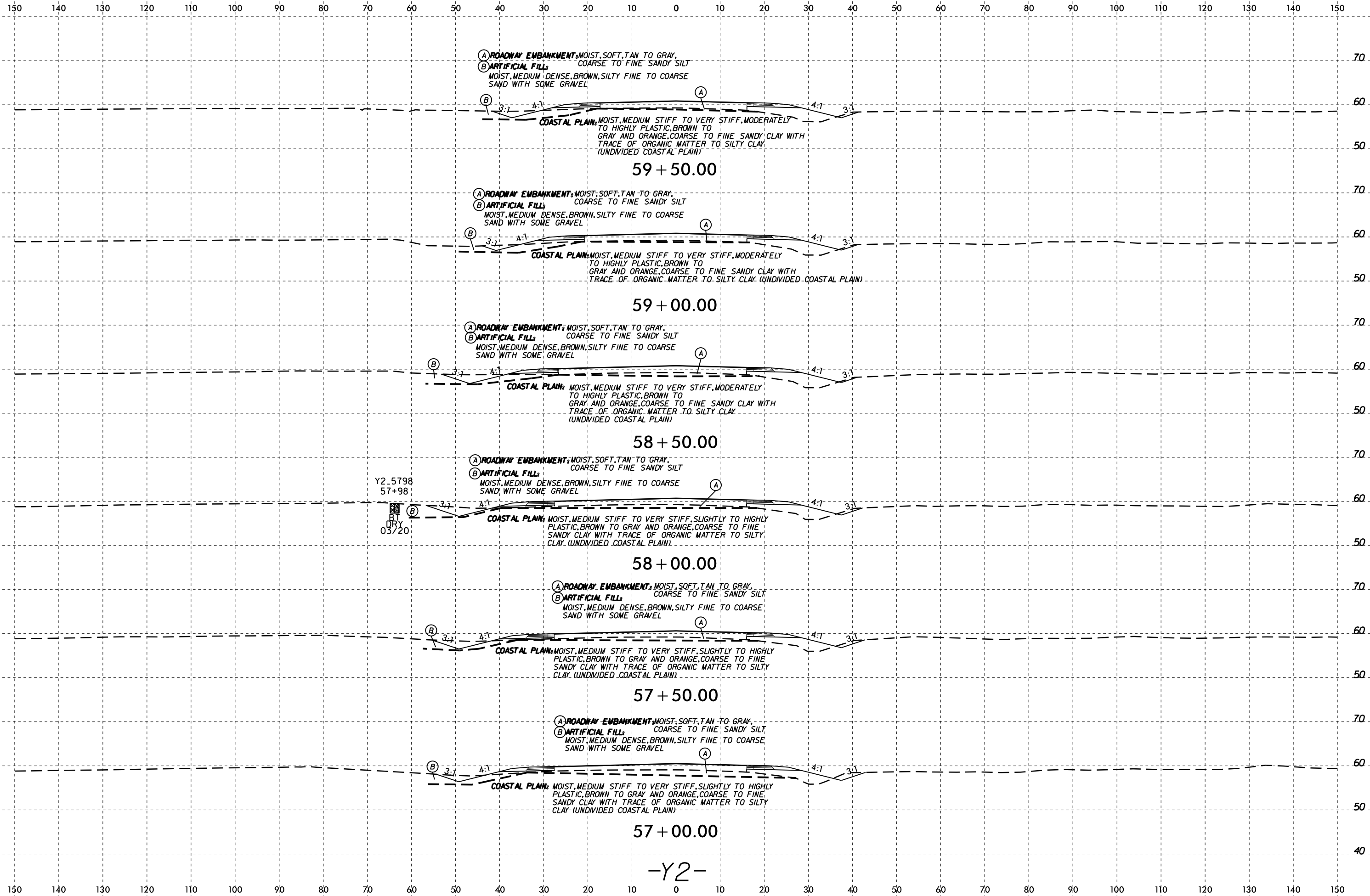


I:\FEB-2016\01\Watershed\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO_RDM\CADD_GEO_RDM\XSL\Y2.dgn

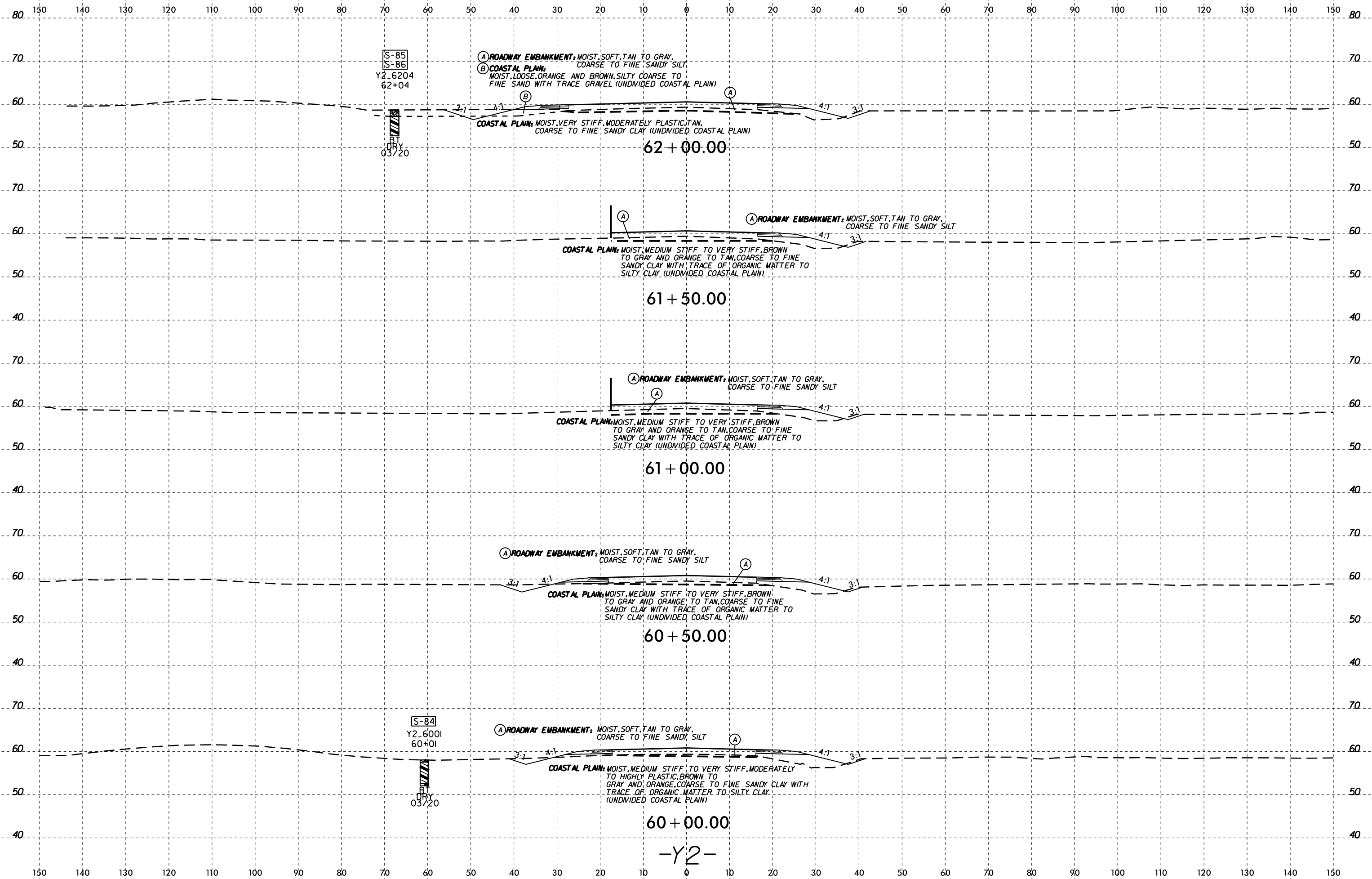
6/23/16
I:\FEB-2016\01
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\GEO_XSL_Y2.dgn







I:\FEB-2016\01
 W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_0244 R-5819 & R-5820 Roadway\Roadway\5819-R5820-GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL_Y2.dgn



62+00.00

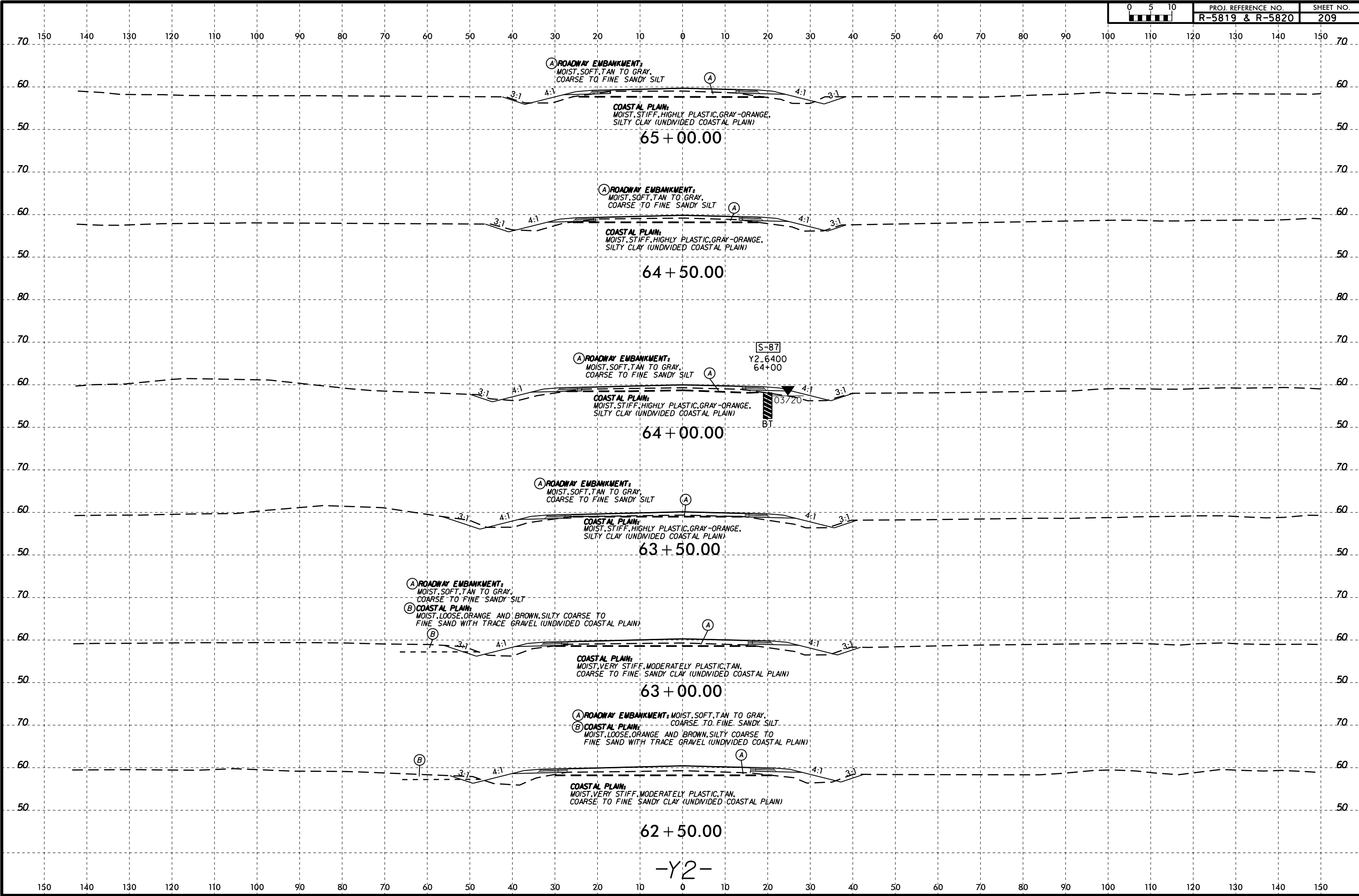
61+50.00

61+00.00

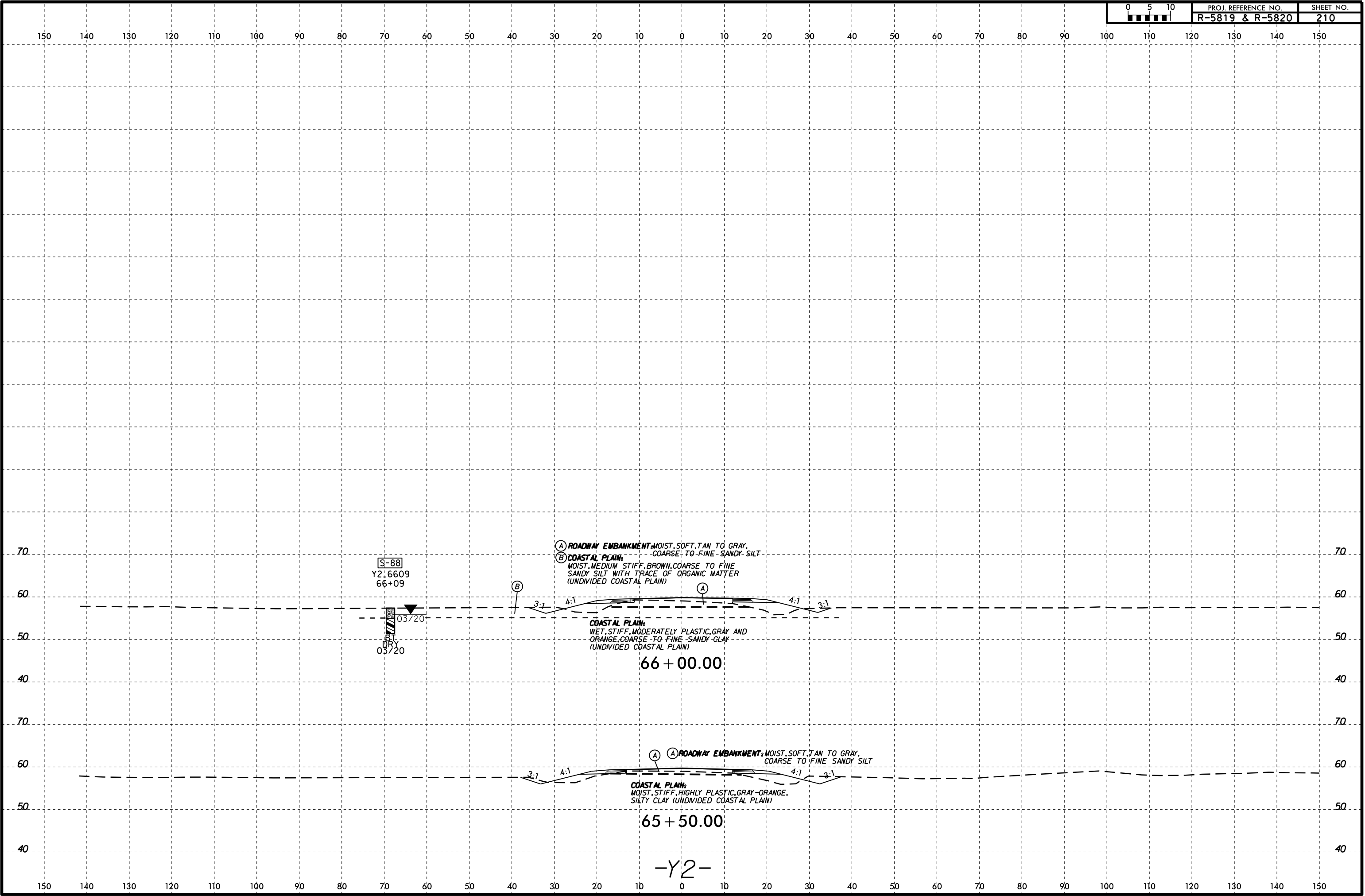
60+50.00

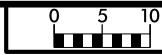
60+00.00

-Y2-



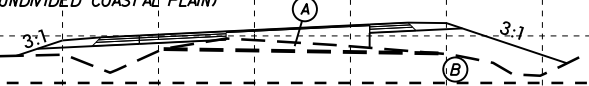
-Y2-





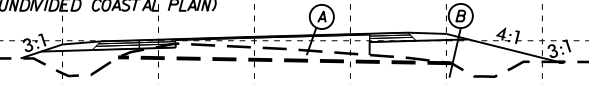
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

(A) ROADWAY EMBANKMENT: MOIST, SOFT, TAN TO GRAY,
 COARSE TO FINE SANDY SILT
 (B) COASTAL PLAIN:
 MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE
 SANDY SILT WITH TRACE OF ORGANIC MATTER
 (UNDIVIDED COASTAL PLAIN)
 COASTAL PLAIN:
 WET, STIFF, MODERATELY PLASTIC, GRAY AND
 ORANGE, COARSE TO FINE SANDY-CLAY
 (UNDIVIDED COASTAL PLAIN)



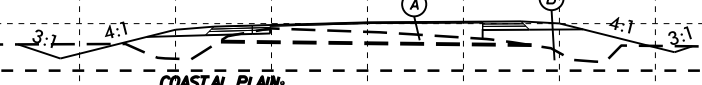
67 + 50.00

(A) ROADWAY EMBANKMENT: MOIST, SOFT, TAN TO GRAY,
 COARSE TO FINE SANDY SILT
 (B) COASTAL PLAIN:
 MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE
 SANDY SILT WITH TRACE OF ORGANIC MATTER
 (UNDIVIDED COASTAL PLAIN)
 COASTAL PLAIN:
 WET, STIFF, MODERATELY PLASTIC, GRAY AND
 ORANGE, COARSE TO FINE SANDY-CLAY
 (UNDIVIDED COASTAL PLAIN)



67 + 00.00

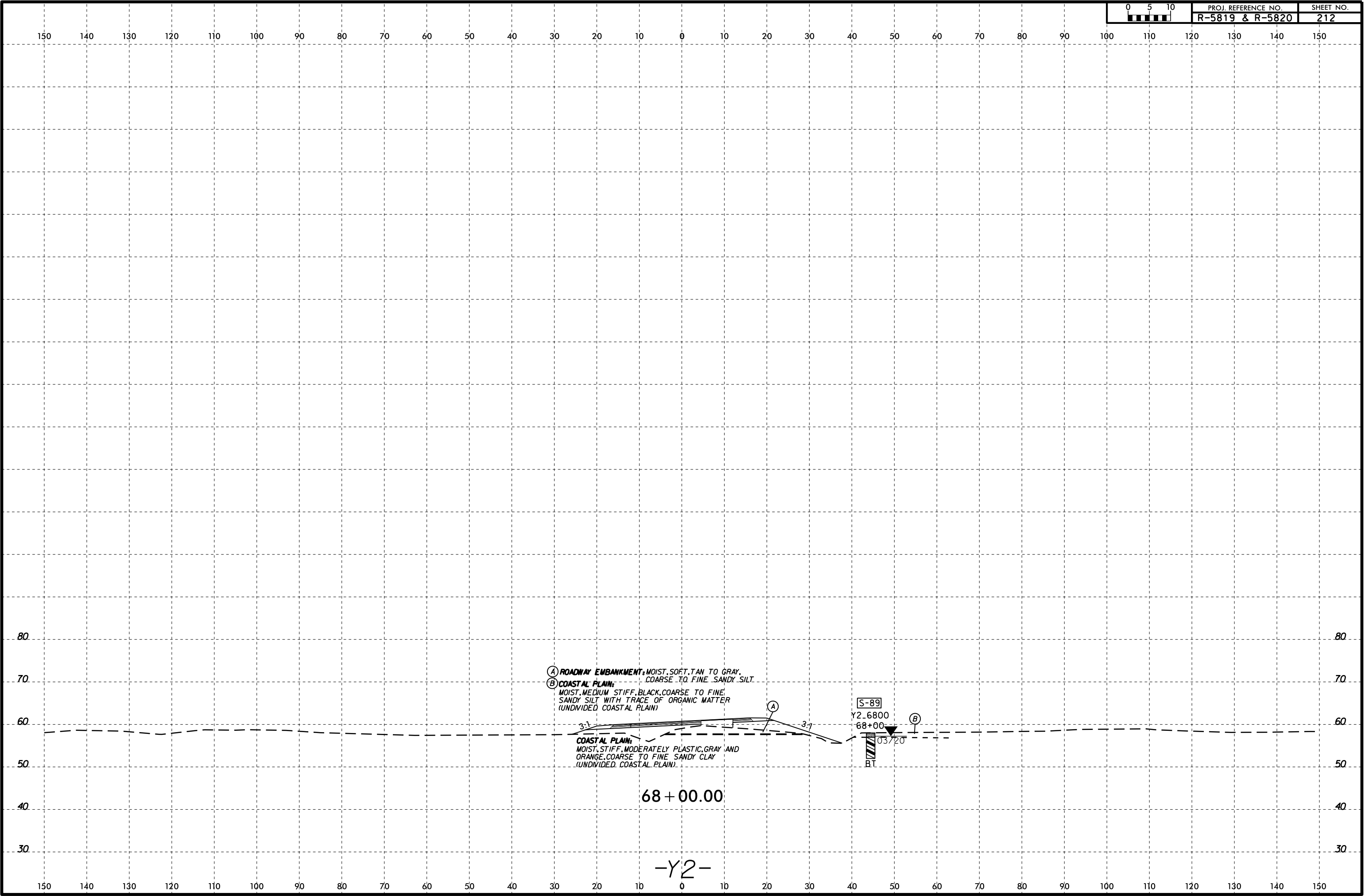
(A) ROADWAY EMBANKMENT: MOIST, SOFT, TAN TO GRAY,
 COARSE TO FINE SANDY SILT
 (B) COASTAL PLAIN:
 MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE
 SANDY SILT WITH TRACE OF ORGANIC MATTER
 (UNDIVIDED COASTAL PLAIN)
 COASTAL PLAIN:
 WET, STIFF, MODERATELY PLASTIC, GRAY AND
 ORANGE, COARSE TO FINE SANDY-CLAY
 (UNDIVIDED COASTAL PLAIN)



66 + 50.00

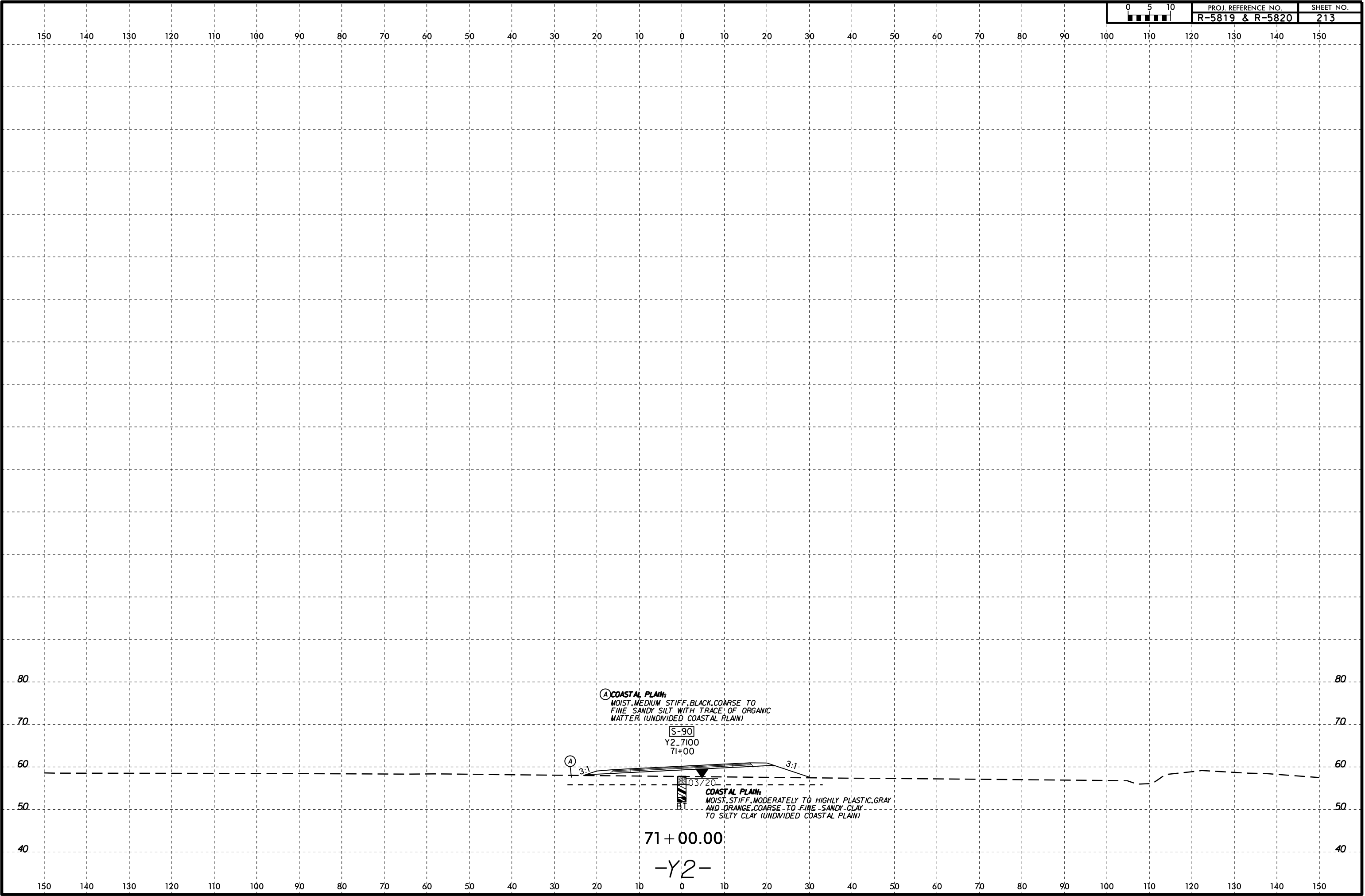
-Y2-

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



68 + 00.00

-Y2-



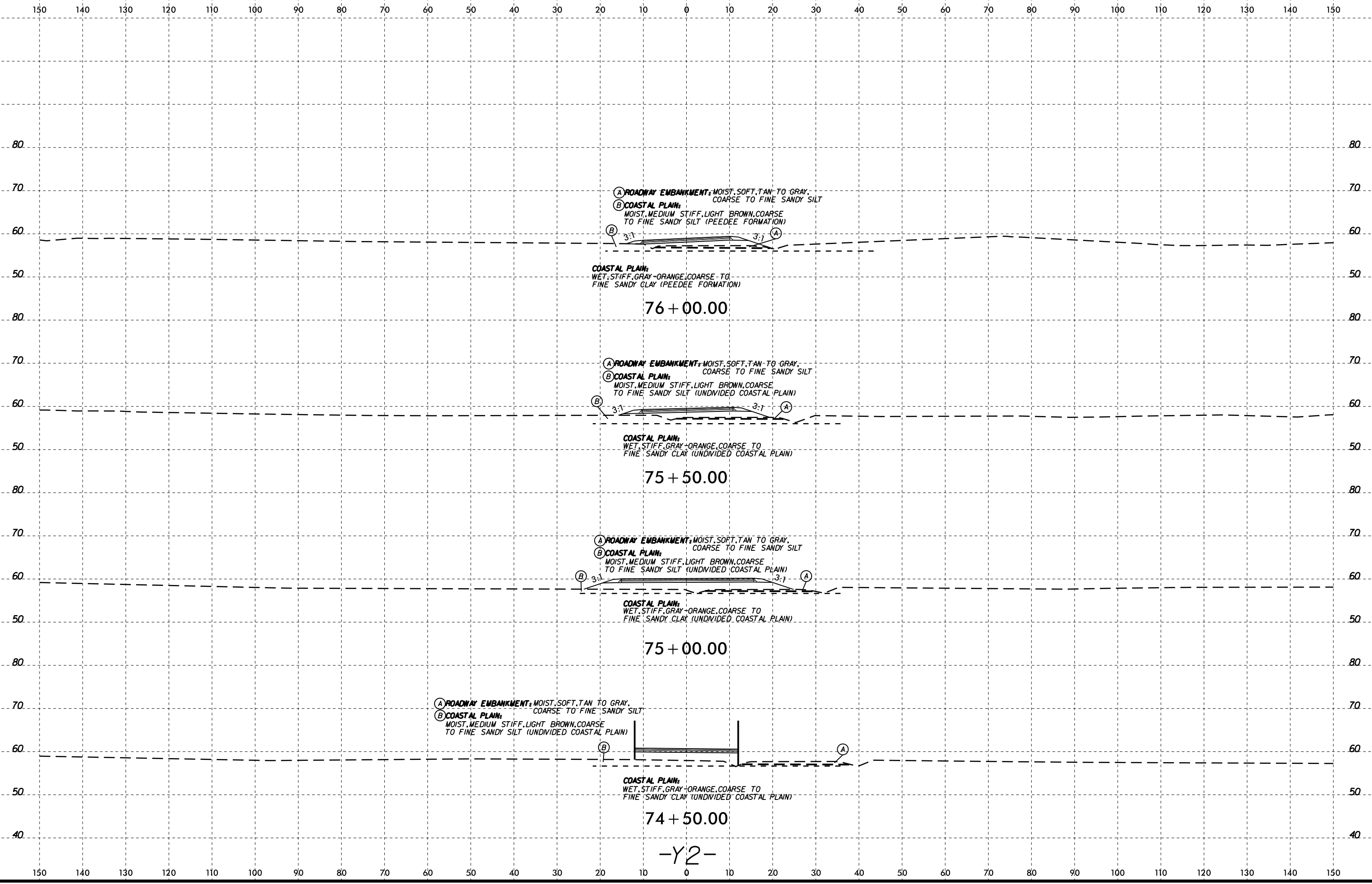
A COASTAL PLAIN:
 MOIST, MEDIUM STIFF, BLACK, COARSE TO
 FINE SANDY SILT WITH TRACE OF ORGANIC
 MATTER (UNDIVIDED COASTAL PLAIN)

S-90
 Y2_7100
 71+00

B COASTAL PLAIN:
 MOIST, STIFF, MODERATELY TO HIGHLY PLASTIC, GRAY
 AND ORANGE, COARSE TO FINE SANDY CLAY
 TO SILTY CLAY (UNDIVIDED COASTAL PLAIN)

71+00.00

-Y2-





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

80 80

70 70

60 60

50 50

78 + 00.00

80 80

70 70

60 60

50 50

77 + 50.00

40 40

70 70

60 60

50 50

77 + 00.00

80 80

70 70

60 60

50 50

76 + 50.00

40 40

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

(A) ROADWAY EMBANKMENT: MOIST. SOFT, TAN TO GRAY, COARSE TO FINE SANDY SILT

(B) COASTAL PLAIN: MOIST, MEDIUM STIFF, LIGHT BROWN, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN: WET, STIFF, GRAY-ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

(A) ROADWAY EMBANKMENT: MOIST. SOFT, TAN TO GRAY, COARSE TO FINE SANDY SILT

(B) COASTAL PLAIN: MOIST, MEDIUM STIFF, LIGHT BROWN, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN: WET, STIFF, GRAY-ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

(A) ROADWAY EMBANKMENT: MOIST. SOFT, TAN TO GRAY, COARSE TO FINE SANDY SILT

(B) COASTAL PLAIN: MOIST, MEDIUM STIFF, LIGHT BROWN, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN: WET, STIFF, GRAY-ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

(A) ROADWAY EMBANKMENT: MOIST. SOFT, TAN TO GRAY, COARSE TO FINE SANDY SILT

(B) COASTAL PLAIN: MOIST, MEDIUM STIFF, LIGHT BROWN, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN: WET, STIFF, GRAY-ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

S-91

Y2.7700

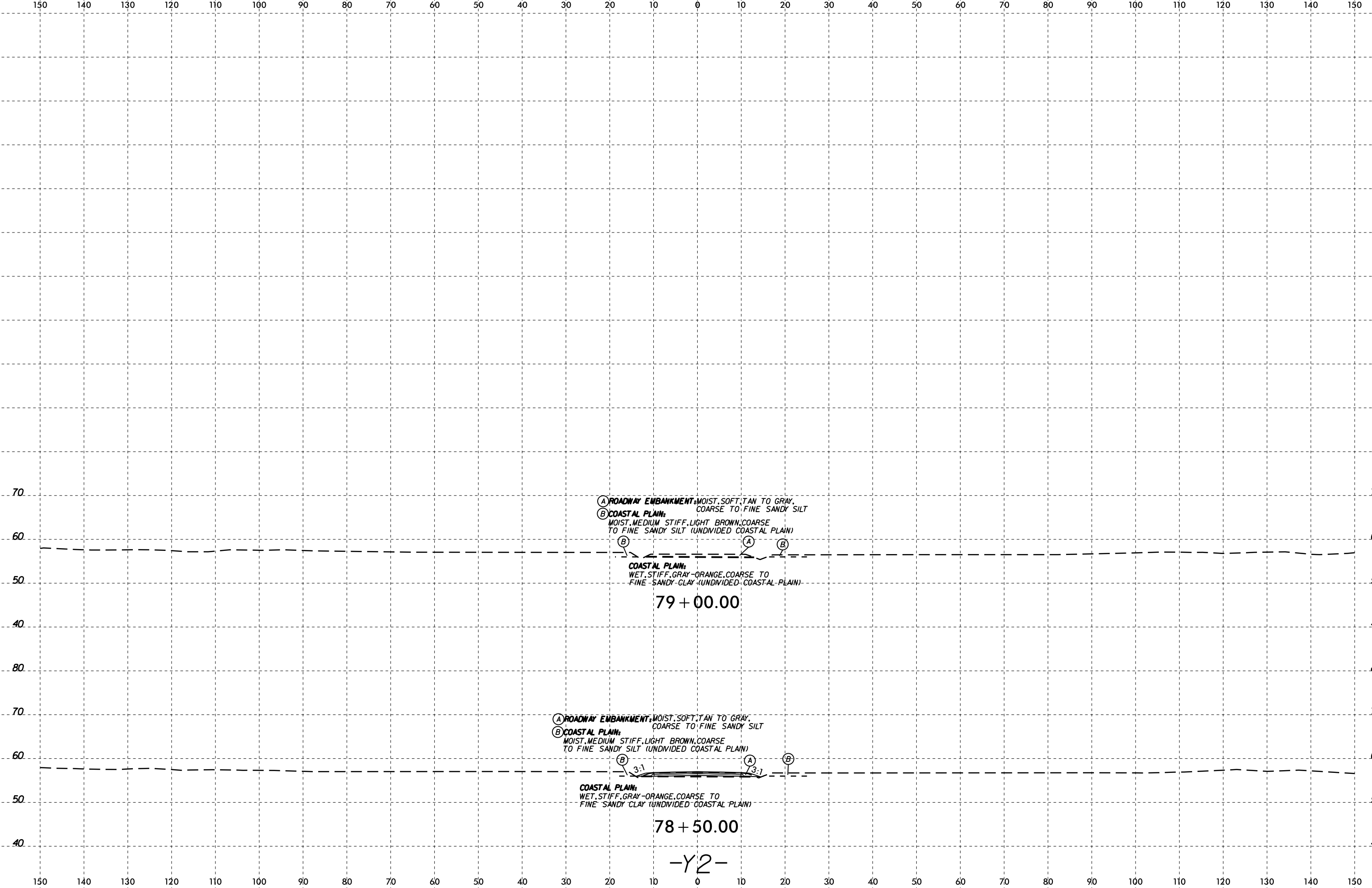
77+00

BT

0.3720

-Y2-

I:\FEB-2016\02 Wells\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO_XSL_Y2.dgn



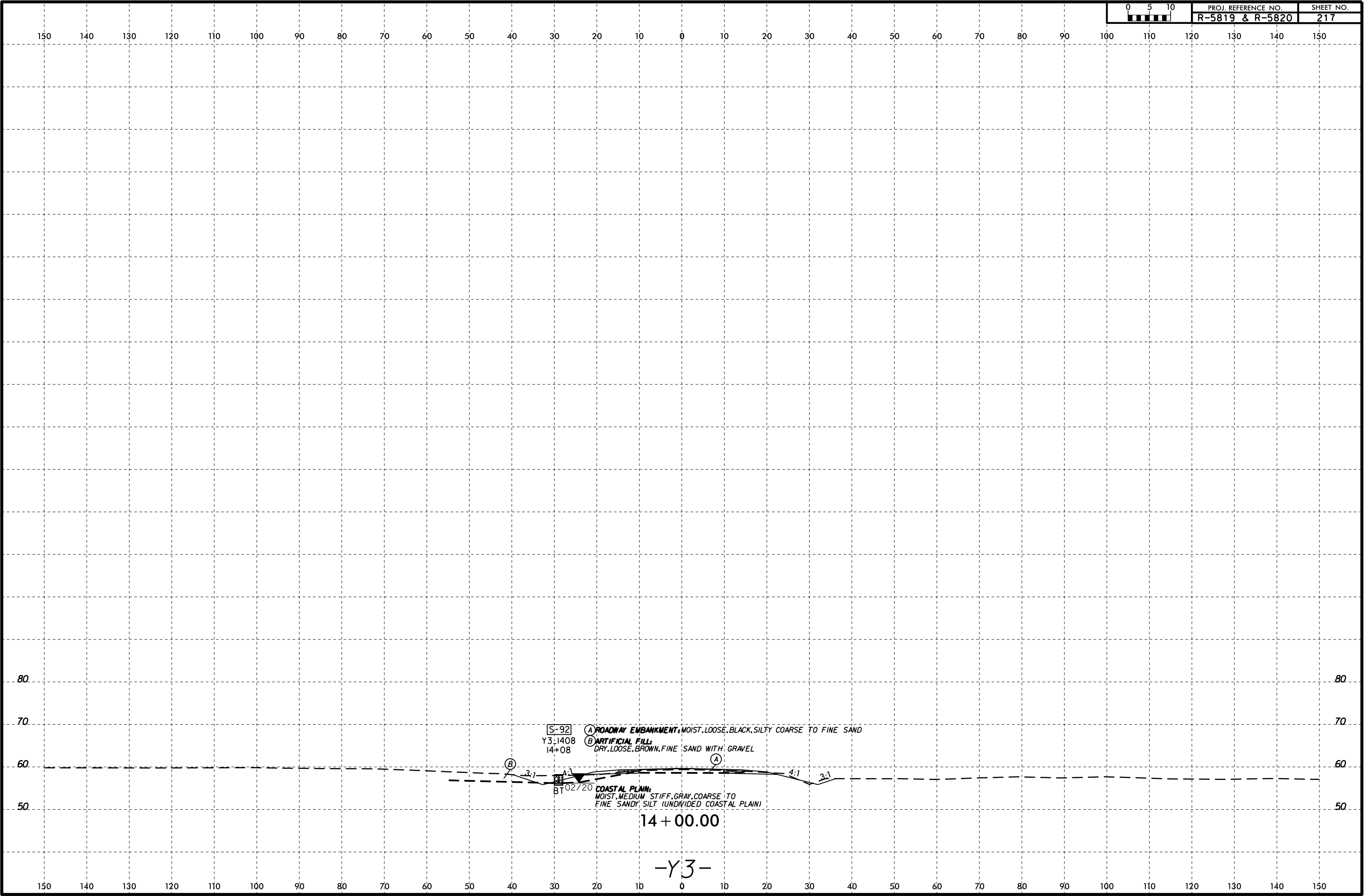
(A) ROADWAY EMBANKMENT, MOIST, SOFT, TAN TO GRAY, COARSE TO FINE SANDY SILT
 (B) COASTAL PLAIN, MOIST, MEDIUM STIFF, LIGHT BROWN, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)
 COASTAL PLAIN, WET, STIFF, GRAY-ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

79 + 00.00

(A) ROADWAY EMBANKMENT, MOIST, SOFT, TAN TO GRAY, COARSE TO FINE SANDY SILT
 (B) COASTAL PLAIN, MOIST, MEDIUM STIFF, LIGHT BROWN, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)
 COASTAL PLAIN, WET, STIFF, GRAY-ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

78 + 50.00

-Y2-



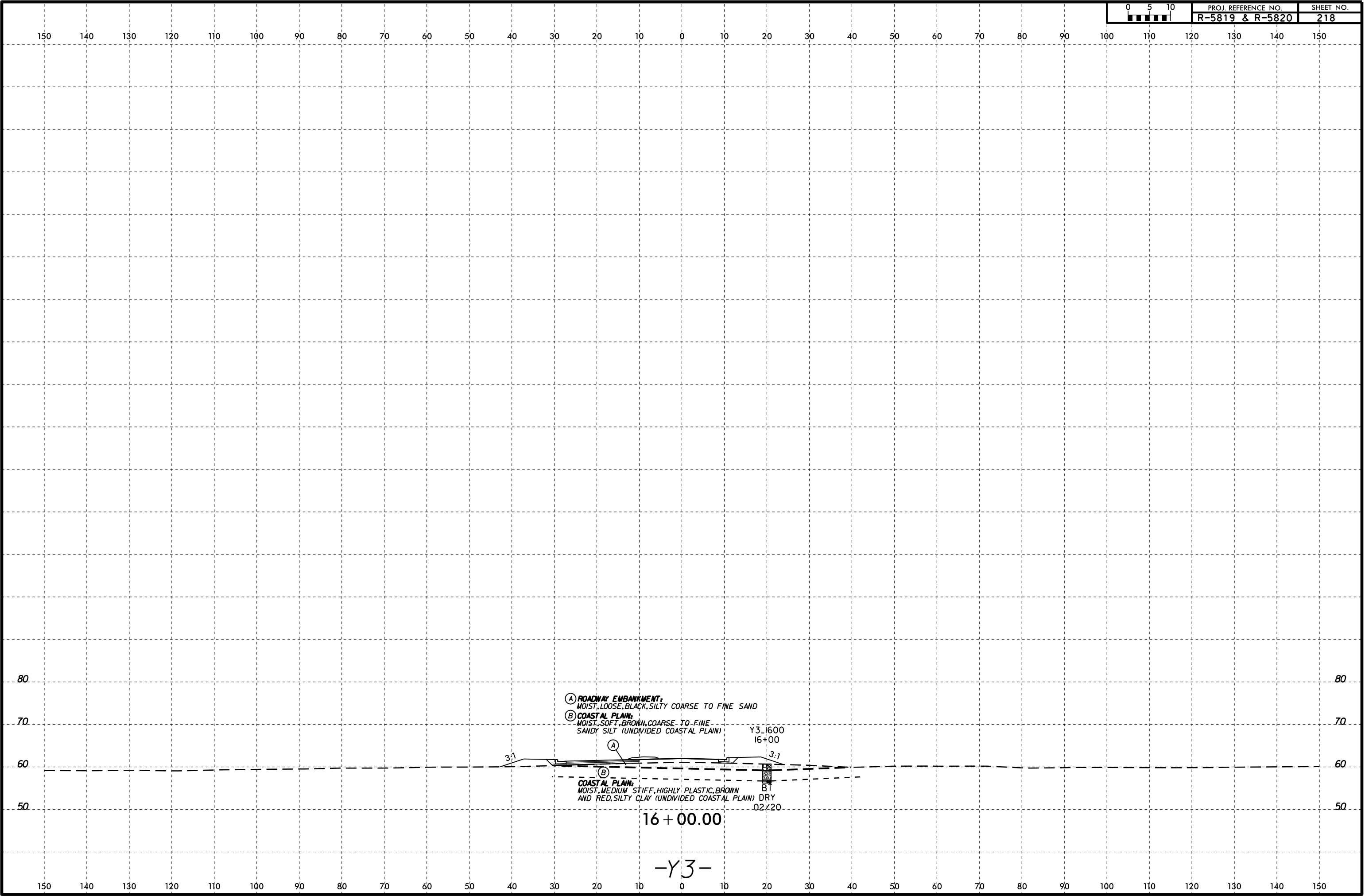
S-92
Y3:1408
14+08

(A) ROADWAY EMBANKMENT; MOIST, LOOSE, BLACK, SILTY COARSE TO FINE SAND
(B) ARTIFICIAL FILL; DRY, LOOSE, BROWN, FINE SAND WITH GRAVEL

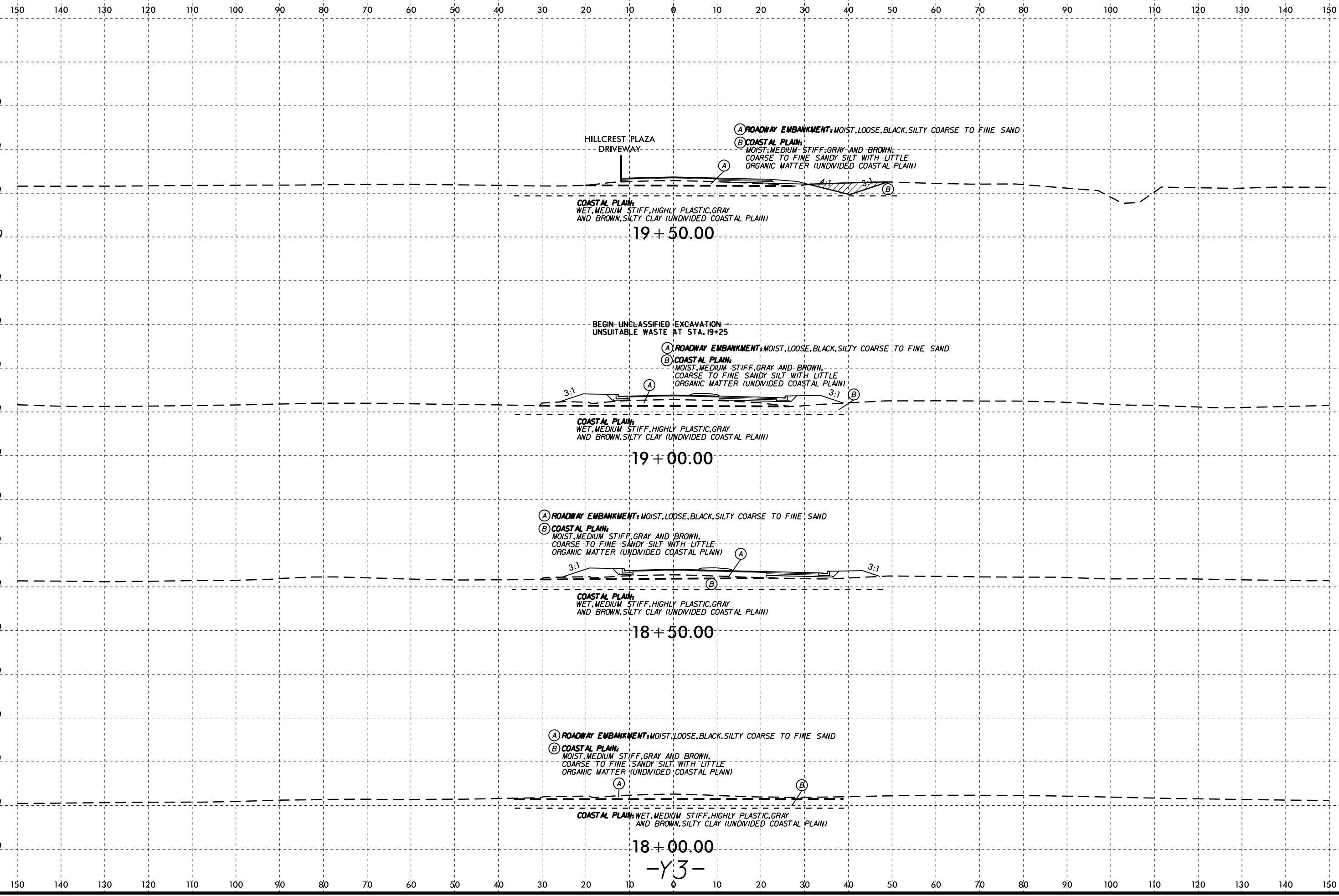
BT 02/20
COASTAL PLAIN;
MOIST, MEDIUM STIFF, GRAY, COARSE TO
FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

14 + 00.00

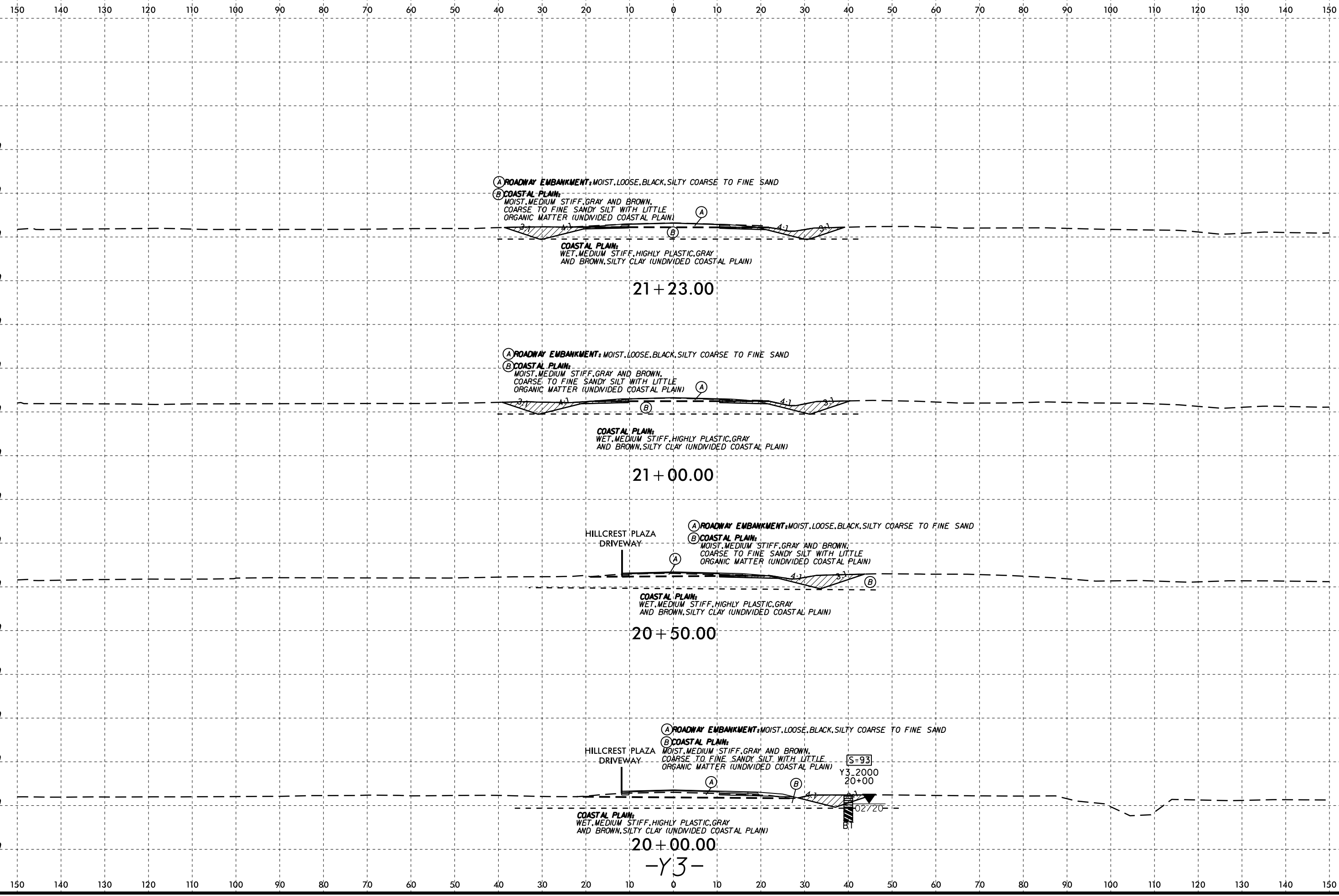
-Y3-



-Y3-

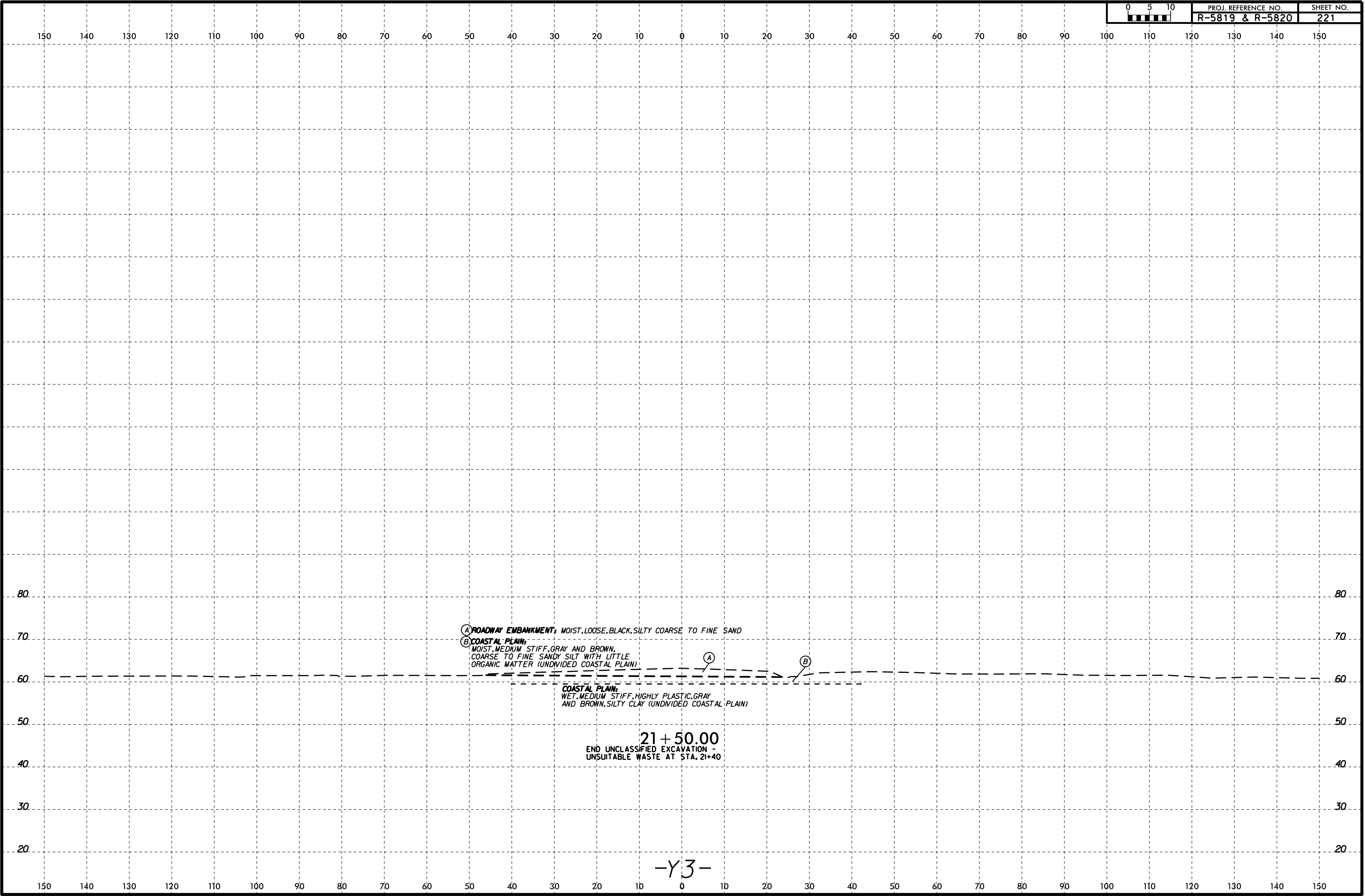


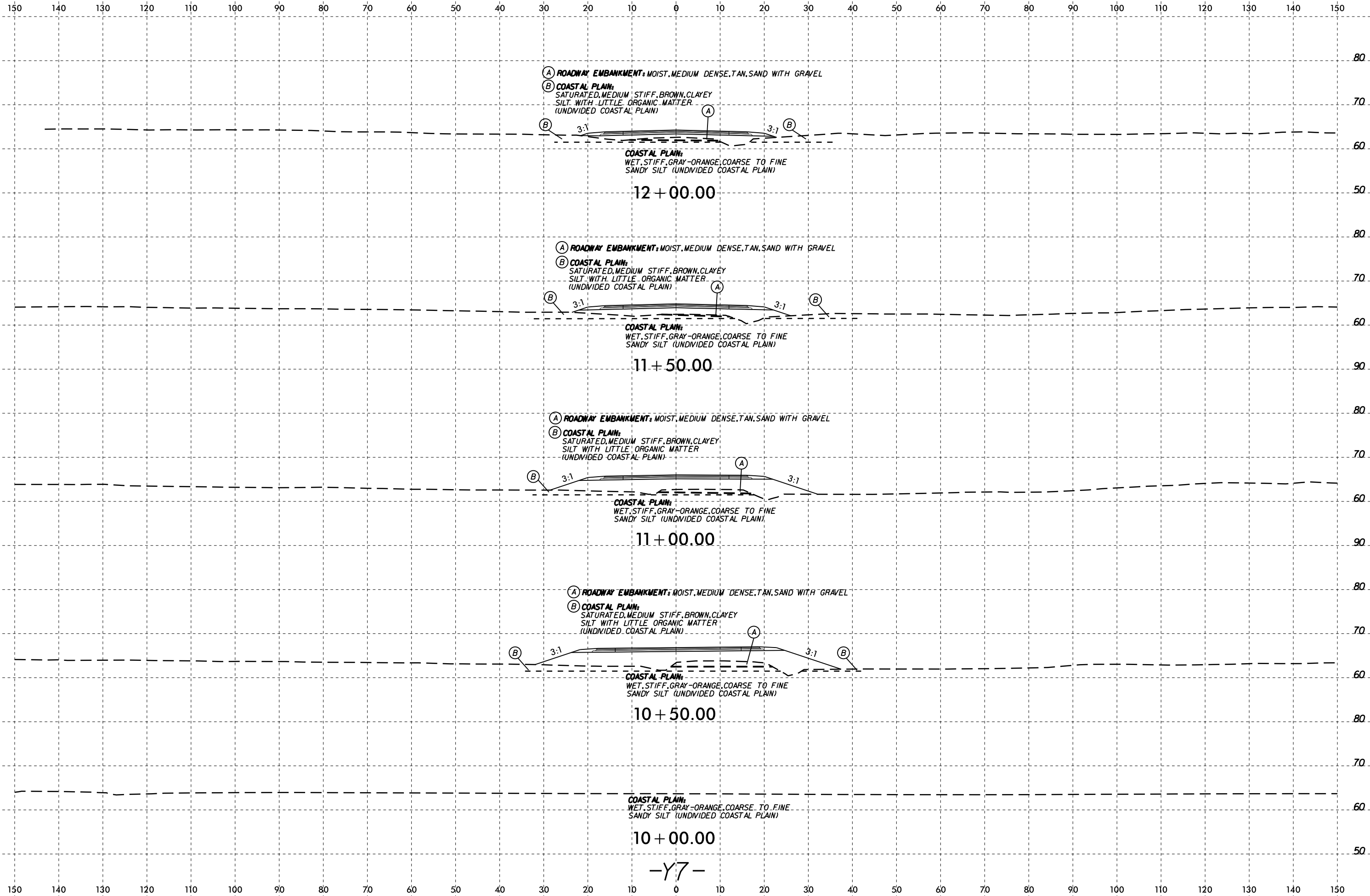
-Y3-



I:\FEB-2016\02
 W\shere\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\5819-R5820-GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL_Y3.dgn
 Wells - A1 KA211387

-Y3-

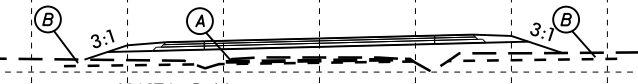




I:\FEB-2016\02
 W\shere\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO.RDW\CADD_GEO\RDW\CADD_GEO\RDW\XSL_Y7.dgn
 Wells - A1 KA211387

10 + 00.00
-Y7-

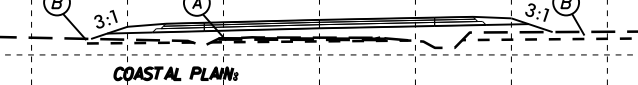
(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL
 (B) COASTAL PLAIN: SATURATED, MEDIUM STIFF, BROWN, CLAYEY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)



COASTAL PLAIN:
 WET, STIFF, GRAY-ORANGE, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

14 + 50.00

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL
 (B) COASTAL PLAIN: SATURATED, MEDIUM STIFF, BROWN, CLAYEY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)



COASTAL PLAIN:
 WET, STIFF, GRAY-ORANGE, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

14 + 00.00

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL
 (B) COASTAL PLAIN: SATURATED, MEDIUM STIFF, BROWN, CLAYEY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)



COASTAL PLAIN:
 WET, STIFF, GRAY-ORANGE, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

13 + 50.00

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL
 (B) COASTAL PLAIN: SATURATED, MEDIUM STIFF, BROWN, CLAYEY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)



COASTAL PLAIN:
 WET, STIFF, GRAY-ORANGE, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

13 + 00.00

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL
 (B) COASTAL PLAIN: SATURATED, MEDIUM STIFF, BROWN, CLAYEY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

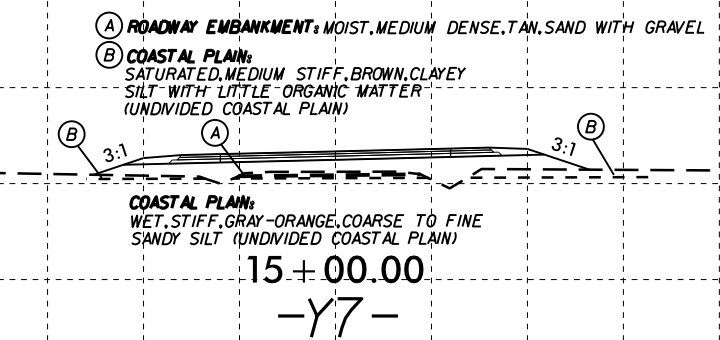
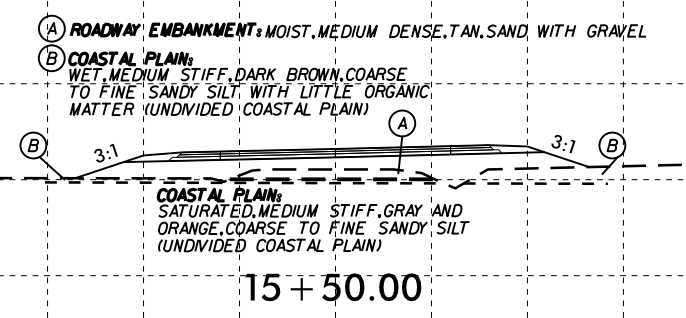
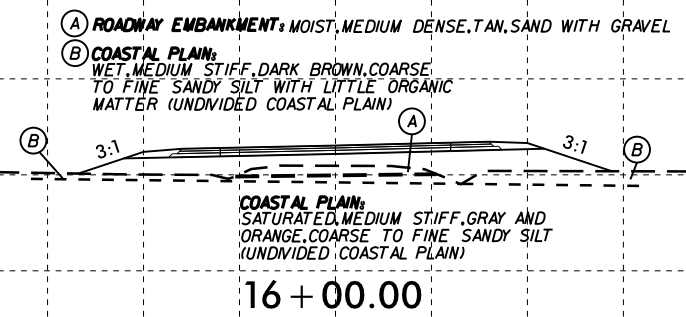
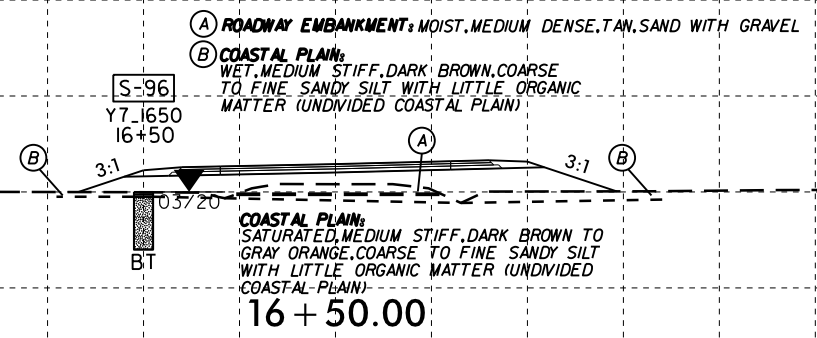
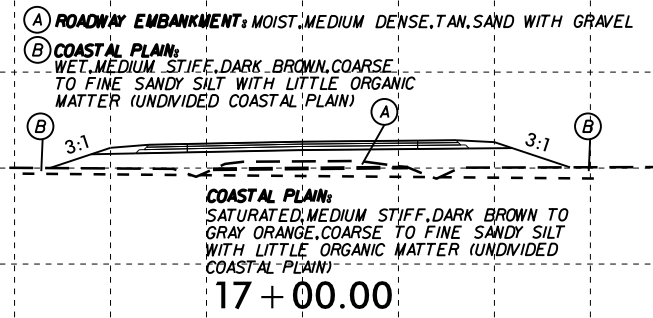


COASTAL PLAIN:
 WET, STIFF, GRAY-ORANGE, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

12 + 50.00

-Y7-

I:\FEB-2016\02\Washoe\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\RS819-RS820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XSL_Y7.dgn



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

80 80

70 70

60 60

50 50

80 80

70 70

60 60

50 50

80 40

70 70

60 60

50 50

80 80

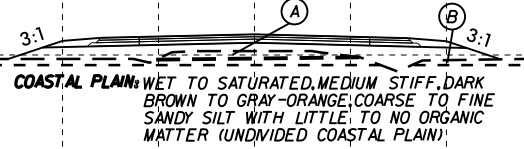
70 70

60 60

50 50

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

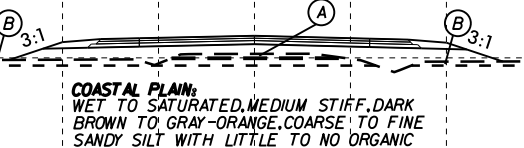
(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL
 (B) COASTAL PLAIN: SATURATED, MEDIUM STIFF, HIGHLY PLASTIC, BROWN, SILTY CLAY WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)



COASTAL PLAIN: WET TO SATURATED, MEDIUM STIFF, DARK BROWN TO GRAY-ORANGE, COARSE TO FINE SANDY SILT WITH LITTLE TO NO ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

19 + 00.00

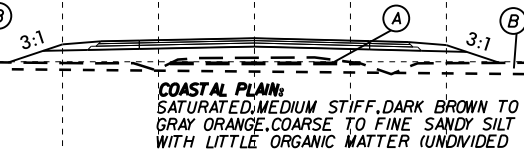
(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL
 (B) COASTAL PLAIN: SATURATED, MEDIUM STIFF, HIGHLY PLASTIC, BROWN, SILTY CLAY WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)



COASTAL PLAIN: WET TO SATURATED, MEDIUM STIFF, DARK BROWN TO GRAY-ORANGE, COARSE TO FINE SANDY SILT WITH LITTLE TO NO ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

18 + 50.00

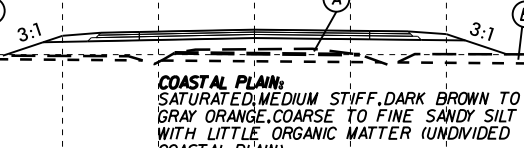
(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL
 (B) COASTAL PLAIN: WET, MEDIUM STIFF, DARK BROWN, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)



COASTAL PLAIN: SATURATED, MEDIUM STIFF, DARK BROWN TO GRAY ORANGE, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

18 + 00.00

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL
 (B) COASTAL PLAIN: WET, MEDIUM STIFF, DARK BROWN, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)



COASTAL PLAIN: SATURATED, MEDIUM STIFF, DARK BROWN TO GRAY ORANGE, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

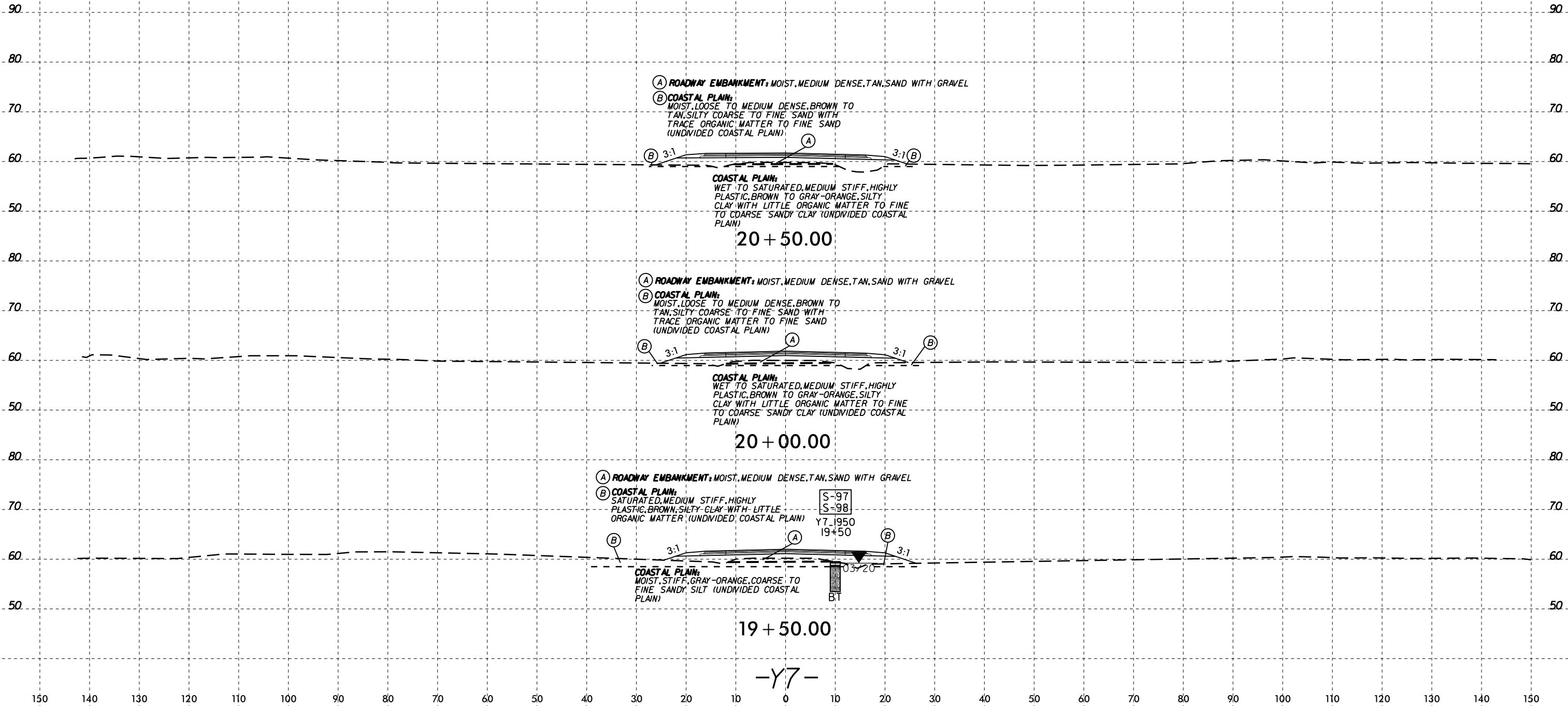
17 + 50.00

-Y7-

I:\FEB-2016\02 Wells - At KA211387\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\5819-R5820-GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL_Y7.dgn



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



(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL

(B) COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, BROWN TO TAN, SILTY COARSE TO FINE SAND WITH TRACE ORGANIC MATTER TO FINE SAND (UNDIVIDED COASTAL PLAIN)

(B) 3:1 (A) 3:1 (B)

COASTAL PLAIN: WET TO SATURATED, MEDIUM STIFF, HIGHLY PLASTIC, BROWN TO GRAY-ORANGE, SILTY CLAY WITH LITTLE ORGANIC MATTER TO FINE TO COARSE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

20 + 50.00

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL

(B) COASTAL PLAIN: MOIST, LOOSE TO MEDIUM DENSE, BROWN TO TAN, SILTY COARSE TO FINE SAND WITH TRACE ORGANIC MATTER TO FINE SAND (UNDIVIDED COASTAL PLAIN)

(B) 3:1 (A) 3:1 (B)

COASTAL PLAIN: WET TO SATURATED, MEDIUM STIFF, HIGHLY PLASTIC, BROWN TO GRAY-ORANGE, SILTY CLAY WITH LITTLE ORGANIC MATTER TO FINE TO COARSE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

20 + 00.00

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL

(B) COASTAL PLAIN: SATURATED, MEDIUM STIFF, HIGHLY PLASTIC, BROWN, SILTY CLAY WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

(B) 3:1 (A) 3:1 (B)

COASTAL PLAIN: MOIST, STIFF, GRAY-ORANGE, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)

19 + 50.00

-Y7-

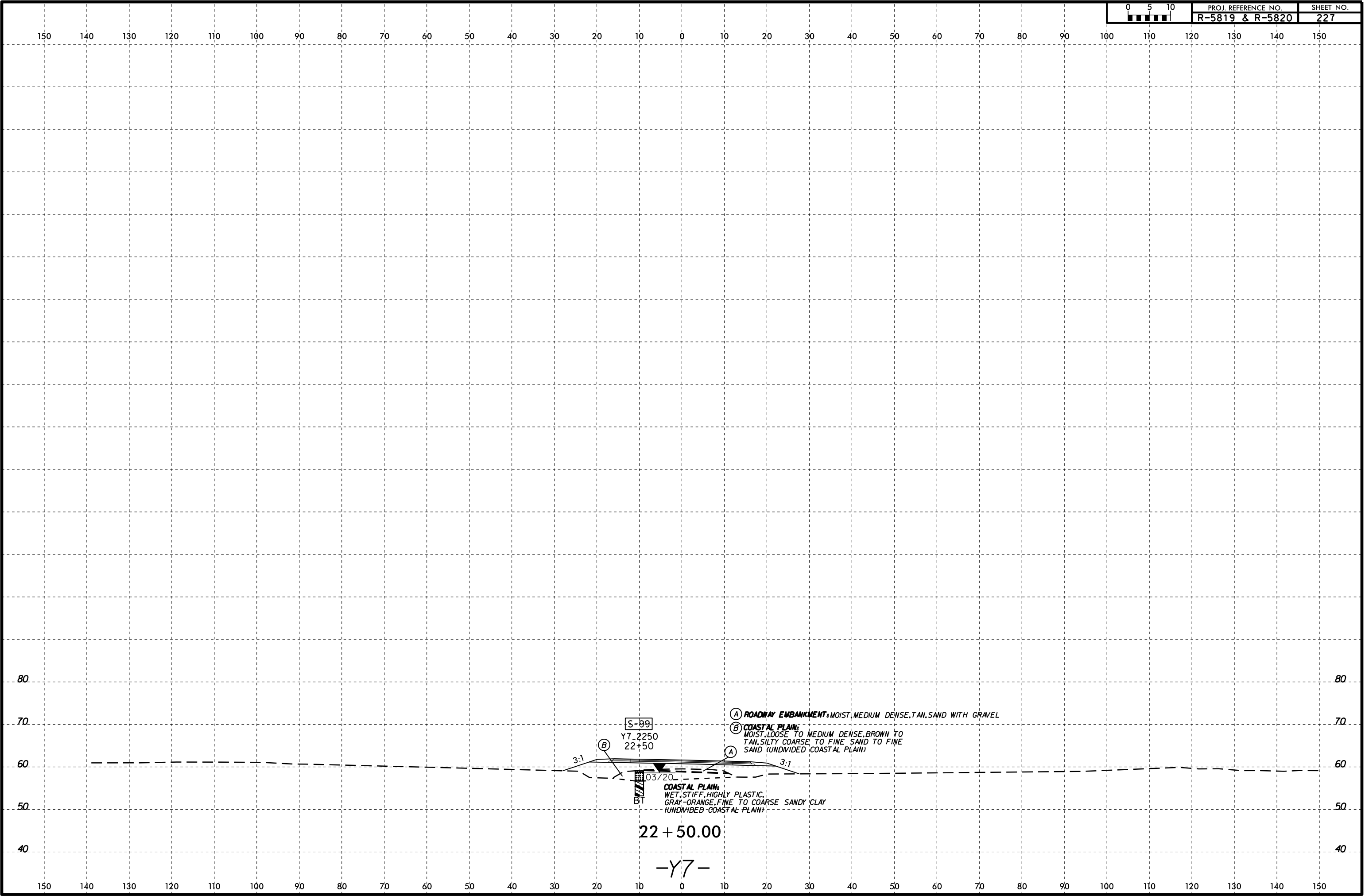
S-97
S-98

YT 1950

19+50

BT

0.3/20



S-99

Y7_2250
22+50

03/20

BT

22 + 50.00

-Y7-

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN. SAND WITH GRAVEL

(B) COASTAL PLAIN:
MOIST, LOOSE TO MEDIUM DENSE, BROWN TO
TAN, SILTY COARSE TO FINE SAND TO FINE
SAND (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN:
WET, STIFF, HIGHLY PLASTIC,
GRAY-ORANGE, FINE TO COARSE SANDY CLAY
(UNDIVIDED COASTAL PLAIN)

3:1

3:1

(B)

(A)

80

70

60

50

40

80

70

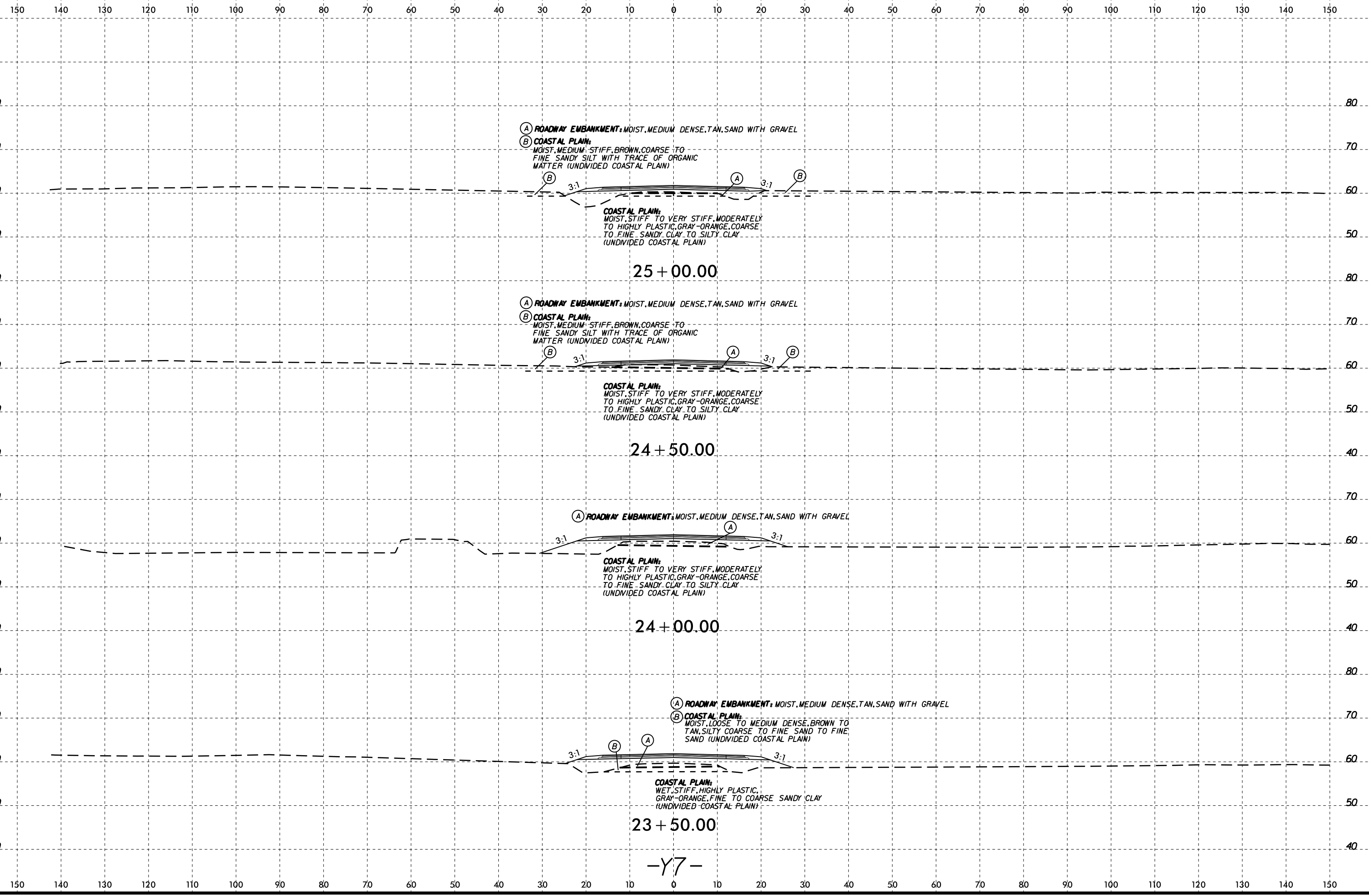
60

50

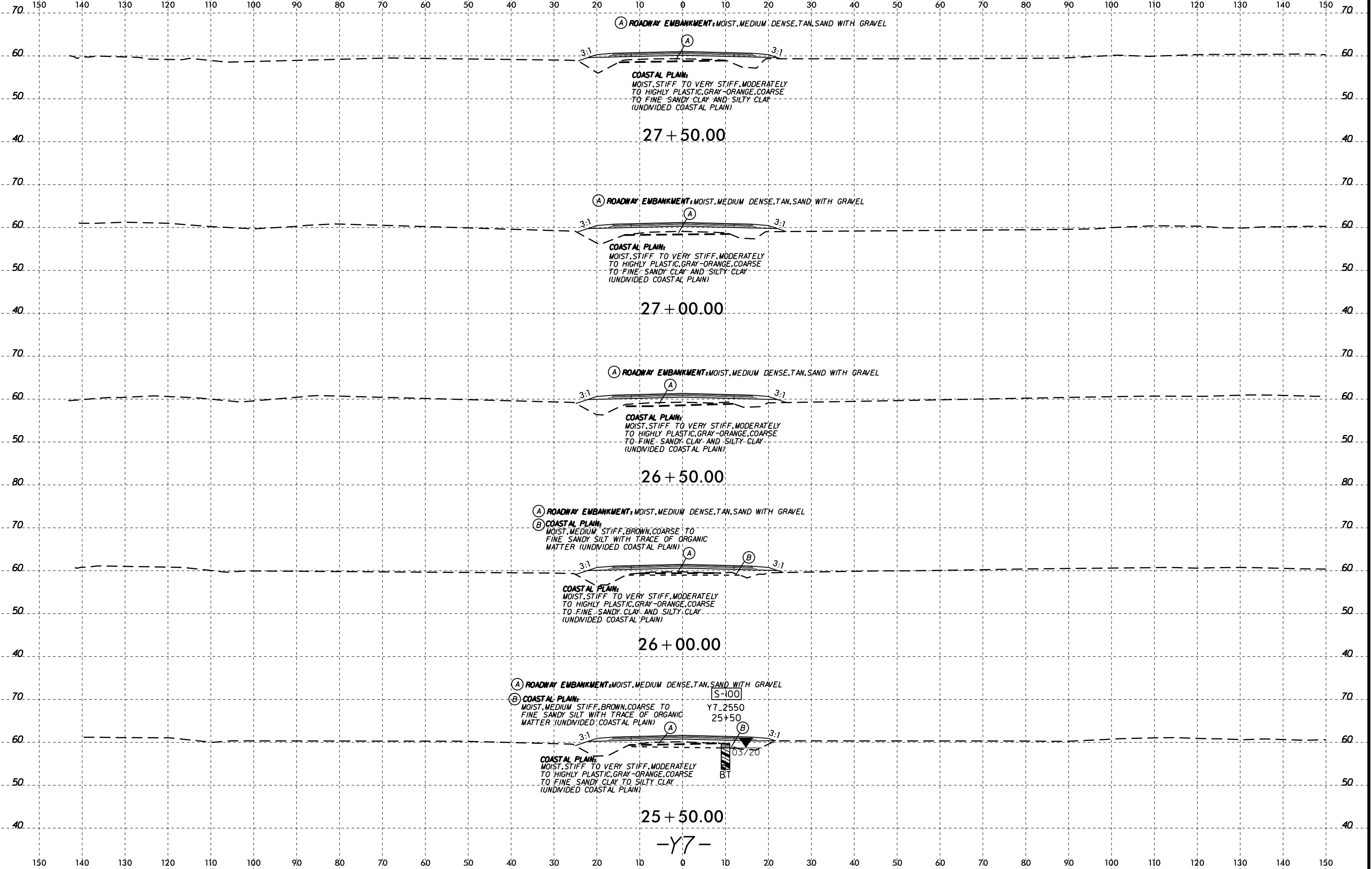
40

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

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



I:\FEB-2016\02
 W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\XSL_Y7.dgn
 Wells





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

80 80

70 70

60 60

50 50

80 80

70 70

60 60

50 50

80 80

70 70

60 60

50 50

40 40

70 70

60 60

50 50

40 40

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

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL

(B) COASTAL PLAIN:
MEDIUM DENSE TO LOOSE, BROWN TO TAN,
SILTY COARSE TO FINE SAND (UNDIVIDED
COASTAL PLAIN)

COASTAL PLAIN:
MOIST, STIFF TO VERY STIFF, MODERATELY
TO HIGHLY PLASTIC, GRAY-ORANGE, COARSE
TO FINE SANDY CLAY AND SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

29 + 50.00

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL

(B) COASTAL PLAIN:
MOIST, MEDIUM DENSE TO LOOSE, BROWN TO
TAN, SILTY COARSE TO FINE SAND
(UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN:
MOIST, STIFF TO VERY STIFF, MODERATELY
TO HIGHLY PLASTIC, GRAY-ORANGE, COARSE
TO FINE SANDY CLAY AND SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

29 + 00.00

S-101
S-102

Y7 2850

28+50

BT

03/20

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL

(B) COASTAL PLAIN:
MOIST, LOOSE, BROWN, SILTY COARSE TO
FINE SAND WITH TRACE OF ORGANIC MATTER
AND TRACE GRAVEL (UNDIVIDED COASTAL
PLAIN)

COASTAL PLAIN:
MOIST, STIFF TO VERY STIFF, MODERATELY
TO HIGHLY PLASTIC, GRAY-ORANGE, COARSE
TO FINE SANDY CLAY AND SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

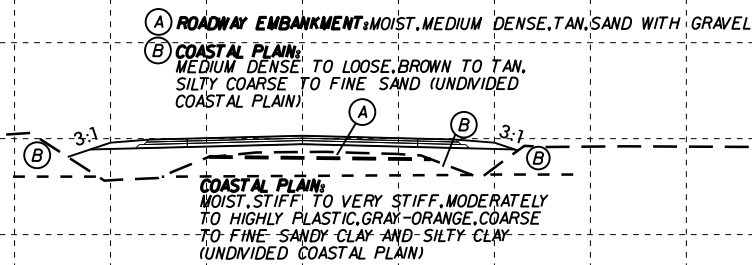
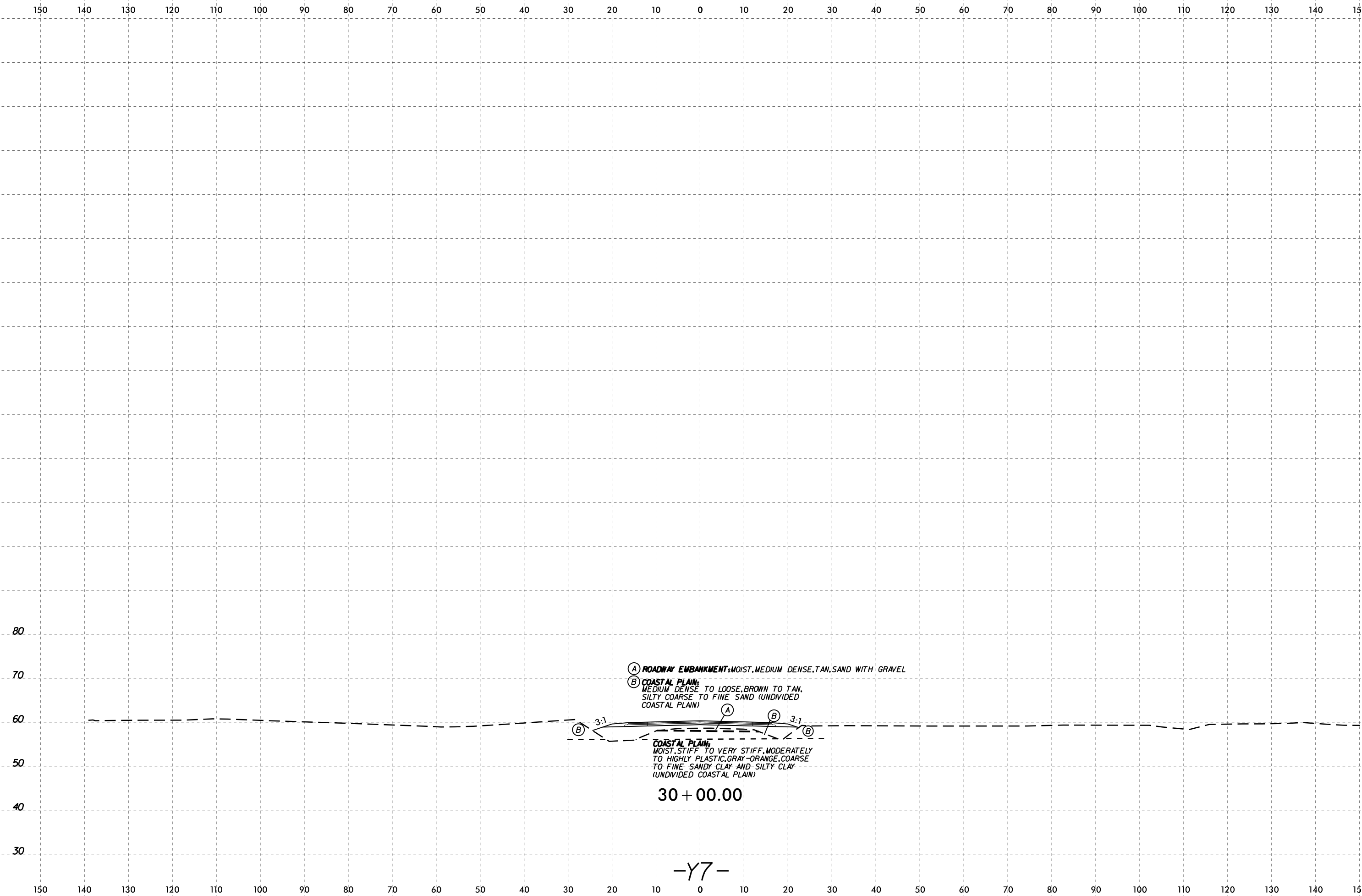
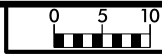
28 + 50.00

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL

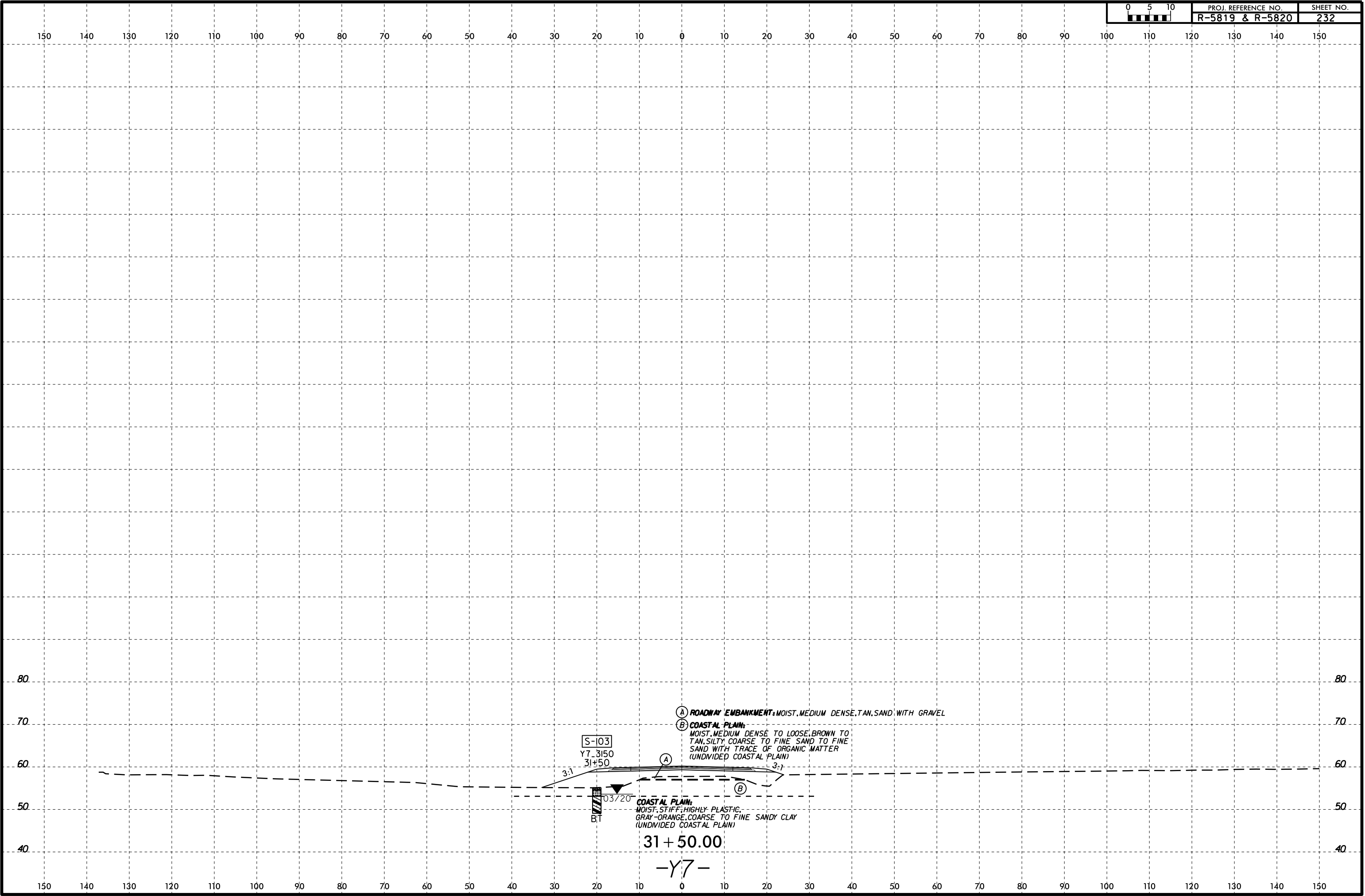
COASTAL PLAIN:
MOIST, STIFF TO VERY STIFF, MODERATELY
TO HIGHLY PLASTIC, GRAY-ORANGE, COARSE
TO FINE SANDY CLAY AND SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

28 + 00.00

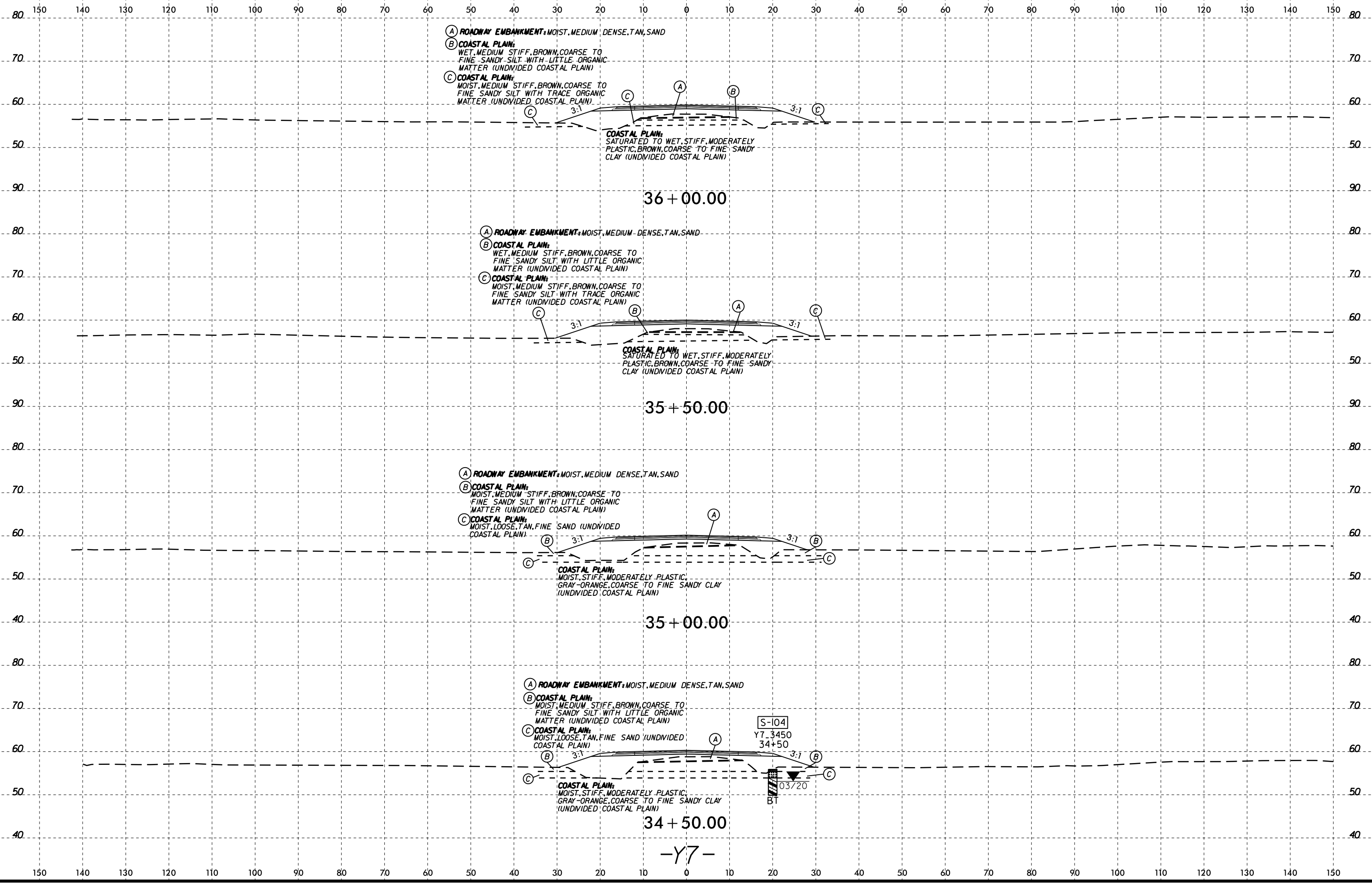
-Y7-



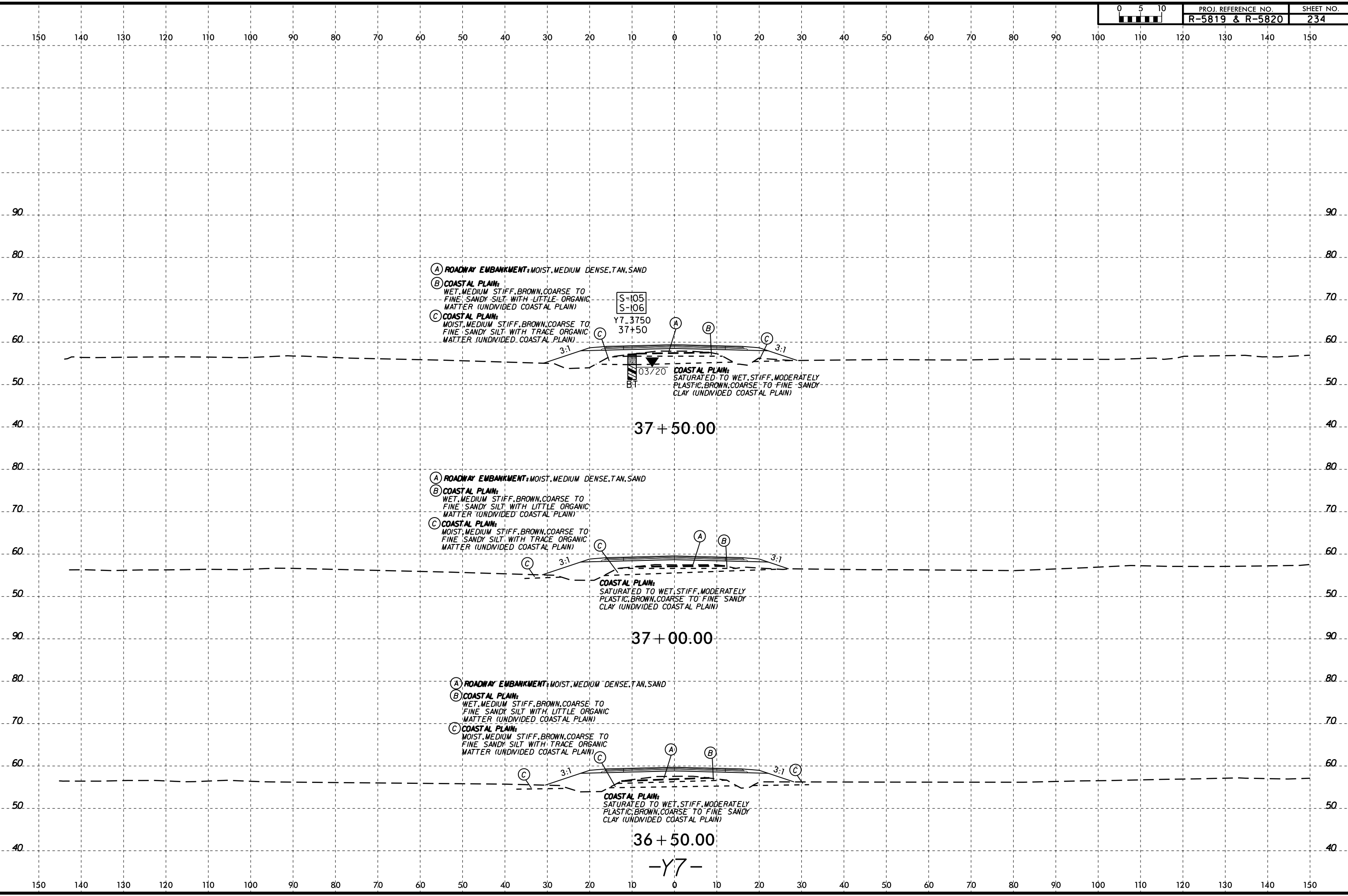
-Y7-



15-FEB-2021 16:03
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XSL_Y7.dgn
6/23/16



6/23/16
I:\FEB-2016\03
Washoe\GEO
TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL_Y7.dgn



- (A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN. SAND
- (B) COASTAL PLAIN: WET, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)
- (C) COASTAL PLAIN: MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT WITH TRACE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

S-105
S-106

Y7_3750
37+50

37 + 50.00

- (A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN. SAND
- (B) COASTAL PLAIN: WET, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)
- (C) COASTAL PLAIN: MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT WITH TRACE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

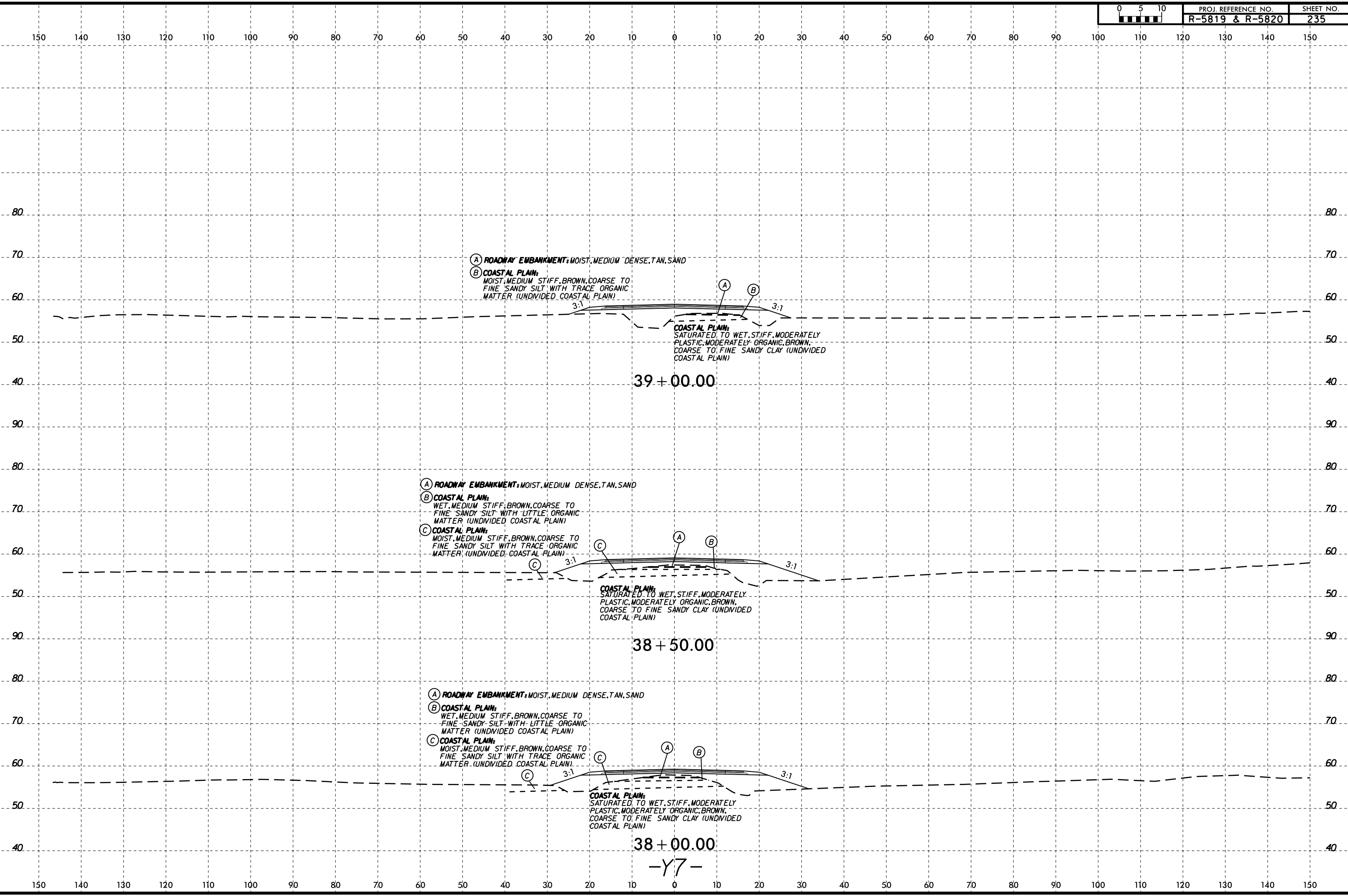
37 + 00.00

- (A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN. SAND
- (B) COASTAL PLAIN: WET, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)
- (C) COASTAL PLAIN: MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT WITH TRACE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

36 + 50.00

-Y7-

6/23/16
I:\FEB-2016\03
Watershed\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\GEO\RDW\CADD_GEO\RDW\GEO_XSL_Y7.dgn



(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND
(B) COASTAL PLAIN: MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT WITH TRACE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN: SATURATED, TO WET, STIFF, MODERATELY PLASTIC, MODERATELY ORGANIC, BROWN, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

39 + 00.00

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND
(B) COASTAL PLAIN: WET, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)
(C) COASTAL PLAIN: MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT WITH TRACE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN: SATURATED, TO WET, STIFF, MODERATELY PLASTIC, MODERATELY ORGANIC, BROWN, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

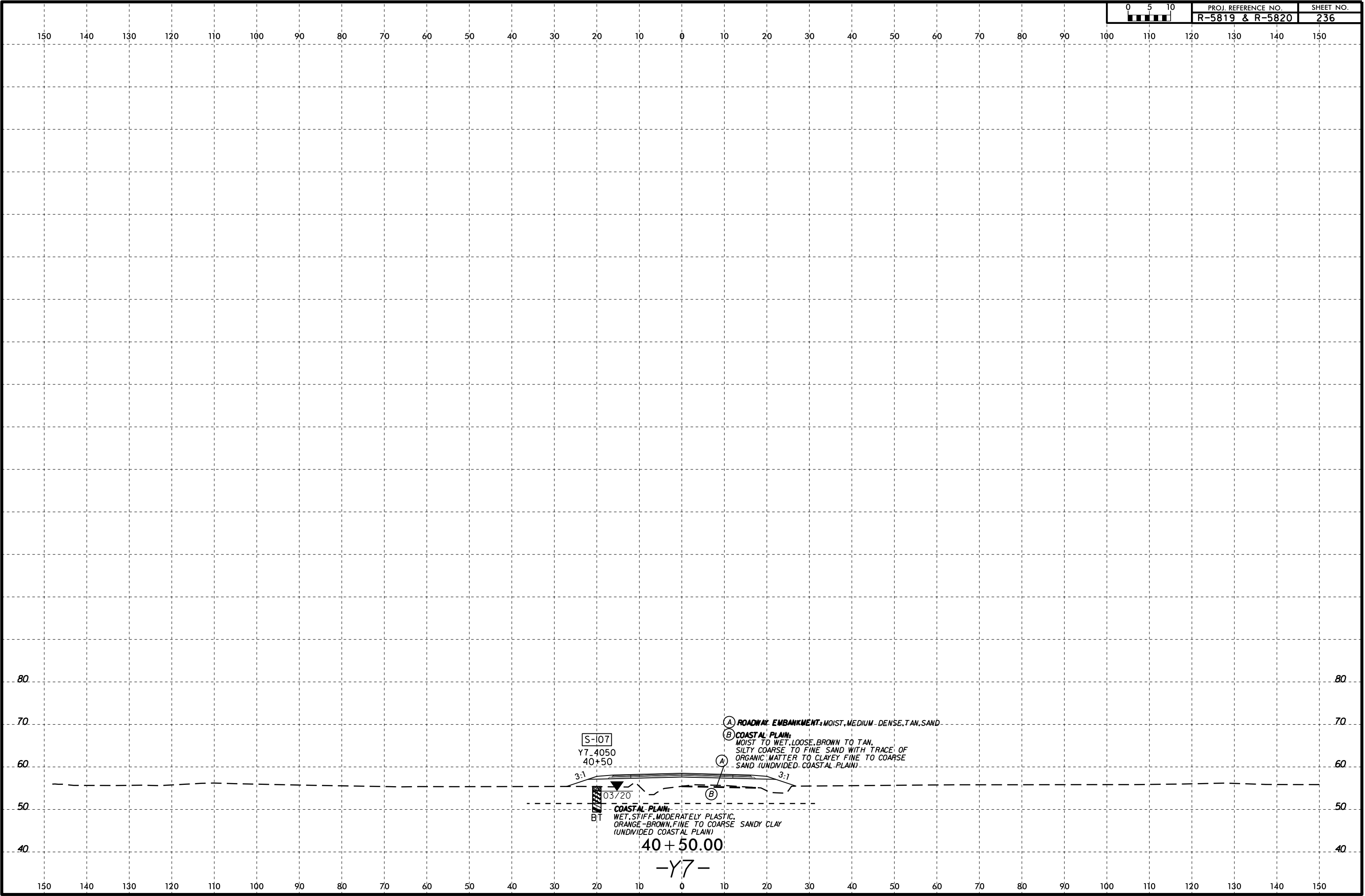
38 + 50.00

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN, SAND
(B) COASTAL PLAIN: WET, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT WITH LITTLE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)
(C) COASTAL PLAIN: MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT WITH TRACE ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN: SATURATED, TO WET, STIFF, MODERATELY PLASTIC, MODERATELY ORGANIC, BROWN, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

38 + 00.00

-Y7-



S-107
Y7.4050
40+50

BT
03/20

COASTAL PLAIN:
WET, STIFF, MODERATELY PLASTIC,
ORANGE-BROWN, FINE TO COARSE SANDY CLAY
(UNDIVIDED COASTAL PLAIN)

40 + 50.00

-Y7-

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM-DENSE, TAN SAND
(B) COASTAL PLAIN:
MOIST TO WET, LOOSE, BROWN TO TAN,
SILTY COARSE TO FINE SAND WITH TRACE OF
ORGANIC MATTER TO CLAYEY FINE TO COARSE
SAND (UNDIVIDED COASTAL PLAIN)

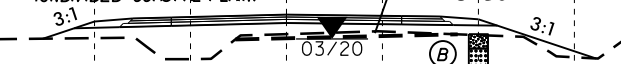
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

(A) ROADWAY EMBANKMENT: MOIST, MEDIUM DENSE, TAN. SAND
 (B) COASTAL PLAIN: MOIST TO WET, LOOSE, BROWN-TAN, SILTY FINE TO COARSE SAND TO FINE SAND (UNDIVIDED COASTAL PLAIN)
 COASTAL PLAIN: WET, STIFF, MODERATELY PLASTIC, ORANGE-BROWN, FINE TO COARSE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

(A) Y7_4350
43+50

(B) BT

43 + 50.00
-Y7-



70 60 50 40 70 60 50 40

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



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

80

70

60

50

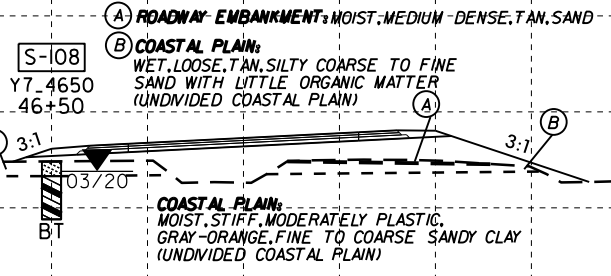
40

80

70

60

50

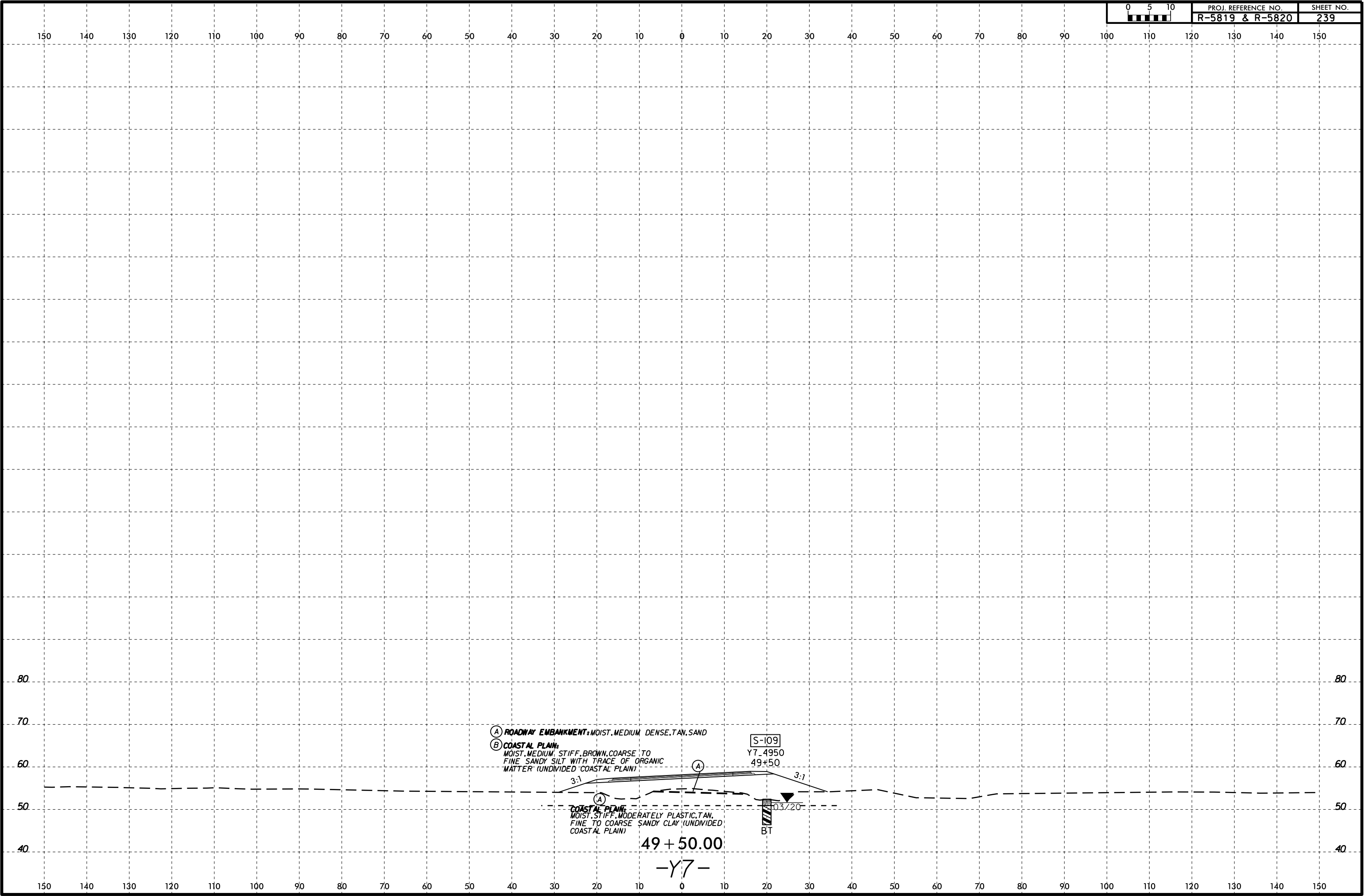


46 + 50.00

-Y7-

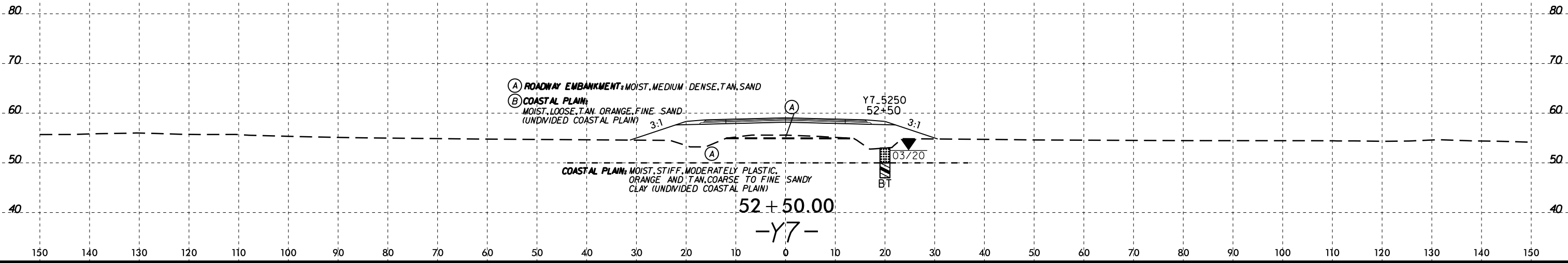
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

I:\FEB-2016\03
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL_Y7.dgn
I:\FEB-2016\03
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL_Y7.dgn
I:\FEB-2016\03
Winters\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSL_Y7.dgn

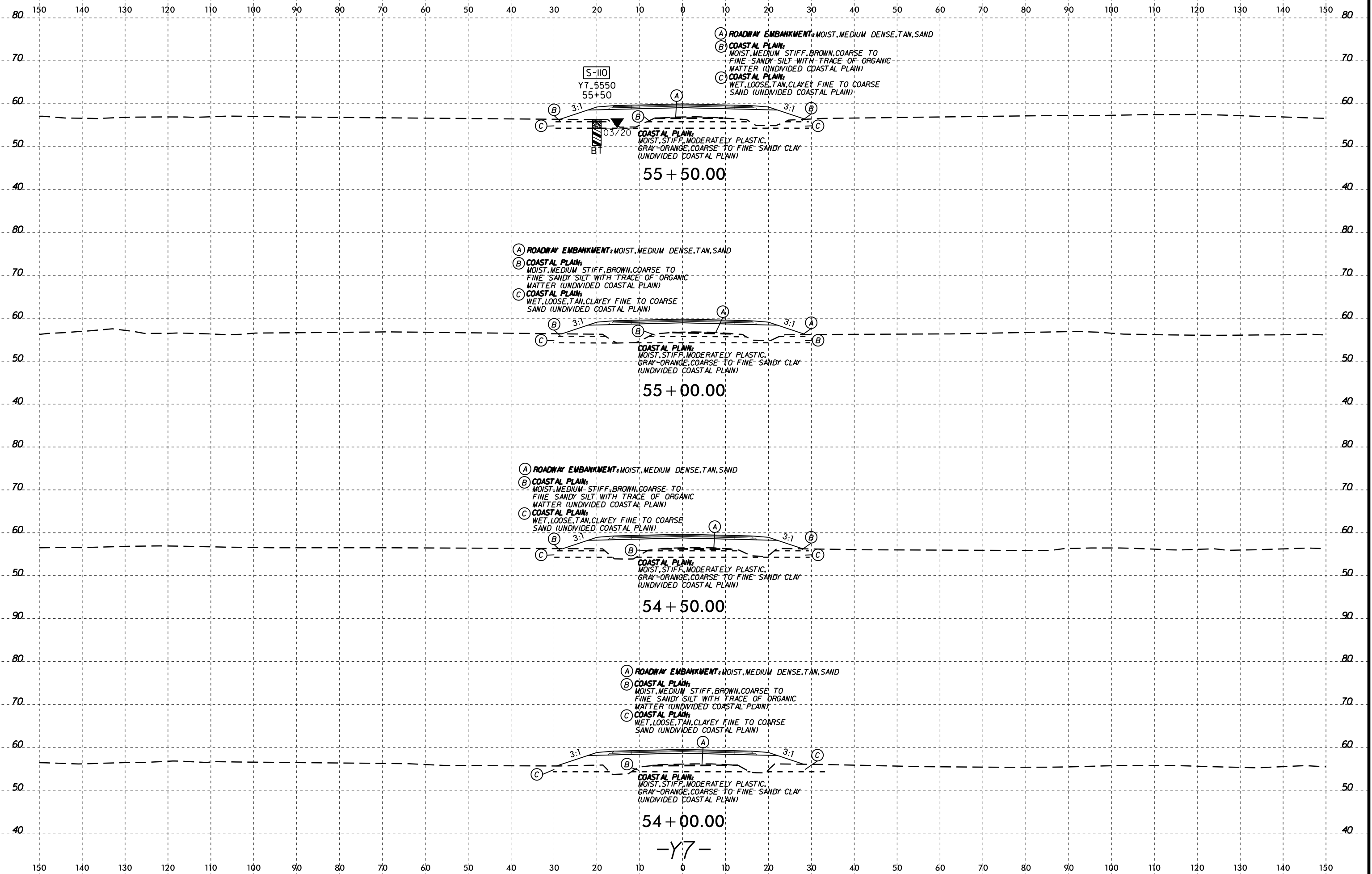


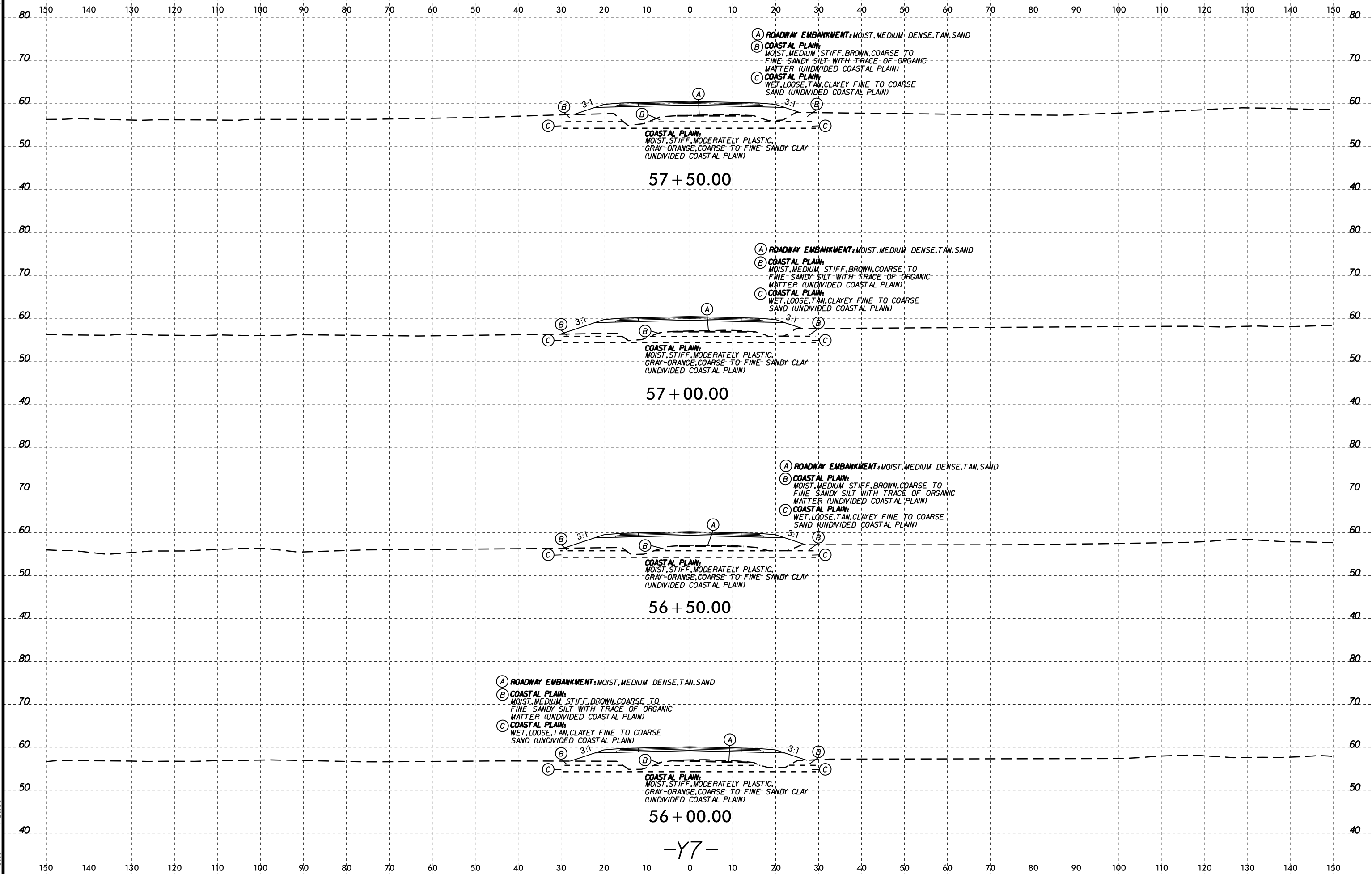


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



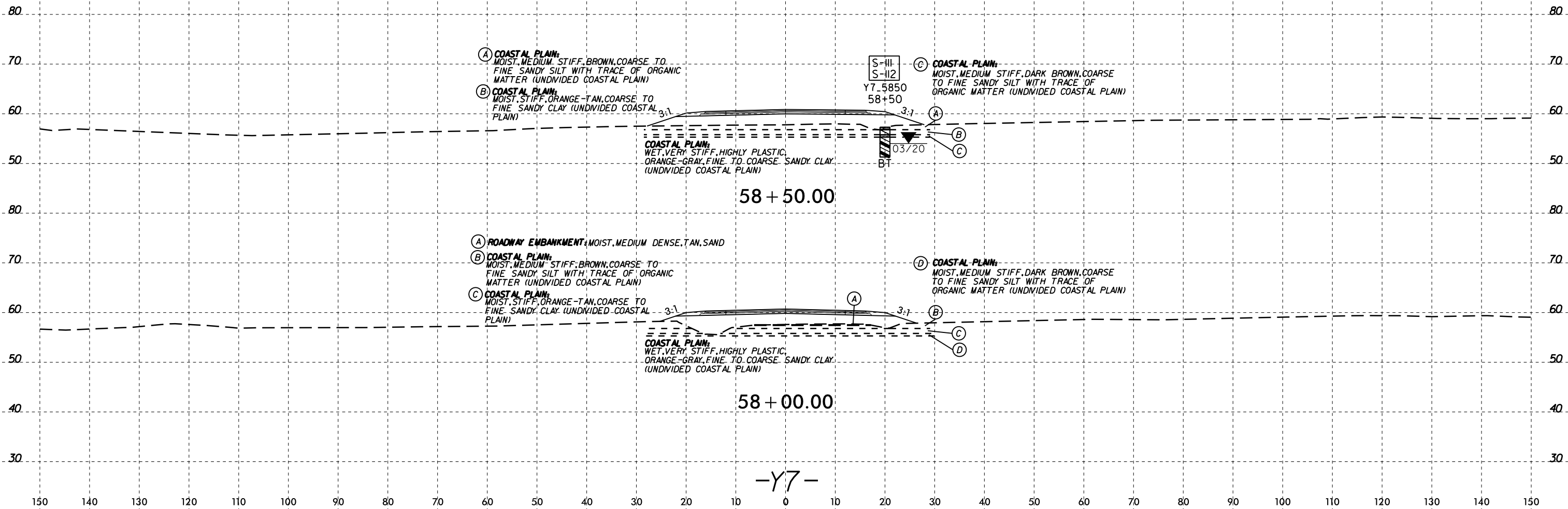
I:\FEB-2016\03
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\RS819-R5820_GEO_RDW\CADD_GEO\RDW\CADD_GEO\RDW\XSL_Y7.dgn

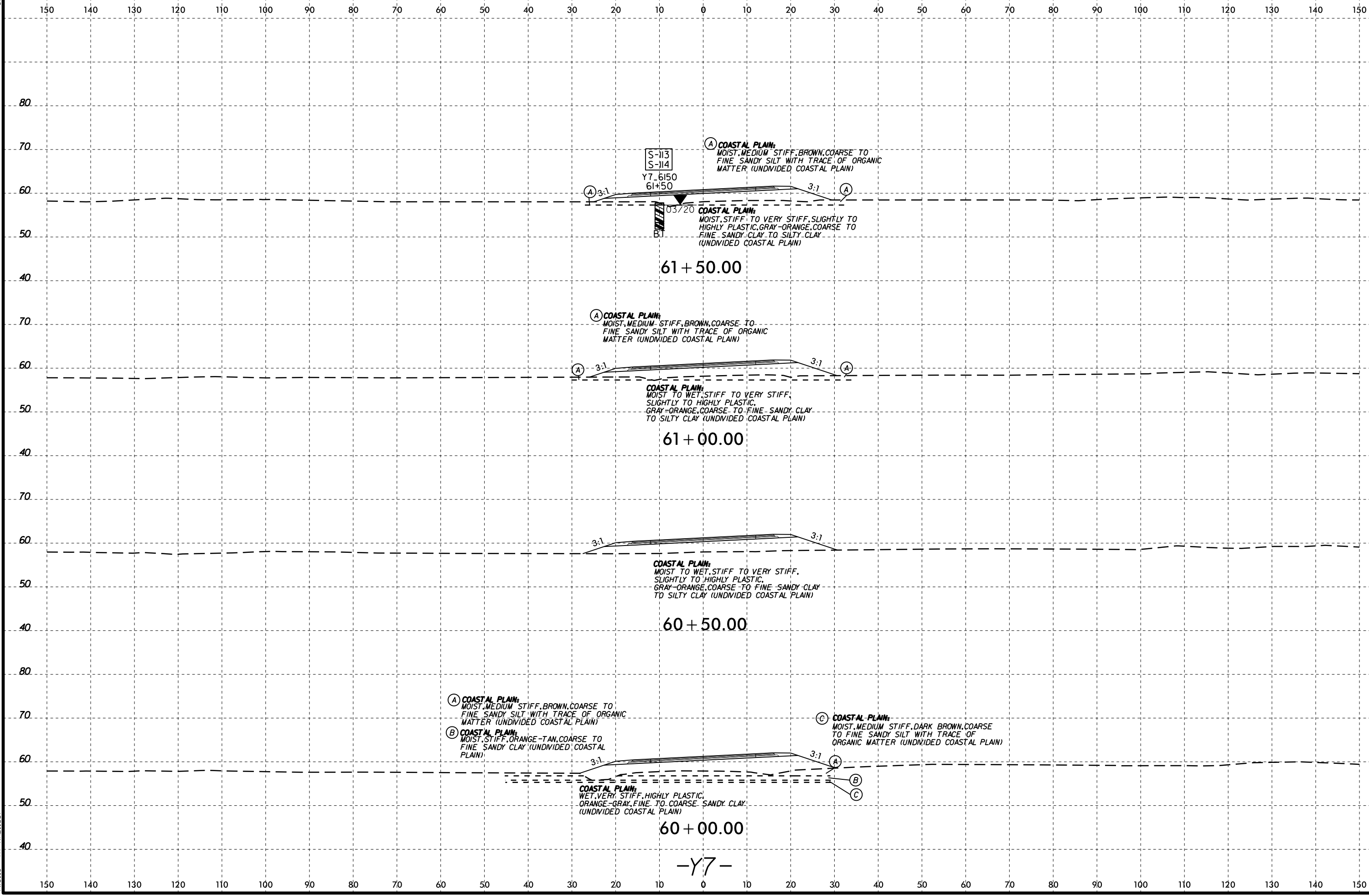




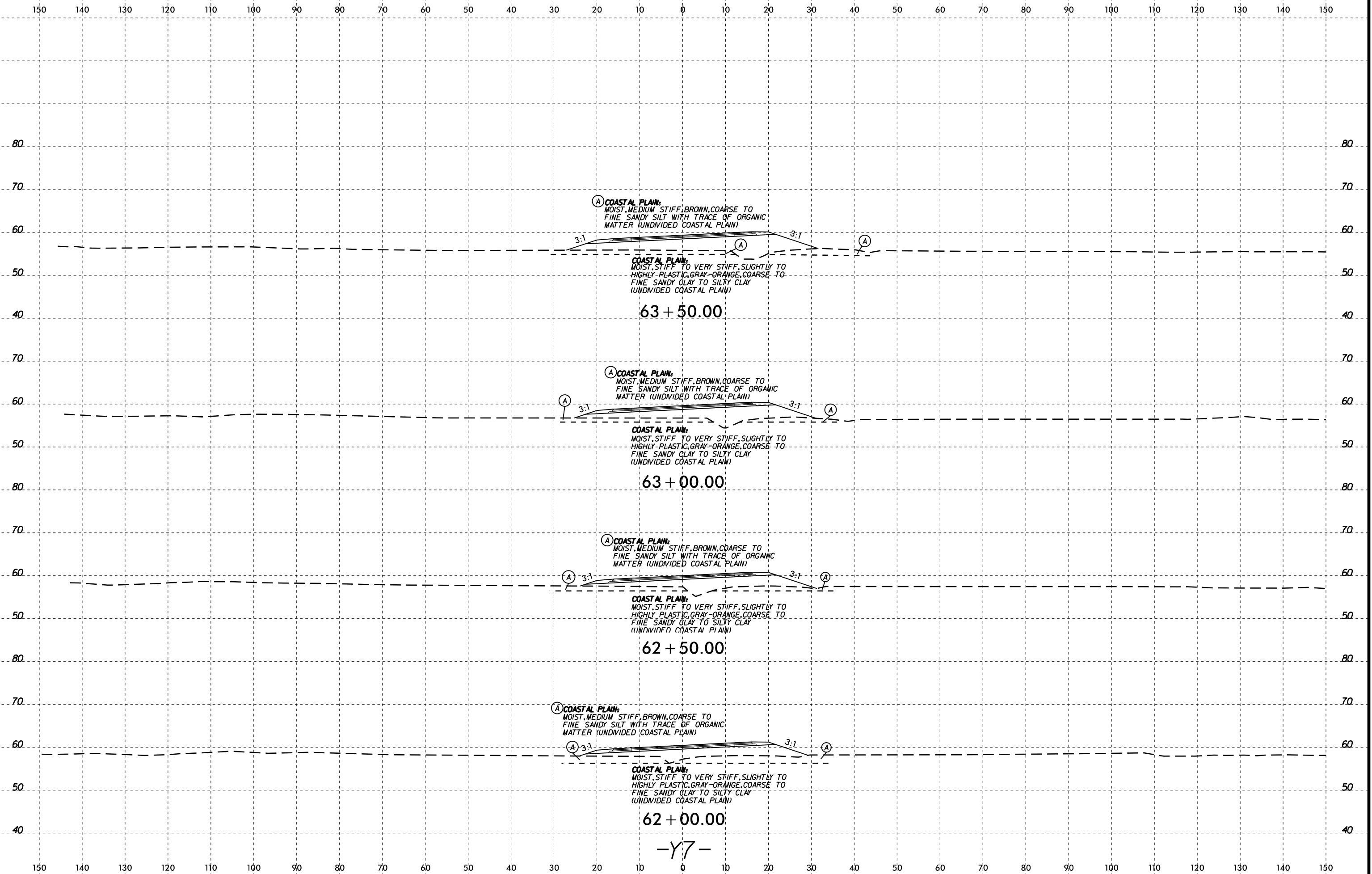
I:\FEB-2016\03
 W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\XSL_Y7.dgn
 Wells

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





-Y7-



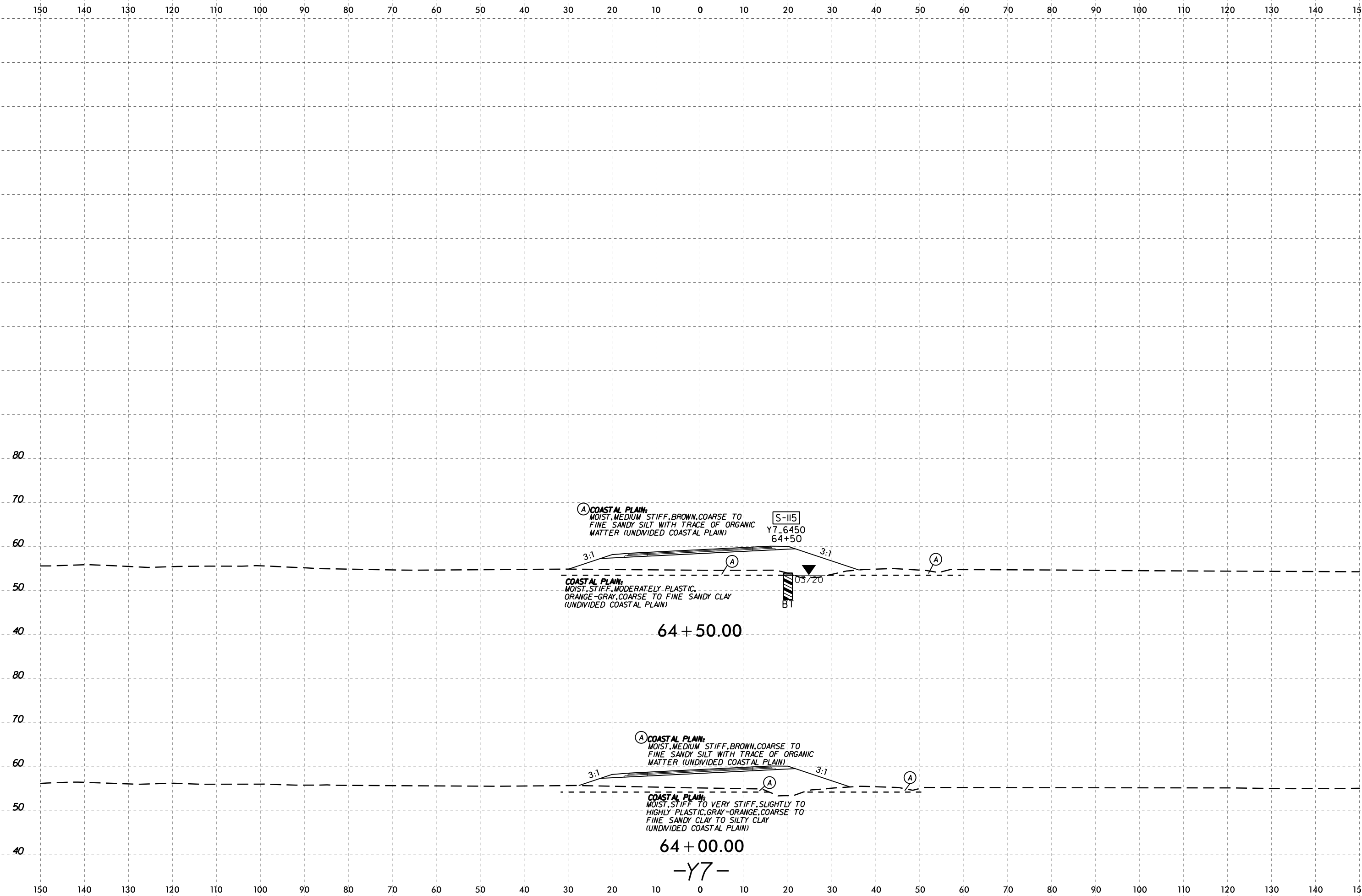
62 + 00.00

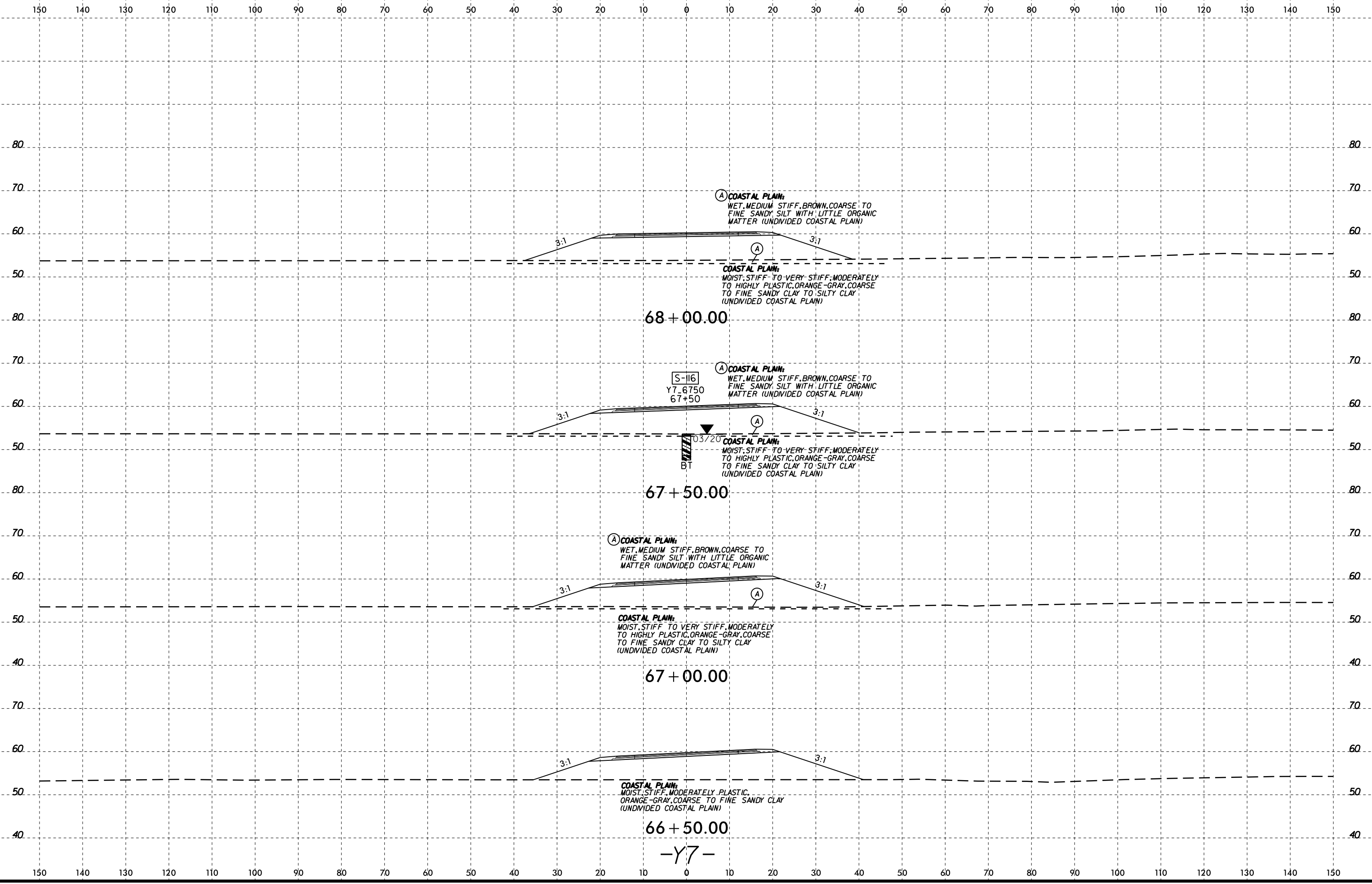
62 + 50.00

63 + 00.00

63 + 50.00

-Y7-





66 + 50.00

COASTAL PLAIN2
MOIST, STIFF, MODERATELY PLASTIC,
ORANGE-GRAY, COARSE TO FINE SANDY CLAY
(UNDIVIDED COASTAL PLAIN)

67 + 00.00

COASTAL PLAIN2
WET, MEDIUM STIFF, BROWN, COARSE TO
FINE SANDY SILT WITH LITTLE ORGANIC
MATTER (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN2
WET, MEDIUM STIFF, BROWN, COARSE TO
FINE SANDY SILT WITH LITTLE ORGANIC
MATTER (UNDIVIDED COASTAL PLAIN)

67 + 50.00

COASTAL PLAIN2
MOIST, STIFF TO VERY STIFF, MODERATELY
TO HIGHLY PLASTIC, ORANGE-GRAY, COARSE
TO FINE SANDY CLAY TO SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

S-116
Y7 6750
67+50

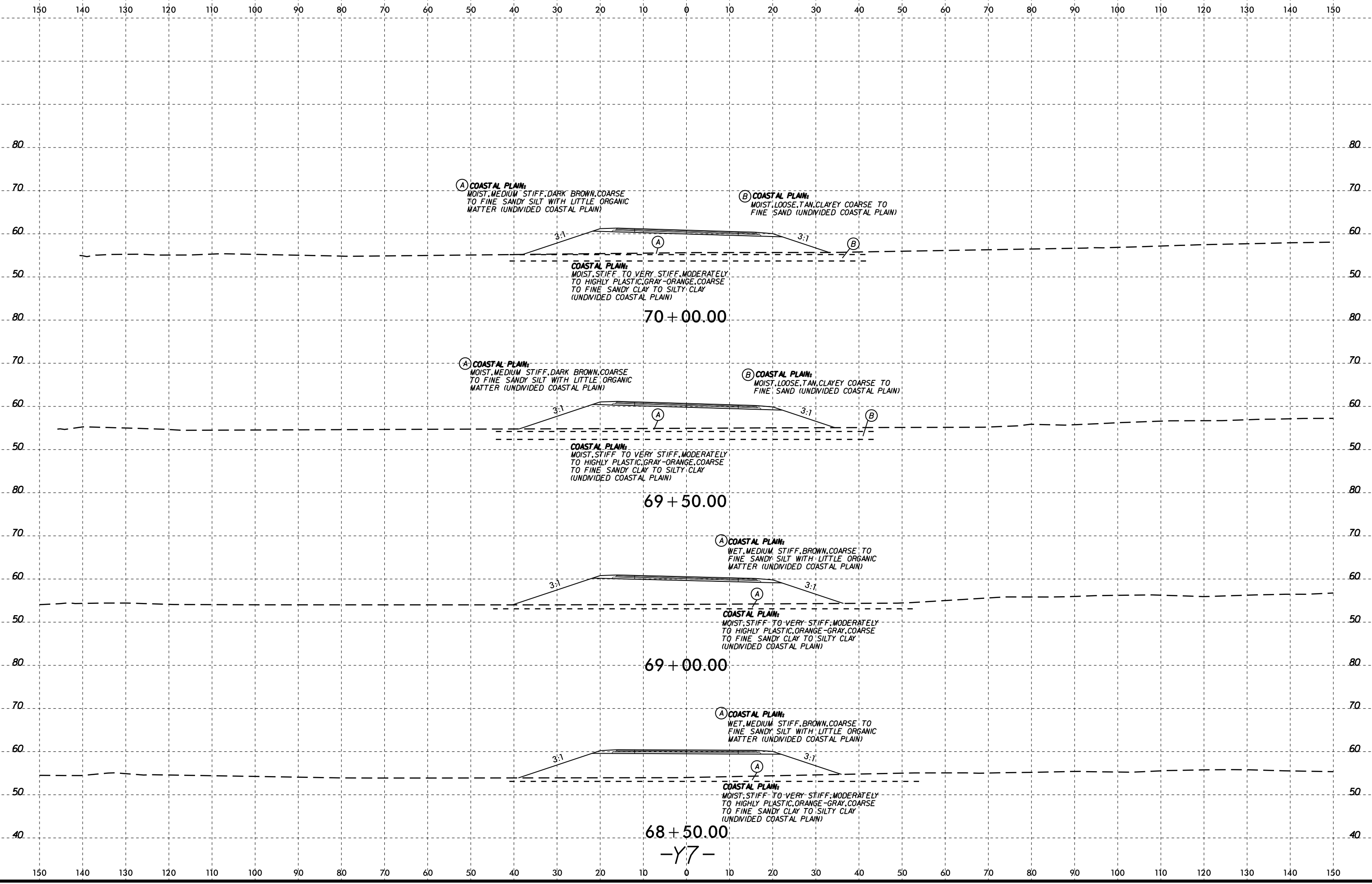
COASTAL PLAIN2
WET, MEDIUM STIFF, BROWN, COARSE TO
FINE SANDY SILT WITH LITTLE ORGANIC
MATTER (UNDIVIDED COASTAL PLAIN)

68 + 00.00

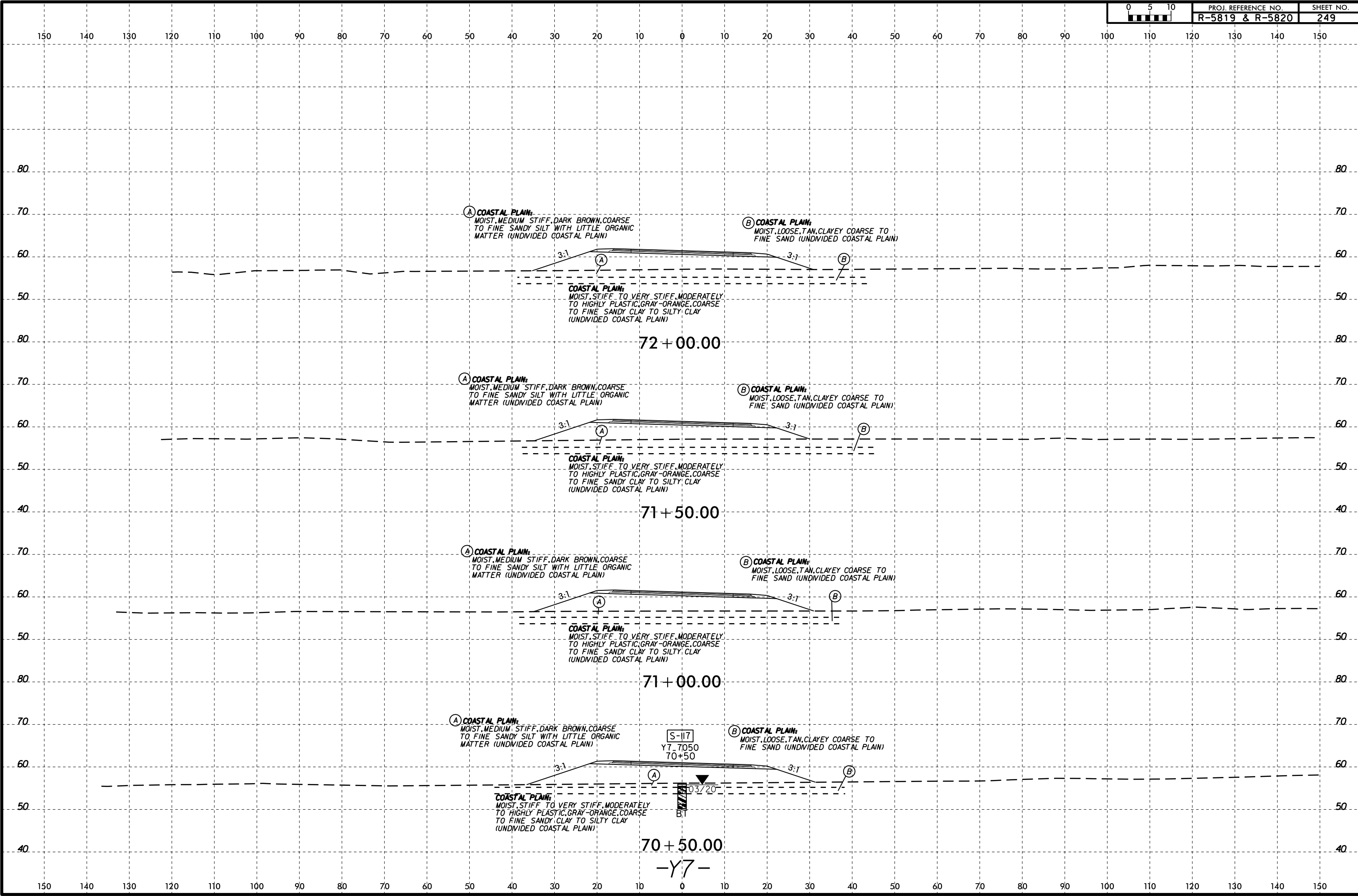
COASTAL PLAIN2
MOIST, STIFF TO VERY STIFF, MODERATELY
TO HIGHLY PLASTIC, ORANGE-GRAY, COARSE
TO FINE SANDY CLAY TO SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN2
WET, MEDIUM STIFF, BROWN, COARSE TO
FINE SANDY SILT WITH LITTLE ORGANIC
MATTER (UNDIVIDED COASTAL PLAIN)

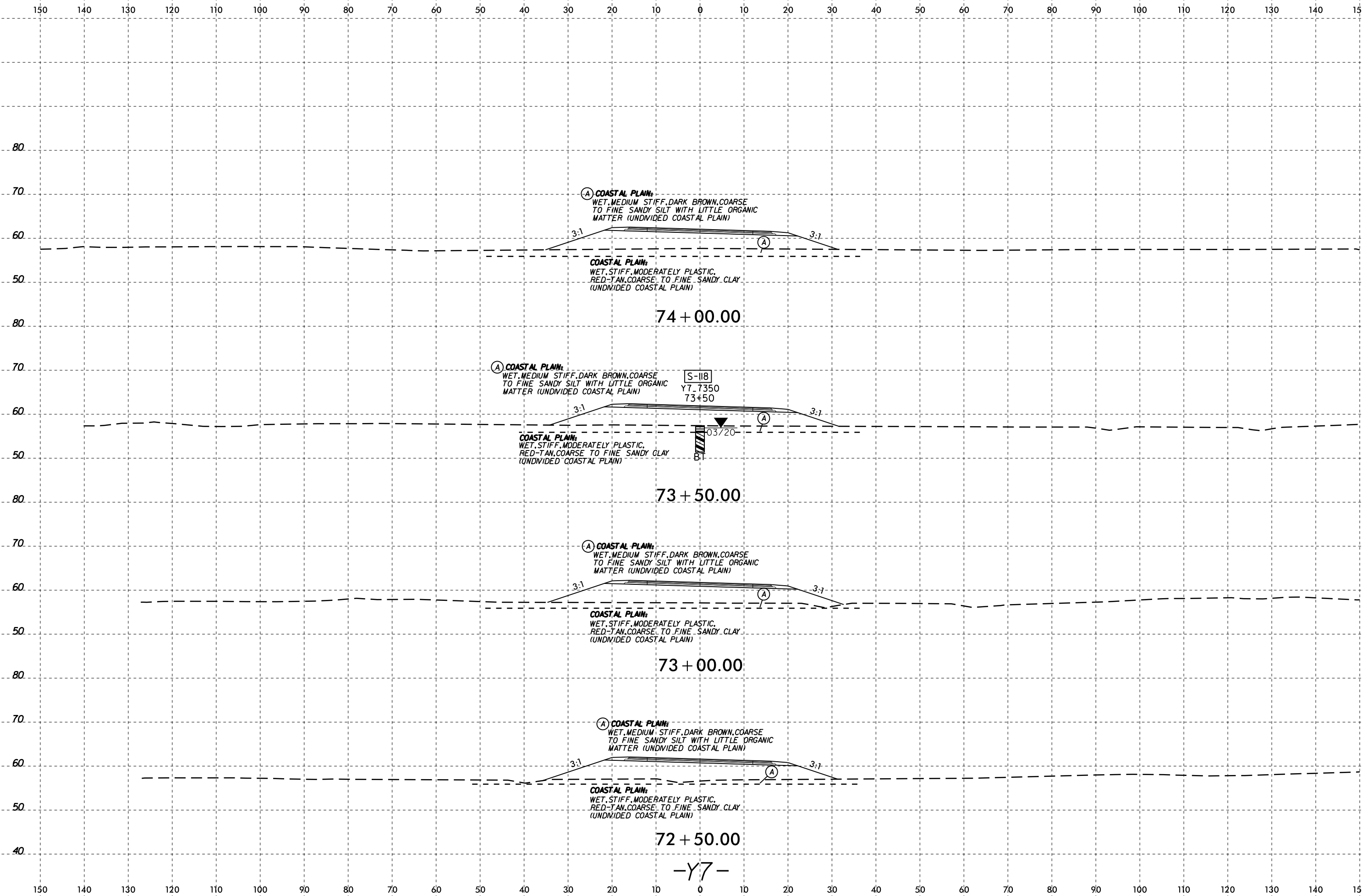
-Y7-



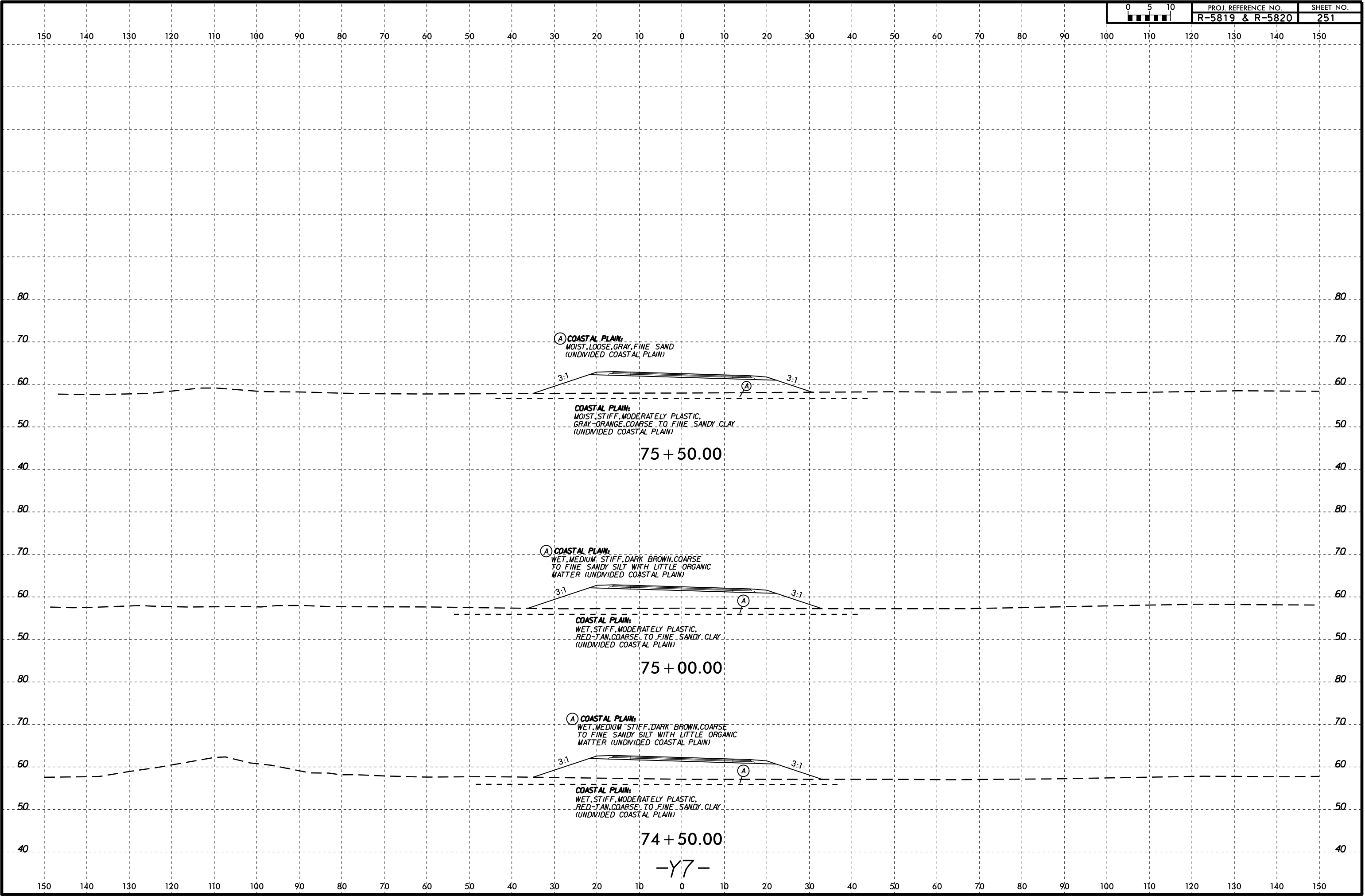
68+50.00
-Y7-

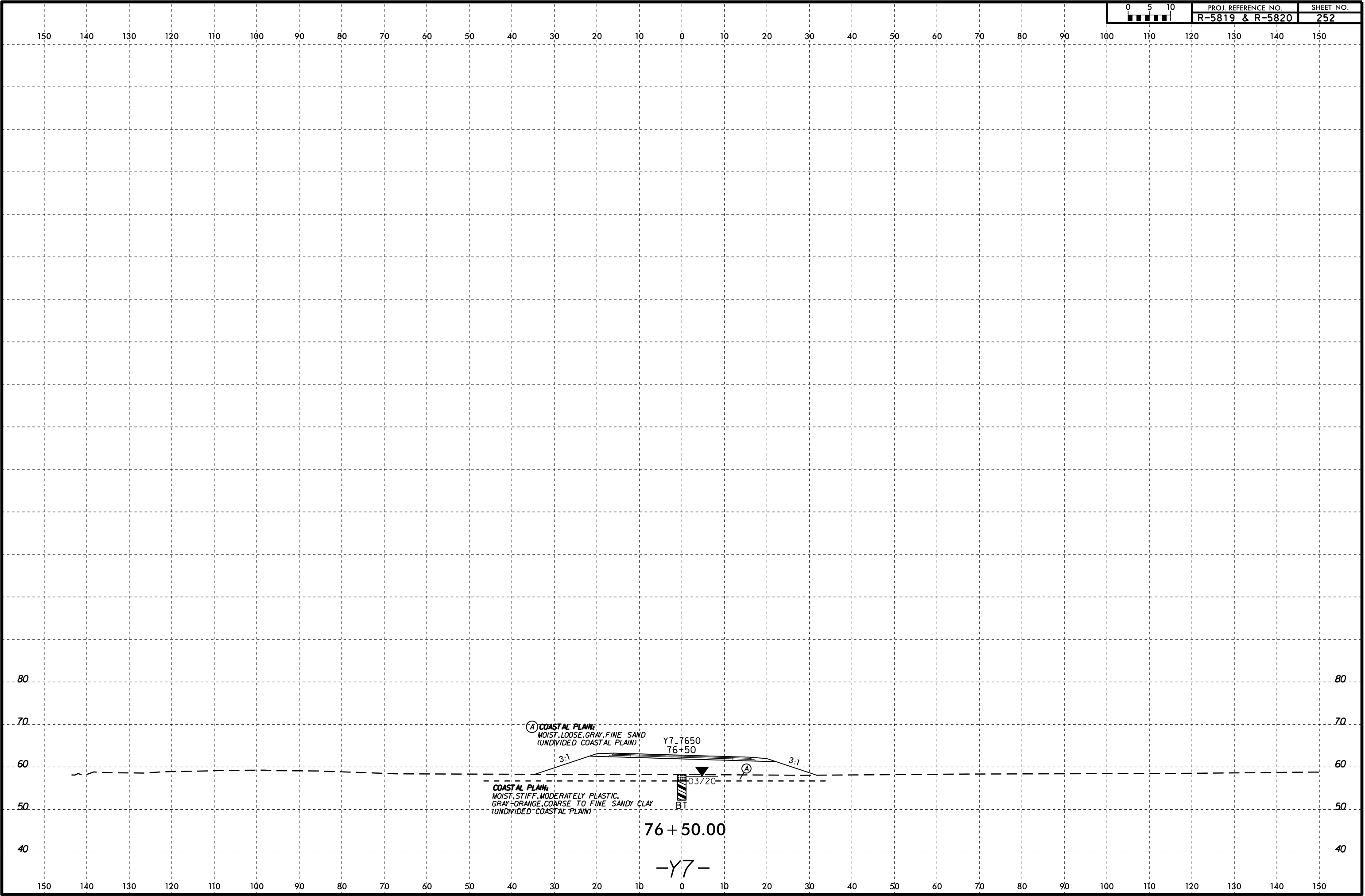


6/23/16
I:\FEB-2016\04
Watershed\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\RS819-RS820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XSL_Y7.dgn
Wells - A1 KA21387



74 + 00.00
73 + 50.00
73 + 00.00
72 + 50.00
-Y7-





(A) COASTAL PLAIN:
MOIST, LOOSE, GRAY, FINE SAND
(UNDIVIDED COASTAL PLAIN)

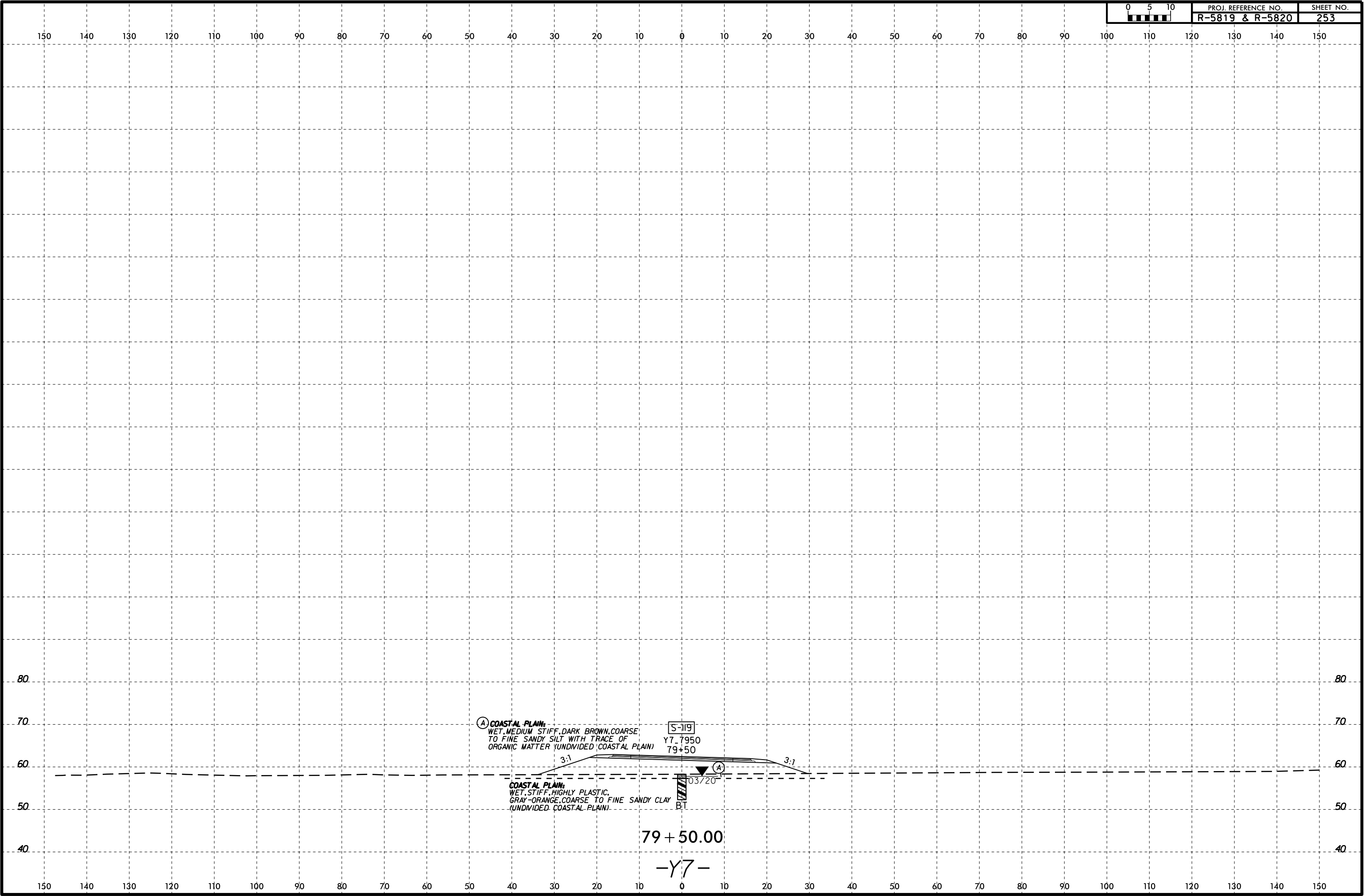
COASTAL PLAIN:
MOIST, STIFF, MODERATELY PLASTIC,
GRAY-ORANGE, COARSE TO FINE SANDY CLAY
(UNDIVIDED COASTAL PLAIN)

Y7-7650
76+50

BT

76 + 50.00

-Y7-



Ⓐ **COASTAL PLAIN:**
 WET, MEDIUM STIFF, DARK BROWN, COARSE
 TO FINE SANDY SILT WITH TRACE OF
 ORGANIC MATTER (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN:
 WET, STIFF, HIGHLY PLASTIC,
 GRAY-ORANGE, COARSE TO FINE SANDY CLAY
 (UNDIVIDED COASTAL PLAIN)

S-119

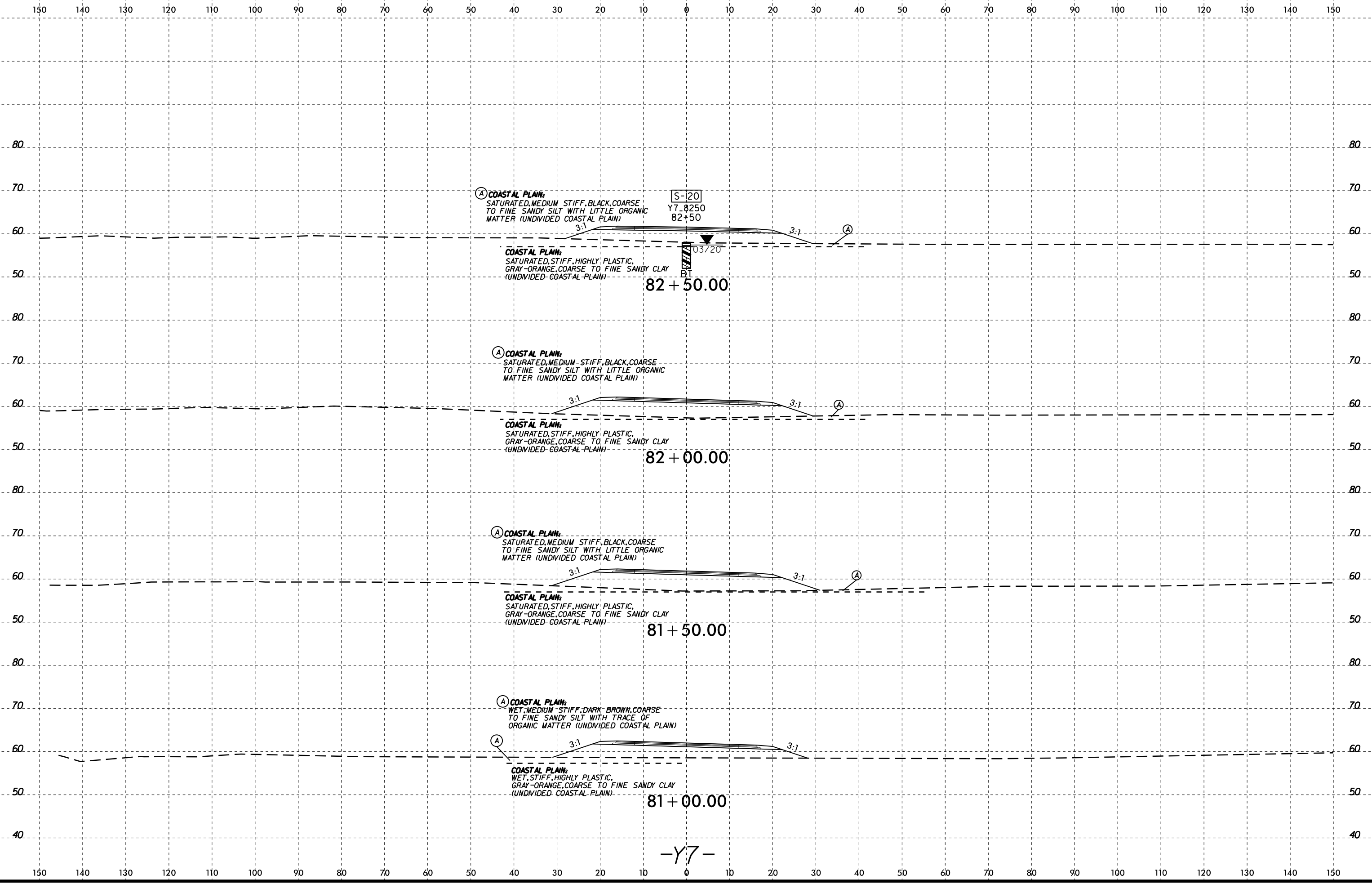
Y7-7950
79+50

03/20

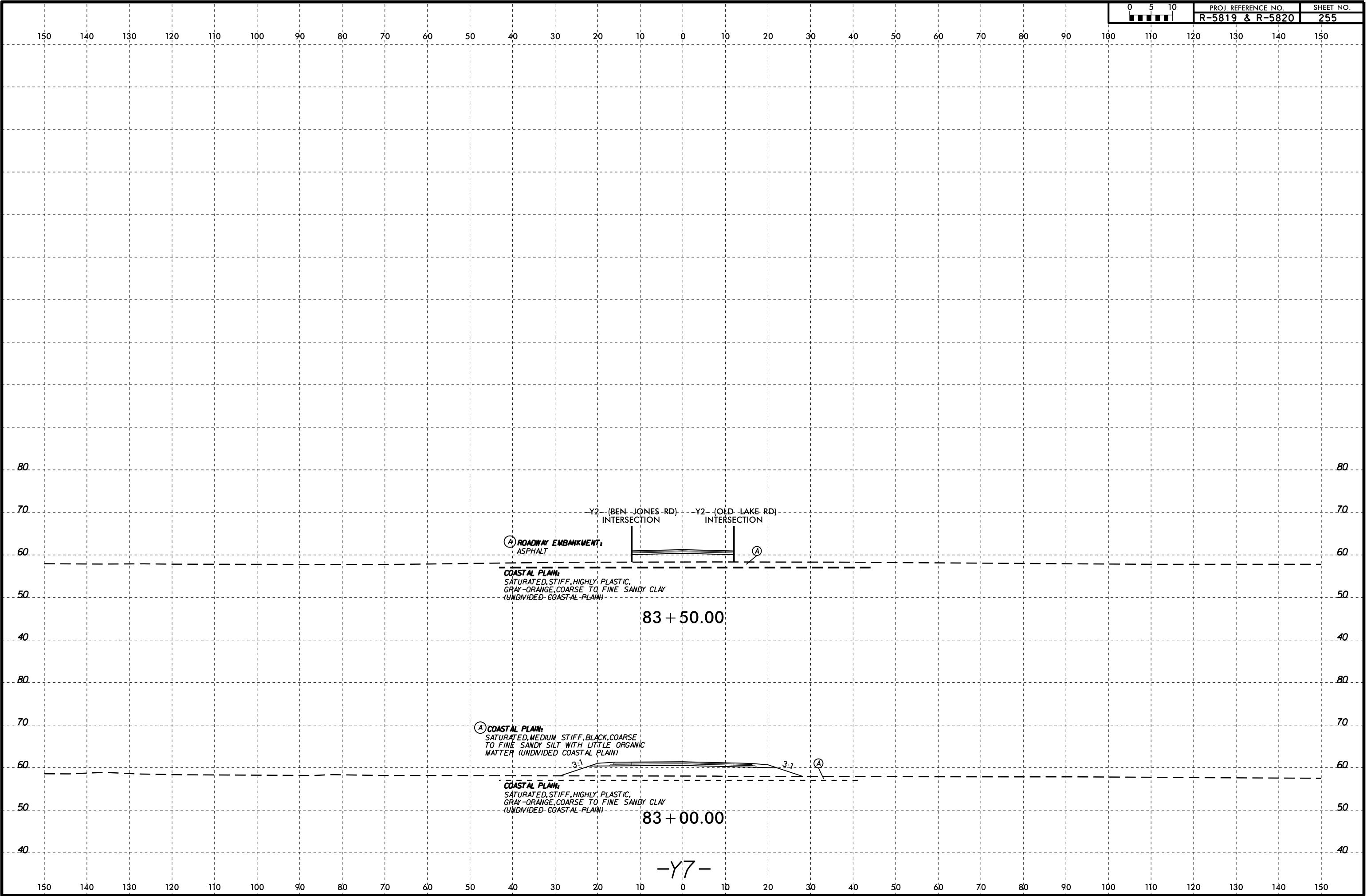
B1

79 + 50.00

-Y7-



-Y7-



(A) ROADWAY EMBANKMENT:
ASPHALT

COASTAL PLAIN:
SATURATED, STIFF, HIGHLY PLASTIC,
GRAY-ORANGE, COARSE TO FINE SANDY CLAY
(UNDIVIDED COASTAL PLAIN)

83 + 50.00

Y2 - (BEN JONES RD)
INTERSECTION

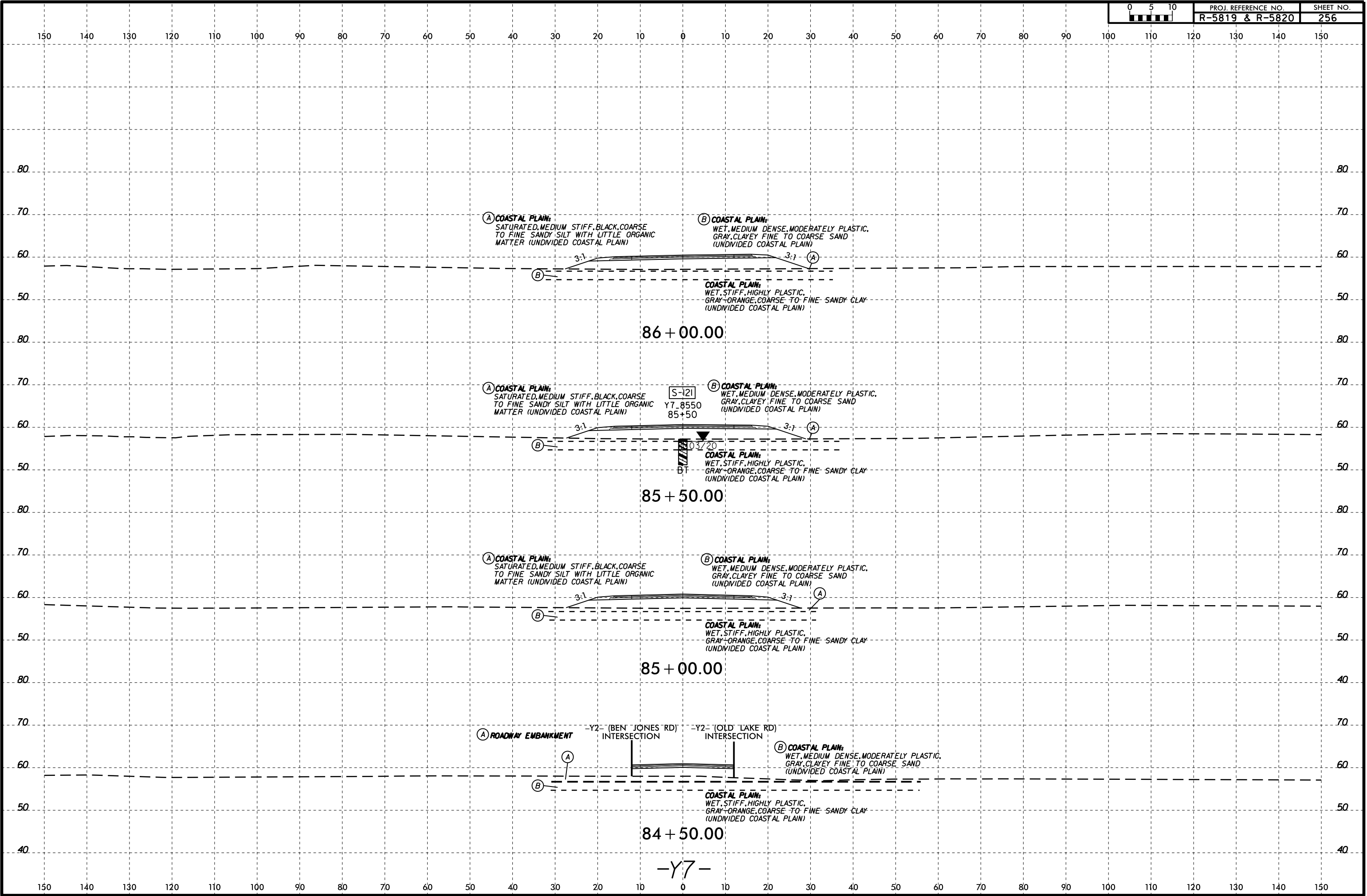
Y2 - (OLD LAKE RD)
INTERSECTION

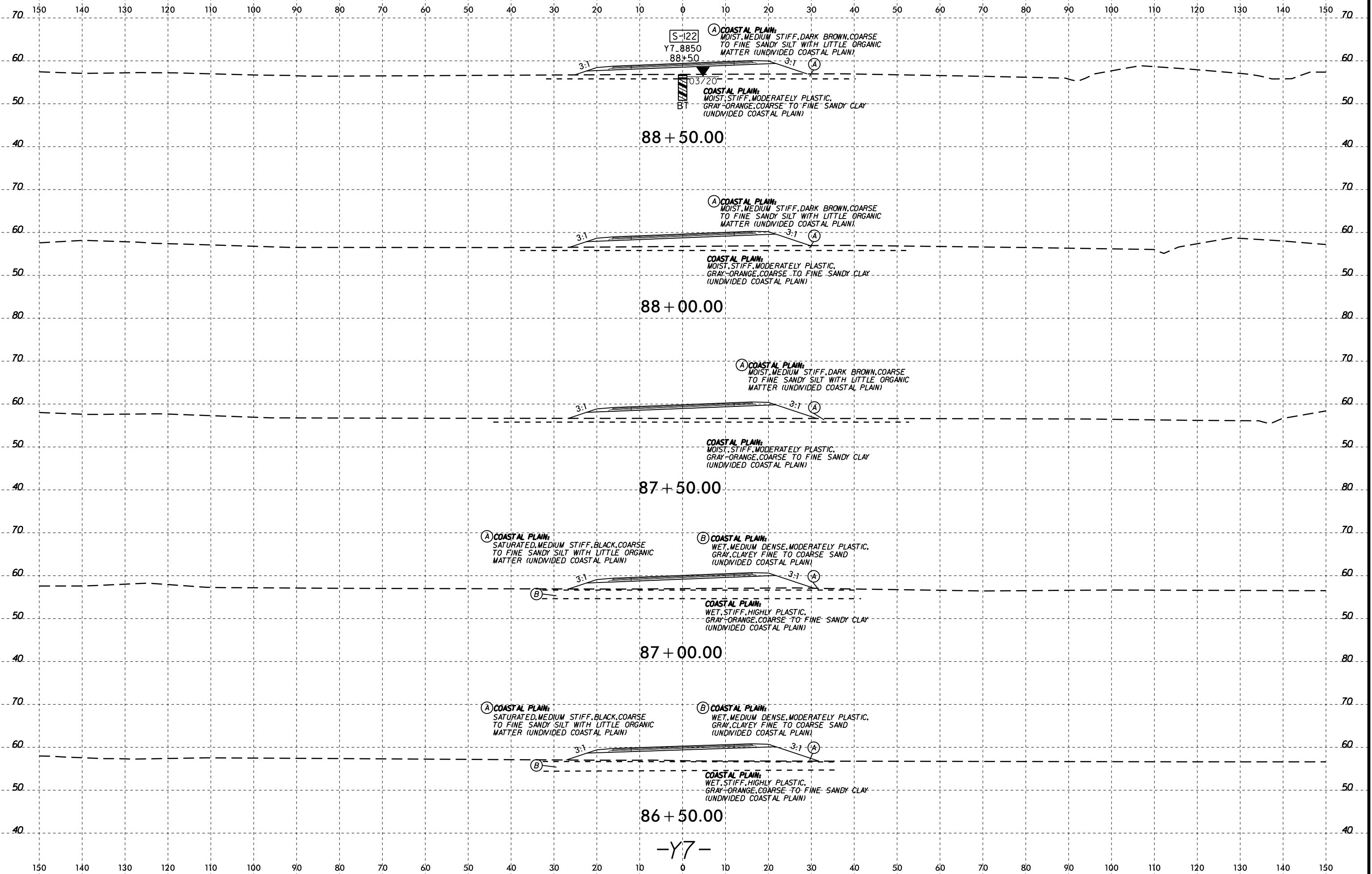
(A) COASTAL PLAIN:
SATURATED, MEDIUM STIFF, BLACK, COARSE
TO FINE SANDY SILT WITH LITTLE ORGANIC
MATTER (UNDIVIDED COASTAL PLAIN)

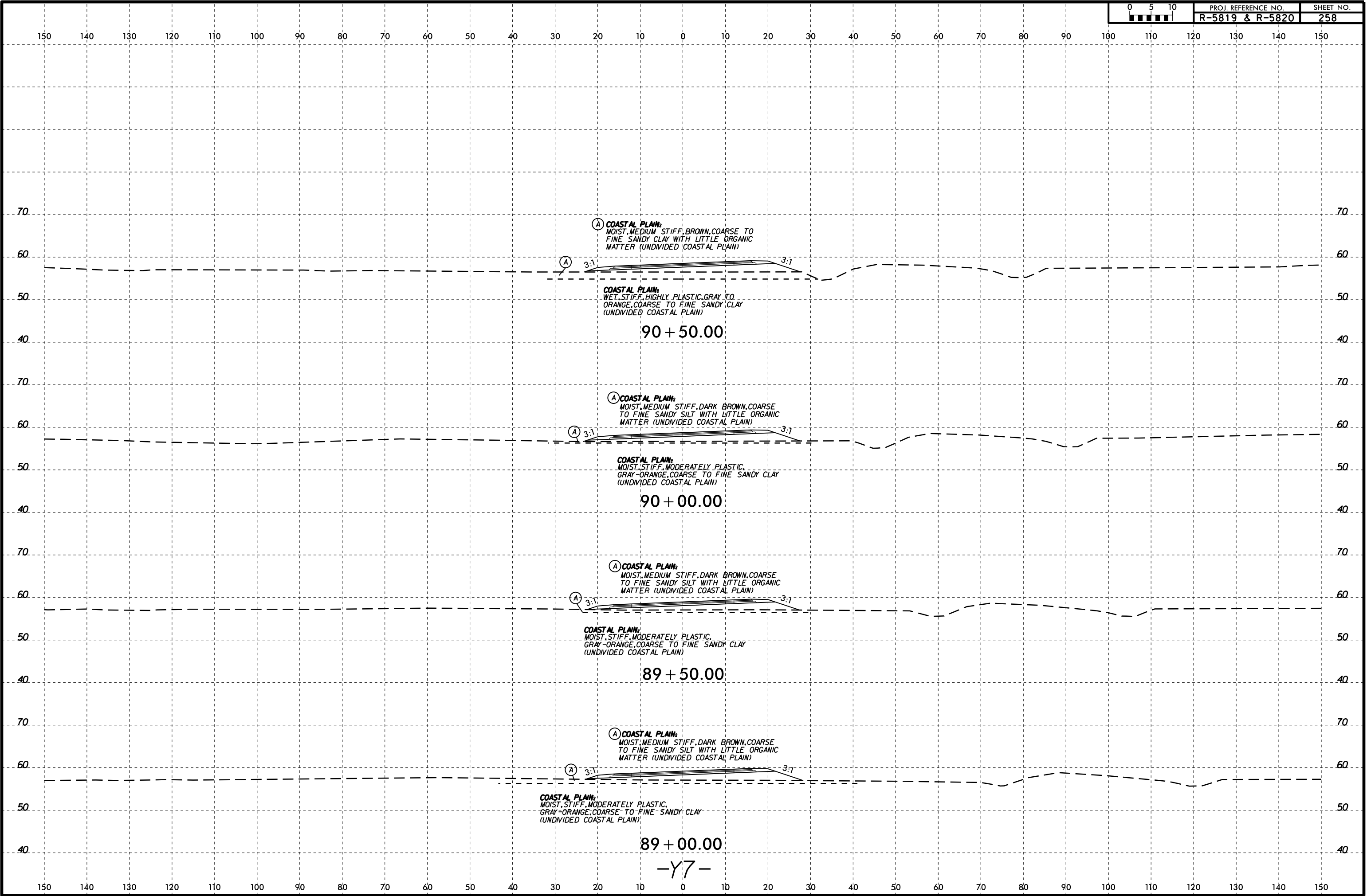
COASTAL PLAIN:
SATURATED, STIFF, HIGHLY PLASTIC,
GRAY-ORANGE, COARSE TO FINE SANDY CLAY
(UNDIVIDED COASTAL PLAIN)

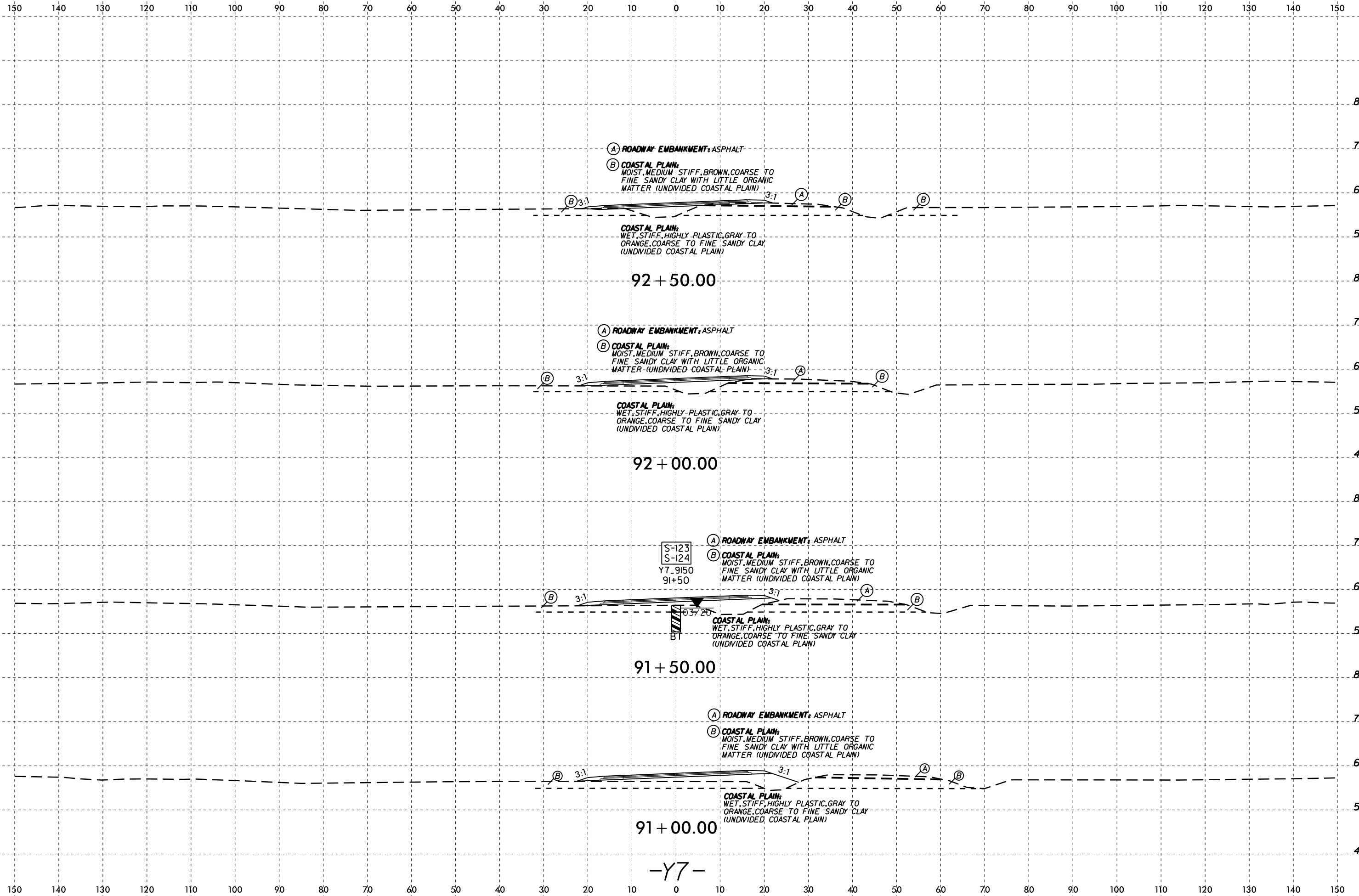
83 + 00.00

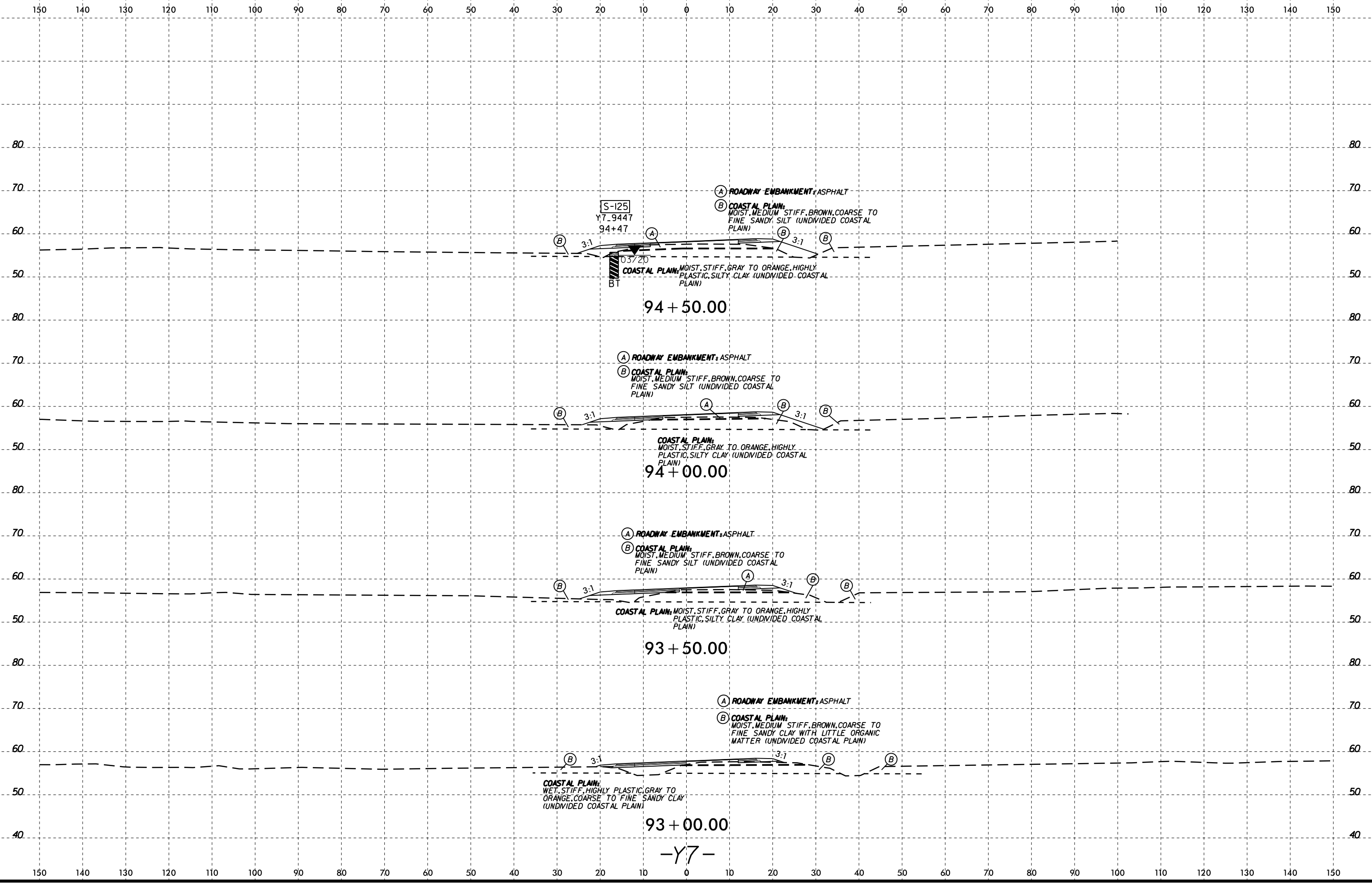
-Y7-

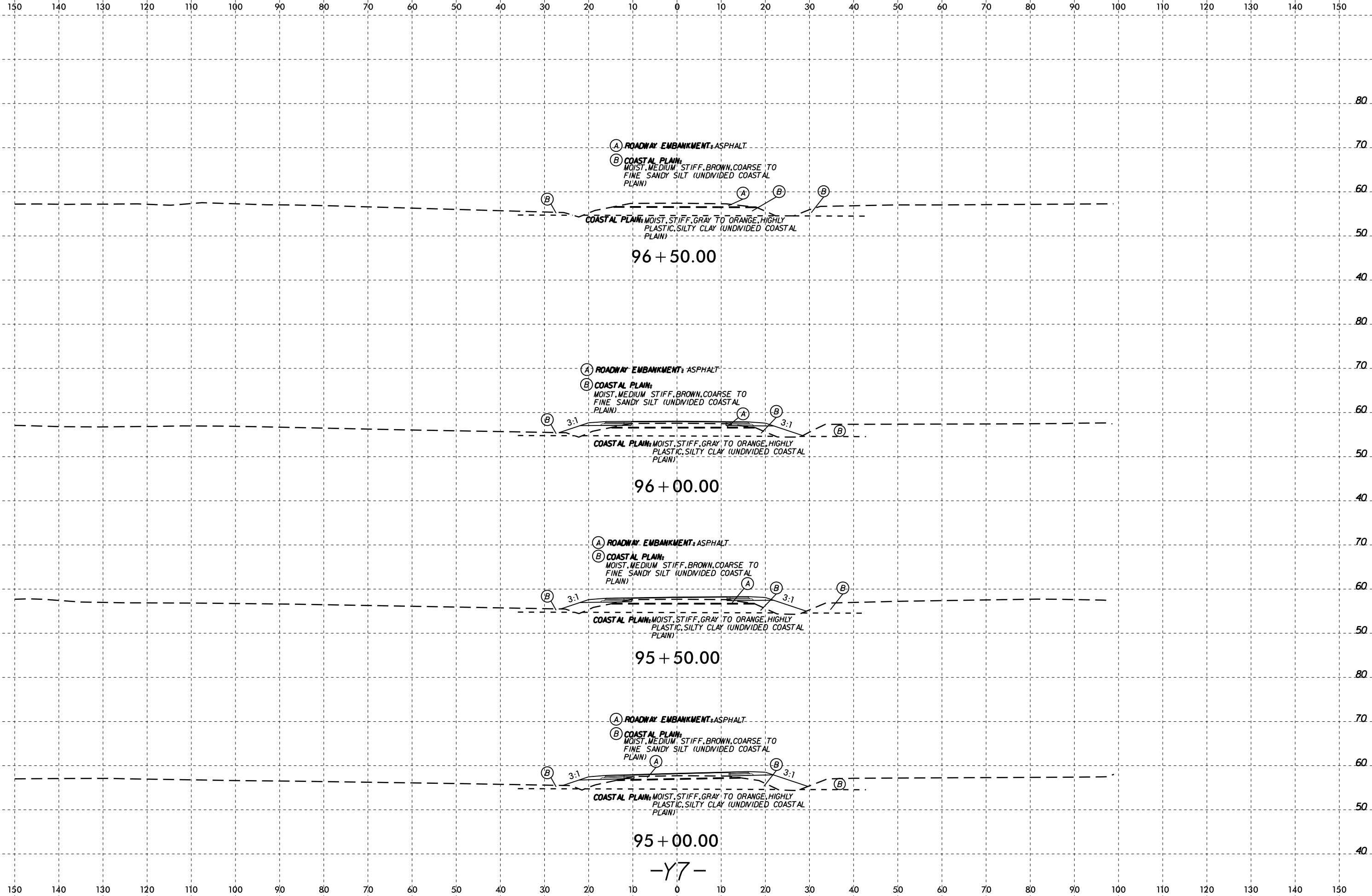




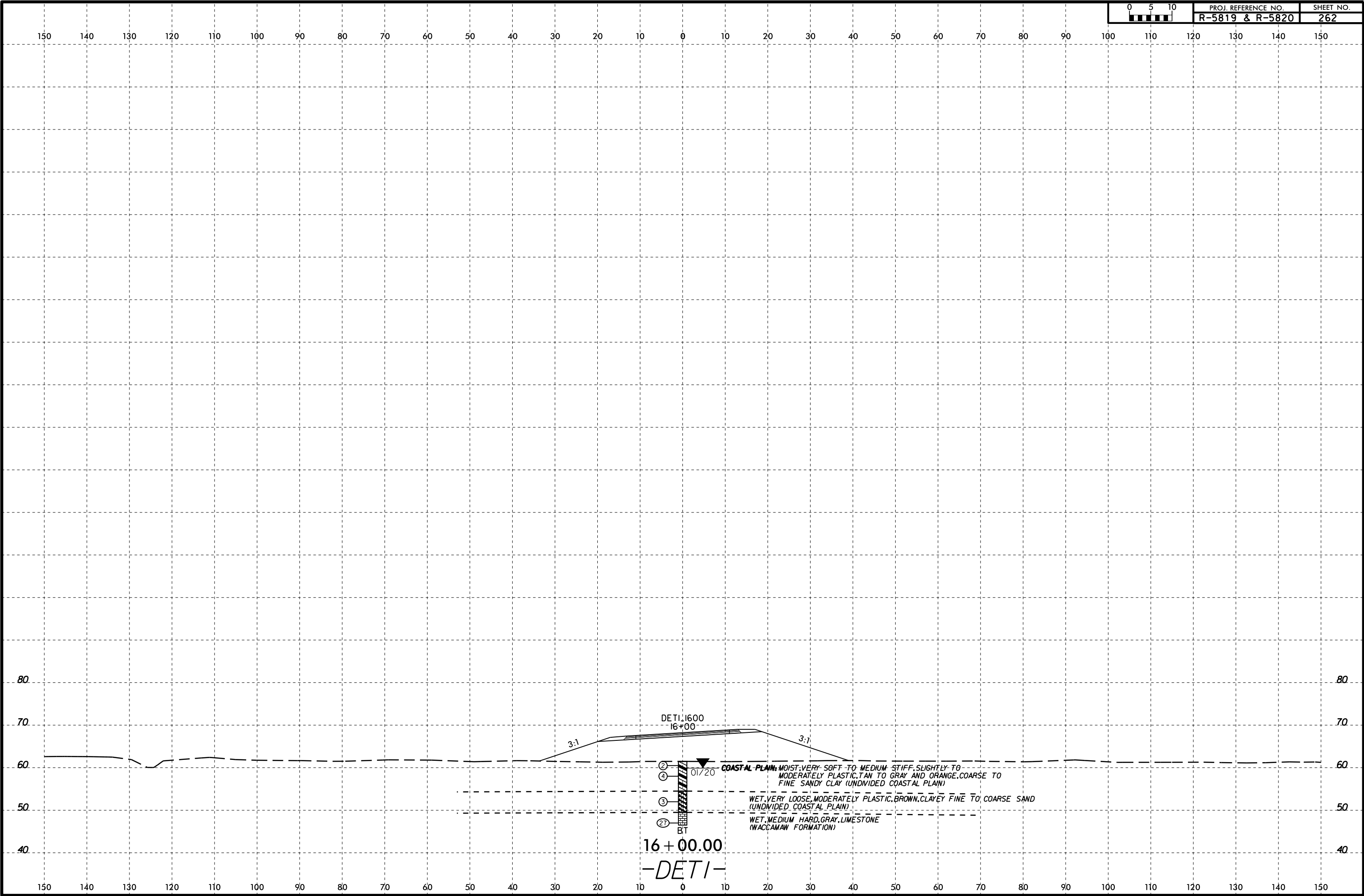


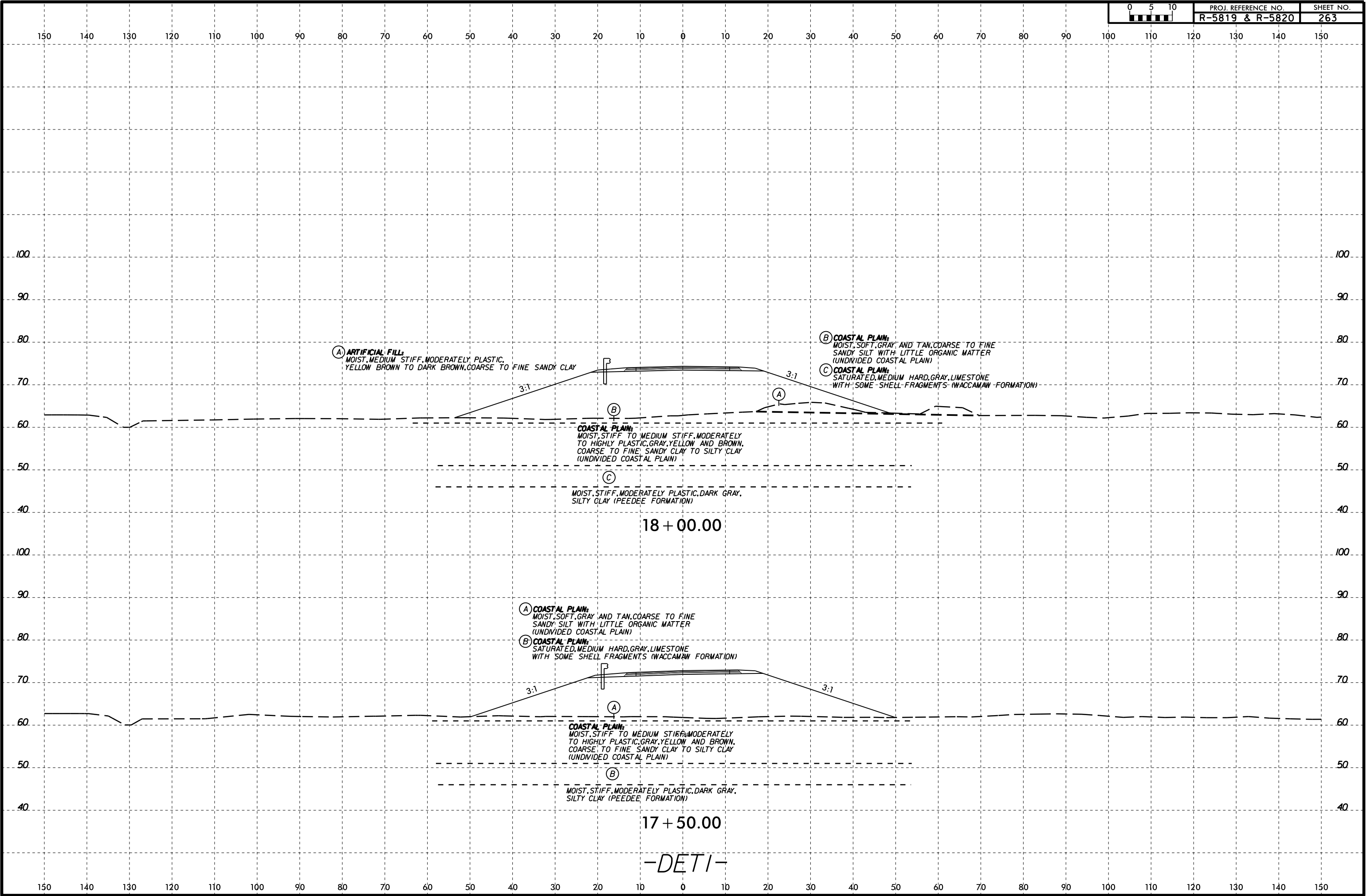






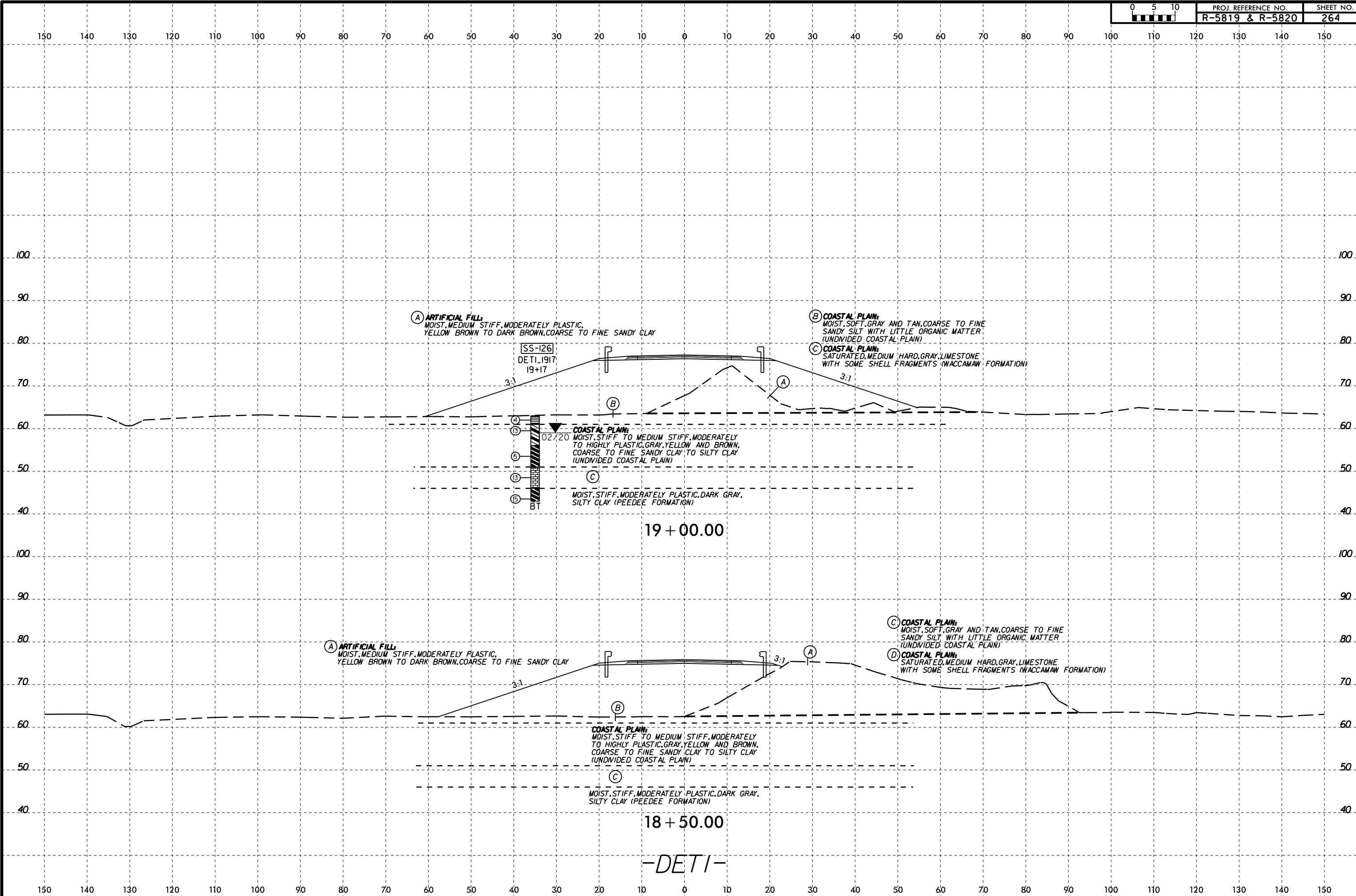
6/23/16
I:\FEB-2016\05
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\5819-R5820_GEO.XSI.DET1.dgn
Wells - At KA211387

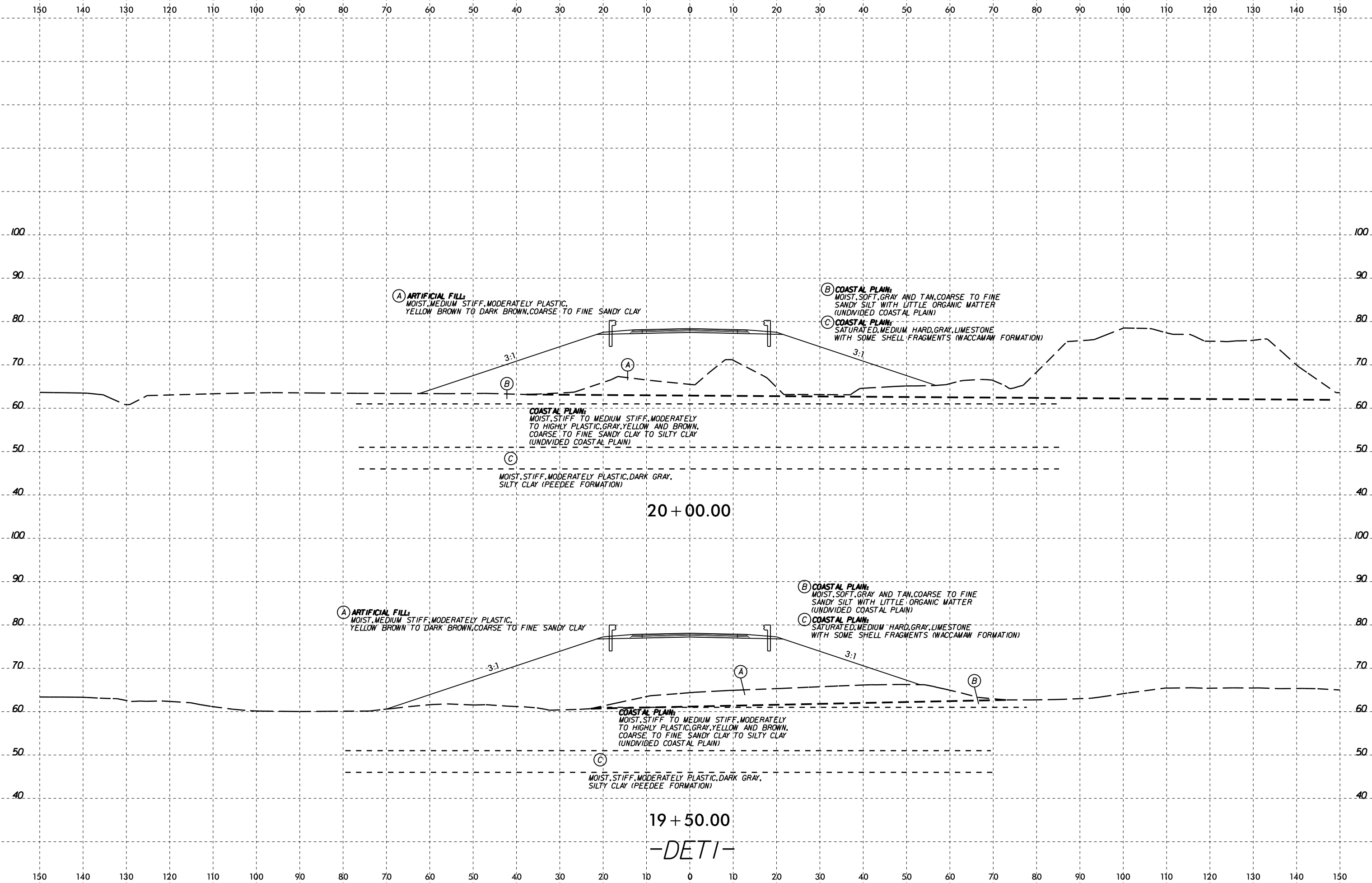


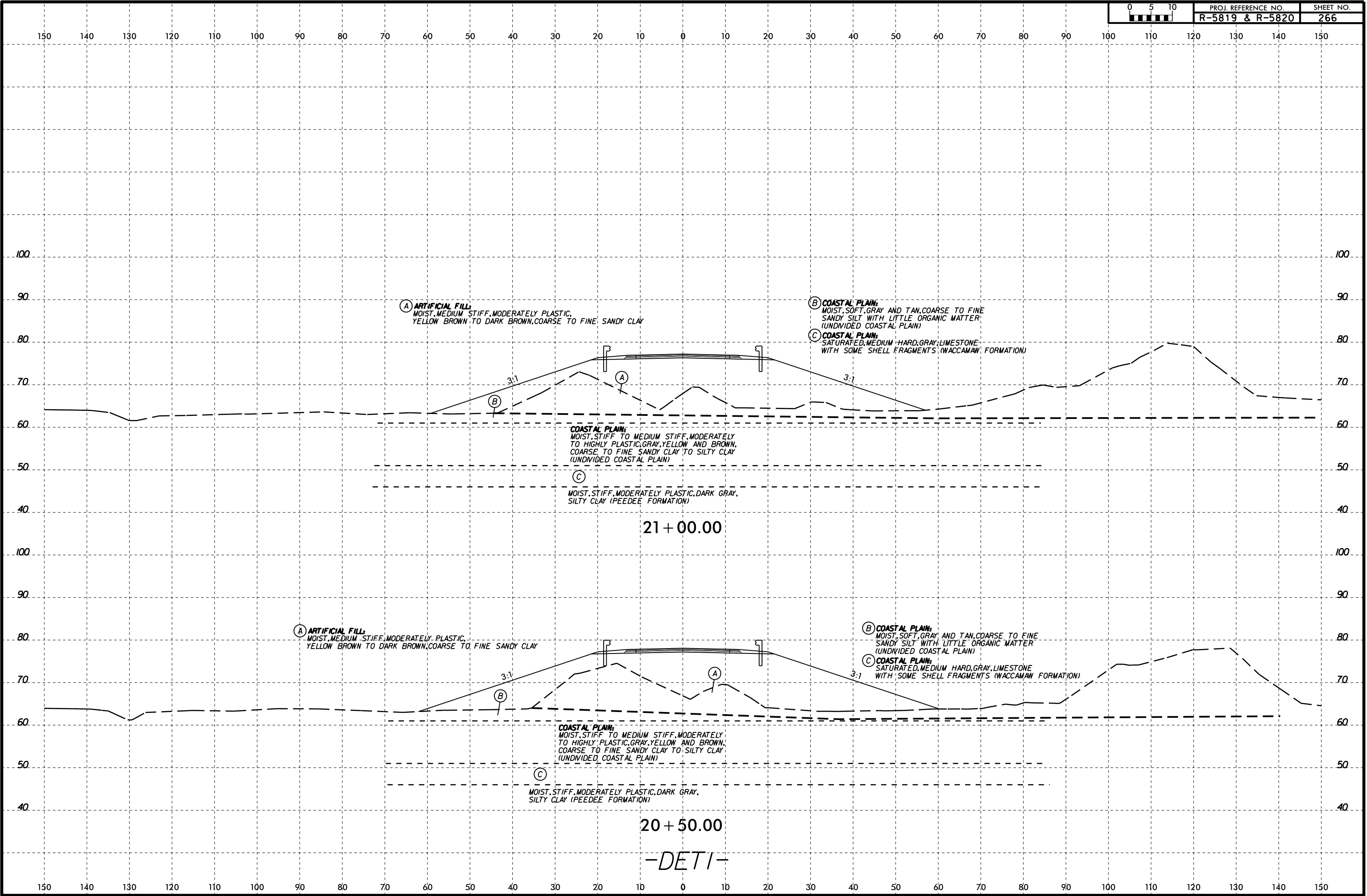


I:\FEB-2016\05...GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSI_DET1.dgn

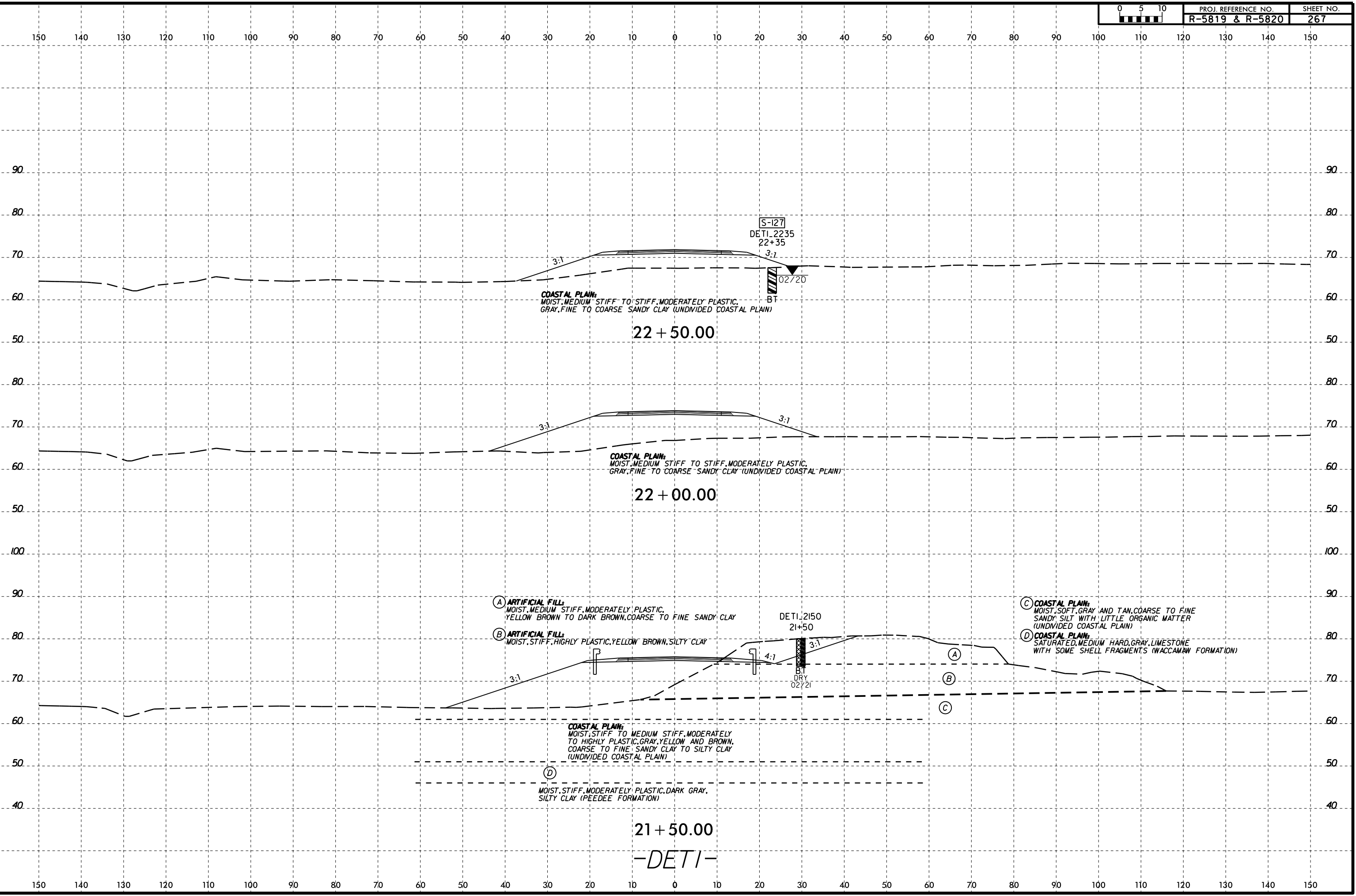
-DETI-







I:\FEB-2016\05
Washoe\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\RS5819-R5820_GEO_XSI_DET1.dgn
Wells - A1 KA211387



22 + 50.00

22 + 00.00

21 + 50.00

-DET1-

COASTAL PLAIN:
MOIST, MEDIUM STIFF TO STIFF, MODERATELY PLASTIC,
GRAY, FINE TO COARSE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

COASTAL PLAIN:
MOIST, MEDIUM STIFF TO STIFF, MODERATELY PLASTIC,
GRAY, FINE TO COARSE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

(A) **ARTIFICIAL FILL:**
MOIST, MEDIUM STIFF, MODERATELY PLASTIC,
YELLOW BROWN TO DARK BROWN, COARSE TO FINE SANDY CLAY

(B) **ARTIFICIAL FILL:**
MOIST, STIFF, HIGHLY PLASTIC, YELLOW BROWN, SILTY CLAY

COASTAL PLAIN:
MOIST, STIFF TO MEDIUM STIFF, MODERATELY
TO HIGHLY PLASTIC, GRAY, YELLOW AND BROWN,
COARSE TO FINE SANDY CLAY TO SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

(D) **COASTAL PLAIN:**
MOIST, STIFF, MODERATELY PLASTIC, DARK GRAY,
SILTY CLAY (PEEDEE FORMATION)

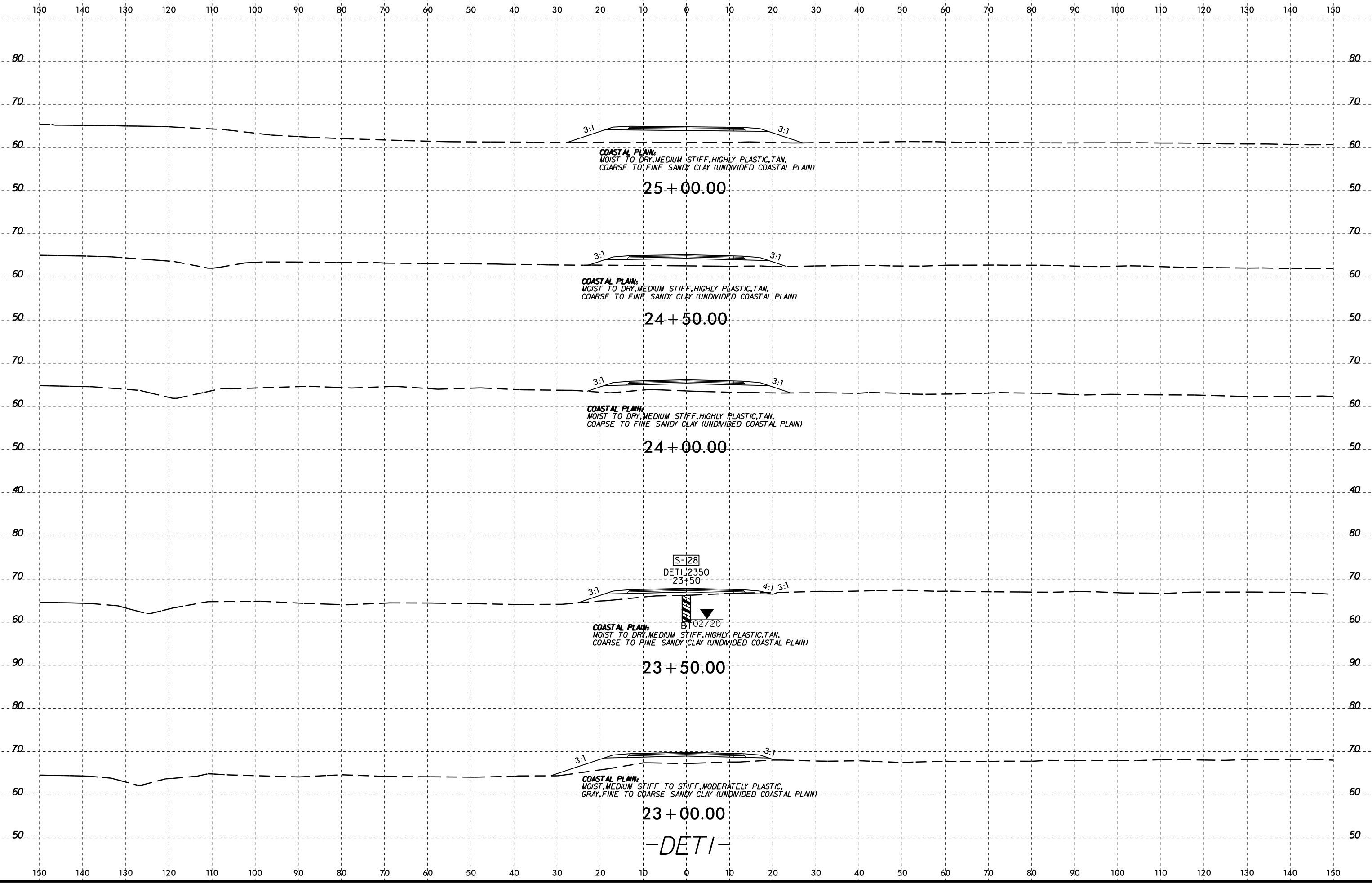
(C) **COASTAL PLAIN:**
MOIST, SOFT, GRAY AND TAN, COARSE TO FINE
SANDY SILT WITH LITTLE ORGANIC MATTER
(UNDIVIDED COASTAL PLAIN)

(D) **COASTAL PLAIN:**
SATURATED, MEDIUM HARD, GRAY, LIMESTONE
WITH SOME SHELL FRAGMENTS (WACCAMAW FORMATION)

S-127
DET. 2235
22+35
BT
02/20

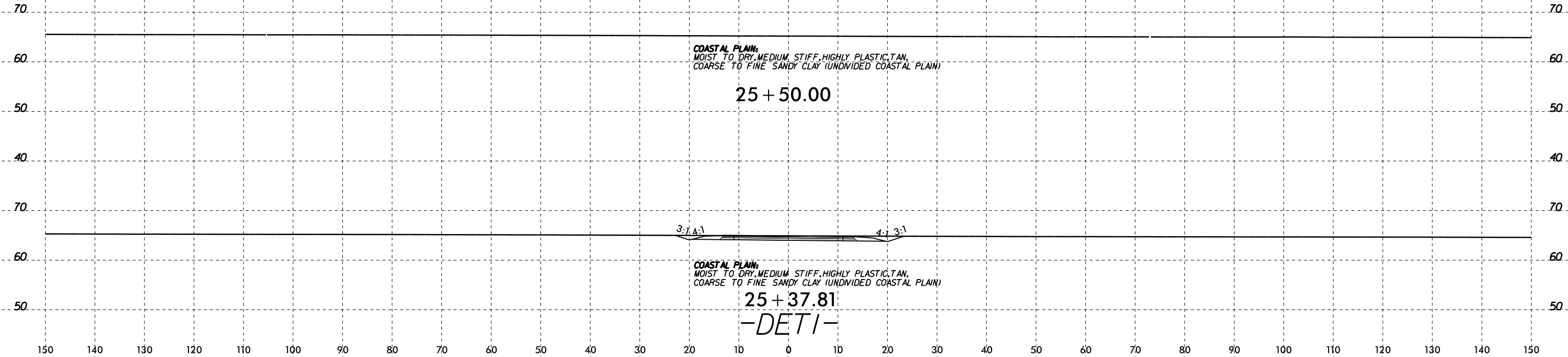
DET. 2150
21+50
BT
DRY
02/21

(A)
(B)
(C)



-DET1-

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



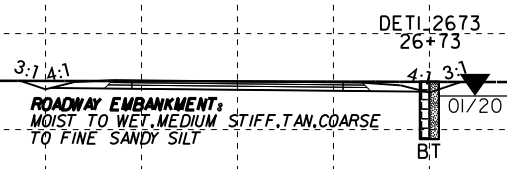
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



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

80
70
60
50

80
70
60
50

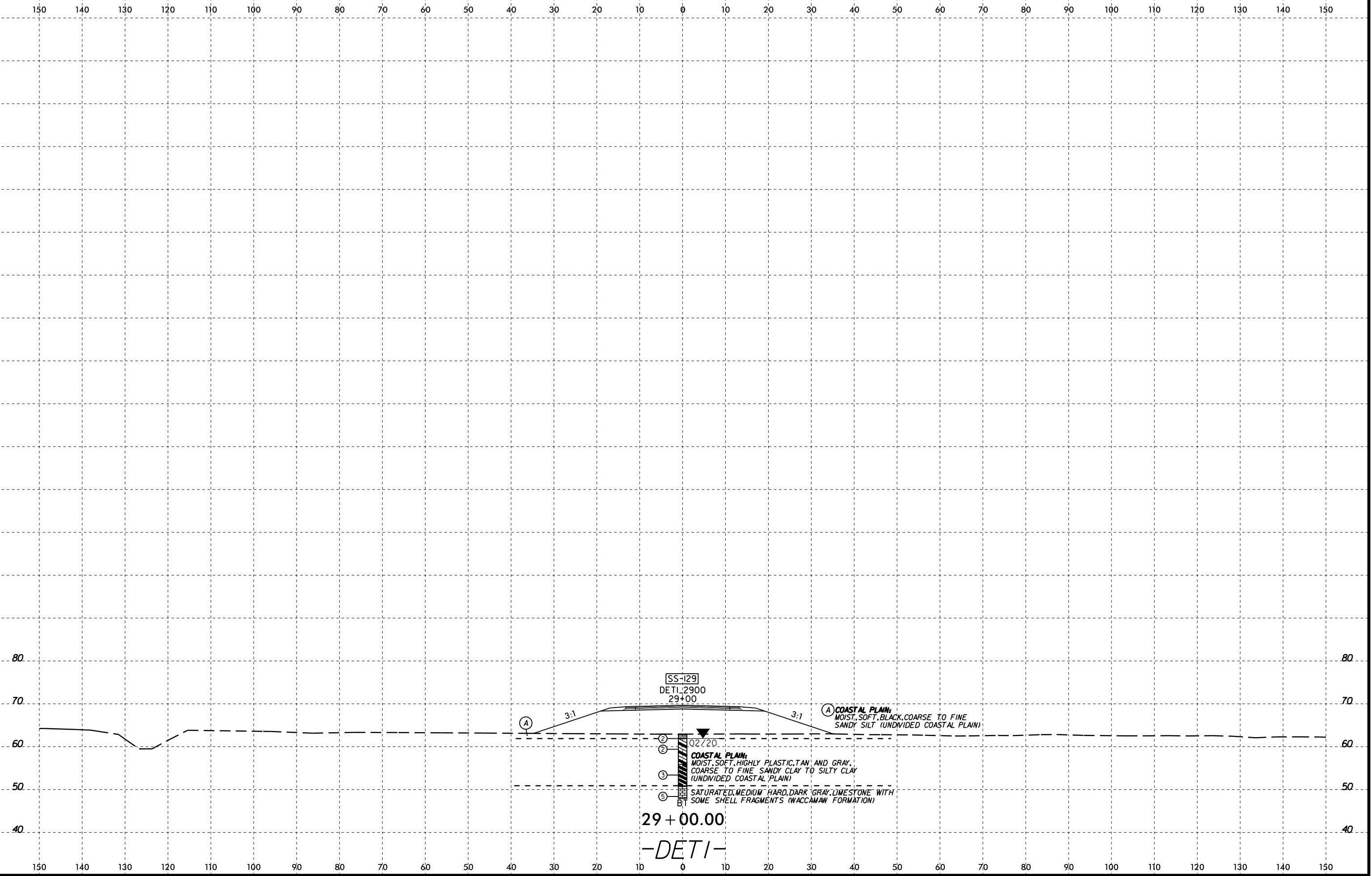


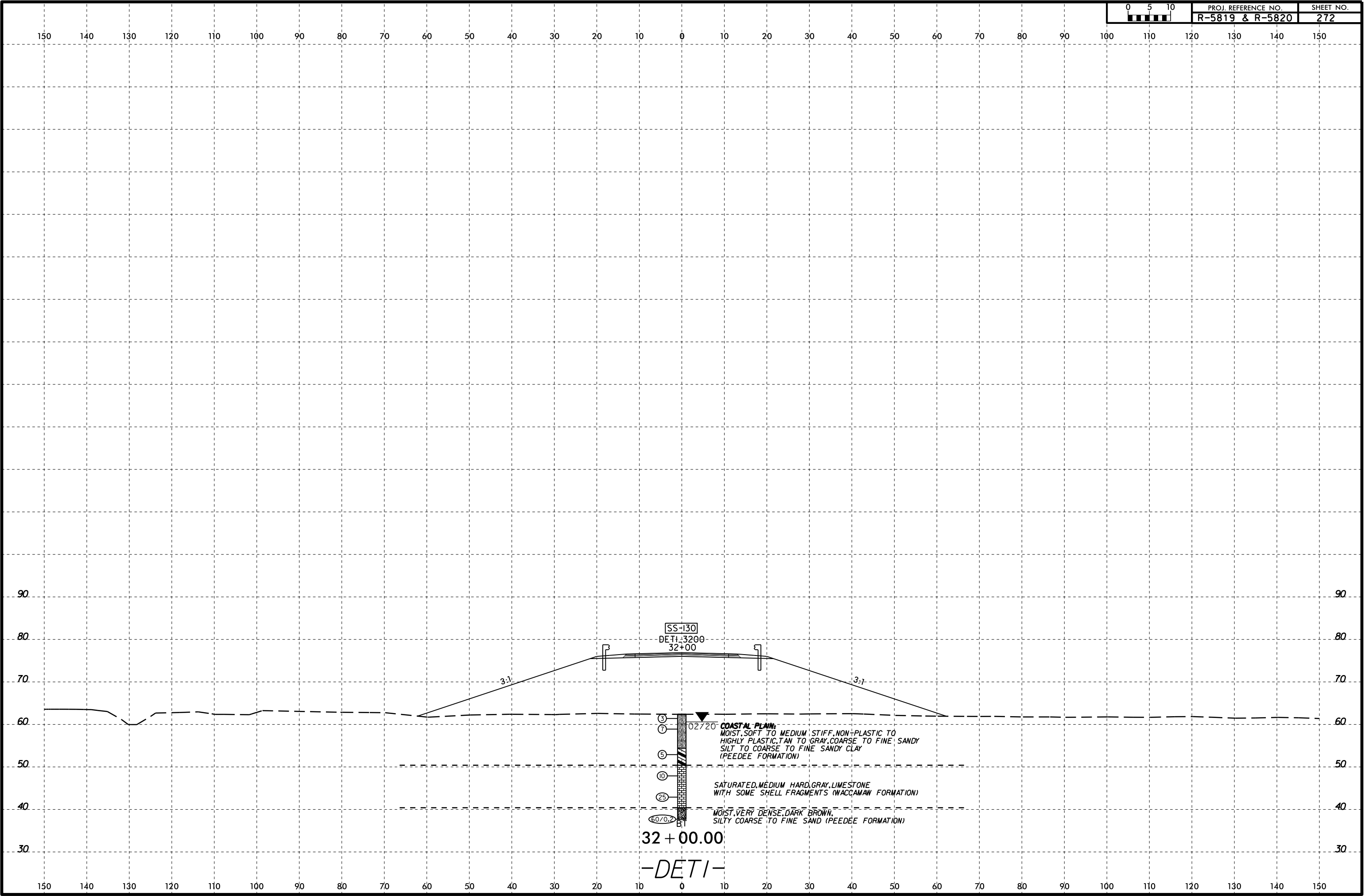
26+73.98

-DETI-

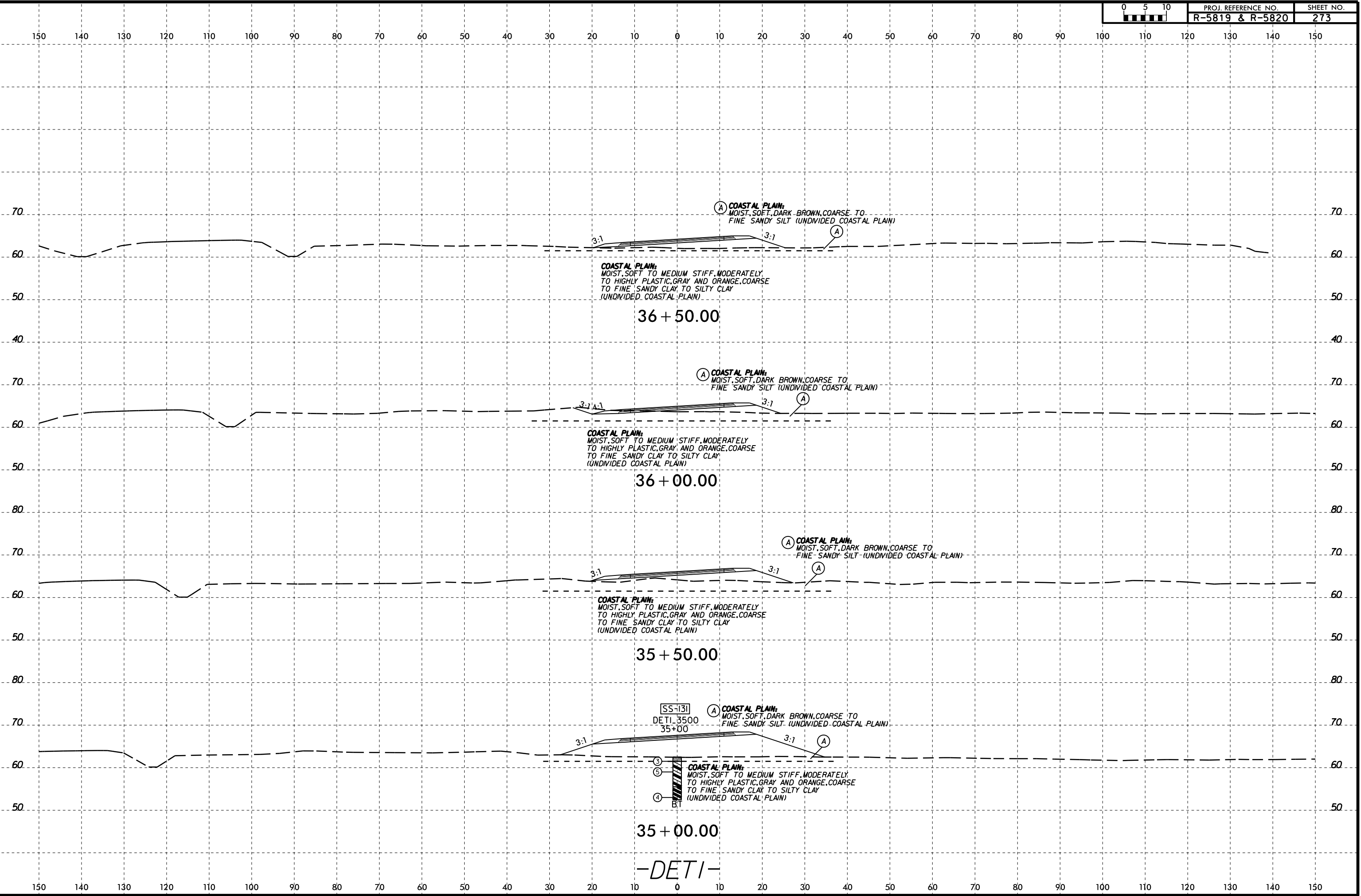
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

6/23/16
I:\FEB-2016\05
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO_RDW\CADD_GEO\RDW\CADD_GEO\RDW\RS5819-R5820_GEO_XSI.DET1.dgn



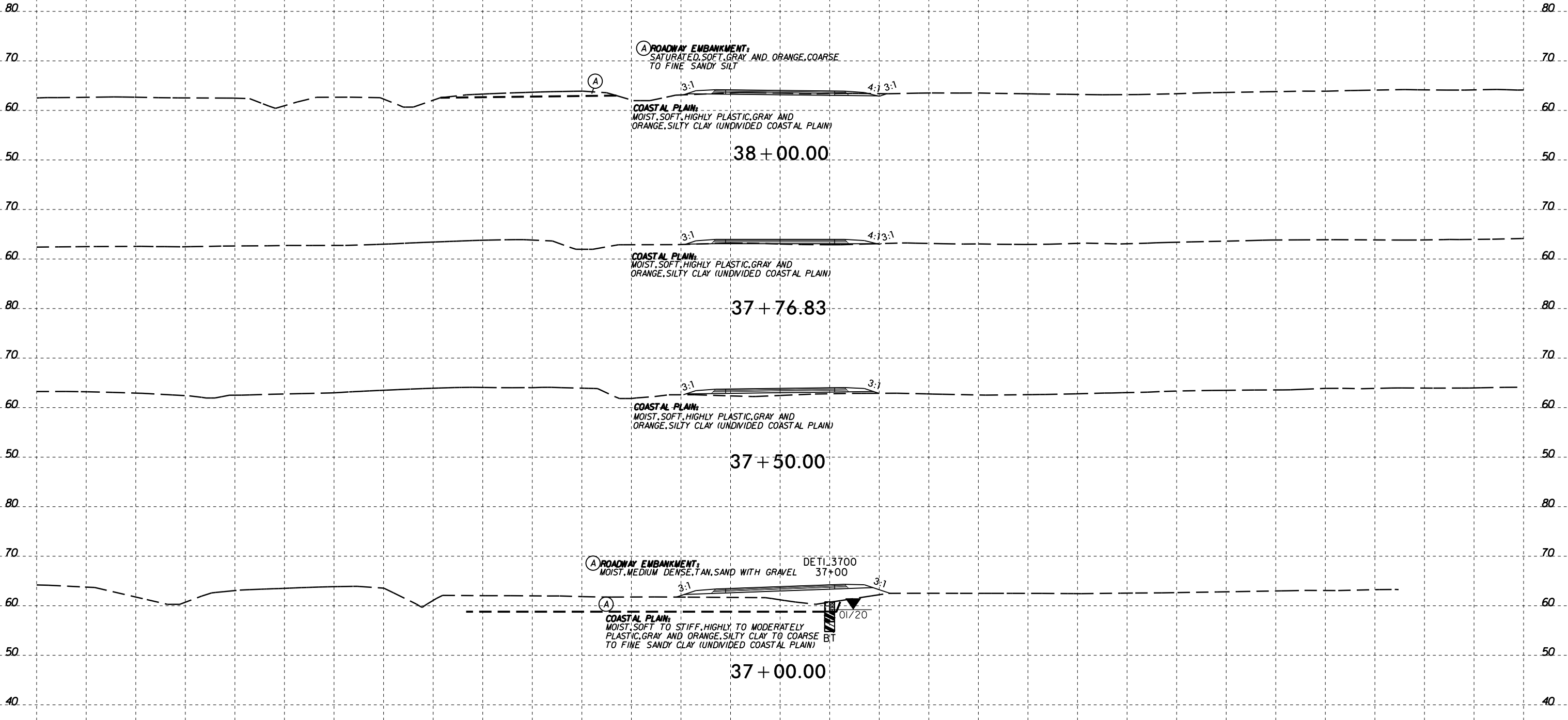


15-FEB-2021 16:05
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\R5819-R5820_GEO\RDW\CADD_GEO\TECH\XSEC\R5819-R5820_GEO_XSI_DET1.dgn
Wells - A1 KA211387





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



ROADWAY EMBANKMENT:
SATURATED, SOFT, GRAY AND ORANGE, COARSE
TO FINE SANDY SILT

COASTAL PLAIN:
MOIST, SOFT, HIGHLY PLASTIC, GRAY AND
ORANGE, SILTY CLAY (UNDIVIDED COASTAL PLAIN)

38 + 00.00

COASTAL PLAIN:
MOIST, SOFT, HIGHLY PLASTIC, GRAY AND
ORANGE, SILTY CLAY (UNDIVIDED COASTAL PLAIN)

37 + 76.83

COASTAL PLAIN:
MOIST, SOFT, HIGHLY PLASTIC, GRAY AND
ORANGE, SILTY CLAY (UNDIVIDED COASTAL PLAIN)

37 + 50.00

ROADWAY EMBANKMENT:
MOIST, MEDIUM DENSE, TAN, SAND WITH GRAVEL

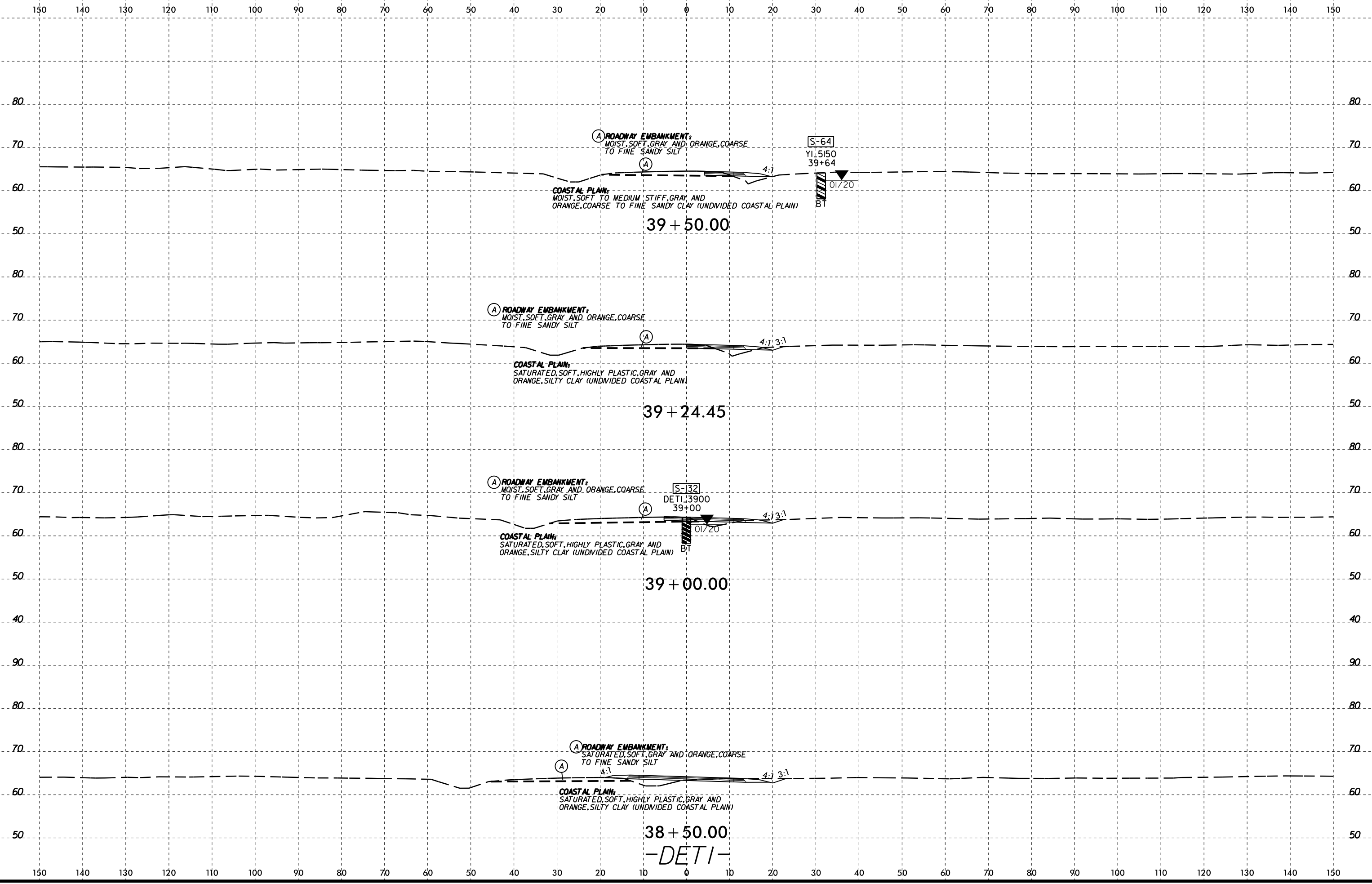
DETAIL: 3700
37+00

COASTAL PLAIN:
MOIST, SOFT TO STIFF, HIGHLY TO MODERATELY
PLASTIC, GRAY AND ORANGE, SILTY CLAY TO COARSE
TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

37 + 00.00

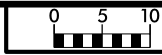
-DET1-

I:\FEB-2016\05
Washoe\GEO
TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO_XSI_DET1.dgn
Wells - A1 KA211387

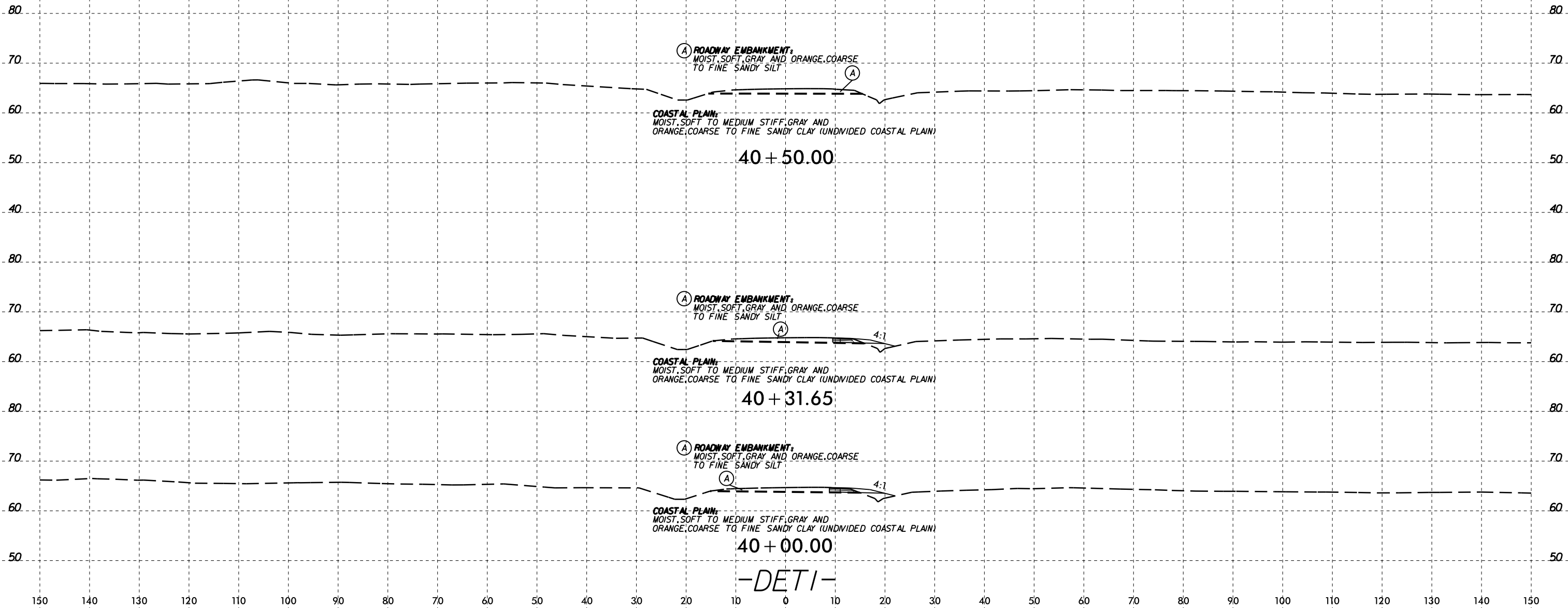


I:\FEB-2016\05
 W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XSI_DET1.dgn
 Wells - A1 KA211387

38+50.00
-DET1-



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



ROADWAY EMBANKMENT:
MOIST, SOFT, GRAY AND ORANGE, COARSE
TO FINE SANDY SILT

COASTAL PLAIN:
MOIST, SOFT TO MEDIUM STIFF, GRAY AND
ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

40 + 50.00

ROADWAY EMBANKMENT:
MOIST, SOFT, GRAY AND ORANGE, COARSE
TO FINE SANDY SILT

COASTAL PLAIN:
MOIST, SOFT TO MEDIUM STIFF, GRAY AND
ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

40 + 31.65

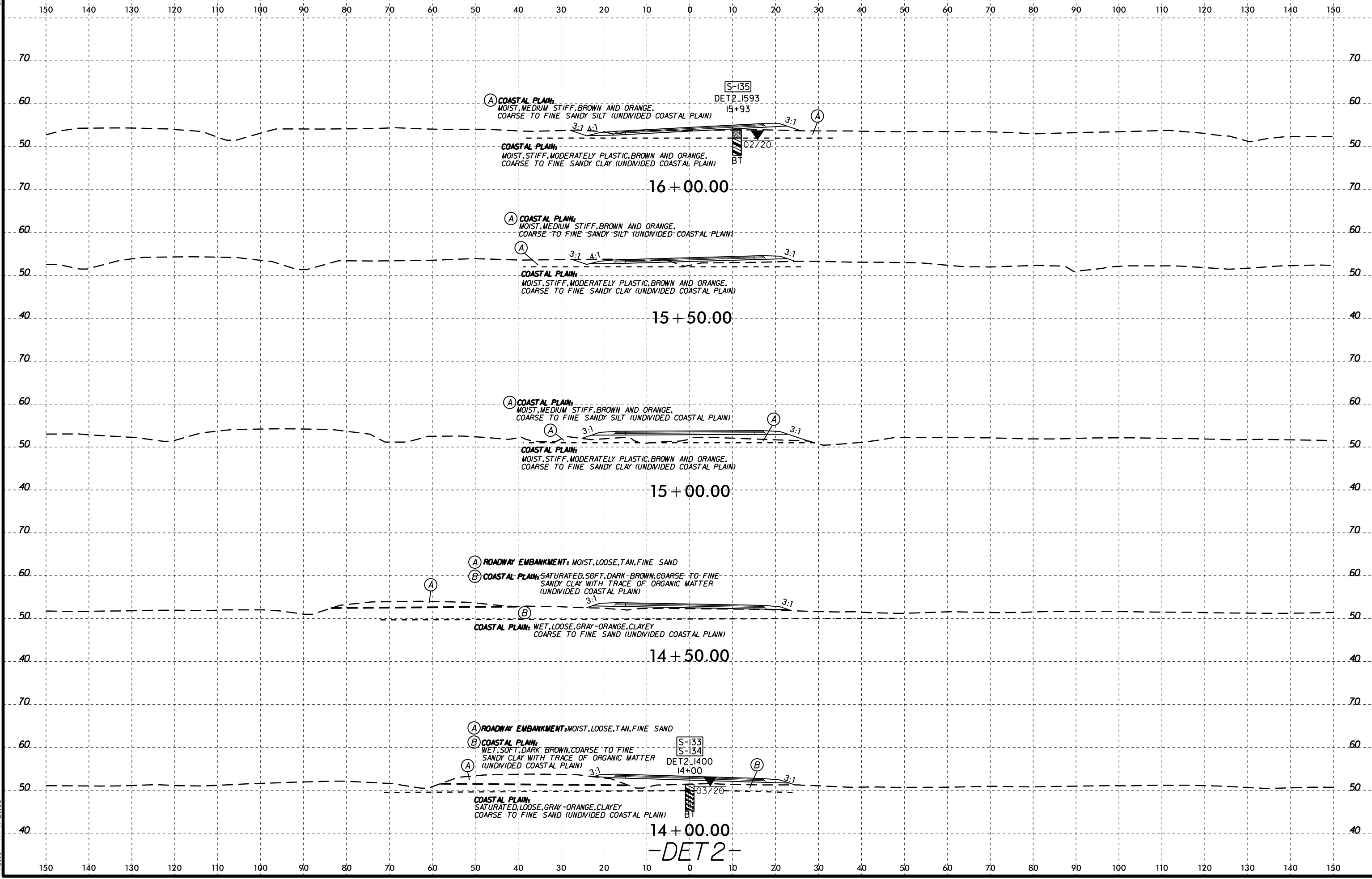
ROADWAY EMBANKMENT:
MOIST, SOFT, GRAY AND ORANGE, COARSE
TO FINE SANDY SILT

COASTAL PLAIN:
MOIST, SOFT TO MEDIUM STIFF, GRAY AND
ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

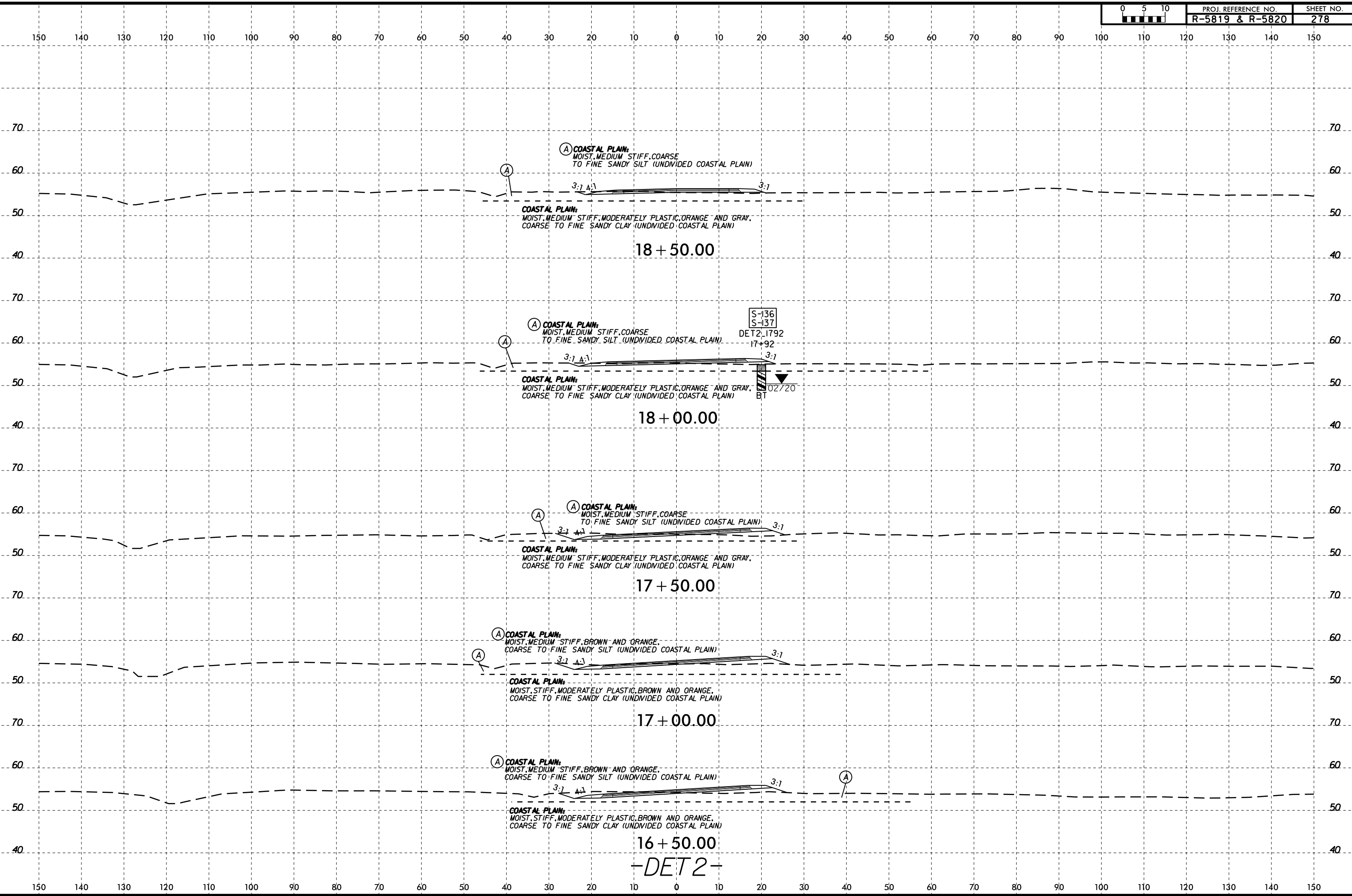
40 + 00.00

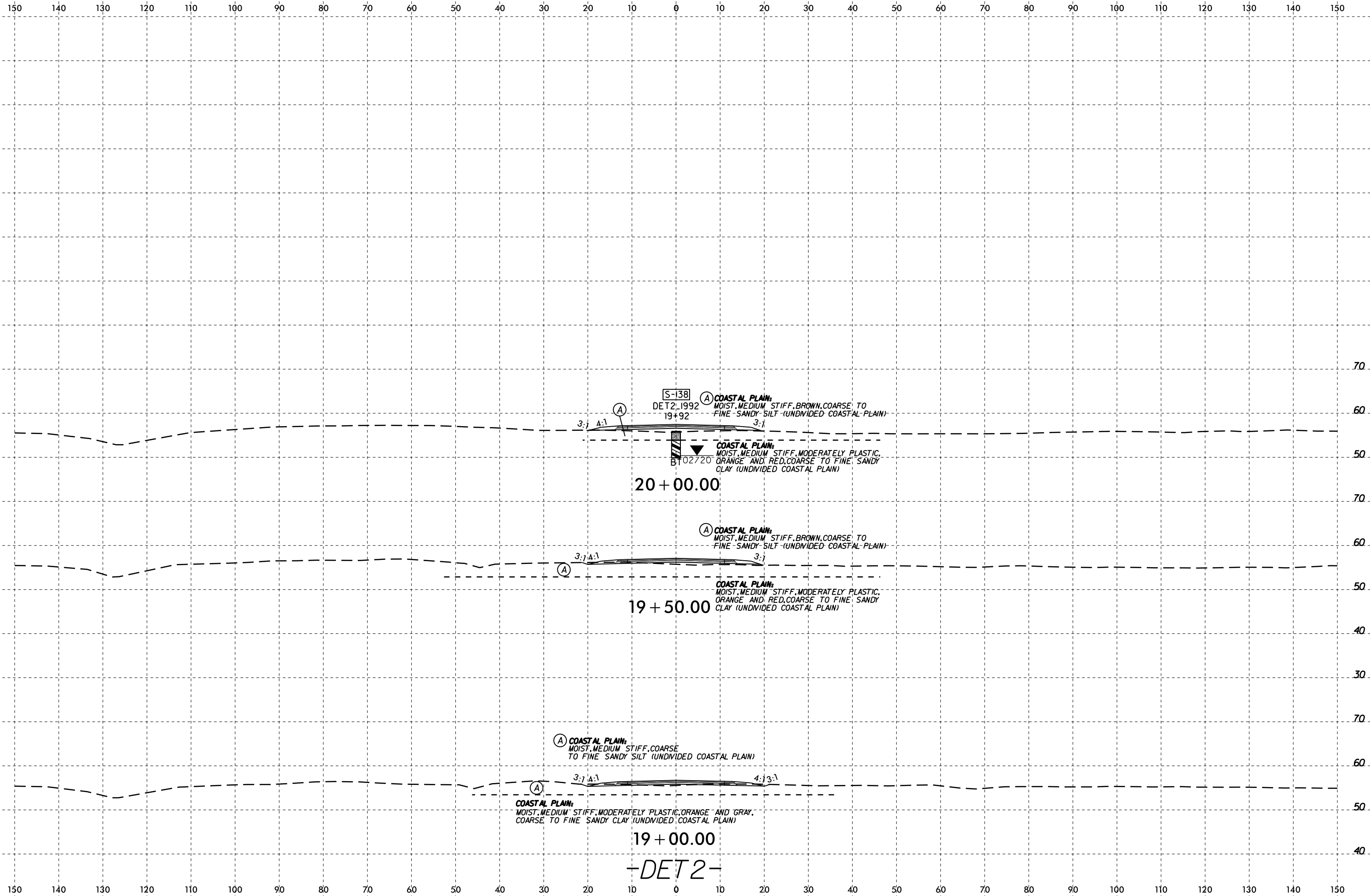
-DETI-

I:\FEB-2016\05
Washoe\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO_CADD\RDW\CADD_GEO\RDW\CADD_GEO\XSI_DETI.dgn
Wells - A1 KA211387



16+00.00
15+50.00
15+00.00
14+50.00
14+00.00
-DET2-

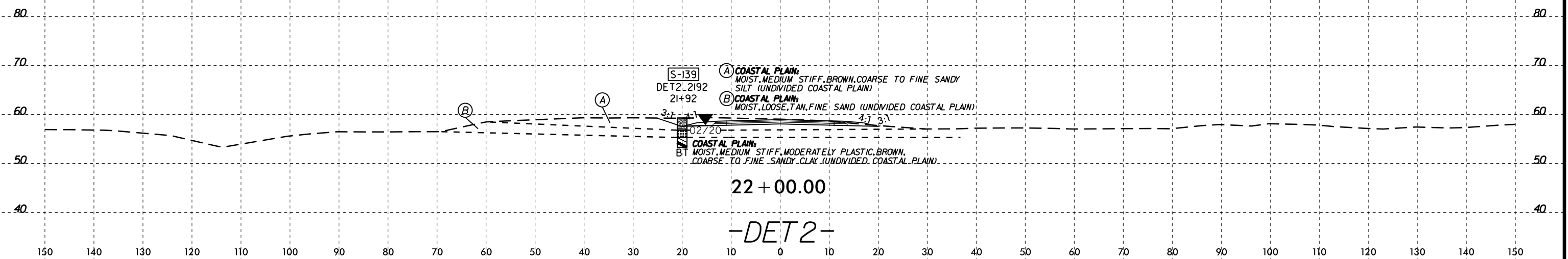






150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

I:\FEB-2016\05
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO\XSI_DET2.dgn



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

70

70

60

60

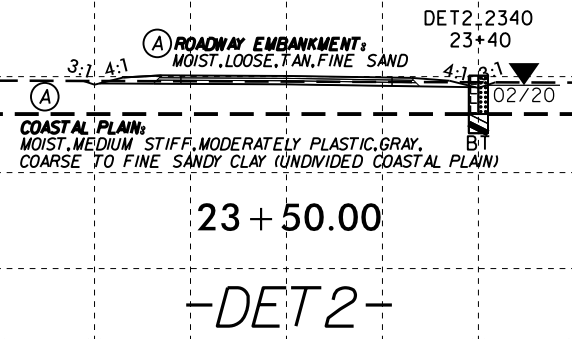
50

50

40

40

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

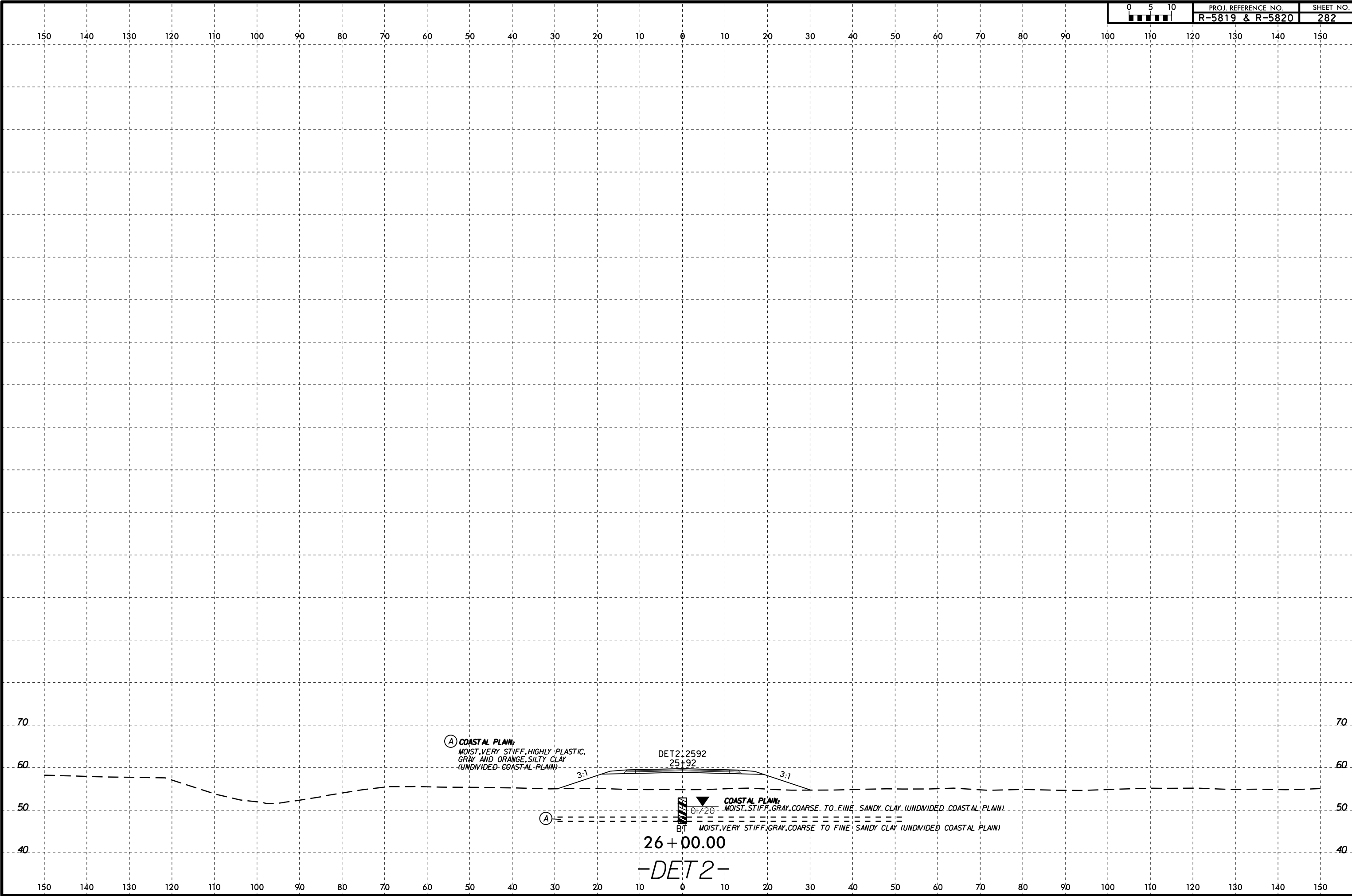


6/23/16

I:\FEB-2016\05
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942.024A R-5819 & R-5820 Roadway\Roadway\RS5819-R5820_GEO_RDW\CADD_GEO_RDW\RS5819-R5820_GEO_XSI_DET2.dgn
Wells - A1 KA211387



PROJ. REFERENCE NO.	SHEET NO.
R-5819 & R-5820	282



Ⓐ **COASTAL PLAIN,**
MOIST, VERY STIFF, HIGHLY PLASTIC,
GRAY AND ORANGE SILTY CLAY
(UNDIVIDED COASTAL PLAIN)

DET2:2592
25+92

Ⓐ

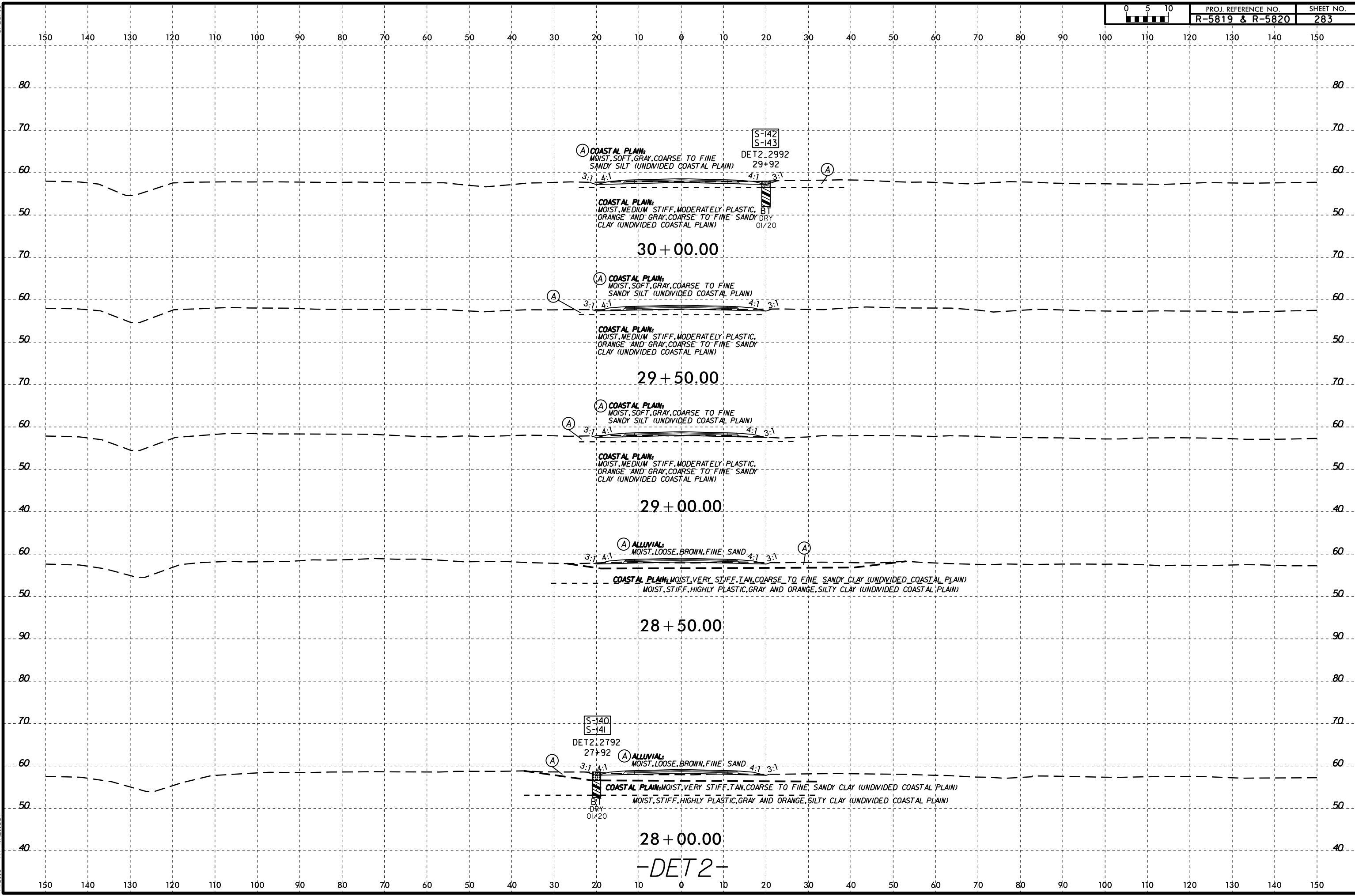
COASTAL PLAIN,
MOIST, STIFF, GRAY, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

BT
MOIST, VERY STIFF, GRAY, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

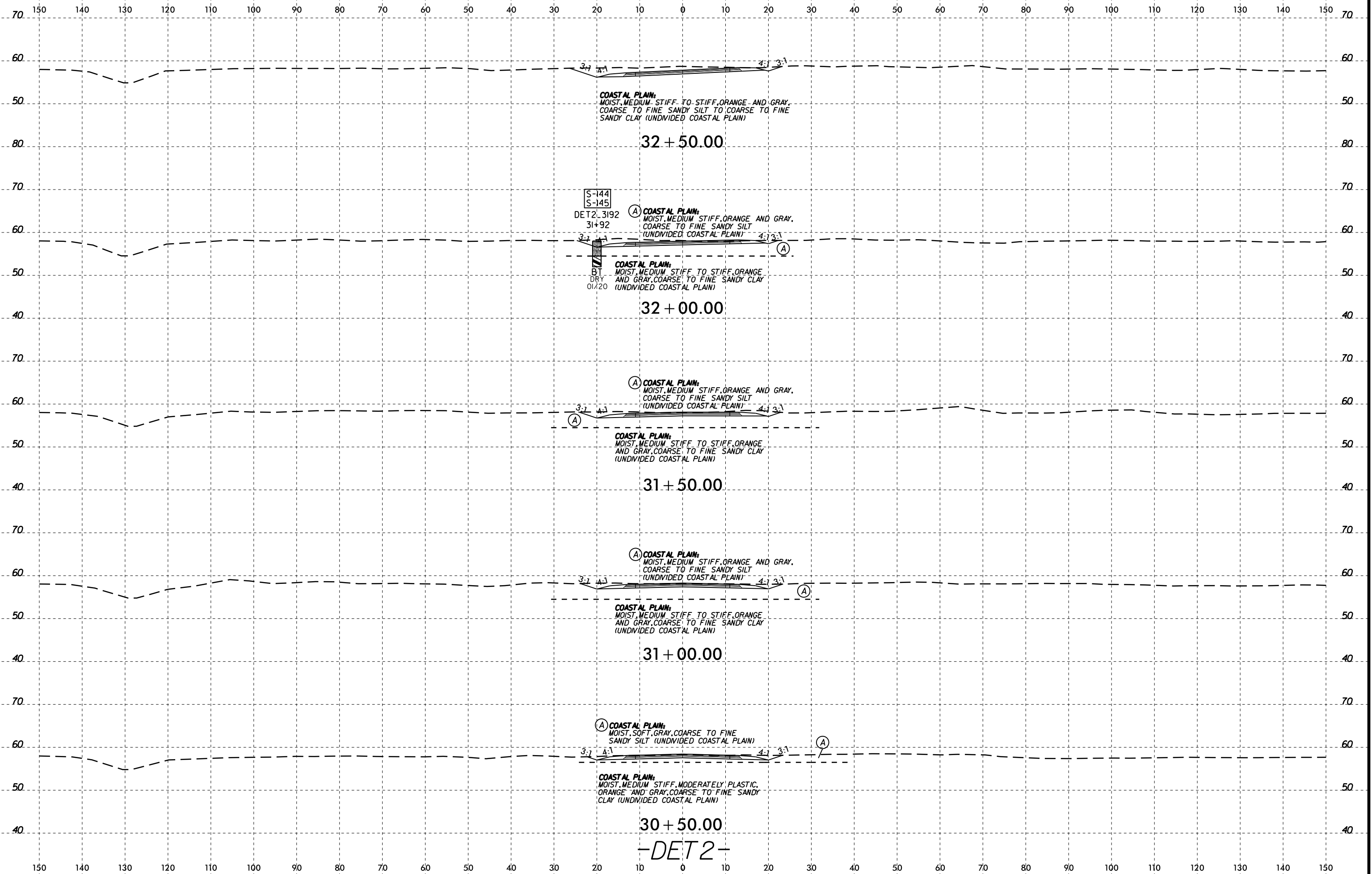
26 + 00.00

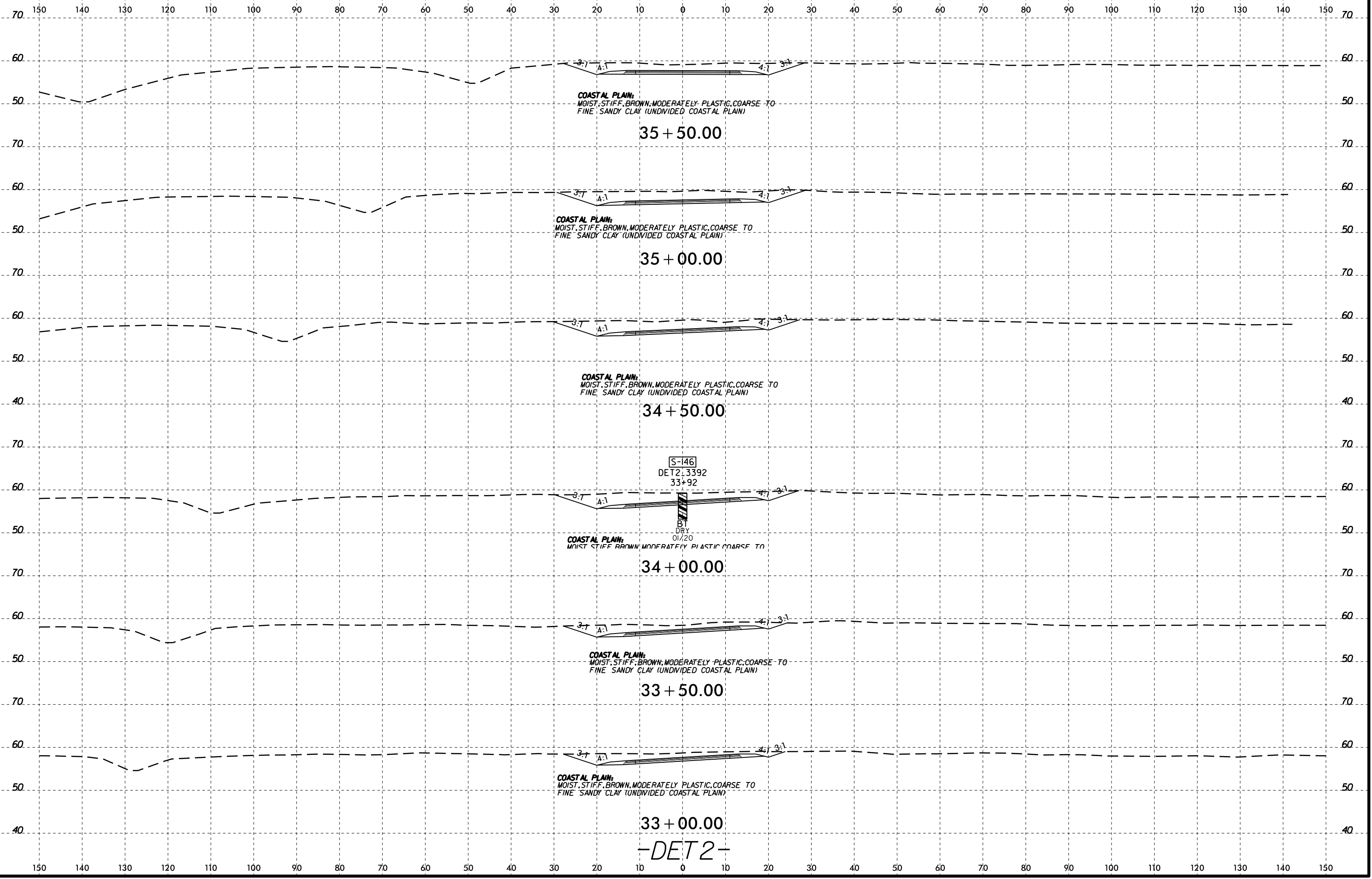
-DET2-

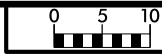
I:\FEB-2016\05
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\Roadway\R5819-R5820_GEO\RDW\CADD_GEO\RDW\CADD_GEO_XSI_DET2.dgn
Wells - A1 KA211387



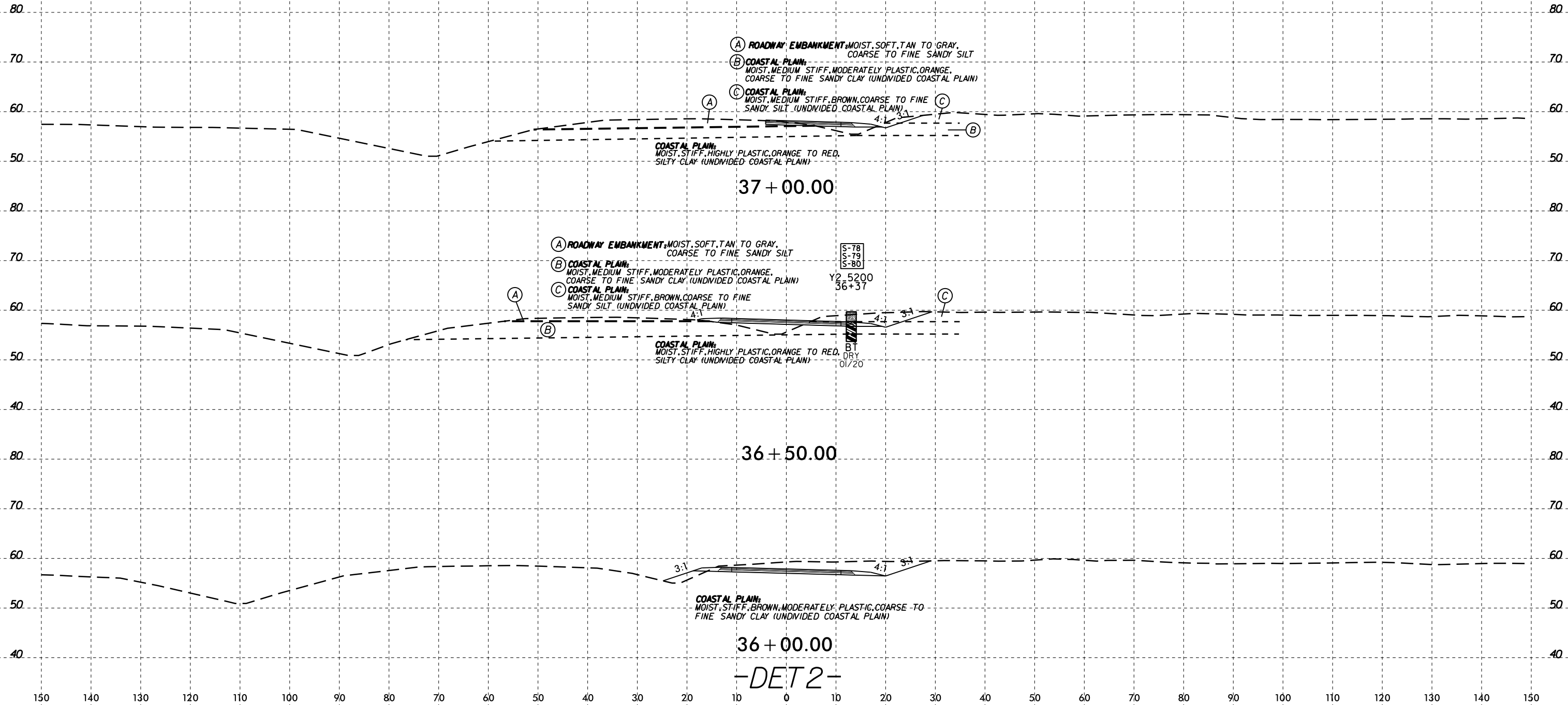
28 + 00.00
-DET2-







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



(A) ROADWAY EMBANKMENT: MOIST, SOFT, TAN TO GRAY, COARSE TO FINE SANDY SILT
 (B) COASTAL PLAIN: MOIST, MEDIUM STIFF, MODERATELY PLASTIC, ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)
 (C) COASTAL PLAIN: MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)
 COASTAL PLAIN: MOIST, STIFF, HIGHLY PLASTIC, ORANGE TO RED, SILTY CLAY (UNDIVIDED COASTAL PLAIN)

37 + 00.00

(A) ROADWAY EMBANKMENT: MOIST, SOFT, TAN TO GRAY, COARSE TO FINE SANDY SILT
 (B) COASTAL PLAIN: MOIST, MEDIUM STIFF, MODERATELY PLASTIC, ORANGE, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)
 (C) COASTAL PLAIN: MOIST, MEDIUM STIFF, BROWN, COARSE TO FINE SANDY SILT (UNDIVIDED COASTAL PLAIN)
 COASTAL PLAIN: MOIST, STIFF, HIGHLY PLASTIC, ORANGE TO RED, SILTY CLAY (UNDIVIDED COASTAL PLAIN)

S-78
S-79
S-80

Y2_5200
36+37

BT
DRY
01/20

36 + 50.00

COASTAL PLAIN: MOIST, STIFF, BROWN, MODERATELY PLASTIC, COARSE TO FINE SANDY CLAY (UNDIVIDED COASTAL PLAIN)

36 + 00.00

-DET2-

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

I:\FEB-2016\05
W:\shore\GEO\TECHNICAL\Projects\Active Projects\20190942_024A R-5819 & R-5820 Roadway\GEO\RDW\CADD_GEO\RDW\CADD_GEO\RDW\XSI_DET2.dgn
Tweiss - A1 KA211387

