

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-5014	1	65

CAUTION NOTICE

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

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

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

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

PERSONNEL

Lindsay Pugh

Ted Triantis

Bill Miller

INVESTIGATED BY Lee Stone, P.G.

DRAWN BY Lee Stone P.G.

CHECKED BY Steve Hudson, P.G.

SUBMITTED BY Lee Stone, P.G.

DATE October 2016

**ROADWAY
SUBSURFACE INVESTIGATION**

COUNTY DARE
PROJECT DESCRIPTION SR 1217 (COLINGTON RD.) FROM
DEAD END TO US 158 CROATAN HIGHWAY IN
KILL DEVIL HILLS

INVENTORY

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	11+00 to 240+00	4-20	21-37
-Y1-	12+18 to 13+85	20	-
-Y2-	10+15 to 11+57	8	38
-Y3-	11+00 to 12+78	8	38
-Y4-	10+15 to 11+73	11	38
-Y5-	10+70 to 12+74	11	38
-Y1A-	11+70 to 13+63	7	39
-Y3A-	11+60 to 12+81	9	39
-Y3B-	11+92 to 12+21	10	39
-Y3C-	10+00 to 11+00	10	39
-MUP-	10+11 to 37+55	15-18	40-41

LINE	STATION	CROSS SECTIONS
-L-	53+50 to 56+98	42-45
-L-	66+00 to 68+50	45-48
-L-	71+50 to 74+00	49-51
-L-	76+50	52
-L-	85+00 to 87+00	52-54
-L-	101+00 to 104+00	54-57
-L-	115+50 to 117+00	58-59
-L-	130+50 to 133+00	60-61
-L-	163+00 to 177+00	62-71
-Y3A-	11+65 to 12+50	72

REFERENCE: R-5014

PROJECT: 41162



DocuSigned by:

Joseph L. Stone

12/2/2016

SIGNATURE	DATE	SIGNATURE	DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT
SUBSURFACE INVESTIGATION
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																																																																																																																																																										
<p>SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p>										<p>WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.</p>										<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:</p>										<p>ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOADED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS, MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SROD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>																																																																																																																																																																										
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<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</td> <td>- SATURATED - (SAT.)</td> <td>USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE</td> </tr> <tr> <td>PL - PLASTIC LIMIT</td> <td>- WET - (W)</td> <td>SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE</td> </tr> <tr> <td>OM - OPTIMUM MOISTURE SHRINKAGE LIMIT</td> <td>- MOIST - (M)</td> <td>SOLID; AT OR NEAR OPTIMUM MOISTURE</td> </tr> <tr> <td>SL - SHRINKAGE LIMIT</td> <td>- DRY - (D)</td> <td>REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE</td> </tr> </table>										SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION	LL - LIQUID LIMIT	- SATURATED - (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE	PL - PLASTIC LIMIT	- WET - (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE	OM - OPTIMUM MOISTURE SHRINKAGE LIMIT	- MOIST - (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE	SL - SHRINKAGE LIMIT	- DRY - (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE	<p>ORGANIC MATERIAL TRACE OF ORGANIC MATTER 2 - 3% LITTLE ORGANIC MATTER 3 - 5% MODERATELY ORGANIC 5 - 10% HIGHLY ORGANIC > 10%</p> <p>GRANULAR SOILS 2 - 3% 3 - 5% 5 - 12% > 12%</p> <p>SILT - CLAY SOILS 3 - 5% 5 - 12% 12 - 20% > 20%</p> <p>OTHER MATERIAL TRACE 1 - 10% LITTLE 10 - 20% SOME 20 - 35% HIGHLY 35% AND ABOVE</p>										<p>ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY</p>										<p>VERY HARD - CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD - CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY HARD - CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM HARD - CAN BE 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. SOFT - 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. VERY SOFT - CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.</p>																																																																																																																																																											
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PLASTICITY										EQUIPMENT USED ON SUBJECT PROJECT										FRACTURE SPACING										BEDDING																																																																																																																																																																										
<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	<p>DRILL UNITS: <input type="checkbox"/> CME-45C <input type="checkbox"/> CME-55 <input type="checkbox"/> CME-550 <input type="checkbox"/> VANE SHEAR TEST <input type="checkbox"/> PORTABLE HOIST <input checked="" type="checkbox"/> D-50</p> <p>ADVANCING TOOLS: <input type="checkbox"/> CLAY BITS <input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER <input checked="" type="checkbox"/> 8" HOLLOW AUGERS <input checked="" type="checkbox"/> HARD FACED FINGER BITS <input type="checkbox"/> TUNG-CARBIDE INSERTS <input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER <input checked="" type="checkbox"/> TRICONE 2 7/8" STEEL TEETH <input type="checkbox"/> TRICONE " TUNG-CARB. <input type="checkbox"/> CORE BIT</p> <p>HAMMER TYPE: <input checked="" type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL</p> <p>CORE SIZE: <input type="checkbox"/> -B <input type="checkbox"/> -H <input type="checkbox"/> -N</p> <p>HAND TOOLS: <input type="checkbox"/> POST HOLE DIGGER <input checked="" type="checkbox"/> HAND AUGER <input type="checkbox"/> SOUNDING ROD <input type="checkbox"/> VANE SHEAR TEST <input checked="" type="checkbox"/> SOIL PUSH PROBE</p>										<p>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</p>										<p>VERY THICKLY BEDDED 4 FEET THICKLY BEDDED 1.5 - 4 FEET THINLY BEDDED 0.16 - 1.5 FEET VERY THINLY BEDDED 0.03 - 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THINLY LAMINATED < 0.008 FEET</p>																																																																																																																																																											
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COLOR										INDURATION										ELEVATION: FEET										NOTES:																																																																																																																																																																										
<p>DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-BROWN). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.</p>										<p>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.</p>										<p>ELEVATION: _____ FEET</p>										<p>U.C.P. - UNDIVIDED COASTAL PLAIN NM - GROUNDWATER NOT MEASURED (SEE SHEET 76 FOR EXAMPLE) ~ - APPROXIMATE LIMIT OF ORGANIC SOILS</p>																																																																																																																																																																										

09/08/19

See Sheet 1-A For Index of Sheets

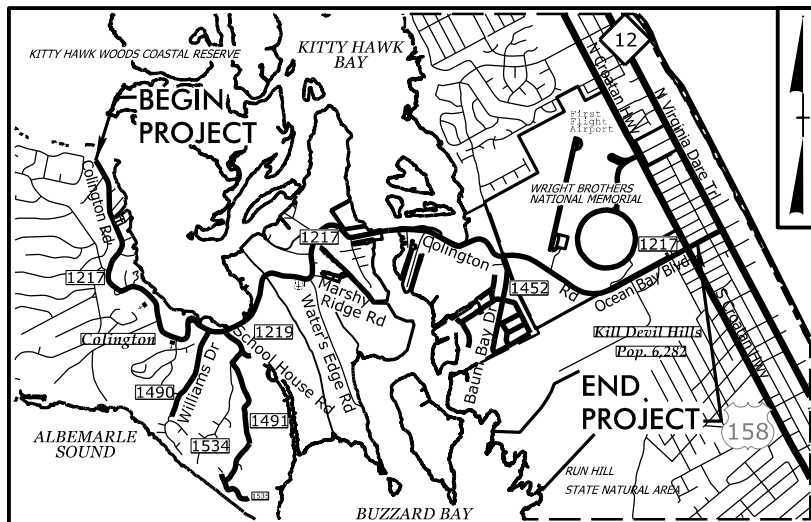
STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS DARE COUNTY

**APPROVED
25% PLANS**

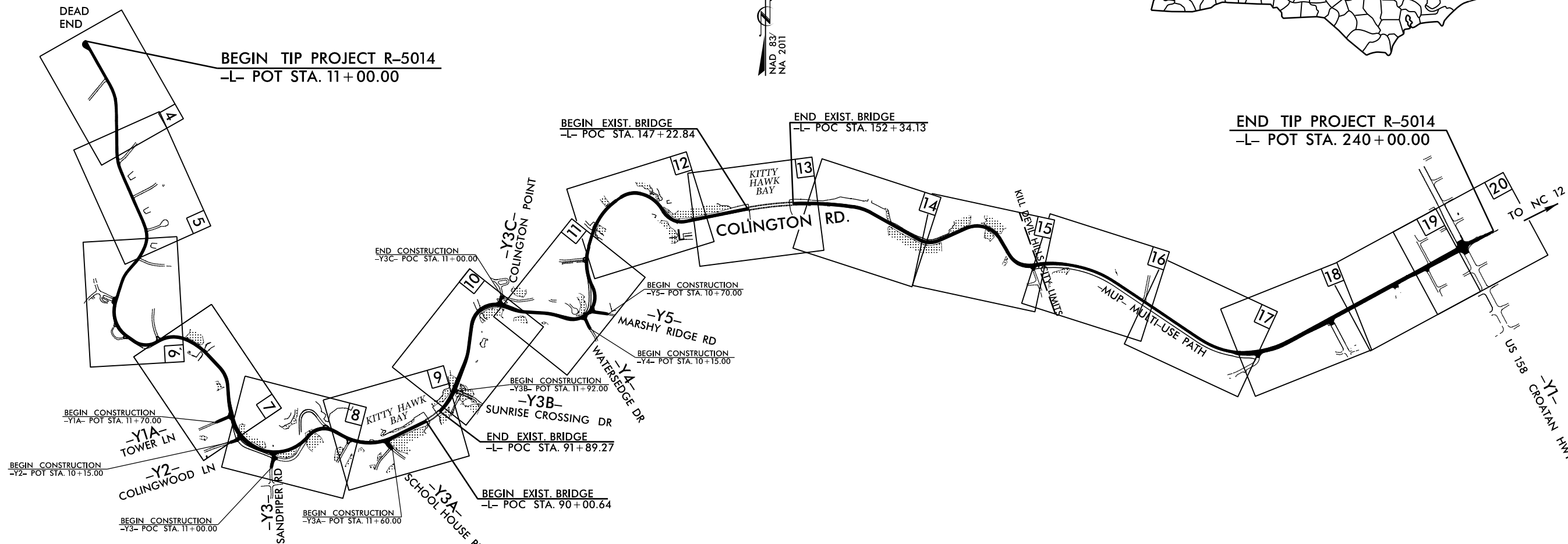
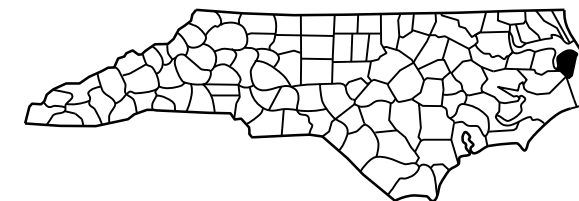
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-5014	3	65
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
41162.1.1	STP-1217(6)	PE	

**INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION**

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



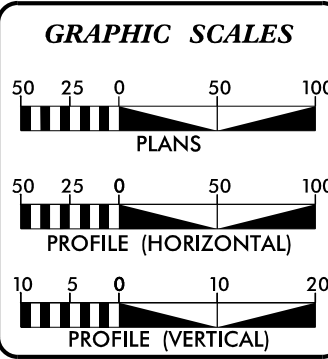
VICINITY MAP



THERE IS A DESIGN EXCEPTION FOR HORIZONTAL CURVE RADIUS AND ASSOCIATED HORIZONTAL STOPPING SIGHT DISTANCE.
THERE IS NO CONTROL OF ACCESS ON THIS PROJECT.
A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF KILL DEVIL HILLS.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD

TIP PROJECT: R-5014

CONTRACT:



DESIGN DATA

ADT 2018 =	13,970
ADT 2038 =	19,300
DHV =	11 %
D =	65 %
T =	3 % *
V =	40 MPH
* TTST = 1% DUAL 2%	
FUNC CLASS = LOCAL STATEWIDE TIER	

PROJECT LENGTH

TOTAL LENGTH ROADWAY TIP PROJECT R-5014 = 4.337 MILES

Prepared in the Office of:

CALYX
ENGINEERS + CONSULTANTS

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
MAY 19, 2017

LETTING DATE:
NOVEMBER 20, 2018

NCDOT CONTACT: GARY LOVERING, PE
ROADWAY DESIGN - PROJECT ENGINEER

JOHNNY BANKS
CALYX E & C
PROJECT MANAGER

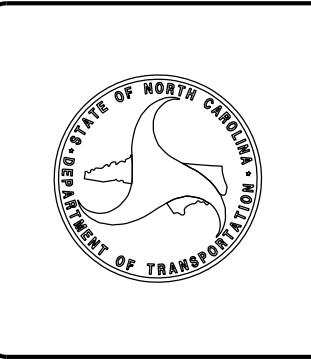
STEPHEN C. BROWDE, PE
CALYX E & C
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



28-OCT-2016 08:30 C:\Projects\NCDOT\R5014_GEO_RDWY\CADD_GEO\TECH\Site&Sub\R5014_Rdy_TSH.dgn listone AT MICROSTATIONPC2

October 28, 2016

WBS Number: 41162.1.1
 TIP Number: R-5014
 F.A .Project: STP-1217(6)
 County: Dare
 Description: SR 1217 (Colington Rd.) from Dead End to US 158 Croatan Hwy. in Kill Devil Hills
 CATLIN Number: 216070

SUBJECT: Geotechnical Inventory Report

Project Description

This project begins at the dead end of SR 1217 (Colington Rd.) and extends east along existing SR 1217 for approximately 4.3 miles to the intersection of SR 1217 and US 158. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork was conducted in August, September, and October of 2016. SPT, hand auger, and push probe borings were completed at various offsets along the project corridor. Representative soil samples were collected for visual classification in the field and for laboratory analysis.

The following alignments were investigated. Subsurface profiles and selected cross sections of these alignments are included in this report.

<u>Line</u>	<u>Station(±)</u>
-L-	11+00 to 240+00
-Y1-	12+18 to 13+85
-Y2-	10+15 to 11+57
-Y3-	11+00 to 12+78
-Y4-	10+15 to 11+73
-Y5-	10+70 to 12+74
-Y1A-	11+70 to 13+63
-Y3A-	11+60 to 12+81
-Y3B-	11+92 to 12+21
-Y3C-	10+00 to 11+00
-MUP-	10+11 to 37+55

Areas of Special Geotechnical Interest

1) The entire project exhibits seasonal high groundwater except the following sections:

<u>Line</u>	<u>Station(±)</u>
-L-	59+50 to 65+50
-L-	69+00 to 71+00
-L-	78+00 to 80+00
-L-	177+00 to 183+00

<u>Line</u>	<u>Station(±)</u>
-L-	229+00 to 240+00
-Y2-	10+15 to 11+34
-Y3-	11+00 to 12+00

2) The following sections contain organic soils that have the potential to cause embankment/subgrade and or slope stability problems during construction.

<u>Line</u>	<u>Station(±)</u>
-L-	53+85 to 55+75
-L-	56+25 to 56+75
-L-	57+74 to 59+08
-L-	66+45 to 68+47
-L-	71+56 to 73+80
-L-	76+01 to 77+80
-L-	85+25 to 95+82
-L-	101+87 to 102+25
-L-	115+64 to 116+85
-L-	131+28 to 132+75
-L-	163+08 to 173+60
-L-	174+75 to 176+85
-Y3A-	11+60 to 12+81
-Y3B-	11+92 to 12+21

Physiography and Geology

This project corridor is located within the Coastal Plain Physiographic Province. Topography along the project is nearly flat to gently sloping. Natural ground elevations ranged from sea level to 13± feet above sea level.

Surficial soils in this area are generally classified as undivided coastal plain sediments.

Ground Water

Ground water data was collected in August, September, and October 2016, and was found at elevations ranged from 1± feet below sea level to 2± feet above sea level.

Soils

Soils encountered within this project area have been divided into three categories, undivided coastal plain soils, artificial fill, and roadway embankment.

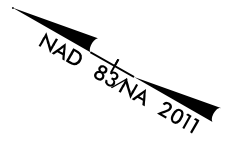
Soils identified as undivided coastal plain are composed of 6 or more feet of very loose to medium dense sand (A-2-4, A-3); with 1± to 6 ± feet of very soft muck, very loose moderately organic sand, very loose sand with little organic content and moderately organic silty clay (A-7-5.) Samples taken within these organic soils returned organic percentages ranging from 4% to 79%.

Roadway embankment soils were found along the existing SR 1217 corridor and associated intersecting side roads. Where encountered it was composed of 1± to 15± feet of very loose sand (A-2-4, A-3).

Soils identified as artificial fill were primarily comprised of less than 2 feet of loose to medium dense sand with gravel (A-3, A-1-b.)

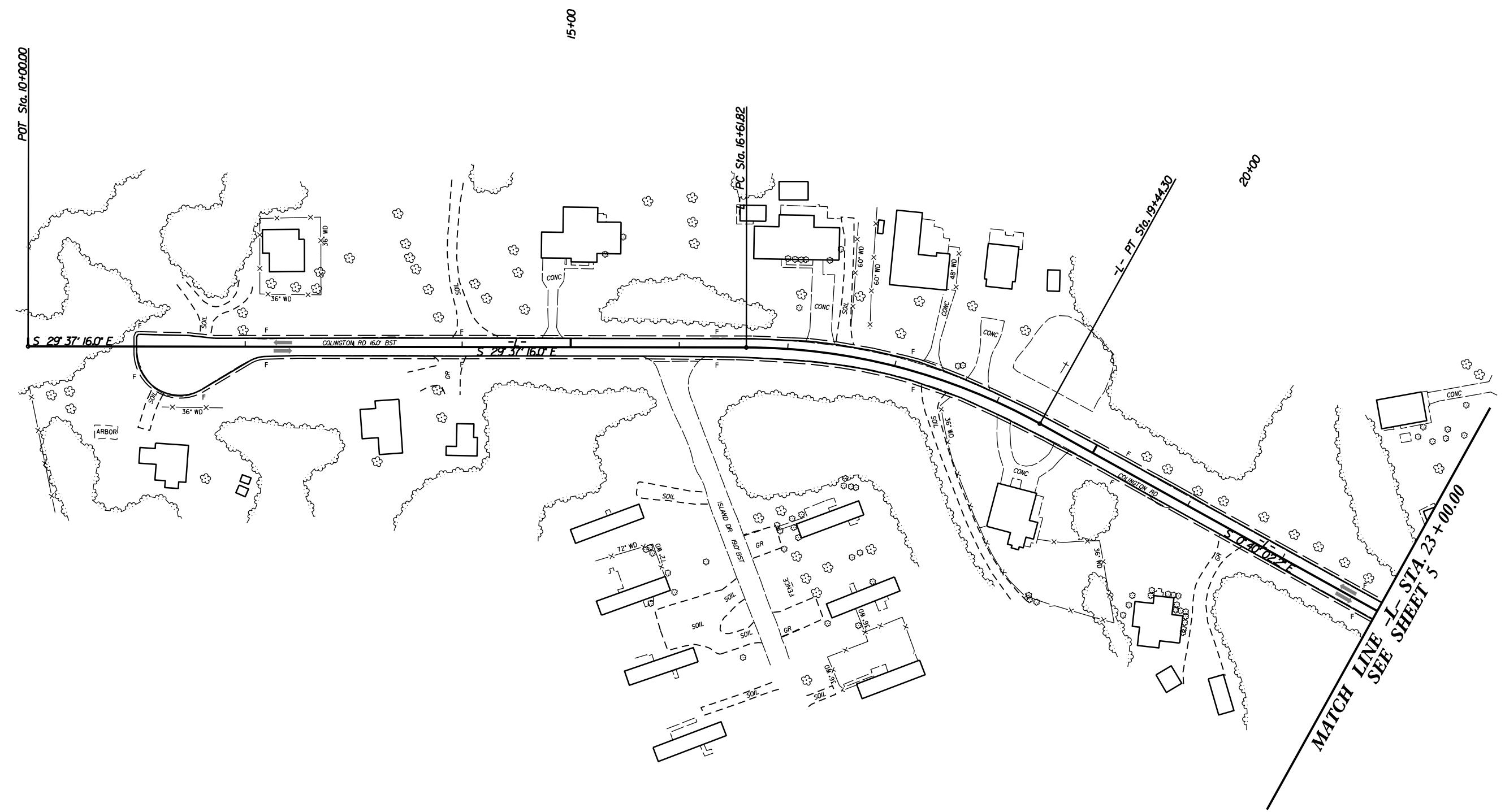
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R-5014	4
RW SHEET NO.	
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L-
 PI Sta 18+06.15
 $\Delta = 28^{\circ} 57' 13.8" (RT)$
 $D = 10' 15" 00.0"$
 $L = 282.48'$
 $T = 144.32'$
 $R = 558.98'$
 SE = EXIST.
 V = EXIST.

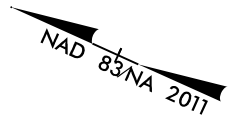


REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-5014	5
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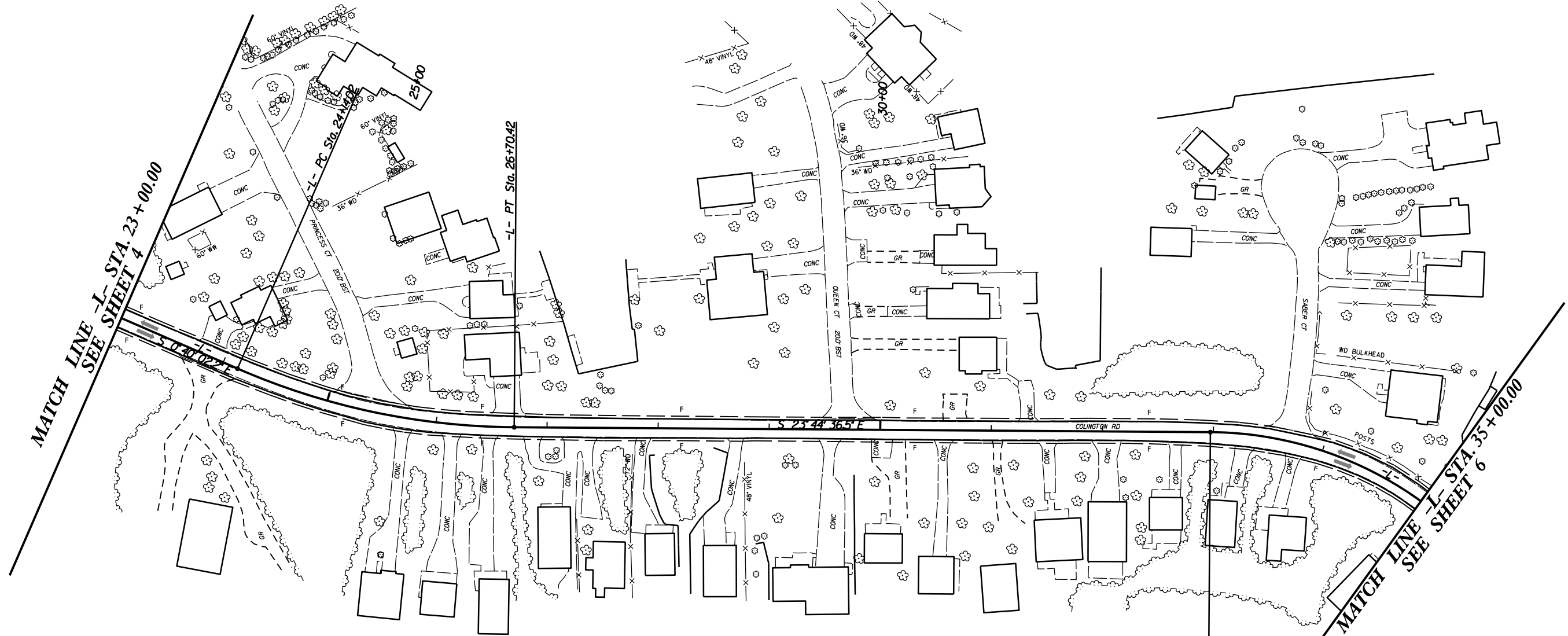


-L-

PI Sta 25+43.98	PI Sta 34+44.90
$\Delta = 23^{\circ} 04' 34.3" (LT)$	$\Delta = 48^{\circ} 32' 06.7" (RT)$
$D = 9' 00" 00.0"$	$D = 17' 30" 00.0"$
$L = 256.40'$	$L = 277.34'$
$T = 129.96'$	$T = 147.61'$
$R = 636.62'$	$R = 327.40'$
SE = EXIST.	SE = EXIST.
V = EXIST.	V = EXIST.

REVISIONS

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 1:1



MATCH LINE -L- STA. 23+00.00
SEE SHEET 4

MATCH LINE -L- STA. 35+00.00
SEE SHEET 6

-L- PC Sta. 32+97.29

-L- PT Sta. 26+70.42

S 23° 44' 36.5" E

COLINGTON RD

SHERIFF CT

QUEEN CT

PRINCESS CT

25+00

30+00

POSTS

WD BULKHEAD

36" WD

36" WD

36" WD

48" VINYL

60" VINYL

60" VINYL

60" VINYL

60" VINYL

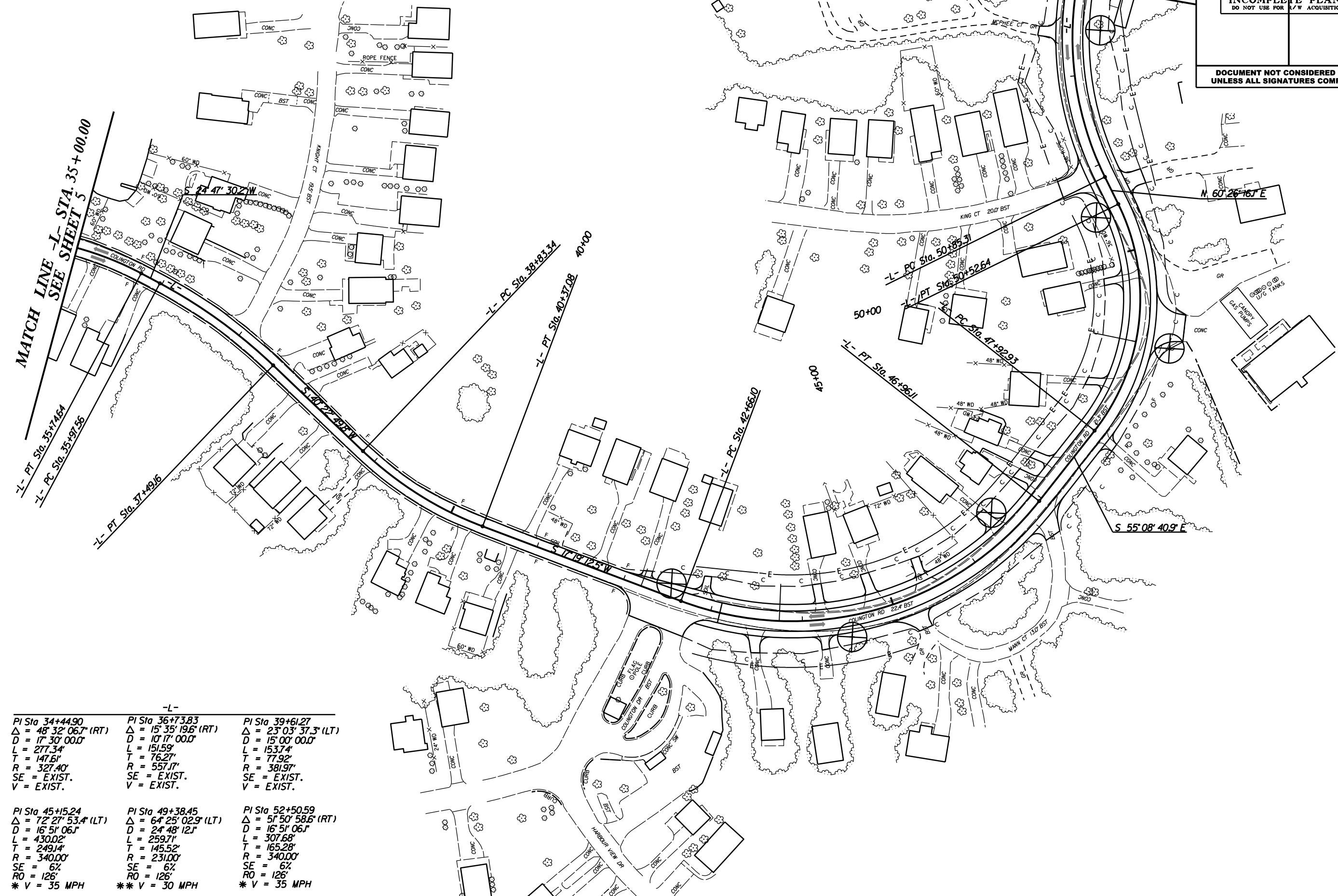
60" VINYL

PROJECT REFERENCE NO. R-5014	SHEET NO. 6
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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MATCH LINE -L- STA. 53+00.00
SEE SHEET 7

MATCH LINE -L- STA. 35+00.00
SEE SHEET 5

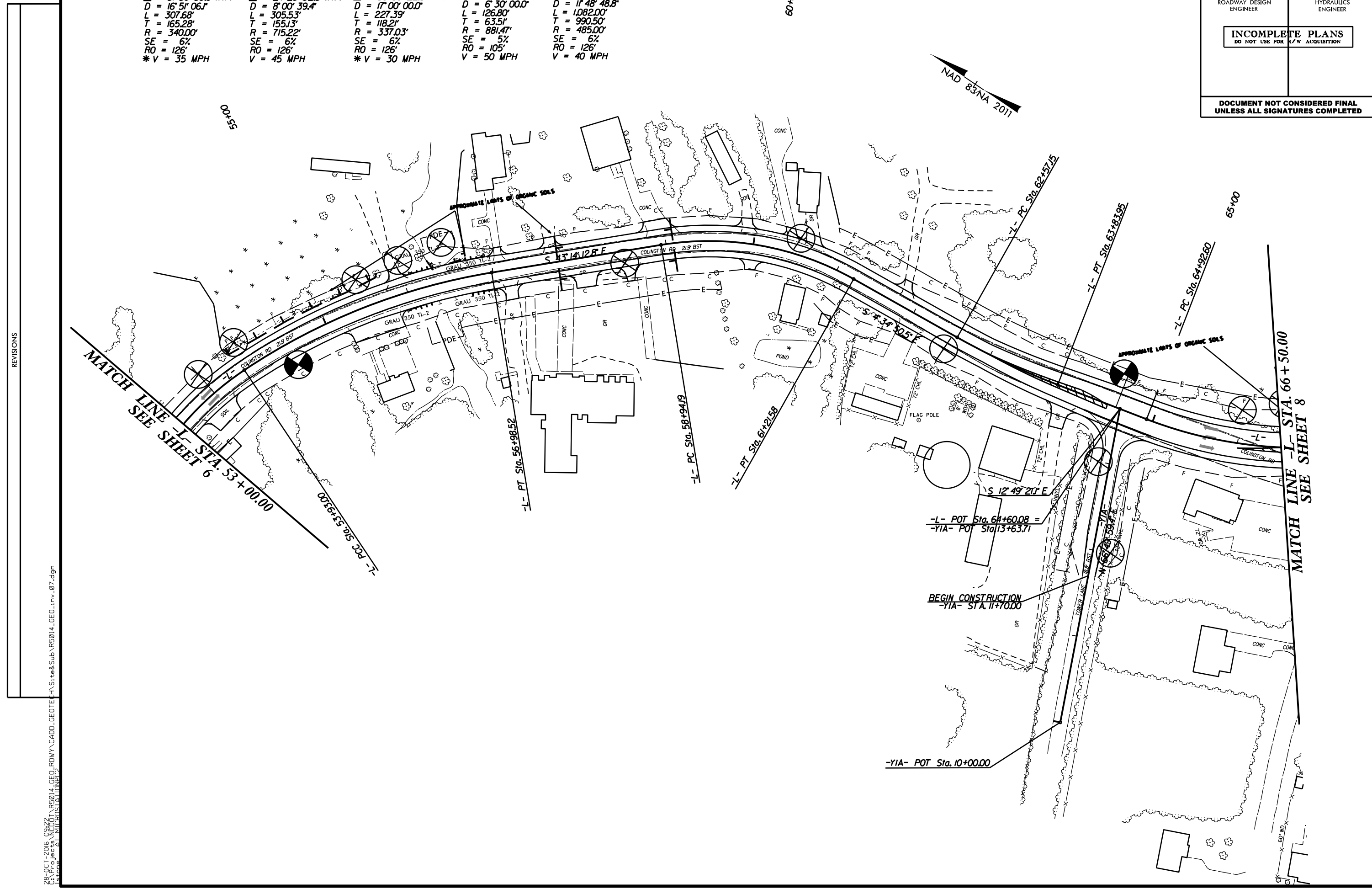


-L-		
PI Sta 34+44.90 Δ = 48° 32' 06.7" (RT) D = 17' 30' 00.0" L = 277.34' T = 147.61' R = 327.40' SE = EXIST. V = EXIST.	PI Sta 36+73.83 Δ = 15° 35' 19.6" (RT) D = 10' 17' 00.0" L = 151.59' T = 76.27' R = 557.17' SE = EXIST. V = EXIST.	PI Sta 39+61.27 Δ = 23° 03' 37.3" (LT) D = 15' 00' 00.0" L = 153.74' T = 77.92' R = 381.97' SE = EXIST. V = EXIST.
PI Sta 45+15.24 Δ = 72° 27' 53.4" (LT) D = 16' 51' 06.1" L = 430.02' T = 249.14' R = 340.00' SE = 6% RO = 126' * V = 35 MPH	PI Sta 49+38.45 Δ = 64° 25' 02.9" (LT) D = 24' 48' 12.1" L = 259.71' T = 145.52' R = 231.00' SE = 6% RO = 126' ** V = 30 MPH	PI Sta 52+50.59 Δ = 51° 50' 58.6" (RT) D = 16' 51' 06.1" L = 307.68' T = 165.28' R = 340.00' SE = 6% RO = 126' * V = 35 MPH

REVISIONS
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PROJECT REFERENCE NO.	SHEET NO.
R-5014	7
RW SHEET NO.	
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INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
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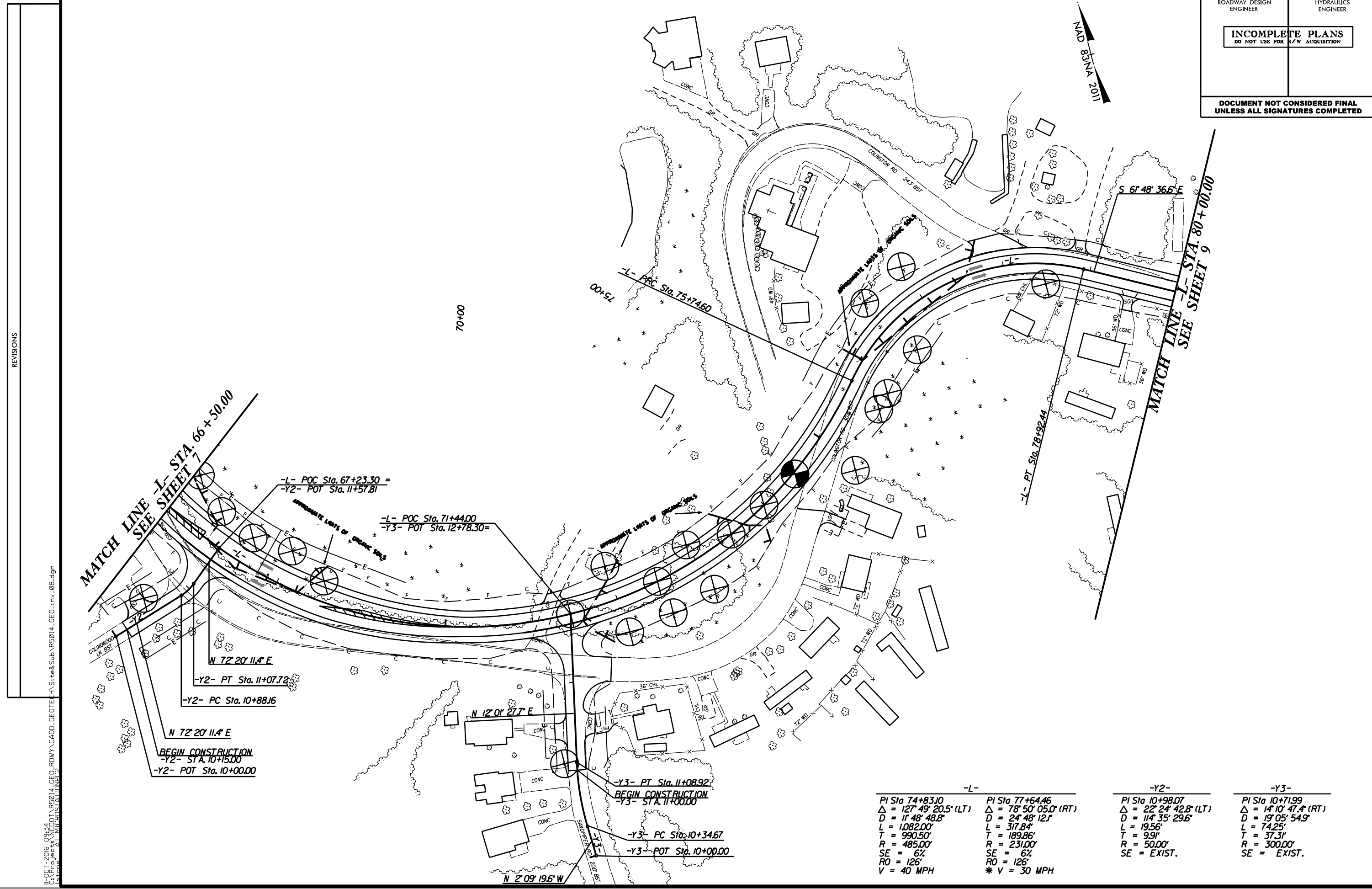
-L-				
PI Sta 52+50.59 Δ = 51° 50' 58.6" (RT) D = 16° 51' 06.1" L = 307.68' T = 165.28' R = 340.00' SE = 6% RO = 126' * V = 35 MPH	PI Sta 55+48.13 Δ = 24° 28' 32.5" (RT) D = 8° 00' 39.4" L = 305.53' T = 155.13' R = 715.22' SE = 6% RO = 126' V = 45 MPH	PI Sta 60+12.41 Δ = 38° 39' 22.3" (RT) D = 17° 00' 00.0" L = 227.39' T = 118.21' R = 337.03' SE = 6% RO = 126' * V = 30 MPH	PI Sta 63+20.66 Δ = 8° 14' 30.6" (LT) D = 6° 30' 00.0" L = 126.80' T = 63.51' R = 881.47' SE = 5% RO = 105' V = 50 MPH	PI Sta 74+83.10 Δ = 127° 49' 20.5" (LT) D = 11° 48' 48.8" L = 1082.00' T = 990.50' R = 485.00' SE = 6% RO = 126' V = 40 MPH



REVISIONS

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PROJECT REFERENCE NO. R-5014	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	



REVISIONS

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MATCH LINE -L- STA. 66+50.00
 SEE SHEET 7

-L- POC Sta. 67+23.30 =
 -Y2- POT Sta. 11+57.81

APPROXIMATE LIMITS OF ORIGINAL STAG

-L- POC Sta. 71+44.00
 -Y3- POT Sta. 12+78.30 =

N 72° 20' 11.4" E

-Y2- PT Sta. 11+07.72

-Y2- PC Sta. 10+88.16

N 72° 20' 11.4" E

BEGIN CONSTRUCTION
 -Y2- STA. 10+15.00
 -Y2- POT Sta. 10+00.00

-L- POC Sta. 75+74.60

N 72° 20' 11.4" E

-Y2- PT Sta. 11+07.72

-Y2- PC Sta. 10+88.16

BEGIN CONSTRUCTION
 -Y2- STA. 10+15.00
 -Y2- POT Sta. 10+00.00

-Y3- PT Sta. 11+08.92
BEGIN CONSTRUCTION
 -Y3- STA. 11+00.00

-Y3- PC Sta. 10+34.67
 -Y3- POT Sta. 10+00.00

-L-	-Y2-	-Y3-
PI Sta 74+83.10	PI Sta 10+98.07	PI Sta 10+71.99
$\Delta = 127^{\circ} 49' 20.5" (LT)$	$\Delta = 22^{\circ} 24' 42.8" (LT)$	$\Delta = 14^{\circ} 10' 47.4" (RT)$
D = 11' 48' 48.8"	D = 114' 35' 29.6"	D = 19' 05' 54.9"
L = 1082.00'	L = 19.56'	L = 74.25'
T = 990.50'	T = 9.91'	T = 37.31'
R = 485.00'	R = 50.00'	R = 300.00'
SE = 6%	SE = EXIST.	SE = EXIST.
RO = 126'		
V = 40 MPH	* V = 30 MPH	

N 2° 09' 19.6" W

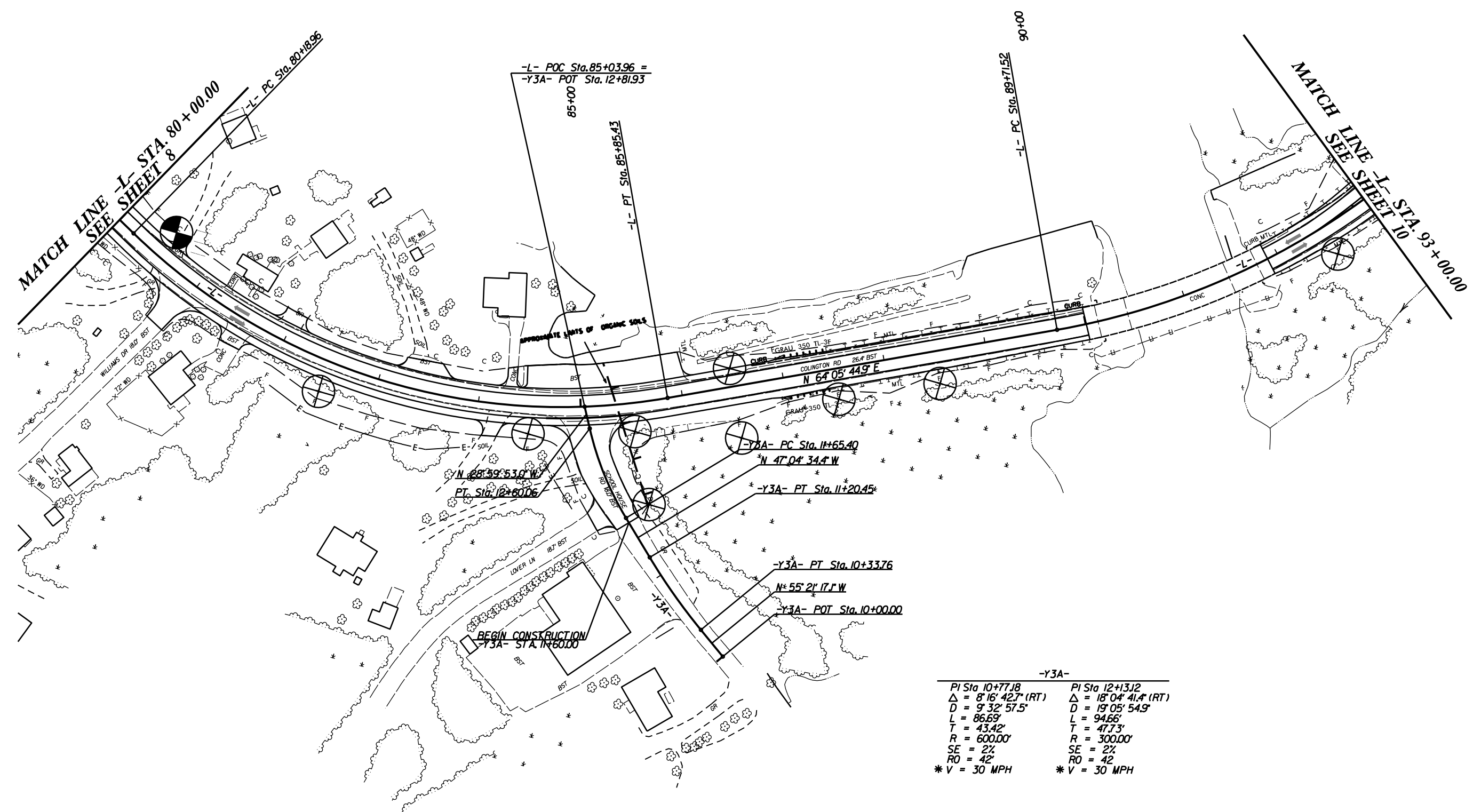
PROJECT REFERENCE NO.	SHEET NO.
R-5014	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L-

PI Sta 83+25.29	PI Sta 92+55.51
$\Delta = 54^{\circ}05'38.6"$ (LT)	$\Delta = 43^{\circ}15'31.2"$ (LT)
D = 9'32'57.5"	D = 8'00'00.0"
L = 566.47'	L = 540.73'
T = 306.34'	T = 283.99'
R = 600.00'	R = 716.20'
SE = 6%	SE = 6%
RO = 126'	RO = 126'
V = 40 MPH	V = 45 MPH

NAD 83 N/A 2017

REVISIONS
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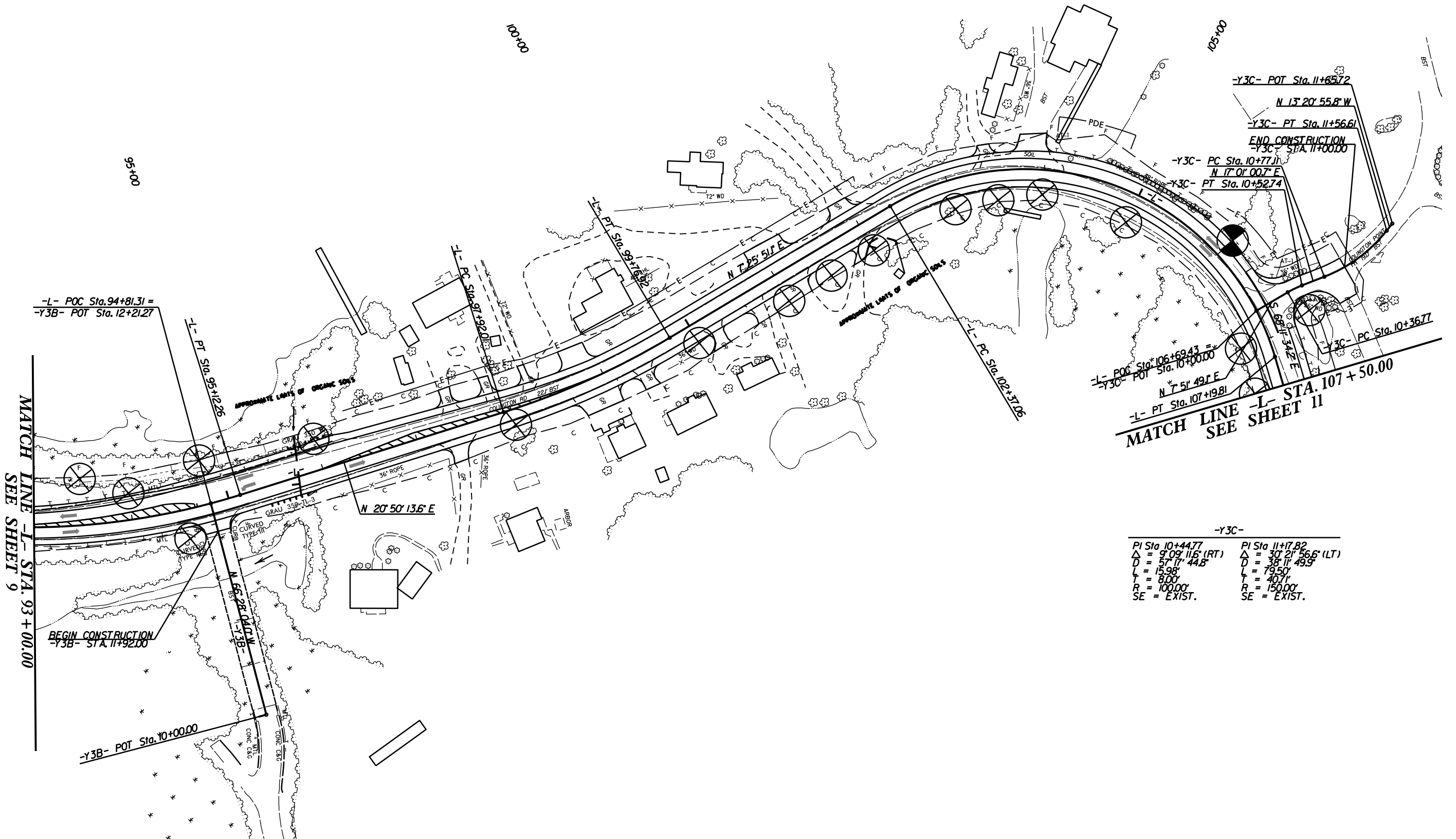


-Y3A-

PI Sta 10+77.18	PI Sta 12+13.12
$\Delta = 8^{\circ}16'42.7"$ (RT)	$\Delta = 18^{\circ}04'41.4"$ (RT)
D = 9'32'57.5"	D = 19'05'54.9"
L = 86.69'	L = 94.66'
T = 43.42'	T = 47.73'
R = 600.00'	R = 300.00'
SE = 2%	SE = 2%
RO = 42'	RO = 42'
* V = 30 MPH	* V = 30 MPH

PROJECT REFERENCE NO.	SHEET NO.
R-5014	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	

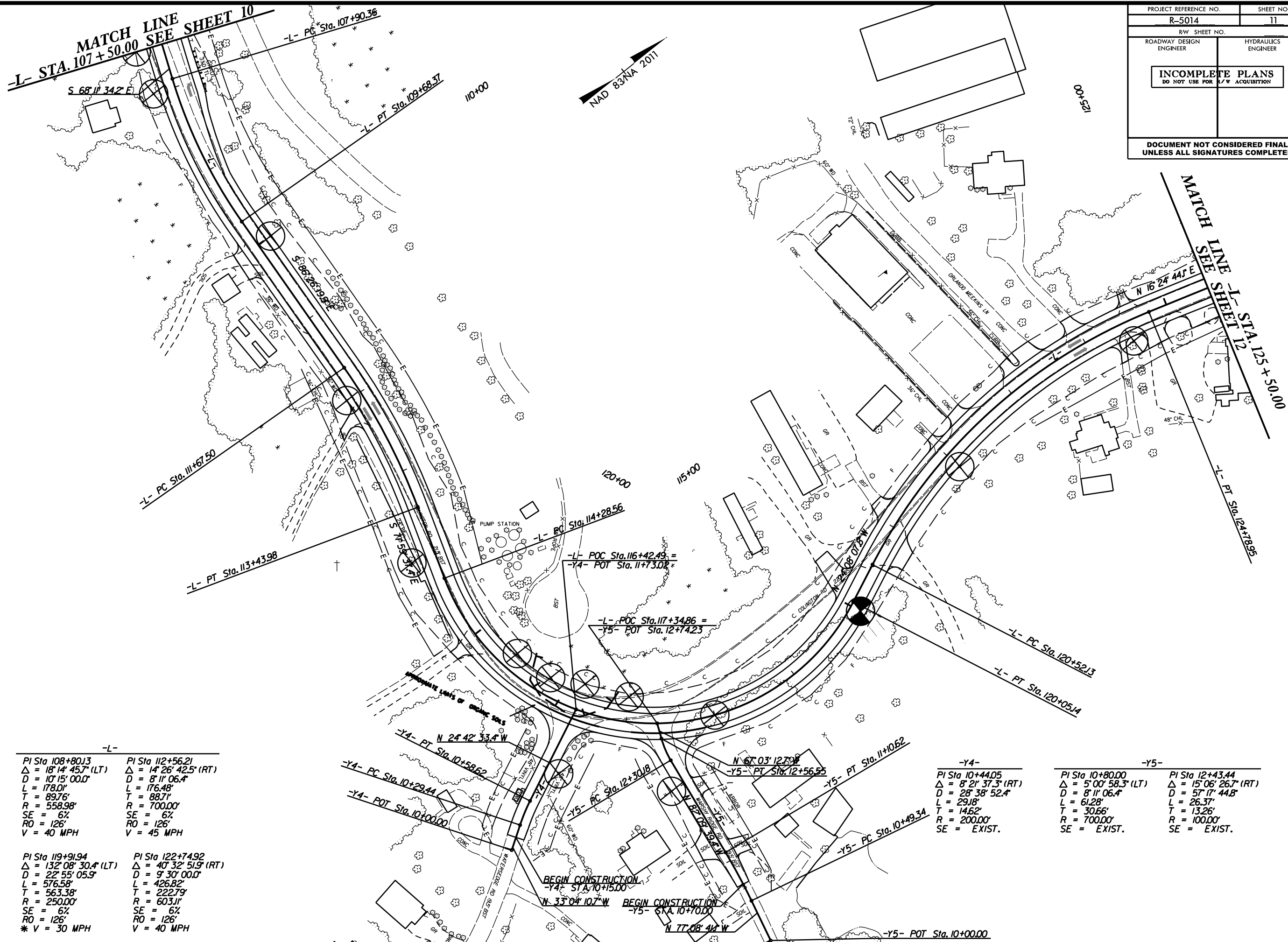
-L-		
PI Sta 92+55.51	PI Sta 98+84.89	PI Sta 105+78.55
$\Delta = 43^{\circ}15'31.2"$ (LT)	$\Delta = 13^{\circ}24'22.6"$ (LT)	$\Delta = 10^{\circ}22'34.7"$ (RT)
D = 8'00'00.0"	D = 7'15'00.0"	D = 2'37'15.8"
L = 540.73'	L = 184.91'	L = 482.75'
T = 283.99'	T = 92.88'	T = 341.49'
R = 716.20'	R = 790.29'	R = 265.00'
SE = 6%	SE = 5%	SE = 6%
RO = 126'	RO = 105'	RO = 126'
V = 45 MPH	V = 45 MPH	* V = 30 MPH



REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-5014	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	



REVISIONS

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-L-	-L-
PI Sta 108+80.13	PI Sta 112+56.21
Δ = 18° 14' 45.7" (LT)	Δ = 14° 26' 42.5" (RT)
D = 10' 15" 00.0"	D = 8' 11" 06.4"
L = 178.01'	L = 176.48'
T = 89.76'	T = 88.71'
R = 558.98'	R = 700.00'
SE = 6%	SE = 6%
RO = 126'	RO = 126'
V = 40 MPH	V = 45 MPH

PI Sta 119+91.94	PI Sta 122+74.92
Δ = 132° 08' 30.4" (LT)	Δ = 40° 32' 51.9" (RT)
D = 22' 55" 05.9"	D = 9' 30" 00.0"
L = 576.58'	L = 426.82'
T = 563.38'	T = 222.79'
R = 250.00'	R = 603.11'
SE = 6%	SE = 6%
RO = 126'	RO = 126'
* V = 30 MPH	V = 40 MPH

-Y4-
PI Sta 10+44.05
Δ = 8° 21' 37.3" (RT)
D = 28' 38" 52.4"
L = 29.18'
T = 14.62'
R = 200.00'
SE = EXIST.

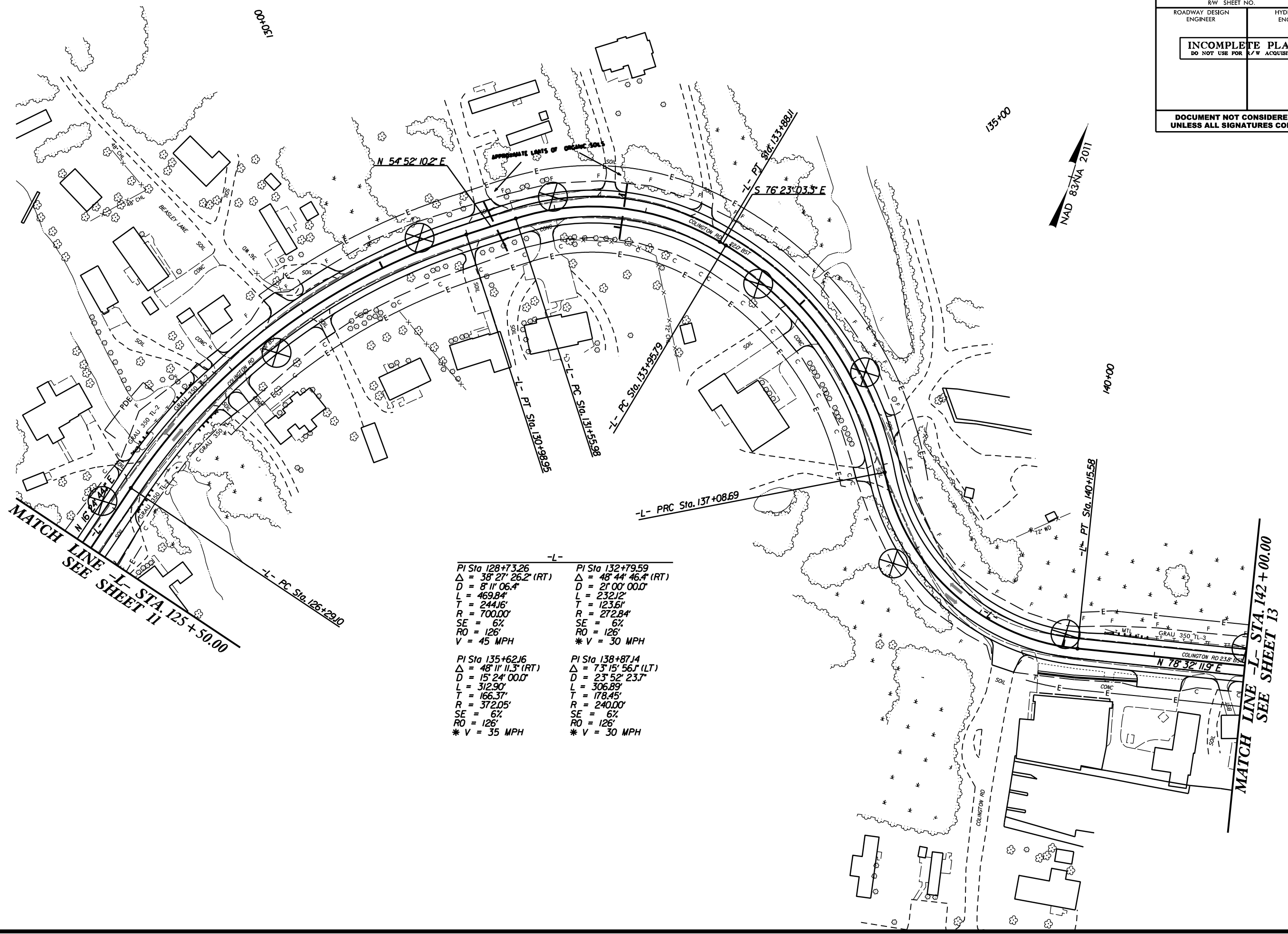
-Y5-	-Y5-
PI Sta 10+80.00	PI Sta 12+43.44
Δ = 5° 00' 58.3" (LT)	Δ = 15° 06' 26.7" (RT)
D = 8' 11" 06.4"	D = 57' 17" 44.8"
L = 61.28'	L = 26.37'
T = 30.66'	T = 13.26'
R = 700.00'	R = 100.00'
SE = EXIST.	SE = EXIST.

BEGIN CONSTRUCTION -Y4- STA. 10+15.00

BEGIN CONSTRUCTION -Y5- STA. 10+70.00

PROJECT REFERENCE NO. R-5014	SHEET NO. 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR E/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

REVISIONS
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MATCH LINE -L- STA. 125+50.00
 SEE SHEET 11

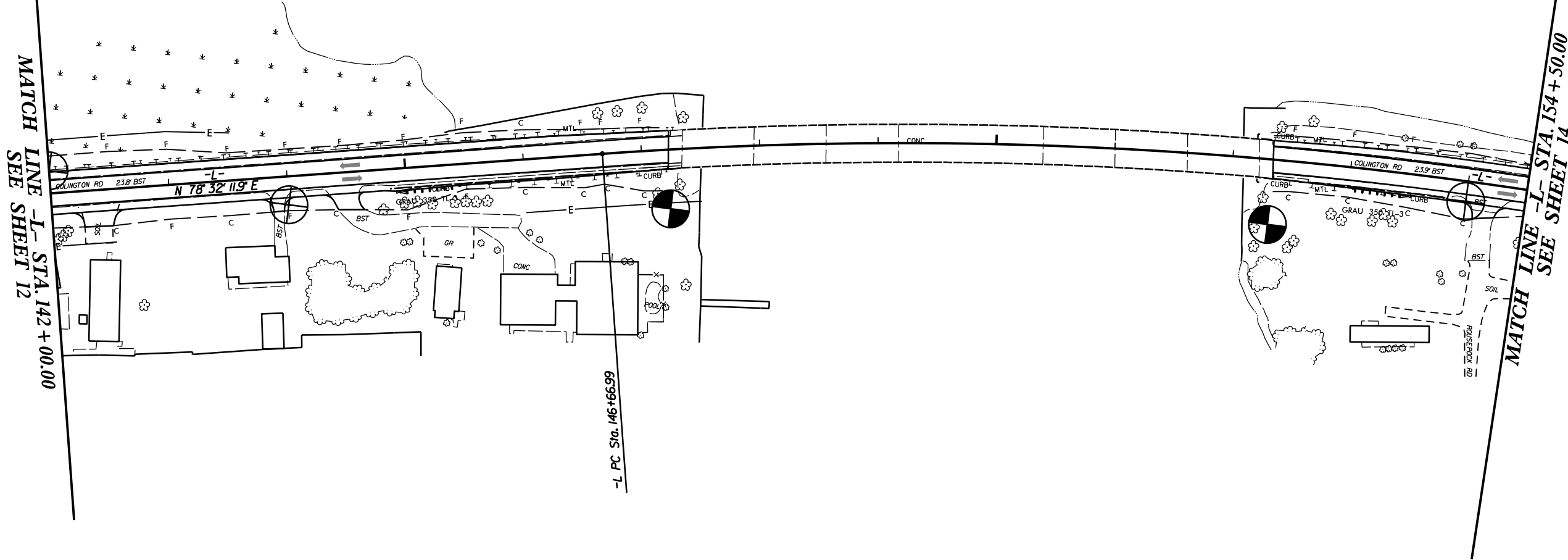
-L-	
PI Sta 128+73.26	PI Sta 132+79.59
$\Delta = 38^{\circ} 27' 26.2''$ (RT)	$\Delta = 48^{\circ} 44' 46.4''$ (RT)
D = 8' 11' 06.4"	D = 21' 00' 00.0"
L = 469.84'	L = 232.12'
T = 244.16'	T = 123.61'
R = 700.00'	R = 272.84'
SE = 6%	SE = 6%
RO = 126'	RO = 126'
* V = 45 MPH	* V = 30 MPH
PI Sta 135+62.16	PI Sta 138+87.14
$\Delta = 48^{\circ} 11' 11.3''$ (RT)	$\Delta = 73^{\circ} 15' 56.1''$ (LT)
D = 15' 24' 00.0"	D = 23' 52' 23.7"
L = 312.90'	L = 306.89'
T = 166.37'	T = 178.45'
R = 372.05'	R = 240.00'
SE = 6%	SE = 6%
RO = 126'	RO = 126'
* V = 35 MPH	* V = 30 MPH

MATCH LINE -L- STA. 142+00.00
 SEE SHEET 13

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REVISIONS

MATCH LINE -L- STA. 142+00.00
SEE SHEET 12



-L PC Sta. 146+66.99

-L-
PI Sta 151+21.7
 $\Delta = 14^{\circ} 36' 20.0''$ (RT)
D = 1' 37' 00.0"
L = 903.44'
T = 454.18'
R = 3,544.07'
SE = 2%
RO = 42'
V = 80 MPH

145+00

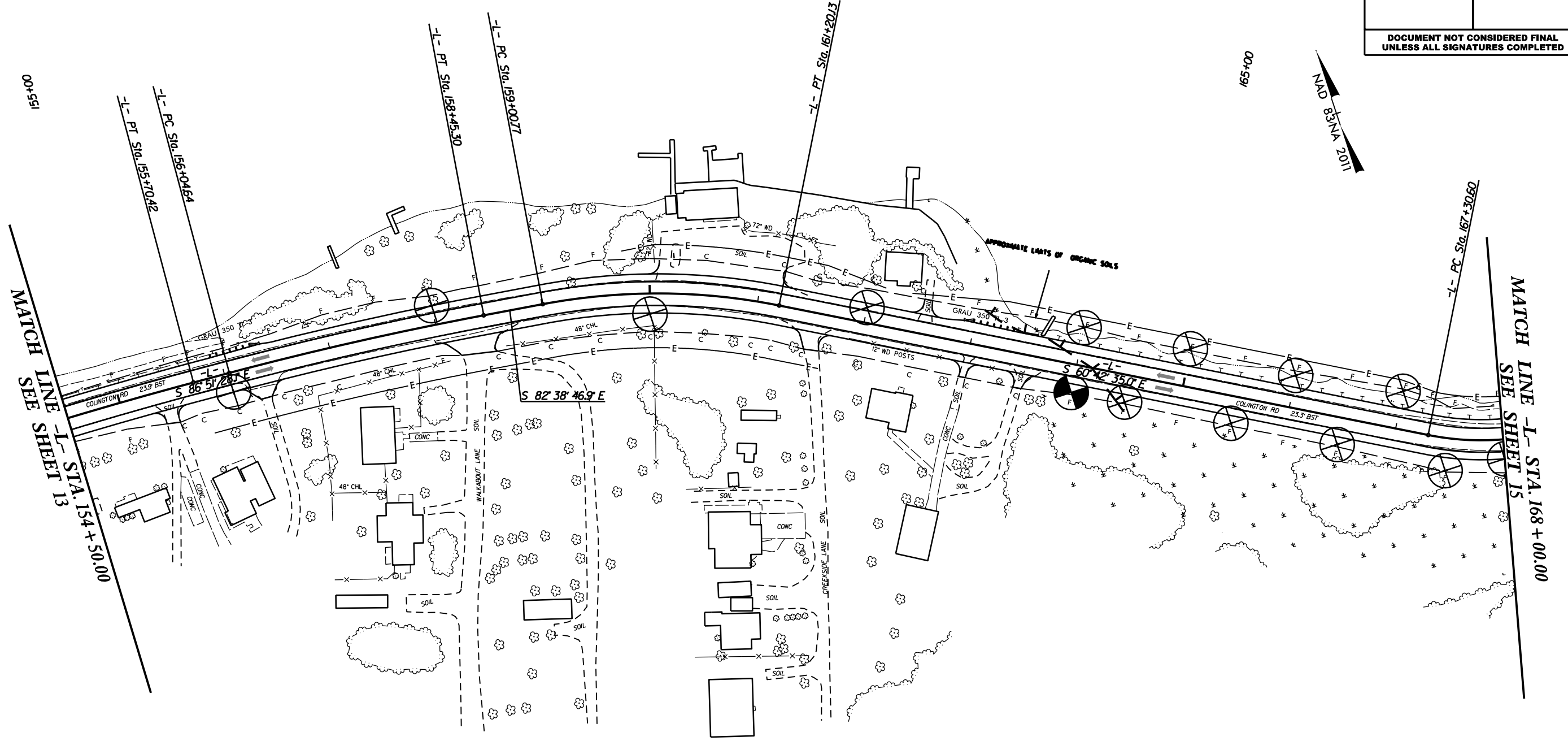
150+00

NAD 83/NA 2011

PROJECT REFERENCE NO.	SHEET NO.
R-5014	13
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	

PROJECT REFERENCE NO.	SHEET NO.
R-5014	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	

-L-			
PI Sta 151+21.7	PI Sta 157+25.02	PI Sta 160+11.81	PI Sta 168+56.10
$\Delta = 14^{\circ} 36' 20.0"$ (RT)	$\Delta = 4^{\circ} 12' 41.2"$ (RT)	$\Delta = 21^{\circ} 56' 11.8"$ (RT)	$\Delta = 53^{\circ} 18' 40.2"$ (LT)
D = 1' 37' 00.0"	D = 1' 45' 00.0"	D = 10' 00' 00.0"	D = 22' 55' 05.9"
L = 903.44'	L = 240.65'	L = 219.37'	L = 232.61'
T = 454.18'	T = 120.38'	T = 111.04'	T = 125.49'
R = 3,544.07'	R = 3,274.04'	R = 572.96'	R = 250.00'
SE = 2%	SE = 2%	SE = 6%	SE = 6%
RO = 42'	RO = 42'	RO = 126'	RO = 126'
V = 80 MPH	V = 80 MPH	V = 40 MPH	* V = 30 MPH

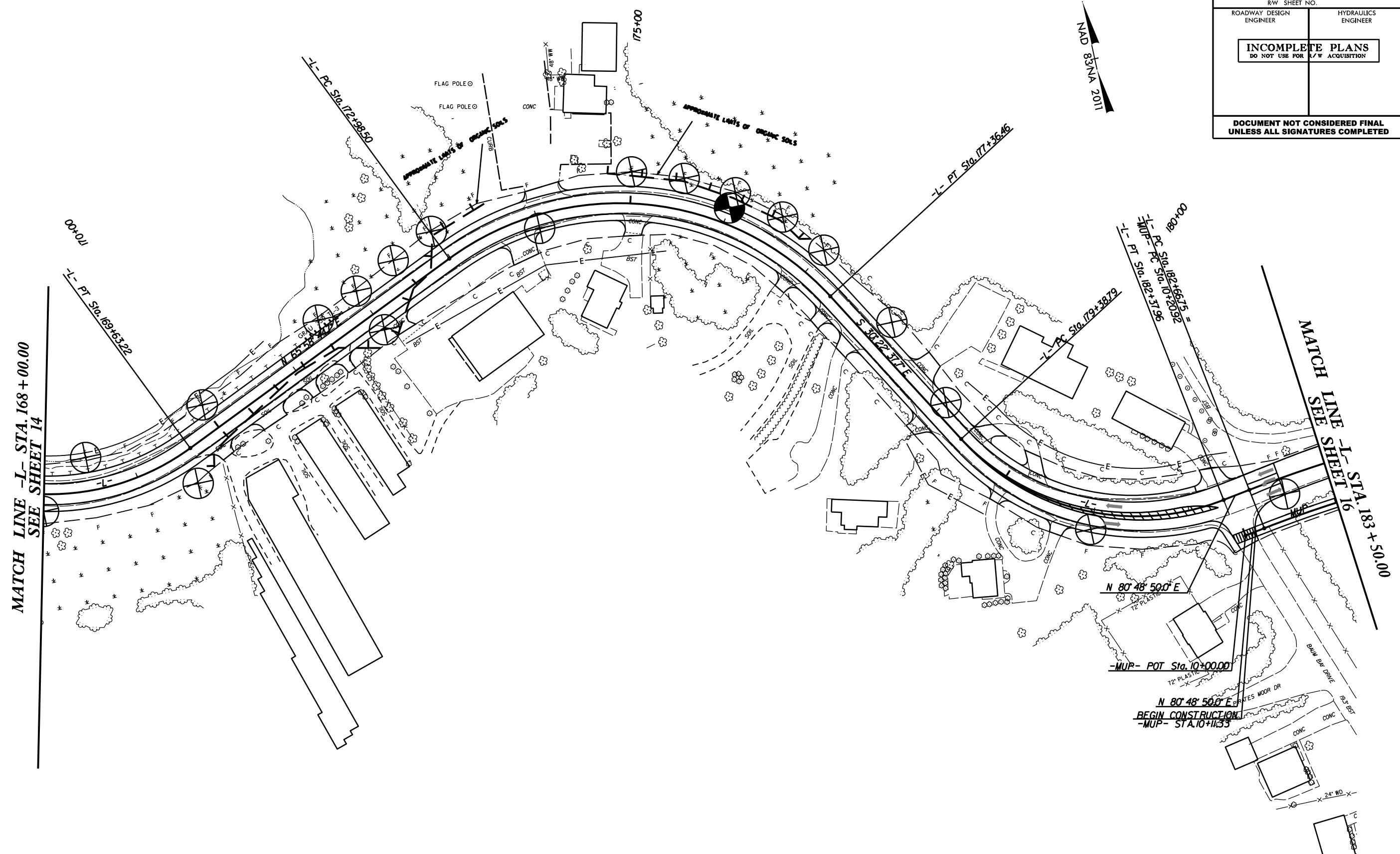


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PROJECT REFERENCE NO.	SHEET NO.
R-5014	15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCH LINE -L- STA. 168 + 00.00
SEE SHEET 14

MATCH LINE SHEET 16
-L- STA. 183 + 50.00

-L-				-MUP-	
PI Sta 168+56.10	PI Sta 175+66.94	PI Sta 181+09.39	PI Sta 187+68.88	PI Sta 15+06.09	
$\Delta = 53^{\circ} 18' 40.2''$ (LT)	$\Delta = 83^{\circ} 38' 37.6''$ (RT)	$\Delta = 68^{\circ} 48' 32.2''$ (LT)	$\Delta = 43^{\circ} 02' 44.8''$ (RT)	$\Delta = 43^{\circ} 02' 44.8''$ (RT)	
D = 22' 55' 05.9"	D = 19' 05' 54.9"	D = 23' 00' 00.0"	D = 4' 30' 00.0"	D = 4' 39' 26.2"	
L = 232.61'	L = 437.96'	L = 299.17'	L = 956.57'	L = 924.27'	
T = 125.49'	T = 268.44'	T = 170.60'	T = 502.13'	T = 485.17'	
R = 250.00'	R = 300.00'	R = 249.11'	R = 1273.24'	R = 1230.24'	
SE = 6%	SE = 6%	SE = 6%	SE = EXIST.		
RO = 126'	RO = 126'	RO = 126'	V = 55 MPH		
* V = 30 MPH	* V = 30 MPH	* V = 30 MPH			

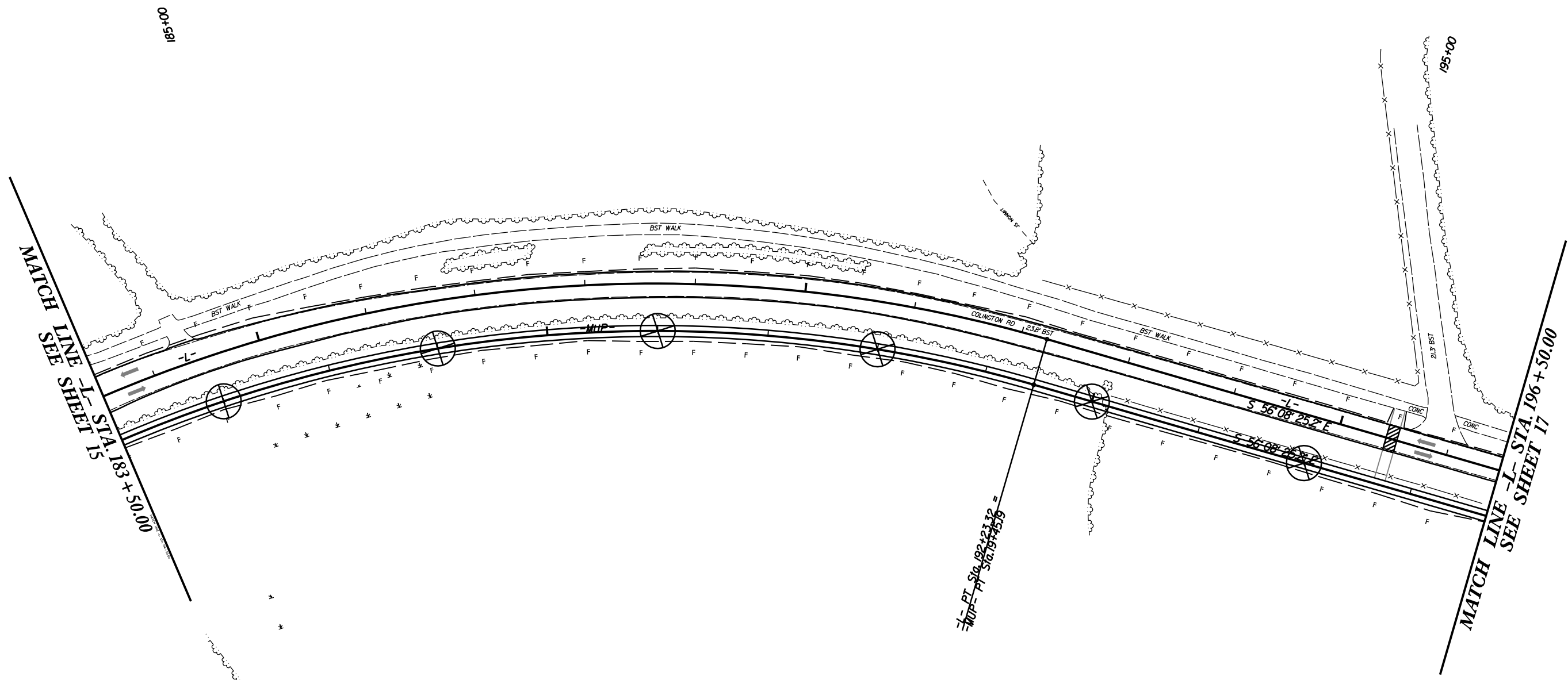
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PROJECT REFERENCE NO. R-5014	SHEET NO. 16
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L-	-MUP-
PI Sta 187+68.88	PI Sta 15+06.09
$\Delta = 43^{\circ} 02' 44.8" (RT)$	$\Delta = 43^{\circ} 02' 44.8" (RT)$
$D = 4^{\circ} 30' 00.0"$	$D = 4^{\circ} 39' 26.2"$
$L = 956.57'$	$L = 924.27'$
$T = 502.13'$	$T = 485.17'$
$R = 1273.24'$	$R = 1,230.24'$
SE = EXIST.	
V = 55 MPH	

190+00



MATCH LINE SEE SHEET 15
STA. 183+50.00

MATCH LINE -L- STA. 196+50.00
SEE SHEET 17

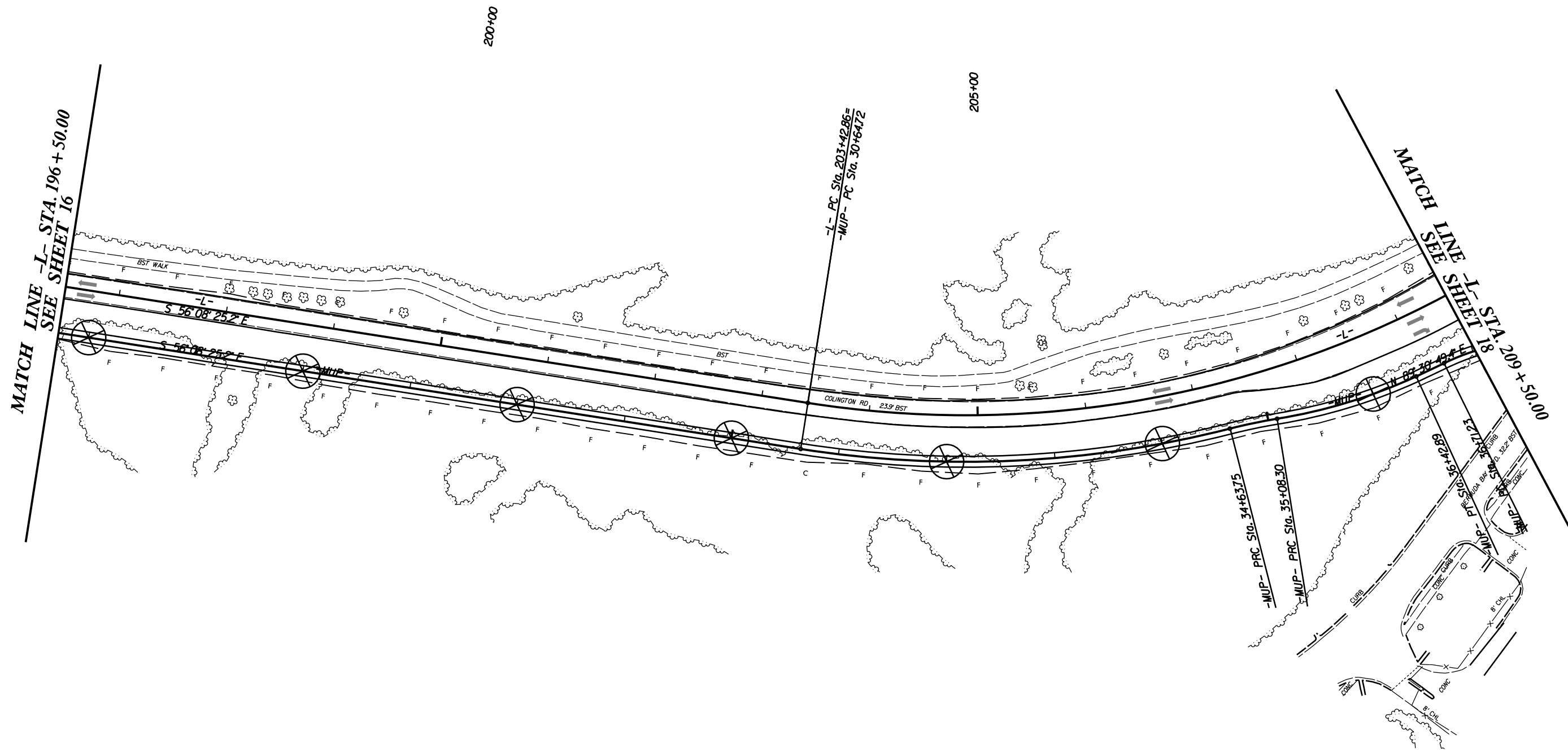
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PROJECT REFERENCE NO.	SHEET NO.
R-5014	17
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



-L-	-MUP-	
PI Sta 209+11.27	PI Sta 32+67.01	PI Sta 34+86.04
$\Delta = 62^{\circ} 13' 20.7''$ (LT)	$\Delta = 23^{\circ} 12' 51.8''$ (LT)	$\Delta = 5^{\circ} 06' 18.4''$ (RT)
D = 6' 05' 00.0"	D = 5' 49' 03.8"	D = 1' 27' 33.0"
L = 1,022.83'	L = 399.03'	L = 44.55'
T = 568.41'	T = 202.29'	T = 22.29'
R = 941.85'	R = 984.85'	R = 500.00'
SE = EXIST.		
V = 50 MPH		
	PI Sta 35+76.00	PI Sta 37+12.08
	$\Delta = 15^{\circ} 25' 19.7''$ (LT)	$\Delta = 23^{\circ} 05' 12.6''$ (RT)
	D = 1' 27' 33.0"	D = 28' 38' 52.4"
	L = 134.58'	L = 80.59'
	T = 67.70'	T = 40.85'
	R = 500.00'	R = 200.00'



REVISIONS

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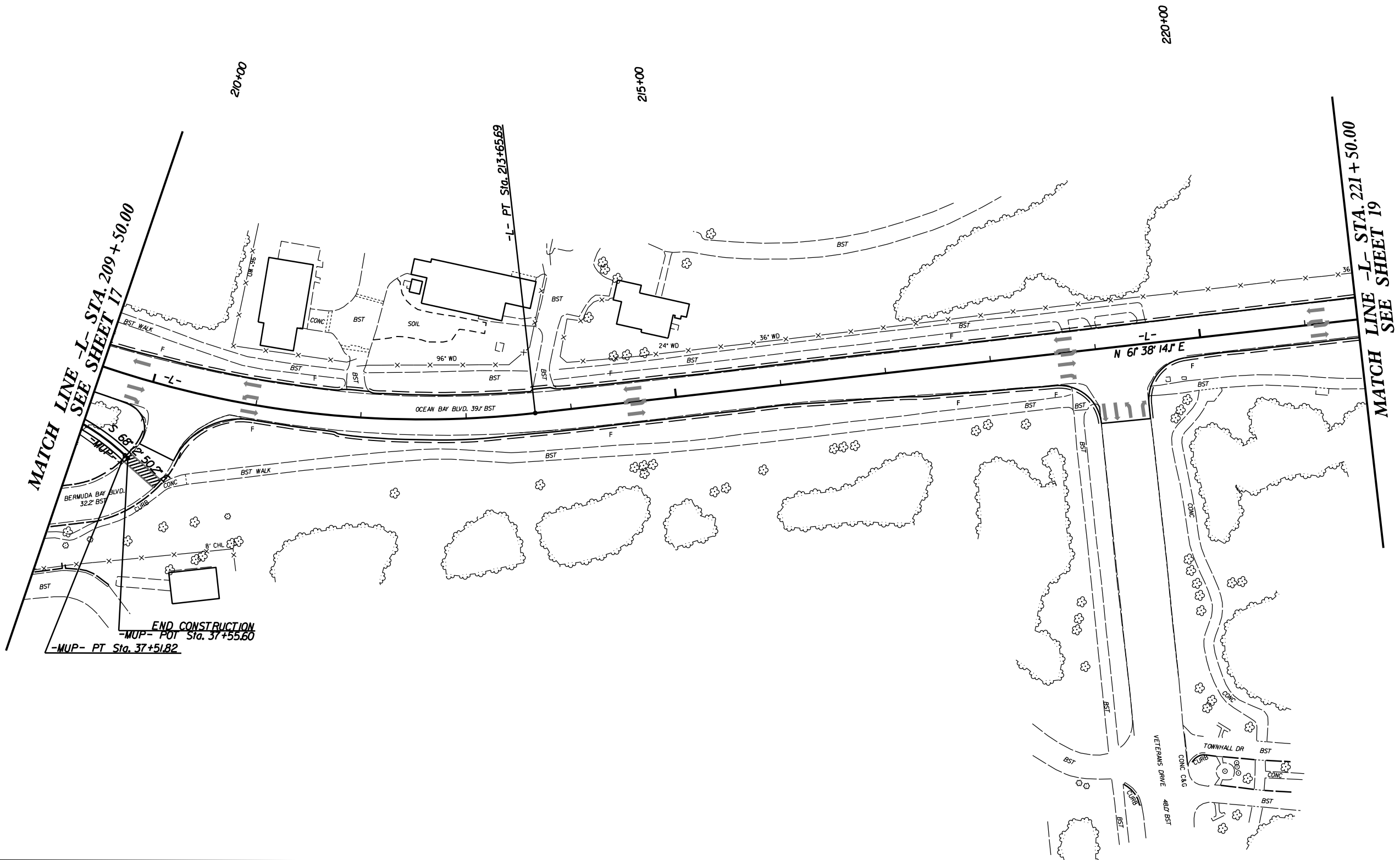
PROJECT REFERENCE NO.	SHEET NO.
R-5014	18
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-L-	-MUP-
PI Sta 209+11.27	PI Sta 37+12.08
$\Delta = 62^{\circ} 13' 20.7"$ (LT)	$\Delta = 23^{\circ} 05' 12.6"$ (RT)
D = 6' 05' 00.0"	D = 28' 38' 52.4"
L = 1,022.83'	L = 80.59'
T = 568.41'	T = 40.85'
R = 941.85'	R = 200.00'
SE = EXIST.	
V = 50 MPH	

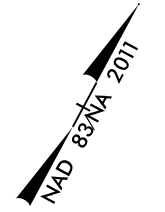


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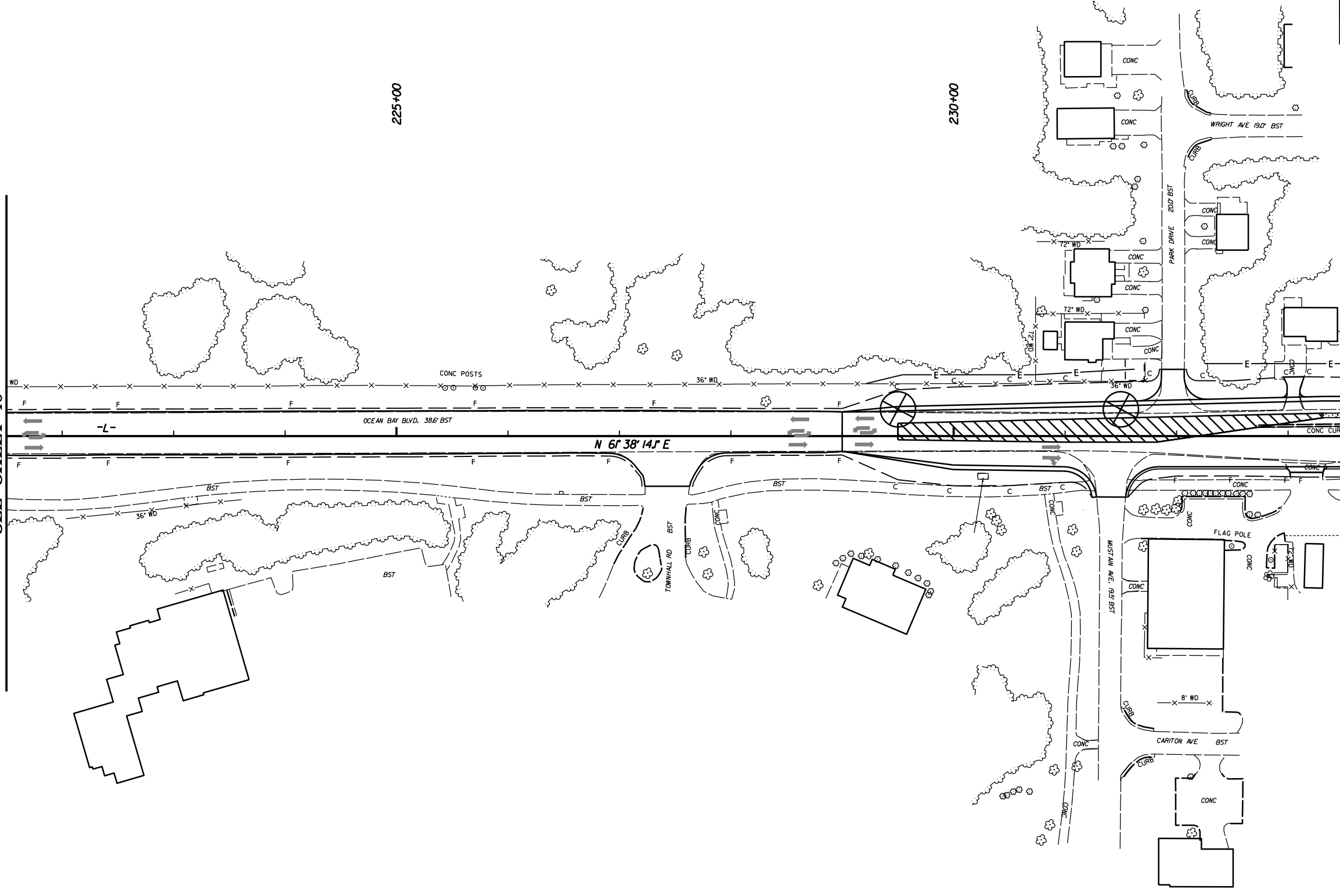


PROJECT REFERENCE NO.	SHEET NO.
R-5014	19
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



MATCH LINE -L- STA. 221 + 50.00
SEE SHEET 18

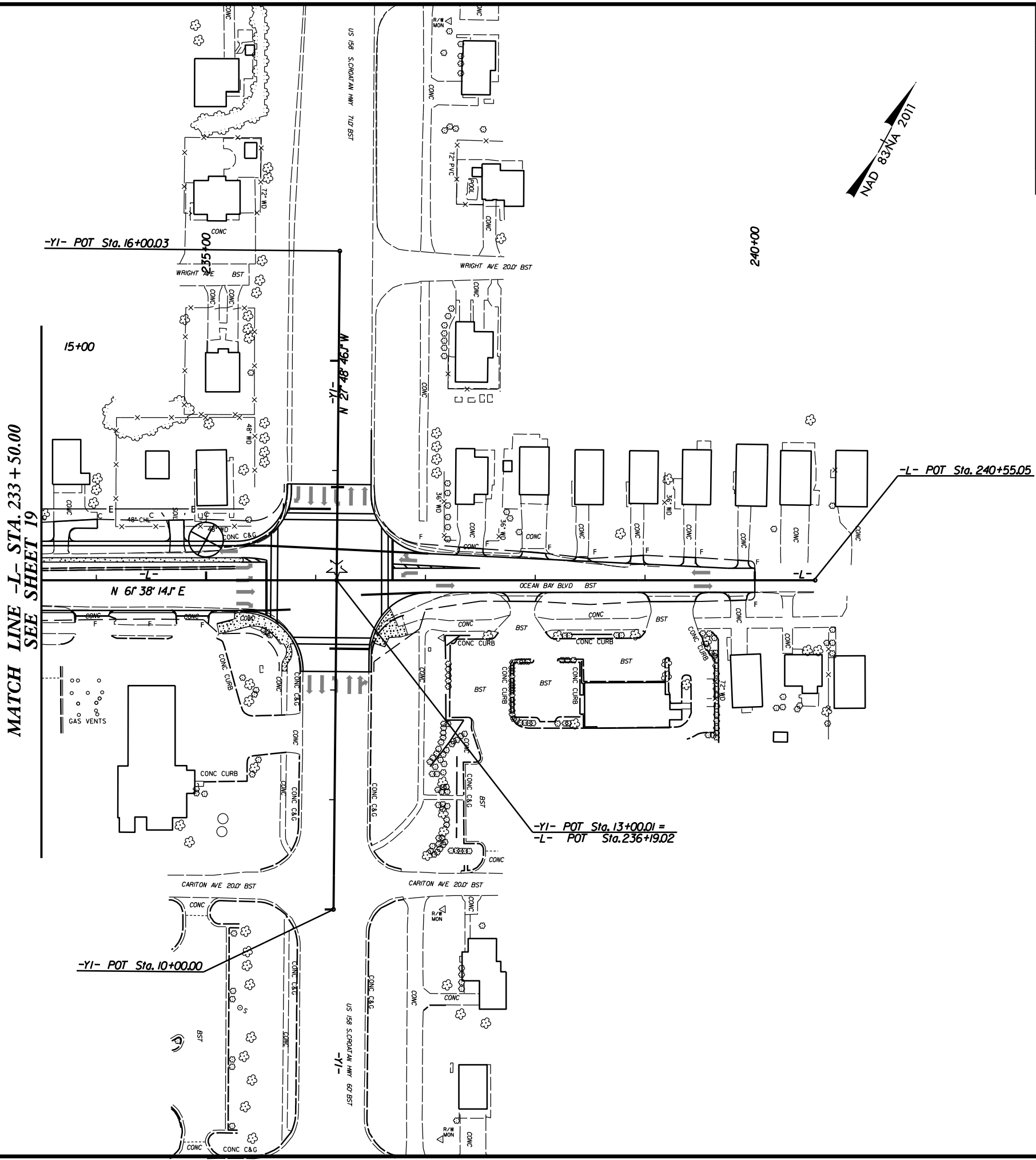
MATCH LINE -L- STA. 233 + 50.00
SEE SHEET 20



REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-5014	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	



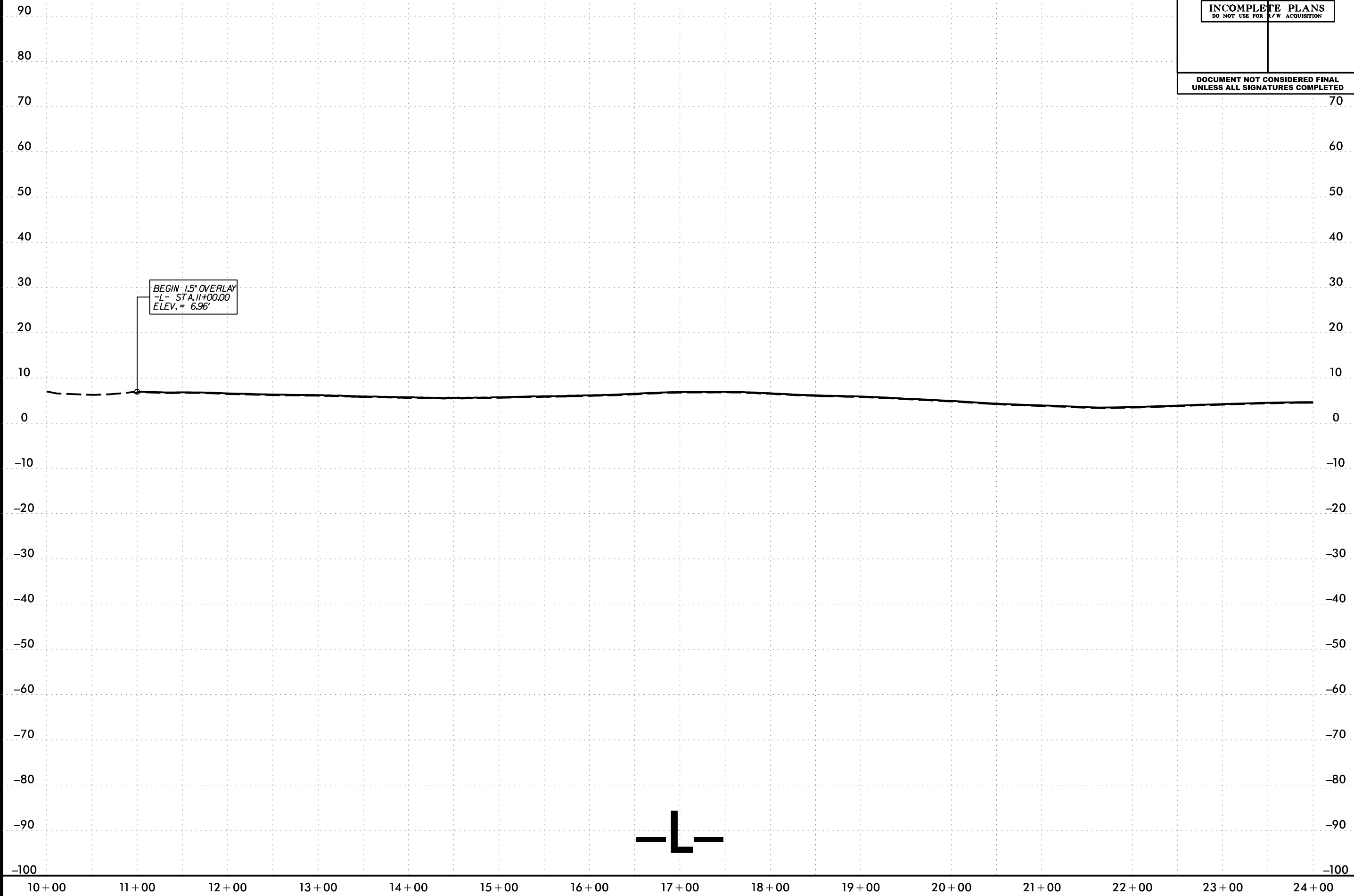
MATCH LINE -L- STA. 233 + 50.00
SEE SHEET 19

REVISIONS

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5/14/99

PROJECT REFERENCE NO.	SHEET NO.
R-5014	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

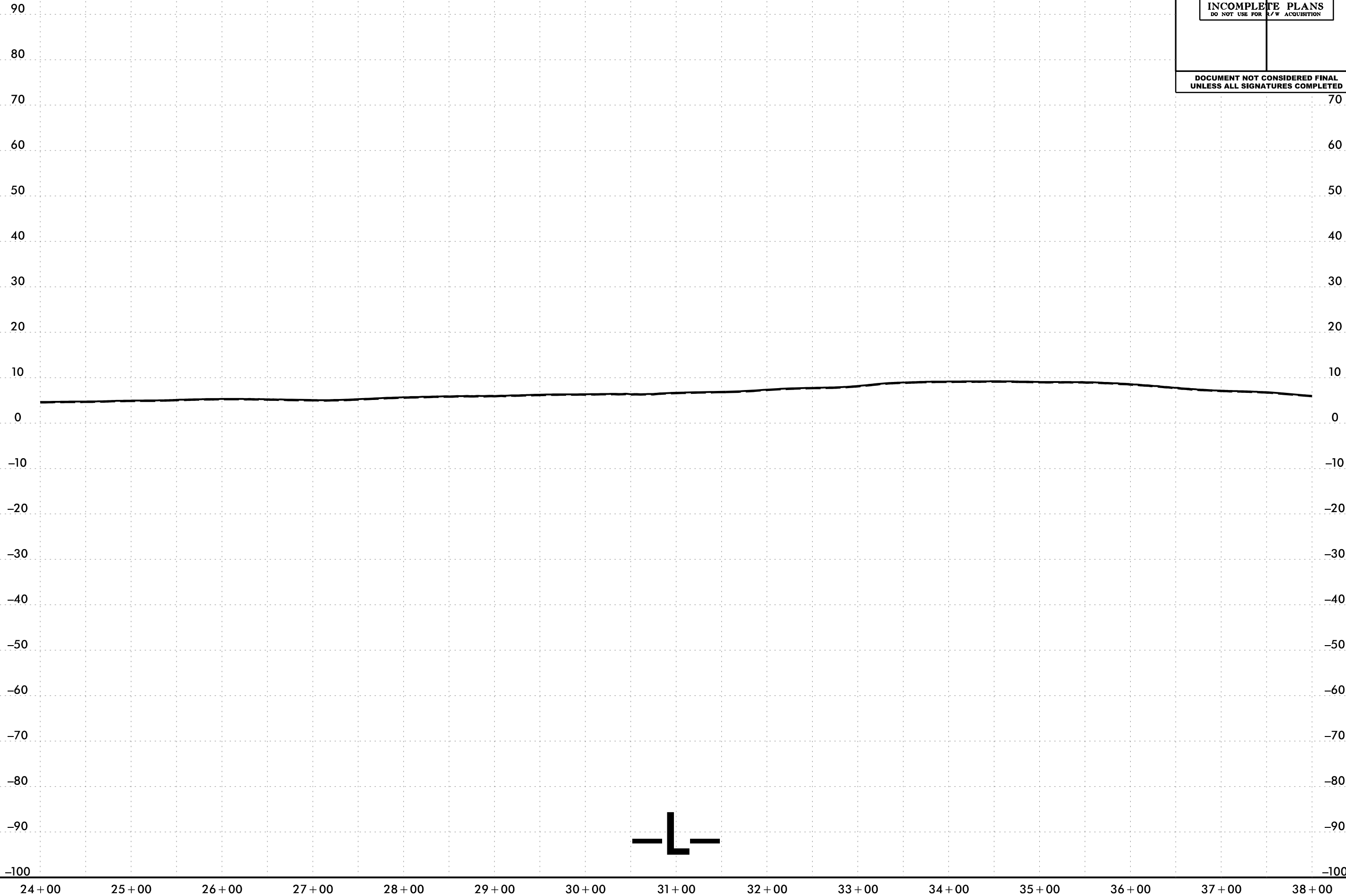


BEGIN 1.5" OVERLAY
 L = STA. 11+00.00
 ELEV. = 6.96'

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 User: AL_MIRANDA

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PROJECT REFERENCE NO.	SHEET NO.
R-5014	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

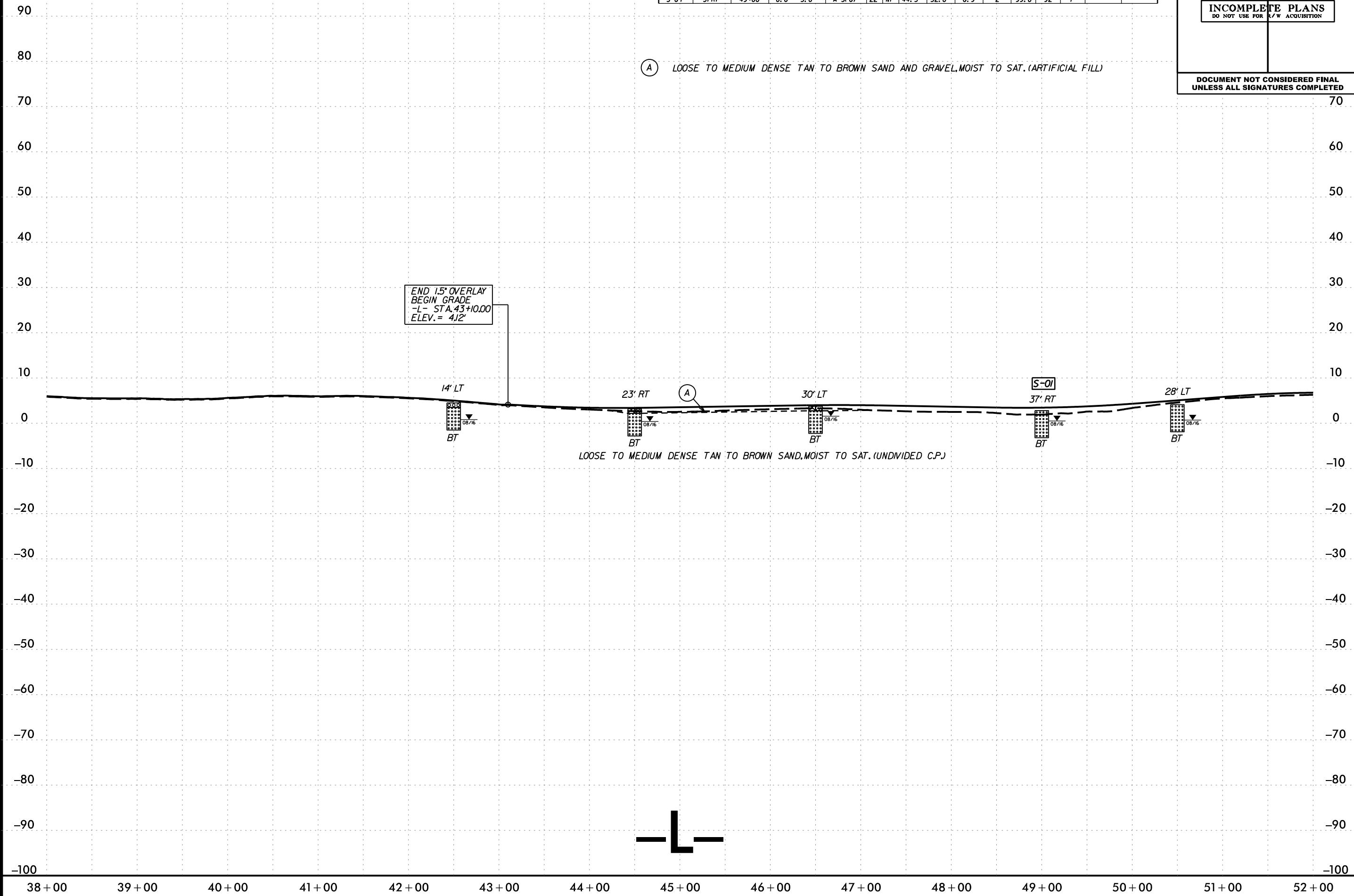


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PROJECT REFERENCE NO. R-5014	SHEET NO. 23
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40		
S-01	37' RT	49+00	0.0 - 5.0	A-3(0)	22	NP	44.5	52.6	0.9	2	99.6	92	1	-



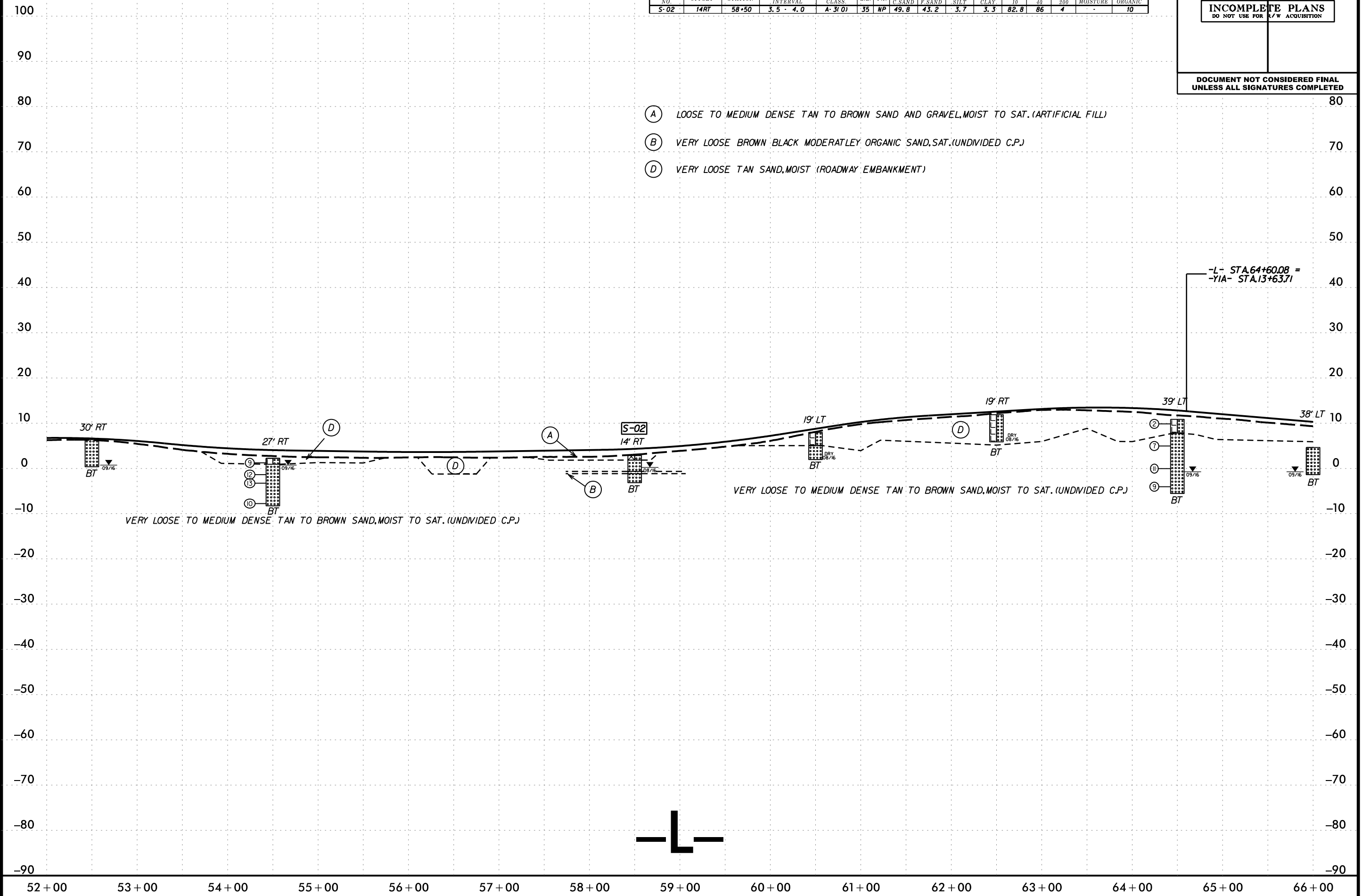
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 User: AL_MIRANDA

5/14/99

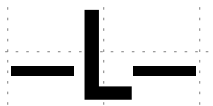
PROJECT REFERENCE NO.	SHEET NO.
R-5014	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-02	14RT	58+50	3.5 - 4.0	A-3(0)	35	NP	49.8	43.2	3.7	3.3	82.8	86	4	-	10

- (A) LOOSE TO MEDIUM DENSE TAN TO BROWN SAND AND GRAVEL, MOIST TO SAT. (ARTIFICIAL FILL)
- (B) VERY LOOSE BROWN BLACK MODERATELY ORGANIC SAND, SAT. (UNDIVIDED C.P.)
- (D) VERY LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)



-L- STA. 64+60.08 =
-YIA- STA. 13+63.71

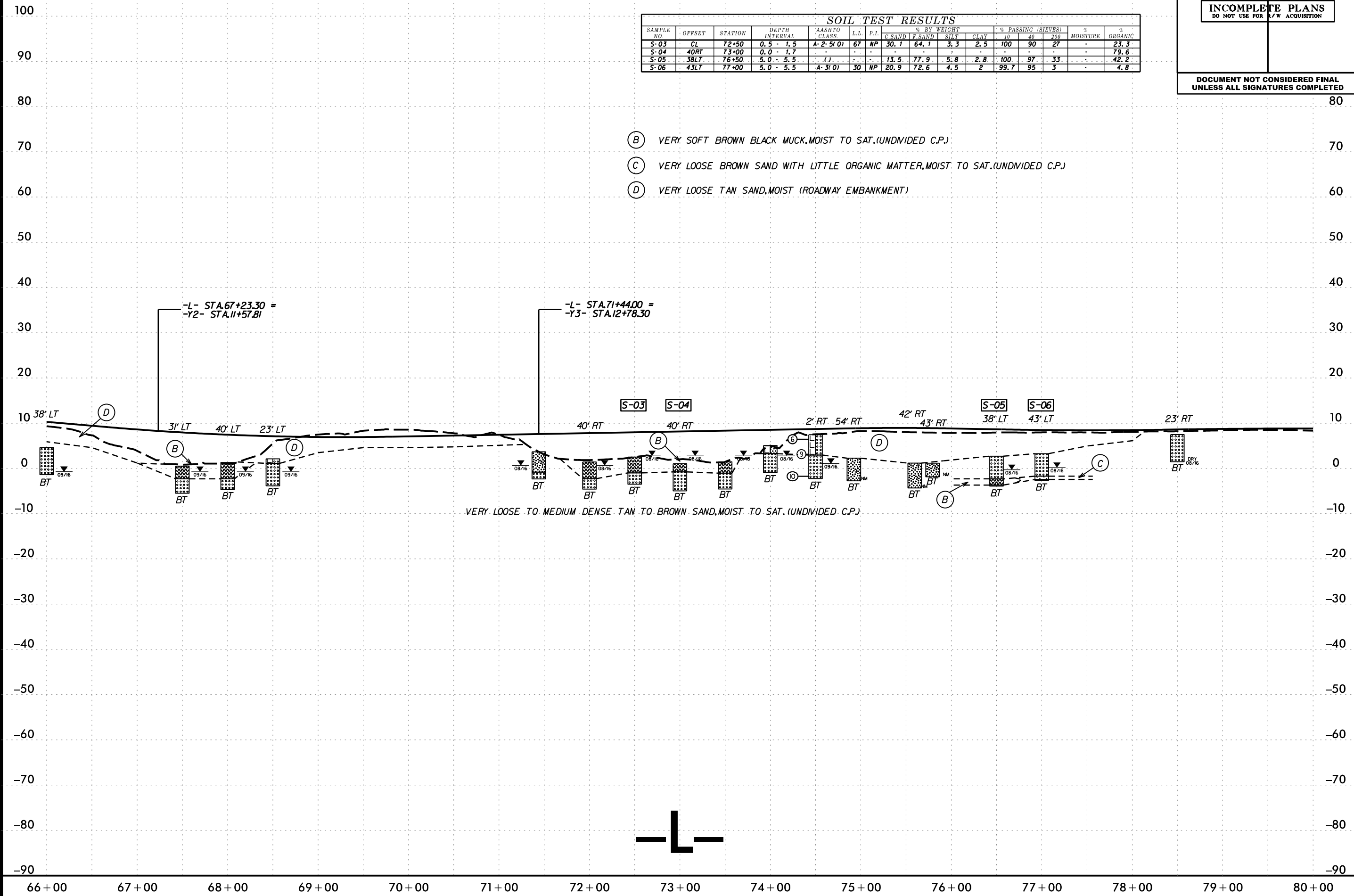


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PROJECT REFERENCE NO. R-5014	SHEET NO. 25
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							F. SAND	F. SAND	SILT	CLAY	10	40	200		
S-03	CL	72+50	0.5 - 1.5	A-2-5(0)	67	NP	30.1	64.1	3.3	2.5	100	90	27	-	23.3
S-04	40RT	73+00	0.0 - 1.7	-	-	-	-	-	-	-	-	-	-	-	79.6
S-05	38LT	76+50	5.0 - 5.5	(J)	-	-	13.5	77.9	5.8	2.8	100	97	33	-	42.2
S-06	43LT	77+00	5.0 - 5.5	A-3(0)	30	NP	20.9	72.6	4.5	2	99.7	95	3	-	4.8

- (B) VERY SOFT BROWN BLACK MUCK, MOIST TO SAT. (UNDIVIDED C.P.)
- (C) VERY LOOSE BROWN SAND WITH LITTLE ORGANIC MATTER, MOIST TO SAT. (UNDIVIDED C.P.)
- (D) VERY LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)



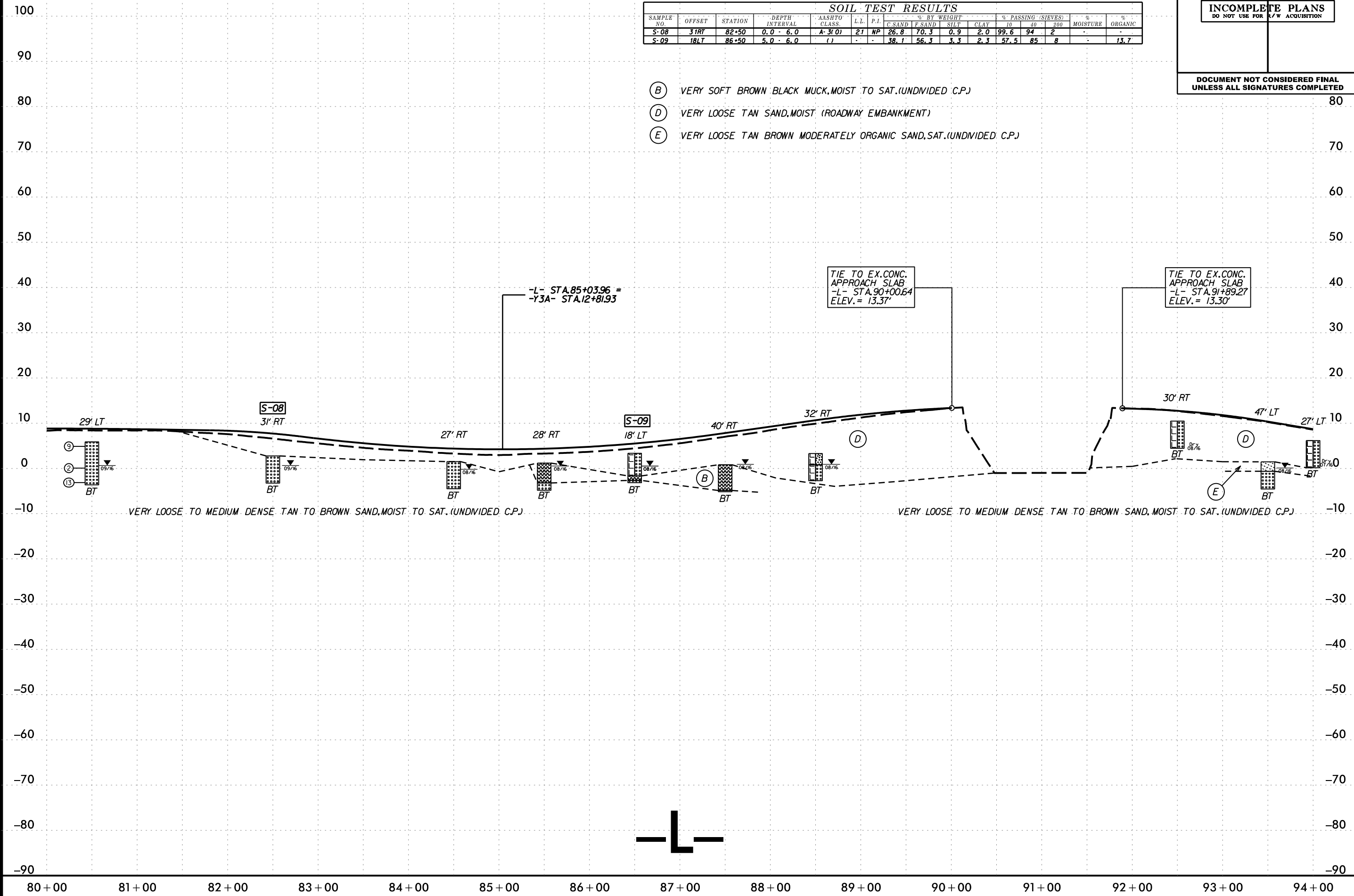
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PROJECT REFERENCE NO. R-5014	SHEET NO. 26
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-08	31RT	82+50	0.0 - 6.0	A-3(0)	21	NP	26.8	70.3	0.9	2.0	99.6	94	2	-	-
S-09	18LT	86+50	5.0 - 6.0	()	-	-	38.1	56.3	3.3	2.3	57.5	85	8	-	13.7

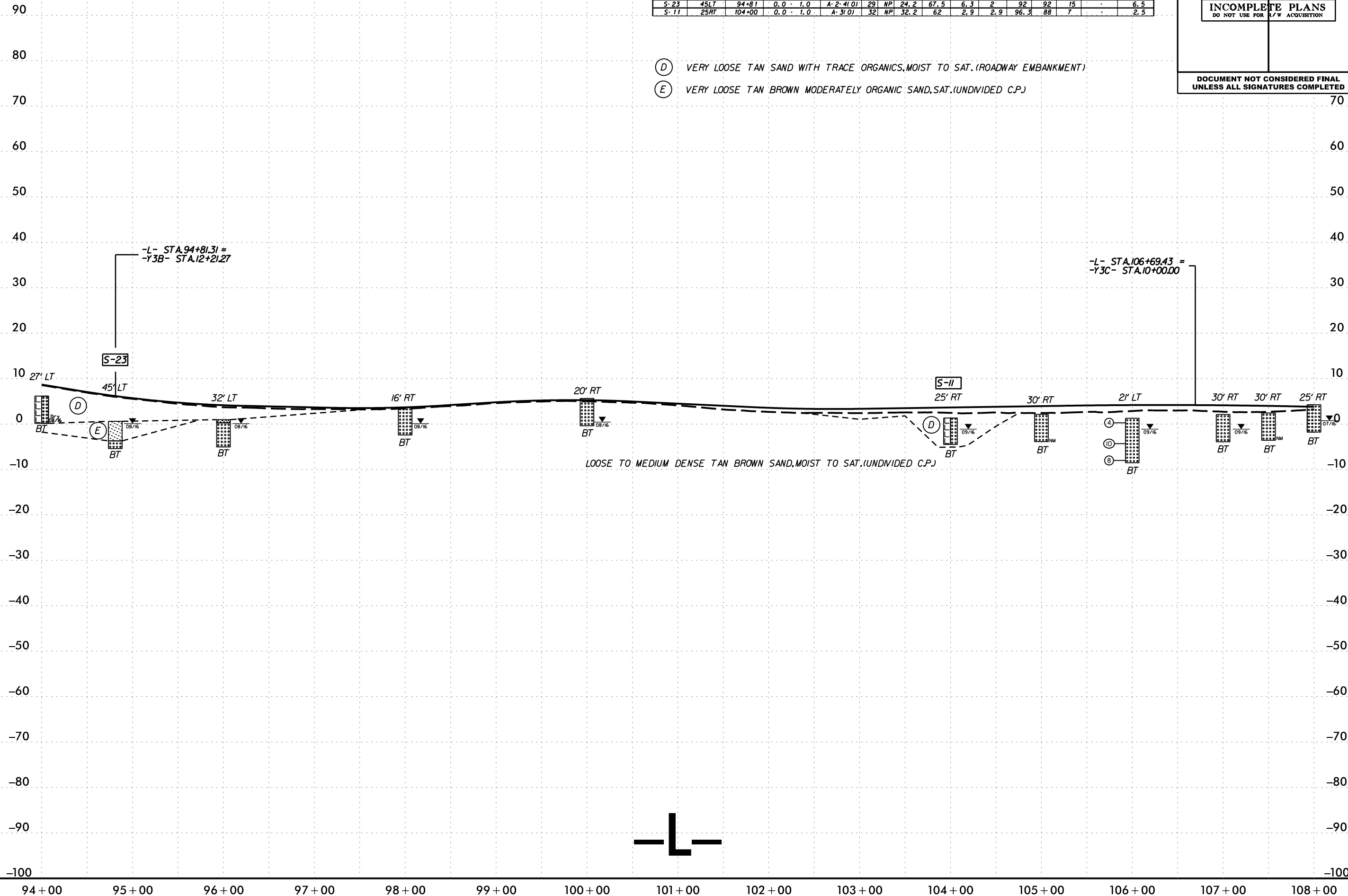
- (B) VERY SOFT BROWN BLACK MUCK, MOIST TO SAT. (UNDIVIDED C.P.)
- (D) VERY LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)
- (E) VERY LOOSE TAN BROWN MODERATELY ORGANIC SAND, SAT. (UNDIVIDED C.P.)



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SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							C SAND	F SAND	SILT	CLAY	10	40			200
S-23	45LT	94+81	0.0 - 1.0	A-2-4(0)	29	NP	24.2	67.5	6.3	2	92	92	15	-	6.5
S-11	25RT	104+00	0.0 - 1.0	A-3(0)	32	NP	32.2	62	2.9	2.9	96.3	88	7	-	2.5

- (D) VERY LOOSE TAN SAND WITH TRACE ORGANICS, MOIST TO SAT. (ROADWAY EMBANKMENT)
- (E) VERY LOOSE TAN BROWN MODERATELY ORGANIC SAND, SAT. (UNDIVIDED C.P.)

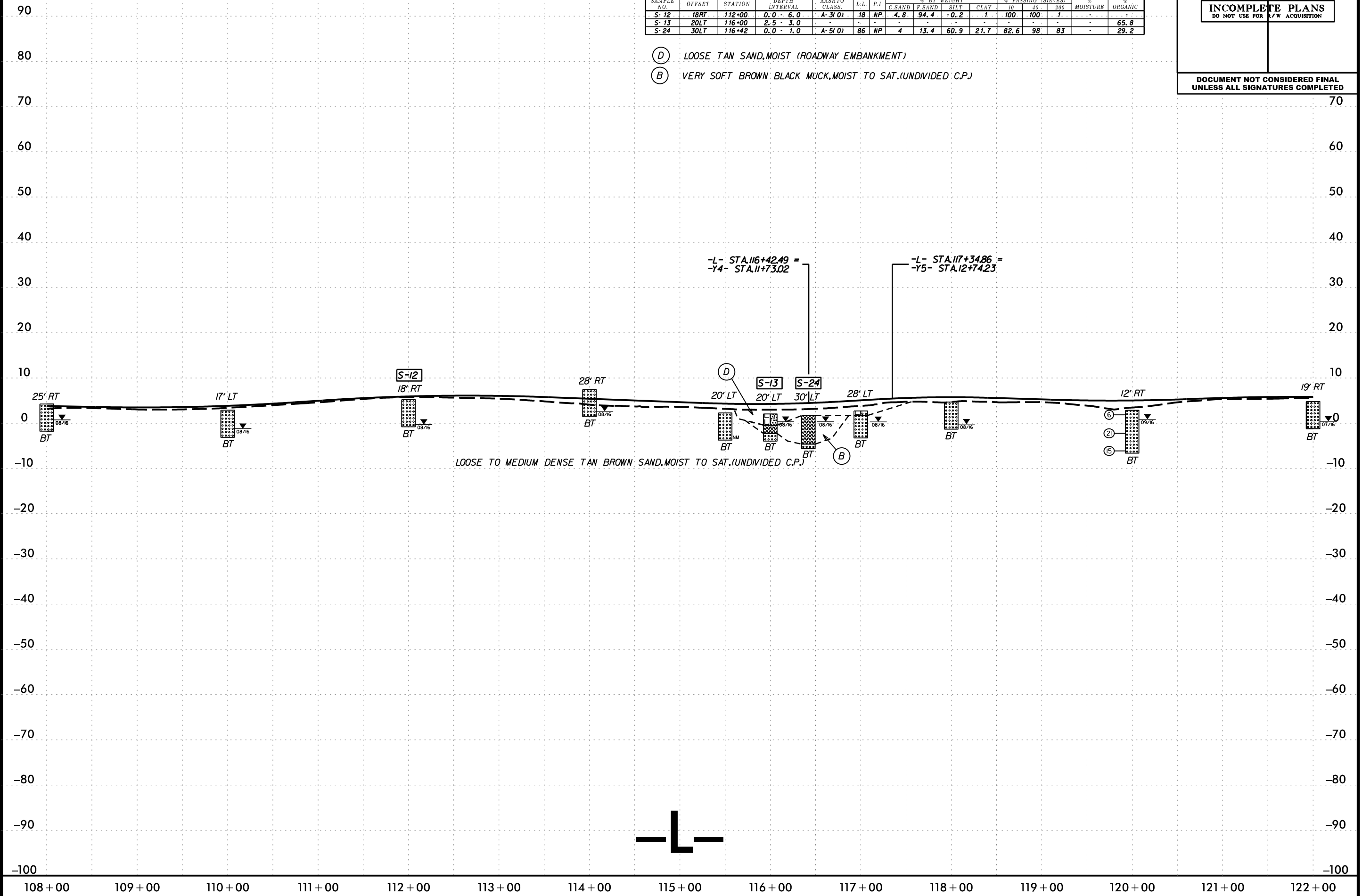


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PROJECT REFERENCE NO. R-5014	SHEET NO. 28
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C SAND	F SAND	SILT	CLAY	10	40	200		
S-12	18RT	112+00	0.0 - 6.0	A-3(0)	18	NP	4.8	94.4	0.2	1	100	100	1	-	-
S-13	20LT	116+00	2.5 - 3.0	-	-	-	-	-	-	-	-	-	-	65.8	
S-24	30LT	116+42	0.0 - 1.0	A-5(0)	86	NP	4	13.4	60.9	21.7	82.6	98	83	-	29.2

- (D) LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)
- (B) VERY SOFT BROWN BLACK MUCK, MOIST TO SAT. (UNDIVIDED C.P.)



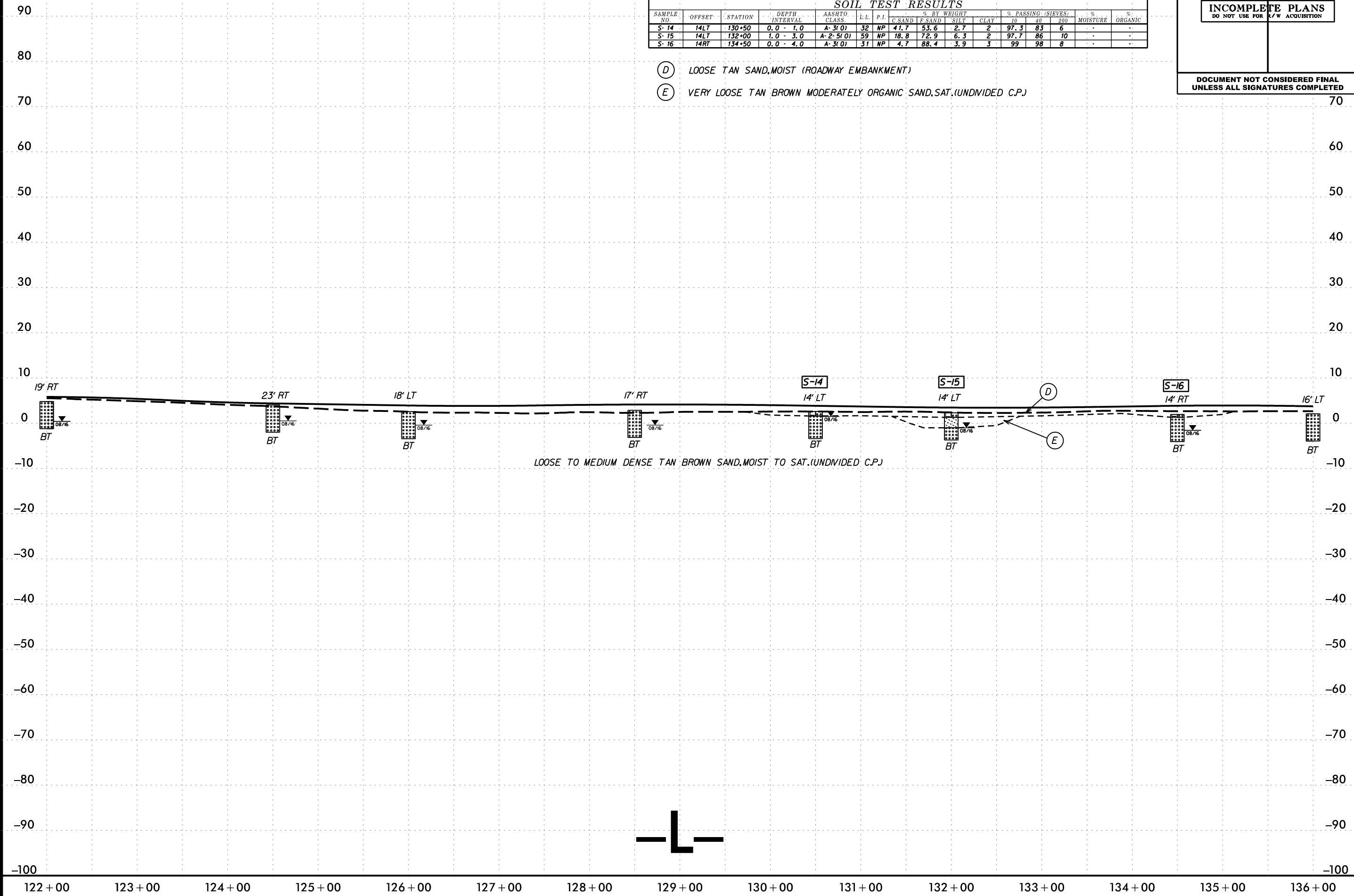
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PROJECT REFERENCE NO. R-5014	SHEET NO. 29
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)		% MOISTURE	% ORGANIC
							C SAND	F SAND	SILT	CLAY	#10	#200		
S-14	14LT	130+50	0.0 - 1.0	A-3(0)	32	NP	41.7	53.6	2.7	2	97.3	83	6	..
S-15	14LT	132+00	1.0 - 3.0	A-2-S(0)	59	NP	18.8	72.9	6.3	2	97.7	86	10	..
S-16	14RT	134+50	0.0 - 4.0	A-3(0)	31	NP	4.7	88.4	3.9	3	99	98	8	..

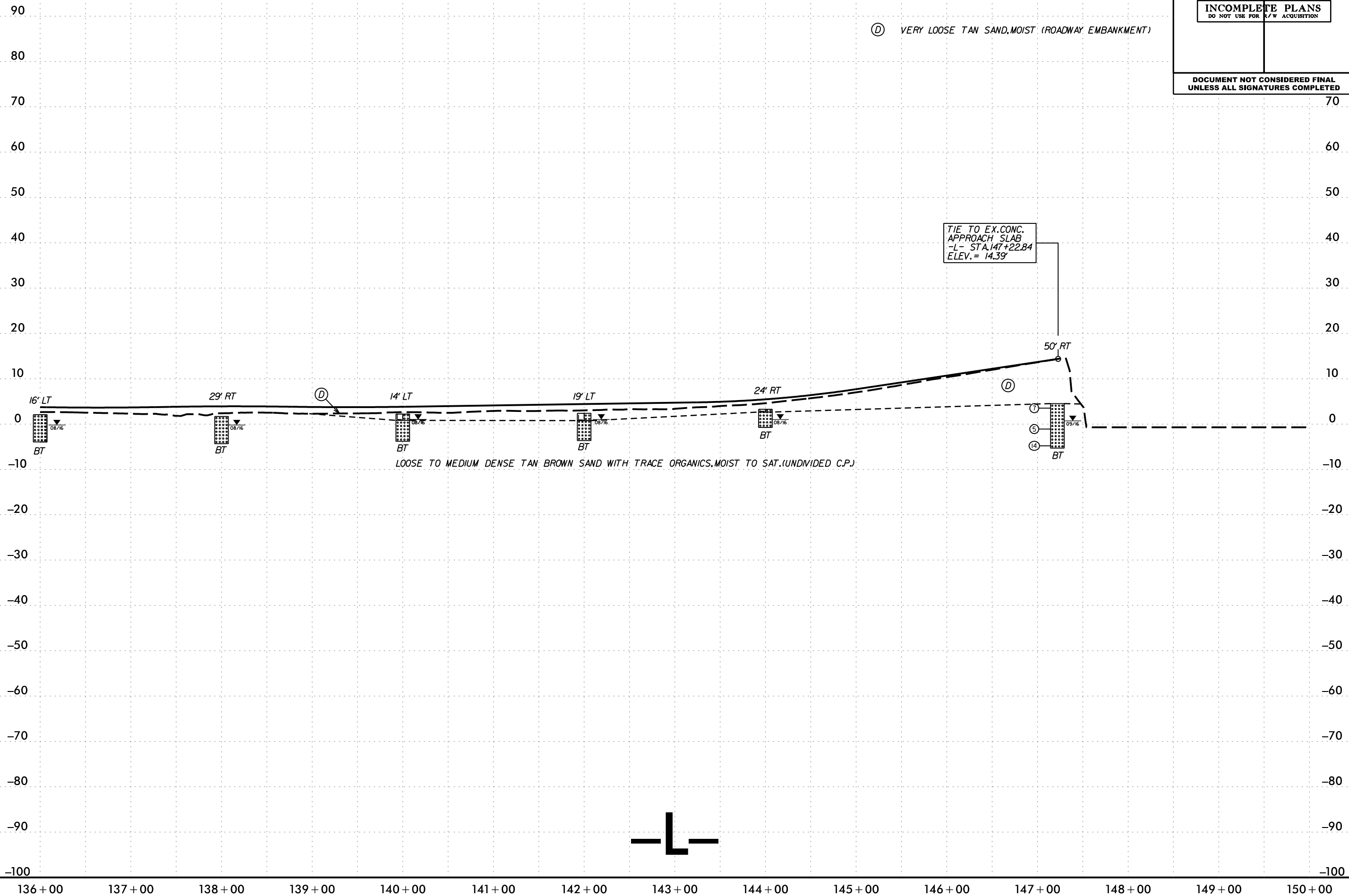
- (D) LOOSE TAN SAND, MOIST (ROADWAY EMBANKMENT)
- (E) VERY LOOSE TAN BROWN MODERATELY ORGANIC SAND, SAT. (UNDIVIDED C.P.)



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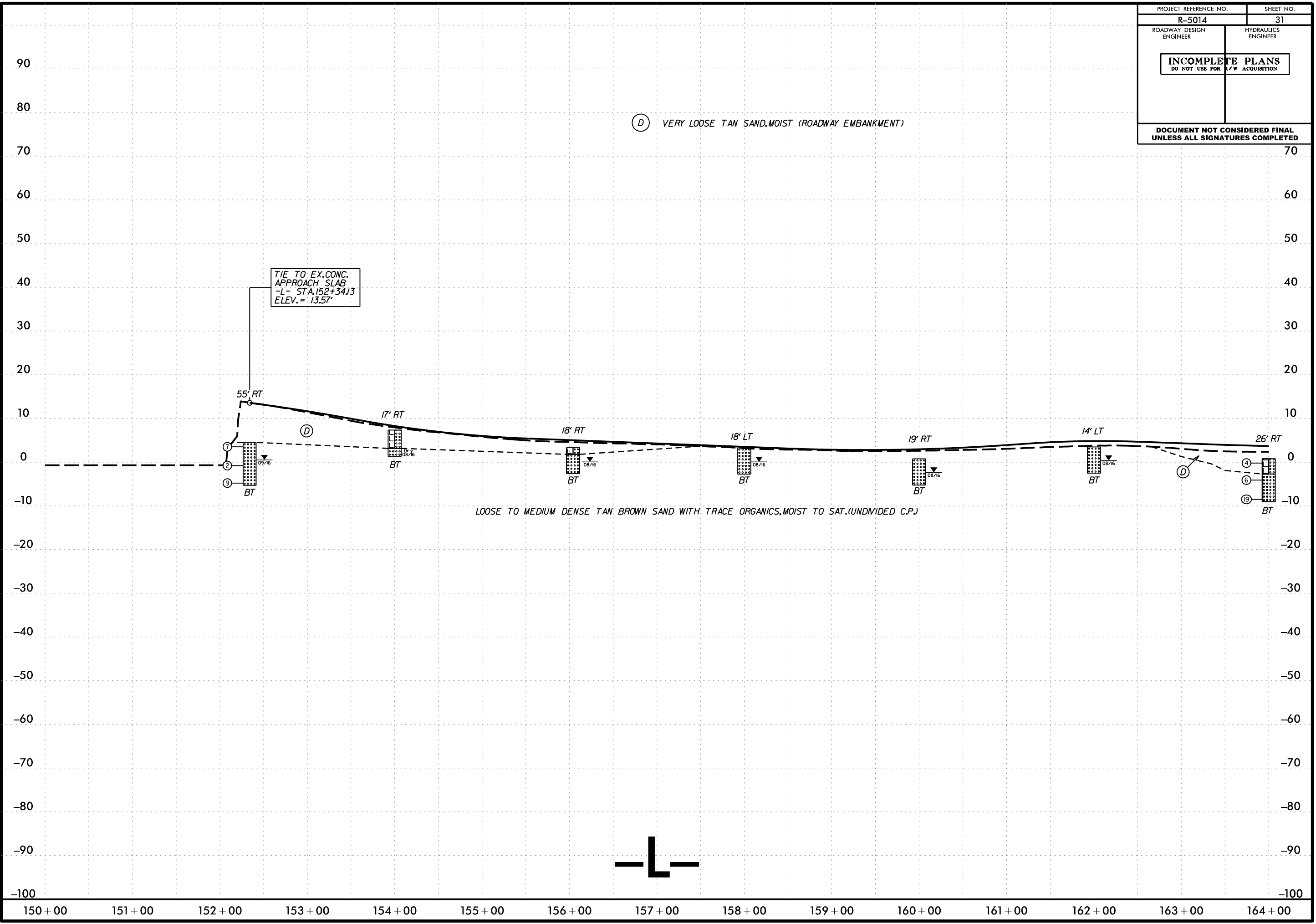
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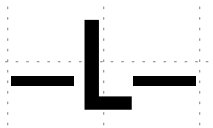
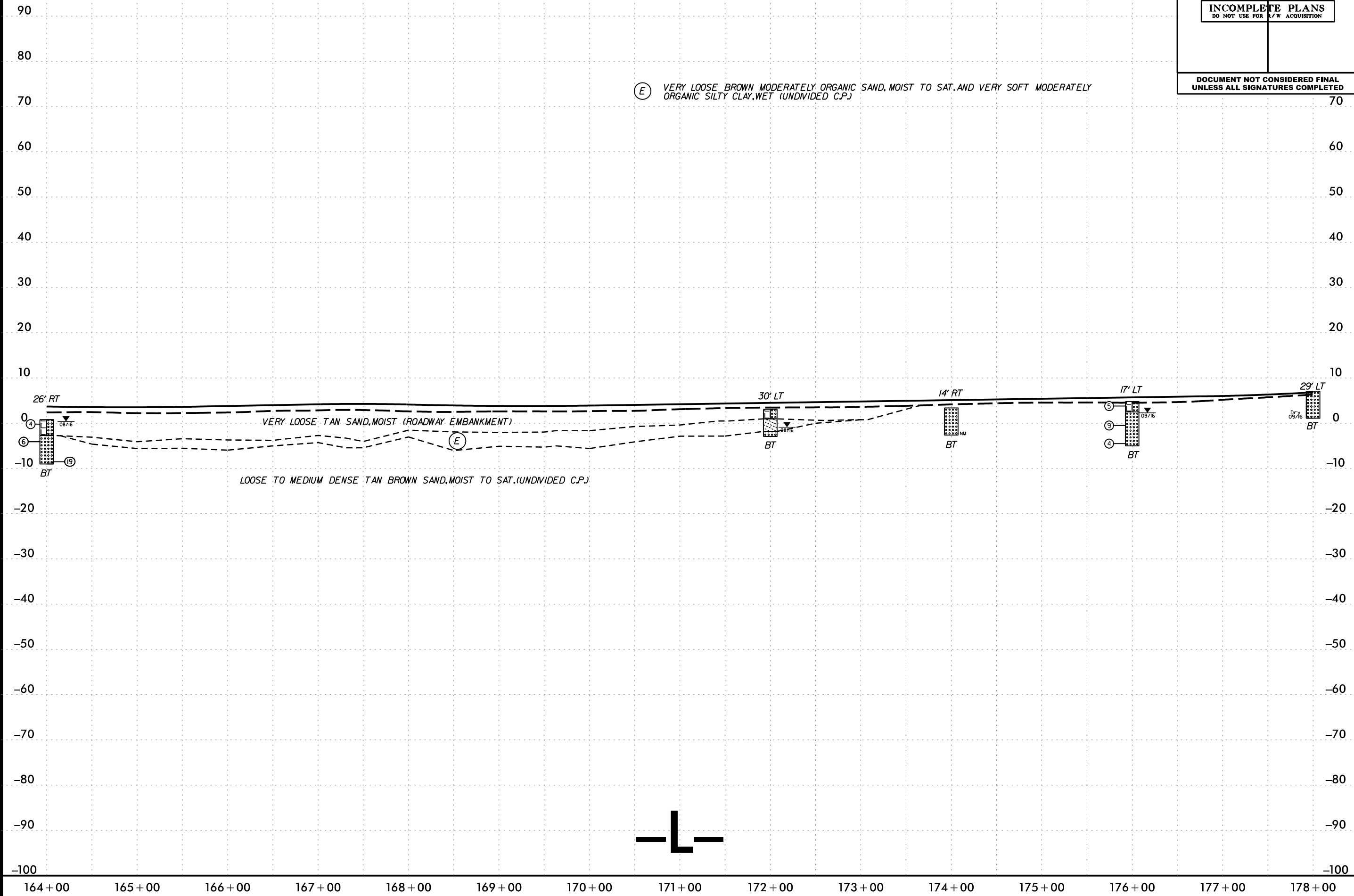
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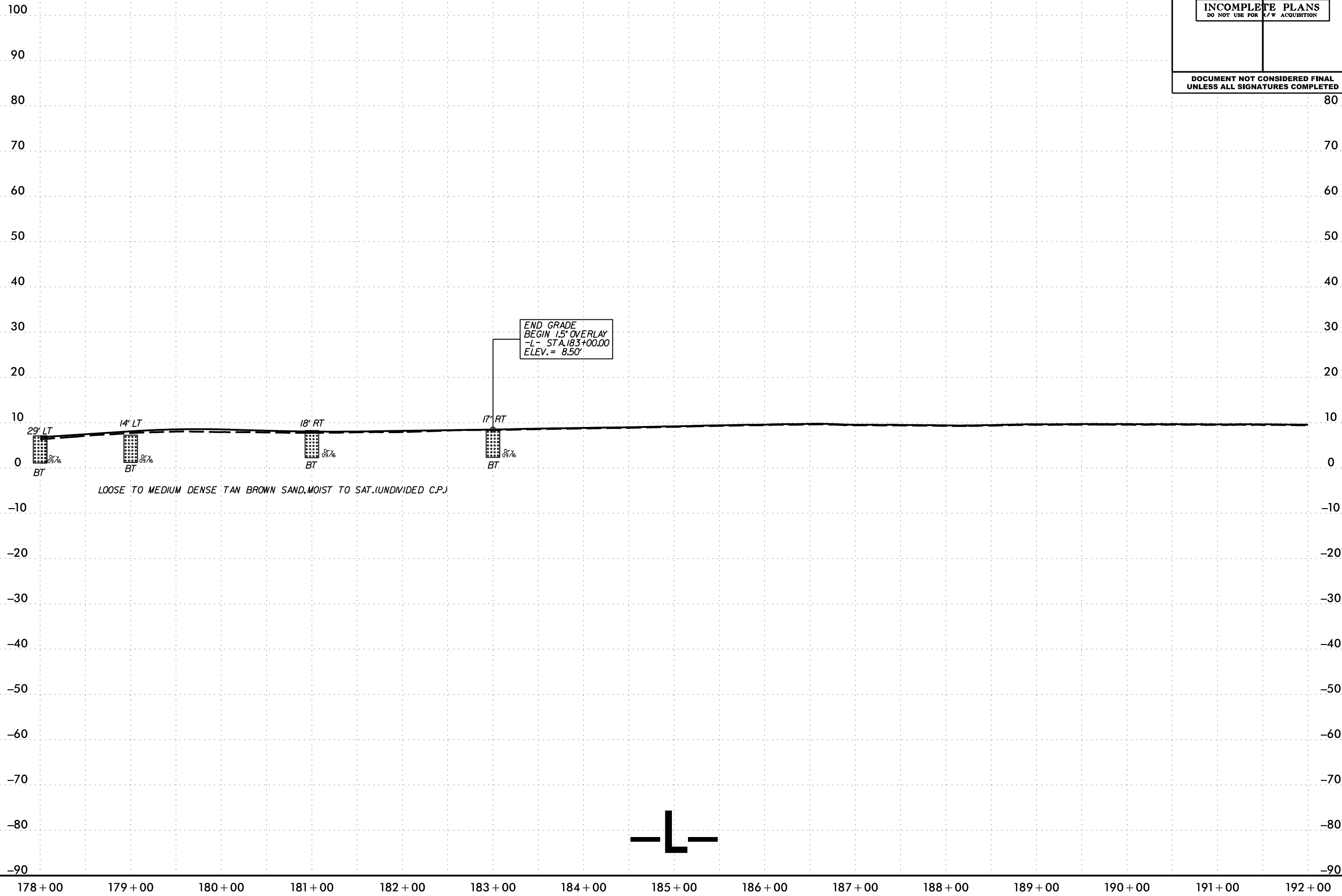
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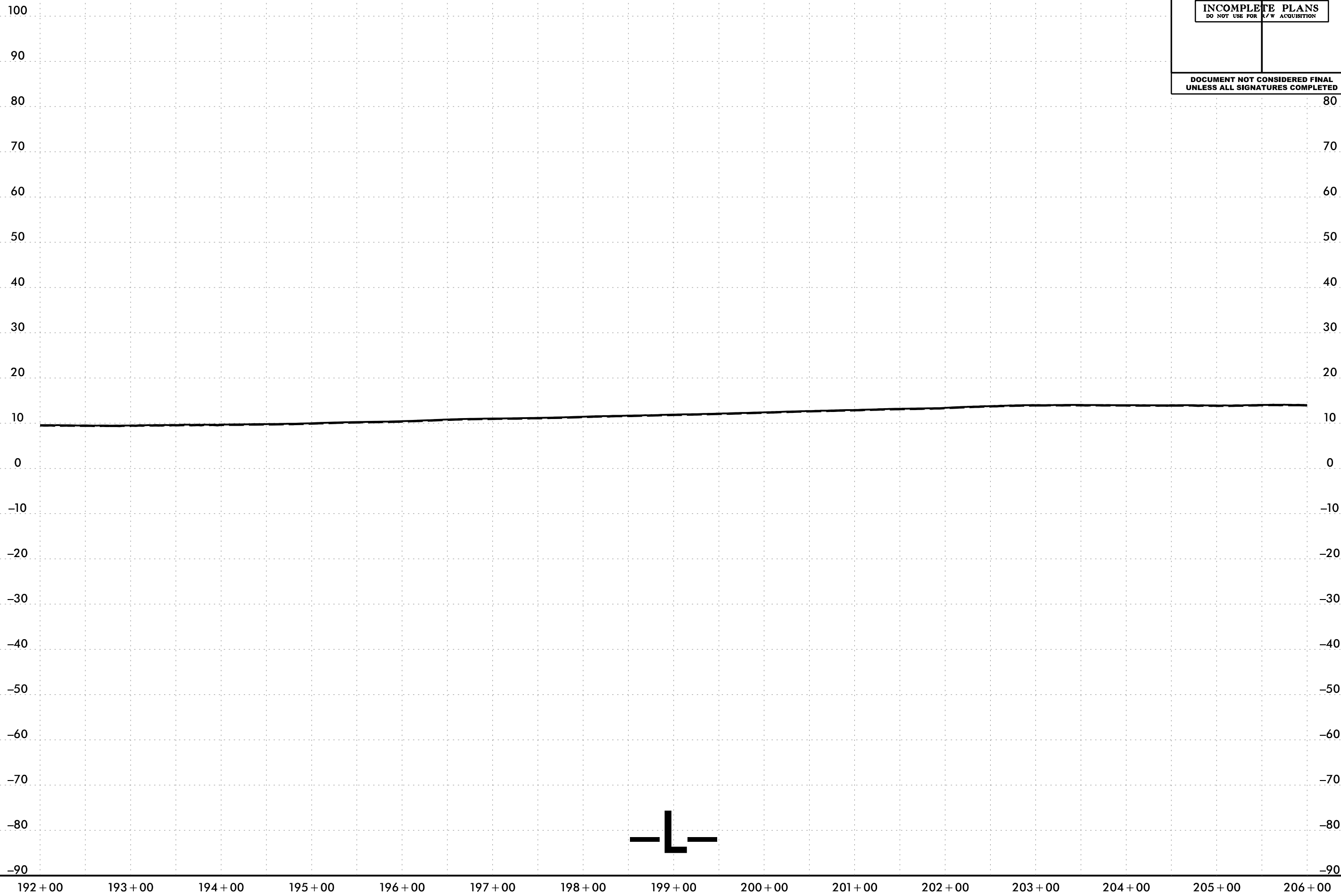
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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PROJECT REFERENCE NO.	SHEET NO.
R-5014	34
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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 192+00 193+00 194+00 195+00 196+00 197+00 198+00 199+00 200+00 201+00 202+00 203+00 204+00 205+00 206+00

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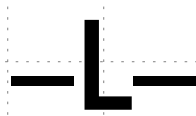
PROJECT REFERENCE NO.	SHEET NO.
R-5014	35
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

100
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-60
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-80
-90

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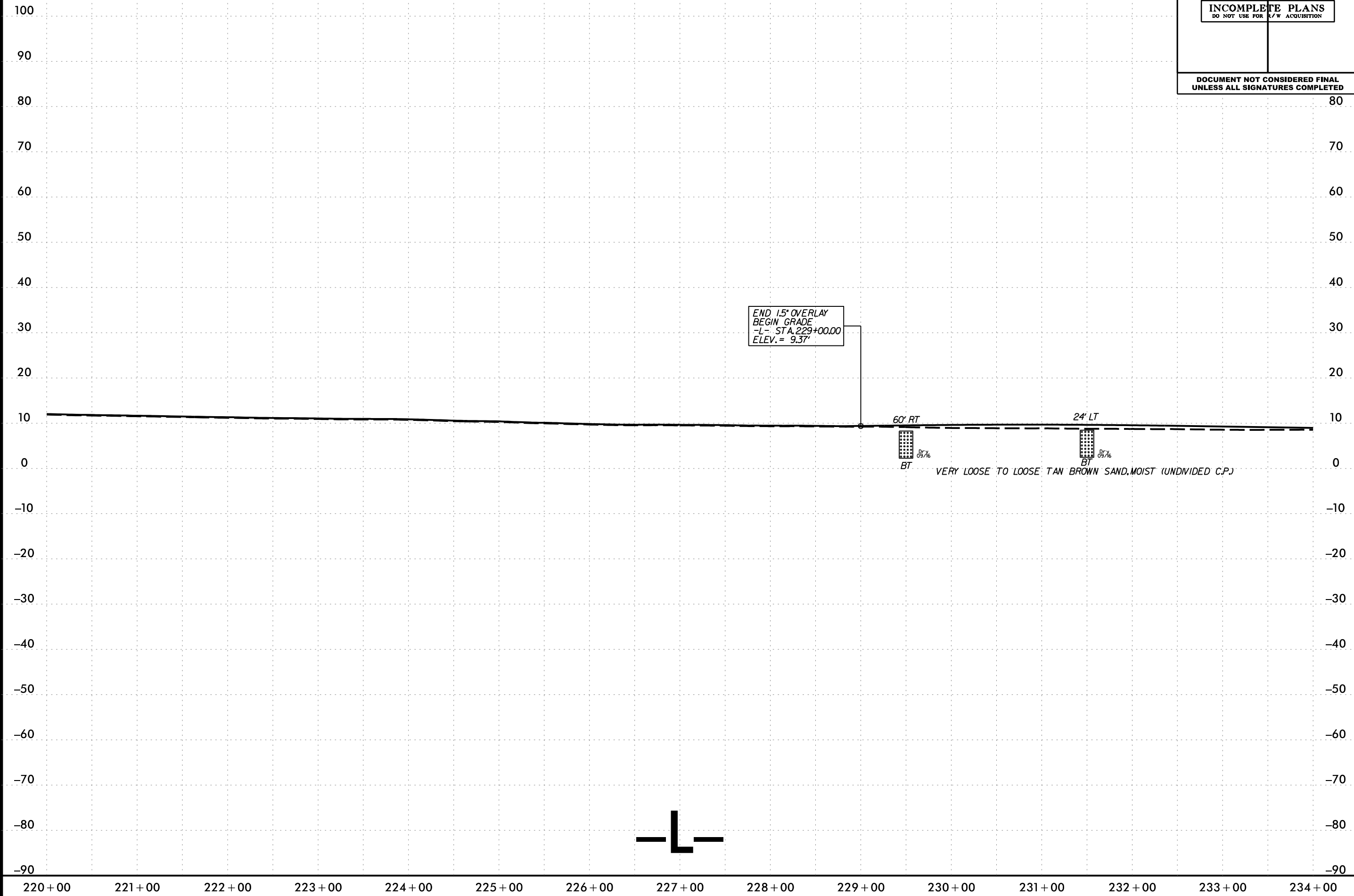
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AL MARRAS/11/11/16



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PROJECT REFERENCE NO.	SHEET NO.
R-5014	36
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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AL MARRAS

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PROJECT REFERENCE NO. R-5014	SHEET NO. 37
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

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-10
-20
-30
-40
-50
-60
-70
-80
-90

80
70
60
50
40
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90

234+00 235+00 236+00 237+00 238+00 239+00 240+00

END GRADE
BEGIN 1.5" OVERLAY
-L- STA. 235+77.02
ELEV. = 9.44'

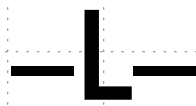
-L- STA. 236+19.02 =
-YI- STA. 13+00.01

END OVERLAY
-L- STA. 240+00.00
ELEV. = 7.72'

37' LT



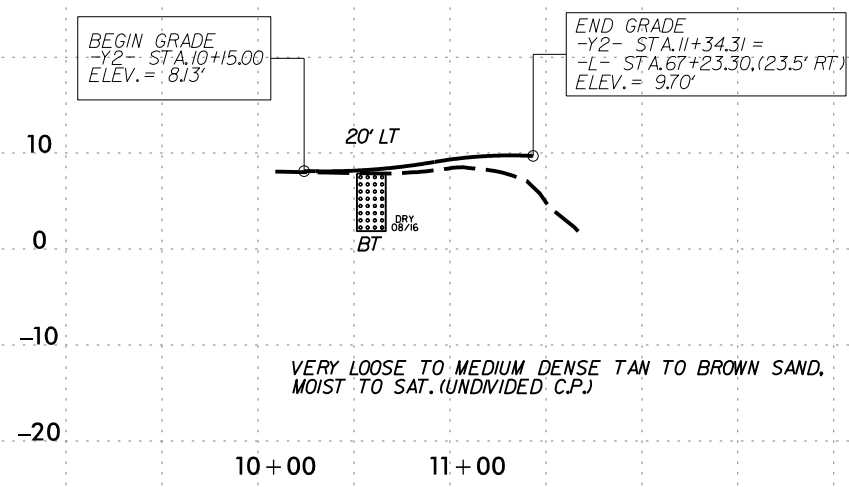
VERY LOOSE TO LOOSE TAN BROWN SAND, MOIST (UNDIVIDED C.P.)



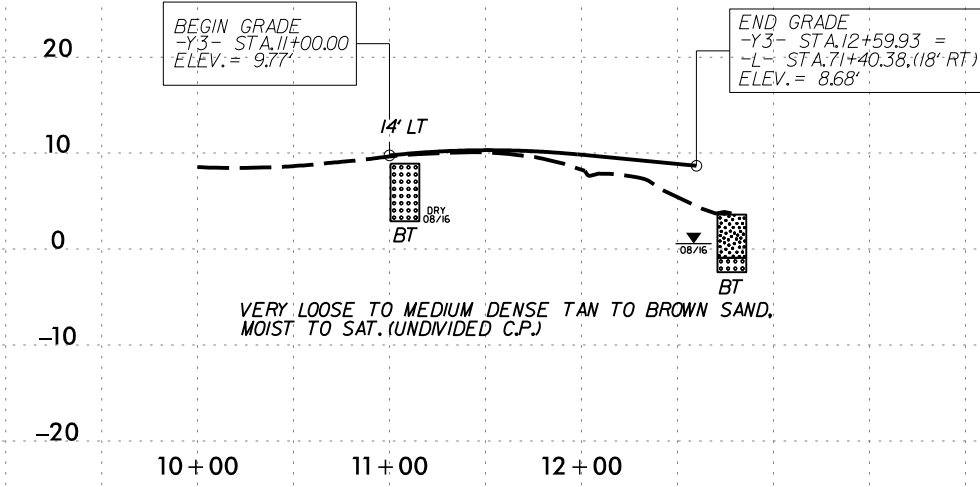
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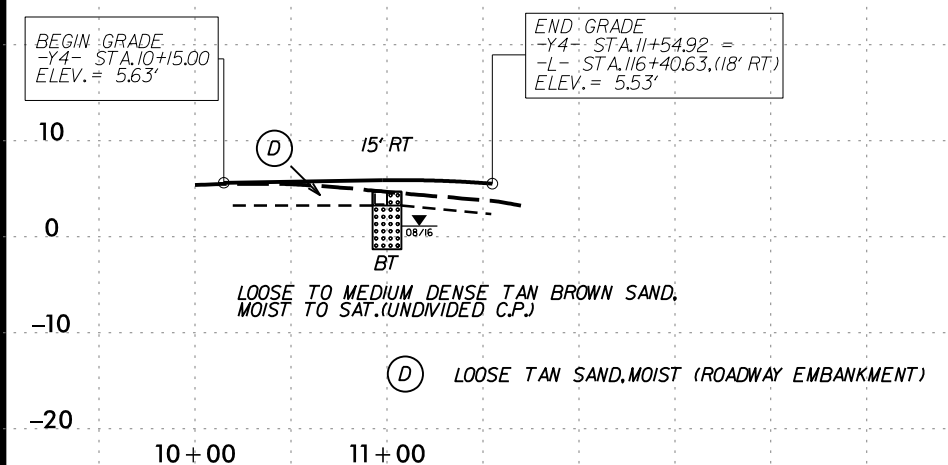
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



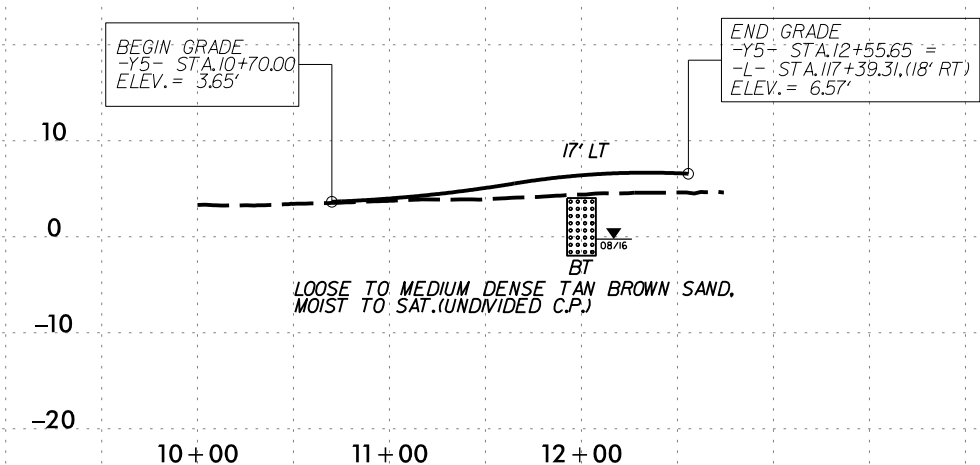
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-Y3-



-Y4-



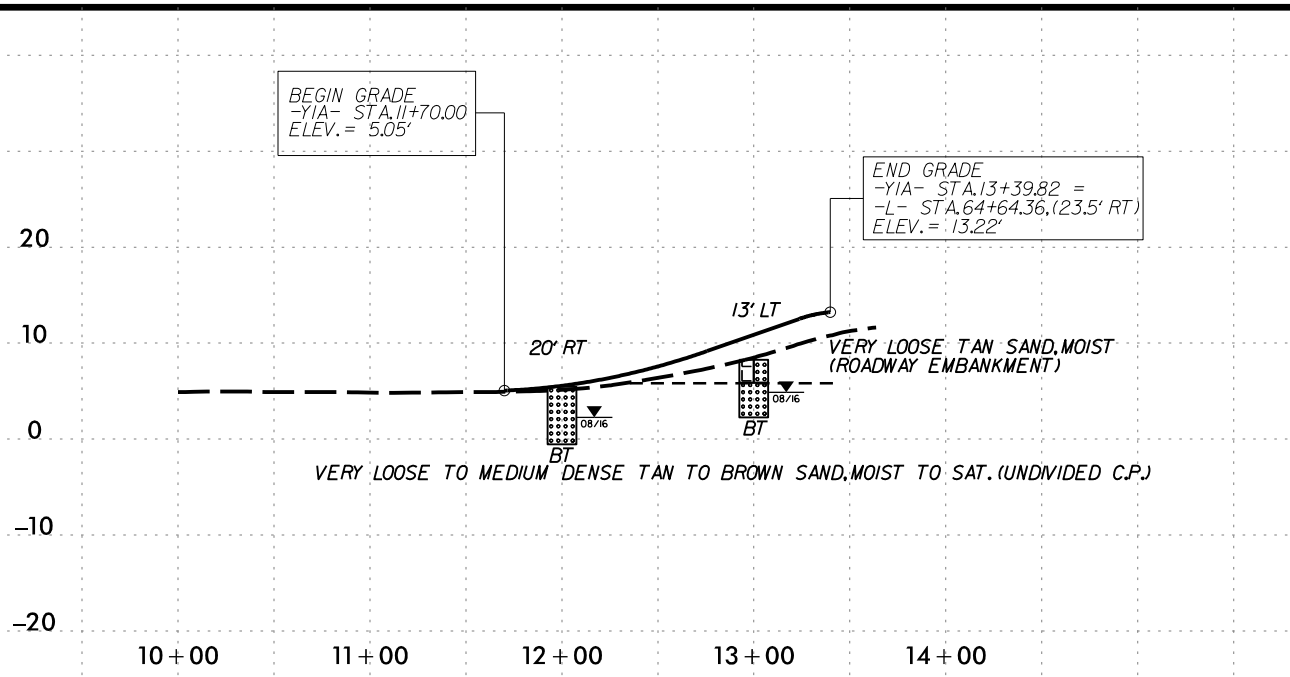
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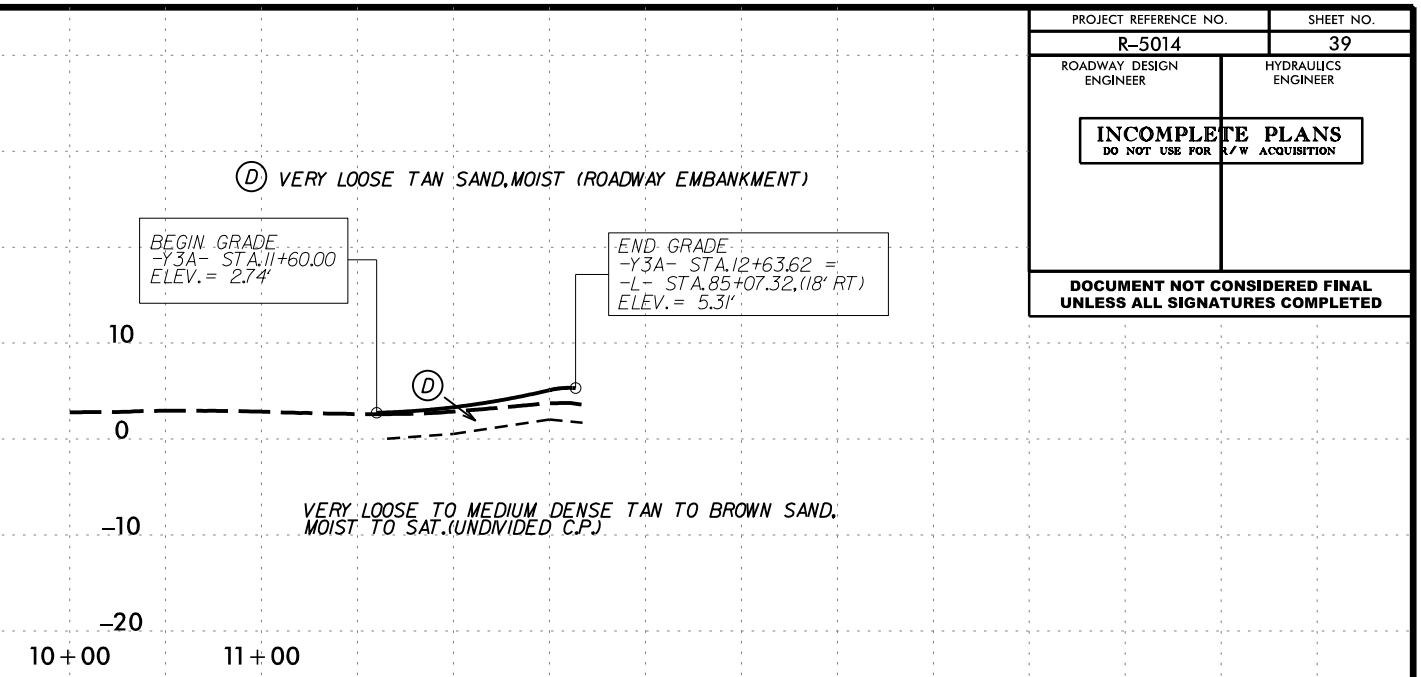
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

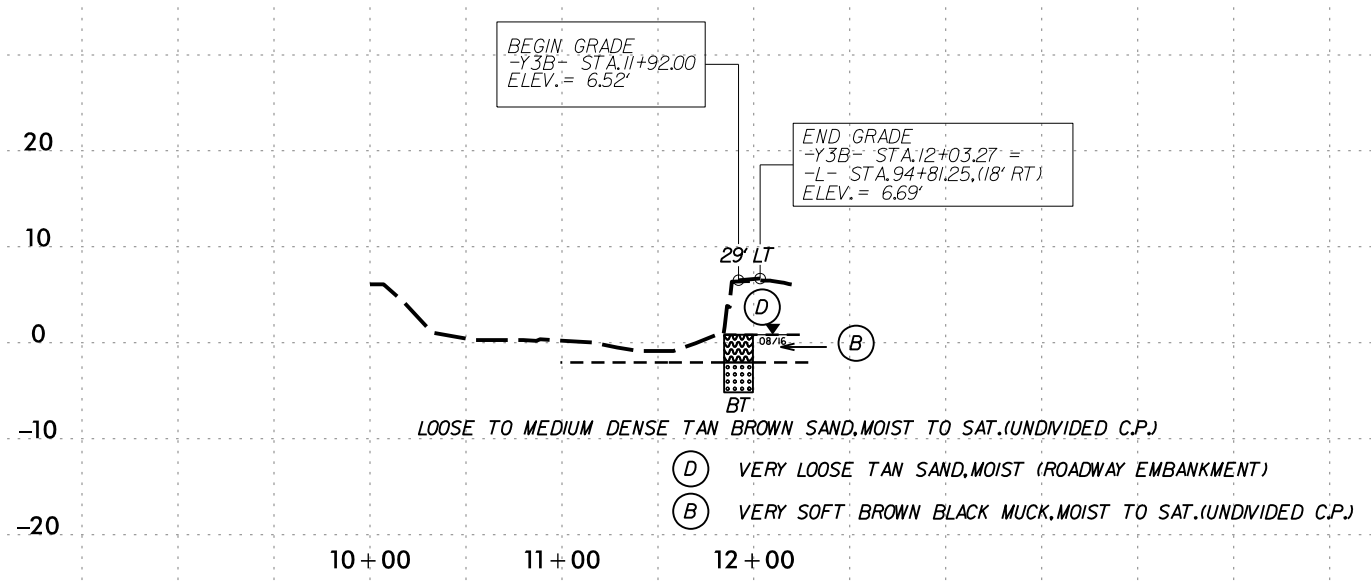
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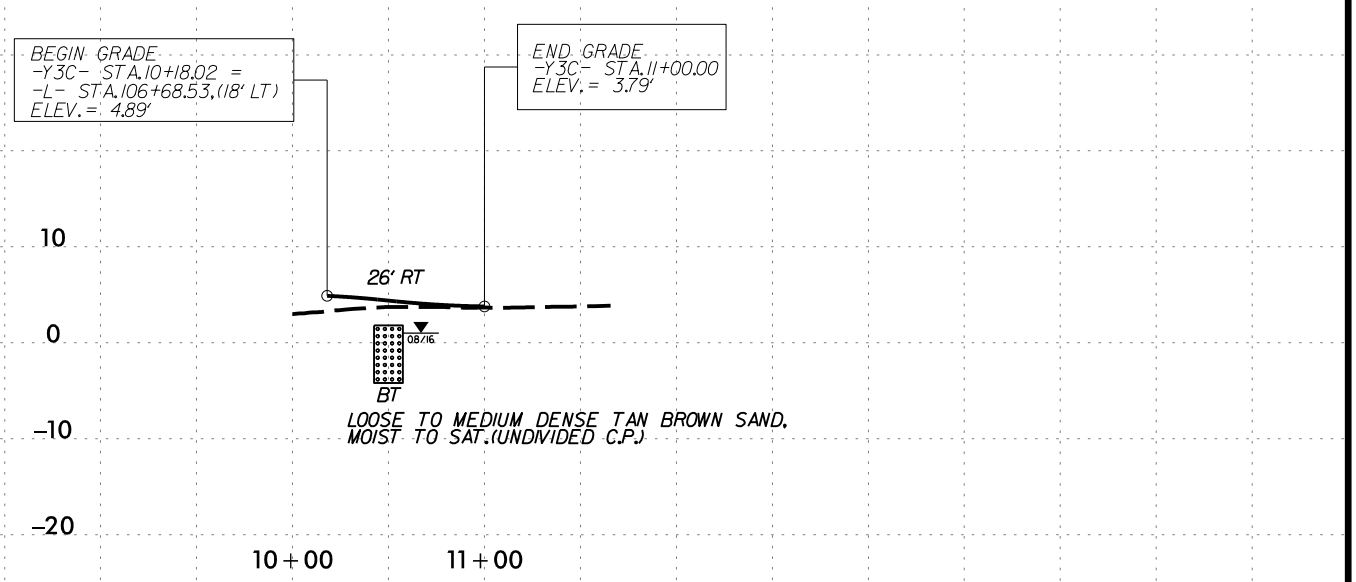
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-Y3B-



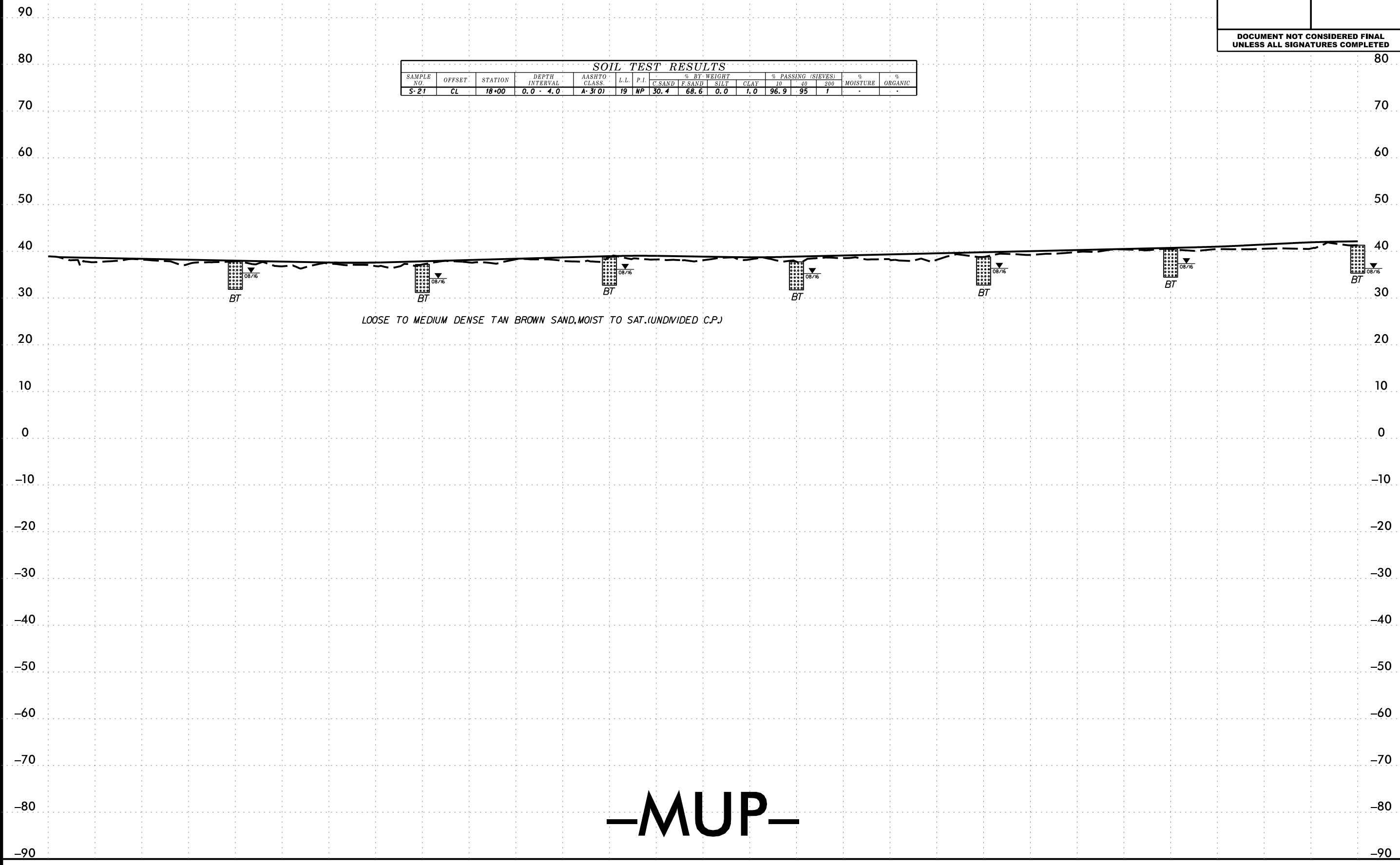
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PROJECT REFERENCE NO.		SHEET NO.	
R-5014		40	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-27	CL	18+00	0.0 - 4.0	A-3(0)	19	NP	30.4	68.6	0.0	1.0	96.9	95	1	-	-



LOOSE TO MEDIUM DENSE TAN BROWN SAND, MOIST TO SAT. (UNDIVIDED C.P.)

-MUP-

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PROJECT REFERENCE NO.		SHEET NO.	
R-5014		41	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

100

90

80

70

60

50

40

30

20

10

0

-10

-20

-30

-40

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-60

-70

-80

-90

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30

20

10

0

-10

-20

-30

-40

-50

-60

-70

-80

-90

LOOSE TO MEDIUM DENSE TAN BROWN SAND, MOIST TO SAT. (UNDIVIDED C.P.)

LOOSE TO MEDIUM DENSE TAN BROWN SAND, MOIST TO SAT. (UNDIVIDED C.P.)

-MUP-

-90

24+00

25+00

26+00

27+00

28+00

29+00

30+00

31+00

32+00

33+00

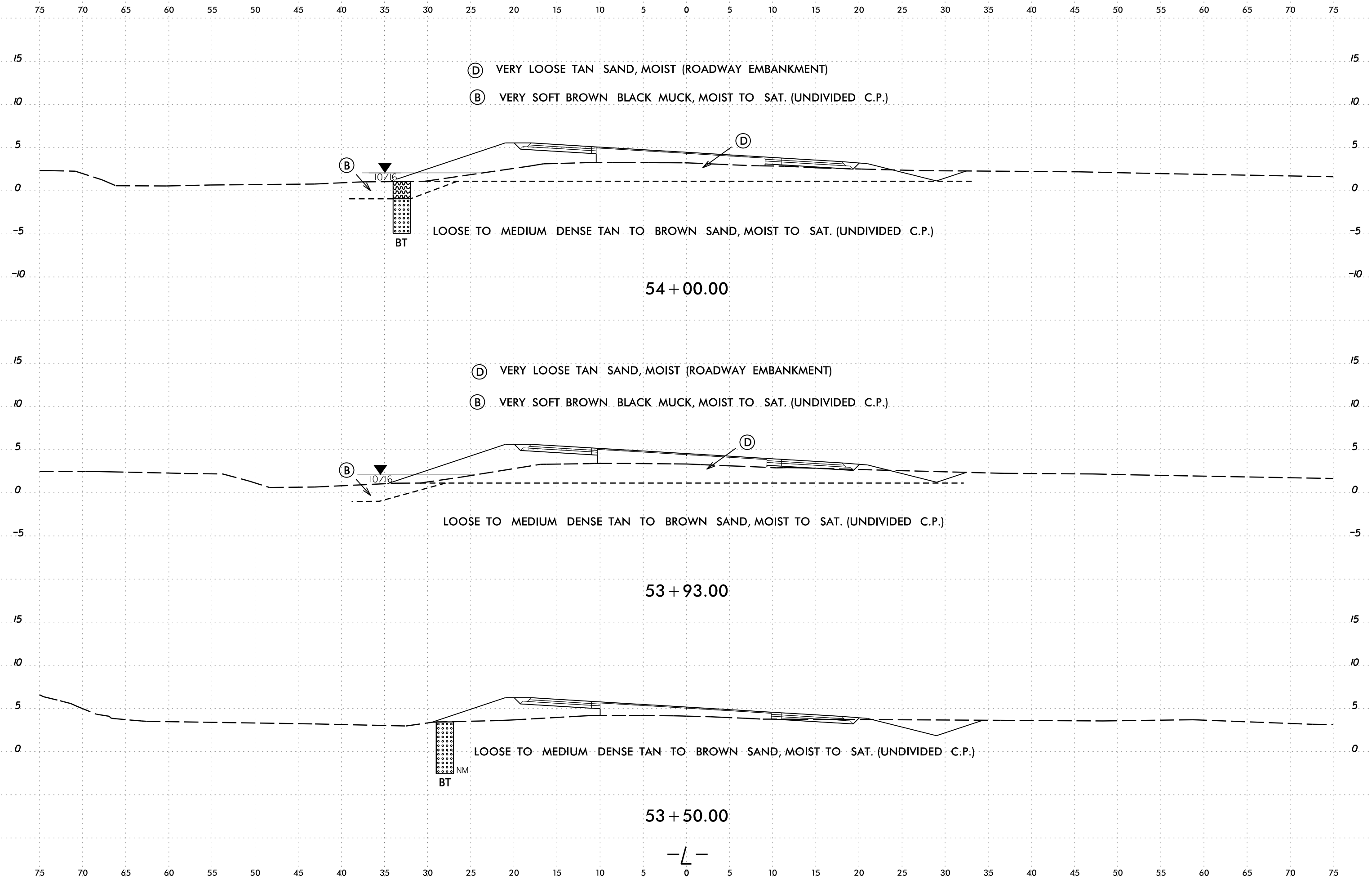
34+00

35+00

36+00

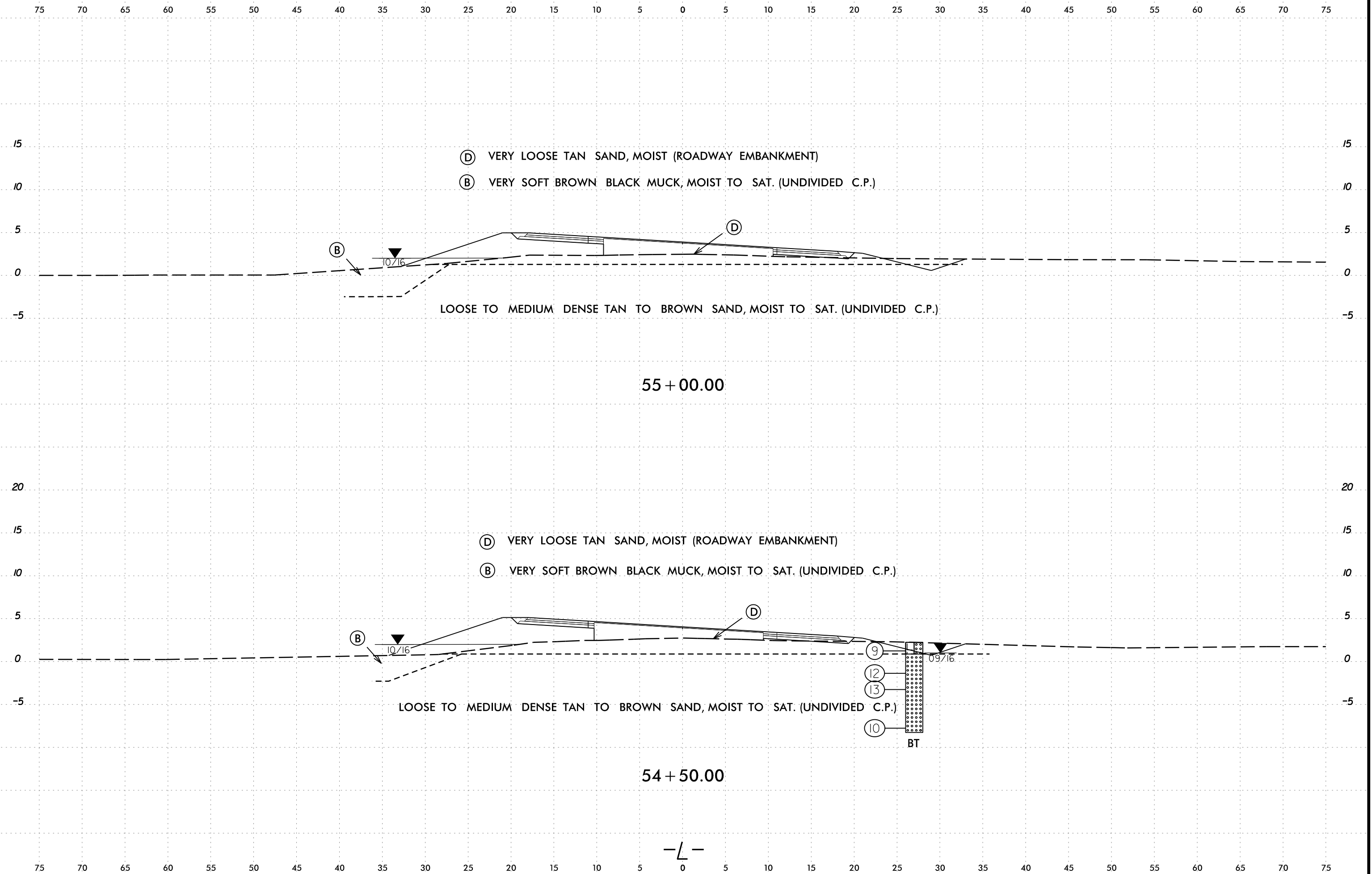
37+00

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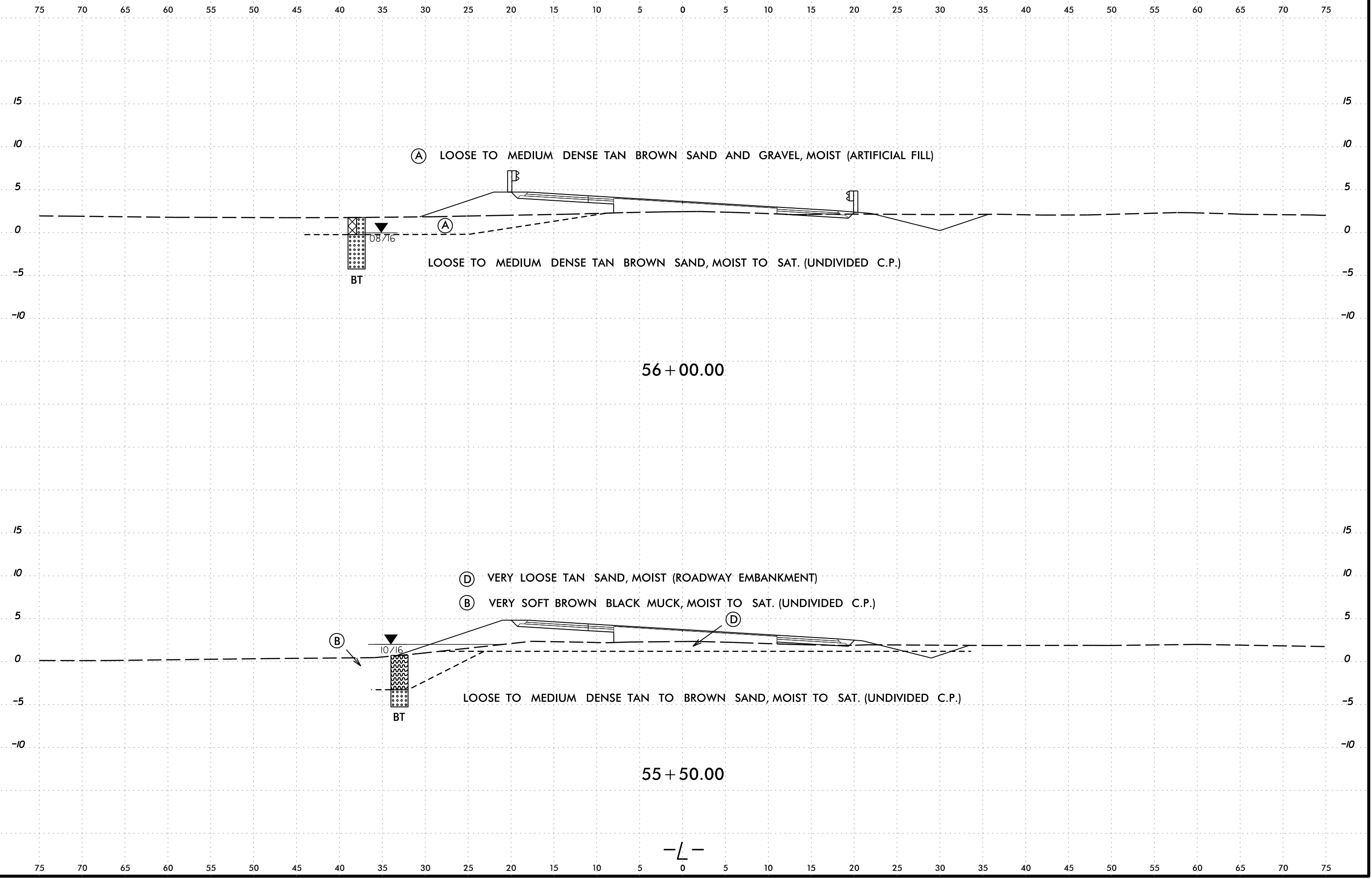
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LSTONE AT MICROSTATIONPC2



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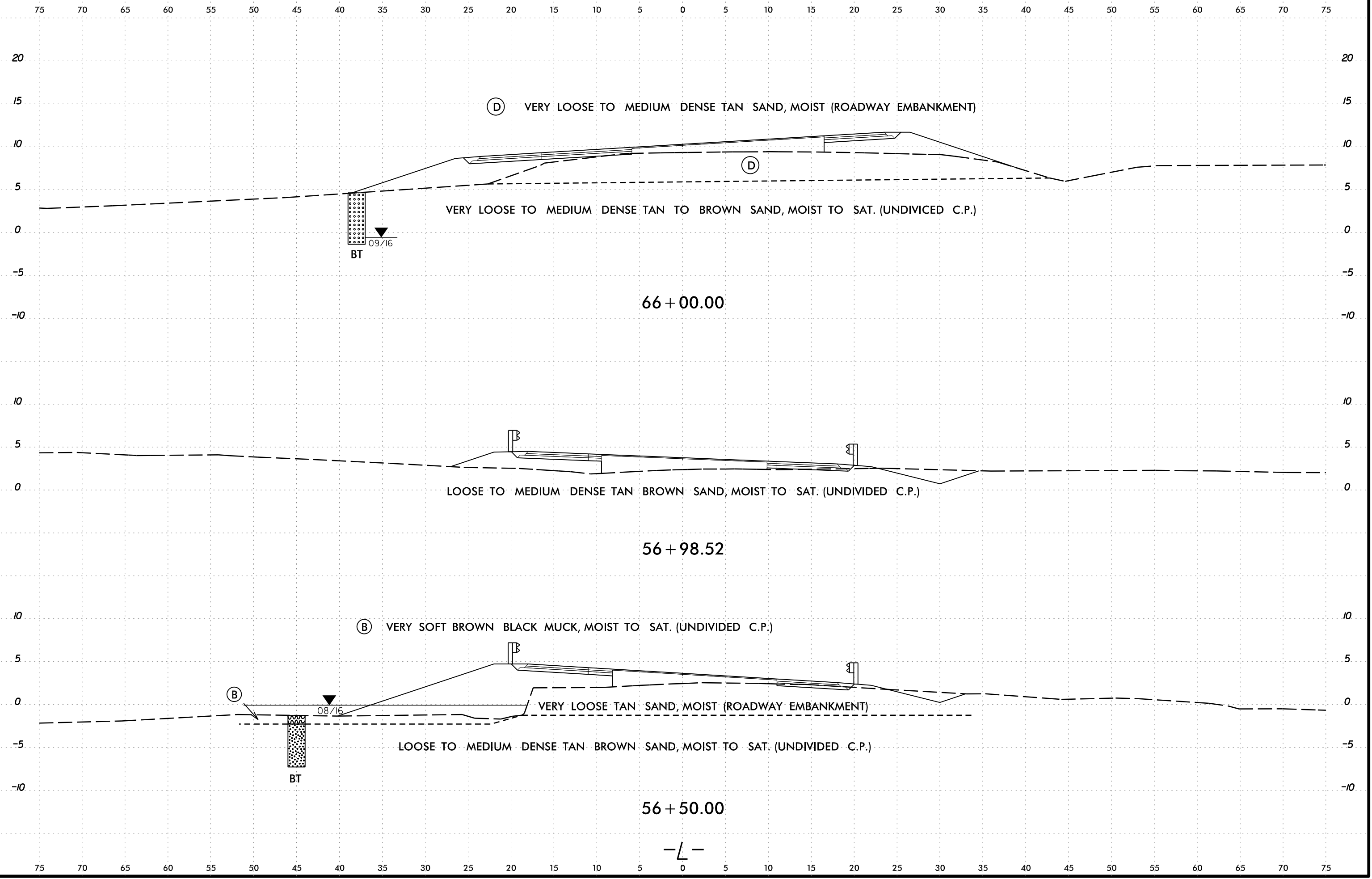
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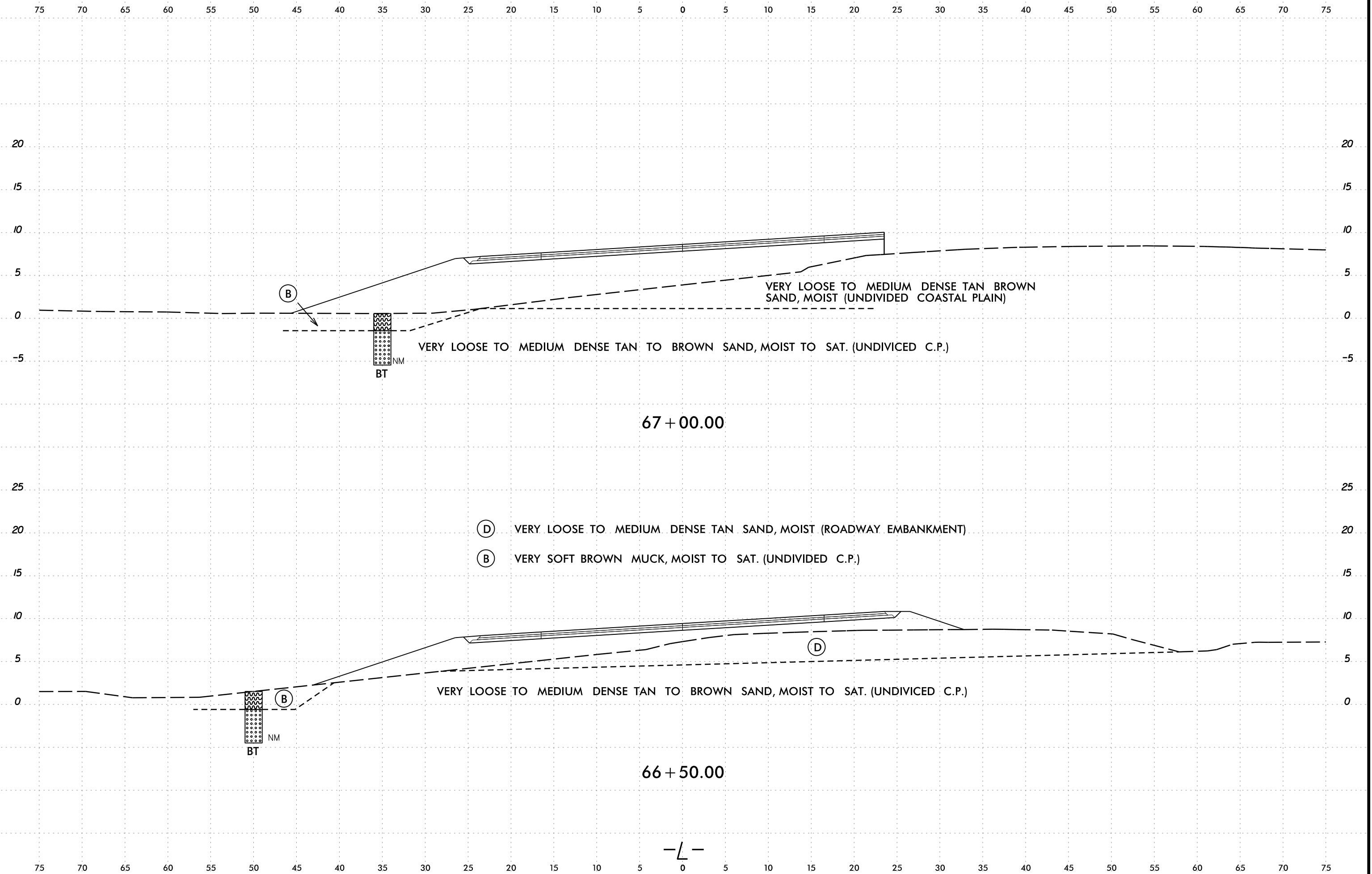
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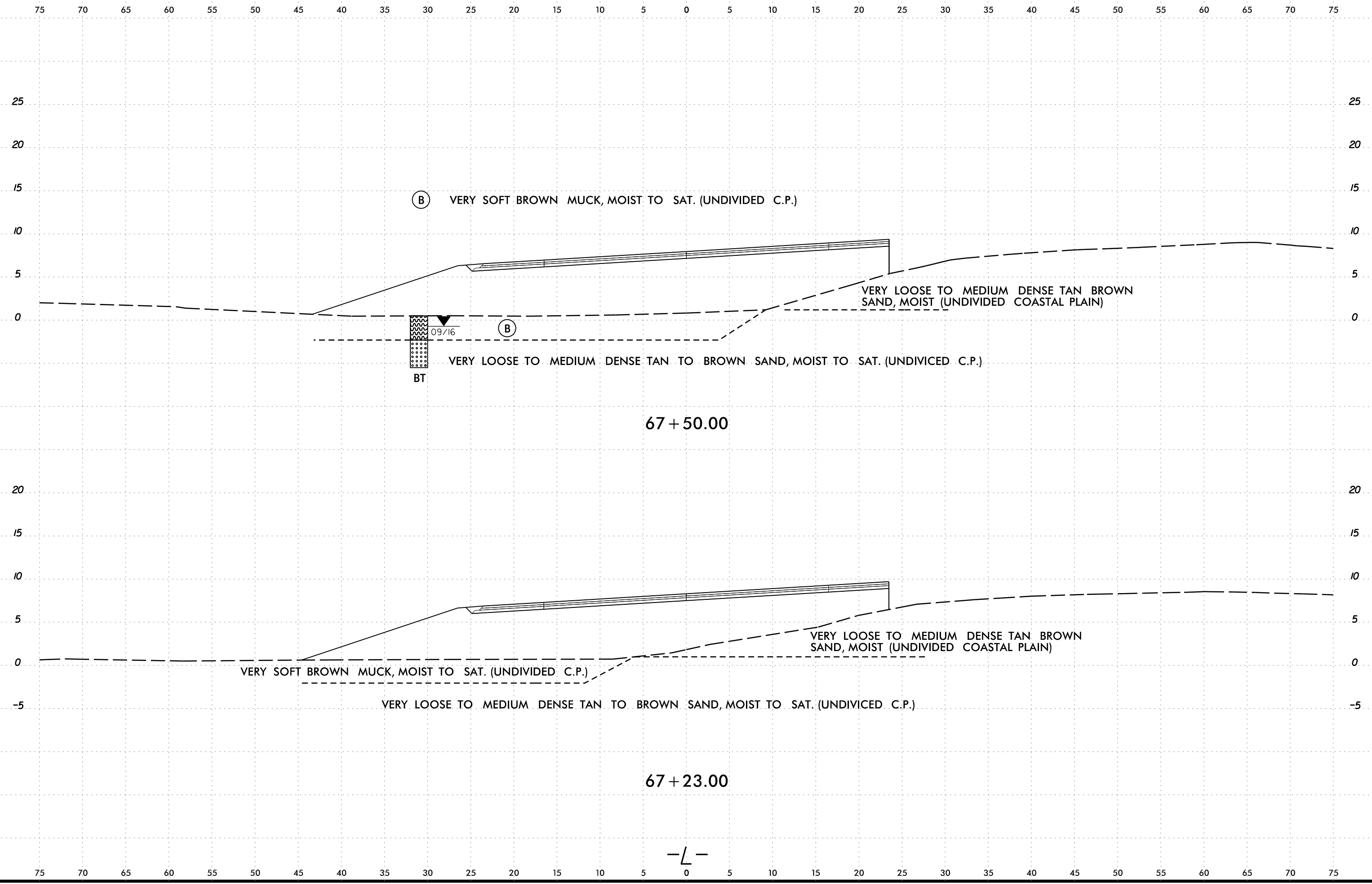


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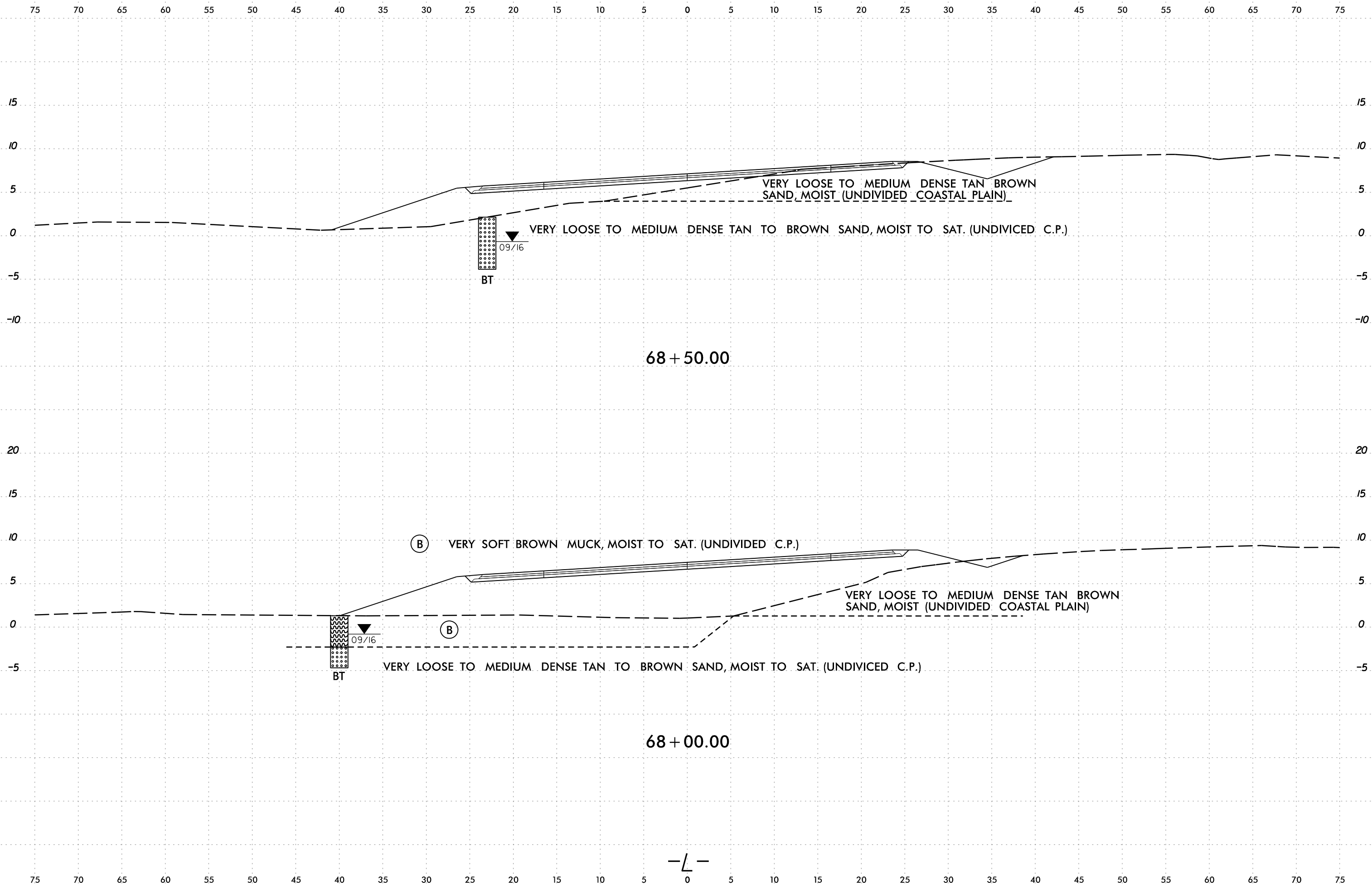
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LSTONE AT MICROSTATIONPC2



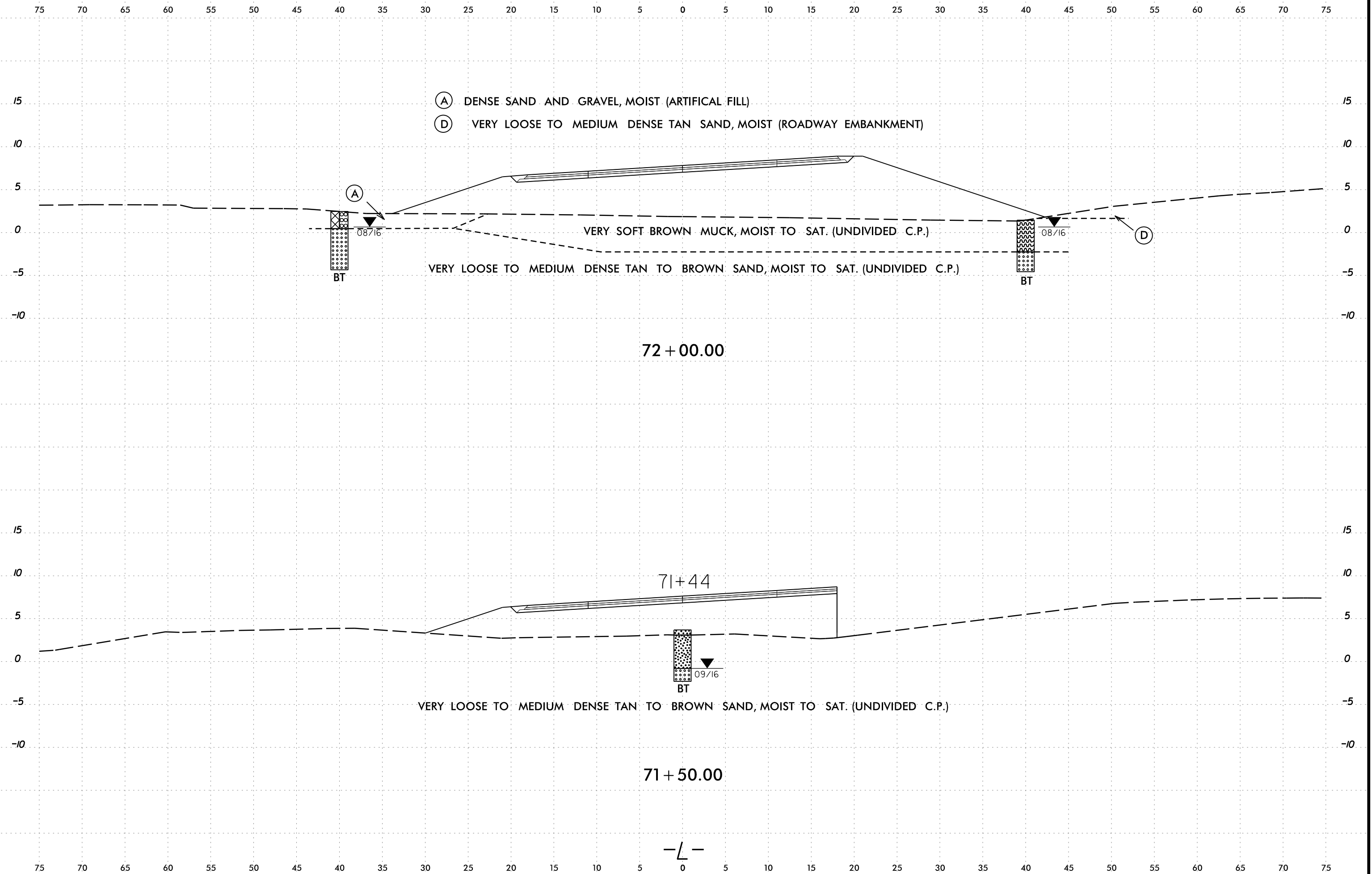


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 Isotone AT MICROSTATIONPC2



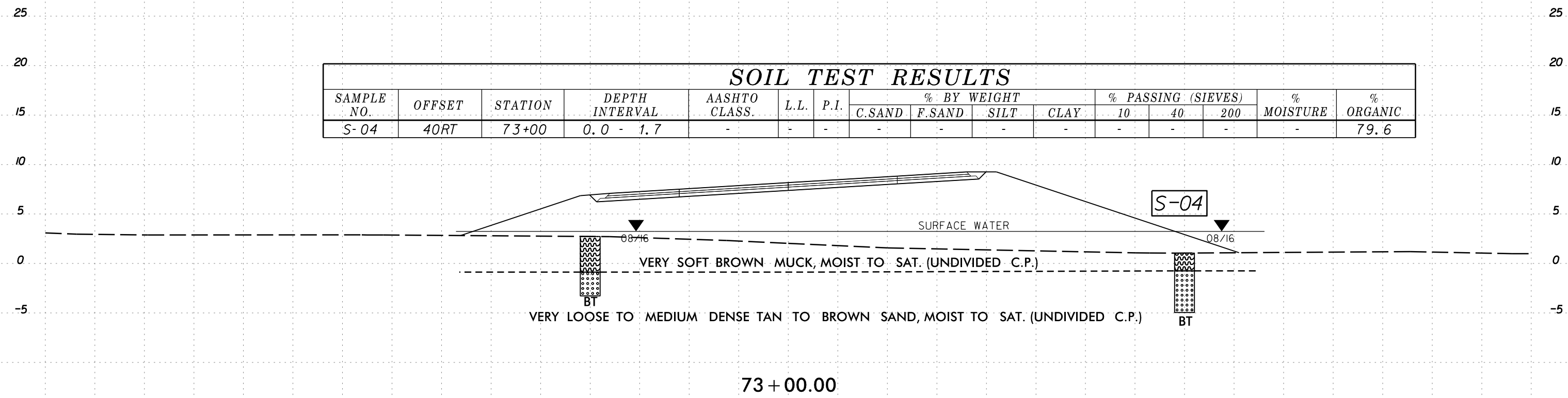
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6/23/16
28-OCT-2016 13:31
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LSTONE AT MICROSTATIONPC2

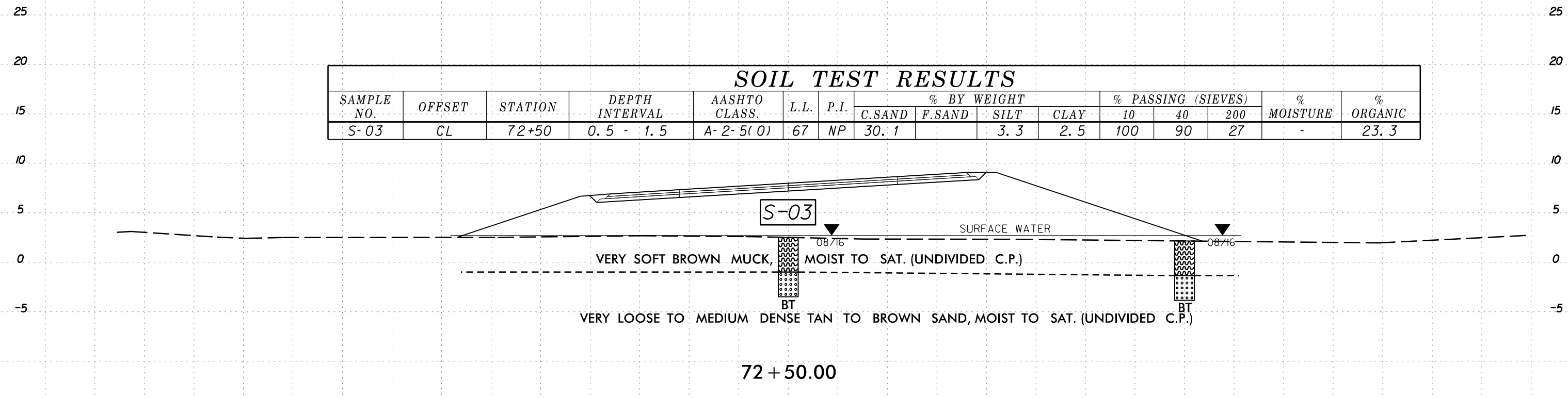


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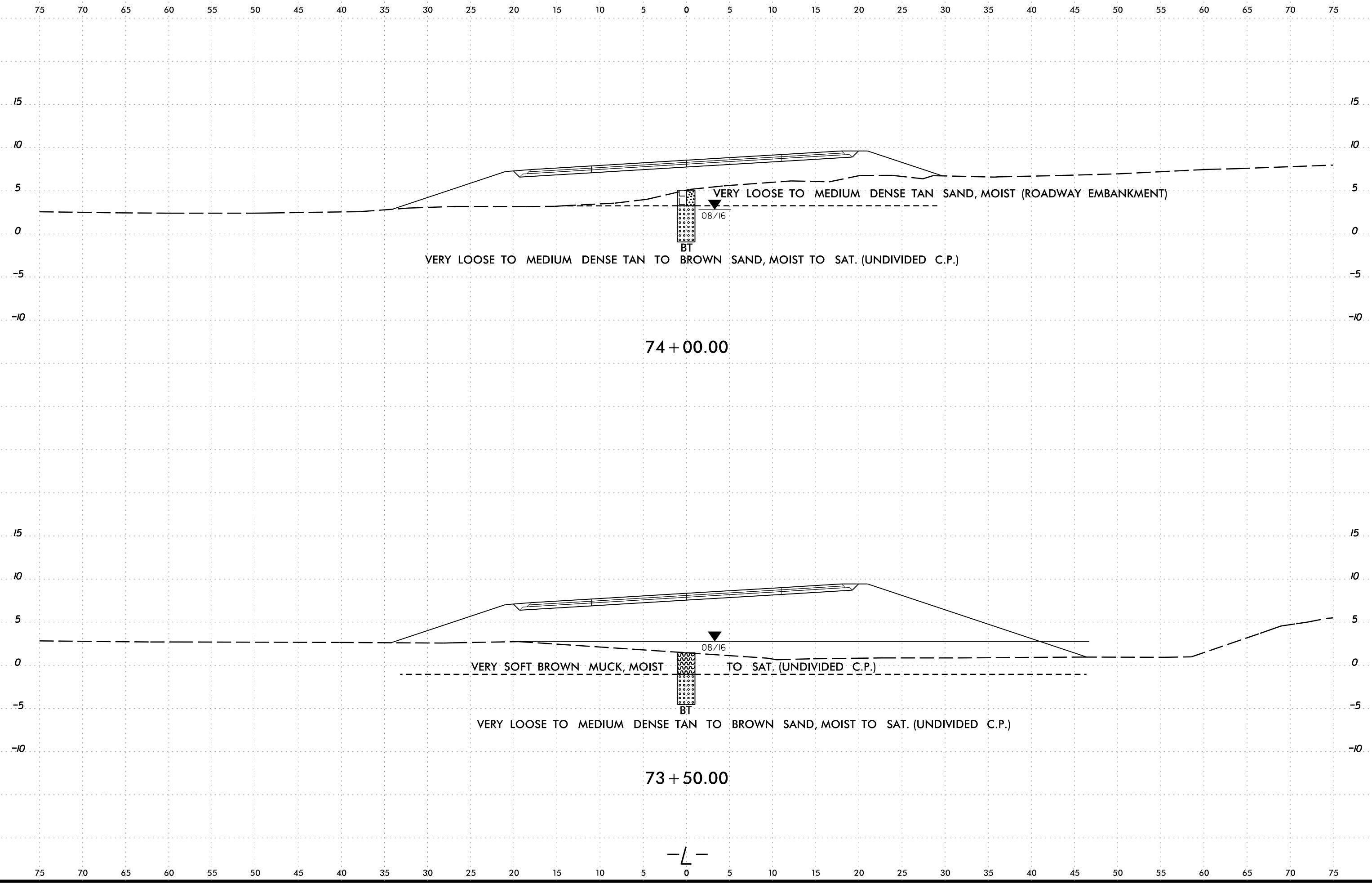
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-04	40RT	73+00	0.0 - 1.7	-	-	-	-	-	-	-	-	-	-	-	79.6



SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-03	CL	72+50	0.5 - 1.5	A-2-5(0)	67	NP	30.1	-	3.3	2.5	100	90	27	-	23.3

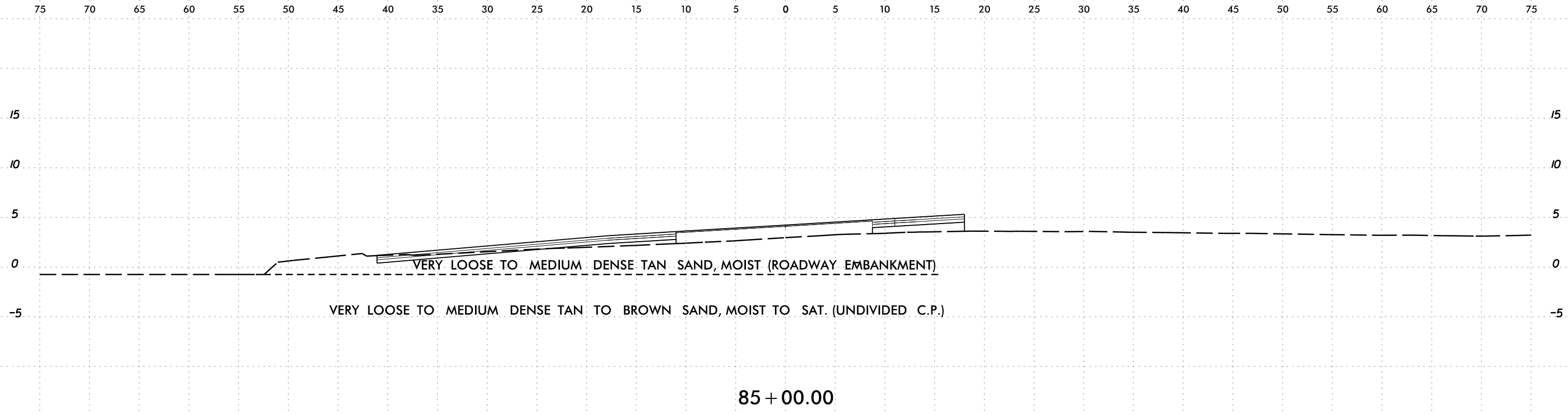


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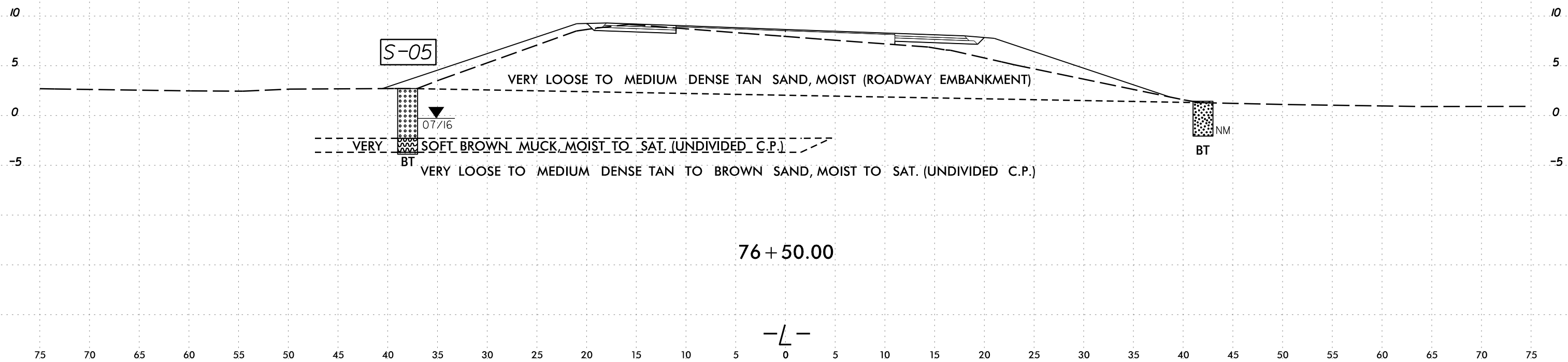
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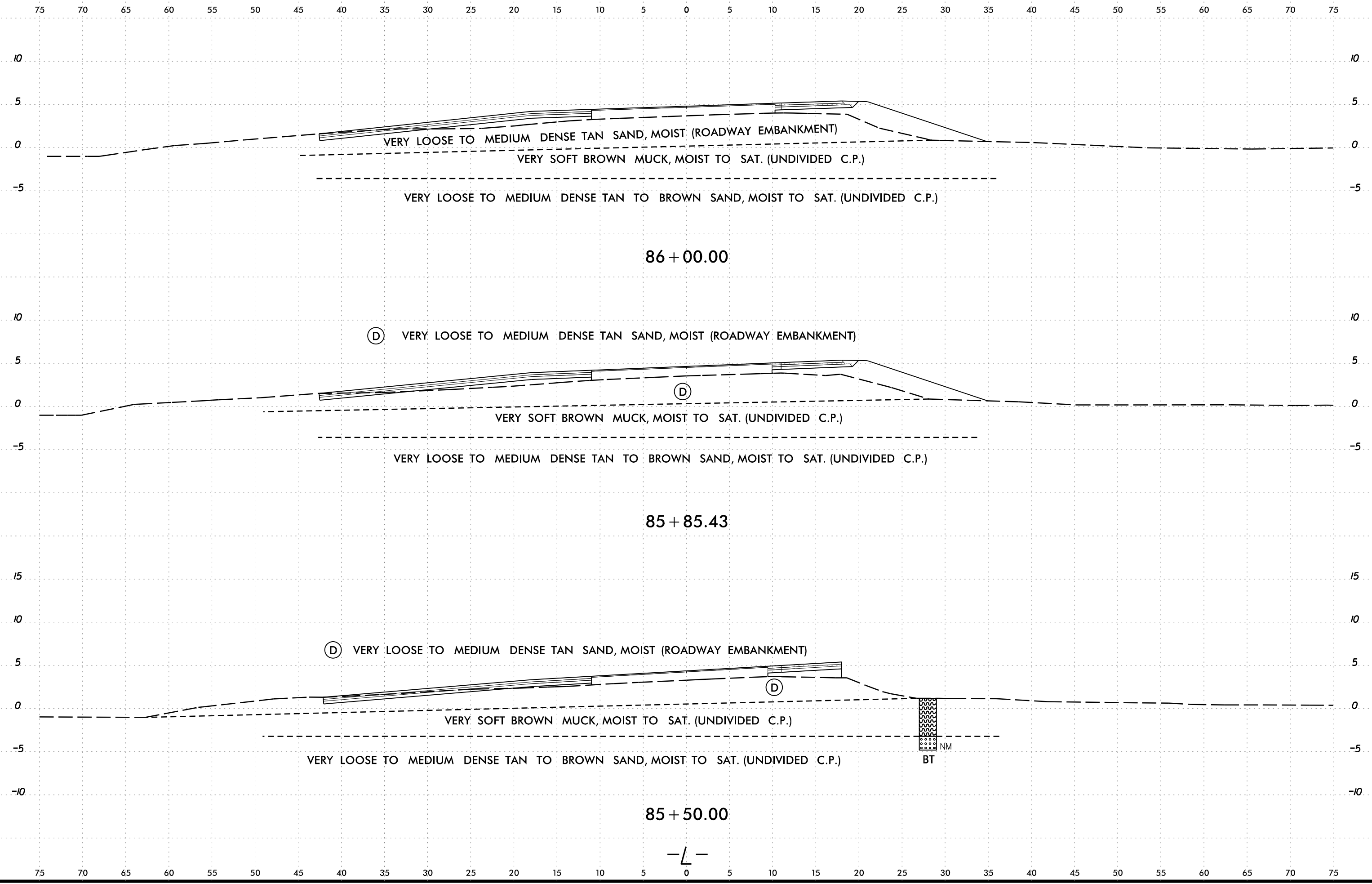
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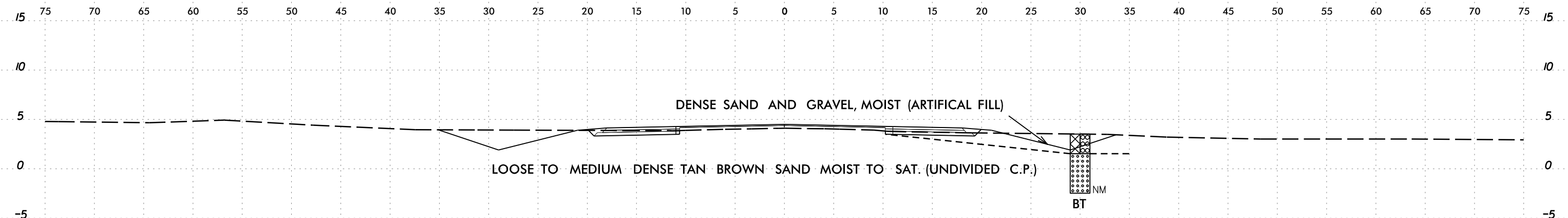


SOIL TEST RESULTS

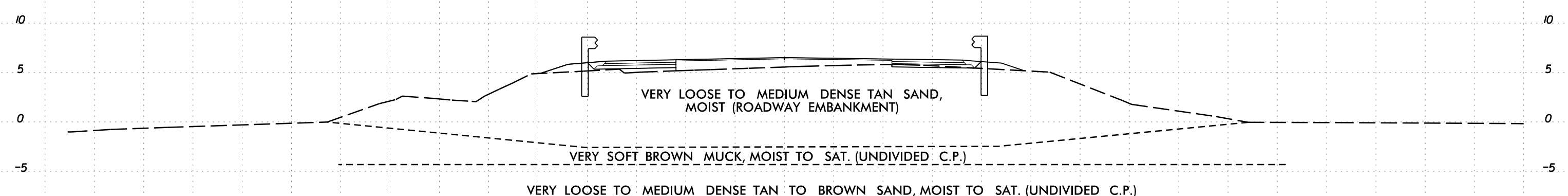
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							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-05	38LT	76+50	5.0 - 5.5	()	-	-	13.5	77.9	5.8	2.8	100	97	33	-	42.2





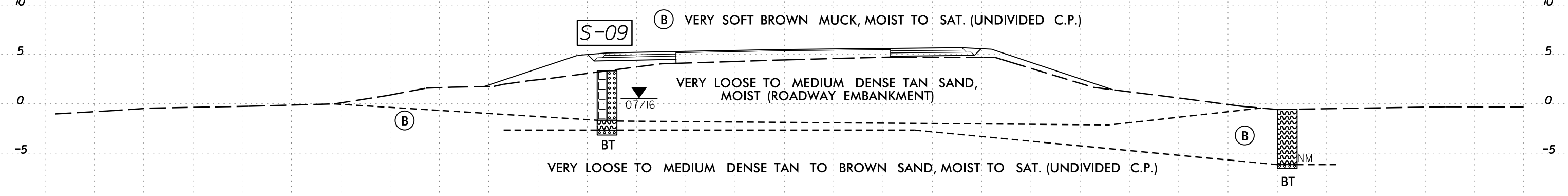


101 + 00.00



87 + 00.00

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-09	18LT	86+50	5.0 - 6.0	()	-	-	38.1		3.3	2.3	57.5	85	8	-	13.7



86 + 50.00

-L-

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

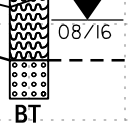
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-10	30RT	102+00	0.0 - 4.0	A-2-4(0)	33	NP	26.2	50.3	20.8	2.7	72.6	89	25	-	21.6

- (B) VERY LOOSE BROWN BLACK MUCK, MOIST TO SAT. (UNDIVIDED C.P.)
- (A) DENSE SAND AND GRAVEL, MOIST (ARTIFICIAL FILL)

LOOSE TO MEDIUM DENSE TAN BROWN SAND MOIST TO SAT. (UNDIVIDED C.P.)

S-10



102 + 00.00

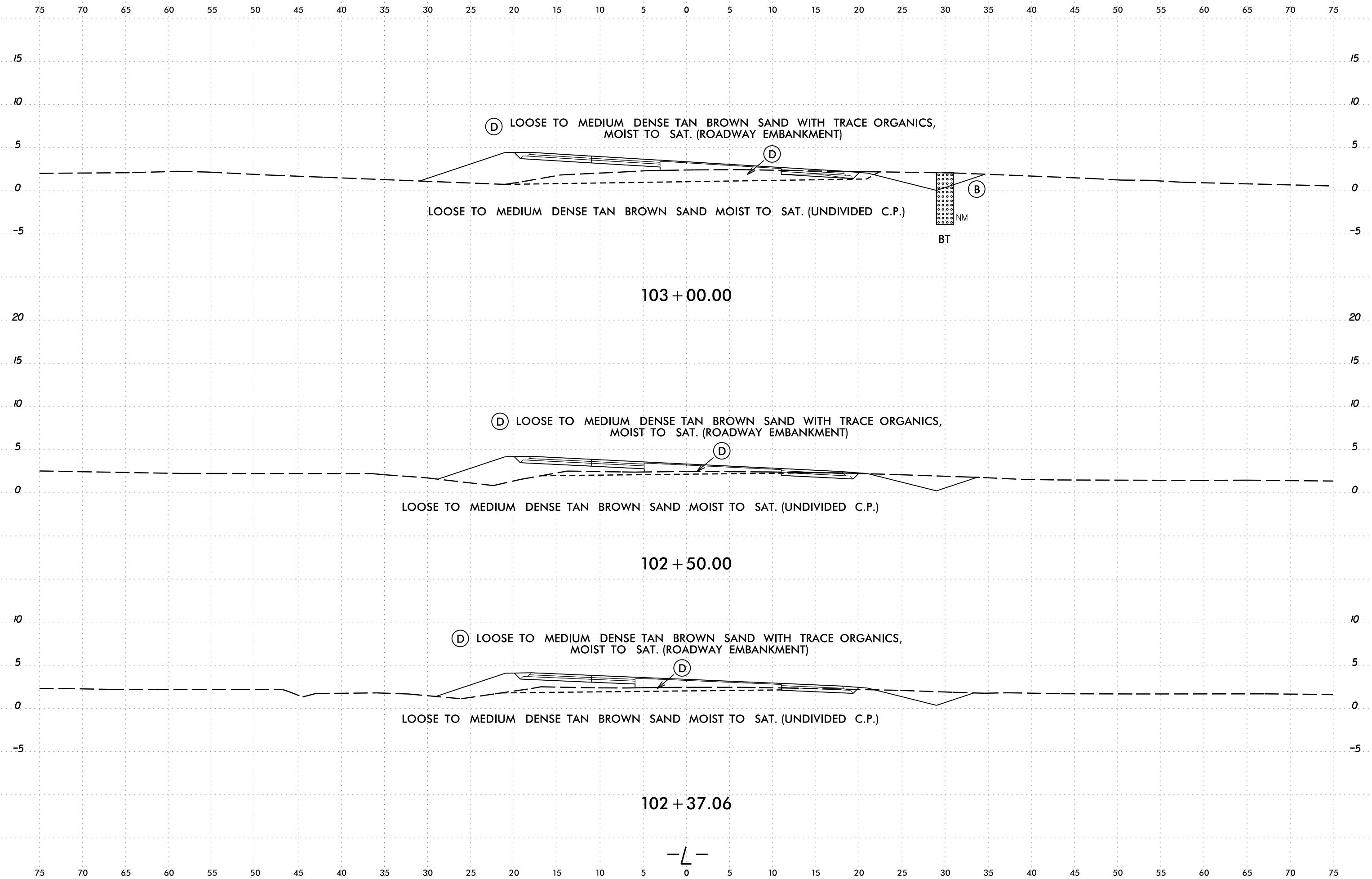
LOOSE TO MEDIUM DENSE TAN BROWN SAND MOIST TO SAT. (UNDIVIDED C.P.)



101 + 50.00

-L-

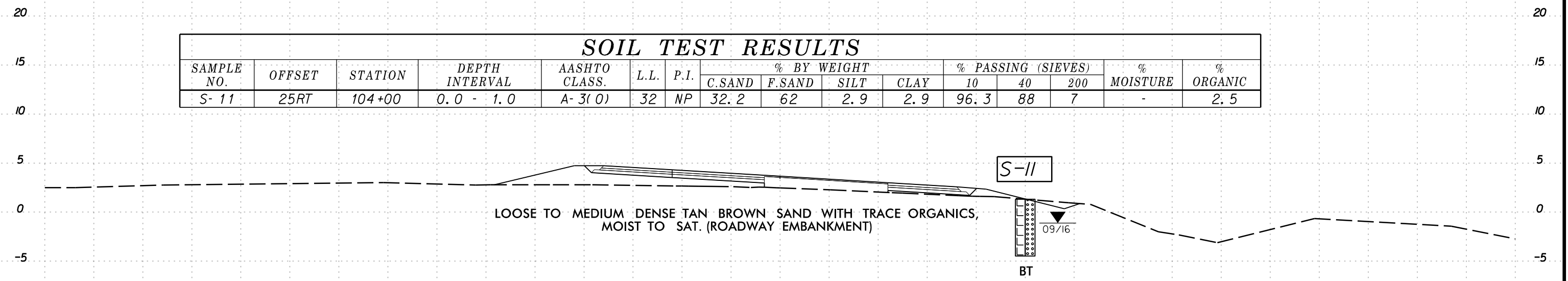
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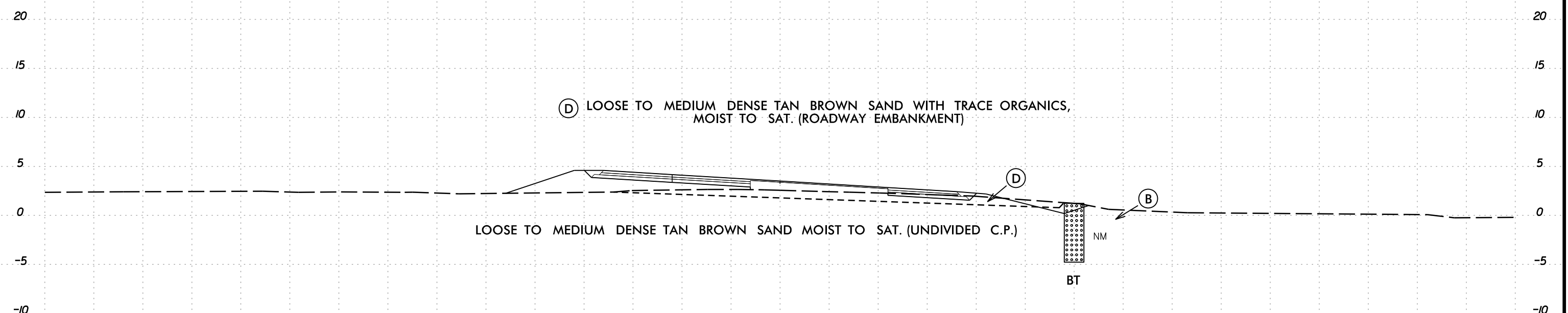
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 Isotone AT MICROSTATIONPC2

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

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-11	25RT	104+00	0.0 - 1.0	A-3(0)	32	NP	32.2	62	2.9	2.9	96.3	88	7	-	2.5



104 + 00.00



103 + 50.00

-L-

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

SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-13	20LT	116+00	2.5 - 3.0	-	-	-	-	-	-	-	-	-	-	65.8	

S-13

LOOSE TAN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

VERY SOFT BROWN BLACK MUCK SAT. (UNDIVIDED C.P.)

LOOSE TO MEDIUM DENSE TAN BROWN SAND, SAT. (UNDIVIDED C.P.)

BT

116 + 00.00

07/16

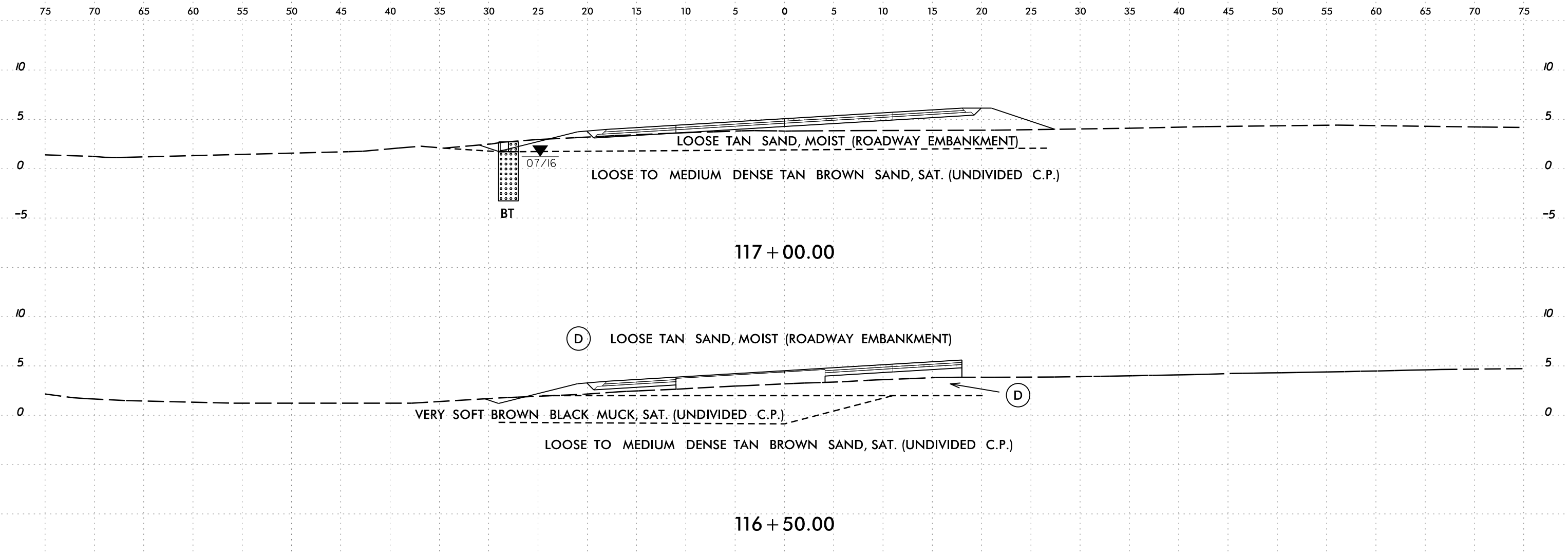
LOOSE TO MEDIUM DENSE TAN BROWN SAND, SAT. (UNDIVIDED C.P.)

BT

115 + 50.00

-L-

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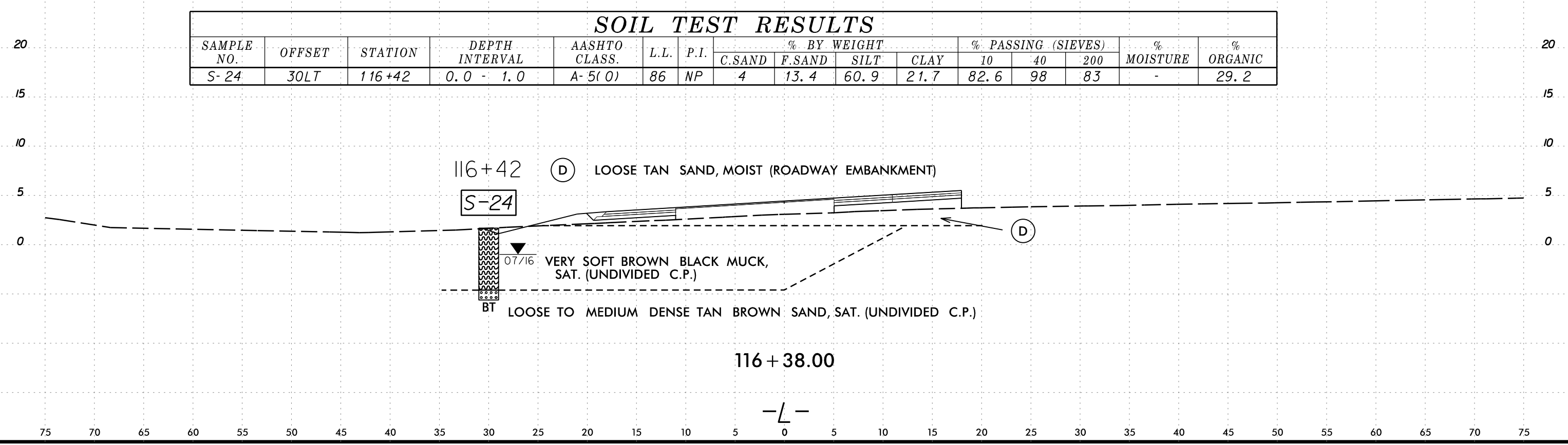


117 + 00.00

116 + 50.00

SOIL TEST RESULTS

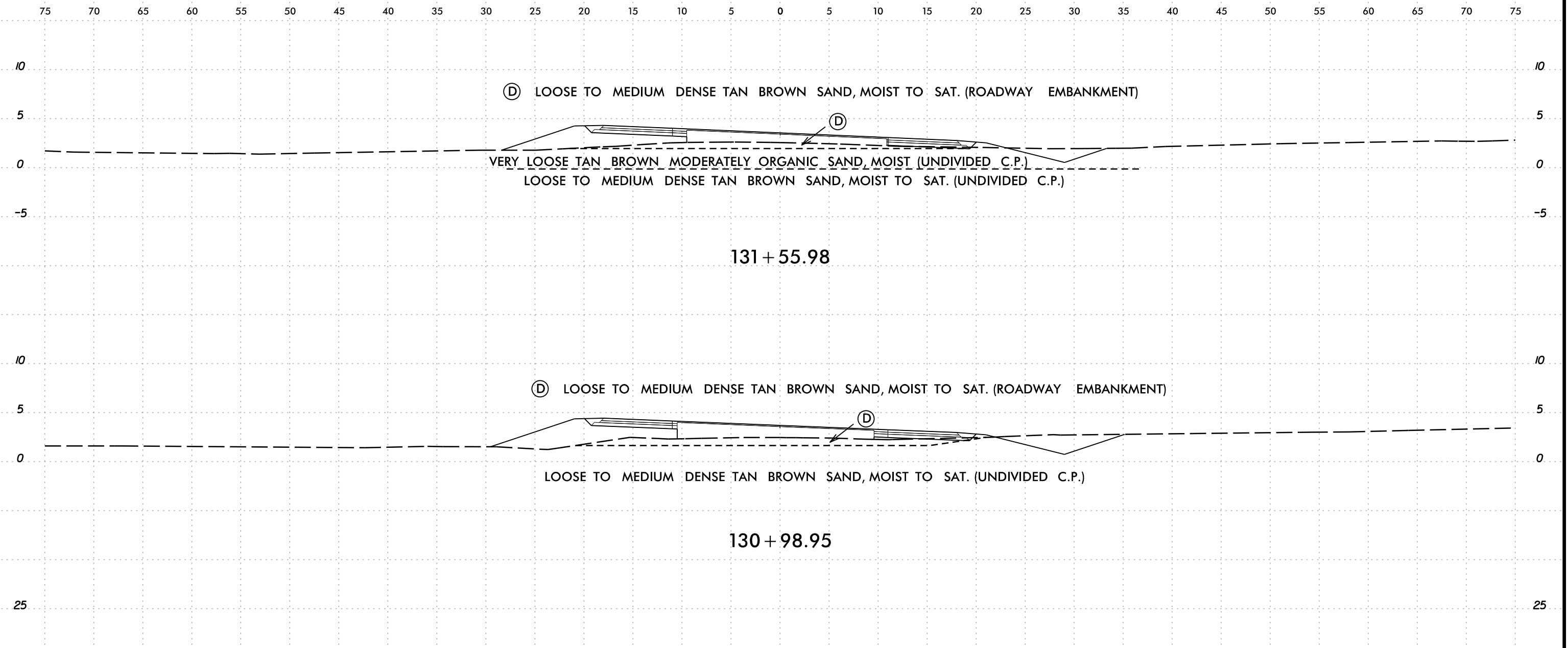
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							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-24	30LT	116+42	0.0 - 1.0	A-5(0)	86	NP	4	13.4	60.9	21.7	82.6	98	83	-	29.2



116 + 38.00

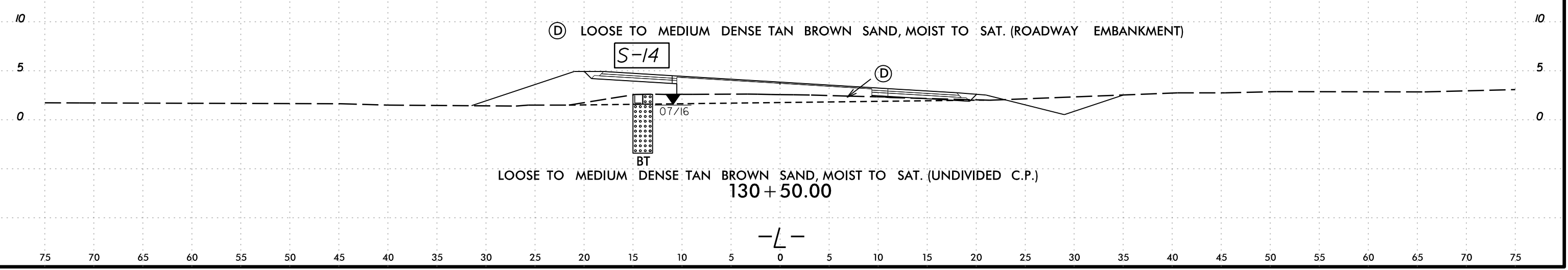
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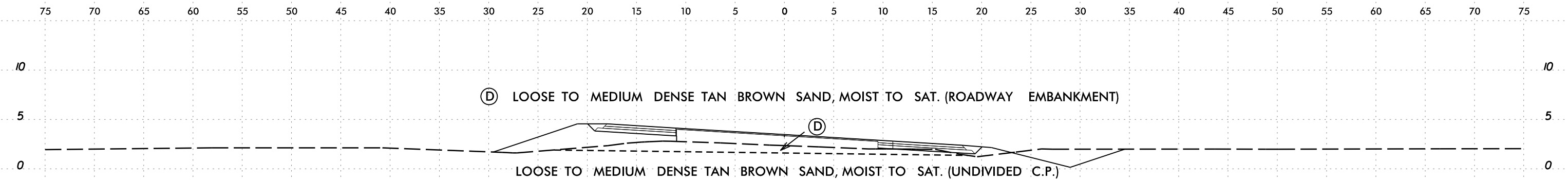


SOIL TEST RESULTS

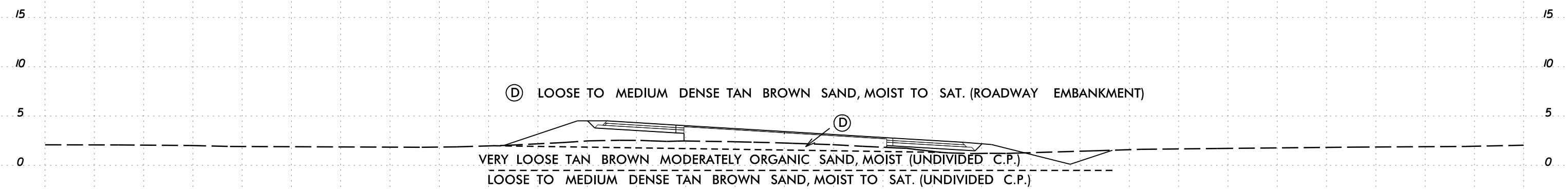
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							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-14	14LT	130+50	0.0 - 1.0	A-3(0)	32	NP	41.7	53.6	2.7	2	97.3	83	6	-	-



-L-



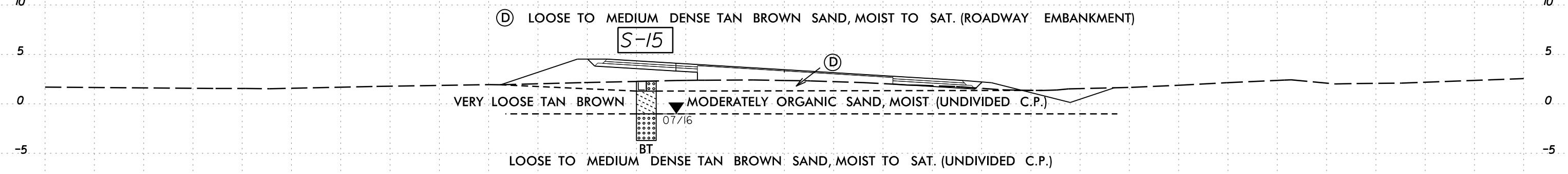
133 + 00.00



132 + 50.00

SOIL TEST RESULTS

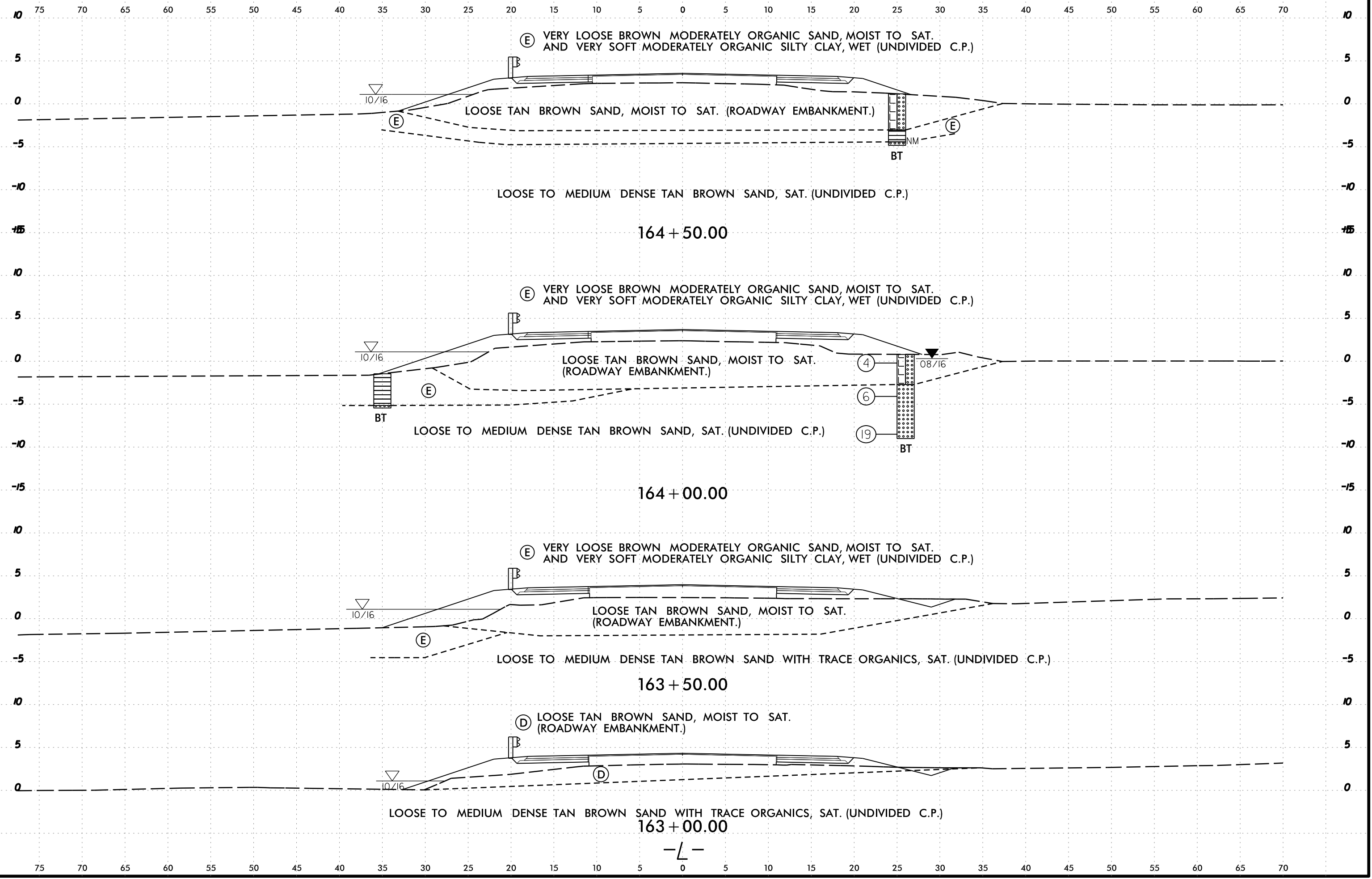
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							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-15	14LT	132+00	1.0 - 3.0	A-2-5(0)	59	NP	18.8	72.9	6.3	2	97.7	86	10	-	-



132 + 00.00

-L-

6/23/16



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SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-17	30LT	166+00	3.0 - 4.0	A-7-5(31)	71	35	5.3	18	37	39.7	99.9	97	78	-	-

(E) VERY LOOSE BROWN MODERATELY ORGANIC SAND, MOIST TO SAT. AND VERY SOFT MODERATELY ORGANIC SILTY CLAY, WET (UNDIVIDED C.P.)

S-17

10/16

LOOSE TAN BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT.)

(E)

BT

(E)

LOOSE TO MEDIUM DENSE TAN BROWN SAND, SAT. (UNDIVIDED C.P.)

166 + 00.00

(E) VERY LOOSE BROWN MODERATELY ORGANIC SAND, MOIST TO SAT. AND VERY SOFT MODERATELY ORGANIC SILTY CLAY, WET (UNDIVIDED C.P.)

10/16

LOOSE TAN BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT.)

(E)

(E)

BT

LOOSE TO MEDIUM DENSE TAN BROWN SAND, SAT. (UNDIVIDED C.P.)

165 + 50.00

(E) VERY LOOSE BROWN MODERATELY ORGANIC SAND, MOIST TO SAT. AND VERY SOFT MODERATELY ORGANIC SILTY CLAY, WET (UNDIVIDED C.P.)

10/16

LOOSE TAN BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT.)

(E)

(E)

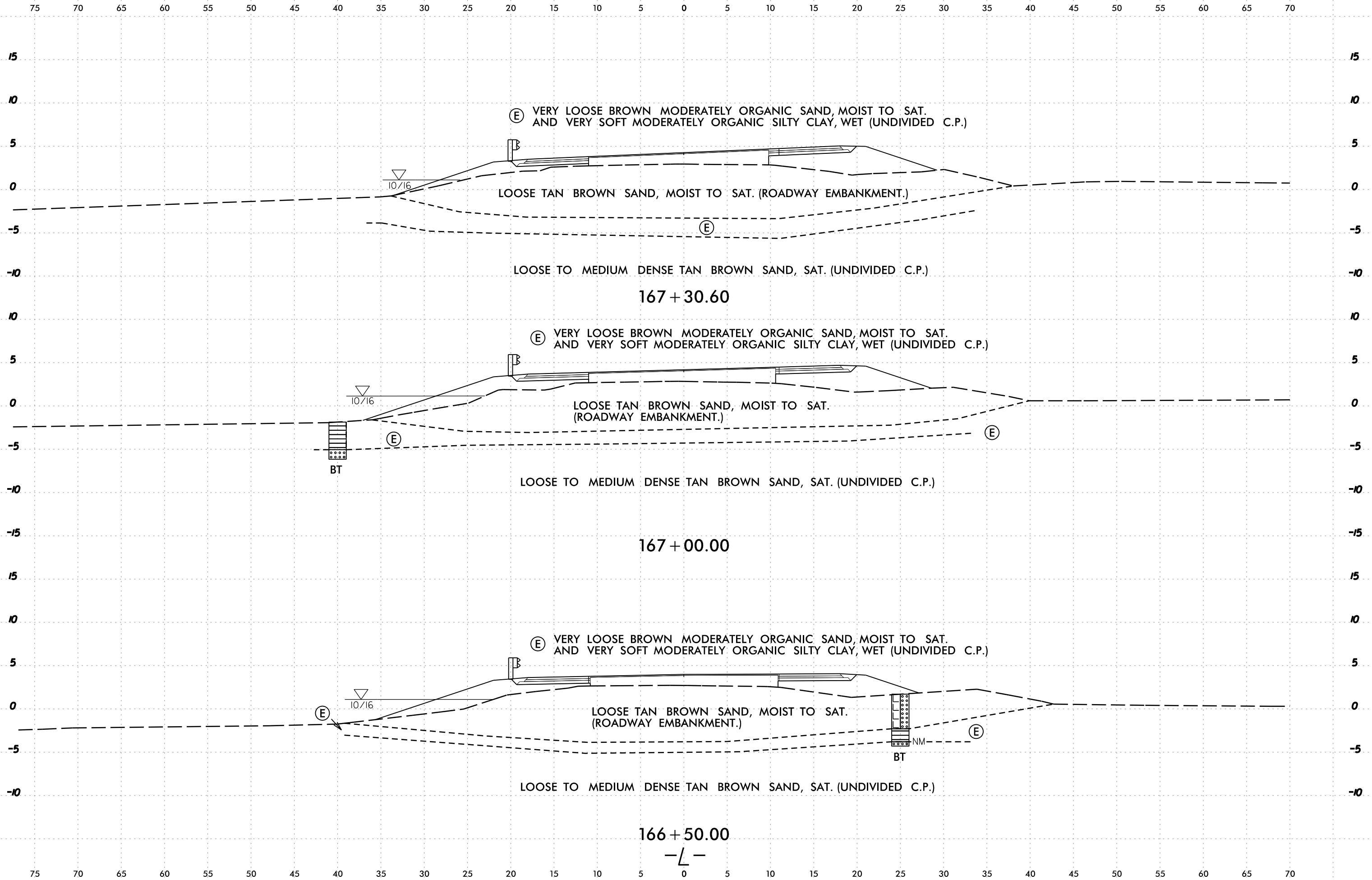
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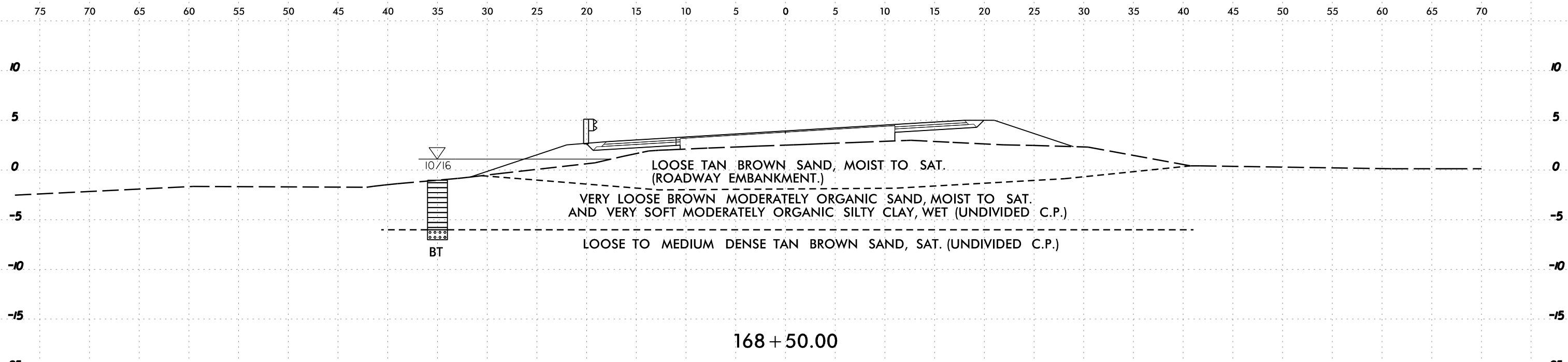
LOOSE TO MEDIUM DENSE TAN BROWN SAND, SAT. (UNDIVIDED C.P.)

165 + 00.00

-L-

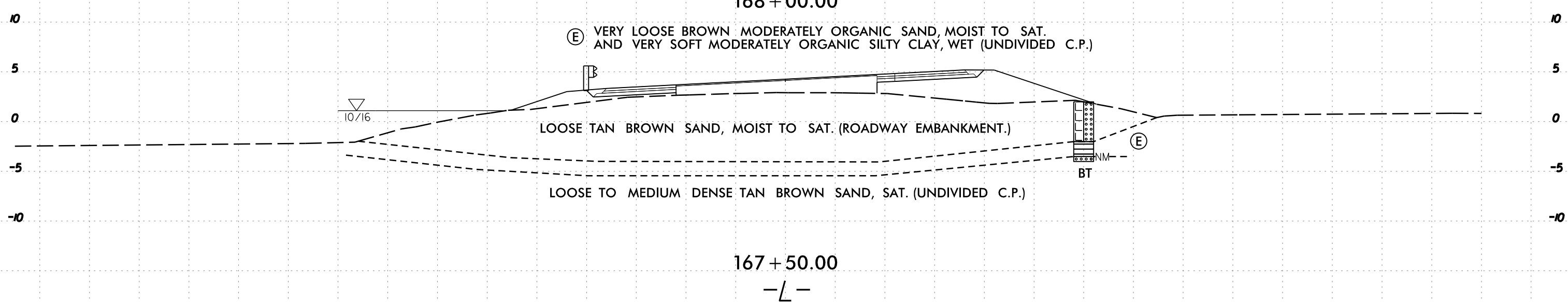
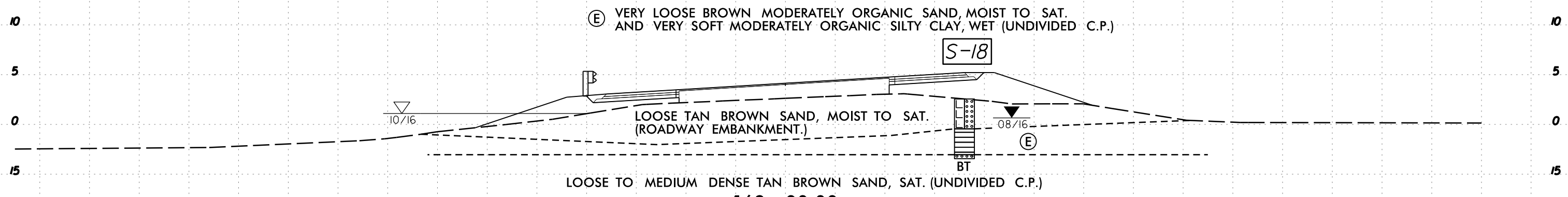
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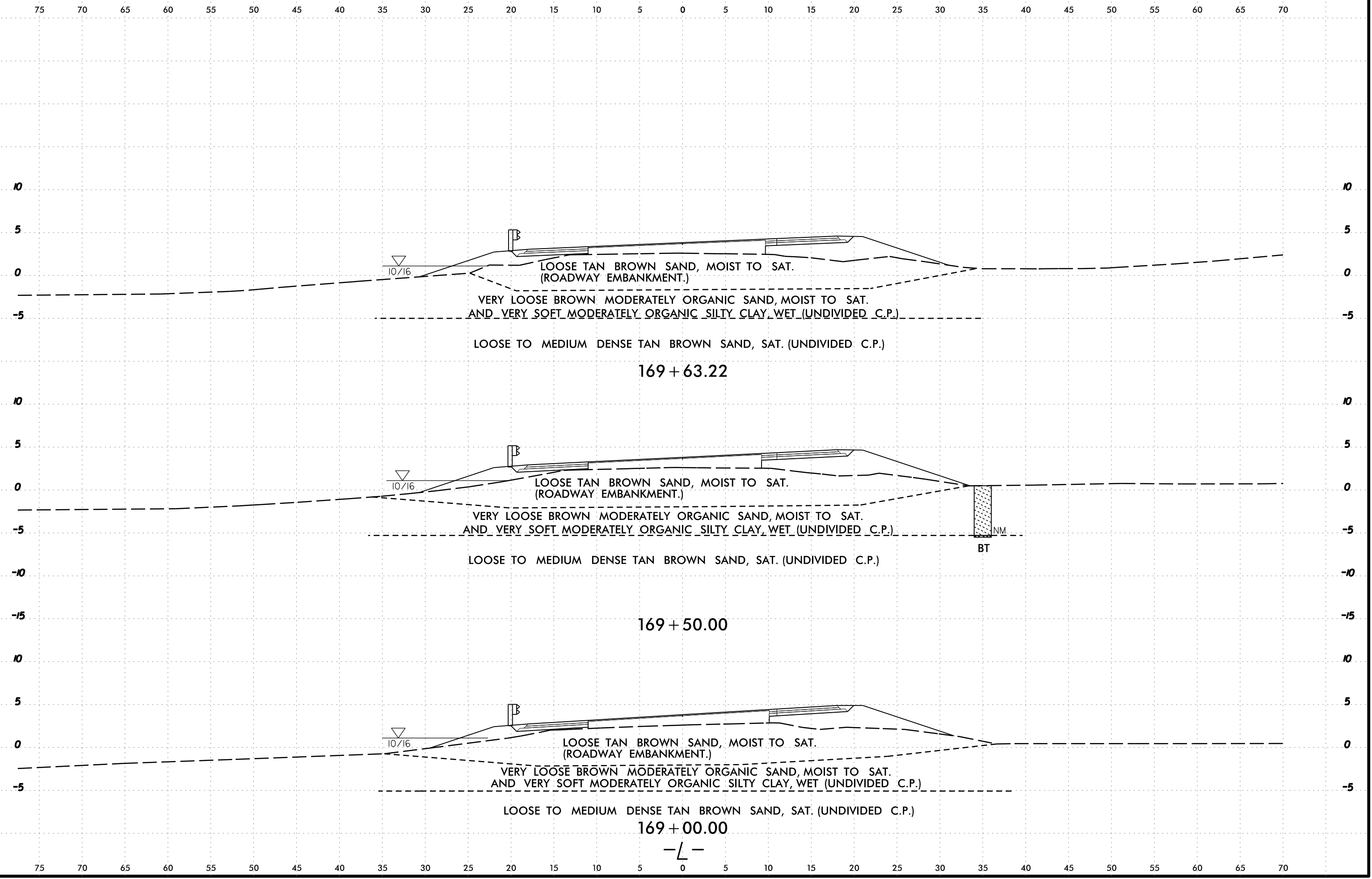
SOIL TEST RESULTS

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-18	18RT	168+00	3.0 - 4.0	A-7-5(28)	78	33	9.7	18.8	32.7	38.8	91.4	93	73	-	13.3



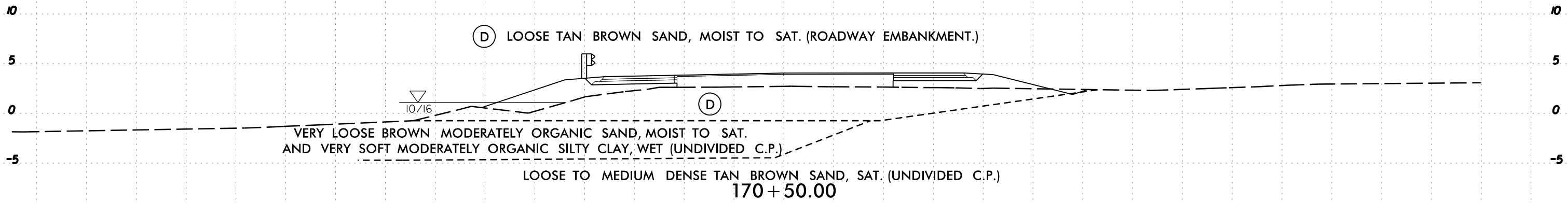
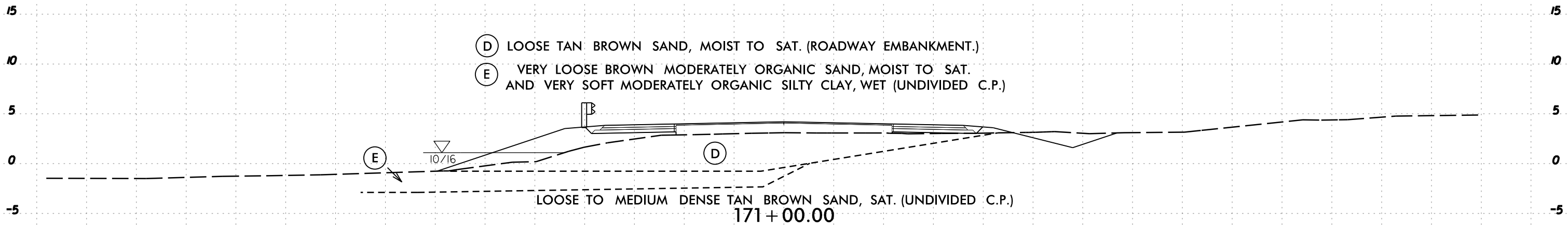
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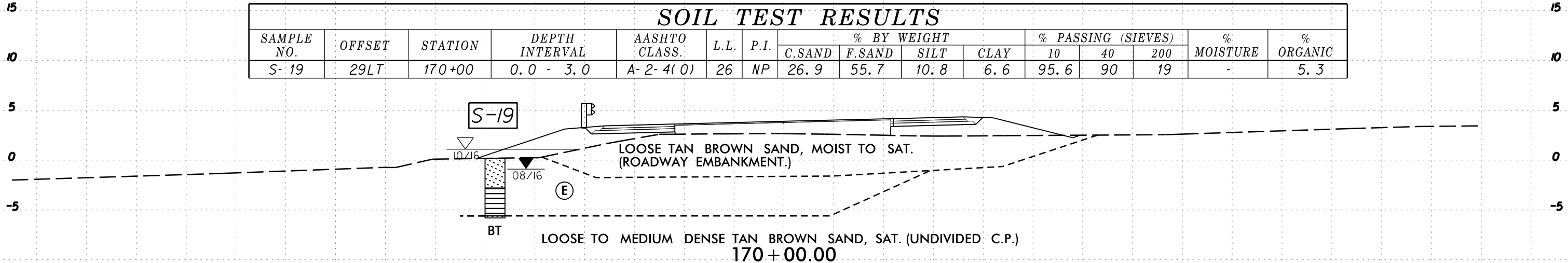


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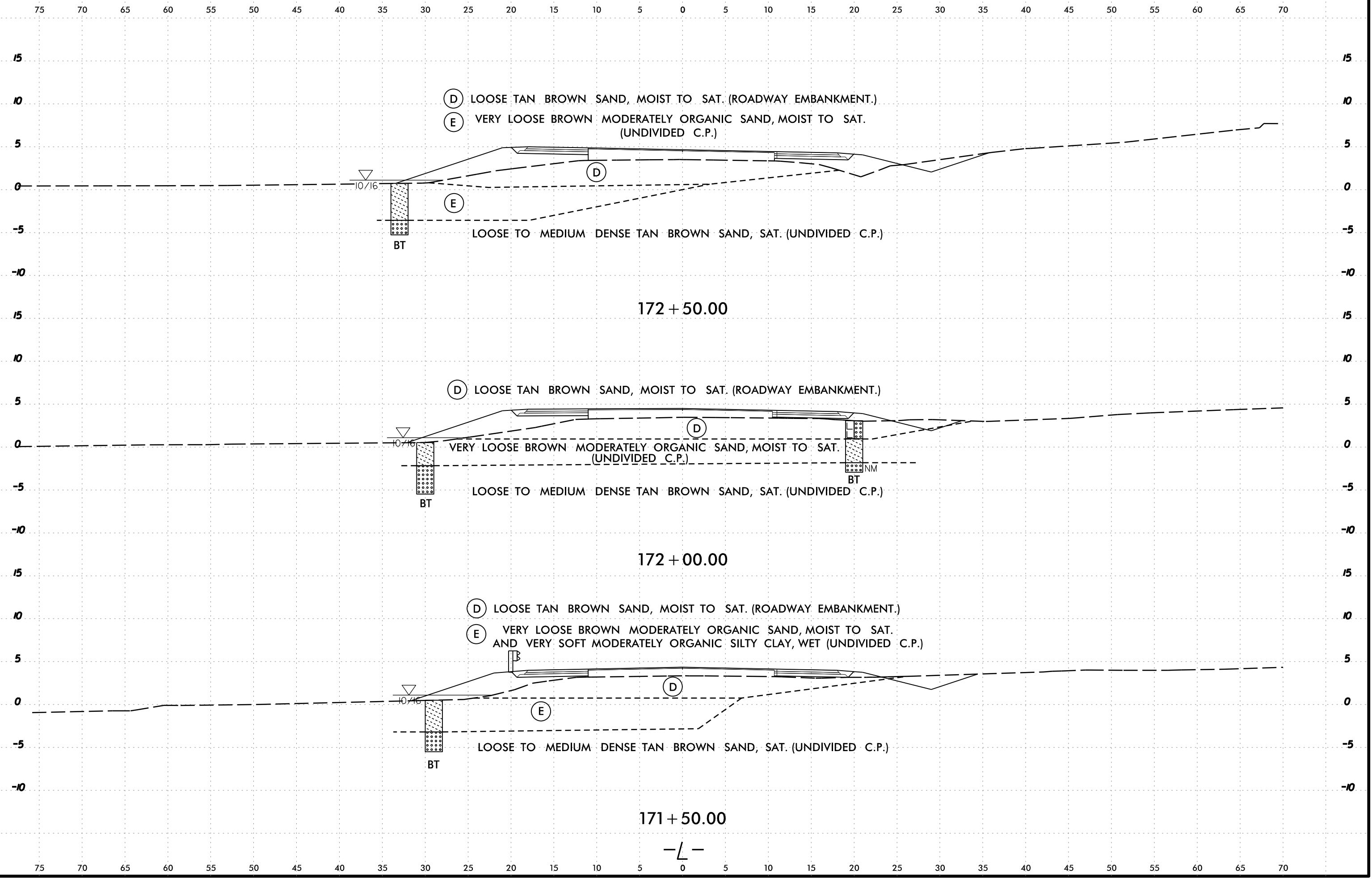


SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-19	29LT	170+00	0.0 - 3.0	A-2-4(0)	26	NP	26.9	55.7	10.8	6.6	95.6	90	19	-	5.3

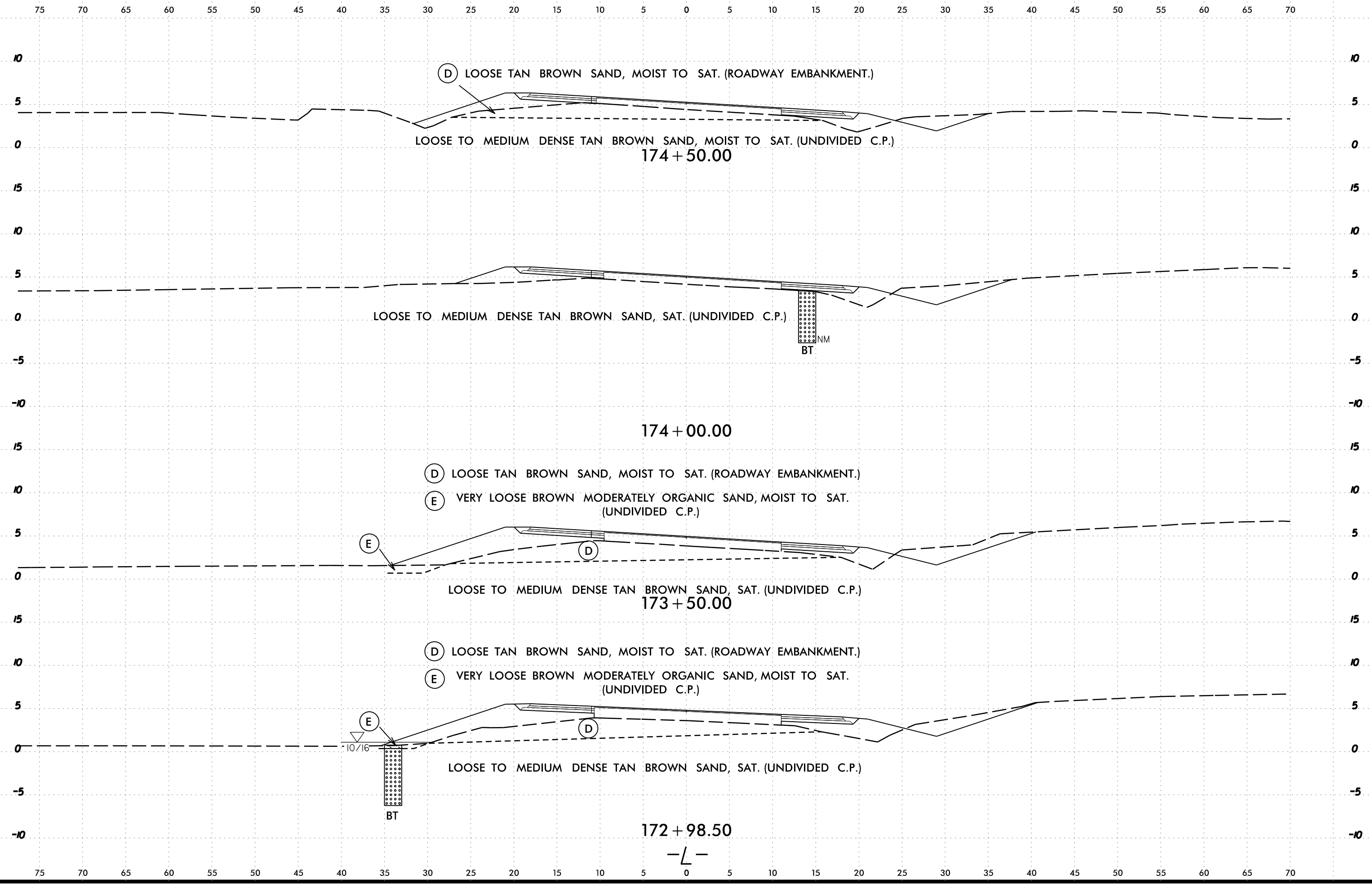


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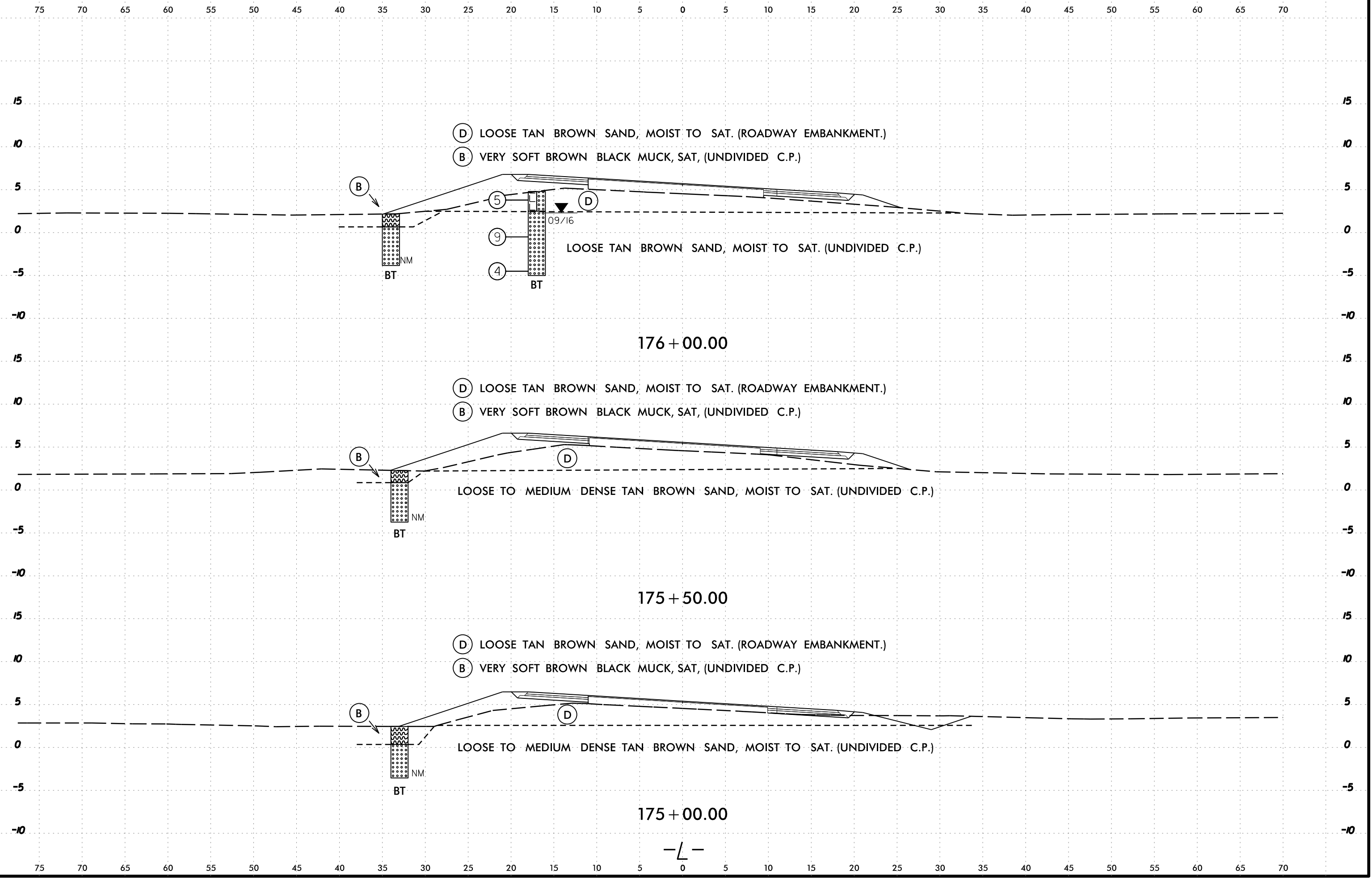
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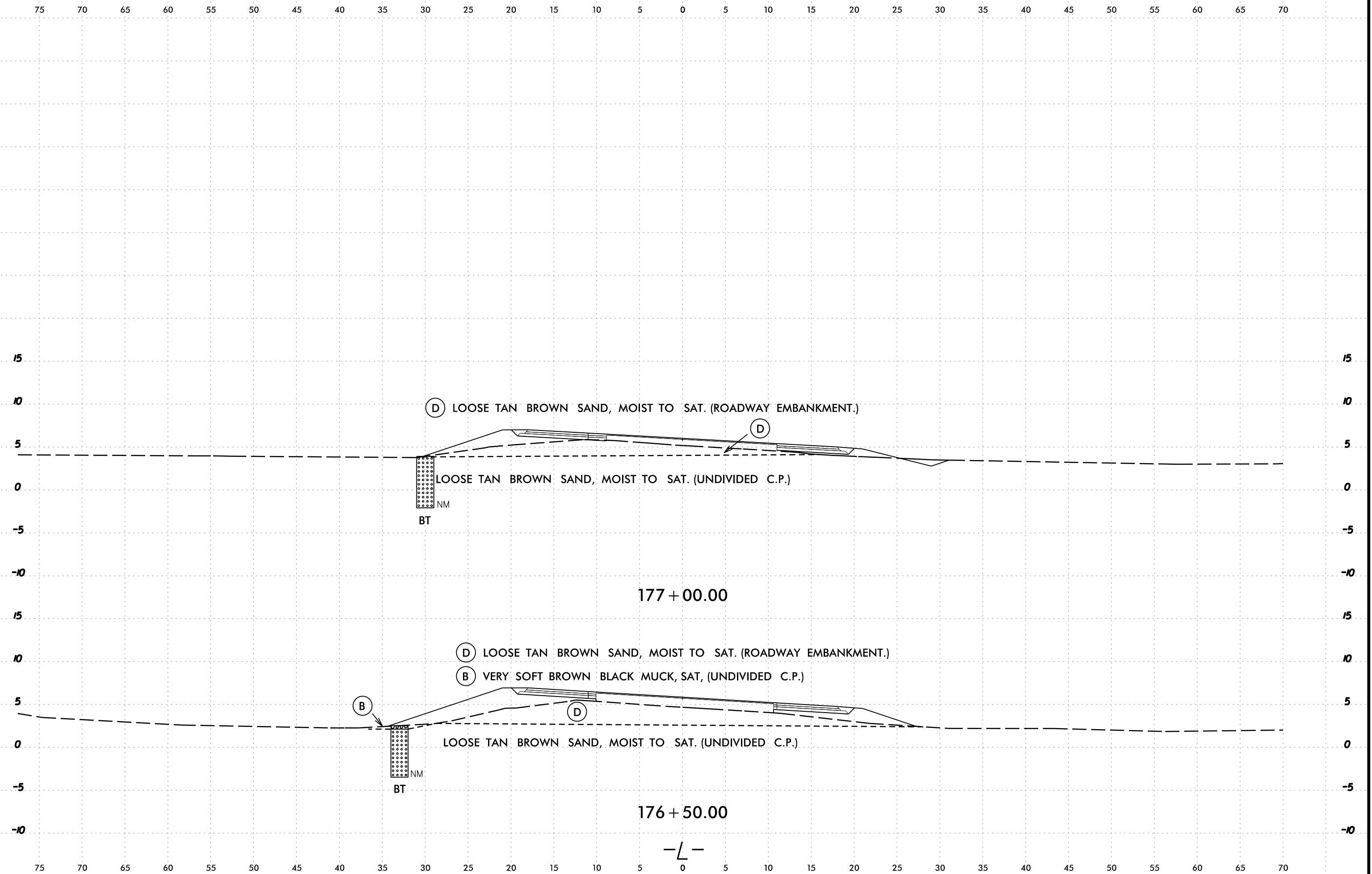
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6/23/16
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LSTONE AT MICROSTATIONPC2



14-NOV-2016 11:01
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