

REFERENCE: U-4906

PROJECT: 40255

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.	U-4906	1	61

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	30+50 - 280+00	4-22	26-34
-LI-	14+00 - 23+25	23	35
-LI-	61+25 - 71+40	25	36
-YI-	12+25 - 16+73	10	37
-Y2-	12+00 - 23+15	13	37
-Y4-	10+00 - 18+66	25	38

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	105+00	39
-L-	110+00	40
-L-	111+50	41
-L-	116+00	42
-L-	118+00	43
-L-	120+00	44
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-L-	151+00	46
-L-	155+00	47
-L-	274+50	48
-L-	280+00	49
-LI-	14+00 - 20+00	50-55
-Y4-	10+50 - 16+00	56-61

ROADWAY SUBSURFACE INVESTIGATION

COUNTY ONSLow
PROJECT DESCRIPTION GUM BRANCH ROAD
(SR 1308) WIDENING FROM THE EASTERN CITY
LIMITS OF RICHLANDS TO TIMOTHY ROAD
(SR 1388)

INVENTORY

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.

PERSONNEL

J.K. CRENSHAW

R.E. SMITH

J.M. EDMONSON

INVESTIGATED BY T.C. BOTTOMS

DRAWN BY J.K. CRENSHAW

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE OCTOBER, 2016



DocuSigned by:
Tyler C. Bottoms 12/12/2016
48A2D3BD08CF4A6...
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 (ASTM T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, <i>VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6</i></p>										<p>WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.</p>										<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:</p>										<p>ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (ROD) - 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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CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.</p> <p>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.</p> <p>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></p> <p>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></p> <p>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></p> <p>COMPLETE: ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.</p>									
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	26 OR MORE		HIGH																																																																																																																																																																																											
<p style="text-align: center;">FRAC. SPACING</p> <p>TERM: VERY WIDE, WIDE, MODERATELY CLOSE, CLOSE, VERY CLOSE</p> <p>SPACING: MORE THAN 10 FEET, 3 TO 10 FEET, 1 TO 3 FEET, 0.16 TO 1 FOOT, LESS THAN 0.16 FEET</p> <p style="text-align: center;">BEDDING</p> <p>TERM: VERY THICKLY BEDDED, THICKLY BEDDED, THINLY BEDDED, VERY THINLY BEDDED, THICKLY LAMINATED, THINLY LAMINATED</p> <p>THICKNESS: 4 FEET, 1.5 - 4 FEET, 0.16 - 1.5 FEET, 0.03 - 0.16 FEET, 0.008 - 0.03 FEET, < 0.008 FEET</p>										<p style="text-align: center;">INDURATION</p> <p>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</p> <p>FRIABLE: RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.</p> <p>MODERATELY INDURATED: GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.</p> <p>INDURATED: GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</p> <p>EXTREMELY INDURATED: SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>																																																																																																																																																																																				
<p style="text-align: center;">FRAC. SPACING</p> <p>TERM: VERY WIDE, WIDE, MODERATELY CLOSE, CLOSE, VERY CLOSE</p> <p>SPACING: MORE THAN 10 FEET, 3 TO 10 FEET, 1 TO 3 FEET, 0.16 TO 1 FOOT, LESS THAN 0.16 FEET</p> <p style="text-align: center;">BEDDING</p> <p>TERM: VERY THICKLY BEDDED, THICKLY BEDDED, THINLY BEDDED, VERY THINLY BEDDED, THICKLY LAMINATED, THINLY LAMINATED</p> <p>THICKNESS: 4 FEET, 1.5 - 4 FEET, 0.16 - 1.5 FEET, 0.03 - 0.16 FEET, 0.008 - 0.03 FEET, < 0.008 FEET</p>										<p style="text-align: center;">INDURATION</p> <p>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</p> <p>FRIABLE: RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.</p> <p>MODERATELY INDURATED: GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.</p> <p>INDURATED: GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.</p> <p>EXTREMELY INDURATED: SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.</p>																																																																																																																																																																																				
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See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

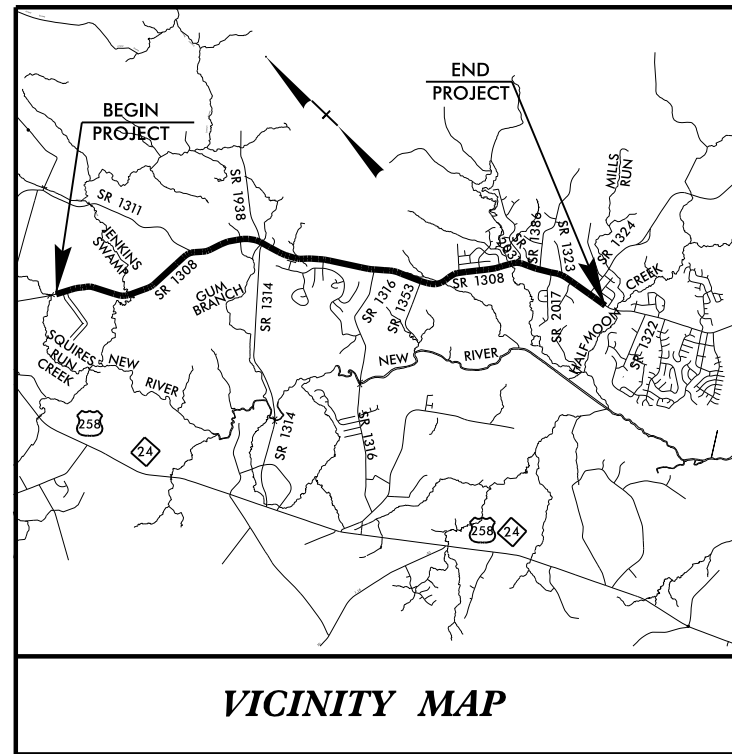
ONSLOW COUNTY

LOCATION: GUM BRANCH ROAD (SR 1308) - WIDENING FROM THE EASTERN CITY LIMITS OF RICHLANDS TO TIMOTHY ROAD (SR 1388)

TYPE OF WORK: RESURFACING & WIDENING, DRAINAGE AND PAVEMENT MARKINGS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4906	3	61
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
40255.1.1	STP-1308(12)	P.E.	

TIP PROJECT: U-4906

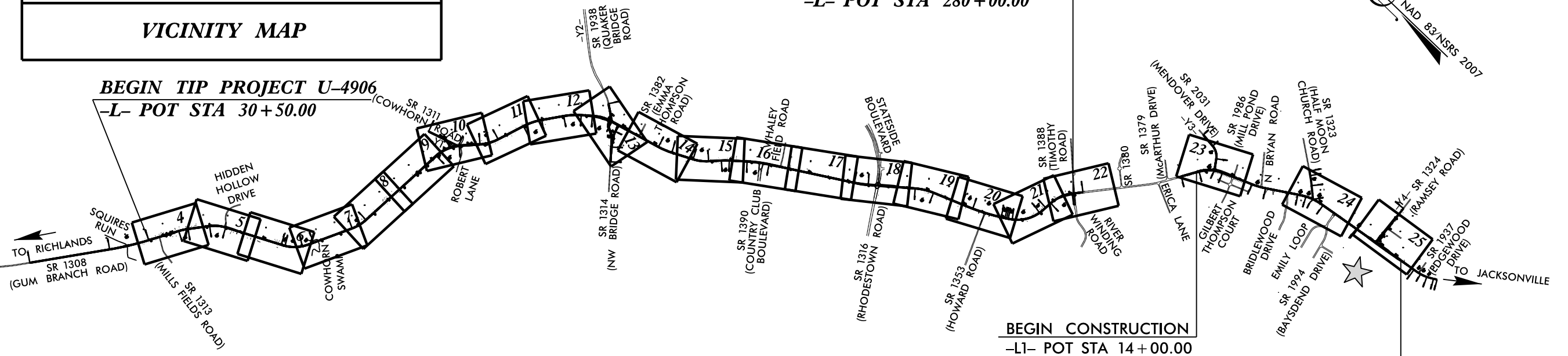


25% SUBMITTAL

★ EXISTING TRAFFIC SIGNAL

BEGIN TIP PROJECT U-4906
-L- POT STA 30+50.00

END TIP PROJECT U-4906
-L- POT STA 280+00.00



NOTE:

- CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
- THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

** DESIGN SPEED IS 60 MPH FROM SQUIRES RUN BRIDGE TO QUAKER BRIDGE ROAD AND 50 MPH FROM QUAKER BRIDGE ROAD TO TIMOTHY ROAD

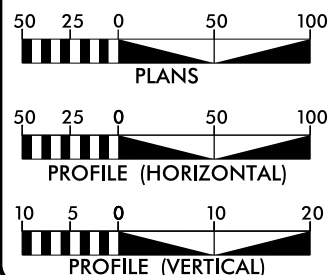
END CONSTRUCTION
-L1- POT STA 71+40.00

BEGIN CONSTRUCTION
-L1- POT STA 14+00.00

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

CONTRACT:

GRAPHIC SCALES



DESIGN DATA

ADT 2015 = 19600
ADT 2040 = 41000
K = 8 %
D = 60 %
T = 4 % *
** V = 60/50 MPH
* TTST = 1% DUAL 3%
FUNC CLASS = MINOR ARTERIAL
STATEWIDE TIER

PROJECT LENGTH

LENGTH OF ROADWAY TIP PROJECT U-4906 = 4.725 MILES
TOTAL LENGTH OF TIP PROJECT U-4906 = 4.725 MILES

Prepared In the Office of:

HNTB
HNTB NORTH CAROLINA, P.C.
343 E. Six Forks Road, Suite 200
Raleigh, North Carolina 27609
NC License No: C-1554

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: AUG., 2017

LETTING DATE: JULY 16, 2019

DAVID W. BASS, PE
PROJECT ENGINEER

MONICA J. DUVAL
PROJECT DESIGN ENGINEER

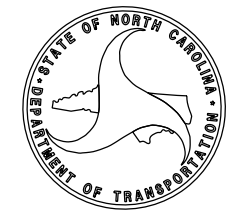
DAVID B. LEONARD, PE
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.



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PAT McCRORY
Governor
NICHOLAS J. TENNYSON
Secretary

October 12, 2016

STATE PROJECT: 40255.1.1 (U-4906)
 F.A. PROJECT: STP-1308(12)
 COUNTY: Onslow
 DESCRIPTION: Gum Branch Road (SR 1308) Widening from the Eastern City Limits of Richlands to Timothy Road (SR 1388)
 SUBJECT: Geotechnical Inventory

Project Description

This project is located in Onslow County on Gum Branch Road from the eastern city limits of Richlands to Timothy Road. Proposed construction consists of widening portions of Gum Branch Road and the intersecting roads. This geotechnical investigation was confined to the areas of proposed construction.

Fieldwork for this project was conducted during August and September of 2016. Hand auger borings were completed and representative soil samples were collected for visual classification in the field and laboratory analysis.

The following alignments were investigated:

<u>Line</u>	<u>Station(±)</u>
-L-	30+50 to 280+00
-L1-	14+00 to 23+25
-L1-	61+25 to 71+40
-Y1-	12+25 to 16+73
-Y2-	12+00 to 23+15
-Y4-	10+00 to 18+66

Areas of Special Geotechnical Interest

- 1) The entire project was found to exhibit seasonal high ground water.

- 2) The following section contains cohesive soils which have the potential to cause embankment, subgrade, and or slope stability problems during construction.

<u>Line</u>	<u>Station(±)</u>
-L-	30+50 to 62+25
-L-	78+25 to 86+25
-L-	98+60 to 128+25
-L-	139+10 to 140+90
-L-	159+10 to 181+70
-L-	199+25 to 251+90
-L-	266+90 to 280+00
-L1-	14+00 to 23+25
-L1-	61+25 to 71+40
-Y1-	13+35 to 15+25
-Y2-	18+80 to 23+15
-Y4-	10+00 to 18+66

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 range from 25± to 53± feet above sea level along the existing SR 1308 embankment.

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

Ground Water

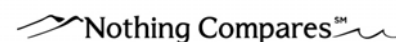
Ground water data was collected in August of 2016, during a time of normal precipitation. Ground water elevations ranged from 20± to 46± feet above sea level.

Soils

Soils within this project area have been divided into two categories: roadway embankment and undivided coastal plain.

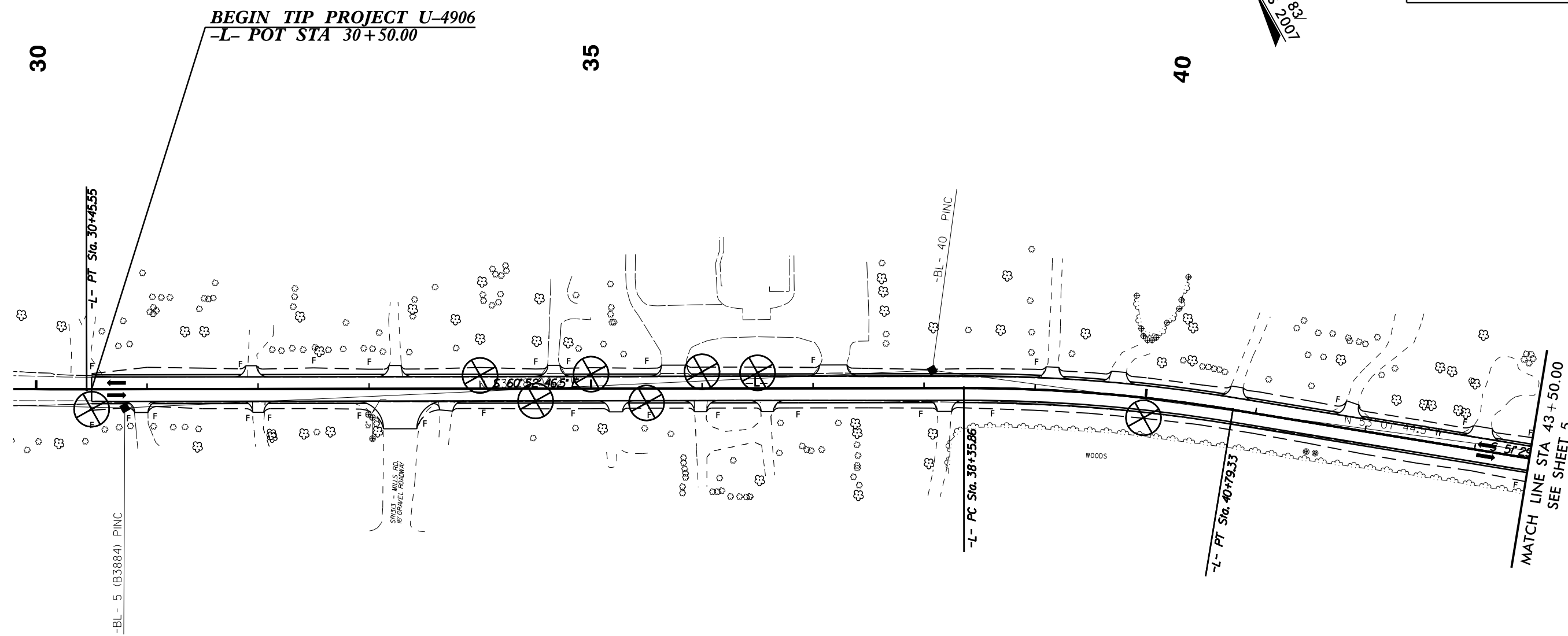
Roadway embankment soils were encountered along existing SR 1308 and intersecting roads. These soils are comprised of 1± to 3± feet of medium dense to dense sand and sand with gravel (A-2-4, A-3, A-1-b).

Undivided coastal plain soils were encountered beneath the roadway embankment. They are comprised of 2± or more feet of loose to medium dense sand (A-2-4, A-3) and soft to stiff silt (A-4), sandy clay, and clay (A-6, A-7-5, A-7-6). Within the cohesive soils moistures ranged from 16.2% to 63.6%.



5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4906	4
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	



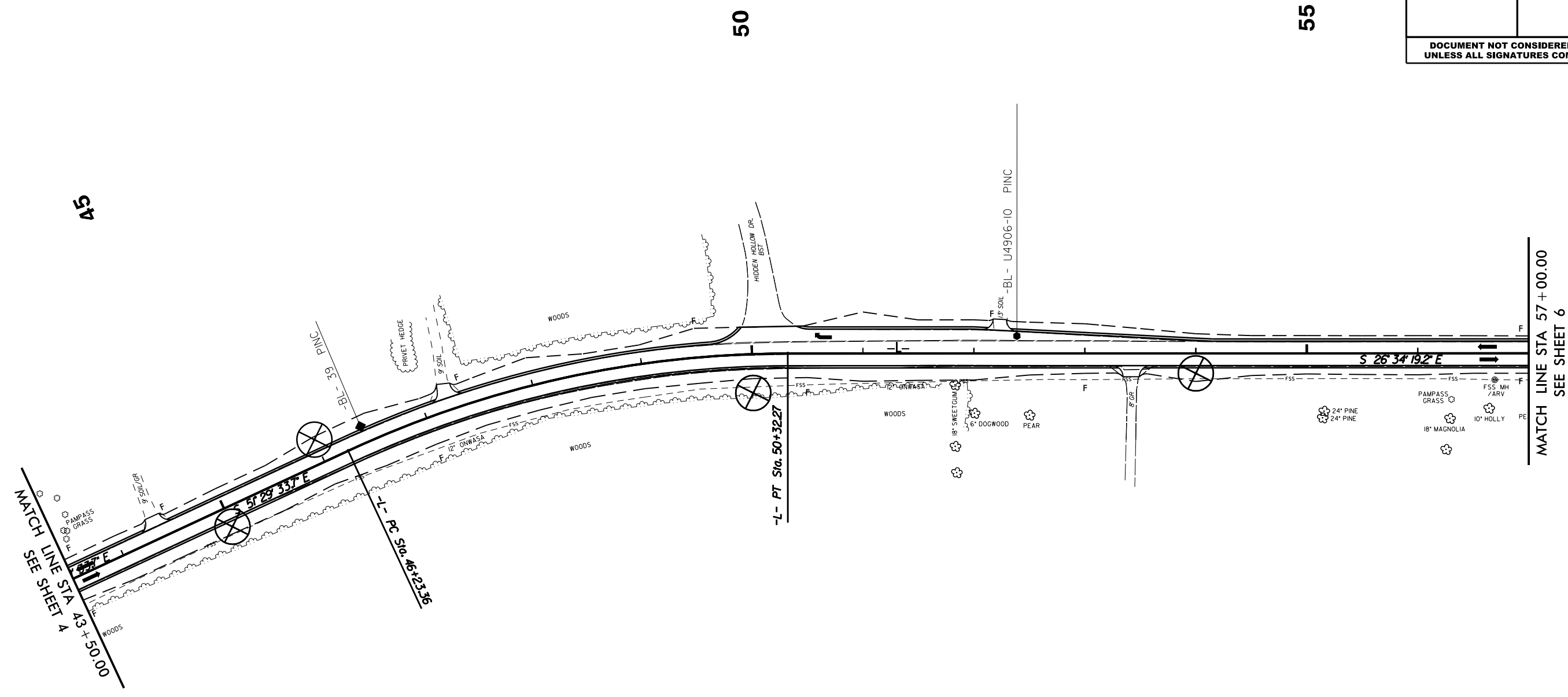
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NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED.

FOR -L- PROFILE, SEE SHEET 28

5/14/99

PROJECT REFERENCE NO. U-4906	SHEET NO. 5
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	



MATCH LINE STA 43+50.00
SEE SHEET 4

MATCH LINE STA 57+00.00
SEE SHEET 6

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NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEET 28

5/14/99

PROJECT REFERENCE NO. U-4906	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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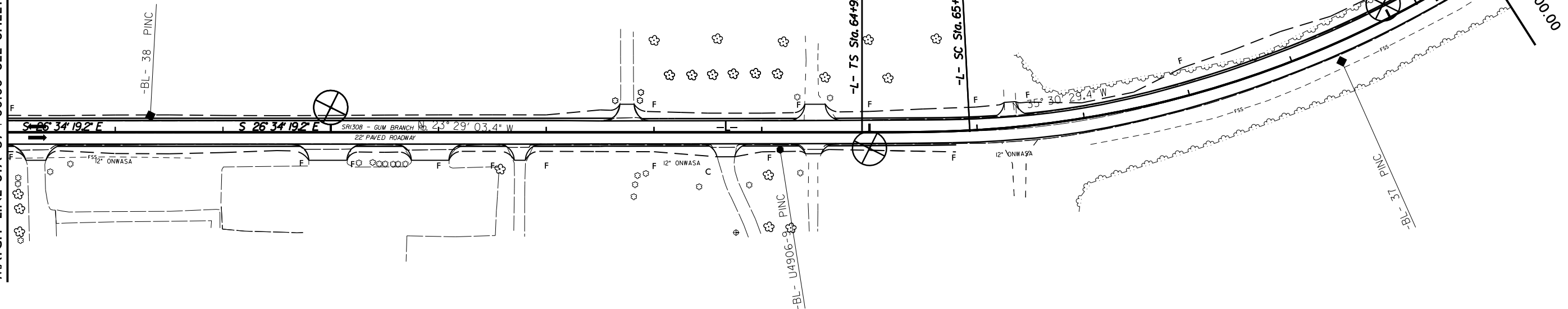


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MATCH LINE STA 57 + 00.00 SEE SHEET 5



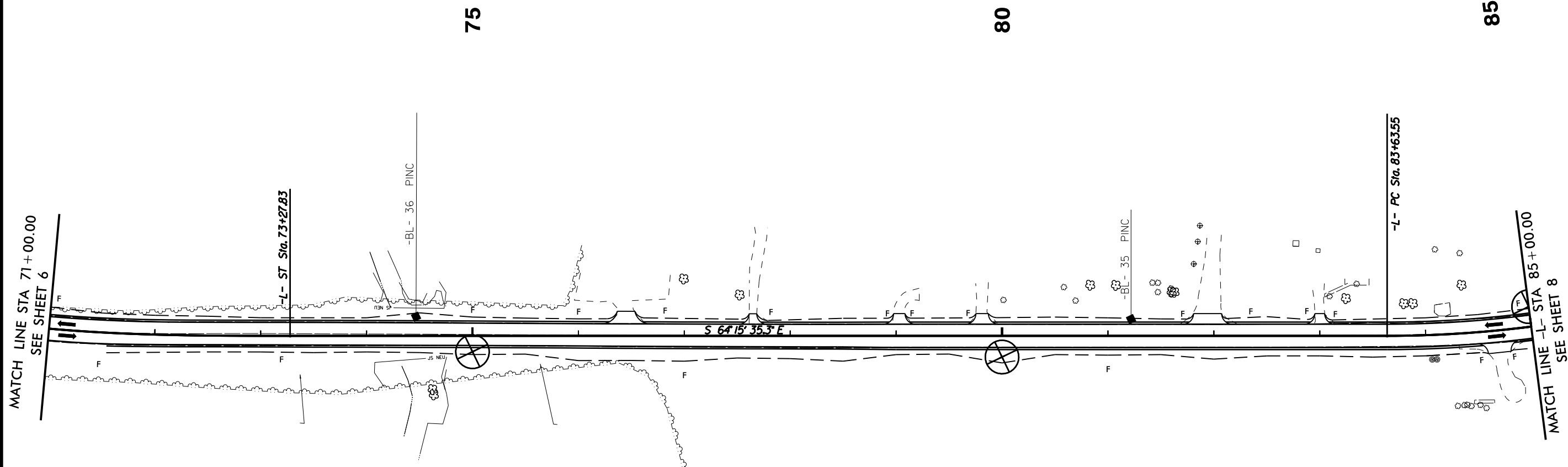
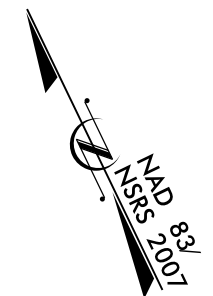
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NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEET 28 AND 29

5/14/99

PROJECT REFERENCE NO. U-4906	SHEET NO. 7
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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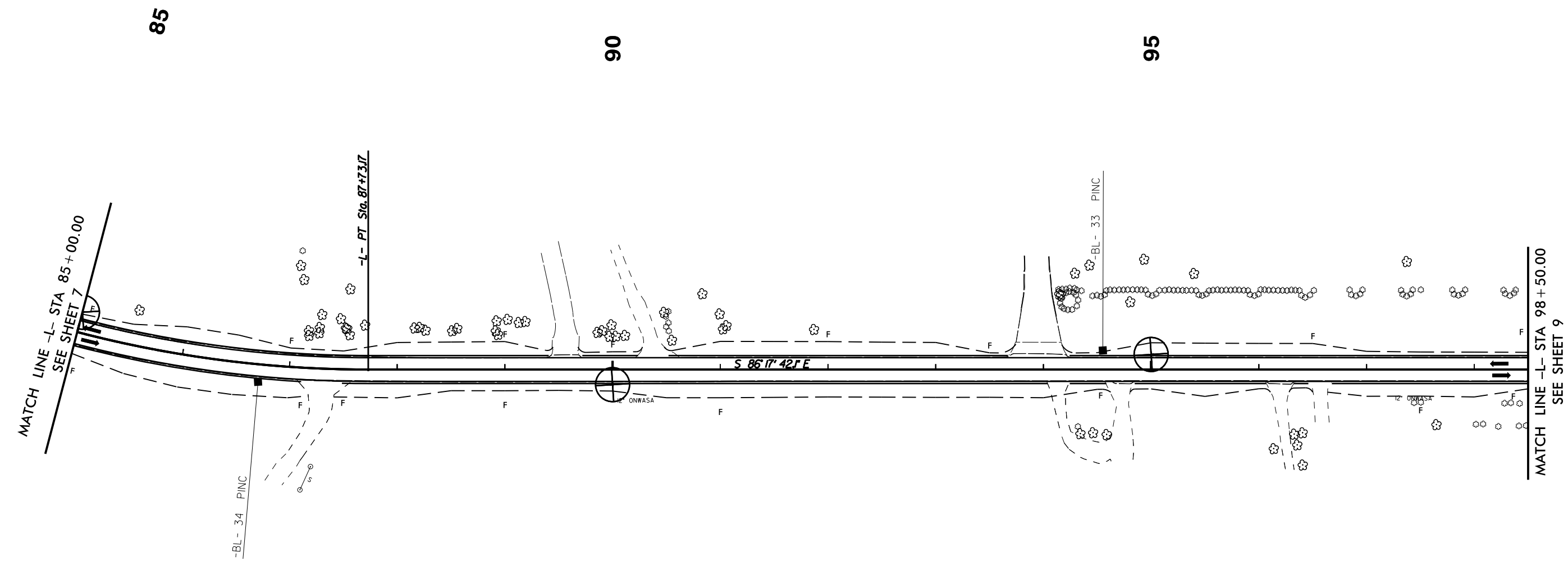
NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEET 29

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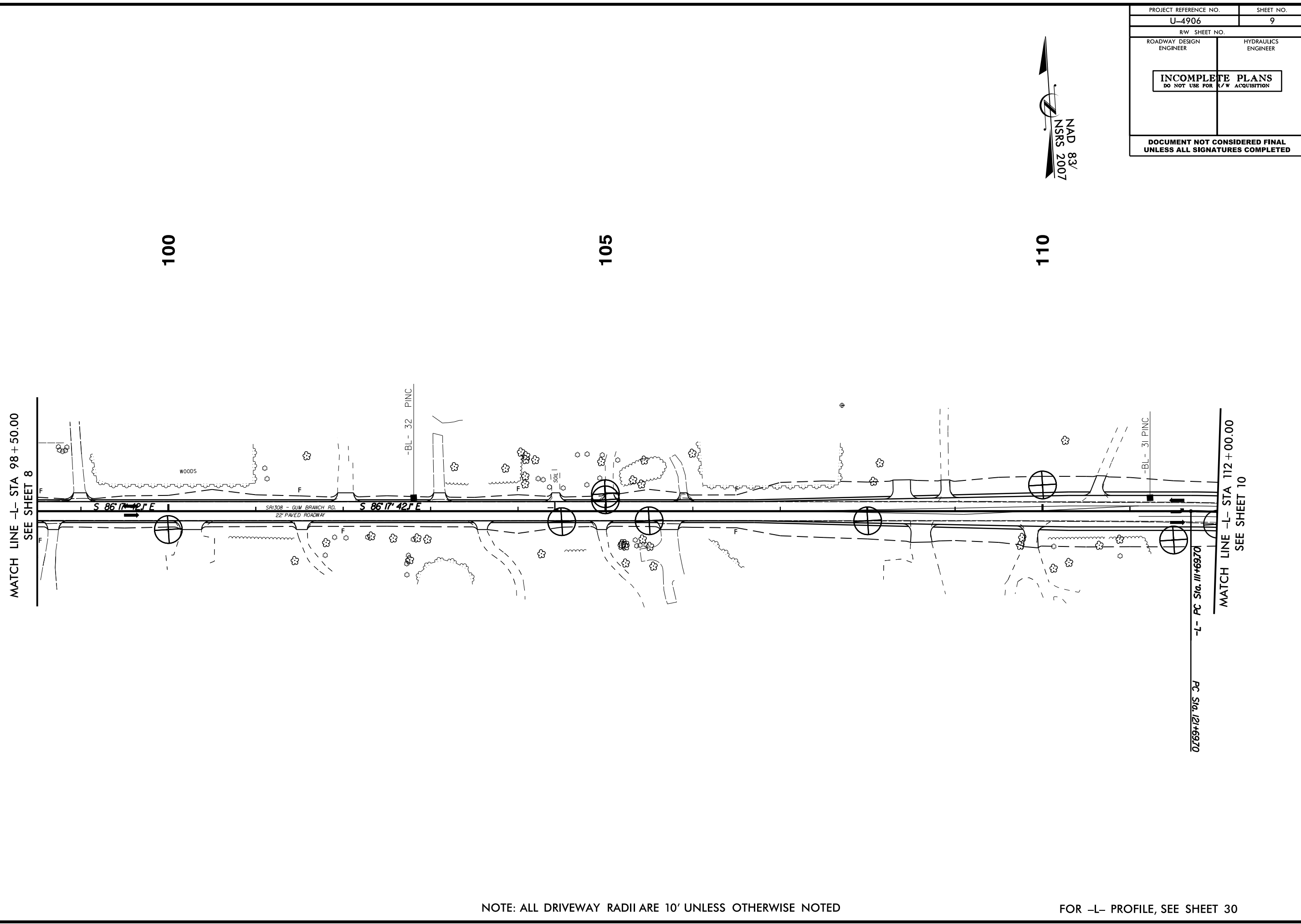
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEET 29 AND 30

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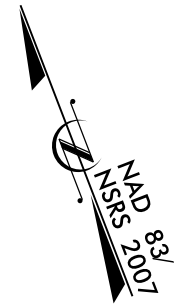
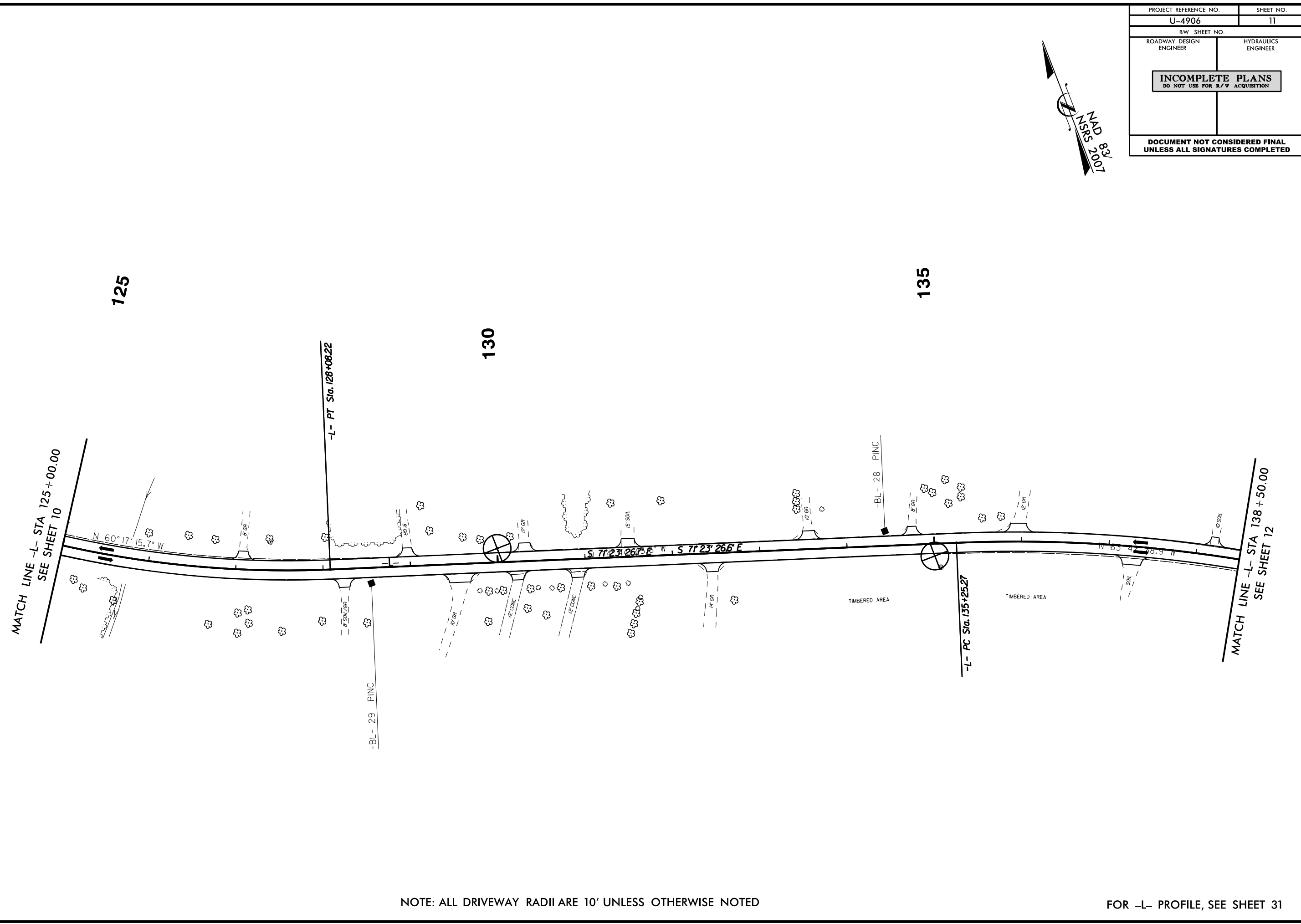


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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEET 30

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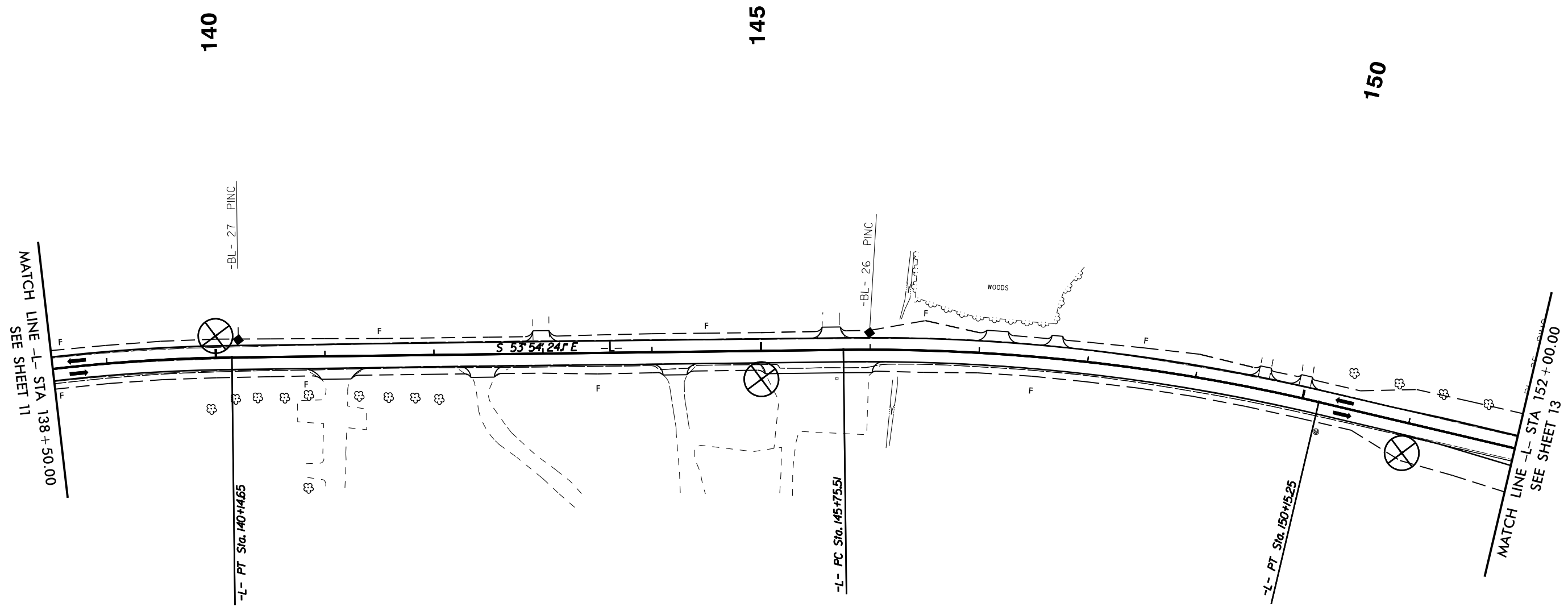
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEET 31

5/14/99

PROJECT REFERENCE NO. U-4906	SHEET NO. 12
RW SHEET NO.	
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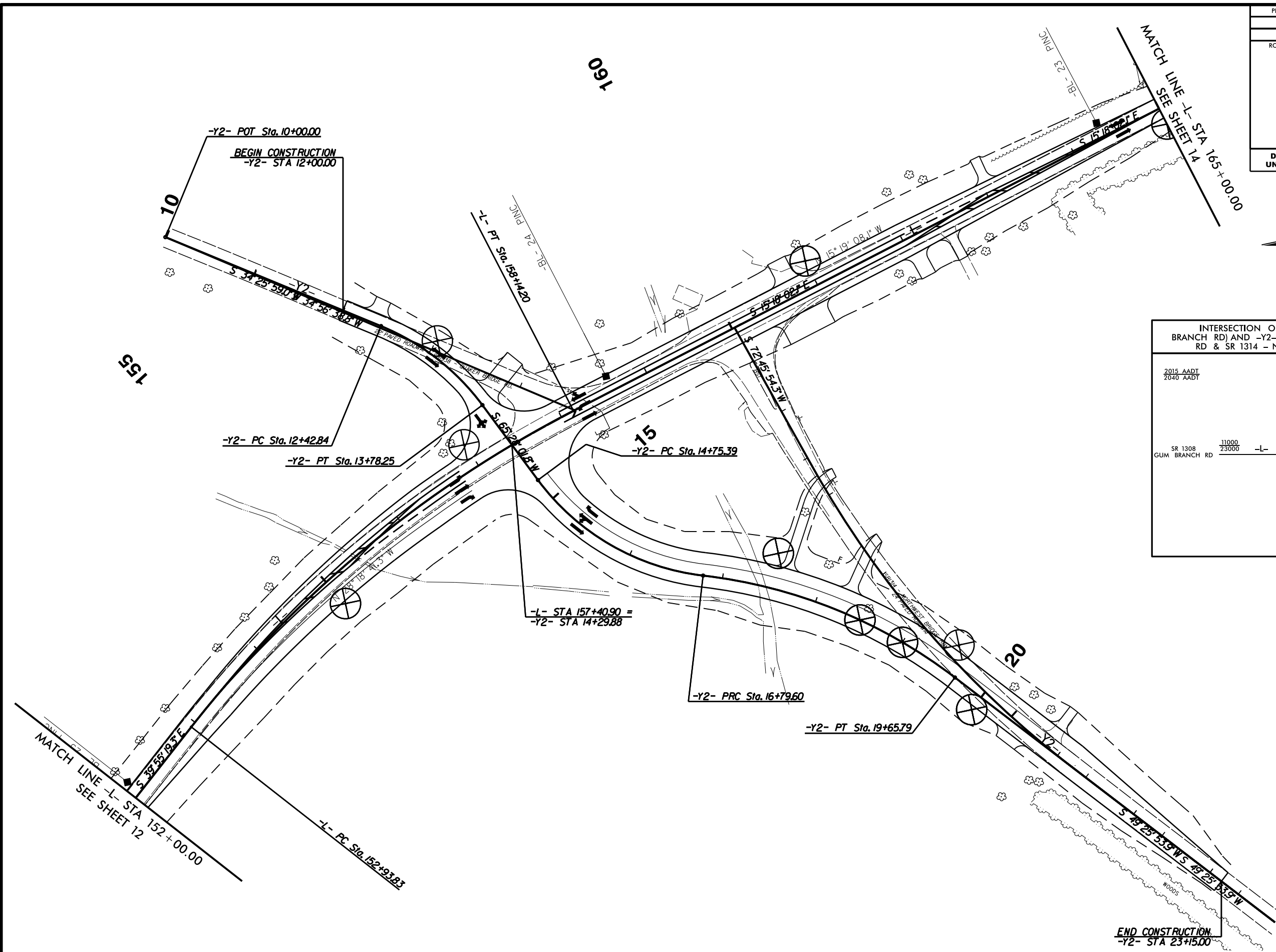
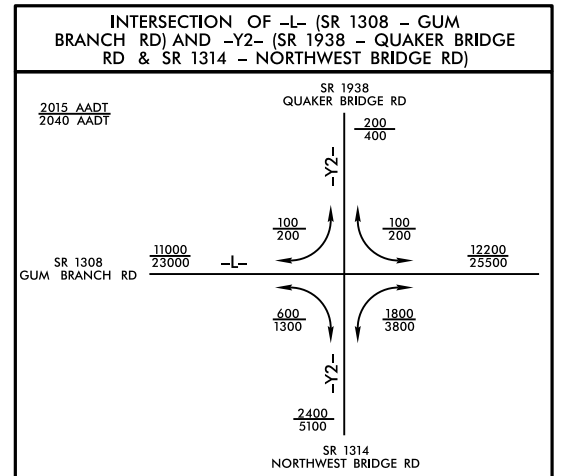


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NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEETS 31 AND 32

PROJECT REFERENCE NO.	SHEET NO.
U-4906	13
RW SHEET NO.	
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INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEET 32
FOR -Y2- PROFILE, SEE SHEET 39

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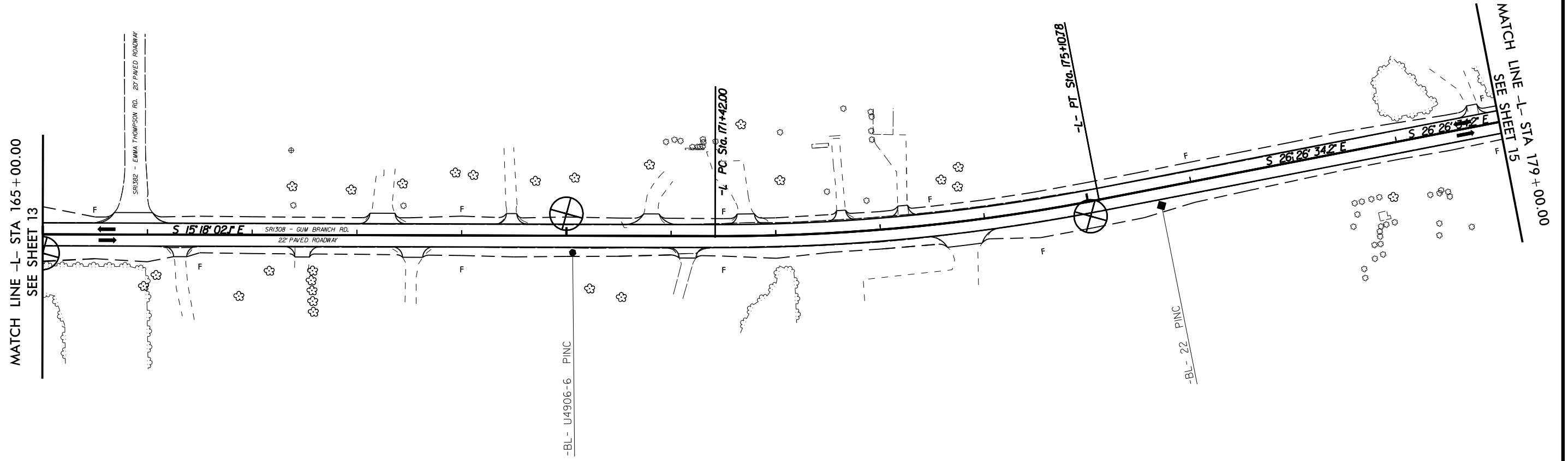
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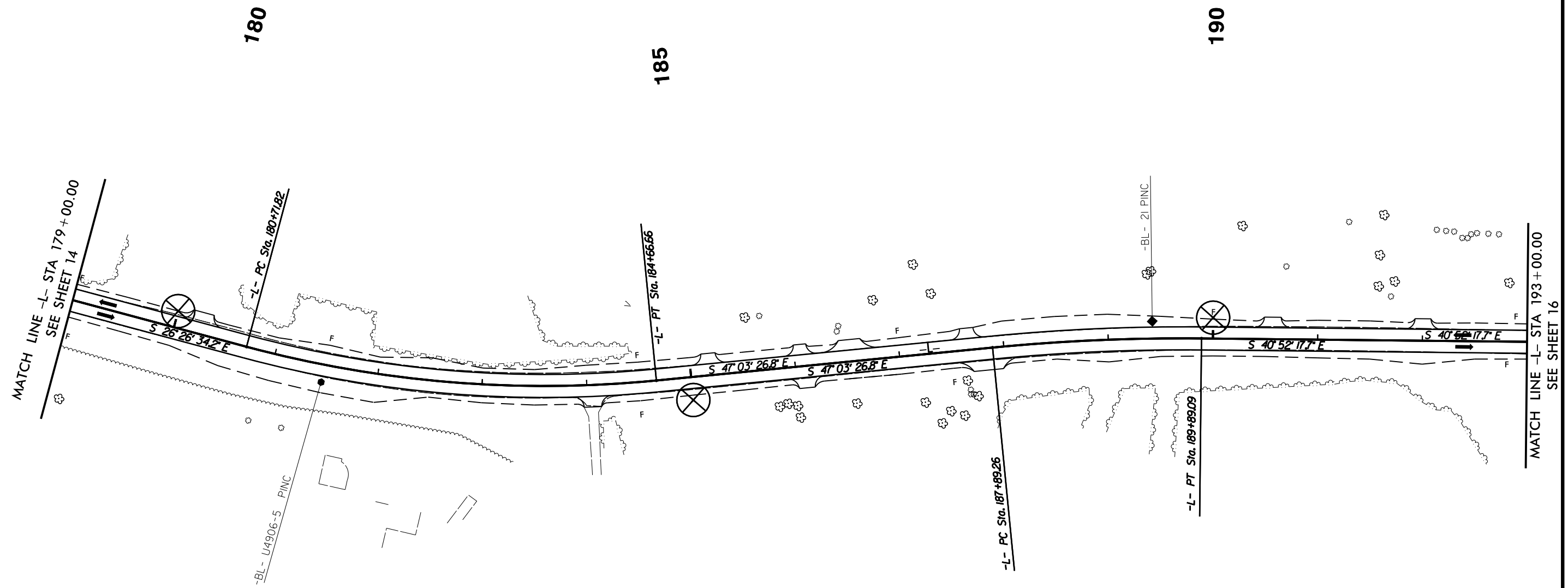
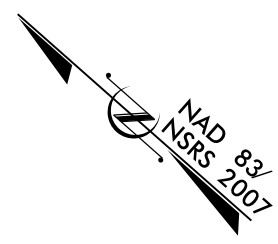
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NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEETS 32 AND 33

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4906	15
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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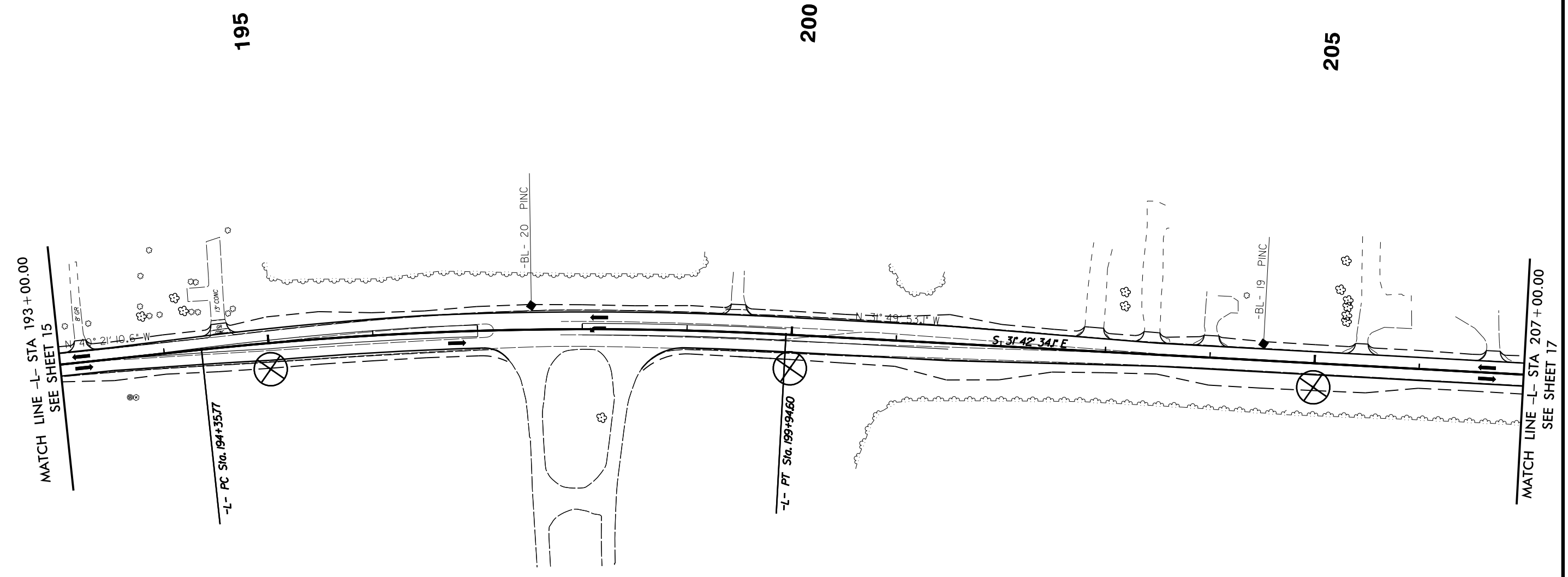
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NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEET 33

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PROJECT REFERENCE NO.	SHEET NO.
U-4906	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	

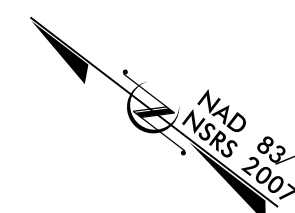


NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

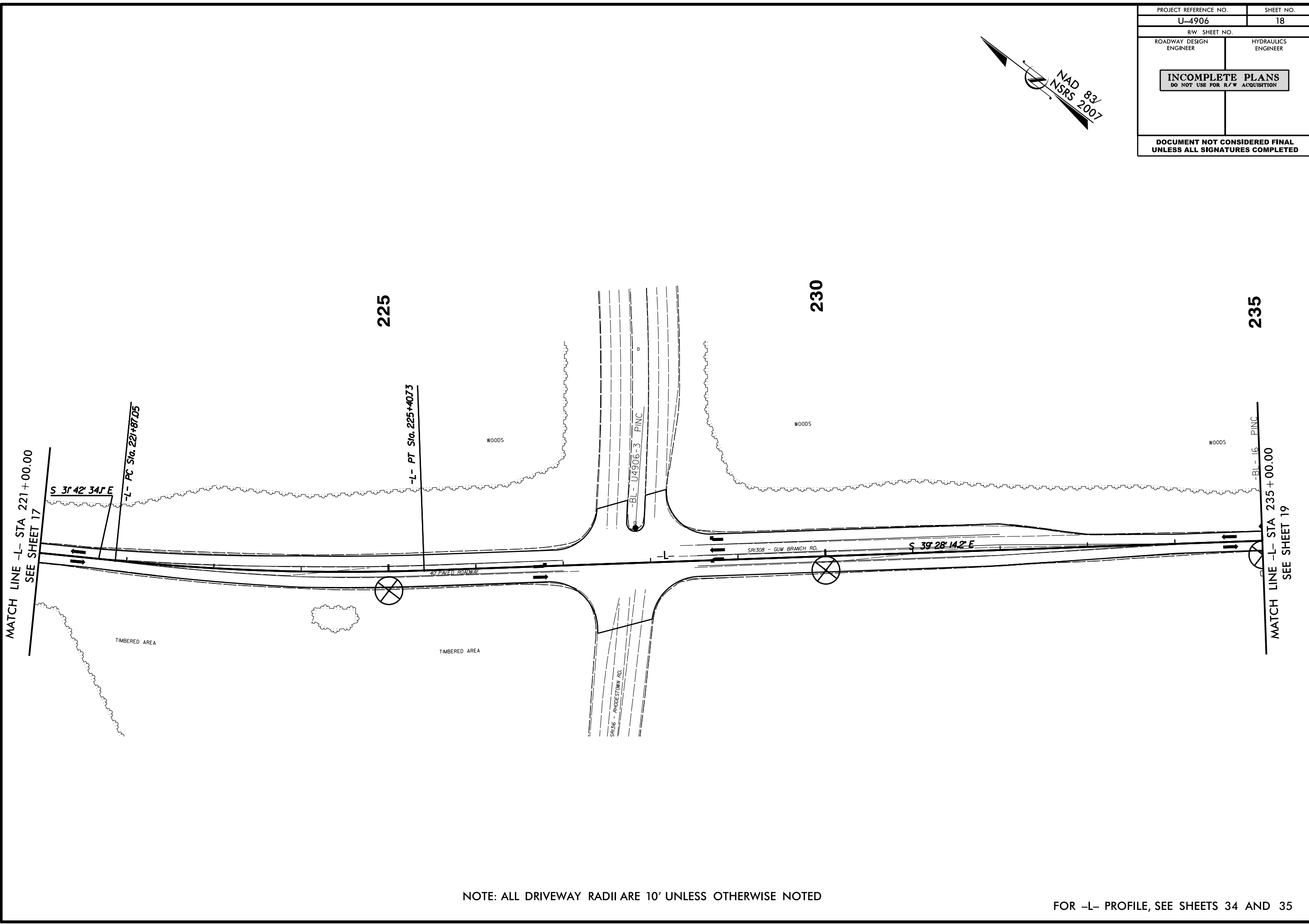
FOR -L- PROFILE, SEE SHEETS 33 AND 34

5/14/99

PROJECT REFERENCE NO. U-4906	SHEET NO. 18
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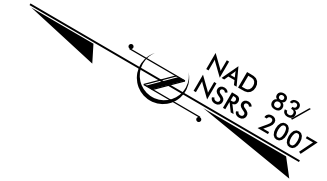


NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED

FOR -L- PROFILE, SEE SHEETS 34 AND 35

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
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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	



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240

245



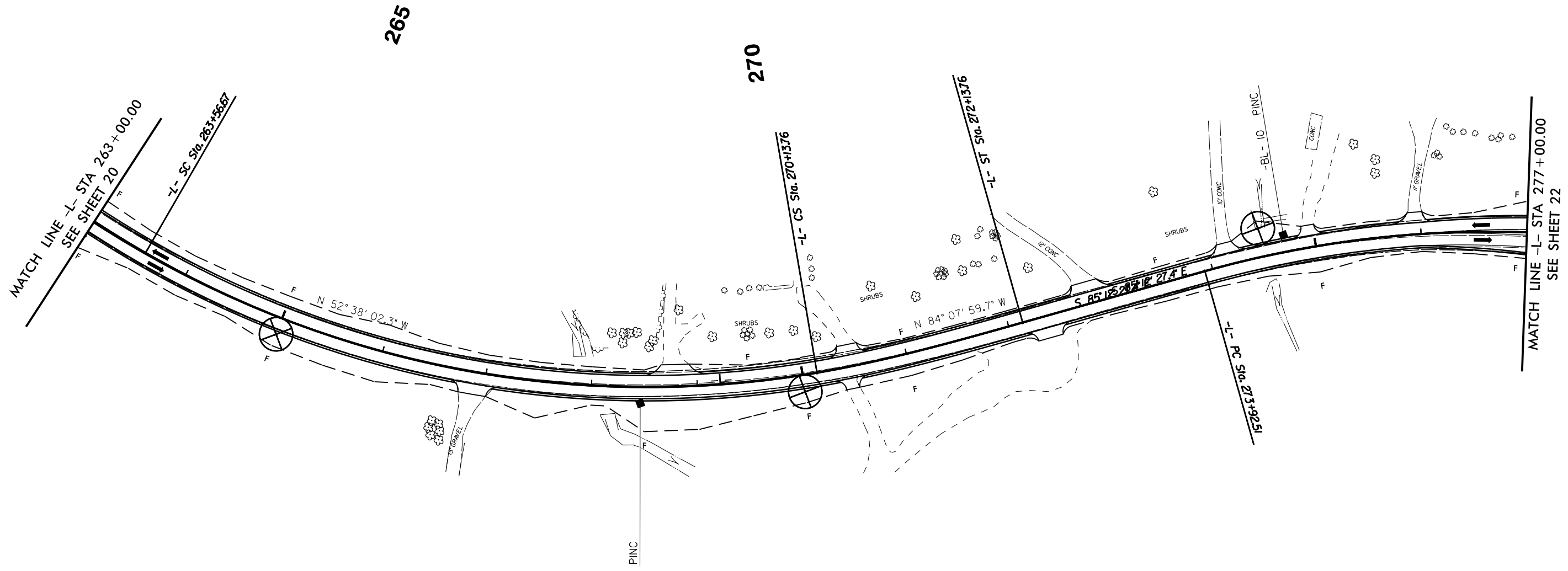
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 5/14/99

NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON PLANS

FOR -L- PROFILE, SEE SHEET 35

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4906	21
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	



265

270

275

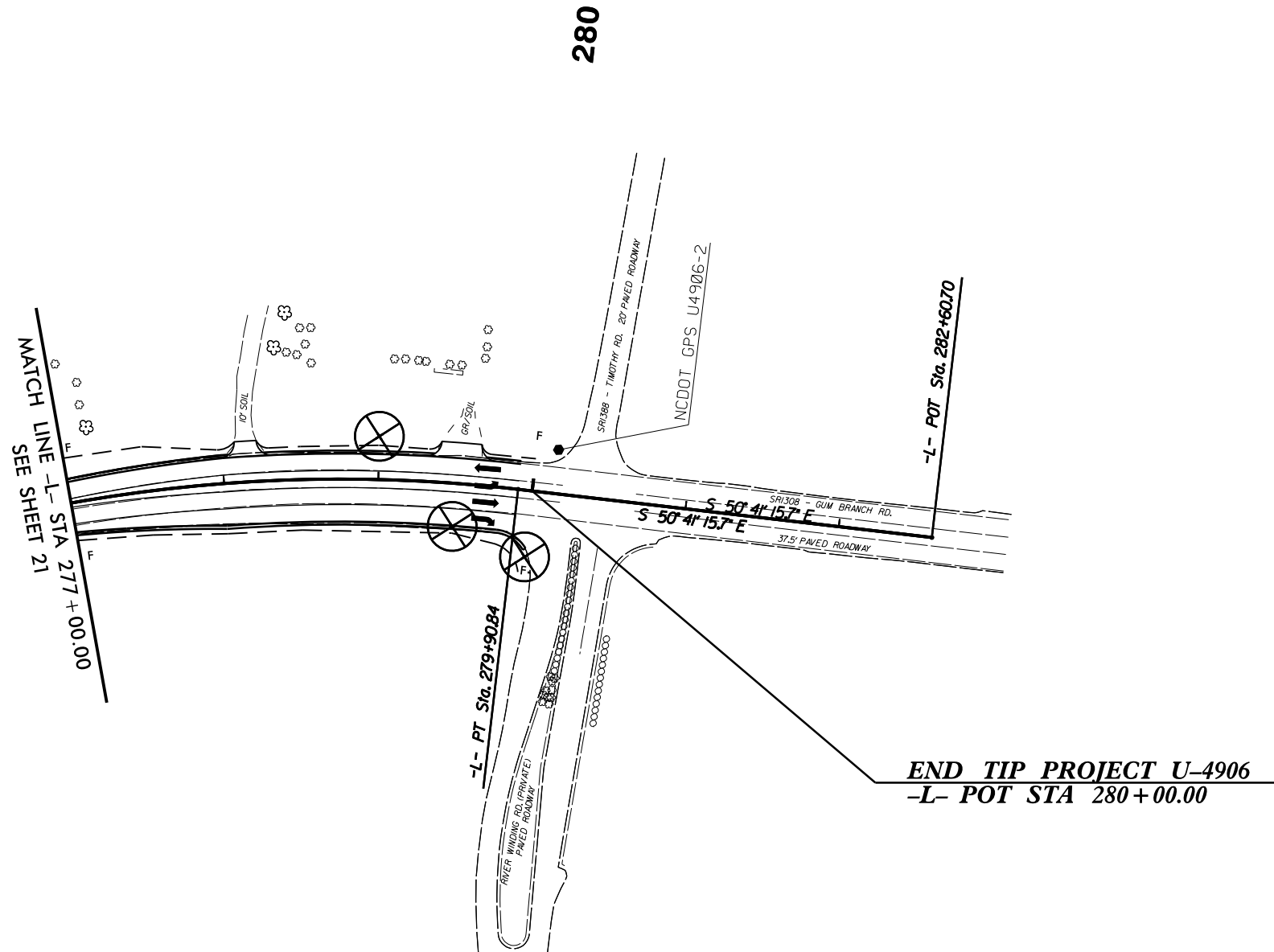
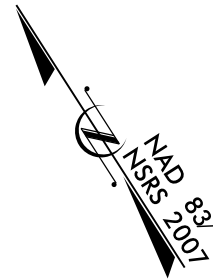
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NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON PLANS

FOR -L- PROFILE, SEE SHEET 36

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4906	22
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	



280

END TIP PROJECT U-4906
-L- POT STA 280+00.00

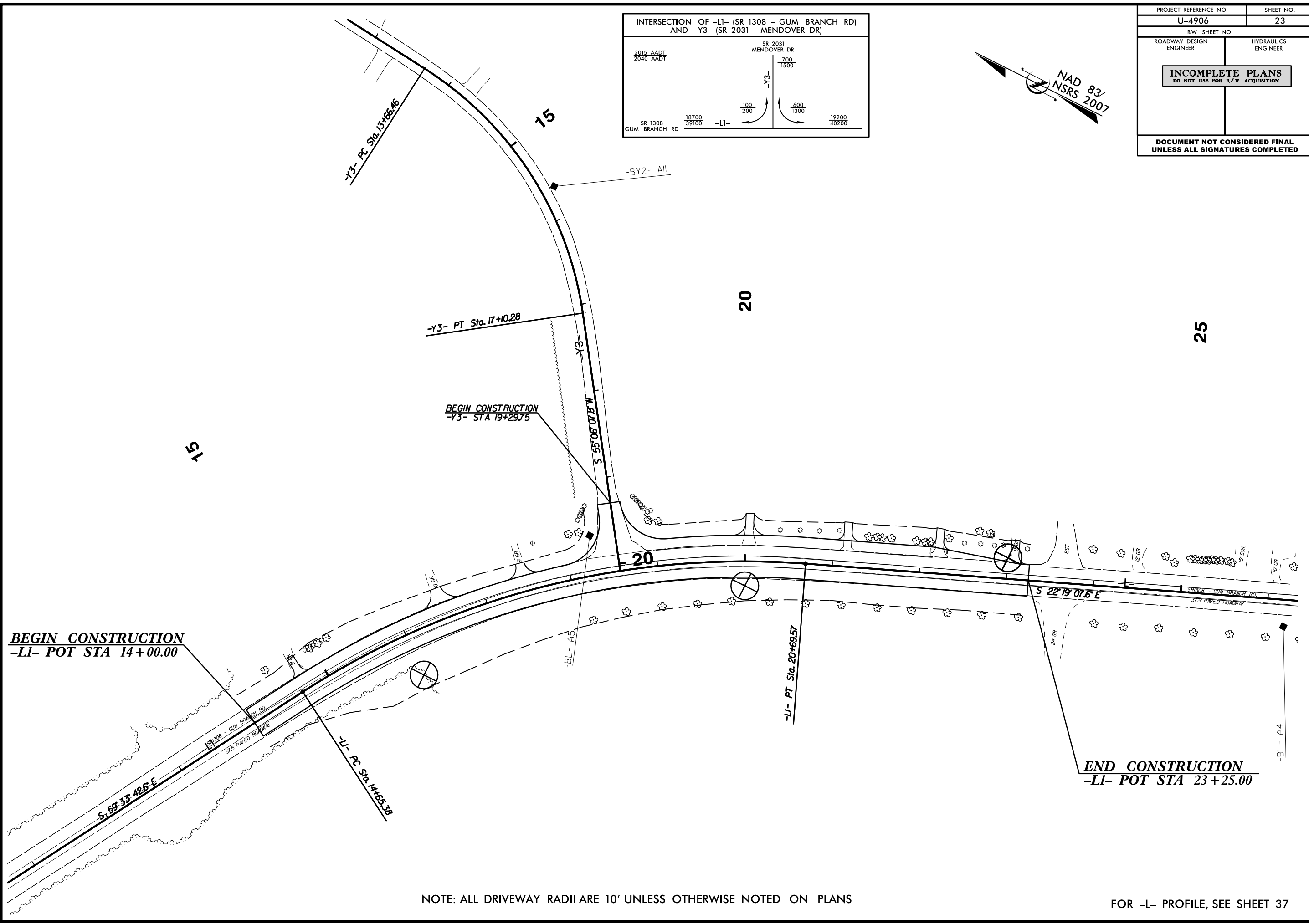
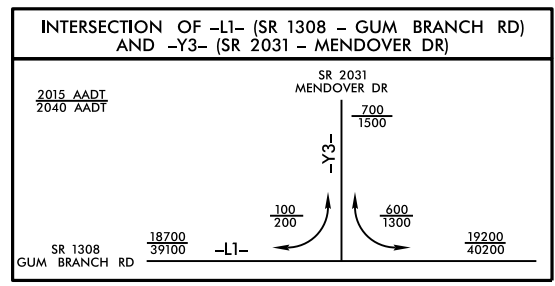
NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON PLANS

FOR -L- PROFILE, SEE SHEET 36

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 \$\$\$\$REVISIONS\$\$\$\$

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4906	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	



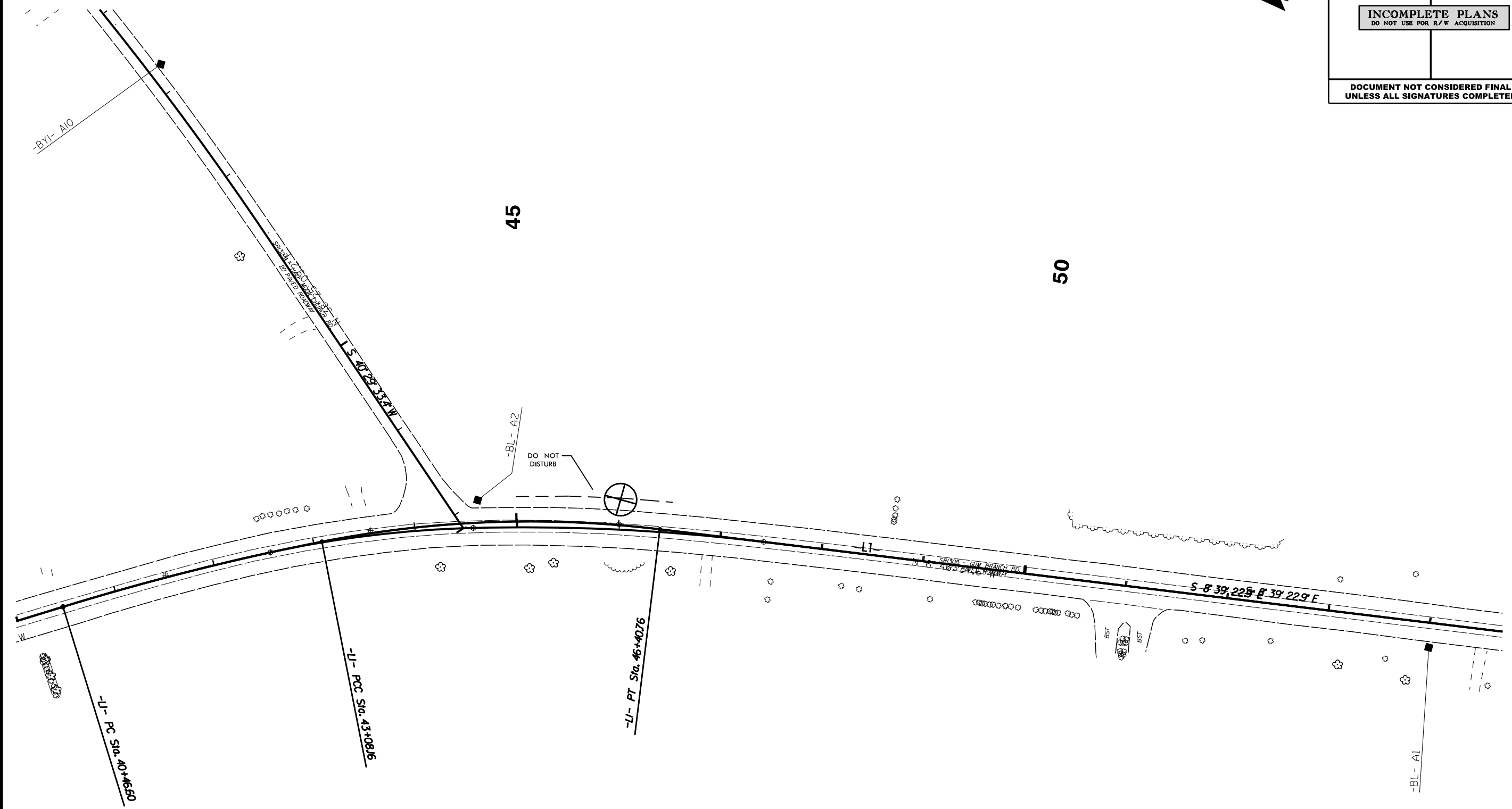
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NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON PLANS

FOR -L- PROFILE, SEE SHEET 37

5/14/99

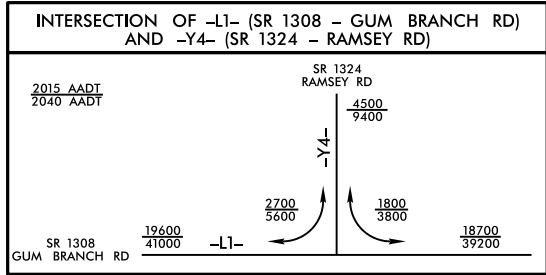
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RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



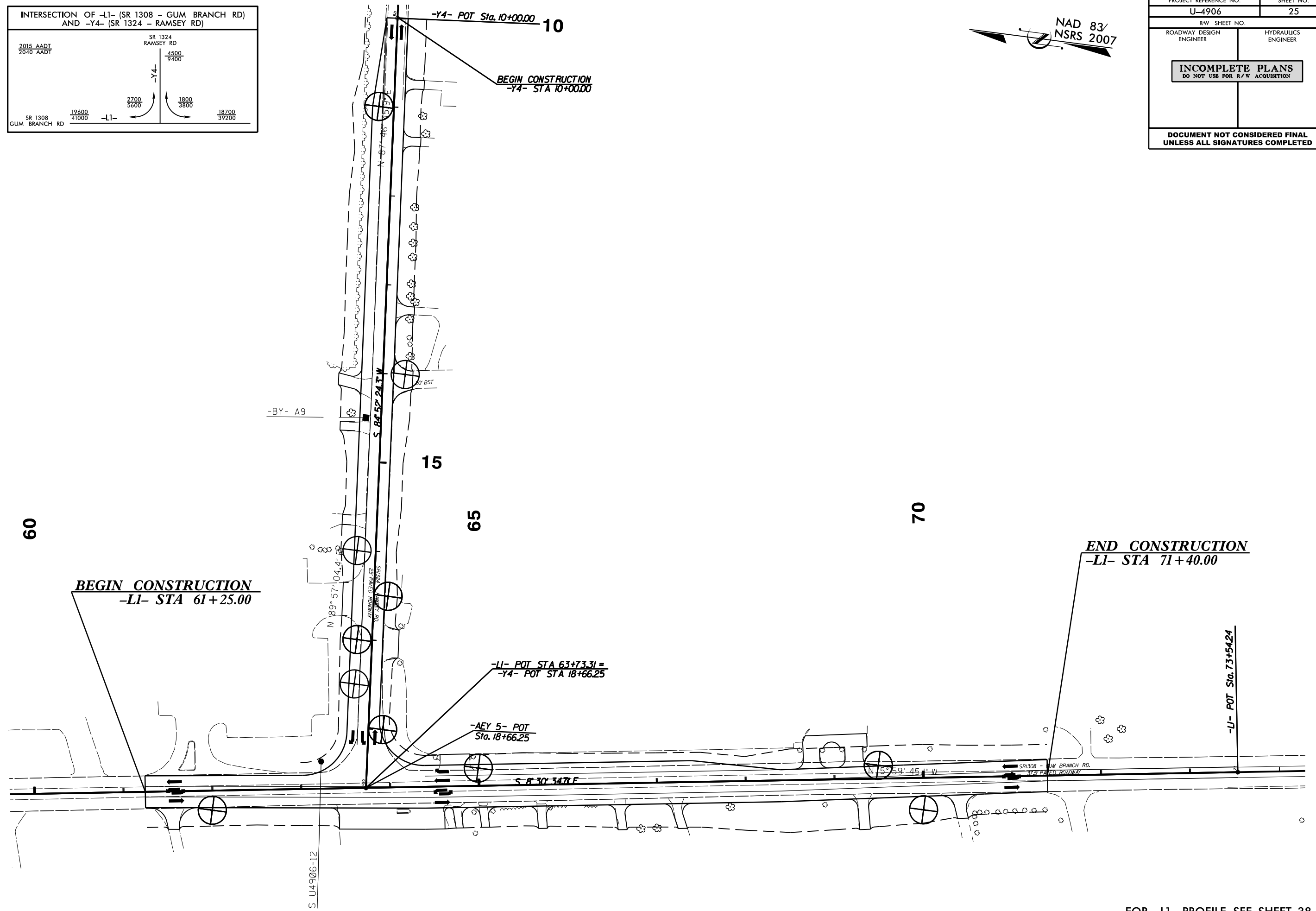
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FOR -L1- PROFILE, SEE SHEET 37

5/14/99



PROJECT REFERENCE NO. U-4906	SHEET NO. 25
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	



25-OCT-2016 13:39
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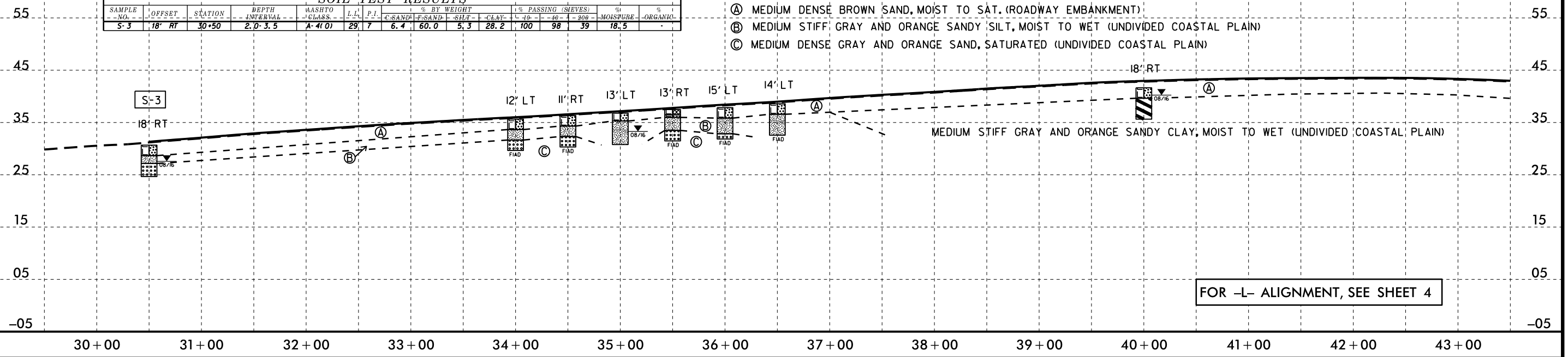
NOTE: ALL DRIVEWAY RADII ARE 10' UNLESS OTHERWISE NOTED ON PLANS

FOR -L1- PROFILE, SEE SHEET 38

5/28/99

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-3	18' RT	30+50	2.0-3.5	A-4(0)	29	7	6.4	60.0	5.3	28.2	100	98	39	18.5	-

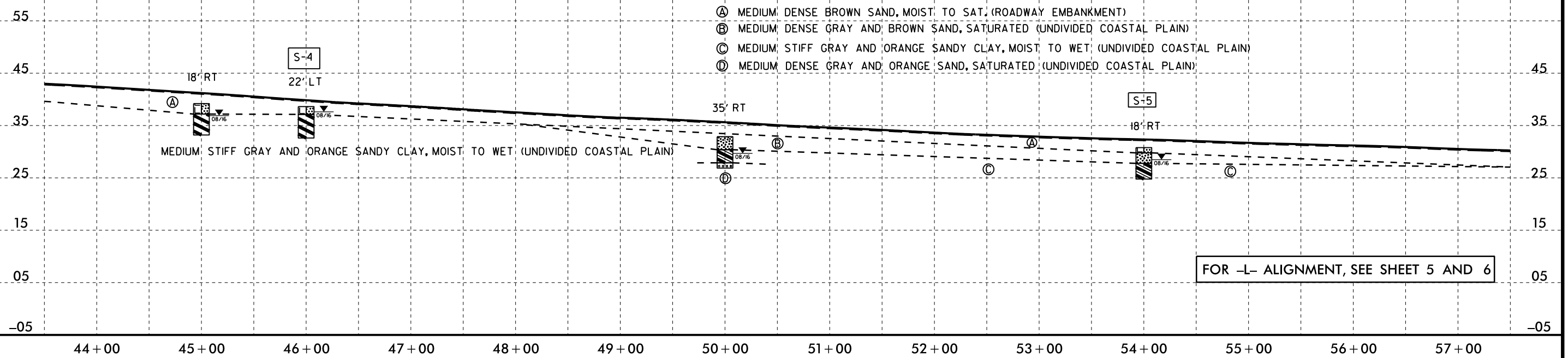
- (A) MEDIUM DENSE BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)
- (B) MEDIUM STIFF GRAY AND ORANGE SANDY SILT, MOIST TO WET (UNDIVIDED COASTAL PLAIN)
- (C) MEDIUM DENSE GRAY AND ORANGE SAND, SATURATED (UNDIVIDED COASTAL PLAIN)



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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-4	22' LT	46+00	1.5-6.0	A-7.5(15)	51	18	1.8	35.2	14.6	48.3	100	99	74	27.7	-
S-5	18' RT	54+00	3.0-6.0	A-6(1)	32	11	12.1	49.3	10.4	28.2	100	96	42	21.9	-

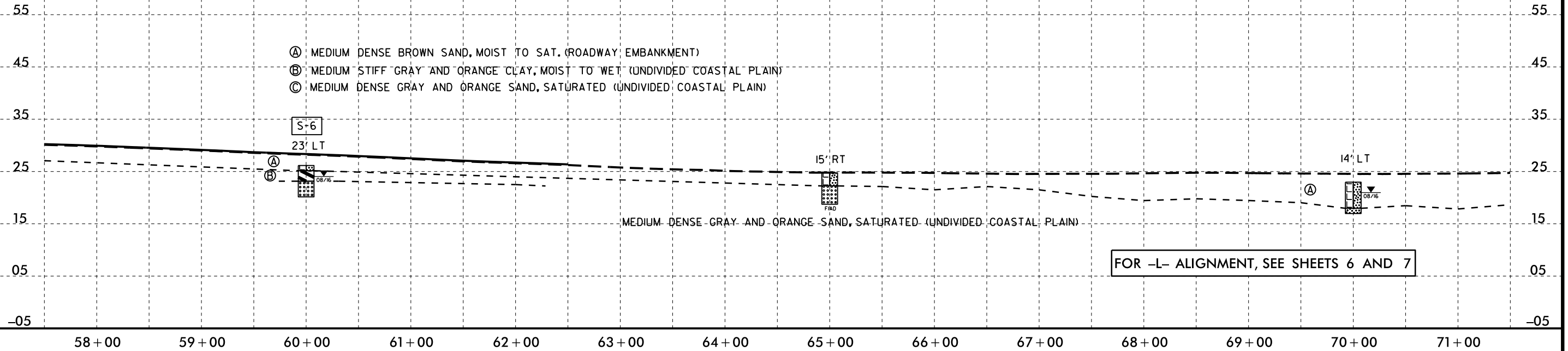
- (A) MEDIUM DENSE BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)
- (B) MEDIUM DENSE GRAY AND BROWN SAND, SATURATED (UNDIVIDED COASTAL PLAIN)
- (C) MEDIUM STIFF GRAY AND ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED COASTAL PLAIN)
- (D) MEDIUM DENSE GRAY AND ORANGE SAND, SATURATED (UNDIVIDED COASTAL PLAIN)



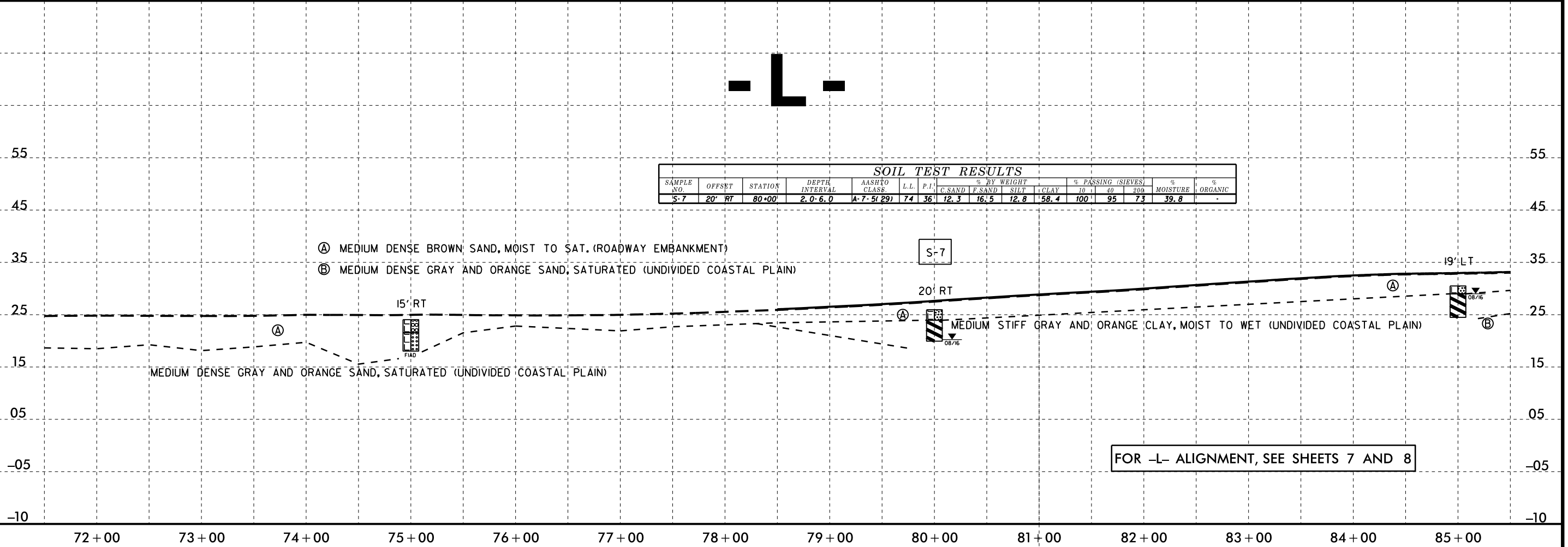
5/28/99

PROJECT REFERENCE NO.		SHEET NO.	
U-4906		27	
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-6	23' LT	60+00	1.0-3.0	A-7-6(14)	51	22	0.4	36.9	14.4	48.3	100	100	66	24.0	-



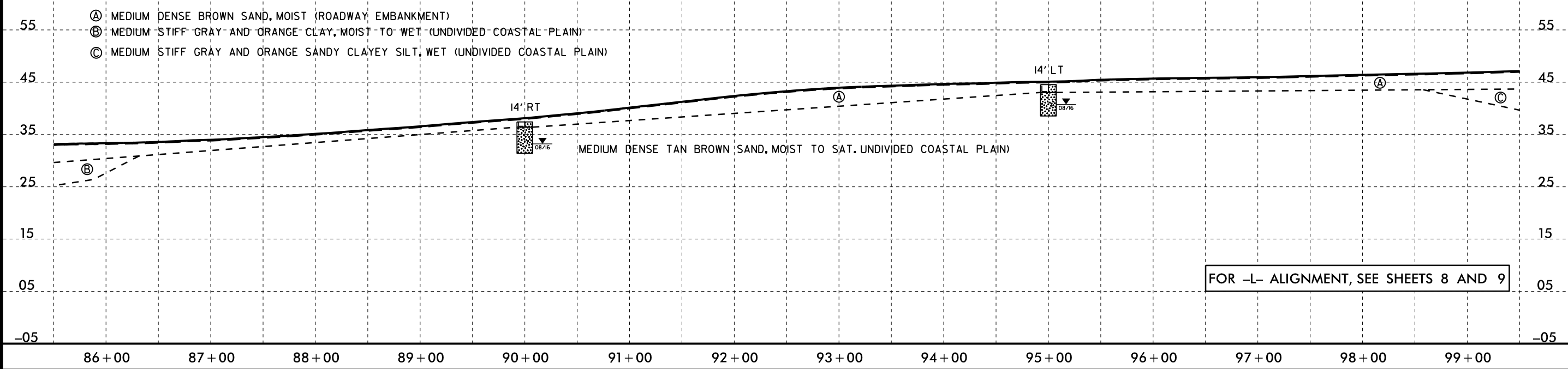
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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			MOISTURE	ORGANIC
							C.SAND	F.SAND	SILT	CLAY	#10	#40	#200		
S-7	20' RT	80+00	2.0-6.0	A-7-5(29)	74	36	12.3	16.5	12.8	58.4	100	95	73	39.8	-



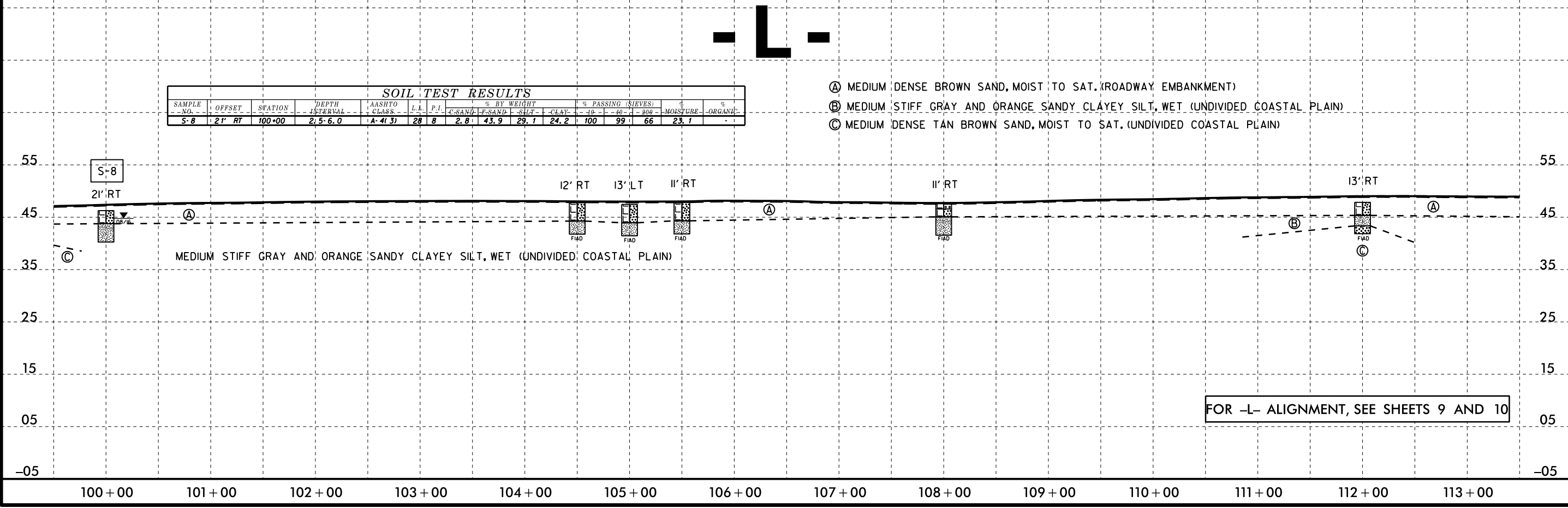
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5/28/99

PROJECT REFERENCE NO. U-4906	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.L.	% BY WEIGHT				% PASSING (SIEVES)		% MOISTURE		% ORGANIC
							C-SAND	F-SAND	SILT	CLAY	-40	-200			
S-8	21' RT	100+00	2.5-6.0	A-4(3)	28	8	2.8	43.9	29.1	24.2	100	99	66	23.1	

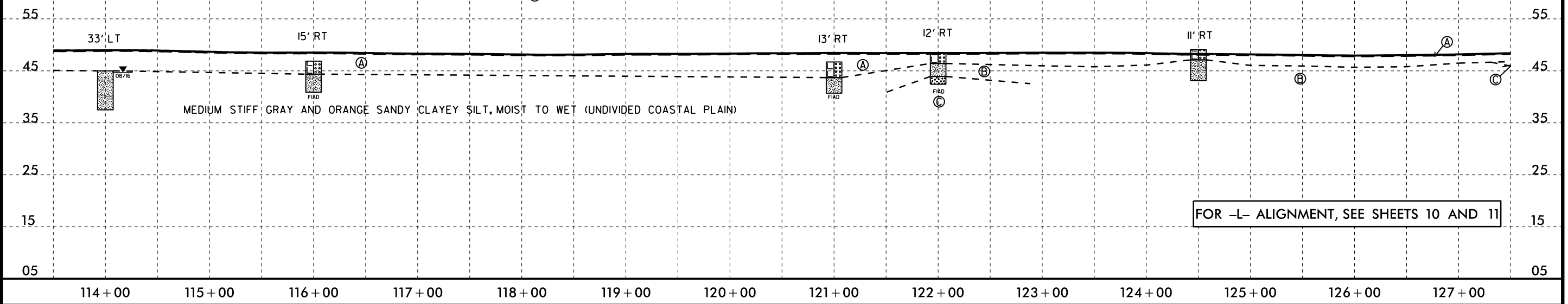


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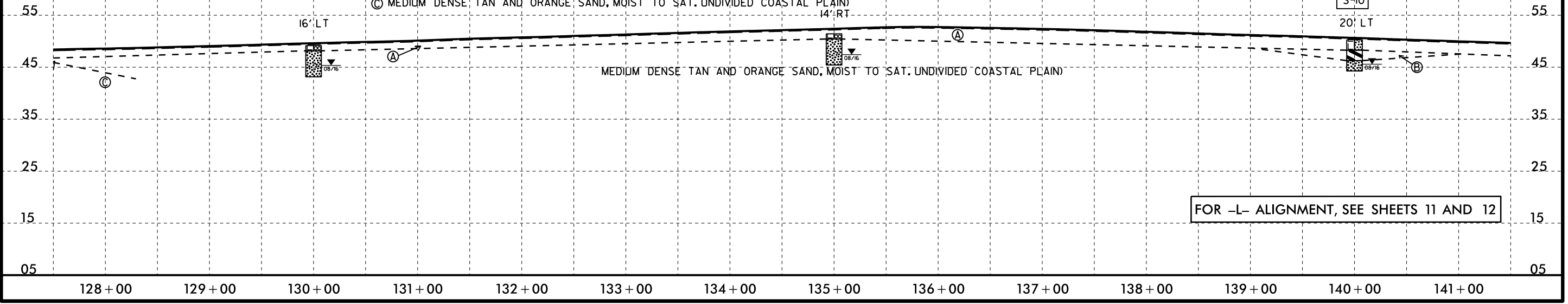
PROJECT REFERENCE NO. U-4906	SHEET NO. 29
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

- Ⓐ MEDIUM DENSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)
- Ⓑ MEDIUM STIFF GRAY AND ORANGE SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED COASTAL PLAIN)
- Ⓒ MEDIUM DENSE TAN AND ORANGE SAND, MOIST TO SAT. UNDIVIDED COASTAL PLAIN



SOIL TEST RESULTS														
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)		% MOISTURE	% ORGANIC	
							SAND	SANDY SILT	CLAY	#10	#200			
S-10	20' LT	140+00	2.0-5.5	A-7-5(14)	53	22	4.2	44.9	12.6	36.3	100	99	64	28.2

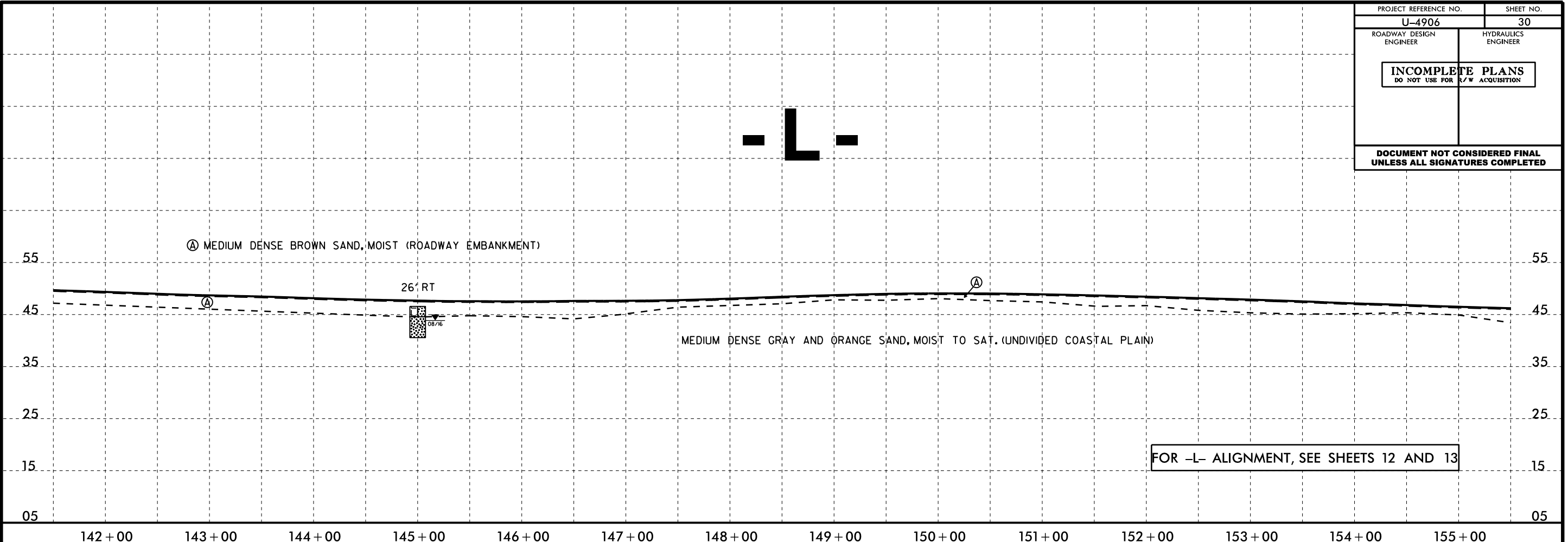
- Ⓐ MEDIUM DENSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)
- Ⓑ STIFF GRAY AND ORANGE SANDY CLAY, MOIST (UNDIVIDED COASTAL PLAIN)
- Ⓒ MEDIUM DENSE TAN AND ORANGE SAND, MOIST TO SAT. UNDIVIDED COASTAL PLAIN



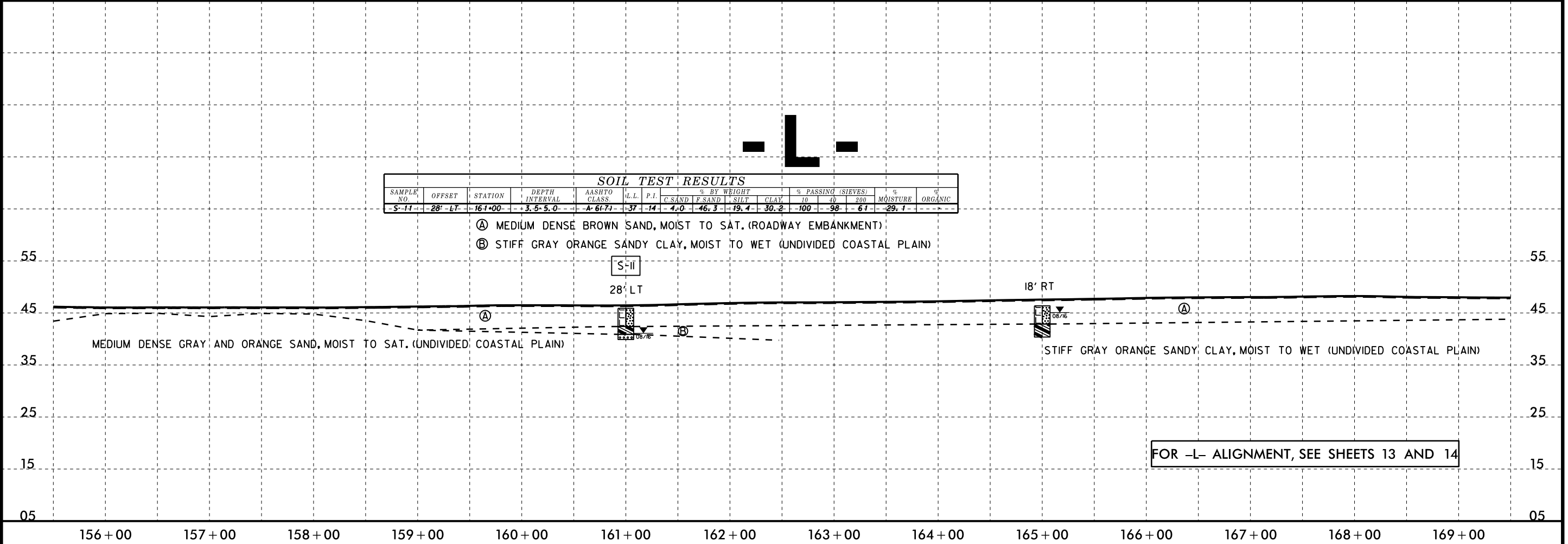
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5/28/99

PROJECT REFERENCE NO. U-4906	SHEET NO. 30
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



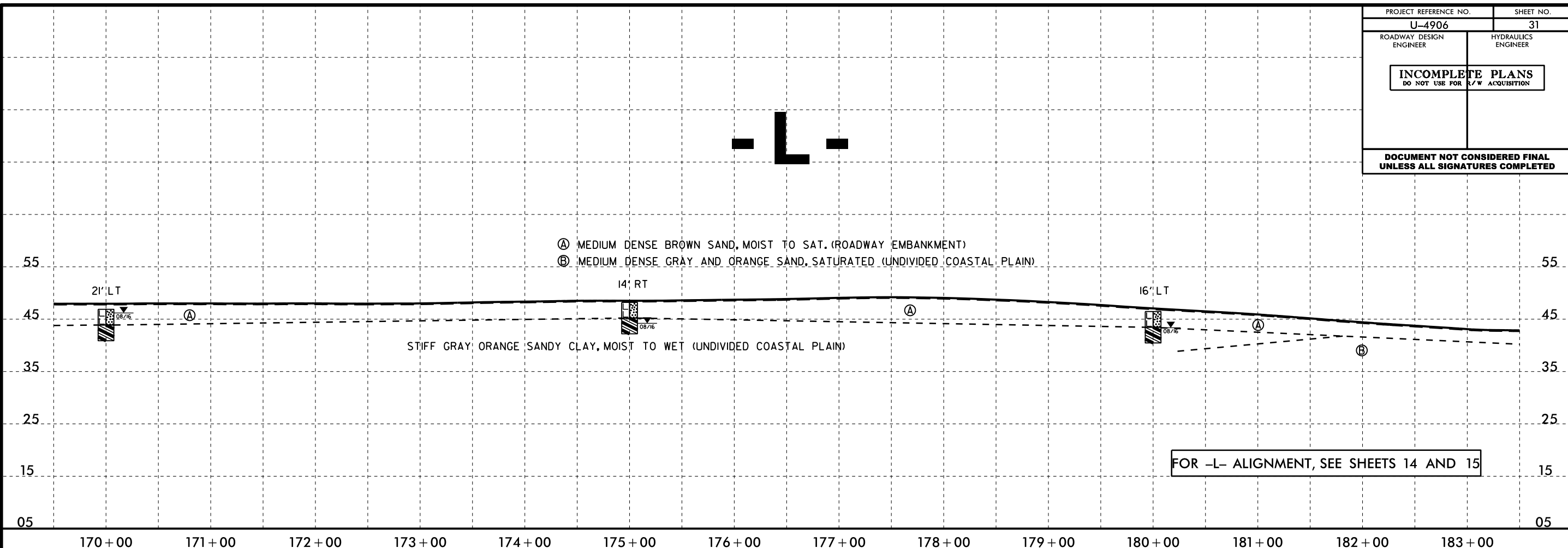
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	L.L.	P.I.	% BY WEIGHT			% PASSING (SIEVES)			% MOISTURE	% ORGANIC	
							C. SAND	F. SAND	SILT	CLAY	10	40			200
S-11	28' LT	161+00	3.5-5.0	A-6(7)	37	14	4.0	46.3	19.4	30.2	100	98	61	29.1	



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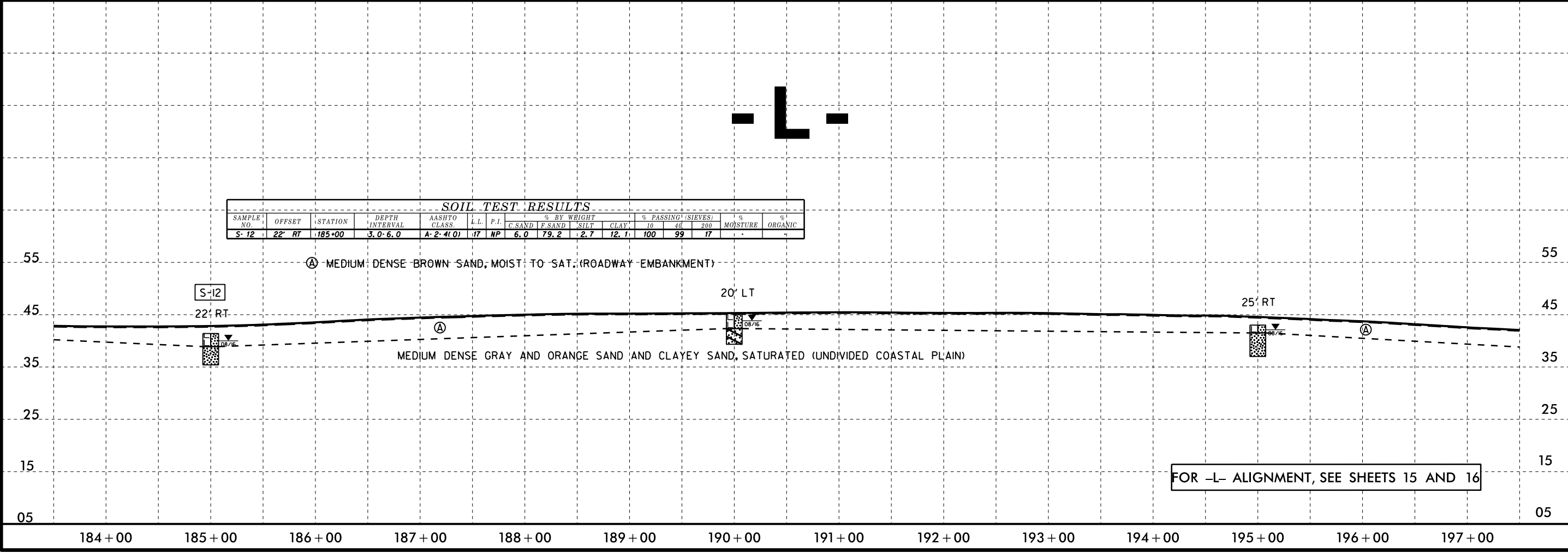
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PROJECT REFERENCE NO. U-4906	SHEET NO. 31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	



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	22' RT	185+00	3.0-6.0	A-2-4(0)	47	NP	6.0	79.2	2.7	12.1	100	99	17	-	-

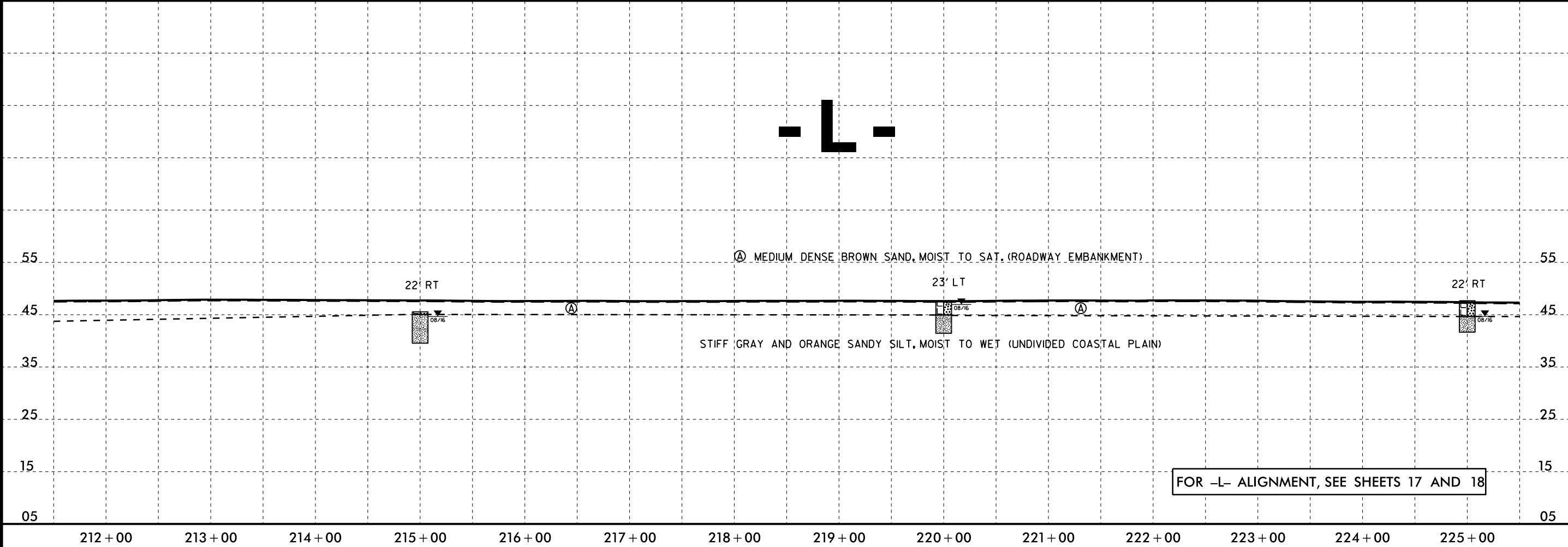
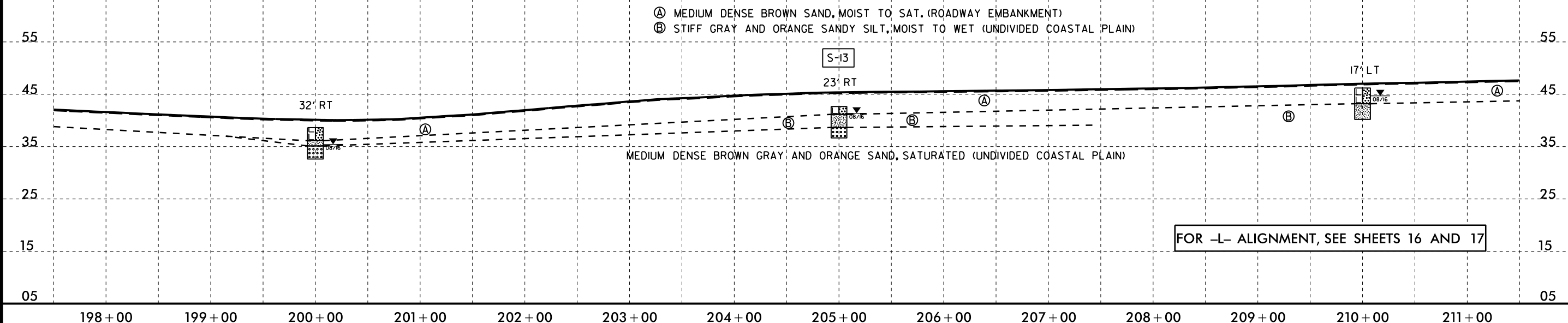


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5/28/99

PROJECT REFERENCE NO. U-4906	SHEET NO. 32
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

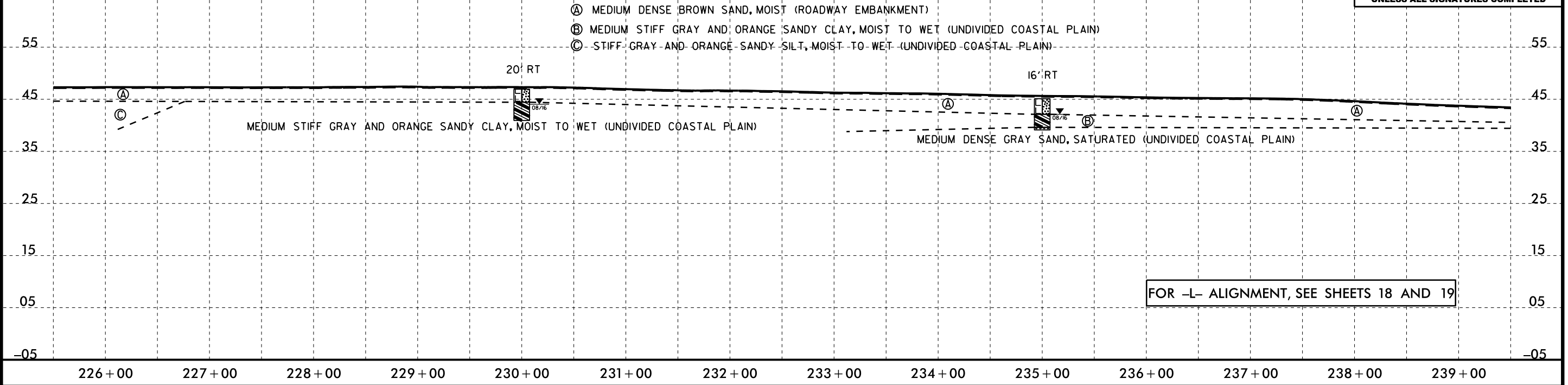
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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% MOISTURE	% ORGANIC		
							C. SAND	F. SAND	SILT	CLAY				
S-13	23' RT	205+00	1.5'-4.0'	A-4(1)	29	7	7.3	50.6	14.0	28.2	100	97	52	63.6



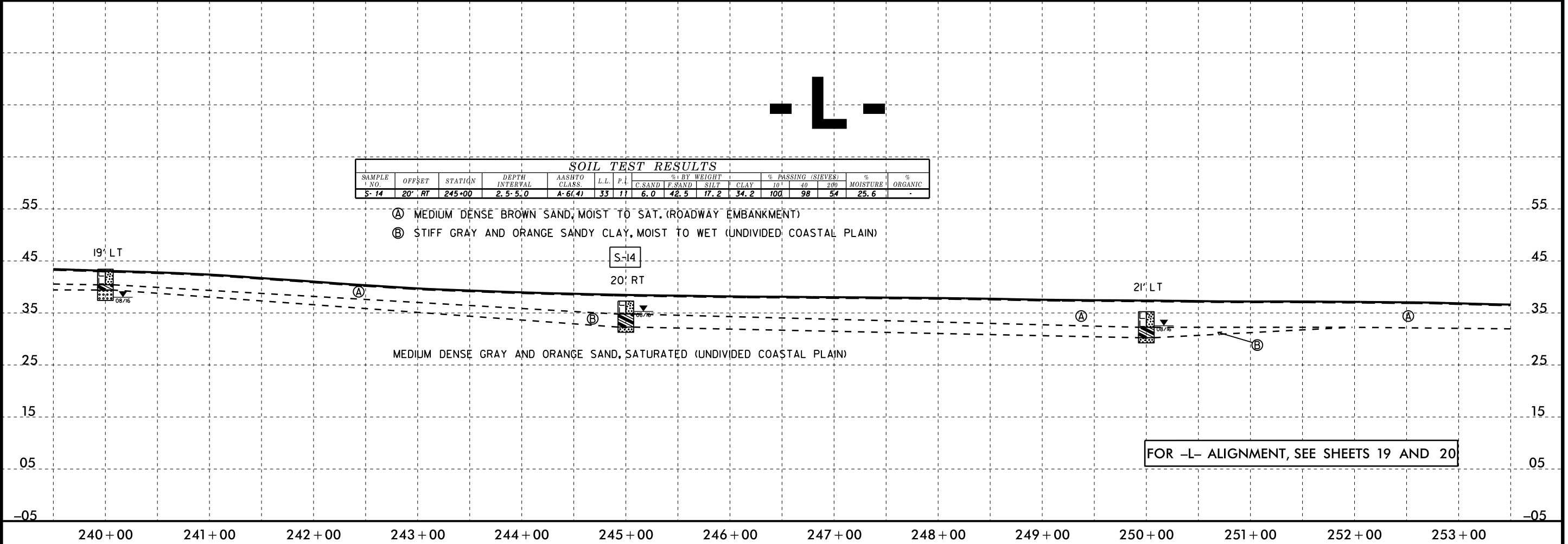
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5/28/99

PROJECT REFERENCE NO. U-4906	SHEET NO. 33
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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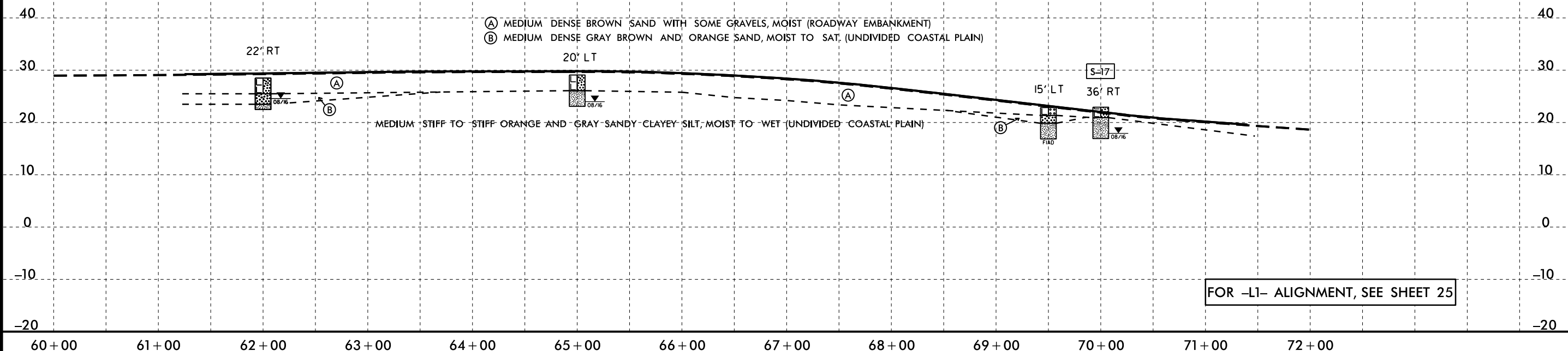


PROJECT REFERENCE NO. U-4906		SHEET NO. 36	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			

-L1-

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
S-17	36' RT	70+00	2.0-6.0	A-4(3)	36	9	C.SAND	F.SAND	SILT	CLAY	10	40	200		
							9.3	45.1	11.4	34.2	100	95	52	19.5	-

- (A) MEDIUM DENSE BROWN SAND WITH SOME GRAVELS, MOIST (ROADWAY EMBANKMENT)
- (B) MEDIUM DENSE GRAY BROWN AND ORANGE SAND, MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)



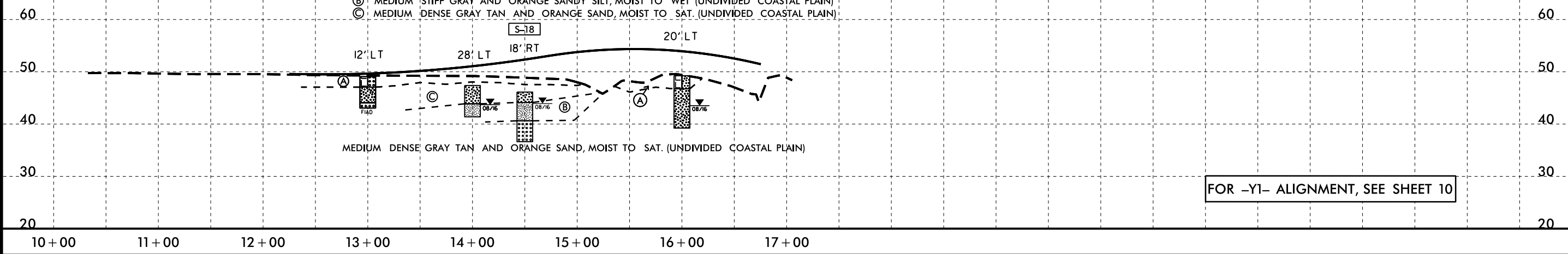
5/28/99

PROJECT REFERENCE NO. U-4906	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	

-Y1-

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	18' RT	14+50	3.0-5.5	A-4(0)	25	5	4.0	56.2	17.6	22.2	100	99	51	24.5	-

- (A) MEDIUM DENSE BROWN TAN SAND, MOIST (ROADWAY EMBANKMENT)
- (B) MEDIUM STIFF GRAY AND ORANGE SANDY SILT, MOIST TO WET (UNDIVIDED COASTAL PLAIN)
- (C) MEDIUM DENSE GRAY TAN AND ORANGE SAND, MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)

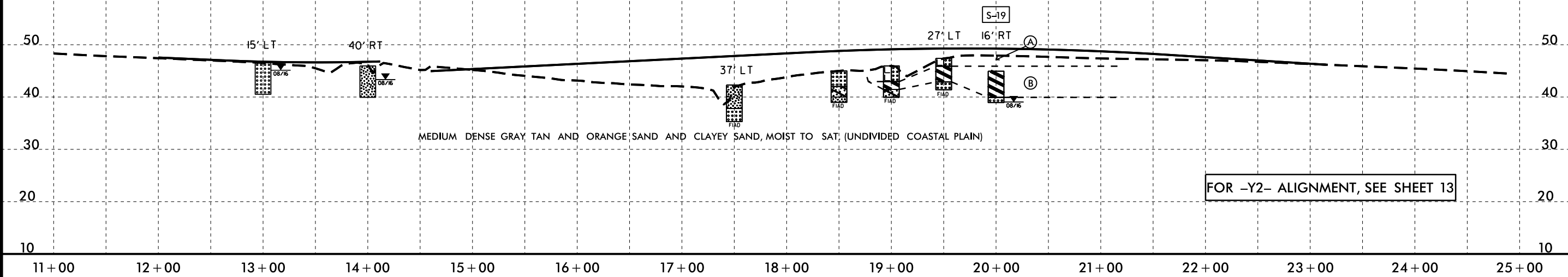


FOR -Y1- ALIGNMENT, SEE SHEET 10

-Y2-

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	16' RT	20+00	0.0-5.0	A-7-6(6)	42	13	4.6	47.1	14.0	34.2	100	98	57	22.7	-

- (A) MEDIUM DENSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)
- (B) MEDIUM STIFF GRAY AND ORANGE SANDY CLAY, MOIST (UNDIVIDED COASTAL PLAIN)



FOR -Y2- ALIGNMENT, SEE SHEET 13

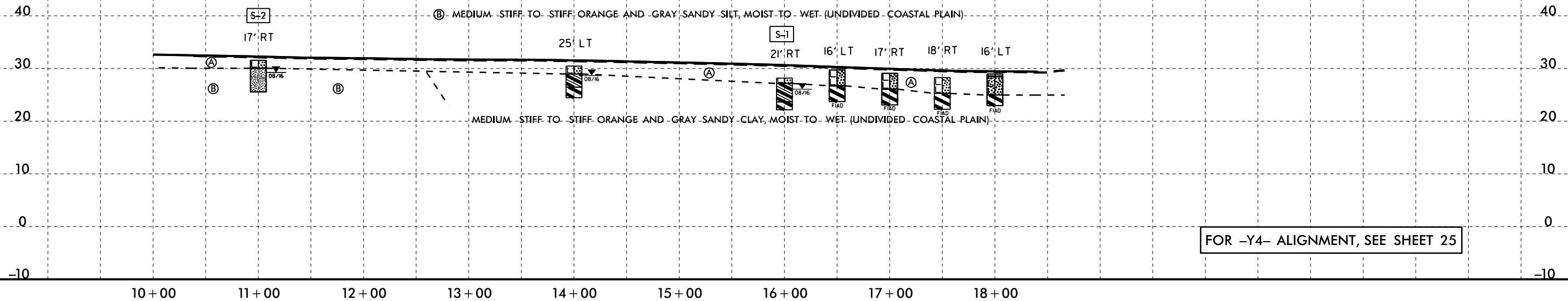
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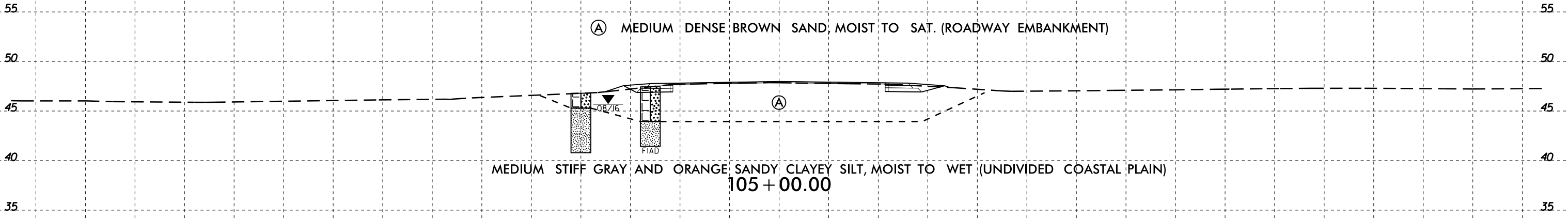
PROJECT REFERENCE NO. U-4906	SHEET NO. 7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	10	40	200		
S-2	17' RT	11+00	1.5-6.0	A-4(2)	30	8	9.5	43.5	18.8	28.2	100	95	54	-	-
S-1	21' RT	16+00	1.0-4.5	A-6(6)	40	11	9.1	38.1	18.6	34.2	100	96	63	21.3	-

- Ⓐ LOOSE TO MEDIUM DENSE BROWN SAND, MOIST (ROADWAY ENBANKMENT)
- Ⓑ MEDIUM STIFF TO STIFF ORANGE AND GRAY SANDY SILT, MOIST TO WET (UNDIVIDED COASTAL PLAIN)



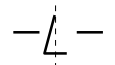
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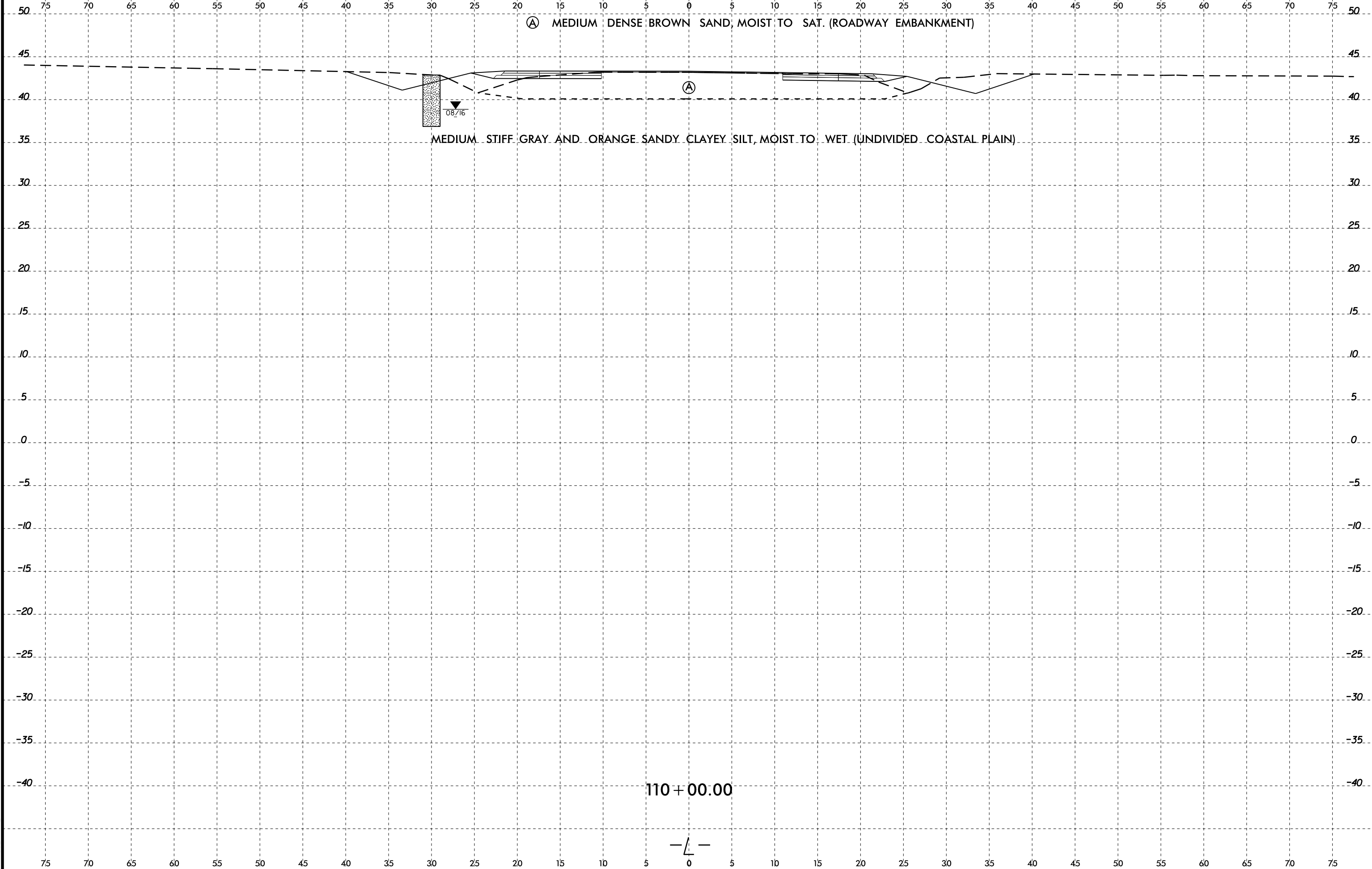
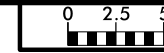


(A) MEDIUM DENSE BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

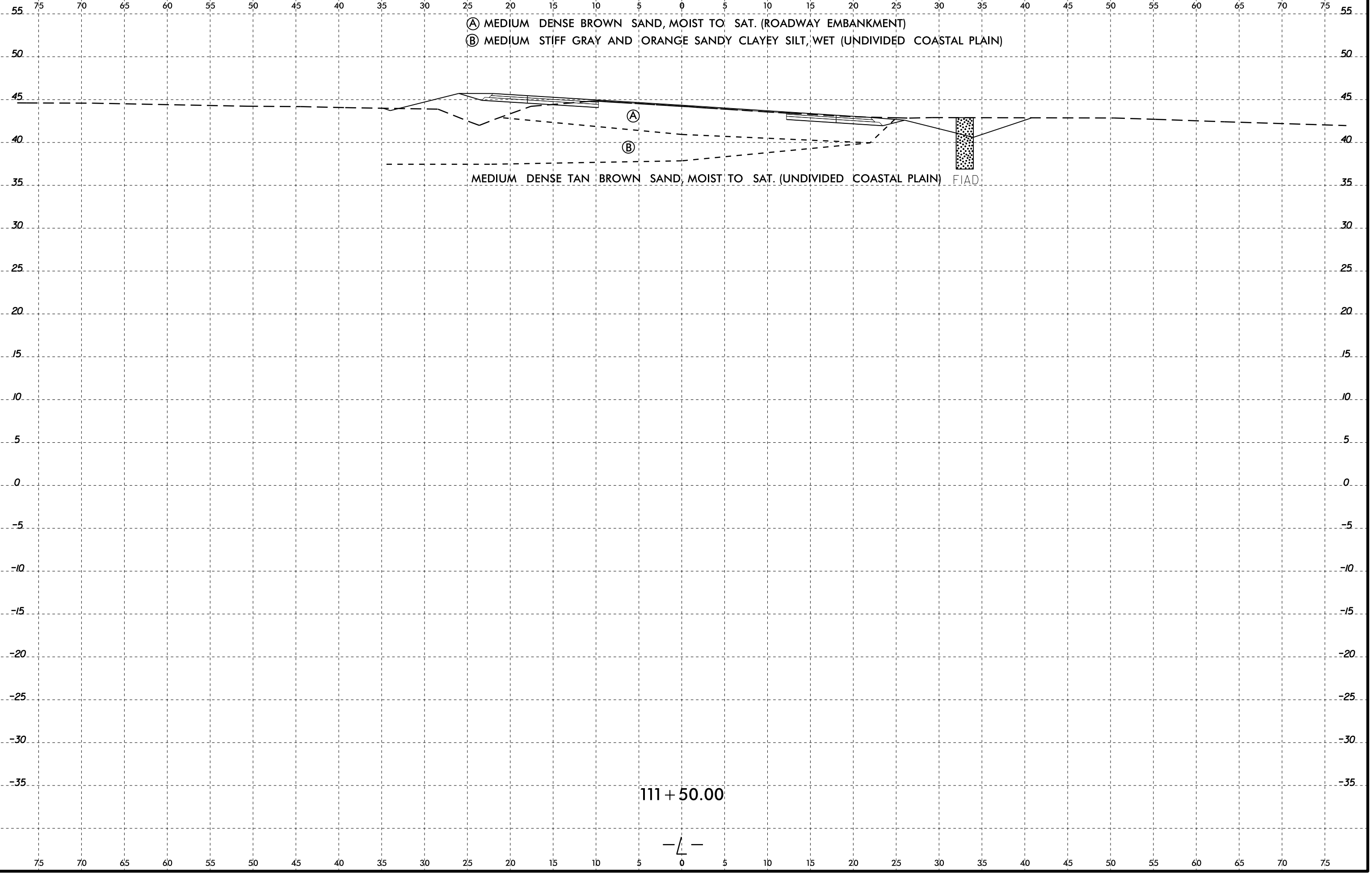
MEDIUM STIFF GRAY AND ORANGE SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

105 + 00.00

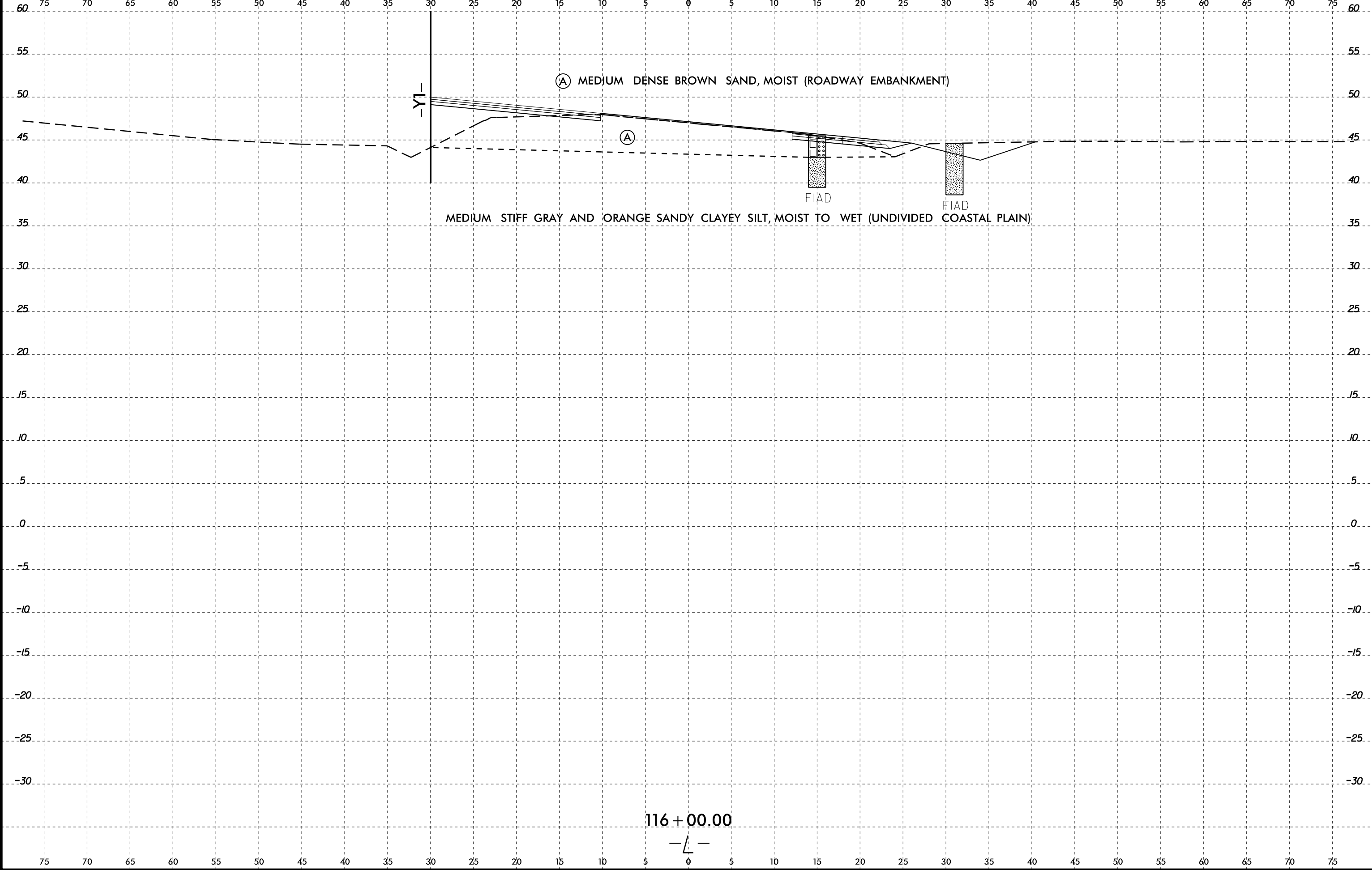




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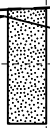
116 + 00.00

—L—

(A) MEDIUM DENSE BROWN SAND, MOIST TO SAT. (ROADWAY EMBANKMENT)

(A)

MEDIUM STIFF GRAY AND ORANGE SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

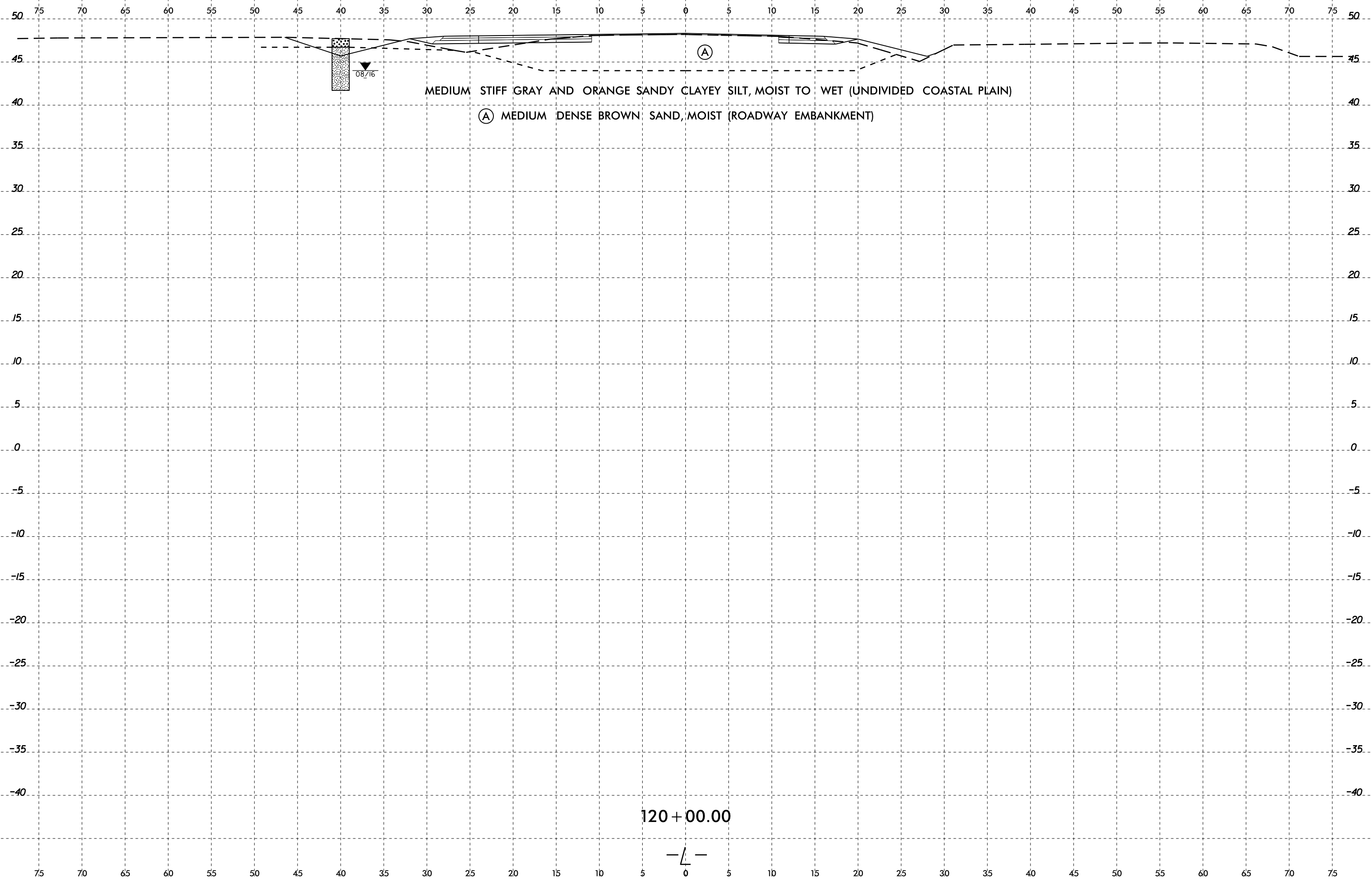


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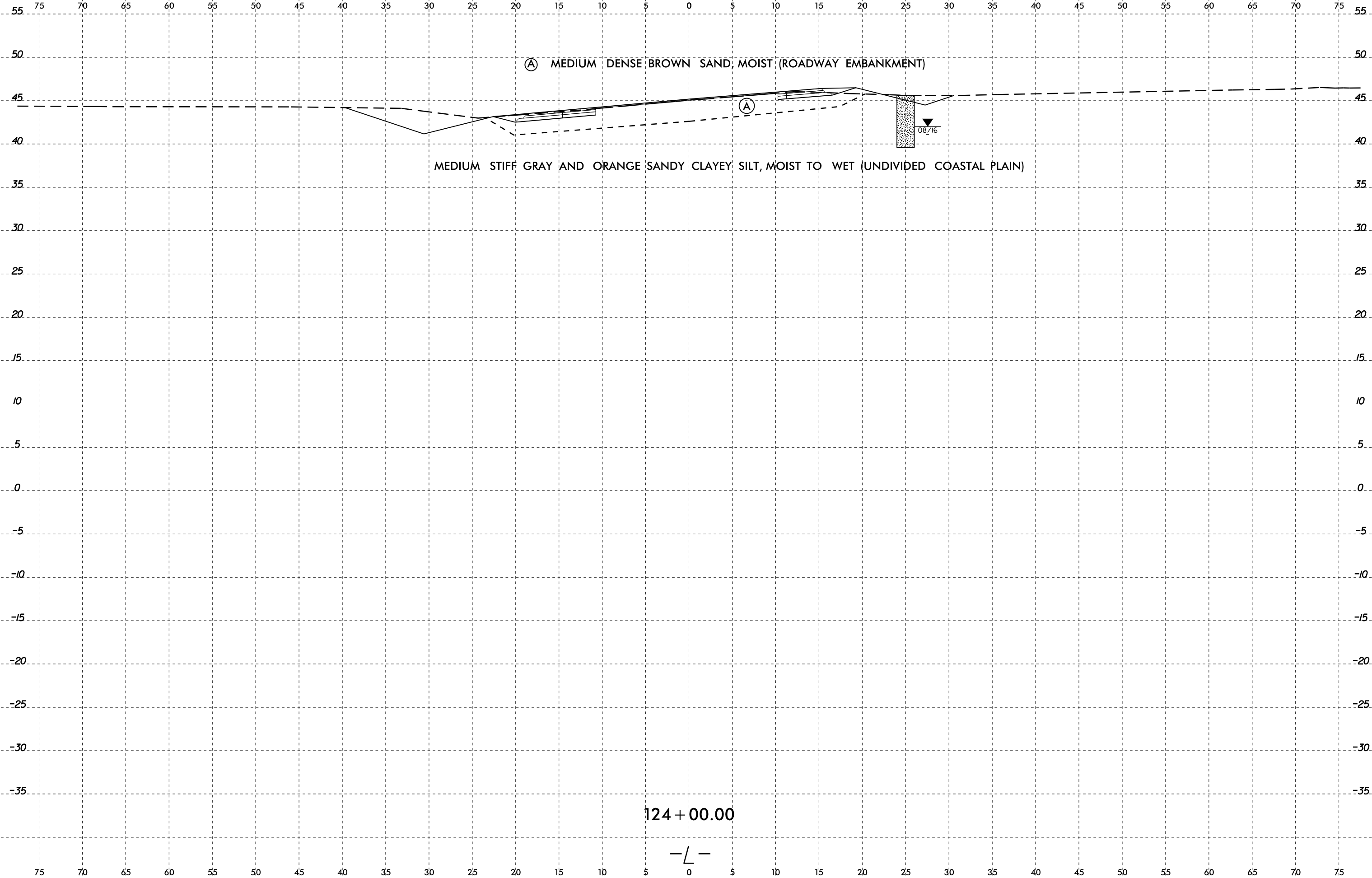
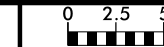
118 + 00.00



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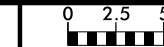
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124 + 00.00

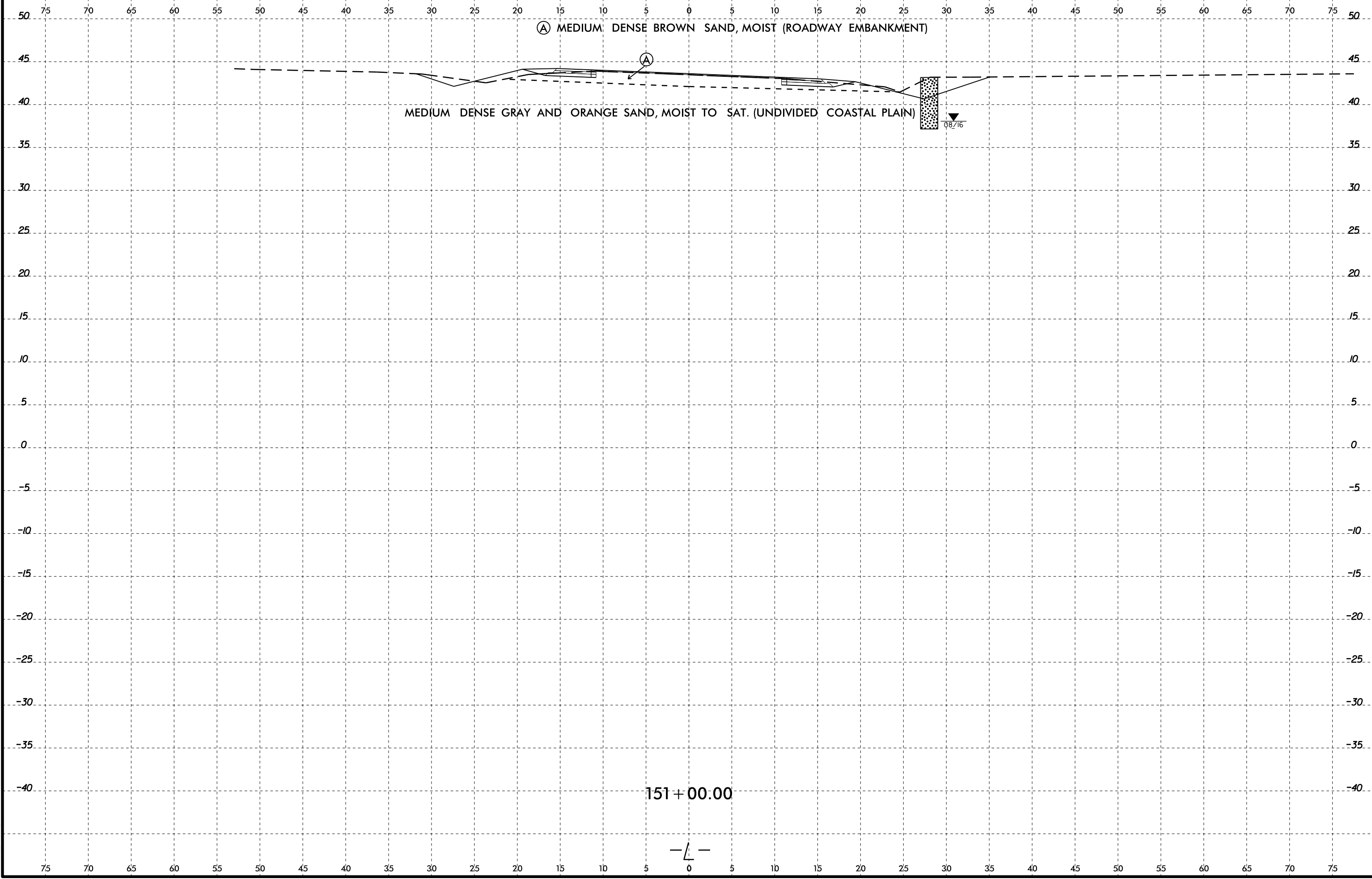


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PROJ. REFERENCE NO.
U-4906

SHEET NO.
46



(A) MEDIUM DENSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)

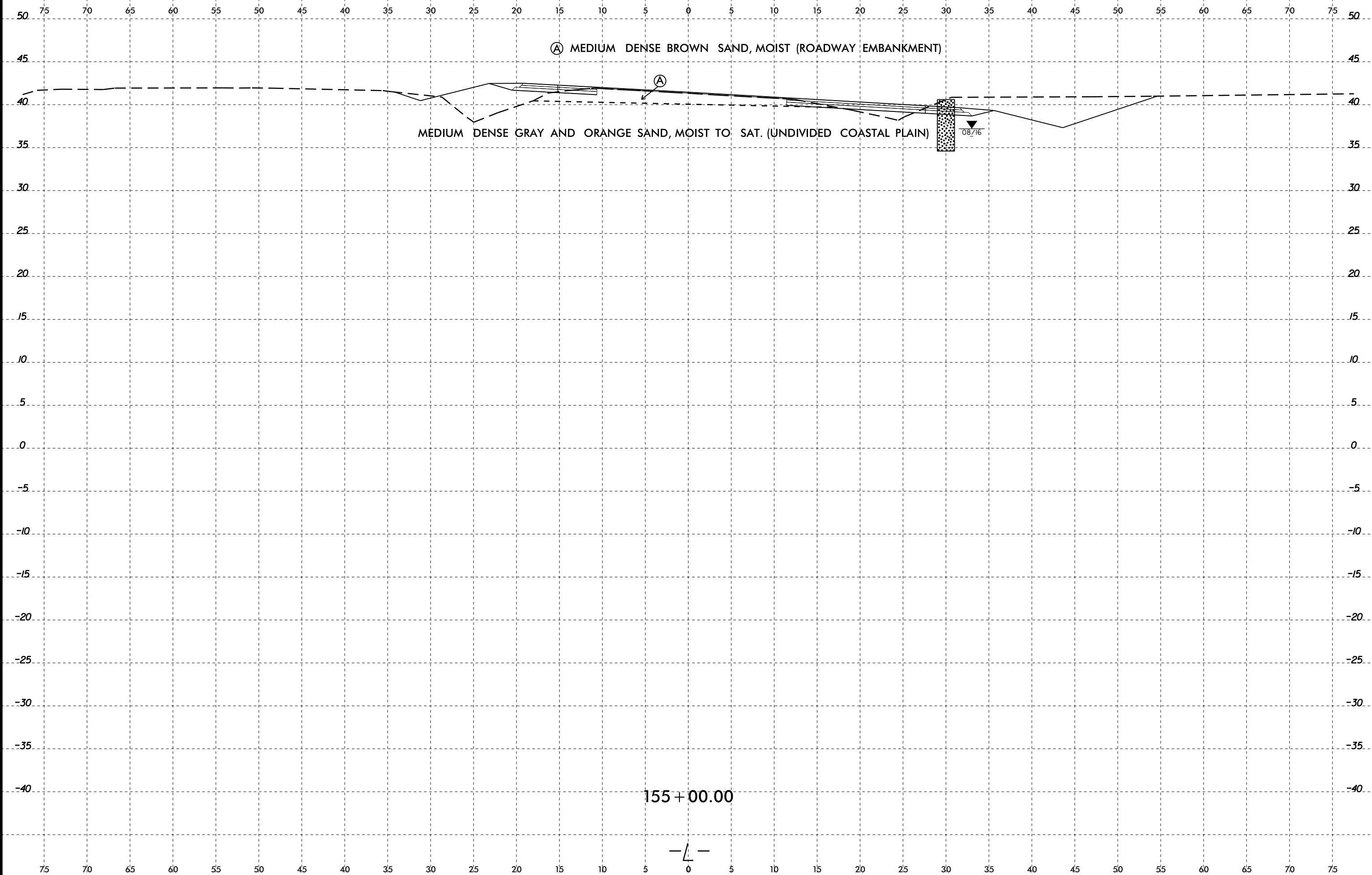
MEDIUM DENSE GRAY AND ORANGE SAND, MOIST TO SAT. (UNDIVIDED COASTAL PLAIN)

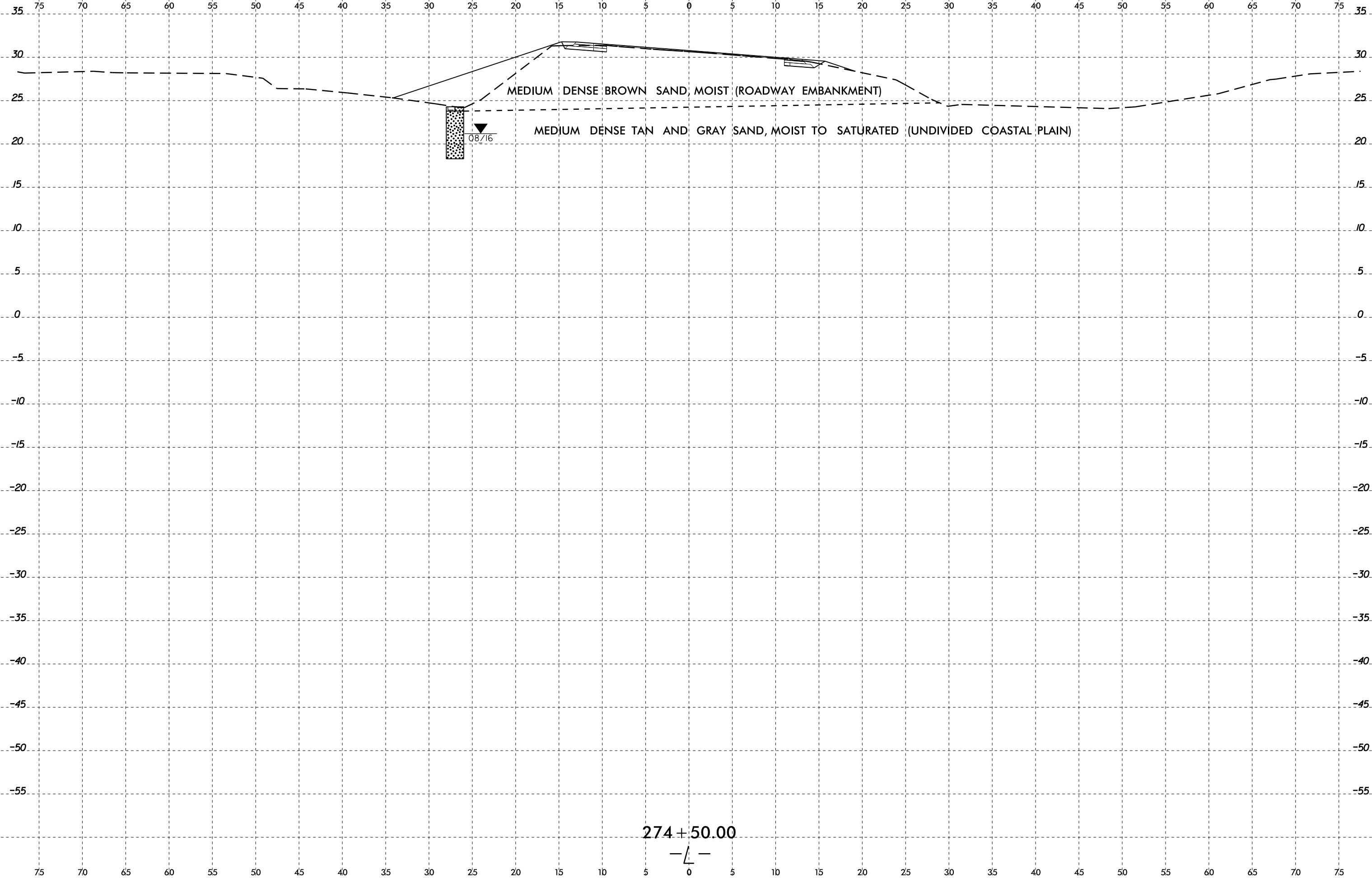
08/16

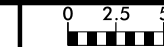
151 + 00.00

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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-16	43' RT	280+00	0.5-6.0	A-4(-4)	34	10	4.2	41.3	20.2	34.2	100	99	59	22.7	

Ⓐ MEDIUM DENSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)

MEDIUM STIFF BROWN SANDY CLAYEY SILT, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

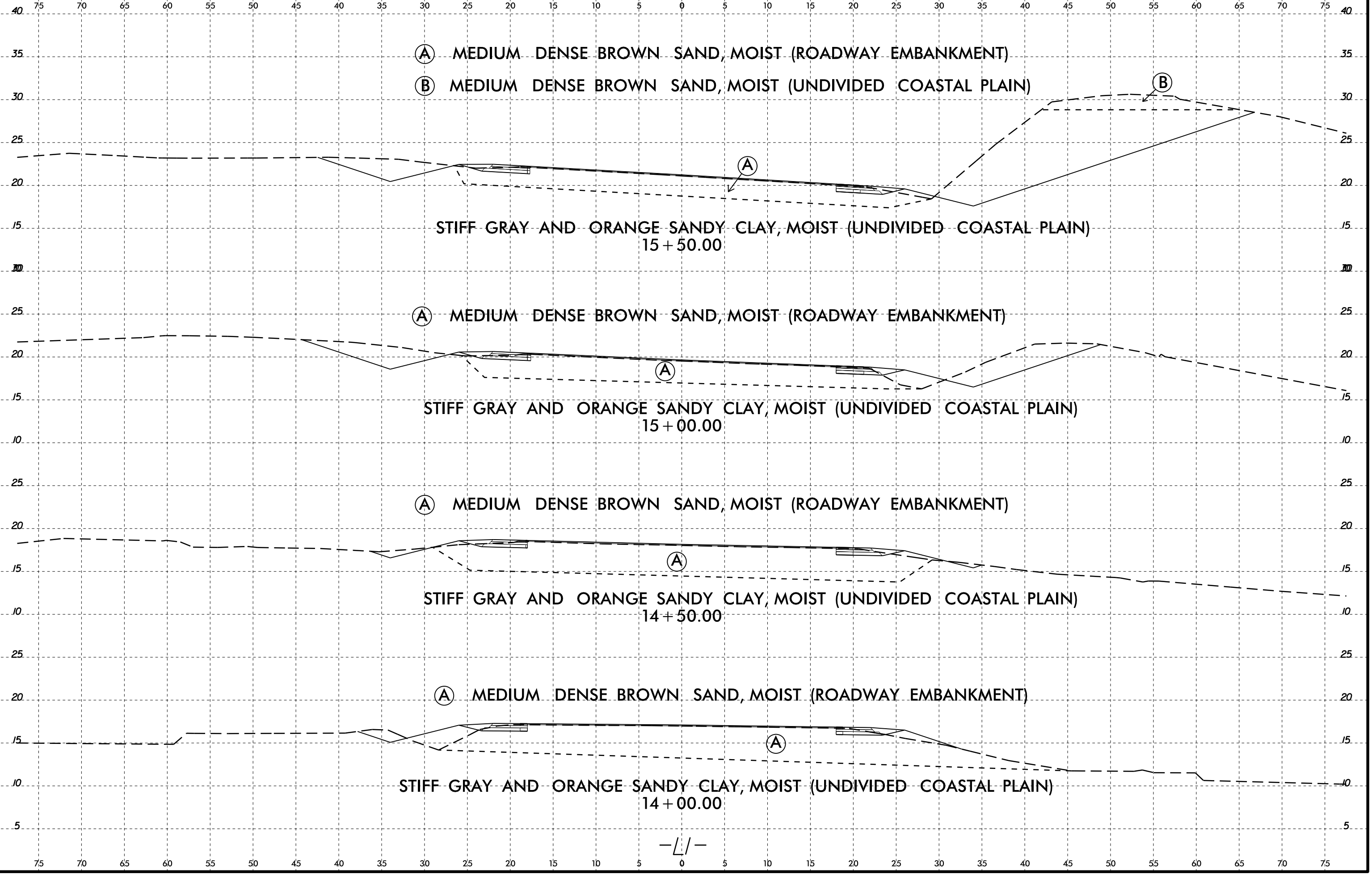
S-16

08.716

280+00.00

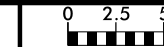
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SOIL TEST RESULTS

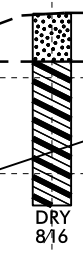
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-20	50' RT	16+00	2.5-10.0	A-6(9)	33	20	5.4	37.1	19.2	38.3	100	97	60	16.2	-

(A) MEDIUM DENSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)

(B) MEDIUM DENSE BROWN SAND, MOIST (UNDIVIDED COASTAL PLAIN)

STIFF GRAY AND ORANGE SANDY CLAY, MOIST (UNDIVIDED COASTAL PLAIN)

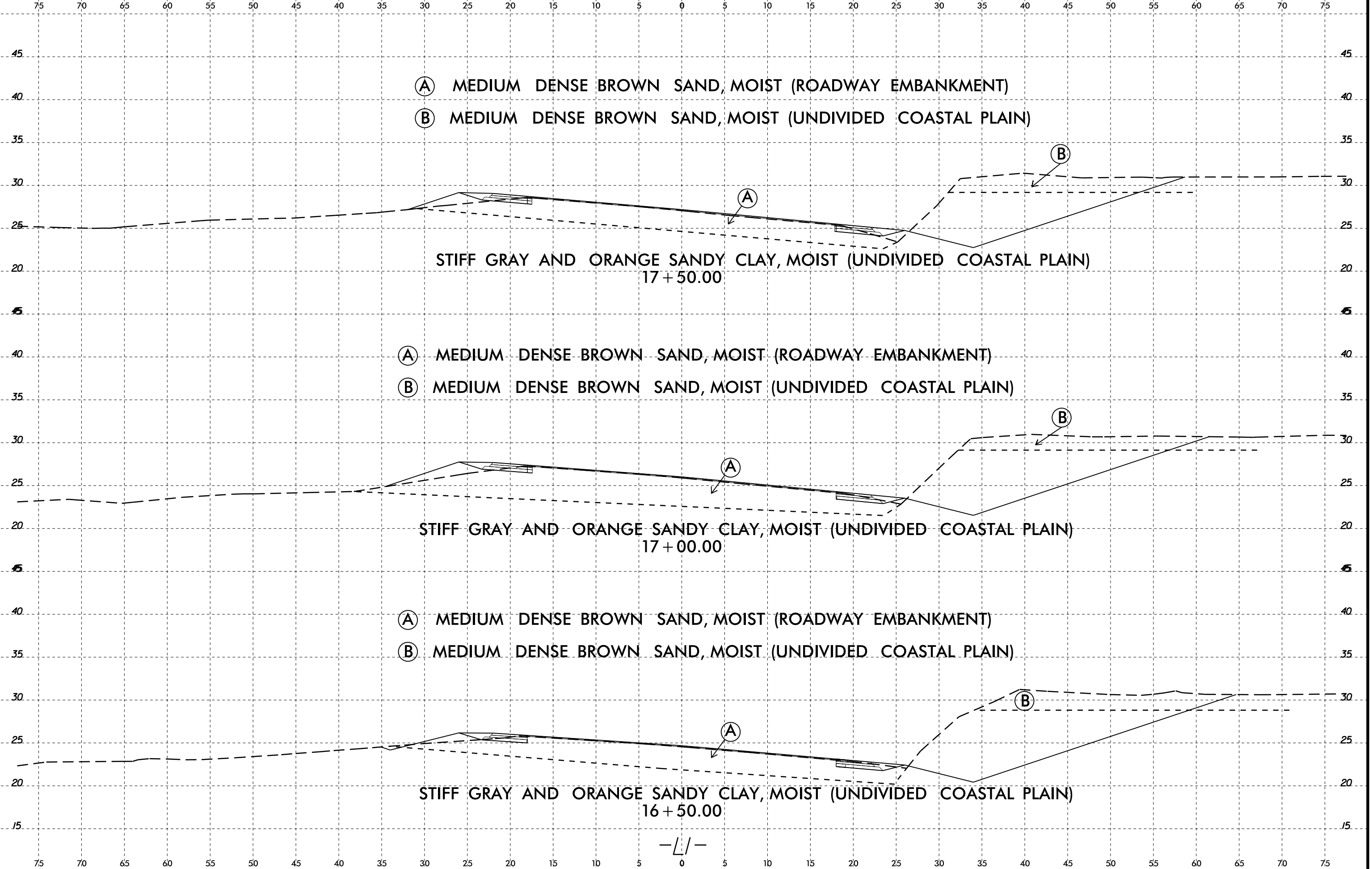
S-20



16 + 00.00

-L/-

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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

45 45

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30 30

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10 10

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40 40

35 35

30 30

25 25

20 20

15 15

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

WENDOVER DRIVE

- (A) MEDIUM DENSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)
- (B) MEDIUM DENSE BROWN GRAY AND ORANGE SAND, MOIST (UNDIVIDED COASTAL PLAIN)

STIFF GRAY AND ORANGE SANDY CLAY, MOIST (UNDIVIDED COASTAL PLAIN)

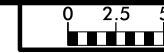
18 + 50.00

- (A) MEDIUM DENSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)
- (B) MEDIUM DENSE BROWN GRAY AND ORANGE SAND, MOIST (UNDIVIDED COASTAL PLAIN)

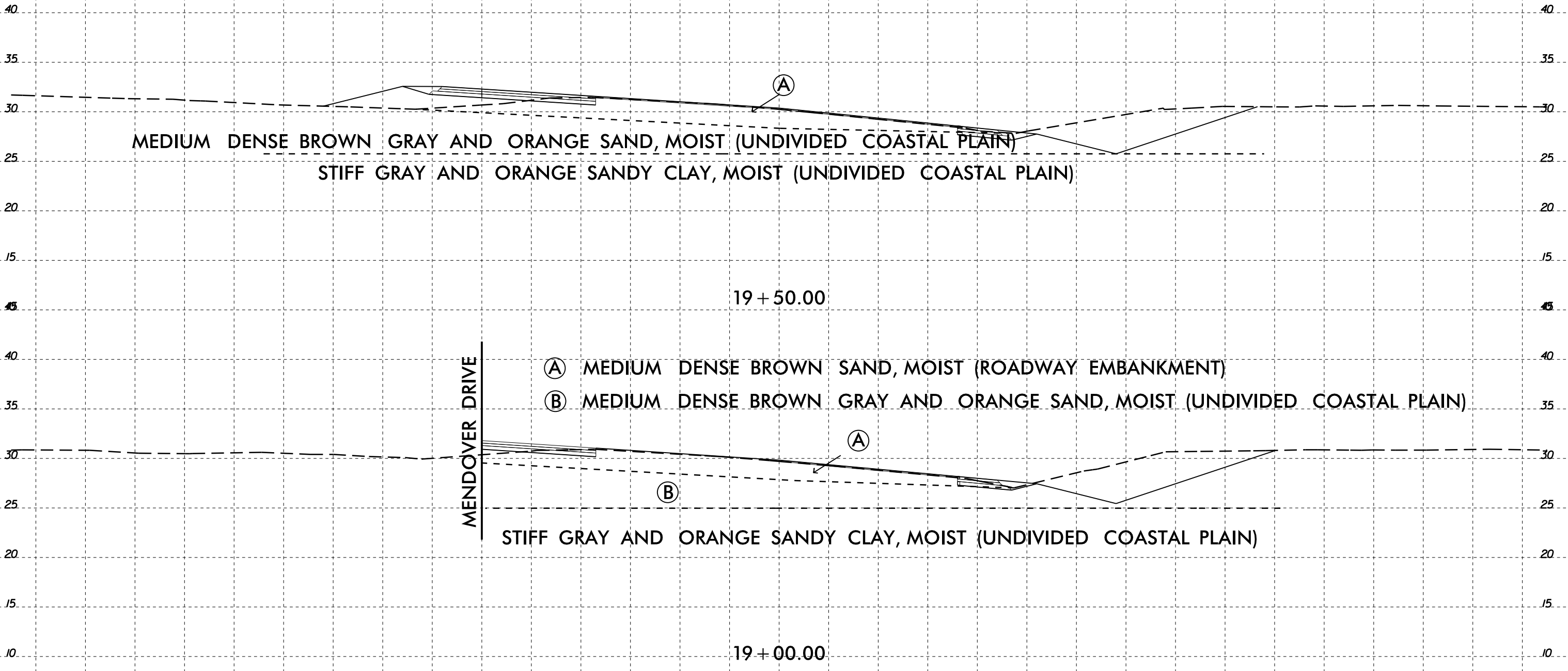
STIFF GRAY AND ORANGE SANDY CLAY, MOIST (UNDIVIDED COASTAL PLAIN)

18 + 00.00

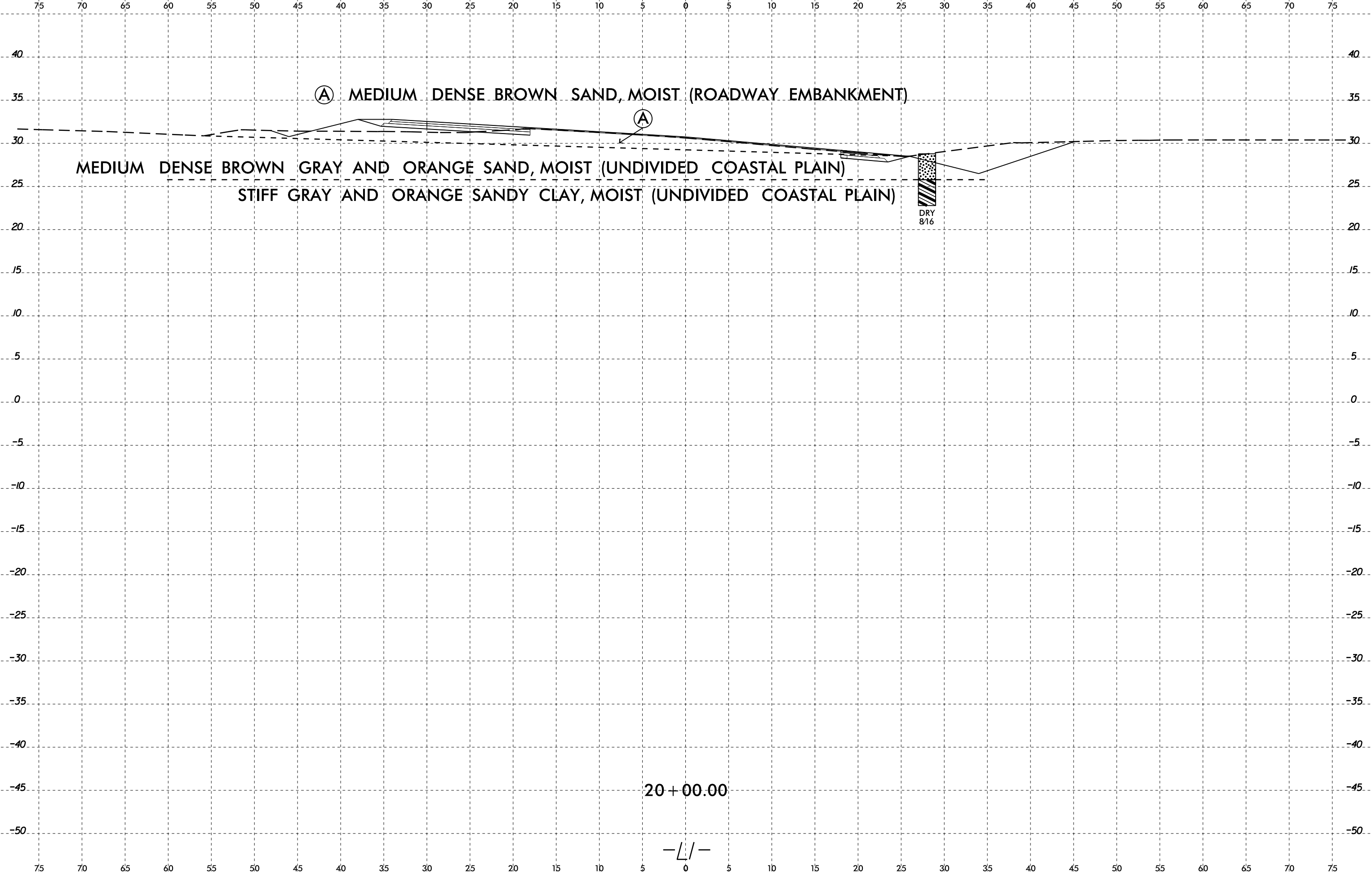
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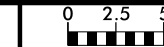
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20 + 00.00

-L/-



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-2	17' RT	11+00	1.5-6.0	A-4(2)	30	8	9.5	43.5	18.8	28.2	100	95	54	-	-

(A) LOOSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)
11 + 00.00

S-2

08/16

MEDIUM STIFF GRAY AND ORANGE SANDY SILT, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

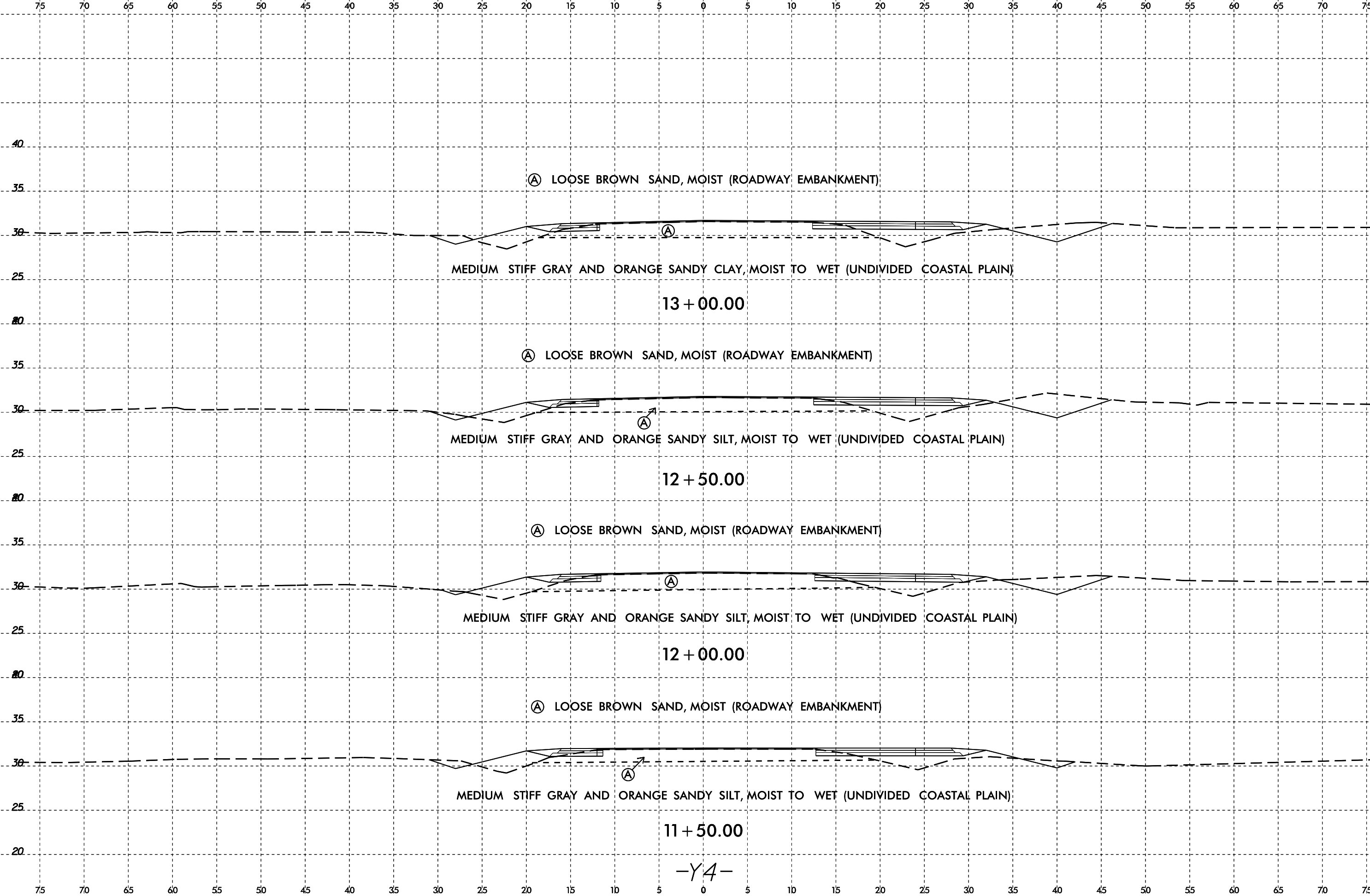
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(A) LOOSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)

(A)

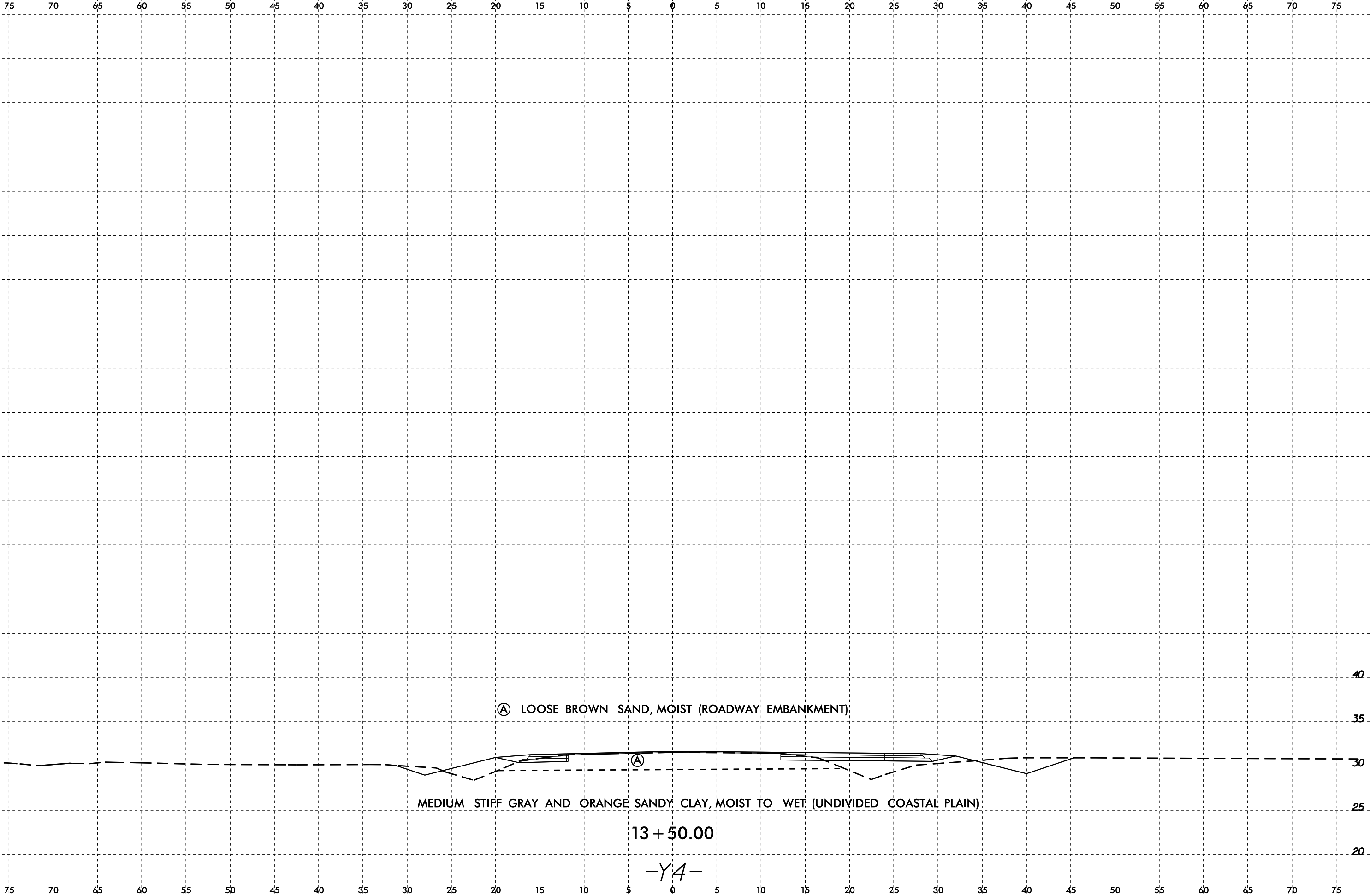
MEDIUM STIFF GRAY AND ORANGE SANDY SILT, MOIST TO WET (UNDIVIDED COASTAL PLAIN)
10 + 50.00

-Y4-



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(A) LOOSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)

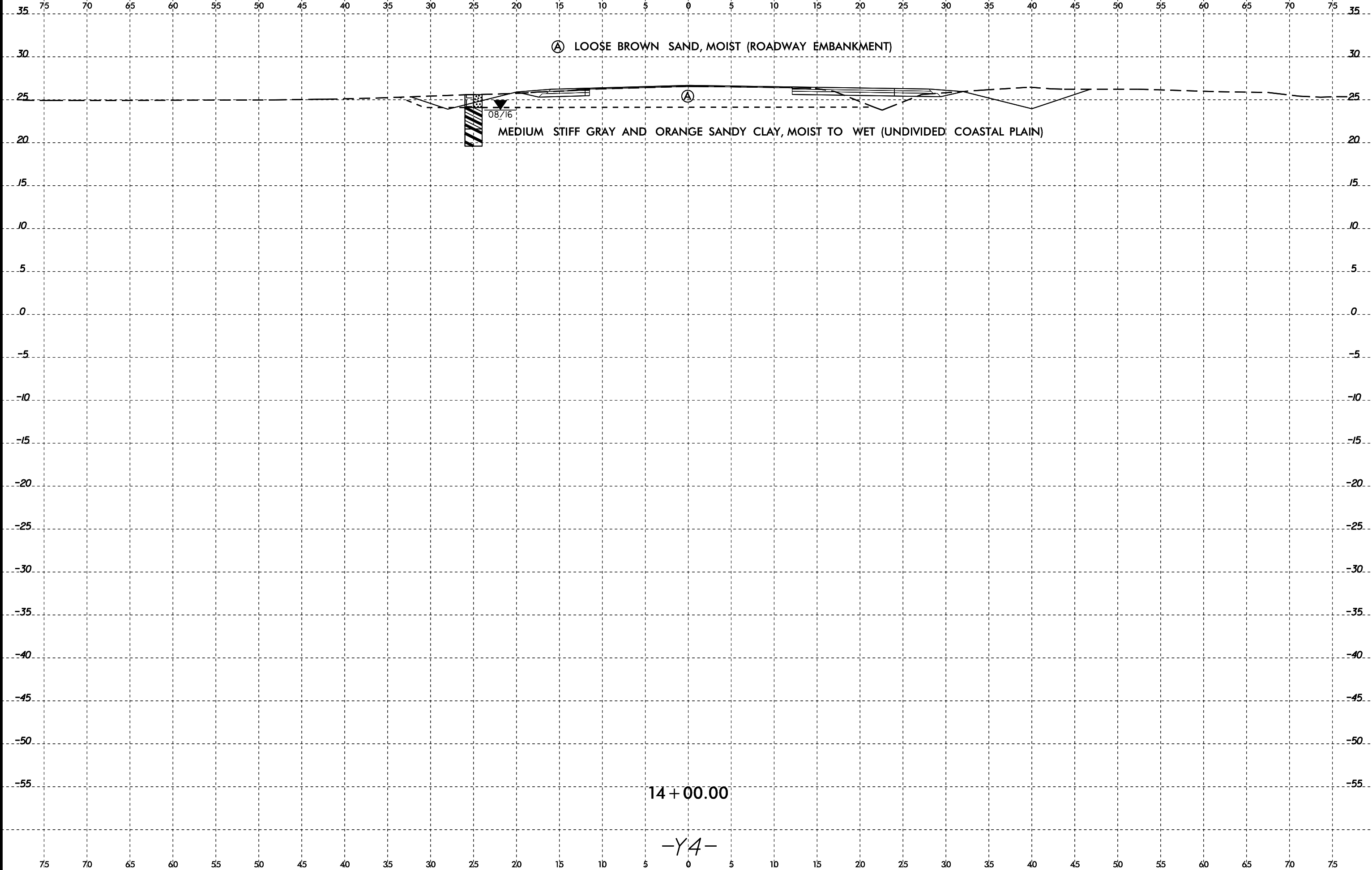
MEDIUM STIFF GRAY AND ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

13 + 50.00

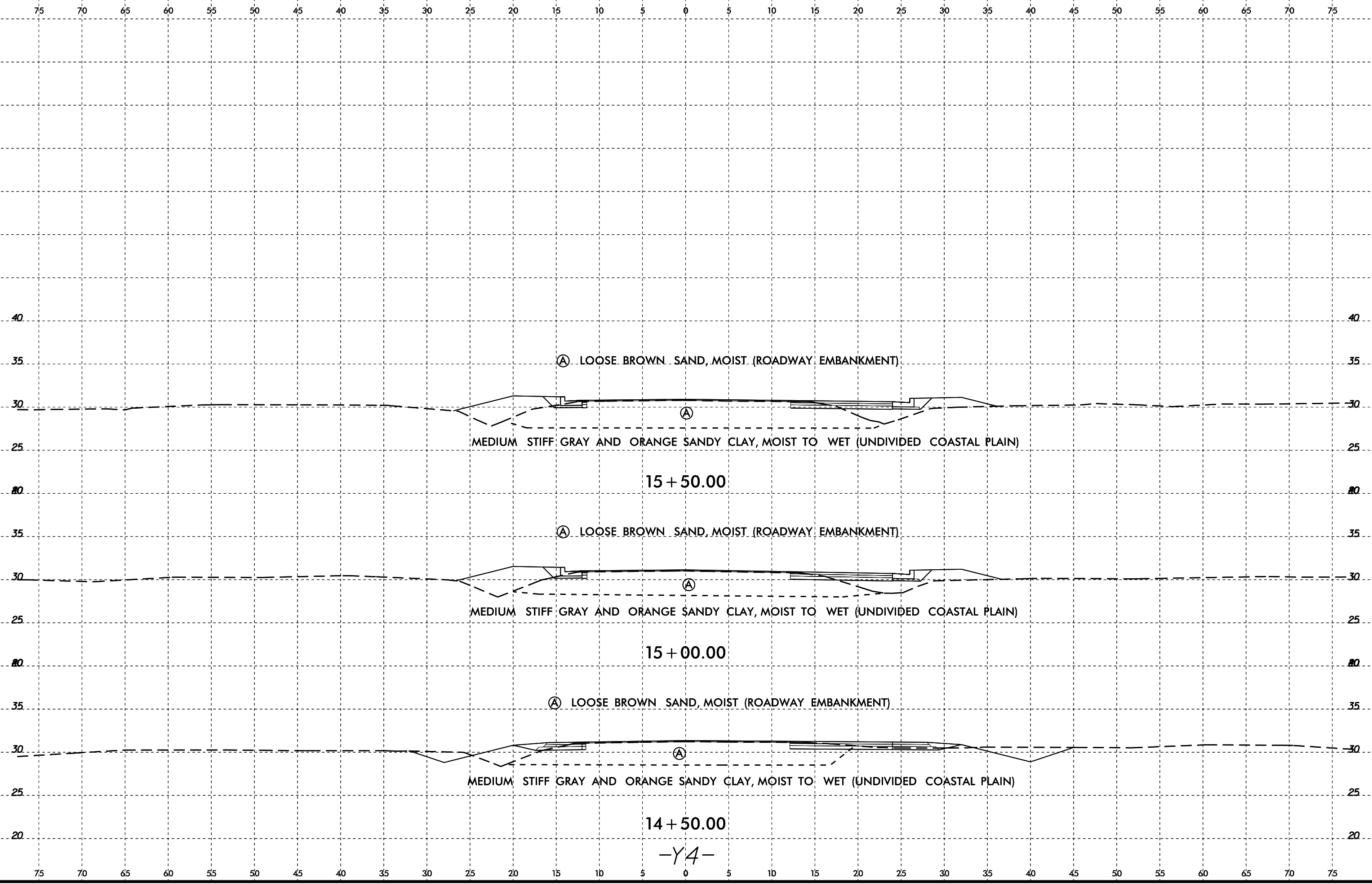
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(A) LOOSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)

MEDIUM STIFF GRAY AND ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

15 + 50.00

(A) LOOSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)

MEDIUM STIFF GRAY AND ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

15 + 00.00

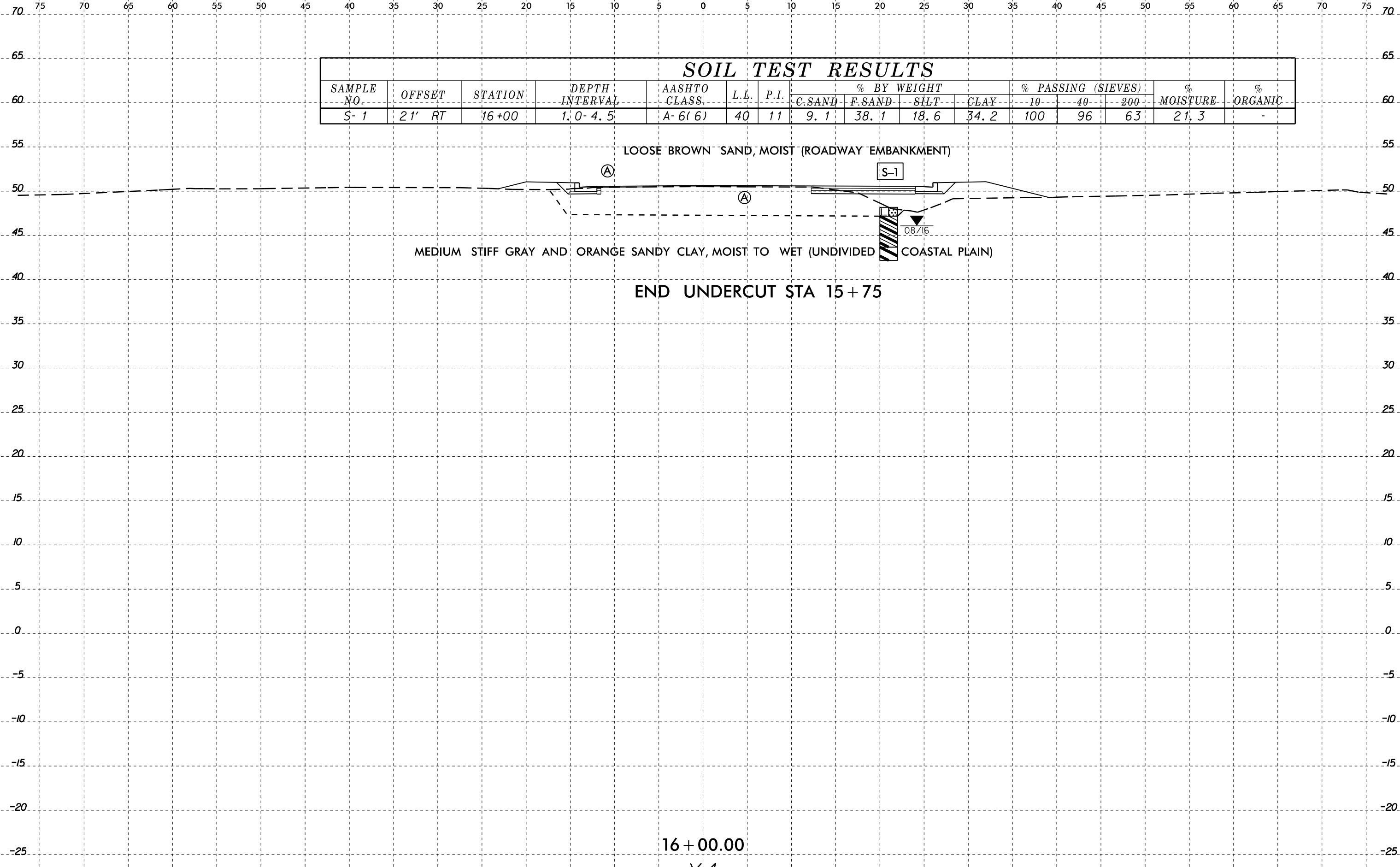
(A) LOOSE BROWN SAND, MOIST (ROADWAY EMBANKMENT)

MEDIUM STIFF GRAY AND ORANGE SANDY CLAY, MOIST TO WET (UNDIVIDED COASTAL PLAIN)

14 + 50.00

-Y4-

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-1	21' RT	16+00	1.0-4.5	A-6(6)	40	11	9.1	38.1	18.6	34.2	100	96	63	21.3	-



END UNDERCUT STA 15+75

16+00.00

-Y4-