

REFERENCE: B-4550

PROJECT: 33763

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.	B-4550	1	12

**CONTENTS**

<u>LINE</u>	<u>STATION</u>	<u>PLAN</u>	<u>PROFILE</u>
-L-	12+25 to 19+90	4	

**CROSS SECTIONS**

<u>LINE</u>	<u>STATION</u>	<u>SHEETS</u>
-L-	15+50 to 16+75	5-7
-L-	17+50 to 18+00	8-9

**APPENDICES**

<u>APPENDIX</u>	<u>TITLE</u>	<u>SHEETS</u>
A	LABORATORY RESULTS	10-II

**ROADWAY  
SUBSURFACE INVESTIGATION**

COUNTY HOKE  
PROJECT DESCRIPTION BR NO 41 & 42 ON SR 1432  
OVER ROCKFISH CREEK

**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

F. Dungan

C. Bruinsma

D. Teague

INVESTIGATED BY F. Dungan

DRAWN BY F. Dungan

CHECKED BY C. Bruinsma

SUBMITTED BY F. Dungan

DATE April 2016



DocuSigned by:

*[Signature]*

4/29/2016

C6DB1CBA00DF74A

SIGNATURE

DATE

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



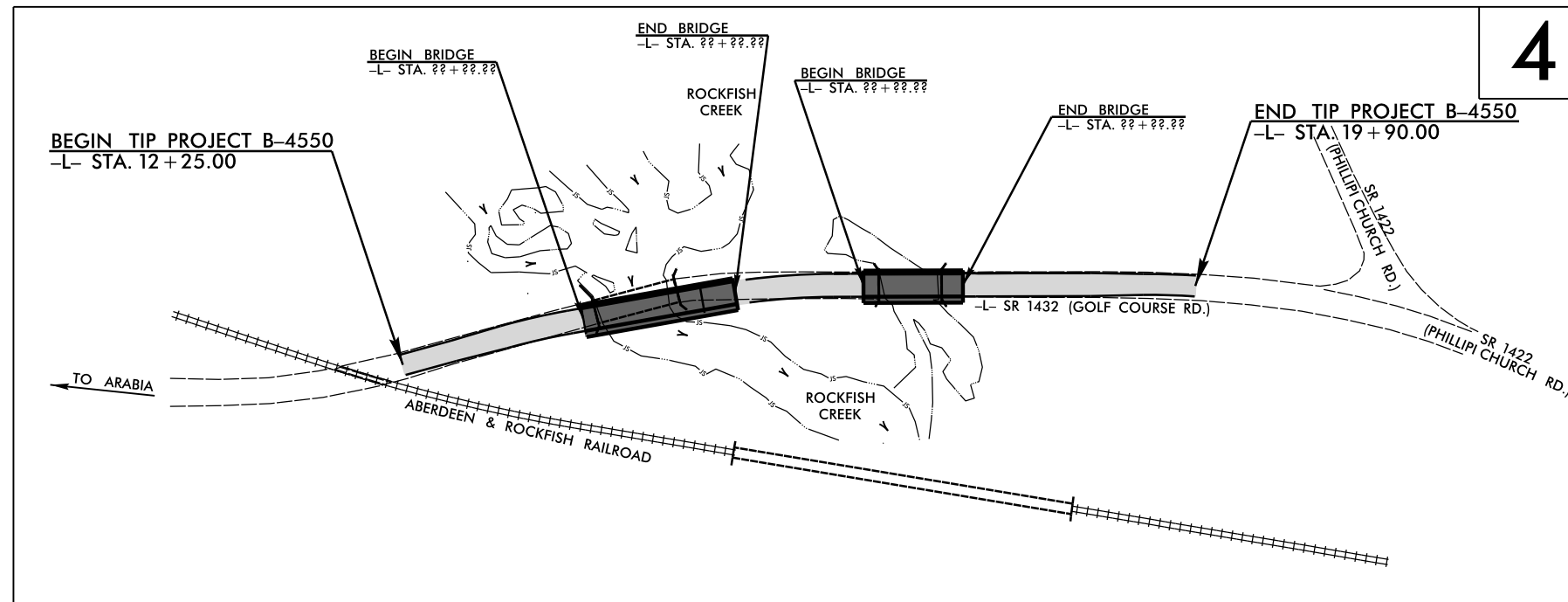
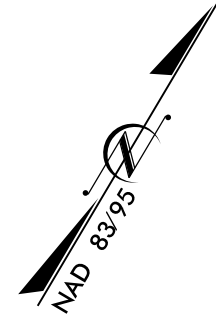
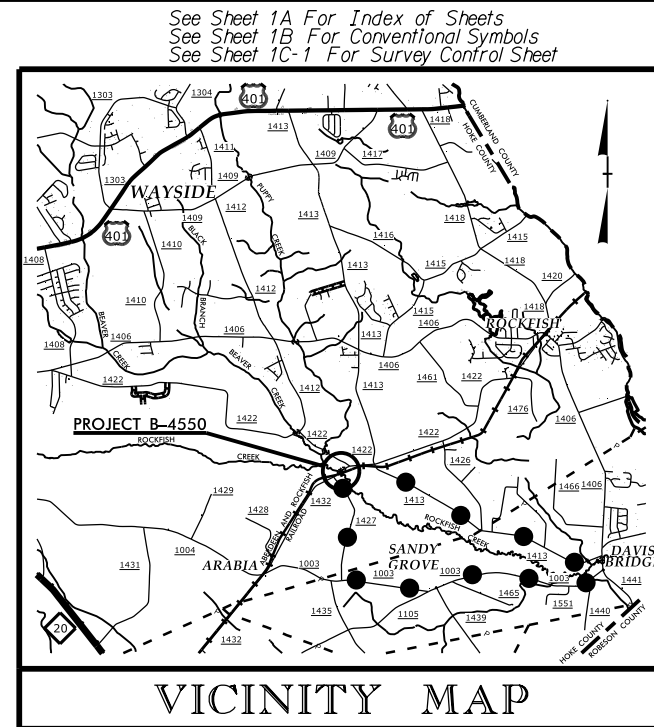
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N.C.	B-4550	3	12
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33763.1.2	BRZ-1432(6)	PE	

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**HOKE COUNTY**

**LOCATION: BRIDGE NO. 41 & NO. 42 OVER ROCKFISH CREEK  
ON SR 1432 (GOLF COURSE ROAD)**

**TYPE OF WORK: GRADING, DRAINAGE, PAVING, & STRUCTURES**

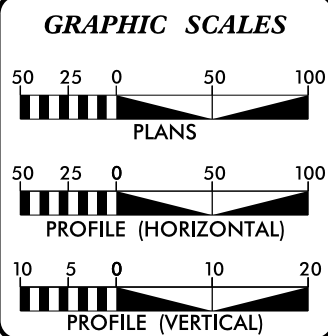


DESIGN EXCEPTION REQUIRED FOR SAG VERTICAL CURVES, AND ASSOCIATED NIGHTTIME STOPPING SIGHT DISTANCE.  
THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD \_\_\_\_.

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

**TIP PROJECT: B-4550**

**CONTRACT:**



**DESIGN DATA**

ADT 2018 =	2800
ADT 2035 =	4100
DHV =	10 %
D =	55 %
T =	6 % *
V =	55 MPH
* TTST =	1% DUAL = 5%
FUNC CLASS =	COLLECTOR
	"SUBREGIONAL TIER"

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT B-4550	=	?.??? MILES
LENGTH STRUCTURE TIP PROJECT B-4550	=	?.??? MILES
TOTAL LENGTH OF TIP PROJECT B-4550	=	0.145 MILES

Prepared in the Office of:  
**DIVISION OF HIGHWAYS**  
1000 Birch Ridge Dr., Raleigh NC, 27610

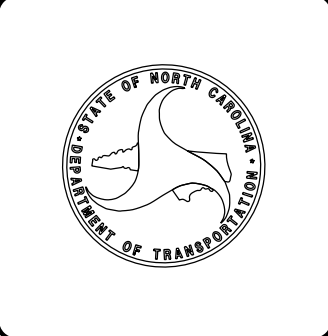
2012 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	<b>JAMES A. SPEER, PE</b> PROJECT ENGINEER
APRIL 21, 2017	
LETTING DATE:	<b>DANIEL W. GARDNER, JR., PE</b> PROJECT DESIGN ENGINEER
APRIL 17, 2018	

**HYDRAULICS ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.

**ROADWAY DESIGN ENGINEER**

SIGNATURE: \_\_\_\_\_ P.E.



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PAT McCRORY  
Governor  
NICHOLAS J. TENNYSON  
Secretary

April 29, 2016

STATE PROJECT: 33763 (B-4550)  
 FEDERAL PROJECT: BRZ-1432 (6)  
 COUNTY: HOKE  
 DESCRIPTION: BR NO 41 & 42 ON SR 1432 OVER ROCKFISH CREEK  
 SUBJECT: Roadway Subsurface Inventory Report

**Project Description**

This project is located in Hoke County in a rural residential setting on SR 1432 (Golf Course Rd). Proposed construction consists of roadway embankment improvements and replacing bridge numbers 41 and 42. The length of this project is approximately 0.15 miles. This geotechnical investigation was confined to areas of proposed construction.

Fieldwork for this project was conducted during December 2015. Hand auger borings were completed and representative samples were collected and submitted to NCDOT M&T Soils Lab for AASHTO classification, moisture content, and organic content.

The following alignment was investigated. Selected cross sections of this alignment are included in this report.

<u>Alignment</u>	<u>Station</u>
-L-	10+00 to 20+50

**Areas of Special Geotechnical Interest**

The entire project was found to exhibit high groundwater.

The following sections contain non-cohesive, organic material which has the potential to cause embankment/subgrade and/or slope stability problems.

<u>Alignment</u>	<u>Station</u>
-L-	16+00 to 18+00

**Physiography and Geology**

The project corridor is located in Coastal Plain Physiographic Province. Topography along the project is typically flat. Elevations range from 130± feet in the channel of Rockfish Creek to 148± in the upland areas of the project.

Surficial soils consist of Cretaceous-aged Middendorf Formation sands and clays.

**Soils**

Soils encountered at the project site include roadway embankment, alluvial, and Coastal Plain sediments.

Roadway Embankment soils are present along existing SR1432. These soils consist of brown and gray, very loose to medium dense, silty sand, (A-2-4).

Alluvial deposits are located within the floodplain of Rockfish Creek and its associated channels/overflow. These soils are primarily gray to black, very soft, highly organic sandy silt (A-4), tan, dark brown and dark gray, very loose to loose, clayey or silty sand (A-2-4). Organic content ranges from 3.3 to 12.1%. Fine to medium coarse grained sand classifying as A-3 were also encountered as lenses and thicker depositions associated with the main channel of Rockfish Creek. Higher organic content may be possible along the proposed corridor.

Coastal Plain sediments in the area consist of silty and clayey sand and sandy clays of the Middendorf Formation. This material was not encountered in any of the hand augers performed at the time of investigation.

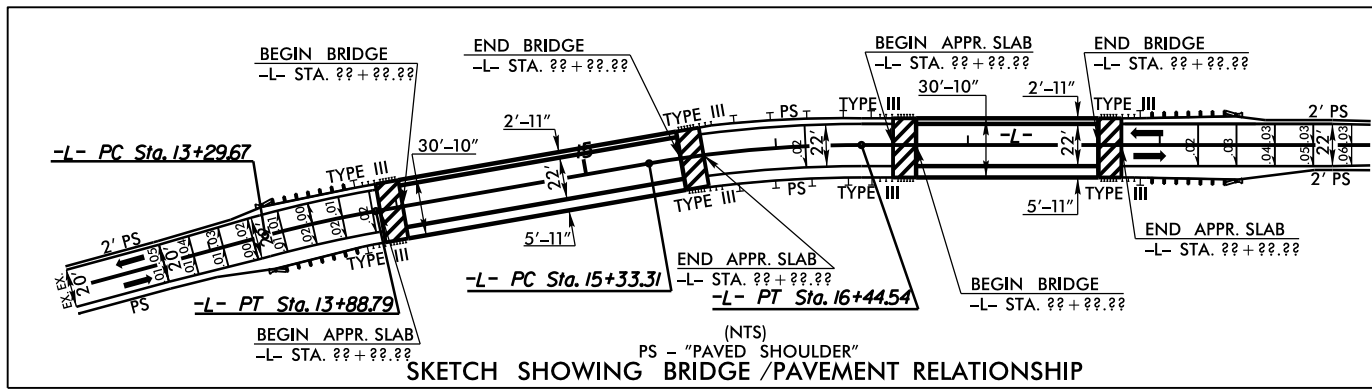
**Ground Water**

Ground water data was collected in December 2015, during a time of high precipitation. Groundwater was encountered at elevations ranging from 135.6 to 137.3 feet.



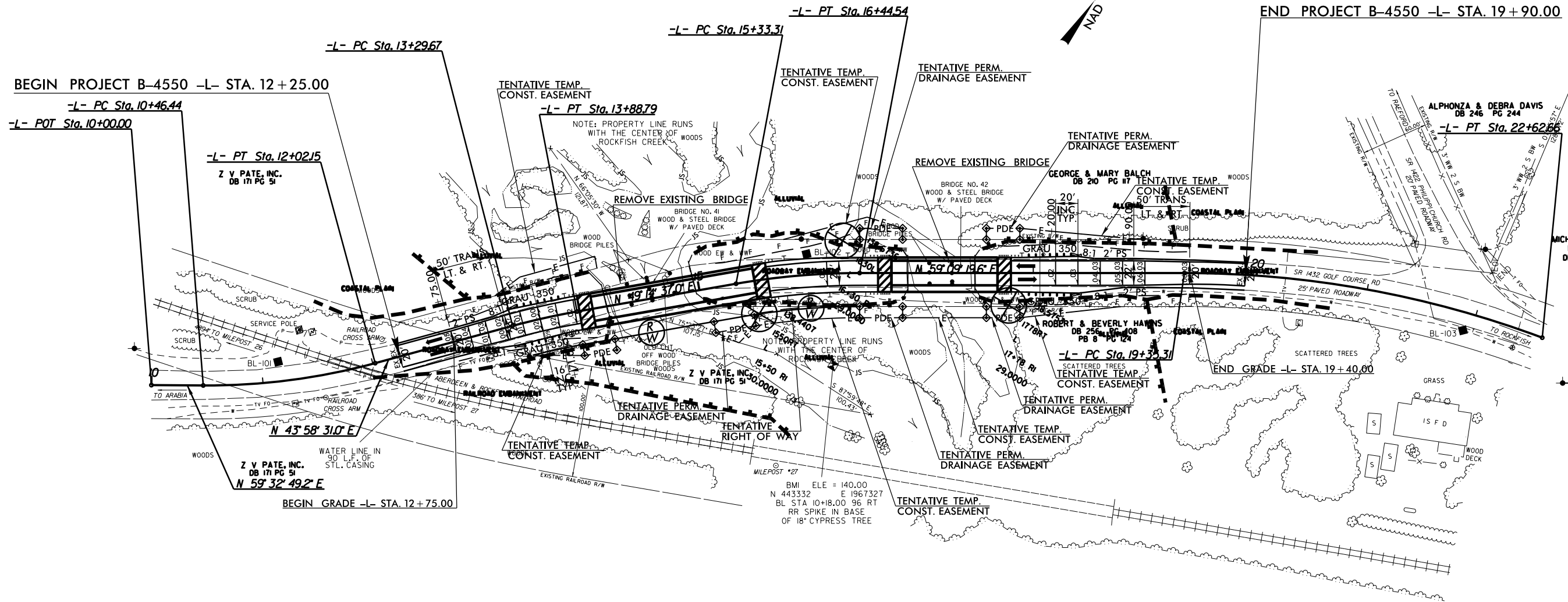
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PROJECT REFERENCE NO.	SHEET NO.
B-4550	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION	
<b>DOCUMENT NOT CONSIDERED FINAL</b> UNLESS ALL SIGNATURES COMPLETED	



-L-			
PI Sta 11+24.78	PI Sta 13+59.25	PI Sta 15+89.06	PI Sta 21+00.74
$\Delta = 15' 34' 18.2''$ (LT)	$\Delta = 5' 16' 05.9''$ (RT)	$\Delta = 9' 54' 42.6''$ (RT)	$\Delta = 20' 27' 33.1''$ (RT)
$D = 10' 00' 00.0''$	$D = 8' 54' 38.5''$	$D = 8' 54' 38.5''$	$D = 6' 15' 00.0''$
$L = 155.72'$	$L = 59.12'$	$L = 111.24'$	$L = 327.35'$
$T = 78.34'$	$T = 29.58'$	$T = 55.76'$	$T = 165.44'$
$R = 572.96'$	$R = 643.00'$	$R = 643.00'$	$R = 916.73'$
	SE = SEE PLANS	SE = SEE PLANS	

SKETCH SHOWING BRIDGE /PAVEMENT RELATIONSHIP

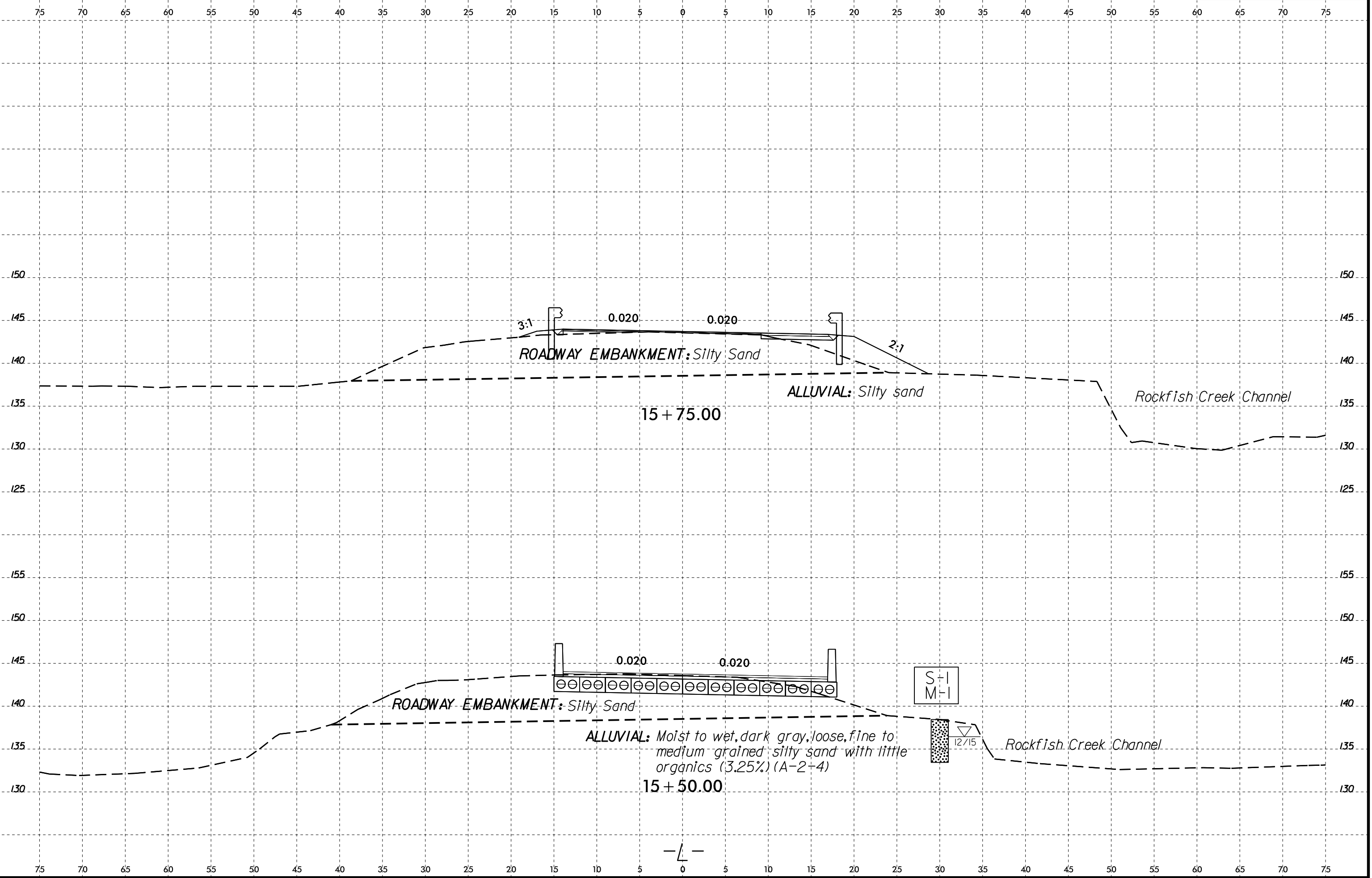


REVISIONS

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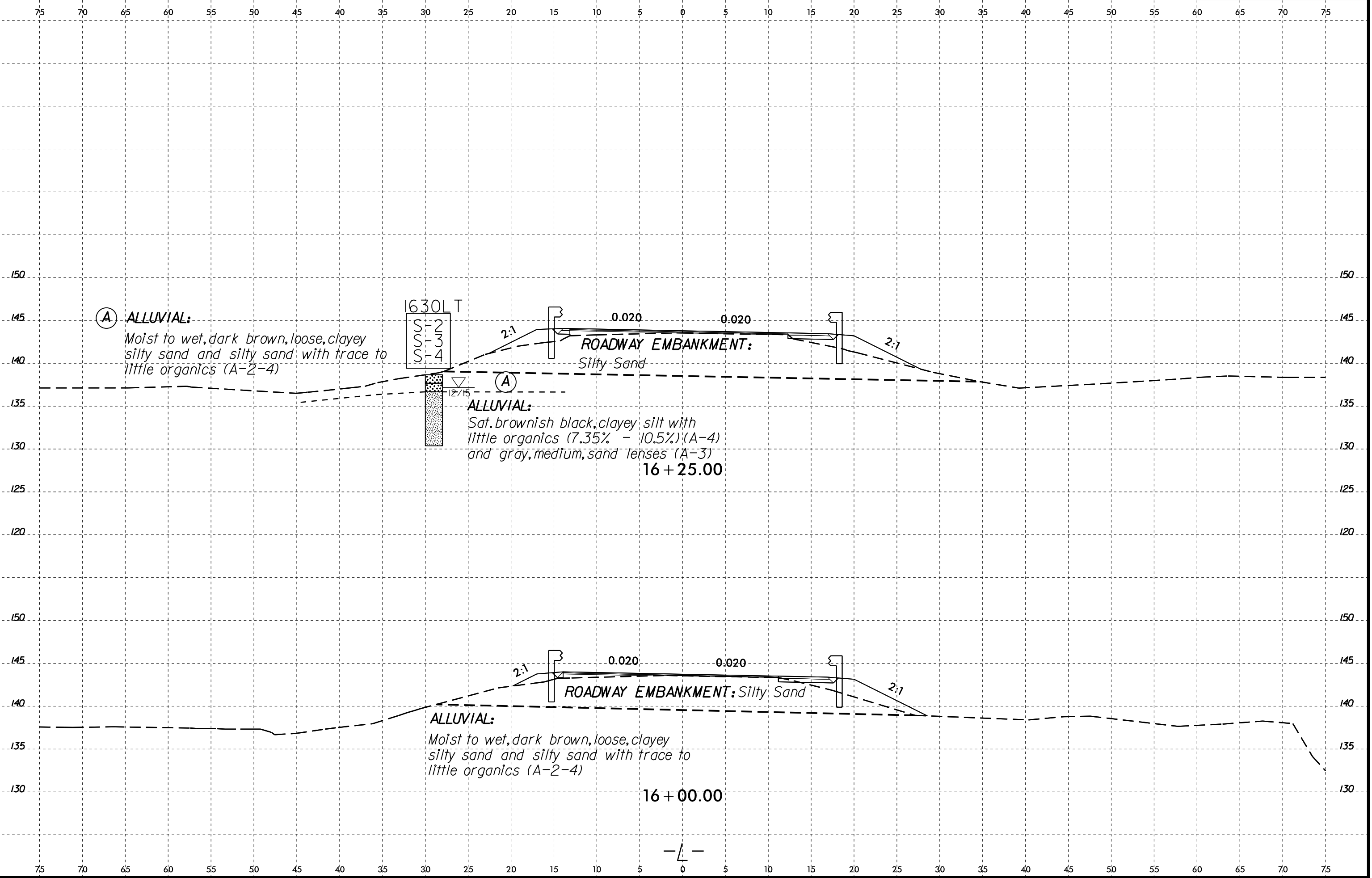
NOTE: MILL EXISTING PAVEMENT AT TIE-INS.  
SEE SHEET 5 FOR -L- PROFILE  
SEE SHEET S-? THRU S-?? FOR STRUCTURE PLANS

8/23/99



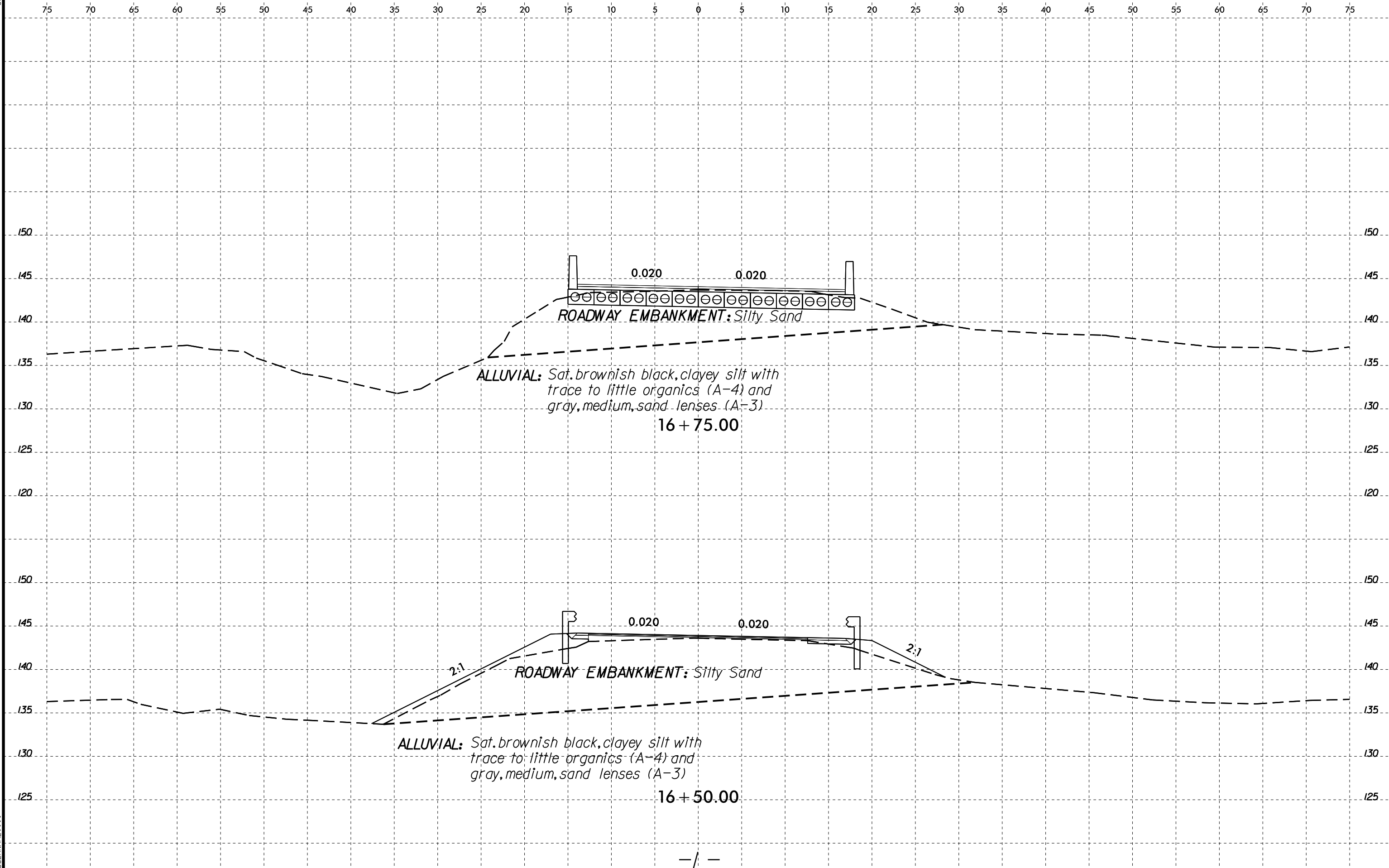
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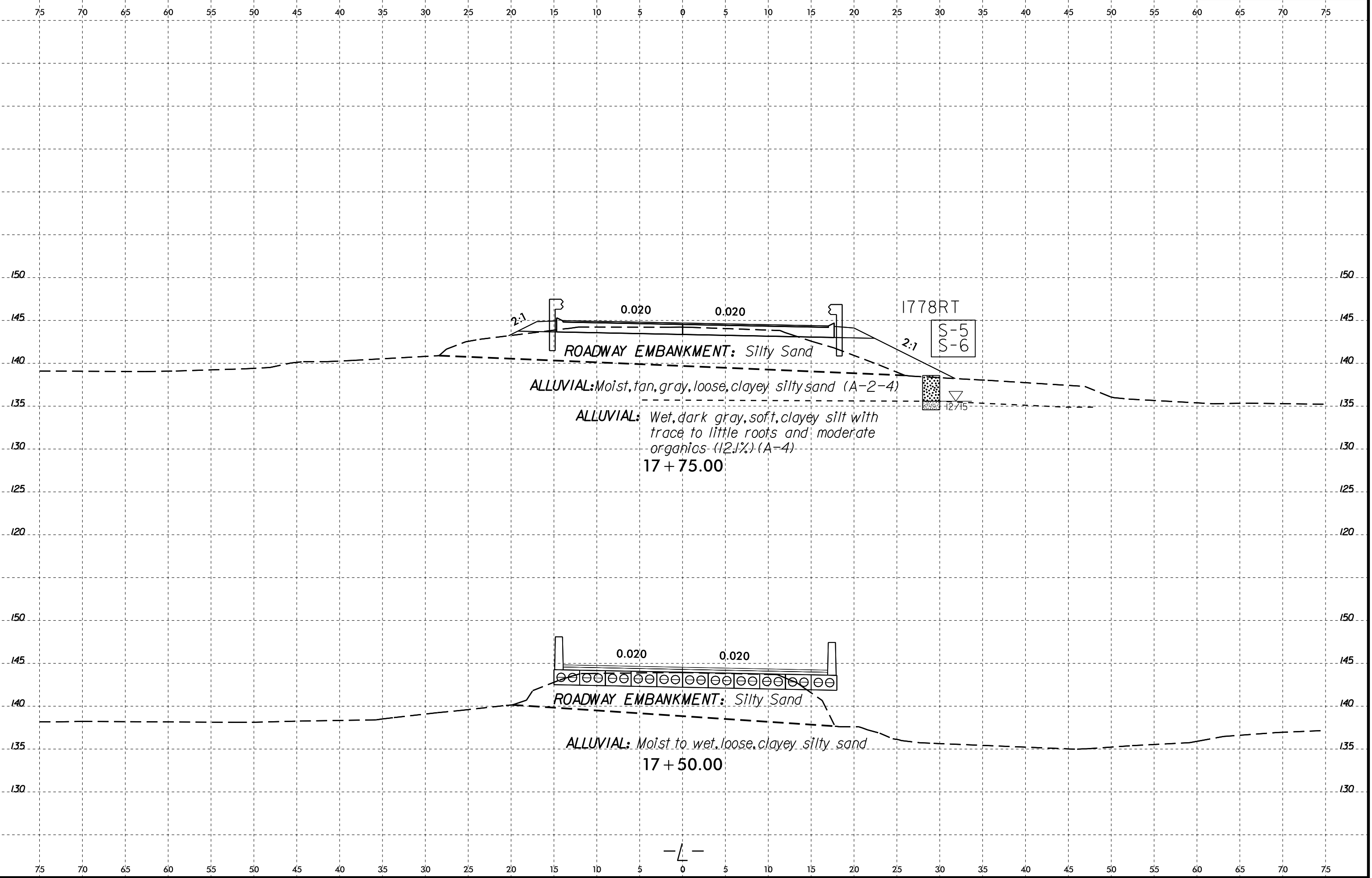


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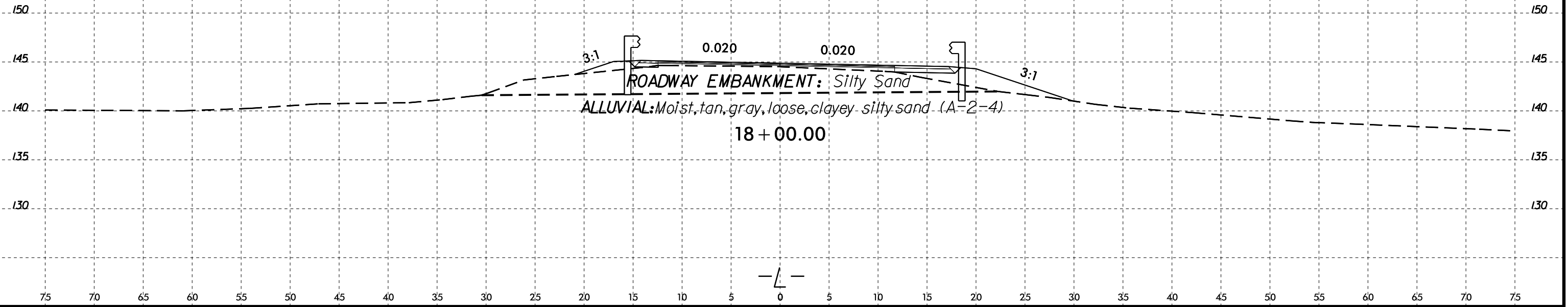


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*NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT  
SUBSURFACE INVESTIGATION  
APPENDIX A  
LABORATORY RESULTS*

*REFERENCE: B-4550*

*PROJECT: 33763*

INITIALS

DATE

### SOIL LABORATORY TESTING SUMMARY

Boring No.	Sample No.	Alignment	Station	Offset (ft)	Depth (ft)	AASHTO Class.	L.L.	P.I.	% Retained #4 Sieve	% Passing #10 Sieve	% Passing #40 Sieve	% Passing #200 Sieve	Coarse Sand (% by Weight)	Fine Sand (% by Weight)	Silt (% by Weight)	Clay (% by Weight)	% Moisture	% Organic
1550RT	S-1	-L-	15+50	30' RT	0.0 - 5.0	A-2-4(0)	24	NP	-	100	99	11	18.3	73.3	4.3	4	-	3.25
1550RT	M-1	-L-	15+50	30' RT	2.0 - 3.0	-	-	-	-	-	-	-	-	-	-	-	38.3	-
1630LT	S-2	-L-	16+30	29' LT	0.0 - 1.0	A-2-4(0)	32	NP	-	100	69	27	52.6	23.2	16.2	8.1	-	7.35
1630LT	S-3	-L-	16+30	29' LT	1.0 - 2.0	A-2-4(0)	15	NP	-	98	65	12	60.2	30.2	5.5	4	43.8	-
1630LT	S-4	-L-	16+30	29' LT	2.0 - 4.0	A-4(0)	36	NP	1	98	78	42	35.2	26.8	29.9	8.1	132.9	10.5
1778RT	S-5	-L-	17+78	29' RT	0.0 - 3.0	A-2-4(0)	17	NP	-	99	78	33	39.1	33.8	11	16.1	19.6	-
1778RT	S-6	-L-	17+78	29' RT	3.0 - 4.0	A-4(0)	30	NP	14	84	75	47	22	27.6	30.3	20.1	57.5	12.1