

REFERENCE: B-5351

PROJECT: 46065

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-5351	1	26

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	10+95.00 - 35+50.00	4-5	10
-Y-	10+00.00 - 12+50.68	5	NA
-DET1-	10+00.00 - 33+74.66	6-7	11-12
-DET2-	10+00.00 - 34+53.94	8-9	13

CROSS SECTIONS

LINE	STATION	SHEETS
-L-	17+50.00 - 29+50.00	14-16
-DET1-	21+00.00 - 22+50.00	17-18
-DET2-	21+00.00 - 22+50.00	19-20

APPENDICES

APPENDIX	TITLE	SHEETS
	SOIL TEST RESULTS	21
	CORE PHOTOGRAPHS	22-24

ROADWAY SUBSURFACE INVESTIGATION

COUNTY GUILFORD
PROJECT DESCRIPTION BRIDGE NO. 237/242 ON US29-70
& I-85 BUSINESS OVER DEEP RIVER

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.

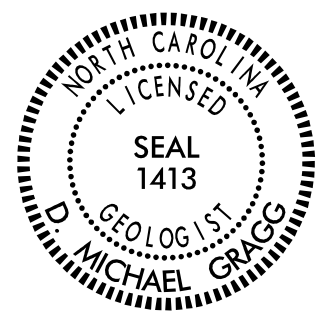
- NOTES:
- THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
 - BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR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

PERSONNEL

C. TAYLOR
R. TOOTHMAN
M. MORGAN

INVESTIGATED BY D. M. GRAGG
DRAWN BY T. STIVERS
CHECKED BY K. BUSSEY
SUBMITTED BY HDR|ICA
DATE MAY, 2017

ICA Engineering
5121 Kingdom Way,
Suite 100
Raleigh, NC 27607
NC License No: F-0258



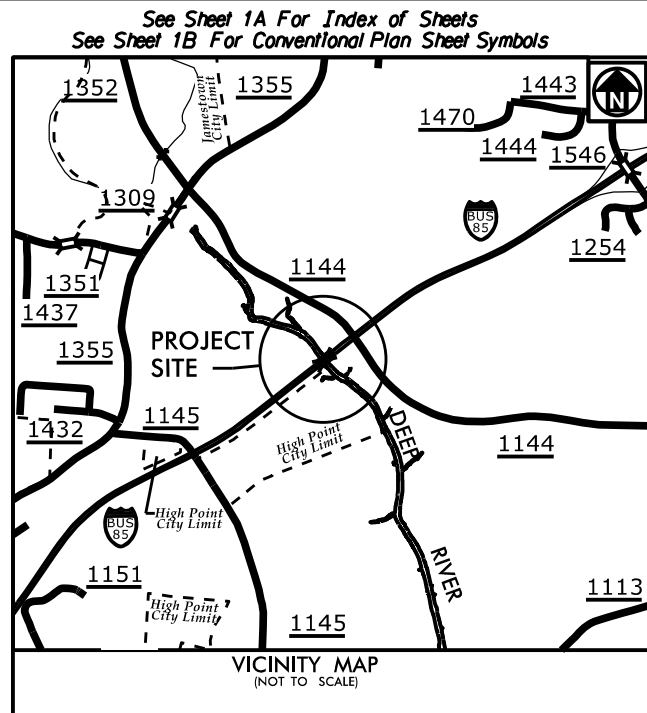
DocuSigned by:
D. Michael Gragg 5/5/2017
SIGNATURE DATE

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

09/08/19

TIP PROJECT: B-5351

CONTRACT:



25% PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

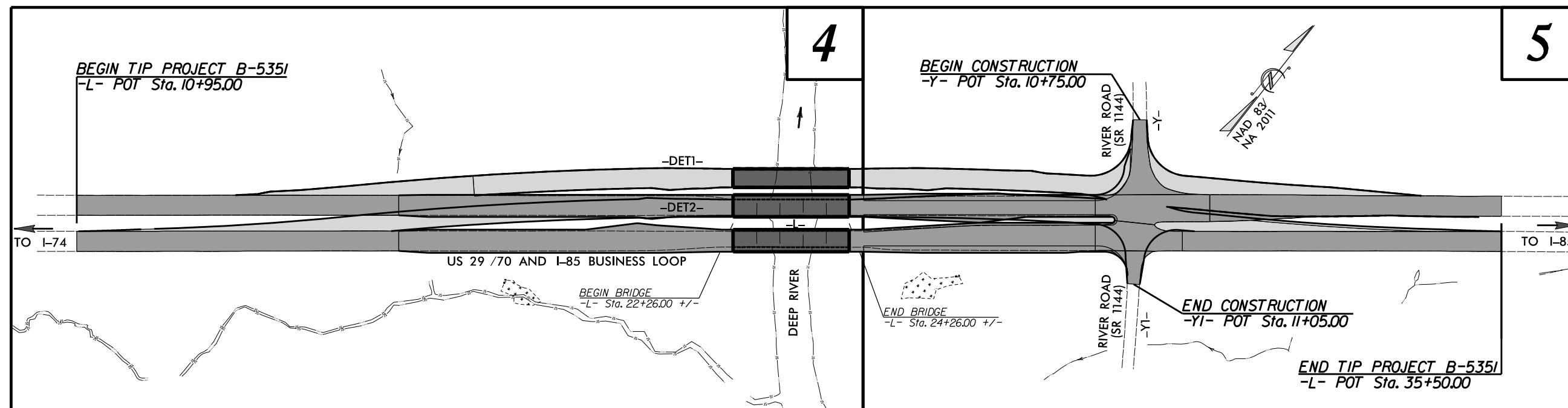
GUILFORD COUNTY

**LOCATION: REPLACE BRIDGE NO. 242 AND BRIDGE NO. 237 OVER DEEP RIVER
IN HIGH POINT ON US 29 /70 /I-85 BUSINESS**

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

STRUCTURE RECOMMENDATIONS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-5351	3	26
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
46065.1.1	BRNHS-0029(55)	PE	



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

<p>GRAPHIC SCALES</p> <p>50 25 0 50 100 PLANS</p> <p>50 25 0 50 100 PROFILE (HORIZONTAL)</p> <p>10 5 0 10 20 PROFILE (VERTICAL)</p>	<p>DESIGN DATA</p> <p>ADT 2018 = 34,500 ADT 2038 = 42,900 K = 10 % D = 55 % T = 8 % * V = 60 MPH * (TTST = 3% + DUAL 5%) FUNC CLASS = MAJOR ARTERIAL REGIONAL TIER</p>	<p>PROJECT LENGTH</p> <p>LENGTH ROADWAY TIP PROJECT B-5351 = 0.427 MILES LENGTH STRUCTURE TIP PROJECT B-5351 = 0.038 MILES TOTAL LENGTH OF TIP PROJECT B-5351 = 0.465 MILES</p>	<p>PLANS PREPARED FOR THE NCDOT BY:</p> <p>M M MOTT MACDONALD 2012 STANDARD SPECIFICATIONS</p> <p>ICAK Engineering 5121 Kingdom Way, Suite 100 Raleigh, NC 27607 NC License No. F-0669</p> <p>RIGHT OF WAY DATE: DECEMBER 15, 2017</p> <p>LETTING DATE: DECEMBER 18, 2018</p> <p>DAVID C. WALLER, PE PROJECT ENGINEER PEF ENGINEER</p> <p>JORDAN WOODARD, PE PROJECT DESIGN ENGINEER PEF ENGINEER</p> <p>GARY LOVERING, PE PROJECT ENGINEER NCDOT ROADWAY DESIGN</p>	<p>HYDRAULICS ENGINEER</p> <p>SIGNATURE: _____ P.E.</p> <p>ROADWAY DESIGN ENGINEER</p> <p>SIGNATURE: _____ P.E.</p>	
--	---	--	--	--	--

\$\$\$\$\$SYTIME\$\$\$\$\$DDON\$\$\$\$\$USRNAME\$\$\$\$\$



May 4, 2017

WBS NUMBER: 46065.1.1
 TIP NUMBER: B-5351
 F.A. NUMBER:
 COUNTY: Guilford
 DESCRIPTION: Replace Bridge No. 237/242 on US 29-70 & I-85 Business over Deep River

SUBJECT: Geotechnical Report – Inventory

PROJECT DESCRIPTION

The project is located in southwestern Guilford County, North Carolina. This project consists of roadway subsurface investigation for proposed detours and roadway improvements near the existing bridge over Deep River and improvement of the bridge approaches.

A CME 55 drill rig (170055) with an automatic hammer was used for the geotechnical investigation during March 2017. Standard penetration tests (SPT), hand auger advancement and rock coring were performed with samples extracted for visual classification and/or logging by HDR|ICA Engineering.

The following alignments, totaling 1.40 miles of roadway, were investigated. Selected cross sections from the alignments are included with this report.

<u>LINE</u>	<u>STATIONS</u>
-L-	10+95.00 to 35+50.00
-Y1-	10+00.00 to 11+05.00
-DET1-	10+00.00 to 33+74.66
-DET2-	10+00.00 to 34+53.94

AREAS OF SPECIAL GEOTECHNICAL INTEREST

Alluvial Sediments: Alluvial sediments are interpreted to occur within the following limits either at the existing surface or underlying roadway embankment (RE).

<u>LINE</u>	<u>STATIONS</u>	<u>OFFSETS</u>
-DET1-	15+00.00 to 15+90.00	LT
-L-	15+50.00 to 22+60.00	RT
-L-	21+90.00 to 27+22.75	LT to RT
-Y1-	11+68.00 to 12+30.00	LT to RT
-DET2-	31+00.00 to 35+50.00	RT
-DET1-	20+70.00 to 24+75.00	LT to RT
-DET2-	20+95.00 to 25+95.00	LT to RT

Boulders / Weathered Rock: Boulders and/or weathered rock (WR) stratum may occur at or above grade at the following locations:

<u>LINE</u>	<u>STATIONS</u>	<u>OFFSETS</u>
-DET1-	15+10.00 to 15+50.00	LT
-L-	17+50	RT

High Plasticity Soils: High plasticity soils exceeding a PI of 40 were encountered in one boring within the project limits. Additional locations were not indicated by advanced borings however the presence of unidentified accumulations is possible.

<u>LINE</u>	<u>STATIONS</u>	<u>OFFSETS</u>
-L-	21+50 to 22+50	RT

PHYSIOGRAPHY AND GEOLOGY

The project site is located within the Piedmont Physiographic Province (Carolina Slate Belt Subprovince). The project corridor is a commercial-retail and woodland setting 1.7 miles southwest of Jamestown, NC and 5.0 miles east-northeast of High Point, NC. The general topography of the project area is on an upland surface of elevations 750 feet to 790 feet incised and dissected by the Deep River and its tributaries to elevations 690 feet to 700 feet and exhibiting moderate to occasionally steep gradient side slopes. The drainage courses are relatively narrow in relation to channel width. Drainage flows to the south-southeast away from the project site.

Geologically, the project is located within the Carolina Slate Belt Litho-Tectonic Province (*Geologic Map of North Carolina, 1985 & Geologic Map of Region G, North Carolina, 1982*). Underlying metamorphosed granitic rock (felsic intrusive complex) is considered Late Proterozoic to late Cambrian. The overlying residual soils are a product of the physical and chemical weathering of the underlying crystalline rock. Relatively thin alluvial deposits line Deep River and its tributaries.

SOIL PROPERTIES

Soils and rock encountered during this investigation are separated into five (5) categories based on origin. The origins consist of roadway embankment (RE), alluvial soils, residual soils, weathered rock (WR) and recovered crystalline rock (CR). Indicated AASHTO groups are field visual classifications with exception of four (4) bulk samples and one (1) Standard penetration test (SPT) drive.

Materials interpreted as roadway embankment (RE) were observed sporadically throughout -L-, -Y1- and -DET1- alignments and within each boring, excepting DET22050R along the DET2 alignment. Intercepted materials were composed of soft to stiff (typically medium stiff), clayey to sandy silt (A-4 and A-5); lesser accumulations of clay with gravel (A-2-6 and A-7-6) and comingled silt, asphalt fragments and road base aggregate all varying in interpreted thickness from 1.0 foot to 11.8 feet dependent upon location.

Alluvial soils were encountered within Deep River tributaries parallel to -L-, -DET1- and -DET2-, sediment deposits parallel to Deep River and sediment deposits crossing beneath -Y1- within eight (8) of the advanced borings. Recovered SPT samples indicate alluvial soils were composed of moist, soft to very stiff, micaceous fine sandy silt (A-4 and A-5), stiff sandy clay (A-6) or very loose fine grain sand (A-2-4) all classifications with wood/root fragments and traces of gravel. Intercepted alluvial deposit thickness ranged from 2.8 feet to 16.8 feet.

Residual soils are present, within the subsurface, throughout the proposed -L-, -DET1-, -DET2- and -Y1- alignments and are derived from weathering of the underlying crystalline rock. Residual soils were not penetrated within five (5) of the advanced borings but where present underlie roadway embankment and/or alluvial deposits. Residual soils were composed of dry to moist, medium stiff to hard clayey silt with mica (A-5); stiff to hard occasionally saprolitic sandy silt with weathered rock fragments (A-4); medium stiff to stiff clay (A-6); medium stiff to stiff silty clay with

mica (A-7-5 and A-7-6) and loose to very dense, fine to coarse grain clayey to silty sand with occasional quartz fragments and mica (A-2-4, A-2-6, A-2-5). Penetrated residual soil thickness varies within the project corridor from 0.5 foot to 30.0 feet prior to boring termination or transition into another stratum. Weathered rock seams were intercepted interlayered with residual soil strata. Detailed discussion is presented within the following paragraph. Auger refusal or SPT refusal was typically not encountered within residual soils prior to boring terminations but rather at strata boundaries with weathered rock or crystalline rock.

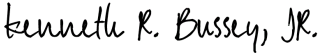
Weathered Rock was intercepted within six (6) advanced borings either interlayered with residual soils or as a transitional stratum between residual soils and crystalline rock. Included within the weathered rock discussion is an interpreted colluvial boulder intercepted at 4.5 feet below ground surface and partially penetrated prior to termination at the L1750R location. Weathered rock strata, when present exhibited thickness ranging from 0.1 foot to 4.0 feet. Subsequent advancement of all borings suggests that boulders and/or weathered rock seams, near the ground surface, may be anticipated at any location or any depth throughout the project limits.

Crystalline Rock was penetrated in three (3) borings within the project limits. Feldspar-hornblende-biotite rich diorite exhibiting fresh to moderate weathering and faint foliation was interlayered with feldspar-quartz-biotite-hornblende rich meta-granite exhibiting moderate to slight weathering. Close to very close fracture spacing was indicated with many discontinuity walls iron oxide stained, spotty clay infilled and few loose grains embedded within the clay. Core run recoveries ranged from 52% to 100% while individual run rock quality designation (RQD) ranged from 0% to 100%.

GROUNDWATER

Groundwater was encountered during drilling operations (immediate) within seven (7) advanced borings along the proposed alignments, -L-, -Y1-, -DET1- and -DET2- at elevations of 706.7 to 681.2 (MSL) or 1.2 feet to 15.2 feet below the ground surface. The remaining advanced borings were reported as dry. Static or 24 hour measurements were recorded from six (6) borings and varied from 0.9 foot to 13.2 feet below ground surface equating to elevations 708.9 to 682.5 (MSL) while remaining borings were immediately backfilled. Groundwater levels are anticipated to fluctuate with individual precipitation events, seasonal precipitation accumulations or prolonged drought.

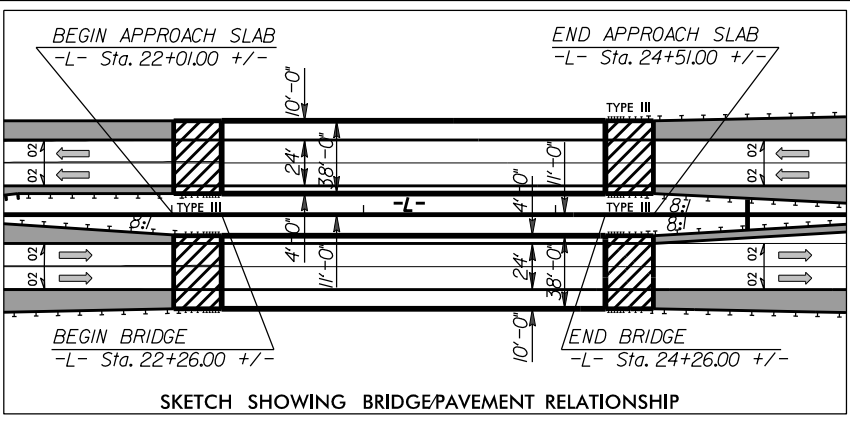
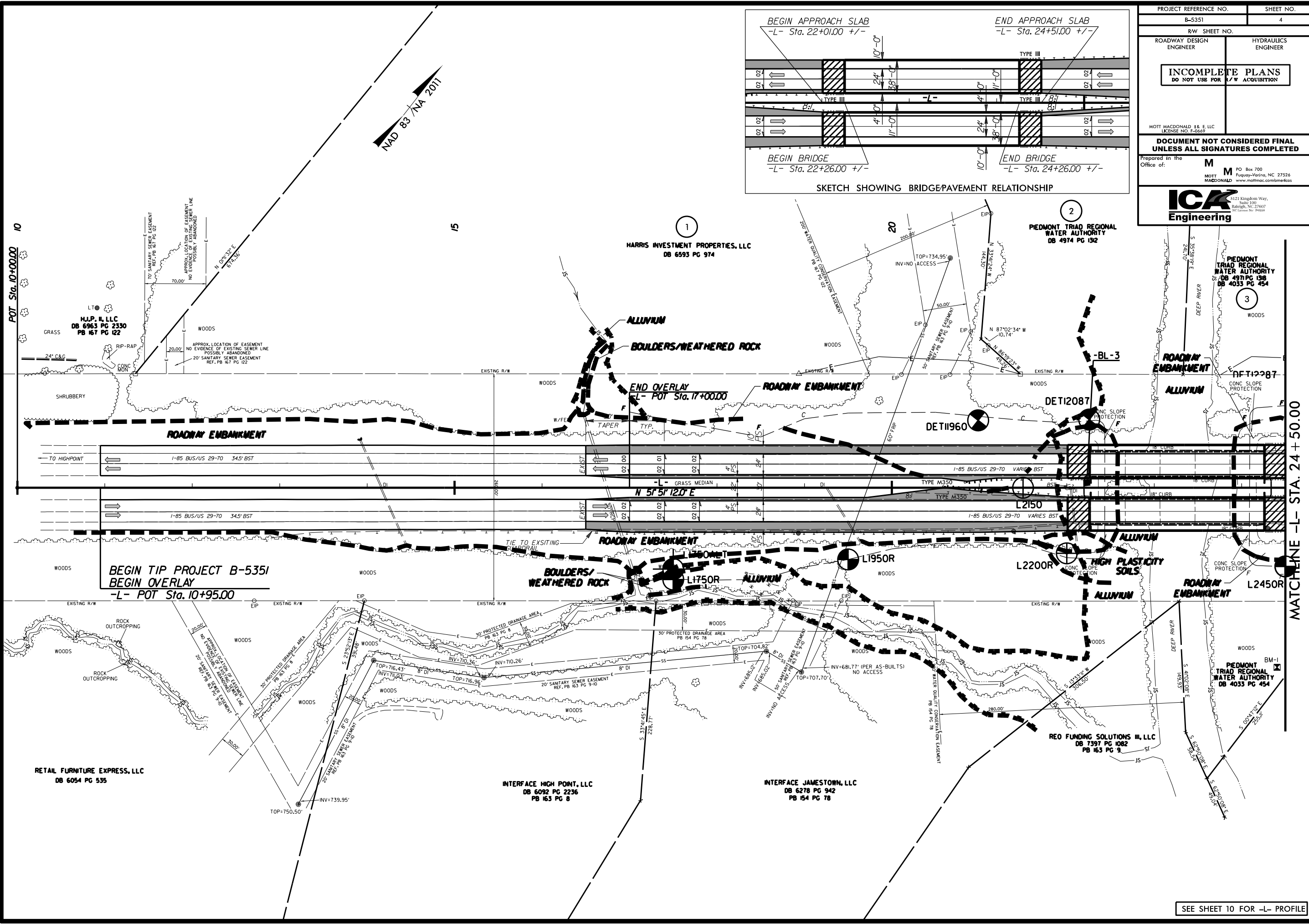
Prepared by,

DocuSigned by:

22A188C7B3D7442...
Kenneth R. Bussey, Jr., PE
Project Engineer

DocuSigned by:

B67B5CEBC21A460...
D. Michael Gragg, LG
Senior Project Geologist

8/17/99
 POT Sta. 10+00.00
 TO HIGHPOINT
 I-85 BUS/US 29-70 34.5' BST
 I-85 BUS/US 29-70 34.5' BST
 I-85 BUS/US 29-70 VARIES BST
 I-85 BUS/US 29-70 VARIES BST
 BEGIN TIP PROJECT B-5351
 BEGIN OVERLAY
 -L- POT Sta. 10+95.00
 RETAIL FURNITURE EXPRESS, LLC
 DB 6054 PG 535
 INTERFACE HIGH POINT, LLC
 DB 6092 PG 2236
 PB 163 PG 8
 INTERFACE JAMESTOWN, LLC
 DB 6278 PG 942
 PB 154 PG 78
 RED FUNDING SOLUTIONS III, LLC
 DB 7397 PG 1082
 PB 163 PG 9
 SEE SHEET 10 FOR -L- PROFILE



PROJECT REFERENCE NO. B-5351	SHEET NO. 4
R/W SHEET NO. ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
MOTT MACDONALD I & E LLC LICENSE NO. F-0869 DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	M PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/america
 ICA Engineering 1121 Kingdom Way, Suite 100 Raleigh, NC 27607 919.286.1000	

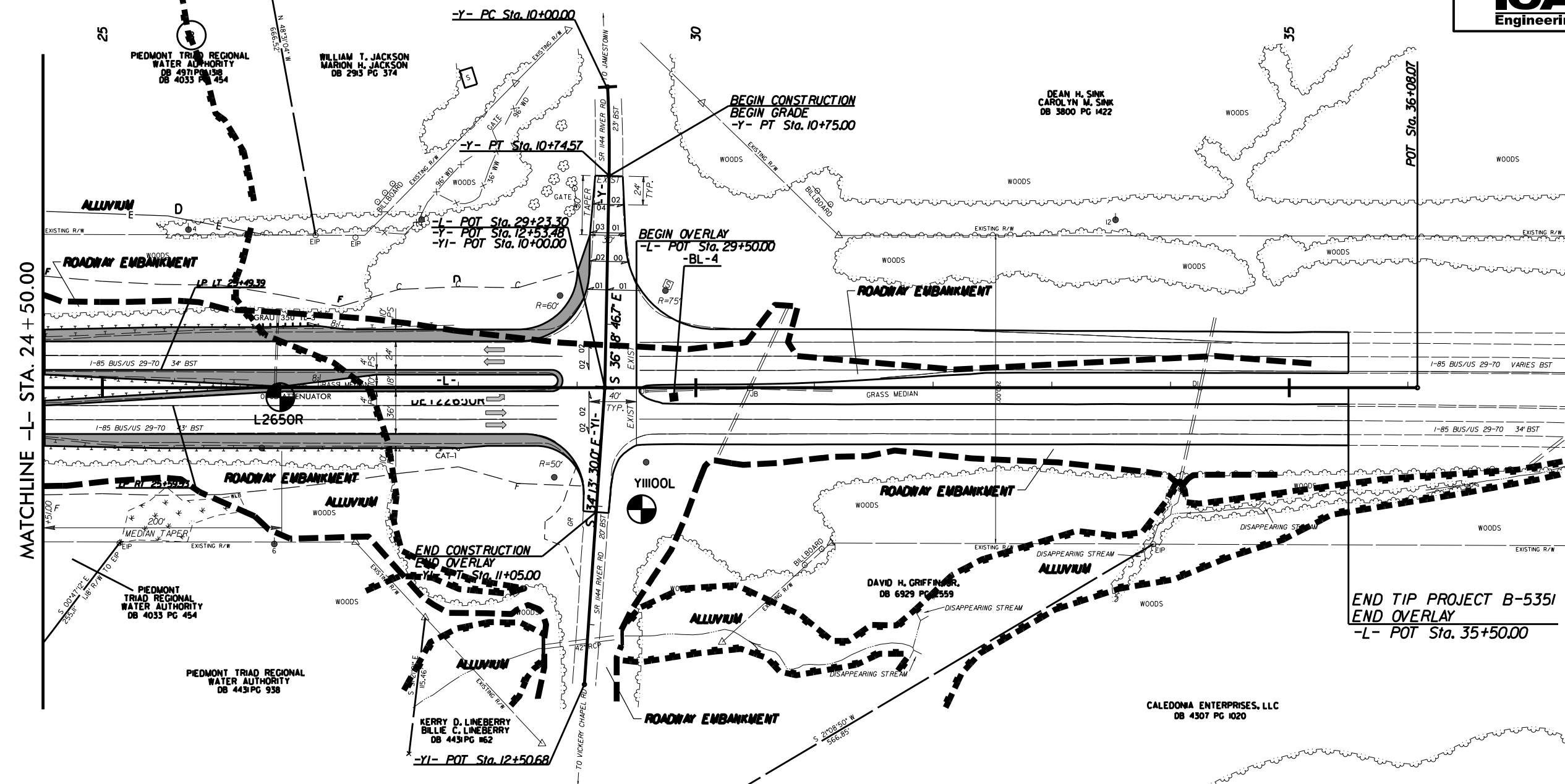
MATCHLINE -L- STA. 24 + 50.00

8/17/99
 \$\$\$SYTIME\$\$\$\$\$
 \$\$\$SITE ERIE\$\$\$\$\$
 \$\$\$ENGINEER\$\$\$\$\$

-Y-
 PI Sta 10+37.30
 $\Delta = 4' 16'' 22.0'$ (RT)
 D = 5' 43' 46.5"
 L = 74.57'
 T = 37.30'
 R = 1,000.00'

TRAFFIC DIAGRAM	ADT 2018	ADT 2038
	3,600	5,300
	1,700	4,000
US 29/70	34,500	42,900
I-85 BUS.	125	220
S.R. 1144	25	120
RIVER RD.	310	710

PROJECT REFERENCE NO.	SHEET NO.
B-5351	5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
MOTT MACDONALD 14 E. LLC LICENSE NO. F-0869	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	M MOTT MACDONALD PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/americas



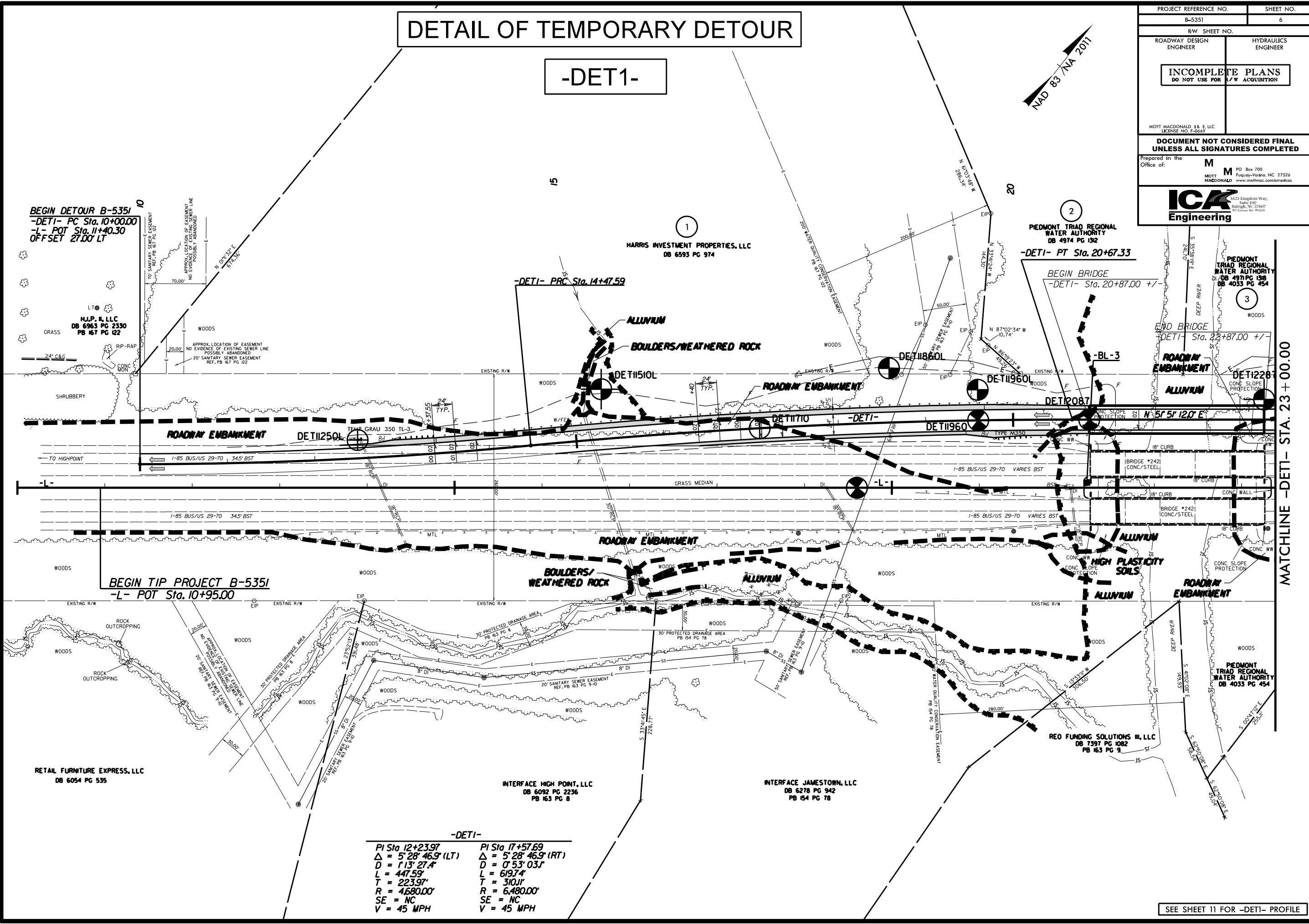
END TIP PROJECT B-5351
 END OVERLAY
 -L- POT Sta. 35+50.00

SEE SHEET 10 FOR -L- PROFILE

DETAIL OF TEMPORARY DETOUR

-DET1-

PROJECT REFERENCE NO. B-5351	SHEET NO. 6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
MOTT MACDONALD I & E, LLC LICENSE NO. F-0869	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
Prepared in the Office of:	M M MOTT MACDONALD PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/marcom
ICA Engineering 1121 Kingdom Way, Suite 100 Raleigh, NC 27607 301 Union St. Plaza	



MATCHLINE -DET1- STA. 23 + 00.00

-DET1-


PI Sta 12+23.97	PI Sta 17+57.69
$\Delta = 5' 28' 46.9''$ (LT)	$\Delta = 5' 28' 46.9''$ (RT)
$D = 1' 13' 27.4''$	$D = 0' 53' 03.1''$
$L = 447.59'$	$L = 619.74'$
$T = 223.97'$	$T = 310.11'$
$R = 4,680.00'$	$R = 6,480.00'$
SE = NC	SE = NC
V = 45 MPH	V = 45 MPH

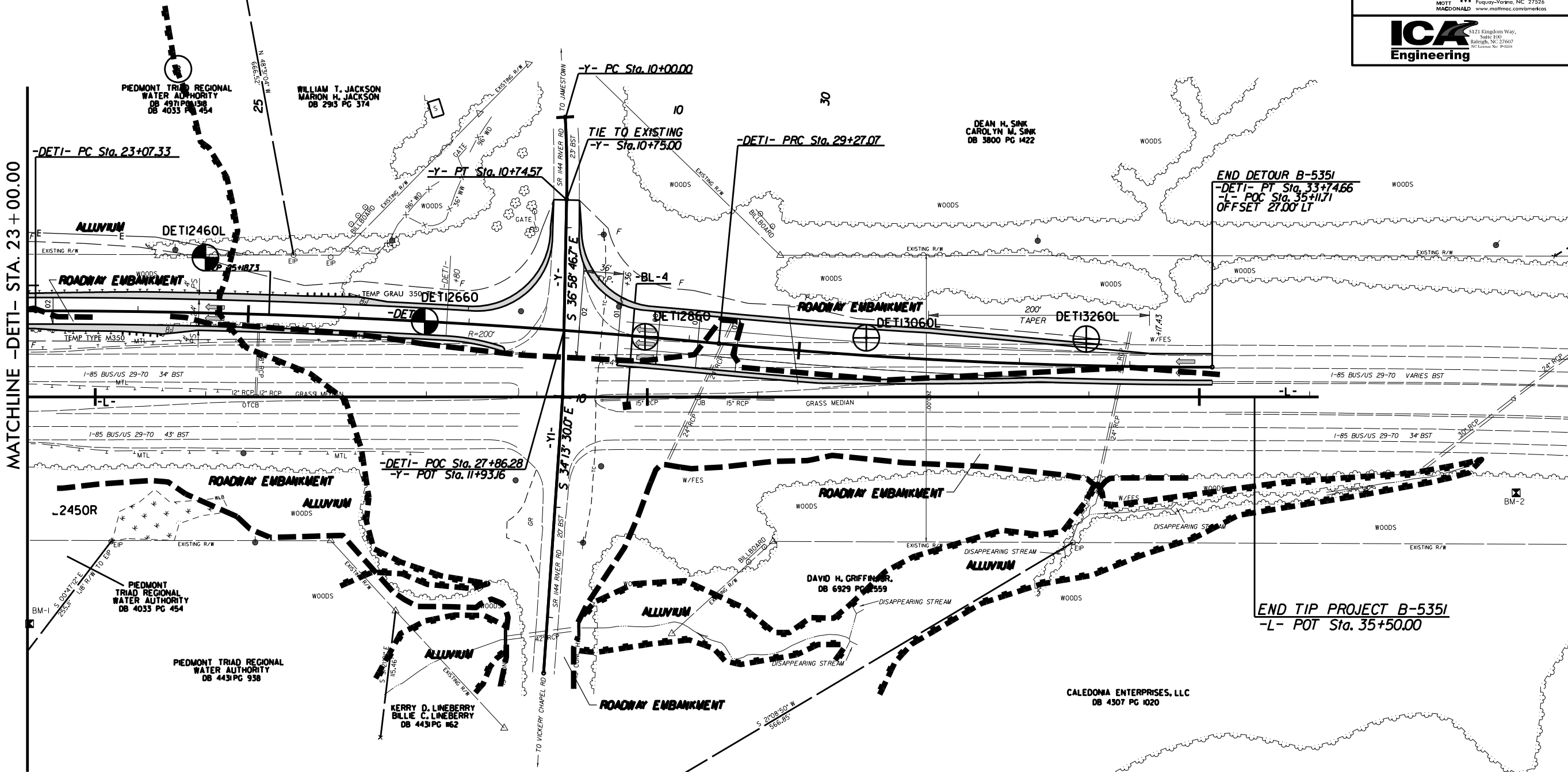
SEE SHEET 11 FOR -DET1- PROFILE

8/17/99
SYTIME\$\$\$\$
\$\$\$\$SYTIME\$\$\$\$

DETAIL OF TEMPORARY DETOUR

-DET1-

PROJECT REFERENCE NO. B-5351	SHEET NO. 7						
RW SHEET NO.							
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER						
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION							
MOTT MACDONALD I.E. LLC LICENSE NO. F-0869							
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED							
Prepared in the Office of:							
<table border="1"> <tr> <td>M</td> <td>PO Box 700</td> </tr> <tr> <td>M</td> <td>Fuquay-Varina, NC 27526</td> </tr> <tr> <td>MOTT MACDONALD</td> <td>www.mottmac.com/markets</td> </tr> </table>		M	PO Box 700	M	Fuquay-Varina, NC 27526	MOTT MACDONALD	www.mottmac.com/markets
M	PO Box 700						
M	Fuquay-Varina, NC 27526						
MOTT MACDONALD	www.mottmac.com/markets						
							



MATCHLINE - DET1- STA. 23+00.00

END DETOUR B-5351
 -DET1- PT Sta. 33+74.66
 -L- POC Sta. 35+11.71
 OFFSET 27.00' LT

END TIP PROJECT B-5351
 -L- POT Sta. 35+50.00

-Y-
 PI Sta 10+37.30
 $\Delta = 4'16''22.0''$ (RT)
 $D = 5'43''46.5''$
 $L = 74.57'$
 $T = 37.30'$
 $R = 1,000.00'$

-DET1- PI Sta 26+17.43 $\Delta = 5'28''46.9''$ (RT) $D = 0'53''03.1''$ $L = 619.74'$ $T = 310.11'$ $R = 6,480.00'$ SE = NC V = 45 MPH	-DET1- PI Sta 31+51.03 $\Delta = 5'28''46.9''$ (LT) $D = 1'13''27.4''$ $L = 447.59'$ $T = 223.97'$ $R = 4,680.00'$ SE = NC V = 45 MPH
--	--

SEE SHEET 12 FOR -DET1- PROFILE

8/17/09
SYTIME
DN
\$

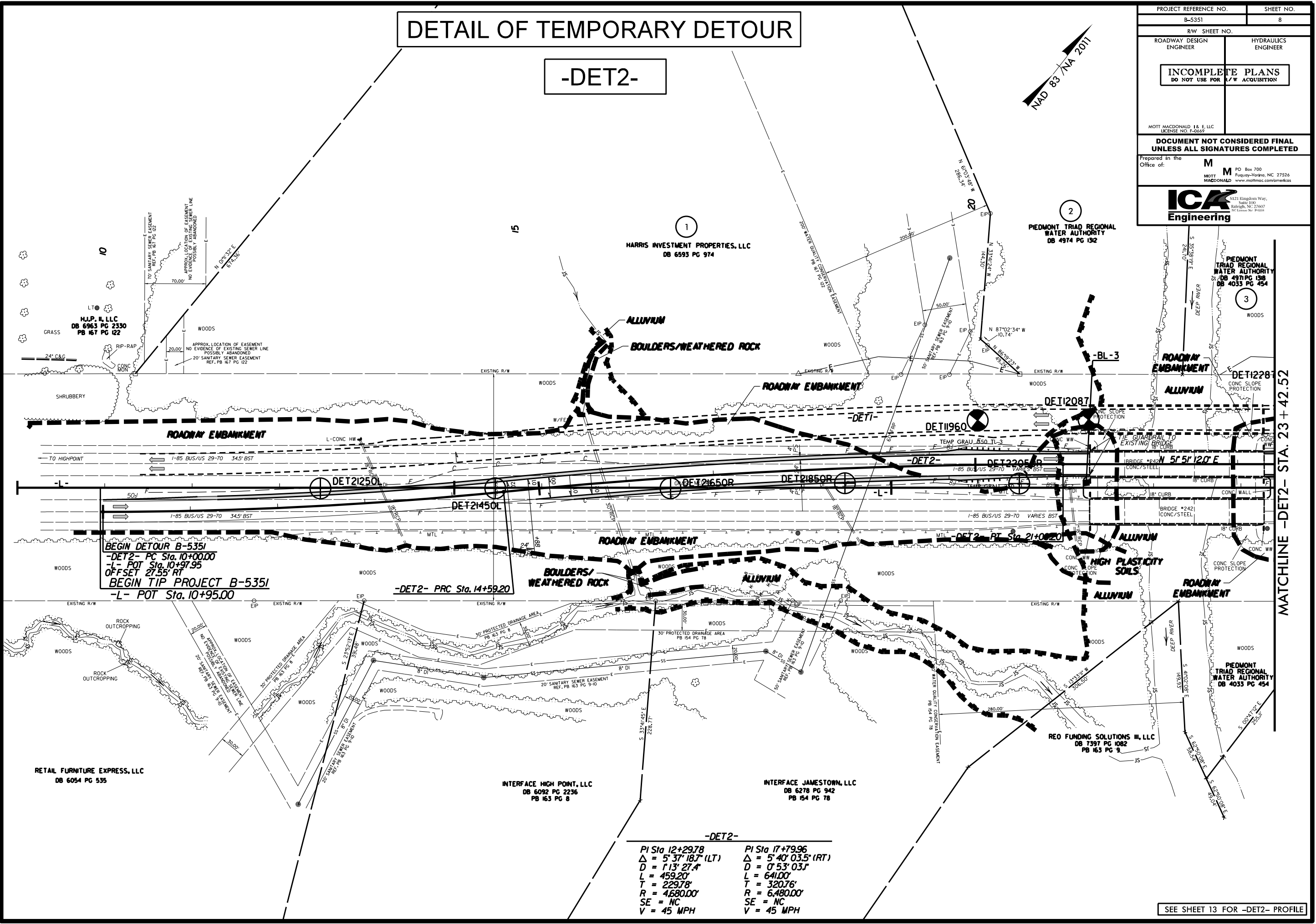
8/17/99

DETAIL OF TEMPORARY DETOUR

-DET2-



PROJECT REFERENCE NO. B-5351		SHEET NO. 8	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION			
MOTT MACDONALD & E. LLC LICENSE NO. F-0869			
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
Prepared in the Office of:		MOTT MACDONALD & E. LLC PO Box 700 Fuquay-Varina, NC 27526 www.mottmac.com/america	
ICA Engineering 1121 Kingdom Way, Suite 100 Raleigh, NC 27607 301 Linn St. Platts			



BEGIN DETOUR B-5351
 -DET2- PC Sta. 10+00.00
 -L- POT Sta. 10+97.95
 OFFSET 27.55' RT
BEGIN TIP PROJECT B-5351
 -L- POT Sta. 10+95.00

-DET2- PRC Sta. 14+59.20

-DET2-

PI Sta 12+29.78	PI Sta 17+79.96
Δ = 5' 37" 18.7' (LT)	Δ = 5' 40" 03.5' (RT)
D = 1' 13" 27.4'	D = 0' 53" 03.7'
L = 459.20'	L = 641.00'
T = 229.78'	T = 320.76'
R = 4,680.00'	R = 6,480.00'
SE = NC	SE = NC
V = 45 MPH	V = 45 MPH

SEE SHEET 13 FOR -DET2- PROFILE

DETAIL OF TEMPORARY DETOUR

-DET2-



PROJECT REFERENCE NO. B-5351 SHEET NO. 9

RW SHEET NO. ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

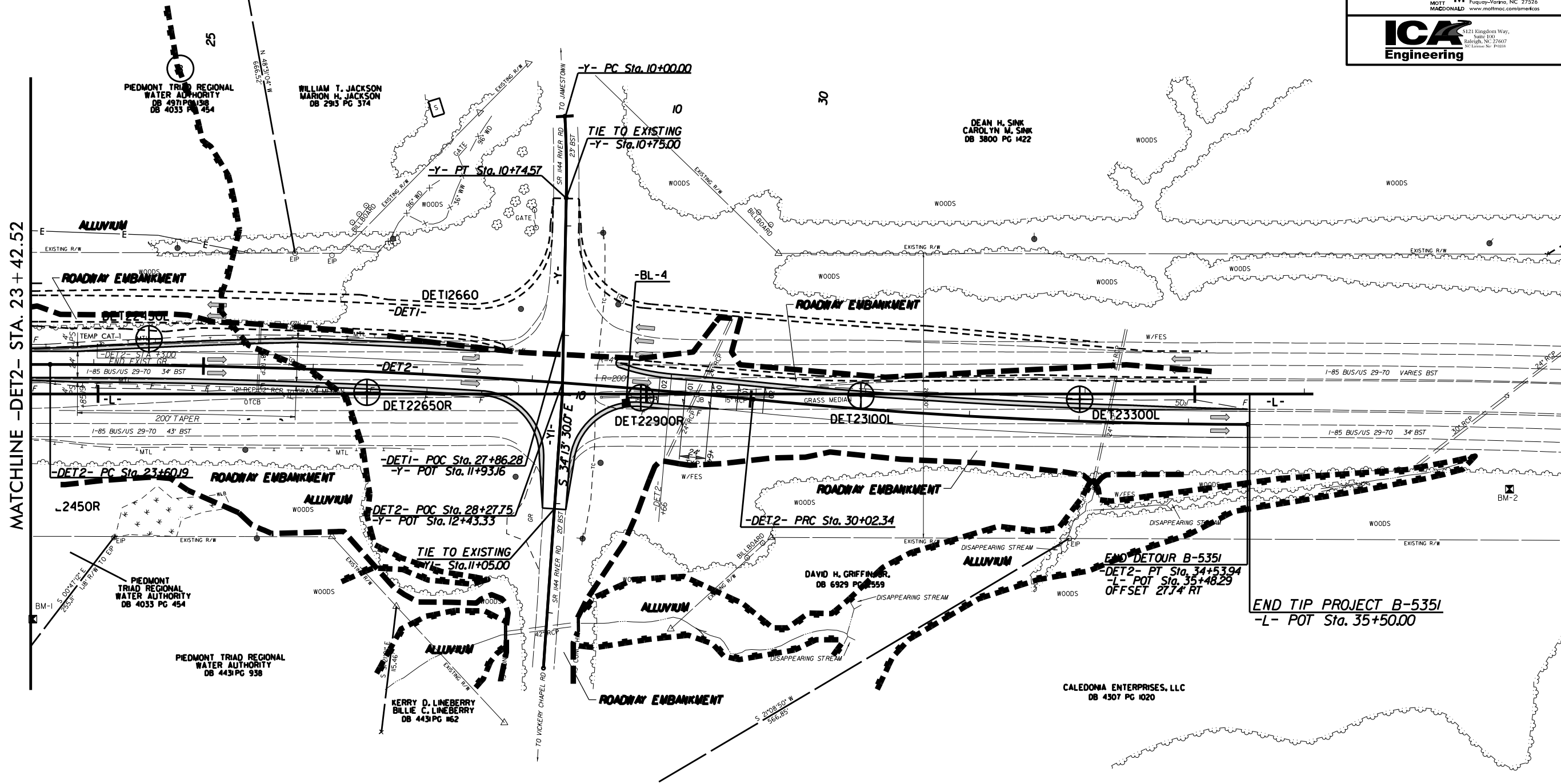
INCOMPLETE PLANS
DO NOT USE FOR PERMITS OR W/ACQUISITION

MOTT MACDONALD, P.A., E. LLC
LICENSE NO. F-0669

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

Prepared in the Office of: M MOTT MACDONALD, P.A., E. LLC
PO Box 700
Fuquay-Varina, NC 27526
www.mottmac.com/brm/nc

ICA Engineering
121 Kingdom Way, Suite 100
Raleigh, NC 27607
301 Linnam St. #101



MATCHLINE -DET2- STA. 23 + 42.52

-Y-
 PI Sta 10+37.30
 $\Delta = 4' 16'' 22.0'' \text{ (RT)}$
 $D = 5' 43'' 46.5''$
 $L = 74.57'$
 $T = 37.30'$
 $R = 1,000.00'$

-DET2-
 PI Sta 26+81.53
 $\Delta = 5' 40'' 40.4'' \text{ (RT)}$
 $D = 0' 53'' 03.7''$
 $L = 642.15'$
 $T = 321.34'$
 $R = 6,480.00'$
 $SE = NC$
 $V = 45 \text{ MPH}$

PI Sta 32+28.32
 $\Delta = 5' 31'' 43.8'' \text{ (LT)}$
 $D = 1' 13'' 27.4''$
 $L = 451.60'$
 $T = 225.98'$
 $R = 4,680.00'$
 $SE = NC$
 $V = 45 \text{ MPH}$

SEE SHEET 13 FOR -DET2- PROFILE

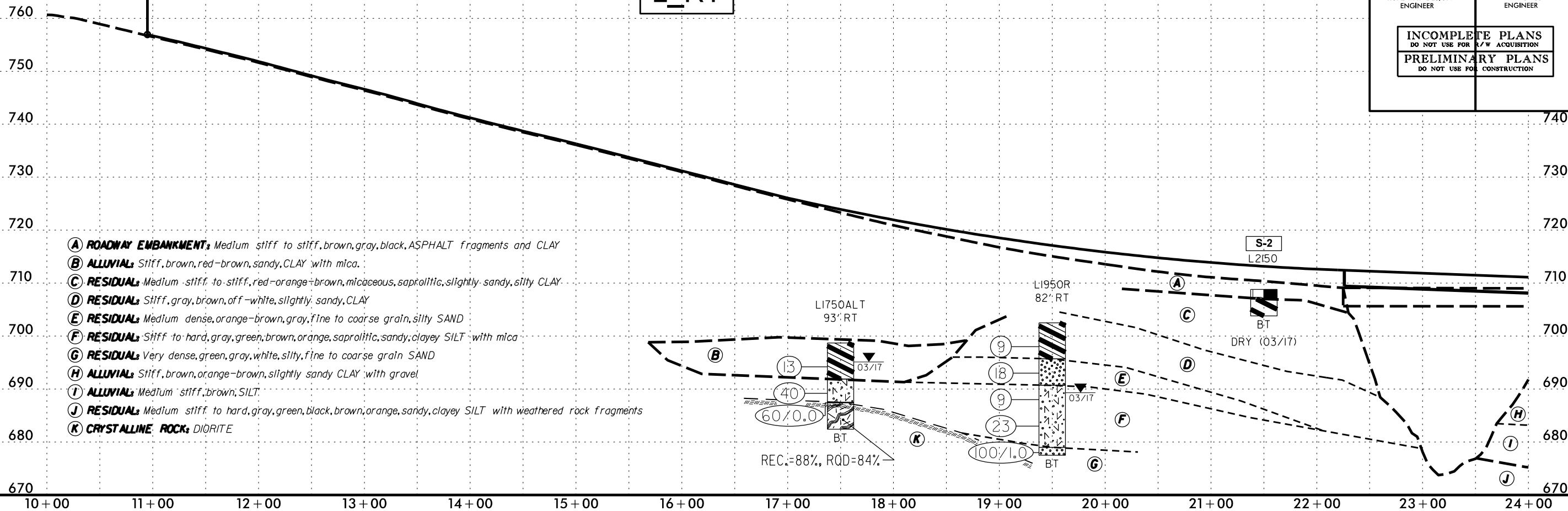
8/17/99
SYTIME
DN
S
S

5/28/99

BEGIN PROJECT
BEGIN OVERLAY
STA. 10+95.00

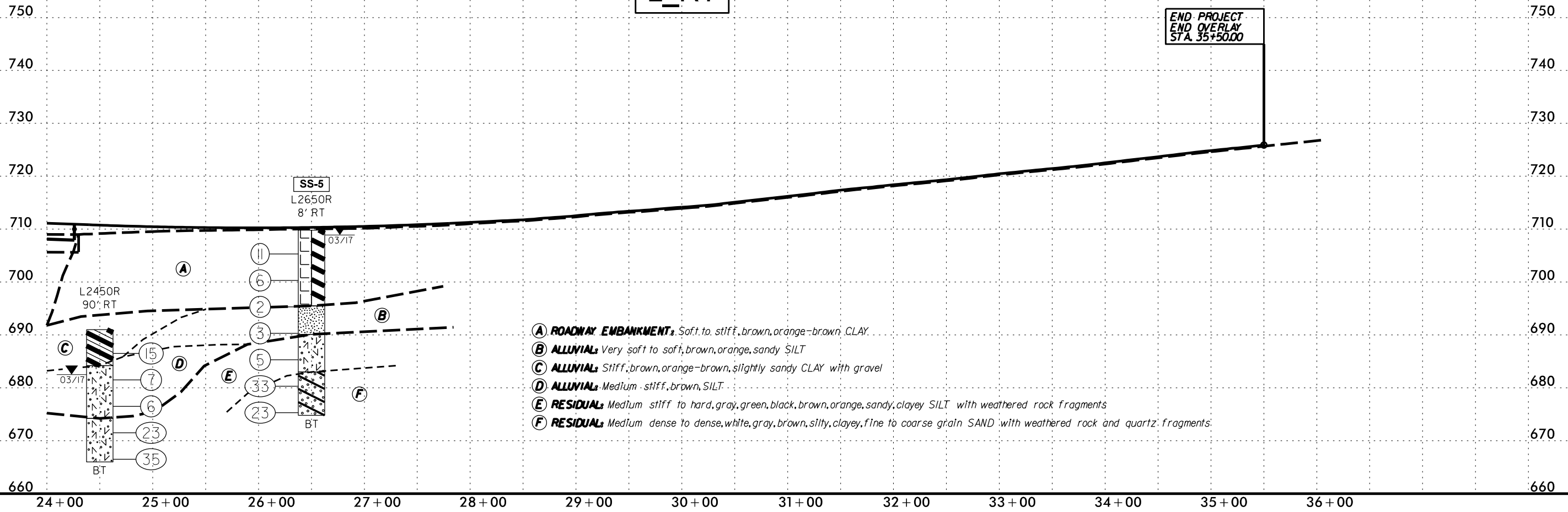
-L_RT-

PROJECT REFERENCE NO. B-5351	SHEET NO. 10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



-L_RT-

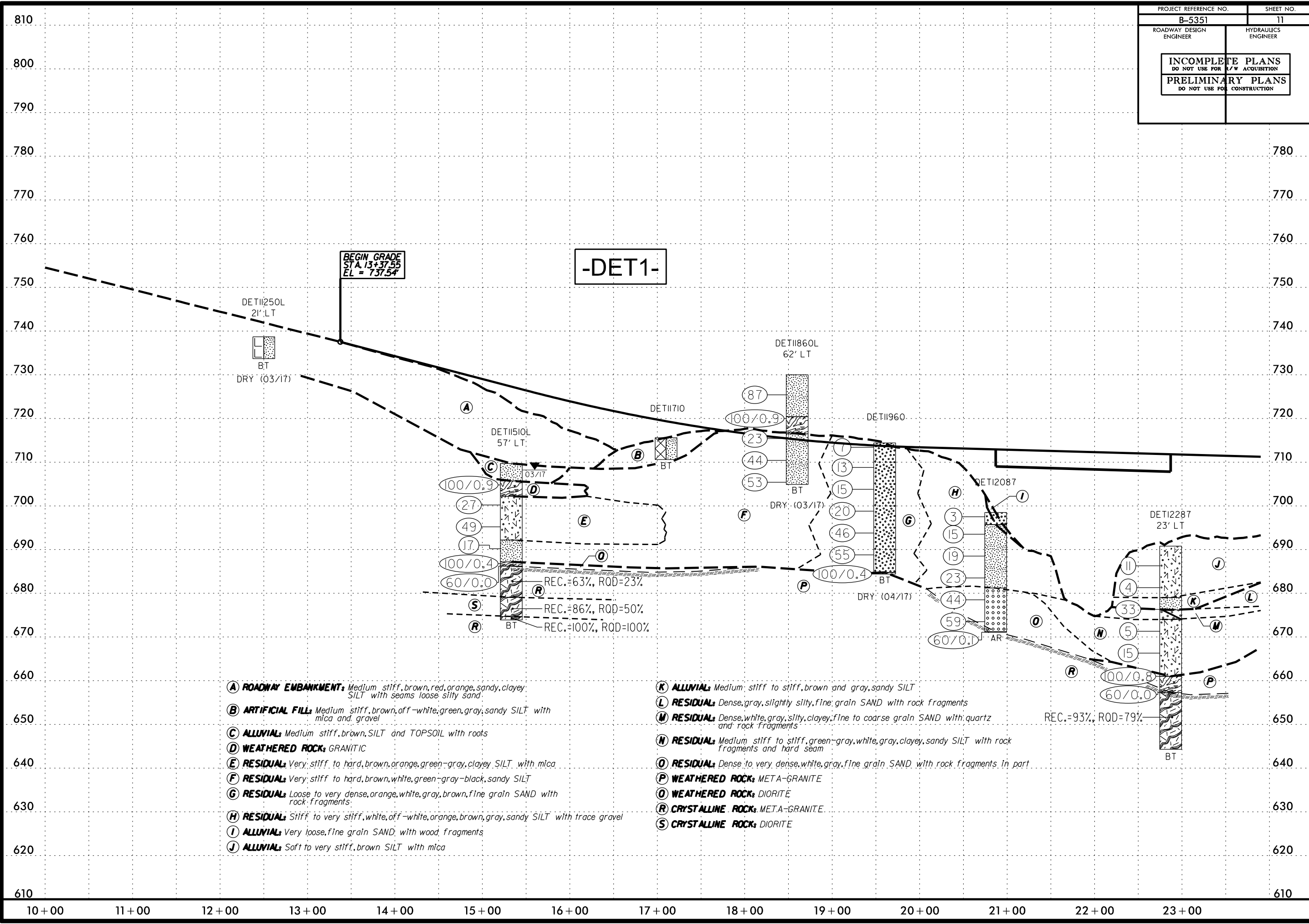
END PROJECT
END OVERLAY
STA. 35+50.00



SYTIME\$\$\$\$\$
\$\$\$\$\$SYTIME\$\$\$\$\$

5/14/99

PROJECT REFERENCE NO. B-5351	SHEET NO. 11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



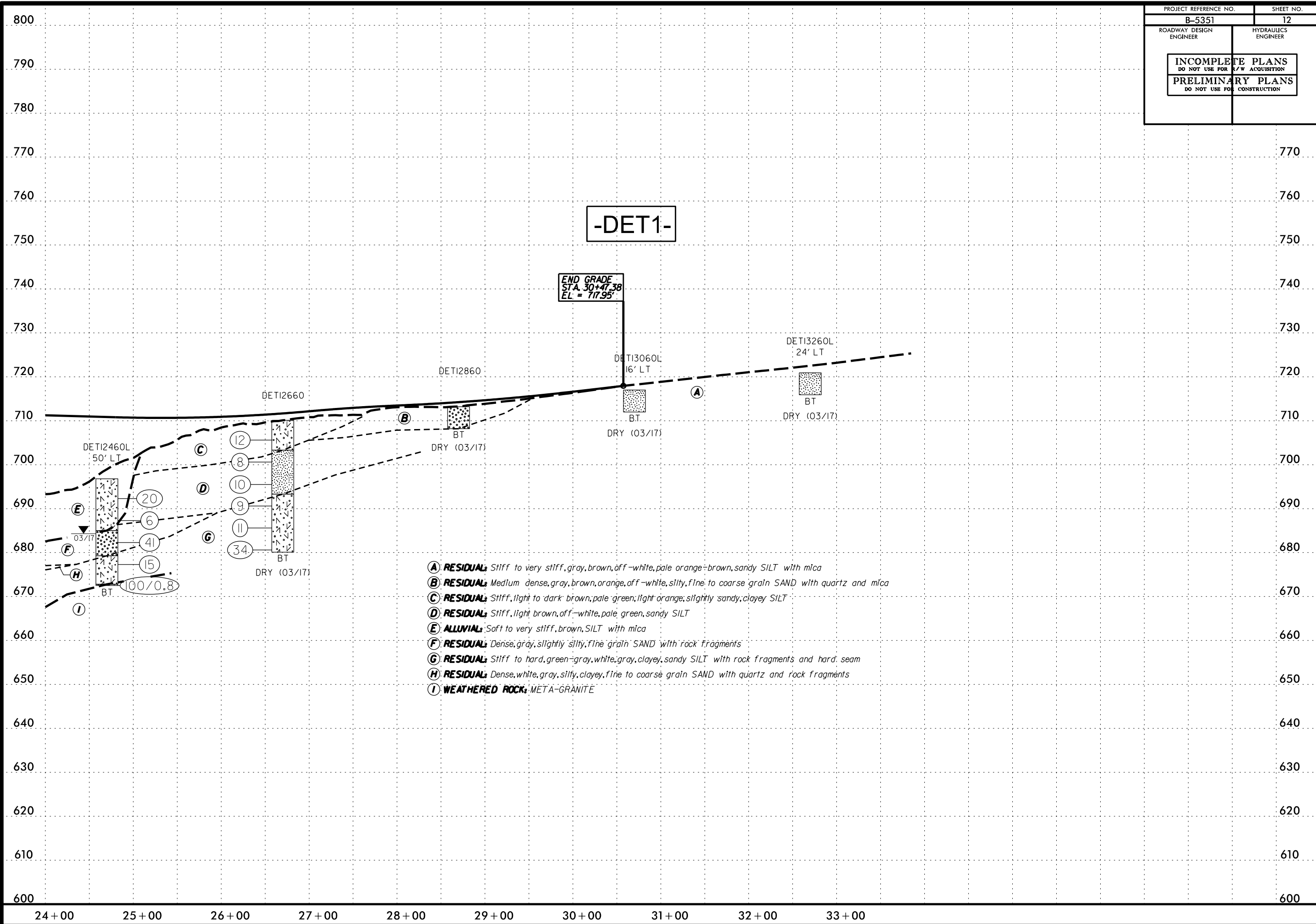
- (A) ROADWAY EMBANKMENT:** Medium stiff, brown, red, orange, sandy, clayey SILT with seams loose silty sand
- (B) ARTIFICIAL FILL:** Medium stiff, brown, off-white, green, gray, sandy SILT with mica and gravel
- (C) ALLUVIAL:** Medium stiff, brown, SILT and TOPSOIL with roots
- (D) WEATHERED ROCK:** GRANITIC
- (E) RESIDUAL:** Very stiff to hard, brown, orange, green-gray, clayey SILT with mica
- (F) RESIDUAL:** Very stiff to hard, brown, white, green-gray-black, sandy SILT
- (G) RESIDUAL:** Loose to very dense, orange, white, gray, brown, fine grain SAND with rock fragments
- (H) RESIDUAL:** Stiff to very stiff, white, off-white, orange, brown, gray, sandy SILT with trace gravel
- (I) ALLUVIAL:** Very loose, fine grain SAND, with wood fragments
- (J) ALLUVIAL:** Soft to very stiff, brown SILT with mica

- (K) ALLUVIAL:** Medium stiff to stiff, brown and gray, sandy SILT
- (L) RESIDUAL:** Dense, gray, slightly silty, fine grain SAND with rock fragments
- (M) RESIDUAL:** Dense, white, gray, silty, clayey, fine to coarse grain SAND with quartz and rock fragments
- (N) RESIDUAL:** Medium stiff to stiff, green-gray, white, gray, clayey, sandy SILT with rock fragments and hard seam
- (O) RESIDUAL:** Dense to very dense, white, gray, fine grain SAND with rock fragments in part
- (P) WEATHERED ROCK:** META-GRANITE
- (Q) WEATHERED ROCK:** DIORITE
- (R) CRYSTALLINE ROCK:** META-GRANITE
- (S) CRYSTALLINE ROCK:** DIORITE

10+00 11+00 12+00 13+00 14+00 15+00 16+00 17+00 18+00 19+00 20+00 21+00 22+00 23+00

5/14/99

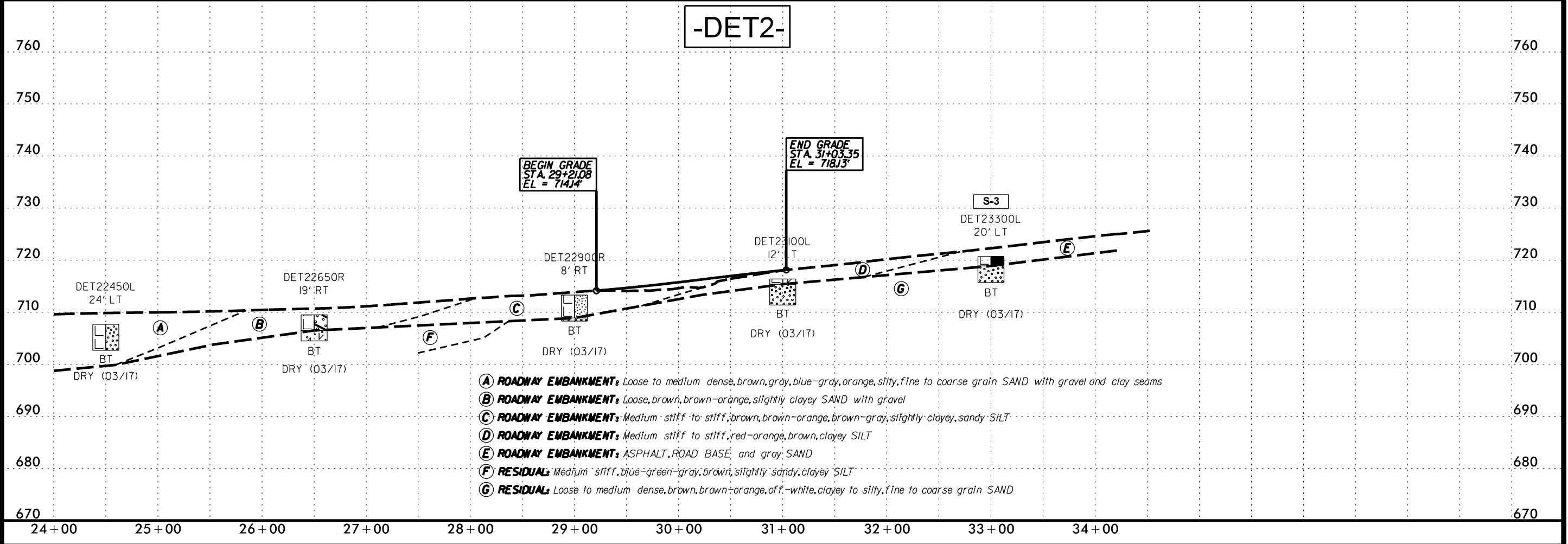
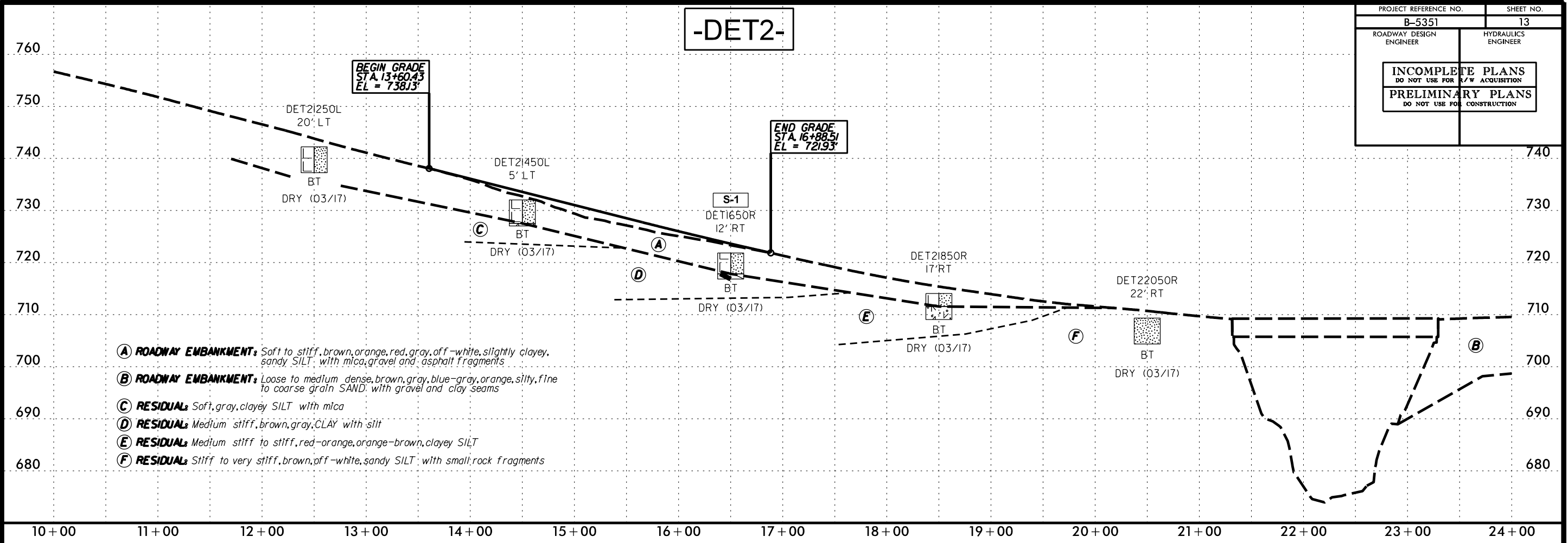
PROJECT REFERENCE NO. B-5351	SHEET NO. 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



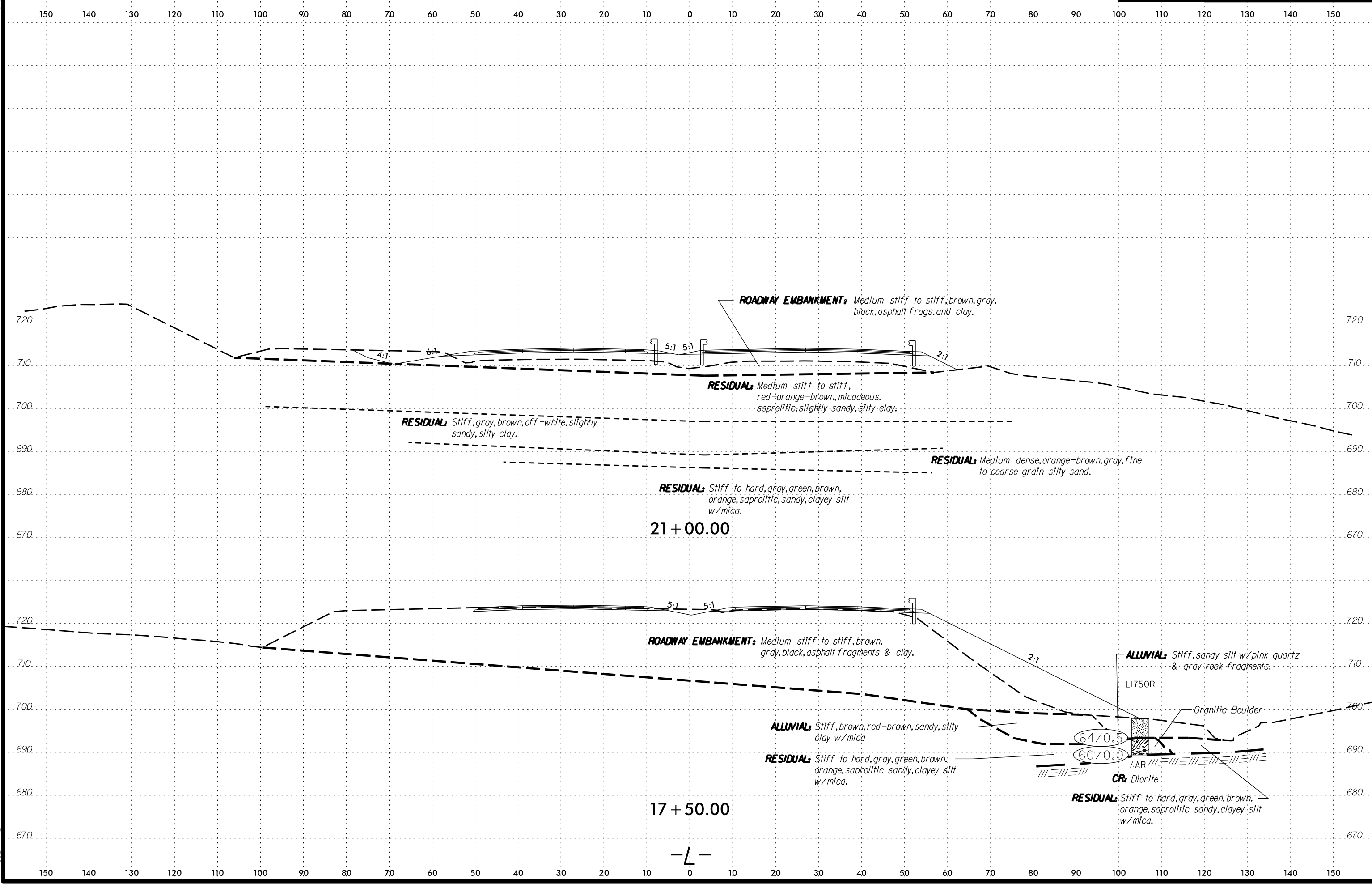
DATE PLOTTED: 5/14/99

5/28/99

PROJECT REFERENCE NO. B-5351	SHEET NO. 13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

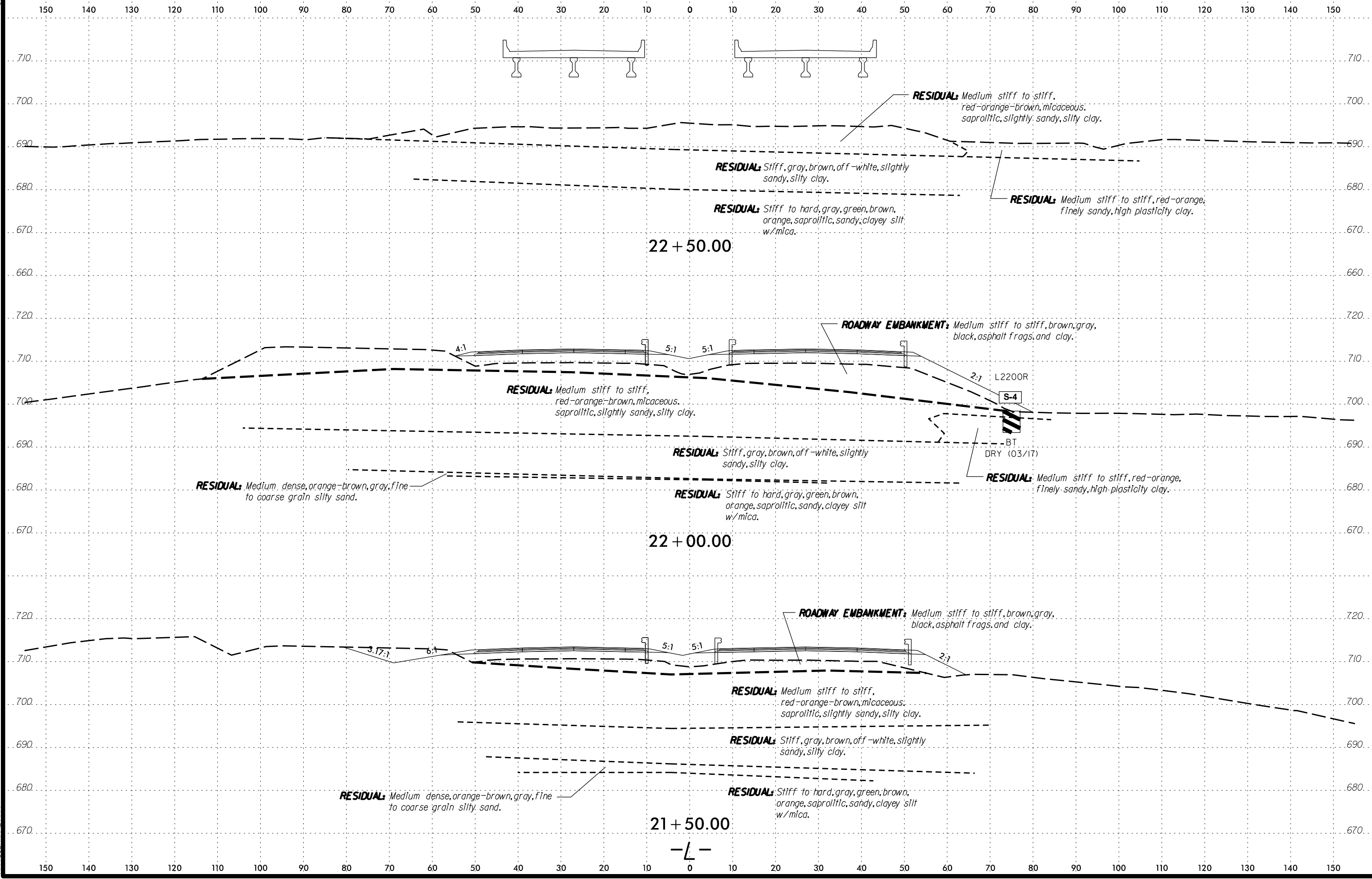


5/28/99



SECTION CONTOUR INTERVAL 1'0"

6/23/16



22 + 50.00

22 + 00.00

21 + 50.00

RESIDUAL: Medium dense, orange-brown, gray, fine to coarse grain silty sand.

RESIDUAL: Medium stiff to stiff, red-orange-brown, micaceous, saprolitic, slightly sandy, silty clay.

RESIDUAL: Stiff, gray, brown, off-white, slightly sandy, silty clay.

RESIDUAL: Stiff to hard, gray, green, brown, orange, saprolitic, sandy, clayey silt w/mica.

RESIDUAL: Medium stiff to stiff, red-orange-brown, micaceous, saprolitic, slightly sandy, silty clay.

RESIDUAL: Medium stiff to stiff, red-orange, finely sandy, high plasticity clay.

ROADWAY EMBANKMENT: Medium stiff to stiff, brown, gray, black, asphalt frags, and clay.

RESIDUAL: Medium stiff to stiff, red-orange, finely sandy, high plasticity clay.

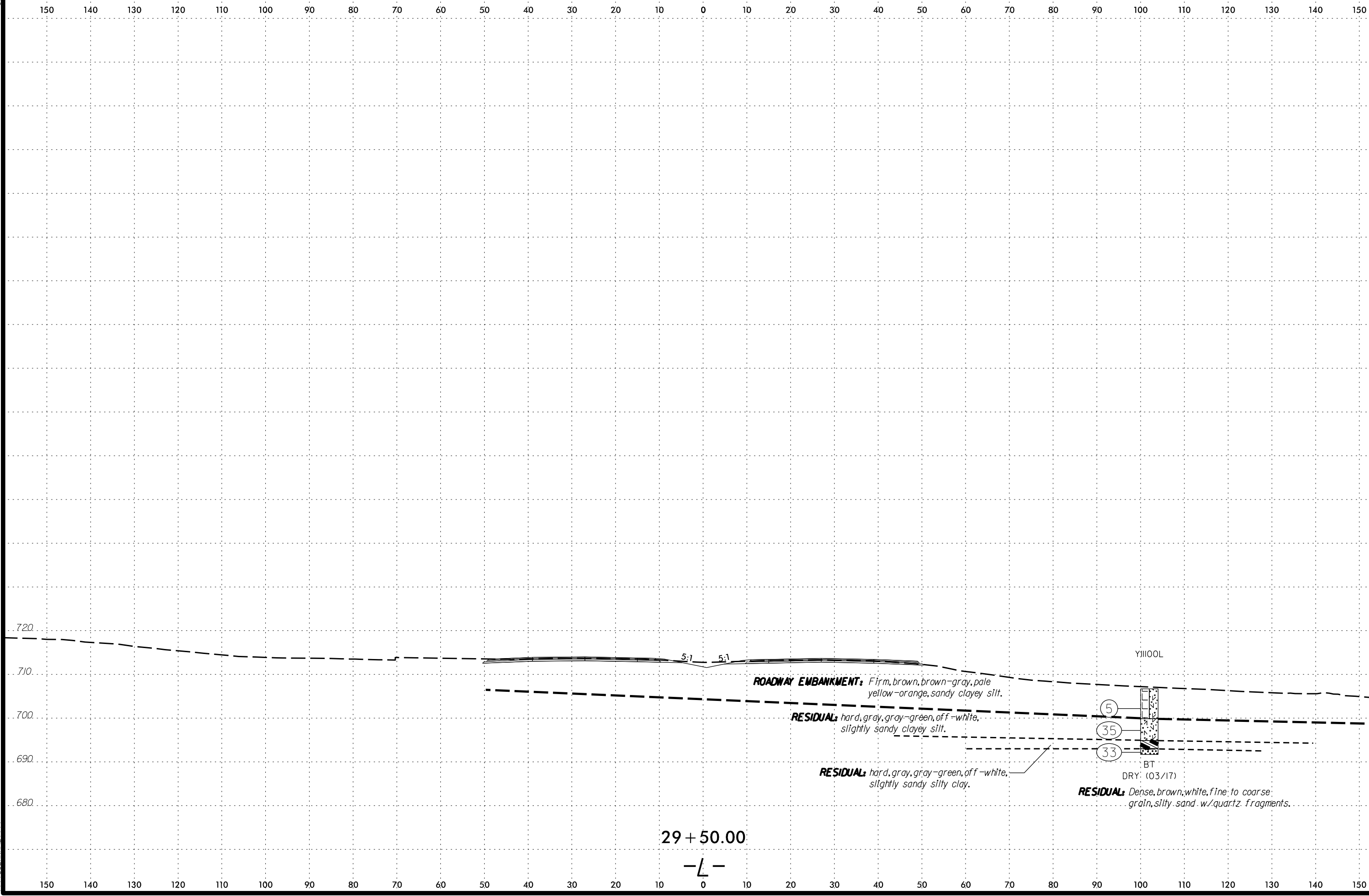
RESIDUAL: Medium stiff to stiff, red-orange-brown, micaceous, saprolitic, slightly sandy, silty clay.

RESIDUAL: Stiff, gray, brown, off-white, slightly sandy, silty clay.

RESIDUAL: Stiff to hard, gray, green, brown, orange, saprolitic, sandy, clayey silt w/mica.

SECTION CUTS TO BE MADE AT THESE STATIONS

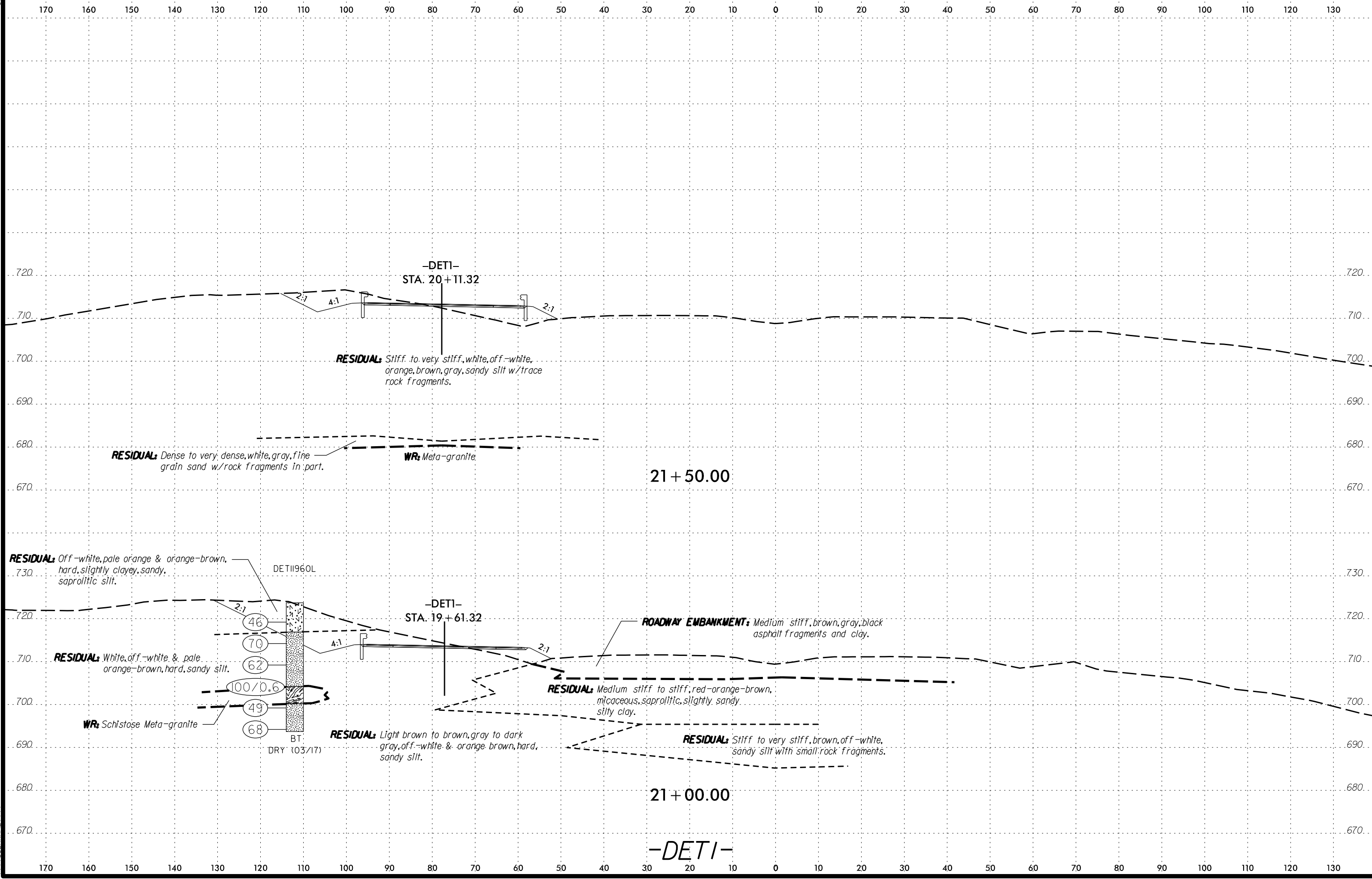
6/23/16



29 + 50.00

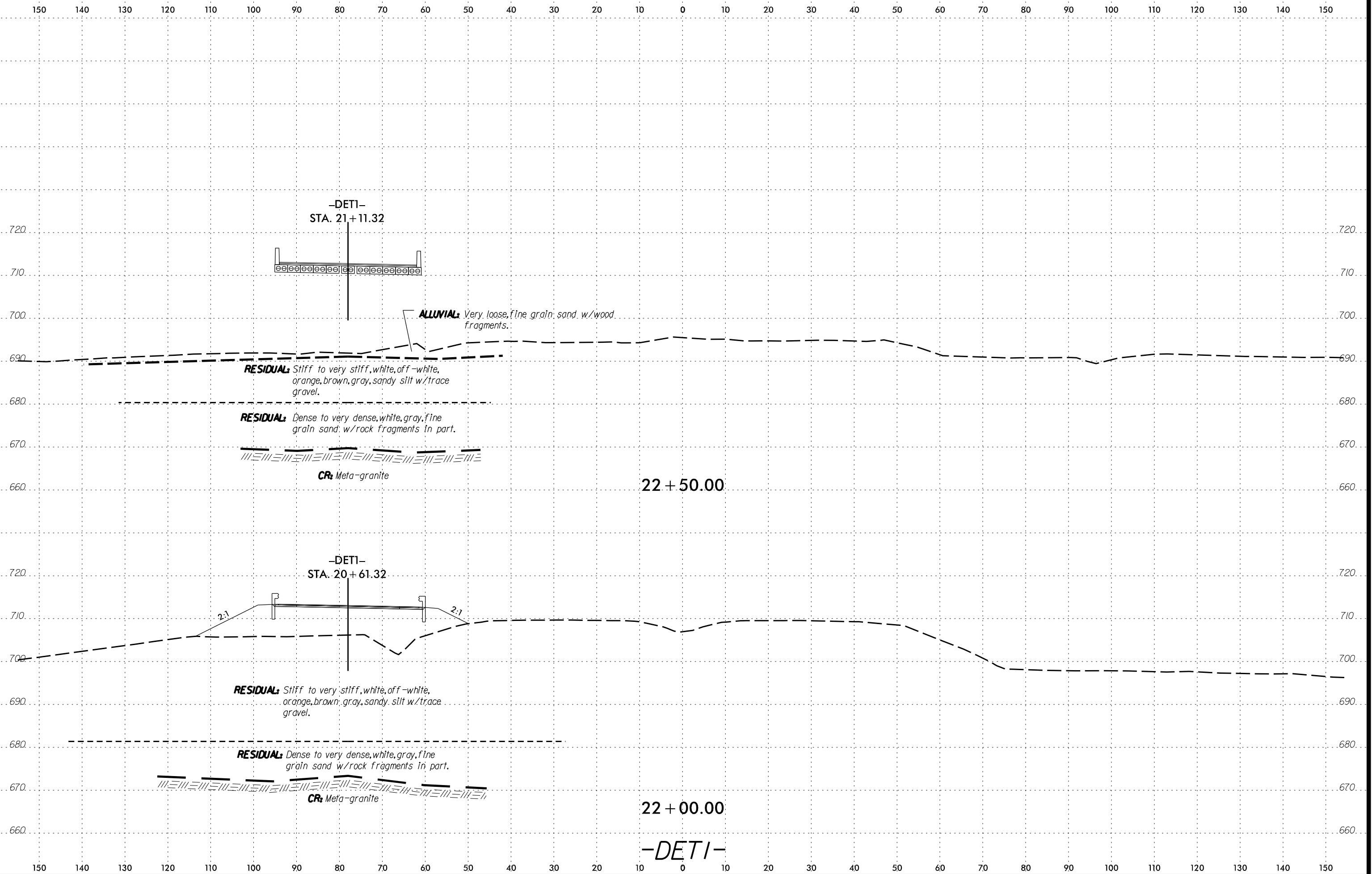
-L-

DATE: 6/23/16
DRAWN BY: [illegible]
CHECKED BY: [illegible]
SCALE: AS SHOWN
SHEET NO.: 16

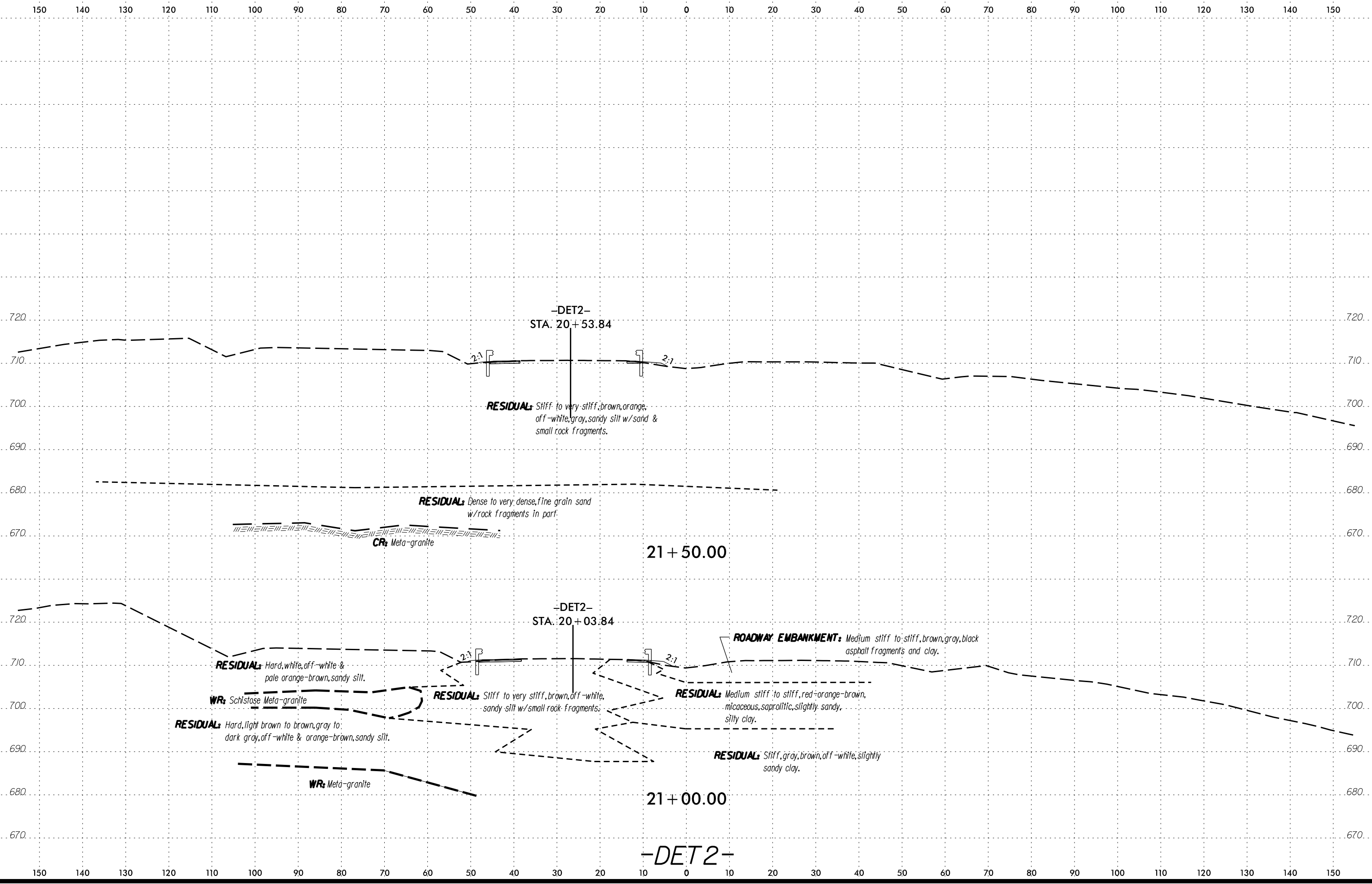


SCHEMATIC CROSS SECTION

6/23/16
SECTION
CON
D
O
P
R
E
P
A
R
E
D
B
Y
S
E
R
V
I
C
E
S
C
O
R
P
O
R
A
T
I
O
N



6/23/16



-DET2-
STA. 20+53.84

RESIDUAL: Stiff to very stiff, brown, orange, off-white, gray, sandy silt w/ sand & small rock fragments.

RESIDUAL: Dense to very dense, fine grain sand w/ rock fragments in part.

CR: Meta-granite

21+50.00

-DET2-
STA. 20+03.84

ROADWAY EMBANKMENT: Medium stiff to stiff, brown, gray, black asphalt fragments and clay.

RESIDUAL: Hard, white, off-white & pale orange-brown, sandy silt.

WR: Schistose Meta-granite

RESIDUAL: Stiff to very stiff, brown, off-white, sandy silt w/ small rock fragments.

RESIDUAL: Medium stiff to stiff, red-orange-brown, micaceous, saprolitic, slightly sandy, silty clay.

RESIDUAL: Hard, light brown to brown, gray to dark gray, off-white & orange-brown, sandy silt.

WR: Meta-granite

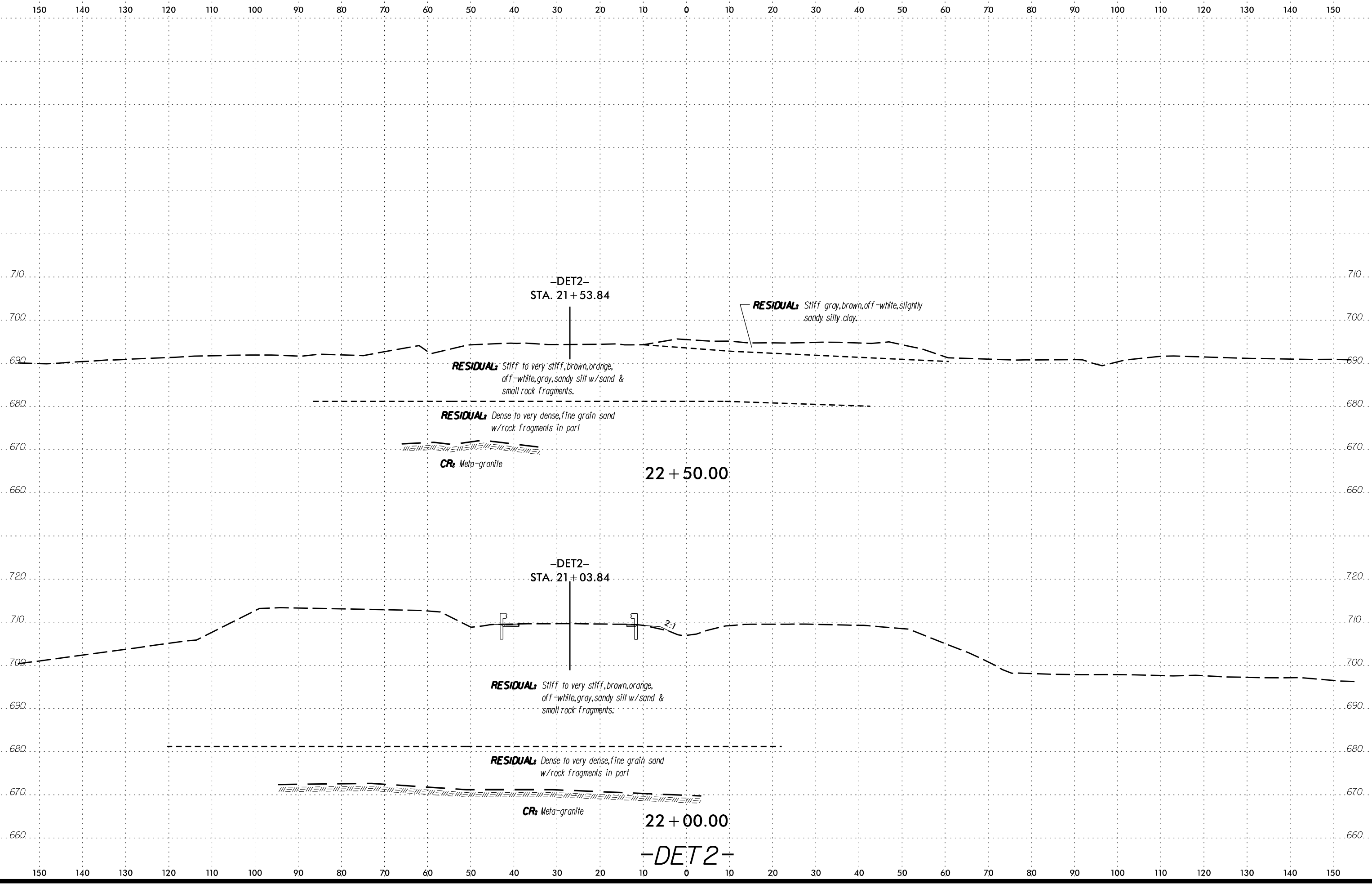
RESIDUAL: Stiff, gray, brown, off-white, slightly sandy clay.

21+00.00

-DET2-

SECTION
CON
DATE
BY

6/23/16
SECTION
CON
DATE
BY



SOIL TEST RESULTS

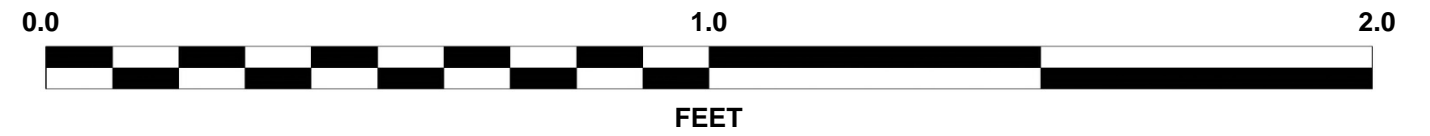
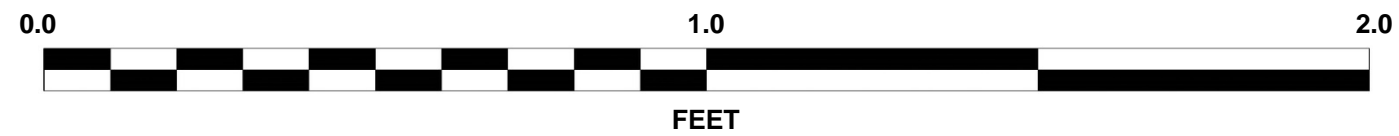
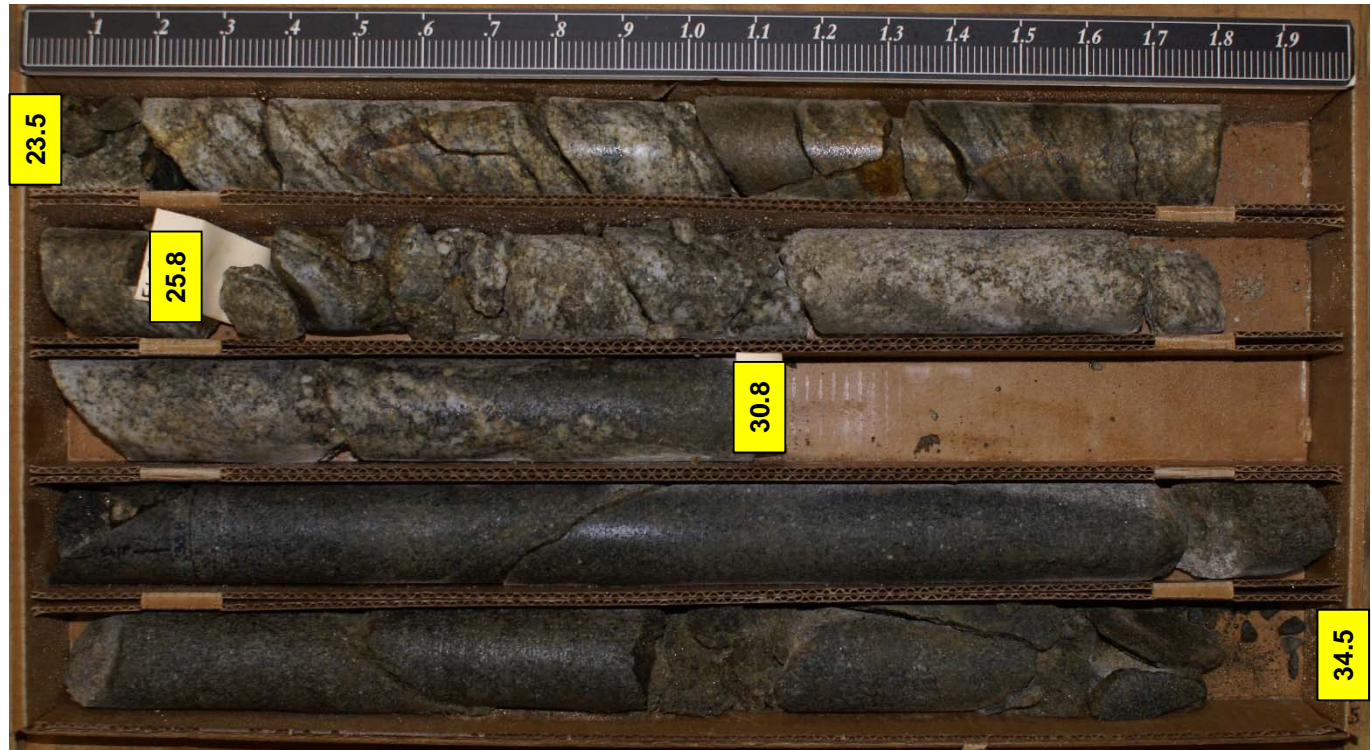
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-1	12' RT	16+50	0.4-5.0	A-4(2)	39	10	29.2	29.0	28.9	13.0	94.8	77.5	44.5	19	-
S-2	CL	21+50	0.9-5.0	A-7-6(16)	56	26	15.2	19.7	22.4	42.7	93.1	85.7	64.1	27	-
S-3	20' LT	33+00	0.7-5.0	A-2-4(0)	26	3	36.8	34.8	20.6	7.8	84.4	65.1	28.7	20	-
S-4	75' RT	22+00	0.0-5.0	A-7-5(36)	83	41	8.3	18.3	23.2	50.2	98.4	94.6	75.7	40	-
SS-5	8' RT	26+50	3.5-5.0	A-7-6(12)	43	20	7.5	30.7	22.9	38.9	99.9	96.6	67.1	32	-

CORE PHOTOGRAPHIC RECORD

Replace Bridge 237/242 on US 29-70 & I-85 Business over Deep River

DET11510L
STA. 15+33 @ 57.0' LT.
Box 1 of 2: 11.0 FEET

DET11510L
STA. 15+33 @ 57.0' LT.
Box 2 of 2: 1.3 FEET

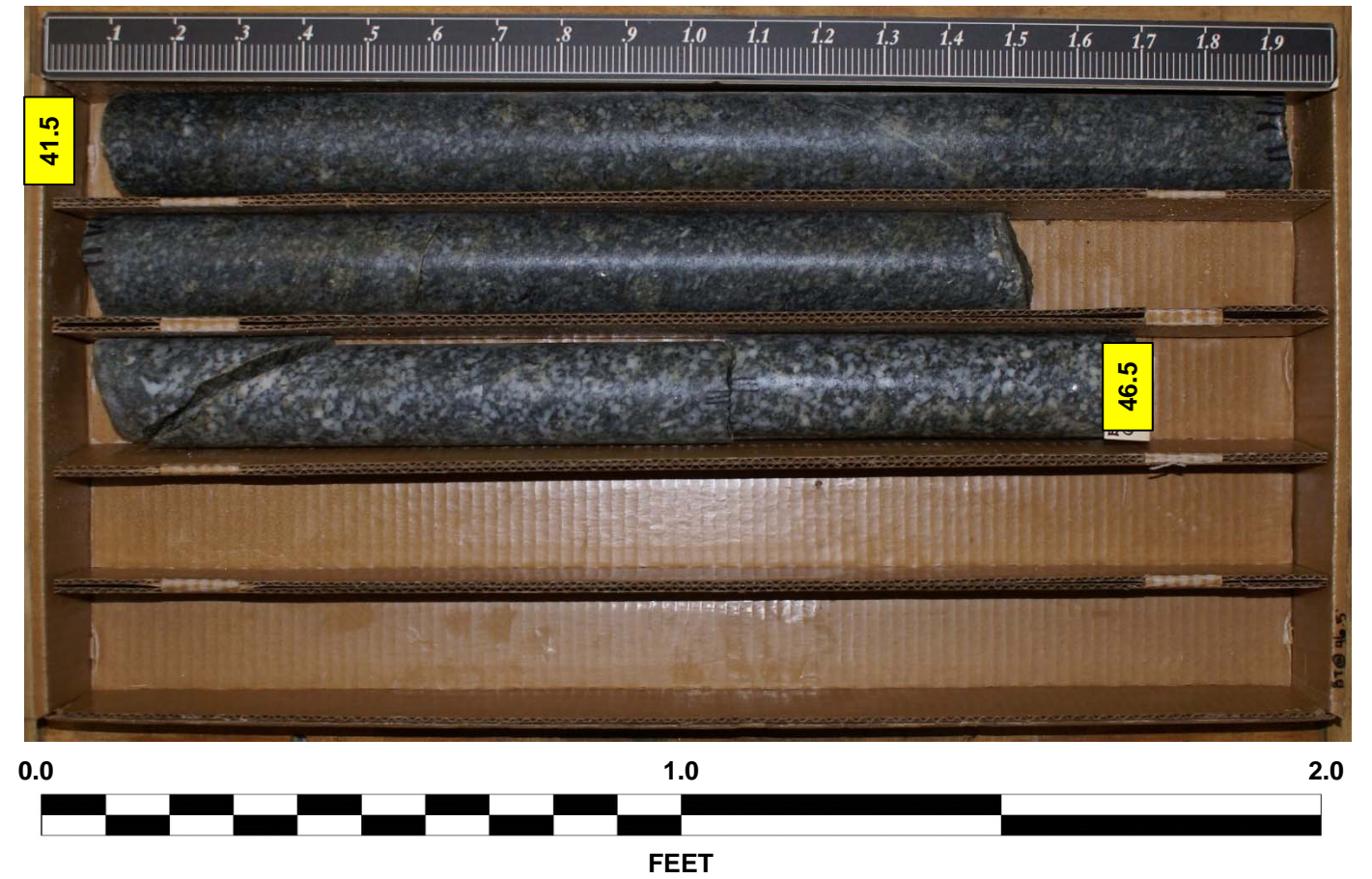
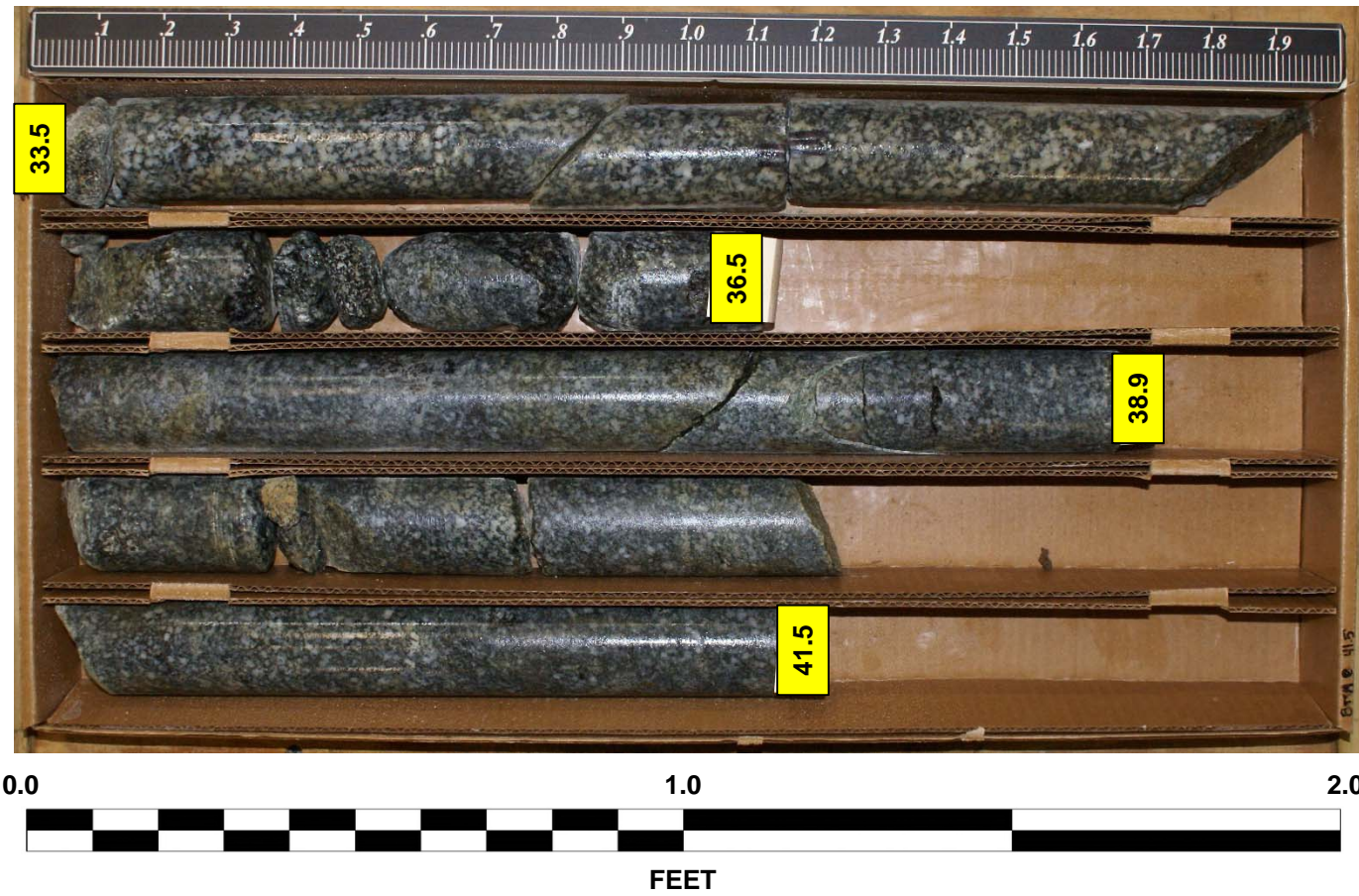


CORE PHOTOGRAPHIC RECORD

Replace Bridge 237/242 on US 29-70 & I-85 Business over Deep River

DET12287
STA. 22+87 @ 23.0' LT.
Box 1 of 2: 8.0 FEET

DET12287
STA. 22+87 @ 23.0' LT.
Box 2 of 2: 5.0 FEET



CORE PHOTOGRAPHIC RECORD

Replace Bridge 237/242 on US 29-70 & I-85 Business over Deep River

L1750R ALT
STA. 17+50 @ 93.0' RT.
Box 1 of 1: 5.0 FEET

