

CONTRACT: 34518.1.1 ID: R-2915D

NOTE: SEE SHEET 1A FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

**CONTENTS**

LINE  
 -L- STA. 453+03 (-TIE STA 14+00)  
 TO STA. 679+90

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

**ROADWAY**  
**SUBSURFACE INVESTIGATION**

PROJ. REFERENCE NO. 34518.1.1 F.A. PROJ. HPPSTP-0221(13)  
 COUNTY ASHE  
 PROJECT DESCRIPTION US 221 FROM SOUTH OF NC 194  
TO US 221 BYPASS

**INVENTORY**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2915D 34518.1.1	1	59
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34518.1	HPPSTP-0221(13)	P.E.	
		RW & UTIL.	

**CAUTION NOTICE**

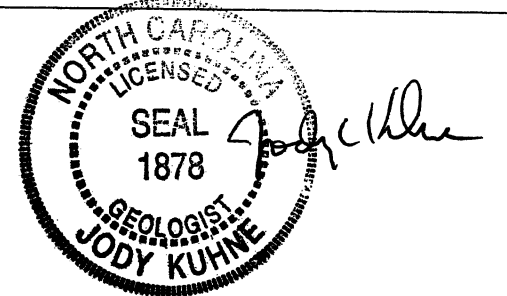
THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE 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 THIS 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.

PERSONNEL  
 URS, COUNSULTANTS  
 J HVOZDIK

INVESTIGATED BY JC KUHNE  
 CHECKED BY \_\_\_\_\_  
 SUBMITTED BY JC KUHNE  
 DATE 1/20/2013



DRAWN BY: JT WILLIAMS JC KUHNE

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - 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.

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2915D	1A	59
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34518.1.1	HPPSTP-0221(13)	P.E.	

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

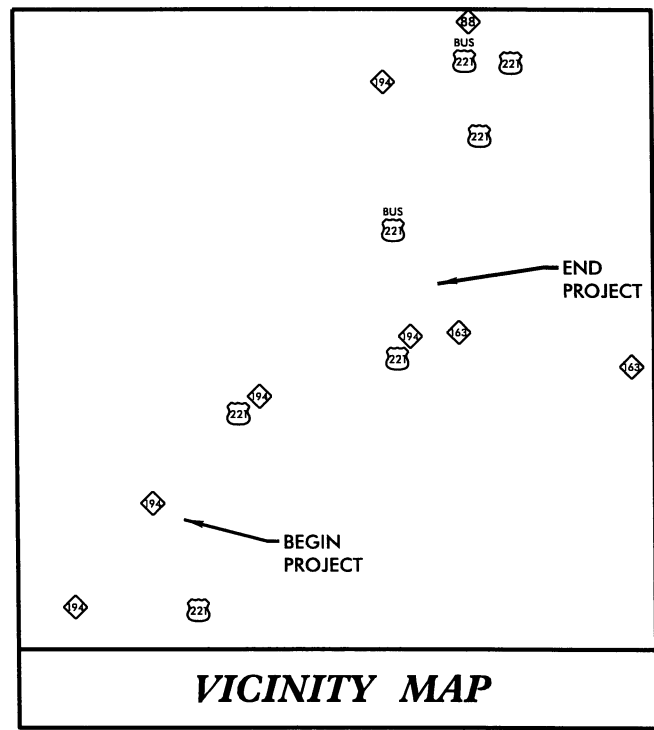
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**ASHE COUNTY**

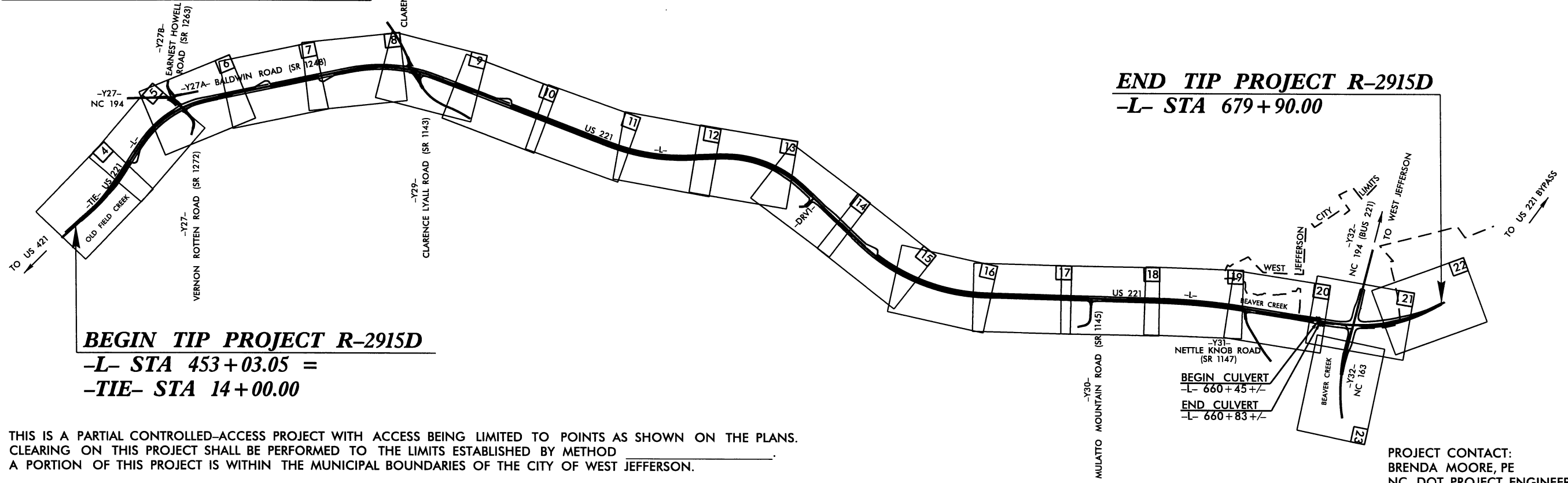
LOCATION: US 221 FROM SOUTH OF NC 194 TO US 221 BYPASS

TYPE OF WORK: GRADING, PAVING, DRAINAGE, CURB AND GUTTER,  
SIGNALS, AND CULVERT

**TIP PROJECT: R-2915D**



VICINITY MAP



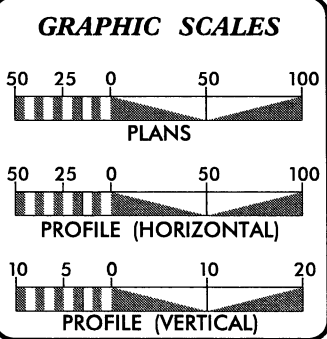
**END TIP PROJECT R-2915D**  
**-L- STA 679+90.00**

**BEGIN TIP PROJECT R-2915D**  
**-L- STA 453+03.05 =**  
**-TIE- STA 14+00.00**

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO POINTS AS SHOWN ON THE PLANS. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD \_\_\_\_\_ A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF WEST JEFFERSON.

PROJECT CONTACT:  
BRENDA MOORE, PE  
NC DOT PROJECT ENGINEER

**CONTRACT:**



**DESIGN DATA**

ADT 2015 =	14715
ADT 2035 =	25000
DHV =	9 %
D =	55 %
T =	9 % *
V =	60 MPH
* TTST =	2 DUAL 7
FUNC CLASS =	Major Collector
	Statewide Tier

**PROJECT LENGTH**

LENGTH OF ROADWAY PROJECT R-2915D	=	4.290 MI
LENGTH OF STRUCTURE PROJECT R-2915D	=	0.007 MI
TOTAL LENGTH OF PROJECT R-2915D	=	4.297 MI

Prepared in the Office of:

Engineers • Planners • Scientists • Construction Managers  
4601 Six Forks Road, Landmark Center II, Suite 220  
Raleigh, NC 27609-5210  
Phone (919) 783-9214 • Fax (919) 783-9266

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
September 16, 2013

LETTING DATE:  
September 16, 2015

**BARRY C. SMITH, P.E.**  
PROJECT ENGINEER

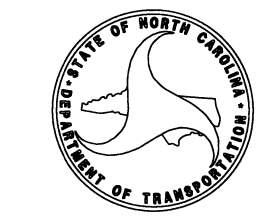
**CHARLES L. FLOWE, P.E.**  
PROJECT MANAGER

**HYDRAULICS ENGINEER**

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

**ROADWAY DESIGN ENGINEER**

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



21-JAN-2013 11:43 C:\Proje\ct\2915D\CADD\Plan\2915D.GEO.tsh.dgn





STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

PATRICK L. MCCRORY  
GOVERNOR

ANTHONY J. TATA  
SECRETARY

January 20, 2013

STATE PROJECT: 34518.1.1 (R-2915D)  
COUNTY: Ashe  
DESCRIPTION: US 221 from South of NC 194 to US 221 Bypass  
SUBJECT: Geotechnical Report – Inventory

**PROJECT DESCRIPTION**

The project is located in central Ashe County south of West Jefferson. The “D” project section begins just south of the NC 194 intersection, continues 4.3 miles northeast and consists of widening two-lane to four-lane with no vertical alignment changes and minor horizontal alignment changes along existing. It is anticipated that existing culverts and pipes will be extended, in particular the 3-barrel culvert at Station 660+45. No other structures are proposed. The terrain is mountainous but does not include unusually large cuts and fills. The following alignment was investigated:

–L- Station 453+03 (-Tie Sta. 14+00) to 679+90

The total length of lines investigated is 4.3 miles. The field investigation was conducted in December 2012. All borings were conducted with a CME-550 drill machine with an automatic hammer. Standard Penetration Tests were performed utilizing Hollow Stem Augers with carbide insert teeth in the head stem.

**AREAS OF SPECIAL GEOTECHNICAL INTEREST**

**Crystalline Rock:** Weathered to crystalline rock should be expected within 10’ of grade in the following Station intervals:

456+00 – 460+00

**MAILING ADDRESS:**  
NC DEPARTMENT OF TRANSPORTATION  
GEOTECHNICAL ENGINEERING UNIT  
1589 MAIL SERVICE CENTER  
RALEIGH NC 27699-1589

TELEPHONE: 919-707-6850  
FAX: 919-250-4237  
**WEBSITE:**  
[www.ncdot.gov/doh/preconstruct/highway/geotech](http://www.ncdot.gov/doh/preconstruct/highway/geotech)

**LOCATION:**  
CENTURY CENTER COMPLEX  
ENTRANCE B-2  
1020 BIRCH RIDGE DRIVE  
RALEIGH NC

558+50 – 559+50  
601+00 – 604+50  
630+50 – 632+00

**SOIL PROPERTIES**

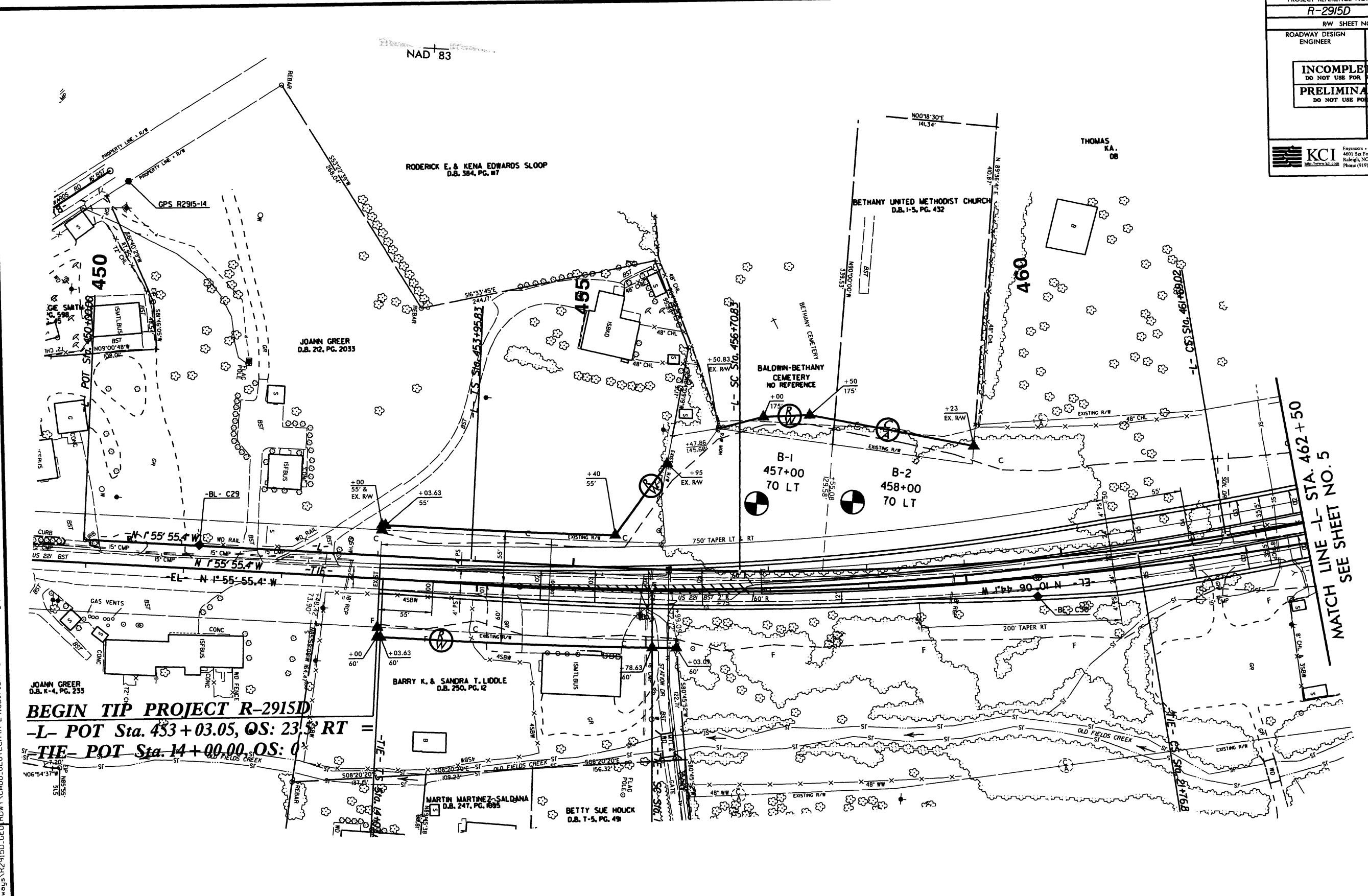
Soils on the project are derived from Amphibolite gneissic rocks (Zata) encountered within the project corridor. There is a low quartz component so sandy soils are not typical. The dominant residual and saprolitic soil types encountered are micaceous silts, clayey silts and clayey/silty sands (AASHTO A-4, A-6, A-2-4&5). Weathered and crystalline rock may require blasting and is unlikely to produce durable stone for use on the project.

Respectfully submitted,

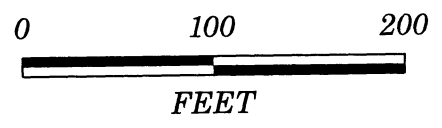
Jody C. Kuhne, PG, PE  
Project Geological Engineer

PROJECT REFERENCE NO. R-2915D	SHEET NO. 4 of 59
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR A/W ACQUISITION</small> <b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	
<small>Engineers • Planners • Scientists • Construction Managers          4601 Six Forks Road, Landmark Center II, Suite 220          Raleigh, NC 27609-5310          Phone (919) 783-9214 • Fax (919) 783-9266</small>	


8/17/99  
 REVISIONS  
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**BEGIN TIP PROJECT R-2915D**  
**-L- POT Sta. 453 + 03.05, OS: 23.5 RT =**  
**TIE- POT Sta. 14 + 00.00, OS: 0**



MATCH LINE -L- STA. 462 + 50  
 SEE SHEET NO. 5

PROJECT REFERENCE NO. <b>R-2915D</b>		SHEET NO. <b>50 of 59</b>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			
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-L-  
 Pis Sta 462+60.70  
 Os = 2' 37" 33.8"  
 Ls = 275.00'  
 LT = 183.35'  
 ST = 91.69'

THOMAS M. H.  
 KATHY H. I.  
 DB 313 PG 13...

ARCHIE LINCOLN PIERCE AND WIFE,  
 RANCY CAROLYN PIERCE, TRUSTEES  
 DB 402 PG 1408

AGNES BALDWIN LIVING TRUST  
 DB 390 PG 1553

Pis Sta 473+00  
 Os = 264.44'  
 Ls = 141.44'  
 R = 300.0'

B-3  
 467+00  
 100 LT

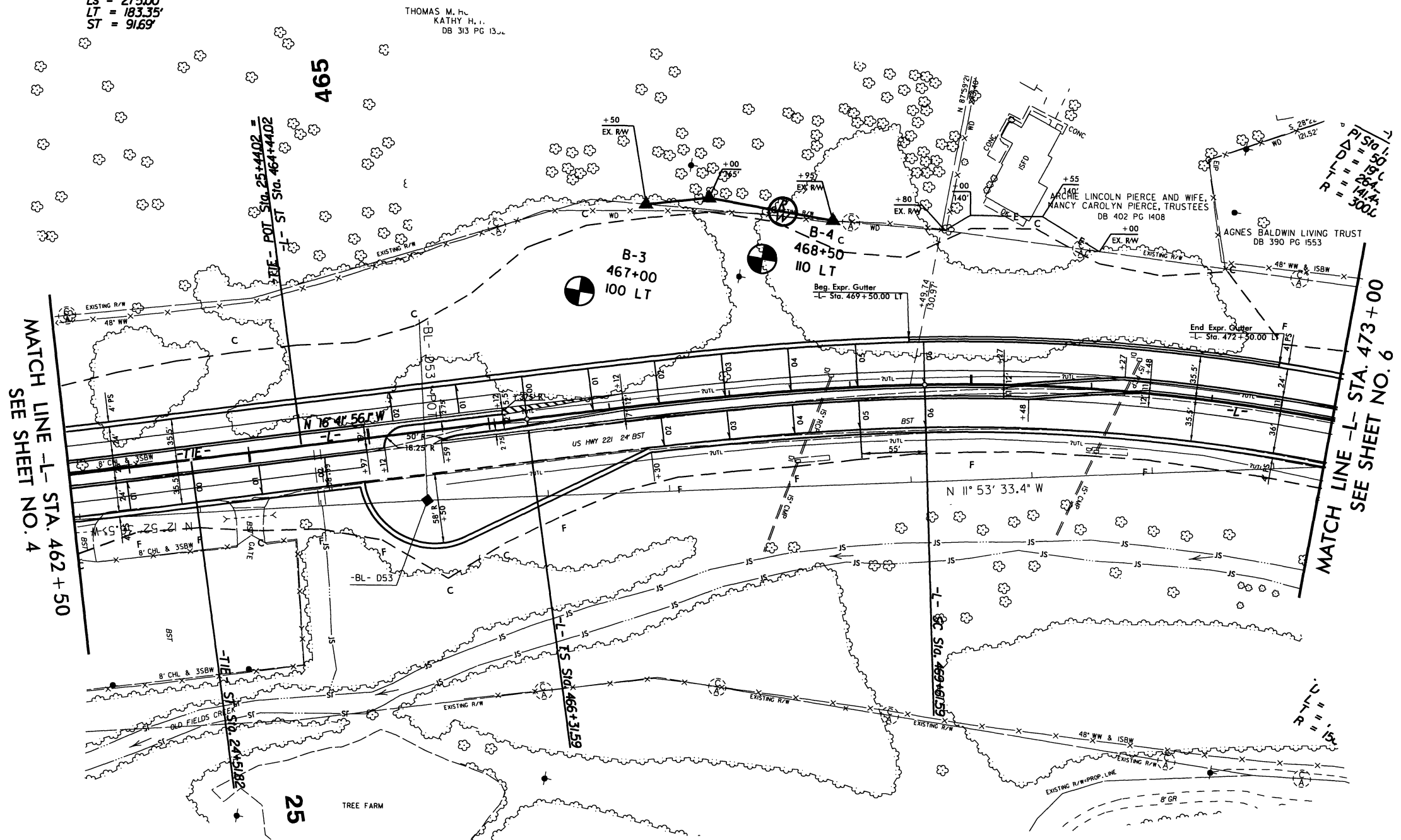
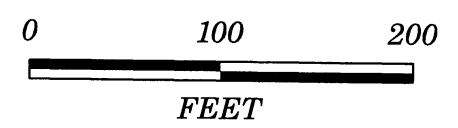
B-4 C  
 468+50  
 110 LT

Begin. Expr. Gutter  
 -L- Sta. 469+50.00 LT

End Expr. Gutter  
 -L- Sta. 472+50.00 LT

MATCH LINE -L- STA. 462+50  
 SEE SHEET NO. 4


MATCH LINE -L- STA. 473+00  
 SEE SHEET NO. 6

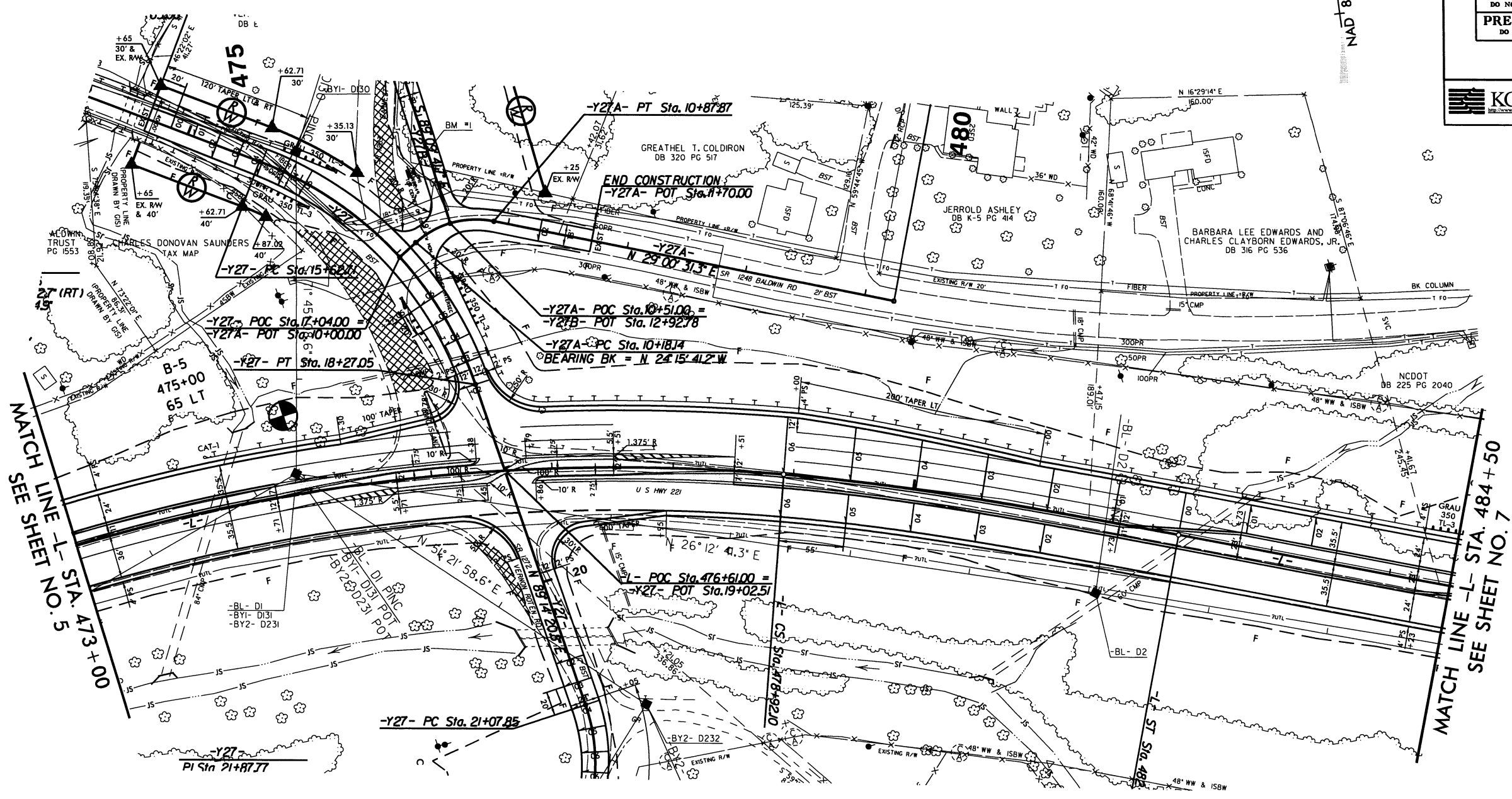


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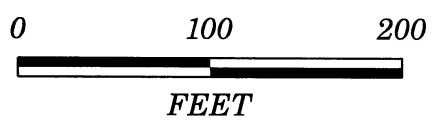
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<b>INCOMPLETE PLANS</b> DO NOT USE FOR P/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			
 <b>KCI</b> <small>Engineers • Planners • Scientists • Construction Managers</small> <small>4601 Six Forks Road, Landmark Center II, Suite 220          Raleigh, NC 27609-5210          Phone (919) 783-9214 • Fax (919) 783-9266</small>			




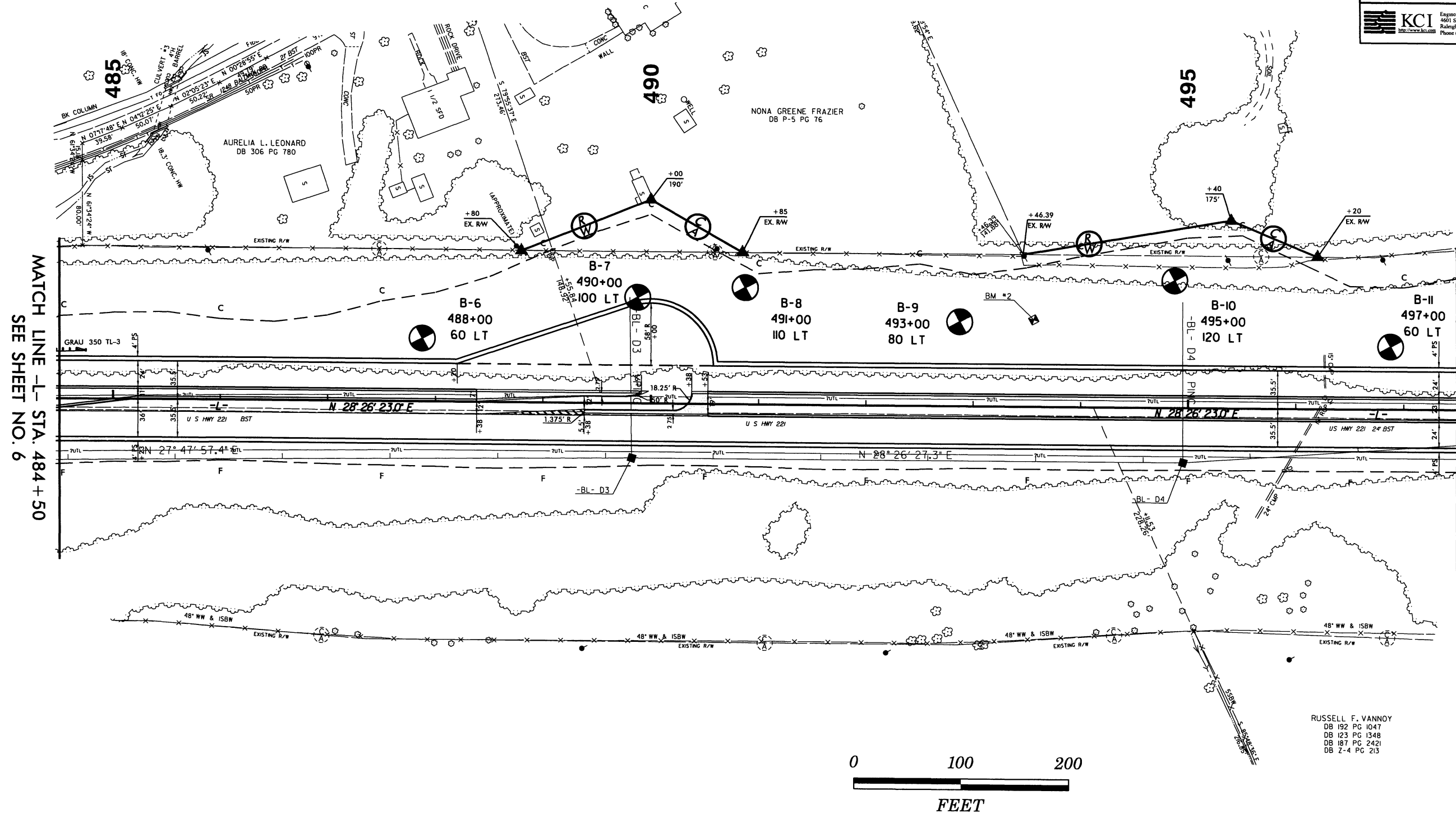
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SEE SHEET NO. 5

MATCH LINE -L- STA. 484+50  
SEE SHEET NO. 7



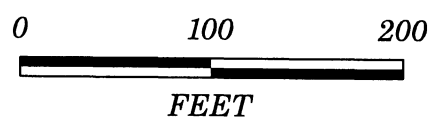
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PROJECT REFERENCE NO. <b>R-2915D</b>	SHEET NO. <b>7 of 57</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
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MATCH LINE -L- STA. 484 + 50  
SEE SHEET NO. 6

MATCH LINE -L- STA. 497 + 50  
SEE SHEET NO. 8




RUSSELL F. VANNOY  
 DB 192 PG 1047  
 DB 123 PG 1348  
 DB 187 PG 2421  
 DB 2-4 PG 213

REVISIONS

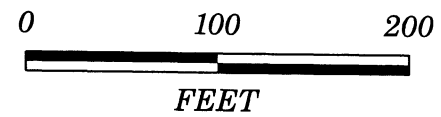
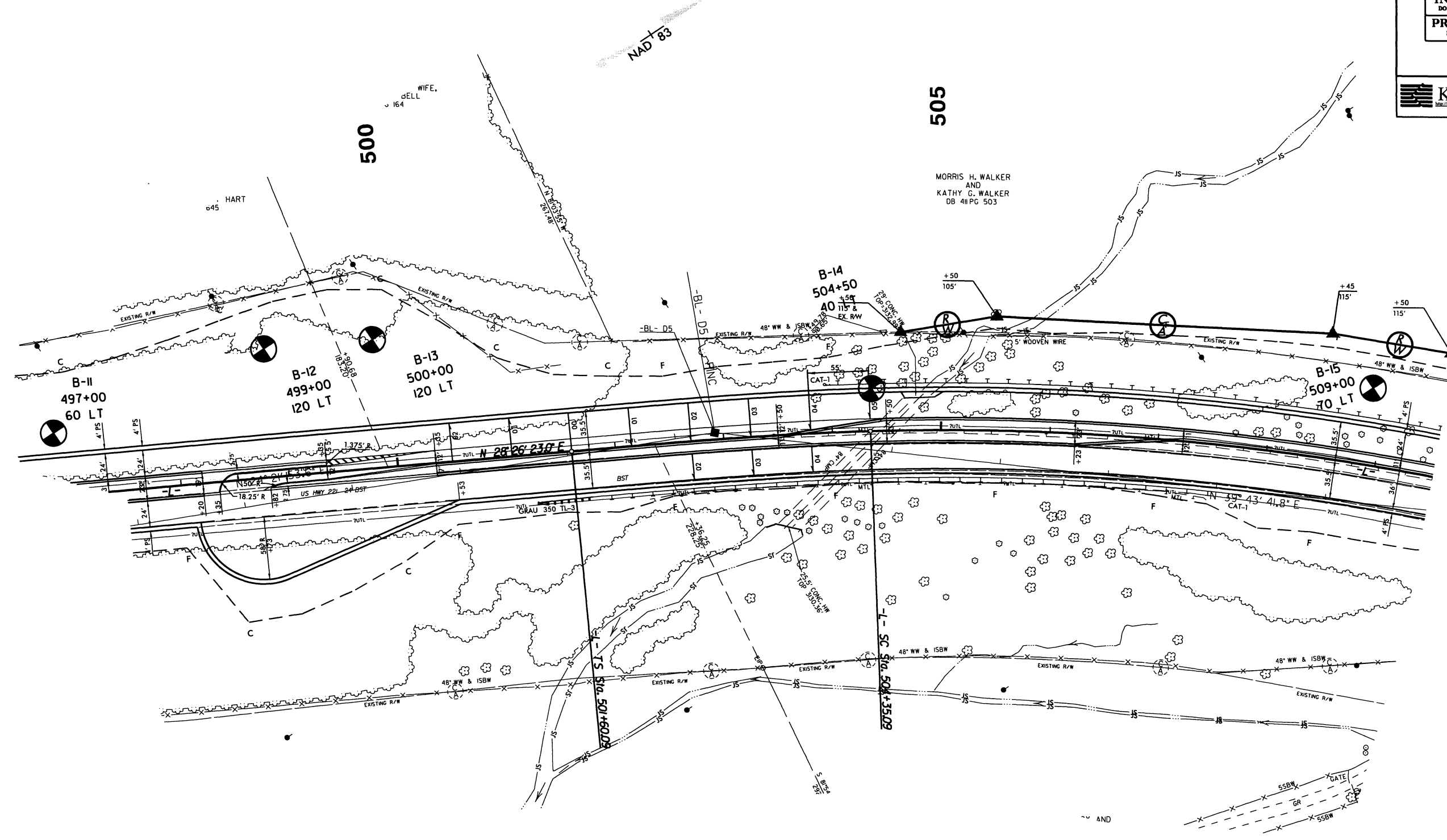
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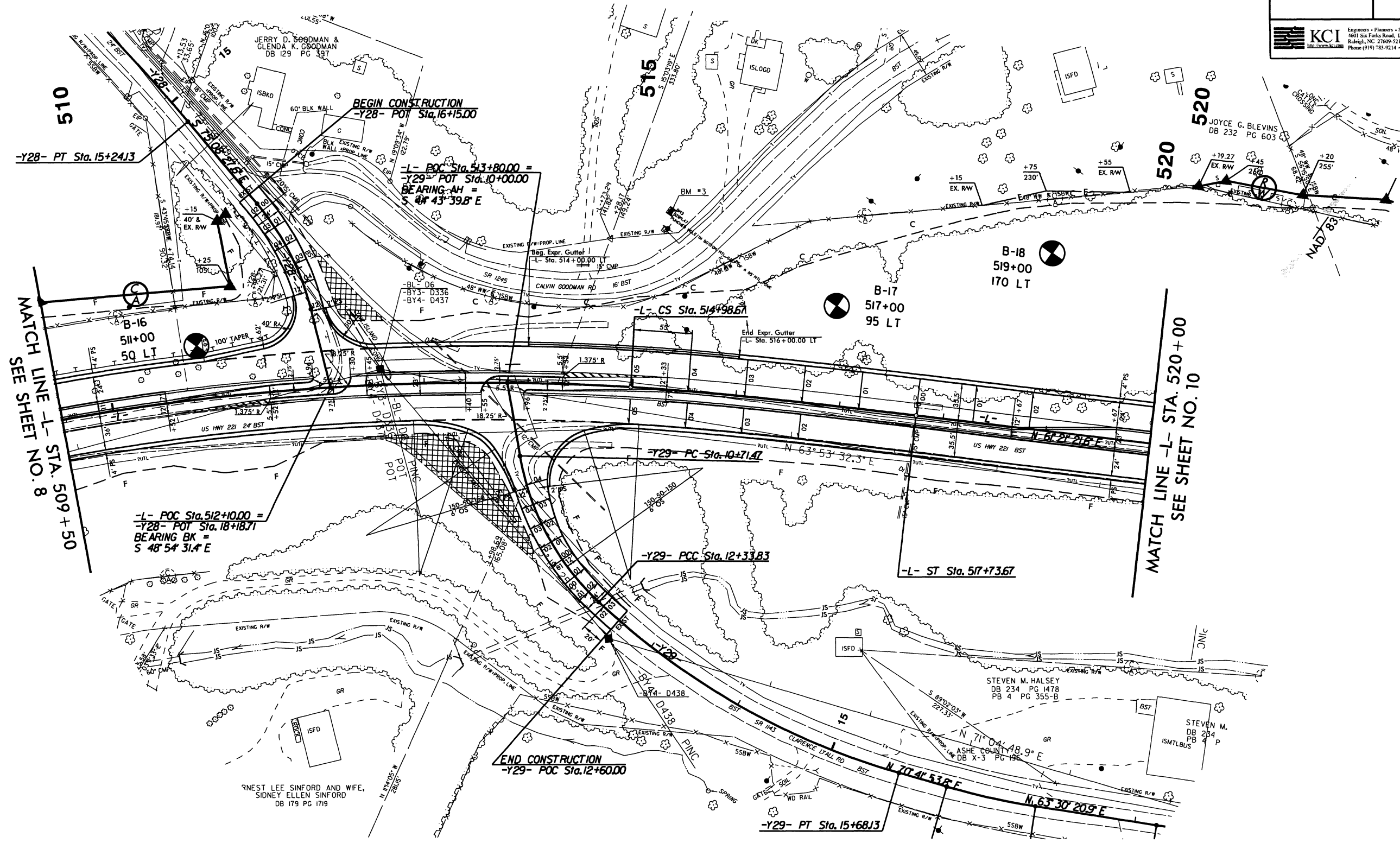


PROJECT REFERENCE NO. <b>R-2915D</b>	SHEET NO. <b>9 OF 59</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
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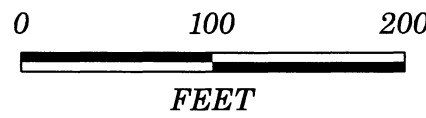


PROJECT REFERENCE NO. <b>R-2915D</b>	SHEET NO. <b>9 OF 52</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
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MATCH LINE -L- STA. 509+50  
 SEE SHEET NO. 8


MATCH LINE -L- STA. 520+00  
 SEE SHEET NO. 10

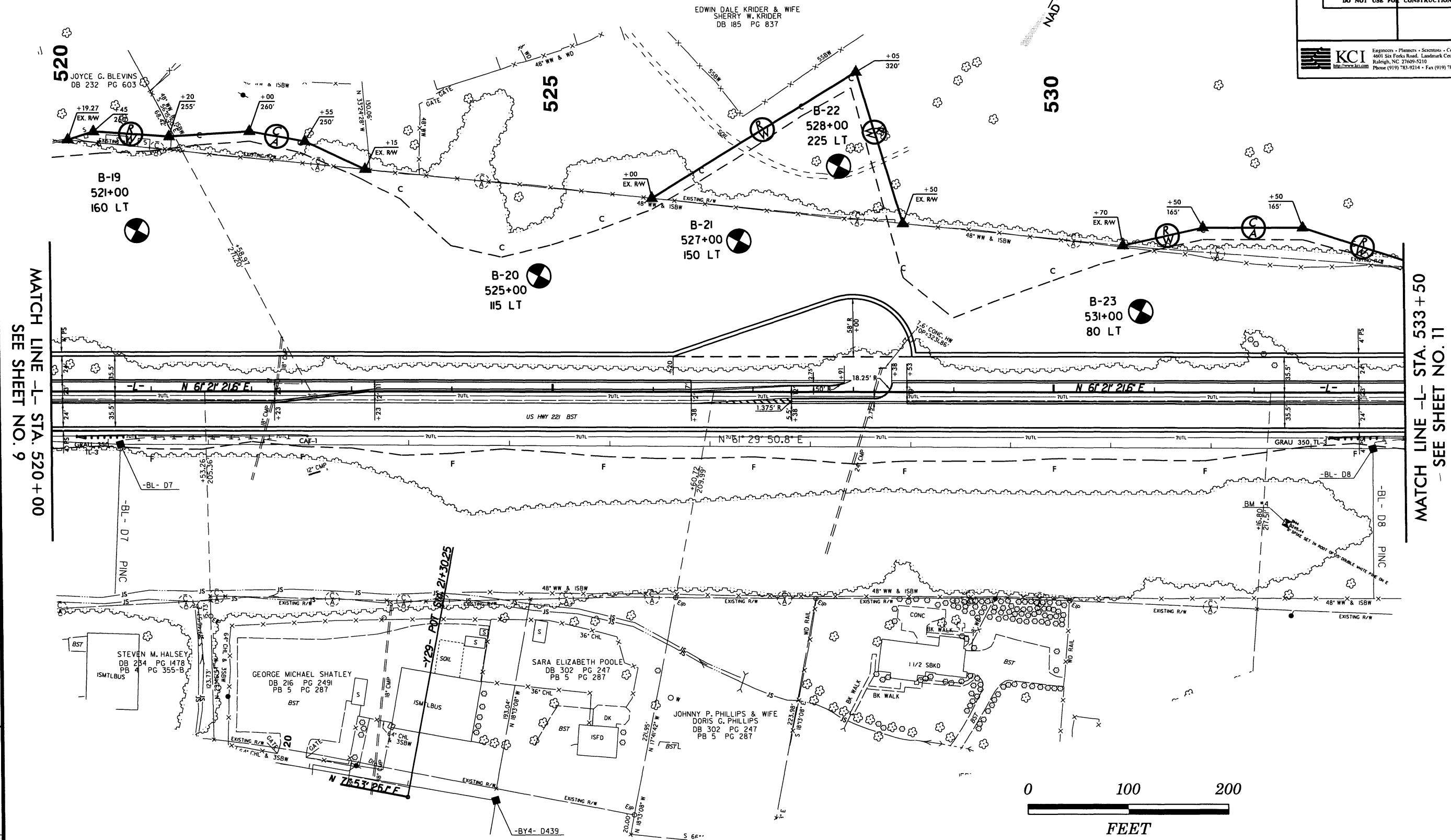


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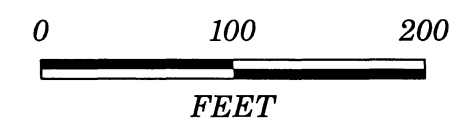
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PROJECT REFERENCE NO. <b>R-2915D</b>		SHEET NO. <b>10 of 59</b>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
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MATCH LINE -L- STA. 520+00  
SEE SHEET NO. 9

MATCH LINE -L- STA. 533+50  
SEE SHEET NO. 11




REVISIONS

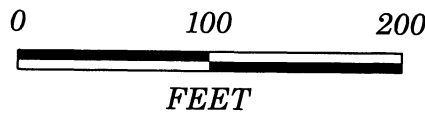
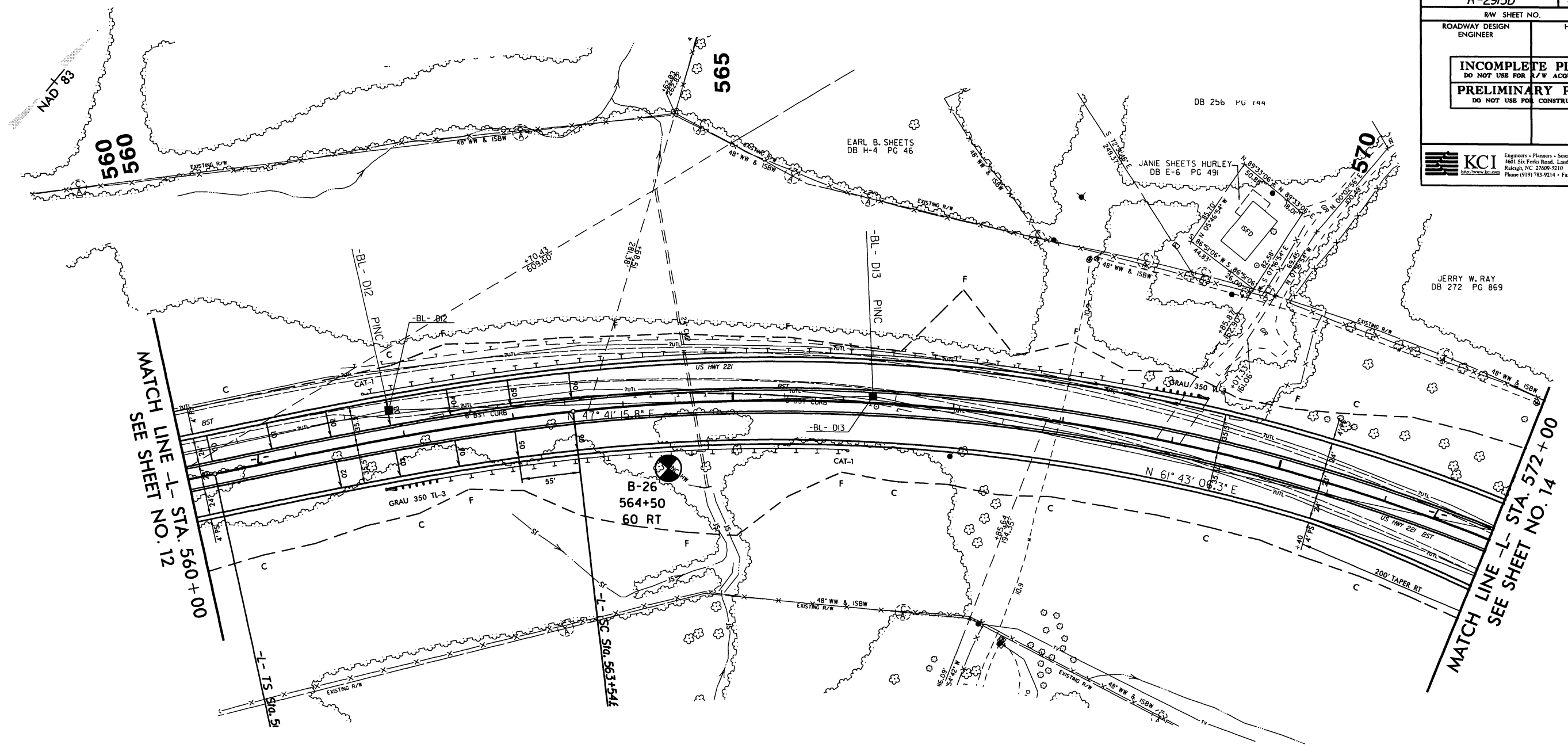


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PROJECT REFERENCE NO. <b>R-2915D</b>	SHEET NO. <b>12 of 59</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
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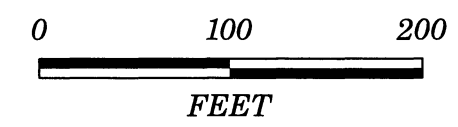
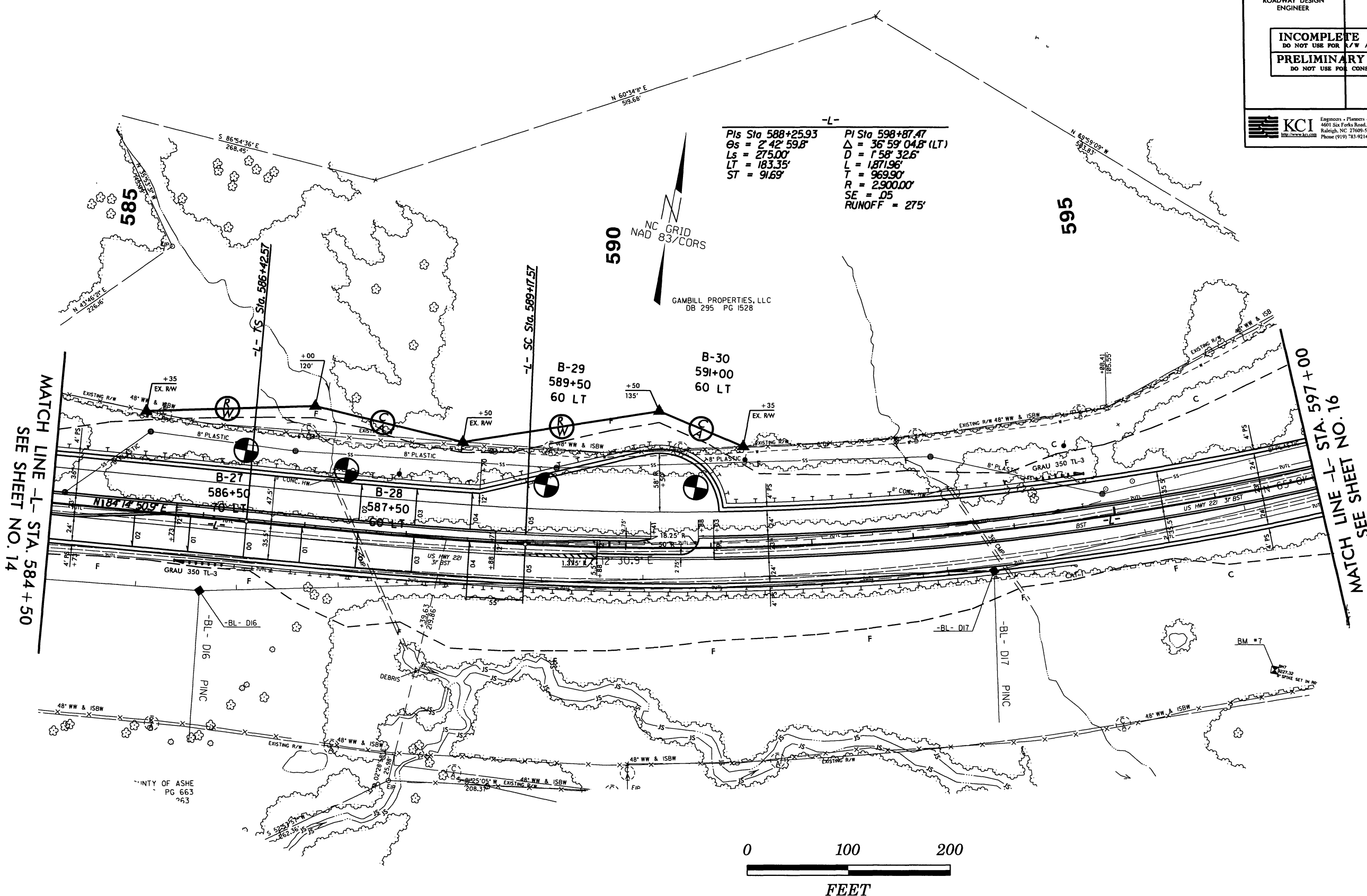


MATCH LINE -L- STA. 560+00  
SEE SHEET NO. 12

MATCH LINE -L- STA. 572+00  
SEE SHEET NO. 14

8/17/99  
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PROJECT REFERENCE NO. <b>R-2915D</b>	SHEET NO. <b>13 of 59</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
 <b>KCI</b> <small>Engineers • Planners • Scientists • Construction Managers</small> <small>4601 Six Forks Road, Landmark Center II, Suite 220</small> <small>Raleigh, NC 27609-5210</small> <small>Phone (919) 783-9214 • Fax (919) 783-9266</small>	

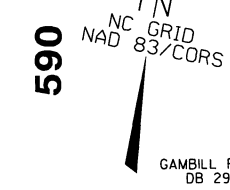


MATCH LINE -L- STA. 584 + 50  
 SEE SHEET NO. 14

MATCH LINE -L- STA. 597 + 00  
 SEE SHEET NO. 16

-L-

<i>PI</i> Sta 588+25.93 $\Theta_s = 2^\circ 42' 59.8"$ $L_s = 275.00'$ $LT = 183.35'$ $ST = 91.69'$	$\Delta = 36^\circ 59' 04.8" (LT)$ $D = 1^\circ 58' 32.6"$ $L = 1871.96'$ $T = 969.90'$ $R = 2900.00'$ $SE = 05$ $RUNOFF = 275'$
---	--

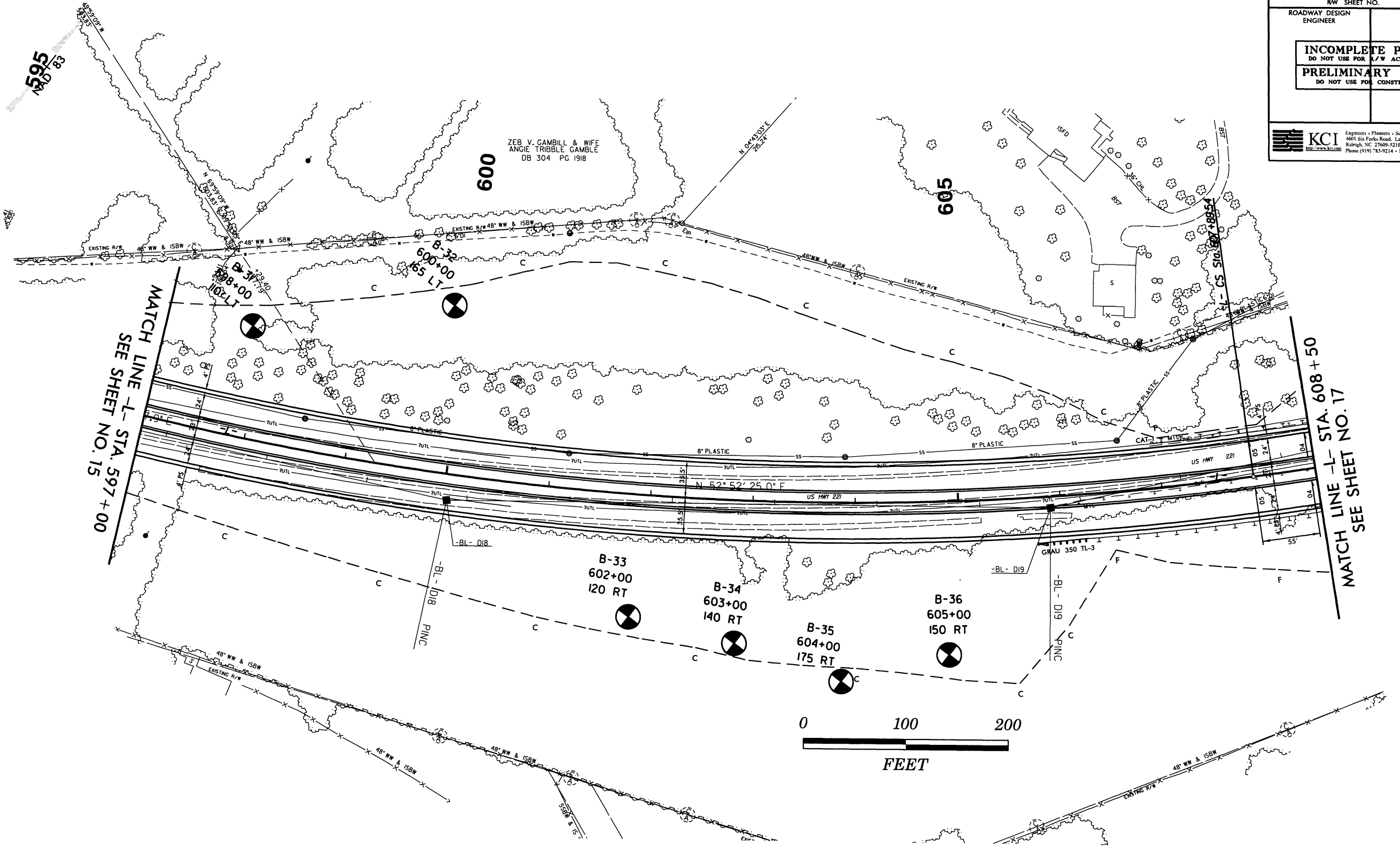


GAMBILL PROPERTIES, LLC  
 DB 295 PG 1528

COUNTY OF ASHE  
 PG 663  
 263

8/17/99

PROJECT REFERENCE NO.		SHEET NO.	
R-2915D		14 of 59	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
<b>INCOMPLETE PLANS</b>			
DO NOT USE FOR R/W ACQUISITION			
<b>PRELIMINARY PLANS</b>			
DO NOT USE FOR CONSTRUCTION			
<small>Engineers • Planners • Scientists • Construction Managers          4601 Six Forks Road, Landmark Center II, Suite 220          Raleigh, NC 27609-5210          Phone: (919) 783-9214 • Fax: (919) 783-9266</small>			



595  
N 0° 18' 00" E

ZEB V. GAMBILL & WIFE  
ANGIE TRIBBLE GAMBLE  
DB 304 PG 1918

600

605

MATCH LINE -L- STA. 597 + 00  
SEE SHEET NO. 15


MATCH LINE -L- STA. 608 + 50  
SEE SHEET NO. 17

REVISIONS

18-JAN-2013 11:51  
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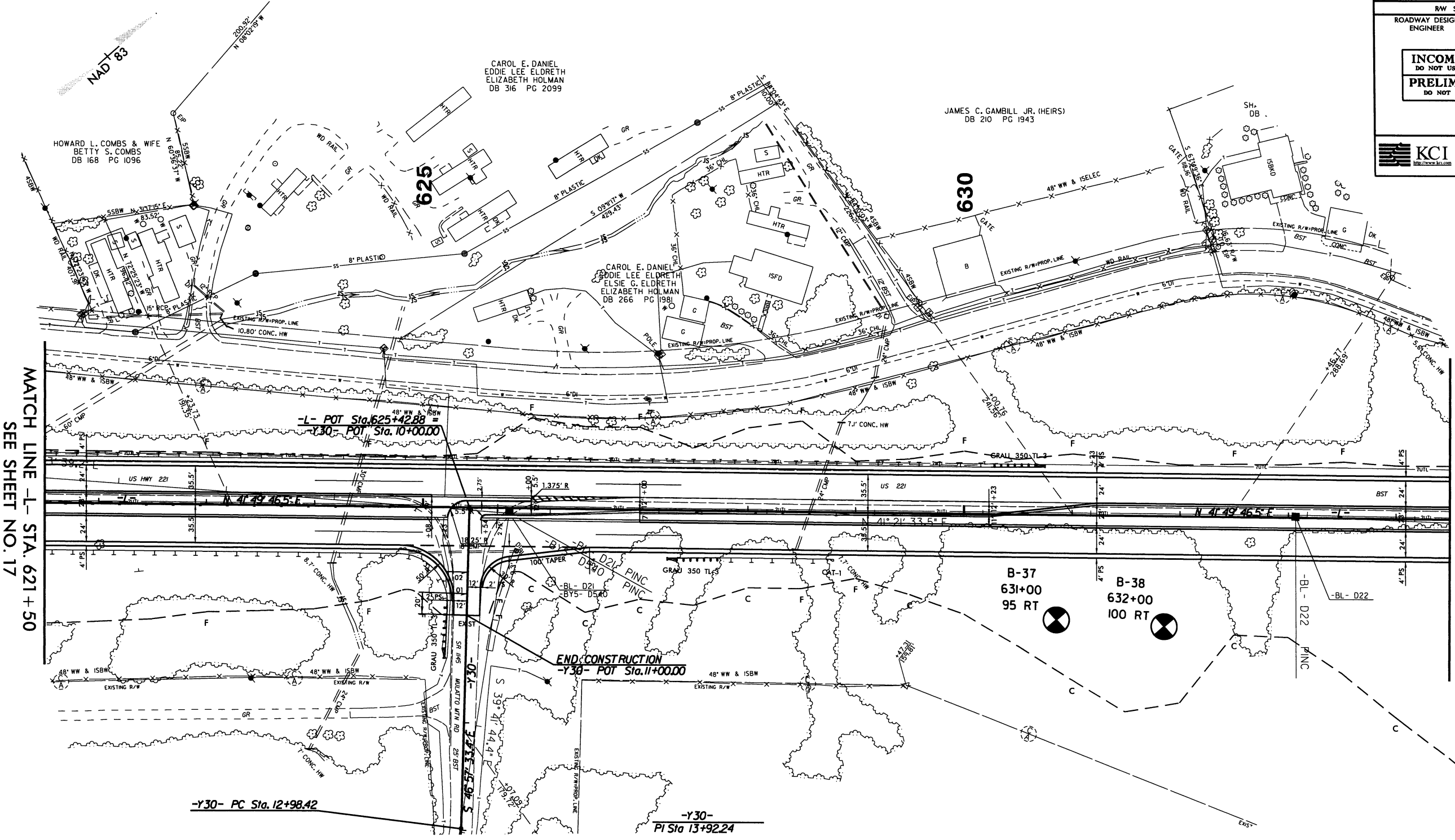
8/17/99

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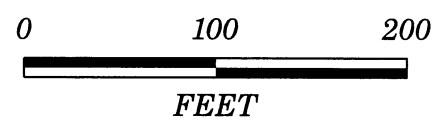
PROJECT REFERENCE NO. <b>R-2915D</b>		SHEET NO. <b>16 of 69</b>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION			
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			
 <b>KCI</b> <small>Engineers • Planners • Scientists • Construction Managers</small> <small>4601 Six Forks Road, Landmark Center II, Suite 220</small> <small>Raleigh, NC 27609-5210</small> <small>Phone (919) 783-9214 • Fax (919) 783-9266</small>			

MATCH LINE -L- STA. 621+50  
SEE SHEET NO. 17


MATCH LINE -L- STA. 634+50  
SEE SHEET NO. 19



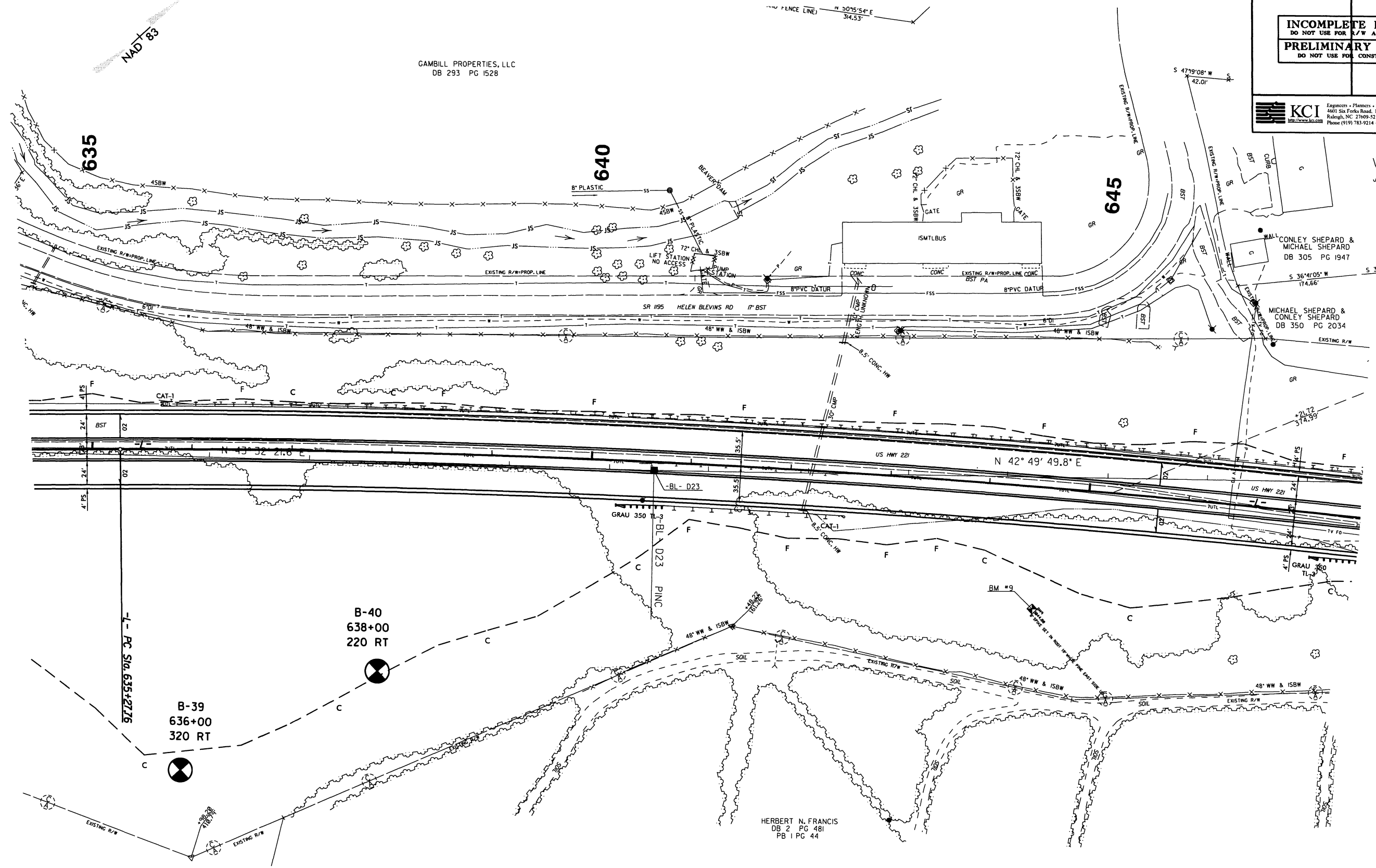
REVISIONS





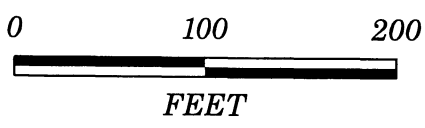
PROJECT REFERENCE NO. <b>R-2915D</b>	SHEET NO. <b>16 of 69</b>
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
 <b>KCI</b> <small>Engineers • Planners • Scientists • Construction Managers</small> <small>4001 Six Forks Road, Landmark Center II, Suite 220</small> <small>Raleigh, NC 27609-5210</small> <small>Phone (919) 783-9214 • Fax (919) 783-9266</small>	


8/17/99  
 REVISIONS  
 18 JAN 2013 11:54 ddp, jcs, ts \Roadways\VR2915D\_GEO\RDWY\CADD\_GEO\TECHN\VR2915D\_Plan\Pro\VR2915D\_Rdy\_psh\_19.dgn  
 19 JAN 2013 11:54 ddp, jcs, ts \Roadways\VR2915D\_GEO\RDWY\CADD\_GEO\TECHN\VR2915D\_Plan\Pro\VR2915D\_Rdy\_psh\_19.dgn

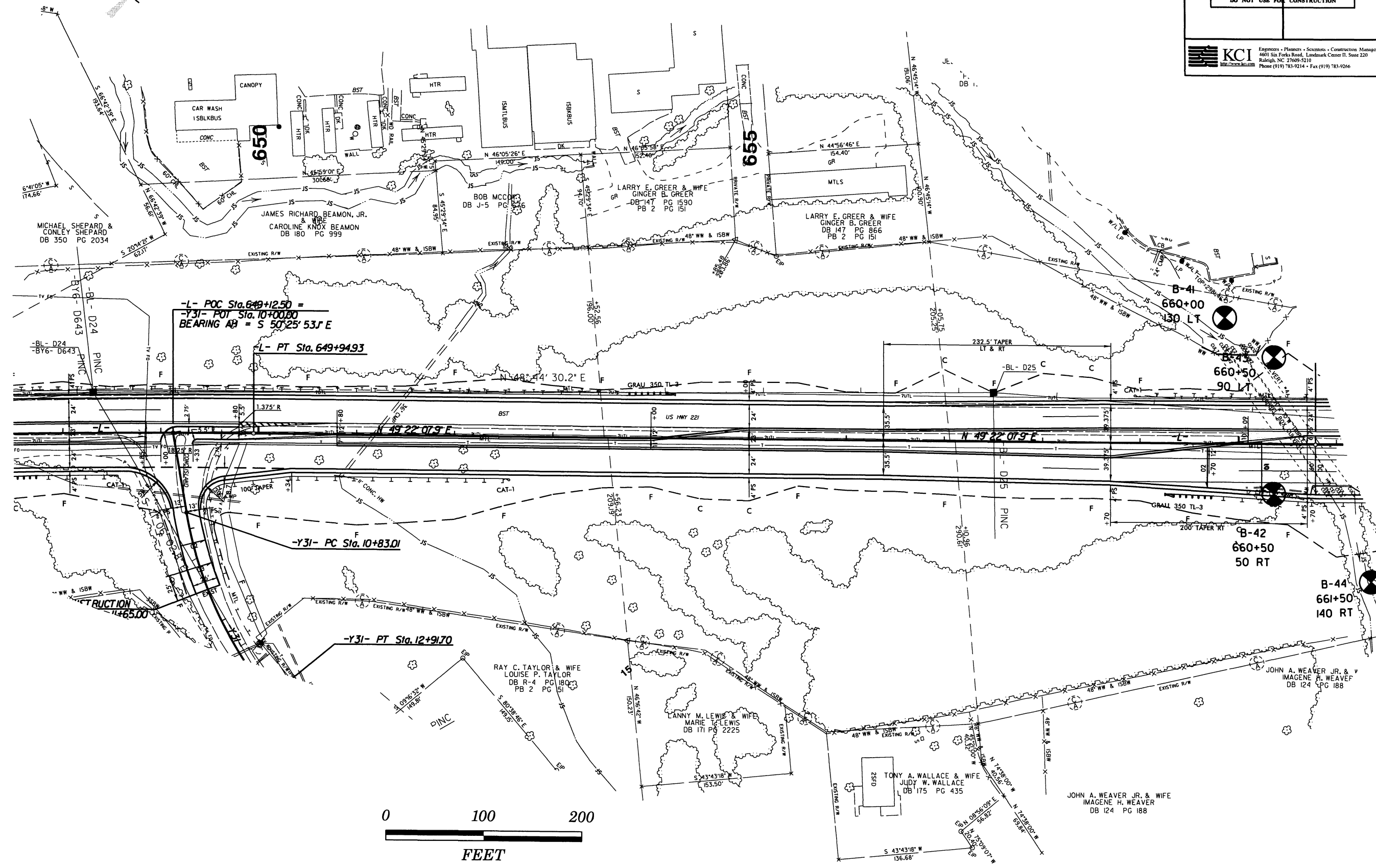


GAMBILL PROPERTIES, LLC  
DB 293 PG 1528

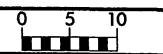
HERBERT N. FRANCIS  
DB 2 PG 481  
PB 1 PG 44



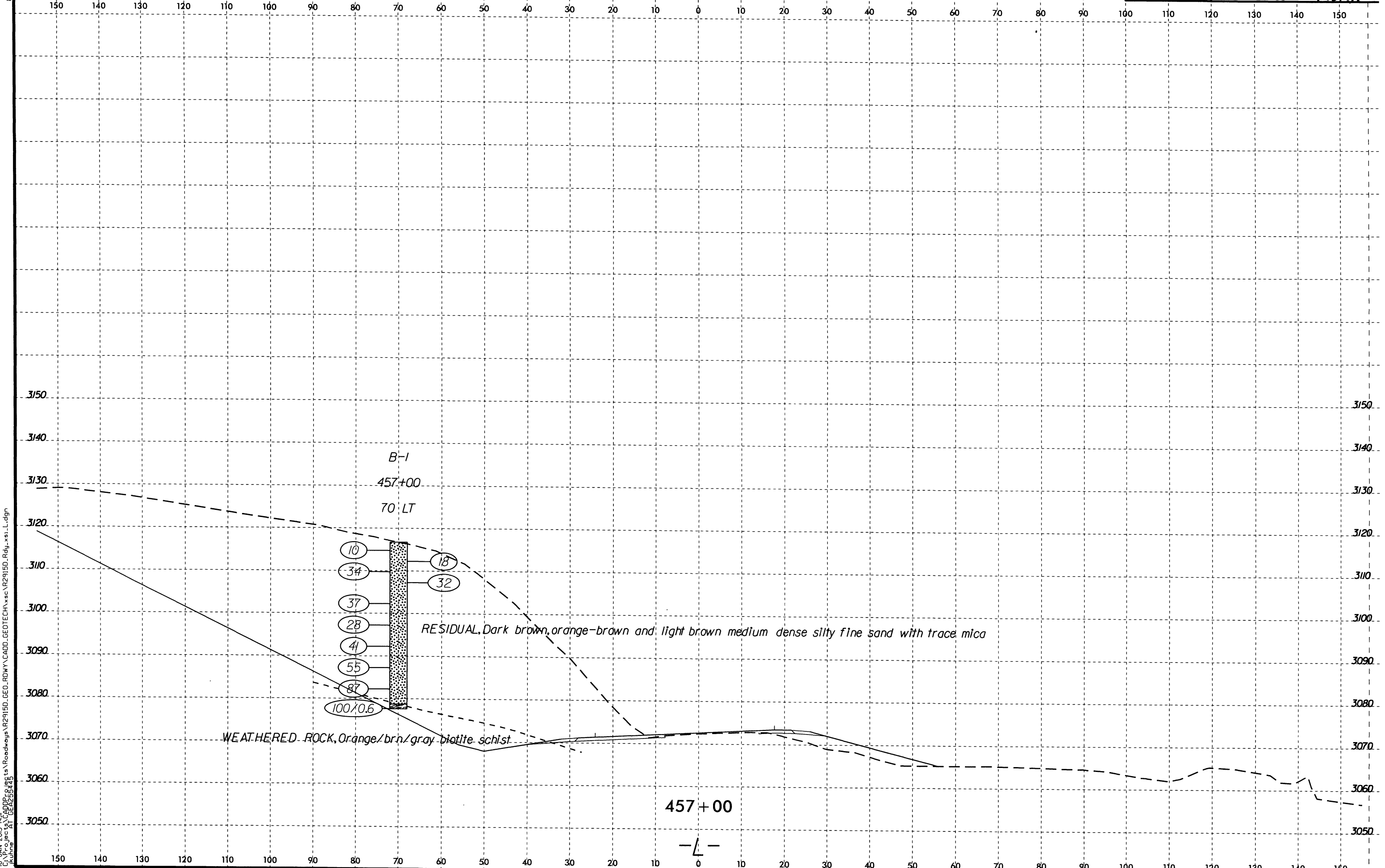
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RAW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR E/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			
 <b>KCI</b> <small>Engineers • Planners • Scientists • Construction Managers</small> <small>401 Six Forks Road, Landmark Center II, Suite 220</small> <small>Raleigh, NC 27609-5210 Phone (919) 783-9214 • Fax (919) 783-9266</small>			



8/23/99

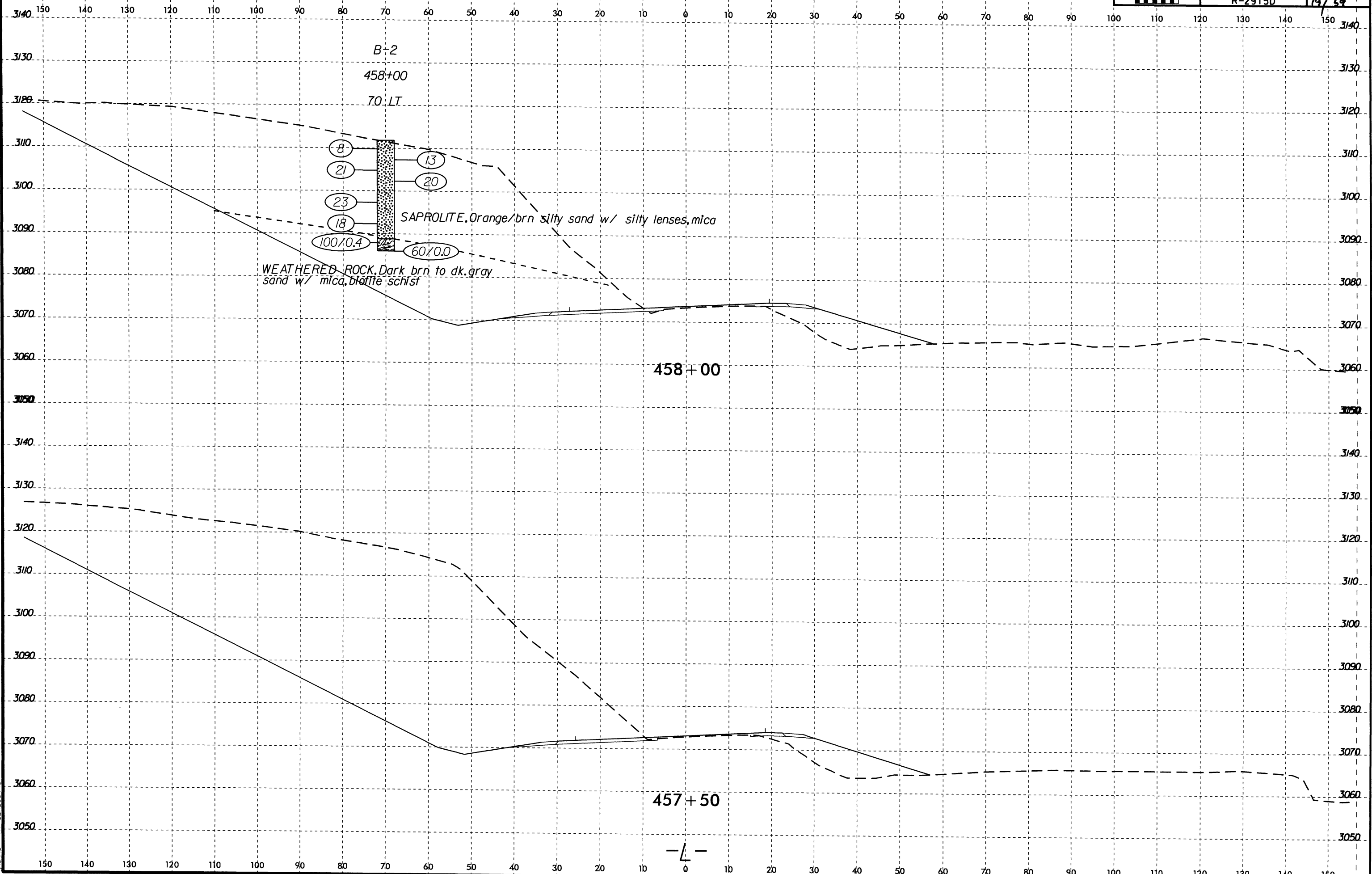


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R-2915D	15/39



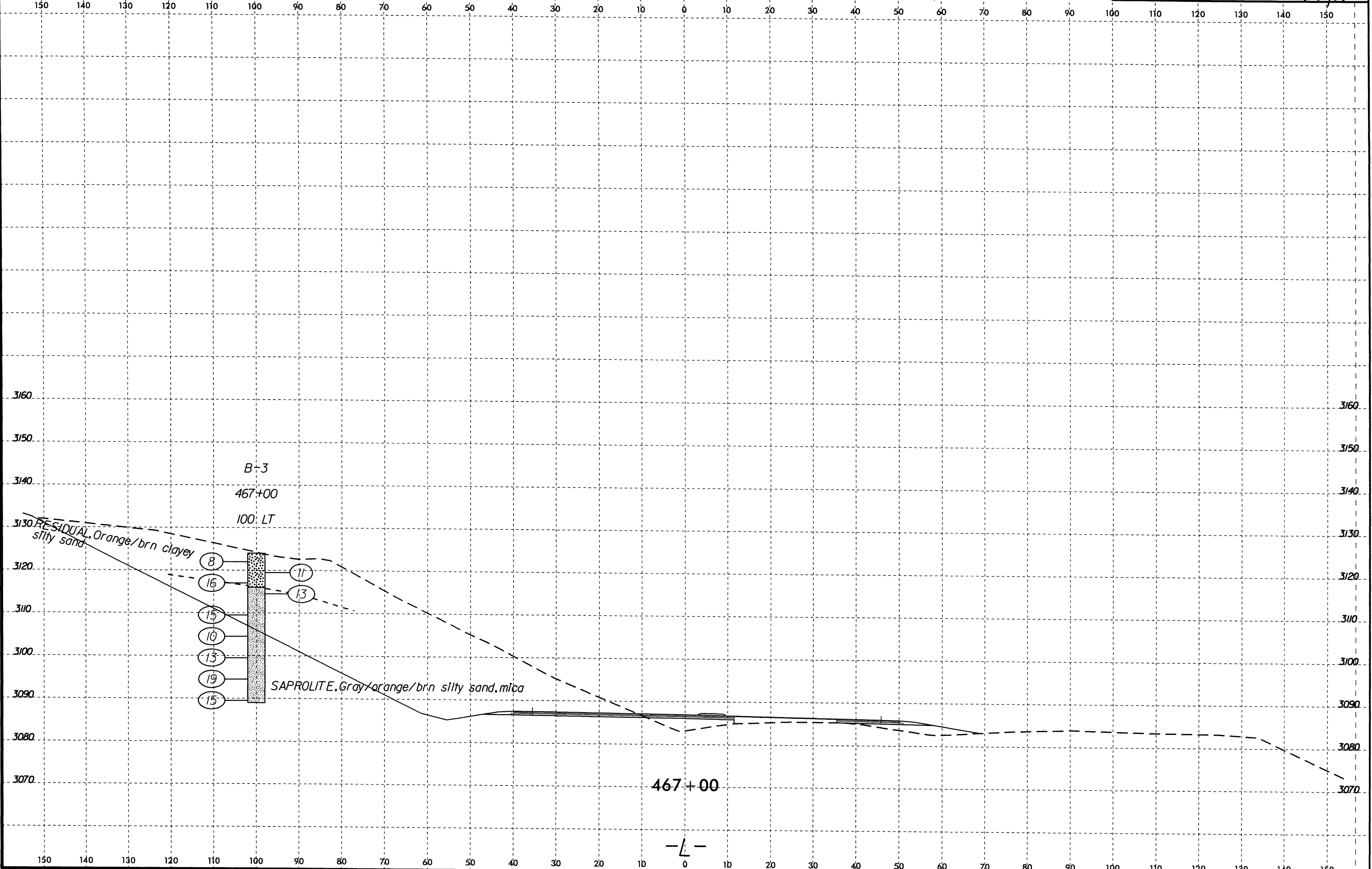
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8/23/99

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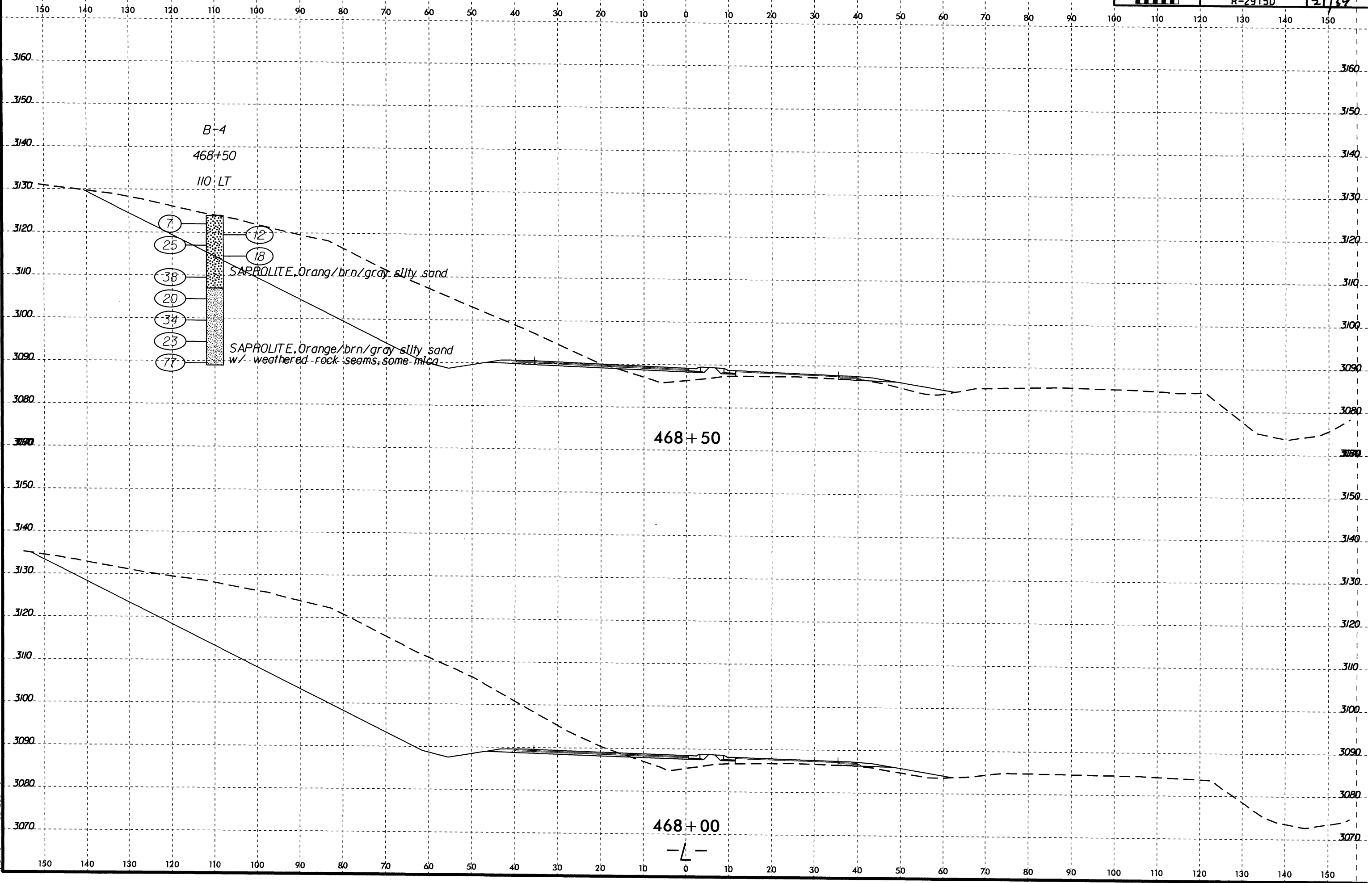


-L-

8/23/99



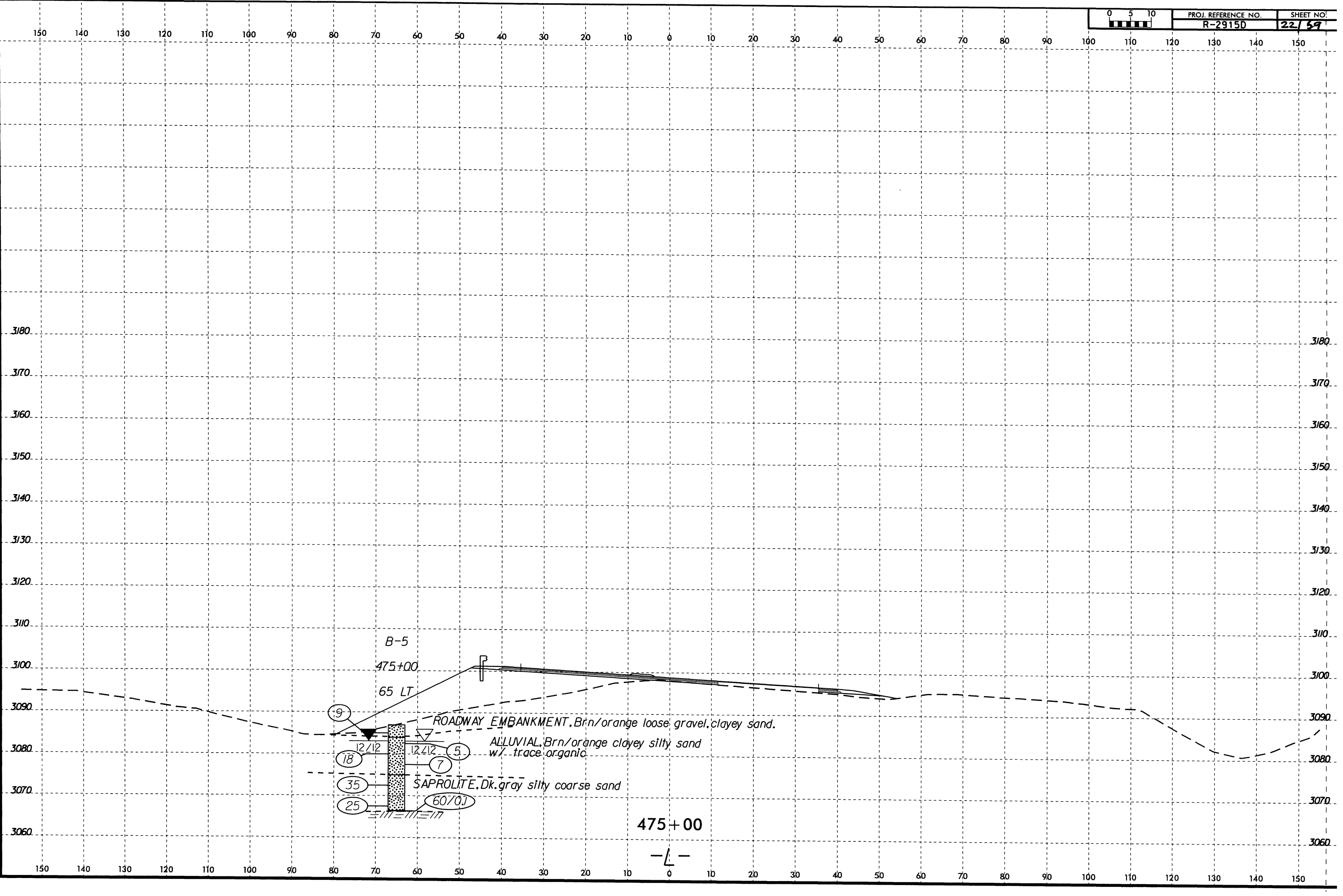
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R-2915D	21/39



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8/23/99

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ksj



B-5

475+00

65 LT

ROADWAY EMBANKMENT, Brn/orange loose gravel, clayey sand.

ALLUVIAL, Brn/orange clayey silty sand w/ trace organic.

SAPROLITE, Dk. gray silty coarse sand

475+00

-L-

9

18

35

25

12/12

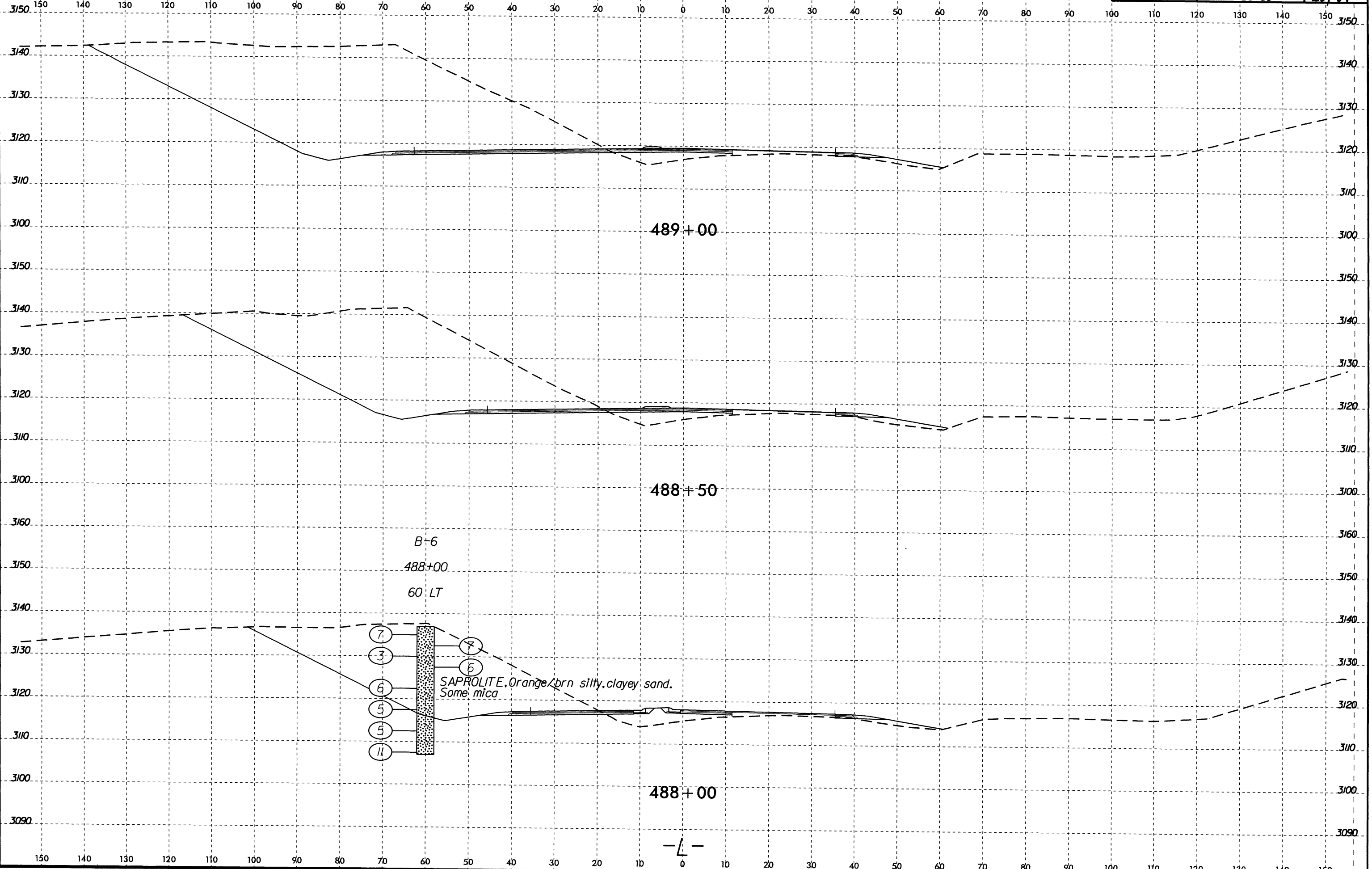
12/12

5

7

60/0.1

8/23/99



B+6  
 488+00  
 60 LT

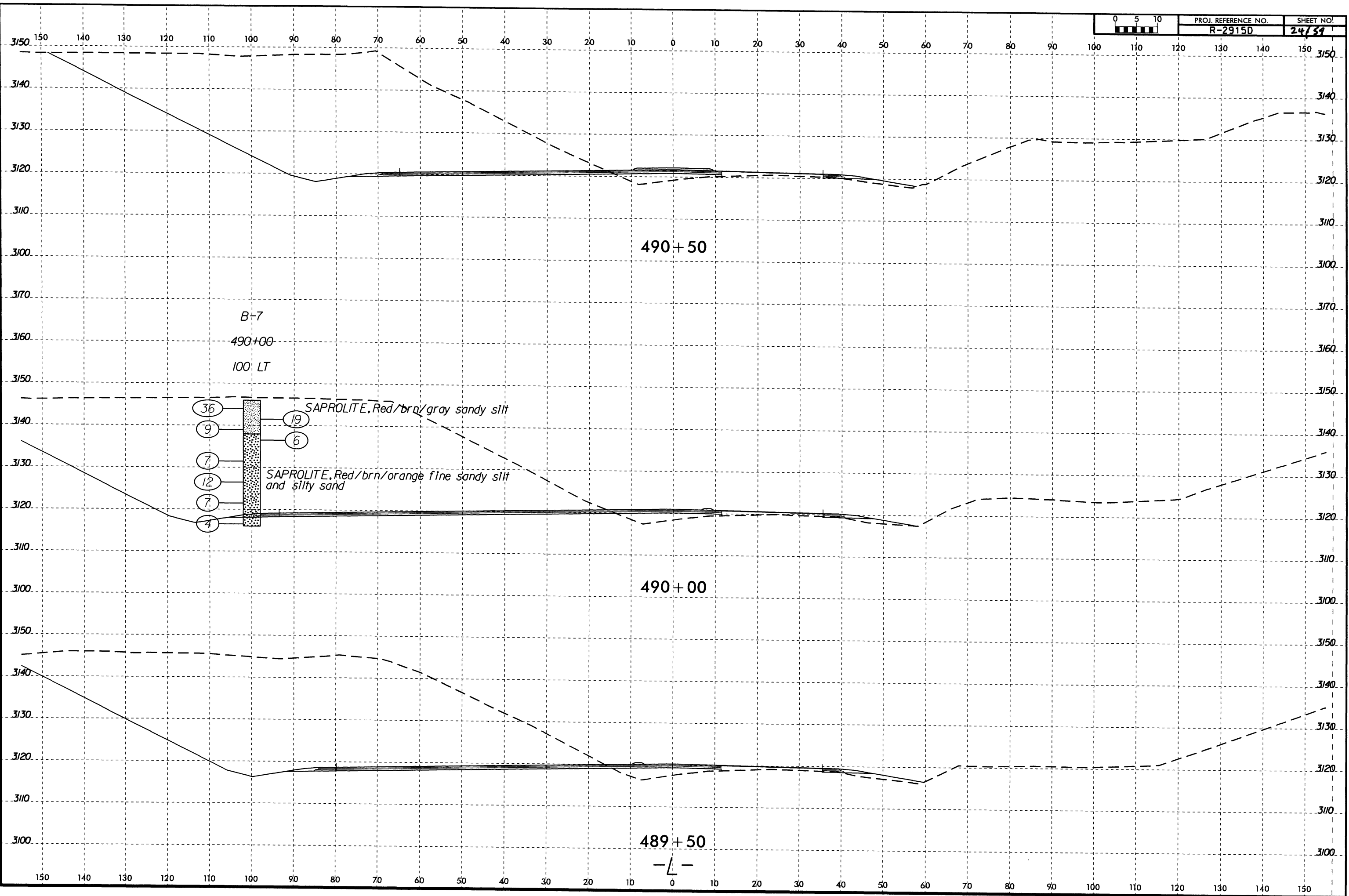
7  
 3  
 6  
 5  
 5  
 11

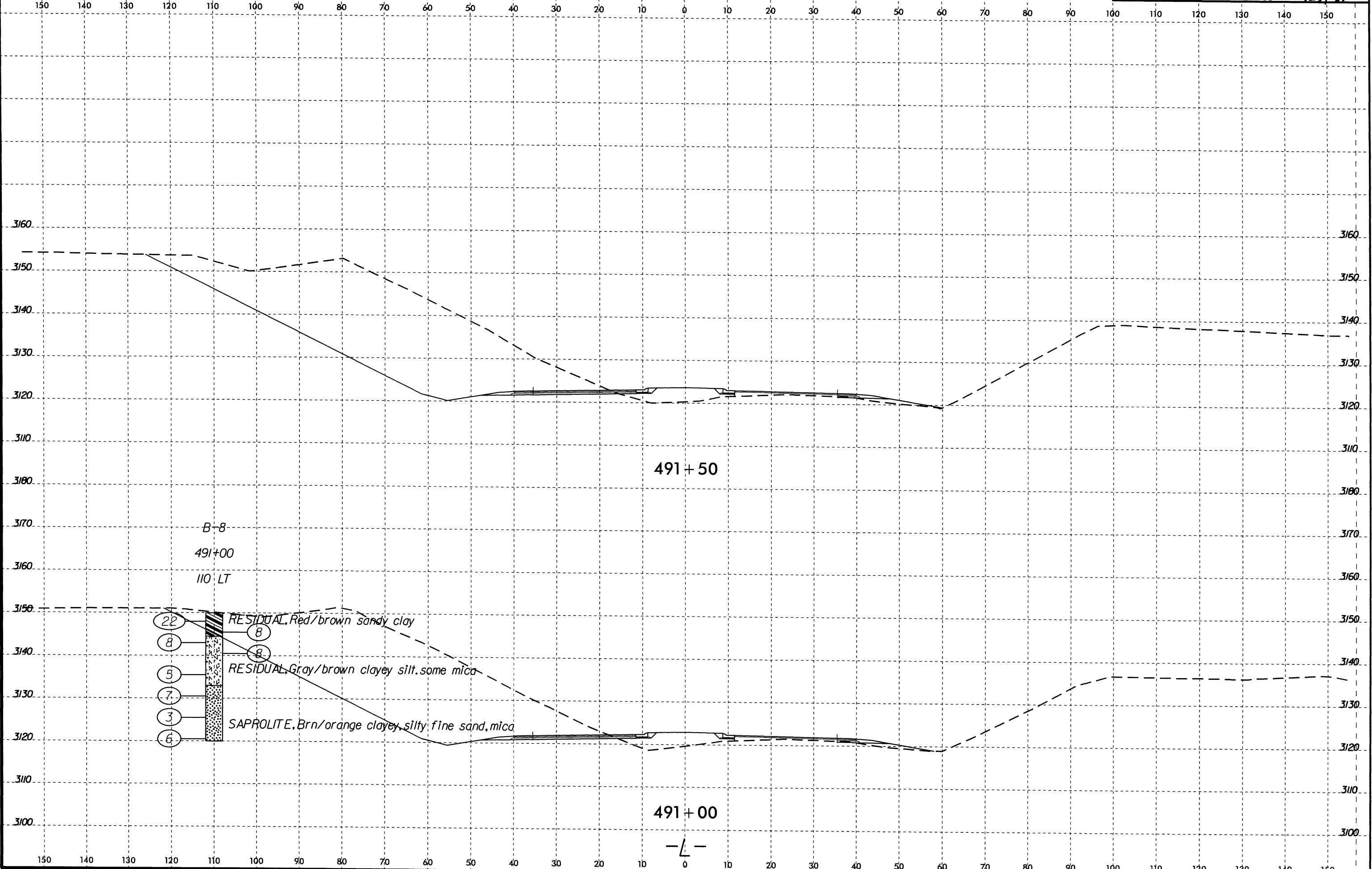
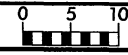
SAPROLITE, Orange/brn silty, clayey sand.  
 Some mica

I:\8-JAN-2003 14:17  
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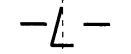


491 + 50

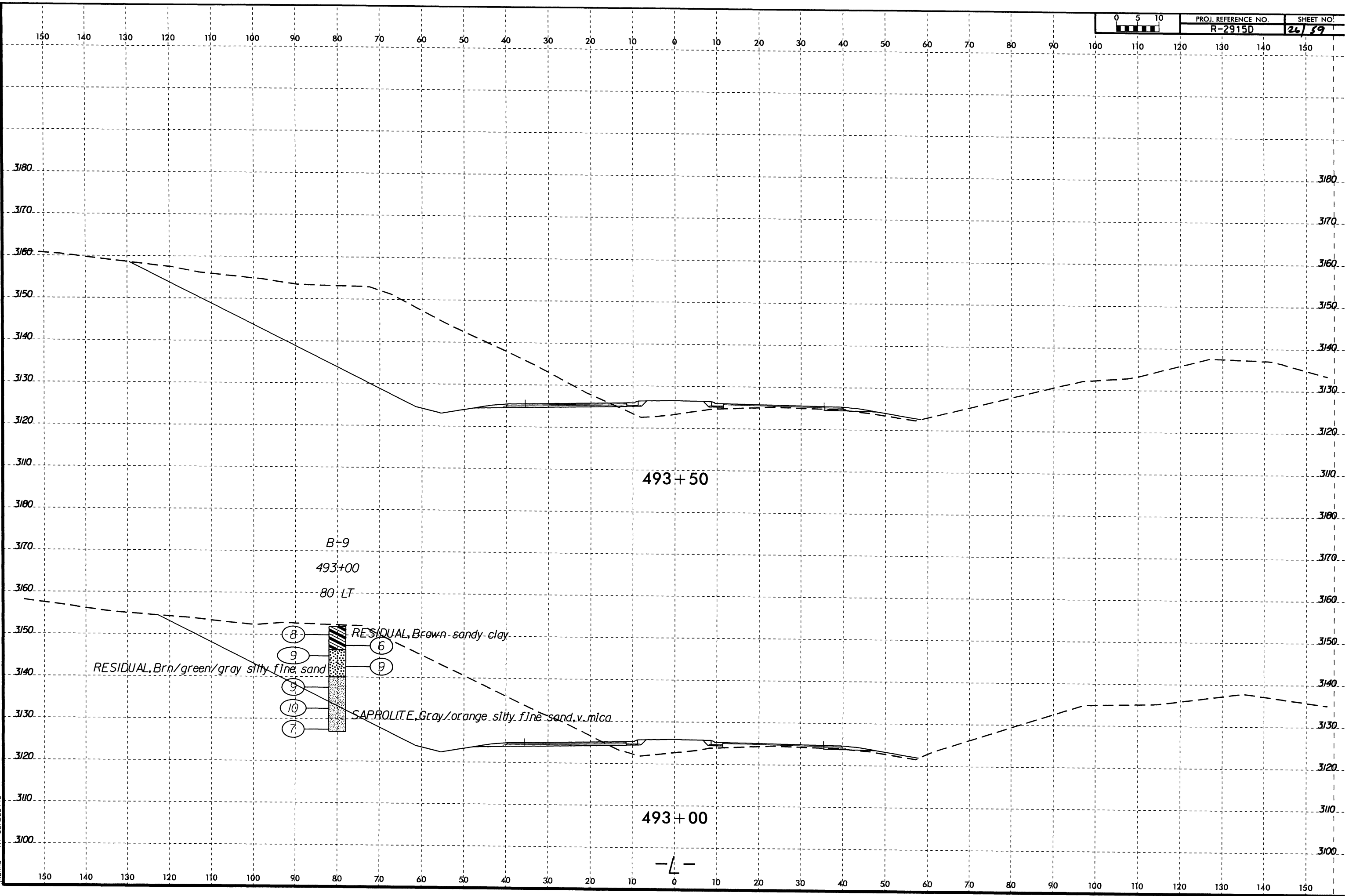
B-8  
491+00  
110 LT

- 22 RESIDUAL, Red/brown sandy clay
- 8 RESIDUAL, Gray/brown clayey silt, some mica
- 5 RESIDUAL, Gray/brown clayey silt, some mica
- 7 RESIDUAL, Gray/brown clayey silt, some mica
- 3 SAPROLITE, Brn/orange clayey, silty fine sand, mica
- 6 SAPROLITE, Brn/orange clayey, silty fine sand, mica

491 + 00



8/23/99  
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kukhne



B-9  
493+00  
80-LT

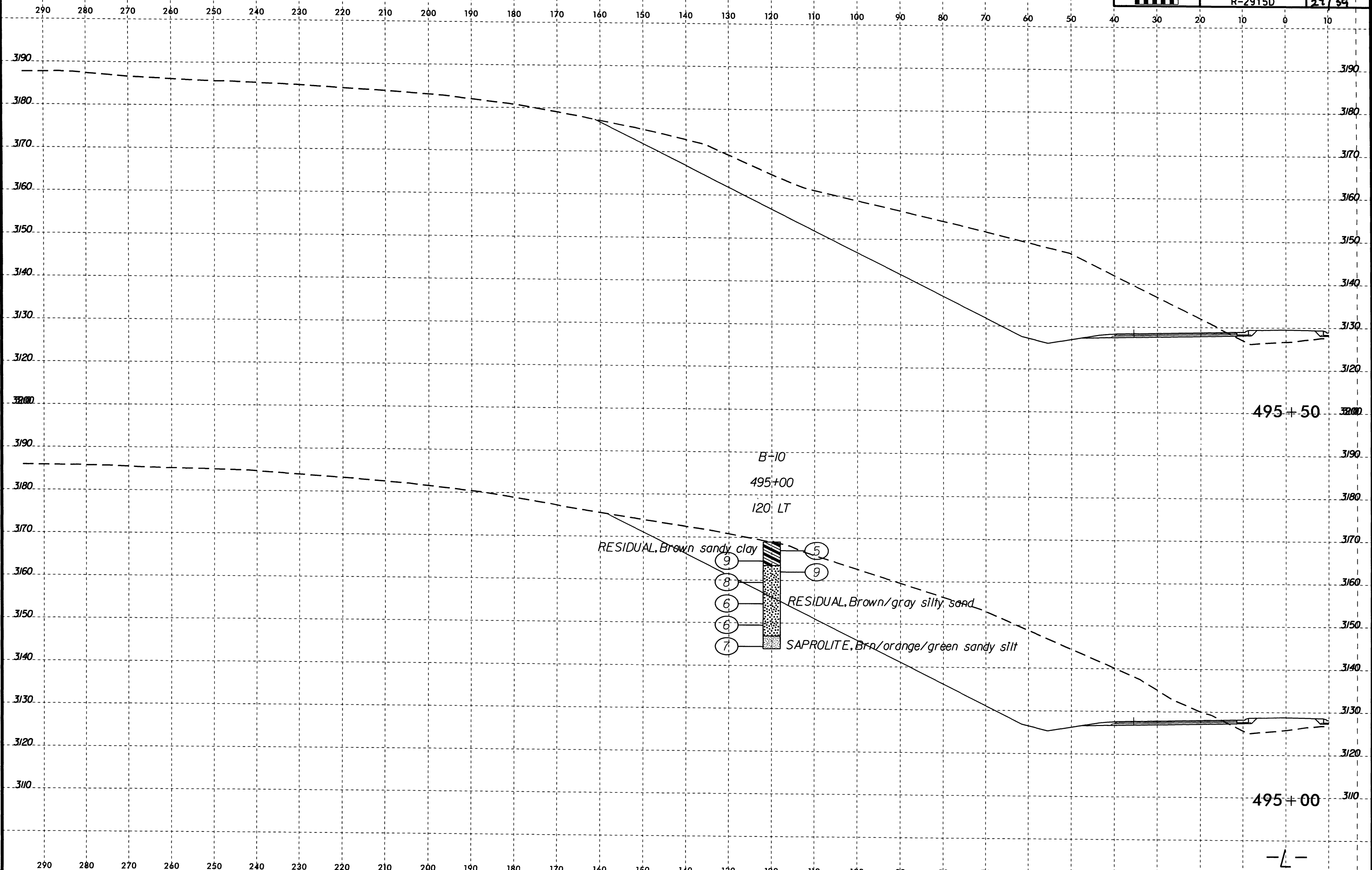
- (8) RESIDUAL, Brown sandy clay
- (9) RESIDUAL, Brn/green/gray silty fine sand
- (9)
- (10)
- (7) SAPROLITE, Gray/orange silty fine sand, v. mica

493+50

493+00

-L-

8/23/99  
18-JAN-2013 15:45  
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kukhne AT GE25545



495+50

B-10  
495+00  
120' LT

RESIDUAL, Brown sandy clay

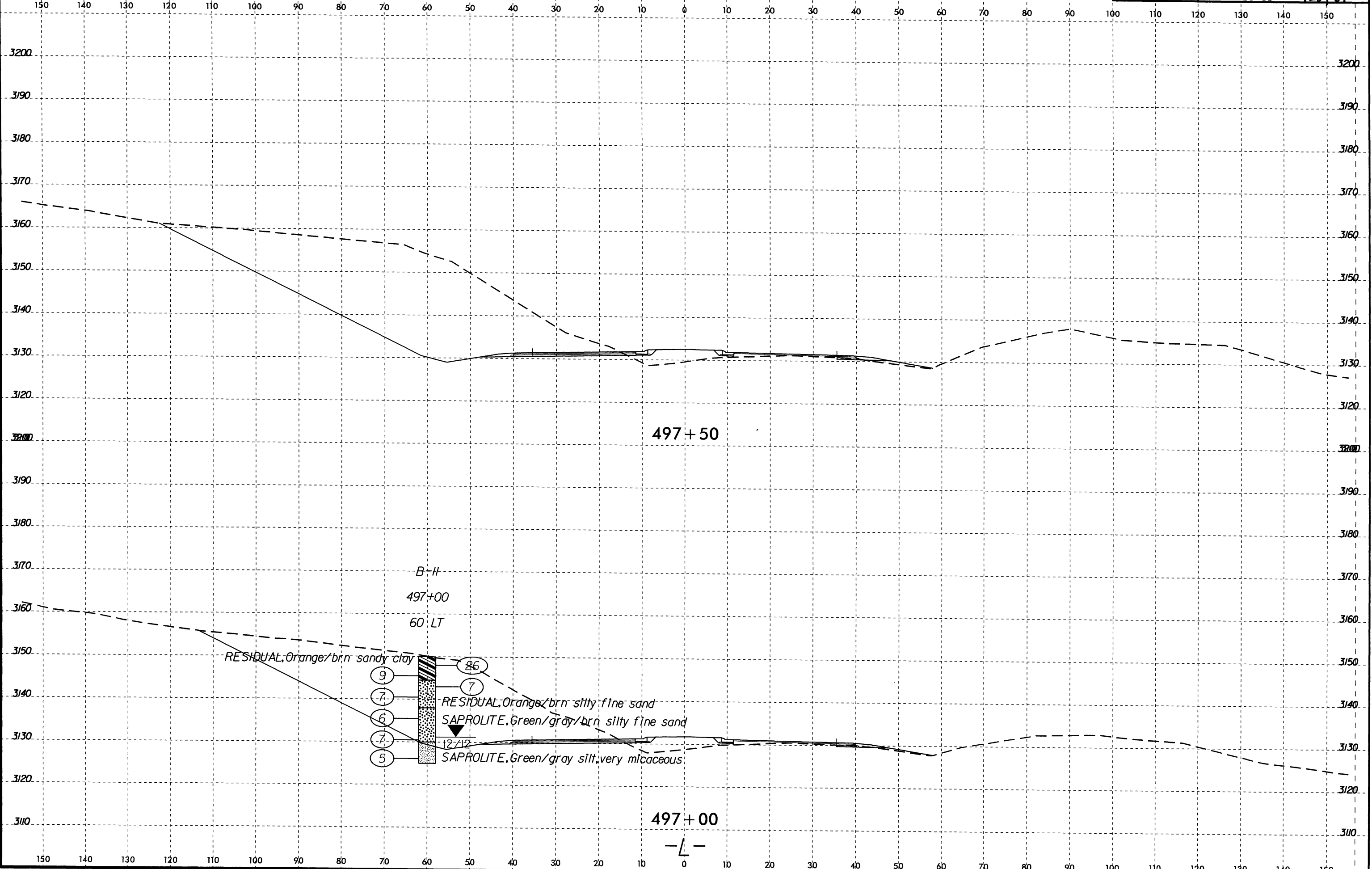
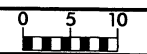
RESIDUAL, Brown/gray silty sand

SAPROLITE, Brn/orange/green sandy silt

495+00

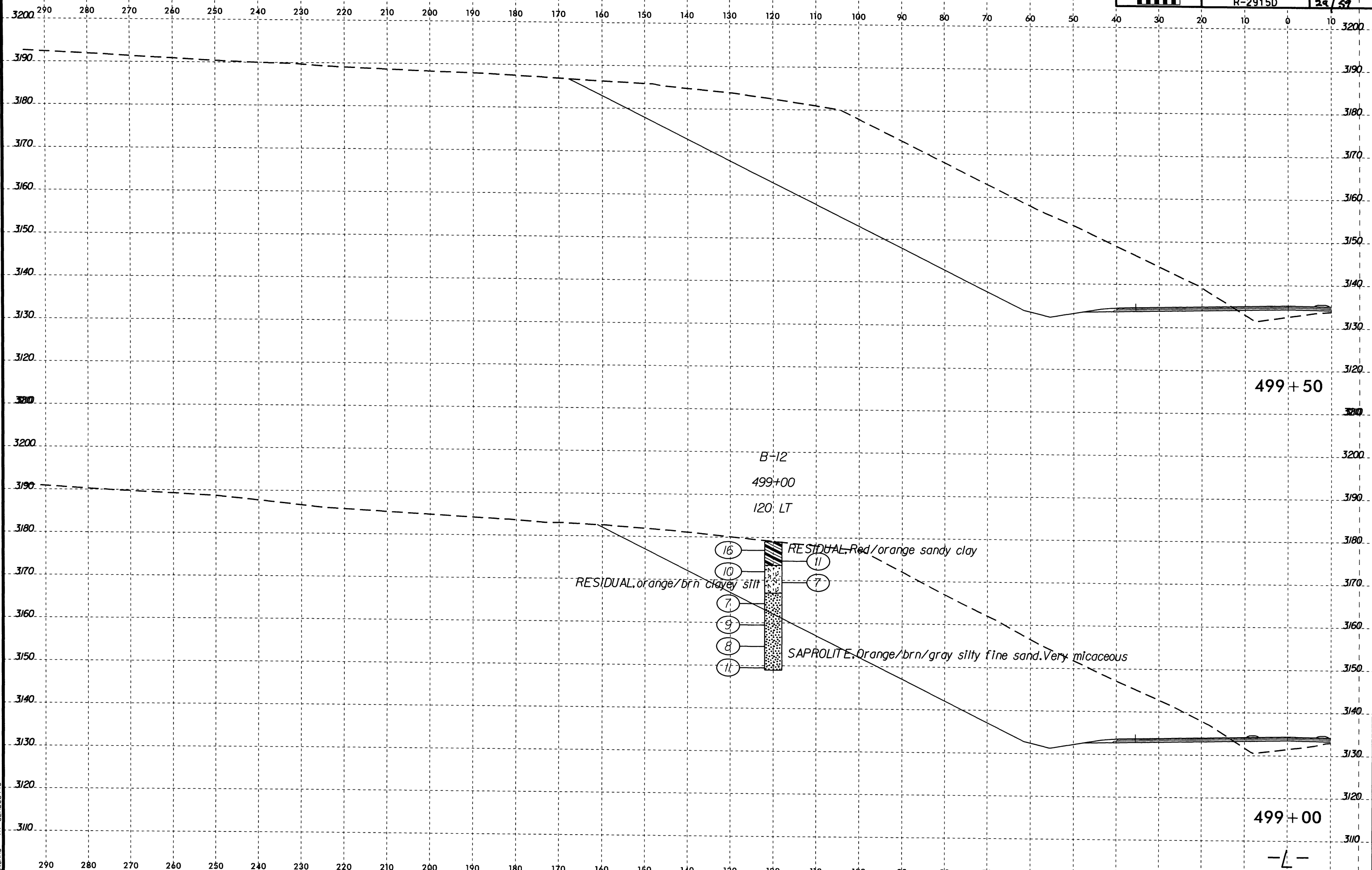
-L-

8/23/99



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kjhne AT GER29145

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1/11/13 11:45:45



499+50

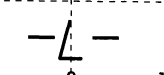
B-12  
499+00  
120' LT

RESIDUAL, orange/brn clayey silt

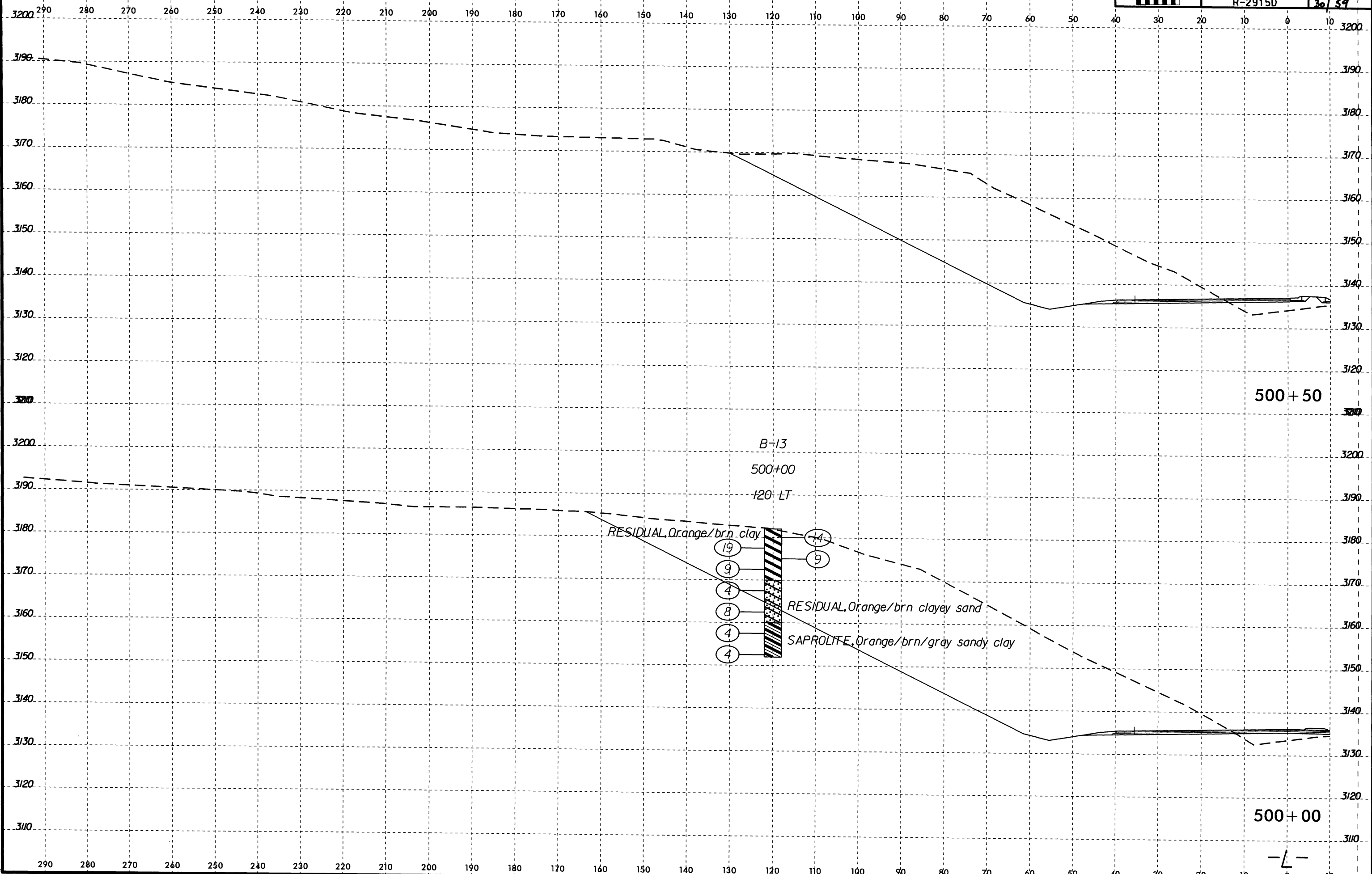
RESIDUAL, Red/orange sandy clay

SAPROLITE, Orange/brn/gray silty fine sand, Very micaceous

499+00

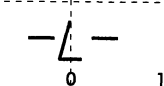


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kukhne AT GEI255415

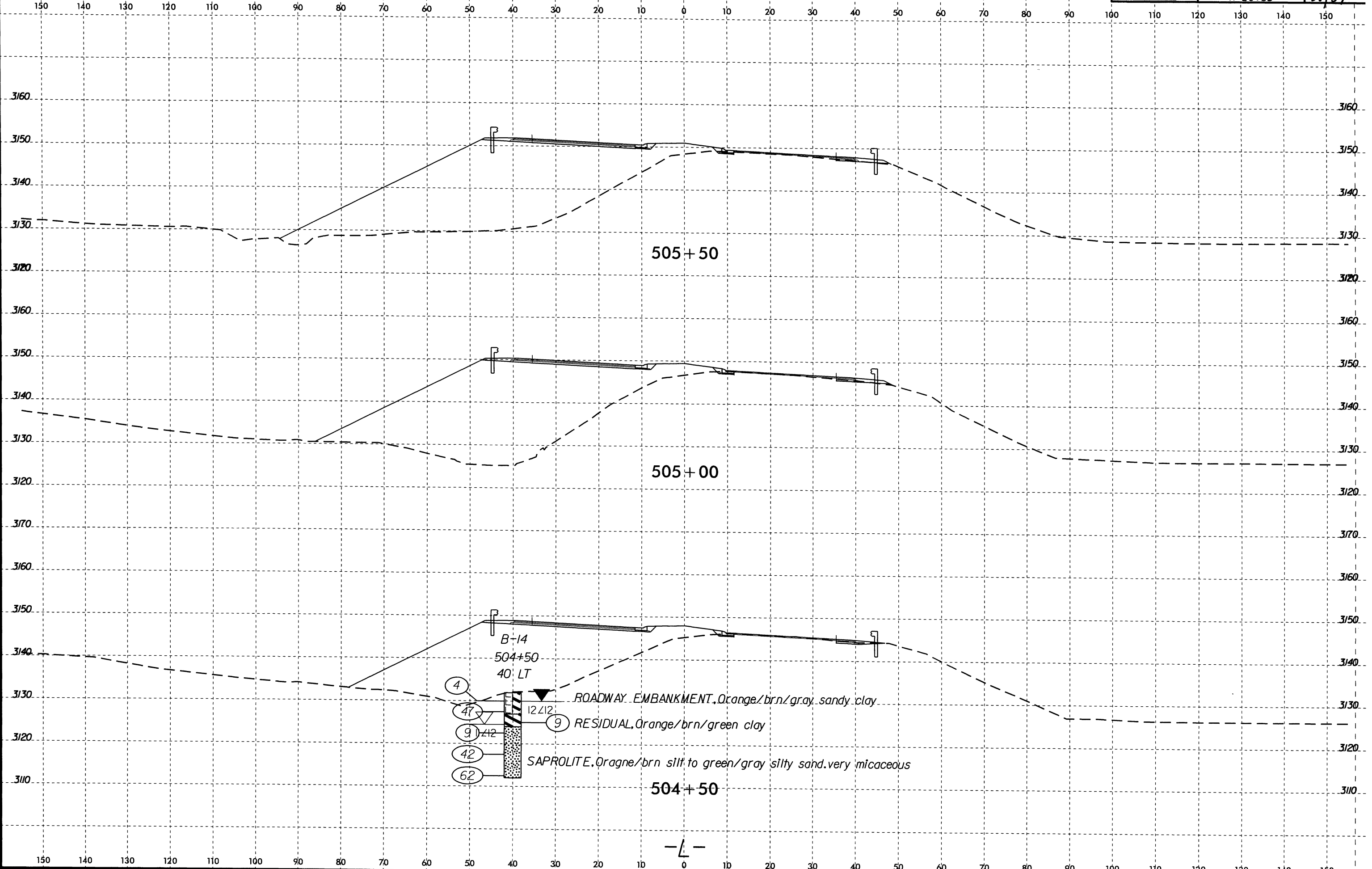


500+50

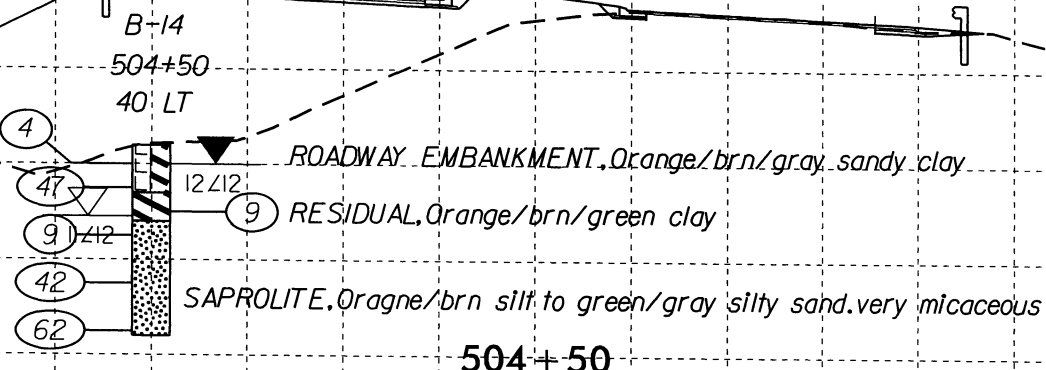
500+00



8/23/99



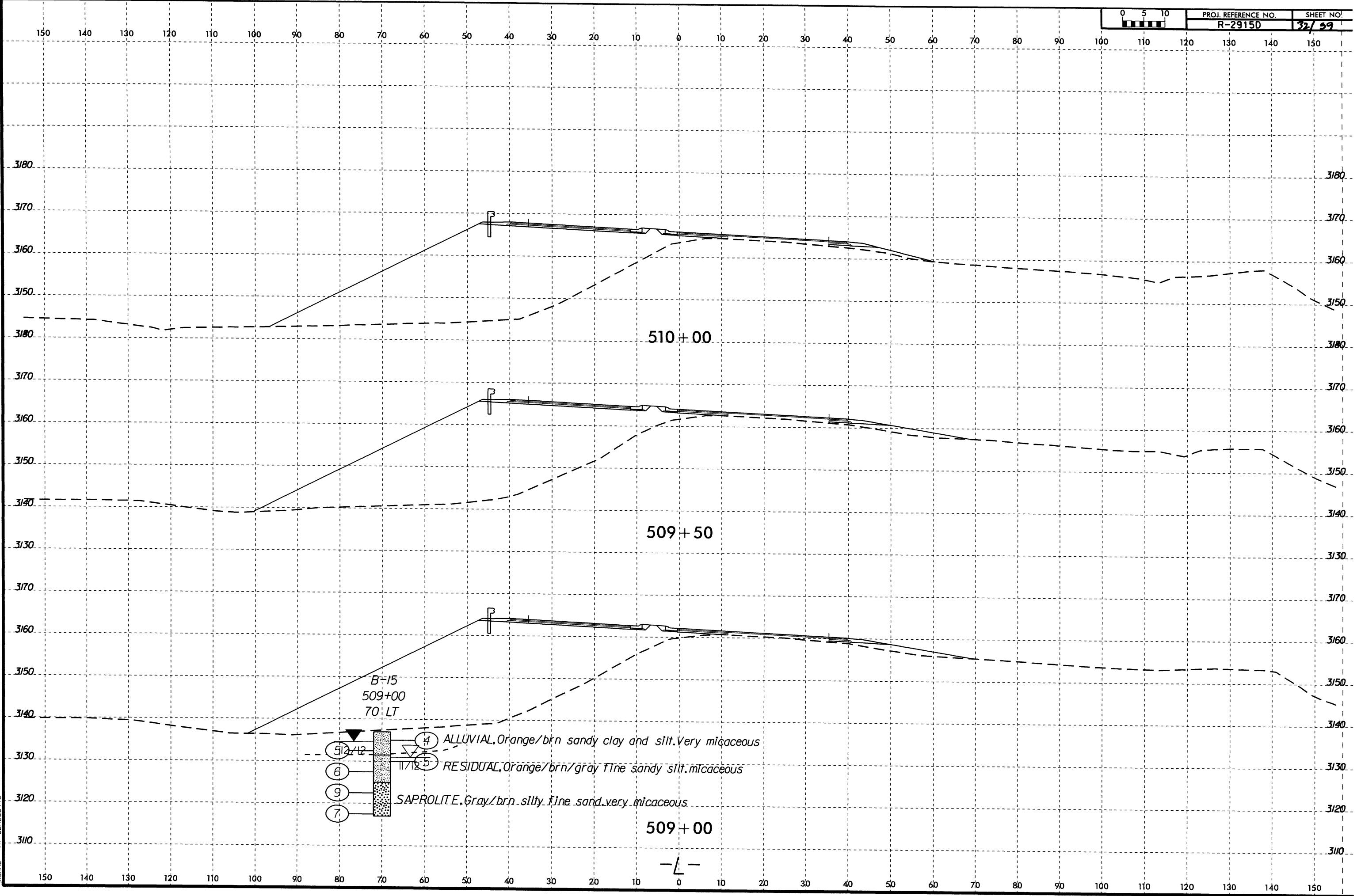
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Kuhme AT-GE255445



-L-



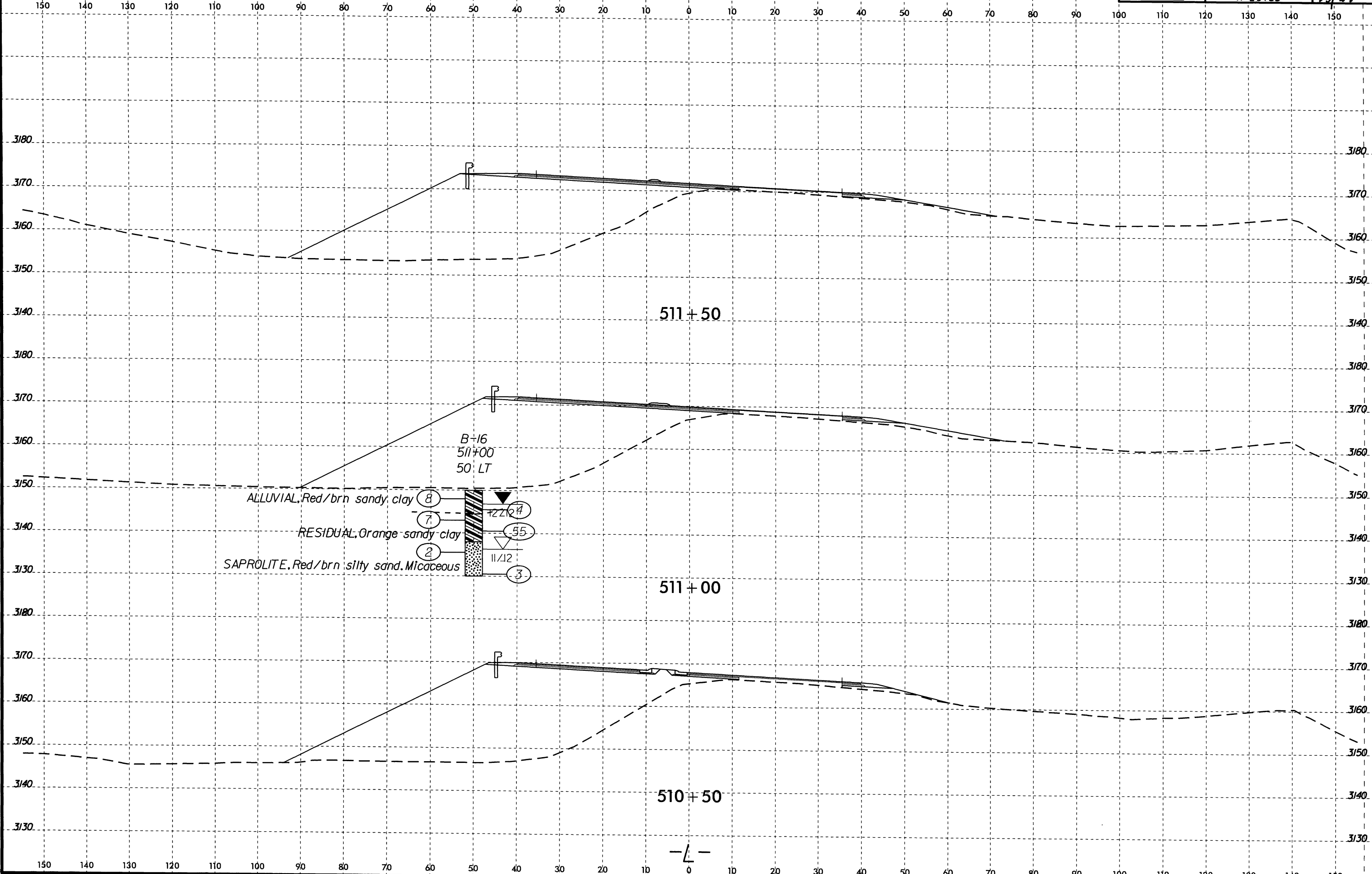
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kjhne AT 64255475



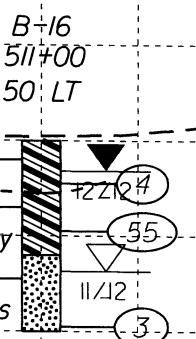
8/23/99



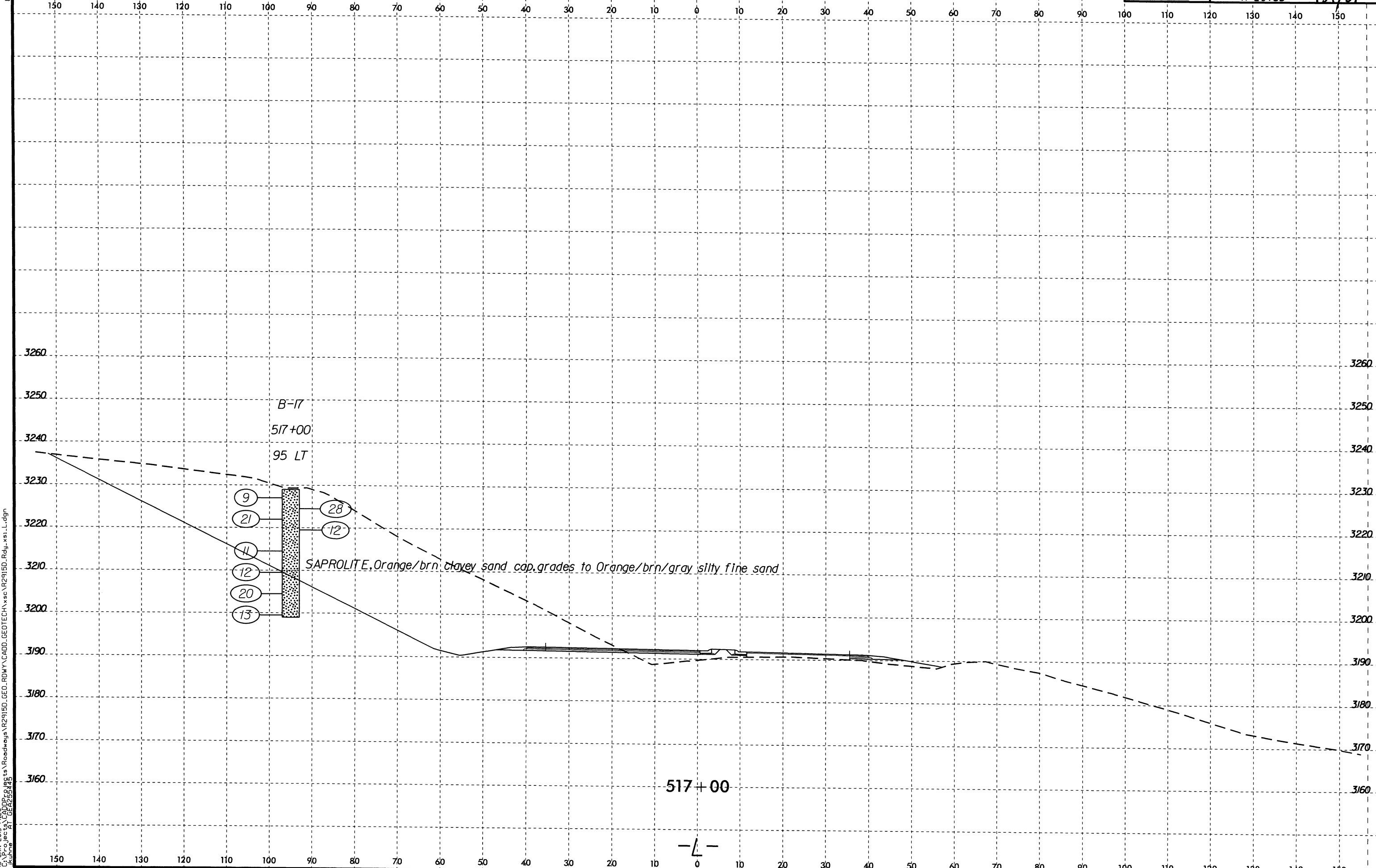
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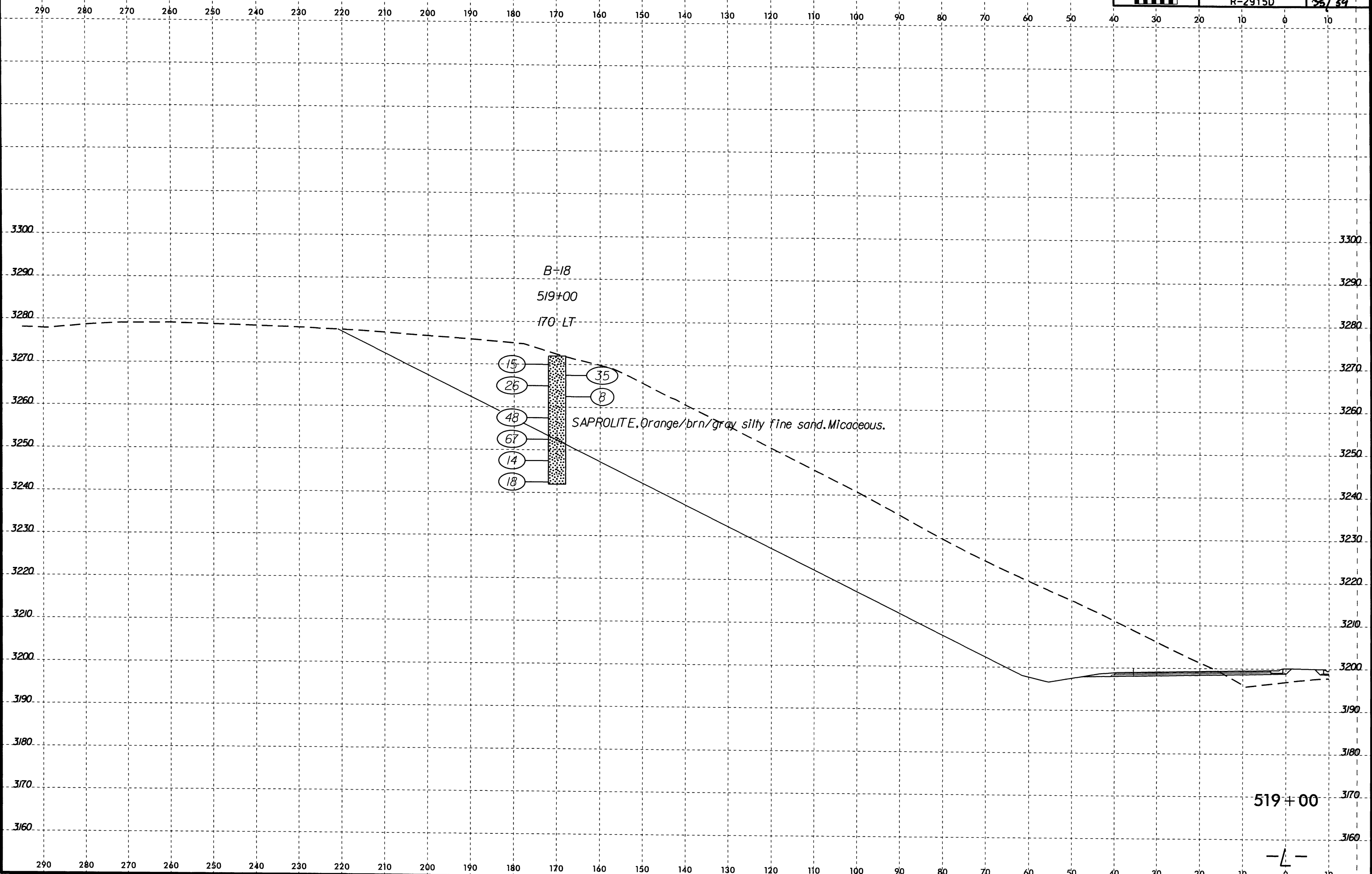
ALLUVIAL, Red/brn sandy clay (8)  
 RESIDUAL, Orange sandy clay (7)  
 SAPROLITE, Red/brn silty sand, Micaceous (2)



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kukhne AT GE295445

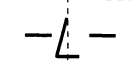


B-18  
519+00  
170+LT

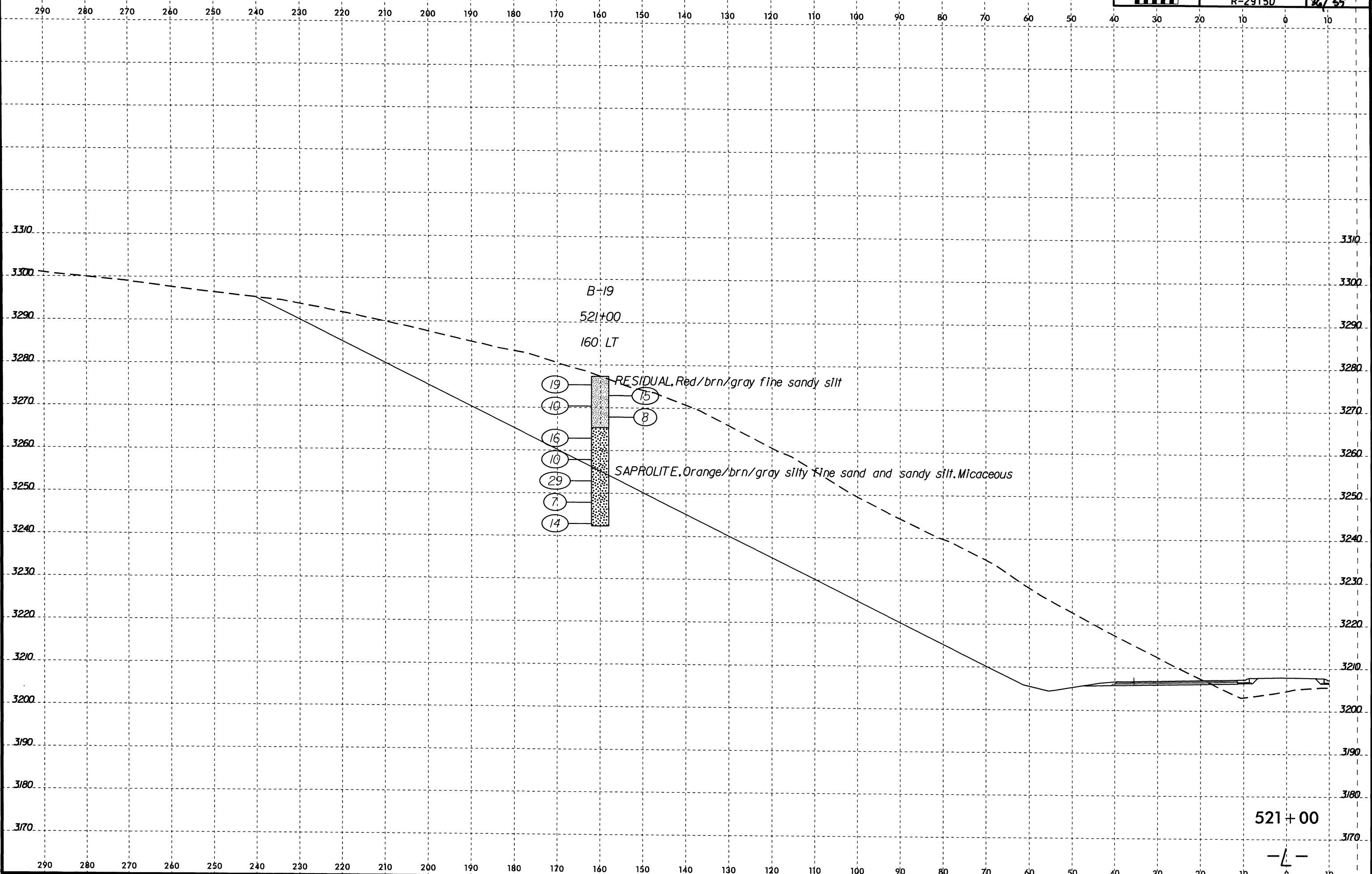
- 15
- 26
- 48
- 67
- 14
- 18

SAPROLITE, Orange/brn/gray silty fine sand. Micaceous.

519+00



18-JAN-2013 15:22  
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kukhne AT GE25545



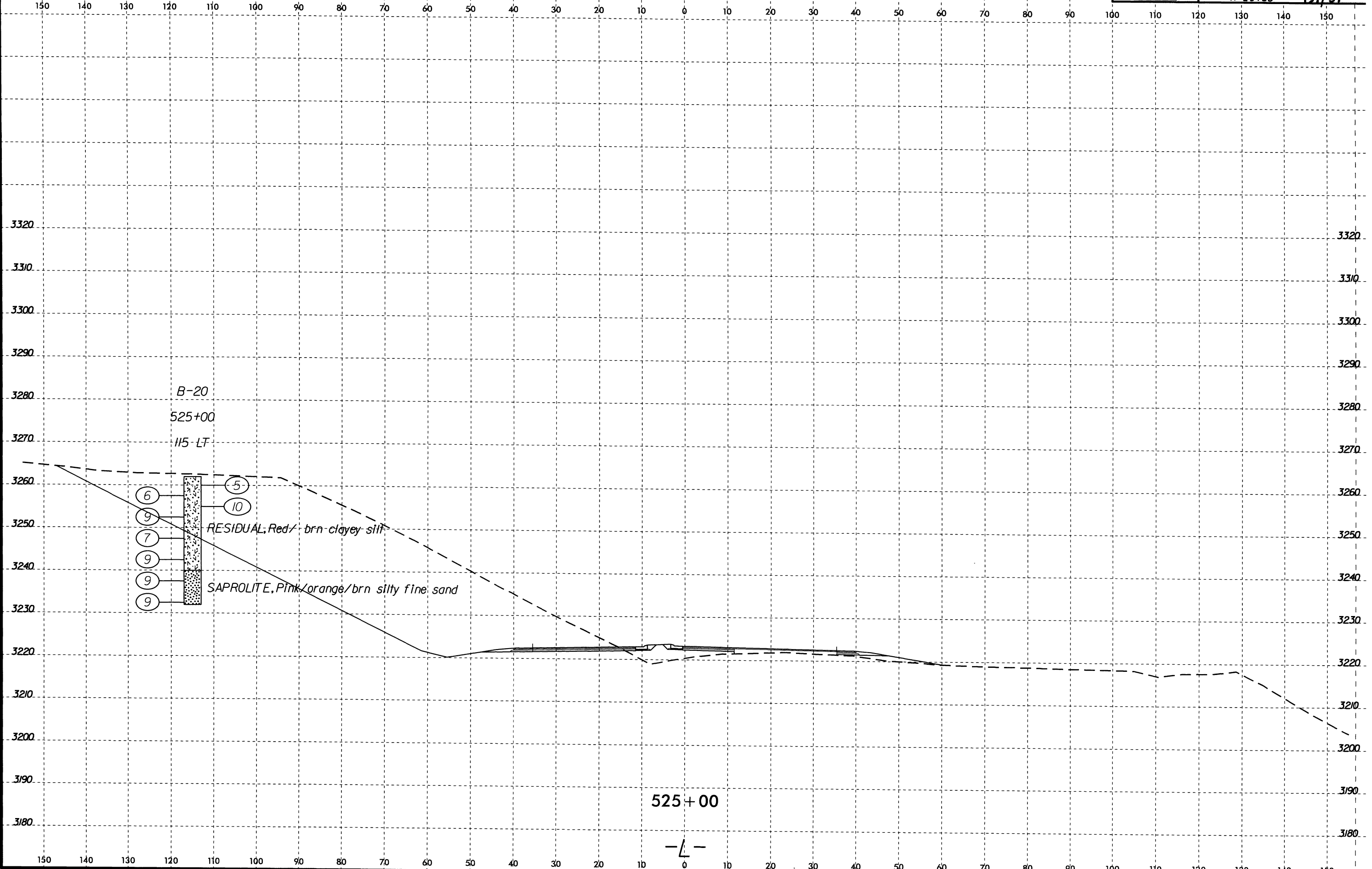
B-19  
521+00  
160 LT

RESIDUAL, Red/brn/gray fine sandy silt  
SAPROLITE, Orange/brn/gray silty fine sand and sandy silt. Micaceous

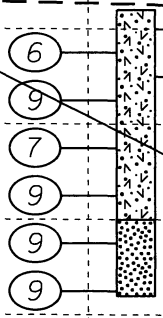
521+00

-L-

8/23/99



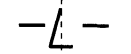
B-20  
525+00  
115-LF



RESIDUAL, Red/brn clayey silt

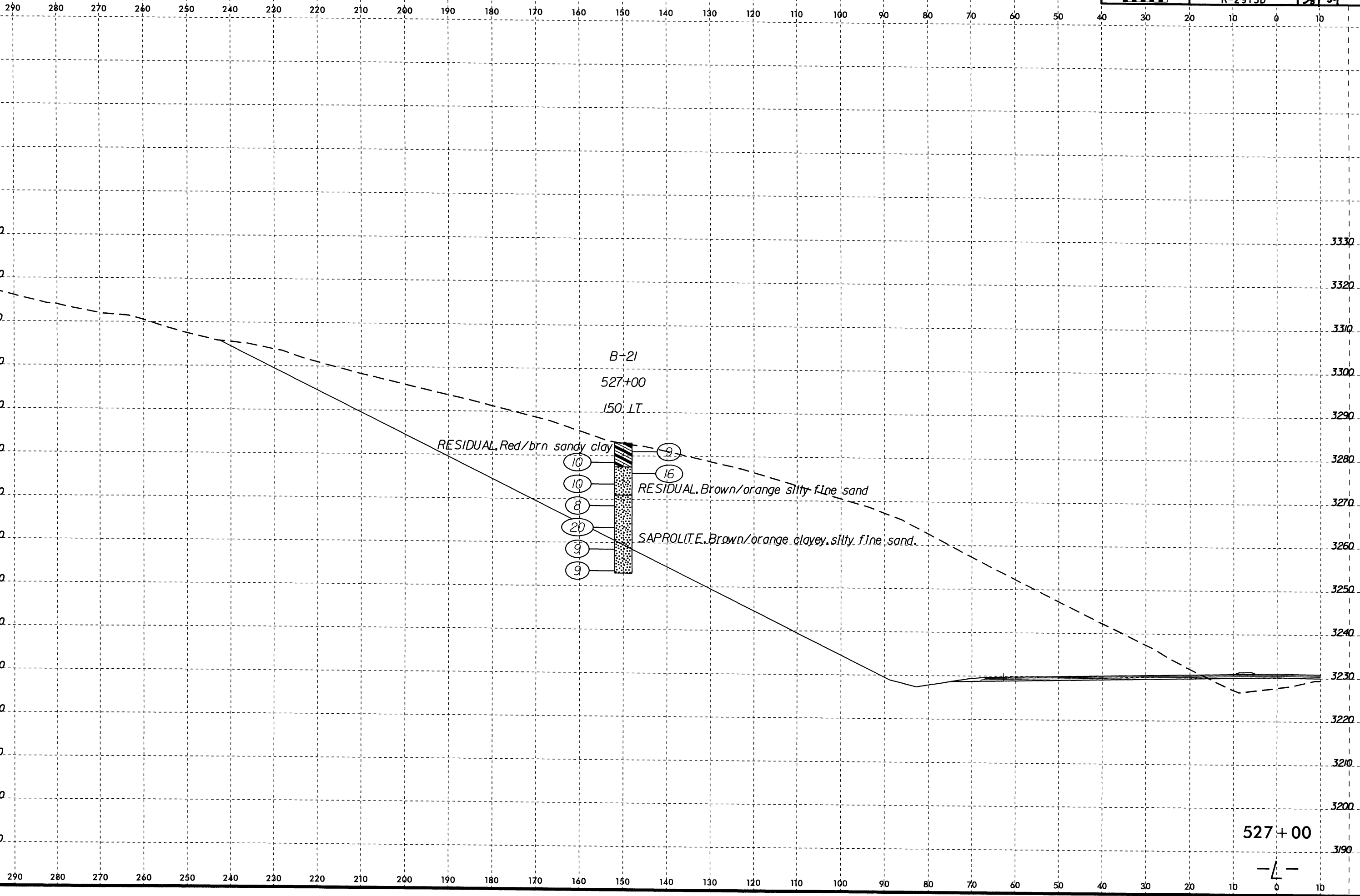
SAPROLITE, Pink/orange/brn silty fine sand

525+00

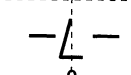


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kjhme AT GE25545

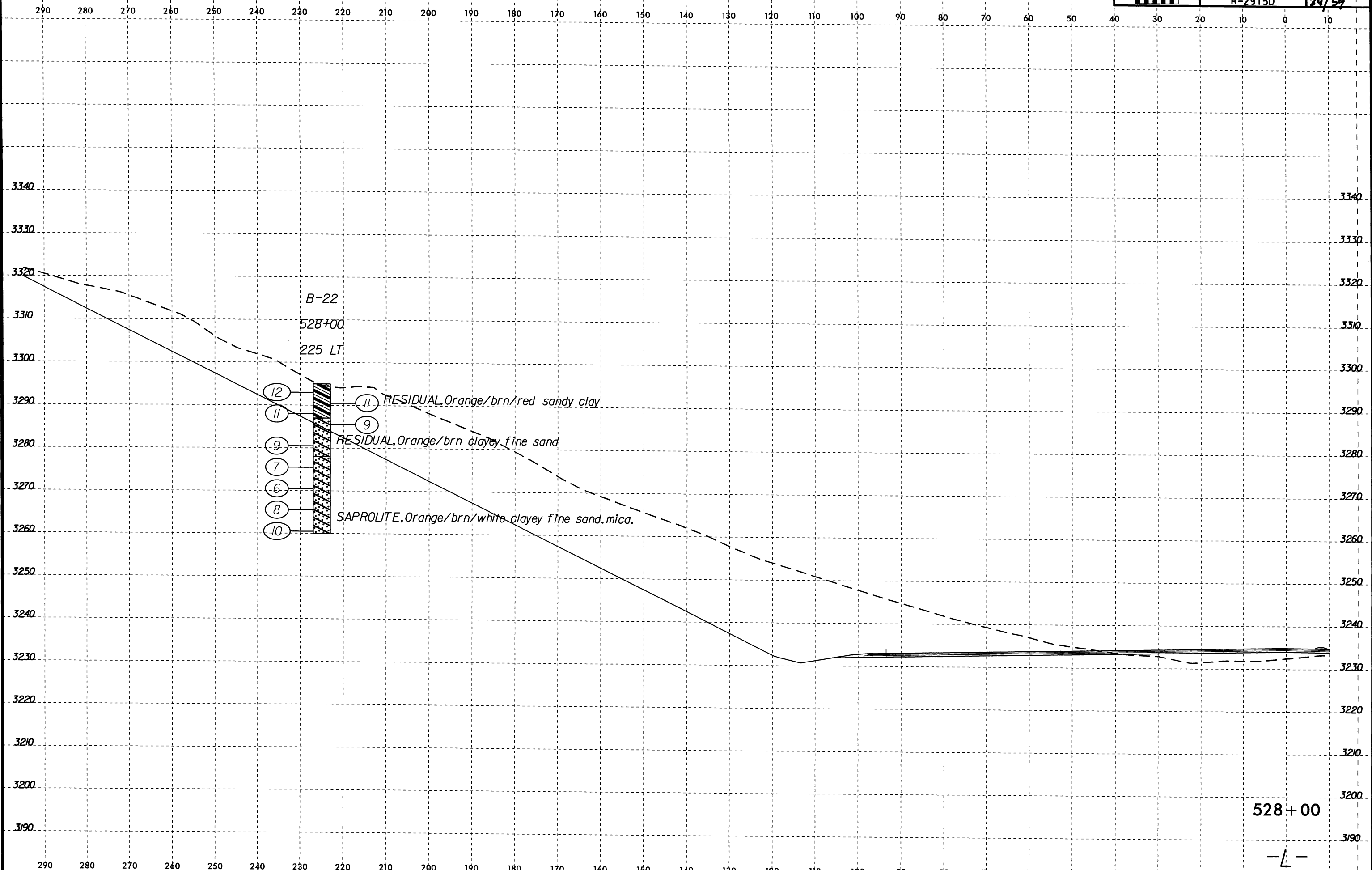
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527+00



8/23/99  
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B-22  
528+00  
225 LT

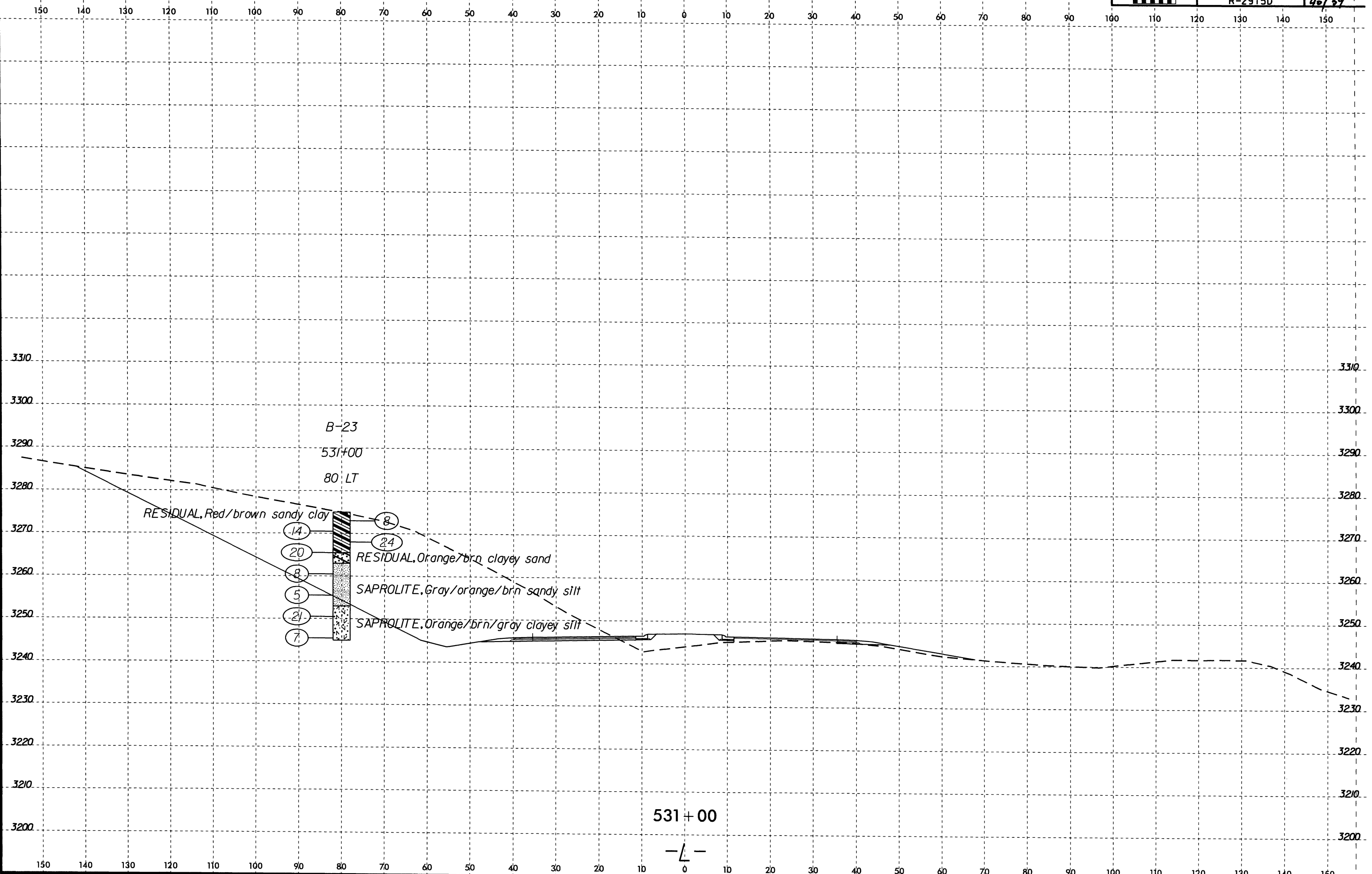
- 12
  - 11
  - 9
  - 7
  - 6
  - 8
  - 10
- RESIDUAL, Orange/brn/red sandy clay
- RESIDUAL, Orange/brn clayey fine sand
- SAPROLITE, Orange/brn/white clayey fine sand, mica.

528+00

-L-



18-JAN-2013 14:28  
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kjhne AT BE255745



B-23  
531+00  
80 LT

RESIDUAL, Red/brown sandy clay

14

20

8

5

21

7



8

24

8

5

21

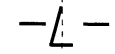
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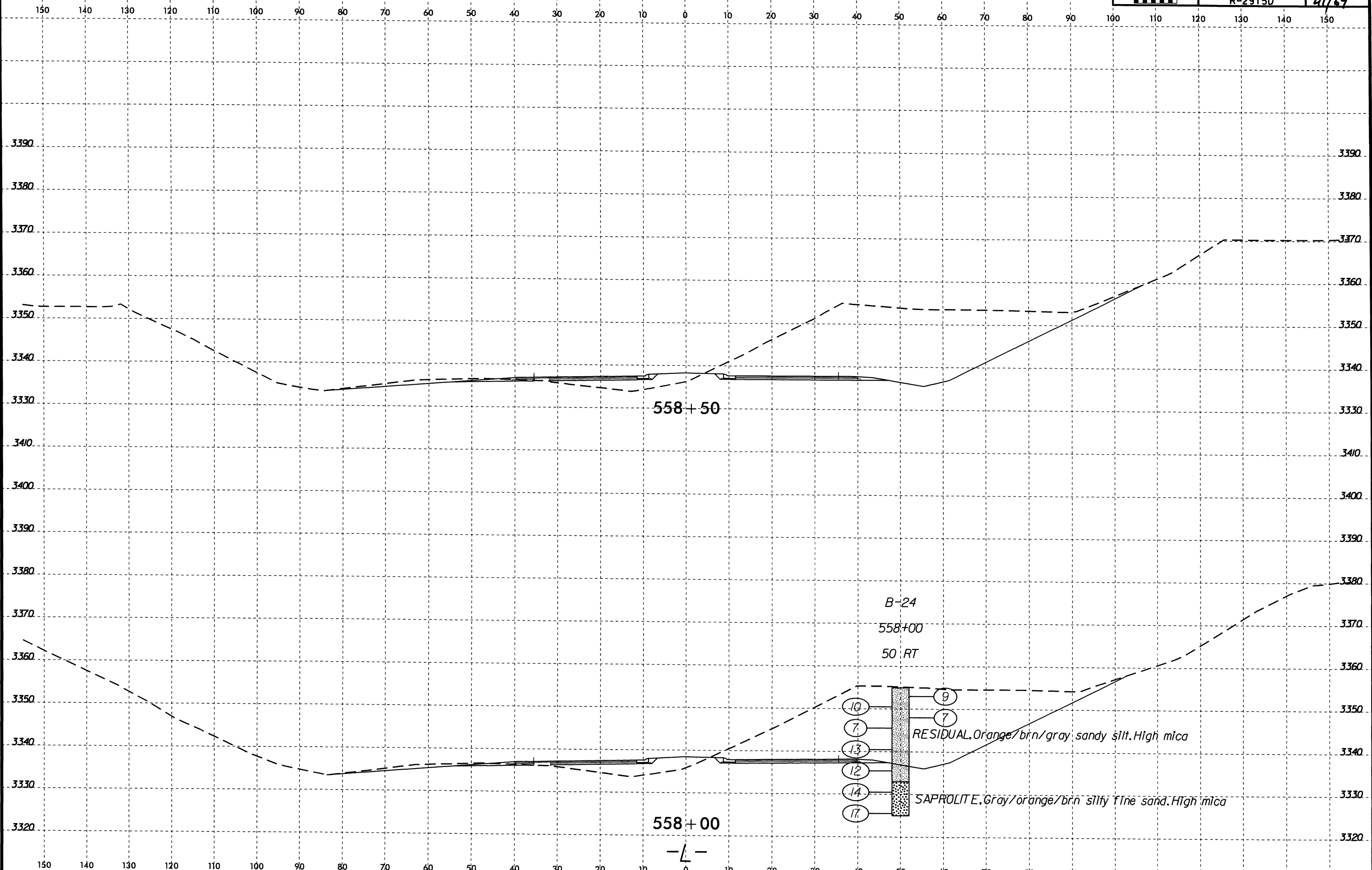
RESIDUAL, Orange/brn clayey sand

SAPROLITE, Gray/orange/brn sandy silt

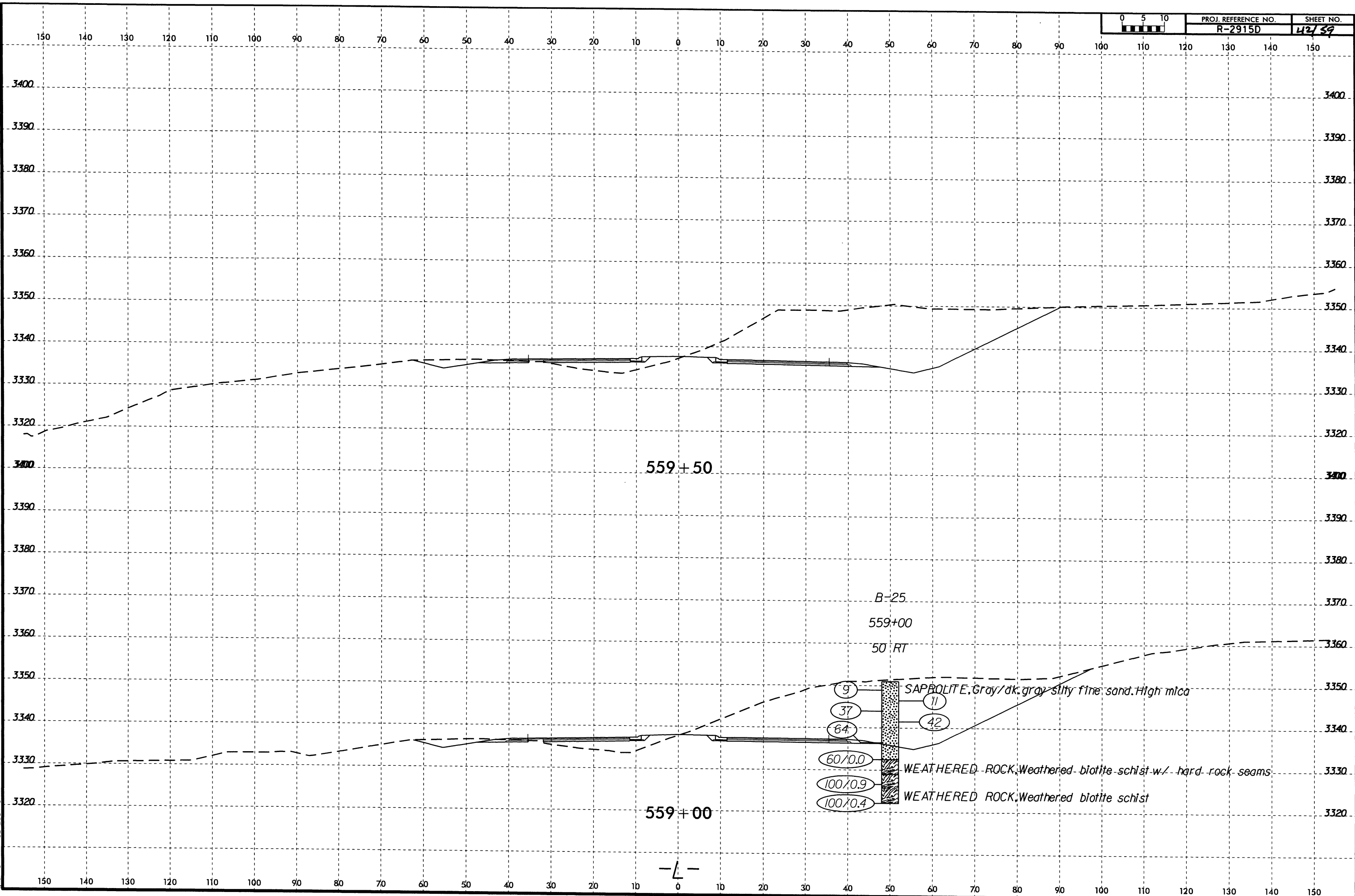
SAPROLITE, Orange/brn/gray clayey silt

531+00

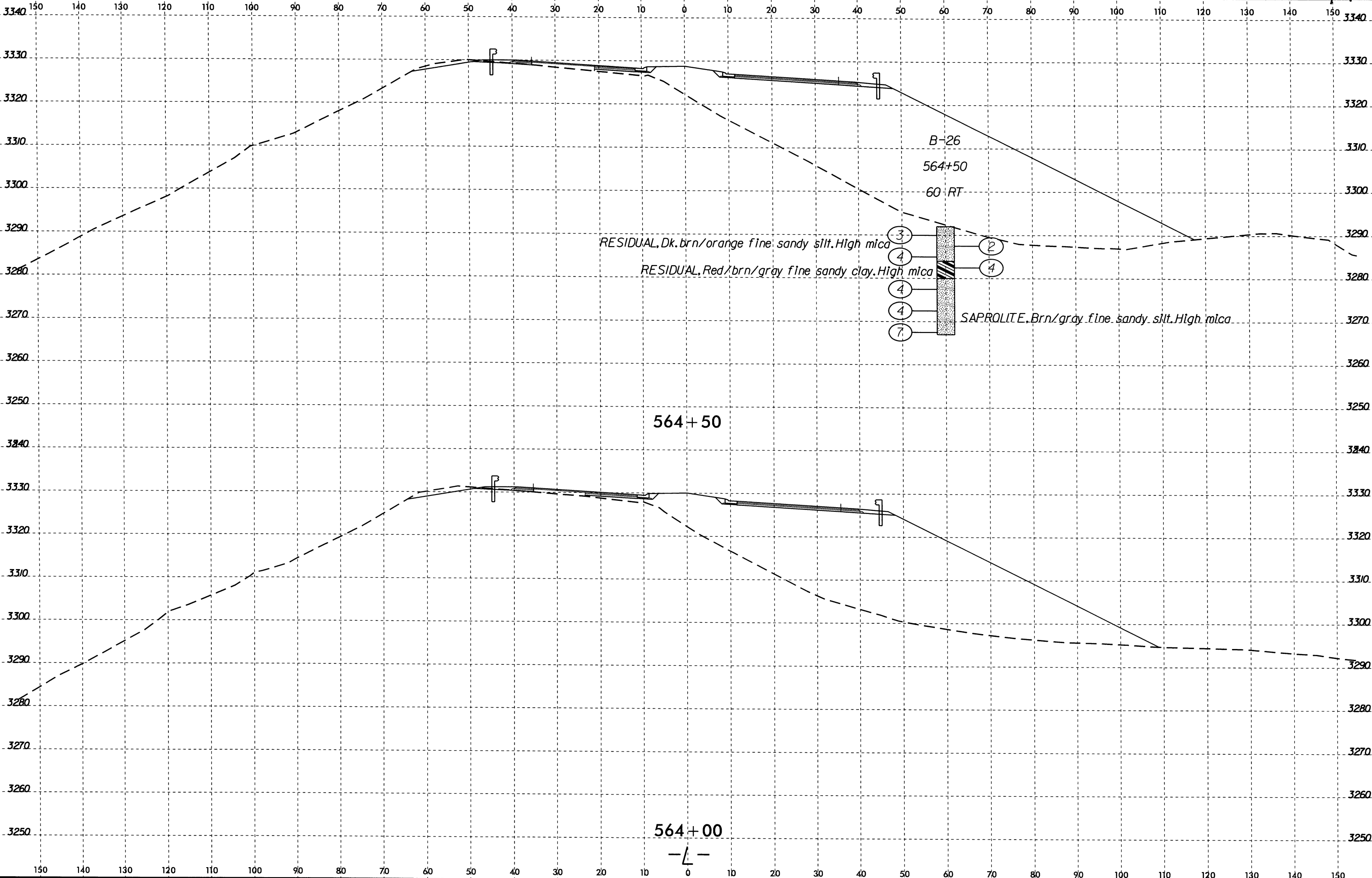
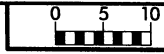




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 kluhne AT GE255425

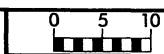


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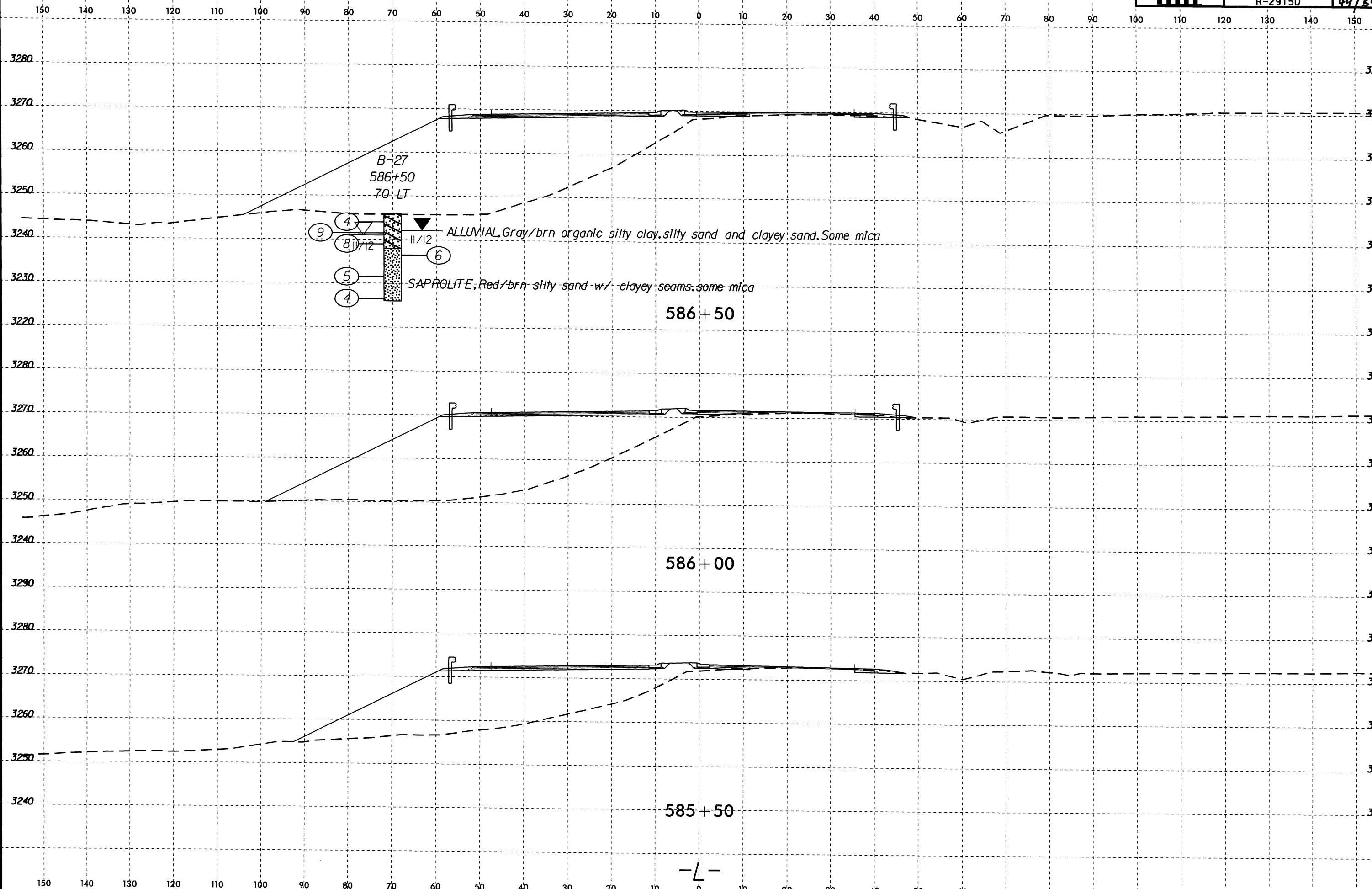


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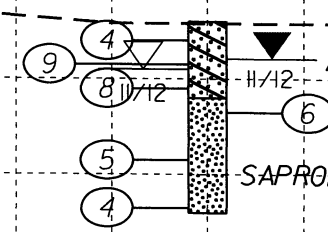
8/23/99



PROJ. REFERENCE NO. R-2915D SHEET NO. 44/59



B-27  
586+50  
70-LT



ALLUVIAL, Gray/brn organic silty clay, silty sand and clayey sand. Some mica

SAPROLITE, Red/brn silty sand w/ clayey seams, some mica

586 + 50

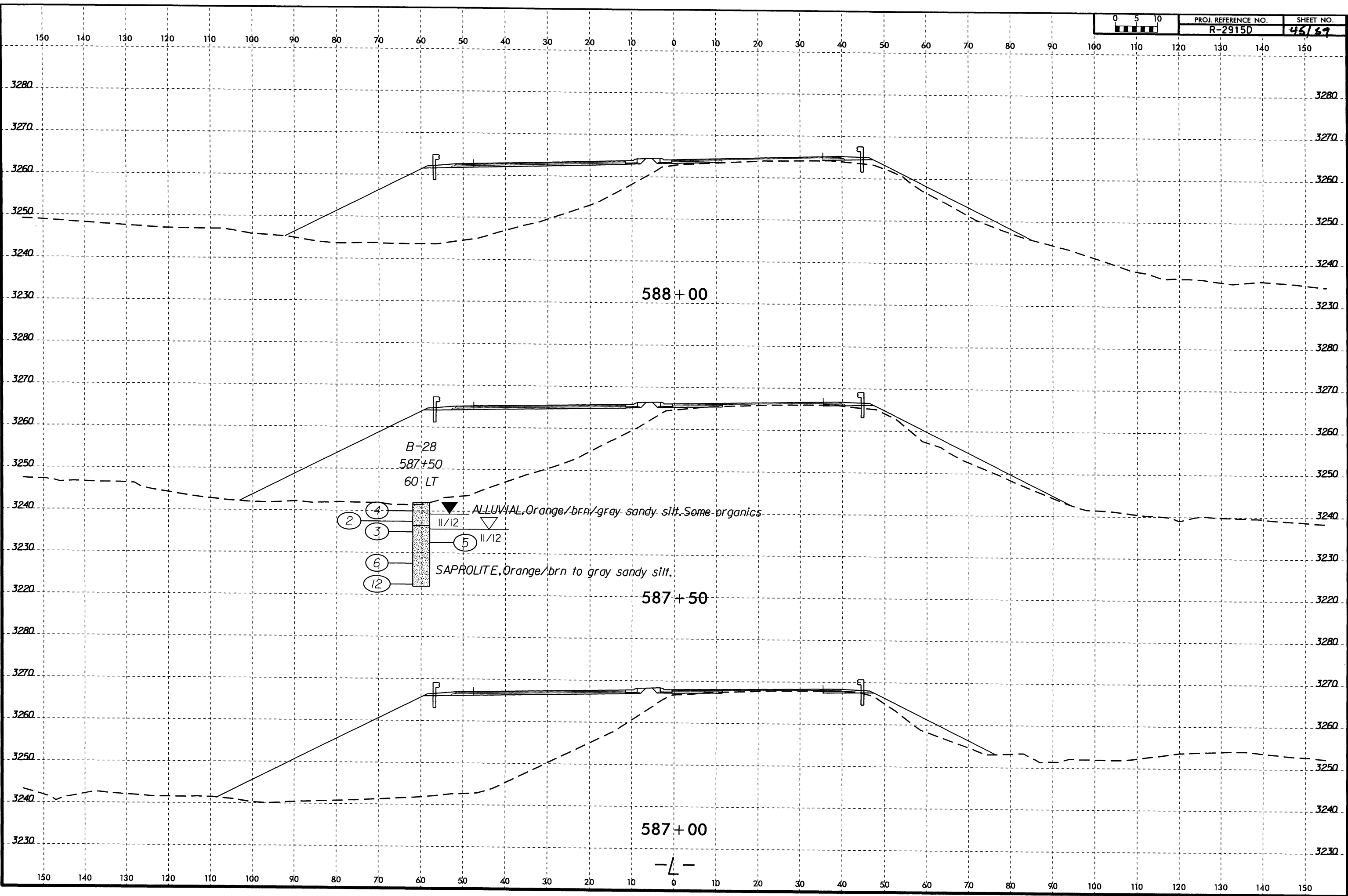
586 + 00

585 + 50

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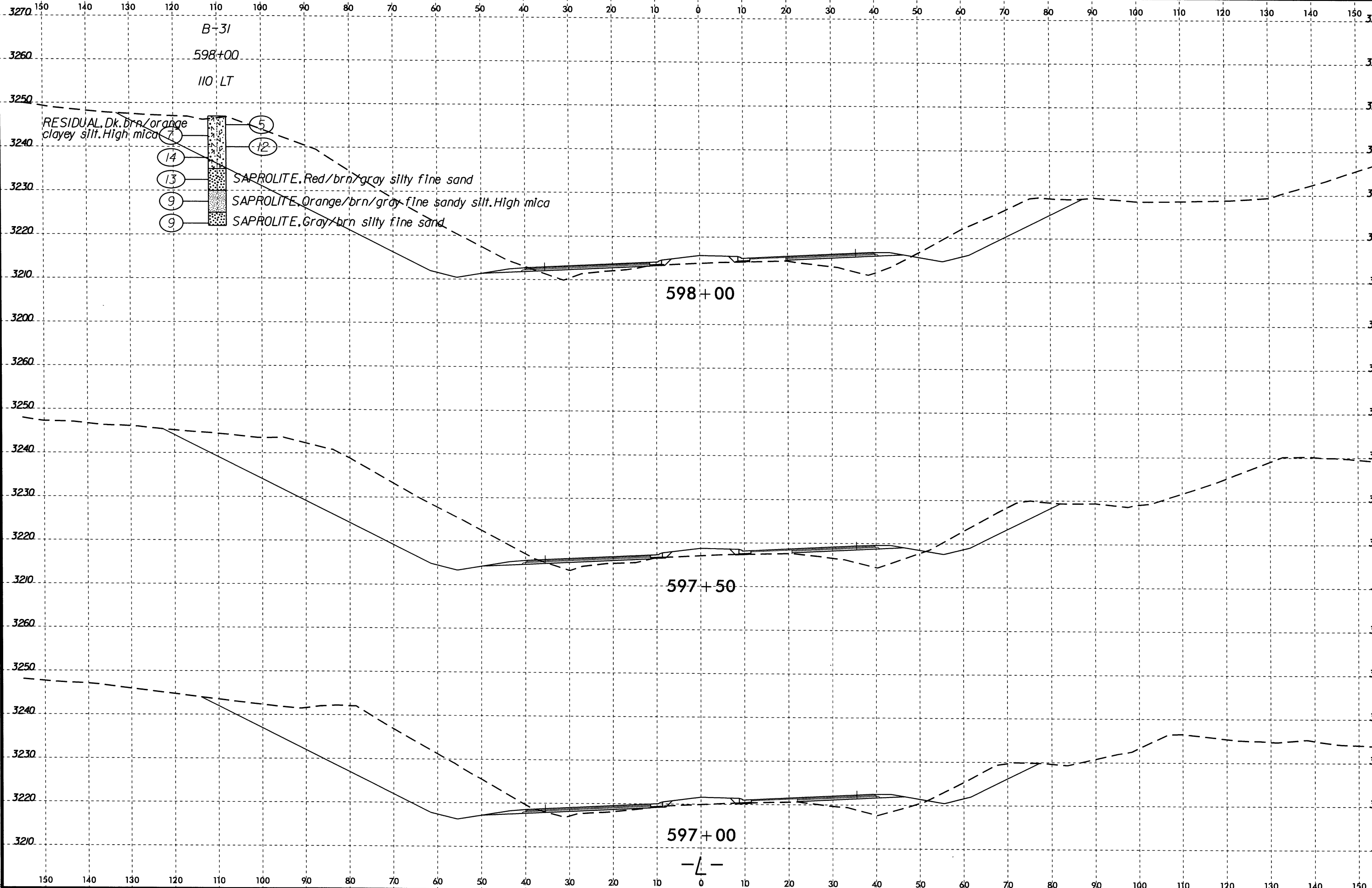
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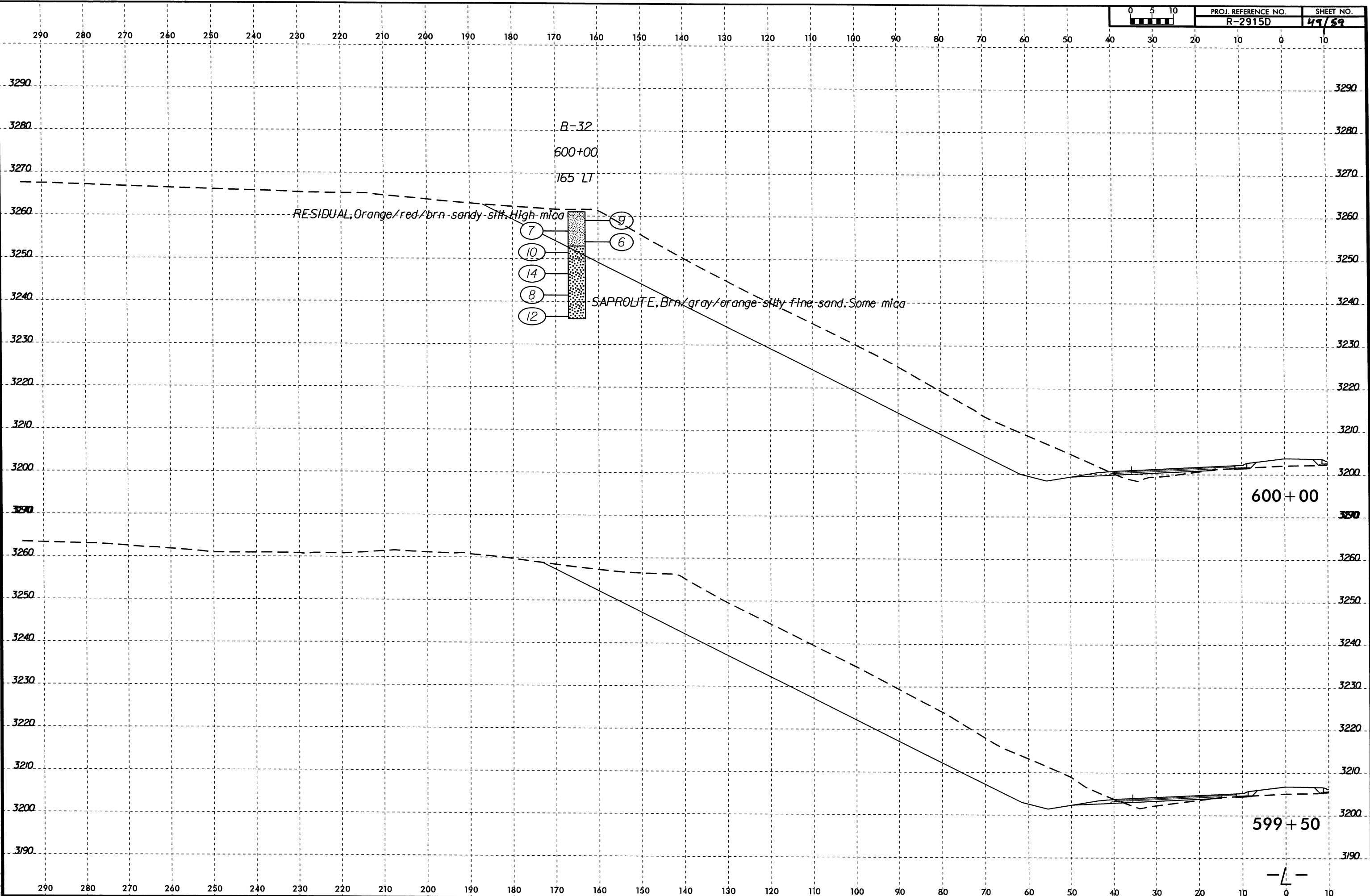


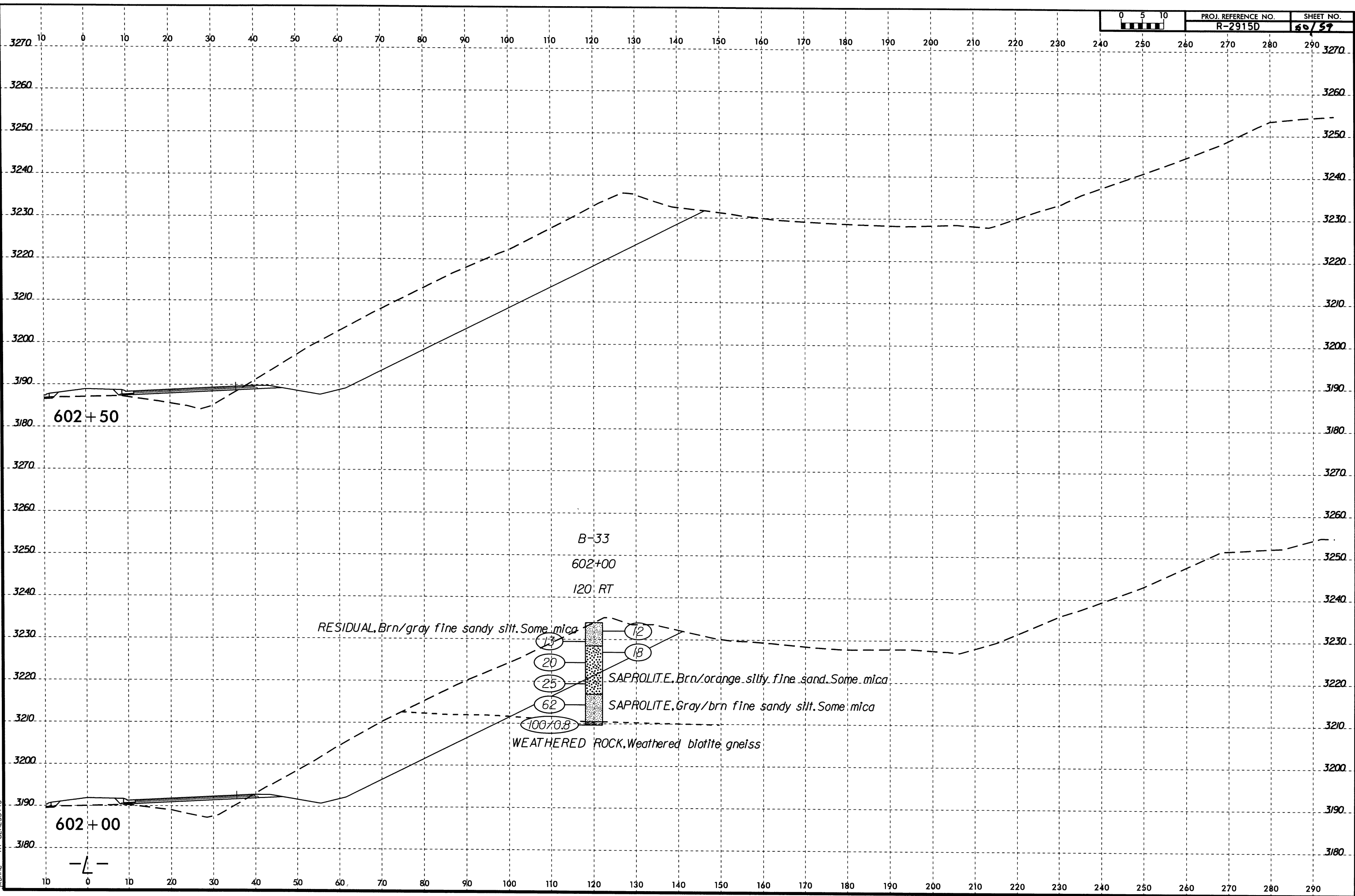




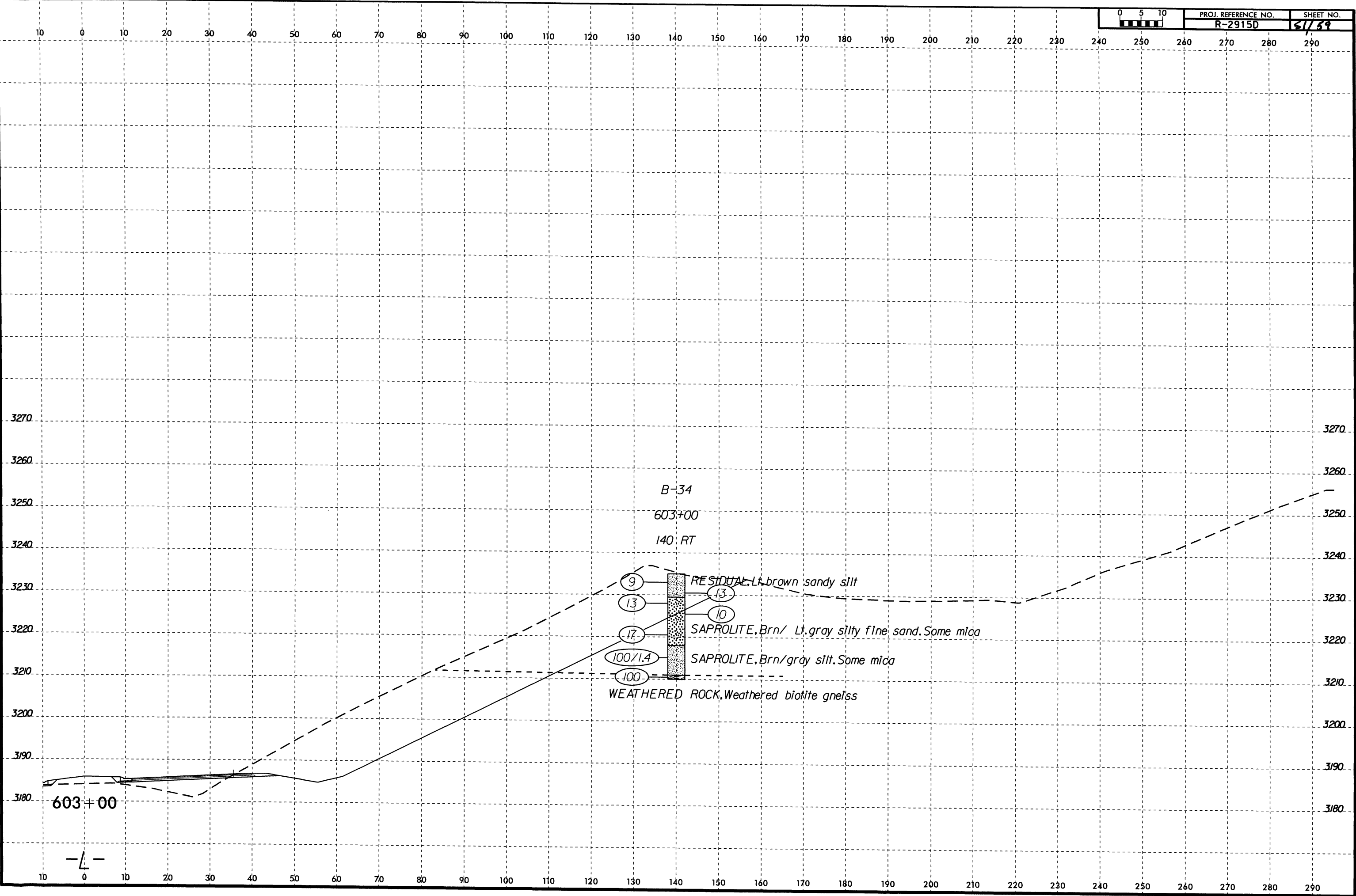
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 kühne AT GE25545

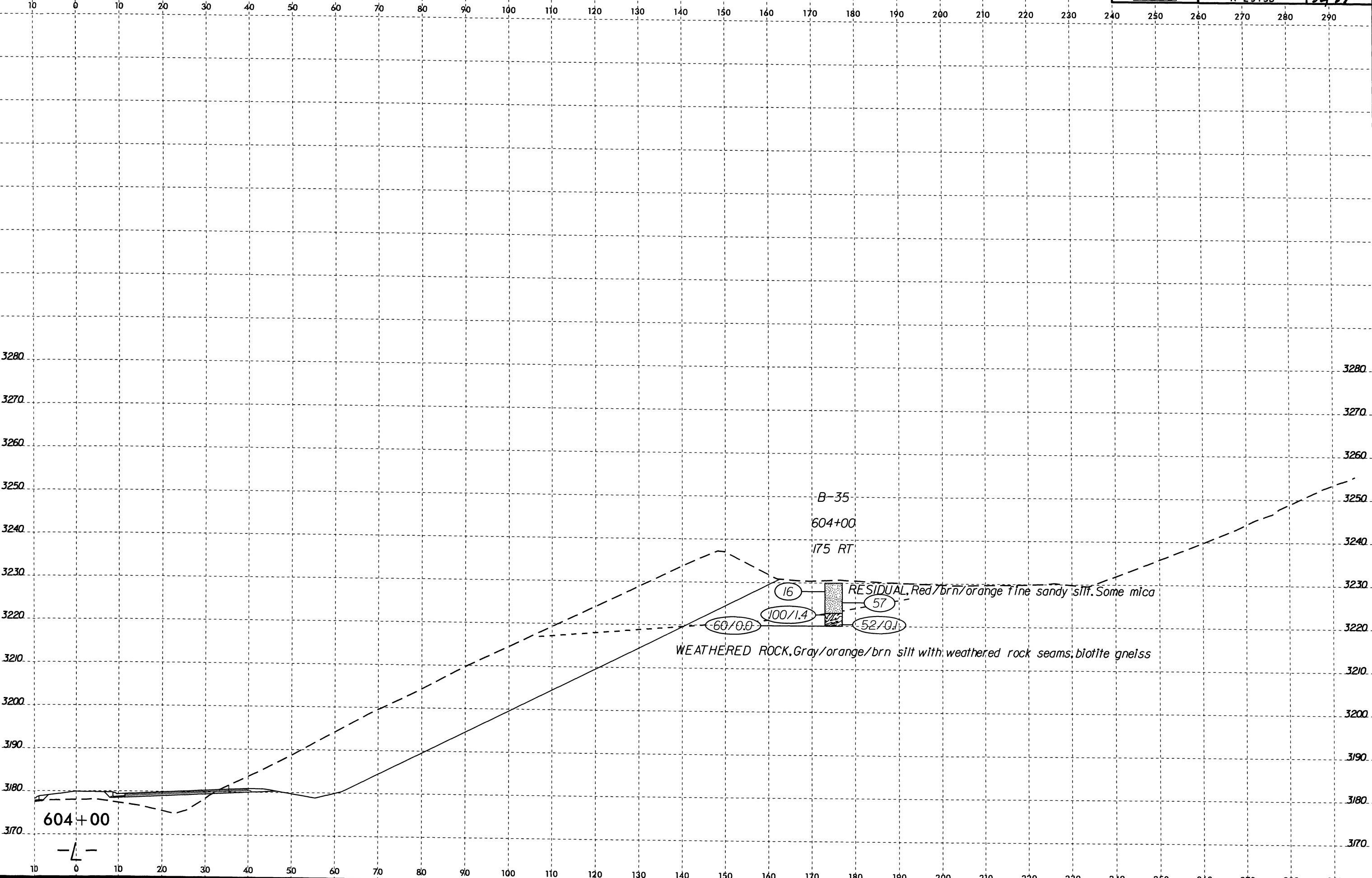


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PROJ. REFERENCE NO.  
R-2915D

SHEET NO.  
52/59



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3250  
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3230  
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3180  
3170

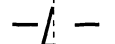
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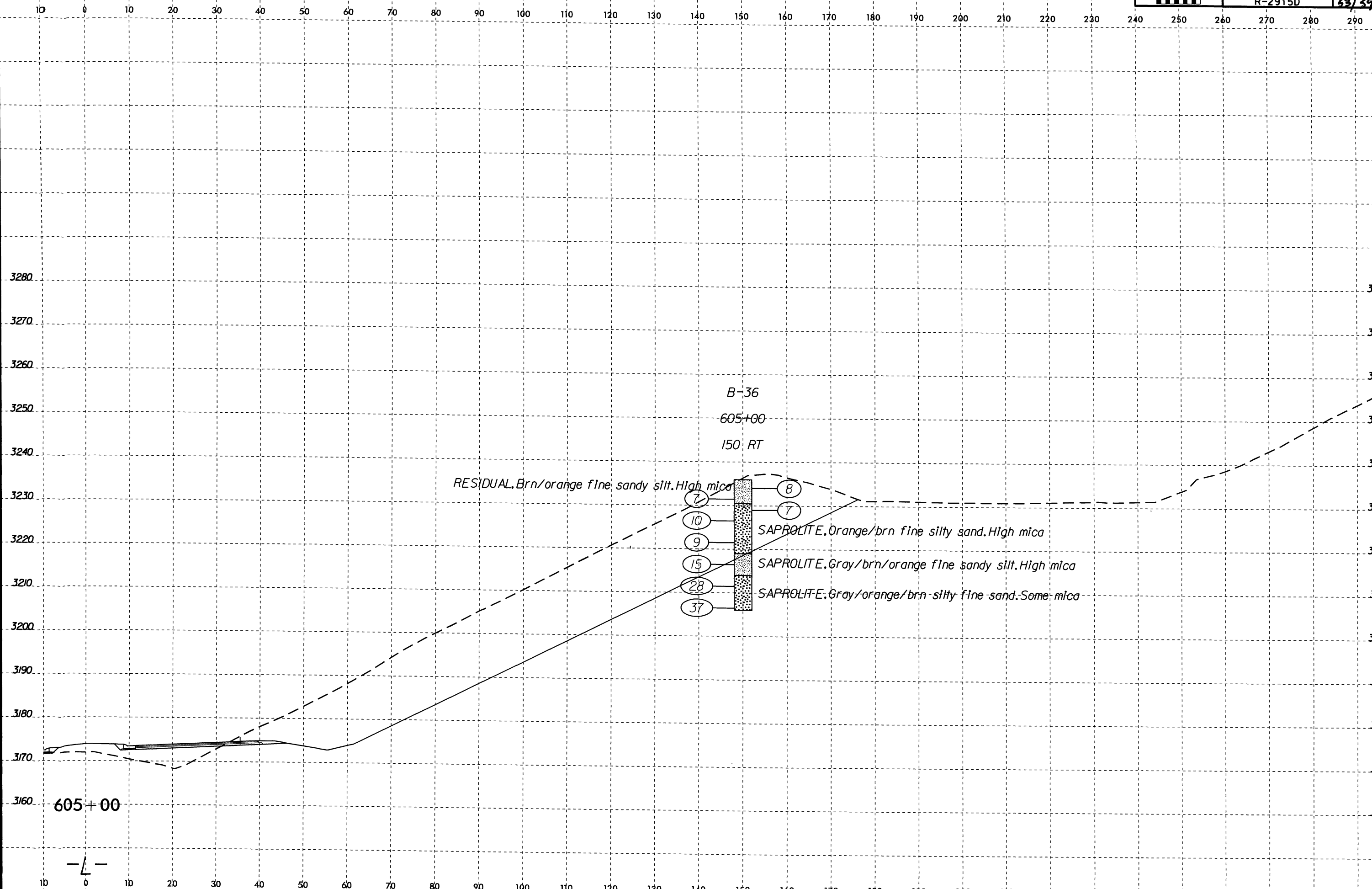
604+00

B-35  
604+00  
75 RT

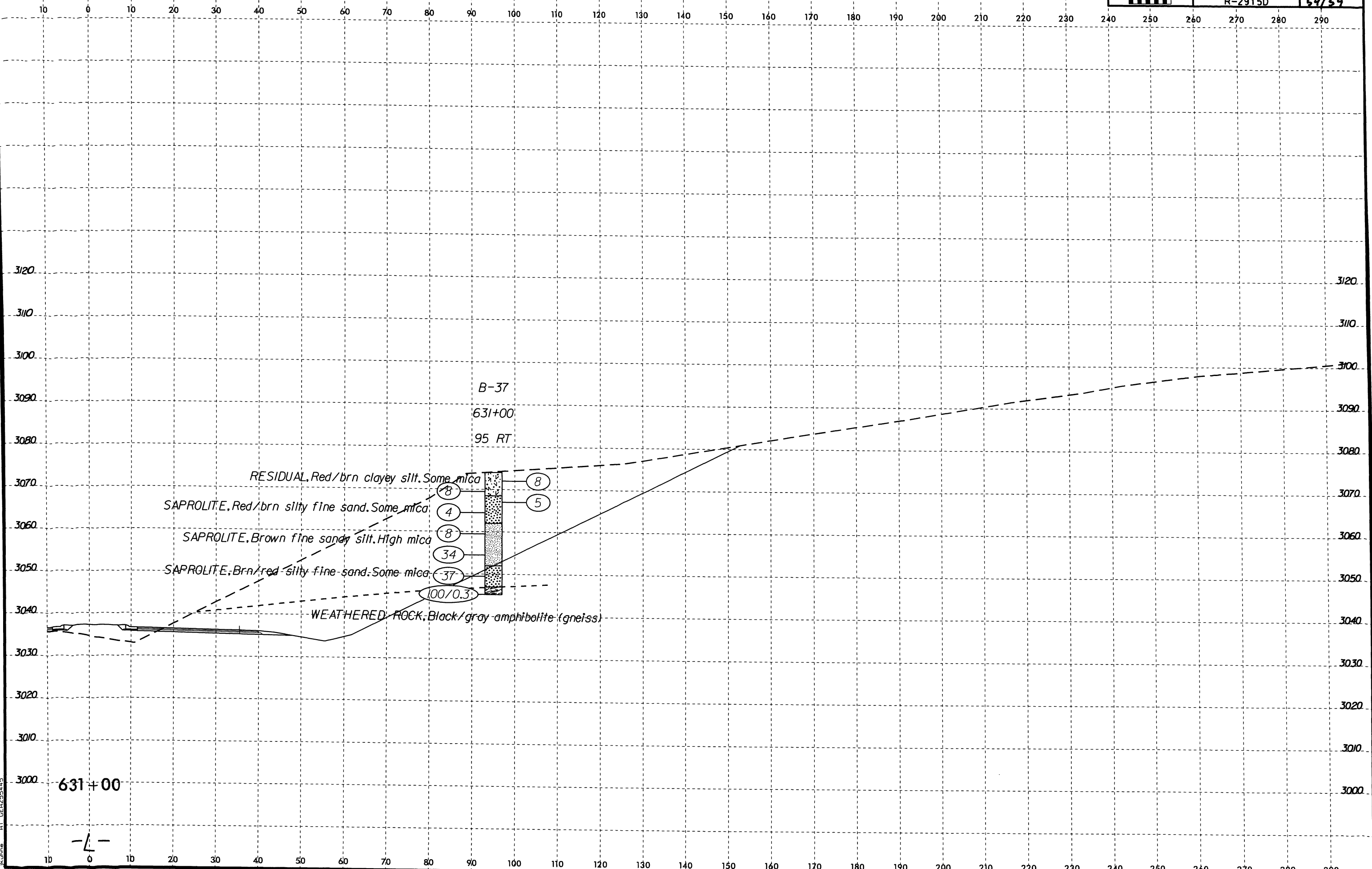
(16)  
RESIDUAL, Red/brn/orange fine sandy silt. Some mica  
(57)  
(60/0.0)  
(100/1.4)  
(52/0.1)  
WEATHERED ROCK, Gray/orange/brn silt with weathered rock seams; biotite gneiss

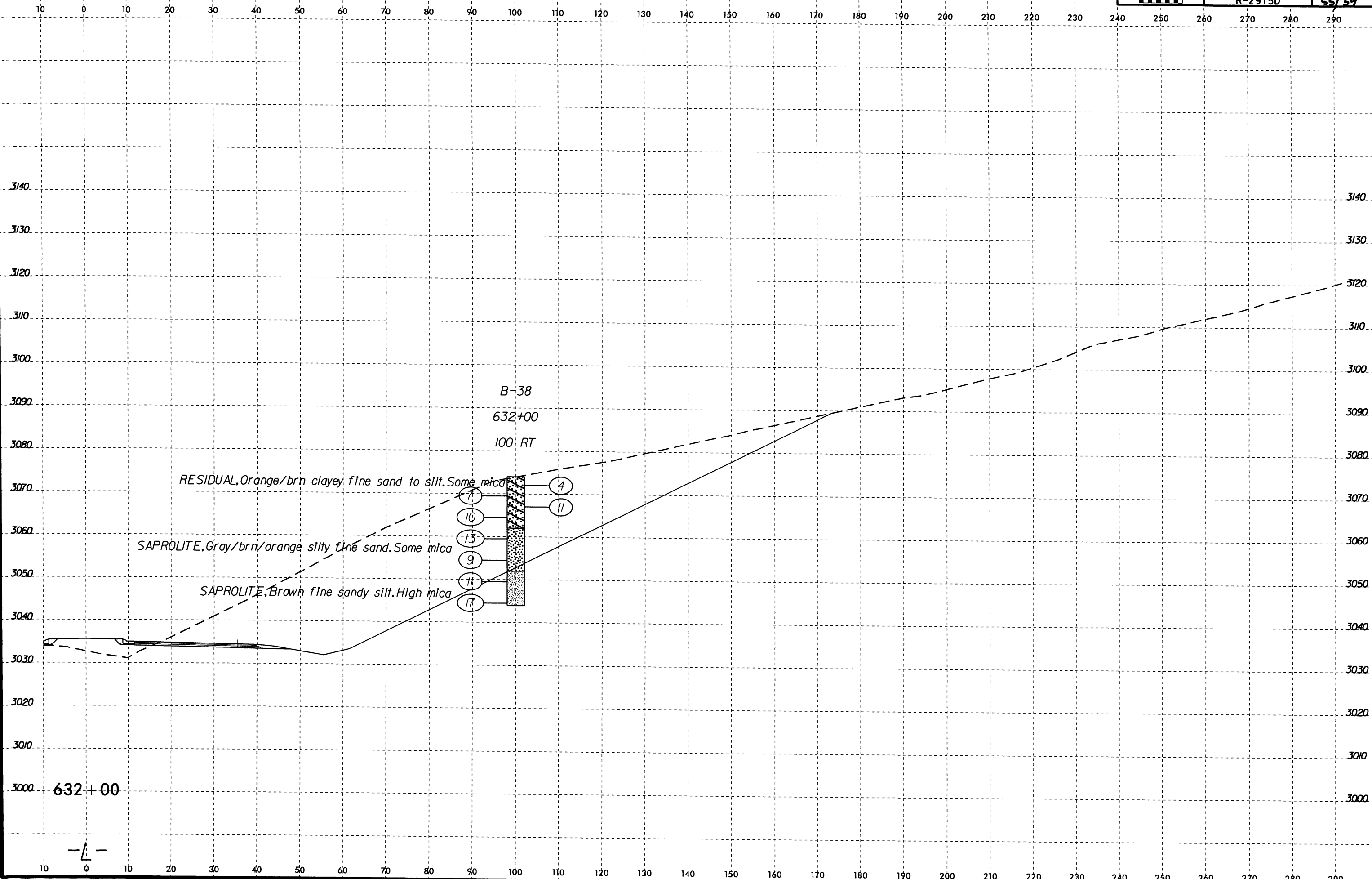
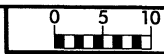


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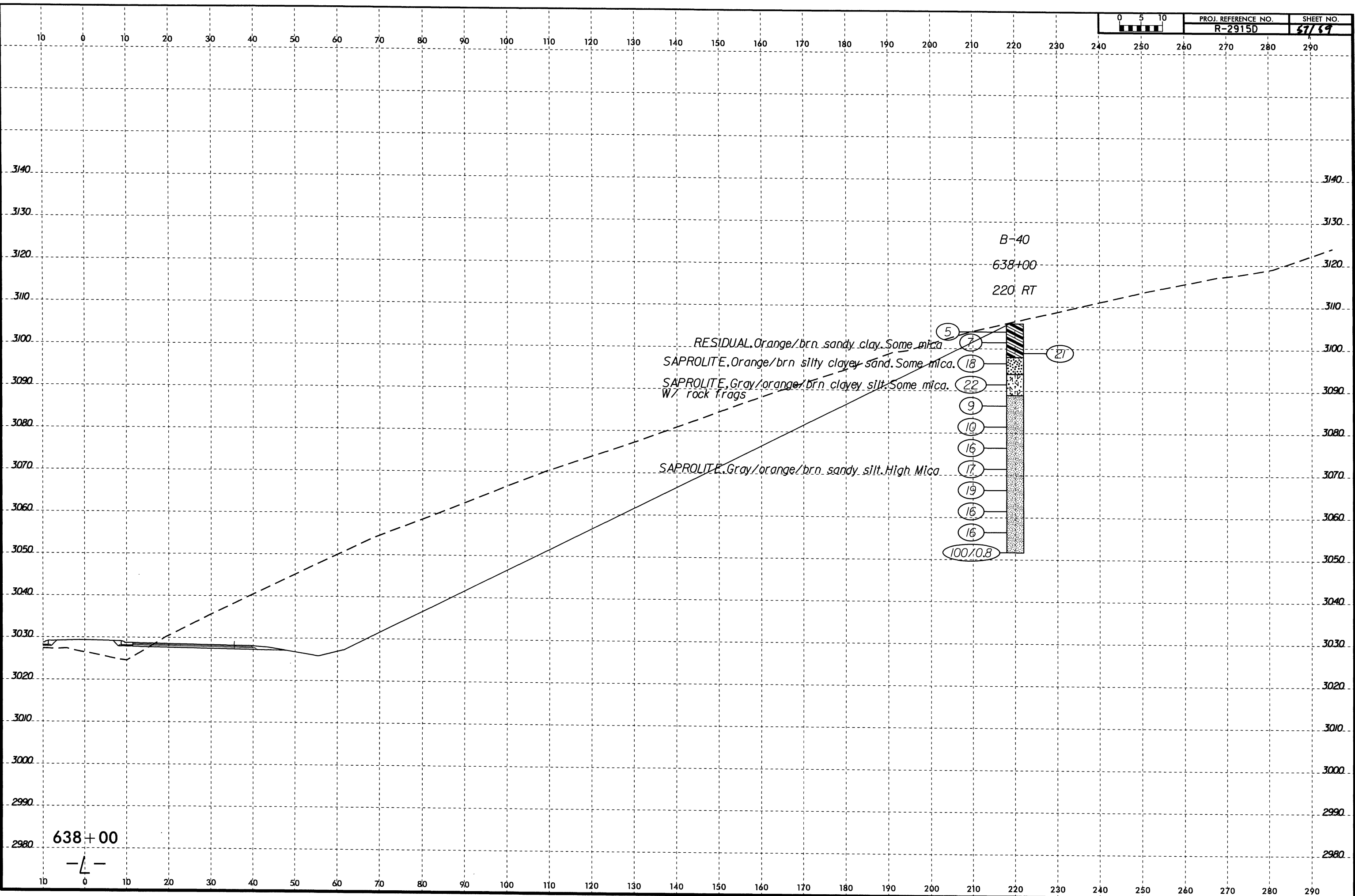
632+00

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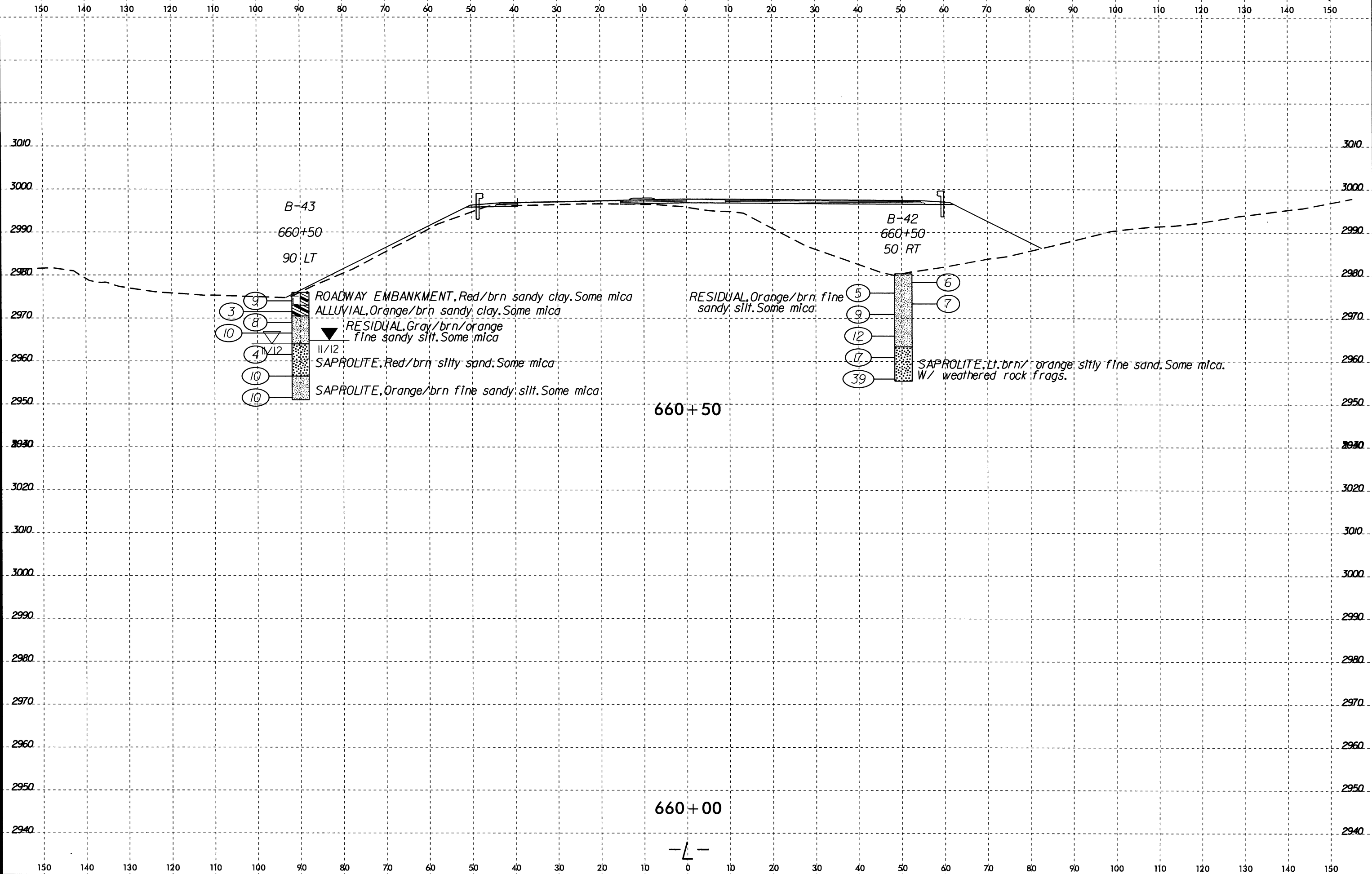




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