

NOTE: SEE SHEET 1A 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-4037	1	12
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33403.1.1	BRZ-3452(1)	P.E.	
33403.2.1	BRZ-3452(1)	RIGHT-OF-WAY	
33403.2.1	BRZ-3452(1)	UTILITY	
33403.3.1	BRZ-3452(1)	CONSTRUCTION	

CONTENTS

LINE	STATION	PLAN	PROFILE	XSECT
-L-	11+45.12 to 16+22.75	4		5
-YI-	10+08.00 to 11+89.00	4		

ROADWAY  
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 33403.1.1 (B-4037) F.A. PROJ. BRZ-3452(1)  
COUNTY BUNCOMBE  
PROJECT DESCRIPTION APPROACHES TO BRIDGE NO. 262 ON SR-3452  
OVER SOUTH HOMINY CREEK

INVENTORY

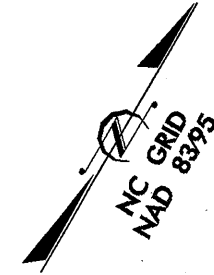
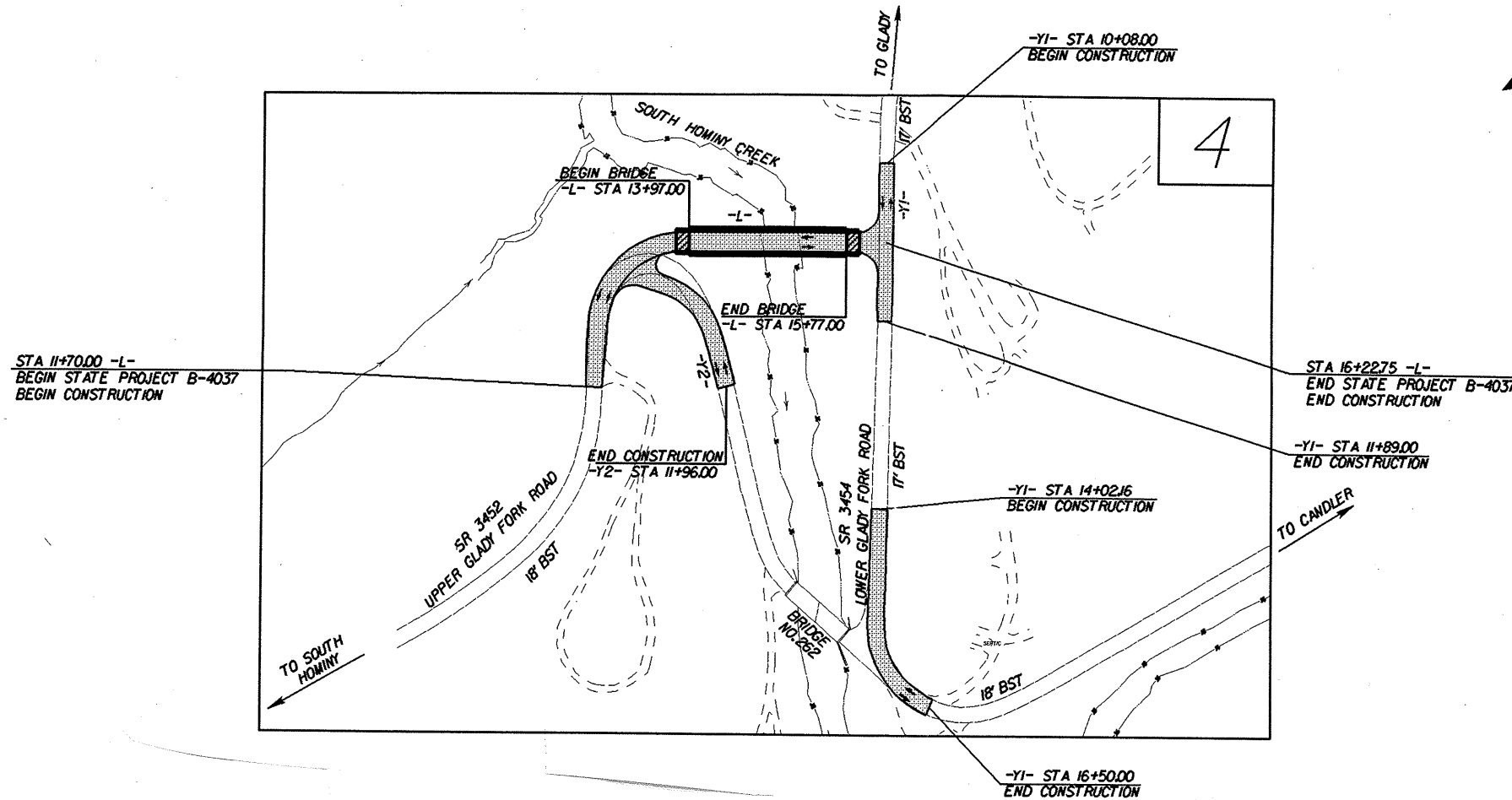
**CAUTION NOTICE**

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) 250-4088, 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.

CONTRACT: C201868 ID: B-4037



PERSONNEL

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

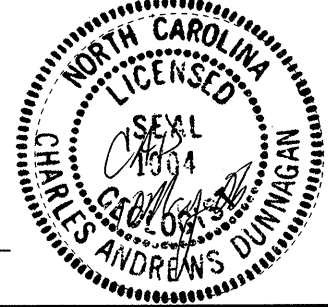
INVESTIGATED BY C A DUNNAGAN  
CHECKED BY W D FRYE, Jr  
SUBMITTED BY W D FRYE, Jr  
DATE MAY 2006

DRAWN BY: C A DUNNAGAN

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT 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.

*C A Dunnagan*  
C A DUNNAGAN

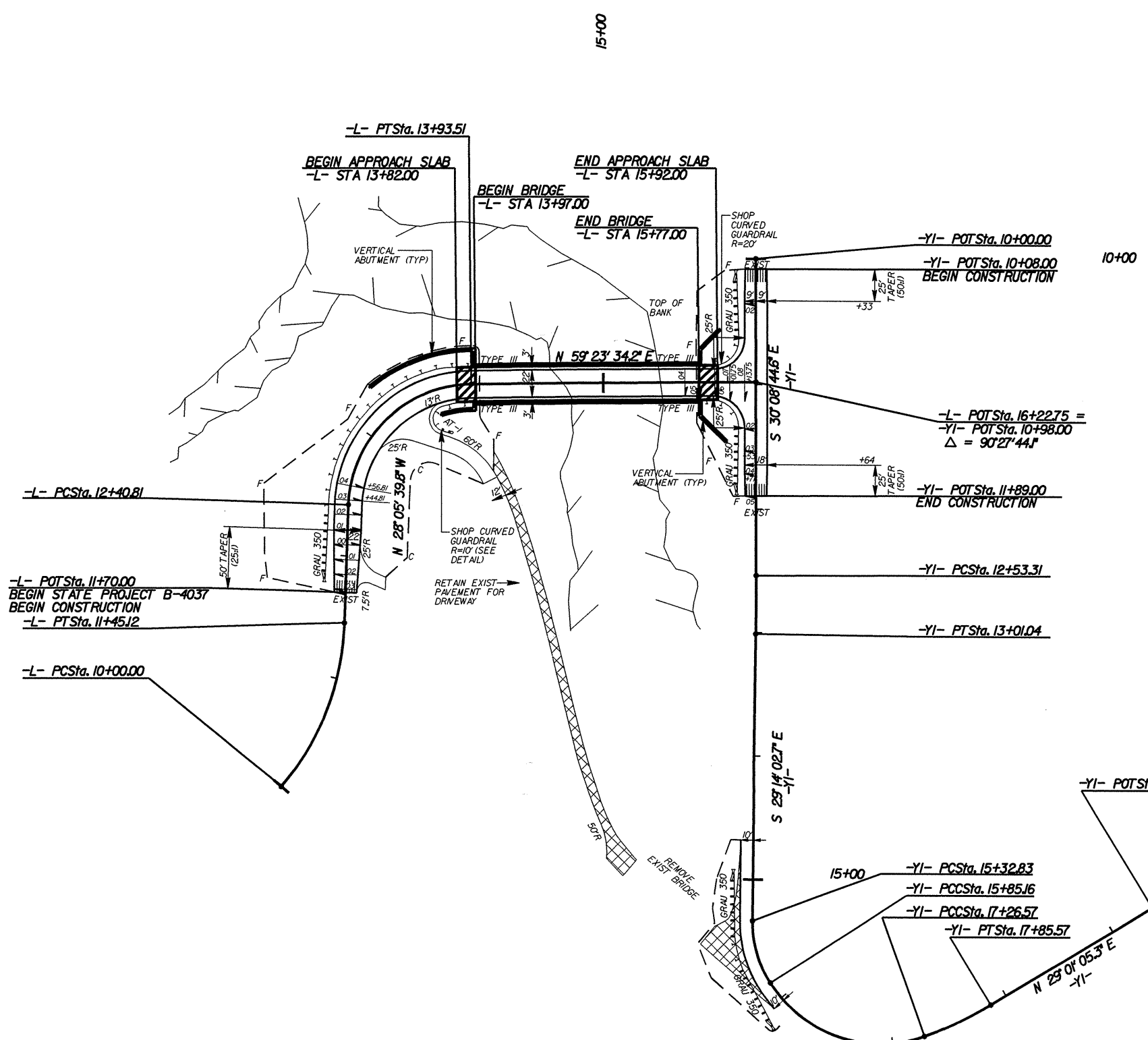


**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY MCDOT FOR MONUMENT "GPS B4037-1" WITH NAD 83 (HARN) STATE PLANE GRID COORDINATES OF NORTHING: 657503.0354(1) EASTING: 887258.7632(1) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999776694 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "GPS B4037-1" TO -L- STATION 16+227.5 IS N 33° 20' 08.54" W 565.16'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS BASED ON MCDOT MONUMENT "GPS B4037-1" (ELEV. 2201.390') NAD 83

-L-	
PI Sta 10+75.31 Δ = 37° 47' 38.7" (LT) D = 26' 02' 36.7" L = 145.12' T = 75.31' R = 220.00' SE = EXISTING RO = EXISTING	PI Sta 13+36.52 Δ = 87° 29' 14.0" (RT) D = 57' 17' 44.8" L = 152.69' T = 95.71' R = 100.00' **SE = 0.04 RO = 48'
-YI-	
PI Sta 12+77.18 Δ = 0° 54' 41.9" (RT) D = 1° 54' 35.5" L = 47.73' T = 23.87' R = 3,000.00' SE = EXISTING RO = EXISTING	PI Sta 15+59.76 Δ = 33° 18' 51.8" (LT) D = 63° 39' 43.1" L = 52.33' T = 26.93' R = 90.00' SE = EXISTING RO = EXISTING
PI Sta 16+68.93 Δ = 77° 09' 58.0" (LT) D = 54° 34' 02.7" L = 141.4' T = 83.77' R = 105.00' SE = EXISTING RO = EXISTING	PI Sta 17+56.17 Δ = 11° 16' 02.2" (LT) D = 19° 05' 54.9" L = 59.00' T = 29.59' R = 300.00' SE = EXISTING RO = EXISTING

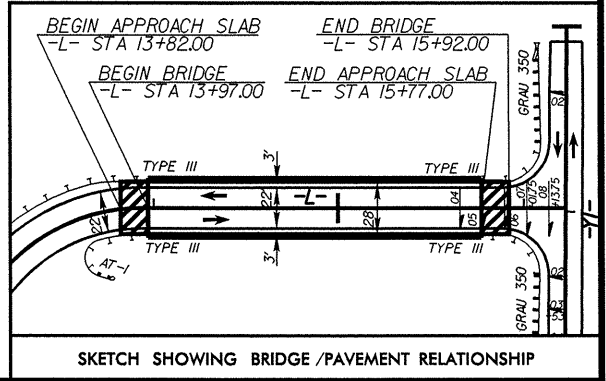
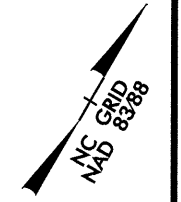


PROJECT REFERENCE NO. B-4037	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	
Kimley-Horn and Associates, Inc. P.O. BOX 33068 RALEIGH, N.C. 27636-3068	

REMOVE AND OBLITERATE EXISTING ASPHALT PAVEMENT

\* HORIZONTAL CURVE DESIGN EXCEPTION  
\*\* SUPERELEVATION DESIGN EXCEPTION

SEE SHEET NO.5 FOR -L- PROFILE  
SEE SHEET NO.5 FOR -YI- PROFILE



\$FILES\$  
 \$DATE\$

2/12

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL ENGINEERING UNIT

PROJECT REFERENCE NO. 33403.11(B-4037) SHEET NO. 2

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

Table with multiple columns: SOIL DESCRIPTION, GRADATION, ROCK DESCRIPTION, TERMS AND DEFINITIONS, SOIL LEGEND AND AASHTO CLASSIFICATION, MINERALOGICAL COMPOSITION, COMPRESSIBILITY, PERCENTAGE OF MATERIAL, GROUND WATER, MISCELLANEOUS SYMBOLS, ABBREVIATIONS, EQUIPMENT USED ON SUBJECT PROJECT, FRACTURE SPACING, BEDDING, INDURATION, PLASTICITY, and COLOR.

# EARTHWORK BALANCE SHEET

Volumes in Cubic Yards

COUNTY Buncombe

DATE 5/20/2008

SHEET 3 OF 12 SHEETS

PROJECT TIP # B-4037

LINE	STATION	STATION	TOTAL EXCAV. (UNCL.)	ROCK EXCAV.	UNDERCUT EXCAV.	UNSUIT. EXCAV.	SUITABLE EXCAV.	TOTAL EMB.	ROCK EMB.	UNDERCUT EMB.	EARTH EMB.	EMBANK. 15%	BORROW	SUITABLE WASTE	UNSUIT. WASTE	TOTAL WASTE
							12	4276	690	0	3414	4616	3914	0	0	0
L	11+70.00	13+97.00	702	690	0	0	0	813	0		813	935	935	0	0	0
L	15+77.00	16+13.75	0	0	0	0	0	635	0	0	635	731	730	0	0	0
Y1	10+08.00	11+89.00	1	0	0	0	1833	54	0		54	63	0	1770	0	1770
Y1	14+02.16	16+50.00	1833	0	0	0	8	1865	1209	0	354	1616	399	0	0	0
Y2	10+12.12	11+96.00	1217	1209	0	0	8									
<b>PROJECT SUBTOTAL</b>			3753	1899	0	0	1854	7643	1899	0	5270	7961	5978	-1770	0	1770
ADDITIONAL UNDERCUT					10											
SHOULDER MATERIAL													-1770	-1770	0	-1770
WASTE IN LIEU OF BORROW							-50						50			
LOSS DUE TO CLEARING & GRUBBING			-50										4258	0	0	0
<b>PROJECT TOTAL</b>			3703	1899	10	0	1804	7643	1899	0	5270	7961				
EST 5% TO REPLACE TOP SOIL ON BORROW PIT													213			
<b>GRAND TOTAL</b>			3703										4471			
SAY			3800										4500			

\* EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

May 10, 2006

STATE PROJECT: 33403.1.1 (B-4037)  
FEDERAL PROJECT: BRZ-3452(1)  
COUNTY: Buncombe  
DESCRIPTION: Approaches to Bridge No. 262 on SR-3452 over South Hominy Creek  
SUBJECT: Geotechnical Report – Inventory

**Project Description**

This project is centered on replacing the existing Bridge No. 262. The new structure will be approximately 400.0 feet upstream (North) of the old structure. Therefore, new approaches will be required. On May 4, 2006 a reconnaissance was conducted through the project corridor. The only factor that needs to be addressed here is the rock exposed in the existing cuts.

**Areas of Special Geotechnical Interest**

- (1) Hard Rock: Rock (with saprolite and weathered rock) is exposed within the following Station interval. The interval noted will probably be involved in the proposed construction.

<u>Line</u>	<u>Station Interval</u>
-L-	12+00 to 14+00

**Geology and Rock Properties**

The rocks exposed within the project corridor are members of the Ashe Metamorphic Suite. These rocks are primarily biotite-muscovite gneiss. The outcrops are fractured into blocks from 1.0 ft. by 1.0 ft. to 3.0 ft. by 3.0 ft. (the dimensions are approximate). Rock data was gathered and are here presented in dip and dip direction.

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

TELEPHONE: 919-250-4088  
FAX: 919-250-4237  
WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:  
CENTURY CENTER COMPLEX  
BUILDING B  
1020 BIRCH RIDGE DRIVE  
RALEIGH NC 27610

4/12

Discontinuity

Dip° / Dip Direction°

Foliation	36/160
Joint <sub>1</sub>	85/160
Joint <sub>2</sub>	50/276
Joint <sub>3</sub>	83/224
Joint <sub>4</sub>	56/080

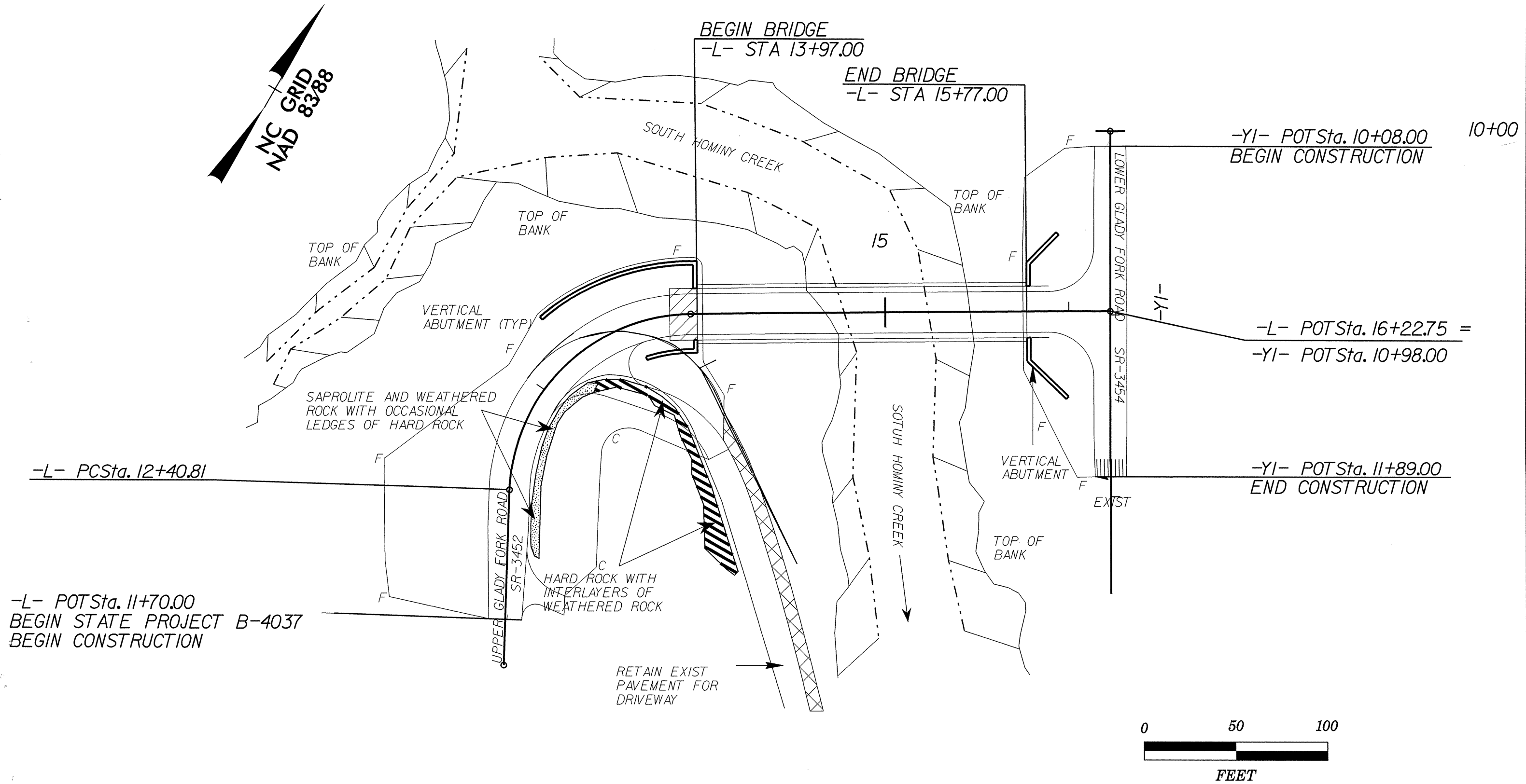
**Comments**

The driveway located left of -Y1- Station 16+60 has very limited sight distance. The proposed alignment will channel all traffic onto -Y1-. This may augment an already dangerous situation.

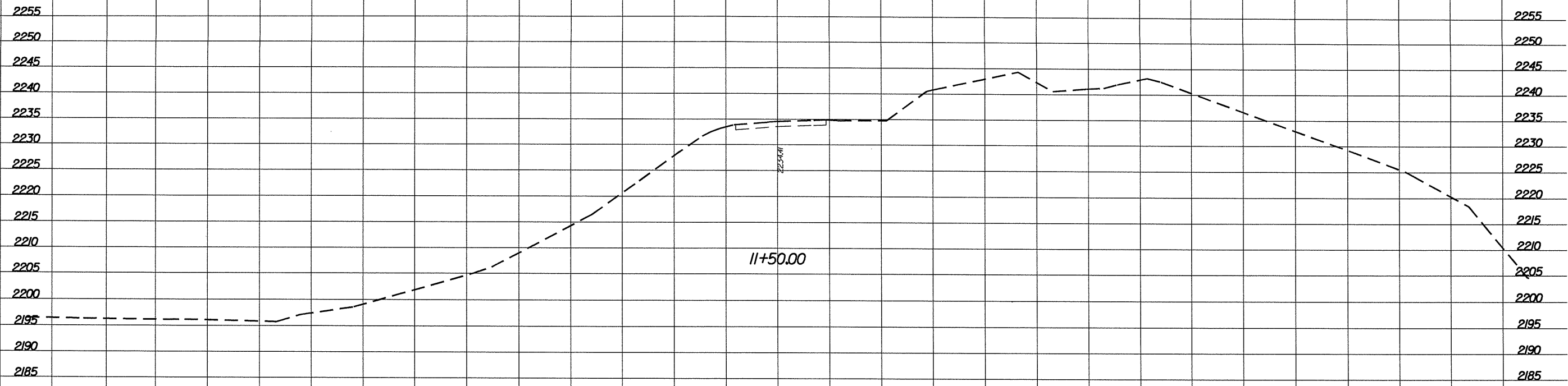
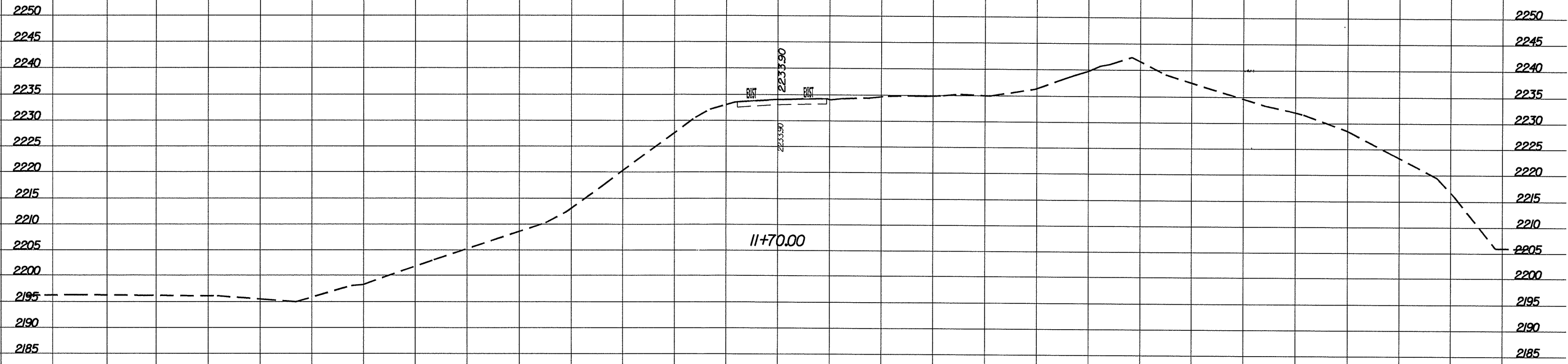
Respectfully Submitted,

Charles A. Dunnagan, LG  
Project Geological Engineer

# APPROACHES TO BRIDGE NO. 262 ON SR-3452 OVER SOUTH HOMINY CREEK



x-1

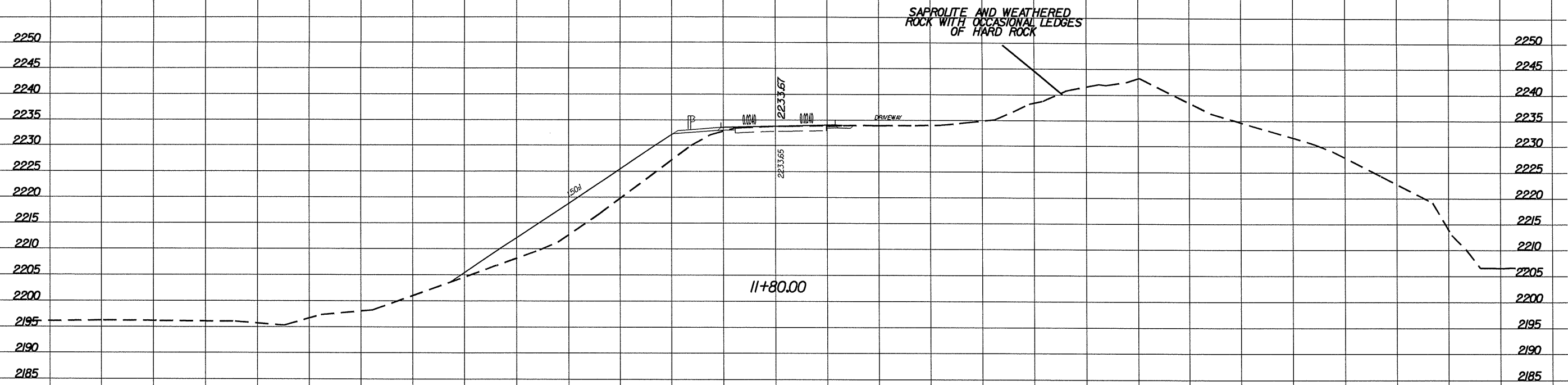
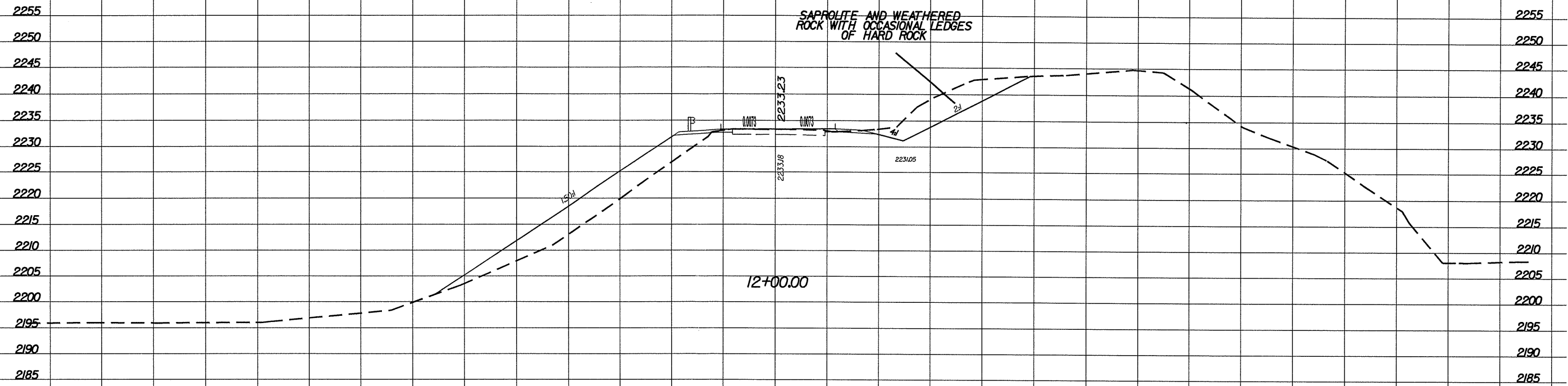


-L- (UPPER GLADY FORK ROAD)

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140



X-2

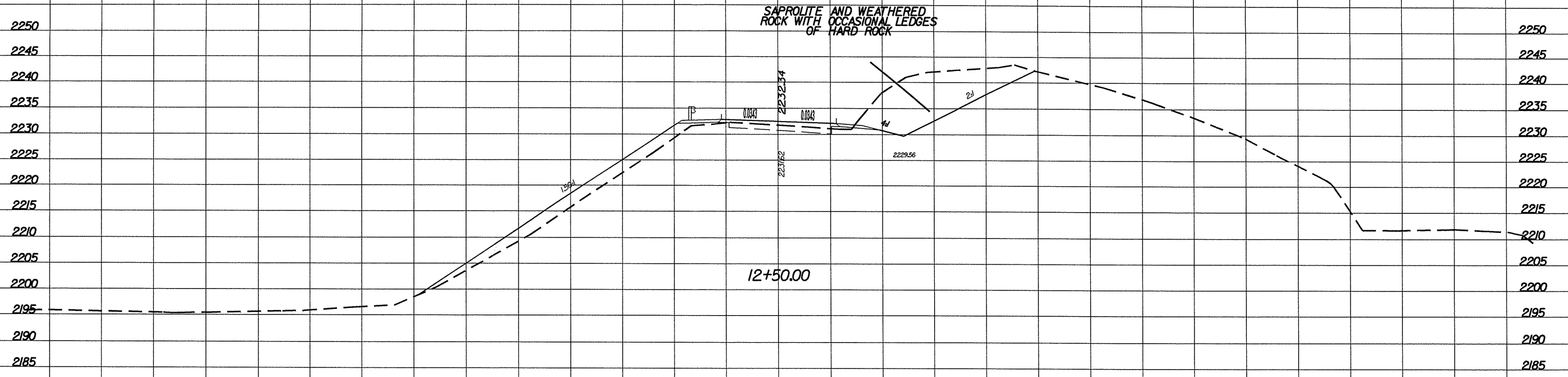
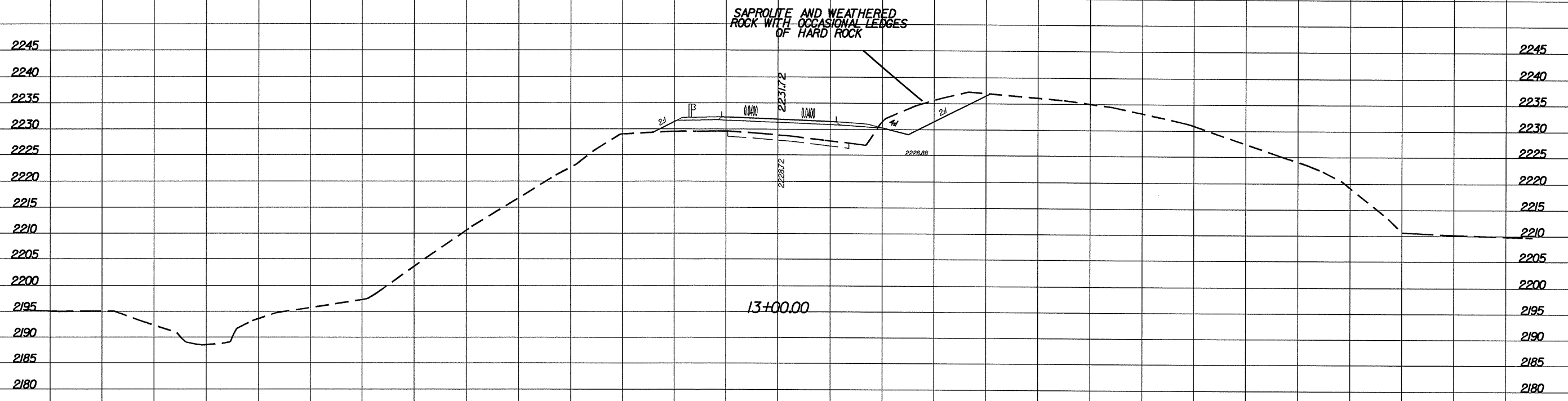


-L- (UPPER GLADLY FORK ROAD)

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140



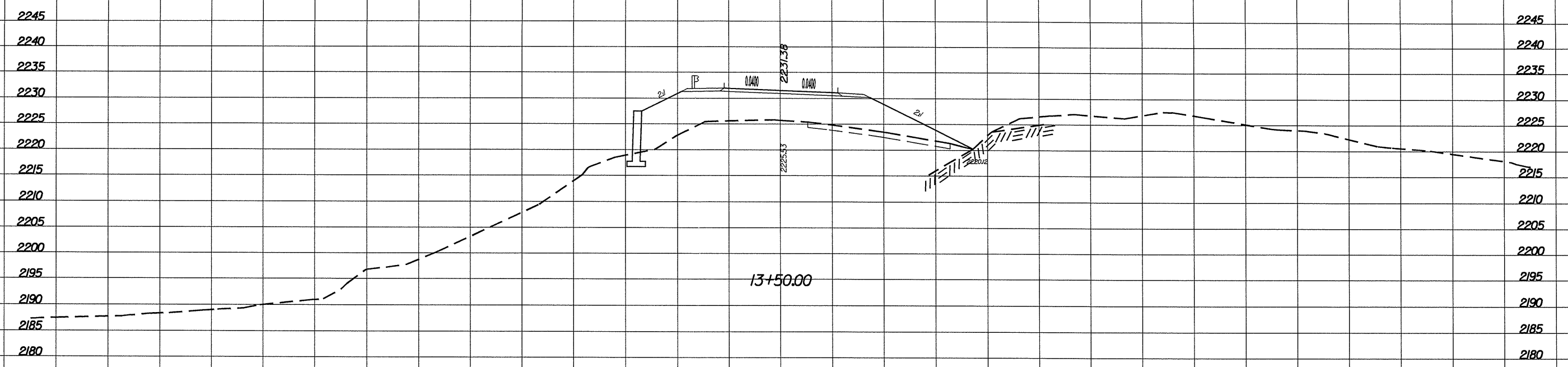
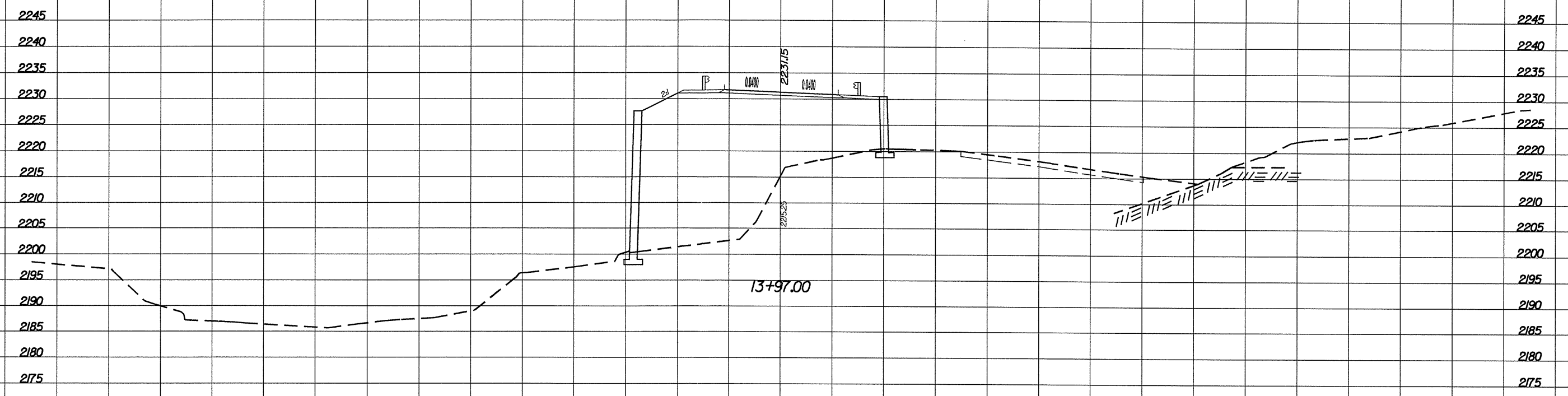
X-3



-L- (UPPER GLADY FORK ROAD)

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

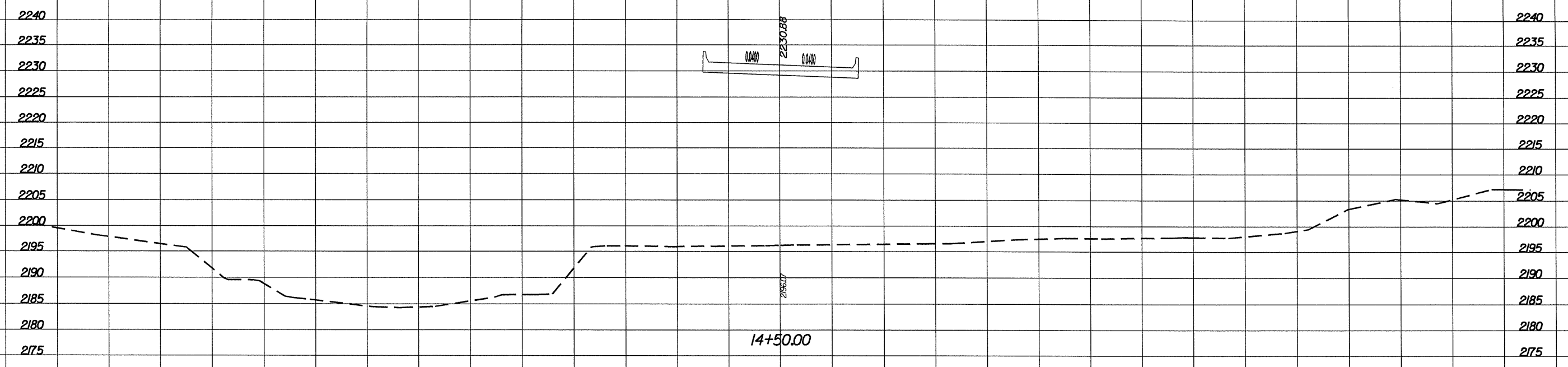
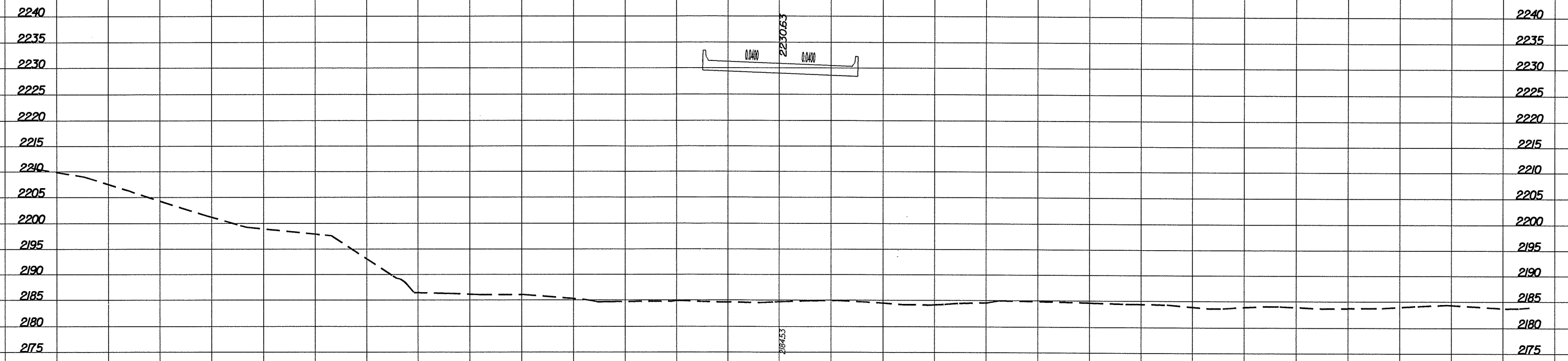
x-4



-L- (UPPER GLADY FORK ROAD)

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

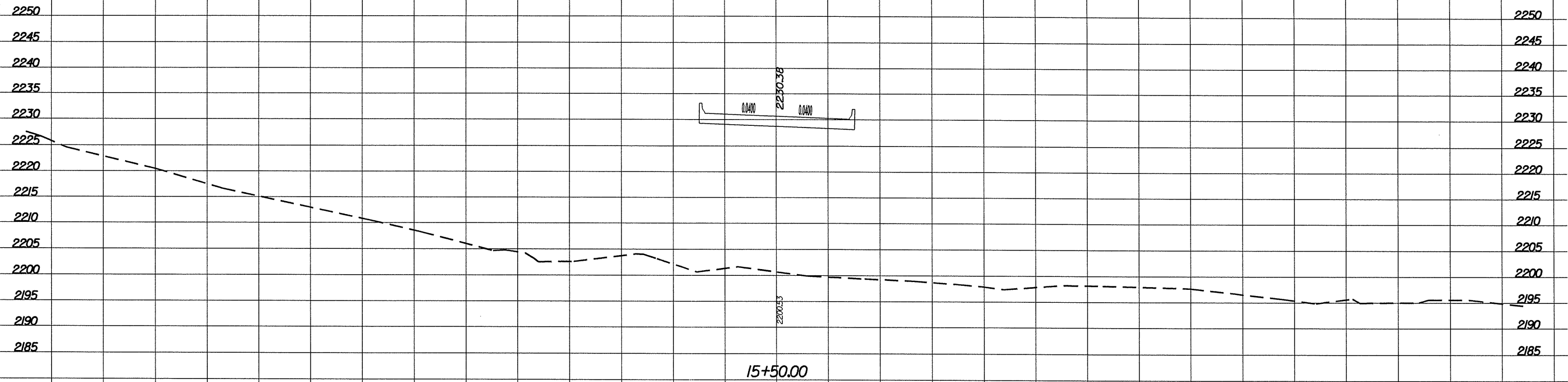
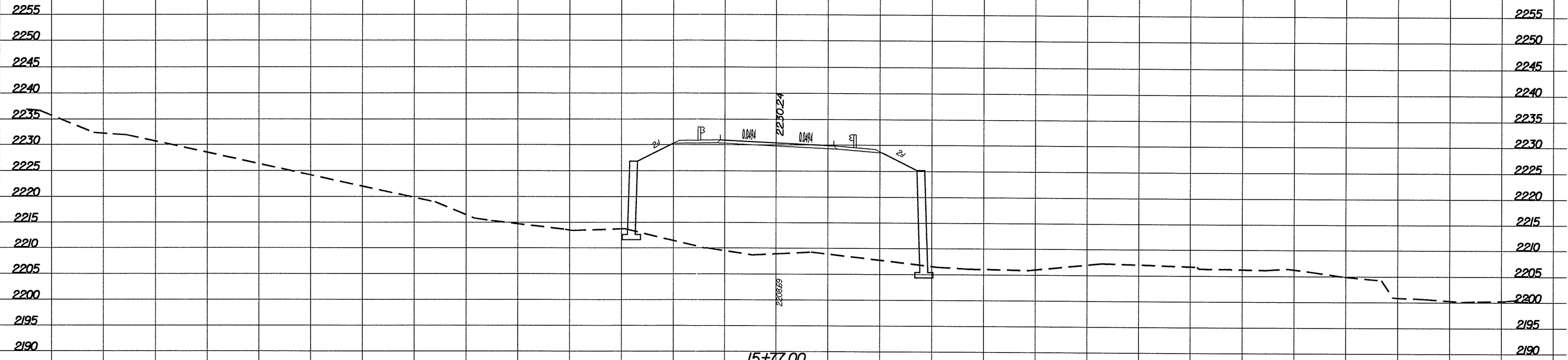
x-5



-L- (UPPER GLADY FORK ROAD)

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

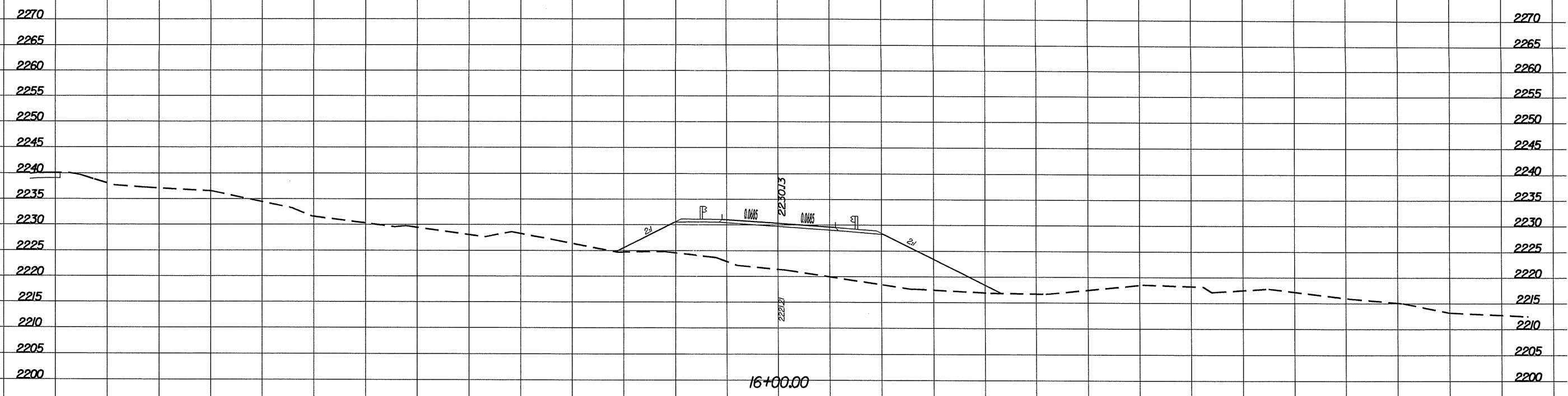
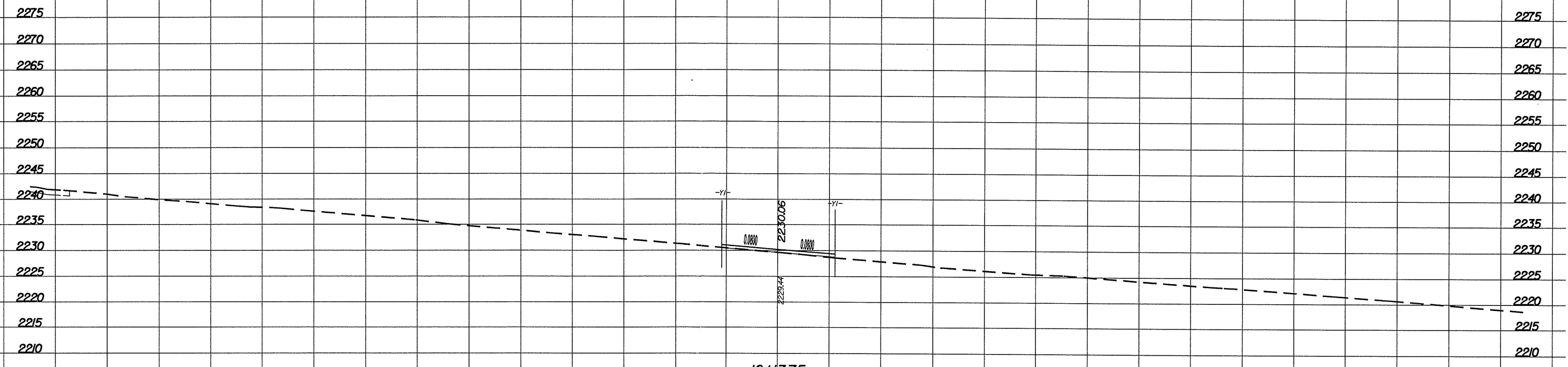
X-6



-L- (UPPER GLADY FORK ROAD)

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140

X-7



-L- (UPPER GLADY FORK ROAD)

140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140