



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

May 6, 2005

NC Department of Environment and Natural Resources
Division of Water Quality-Stormwater Management
943 Washington Square Mall
Washington, NC 27889

Attention: Mr. Bill Moore

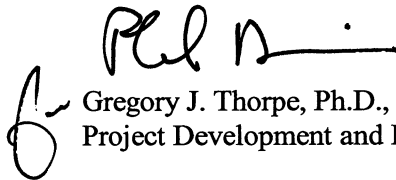
Subject: **Stormwater Permit Request for the Replacement of Bridge No. 16 over Rockyhock Creek on SR 1222**; Chowan County; TIP Project B-3636; Federal Aid Project No. BRZ-1222(5); \$420.00 Debit WBS 33184.1.1.

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 16 in Chowan County, North Carolina. Chowan County falls under the jurisdiction of the Coastal Area Management Act (CAMA). The NCDOT is applying for a CAMA Major Development Permit, a Clean Water Act (CWA) §404 Department of the Army Permit, and a North Carolina CWA §401 Water Quality Certification.

A stormwater application form and one copy of the project permit drawings are provided with this request. Please review this project for authorization by your division.

Thank you for your assistance with this important matter. Any assistance you can provide in expediting the review of this project is greatly appreciated. If you have any questions concerning this project, please feel free to contact Mr. Chris Underwood at (919) 715-1451.

Sincerely,



Gregory J. Thorpe, Ph.D., Environmental Management Director
Project Development and Environmental Analysis Branch

CC:

Mr. John Hennessy, DWQ Raleigh
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Mr. Jay Bennett, P.E., Roadway Design
Mr. Omar Sultan, Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Ms. Lynn Mathis, DCM

Mr. Mark Staley, Roadside Environmental
Mr. John Sullivan, FHWA
Mr. Don Conner, P.E., Division Engineer
Mr. Clay Willis, DEO
Mr. David Franklin, USACE, Wilmington
Mr. Brian Yamamoto, P.E., Planning Engineer
Ms. Cathy Brittingham, DCM

OFFICE USE ONLY		
Date Received	Fee Paid	Permit Number

**State of North Carolina
Department of Environment and Natural Resources
Division of Water Quality**

STORMWATER MANAGEMENT PERMIT APPLICATION FORM

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
LINEAR ROADWAY PROJECT**

This form may be photocopied for use as an original.

DWQ Stormwater Management Plan Review:

A complete stormwater management plan submittal includes this application form, a supplement form for each BMP proposed (see Section V), design calculations, and plans and specifications showing all road and BMP details.

I. PROJECT INFORMATION

NCDOT Project Number: BRZ-1222(5) / 33184.1.1 County: Chowan

Project Name: B-3636: Replacement of Bridge #16 over Rockyhock Creek on SR 1222

Project Location: 0.5 miles west of Valhalla on NC 32

Contact Person: Mr. Marshall Clawson, PE Phone: 919-250-4100 Fax: 919-250-4108

Receiving Stream Name: Rockyhock Creek River Basin: Chowan Class: B NSW

Proposed linear feet of project: 0.269mi (1420 LF)

Proposed Structural BMP and Road Station (*attach a list of station and BMP type if more room is needed*):

Grass fill embankment

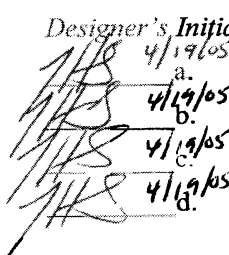
Type of proposed project: (*check all that apply*):

- New
 Widening
 2 lane*
 4 lane*
 Curb and Gutter
 Bridge Replacement
 Other (*Describe*) _____

**2 lane and 4 lane imply that roadside ditches are used unless Curb and Gutter is also checked.*

II. REQUIRED ITEMS CHECKLIST

Initial in the space provided below to indicate the following design requirements have been met and supporting documentation is attached. Supporting documentation shall, at a minimum, consist of a brief narrative description including (1) the scope of the project, (2) how the items below are met, (3) how the proposed best management practices minimize water quality impacts, and (4) any significant constraints and/or justification for not meeting a, b, c and d to the maximum extent practicable.

Designer's Initials


a. The amount of impervious surface has been minimized as much as possible.

b. The runoff from the impervious areas has been diverted away from surface waters as much as possible.

c. Best Management Practices are employed which minimize water quality impacts.

d. Vegetated roadside ditches are 3:1 slope or flatter.

III. OPERATION AND MAINTENANCE AGREEMENT

I acknowledge and agree by my initials below that the North Carolina Department of Transportation is responsible for the implementation of the four maintenance items listed. I agree to notify DWQ of any operational problems with the BMP's that would impact water quality or prior to making any changes to the system or responsible party.

Maintenance Engineer's Initials

- SDB 4/22/05* a. BMP's shall be inspected and maintained in good working order.
- SDB 4/22/05* b. Eroded areas shall be repaired and reseeded as needed.
- SDB 4/22/05* c. Stormwater collection systems, including piping, inlets, and outlets, shall be maintained to insure proper functioning.

Maintenance Engineer's Name: STERLING D. BAKER
 Title: DIVISION MAINTENANCE ENGINEER

IV. APPLICATION CERTIFICATION

I, *(print or type name)* _____ Branch, certify that the information included on this permit application form is, to the best of my knowledge, correct and that the project will be constructed in conformance with the approved plans and that the proposed project complies with the requirements of 15A NCAC 2H .1000.

Title: _____
 Address: _____
 Signature: _____ Date: _____

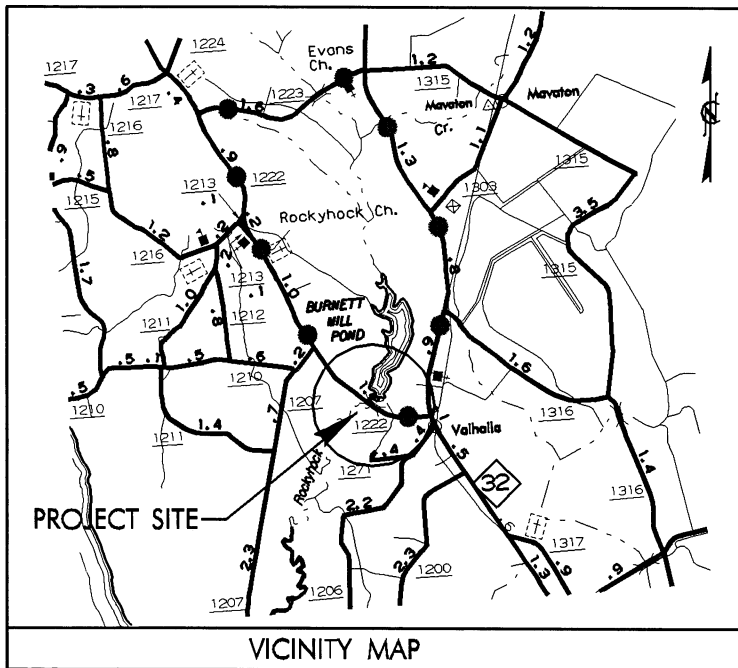
V. SUPPLEMENT FORMS

The applicable state stormwater management permit supplement form(s) listed below must be submitted for each BMP specified for this project. Contact the Stormwater and General Permits Unit at (919) 733-5083 for the status and availability of these forms.

- Form SWU-102 Wet Detention Basin Supplement
- Form SWU-103 Infiltration Basin Supplement
- Form SWU-104 Low Density Supplement
- Form SWU-105 Curb Outlet System Supplement
- Form SWU-106 Off-Site System Supplement
- Form SWU-107 Underground Infiltration Trench Supplement
- Form SWU-108 Neuse River Basin Supplement
- Form SWU-109 Innovative Best Management Practice Supplement
- Form SWU-110 Extended Dry Detention Basin Supplement

CONTRACT: C201469 TIP PROJECT: B-3636

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols



VICINITY MAP

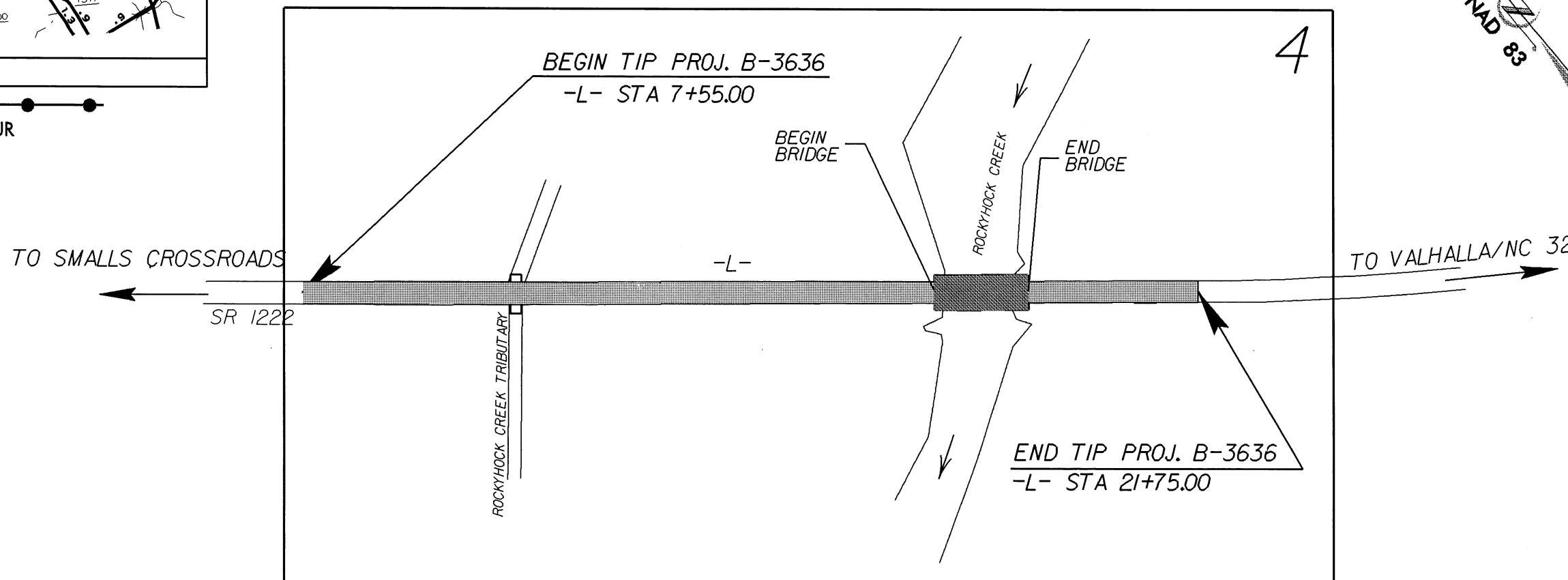
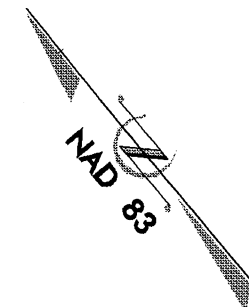


STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CHOWAN COUNTY

LOCATION: BRIDGE NO. 16 OVER ROCKYHOCK CREEK ON SR 1222
TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURE

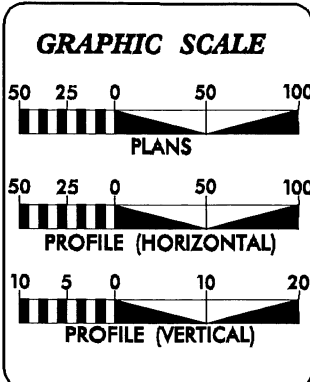
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N.C.	B-3636	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33184.1.1	BRZ-1222(5)	PE	
33184.2.1	BRZ-1222(5)	R/W, UTILITIES	



METHOD OF CLEARING //

NOTE: THIS PROJECT IS NOT WITHIN THE LIMITS OF ANY MUNICIPALITY

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2004 = 2,540 vpd
ADT 2025 = 3,800 vpd
DHV = 10 %
D = 60 %
*T = 4 %
V = 60 MPH
*DUALS = 3% *TTST = 1%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3636 = 0.269 MILES
LENGTH STRUCTURE TIP PROJECT B-3636 = 0.000 MILES
TOTAL LENGTH TIP PROJECT B-3636 = 0.269 MILES

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 30, 2005	JAMES A. SPEER, PE MASTER PROJECT ENGINEER
LETTING DATE: MARCH 21, 2006	JOHN C. LANSFORD, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

SIGNATURE: _____ P.E.

STATE HIGHWAY ENGINEER - DESIGN

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____ DATE: _____

DIVISION ADMINISTRATOR

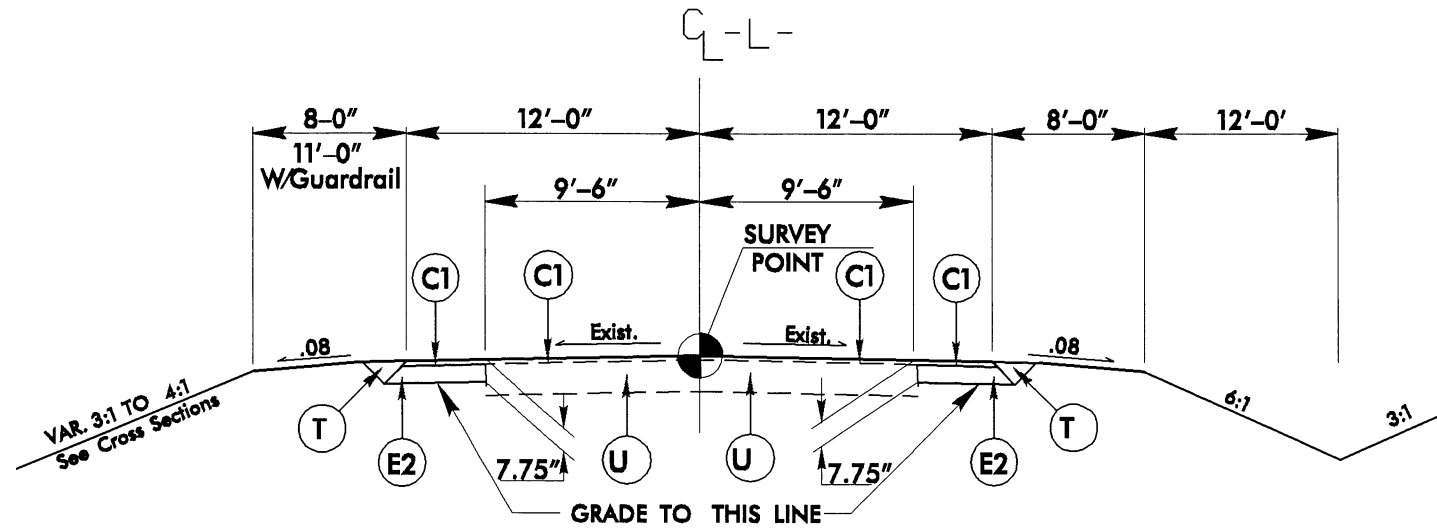
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PAVEMENT SCHEDULE

C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
C2	PROP. APPROX. 2 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH TO BE IN LAYERS NOT TO EXCEED 1.5" IN DEPTH
E1	PROP. APPROX. 4 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E2	PROP. APPROX. 6 1/2" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 370.5 LBS. PER SQ. YD. IN EACH OF TWO LAYERS
U	EXISTING PAVEMENT.
T	EARTH MATERIAL.

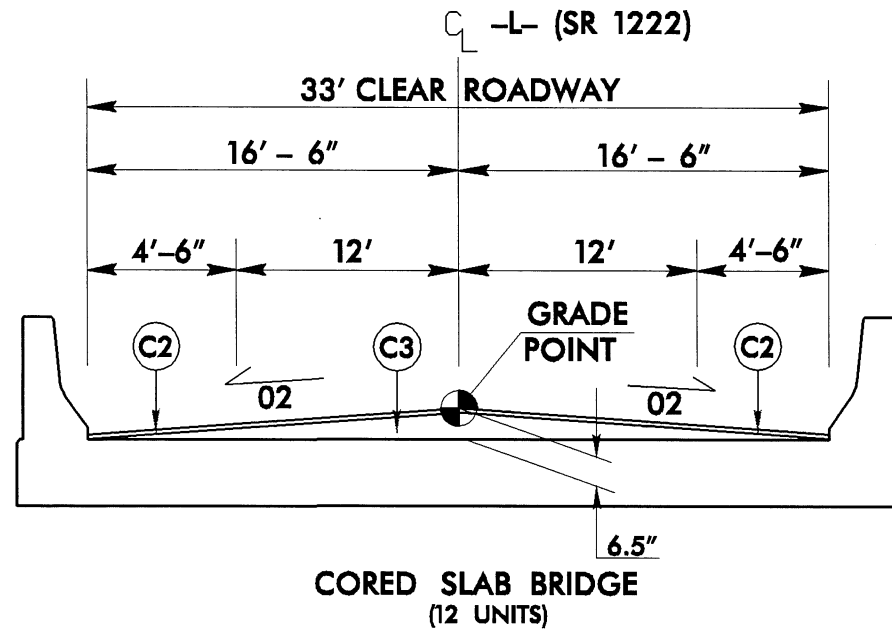
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PROJECT REFERENCE NO. B-3636	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	

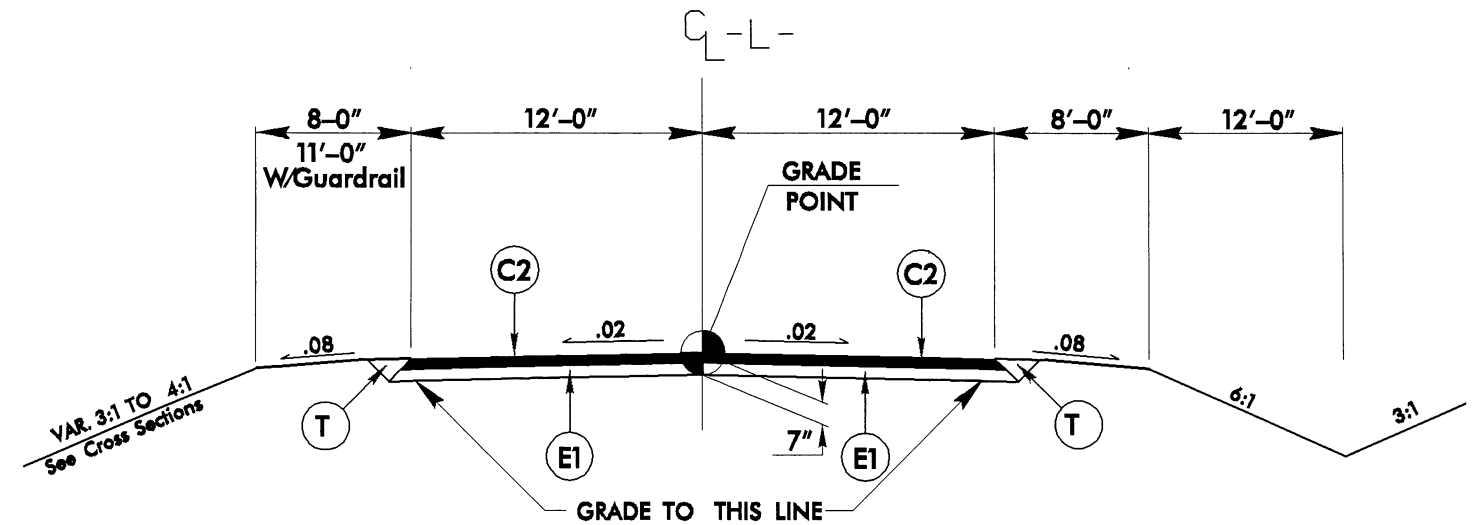


TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:
 -L- STA. 7+55.00 TO 10+50.00
 -L- STA. 11+50.00 TO 15+00.00
 -L- STA. 19+70.00 TO 21+75.00



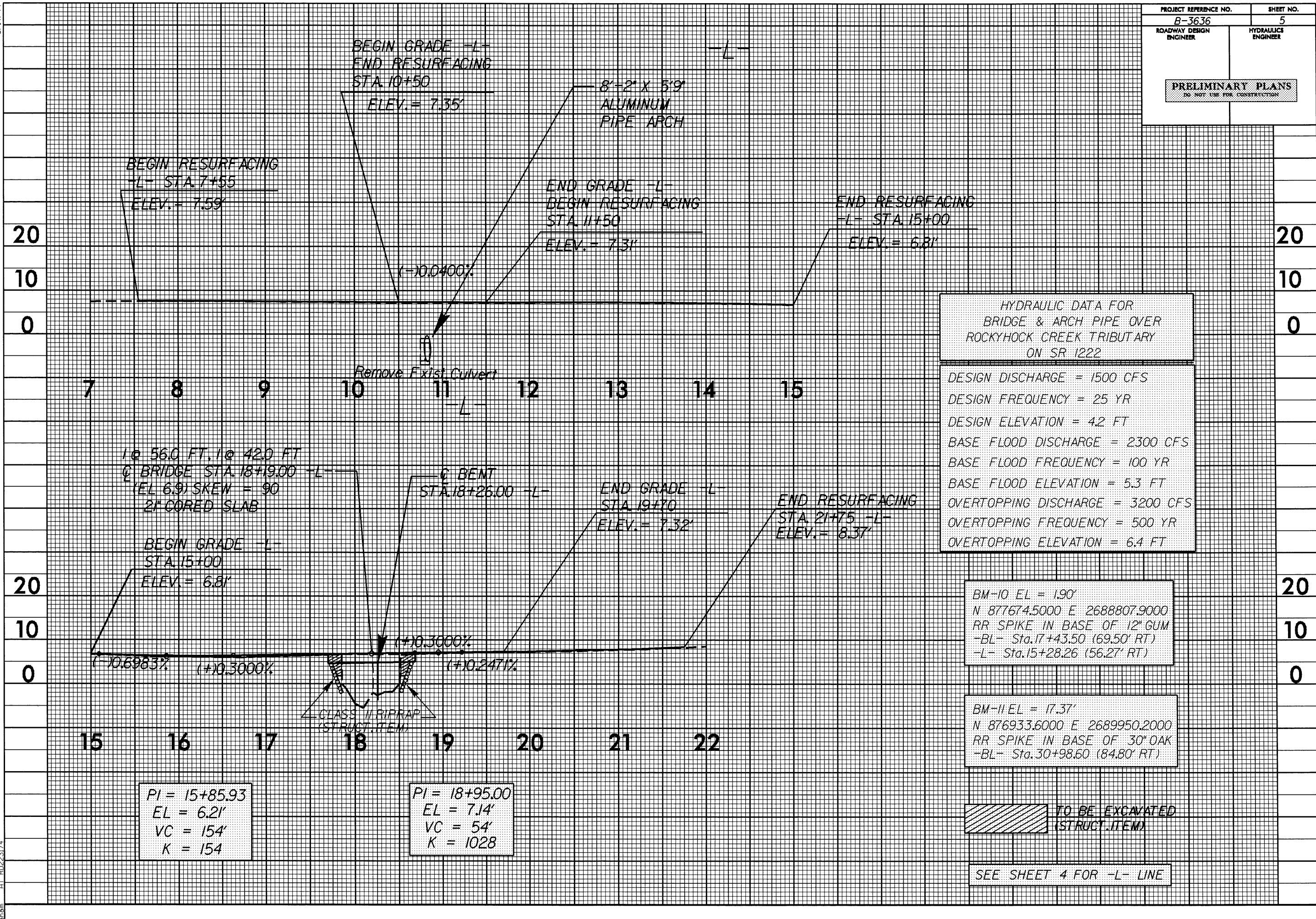
TYPICAL SECTION ON STRUCTURE
 -L- STA 17+70.00 +/- TO 18+68.00 +/-



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:
 -L- STA. 10+50.00 TO 11+50.00
 -L- STA. 15+00.00 TO BEGIN BRIDGE
 END BRIDGE TO -L- STA. 19+70.00

5/14/99



HYDRAULIC DATA FOR
BRIDGE & ARCH PIPE OVER
ROCKYHOCK CREEK TRIBUTARY
ON SR 1222

DESIGN DISCHARGE = 1500 CFS
DESIGN FREQUENCY = 25 YR
DESIGN ELEVATION = 4.2 FT
BASE FLOOD DISCHARGE = 2300 CFS
BASE FLOOD FREQUENCY = 100 YR
BASE FLOOD ELEVATION = 5.3 FT
OVERTOPPING DISCHARGE = 3200 CFS
OVERTOPPING FREQUENCY = 500 YR
OVERTOPPING ELEVATION = 6.4 FT

BM-10 EL = 1.90'
N 877674.5000 E 2688807.9000
RR SPIKE IN BASE OF 12" GUM
-BL- Sta.17+43.50 (69.50' RT)
-L- Sta.15+28.26 (56.27' RT)

BM-11 EL = 17.37'
N 876933.6000 E 2689950.2000
RR SPIKE IN BASE OF 30" OAK
-BL- Sta.30+98.60 (84.80' RT)

PI = 15+85.93
EL = 6.21'
VC = 154'
K = 154

PI = 18+95.00
EL = 7.14'
VC = 54'
K = 1028

TO BE EXCAVATED
(STRUCT. ITEM)

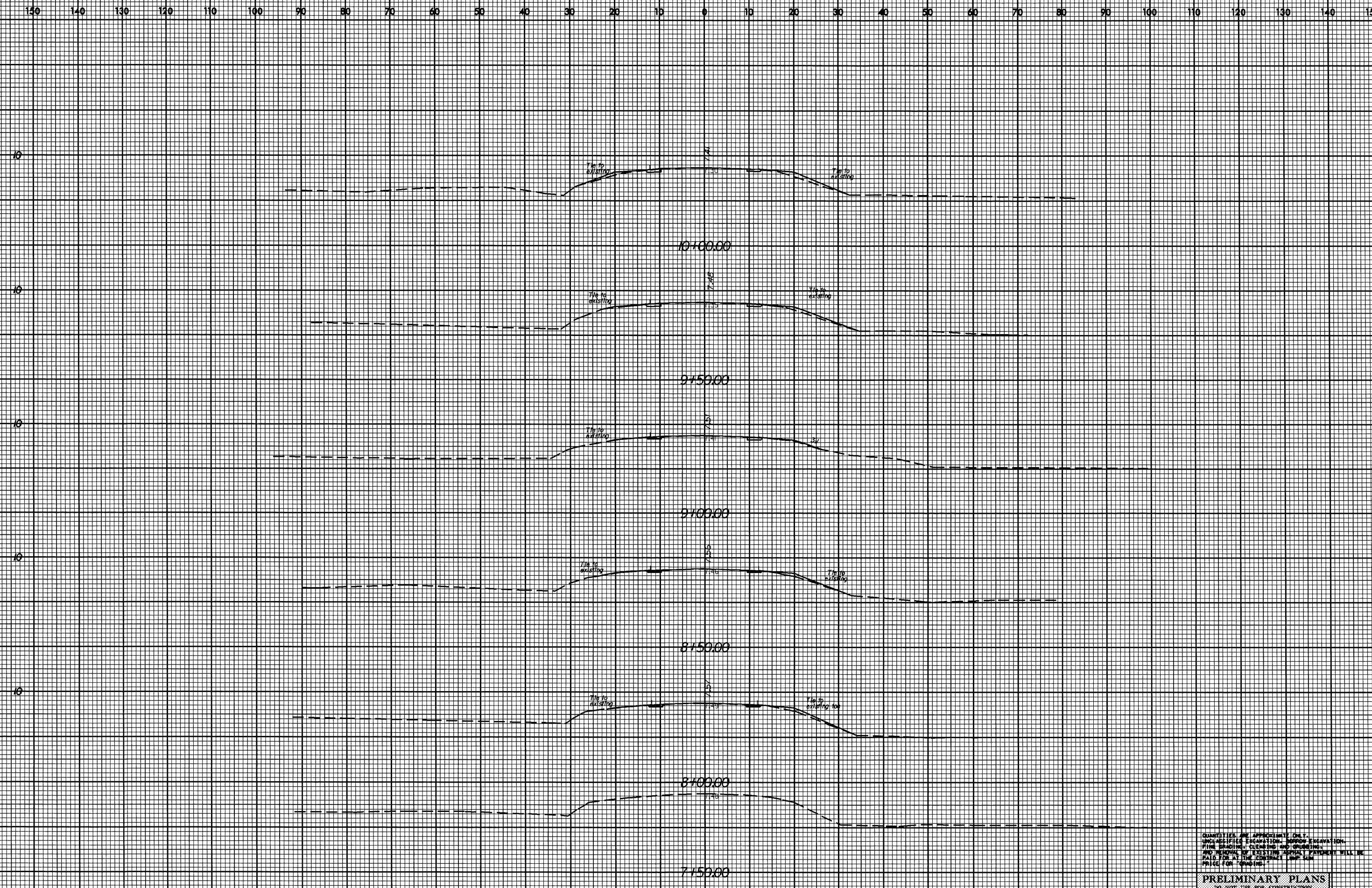
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8/23/99



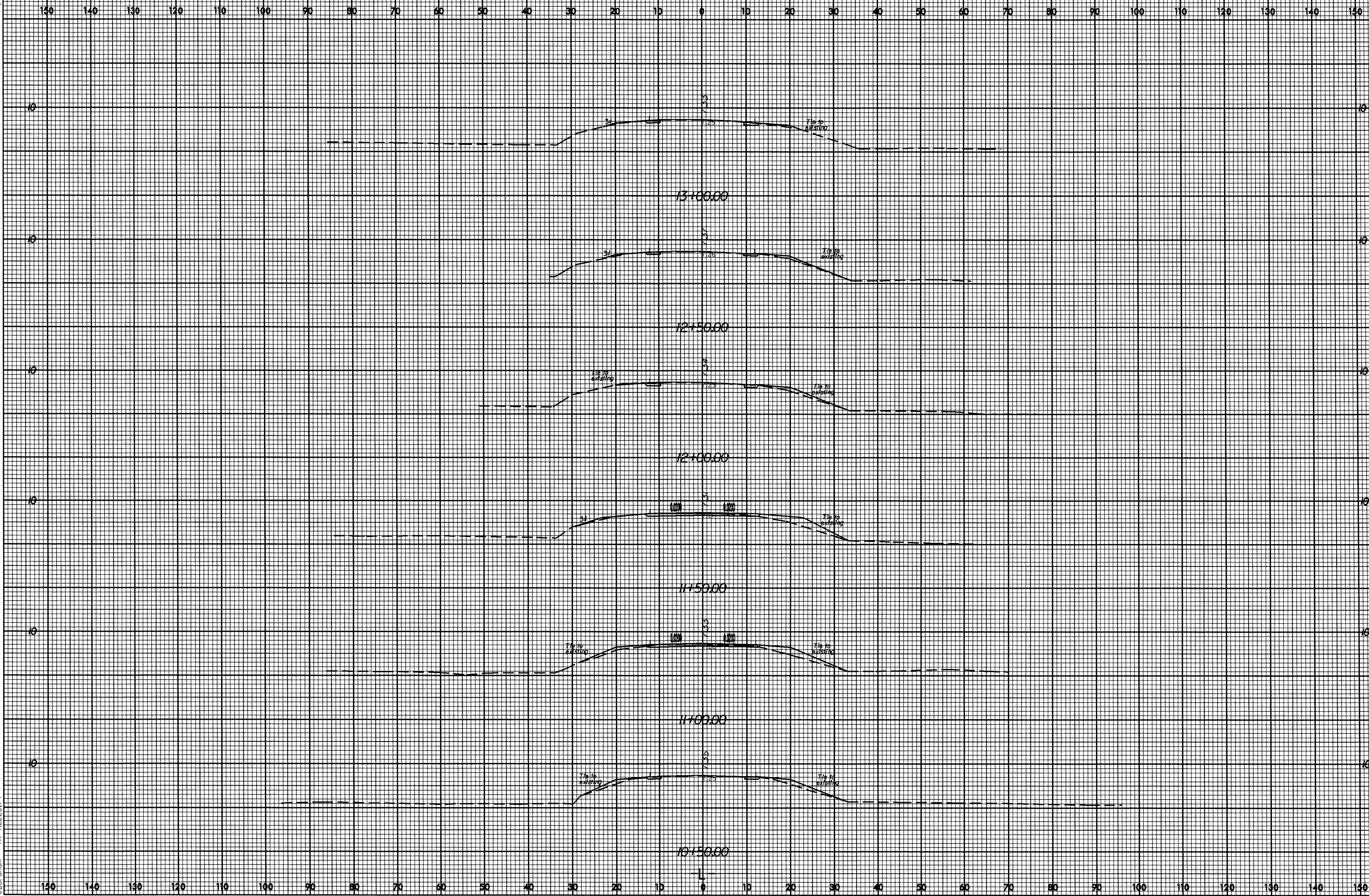
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B-3636 SHEET NO.
X-1



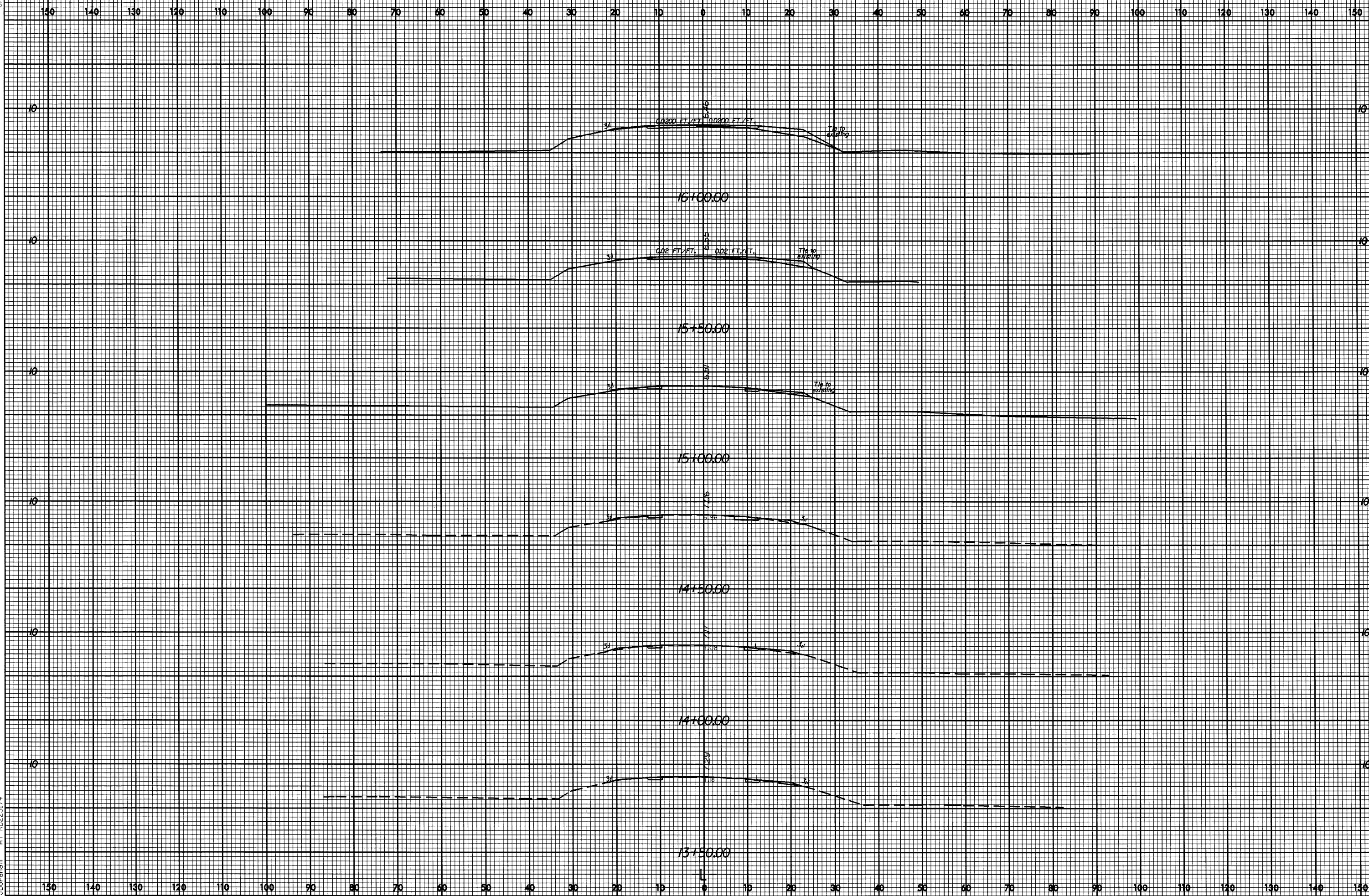
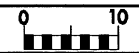
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QUANTITIES ARE APPROXIMATE ONLY.
UNCLASSIFIED EXCAVATION, BORROW EXCAVATION,
FINE GRADING, CLEANING AND GRUBBING,
AND REMOVAL OF EXISTING ASPHALT PAVEMENT WILL BE
PAID FOR AT THE CONTRACT LUMP SUM
PRICE FOR GRADING.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



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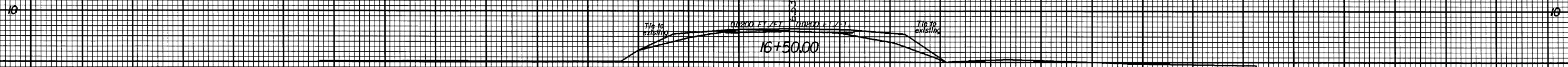
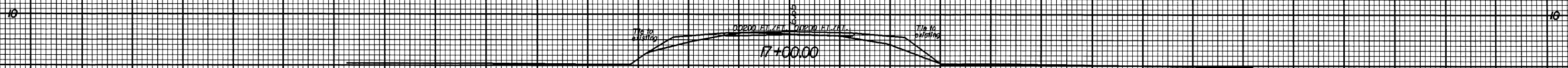
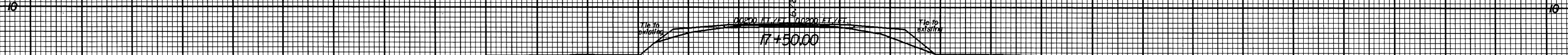
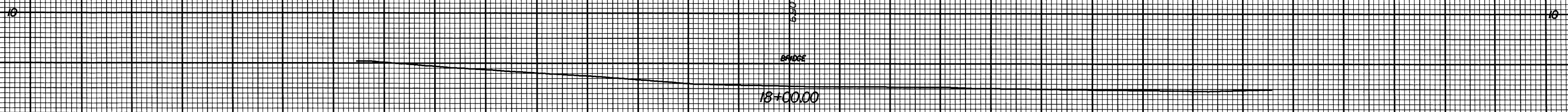
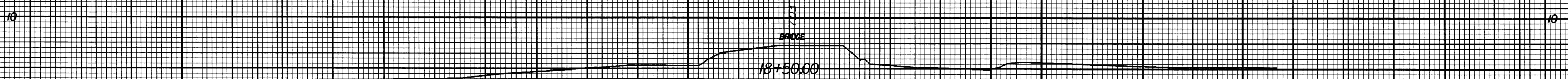
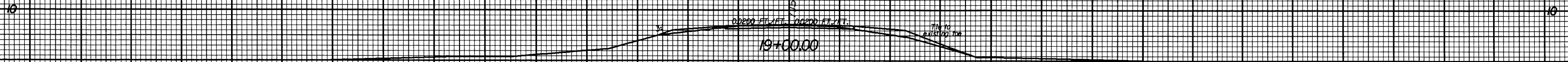
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PROJ. REFERENCE NO.
B-3636

SHEET NO.
X-4

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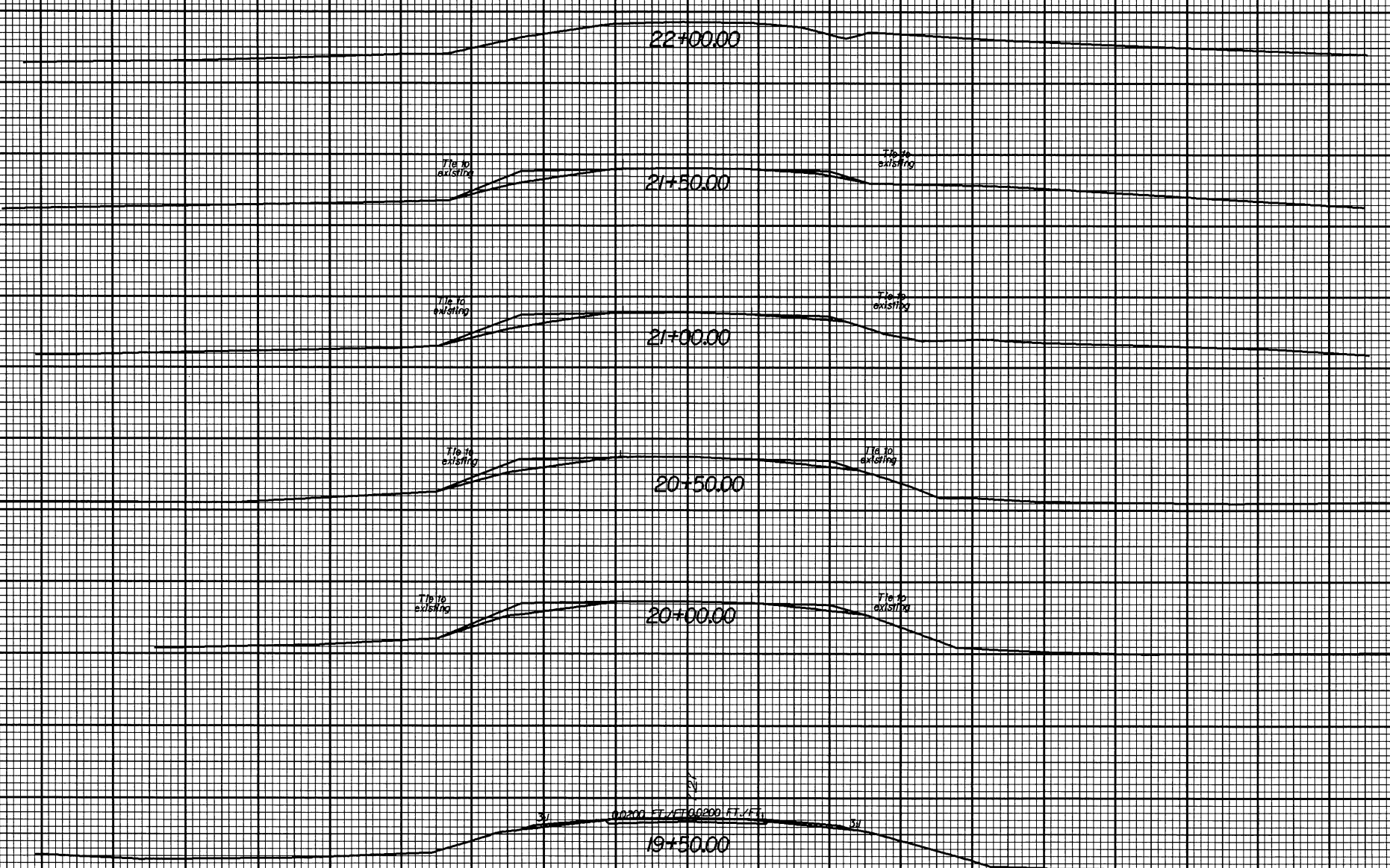


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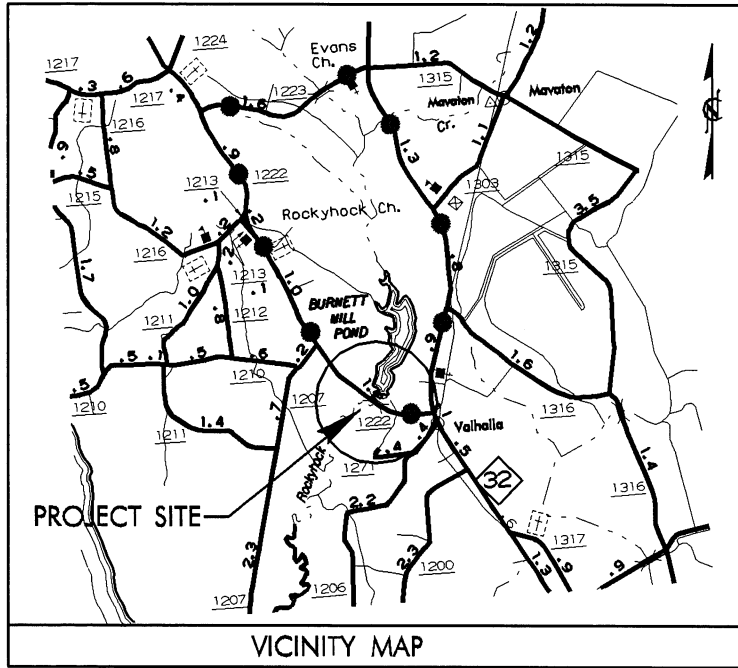
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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

CONTRACT: C201469 TIP PROJECT: B-3636

See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

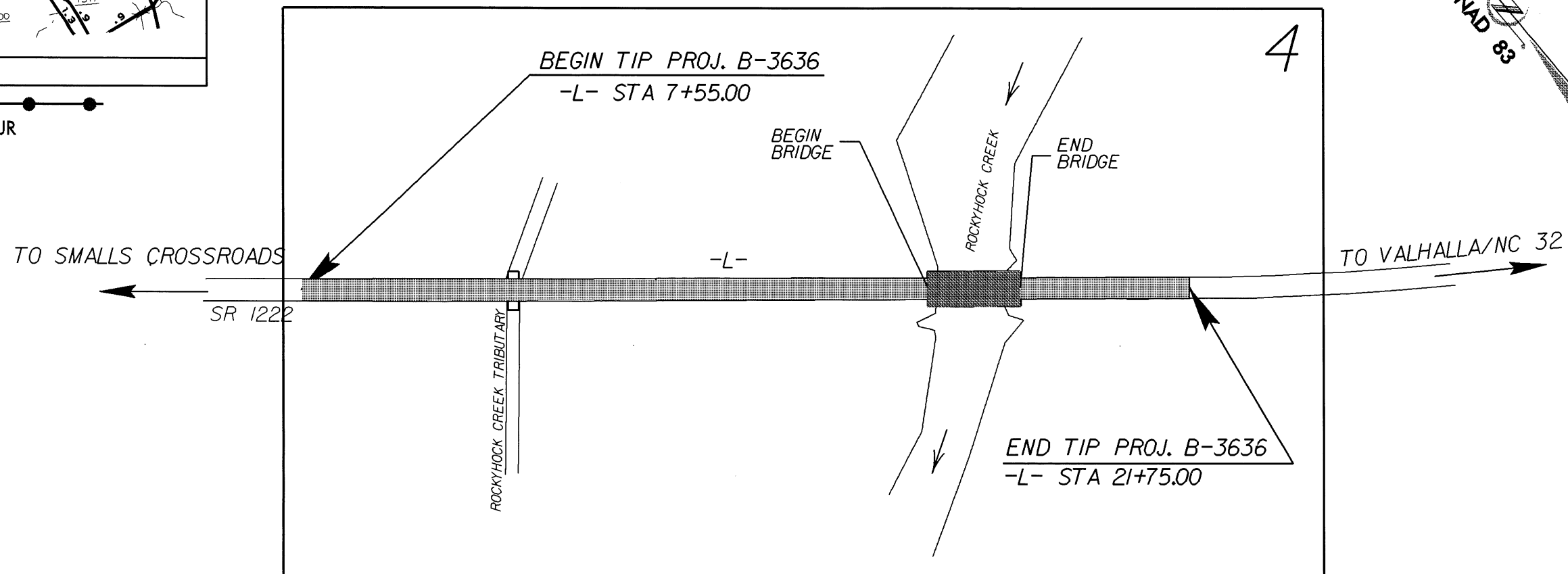
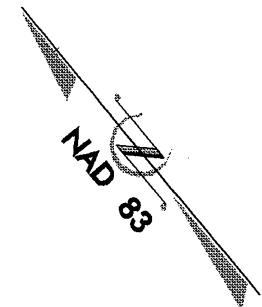


STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

CHOWAN COUNTY

LOCATION: BRIDGE NO. 16 OVER ROCKYHOOK CREEK ON SR 1222
TYPE OF WORK: GRADING, PAVING, DRAINAGE, STRUCTURE

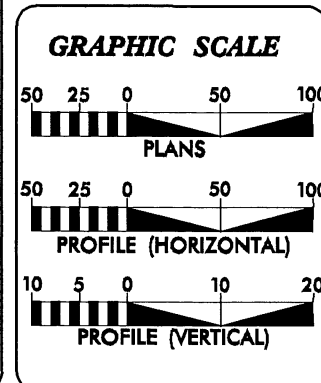
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3636	1	
STATE PROJ. NO.	R.A. PROJ. NO.	DESCRIPTION	
33184.1.1	BRZ-1222(5)	PE	
33184.2.1	BRZ-1222(5)	RW, UTILITIES	



METHOD OF CLEARING //

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DESIGN DATA

ADT 2004 = 2,540 vpd
ADT 2025 = 3,800 vpd
DHV = 10 %
D = 60 %
* T = 4 %
V = 60 MPH
* DUALS = 3% * TTST = 1%

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3636 = MILES
LENGTH STRUCTURE TIP PROJECT B-3636 = MILES
TOTAL LENGTH TIP PROJECT B-3636 = 0.269 MILES

Prepared in the Office of:
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1000 Birch Ridge Dr., Raleigh, NC 27610

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: MARCH 30, 2005	JAMES A. SPEER, PE MASTER PROJECT ENGINEER
LETTING DATE: MARCH 21, 2006	JOHN C. LANSFORD, PE PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ PE
ROADWAY DESIGN

SIGNATURE: _____ PE

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY ENGINEER - DESIGN
**DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION**

APPROVED
DIVISION ADMINISTRATOR

DATE

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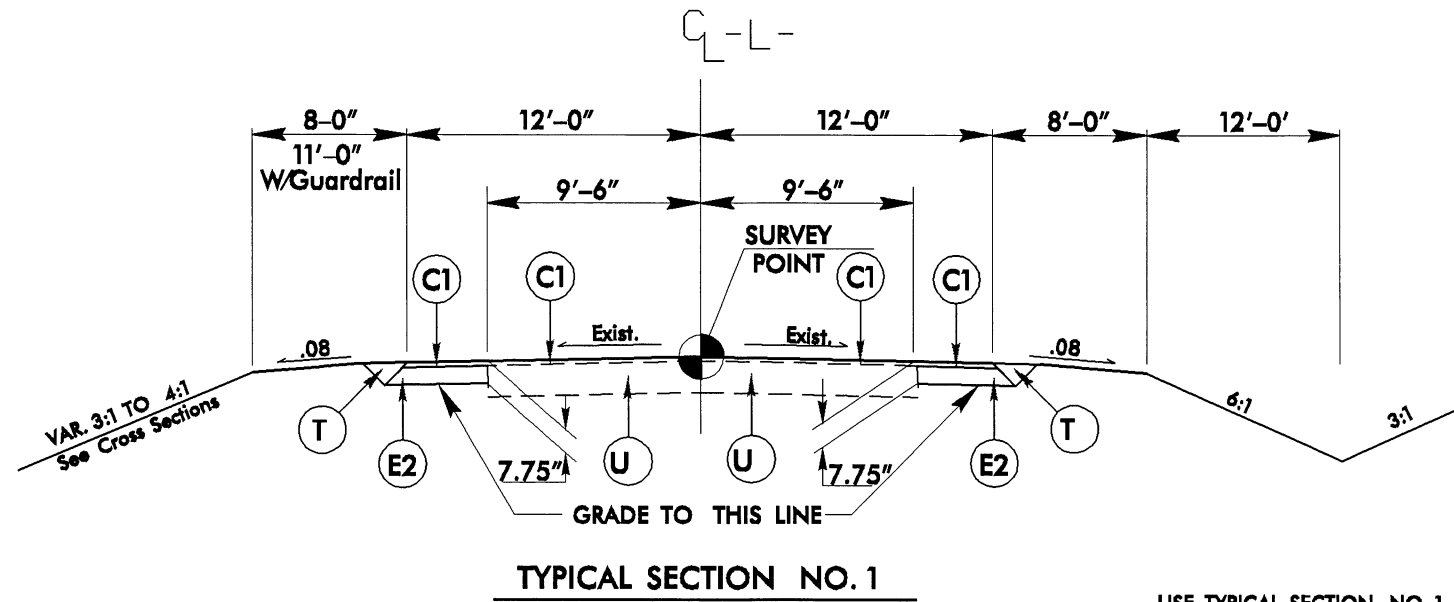
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PAVEMENT SCHEDULE

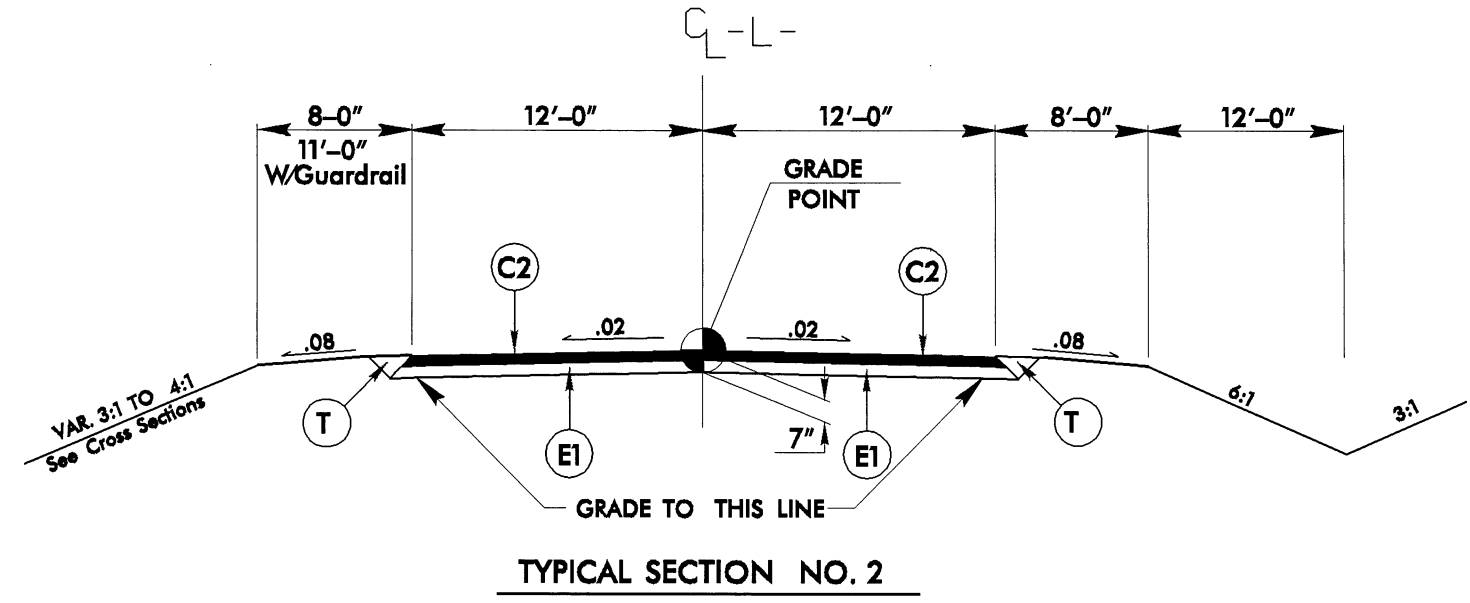
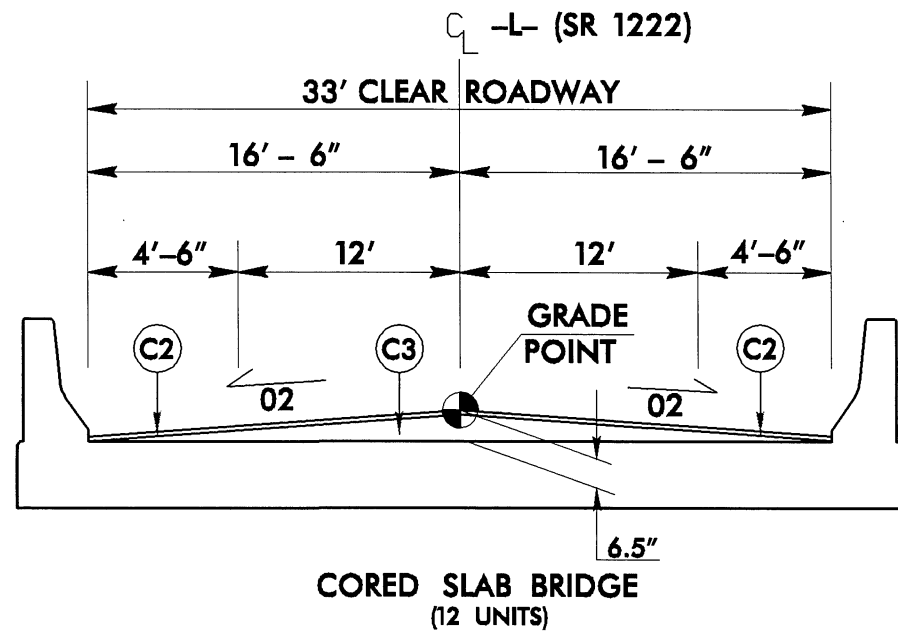
C1	PROP. APPROX. 1 1/4" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 137.5 LBS. PER SQ. YD.
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U	EXISTING PAVEMENT.
T	EARTH MATERIAL.

NOTE: ALL SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.

PROJECT REFERENCE NO. B-3636	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>	



USE TYPICAL SECTION NO. 1 AT THE FOLLOWING LOCATIONS:
 -L- STA. 7+55.00 TO 10+50.00
 -L- STA. 11+50.00 TO 15+00.00
 -L- STA. 19+70.00 TO 21+75.00



USE TYPICAL SECTION NO. 2 AT THE FOLLOWING LOCATIONS:
 -L- STA. 10+50.00 TO 11+50.00
 -L- STA. 15+00.00 TO BEGIN BRIDGE
 END BRIDGE TO -L- STA. 19+70.00

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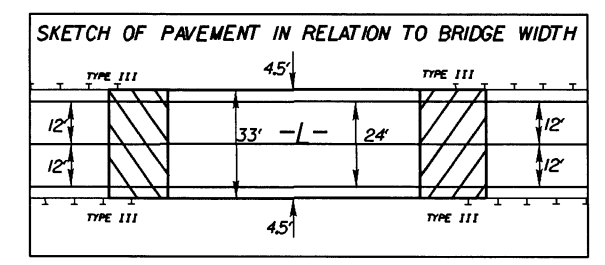
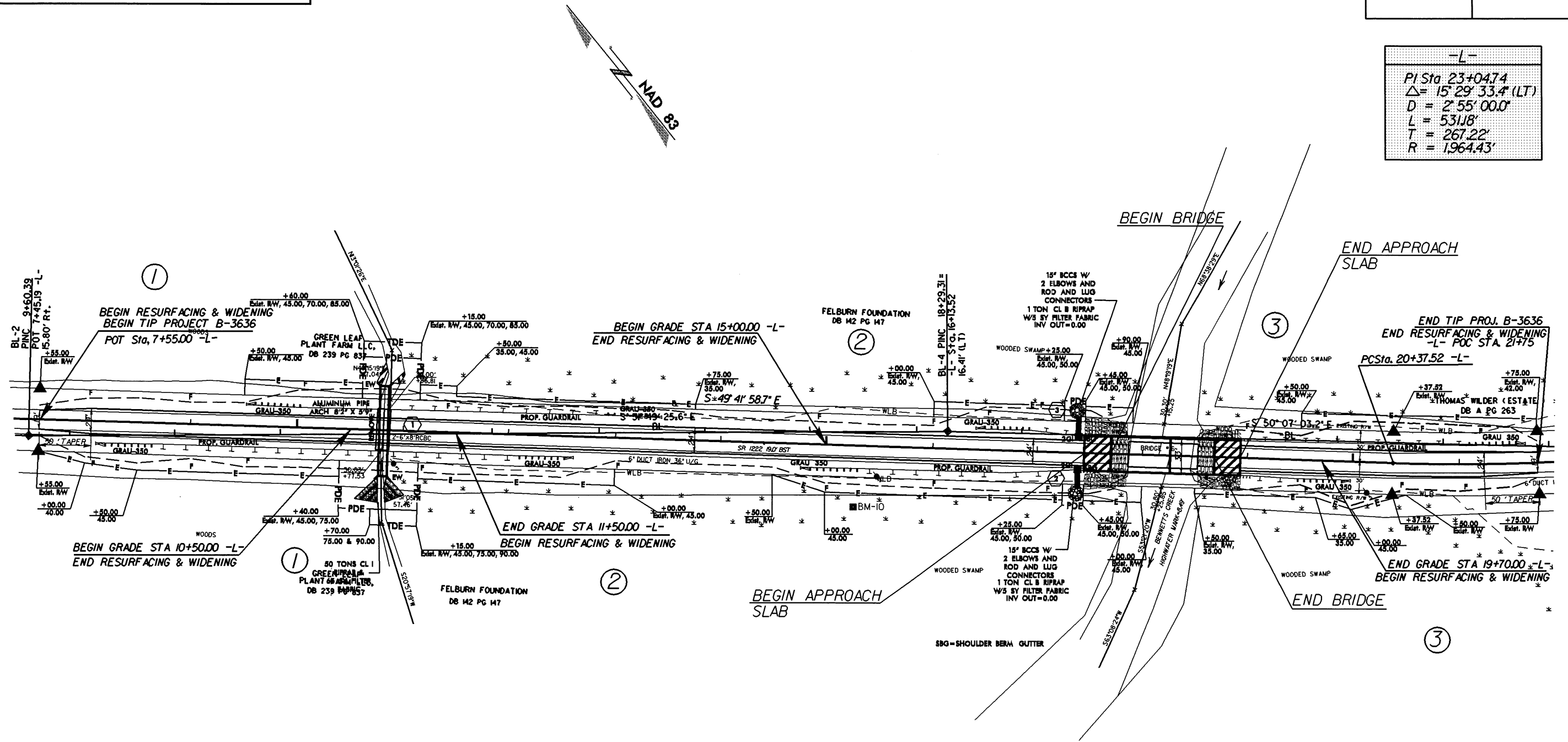
7/2/99

REVISIONS

SEE SHEETS S-1 THRU S- FOR STRUCTURE PLANS
SEE SHEET 5 FOR -L- PROFILE

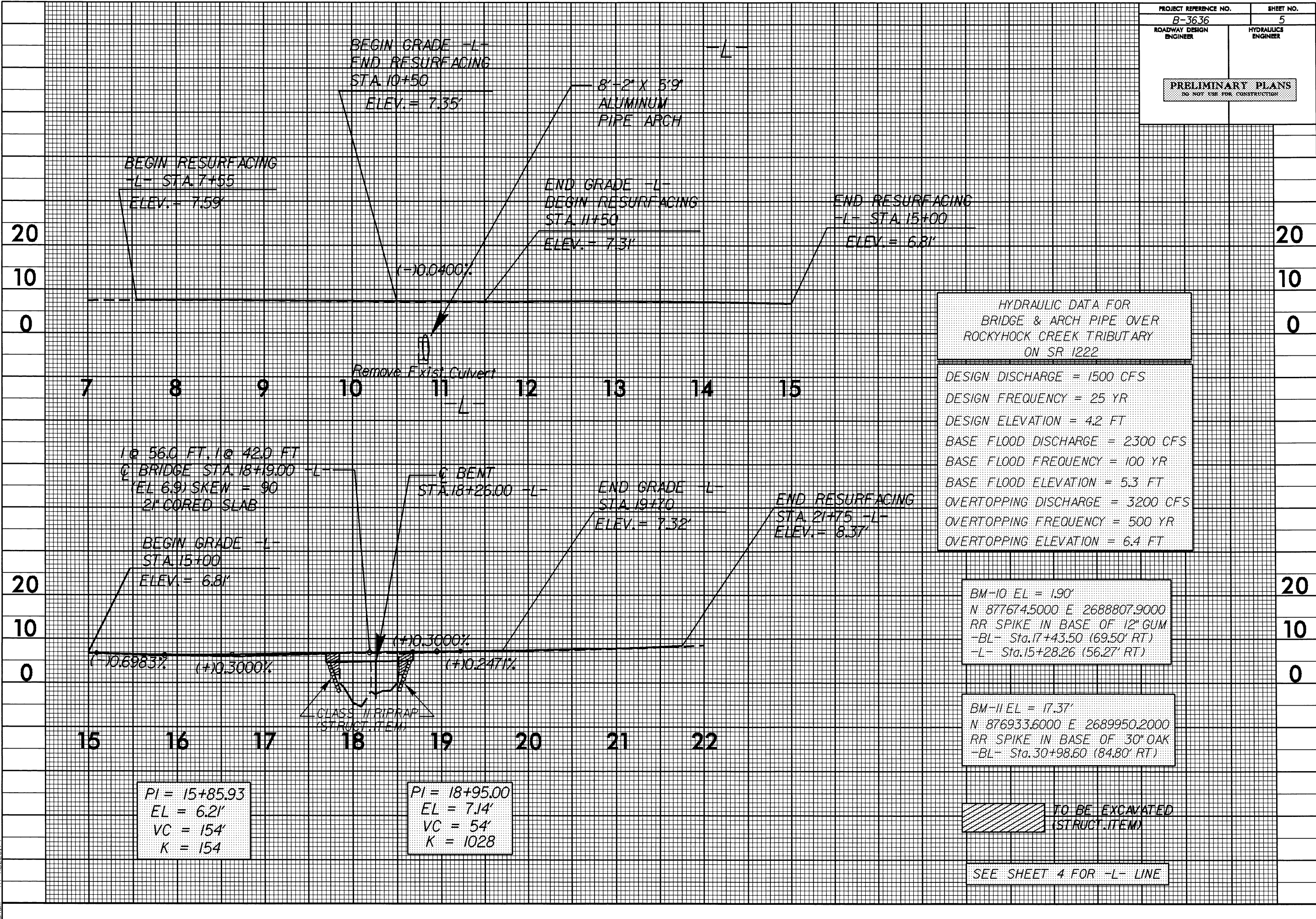
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RAW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS <small>DO NOT USE FOR CONSTRUCTION</small>			

-L-
PI Sta 23+04.74 $\Delta = 15^\circ 29' 33.4" (LT)$ $D = 2' 55' 00.0"$ $L = 531.18'$ $T = 267.22'$ $R = 1964.43'$



03-MAY-2005 08:56
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JDGriffin

5/14/99



HYDRAULIC DATA FOR
BRIDGE & ARCH PIPE OVER
ROCKYHOCK CREEK TRIBUTARY
ON SR 1222

DESIGN DISCHARGE = 1500 CFS
 DESIGN FREQUENCY = 25 YR
 DESIGN ELEVATION = 4.2 FT
 BASE FLOOD DISCHARGE = 2300 CFS
 BASE FLOOD FREQUENCY = 100 YR
 BASE FLOOD ELEVATION = 5.3 FT
 OVERTOPPING DISCHARGE = 3200 CFS
 OVERTOPPING FREQUENCY = 500 YR
 OVERTOPPING ELEVATION = 6.4 FT

BM-10 EL = 1.90'
 N 877674.5000 E 2688807.9000
 RR SPIKE IN BASE OF 12" GUM
 -BL- Sta. 17+43.50 (69.50' RT)
 -L- Sta. 15+28.26 (56.27' RT)

BM-11 EL = 17.37'
 N 876933.6000 E 2689950.2000
 RR SPIKE IN BASE OF 30" OAK
 -BL- Sta. 30+98.60 (84.80' RT)

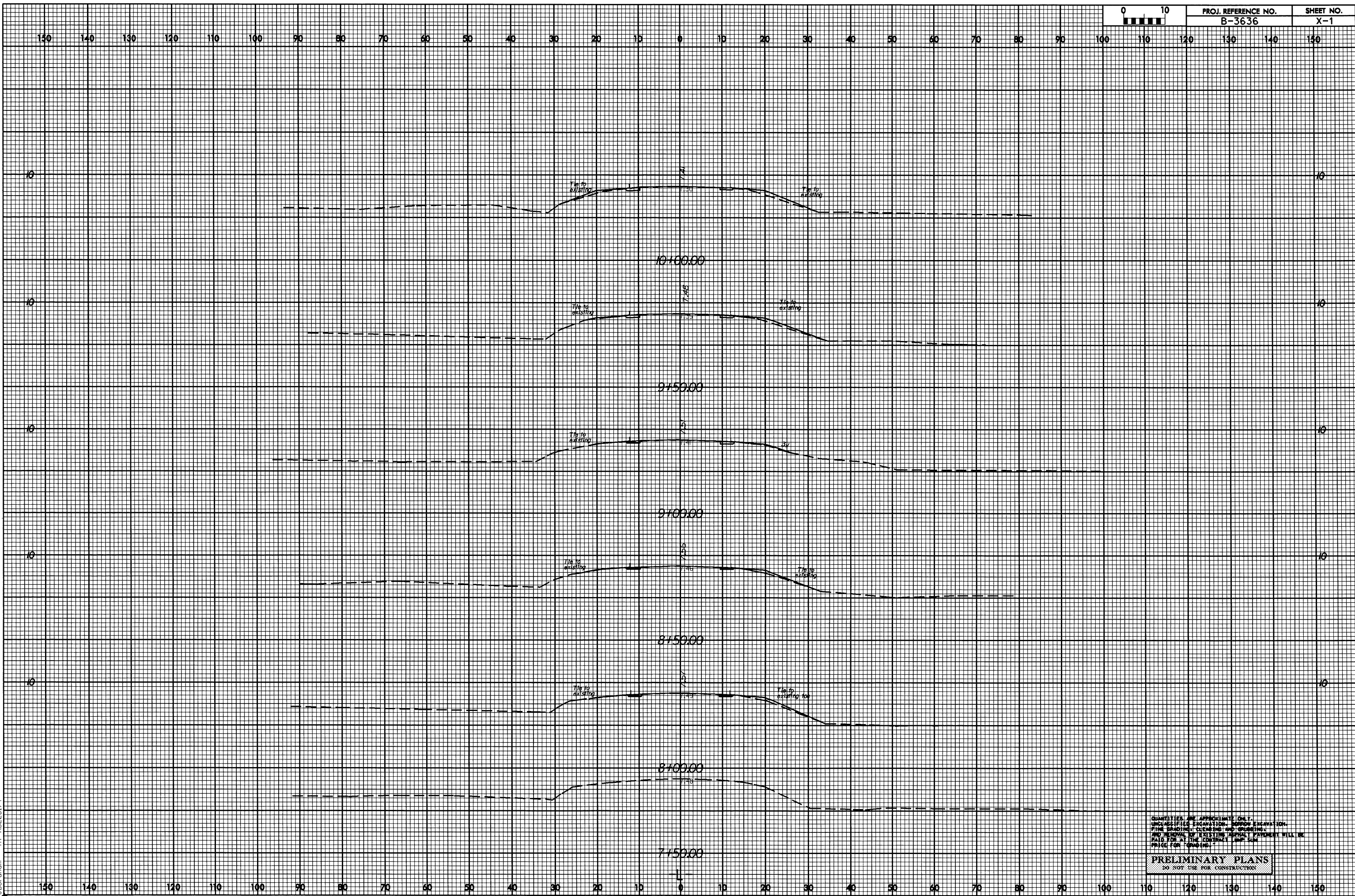
PI = 15+85.93
 EL = 6.21'
 VC = 154'
 K = 154

PI = 18+95.00
 EL = 7.14'
 VC = 54'
 K = 1028

TO BE EXCAVATED
(STRUCT. ITEM)

SEE SHEET 4 FOR -L- LINE

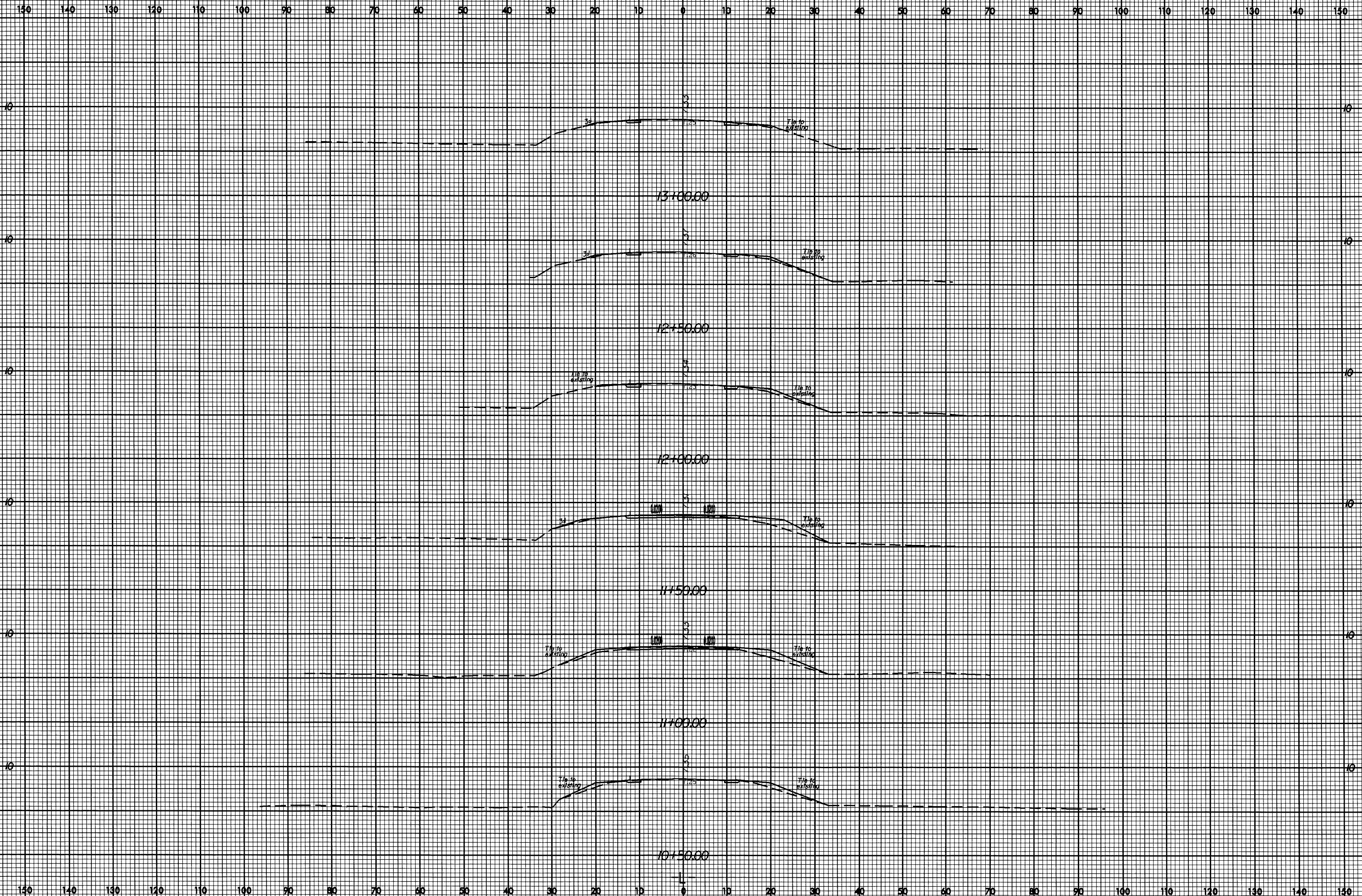
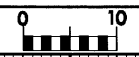
03-MAY-2005 08:58
 t:\p\c\ab\3636_rdy.plt.dgn
 jrahon A1 R023174

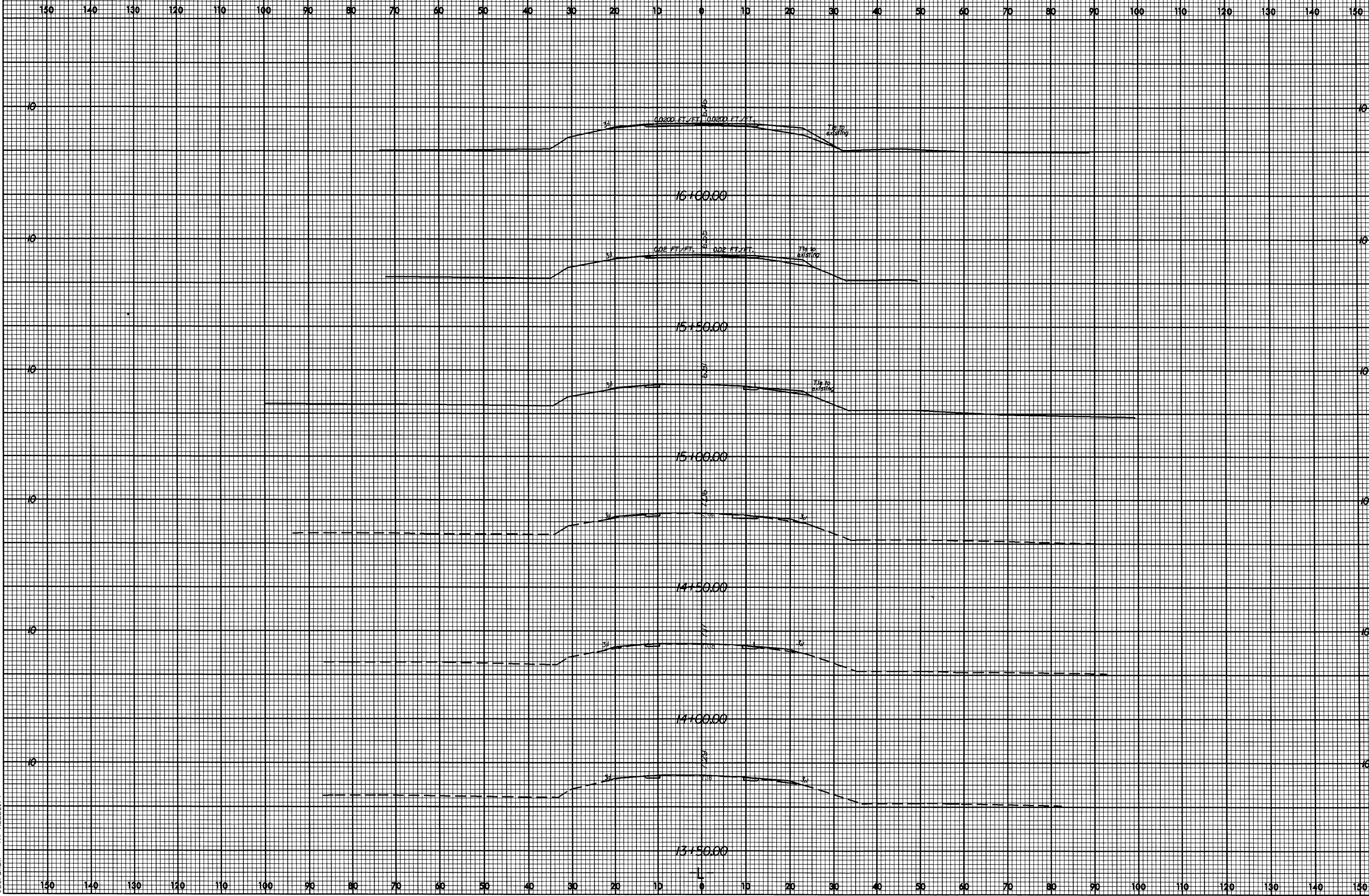
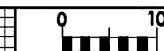


03-MAY-2005 08:53
\\sca\B3636\A\100023194
J0061000

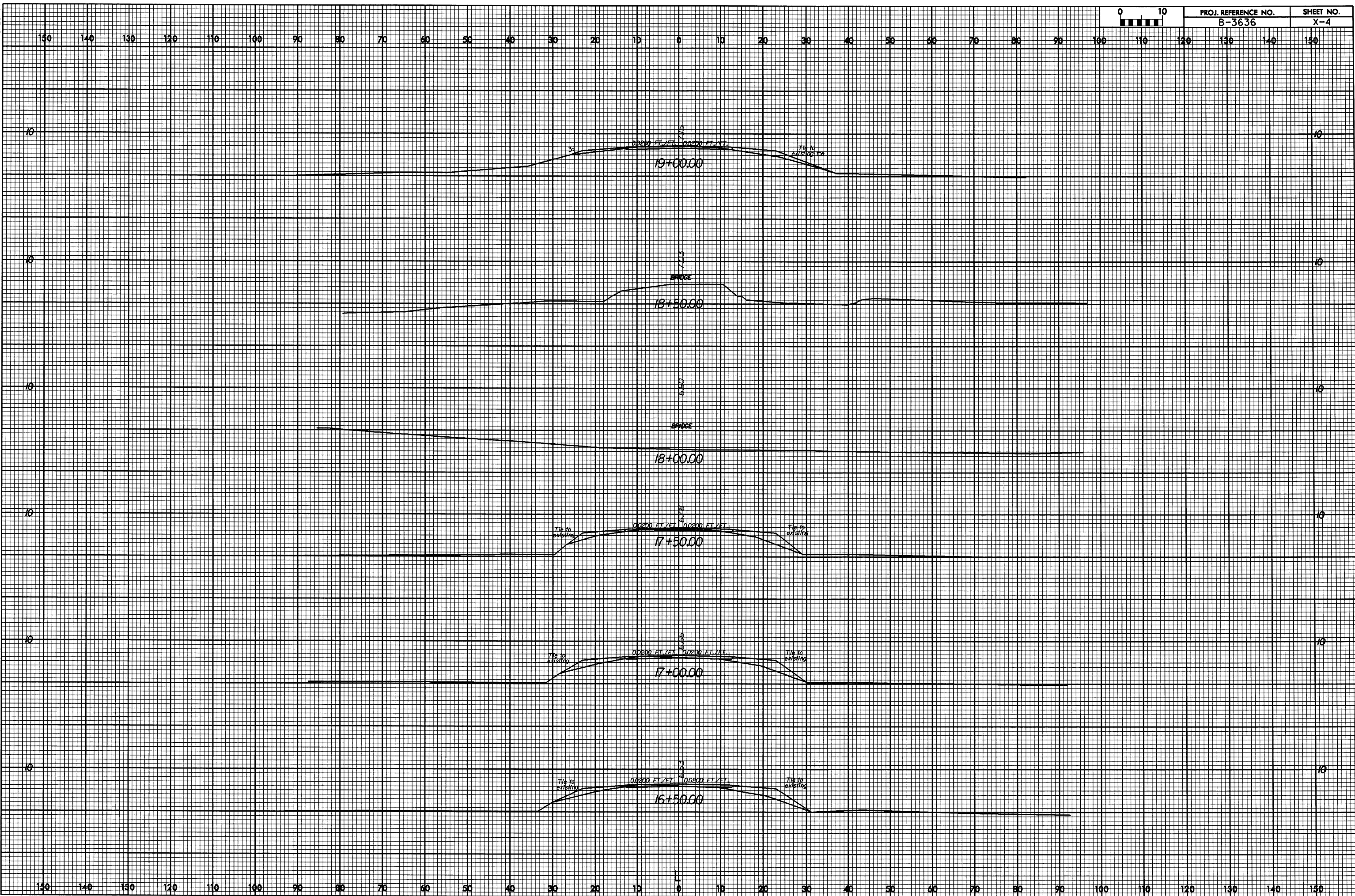
QUANTITIES ARE APPROXIMATE ONLY.
UNCLASSIFIED EXCAVATION, BROAD EXCAVATION,
FINE GRADING, CLEANING AND GRUBBING,
AND REMOVAL OF EXISTING ASPHALT PAVEMENT WILL BE
PAID FOR AT THE CONTRACT LOW BID SUM
PRICE FOR GRADING.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





03-MAY-2005 08:54
\\scc\B3636\pl\jg\cham

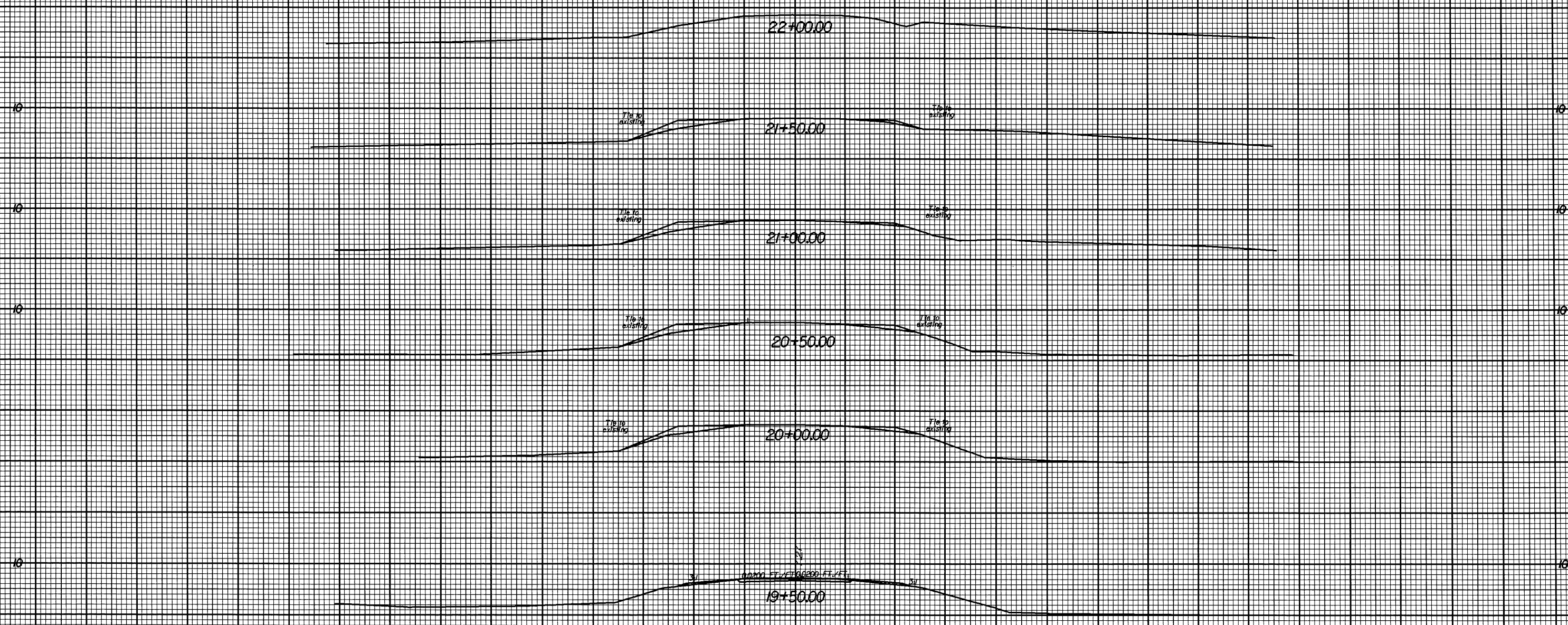




PROJ. REFERENCE NO.
B-3636

SHEET NO.
X-5

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150