



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

January 9, 2006

Stormwater Section
Division of Water Quality
943 Washington Square Mall
Washington, NC 27889

Attention: Mr. Bill Moore

Dear Sir:

Subject: **Stormwater Permit Request** for the proposed replacement of Bridge No. 90 over Tranter's Creek on SR1414/SR1556, in Beaufort/Pitt Counties. Federal Aid Project No. BRZ-1414(2), State Project No. 8.251001, TIP No. B-4022; Debit WBS 33389.1.1 \$420.

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 90 on SR1414/SR1556 over Tranter's Creek in Beaufort/Pitt Counties. Beaufort County falls under the jurisdiction of the Coastal Area Management Act (CAMA). The NCDOT is applying for a Clean Water Act (CWA) §404 Department of Army Permit, and a North Carolina CWA §401 Water Quality Certification.

A Stormwater Application Form, the Project Scope Narrative, and the project plans are provided with this request. Please review this project for authorization by your division.

Thank you for your time and consideration. Please contact Mr. A.T. Nottingham, P.E. at (919) 250-4100 if you have any questions or concerns with the stormwater design. If you need any additional information from our staff, contact Mr. Tyler Stanton at tstanton@dot.state.nc.us or (919) 715-1439.

Sincerely,

A handwritten signature in black ink, appearing to read "Gregory J. Thorpe".

Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA

Cc: w/out attachments:

Mr. William Wescott, USACE
Mr. Bill Arrington, NCDOT
Mr. Steve Sollod, NCDOT
Mr. Bill Goodwin, P.E., PDEA
File B-4022

Enclosures (3)

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1548 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-733-3141
FAX: 919-733-9794

WEBSITE: WWW.DOH.DOT.STATE.NC.US

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

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.

DWO 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: 33389.1.1 (B-4022) County: Beaufort

Project Name: Replace bridge no. 90 over Tranter's Creek on SR 1414

Project Location: SR 1414 Beaufort Co., SR 1556 P.H

Contact Person: Andrew Nottingham Phone: 919-250-4100 Fax: 919-250-4108

Receiving Stream Name: Tranter's Creek River Basin: Tar-Pamlico Class: Csw NSW

Proposed linear feet of project: 850'

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

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

- SRM a. The amount of impervious surface has been minimized as much as possible.
SRM b. The runoff from the impervious areas has been diverted away from surface waters as much as possible.
SRM c. Best Management Practices are employed which minimize water quality impacts.
SRM 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

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

Maintenance Engineer's Name: John W. Rouse Jr.
Title: Division Maintenance Engineer

IV. APPLICATION CERTIFICATION

I, (print or type name) Gregory J. Therpe of ID+EA 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: Environmental Management Director
Address: 1598 Mail Service Center, Raleigh NC 27699-1598
Signature: [Signature] Date: 1/10/06

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 |

STORMWATER MANAGEMENT PLAN

NCDOT Project 33389.1.1 (B-4022)

Date:9/13/05

Beaufort County

Bridge No. 90 on SR 1414 over Tranter's Creek

Hydraulics Project Manager: Andrew Nottingham, PE

PROJECT DESCRIPTION

The NC Department of Transportation proposes to replace bridge no. 90 with a bridge. SR 1414 is a rural local route with a 19' pavement width and 10' grassed shoulders. The proposed roadway will have a 22' pavement width and 5' grassed shoulders (8' shoulders in guardrail areas). The existing structure is a five span bridge 175' long with a clear roadway width of 24'. Intermediate crutch piers have been added between the principle piers. The proposed structure will be a four-span box-beam bridge 220' long with a clear roadway width of 29'10". Traffic will be detoured off-site during the bridge construction. Roadway improvements will result in an additional impervious area of 4648 square feet (0.107 acre).

ENVIRONMENTAL DESCRIPTION

The surrounding land use consists of woodlands, swamps, agricultural fields, and rural residential lots. The project area is located within a level, wide flood plain with gently sloping valleys. Natural ground elevation at the site is approximately 16 NGVD. The project is located in the Tar-Pamlico River Basin. This portion of Tranter's Creek is well defined and deep, with depths averaging 16'. Normal flow velocity is slow as it passes through adjacent swampland. The best usage classification is CSw with a NSW designation. No watershed critical areas, HQW, or ORW waters are located within one mile of the project site.

BEST MANAGEMENT PRACTICES

- The bridge replacement will be accomplished with a road closure that will minimize construction time and on-site impacts.
- The roadway typical section is a fill section with slopes no steeper than 3:1. Approach roadway drainage will be by sheet flow across the grassed shoulders.
- Deck drains have been eliminated from the bridge.
- Bridge deck drainage is directed away from either ends of the bridge by a gutter and drainage system, and then dispersed on rip rapped pads before entering the wetlands. The outlet pads are placed more than 50' from the creek bank which is outside of the riparian buffer limits.

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

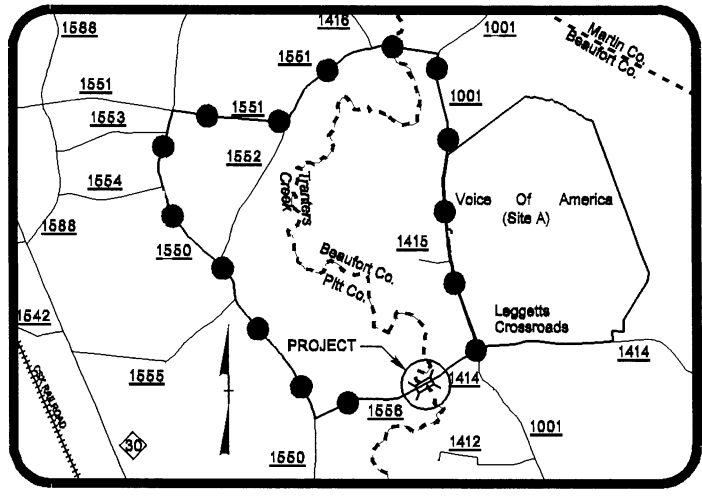
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT & BEAUFORT COUNTY

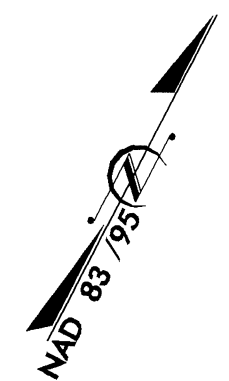
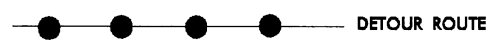
LOCATION: BRIDGE NO. 90 OVER TRANTERS CREEK
ON SR 1414 & SR 1556

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

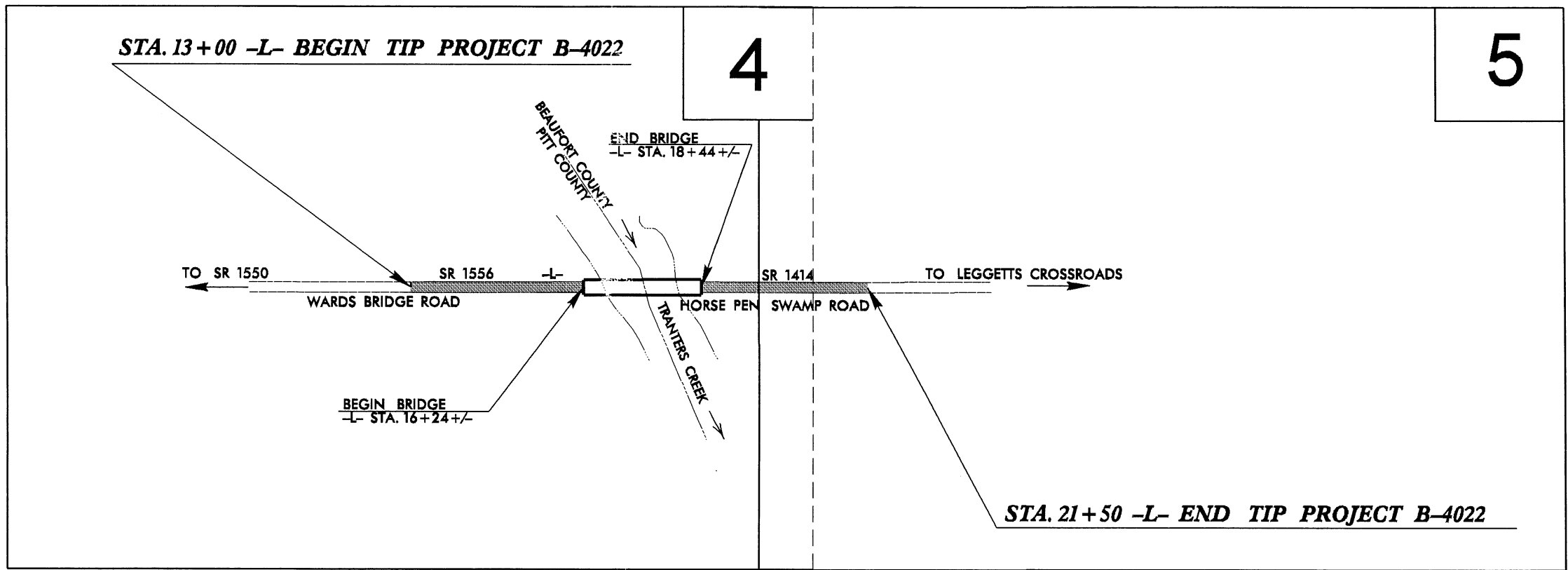
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4022	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
33389.1.1	BRZ-1414(2)	PE	
33389.2.1	BRZ-1414(2)	R /W, UTILITIES	



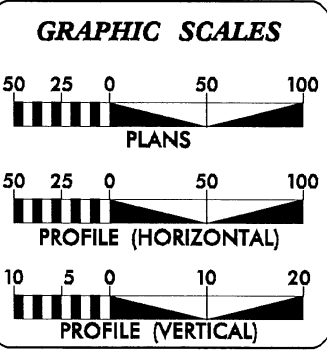
VICINITY MAP



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.



DESIGN DATA

ADT 2006 =	452
ADT 2026 =	713
DHV =	10 %
D =	60 %
T =	3 % *
V =	60 MPH
* TTST =	1%
DUAL =	2%
FUNC. CLASS =	RURAL LOCAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4022	=	0.119 MILES
LENGTH STRUCTURE TIP PROJECT B-4022	=	0.042 MILES
TOTAL LENGTH TIP PROJECT B-4022	=	0.161 MILES

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 3, 2005

LETTING DATE:
JUNE 20, 2006

GARY LOVERING, PE
PROJECT ENGINEER

RON McCOLLUM, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED DIVISION ADMINISTRATOR DATE

CONTRACT: C201496 TIP PROJECT: B-4022

23-SEP-2005 08:23
R:\Roadway\Projects\B-4022-rdy-tsh.dgn
planor.d AT RD223158

Note: Not to Scale

*S.U.E. = Subsurface Utility Engineering

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	-----
Property Monument	□
Parcel/Sequence Number	⑫③
Existing Fence Line	-----
Proposed Woven Wire Fence	-----
Proposed Chain Link Fence	-----
Proposed Barbed Wire Fence	-----
Existing Wetland Boundary	WLB
Proposed Wetland Boundary	WLB
Existing High Quality Wetland Boundary	HQ WLB
Existing Endangered Animal Boundary	EAB
Existing Endangered Plant Boundary	EPB

BUILDINGS AND OTHER CULTURE:

Gas Pump Vent or UG Tank Cap	○
Sign	○
Well	○
Small Mine	✕
Foundation	□
Area Outline	□
Cemetery	⊕
Building	□
School	□
Church	⊕
Dam	-----

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	-----
River Basin Buffer	RBB
Flow Arrow	←
Disappearing Stream	-----
Spring	○
Swamp Marsh	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

Standard Gauge	-----
RR Signal Milepost	○
Switch	□
RR Abandoned	-----
RR Dismantled	-----

RIGHT OF WAY:

Baseline Control Point	◆
Existing Right of Way Marker	△
Existing Right of Way Line	-----
Proposed Right of Way Line	-----
Proposed Right of Way Line with Iron Pin and Cap Marker	-----
Proposed Right of Way Line with Concrete or Granite Marker	-----
Existing Control of Access	-----
Proposed Control of Access	-----
Existing Easement Line	-----
Proposed Temporary Construction Easement	-----
Proposed Temporary Drainage Easement	-----
Proposed Permanent Drainage Easement	-----
Proposed Permanent Utility Easement	-----

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	C
Proposed Slope Stakes Fill	F
Proposed Wheel Chair Ramp	WCR
Curb Cut for Future Wheel Chair Ramp	CCFR
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	⊕
Pavement Removal	-----

VEGETATION:

Single Tree	○
Single Shrub	○
Hedge	-----
Woods Line	-----
Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

MAJOR:	
Bridge, Tunnel or Box Culvert	-----
Bridge Wing Wall, Head Wall and End Wall	-----
MINOR:	
Head and End Wall	-----
Pipe Culvert	-----
Footbridge	-----
Drainage Box: Catch Basin, DI or JB	□
Paved Ditch Gutter	-----
Storm Sewer Manhole	○
Storm Sewer	-----

UTILITIES:

POWER:	
Existing Power Pole	●
Proposed Power Pole	○
Existing Joint Use Pole	●
Proposed Joint Use Pole	○
Power Manhole	○
Power Line Tower	⊗
Power Transformer	⊗
UG Power Cable Hand Hole	□
H-Frame Pole	●
Recorded UG Power Line	-----
Designated UG Power Line (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	●
Proposed Telephone Pole	○
Telephone Manhole	○
Telephone Booth	□
Telephone Pedestal	□
Telephone Cell Tower	⊕
UG Telephone Cable Hand Hole	□
Recorded UG Telephone Cable	-----
Designated UG Telephone Cable (S.U.E.*)	-----
Recorded UG Telephone Conduit	-----
Designated UG Telephone Conduit (S.U.E.*)	-----
Recorded UG Fiber Optics Cable	-----
Designated UG Fiber Optics Cable (S.U.E.*)	-----

WATER:

Water Manhole	○
Water Meter	○
Water Valve	⊗
Water Hydrant	⊕
Recorded UG Water Line	-----
Designated UG Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

TV:

TV Satellite Dish	⊕
TV Pedestal	□
TV Tower	⊗
UG TV Cable Hand Hole	□
Recorded UG TV Cable	-----
Designated UG TV Cable (S.U.E.*)	-----
Recorded UG Fiber Optic Cable	-----
Designated UG Fiber Optic Cable (S.U.E.*)	-----

GAS:

Gas Valve	◇
Gas Meter	⊕
Recorded UG Gas Line	-----
Designated UG Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

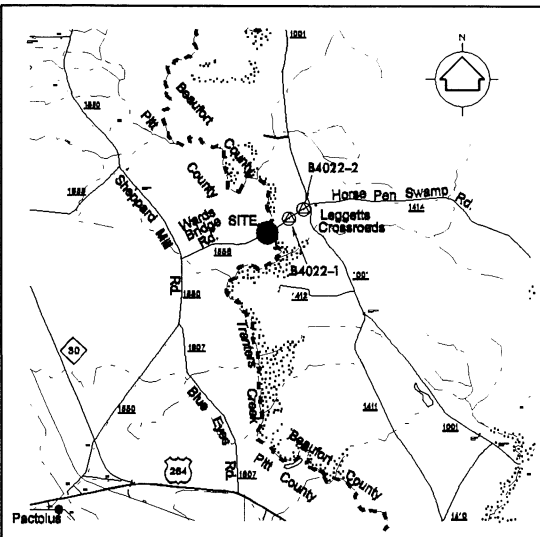
SANITARY SEWER:

Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
UG Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.*)	-----

MISCELLANEOUS:

Utility Pole	●
Utility Pole with Base	□
Utility Located Object	○
Utility Traffic Signal Box	□
Utility Unknown UG Line	-----
UG Tank; Water, Gas, Oil	□
AG Tank; Water, Gas, Oil	□
UG Test Hole (S.U.E.*)	⊕
Abandoned According to Utility Records	AATUR
End of Information	E.O.I.

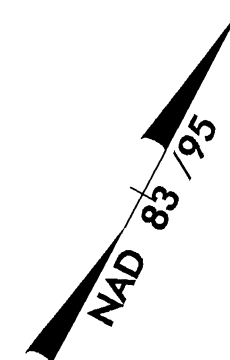
SURVEY CONTROL SHEET B-4022



VICINITY MAP
(NOT TO SCALE)

CONTROL DATA						
BL POINT	DESC.	NORTH	EAST	ELEVATION	L STATION	OFFSET
3	BL-3	705625.0711	2542644.0195	18.48	OUTSIDE PROJECT LIMITS	
4	BL-4	705968.0419	2543219.8369	19.69	16+29.60	15.66 LT
5	BL-5	706357.6935	2544015.0900	18.17	OUTSIDE PROJECT LIMITS	

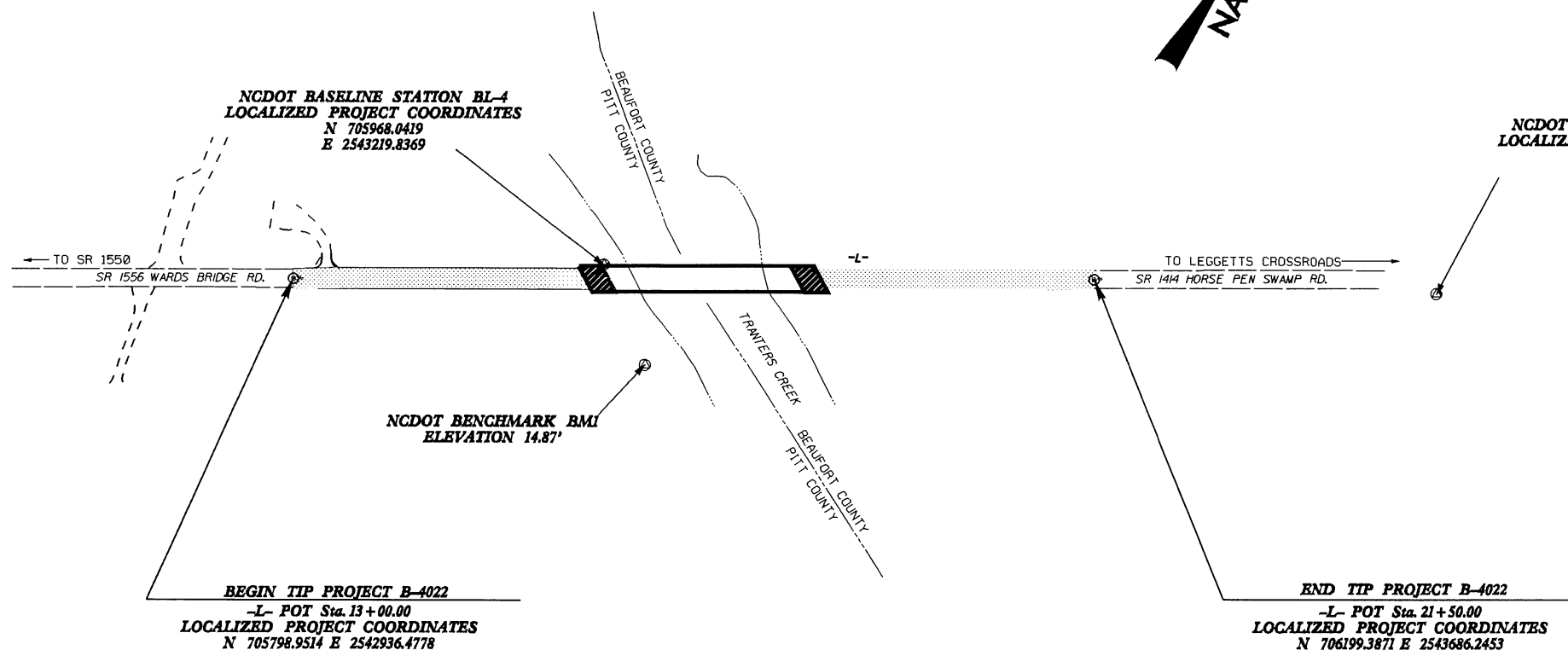
BENCHMARK DATA	
BM1	ELEVATION = 14.87
N 705893	E 2543309
L STATION	16+73 92 RIGHT
RR SPIKE	SET IN 36" OAK



NCDOT BASELINE STATION BL-3
LOCALIZED PROJECT COORDINATES
N 705625.0711
E 2542644.0195

NCDOT BASELINE STATION BL-4
LOCALIZED PROJECT COORDINATES
N 705968.0419
E 2543219.8369

NCDOT BASELINE STATION BL-5
LOCALIZED PROJECT COORDINATES
N 706357.6935
E 2544015.0900



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B4022-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 7070106170(11) EASTING: 25448604030(11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99990472 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B4022-1" TO L- STATION 13+00.00 IS S 57°47'51.9" W 2273.6802(11) ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAD 88

NOTES:

THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:

HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT
FILE: b4022_la_control_040812.txt

SITE CALIBRATION INFORMATION HAS NOT BEEN PROVIDED FOR THIS PROJECT. IF FURTHER INFORMATION IS NEEDED, PLEASE CONTACT THE LOCATION AND SURVEYS UNIT.

⊙ INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.

PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
NETWORK ESTABLISHED FROM NGS ONLINE POSITIONING USER SERVICE (OPUS)

NOTE: DRAWING NOT TO SCALE

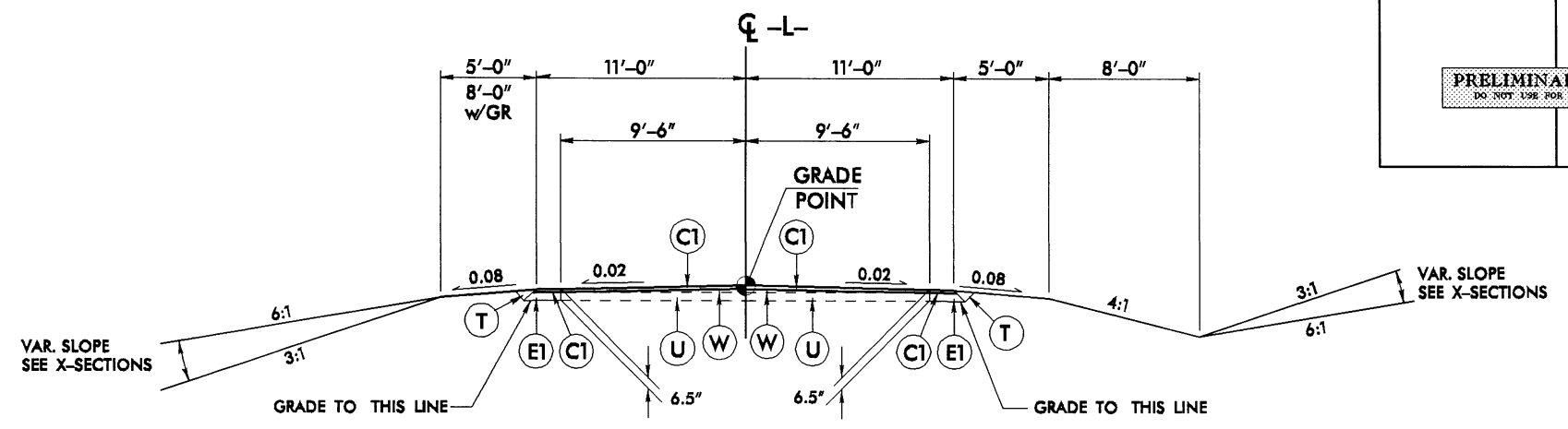
23-SEP-2005 08:24:49 d:\p22_1s_1c.dgn
r:\roadway\p22_1s_1c.dwg
L:\roadway\p22_1s_1c.dwg

PROJECT REFERENCE NO. B-4022	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

**PAVEMENT SCHEDULE
FINAL DESIGN**

C1	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.
C2	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 PLACED IN LAYERS NOT TO EXCEED 2" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
T	EARTH MATERIAL.
U	EXISTING PAVEMENT.
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL)

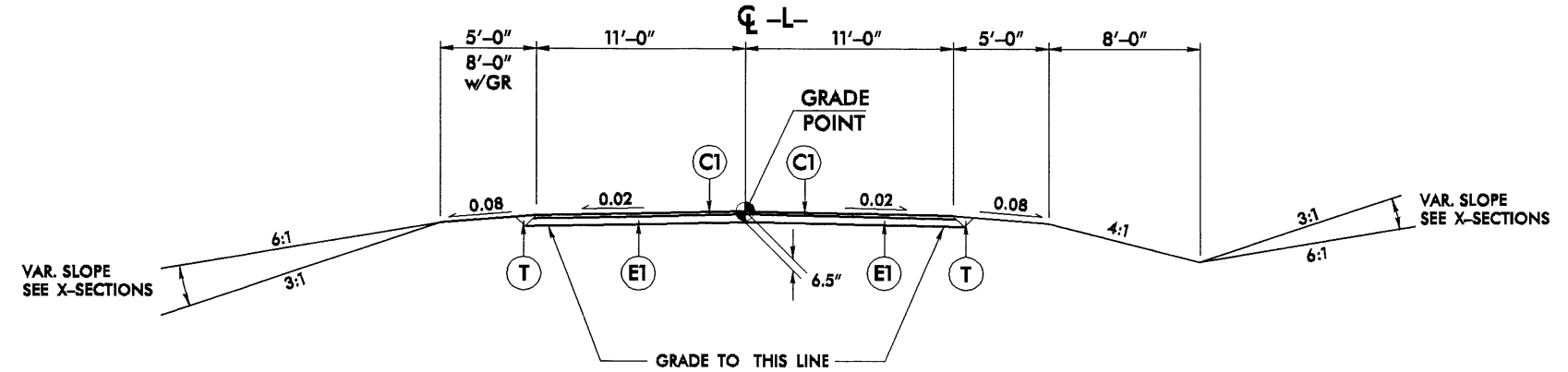
NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.



TYPICAL SECTION NO. 1

USE TYPICAL SECTION NO. 1

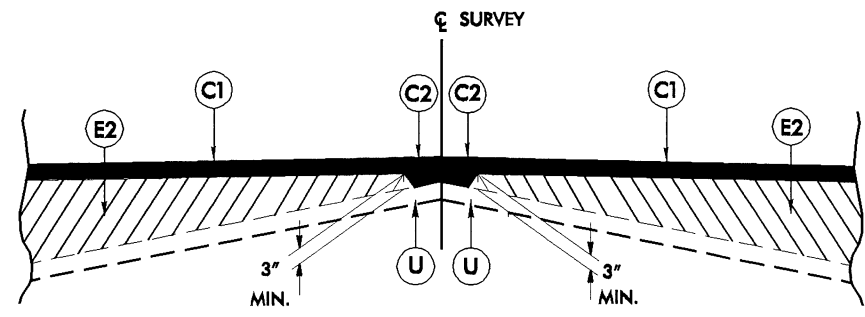
-L- STA. 13+00 TO -L- STA. 15+74
-L- STA. 18+94 TO -L- STA. 21+50



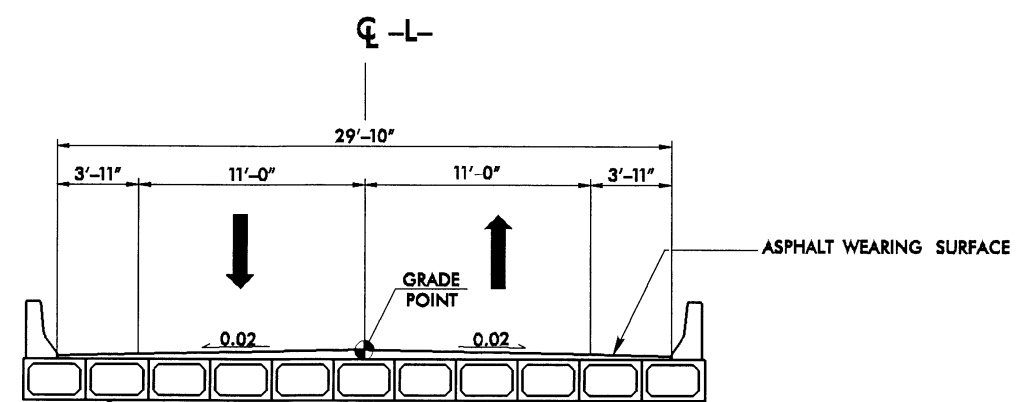
TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

-L- STA. 15+74 TO -L- STA. 16+24 +/- (BEG. BRIDGE)
-L- STA. 18+44 +/- (END BRIDGE) TO -L- STA. 18+94



Wedging Detail



PROPOSED BOX GIRDER BRIDGE
(STRUCTURE PAY ITEM, SEE
STRUCTURE PLANS S-1 THRU S-...)

TYPICAL SECTION ON STRUCTURE


USE TYPICAL SECTION ON STRUCTURE

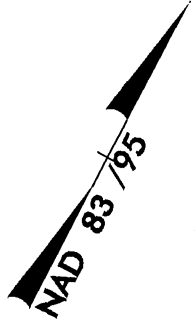
-L- STA. 16+24 +/- TO -L- STA. 18+44 +/-

6/2/99
23-SEP-2005 08:24
R:\Roadway\17-01\17-01-022-r.dwg
17-01-022-r.dwg

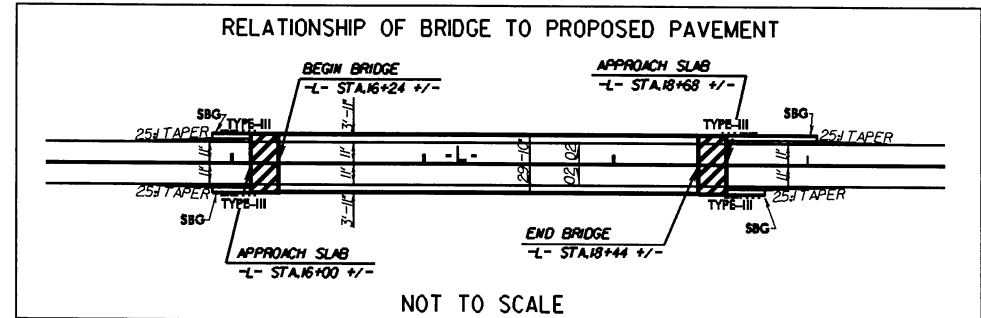
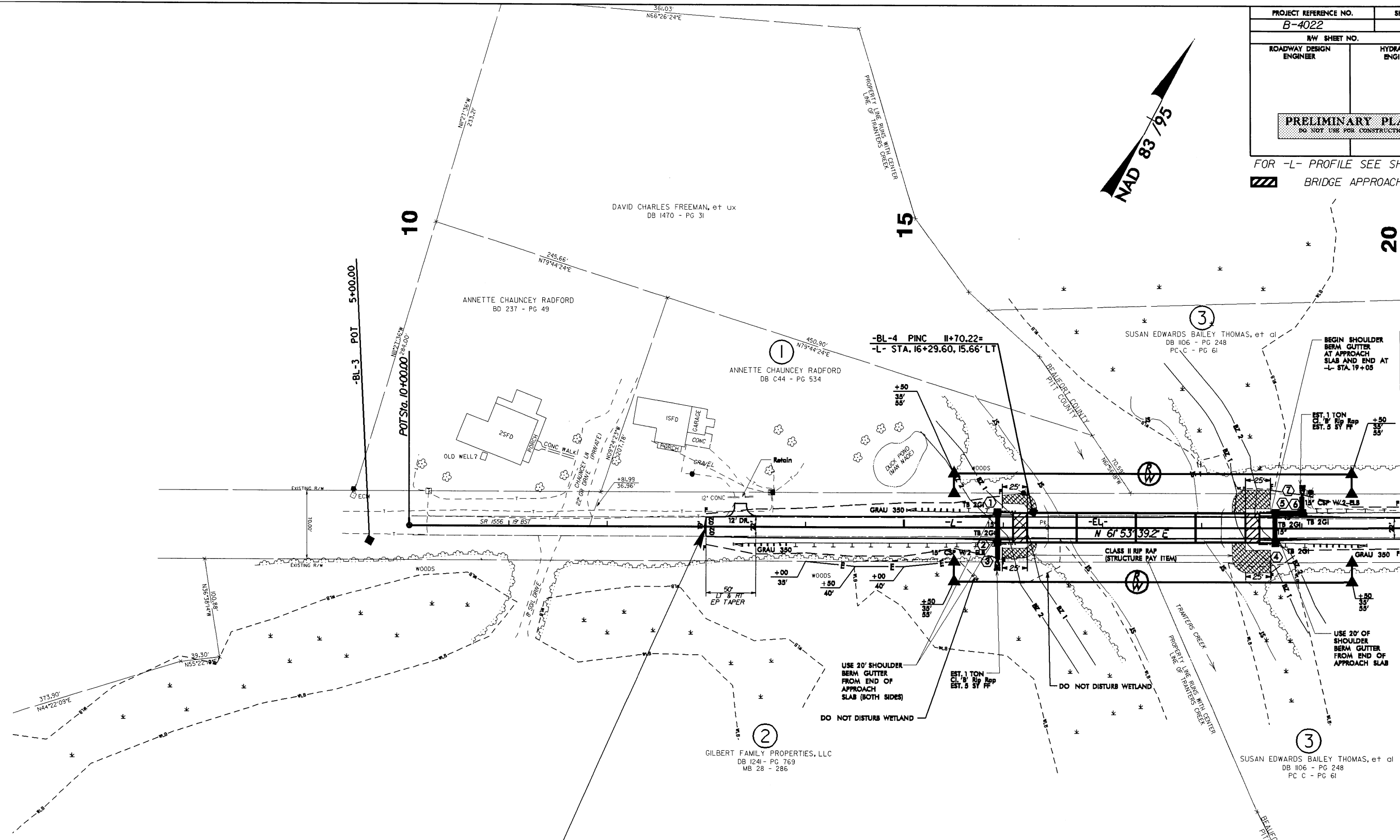
8/17/99

PROJECT REFERENCE NO. B-4022		SHEET NO. 4
RW SHEET NO.		
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		

FOR -L- PROFILE SEE SHEET 6
 BRIDGE APPROACH SLAB



REVISIONS



NOT TO SCALE

STA. 13+00 -L- BEGIN TIP PROJECT B-4022

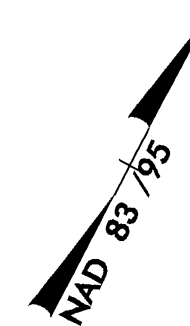
29-SEP-2005 14:35
 s:\p\p\1822_rdy_psh04.dgn
 s:\p\p\1822_rdy_psh04.dgn
 s:\p\p\1822_rdy_psh04.dgn

MATCHLINE -L- STA. 20+00.00 SEE SHEET NO. 5

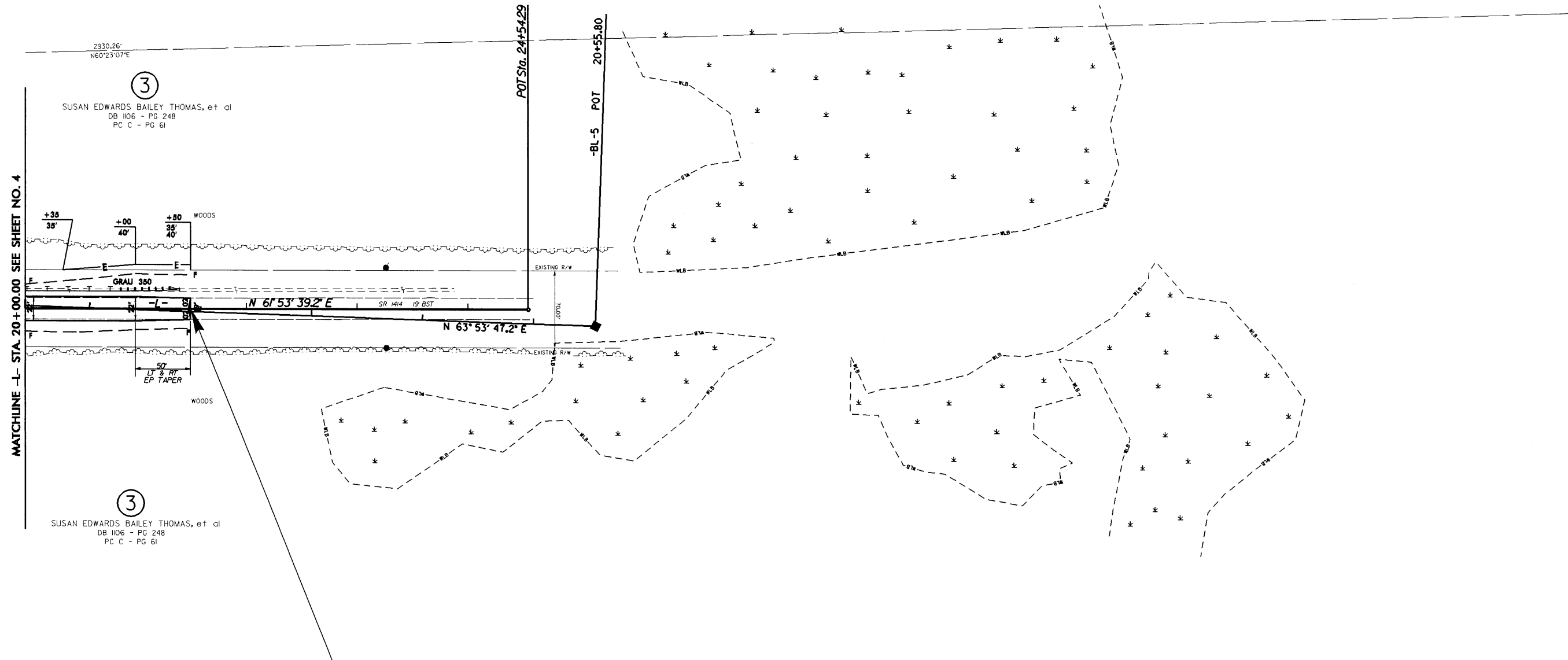
8/17/99

PROJECT REFERENCE NO. B-4022	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

FOR -L- PROFILE SEE SHEET 6



20



③
SUSAN EDWARDS BAILEY THOMAS, et al
DB 1106 - PG 248
PC C - PG 61

+35
35'
+00
40'
+80
35'
40'

MATCHLINE -L- STA. 20+00.00 SEE SHEET NO. 4

③
SUSAN EDWARDS BAILEY THOMAS, et al
DB 1106 - PG 248
PC C - PG 61

STA. 21+50 -L- END TIP PROJECT B-4022

REVISIONS

29-SEP-2005 14:39
F:\roadway\BTL\BTL2150.dgn
psh

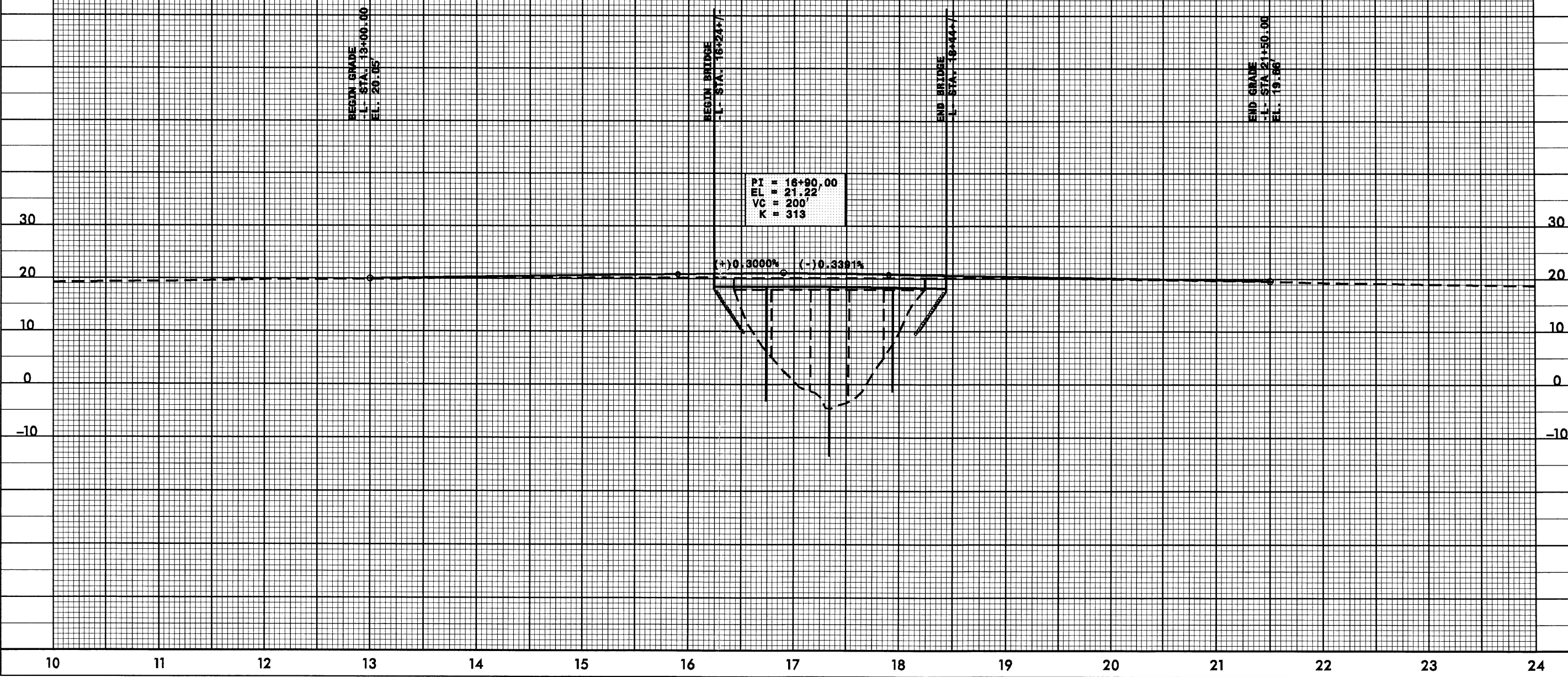
5/14/79

PROJECT REFERENCE NO. B-4022	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

BRIDGE HYDRAULIC DATA	
DESIGN DISCHARGE	= 6400 CFS
DESIGN FREQUENCY	= 25 YRS
DESIGN HW ELEVATION	= 18.1 FT
BASE DISCHARGE	= 9300 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 20.8 FT
OVERTOPPING DISCHARGE	= 7800 CFS
OVERTOPPING FREQUENCY	= 50 YRS
OVERTOPPING ELEVATION	= 19.5 FT
EST. NORM. W.S. ELEV.	= 10.5 FT
DATE OF SURVEY	= 02-20-03
W.S. ELEVATION AT DATE OF SURVEY	= 12.6 FT

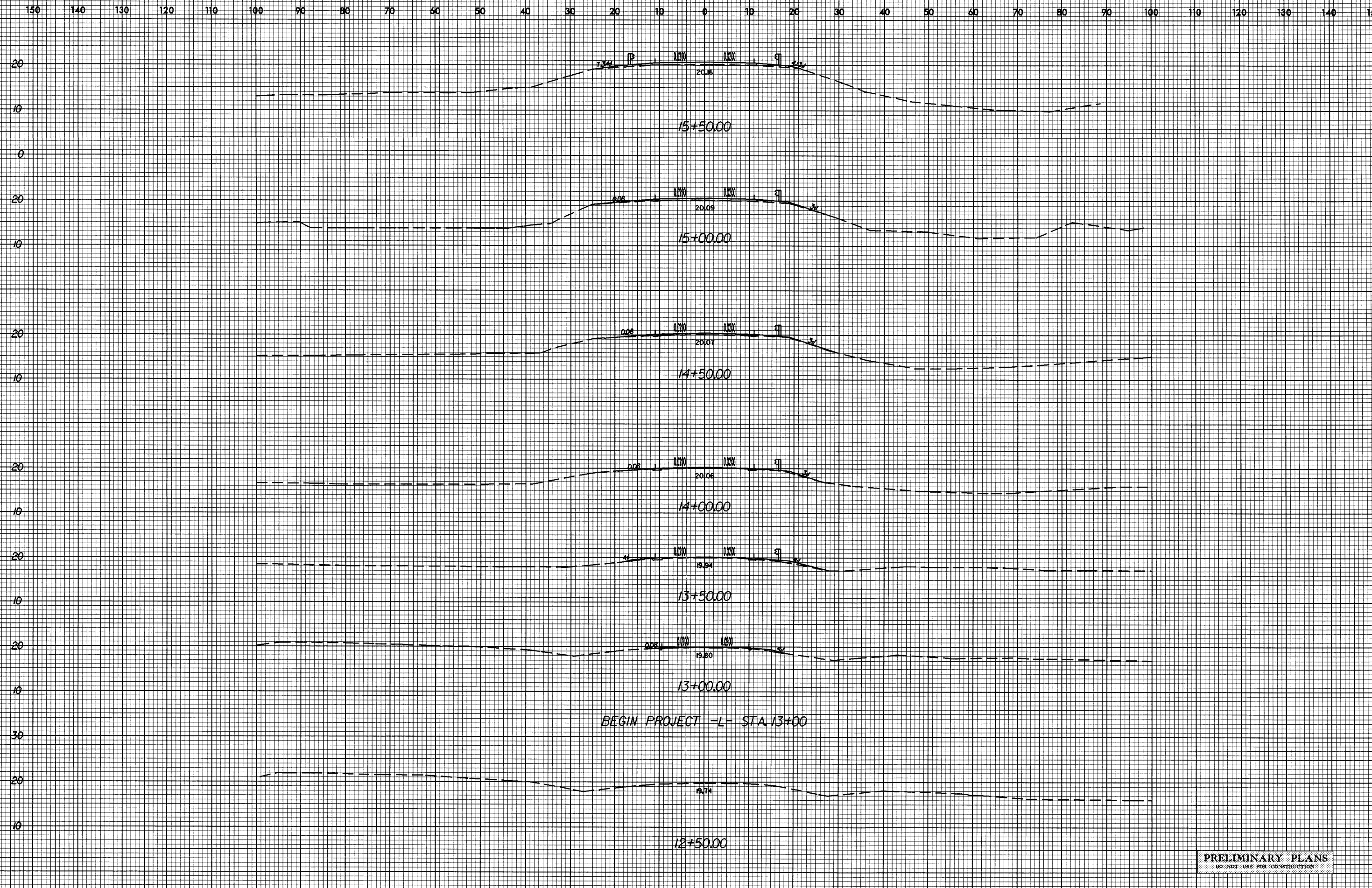
-L-

BM *1 RR SPIKE SET IN 36" OAK
92' RIGHT OF -L- STA 16+7.3
ELEV. = 14.87'



23-SEP-2005 08:24
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 L:\m\g\at\1022\022

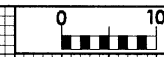
8/23/99



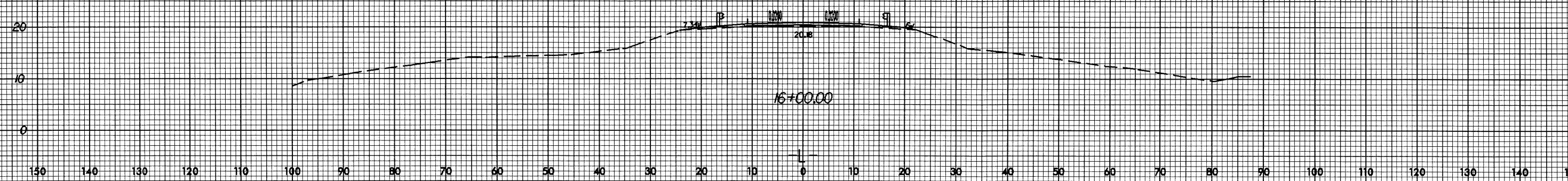
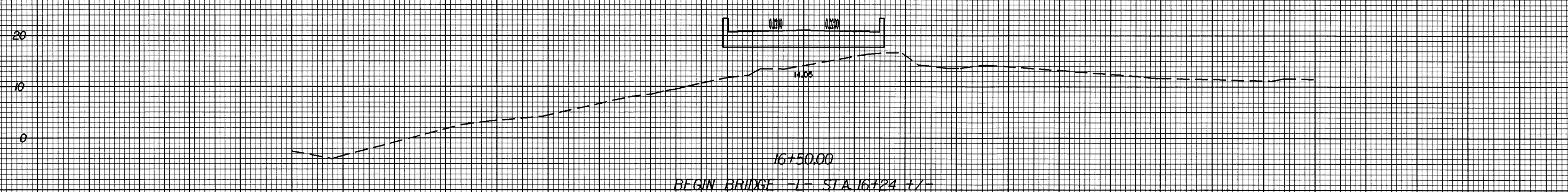
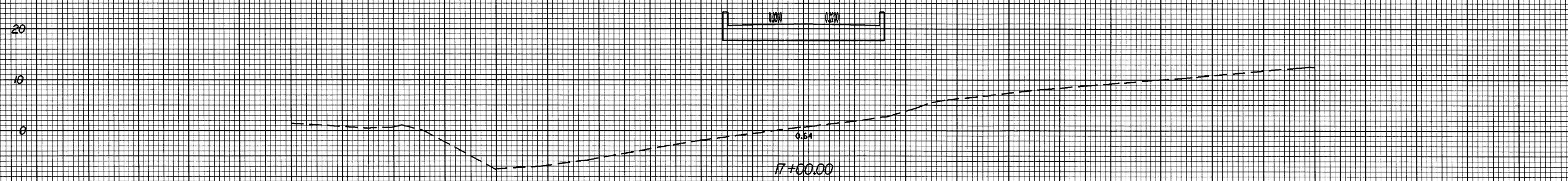
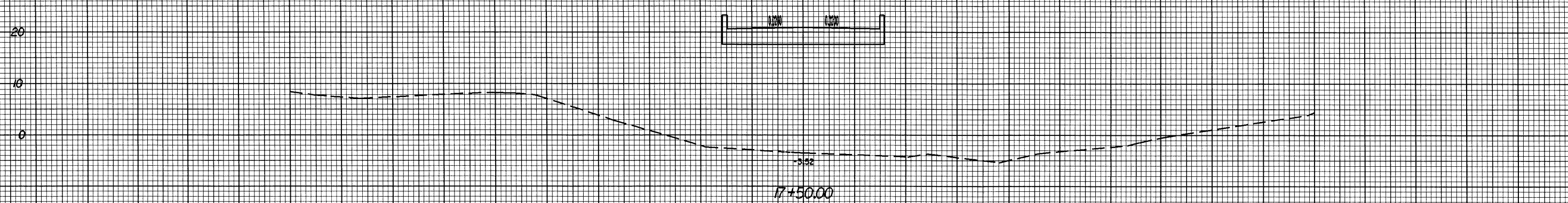
BEGIN PROJECT -L- STA. 13+00

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

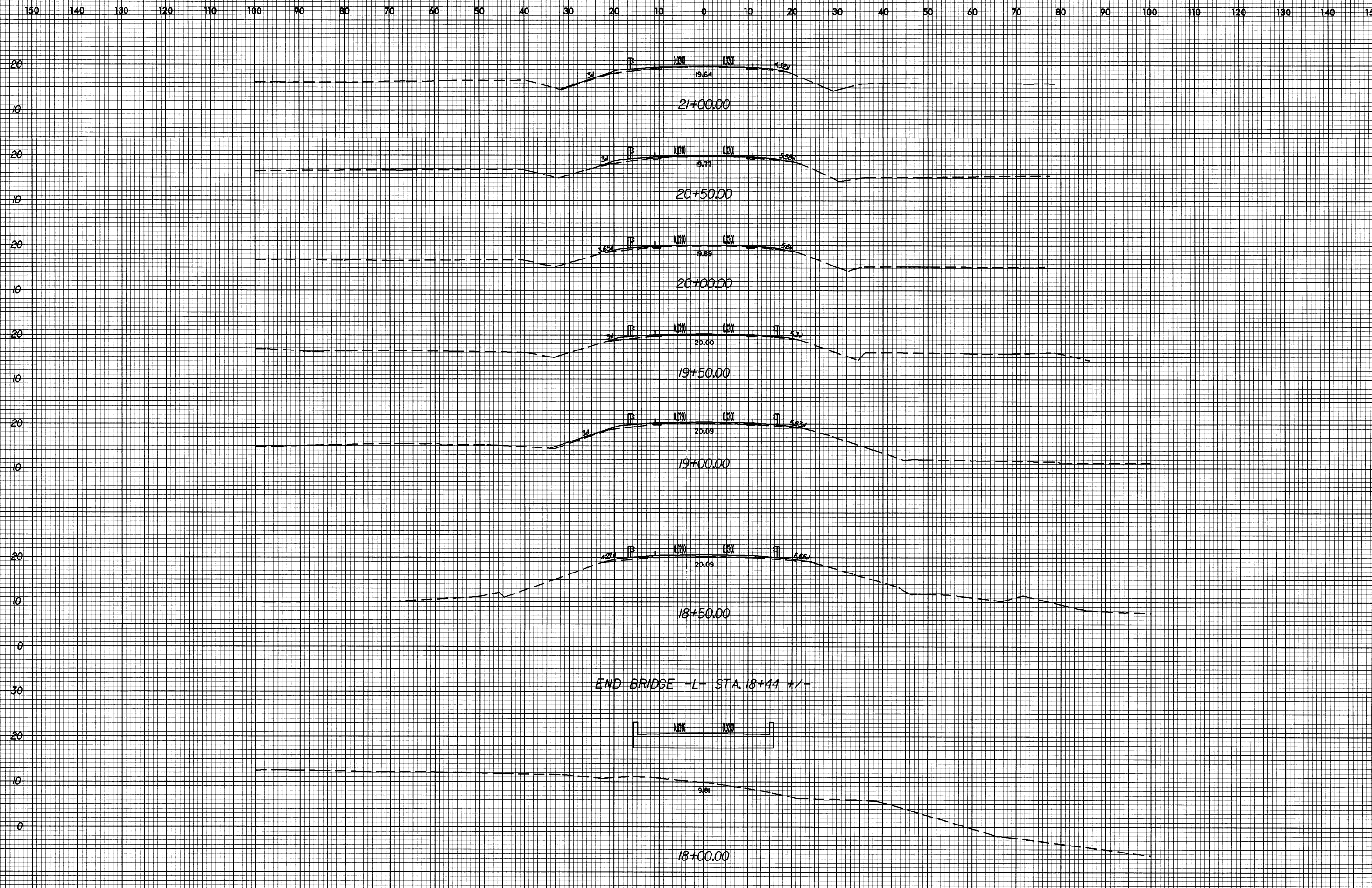
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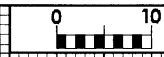


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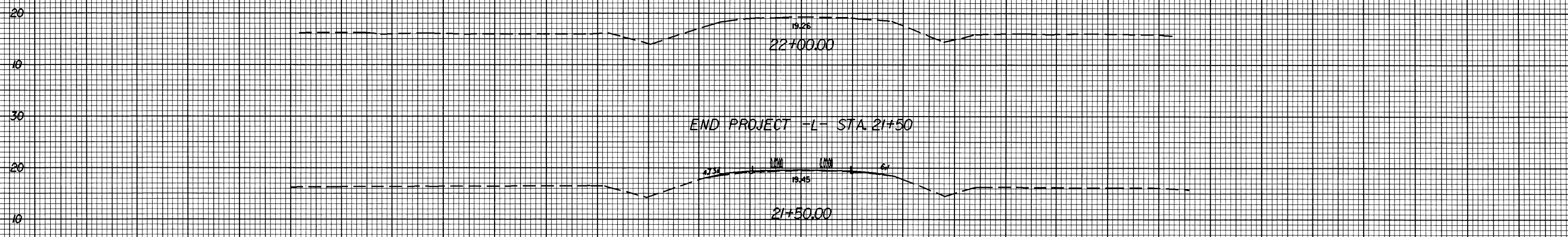


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150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150