



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

December 29, 2005

U.S. Army Corps of Engineers
Washington Regulatory Field Office
US Army Corps of Engineers
Post Office Box 1000
Washington, North Carolina 27889-1000

ATTN: Mr. William Wescott
NCDOT Coordinator

Dear Sir:

Subject: **Nationwide 23 Permit Application and Buffer Authorization** for the proposed replacement of Bridge No. 296 on SR 1222 over Neuse River Cut-off (Overflow) in Wayne County, Federal Aid Project: BRZ-1222(4), State Project No. 8.2331301, WBS Element 33145.1.1, TIP B-3538

Please find enclosed a copy of the Buffer Drawings, FHWA Right of Way Consultation, Planning Document, and half-size plan sheets, for the above referenced project. The North Carolina Department of Transportation (NCDOT) proposes to replace existing Bridge No. 296 on SR 1222 (Bryan Boulevard) over Neuse River Cut-Off (DWQ Index # 27-59) in Wayne County. The FHWA Right of Way Consultation dated June 30, 2002 reverses the preferred alternative (see FHWA Right of Way Consultation). The project involves replacement of the existing 161-foot structure with a new structure at the same location. The proposed replacement structure is a 176-foot-¾-inch long bridge with a 29-foot-10-inch clear roadway width. During construction, traffic will be maintained with an on-site detour that utilizes a temporary bridge located approximately 40 feet north of the existing bridge. The total buffer impact is 11,706 ft². Less than 0.001 acre of surface water impacts will occur from construction of the bridge bents.

IMPACTS TO WATERS OF THE UNITED STATES

General Description: The project is located in the United States Geologic Survey (USGS) Hydrologic Unit 03020201 of the Neuse River Basin and in the North Carolina Division of Water Quality (DWQ) sub-basin 03-04-12. Neuse River Cut-Off joins with the Neuse River approximately 0.6 miles downstream from Bridge No. 296. A Best Usage Classification of "C NSW" has been assigned to Neuse River Cut-Off. Approximately 0.6 miles upstream of Bridge

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.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

No. 296 lies a water supply protected area classified a WS-IV. Wetlands are not present within the project area.

Permanent Impacts: Less than 0.001 acre of surface water impacts from construction of the bridge bents will occur. There are no permanent stream impacts expected to Neuse River Cut-Off from the construction of the new bridge.

Temporary Impacts: Temporary impacts to surface waters from installation of the temporary detour bridge bents are expected to be less than 0.001 acre. There are no temporary stream impacts expected to Neuse River Cut-Off from the construction of the new bridge.

After construction activities are completed, the temporary bridge will be removed and disturbed upland areas will be revegetated and returned to preconstruction elevation.

BUFFER IMPACTS

NEUSE RIVER BASIN BUFFER RULES

This project is located in the Neuse River Basin; therefore, the regulations pertaining to the buffer rules apply. There will be a total of 11,706 ft² of impacts to riparian buffers, 6,830 ft² in Zone 1 and 4,876 ft² in Zone 2, due to the detour and construction of the new bridge. All practicable measures to minimize impacts within buffer zones were followed. According to the buffer rules, bridges are allowable. Uses designated as allowable may proceed within the riparian buffer provided that there are no practical alternatives to the requested use pursuant to Item (8) of this Rule. These uses require written authorization from the Division of Water Quality. Therefore, NCDOT requests that the NC Division of Water Quality review this application and issue a written authorization for a Neuse River Riparian Buffer Certification.

UTILITY IMPACTS

Southern Bell Telephone Company owns underground telephone cables along SR 1222, which become aerial over the Neuse River Cut-Off. Along the south side of SR 1222, Southern Wayne Sanitary District owns a water line, which is suspended on timber pilings over the Neuse River Cut-Off next to the existing bridge. No utility impacts to surface waters are expected from the proposed project.

BRIDGE DEMOLITION

The existing bridge has four spans totaling 161 feet. It is composed entirely of timber and steel. These components are slated for removal in a manner that will avoid dropping any bridge components into Neuse River Cut-Off. Because the Neuse River Cut-Off is known to support anadromous fish, "Stream Crossing Guidelines for Anadromous Fish Passage" will be followed and no in-stream work will be allowed between February 15 and June 15. There are no other special restrictions beyond those outlined in the BMPs for Protection of Surface Waters and BMPs for Bridge Demolition and Removal. Best Management Practices for Bridge Demolition and Removal will be followed to avoid any temporary fill from entering Waters of the United States.

Schedule: The project schedule calls for a January 16, 2007 Let date, with a Let Review date of November 28, 2006.

AVOIDANCE, MINIMIZATION, AND MITIGATION

Avoidance and Minimization:

Avoidance examines all appropriate and practicable possibilities of averting impacts to "Waters of the United States". Because of the presence of surface waters within the project study area, avoidance of all impacts is not practicable. The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to providing full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Because avoidance of all impacts was not possible, minimization measures were incorporated as part of the project design. As part of this commitment, impacts to Neuse River Cut-Off were minimized by replacing the bridge in the same location.

Mitigation:

No mitigation is proposed for this project.

FEDERAL PROTECTED SPECIES

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of January 29, 2003 the US Fish and Wildlife Service (USFWS) lists one federally protected species for Wayne County; the red-cockaded woodpecker (*Picoides borealis*), which is listed as Endangered. No species have been added to or deleted from this list since the completion of the CE (September 2000).

Field surveys conducted in 2001 determined that the project area does not contain habitat for the red-cockaded woodpecker. Therefore, a biological conclusion of "No Effect" has been given for this species and remains valid.

REGULATORY APPROVALS


Section 404 Permit: All aspects of this project are being processed by the Federal Highway Administration as a "Categorical Exclusion" in accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 23 (FR number 10, pages 2020-2095; January 15, 2002).

Section 401 Permit: We anticipate 401 General Water Quality Certification number 3403 will apply to this project. All general conditions of the Water Quality Certifications will be met. Therefore, in accordance with 15A NCAC 2H, Section .0500(a) and 15A NCAC 2B.0200, we are providing copies of this application to the North Carolina Department of Environmental and Natural Resources, Division of Water Quality for their review.

A copy of this application will be posted on the NCDOT website at:
<http://www.doh.dot.state.nc.us/preconstruct/pe/neu/permit.html>

Thank you for your time and assistance with this project. Please contact Tyler Stanton at tstanton@dot.state.nc.us or (919) 715-1439 if you have any questions or need any additional information.

Sincerely,


for

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

cc:

W/attachment

- Mr. John Hennessy, NCDWQ (7 Copies)
- Mr. Travis Wilson, NCWRC
- Mr. Gary Jordan, USFWS
- Mr. Ron Sechler, NMFS
- Mr. Michael Street, NCDMF
- Dr. David Chang, P.E., Hydraulics
- Mr. Greg Perfetti, P.E., Structure Design
- Mr. Mark Staley, Roadside Environmental
- Mr. Richard E. Greene, P.E., Division Engineer
- Mr. Jamie Shern, Division 4 Environmental Officer

W/o attachment

- Mr. Scott McLendon, USACE, Wilmington
- Mr. Jay Bennett, P.E., Roadway Design
- Mr. Majed Alghandour, Programming and TIP
- Mr. Art McMillan, P.E., Highway Design
- Mr. Hank Schwab, P.E., PDEA Project Planning Engineer

RECEIVED

JUL 6 2004

DIVISION OF HIGHWAYS
IDEA-OFFICE OF NATURAL ENVIRONMENT

**North Carolina Department of Transportation
PROJECT ENVIRONMENTAL CONSULTATION FORM
TIP No. B-3538**

I. GENERAL INFORMATION

- a. Consultation Phase: Revised Right of Way Consultation
- b. Project Description: Replacement of Bridge No. 296 on SR 1222 over Neuse River Cutoff in Wayne County
- c. State Project: 8.2331301
WBS Project: 33145.1.1
Federal Project: BRZ-1222 (4)
- d. Document Type: Right of Way Consultation 6-30-02
Categorical Exclusion 9-27-00

II. ACTION PROPOSED IN RIGHT OF WAY CONSULTATION

This project proposed to replace Bridge No. 296 with a new 175-foot long bridge on new alignment approximately 40 feet north (upstream) of the existing structure. Traffic would be maintained on the existing structure during construction.

III. CONCLUSIONS

The Categorical Exclusion and Right of Way Consultation have been reevaluated as required by 23 CFR 771. It was determined that the current proposed action is not the same as the action proposed in the previous documents. Proposed changes, are noted below in Section IV. It has been determined that anticipated social, economic, and environmental impacts were accurately described in the Categorical Exclusion unless noted otherwise herein.

IV. CHANGES IN PROPOSED ACTION AND ENVIRONMENTAL CONSEQUENCES

The original Categorical Exclusion (CE) proposed two alternatives. Alternate One recommended replacing the existing bridge with a new bridge at approximately the same location and elevation and maintaining traffic onsite using a temporary detour bridge to the north. Alternate Two recommended replacing the bridge on new location to the north and maintaining traffic along the existing alignment. Alternate Two was the recommended alternate in the CE Document.

Since that time, Hurricane Floyd caused a lot of flood damage to eastern North Carolina. The vicinity of this bridge project was flooded and FEMA bought most of the surrounding houses and property. FEMA regulations declare no new impervious surface (includes pavement) is allowed to be placed on land acquired using Hazard Mitigation Grant Program (HMGP)/Supplemental funding. NCDOT's Roadway Design Unit has been coordinating with FEMA as well as the NC Division of Emergency Management (NCDEM). These agencies have conditionally approved the replacement of Bridge No. 296 utilizing Alternate One. These conditions are stated on the Green Sheet.

Therefore, the recommended alternate will change from Alternate Two, to Alternate One (onsite detour to the north). The previously attained Total Cost Estimate (Construction and Right of Way Cost) for Alternate One is \$1,668,000. The new recommended Alternate will not affect any houses, nor result in any relocations because the properties surrounding the project have been purchased by FEMA resulting from flooding caused by Hurricane Floyd.

According to the February 2003 updated list for Wayne County, the only listed Threatened and Endangered Species is the Red-cockaded Woodpecker. As stated in the Categorical Exclusion, the Biological Conclusion of No Effect remains valid.

V. COORDINATION

Project Development and Environmental Analysis Branch personnel have discussed current project proposals with others as follows:

Design Engineer: Greg Brew

6-9-04
Date

Permits Section: Tyler Stanton

5-17-04
Date

VI. NCDOT CONCURRENCE

Robin Y. Hancock

Robin Y. Hancock, PE, Project Development Engineer

6-30-04

Date

Teresa Hart

Teresa Hart, PE, CPM, Assistant Branch Manager
Project Development and Environmental Analysis

6-30-04

Date

VII. FHWA CONCURRENCE

for John F. Sullivan, III, PE
Acting Division Administrator, FHWA

6/30/04

Date

PROJECT COMMITMENTS

Wayne County
Bridge No. 296 on SR 1222
over Neuse River Cutoff
Federal-Aid No. BRZ-1222(4)
State Project No. 8.2331301
WBS 33145.1.1
TIP No. B-3538

Commitments Developed Through Project Development and Design

Division 4 Construction, Roadside Environmental Unit, Structure Design Unit

Bridge Demolition: Best Management Practices for Bridge Demolition & Removal will be implemented. The existing bridge is constructed entirely of timber and steel. Therefore, Bridge No. 296 will be removed without dropping any component into Waters of the United States during construction.

Hydraulics Unit, Roadway Design Unit

As recommended by the Wildlife Resources Commission, NCDOT will consider using measures to avoid bridge deck drainage directly into the Neuse River Overflow during the hydraulic analysis of the proposed bridge replacement.

Roadside Environmental Unit, Hydraulics Unit, Division 4 Construction Office

NCDOT will adhere to construction guidelines outlined in "NCDOT Stream Crossing Guidelines for Anadromous Fish Passage" during the construction of Bridge No. 296 in Wayne County. No in-water work will occur from February 15 to June 15.

Roadside Environmental Unit, Division 4 Construction Office

Once construction of the new bridge and approaches are complete, the detour bridge will be removed. The approach fill for the detour will be removed to natural grade and the area will be revegetated with appropriate plant species.

Roadside Environmental Unit, Division 4 Construction Office, Roadway Design Unit

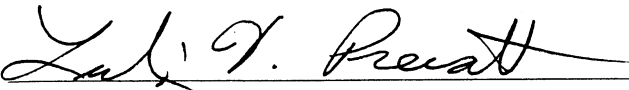
The following conditions are required through FEMA and the Division of Emergency Management:

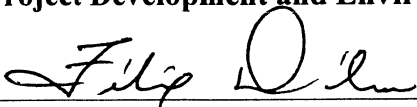
1. The time required for the temporary roadway and bridge is not to exceed 18 months from the date of earth moving startup.
2. The Hazard Mitigation Grant Program (HMGP) Property must be returned to pre-construction state.
3. NCDOT will maintain HMGP Property; keeping it free of storm debris.
4. NCDOT will publish a public notice in the local newspaper and provide FEMA with a copy
5. NCDOT will provide FEMA with a detailed engineering site plan for review.

Wayne County
Bridge No. 296 on SR 1222
Over Neuse River Overflow
Federal Project BRZ-1222 (4)
State Project 8.2331301
TIP No. B-3538

CATEGORICAL EXCLUSION
U. S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
N. C. DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

APPROVED:

9-25-00 
Date William D. Gilmore, P. E., Manager
Project Development and Environmental Analysis Branch

9-27-00 
Date ^{for} Nicholas Graf, P. E.
Division Administrator, FHWA

Wayne County
Bridge No. 296 on SR 1222
Over Neuse River Overflow
Federal Project BRZ-1222 (4)
State Project 8.2331301
TIP No. B-3538

CATEGORICAL EXCLUSION

September 2000

Documentation Prepared in
Project Development and Environmental Analysis Branch By:

9-12-00 Karen T. Orthner
Date Karen T. Orthner
Project Development Engineer

9-21-00 Wayne Elliott
Date Wayne Elliott
Bridge Project Development Engineer, Unit Head

9-25-00 Lubin V. Prevatt
Date Lubin V. Prevatt, P. E., Assistant Manager
Project Development and Environmental Analysis Branch



PROJECT COMMITMENTS

Replacement of Bridge No. 296
on SR 1222 over Neuse River
Wayne County
Federal-Aid No. BRZ-1222(4)
State Project No. 8.2331301
T.I.P. No. B-3538

Commitments Developed Through Project Development and Design

Hydraulics Unit, Roadway Design Unit

As recommended by the Wildlife Resources Commission, NCDOT will consider using measures to avoid bridge deck drainage directly into the Neuse River Overflow during the hydraulic analysis of the proposed bridge replacement.

Roadside Environmental Unit, Division Four Construction, Structure Design Unit

NCDOT will adhere to the Best Management Practices (BMPs) for "Bridge Demolition and Removal" during the removal of Bridge No. 296 in Wayne County.

Roadside Environmental Unit, Hydraulics Unit, Division Four Construction Office

NCDOT will adhere to construction guidelines outlined in "NCDOT Stream Crossing Guidelines for Anadromous Fish Passage" during the construction of Bridge No. 296 in Wayne County. No in-water work will occur from February 15 to June 15.

Roadside Environmental Unit, Division Four Construction Office

Once construction of the new bridge and approaches are complete, the existing bridge will be removed. The existing approach fill will be removed to natural grade and the area will be planted with native grasses and/or tree species as appropriate.

**Wayne County
Bridge No. 296 on SR 1222
Over Neuse River Overflow
Federal Project BRZ-1222 (4)
State Project 8.2331301
TIP No. B-3538**

Bridge No. 296 is located in Wayne County over the Neuse River Overflow. It is programmed in the Draft 2002-2008 Transportation Improvement Program (TIP) as a bridge replacement project. This project is part of the Federal Highway Bridge Replacement and Rehabilitation Program (HBRRP) and has been classified as a "Categorical Exclusion". No substantial environmental impacts are expected.

I. SUMMARY OF RECOMMENDATIONS

Bridge No.296 will be replaced as recommended in Alternate 2 with a new bridge on new alignment approximately 40 feet (12.2 m) north (upstream) of the existing structure (see Figure 2). The new structure will be approximately 175 feet (53.3 m) long and 30 feet (9.2 m) wide. The cross section of the new bridge will include two 12-foot (3.6-m) lanes with 3-foot (1.0-m) offsets on each side of the bridge. Traffic will be maintained on the existing structure during construction.

There will be approximately 1250 feet (381 m) of new approach work to the east of and 850 feet (260 m) of new approach work to the west of the new bridge. The pavement width of the roadway approaches will be 24 feet (7.2 m). Additionally, there will be 8-foot (2.4-m) grass shoulders. The design speed will be 25 mph (40 km/h).

The estimated cost of the project is \$1,365,000 including \$1,272,000 in construction costs and \$93,000 in right of way costs. The estimated cost shown in the Draft 2002-2008 TIP is \$1,800,000.

II. ANTICIPATED DESIGN EXCEPTIONS

Based on preliminary analysis, a design exception will not be required for this project.

III. EXISTING CONDITIONS

SR 1222 is classified as a Rural Local Route in the Statewide Functional Classification System. The dead-end road is located approximately one mile southwest of Goldsboro, N. C. Currently the traffic volume is 800 vehicles per day (VPD) and projected at 1300 VPD for the year 2025. There is a 20 mph (30 km/h) posted speed limit in the vicinity of the bridge. The road serves primarily local residential and industrial traffic.

The existing bridge was completed in 1953. It is composed of a four-span timber and steel superstructure. The deck is 161 feet (49 m) long and 19 feet (6 m) wide. The substructure is composed of timber bents with timber caps. There are approximately 28 feet (8.5 m) of vertical clearance between the floorbeams of the bridge deck and streambed. There is one lane of traffic on the bridge.

According to Bridge Maintenance Unit records, the sufficiency rating of the bridge is 5.0 out of a possible 100. Presently, the bridge is posted with weight restrictions of 14 tons for single vehicles and 17 tons for truck-tractor semi-trailers.

Vertical alignment is good in the project vicinity. The existing bridge lies in a tangent section of roadway that curves sharply on both the east and west approaches to the bridge. The pavement width on the approaches to the bridge is 19 feet (6 m). Shoulders on the approaches of the bridge are approximately 4 feet (1.2 m) wide.

The Traffic Engineering Branch indicates that no accidents have been reported during a recent three-year period in the vicinity of the project.

There are six daily school bus crossings over the studied bridge. Because SR 1222 is a dead-end road, there is no alternate route available for the school buses in the case of road closure.

Southern Bell Telephone Company owns underground telephone cables along SR 1222, which become aerial over the Neuse River Overflow. CP&L owns power lines along SR 1247 with a service drop at the intersection of SR 1222. No power lines cross the Neuse River Overflow. Along the south side of SR 1222, Southern Wayne Sanitary District owns a water line, which is suspended on timber pilings over the Neuse River Overflow next to the bridge.

IV. PROPOSED ALTERNATIVES

There are two "build" options considered in this document as follows:

Alternate 1: Bridge No. 296 would be replaced with a new 175-foot (53 m) long bridge at approximately the same location and roadway elevation as the existing bridge. Traffic would be maintained on-site using a temporary detour north of the existing bridge. The design speed would be 25 mph (40 km/h).

Alternate 2: (Recommended) Bridge No. 296 will be replaced with a new 175-foot (53 m) long bridge on new location approximately 40 feet (12.2 m) north (upstream) of the existing structure. Traffic will be maintained on the existing bridge during construction. The design speed will be 25 mph (40 km/h).

Both alternates were evaluated on the north side of the bridge in order to avoid a water line suspended on timber pilings along the south side of the bridge.

Bridge No. 296 is the only access in and out of a residential and industrial community northeast of the Neuse River Overflow on SR 1222. Therefore, closing the road during construction is not an option, as access to this community would be cut off.

"Do-nothing" is not practical; requiring the eventual closing of the road as the existing bridge completely deteriorates. Rehabilitation of the existing deteriorating bridge is neither practical nor economical.

V. ESTIMATED COST (Table 1)

COMPONENT	ALTERNATE 1	Recommended ALTERNATE 2
New Bridge	383,000	383,000
Existing Bridge Removal	28,000	28,000
Roadway & Approaches	198,000	345,000
Detour Bridge and Approaches	322,000	N/A
Mobilization & Miscellaneous	371,000	316,000
Engineering & Contingencies	220,000	200,000
Total Construction	\$1,522,000	\$1,272,000
Right of Way	\$146,000	\$93,000
Total Cost	\$1,668,000	\$1,365,000

VI. RECOMMENDED IMPROVEMENTS

Bridge No.296 will be replaced as recommended in Alternate 2 with a new bridge on new alignment approximately 40 feet (12.2 m) north (upstream) of the existing structure (see Figure 2). The new structure will be approximately 175 feet (53.3 m) long and 30 feet (9.2 m) wide. The cross section of the new bridge will include two 12-foot (3.6-m) lanes with 3-foot (1.0-m) offsets on each side of the bridge. Traffic will be maintained on the existing structure during construction.

There will be approximately 1250 feet (381 m) of new approach work to the east of and 850 feet (260 m) of new approach work to the west of the new bridge. The pavement width of the roadway approaches will be 24 feet (7.2 m). Additionally, there will be 8-foot (2.4-m) grass shoulders. The design speed will be 25 mph (40 km/h).

Once construction of the new bridge and approaches are complete, the existing bridge will be removed. The existing approach fill will be removed to natural grade and the area will be planted with native grasses and/or tree species as appropriate.

Alternate 2 is recommended due to lower cost. Each alternate would provide a 25 mph (40 km/h) design speed. Each alternate maintains traffic on site, since there are no alternate routes available in the area. In addition, the environmental consequences are essentially the same for both alternates.

VII. ENVIRONMENTAL EFFECTS

A. GENERAL

This project is expected to have an overall positive impact. Replacement of an inadequate bridge will result in safer traffic operations.

This project is considered to be a "Categorical Exclusion" due to its limited scope and insignificant environmental consequences.

This bridge replacement will not have a substantial adverse effect on the quality of the human or natural environment by implementing the environmental commitments listed in the "Project Commitments" (green) sheet of this document. In addition, the use of current NCDOT standards and specifications will be implemented.

The project is not in conflict with any plan, existing land use, or zoning regulation. No change in land use is expected to result from construction of this project.

There are no hazardous waste impacts.

No adverse effect on families or communities is anticipated. Right-of-way acquisition will be limited.

No adverse effect on public facilities or services is expected. The project is not expected to adversely affect social, economic, or religious opportunities in the area.

There are no publicly owned parks, recreational facilities, or wildlife and waterfowl refuges of national, state, or local significance in the vicinity of the project. This project will not impact any resource protected by Section 4(f) of the U. S. Department of Transportation Act of 1966.

The proposed bridge replacement project will not raise the existing flood levels or have any significant adverse effect on the existing floodplain.

Utility impacts are considered to be low for the proposed project.

B. AIR AND NOISE

This project is an air quality "neutral" project, so it is not required to be included in the regional emissions analysis and a project level CO analysis is not required.

The project is located in Wayne County, which has been determined to be in compliance with the National Ambient Air Quality Standards. 40 CFR part 51 is not applicable, because the proposed project is located in an attainment area. This project is not anticipated to create any adverse effects on the air quality of this attainment area.

The project will not substantially increase traffic volumes. Therefore, it will not have substantial impact on noise levels. Temporary noise increases may occur during construction.

C. LAND USE & FARMLAND EFFECTS

In the vicinity of this project, Wayne County has no zoning. This project will impact no soils considered to be prime or important farmland.

D. HISTORICAL EFFECTS & ARCHAEOLOGICAL EFFECTS

The State Historic Preservation Office (SHPO) indicated that there are no known architectural or archaeological sites in the project area and no unknown sites are likely to be found. Therefore, the SHPO recommended no architectural or archaeological surveys be conducted in connection with this project. (See attachment.)

E. NATURAL RESOURCES

I. PHYSICAL RESOURCES

Soil and water resources, which occur in the study area, are discussed below. Soils and the availability of water directly influence composition and distribution of flora and fauna in any biotic community.

The project lies in the Atlantic Coastal Plain physiographic province. Topography within the project region can be described as smooth, but short, sloping to moderately steep breaks occurring along the floodplain of permanent streams. Topography in the project area is flat with steep slopes occurring on the waters edge. Primary land use is agriculture, but it includes urban areas around Goldsboro. Project elevation is approximately 60.0 ft (18.3 m) above mean sea level (msl).

SOILS

Two soil phases occur within project boundaries. Wickham loamy sands (WhA) are well-drained soils found on broad stream terraces. These soils formed in stream sediments. Permeability is moderate and the seasonal high water table remains below a depth of 5.0 ft (1.5 m). The slopes of this Wickham loamy sand are 0-2 percent. Infiltration is moderate, and surface runoff is slow. Major hazards include flooding for short periods of time and erosion for the steeper sloped areas. Wickham loamy sands are listed as non-hydric.

Wickham sandy loam (WkB2) is a well-drained soil on smooth, low ridges on stream terraces, which formed in stream sediments. Permeability is moderate and the seasonal high water table remains below a depth of 5.0 ft (1.5 m). Slopes range from 2-6 percent. Infiltration is moderately slow, and surface runoff is medium. Erosion is a moderate hazard because of the steep slopes. Wickham sandy loam is listed as non-hydric.

Wickham soils are low in natural fertility and organic matter content. They are important for farming and well suited to locally grown crops.

WATER RESOURCES

This section contains information concerning those water resources likely to be impacted by the project. Water resource information encompasses physical aspects of the resource, its relationship to major water systems, Best Usage Standards and water quality of the resources. Probable impacts to these water bodies are also discussed, as are means to minimize those impacts.

Waters Impacted and Characteristics

Neuse River Overflow will be the only surface water resource directly impacted by the proposed project (Figure 2). Neuse River Overflow is located in sub-basin 03-04-12 of the Neuse River Basin, and has its confluence with the Neuse River approximately 0.6 mi (1.0 km stream channel distance) downstream of Bridge No. 296. The Neuse River Overflow is not considered a navigable waterway.

At Bridge No. 296, the channel of Neuse River Overflow is approximately 90.0 ft (27.4 m) wide and has a depth of 10.0 ft (3.1 m). The average baseflow width is 40.0 ft (12.2 m) and the average baseflow depth is 4.0 ft (1.2 m). Rip-rap is located under both sides of the bridge to stabilize the banks. The streambanks are steep, but stable. On July 29, 1999, very little flow was observed in this portion of Neuse River Overflow. Approximately 0.1 mi (0.2 km) downstream of the bridge is a riffle area comprised of clay, sand, cobbles, and boulders. Upstream of the bridge, rock ledges are visible and the substrate consists of clay and sand.

Best Usage Classification

Streams have been assigned a best usage classification by the Division of Water Quality (DWQ). The DWQ identifies Neuse River Overflow as Neuse River Cut-Off. In this report, I will address it as Neuse River Overflow. The classification of Neuse River Overflow (Cut-Off) [index no. 27-59] is C NSW. The "C" classification denotes freshwaters suitable for aquatic life propagation and survival, fishing, wildlife, secondary recreation and agriculture. The supplemental classification of NSW denotes Nutrient Sensitive Waters which require limitations on nutrient inputs.

Within the project region lies the Neuse River Water Supply Watershed. Approximately 0.6 mi (1.0 km) west of Bridge No. 296 lies a water supply protected area. A protected area is only located within WS-IV watersheds. WS-IV refers to those waters used as sources of water supply for drinking, culinary, or food processing purposes for those users where a WS-I, WS-II, or WS-III classification is not feasible. WS-IV waters are generally located within moderately to highly developed watersheds. A protected area is defined as land within five miles and draining to the normal pool elevation of water supplies, or within ten miles upstream and draining to a river intake.

Neither High Quality Waters (HQW), Water Supplies (WS-I: undeveloped watersheds, or WS-II: predominately undeveloped watersheds) nor Outstanding Resource Waters (ORW) occur within 1.0 mile (1.6 km) of the project study area.

Water Quality

The DWQ has initiated a whole basin approach to water quality management for the 17 river basins within the state. To accomplish this goal the DWQ collects biological, chemical and physical data that can be used in basinwide assessment and planning. All basins are reassessed every five years. Prior to the implementation of the basinwide approach to water quality management, the Benthic Macroinvertebrate Ambient Network (managed by the DEM) assessed water quality by sampling for benthic macroinvertebrate organisms at fixed monitoring sites throughout the state. Biological monitoring is now performed as part of the basinwide assessment program.

Many benthic macroinvertebrates have stages in their life cycle that can last from six months to a year; therefore, the adverse effects of a toxic spill will not be overcome

until the next generation. Different taxa of macroinvertebrates have different tolerances to pollution; therefore, long term changes in water quality conditions can be identified by population shifts from pollution sensitive to pollution tolerant organisms (and vice versa). Overall, the species present, the population diversity and the biomass are reflections of long term water quality conditions. There is a biological sampling station located on the Neuse River at NC 117, within 1.0 mi (1.6 km) of the project corridor. This site was last sampled in August 1995 and received a rating of Good-Fair.

The Ambient Monitoring System (AMS) is a network of stream, lake, and estuarine water quality monitoring stations strategically located for the collection of physical and chemical water quality data. The type of water quality data or parameters that are collected are determined by the waterbody's freshwater or saltwater classification and corresponding water quality standards. Class C waters are sampled at a minimum frequency of once per month. There is one AMS station located within 3.0 mi (4.8 km) downstream of Bridge No. 296. A review of the monitoring information obtained from this location indicated no significant water quality problems.

Point source dischargers located throughout North Carolina are permitted through the National Pollutant Discharge Elimination System (NPDES) Program. Any discharger is required to register for a permit. Two permitted dischargers are located within 1.0 mi (1.6 km) of Bridge No. 296.

Table 2. Major Dischargers Within 1.0 mi (1.6 km) of Bridge No. 296

Facility	NPDES #	Design Flow (MGD)	Avg. Flow from 1991 (MGD)	Location
Wayne County Genoa Industrial Park WWTP	NC0030392	0.4000	0.0882	Neuse R. *downstream
Celotex Corporation	NC0050695	N/A	0.0000	Neuse R. Ut *downstream

"MGD" Quantifies the flow in millions of gallons per day (MGD).

"*" Denotes if the discharger is located upstream or downstream of Bridge No. 296.

"Ut" Unnamed Tributary

Nonpoint source discharge refers to runoff that enters surface waters through stormwater or snowmelt. Agricultural activities may serve as a source for various forms of nonpoint source pollutants. Land clearing and plowing disturb soils to a degree where they are susceptible to erosion, which can lead to sedimentation in streams. Sediment is the most widespread cause of nonpoint source pollution in North Carolina. Pesticides, chemical fertilizers, and land application of animal wastes can be transported via runoff to receiving streams and potentially elevate concentrations of toxic compounds and nutrients. Animal wastes can also be a source of bacterial contamination and elevate biochemical oxygen demand (BOD). Drainage ditches on poorly drained soils enhances the transportation of stormwater into surface waters.

Summary of Anticipated Impacts

Surface waters present in the project area include the Neuse River Overflow. Estimated linear impacts are derived using the combined ROW width of 90.0 feet (27.4 m) for Alternate 1 and 80.0 feet (24.4 m) for Alternate 2. Anticipated impacts to the Neuse River Overflow will be 90.0 feet (27.4 m) for Alternate 1 and 80.0 feet (24.4 m) for Alternate 2. Usually, project construction does not require the entire ROW; therefore, actual impacts may be considerably less.

Project construction may result in the following impacts to surface waters:

1. Increased sedimentation and siltation from construction and/or erosion.
2. Changes in light incidence and water clarity due to increased sedimentation and vegetation removal.
3. Alteration of water levels and flows due to interruptions and/or additions to surface and ground water flow from construction.
4. Changes in water temperature due to removal of streamside vegetation.
5. Increased nutrient loading during construction via runoff from exposed areas.
6. Increased concentration of toxic compounds from highway runoff, construction, toxic spills, and increased vehicular use.

Precautions will be taken to minimize impacts to water resources in the study area. NCDOT's Best Management Practices for the Protection of Surface Waters will be strictly enforced during the construction stage of the project. Guidelines for these BMPs include, but are not limited to: minimizing built upon area and diversion of stormwater away from surface water supply waters as much as possible. In addition, measures to avoid deck drainage directly into the stream will be considered in the hydraulic analysis of this project. Provisions to preclude contamination by toxic substances during the construction interval must also be strictly enforced.

II. BIOTIC RESOURCES

Biotic resources include aquatic and terrestrial communities. This section describes those communities encountered in the study area as well as the relationships between fauna and flora within these communities. Composition and distribution of biotic communities throughout the project area are reflective of topography, hydrologic influences and past and present land uses in the study area. Descriptions of the terrestrial systems are presented in the context of plant community classifications and follow descriptions presented by Schafale and Weakley (1990) where possible. Dominant flora and fauna observed, or likely to occur, in each community are described and discussed.

Scientific nomenclature and common names (when applicable) are provided for each animal and plant species described. Plant taxonomy generally follows Radford, et al. (1968). Animal taxonomy follows Martof, et al. (1980), Menhinick (1991), Potter, et al. (1980), Webster, et al. (1985), Glassberg (1999), and Borror, et al (1970). Subsequent references to the same organism will include the common name only. Fauna observed during the site visit are denoted with an asterisk (*). Spoor evidence equates to observation of the species. Published range distributions and habitat analysis are used in estimating fauna expected to be present within the project area.

TERRESTRIAL COMMUNITIES

Two distinct terrestrial communities are identified in the project study area: mixed pine hardwood forest and maintained/disturbed. Community boundaries within the study area are generally well defined without a significant transition zone between them. Many faunal species likely to occur within the study area may exploit all communities for shelter and foraging opportunities, or as movement corridors.

Mixed Pine Hardwood Forest

The mixed pine hardwood forest is present in the upland areas adjacent to Neuse River Overflow. The transition from mixed pine hardwood forest to the surrounding communities is abrupt due to the change in vegetation and road shoulder and agricultural maintenance activities.

On the southwest corner of the bridge, the area adjacent to the mixed pine hardwood forest appears to have been previously inhabited and maintained. The forest community is littered with debris including concrete and trash. The other three corners of the bridge are relatively undisturbed mixed pine hardwood forest. The canopy is primarily composed of sycamore (*Platanus occidentalis*), water oak (*Quercus nigra*), southern red oak (*Q. falcata*), sweetgum (*Liquidambar styraciflua*), laurel oak (*Q. laurifolia*), river birch (*Betula nigra*), bald cypress (*Taxodium distichum*), and eastern redcedar (*Juniperus virginiana*). The shrub layer consists of saplings of the canopy trees, ironwood (*Carpinus caroliniana*), and sassafras (*Sassafras albidum*). Herbs within the forest consist of river oats (*Chasmanthium latifolium*) and Japanese grass (*Microstegium vimineum*). Virginia creeper (*Parthenocissus quinquefolia*), poison ivy (*Toxicodendron radicans*), and greenbrier (*Smilax rotundifolia*) comprise the vine layer of this community.

Maintained/Disturbed

The maintained/disturbed community includes road shoulders along SR 1222 that are present along the entire length of the project, a utility corridor, and an agricultural field. Road shoulders and utility corridors are irregularly maintained, receiving only periodic mowing and herbicide applications. The portion of the agricultural field that will be impacted is less maintained; therefore, vegetation occurring along the utility corridor would be similar to, but denser than that in the agricultural field.

Road shoulders act as buffers between the roadway and surrounding communities by filtering storm water run-off and reducing run-off velocities. The width of the road shoulder is approximately 10.0 ft (3.1 m). Vegetation occurring within frequently maintained portions of the road shoulder include low growing species such as: fescue (*Festuca* spp.), crab grass (*Digitaria* sp.), dwarf dandelion (*Krigia virginica*), clover (*Trifolium* spp.), common chickweed (*Stellaria media*), and buckhorn plantain (*Plantago lanceolata*). Areas receiving less frequent maintenance, such as utility corridors are occupied by Japanese honeysuckle (*Lonicera japonica*), chrysanthemum (*Chrysanthemum* sp.), dog-fennel (*Eupatorium capillifolium*), ragweed (*Ambrosia* sp.), pokeweed (*Phytolacca americana*), dayflower (*Commelina* sp.), greenbrier, morning glory (*Ipomoea* sp.), curly dock (*Rumex crispus*), horse nettle (*Solanum carolinensis*), grape (*Vitis* sp.), sneeze-weed (*Helenium* sp.), trumpet creeper (*Campsis radicans*), Chinese privet (*Ligustrum sinense*), Chinese wisteria (*Wisteria sinensis*), passion-flower

(*Passiflora* sp.), and saplings of longleaf pine (*Pinus palustris*), water oak (*Quercus nigra*), mimosa-tree (*Albizia julibrissin*), and redbud (*Cercis canadensis*).

Wildlife

Many faunal species are highly adaptive and may populate or exploit the entire range of biotic communities discussed. Generally, community boundaries are abrupt, with little transitional area between them. Forested tracts and drainageways provide habitat for species requiring a forest community, and also provide shelter and movement

corridors for other species of wildlife within the project vicinity.

Mammals that commonly exploit habitats found within the project area include: the hispid cotton rat (*Sigmodon hispidus*), house mouse (*Mus musculus*), Norway rat (*Rattus norvegicus*), and least shrew (*Cryptotis parva*). The hispid cotton rat thrives in dense vegetation associated with field edges. The Virginia opossum (*Didelphis virginiana*) and raccoon (*Procyon lotor*) are very adaptive mammals which frequent areas of human settlement. The gray fox (*Urocyon cinereoargenteus*) preys heavily on cottontails (*Sylvilagus floridanus*) and other rodents which can be found in abundance in this type of habitat.

Birds found foraging within the project area include: brown thrasher* (*Toxostoma rufum*), Carolina wren (*Thryothorus ludovicianus*), great blue heron (*Ardea herodias*), common crow (*Corvus brachyrhynchos*), field sparrow (*Spizella pusilla*), eastern bluebird (*Sialia sialis*), turkey vulture (*Cathartes aura*), and killdeer (*Charadrius vociferus*). Insects observed utilizing the area were cicadas* (Family Cicadidae), Horace's duskywing* (*Erynnis horatius*), and least skipper* (*Ancyloxypha numitor*). An orb-weaver spider* (Order Araneida) was also observed in the project area.

Reptiles that can be expected to utilize the terrestrial communities within the project area include: redbelly snake (*Storeria occipitomaculata*), rat snake (*Elaphe obsoleta*), rough green snake (*Opheodrys aestivus*), Carolina anole (*Anolis carolinensis*), five-lined skink (*Eumeces fasciatus*), eastern hognose snake (*Heterodon platyrhinos*), snapping turtle (*Chelydra serpentina*), spotted turtle (*Clemmys guttata*), and eastern fence lizard (*Sceloporus undulatus*). The diet of the rat snake consist primarily of rats and mice.

The forest communities near surface water provide excellent habitat for amphibians such as Carolina mudpuppy (*Necturus lewisi*), dwarf salamander (*Eurycea quadridigitata*), Fowler's toad* (*Bufo woodhousei*), little grass frog (*Limnaeodius ocularis*), spring peeper (*Hyla crucifer*), and Brimley's chorus frog (*Pseudacris brimleyi*). Brimley's chorus frog occurs along streams flowing through hardwood forests, with females depositing eggs on plant stems and other submerged objects.

AQUATIC COMMUNITIES

One aquatic community, Neuse River Overflow, will be impacted by the proposed project. Fauna present within the project area are dependent upon physical characteristics of the water body and overall condition of the water resource. Terrestrial communities adjacent to a water resource also greatly influence aquatic communities. Fauna associated with the aquatic communities include various invertebrate and vertebrate species.

The streambank along this portion of Neuse River Overflow is steep, yet stable. Vegetation along the streambank includes various mosses (Musci), liverwort (Hepaticae), and Japanese grass.

Fish species likely to occur in Neuse River Overflow include mosquitofish* (*Gambusia holbrooki*), sunfish* (Family Centrarchidae), creek chub (*Semotilus atromaculatus*), and margined madtom (*Noturus insignis*). Invertebrates that would be present include: crayfish* (Cambaridae), dragonflies* and damselflies* (Odonata), nymphal and larval stages of caddisflies* (Trichoptera) and stoneflies* (Plecoptera), whirligig beetles* (Gyrinidae), and water striders* (*Aquarius* sp.). Mollusks identified in Neuse River Overflow include two types of freshwater mussels, including four specimens of *Elliptio* spp.* and three eastern floaters* (*Pyganodon cataracta*), as well as asiatic clams* (*Corbicula fluminea*) and snails* (Gastropoda).

The Wildlife Resources Commission (WRC) indicated this section of Neuse River Overflow is known to support anadromous fish. WRC has requested that NCDOT comply with the “Stream Crossing Guidelines for Anadromous Fish Passage” and that no in-water work occur from February 15 to June 15.

SUMMARY OF ANTICIPATED IMPACTS

Construction of the subject project will have various impacts on the biotic resources described. Any construction related activities in or near these resources have the potential to impact biological functions. This section quantifies and qualifies impacts to the natural resources in terms of area impacted and ecosystems affected. Temporary and permanent impacts are considered here as well.

Calculated impacts to biotic resources reflects the relative abundance of each community present within the study area. Project construction will result in clearing and degradation of portions of these communities. Table 3 summarizes potential quantitative losses to these biotic communities resulting from project construction. Estimated impacts for Alternate 1 and Alternate 2 are derived using the proposed ROW of 80.0 feet (24.4 m) for the Replacement Bridge. In addition, Alternate 1 involves a detour bridge with a ROW of 60.0 feet (18.3 m), for a combined width of 90.0 feet (27.4 m), excluding overlap. The paved roadway width of 19.0 ft (5.8 m) has been excluded from the impact calculations. Usually, project construction does not require the use of the entire ROW or study area width, therefore, actual impacts may be considerably less. Surface water impacts are presented in “Water Resources” section of this document.

Table 3. Anticipated Impacts to Biotic Communities

Community	Alternate 1*	Alternate 2
Mixed Pine Hardwood	0.39 (0.16)	0.65 (0.26)
Maintained/Disturbed	2.27 (0.92)	2.39 (0.97)
Total	2.66 (1.08)	3.04 (1.23)

Note: Values cited are in acres (hectares).

***Approximately 30% of Alternate 1 involve temporary impacts.**

Plant communities found along the proposed project area serve as nesting and sheltering habitat for various wildlife. Replacing Bridge No. 296 will reduce habitat for faunal species, thereby diminishing faunal numbers. Habitat reduction concentrates wildlife into smaller areas of refuge, thus causing some species to become more susceptible to disease, predation and starvation.

Areas modified by construction (but not paved) will become road shoulders and early successional habitat. Increased traffic noise and reduced habitat will displace some wildlife further from the roadway while attracting other wildlife by the creation of more early successional habitat. Animals temporarily displaced by construction activities will

repopulate areas suitable for the species. This temporary displacement of animals may result in an increase of competition for the remaining resources.

Aquatic communities are sensitive to small changes in their environment. Stream channelization, scouring, siltation, sedimentation and erosion from construction-related work would effect water quality and biological constituents. Although direct impacts may be temporary, environmental impacts from these construction processes may result in long term or irreversible effects.

In-stream construction alters the stream substrate and may remove streamside vegetation at the site. Disturbances to the substrate will destroy aquatic vegetation and produce siltation, which clogs the gills and/or feeding mechanisms of benthic organisms (sessile filter-feeders and deposit-feeders), fish and amphibian species. Benthic organisms can also be covered by excessive amounts of sediment. These organisms are slow to recover or repopulate a stream. Turbidity reduces light penetration thus decreasing the growth of aquatic vegetation.

The removal of streamside vegetation and placement of fill material at the construction site alters the terrain. Alterations of the streambank enhances the likelihood of erosion and sedimentation. Revegetation stabilizes and holds the soil thus mitigating these processes. Erosion and sedimentation carry soils, toxic compounds and other materials into aquatic communities at the construction site. These processes magnify turbidity and can cause the formation of sandbars at the site and downstream, thereby altering water flow and the growth of vegetation. Streamside alterations also lead to more direct sunlight penetration and to elevations of water temperatures which may impact many species.

III. JURISDICTIONAL TOPICS

This section provides descriptions, inventories and impact analysis pertinent to two important issues--Waters of the United States, and rare and protected species.

WATERS OF THE UNITED STATES

The U.S. Army Corps of Engineers (USACE) promulgated the definition of "Waters of the United States" under 33 CFR §328.3(a). Waters of the United States include most interstate and intrastate surface waters, tributaries, and wetlands. Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions are considered "wetlands" under 33 CFR §328.3(b). Wetlands generally include swamps, marshes, bogs, and similar areas. Any action that proposes to place dredged or fill materials into Waters of the United States falls under the jurisdiction of the USACE, and must follow the statutory provisions under Section 404 of the Clean Water Act (CWA) (33 U.S.C. 1344).

Characteristics of Wetlands and Surface Waters

Potential wetland communities were investigated pursuant to the 1987 "Corps of Engineers Wetland Delineation Manual". The three parameter approach is used where hydric soils, hydrophytic vegetation and prescribed hydrologic characteristics must all be present for an area to be considered a wetland. **Wetlands are not present within the project area.**

Summary of Anticipated Impacts

Surface waters present in the project area include the Neuse River Overflow. Estimated linear impacts are derived using the combined ROW width of 90.0 feet (27.4 m) for Alternate 1 and 80.0 feet (24.4 m) for Alternate 2. Anticipated impacts to the Neuse River Overflow will be 90.0 feet (27.4 m) for Alternate 1 and 80.0 feet (24.4 m) for Alternate 2. Usually, project construction does not require the entire ROW; therefore, actual impacts may be considerably less.

Permits

Impacts to jurisdictional surface waters are anticipated. In accordance with provisions of section 404 of the Clean Water Act (33 U.S.C. 1344), a permit will be required from the COE for the discharge of dredged or fill material into "Waters of the United States."

A Section 404 Nationwide Permit 33 CFR 330.5(a) (23) is likely to be applicable for all impacts to Waters of the United States from the proposed project. This permit authorizes activities undertaken, assisted, authorized, regulated, funded or financed in whole, or part, by another Federal agency or department where that agency or department has determined that pursuant to the council on environmental quality regulation for implementing the procedural provisions of the National Environmental Policy Act;

- (1) that the activity, work, or discharge is categorically excluded from environmental documentation because it is included within a category of actions which neither individually nor cumulatively have a significant effect on the human environment, and;
- (2) that the office of the Chief of Engineers has been furnished notice of the agency' or department's application for the categorical exclusion and concurs with that determination.

A North Carolina Division of Water Quality (DWQ) Section 401 Water Quality General Certification is required prior to the issuance of the Section 404 Nationwide Permit No. 23. Section 401 Certification allows surface waters to be temporarily impacted for the duration of the construction or other land manipulations.

Neuse River Buffers

As the project is located in the Neuse River Basin, Riparian Area Rules for Nutrient Sensitive Waters apply. The rules state that roads, bridges, stormwater management facilities, ponds, and utilities may be allowed where no practical alternative exists. They also state that these structures shall be located, designed, constructed, and maintained to have minimal disturbance, to provide maximum erosion protection, to have the least adverse effects on aquatic life and habitat, and to protect water quality to the maximum extent practical through the use of best management practices. Every reasonable effort will be made to avoid and minimize wetland and stream impacts.

Estimated impacts to the riparian buffers are derived using the combined ROW width of 90.0 ft (27.4 m) for Alternate 1 and 80.0 feet (24.4 m) for Alternate 2, and the required buffer width of 50.0 ft (15.2 m) on each side of the water resource. Anticipated impacts to riparian buffers are calculated to be 0.21 ac (0.08 ha) for Alternate 1 and 0.18 acres (0.07 ha) for Alternate 2. It is possible the Neuse River Overflow may be exempted when an on-site determination by the Division of Water Quality is conducted. Therefore, impacts may be considerably less.

Mitigation

The USACE has adopted, through the Council on Environmental Quality (CEQ), a wetland mitigation policy which embraces the concept of "no net loss of wetlands" and sequencing. The purpose of this policy is to restore and maintain the chemical, biological and physical integrity of Waters of the United States, specifically wetlands. Mitigation of

wetland impacts has been defined by the CEQ to include: avoiding impacts (to wetlands), minimizing impacts, rectifying impacts, reducing impacts over time and compensating for impacts (40 CFR 1508.20). Each of these three aspects (avoidance, minimization and compensatory mitigation) must be considered sequentially.

Avoidance

Avoidance mitigation examines all appropriate and practicable possibilities of averting impacts to Waters of the United States. According to a 1990 Memorandum of Agreement (MOA) between the Environmental Protection Agency (EPA) and the USACE, in determining "appropriate and practicable" measures to offset unavoidable impacts, such measures should be appropriate to the scope and degree of those impacts and practicable in terms of cost, existing technology and logistics in light of overall project purposes.

Minimization

Minimization includes the examination of appropriate and practicable steps to reduce the adverse impacts to Waters of the United States. Implementation of these steps will be required through project modifications and permit conditions. Minimization typically focuses on decreasing the footprint of the proposed project through the reduction of median widths, ROW widths, and/or fill slopes. Other practical mechanisms to minimize impacts to Waters of the United States crossed by the proposed project include: strict enforcement of sedimentation control BMP's for the protection of surface waters during the entire life of the project; reduction of clearing and grubbing activity; reduction/elimination of direct discharge into streams; reduction of runoff velocity; re-establishment of vegetation on exposed areas, judicious pesticide and herbicide usage; minimization of "in-stream" activity; and litter/debris control. In addition, once construction of the new bridge and approaches are complete as recommended in Alternate 2, the existing bridge will be removed. The existing approach fill will be removed to natural grade and the area will be planted with native grasses and/or tree species as appropriate.

Compensatory Mitigation

Compensatory mitigation is not normally considered until anticipated impacts to Waters of the United States have been avoided and minimized to the maximum extent possible. It is recognized that "no net loss of wetlands" functions and values may not be achieved in each and every permit action. Appropriate and practicable compensatory mitigation is required for unavoidable adverse impacts which remain after all appropriate and practicable minimization has been required. Compensatory actions often include restoration, creation and enhancement of Waters of the United States. Such actions should be undertaken in areas adjacent to or contiguous to the discharge site. Compensatory mitigation is not usually necessary with a Nationwide Permit No. 23, however the final decision lies with the COE.

Bridge Demolition

Bridge No. 296 has four spans totaling 161 feet (49 m) in length. The bridge is composed entirely of timber and steel. Therefore, Bridge No. 296 will be removed without dropping any components into Waters of the U.S. during construction.

RARE AND PROTECTED SPECIES

Some populations of fauna and flora have been in, or are in, the process of decline either due to natural forces or their inability to coexist with human activities. Federal law (under the provisions of the Endangered Species Act of 1973, as amended) requires that any action, likely to adversely affect a species classified as federally-protected, be subject to review by the U.S. Fish and Wildlife (FWS). Other species may receive additional protection under separate state laws.

Federally-Protected Species

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of December 20, 1999, the FWS lists one federally-protected species for Wayne County. A brief description of the species' characteristics and habitat follows.

Picoides borealis (red-cockaded woodpecker) **Endangered**

Family: Picidae

Date Listed: October 10, 1970

The adult red-cockaded woodpecker (RCW) has a plumage that is entirely black and white except for small red streaks on the sides of the nape in the male. The back of the RCW is black and white with horizontal stripes. The breast and underside of this woodpecker are white with streaked flanks. The RCW has a large white cheek patch surrounded by the black cap, nape, and throat.

The RCW uses open old growth stands of southern pines, particularly longleaf pine (*Pinus palustris*), for foraging and nesting habitat. A forested stand must contain at least 50 percent pine, lack a thick understory, and be contiguous with other stands to be appropriate habitat for the RCW. These birds nest exclusively in trees that are greater than 60 years old and are contiguous with pine stands at least 30 years of age. The foraging range of the RCW is up to 500 acres (200 hectares). This acreage must be contiguous with suitable nesting sites.

These woodpeckers nest exclusively in living pine trees and usually in trees that are infected with the fungus that causes red-heart disease. Cavities are located in colonies from 12.0-100.0 ft (3.6-30.3 m) above the ground and average 30.0-50.0 ft (9.1- 15.2 m) high. They can be identified by a large incrustation of running sap that surrounds the tree. The RCW lays its eggs in April, May, and June; the eggs hatch approximately 38 days later.

BIOLOGICAL CONCLUSION

NO EFFECT

Suitable habitat, in the form of open old growth stands of southern pines, does not exist within the project area. The project area is dominated by mixed pine hardwood forest community. Pines within this forested community are interspersed within the community and represent less than fifty percent of the canopy. A review of the NC Natural Heritage Program database of rare species and unique habitats on January 19, 2000 revealed that there are no known occurrences of the red-cockaded woodpecker within 2.0 mi (3.2 km) of the project study area. Therefore, project construction will not affect the red-cockaded woodpecker.

Federal Species of Concern and State Listed Species

There are five Federal Species of Concern (FSC) listed for Wayne County. Federal Species of Concern are not afforded federal protection under the ESA and are not subject to any of its provisions, including Section 7, until they are formally proposed or listed as Threatened or Endangered. Federal Species of Concern are defined as those species which may or may not be listed in the future. These species were formally candidate species, or species under consideration for listing for which there was insufficient information to support a listing of Endangered, Threatened, Proposed Endangered and Proposed Threatened. Organisms which are listed as Endangered (E), Threatened (T), Significantly Rare (SR) or Special Concern (SC) by the North Carolina Natural Heritage Program (NCNHP) list of rare species and unique habitats are afforded state protection under the State Endangered Species Act and the North Carolina Plant Protection and Conservation Act of 1979.

Table 4 lists Federal Species of Concern and State listed species, the species state status and the existence of suitable habitat for each species in the study area. This species list is provided for information purposes as the status of these species may be upgraded in the future.

Surveys for these species were not conducted during the site visit, nor were any of these species observed. A review of the NCNHP database of rare species and unique habitats on January 19, 2000 revealed no records of North Carolina rare and/or protected species in or near the project study area.

Table 4. Federal Species of Concern for Wayne County

Scientific Name	Common Name	Status	Habitat
<i>Corynorhinus rafinesquii</i>	Rafinesque's big-eared bat	SC* (PT)	Yes
<i>Heterodon simus</i>	southern hognose snake	SR (PSC)	Yes
<i>Lythrurus matutinus</i>	pinewoods shiner	SR	Yes
<i>Fusconaia masoni</i>	Atlantic pigtoe	T (PE)	Yes
<i>Litsea aestivalis</i>	Pondspice	C	No

"*" ----- Historic record (Last observed in Wayne County more than twenty years ago.)

"E"-----An Endangered species is any native or once-native species of wild animal whose continued existence as a viable component of the State's fauna is determined by the Wildlife Resources Commission to be in jeopardy or any species of wild animal determined to be an "endangered species" pursuant to the Endangered Species Act.

"SC"----- A Special Concern species is any species of wild animal native or once-native to North Carolina which is determined by the Wildlife Resources Commission to require monitoring but which may be taken under regulations adopted under the provisions of Article 25 of Chapter 113 of the General Statutes; 1987.

"SR"-----A Significantly Rare species is one which has not been listed by the N.C. Wildlife Resources Commission as an Endangered, Threatened, or Special Concern species, but which exists in the state in small numbers and has been determined by the N.C. Natural Heritage Program to need monitoring.

"T"----- A Threatened species is any native or once-native species of wild animal which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range or one that is designated as a threatened species pursuant to the Endangered Species Act.

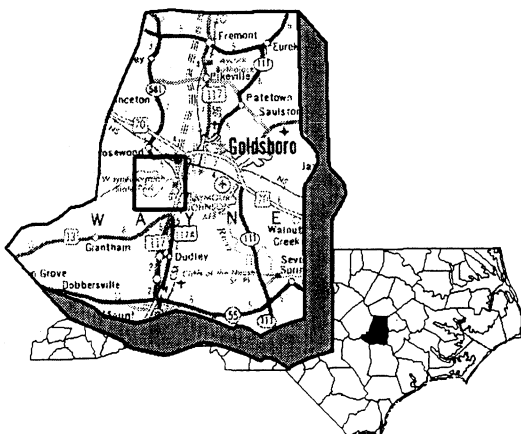
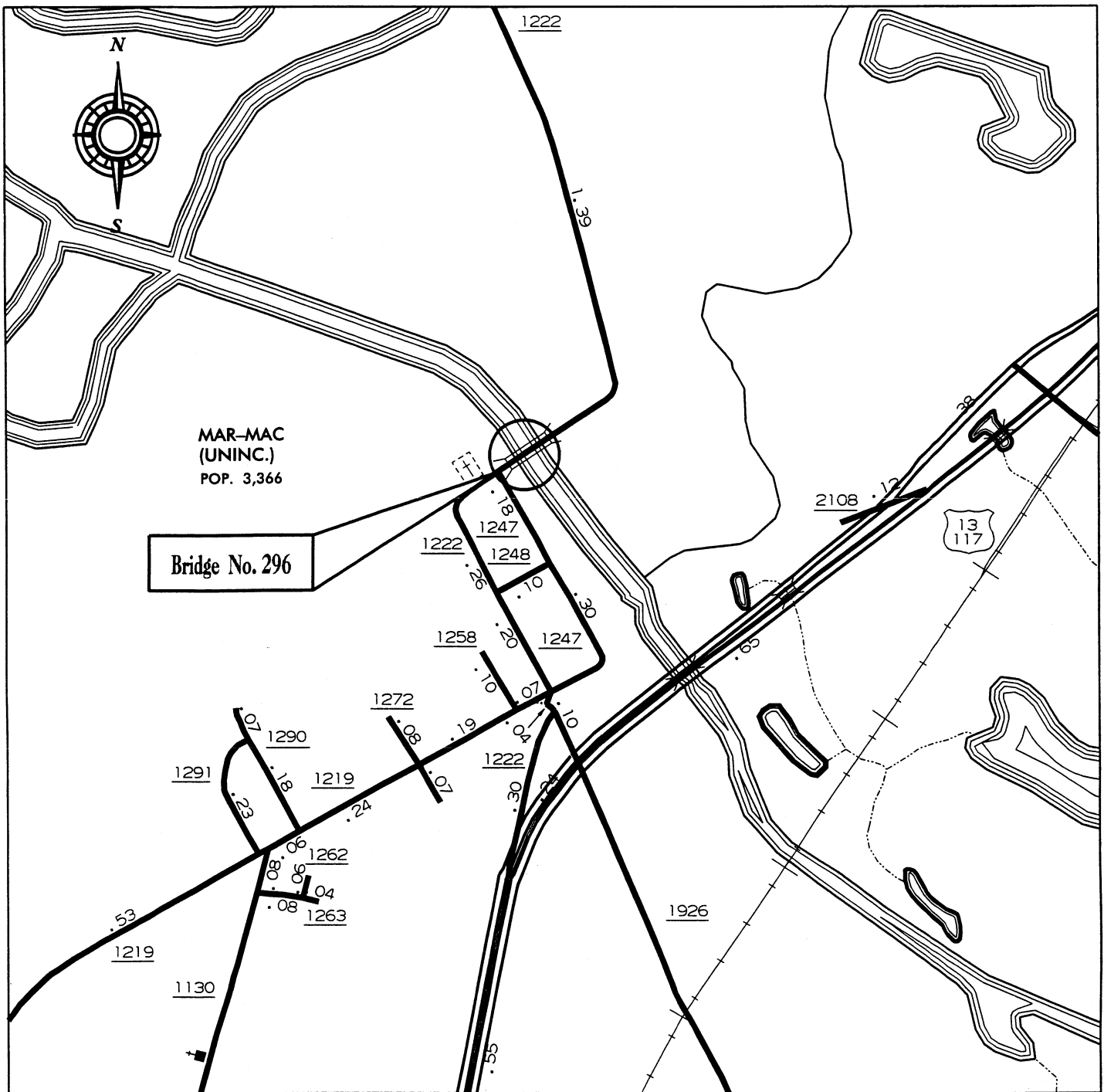
"C"----- A Candidate species is one which is very rare in North Carolina, generally with 1-20 populations in the state, generally substantially reduced in numbers by habitat destruction, direct exploitation or disease. The species is also either rare throughout its range or disjunct in North Carolina from a main

range in a different part of the country or the world.

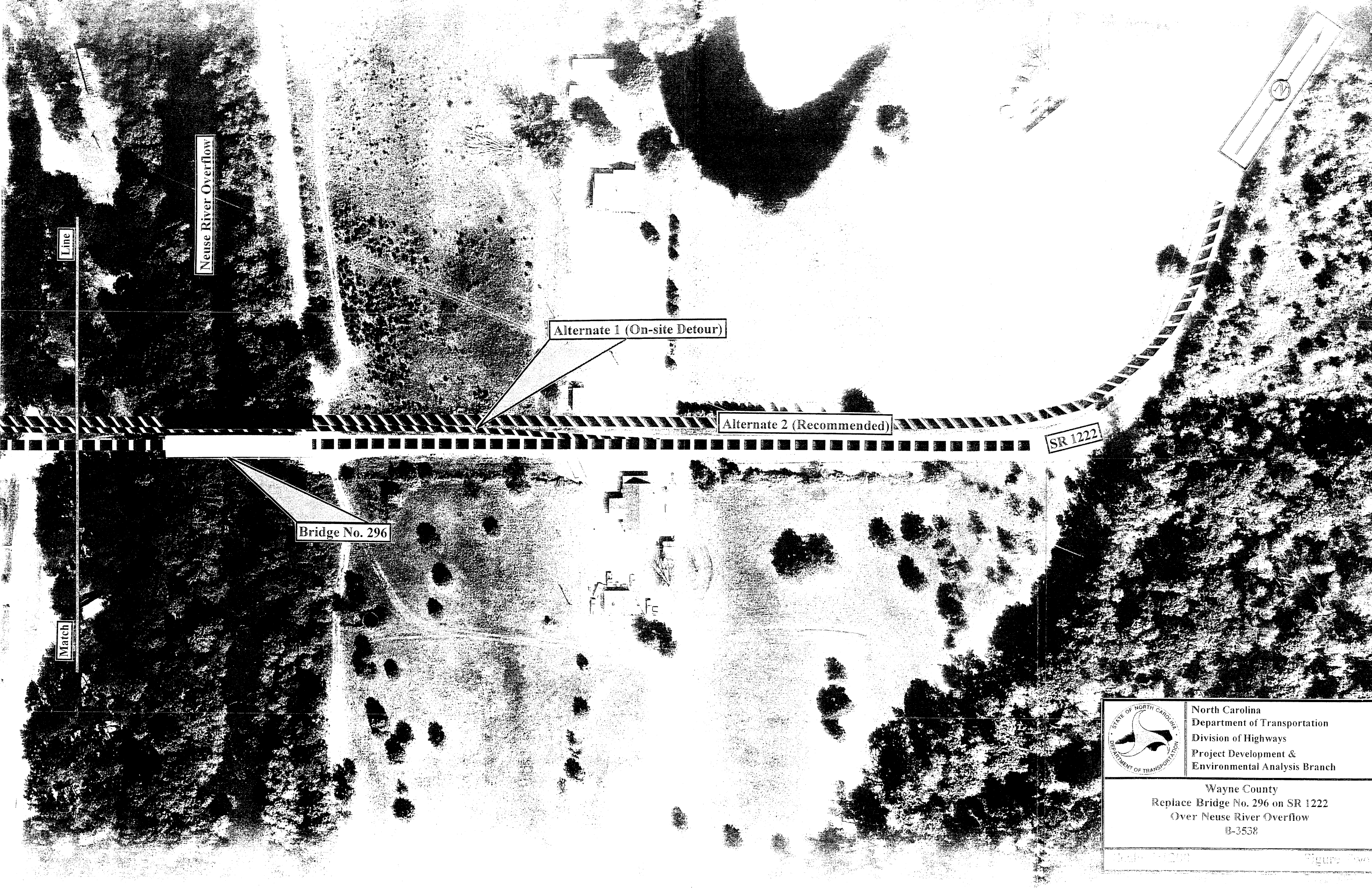
“PE”---- Proposed Endangered


“PT”---- Proposed Threatened

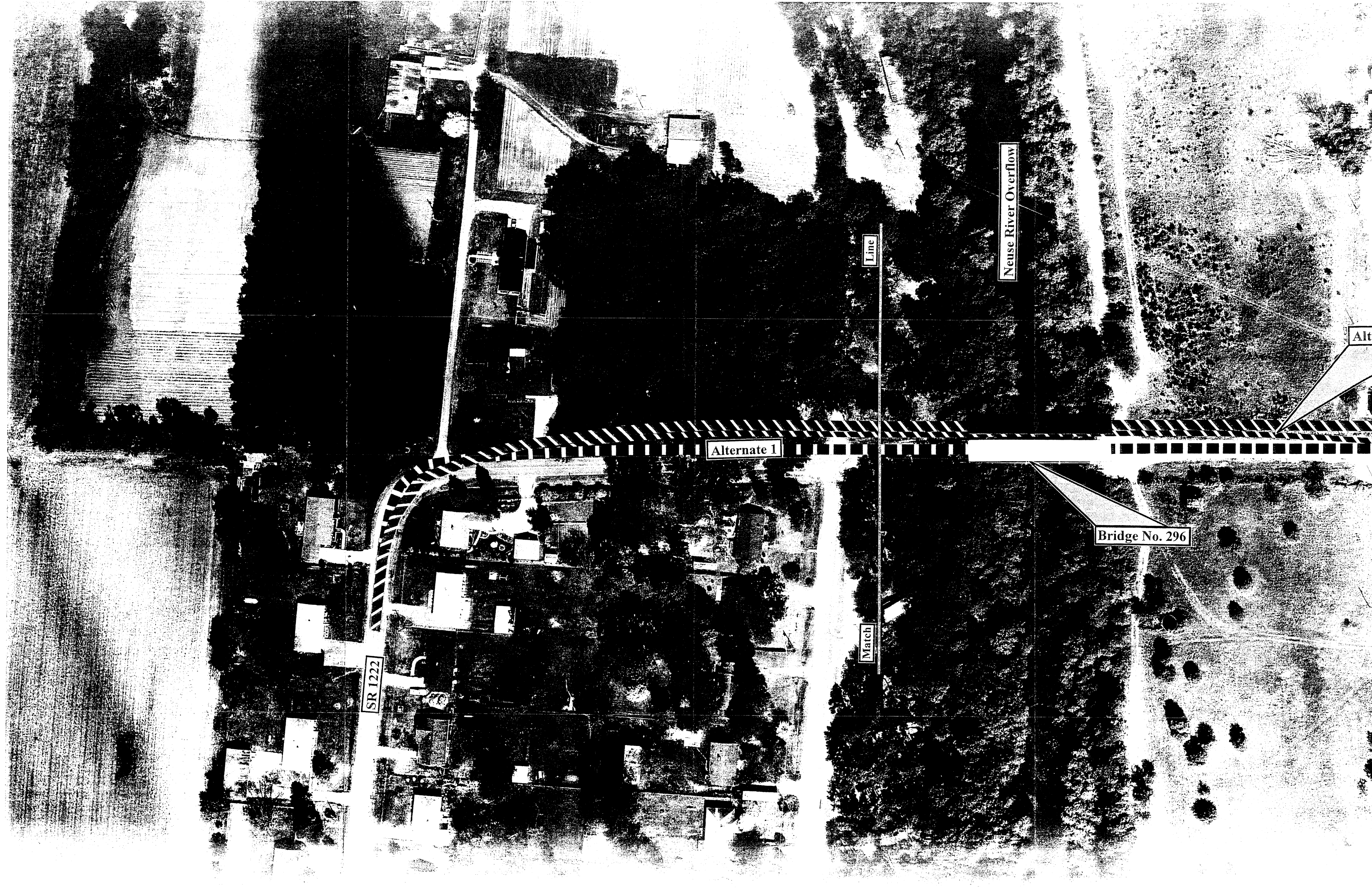
“PSC”---Proposed Special Concern



	<p>North Carolina Department of Transportation Division of Highways Planning & Environmental Branch</p>
<p>Wayne County Replace Bridge No. 296 on SR 1222 Over Neuse River Overflow B-3538</p>	
<p>Figure 1</p>	



	North Carolina Department of Transportation Division of Highways Project Development & Environmental Analysis Branch
	Wayne County Replace Bridge No. 296 on SR 1222 Over Neuse River Overflow B-3538
Scale: 1" = 100' Figure Two	



SR 1222

Alternate 1

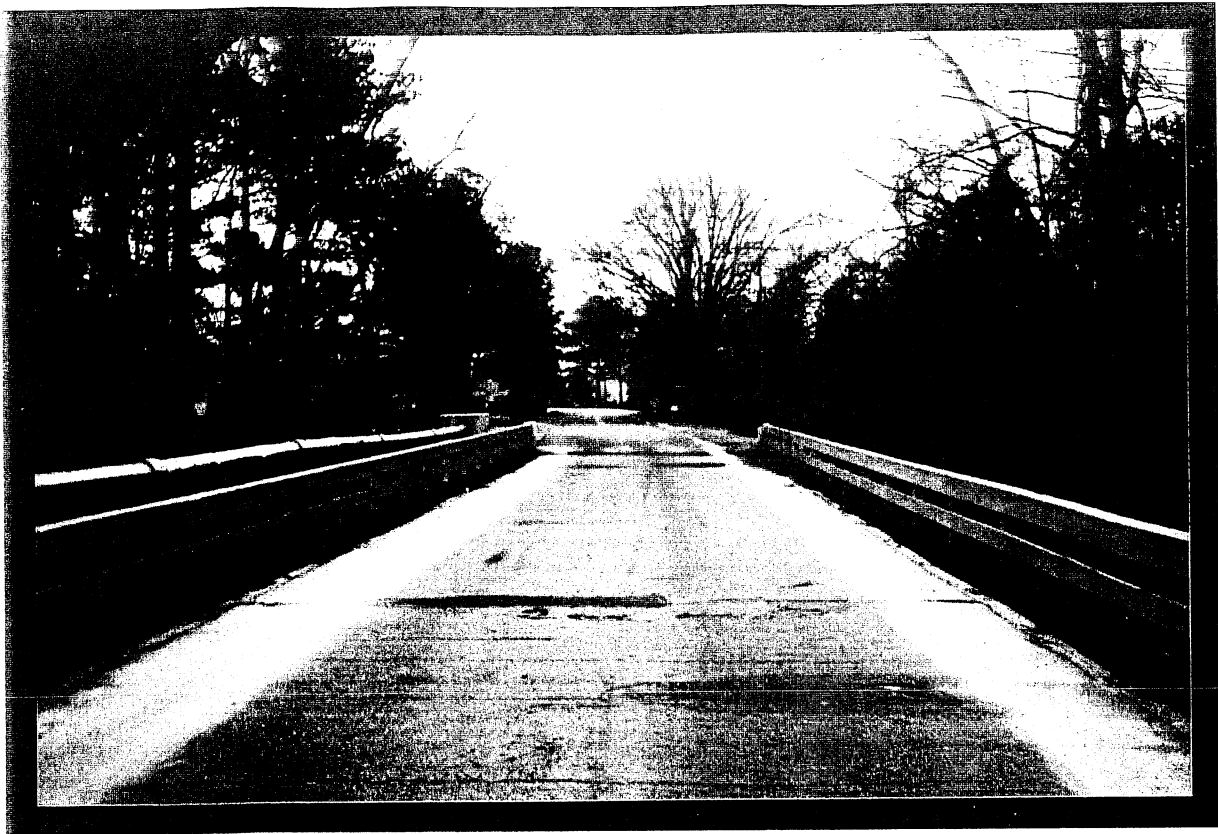
Line

Match

Neuse River Overflow

Bridge No. 296

Alte



Looking West from the Bridge



Looking East from the Bridge



South Face of Bridge



North Carolina Department of Cultural Resources

James B. Hunt Jr., Governor
Betty Ray McCain, Secretary

Division of Archives and History
Jeffrey J. Crow, Director

MAILING ADDRESS
4617 Mail Service Center
Raleigh, NC 27699-4617

LOCATION
507 North Blount Street
Raleigh, NC
State Courier 53-31-31

August 17, 1999

MEMORANDUM

TO: Karen Orthner
Division of Highways
Department of Transportation

FROM: David Brook
Deputy State Historic Preservation Officer

SUBJECT: Bridge 296 on SR 1222 over Neuse River
Overflow, B-3538, Wayne County, ER 99-
8120

Thank you for contacting us regarding the above project. We have reviewed our files and found that our Environmental Review Coordinator, Renee Gledhill-Earley, called Karen Orthner, North Carolina Department of Transportation, on February 3, 1999, and advised that no architectural or archaeological surveys were recommended for this project.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919/733-4763.

DB:slw

cc: Nicholas Graf
William D. Gilmore






☐ North Carolina Wildlife Resources Commission ☐

512 N. Salisbury Street, Raleigh, North Carolina 27604-1188, 919-733-3391
Charles R. Fullwood, Executive Director

MEMORANDUM

TO: Karen Orthner, Project Planning Engineer
Project Development and Environmental Analysis Branch, NCDOT

FROM: David Cox, Highway Project Coordinator
Habitat Conservation Program 

DATE: February 25, 1999

SUBJECT: NCDOT Bridge Replacement Projects in Wayne County, North Carolina.
TIP Nos. B-3378, B-3538 and B-3539.

Biologists with the N. C. Wildlife Resources Commission (NCWRC) have reviewed the information provided and have the following preliminary comments on the subject project. Our comments are provided in accordance with provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

On bridge replacement projects of this scope our standard recommendations are as follows:

1. We generally prefer spanning structures. Spanning structures usually do not require work within the stream and do not require stream channel realignment. The horizontal and vertical clearances provided by bridges allows for human and wildlife passage beneath the structure, does not block fish passage, and does not block navigation by canoeists and boaters.
2. Bridge deck drains should not discharge directly into the stream.
3. Live concrete should not be allowed to contact the water in or entering into the stream.
4. If possible, bridge supports (bents) should not be placed in the stream.

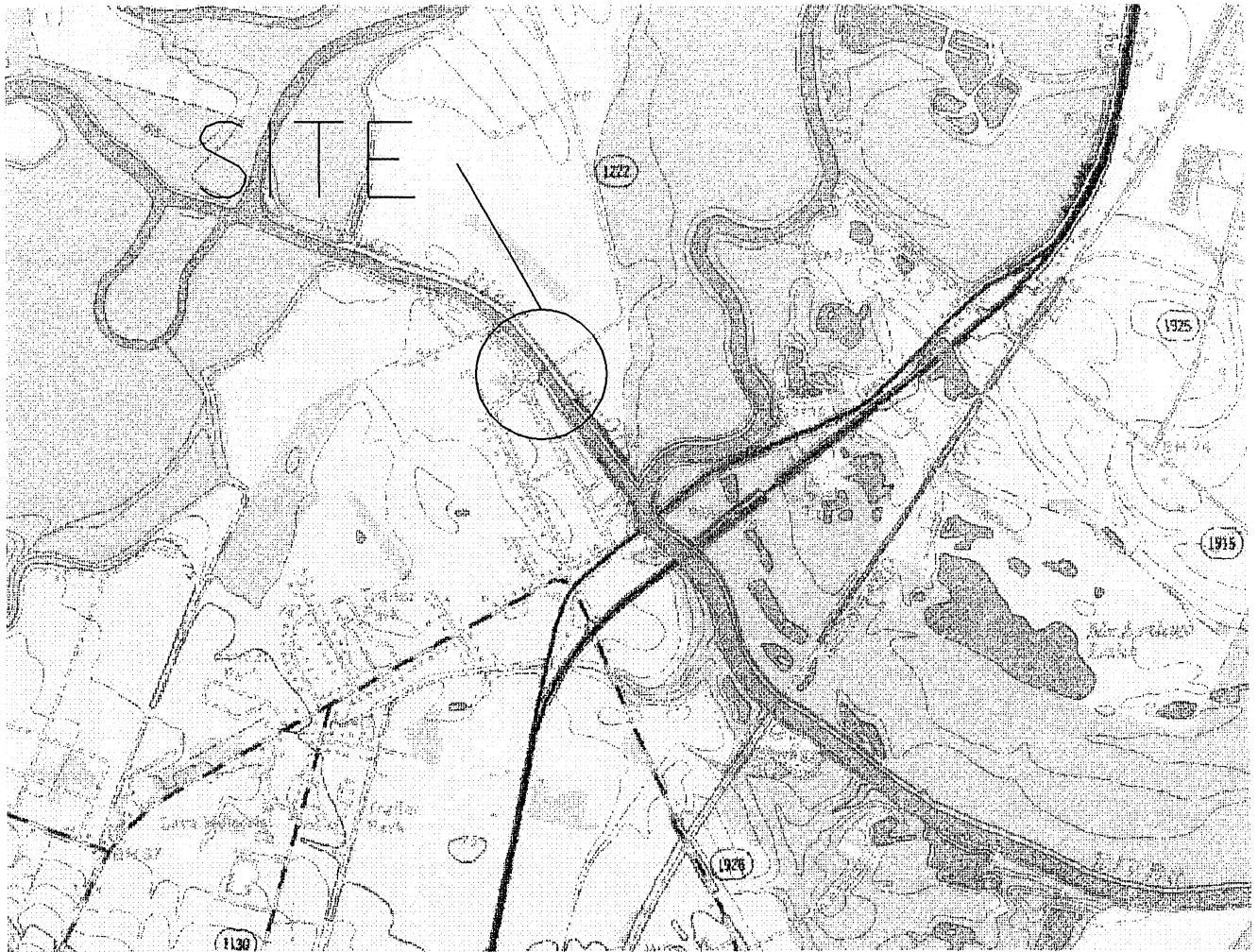
avoid destabilizing stream banks. If the structure will be on a new alignment, the old structure should be removed and the approach fills removed from the 100-year floodplain. Approach fills should be removed down to the natural ground elevation. The area should be stabilized with grass and planted with native tree species. If the area that is reclaimed was previously wetlands, NCDOT should restore the area to wetlands. If successful, the site may be used as wetland mitigation for the subject project or other projects in the watershed.

Project specific comments:

1. B-3378 – Wayne County – Bridge # 34 is located over Nahunta Swamp. With the recent dam removal in the Neuse River this site now may support anadromous fish. NCDOT should follow the officially adopted document “Stream Crossing Guidelines for Anadromous Fish Passage”. No in-water work should be conducted between February 15 and June 15.
2. B-3538 – Wayne County – Bridge # 296 is over the Neuse River overflow. This site is known to support anadromous fish. NCDOT should follow the officially adopted document “Stream Crossing Guidelines for Anadromous Fish Passage”. No in-water work should be conducted between February 15 and June 15.
3. B-3539 – Wayne County – Bridge # 164 is over Stony Creek. This site is known to support anadromous fish. NCDOT should follow the officially adopted document “Stream Crossing Guidelines for Anadromous Fish Passage”. No in-water work should be conducted between February 15 and June 15.

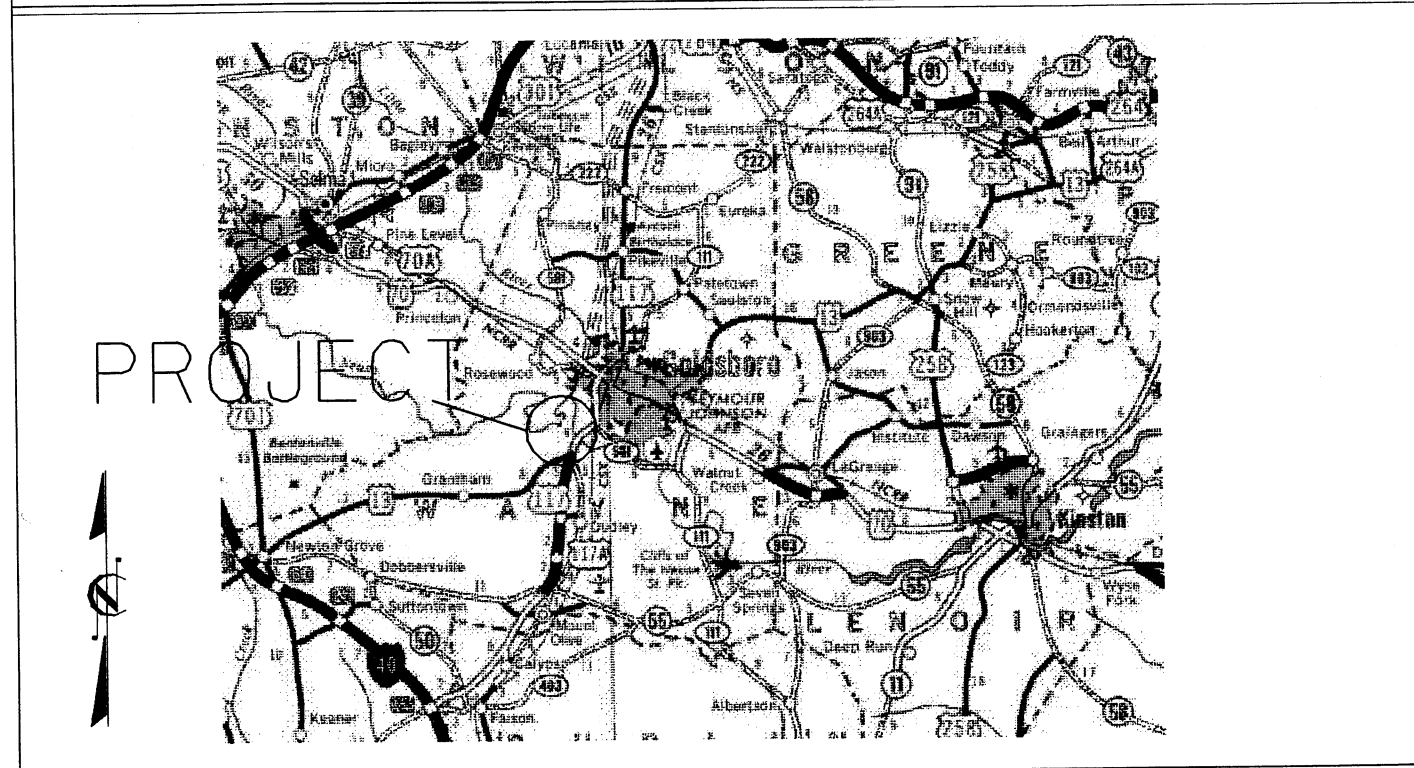
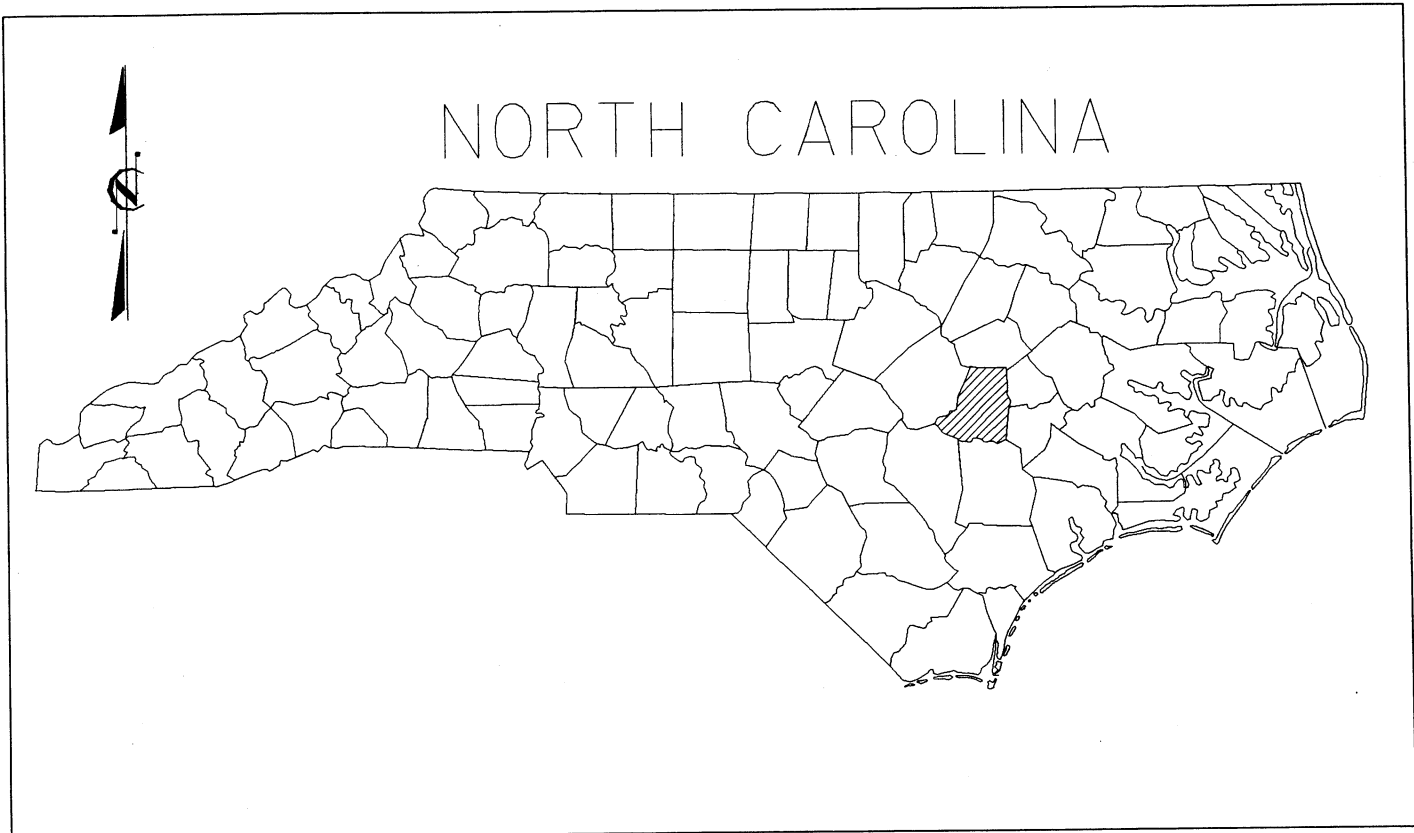
We request that NCDOT routinely minimize adverse impacts to fish and wildlife resources in the vicinity of bridge replacements. The NCDOT should install and maintain sedimentation control measures throughout the life of the project and prevent wet concrete from contacting water in or entering into these streams. Replacement of bridges with spanning structures of some type, as opposed to pipe or box culverts, is recommended in most cases. Spanning structures allow wildlife passage along streambanks, reducing habitat fragmentation and vehicle related mortality at highway crossings.

If you need further assistance or information on NCWRC concerns regarding bridge replacements, please contact me at (919) 528-9886. Thank you for the opportunity to review and comment on these projects.



TOPOGRAPHIC
MAPS
NEUSE RIVER BUFFER

NCDOT
DIVISION OF HIGHWAYS
WAYNE COUNTY
PROJECT: 33145.1.1 (B-3538)
REPLACE BRIDGE # 296 OVER
NEUSE RIVER CUT-OFF
ALONG SR 1222

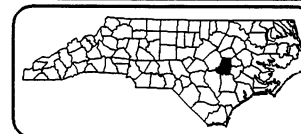


VICINITY
MAPS
NEUSE RIVER BUFFER

NCDOT
DIVISION OF HIGHWAYS
WAYNE COUNTY
PROJECT: 33145.1.1 (B-3538)
REPLACE BRIDGE # 296 OVER
NEUSE RIVER CUT-OFF
ALONG SR 1222

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

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS



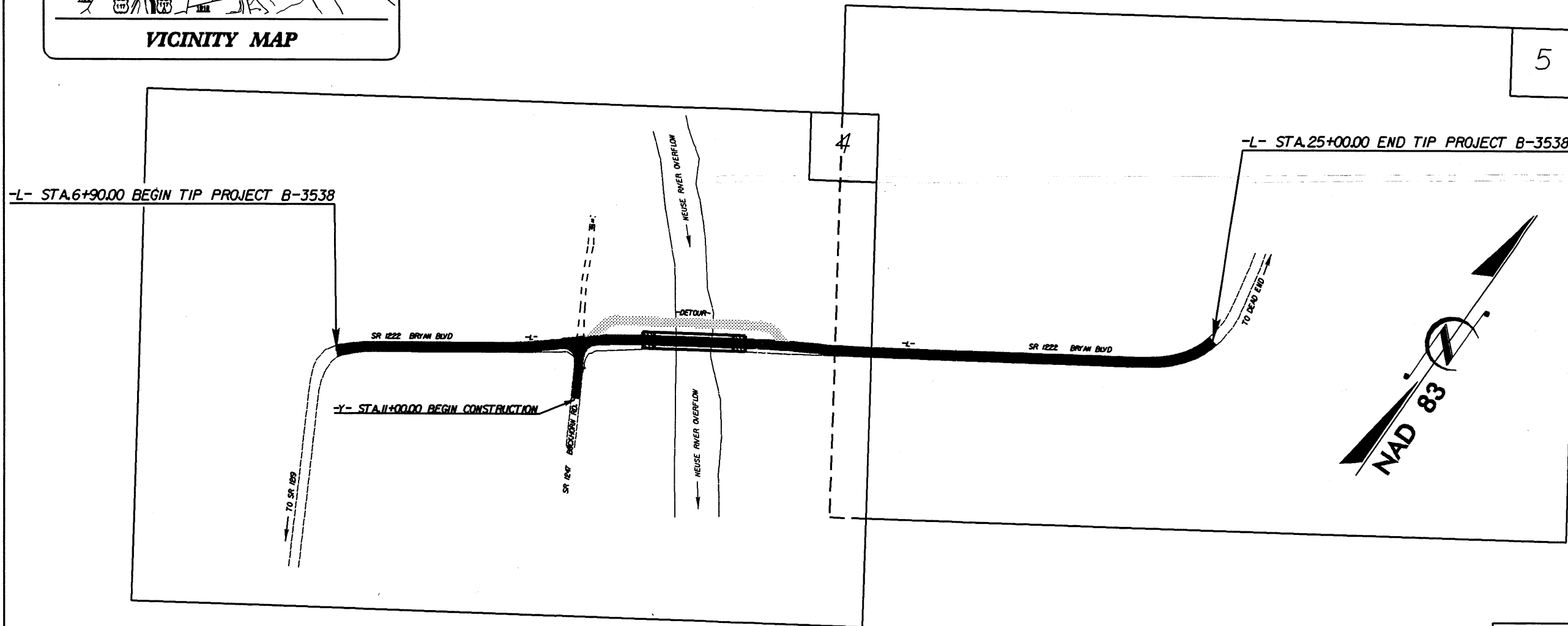
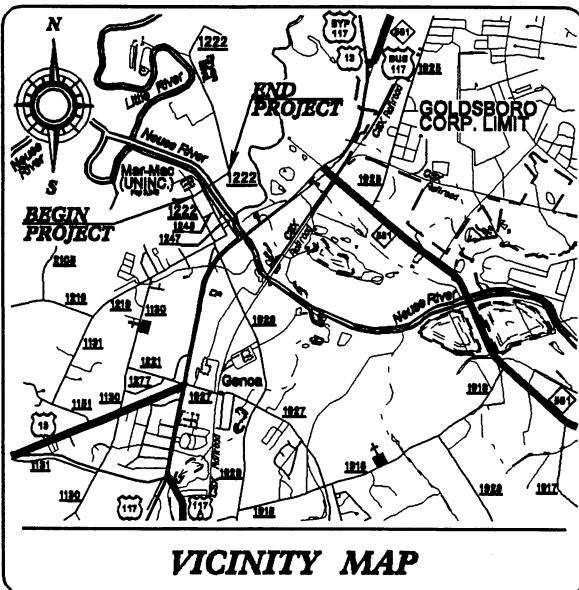
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N.C.	B-3538	1	3/11
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33145.1.1	BRZ-1222(4)	PE	
33145.2.2	BRZ-1222(8)	RW, UTIL	

WAYNE COUNTY

LOCATION: BRIDGE NO. 296 OVER THE NEUSE RIVER OVERFLOW
ON SR 1222

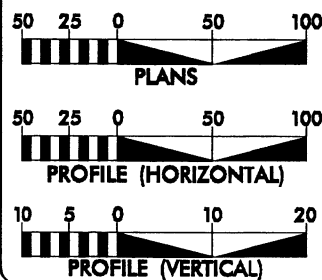
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURE

PERMIT
DRAWINGS
04/05/05
NEUSE RIVER BUFFER



PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



DESIGN DATA

ADT 2005 = 900
ADT 2025 = 1300
DHV = 10 %
D = 60 %
T = 4 % *
V = 25 MPH
* TTST 2% + DUAL 2%
FUNC. CLASS = LOCAL RURAL

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-3538 = 0.31 MILE
LENGTH STRUCTURE TIP PROJECT B-3538 = 0.03 MILE
TOTAL LENGTH STATE TIP PROJECT B-3538 = 0.34 MILE

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

2002 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEBRUARY 28, 2005

LETTING DATE:
APRIL 18, 2006

G. E. BREW, PE
PROJECT ENGINEER

W. T. BEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.
ROADWAY DESIGN
ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

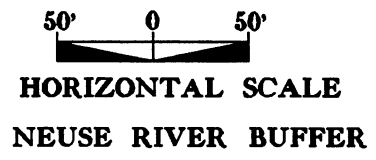
STATE DESIGN ENGINEER
DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR DATE

TIP PROJECT: B-3538

CONTRACT:

PROJECT REFERENCE NO.	SHEET NO.
B-3538	6
HW SHEET NO.	5/11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

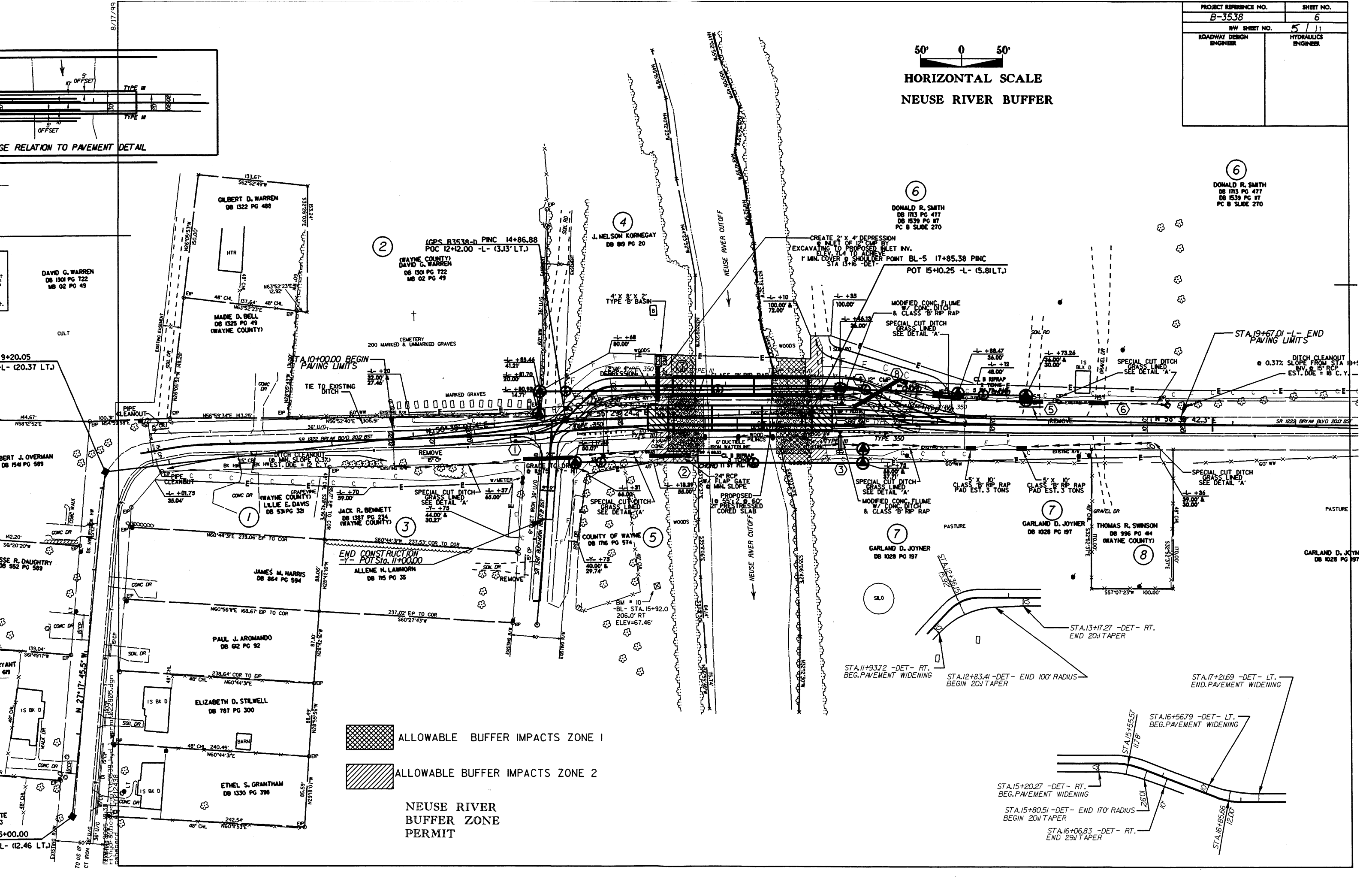
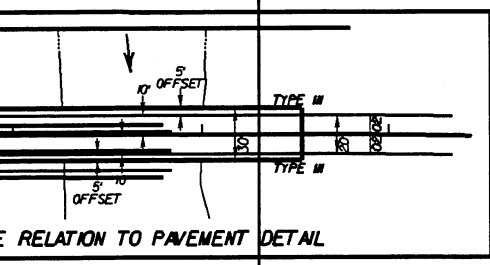


6
DONALD R. SMITH
DB 173 PG 477
DB 1539 PG 17
PC 8 SLIDE 270

6
DONALD R. SMITH
DB 173 PG 477
DB 1539 PG 17
PC 8 SLIDE 270

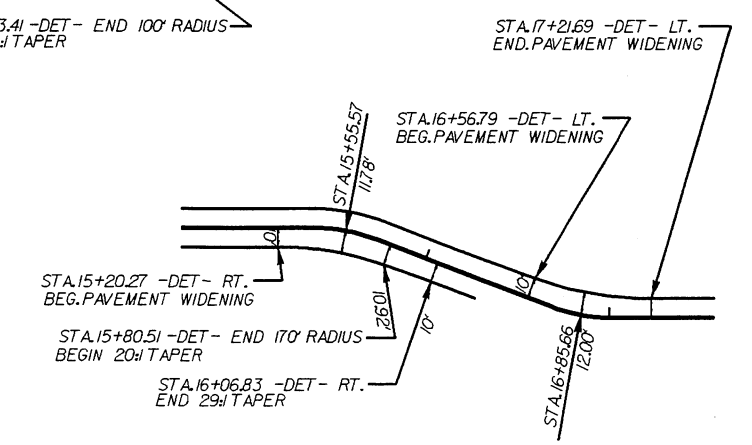
4
J. NELSON KORMEGAY
DB 89 PG 20

2
GPS B1538-D PINC 14+86.88
POC 12+12.00 -L- (3.13' LT.)
(WAYNE COUNTY)
DAVID C. WARREN
DB 1304 PG 722
MB 02 PG 49

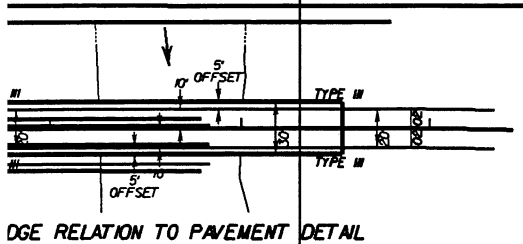
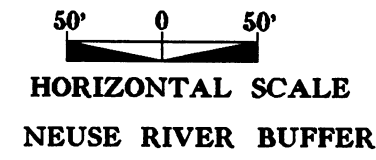


ALLOWABLE BUFFER IMPACTS ZONE 1
ALLOWABLE BUFFER IMPACTS ZONE 2

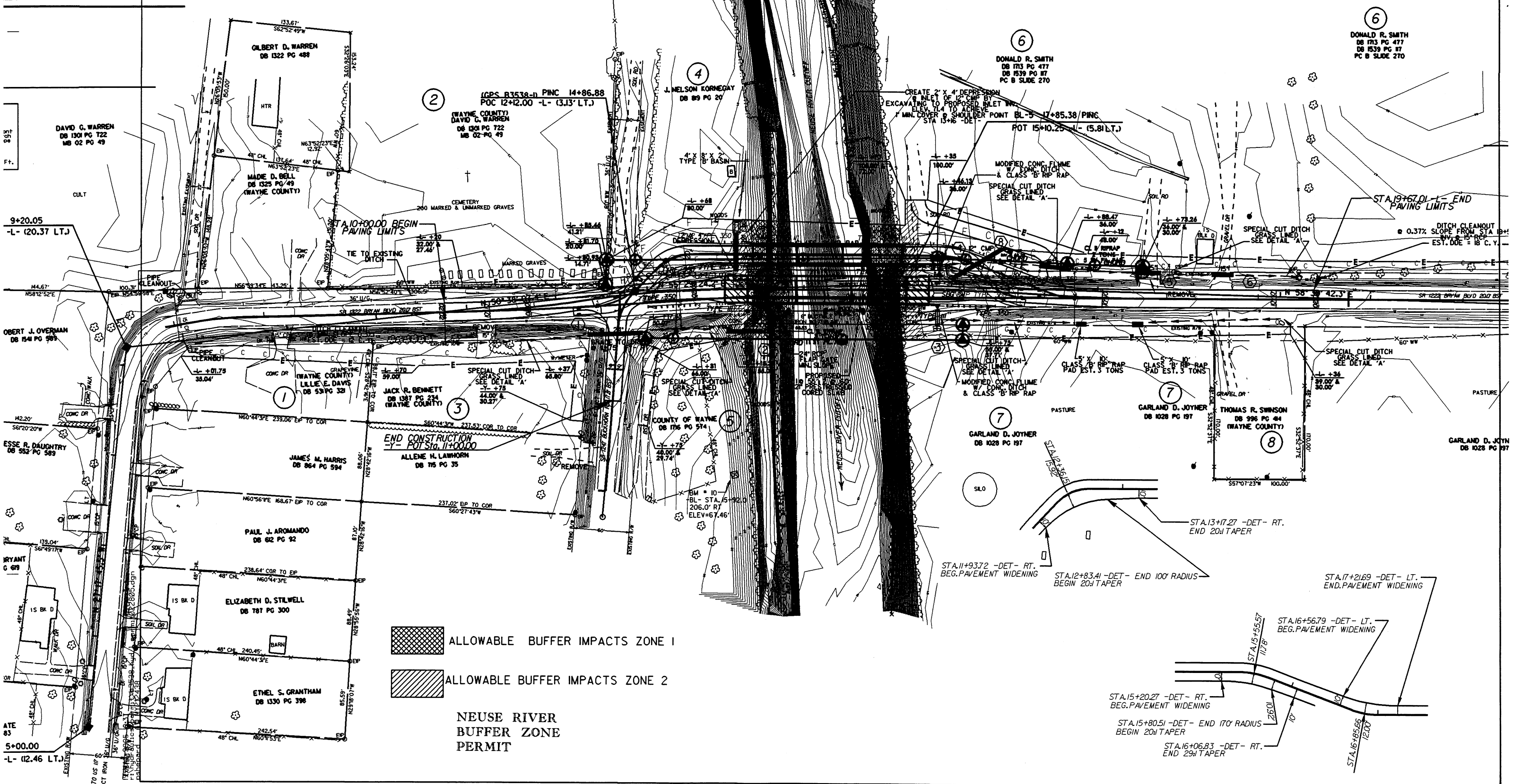
NEUSE RIVER
BUFFER ZONE
PERMIT



PROJECT REFERENCE NO.	SHEET NO.
B-3538	6
RW SHEET NO.	6111
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



DGE RELATION TO PAVEMENT DETAIL



ALLOWABLE BUFFER IMPACTS ZONE 1

ALLOWABLE BUFFER IMPACTS ZONE 2

NEUSE RIVER
BUFFER ZONE
PERMIT

6
DONALD R. SMITH
DB 173 PG 477
DB 1539 PG 17
PC B SLIDE 270

6
DONALD R. SMITH
DB 173 PG 477
DB 1539 PG 17
PC B SLIDE 270

4
J. NELSON KORNEGAY
DB 89 PG 20

2
(WAYNE COUNTY)
DAVID G. WARREN
DB 00 PG 722
MB 02 PG 49

GILBERT D. WARREN
DB 1322 PG 488

DAVID G. WARREN
DB 1301 PG 722
MB 02 PG 49

MADE D. BELL
DB 1325 PG 49
(WAYNE COUNTY)

9+20.05
-L- (20.37 LT.)

OBERT J. OVERMAN
DB 1541 PG 583

ESSE R. DAUGHTRY
DB 552 PG 583

RYANT
G 699

ATE
83

5+00.00
-L- (12.46 LT.)

1
JACK R. BENNETT
DB 1387 PG 234
(WAYNE COUNTY)

3
JACK R. BENNETT
DB 1387 PG 234
(WAYNE COUNTY)

JAMES M. HARRIS
DB 964 PG 594

PAUL J. AROMANDO
DB 62 PG 32

ELIZABETH D. STILWELL
DB 787 PG 300

ETHEL S. GRANTHAM
DB 1330 PG 398

END CONSTRUCTION
-Y- POT STA. 11+00.00

ALLEN H. LAWORN
DB 715 PG 35

5
COUNTY OF WAYNE
DB 176 PG 574

7
GARLAND D. JOYNER
DB 1028 PG 197

7
GARLAND D. JOYNER
DB 1028 PG 197

7
GARLAND D. JOYNER
DB 1028 PG 197

8
THOMAS R. SWINSON
DB 996 PG 44
(WAYNE COUNTY)

GARLAND D. JOYNER
DB 1028 PG 197

CREATE 2' X 4' DEPRESSION
EXCAVATING TO PROPOSED INLET IN
ELEV. 71.4 TO ACHIEVE
MIN. COVER & SHOULDER POINT BL-5
STA 13+6 -DET-

MODIFIED CONC FLAME
& CLASS 'B' RIP RAP
SPECIAL CUT DITCH
SEE DETAIL 'A'

MODIFIED CONC FLAME
& CLASS 'B' RIP RAP
SPECIAL CUT DITCH
SEE DETAIL 'A'

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SPECIAL CUT DITCH
SEE DETAIL 'A'

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SEE DETAIL 'A'

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& CLASS 'B' RIP RAP
SPECIAL CUT DITCH
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MODIFIED CONC FLAME
& CLASS 'B' RIP RAP
SPECIAL CUT DITCH
SEE DETAIL 'A'

MODIFIED CONC FLAME
& CLASS 'B' RIP RAP
SPECIAL CUT DITCH
SEE DETAIL 'A'

STA.13+17.27 -DET- RT.
END 20' TAPER

STA.11+93.72 -DET- RT.
BEG. PAVEMENT WIDENING

STA.12+83.41 -DET- END 100' RADIUS
BEGIN 20' TAPER

STA.17+21.69 -DET- LT.
END PAVEMENT WIDENING

STA.15+56.79 -DET- LT.
BEG. PAVEMENT WIDENING

STA.15+20.27 -DET- RT.
BEG. PAVEMENT WIDENING

STA.15+80.51 -DET- END 170' RADIUS
BEGIN 20' TAPER

STA.16+06.83 -DET- RT.
END 29' TAPER

STA.16+56.79 -DET- LT.
BEG. PAVEMENT WIDENING

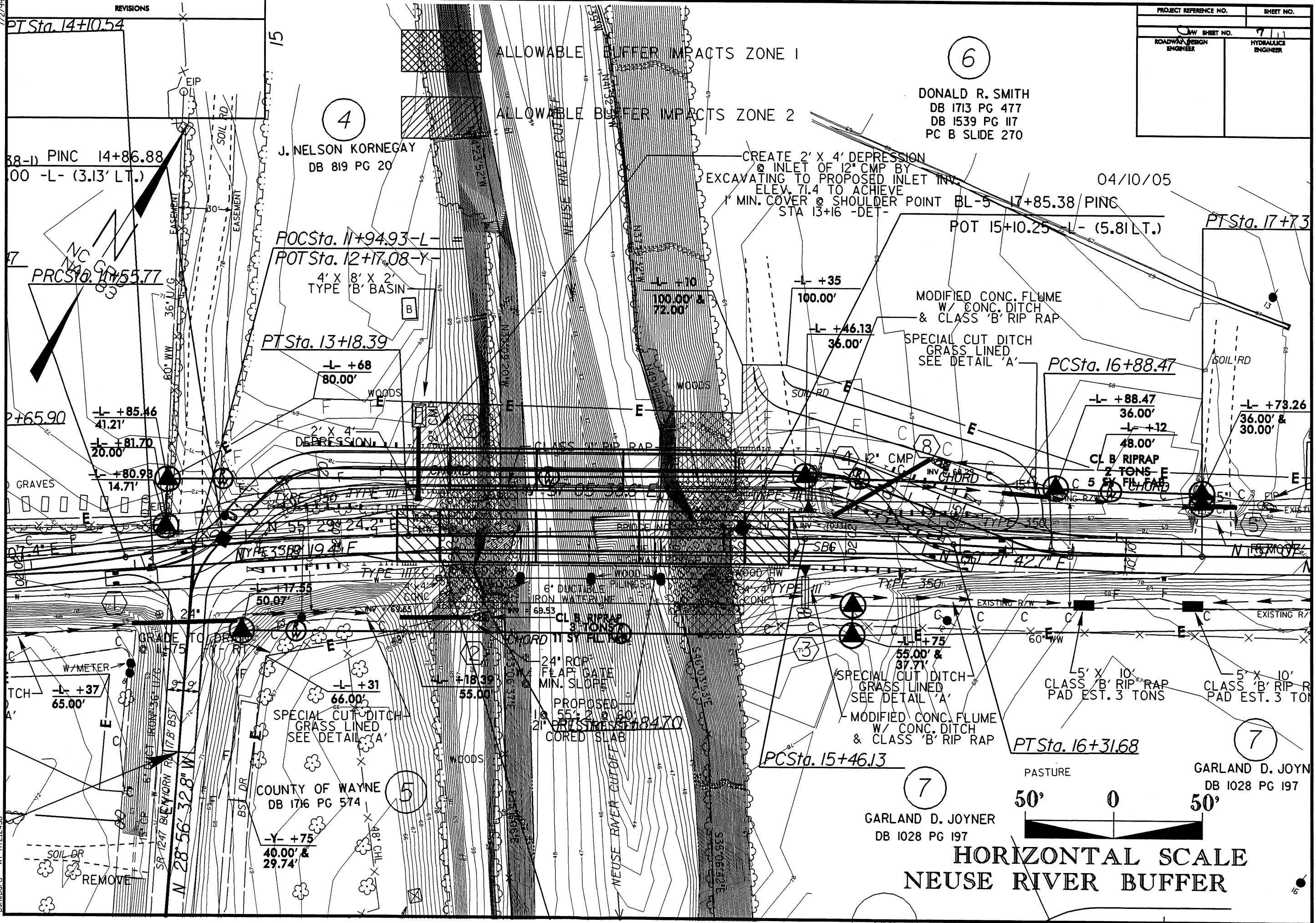
STA.16+56.79 -DET- LT.
BEG. PAVEMENT WIDENING

STA.16+56.79 -DET- LT.
BEG. PAVEMENT WIDENING

STA.16+56.79 -DET- LT.
BEG. PAVEMENT WIDENING

7/2/99
19-MAY-2005 10:29
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pshepard AT HY212438

PROJECT REFERENCE NO.	SHEET NO.
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



6
DONALD R. SMITH
DB 1713 PG 477
DB 1539 PG 117
PC B SLIDE 270

4
J. NELSON KORNEGAY
DB 819 PG 20

04/10/05

POT 15+10.25 -L- (5.81 LT.)

PT Sta. 17+73

MODIFIED CONC. FLUME
W/ CONC. DITCH
& CLASS 'B' RIP RAP

SPECIAL CUT DITCH
GRASS LINED
SEE DETAIL 'A'

PCSta. 16+88.47

-L- +88.47
36.00'

-L- +12
48.00'

CL B RIPRAP
2 TONS

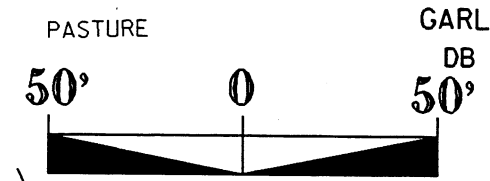
5' X 10' PAD

-L- +73.26
36.00' &
30.00'

COUNTY OF WAYNE
DB 1716 PG 574

7
GARLAND D. JOYNER
DB 1028 PG 197

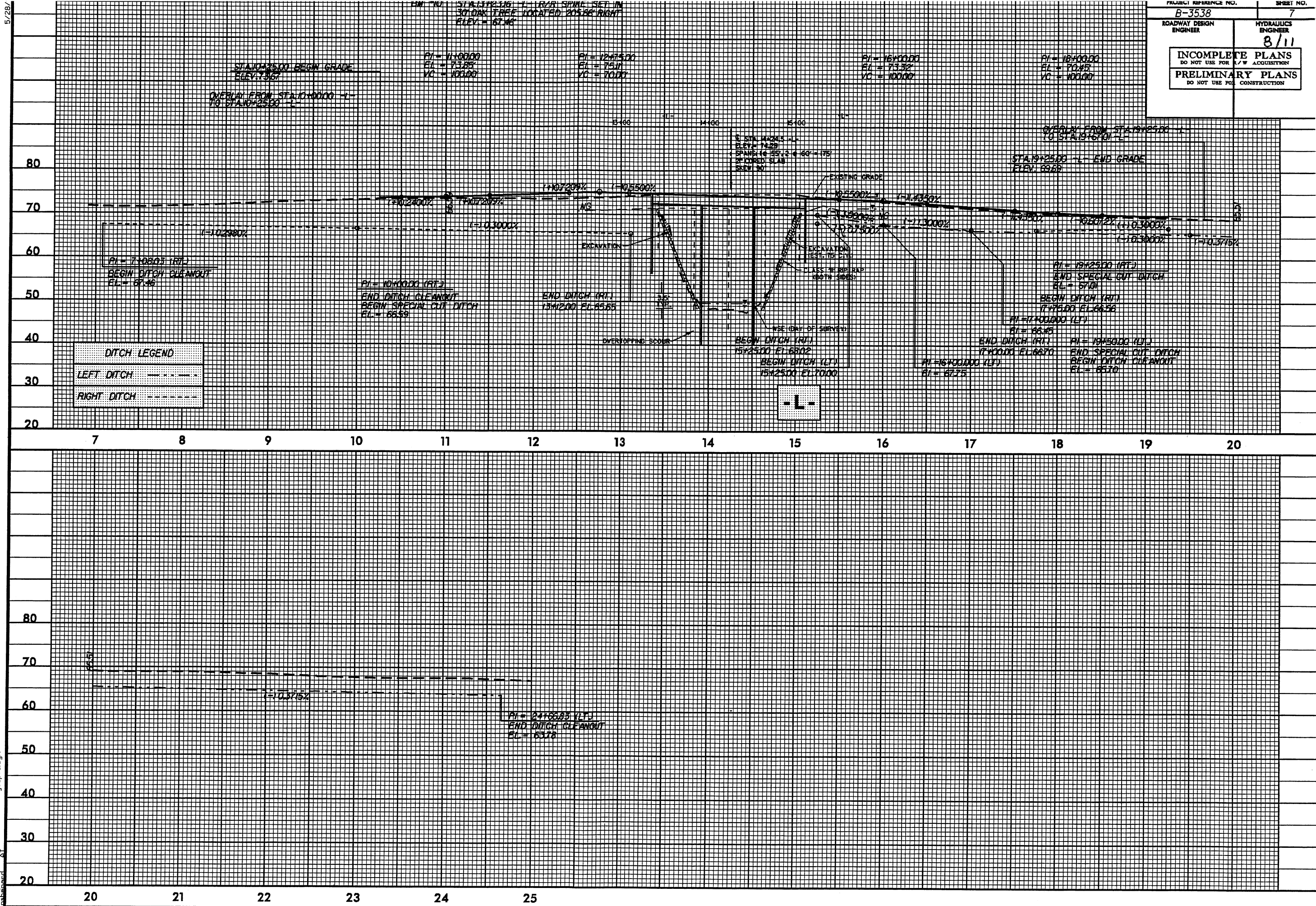
7
GARLAND D. JOYNER
DB 1028 PG 197



HORIZONTAL SCALE
NEUSE RIVER BUFFER

5/28/

08-APR-2005 13:24 r:\hyd\ajices\permit\b3538_hyd.pfl.dgn



PROJECT REFERENCE NO. B-3538		SHEET NO. 7	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		8/11	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

Property Owner Contact Report

TIP # B-3538

Owner Last

Name/
Business First Name

Address

City/Town

State

Zip Code

Home
PhoneContact/
Relationship

Contacted By

Contact
Date

How Contacted

Comments

Aromando	Paul J.	515 Bryan Blvd.	Goldstoro	NC	27530	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Bell	Madie D.	405 Tyndall Drive	Goldstoro	NC	27530	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Bennett	Jack R.	1412 Hwy 117 South	Goldstoro	NC	27530	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Bryant	Wanda D.	512 Bryan Blvd.	Goldstoro	NC	27530	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
County of Wayne		P.O. Box 227	Goldstoro	NC	27533	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Daughtry	Jesse R.	516 Bryan Blvd.	Goldstoro	NC	27530	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Oavis	Lillie E.	519 Bryan Blvd.	Goldstoro	NC	27530	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Giantham	Elfred S.	511 Bryan Blvd.	Goldstoro	NC	27530	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Harris	James M.	517 Bryan Blvd.	Goldstoro	NC	27530	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Joyner	Garland D.	107 Lou Drive	Goldstoro	NC	27530	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Komegay	J. Nelson	399 Buckhorn Rd.	Goldstoro	NC	27530	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Lawhorn	Allene H.	1088 Mt. Carmel Church Rd.	Pikeville	NC	27863	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Overman	Robert J.	707 Old Mt. Olive HWY	Dudley	NC	28333	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Pale	Mcrris C.	508 Bryan Blvd.	Goldstoro	NC	27530	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Seegars Family Limited Partnership		743 Lake Wackena RD	Goldstoro	NC	27534	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	
Smith	Donald R.	936 Sleepy Creek RD	Dudley	NC	28333	Owner	Self	H. A. Sorrell	8/3/00	Person/Letter	

Monday, April 04, 2005

9 of 11

Page 1 of 1

TIP # B-3538

Owner Last Name/ Business	Owner First Name	Address	City/Town	State	Zip Code	Contact/ Relationship	Home Phone	Contacted By	Contact Date	How Contacted	Comments
Stowell	Elizabeth D.	513 Bryan Blvd	Goldsboro	NC	27530	Owner Self		H. A. Sorrell	8/3/00	Person/Letter	
Swinson	Thomas R.	723 Bryan Blvd.	Goldsboro	NC	27530	Owner Self		H. A. Sorrell	8/3/00	Person/Letter	
Warren	David E.	119 Armslrong Drive	Goldsboro	NC	27530	Owner Self		H. A. Sorrell	8/2/00	Person/Letter	
Warren	David G.	612 Bryan Blvd.	Goldsboro	NC	27530	Owner Self		H. A. Sorrell	8/3/00	Person/Letter	
Warren	Gilbert D.	602-Bryan Blvd.	Goldsboro	NC	27530	Owner Self		H. A. Sorrell	8/3/00	Person/Letter	

10. of 11

Page 2 of 2

Monday, April 04, 2005

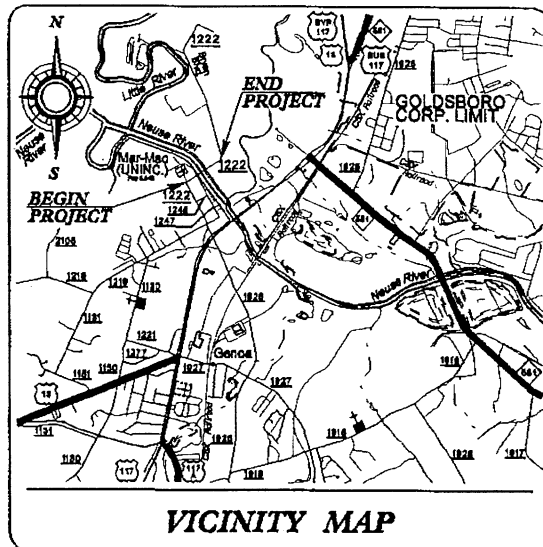
05/08/99

18-MAY-2005 14:09
C:\roadway\proj\B3538_rdy_tsh.dgn
West At RD22385

TIP PROJECT: B-3538

CONTRACT:

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



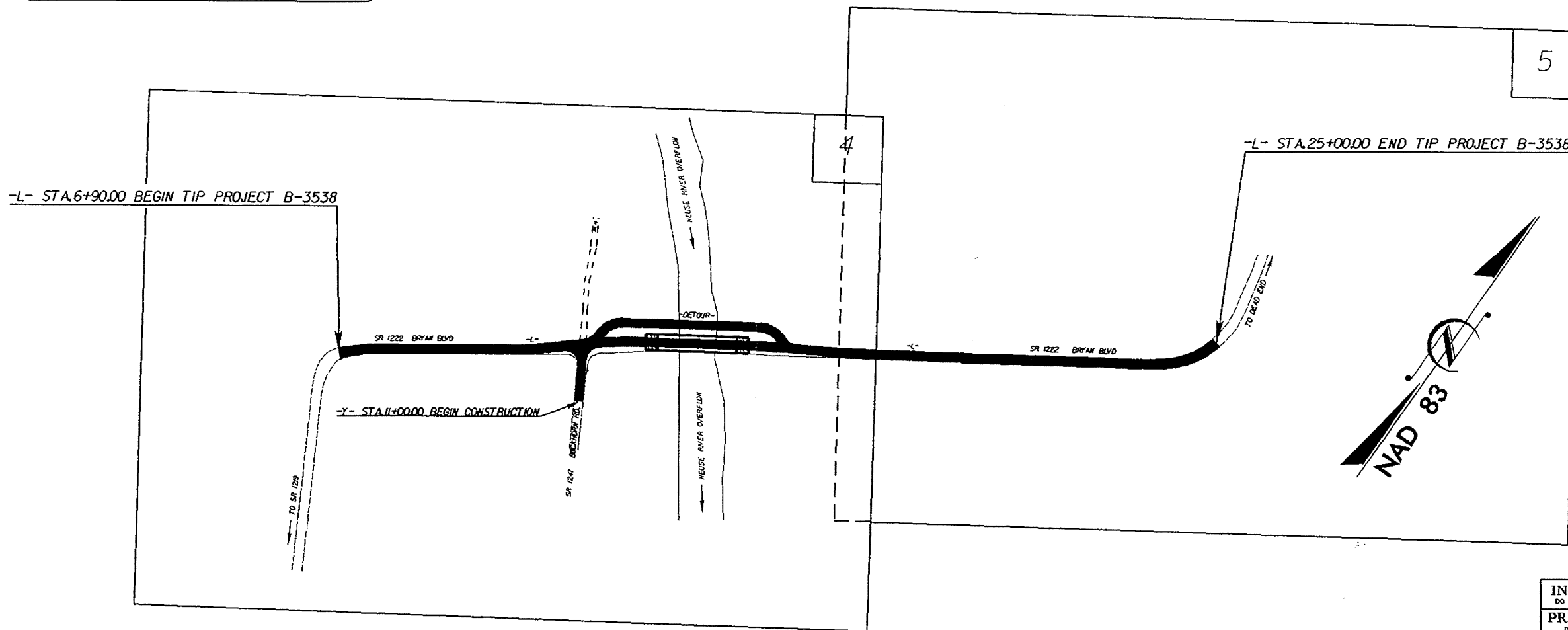
VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
WAYNE COUNTY

**LOCATION: BRIDGE NO. 296 OVER THE NEUSE RIVER OVERFLOW
ON SR 1222**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-3538	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33145.11	BRZ-1222(4)	PE	
33145.2.2	BRZ-1222(8)	RW, UTIL	



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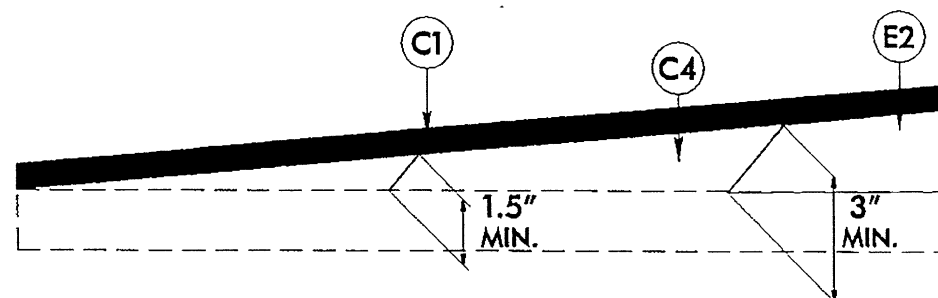
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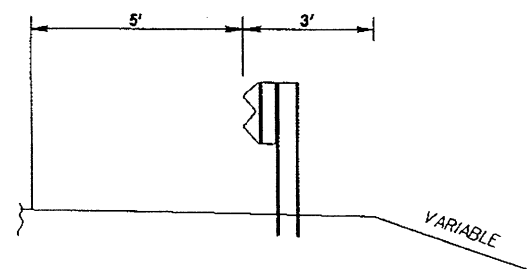
6/2/99

FINAL PAVEMENT SCHEDULE	
C1	PROP. APPROX. 1.25" ASPHALT CONCRETE SURFACE COURSE TYPE SF9.5A, AT AN AVERAGE RATE OF 140 LBS. PER SQ.YD.
C2	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 168 LBS. PER SQ.YD.
C3	PROP. APPROX. 2.5" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 140 LBS. PER SQ.YD. IN EACH OF TWO LAYERS
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 112 LBS. PER SQ.YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ.YD.
E2	PROP. APPROX. 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.
R1	CONCRETE SHOULDER BERM GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT (SEE STANDARD WEDGING DETAIL)

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

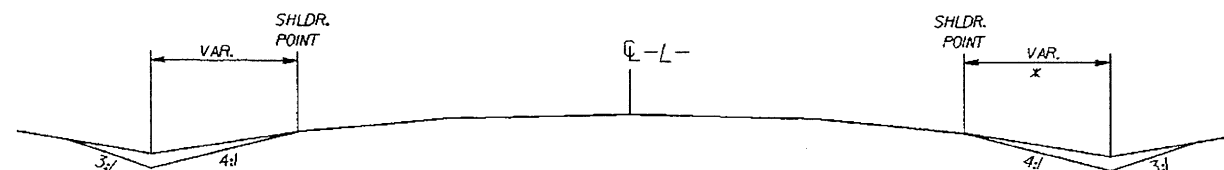


Wedging Detail For Resurfacing



DETAIL SHOWING GUARDRAIL AT 5' OFFSET

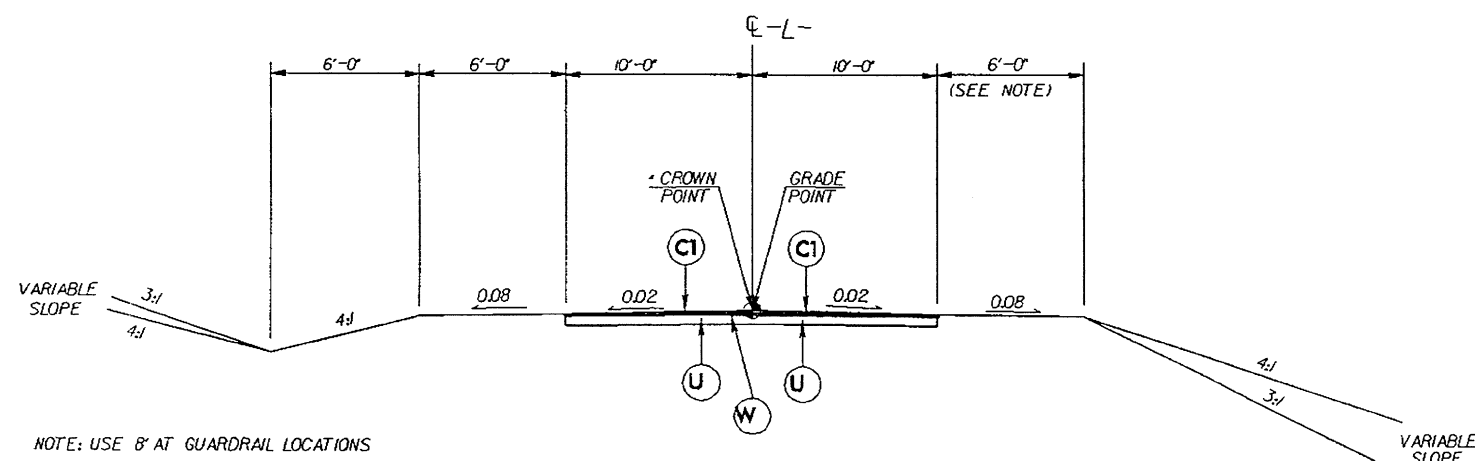
USE WITH TYPICAL SECTION NOS. 3 & 4



TYPICAL SECTION NO. 1
DITCH CLEAN OUT

USE TYPICAL SECTION NO. 1

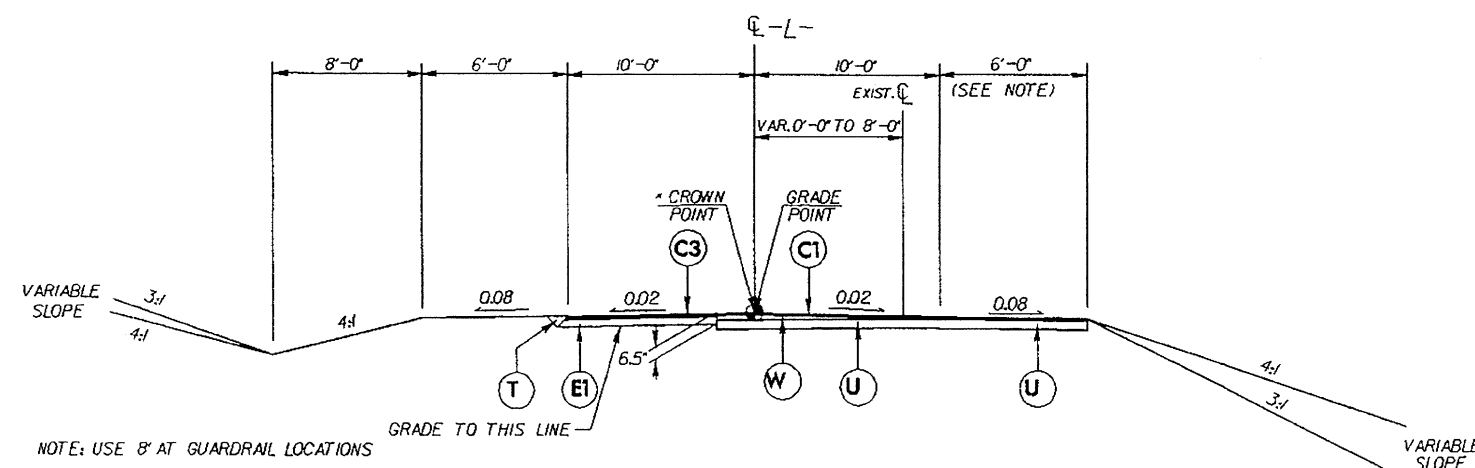
- * -L- FROM STA.7+08.66 TO STA.10+00.00 RIGHT
- L- FROM STA.19+50.00 TO STA.24+66.83 LEFT



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2

- * -L- FROM STA.10+00.00 TO STA.10+20.47
- L- FROM STA.17+73.27 TO STA.19+25.00
- * -L- FROM STA.19+25.00 TO STA.19+67.01



TYPICAL SECTION NO. 3

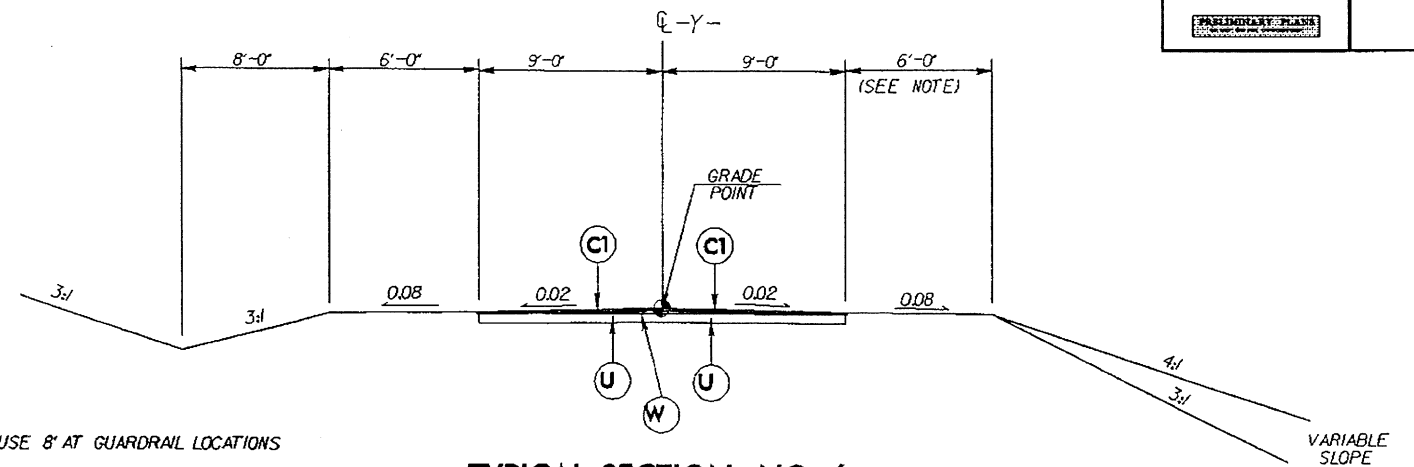
USE TYPICAL SECTION NO. 3

- * -L- FROM STA.10+20.47 TO STA.10+25.00
- L- FROM STA.10+25.00 TO STA.12+68.00
- L- FROM STA.15+54.77 TO STA.17+73.27

FINAL PAVEMENT SCHEDULE

C1	1.25" ASPHALT CONCRETE TYPE SF9.5A
C2	1.5" ASPHALT CONCRETE TYPE SF9.5A
C3	2.5" ASPHALT CONCRETE TYPE SF9.5A
C4	VAR. DEPTH ASPHALT CONCRETE TYPE SF9.5A
E1	4" ASPHALT CONCRETE TYPE B25.0B
E2	VAR. DEPTH ASPHALT CONCRETE TYPE B25.0B
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	VARIABLE DEPTH ASPHALT PAVEMENT

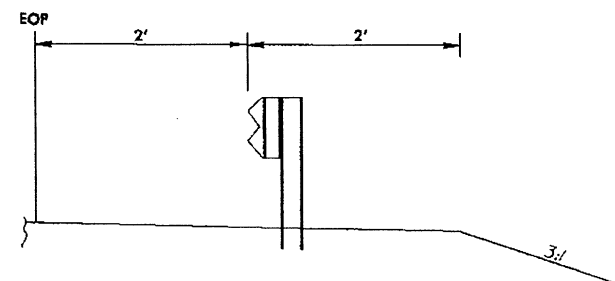
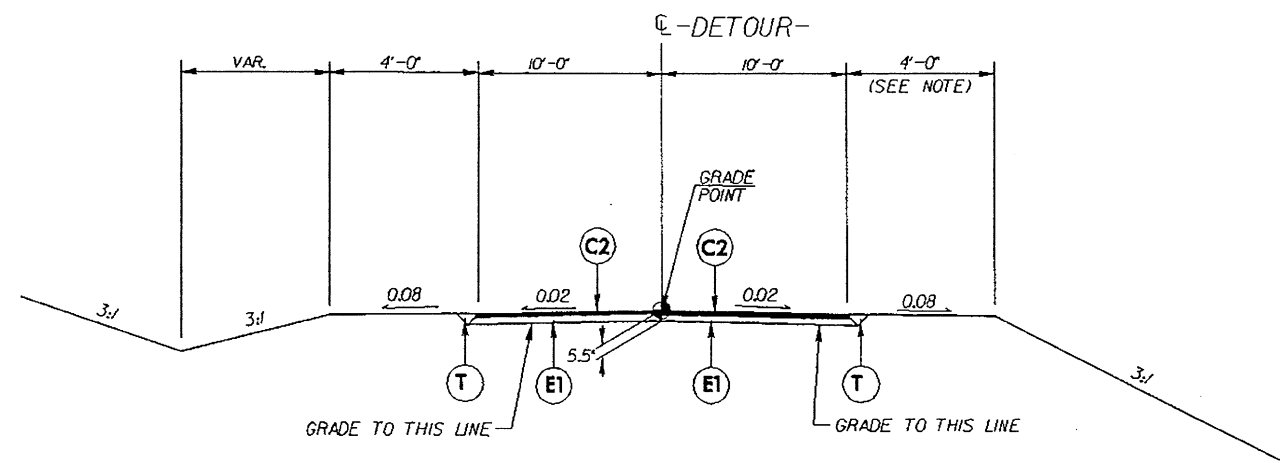
PROJECT REFERENCE NO. B-3538	SHEET NO. 2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
DATE: 6/2/99	



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO. 6

-Y- FROM STA.11+00.00 TO STA.12+04.479

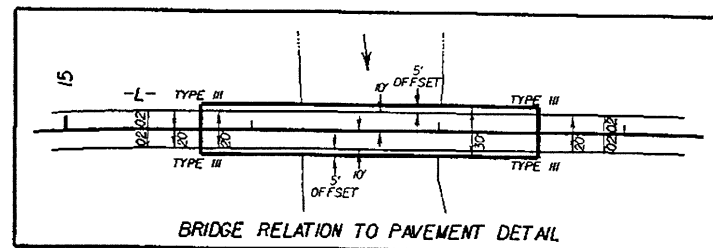
DETAIL SHOWING GUARDRAIL AT 2' OFFSET
USE WITH TYPICAL SECTION NOS. 7

TYPICAL SECTION NO. 7

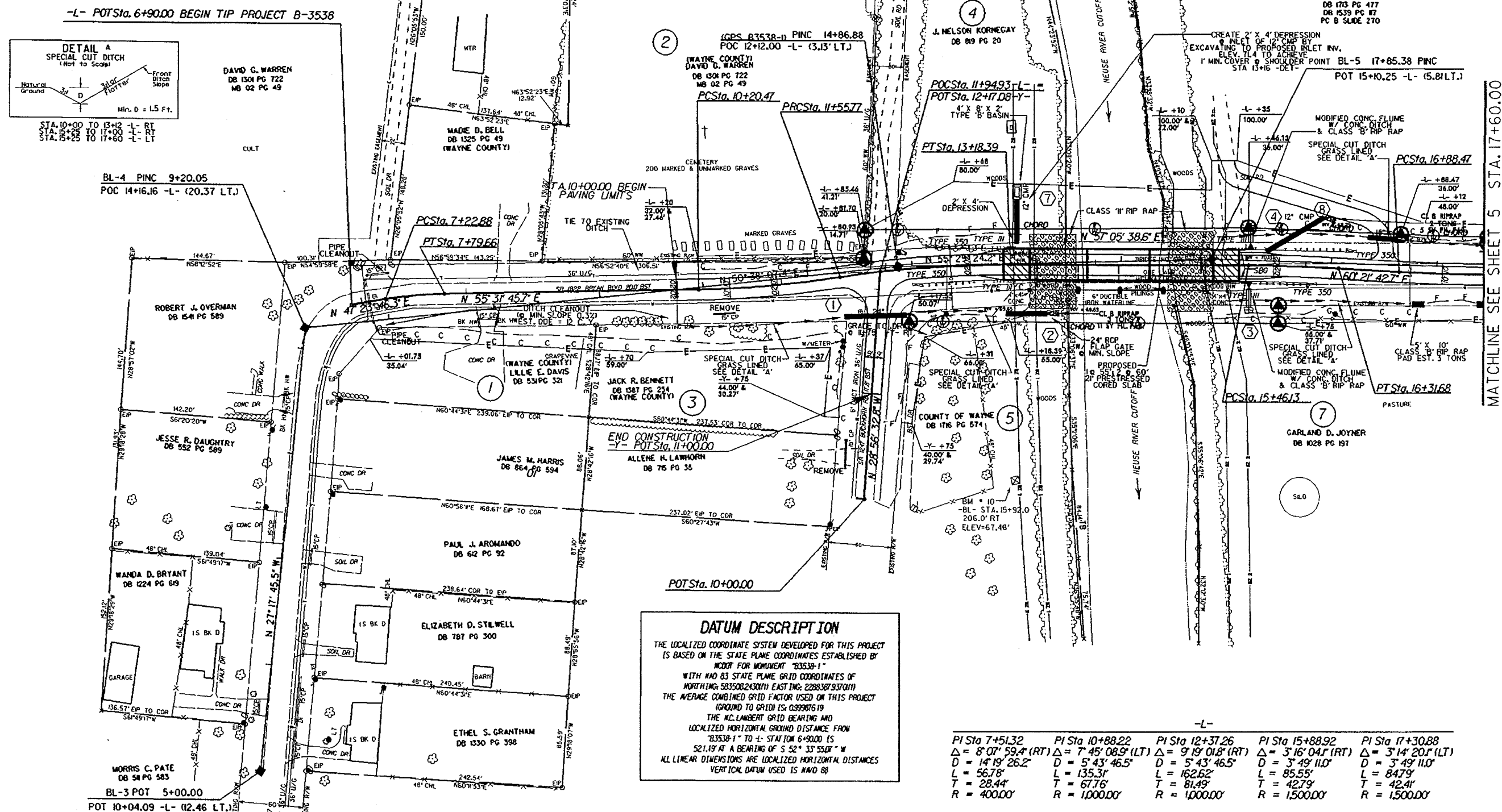
USE TYPICAL SECTION NO. 7

-DETOUR- FROM STA.11+38.90 TO STA.11+93.38, TRANSITION FROM EXISTING TO TYPICAL SECTION NO. 6
 -DETOUR- FROM STA.11+93.38 TO STA.13+34.13 (BEG. BRIDGE)
 -DETOUR- FROM STA.14+98.01 (END BRIDGE) TO STA.16+05.31
 -DETOUR- FROM STA.16+05.31 TO STA.16+62.49, TRANSITION FROM TYPICAL SECTION NO. 6 TO EXISTING

8-MAY-2005 11:09
 21 Roadway Pro\B3538.rdy-psh4-1.dgn
 West 01 80223185



PROJECT REFERENCE NO.		SHEET NO.	
RAW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<div style="border: 1px solid black; padding: 5px; text-align: center;"> PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION </div>			



MATCHLINE SEE SHEET 5 STA. 17+60.00

8/17/99

18-MAY-2005 14:09
C:\Roadway\Projects\B3538-rdy-ph5-1.dgn
Sheet 4 of 10

REVISIONS

MATCHLINE SEE SHEET 4 STA. 17+60.00

PT Sta. 17+73.26

L+73.26
34.00' &
30.00'

SPECIAL CUT DITCH
GRASS LINED
SEE DETAIL 'A'

REMOVE

N 57° 01' 22.6" E

EXISTING R/W

CLASS 'B' RIP RAP
PAD EST. 3 TONS

GRAVEL DR

EXISTING R/W

SPECIAL CUT DITCH
GRASS LINED
SEE DETAIL 'A'

L+36
39.00' &
30.00'

100.00'

557° 07' 23" W

100.00'

100.00'

100.00'

100.00'

100.00'

100.00'

100.00'

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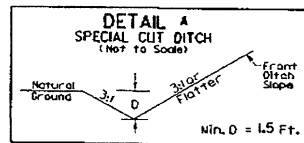
100.00'

100.00'

100.00'

100.00'

6
DONALD R. SMITH
DB 113 PG 477
DB 133 PG 47
PC B SLIDE 270



STA. 17+75 TO 19+25 -L- RT
STA. 17+60 TO 19+50 -L- LT

-L- POC Sta. 25+00.00 END TIP PROJECT B-3538

STA. 19+67.01 -L- END
PAVING LIMITS

DITCH CLEANOUT
0.37% SLOPE FROM STA 19+50 TO
INV. & 15' RCP
EST. CDE = 18 C. Y.

PC Sta. 23+59.28

L+75
42.00'

L+78
43.00' &
28.91'

(GPS B3538-2) PINC 26+81.74
POC 24+03.25 -L- 05.76 RT.J

-L-
PI Sta 17+30.88 PI Sta 24+88.59
 $\Delta = 3^\circ 14' 20.1" (LT)$ $\Delta = 68^\circ 28' 26.4" (LT)$
 $D = 3^\circ 49' 11.0"$ $D = 30^\circ 09' 20.4"$
 $L = 847.9'$ $L = 227.07'$
 $T = 42.41'$ $T = 129.30'$
 $R = 1500.00'$ $R = 190.00'$

PT Sta. 25+86.32

WOODS
DONALD R. SMITH
DB 113 PG 477
PC B SLIDE 270

GARLAND D. JOYNER
DB 1028 PG 197

GARLAND D. JOYNER
DB 1028 PG 197

THOMAS R. SWINSON
DB 996 PG 414
(WAYNE COUNTY)

GARLAND D. JOYNER
DB 1028 PG 197

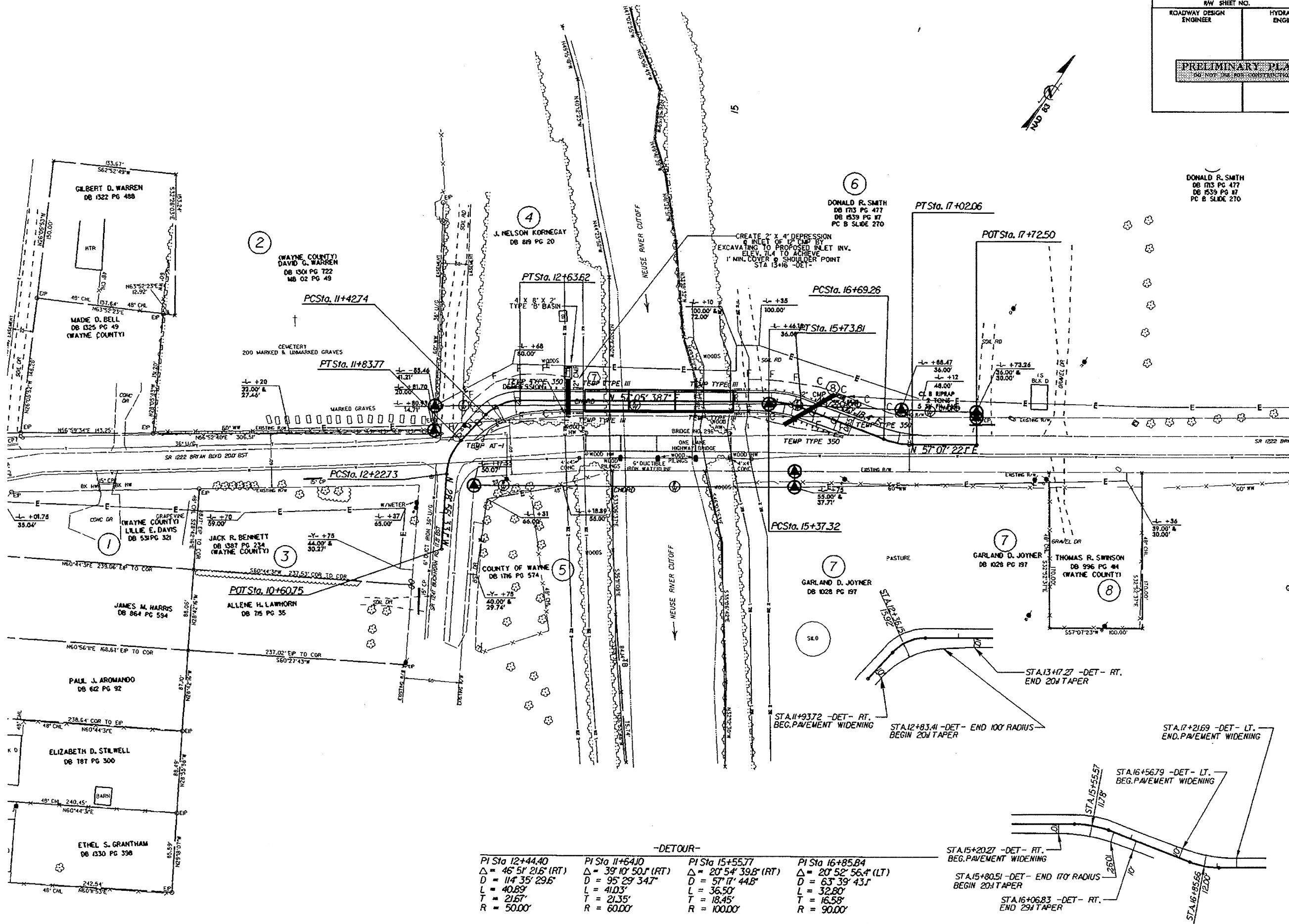
SEEGARS FAMILY
PATRERS
DB 151 PG

PROJECT REFERENCE NO.	SHEET NO.
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/C CONSTRUCTION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

8/17/99

PROJECT REFERENCE NO.		SHEET NO.	
B-3538		6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS			

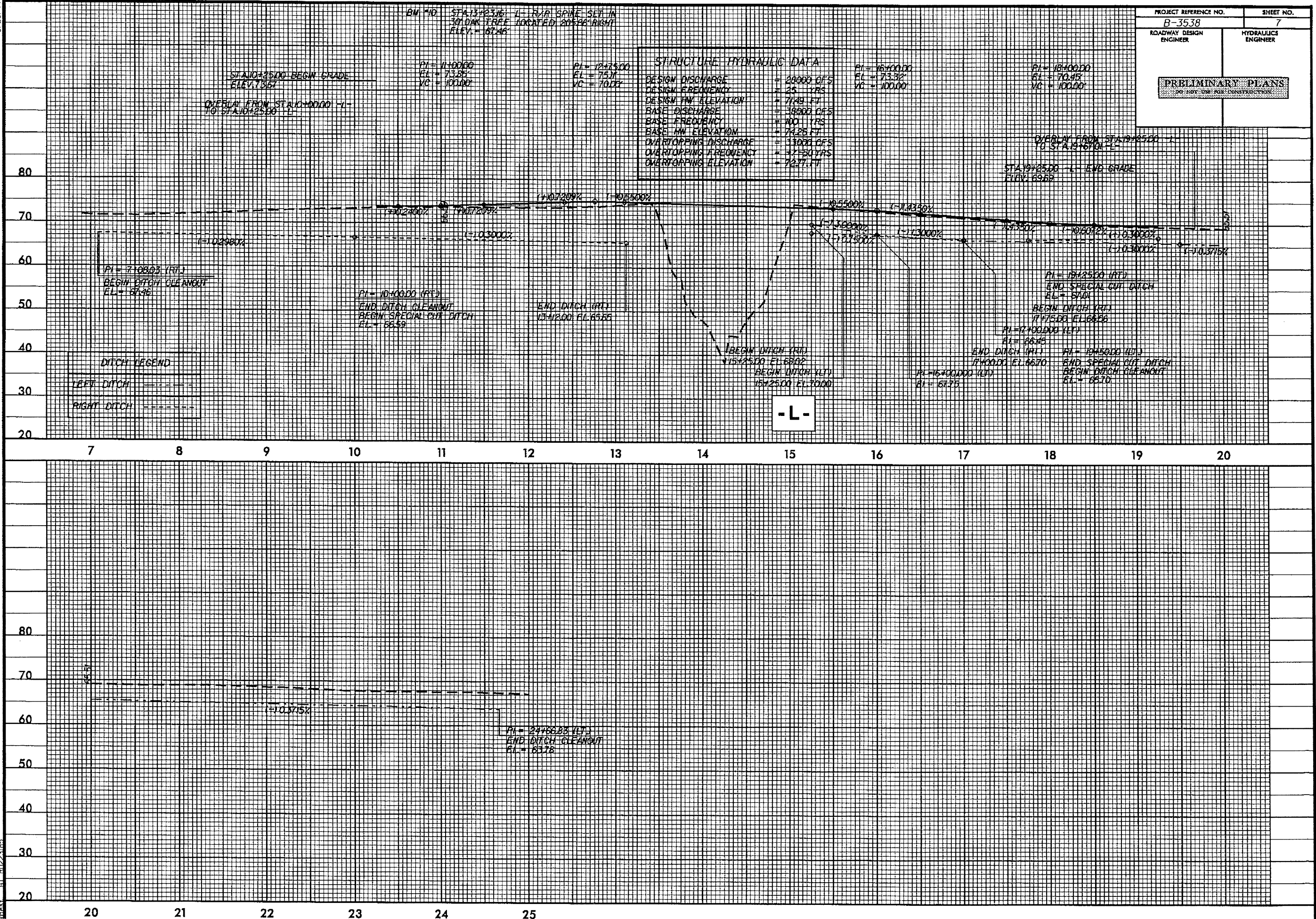
DONALD R. SMITH
DB 173 PG 477
DB 1539 PG 87
PC B SLIDE 270



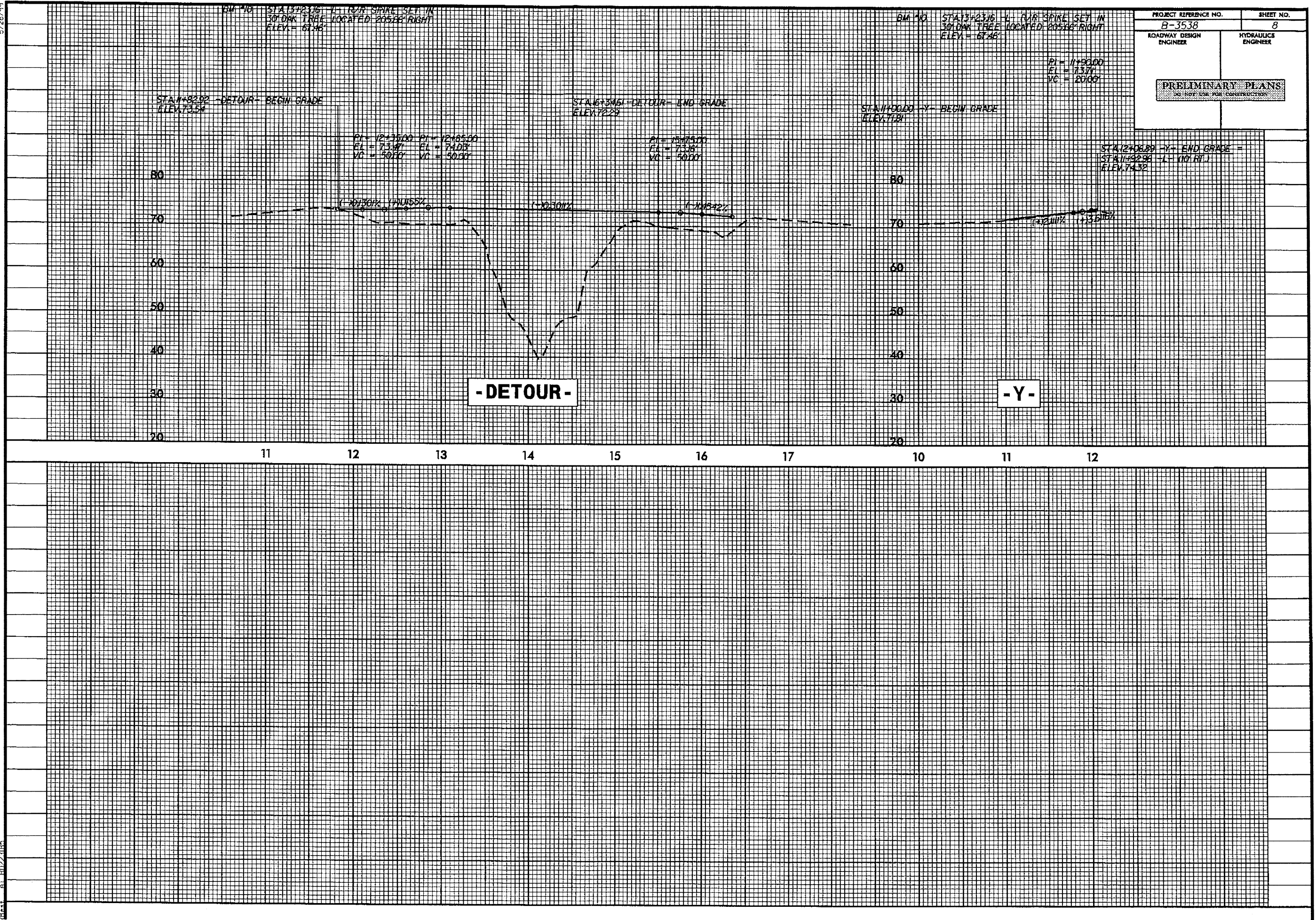
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User: B-3538

5/28/99

3-MAY-2005 11:08
\\woodward\cadd\990218\B
B-3538.dwg p1.dgn



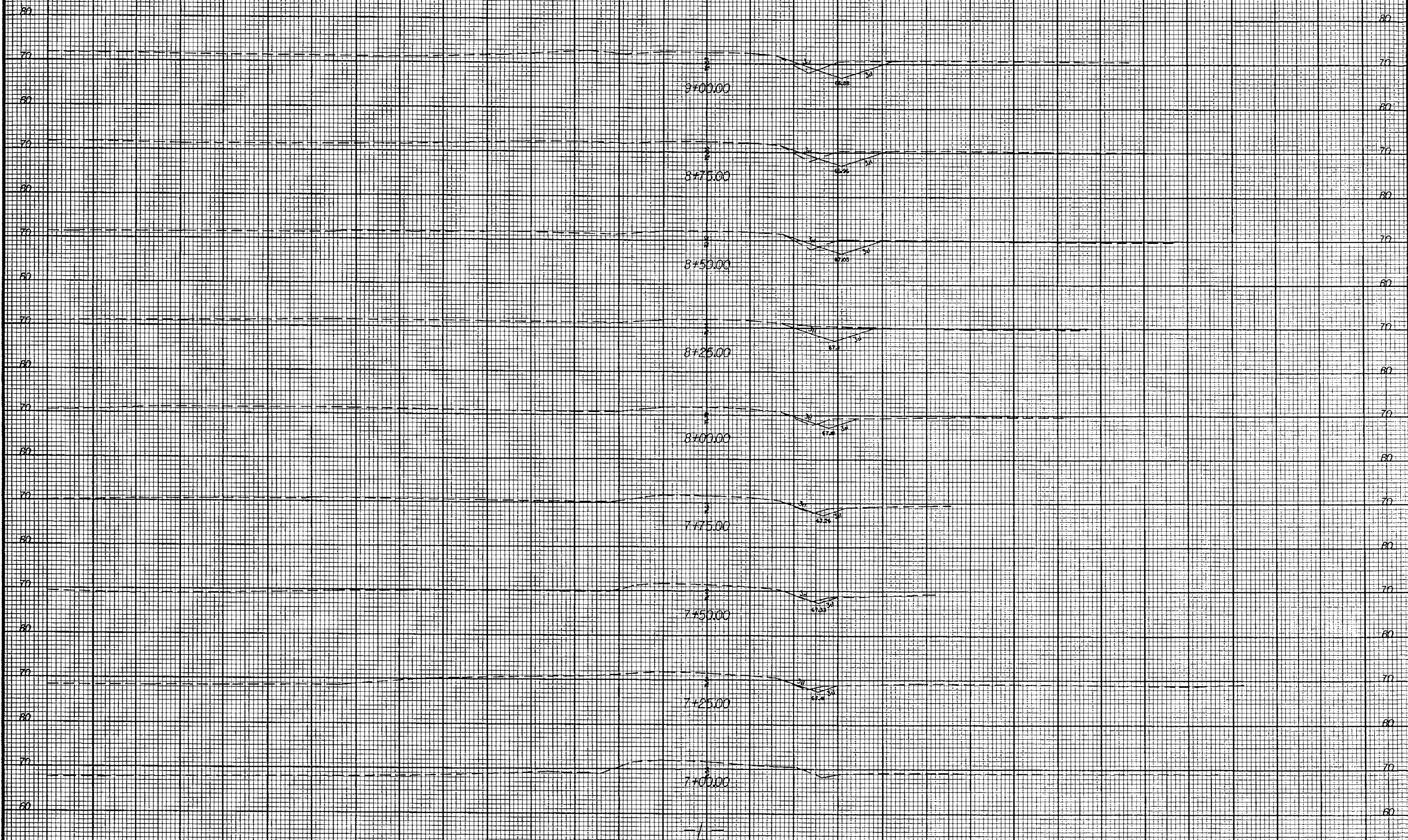
5/28/99



02/03/98

18-MAY-2005 14:2
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est at RD22385

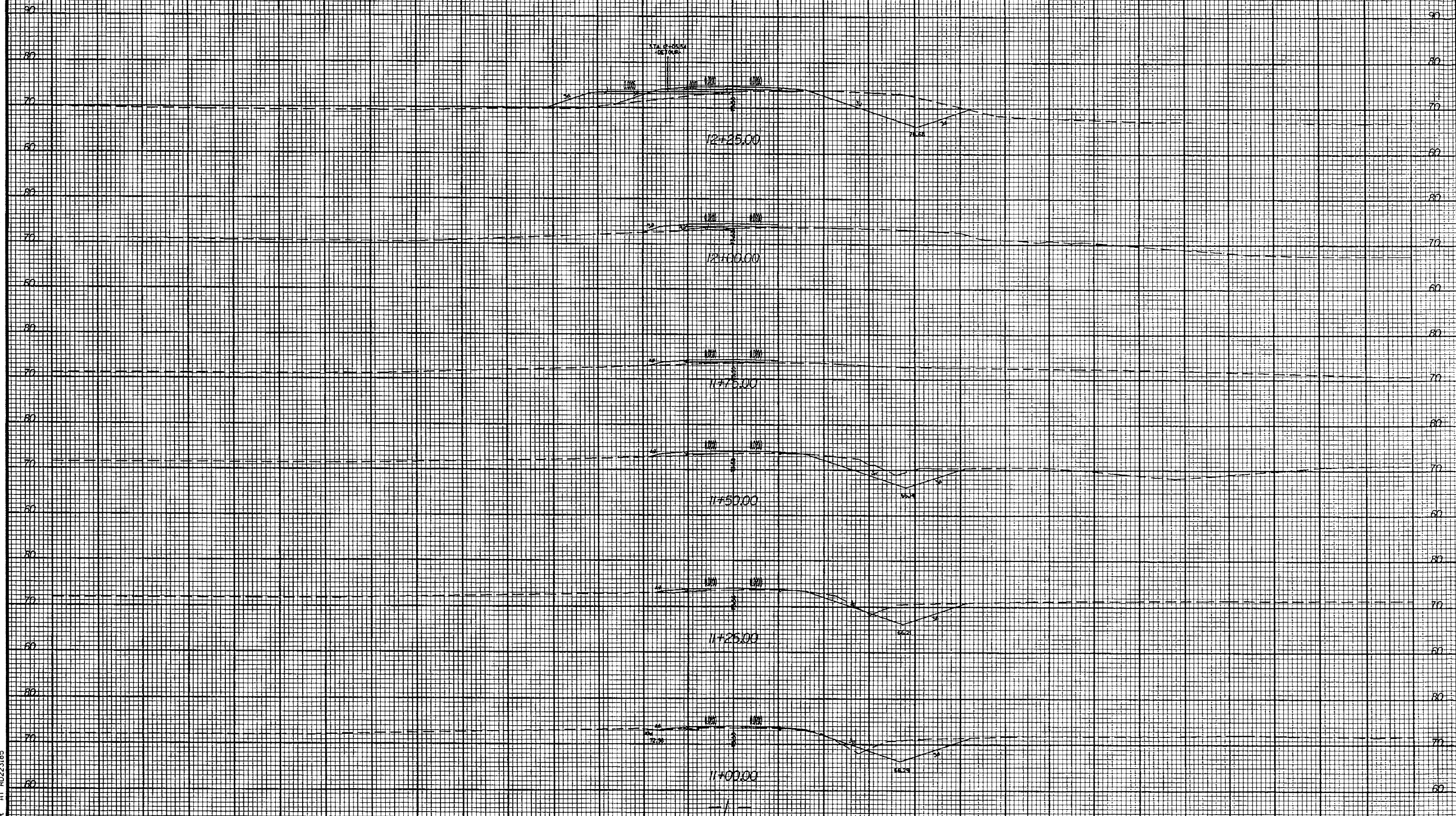
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B-3538	X-1	



02/03/98

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3est At RD23185

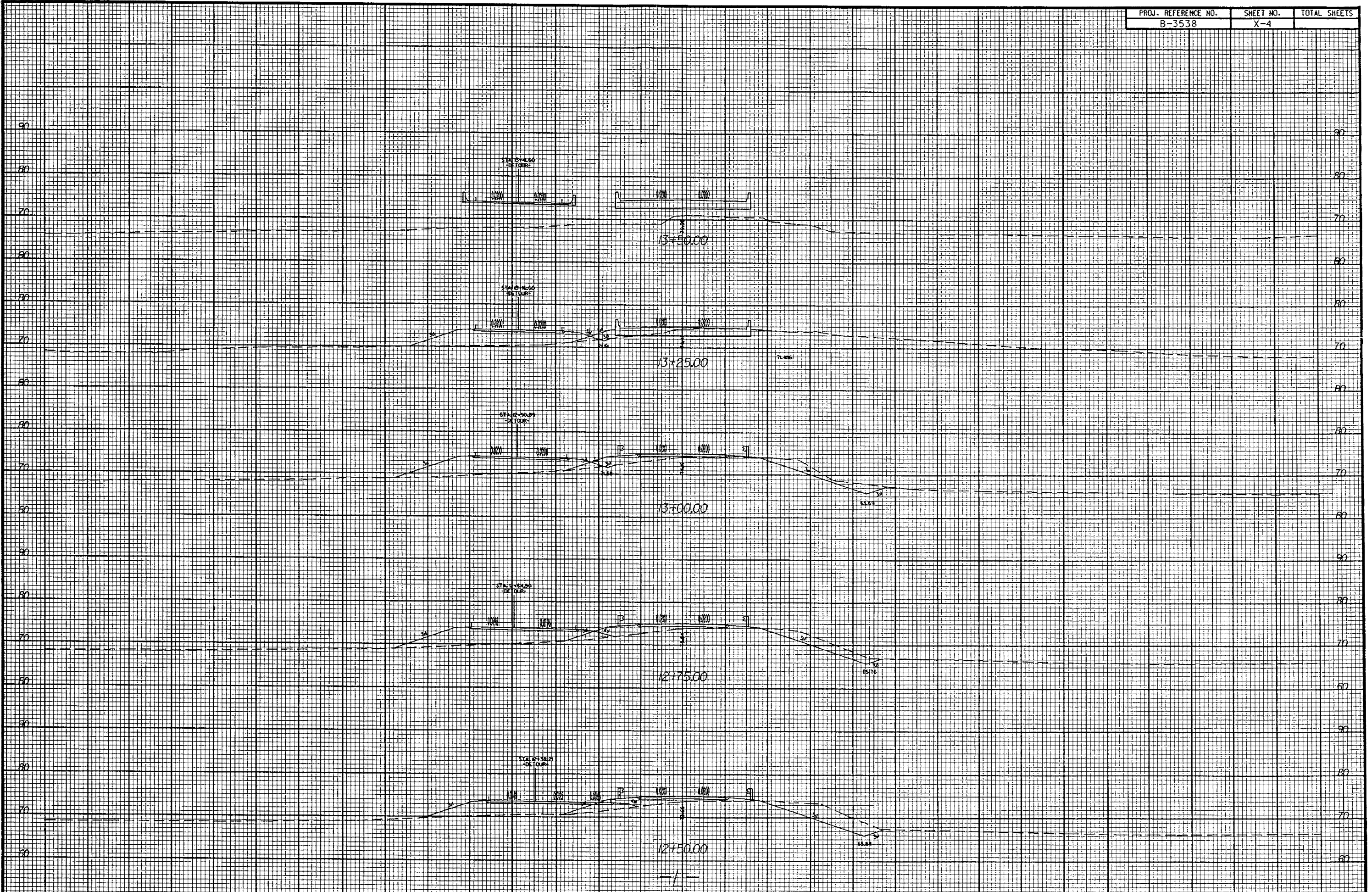
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B-3538	X-3	



02/03/98

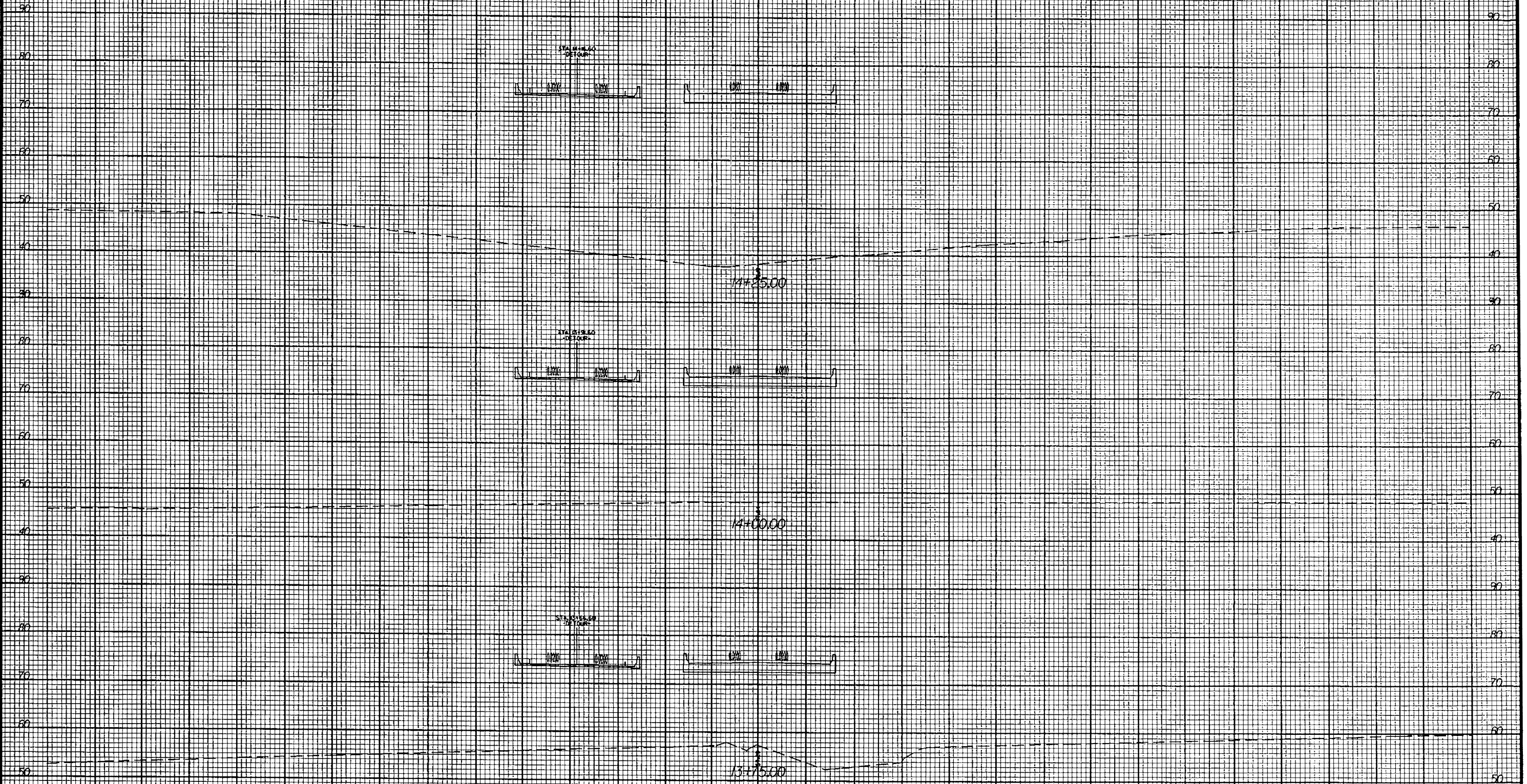
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02/03/98

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
B-3538	X-4	



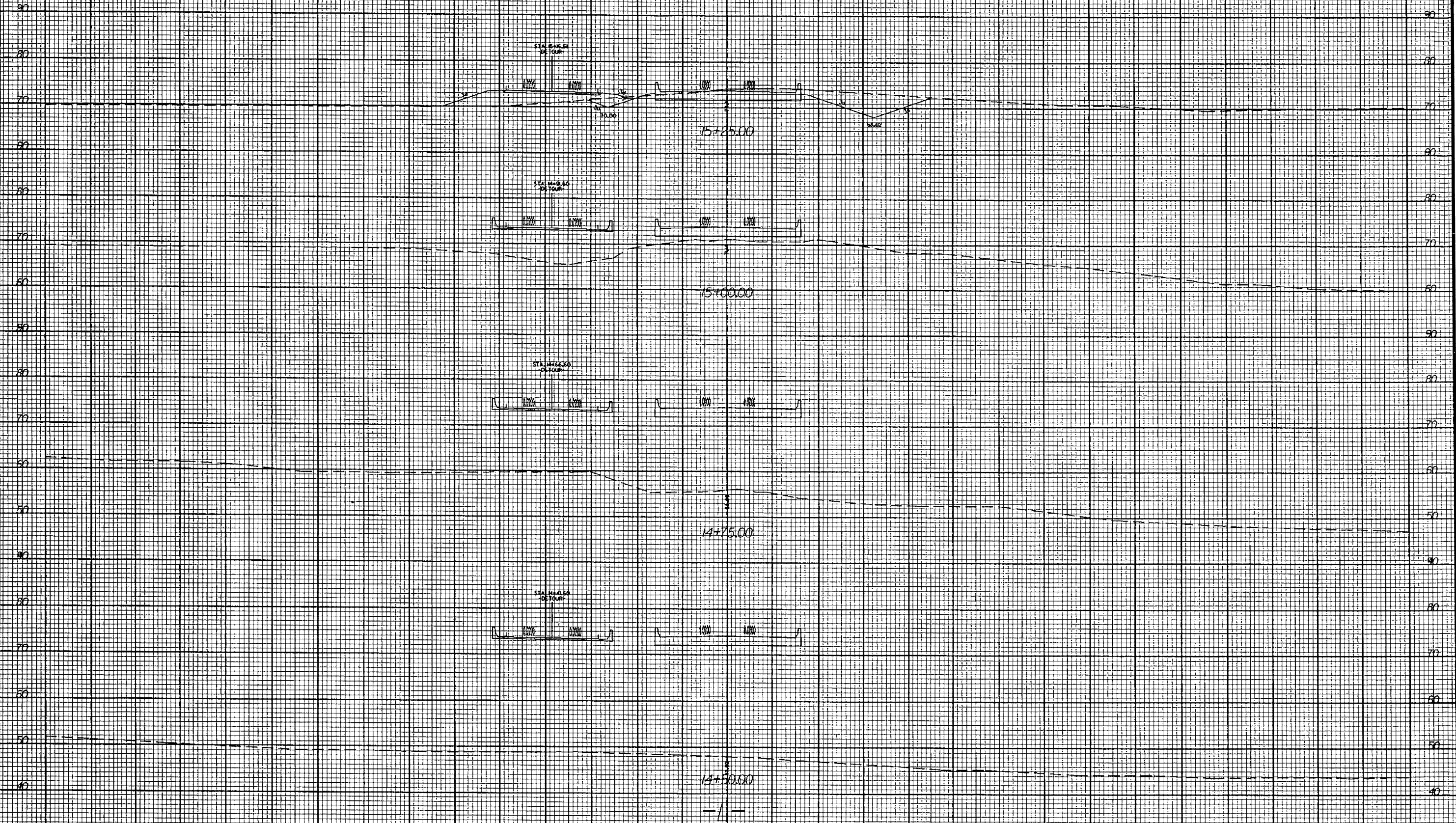
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PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
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02/03/98

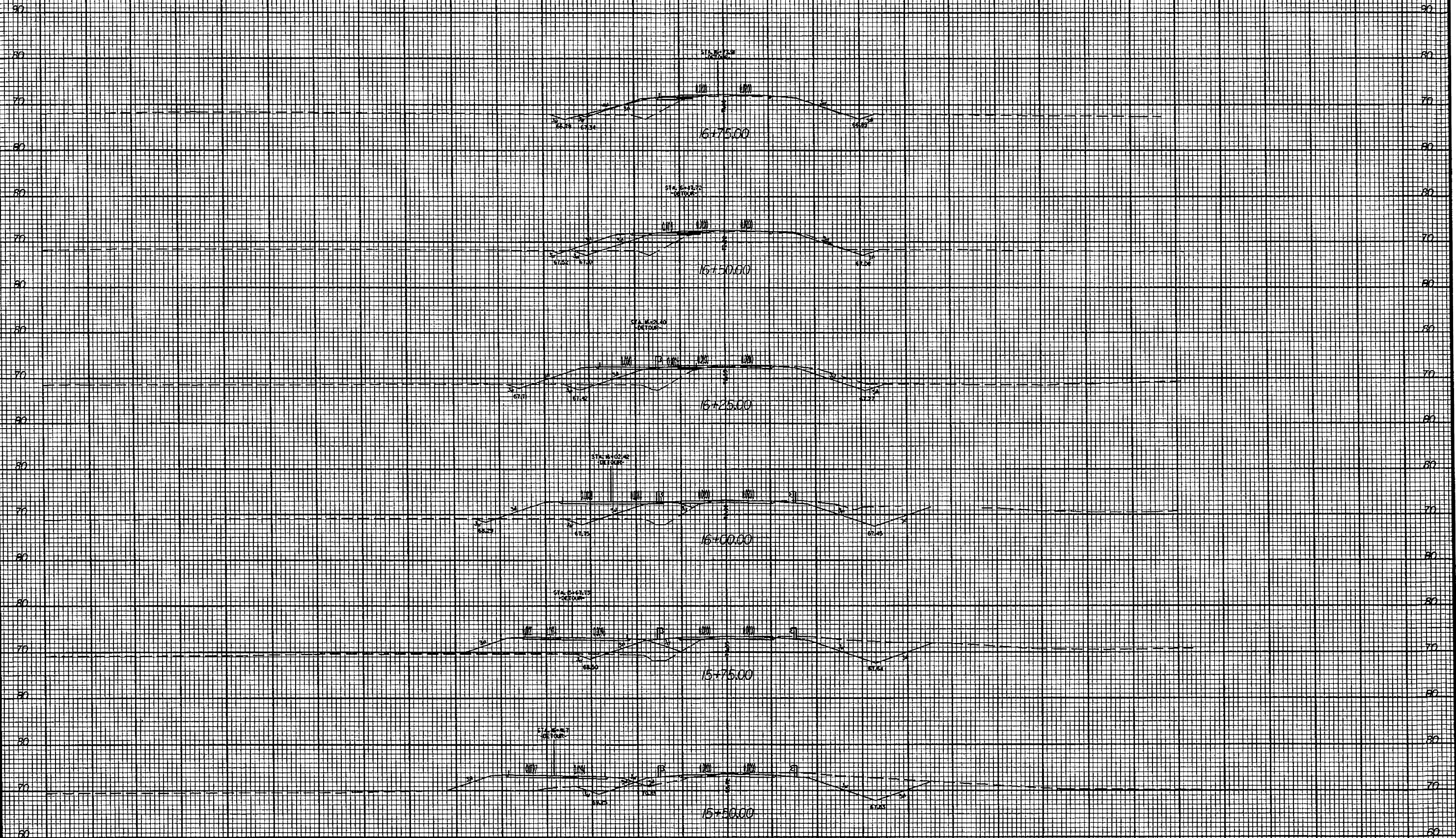
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B-3538	X-6	



02/03/98

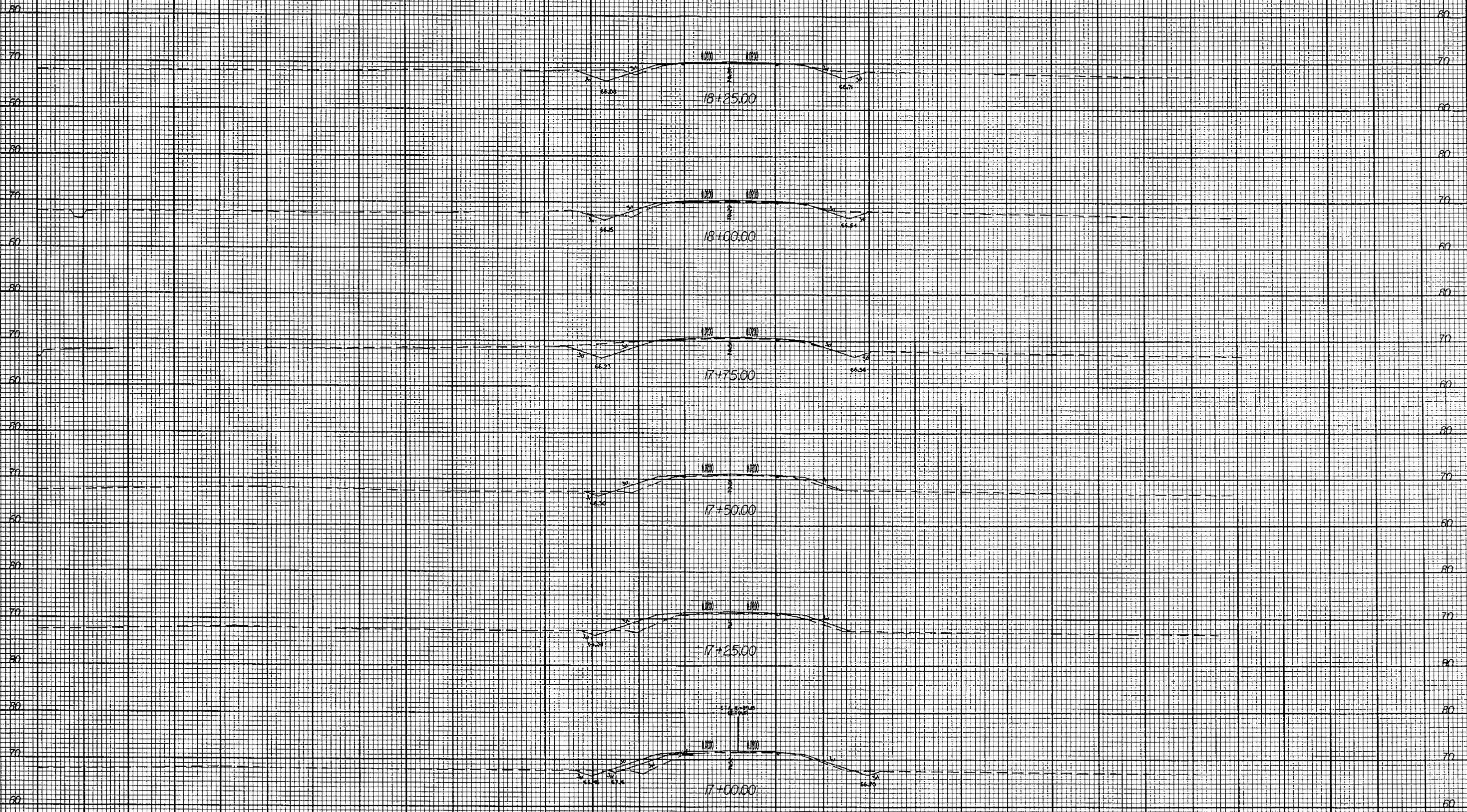
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02/03/98

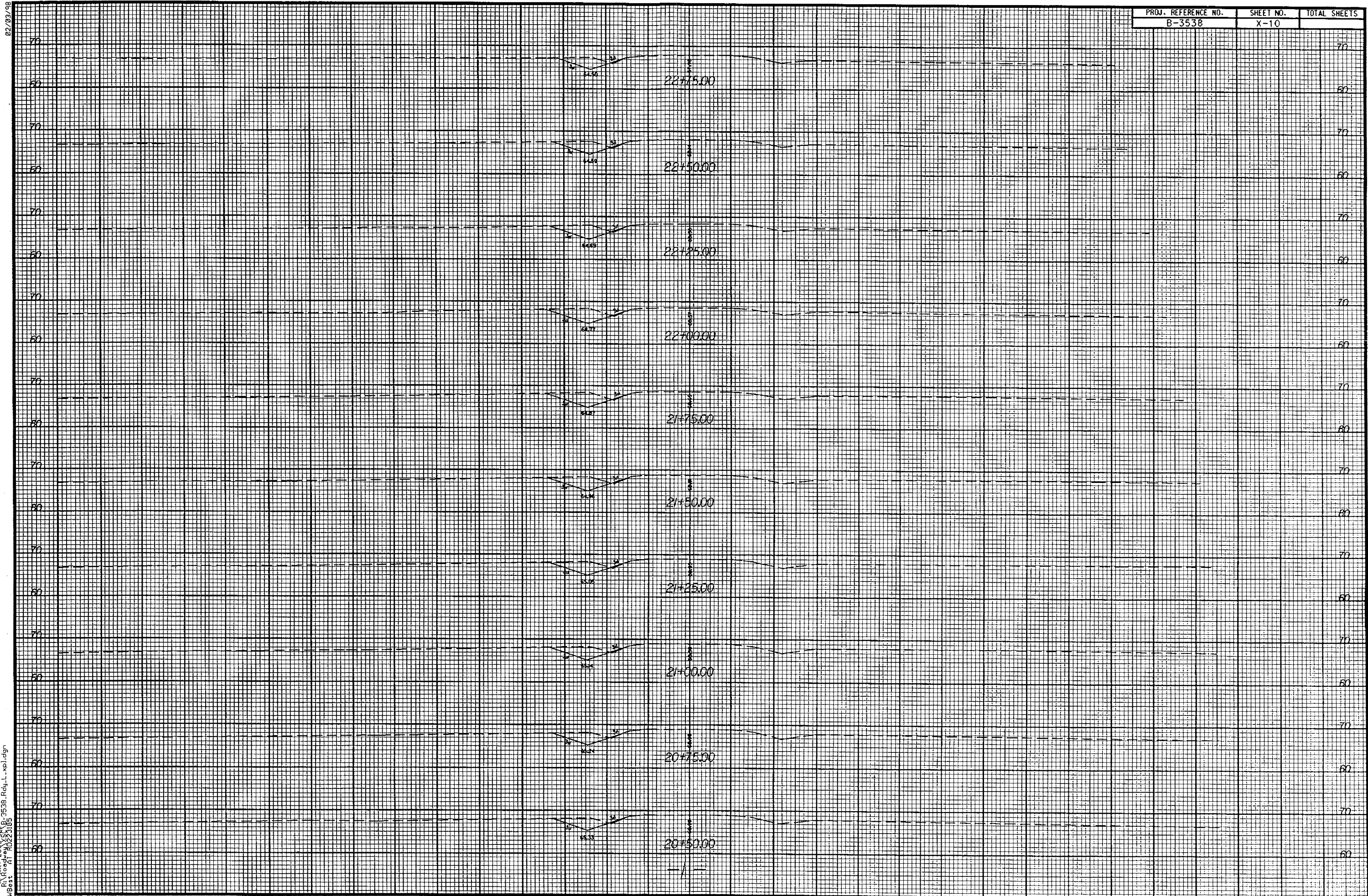
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02/03/98

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18-MAY-2005 14:2
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vbest 11/02/2005



02/03/98

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
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11/23/05

