



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

November 1, 2011

U. S. Army Corps of Engineers
Regulatory Field Office
69 Darlington Ave.
Wilmington, NC 28403

Attn: Mr. Ronnie Smith
NCDOT Coordinator

Dear Sir:

Subject: **Application for a Section 10 Permit, Individual Section 404 Permit, and Individual Section 401 Water Quality Certification** for the replacement of Bridge Nos. 12, 18 and 42 on NC 11 over Cape Fear River and overflows in Bladen County. Federal Aid Project No. BRSTP-0011 (9). State Project No. 8.1421401. TIP No. B-4028. Debit \$570.00 from WBS 33395.1.1

The North Carolina Department of Transportation (NCDOT), Division of Highways, in consultation with the Federal Highway Administration (FHWA), proposes to construct Bridge No.'s 12, 18 and 42 on NC 11 over the Cape Fear River and overflows. The project is approximately 1.3 miles in length.

The purpose of this letter is to request approval for a Section 10 Permit, Section 404 Individual Permit, and an Individual Section 401 Water Quality Certification. In addition to this cover letter and ENG Form 4345, this application package includes permit drawings, utility permit drawings, and half size roadway plans.

1.0 Purpose and Need

The purpose for this project, as identified in the Final Environmental Assessment (EA), is to improve safety due to Bridge Nos. 12, 18 and 42 having fifty-seven year old superstructures and substructure components which have experienced an increasing degree of deterioration that can no longer be addressed by maintenance activities.

2.0 Project Description

The replacement structures for Bridge No.'s 12, 18 and 42 will consist of a bridge approximately 1,260-foot long, 360-foot, and 360-foot respectively. These bridge lengths are based on preliminary design information and are set by hydraulic requirements. The bridges will be of

sufficient width to provide for two 12-foot lanes with 4-foot offsets on each side. The roadway grade of each new structure will be approximately the same as the existing grade.

3.0 Summary of Impacts

Waters of the U.S.: Proposed impacts to jurisdictional areas total 1.12 acres of permanent wetland impacts, 0.043 acre of temporary wetland impacts, 1.73 acres of permanent surface water impacts and 3,910 square feet of temporary surface water impacts.

4.0 Summary of Mitigation

The proposed construction of B-4028 will permanently impact 1.12 acres of jurisdictional riparian wetlands that will require mitigation. The unavoidable impacts to jurisdictional riparian wetlands will be offset by compensatory mitigation provided by the NC Ecosystem Enhancement Program (EEP).

5.0 Project Schedule

Construction phasing of this project will begin with utility relocations then bridge and causeway replacement. Permit drawings are attached for both portions. The let date is currently August 21, 2012. The let date, however, may advance as additional funds become available.

6.0 NEPA Document Status

The FHWA and NCDOT completed the Environmental Assessment (EA) on January 19, 2010 in compliance with the NEPA guidelines. The EA explains the purpose and need for the project, provides a description of the alternatives considered, and characterizes the social, economic, and environmental effects. The EA was approved and circulated to federal, state, and local agencies. Following the EA, a Finding of No Significant Impact (FONSI) was completed on September 23, 2010. Copies of the project documents have been provided to regulatory review agencies involved in the approval process. Additional copies will be provided upon request.

6.1 Independent Utility

B-4028 is in compliance with 23 CFR Part 771.111(f) which lists the FHWA characteristics of the independent utility of a project. The project meets the criteria for independent utility as discussed below:

- The project has logical termini and independent utility and is of sufficient length to address environmental matters on a broad scope;
- The project is usable and a reasonable expenditure of funds, even if no additional transportation improvements are made in the area; and
- The project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

7.0 Resource Status

The project is located in the Cape Fear River Basin and lies within Hydrologic Unit 03030005 (Subbasin 03-06-16). This is within the Middle Atlantic Coastal Plain ecoregion.

7.1 Wetland Delineations

A wetland delineation for the study area was performed and summarized in the 2002 Natural Resources Technical Report (NRTR). The wetlands within the study area were delineated based on the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual and a preliminary design was prepared to avoid and minimize impacts to wetlands to the maximum extent possible. Wetland delineations were completed in July 2001. This delineation was later field verified by Mr. Richard Spencer of the USACE, Wilmington District) on December 29, 2004. The study area was re-delineated in August, 2010.

7.2 Stream Delineations

Data collected for streams were derived from USGS topographic maps, the Bladen County Soil Survey (USDA, 1990), and site reconnaissance. The data included stream classifications, which were presented in the NRTR. The USACE concurred on stream classifications by Mr. Richard Spencer of the USACE, Wilmington District) on December 29, 2004.

7.3 R-3825: Characterization of Jurisdictional Sites

7.3.1 Wetlands

There are three wetland communities found within the project study area. The NRTR and EA identify two wetland communities found within the project study area: 'Bottomland Hardwood' and 'Floodplain Slough-Roadside Canal'; which encompass the borrow pits, maintained areas on the west side in the utility corridor and areas that would currently be identified as Non-Tidal Freshwater Marsh. A Riverine Swamp Forest wetland community was also identified after the field work for re-verifying the wetlands. This was classified as a Bottomland Hardwood community in the NRTR and EA. More detailed information about these wetlands can be found in the EA and the NRTR which includes figures showing the wetlands within the project area.

7.3.2 Streams

Best Usage Classifications for the jurisdictional stream is provided in the EA. 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 of the project study area. None of the streams are designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River. The Cape Fear River is not listed on the Final 2010 Section 303(d) list of impaired waters.

7.4 Impacts to Jurisdictional Resources

Impacts to jurisdictional wetlands and Cape Fear River for B-4028 are summarized below:

Permanent Impacts: Proposed permanent impacts for B-4028 include fill and mechanized clearing in wetlands totaling 1.12 acres of riparian wetlands. Proposed permanent impacts to surface waters for B-4028 are 1.73 acres.

Temporary Impacts: There will be 3,910 square feet of temporary impacts to surface waters due to bridge construction, temporary bents, barge landing, and temporary work bridge. There will be 1,850 square feet of temporary fill to riparian wetlands.

Hand-Clearing: There will be 0.85 acre of hand-clearing in jurisdictional wetlands due to project construction.

Utility Impacts: There will be 2.32 acres of hand-clearing impacts to jurisdictional wetlands as a result of utility relocation. In addition, there will be <0.01 acre of permanent fill due to transmission poles.

8.0 Protected Species

Plants and animals with federal classification 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. The United States Fish and Wildlife Service (USFWS, 2010) lists six federally protected species for Bladen County as of the September 22, 2010 listing (Table 1).

Table 1 Federally Protected Species in Bladen County

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
American alligator	<i>Alligator mississippiensis</i>	T (S/A)	Yes	N/A
Red-cockaded woodpecker	<i>Picoides borealis</i>	E	No	No Effect
Shortnose sturgeon	<i>Acipenser brevirostrum</i>	E	Yes	No Effect
American chaffseed	<i>Schwalbea americana</i>	E	No	No Effect
Pondberry	<i>Lindera melissifolia</i>	E	No	No Effect
Rough-leaved loosestrife	<i>Lysimachia asperulaefolia</i>	E	No	No Effect

Key: E= Endangered, T(S/A) = Threatened (Similarity of Appearance), MANLAA= May Affect, Not Likely to Adversely Affect

The NC Natural Heritage Program (NCNHP) database (updated May 2011) was also reviewed by NCDOT for recorded occurrences of protected species. No occurrences of federally protected species were recorded within one mile for the project study area.

8.1 Bald and Golden Eagle Protection Act (BGPA)

In the July 9, 2007 Federal Register (72:37346-37372), the bald eagle was declared recovered, and removed (de-listed) from the Federal List of Threatened and Endangered wildlife. This delisting took effect August 8, 2007. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) became the primary law protecting bald eagles. A survey was conducted on August 25, 2010 found no nests within 660 feet of the project limits; however, nesting and foraging habitat is present.

8.2 Moratorium

There is an in-water work moratorium for B-4028. According to the NC Wildlife Resources Commission (NCWRC), anadromous fish species and shortnose sturgeon are found in this portion of the Cape Fear River. An in-water work moratorium between February 15 and June 30 will apply to the Cape Fear River. This was requested in a letter from the NCWRC dated February 12, 2010. Correspondence (attached) with NMFS concurred that NCWRC's moratorium would also be adequate for the shortnose sturgeon. Additionally, the Cape Fear River is also designated as an Inland Primary Nursery Area (IPNA) in the study area. However, NCWRC stated through personal communication (Travis Wilson, Oct. 4, 2011) that NCDOT is not required to adhere to the IPNA in-water work moratorium.

9.0 Cultural Resources

The potential effect of the proposed project on cultural resources in the project area was evaluated in accordance with Section 106 of the National Historic Preservation Act of 1966, as amended. The State Historic Preservation Office (SHPO) letter, dated May 15, 2008 determined that removal of the existing structure (Bridge No. 12) will have an Adverse Affect on the historic property, which will require a Memorandum of Agreement (MOA). On August 18, 2010, NCDOT, FHWA, and SHPO completed an MOA for the replacement of Bridge No. 12. The filing of the MOA and execution of its terms completes the requirements of Section 106 of the National Preservation Act and the Advisory Council on Historic Preservation regulations with this project (see FONSI Appendix D).

An archaeological survey of the project's area of potential effect was conducted by NCDOT archaeologists to determine the project's impact on significant archaeological or historical resources. No archaeological sites were found within the project's area of potential effects. Therefore, no additional archaeological investigation is recommended for this project. The SHPO concurred with these findings in a letter dated May 15, 2002. A copy of this letter can be found in the FONSI.

10.0 FEMA Compliance

The project has been coordinated with appropriate state and local officials and the Federal Emergency Management Agency (FEMA) to assure compliance with FEMA, state, and local floodway regulations.

11.0 Mitigation Options

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and NEPA compliance stages; minimization measures were incorporated as part of the project design.

11.1 Avoidance and Minimization

All jurisdictional features were delineated, field verified and surveyed within the corridor for the NC 11 bridge replacements. Using these surveyed features, preliminary designs were adjusted to avoid and/or minimize impacts to jurisdictional areas. NCDOT employs many strategies to avoid and minimize impacts to jurisdictional areas in all of its designs. Many of these strategies have been incorporated into BMP documents that have been reviewed and approved by the resource agencies and which will be followed throughout construction. All wetland areas not affected by the project will be protected from unnecessary encroachment. Individual avoidance and minimization items are as follows:

- No staging of construction equipment or storage of construction supplies will be allowed in wetlands or near surface waters.
- The project was designed to avoid or minimize disturbance to aquatic life movements.
- NCDOT will minimize long-term water quality impacts through the use of the most recent Best Management Practices for Protection of Surface Waters, as identified in the Federal Aid Highway Program (FHPM) and North Carolina Administrative Code, Chapter 4.
- NCDOT and its contractors will not excavate, fill, or perform land clearing activities within Waters of the U.S. or any areas under the jurisdiction of the USACE, except as authorized by the USACE. To ensure that all borrow and waste activities occur on high ground, except as authorized by permit, the NCDOT shall require its contractors to identify all areas to be used to borrow material, or to dispose of dredged, fill or waste material. Documentation of the location and characteristics of all borrow and disposal sites associated with the project will be available to the USACE on request.
- The use of existing bridge during bridge construction over the Cape Fear River.
- The use of 3:1 fill slopes in jurisdictional areas where practicable.
- NCDOT's Stream Crossing Guidelines for Anadromous Fish Passage will apply to the Cape Fear River.
- No in-water work will be performed in the Cape Fear River between February 15th and June 30th, due to the likely presence of shortnose sturgeon and other anadromous fish.
- NCDOT will implement Best Management Practices for Bridge Demolition and Removal. The asphalt-wearing surface of the three bridges and bridge rails will be removed without dropping them into the water prior to bridge demolition.
- Utilizing existing road and utility corridor to relocate new utilities, thus reducing the need for a new utility corridor.
- Special Sediment Control Fence will be used where applicable.
- The use of hand clearing rather than mechanized clearing where possible.

- At the request of regulatory agencies, NCDOT will remove the existing causeway and grade the area down to natural ground elevation within the easement.

11.2 Compensation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The unavoidable impacts to jurisdictional riparian and non-riparian wetlands will be offset by compensatory mitigation provided by the EEP. A copy of the EEP acceptance letter, dated November 1, 2011, is attached.

NCDOT is not proposing mitigation for hand clearing for the following reasons:

- This activity does not create a permanent wetland conversion from forested or scrub/shrub to herbaceous.
- Hand clearing is not prohibited based on the following definition of dredged material. Title 33 U.S.C 323.2(d)(2) *The term discharge of dredged material does not include the following: (ii) Activities that involve only the cutting or removing of vegetation above the ground (e.g., mowing, rotary cutting, and chainsawing) where the activity neither substantially disturbs the root system nor involves mechanized pushing, dragging, or other similar activities that redeposit excavated soil material.*
- Additionally, NCDOT was asked to perform the N.C. Wetland Assessment Method (WAM). This has been performed; however the implementation aspect of WAM has not been put on public notice for comments. For this reason, NCDOT does not feel that WAM should be used at this time to determine the need for compensatory mitigation.

12.0 Indirect and Cumulative Effects

The Environmental Assessment and subsequent Finding of No Significant Impact for B-4028 determined that no significant impacts to natural, ecological, cultural, scenic, or community resources are expected due to the construction of the preferred alternative. Any direct impacts to resources have been avoided (where possible), minimized, and mitigated. The bridge is being replaced immediately upstream of the existing structure and is not creating any new access to adjacent land or offering any significant travel time savings. Therefore, no indirect or cumulative effects are expected due to the construction of B-4028.

13.0 Regulatory Approvals

Section 10: Application is hereby made for a USACE Section 10 Permit as required for the above-described activities.


Section 404: Application is hereby made for a USACE Individual 404 Permit as required for the above-described activities.

Section 401: We are also requesting a Section 401 Water Quality Certification from the NCDWQ. In compliance with Section 143-215.3D(e) of the NCAC, we will provide \$570.00 to act as payment for processing the Section 401 permit application previously noted in this application (see Subject line). We are providing five (5) copies of this application to the NCDWQ, for their approval.

A copy of this permit application and its distribution list will be posted on the NCDOT website at: <http://www.ncdot.org/doh/preconstruct/pe/neu/permit.html>

If you have any questions or need additional information, please contact John S. Merritt at 919-707-6140 or jsmerritt@ncdot.gov.

Sincerely,



Gregory J. Thorpe, Ph.D., Branch Manager
Project Development & Environmental Analysis

cc list:

NCDOT Permit Application Standard Distribution List.

17. DIRECTIONS TO THE SITE

The project is located on NC 11, approximately two miles north of the intersection on NC 11 and NC 87.

18. Nature of Activity (Description of project, include all features)

Proposed replacement of Bridge No. 12 over the Cape Fear River and overflow bridges No. 18 and 42. Also relocation of utilities.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

Replace structurally deficient bridges.

USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

Construction of roadway and bridge.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:

Type	Type	Type
Amount in Cubic Yards	Amount in Cubic Yards	Amount in Cubic Yards

Please see attached permit drawings

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

Acres 1.12 acres of permanent wetland impacts, 0.043 acre of temporary wetland impacts
or

Linear Feet 1.73 acres of permanent surface water impacts, 0.090 acre of temporary impacts

23. Description of Avoidance, Minimization, and Compensation (see instructions)

See attached cover letter.

24. Is Any Portion of the Work Already Complete? ☐ Yes ☒ No IF YES, DESCRIBE THE COMPLETED WORK

25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).

a. Address-

City -

State -

Zip -

b. Address-

City -

State -

Zip -

c. Address-

City -

State -

Zip -

d. Address-

City -

State -

Zip -

e. Address-

City -

State -

Zip -

26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

SIGNATURE OF APPLICANT

DATE

SIGNATURE OF AGENT

DATE

The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

STORMWATER MANAGEMENT PLAN

B-4028, State Project 33395.1.1

Date: 8/4/11

Bladen County

Hydraulics Project Engineer: R.C. Henegar, PE

ROADWAY DESCRIPTION

This project involves replacing Bridge No. 12 over Cape Fear River and Overflow Bridges No. 18 and No. 42 on NC 11 in Bladen County. The overall length of the project is 1.259 miles. The existing 22-foot paved road is a two-lane road with 2-foot grassed shoulders. Bridge No. 12 is a 1236 ft. twenty three span bridge (2@ 35; 1@ 286; 8@ 44; 1@ 41; 1@ 47; 10@ 44) with a clear roadway width of 30 feet. Bridge No. 18 is a 340ft. ten span bridge (10@ 34) with a clear roadway width of 30 feet. Bridge No. 42 is a 340ft. ten span bridge (10@ 34) with a clear roadway width of 30 feet. The project will be a two-lane section with 12 foot lanes and 4 foot grassed shoulders. The replacement structure for Bridge No. 12 will be a 1275 ft. bridge with 12 spans (1@ 115; 1@ 185; 1@ 120 Steel Girder; 9@ 95) 54" Prestressed Girder with a clear roadway width of 32 feet. The replacement structure for Bridge No. 18 will be a 375 ft. bridge with five spans (5@ 75) 45" Prestressed Girder with a clear roadway width of 32 feet. The replacement structure for Bridge No. 42 will be a 375 ft. bridge with five spans (5@ 75) 45" Prestressed Girder with a clear roadway width of 32 feet.

ENVIRONMENTAL DESCRIPTION

This project is located in the Cape Fear River Basin. There is one river crossing on this project, which has a WS-IV Sw classification. This river is not on the 303(d) list. Wetlands will be impacted by the proposed project.

BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

There will be no direct discharge into the stream. Sheet flow will be utilized as much as practicable and discharged onto grassed surfaces.

Merritt, John S

From: Fritz.Rohde@noaa.gov
Sent: Monday, July 25, 2011 3:27 PM
To: Merritt, John S
Subject: Re: RE: B-4028

I forgot the terminology. Yes, no effect.

----- Original Message -----

From: "Merritt, John S" <jsmerritt@ncdot.gov>
Date: Monday, July 25, 2011 3:17 pm
Subject: RE: B-4028
To: "Fritz.Rohde@noaa.gov" <Fritz.Rohde@noaa.gov>

> Sorry for the multiple emails. Just to insure I don't assume, the
> call for this species would be 'No Effect'? Thanks again for the help.
>
> John Merritt
>
> -----Original Message-----
> From: Fritz.Rohde@noaa.gov [
> Sent: Monday, July 25, 2011 2:49 PM
> To: Merritt, John S
> Subject: Re: B-4028
>
> Adhering to the WRC moratorium would provide protection to the
> sturgeon also. Thus no impact.
>
> Fritz Rohde
>
> ----- Original Message -----
> From: "Merritt, John S" <jsmerritt@ncdot.gov>
> Date: Monday, July 25, 2011 2:26 pm
> Subject: B-4028
> To: "Fritz.Rohde@noaa.gov" <Fritz.Rohde@noaa.gov>
>
>
> > Good afternoon,
> >
> > This is concerning replacing Bridge No. 12 over the Cape Fear
> River > and Bridge Nos. 18 and 42 over the Cape Fear River Overflow
> areas on > NC 11 in Bladen County. The NCDOT is currently adhering
> to an > anadromous fish moratorium requested by WRC (Feb. 15 - June 30).
> > NHP records indicated an occurrence upstream of the project site
> for > the federally endangered shortnose sturgeon (Acipenser
> brevirostrum), > just below lock and dam No. 1 in 1993. Also several
> occurrences are > found downstream dated 1993, with the closest
> approximately 2.5 miles > from the project area. What would the
> appropriate biological > conclusion for this federally-protected
> species be, given the current > moratorium?



November 1, 2011

Mr. Gregory J. Thorpe, Ph.D.
Manager, Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

B-4028, Replace Bridge Number 12 and 18 over the Cape Fear River and Cape Fear River overflow on NC 11, Bladen County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the compensatory riparian wetland mitigation for the subject project. Based on the information supplied by you on October 27, 2011, the impacts are located in CU 03030005 of the Cape Fear River basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Cape Fear 03030005 SICP	Stream			Wetlands			Buffer (Sq. Ft.)	
	Cold	Cool	Warm	Riparian	Non-Riparian	Coastal Marsh	Zone 1	Zone 2
Impacts (feet/acres)	0	0	0	1.12	0	0	0	0

This mitigation acceptance letter replaces the mitigation acceptance letter issued on October 27, 2011. EEP commits to implementing sufficient compensatory riparian wetland mitigation credits to offset the impacts associated with this project in accordance with the N.C. Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument dated July 28, 2010. If the above referenced impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,

Michael Ellison
EEP Deputy Director

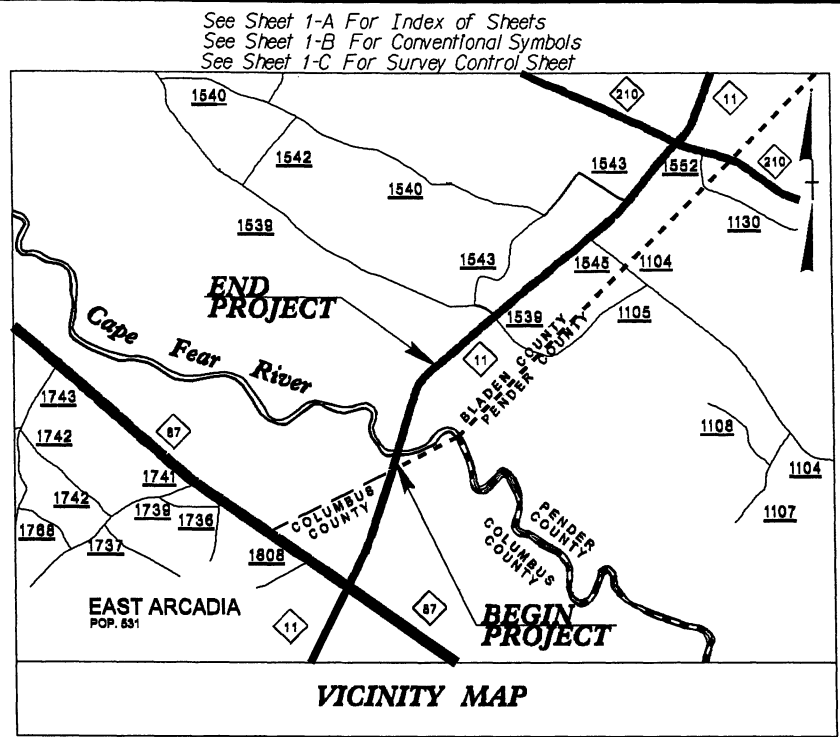
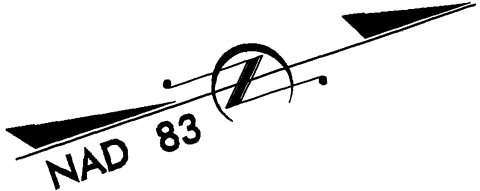
cc: Mr. Ronnie Smith, USACE – Wilmington Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: B-4028 Revised

Restoring... Enhancing... Protecting Our State



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4028	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33395.1.1	BRSTP-0011(9)	P.E.	
33395.3.1	BRSTP-0011(9)	RW & UTIL.	

Permit Drawing
Sheet 1 of 19

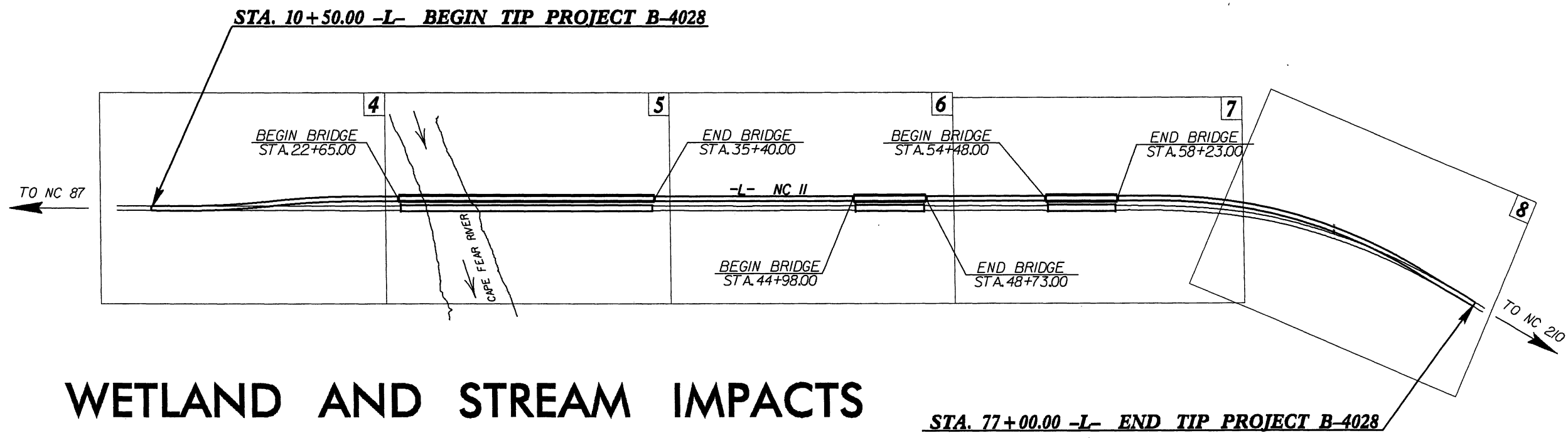


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
BLADEN COUNTY

LOCATION: BRIDGE NOS. 12, 18 AND 42 OVER CAPE FEAR
RIVER AND OVERFLOW ON NC 11

TYPE OF WORK: GRADING, DRAINAGE, PAVING, GUARDRAIL
AND STRUCTURES

TIP PROJECT: B-4028



WETLAND AND STREAM IMPACTS

NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

NOTE: CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

<p>GRAPHIC SCALES</p> <p>50 25 0 50 100 PLANS</p> <p>50 25 0 50 100 PROFILE (HORIZONTAL)</p> <p>10 5 0 10 20 PROFILE (VERTICAL)</p>	<p>DESIGN DATA</p> <p>ADT 2012 = 3663 ADT 2032 = 6478 DHV = 11 % D = 55 % T = 34 % * V = 60 MPH * TTST 28% DUAL 6% FUNC. CLASS=MAJOR COLLECTOR REGIONAL TIER</p>	<p>PROJECT LENGTH</p> <p>LENGTH ROADWAY TIP PROJECT B-4028 = 0.875 MILES LENGTH STRUCTURES TIP PROJECT B-4028 = 0.384 MILES TOTAL LENGTH TIP PROJECT B-4028 = 1.259 MILES</p>	<p>Prepared in the Office of: DIVISION OF HIGHWAYS 1000 Birch Ridge Dr., Raleigh NC, 27610</p> <p>2006 STANDARD SPECIFICATIONS</p> <p>RIGHT OF WAY DATE: OCTOBER 22, 2010</p> <p>LETTING DATE: AUGUST 21, 2012</p> <p>BRENDA MOORE, P.E. PROJECT ENGINEER</p> <p>VACANT PROJECT DESIGN ENGINEER</p>	<p>HYDRAULICS ENGINEER</p> <p>SIGNATURE: _____ P.E.</p> <p>ROADWAY DESIGN ENGINEER</p> <p>SIGNATURE: _____ P.E.</p>	<p>DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA</p> <p>STATE HIGHWAY DESIGN ENGINEER</p>
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CONTRACT: \$\$\$\$\$\$SYTIME\$\$\$\$\$\$DGN\$\$\$\$\$\$USERNAME\$\$\$\$\$\$

8/17/99
REVISIONS
08/03/11 R/W REVISION (PJS) - THE PUE WAS ADJUSTED TO THE LEFT ON PARCEL 1 (J.L. BIBBS AND WIFE ROSA) AND ON PARCEL 22 (CORBETT INDUSTRIES, INC.)

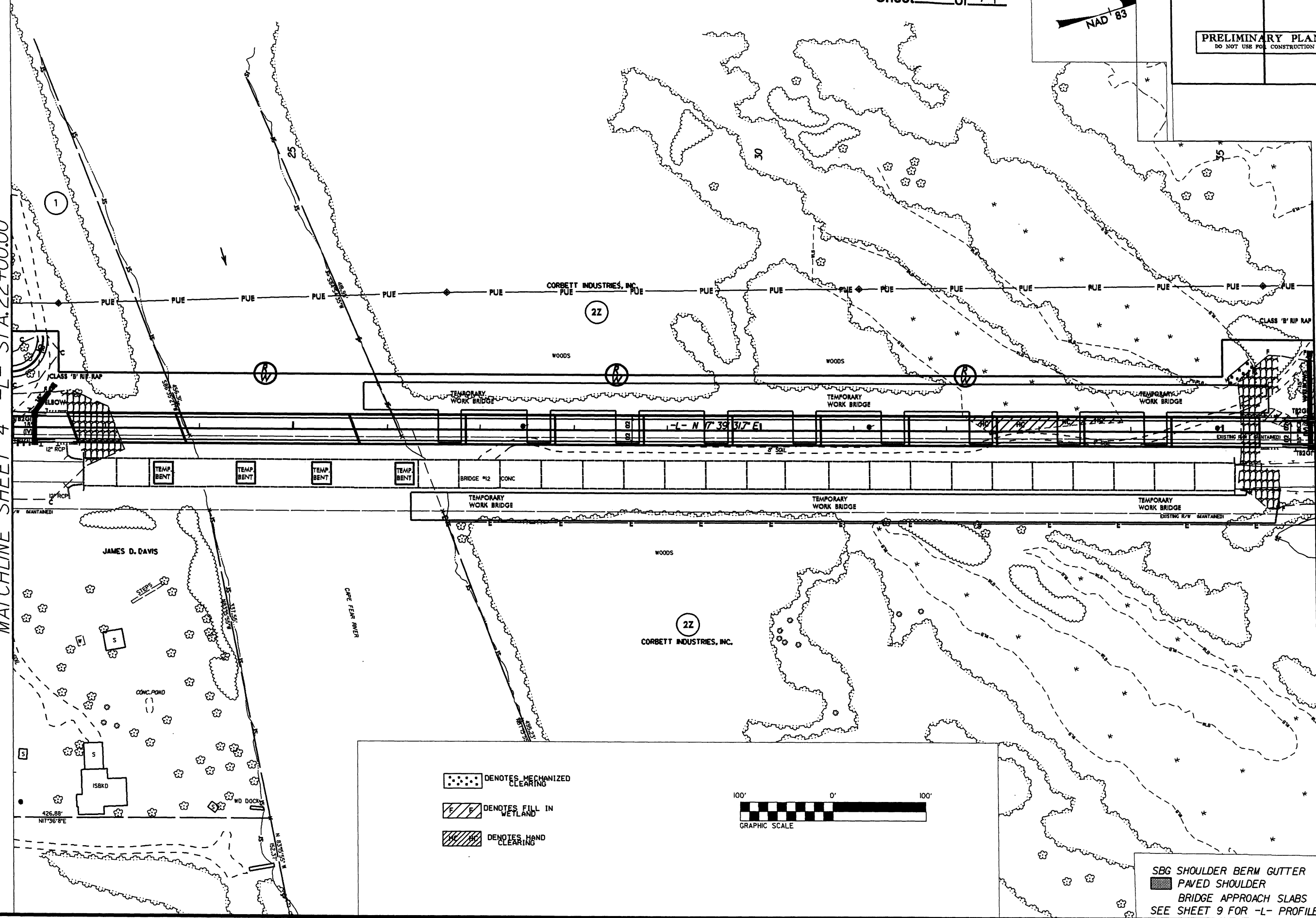
Permit Drawing
Sheet 2 of 19



PROJECT REFERENCE NO. B-4028		SHEET NO. 5	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		DO NOT USE FOR CONSTRUCTION	

MATCHLINE SHEET 4 -L- STA. 22+00.00

MATCHLINE SHEET 6 -L- STA. 36+00.00



8/17/99

REVISIONS
08/03/11 R/W REVISION (PJS) - THE PUE WAS ADJUSTED TO THE LEFT ON PARCEL 1 (J.L.BIBBS AND WIFE ROSA) AND ON PARCEL 22 (CORBETT INDUSTRIES, INC.)

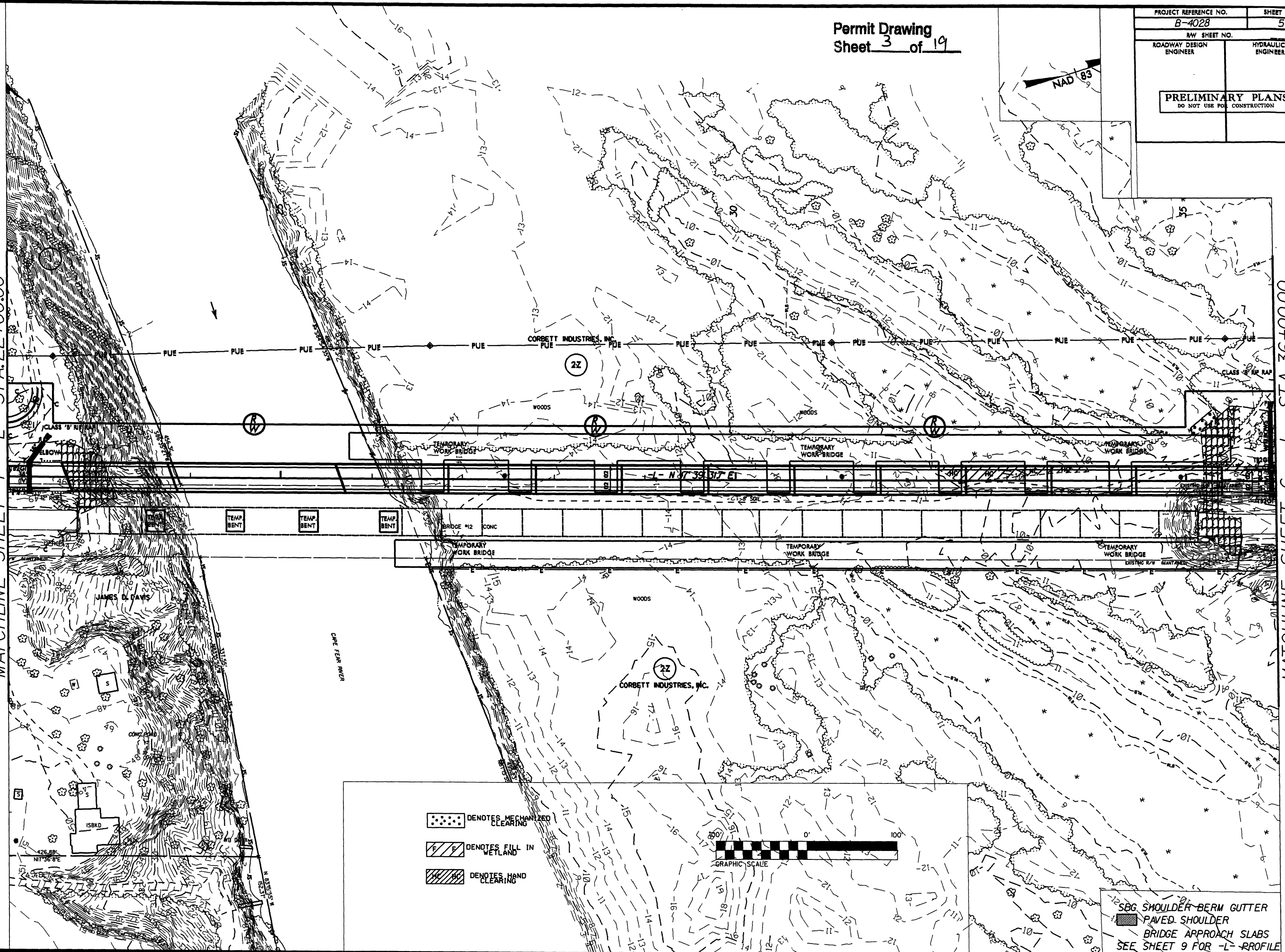
Permit Drawing
Sheet 3 of 19

PROJECT REFERENCE NO. B-4028		SHEET NO. 5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

NAD 83

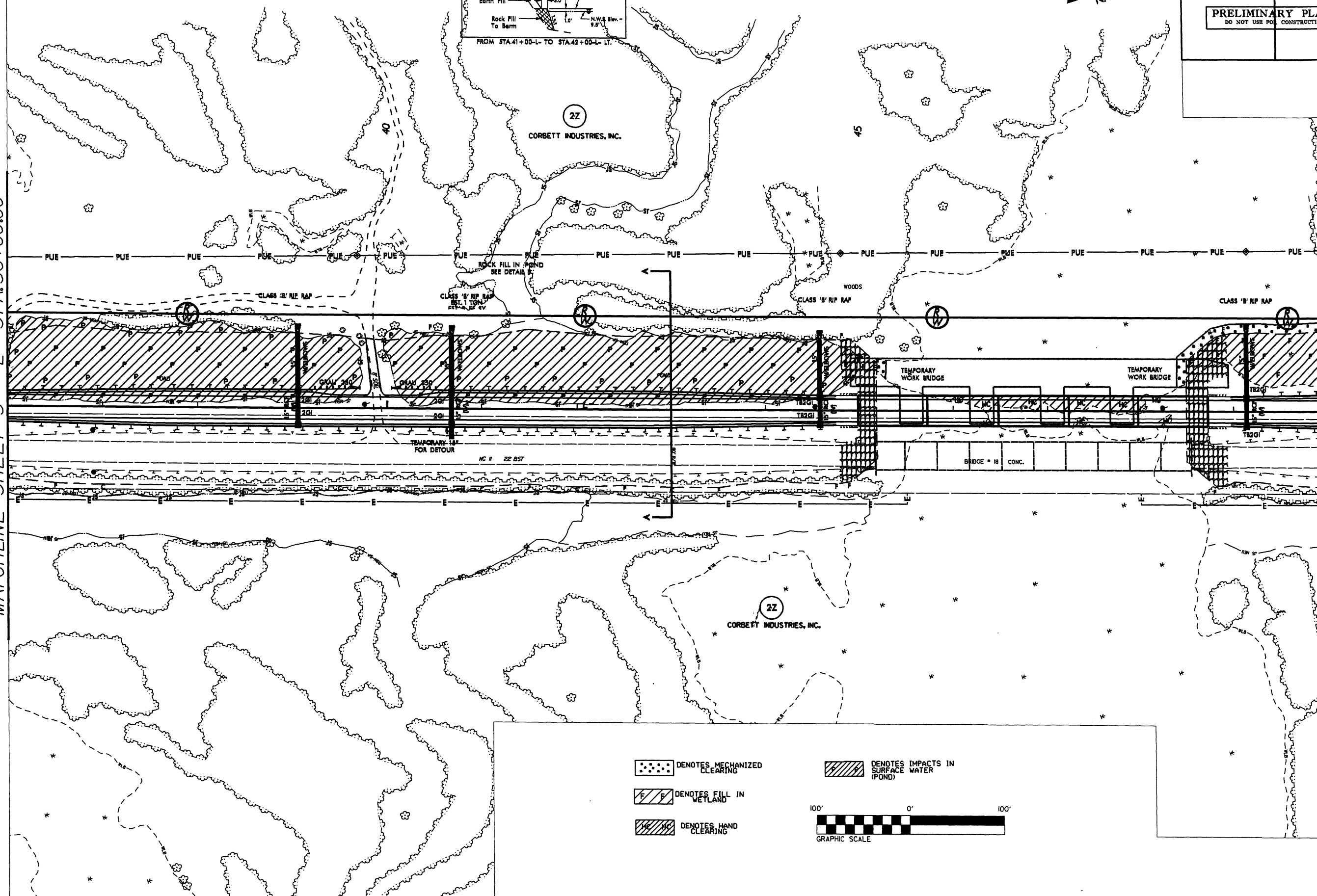
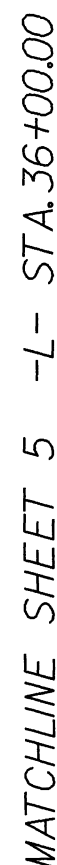
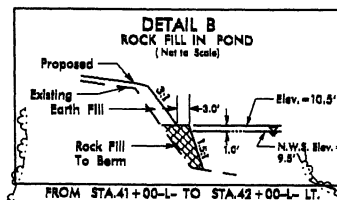
MATCHLINE SHEET 4 -L- STA. 22+00.00

MATCHLINE SHEET 6 -L- STA. 36+00.00




Permit Drawing
Sheet 4 of 19


NAD 82



08/03/11 R/W REVISION (P/S) - THE PUE WAS ADJUSTED TO THE LEFT ON PARCEL 22 (CORBETT INDUSTRIES, INC.).


 DENOTES IMPACTS IN SURFACE WATER (POND)

100' 0'


 GRAPHIC SCALE

8/17/99

REVISIONS
08/03/11 R/W REVISION (P/S) - THE PUE WAS ADJUSTED TO THE LEFT ON PARCEL 22 (CORBETT INDUSTRIES, INC.)

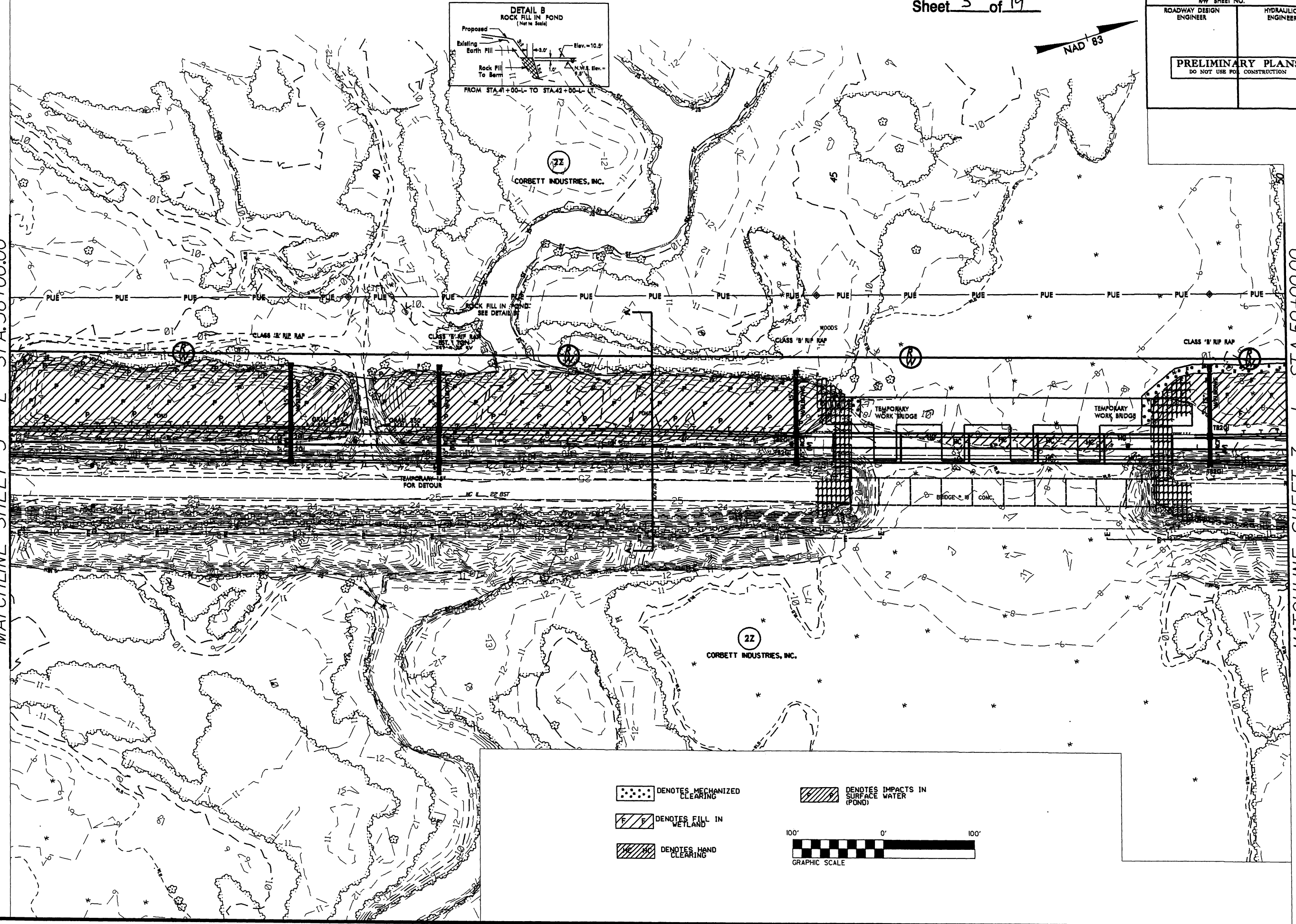
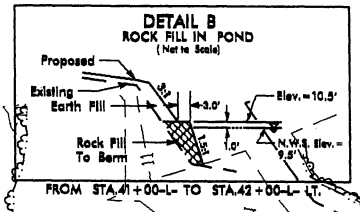
Permit Drawing
Sheet 5 of 19

PROJECT REFERENCE NO. B-4028		SHEET NO. 6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			



MATCHLINE SHEET 5 -L- STA.36+00.00

MATCHLINE SHEET 7 -L- STA.50+00.00



DENOTES MECHANIZED CLEARING	DENOTES IMPACTS IN SURFACE WATER (POND)
DENOTES FILL IN WETLAND	
DENOTES HAND CLEARING	

100' 0' 100'
GRAPHIC SCALE

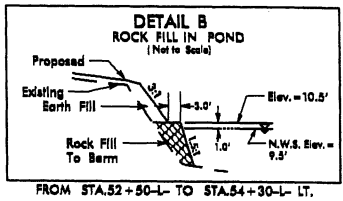
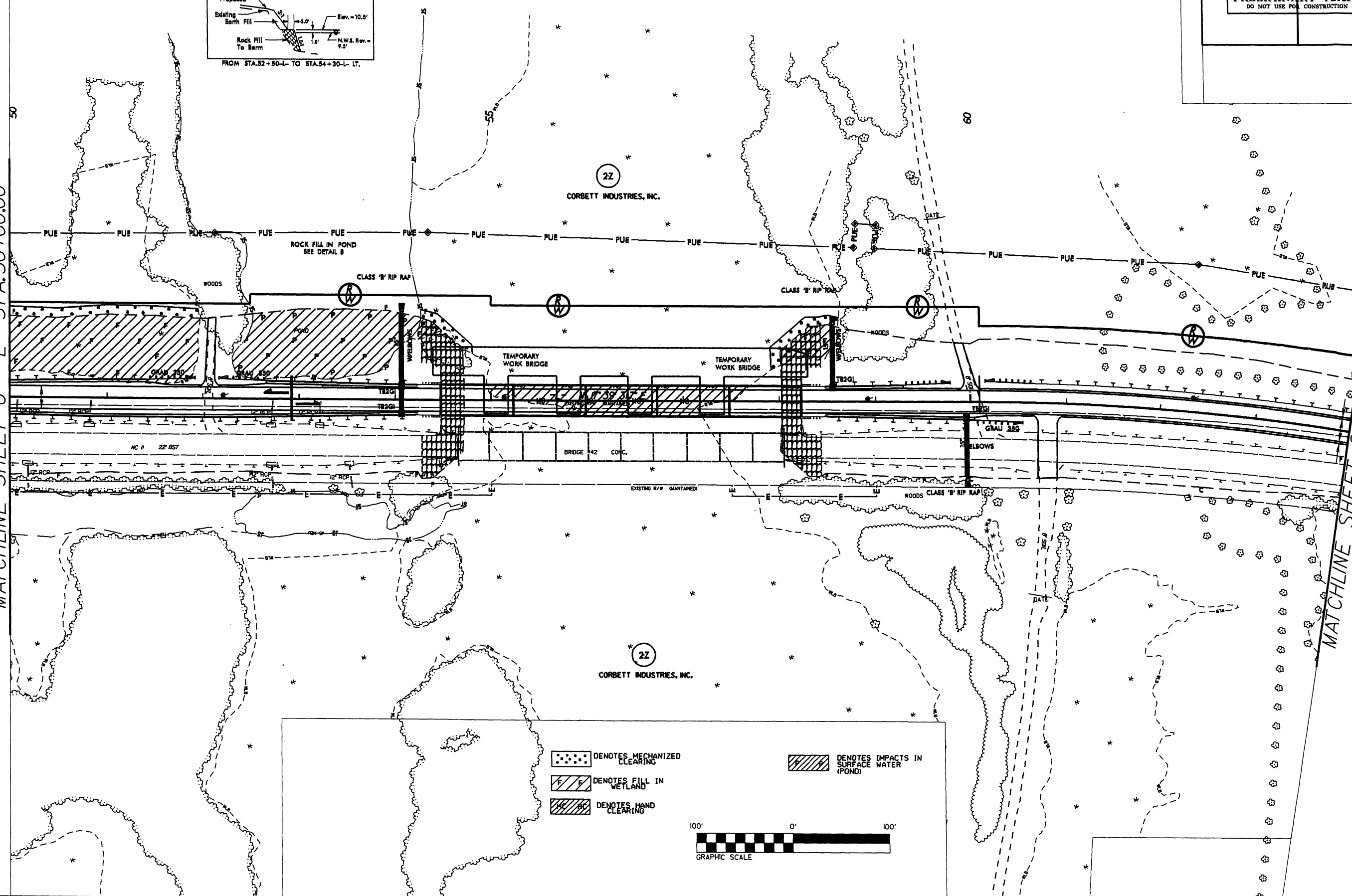
8/17/99

08/03/11 R/W REVISION (PJS) - THE PUE WAS ADJUSTED TO THE LEFT ON PARCEL 22 (CORBETT INDUSTRIES, INC.).

REVISIONS

SYSTEMS ENGINEERING
DESIGN
CONSTRUCTION
MANAGEMENT

MATCHLINE SHEET 6 -L- STA.50+00.00

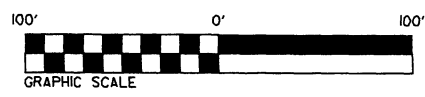


Permit Drawing
Sheet 6 of 19



PROJECT REFERENCE NO. <i>B-4028</i>		SHEET NO. <i>7</i>	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<div><div>PRELIMINARY PLANS</div><div>DO NOT USE FOR CONSTRUCTION</div></div>			

- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING

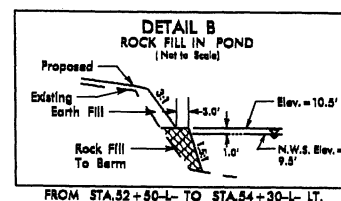


DENOTES IMPACTS IN SURFACE WATER (POND)

MATCHLINE SHEET 8 -L- STA.64+00.00




Permit Drawing
Sheet 7 of 19

NAD-8

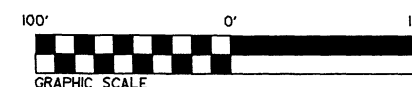


MATCHLINE SHEET 6 -L- STA. 50+00.00

08/03/11 R/W REVISION (P/S) - THE PUE WAS ADJUSTED TO THE LEFT ON PARCEL 22 (CORBETT INDUSTRIES, INC.).

 DENOTES MECHANIZED CLEARING
 DENOTES FILL IN WETLAND
 DENOTES HAND CLEARING

 DENOTES IMPACTS IN
SURFACE WATER
(POND)

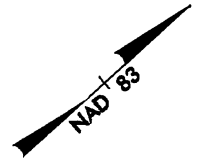


8/17/99

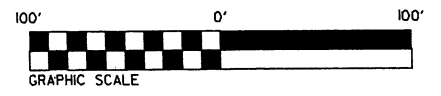
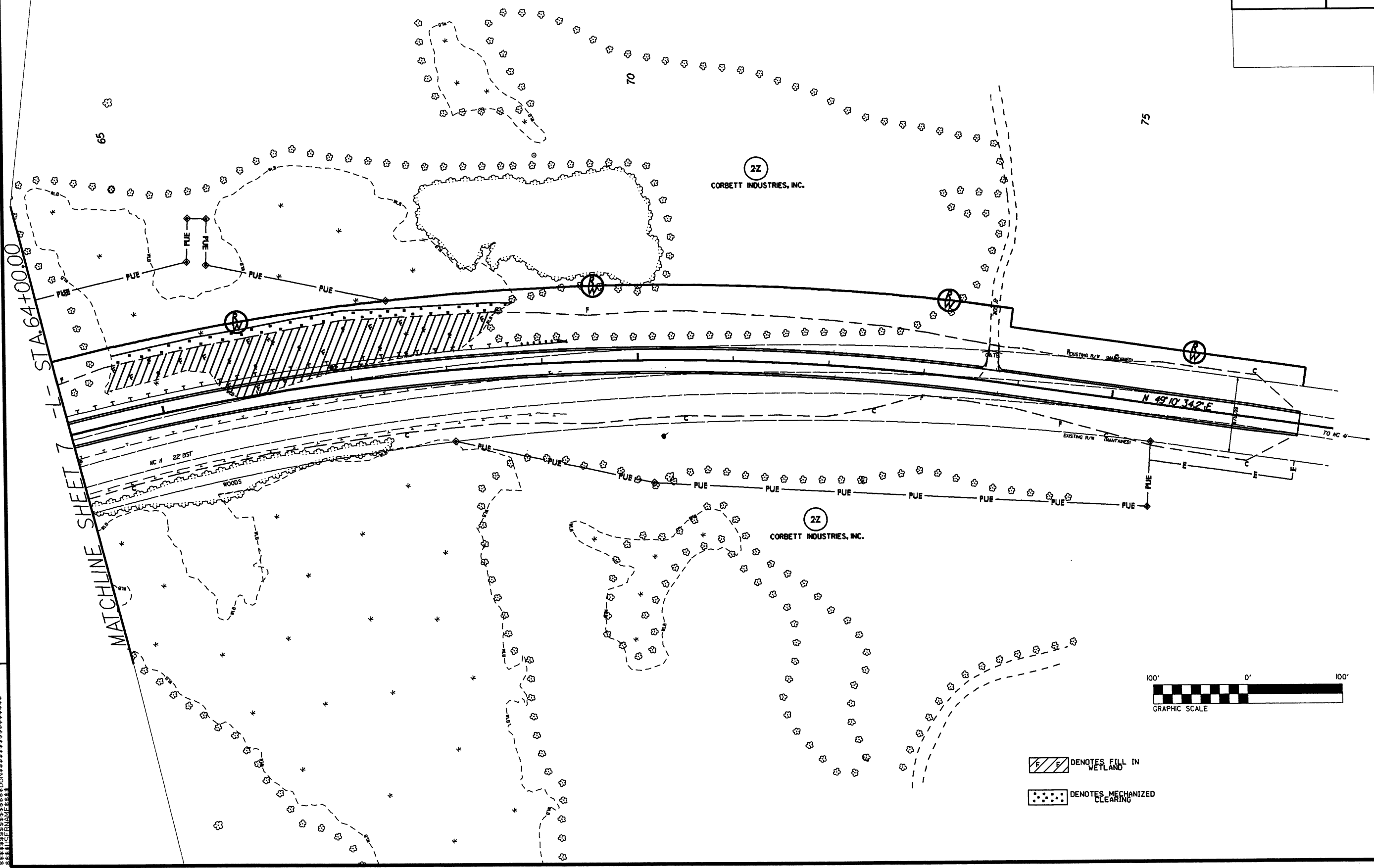
REVISIONS
08/03/11 R/W REVISION (PJS) - THE PUE LEFT OF -L- WAS ADJUSTED ON PARCEL 2Z (CORBETT INDUSTRIES, INC.).

SYSTEMS
DGN
USER

Permit Drawing
Sheet 8 of 19

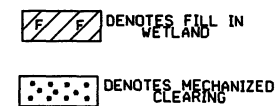


PROJECT REFERENCE NO. B-4028	SHEET NO. 8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



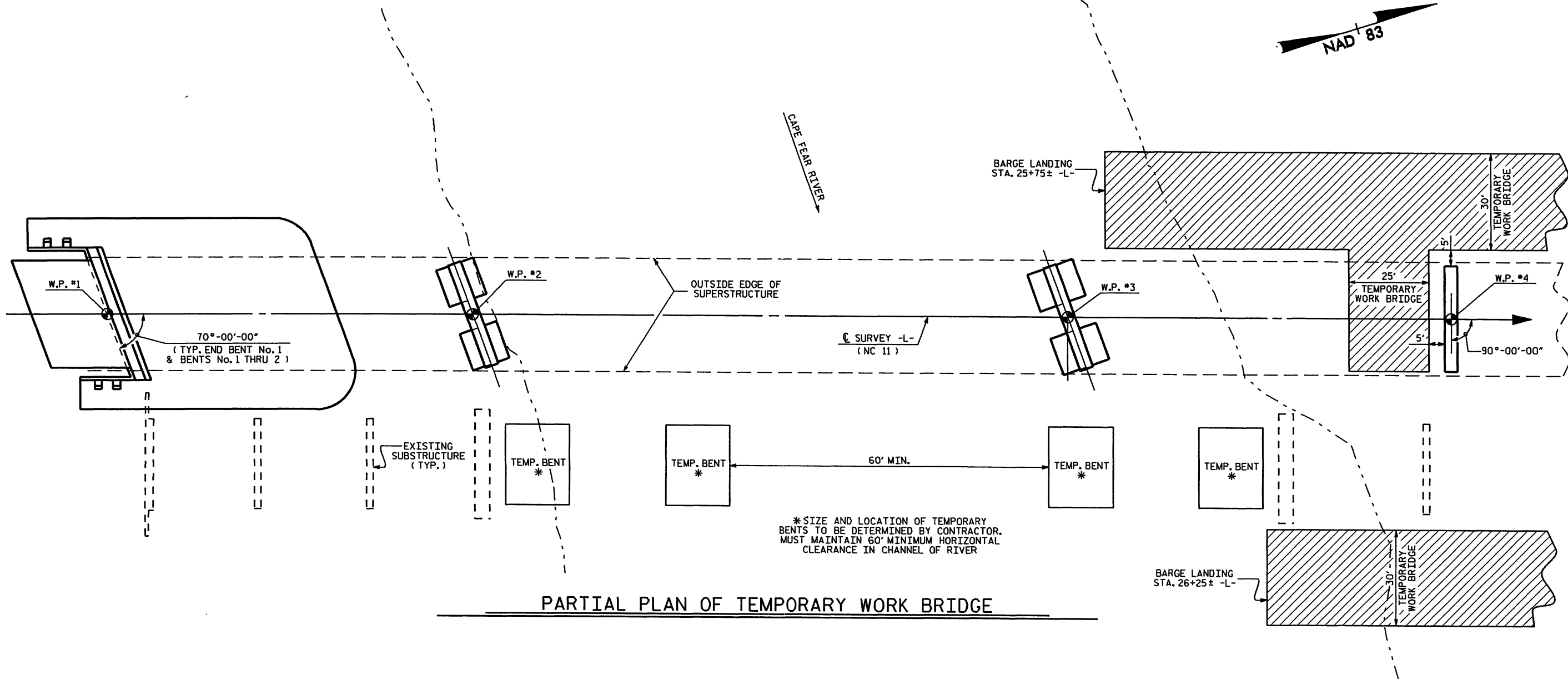
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING

NAD 83



REVISIONS

SYTIME \$\$\$ DGN \$\$\$



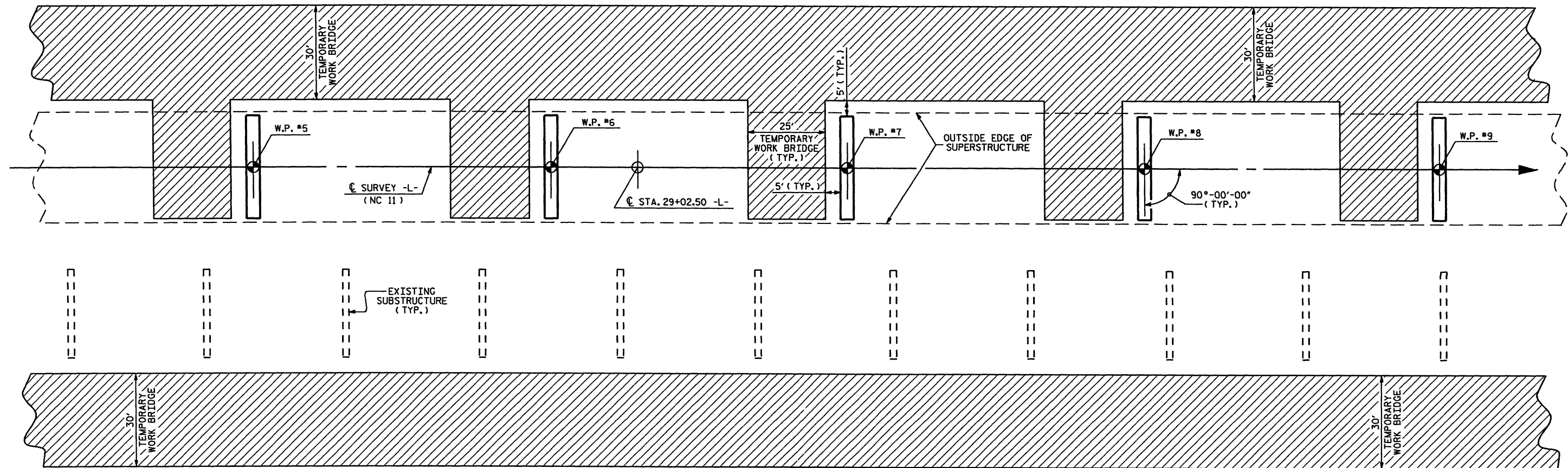
PARTIAL PLAN OF TEMPORARY WORK BRIDGE

PROJECT NO. B-4028
BLADEN COUNTY
STATION: 29+02.50 -L-

SHEET 1 OF 3

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH					
TEMPORARY ACCESS DETAILS					
REVISIONS					
NO.	BY	DATE	NO.	BY	DATE
1			3		
2			4		
SHEET NO.					S-?
TOTAL SHEETS					??

DRAWN BY : MIKE BRITT DATE : 8-30-11
CHECKED BY : DATE :



PARTIAL PLAN OF TEMPORARY WORK BRIDGE

PROJECT NO. B-4028
BLADEN COUNTY
STATION: 29+02.50 -L-

SHEET 2 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

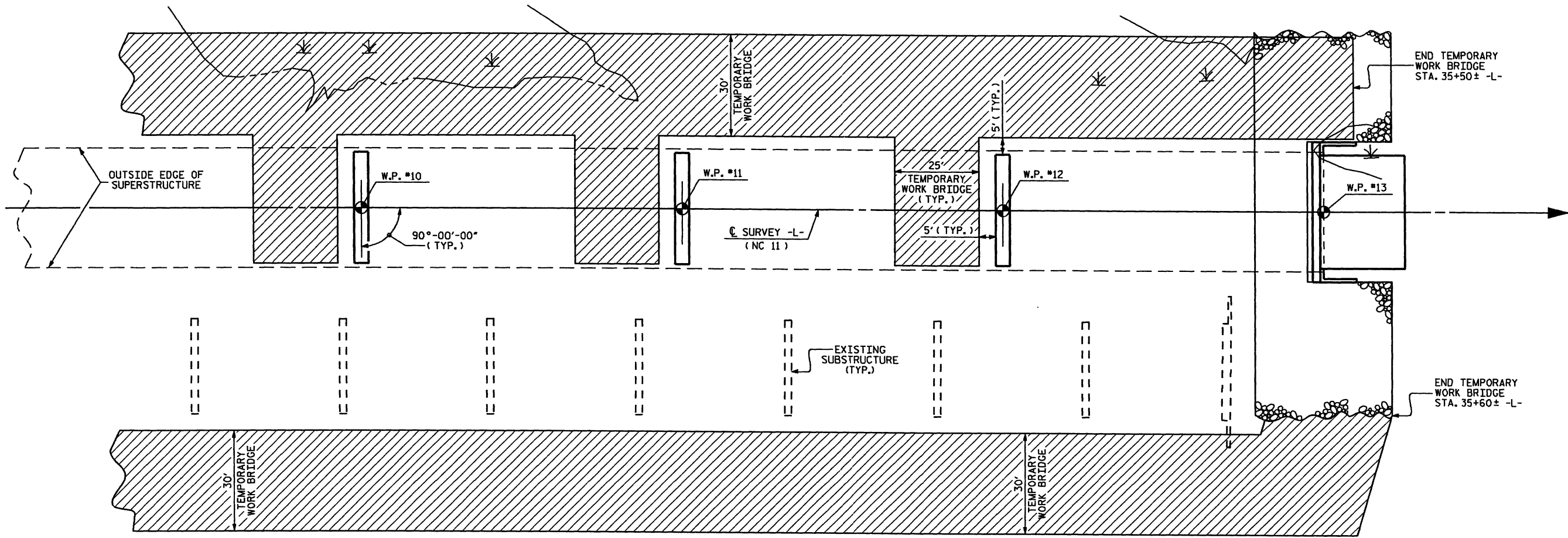
TEMPORARY ACCESS
DETAILS

DRAWN BY : MIKE BRITT DATE : 8-30-11
CHECKED BY : _____ DATE : _____

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mbt11

REVISIONS						SHEET NO. 5-?
NO.	BY	DATE	NO.	BY	DATE	
1			3			TOTAL SHEETS
2			4			??

STR. #1



PARTIAL PLAN OF TEMPORARY WORK BRIDGE

PROJECT NO. B-4028
BLADEN COUNTY
STATION: 29+02.50 -L-

SHEET 3 OF 3

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

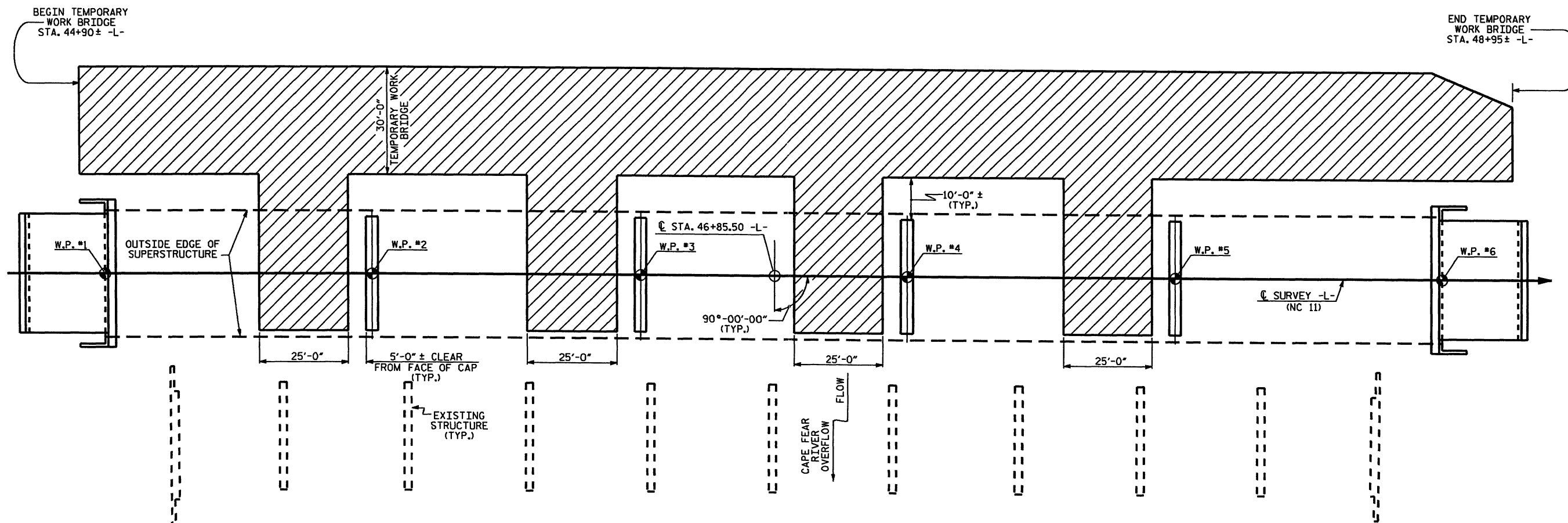
TEMPORARY ACCESS
DETAILS

DRAWN BY : MIKE BRITT DATE : 8-30-11
CHECKED BY : DATE :

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mbritt

REVISIONS						SHEET NO. S-?
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS ??
2			4			

STR. #1



PLAN OF TEMPORARY WORK BRIDGE



PROJECT NO. B-4028
BLADEN COUNTY
 STATION: 46+85.50 -L-



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

TEMPORARY ACCESS DETAILS

REVISIONS						SHEET NO.
NO.	BY:	DATE:	NO.	BY:	DATE:	
1			3			TOTAL SHEETS
2			4			

DRAWN BY : S. B. WILLIAMS DATE : 8/11
CHECKED BY : _____ DATE : _____

30-AUG-2011 08:04
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abw\lms

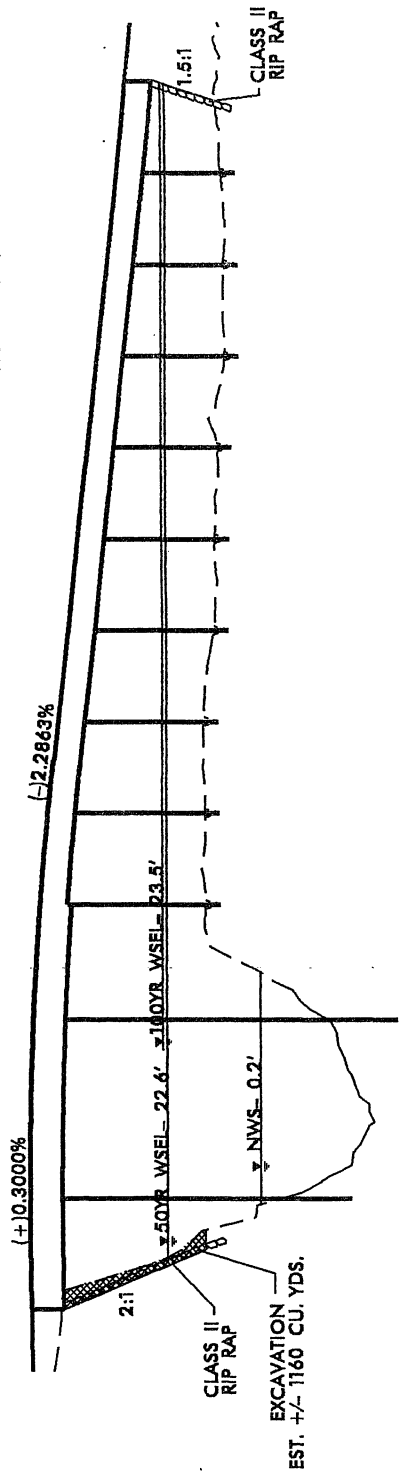
STR. #2

-L-

STA. 29+02.5 -L-
1@115'; 1@185'; 1@120' STEEL GIRDERS; 9@95'
54' PRESTRESSED GIRDERS O.A.L.- 1275'
SKEW- 90'
ELEV- 45.79'

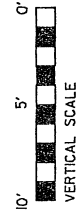
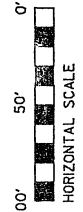
PI=25+85.00
EL=53.05'
VC=500'

NOTE: USE STANDARD DECK DRAINS FROM BEGIN BRIDGE
TO STA. 23+47 -L- LT. AND RT. TO END BRIDGE
LT. AND RT. TO END BRIDGE



22+00 24+00 26+00 28+00 30+00 32+00 34+00 36+00

PROFILE



Permit Drawing
Sheet 15 of 19

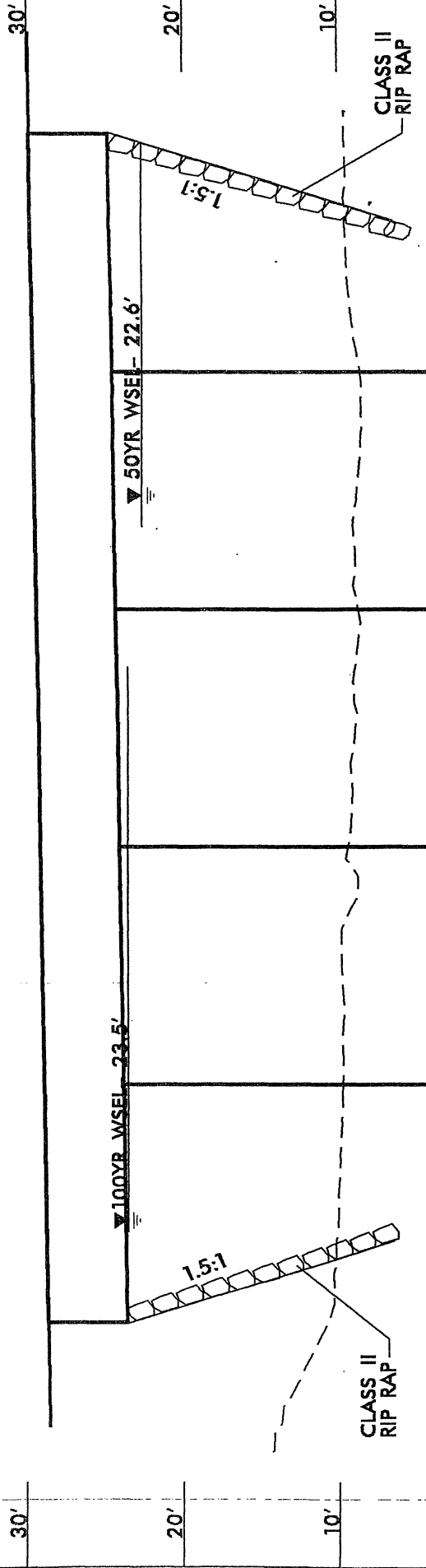
NCDOT

DIVISION OF HIGHWAYS
BLADEN COUNTY
PROJECT: 33395.1.1 (B-4028)

REPLACE BRG[#] 12, 18, AND 42
OVER CAPE FEAR RIVER ON NC 11

SHEET OF 7/27/11

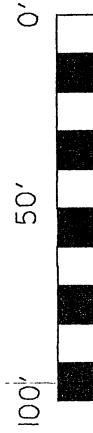
STA. 46+85.5 -L-
 5@ 75'; 45" PRESTRESSED GIRDERS (O.A.L- 375')
 ELEV.- 29.24'
 SKEW- 90°



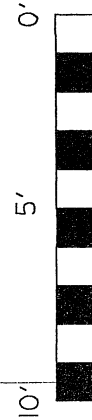
45+00 -L- 46+00 -L- 47+00 -L- 48+00 -L-

PROFILE

OVERFLOW BRIDGE



HORIZONTAL SCALE



VERTICAL SCALE

NCDOT

DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 33395.1.1 (B-4028)

REPLACE BRG[#] 12, 18, AND 42 OVER
 CAPE FEAR RIVER ON NC 11

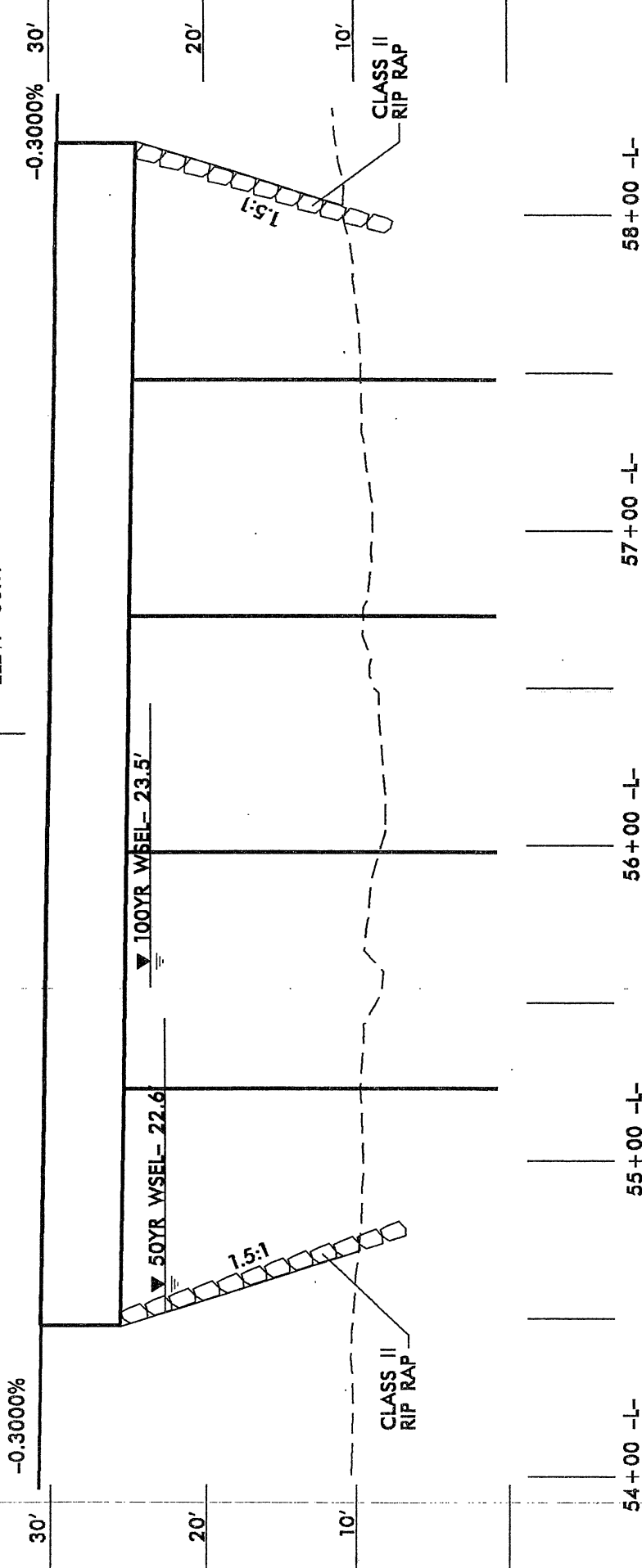
SHEET

OF

7 / 27 / 11

Permit Drawing
 Sheet 16 of 19

STA. 56+35.5 -L-
 5@ 75'; 45" PRESTRESSED GIRDER (O.A.L.- 375')
 SKEW- 90°
 ELEV.- 30.11'

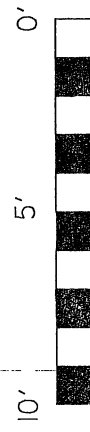


PROFILE

OVERFLOW BRIDGE



HORIZONTAL SCALE



VERTICAL SCALE

Permit Drawing
 Sheet 17 of 19

NCDOT

DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 33395.1.1 (B-4028)

REPLACE BRG[#] 12, 18, AND 42 OVER
 CAPE FEAR RIVER ON NC 11

SHEET

OF

7/27/11

PROPERTY OWNERS
NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
2Z	CORBETT INDUSTRIES INC	P.O. BOX 210 WILMINGTON, N.C. 28402

Permit Drawing
Sheet 18 of 19

NCDOT

DIVISION OF HIGHWAYS

BLADEN COUNTY

PROJECT: 33395.1.1 (B-4028)

REPLACE BRG[#] 12, 18, AND 42
OVER CAPE FEAR RIVER ON NC 11

SHEET

OF

8 / 4 / 11

WETLAND PERMIT IMPACT SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS			
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)
	22+65-L - to 69+00-L-	(1236' Bridge)	0.89			0.23	0.27	1.73			
		(375' Bridge)									
		(375' Bridge)									
		Work Bridges					0.58				

Permit Drawing
Sheet 19 of 19

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

BLADEN COUNTY
WBS - 33395.1.1 (B-4028)

ATN Revised 3/31/05

SHEET

10/6/2011

B-4028 NEU Narrative**Utility Owners:**

- **Power:** Four County EMC – (contact: Edward Pope 910-259-1854)
- **Telephone:** AT&T (contact: Shannon Coston 910-341-1623)
- **Telecommunications:** BTI (contact: Scott Powell 919-600-4934)

General Utility Relocation:

All utility lines inside the project limits will be adjusted as necessary or relocated away from construction. The power, telephone and telecommunications will be relocated prior to the letting.

Existing Utilities:

- **Power:** the existing Four County EMC aerial power transmission pole lines run along northwest side of NC 11.
- **Telephone:** the existing AT &T Telephone lines (fiber optic and copper cables) are underground and aerial along northwest side of NC 11.
- **Telecommunications:** the existing BTI Telecommunications fiber optic lines are underground along southeast side of NC 11.

Proposed Utility Relocation:

- **Power:** Four County EMC will abandon all aerial power transmission pole lines after a new aerial power transmission pole line is installed along the proposed R/W line on the northwest side of NC 11 then crosses Line –L- at Sta. 67+53 and continues on the south east side of NC 11 to the end of the project.
- **Telephone:** AT&T will abandon all aerial and underground facilities and install new fiber optic cables on the west side of NC 11. The proposed underground conduits will be installed by directional bore across the Cape Fear River and wetlands.
- **Telecommunications:** BTI will abandon all underground facilities and install new fiber optic cables with AT&T on the west side of NC 11. The proposed underground conduits will be installed by directional bore across the Cape Fear River and wetlands.
-

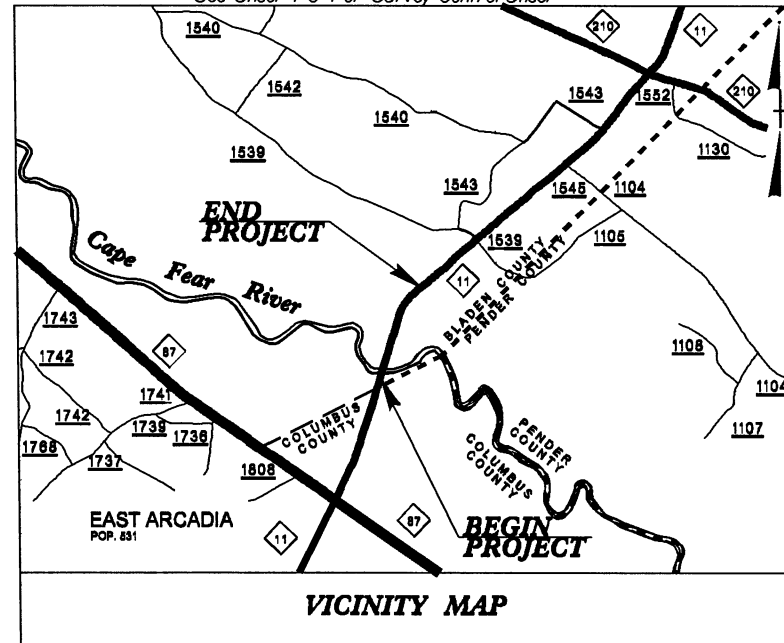
09/08/99

25-OCT-2010 07:35
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\$\$\$\$\$USERNAME\$\$\$\$\$

TIP PROJECT: B-4028

CONTRACT:

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



STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

BLADEN COUNTY

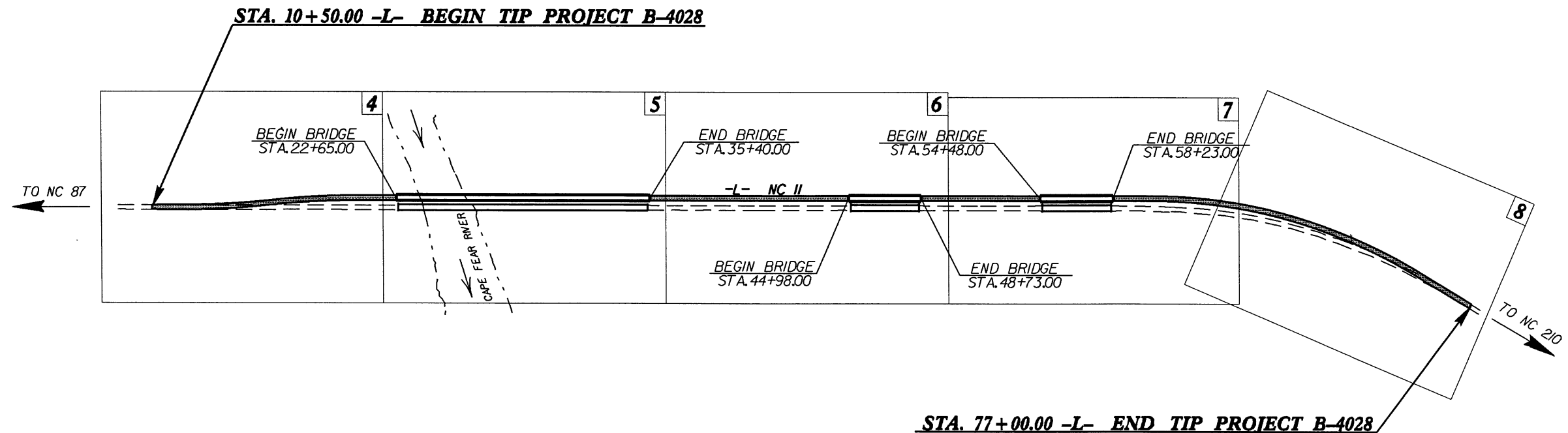
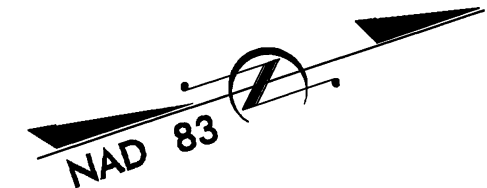
LOCATION: BRIDGE NOS. 12, 18 AND 42 OVER CAPE FEAR
RIVER AND OVERFLOW ON NC 11

TYPE OF WORK: RELOCATE AERIAL TRANSMISSION POWER POLE LINES
AND U/G TELEPHONE FIBER OPTIC CABLES TO THE WEST
SIDE

NEU UTILITIES RELOCATION PERMIT PLANS 10 /18 /11

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-4028	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33395.1.1	BRSTP-0011(9)	P.E.	
33395.3.1	BRSTP-0011(9)	R/W & UTIL.	

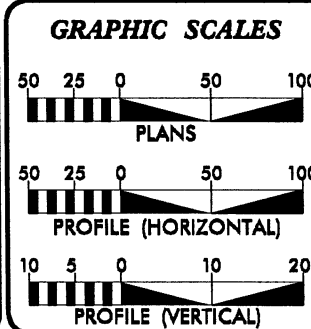
Utility Permit Drawing
Sheet 1 of 7



NOTE: THIS PROJECT IS NOT WITHIN ANY MUNICIPAL BOUNDARIES.

NOTE: CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA	
ADT 2012 =	3663
ADT 2032 =	6478
DHV =	11 %
D =	55 %
T =	34 % *
V =	60 MPH
* TTST 28% DUAL 6%	
FUNC. CLASS=MAJOR COLLECTOR	
REGIONAL TIER	

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT B-4028 =	0.875 MILES
LENGTH STRUCTURES TIP PROJECT B-4028 =	0.384 MILES
TOTAL LENGTH TIP PROJECT B-4028 =	1.259 MILES

Prepared in the Office of: DIVISION OF HIGHWAYS 1000 Birch Ridge Dr., Raleigh NC, 27610	
2004 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE:	BRENDA MOORE, P.E. PROJECT ENGINEER
LETTING DATE: AUGUST 21, 2012	JOYCE DREW PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER	
SIGNATURE:	P.E.
ROADWAY DESIGN ENGINEER	
SIGNATURE:	P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA	
STATE HIGHWAY DESIGN ENGINEER	

DETAIL A
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground

4:1 Slope

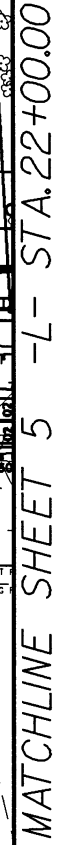
Front Ditch Slope

D

Min. D = Var. Ft.

FROM STA.12+00 — LT. TO STA.14+50 — LT.

NAD 83



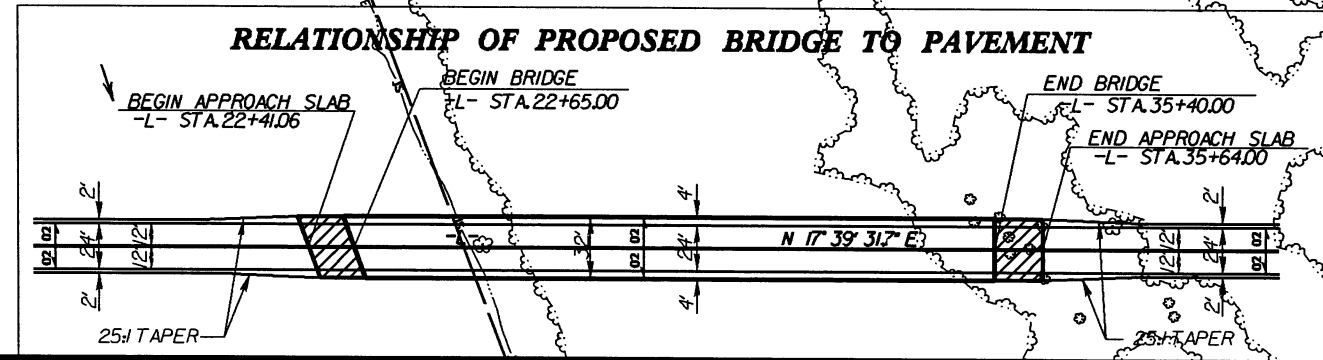
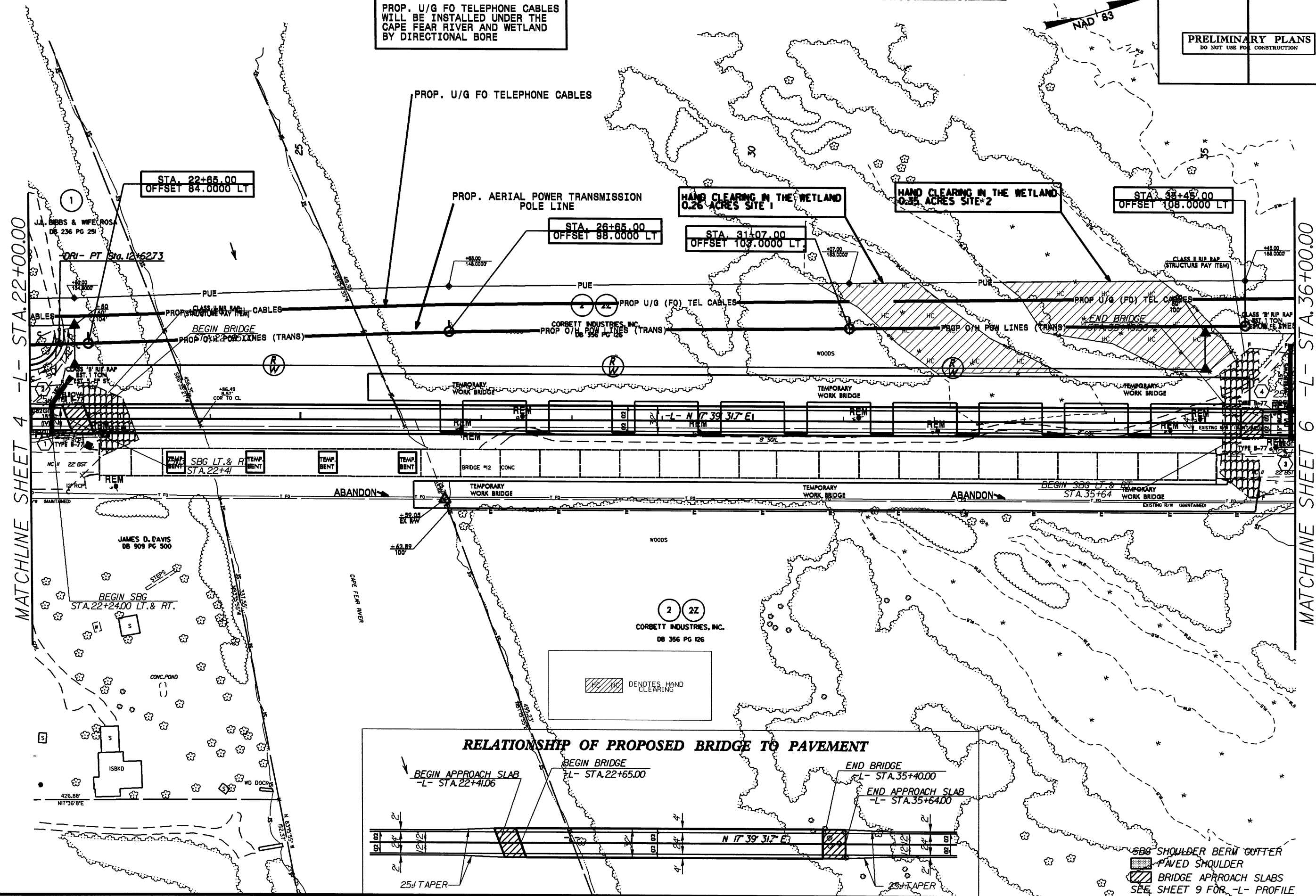
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 c:\c11\CPN\AME\44

8/17/99

Utility Permit Drawing
Sheet 3 of 7

PROJECT REFERENCE NO.	SHEET NO.
B-4028	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

PROP. U/G FO TELEPHONE CABLES
WILL BE INSTALLED UNDER THE
CAPE FEAR RIVER AND WETLAND
BY DIRECTIONAL BORE



03/25/11 R/W REVISION (PJS) - THE PUE WAS CHANGED TO R/W FROM -L- STA. 20+00.00 TO STA. 22+50.00 LT. DUE TO RECONNECTION OF A DRIVE FOR PARCEL 1 (J.L. BIBBS & WIFE ROSA).

25 OCT 2010 04:37 U:\A\Proj\NEW Permit Plans\64028_rdy_psh5.dgn

MATCHLINE SHEET 6 -L- STA. 36+00.00

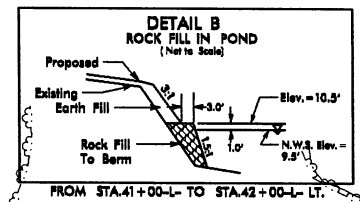
MATCHLINE SHEET 4 -L- STA. 22+00.00

PROJECT REFERENCE NO.	SHEET NO.
B-4028	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Utility Permit Drawing Sheet 4 of 7



PROP. U/G FO TELEPHONE CABLES
WILL BE INSTALLED UNDER THE
CAPE FEAR RIVER AND WETLAND
BY DIRECTIONAL BORE



HAND CLEARING IN THE WETLAND
0.01 ACRES SITE 3

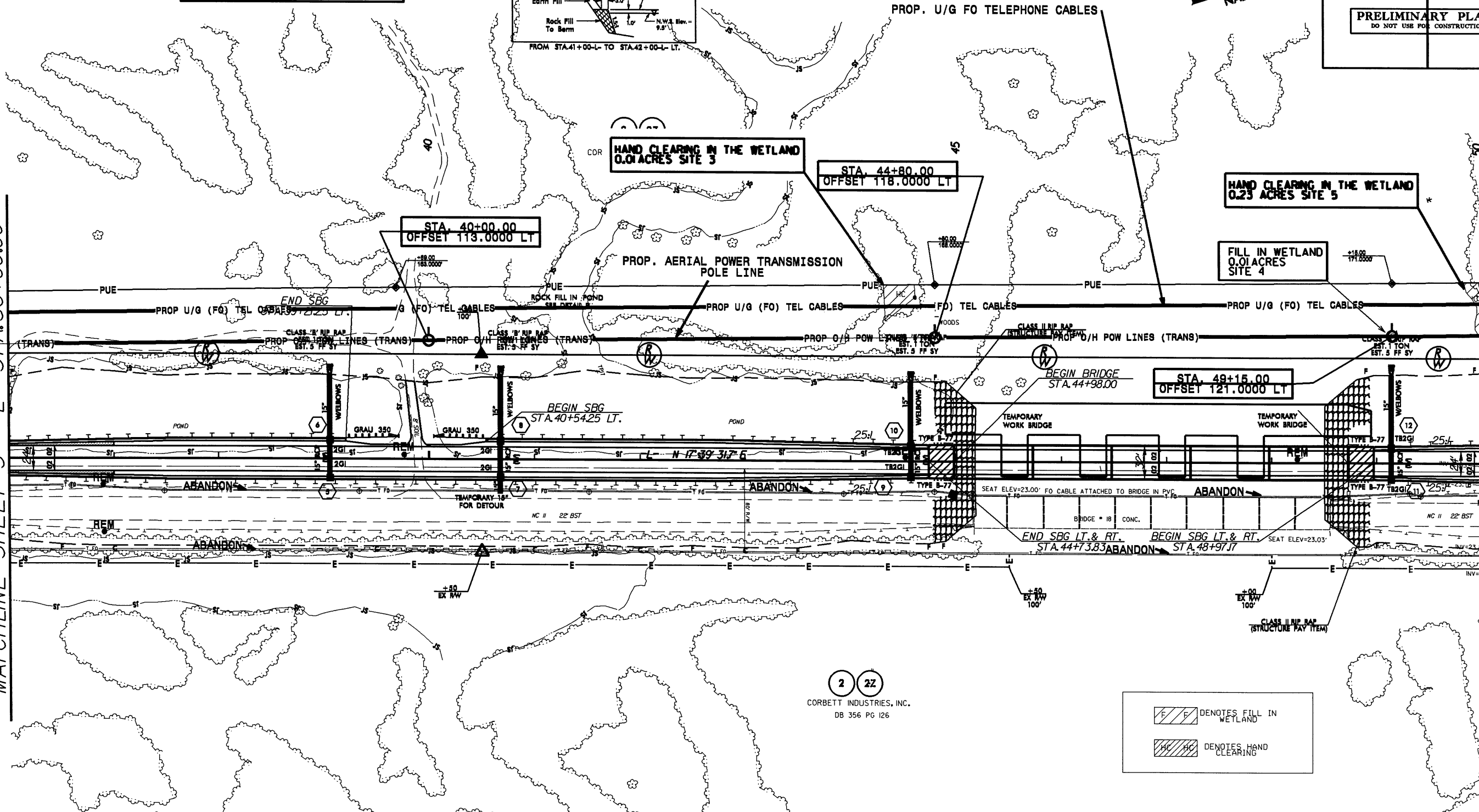
STA. 44+80.00
OFFSET 118.0000 LT

HAND CLEARING IN THE WETLAND
0.23 ACRES SITE 5

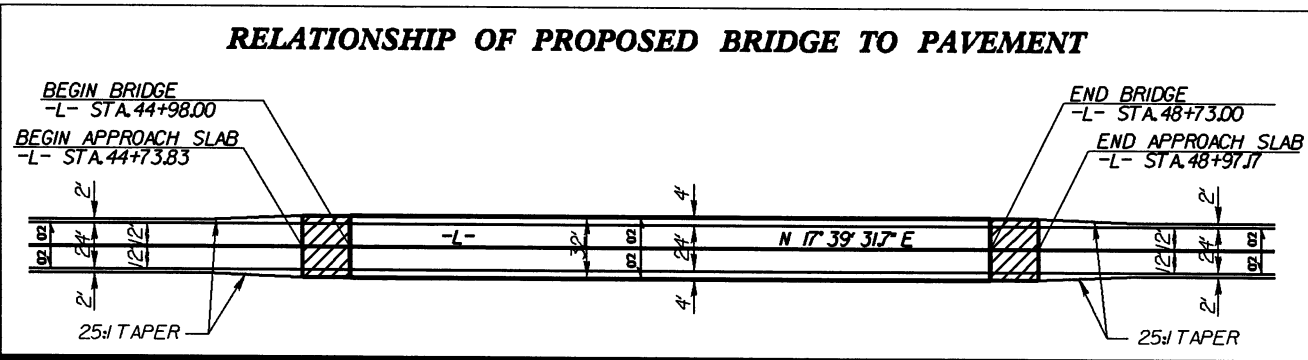
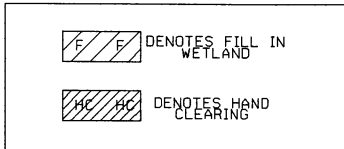
FILL IN WETLAND
0.01 ACRES
SITE 4

MATCHLINE SHEET 5 -L- STA. 36+00.00

MATCHLINE SHEET 7 -L- STA. 50+00.00



2 22
CORBETT INDUSTRIES, INC.
DB 356 PG 126



8/17/99

REVISIONS

25-OCT-2010 03:38 U:\Projs\NEU Permit\Plans\B-4028_rdw_psh6.dgn
*****REVISIONS*****

of _____

NAD 83

-L-

PI Sta 67+15.07
 $\Delta = 31^{\circ} 31' 02.5''$ (RT)
 $D = 2' 17'' 30.6''$
 $L = 1,375.20'$
 $T = 705.48'$
 $R = 2,500.00'$
SE = 05

MATCHLINE SHEET 6 -L- STA. 50+00.00

REVISIONS

25-OCT-2011 07:38
3: Utilities\Rdy-Ut\Proj\NEU Permit Plans\b4028-rdy-psh7.dgn

DETAIL B
ROCK FILL IN POND
 (Not to Scale)

Proposed
 Existing Earth Fill
 Rock Fill To Berm
 Elev. = 10.5'
 N.W.S. Elev. = 9.3'
 N.W.S. Elev. = 9.3'

3.0'
 1.0'

FROM STA. 52 + 50 - L TO STA. 54 + 30 - L LT.

STA. 52+13.00
OFFSET 124.0000 LT

**HAND CLEARING IN THE WETLAND
LO4 ACRES SITE 7**

**FILL IN WETLAND
0.01 ACRES
SITE 6**

CORBETT INDUSTRIES, INC.
 88-356-86-126
 PROP. AERIAL POWER TRANSMISSION
 POLE LINE

STA. 58+86.00
OFFSET 111.0000 LT

**HAND CLEARING IN THE WETLAND
0.10 ACRES SITE 8**

**HAND CLEARING IN THE WETLAND
0.23 ACRES SITE 5**

END SBG
STA. 51+41.75 LT

BEGIN SBG
POND/STA. 52+66.75 LT

BEGIN BRIDGE
STA 54+48.00

END BRIDGE
ST. 58+23.00 HC

**PROP. TRANSMISSION
POLE GUY-WIRE**

ROP 0 1 POW ~~END SBG~~
STA. 39+29.25


~~PROP D/G~~ (FO)

PROP O/H POW L

END SBG LT. & RT.
STA. 54+23.83

REMOVE
RNV=23.19
R2' RCP

ABANDON



INC. 5459

GRAU 350

END SBG
STA. 60+04.25 RT.

STA. 62+29.00
OFFSET 105.0000 LT

BEGIN SBG LT. & RT.
STA. 58+47.17

2 2Z

CORBETT INDUSTRIES, INC.
DB 356 PG 126

 DENOTES FILL IN WETLAND

 HC HC DENOTES HAND CLEARING

RELATIONSHIP OF PROPOSED BRIDGE TO PAVEMENT

BEGIN BRIDGE
-1- STA 54+48.00

BEGIN APPROACH SLAB
-L- STA.54+23.83

END BRIDGE
-1- STA 53+23.00

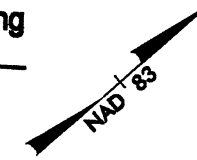
END APPROACH SLAB
-1 - STA 58+47.7

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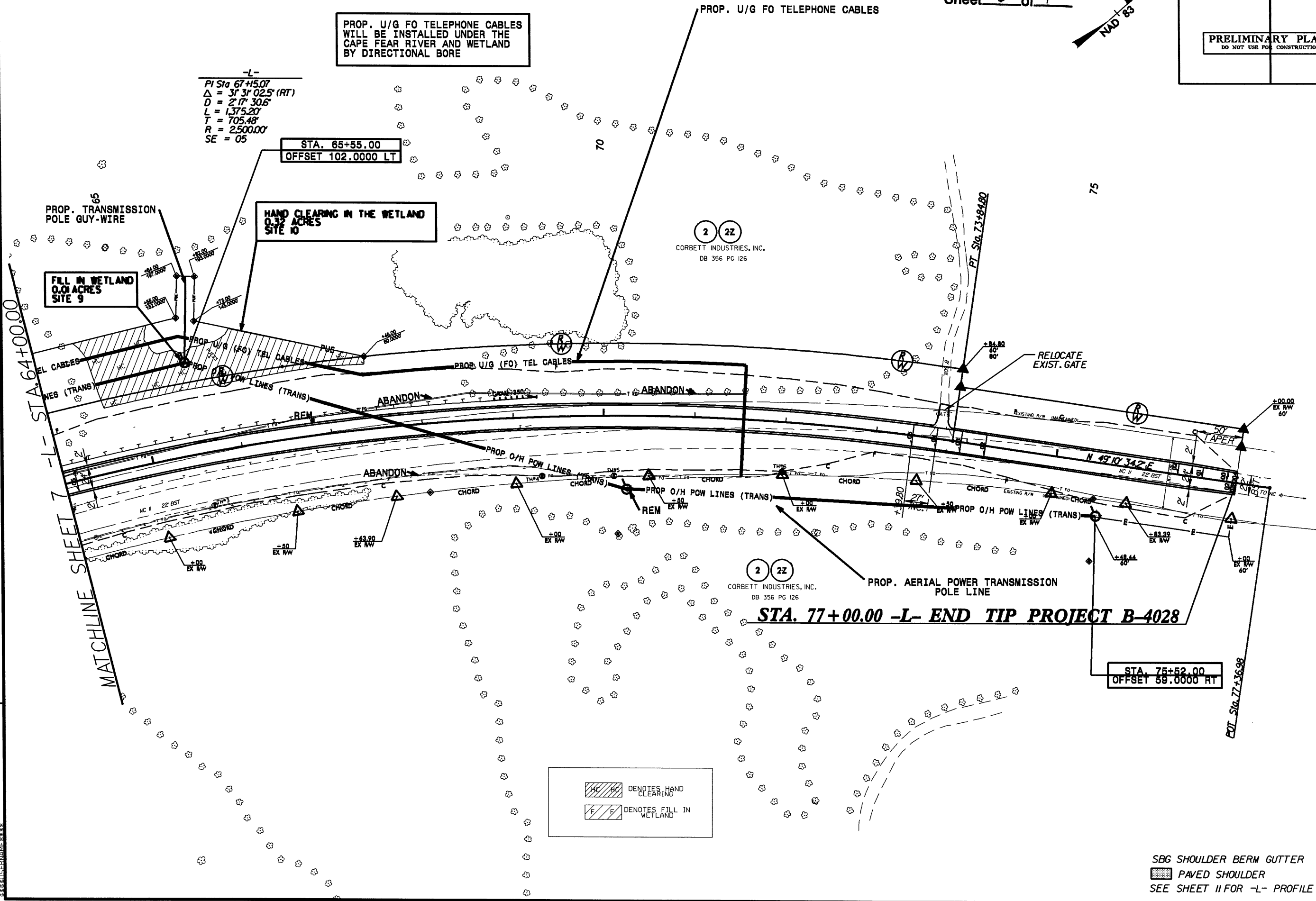
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*****REVISIONS*****

Utility Permit Drawing
Sheet 6 of 7



PROJECT REFERENCE NO. <i>B-4028</i>		SHEET NO. <i>8</i>	
RAW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<div>PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION</div>			



HC

DENOTES HAND CLEARING

F

DENOTES FILL IN WETLAND

SBG SHOULDER BERM GUTTER
PAVED SHOULDER
SEE SHEET 11 FOR -L- PROFILE

WETLAND PERMIT IMPACT SUMMARY

WETLANDS IMPACTS												
WETLAND IMPACTS				SURFACE WATER IMPACTS								
Site No.	Station (From/To)	Structure Size / Type	Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	30+72 to 33+40	Aerial Power Lines					0.26					
2	32+76 to 35+29	Aerial Power Lines					0.35					
3	44+32 to 44+61	Aerial Power Lines					0.01					
4	49+15	Transmission Pole	< 0.01									
5	49+84 to 51+95	Aerial Power Lines					0.23					
6	54+35	Transmission Pole	< 0.01									
7*	57+88 to 58+63	Aerial Power Lines					1.05					
8	61+88 to 63+63	Aerial Power Lines					0.10					
9	65+55	Transmission Pole	< 0.01									
10	64+44 to 67+45	Aerial Power Lines					0.32					

*** Wetland is mainly herbaceous.**

Utility Permit Drawing
Sheet 7 of 7

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BLADEN COUNTY
WBS - 33395.1.1 (B-4028)

ATN Revised 3/31/05

SHEET

#####

CONTRACT:

See Sheet 1-C For Survey Control Sheet

END PROJECT

BEGIN PROJECT

Cape Fear River

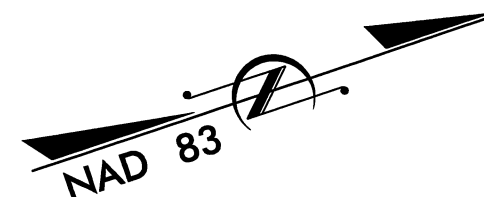
EAST ARCADIA
POP. 531

BLADEN COUNTY
PENDER COUNTY
COLUMBUS COUNTY

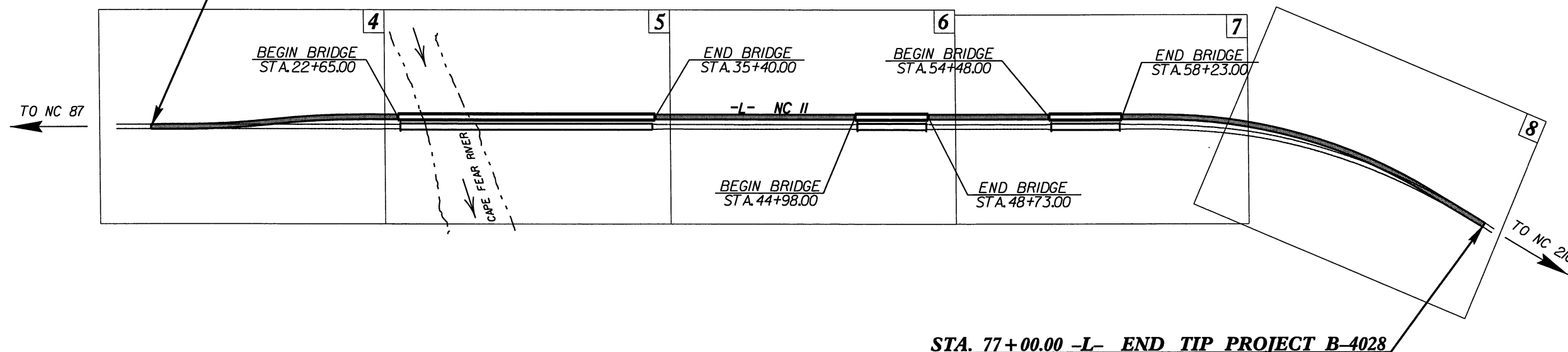
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**TYPE OF WORK: GRADING, DRAINAGE, PAVING, GUARDRAIL
AND STRUCTURES**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEET
N.C.	B-4028	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
33395.1.1	BRSTP-0011(9)	P.E.	
33395.3.1	BRSTP-0011(9)	R/W & UTIL.	

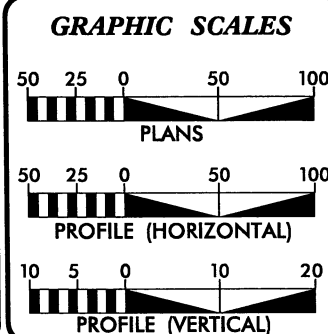


STA. 10+50.00 -L- BEGIN TIP PROJECT B-4028



NOTE: CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2012 = 3663
ADT 2032 = 6478
DHV = 11 %
D = 55 %
T = 34 % *
V = 60 MPH
* TTST 28% DUAL 6%
FUNC. CLASS=MAJOR COLLECTOR
REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT B-4028	=	0.875 MILES
LENGTH STRUCTURES TIP PROJECT B-4028	=	0.384 MILES
TOTAL LENGTH TIP PROJECT B-4028	=	1.259 MILES

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
OCTOBER 22, 2010

LETTING DATE:
AUGUST 21, 2012

BRENDA MOORE, P.E.
PROJECT ENGINEER

VACANT

PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ **P.E.**

**ROADWAY DESIGN
ENGINEER**

SIGNATURE: _____ **P.E.** _____

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA



P.E.

STATE HIGHWAY DESIGN ENGINEER

Note: Not to Scale
***S.U.E. = Subsurface Utility Engineering**

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	✕
Property Monument	□
Parcel/Sequence Number	②3
Existing Fence Line	-x-x-x-
Proposed Woven Wire Fence	○
Proposed Chain Link Fence	□
Proposed Barbed Wire Fence	◇
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----
Known Soil Contamination: Area or Site	☠ ☠
Potential Soil Contamination: Area or Site	☠ ☠

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

Stream or Body of Water	-----
Hydro, Pool or Reservoir	□
Jurisdictional Stream	-----
Buffer Zone 1	-----
Buffer Zone 2	-----
Flow Arrow	→
Disappearing Stream	→
Spring	○
Wetland	-----
Proposed Lateral, Tail, Head Ditch	-----
False Sump	-----

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

Existing Edge of Pavement	-----
Existing Curb	-----
Proposed Slope Stakes Cut	-----
Proposed Slope Stakes Fill	-----
Proposed Curb Ramp	-----
Curb Cut Future Ramp	-----
Existing Metal Guardrail	-----
Proposed Guardrail	-----
Existing Cable Guiderail	-----
Proposed Cable Guiderail	-----
Equality Symbol	-----
Pavement Removal	-----

VEGETATION:

Single Tree	-----
Single Shrub	-----
Hedge	-----
Woods Line	-----

Orchard	-----
Vineyard	-----

EXISTING STRUCTURES:

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

UTILITIES:

POWER:	
Existing Power Pole	-----
Proposed Power Pole	-----
Existing Joint Use Pole	-----
Proposed Joint Use Pole	-----
Power Manhole	-----
Power Line Tower	-----
Power Transformer	-----
U/G Power Cable Hand Hole	-----
H-Frame Pole	-----
Recorded U/G Power Line	-----
Designated U/G Power Line (S.U.E.*)	-----

TELEPHONE:

Existing Telephone Pole	-----
Proposed Telephone Pole	-----
Telephone Manhole	-----
Telephone Booth	-----
Telephone Pedestal	-----
Telephone Cell Tower	-----
U/G Telephone Cable Hand Hole	-----
Recorded U/G Telephone Cable	-----
Designated U/G Telephone Cable (S.U.E.*)	-----
Recorded U/G Telephone Conduit	-----
Designated U/G Telephone Conduit (S.U.E.*)	-----
Recorded U/G Fiber Optics Cable	-----
Designated U/G Fiber Optics Cable (S.U.E.*)	-----

WATER:

Water Manhole	-----
Water Meter	-----
Water Valve	-----
Water Hydrant	-----
Recorded U/G Water Line	-----
Designated U/G Water Line (S.U.E.*)	-----
Above Ground Water Line	-----

TV:

TV Satellite Dish	-----
TV Pedestal	-----
TV Tower	-----
U/G TV Cable Hand Hole	-----
Recorded U/G TV Cable	-----
Designated U/G TV Cable (S.U.E.*)	-----
Recorded U/G Fiber Optic Cable	-----
Designated U/G Fiber Optic Cable (S.U.E.*)	-----

GAS:

Gas Valve	-----
Gas Meter	-----
Recorded U/G Gas Line	-----
Designated U/G Gas Line (S.U.E.*)	-----
Above Ground Gas Line	-----

SANITARY SEWER:

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

MISCELLANEOUS:

Utility Pole	-----
Utility Pole with Base	-----
Utility Located Object	-----
Utility Traffic Signal Box	-----
Utility Unknown U/G Line	-----
U/G Tank; Water, Gas, Oil	-----
Underground Storage Tank, Approx. Loc.	-----
A/G Tank; Water, Gas, Oil	-----
Geoenvironmental Boring	-----
U/G Test Hole (S.U.E.*)	-----
Abandoned According to Utility Records	-----
End of Information	-----

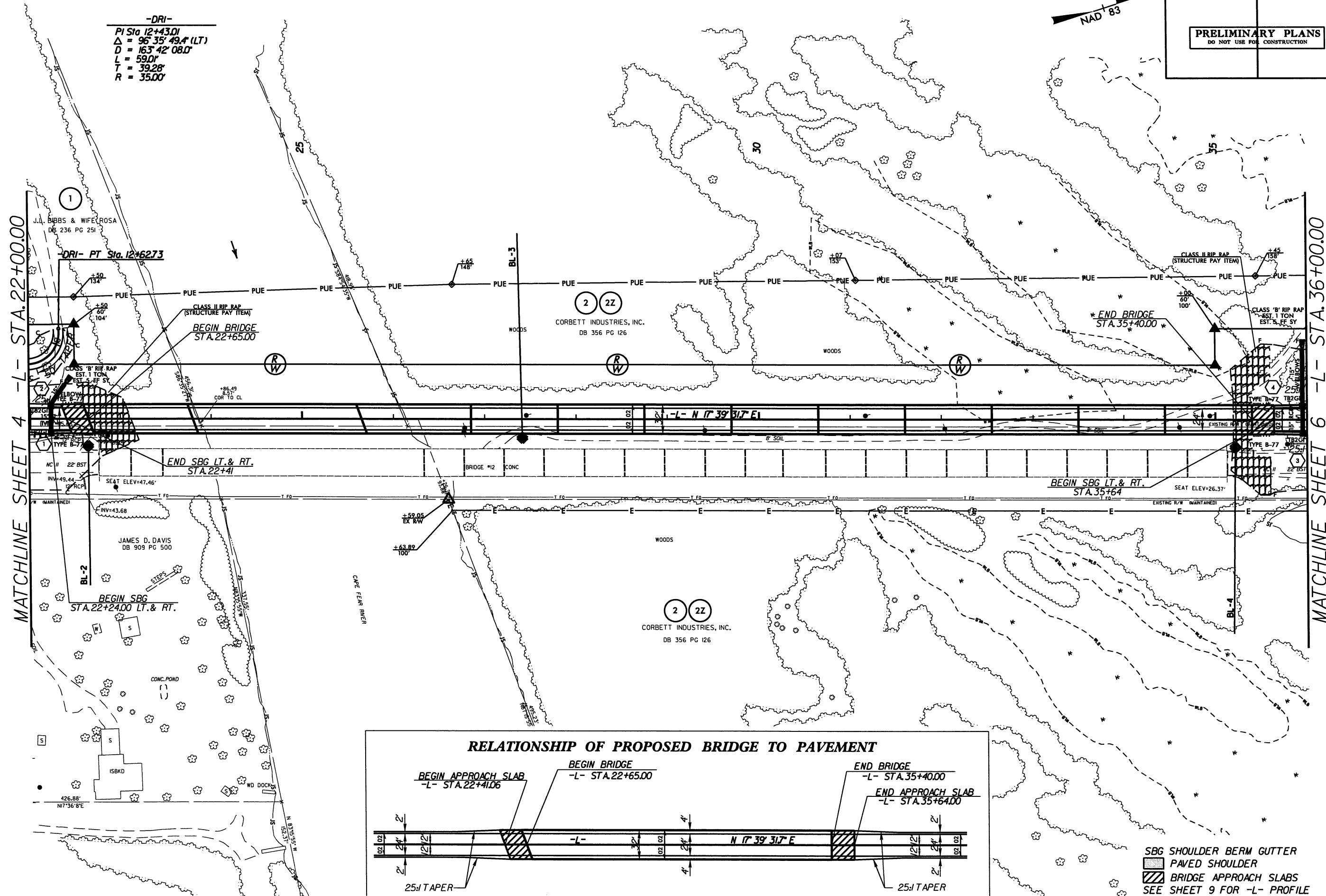
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8/17/99

REVISIONS
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PROJECT REFERENCE NO.		SHEET NO.	
B-4028		5	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<div>PRELIMINARY PLANS</div> <div>DO NOT USE FOR CONSTRUCTION</div>			



MATCHLINE SHEET 4 -L- STA. 22+00.00

MATCHLINE SHEET 6 -L- STA. 36+00.00

8/17/99

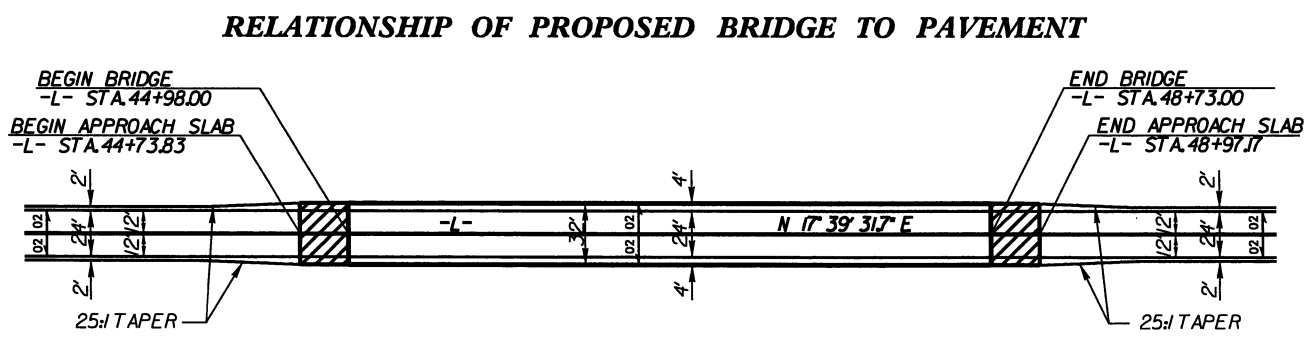
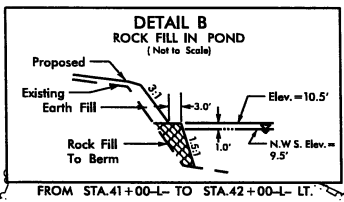
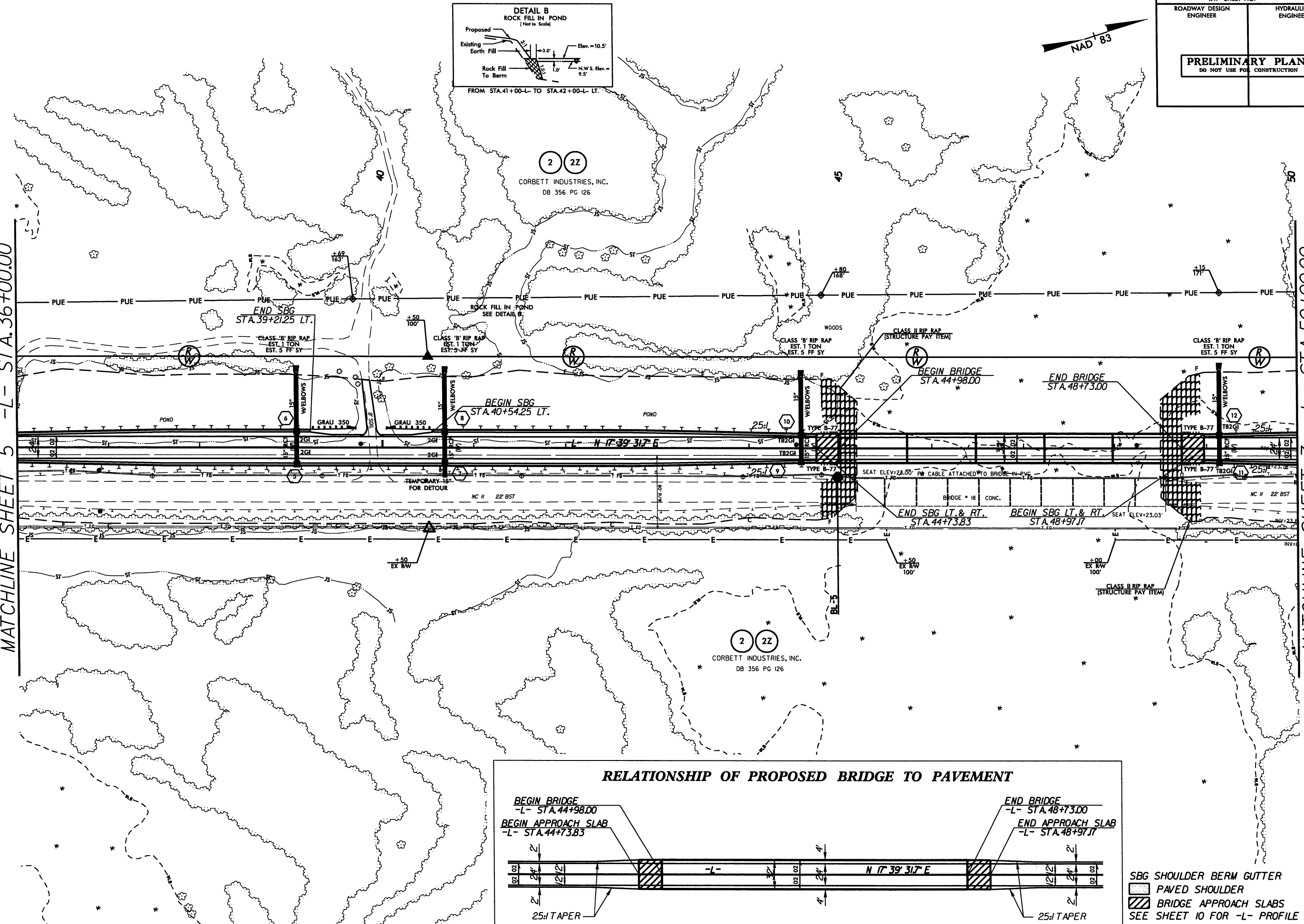
REVISIONS
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8/17/99

PROJECT REFERENCE NO. <i>B-4028</i>		SHEET NO. <i>6</i>
RW SHEET NO.		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER
<div>PRELIMINARY PLANS</div> <div>DO NOT USE FOR CONSTRUCTION</div>		

MATCHLINE SHEET 5 -L- STA.36+00.00

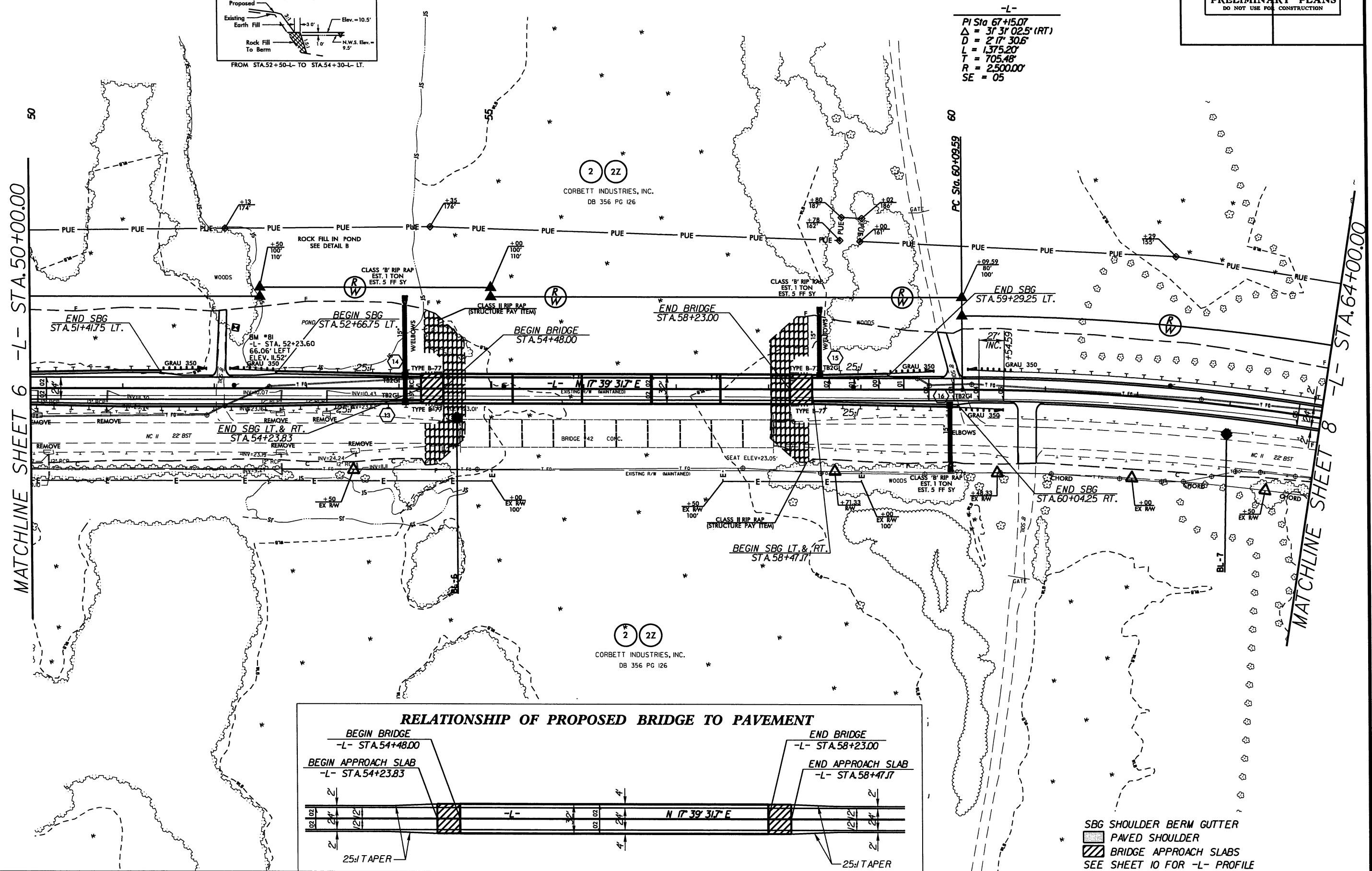
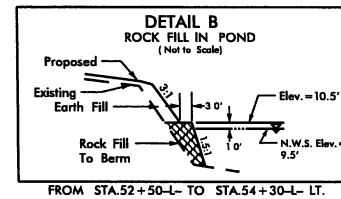
MATCHLINE SHEET 7 -L- STA.50+00.00





SBG SHOULDER BERM GUTTER
PAVED SHOULDER
BRIDGE APPROACH SLABS
SEE SHEET 10 FOR -L- PROFILE

-L-

PI Sta 67+15.07
 $\Delta = 31^{\circ} 31' 02.5''$ (RT)
 $D = 2^{\circ} 17' 30.6''$
 $L = 1,375.20'$
 $T = 705.48'$
 $R = 2,500.00'$
SE = 05



SBG SHOULDER BERM GUTTER
 PAVED SHOULDER
 BRIDGE APPROACH SLABS
 SEE SHEET 10 FOR -L- PROFILE

08/03/11 R/W REVISION (PJS) - THE PUE WAS ADJUSTED TO THE LEFT ON PARCEL 22 (CORBETT INDUSTRIES, INC.).

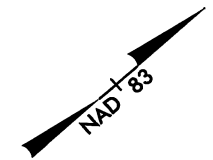
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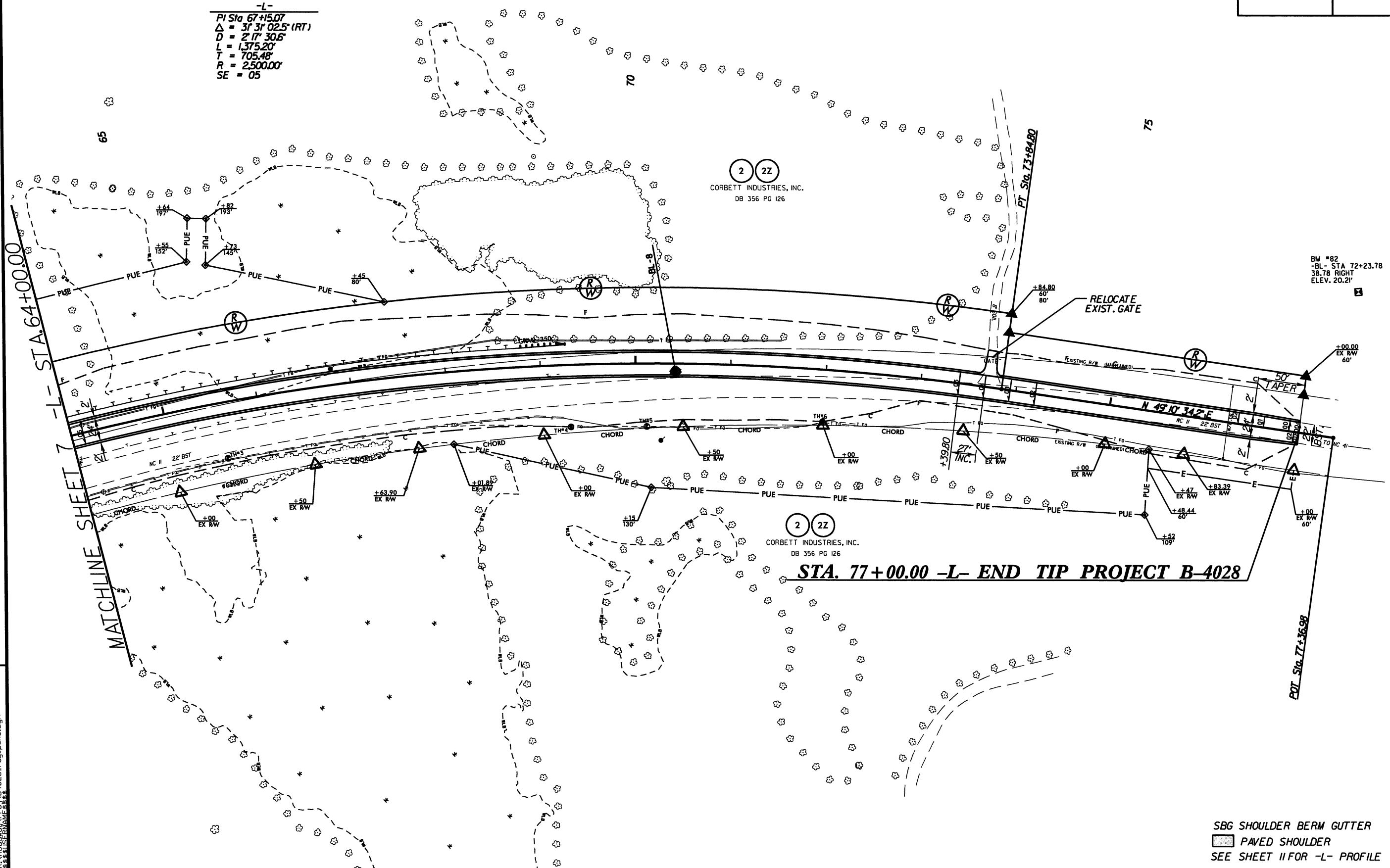
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REVISIONS
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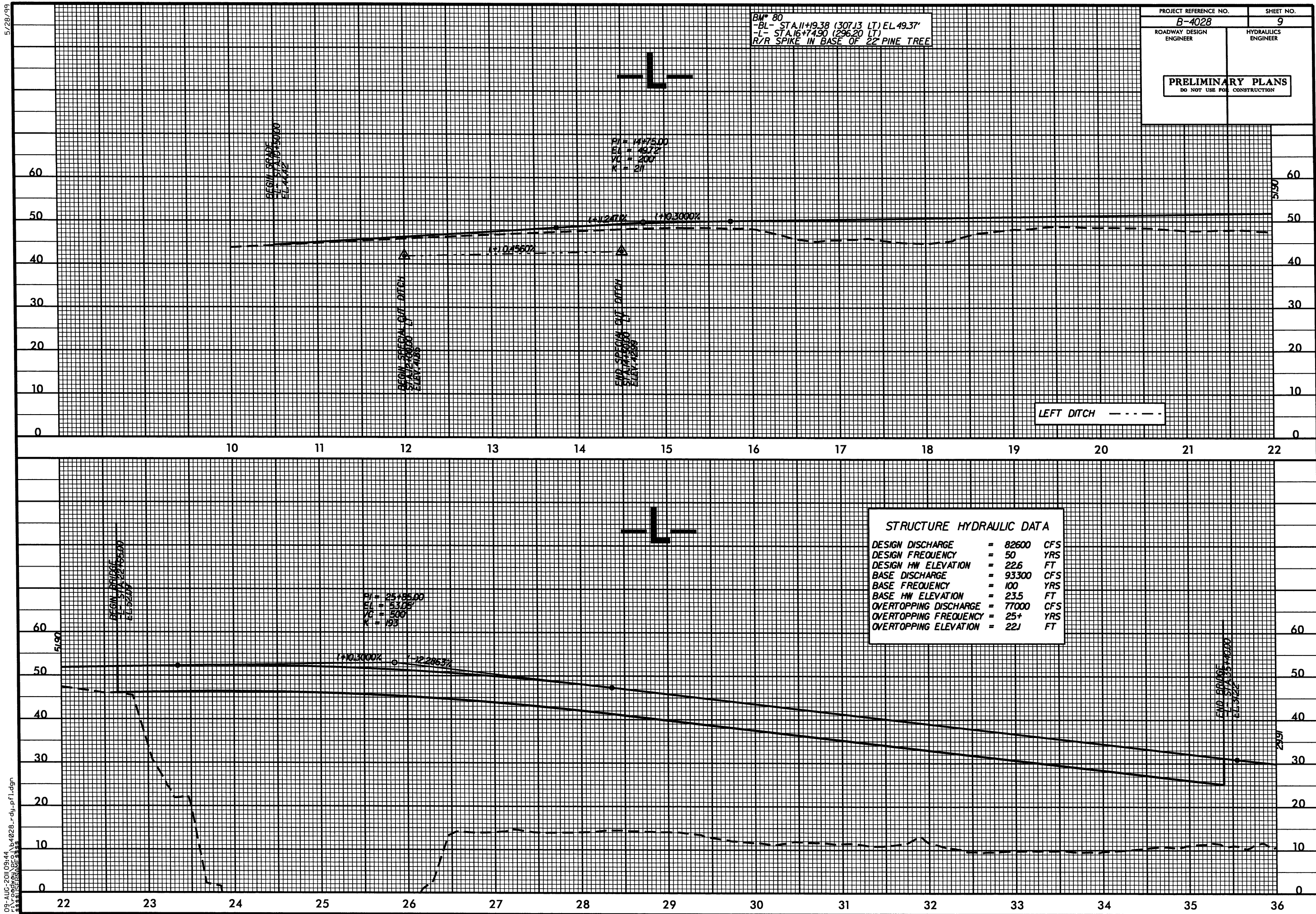
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B-4028		8	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<div>PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION</div>			



-L-
PI Sta 67+15.07
 $\Delta = 31' 31'' 02.5''$ (RT)
D = 2' 17' 30.6"
L = 1,375.20'
T = 705.48'
R = 2,500.00'
SE = 05



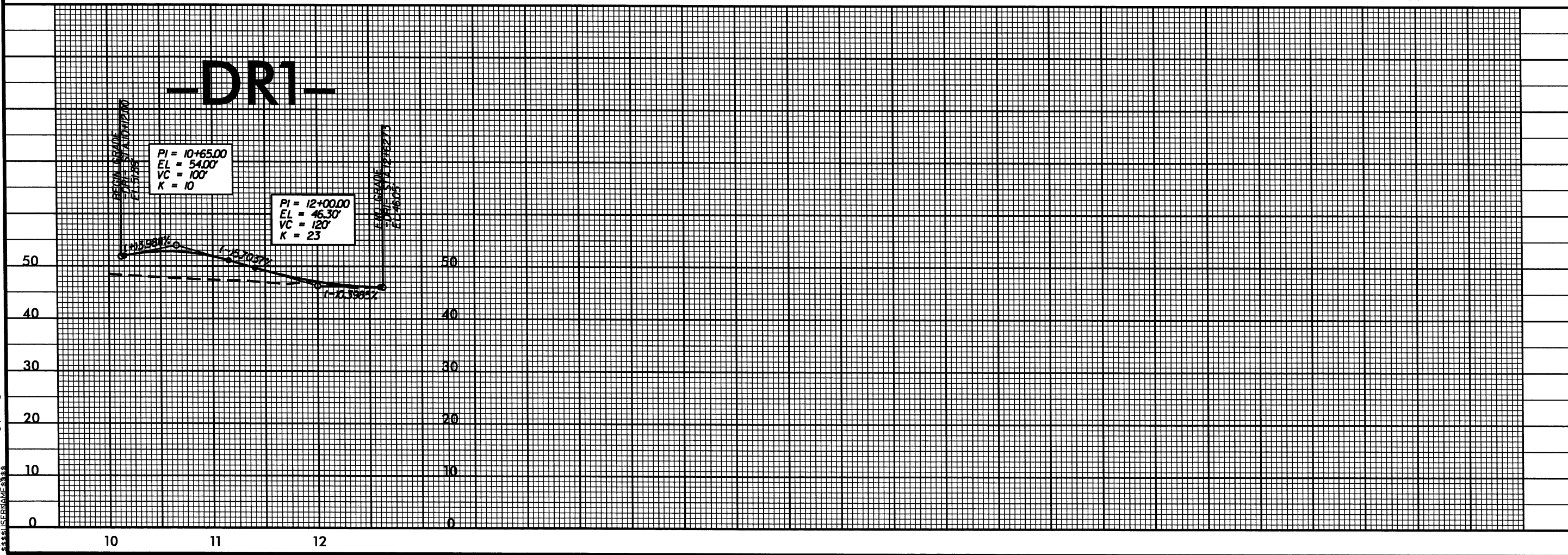
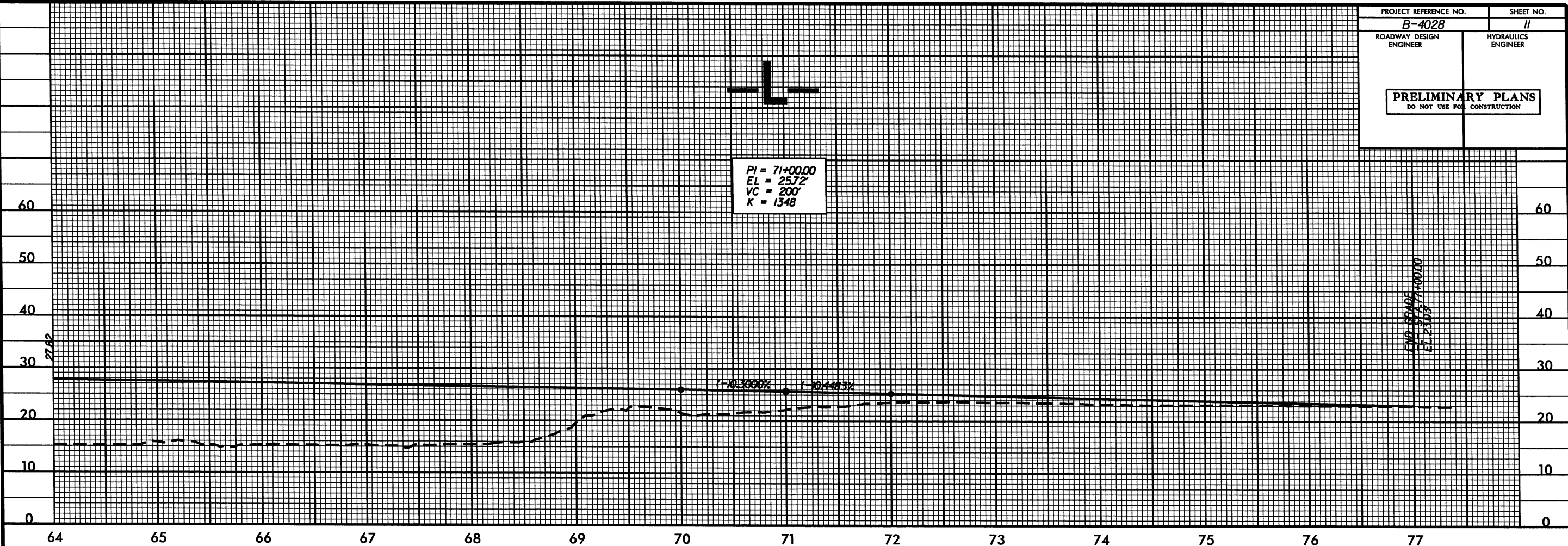
SBG SHOULDER BERM GUTTER
PAVED SHOULDER
SEE SHEET 11 FOR -L- PROFILE

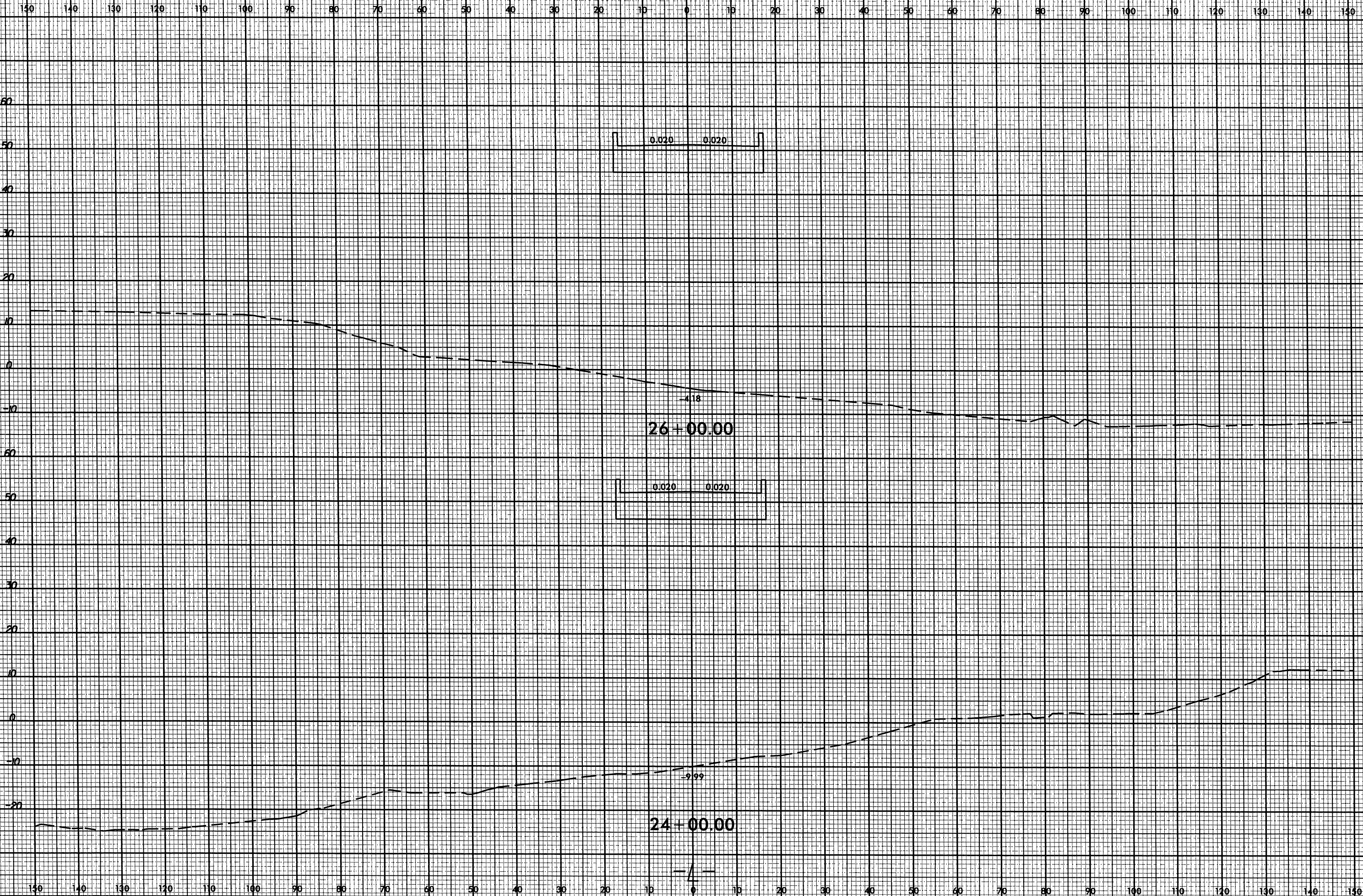


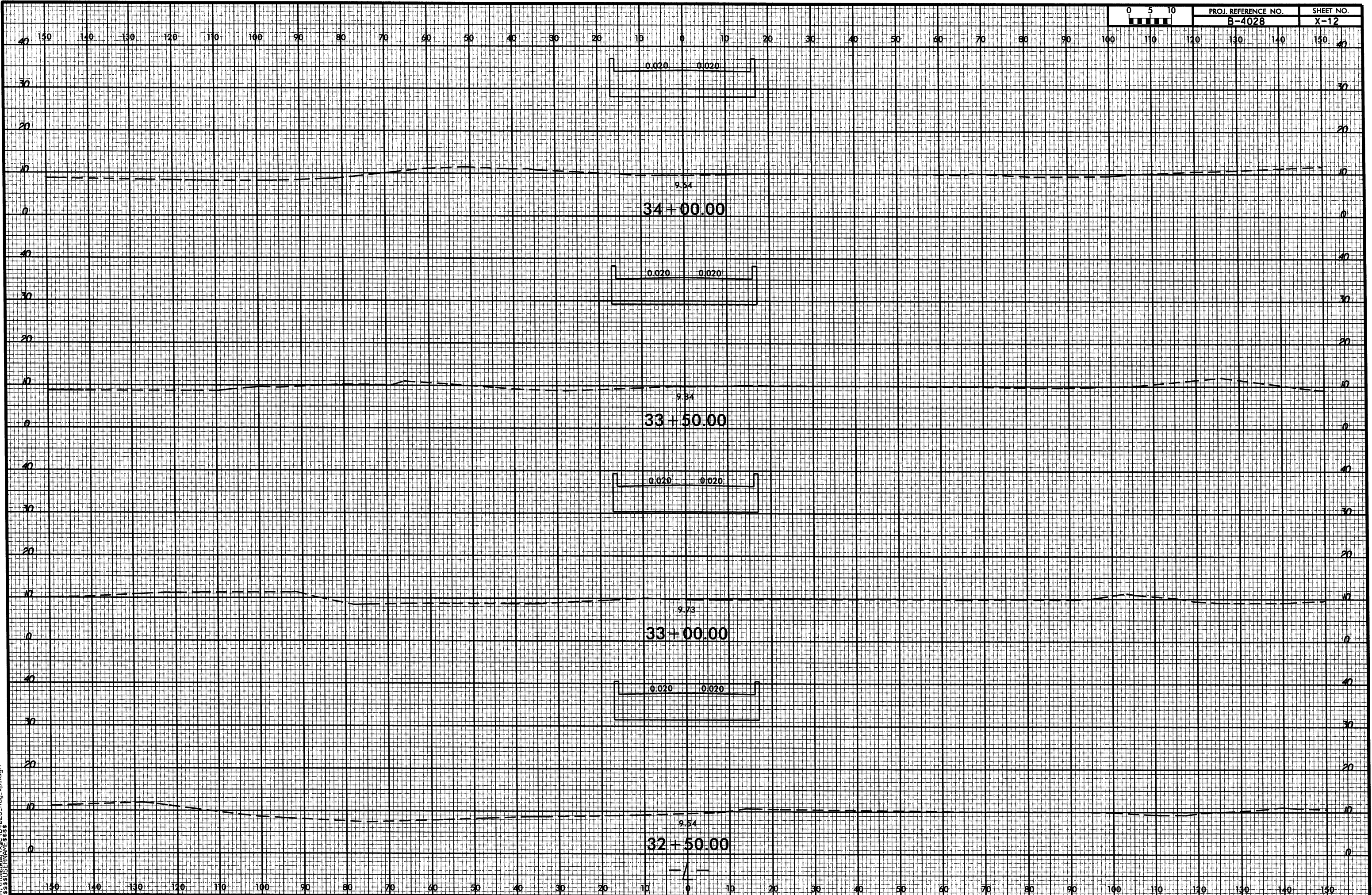
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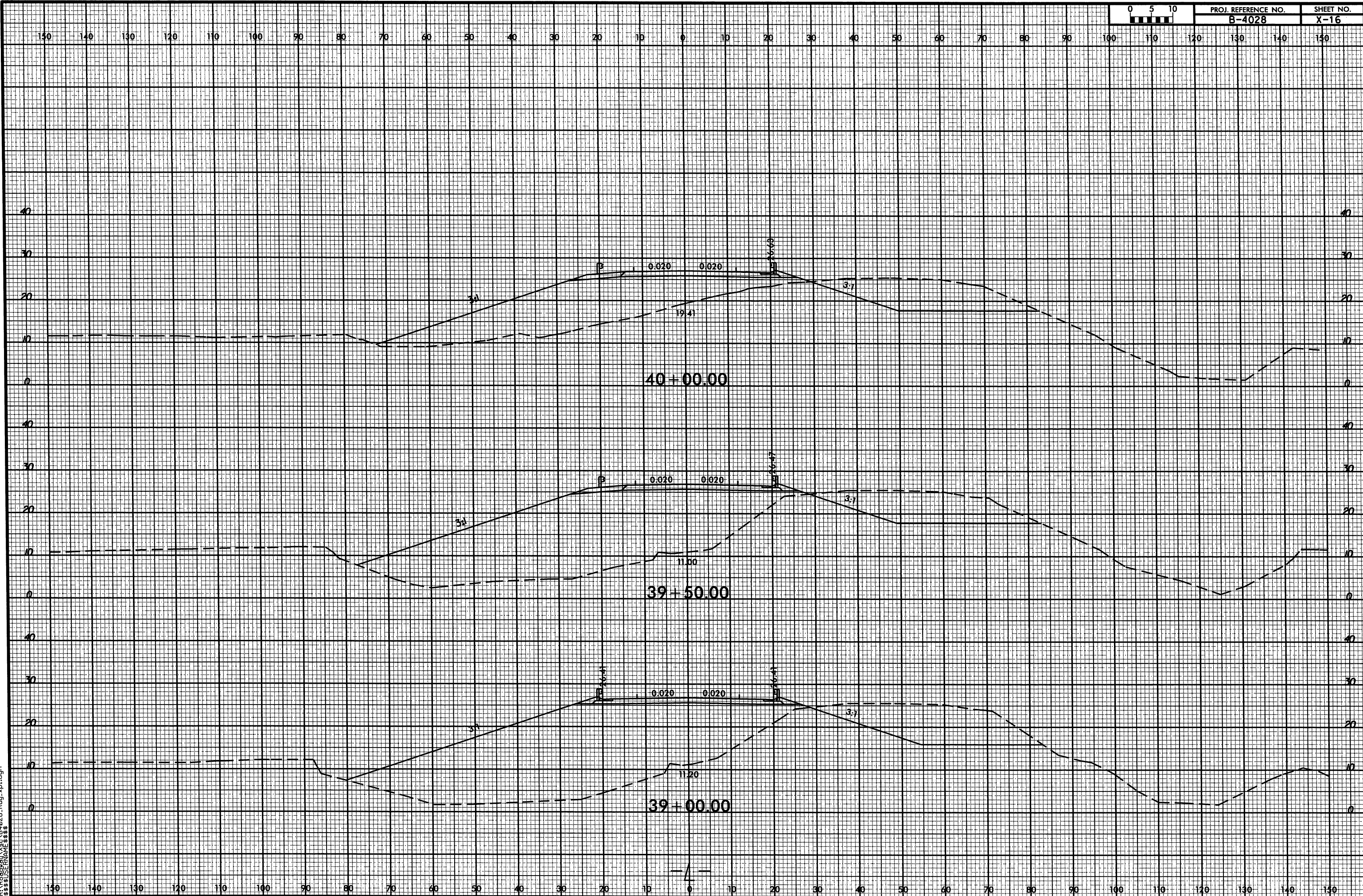
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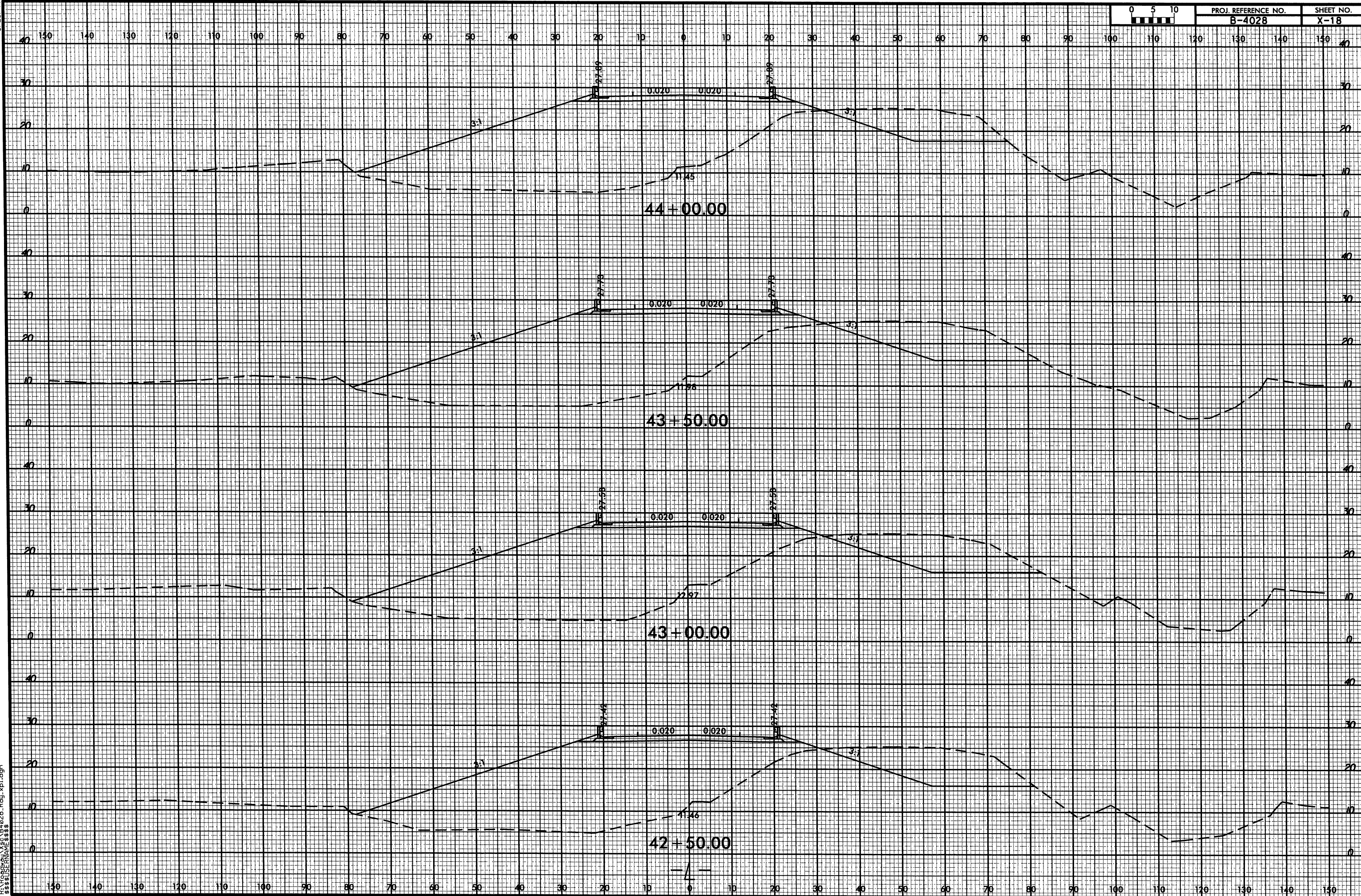
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ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			





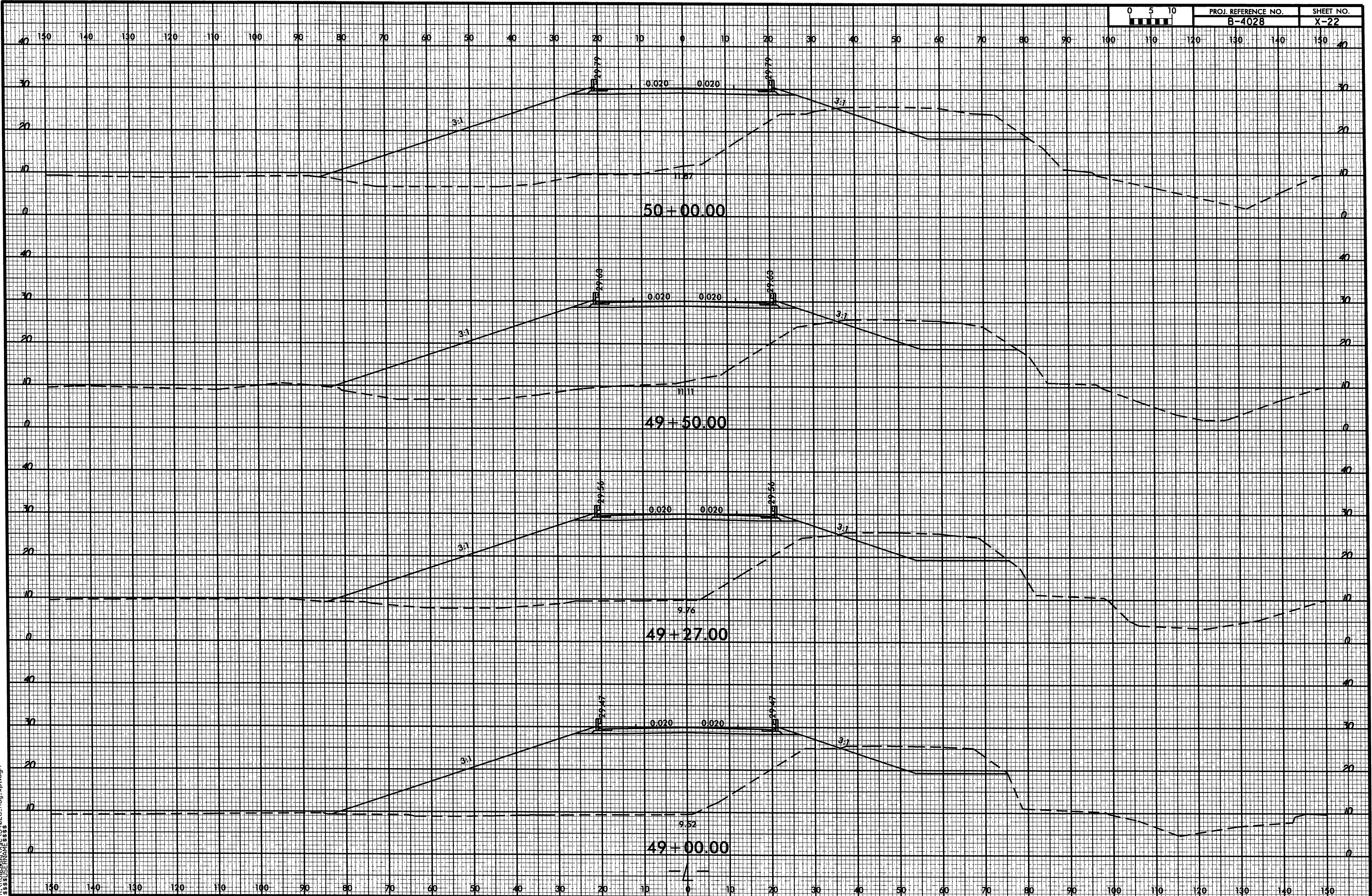


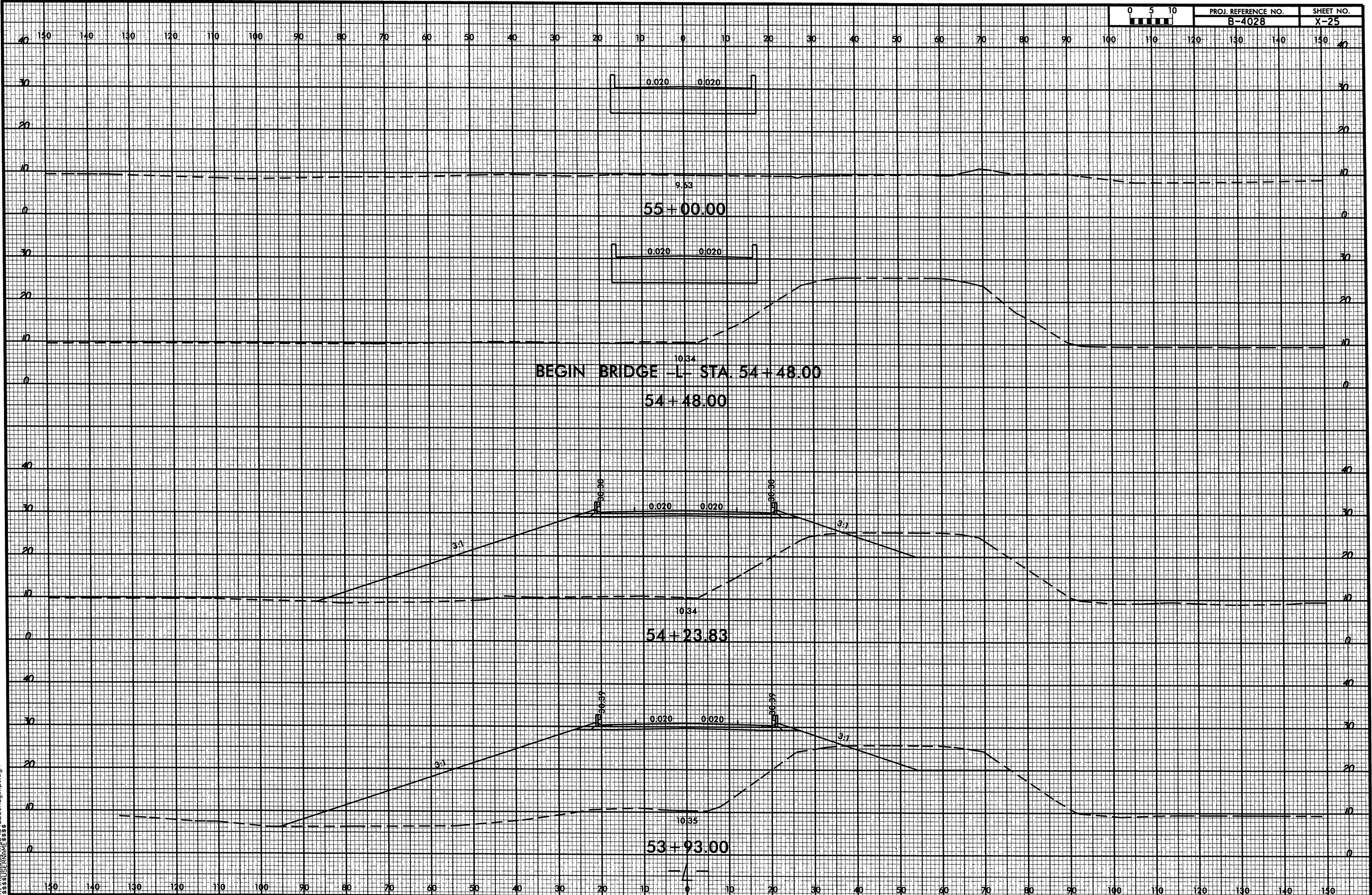




8/23/99

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8/23/99

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