



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

February 3, 2009

U. S. Army Corps of Engineers
Regulatory Field Office
151 Patton Avenue, Room 208
Asheville, NC 28801-5006

ATTN: Mr. David Baker
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permit 23 and 401 Water Quality Certification** for the proposed replacement of Bridge No. 146 over Big Pine Creek on SR 1151 (Big Pine Road) in Madison County, Federal Aid Project No. BRSTP-1151(3); Division 13; WBS Element 33314.1.1; TIP No. B-3869.
Debit Work Order \$240.00

Dear Sir:

The North Carolina Department of Transportation (NCDOT) proposes to replace Bridge No. 146 over Big Pine Creek on SR 1151. There will be 40 lf of permanent surface water impacts and no temporary impacts.

Please see enclosed copies of the Pre-Construction Notification (PCN), Approved Jurisdictional Determination Form, permit drawings and roadway plan sheets for the above-referenced project. The Categorical Exclusion (CE) was completed in April 2008 and was distributed shortly thereafter. Additional copies are available upon request.

This project calls for a letting date of October 20, 2009 and a review date of September 1, 2009.

A May 2000 letter from the North Carolina Wildlife Resources Commission (NCWRC) lists a trout moratorium from November 1 to April 15 for Big Pine Creek. Since NCWRC's comments for this project are more than eight years old, NCDOT hereby requests a new NCWRC review. NCDOT requests that NCWRC forward their comments to the Corps of Engineers and the NCDOT within 30 calendar days of receipt of this application.

A copy of this permit application will be posted on the NCDOT Website at: <http://www.ncdot.org/doh/preconstruct/pe/>. If you have any questions or need additional information, please e-mail Jeff Hemphill at jhemphill@ncdot.gov.

Sincerely,


for

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

W/attachment:

Mr. Brian Wrenn, NCDWQ (5 Copies)
Ms. Marella Buncick, USFWS
Ms. Marla Chambers, NCWRC
Dr. Charles Nicholson, TVA

W/o attachment (see website for attachments):

Dr. David Chang, P.E., Hydraulics
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Jay Swain, P.E., Division Engineer
Mr. Roger Bryan, DEO
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Ms. Stacy Oberhausen, PDEA Planning Engineer

III. Project Information

Attach a **vicinity map** clearly showing the location of the property with respect to local landmarks such as towns, rivers, and roads. Also provide a detailed **site plan** showing property boundaries and development plans in relation to surrounding properties. Both the vicinity map and site plan must include a scale and north arrow. The specific footprints of all buildings, impervious surfaces, or other facilities must be included. If possible, the maps and plans should include the appropriate USGS Topographic Quad Map and NRCS Soil Survey with the property boundaries outlined. Plan drawings, or other maps may be included at the applicant's discretion, so long as the property is clearly defined. For administrative and distribution purposes, the USACE requires information to be submitted on sheets no larger than 11 by 17-inch format; however, DWQ may accept paperwork of any size. DWQ prefers full-size construction drawings rather than a sequential sheet version of the full-size plans. If full-size plans are reduced to a small scale such that the final version is illegible, the applicant will be informed that the project has been placed on hold until decipherable maps are provided.

1. Name of project: Replacement of Bridge No. 146 on SR 1151 (Big Pine Road) over Big Pine Creek
2. T.I.P. Project Number or State Project Number (NCDOT Only): B-3869
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Madison Nearest Town: Big Pine
Subdivision name (include phase/lot number): N/A
Directions to site (include road numbers/names, landmarks, etc.): Take I-40 west to Exit 24 and turn right (north) on NC 209. Proceed north on NC 209 for approximately sixteen and a half miles to SR 1151 (Baltimore Branch Road – name changes to Big Pine Road over the mountain). Proceed approximately four miles to SR 1158. Bridge 146 is located just prior to the intersection with SR 1159 (North Fork Road).
5. Site coordinates (For linear projects, such as a road or utility line, attach a sheet that separately lists the coordinates for each crossing of a distinct waterbody.)
Decimal Degrees (6 digits minimum): 35.7587 °N 82.8294 °W
6. Property size (acres): N/A
7. Name of nearest receiving body of water: Big Pine Creek (DWQ Class 'C' water)
8. River Basin: French Broad River
(Note – this must be one of North Carolina's seventeen designated major river basins. The River Basin map is available at <http://h2o.enr.state.nc.us/admin/maps/>.)

9. Describe the existing conditions on the site and general land use in the vicinity of the project at the time of this application: The site is located in a rural section of Madison County. The site is primarily surrounded by commercial and rural residential property.

10. Describe the overall project in detail, including the type of equipment to be used: The North Carolina Department of Transportation (NCDOT) proposes to replace the existing 31-foot long single span Bridge No. 146 on the same alignment with a new 24-foot wide and 40-foot long single span bridge. There will be 40 linear feet of permanent impacts to surface waters resulting from the east bridge abutment from the proposed bridge being placed at the waters edge. A temporary bridge will span Big Pine Creek just north of the existing bridge to provide an onsite detour. No temporary impacts to surface waters will result from the construction of this project. Construction equipment will consist of heavy trucks, earth moving equipment, cranes, etc.

11. Explain the purpose of the proposed work: The existing bridge is structurally deficient and according to federal guidelines are considered functionally obsolete. The replacement of this bridge will result in safer traffic operations.

IV. Prior Project History

If jurisdictional determinations and/or permits have been requested and/or obtained for this project (including all prior phases of the same subdivision) in the past, please explain. Include the USACE Action ID Number, DWQ Project Number, application date, and date permits and certifications were issued or withdrawn. Provide photocopies of previously issued permits, certifications or other useful information. Describe previously approved wetland, stream and buffer impacts, along with associated mitigation (where applicable). If this is a NCDOT project, list and describe permits issued for prior segments of the same T.I.P. project, along with construction schedules. N/A

V. Future Project Plans

Are any future permit requests anticipated for this project? If so, describe the anticipated work, and provide justification for the exclusion of this work from the current application. N/A

VI. Proposed Impacts to Waters of the United States/Waters of the State

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to wetlands, open water, and stream channels associated with the project. Each impact must be listed separately in the tables below (e.g., culvert installation should be listed separately from riprap dissipater pads). Be sure to indicate if an impact is temporary. All proposed impacts, permanent and temporary, must be listed, and must be labeled and clearly identifiable on an accompanying site plan. All wetlands and waters, and all streams (intermittent and perennial)

should be shown on a delineation map, whether or not impacts are proposed to these systems. Wetland and stream evaluation and delineation forms should be included as appropriate. Photographs may be included at the applicant's discretion. If this proposed impact is strictly for wetland or stream mitigation, list and describe the impact in Section VIII below. If additional space is needed for listing or description, please attach a separate sheet.

Provide a written description of the proposed impacts: The construction of the new bridge on the same alignment will result in 40 linear feet of permanent impacts to surface waters for the replacement of Bridge No. 146 (Site 1). Permanent impacts will result from a new abutment on the east side of the proposed bridge. A temporary detour will bridge Big Pine Creek to the north of the existing bridge with no temporary impacts to surface waters.

1. Individually list wetland impacts. Types of impacts include, but are not limited to mechanized clearing, grading, fill, excavation, flooding, ditching/drainage, etc. For dams, separately list impacts due to both structure and flooding.

| Wetland Impact Site Number (indicate on map) | Type of Impact | Type of Wetland (e.g., forested, marsh, herbaceous, bog, etc.) | Located within 100-year Floodplain (yes/no) | Distance to Nearest Stream (linear feet) | Area of Impact (acres) |
|--|----------------|--|---|--|------------------------|
| N/A | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| Total Wetland Impact (acres) | | | | | |

2. List the total acreage (estimated) of all existing wetlands on the property: 0 acre
3. Individually list all intermittent and perennial stream impacts. Be sure to identify temporary impacts. Stream impacts include, but are not limited to placement of fill or culverts, dam construction, flooding, relocation, stabilization activities (e.g., cement walls, rip-rap, crib walls, gabions, etc.), excavation, ditching/straightening, etc. If stream relocation is proposed, plans and profiles showing the linear footprint for both the original and relocated streams must be included. To calculate acreage, multiply length X width, then divide by 43,560.

| Stream Impact Number (indicate on map) | Stream Name | Type of Impact | Perennial or Intermittent? | Average Stream Width Before Impact | Impact Length (linear feet) | Area of Impact (acres) |
|---|----------------|----------------|----------------------------|------------------------------------|-----------------------------|------------------------|
| Bridge 146 | Big Pine Creek | Permanent | Perennial | 4 feet | 40 | <0.01 |
| | | | | | | |
| | | | | | | |
| Total Stream Impact (by length and acreage) | | | | | 40 | <0.01 |

4. Individually list all open water impacts (including lakes, ponds, estuaries, sounds, Atlantic Ocean and any other water of the U.S.). Open water impacts include, but are not limited to fill, excavation, dredging, flooding, drainage, bulkheads, etc.

| Open Water Impact Site Number (indicate on map) | Name of Waterbody (if applicable) | Type of Impact | Type of Waterbody (lake, pond, estuary, sound, bay, ocean, etc.) | Area of Impact (acres) |
|---|-----------------------------------|----------------|--|------------------------|
| N/A | | | | |
| | | | | |
| | | | | |
| Total Open Water Impact (acres) | | | | |

5. List the cumulative impact to all Waters of the U.S. resulting from the project:

| | |
|--|-------|
| Stream Impact (acres): | <0.01 |
| Wetland Impact (acres): | 0 |
| Open Water Impact (acres): | 0 |
| Total Impact to Waters of the U.S. (acres) | <0.01 |
| Total Stream Impact (linear feet): | 40 |

6. Isolated Waters

Do any isolated waters exist on the property? Yes No

Describe all impacts to isolated waters, and include the type of water (wetland or stream) and the size of the proposed impact (acres or linear feet). Please note that this section only applies to waters that have specifically been determined to be isolated by the USACE.

7. Pond Creation

If construction of a pond is proposed, associated wetland and stream impacts should be included above in the wetland and stream impact sections. Also, the proposed pond should be described here and illustrated on any maps included with this application.

Pond to be created in (check all that apply): uplands stream wetlands

Describe the method of construction (e.g., dam/embankment, excavation, installation of draw-down valve or spillway, etc.): _____

Proposed use or purpose of pond (e.g., livestock watering, irrigation, aesthetic, trout pond, local stormwater requirement, etc.): _____

Current land use in the vicinity of the pond: _____

Size of watershed draining to pond: _____ Expected pond surface area: _____

VII. Impact Justification (Avoidance and Minimization)

Specifically describe measures taken to avoid the proposed impacts. It may be useful to provide information related to site constraints such as topography, building ordinances, accessibility, and financial viability of the project. The applicant may attach drawings of alternative, lower-impact

site layouts, and explain why these design options were not feasible. Also discuss how impacts were minimized once the desired site plan was developed. If applicable, discuss construction techniques to be followed during construction to reduce impacts. A temporary bridge will be utilized for an onsite detour that will span Big Pine Creek resulting in no temporary impacts to surface waters.

VIII. Mitigation

DWQ - In accordance with 15A NCAC 2H .0500, mitigation may be required by the NC Division of Water Quality for projects involving greater than or equal to one acre of impacts to freshwater wetlands or greater than or equal to 150 linear feet of total impacts to perennial streams.

USACE – In accordance with the Final Notice of Issuance and Modification of Nationwide Permits, published in the Federal Register on January 15, 2002, mitigation will be required when necessary to ensure that adverse effects to the aquatic environment are minimal. Factors including size and type of proposed impact and function and relative value of the impacted aquatic resource will be considered in determining acceptability of appropriate and practicable mitigation as proposed. Examples of mitigation that may be appropriate and practicable include, but are not limited to: reducing the size of the project; establishing and maintaining wetland and/or upland vegetated buffers to protect open waters such as streams; and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferable in the same watershed.

If mitigation is required for this project, a copy of the mitigation plan must be attached in order for USACE or DWQ to consider the application complete for processing. Any application lacking a required mitigation plan or NCEEP concurrence shall be placed on hold as incomplete. An applicant may also choose to review the current guidelines for stream restoration in DWQ's Draft Technical Guide for Stream Work in North Carolina, available at <http://h2o.enr.state.nc.us/ncwetlands/strmgide.html>.

1. Provide a brief description of the proposed mitigation plan. The description should provide as much information as possible, including, but not limited to: site location (attach directions and/or map, if offsite), affected stream and river basin, type and amount (acreage/linear feet) of mitigation proposed (restoration, enhancement, creation, or preservation), a plan view, preservation mechanism (e.g., deed restrictions, conservation easement, etc.), and a description of the current site conditions and proposed method of construction. Please attach a separate sheet if more space is needed.

NCDOT proposes no mitigation for this project due to its minimal permanent impacts.

2. Mitigation may also be made by payment into the North Carolina Ecosystem Enhancement Program (NCEEP). Please note it is the applicant's responsibility to contact the NCEEP at

(919) 715-0476 to determine availability, and written approval from the NCEEP indicating that they are will to accept payment for the mitigation must be attached to this form. For additional information regarding the application process for the NCEEP, check the NCEEP website at <http://h2o.enr.state.nc.us/wrp/index.htm>. If use of the NCEEP is proposed, please check the appropriate box on page five and provide the following information:

Amount of stream mitigation requested (linear feet): N/A
 Amount of buffer mitigation requested (square feet): N/A
 Amount of Riparian wetland mitigation requested (acres): N/A
 Amount of Non-riparian wetland mitigation requested (acres): N/A
 Amount of Coastal wetland mitigation requested (acres): N/A

IX. Environmental Documentation (required by DWQ)

1. Does the project involve an expenditure of public (federal/state/local) funds or the use of public (federal/state) land? Yes No
2. If yes, does the project require preparation of an environmental document pursuant to the requirements of the National or North Carolina Environmental Policy Act (NEPA/SEPA)?
 Note: If you are not sure whether a NEPA/SEPA document is required, call the SEPA coordinator at (919) 733-5083 to review current thresholds for environmental documentation.
 Yes No
3. If yes, has the document review been finalized by the State Clearinghouse? If so, please attach a copy of the NEPA or SEPA final approval letter. Yes No

X. Proposed Impacts on Riparian and Watershed Buffers (required by DWQ)

It is the applicant's (or agent's) responsibility to determine, delineate and map all impacts to required state and local buffers associated with the project. The applicant must also provide justification for these impacts in Section VII above. All proposed impacts must be listed herein, and must be clearly identifiable on the accompanying site plan. All buffers must be shown on a map, whether or not impacts are proposed to the buffers. Correspondence from the DWQ Regional Office may be included as appropriate. Photographs may also be included at the applicant's discretion.

1. Will the project impact protected riparian buffers identified within 15A NCAC 2B .0233 (Neuse), 15A NCAC 2B .0259 (Tar-Pamlico), 15A NCAC 02B .0243 (Catawba) 15A NCAC 2B .0250 (Randleman Rules and Water Supply Buffer Requirements), or other (please identify _____)? Yes No
2. If "yes", identify the square feet and acreage of impact to each zone of the riparian buffers. If buffer mitigation is required calculate the required amount of mitigation by applying the buffer multipliers.

| Zone* | Impact (square feet) | Multiplier | Required Mitigation |
|-------|----------------------|-------------------|---------------------|
| 1 | | 3 (2 for Catawba) | |

| | | | |
|-------|--|-----|--|
| 2 | | 1.5 | |
| Total | | | |

* Zone 1 extends out 30 feet perpendicular from the top of the near bank of channel; Zone 2 extends an additional 20 feet from the edge of Zone 1.

3. If buffer mitigation is required, please discuss what type of mitigation is proposed (i.e., Donation of Property, Riparian Buffer Restoration / Enhancement, or Payment into the Riparian Buffer Restoration Fund). Please attach all appropriate information as identified within 15A NCAC 2B .0242 or .0244, or .0260. N/A
-
-

XI. Stormwater (required by DWQ)

Describe impervious acreage (existing and proposed) versus total acreage on the site. Discuss stormwater controls proposed in order to protect surface waters and wetlands downstream from the property. If percent impervious surface exceeds 20%, please provide calculations demonstrating total proposed impervious level. N/A

XII. Sewage Disposal (required by DWQ)

Clearly detail the ultimate treatment methods and disposition (non-discharge or discharge) of wastewater generated from the proposed project, or available capacity of the subject facility.
N/A

XIII. Violations (required by DWQ)

Is this site in violation of DWQ Wetland Rules (15A NCAC 2H .0500) or any Buffer Rules?
Yes No

Is this an after-the-fact permit application? Yes No

XIV. Cumulative Impacts (required by DWQ)

Will this project (based on past and reasonably anticipated future impacts) result in additional development, which could impact nearby downstream water quality? Yes No
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at <http://h2o.enr.state.nc.us/ncwetlands>. If no, please provide a short narrative description: _____

XV. Other Circumstances (Optional):

It is the applicant's responsibility to submit the application sufficiently in advance of desired construction dates to allow processing time for these permits. However, an applicant may choose to list constraints associated with construction or sequencing that may impose limits on work schedules (e.g., draw-down schedules for lakes, dates associated with Endangered and Threatened Species, accessibility problems, or other issues outside of the applicant's control).

As of January 31, 2008, the United States Fish and Wildlife Service lists a total of three federally protected species for Madison County (Table below).

The bald eagle is now protected under The Bald and Golden Eagle Act which requires NCDOT to look for suitable foraging habitat within one mile of the project area for these species. No suitable foraging habitat was observed within a mile of the project study area.

Federally protected species of Madison County.

| Common Name | Scientific Name | Status | Habitat | Biological Conclusion |
|--------------------|-----------------------------|-------------------|----------------|------------------------------|
| Bog turtle | <i>Clemmys muhlenbergii</i> | Threatened S/A | No | Not Subject |
| Spotfin chub | <i>Hybopsis monacha</i> | Threatened | Yes | No Effect |
| Gray bat | <i>Myotis grisescens</i> | Endangered | No | No Effect |

E.L. Luck

2.16.09

Applicant/Agent's Signature

Date

(Agent's signature is valid only if an authorization letter from the applicant is provided.)

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION: TIP# B-3869 NCDOT

State: NC County/parish/borough: Madison City: Big Pine
Center coordinates of site (lat/long in degree decimal format): Lat. 35° N, Long. 82° W
Universal Transverse Mercator:

Name of nearest waterbody: Big Pine Creek

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: French Broad River

Name of watershed or Hydrologic Unit Code (HUC): 06010105

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain:

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: 350 linear feet: width (ft) and/or acres.

Wetlands: acres.

c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual

Elevation of established OHWM (if known):

2. Non-regulated waters/wetlands (check if applicable):³

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.

Explain:

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: **Pick List**

Drainage area: **Pick List**

Average annual rainfall: inches

Average annual snowfall: inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW⁵: .

Tributary stream order, if known: .

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

- Tributary is: Natural
 Artificial (man-made). Explain:
 Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: feet
Average depth: feet
Average side slopes: **Pick List**.

Primary tributary substrate composition (check all that apply):

- | | | |
|--|--|-----------------------------------|
| <input type="checkbox"/> Silts | <input type="checkbox"/> Sands | <input type="checkbox"/> Concrete |
| <input type="checkbox"/> Cobbles | <input type="checkbox"/> Gravel | <input type="checkbox"/> Muck |
| <input type="checkbox"/> Bedrock | <input type="checkbox"/> Vegetation. Type/% cover: | |
| <input type="checkbox"/> Other. Explain: | | |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

Surface flow is: **Pick List**. Characteristics:

Subsurface flow: **Pick List**. Explain findings:

Dye (or other) test performed:

Tributary has (check all that apply):

- | | |
|---|---|
| <input type="checkbox"/> Bed and banks | |
| <input type="checkbox"/> OHWM ⁶ (check all indicators that apply): | |
| <input type="checkbox"/> clear, natural line impressed on the bank | <input type="checkbox"/> the presence of litter and debris |
| <input type="checkbox"/> changes in the character of soil | <input type="checkbox"/> destruction of terrestrial vegetation |
| <input type="checkbox"/> shelving | <input type="checkbox"/> the presence of wrack line |
| <input type="checkbox"/> vegetation matted down, bent, or absent | <input type="checkbox"/> sediment sorting |
| <input type="checkbox"/> leaf litter disturbed or washed away | <input type="checkbox"/> scour |
| <input type="checkbox"/> sediment deposition | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining | <input type="checkbox"/> abrupt change in plant community |
| <input type="checkbox"/> other (list): | |
| <input type="checkbox"/> Discontinuous OHWM. ⁷ Explain: | |

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

- | | |
|--|--|
| <input checked="" type="checkbox"/> High Tide Line indicated by: | <input checked="" type="checkbox"/> Mean High Water Mark indicated by: |
| <input type="checkbox"/> oil or scum line along shore objects | <input type="checkbox"/> survey to available datum; |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings; |
| <input type="checkbox"/> physical markings/characteristics | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges | |
| <input type="checkbox"/> other (list): | |

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain:

Identify specific pollutants, if known:

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain:

Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain:

Surface flow is: **Pick List**

Characteristics:

Subsurface flow: **Pick List**. Explain findings:

Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain:

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- Habitat for:
 - Federally Listed species. Explain findings:
 - Fish/spawn areas. Explain findings:
 - Other environmentally-sensitive species. Explain findings:
 - Aquatic/wildlife diversity. Explain findings:

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately () acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)

Size (in acres)

Directly abuts? (Y/N)

Size (in acres)

Summarize overall biological, chemical and physical functions being performed:

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

TNWs: linear feet width (ft), Or, acres.

Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: DWQ rating form greater than 30.

Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs⁸ that flow directly or indirectly into TNWs.**

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: **87 Corps Manuel Wetland criteria were met in areas adjacent to RPWs.**
 Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.⁹**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from "waters of the U.S.," or
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
 Demonstrate that water is isolated with a nexus to commerce (see E below).

E. **ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰**

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
 from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
 which are or could be used for industrial purposes by industries in interstate commerce.
 Interstate isolated waters. Explain: .
 Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

⁸See Footnote # 3.

⁹To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
- Other non-wetland waters: acres.
Identify type(s) of waters: .
- Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas: .
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: .
- USDA Natural Resources Conservation Service Soil Survey. Citation: .
- National wetlands inventory map(s). Cite name: .
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): .
or Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD:

PROPERTY OWNERS

NAMES AND ADDRESSES

| PARCEL NO. | NAMES | ADDRESSES |
|------------|---|---------------------------------------|
| 1 | LEONARD BUCKNER | 121 Hawkridge Road Marshall, NC 28753 |
| 2 | NORTH FORK BAPTIST CHURCH | Big Pine Road Marshall, NC 28753 |
| 3 | JEFFREY W. MOORE & WIFE CYNTHIA H. MOORE | 31 South Fork Road Marshall, NC 28753 |

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
MADISON COUNTY
PROJECT: 33759.1.1 (B-3869)
BRIDGE NO. 146 OVER
BIG PINE CREEK
ON SR 1151 (BIG PINE RD.)

SHEET OF 10 / 21 / 08

Permit Drawing
Sheet 2 of 10

WETLAND PERMIT IMPACT SUMMARY

| Site No. | Station (From/To) | Structure Size / Type | 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) | Natural Stream Design (ft) | |
| 1 | 10+97.00 To 11+37.00 | Prop. 1 @40' SPAN 21" P.S. CORED SLAB W/ VERTICAL ABUTMENTS | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | < 0.01 | 0 | 40 | 0 | 0 |
| | DETOUR BRIDGE 10+58.40 TO 11+13.40 | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0 | 0 | 0 |
| TOTALS: | | | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 40 | 0 | 0 |

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

 MADISON COUNTY
 WBS - 33314.1.1 (B-3869)

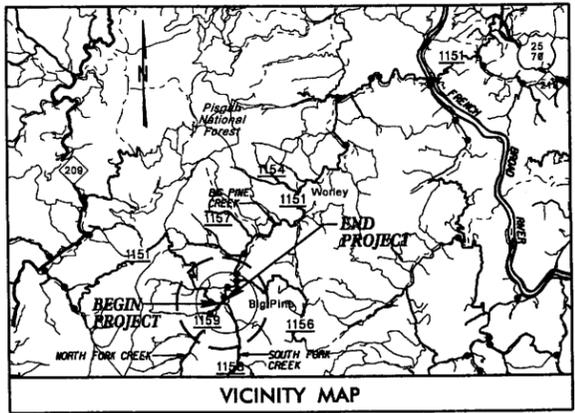
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ATM Revised 3/31/05

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CONTRACT

TIP PROJECT: B-3869

See Sheet 1-A For Index of Sheets



STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

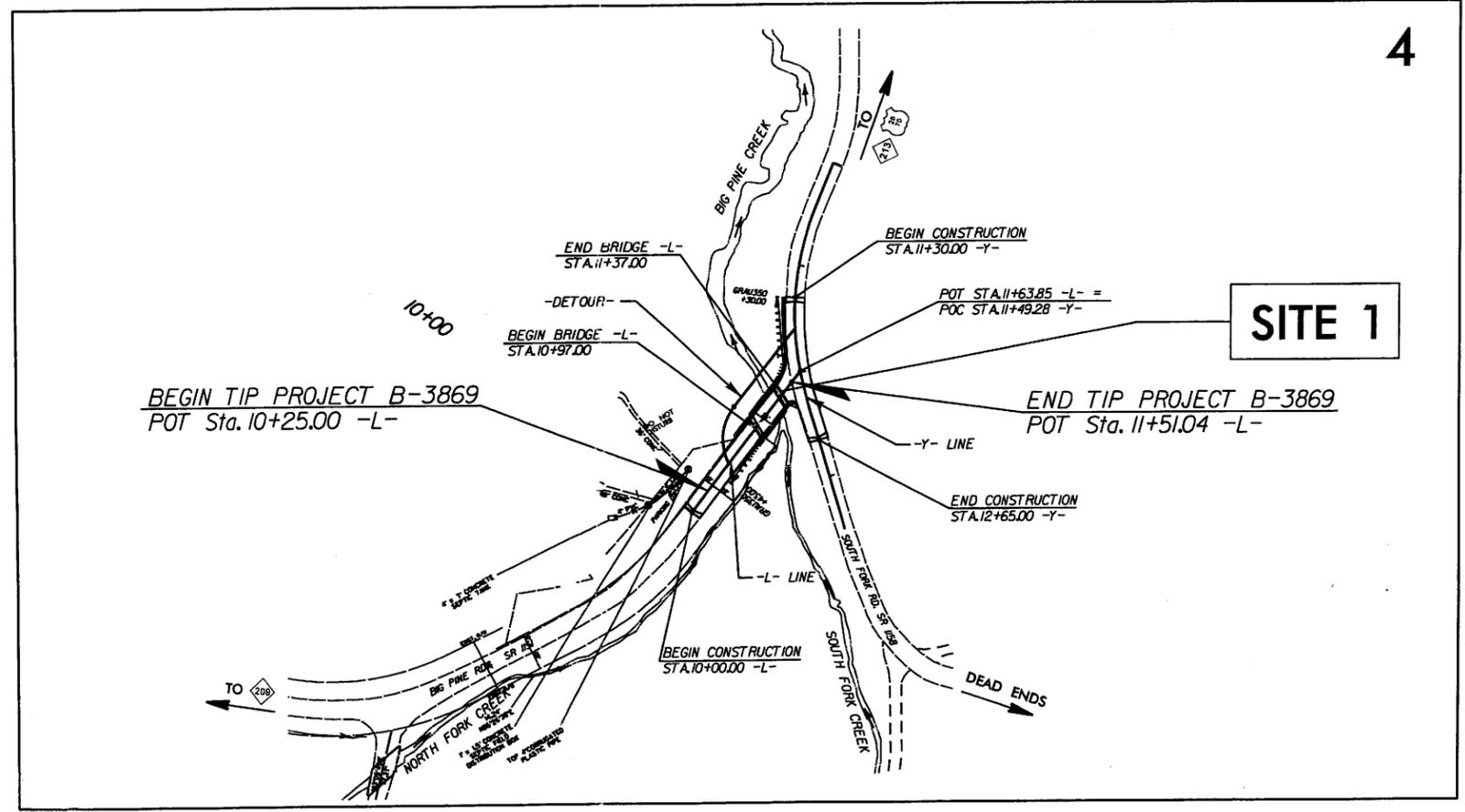
MADISON COUNTY

**LOCATION: REPLACEMENT OF BRIDGE No. 146
ON SR 1151 OVER BIG PINE CREEK**

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

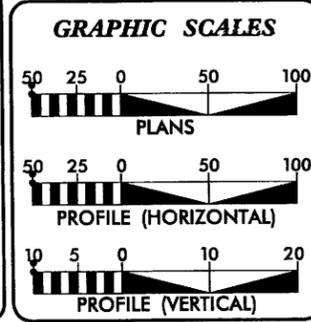
STREAM IMPACTS

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | B-3869 | 1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 33314.1.1 | BRSTP-1151(3) | PREL. | |
| 33314.2.2 | BRSTP-1151(3) | RAW & UTIL | |
| 33314.3.1 | BRSTP-1151(3) | CONST | |



- CLEARING FOR THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
- THIS PROJECT IS NOT WITHIN ANY CITY LIMITS.
- DESIGN EXCEPTION FOR DESIGN SPEED REQUIRED.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

| | |
|------------|----------|
| ADT 2009 = | 190 |
| ADT 2029 = | 250 |
| DHV = | 10 % |
| D = | 60 % |
| T = | 3 % * |
| V = | 30 MPH** |
| * TTST 1 % | DUAL 2 % |

PROJECT LENGTH

| | | |
|--|---|-----------|
| LENGTH OF ROADWAY TIP PROJECT B-3869 | = | 0.016 MI. |
| LENGTH OF STRUCTURE TIP PROJECT B-3869 | = | 0.008 MI. |
| TOTAL LENGTH OF TIP PROJECT B-3869 | = | 0.024 MI. |

Prepared in the Office of:

Stantec
 Stantec Consulting Inc.
 Suite 300, 801 Jones Franklin Road
 Raleigh, NC U.S.A.
 27608
 Tel. 919.851.6866 Fax. 919.851.7024
 www.stantec.com

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
AUGUST 18, 2006

LETTING DATE:
OCTOBER 20, 2009

ROBERT WILLIAMS, PE
PROJECT ENGINEER

KEITH F. HUDSON
PROJECT DESIGN ENGINEER

NCDOT CONTACT:
CATHY S. HOUSER, PE
PROJECT ENGINEER - DESIGN SERVICES

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

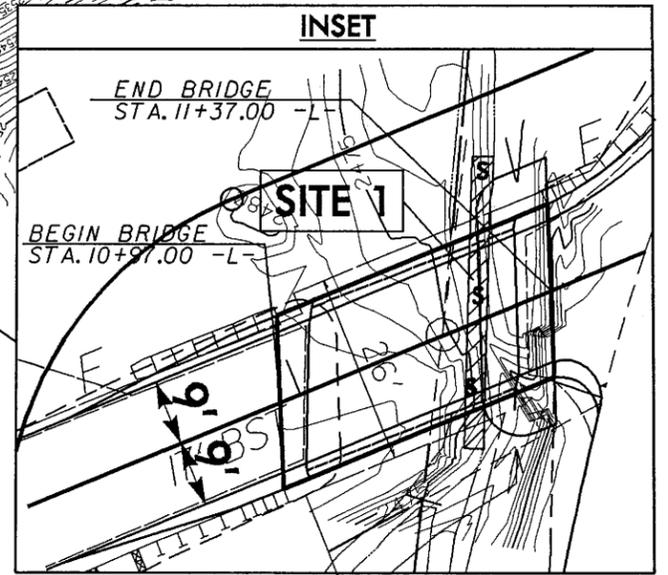
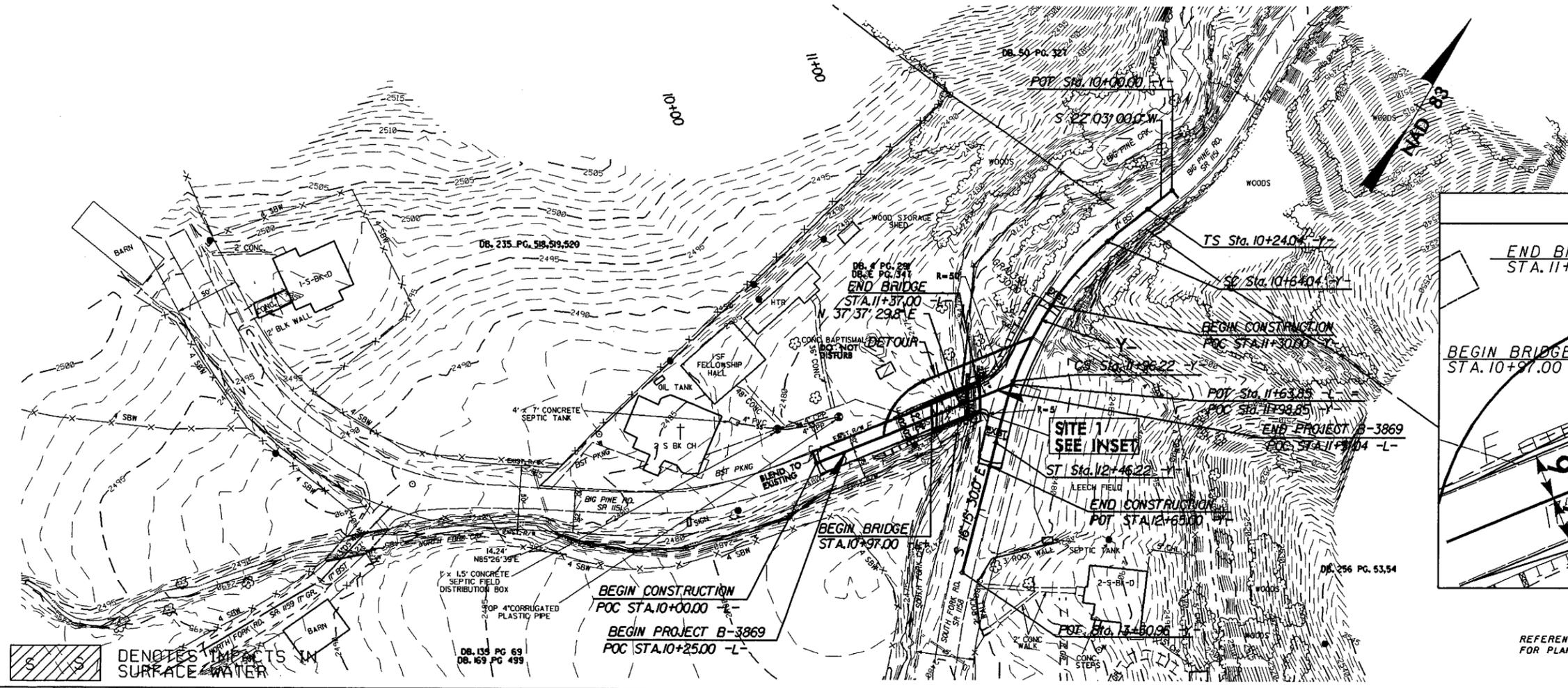
ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

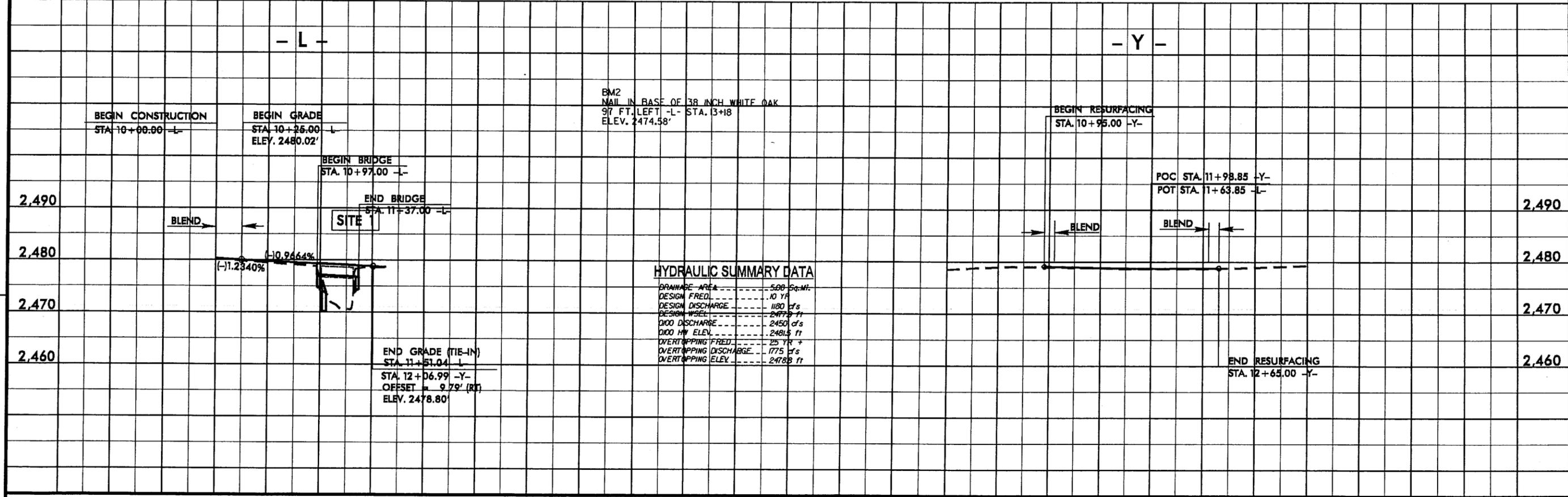
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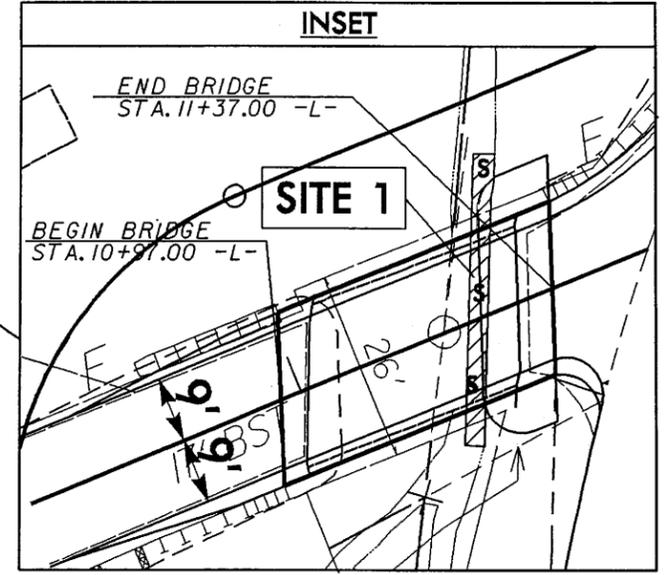
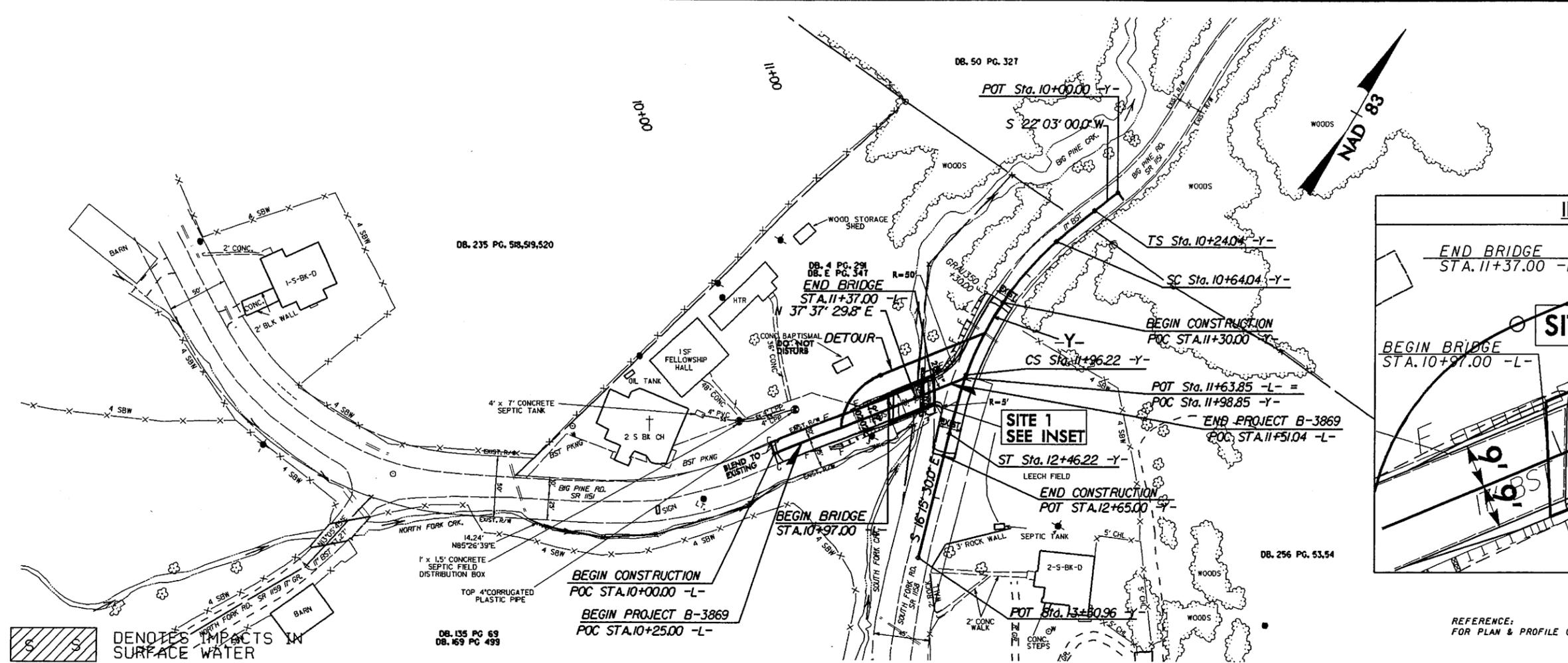
DENOTES IMPACTS IN SURFACE WATER

REFERENCE:
FOR PLAN & PROFILE OF DETOUR, SEE SHEET NO. 5

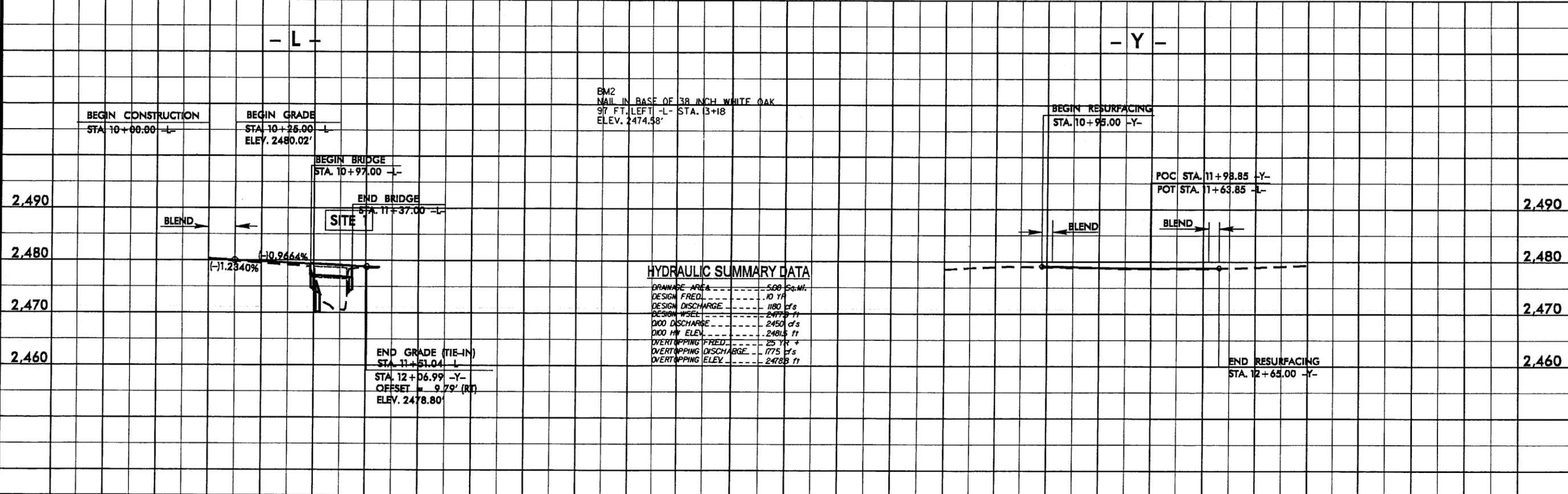
REVISIONS



12/10/08



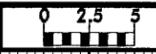
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FOR PLAN & PROFILE OF DETOUR. SEE SHEET NO. 5



REVISIONS

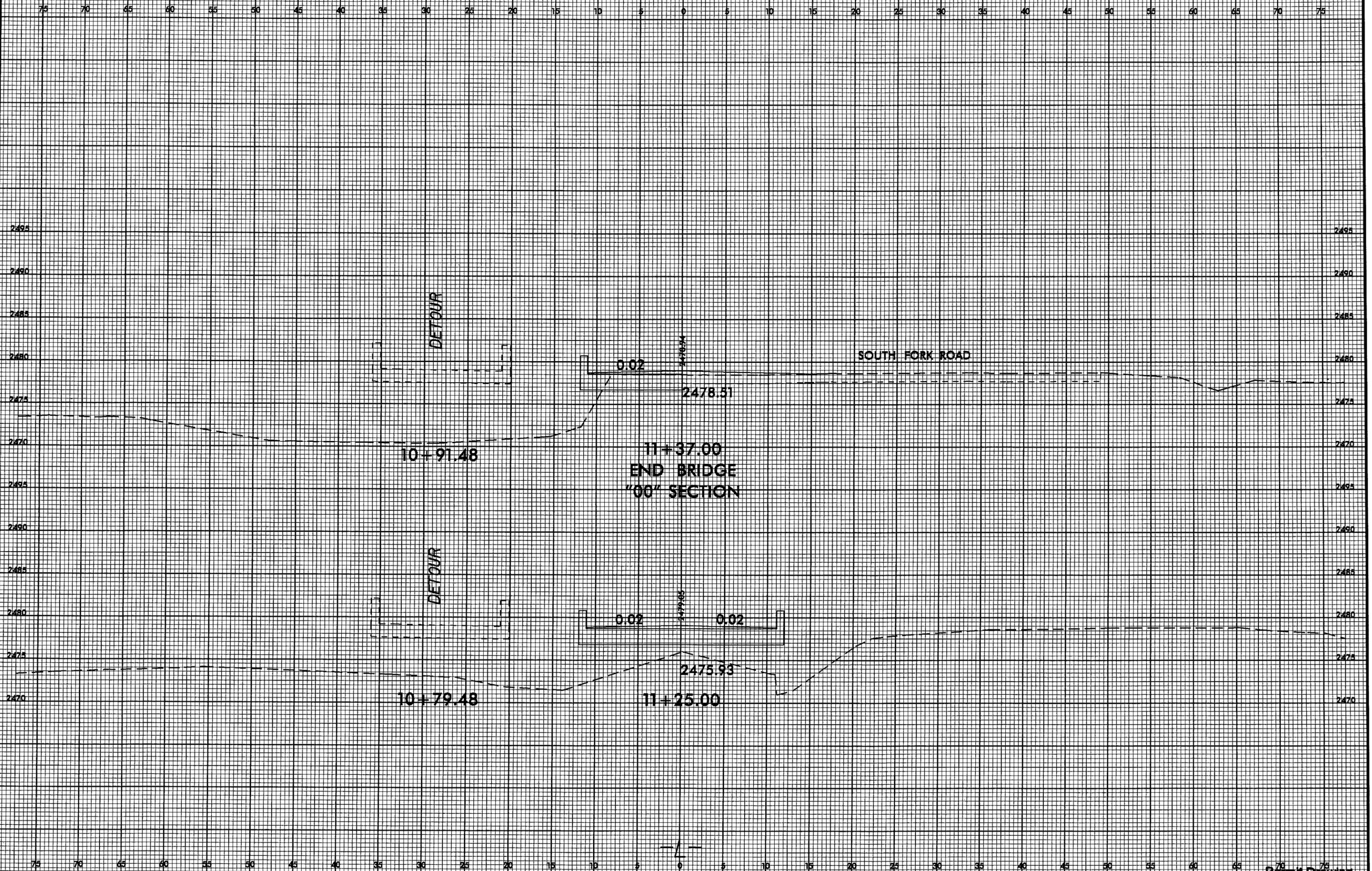
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8/23/99



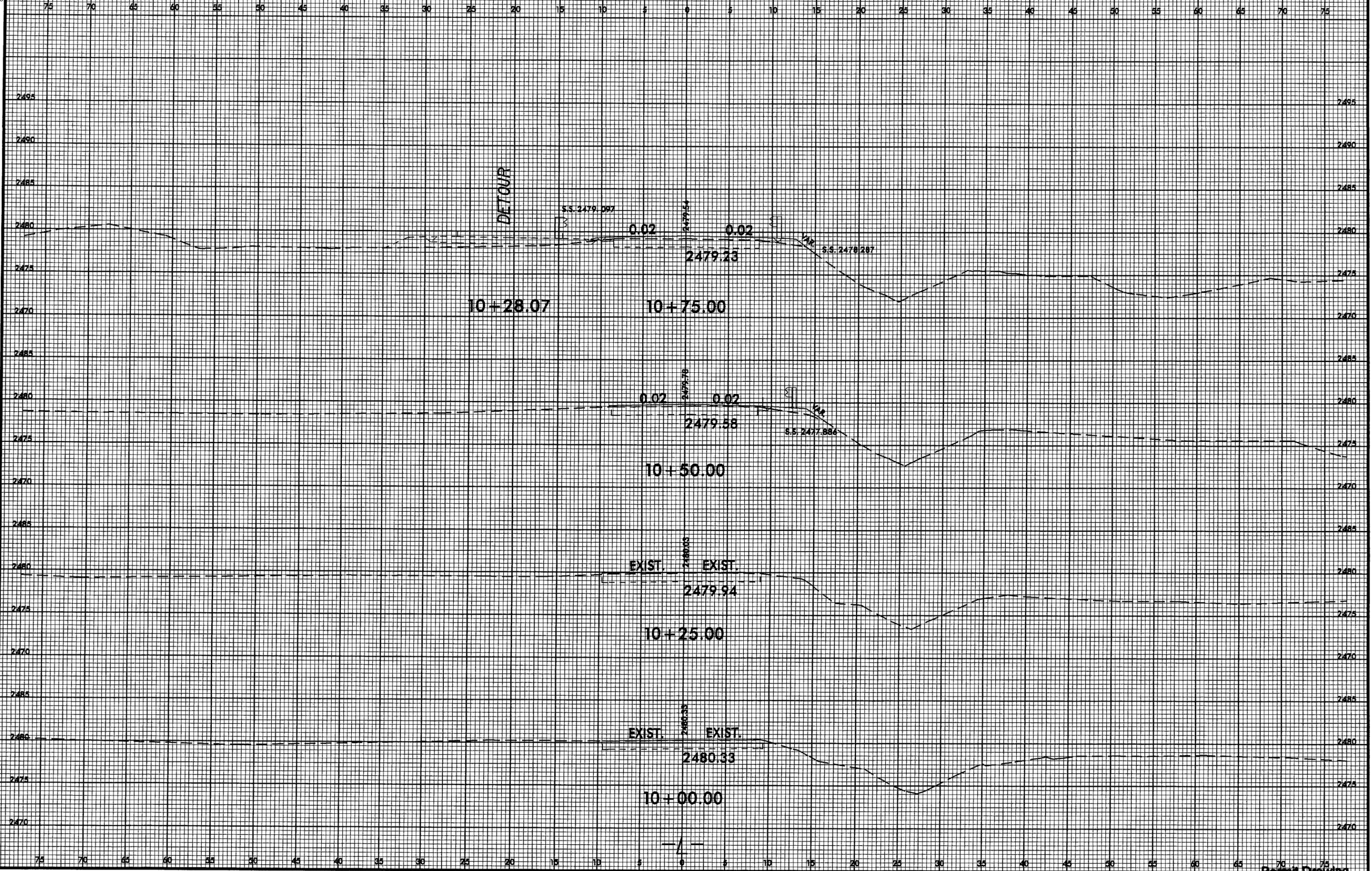
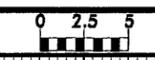
PROJ. REFERENCE NO.
B-3869

SHEET NO.
X-3



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gsal At 11/24/07

8/23/99



12-DEC-2008 08:05
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See Sheet 1A For Index of Sheets

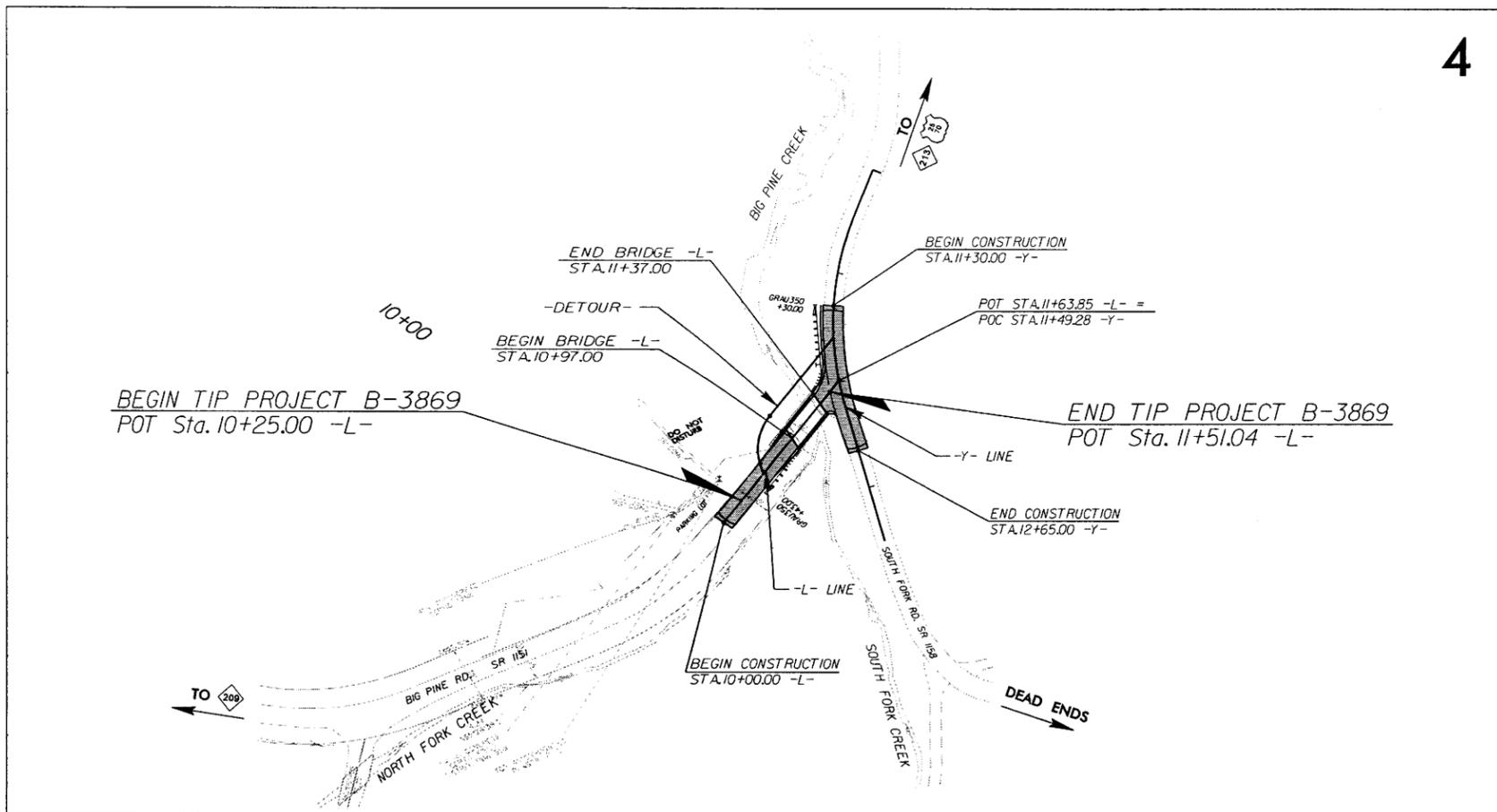
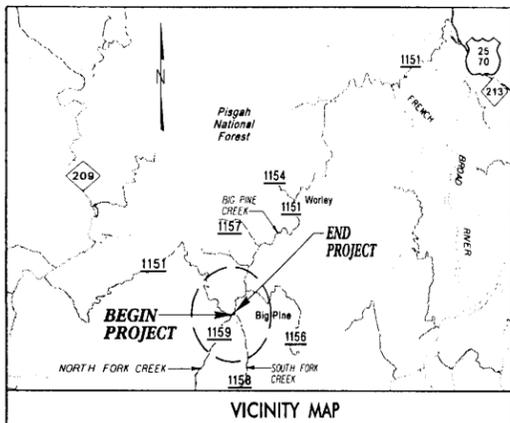
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

MADISON COUNTY

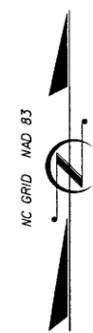
**LOCATION: REPLACEMENT OF BRIDGE No. 146
ON SR 1151 OVER BIG PINE CREEK**

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

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C. | B-3869 | 1 | |
| STATE PROJ. NO. | F.A. PROJ. NO. | DESCRIPTION | |
| 33314.1.1 | BRSTP-1151(3) | PREL. | |
| 33314.2.2 | BRSTP-1151(3) | RW & UTIL | |
| 33314.3.1 | BRSTP-1151(3) | CONST | |
| | | | |
| | | | |
| | | | |



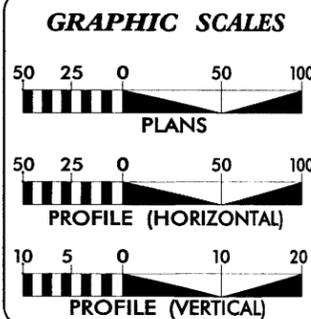
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- CLEARING FOR THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.
- THIS PROJECT IS NOT WITHIN ANY CITY LIMITS.
- ** DESIGN EXCEPTION FOR DESIGN SPEED REQUIRED.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT



DESIGN DATA

| |
|---------------------|
| ADT 2009 = 190 |
| ADT 2029 = 250 |
| DHV = 10 % |
| D = 60 % |
| T = 3 % * |
| V = 30 MPH** |
| * TTST 1 % DUAL 2 % |

PROJECT LENGTH

| | | |
|--|---|-----------|
| LENGTH OF ROADWAY TIP PROJECT B-3869 | = | 0.016 MI. |
| LENGTH OF STRUCTURE TIP PROJECT B-3869 | = | 0.008 MI. |
| TOTAL LENGTH OF TIP PROJECT B-3869 | = | 0.024 MI. |

Prepared in the Office of:

Stantec Consulting Inc.
Suite 300, 801 Jones Franklin Road
Raleigh, NC U.S.A. 27606
Tel. 919.851.6866 Fax. 919.851.7024
www.stantec.com

| | |
|---------------------------------------|--|
| 2006 STANDARD SPECIFICATIONS | ROBERT WILLIAMS, PE PROJECT ENGINEER |
| RIGHT OF WAY DATE: AUGUST 18, 2006 | KEITH F. HUDSON PROJECT DESIGN ENGINEER |
| LETTING DATE: OCTOBER 20, 2009 | CATHY S. HOUSER, PE PROJECT ENGINEER - DESIGN SERVICES |

NCDOT CONTACT:

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

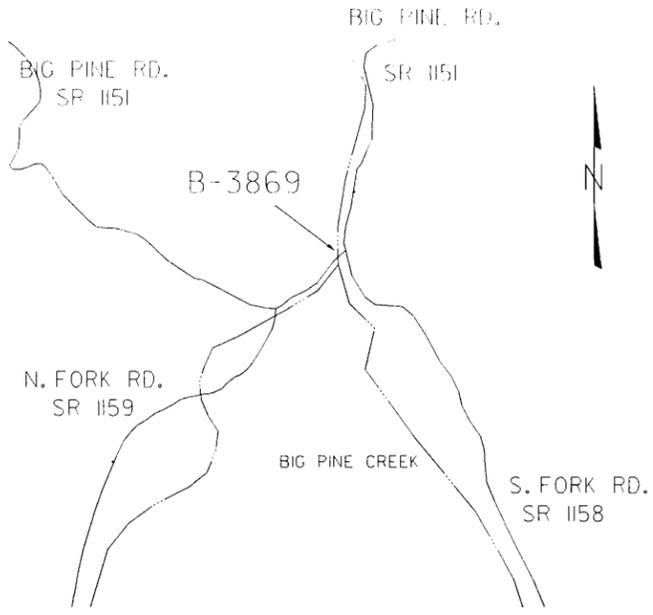
SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY DESIGN ENGINEER P.E.

10/22/2008
D:\Baldwin\Proj\B3869_rdy_tsh.dgn
rwilliams

SURVEY CONTROL SHEET B-3869



**VICINITY MAP
(NOT TO SCALE)**



| BL | POINT | DESC. | NORTH | EAST | ELEVATION | L STATION | OFFSET |
|------|-------|---------|-------------|-------------|-----------|------------------------|----------|
| GPS1 | | B3869-1 | 762438.7704 | 869349.6655 | 2490.19 | OUTSIDE PROJECT LIMITS | |
| 3 | | BL-3 | 762677.4997 | 869674.4080 | 2479.26 | 11+72.92 | 19.96 RT |
| 4 | | BL-4 | 763059.1633 | 869773.5191 | 2477.72 | OUTSIDE PROJECT LIMITS | |
| BY | POINT | DESC. | NORTH | EAST | ELEVATION | Y STATION | OFFSET |
| Y3 | | BL-3 | 762677.4997 | 869674.4080 | 2479.26 | 12+79.89 | 89.51 RT |
| 5 | | BY-4 | 762489.6986 | 869853.0889 | 2481.63 | OUTSIDE PROJECT LIMITS | |

| | | | |
|-------------------------------------|---------------------|-----------------------------------|---------------------|
| BMI | ELEVATION = 2496.92 | BM2 | ELEVATION = 2474.58 |
| N 762348 | E 869303 | N 762860 | E 869640 |
| L STATION 10+00 | | L STATION 13+18 97 LEFT | |
| S 48° 56' 25.6" W DIST 320.66 | | NAIL IN BASE OF 38 INCH WHITE OAK | |
| NAIL IN BASE OF 18 INCH TWIN POPLAR | | | |

| | |
|--------------------------------|---------------------|
| BMI3 | ELEVATION = 2471.15 |
| N 763102 | E 869759 |
| Y STATION 10+00 | |
| N 4° 28' 02.6" W DIST 129.19 | |
| NAIL IN BASE OF 18 INCH POPLAR | |

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "B3869-1" WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF NORTHING: 762438.7704(FT) EASTING: 869349.6655(FT) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99981377 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B3869-1" TO -L- STATION 10+00.00 IS N 58°21'33.7" E 228.73' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

-L- STA. 13+35.25 END STATE PROJECT 33314.1.1 LOCALIZED PROJECT COORDINATES
 N - 762829.9187
 E - 869733.7177

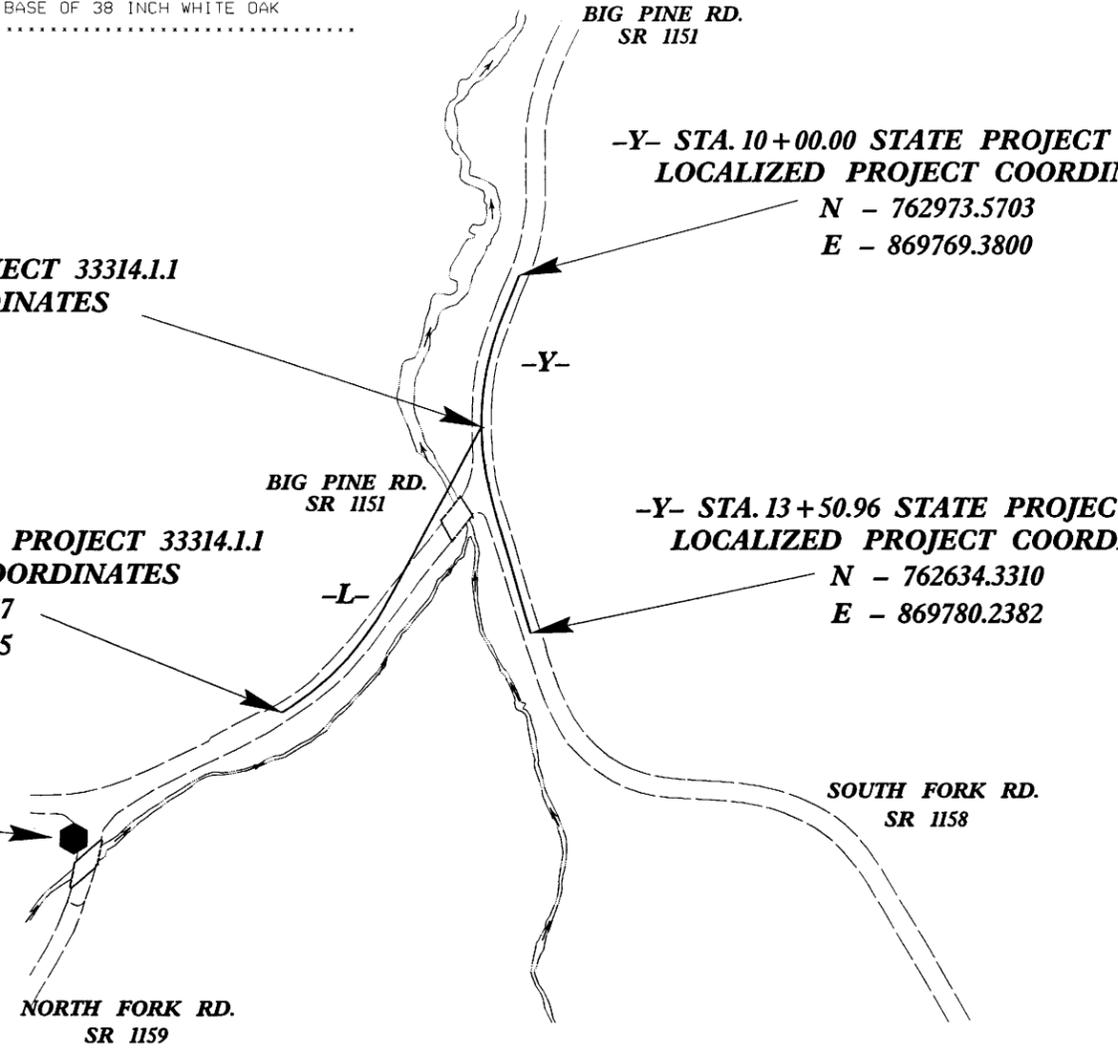
-L- STA. 10+00.00 BEGIN STATE PROJECT 33314.1.1 LOCALIZED PROJECT COORDINATES
 N - 762558.7577
 E - 869544.3925

NCDOT GPS STA. "B3869-1" LOCALIZED PROJECT COORDINATES
 N - 762438.7704
 E - 869349.6655

-Y- STA. 10+00.00 STATE PROJECT 33314.1.1 LOCALIZED PROJECT COORDINATES
 N - 762973.5703
 E - 869769.3800

-Y- STA. 13+50.96 STATE PROJECT 33314.1.1 LOCALIZED PROJECT COORDINATES
 N - 762634.3310
 E - 869780.2382

NCDOT GPS STA. "B3869-2" LOCALIZED PROJECT COORDINATES
 N - 761975.1526
 E - 870303.0232



NOTES:

1. THE CONTROL DATA FOR THIS PROJECT CAN BE FOUND ELECTRONICALLY BY SELECTING PROJECT CONTROL DATA AT:
[HTTP://WWW.DOH.DOT.STATE.NC.US/PRECONSTRUCT/HIGHWAY/LOCATION/PROJECT/](http://www.doh.dot.state.nc.us/preconstruct/highway/location/project/)

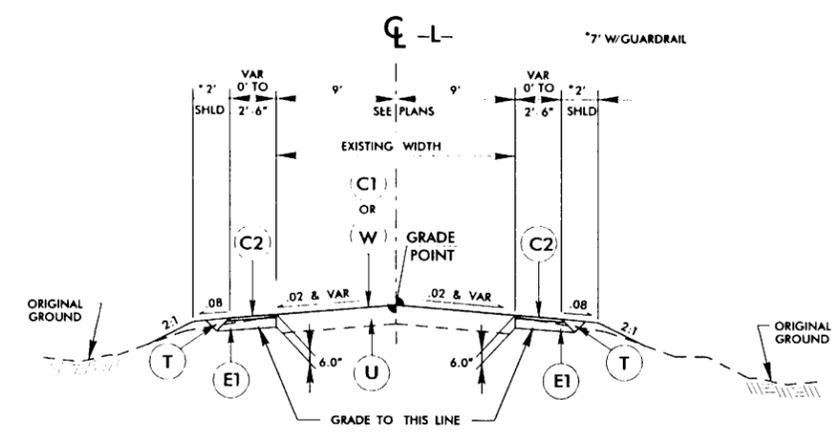
THE FILES TO BE FOUND ARE AS FOLLOWS:
 B3869_LS_CONTROL_051004.TXT

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

- INDICATES GEODETIC CONTROL MONUMENTS USED OR SET FOR HORIZONTAL PROJECT CONTROL BY THE NCDOT LOCATION AND SURVEYS UNIT.
 PROJECT CONTROL ESTABLISHED USING GLOBAL POSITIONING SYSTEM.
 NETWORK ESTABLISHED FROM EXISTING HARN MONUMENTATION

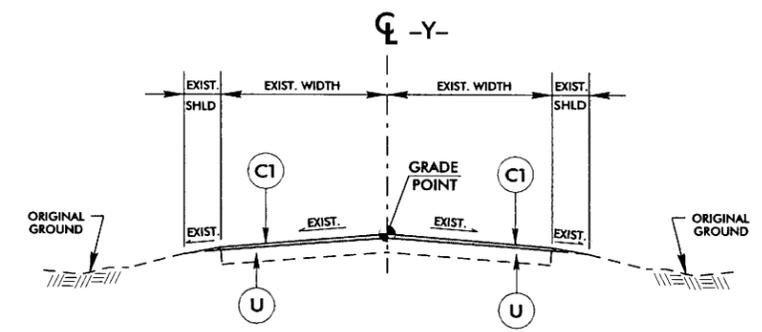
NOTE: DRAWING NOT TO SCALE

10-27-2019 10:47:20 AM C:\Users\jls111\OneDrive\Desktop\B3869-1.dgn



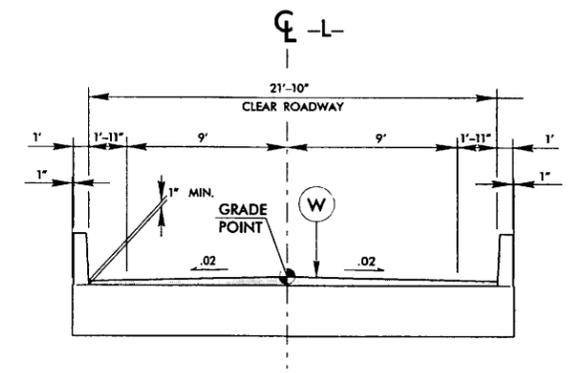
TYPICAL SECTION NO. 1

-L- STA. 10+25.00 TO STA. 10+97.00 (BEGIN BRIDGE)
-L- STA. 11+37.00 (END BRIDGE) TO STA. 11+51.04



TYPICAL SECTION NO. 2

-Y- STA. 11+30.00 TO STA. 12+65.00

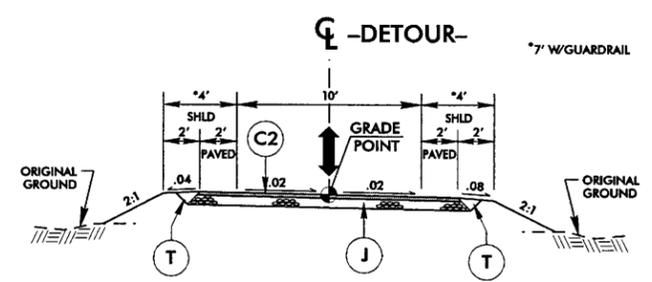


CORED SLAB BRIDGE

8 PRESTRESSED CONC. CORED SLAB UNITS = 24'-0"

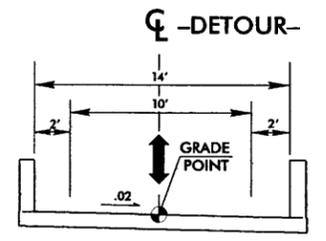
TYPICAL SECTION NO. 3

-L- STA. 10+97.00 TO STA. 11+37.00



TYPICAL SECTION NO. 4

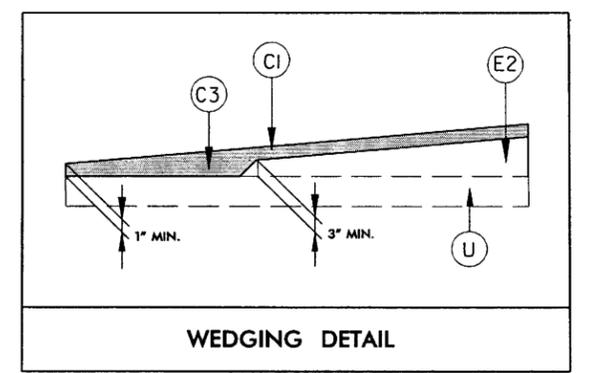
ONE LANE ONE WAY
-DETOUR- STA. 10+10.18 TO STA. 10+58.40 (BEGIN TEMP BRIDGE)
-DETOUR- STA. 11+13.40 (END TEMP BRIDGE) TO STA. 11+32.89



TYPICAL SECTION NO. 5

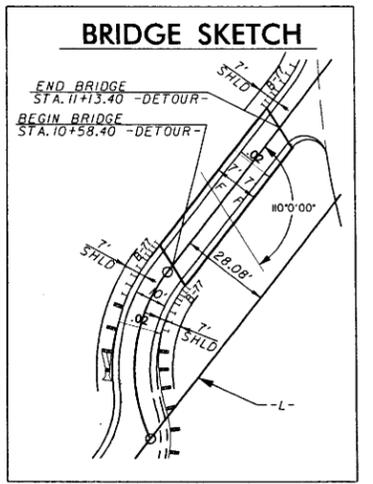
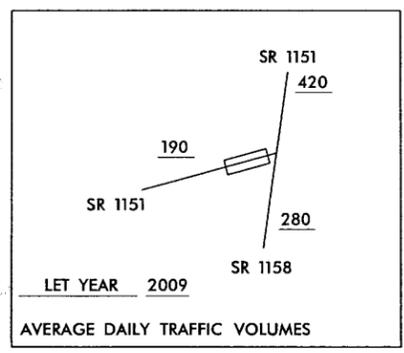
ONE LANE ONE WAY STRUCTURE
-DETOUR- STA. 10+58.40 TO STA. 11+13.40

| PAVEMENT SCHEDULE | |
|-------------------|--|
| C1 | PROP. APPROX. 1.0" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. |
| C2 | PROP. APPROX. 2.0" ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. IN EACH OF TWO LAYERS |
| C3 | PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE SF9.5A, AT AN AVERAGE RATE OF 110 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1" OR GREATER THAN 1.75". |
| E1 | PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. |
| E2 | PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH. |
| J | 6" AGGREGATE BASE COURSE |
| T | EARTH MATERIAL |
| U | EXISTING PAVEMENT |
| W | WEDGING |



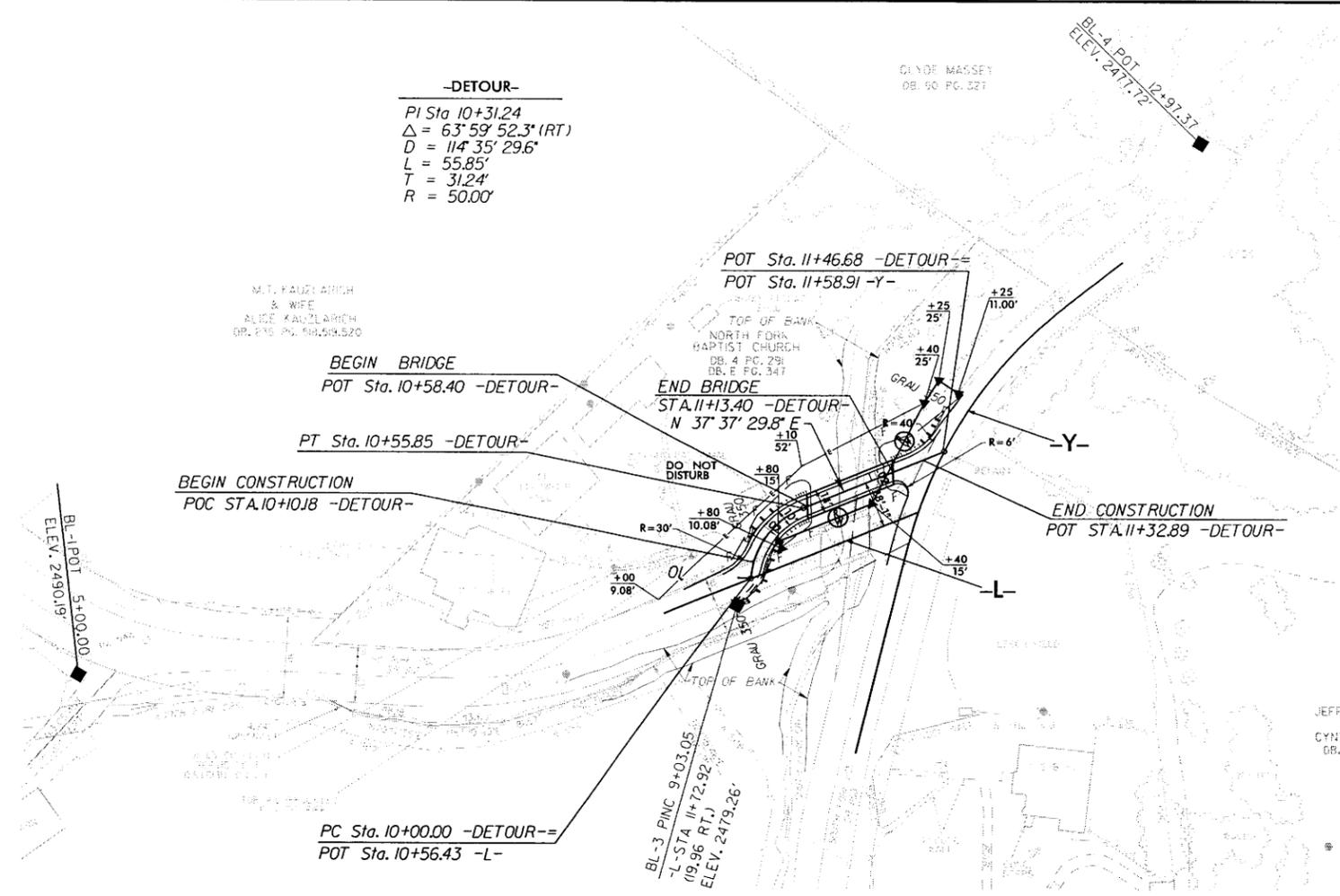
WEDGING DETAIL

NOTE:
ALL PAVEMENT STRUCTURE SLOPES ARE 1:1 UNLESS OTHERWISE SPECIFIED.



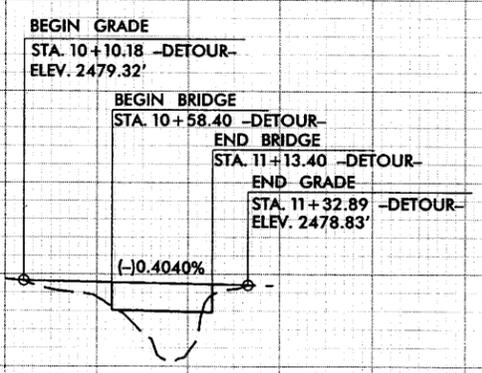
-DETOUR-

PI Sta 10+31.24
 $\Delta = 63^\circ 59' 52.3''$ (RT)
 $D = 114' 35'' 29.6''$
 $L = 55.85'$
 $T = 31.24'$
 $R = 50.00'$



REFERENCE:
FOR PLAN & PROFILE OF L-LINE, SEE SHEET NO. 4

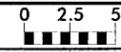
- DETOUR -



HYDRAULIC SUMMARY DATA

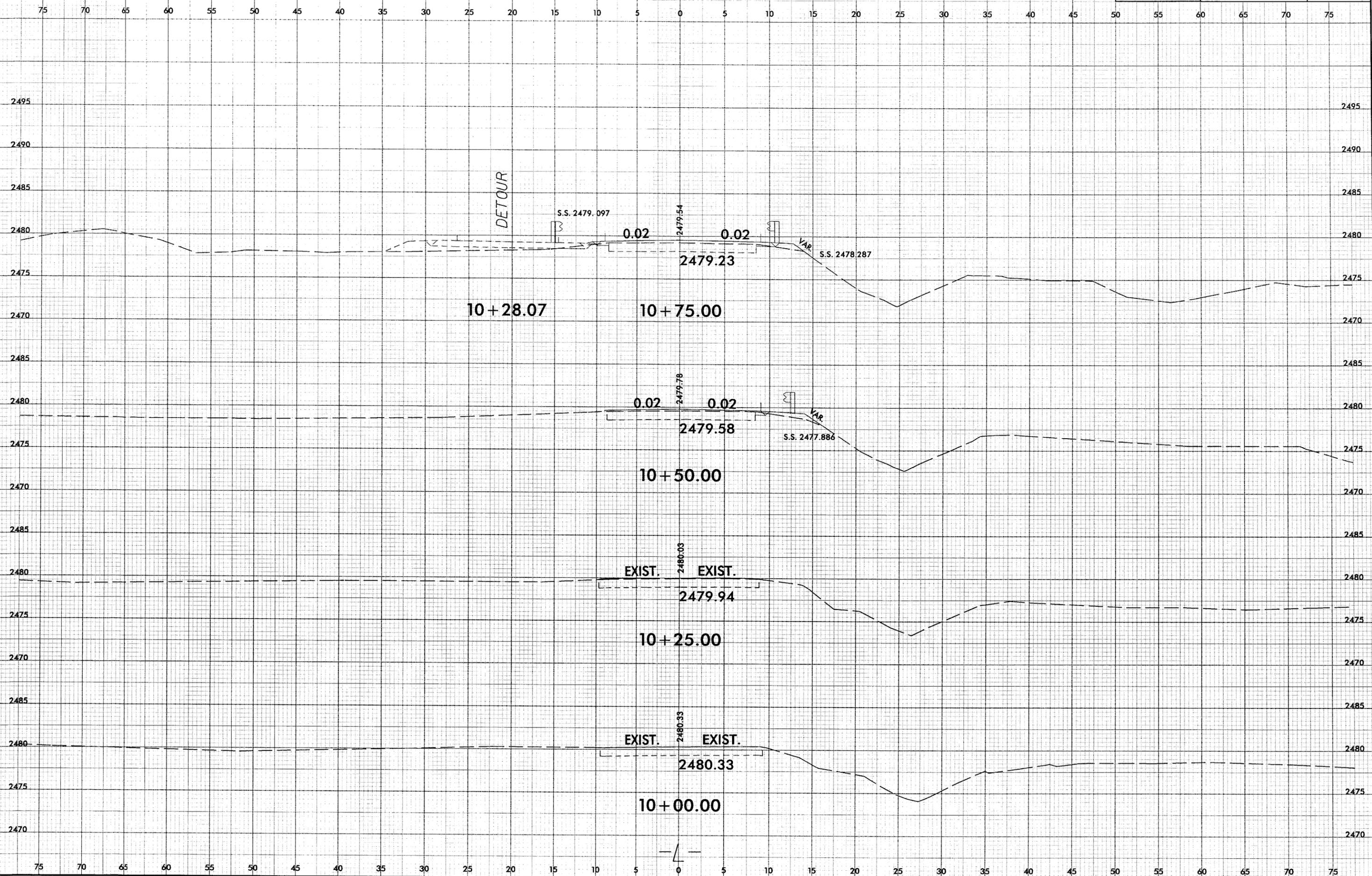
| | |
|-----------------------|-------------|
| DRAINAGE AREA | 5.08 Sq.MI. |
| DESIGN FREQ. | 5 YR. |
| DESIGN DISCHARGE | 880 cfs |
| DESIGN WSEL | 2475.6 ft. |
| 0100 DISCHARGE | 2450 cfs |
| 0100 HW ELEV. | 2481.3 ft. |
| OVERTOPPING FREQ. | .25 YR. |
| OVERTOPPING DISCHARGE | 1175 cfs |
| OVERTOPPING ELEV. | 2478.8 ft. |

REVISIONS

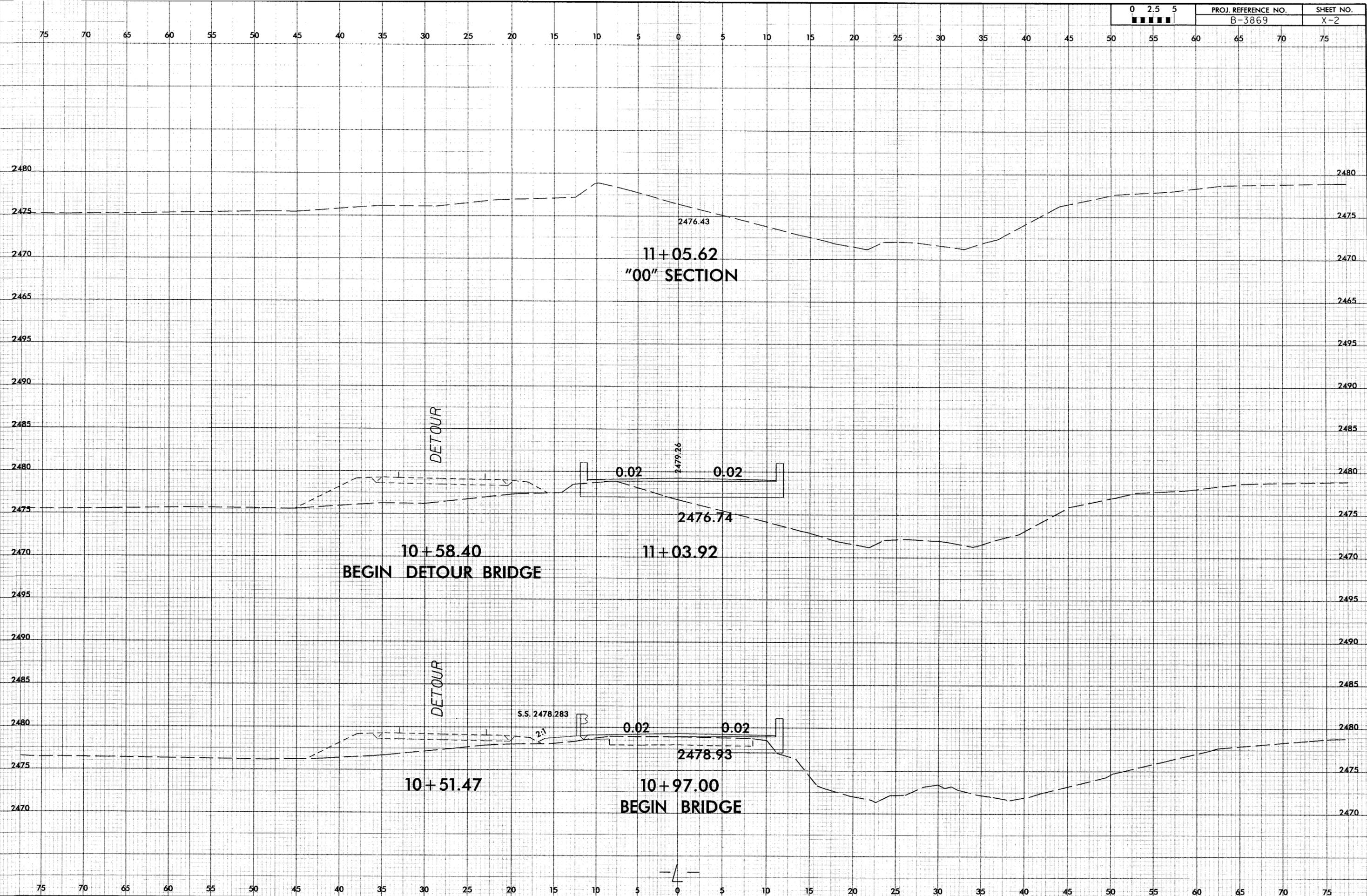
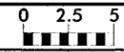


PROJ. REFERENCE NO.
B-3869

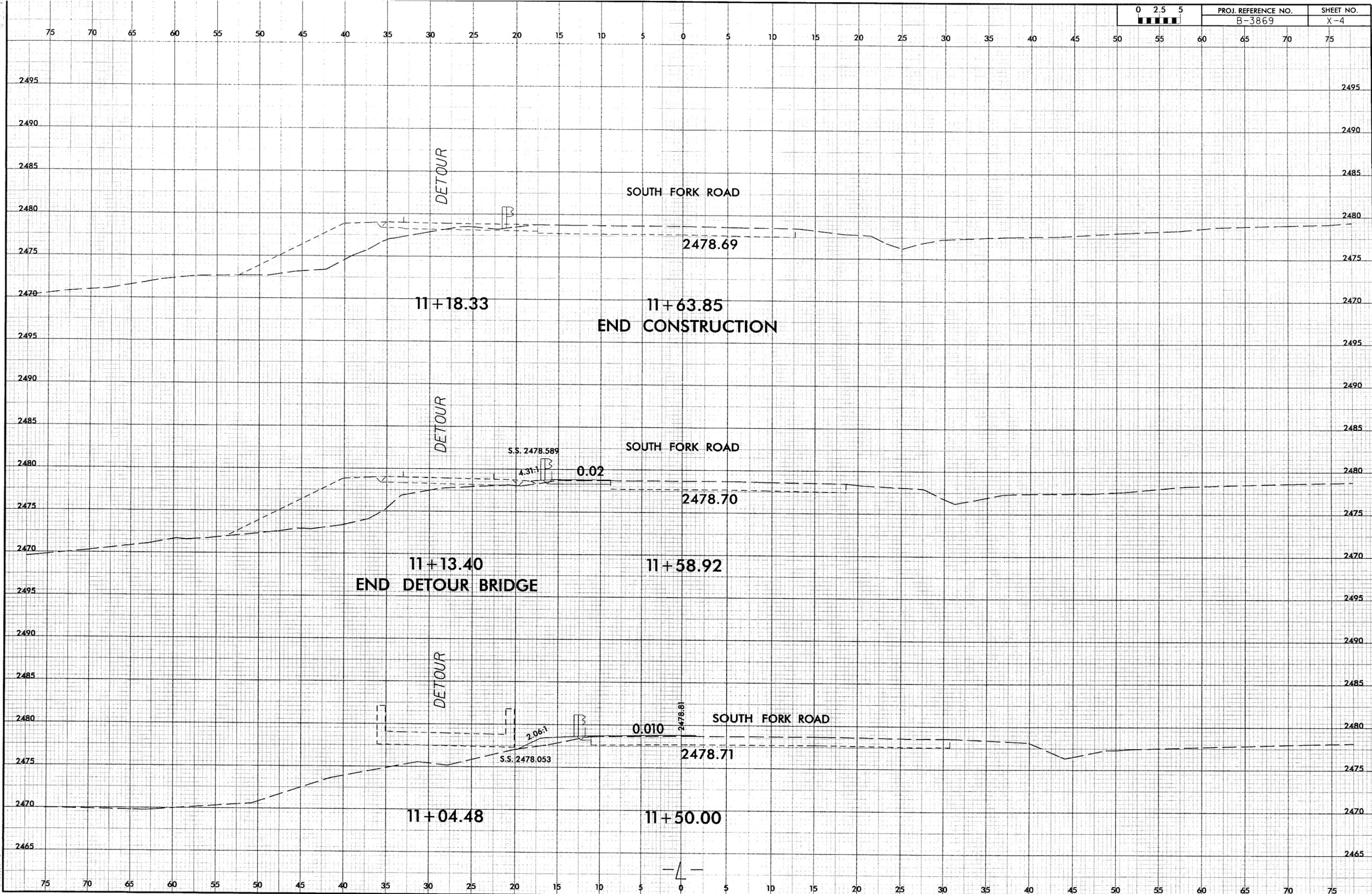
SHEET NO.
X-1



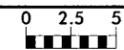
10-20-2008
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01/20/2008
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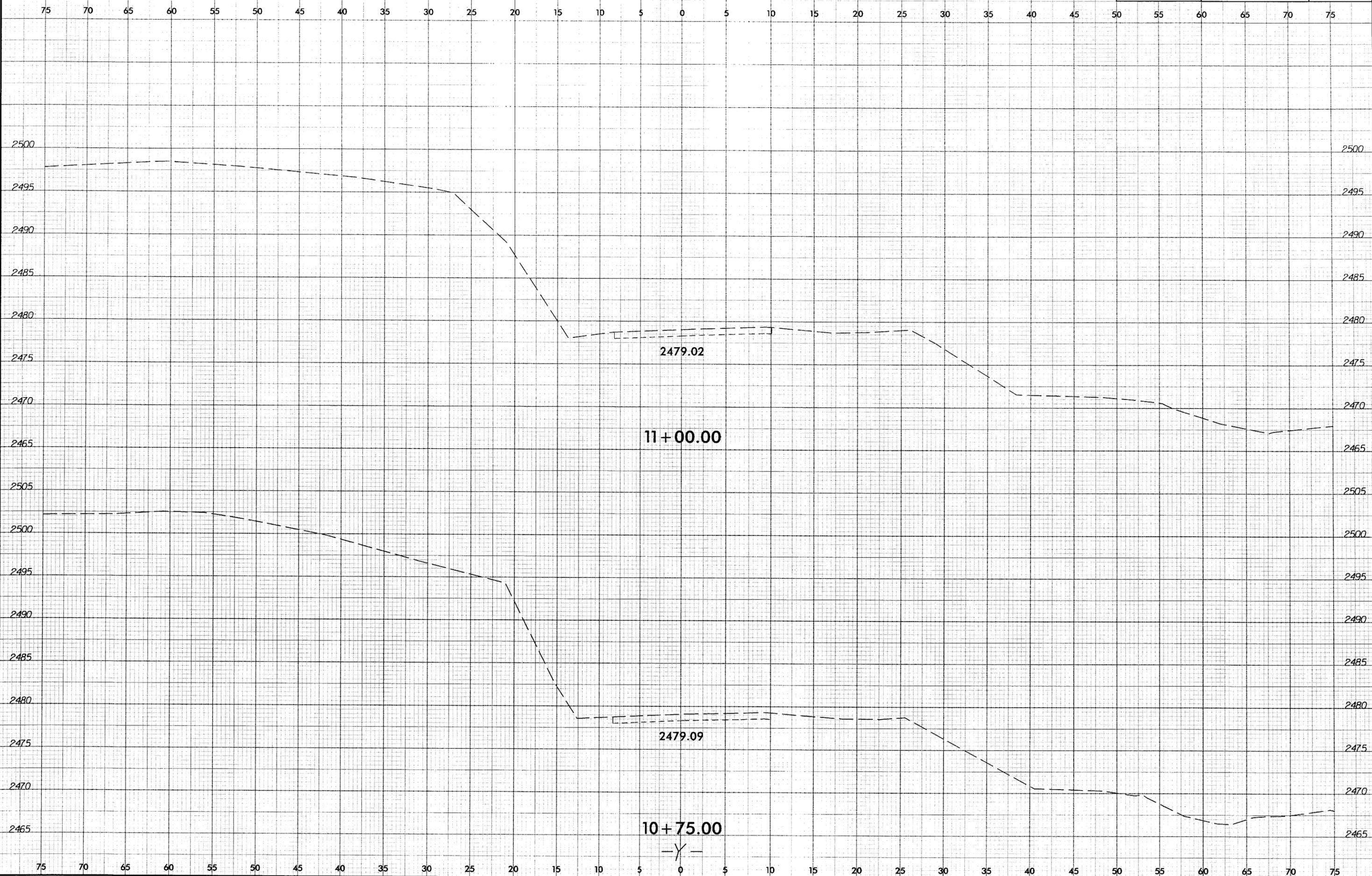


10/22/2008
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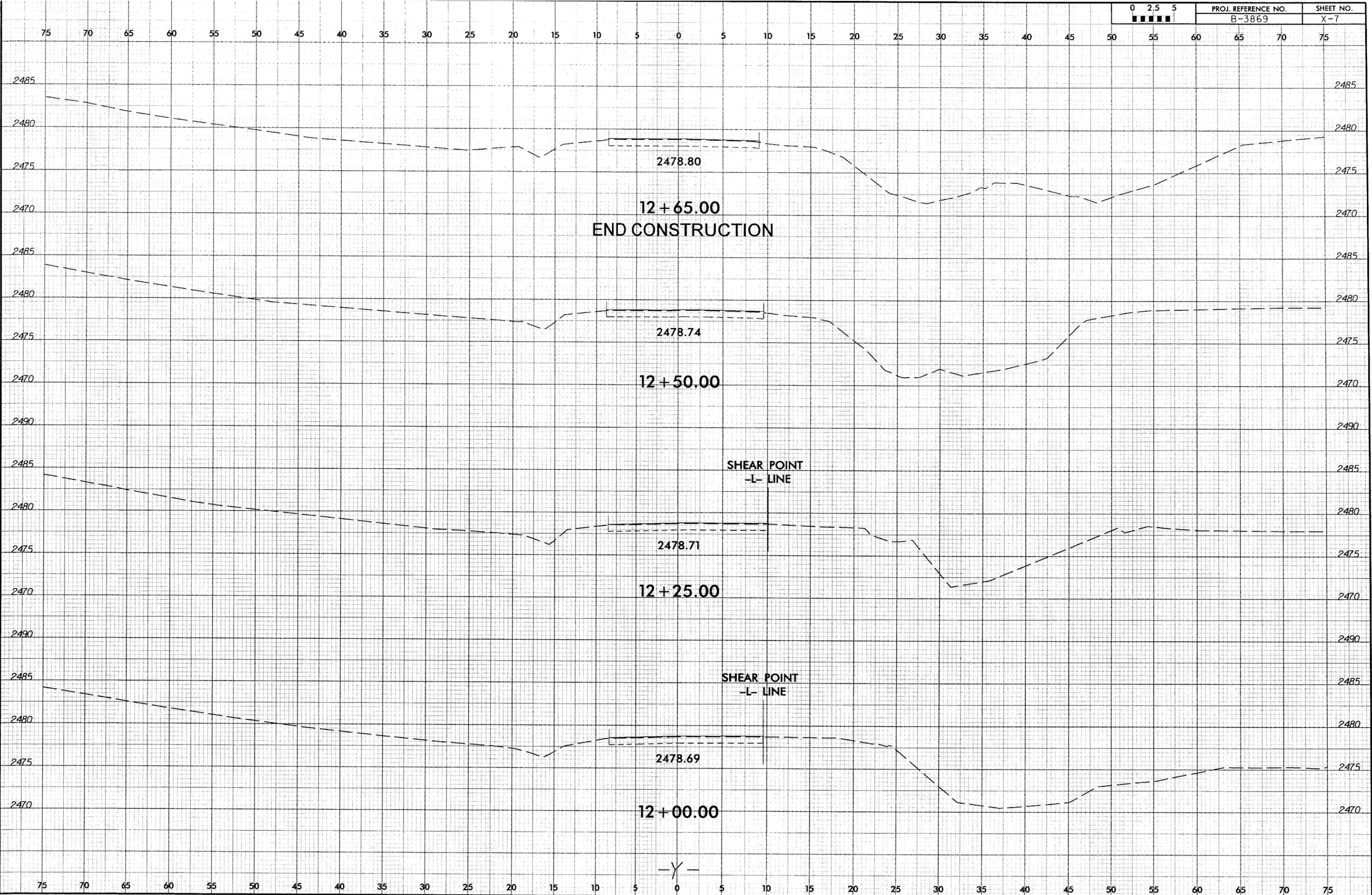
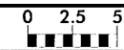


PROJ. REFERENCE NO.
B-3869

SHEET NO.
X-5



10/27/2008
18:50:00
C:\Program Files\AutoCAD\acad.rvt



2478.80

12 + 65.00
END CONSTRUCTION

2478.74

12 + 50.00

SHEAR POINT
-L- LINE

2478.71

12 + 25.00

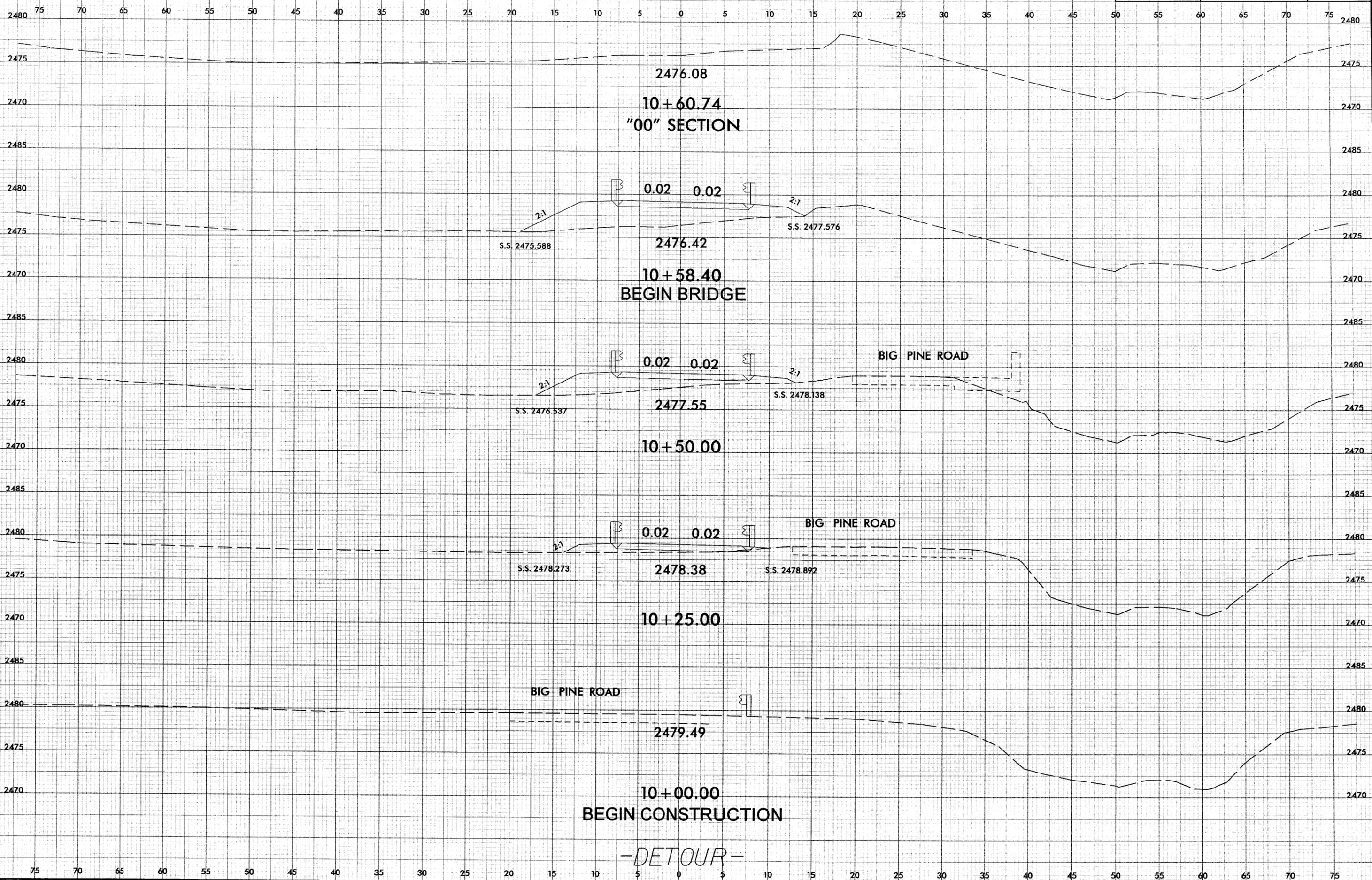
SHEAR POINT
-L- LINE

2478.69

12 + 00.00

-Y-

10/27/2008
11:56:08 AM
c:\p1\proj\12+00.00\12+00.00.dgn



11/23/2008 10:30:00 AM b:\3869\rdy_xpl_DET00U.dgn

-DETOUR-

