



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 6, 2008

US Army Corps of Engineers
Raleigh Regulatory Field Office
3331 Heritage Trade Drive, Suite 105
Wake Forest, North Carolina 27587

ATTN: Mr. John Thomas
NCDOT Coordinator

Subject: **Application for Section 404 Nationwide Permit 14 and Section 401 Water Quality Certification.** Widening of US 70 from the Rowan/Iredell County Line to SR 1001(Amity Hill Road) in Rowan County. NCDOT Division 9, State Project No. 8.1631801, WBS No. 34517.1.1, T.I.P. No. R-2911B.

\$240.00 Debit from WBS Element 34517.1.1.

Dear Sir,

The North Carolina Department of Transportation (NCDOT) proposes to widen US 70 from the Rowan County/Iredell County line to SR 1001 (Amity Hill Road) in Rowan County. US 70 will be widened from the existing two-lane facility to a four-lane divided roadway. The improved facility will have a 30-foot raised grass median with grass shoulders on each side. The new facility will include two lanes, a 12-foot wide travel lane in each direction, plus 8-foot shoulders, 4-feet of each shoulder will be paved. The proposed project replaces the current bridge over Third Creek with dual structures; each structure is a 4-span pre-stressed concrete girder bridge with an overall length of 280-feet and a total bridge width of 39-feet, 3-inches. The bridge will span Third Creek. The bridge will include two lanes, 12-foot wide in each direction with a 4-foot shoulder.

The purpose of this project is to increase traffic carrying capacity and to improve safety by widening US 70 from the existing two-lane facility to a four-lane facility. The proposed widening of US 70 will provide a continuous multilane facility leaving Statesville in conformance with thoroughfare plans for Statesville. US 70 is a Major Arterial for Rowan County and a Principal Arterial/Major Thoroughfare for Iredell County that serves commuters traveling between Statesville, Cleveland and Salisbury. Construction of this project will be a step toward implementation of these long-range plans, which were adopted by local governments

MAILING ADDRESS:

NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
NATURAL ENVIRONMENT UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

TELEPHONE: 919-715-1334 or
919-715-1335

FAX: 919-715-5501

LOCATION:

2728 CAPITAL BLVD, SUITE 240
RALEIGH NC 27604

WEBSITE: WWW.NCDOT.ORG

and NCDOT. Please see the enclosed Pre-Construction Notification, permit drawings, and design plans for the subject project.

NEPA DOCUMENT STATUS

An Environmental Assessment (EA) for all project sections was completed for the project in May of 1999, the Federal Highway Administration (FHWA) issued an administrative action, Finding of No Significant Impact (FONSI) for all project sections in December of 2000. A Right of Way Consultation was completed for R-2911B in September of 2004. Additional copies of these documents are available upon request.

IMPACTS TO WATERS OF THE UNITED STATES

The project is located in sub basin 03-07-06 of the Yadkin River Basin. This area is part of Hydrologic Cataloging Unit 03040102. There are three perennial streams, with a best usage classification of Class C, located within the project area. The streams are Third Creek and two unnamed tributaries (UTs) to Third Creek. A new bridge will be constructed over Third Creek east of the existing bridge. Both UTs will be piped under the proposed roadway widening.

There are no streams listed on the 2006 Final 303(d) list within 1.0 mile of the project study area.

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

There are three riverine wetlands located within the project area. Two of the four wetlands originate inside of the project study area and expand well beyond the limits of the corridor. The wetland at Site 2 is located on the south side of US 70, Plan Sheet 14, Station 140+81 to 141+11. There is another wetland located within the project corridor just south of this wetland. However, this wetland will not be impacted by the project, but it is shown on Plan Sheet 14. Site 4 shows two wetlands. These wetlands are located at Station 161+82 to 164+10.

The US Army Corps of Engineers is satisfied with the Jurisdictional Information they have in their files regarding this project.

SCHEDULE

TIP No.	Let Date	Completion Date
R-2911A	8/17/2004	7/2007
R-2911B	9/16/2008	N/A
R-2911C	12/21/2004	9/2007
R-2911D	12/21/2004	9/2007
R-2911E	12/21/2004	6/2007

R-2911B calls for a let date of September 16, 2008 and has a review date of August 5, 2008. This project has a date of availability of October 28, 2008. It is expected that the contractor will begin construction shortly after that date.

Permanent Impacts

There will be a total of 250 linear feet of permanent jurisdictional stream impacts and <0.10 acre of permanent riverine wetland impacts.

Site 2:

Approximately <0.01 acre of riverine wetland impacts are due to mechanized clearing for the construction of a lateral base ditch.

Site 3:

There will be approximately 123 linear feet of permanent jurisdictional stream impacts to UT to Third Creek. These impacts are the result of the construction of a lateral V ditch.

Site 4:

There will be a total of 0.09 acre of riverine wetland impacts at this site. The wetland impacts are broken down as follows: 0.05 acres of riverine wetland impacts from permanent fill, 0.01 impacts from excavation in wetland, and 0.03 impacts due to mechanized clearing in wetland. Permanent surface water impacts to this site will be 127-linear feet to UT to Third Creek. All wetland and stream impacts associated with Site 4 are the result of the construction of a lateral V ditch and the installation of the 72-inch steel plate pipe.

Temporary Impacts

Site 1:

There will be 0.04 acre of temporary impacts to the surface waters of Third Creek resulting from the use of two causeways. The causeways will be used during the construction of the new bridge. Please note that both causeways will not be in place at the same time in order to allow maximum flow through Third Creek. The temporary causeways will be used to support a crane during construction of the bridge.

Utility Impacts

There will be no NCDOT utility impacts to jurisdictional areas on this project.

FEDERALLY PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE), and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. The United States Fish and Wildlife Service (USFWS) lists 1 species for Rowan County. Table 1 lists the species and their federal status.

Table 1. Federally Protected Species in Rowan County, NC

Common Name	Scientific Name	Federal Status*	Biological Conclusion	Habitat Present
Schweinitz's sunflower	<i>Helianthus schweinitzii</i>	E	No Effect	Yes

E = endangered

A Biological Conclusion of "No Effect" was given in the Environmental Assessment (EA) for the bald eagle based on lack of habitat. The bald eagle was delisted on August 8, 2007 from the Endangered Species Act. After delisting, the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668-668d) becomes the primary law protecting bald eagles.

A Biological Conclusion of "No Effect" was also given in the EA for Schweinitz's sunflower. A field survey for Schweinitz's sunflower was conducted on September 27, 2007 by NCDOT Biologists. Suitable habitat exists along the roadside shoulder. No populations of Schweinitz's sunflower were found during the survey. Therefore, the Biological Conclusion of No Effect remains valid.

CULTURAL RESOURCES

Archaeology

In a letter located in the EA, dated December 21, 2000, the State Historic Preservation Office (SHPO) concurred with the NCDOT that archeological sites 31RW172, 31RW173, 31RW174, and 31RW175 were lacking integrity and not eligible for listing in the National Register of Historic Places. These archeological sites are all located on the south side of US70 in the area of Third Creek.

Historic Architecture

In a letter located in the EA dated December 6, 1996, the SHPO identified the Wood-Fleming House, located south of US 70, 0.5 miles east of its junction with SR 1808, as being of historic and cultural importance. In a letter found in the EA dated September 11, 1998, it was determined that with the selection of Alternative 3A (a four lane alternative with 30-foot medians), SHPO concurred with the conclusion of No Adverse Effect as long as there were no median openings in front of the historic property. There are no median openings located in front of the Wood-

Fleming house and historic properties associated with it. Therefore, the conclusion of No Adverse Effect applies. The Wood-Fleming House is located on the south side of US 70 on Plan Sheet 4, Station 16 and Plan Sheet 5, Station 17.

MITIGATION OPTIONS

Avoidance and Minimization and Compensatory Mitigation

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. With the exception of not building the project, there are no feasible means of avoiding impacts to the streams or wetlands. NCDOT will minimize impacts to the streams and wetlands through the use of best management practices.

According to the Clean Water Act (CWA) §404(b)(1) guidelines, NCDOT must avoid, minimize, and mitigate, in sequential order, impacts to waters of the US. The following is a list of the project's jurisdictional stream avoidance/minimization activities proposed or completed by NCDOT:

Avoidance/Minimization

- Temporary construction impacts due to erosion and sedimentation will be minimized through implementation of stringent erosion control methods and use of Best Management Practices (BMPs) highlighted in NCDOT's "Best Management Practices for Construction and Maintenance Activities".
- Maintain 2:1 fill slopes in jurisdictional areas.
- Best Management Practices for Protection of Surface Waters will be implemented.
- The new bridge on US70 will span Third Creek. There will be no bents placed in the water.

Compensatory Mitigation

Due to the minimal amount of impacts (<0.01 ac) to riverine wetlands located on the subject property, no compensatory mitigation is proposed. There are two tributaries to Third Creek with stream impacts. These tributaries are degraded with silt and sediment and do not provide significant aquatic uses. Therefore, mitigation is not proposed for the stream impacts to the two tributaries to Third Creek (250 ft. total).

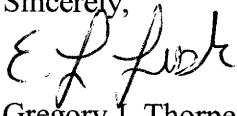
REGULATORY APPROVALS

Section 404 Permit: The project has been processed by the Federal Highway Administration and has been issued an administrative action of, "Finding of No Significant Impact" (FONSI) in

accordance with 23 CFR 771.115(b). The NCDOT requests that these activities be authorized by a Nationwide Permit 14 (Federal Register Vol. 72, No. 47 Pages 11092-11198; March 12, 2007).

Section 401 Permit: General Water Quality Certification 3704 will apply to this project. All general conditions of the Water Quality Certifications will be met. Written concurrence is required for this certification. In accordance with 15A NCAC 2H, Section .0500 and 15A NCAC 2B.0200 we are providing five copies of this application to the North Carolina Department of Environment and Natural Resources, Division of Water Quality, for their review and approval.

A copy of this permit application 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 Sara Easterly at 919-715-5499 or seeasterly@dot.state.nc.us.

Sincerely,

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

Cc:

W/attachment

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

W/o attachment (see website for attachments)

Dr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Greg Perfetti, P.E., Structure Design
Mr. S. P. Ivey, P.E., Division Engineer
Mr. Kent Boyer, 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. Beverly Robinson, P. E., PDEA

Office Use Only:

Form Version March 05

USACE Action ID No. _____ **DWQ No.** _____

(If any particular item is not applicable to this project, please enter "Not Applicable" or "N/A".)

I. Processing

1. Check all of the approval(s) requested for this project:

☒ Section 404 Permit	☐ Riparian or Watershed Buffer Rules
☐ Section 10 Permit	☐ Isolated Wetland Permit from DWQ
☒ 401 Water Quality Certification	☐ Express 401 Water Quality Certification
2. Nationwide, Regional or General Permit Number(s) Requested: Nationwide Permit 14
3. If this notification is solely a courtesy copy because written approval for the 401 Certification is not required, check here: ☐
4. If payment into the North Carolina Ecosystem Enhancement Program (NCEEP) is proposed for mitigation of impacts, attach the acceptance letter from NCEEP, complete section VIII, and check here: ☐
5. If your project is located in any of North Carolina's twenty coastal counties (listed on page 4), and the project is within a North Carolina Division of Coastal Management Area of Environmental Concern (see the top of page 2 for further details), check here: ☐

II. Applicant Information

1. Owner/Applicant Information
Name: North Carolina Department of Transportation
Mailing Address: Gregory J. Thorpe, Ph.D., Manager
Project Development and Environmental Analysis Branch
1598 Mail Service Center
Raleigh, NC 27699-1598
Telephone Number: 919-733-3141 Fax Number: 919-733-9794
E-mail Address: gthorpe@dot.state.nc.us
2. Agent/Consultant Information (A signed and dated copy of the Agent Authorization letter must be attached if the Agent has signatory authority for the owner/applicant.)
Name: _____
Company Affiliation: _____
Mailing Address: _____

Telephone Number: _____ Fax Number: _____
E-mail Address: _____

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: Proposed Widening of US 70 From the Rowan/Iredell County line to SR 1001 (Amith Hill Road)
2. T.I.P. Project Number or State Project Number (NCDOT Only): R-2911B
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Rowan Nearest Town: Cleveland
Subdivision name (include phase/lot number): N/A
Directions to site (include road numbers/names, landmarks, etc.): 40 West to Exit 151 (Hwy 77) take 77 South to Exit 498 (US 70) Take US 70 east to the Iredell/Rowan County Line.
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): _____°N _____°W
6. Property size (acres): Please refer to attached drawings.
7. Name of nearest receiving body of water: Third Creek (Lake Norman)
8. River Basin: Yadkin 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 local area surrounding the proposed project consists of gently rolling hills and land with both commercial and residential development.

10. Describe the overall project in detail, including the type of equipment to be used: NCDOT proposes to widen US 70 to a four-lane divided facility from the Iredell/Rowan County Line to SR 1001 (Amity Hill Rd). Heavy duty excavation equipment will be used such as trucks, dozers, cranes and other various equipment necessary for roadway construction.
11. Explain the purpose of the proposed work: The purpose of this project is to improve safety and provide better traffic carrying capacity along US 70. US 70 is a Major Arterial for Rowan County and a Principal Arterial/Major Thoroughfare for Iredell County that serves commuters traveling between Statesville, Cleveland and Salisbury.

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.

1. Provide a written description of the proposed impacts: There will be approximately 250 linear feet of warm perennial stream impacted, 123-feet from the installation of a 24-inch reinforced concrete pipe, and 127-feet from the installation of a 72-inch steel plate pipe. The installation of the 72-inch pipe and the installation of a lateral base ditch will result in <0.10 acres of riverine wetland impacts.

2. 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)
Site 2	Mechanized Clearing	herbaceous	No		<0.01
Site 4	Permanent Fill in Wetland	herbaceous	No		0.05
Site 4	Excavation in Wetland	herbaceous	No		0.01
Site 4	Mechanized Clearing	herbaceous	No		0.03
Total Wetland Impact (acres)					<0.10

3. List the total acreage (estimated) of all existing wetlands on the property: 1.2 acres

4. 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)
Site 1	Third Creek	Temporary Causeway	Perennial	20 feet	20	0.04
Site 3	UT to Third Creek	24-inch RCP	Perennial	2.0 feet	123	0.01
Site 4	UT to Third Creek	72-inch Steel Plate Pipe	Perennial	3.0-feet	127	0.02
Total Stream Impact (by length and acreage)					250	0.07

5. 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)				0

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

Stream Impact (acres):	0.07
Wetland Impact (acres):	0.09
Open Water Impact (acres):	0.00
Total Impact to Waters of the U.S. (acres)	0.16
Total Stream Impact (linear feet):	250

7. 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.

N/A

8. 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.): N/A

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

Current land use in the vicinity of the pond: N/A

Size of watershed draining to pond: N/A Expected pond surface area: N/A

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.

With the exception of not building the project, there are no means of avoiding impacts to waters of the State. NCDOT will minimize impacts to the stream and wetlands through the use of Best Management Practices.

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.

N/A

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			
2			
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.

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 ☒

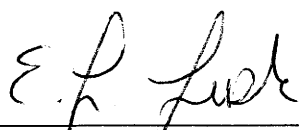
If yes, please submit a qualitative or quantitative cumulative impact analysis in accordance with the most recent North Carolina Division of Water Quality policy posted on our website at <http://h2o.enr.state.nc.us/ncwetlands>. If no, please provide a short narrative description:

N/A

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).

N/A

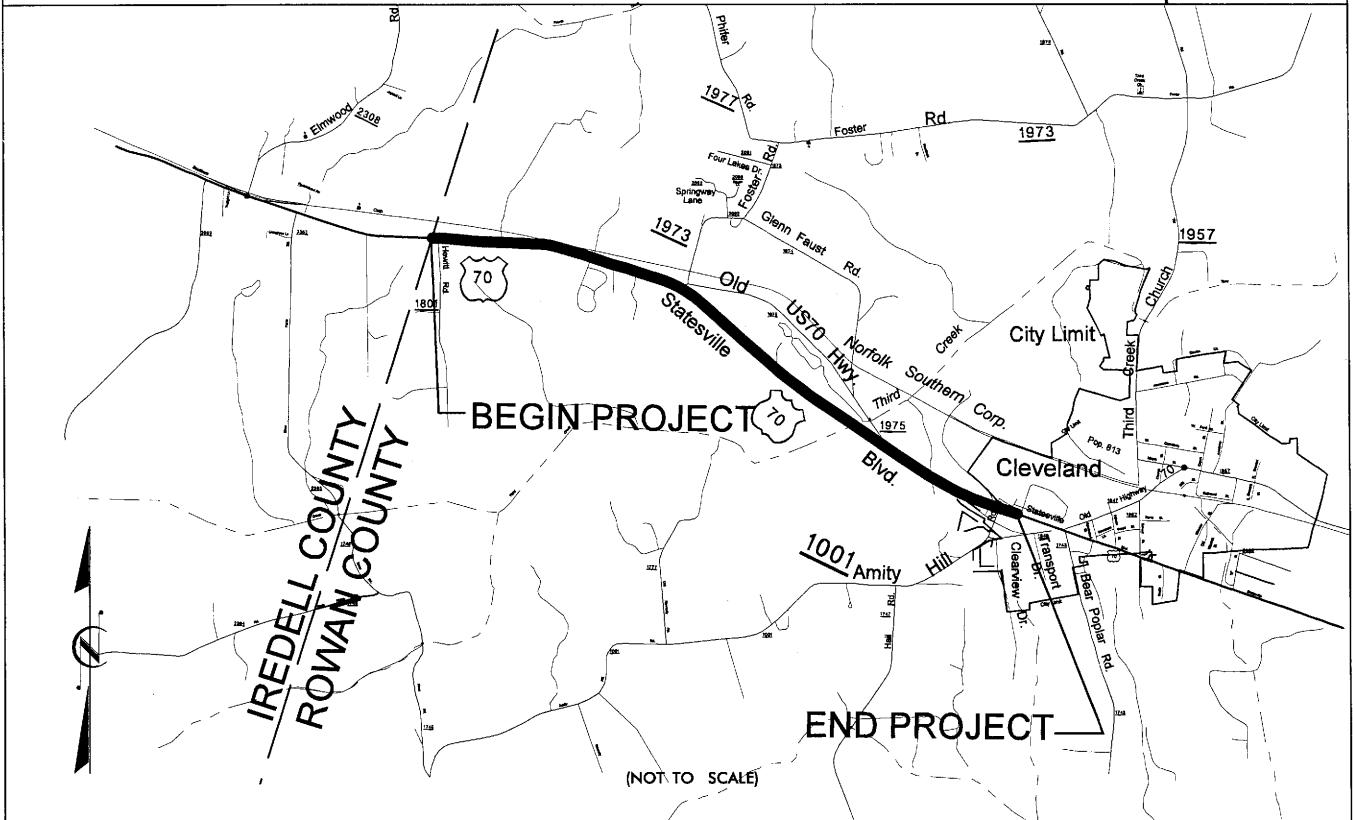
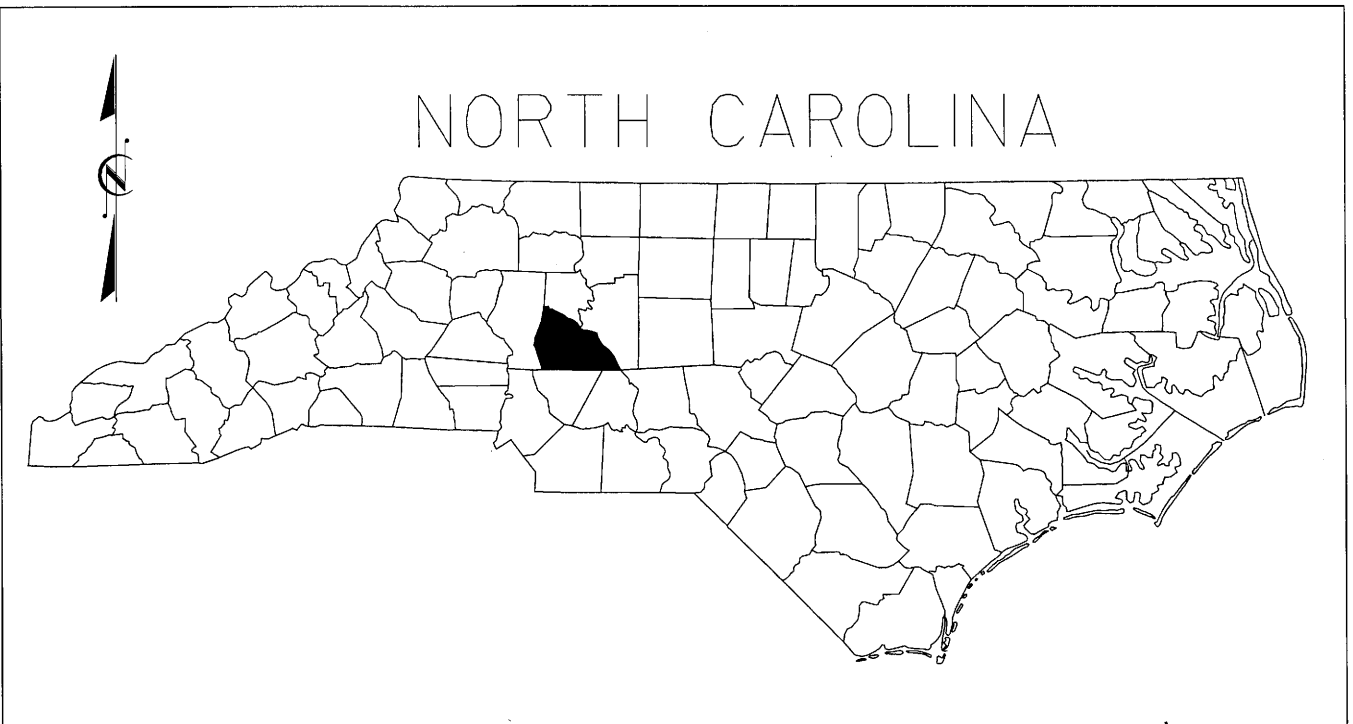


3.6.08

Applicant/Agent's Signature

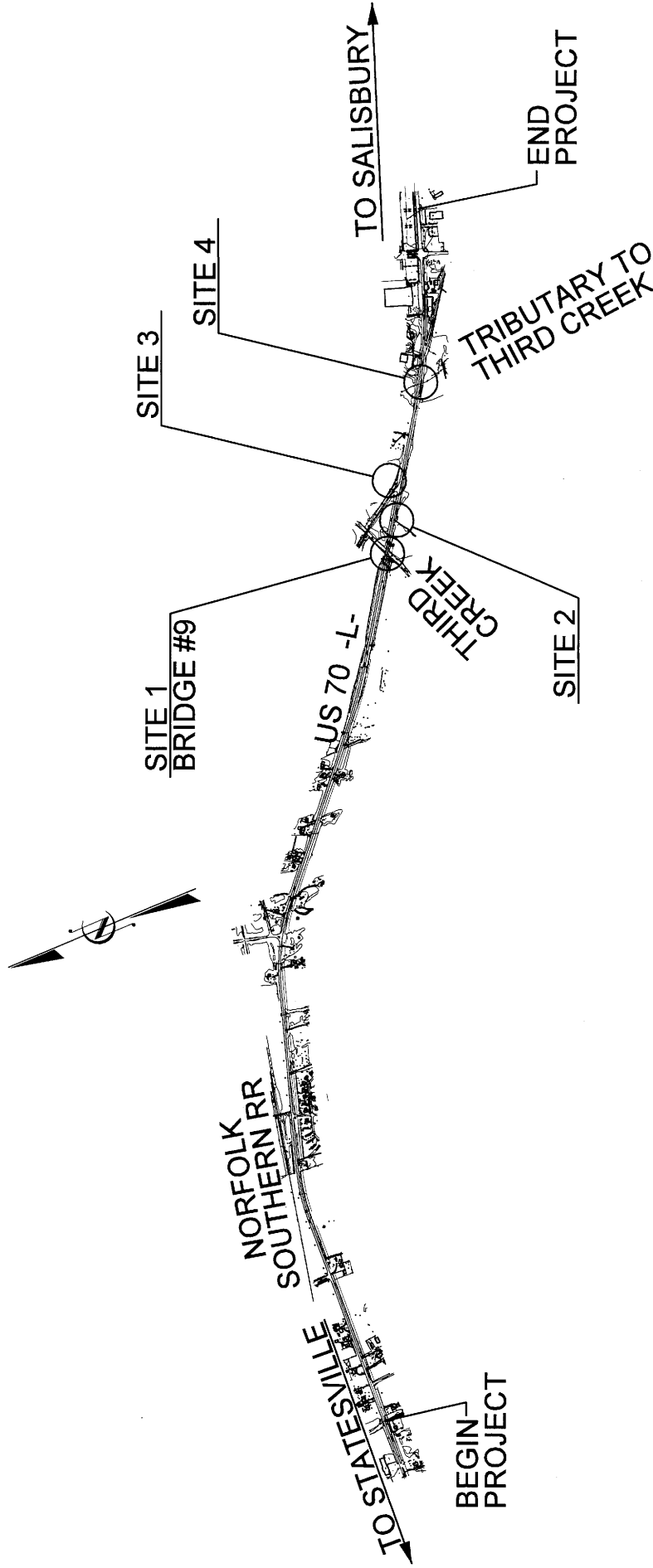
Date

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



VICINITY MAPS

NCDOT
DIVISION OF HIGHWAYS
ROWAN COUNTY
PROJECT: 34517.1.1 (R-2911B)
BRIDGE NO. 9 OVER
THIRD CREEK AND
APPROACHES ON US 70



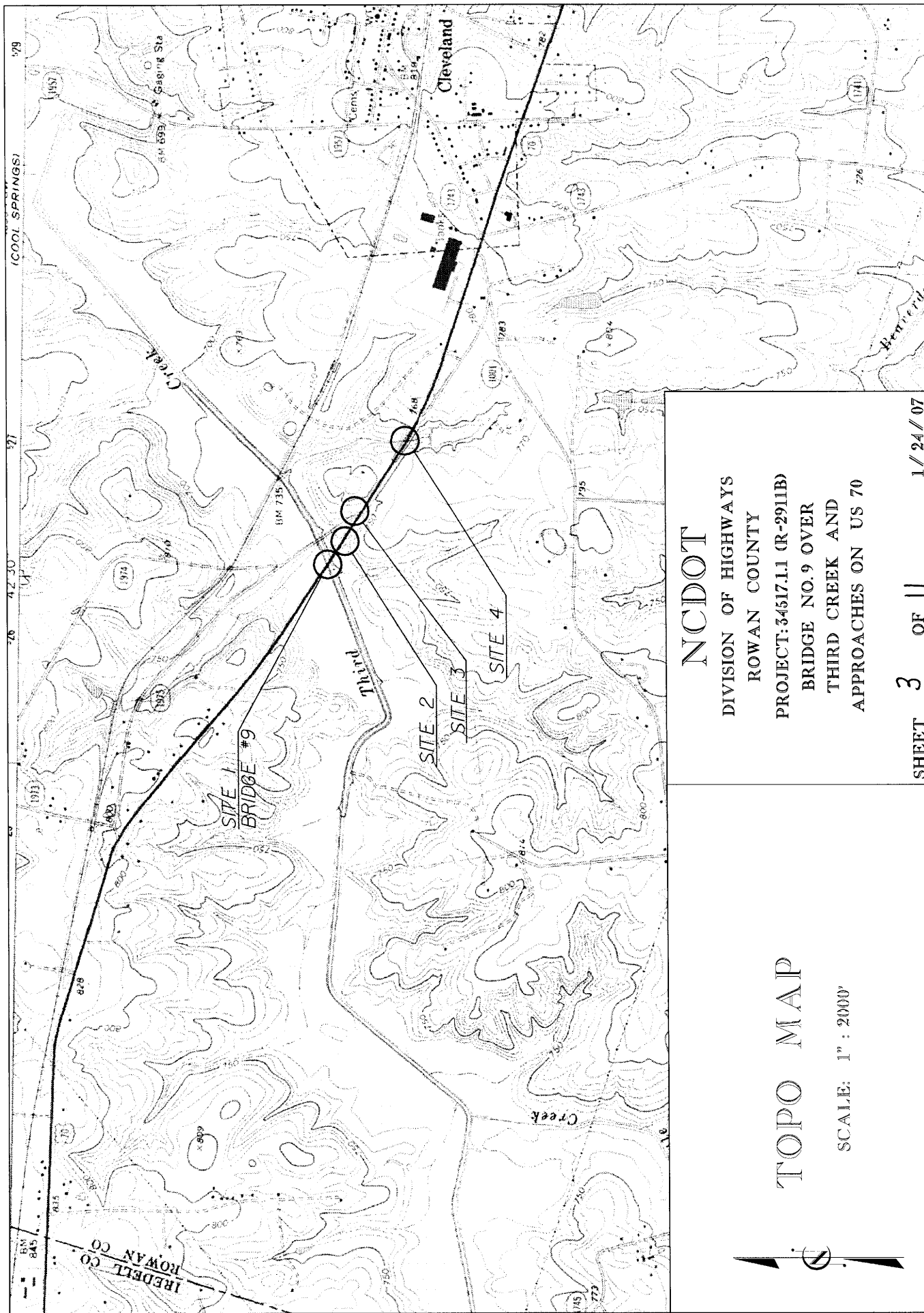
SITE MAP
NOT TO SCALE

NCDOT

DIVISION OF HIGHWAYS
ROWAN COUNTY
PROJECT: 34517.1.1 (R-291IB)
BRIDGE NO. 9 OVER
THIRD CREEK AND
APPROACHES ON US 70

SHEET 2 OF 11

1/24/07



NCDOT
DIVISION OF HIGHWAYS
ROWAN COUNTY
PROJECT: 34517.1.1 (R-2911B)
BRIDGE NO. 9 OVER
THIRD CREEK AND
APPROACHES ON US 70

SHEET 3 OF 11 1/24/07

PROPERTY OWNERS

NAMES AND ADDRESSES

REFERENCE NO.	NAMES	ADDRESSES
33	Graham Enterprises	3510 Buena Vista Rd. Winston-Salem NC 27106
34	Brian James Moerman	P.O. Box 4357, Mooresville NC 28117-2357
35	Luther P. Brown, Jr.	1944 Brookhaven Rd. Wilmington NC 28403
36	Connor R. Hutchinson	12220 Statesville Blvd. Cleveland NC 27013-9613
37	James W. & Elizabeth S. Phelps	145 Boxwood Church Rd. Mocksville NC 27028-6666
38	Charles & Pleasant Brown	P.O. Box 174 Cleveland NC 27013

NCDOT
DIVISION OF HIGHWAYS
ROWAN COUNTY
PROJECT: 34517.1.1 (R-2911B)
BRIDGE NO. 9 OVER
THIRD CREEK AND
APPROACHES ON US 70

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

ROWAN COUNTY
BRIDGE #9 ON NC 70
OVER THIRD CREEK
11/12/2007

ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
-----------------------	-----------

R-2911B

SHEET NO.
13

RW SHEET NO.	
ROADWAY DESIGN ENGINEER	

**HYDRAULICS
ENGINEER**

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 6 of 1

of IT

 DENOTES TEMPORARY FILL
IN SURFACE WATERS

CAUSEWAY QUANTITIES

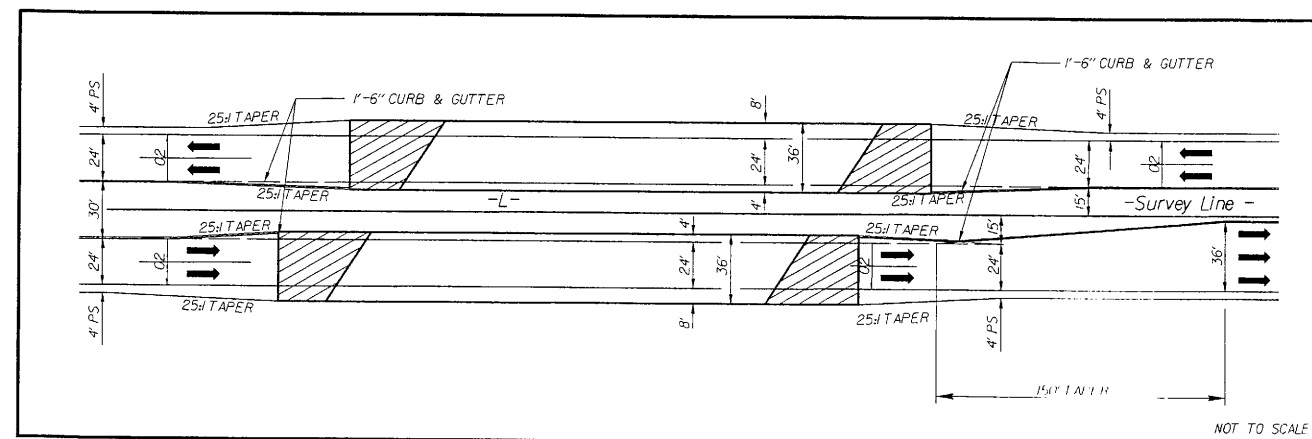
TOTAL VOLUME OF CLASS II RIP RAP
BELOW ORDINARY HIGH WATER= 257 YD³

NOTE: BOTH CAUSEWAYS SHALL NOT
BE IN PLACE AT THE SAME TIME
IN ORDER TO ALLOW MAXIMUM
FLOW THRU THE CREEK.

SITE 1

MATCH TO SHEET 14 -L- STA. 140+00

MATCH TO SHEET 12 -L- STA. 126+00

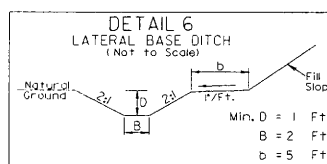


RELATIONSHIP OF PAVEMENT TO PROPOSED BRIDGE

 BRIDGE APPROACH SLAB

NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

See Sheet 22 for $-L-$ Profile



-L- 137+88 RT TO 140+00 RT DDE = 467 CY

REVISIONS

R/W Revision May 24, 2005: Revised Property Data for Parcel 34.

11/14/2007
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8/17/99

8/17/99

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

ROWAN COUNTY
BRIDGE #9 ON NC 70
OVER THIRD CREEK
11/12/2007

ENGLISH

PROJECT REFERENCE NO. SHEET NO.

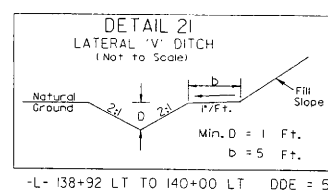
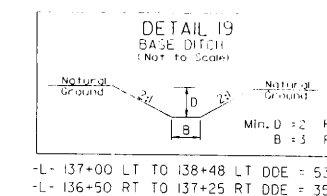
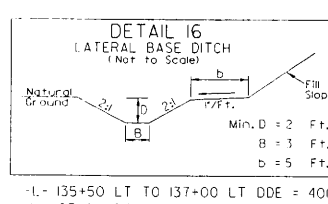
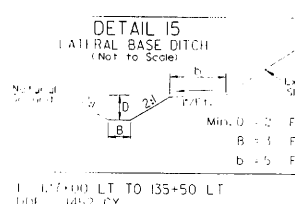
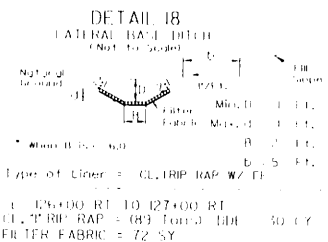
R-2911B 13

R/W SHEET NO.

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

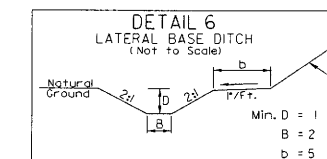
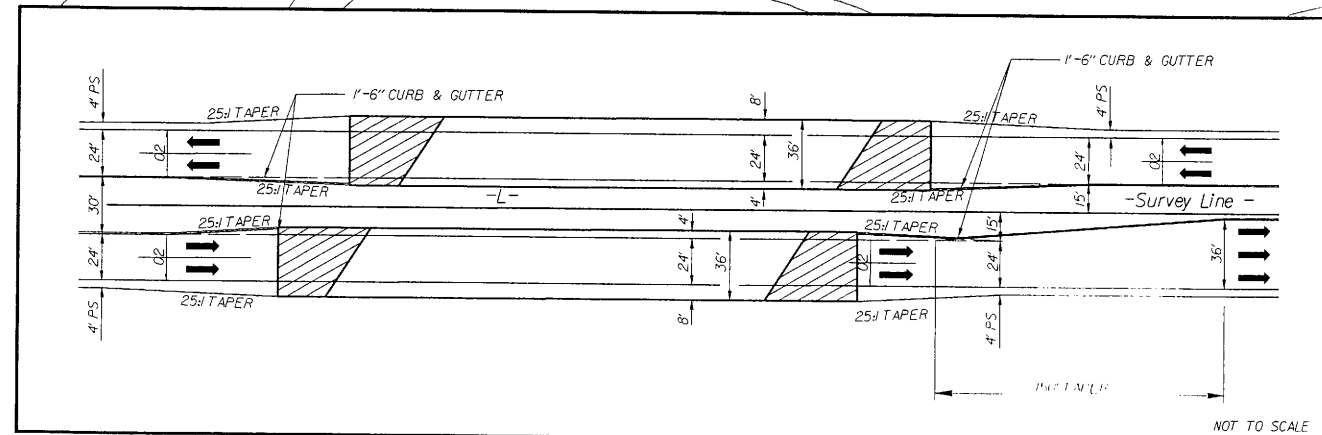
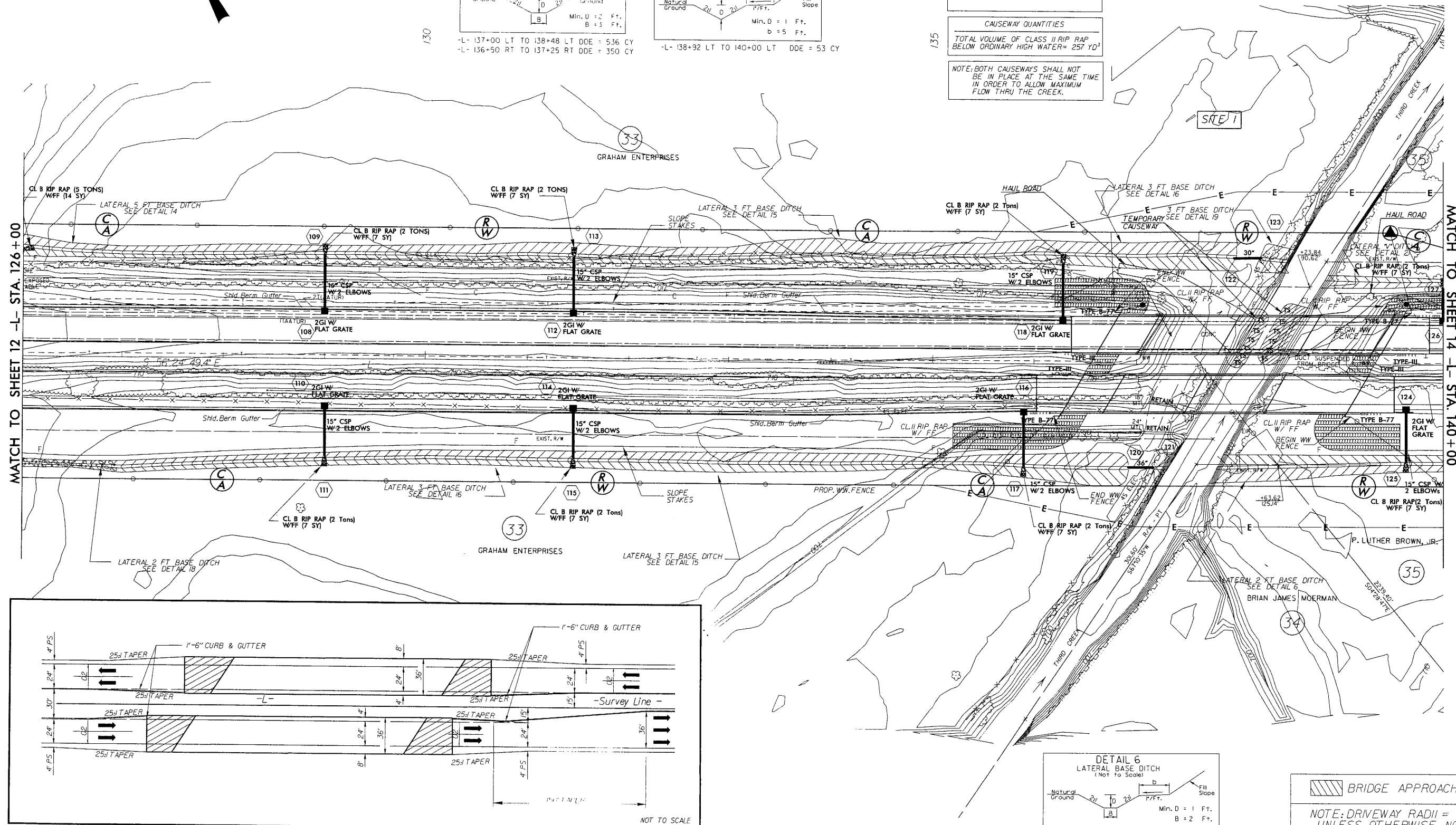
Permit Drawing
Sheet 7 of 11



15 DENOTES TEMPORARY FILL
IN SURFACE WATERS

CAUSEWAY QUANTITIES
TOTAL VOLUME OF CLASS II RIP RAP
BELOW ORDINARY HIGH WATER = 257 YD³

NOTE: BOTH CAUSEWAYS SHALL NOT
BE IN PLACE AT THE SAME TIME
IN ORDER TO ALLOW MAXIMUM
FLOW THRU THE CREEK.



BRIDGE APPROACH SLAB

NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

See Sheet 22 for -L- Profile

REVISIONS

R/W Revision May 24, 2005; Revised Property Data for Parcel 34.

11/14/2007
R/W-2911B-Hydraulics VR2911B-hyd_PSH_13_PERMIT.dgn
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8/17/99

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

ROWAN COUNTY
NC 70
11/12/2007

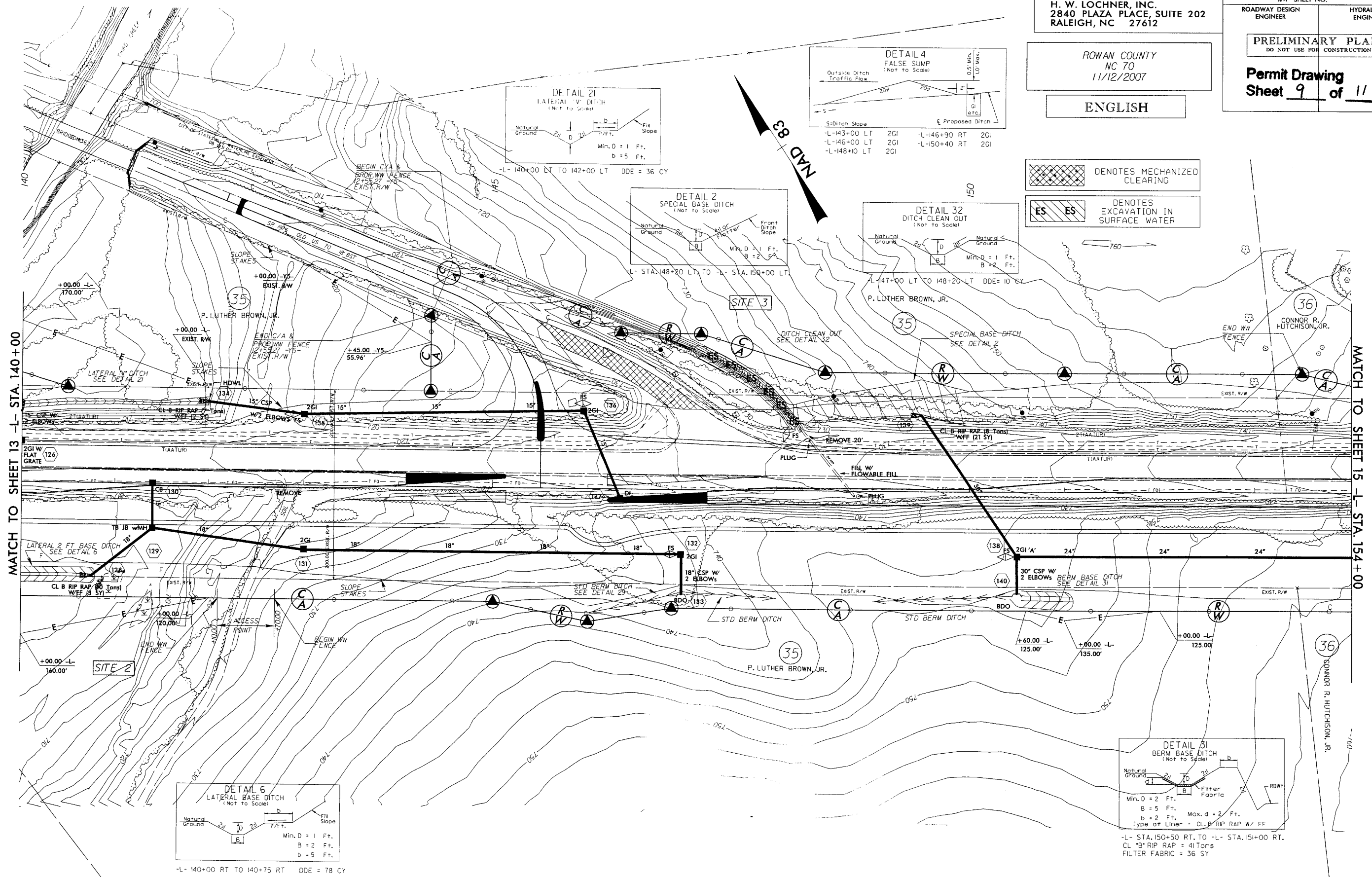
ENGLISH

PROJECT REFERENCE NO.	SHEET NO.
R-2911B	14

RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 9 of 11



NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

See Sheet 23 for -L- Profile
See Sheet 25 for -Y5- Profile

REVISIONS

R/W Revision August 1, 2005; Revised C/A Fence Location for Parcel 36.

11/26/2007
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2:34:32 PM

8/17/99

REVISIONS
R/W Revision May 24, 2005; Revised Access Locations for Parcel 36; revised Property Data for Parcels 37 & 38.
R/W Revision August 1, 2005; Revised C/A Fence Location for Parcel 36.
R/W Revision February 15, 2006; Revised Parcel 37 owner changed; added Parcel 37A and added new property line.
R/W Revision February 15, 2006; Added Access Point for Parcel 37A.

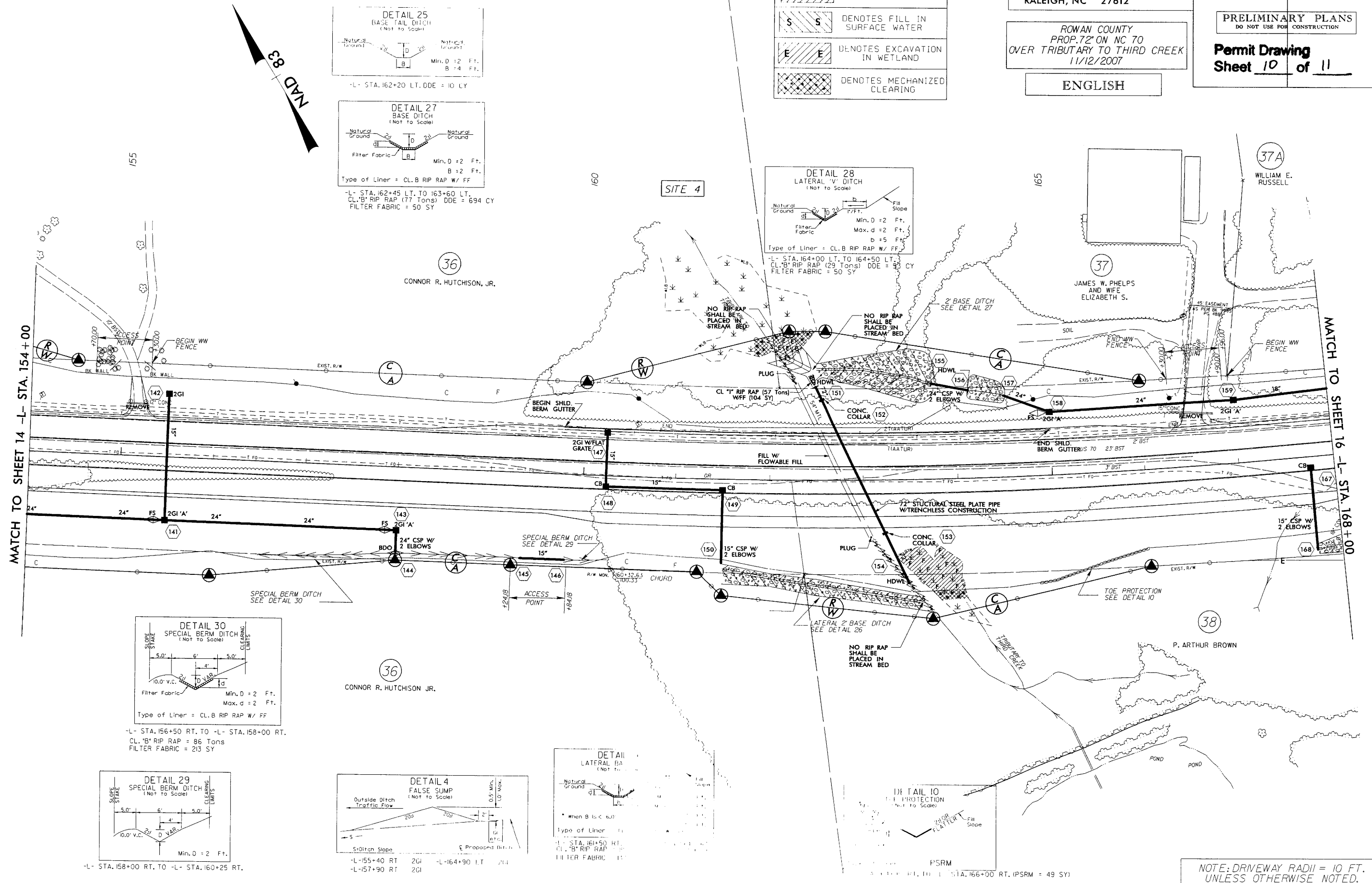
LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

ROWAN COUNTY
PROP. 72' ON NC 70
OVER TRIBUTARY TO THIRD CREEK
11/12/2007

ENGLISH

PROJECT REFERENCE NO. R-2911B		SHEET NO. 15	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			
Permit Drawing Sheet <u>10</u> of <u>11</u>			



-L- STA. 158+00 RT. TO -L- STA. 160+25 RT.

NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.
See Sheet 23 for -L- Profile

\\26/2007
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LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

ROWAN COUNTY
PROP. 72" ON NC 70
OVER TRIBUTARY TO THIRD CREEK
11/12/2007

ENGLISH

PROJECT REFERENCE NO.

R-2911B

SHEET NO.

15

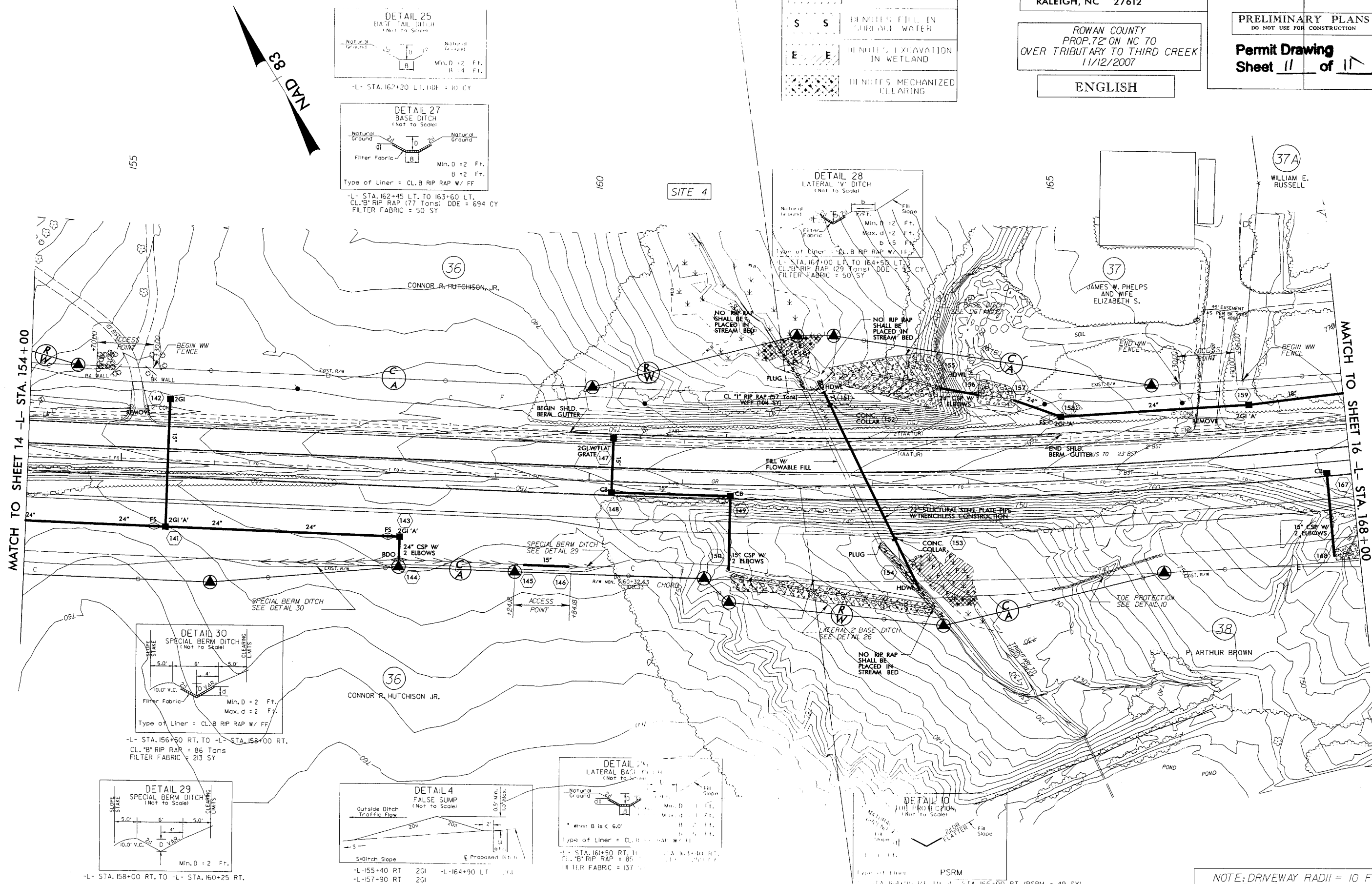
RW SHEET NO.

ROADWAY DESIGN
ENGINEER

HYDRAULICS

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

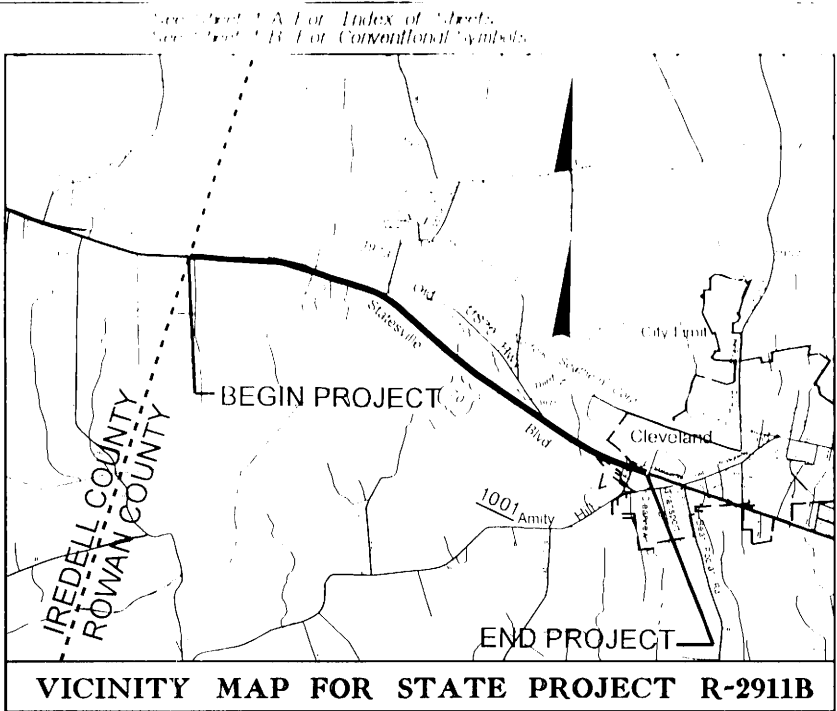
Permit Drawing Sheet 11 of	
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NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

See Sheet 23 for -L- Profile

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2911B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34517.1.1	STP-70(39)	P.E.	
34517.2.7	STP-70(81)	RW & UTIL	



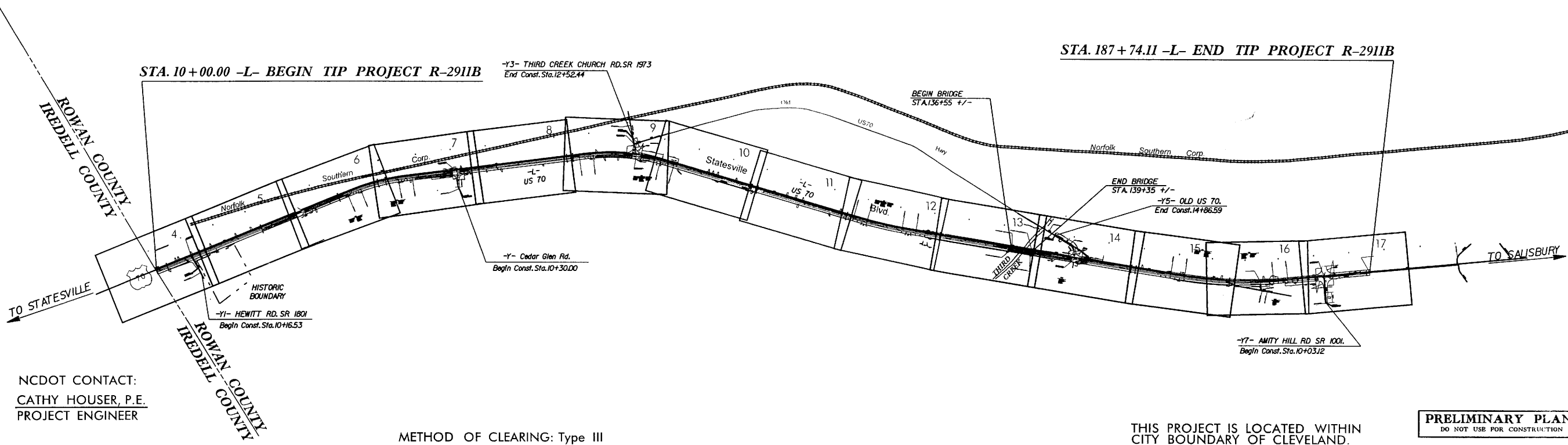
VICINITY MAP FOR STATE PROJECT R-2911B

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

ROWAN COUNTY

LOCATION: US 70 FROM IREDELL COUNTY LINE
TO EAST OF SR 1001 (AMITY HILL ROAD)

TYPE OF WORK: GRADING, DRAINAGE, PAVING, CULVERTS
SIGNALS, AND STRUCTURES

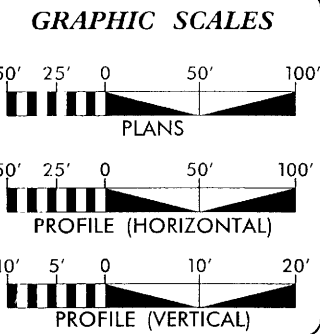


NCDOT CONTACT:
CATHY HOUSER, P.E.
PROJECT ENGINEER

METHOD OF CLEARING: Type III

THIS PROJECT IS LOCATED WITHIN
CITY BOUNDARY OF CLEVELAND.

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA	
ADT 2008 =	13,300
ADT 2030 =	23,500
DHV =	9 %
D =	55 %
T =	9 % *
V = 60 MPH	SHOULDER SECTION
V = 50 MPH	CURB & GUTTER SECTION
* TTST 6%	DUAL 3%

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT R-2911B =	3.313 Miles
LENGTH STRUCTURES TIP PROJECT R-2911B =	0.053 Miles
TOTAL LENGTH STATE TIP PROJECT R-2911B =	3.366 Miles

THIS IS A PARTIAL CONTROLLED-ACCESS PROJECT
WITH ACCESS BEING LIMITED TO
POINTS SHOWN ON THE PLANS.

Prepared In the Office of: LOCHNER H. W. LOCHNER, INC. 2840 PLAZA PLACE, SUITE 202 RALEIGH, NC 27612	
2002 STANDARD SPECIFICATIONS	
RIGHT OF WAY DATE: October 30, 2004	Stephen Browde, P.E. PROJECT ENGINEER
LETTING DATE: October 21, 2008	Brian K. Eason, P.E. PROJECT DESIGN ENGINEER

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

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA	
STATE DESIGN ENGINEER	P.E.
DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED	
DIVISION ADMINISTRATOR	

09/08/09

3-OCT-2007 10:01
R:\Roadway\Project\2911B\rdy-fsh.dgn
bbollman AT WSRAL-0211A

TIP PROJECT: R-2911B

CONTRACT:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL SYMBOLS

ROADS & RELATED ITEMS

Edge of Pavement	
Curb	
Prop. Slope Stakes Cut	C
Prop. Slope Stakes Fill	F
Prop. Woven Wire Fence	
Prop. Chain Link Fence	
Prop. Barbed Wire Fence	
Prop. Wheelchair Ramp	WCR
Curb Cut for Future Wheelchair Ramp	CCFR
Exist. Guardrail	
Prop. Guardrail	
Equality Symbol	
Pavement Removal	

RIGHT OF WAY

Baseline Control Point	
Existing Right of Way Marker	
Exist. Right of Way Line w/Marker	
Prop. Right of Way Line with Proposed	
RW Marker (Iron Pin & Cap)	
Prop. Right of Way Line with Proposed	
(Concrete or Granite) RW Marker	
Exist. Control of Access Line	
Prop. Control of Access Line	
Exist. Easement Line	E
Prop. Temp. Construction Easement Line	E
Prop. Temp. Drainage Easement Line	TDE
Prop. Perm. Drainage Easement Line	PDE

HYDROLOGY

Stream or Body of Water	
River Basin Buffer	RBB
Flow Arrow	
Disappearing Stream	
Spring	
Swamp Marsh	
Shoreline	
Falls, Rapids	
Prop Lateral, Tail, Head Ditches	

STRUCTURES

MAJOR	
Bridge, Tunnel, or Box Culvert	CONC
Bridge Wing Wall, Head Wall and End Wall	CONC WW

MINOR	
Head & End Wall	CONC HW
Pipe Culvert	
Footbridge	
Drainage Boxes	CB
Paved Ditch Gutter	

UTILITIES

Exist. Pole	
Exist. Power Pole	
Prop. Power Pole	
Exist. Telephone Pole	
Prop. Telephone Pole	
Exist. Joint Use Pole	
Prop. Joint Use Pole	
Telephone Pedestal	
U/G Telephone Cable Hand Hold	
Cable TV Pedestal	
U/G TV Cable Hand Hold	
U/G Power Cable Hand Hold	
Hydrant	
Satellite Dish	
Exist. Water Valve	
Sewer Clean Out	
Power Manhole	
Telephone Booth	
Cellular Telephone Tower	
Water Manhole	
Light Pole	
H-Frame Pole	
Power Line Tower	
Pole with Base	
Gas Valve	
Gas Meter	
Telephone Manhole	
Power Transformer	
Sanitary Sewer Manhole	
Storm Sewer Manhole	
Tank; Water, Gas, Oil	
Water Tank With Legs	
Traffic Signal Junction Box	
Fiber Optic Splice Box	
Television or Radio Tower	
Utility Power Line Connects to Traffic Signal Lines Cut Into the Pavement	

Recorded Water Line	W
Designated Water Line (S.U.E.*)	W
Sanitary Sewer	SS
Recorded Sanitary Sewer Force Main	FSS
Designated Sanitary Sewer Force Main(S.U.E.*)	FSS
Recorded Gas Line	G
Designated Gas Line (S.U.E.*)	G
Storm Sewer	S
Recorded Power Line	P
Designated Power Line (S.U.E.*)	P
Recorded Telephone Cable	T
Designated Telephone Cable (S.U.E.*)	T
Recorded U/G Telephone Conduit	TC
Designated U/G Telephone Conduit (S.U.E.*)	TC
Unknown Utility (S.U.E.*)	UTL
Recorded Television Cable	TV
Designated Television Cable (S.U.E.*)	TV
Recorded Fiber Optics Cable	FO
Designated Fiber Optics Cable (S.U.E.*)	FO
Exist. Water Meter	
U/G Test Hole (S.U.E.*)	ATTUR
Abandoned According to U/G Record	E.O.I.
End of Information	

BOUNDARIES & PROPERTIES

State Line	
County Line	
Township Line	
City Line	
Reservation Line	
Property Line	
Property Line Symbol	PL
Exist. Iron Pin	EP
Property Corner	
Property Monument	ECM
Property Number	123
Parcel Number	6
Fence Line	WW & ISBW
Existing Wetland Boundaries	WLB
High Quality Wetland Boundary	HQ WLB
Medium Quality Wetland Boundaries	MQ WLB
Low Quality Wetland Boundaries	LQ WLB
Proposed Wetland Boundaries	WLB
Existing Endangered Animal Boundaries	EAB
Existing Endangered Plant Boundaries	EPB

BUILDINGS & OTHER CULTURE

Buildings	
Foundations	
Area Outline	
Gate	
Gas Pump Vent or U/G Tank Cap	
Church	
School	
Park	
Cemetery	
Dam	
Sign	
Well	
Small Mine	
Swimming Pool	

TOPOGRAPHY

Loose Surface	
Hard Surface	
Change in Road Surface	
Curb	
Right of Way Symbol	R/W
Guard Post	GP
Paved Walk	
Bridge	
Box Culvert or Tunnel	
Ferry	
Culvert	
Footbridge	
Trail, Footpath	
Light House	

VEGETATION

Single Tree	
Single Shrub	
Hedge	
Woods Line	
Orchard	
Vineyard	VINEYARD

RAILROADS

Standard Gauge	
RR Signal Milepost	
Switch	

5/28/99

25-QCT-2007 (06-01)
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2911B-0211A

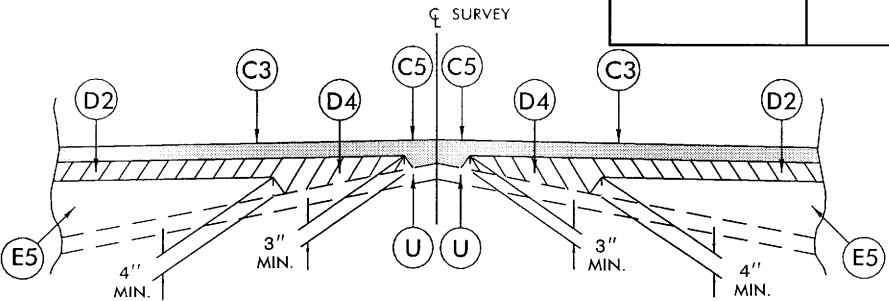
PRELIMINARY PAVEMENT DESIGN SCHEDULE			
C1	PROP. APPROX. 1 1/2" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	E5	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.
C2	PROP. APPROX. 1" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	J	PROP. 10" AGGREGATE BASE COURSE.
C3	PROP. APPROX. 3" ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	K	SUBBASE TO BE TREATED WITH LIME TO A DEPTH OF 8" AT A RATE OF 20 LBS. PER SQ. YD. AS DIRECTED BY THE ENGINEER. OR SUBBASE TO BE TREATED WITH CEMENT TO A DEPTH OF 7" AT A RATE OF 55 LBS. PER SQ. YD. AS DIRECTED BY THE ENGINEER.
C4	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.	R1	2' 6" CONCRETE CURB AND GUTTER.
C5	PROP. VAR. DPTH ASPHALT CONCRETE SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT TO EXCEED 1 1/2" IN DEPTH.	R2	1'-6" CONCRETE CURB AND GUTTER.
D1	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	R3	EXPRESSWAY GUTTER
D2	PROP. APPROX. 4" ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	T	EARTH MATERIAL.
D3	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/4" IN DEPTH OR GREATER THAN 4" IN DEPTH.	U	EXISTING PAVEMENT.
D4	PROP. VAR. DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH, TO BE PLACED IN LAYERS NOT LESS THAN 2 1/4" IN DEPTH OR GREATER THAN 4" IN DEPTH.	V	MILLING OF EXISTING PAVEMENT 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.	W1	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL No. 1)
E2	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.	W2	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL No. 2)
E3	PROP. APPROX. 8" ASPHALT CONCRETE BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.	W3	VARIABLE DEPTH ASPHALT PAVEMENT (SEE WEDGING DETAIL No. 3)
E4	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" IN DEPTH OR GREATER THAN 5 1/2" IN DEPTH.		

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

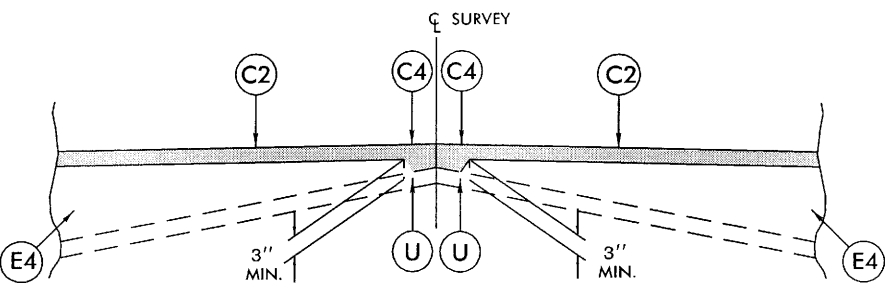
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO.	SHEET NO.
R-2911B	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

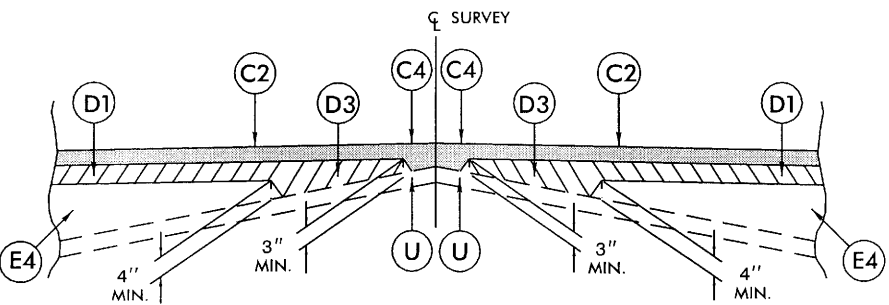
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DO NOT USE FOR CONSTRUCTION



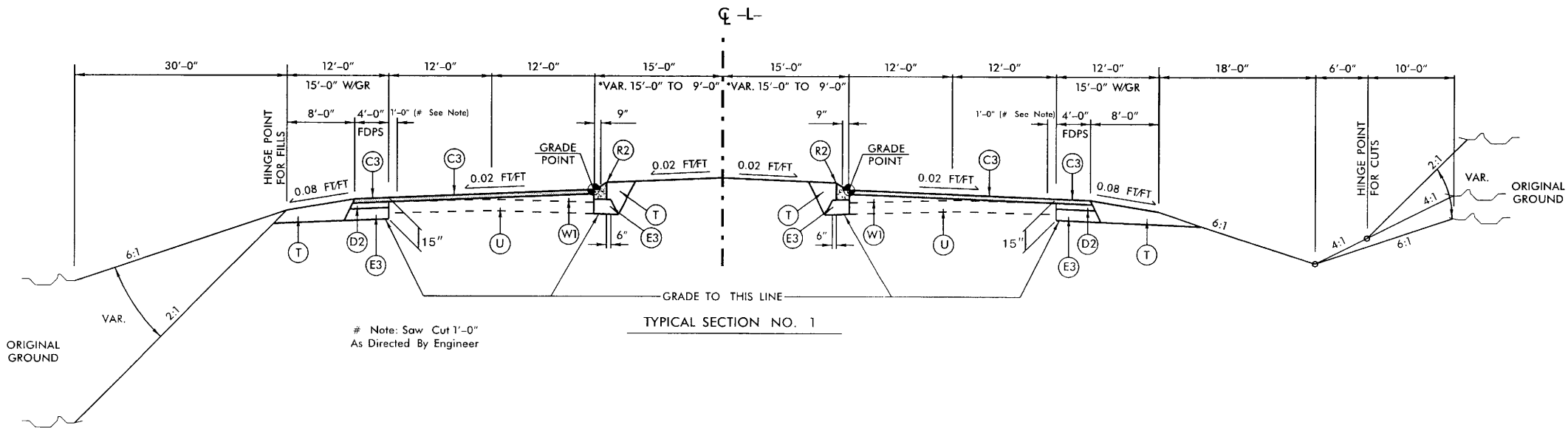
Wedging Detail No. 1



Wedging Detail No. 2



Wedging Detail No. 3



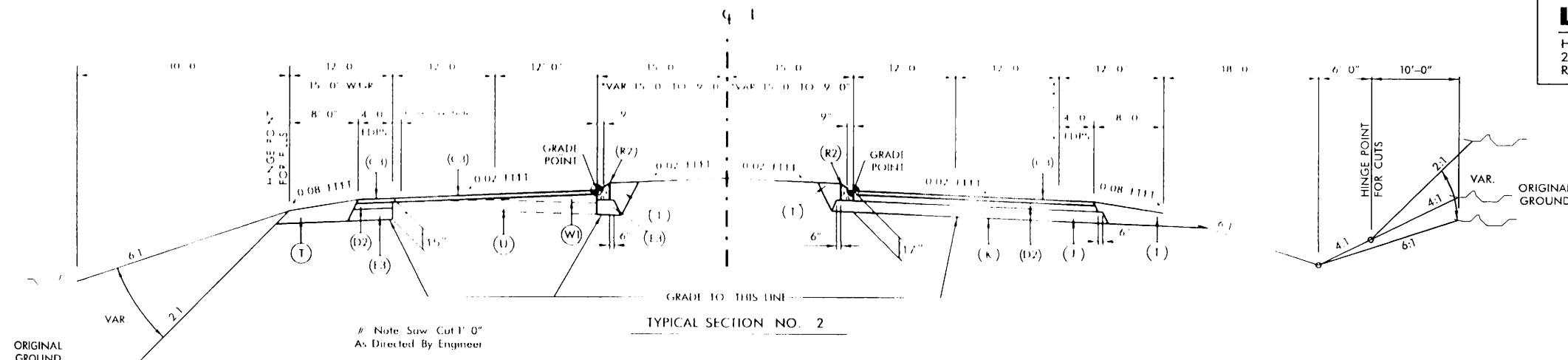
USE TYPICAL SECTION NO. 1
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6/2/95

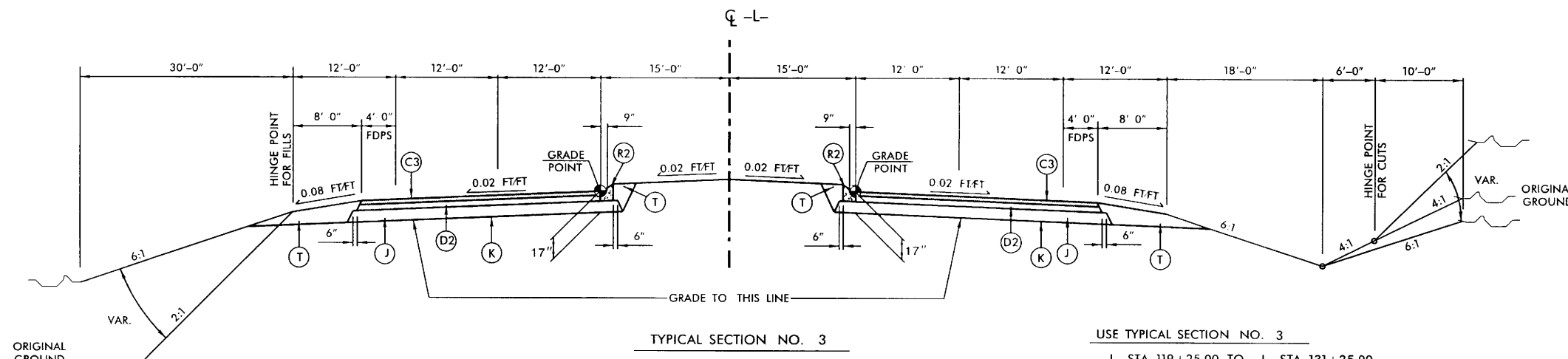
LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

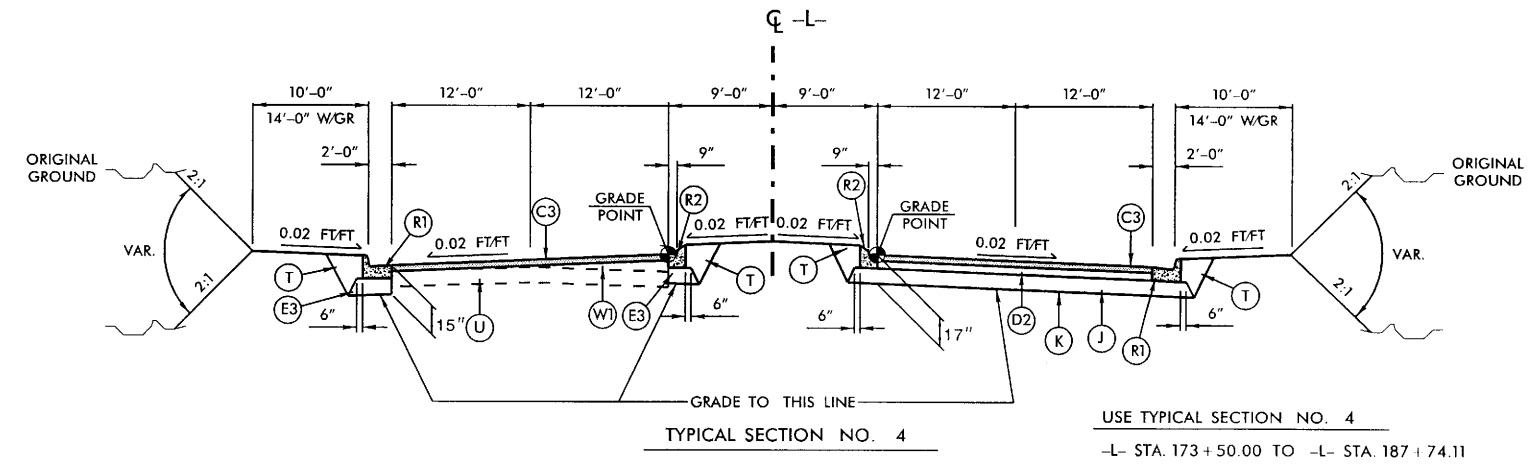
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ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



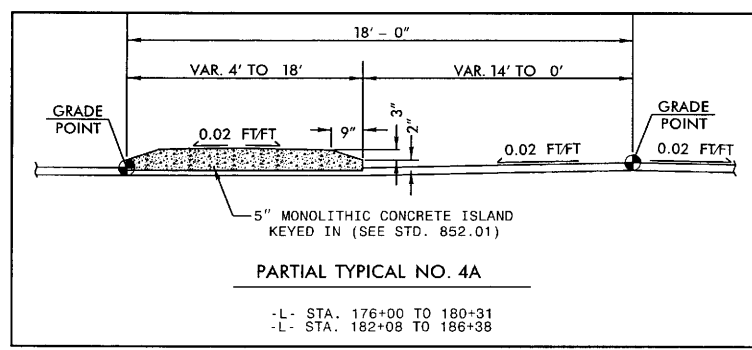
USE TYPICAL SECTION NO. 2
-L- STA. 14+65.00 TO -L- STA. 119+25.00
-L- STA. 131+25.00 TO -L- STA. 136+96.00 +/- (BEGIN BRIDGE)
-L- STA. 139+25.00 +/- (END BRIDGE) TO -L- STA. 168+50.00
* -L- STA. 168+50.00 TO -L- STA. 173+50.00



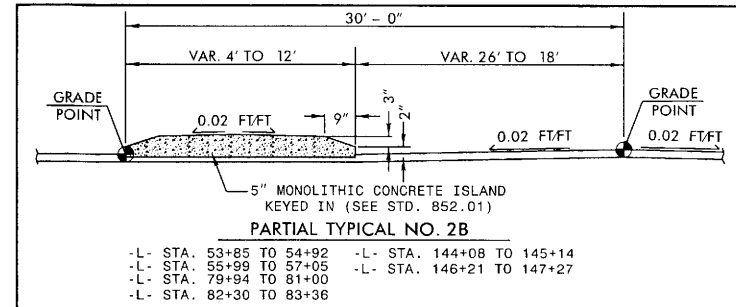
USE TYPICAL SECTION NO. 3
-L- STA. 119+25.00 TO -L- STA. 131+25.00



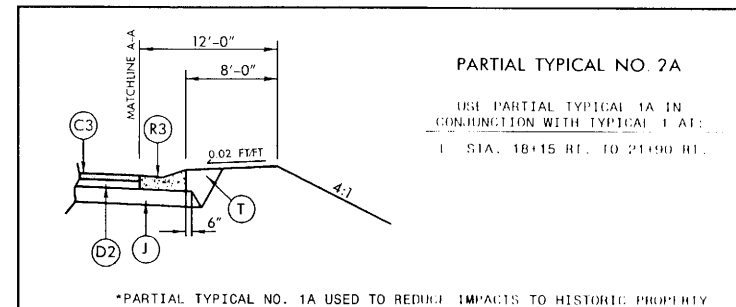
USE TYPICAL SECTION NO. 4
-L- STA. 173+50.00 TO -L- STA. 187+74.11



PARTIAL TYPICAL NO. 4A
-L- STA. 176+00 TO 180+31
-L- STA. 182+08 TO 186+38

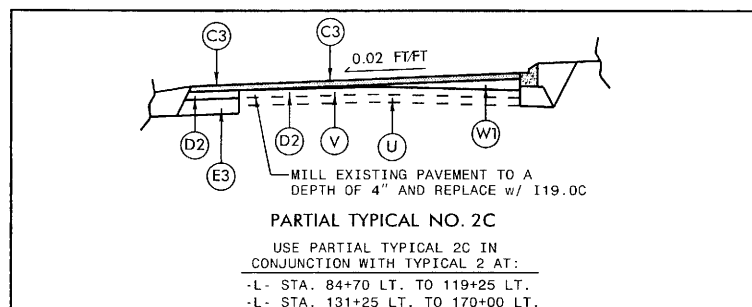


PARTIAL TYPICAL NO. 2B
-L- STA. 53+85 TO 54+92
-L- STA. 55+99 TO 57+05
-L- STA. 79+94 TO 81+00
-L- STA. 82+30 TO 83+36
-L- STA. 144+08 TO 145+14
-L- STA. 146+21 TO 147+27



PARTIAL TYPICAL NO. 2A
USE PARTIAL TYPICAL 1A IN CONJUNCTION WITH TYPICAL 1 AT:
1 STA. 18+15 RT. TO 21+90 RT.

*PARTIAL TYPICAL NO. 1A USED TO REDUCE IMPACTS TO HISTORIC PROPERTY



PARTIAL TYPICAL NO. 2C
USE PARTIAL TYPICAL 2C IN CONJUNCTION WITH TYPICAL 2 AT:
-L- STA. 84+70 LT. TO 119+25 LT.
-L- STA. 131+25 LT. TO 170+00 LT.

PRELIM. PAVEMENT SCHEDULE	
C1	1 1/2" TYPE S9.5B
C2	3" TYPE S9.5B
C3	3" TYPE S9.5C
C4	VAR. TYPE S9.5B
C5	VAR. TYPE S9.5C
D1	4" TYPE I19.0B
D2	4" TYPE I19.0C
D3	VAR. TYPE I19.0B
D4	VAR. TYPE I19.0C
E1	4" TYPE B25.0B
E2	5" TYPE B25.0B
E3	8" TYPE B25.0C
E4	VAR. TYPE B25.0B
E5	VAR. TYPE B25.0C
J	10" ABC
K	8" LIME SUBBASE (OR) 7" CEMENT SUBBASE
R1	2'-6" C & G
R2	1'-6" C & G
R3	EXPRESSWAY GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	4" MILLING
W1	WEDGING SEE DETAIL 1
W2	WEDGING SEE DETAIL 2
W3	WEDGING SEE DETAIL 3

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25-OCT-2007 10:02
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PROJECT REFERENCE NO.
R-2911B

SHEET NO.
2-B

ROADWAY DESIGN
ENGINEER

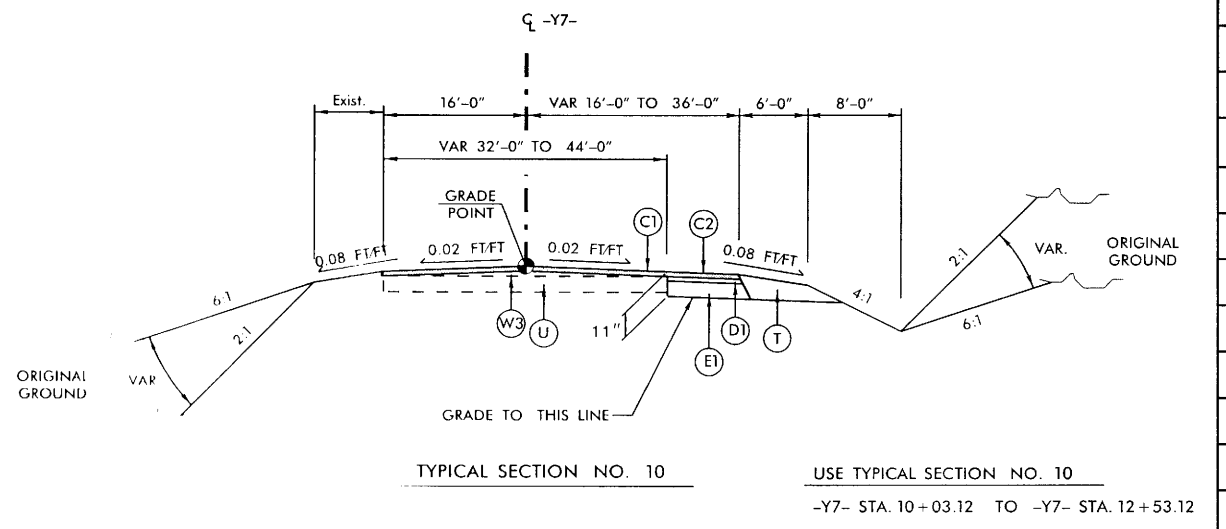
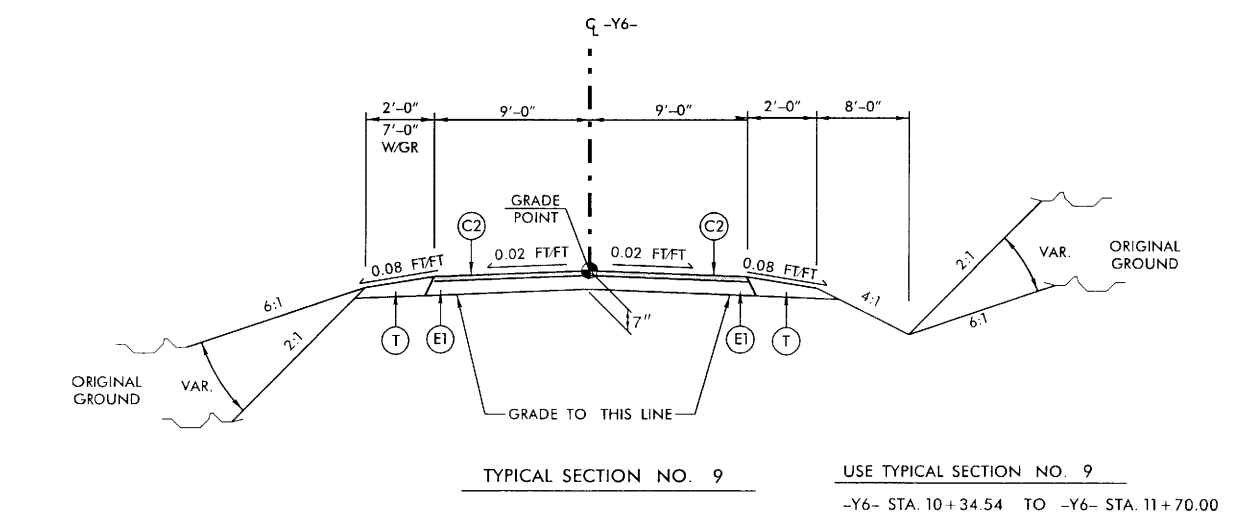
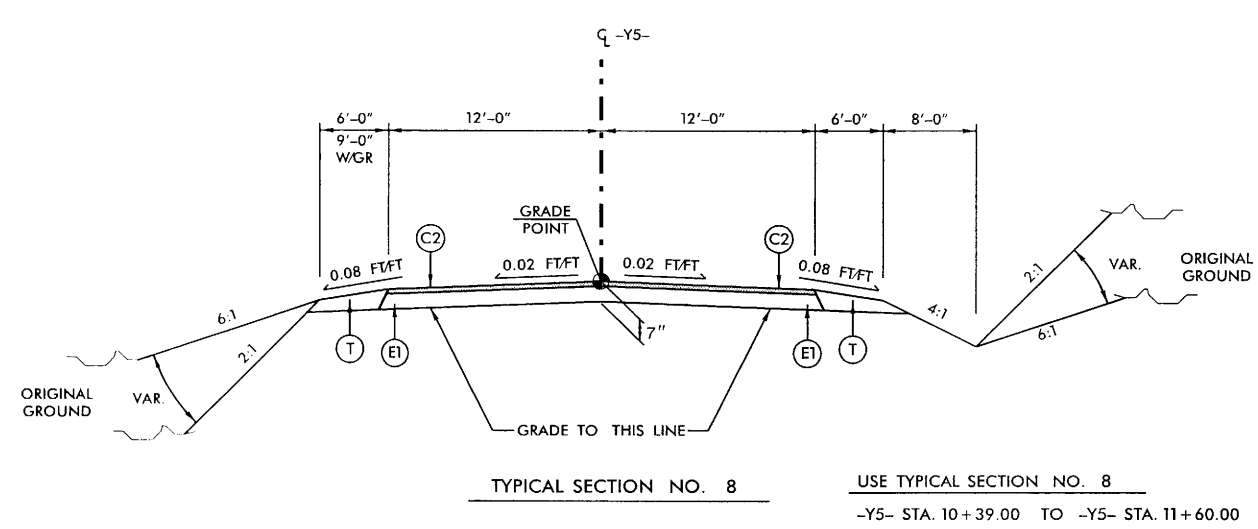
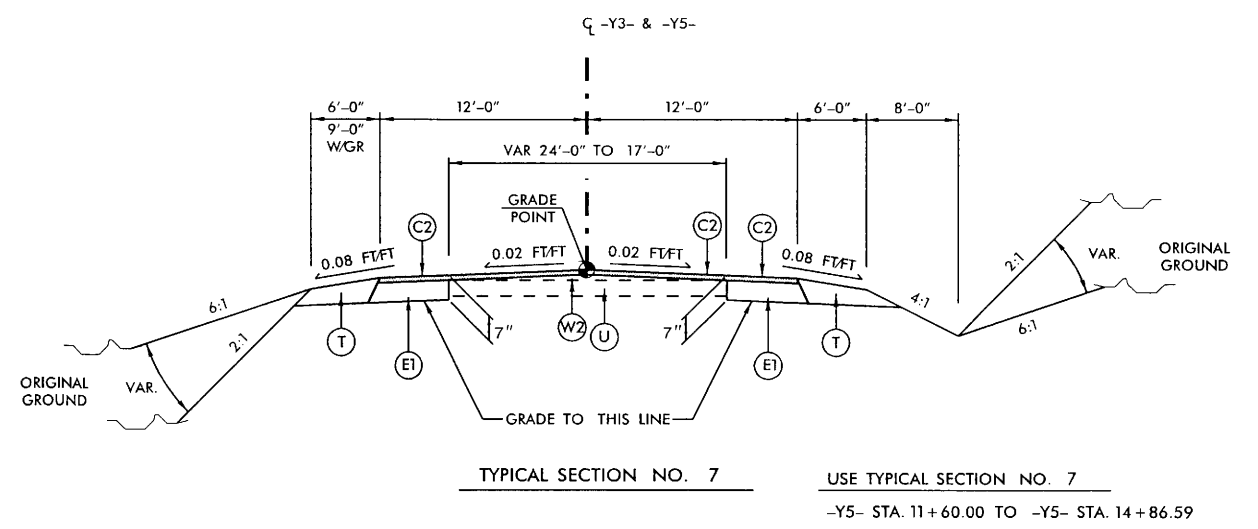
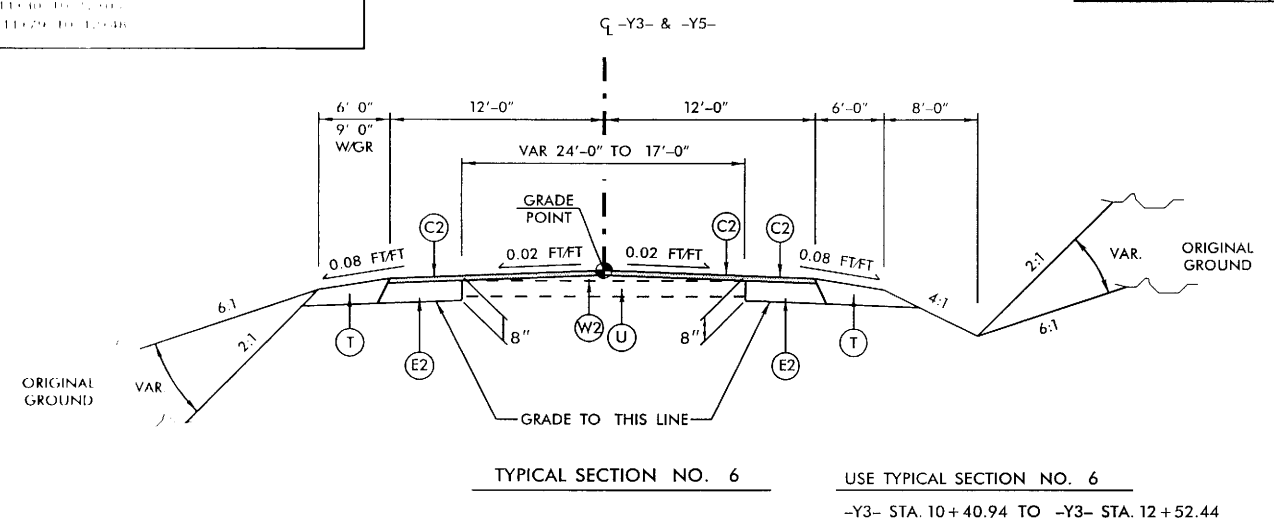
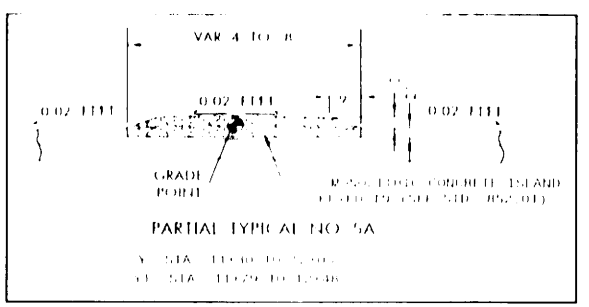
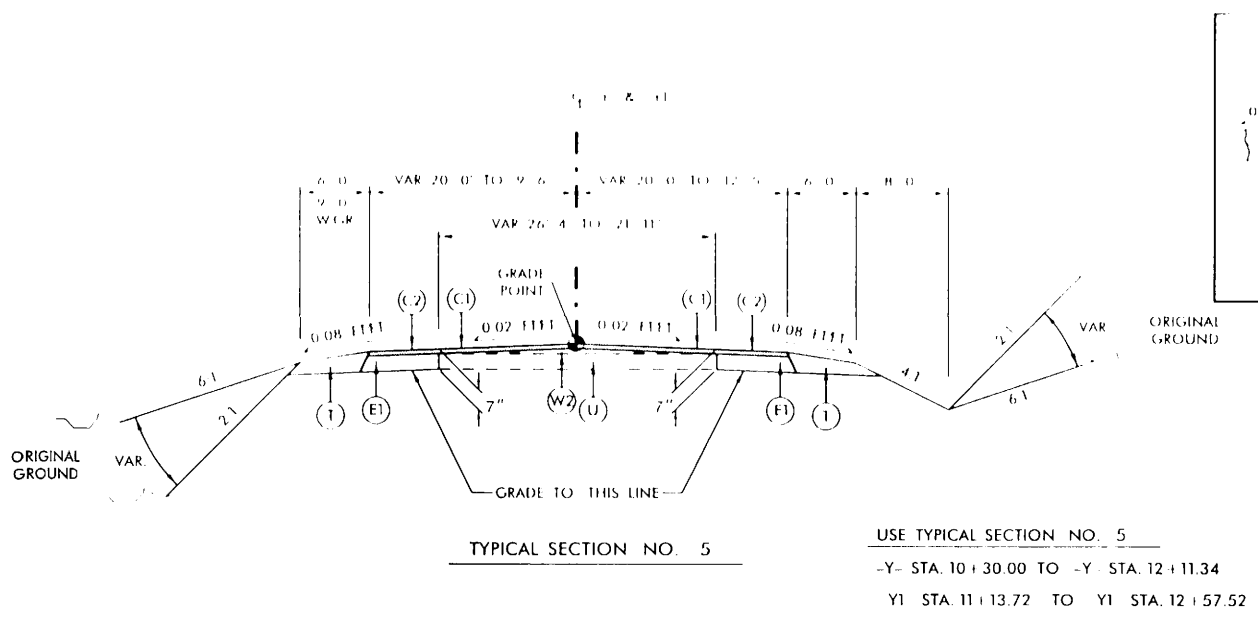
PAVEMENT DESIGN
ENGINEER

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PRELIMINARY PLANS

DO NOT USE FOR CONSTRUCTION



PRELIM. PAVEMENT SCHEDULE	
C1	1½" TYPE S9.5B
C2	3" TYPE S9.5B
C3	3" TYPE S9.5C
C4	VAR. TYPE S9.5B
C5	VAR. TYPE S9.5C
D1	4" TYPE I19.0B
D2	4" TYPE I19.0C
D3	VAR. TYPE I19.0B
D4	VAR. TYPE I19.0C
E1	4" TYPE B25.0B
E2	5" TYPE B25.0B
E3	8" TYPE B25.0C
E4	VAR. TYPE B25.0B
E5	VAR. TYPE B25.0C
J	10" ABC
K	8" LIME SUBBASE (OR) 7" CEMENT SUBBASE
R1	2'-6" C & G
R2	1'-6" C & G
R3	EXPRESSWAY GUTTER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V	4" MILLING
W1	WEDGING SEE DETAIL 1
W2	WEDGING SEE DETAIL 2
W3	WEDGING SEE DETAIL 3

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
PARCEL INDEX

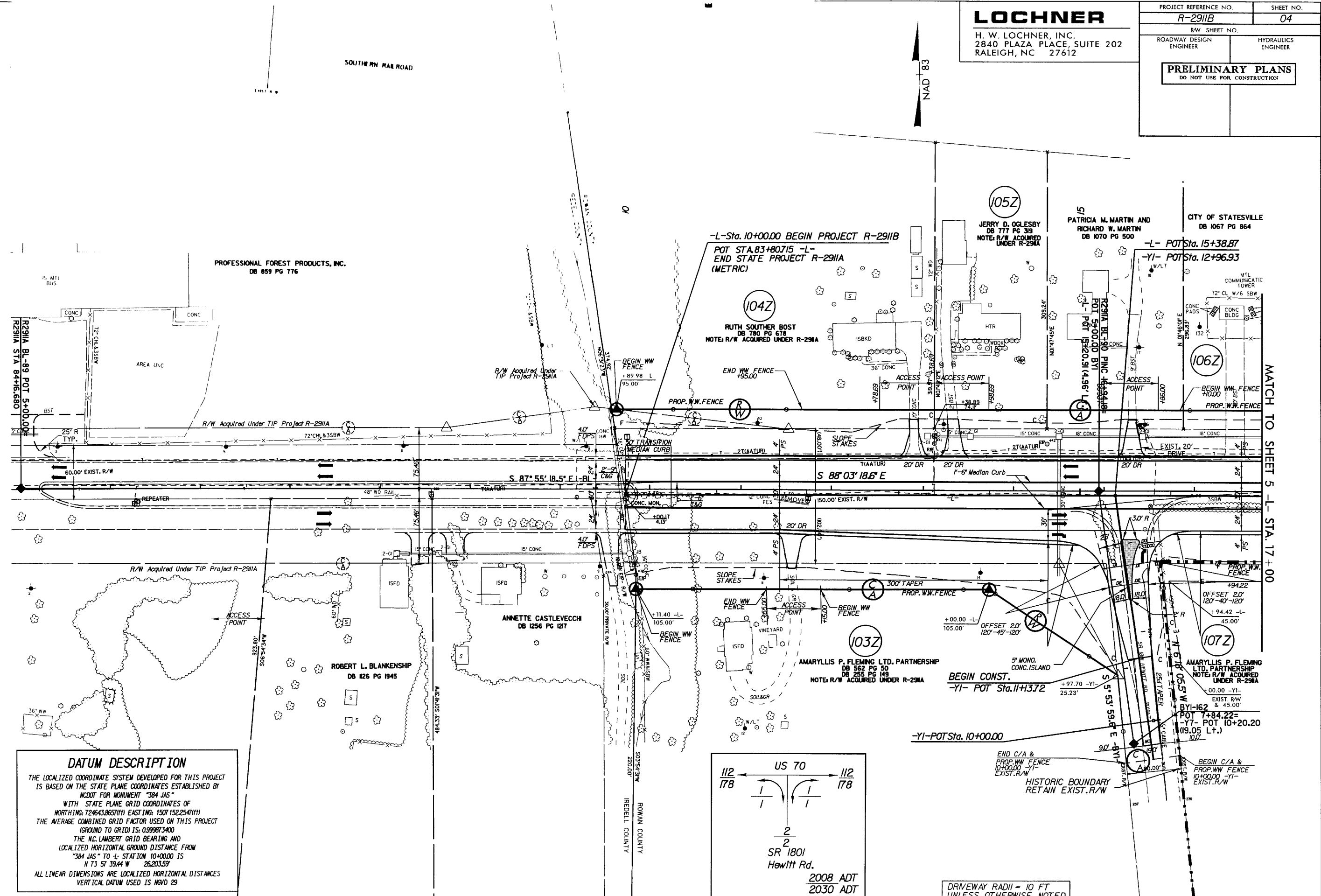
PARCEL No.	SHEET No.	PROPERTY OWNER NAME
1	5, 6	SHAVER WOOD PRODUCTS, INC.
2	6, 7	JOHN STRICKLAND AND WIFE, KATHRYN H.
3	6, 7	SOUTHERN RAILROAD
5	7, 8, 9	JAMES M. REDMOND, JR.
6	7, 8, 9	BOBBY G. DAVIS AND WIFE LAURA J. DAVIS
7	7	JAMES M. REDMOND, JR.
8	8, 9	MRS. H.B. THOMPSON HEIRS
9	9	DENNIS W. MCCALL
10	9	HENRY P. STOCKTON & WIFE
11	9	KATHLEEN HAYNES PHIFER
11A	9	VICTOR D. BRAWLEY & WIFE ALBERTA M. BRAWLEY
11B	9	HENRY STOCKTON
12	9	CHARLES W. BARBER
12A	9	AARON CORNELL STOCKTON
13	9	LAURA B. BARBER
14	9, 10	ROGER PHILLIP SPILLMAN
14A	9, 10	ROGER P. SPILLMAN
15	9, 10	ANDERSON PHIFER HEIRS
16	10, 11	EARL C. WANZER
17	10	WILLIE PHIFER AND WIFE FANNIE, PHIFER
18	10	RAY F. EBERHART
19	10	SONYA Y. SIMMONS
20	10	JEFFERSON DAVIS HERRING AND WIFE, ESSIE F. HERRING
21	10	LINDA K. BARBER
22	10, 11	ROBERT E. HOGUE
23	10, 11	MARTHA C. COWAN
24	10, 11	LILLIE MAE ROLAND
25	11	LINDA K. BARBER; JOE D. HOUBE AND WIFE ANNIE HOUBE
25A	11	LINDA K. BARBER
26	11	MAMIE MITCHELL COWAN
27	11	HEIRS TO EULA SMITH
28	11	OBRA ROZZELL COWAN
29	11	ANDREW LEE TABOR SR & WIFE

[illegible]

LOCHNER

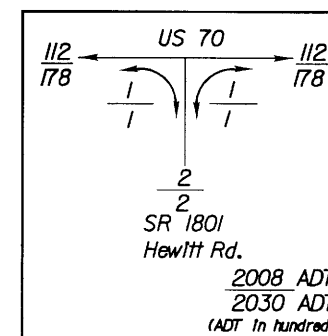
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO.	SHEET NO.
R-2911B	04
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCOT FOR MONUMENT "384 JAS" WITH STATE PLANE GRID COORDINATES OF NORTHING: 724643.8657(11) EASTING: 1501152.2547(11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999873400 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "384 JAS" TO -L- STATION 10+00.00 IS N 73 57 39.44 W 26203.59' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS MVD 29



DRIVEWAY RADII = 10 FT
UNLESS OTHERWISE NOTED

--- HISTORIC BOUNDARY

See Sheet 18 for -L- Profile
See Sheet 25 for -YI- Profile

REVISIONS
R/W Revision Apr. 24, 2005; Revised Access Points for Parcels 104Z, 105Z, and 106Z. Revised Property Data for Parcels 103Z, 105Z, and 107Z.
R/W Revision February 15, 2006; Revised Fence Length for Parcel 104Z.

25 OCT 2007 09:51
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10/24/2007 10:24:11 AM
10/24/2007 10:24:11 AM

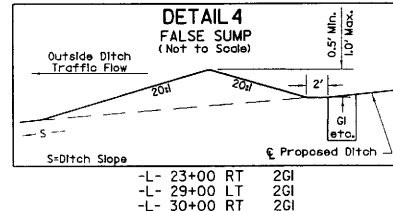
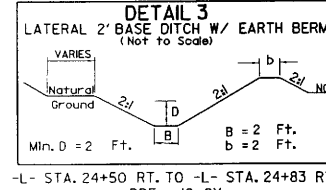
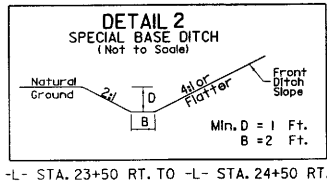
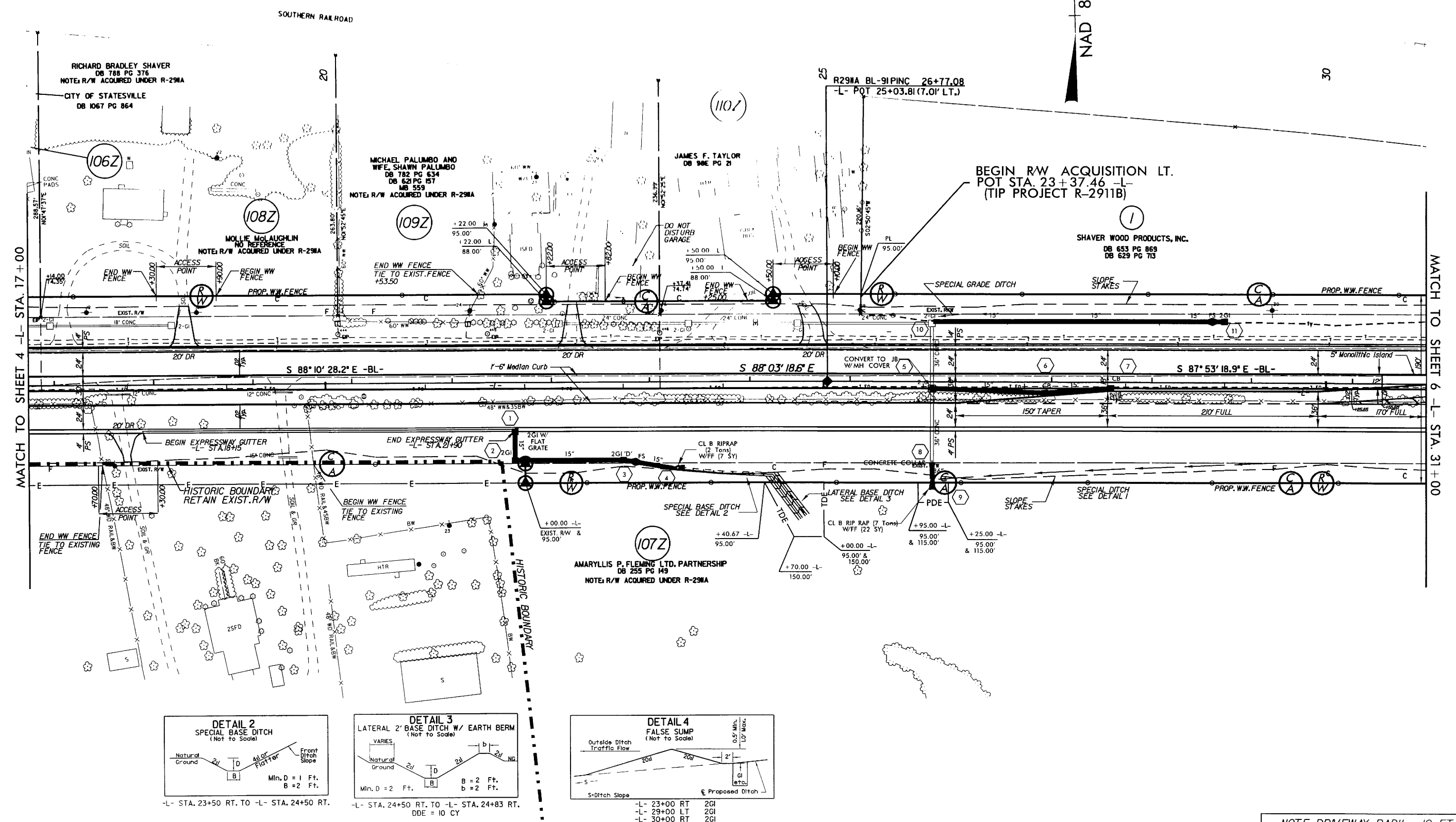
LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO.	SHEET NO.
R-2911B	05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

NAD 83



NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

See Sheet 18 for -L- Profile

REVISIONS

R/W Revision: April 11, 2005, Added Left Over (Median Opening) at +/- Sta. 26+55 to +/- Sta. 31+20
R/W Revision: May 24, 2005, Revised Property Data for Parcels 107Z, 108Z, & 109Z, Revised Access Point and Right of Way for Parcel 109Z to Avoid Garage.
R/W Revision: June 17, 2005, Revised Proposed W.W. Fence to Tie into Existing Fence at Parcel 109Z.
R/W Revision: February 15, 2006, Revised Access Point for Parcel 109Z to Tie into Existing Fence at Parcel 109Z.
R/W Revision: May 30, 2006, Added Median Opening at Parcel 11 Shaver Wood Products, Inc.

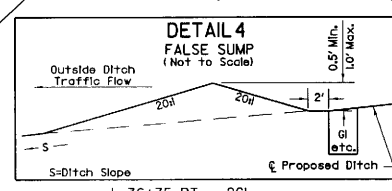
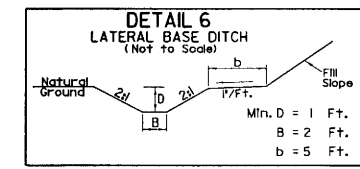
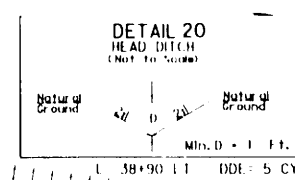
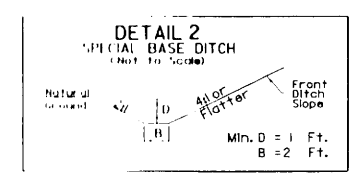
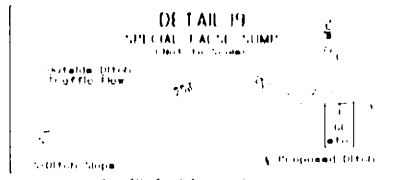
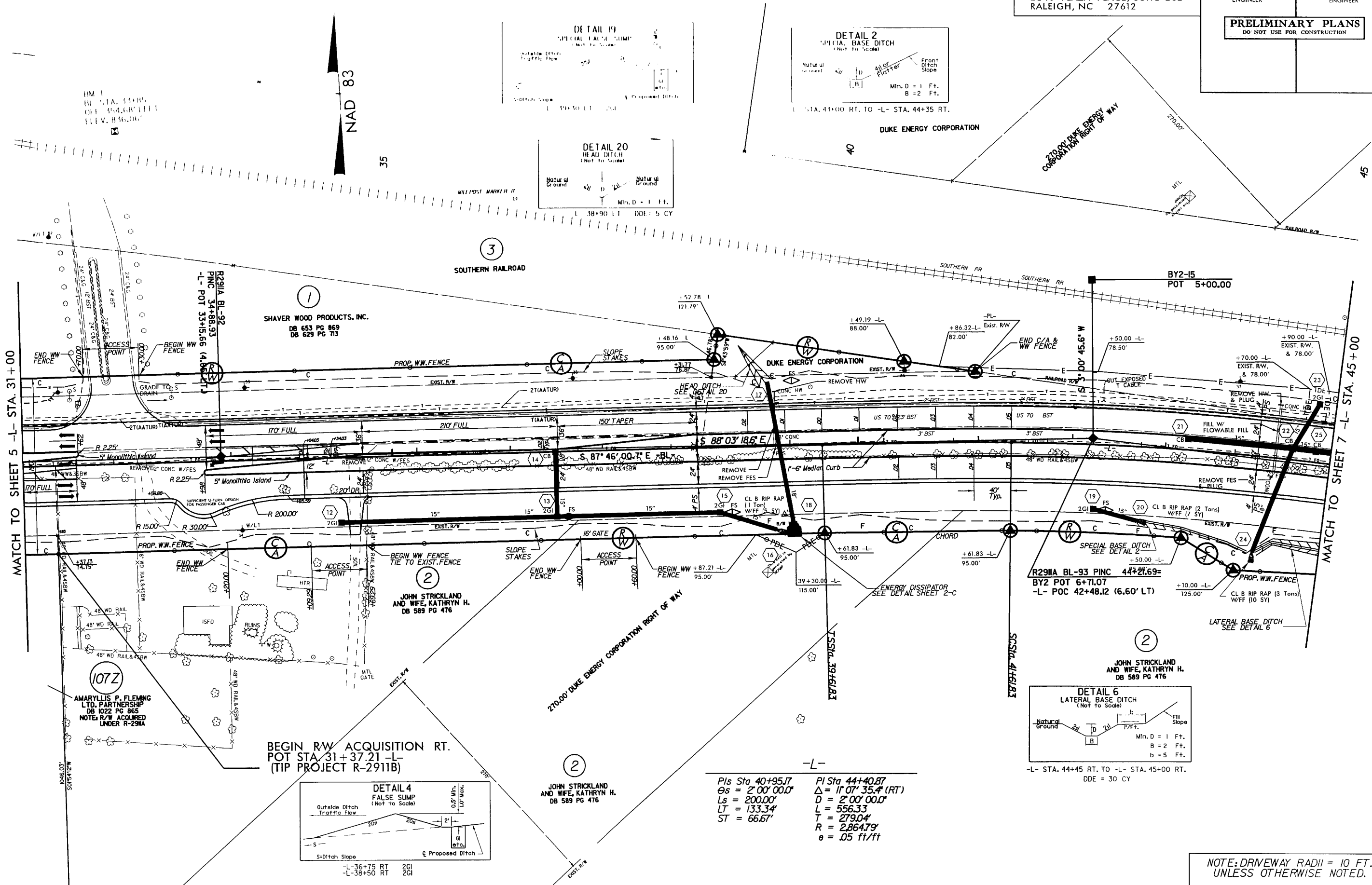
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LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO.	SHEET NO.
R-2911B	06
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



Pls Sta 40+95.7
Δs = 2' 00" 00.0"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 44+40.87
Δs = 11' 07" 35.4" (RT)
D = 2' 00" 00.0"
L = 556.33'
T = 279.04'
R = 2,864.79'
e = .05 ft/ft

NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

See Sheet 19 for -L- Profile

REVISIONS

Rev. 1: April 17, 2005, Added Left Over (Median Opening at +/- L- Sta. 26+55 to L- Sta. 31+20) and revised Existing Right of Way for Railroad.

Rev. 2: April 17, 2005, Added Right of Way (Median Opening at +/- L- Sta. 26+55 to L- Sta. 31+20) and revised Existing Right of Way for Railroad.

Rev. 3: April 17, 2005, Added Right of Way (Median Opening at +/- L- Sta. 26+55 to L- Sta. 31+20) and revised Existing Right of Way for Railroad.

Rev. 4: April 17, 2005, Added Right of Way (Median Opening at +/- L- Sta. 26+55 to L- Sta. 31+20) and revised Existing Right of Way for Railroad.

Rev. 5: April 17, 2005, Added Right of Way (Median Opening at +/- L- Sta. 26+55 to L- Sta. 31+20) and revised Existing Right of Way for Railroad.

Rev. 6: April 17, 2005, Added Right of Way (Median Opening at +/- L- Sta. 26+55 to L- Sta. 31+20) and revised Existing Right of Way for Railroad.

Rev. 7: April 17, 2005, Added Right of Way (Median Opening at +/- L- Sta. 26+55 to L- Sta. 31+20) and revised Existing Right of Way for Railroad.

Rev. 8: April 17, 2005, Added Right of Way (Median Opening at +/- L- Sta. 26+55 to L- Sta. 31+20) and revised Existing Right of Way for Railroad.

Rev. 9: April 17, 2005, Added Right of Way (Median Opening at +/- L- Sta. 26+55 to L- Sta. 31+20) and revised Existing Right of Way for Railroad.

Rev. 10: April 17, 2005, Added Right of Way (Median Opening at +/- L- Sta. 26+55 to L- Sta. 31+20) and revised Existing Right of Way for Railroad.

25-OCT-2007, 09:51
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8/17/99

REVISIONS

R/W Revision: May 24, 2005; Revised Property Data For Parcel 7 and Revised Existing Right of Way for Railroad.
R/W Revision: May 30, 2006; Reduced Ditch Width From Sta. 40+00 to 52+00 LT to reduce impact on Parcel 3.
R/W Revision: June 13, 2006; Removed Control Access From Sta. 41+23.34 to 50+21.35 LT. Replaced PDE with TDE on Parcel 3.

25 OCT-2007 09:51
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bbochner

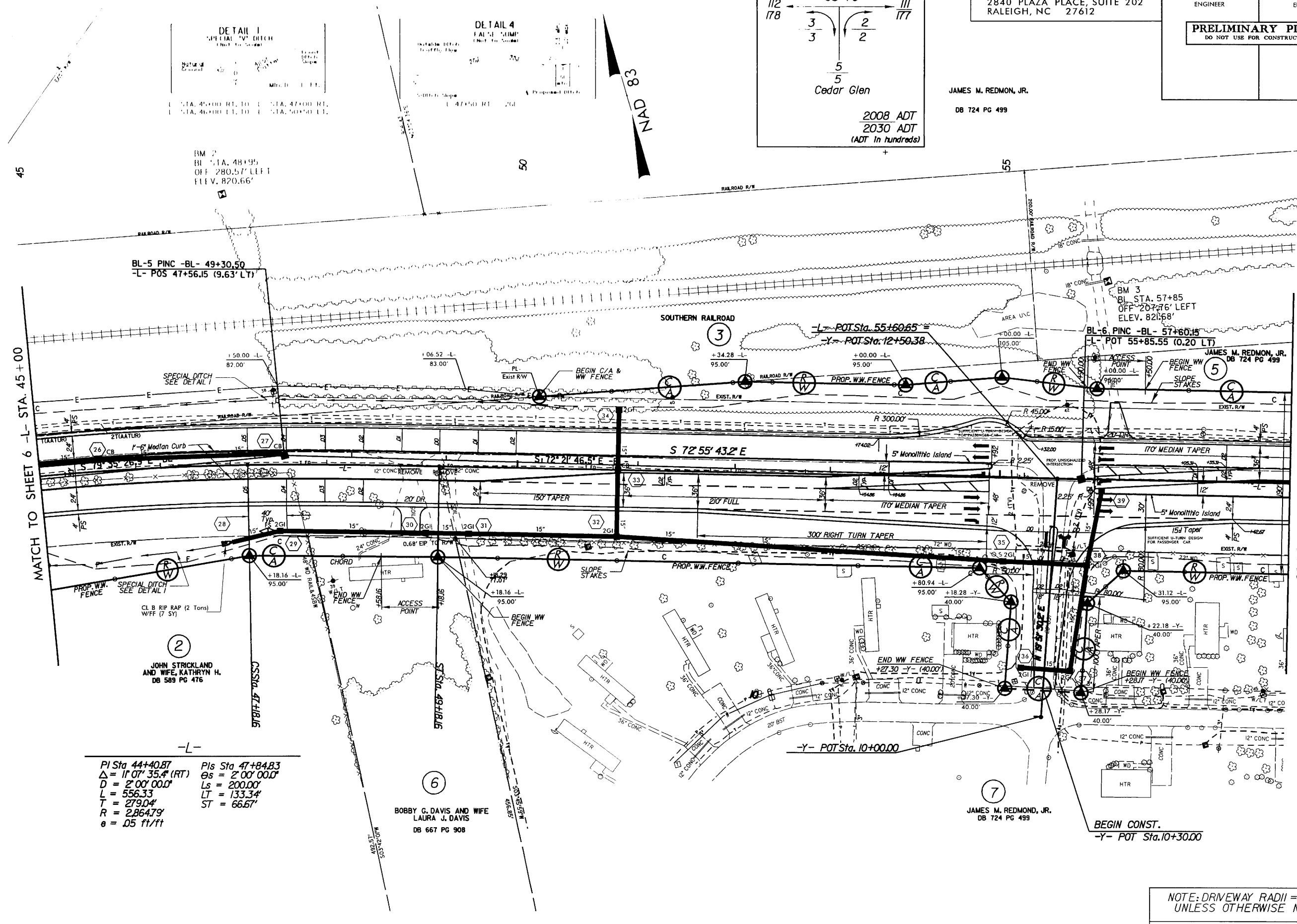
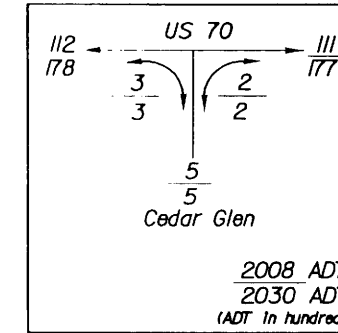
LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

JAMES M. REDMON, JR.

DB 724 PG 499

PROJECT REFERENCE NO.	SHEET NO.
R-2911B	07
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



PI Sta 44+40.87
 $\Delta = 11^{\circ} 07' 35.4''$ (RT)
 $D = 2' 00'' 00.0''$
 $L = 556.33'$
 $T = 279.04'$
 $R = 2.86479'$
 $e = 05$ ft/ft

PIs Sta 47+84.83
 $\Theta_s = 2' 00'' 00.0''$
 $L_s = 200.00'$
 $LT = 133.34'$
 $ST = 66.67'$

BOBBY G. DAVIS AND WIFE
LAURA J. DAVIS
DB 667 PG 908

JAMES M. REDMON, JR.
DB 724 PG 499

NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

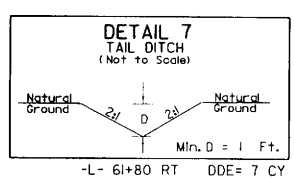
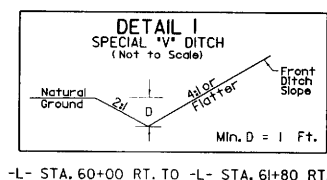
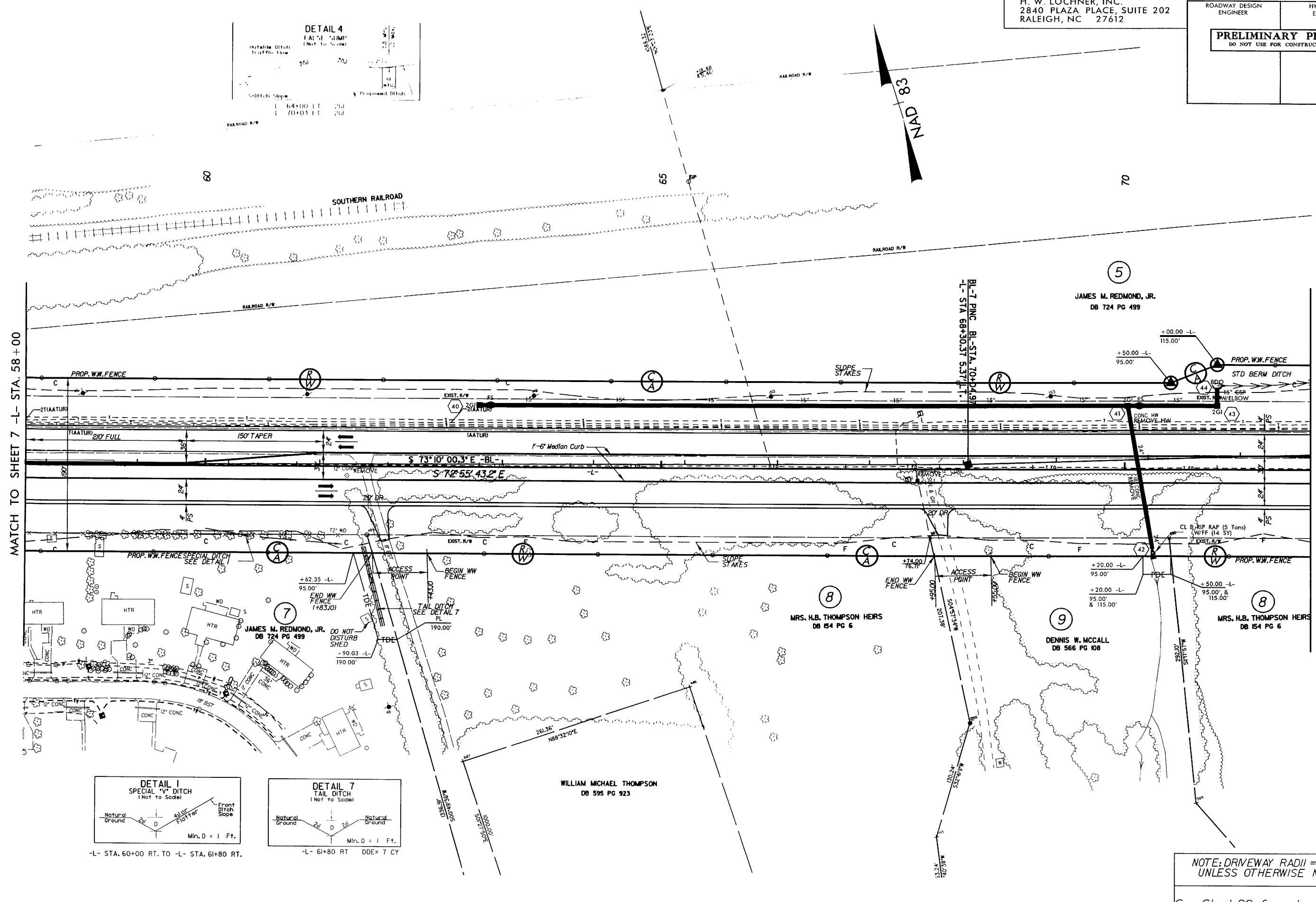
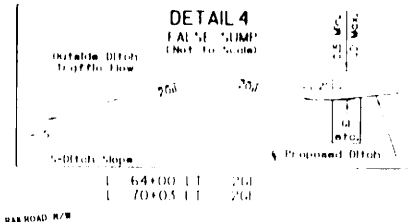
See Sheet 19 for -L- Profile
See Sheet 25 for -Y- Profile

8/17/99

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO. R-2911B	SHEET NO. 08
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

See Sheet 20 for -L- Profile

REVISIONS

R/W Revision May 24, 2005; Revised Property Data for Parcels 5 and 7.

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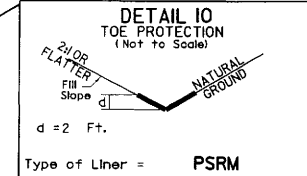
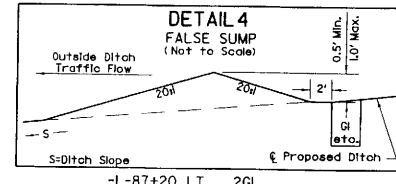
8/17/79

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

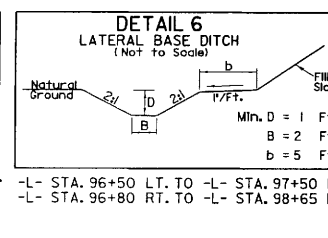
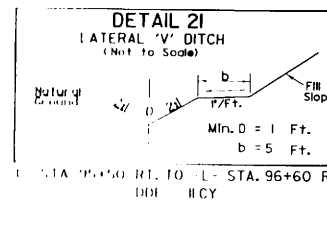
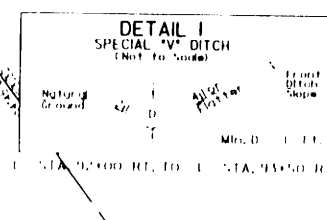
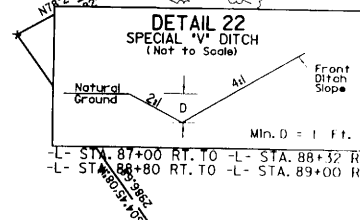
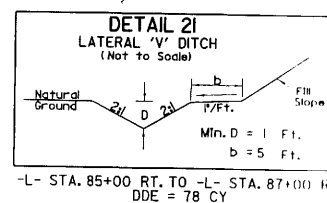
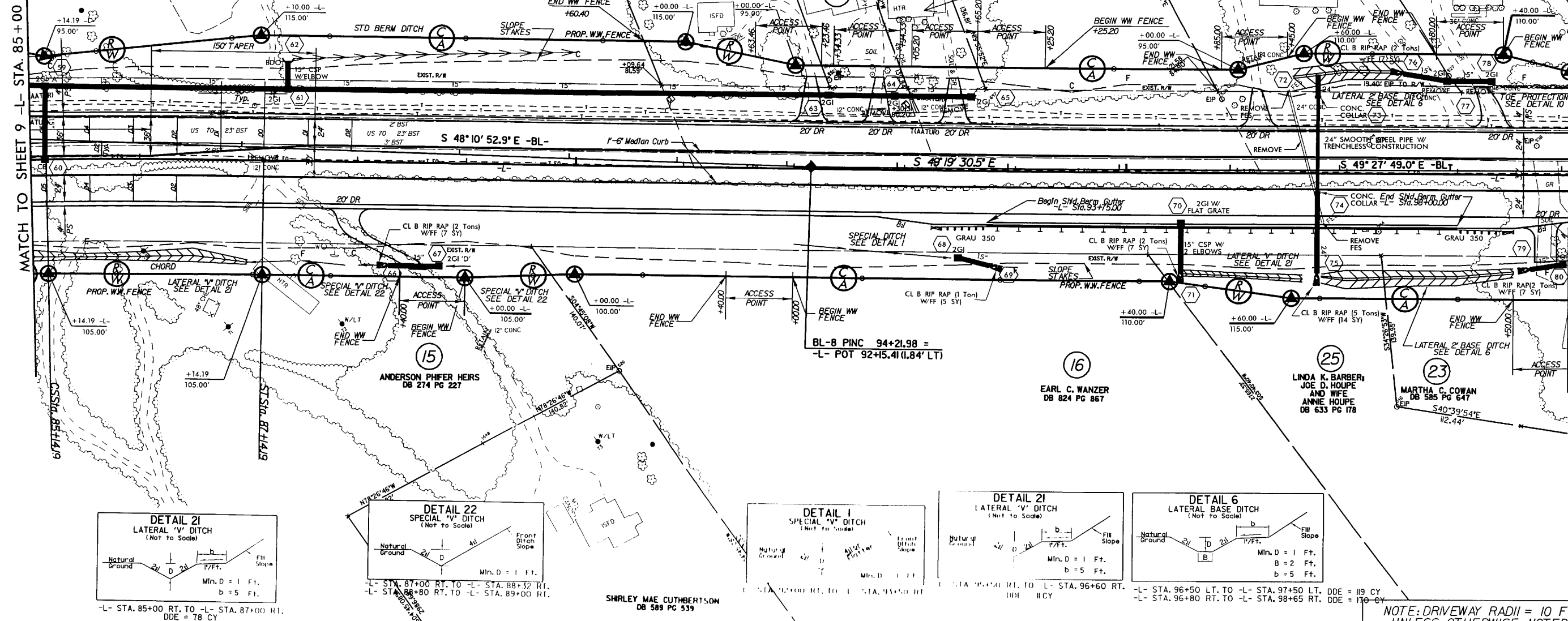
PROJECT REFERENCE NO.	SHEET NO.
R-2911B	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



MATCH TO SHEET 9 -L- STA. 85+00

MATCH TO SHEET 11 -L- STA. 99+00



NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

See Sheet 21 for -L- Profile

REVISIONS

R/W Revision May 24, 2005; Revised Property Data for Parcels 17, 20, & 25.
R/W Revision May 24, 2005; Revised Access Points for Parcels 17, 18, 19, and 20.
R/W Revision February 15, 2006; Revised Name Change on Parcel 25.

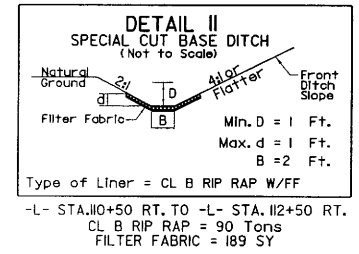
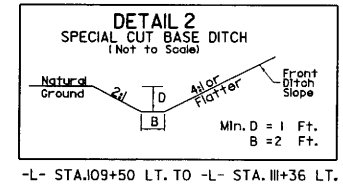
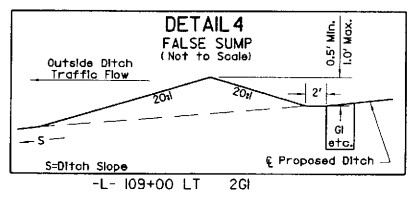
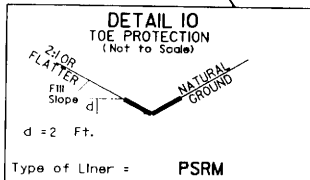
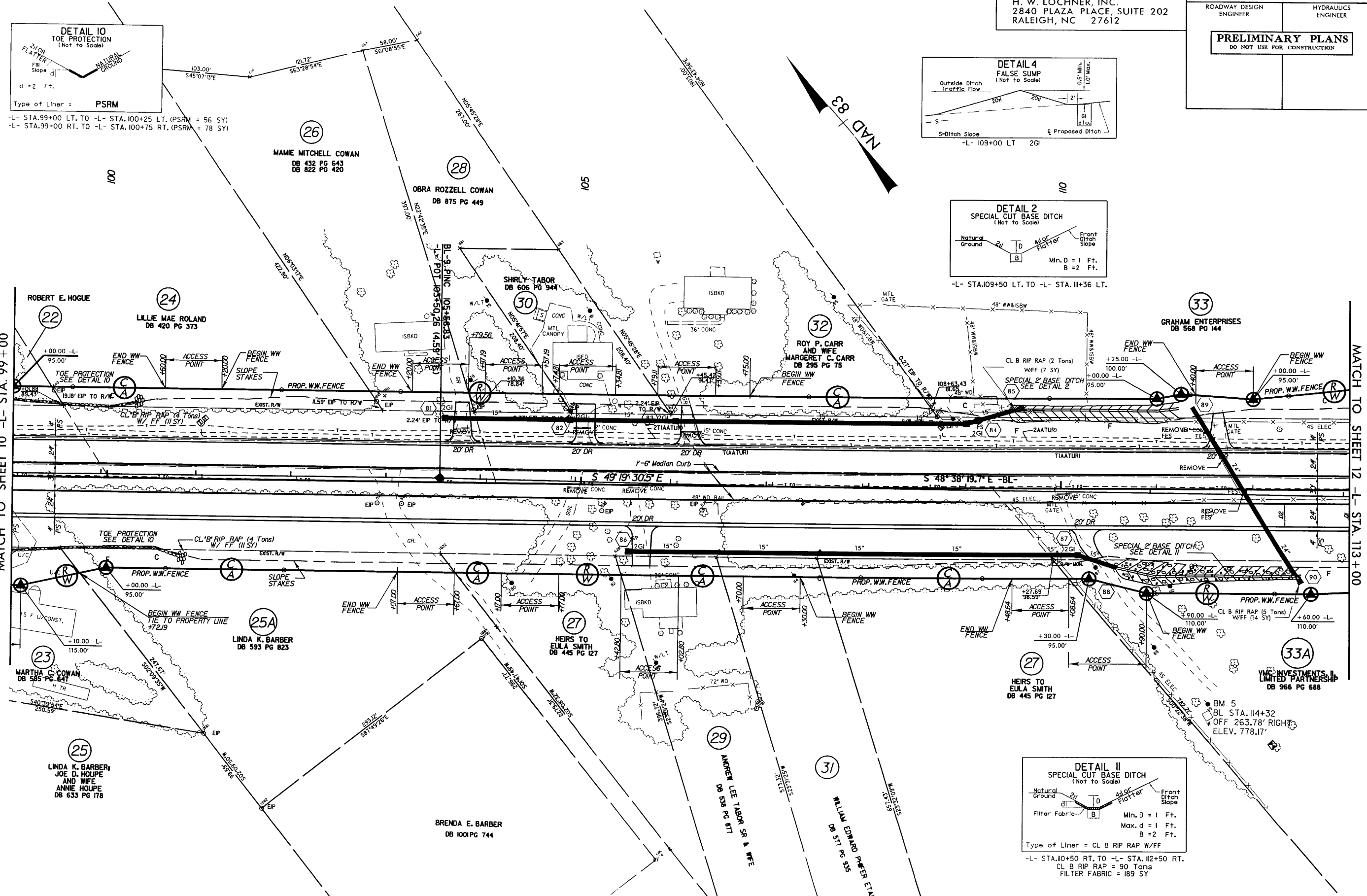
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LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO.	SHEET NO.
R-2911B	II
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



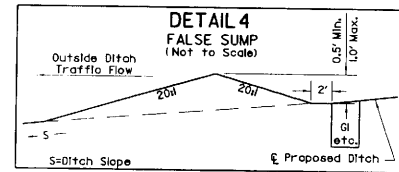
NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

See Sheet 2I for -L- Profile

REVISIONS

R/W Revision May 24, 2005: Revised Access Points for Parcels 26, 27, 28, 29, 30, 31, 32, and Property Data for Parcel 33A per R/W Contacts.
R/W Revision June 17, 2005: Revised Proposed W/F Fence to Begin at Parcel 25A Property Line.
R/W Revision February 15, 2006: Revised Access Point at Parcel 25A.
R/W Revision February 15, 2006: Changed Property Owners Name at Parcel 27.
R/W Revision February 15, 2006: Revised Name Change on Parcel 25.

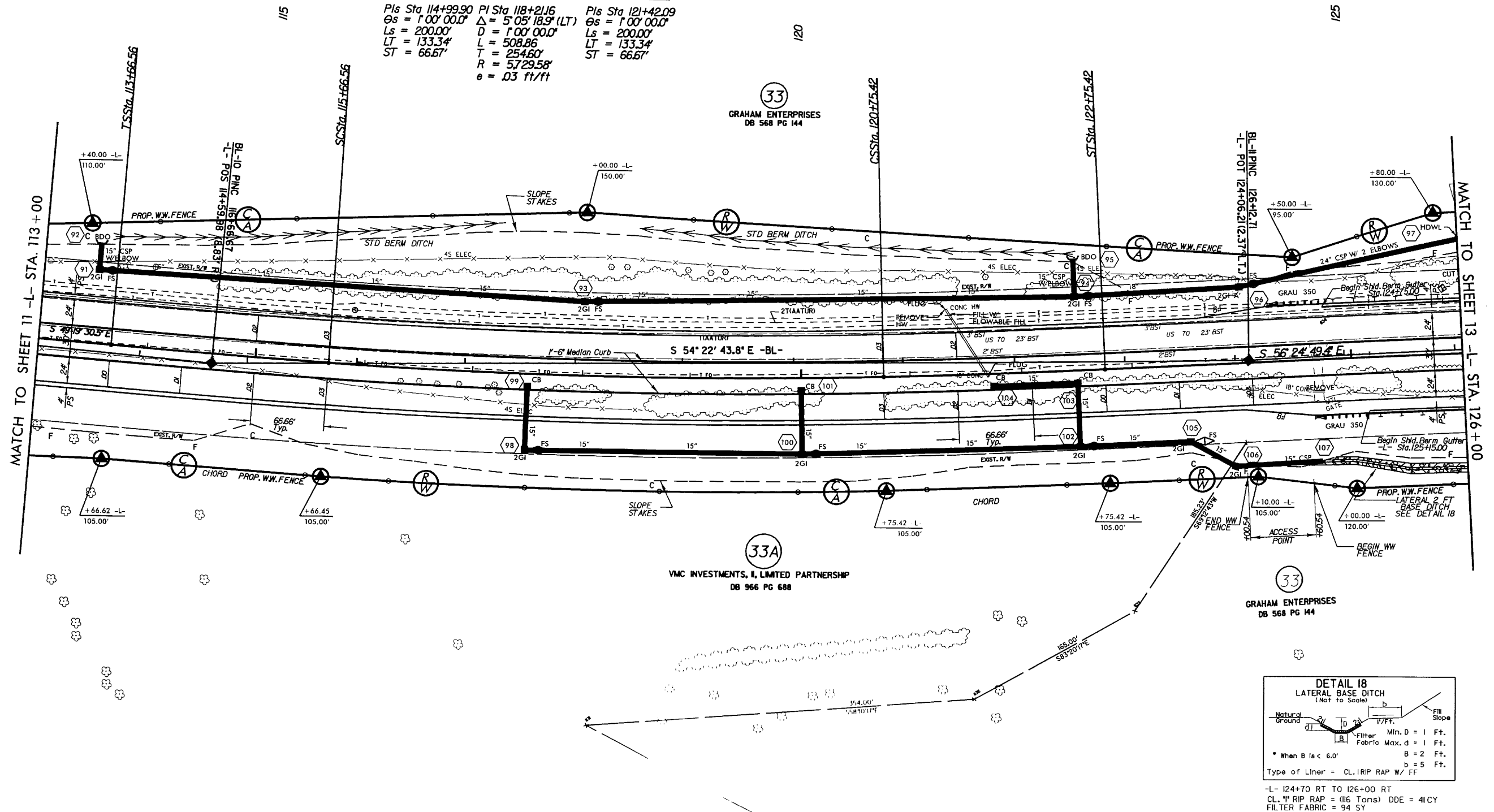
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bballman



-L-113+50 LT	2GI	-L-117+50 RT	2GI
-L-118+00 LT	2GI	-L-120+00 RT	2GI
-L-122+50 LT	2GI	-L-122+50 RT	2GI
-L-124+00 LT	2GI	-L-123+50 RT	2GI

-7-

<i>Pls</i> Sta 114+99.90	<i>Pl</i> Sta 118+211.6	<i>Pls</i> Sta 121+42.09
<i>Os</i> = 1°00'00.0"	Δ = 5°05'18.9" (LT)	<i>Os</i> = 1°00'00.0"
<i>Ls</i> = 200.00'	<i>D</i> = 1°00'00.0"	<i>Ls</i> = 200.00'
<i>LT</i> = 133.34'	<i>T</i> = 58.86	<i>LT</i> = 133.34'
<i>ST</i> = 66.67'	<i>L</i> = 254.60'	<i>ST</i> = 66.67'
	<i>R</i> = 5729.58'	
	<i>e</i> = .03 ft/ft	



DETAIL 18
LATERAL BASE DITCH
 (Not to Scale)

The diagram shows a cross-section of a ditch. The ditch is filled with "Filter Fabric" and has a "Min. D = 1 Ft." depth. The ditch is lined with "CL. IRIP RAP W/ FF". The ditch is located on a "Natural Ground" slope. The ditch has a "1' Ft." width at the top. The ditch is labeled with "D" for depth and "B" for bottom width. The ditch is shown on a "FTH Slope".

* When B is < 6.0'

Type of Liner = CL. IRIP RAP W/ FF

-L- I24+70 RT TO I26+00 RT
CL. "I" RIP RAP = (116 Tons) DDE = 41 CY
FILTER FABRIC = 94 SY

NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

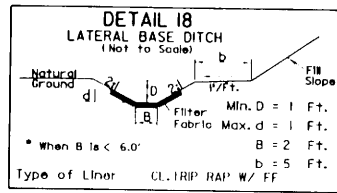
See Sheet 22 for -L- Profile

REVISIONS

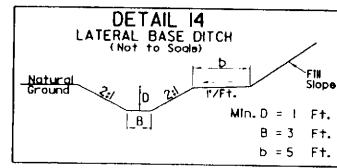
R/W Revision May 24, 2005; Revised Property Data for Parcel 33A.
R/W Revision February 15, 2006; Added Access Point for Parcel 33 per Roadway.

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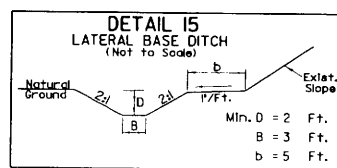
PROJECT REFERENCE NO.	SHEET NO.
R-2911B	13
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



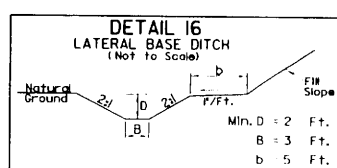
-L- 126+00 RT TO 127+00 RT
CL 1" RIP RAP = (89 Tons) DDE = 30 CY
FILTER FABRIC = 72 SY



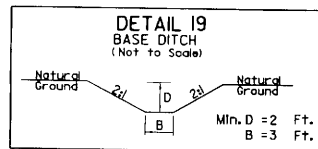
-L- 126+00 LT TO 127+00 LT
DDE = 117 CY



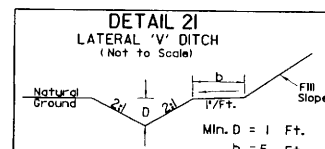
-L- 127+00 LT TO 135+50 LT
DDE = 1452 CY



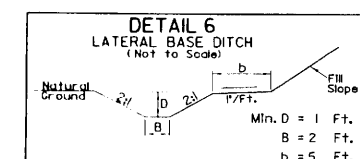
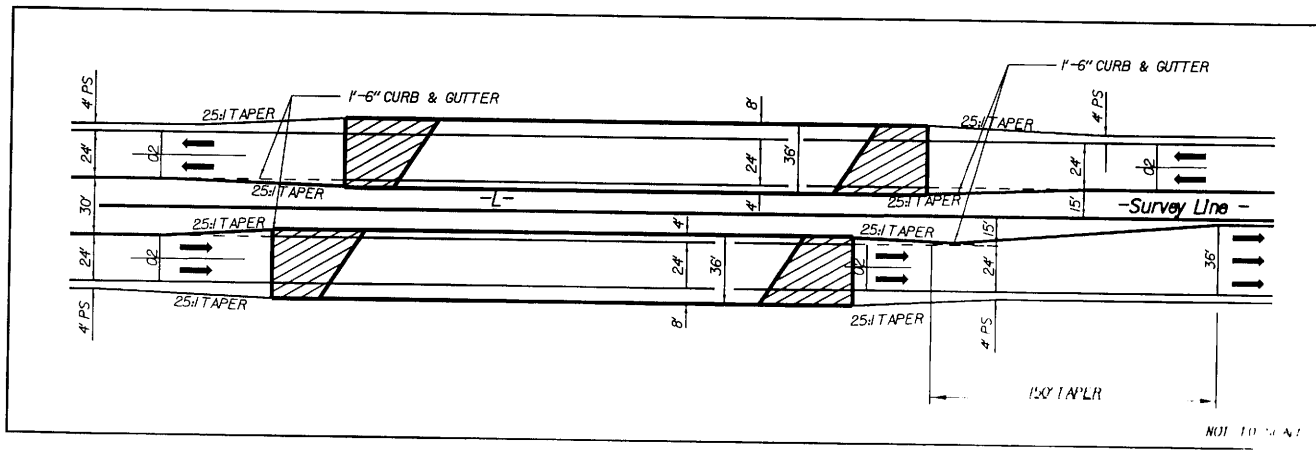
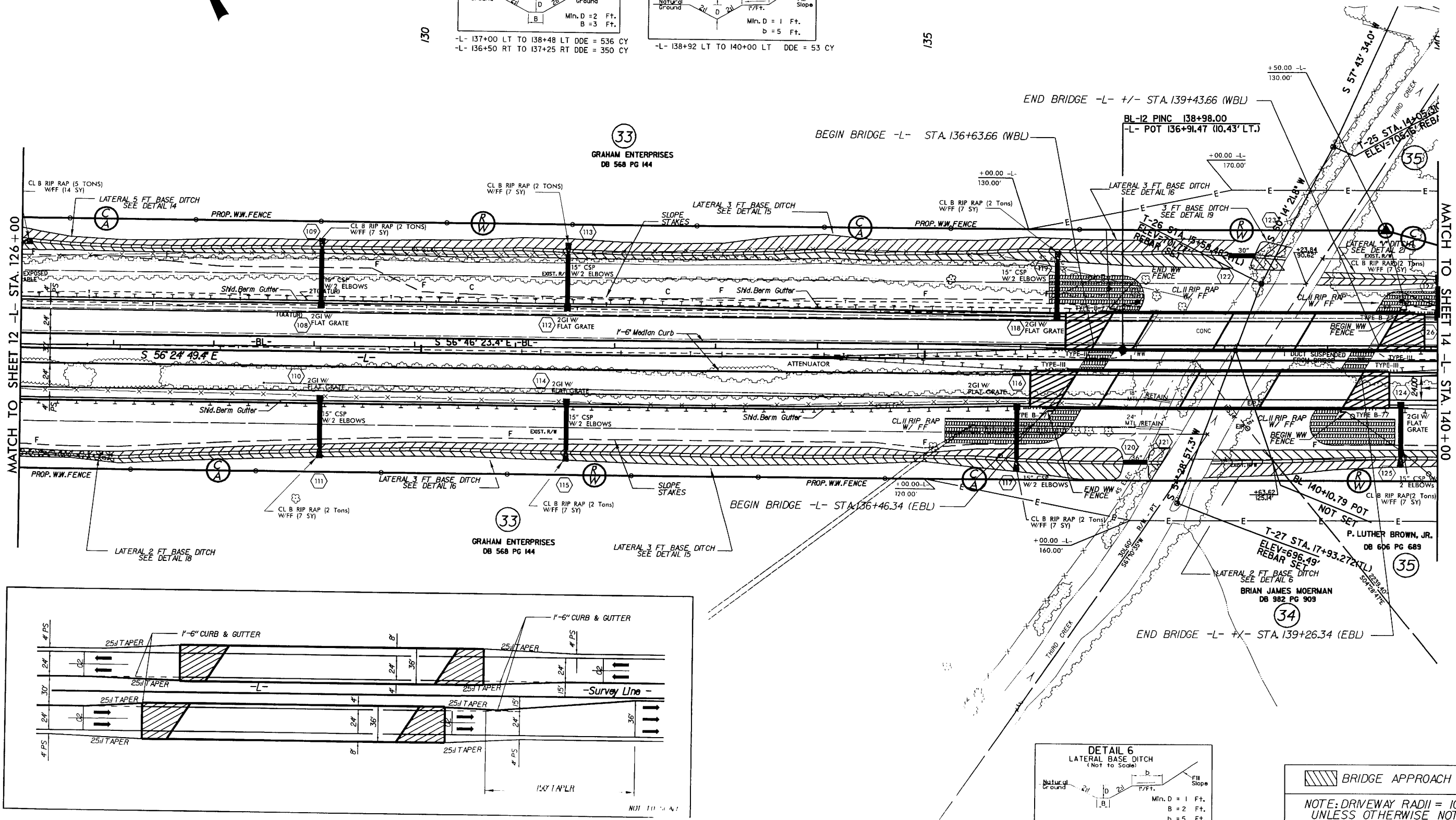
-L- 135+50 LT TO 137+00 LT DDE = 400 CY
-L- 127+00 RT TO 136+50 RT DDE = 1170 CY



-L- 137+00 LT TO 138+48 LT DDE = 536 CY
-L- 136+50 RT TO 137+25 RT DDE = 350 CY



-L- 138+92 LT TO 140+00 LT DDE = 53 CY



-L- 137+00 RT TO 140+00 RT DDE = 467 CY

BRIDGE APPROACH SLAB

NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

See Sheet 22 for -L- Profile

REVISIONS

R/W Revision May 24, 2005; Revised Property Data For Parcel 34.

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8/17/99

LOCHNER

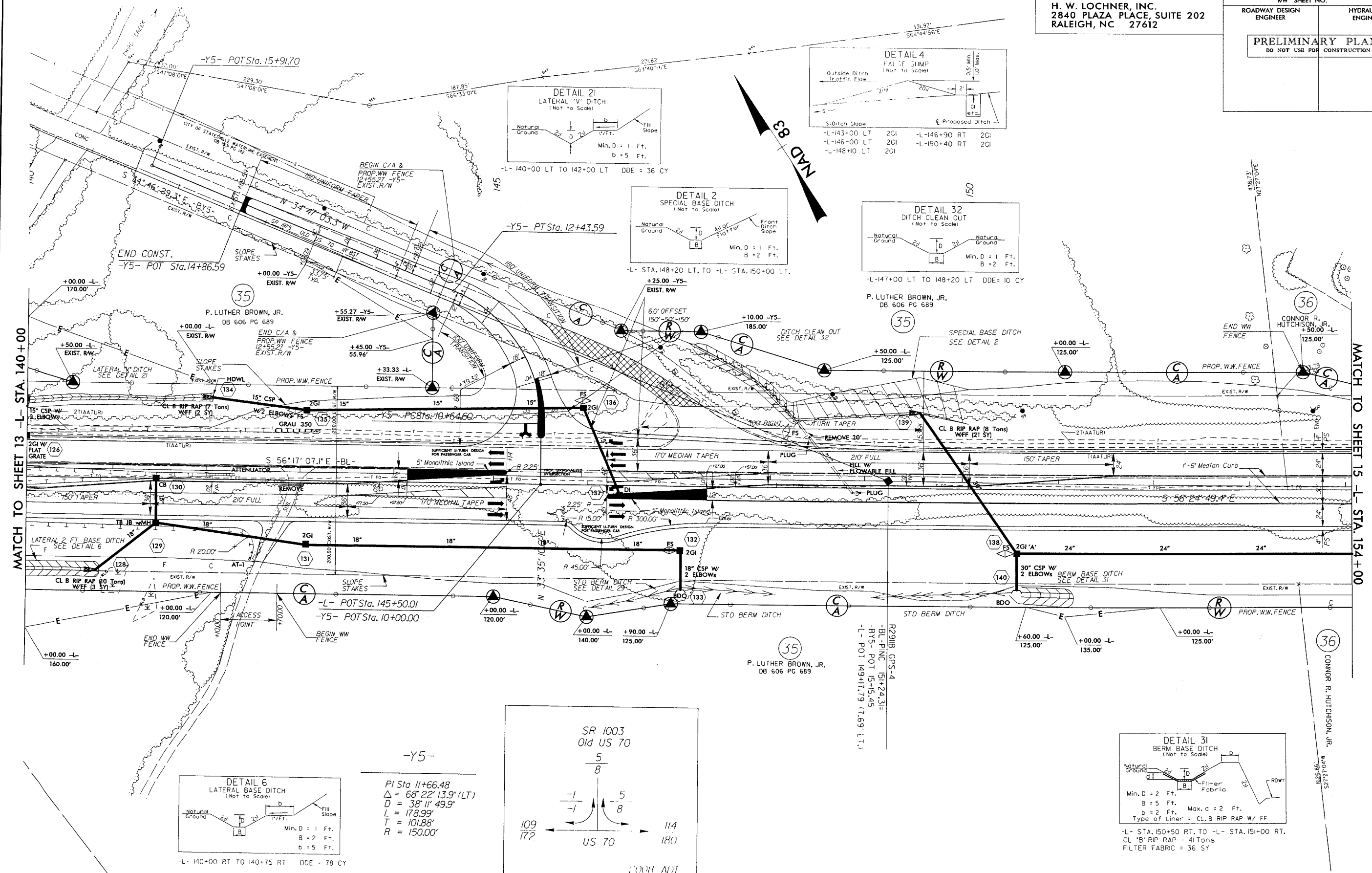
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO.	SHEET NO.
R-2911B	14
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

REVISIONS

R/W Revision August 1, 2005, Revised C/A Fence Location for Parcel 36.

11/28/2007
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NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.

See Sheet 23 for -L- Profile
See Sheet 25 for -Y5- Profile

8/17/99

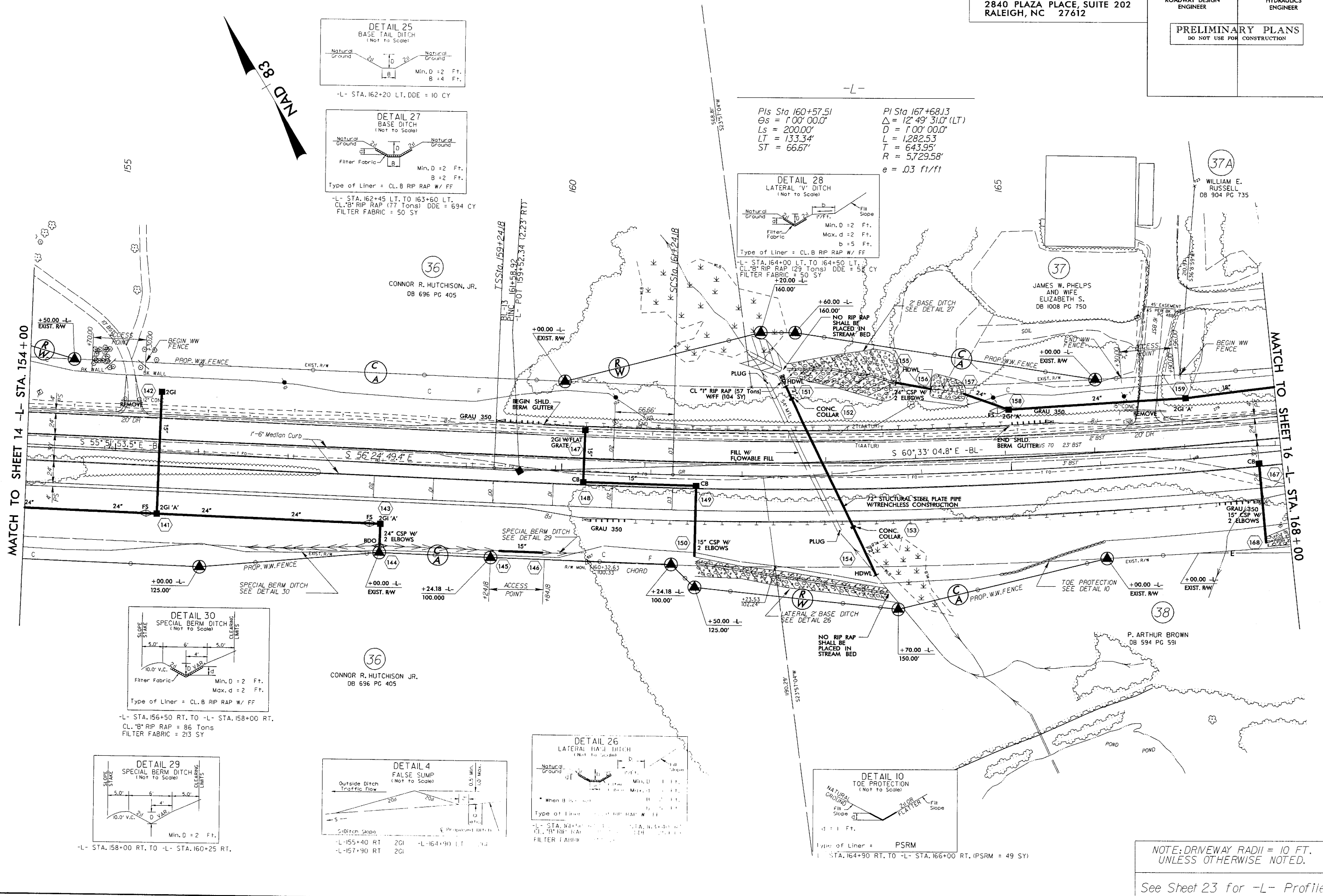
REVISIONS
R/W Revision May 24, 2005; Revised Access Locations for Parcel 36, revised Property Data for Parcel 36, revised C/A Fence Location for Parcel 36.
R/W Revision August 1, 2005; Revised C/A Fence Location for Parcel 36.
R/W Revision February 19, 2006; Revised Parcel 37 owner change, added Parcel 37A, and added new property line.
R/W Revision February 19, 2006; Added Access Point for Parcel 37A.

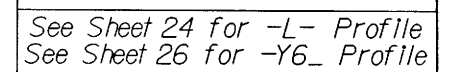
11/28/2007
R/W Revision May 24, 2005; Revised Access Locations for Parcel 36, revised Property Data for Parcel 36, revised C/A Fence Location for Parcel 36.
R/W Revision August 1, 2005; Revised C/A Fence Location for Parcel 36.
R/W Revision February 19, 2006; Revised Parcel 37 owner change, added Parcel 37A, and added new property line.
R/W Revision February 19, 2006; Added Access Point for Parcel 37A.

LOCHNER

H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO.	SHEET NO.
R-2911B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	





	REVIEWS
R/W	Revision May 24, 2005; Revised Property Data for Parcels 37, 38 & 39A
R/W	Revision June 17, 2005; Turned Easement into R/W Added Two R/W Monuments and Deleted One Monument on Parcel 38.
R/W	Revision February 15, 2006; Changed Parcel 37 to Parcel 37A per new Property Line.
R/W	Revision February 15, 2006; Removed C/A Label from Back Property Line on Parcel 36.
R/W	Revision May 30, 2006; Revised fence and access location on Parcel 37A.

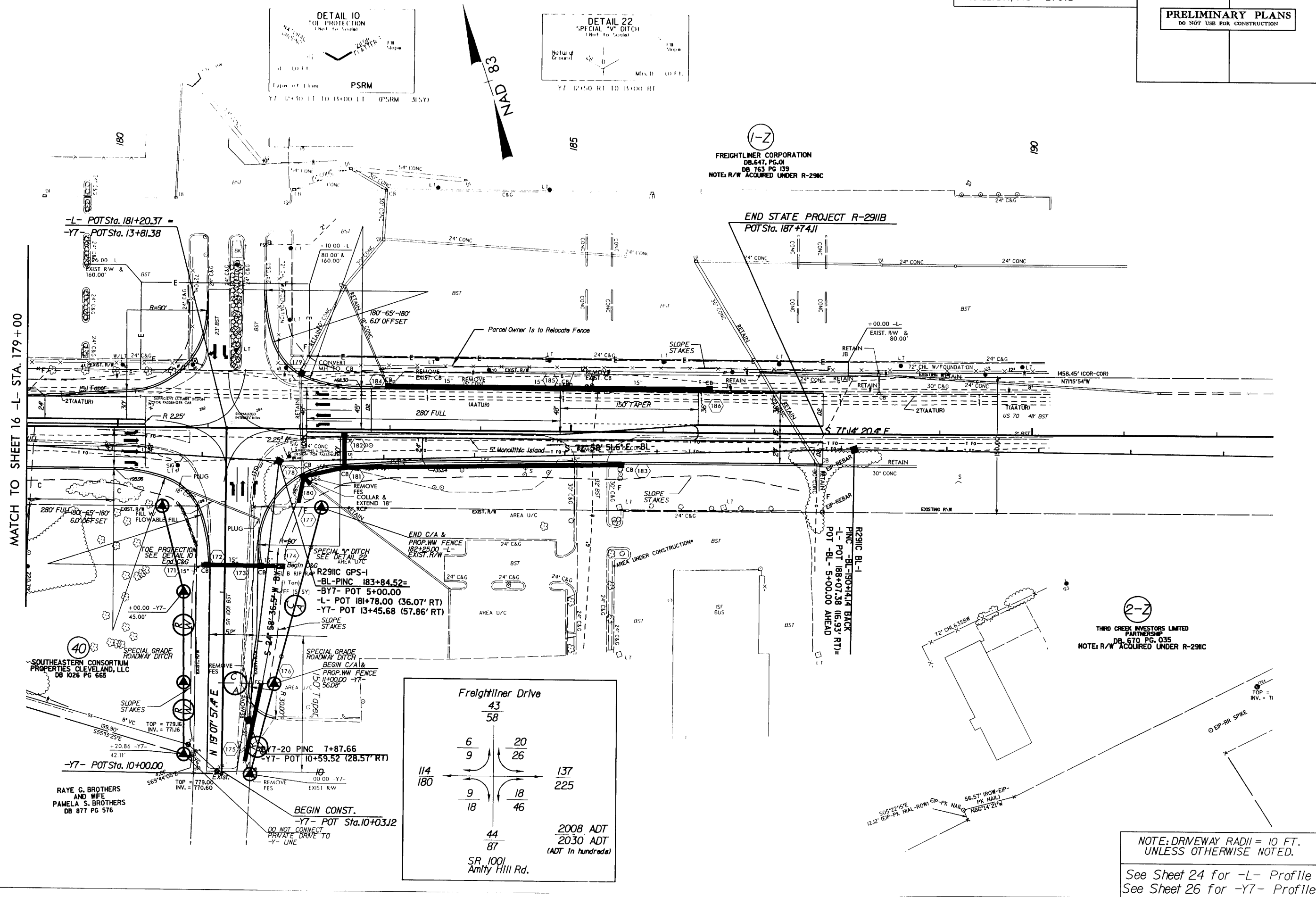
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bbolman AT WSRAL-0211A

8/17/9

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO.	SHEET NO.
R-2911B	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



REVISIONS
R/W Revision May 24, 2005, Revised Property Data for Parcel 40, Reduced R/W Width along Y7 on Parcel 40.
R/W Revision February 15, 2006, Revised C/A from Parcel 40.

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NOTE: DRIVEWAY RADII = 10 FT.
UNLESS OTHERWISE NOTED.
See Sheet 24 for -L- Profile
See Sheet 26 for -Y7- Profile

5/28/9

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2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO.	SHEET NO.
R-2911B	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

(R-2911A) Metric
PI = 83+70
EL = 254.218m
VC = 252m
K = 194

CONVERTS TO

(R-2911A) English
PI = 9+64.85
** EL = 834.30'
VC = 827'
K = 637
= Elevation Includes 3" resurfacing

BM (Elmwood Reset 1983)
The mark is 8 inches above the ground
and stamped "ELMWOOD 1948 RESET 1983"
-BL- Sta.12+63.03 Lt.541.06' EL=845.03'

BEGIN GRADE -L- STA. 10+00.00
EL. 835.70

TO BE CONSTRUCTED UNDER
TIP PROJECT R-2911A

PROPOSED GRADE

VPI -L- Sta.13+13.43
EL = 837.57
VPC -L- Sta.13+99.43
EL = 837.24

-L- Sta.15+30.67
-L- Sta.12+66.97

-L-

PI = 17+49.43
EL = 840.51'
VC = 700'
K = 351

PI = 26+00.00
EL = 830.30'
VC = 400'
K = 235

PROPOSED GRADE

EXISTING GROUND

--- LEFT DITCH PROFILE
--- RIGHT DITCH PROFILE

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5/28/05

BM * 1
Chiseled X In a Concrete Headwall for an
18" concrete pipe at the entrance to a cattle farm.
-BL- Sta.33+85 Lt.354.68' EL=836.06'

PI = 33+70.00
EL = 834.15'
VC = 370'
K = 154

PI = 39+50.00
EL = 823.13'
VC = 200'
K = 667

-L-

PI = 44+50.00
EL = 812.13'
VC = 540'
K = 138

PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.15	
DRAINAGE AREA	= 4.28 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 7.82 CFS
DESIGN HW ELEVATION	= 82.55 FT
100 YEAR DISCHARGE	= 8.65 CFS
100 YEAR HW ELEVATION	= 82.63 FT
OVERTOPPING FREQUENCY	= 100/300 YRS
OVERTOPPING DISCHARGE	= 100/300 CFS
OVERTOPPING ELEVATION	= 82.90 FT

--- LEFT DITCH PROFILE
--- RIGHT DITCH PROFILE

BM * 3
Chiseled X In the east end of an 18"
concrete pipe under an access road to a tobacco field.
-BL- Sta.57+85 Lt.207.76' EL=821.68'

BM * 2
Railroad spike In the base of a 42" Black Oak
-BL- Sta.48+95 Lt.280.57' EL=820.66'

PI = 49+80.00
EL = 821.14'
VC = 200'
K = 1000

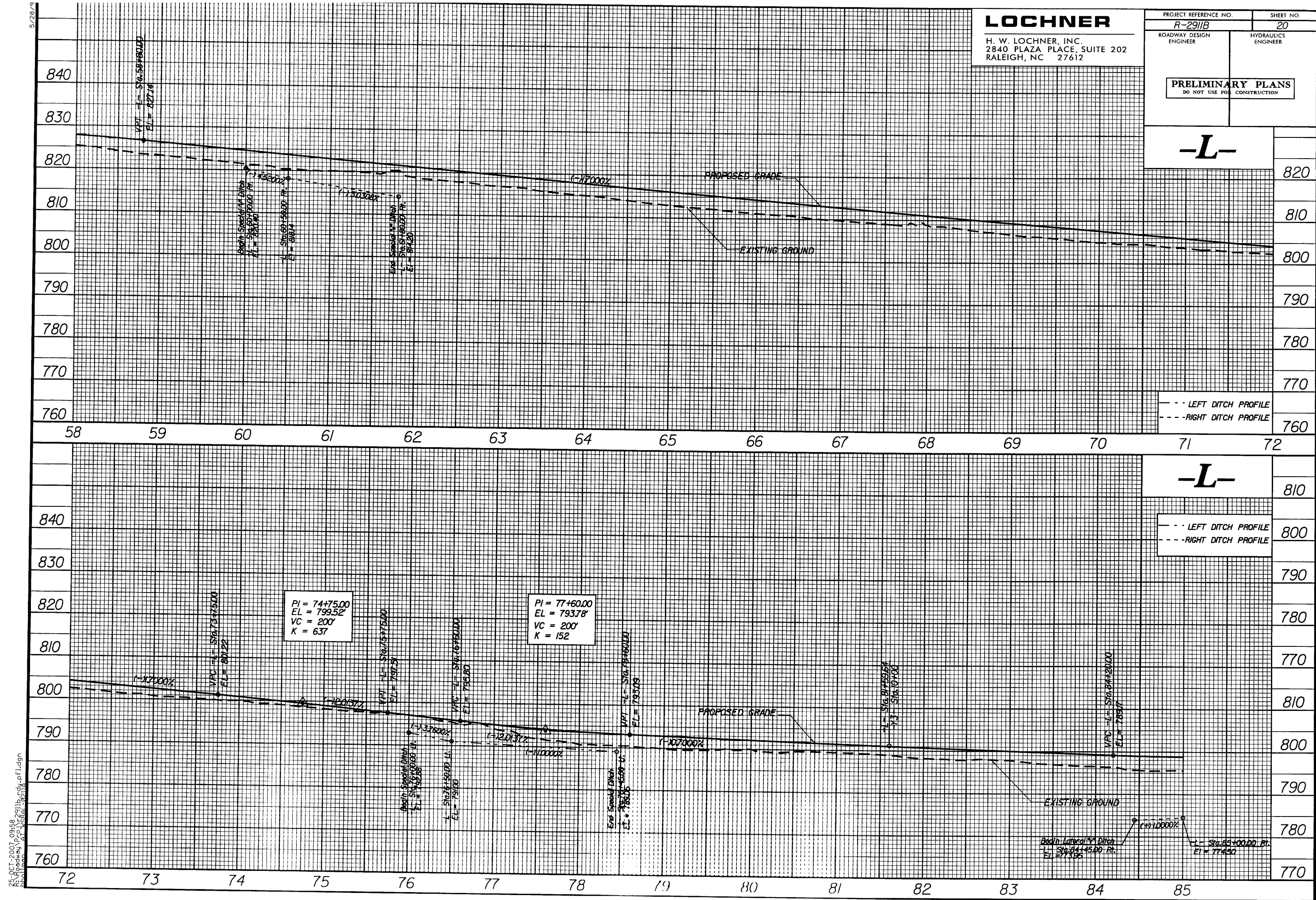
PI = 56+30.00
EL = 830.89'
VC = 500'
K = 156

-L-

--- LEFT DITCH PROFILE
--- RIGHT DITCH PROFILE

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2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

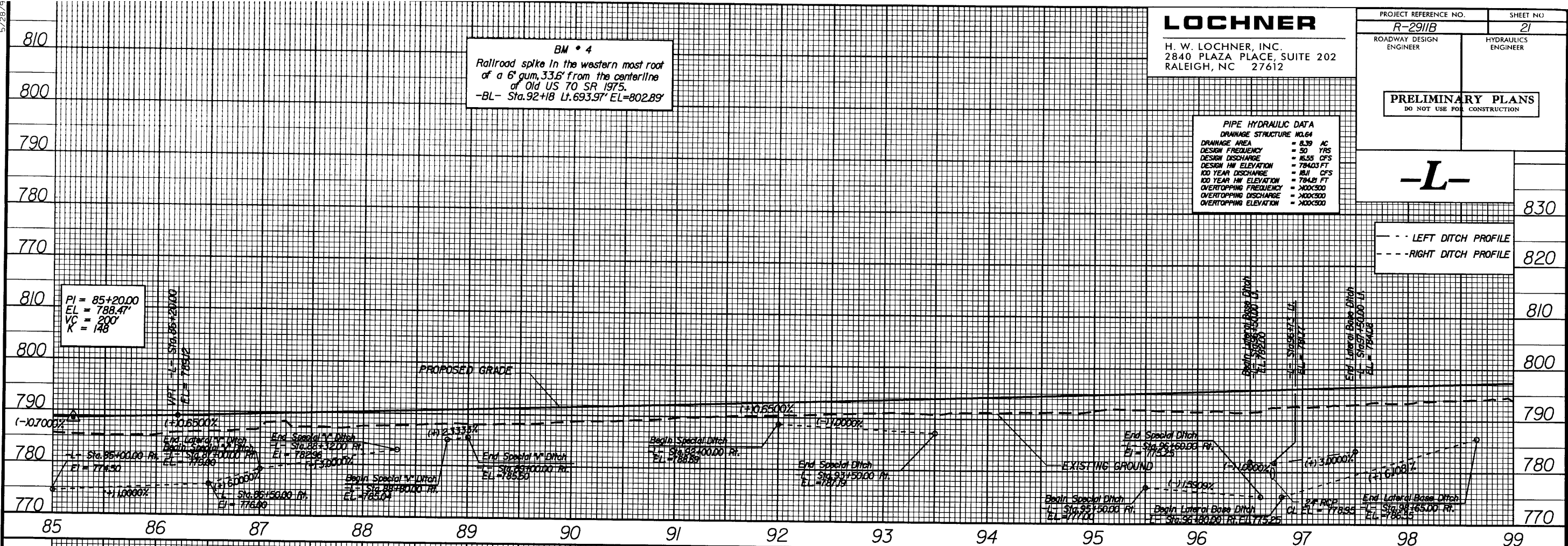
PROJECT REFERENCE NO. R-2911B	SHEET NO. 21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.64	
DRAINAGE AREA	= 0.39 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 16.55 CFS
DESIGN HW ELEVATION	= 784.03 FT
100 YEAR DISCHARGE	= 18.11 CFS
100 YEAR HW ELEVATION	= 784.21 FT
OVERTOPPING FREQUENCY	= 100X300
OVERTOPPING DISCHARGE	= 100X300
OVERTOPPING ELEVATION	= 100X300

--- LEFT DITCH PROFILE
--- RIGHT DITCH PROFILE

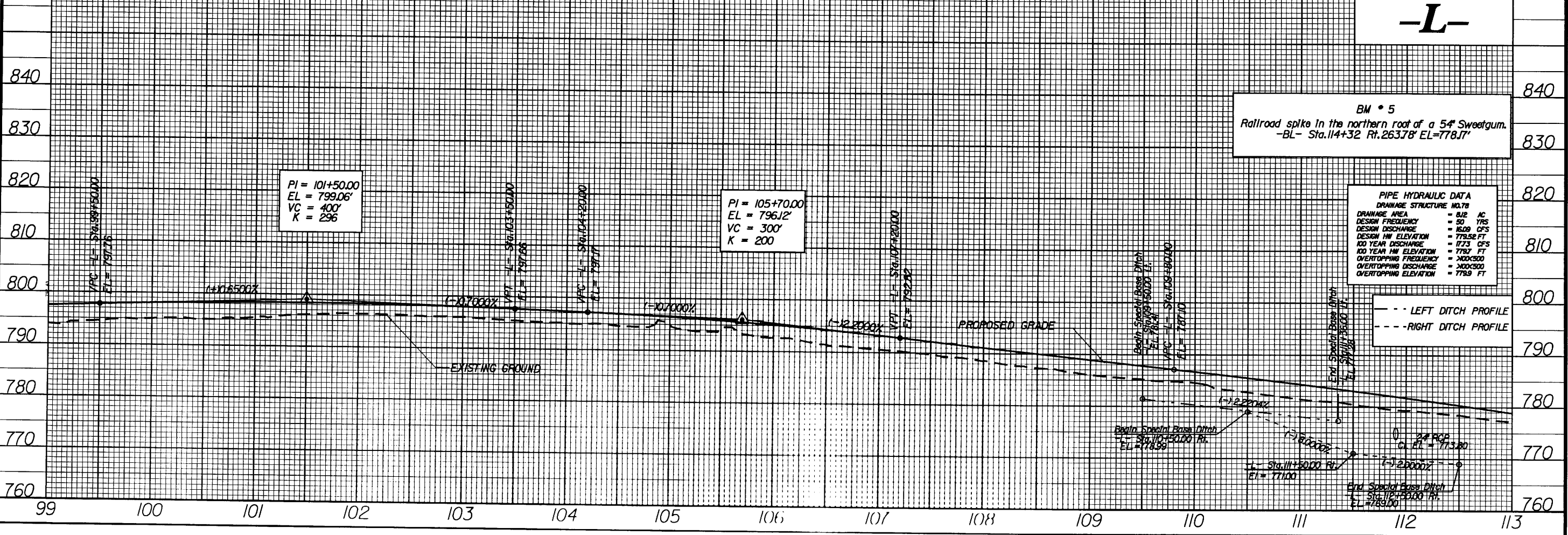


-L-

BM * 5
Railroad spike in the northern root of a 54' Sweetgum.
-BL- Sta.114+32 Rt.263.78' EL=778.17'

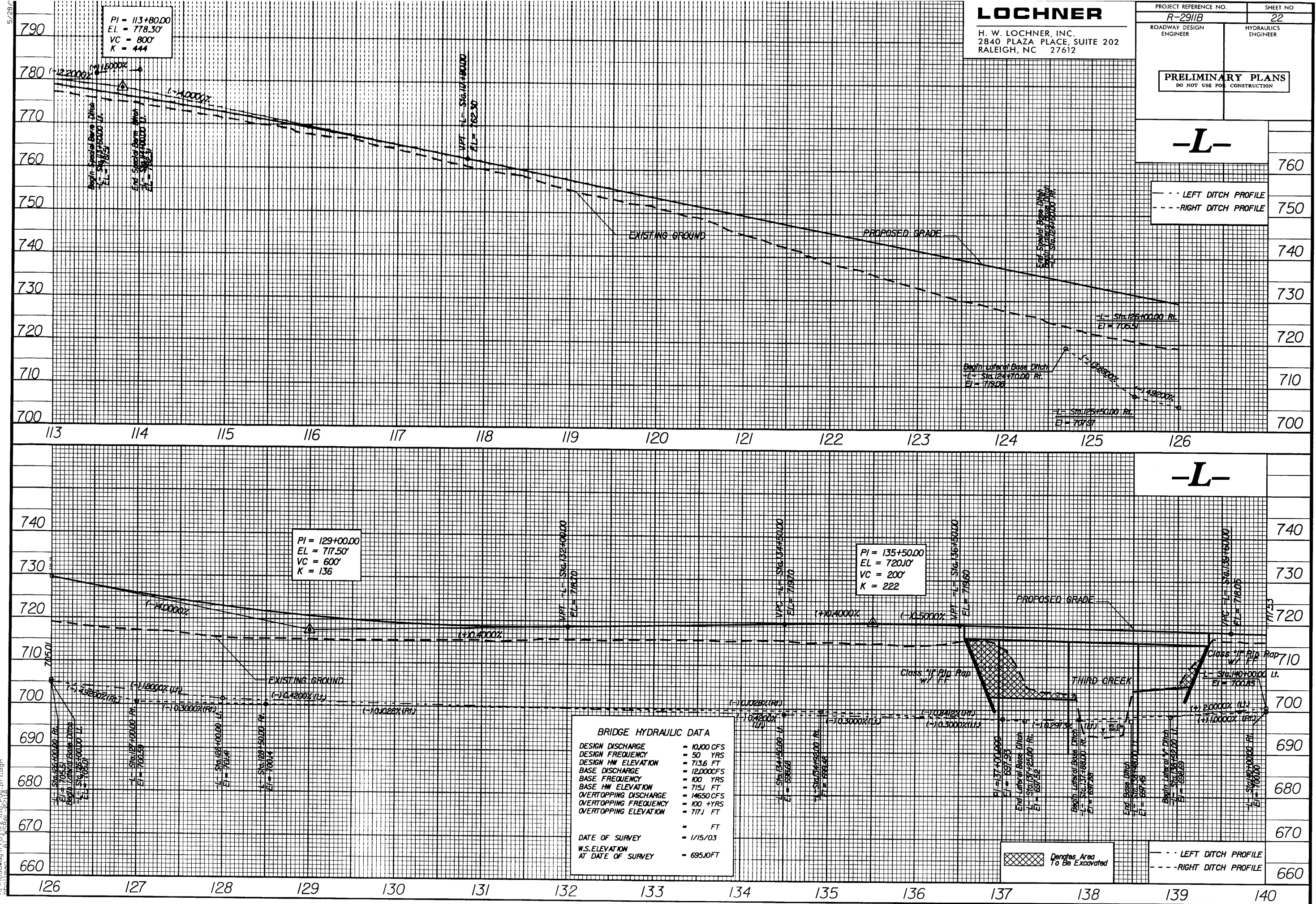
PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.78	
DRAINAGE AREA	= 0.12 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 16.09 CFS
DESIGN HW ELEVATION	= 779.52 FT
100 YEAR DISCHARGE	= 17.73 CFS
100 YEAR HW ELEVATION	= 779.71 FT
OVERTOPPING FREQUENCY	= 100X300
OVERTOPPING DISCHARGE	= 100X300
OVERTOPPING ELEVATION	= 779.9 FT

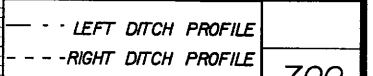
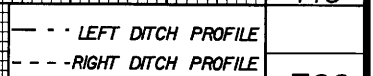
--- LEFT DITCH PROFILE
--- RIGHT DITCH PROFILE



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CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 259 CFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 729.66FT
BASE DISCHARGE	= 301 CFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 730.5 FT
OVERTOPPING DISCHARGE	= 790 CFS
OVERTOPPING FREQUENCY	= 500+ YRS
OVERTOPPING ELEVATION	= 750 FT

5/28/9

LOCHNER

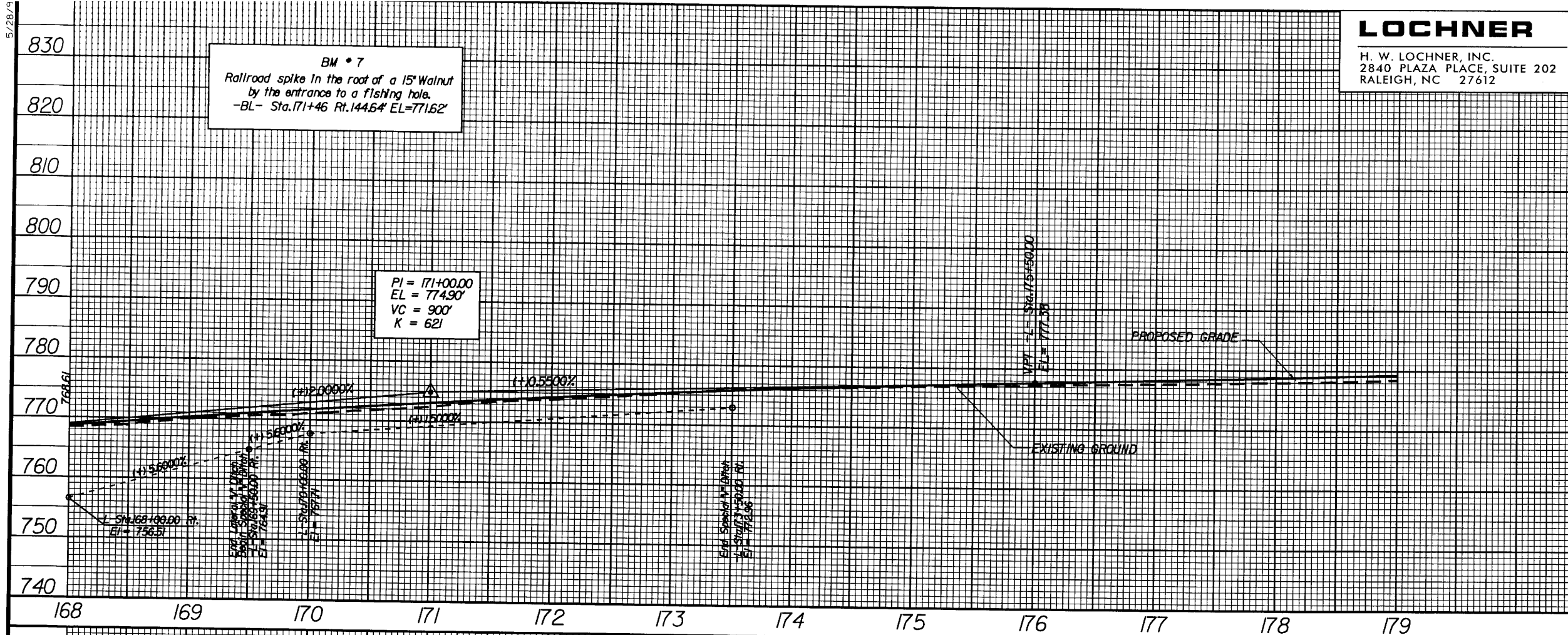
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO.	SHEET NO.
R-2911B	24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

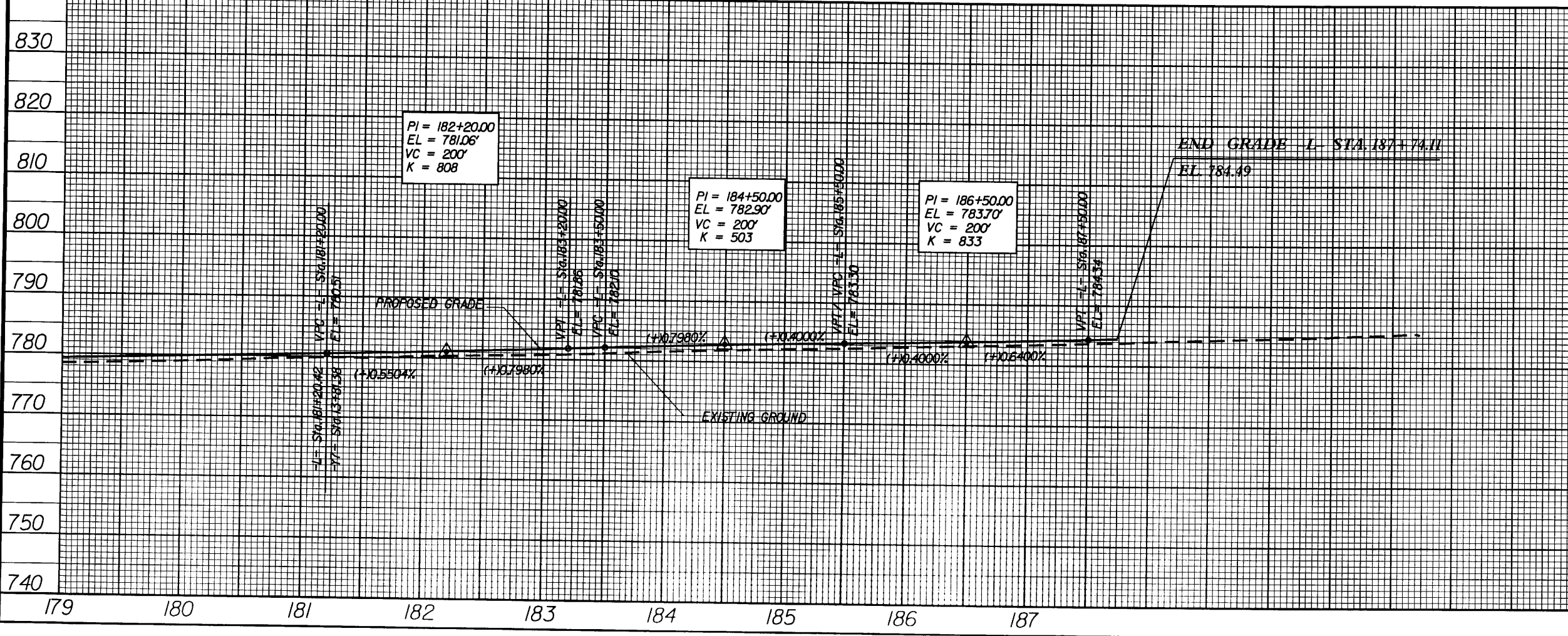
800
790
780
770
760
750
740



--- LEFT DITCH PROFILE
--- RIGHT DITCH PROFILE

-L-

830
820
810
800
790
780
770
760
750
740



--- LEFT DITCH PROFILE
--- RIGHT DITCH PROFILE

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PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y- -YI-

-Y3- -Y5-

PI = 11+72.25
EL = 832.40'
VC = 100'
K = 22

PI = 11+15.00
EL = 826.39'
VC = 100'
K = 216

PI = 11+30.00
EL = 794.92'
VC = 100'
K = 29

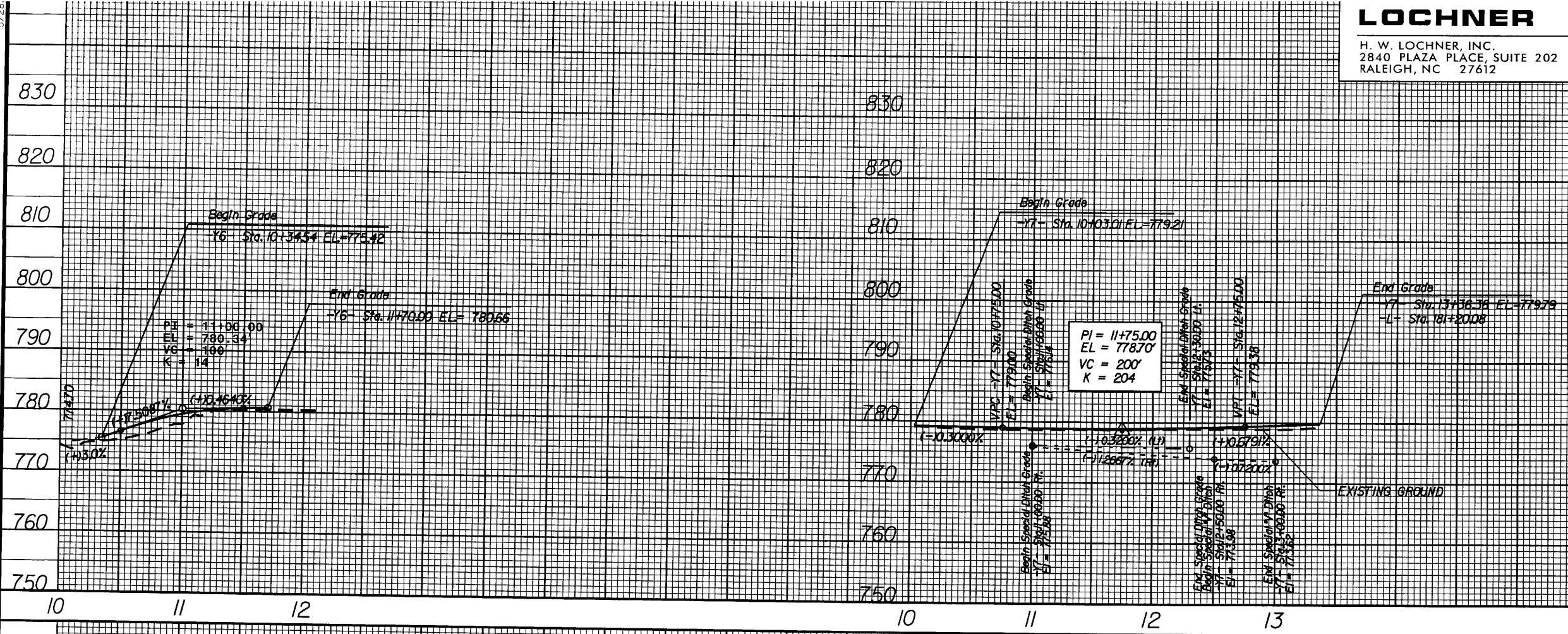
PI = 11+87.79
EL = 724.90'
VC = 120'
K = 30

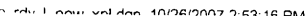
PI = 13+50.00
EL = 720.03'
VC = 120'
K = 120

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5/28

-Y6- -Y7-



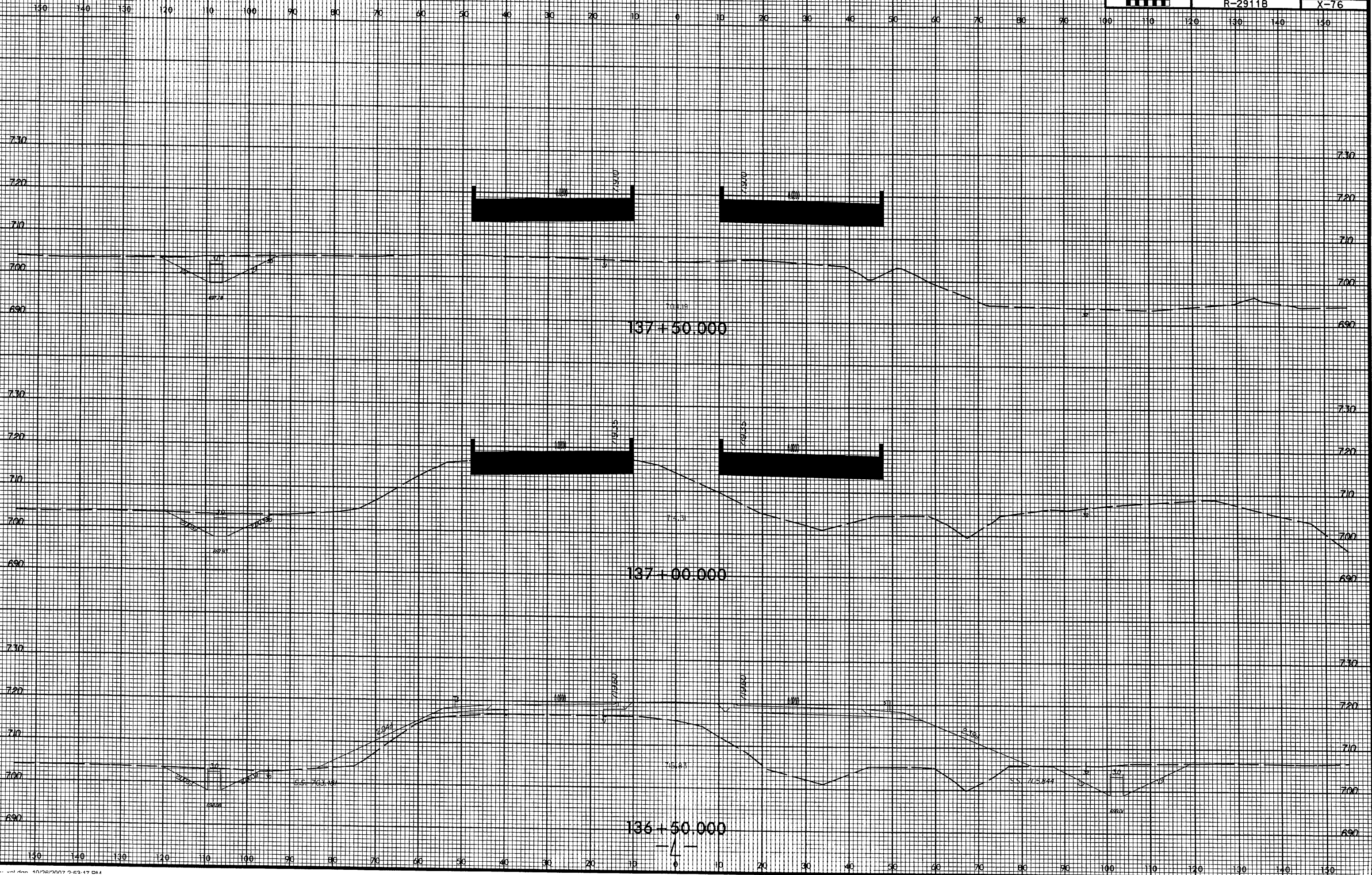


8/23/1



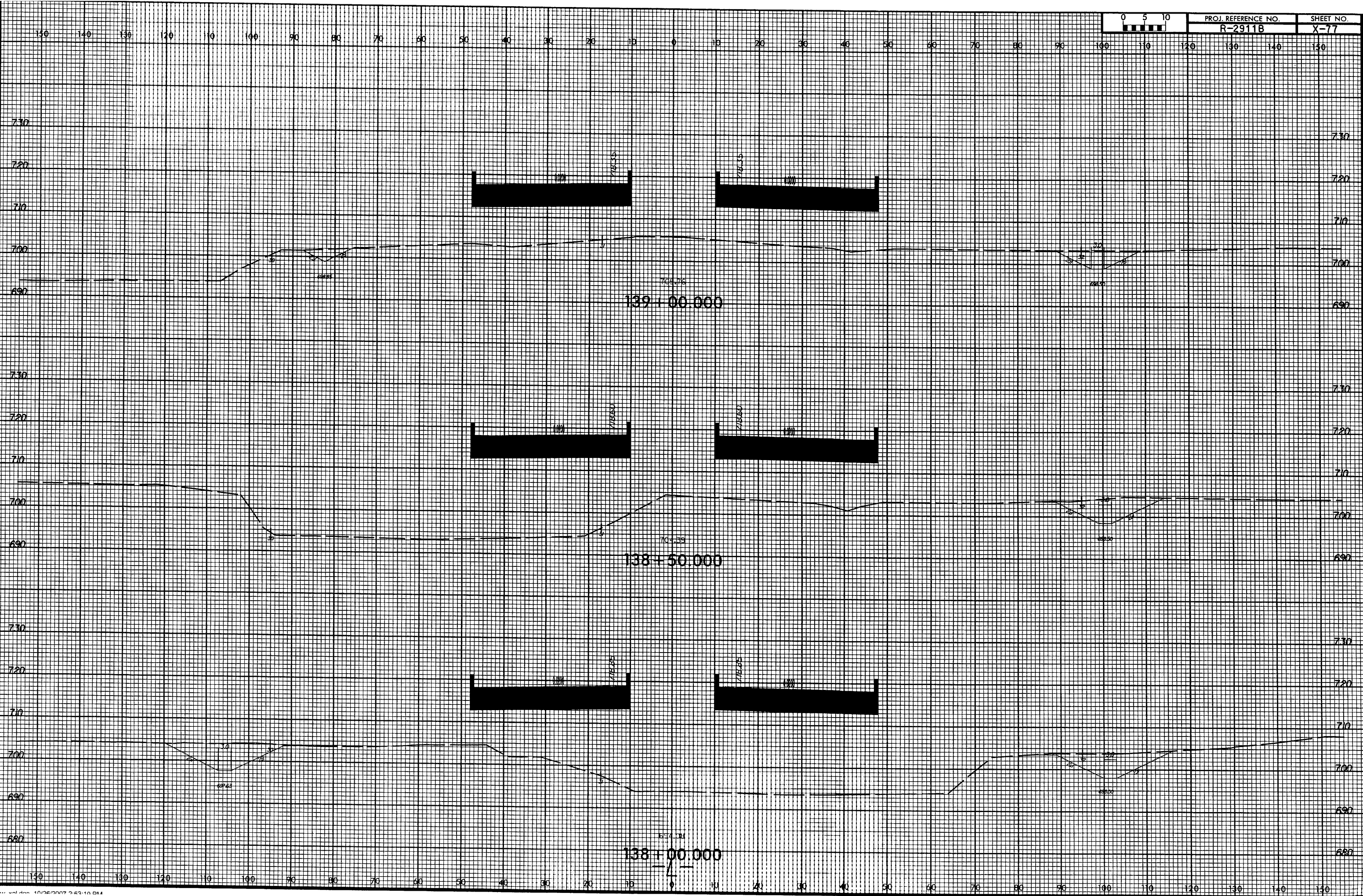
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R-2911B

SHEET NO.
X-76

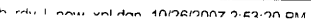


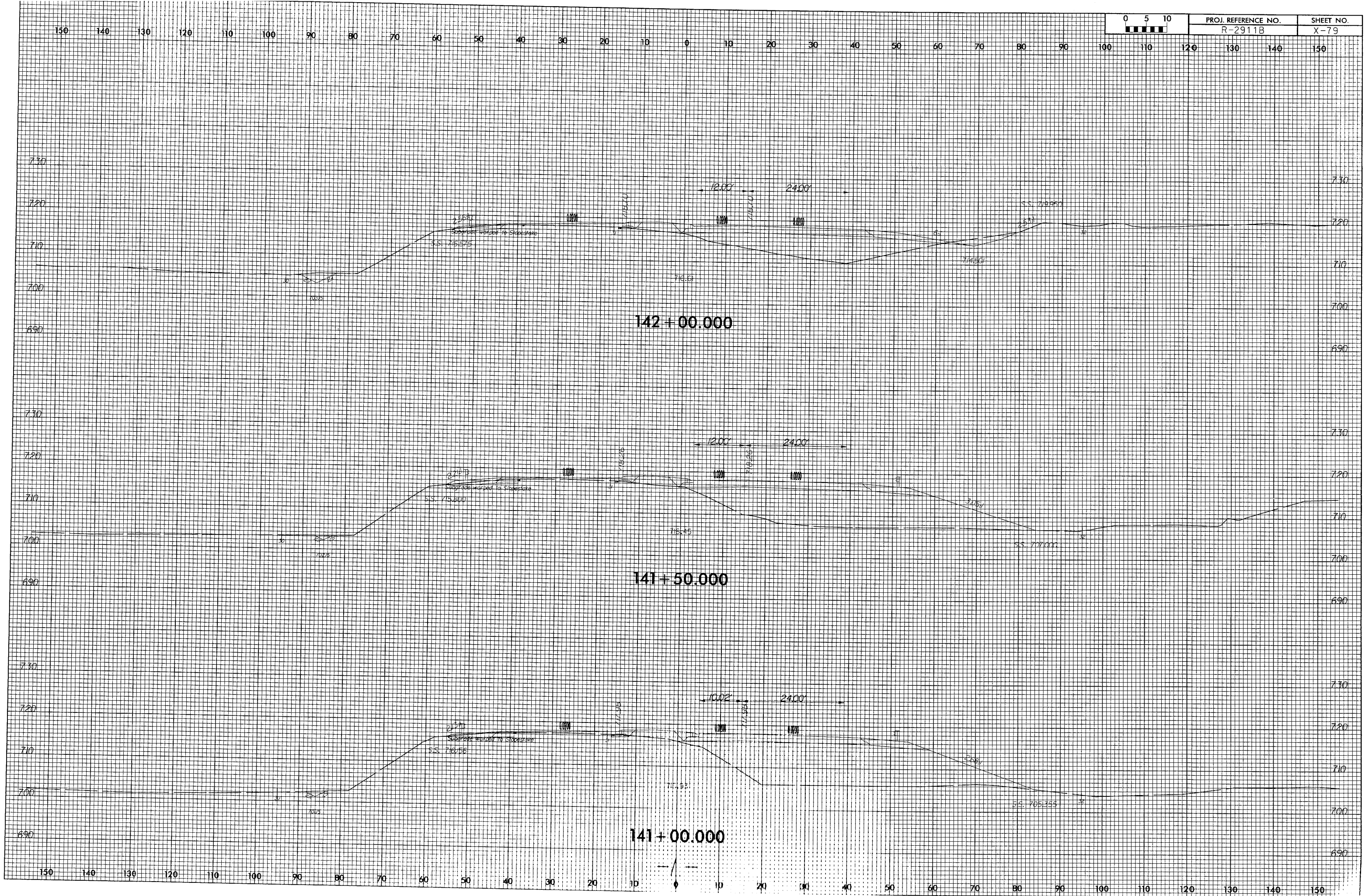
SYSTEMS
USE

8/22/13

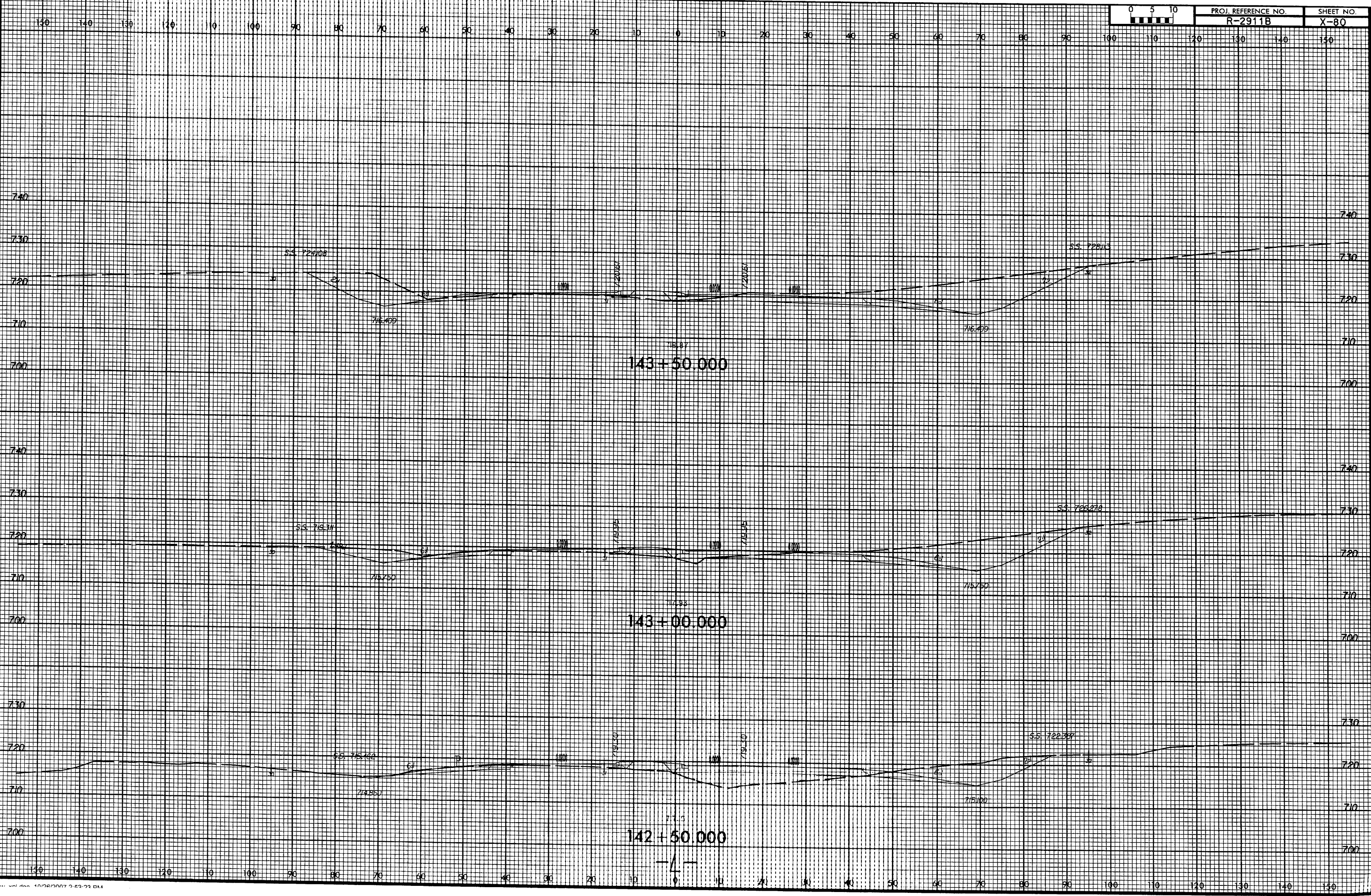


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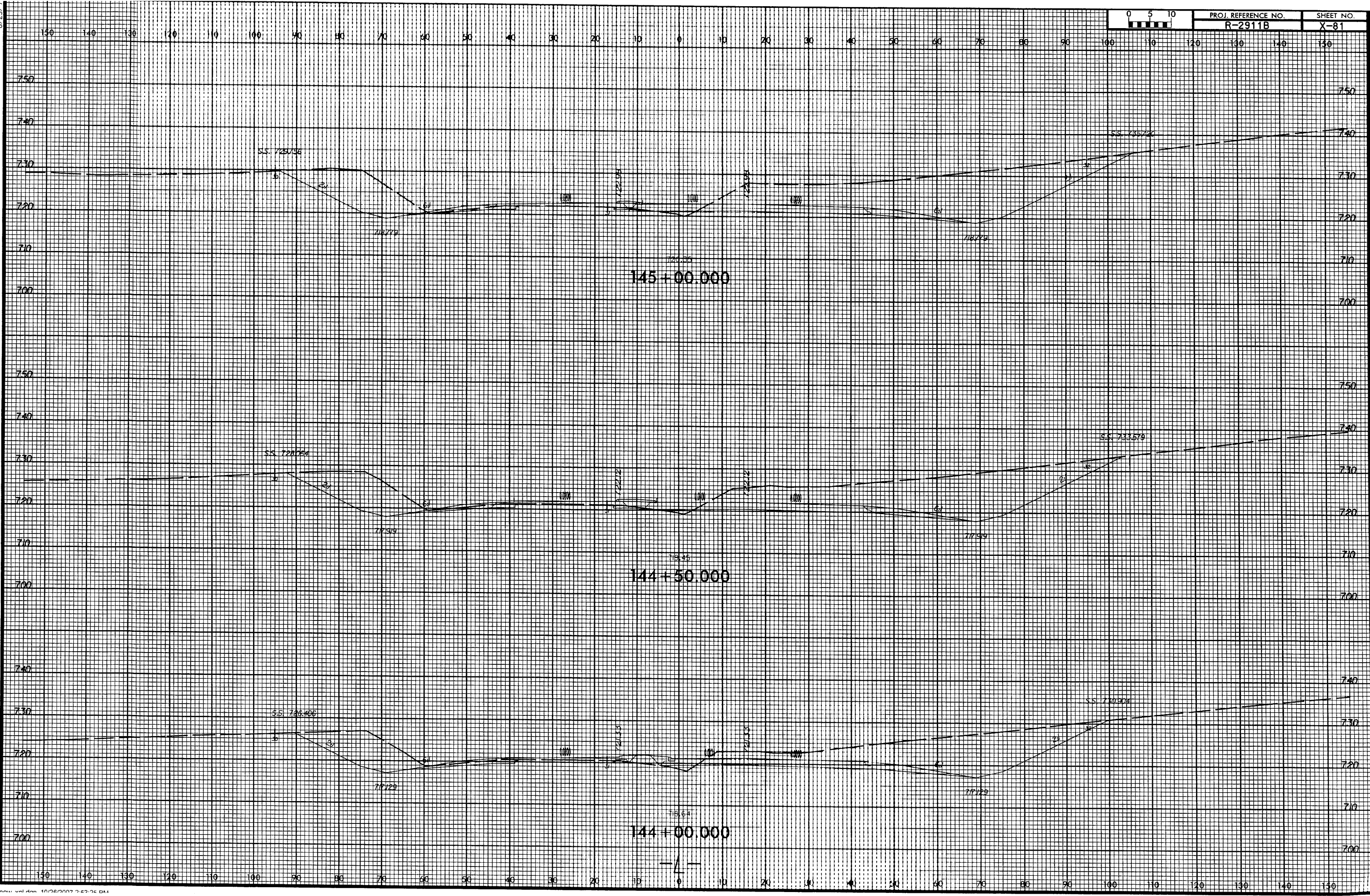


8/23/

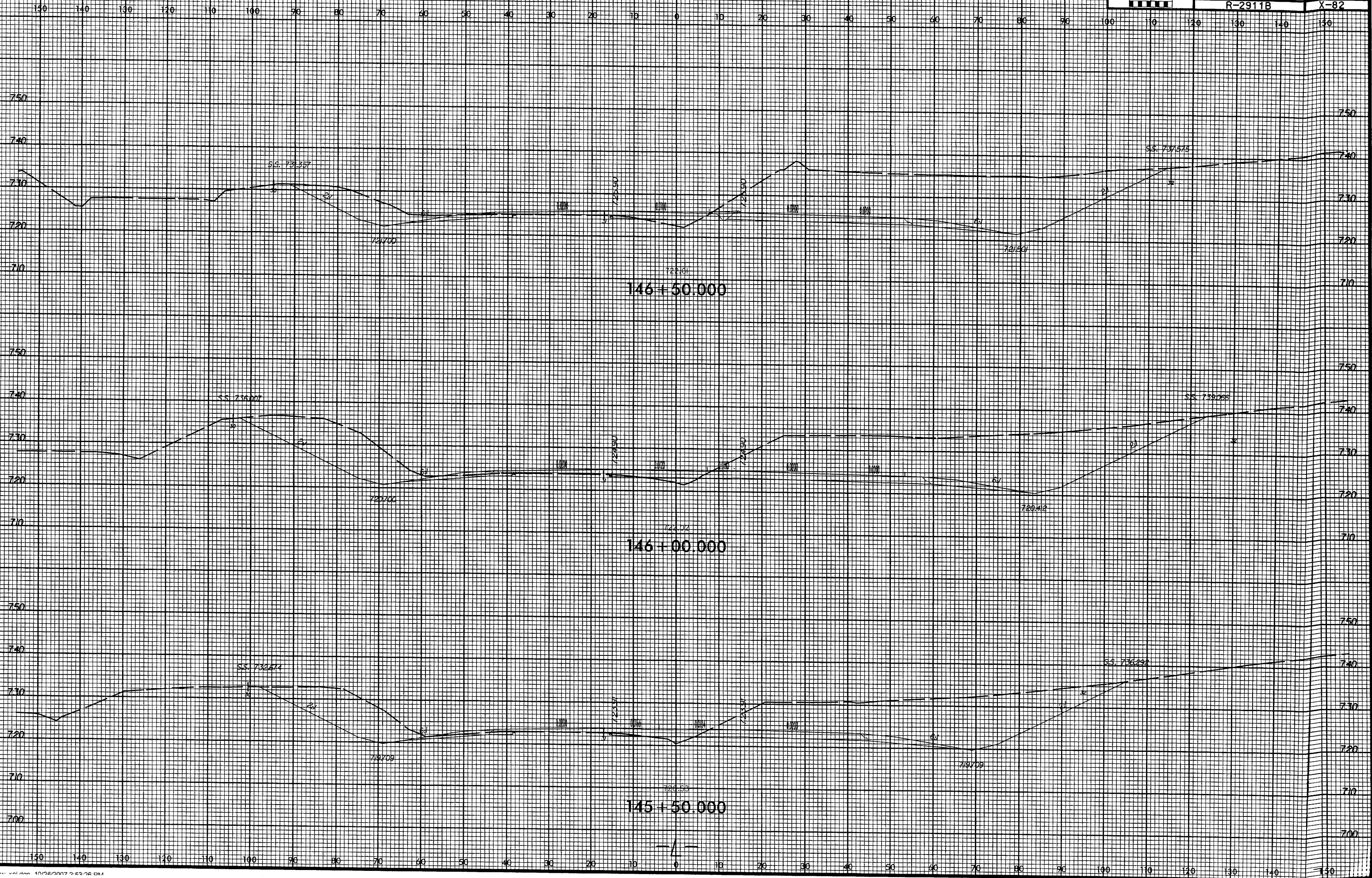


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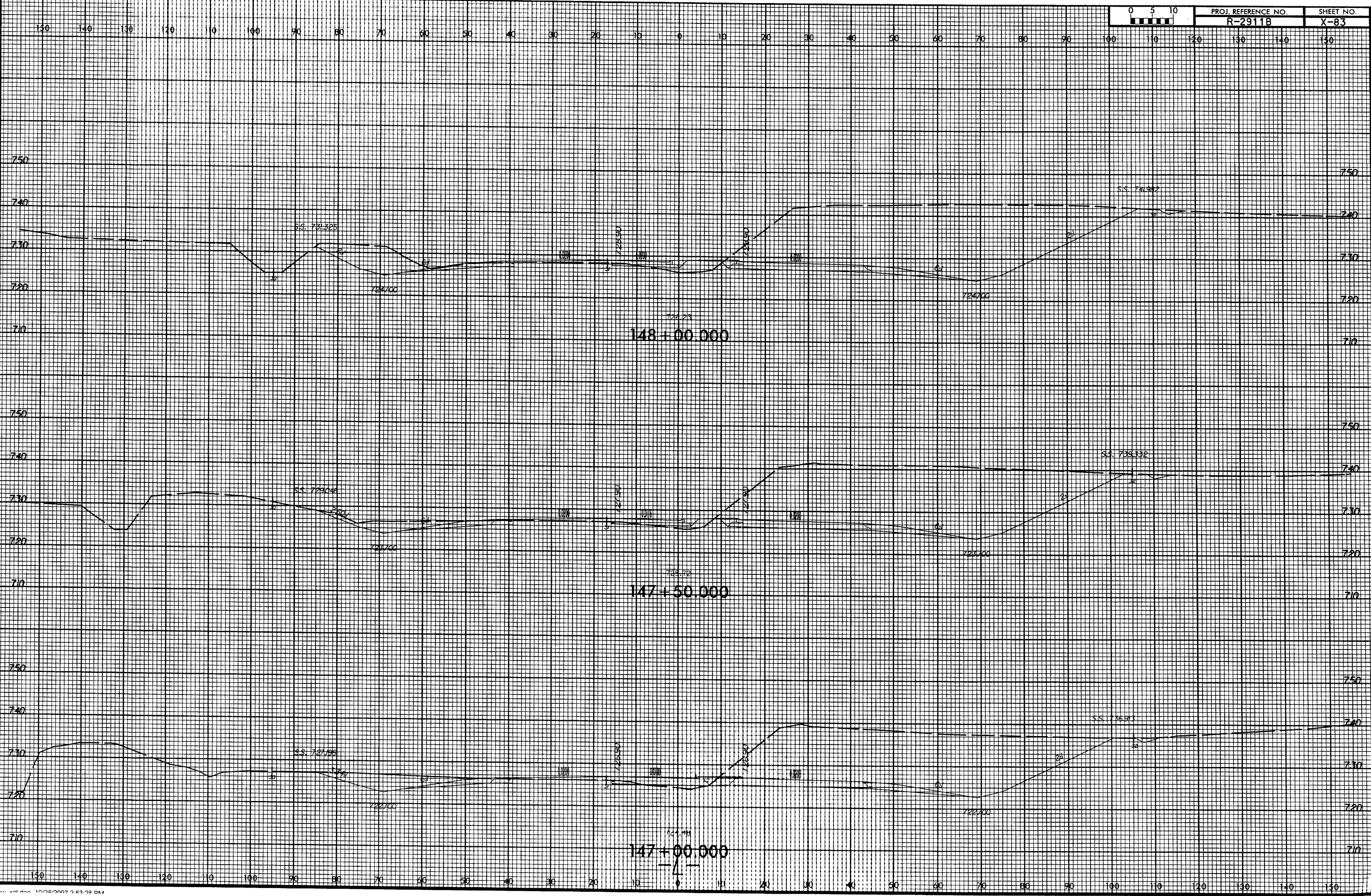
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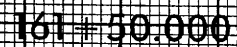


8/23/91

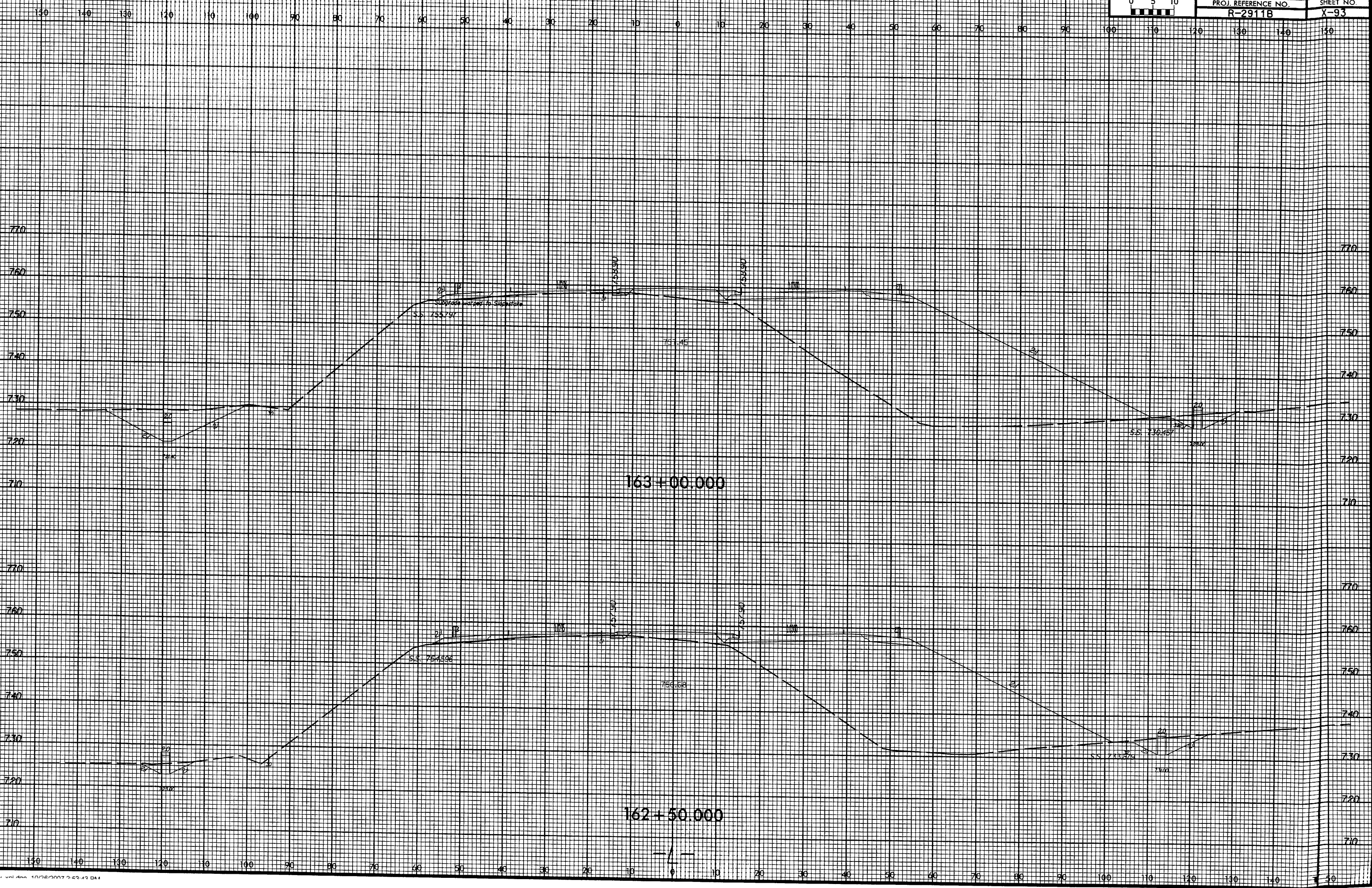








8/23/17



\$\$\$\$SYTIME\$\$\$\$
\$\$\$\$PLAN\$\$\$\$
\$\$\$\$SECTION\$\$\$\$
\$\$\$\$DATE\$\$\$\$
\$\$\$\$TIME\$\$\$\$
\$\$\$\$USER\$\$\$\$
\$\$\$\$PROJECT\$\$\$\$
\$\$\$\$SHEET\$\$\$\$
\$\$\$\$TOTAL\$\$\$\$
\$\$\$\$PAGE\$\$\$\$

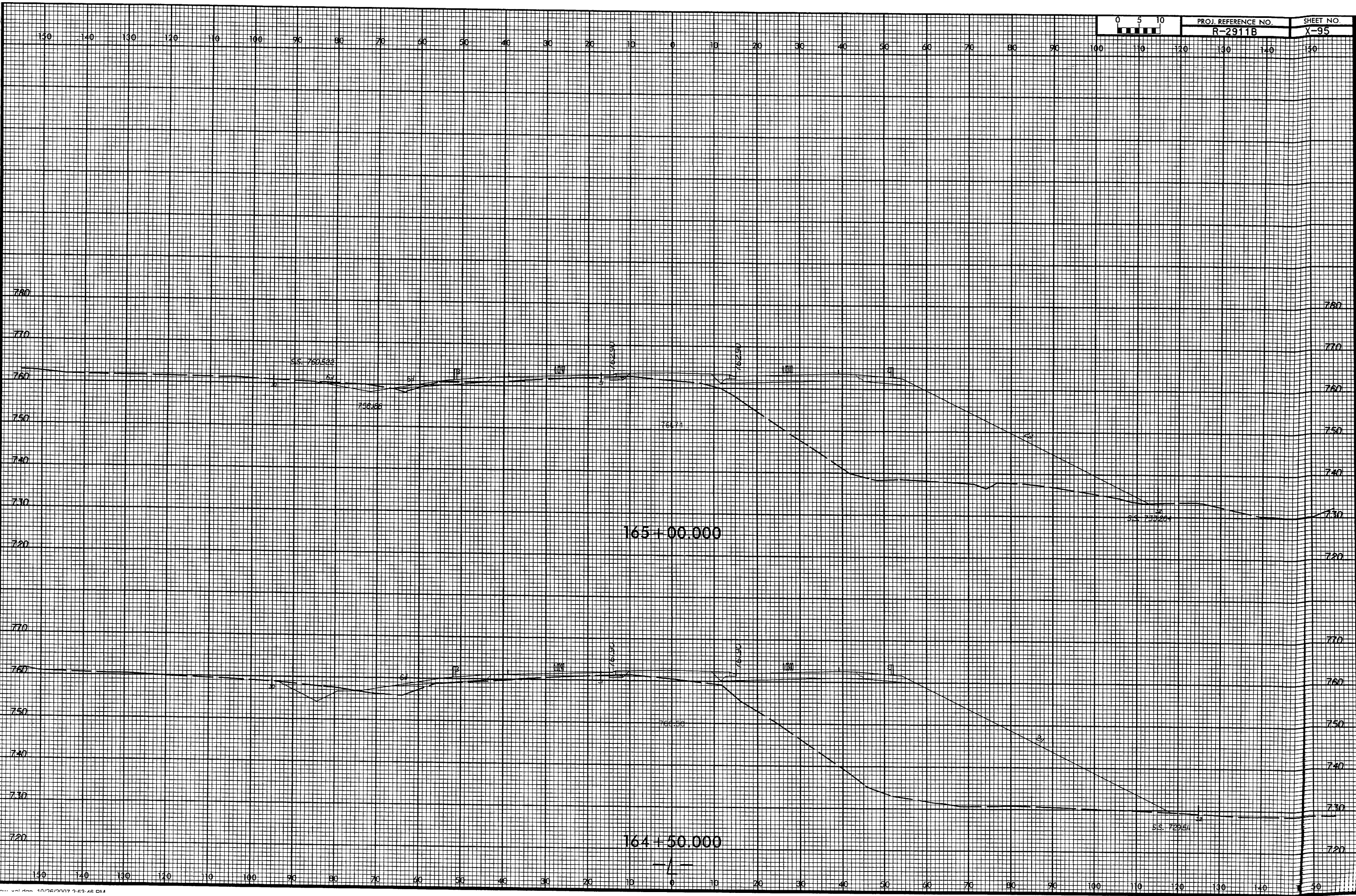


8/23/99



PROJ. REFERENCE NO.
R-2911B

SHEET NO.
X-95



S.S. 760.522

756.166

54'

18'

100'

762.230

764.71

763.290

100'

51'

165+00.000

S.S. 730.264

710

760

750

740

730

720

762.230

766.58

761.30

100'

51'

164+50.000

S.S. 729.611

SYNOPSIS OF DATA
1. PROJECT NO. R-2911B
2. SHEET NO. X-95
3. DATE 8/23/99
4. DRAWN BY J. L. WILSON
5. CHECKED BY J. L. WILSON
6. APPROVED BY J. L. WILSON