



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

April 18, 2007

U. S. Army Corps of Engineers
Regulatory Field Office
Post Office Box 1890
Wilmington, NC 28402-1890

ATTN: Mr. Richard Spencer
NCDOT Coordinator

SUBJECT: **Nationwide 23 and 33 Permit Application** for the proposed Culvert Replacement on the American Tobacco Trail over Indian Creek in Chatham County. Federal Project No. STP-0505(7), State Project No 8.2352401, WBS Element 33896.1.1, T.I.P. No. E-2921F.

Dear Mr. Spencer:

Please find enclosed the Categorical Exclusion (CE) for the above referenced project, along with half-size design plans, permit drawings, and a Pre-construction notification (PCN). The North Carolina Department of Transportation (NCDOT) plans to pave the existing railroad bed and convert it to a bicycle and pedestrian facility. The project will include adding new decking to the existing structures that cross Panther Creek and Northeast Creek. During construction, the contractor will replace two 54-inch corrugated metal pipes (CMP) in the headwaters of Indian Creek with one 96-inch CMP with headwall or two 72-inch CMP with headwall and trenchless installation.

IMPACTS TO WATERS OF THE UNITED STATES

General Description: The project is located in the Cape Fear River basin (HUC 03030002) and will impact the headwaters of Indian Creek, a perennial stream, at Station 43+00. Indian Creek is assigned a best usage classification of WS-IV-NSW, by the N.C. Division of Water Quality. Indian Creek is not designated as a North Carolina Natural or Scenic River, or as a National Wild and Scenic River, nor is it listed on the 2004 Final 303(d) list. No designated Outstanding Resource Waters (ORW), High Quality Water (HQW), Water Supply I (WS-I), or Water Supply II (WS-II) waters occur within 1.0 mile of the project study area. The project does not drain to a 303(d) stream within one mile of the project limits.

No wetlands occur on the project.

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
PROJECT DEVELOPMENT AND ENVIRONMENTAL ANALYSIS
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1548

TELEPHONE: 919-715-1334
FAX: 919-715-5501

WEBSITE: WWW.NCDOT.ORG

LOCATION:
2728 CAPITAL BLVD
SUITE 240
RALEIGH, NC 27604

Temporary Impacts: This project will result in 30 feet of temporary impacts to the headwaters of Indian Creek at Site 1. Impacts are composed of de-watering the stream for the installation of the new pipes. The contractor will use cofferdams or another impervious structure on both sides of the pipe so that the placement of the pipe can occur in the dry. The water will be diverted in either a diversion channel or a pipe located adjacent to the existing pipe. No temporary wetland impacts will occur.

Permanent Impacts: Permanent stream impacts of 20 feet will occur from the placement of riprap at the existing scour hole at the pipe outlet at Site 1. The permanent stream impacts occur within the area of temporary impacts. No permanent wetland impacts will occur.

Utility Impacts: No impacts will occur due to utility relocations.

RESTORATION PLAN: All materials used as temporary fill in the construction of the diversion structure will be removed and restored to the original contours.

PROJECT SCHEDULE

Project construction will commence shortly after permits are received.

FEDERALLY-PROTECTED SPECIES

Plants and animals with federal classifications of Endangered, Threatened, Proposed Endangered, and Proposed Threatened are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of April 27, 2007 the Fish and Wildlife Service (FWS) lists four federally protected species for Chatham County (Table 1). A Biological Conclusion of “No Effect” was reached for all applicable species in the CE document.

Table 1. Federally Protected Species for Chatham County

Scientific Name	Common Name	Status	Biological Conclusion	Habitat present
<i>Haliaeetus leucocephalus</i>	Bald Eagle	T	No Effect	No
<i>Notropis mekistocholas</i>	Cape Fear Shiner	E	No Effect	No
<i>Picoides borealis</i>	Red-cockaded woodpecker	E	No Effect	No
<i>Ptilimnium nodosum</i>	Harperella	E	No Effect	No

AVOIDANCE AND MINIMIZATION:

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 and include:

- The culvert will be replaced in the existing location.
- All other culverts on the project will not be disturbed.
- New decking will be added to the existing sub-structures in Panther Creek and Northeast Creek for the reconstruction of these bridge crossings.

- No new fill will occur in the adjacent floodplains.
- The new pipe will be buried a minimum of 12 inches to avoid impacts to aquatic life movement.

MITIGATION

Mitigation is not proposed due to the minimal amount of the proposed impacts.

REGULATORY APPROVALS

Section 404 Permit: This project has been processed by the Federal Highway Administration as a “Categorical Exclusion.” NCDOT is hereby applying for a Clean Water Act Section 404 Nationwide Permit. The NCDOT requests that these activities be authorized by Nationwide Permit 23 and 33.

Section 401 Permit: NCDOT is hereby applying for a 401 Water Quality Certification from DWQ. We anticipate 401 General Certification number 3403 and 3366 will apply to this project. All general conditions of the Water Quality Certifications will be met. Therefore, in accordance with 15A NCAC 2H, Section .0500(a), we are providing two copies of this application to the NCDWQ for their notification.

Thank you for your assistance with this project. If you have any questions or need additional information, please contact Brett Feulner at bmfeulner@dot.state.nc.us or (919) 715-1488.

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

Sincerely,



for

Gregory J. Thorpe, Ph.D. Environmental Management Director,
Project Development and Environmental Analysis Branch

cc: w/attachment

Mr. John Hennessy, NCDWQ (2 Copies)
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Mr. Art King, Div 8 DEO

Dr. David Chang, P.E., Hydraulics
Mr. Mark Staley, Roadside Environmental
Mr. Greg Perfetti, P.E., Structure Design
Mr. Tim Johnson, P.E. Division 8 Engineer

w/o attachment

Mr. Art McMillan, P.E., Highway Design
Mr. Majed Alghandour, P. E., Prog. and TIP

Mr. Kumar Trivedi, P.E., Bicycle and Pedestrian
Mr. Scott McLendon, USACE, Wilmington

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:

<input checked="" type="checkbox"/> Section 404 Permit	<input type="checkbox"/> Riparian or Watershed Buffer Rules
<input type="checkbox"/> Section 10 Permit	<input type="checkbox"/> Isolated Wetland Permit from DWQ
<input type="checkbox"/> 401 Water Quality Certification	<input type="checkbox"/> Express 401 Water Quality Certification

2. Nationwide, Regional or General Permit Number(s) Requested: NW 23 and 33

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: Gregory J. Thorpe, Ph.D., Environmental Management Director
Mailing Address: 1598 Mail Service Center
Raleigh, NC 27699

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: American Tobacco Trail from Durham County Line to the Wake County Line
2. T.I.P. Project Number or State Project Number (NCDOT Only): E-2921F
3. Property Identification Number (Tax PIN): N/A
4. Location
County: Chatham Nearest Town: Cary/ Durham
Subdivision name (include phase/lot number): N/A
Directions to site (include road numbers/names, landmarks, etc.): The project is located on an old railroad bed in Chatham County

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): 35.8662°N 78.9318°W
6. Property size (acres): N/A
7. Name of nearest receiving body of water: Northeast Creek, Panther Creek, and Indian Creek
8. River Basin: Cape Fear
(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: forestland

10. Describe the overall project in detail, including the type of equipment to be used: _____
Standard DOT construction equipment.

11. Explain the purpose of the proposed work: The purpose is to pave an old railroad bed and convert it to a bicycle and pedestrian facility. During the construction, the contractor will replace 2-54" CMPs with 1-96" CMP with headwall or 2-72" CMP with headwall and trenchless installation

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.

No

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: Project impacts to Indian Creek consist of 30 feet of temporary impacts and 20 feet of permanent fill from the placement of riprap at the pipe outlet.

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)
Total Wetland Impact (acres)					

3. List the total acreage (estimated) of all existing wetlands on the property: 0

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	Indian Creek	Temporary	Perennial	5-6'	30	
Site 1	Indian Creek	Permanent	Perennial	5-6'	20	
Total Stream Impact (by length and acreage)					30*	

*Permanent impacts located within the area of temporary impact

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)
Total Open Water Impact (acres)				

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

Stream Impact (acres):	NA
Wetland Impact (acres):	0
Open Water Impact (acres):	0
Total Impact to Waters of the U.S. (acres)	NA
Total Stream Impact (linear feet):	30*

*Includes 20 feet of permanent impacts within 30 feet of temporary impacts

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.

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.): _____

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. The culvert will be replaced in place. All other stream crossings will use existing structures.

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.

No mitigation is proposed due to the minimal amount proposed 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): _____

Amount of buffer mitigation requested (square feet): _____

Amount of Riparian wetland mitigation requested (acres): _____

Amount of Non-riparian wetland mitigation requested (acres): _____

Amount of Coastal wetland mitigation requested (acres): _____

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. _____

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. Approximately the same as current conditions

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: _____

Replace an existing structure

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).



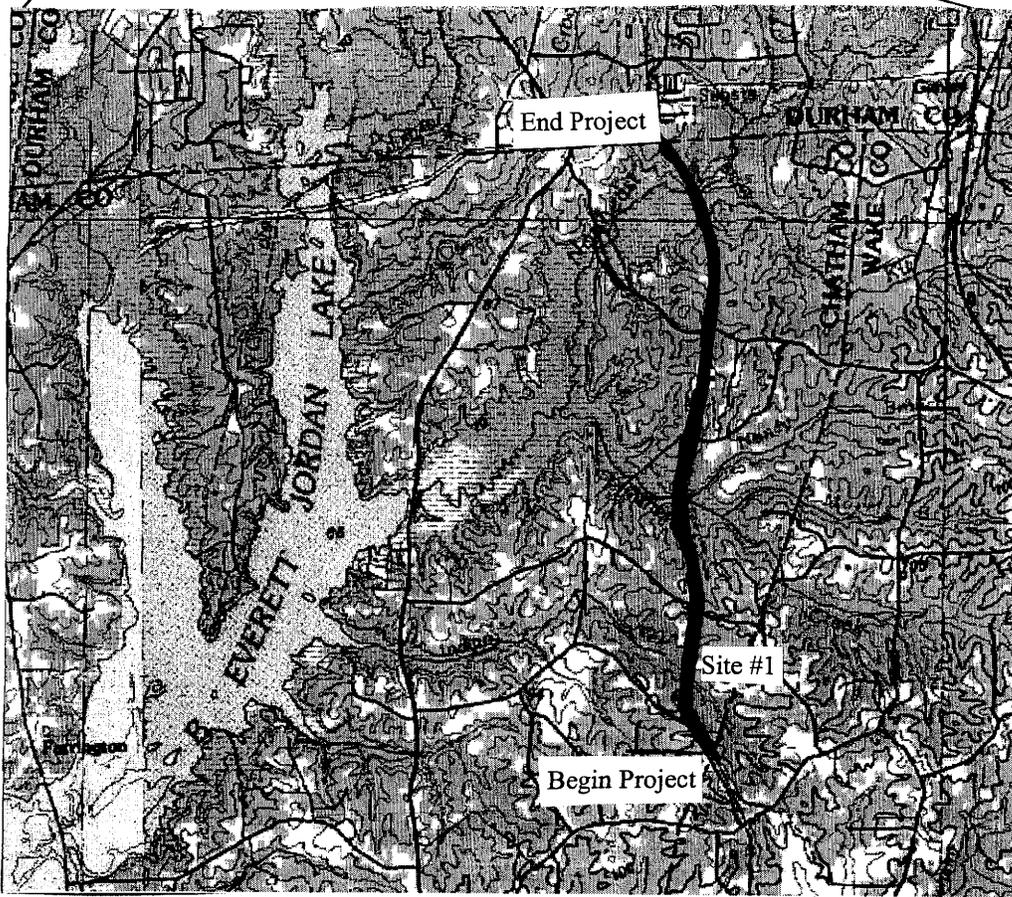
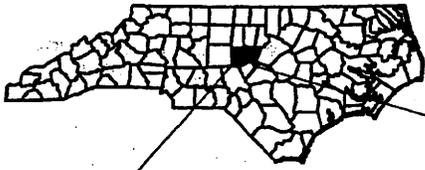
Applicant/Agent's Signature

4.18.07

Date

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

VICINITY MAP



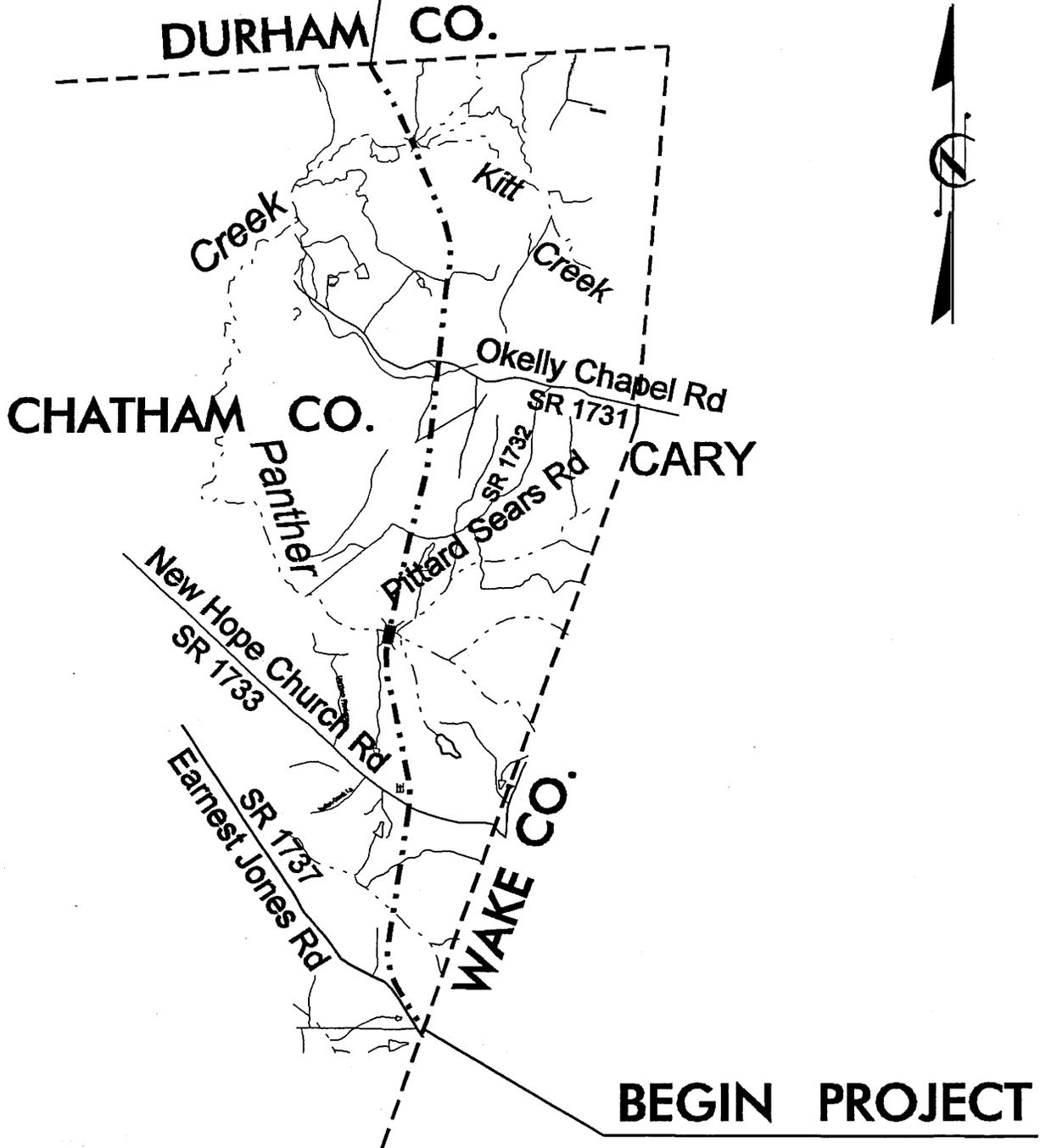
**N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS**

CHATHAM COUNTY

Project 8.2352401 (E-2921F)

SHEET 1 OF 4

END PROJECT

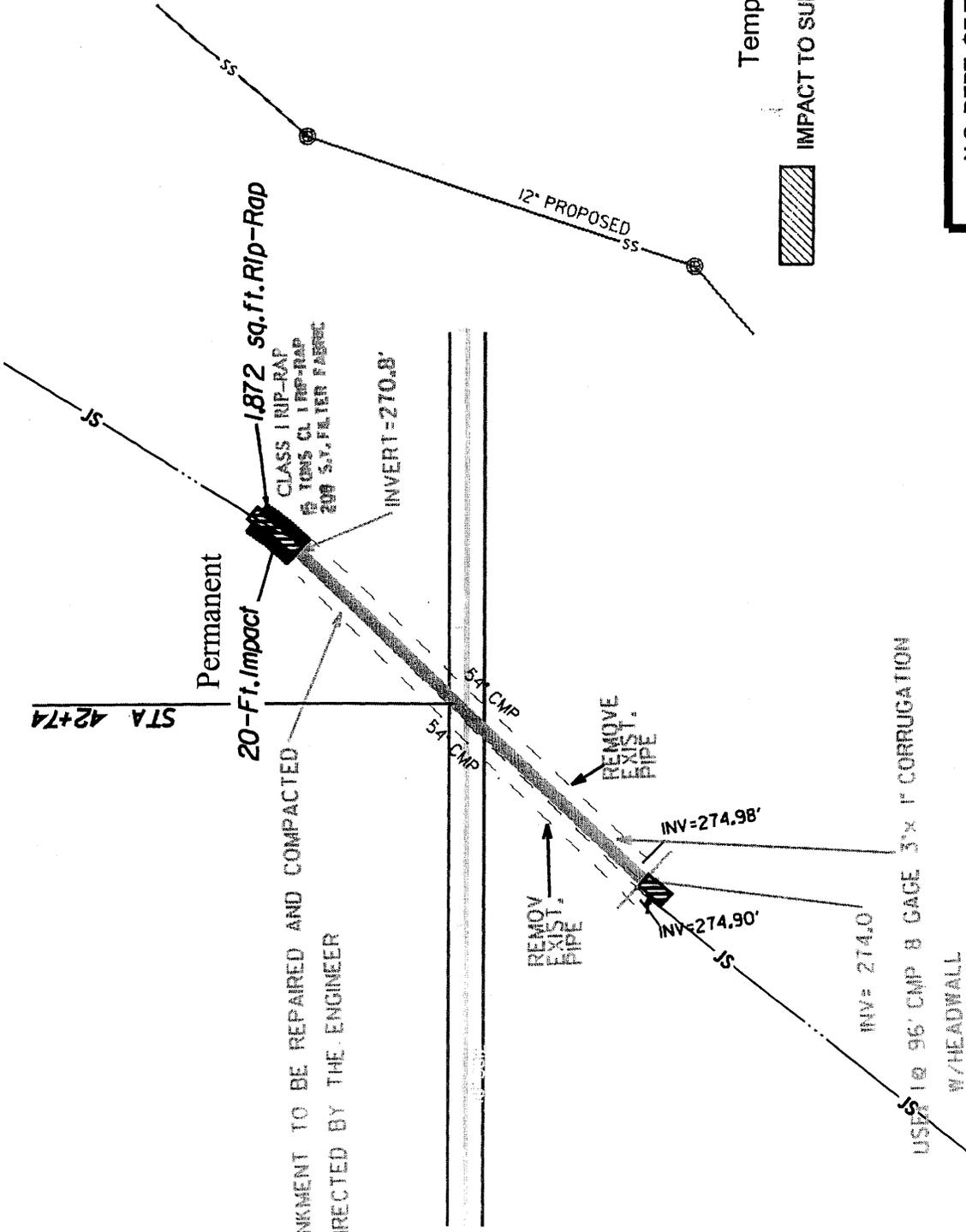


VICINITY MAP

E-2921 F

American Tobacco Trail, Phase F

Permit Drawing
Sheet 2 of 4



STA 42+74

Permanent

1872 sq. ft. Rip-Rap

CLASS 1 RIP-RAP
16 TONS CL. 1 RIP-RAP
200 S.Y. FILTER FABRIC

INVERT = 270.8'

EMBANKMENT TO BE REPAIRED AND COMPACTED
AS DIRECTED BY THE ENGINEER

REMOVE
EXIST.
PIPE

REMOVE
EXIST.
PIPE

INV = 274.98'

INV = 274.90'

INV = 274.0'

USE 12 96' CMP 8 GAGE 3' x 1' CORRUGATION

W/HEADWALL

METHOD A INSTALLATION

OR

2 @ 12' CMP W/HEADWALL

TRENCHLESS INSTALLATION

Temporary

IMPACT TO SURFACE WATERS



N.C. DEPT. OF TRANSPORTATION
DIVISION OF BICYCLE AND PEDESTRIAN
CITY OF RALEIGH, WAKE COUNTY
PROJECT TIP NO. E-2921F
AMERICAN TOBACCO TRAIL, PHASE F
SHEET 3 OF 4 01/30/2007

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 (lin. ft.)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)	
1	42+69	1@96 CMP or 2@ 72 CMP						30,000	20				
TOTALS:								30,000	20				

Note: Rip Rap to be placed on stream banks

Approximately 400 square feet of riprap at pipe outlet,

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CHATHAM COUNTY
WBS - 33906.1.1 (E-2921F)

RECEIVED
JAN 10 2007
DIVISION OF HIGHWAYS
PDEA-OFFICE OF NATURAL ENVIRONMENT

AMERICAN TOBACCO TRAIL, PHASE F
CHATHAM COUNTY
TIP PROJECT NO. E-2921F

CATEGORICAL EXCLUSION
UNITED STATES DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF BICYCLE AND PEDESTRIAN TRANSPORTATION

FOR FURTHER INFORMATION CONTACT:
THOMAS P. NORMAN, DIRECTOR
DIVISION OF BICYCLE AND PEDESTRIAN TRANSPORTATION
NC DEPARTMENT OF TRANSPORTATION
1552 MAIL SERVICE CENTER
RALEIGH, NC 27699-1552

APPROVED:

January 8, 2007
DATE

Thomas P. Norman
DIRECTOR

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Appendix A Categorical Exclusion Form Check List

Appendix B Jurisdictional Resources Review Report

Appendix C Concurrence Letter From Army Corps of Engineers

SUMMARY

The proposed project, American Tobacco Trail, Phase F, is to be constructed with two separate typical sections. The first portion of the proposed multi-use trail from Wake-Chatham County line to SR 1733 (New Hope Church Road) is proposed to be a 12-foot wide crushed stone trail (see Typical Section 1) for an approximate distance of 1.1 Miles. The second portion of the proposed multi-use trail will be a dual-surface trail consisting of a 10-foot wide asphalt path and a 6-foot wide crushed stone surface (see Typical Section 2) from SR 1733 (New Hope Church Road) to Chatham-Durham County line for a distance of 3.58 miles.

The proposed project will be constructed on a discontinued railway corridor that was constructed several decades ago. At present, this discontinued railway corridor is being used as an unpaved trail and maintained by volunteers from Triangle Rails to Trails organization. The proposed project will be built on existing cut and fill sections originally constructed for the railway. All trail construction will be contained inside the existing 100-ft wide railroad right of way.

The American Tobacco Trail, Phase F, will provide approximately 4.68 miles of off-road transportation opportunities for bicyclists and pedestrians from Wake/Chatham County line to Chatham-Durham County line. The Division of Bicycle and Pedestrian Transportation will participate in the cost of construction through a municipal reimbursement agreement for an amount not to exceed \$2,400,000. The Chatham County Parks & Recreation Department will be responsible for trail maintenance once construction is completed. Long term use as an active railway corridor and subsequently maintained as an unpaved trail has already disturbed the site of the proposed project. There will be no new significant additional environmental impacts involved with the construction of the trail. In addition, the project will be designed to have minimum impacts to the natural environment surrounding the existing railway bed. Vegetation has grown on the slopes of the rail bed since the railway corridor was discontinued. Some of small trees will need to be cleared in order to construct the proposed trail. In some locations minor grading will be needed to alter existing narrow cut and fill slopes to accommodate trail sections of 12-feet and 16-feet. Since no new right of way will be acquired, this trail project qualifies as a Type One Categorical Exclusion.

DESCRIPTION OF PROJECT

The proposed project will be constructed along an abandoned railroad right of way from Wake-Chatham County line to Chatham-Durham County line (see Vicinity Map of Project Location). The typical section for the proposed multi-use trail will be a 12-foot wide unpaved crushed stone surface (see Typical Section No. 1) and a dual surface trail of 10-foot wide asphalt pavement and 6-foot wide crushed stone surface (see Typical Section No. 2). Trail construction will be contained within the existing railroad right of way. The proposed trail will cross New Hope Church Road (SR 1733) at approximate Station 68+00, Panther Creek at approximate Station 112+00, Pittard Sears Road (SR 1732) at approximate Station 136+50, Okelly Chapel Road (SR 1731) at approximate Station 179+60 and Kitt Creek at approximate Station 234+00.

A well maintained trail would improve pedestrian and bicycle transportation as well as equestrian use in this area. The estimated cost of the proposed project is \$2,400,000. The Division of Bicycle and Pedestrian Transportation will participate in the cost of construction up to an amount that is not to exceed \$2,400,000. The Town of Cary will participate in the construction of the project and Chatham County Parks and Recreation Department will participate in the maintenance of the trail after the trail is completed.

PURPOSE AND NEED FOR THE PROJECT

The proposed trail project was requested as a prioritized bicycle/pedestrian transportation improvement by Chatham County and regional MPO and was adopted in the 2006-12 Transportation Improvement Program. This portion of the American Tobacco Trail is a vital link between the existing sections of Wake County and Durham County American Tobacco Trails. It will complete the missing link of the trail that will provide approximately 22 miles of multi purpose trail in Wake, Chatham and Durham Counties. The construction of Phase F of the American Tobacco Trail will create a safer south-to-north non-motorized transportation corridor for bicyclists and pedestrians and will link residential and commercial areas of this fast growing region.

ALTERNATIVES CONSIDERED

In evaluating the need for the proposed multi-use trail project, the following alternatives were considered:

- 1) Construct an approximately 4.68 mile long, 12-foot wide unpaved crushed stone trail and 10-foot wide asphalt trail with 6-foot wide unpaved crushed stone dual surface trail along a an existing railroad corridor from Wake-Chatham County line to Chatham-Durham County line.
- 2) Do nothing.

DISCUSSION OF RECOMMENDED ALTERNATIVE

The recommended alternative is to construct the proposed 4.68-mile section of unpaved and paved trail within the existing 100-ft wide railway right of way in Chatham County. This section of trail is a vital link between Wake County and Durham County sections of American Tobacco trail. When completed, there will be an approximate 22 mile long off-road regional bicycle and pedestrian facility spanning three counties. The rapidly growing Triangle area population living or working in the vicinity of the ATT will have access to a high quality alternative transportation and recreational facility.

The Chatham County Commission unanimously approved a dual surface trail for the Chatham County portion of ATT. The Town of Cary has shown interest in the construction of the trail in Chatham County and may participate in the construction of the project. The Town of Cary will connect its greenway system to ATT and has plans to provide a trailhead at New Hope Church Road with vehicle and equestrian trailer parking facilities. The "Do Nothing" alternative was not chosen because it would not fulfill the need for creating a safer off-road transportation network for bicyclists and pedestrians.

The project site was used as a railroad corridor for decades and has been used as an unpaved trail for many years. Therefore, the proposed construction of Phase F of American Tobacco Trail will impose no new significant impacts on the biological environment (see attached Jurisdictional Resources Review Report). For this reason the proposed project qualifies as a Type One Categorical Exclusion.

North Carolina Department of Transportation
Division of Bicycle and Pedestrian Transportation

TIP No. **E-2921F**

Final Estimate

County: **Chatham**

Route American Tobacco Trail Phase F

Division: **8**

From Wake-Chatham County line to Chatham-Durham County line

Typical Section 12-foot Crushed Stone and 10-foot paved and 6-foot unpaved dual surface trail

Prepared By: Kumar Trivedi (715-2345)

Item Number	Sec No.	Description	Quantity	Unit	Price	Amount
0000100000-N	800	Mobilization	1	LS	\$ 100,000.00	\$ 100,000
0000400000-N	801	Construction Surveying	1	LS	\$ 50,000.00	\$ 50,000
0063000000-E	200	Grading	1	LS	\$ 350,000.00	\$ 350,000
0008000000-E	200	Supp.Clearing & Grubbing	1	ACR	\$ 10,000.00	\$ 10,000
0192000000-E	260	Proof Rolling	7.5	HR	\$ 200.00	\$ 1,500
0318000000-E	300	Foundation Conditioning Material	80	TN	\$ 40.00	\$ 3,200
0344000000-E	310	18" Side Drain Pipe	332	LF	\$ 42.00	\$ 13,944
0366000000-E	310	Pipe Cleanout	3	EA	\$ 500.00	\$ 1,500
0378000000-E	310	24"RCP	52	LF	\$ 66.00	\$ 3,432
		ALTERNATE #1				
0576000000-E	310	72"CMP	320	LF	\$ 250.00	\$ 80,000
		ALTERNATE #1				
0576000000-E	310	96" CMP	160	LF	\$ 220.00	
0995000000-E	310	Pipe Removal	540	LF	\$ 17.00	\$ 9,180
1121000000-E	520	ABC	12,000	TN	\$ 30.00	\$ 360,000
1275000000-E	600	Prime Coat	7,450	GAL	\$ 6.00	\$ 44,700
		Granite Screening	1,900	SY	\$ 25.00	\$ 47,500
1525100000-E	SP	Asph. Conc. Surface Course, Type SF 9.5A	2,300	TN	\$ 40.00	\$ 92,000
1560000000-E	620	Asphalt Binder for Plant Mix, Grade PG 64-22	170	TN	\$ 330.00	\$ 56,100
		ALTERNATE #1				
2209000000-E	838	Endwalls with 72" CMP Using Concrete	11.9	CY	\$ 2,000.00	\$ 23,800
		ALTERNATE #1				
2209000000-E	838	Endwalls with 96" CMP Using Concrete	10.1	CY	\$ 1,500.00	
3536000000-E	866	Chainlink Fence, 48" Fabric	15,200	LF	\$ 5.00	\$ 76,000
3542000000-E	866	Metal Line Posts for 48" Chainlink Fence	1,264	EA	\$ 32.00	\$ 40,448
3548000000-E	866	Metal Terminal Posts for 48" Chainlink Fence	55	EA	\$ 102.00	\$ 5,610
	SP	6"X6" Wood Bollards	12	EA	\$ 500.00	\$ 6,000
3420000000-E	SP	Wood Safety Rail	500	LF	\$ 15.00	\$ 7,500
3649000000-E	876	Plain Rip Rap,Class B	35	TN	\$ 45.00	\$ 1,575
3656000000-E	876	Filter Fabric for Drainage	315	SY	\$ 3.00	\$ 945
3628000000-E	876	Plain Rip Rap,Class I	115	TN	\$ 45.00	\$ 5,175
4025000000-E	901	Contractor Furnished, Type E signs	130	SF	\$ 15.00	\$ 1,950
4072000000-E	903	Supports, 3 LB, Steel U-Channel Posts	380	LF	\$ 5.00	\$ 1,900
4102000000-N	904	Type E Signs, Erection	36	EA	\$ 148.00	\$ 5,328
4412000000-E	SP	Stationary Work Zone Sign	144	SF	\$ 10.00	\$ 1,440
4412100000-E	1110	Work Zone Signs (Portable)	96	SF	\$ 10.00	\$ 960
4435000000-N	1135	Cones	20	EA	\$ 10.00	\$ 200
4450000000-N	1150	Flagger (By Hour)	480	HR	\$ 40.00	\$ 19,200

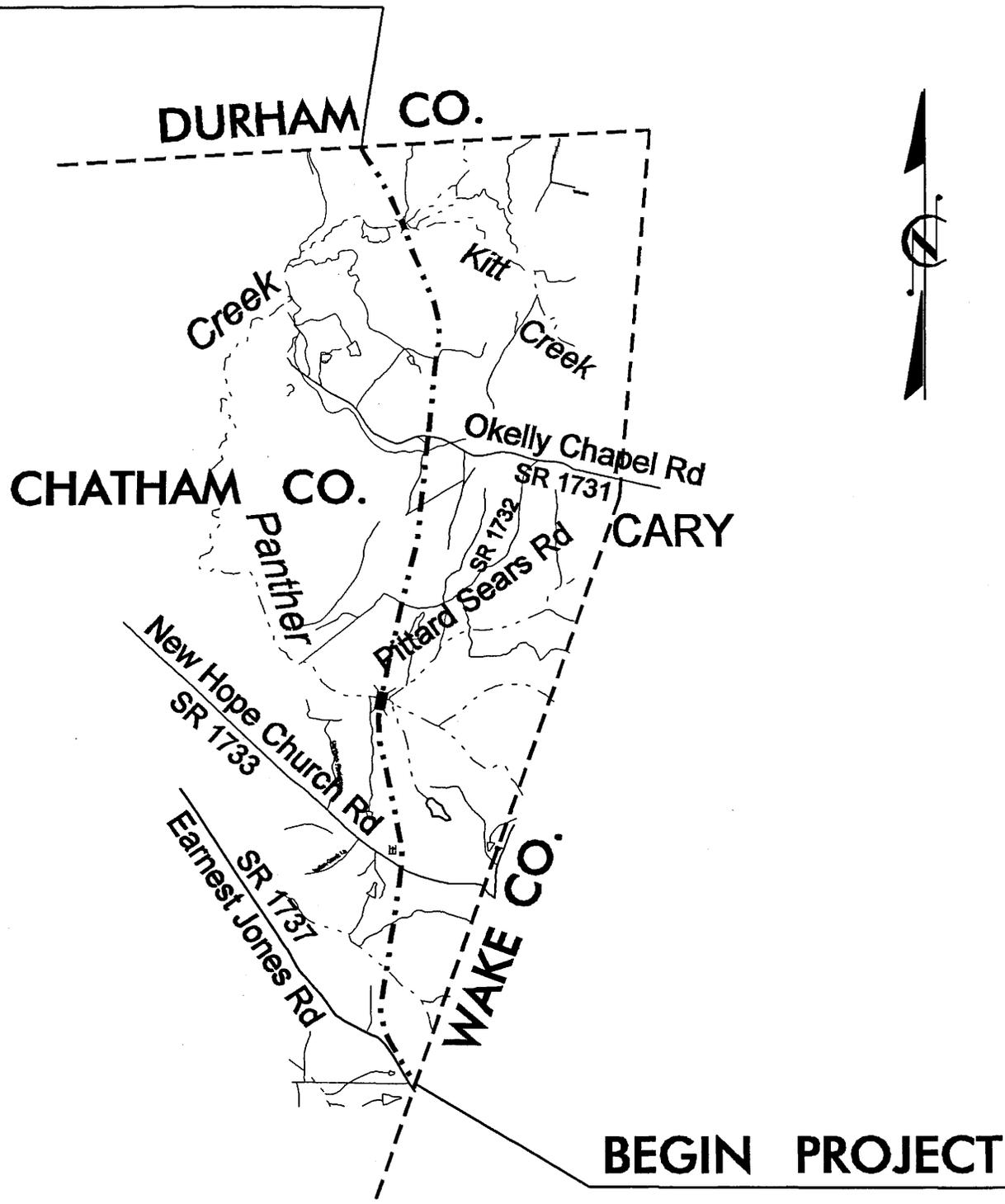
North Carolina Department of Transportation
 Division of Bicycle and Pedestrian Transportation
 Final Estimate

Prepared By: Kumar Trivedi (715-2345)

Item Number	Sec No.	Description	Quantity	Unit	Price	Amount
4446100000-E	1145	Barricades (Type III)	48	LF	\$ 33.00	\$ 1,584
4686000000-E	1205	Thermoplastic (4", 120 Mills)	85	LF	\$ 0.40	\$ 34
4710000000-E	1205	Thermoplastic (24", 120 Mills)	121	LF	\$ 1.15	\$ 139
4810000000-E	1205	Paint (4")	2,000	LF	\$ 0.15	\$ 300
4595000000-N	SP	Generic Traffic Control Item	8	SF	\$ 81.00	\$ 648
4721000000-E	1205	Thermoplastic Pvmt. Marking Charac. (120 Mills)	51	EA	\$ 80.00	\$ 4,080
4725000000-E	1205	Thermoplastic Pvmt. Marking Symbols (90 Mills)	4	EA	\$ 81.00	\$ 324
		LUMP SUM EROSION CONTROL				\$ 250,000
		LUMP SUM STRUCTURE				\$ 364,000

Contract Cost	\$ 2,042,196
E. & C. (15%)	306,329.42
Construction Cost	<u>\$ 2,348,526</u>
SAY	<u><u>\$ 2,400,000</u></u>

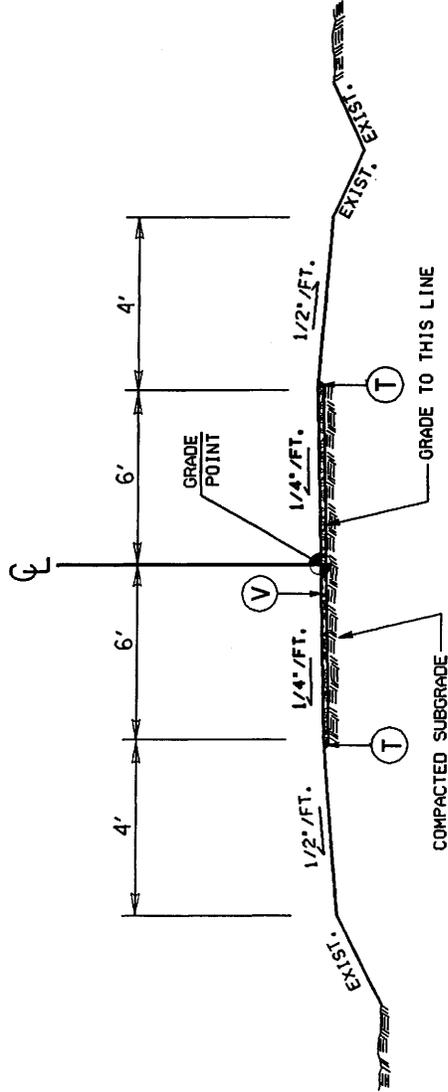
END PROJECT



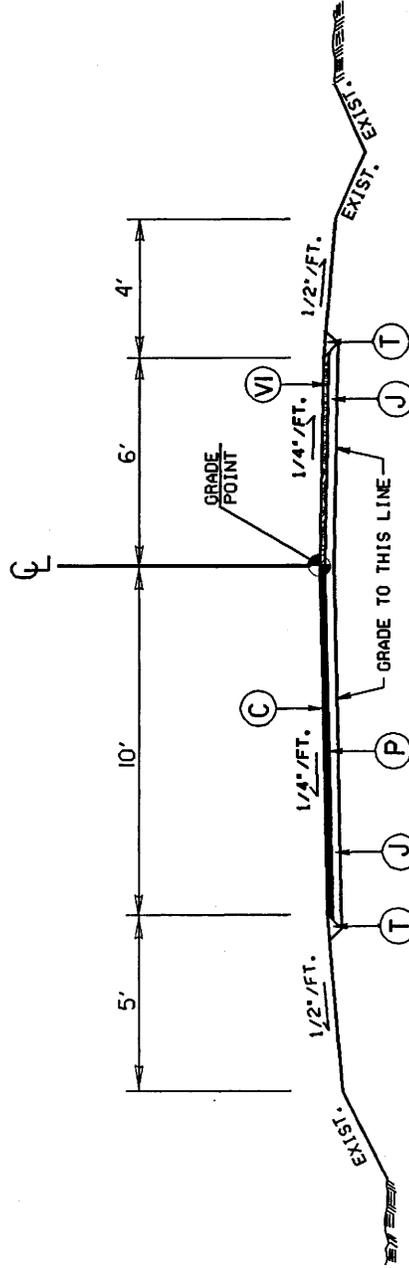
VICINITY MAP

PAVEMENT SCHEDULE	
C	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF 9.5A, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
J	PROP. 6" AGGREGATE BASE COURSE.
P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YD.
T	EARTH MATERIAL
V	5" GRANITE SCREENING
V1	2" GRANITE SCREENING

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



TYPICAL SECTION NO. 1



TYPICAL SECTION NO. 2

**AMERICAN TOBACCO TRAIL, PHASE F
CHATHAM COUNTY
TIP PROJECT NO. E-2921F**

APPENDIX A

CATEGORICAL EXCLUSION FORM CHECK LIST

**INDEPENDENT BICYCLE/PEDESTRIAN PROJECT
CATEGORICAL EXCLUSION FORM**

General Information

Project Name: American Tobacco Trail, Phase F

TIP Number : E-2921F

Project Sponsor: NC DOT Div. of Bicycle and Pedestrian Transportation

Project Contact

Name: Tom Norman

Telephone: 919-807-0771

E-mail: TNORMAN@DOT.STATE.NC.US

Project Description: The proposed project will be constructed along an abandoned railroad right of way from Wake-Chatham County line to Chatham-Durham County line. The multi-use trail will be a 12-foot wide unpaved crushed stone surface for up to first 5,800 feet and a dual surface trail of 10-foot wide asphalt pavement and 6-foot wide crushed stone surface for up to last 18,895 feet.

Purpose and Need: This portion of the American Tobacco Trail is a vital link between the existing sections of Wake County and Durham County American Tobacco Trails. It will complete the missing link of the trail that will provide continuous approximately 22 miles of multi purpose trail in Wake, Chatham and Durham Counties.

Proposed Improvements: See Categorical Exclusion Report

Special Information: See Jurisdictional Review Report

Threshold Criteria

Please answer each question. If a response falls within a Yes/No "box", then supporting documentation of the impact should be included.

ECOLOGICAL

YES

NO

- (1) Will the project have a substantial impact on any unique or important natural resource?

X

- | | | | |
|-----|---|---|--------------------------|
| (2) | Does the project involve habitat where federally listed endangered or threatened species may occur? | <input type="checkbox"/> | <u> X </u> |
| (3) | Will the project affect anadromous fish? | <input type="checkbox"/> | <u> X </u> |
| (4) | If the project involves wetlands, is the amount of permanent and/or temporary wetland taking less than one-third (1/3) of an acre and have all practicable measures to avoid and minimize wetland takings been evaluated? If no wetlands are involved, write "N/A". | N/A
<hr style="width: 50px; margin: 0 auto;"/> | <input type="checkbox"/> |
| (5) | Will the project require the use of U. S. Forest Service lands? | <input type="checkbox"/> | <u> X </u> |
| (6) | Will the quality of adjacent water resources be adversely impacted by proposed construction activities? | <input type="checkbox"/> | <u> X </u> |
| (7) | Does the project involve waters classified as Outstanding Water Resources and/or High Quality Waters? | <input type="checkbox"/> | <u> X </u> |
| (8) | Will the project require fill in waters of the United States in any of the designated mountain trout counties? | <input type="checkbox"/> | <u> X </u> |
| (9) | Does the project involve any known underground storage tanks (UST's) or hazardous materials sites? | <input type="checkbox"/> | <u> X </u> |

PERMITS AND COORDINATION

YES **NO**

- | | | | |
|------|--|---|--------------------------|
| (10) | If the project is located within a CAMA county, will the Project significantly affect the coastal zone and/or any "Area of Environmental Concern" (AEC)? | N/A
<hr style="width: 50px; margin: 0 auto;"/> | <input type="checkbox"/> |
| (11) | Does the project involve Coastal Barrier Resources Act Resources? | N/A
<hr style="width: 50px; margin: 0 auto;"/> | <input type="checkbox"/> |
| (12) | Will a U. S. Coast Guard permit be required? | N/A
<hr style="width: 50px; margin: 0 auto;"/> | <input type="checkbox"/> |
| (13) | Will the project result in the modification of any existing regulatory floodway? | <input type="checkbox"/> | <u> X </u> |
| (14) | Will the project require any stream relocations or channel changes? | <input type="checkbox"/> | <u> X </u> |

SOCIAL, ECONOMIC, AND CULTURAL RESOURCES

YES **NO**

- | | | | |
|------|---|--------------------------|--------------|
| (15) | Will the project induce substantial impacts to planned growth or land use for the area? | <input type="checkbox"/> | <u> X </u> |
|------|---|--------------------------|--------------|

- | | | | |
|------|---|--------------------------|--------------------------|
| (16) | Will the project require the relocation of any family or business? | <input type="checkbox"/> | <u> X </u> |
| (17) | Will the project have a disproportionately high and adverse human health and environmental effect on any minority or low-income population? | <input type="checkbox"/> | <u> X </u> |
| (18) | If the project involves the acquisition of right of way, is the amount of right of way acquisition considered minor? | <u> X </u> | <input type="checkbox"/> |
| (19) | Will the project involve any changes in access control? | <input type="checkbox"/> | <u> X </u> |
| (20) | Will the project substantially alter the usefulness and/or land use of adjacent property? | <input type="checkbox"/> | <u> X </u> |
| (21) | Will the project have an adverse effect on permanent local traffic patterns or community cohesiveness? | <input type="checkbox"/> | <u> X </u> |
| (22) | Is the project included in an approved thoroughfare plan and/or Transportation Improvement Program (and is therefore, in conformance with the Clean Air Act of 1990)? | <u> X </u> | <input type="checkbox"/> |
| (23) | Is the project anticipated to cause an increase in traffic volumes? | <input type="checkbox"/> | <u> X </u> |
| (24) | Will traffic be maintained during construction using existing roads, staged construction, or on-site detours? | <u> X </u> | <input type="checkbox"/> |
| (25) | If the project is a bridge replacement project, will the bridge be replaced at its existing location (along the existing facility) and will all construction proposed in association with the bridge replacement project be contained on the existing facility? | <u> X </u> | <input type="checkbox"/> |
| (26) | Is there substantial controversy on social, economic, or environmental grounds concerning the project? | <input type="checkbox"/> | <u> X </u> |
| (27) | Is the project consistent with all Federal, State, and local laws relating to the environmental aspects of the project? | <u> X </u> | <input type="checkbox"/> |
| (28) | Will the project have an "effect" on structures/properties eligible for or listed on the National Register of Historic Places? | <input type="checkbox"/> | <u> X </u> |
| (29) | Will the project affect any archaeological remains which are important to history or pre-history? | <input type="checkbox"/> | <u> X </u> |

- (30) Will the project require the use of Section 4(f) resources (public parks, recreation lands, wildlife and waterfowl Refuges, historic sites, or historic bridges, as defined in Section 4(f) of the U. S. DOT Act of 1966)? X

- (31) Will the project result in any conversion of assisted public recreation sites or facilities to non-recreation uses, as defined by Section 6(f) of the Land and Water Conservation Act of 1965, as amended? X

- (32) Will the project involve construction in, across, or adjacent to a river designated as a component of or proposed For inclusion in the Natural System of Wild and Scenic Rivers? X

Additional Documentation Required for Unfavorable Responses:
 (Unfavorable responses from the section above would include any "checked" boxes. For example, under the Yes/No columns, unfavorable responses are identified on this form by an outline. Favorable responses are identified by underlining. Additional supporting documentation should be attached, as necessary)

Categorical Exclusion Approval

Prepared by: Kumar Trivedi, Senior Facility Design Engineer

01-08-07	Thomas Norman, Director, NCDOT Div. Of Bicycle and Pedestrian Transportation
Date	Name, Title, Company/Agency

**AMERICAN TOBACCO TRAIL, PHASE F
CHATHAM COUNTY
TIP PROJECT NO. E-2921F**

APPENDIX B

JURISDICTIONAL RESOURCES REVIEW REPORT



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

October 5, 2006

MEMORANDUM TO: Thomas P. Norman, PE, Director
Bicycle and Pedestrian

ATTENTION: Kumar Trivedi, PE
Senior Facility Engineer

FROM: Brett Feulner
Natural Environment Unit

SUBJECT: Jurisdictional Resources Review for the proposed American Tobacco Trail from Wake-Chatham County to the Chatham-Durham County Line, Chatham County; Federal Aid No. RSTP-0505(7); State Project No. 8.2352401; TIP No. E-2921F, 33896.1.1

The NCDOT plans to convert an existing discontinued railroad corridor into a multi-use trail. The first portion of the trail from the Chatham-Wake County line to SR 1733 (New Hope Church Road) is proposed to be a 12-foot wide unpaved crushed stone trail for 1.1 miles. The second portion of the proposed multi-use trail from SR 1733 (New Hope Church Road) to the Chatham-Durham County line, will be a dual-surface trail consisting of a 10-foot wide asphalt path and a 6-foot wide crushed stone typical section for 3.58 miles. At the crossings of Panther Creek and Northeast Creek the project will use the existing substructure to construct new timber deck. No new fill will occur within these two jurisdictional crossings. On September 12, 2006 NCDOT Biologist Brett Feulner and Sara Easterly surveyed the above-mentioned project for jurisdictional resources within the project area.

WATER RESOURCES

The existing discontinued railroad bed crosses six unnamed tributaries (UTs) via culverts. Two streams, Panther Creek and Northeast Creek, will be crossed by adding new decking to the existing substructures from the original railway trestles. No new structure will be placed in Panther Creek or Northeast Creek. Table 1 lists the location, name and stream status of all of the streams in the project area. No wetlands were found in the project study area. Currently, project plans do not call for extending any existing culverts over jurisdictional streams, therefore no permits will be required.

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

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

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

Station	Stream Name	Intermittent or Perennial	DWQ Classification
43+00	UT to Indian Creek	Perennial	WS-IV-NSW
54+00	UT to Indian Creek	Perennial	WS-IV-NSW
72+00	UT to Indian Creek	Perennial	WS-IV-NSW
112+50	Panther Creek	Perennial	WS-IV-NSW
147+50	UT to Panther Creek	Intermittent	WS-IV-NSW
176+00	Ut to Northeast Creek	Perennial	WS-IV-NSW
197+50	Ut to Northeast Creek	Perennial	WS-IV-NSW
235+00	Northeast Creek	Perennial	WS-IV-NSW

PROTECTED SPECIES

Plants and animals with federal classifications of Endangered (E), Threatened (T), Proposed Endangered (PE) and Proposed Threatened (PT) are protected under provisions of Section 7 and Section 9 of the Endangered Species Act of 1973, as amended. As of April 27, 2006 the U.S. Fish and Wildlife Service (USFWS) lists 4 federally protected species in Chatham County (Table 2).

Table 2. Federally Protected Species for Chatham County

Scientific Name	Common Name	Status	Biological Conclusion	Habitat
<i>Haliaeetus leucocephalus</i>	Bald Eagle	Threatened	No Effect	No
<i>Picoides borealis</i>	Red-Cockaded Woodpecker	Endangered	No Effect	No
<i>Notropis mekistocholas</i>	Cape Fear Shiner	Endangered	No Effect	No
<i>Ptilimnium nodosum</i>	Harperella	Endangered	No Effect	No

Name: Bald Eagle (*Haliaeetus leucocephalus*)

Family: Accipitridae

Federal Status: Threatened

Date Listed: Endangered, 1967; Threatened, 1995

Characteristics:

The bald eagle is a large raptor. The characteristic adult plumage consists of a white head and tail with a dark brown body. Juvenile eagles are completely dark brown and do not fully develop the white head and tail until the fifth or sixth year. Fish are the primary food source, but bald eagles will also take a variety of birds, mammals, and turtles (both live and as carrion) when fish are not readily available. Adults average about 3 feet from head to tail, weigh approximately 10 to 12 pounds and have a wingspan that can reach 7 feet. Generally, female bald eagles are somewhat larger than the males.

Habitat includes quiet coastal areas, rivers or lakeshores with large, tall trees. Man-made reservoirs also provide habitat.

Biological Conclusion:**No Effect**

No foraging habitat is present within one mile of the project in the form of large water bodies. Additionally, the North Carolina Natural Heritage Program's (NCNHP) database of rare species and unique habitats was reviewed in September 15, 2006 and no populations of the species have been recorded within one mile of the project area.

Name: Red-cockaded woodpecker (*Picoides borealis*)

Family: Picidae

Status: Endangered

Date Listed: 10/13/70

The red-cockaded woodpecker (RCW) once occurred from New Jersey to southern Florida and west to eastern Texas. It occurred inland in Kentucky, Tennessee, Arkansas, Oklahoma, and Missouri. The RCW is now found only in coastal states of its historic range and inland in southeastern Oklahoma and southern Arkansas. In North Carolina moderate populations occur in the sandhills and southern coastal plain. The few populations found in the piedmont and northern coastal plain are believed to be relics of former populations.

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

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

These woodpeckers nest exclusively in living pine trees and usually in trees that are infected with the fungus that causes red-heart disease. Cavities are located in colonies from 12-100 feet above the ground and average 30-50 feet high. They can be identified by a large incrustation of running sap that surrounds the tree. The large incrustation of sap is believed to be used as a defense by the RCW against possible predators. A clan of woodpeckers usually consists of one breeding pair and the offspring from previous years. The RCW lays its eggs in April, May, and June and hatch 38 days later. Clutch size ranges in number from 3-5 eggs. All members of the clan share in raising the young. Red-cockaded woodpeckers feed mainly on insects but may feed on seasonal wild fruits.

Biological Conclusion:**No Effect**

No foraging or nesting habitat is located within the project area. Foraging habitat is located adjacent to the project area but no nesting habitat was observed. The NCNHP database was reviewed on September 15, 2006 and no occurrences of the RCW were observed within one mile of the project area.

Name: Harperella (*Ptilimnium nodosum*)

Plant Family: Apiaceae

Federal Status: Endangered,

Date Listed: September 28, 1988

Harperella is an annual herb in the carrot family, with fibrous roots and erect to spreading stems. The stems are green and often have a purplish tinge at the base and they may branch above mid-stem. The leaves are hollow, cylindrical, and septate, with broadly clasping bases. Flowers are umbels, each umbel subtended by an involucre of small lanceolate bracts. North Carolina currently has two known populations of harperella, one in Granville and one in Chatham County. This plant can be found in two types of habitat, rocky or gravel shoals and the margins of clear, swift-flowing stream sections, and the edges of intermittent pineland ponds or low, wet savanna meadows in the coastal plain. It is always found in saturated substrates and tolerates periodic, moderate flooding. There is a preference for sunny areas and this species is abundant where it is sheltered from stream erosion, usually on the downstream side of large rocks or amidst thick clones of water willow.

Biological Conclusion

No Effect

No habitat in the form of rocky or gravel shoals or the margins of clear, swift-flowing stream sections, and the edges of intermittent pineland ponds or low, wet savanna meadows was observed in the project area. The NCNHP database was also reviewed on September 15, 2006 and no occurrences of harperella were observed within one mile of the project area.

Name: Cape Fear shiner (*Notropis mekistocholas*)

Family: Cyprinidae

Federal Status: Endangered

Date Listed: September 25, 1987

The Cape Fear shiner is a small, moderately stocky minnow. Its body is flushed with a pale silvery yellow, and a black band runs along its sides (Snelson 1971). The fins are yellowish and somewhat pointed. The upper lip is black and the lower lip has a black bar along its margin. Cape Fear shiner habitat occurs in streams with gravel, cobble, or boulder substrates. It is most often observed inhabiting slow pools, riffles, and slow runs associated with water willow beds. Juveniles can be found inhabiting slackwater, among large rock outcrops and in flooded side channels and pools. The Cape Fear shiner is thought to feed on bottom detritus, diatoms, and other periphytes. Captive specimens feed readily on plant and animal material. The Cape Fear shiner is limited to three populations in North Carolina. The strongest population of the Cape Fear shiner is in Chatham and Lee counties from the Locksville dam upstream to Rocky River and Bear Creek. Another population is located above the Rocky River Hydroelectric Dam in Chatham County, and the third population is found in the Deep River system in Randolph and Moore County.

Biological Conclusion**No Effect**

There is no habitat in the project area in the form of slow pools, riffles, and slow runs associated with water willow beds. The proposed project is located upstream of Jordan Dam and there are no known occurrences of the Cape Fear shiner upstream of the Dam. The NCNHP database was reviewed on September 15, 2006 and no known occurrences within one mile of the project were observed. Additionally, Neil Medlin of the NCDOT spoke with Gary Jordan of the USFWS on September 14, 2005. Mr. Jordan confirmed that no surveys would be required and the appropriate biological conclusion is no effect.

cc: File: E-2921F

**AMERICAN TOBACCO TRAIL, PHASE F
CHATHAM COUNTY
TIP PROJECT NO. E-2921F**

APPENDIX C

CONCURRENCE LETTER FROM ARMY CORPS OF ENGINEERS



DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS

AUG 2 2006

B. EVERETT JORDAN DAM AND LAKE
POST OFFICE BOX 144
MONCURE, NORTH CAROLINA 27559

August 1, 2006

Mr. Thomas P. Norman, Director
North Carolina Department of Transportation
Division of Bicycle & Pedestrian Transportation
1552 Mail Service Center
Raleigh, North Carolina 27699-1552

Dear Mr. Norman:

Reference your July 3, 2006 letter regarding proposed construction of the Chatham County portion of the American Tobacco Trail (ATT) within the North Carolina Department of Transportation's (NCDOT) easement (DACW 21-2-99-6617) on Government property, at B. Everett Jordan Lake. Also reference your June 21, 2006 meeting with representatives of the Corps and the North Carolina Wildlife Resource Commission (NCWRC).

We have coordinated with the NCWRC regarding your request for concurrence on the proposed use of a dual trail surface. Review of management plans for the areas in question indicates that due to the type and location of timber resources in the vicinity of the trail the proposed asphalt surface would not impact future plans for timber management. The proposed hardened equipment crossings will not be necessary. However, in the event that some currently unanticipated future event should result in management activities that would require crossing the trail, the proposed release of responsibility for damage to the paved trail surface due to management activities is appropriate. Note that all management activities would be coordinated and all reasonable efforts would be made to avoid damage to the trail surface.

We concur in the proposed use of a dual surface treatment; asphalt and crushed stone. This concurrence is subject to the following conditions.

1. The NCDOT in coordination Chatham County and/or any other entities responsible for construction, operation, and maintenance of the ATT will provide written conformation that the US Army Corps of Engineers and the NCWRC will not be held responsible for damages to paved trail surfaces resulting from prescribed land management activities
2. Discharge of fill material that would diminish the flood storage capacity of B. Everett Jordan Lake will be avoided. Loss of flood storage due to placement of material below elevation 245 feet mean sea level will be mitigated. The NCDOT will provide a calculation of cut and fill below elevation 245 ft msl on Government property.
3. The NCDOT will abide by Supplemental Agreement No. 2 to Easement DACW 21-2-99-6617 including attached License Agreement and Memorandum of Agreement for operation of the trail.

Thank you for your continuing efforts to provide high quality trail facilities on public lands. We look forward to the completion of this facility. If we can provide any clarification or additional information regarding this matter please contact Mr. Michael Hosey of the Wilmington District Operations Support Section at 919-542-4501 ext. 26.

Sincerely,

for Daniel Brown
Operations Manager

CC:

Mr. Isaac Harold
North Carolina Wildlife Resources Commission
2513 White Plains Lane
Mebane, North Carolina 27302

Ms. Tracy Burnett, Director
Chatham County Recreation Department
Post Office Box 87
Pittsboro, North Carolina 27312

January 14, 2004

Real Estate Division

SUBJECT: Supplemental Agreement No. 2 to Easement No. DACW21-2-99-6617 for the Chatham County Portion of the American Tobacco Trail (ATT) at B. Everett Jordan Lake

Mr. W. Stephen Head
State of North Carolina
Department of Transportation
Rail Division, Engineering and Safety Branch
1556 Mail Service Center
Raleigh, North Carolina 27699-1556

Dear Mr. Head:

I have enclosed four copies of the subject Supplemental Agreement No. 2 for execution by the appropriate official. The purpose of this document is to incorporate the license agreement between North Carolina Department of Transportation and Chatham County for the construction, operation and maintenance of the ATT located within the boundaries of Jordan Lake in Chatham County, into Easement No. DACW21-2-99-6617.

Please return all copies to this office. Upon execution on behalf of the Government, a fully executed copy will be furnished you for your records. Should you have any questions regarding this instrument, you may call me at (919) 542-6393.

Sincerely,



Sherry G. Oenbrink
Lead Realty Specialist

Enclosures

Copy furnished:

Steve Brown, Operations Manager, Falls/Jordan Lake Projects, 11405 Falls of the Neuse Road, Wake Forest, North Carolina 27585-1405

✓ Ms. Tracy Burnett, Chatham County, Planning Department, P. O. Box 54, Pittsboro, North Carolina 27312-0054

Mr. Bill Bussey, Triangle Rails-to-Trails Conservancy, 344 Roberson Creek Road, Pittsboro, North Carolina 27312

NORTH CAROLINA

CHATHAM COUNTY

LICENSE AGREEMENT

THIS LICENSE AGREEMENT ("Agreement"), is made this 1st day of December, 2008, by and between the STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION ("Department") and CHATHAM COUNTY, NC ("County").

WITNESSETH:

WHEREAS, the Department, in accordance with N.C. Gen. Stat. §§ 136-44.36A *et seq.* is authorized to preserve rail transportation corridors and permit compatible interim uses of such corridors; and

WHEREAS, the Department has an easement interest in an inactive railroad corridor located on Federal land on the B. Everett Jordan Lake Project, in Wake, Durham and Chatham Counties; and

WHEREAS, the County has requested that the Department grant a license for use of that portion of said corridor located in Chatham County to the County for a "Rail Trail"; and

WHEREAS, the Department does not anticipate the need to resume active rail service in said rail corridor for at least ten (10) years; and

WHEREAS, the Department has previously leased other portions of a railroad corridor not located on property of the United States to the County for interim public recreation use in accordance with N.C. Gen. Stat. § 136-44.36D and the provisions hereinafter set forth; and

WHEREAS, THE SECRETARY OF THE ARMY, on behalf of the United States of America, granted the Department, its successors and assigns, Easement DACW21-2-99-6617 ("Easement") for the construction, installation, operation and maintenance of multi-use transportation facilities on, over and upon and affecting certain real property located in Wake, Durham and Chatham counties, North Carolina. Said easement dated June 1, 2000, is recorded in said counties

WHEREAS, the Easement requires written approval from the District Engineer, Wilmington District or his authorized representative the Operations Manager, Falls/Jordan Lake Projects to the transfer or assignment of any interest, privilege, or license whatsoever in connection with the Easement, and

WHEREAS, the Department is desirous of granting the County a license for a portion of the Easement premises for use as a part of the County's "Rail Trail". Said license (Agreement) shall be subject to the terms and conditions the Easement.

NOW, THEREFORE, for and in consideration of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt of which is hereby acknowledged, the Department grants unto the County a license for ingress, egress, regress, use and occupation for the purposes set forth herein on and over certain land ("Licensed Premises") lying and being in Chatham County, North Carolina, the Licensed Premises being a portion of the lands subject to the Easement and more particularly described in Exhibit "A" attached hereto.

1. AUTHORITY

The County, by entering in this Agreement acknowledges that it has acted in accordance with all applicable laws and regulations, including, but not limited to N.C. General Statutes § 136-44.36D, and that it will continue to act in accordance with these laws and regulations upon execution of this Agreement.

2. SCOPE AND TERM OF AGREEMENT

The County shall use the Licensed Premises solely for interim public recreational trail use, and such use shall not interfere with the ultimate transportation purposes of the corridor as determined by the Department. The County agrees that all costs associated with the use and development of the Licensed Premises shall be at no expense to the United States of America. This grant shall not be construed to vest in the County any other greater interest, and in no event is any warranty of said privilege hereby given by the Department, nor shall any warranty be implied from the terms of this License Agreement. The County agrees to assume all development costs for such use, at no expense to the Department and the United States, excluding any future bicycle/pedestrian project programmed in the Department's Transportation Improvement Program.

The term of this Agreement shall be ten years, automatically renewable for consecutive five - year terms, unless terminated. After the initial ten - year term, the Department has the right to resume active rail use of the Licensed Premises to assure continuation of the corridor's perpetual use for railroad and interim compatible uses. The Department has the right to resume active rail use of the Licensed Premises to assure continuation of the corridor's perpetual use for railroad purposes and interim compatible uses. The Department shall give the County twelve (12) months written notice of termination of this Agreement, if the Department terminates the Agreement pursuant to this Paragraph. A copy of such notice of termination shall be provided to the District Engineer, Wilmington District, or his authorized representative the Operations Manager, Falls/Jordan Lakes Projects.

3. LICENSE FEES

Upon execution of this Agreement by both parties, the County shall submit payment of ten dollars (\$10.00) to the Department for the first ten years of this Agreement and shall submit additional payment of one dollar (\$1.00) every year thereafter that this Agreement remains in effect.

4. AS IS, WHERE IS

The Department makes no warranties or representations regarding the condition of the Licensed Premises. The County takes the Licensed Premises "AS IS, WHERE IS" and expressly waives any and all claims against the Department and the United States relating to or arising from the condition of the Licensed Premises and the property surrounding the Licensed Premises, including but not limited to, any claims and costs relating to environmental contamination.

5. RESERVATIONS

a. The Department reserves unto itself and its agents the permanent rights to maintain, operate, renew, or reconstruct upon, under, or over the Licensed Premises all tracks and facilities necessary for resumption of active rail use. The Department further reserves unto itself and its agents the permanent right to resume active rail use. Such reservations are subject to the notice provisions otherwise provided in this Agreement. The United States, its officers, agents, and employees, retain the right to enter upon the Licensed Premises as provided for in the Easement.

b. The Department further reserves unto itself and its agents the right to enter upon the Licensed Premises at any and all times for inspection of the Licensed Premises and for any other lawful purpose.

c. The County agrees that its occupation and use of the Licensed Premises is subject to any or all contracts, leases, licenses, easements, or agreements pertaining to the Licensed Premises and existing at the time of execution of this Agreement between the Department and third parties and that the County shall construct its rail trail so as not to unreasonably interfere with such contracts, leases, licenses, easements, or agreements. Upon execution of this Agreement, the Department will make available such contracts, leases, licenses, easements, or agreements to the County. In the event that the County finds the terms of these contracts, leases, licenses, easements, or agreements are unacceptable, the County's sole and exclusive remedy shall be to terminate this Agreement without further liability or obligation to either party.

d. The Department shall retain and negotiate all agreements for aerial and subsurface use of the Licensed Premises.

6. ASSIGNMENT, SUBLICENSES AND ENCUMBRANCES

The County will use the Licensed Premises for the purpose of constructing and maintaining an interim recreational trail and for no other purpose without the written consent of the Department, and subsequent approval by the District Engineer, Wilmington District or his authorized representative, the Operations Manager, Falls/Jordan Lakes Projects. This Agreement is a personal privilege to the County and shall not be assigned in whole or in part by the County without the written consent of the Department and subsequent approval by the United States, nor shall the County, except with such written consent, permit the Licensed Premises to be used for any purpose by any other party, firm, or corporation. The County shall not, without express consent of the Department and subsequent approval by the United States, encumber, create or incur any lien on or with respect to the Licensed Premises. Consent by the Department and the United States to any sublicense, assignment, amendment, or encumbrance of this Agreement shall not be construed to be consent to any further sublicense, assignment, or amendment of this Agreement. Should the County become aware of any encroachment by any entity or person other than the County upon the Licensed Premises, the County shall notify the Department of the encroachment immediately and shall take no action with respect to the encroachment without express written consent from the Department. The Department shall provide copies of such notices to the District Engineer, Wilmington District or his authorized representative the Operations Manager, Falls/Jordan Lake Projects.

7. CONSTRUCTION, MAINTENANCE AND MANAGEMENT

a. The County will not construct or cause to be constructed the Rail Trail, including but not limited to construction of any buildings, structures or improvements, unless reviewed and approved in writing by the Department's Rail Division and Division of Bicycles and Pedestrian Transportation, and the subsequent approval of the District Engineer, Wilmington District or his authorized representative the Operations Manager, Falls/Jordan Lakes Projects. The County's plans for the Rail Trail shall be developed in accordance with Departmental and federal laws, rules, standards, specifications, policies and procedures for interim public recreational trail use, including the Department's Rail Corridor Preservation Policy. Any development plan shall include, but not be limited to, any proposed physical and geographical renovations or alterations. Any buildings, structures, or improvements erected by the County on the Licensed Premises shall be substantially constructed or installed and maintained; shall be kept in good repair and presentable condition; shall be located as described herein or otherwise approved in writing by the Department's Rail Division and Division of Bicycles and Pedestrian Transportation; and shall not be relocated upon the Licensed Premises except with the written consent of the Department's Rail Division and Division of Bicycles and Pedestrian Transportation. The County will be responsible for keeping the Licensed Premises in a safe and clean and sanitary condition, free of waste, trash, or unsanitary or flammable matter, and prevent the posting of advertising bills or signs upon the Licensed Premises, except the usual business signs of the County or as otherwise provided herein.

b. If the County undertakes to revise, renew, relocate, or change in any manner whatsoever all or any part of the plans and specifications approved by the Department, such plans shall be submitted to the Department's Rail Division and Division of Bicycle and Pedestrian Transportation for approval before any such change is made and all such changes shall require the subsequent approval of the Operations Manager, Falls/Jordan Lake Projects. After approval, the terms and conditions of this Agreement shall apply thereto.

c. The County shall improve and/or maintain the Licensed Premises at the County's own cost and expense. The Department and the United States shall be exempt from any costs, charges, or assessments of any kind or character which arise out of or are incident to the location and improvement of the Licensed Premises within the limits of the right of way, or on account of any action or omission by the County in connection therewith. The County, at no expense to the Department or the United States, shall operate and maintain, or cause to be maintained, the Licensed Premises and/or subsequent facilities in accordance with all State and Federal laws, policies and specifications, local codes, and ordinances. The County shall perform inspections to all trestles, pipes culverts and retaining walls at least once every two years, and prepare written documentation of said inspections. For those structures crossing public streets, said work shall be performed in accordance with, and future amendment of, National Bridge Inspection Standards (23 CFR, Chapter 1, Part 650), the AASHTO Manual for Maintenance Inspection of Bridges, 1983, and Recording and Coding Guide for the Structure Inventory and approval of the Nation's Bridges -- December, 1988. The County shall be solely responsible for obtaining all federal, state and local licenses and permits for said corridor and or subsequent facilities. Failure to comply with all state and federal procedures referred to in this paragraphs may result in cancellation of this Agreement by the Department at no cost or liability to the Department or the United States.

d. If the Department determines that the County has failed to construct or maintain the Rail Trail in accordance with said approved plans and specifications, the Department reserves the right to require the County to fulfill the design requirements, and if the County fails to do so, the Department shall have the right to terminate this Agreement and assess costs against the County as provided in Paragraph 12(d), below. Said construction or maintenance failure by the County may further result in the termination of this Agreement by the Department at the request of the United States.

e. In the event the County deems it necessary for the Department to remove and relocate any structures or property of third persons or corporations, including but not limited to wire lines and poles or other supports now located and constructed upon or near the Department's right of way, the County shall remove and relocate or arrange for the removal or relocation of same without cost or expense to the Department or the United States, and in all respects in accordance with the requirements of the Department or the United States. Any utility changes must conform to specifications promulgated by all applicable laws, policies, procedures and guidelines.

f. The County shall obtain all permits, certificates, licenses, and authorizations required by any governmental authority for any improvements to or use of the Licensed Premises.

g. The County shall comply with the requirements of all federal, state, and local laws, rules, regulations, and policies, including but not limited to all safety, health, environmental, and sanitation laws, rules, regulations and policies for all conditions caused by any use, acts, or omissions of the County, its agents, or its invitees or guests, on the Licensed Premises and will at its own expense make all corrections, repairs, or additions to the Licensed Premises which are necessary to ensure compliance with such laws, rules, regulations, and policies.

h. The County shall not install any underground tanks or associated underground piping for the storage of any product on the Licensed Premises without the express written consent of the Department and the subsequent approval of the District Engineer, Wilmington District of his authorized representative the Operations Manager, Falls/Jordan Lake Projects.

i. The County shall not dispose of any wastes of any kind, whether hazardous or not, on the Licensed Premises and the County shall not conduct any activity on the Licensed Premises which may or does require a hazardous waste treatment, storage or disposal facility permit from either the federal or state agencies.

j. The County agrees to exercise every reasonable precaution during construction or maintenance to prevent eroding of soil; silting or pollution of rivers, streams, lakes, reservoirs, other water impoundments, ground surfaces, or other property; or pollution of the air.

k. The County shall comply with all applicable rules and regulations of the North Carolina Department of Environment and Natural Resources. The County agrees to comply with all federal, state and local environmental laws, rules, regulations while subject to the terms of this Agreement. None of the terms of this paragraph, or of this agreement elsewhere shall be construed as a waiver of any environmental regulations. If hazardous or any other unauthorized material is discovered, and it is determined that such material is present as a result of action by the County, the County shall be solely responsible and hold the Department and the United States harmless for all costs associated with the removal of the material and any damages caused by the existence of said material.

l. Upon execution of this Agreement, the County shall post the following signs along the entire length of the corridor in order to deter new encroachments: "Future Home of the American Tobacco Trail."

m. The County, at no expense to the Department or the United States, shall assume all responsibility for management, security and liability for the Licensed Premises and related facilities. Management and security shall be conducted in a manner satisfactory to the Department and the United States and in compliance with all applicable laws and regulations.

n. The County shall not permit hunting on or from the Licensed Premises. The County shall post signs at all entrances and at various focal points along the Rail Trail that prohibit hunting on or from the licensed premises. In addition to and in accordance with its obligations in Paragraph 7(l) above, the County shall post signs at all entrances and at various focal points along the Rail Trail giving notice of hunting on the property adjacent to the Licensed Premises.

However, hunters may only use the trail for hunting access during hunting seasons under the following circumstances:

(1) The trail and associated facilities shall be utilized only by hunters licensed in the State of North Carolina for access to the surrounding Gameland areas open to hunting.

(2) Hunters licensed in the State of North Carolina may carry hunting weapons on the trail corridor and in trailhead areas only if the weapon is unloaded, is approved for hunting in the State of North Carolina, is carried in the open, and is carried only during hunting seasons designated by the State of North Carolina.

(3) firing weapons within or across the fenced trail corridor is prohibited.

8. ENHANCEMENT FUNDS

If any Enhancement Funds, as defined by Section 1202 of the Transportation Equity Act of the 21st Century, are used for any improvements to the Licensed Premises, all provisions pertaining to receiving said funding shall be incorporated into the terms of this Agreement.

9. LIABILITY

a. To the extent allowed by state law, the County shall be solely responsible for, and shall indemnify, defend, and hold harmless the Department and the United States and its assigns from any claims, demands, causes of action, suits, judgments, or other liability, including expenses and attorneys fees therewith, for any death or injuries to any persons, including but not limited to the County's employees, agents, assigns, guests, or invitees, or for loss of or damage to property, including but not limited to property owned or possessed by the County's employees, agents, assigns, guests, or invitees, which occurs by reason of, or arises out of, or is incidental to, the use or occupancy by the County, its agents, assigns, guests or invitees of the Licensed Premises covered by this Agreement.

b. Without limiting the indemnities provided in this Agreement, the County, shall indemnify, defend, and hold harmless the Department, the United States and their assigns from any claims, demands, causes of action, suits, judgments, or other liability, including expenses and attorneys fees therewith, for any death or injuries to persons or for loss of or damage to property arising out of or in connection with hunting on the Licensed Premises. The County expressly assumes all responsibility for protection of the public's health and safety with respect to any hunting that occurs on the Licensed Premises.

expressly assumes all responsibility for protection of the public's health and safety with respect to any hunting that occurs on the Licensed Premises.

c. Irrespective of any obligations assumed by the County elsewhere in this Agreement, the County shall have the duty to maintain the Licensed Premises in a reasonably safe condition for the County's agents, invitees, guests. The County shall be responsible, hold the Department and the United States harmless, and assume liability on behalf of the Department and the United States as to all persons or parties, for any dangerous conditions, reasonable or unreasonable, natural or artificial, which exist at the time of the execution of this Agreement, or which arise after the execution of this Agreement, whether or not the Department or the United States knows or has reason to know of the conditions and whether or not the Department or the United States has concealed or failed to disclose to the County such conditions.

10. ENFORCEABILITY

If any provision of this Agreement, or the application thereof to any person or circumstance, shall, for any reason and to any extent, be invalid or unenforceable, the remainder of this Agreement and the application of such provision to other persons or circumstances shall not be affected thereby but rather shall be enforceable to the fullest extent permitted by law.

11. THIRD-PARTY AGREEMENTS

If it is necessary for the County to enter into agreements with third parties (1) for the purchase or lease of real property rights in order to construct the Rail Trail or (2) for the construction or maintenance of the Licensed Premises, the County shall enter into such Agreements at its sole cost and expense. Such Agreements shall not affect the terms or obligations of the parties to this Agreement.

12. TERMINATION

a. Failure on the part of the County to comply with the terms of this Agreement shall be grounds for the Department to terminate this Agreement at no cost or liability to the Department or the United States and subject to the costs described in paragraph 12(d), below. Said failure by the County may further result in termination of this Agreement by the Department at the request of the United States.

b. Upon termination of this Agreement, any and all leases and third party agreements connected to the use of the Licensed Premises entered into by the County and persons or entities other than the Department shall be null and void.

c. Upon notice of termination of this Agreement by either party pursuant to any of the termination terms in this Agreement, the County, at its own cost and expense, within *one hundred eighty (180) days* after termination of this Agreement, shall remove any improvements affixed to the Licensed Premises which in the opinion of the Department can be removed without material injury to the Licensed Premises, and restore the Licensed Premises to the condition

d. Upon termination of this Agreement by either party, the County shall be responsible for paying the costs for completing and maintaining the Rail Trail or the costs to return the Licensed Premises to its condition prior to execution of this Agreement.

13. MERGER CLAUSE

This Agreement and the Exhibits attached hereto constitute the final expression of all the terms agreed upon and are a complete and exclusive statement of those terms, superseding all other prior understanding and agreements, both written and oral, between the parties with respect to the subject matter of this Agreement and the Exhibits. This Agreement and the Exhibits may not be supplemented, amended, or modified at anytime except by an instrument in writing executed by both parties.

14. SUBJECT TO EASEMENT

The County acknowledges that this Agreement is subject to the terms and conditions of Easement DACW21-2-99-6617, and any future amendments thereto.

15. MEMORANDUM OF AGREEMENT

Attached hereto as Exhibit B is a Memorandum of Agreement between the County, the United States Army Corps of Engineers, and the North Carolina Wildlife Resources Commission. The terms of the Memorandum of Agreement are incorporated herein by reference.

IN WITNESS WHEREOF, the Department has caused this instrument to be signed by its duly authorized agent, and the County has caused this instrument to be signed by its duly authorized agent, this the day and year first above written.

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

COUNTY OF CHATHAM,
NORTH CAROLINA

BY: *David A. King*
DEPUTY SECRETARY
FOR TRANSPORTATION

BY: *Thomas J. Emmons*
CHAIRMAN, COUNTY
BOARD OF COMMISSIONERS

WITNESSED BY:
James Deering

ATTEST:
Dandra B. Dublett, CMC
CLERK TO THE BOARD

This Instrument has been pre-audited
in the manner required by the Local
Government Budget and Fiscal
Control Act

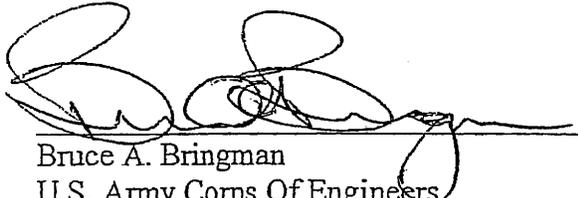
Vicki McConnell
County Finance Officer

Federal Tax Identification Number

56-6000284
Chatham County

THIS LICENSE AGREEMENT is also consented to on behalf of the United States this

6th day of January, 2007.

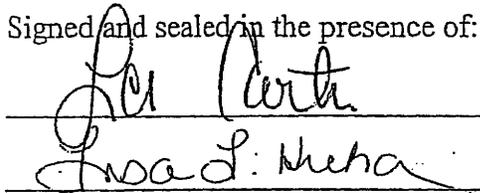


Bruce A. Bringman
U.S. Army Corps Of Engineers,
Savannah District
Real Estate Division,
Chief, Management Section



Steve Brown
U. S. Army Corps of Engineers,
Wilmington District
Operations Manager,
Falls/Jordan Lake Projects

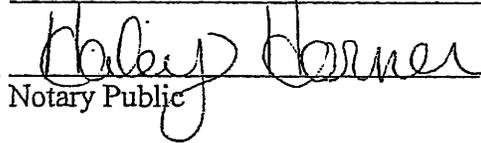
Signed and sealed in the presence of:



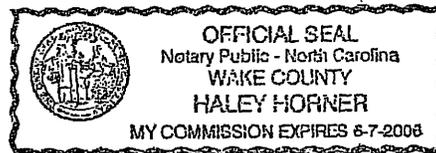
Notary Public

LISA HREHA
Notary Public, Bryan County, GA
My Commission Expires November 12, 2007

Signed and sealed in the presence of:



Notary Public



CERTIFICATE OF AUTHORITY

I, Tammy Denning, certify that I am the Secretary to the Board of Transportation for the State of North Carolina, and further certify that DAVID KING, who signed the foregoing instrument, on behalf of the State of North Carolina Department of Transportation (Department) was then the Deputy Secretary for Transportation. I further certify that said officer was acting within the scope of powers delegated to him by the State of North Carolina Department of Transportation in executing this instrument.

This 2nd day of December, 2003.

COPY OF A RESOLUTION PASSED BY THE BOARD OF COUNTY
COMMISSIONERS
OF THE COUNTY OF CHATHAM, NORTH CAROLINA

WHEREAS, the North Carolina Department of Transportation and the County of Chatham propose to enter into a License Agreement for interim use of parts of an inactive railroad corridor in Chatham County; and

WHEREAS, the County of Chatham agrees to use said corridor solely for the purpose of recreational and/or alternative transportation facilities; and

WHEREAS, the County shall assume all development costs, management, security and liability responsibilities at no expense or liability whatsoever to the Department; and

WHEREAS, the Department shall have the right to return the corridor to active rail use upon a twelve (12) month written notice of license termination.

NOW, THEREFORE, BE IT RESOLVED that said License Agreement is hereby formally approved by the Board of Commissioners of the County of Chatham and that the Clerk of this County is hereby empowered to sign and execute the Agreement with the Department of Transportation.

A motion was made by Commissioner Atwater and seconded by Commissioner Pollard for adoption of the following Resolution, and upon being put to a vote was duly adopted:

I, Sandra B. Sublett, Clerk of the County of Chatham, do hereby certify that the foregoing is a true and correct copy of excerpts from the Minutes of the meeting of the Board of Commissioners duly held on the 18th day of August, 2003.

WITNESS my hand and the official seal of Chatham County on this the 20th day of August, 2003.

(SEAL)


CLERK
COUNTY OF CHATHAM
NORTH CAROLINA

ACKNOWLEDGMENT

STATE OF Georgia
COUNTY OF Bryan

Before me a Notary Public in and for the County of Bryan, personally appeared before me Bruce A. Bringman, to me known to be the identical person and officer whose name is subscribed to the foregoing instrument, and acknowledged to me that he/she executed the foregoing instrument by direction of the Assistant Secretary of the Army (I, L&E) for the purpose therein expressed as the act and deed of the United States of America.

GIVEN under my hand and seal, this 12 day of JAN, 2007.

Lisa Hreha
NOTARY PUBLIC

(SEAL)

My Commission Expires:

LISA HREHA
~~Notary Public, Bryan County, GA~~
My Commission Expires November 12, 2007

EXHIBIT B

**Memorandum of Agreement
Between
The County of Chatham
The US Army Corps of Engineers
And
The North Carolina Wildlife Resources Commission
For the Operation of the
AMERICAN TOBACCO RAIL-TRAIL
B. EVERETT JORDAN LAKE PROJECT**

THIS MEMORANDUM OF AGREEMENT (MOA), made and entered into by and between the **County of Chatham**, North Carolina, hereinafter called the County, the **United States Army Corps of Engineers**, hereinafter called the COE, and the **North Carolina Wildlife Resources Commission**, hereinafter called the Commission;

WITNESSETH:

THAT, WHEREAS, the County is developing and maintaining the **American Tobacco Trail (ATT)** and associated facilities on the Jordan Lake Game Land in Chatham County for recreational hiking, cycling and horse back riding and

WHEREAS, the County is designing, constructing, and maintaining trails suitable for hiking, cycling and horse back riding on Game Lands; and

WHEREAS, the Commission is authorized to grant permits for use of portions of their leased land on the Jordan Lake Project; and

WHEREAS, the COE has agreed to allow recreational trails to be constructed, operated and maintained on the Jordan Lake Project; and;

WHEREAS, it is the purpose of this MOA to address specific operational details and responsibilities for the construction, operation and maintenance of the ATT and associated facilities.

NOW, THEREFORE, in consideration of the sum of one dollar and other valuable considerations, to be paid by the County under the terms of this MOA, the Commission hereby grants to the County permission to design, construct, maintain, and use trails on the portion of Jordan Lake Game Land as indicated on the attached map labeled Attachment A, and subject to further terms and conditions, as follows:

A. The County Agrees:

1. That the County's facilities on Federal property shall in all instances be open to the general public for access on an equal basis.
2. The County shall provide a time line for construction and commencement of operation of the trail and trailheads on Federal property prior to beginning construction.

EXHIBIT B

3. The County shall provide a detailed written trail management plan. The plan must be approved by the Commission and the COE prior to commencement of operation of the trail and associated facilities. The plan shall include information on the following topics:

- a. Operations and Maintenance
 - staff
 - facilities
 - budget
 - inspection schedule
 - standards
- b. Regulations and Enforcement
 - regulations
 - enforcement authority
 - patrol
- c. Visitation/Usage
 - quantification methods
- d. Environmental Stewardship
 - management and monitoring of trail impacts
 - natural resource management plans
- e. Special Events
 - schedule of any annual events
 - fees
 - liability
- d. Agency Coordination & Procedures
 - Counties
 - State
 - Federal
- e. Revenue
 - sources
 - accounting

4. The County shall provide visitor information as follows:

a. The County shall adopt and enforce user regulations for the portions of the ATT they manage on Federal property. The County shall post its rules and regulations. These regulations and any revisions or amendments thereto, must be reviewed and approved, by the COE and the Commission before the County commences operation of the trail and associated facilities. The County will review or amend user regulations, as needed, or as requested by the Commission or the COE.

b. To insure that the public is fully informed concerning use of areas on Federal property by hunters and about natural resource management activities , the County shall provide adequate space on public notice boards for the

EXHIBIT B

Commission to post current information on hunter access, hunter safety, hunting seasons and notices of management activities such as prescribed burns and timber harvests located in the area of the ATT.

c. The wording and location of all signs placed along the trail and associated facilities on Federal property must be approved in advance by the Commission, and receive prior consent by the COE.

d. The County shall post signs identifying permitted and prohibited types of access at all gates and access points along the trail areas on Federal property.

5. The County shall post Gameland boundary signs on the areas of Federal property leased or licensed for trail right of way, access roads, or other associated facilities located on, passing through, or directly adjacent to Gamelands to the satisfaction of the Commission. Signs shall be posted at a minimum of 25 per mile of boundary unless otherwise specified.

6. The County shall erect a fence along the trail corridor and any other associated facilities on Federal property. The fence will be erected as follows:

a. The fence line along the trail shall correspond to the existing transportation right of way, which is in most cases 50 feet from the centerline of the abandoned railway.

b. Fences and all associated gates and openings shall meet a standard to be agreed upon by the County, the Commission, and the COE.

c. Fences shall have pedestrian passages at a frequency and/or location to be specified by the Commission.

d. Pedestrian openings shall be designed to prevent the passage of horses, bicycles, ATV's and other unauthorized vehicles from the trail area into surrounding Federal property.

7. Access

a. The County shall construct the trail and associated structures and facilities to accommodate the Commissions access needs.

b. The County shall place barriers and/or gates at trail/road crossings and other trail access points to prevent unauthorized vehicles from gaining access to Federal property. The Commission will approve and the COE will consent to design of all gates and barriers.

EXHIBIT B

c. The County shall provide the Commission and the COE with keys for all gates and barriers controlled by the County, which provide access onto Federal property.

8. The County shall not remove any merchantable timber without prior approval of the Commission.

9. The County shall be responsible for protection of structures and facilities under their management located in areas subject to prescribed burning.

10. The County shall provide an annual report to the COE and the Commission of all pesticide and herbicide use for the portions of the ATT on Federal property.

11. The County shall provide and maintain trash receptacles at appropriate locations along the trail. Trash cans shall be large enough and present in quantities sufficient to handle the volume of trash generated by trail users. Cans shall be emptied at a frequency adequate to provide for the volume of waste generated by trail users. All waste shall be removed from Federal property and disposed of in approved landfill or recycling center.

12. The County shall provide and maintain separate containers for recyclable materials (at a minimum for aluminum cans and plastic bottles). Recycling containers shall be of a size and present in a quantity to handle the volume of recyclable materials generated by trail users. Recycling containers shall be emptied at a frequency adequate to provide for the volume of material generated by trail users.

13. Events.

a. Special events (organized activities) that occur on the trail crossing Federal property must be approved in advance by the Commission and the COE. A special event is defined as a planned event, at or along the ATT, that is estimated to generate user participation that exceeds the normal design capacity of the trail, and may interrupt normal daily use of the surrounding properties of the COE and the Commission.

b. The COE and the Commission reserve the right to not permit any event on Federal property that is determined to be detrimental to the public lands, inconsistent with their designated purposes, or incompatible with existing uses.

14. The County shall inspect bridge structures as set out in the NCDOT License agreement. Copies of all inspection reports must be provided to the COE and the Commission.

15. The County is responsible for all activities required for operation and maintenance of the American Tobacco Trail on Federal property.

EXHIBIT B

16. The County may receive revenue from operation of these facilities under the following conditions:

a. The County may collect reasonable fees for the use of the trail for special events.

b. The County shall not collect admission or user fees for general use or access onto the trail.

c. All monies received by the County from operations conducted on the premises must be utilized by the County for administration, maintenance, operation, and development of the trail. Any such monies not so utilized within a reasonable time, shall be paid to the District Engineer at the end of each five-year period. The County shall establish and maintain adequate records and accounts and render annual statements of receipts and expenditures to the District Engineer. The District Engineer shall have the right to perform audits of the County's records and accounts.

17. Public Safety

a. The County is responsible for emergency response, fire protection and law enforcement on the trail and associated facilities.

b. The County shall post notices for the public detailing what to do in case of an emergency.

c. The County shall provide a monthly report to the Operations Manager, Falls/Jordan Lake Projects detailing crimes and accidents occurring on County managed areas on Federal property.

B. THE COMMISSION AGREES:

1. The Commission shall actively managed timber within the trail corridor.

2. The Commission shall specify equipment access points for use during forestry and wildlife management activities in order for the County to accommodate its access needs.

3. The Commission shall coordinate all management activities that occur within or directly adjacent to the ATT corridor with the County and shall notify the County when management activities (timber sales, prescribed burning, etc.) require the trail to be closed.

4. The Commission shall provide an annual report to the County identifying tracts where prescribed burns or harvests that may affect trail usage are planned.

EXHIBIT B

5. The Commission shall be responsible for restoring the contours of and stabilizing areas within the trail corridor disturbed by its management activities.

6. The Commission shall provide the County advance notice prior to commencing prescribed burning activities and timber harvest operations.

C. IT IS MUTUALLY AGREED:

1. That trees, shrubs, or vines shall not be cut, mutilated or destroyed, nor shall logs, trees or wood be removed, nor berries, mushrooms, fruit, or nuts of any kind be gathered or removed, except by the Commission, or its authorized agent.

2. That no clause of this MOA shall be construed to imply a limitation to the function of the area for wildlife management and recreational hunting.

3. That properly licensed game land hunters shall not be subject to any special fees or license, to use the trail.

4. That hunters may use the trail for hunting access during hunting seasons under the following circumstances:

a. The trail and associated facilities on Federal property shall be utilized for access to the surrounding Gameland areas open to hunting only by hunters licensed in the State of North Carolina.

b. That hunters licensed in the State of North Carolina may carry unloaded weapons on the trail areas and that all persons carrying weapons on the trail must comply with all applicable laws and rules governing the type, use, and possession of weapons.

c. That firing weapons within or across the fenced trail corridor is prohibited.

5. That if trail usage guidelines are not followed by users as determined by the Commission and the COE, then this MOA may be terminated in accordance with Condition 12 of the License Agreement.

6. That failure by the County to comply with this MOA shall be grounds for the District Engineer to terminate this and any other license, or lease agreement with the County pertaining to the American Tobacco Trail and its associated facilities. Termination will be at no cost or liability to the United States or to the State of North Carolina.

D. IT IS HEREBY FURTHER AGREED:

That this MOA shall become effective upon it's signing by the parties hereto, and shall continue in full force effective for the term of the License Agreement between the State of North Carolina Department of Transportation and Chatham County, North Carolina for use of that portion of an inactive rail corridor located on Federal lands at B. Everett Jordan Lake Project.

IN WITNESS WHEREOF, this MOA has been signed in duplicate in the name of the North Carolina Wildlife Resources Commission by Charles R. Fullwood, Executive Director, in the name of the County of Chatham, North Carolina by Tommy Emerson, Chairman, Chatham County Board of Commissioners, and for the United States Army Corps of Engineers, Wilmington District by Steve Brown Operations Manager, Falls/Jordan Lake Projects.

NORTH CAROLINA WILDLIFE RESOURCES COMMISSION

By: Charles R. Fullwood
Charles R. Fullwood, Executive Director

Date: 10/16/03

COUNTY OF CHATHAM, NORTH CAROLINA

By: Tommy Emerson
Tommy Emerson, Chairman,
Chatham County Board of Commissioners

Date: 8-18-03

UNITED STATES ARMY CORPS OF ENGINEERS, WILMINGTON

By: Steve Brown
Steve Brown, Operations Manager
Falls/Jordan Lake Projects

Date: 10/22/03

5/1/06

RECEIVED

DEC 29 2006

ON HIGHWAYS
PDE/OTFC: NATL ENVIRONMENT

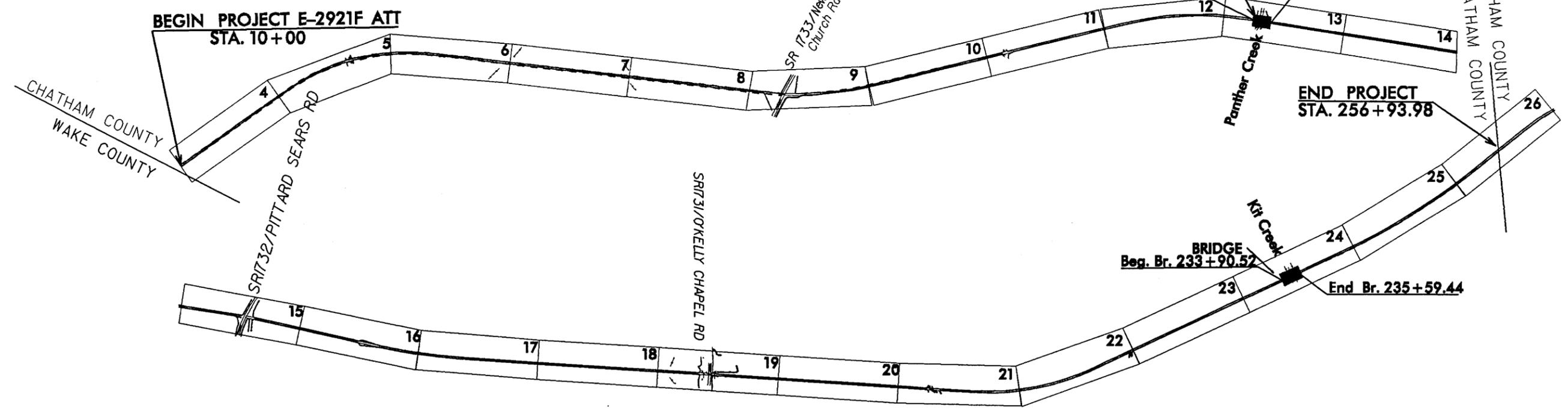
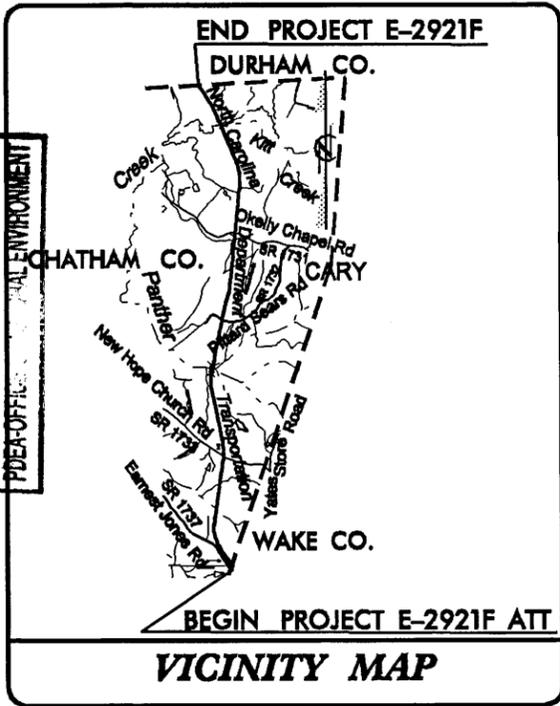
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	E-2921F	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

STATE OF NORTH CAROLINA
DIVISION OF BICYCLE AND
PEDESTRIAN TRANSPORTATION

CHATHAM COUNTY

LOCATION: FROM WAKE-CHATHAM COUNTY LINE TO
CHATHAM-DURHAM COUNTY LINE

TYPE OF WORK: GRADING, PAVING, DRAINAGE & SIGNAGE

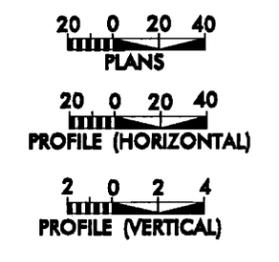


INCOMPLETE PLANS
DO NOT USE FOR B/C/V ASSUMPTION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INDEX OF SHEETS

SHEET 1	TITLE SHEET	SHEETS 4 THRU 26	PLAN & PROFILE SHEETS
SHEET 1-A	SYMBOL SHEET	SHEETS TCP-1 THRU TCP-2	PAVEMENT MARKING PLANS
SHEET 2	PAVEMENT SCHEDULE TYPICAL SECTION	SHEET SIGN-1	SIGNING PLANS
SHEET 2-A	BOLLARD DETAILS TRAIL CONNECTION DETAIL SIGN PLACEMENT DETAIL	SHEETS EC-1 THRU EC-	EROSION CONTROL PLANS
SHEET 3	PIPE SUMMARY EARTHWORK SUMMARY GENERAL NOTES LIST OF STANDARDS	SHEETS X-1 THRU X-199	CROSS-SECTIONS
		SHEETS S-1 THRU S-	STRUCTURE PLANS

GRAPHIC SCALES



HYDRAULICS ENGINEER
SIGNATURE: _____ P.E.
BICYCLE FACILITY
DESIGN ENGINEER
SIGNATURE: _____ P.E.

PROJECT LENGTH
TRAIL: 24693.98 FEET /4.68 MILES
DESIGN DATA
V = 20 MPH
2006 SPECIFICATIONS

Division of
Bicycle &
Pedestrian
Transportation
THOMAS P. NORMAN
DIRECTOR

PROJECT: E-2921F ATT

2/21/06 2:06:08 PM
ve2921f_att.tsh.dgn
ATT: 2921F ATT

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

State Line	-----
County Line	-----
Township Line	-----
City Line	-----
Reservation Line	-----
Property Line	-----
Existing Iron Pin	○
Property Corner	-----
Property Monument	□
Parcel/Sequence Number	②③
Existing Fence Line	-----
Proposed Woven Wire Fence	-----
Proposed Chain Link Fence	-----
Proposed Barbed Wire Fence	-----
Existing Wetland Boundary	-----
Proposed Wetland Boundary	-----
Existing High Quality Wetland Boundary	-----
Existing Endangered Animal Boundary	-----
Existing Endangered Plant Boundary	-----

BUILDINGS AND OTHER CULTURE:

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

HYDROLOGY:

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

RAILROADS:

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

RIGHT OF WAY:

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

ROADS AND RELATED FEATURES:

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

VEGETATION:

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

EXISTING STRUCTURES:

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

UTILITIES:

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

TELEPHONE:

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

WATER:

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

TV:

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

GAS:

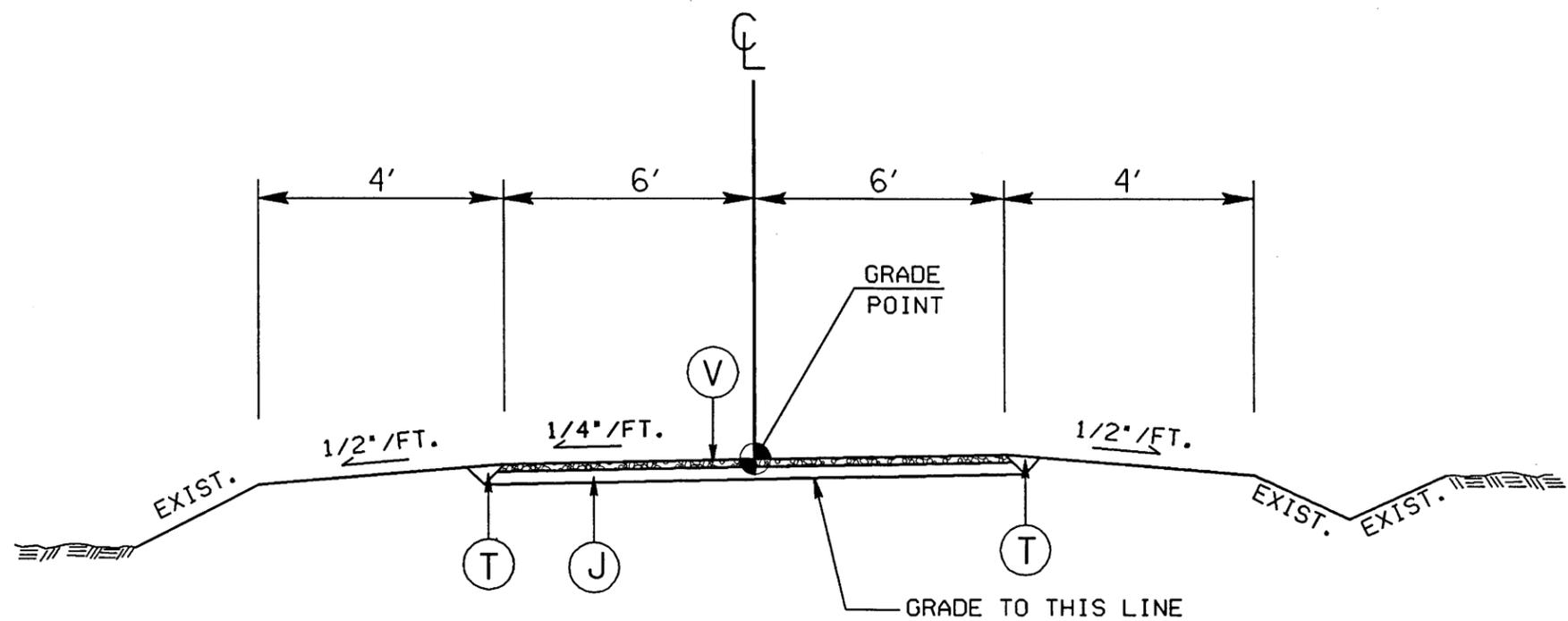
Gas Valve	◆
Gas Meter	⊕
Recorded UG Gas Line	-----
Designated UG Gas Line (S.U.E.®)	-----
Above Ground Gas Line	-----

SANITARY SEWER:

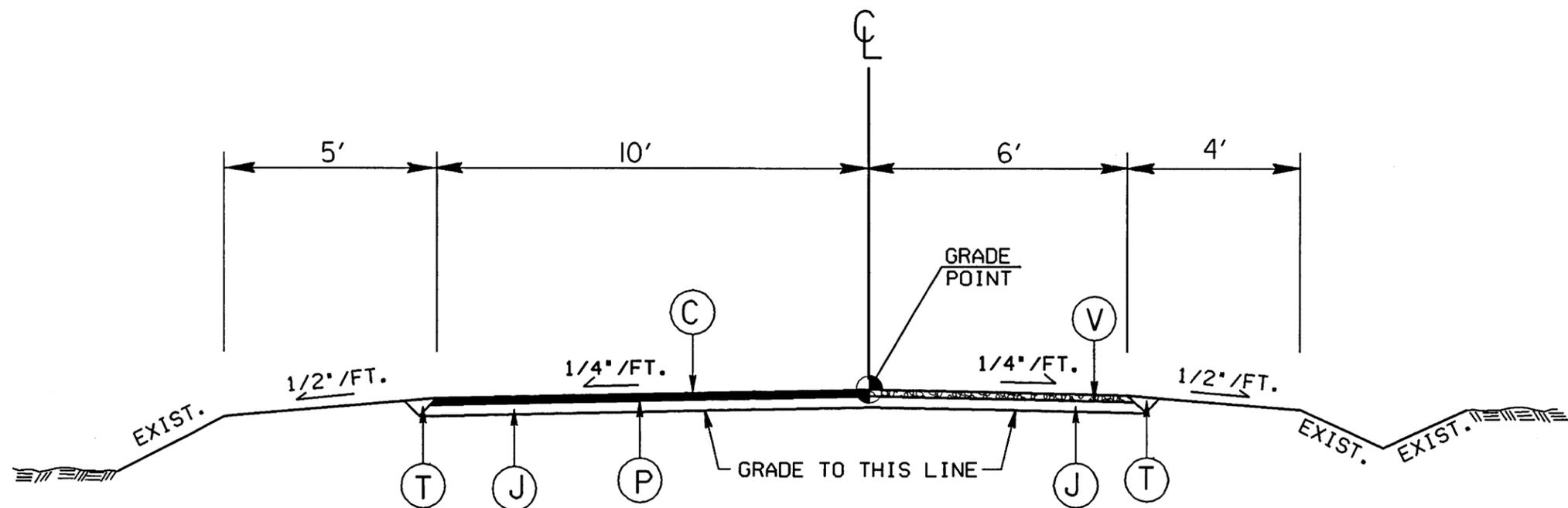
Sanitary Sewer Manhole	⊕
Sanitary Sewer Cleanout	⊕
UG Sanitary Sewer Line	-----
Above Ground Sanitary Sewer	-----
Recorded SS Forced Main Line	-----
Designated SS Forced Main Line (S.U.E.®)	-----

MISCELLANEOUS:

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



TYPICAL SECTION NO. 1



TYPICAL SECTION NO. 2

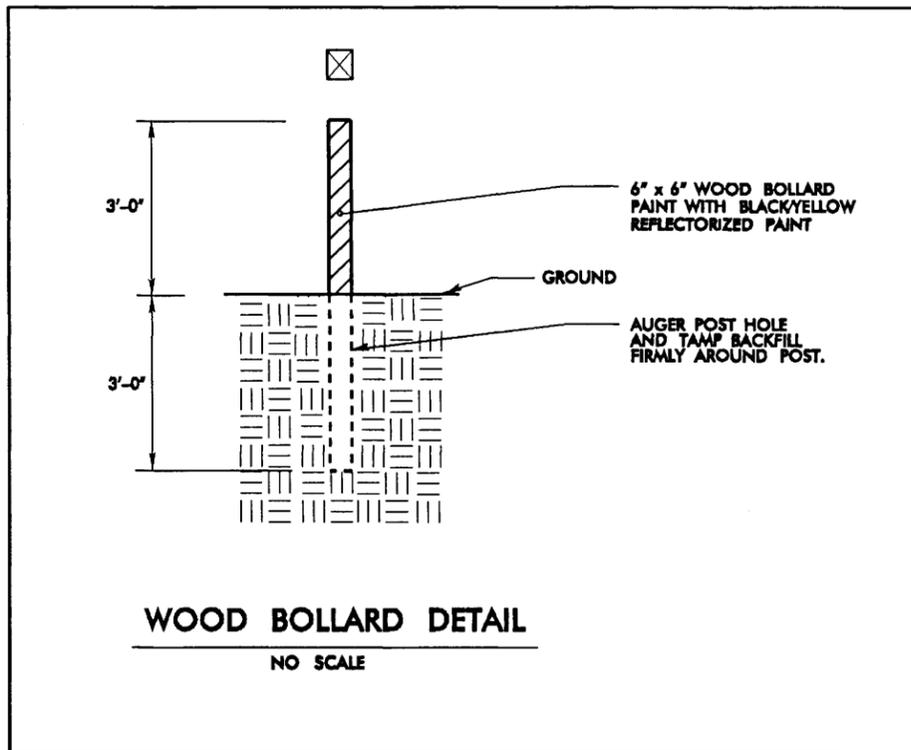
PAVEMENT SCHEDULE	
C	PROP. APPROX. 2" ASPHALT CONCRETE SURFACE COURSE, TYPE SF 9.5A, AT AN AVERAGE RATE OF 112 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
J	PROP. 6" AGGREGATE BASE COURSE.
P	PRIME COAT AT THE RATE OF 0.35 GAL. PER SQ. YD.
T	EARTH MATERIAL
V	2" GRANITE SCREENING

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

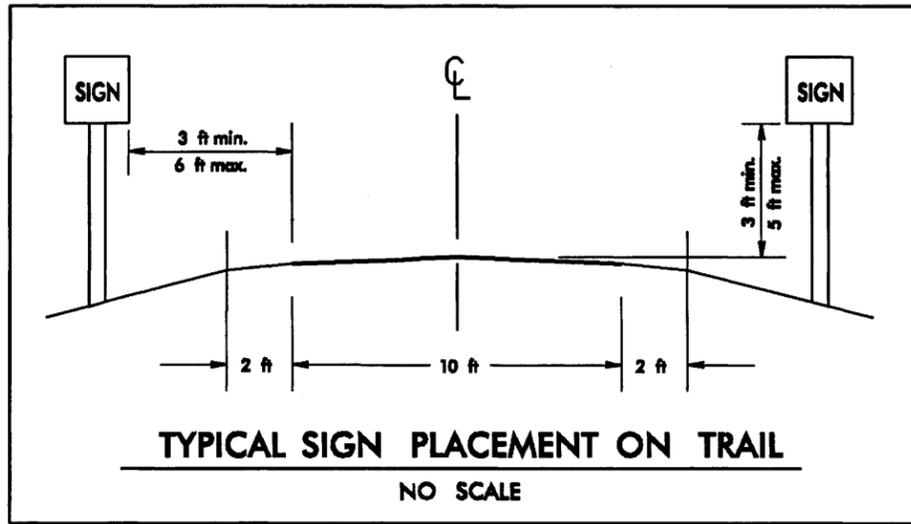
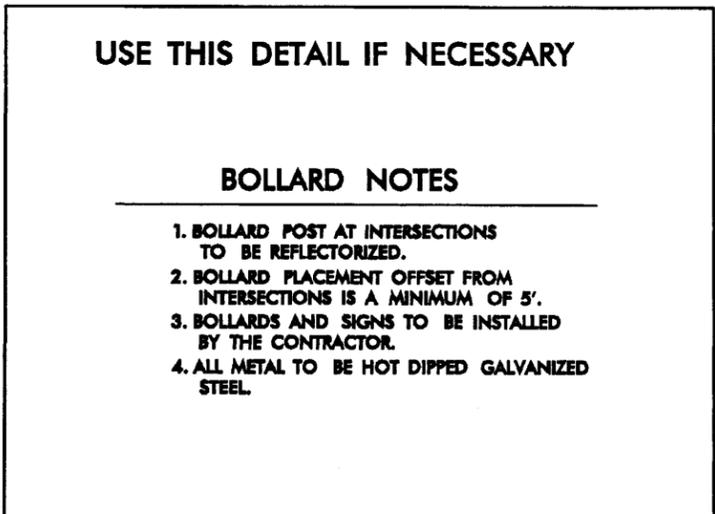
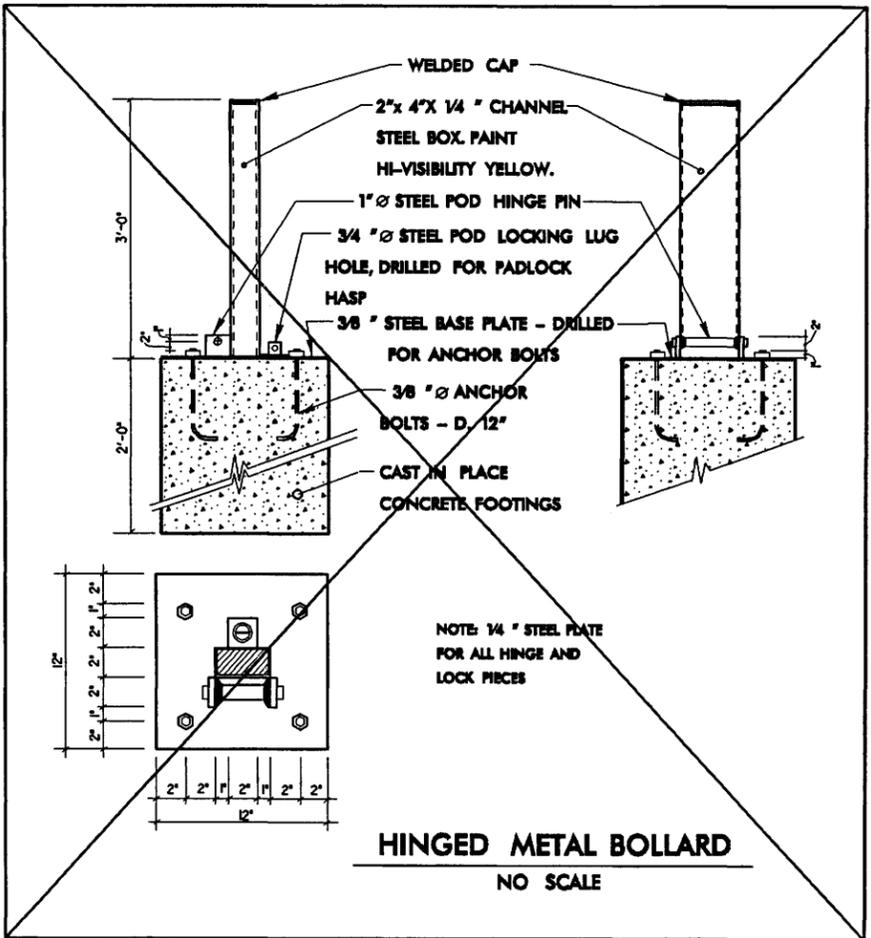
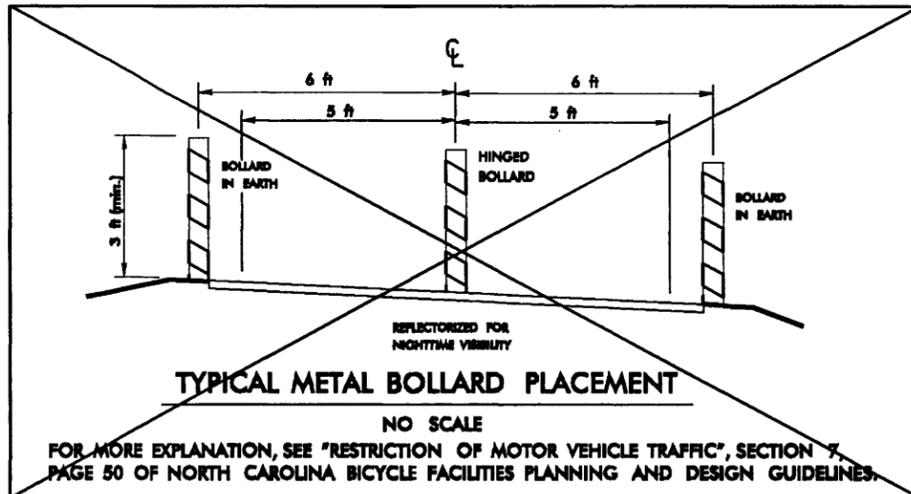
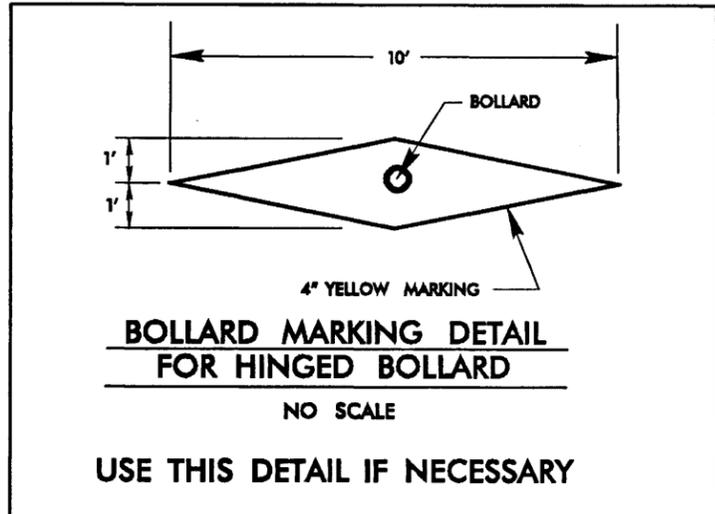
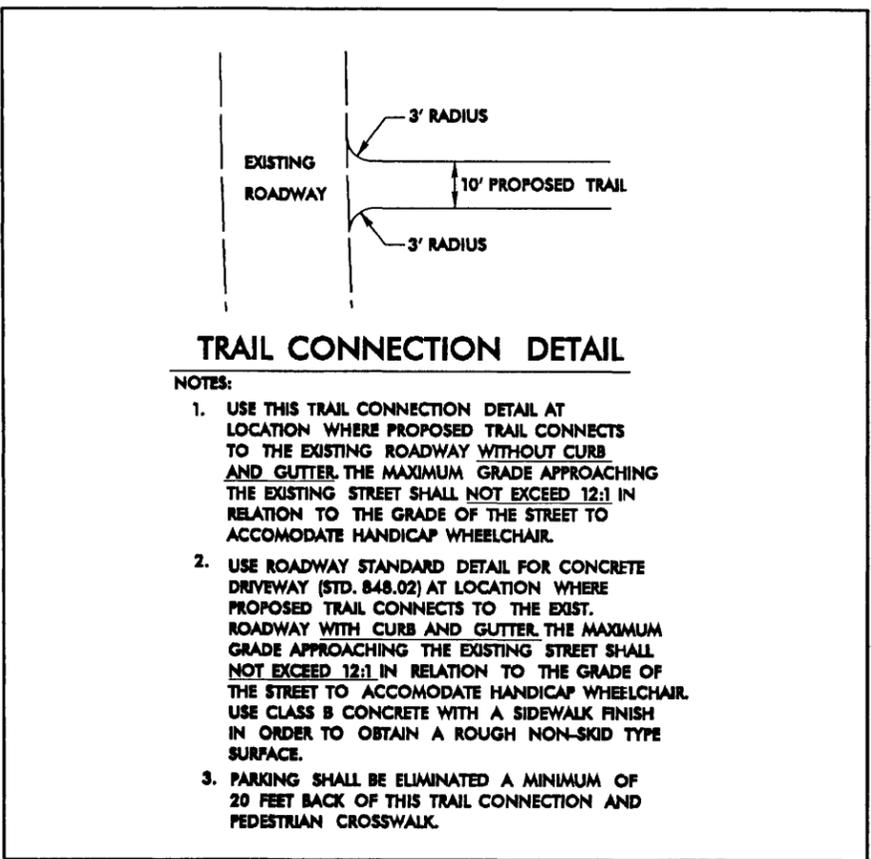
**USE TYPICAL SECTION NO. 1
AT THE FOLLOWING LOCATIONS
FROM STA. 10+00 TO STA. 68+00**

**USE TYPICAL SECTION NO. 2
AT THE FOLLOWING LOCATIONS
FROM STA. 68+22 TO STA. 111+68
FROM STA. 113+24 TO STA. 136+48
FROM STA. 136+68 TO STA. 179+40
FROM STA. 179+60 TO STA. 233+90
FROM STA. 235+60 TO STA. 256+94**

2-DEC-2006 08:41 AM C:\PROJECTS\2921F\2921F.dwg



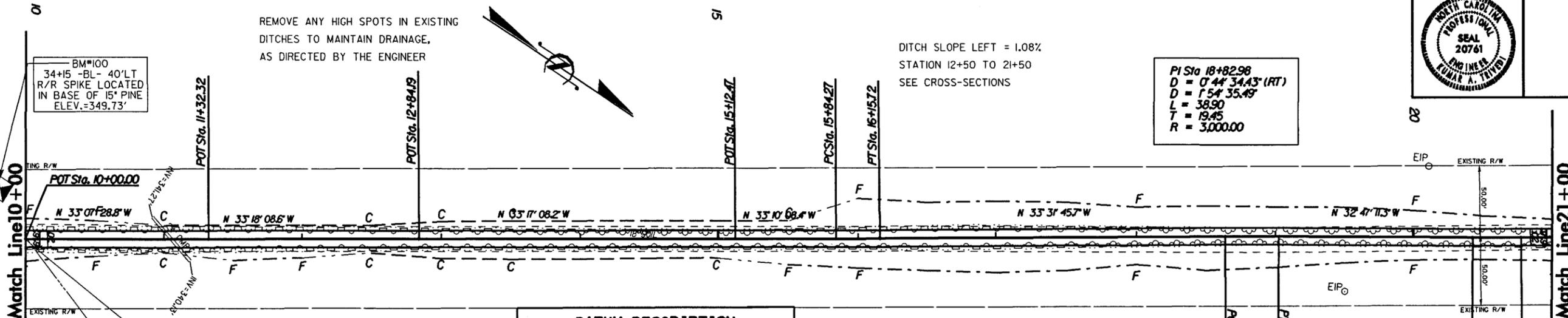
WOOD BOLLARD DETAIL
NO SCALE



21-055-21005 0044
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8/17/99

PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 4
BY SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
	



BEGIN PROJECT E-2921F ATT STATION 10+00.00

CHATHAM COUNTY
WAKE COUNTY

4" HIGH SAFETY FENCE (CHAINLINK FENCE)

- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
- ALL SAFETY FENCES TO BE INSTALLED AND SHALL NOT HAVE ANY GAPS
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 9000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 730 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
- CONTRACTOR WILL BE PAID FOR ACTUAL QUANTITY INSTALLED

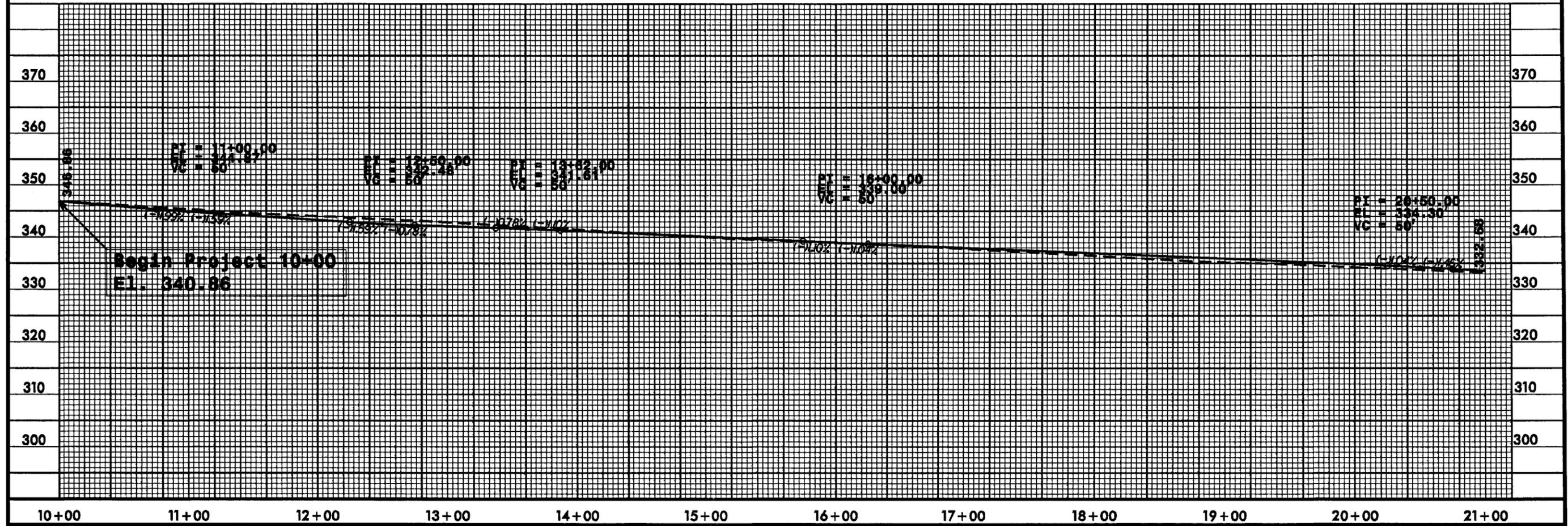
DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "E2921F-4" WITH NAD 1983/2001(CORS) STATE PLANE GRID COORDINATES OF NORTHING: 752276.420(ft) EASTING: 2021357.6140(ft) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99991306 THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "E2921F-4" TO -L- STATION 10+00.00 IS 5551.9958 N 4° 29' 25.93" W ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

PI Sta 15+99.99
 $\Delta = 0' 21' 37.27" (LT)$
 $D = 1' 08' 45.30"$
 $L = 31.45$
 $T = 15.72$
 $R = 5,000.00$

PI Sta 20+59.96
 $\Delta = 0' 40' 25.98" (LT)$
 $D = 1' 54' 35.49"$
 $L = 35.28$
 $T = 17.64$
 $R = 3,000.00$

DITCH SLOPE RIGHT = 1.03%
 STATION 12+50 TO 21+50
 SEE CROSS-SECTIONS



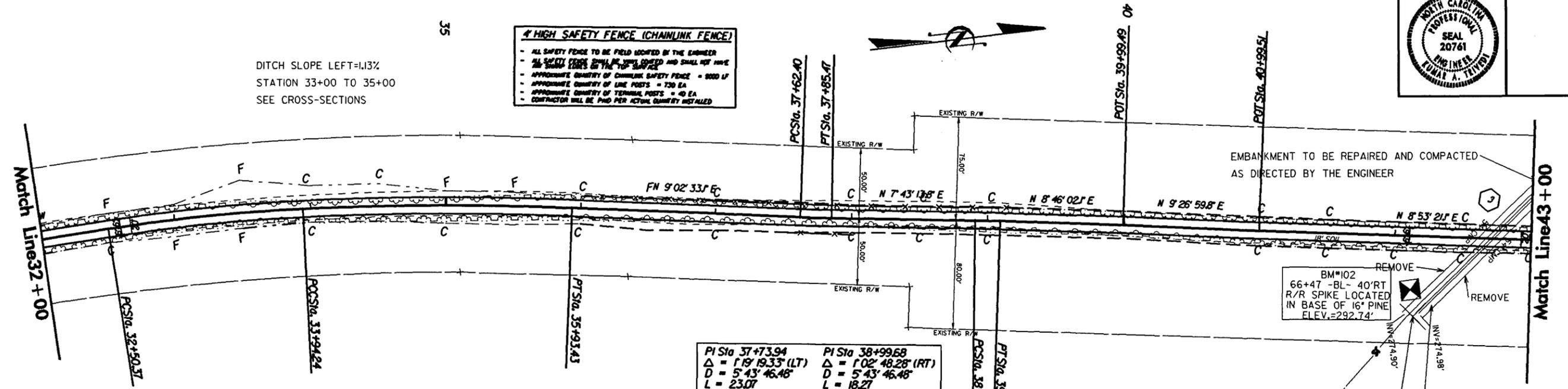
8/17/99

PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 6
DW SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
	

DITCH SLOPE LEFT=1:1.3%
STATION 33+00 TO 35+00
SEE CROSS-SECTIONS

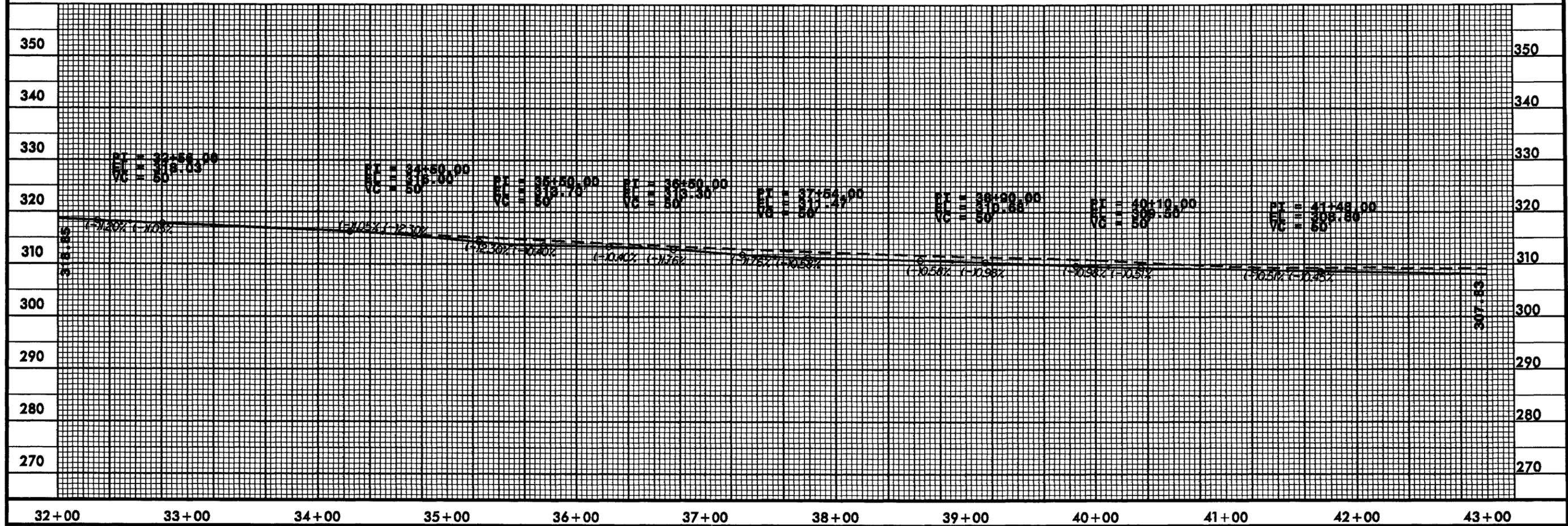
4' HIGH SAFETY FENCE (CHAINLINK FENCE)

- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
- ALL SAFETY FENCE SHALL BE INSTALLED AND SHALL NOT HAVE
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 9000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 750 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
- CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED



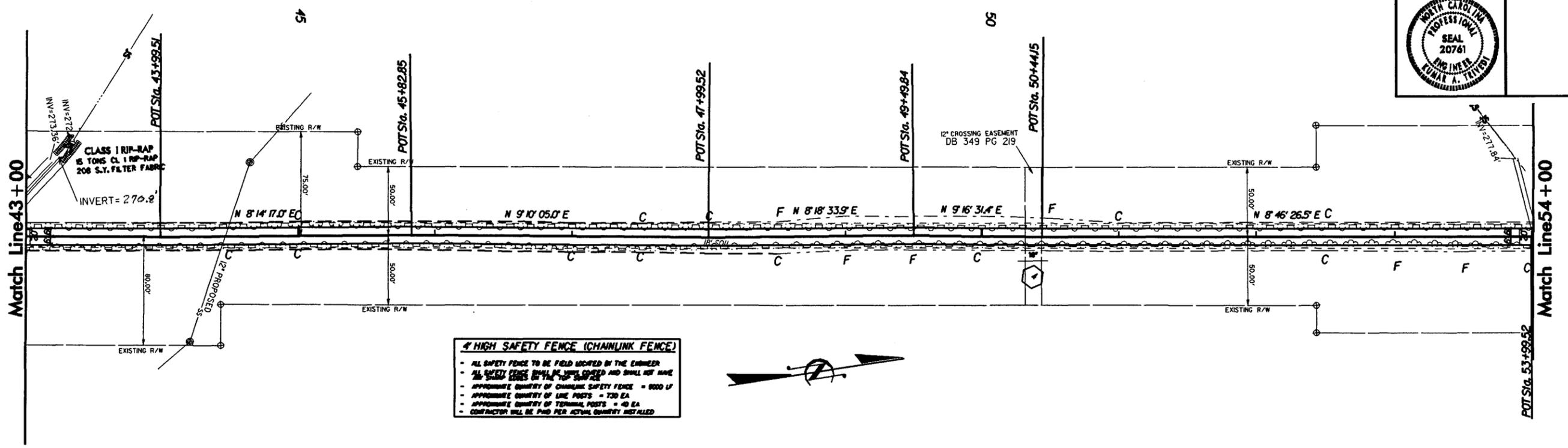
PI Sta 33+22.37	PI Sta 34+93.90
Δ = 6° 07' 46.25" (RT)	Δ = 5° 01' 56.32" (RT)
D = 4' 15' 38.4"	D = 2' 34' 35.58"
L = 143.86	L = 199.19
T = 72.00	T = 99.66
R = 1,344.76	R = 2,223.74

PI Sta 37+73.94	PI Sta 38+99.68
Δ = 1° 19' 19.33" (LT)	Δ = 1° 02' 48.28" (RT)
D = 5' 43' 46.48"	D = 5' 43' 46.48"
L = 23.07	L = 18.27
T = 11.54	T = 9.13
R = 1,000.00	R = 1,000.00



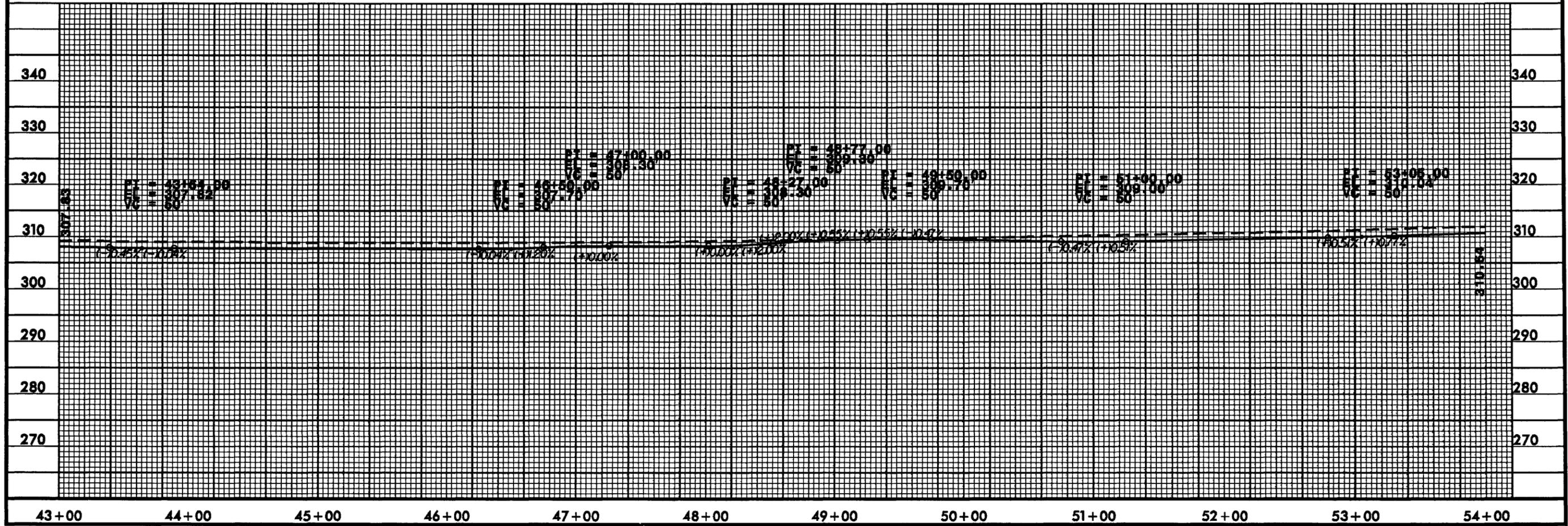
8/17/99

PROJECT REFERENCE NO. E2921E ATT	SHEET NO. 7
BY SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
	



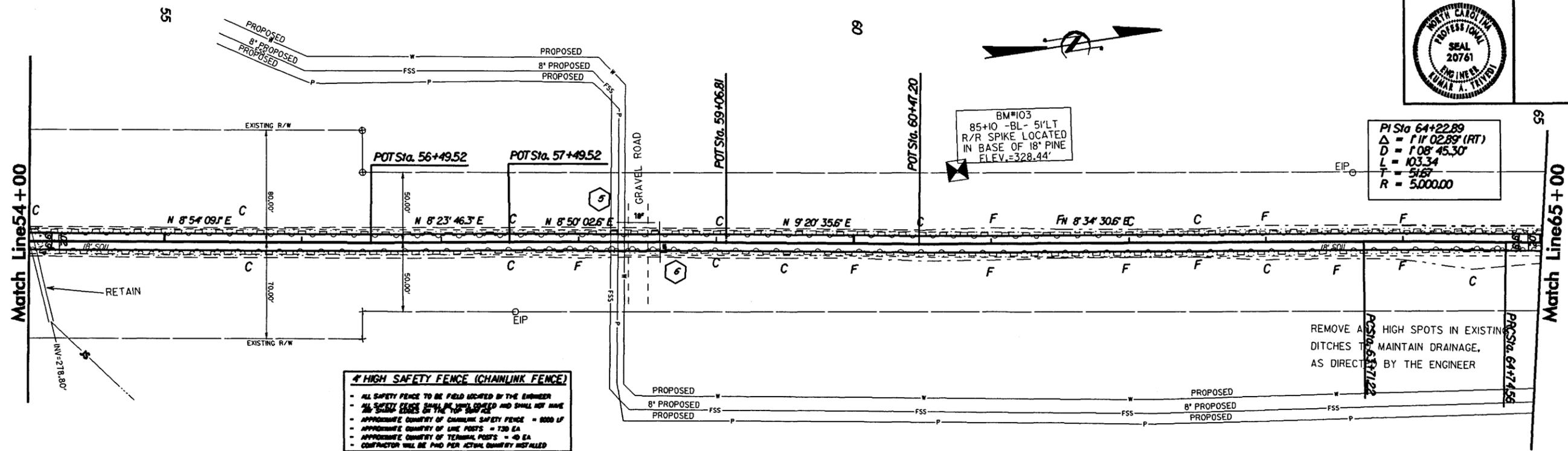
4' HIGH SAFETY FENCE (CHAINLINK FENCE)

- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER.
- ALL SAFETY FENCE SHALL BE VERTICALLY CURVED AND SHALL NOT HAVE ANY SHARP KINKS OR TYPICAL TOP SURFACE.
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 9000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 730 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
- CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED



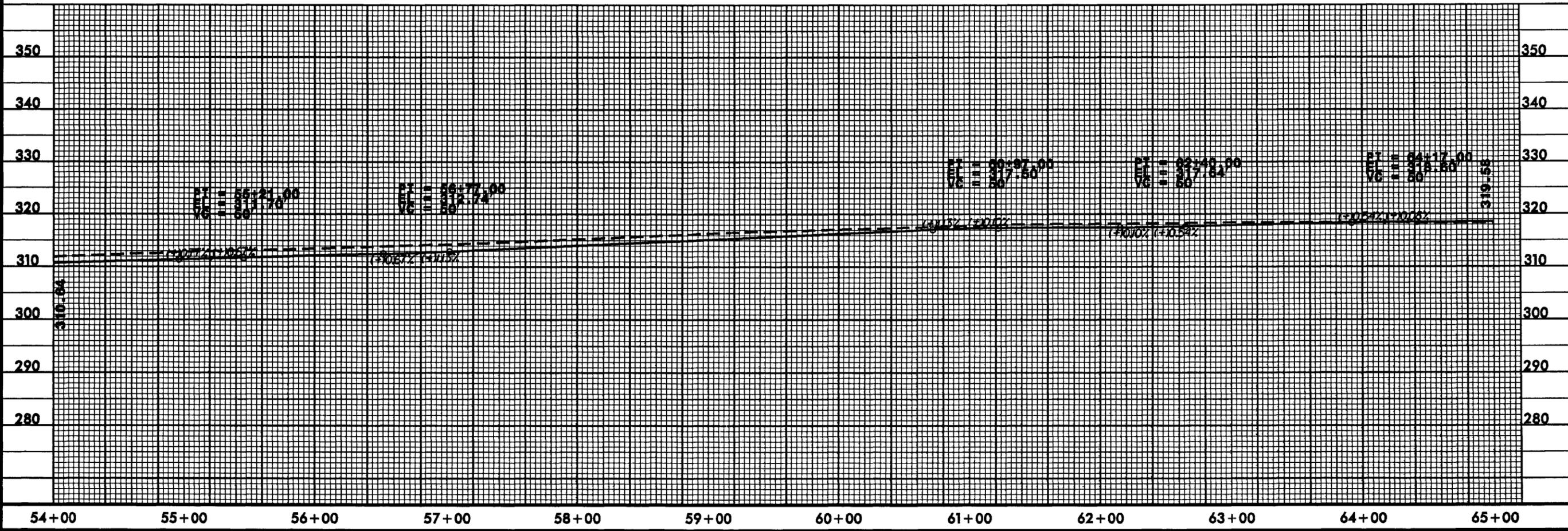
8/17/99

PROJECT REFERENCE NO. E2921F ATT		SHEET NO. 8
BY SHEET NO.		
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER	
		



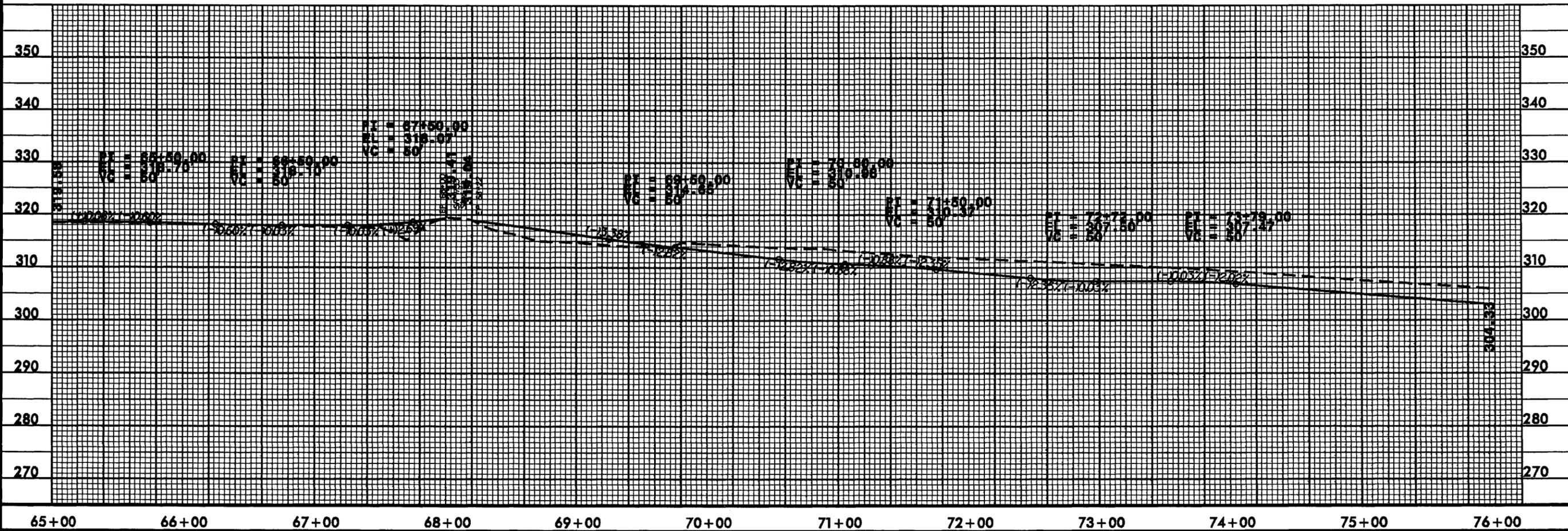
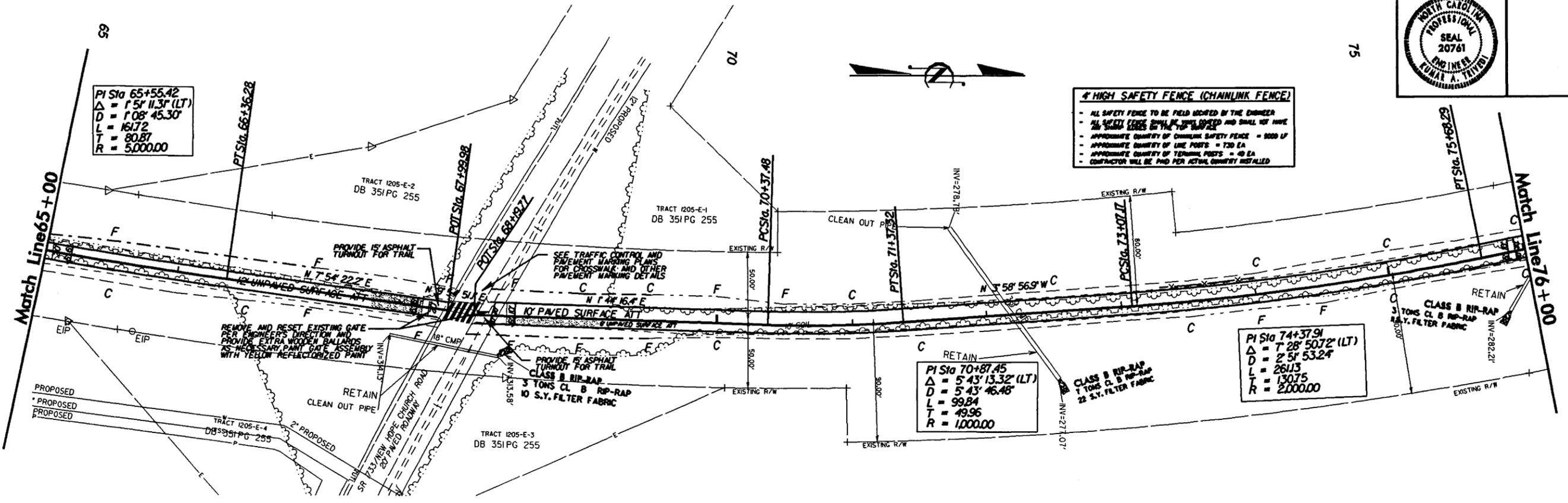
4' HIGH SAFETY FENCE (CHAINLINK FENCE)

- ALL SAFETY FENCE TO BE FIELD CHECKED BY THE ENGINEER
- ALL SAFETY FENCE SHALL BE PROPERLY INSTALLED AND SHALL NOT HAVE ANY SAGS OR SLACKS IN THE LINE
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 8000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 130 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
- CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED



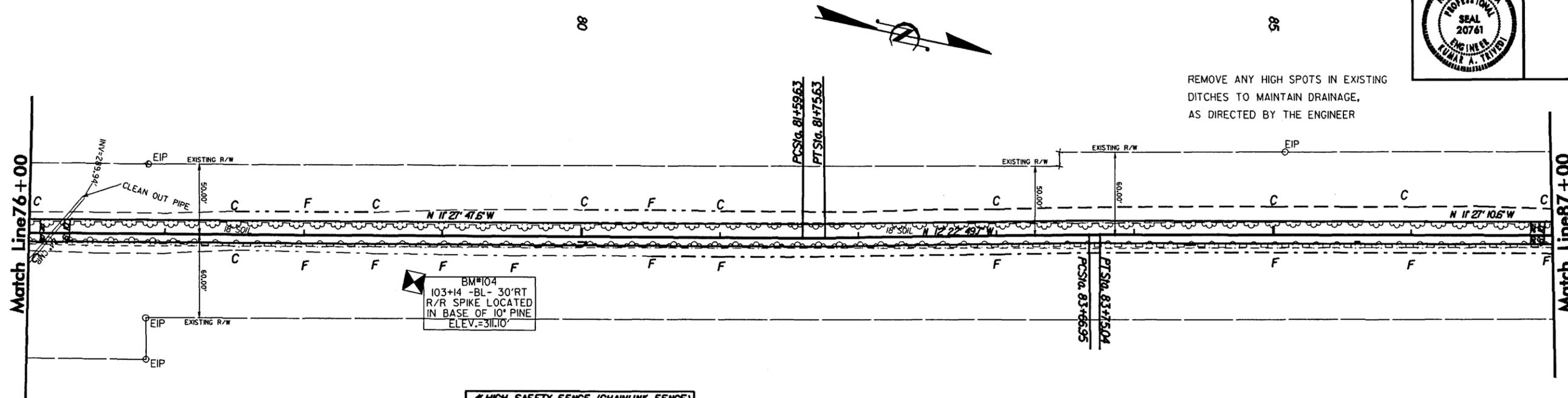
8/17/98

PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 9
RW SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
	



8/17/99

PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 10
DW/ SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
	



4' HIGH SAFETY FENCE (CHAINLINK FENCE)

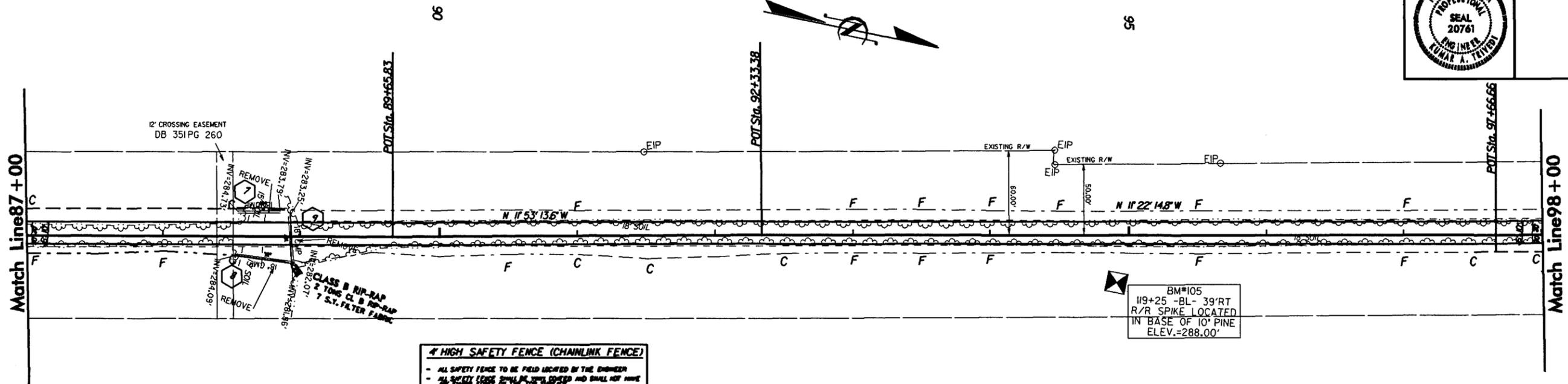
- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
- ALL SAFETY FENCE SHALL BE GALV. COATED AND SHALL NOT HAVE ANY SPURS OR POINTS ON THE TOP SURFACE
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 8000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 730 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
- CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED

PI Sta 81+67.63 $\Delta = 0^{\circ} 55' 02.05" (LT)$ $D = 5^{\circ} 43' 46.48"$ $L = 16.01$ $T = 8.00$ $R = 1000.00$	PI Sta 83+70.99 $\Delta = 0^{\circ} 55' 39.03" (RT)$ $D = 11^{\circ} 27' 32.96"$ $L = 8.09$ $T = 4.05$ $R = 500.00$
--	---

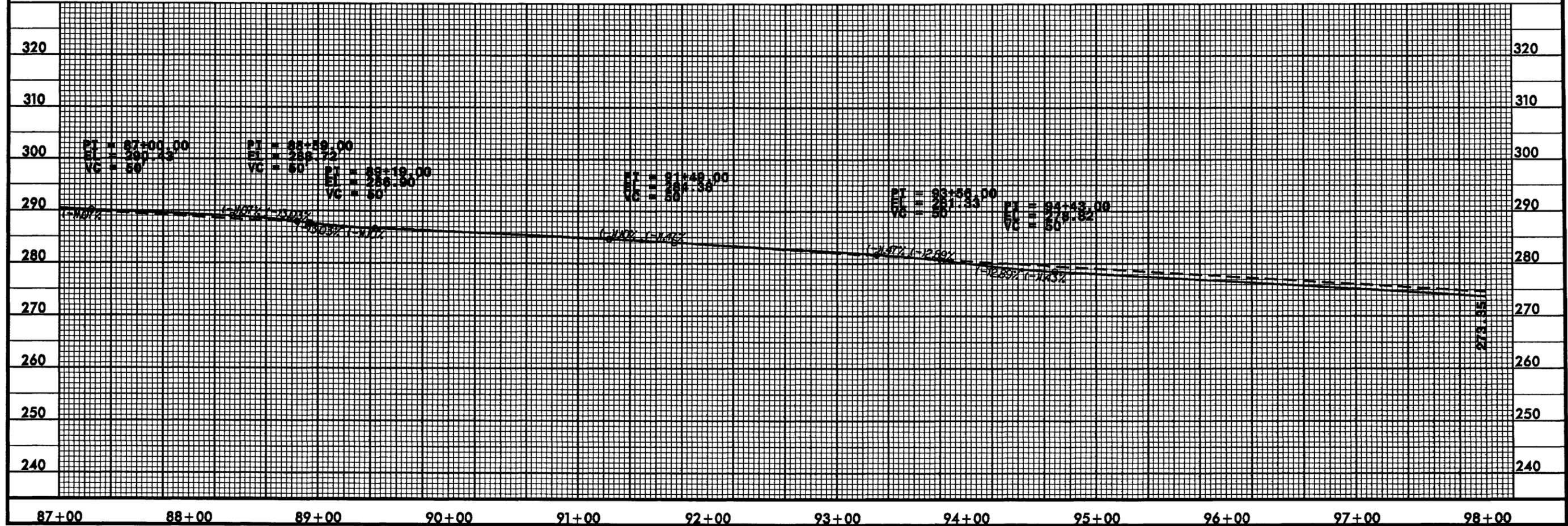


8/17/99

PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 11
BY SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
	

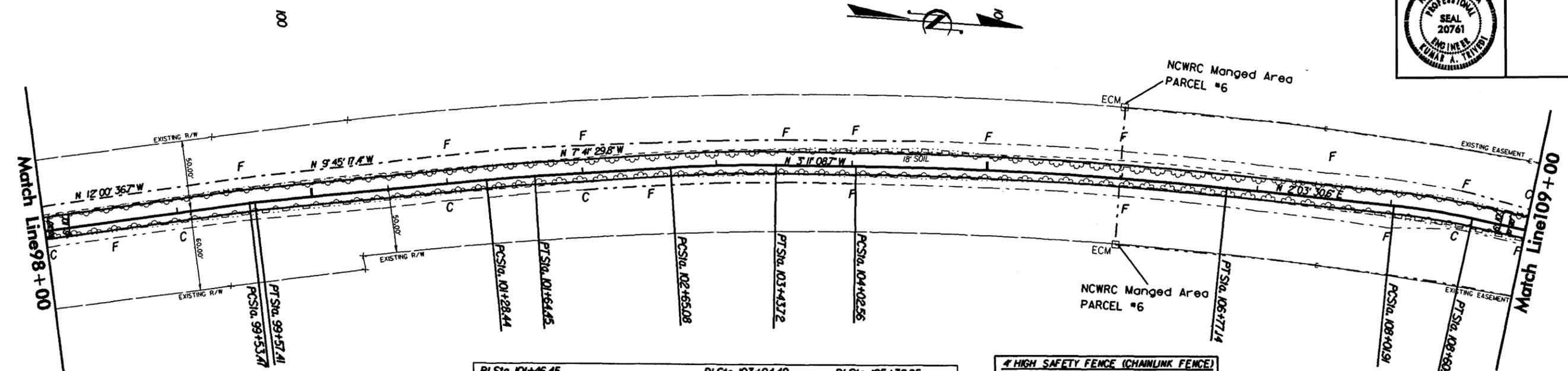


- 4' HIGH SAFETY FENCE (CHAINLINK FENCE)**
- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
 - ALL SAFETY FENCE SHALL BE 30" HIGH AND SHALL NOT HAVE 2" SHARP EDGES ON THE TOP SURFACE
 - APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE - 9000 LF
 - APPROXIMATE QUANTITY OF LINE POSTS - 730 EA
 - APPROXIMATE QUANTITY OF TERMINAL POSTS - 40 EA
 - CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED



8/17/99

PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 12
BY SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER

PI Sta 99+55.44
 $\Delta = 2' 15'' 19.32''$ (RT)
 $D = 5' 17'' 44.81''$
 $L = 3.94$
 $T = 1.97$
 $R = 100.00$

PI Sta 101+46.45
 $\Delta = 2' 03'' 47.55''$ (RT)
 $D = 5' 43'' 46.48''$
 $L = 36.01$
 $T = 18.01$
 $R = 1000.00$

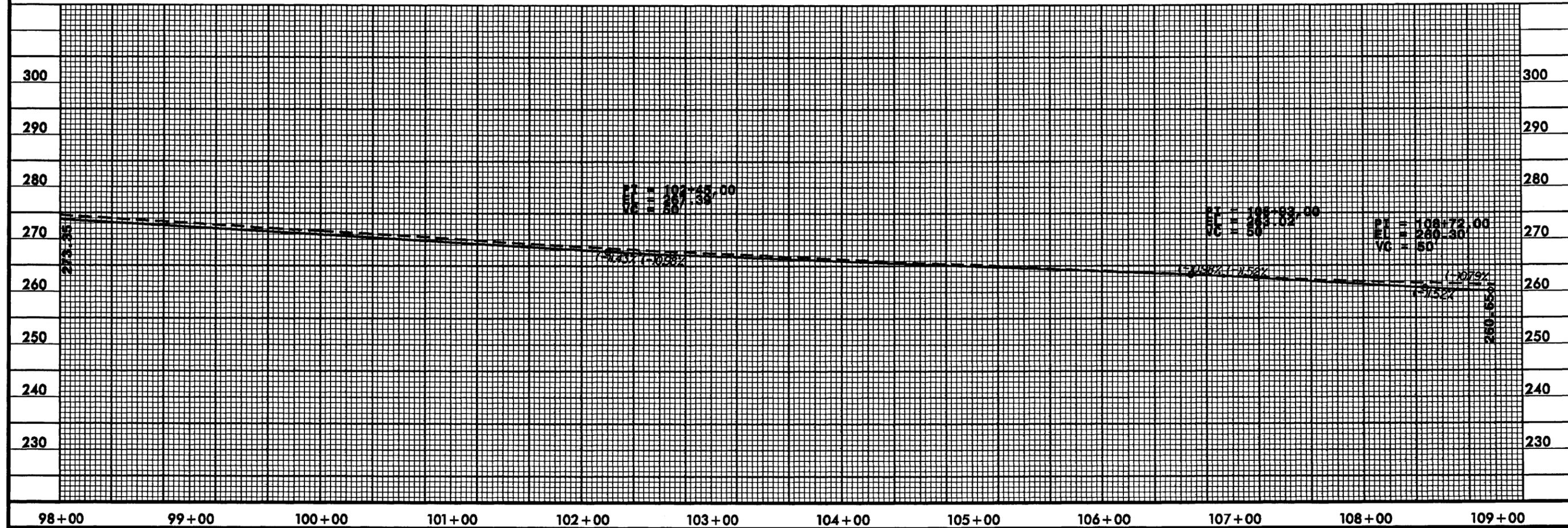
PI Sta 103+04.42
 $\Delta = 4' 30'' 21.14''$ (RT)
 $D = 5' 43'' 46.48''$
 $L = 78.64$
 $T = 39.34$
 $R = 1000.00$

PI Sta 105+39.95
 $\Delta = 5' 14'' 39.29''$ (RT)
 $D = 1' 54'' 35.49''$
 $L = 27.459$
 $T = 137.39$
 $R = 3000.00$

4' HIGH SAFETY FENCE (CHAINLINK FENCE)

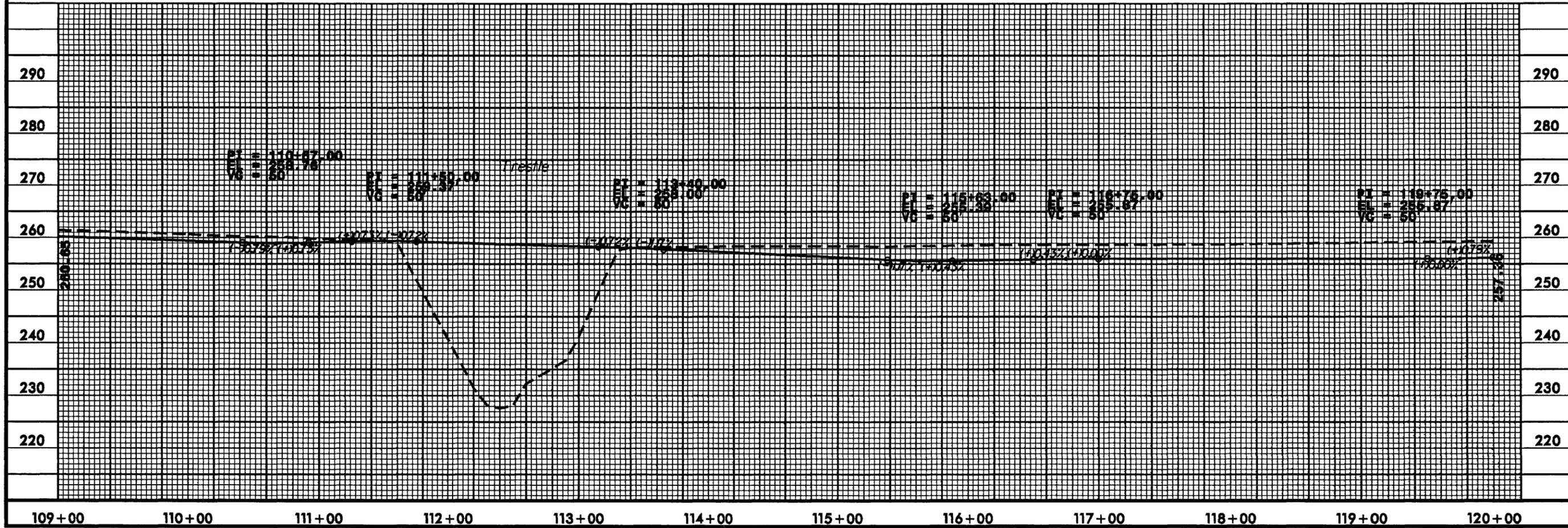
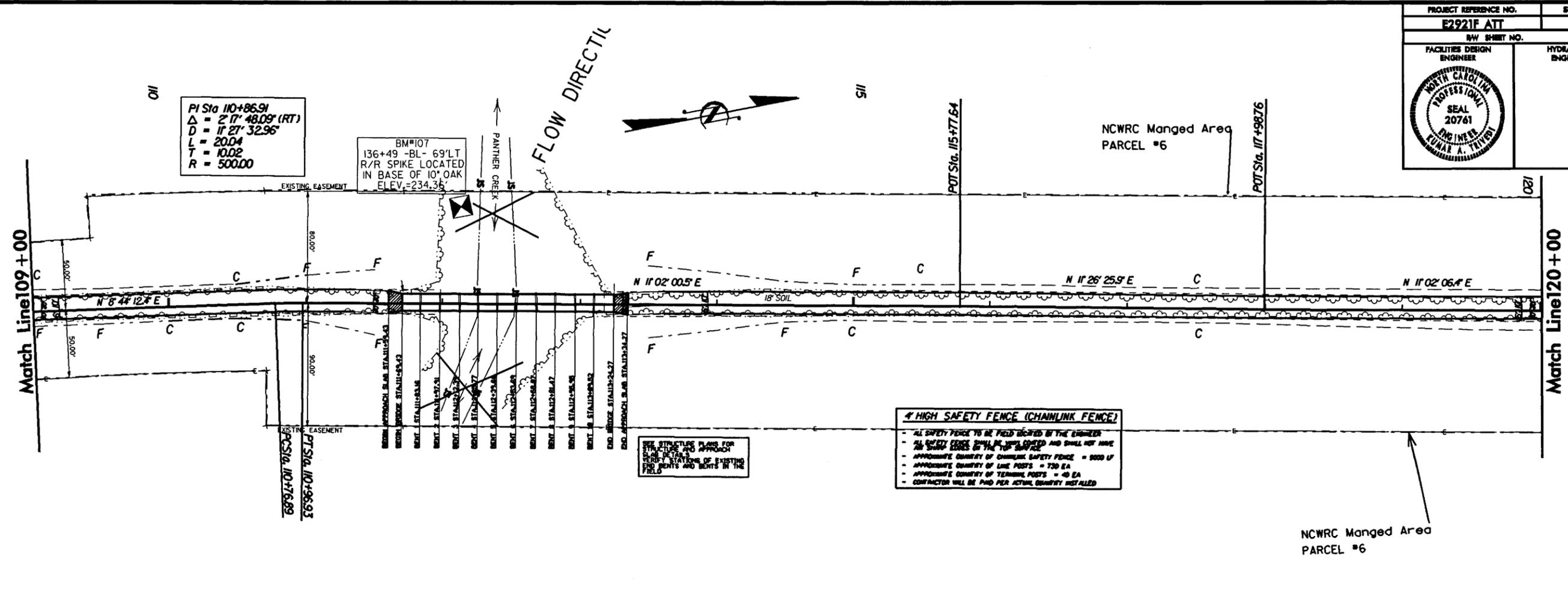
- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
- ALL SAFETY EDGES SHALL BE 10' WIDE AND SHALL NOT HAVE
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 8000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 130 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
- CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED

PI Sta 108+31.08
 $\Delta = 6' 40'' 41.81''$ (RT)
 $D = 1' 27'' 32.96''$
 $L = 58.28$
 $T = 29.17$
 $R = 500.00$



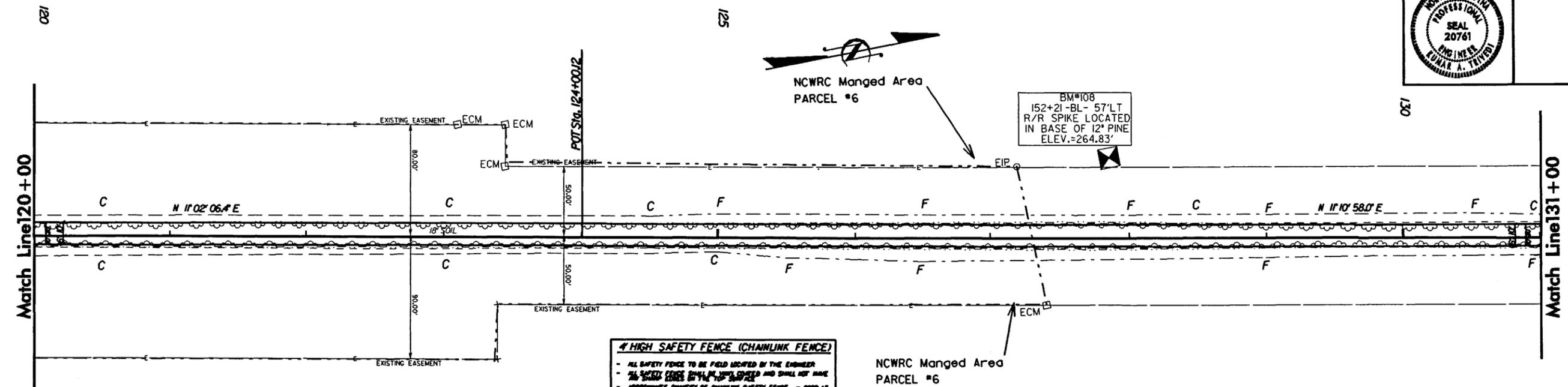
8/17/99

PROJECT REFERENCE NO. E2921F ATT		SHEET NO. 13	
BY SHEET NO.			
FACILITIES DESIGN ENGINEER		HYDRAULICS ENGINEER	
			

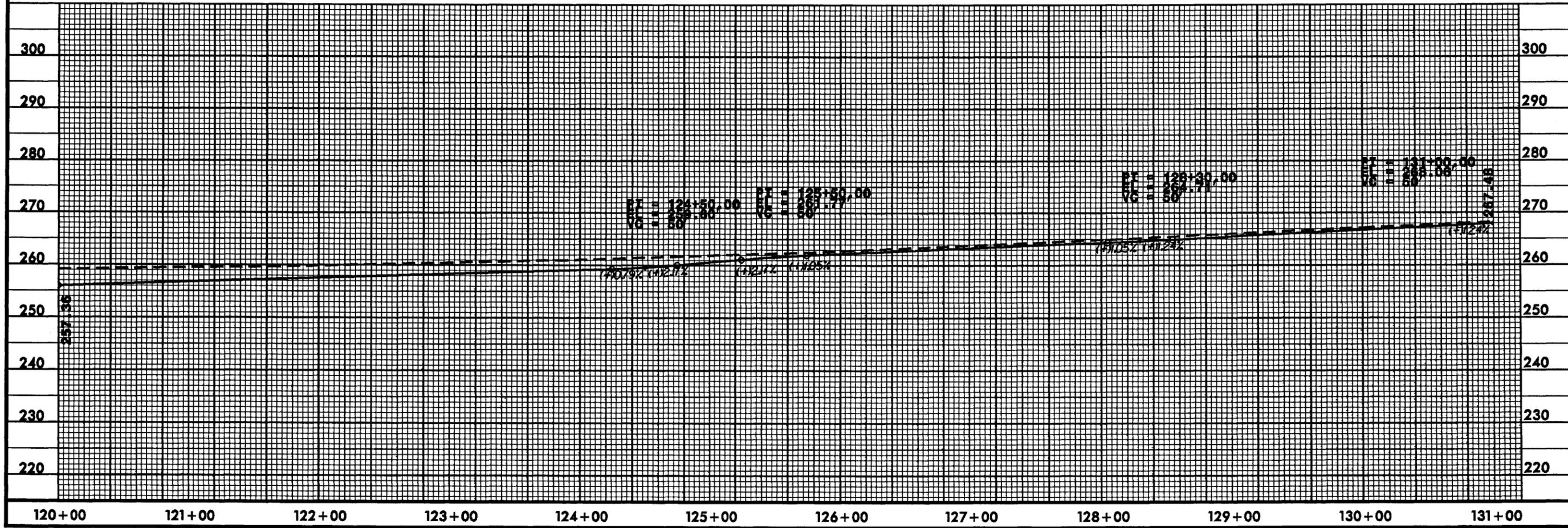


8/17/99

PROJECT REFERENCE NO. E2921F ATT		SHEET NO. 14	
RW SHEET NO.			
FACILITIES DESIGN ENGINEER		HYDRAULICS ENGINEER	
			

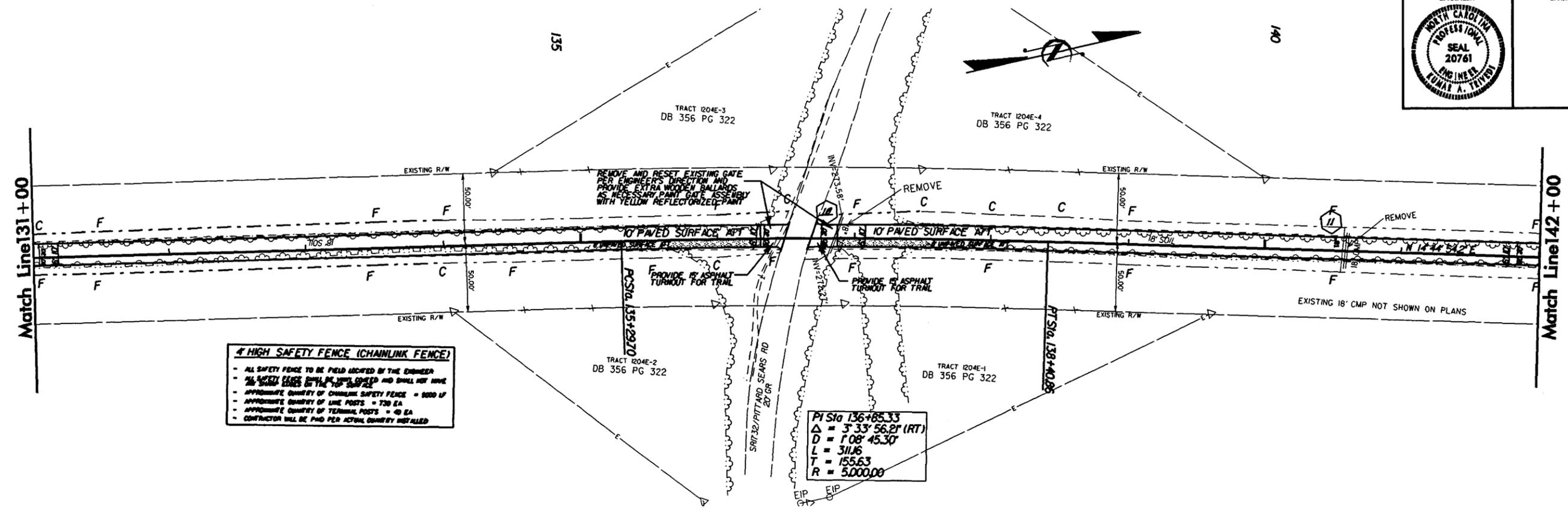


- #4 HIGH SAFETY FENCE (CHAINLINK FENCE)**
- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
 - ALL SAFETY FENCE SHALL BE VENT COVERED AND SHALL NOT HAVE THE SHARP EDGES ON THE TOP SURFACE
 - APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 6000 LF
 - APPROXIMATE QUANTITY OF LINE POSTS = 730 EA
 - APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
 - CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED



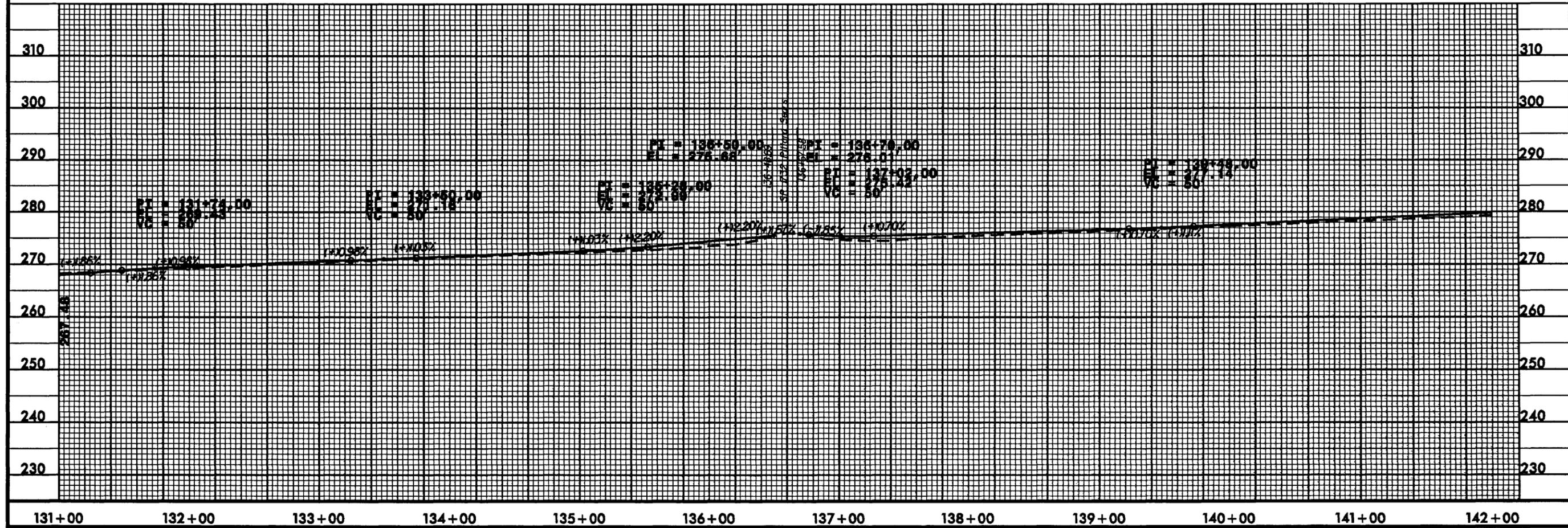
8/17/99

PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 15
BY SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
	



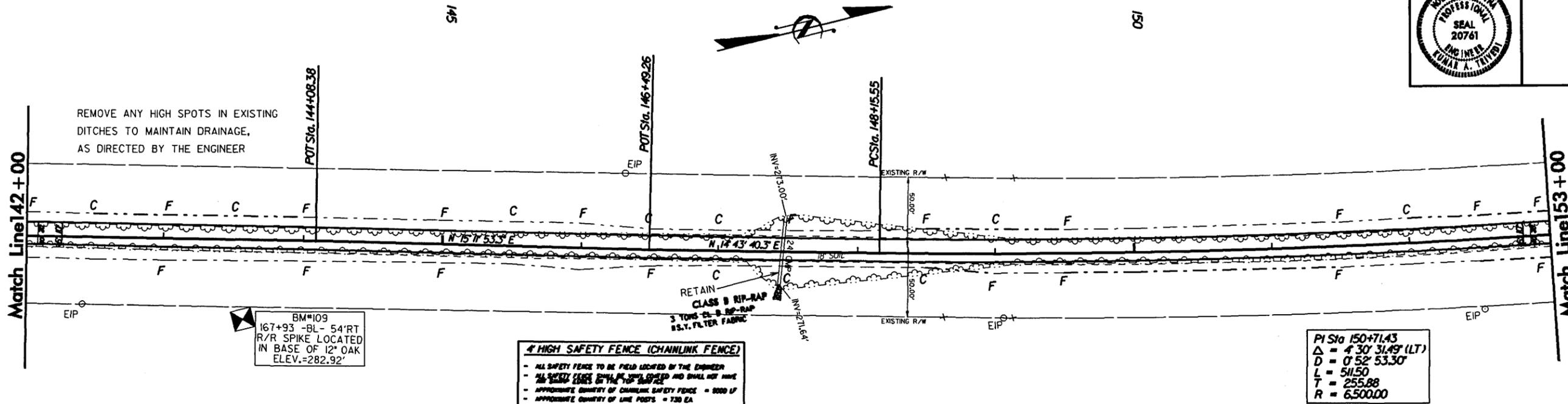
4' HIGH SAFETY FENCE (CHAINLINK FENCE)

- ALL SAFETY FENCE TO BE FIELD CHECKED BY THE ENGINEER
- ALL SAFETY FENCE SHALL BE WELL MAINTAINED AND SHALL NOT HAVE 75% SLACK IN THE TOP SURFACE
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 6000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 730 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 49 EA
- CONTRACTOR WILL BE PRD PER ACTUAL QUANTITY INSTALLED



8/17/99

PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 16
RW SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
 NORTH CAROLINA PROFESSIONAL SEAL 20761 ENGINEER KUMAR A. THIRUV	

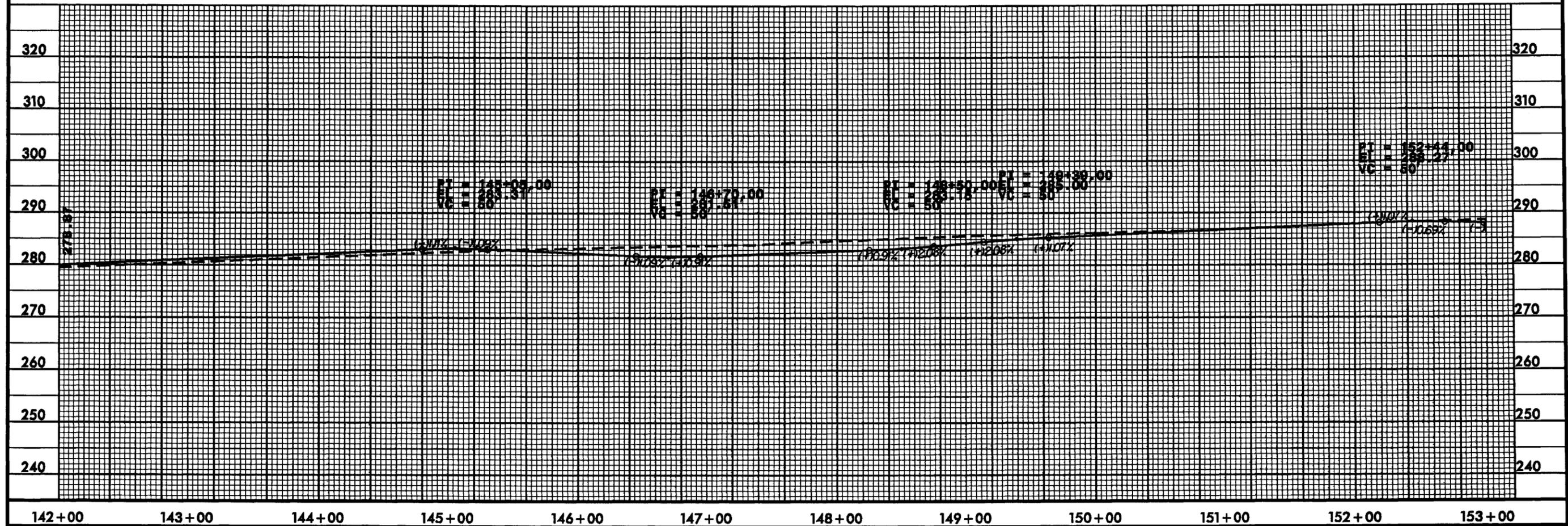


BM#109
167+93 -BL- 54"RT
R/R SPIKE LOCATED
IN BASE OF 12" OAK
ELEV.=282.92'

4' HIGH SAFETY FENCE (CHAINLINK FENCE)

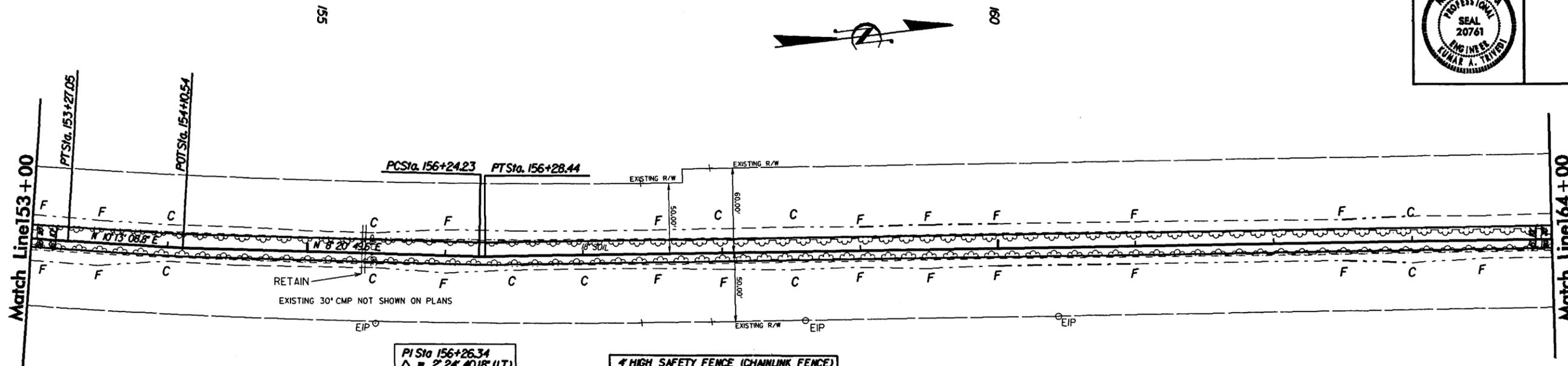
- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
- ALL SAFETY FENCE SHALL BE 4' HIGH AND SHALL NOT HAVE ANY SPREAD LEGS ON THE TOP SURFACE
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 8000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 720 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
- CONTRACTOR SHALL BE PAID PER ACTUAL QUANTITY INSTALLED

PI Sta 150+71.43
Δ = 4' 30" 31.49' (LT)
D = 0' 52" 53.30"
L = 511.50
T = 255.88
R = 6500.00



8/17/99

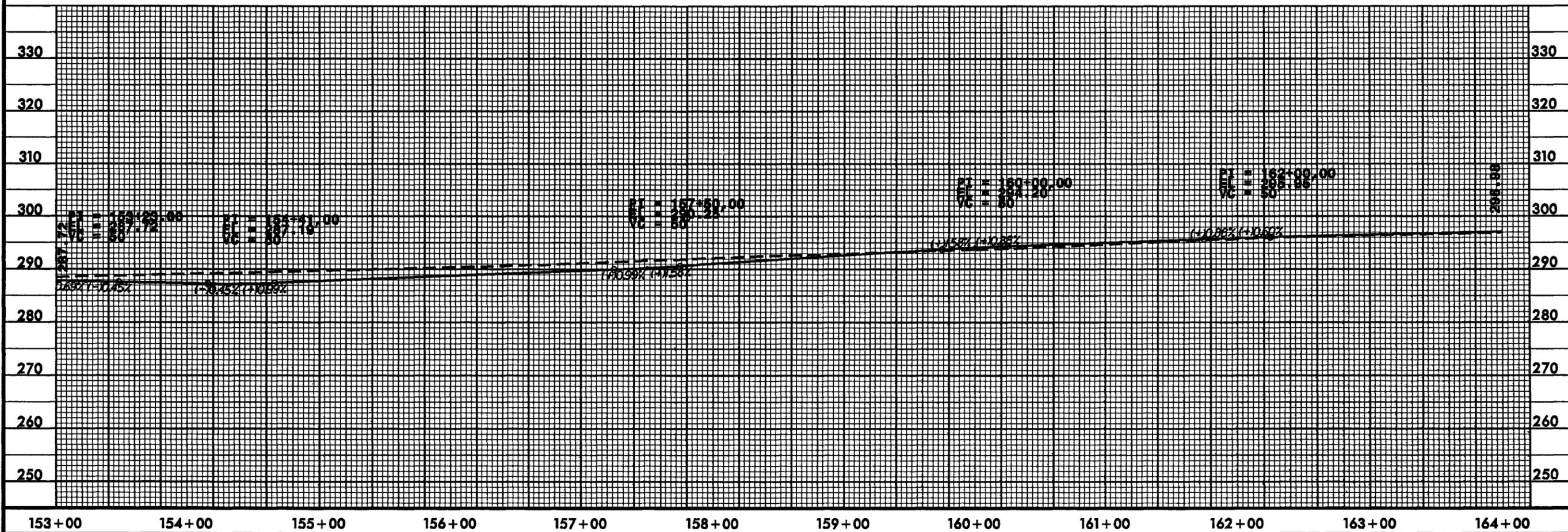
PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 17
BY SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
	



PI Sta 156+26.34
 $\Delta = 2' 24" 40.18" (LT)$
 $D = 57' 11" 44.81"$
 $L = 4.21$
 $T = 2.10$
 $R = 100.00$

4' HIGH SAFETY FENCE (CHAINLINK FENCE)

- ALL SAFETY FENCE TO BE FIELD SORTED BY THE ENGINEER
- ALL SAFETY FENCE TO BE 4' HIGH AND SHALL NOT HAVE ANY SPACING BETWEEN TOP OF RAILS
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 9000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 730 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
- CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED



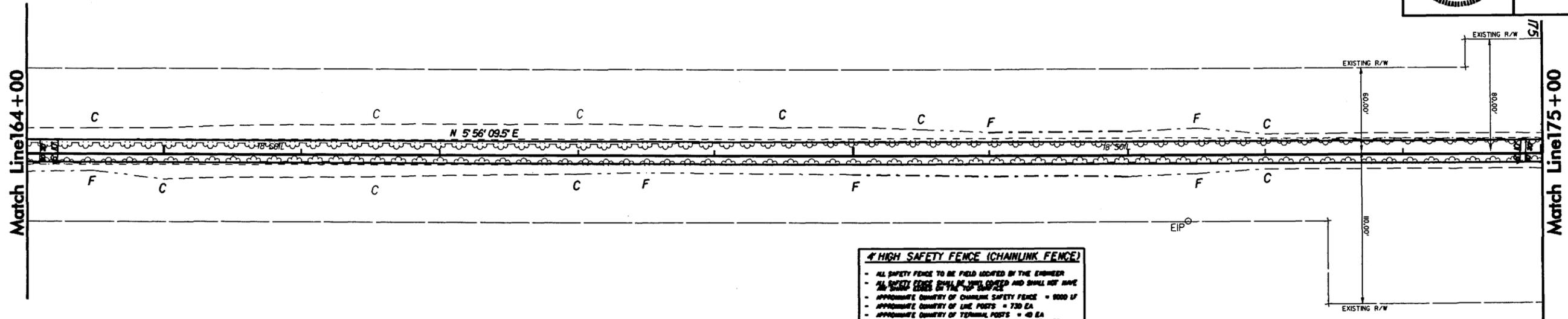
8/17/99

65



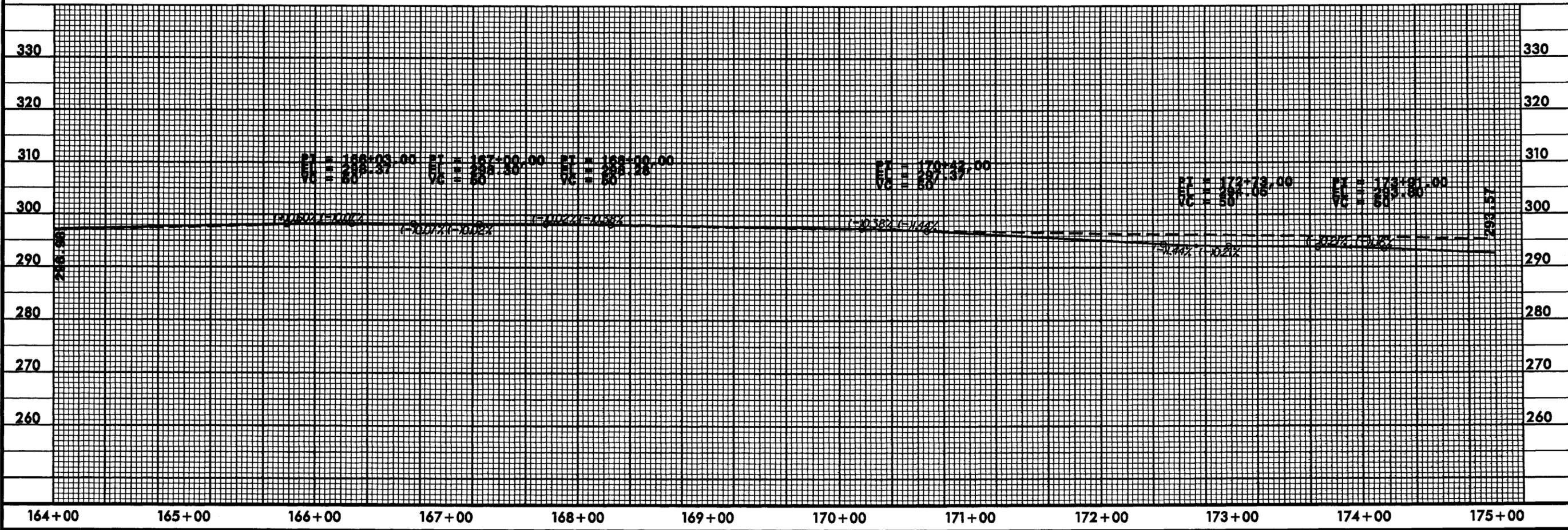
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PROJECT REFERENCE NO. E2921F ATT		SHEET NO. 18	
DW SHEET NO.			
FACILITIES DESIGN ENGINEER		HYDRAULICS ENGINEER	



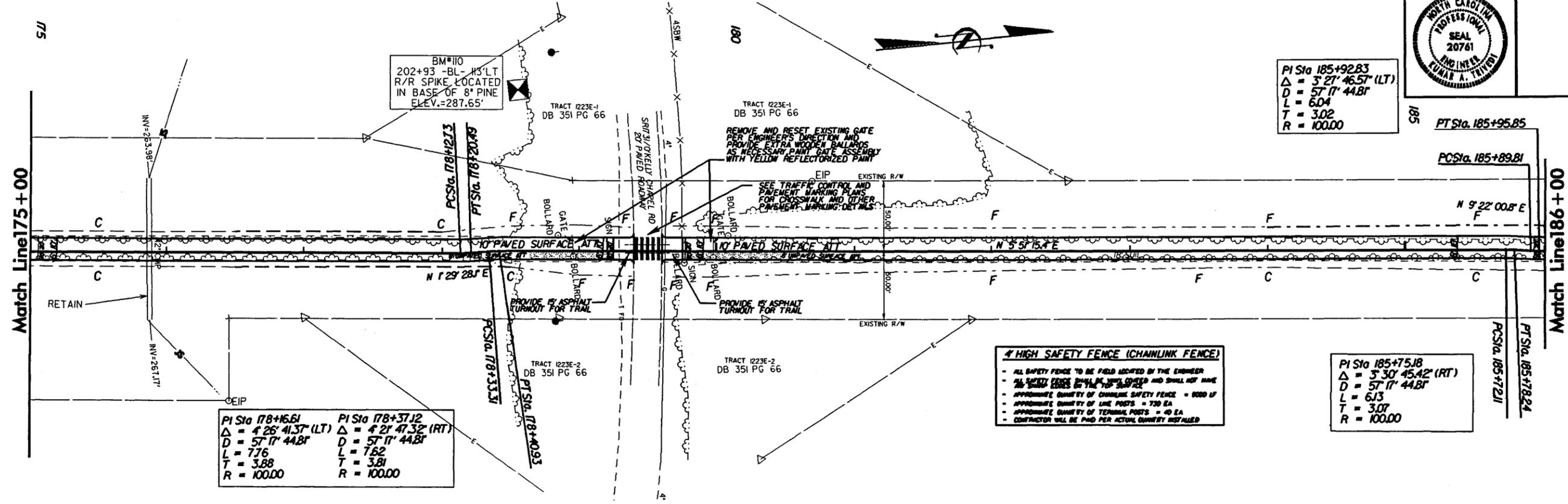
4' HIGH SAFETY FENCE (CHAINLINK FENCE)

- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
- ALL SAFETY FENCE SHALL BE GALV. COATED AND SHALL NOT HAVE ANY SHARP EDGES ON THE TOP SURFACE
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 9000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 130 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
- CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED



8/17/99

PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 19
BY SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
	

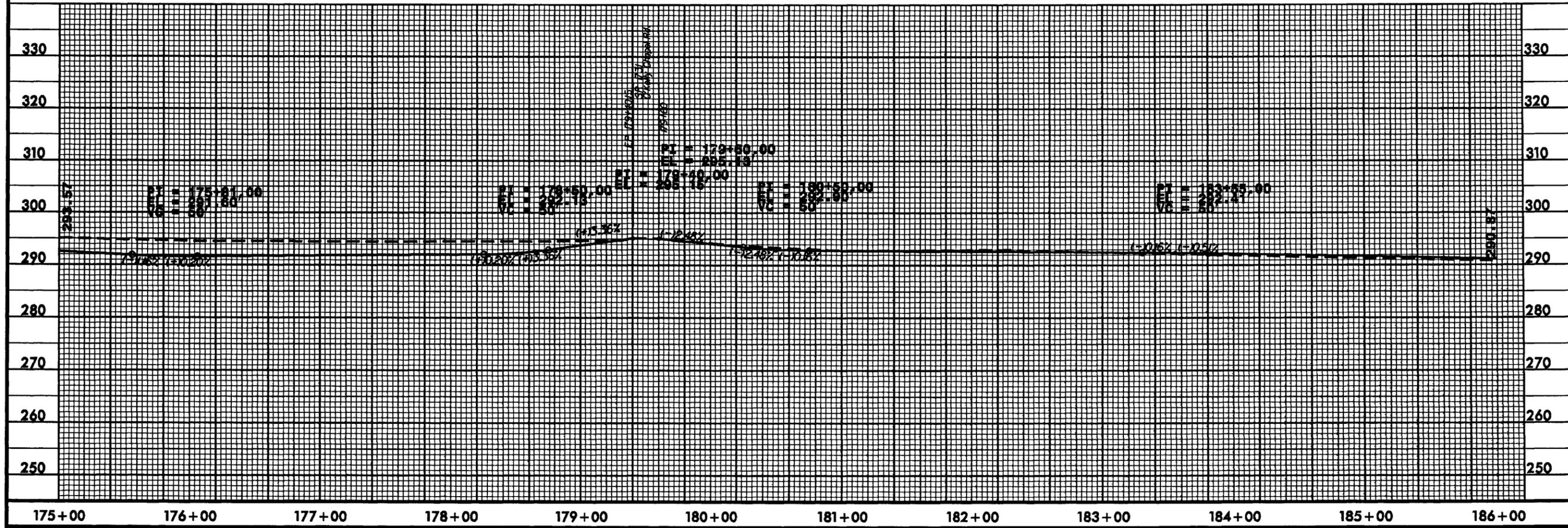


PI Sta 185+92.83
 $\Delta = 3' 21'' 46.57''$ (LT)
 $D = 57' 17'' 44.81''$
 $L = 6.04$
 $T = 3.02$
 $R = 100.00$

PI Sta 178+16.61
 $\Delta = 4' 26'' 41.37''$ (LT)
 $D = 57' 17'' 44.81''$
 $L = 7.76$
 $T = 3.88$
 $R = 100.00$

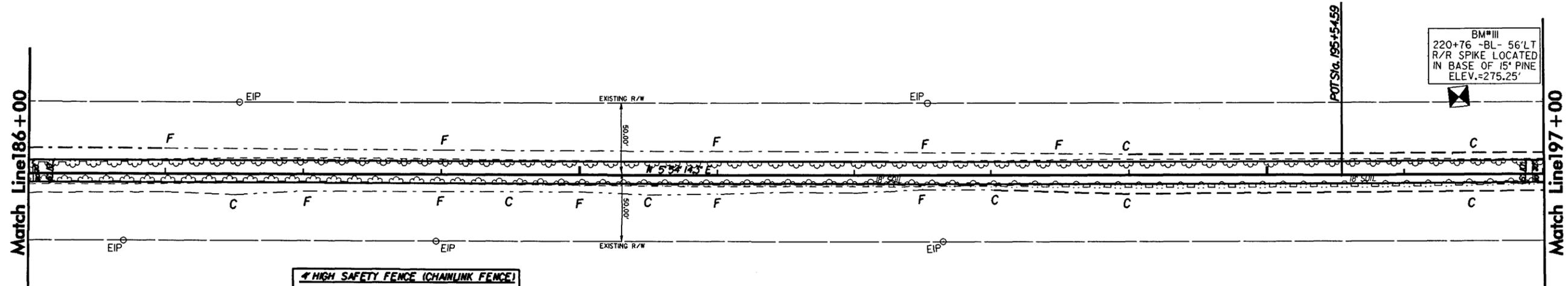
PI Sta 178+37.12
 $\Delta = 4' 21'' 47.32''$ (RT)
 $D = 57' 17'' 44.81''$
 $L = 7.62$
 $T = 3.81$
 $R = 100.00$

PI Sta 185+75.18
 $\Delta = 3' 30'' 45.42''$ (RT)
 $D = 57' 17'' 44.81''$
 $L = 6.13$
 $T = 3.07$
 $R = 100.00$



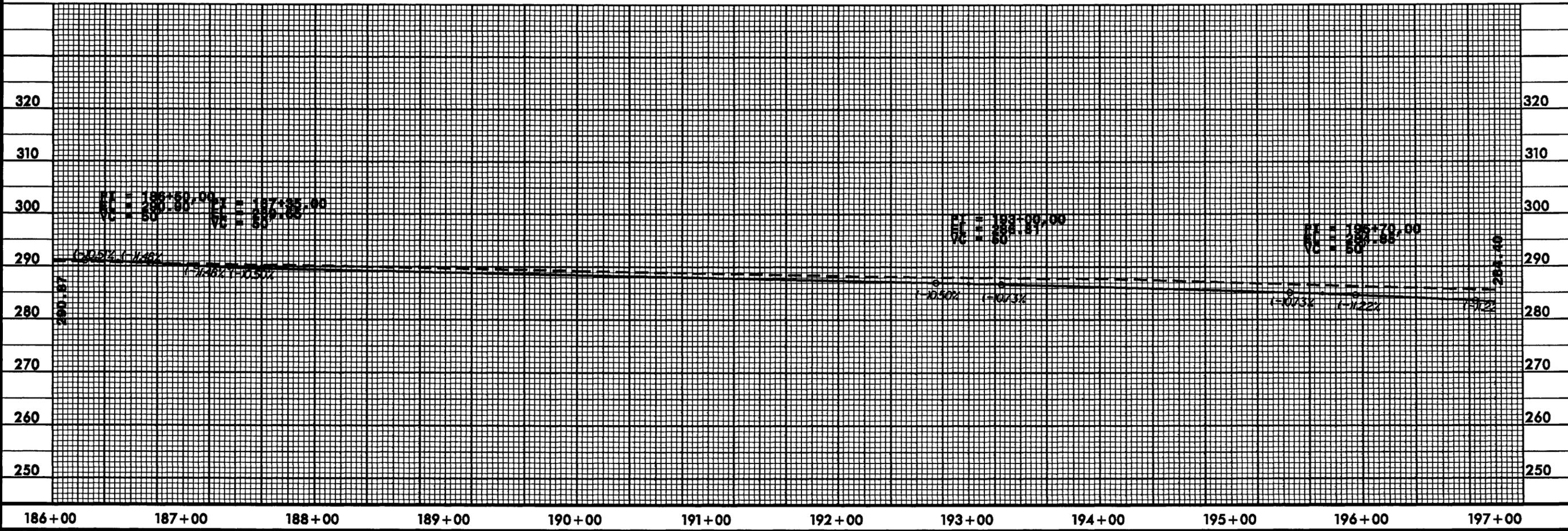
8/17/99

PROJECT REFERENCE NO. E2921F ATT		SHEET NO. 20
HW SHEET NO.		
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER	
		



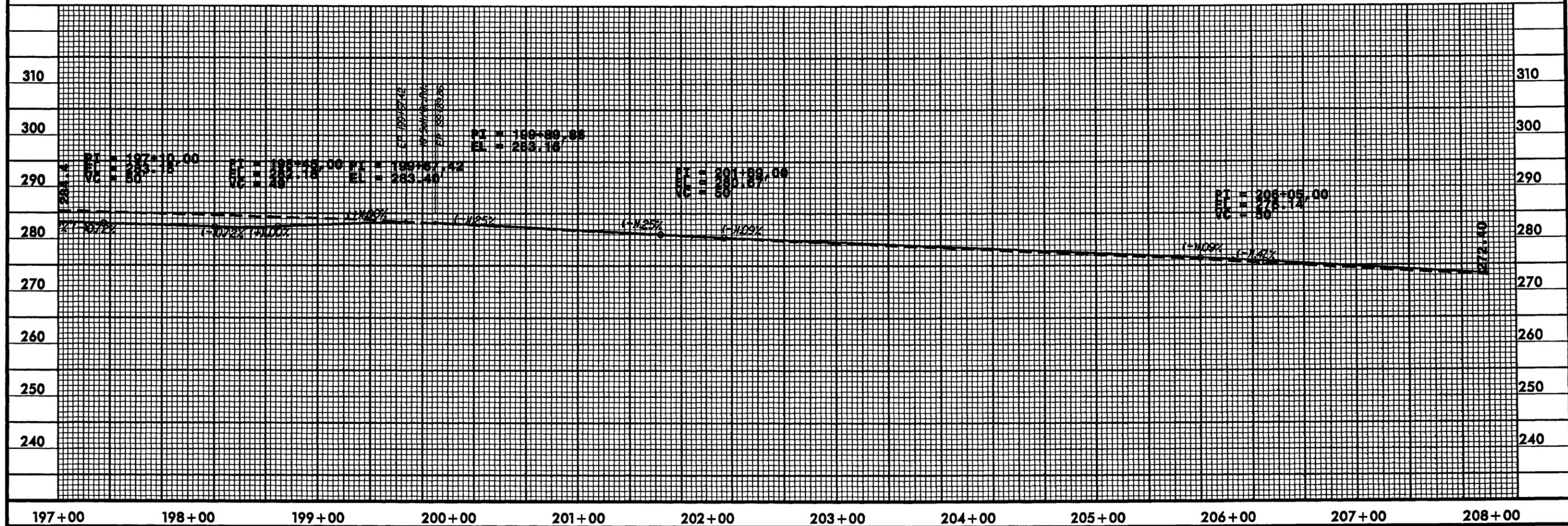
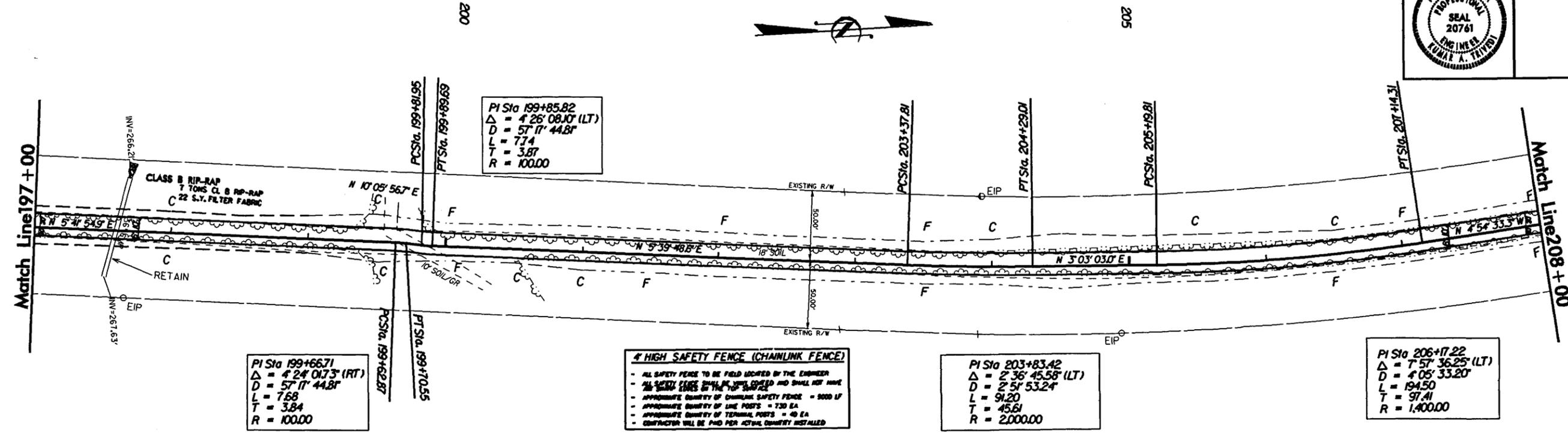
- 4' HIGH SAFETY FENCE (CHAINLINK FENCE)**
- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
 - ALL SAFETY FENCE SHALL BE VINYL COATED AND SHALL NOT HAVE TWO SHARP EDGES ON THE TOP SURFACE
 - APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 8000 LF
 - APPROXIMATE QUANTITY OF LINE POSTS = 720 EA
 - APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
 - CONTRACTOR WILL BE PRG FOR ACTUAL QUANTITY INSTALLED

BM#III
220+76 -BL- 56'LT
R/R SPIKE LOCATED
IN BASE OF 15' PINE
ELEV.=275.25'



8/17/99

PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 21
RW SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
	

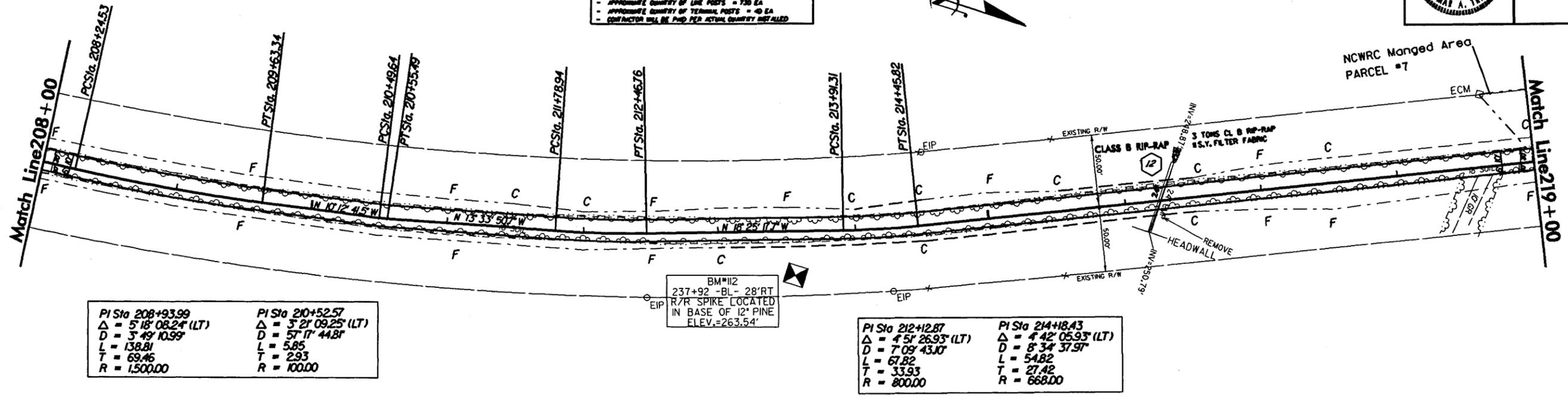
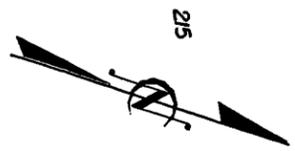


8/17/99

PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 22
RW SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
	

4' HIGH SAFETY FENCE (CHAINLINK FENCE)

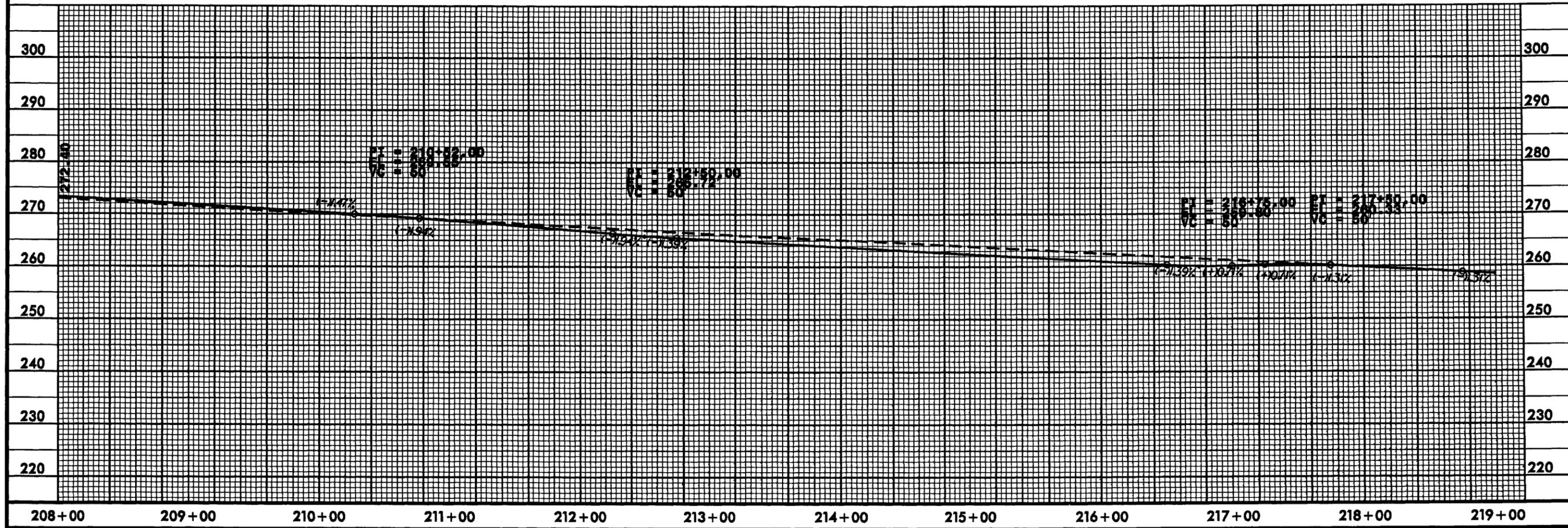
- ALL SAFETY FENCE TO BE FIELD MONITORED BY THE ENGINEER
- ALL SAFETY FENCE TO BE FIELD MONITORED AND SHALL NOT HAVE
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 9000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 730 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
- CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED



PI Sta 208+93.99	PI Sta 210+52.57
$\Delta = 5' 18'' 08.24''$ (LT)	$\Delta = 3' 21'' 09.25''$ (LT)
$D = 3' 49'' 10.99''$	$D = 5' 17'' 44.81''$
$L = 138.81$	$L = 5.85$
$T = 69.46$	$T = 2.93$
$R = 1500.00$	$R = 100.00$

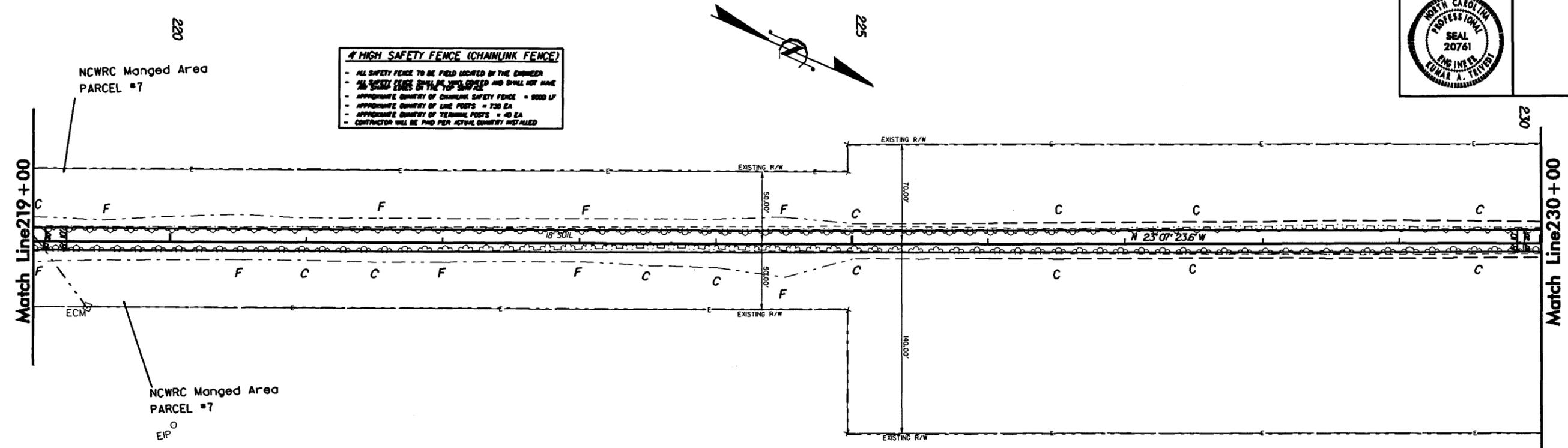
BM#112
237+92 -BL- 28'RT
R/R SPIKE LOCATED
IN BASE OF 12" PINE
ELEV.=263.54'

PI Sta 212+12.87	PI Sta 214+18.43
$\Delta = 4' 51'' 26.93''$ (LT)	$\Delta = 4' 42'' 05.93''$ (LT)
$D = 7' 09'' 43.07''$	$D = 8' 34'' 37.97''$
$L = 67.82$	$L = 54.82$
$T = 33.93$	$T = 27.42$
$R = 800.00$	$R = 668.00$



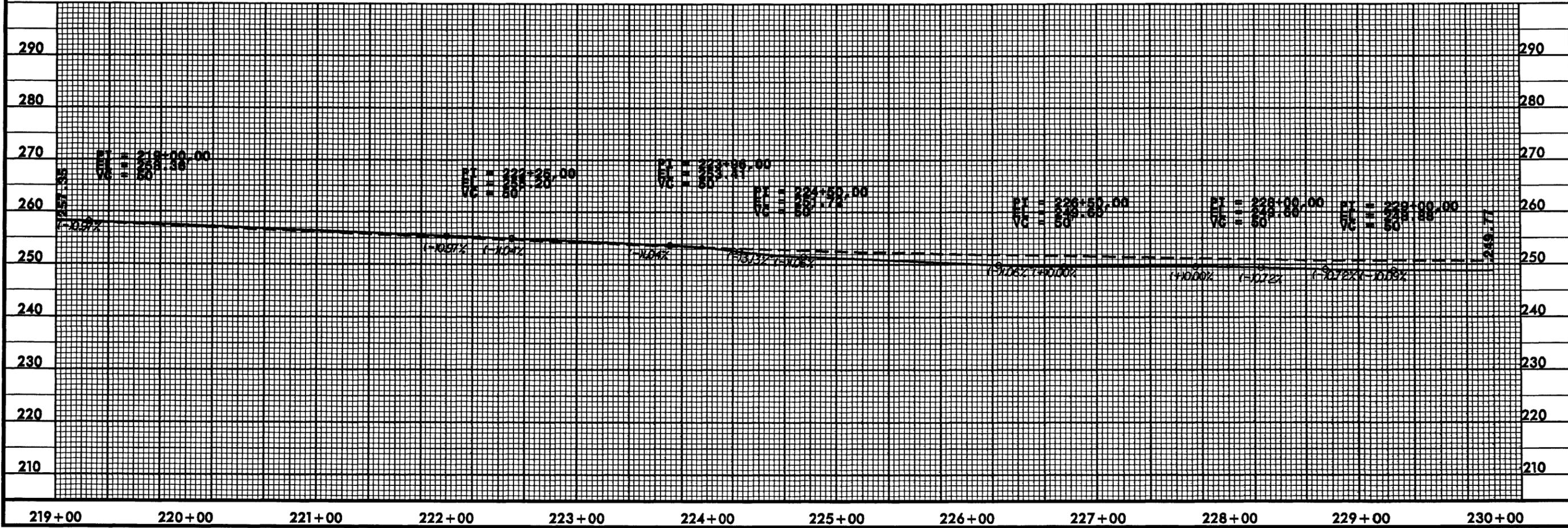
8/17/12

PROJECT REFERENCE NO. E2921F ATT	SHEET NO. 23
BY SHEET NO.	
FACILITIES DESIGN ENGINEER	HYDRAULICS ENGINEER
 NORTH CAROLINA PROFESSIONAL SEAL 20761 KUMAR A. THIRUVAI	



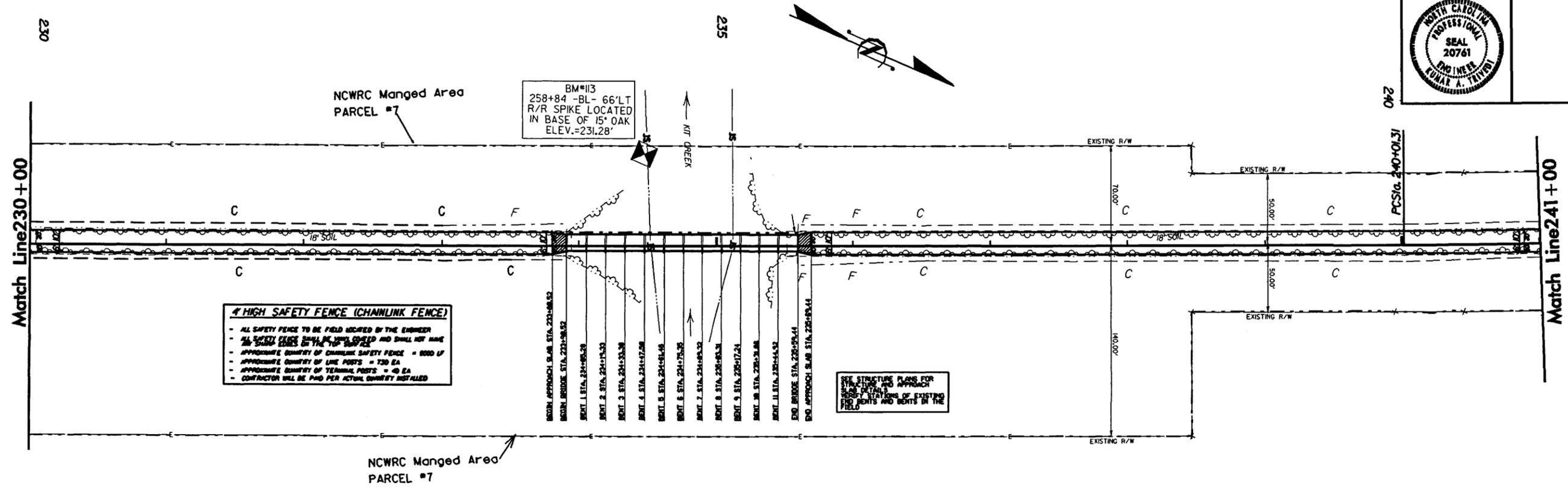
4' HIGH SAFETY FENCE (CHAINLINK FENCE)

- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
- ALL SAFETY FENCE SHALL BE FIELD LOCATED AND SHALL NOT HAVE AN EXCESS LENGTH ON THE TOP SURFACE
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 9000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 730 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
- CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED



8/17/99

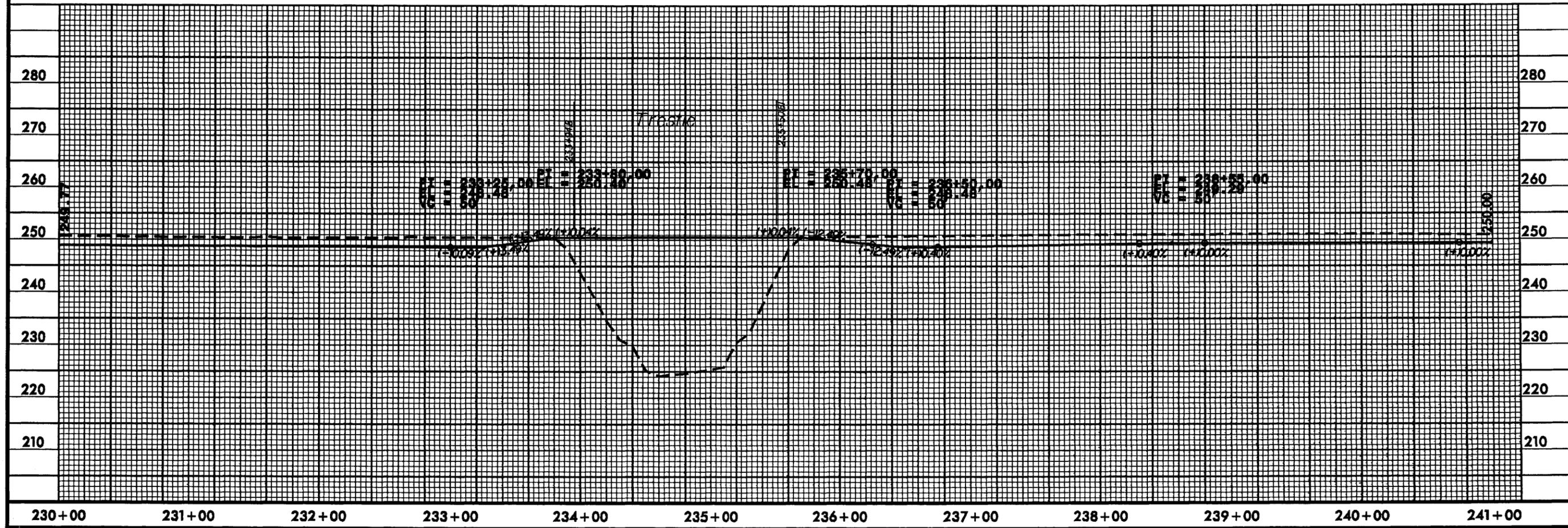
PROJECT REFERENCE NO. E2921F ATT		SHEET NO. 24	
RW SHEET NO.			
FACILITIES DESIGN ENGINEER		HYDRAULICS ENGINEER	



4' HIGH SAFETY FENCE (CHAINLINK FENCE)

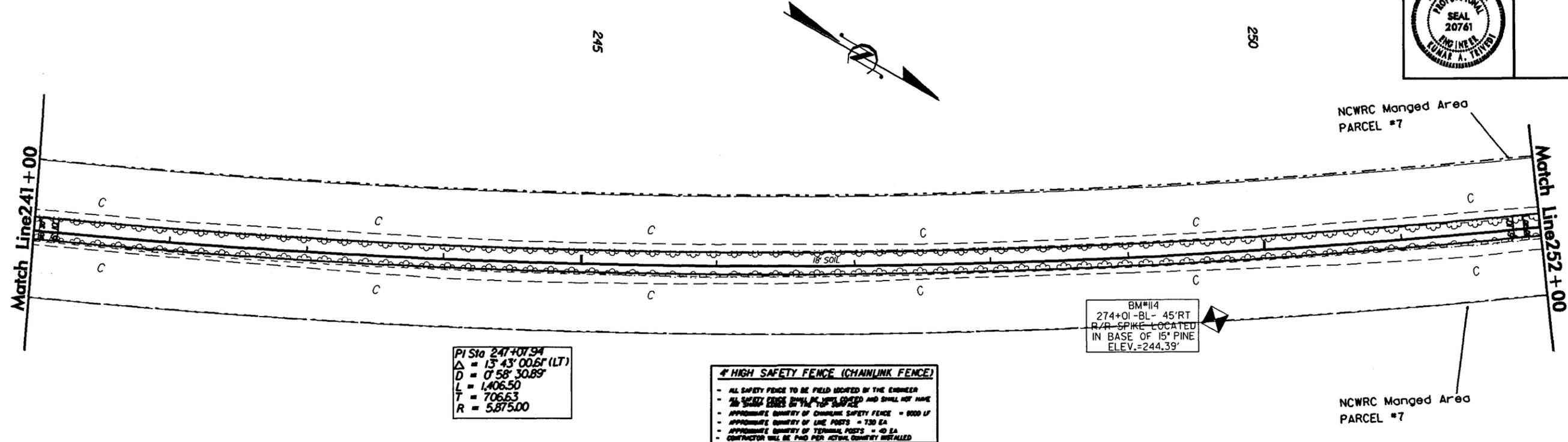
- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
- ALL SAFETY FENCE TO BE 18\"/>

SEE STRUCTURE PLANS FOR
STAKEOUT AND APPROACH
DIMENSIONS AND EXISTING
FIELD



8/17/99

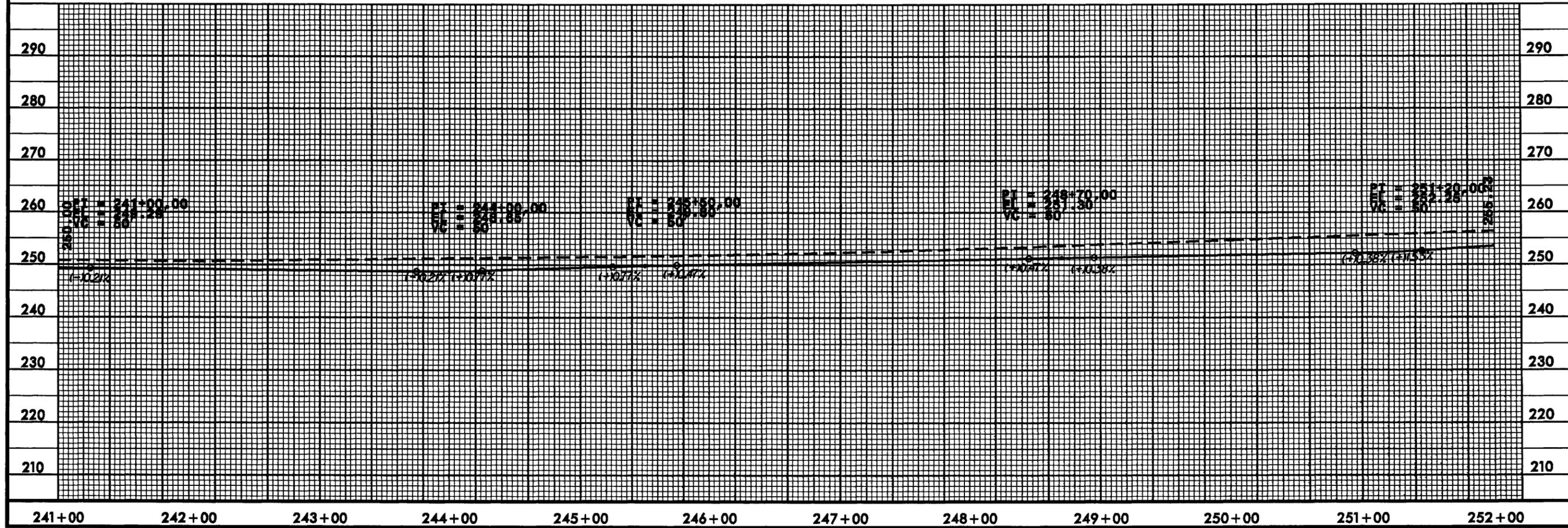
PROJECT REFERENCE NO. E2921F ATT		SHEET NO. 25	
BY SHEET NO.			
FACILITIES DESIGN ENGINEER		HYDRAULICS ENGINEER	
			



PI Sta 241+01.94
 $\Delta = 13^{\circ} 43' 00.61''$ (LT)
 $D = 0^{\circ} 58' 30.89''$
 $L = 1,406.50$
 $T = 706.63$
 $R = 5,875.00$

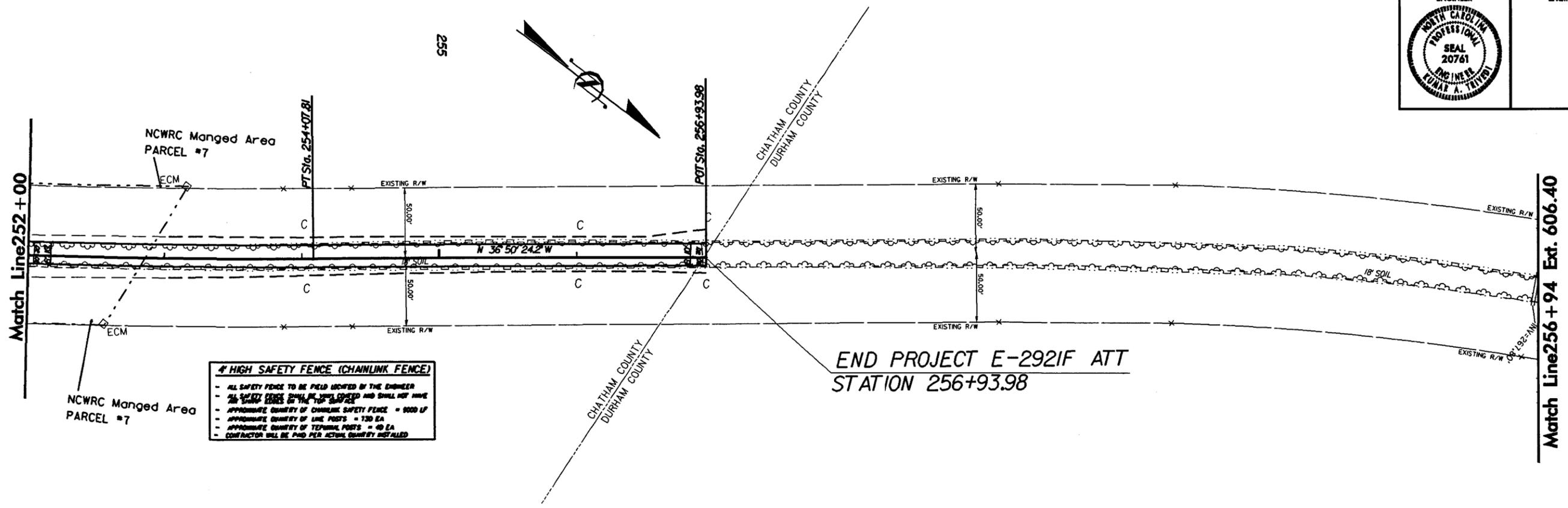
4' HIGH SAFETY FENCE (CHAINLINK FENCE)

- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
- ALL SAFETY FENCE SHALL BE UNILATERAL AND SHALL NOT HAVE
- APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 8000 LF
- APPROXIMATE QUANTITY OF LINE POSTS = 730 EA
- APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
- CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED

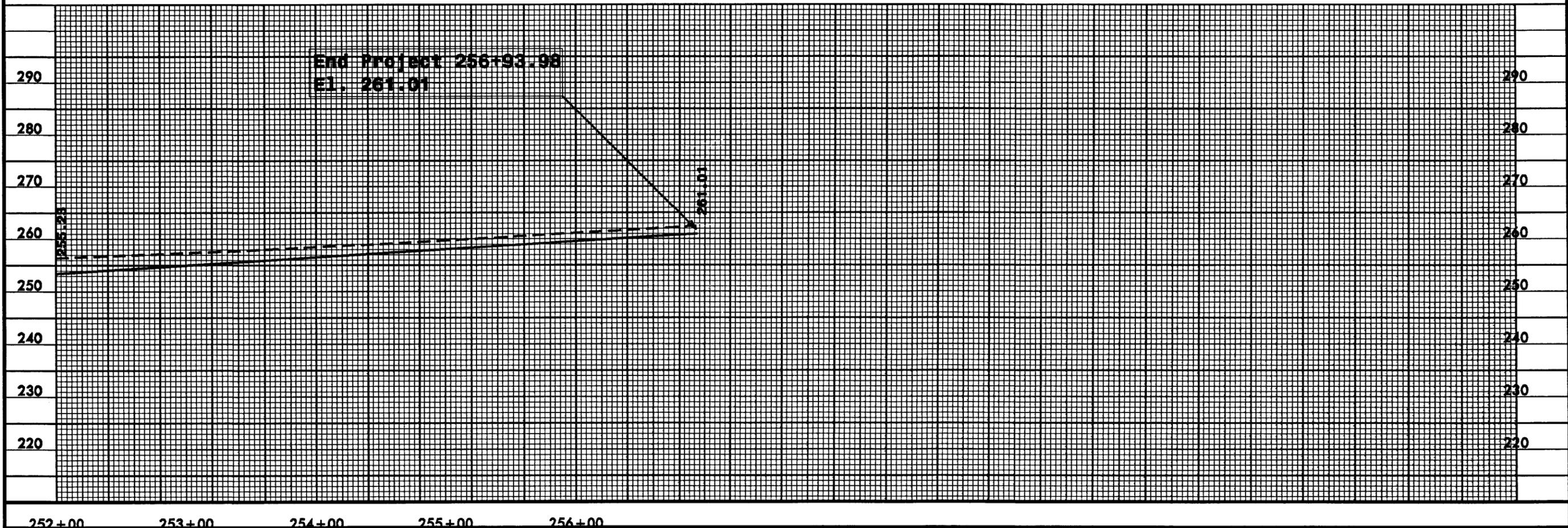


8/17/98

PROJECT REFERENCE NO. E2921F ATT		SHEET NO. 26	
RW SHEET NO.			
FACILITIES DESIGN ENGINEER		HYDRAULICS ENGINEER	
			



- 4' HIGH SAFETY FENCE (CHAINLINK FENCE)**
- ALL SAFETY FENCE TO BE FIELD LOCATED BY THE ENGINEER
 - ALL SAFETY FENCE SHALL BE FULLY COVERED AND SHALL NOT HAVE ANY SPINDS EXPOSED TO THE TOP SURFACE
 - APPROXIMATE QUANTITY OF CHAINLINK SAFETY FENCE = 6000 LF
 - APPROXIMATE QUANTITY OF LINE POSTS = 120 EA
 - APPROXIMATE QUANTITY OF TERMINAL POSTS = 40 EA
 - CONTRACTOR WILL BE PAID PER ACTUAL QUANTITY INSTALLED



1366

1374