



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

LYNDO TIPPETT
SECRETARY

March 8, 2007

MEMORANDUM TO: Mr. C. E. Lassiter, Jr., PE
Division Two Engineer

FROM: Philip S. Harris, III, P.E., Unit Head *E. F. Furr*
Natural Environment Unit
Project Development and Environmental Analysis Branch

SUBJECT: Beaufort County, Improvements to US 17 over the Tar
River; T.I.P. Number R-2510B; Federal Aid Project MAF-
75-3 (26); State Project 8.T150601

Attached are the modifications to the U. S. Army Corps of Engineers Individual 404 and the DWQ Individual Section 401 Water Quality Certification for the above referenced project. Also included are the CAMA Major Permit and the DWQ Stormwater permit for the above referenced project. All environmental permits have been received for the construction of this project.

PSH/gyb

Attachment

Cc:

Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Jay Bennett, P.E., Roadway Design
Dr. David Chang, P.E., Hydraulics
Mr. Randy Garris, P.E. State Contract Officer
Mr. Art McMillan, P.E., Highway Design
Mr. Greg Perfetti, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. John F. Sullivan, FHWA
Mr. Rob Hanson, P.E., PDEA Eastern Region Unit Head
Mr. Jay B. Johnson, Division Environmental Officer



Michael F. Easley, Governor

William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director
Division of Water Quality

February 28, 2007

NC Department of Transportation
Project Development Branch
Attn.: Dr. Gregory J. Thorpe
1548 Mail Service Center
Raleigh, NC 27699-1548

**Subject: Permit No. SW7061219
NCDOT Project R-2510B, US 17 Washington
Bypass
Other Stormwater Permit
Linear Public Road / Bridge Project
Beaufort County**

Dear Dr. Thorpe:

The Washington Regional Office received a complete Stormwater Management Permit Application for the subject project on February 26, 2007. Staff review of the plans and specifications has determined that the project, as proposed, will comply with the Stormwater Regulations set forth in Title 15A NCAC 2H .1000. We are forwarding Permit No. SW7061219 dated February 28, 2007, for the construction of the subject US 17 Washington Bypass project.

This permit shall be effective from the date of issuance until rescinded and shall be subject to the conditions and limitations as specified therein.

If any parts, requirements, or limitations contained in this permit are unacceptable, you have the right to request an adjudicatory hearing upon written request within thirty (30) days following receipt of this permit. This request must be in the form of a written petition, conforming to Chapter 150B of the North Carolina General Statutes, and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, NC 27699-6714. Unless such demands are made this permit shall be final and binding.

If you have any questions, or need additional information concerning this matter, please contact either me or Samir Dumpor at (252) 946-6481.

Sincerely,


Al Hodge
Regional Supervisor
Surface Water Protection Section

AH/sd: J:\WPDATA\WQS\State SW-SD\Permits - General Permits

cc: Josh Dalton, P.E., Sungate Design Group, P.A. (915 Jones Franklin Road,
Raleigh, NC 27606)
Beaufort County Building Inspections
Division of Coastal Management
Washington Regional Office
Central Files

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
DIVISION OF WATER QUALITY

STATE STORMWATER MANAGEMENT PERMIT
OTHER PERMIT

In accordance with the provisions of Article 21 of Chapter 143, General Statutes of North Carolina as amended, and other applicable Laws, Rules and Regulations

PERMISSION IS HEREBY GRANTED TO

NC Department of Transportation
NCDOT Project R-2510B, US 17 Washington Bypass
Beaufort County
FOR THE

construction of a public road / bridge in compliance with the provisions of 15A NCAC 2H .1000 (hereafter referred to as the "stormwater rules") and the approved stormwater management plans and specifications, and other supporting data as attached and on file with and approved by the Division of Water Quality and considered a part of this permit.

The Permit shall be effective from the date of issuance until rescinded and shall be subject to the following specific conditions and limitations:

I. DESIGN STANDARDS

1. The runoff from the impervious surfaces has been directed away from surface waters as much as possible.
2. The amount of built-upon area has been minimized as much as possible.
3. Best Management Practices are employed which minimize water quality impacts.
4. Approved plans and specifications for projects covered by this permit are incorporated by reference and are enforceable parts of the permit.
5. Vegetated roadside ditches are 3:1 slopes or flatter.

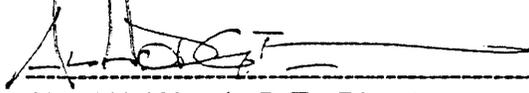
II. SCHEDULE OF COMPLIANCE

1. The permittee shall at all times provide adequate erosion control measures in conformance with the approved Erosion Control Plan.

7. The permittee shall notify the Division of any name, ownership or mailing address changes within 30 days.

Permit issued this, the twenty-eight day of February, 2007.

NORTH CAROLINA ENVIRONMENTAL MANAGEMENT COMMISSION



Alan W. Klimek, P.E., Director
Division of Water Quality
By Authority of the Environmental Management Commission

PROJECT COMMITMENTS

Beaufort County
Improvements to US 17
Over the Tar River
Federal Aid Project MAF-75-3 (26)
State Project 8.T150601
TIP No. R-2510

In addition to the standard Nationwide Permit # 6 Conditions, the Individual Permit Conditions, the General Nationwide Permit Conditions, Section 404 Only Conditions, Regional Conditions, State Consistency Conditions, General Certification Conditions, Individual Section 404 Special Conditions and the Section 401 Conditions of Certification, the following Special Commitments have been agreed to by NCDOT:

Commitments Developed During Permitting:

Division 2 Construction

In order to protect Striped Bass, American Shad, and River Herring during spawning periods and through embryonic, larval or juvenile life stages, no in-water work shall be conducted in the channel of the Tar-Pamlico River from February 15 through June 15 of any year, and no in-water work shall be conducted within the connected inundated floodplain from February 15 through May 31 of any year, without prior approval of the NC Division of Coastal Management (DCM), in consultation with the NC Wildlife Resources Commission (WRC) and the NC Division of Marine Fisheries (DMF). *CAMA permit*

The permittee shall implement NCDOT's Stream Crossing Guidelines for Anadromous Fish Passage, except as modified in Condition No.1 of this permit.

The West Indian Manatee, *Trichechus manatus*, which is listed as a federally endangered species, has been reported in North Carolina waters. In order to protect the West Indian manatee all in-water work should be done during the period from November 1 to May 31. If work must be done during the period from June through October the enclosed guidelines prepared by the U.S. Fish and Wildlife Service (USFWS) (rev. 06/2003), entitled "Guidelines for Avoiding Impacts to the West Indian Manatee: Precautionary Measures for Construction Activities in North Carolina Waters" shall be followed.

Compensatory mitigation for impacts to 110,842.3 square feet of protected riparian buffers in Zone 1 and 74,854.0 square feet of protected riparian buffer in Zone 2 shall be required as described below, and replaces condition #10 in the 401 Water Quality Certification dated September 6,2005:

Riparian Buffer Zone	Area Impacted (sq. ft.)	Mitigation Ratio	Area to Be Mitigated (sq. ft.)
Zone 1	110,842.3	3:1	315,368.4
Zone2	74,854.0	1.5:1	106,332.2
		Total	421,700.6

We understand that you have chosen to perform compensatory mitigation for impacts to protected buffers through use of the North Carolina Ecosystem Enhancement Program (EEP). Mitigation for unavoidable impacts to Tar-Pamlico Riparian Buffers shall be provided in the Tar-Pamlico River Basin (HUC 03020104) and done in accordance with 15A NCAC 2B .0259. EEP has

indicated in a letter dated October 27, 2006 that they will assume responsibility for satisfying the compensatory mitigation requirements for the above-referenced project, in accordance with the Tri-Party MOA signed on July 22, 2003 and the Dual-Party MOA signed on April 12, 2004.

Compensatory mitigation for impacts to 7.93 acres of jurisdictional wetlands shall be done. Total mitigation shall be provided as described below, and replaces condition #11 in the 401 Water Quality Certification dated September 6, 2005:

Wetland Type	Area (ac)	Mitigation Ratio	Acres to Be Mitigated (ac)
Riparian	6.04	2:1	12.08
Non-riparian	1.88	2:1	3.76
		Total	15.84
		Onsite	0.70
		Offsite	15.14

Offsite Compensatory Mitigation

Compensatory mitigation for 11.38 acres of riparian and 3.76 acres non-riparian wetlands not mitigated onsite shall be mitigated in Hydrologic Cataloging Unit 03020104, associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated August 4, 2005, and in accordance with the Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003.

Compensatory mitigation for impacts to 2,368 linear feet of streams shall be done at a replacement ratio of 1: 1. Applying a replacement ratio of 1: 1, total mitigation for 2,368 linear feet of streams shall be provided as described below, and replaces condition #12 in the 401 Water Quality Certification dated September 6, 2005:

Offsite Compensatory Mitigation

Compensatory mitigation for the unavoidable impacts to 2,368 linear feet of streams in the Hydrologic Cataloging Unit 03020104 associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated August 4, 2005, and in accordance with the Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003.

Turbidity curtains shall be used to isolate all work areas from the Tar River and Kennedy Creek, including pile installation, and excavation or filling within or adjacent to surface waters. The turbidity curtains shall be of sufficient length to extend to the substrate and shall encircle the immediate work area, however, they shall not extend across the river or cause an unacceptable impedance to navigation. The turbidity curtains shall be properly maintained and retained in the water until construction is complete. The turbidity curtains shall be removed when turbidity within the curtains reaches ambient levels.

The installation of the bridge piles shall be accomplished by pile driving. Should the permittee and/or its contractor desire to utilize another type of pile installation, such as drilled shaft construction or jetting, additional authorization from DCM shall be required.

Construction mats shall be utilized to support equipment within wetland areas to minimize temporary wetland impacts. These mats shall be removed immediately following project completion.

Barges, when used, shall be floated into place and then sunk, if necessary. They shall not be sunk and then dragged into place to accomplish the authorized activities.

In accordance with project commitments made within the Final Environmental Impact Statement, dated 8/31/04, the permittee shall follow Design Standards in Sensitive Watersheds, 15A NCAC 4B .0124.

In accordance with environmental commitments made in the Final Environmental Impact Statement, dated 8/31/04, the permittee shall minimize any tree removal along the right-of-way in front of the Bishop Joseph A. Beebe House historic property and erect tree-protection fence line during construction of the project.

In accordance with environmental commitments made in the Final Environmental Impact Statement, dated 8/31/04, and as confirmed in the letter to the NCDOT, dated 10/6/06, from the NC Department of Cultural Resources, State Historic Preservation Office, the permittee shall use Minnesota Bridge Rail (one-bar metal rail) over the river that transitions to a flat-faced barrier for the remainder of the bridge.

Unless specifically altered herein, any mitigative measures or environmental commitments specifically made by the permittee in the CAMA permit application, the Final Environmental Impact Statement dated 8/31/04, and/or during the NEPA/404 Merger Process, shall be implemented, regardless of whether or not such commitments are addressed by individual conditions of this permit.

No construction shall begin on the C-Section of the project, R-2510C, until a Major Modification of this CAMA permit is issued by the NC Division of Coastal Management in accordance with the rules of the NC Coastal Resources Commission.

The permittee and/or contractor shall contact the N.C. Division of Coastal Management at (252) 808-2808 to schedule a pre-construction conference prior to project initiation.

Two copies of the final construction drawings shall be furnished to NCDWQ Central Office prior to the pre-construction meeting. The permittee shall provide written verification that the final construction drawings comply with the permit drawings contained in the application dated November 13, 2006. Any deviations from the approved drawings are not authorized unless approved by the NC Division of Water Quality .

Upon completion of the project, the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed.

To avoid potential navigation hazards during and after inundation events, woody debris generated from clearing the bridge corridor will be burned or removed from the area between Sand Hole Road and the Tar River.

Division 2 Construction/Hydraulics Unit

Bridge deck drains should not discharge directly into the stream. Stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed

scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of *Storm water Best Management Practices*.

PDEA

Construction within jurisdictional areas on the property shall begin only after the permittee has made full payment to the NC EEP and provided a copy of the payment documentation to the Corps, and the NC EEP has provided written confirmation to the Corps that it agrees to accept responsibility for the mitigation work required, in compliance with the MOU between the North Carolina Department of Environment and Natural Resources and the United States Army Corps of Engineers, Wilmington District, dated November 4, 1998.

Project Services/Utilities

Any relocation of utility lines that is not already depicted on the attached work plan drawings, or described within the attached permit application, shall require approval by DCM, either under the authority of this permit, or by the utility company obtaining separate authorization.

REU/PDEA

Due to the possibility that compaction, mechanized clearing and/or other site alterations might prevent the temporary wetland impact area from re-attaining jurisdictional wetland status, the permittee shall provide an annual update on the wetland areas temporarily impacted by this project. This annual update shall consist of photographs and a report on the progress of these temporarily impacted areas in reattaining wetland jurisdictional status. Three years after project completion, the permittee shall schedule an agency field meeting with the NC Division of Coastal Management, the NC Division of Water Quality, the US Army Corps of Engineers, and the NC Wildlife Resources Commission, to determine if the wetland areas temporarily impacted by this project have re-attained jurisdictional wetland status. If at the end of 3 years the wetland areas temporarily impacted by this project have not re-attained jurisdictional wetland status, DCM and the above listed agencies shall determine whether compensatory wetland mitigation will be required.

Prior to planting any of the vegetation for the wetland restoration sites located at the Osprey Seafood mitigation site and the Packing House Road mitigation site, a planting plan shall be submitted to, and approved by, the NC Division of Water Quality.

During construction of the Osprey Seafood and Packing House Road mitigation sites, the areas to be restored shall be graded to an elevation that approximates adjacent wetlands, and then ripped to promote vegetation re-establishment.

For the aforementioned wetland mitigation sites (the Osprey Seafood and Packing House Road mitigation sites), success shall be tracked over a 3-year period. The NCDOT shall submit an annual summary report (including pictures of the sites) at the end of each of the first two years after the completion of the project. The report shall discuss the site's vegetative and hydrologic changes. This report can be qualitative in nature and is in lieu of the usual quantitative hydrology and vegetative success criteria. At the end of the third year after project completion, the NCDOT will coordinate a field visit to the sites, at which time the DWQ will determine the success of the mitigation, and the sites may be declared successful with written approval from the NC Division of Water Quality. If, at the end of the 3-year monitoring period, the NC Division of Water Quality feels that the success cannot be determined or has not been achieved, then the NCDOT shall coordinate field visits on an annual basis until the NCDWQ is satisfied that the sites are successful.

Permit Class
NEW

Permit Number
29-07

STATE OF NORTH CAROLINA
Department of Environment and Natural Resources
and
Coastal Resources Commission

Permit

for

Major Development in an Area of Environmental Concern
pursuant to NCGS 113A-118

Excavation and/or filling pursuant to NCGS 113-229

Issued to N.C. Department of Transportation, 1598 Mail Service Center, Raleigh, NC 27699-1598

Authorizing development in Beaufort County at a new crossing of the Tar River as part of
the US 17 bypass of the City of Washington, as requested in the permittee's application dated 11/13/06
including the attached 175 1/2-size plan drawings; including 102 dated 10/2/06, 41 dated 10/27/06, and 32 dated 11/3/06.

This permit, issued on 3/6/07, is subject to compliance with the application (where consistent with the permit), all applicable regulations, special conditions and notes set forth below. Any violation of these terms may be subject to fines, imprisonment or civil action; or may cause the permit to be null and void.

B-Section of the US 17 Washington Bypass (TIP No. R-2510B)

- 1) In order to protect Striped Bass, American Shad, and River Herring during spawning periods and through embryonic, larval or juvenile life stages, no in-water work shall be conducted in the channel of the Tar-Pamlico River from February 15 through June 15 of any year, and no in-water work shall be conducted within the connected inundated floodplain from February 15 through May 31 of any year, without prior approval of the NC Division of Coastal Management (DCM), in consultation with the NC Wildlife Resources Commission (WRC) and the NC Division of Marine Fisheries (DMF).
- 2) The permittee shall implement NCDOT's Stream Crossing Guidelines for Anadromous Fish Passage, except as modified in Condition No. 1 of this permit.

(See attached sheets for Additional Conditions)

This permit action may be appealed by the permittee or other qualified persons within twenty (20) days of the issuing date. An appeal requires resolution prior to work initiation or continuance as the case may be.

This permit must be accessible on-site to Department personnel when the project is inspected for compliance.

Any maintenance work or project modification not covered hereunder requires further Division approval.

All work must cease when the permit expires on

No Expiration Date, pursuant to GS 136-44.7B

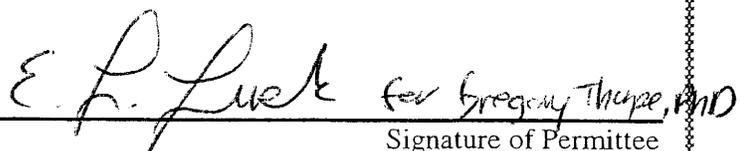
In issuing this permit, the State of North Carolina agrees that your project is consistent with the North Carolina Coastal Management Program.

Signed by the authority of the Secretary of DENR and the Chairman of the Coastal Resources Commission.



Charles S. Jones, Director
Division of Coastal Management

This permit and its conditions are hereby accepted.



Signature of Permittee

ADDITIONAL CONDITIONS

- 3) The West Indian Manatee, *Trichechus manatus*, which is listed as a federally endangered species, has been reported in North Carolina waters. In order to protect the West Indian manatee all in-water work should be done during the period from November 1 to May 31. If work must be done during the period from June through October the enclosed guidelines prepared by the U.S. Fish and Wildlife Service (USFWS) (rev. 06/2003), entitled "Guidelines for Avoiding Impacts to the West Indian Manatee: Precautionary Measures for Construction Activities in North Carolina Waters" shall be followed.
- 4) Turbidity curtains shall be used to isolate all work areas from the Tar River and Kennedy Creek, including pile installation, and excavation or filling within or adjacent to surface waters. The turbidity curtains shall be of sufficient length to extend to the substrate and shall encircle the immediate work area, however, they shall not extend across the river or cause an unacceptable impedence to navigation. The turbidity curtains shall be properly maintained and retained in the water until construction is complete. The turbidity curtains shall be removed when turbidity within the curtains reaches ambient levels.
- 5) The permittee shall exercise all available precautions in the day-to-day construction of the authorized project to prevent waste from entering the adjacent waters and wetlands.
- 6) Live concrete shall not be allowed to contact Waters of the State or water that will enter Waters of the State.
- 7) Any waste materials or debris generated by the construction of the new bridge or roadway shall be disposed of at an approved upland site or shall be recycled in an environmentally appropriate manner provided appropriate authorizations from any relevant state, federal, or local authorities are obtained.
- 8) The installation of the bridge piles shall be accomplished by pile driving. Should the permittee and/or its contractor desire to utilize another type of pile installation, such as drilled shaft construction or jetting, additional authorization from DCM shall be required.
- 9) The permittee shall minimize the need to cross wetlands in transporting equipment to the maximum extent practicable.
- 10) Construction mats shall be utilized to support equipment within wetland areas to minimize temporary wetland impacts. These mats shall be removed immediately following project completion.

Barges

- 11) Barges, when used, shall be floated into place and then sunk, if necessary. They shall not be sunk and then dragged into place to accomplish the authorized activities.

Excavation and Fill

- 12) Material excavated may be used in fill areas associated with the project or shall be removed from the site and taken to an approved high ground location.

ADDITIONAL CONDITIONS

- 13) All excavated materials shall be confined above normal water level and landward of regularly or irregularly flooded wetlands behind adequate dikes or other retaining structures to prevent spillover of solids into any wetlands or surrounding waters.
- 14) The temporary placement and double handling of any excavated or fill material within waters or vegetated wetlands is not authorized.
- 15) No excavation shall take place at any time in any vegetated wetlands or surrounding waters outside of the alignment of the areas indicated on the attached workplan drawing(s), without permit modification.
- 16) No excavated or fill material shall be placed at any time in any vegetated wetlands or surrounding waters outside of the alignment of the fill area(s) as indicated on the attached workplan drawing(s), without permit modification.
- 17) All fill material shall be clean and free of any pollutants except in trace quantities.
- 18) Construction staging areas shall be located only in upland areas, and not in wetlands or waters of the State.
- 19) There shall be no clearing or grubbing of wetlands outside of the area(s) indicated on the attached workplan drawing(s) without prior approval from the N.C. Division of Coastal Management.
- 20) Placement of riprap shall be limited to the areas as depicted on the attached work plan drawings. The riprap material shall be free from loose dirt or any pollutant and shall consist of clean rock or masonry materials, such as but not limited to, granite, marl, or broken concrete.

Sedimentation and Erosion Control

- 21) The permittee shall follow "Best Management Practices for the Protection of Surface Waters" and shall also implement sedimentation and erosion control measures sufficient to protect aquatic resources.
- 22) This project shall conform to all requirements of the NC Sedimentation Pollution Control Act and NC DOT's Memorandum of Agreement with the Division of Land Resources.
- 23) Appropriate sedimentation and erosion control devices, measures or structures shall be implemented to ensure that eroded materials do not enter adjacent wetlands, watercourses and property (e.g. silt fence, diversion swales or berms, etc.).
- 24) In order to protect water quality, runoff from construction shall not visibly increase the amount of suspended sediments in adjacent waters.
- 25) In accordance with project commitments made within the Final Environmental Impact Statement, dated 8/31/04, the permittee shall follow Design Standards in Sensitive Watersheds, 15A NCAC 4B .0124.

ADDITIONAL CONDITIONS

Mitigation

- NOTE:** Anticipated impacts of this project (R-2510B) include fill in 5.33 acres of 404 wetlands and impacts to 2,368 linear feet of streams.
- NOTE:** On-site wetland restoration of 0.6 acres and 3.5 acres of preservation will be provided at the Osprey Seafood site and 0.1 acres of restoration will be provided at the Packing House Road site and the remaining wetland mitigation will be provided by the EEP, in accordance with the mitigation acceptance letter dated 11/27/06.
- NOTE:** The Ecosystem Enhancement Program (EEP) has agreed (per 12/4/06 acceptance letter to USACE) to provide compensatory mitigation for the wetland impacts associated with the proposed project in accordance with Section X of the "Tri-Party" Memorandum of Agreement (MOA) entered into on July, 22, 2003 by the NC Department of Transportation (NCDOT), the U.S. Army Corps of Engineers (USACE), and the NC Department of Environment and Natural Resources (NCDENR). The EEP will transfer funds from the MOA account into the Riparian Buffer Restoration Fund for stream buffer impacts upon NCDOT's receipt of the NCDWQ Buffer Certification and verification of the buffer impact/mitigation amounts. At that time, the EEP will be responsible for the buffer mitigation required for this project.
- 26) Due to the possibility that compaction, mechanized clearing and/or other site alterations might prevent the temporary wetland impact area from re-attaining jurisdictional wetland status, the permittee shall provide an annual update on the wetland areas temporarily impacted by this project. This annual update shall consist of photographs and a report on the progress of these temporarily impacted areas in re-attaining wetland jurisdictional status. Three years after project completion, the permittee shall schedule an agency field meeting with the NC Division of Coastal Management, the NC Division of Water Quality, the US Army Corps of Engineers, and the NC Wildlife Resources Commission, to determine if the wetland areas temporarily impacted by this project have re-attained jurisdictional wetland status. If at the end of 3 years the wetland areas temporarily impacted by this project have not re-attained jurisdictional wetland status, DCM and the above listed agencies shall determine whether compensatory wetland mitigation will be required.

Historical and Cultural Resource Protection

- 27) In accordance with environmental commitments made in the Final Environmental Impact Statement, dated 8/31/04, the permittee shall minimize any tree removal along the right-of-way in front of the Bishop Joseph A. Beebe House historic property and erect tree-protection fence line during construction of the project.
- 28) In accordance with environmental commitments made in the Final Environmental Impact Statement, dated 8/31/04, and as confirmed in the letter to the NCDOT, dated 10/6/06, from the NC Department of Cultural Resources, State Historic Preservation Office, the permittee shall use Minnesota Bridge Rail (one-bar metal rail) over the river that transitions to a flat-faced barrier for the remainder of the bridge.

ADDITIONAL CONDITIONS

Stormwater Management

- 29) The Division of Water Quality (DWQ) approval of this project under stormwater management rules of the Environmental Management Commission is covered by way of Stormwater Permit No. SW7061219, which was issued on 2/28/07. Any violation of the permit approved by the DWQ shall be considered a violation of this CAMA permit.

General

- 30) Any relocation of utility lines that is not already depicted on the attached work plan drawings, or described within the attached permit application, shall require approval by DCM, either under the authority of this permit, or by the utility company obtaining separate authorization.
- 31) If it is determined that additional permanent and/or temporary impacts will occur that are not shown on the attached permit drawings, additional authorization from DCM shall be required.
- 32) This permit does not eliminate the need to obtain any additional permits, approvals or authorizations that may be required.
- 33) Unless specifically altered herein, any mitigative measures or environmental commitments specifically made by the permittee in the CAMA permit application, the Final Environmental Impact Statement dated 8/31/04, and/or during the NEPA/404 Merger Process, shall be implemented, regardless of whether or not such commitments are addressed by individual conditions of this permit.
- 34) The N.C. Division of Water Quality (DWQ) authorized the proposed project (DWQ Project No. 20050785 v.4) on February 13, 2007 under a modification of Water Quality Certification No. 3527 issued 9/6/05. Any violation of the Certification approved by the DWQ shall be considered a violation of this CAMA permit.
- 35) No construction shall begin on the C-Section of the project, R-2510C, until a Major Modification of this CAMA permit is issued by the NC Division of Coastal Management in accordance with the rules of the NC Coastal Resources Commission.
- 36) The permittee and/or contractor shall contact the N.C. Division of Coastal Management at (252) 808-2808 to schedule a pre-construction conference prior to project initiation.

NOTE: The U.S. Army Corps of Engineers issued a permit modification pertaining to the B-Section of the Washington Bypass, R-2510B, on 1/17/07. USACE Action ID No. 199301143.



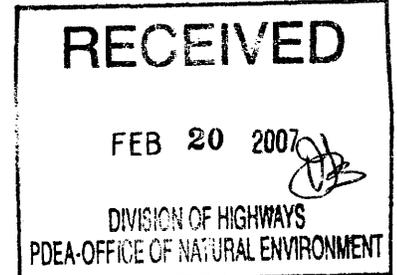
Michael F. Easley, Governor
William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director
Division of Water Quality

Underwood

February 13, 2007

Dr. Greg Thorpe, PhD., Manager
Planning and Environmental Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina, 27699-1548



Subject: Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act Tar-Pamlico Buffer Rules with ADDITIONAL CONDITIONS for Proposed improvements to US 17 from south of SR1149 (Price Rd.) to north of SR 1509 (Springs Rd.) in Beaufort County, Federal Aid Project No.MAF-75-3(26), TIP R-2510B.
DWQ Project No. 20050785 v. 4

Dear Dr. Thorpe:

Attached hereto is a modification of Certification No. 3527 issued to The North Carolina Department of Transportation dated September 6, 2005. This modification is applicable only to the additional proposed activities. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated September 6, 2005 and subsequent modifications still apply except where superceded by this certification. This Water Quality Certification supercedes the certification issued January 24, 2007.

If we can be of further assistance, do not hesitate to contact us.

Sincerely,

Alan W. Klimek, P.E.
Director

Attachments

cc: William Wescott, US Army Corps of Engineers, Washington Field Office

Kathy Matthews, Environmental Protection Agency
Travis Wilson, NC Wildlife Resources Commission
Gary Jordon, US Fish and Wildlife Service
Steve Sollod, Division of Coastal Management
Garcy Ward, DWQ Washington Regional Office
File Copy

**Modification to the 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act
Tar-Pamlico Buffer Rules with ADDITIONAL CONDITIONS**

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (DWQ) Regulations in 15 NCAC 2H .0500 and 15A NCAC .0259 for the Tar-Pamlico Basin. This certification authorizes the NCDOT to impact 7.93 acres of jurisdictional wetlands, 2,368 linear feet of jurisdictional streams and 285,751 square feet of protected riparian buffers in Beaufort County. The project shall be constructed pursuant to the modification dated received December 15, 2006. This Water Quality Certification supercedes the certification issued January 24, 2007. The authorized impacts are as described below:

Surface Water and Stream Impacts in the Tar-Pamlico River Basin Approved with Original Certification

Section B, Site:	Initial Permanent Fill (ac)	Initial Temporary Fill (ac)	Initial Permanent Stream Impacts (ft)
1	0.011		122
2	0.003		73
3	0.759		0
4	0.00		826
5			
6	0.069	0.033	
7	0.128		1,118
8	0.074		
9	0.051		279
10			
11			
INITIAL TOTAL:	1.095	0.033	2,417

Surface Water and Stream Impacts in the Tar-Pamlico Rive Basin Approved By This Certification

Section B, Site:	Modified Permanent Fill (ac)	Modified Temporary Fill (ac)	Modified Permanent Stream Impacts (ft)
1	0.020		170
2	0		0
3	0.060		363
4	0.070		484
5			
6	0.00	0.01	
7	0.180		1,147
8	0		
9	0.050		204
10			
11			
MODIFIED TOTAL:	0.38	0.010	2,368
Difference Between Initial and Modified Totals:	-0.715	-0.023	-49.3

Total Stream Impacts for Section B Approved by This Certification: 2,368 linear feet

Wetland Impacts in the Tar-Pamlico River Basin Approved with Original Certification

Section B, Site:	Initial Fill (Permanent) (ac)	Initial Fill (Temporary) (ac)	Initial Excavation (ac)	Initial Mechanized Clearing (ac)	Initial Hand Clearing (ac)	Initial Total Wetland Impact (ac)
1	0.09			0.007		0.10
2			0.017	0.013		0.03
3	0.43			0.040		0.47
4	3.03			0.149		3.18
5	0.12			0.011		0.13
6	0.22	0.05		0.0		0.27
7	1.55					1.55
8	0.04					0.04
9	0.13			0.017		0.15
10	0.22			0		0.22
11	0					
INITIAL TOTAL:	5.84	0.05	0.017	0.237	0	6.14

Wetland Impacts in the Tar-Pamlico River Basin Approved By This Certification

Section B, Site:	Modified Fill (Permanent) (ac)	Modified Fill (Temporary) (ac)	Modified Excavation (ac)	Modified Mechanized Clearing (ac)	Modified Hand Clearing (ac)	Total Modified Impacts (ac)
1	0.11			0.02		0.13
2			0.0	0		
3	1.00			0.45		1.45
4	2.04			0.14		2.18
5	0.15			0.02		0.18
6	0.24		0.05	1.83	33.11	2.12
7	1.56					1.56
8	0.0					
9	0.10			0.06		0.16
10	0.13			0.02		0.15
11	0					
MODIFIED TOTAL:	5.33	0.00	0.05	2.540	33.11	7.930
Difference Between Initial and Modified Totals:	+0.5	+0.05	+0.033	+2.303	+33.11	+1.79

Total Wetland Impacts for Section B Approved By This Certification: 7.93 acres.

Riparian Buffer Impacts in the Tar-Pamlico River Basin Approved with Original Certification

Section B, Site:	Zone 1 Impact (sq ft)	minus Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required* (using 3:1 ratio)		Zone 2 Impact (sq ft)	minus Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required* (using 1.5:1 ratio)
1	6,676.6	4,312.9	2,363.7	N/A		4,450.0	0.0	4,450.0	N/A
2	2,842.1	1,179.5	1,662.6	N/A		1,992.6	98.8	1,893.8	N/A
3									
4	49,735.4	48,299.0	1,436.4	4,309.2		32,361	24,287.9	8,073.1	24,219.3
5									
6A	9,424.7	35.5	9,389.2	28,167.6		6,215.2	3	6,212.3	18,636.9
6B	10,188.4	7.5	10,180.9	30,542.7		6,628.1	3	6,625.1	19,873.3
6C	29,045.5	35.5	29,010.0	87,030.0		19,778.2	41.5	19,736.7	59,210.1
7	60,721.8	3,079.2	57,642.6	172,927.8		38,160.8	5,244.5	32,916.3	98,748.9
8									
9	16,736.8	2,253.9	14,482.9	43,448.7		11,154.9	1,944.5	9,210.4	27,631.2
10									
11									
INITIAL TOTAL:	185,371.3	59,202.9	102,571.9	366,426		116,290.7	31,623.2	69,936.5	248,319.7

Riparian Buffer Impacts in the Tar-Pamlico River Basin Approved By This Certification

Section B, Site:	Zone 1 Impact (sq ft)	minus Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required* (using 3:1 ratio)		Zone 2 Impact (sq ft)	minus Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required* (using 1.5:1 ratio)
1	11,774.8	5,380.8	6,394.0	19,182.0		7,951.6	0.0	7,951.6	11,927.4
2									
3	27,846.2	24,339.3	3,506.9	10,520.7		16,695.9	14,777.6	1,918.3	2,877.5
4	30,705.3	30,244.9	460.4	1,381.2		18,371.3	13,698.0	4,673.3	7,010.0
5									
6									
7	73,267.8	2,311.1	70,956.7	212,870.1		48,125.5	4,926.6	43,198.9	64,798.3
8									
9	25,212.8	1,408.0	23,804.8	71,414.4		16,114.5	2,968.5	13,146.0	19,719.0
10									
11	5,719.5		5,719.5	N/A		3,965.9	0	3,965.9	N/A
MODIFIED TOTAL:	174,526.1	66,162.1	110,842.3	315,368.4		111,224.7	36,948.7	74,854.0	106,332.2
Difference Between Original and Modified Totals:	-10,845.2	+6,959.2	+8,270.4	-51,057.6		-5,066.0	+5,325.5	+4,917.5	-141,987.5

* N/A = Total for Site is less than 1/3 acre and 150 linear feet of impact, no mitigation required

Total Buffer Impact for Project Approved By This Certification: 285,750 square feet.

Total Buffer Mitigation Required for Project Approved By This Certification: 421,700 square feet

The application provides adequate assurance that the discharge of fill material into the waters of the Tar River Basin in conjunction with the proposed development will not result in a violation of applicable Water Quality Standards and discharge guidelines. Therefore, the State of North Carolina certifies that this activity will not violate the applicable portions of Sections 301, 302, 303, 306, 307 of PL 92-500 and PL 95-217 if conducted in accordance with the application and conditions hereinafter set forth.

This approval is only valid for the purpose and design that you submitted in your modified application dated received December 15, 2006. All the authorized activities and conditions of certification associated with the original Water Quality Certification dated September 6, 2005 still apply except where superceded by this certification. Should your project change, you are required to notify the DWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Condition(s) of Certification:

1. The only modifications to the design of the project authorized by this certification are those submitted in your application received November 16, 2006. All authorized activities and conditions of certification associated with the original Water Quality Certification dated September 6, 2005 and all other corresponding modifications still apply except where superceded by this certification.
2. Compensatory mitigation for impacts to 110,842.3 square feet of protected riparian buffers in Zone 1 and 74,854.0 square feet of protected riparian buffer in Zone 2 shall be required as described below, and replaces condition #10 in the 401 Water Quality Certification dated September 6, 2005:

Riparian Buffer Zone	Area To Be Mitigated (sq.ft)	Mitigation Ratio	Area to Be Mitigated (sq. ft)
Zone 1	110,842.3	3:1	315,368.4
Zone 2	74,854.0	1.5:1	106,332.2
TOTAL:			421,700.6

We understand that you have chosen to perform compensatory mitigation for impacts to protected buffers through use of the North Carolina Ecosystem Enhancement Program (EEP). Mitigation for unavoidable impacts to Tar-Pamlico Riparian Buffers shall be provided in the Tar-Pamlico River Basin (HUC 03020104) and done in accordance with 15A NCAC 2B .0259. EEP has indicated in a letter dated October 27, 2006 that they will assume responsibility for satisfying the compensatory mitigation requirements for the above-referenced project, in accordance with the Tri-Party MOA signed on July 22, 2003 and the Dual-Party MOA signed on April 12, 2004.

2. Compensatory mitigation for impacts to 7.93 acres of jurisdictional wetlands shall be done. Total mitigation shall be provided as described below, and replaces condition #11 in the 401 Water Quality Certification dated September 6, 2005:

Wetland Type	Area (ac)	Riparian Wetlands Mitigated Onsite	Area To Be Mitigated Offsite	Mitigation Ratio	Acres To Be Mitigated (ac)
Riparian	6.04	0.70	5.34	2:1	10.68
Non-Riparian	1.88	0	1.88	2:1	3.76
TOTAL:					14.44

Offsite Compensatory Mitigation

Compensatory mitigation for 10.68 acres of riparian and 3.76 acres non-riparian wetlands not mitigated onsite shall be mitigated in Hydrologic Cataloging Unit 03020104, associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated August 4, 2005, and in accordance with the Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003.

3. Compensatory mitigation for impacts to 2,368 linear feet of streams shall be done at a replacement ratio of 1:1. Applying a replacement ratio of 1:1, total mitigation for 2,368 linear feet of streams shall be provided as described below, and replaces condition #12 in the 401 Water Quality Certification dated September 6, 2005:

Offsite Compensatory Mitigation

Compensatory mitigation for the unavoidable impacts to 2,368 linear feet of streams in the Hydrologic Cataloging Unit 03020104 associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated August 4, 2005, and in accordance with the Memorandum of Agreement (MOA) between the State of North Carolina and the US Army Corps of Engineers signed on July 22, 2003.

3. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be re-vegetated with appropriate native species.
4. Prior to planting any of the vegetation for the wetland restoration sites located at the Osprey Seafood mitigation site and the Packing House Road mitigation site, a planting plan shall be submitted to, and approved by, the NC Division of Water Quality.
5. During construction of the Osprey Seafood and Packing House Road mitigation sites, the areas to be restored shall be graded to an elevation that approximates adjacent wetlands, and then ripped to promote vegetation re-establishment.
6. For the aforementioned wetland mitigation sites (the Osprey Seafood and Packing House Road mitigation sites), success shall be tracked over a 3-year period. The NCDOT shall submit an annual summary report (including pictures of the sites) at the end of each of the first two years after the completion of the project. The report shall discuss the site's vegetative and hydrologic changes. This report can be qualitative in nature and is in lieu of the usual quantitative hydrology and vegetative success criteria. At the end of the third year after project completion, the NCDOT will coordinate a field visit to the sites, at which time the DWQ will determine the success of the mitigation, and the sites may be declared successful with written approval from the NC Division of Water Quality. If, at the end of the 3-year monitoring period, the NC Division of Water Quality feels that the success cannot be determined or has not been achieved, then the NCDOT shall coordinate field visits on an annual basis until the NCDWQ is satisfied that the sites are successful.

7. Bridge deck drains should not discharge directly into the stream. Stormwater should be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Please refer to the most current version of *Stormwater Best Management Practices*.
8. Two copies of the final construction drawings shall be furnished to NCDWQ Central Office prior to the pre-construction meeting. The permittee shall provide written verification that the final construction drawings comply with the permit drawings contained in the application dated November 13, 2006. Any deviations from the approved drawings are not authorized unless approved by the NC Division of Water Quality.
9. Upon completion of the project, the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify DWQ when all work included in the 401 Certification has been completed.

Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

If this Certification is unacceptable to you have the right to an adjudicatory hearing upon written request within sixty (60) days following receipt of this Certification. This request must be in the form of a written petition conforming to Chapter 150B of the North Carolina General Statutes and filed with the Office of Administrative Hearings, 6714 Mail Service Center, Raleigh, N.C. 27699-6714. If modifications are made to an original Certification, you have the right to an adjudicatory hearing on the modifications upon written request within sixty (60) days following receipt of the Certification. Unless such demands are made, this Certification shall be final and binding.

This the 24th day of January 2007

DIVISION OF WATER QUALITY

Alan W. Klimek, P.E.
Director

Modification to WQC No. 3527

Certification of Completion

DWQ Project No.: _____ County: _____

Applicant: _____

Project Name: _____

Date of Issuance of Isolated Wetland Permit: _____

Certificate of Completion

Upon completion of all work approved within the **401 Water Quality Certification and Buffer Rules**, and any subsequent modifications, the applicant is required to return this certificate to the 401/Wetlands Unit, North Carolina Division of Water Quality, 1621 Mail Service Center, Raleigh, NC, 27699-1621. This form may be returned to DWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the **401 Water Quality Certification and Buffer Rules**, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

Agent's Certification

I, _____, hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the **401 Water Quality Certification and Buffer Rules**, the approved plans and specifications, and other supporting materials.

Signature: _____ Date: _____

If this project was designed by a Certified Professional

I, _____, as a duly registered Professional _____ (i.e., Engineer, Landscape Architect, Surveyor, etc.) in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project, for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation of the construction such that the construction was observed to be built within substantial compliance and intent of the **401 Water Quality Certification and Buffer Rules**, the approved plans and specifications, and other supporting materials.

Signature: _____ Registration No. _____ Date _____

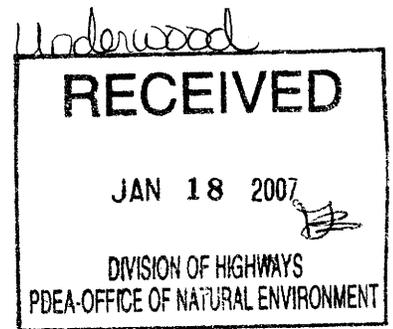


IN REPLY REFER TO

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS

P. O. BOX 1890
WILMINGTON, NORTH CAROLINA 28402-1890

January 17, 2007



Regulatory Division

Action ID No. 199301143

Mr. Gregory J. Thorpe, Ph.D.
Environmental Management Director, PDEA
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Mr. Thorpe:

Reference the Department of the Army (DA) permit issued to you on January 17, 2006, associated with the relocation and widening of approximately 15 miles of US Highway 17 (Washington Bypass). This permit modification pertains to Section B from US 17 south of SR 1149 (Price Road) to US 17 north of SR 1509 (Springs Road). The entire project is located within HUC 03020104 in Beaufort County, North Carolina. This permit modification request complies with special condition (a) of the existing permit.

The proposed revisions will result in a decrease in wetland fill by 0.50 acres and a decrease in stream impacts by 49 feet. Mechanized clearing in wetlands increased because of grubbing required for bridge piling installation. Riparian buffer impacts increased by 2.22 acres because sites 6 and 11 were not included in the initial permit application.

This modification request was discussed and coordinated with the appropriate State and Federal agencies at previous merger concurrence meetings and the coordination revealed no objections to this modification request. Therefore, the permit is hereby modified in accordance with the specific work activities described above and in the enclosed plans. It is understood that all conditions of the original permit remain applicable and that the expiration date is unchanged. In addition, the permittee will comply with the following special permit conditions:

a. All work authorized by this permit modification must be performed in strict compliance with the attached work plans, which are part of this permit. Any modification to the permit plans must be approved by USACE prior to implementation.

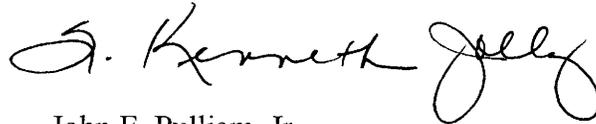
b. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this

project with a copy of this permit, and any authorized modifications. A copy of this permit, and any authorized modifications, including all conditions, shall be available at the project site during construction and maintenance of this project.

c. To avoid potential navigation hazards during and after inundation events, woody debris generated from clearing the bridge corridor will be burned or removed from the area between Sand Hole Road and the Tar River.

Questions regarding this correspondence may be directed to Mr. William Wescott, NCDOT Coordinator/Regulatory Project Manager at the Washington Regulatory Field Office, telephone (252) 975-1616, extension 31.

Sincerely,



John E. Pulliam, Jr.
John E. Pulliam, Jr.
Colonel, U.S. Army
District Engineer

Attachments:

Copies Furnished w/out attachments):

Mr. Steve Sollod
Division of Coastal Management
1638 Mail Service Center
Raleigh, North Carolina 27699-16387

Mr. John Hennessy
Water Quality Section
Division of Environmental Management
North Carolina Department of Environment
and Natural Resources
1650 Mail Service Center
Raleigh, North Carolina 27699-1650

Mr. Travis Wilson
Eastern Region Highway Project Coordinator
Habitat Conservation Program
1142 I-85 Service Road
Creedmoor, North Carolina 27522

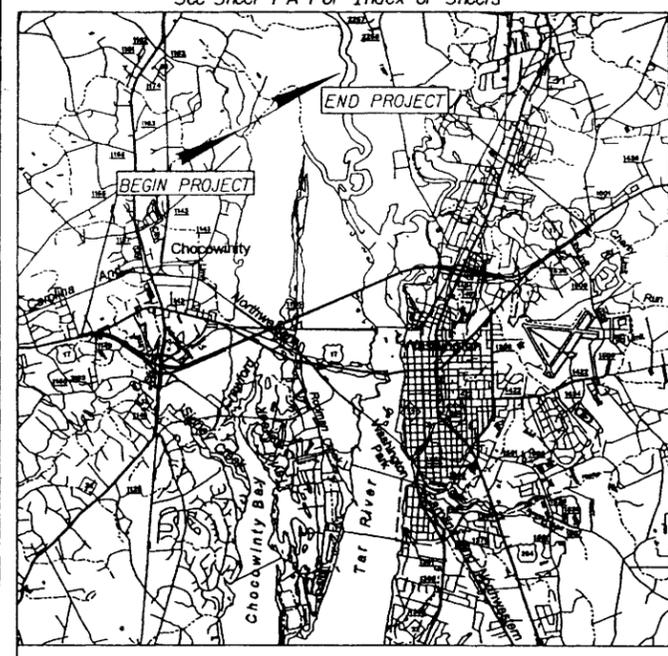
Mr. Pete Benjamin
U.S. Fish and Wildlife Service
Fish and Wildlife Enhancement
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. Ron Sechler
National Marine Fisheries Service
101 Pivers Island
Beaufort, North Carolina 28516

Mr. Chris Militscher
C/O FHWA
U.S. Environmental Protection Agency
Raleigh Office
310 New Bern Avenue, Room 206
Raleigh, North Carolina 27601

TIP PROJECT: R-2510B

See Sheet 1-A For Index of Sheets



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

BEAUFORT COUNTY

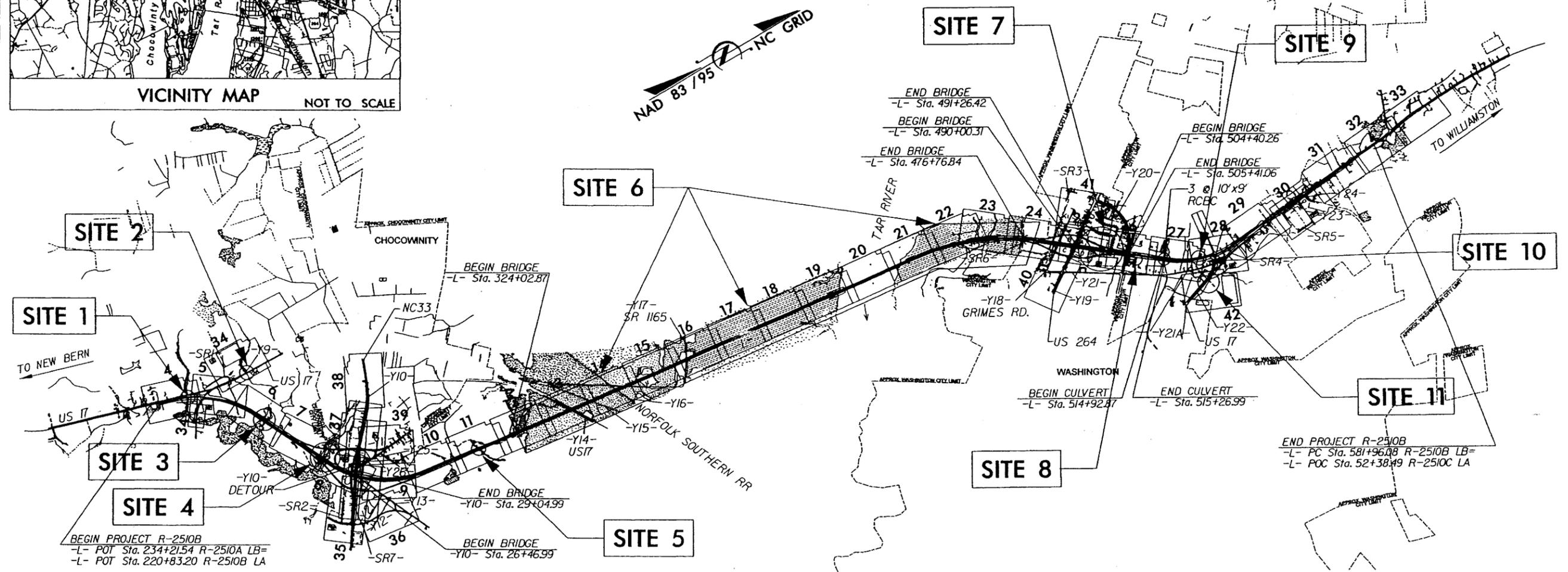
LOCATION: US 17 FROM SOUTH OF SR 1149 PRICE ROAD AND US 17 TO NORTH OF SR 1509 SPRINGS ROAD

TYPE OF WORK: GRADING, DRAINAGE, PAVING, WIDENING, RESURFACING
GUARDRAIL, STRUCTURES, CULVERTS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2510B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	

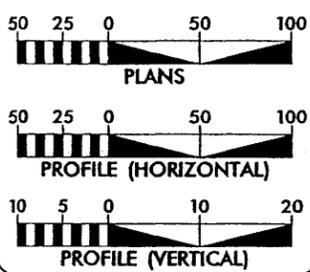
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PD 5 of 105
OCTOBER 2, 2006



METHOD OF CLEARING: III

GRAPHIC SCALES



DESIGN DATA

ADT 2005 = 10,200
ADT 2030 = 19,600
DHV = 12%
D = 60%
T = 8%
(TTST 6% & DUAL 2%)
V = 70 mph

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2510B = 3.898 MILES
LENGTH STRUCTURES TIP PROJECT R-2510B = 2.942 MILES
TOTAL LENGTH TIP PROJECT R-2510B = 6.840 MILES

Prepared in the Office of:
FLATIRON/UNITED
A JOINT VENTURE
EarthTech
A Tyco International Ltd. Company

2002 STANDARD SPECIFICATIONS

G. TOM SHEARIN, P.E.
PROJECT ENGINEER

KEVIN M. HAUGHEY, P.E.
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

REVISIONS

Revisions:

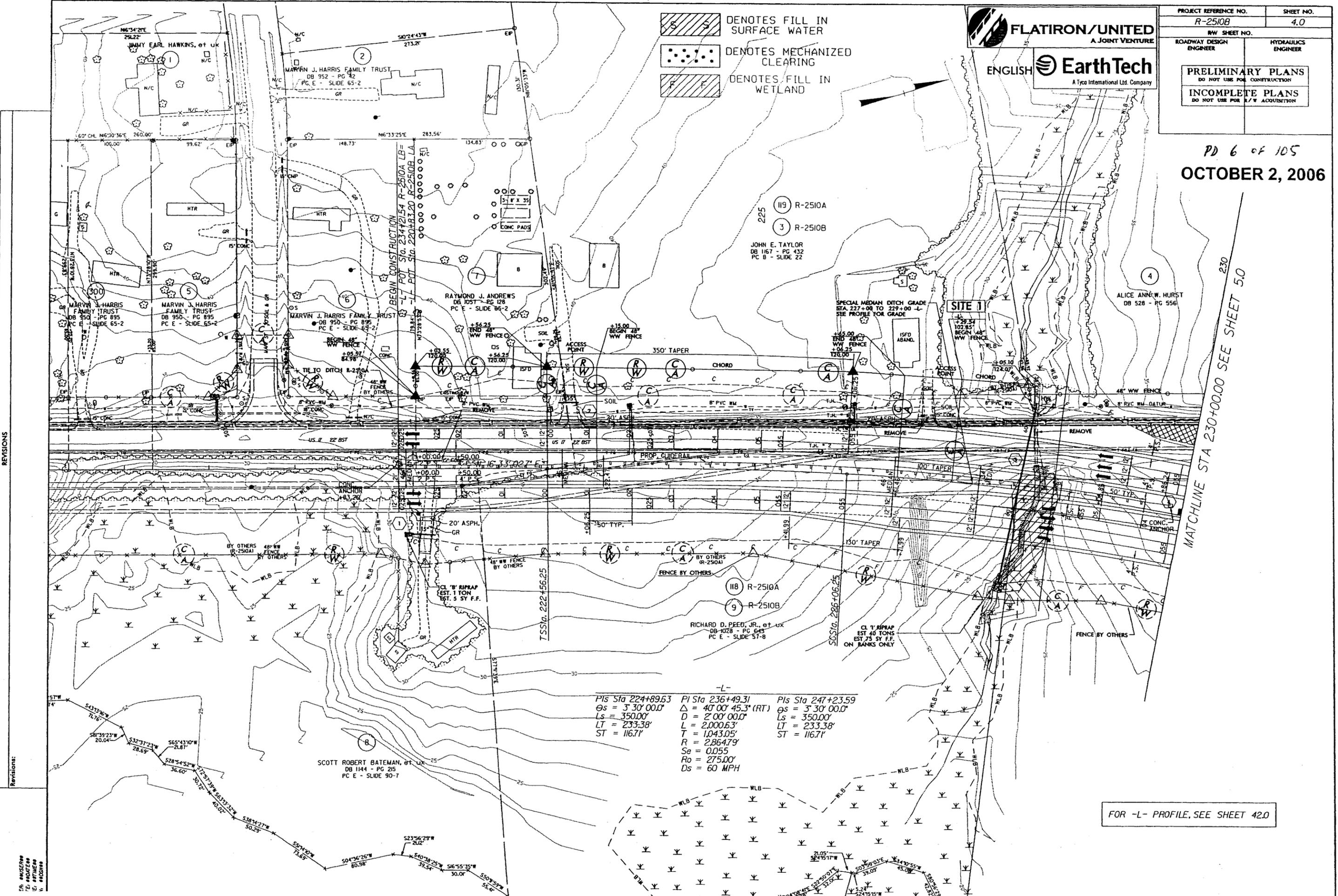
USER: #AUS28#
DATE: 10/02/06
PAGE: 1 OF 1
DRAWN: #AUS28#



PROJECT REFERENCE NO. R-2510B	SHEET NO. 4.0
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

PD 6 OF 105
 OCTOBER 2, 2006

- DENOTES FILL IN SURFACE WATER
- DENOTES MECHANIZED CLEARING
- DENOTES FILL IN WETLAND



REVISIONS:

Revisions:

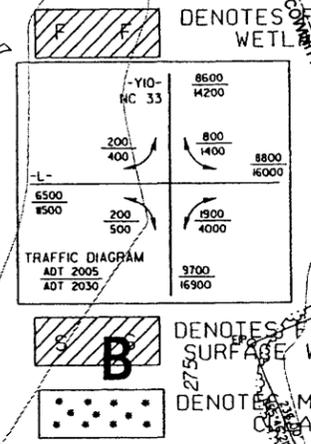
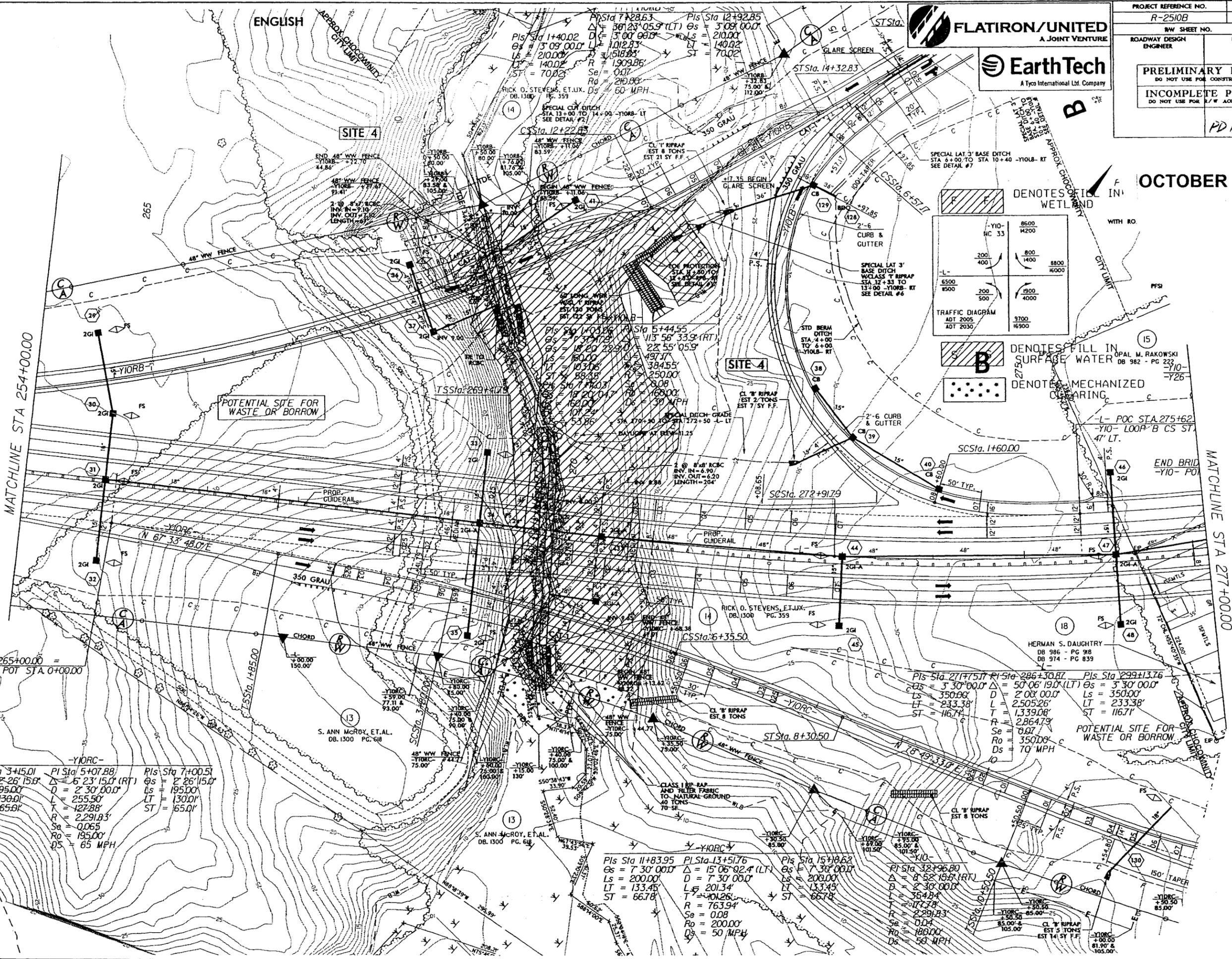
ER: #456789
 TE: #123456
 LE: #987654
 N: #101112

PIs Sta 224+89.63 $\Delta s = 3' 30'' 00.0'$ $Ls = 350.00'$ $LT = 233.38'$ $ST = 116.71'$	-L- PI Sta 236+49.31 $\Delta = 40' 00'' 45.3' (RT)$ $D = 2' 00'' 00.0'$ $L = 2,000.63'$ $T = 1,043.05'$ $R = 2,864.79'$ $Se = 0.055$ $Ro = 275.00'$ $Ds = 60 MPH$	PIs Sta 247+23.59 $\Delta s = 3' 30'' 00.0'$ $Ls = 350.00'$ $LT = 233.38'$ $ST = 116.71'$
---	--	---

FOR -L- PROFILE, SEE SHEET 42.0

MATCHLINE STA 230+00.00 SEE SHEET 5.0

OCTOBER 2, 2006



-YIORC-

PIs Sta 3+15.01	PIs Sta 5+07.88	PIs Sta 7+00.51
Cs = 2'26"15.0"	Δ = 6'23"15.0" (RT)	Cs = 2'26"15.0"
Ls = 195.00	D = 2'30"00.0"	Ls = 195.00
LT = 130.01	T = 255.50	LT = 130.01
ST = 65.01	R = 127.88'	ST = 65.01
	Se = 2.29183'	
	Ro = 195.00'	
	Ds = 65 MPH	

-YIORC-

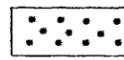
PIs Sta 11+83.95	PIs Sta 13+51.76	PIs Sta 15+18.62
Cs = 7'30"00.0"	Δ = 15'06"02.4" (LT)	Cs = 7'30"00.0"
Ls = 200.00	D = 7'30"00.0"	Ls = 200.00
LT = 133.45	L = 201.34'	LT = 133.45
ST = 66.78	T = 401.26'	ST = 66.78
	R = 763.94'	
	Se = 0.08	
	Ro = 200.00'	
	Ds = 50 MPH	

-YIORC-

PIs Sta 2717+51.77	PIs Sta 286+30.87	PIs Sta 299+13.76
Cs = 3'30"00.0"	Δ = 50'06"19.0" (LT)	Cs = 3'30"00.0"
Ls = 350.00	D = 2'00"00.0"	Ls = 350.00
LT = 233.38'	T = 2505.26'	LT = 233.38'
ST = 116.74	R = 1339.08'	ST = 116.74
	Se = 2.86473'	
	Ro = 350.00'	
	Ds = 70 MPH	

REVISIONS

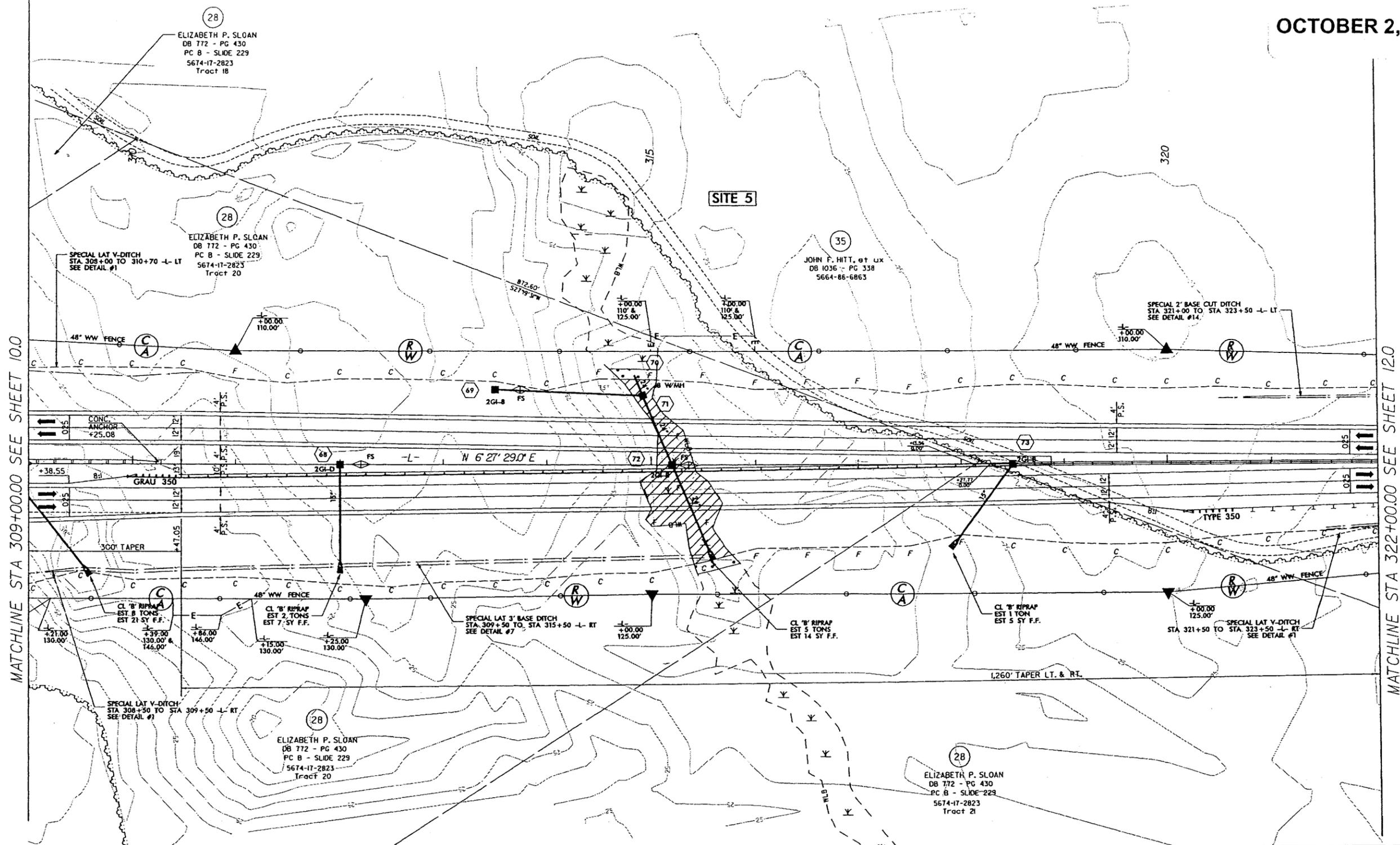
USER: #A5E#*
DATE: #10/02/06
TIME: #10:58 AM
JOB: #R2510B

 DENOTES FILL IN WETLAND
 DENOTES MECHANIZED CLEARING

 **FLATIRON/UNITED**
 A JOINT VENTURE
 **EarthTech**
 A Tyco International Ltd. Company
 ENGLISH

PROJECT REFERENCE NO. R-2510B	SHEET NO. 11.0
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PD 17 of 105	

OCTOBER 2, 2006



MATCHLINE STA 309+00.00 SEE SHEET 10.0

MATCHLINE STA 322+00.00 SEE SHEET 12.0

REVISIONS

Revisions:

USER: MUSEM
 DATE: 10/02/06
 TIME: 10:00 AM
 JOB: MUSEM

FOR -L- PROFILE, SEE SHEET 46.0

PROJECT REFERENCE NO. R-2510B	SHEET NO. 14.0
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR L/W ACQUISITION	
PD 21 c.f. 105	

FOR -L- PROFILE, SEE SHEET 47.0 AND 48.0
 FOR -Y15- PROFILE, SEE SHEET 68.0
 FOR -Y16- PROFILE, SEE SHEET 68.0

OCT - 2 2006

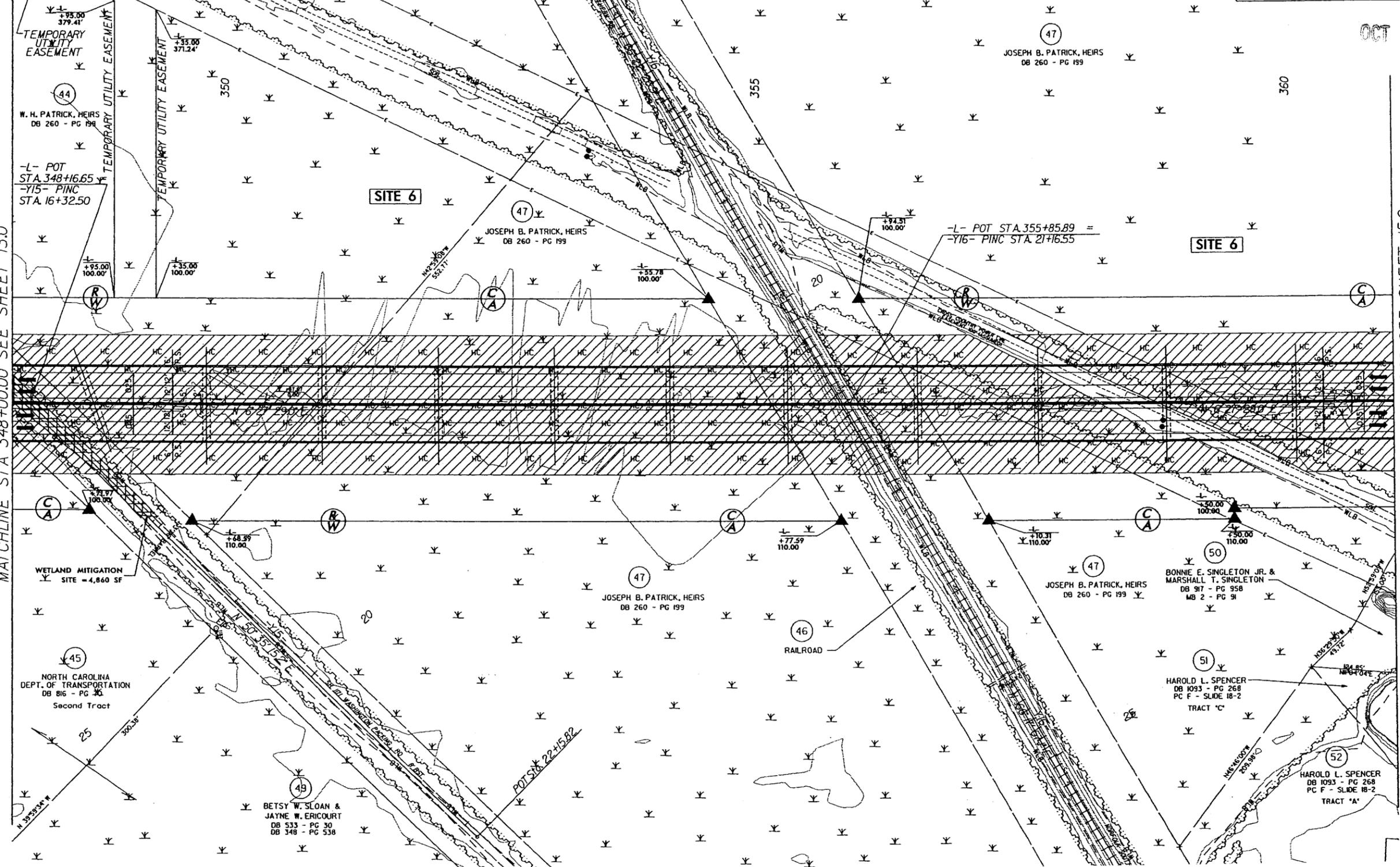
REVISIONS:

MATCHLINE STA 361+00.00 SEE SHEET 15.0

MATCHLINE STA 348+00.00 SEE SHEET 13.0



HAND CLEARING REFERS TO MACHINE CLEARING WITH GRUBBING AT PIERS ONLY. SEE DETAIL ON SHEET 12



USER: #USER##
 DATE: #DATE##
 TIME: #TIME##
 DSN: #DSN##

14



PROJECT REFERENCE NO. R-2510B	SHEET NO. 15.0
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PD 22 of 105	

OCTOBER 2, 2006

HC HC DENOTES HAND CLEARING

HAND CLEARING REFERS TO MACHINE CLEARING WITH GRUBBING AT PIERS ONLY. SEE DETAIL ON SHEET 12

47 JOSEPH B. PATRICK, HEIRS DB 260 - PG 199

50 BONNIE E. SINGLETON JR. & MARSHALL T. SINGLETON DB 917 - PG 958 MB 2 - PG 91

SITE 6

SITE 6

MATCHLINE STA 361+00.00 SEE SHEET 14.0

MATCHLINE STA 374+00.00 SEE SHEET 16.0

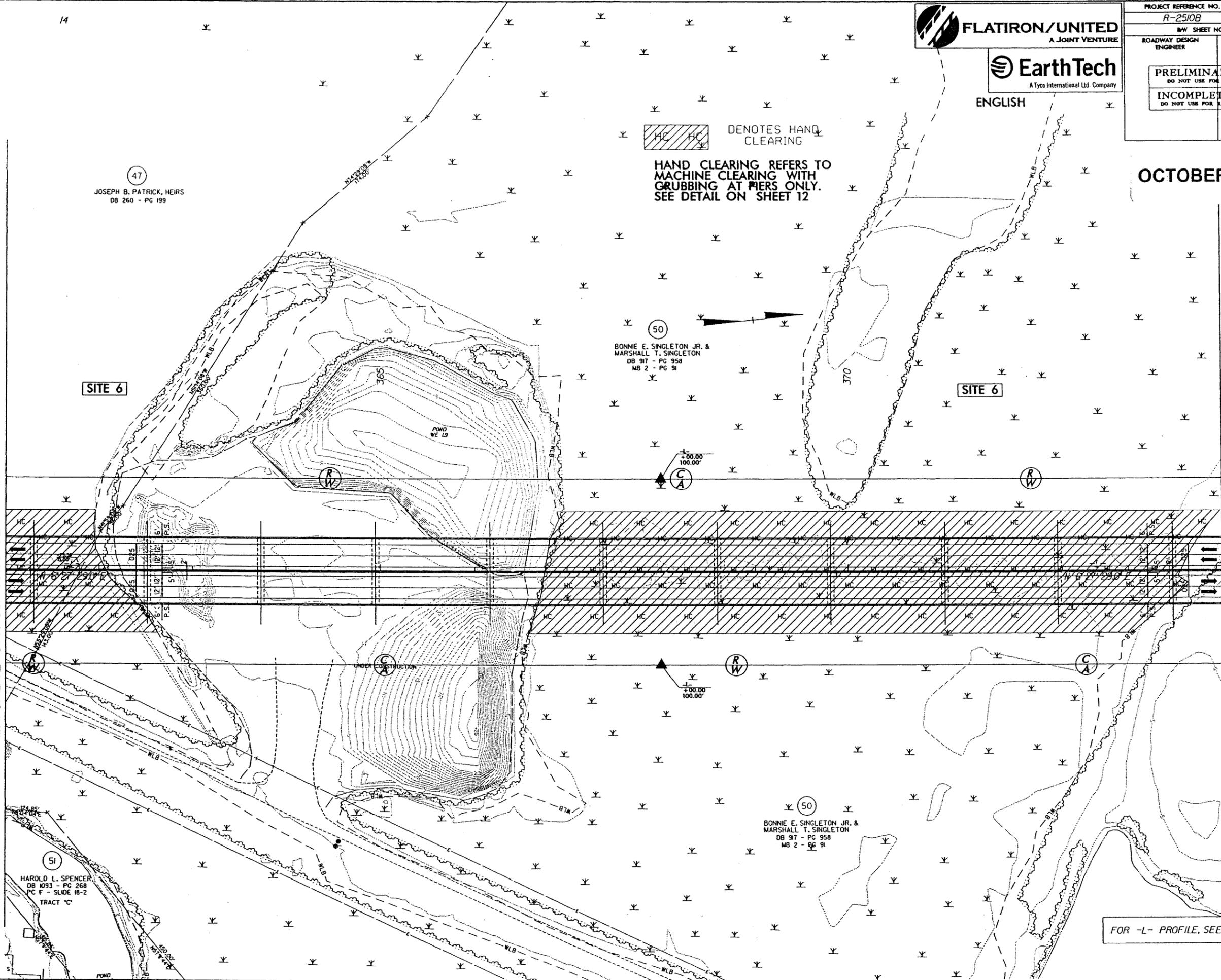
REVISIONS

USER: #/USE# DATE: #/##/## TIME: #:#:## DGN: #/###

51 HAROLD L. SPENCER DB 1093 - PG 268 PC F - SLIDE 1B-2 TRACT 'C'

50 BONNIE E. SINGLETON JR. & MARSHALL T. SINGLETON DB 917 - PG 958 MB 2 - PG 91

FOR -L- PROFILE, SEE SHEET 48.0



OCTOBER 2, 2006

HC HC DENOTES HAND CLEARING

HAND CLEARING REFERS TO MACHINE CLEARING WITH GRUBBING AT PIERS ONLY. SEE DETAIL ON SHEET 12

MATCHLINE STA 374+00.00 SEE SHEET 15

MATCHLINE STA 387+00.00 SEE SHEET 17

50
BONNIE E. SINGLETON JR. & MARSHALL T. SINGLETON
DB 917 - PG 958
MB 2 - PG 91

-Y17-
PI STA 13+66.31
 $\Delta = 5'12'' 29.4'' (RT)$
 $D = 1'30'' 00.0''$
 $L = 347.21'$
 $T = 173.73'$
 $R = 3,819.72'$

53
PATTIE M. DIXON
DB 855 - PG 304
PC C - SLIDE 212

54
BONNIE E. SINGLETON JR. & MARSHALL T. SINGLETON
DB 917 - PG 958
MB 2 - PG 91

55
TEX A. COWARD
DB 1060 - PG 84

56
PATTIE M. DIXON
DB 855 - PG 304
PC C - SLIDE 212

57
CITY OF WASHINGTON
DB 1060 - PG 535

58
BOBBY E. GODFREY JR.
DB 990 - PG 466

SITE 6

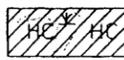
FOR -L- PROFILE, SEE SHEET 48.0 AND 49.0
FOR -Y17- PROFILE, SEE SHEET 68.0

REVISIONS

Revisions:

USER: #USER#
DATE: #DATE#
TIME: #TIME#
DOW: #DOW#

PROJECT REFERENCE NO. R-2510B	SHEET NO. 17.0
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PD 24 OF 105	



DENOTES HAND CLEARING

HAND CLEARING REFERS TO MACHINE CLEARING WITH GRUBBING AT PIERC ONLY. SEE DETAIL ON SHEET 12

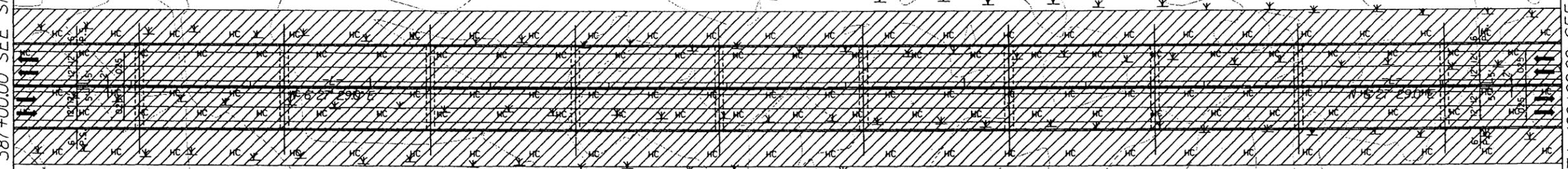
OCTOBER 2, 2006

54
BONNIE E. SINGLETON JR. & MARSHALL T. SINGLETON
DB 917 - PG 958
MB 2 - PG 91

SITE 6

MATCHLINE STA 387+00.00 SEE SHEET 16.0

MATCHLINE STA 400+00.00 SEE SHEET 18.0



+00.00
100.00'

+00.00
100.00'

57
CITY OF WASHINGTON
DB 1060 - PG 535

54
BONNIE E. SINGLETON JR. & MARSHALL T. SINGLETON
DB 917 - PG 958
MB 2 - PG 91

FOR -L- PROFILE, SEE SHEET 49.0

REVISIONS

Revisions:

USER: #USER##
DATE: #DATE##
TIME: #TIME##
DCH: #DCH##



PROJECT REFERENCE NO. R-2510B	SHEET NO. 18.0
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PD 25 of 105	

HC HC DENOTES HAND CLEARING

HAND CLEARING REFERS TO MACHINE CLEARING WITH GRUBBING AT PIERS ONLY. SEE DETAIL ON SHEET 12

English

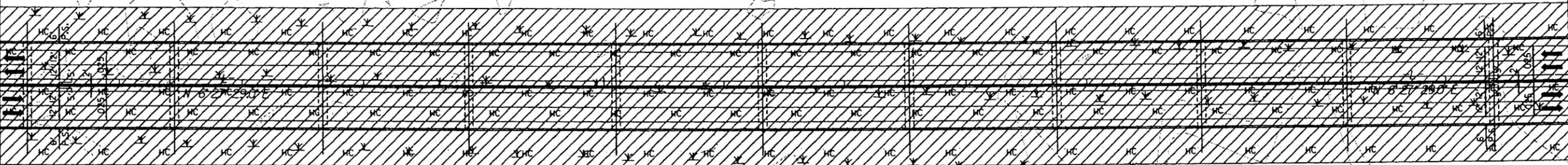
OCTOBER 2, 2006

54
BONNIE E. SINGLETON JR. & MARSHALL T. SINGLETON
DB 917 - PG 958
MB 2 - PG 91

SITE 6

MATCHLINE STA 400+00.00 SEE SHEET 17.0

MATCHLINE STA 413+00.00 SEE SHEET 19.0



54
BONNIE E. SINGLETON JR. & MARSHALL T. SINGLETON
DB 917 - PG 958
MB 2 - PG 91

FOR -L- PROFILE, SEE SHEET 49.0 AND 50.0

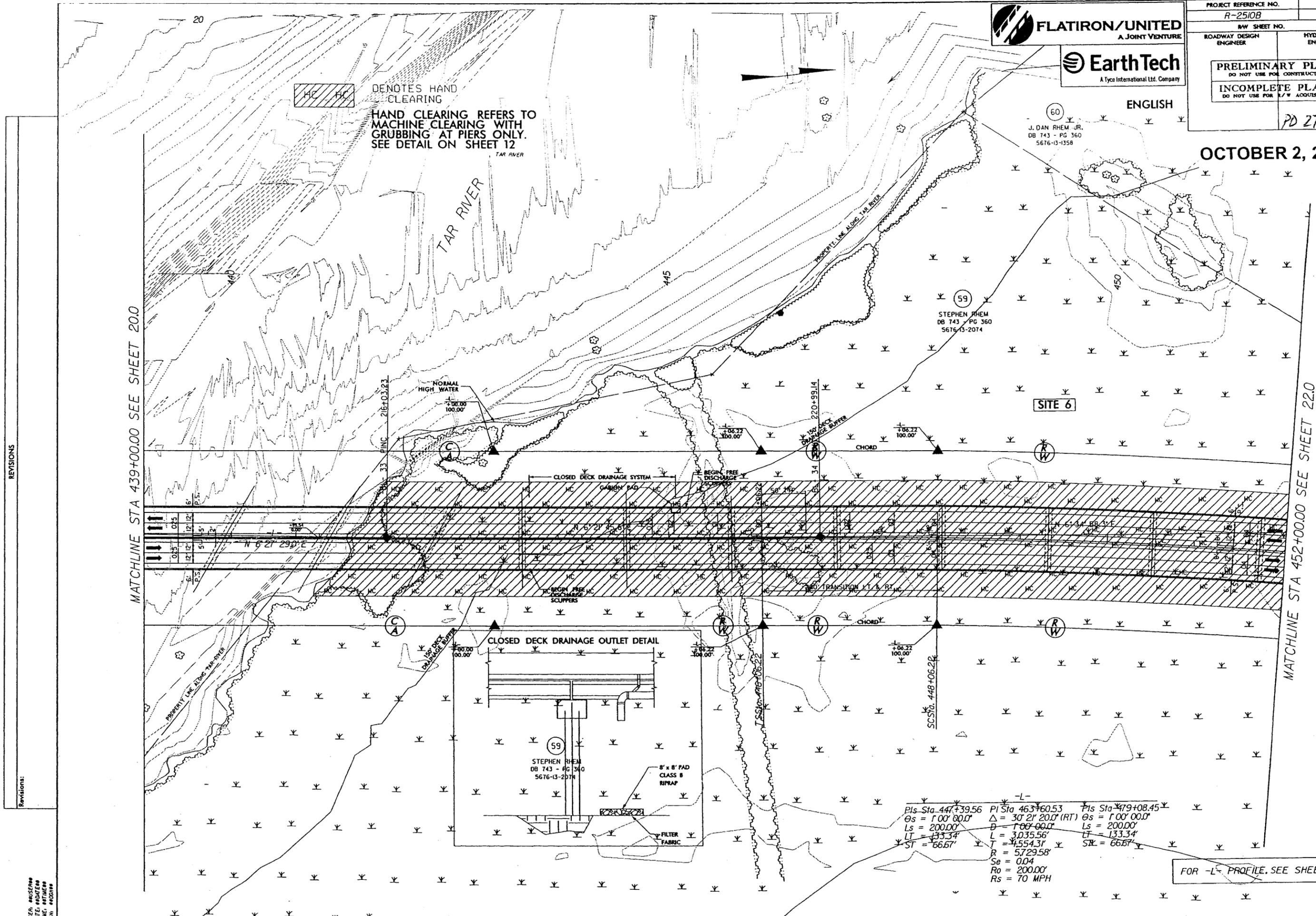
REVISIONS

Revisions:

USER: ANSERRA
DATE: 10/02/06
TIME: 10:00 AM
DRAWN: ANSERRA

PD 27 of 105

OCTOBER 2, 2006



PIs Sta 447+39.56	PI Sta 463+60.53	PIs Sta 479+08.45
Es = 1'00" 00.0"	Δ = 30' 21" 20.0" (RT)	Es = 1'00" 00.0"
Ls = 200.00'	D = 1'00" 00.0"	Ls = 200.00'
LT = 133.34'	L = 3,035.56'	LT = 133.34'
ST = 66.67'	T = 4,554.31'	ST = 66.67'
	R = 5,729.58'	
	Se = 0.04	
	Ro = 200.00'	
	Rs = 70 MPH	

FOR -L- PROFILE, SEE SHEET 51.0

REVISIONS

Revisions:

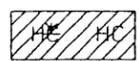
USER: #056888
DATE: #04/28/06
TIME: #08:16:58
DGN: #000188

PROJECT REFERENCE NO. R-2510B	SHEET NO. 22.0
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

PD 2B of 105

OCTOBER 2, 2006

21



DENOTES HAND CLEARING

HAND CLEARING REFERS TO MACHINE CLEARING WITH GRUBBING AT PIERS ONLY. SEE DETAIL ON SHEET 12



60

J. DAN RHEM JR.
DB 743 - PG 360
5676-13-1358

SITE 6

59

STEPHEN RHEM
DB 743 - PG 360
5676-13-2074

MATCHLINE STA 452+00.00 SEE SHEET 21.0

MATCHLINE STA 462+00.00 SEE SHEET 23.0

-L-

PIs Sta 447+39.56	PI Sta 463+60.53	PIs Sta 479+08.45
Es = 1'00'00.0"	Es = 30'21'20.0" (RE)	Es = 1'00'00.0"
Ls = 200.00'	D = 1'00'00.0"	Ls = 200.00'
LT = 133.34'	L = 3.035.56'	LT = 133.34'
ST = 66.67'	T = 1.554.31'	ST = 66.67'
	R = 5,729.56'	
	Se = 0.04	
	Ro = 200.00'	
	Rs = 70 MPH	

NORMAL HIGH WATER

NORMAL HIGH WATER

CLOSED DECK DRAINAGE SYSTEM

180' TRANSITION LT. & RT.

END-FREE DISCHARGE SCUPPERS

REVISIONS

Revisions:

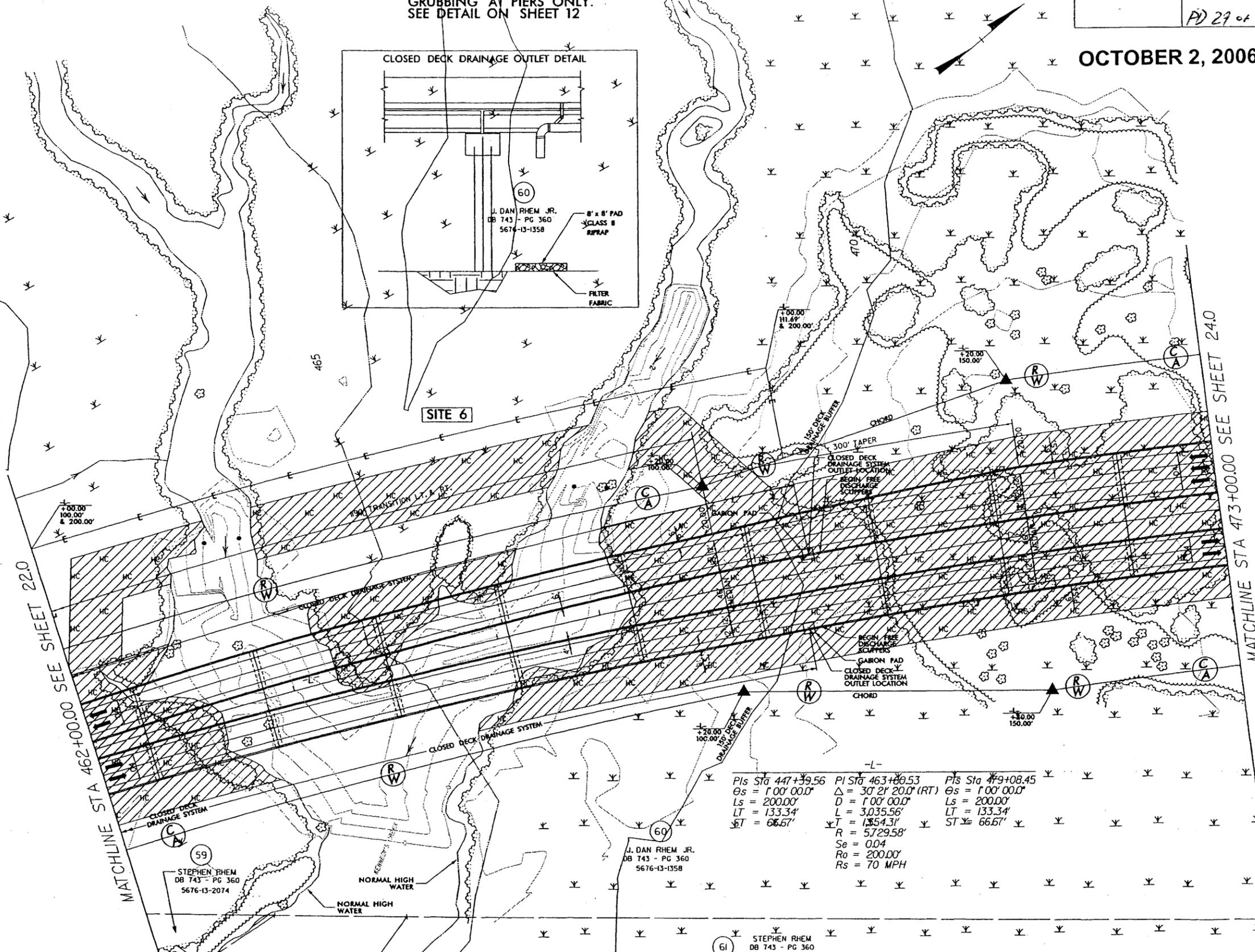
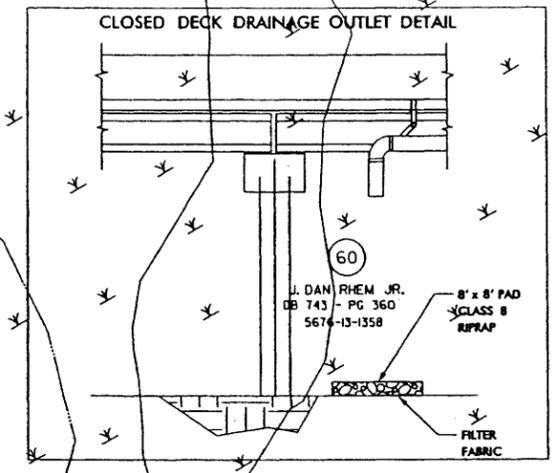
USER: RAUSENB
DATE: 10/2/06
TIME: 11:58 AM
DWG: 810206B

FOR -L- PROFILE, SEE SHEET 51.0 AND 52.0

PD 29 of 105

OCTOBER 2, 2006

HC HC DENOTES HAND CLEARING
HAND CLEARING REFERS TO MACHINE CLEARING WITH GRUBBING AT PIERS ONLY. SEE DETAIL ON SHEET 12



$Pts Sta 447+39.56$ $\theta_s = 1'00'00''$ $L_s = 200.00'$ $LT = 133.34'$ $ST = 66.67'$	$Pi Sta 463+00.53$ $\Delta = 30'21'20'' (RT)$ $D = 1'00'00''$ $L = 3,035.56'$ $LT = 1,854.31'$ $R = 5729.58'$ $Se = 0.04$ $Ro = 200.00'$ $Rs = 70 MPH$	$Pts Sta 479+08.45$ $\theta_s = 1'00'00''$ $L_s = 200.00'$ $LT = 133.34'$ $ST = 66.67'$
---	--	---

59
STEPHEN RHEM
DB 743 - PG 360
5676-13-2074

60
J. DAN RHEM JR.
DB 743 - PG 360
5676-13-1358

61
STEPHEN RHEM
DB 743 - PG 360
5676-13-2074

FOR -L- PROFILE, SEE SHEET 52.0

REVISIONS

Revisions:

USER: #AUS68#
DATE: #04/26/06#
TIME: #11:28:00#
CON: #10/26/06#

FOR -L- PROFILE, SEE SHEET 52.0 AND 53.0
 FOR -Y19RB- PROFILE, SEE SHEET 61.0
 FOR -Y19RC- PROFILE, SEE SHEET 61.0
 FOR -SR6- PROFILE, SEE SHEET 74.0

FLATIRON/UNITED
 A JOINT VENTURE

EarthTech
 A Tyco International Ltd. Company

ENGLISH

PROJECT REFERENCE NO. R-2510B	SHEET NO. 24.0
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

PD 30 of 105

OCTOBER 2, 2006

J. DAN RHEM JR.
 DB 743 - PG 360
 5676-13-1358

HC DENOTES HAND CLEARING
 HAND CLEARING REFERS TO MACHINE CLEARING WITH GRUBBING AT BERS ONLY. SEE DETAIL ON SHEET 12

-L-
 PIs Sta 447+39.56 PI Sta 463+60.53 PI Sta 479+08.45
 $\Theta_s = 1^{\circ}00'00.0''$ $\Delta = 30^{\circ}21'20.0''$ (RT) $\Theta_s = 1^{\circ}00'00.0''$
 $L_s = 200.00'$ $L = 3,035.56'$ $L_s = 200.00'$
 $LT = 133.34'$ $T = 1,554.31'$ $LT = 133.34'$
 $ST = 66.67'$ $R = 5,729.58'$ $ST = 66.67'$
 $Se = 0.04$
 $Ro = 200.00'$
 $Ds = 60$ MPH

LEE E. KNOTT, et al
 DB 517 - PG 22
 PC A - SLIDE 924
 PC D - SLIDE 249
 First Tract
 5676-15-6269

LEE E. KNOTT, et al
 DB 517 - PG 22
 PC A - SLIDE 924
 PC D - SLIDE 249
 Second Tract
 5676-15-6269

A.G. SWANNE
 DB 1289 - PG
 PC C - SLIDE

-Y19RB-
 PIs Sta 0+40.00 PI Sta 2+80.06 PI Sta 4+84.77 PI Sta 6+88.97
 $\Theta_s = 0^{\circ}35'42.4''$ $\Theta_s = 4^{\circ}48'00.0''$ $\Delta = 9^{\circ}57'23.7''$ (LT) $\Theta_s = 4^{\circ}48'00.0''$
 $L_s = 120.00'$ $L_s = 240.00'$ $D = 4^{\circ}00'00.0''$ $L_s = 240.00'$
 $LT = 80.00'$ $LT = 160.06'$ $L = 248.91'$ $LT = 160.06'$
 $ST = 40.00'$ $ST = 80.05'$ $T = 124.77'$ $ST = 80.05'$
 $R = 1,432.39'$
 $Se = 0.08$
 $Ro = 240.00'$
 $Ds = 60$ MPH

LEE E. KNOTT, et al
 DB 517 - PG 22
 PC A - SLIDE 924
 Third Tract
 5676-24-2234

A.G. SWANNE
 DB 1289 - PG 816
 PC G - SLIDE 6-4
 P.S.

OLIVER A. THOMAS, III
 DB 1196 - PG 93
 5676-24-8316

-SR6- (FUTURE)
 PIs Sta 11+96.12 PI Sta 13+33.70
 $\Delta = 9^{\circ}48'24.1''$ (LT) $\Delta = 2^{\circ}14'31.2''$ (LT)
 $D = 6^{\circ}00'00.0''$ $D = 2^{\circ}00'00.0''$
 $L = 163.45'$ $L = 112.10'$
 $T = 81.92'$ $T = 56.06'$
 $R = 954.93'$ $R = 2,864.79'$

-Y19RC-
 PIs Sta 1+60.06 PI Sta 3+52.69 PI Sta 8+29.97
 $\Theta_s = 4^{\circ}48'00.0''$ $\Delta = 8^{\circ}59'48.7''$ (RT) $\Theta_s = 4^{\circ}41'15.0''$
 $L_s = 240.00'$ $D = 4^{\circ}00'00.0''$ $L_s = 187.50'$
 $LT = 160.06'$ $L = 224.92'$ $LT = 125.04'$
 $ST = 80.05'$ $T = 112.69'$ $ST = 62.54'$
 $R = 1,432.39'$
 $Se = 0.08$
 $Ro = 240.00'$
 $Ds = 60$ MPH

FRED WEBB INC.
 DB 868 - PG 616
 DB 868 - PG 618
 PC D - PG 94
 5676-23-7915

STEPHEN RHEM
 DB 743 - PG 360
 5676-13-2074

MATCHLINE STA 473+00.00 SEE SHEET 23.0

MATCHLINE STA 8+150.00

MATCHLINE STA 486+00.00 SEE SHEET 25.0

MATCHLINE SEE SHEET 25.0

MATCHLINE SEE SHEET 40.0

REVISIONS

REVISIONS

USER: #NUSER#
 DATE: #DATE#
 TIME: #TIME#
 JOB: #JOB#

OCTOBER 2, 2006

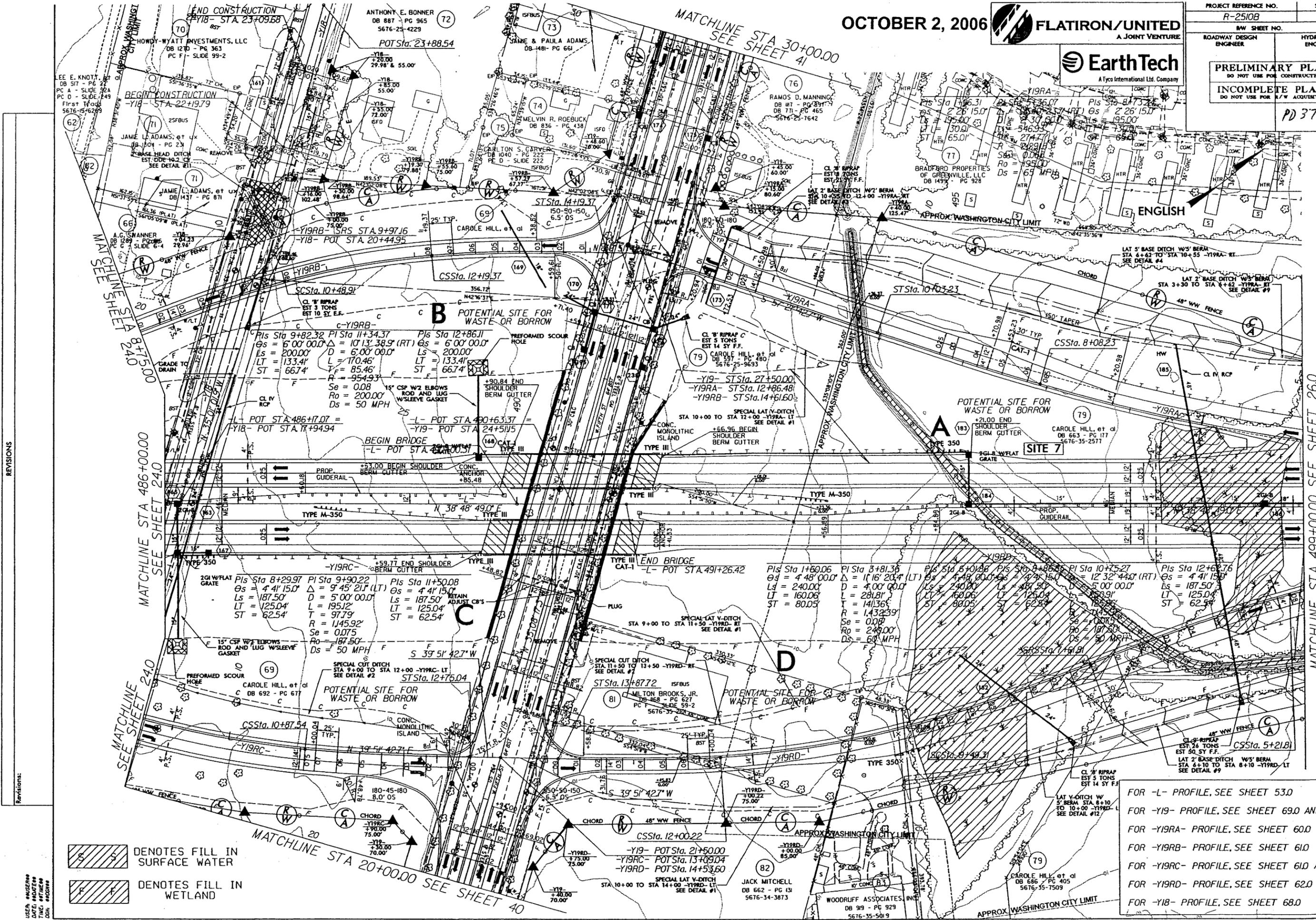


PROJECT REFERENCE NO. R-2510B SHEET NO. 25.0

ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION INCOMPLETE PLANS DO NOT USE FOR A/V ADJUSTMENT

PD 37 of 105



REVISIONS

USER: #026888 DATE: #08/28/06 DRAWN BY: JAC, #202888

Denotes fill in surface water Denotes fill in wetland

FOR -L- PROFILE, SEE SHEET 53.0 FOR -Y19- PROFILE, SEE SHEET 69.0 AND 70.0 FOR -Y19A- PROFILE, SEE SHEET 60.0 FOR -Y19RB- PROFILE, SEE SHEET 61.0 FOR -Y19RC- PROFILE, SEE SHEET 61.0 AND 62.0 FOR -Y19RD- PROFILE, SEE SHEET 62.0 FOR -Y18- PROFILE, SEE SHEET 68.0

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

INCOMPLETE PLANS
DO NOT USE FOR A/C ACQUISITION

PD 38 of 105

OCTOBER 2, 2006

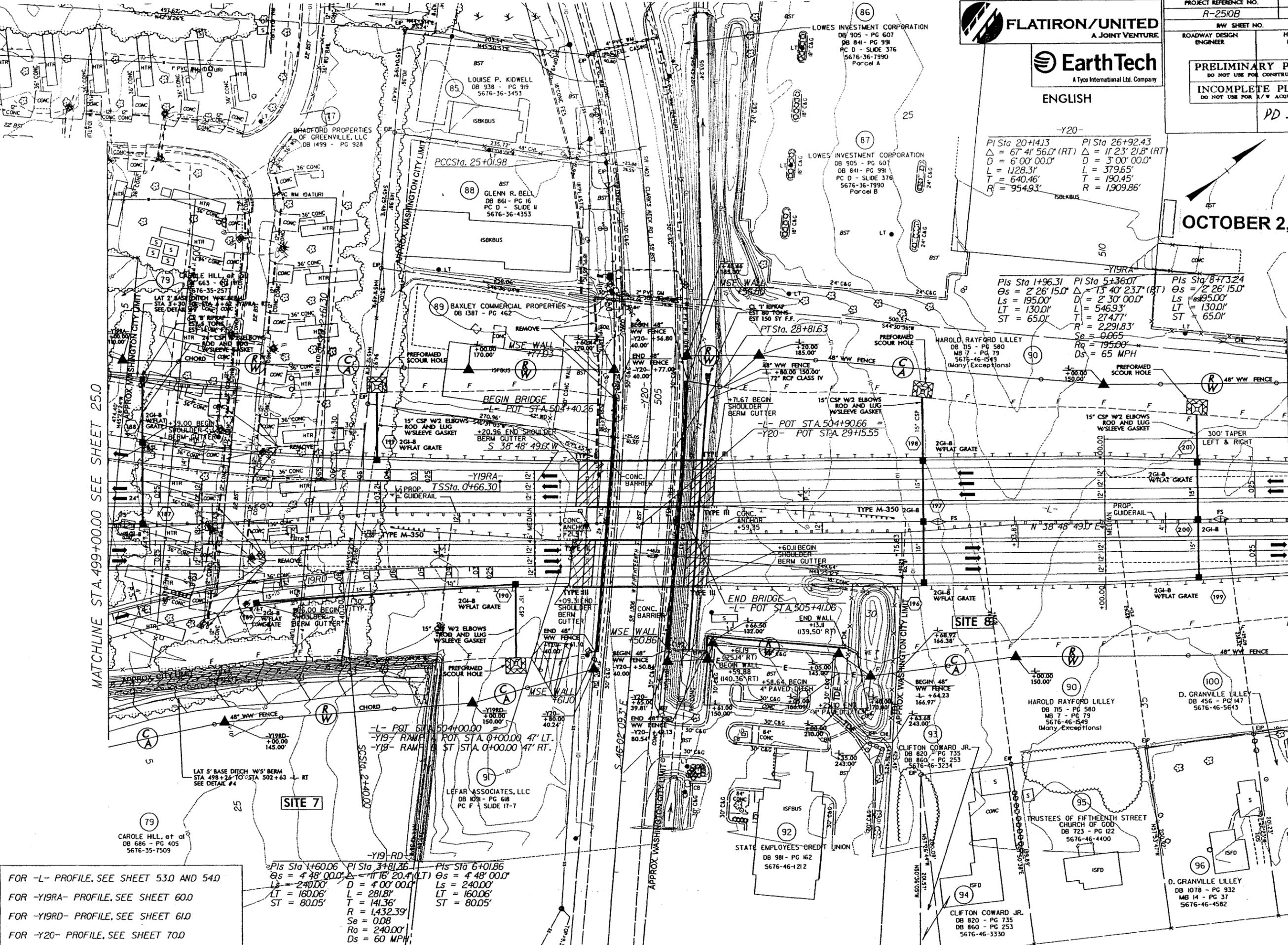
-Y20-
 P1 Sta 20+14.3 Δ = 67° 41' 56.0" (RT) D = 6' 00" 00.0" L = 1128.31' T = 640.46' R = 954.93'
 P1 Sta 26+92.43 Δ = 11° 23' 21.8" (RT) D = 3' 00" 00.0" L = 379.65' T = 190.45' R = 1909.86'

-Y19RA
 P1s Sta 1+96.31 Δs = 2° 26' 15.0" Ls = 195.00' LT = 130.01' ST = 65.01'
 P1 Sta 5+36.07 Δ = 13° 40' 23.7" (RT) D = 2' 30" 00.0" L = 546.93' T = 274.77' R = 2291.83' Ss = 0.665 Rq = 195.00' Ds = 65 MPH

P1s Sta 8+73.24 Δs = 2° 26' 15.0" Ls = 195.00' LT = 130.01' ST = 65.01'

MATCHLINE STA. 499+00.00 SEE SHEET 25.0

MATCHLINE STA. 512+00.00 SEE SHEET 27.0



REVISIONS

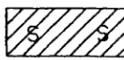
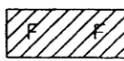
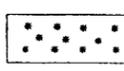
USERS: ANGESBORN
 DATE: 10/02/06
 TIME: 09:11:00
 DGN: #000000

FOR -L- PROFILE, SEE SHEET 53.0 AND 54.0
 FOR -Y19RA- PROFILE, SEE SHEET 60.0
 FOR -Y19RD- PROFILE, SEE SHEET 61.0
 FOR -Y20- PROFILE, SEE SHEET 70.0

P1s Sta 1+60.06 Δs = 4° 48' 00.0" Ls = 240.00' LT = 160.06' ST = 80.05'
 P1 Sta 3+81.26 Δ = 11° 16' 20.4" (LT) Ls = 4' 00" 00.0" T = 141.36' R = 1,432.39' Ss = 0.08 Ro = 240.00' Ds = 60 MPH
 P1s Sta 6+01.86 Δs = 4° 48' 00.0" Ls = 240.00' LT = 160.06' ST = 80.05'

ENGLISH

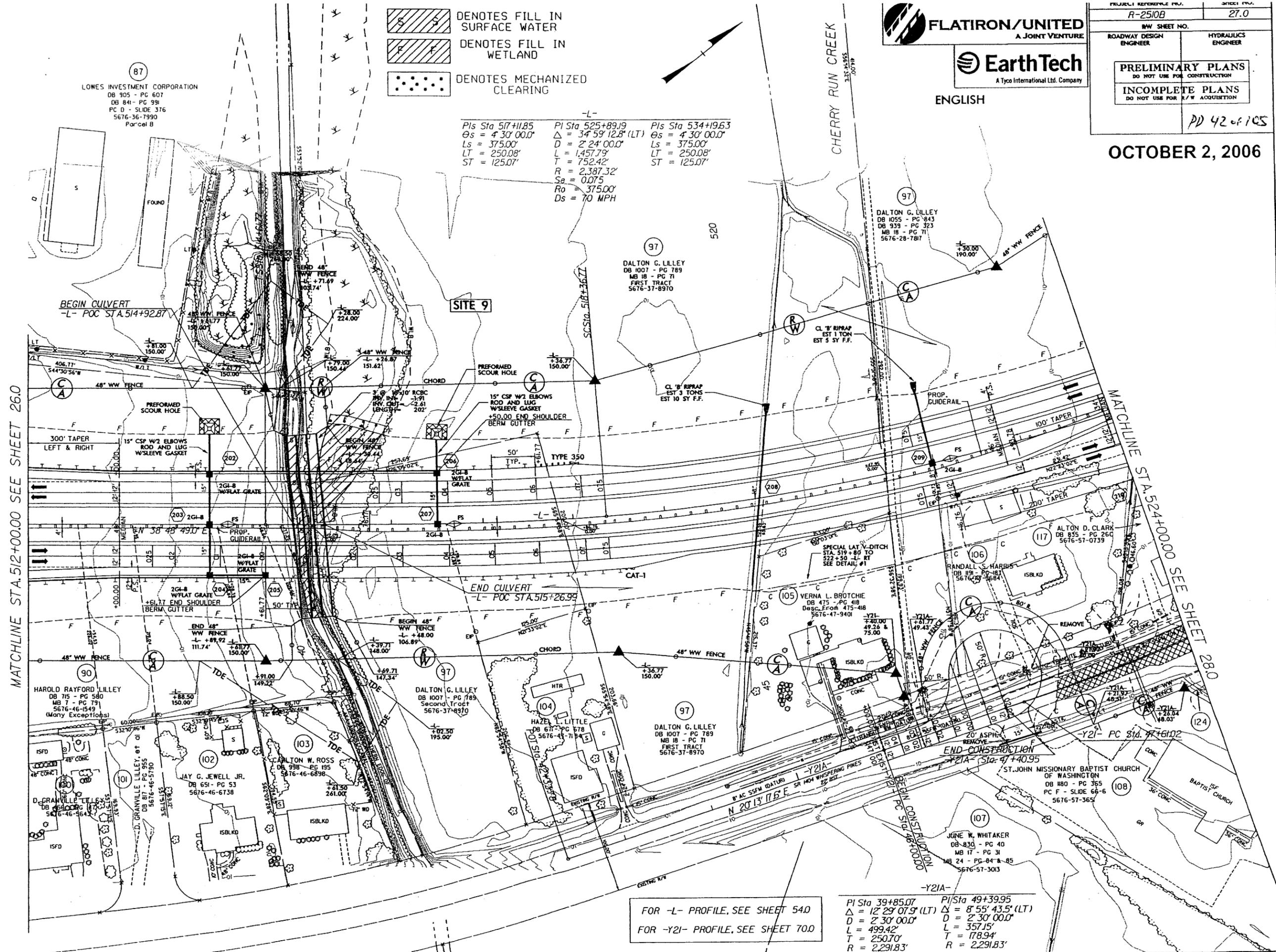
OCTOBER 2, 2006

-  DENOTES FILL IN SURFACE WATER
-  DENOTES FILL IN WETLAND
-  DENOTES MECHANIZED CLEARING



-L-

PIs Sta 517+11.85	PI Sta 525+89.19	PIs Sta 534+196.3
$\Theta_s = 4'30''00.0''$	$\Delta = 34'59''12.8''$ (LT)	$\Theta_s = 4'30''00.0''$
Ls = 375.00'	D = 2'24''00.0''	Ls = 375.00'
LT = 250.08'	L = 1,457.79'	LT = 250.08'
ST = 125.07'	T = 752.42'	ST = 125.07'
	R = 2,387.32'	
	Se = 0.075	
	Ro = 375.00'	
	Ds = 70 MPH	



MATCHLINE STA. 512+00.00 SEE SHEET 26.0

MATCHLINE STA. 524+00.00 SEE SHEET 28.0

FOR -L- PROFILE, SEE SHEET 54.0
FOR -Y2I- PROFILE, SEE SHEET 70.0

-Y2I-

PI Sta 39+85.07	PI Sta 49+39.95
$\Delta = 12'29''07.9''$ (LT)	$\Delta = 8'55''43.5''$ (LT)
D = 2'30''00.0''	D = 2'30''00.0''
L = 499.42'	L = 357.15'
T = 250.70'	T = 178.94'
R = 2,291.83'	R = 2,291.83'

(87) LOWES INVESTMENT CORPORATION
DB 905 - PG 607
DB 841 - PG 391
PC D - SLIDE 376
5676-36-7990
Parcel B

(97) DALTON G. LILLEY
DB 1007 - PG 789
MB 18 - PG 71
FIRST TRACT
5676-37-8970

(97) DALTON G. LILLEY
DB 1055 - PG 843
DB 939 - PG 323
MB 18 - PG 71
5676-28-7817

(90) HAROLD RAYFORD LILLEY
DB 715 - PG 580
MB 7 - PG 791
5676-46-1549
(Many Exceptions)

(97) DALTON G. LILLEY
DB 1007 - PG 789
Second Tract
5676-37-8970

(97) DALTON G. LILLEY
DB 1007 - PG 789
MB 18 - PG 71
FIRST TRACT
5676-37-8970

(107) JENE W. WHITAKER
DB 830 - PG 40
MB 17 - PG 31
MB 24 - PG 84 & 85
5676-57-3013

(108) ST. JOHN MISSIONARY BAPTIST CHURCH
OF WASHINGTON
DB 880 - PG 365
PC F - SLIDE 66-6
5676-57-3657

REVISIONS

USER: #USER#
DATE: #DATE#
TIME: #TIME#
JOB: #JOB#

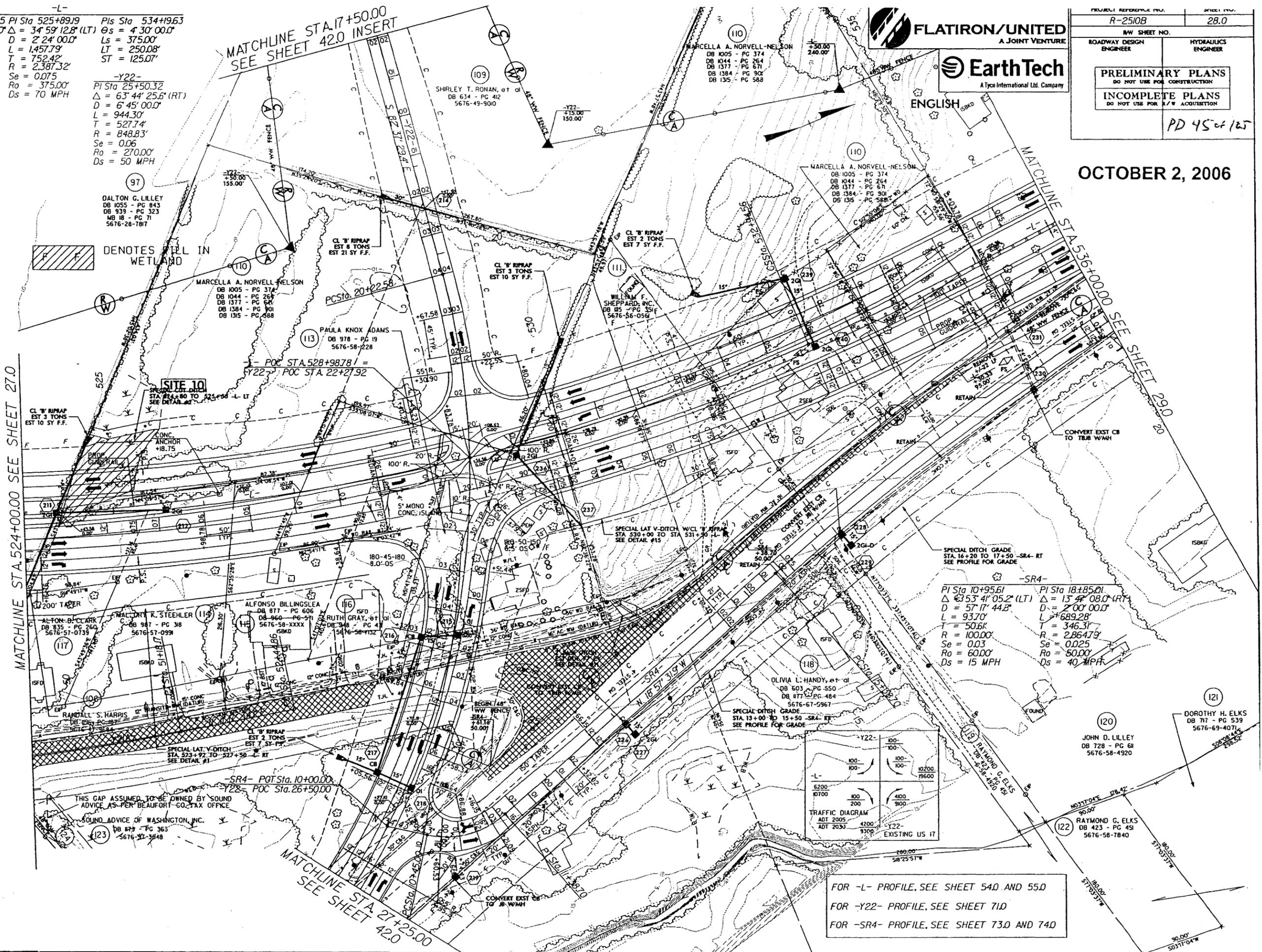
-L-
 PIs Sta 517+11.85 PI Sta 525+89.19 PIs Sta 534+196.3
 $\Delta = 4^{\circ} 30' 00.0''$ $\Delta = 3^{\circ} 59' 12.8''$ (LT) $\Delta = 4^{\circ} 30' 00.0''$
 $L_s = 375.00'$ $D = 2^{\circ} 24' 00.0''$ $L_s = 375.00'$
 $LT = 250.08'$ $L = 1,457.79'$ $LT = 250.08'$
 $ST = 125.07'$ $T = 752.42'$ $ST = 125.07'$
 $R = 2,387.32'$ $T = 527.74'$
 $Se = 0.075$ $R = 848.83'$
 $Ro = 375.00'$ $Se = 0.06$
 $Ds = 70$ MPH $Ro = 270.00'$
 $Ds = 50$ MPH

-Y22-
 PI Sta 25+50.32
 $\Delta = 6^{\circ} 44' 25.6''$ (RT)
 $D = 6^{\circ} 45' 00.0''$
 $L = 944.30'$
 $T = 527.74'$
 $R = 848.83'$
 $Se = 0.06$
 $Ro = 270.00'$
 $Ds = 50$ MPH



PROJECT REFERENCE NO. R-2510B	SHEET NO. 28.0
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PD 45 of 125	

OCTOBER 2, 2006



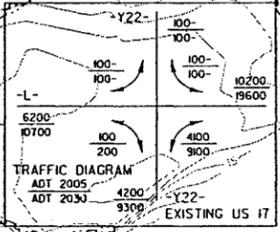
MATCHLINE STA. 524+00.00 SEE SHEET 27.0

MATCHLINE STA. 536+1000 SEE SHEET 29.0

MATCHLINE STA. 17+50.00
SEE SHEET 42.0 INSERT

MATCHLINE STA. 27+25.00
SEE SHEET 42.0

-SR4-
 PI Sta 10+95.61 PI Sta 18+85.01
 $\Delta = 3^{\circ} 53' 41.052''$ (LT) $\Delta = 13^{\circ} 48' 08.0''$ (RT)
 $D = 57^{\circ} 17' 44.8''$ $D = 2^{\circ} 00' 00.0''$
 $L = 937.0'$ $L = 689.28'$
 $T = 50.6K$ $T = 346.31'$
 $R = 100.00'$ $R = 2,864.79'$
 $Se = 0.03$ $Se = 0.025$
 $Ro = 60.00'$ $Ro = 50.00'$
 $Ds = 15$ MPH $Ds = 40$ MPH



FOR -L- PROFILE, SEE SHEET 54.0 AND 55.0
 FOR -Y22- PROFILE, SEE SHEET 71.0
 FOR -SR4- PROFILE, SEE SHEET 73.0 AND 74.0

REVISIONS

USER: #USER#
 DATE: #DATE#
 TIME: #TIME#
 DGN: #DGN#