

PROJECT COMMITMENTS

T.I.P Project No. R-3601
Proposed Widening of US 17-74-76/NC 133
from the NC 133 (River Road)/SR 1472 (Village Road) Interchange
to the US 421/NC 133 Interchange
Brunswick & New Hanover Counties
Federal Aid Project No. NHS-00017(68)
WBS Element 38868.1.1

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Division 3 Construction

The Brunswick River & Alligator Creek have been identified by the NC Division of Marine Fisheries (NCDMF) and the NC Wildlife Resources Commission (NCWRC) as anadromous fish habitat and Inland Primary Nursery Areas. Therefore, NCDOT will implement an in-water construction moratorium from February 15 to September 30 in these waters.

During the section 7 consultation process for shortnose and Atlantic sturgeons, and in negotiation with the National Marine Fisheries Service (NMFS), NCDMF, and NCWRC, it was determined that an in-water work moratorium from January 1 to September 30 would apply to the Brunswick River and that an in-water work moratorium from January 1-June 30 would apply to Alligator Creek.

When doing in-water work, NCDOT will adhere to "Guidelines for Avoiding Impacts to the West Indian Manatee: Precautionary Measures for Construction Activities in North Carolina Waters" to avoid harm to this species.

These measures will be incorporated during construction.

COMMITMENTS FROM PERMITTING

Division 3 Construction

During the moratoria, in-water work is restricted to: working inside casings, static pile extraction, spudding of barges, removal of piles using a vibratory hammer and installation of casings using 'screwing-in' methodology.

Any directional bores proposed near or around jurisdictional features must take all necessary precautions to avoid any slurry or frac out incidents from entering jurisdictional areas. These precautions should include the use of vac trucks where appropriate and secondary containment around the entry and exit pits.

Barges shall be utilized only in areas of sufficient depth such that the barges do not rest on the bottom during periods of low tide.

Reverification 3/30/2015, Electronically Transmitted

U.S. ARMY CORPS OF ENGINEERS

WILMINGTON DISTRICT

Action Id. **SAW-2007-03641**

County: **Brunswick**

U.S.G.S. Quad: **Wilmington**

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Permittee: **NC DOT** Agent: **NC DOT**
Attn: Mr. Richard Hancock, P.E. **attn: Ms. Amy James**
Address: **Manager, PDEA** **PDEA-Natural Environment Section**
1598 Mail Service Center **1598 Mail Service Center**
Raleigh, NC 27699 **Raleigh, NC 27699**

Size (miles) **2+** Nearest Town **Leland**
Nearest Waterway **Brunswick River/Alligator Creek** River Basin **Cape Fear**
USGS HUC **03030005** Coordinates Latitude: **34.2344**
Longitude: **-77.9795**

Location description: **The project area is along US 17/74/76 from the NC 133/SR 1472 interchange to the US 421/NC 133 interchange crossing Brunswick River and Alligator Creek near the Cape Fear River floodplain in Brunswick County.**

Description of projects area and activity: **The NCDOT propose to widen the aforementioned stretch of road from four to six lanes which also involves the replacement of bridges over the Brunswick River and Alligator Creek. Additionally, the northbound bridge will be the start of an additional seventh lane that will continue on US 17 into Wilmington. The current project would result in the permanent loss of 0.38 acres of non tidal wetlands, 0.03 acres of tidal wetlands, and 105 linear feet of intermittent stream. This verification additionally covers changes necessary for to accomplish minimum clearance under bridges 107 and 108 for safety inspections crossing Alligator Creek. There will be an additional 0.01 acre of riparian wetland impacts to meet the minimum clearance.**

Applicable Law: ☒ Section 404 (Clean Water Act, 33 USC 1344)
☒ Section 10 (Rivers and Harbors Act, 33 USC 403)

Authorization: Regional General Permit Number or Nationwide Permit Number: **NWP 23.**

SEE ATTACHED RGP or NWP GENERAL, REGIONAL AND SPECIAL CONDITIONS

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the attached conditions and your submitted application, modified Nationwide 23 request dated March 12, 2015 and impact summary sheet dated March 25, 2015. Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order and/or appropriate legal action.

This verification will remain valid until the expiration date identified below unless the nationwide authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all requirements of the modified nationwide permit. If the nationwide permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Quality (telephone 919-807-6300) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management in Morehead City, NC, at (252) 808-2808.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact **Brad Shaver at 910-251-4611 or Brad.E.Shaver@usace.army.mil.**

Determination of Jurisdiction:

- A. ☐ Based on preliminary information, there appear to be waters of the US including wetlands within the above described project area. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331).
- B. ☐ There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- C. ☐ There are waters of the US and/or wetlands within the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.
- D. ☒ The jurisdictional areas within the above described project area have been identified under a previous action. Please reference jurisdictional determination issued 10/6/2008 and 2/24/2010. Action ID: **SAW-2007 3641**.

Basis For Determination: The subject area exhibited both an ordinary high water and had characteristics of wetlands as described in the 1987 Corps Delineation Manual and both resources are abutting or drain to the Cape Fear River, Brunswick River, or Alligator Creek, all of which are traditionally navigable water bodies that are subject to the ebb and flood of tides.

Remarks: The updated permit drawings are numbered 28, 29, and 44. Attached is the new mitigation transfer form.

All conditions from previous verifications remain valid.

Corps Regulatory Official: SHAYER.BRAD.E. 1276601756 Date: 3/30/2015
Expiration Date of Verification: 03/18/2017

Digitally signed by SHAYER.BRAD.E.1276601756
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The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete our customer Satisfaction Survey online at <http://per2.nwp.usace.army.mil/survey.html>.

Copy furnished (electronic):

NCDENR-DWR, Mr. Mason Herndon
NCDOT-NES, Mr. Chris Rivenbark
NCDENR-DCM, Mr. Stephen Lane
NCDENR-DCM, Mr Steve Sollod
NCDOT-Div 3, Mr. Stonewall Mathis
USACE, Mr. Todd Tugwell
NCEEP, Ms. Beth Harmon

Action ID Number: SAW-2007-03641-010

County: Brunswick

Permittee: NCDOT - PDEA

Project Name: NCDOT/R-3601/US 17-74-76/Division 3

Date Verification Issued: 3/30/2015

Project Manager: Brad Shaver

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT
Attn: Brad Shaver
69 Darlington Ave
Wilmington, NC 28403

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

SPECIAL CONDITIONS

R-3601

Proposed widening of the US 17-74-76/NC 133 from NC 133/SR 1472 Interchange to the US 421/NC 133 Interchange, Brunswick County

COMPLIANCE WITH PLANS

1. All work must be performed in strict compliance with the plans attached to the NCDOT letters dated May 21, 2014 and updated June 26, 2014, which are authorized by this permit. Any modification to the authorized permit plans must be approved by the USACE prior to implementation.

COMPLIANCE WITH SPECIAL CONDITIONS

2. Failure to institute and carry out the details of the following special conditions, below, will result in a directive to cease all ongoing and permitted work within waters and/or wetlands associated with the permitted project, or such other remedies and/or fines as the District Engineer or his authorized representatives may seek.

CONSTRUCTION PLANS

3. The permittee will ensure that the construction design plans for this project do not deviate from the authorized permit plans. Any deviation in the construction design plans will be brought to the attention of the Corps of Engineers, Wilmington Regulatory Field Office prior to any active construction in waters or wetlands.

4. All activities described in the plans as temporary must be restored to their pre project conditions before completion of the project.

PROTECTED RESOURCES

5. The NCDOT must use the United States Department of Interior, Fish and Wildlife Service's GUIDELINES FOR AVOIDING IMPACTS TO THE WEST INDIAN MANATTEE: Precautinary Measures for Construction Activities in North Carolina Waters (attached).

6. The NCDOT must adhere to an inwater work moratorium for the Brunswick River between the periods of Jan 1 – Sept 30 and for Alligator Creek during Jan 1 – June 30 of any year during the construction period. During the moratoria in-water work is restricted to working inside of casings, static pile extraction, spudding of barges, removal of piles using a vibratory hammer and installation of casings using screwing methodology. No other in-water work activities are authorized during the moratoria without prior approval from the Resource Agencies through Corps coordination.

CONTRACTOR COMPLIANCE

7. 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 including the authorized plans referenced in Special Condition (1) and authorized modifications, including all conditions, shall be available at the project site during construction and maintenance of this project.

ACTIVITIES **NOT** AUTHORIZED

8. Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill, or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands, or shall any activities take place that cause the degradation of waters or wetlands. In addition, except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within, into, or out of waters or wetlands or to reduce the reach of waters or wetlands.

This permit does not authorize temporary placement or double handling of excavated or fill material or construction equipment within waters or wetlands outside the permitted area.

BORROW AND WASTE

9. To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent wetlands and streams, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. The permittee shall provide the USACE with appropriate maps indicating the locations of proposed borrow or waste sites as soon as the permittee has that information. The permittee will coordinate with the USACE before approving any borrow or waste sites that are within 400 feet of any streams or wetlands. All jurisdictional wetland lines on borrow and waste sites shall be verified by the Corps of Engineers and shown on the approved reclamation plans. The permittee shall ensure that all such areas comply with the **preceding condition** of this permit, and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This information will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with the **preceding condition**. All information will be available to the USACE upon request. NCDOT shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 30 days of the completion of the reclamation work.

REPORTING OF VIOLATIONS

10. The permittee will report any violation of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act in writing to the Wilmington District, U. S Army Corps of Engineers, within 24 hours of the permittee's discovery of the violation.

SEDIMENTATION AND EROSION CONTROL MEASURES

- 11.** All fill material must be adequately stabilized at the earliest practicable date to prevent sediment from entering into adjacent waters or wetlands. The permittee shall remove all sediment and erosion control measures placed in wetlands or waters, and shall restore natural grades in those areas, prior to project completion.
- 12.** Any directional bores proposed near or around jurisdictional features must take all necessary precautions to avoid any slurry or frac out incidents from entering jurisdictional areas. These precautions should include the use of vac trucks where appropriate and secondary containment around the entry and exit pits.

COMPENSATORY MITIGATION

- 13.** In order to compensate for impacts associated with this permit, mitigation shall be provided in accordance with the provisions outlined on the most recent version of the attached Compensatory Mitigation Responsibility Transfer Form. The requirements of this form, including any special conditions listed on this form, are hereby incorporated as special conditions of this permit authorization.

SHAYER.BRAD.
E.1276601756

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SHAYER.BRAD.E.1276601756
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ou=PKI, ou=USA,
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U.S. ARMY CORPS OF ENGINEERS
Wilmington District
Compensatory Mitigation Responsibility Transfer Form

Permittee: North Carolina Department of Transportation
Project Name: R-3601

Action ID: SAW-2007-03641
County: Brunswick

Instructions to Permittee: The Permittee must provide a copy of this form to the Mitigation Sponsor, either an approved Mitigation Bank or the North Carolina Ecosystem Enhancement Program (NCEEP), who will then sign the form to verify the transfer of the mitigation responsibility. Once the Sponsor has signed this form, it is the Permittee's responsibility to ensure that to the U.S. Army Corps of Engineers (USACE) Project Manager identified on page two is in receipt of a signed copy of this form before conducting authorized impacts, unless otherwise specified below. If more than one mitigation Sponsor will be used to provide the mitigation associated with the permit, or if the impacts and/or the mitigation will occur in more than one 8-digit Hydrologic Unit Code (HUC), multiple forms will be attached to the permit, and the separate forms for each Sponsor and/or HUC must be provided to the appropriate mitigation Sponsors.

Instructions to Sponsor: The Sponsor must verify that the mitigation requirements shown below are available at the identified site. By signing below, the Sponsor is accepting full responsibility for the identified mitigation, regardless of whether or not they have received payment from the Permittee. Once the form is signed, the Sponsor must update the appropriate ledger and provide a copy of the signed form to the Permittee and to the USACE Bank/In-Lieu Fee Program Manager. The Sponsor must also comply with all reporting requirements established in their authorizing instrument.

Additional Permitted Impacts and Compensatory Mitigation Requirements:

Additional Permitted Impacts Requiring 8-digit HUC and Basin: 03030005, Cape Fear River Basin
Mitigation*

Stream Impacts (linear feet)			Wetland Impacts (acres)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-riverine	Non-Riparian	Coastal
			0.01			

*If more than one mitigation sponsor will be used for the permit, only include impacts to be mitigated by this sponsor.

Additional Compensatory Mitigation 8-digit HUC and Basin: 03030005, Cape Fear River Basin
Requirements:

Stream Mitigation (credits)			Wetland Mitigation (credits)			
Warm	Cool	Cold	Riparian Riverine	Riparian Non-riverine	Non-Riparian	Coastal
			0.01			

Mitigation Site Debited: NCEEP

(List the name of the bank to be debited. For umbrella banks, also list the specific site. For NCEEP, list NCEEP. If the NCEEP acceptance letter identifies a specific site, also list the specific site to be debited).

Section to be completed by the Mitigation Sponsor

Statement of Mitigation Liability Acceptance: I, the undersigned, verify that I am authorized to approve mitigation transactions for the Mitigation Sponsor shown below, and I certify that the Sponsor agrees to accept full responsibility for providing the mitigation identified in this document (see the table above), associated with the USACE Permittee and Action ID number shown. I also verify that released credits (and/or advance credits for NCEEP), as approved by the USACE, are currently available at the mitigation site identified above. Further, I understand that if the Sponsor fails to provide the required compensatory mitigation, the USACE Wilmington District Engineer may pursue measures against the Sponsor to ensure compliance associated with the mitigation requirements.

Mitigation Sponsor Name: _____

Name of Sponsor's Authorized Representative: _____

Signature of Sponsor's Authorized Representative

Date of Signature

**USACE Wilmington District
Compensatory Mitigation Responsibility Transfer Form, Page 2**

Conditions for Transfer of Compensatory Mitigation Credit:

- Once this document has been signed by the Mitigation Sponsor and the USACE is in receipt of the signed form, the Permittee is no longer responsible for providing the mitigation identified in this form, though the Permittee remains responsible for any other mitigation requirements stated in the permit conditions.
- Construction within jurisdictional areas authorized by the permit identified on page one of this form can begin only after the USACE is in receipt of a copy of this document signed by the Sponsor, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein. For authorized impacts conducted by the North Carolina Department of Transportation (NCDOT), construction within jurisdictional areas may proceed upon permit issuance; however, a copy of this form signed by the Sponsor must be provided to the USACE within 30 days of permit issuance. NCDOT remains fully responsible for the mitigation until the USACE has received this form, confirming that the Sponsor has accepted responsibility for providing the mitigation requirements listed herein.
- Signed copies of this document must be retained by the Permittee, Mitigation Sponsor, and in the USACE administrative records for both the permit and the Bank/ILF Instrument. It is the Permittee's responsibility to ensure that the USACE Project Manager (address below) is provided with a signed copy of this form.
- If changes are proposed to the type, amount, or location of mitigation after this form has been signed and returned to the USACE, the Sponsor must obtain case-by-case approval from the USACE Project Manager and/or North Carolina Interagency Review Team (NCIRT). If approved, higher mitigation ratios may be applied, as per current District guidance and a new version of this form must be completed and included in the USACE administrative records for both the permit and the Bank/ILF Instrument.

Comments/Additional Conditions:

This mitigation transfer form covers additional impacts from the project as requested in March 12, 2015 letter and March 25, 2015 impact summary sheet.

This form is not valid unless signed by the mitigation Sponsor and USACE Project Manager. For questions regarding this form or any of the conditions of the permit authorization, contact the Project Manager at the address below.

USACE Project Manager: Brad Shaver
USACE Field Office: Wilmington Regulatory Field Office
US Army Corps of Engineers
69 Darlington Avenue
Wilmington, NC 28403

Email:

SHAYER.BRAD.E.1276
601756

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ou=USA, cn=SHAYER.BRAD.E.1276601756
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USACE Project Manager Signature

March 30, 2015

Date of Signature

Current Wilmington District mitigation guidance, including information on mitigation ratios, functional assessments, and mitigation bank location and availability, and credit classifications (including stream temperature and wetland groupings) is available at <http://ribits.usace.army.mil>.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

GUIDELINES FOR AVOIDING IMPACTS TO THE WEST INDIAN MANATEE Precautionary Measures for Construction Activities in North Carolina Waters

The West Indian manatee (*Trichechus manatus*), also known as the Florida manatee, is a Federally-listed endangered aquatic mammal protected under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) and the Marine Mammal Protection Act of 1972, as amended (16 U.S.C 1461 *et seq.*). The manatee is also listed as endangered under the North Carolina Endangered Species Act of 1987 (Article 25 of Chapter 113 of the General Statutes). The U.S. Fish and Wildlife Service (Service) is the lead Federal agency responsible for the protection and recovery of the West Indian manatee under the provisions of the Endangered Species Act.

Adult manatees average 10 feet long and weigh about 2,200 pounds, although some individuals have been recorded at lengths greater than 13 feet and weighing as much as 3,500 pounds. Manatees are commonly found in fresh, brackish, or marine water habitats, including shallow coastal bays, lagoons, estuaries, and inland rivers of varying salinity extremes. Manatees spend much of their time underwater or partly submerged, making them difficult to detect even in shallow water. While the manatee's principal stronghold in the United States is Florida, the species is considered a seasonal inhabitant of North Carolina with most occurrences reported from June through October.

To protect manatees in North Carolina, the Service's Raleigh Field Office has prepared precautionary measures for general construction activities in waters used by the species. Implementation of these measure will allow in-water projects which do not require blasting to proceed without adverse impacts to manatees. In addition, inclusion of these guidelines as conservation measures in a Biological Assessment or Biological Evaluation, or as part of the determination of impacts on the manatee in an environmental document prepared pursuant to the National Environmental Policy Act, will expedite the Service's review of the document for the fulfillment of requirements under Section 7 of the Endangered Species Act. These measures include:

1. The project manager and/or contractor will inform all personnel associated with the project that manatees may be present in the project area, and the need to avoid any harm to these endangered mammals. The project manager will ensure that all construction personnel know the general appearance of the species and their habit of moving about completely or partially submerged in shallow water. All construction personnel will be informed that they are responsible for observing water-related activities for the presence of manatees.
2. The project manager and/or the contractor will advise all construction personnel that

there are civil and criminal penalties for harming, harassing, or killing manatees which are protected under the Marine Mammal Protection Act and the Endangered Species Act.

3. If a manatee is seen within 100 yards of the active construction and/or dredging operation or vessel movement, all appropriate precautions will be implemented to ensure protection of the manatee. These precautions will include the immediate shutdown of moving equipment if a manatee comes within 50 feet of the operational area of the equipment. Activities will not resume until the manatee has departed the project area on its own volition (i.e., it may not be herded or harassed from the area).

4. Any collision with and/or injury to a manatee will be reported immediately. The report must be made to the U.S. Fish and Wildlife Service (ph. 919.856.4520 ext. 16), the National Marine Fisheries Service (ph. 252.728.8762), and the North Carolina Wildlife Resources Commission (ph. 252.448.1546).

5. A sign will be posted in all vessels associated with the project where it is clearly visible to the vessel operator. The sign should state:

CAUTION: The endangered manatee may occur in these waters during the warmer months, primarily from June through October. Idle speed is required if operating this vessel in shallow water during these months. All equipment must be shut down if a manatee comes within 50 feet of the vessel or operating equipment. A collision with and/or injury to the manatee must be reported immediately to the U.S. Fish and Wildlife Service (919-856-4520 ext. 16), the National Marine Fisheries Service (252.728.8762), and the North Carolina Wildlife Resources Commission (252.448.1546).

6. The contractor will maintain a log detailing sightings, collisions, and/or injuries to manatees during project activities. Upon completion of the action, the project manager will prepare a report which summarizes all information on manatees encountered and submit the report to the Service's Raleigh Field Office.

7. All vessels associated with the construction project will operate at "no wake/idle" speeds at all times while in water where the draft of the vessel provides less than a four foot clearance from the bottom. All vessels will follow routes of deep water whenever possible.

8. If siltation barriers must be placed in shallow water, these barriers will be: (a) made of material in which manatees cannot become entangled; (b) secured in a manner that they cannot break free and entangle manatees; and, (c) regularly monitored to ensure that manatees have not become entangled. Barriers will be placed in a manner to allow manatees entry to or exit from essential habitat.

Figure 1. The whole body of the West Indian manatee may be visible in clear water; but in the dark and muddy waters of coastal North Carolina, one normally sees only a small part of the head when the manatee raises its nose to breathe.

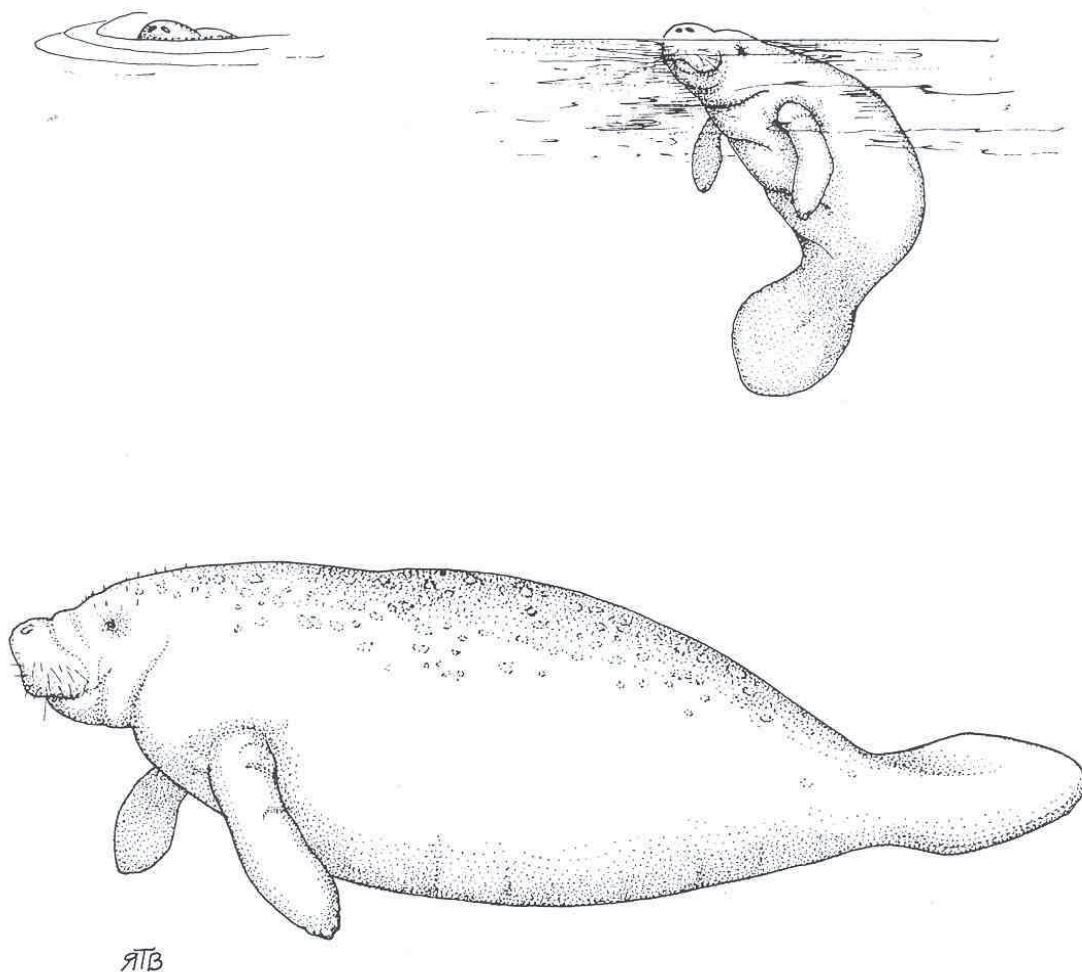


Illustration used with the permission of the North Carolina State Museum of Natural Sciences.
Source: Clark, M. K. 1987. Endangered, Threatened, and Rare Fauna of North Carolina: Part I. A re-evaluation of the mammals. Occasional Papers of the North Carolina Biological Survey 1987-3. North Carolina State Museum of Natural Sciences. Raleigh, NC. pp. 52.

Action ID Number: SAW-2007-03641-010

County: Brunswick

Permittee: NCDOT - PDEA

Project Name: NCDOT/R-3601/US 17-74-76/Division 3

Date Verification Issued: 7/8/2014

Project Manager: Brad Shaver

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT
Attn: Brad Shaver
69 Darlington Ave
Wilmington, NC 28403

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

March 27, 2015
Brunswick County
NCDWQ Project No. 13-0472v.5
Widening of US 17-74-76/ NC 133
TIP Project No. R-3601

MODIFICATION to APPROVAL of 401 WATER QUALITY CERTIFICATION, with ADDITIONAL CONDITIONS.

Mr. Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Dear Mr. Hancock:

You have our approval, in accordance with the conditions listed below, for the following impacts associated with the widening of US 17-74-76/NC 133 from NC 133 (River Road)/SR 1472(Village Road) Interchange to the US 421/NC 133 Interchange in Brunswick County:

Wetland Impacts in the Cape Fear River Basin (riparian)

Station	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Excavation (temporary) (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)
Original approved impacts at Site 10 (Sta. -LLT- 111+79 to 113+14 RT -LRT- 112+37 to 114+59)	0.14	0.03	0	0	0	0.10	0.27
Revised impacts with this approval at Site 10 (Sta. -LLT- 111+79 to 113+14 RT -LRT- 112+37 to 114+59)	0.14	0.03	0.01	0.03	0	0.11	0.32
Revised Total	0.14	0.03	0.01	0.03	0	0.11	0.32

Total Revised Wetland Impacts for Site 10: 0.32 acres.

Open Water (rivers) Impacts in the Cape Fear River Basin

Site	Location	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
	Original impacts at Bridges 103, 107 & 108	0.04	0.02	0.06
	Revised impacts with this approval at Bridges 103, 107 & 108	0.05	0.04	0.09
TOTAL		0.05	0.04	0.09

Total Revised Open Water Impact for Project: 0.09 acres.

The project shall be constructed in accordance with your application dated received March 13, 2015 and revisions received on March 25, 2015. After reviewing your application, we have decided that these impacts are covered by General Water Quality Certification Number 3891 and 3884. This certification corresponds to the Nationwide Permit 23 and Nationwide Permit 12 issued by the Corps of Engineers. In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations. This approval will expire with the accompanying 404 permit.

This approval is valid solely for the purpose and design described in your application (unless modified below). Should your project change, you must notify the NCDWR 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 total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 150 linear feet, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you must adhere to the conditions listed in the attached certification(s) and any additional conditions listed below.

Condition(s) of Certification:

Project Specific Conditions

1. Material temporarily excavated for bridge construction shall be stockpiled in an upland area and placed back into the excavated area in a manner that restores the original grade and soil profile with the organic/root layer on top. [15A NCAC 02H.0506(b)(2) and (b)(3)]
2. All of the authorized activities and written conditions of the certification associated with the original Water Quality Certification dated May 15, 2013 and subsequent modification dated July 14, 2014 still apply except where superseded by this certification.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission.

The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919)-431-3000, Facsimile: (919)-431-3100

A copy of the petition must also be served on DENR as follows:

Mr. Sam M. Hayes, General Counsel

Department of Environment and Natural Resources
1601 Mail Service Center

This letter completes the review of the Division of Water Resources under Section 401 of the Clean Water Act. If you have any questions, please contact Mason Herndon at (910) 308-4021 or mason.herndon@ncdenr.gov.

Sincerely,



S. Jay Zimmerman
Division of Water Resources

Electronic copy only distribution:

Brad Shaver, US Army Corps of Engineers, Wilmington Field Office
Stoney Mathis, Division 3 Environmental Officer
Colin Mellor, NC Department of Transportation
Chris Rivenbark, NC Department of Transportation
Dr. Cynthia Van Der Wiele, US Environmental Protection Agency
Gary Jordan, US Fish and Wildlife Service
Travis Wilson, NC Wildlife Resources Commission
Steve Sollod, NC Coastal Management
Steven Lane, NC Coastal Management
NC Division of Water Resources Raleigh Central Office
File Copy



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

NCDWR Project No.: _____ County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR 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: _____

Engineer's Certification

_____ Partial _____ Final

I, _____, as a duly registered Professional Engineer 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 _____



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

John E. Skvarla, III
Secretary

July 14, 2014
Brunswick County
NCDWQ Project No. 13-0472v.4
Widening of US 17-74-76/ NC 133
TIP Project No. R-3601

MODIFICATION to APPROVAL of 401 WATER QUALITY CERTIFICATION, with ADDITIONAL CONDITIONS.

Mr. Richard W. Hancock, P.E., Manager
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Dear Mr. Hancock:

You have our approval, in accordance with the conditions listed below, for the following impacts associated with the widening of US 17-74-76/NC 133 from NC 133 (River Road)/SR 1472(Village Road) Interchange to the US 421/NC 133 Interchange in Brunswick County:

Revised Stream Impacts in the Cape Fear River Basin

Site	Station	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1	-Y2- 13+05	0	0	47	10	57	0
13	-Y- 34+98 to 36+55	58*	37	0	0	95	0
TOTAL		58*	37	47	10	152	0

Total Revised Stream Impact for Project: 152 linear feet.

*includes 14 lf of bank stabilization

Revised Wetland Impacts in the Cape Fear River Basin (riparian)

Site	Station	Fill (ac)	Fill (temporary) (ac)	Excavation (temporary) (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Total Wetland Impact (ac)
2	-LMED- 54+37 to 54+75 RT	<0.01	0	<0.01	0	0.02	0.03
3	64+43 LT & -LMED- 65+92 to 66+26 LT	0.03	0	<0.01	0	0.04	0.07
4	76+31 LT & -LMED- 74+99 to 75+19 RT	0.04	<0.01	<0.01	0	0.16	0.21

Transportation and Permitting Unit
1617 Mail Service Center, Raleigh, North Carolina 27699-1617
Location: 512 N. Salisbury St. Raleigh, North Carolina 27604
Phone: 919-807-6300 \ FAX: 919-733-1290
Internet: www.ncwaterquality.org

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One
North Carolina
Naturally

5	-LMED- 83+00 to 83+21 RT	0	<0.01	<0.01	0	0	0.01
6	-LRT- 85+81 to 87+69 RT	0	0	0	0	0.01	0.01
7	-LLT- 90+25 to 90+74 LT & -LLT- 94+00 to 94+21 LT	0	<0.01	<0.01	0	<0.01	0.01
8	-LLT- 99+60 to 99+97 LT	<0.01	0	0	0	0.01	0.01
9	-LRT- 101+06 to 101+17 RT	0	0	0	0	<0.01	<0.01
10	-LLT- 111+79 to 113+14 RT -LRT- 112+37 to 114+59	0.14	0.03	0	0	0.10	0.27
11	-LRT- 115+52 to 115+61 RT -LRT- 121+21 to 121+77 RT	0	0	0	0	0.03	0.03
12	-Y2- 20+65	0.16	0	0	0.04	0	0.20
14	-Y- 38+30 RT	0	0	0	0	<0.01	<0.01
	EC measures in HC areas	0	0.04	0	0	0	0.04
UTILITIES*							
U1	73+52 to 73+94	0	0	0	0	0.01	0.01
U2	79+32 to 79+73	0	0	0	0	<0.01	<0.01
U3	84+95 to 85+05	0	0	0	0	<0.01	<0.01
U4	90+64 to 93+31	<0.01	0	0	0	<0.01	0.01
U5	95+69 to 95+64	0	0	0	0	<0.01	<0.01
U6	100+59 to 101+50	0	0	0	0	<0.01	<0.01
U7	107+05 to 107+47	0	0	0	0	<0.01	<0.01
U8	114+93 to 115+07	0	0	0	0	<0.01	<0.01
U9	115+21 to 115+66	<0.01	0	0	0	0	<0.01
U10	121+04 to 121+18	0	0	0	0	<0.01	<0.01
TOTAL**		0.37	0.08	0.02	0.04	0.41	0.92

Total Revised Wetland Impact for Project: 0.92 acres.

*after-the-fact authorization - these sites were not included in the original authorization request and discovered after impacts had occurred.

**totals may not match sum of individual impacts due to rounding.

The project shall be constructed in accordance with your application dated received May 21, 2014 and revisions received on June 26, 2014. After reviewing your application, we have decided that these impacts are covered by General Water Quality Certification Number 3891 and 3884. This certification corresponds to the Nationwide Permit 23 and Nationwide Permit 12 issued by the Corps of Engineers. In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations. This approval will expire with the accompanying 404 permit.

This approval is valid solely for the purpose and design described in your application (unless modified below). Should your project change, you must notify the NCDWR 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 total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 150 linear feet, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you must adhere to the conditions listed in the attached certification(s) and any additional conditions listed below.

Condition(s) of Certification:

Project Specific Conditions

1. All of the authorized activities and written conditions of the certification associated with the original Water Quality Certification dated May 15, 2013 still apply except where superseded by this certification.
2. The permittee will need to adhere to all appropriate in-water work moratoria (including the use of pile driving or vibration techniques) as prescribed by the NC Wildlife Resources Commission, NC Division of Marine Fisheries and National Marine Fisheries. The in-water work moratorium in the Brunswick River extends from January 1st through September 30th and in Alligator Creek from January 1st through June 30th, of any year. During the moratoria in-water work is restricted to working inside of casings, static pile extraction, spudding of barges, removal of piles using a vibratory hammer and installation of casings using screwing methodology. No other in-water work activities are authorized during the moratoria without prior approval from the NC Division of Water Resources and the NC Wildlife Resources Commission. In addition, the permittee shall conform to the NCDOT policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997) at all times.
3. As a condition of this 401 Water Quality Certification, the bridge demolition and construction must be accomplished in strict compliance with the most recent version of NCDOT's Best Management Practices for Construction and Maintenance Activities.
4. For the 47 linear feet of streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species.
5. The project shall be constructed in accordance with the provisions of the NCDOT's National Pollutant Discharge Elimination (NPDES) Stormwater Permit NCS000250, including the applicable requirements of the NCG01000.
6. Please be aware that by having impacted wetlands not covered under the original 401 Water Quality Certification issued to this project without first applying for and securing a modification of the certification, you have violated Title 15A of the North Carolina Administrative Code (NCAC) 2H .0500. Title 15A NCAC 2H .0500 requires certifications pursuant to Section 401 of the Clean Water Act whenever construction or operation of facilities will result in a discharge into navigable waters, including wetlands, as described in 33 Code of Federal Regulations (CFR) Part 323. It also states any person desiring issuance or modification of the State certification or coverage under a general certification required by Section 401 of the Federal Water Pollution Control Act shall file with the Director of the North Carolina Division of Water Resources. Pursuant to G.S. 143-215.6A, these violations and any future violations are subject to a civil penalty assessment of up to a maximum of \$25,000.00 per day for each violation.

If you wish to contest any statement in the attached Certification you must file a petition for an administrative hearing. You may obtain the petition form from the office of Administrative hearings. You must file the petition with the office of Administrative Hearings within sixty (60) days of receipt of this notice. A petition is considered filed when it is received in the office of Administrative Hearings during normal office hours. The Office of Administrative Hearings accepts filings Monday through Friday between the hours of 8:00am and 5:00pm, except for official state holidays. The original and one (1) copy of the petition must be filed with the Office of Administrative Hearings.

The petition may be faxed-provided the original and one copy of the document is received by the Office of Administrative Hearings within five (5) business days following the faxed transmission. The mailing address for the Office of Administrative Hearings is:

Office of Administrative Hearings
6714 Mail Service Center

Raleigh, NC 27699-6714

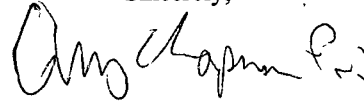
Telephone: (919)-431-3000, Facsimile: (919)-431-3100

A copy of the petition must also be served on DENR as follows:

Mr. Lacy Presnell, General Counsel
Department of Environment and Natural Resources
1601 Mail Service Center

This letter completes the review of the Division of Water Resources under Section 401 of the Clean Water Act. If you have any questions, please contact Mason Herndon at (910) 308-4021 or mason.herndon@ncdenr.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Tom Reeder".

Thomas A. Reeder, Director
Division of Water Resources

ec: Brad Shaver, US Army Corps of Engineers, Wilmington Field Office
Stoney Mathis, Division 3 Environmental Officer
Cynthia Van Der Wiele, Environmental Protection Agency
Gary Jordan, US Fish and Wildlife Service
Travis Wilson, NC Wildlife Resources Commission
Amy James, NCDOT NES
Steve Sollod, NC Coastal Management
Steven Lane, NC Coastal Management
Sonia Carrillo, NCDWQ Central Office
File Copy



North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Donald R. van der Vaart
Secretary

March 30, 2015

Mr. Richard W. Hancock, P.E.
Manager, PDEA
NC Department of Transportation
1548 Mail Service Center
Raleigh, NC 27699-1548

RE: Refinement of CAMA Major Development Permit No. 89-13 (TIP No. R-3601)
Widening of US 17-74-76 / NC 133, Brunswick County

Dear Mr. Hancock:

This is in response to your correspondence, dated March 12, 2015 and March 27, 2015, requesting authorization to revise the construction plans for the project. Your request letter indicates the following:

The original permitted clearance under the end bents on the eastern side of Bridge No. 107 and Bridge No. 108 was set at 4 feet to allow for maintenance and inspection, however, due to oversight, the impacts associated with the excavation to allow for this clearance was not quantified in the drawings or impact summary. It has been determined that impacts can be reduced and adequate room can still be allowed for inspection and maintenance if clearance is limited to 2 feet. Your letter indicates that limiting clearance to 2 feet will reduce impacts to stream banks and wetlands, avoids the need for riprap below the tide line, and will not lead to scour of the stream banks. This design change will result in an additional 0.01 acre of excavation in Section 404 wetlands and 0.01 acre of hand clearing from what was quantified in the permitted drawings and impact summary.

The request also indicates that additional permanent surface water impacts and temporary excavation are needed around bent one on Bridge No. 107 (eastbound) and 0.01 acre of permanent surface water impacts and 0.02 acre of temporary surface water impacts have been added to the impact summary sheet to account for the impacts.

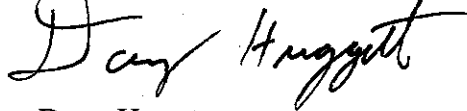
This **Letter of Refinement** authorizes the proposed revisions to the plans as described in your requests, dated March 12, 2015 and March 27, 2015, including: two (2) revised drawings, dated March 11, 2015 and revised impact summary table dated revised March 25, 2014. This letter

Division of Coastal Management
400 Commerce Ave., Morehead City, NC 28557
Phone: 252-808-2808 \ FAX: 252-247-3330 Internet: www.nccoastalmanagement.net

shall be attached to the original CAMA Permit No. 89-13 and all documents must be readily available on site when a DCM representative inspects the project for compliance. All conditions and stipulations of the active permit remain in force unless altered herein.

Please contact Stephen Lane at (252) 808-2808 ext. 208 if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read "Doug Huggett", with a stylized, cursive script.

Doug Huggett
Major Permits and Consistency Coordinator

cc: Stephen Lane, NCDCM
Steve Sollod, NCDCM
Brad Shaver, USACE
Mason Herndon, DWR
Amy James, NCDOT
Stonewall Mathis, NCDOT

Permit Class
MODIFICATION/MINOR

Permit Number
89-13

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

Permit

for

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

X Excavation and/or filling pursuant to NCGS 113-229

Issued to **N.C. Department of Transportation, 1548 Mail Service Center, Raleigh, NC 27699-1548**

Authorizing development in Brunswick County at the Brunswick River and Alligator Creek on
US 17-74-76 / NC 133 as requested in the permittee's application letters dated 5/21/14
and revised letter dated 6/26/14, including the attached drawings as referenced in Condition No. 3 of this permit.

This permit, issued on 7/22/14, 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.

Modification of Bridge Design and In-Work Moratoria (TIP No. R-3601)

- 1) This minor modification of CAMA Permit No. 89-13 authorizes a revision to the bridge designs to allow fewer columns that are larger in diameter, deck drains over surface waters on Brunswick Bridge No. 108, a modification of the in-water work moratoria, placement of fill adjacent to Alligator Creek, and additional impacts from utility line work.
- 2) All conditions and stipulations of the active permit remain in force under this minor modification unless specifically altered herein.

(See attached sheet 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

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

Douglas V. Haggitt

for Braxton C. Davis, Director
Division of Coastal Management

This permit and its conditions are hereby accepted.

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.

Signature of Permittee

ADDITIONAL CONDITIONS

- 3) Unless specifically altered herein, all work authorized by this permit modification shall be carried out in accordance with the following fifty nine (59) workplan drawings:

½ size drawings: Thirty-one (31) drawings dated 5/8/2014, five (5) dated 5/20/14, two (2) dated 6/25/2014, four (4) dated 6/9/2014, thirteen (13) dated 6/10/2014, three (3) dated 6/11/2014, and one (1) dated as received on 5/22/14.

- 4) The permittee shall adhere to an in-water work moratorium in the Brunswick River from January 1st through September 30th and in Alligator Creek from January 1st through June 30th, of any year. During the moratoria, in-water work is restricted to working inside of casings, static pile extraction, spudding of barges, removal of piles using a vibratory hammer and installation of casings using the screwing in method. No other in-water work activities are authorized during the moratoria without prior approval from the NC Division of Coastal Management, in consultation with the appropriate resource agencies.
- 5) This minor modification shall be attached to the original of Permit No. 89-13, which was originally issued on 8/2/13, as well as all subsequent modifications and/or refinements, and copies of all documents must be readily available on site when a Division representative inspects the project for compliance.

NOTE: This permit does not eliminate the need to obtain any additional permits, approvals or authorizations that may be required.



North Carolina Department of Transportation

Highway Stormwater Program
STORMWATER MANAGEMENT PLAN
FOR LINEAR ROADWAY PROJECTS

(Version 1.2; Released September 2011)

Project/TIP No.: R-3601

County(ies): Brunswick New Hanover

Page 1 of 1

General Project Information

Project No.:	R-3601	Project Type:	Roadway Widening	Date:	7/17/2014
NCDOT Contact:	Karen McCauley, PE	Contractor / Designer:	Joseph Kelvington, PE		
Address:	Transportation Program - Mngt Unit, NCDOT 1020 Birch Ridge Drive Raleigh, NC 27610	Address:	R-3601 Project Design Manager 801 Jones Franklin Rd. Suite 300 Raleigh, NC 27606		
	Phone:		919-707-6611	Phone:	919-865-7390
	Email:		kmccauley@ncdot.gov	Email:	joseph.kelvington@stantec.com
City/Town:	Belville and Leland	County(ies):	Brunswick	New Hanover	
River Basin(s):	Cape Fear	CAMA County?	Yes	Yes	
Primary Receiving Water:	Brunswick River	NCDWQ Stream Index No.:	18-77		
NCDWQ Surface Water Classification for Primary Receiving Water	Primary:	Class SC			
	Supplemental:	None			
Other Stream Classification:	None				
303(d) Impairments:	dissolved oxygen (DO)	pH			
Buffer Rules in Effect	N/A				

Project Description

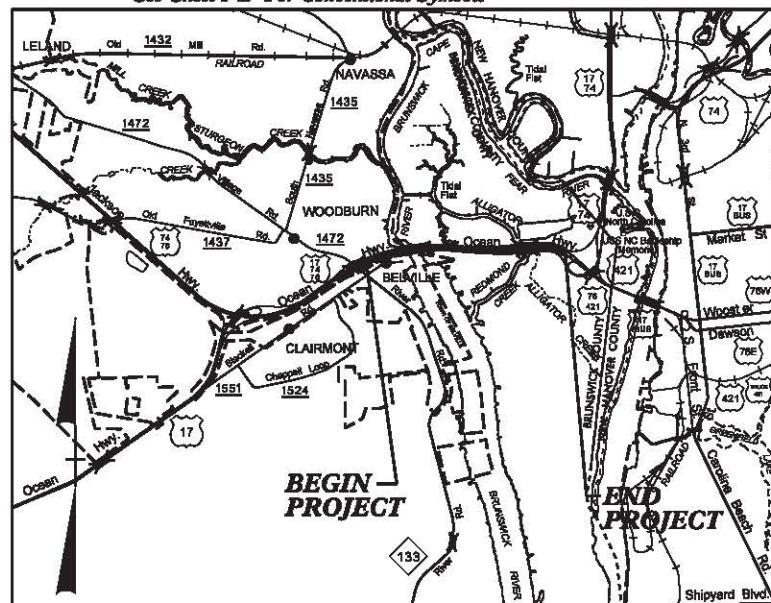
Project Length (lin. Miles or feet):	1.67 Mi.	Surrounding Land Use:	rural, tidally influenced coastal		
	Proposed Project		Existing Site		
Project Built-Upon Area (ac.)	ac.		ac.		
Typical Cross Section Description:	6 lane divided highway, 10 ft paved shoulders lt/rt, 6 ft paved shoulders median; grassed median, varying width		4 lane divided highway, approximately 10 ft paved shoulders rt/lt, 3 ft paved shoulders median; grassed median varying width		
Average Daily Traffic (veh/hr/day):	Design/Future:	ADT 2035=107,000	Existing:	ADT 2009=63,000	

General Project Narrative: Minimizing use of shoulder berm gutter and maintaining grass shoulder sheet flow along the causeway to the maximum extent practical. Eliminating deck drains on Bridge 103 and 105 over the Brunswick River and Bridge 107 over Alligator Creek. At Bridge 108 existing deck drains will be retained on the left side and new deck drains will be added to the widened lane on the right side. Bridge 108 and 107 existing deck area with deck drains = 18,230 sq ft. Proposed bridge 108 and 107 deck area with deck drains = 14,740 sq ft.

References

TIP PROJECT: R-3601

CONTRACT: C 203359

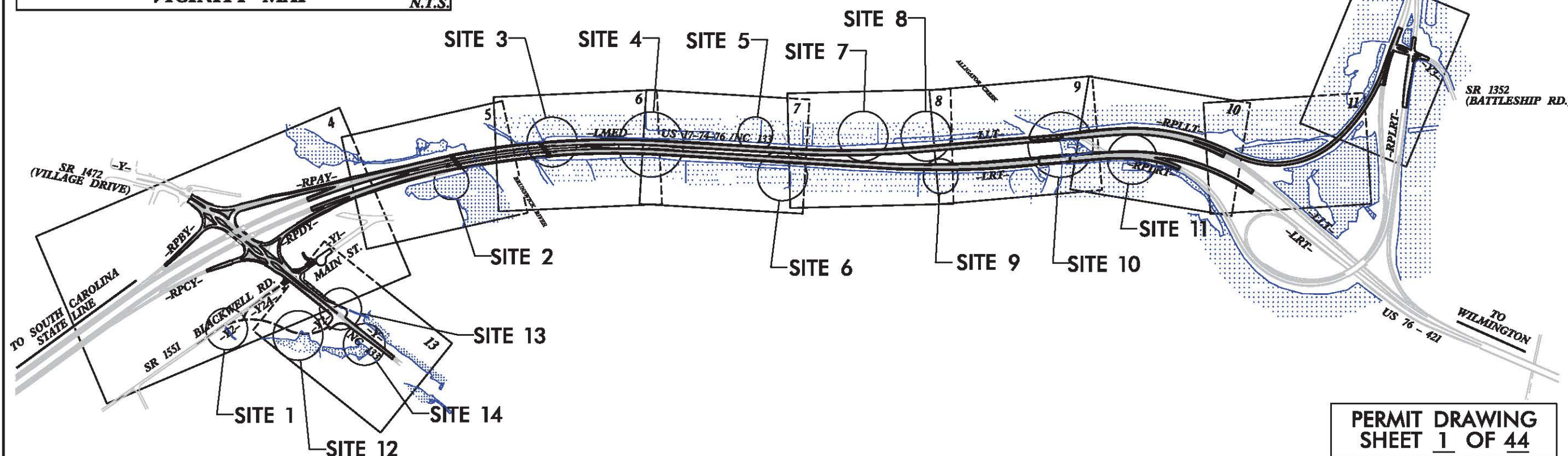
See Sheet 1-A For Index of Sheets
See Sheet 1-B For Conventional Symbols

VICINITY MAP

N.T.S.

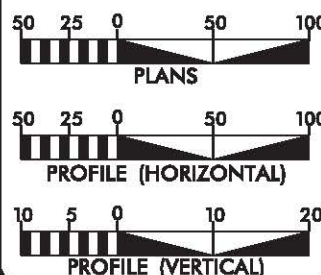
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS**BRUNSWICK AND
NEW HANOVER COUNTIES**LOCATION: US 17-74-76 FROM THE NC 133 / SR 1472 INTERCHANGE
TO THE US 421/NC 133 INTERCHANGETYPE OF WORK: GRADING, DRAINAGE, PAVING, STRUCTURES,
SIGNALS, AND SIGNING

WETLAND AND SURFACE WATER IMPACTS PERMIT



- A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF LELAND AND BELVILLE.
- CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.
- THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES.

GRAPHIC SCALES



DESIGN DATA

ADT 2014 = 79,625
ADT 2035 = 107,000
DHV = 11 %
D = 55 %
T = 6 % *
V = 60 MPH
* (TTST = 3%+ DUAL 3%)
FUNC. CLASSIFICATION
FREWAY

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3601 = 1.462 MI.
LENGTH STRUCTURE TIP PROJECT R-3601 = 0.205 MI.
TOTAL LENGTH TIP PROJECT R-3601 = 1.667 MI.
NOTE: -LMED- & -LRT- USED FOR PROJECT LENGTH.

NCDOT CONTACT: K. ZAK HAMIDI, PE
PROJECT ENGINEER - DESIGN BUILD GROUP

Prepared in the Office of:
STANTEC CONSULTING
801 Jones Franklin Road, Suite 300 Raleigh NC 27606
Tel. (919) 851-6866 Fax. (919) 851-7024 www.Stantec.com
License No. F-0672

2012 STANDARD SPECIFICATIONS

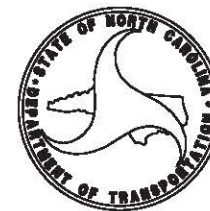
RIGHT OF WAY DATE: JOSEPH T. KELVINGTON, P.E.
APRIL 24, 2014 PROJECT ENGINEER

LETTING DATE: JASON GADDY
DECEMBER 17, 2013 PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.
ROADWAY DESIGN
ENGINEER

SIGNATURE: P.E.

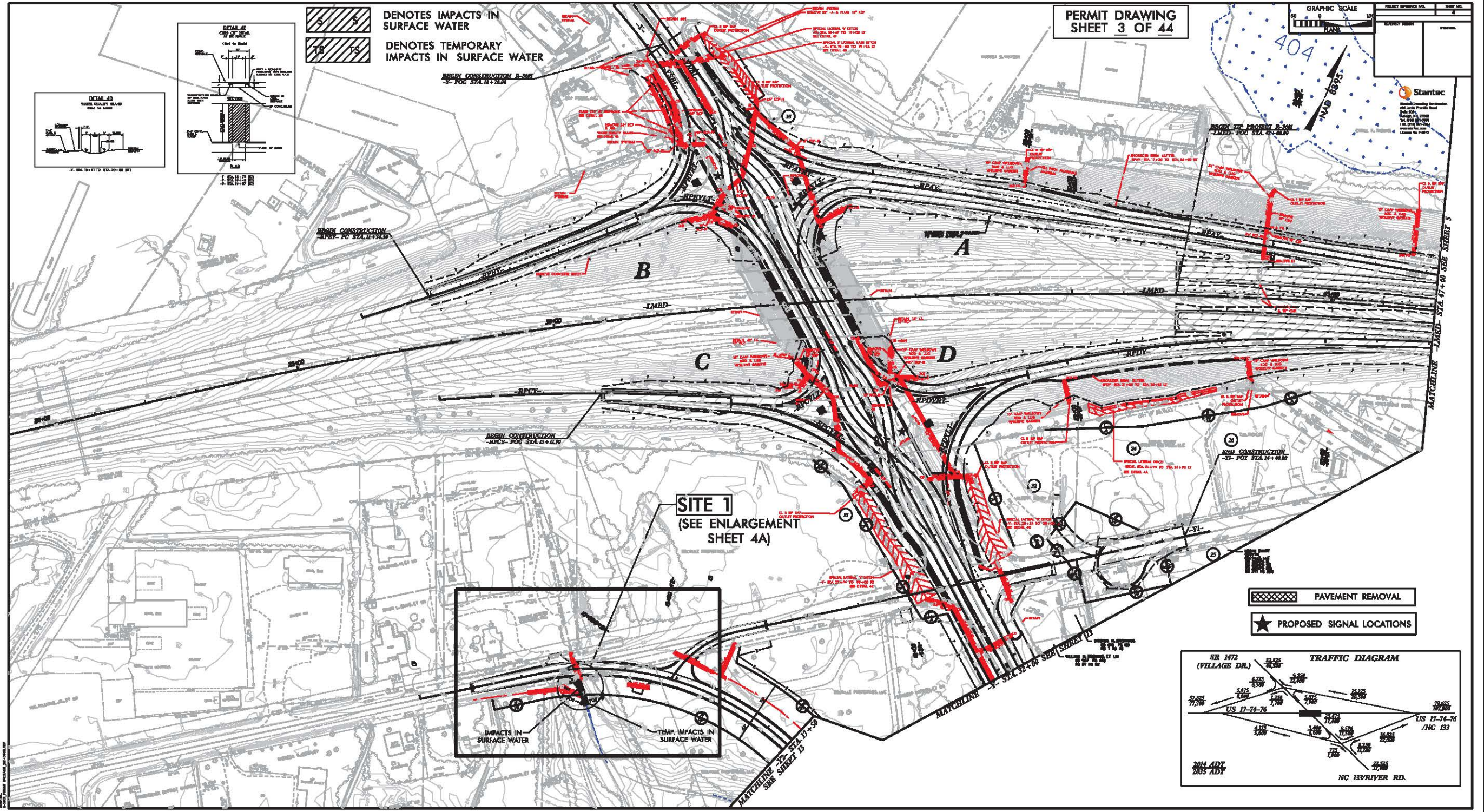


STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3601	1	
STATE FPMR NO.	F.A. FPMR NO.	DESCRIPTION	
WBS-38868.3.F52	NHS-0017(68)	PE	



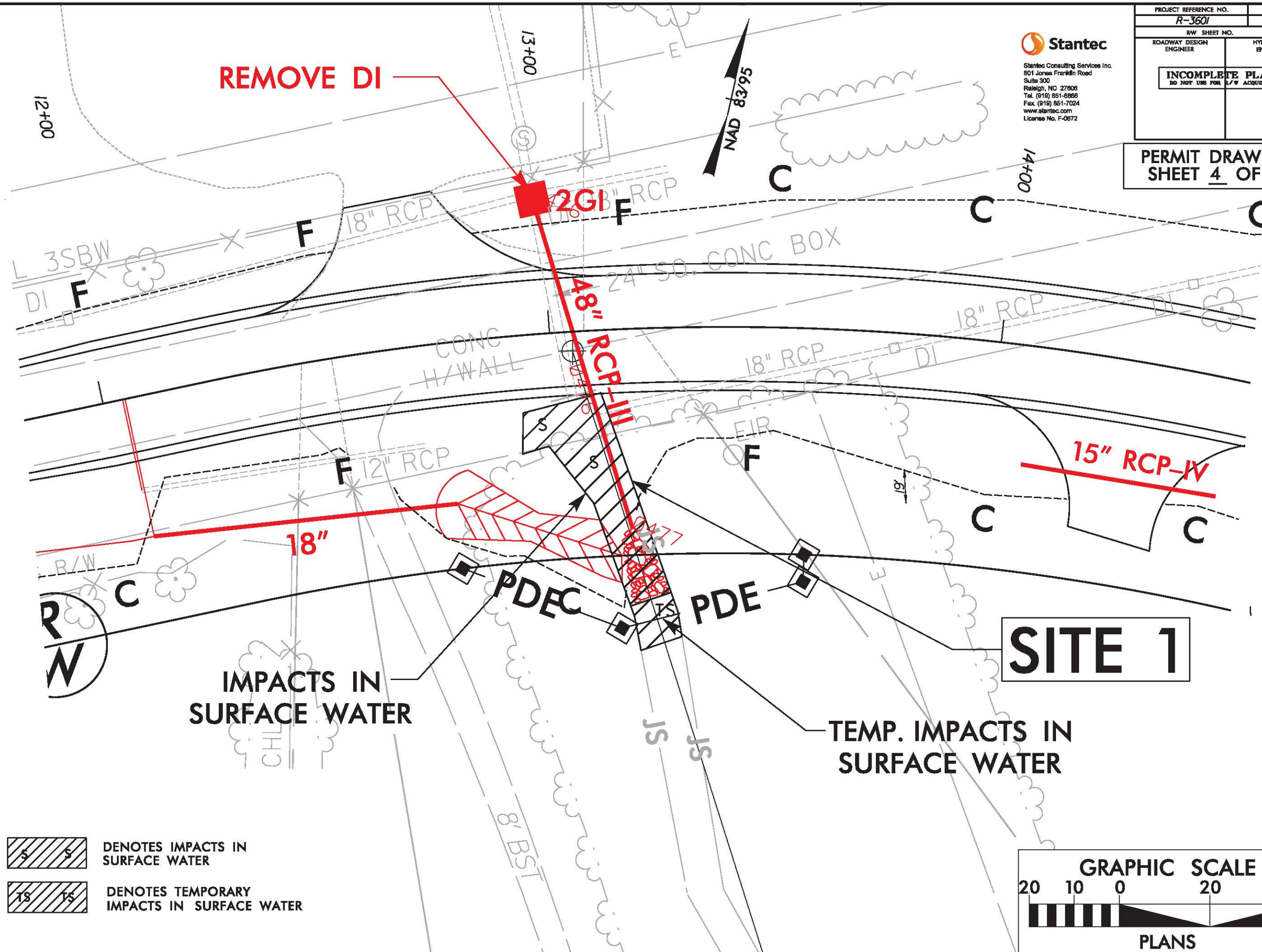
NAD 83/95

PERMIT DRAWING
SHEET 1 OF 44

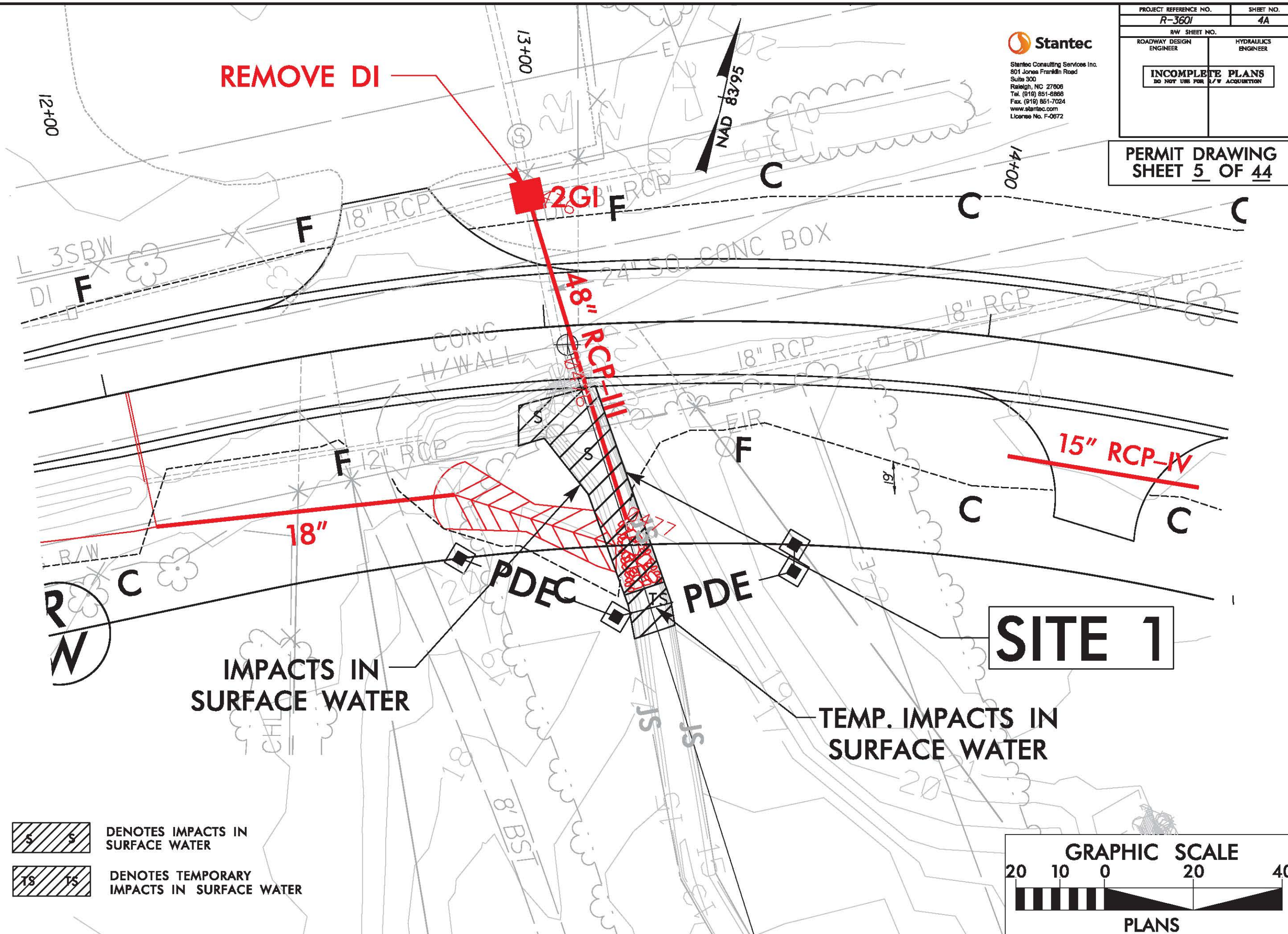


Stantec
Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-8866
Fax. (919) 851-7024
www.stantec.com
License No. F-0672

PROJECT REFERENCE NO.	SHEET NO.
R-3601	4A
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PERMIT DRAWING SHEET 4 OF 44	



 DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER





DENOTES FILL IN WETLAND



DENOTES HAND CLEARING



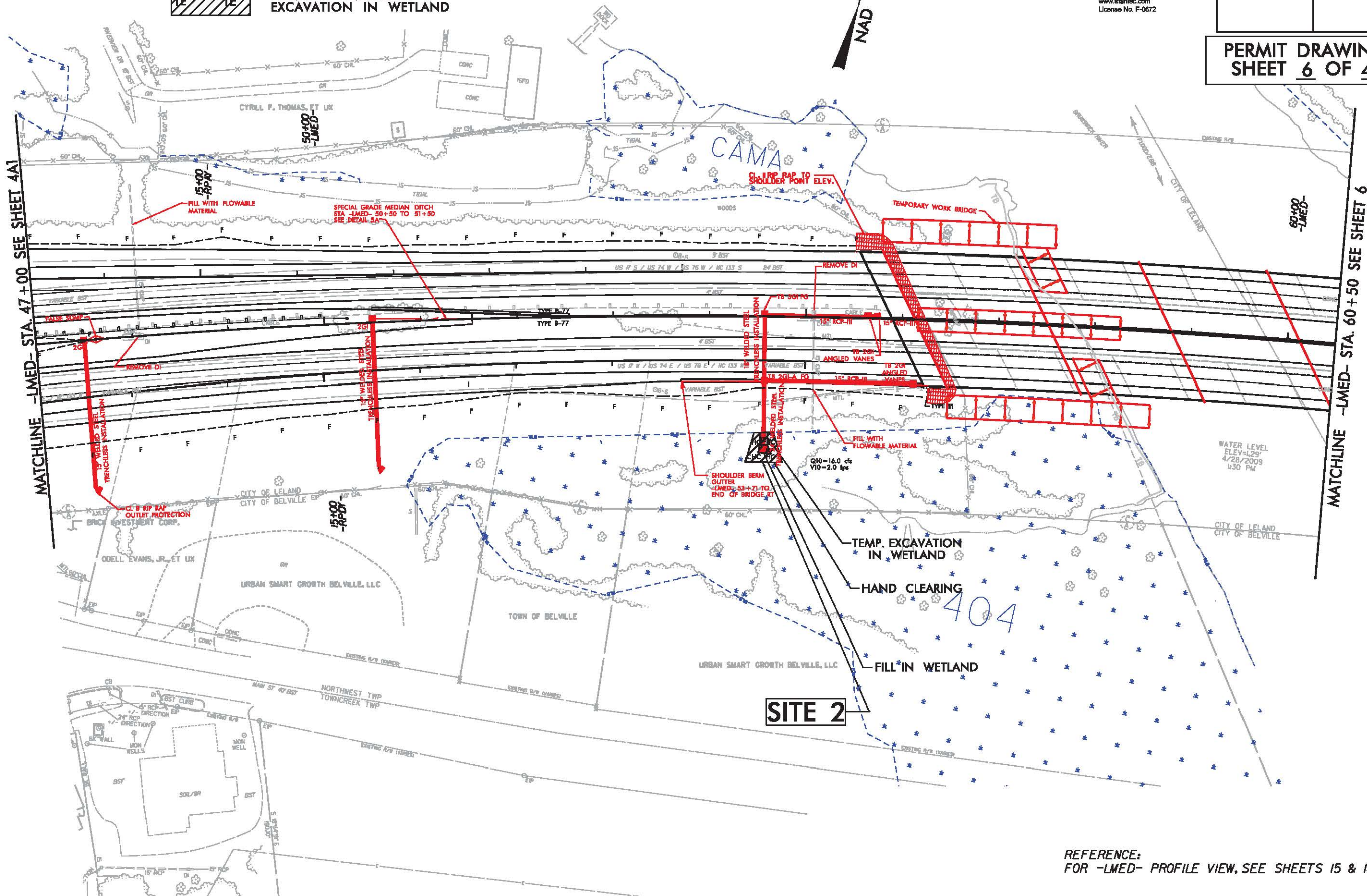
DENOTES TEMPORARY EXCAVATION IN WETLAND



Stantec Consulting Services Inc.
801 Jones Franklin Road
Suite 300
Raleigh, NC 27606
Tel. (919) 851-8886
Fax. (919) 851-7024
www.stantec.com
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PROJECT REFERENCE NO. R-3601	SHEET NO. 5
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	

**PERMIT DRAWING
SHEET 6 OF 44**



REFERENCE:
FOR -LMD- PROFILE VIEW, SEE SHEETS 15 & 16



DENOTES FILL IN
WETLAND



DENOTES HAND
CLEARING



DENOTES TEMPORARY
EXCAVATION IN WETLAND



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PROJECT REFERENCE NO. SHEET NO.

R-3601

5

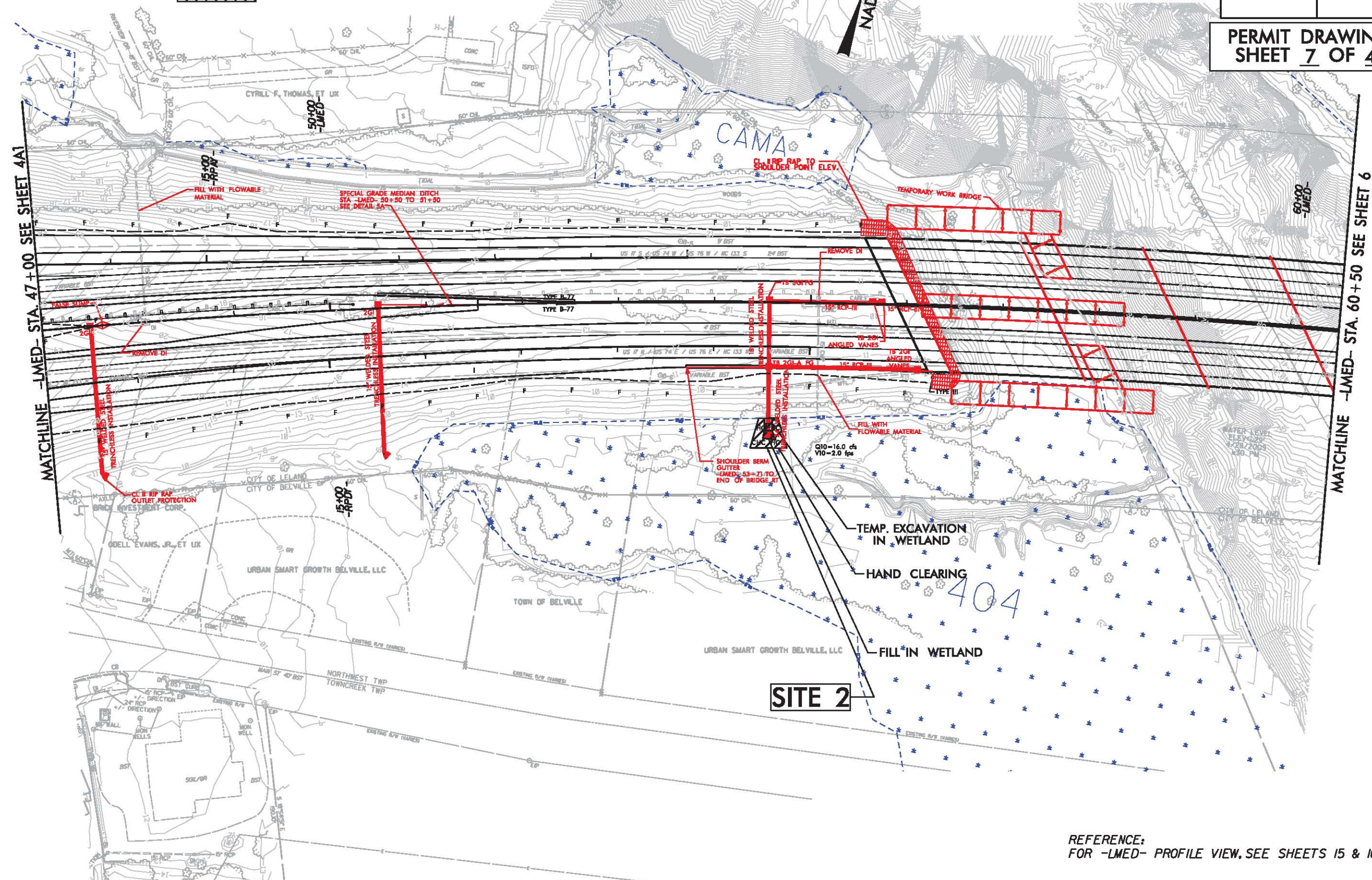
RAW SHEET NO.

ROADWAY DESIGN
ENGINEER

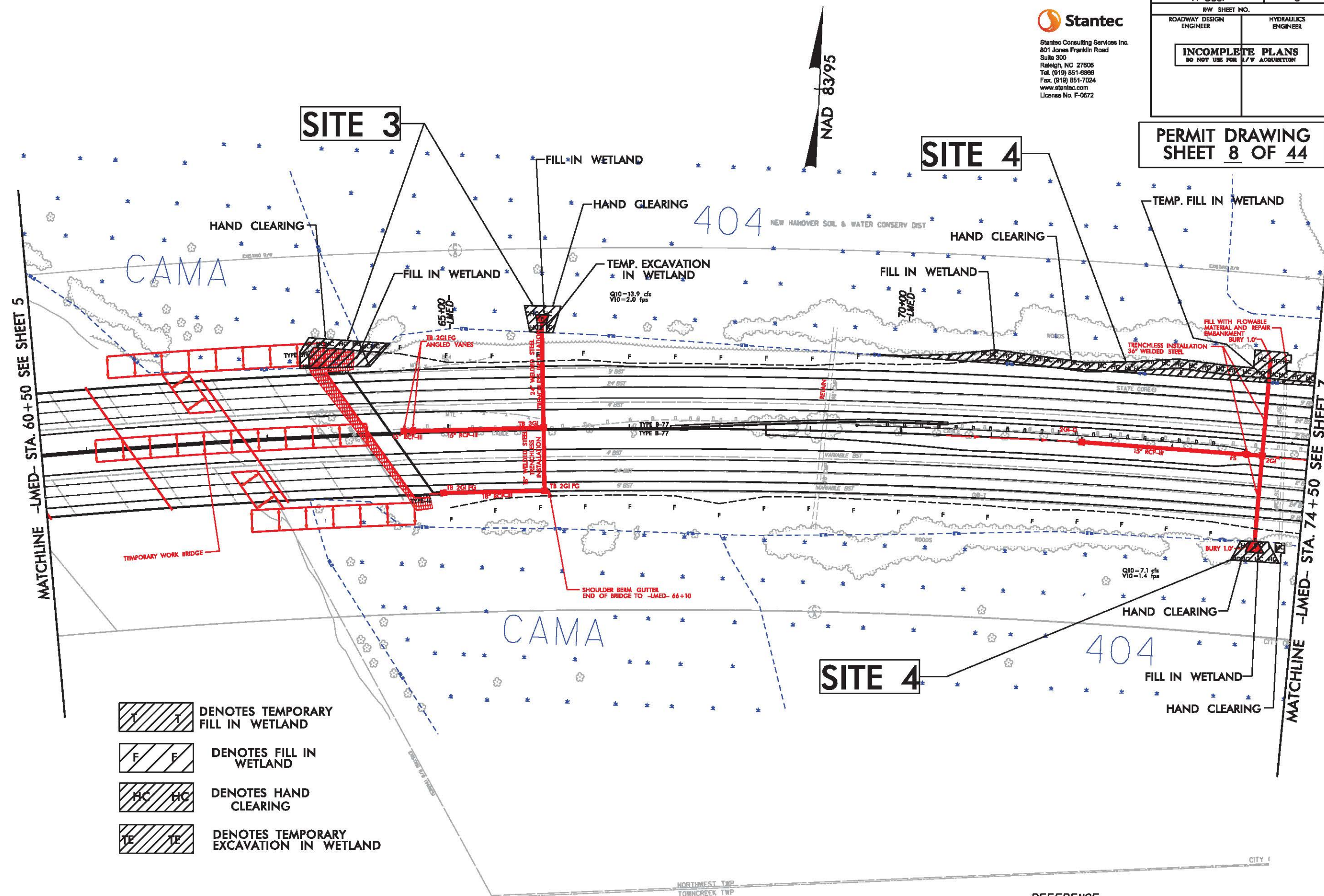
HYDRAULICS
ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR A/W ACQUISITION

PERMIT DRAWING
SHEET 7 OF 44



REFERENCE:
FOR -LMED- PROFILE VIEW, SEE SHEETS 15 & 16

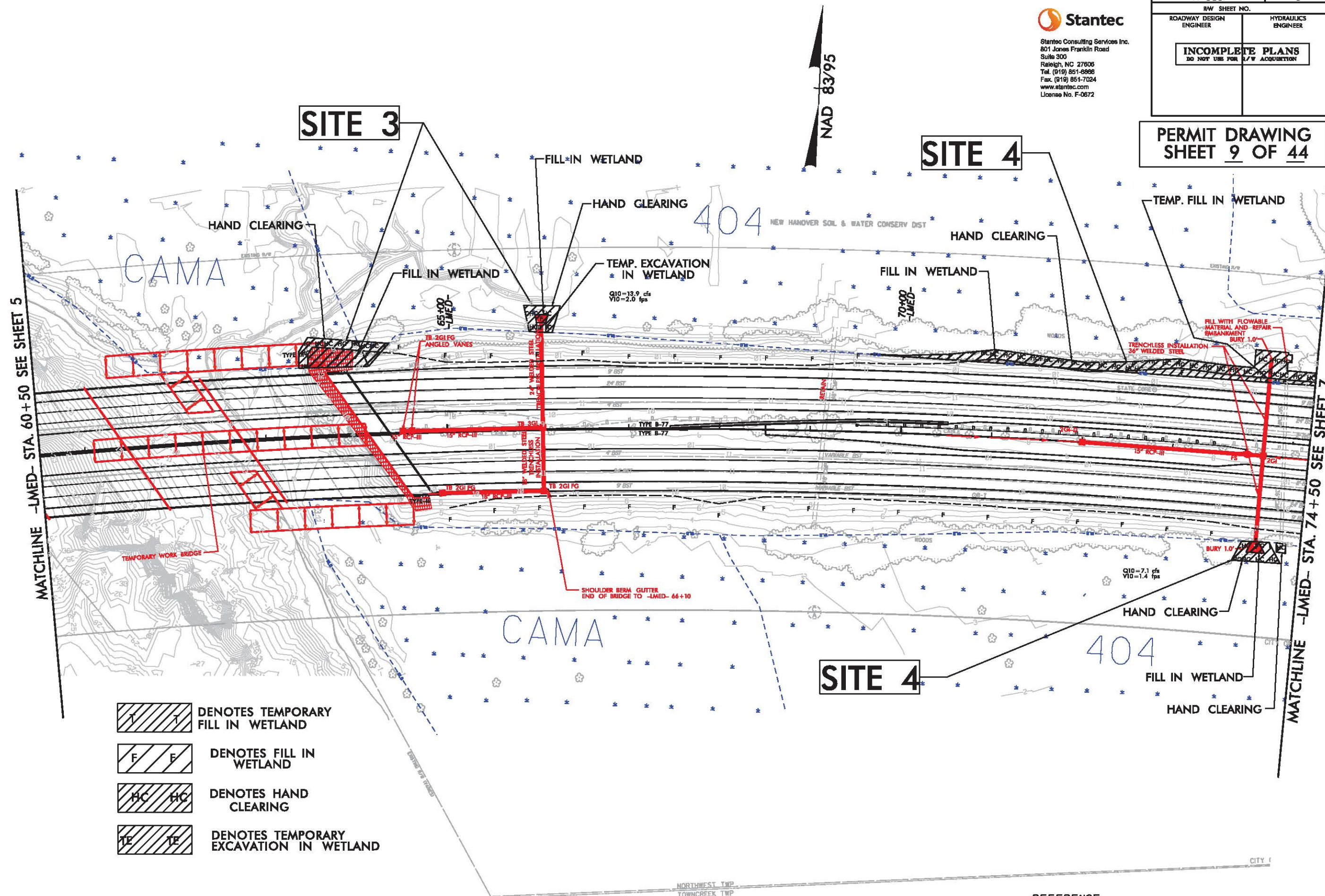


REFERENCE:
FOR -LMED- PROFILE VIEW, SEE SHEETS 15 & 16

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PROJECT REFERENCE NO. R-3601	SHEET NO. 6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	

**PERMIT DRAWING
SHEET 9 OF 44**



- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES HAND CLEARING
- DENOTES TEMPORARY EXCAVATION IN WETLAND

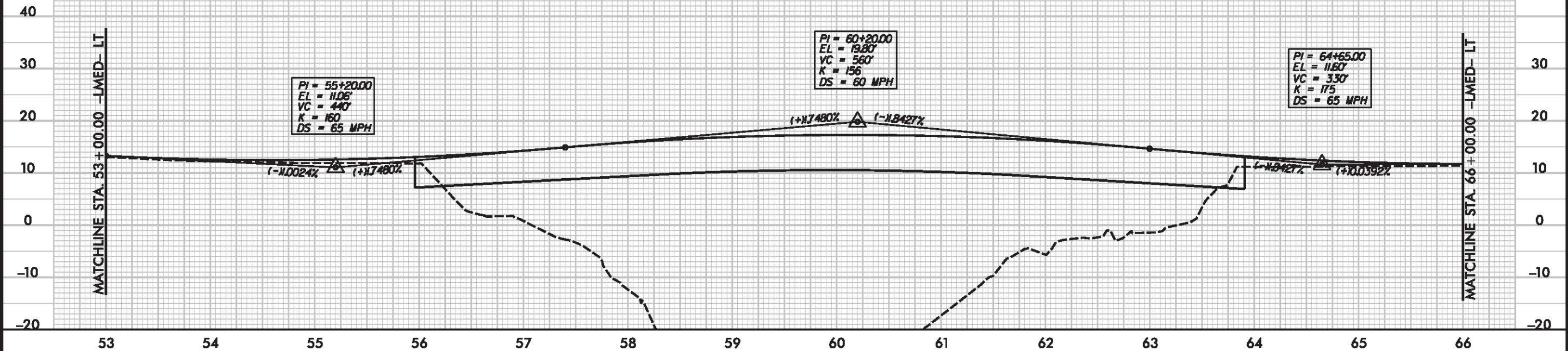
REFERENCE:
FOR -LMED- PROFILE VIEW, SEE SHEETS 15 & 16

5/28/99

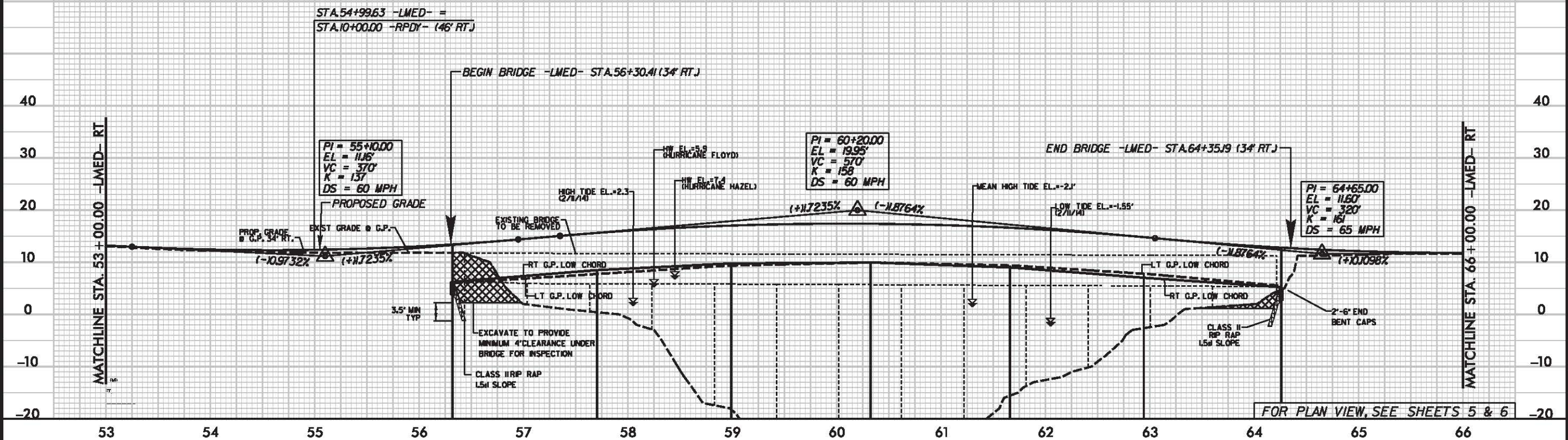
PERMIT DRAWING
SHEET 10 OF 44

PROJECT REFERENCE NO.	SHEET NO.
R-3601	15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-LMED- LT



-LMED- RT

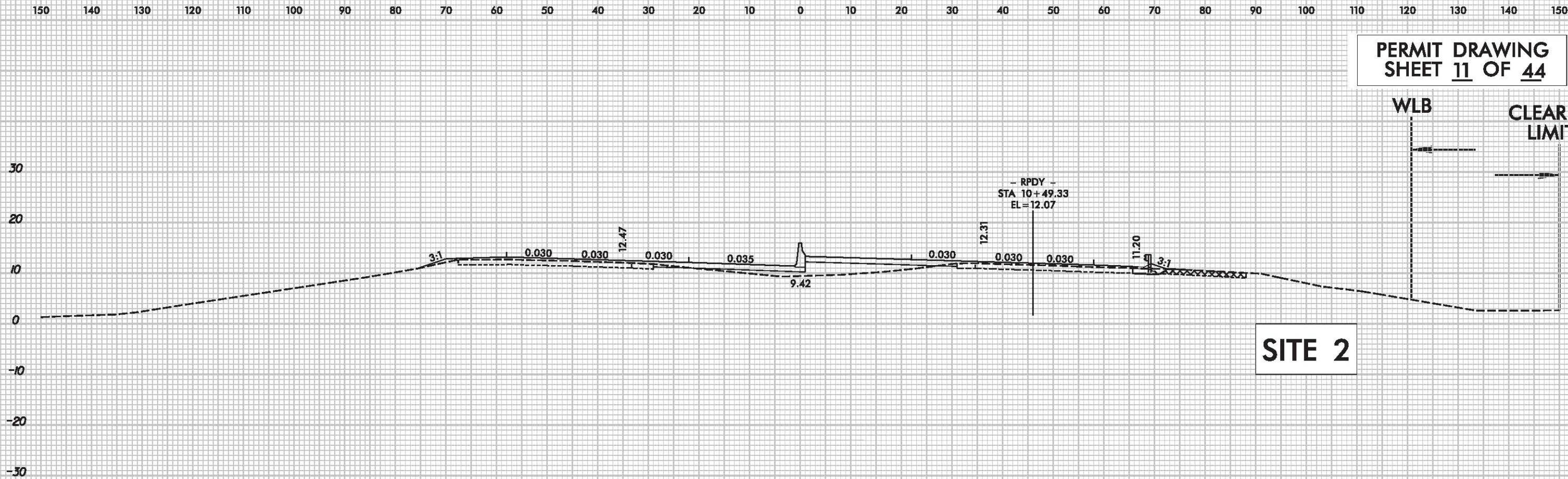


8/23/99



PROJ. REFERENCE NO.	SHEET NO.
R-3601	X-11

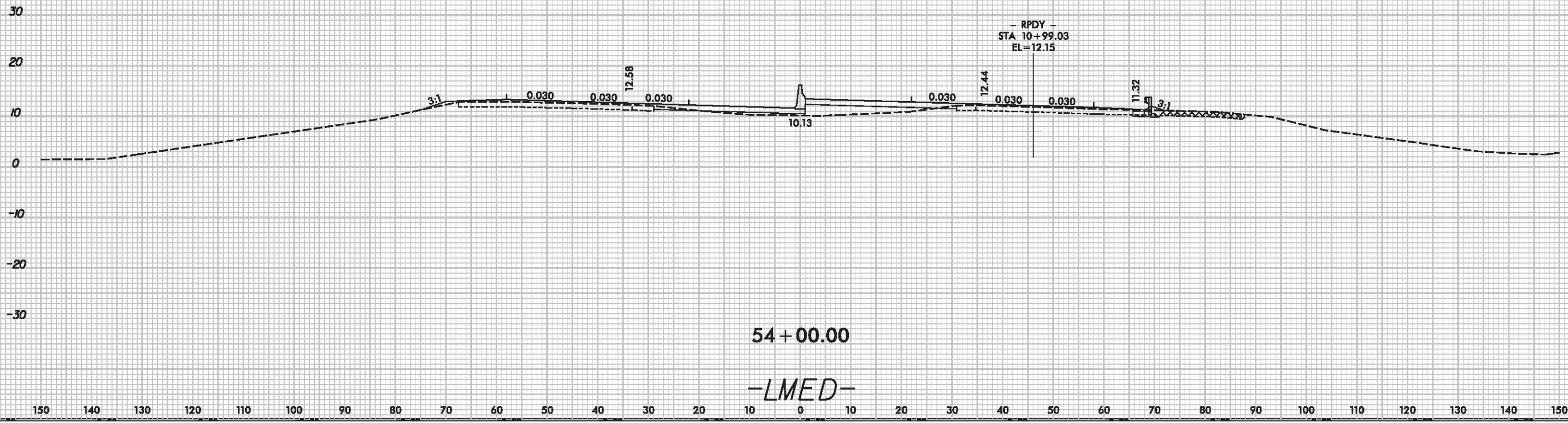
PERMIT DRAWING
SHEET 11 OF 44



WLB
CLEARING
LIMITS

SITE 2

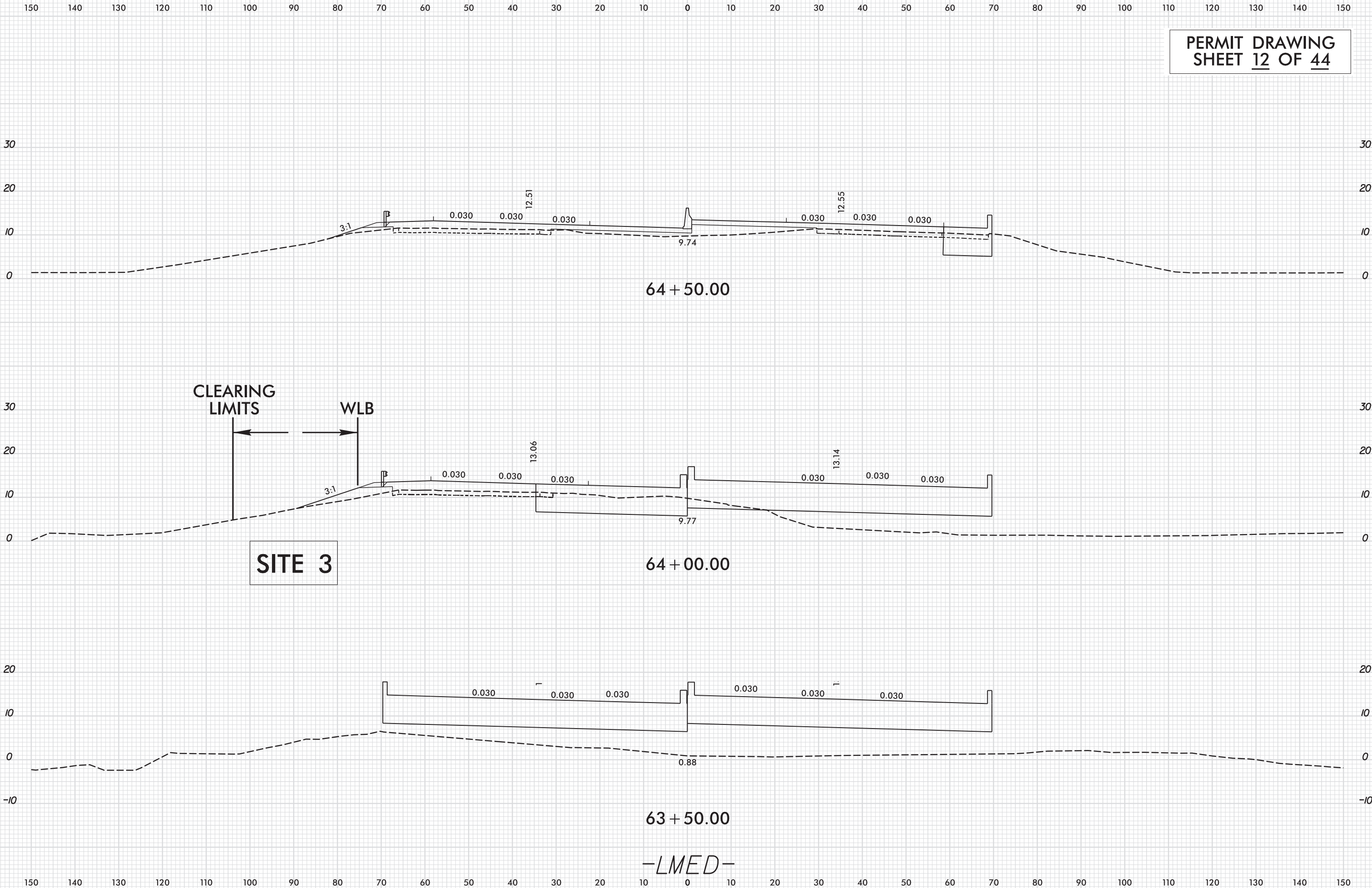
54 + 50.00



54 + 00.00

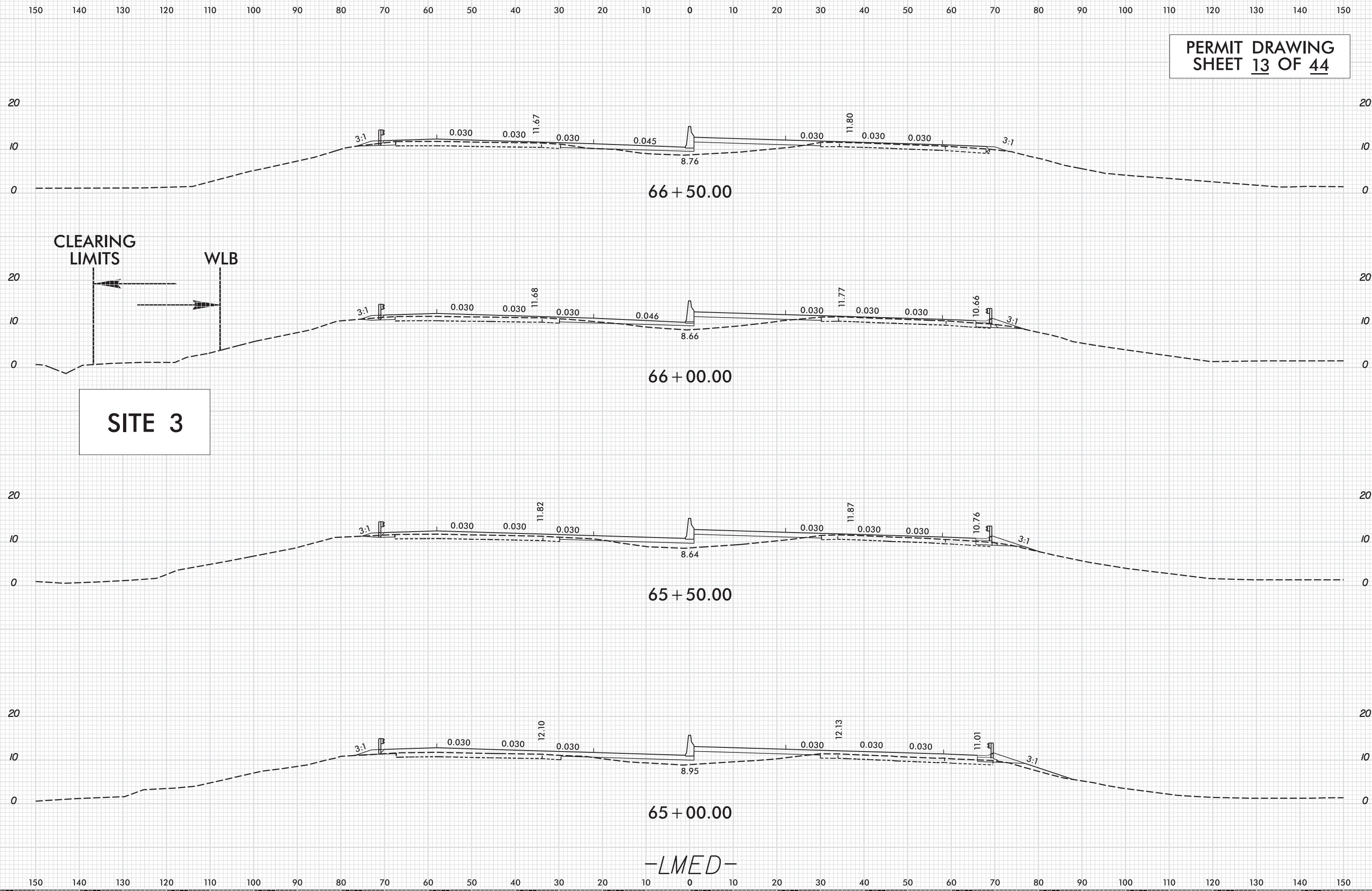
-LMED-

PERMIT DRAWING
SHEET 12 OF 44



8/23/99

PERMIT DRAWING
SHEET 13 OF 44



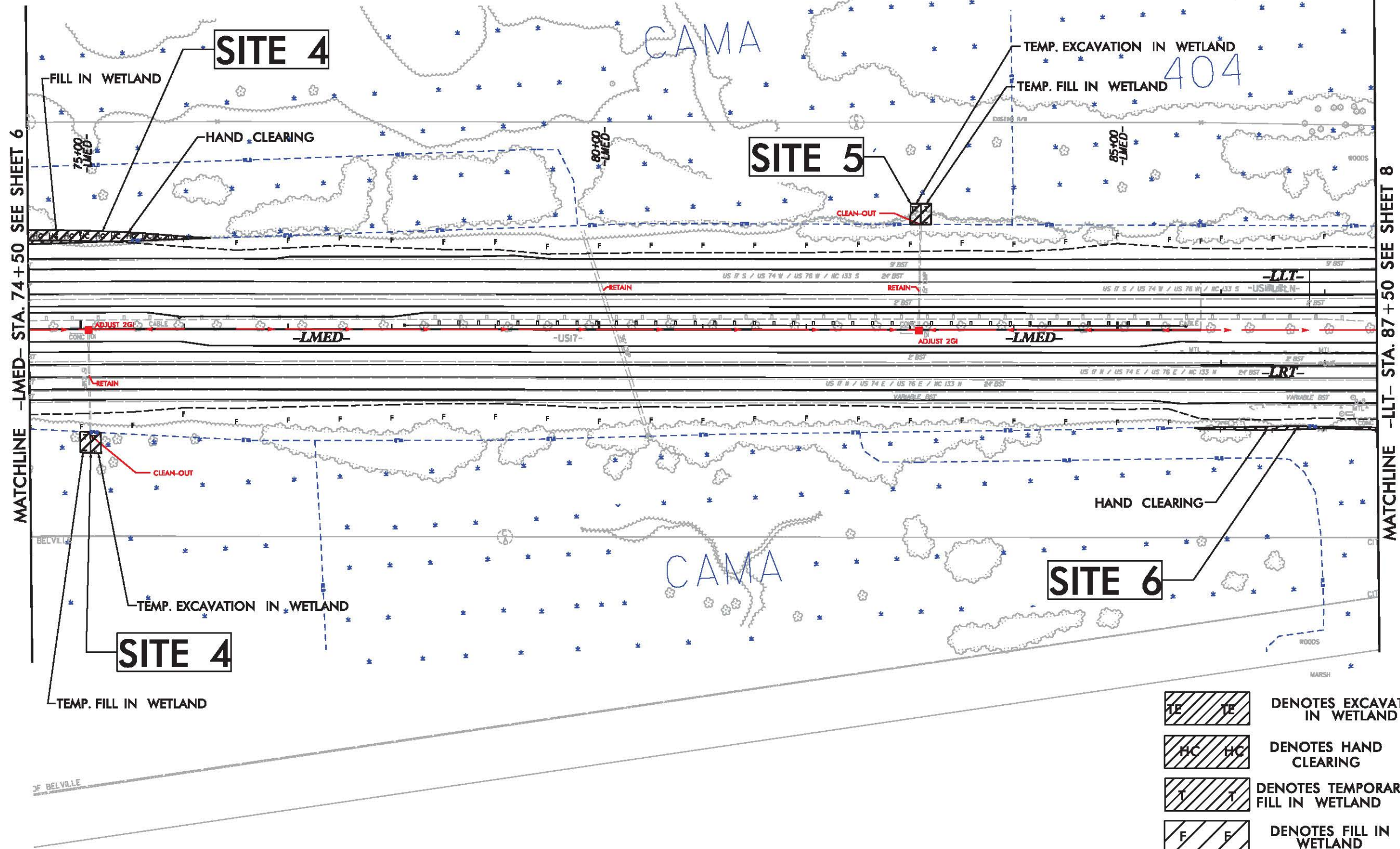
SITE 3

-LMED-

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PROJECT REFERENCE NO. R-3601		SHEET NO. 7	
RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		DO NOT USE FOR A/W ACQUISITION	

**PERMIT DRAWING
SHEET 14 OF 44**



- DENOTES EXCAVATION IN WETLAND
- DENOTES HAND CLEARING
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES FILL IN WETLAND

8/23/99

CLEARING LIMITS

WLB

WLB

PERMIT DRAWING
SHEET 16 OF 44

CLEARING LIMITS

SITE 4

SITE 4

74 + 00.00

73 + 50.00

73 + 00.00

72 + 50.00

72 + 00.00

-LMED-

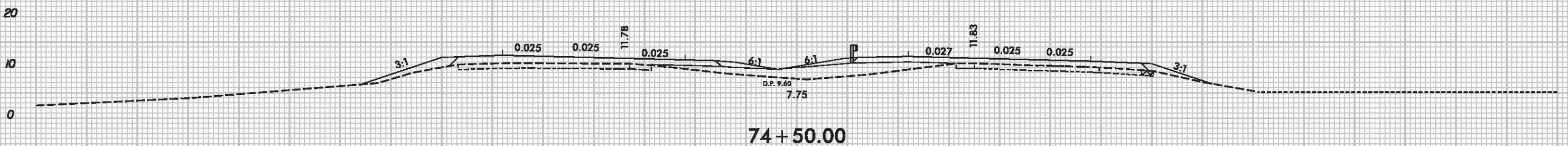
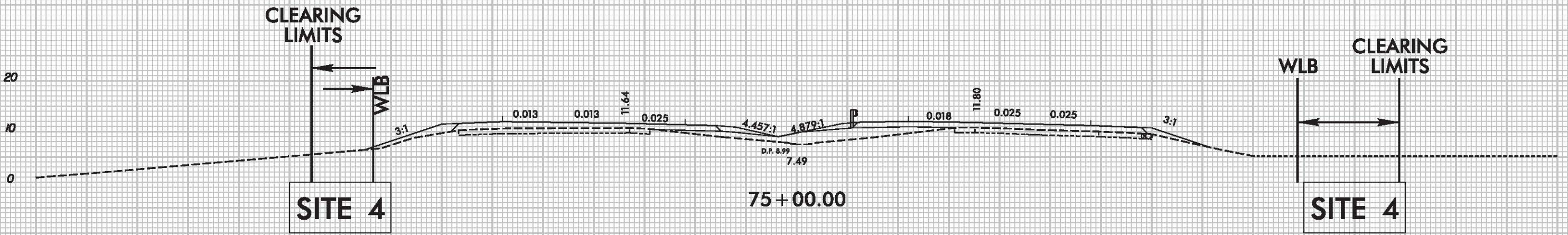
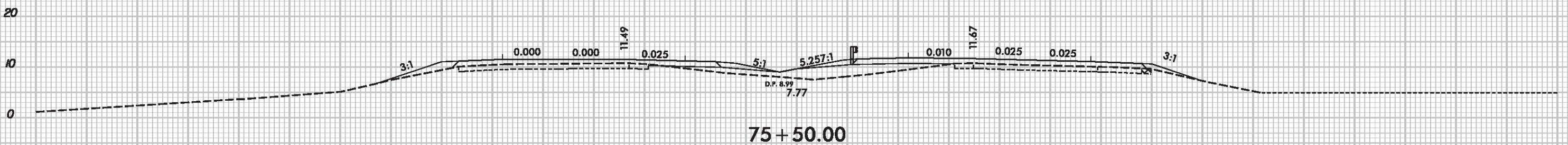
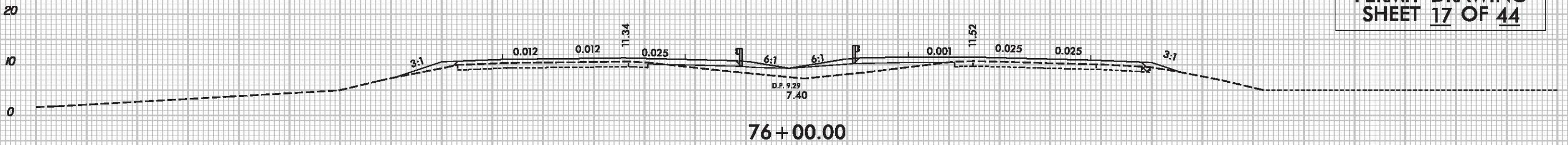
SITE 4

WLB

CLEARING LIMITS

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

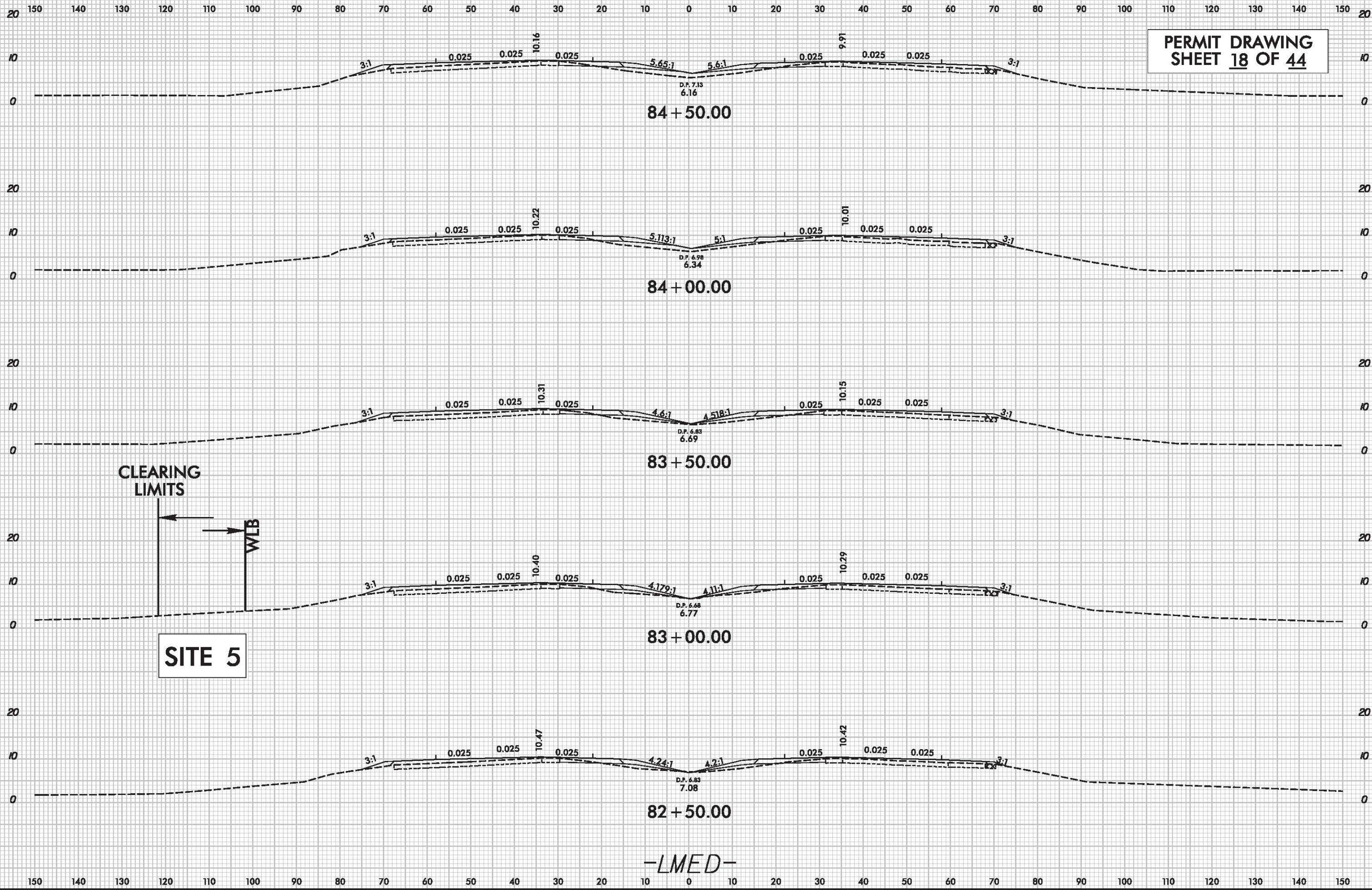
PERMIT DRAWING
SHEET 17 OF 44



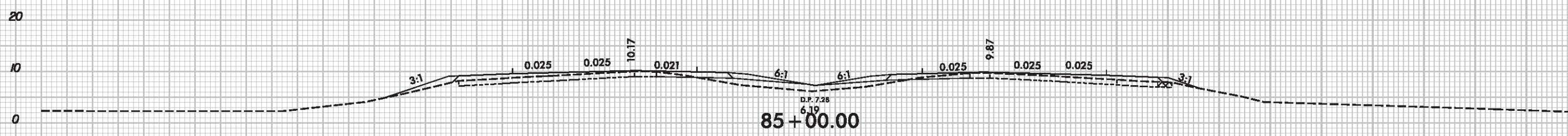
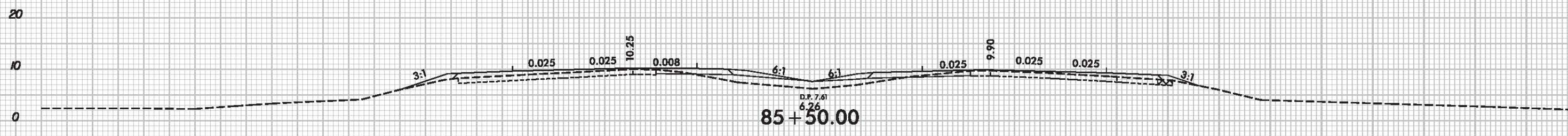
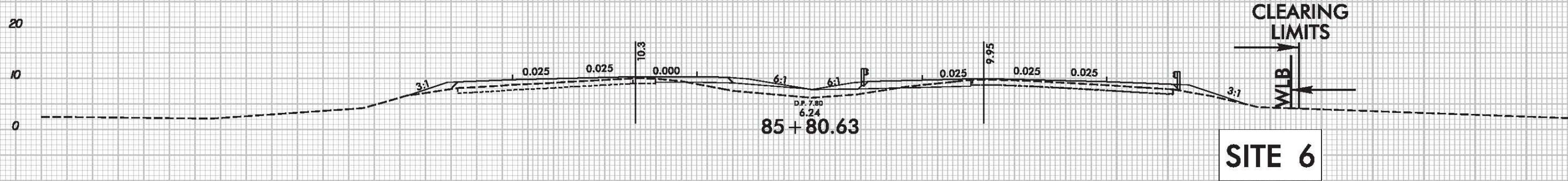
-LMED-

150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

PERMIT DRAWING
SHEET 18 OF 44



PERMIT DRAWING
SHEET 19 OF 44

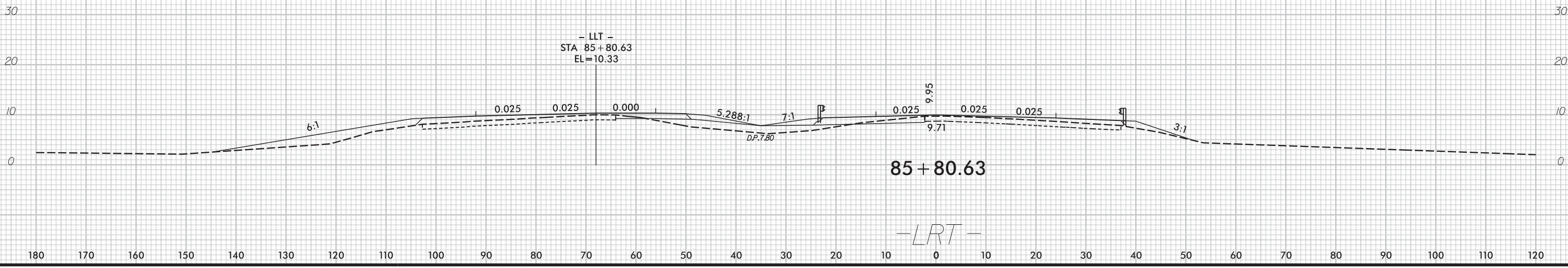
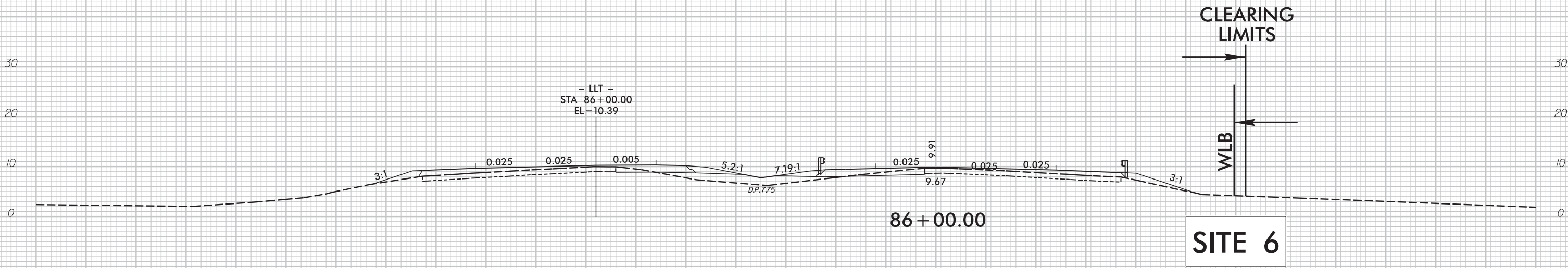
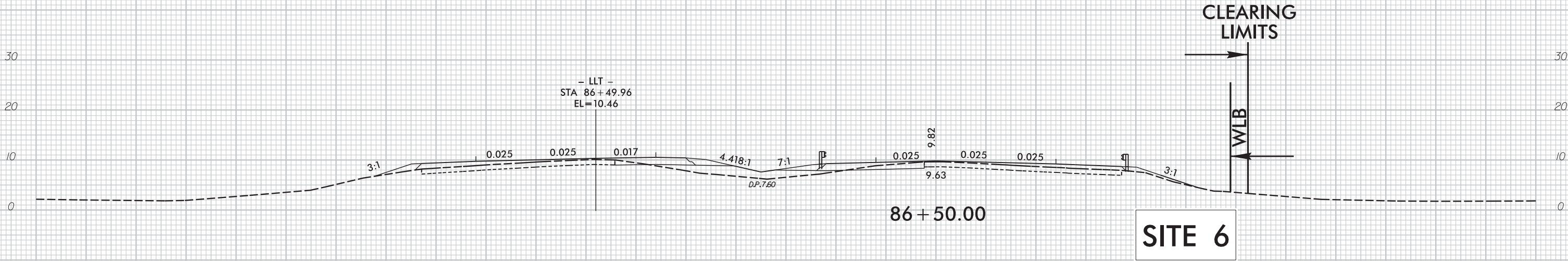


-LMED-

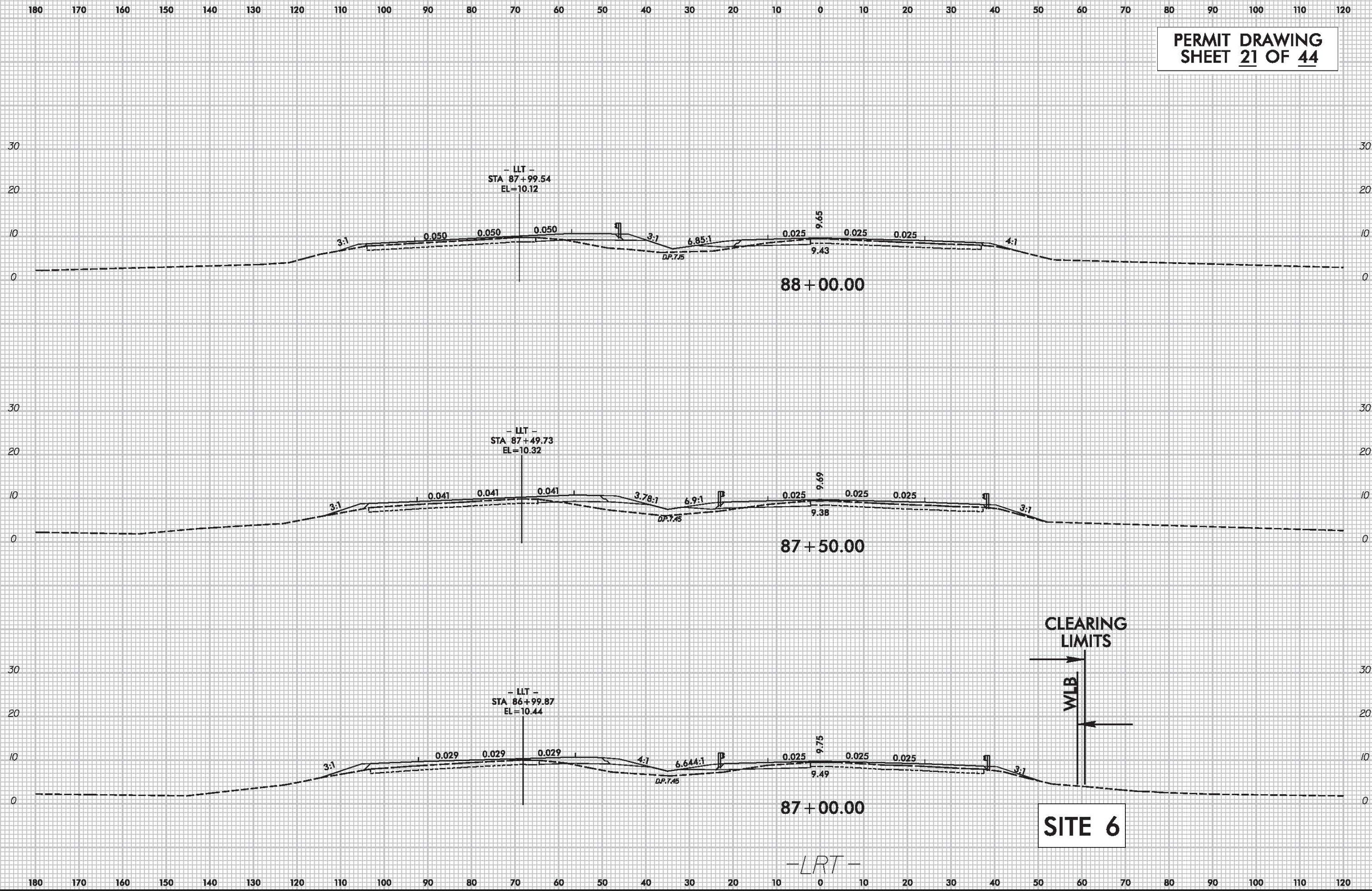
8/23/99

180 170 160 150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120

PERMIT DRAWING
SHEET 20 OF 44



PERMIT DRAWING
SHEET 21 OF 44

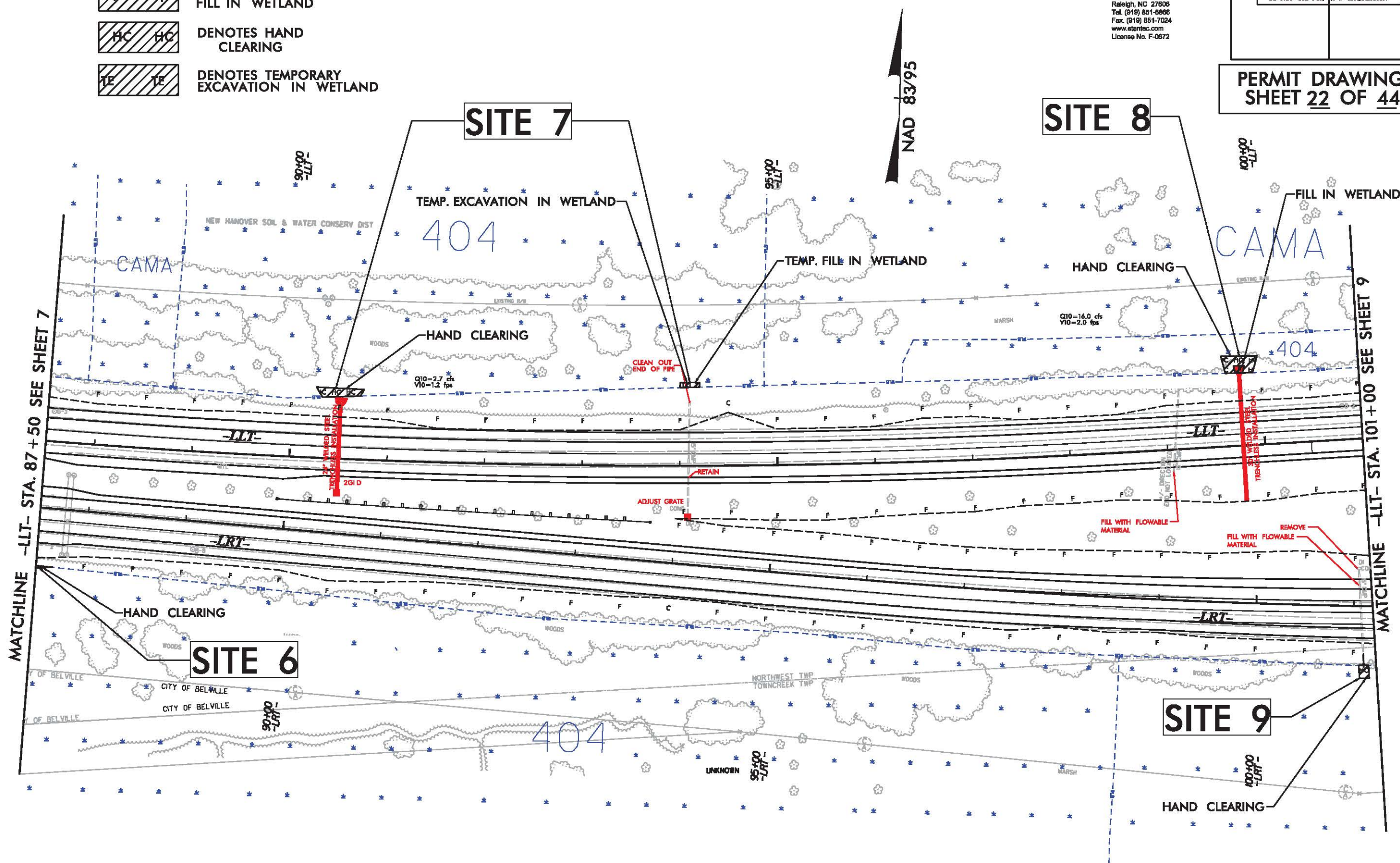


-  DENOTES FILL IN WETLAND
-  DENOTES TEMPORARY FILL IN WETLAND
-  DENOTES HAND CLEARING
-  DENOTES TEMPORARY EXCAVATION IN WETLAND

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PROJECT REFERENCE NO. R-3601	SHEET NO. 8
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	

PERMIT DRAWING
SHEET 22 OF 44

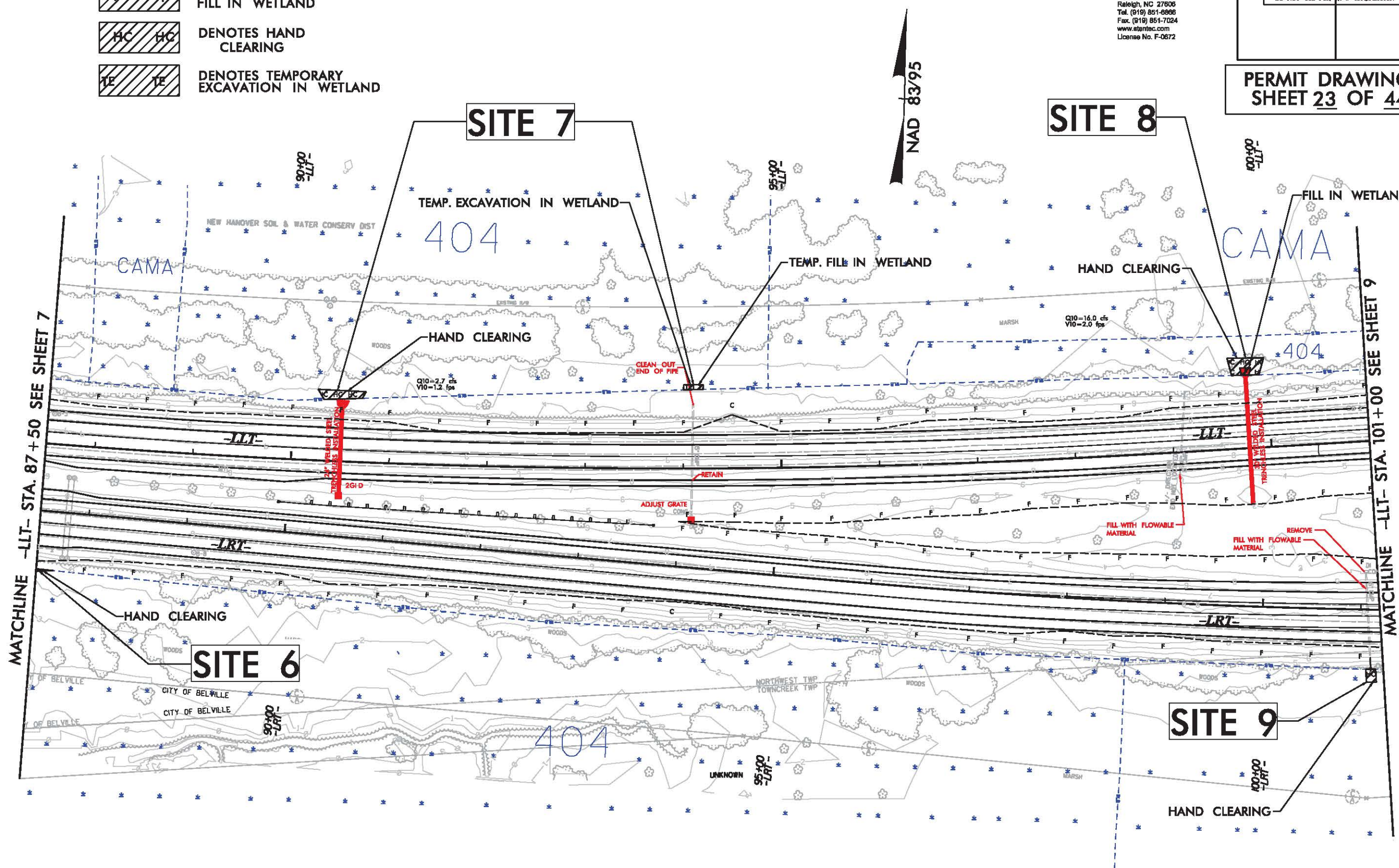


-  DENOTES FILL IN WETLAND
-  DENOTES TEMPORARY FILL IN WETLAND
-  DENOTES HAND CLEARING
-  DENOTES TEMPORARY EXCAVATION IN WETLAND

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PROJECT REFERENCE NO. R-3601	SHEET NO. 8
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	

**PERMIT DRAWING
SHEET 23 OF 44**



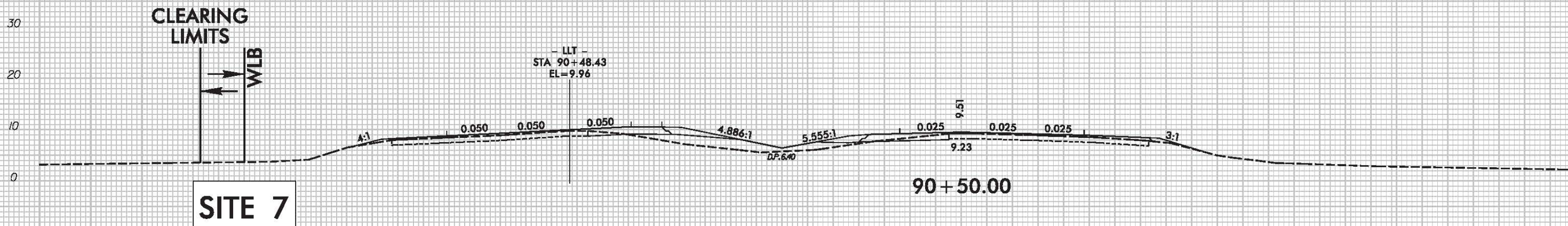
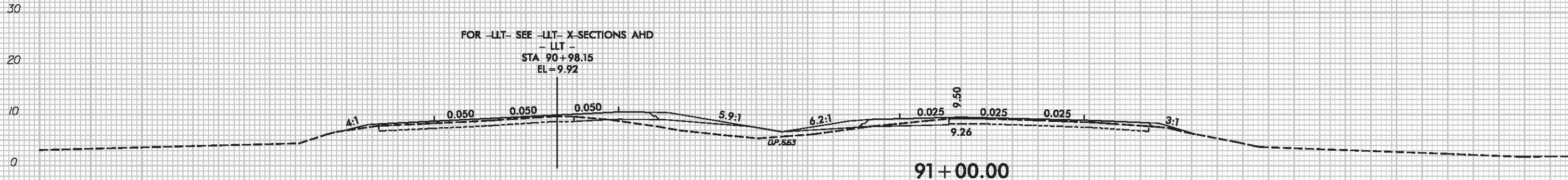
8/23/99



PROJ. REFERENCE NO.	SHEET NO.
R-3601	X-34

PERMIT DRAWING
SHEET 24 OF 44

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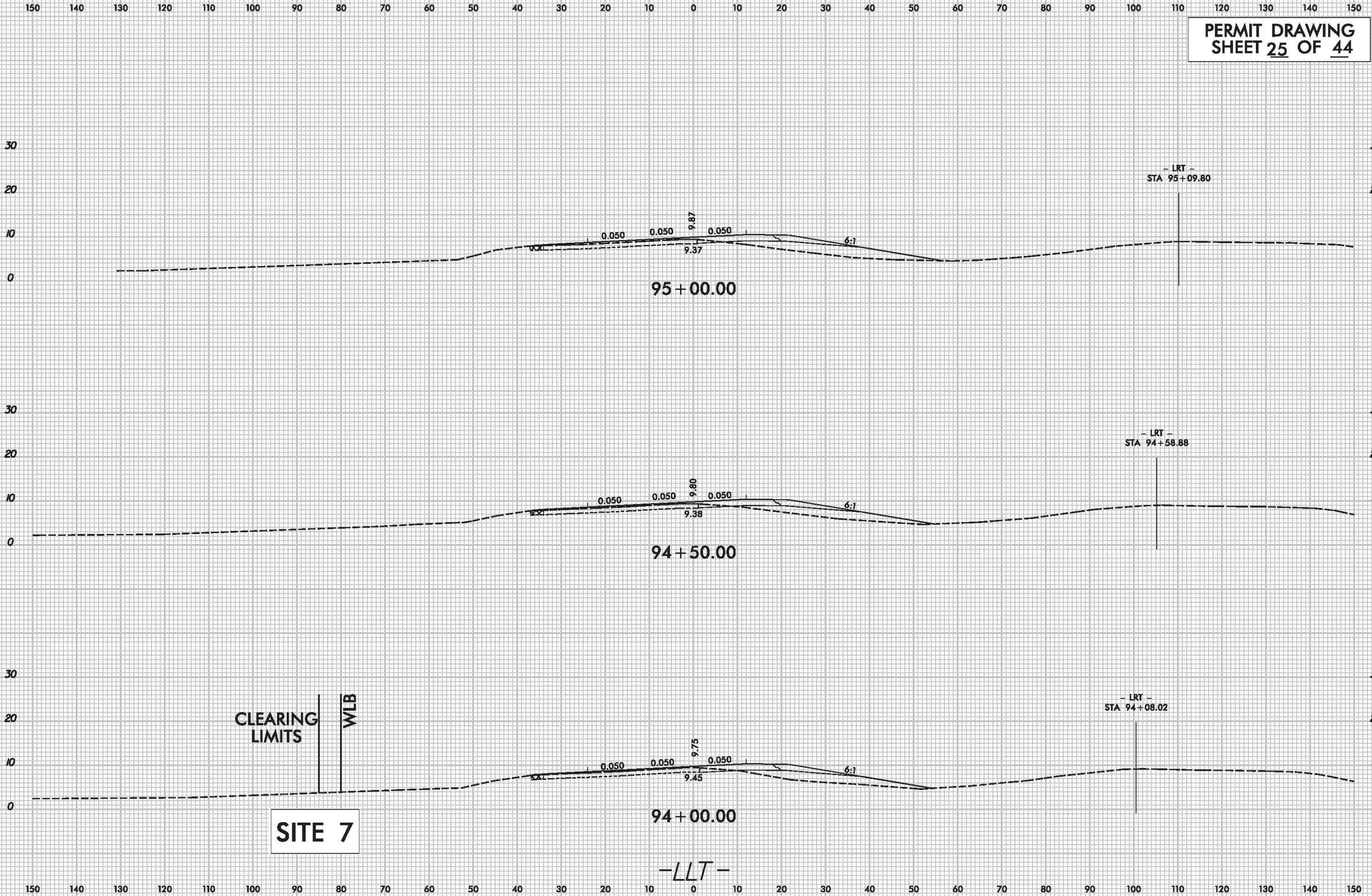


-LRT-

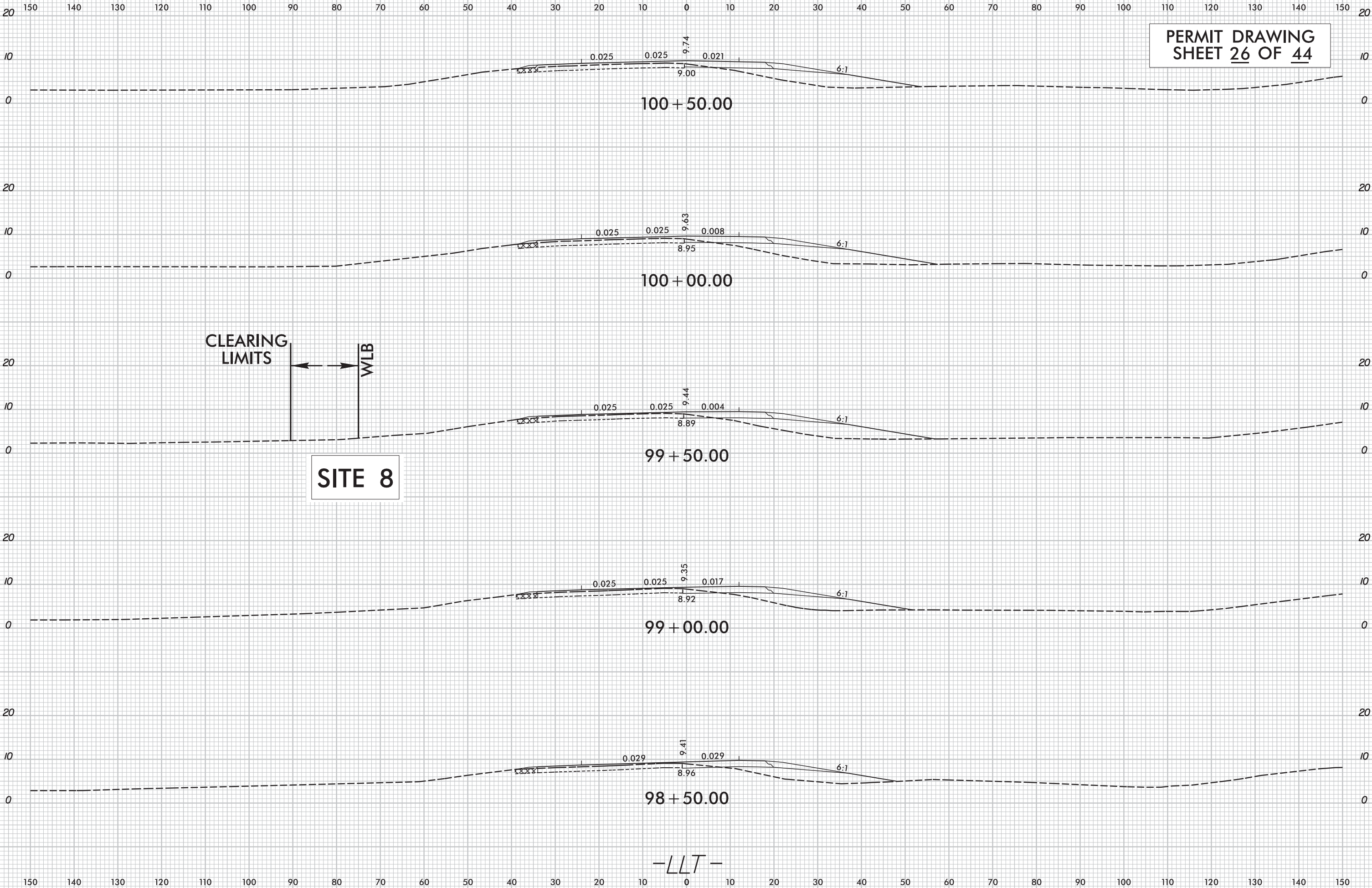
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8/23/99

PERMIT DRAWING
SHEET 25 OF 44



PERMIT DRAWING
SHEET 26 OF 44



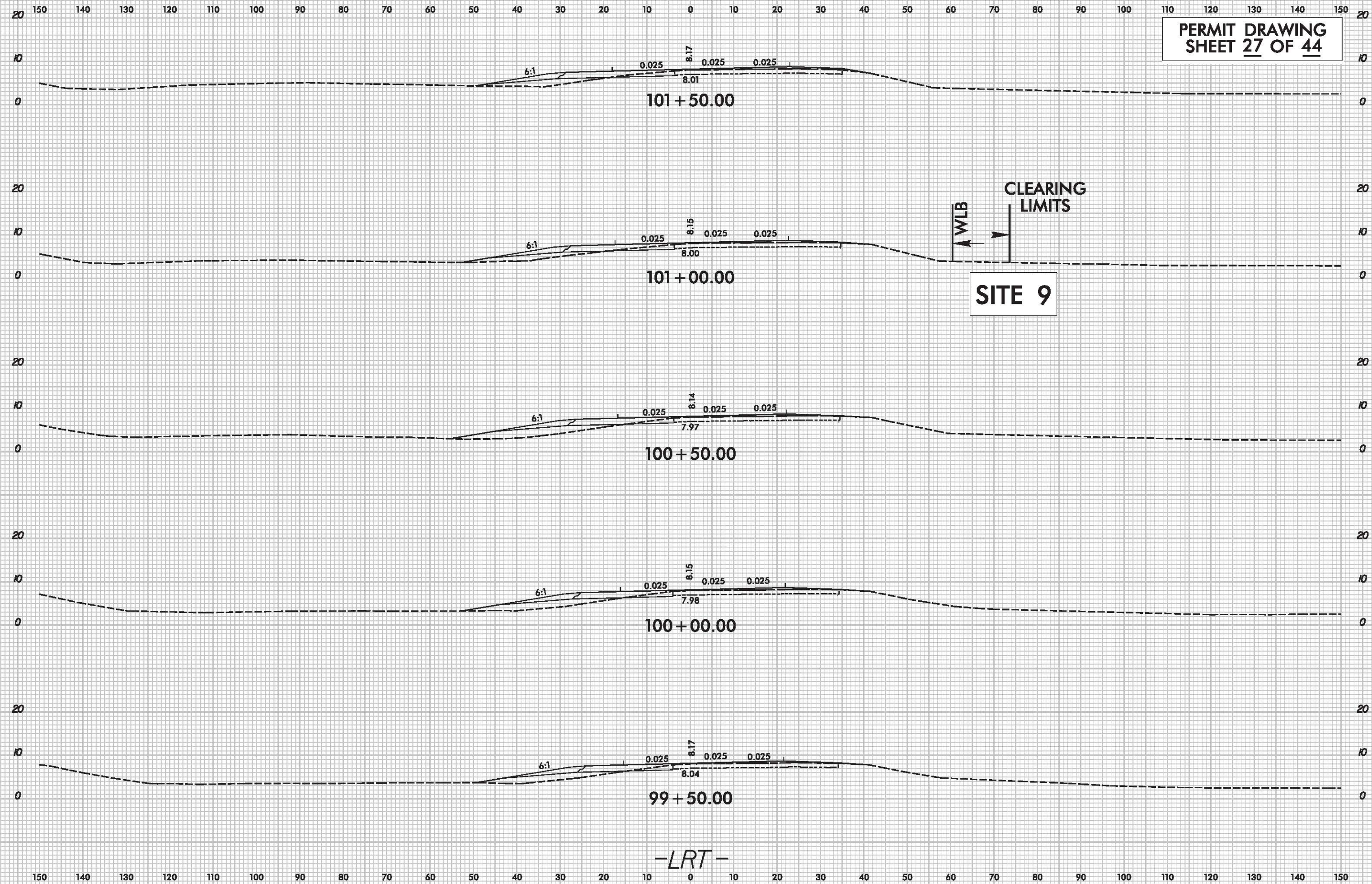
8/23/99



PROJ. REFERENCE NO.
R-3601

SHEET NO.
X-40

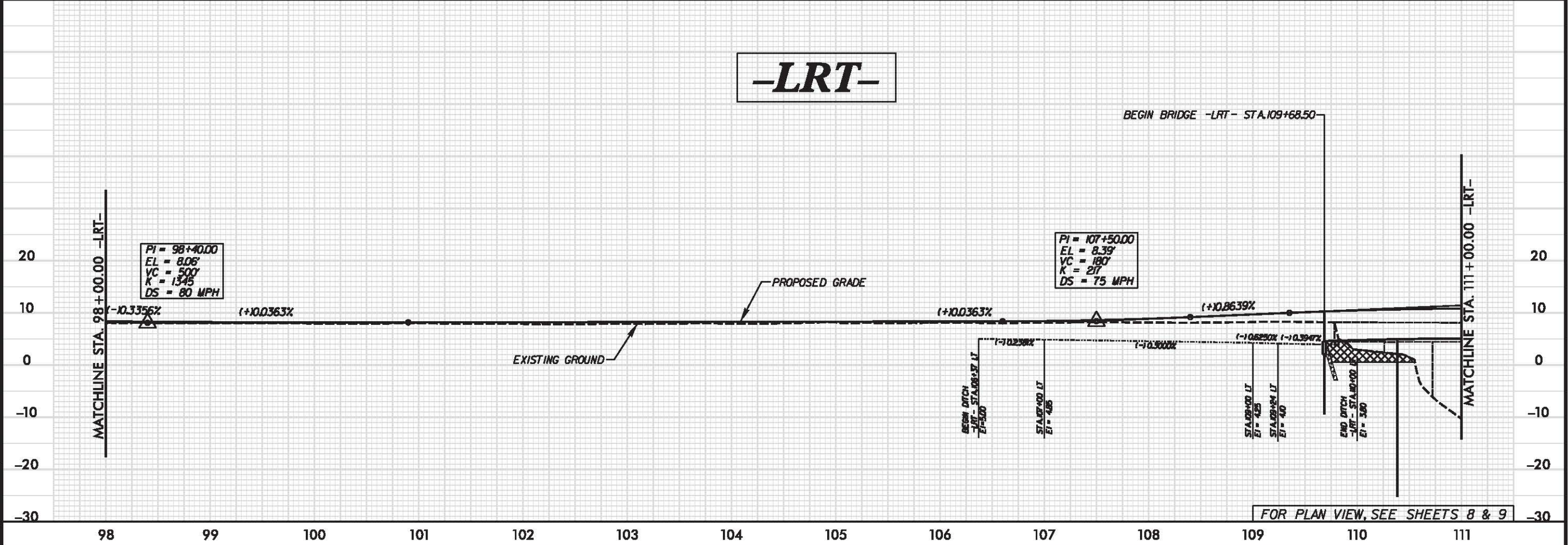
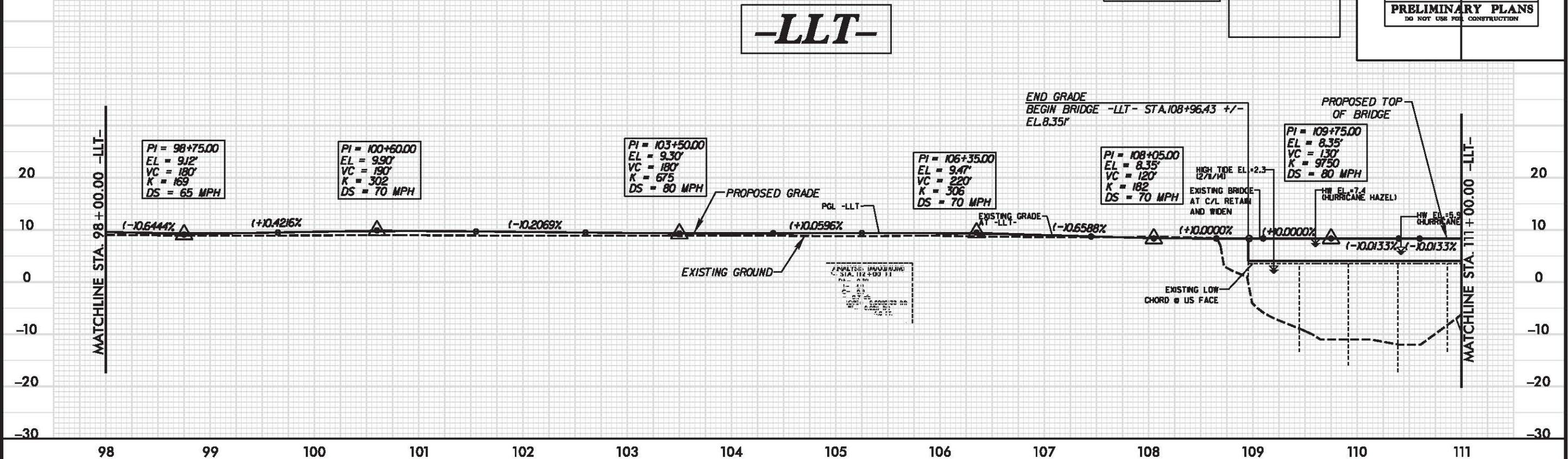
PERMIT DRAWING
SHEET 27 OF 44



5/28/99

PERMIT DRAWING
SHEET 30 OF 44

PROJECT REFERENCE NO.	SHEET NO.
R-3601	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

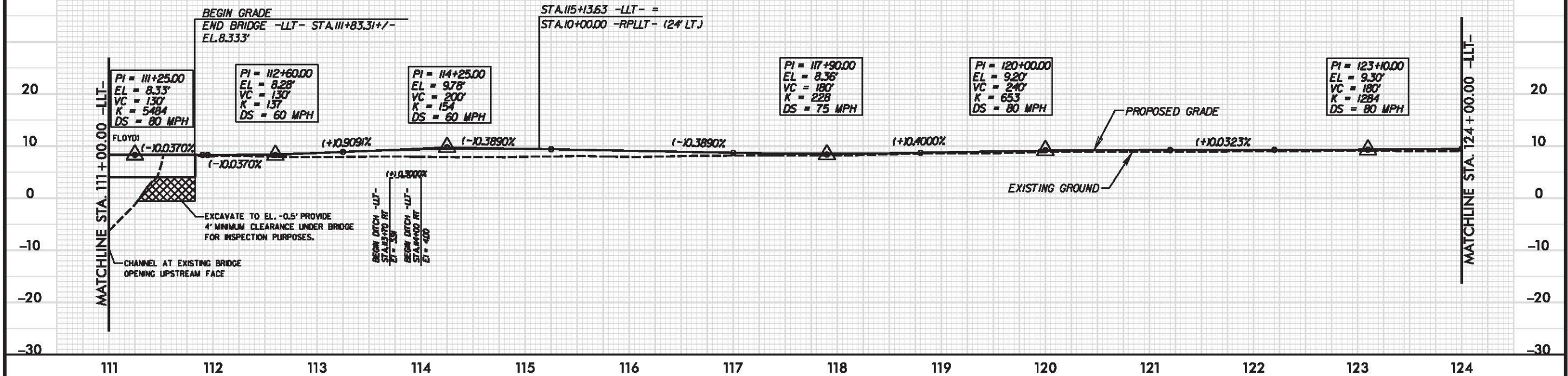


5/28/99

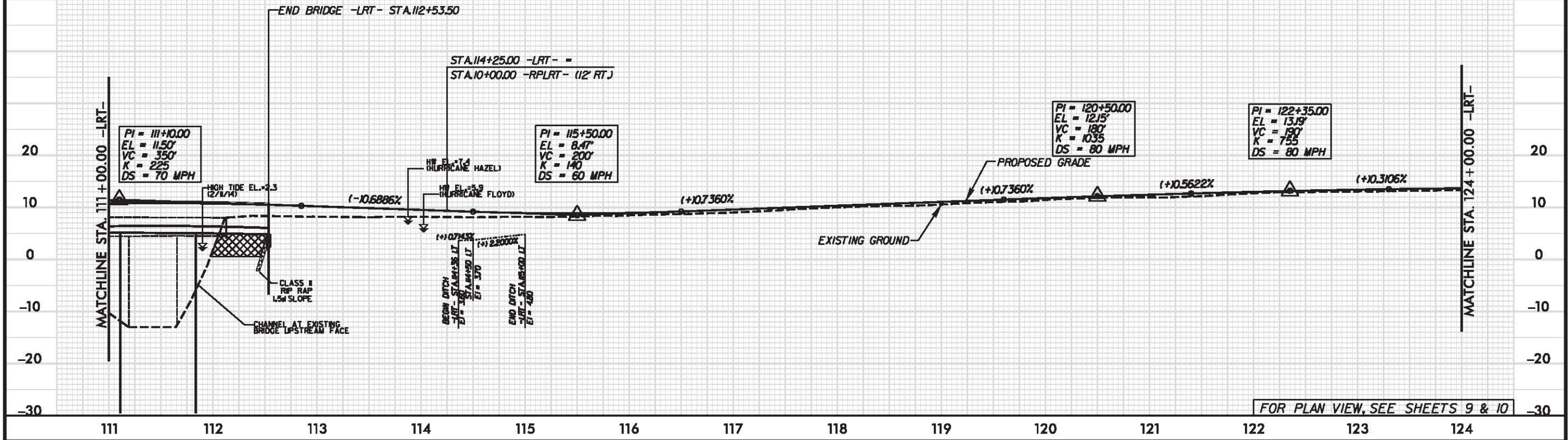
PERMIT DRAWING
SHEET 31 OF 44

PROJECT REFERENCE NO.	SHEET NO.
R-3601	20
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

-LLT-



-LRT-



8/23/99

TEMPORARY FILL LIMITS

CLEARING LIMITS

CLEARING LIMITS

PERMIT DRAWING
SHEET 32 OF 44

6/9/2014

SITE 10

SITE 10

114 + 00.00

113 + 50.00

113 + 00.00

SITE 10

SITE 10

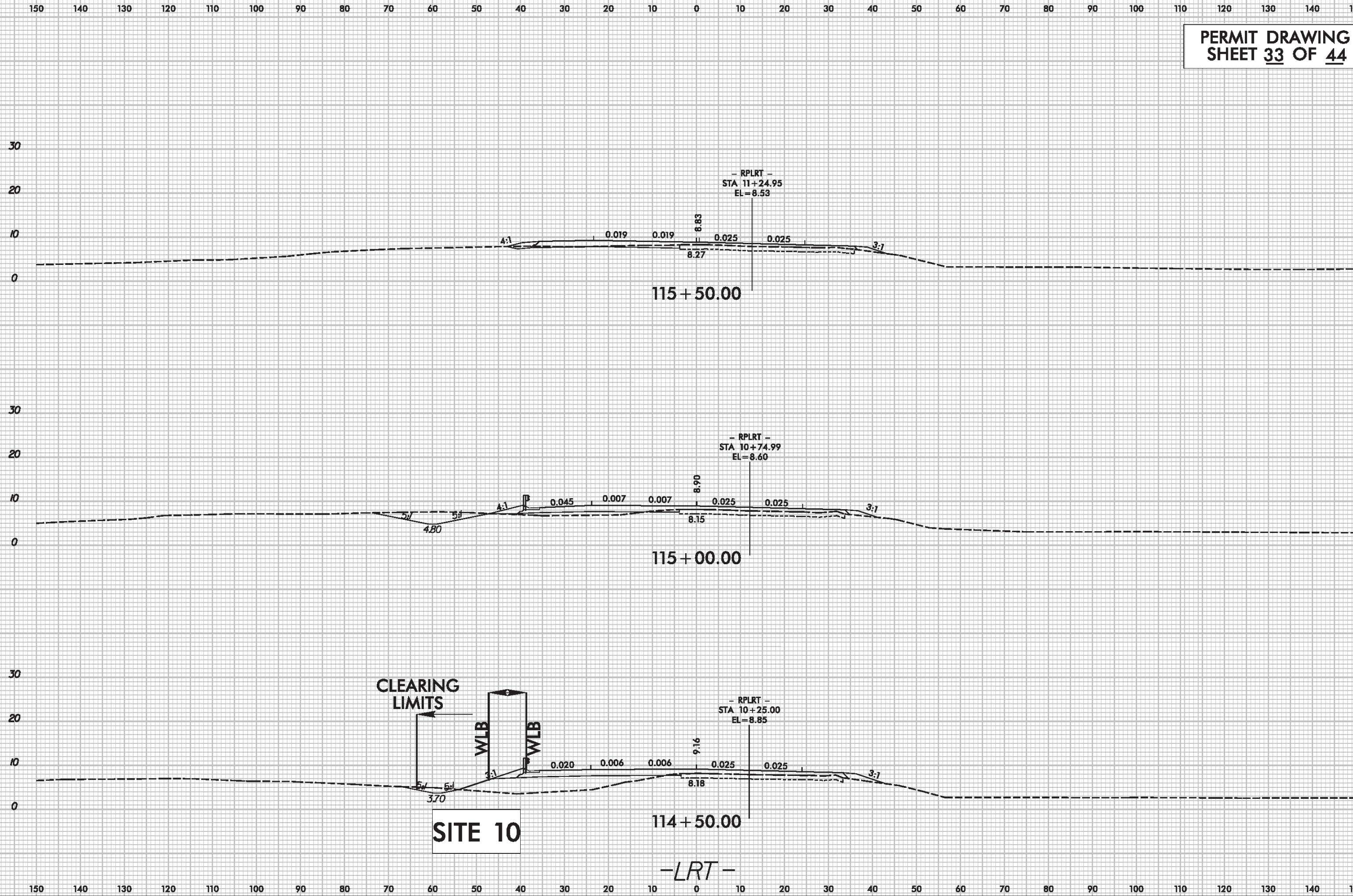
112 + 50.00

-LRT-

END BRIDGE STA. 112 + 53.50

8/23/99

PERMIT DRAWING
SHEET 33 OF 44



8/23/99

TEMPORARY FILL
LIMITS

CLEARING
LIMITS



PROJ. REFERENCE NO.
R-3601

SHEET NO.
X-68

PERMIT DRAWING
SHEET 34 OF 44

6/9/2014

112 + 50.00

SITE 10

TEMPORARY FILL
LIMITS

CLEARING
LIMITS

WLB

112 + 00.00

SITE 10

END BRIDGE -LLT- STA. 111 + 83.31

111 + 50.00

111 + 00.00

-LLT-

8/17/99

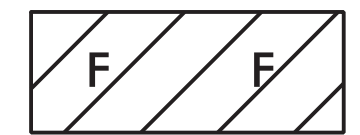
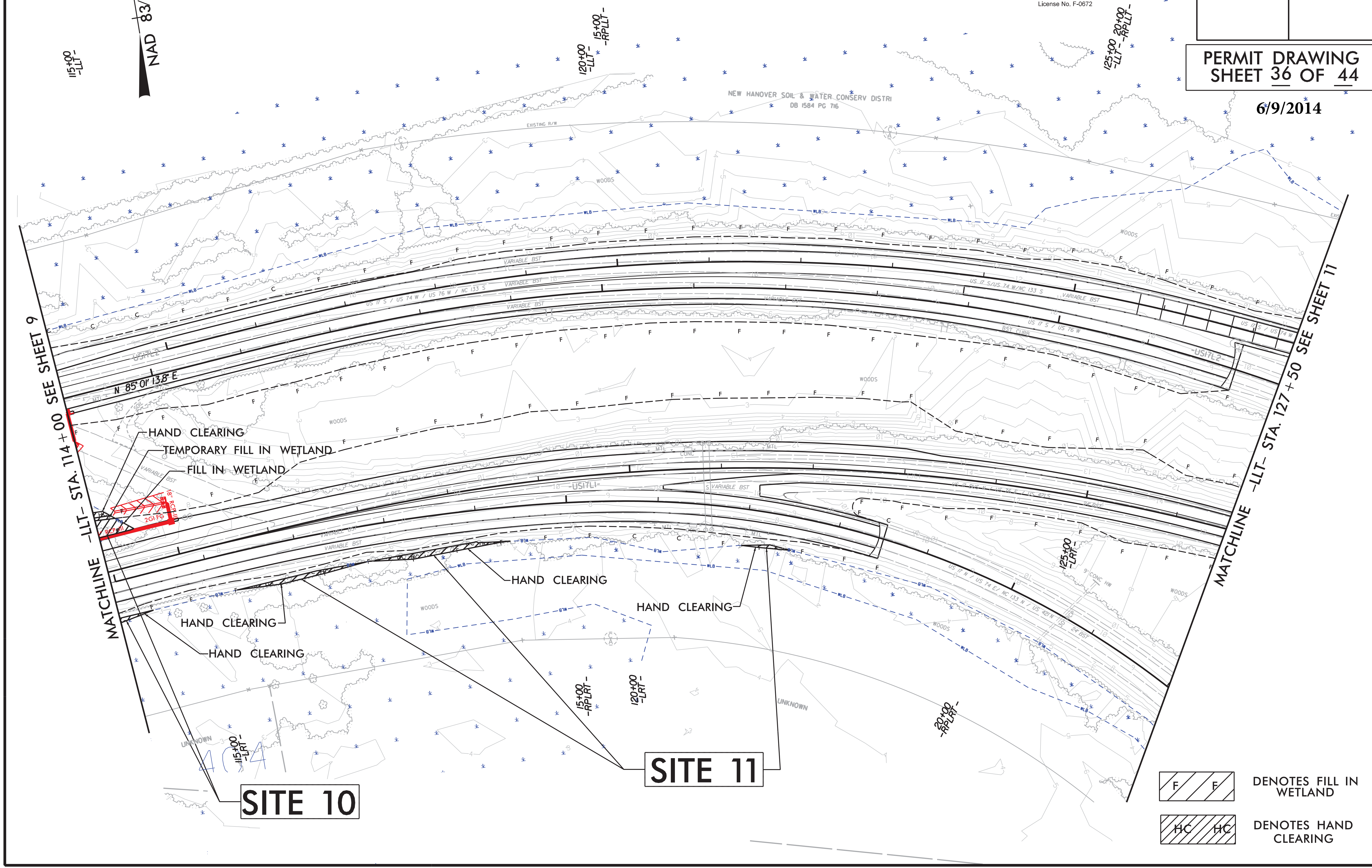
5/8/2014
R-3601-PRM
R-3601-PRM PERMIT PACKAGE_20140508.DWG

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PROJECT REFERENCE NO.		SHEET NO.	
R-3601		10	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			

PERMIT DRAWING
SHEET 36 OF 44

6/9/2014



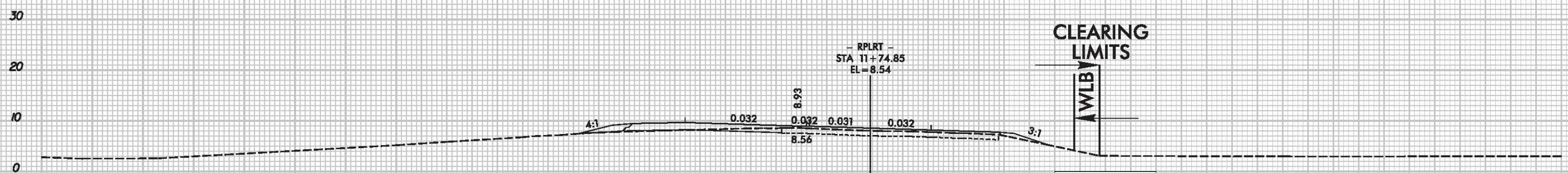
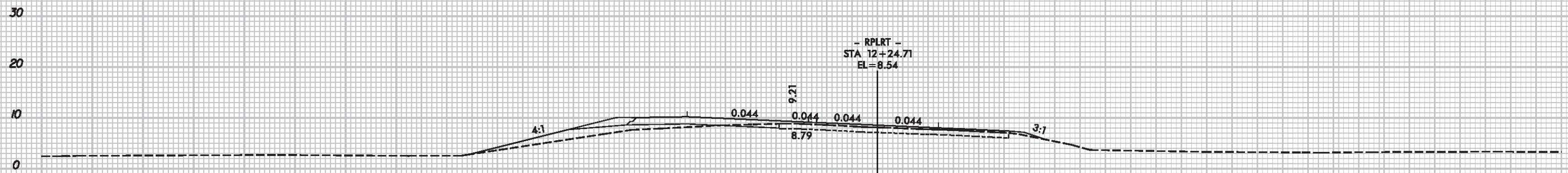
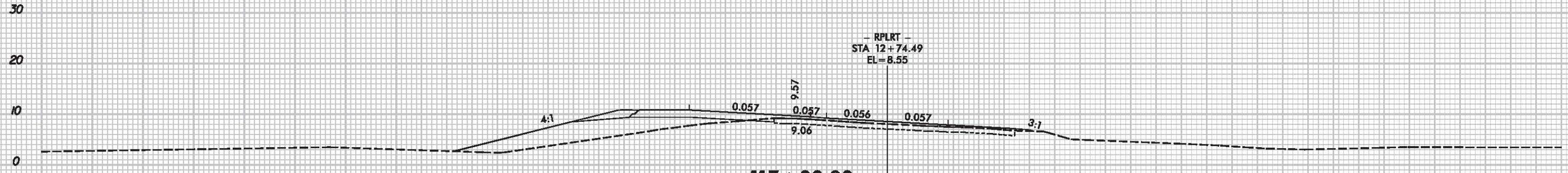
DENOTES FILL IN
WETLAND



DENOTES HAND
CLEARING

PERMIT DRAWING
SHEET 37 OF 44

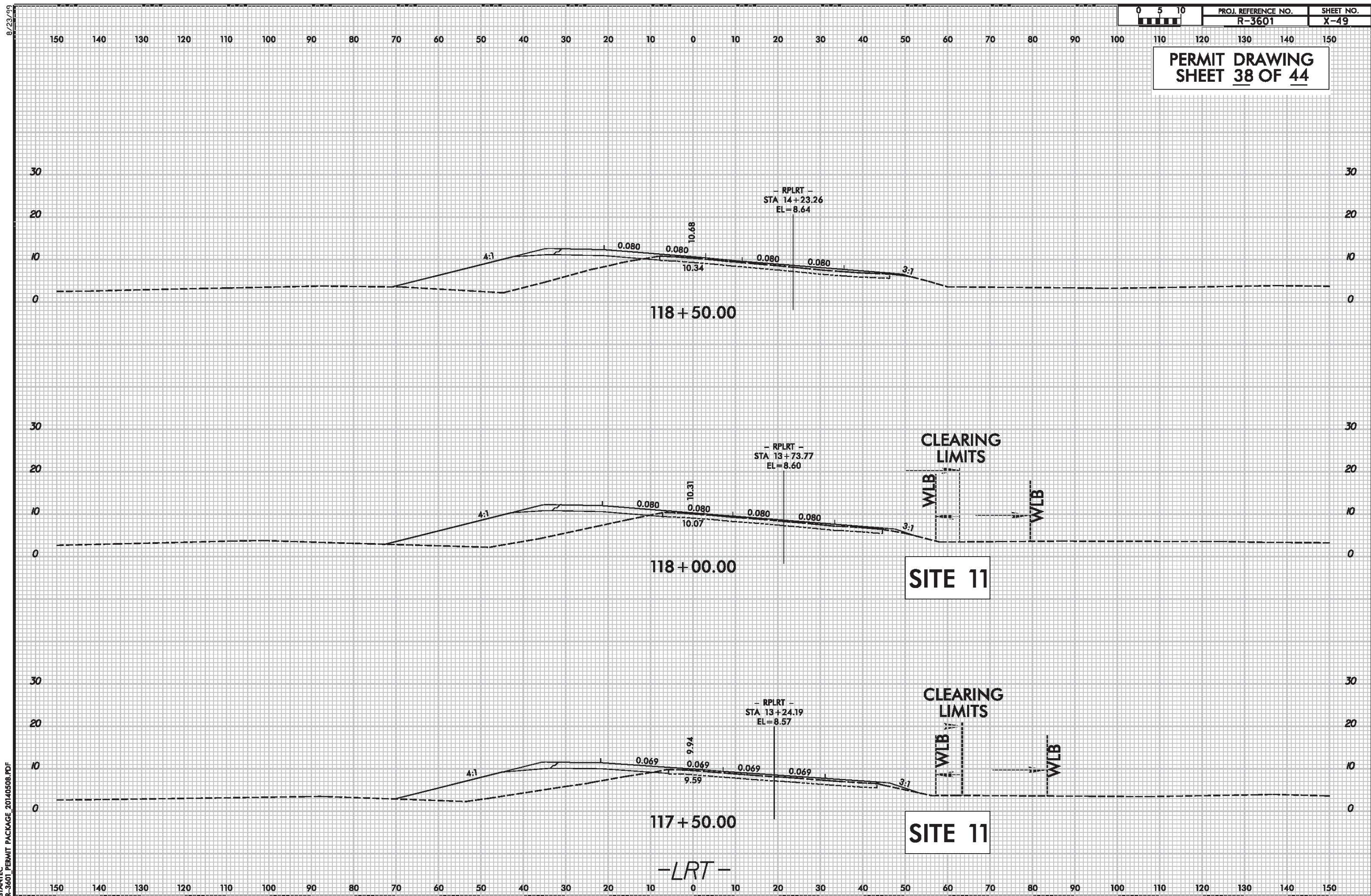
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CLEARING
LIMITS

SITE 11

-LRT-



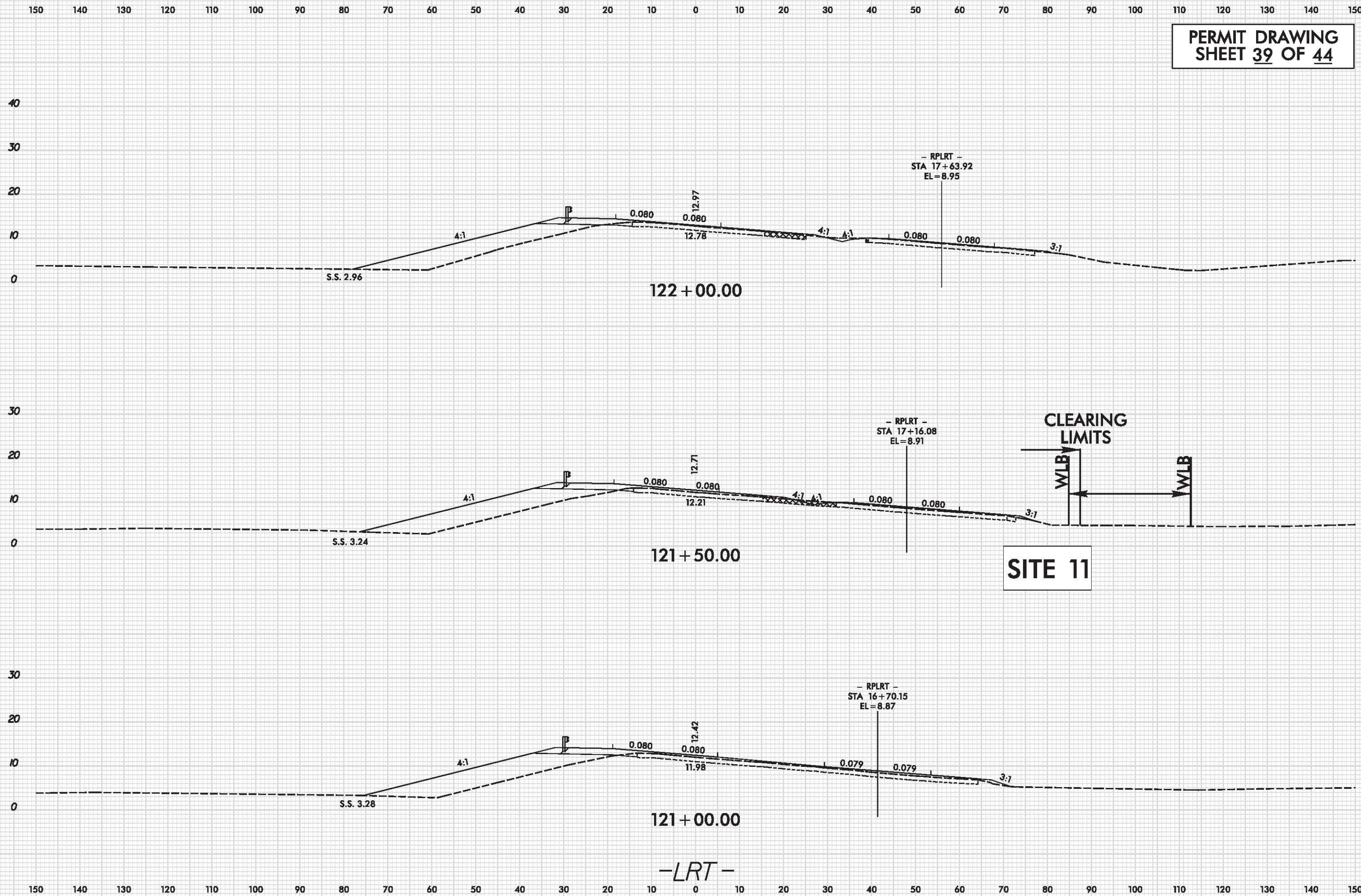
8/23/99



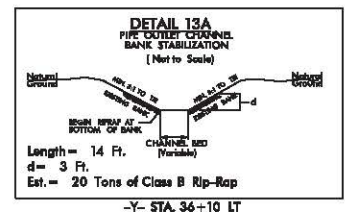
PROJ. REFERENCE NO.
R-3601

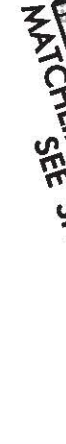
SHEET NO.
X-74

PERMIT DRAWING
SHEET 39 OF 44



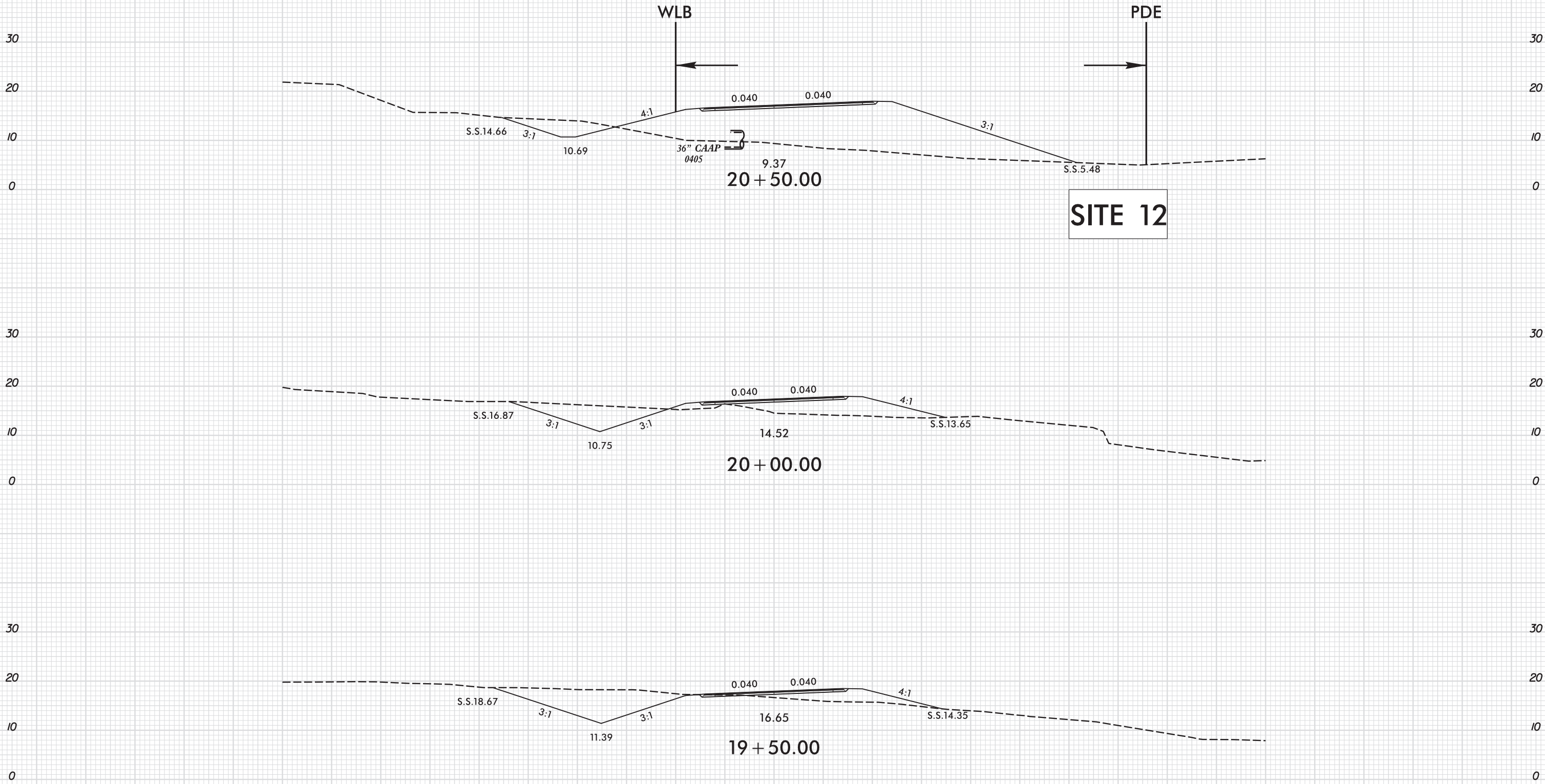
NAD 83/95





8/23/99

PERMIT DRAWING
SHEET 42 OF 44



-Y2-

8/23/99

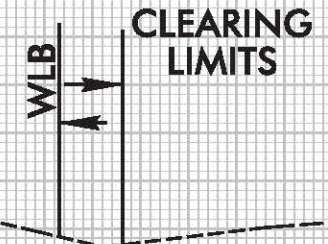


PROJ. REFERENCE NO.
R-3601

SHEET NO.
X-137

PERMIT DRAWING
SHEET 43 OF 44

SITE 14



38 + 00.00

37 + 50.00

37 + 00.00

36 + 50.00

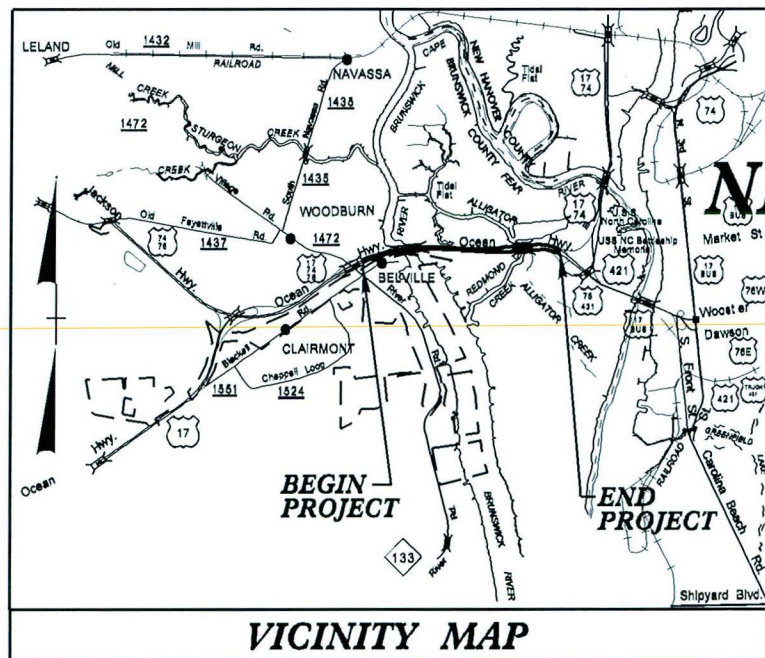
-Y-

WETLAND PERMIT IMPACT SUMMARY														
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS							SURFACE WATER IMPACTS				
			CAMA Permanent Fill in Wetlands (ac)	404 Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Temp Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-Y2- 13+05	48" DRAINAGE PIPE								0.01	< 0.01	47	10	
2	-LMED- 54+37 TO 54+75 RT	24" DRAINAGE PIPE		< 0.01			< 0.01		0.02					
3	64+43 LT & 'LMED- 65+92 TO 66+26 LT	BRIDGE 24" DRAINAGE PIPE	0.03	< 0.01			< 0.01		0.04					
4	76+31 LT & -LMED- 74+99 TO 75+19 RT	ROADWAY FILL/36" DRAINAGE PIPE		0.04	< 0.01		< 0.01		0.16					
5	-LMED- 83+00 TO 83+21 RT	EXISTING DRAINAGE PIPE			< 0.01		< 0.01							
6	-LRT- 85+81 TO 87+69 RT	ROADWAY							0.01					
7	-LLT- 90+25 TO 90+74 LT & -LLT- 94+00 TO 94+21 LT	ROADWAY			< 0.01		< 0.01		< 0.01					
8	-LLT- 99+60 TO 99+97 LT	30" DRAINAGE PIPE		< 0.01					0.01					
9	-LRT- 101+06 TO 101+17 RT	EXISTING DRAINAGE PIPE							< 0.01					
10	-LLT- 111+79 TO 113+14 RT & -LRT- 112+37 TO 114+59	BRIDGE 108 & BRIDGE 107		0.14	0.03	0.01			0.11					
11	-LRT- 115+52 TO 118+61 RT & -LRT- 121+21 TO 121+77 RT	ROADWAY							0.03					
12	' -Y2- 20+65	ROADWAY/36" DRAINAGE PIPE		0.16				0.04						
13	-Y- 34+98 TO 36+55 LT	42" DRAINAGE PIPE								0.02	< 0.01	44	37	
13	-Y- 36+10 LT	BANK STABILIZATION								< 0.01		14		
14	-Y- 38+30 RT	ROADWAY							< 0.01					
TOTALS*:			0.03	0.34	0.04	0.01	0.02	0.04	0.39	0.03	< 0.01	105	47	0.00
*Rounded totals are sum of actual impacts NOTES: 1. Permanent bridge pier surface water impacts = 0.05 acres 2. Temporary bridge pier surface water impacts = 0.04 acres (Due to work bridges=0.02 acre; due to temporary excavation=0.02 acre) 3. There will be 0.38 acre of hand clearing on this project. Additionally, there will be 0.04 acre of temporary fill in wetlands for erosion control measures in hand clearing areas. There will also be a <0.01 acre (165 sq. ft.) of temporary fill in CAMA wetlands for erosion control measures in hand clearing areas.														
										NC DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS R-3601 3/25/2015 BRUNSWICK AND NEW HANOVER COUNTY US 17-74-76 FROM NC 133/SR 1472 INTERCHANGE TO US 421 / NC 133 INTERCHANGE SHEET 44 OF 44				

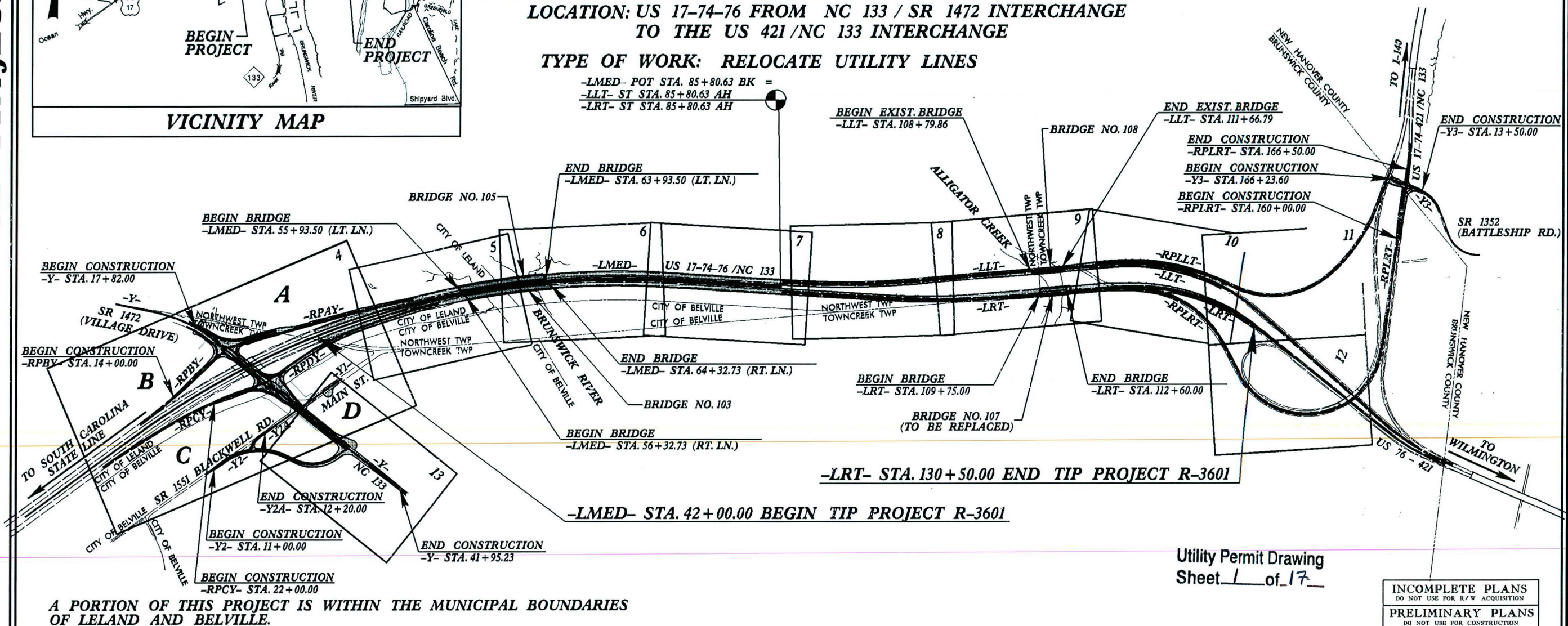
REVISED 06/10/2014

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYSNEU UTILITY DRAWING PLANS
BRUNSWICK AND
NEW HANOVER COUNTIESLOCATION: US 17-74-76 FROM NC 133 / SR 1472 INTERCHANGE
TO THE US 421 / NC 133 INTERCHANGE

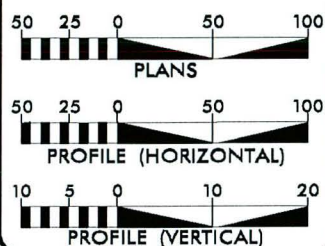
TYPE OF WORK: RELOCATE UTILITY LINES

-LMED- POT STA. 85+80.63 BK =
-LLT- ST STA. 85+80.63 AH
-LRT- ST STA. 85+80.63 AH

TIP PROJECT:

Utility Permit Drawing
Sheet 1 of 17INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

GRAPHIC SCALES



INDEX OF SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2 THRU 3A	PROFILE SHEETS
4 THRU 12	UTILITY DRAWING SHEETS

UTILITIES OWNER

- 1- AT&T
- 2- TIME WARNER CABLE (TWC)
- 3- EARTHLINK
- 4- MCNC
- 5- PROGRESS ENERGY (DISTRIBUTION)
- 6- ATMC
- 7- BRUNSWICK REGIONAL H2GO WATER AND SEWER

SEAL

PREPARED IN THE OFFICE OF:
DIVISION OF HIGHWAYS
UTILITIES UNIT
UTILITIES ENGINEERING1591 MAIL SERVICES CENTER
RALEIGH NC 27699-1591
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Corey Bousquet, P.E. UTILITIES SQUAD LEADER PROJECT ENGINEER
Kifah Kamil UTILITIES PROJECT DESIGNER

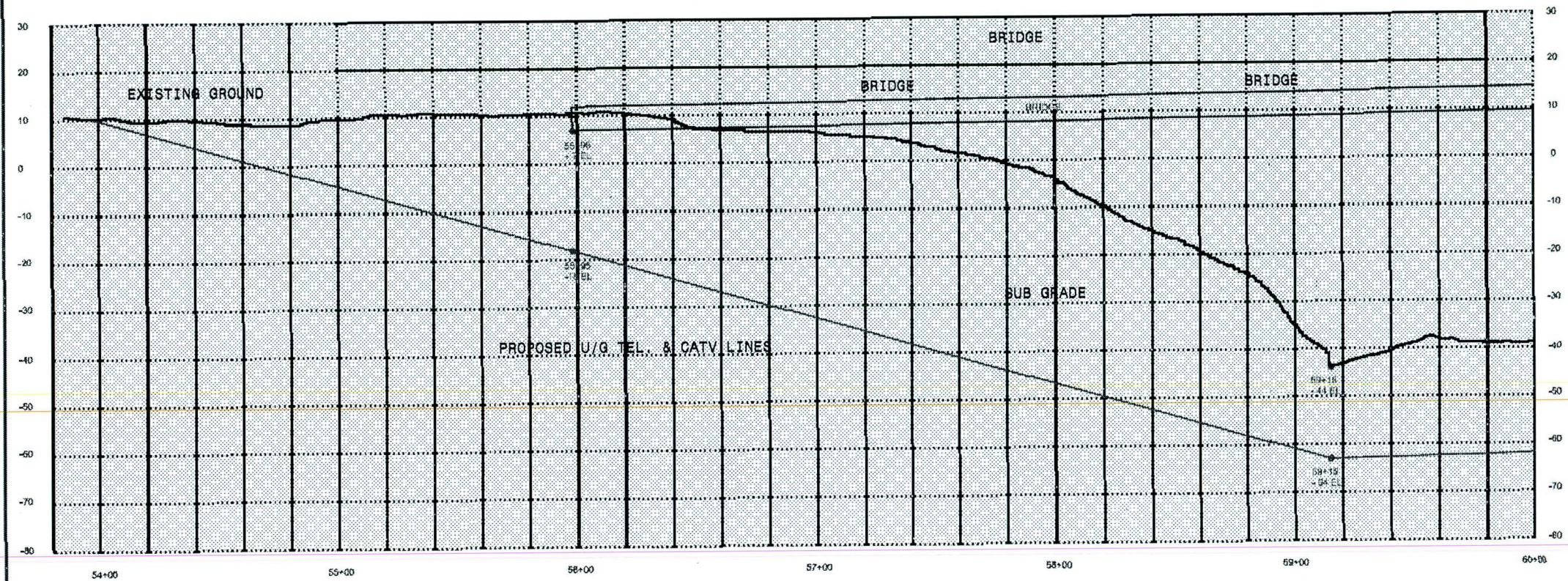
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PROJECT REFERENCE NO.		SHEET NO.	
R-3801		2	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER		
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION			
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

REVISED 6/10/2014

PROPOSED U/G TEL. LINE PROFILE

PRELIMINARY
BORE DETAIL - PROFILE VIEW



SOUNDINGS OF THE BRUNSWICK RIVER WERE RECORDED AT BOTH BRIDGES, BUT WERE PERFORMED ON THE UPRIVER SIDE OF THE BRIDGES ONLY, ACTUAL DEPTH AT 60FT OFFSET FROM BRIDGE IS UNKNOWN THEREFORE IT WILL BE CONTRACTOR'S RESPONSIBILITY TO RECORD DEPTH AND MAINTAIN MINIMUM 20FT BELOW EXISTING GRADE ACROSSRIVER, AND MAINTAIN A MINIMUM DEPTH OF 10FT BELOW SURFACE INSIDE DELINEATED WETLANDS.

DWG_01_OF_02

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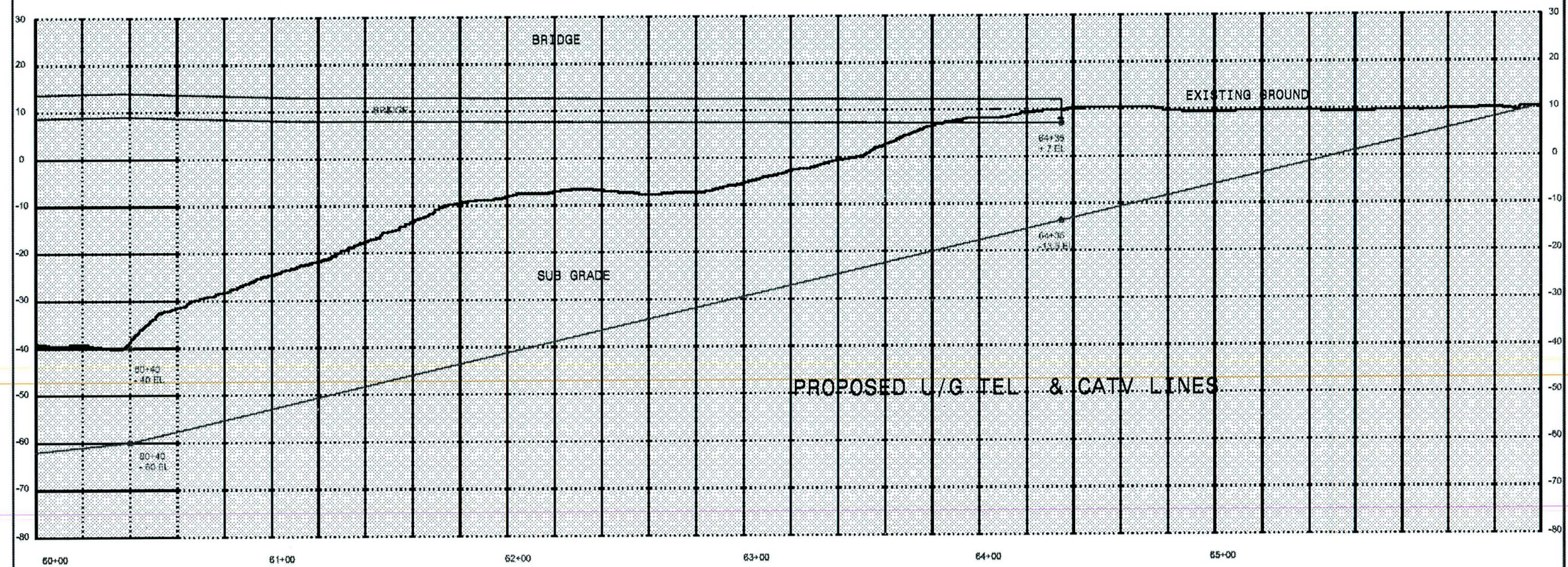
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3601	2A
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

REVISED 6/10/2014

PROPOSED U/G TEL. LINE PROFILE

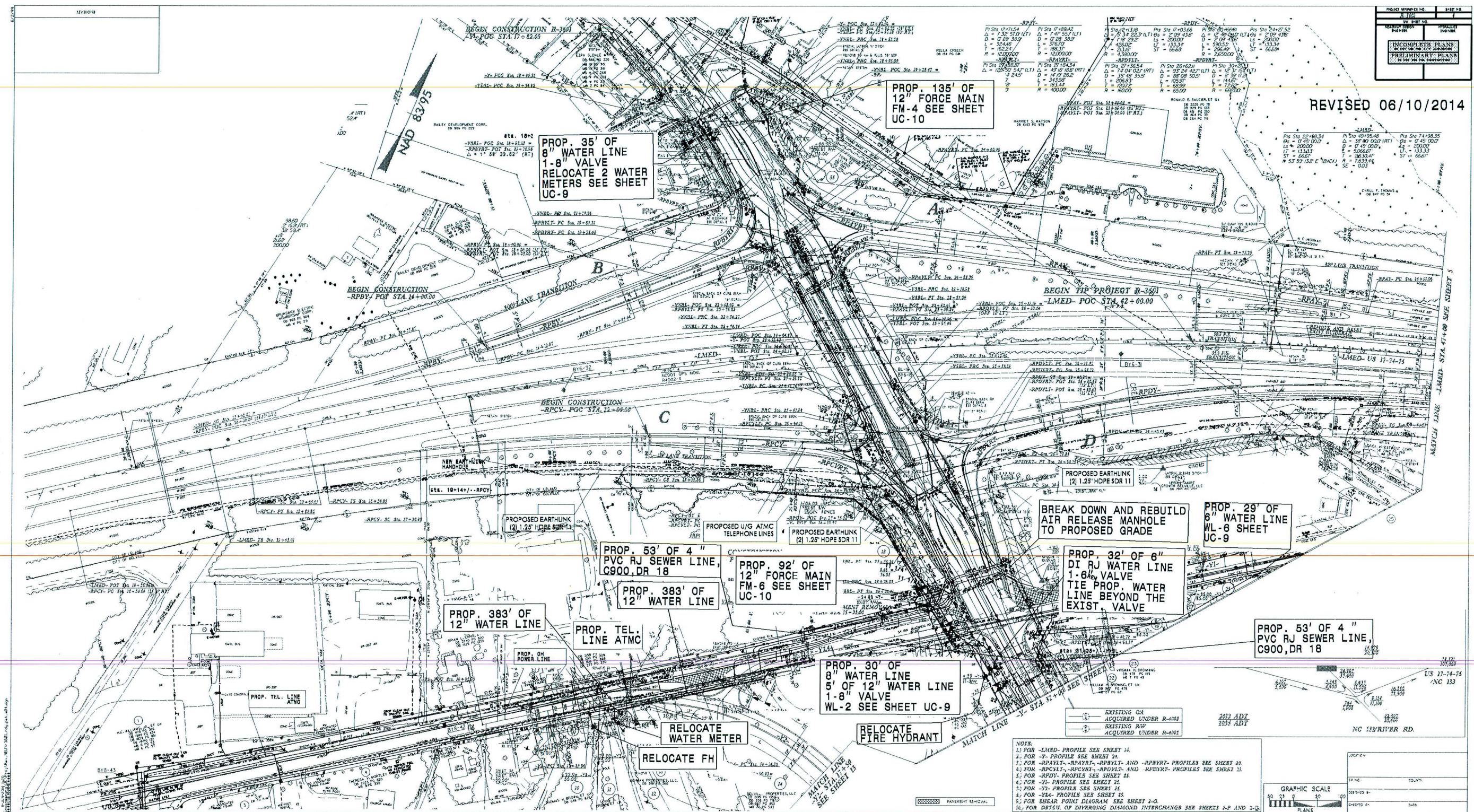
PRELIMINARY BORE DETAIL - PROFILE VIEW



SOUNDINGS OF THE BRUNSWICK RIVER WERE RECORDED AT BOTH BRIDGES, BUT WERE PERFORMED ON THE UPRIVER SIDE OF THE BRIDGES ONLY, ACTUAL DEPTH AT 60FT OFFSET FROM BRIDGE IS UNKNOWN THEREFORE IT WILL BE CONTRACTOR'S RESPONSIBILITY TO RECORD DEPTH AND MAINTAIN MINIMUM 20FT BELOW EXISTING GRADE ACROSSRIVER, AND MAINTAIN A MINIMUM DEPTH OF 10FT BELOW SURFACE INSIDE DELINEATED WETLANDS.

Utility Permit Drawing
Sheet 3 of 17

DWG_02_OF_02



8/17/99

REVISIONS
9/24/12 Design Revision: Revised proposed structure over the Brunswick River from dual bridges to one bridge. SCL

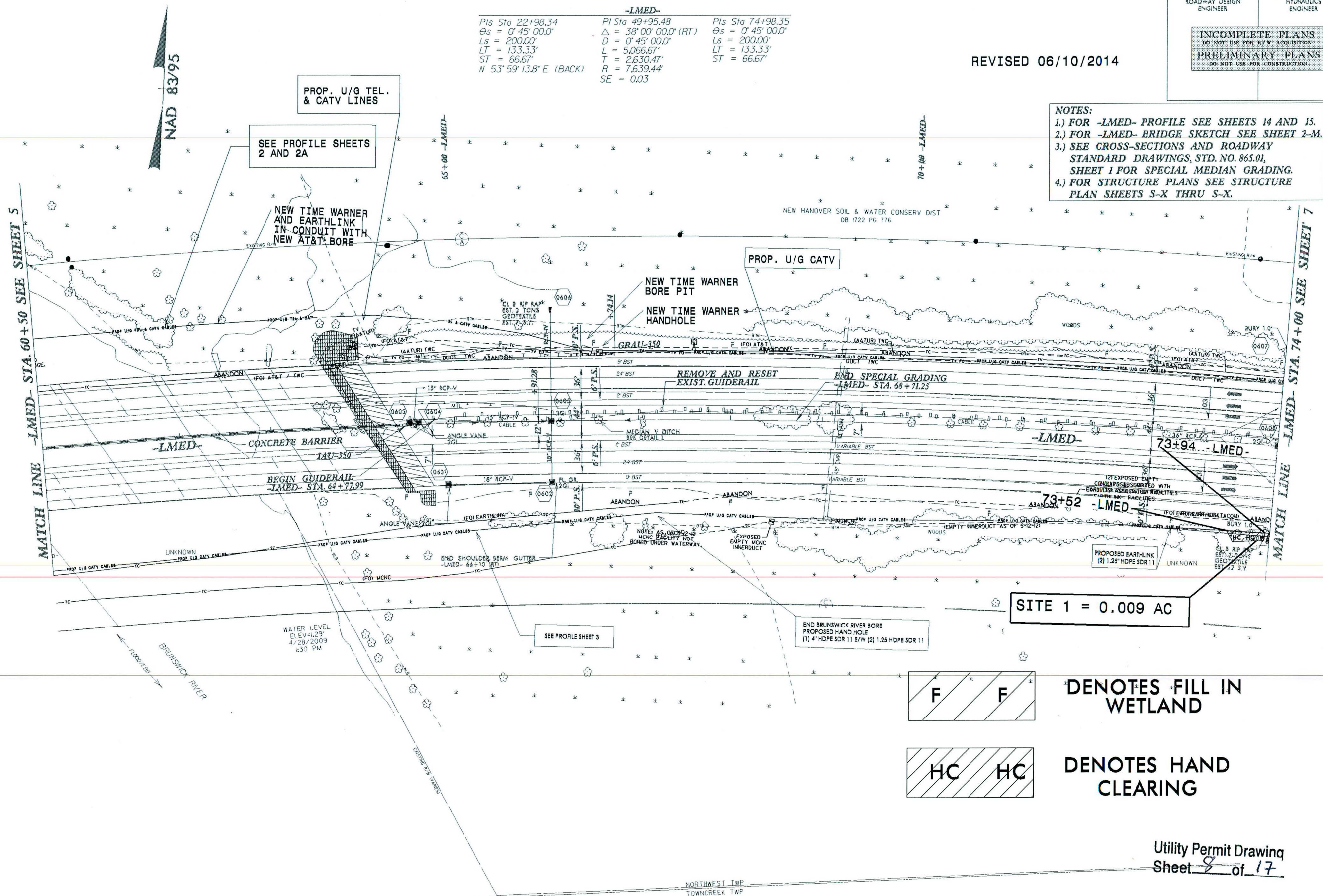
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PROJECT REFERENCE NO.	SHEET NO.
R-3601	6
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

REVISED 06/10/2014

- NOTES:
- 1.) FOR -LMED- PROFILE SEE SHEETS 14 AND 15.
 - 2.) FOR -LMED- BRIDGE SKETCH SEE SHEET 2-M.
 - 3.) SEE CROSS-SECTIONS AND ROADWAY STANDARD DRAWINGS, STD. NO. 865.01, SHEET 1 FOR SPECIAL MEDIAN GRADING.
 - 4.) FOR STRUCTURE PLANS SEE STRUCTURE PLAN SHEETS S-X THRU S-X.



-LMED-
Pls Sta 22+98.34
θs = 0°45'00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'
N 53°59'13.8" E (BACK)

PI Sta 49+95.48
Δ = 38°00'00.0" (RT)
D = 0°45'00.0"
L = 5,066.67'
T = 2,630.47'
R = 7,639.44'
SE = 0.03

Pls Sta 74+98.35
θs = 0°45'00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67'

NORTHWEST TWP
TOWNCREK TWP

Utility Permit Drawing
Sheet 8 of 17

8/17/99

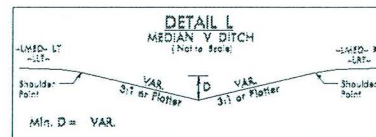
REVISED 06/10/2014

PROJECT REFERENCE NO.	SHEET NO.
R-3601	7
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-LMED-
Pls Sta 22+98.34
Os = 0° 45' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67"
N 53° 59' 13.8" E (BACK)
SE = 0.03

Pls Sta 49+95.48
Δ = 38° 00' 00.0" (RT)
D = 0° 45' 00.0"
L = 5,066.67'
T = 2,630.47'
R = 7,639.44'
SE = 0.03

Pls Sta 74+98.35
Os = 0° 45' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67"

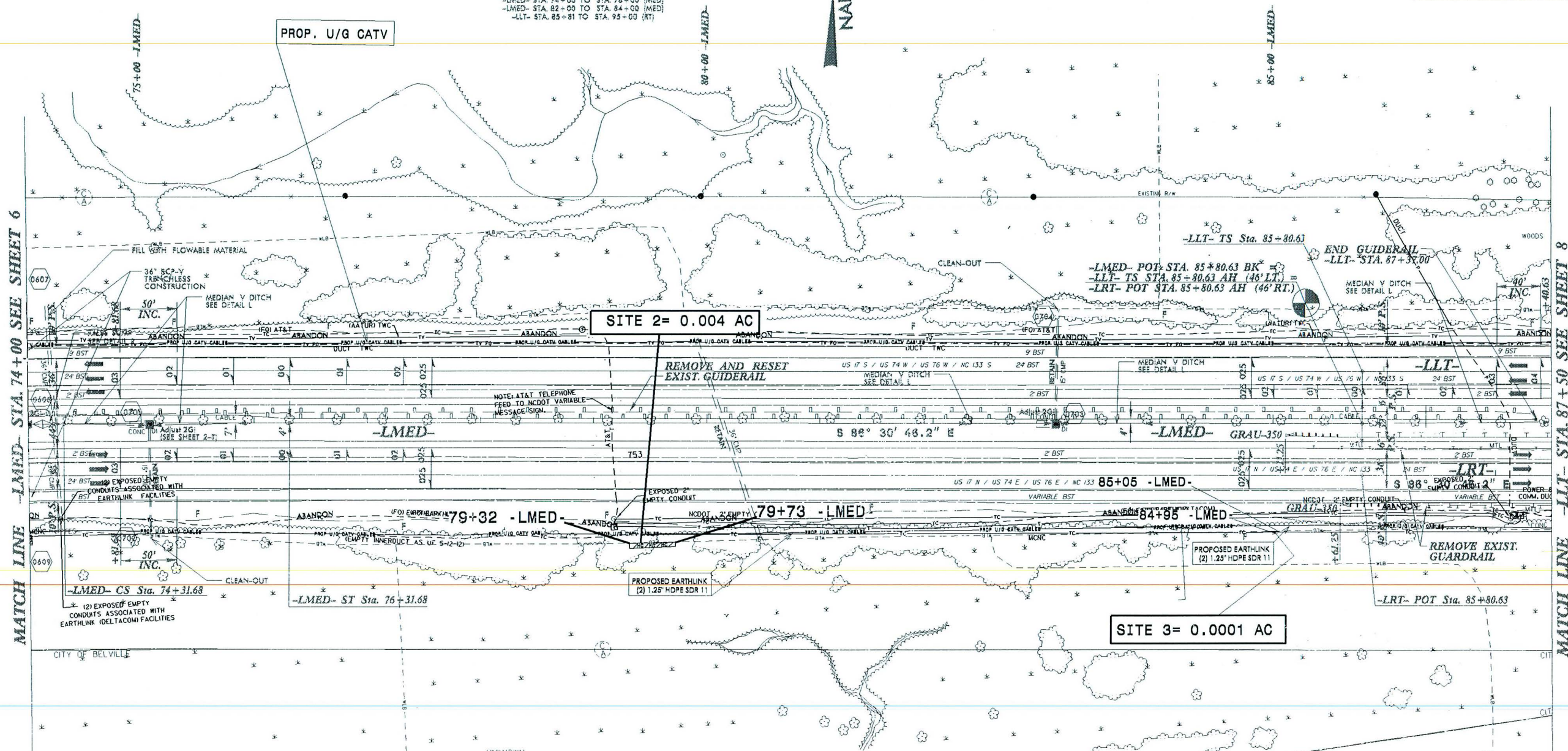


-LMED- STA. 74+00 TO STA. 76+00 (MED)
-LMED- STA. 82+00 TO STA. 84+00 (MED)
-LLT- STA. 85+00 TO STA. 95+00 (RT)

-LLT-
Pls Sta 87+13.96
Os = 0° 45' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67"
S 86° 30' 46.2" E (BACK)

Pls Sta 92+45.65
Δ = 6° 58' 00.0" (LT)
D = 0° 45' 00.0"
L = 928.89'
T = 465.02'
R = 7,639.44'
SE = 0.05

Pls Sta 97+76.19
Os = 0° 45' 00.0"
Ls = 200.00'
LT = 133.33'
ST = 66.67"



DENOTES FILL IN
WETLAND



DENOTES HAND
CLEARING

NOTES:
1.) FOR -LMED- PROFILE SEE SHEET 15.
2.) FOR -LLT- PROFILE SEE SHEET 16.
3.) FOR -LRT- PROFILE SEE SHEET 18.

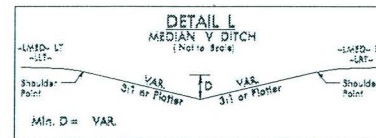
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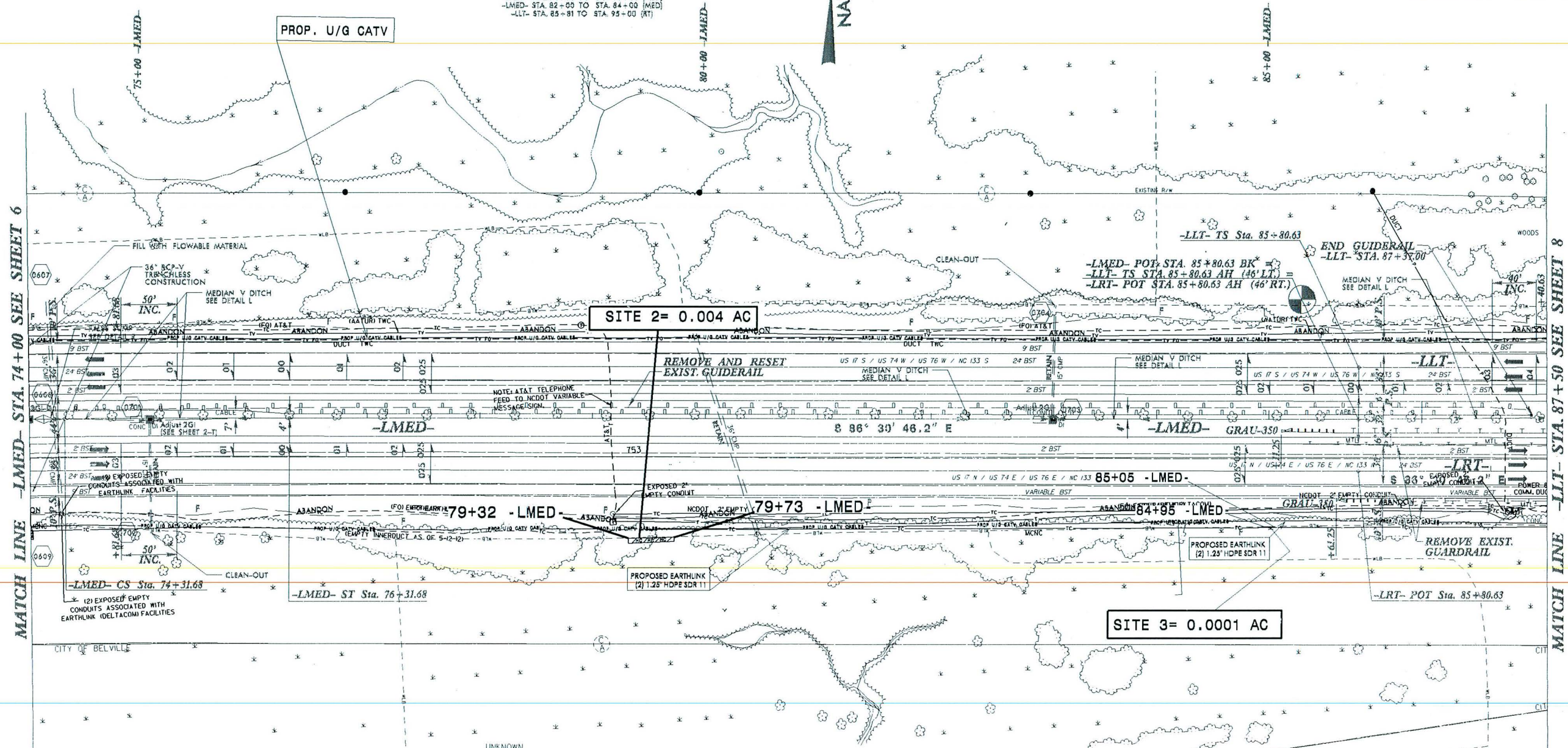
PROJECT REFERENCE NO.	SHEET NO.
R-3601	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

-LMED-
Pls Sta 22+98.34
 $\Delta s = 0' 45' 00.0''$
Ls = 200.00'
LT = 133.33'
ST = 66.67'
N 53° 59' 13.8" E (BACK)
PI Sta 49+95.48
 $\Delta = 38' 00' 00.0''$ (RT)
D = 0' 45' 00.0''
L = 5,066.67'
R = 7,639.44'
SE = 0.03
Pls Sta 74+98.35
 $\Delta s = 0' 45' 00.0''$
Ls = 200.00'
LT = 133.33'
ST = 66.67'



-LMED- STA. 74+00 TO STA. 76+00 (MED)
-LMED- STA. 82+00 TO STA. 84+00 (MED)
-LLT- STA. 85+81 TO STA. 93+00 (RT)

-LLT-
Pls Sta 87+13.96
 $\Delta s = 0' 45' 00.0''$
Ls = 200.00'
LT = 133.33'
ST = 66.67'
S 86° 30' 46.2" E (BACK)
PI Sta 92+45.65
 $\Delta = 6' 58' 00.0''$ (LT)
D = 0' 45' 00.0''
L = 928.89'
R = 7,639.44'
SE = 0.05
Pls Sta 97+76.19
 $\Delta s = 0' 45' 00.0''$
Ls = 200.00'
LT = 133.33'
ST = 66.67'



DENOTES FILL IN WETLAND



DENOTES HAND CLEARING

NOTES:
1.) FOR -LMED- PROFILE SEE SHEET 15.
2.) FOR -LLT- PROFILE SEE SHEET 16.
3.) FOR -LRT- PROFILE SEE SHEET 18.

Utility Permit Drawing
Sheet 10 of 17

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NAD 83/95

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NOTES:
1.) FOR -LLT- PROFILE SEE SHEET 16.
2.) FOR -LRT- PROFILE SEE SHEET 18.

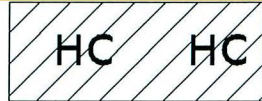
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REVISED 06/10/2014

PROJECT REFERENCE NO.	SHEET NO.
R-3601	9
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

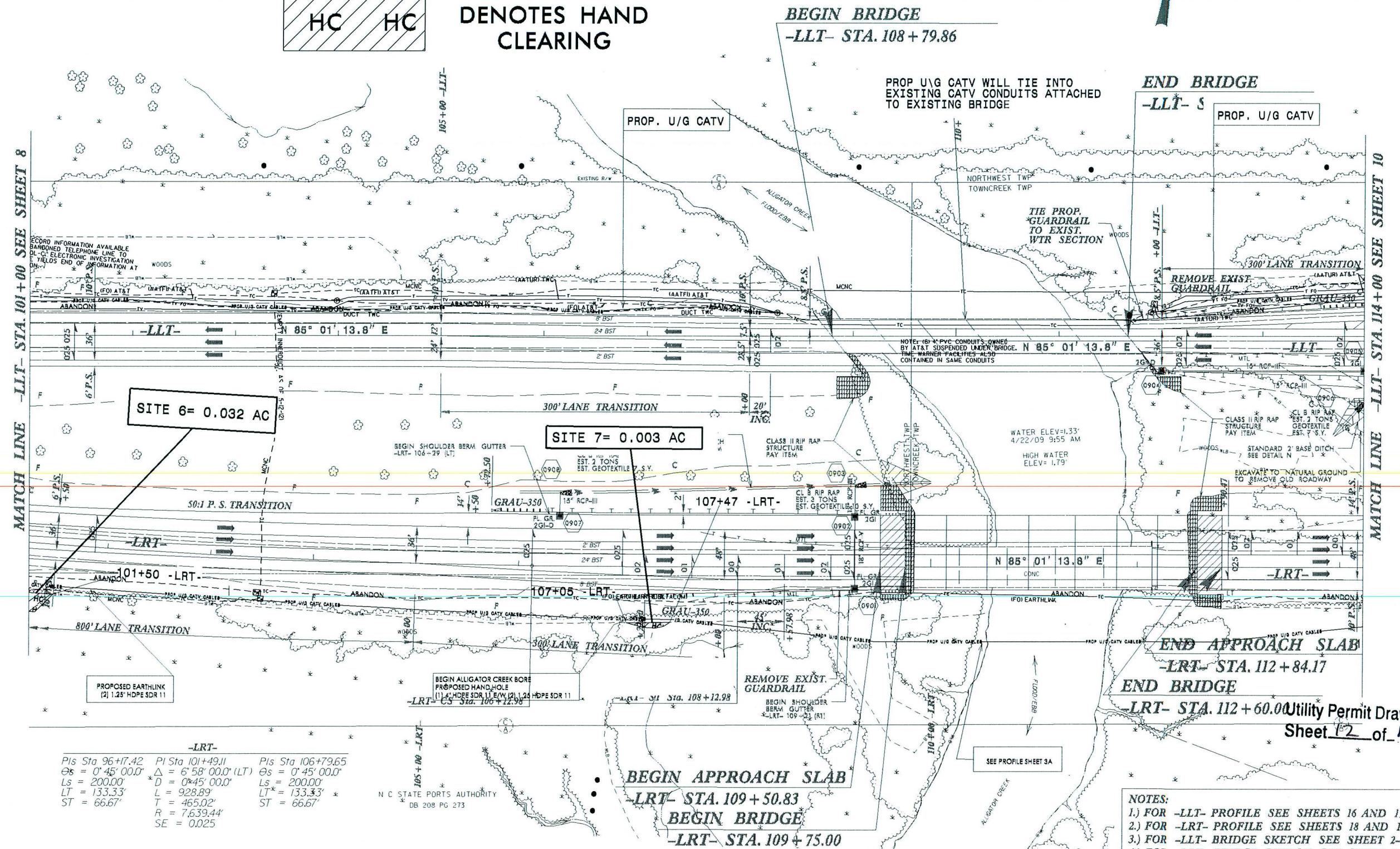


DENOTES FILL IN WETLAND



DENOTES HAND CLEARING

NAD 83/95



-LRT-	-LRT-	-LRT-
Pis Sta 96+17.42	Pis Sta 101+49.11	Pis Sta 106+79.65
Δs = 0° 45' 00.0"	Δs = 6° 58' 00.0" (LT)	Δs = 0° 45' 00.0"
Ls = 200.00'	D = 0° 45' 00.0"	Ls = 200.00'
LT = 133.33'	L = 928.89'	LT = 133.33'
ST = 66.67'	T = 465.02'	ST = 66.67'
	R = 7.639.44'	
	SE = 0.025	

- NOTES:
- 1.) FOR -LLT- PROFILE SEE SHEETS 16 AND 17.
 - 2.) FOR -LRT- PROFILE SEE SHEETS 18 AND 19.
 - 3.) FOR -LLT- BRIDGE SKETCH SEE SHEET 2-M.
 - 4.) FOR -LRT- BRIDGE SKETCH SEE SHEET 2-M.

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-LLT-
Pls Sta 116+66.09 PI Sta 124+10.16 Pls Sta 131+08.59
Es = 4' 30' 00.0" Δ = 37' 16' 30.0" (RT) Es = 4' 30' 00.0"
Ls = 300.00' D = 3' 00' 00.0" Ls = 300.00'
LT = 200.06' L = 1,242.50' LT = 200.06'
ST = 100.06' T = 644.13' ST = 100.06'
R = 1,909.86' SE = 0.07

-RPLLT-
Pls Sta 116+80.05 PI Sta 122+08.59 Pls Sta 126+73.90
Es = 4' 05' 33.2" Δ = 23' 04' 12.5" (RT) Es = 1' 58' 41.0"
Ls = 300.00' D = 2' 43' 42.1" Ls = 145.00'
LT = 200.05' L = 845.56' LT = 96.67'
ST = 100.05' T = 428.59' ST = 48.34'
R = 2,100.00' SE = 0.07

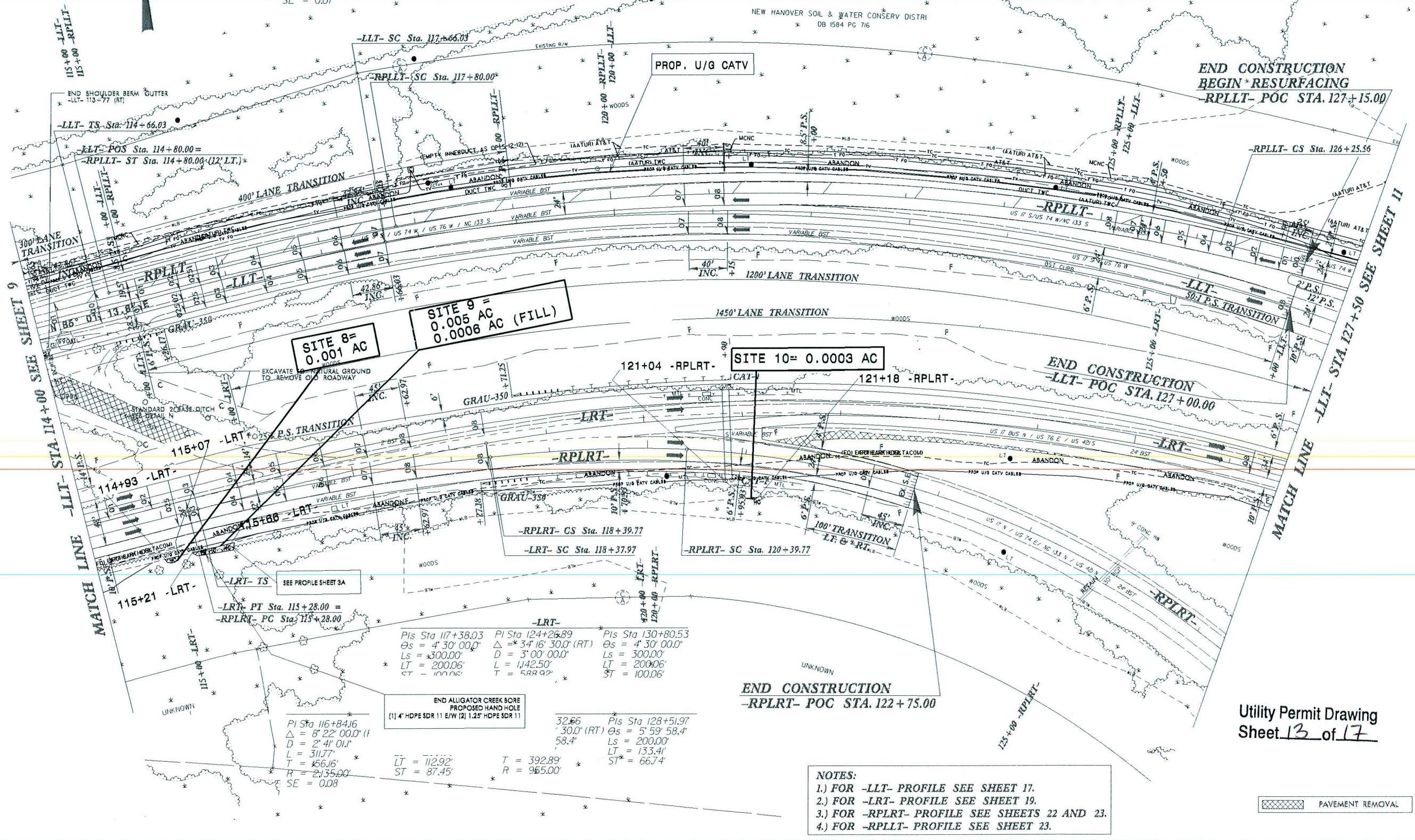


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DENOTES FILL IN WETLAND



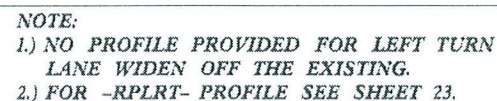
DENOTES HAND CLEARING

PROJECT REFERENCE NO.	SHEET NO.
R-3601	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



- NOTES:**
1.) FOR -LLT- PROFILE SEE SHEET 17.
2.) FOR -LRT- PROFILE SEE SHEET 19.
3.) FOR -RPLRT- PROFILE SEE SHEETS 22 AND 23.
4.) FOR -RPLLT- PROFILE SEE SHEET 23.

REVISÉD 06/10/2014





Utility Permit Drawing
Sheet 16 of 17

NOTE:
1.) FOR -Y- PROFILE SEE SHEET 24.
2.) FOR -Y2- PROFILE SEE SHEET 25.

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	73+52 TO 73+94	U/G Tel & CATV lines					0.01					
2	79+32 TO 79+73	U/G Tel & CATV lines					<0.01					
3	84+95 TO 85+05	U/G Tel & CATV lines					<0.01					
4	93+31 TO 90+64	U/G Tel & CATV lines	<.01				<0.01					
5	95+69 TO 95+94	U/G Tel & CATV lines					<0.01					
6	100+59 TO 101+50	U/G Tel & CATV lines					<0.01					
7	107+05 to 107+47	U/G Tel & CATV lines					<0.01					
8	114+93 to 115+07	U/G Tel & CATV lines					<0.01					
9	115+21 TO 115+66	U/G Tel & CATV lines	<0.01									
10	121+04 to 121+18	U/G Tel & CATV lines					<0.01					
TOTALS:			<0.01	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
BRUNSWICK AND NEW HANOVER COUNTIES
TIP PROJECT (R-3601)

ATN Revised 3/31/05

6/10/2014

Utility Permit Drawing
Sheet 17 of 17