STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

March 31, 2009

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

Attn: Mr. Richard Spencer
NCDOT Coordinator

Dear Sir:

Subject: **Application for Section 404 Individual Permit & Section 401 Water Quality Certification** for the widening of NC 210 (Murchison Road) from the proposed Fayetteville Outer Loop to NC 24-87-210 (Bragg Boulevard) in Spring Lake, Cumberland County. Federal-Aid Project No. STP 210(11), Debit $570 from WBS 36492.1.2, TIP No. U-4444.

Please find enclosed the ENG 4345, permit drawings, roadway plans, EEP acceptance letter, United States Fish and Wildlife Service (USFWS) concurrence letter, and the 4B merger meeting minutes for the above referenced project proposed by the North Carolina Department of Transportation (NCDOT). An Environmental Assessment (EA) and a Finding of No Significant Impact (FONSI) were completed for this project on August 4, 2008, and January 9, 2009, respectively, and distributed shortly thereafter. Additional copies are available upon request. The NCDOT proposes to widen NC 210 to six lanes and upgrade the roadway to a freeway. The total length of the project is 2.57 miles.

Purpose and Need

The purpose of the proposed project is to increase the traffic carrying capacity of NC 210 (Murchison Road) between the proposed Fayetteville Outer Loop (TIP Project X-2) and NC 24-87 (Bragg Boulevard) so that this roadway can also accommodate traffic now using NC 24-87 (Bragg Boulevard) through Fort Bragg, which is to be closed on Fort Bragg for security reasons.

The proposed project will address the following needs:

- Capacity Deficiencies - In 2005, various segments of the project corridor operated at Level of Service (LOS) C or D; however, by 2030 all segments along Murchison Road will be overcapacity and operate at an unacceptable LOS F.

- National & Base Security - Closure of Bragg Boulevard to civilian traffic. Following the events of September 11, 2001, the decision was made to strictly limit public access to Fort Bragg.

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

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

WEBSITE: WWW.NCDOT.ORG

LOCATION:
TRANSPORTATION BUILDING
1 SOUTH WILMINGTON STREET
RALEIGH NC

- Accident Reduction – The conversion of Murchison Road to a facility with full control of access is expected to reduce the number and frequency of accidents on this roadway.

Summary of Impacts

Waters of the U.S.: Construction of the proposed project will necessitate impacts to jurisdictional waters. There will be a total of 7.33 acres of permanent riparian wetland impacts, 0.06 acre of permanent non-riparian wetland impacts and 1,100 linear feet (0.12 acre) of permanent stream impacts for U-4444A. U-4444B, as currently designed, will have no impacts.

Summary of Mitigation

The proposed construction of U-4444A will impact 7.33 acres of jurisdictional riparian wetlands, 0.06 acre of jurisdictional non-riparian wetlands, and 1,100 feet of stream impacts that will require mitigation within the Cape Fear River Basin. NCDOT will utilize the NC Ecosystem Enhancement Program (EEP) for satisfying the federal Clean Water Act compensatory mitigation requirements for the unavoidable impacts to 7.39 acres to wetland and 1,100 linear feet of stream.

Project Schedule

U-4444 has been divided into two sections: A and B. Section A is further broken down into AA and AB. This will be a phased permit as the designs for Sections AA and AB are final and Section B is preliminary. U-4444A has a review date of August 4, 2009, and is scheduled to let September 15, 2009. The project will be available for construction shortly thereafter. Each of the sections is summarized in the following table (Table 1).

Table 1. Section Schedules

Section	Design Stage	Let Date
U-4444AA	Final	September 15, 2009
U-4444AB	Final	September 15, 2009
U-4444B	Preliminary	Post Year

NEPA Document Status

An Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) were approved by the Federal Highway Administration (FHWA) on August 4, 2008 and January 9, 2009, respectively, for U-4444 and circulated to the appropriate agencies. Additional copies are available upon request. The 4B meeting was held on December 16, 2008. The Merger Team was notified on February 19, 2009 that there would not be a 4C meeting due to time constraints.

Independent Utility

The subject project complies with 23 CFR Part 771.111(f), which lists the Federal Highway Administration (FHWA) characteristics of independent utility of a project:

1) The project connects logical termini and is of sufficient length to address environmental matters on a broad scope;

2) The project is usable and a reasonable expenditure, even if no additional transportation improvements are made in the area;
3) The project does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Resource Status

Wetlands and streams within the U-4444 Preferred Alternative corridor were delineated between January and May 2005 using the field delineation method outlined in the 1987 Corps of Engineers Wetland Delineation Manual. The North Carolina Division of Water Quality's (DWQ) Identification Methods for the Origins of Intermittent and Perennial Streams was used to make stream determinations. The wetlands and streams were field verified by Richard Spencer of the US Army Corps of Engineers (USACE) on May 31, 2005.

Three jurisdictional streams have been identified within the project area of U-4444: Cross Creek and two unnamed tributaries (UT) to Cross Creek. Descriptions of these streams are in Table 2.

Table 2. Jurisdictional Streams for U-4444A

Permit Site	Stream Name	Sub-basin	Stream Index #	Best Usage Classification
2(AA)	UT	03-06-15	18-27-(1)	WS-IV
3(AB)	UT	03-06-15	18-27-(1)	WS-IV
4(AB)	Cross Creek	03-06-15	18-27-(1)	WS-IV

Impacts to Jurisdictional Resources

Impacts to jurisdictional wetlands and surface waters for U-4444 are summarized below in Tables 3 & 4 respectively.

Table 3. Wetland Impacts for U-4444A

Permit Site	Station	Permanent (ac.)	Temporary (ac.)
1(AA)	-L- 45+20 to 46+80 LT	0.01	0
2(AA)	-L- 85+00to 91+25 RT	1.08	0
3(AB)	-L- 130+00 to 138+00 RT	5.99	0
4(AB)	-Y3RPA- 26+50 to 23+25	0.26	0
5(AB)	-L- 147+50 to 149+75 LT	0.05	0
Total		**7.39**	**0**

Note: 0.95 acre of additional impacts to riparian wetlands at Site 3 due to a total take.

Table 4. Surface Water Impacts for U-4444A

Permit Site	Name	Permanent (ft.)	Temporary (ft.)	Permanent (ac.)	Temporary (ac.)
2(AA)	UT	310	0	0.03	0
3(AB)	UT	681	0	0.08	0
4(AB)	Cross Creek	109	0	0.01	0
Total		**1,100**	**0**	**0.12**	**0**

Permanent Impacts: Proposed permanent impacts for U-4444A include fill, excavation, and mechanized clearing in wetlands. These impacts are to 6.49 acres of riparian wetlands and 0.06 acre of non-riparian wetlands. Additionally, 0.95 acre of impacts to riparian wetlands will occur at Site 3 due removal of hydrology resulting in a total take. There are 1,100 linear feet (0.12) of stream impacts for U-4444A from pipe installation.

Temporary Impacts: There are no temporary impacts associated with for U-4444A.

Utility Impacts: There will be no impacts due to utilities for U-4444A.

Protected Species

The United States Fish and Wildlife Service (USFWS) list seven federally protected species for Cumberland County as of the January 31, 2008 listing (Table 5).

Table 5. Federally Protected Species in Cumberland County

Common Name	Scientific Name	Federal Status	Habitat Present	Biological Conclusion
American alligator	*Alligator mississippiensis*	T (S/A)	No	N/A
Red-cockaded woodpecker	*Picoides borealis*	E	Yes	May Affect, Not Likely to Adversely Affect
Saint Francis' satyr butterfly	*Neonympha mitchellii francisci*	E	Yes	No Effect
American chaffseed	*Schwalbea americana*	E	No	No Effect
Michaux's sumac	*Rhus michauxii*	E	Yes	No Effect
Pondberry	*Lindera melissafolia*	E	Yes	No Effect
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	E	Yes	No Effect

A Biological Assessment (BA) providing Biological Conclusions for the red-cockaded woodpecker (RCW) was submitted to the USFWS in December 2008. The USFWS responded with concurrence on January 5, 2009. A copy of the USFWS concurrence letter is included with this application.

Cultural Resources

Archaeology

In a letter dated October 17, 2006 (see Appendix A of the EA), the State Historic Preservation Office (SHPO) stated previously recorded archaeological sites exist in the project area.

Extensive archaeological surveys have been conducted in the project area on Fort Bragg by or on behalf of the Fort Bragg Cultural Resource Program (FBCRP). In addition, the Spring Lake portion of the proposed project is completely urbanized.

The FBCRP surveys identified three archaeological sites and one isolated find (Sites 31CD957, 31CD960, 31CD1401, and 31CD1491), none of which were recommended as eligible for the National Register of Historic Places. As a result of consultation with the Office of State Archeology, it was determined no further archaeological surveys will be necessary for the proposed project unless design plans changed prior to construction. The SHPO confirmed this finding in a letter dated August 28, 2008 (see Appendix A of the FONSI).

Historic Architecture

The Spring Lake Elementary School (now known as Lillian Black Elementary School) in Spring Lake is the only building or property within the project area that is either eligible for listing on the National Register of Historic Places. The project, as currently designed, will not impact this property. There are expected to be no character changes, though access to the school will be modified. Access to Bragg Boulevard will be modified at the Lake Avenue intersection with right in and right outs only. Spring Avenue's eastern access to Bragg Boulevard will be closed. Traffic volumes are likely to increase on Lake Avenue as it becomes a more important corridor to access commercial facilities. Spring Avenue's traffic is expected to significantly decrease as it becomes a cul-de-sac. To accommodate increased commercial traffic, Third Street from its junction with Lake Avenue to the new intersection at McCormick Road will be upgraded. The portion of Third Street along the front of the school will not be modified. The SHPO concurred the proposed project will have "no effect" on the Lillian Black Elementary School. See concurrence letter from the SHPO in Appendix A of the Environmental Assessment.

Mitigation Options

The NCDOT is committed to incorporating all reasonable and practicable design features to avoid and minimize jurisdictional impacts, and to provide full compensatory mitigation of all remaining, unavoidable jurisdictional impacts. Avoidance measures were taken during the planning and NEPA compliance stages; minimization measures were incorporated as part of the project design.

Avoidance and Minimization

All jurisdictional features were delineated, field verified and surveyed within the corridor for U-4444. Using these surveyed features, preliminary designs were adjusted to avoid and/or minimize impacts to jurisdictional areas. NCDOT employs many strategies to avoid and minimize impacts to jurisdictional areas in all of its designs. Many of these strategies have been incorporated into BMP documents that have been reviewed and approved by the resource agencies and which will be followed throughout construction. All wetland areas not affected by the project will be protected from unnecessary encroachment. Individual avoidance and minimization items are as follows:

- Widening into the median and providing only a 22-foot median is proposed in order to minimize impacts to wetlands, streams and protected species habitat.
- A loop is proposed in the southeast quadrant of the Honeycutt Road interchange in order to avoid wetlands located in the northeast quadrant of the interchange.
- The 3:1 slopes will be used in jurisdictional areas in order to reduce impacts where practicable.
- The radius of the ramp in the northeast quadrant of the proposed Randolph Street interchange has been reduced in order to reduce wetland and stream impacts.

- Between Gruber Road and the railroad grade separation south of Honeycutt Road, the shoulder width will be reduced to 6 feet (4 feet paved), in order to minimize impacts to red-cockaded woodpecker foraging habitat, wetlands and streams.
- The power transmission line which crosses Murchison Road at Honeycutt Road will be relocated into areas to be cleared for project construction so as to minimize impacts to red-cockaded woodpecker foraging habitat and wetlands.
- Drainage for the southbound lanes of Murchison Road between the railroad grade separation and Gruber Road will be discharged into a grassed ditch or natural swales on the west side of Murchsion Road. The ditch or swale will provide treatment for stormwater before it flows into Little Cross Creek, which is included on the 303(d) list of impaired streams.
- In the vicinity of RCW cavity tree 06542 (located approximately 1,950 feet east of Murchison Road), the proposed ditch along the north side of Honeycutt Road will be reduced to 8 feet.
- In the vicinity of RCW cavity tree 0777E (located approximately 3,500 feet north of Honeycutt Road), the proposed ditch along the east side of Murchison Road will be reduced to 12 feet.

Compensation

The NCDOT has avoided and minimized impacts to jurisdictional resources to the greatest extent possible as described above. The unavoidable impacts to jurisdictional wetlands and streams will be offset by compensatory mitigation provided by the NC Ecosystem Enhancement Program (EEP). A copy of the EEP acceptance letter is included with this application.

Indirect and Cumulative Effects

The majority of the proposed project is located on the federally owned and operated Fort Bragg which negates the possibility of induced growth. The remaining section of the project involves modifying existing Bragg Boulevard through a heavily developed area of the town of Spring Lake. All areas immediately adjacent to the project are already developed and it is not expected that there will be additional development spurred by the project.

It is expected that the cumulative effects of the subject project and the proposed Fayetteville Outer Loop will be limited to the sum of each project's individual effects. It is not expected that Murchison Road and the Fayetteville Outer Loop will have a synergistic effect which would increase the overall cumulative effect beyond each project's direct effects. Little or very limited land use changes are expected along corridor or on federal military land. Some Fort Bragg property is currently functioning as known RCW habitat with federal cooperation.

Regulatory Approvals

Section 404 Permit: Application is hereby made for a USACE Individual Section 404 Permit as required for the above-described activities.

Section 401 Permit: Application is hereby made for a Section 401 Water Quality Certification from the N. C. Division of Water Quality. Debit WBS 36492.1.2 for the $570 processing fee. Five copies will be provided to DWQ for approval.

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

If you have any questions or need additional information, please contact Chris Underwood at csunderwood@ncdot.gov or (919) 431-6662.

Sincerely,

E. L. Luck

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

w/attachment
Mr. Brian Wrenn, NCDWQ (5 Copies)
Ms. Kathy Matthews, USEPA

W/o attachment (see website for attachments)
Dr. David Chang, P.E., Hydraulics
Mr. Greg Perfetti, P.E., Structure Design
Mr. Victor Barbour, P.E., Project Services Unit
Mr. Mark Staley, Roadside Environmental
Mr. Terry Gibson, P.E, Division 6 Engineer
Mr. Jim Rerko, Division 6 Environmental Officer
Mr. Jay Bennett, P.E., Roadway Design
Mr. Majed Alghandour, P.E., Programming and TIP
Mr. Art McMillan, P.E., Highway Design
Mr. Scott McLendon, USACE, Wilmington
Mr. Travis Wilson, NCWRC
Mr. Gary Jordan, USFWS
Ms. Anne Deaton, NCDMF
Mr. Ron Sechler, NMFS
Mr. Jay McInnis, P.E., PDEA
Ms. Beth Harmon, EEP
Mr. Todd Jones, NCDOT External Audit Branch
Mr. Drew Joyner, P.E., Human Environment Unit Head
Mr. Clarence W. Coleman, P.E., FHWA

APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT
(33 CFR 325)

OMB APPROVAL NO. 0710-003
Expires December 31, 2004

Public reporting burden for this collection of information is estimated to average 10 hours per response, although the majority of applications should require 5 hours or less. This includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters Service Directorate of Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302; and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003), Washington, DC 20503. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.

PRIVACY ACT STATEMENT

Authority: Rivers and Harbors Act, Section 10, 33 USC 403: Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research and Sanctuaries Act, 33 USC 1413, Section 103. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)

1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETED

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME	8. AUTHORIZED AGENT'S NAME AND TITLE (an agent is not required)
North Carolina Department of Transportation Project Development & Environmental Analysis	
6. APPLICANT'S ADDRESS	**9. AGENT'S ADDRESS**
1548 Mail Service Center Raleigh, NC 27699-1548	
7. APPLICANT'S PHONE NOs. W/AREA CODE a. Residence b. Business 919-733-3141	**10. AGENT'S PHONE NOs. W/AREA CODE** a. Residence b. Business

11. **STATEMENT OF AUTHORIZATION**

I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.

APPLICANT'S SIGNATURE DATE

NAME, LOCATION, AND DESCRIPTION OR PROJECT OR ACTIVITY

12. PROJECT NAME OR TITLE (see instructions)
U-4444A (Murchison Road)

13. NAME OF WATERBODY, IF KNOWN (if applicable)
Cross Creek

14. PROJECT STREET ADDRESS (if applicable)

15. LOCATION OF PROJECT
Cumberland NC
COUNTY STATE

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) **Section, Township, Range, Lat/Lon, and/or Accessors's Parcel Number, for example.**
NC 210 from Fayetteville to Spring Lake

17. DIRECTIONS TO THE SITE
Please see attached vicinity map and cover letter.

18. Nature of Activity (Description of project, include all features)

Widening from four to six lanes.

19. Project Purpose (Describe the reason or purpose of the project, see instructions)

The closing of Bragg Boulevard facilitated this project.

USE BLOCKS 20-22 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED

20. Reason(s) for Discharge

The placing of reinforced concrete pipes and roadway fill.

21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards

Please see Roadway plans.

22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)

7.33 acres of riparian wetland impacts and 0.06 of non-riparian wetland impacts and 0.12 acre (1100) feet of streams.

23. Is Any Portion of the Work Already Complete? Yes ___ No _X___ IF YES, DESCRIBE THE COMPLETED WORK

24. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (If more than can be entered here, please attach a supplemental list).

Please see sheet 2 of in the permit drawing package.

25. List of Other Certifications or Approvals/Denials Received from other Federal, State, or Local Agencies for Work Described in This Application.

AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED

* Would include but is not restricted to zoning, building, and flood plain permits

26. Application is hereby made for a permit or permits to authorize the work described in this application. I certify that the information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.

E. L. Lusk 3-31-09

SIGNATURE OF APPLICANT DATE SIGNATURE OF AGENT DATE

The application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than $10,000 or imprisoned not more than five years or both.

Draft Minutes of the Interagency 30% Hydraulic Design Review "4B" Meeting December 16, 2008

U-4444 A

State Project 3.6492.1.2
F.A. Project STP-210(11)
NC 210 (Murchison Road) From Fayetteville Outer Loop to Butner Rd.

Team Members:
Richard Spencer, USACE (present)
Rob Ridings, NCDENR (present)
Travis Wilson, NCWRC (present)
Gary Jordan, USFWS (present)
Chris Militscher-EPA (present)
Ron Lucas, FHWA (present)
Rachelle Beauregard, NCDOT NEU (present)
Chris Underwood, NCDOT NEU (present)

Participants:
Marshall Clawson, NCDOT Hydraulics
Elizabeth Lusk, NCDOT NEU
Tracy Pittman, NCDOT Division 6
Jim Rerko, NCDOT Division 6
Jay McInnis, NCODT PEDA
Doug Taylor, NCDOT Roadway Design
Davidian Byrd, NCDOT Roadway Design
Brian Eason, Lochner
Steve Browde, Lochner
Shannon Irwin, Wetherill Engineering
Max Price, Wetherill Engineering

A 30% Hydraulic Design "4B" Meeting was held on Tuesday, December 16, 2008 in the Board Room in the NCDOT Highway Building, Raleigh.

Topics Discussed (U-4444AA):

1. In the area between Gruber Road and the railroad overpass the roadway shoulder on the east side of Murchison Road was reduced from 12 feet to 6 feet in order to provide a 2 foot base ditch that will adequately convey storm water runoff and still avoid and minimize impacts to the trees on the existing ditch back slopes. This was agreed upon by the Roadway Design Unit and the Hydraulic Unit in order to avoid using expressway gutter, which was considered by the Hydraulics Unit to be a safety issue as a result of potential clogging of inlets if the trees were left in place in this area.

2. Little Cross Creek (stream 1 ER) which is located on the west side of Murchison Road in the vicinity of Gruber Road is a 303 D listed stream. The last section of Cross Creek from Blount Street to the Cape Fear River (8+/- miles from the project) was also shown as a 303 D listed stream in the draft 2008 303(d) list.

   As a result of the proximity of the project to Little Cross Creek, a meeting to discuss possible stormwater management strategies with NCDOT Hydraulics Unit, NCDOT PDEA, Chris Militscher EPA, and Rob Ridings DWQ was held on November 21, 2008.

   During this meeting it was explained that no suitable sites existed in the vicinity of Little Cross Creek to construct any type of stormwater management basins as a result of topography, offsite drainage area, and the loss of RCW habitat. It was agreed upon that

where possible storm drain systems would be designed to discharge runoff from paved surfaces in such a way as to maximize the grass swale or natural vegetated swale flow length before discharging to the stream. This design will result in some non typical storm drain systems, so it was agreed upon that a comment be added to the "Green Sheets" that any changes to the storm drain layouts be approved by the Hydraulics Unit. It was also discussed that where required the use of permanent soil reinforcement matting and vegetation would be considered to stabilize roadside swales instead of rip rap.

3. An 18 inch cross pipe located just north of Honeycutt Road currently discharges into Stream 3ER and Wetlands CER and BER. It is proposed that this pipe be replaced with a 30 RCP in order to accommodate any increase in runoff from future development in the watershed. A rip-rap energy basin with an approximate size of 14 feet long by 10 feet wide is proposed at the outlet end of the 30 inch pipe in order to obtain a non erosive velocity into the wetland. This basin will be contained within the area of wetland and stream impacts that have been calculated and will not result in additional impacts. Kathy Matthews with EPA inquired as to if the cross pipe could be placed so that it would not discharge into the wetlands and what was the source of the stormwater runoff. The cross pipe conveys runoff from and the offsite watershed of stream 3ER and the elevation differences between the stream and the natural ground outside of the wetland area would not allow relocation of the cross pipe.

Topics Discussed (U-4444AB):

4. An existing 36 inch cross pipe currently conveys runoff from wetland GTB & FTB on the west side of Murchison Road to stream 6ER and wetland EER on the east side of Murchison Road. Stormwater detention occurs upstream of this crossing as a result of an existing under-sized 15 inch corrugated metal pipe under the rail road fill, and an existing concrete riser structure and 12 inch corrugated metal pipe under the abandoned railroad fill upstream of Murchison Road. The proposed replacement for this cross pipe is a 48 inch RCP under Murchison Road and a 54 inch RCP under Loop D. A rip-rap energy basin with an approximate size of 18.5 feet long by 17 feet wide is proposed at the outlet end of the 54 inch pipe in order to obtain a non erosive velocity into the wetland. This basin will be contained within the area of wetland and stream impacts that have been calculated and will not result in additional impacts.

5. To the west of Murchison Road 3@ 36 inch RCP's are proposed under -Y3Ramp A – in order to avoid excessive backwater on the State of NC Veteran Affairs Property. The upstream invert of these pipes will be set at the elevation of the normal water surface of wetland GTB in order to avoid draining the wetland. A special headwall detail will be provided that increases the toe wall depth in order to avoid under mining of the cross pipes.

6. Possible replacement of storm water detention in the area inside of Loop D was discussed. The flat topography of the wetland and the proposed grade of the loop however will not allow for adequate storage. It was pointed out by Kathy Matthews that this area would not be suitable for detention since it would still considered Waters of the US.

7. Richard Spencer USACE expressed concerns about the effects that the proposed upsizing of the existing 15 inch corrugated metal pipe and resultant loss of detention storage would have on wetland EER downstream of the project. It was agreed upon by the Merger team and NCDOT Hydraulics Unit that consideration should be given to not upsizing the pipe in order to retain as much of the existing detention storage as possible. as long as the headwater on the pipe did not adversely affect the proposed drainage structures under -Y3- Randolph Street. Based on the poor condition of the existing metal pipe NCDOT will discuss replacing the existing pipe with a new 15 inch pipe during the upcoming field inspection.

Meeting Adjouned

STORMWATER MANAGEMENT PLAN

Project: 3.6492.1.2
TIP No. U-4444 A
Cumberland County 2/02/2009

Hydraulics Project Manager: Max Price, P.E. (Wetherill Engineering),
Marshal Clawson, P.E. (NCDOT Hydraulics Unit)

ROADWAY DESCRIPTION

The project U-4444A involves widening of existing NC 210 (Murchison Road) between the proposed Fayetteville Outer Loop (TIP X-2) and NC 24-87 (Bragg Boulevard) in Spring Lake to six lanes and upgrading the roadway to a freeway. In addition to the widening, the existing Honeycutt Road intersection will be converted to an interchange and Randolph Street will be extended to NC 210 and an interchange constructed. The project drainage system consists of cross pipes, grated inlets with associated pipe systems, roadway swales, and lateral storm water swales.

ENVIRONMENTAL DESCRIPTION

The project is located in the Cape Fear River Basin and the primary receiving waters are Little Cross Creek and Cross Creek. The NCDWQ surface water classification for the receiving waters is Water Supply IV (WS-IV). The projects location is greater than 5 miles from the water supply critical area. Little Cross Creek is a 303d listed stream in the 2006 Final North Carolina Water Quality Assessment and Impaired Waters List. The last section of Cross Creek from Blount Street to the Cape Fear River (8+/- miles from the project) was also shown as a 303d listed stream in the draft 2008 303d list. The source of impairment for both streams was biological impairment.
Red-cockaded woodpeckers are present in the project area. The project is located within two of Fort Bragg's habitat management units. Eight foraging partitions exist in the project area or within one half mile of the project area.

Table 1 and Table 2 below identify the jurisdictional streams impacted by the project.

Table 1. List of Stream Crossings in Project U-4444AA

Stream	Station	Stream Name	Stream Type	Proposed Structure
1ER	-L- 38+00 to 45+00 Lt.	Little Cross Creek	Perennial	N/A Parallels Project
2ER	-L- 43+00 to 45+25.00 Lt.	UT Little Cross Creek	Perennial	2@ 30" RCP
3ER	-L- 87+00 to 89+00 Rt.	UT Cross Creek	Perennial	30" RCP w/ Rip Rapped Energy Dissipator
11ER	-L- 87+90 to 88+75 Rt.	UT Cross Creek	Intermittent	N/A

Table 2. List of Stream Crossings in Project U-4444AB

Stream	Station	Stream Name	Stream Type	Proposed Structure
6ER	-L- 135+00 to 137+00 Rt.	Cross Creek	Perennial	54" RCP
8ER	-L- 135+00 to 137+00 Rt.	UT Cross Creek	Intermittent	N/A
9ER	-L- 135+00 to 137+00 Rt.	UT Cross Creek	Perennial	N/A
10ER	-L- 87+90 to 88+75 Rt.	UT Cross Creek	Intermittent	N/A
6TB	-Y3RPAA- 11+60 Rt. & Lt.	Cross Creek	Intermittent	3@ 36" RCP
7TB	-L- 135+65 to 136+25 Lt.	UT Cross Creek	Intermittent	48" RCP

Table 3 and Table 4 below identify the wetland sites that will be impacted by the proposed project. Wetland impacts have been minimized by keeping roadway fill slopes at 3:1 and by the realignment of –Y3 Ramp D- at the Randolph Street Interchange.

Table 3. List of Jurisdictional Wetlands in Project U-4444AA

Stream	Station	Type of Impact	Minimization of Impact
1ER	-L- 45+20 to 46+80 Lt.	Mechanized Clearing	2:1 Fill Slopes were used in this area as a result of low fill height
BER	-L- 85+00 to 91+25 Rt.	Permanent Fill in Wetlands, Mechanized Clearing	3:1 Fill Slopes, Rip-Rap Energy Dissipator and break in pipe slope to reduce outlet velocity
CER	-L- 85+00 to 91+25 Rt.	Permanent Fill in Wetlands, Mechanized Clearing	3:1 Fill Slopes, Rip-Rap Energy Dissipator and break in pipe slope to reduce outlet velocity

Table 4. List of Jurisdictional Wetlands in Project U-4444AB

Stream	Station	Type of Impact	Minimization of Impact
EER	-L- 130+00 to 138+00 Rt.	Permanent Fill, Excavation, Mechanized Clearing	3:1 Fill Slopes, Realignment of –Y3RPD-, Rip-Rap Energy Dissipator and break in pipe slope to reduce outlet velocity
FTB	-Y3RPA- 23+40 to 26+00	Permanent Fill	N/A
HER	-L- 147+50 to 149+75 Lt.	Permanent Fill	N/A
GTB	-Y3RPA- 14723+40 to 26+50 Rt.	No Impact	3 @ 36 RCP upstream inverts will be set at the elevation of the normal water surface of wetland GTB to avoid draining the wetland

BEST MANAGEMENT PRACTICES AND MAJOR STRUCTURES

The primary goal of Best Management Practices (BMPs) is to prevent degradation of the states surface waters by the location, construction and operation of the highway system. The BMPs are activities, practices and procedures taken to prevent or reduce stormwater pollution. The BMPs and measures that will be used on this project to reduce stormwater impacts are preformed scour holes and rip rap energy dissipaters to diffuse velocities from storm systems that drain into the wetlands or the jurisdictional streams. Upsizing of existing cross pipes that were under sized will also aid in reducing outlet velocities. Where possible new storm drain systems were designed to discharge runoff from paved surfaces in such a way as to maximize the grass swale or natural vegetated swale flow length before discharging into streams or wetlands.

Ecosystem Enhancement
PROGRAM

March 23, 2009

Mr. Gregory J. Thorpe, Ph.D.
Environmental Management Director
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Dr. Thorpe:

Subject: EEP Mitigation Acceptance Letter:

U-4444A, NC 210 (Murchison Road) from the Fayetteville Outer Loop (X-0002) to Butner Road, Cumberland County

The purpose of this letter is to notify you that the Ecosystem Enhancement Program (EEP) will provide the stream, riparian wetland and nonriparian wetland mitigation for the subject project. Based on the information supplied by you dated March 17, 2009, the impacts are located in CU 03030004 of the Cape Fear River Basin in the Southern Inner Coastal Plain (SICP) Eco-Region, and are as follows:

Stream (warm):	1,100 feet
Riparian Wetland:	7.33 acres
Nonriparian Wetland:	0.06 acre

This mitigation acceptance letter replaces the mitigation acceptance letter issued on February 24, 2009. EEP commits to implementing sufficient compensatory stream, riparian wetland, and nonriparian wetland mitigation credits to offset the impacts associated with this project by the end of the MOA Year in which this project is permitted, in accordance with Section X of the Amendment No. 2 to the Memorandum of Agreement between the North Carolina Department of Environment and Natural Resources, the North Carolina Department of Transportation, and the U. S. Army Corps of Engineers, fully executed on March 8, 2007. If the above referenced wetland impact amounts are revised, then this mitigation acceptance letter will no longer be valid and a new mitigation acceptance letter will be required from EEP.

Mr. Thorpe
March 23, 2009
TIP U-4444A

If you have any questions or need additional information, please contact Ms. Beth Harmon at 919-715-1929.

Sincerely,

William D. Gilmore, P.E.
EEP Director

cc: Mr. Richard Spencer, USACE – Wilmington Regulatory Field Office
Mr. Brian Wrenn, Division of Water Quality, Wetlands/401 Unit
File: U-4444A Revised

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

January 5, 2009

Gregory J. Thorpe, Ph.D.
North Carolina Department of Transportation
Project Development and Environmental Analysis
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Dr. Thorpe:

This letter is in response to your letter of December 31, 2008 and attached Biological Assessment, which provided the U.S. Fish and Wildlife Service (Service) with the biological determination of the North Carolina Department of Transportation (NCDOT) that the widening of NC 210 (Murchison Road) between the proposed Fayetteville Outer Loop and NC 24-87 (Bragg Boulevard) in Spring Lane to six lanes (Cumberland County, TIP No. U-4444) may affect, but is not likely to adversely affect the federally endangered red-cockaded woodpecker (*Picoides borealis*, RCW). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to information provided, the widening of Murchison Road and the associated Progress Energy power line relocation will remove foraging habitat associated with four existing RCW partitions (FB 165, 207, 264 and 375). The road widening will remove a total of 24.18 acres of foraging habitat, and the power line relocation will remove a total of 0.84 acre of foraging habitat. Counting suitable and potentially suitable foraging habitat, all four RCW partitions will still meet the Standard for Managed Stability guidelines post-project; therefore, no take will occur. No RCW cavity trees will be removed, although the project will occur within 200 feet of four cavity trees (1 active, 1 possibly active, 1 inactive and 1 relic).

Based on the information provided and other available information, the Service concurs with your determination that the proposed project may affect, but is not likely to adversely affect the RCW. We believe that the requirements of section 7(a)(2) of the ESA have been satisfied for this species. We remind you that obligations under section 7 consultation must be reconsidered if: (1) new information reveals impacts of this identified action that may affect listed species or critical habitat in a manner not previously considered in this review; (2) this action is subsequently modified in a manner that was not considered in this review; or (3) a new species is listed or critical habitat determined that may be affected by this identified action.

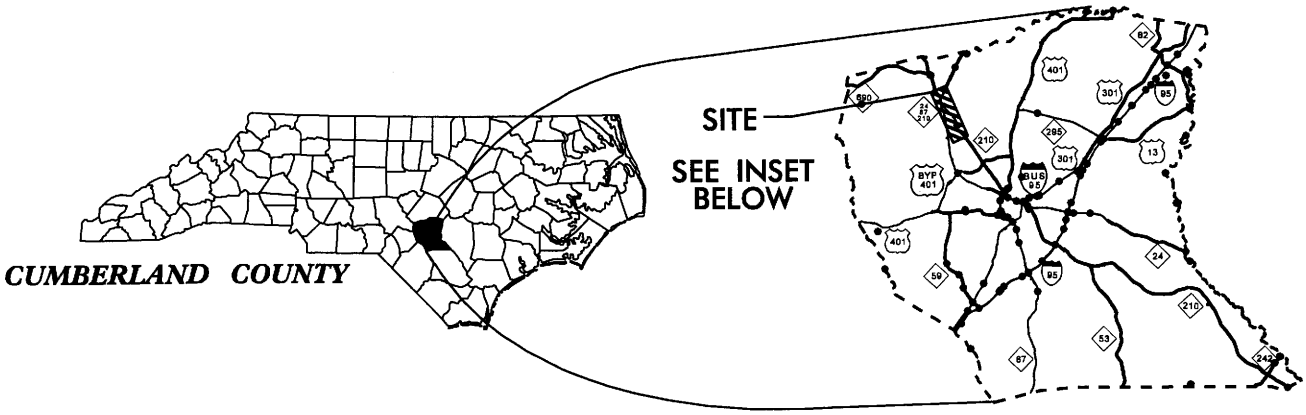
The Service appreciates the opportunity to review this project. If you have any questions regarding our response, please contact Mr. Gary Jordan at (919) 856-4520 (Ext. 32).

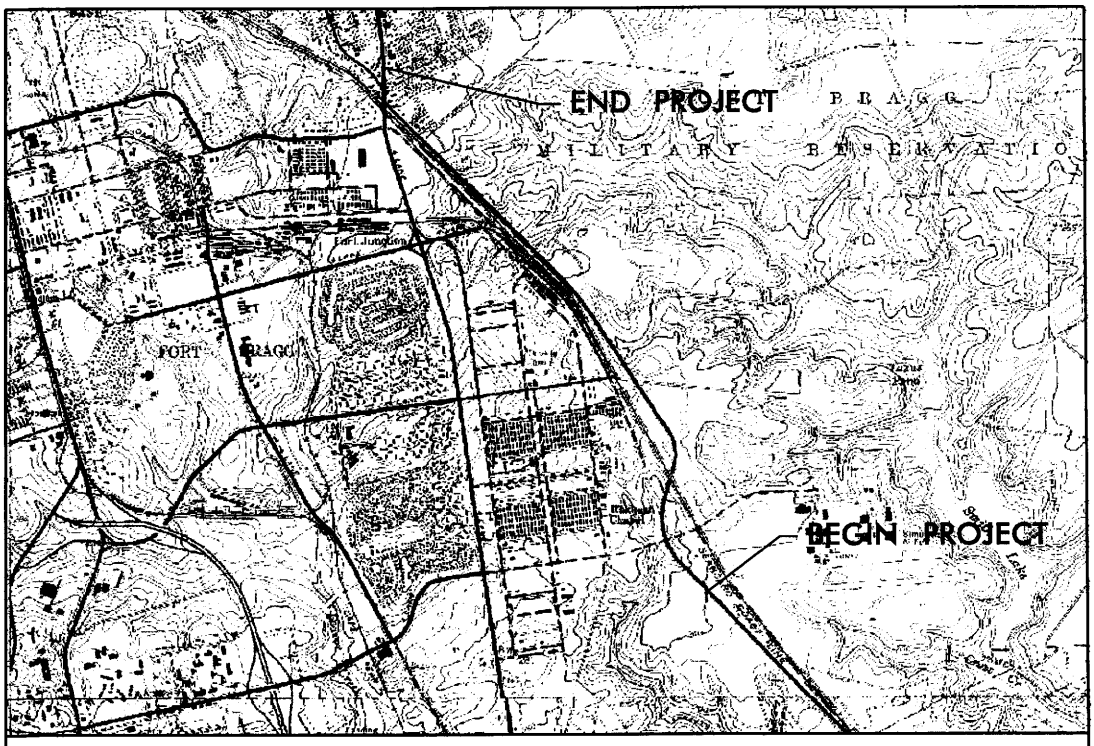
Sincerely,

Gary Jordan

for Pete Benjamin
Field Supervisor

cc: Richard Spencer, USACE, Wilmington, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC
John Sullivan, FHWA, Raleigh, NC
David Harris, NCDOT, Raleigh, NC





VICINITY MAP

WETLAND / STREAM IMPACTS VICINITY MAP

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
CUMBERLAND COUNTY

PROJECT: 36492.1.2 (U-4444A)

NC 210 (MURCHISON ROAD)
FROM FAYETTEVILLE OUTER
LOOP TO BUTNER ROAD

SHEET OF 01 / 20 / 09

Permit Drawing
Sheet 1 of 51

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
1	FORT BRAGG MILITARY RESERVATION	
2	STATE OF NC VETERAN AFFAIRS	

N. C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
CUMBERLAND COUNTY

PROJECT: 36492.1.2 (U-4444A)

NC 210 (MURCHISON ROAD) FROM
FAYETTEVILLE OUTER LOOP
TO BUTNER ROAD

SHEET OF 01/20/09

Permit Drawing
Sheet 2 of 51

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	-L- 45+20 to 46+80 LT.	N/A	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0	0	0
2	-L- 85+00 to 91+25 RT.	30" RCP	1.00	0.00	0.00	0.08	0.00	0.03	0.00	310	0	0
TOTALS:			1.00	0.00	0.00	0.09	0.00	0.03	0.00	310	0	0

U-4444AA

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY
WBS - 36492.1.2 (U-4444AA)

SHEET 2/26/2009

ATN Revised 3/31/05

Permit Drawing
Sheet 3 of 51

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND 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)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
3	-L- 130+00 to 138+00 RT.	54" RCP	4.53	0.00	0.22	0.29	0.00	0.08	0.00	681	0	0
4	-Y3RPA- 26+00 to 23+10	3 @ 36" RCP	0.26	0.00	0.00	0.00	0.00	0.00	0.00	109	0	0
5	-Y3RPA- 14+84 to 12+89	N/A	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0	0	0
TOTALS:			4.84	0.00	0.22	0.29	0.00	0.08	0.00	790	0	0

SITE 3: ADDITIONAL IMPACTS INSIDE-Y3LPD- 0.808 ACRES

SITE 3: ADDITIONAL IMPACTS OUTSIDE -Y3RPD- 0.138 ACRES

U-4444AB

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY
WBS - 36492.1.2 (U-4444AB)

SHEET 2/26/2009

ATN Revised 3/31/05

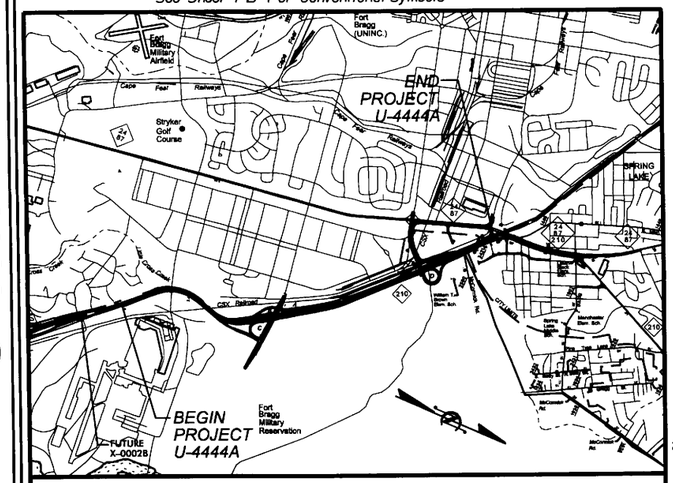
Permit Drawing Sheet 4 of 51

09/08/99

TIP PROJECT: U-4444A

CONTRACT:

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



VICINITY MAP FOR STATE PROJECT U-4444A

R/W PLANS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

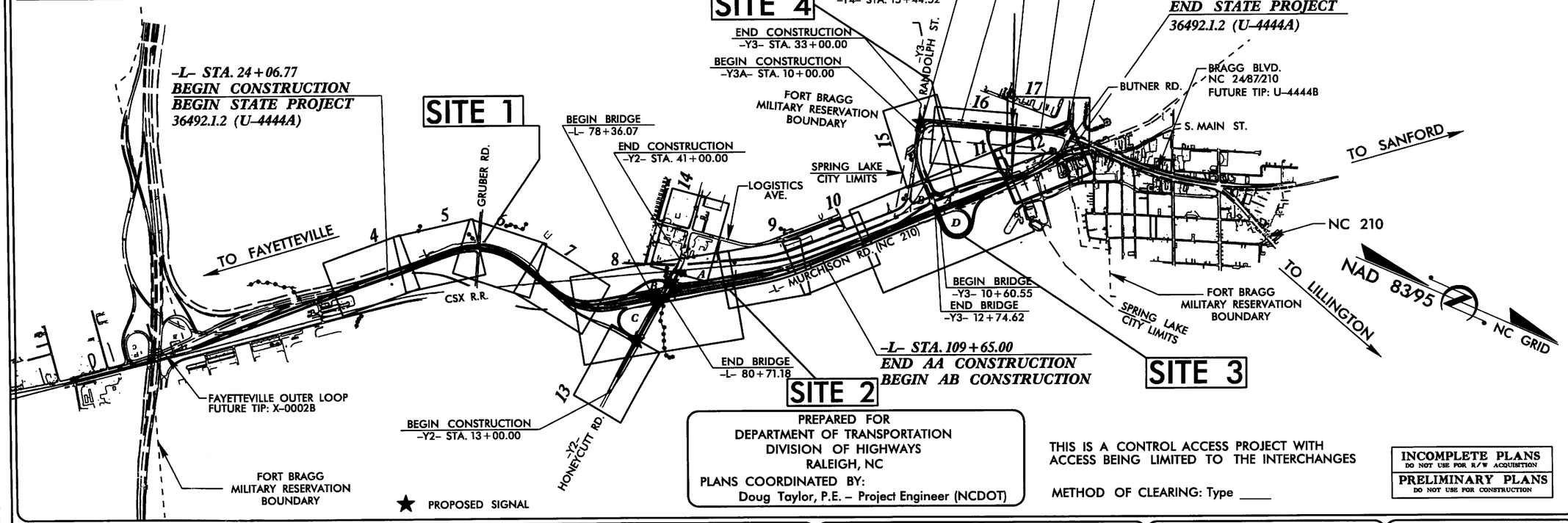
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4444A	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
36492.1.2	STP-210(11)	PE	

Permit Drawing
Sheet 5 of 51

LOCATION: *NC 210 (MURCHISON ROAD) FROM FAYETTEVILLE OUTER LOOP TO BUTNER RD.*

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

WETLAND/STREAM IMPACTS



PREPARED FOR
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, NC
PLANS COORDINATED BY:
Doug Taylor, P.E. – Project Engineer (NCDOT)

THIS IS A CONTROL ACCESS PROJECT WITH ACCESS BEING LIMITED TO THE INTERCHANGES

METHOD OF CLEARING: Type ____

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

GRAPHIC SCALES

PLANS: 50′ 25′ 0 50′ 100′
PROFILE (HORIZONTAL): 50′ 25′ 0 50′ 100′
PROFILE (VERTICAL): 10′ 5′ 0 10′ 20′

DESIGN DATA

ADT 2005 = 45,400
ADT 2035 = 77,000
DHV = 11 %
D = 55 %
T = 6 % *
V = 60 MPH

* TTST 2% DUAL 4%
FUNC. CLASS. = URBAN FREEWAY

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4444A = 2.530 Miles
LENGTH STRUCTURES TIP PROJECT U-4444A = 0.044 Miles
TOTAL LENGTH STATE TIP PROJECT U-4444A = 2.574 Miles

Prepared In the Office of:
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: *March 20, 2009*

LETTING DATE: *September 15, 2009*

BRIAN K. EASON, PE
PROJECT ENGINEER

DAVID W. MARTIN
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

7:38:23 AM
P:\2008\08339.09 U-4444\Hydraulics\Permits_Environmental\Drawings\U-4444_hyd_tsh.dgn
2/20/2009

SITE 1

See Sheet 06-INSET for INSET

LOCHNER

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	06
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

Permit Drawing
Sheet 6 of 51

NAD 83/95

MOVEABLE JERSEY BARRIER FOR ROAD CLOSURE

LITTLE CROSS CREEK

REMOVE & REPLACE NEW FORT BRAGG SECURITY FENCE 72" CL 3SBW

2 TONS CL B RIP RAP
7 SY FILTER FABRIC

FORT BRAGG MILITARY RESERVATION

-L- SB 45+00
-L- NB 45+00
-L- 50+00
-L- SB 50+00
-L- NB 50+00

MATCH TO SHEET 5 -L- STA. 41+00

MATCH TO SHEET 7 -L- STA. 54+00

N 10° 43' 40.9" W

N 13° 03' 36.8" E

MEDIAN BARRIER

-L- ST Sta. 53+47.11

-L_SB- CS Sta. 48+56.68

-L_NB- CS Sta. 48+60.50

-L- CS Sta. 48+67.11

-L_SB- ST Sta. 52+86.68

-L_NB- ST Sta. 52+90.50

SEABOARD COASTLINE RR

GRAPHIC SCALE
50 25 0 50 100

See Sheet 19 for -L- Profile

SITE 1

See Sheet 06–INSET for INSET

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	06
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

Permit Drawing
Sheet 7 of 51

NAD 83/95

MOVEABLE JERSEY BARRIER FOR ROAD CLOSURE

LITTLE CROSS CREEK

REMOVE & REPLACE NEW FORT BRAGG SECURITY FENCE 72" CL 3SBW

2 TONS CL B RIP RAP
7 SY FILTER FABRIC

FORT BRAGG MILITARY RESERVATION

MATCH TO SHEET 5 -L- STA. 41+00

MATCH TO SHEET 7 -L- STA. 54+00

-L- ST Sta. 53+47.11

-L_SB- CS Sta. 48+56.68

-L_NB- CS Sta. 48+60.50

-L- CS Sta. 48+67.11

-L_SB- ST Sta. 52+86.68

-L_NB- ST Sta. 52+90.50

MEDIAN BARRIER

N 10° 43' 40.9" W

N 13° 03' 56.8" E

5375' INC.

GRUBER RD 30' BST

GUARD HOUSE GATE RETAIN

SEABOARD COASTLINE RR

EXISTING R/W

GRAPHIC SCALE
50 25 0 50 100

See Sheet 19 for -L- Profile

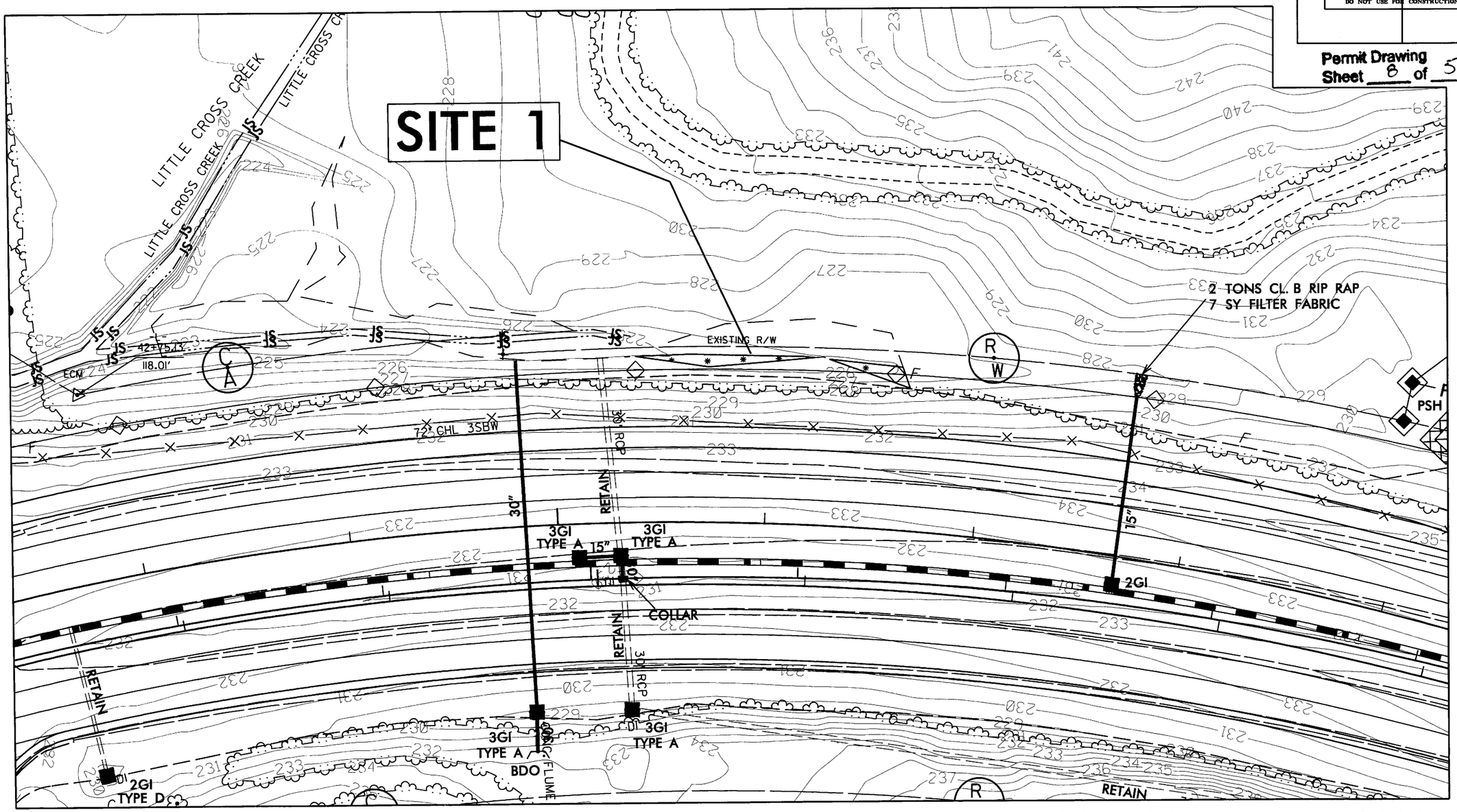
PROJECT REFERENCE NO.	SHEET NO.
U-4444A	06-INSET
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 8 of 51

NAD 83/95



GRAPHIC SCALE
50 25 0 50 100

DENOTES MECHANIZED CLEARING

PROJECT: 36492.1.2 (U-4444AA)

SITE 1

(STREAM IER)
(WETLAND IER)

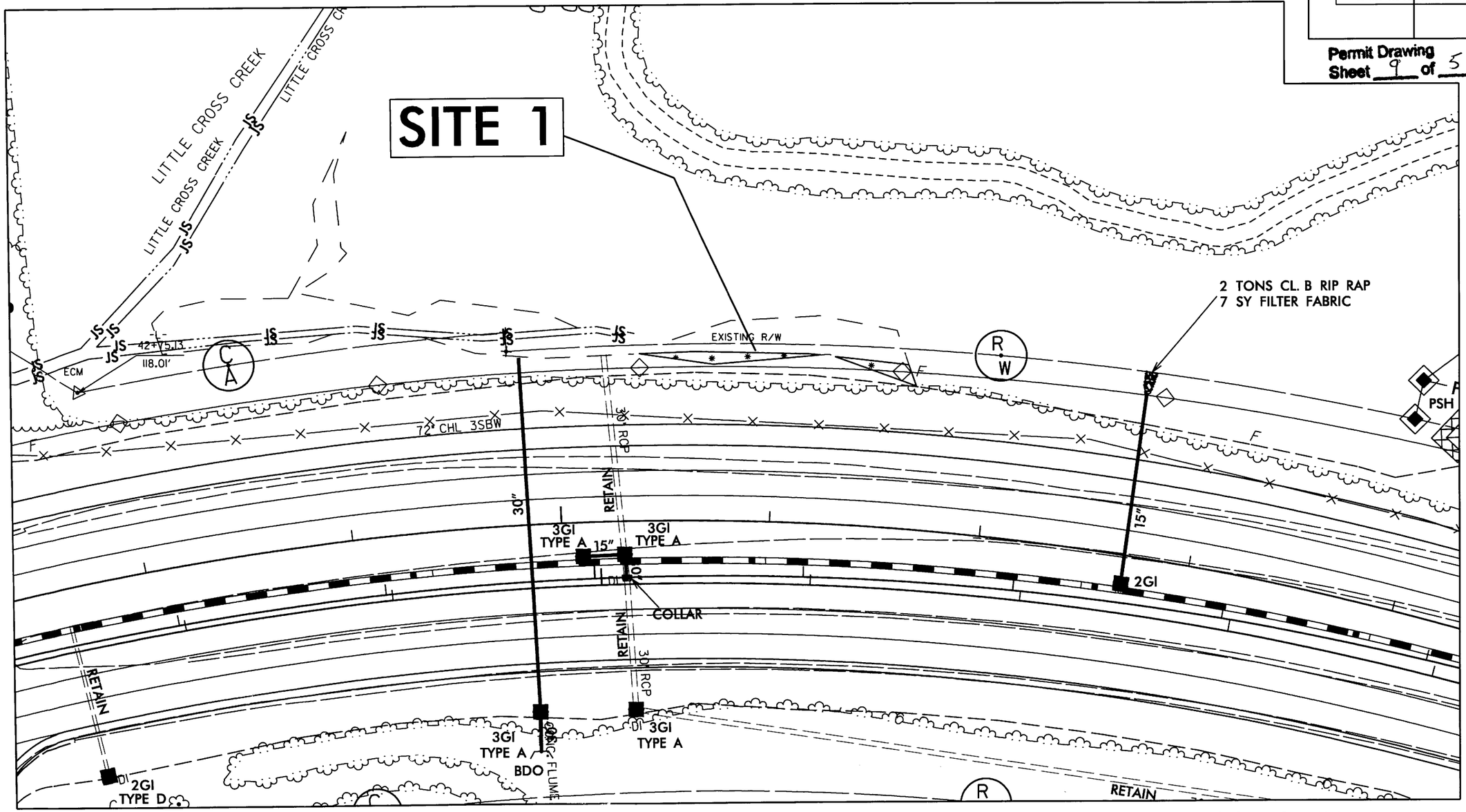
PROJECT REFERENCE NO.	SHEET NO.
U-4444A	06-INSET
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 9 of 51

NAD 83/95



GRAPHIC SCALE
50 25 0 50 100

DENOTES MECHANIZED CLEARING

PROJECT: 36492.1.2 (U-4444AA)

SITE 1

(STREAM IER)
(WETLAND IER)

REVISIONS

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	08
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 10 of 51

NAD 83/95

MATCH TO SHEET 14 -Y2- STA. 39+00

MATCH TO SHEET 7 -L- STA. 67+00

MATCH TO SHEET 9 -L- STA. 92+00

MATCH TO SHEET 13 -Y2- STA. 22+00

SITE 2

See Sheet 08–INSET for INSET

See Sheet 20 for -L- Profile
See Sheet 29 for -Y2RPA- Profile
See Sheet 30 for -Y2RPB- Profile
See Sheet 32 for -Y2RPC- Profile
See Sheet 32 for -Y2LPC- Profile
See Sheet 24 for -Y2- Profile

LOCATION:
INTERCHANGE NC 210 (MURCHISON ROAD) AND
Y2 (HONEYCUTT ROAD)

TIP NO.: U-4444A
COUNTY: CUMBERLAND CO.
DESIGNED BY: HW LOCHNER, INC./NCDOT
CHECKED BY:
DATE:

GRAPHIC SCALE
50 25 0 50 100
PLANS

REVISIONS

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	08
SW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR RIGHT OF WAY ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 11 of 51

NAD 83/95

MATCH TO SHEET 14 -Y2- STA. 39+00

MATCH TO SHEET 7 -L- STA. 67+00

MATCH TO SHEET 9 -L- STA. 92+00

MATCH TO SHEET 13 -Y2- STA. 22+00

SITE 2

See Sheet 08–INSET for INSET

See Sheet 20 for -L- Profile
See Sheet 29 for -Y2RPA- Profile
See Sheet 30 for -Y2RPB- Profile
See Sheet 32 for -Y2RPC- Profile
See Sheet 32 for -Y2LPC- Profile
See Sheet 24 for -Y2- Profile

LOCATION: INTERCHANGE NC 210 (MURCHISON ROAD) AND Y2 (HONEYCUTT ROAD)

TIP NO.: U-4444A
COUNTY: CUMBERLAND CO.
DESIGNED BY: HW LOCHNER, INC./NCDOT
CHECKED BY:
DATE:

GRAPHIC SCALE
50 25 0 50 100
PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	08-INSET
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

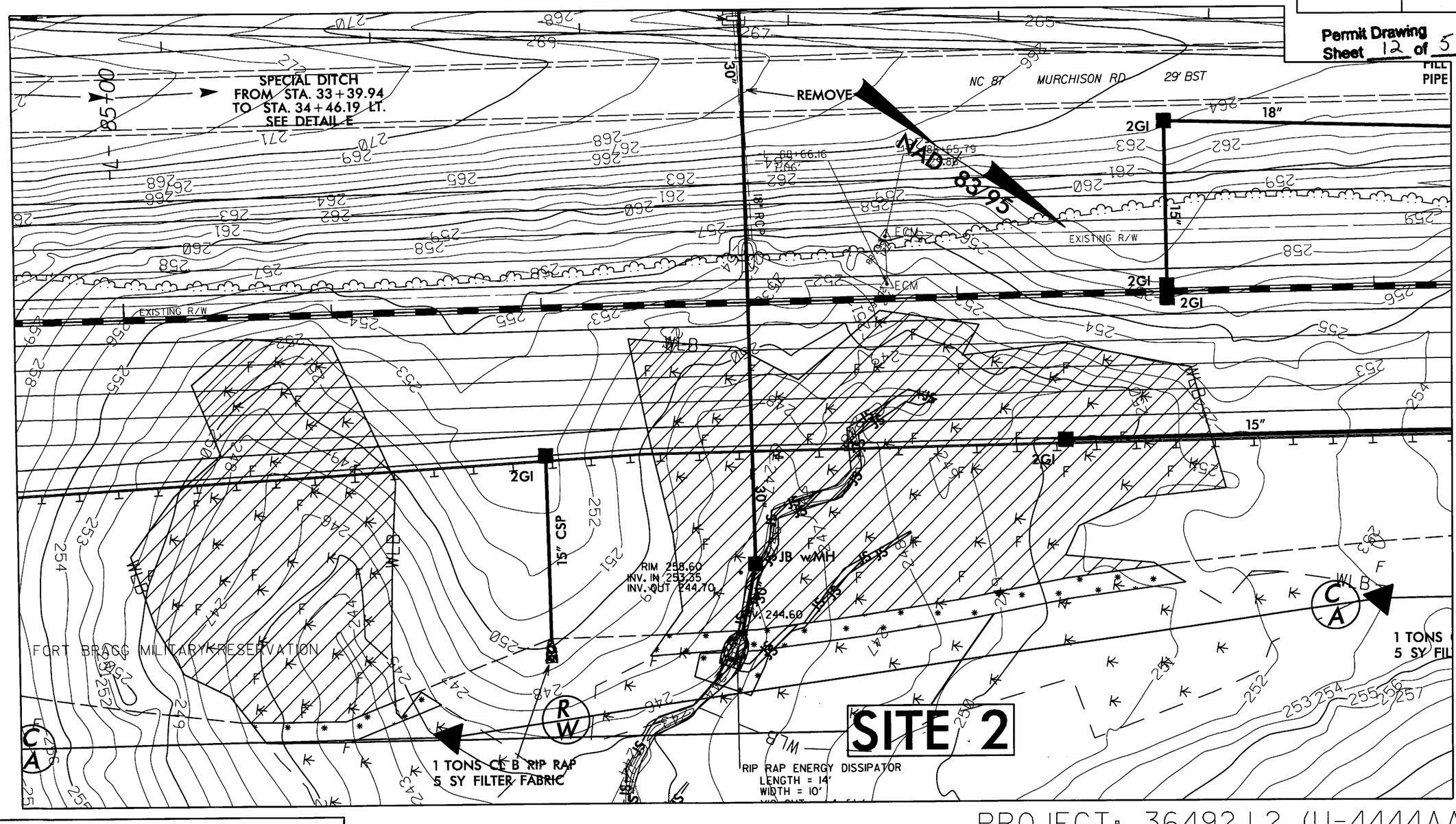
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing Sheet 12 of 51

F / F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S / S DENOTES IMPACTS IN SURFACE WATER



GRAPHIC SCALE

50 25 0 50 100

PROJECT: 36492.1.2 (U-4444AA)

SITE 2

(STREAM 3ER, 11ER)
(WETLANDS BER, CER)

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	08-INSET
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

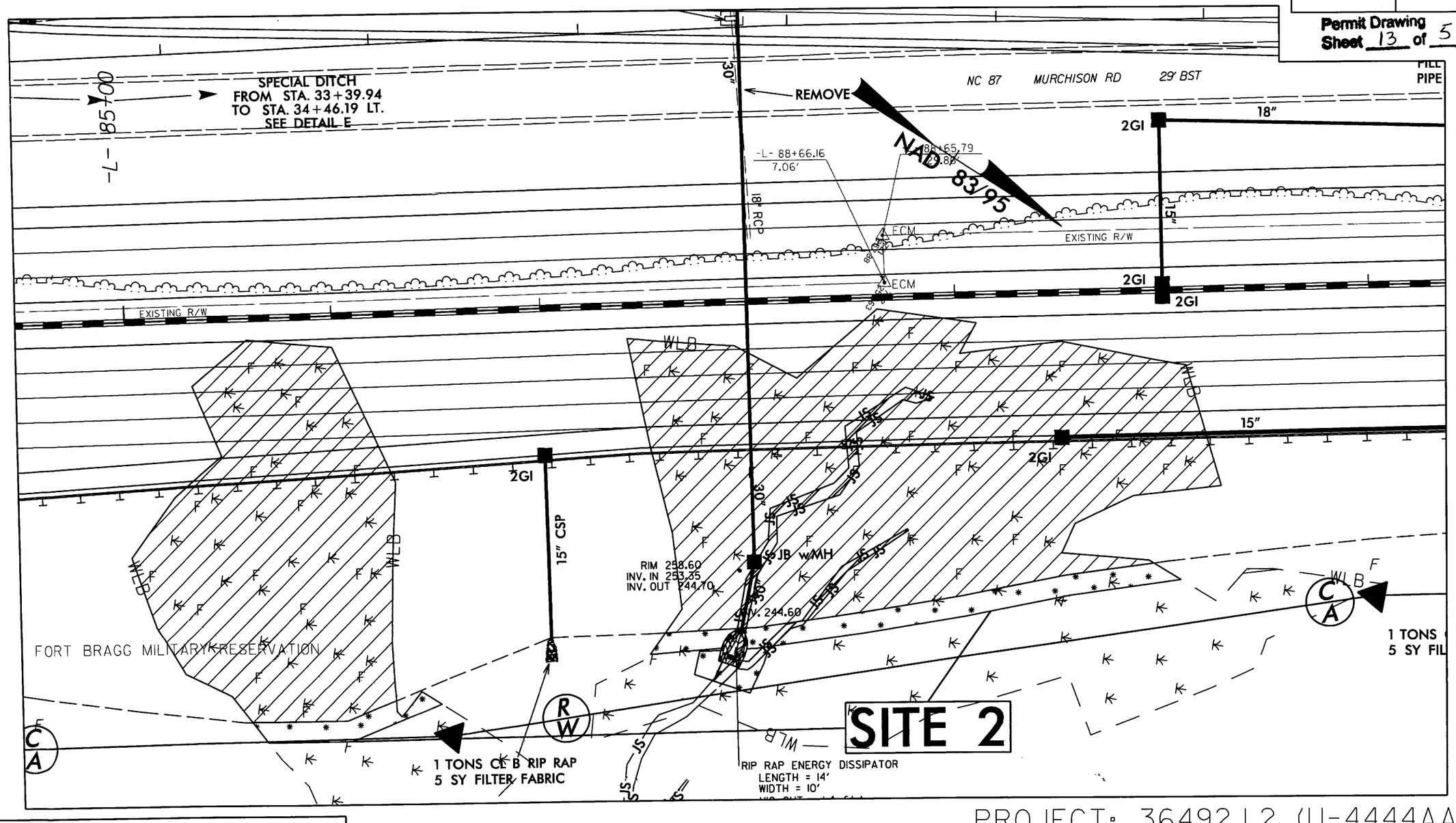
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 13 of 51

F/F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S/S DENOTES IMPACTS IN SURFACE WATER



GRAPHIC SCALE
50 25 0 50 100

PROJECT: 36492.1.2 (U-4444AA)
SITE 2
(STREAM 3ER, 11ER)
(WETLANDS BER, CER)

REVISIONS

MATCH TO SHEET 11B -L- STA. 118+200

SITE 4

See Sheet 11-INSET2 for INSET

NAD 83/95

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	1
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Permit Drawing
Sheet 14 of 51

MATCH TO SHEET 10 -L- STA. 119+00

MATCH TO SHEET 12 -L- STA. 148+00

SITE 5

See Sheet 11&12-INSET3 for INSET

SITE 3

See Sheet 11-INSET1 for INSET

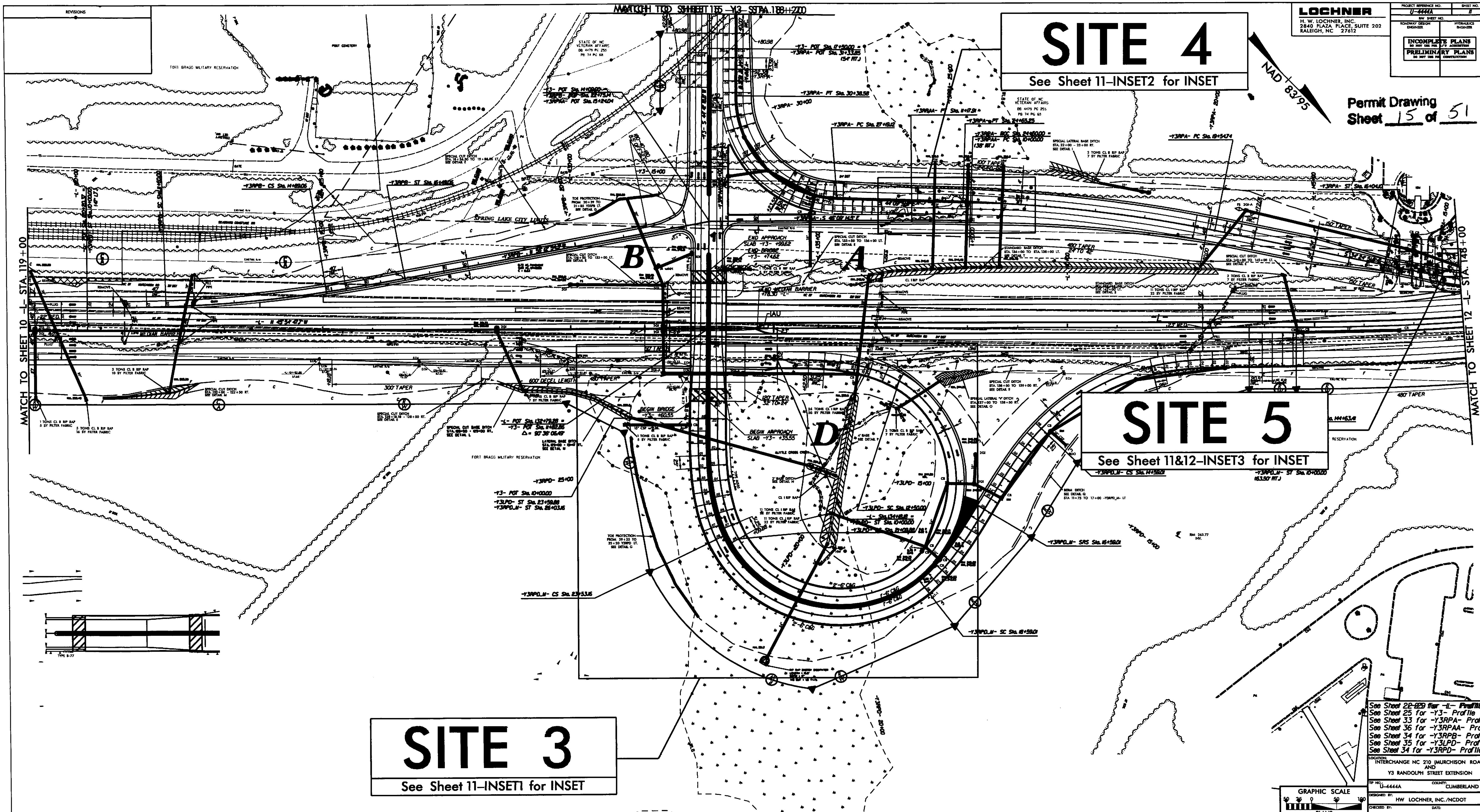
See Sheet 22-B29 for -L- Profiles
See Sheet 25 for -Y3- Profile
See Sheet 33 for -Y3RPA- Profile
See Sheet 36 for -Y3RPAA- Profile
See Sheet 34 for -Y3RPB- Profile
See Sheet 35 for -Y3LPD- Profile
See Sheet 34 for -Y3RPD- Profile

LOCATION:
INTERCHANGE NC 210 (MURCHISON ROAD)
AND
Y3 RANDOLPH STREET EXTENSION

TIP NO. U-4444A
COUNTY: CUMBERLAND

DESIGNED BY: HW LOCHNER, INC./NCDOT
CHECKED BY:
DATE:

GRAPHIC SCALE
50 25 0 50 100
PLANS


MATCH TO SHEET 15 -Y3- STA. 18+2.00
SITE 4
See Sheet 11-INSET2 for INSET
NAD 83/95
Permit Drawing
Sheet 15 of 51
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
PROJECT REFERENCE NO. U-4444A
SHEET NO. 11
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
REVISIONS
FORT BRAGG MILITARY RESERVATION
POST CEMETERY
STATE OF NC VETERAN AFFAIRS
DB 4479 PG 255
PB 74 PG 68
SPRING LAKE CITY LIMITS
MATCH TO SHEET 10 -L- STA. 119+00
MATCH TO SHEET 12 -L- STA. 148+00
A
B
D
END APPROACH SLAB -Y3- +99.62
END BRIDGE -Y3- +74.62
END MEDIAN BARRIER +78.30 -L-
BEGIN BRIDGE -Y3- +60.55
BEGIN APPROACH SLAB -Y3- +35.55
-L- POT Sta. 132+79.28 =
-Y3- POT Sta. 11+82.86
Δ = 90° 36' 06.45"
-Y3- POT Sta. 10+00.00
-Y3LPD- ST Sta. 23+59.88
-Y3RPD_M- ST Sta. 26+03.16
-Y3RPD- 25+00
-Y3RPD_M- CS Sta. 23+53.16
-Y3RPD_M- SC Sta. 18+59.01
-Y3RPD_M- SRS Sta. 16+59.01
-Y3LPD- 15+00
-Y3LPD- SC Sta. 12+50.00
600' DECEL LENGTH
480' TAPER
300' TAPER
120' TAPER 32' TO 24'
100' TAPER
150' TAPER
480' TAPER 24' TO 42'
SITE 5
See Sheet 11&12-INSET3 for INSET
SITE 3
See Sheet 11-INSET1 for INSET
See Sheet 22-229 for -L- Profile
See Sheet 25 for -Y3- Profile
See Sheet 33 for -Y3RPA- Profile
See Sheet 36 for -Y3RPAA- Profile
See Sheet 34 for -Y3RPB- Profile
See Sheet 35 for -Y3LPD- Profile
See Sheet 34 for -Y3RPD- Profile
LOCATION:
INTERCHANGE NC 210 (MURCHISON ROAD)
AND
Y3 RANDOLPH STREET EXTENSION
TIP NO.: U-4444A
COUNTY: CUMBERLAND
DESIGNED BY: HW LOCHNER, INC./NCDOT
CHECKED BY:
DATE:
GRAPHIC SCALE
50 25 0 50 100
PLANS

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	12
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

Permit Drawing Sheet 16 of 51

NAD 83/95

-L- STA.160+00
END STATE PROJECT U-4444A

MATCH TO SHEET 11 -L- STA. 148+00

SITE 5

See Sheet 11&12-INSET3 for INSET

GRAPHIC SCALE
50 25 0 50 100

See Sheet 23 for -L- Profile
See Sheet 33 for -Y3RPA- Profile

LOCHNER

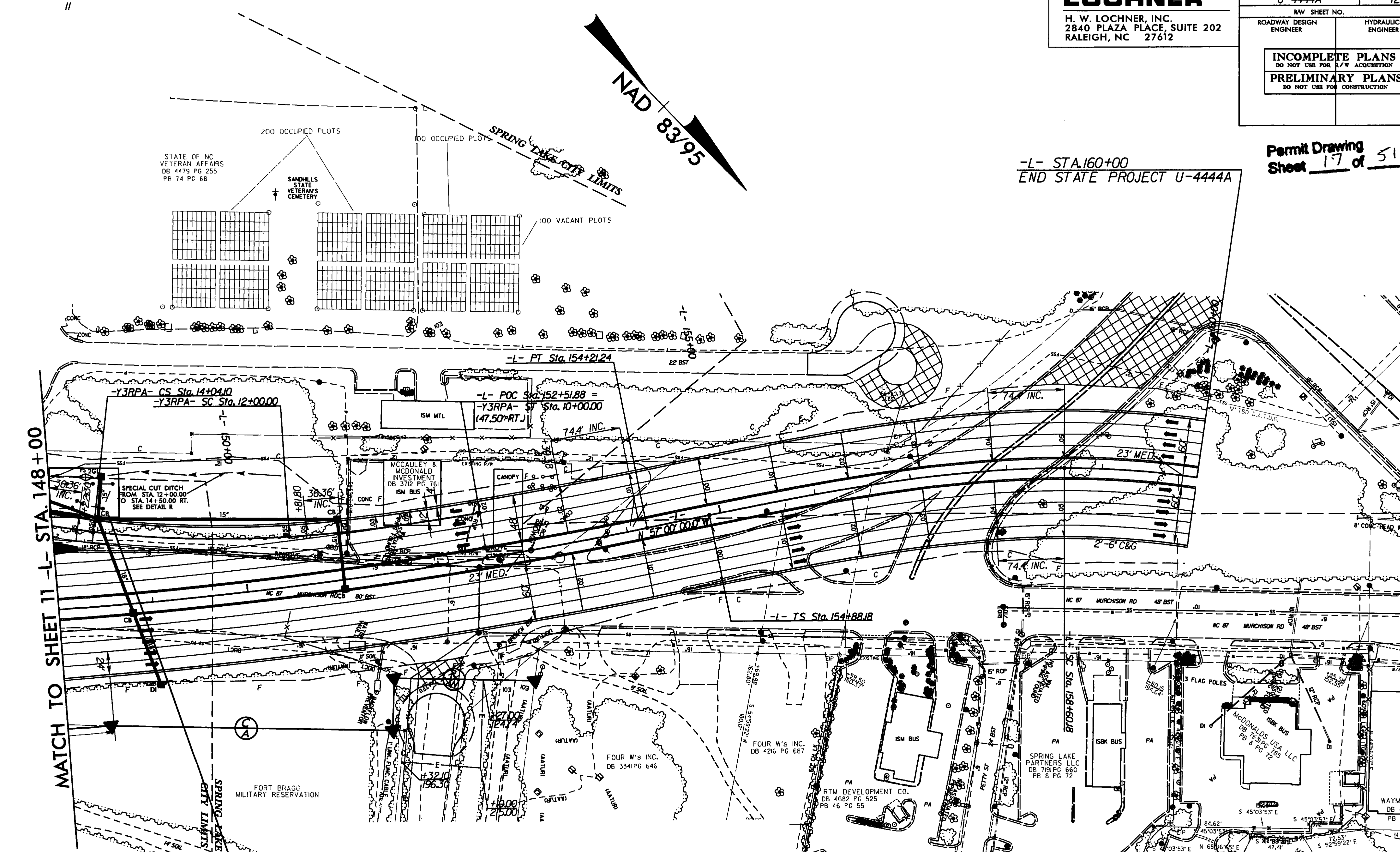
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	12
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

Permit Drawing
Sheet 17 of 51



NAD 83/95
SPRING LAKE CITY LIMITS
-L- STA.160+00
END STATE PROJECT U-4444A
200 OCCUPIED PLOTS
100 OCCUPIED PLOTS
100 VACANT PLOTS
STATE OF NC
VETERAN AFFAIRS
DB 4479 PG 255
PB 74 PG 68
SANDHILLS STATE VETERAN'S CEMETERY
-L- PT Sta. 154+21.24
-Y3RPA- CS Sta. 14+04.10
-Y3RPA- SC Sta. 12+00.00
-L- POC Sta. 152+51.88 =
-Y3RPA- ST Sta. 10+00.00
(47.50' RT.)
74.4' INC.
ISM MTL
MCCAULEY & MCDONALD INVESTMENT
DB 3712 PG 761
ISM BUS
CANOPY
SPECIAL CUT DITCH
FROM STA. 12+00.00
TO STA. 14+50.00 RT.
SEE DETAIL R
36.36' INC.
23' MED.
N 57°00'00.0" W
2'-6" C&G
NC 87 MURCHISON RD
-L- TS Sta. 154+88.18
SC Sta. 158+60.18
MATCH TO SHEET 11 -L- STA. 148+00
FORT BRAGG
MILITARY RESERVATION
SPRING LAKE CITY LIMITS
FOUR W's INC.
DB 3341 PG 646
FOUR W's INC.
DB 4216 PG 687
RTM DEVELOPMENT CO.
DB 4682 PG 525
PB 46 PG 55
ISM BUS
SPRING LAKE PARTNERS LLC
DB 7191 PG 660
PB 8 PG 72
ISBK BUS
McDONALDS USA LLC
DB 7631 PG 185
PB 8 PG 72
FLAG POLES
WAYMON

SITE 5

See Sheet 11&12-INSET3 for INSET

GRAPHIC SCALE
50 25 0 50 100

See Sheet 23 for -L- Profile
See Sheet 33 for -Y3RPA- Profile

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	11-INSET1
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

Permit Drawing
Sheet 18 of 51

GRAPHIC SCALE
100 50 0 100 200

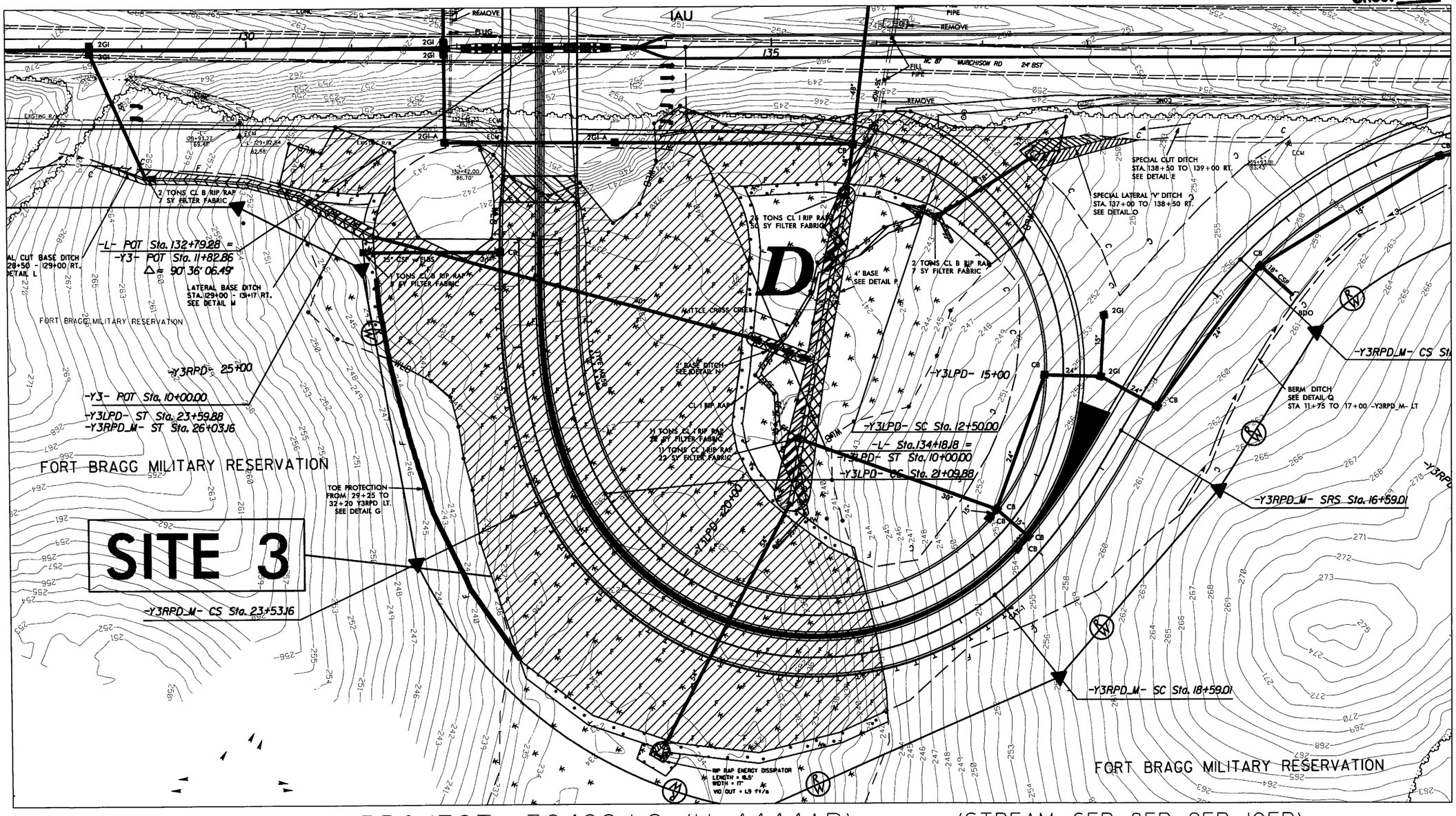
F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

NAD 83/95



PROJECT: 36492.1.2 (U-4444AB)

SITE 3

(STREAM 6ER, 8ER, 9ER, 10ER)
(WETLAND EER)

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	11-INSET1
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

Permit Drawing
Sheet 19 of 51

GRAPHIC SCALE
100 50 0 100 200

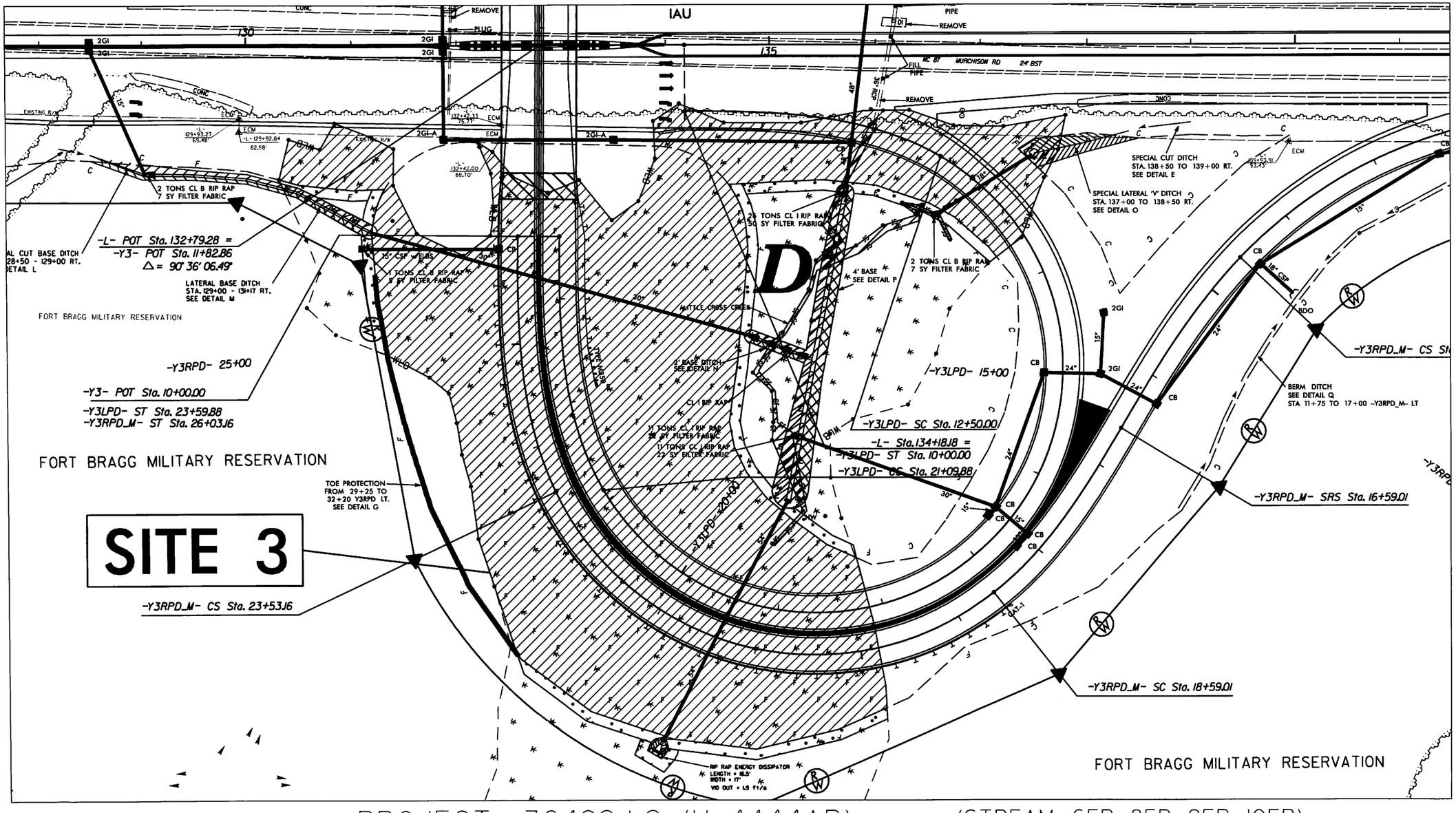
F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

E E DENOTES EXCAVATION IN WETLAND

NAD 83/95



PROJECT: 36492.1.2 (U-4444AB) (STREAM 6ER, 8ER, 9ER, 10ER)
(WETLAND EER)

SITE 3

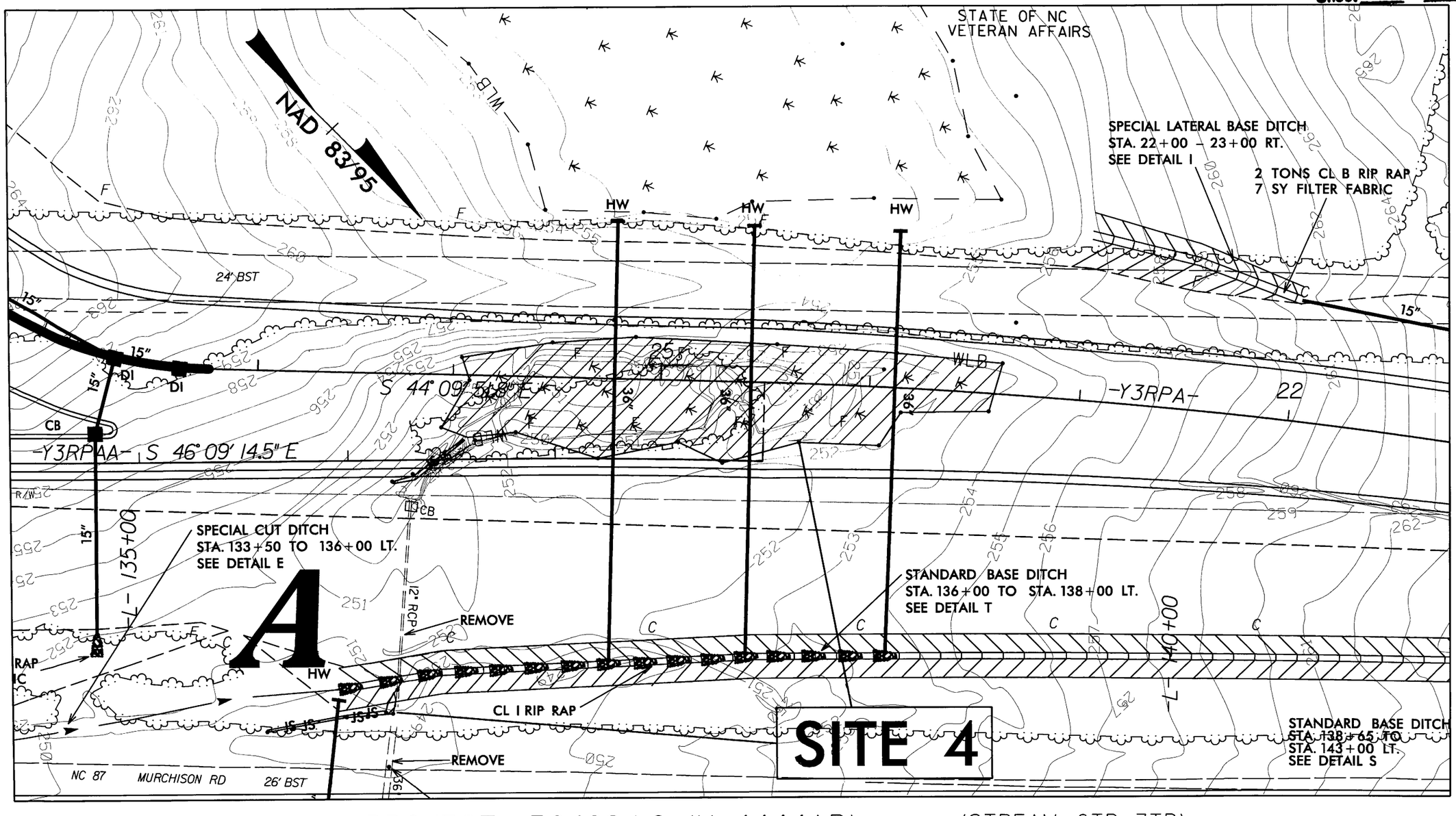
PROJECT REFERENCE NO.	SHEET NO.
U-4444A	11-INSET2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

Permit Drawing
Sheet 20 of 51

F/F DENOTES FILL IN WETLAND

S/S DENOTES IMPACTS IN SURFACE WATER



PROJECT: 36492.1.2 (U-4444AB) (STREAM 6TB, 7TB)
(WETLAND FTB)

SITE 4

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	11-INSET2
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

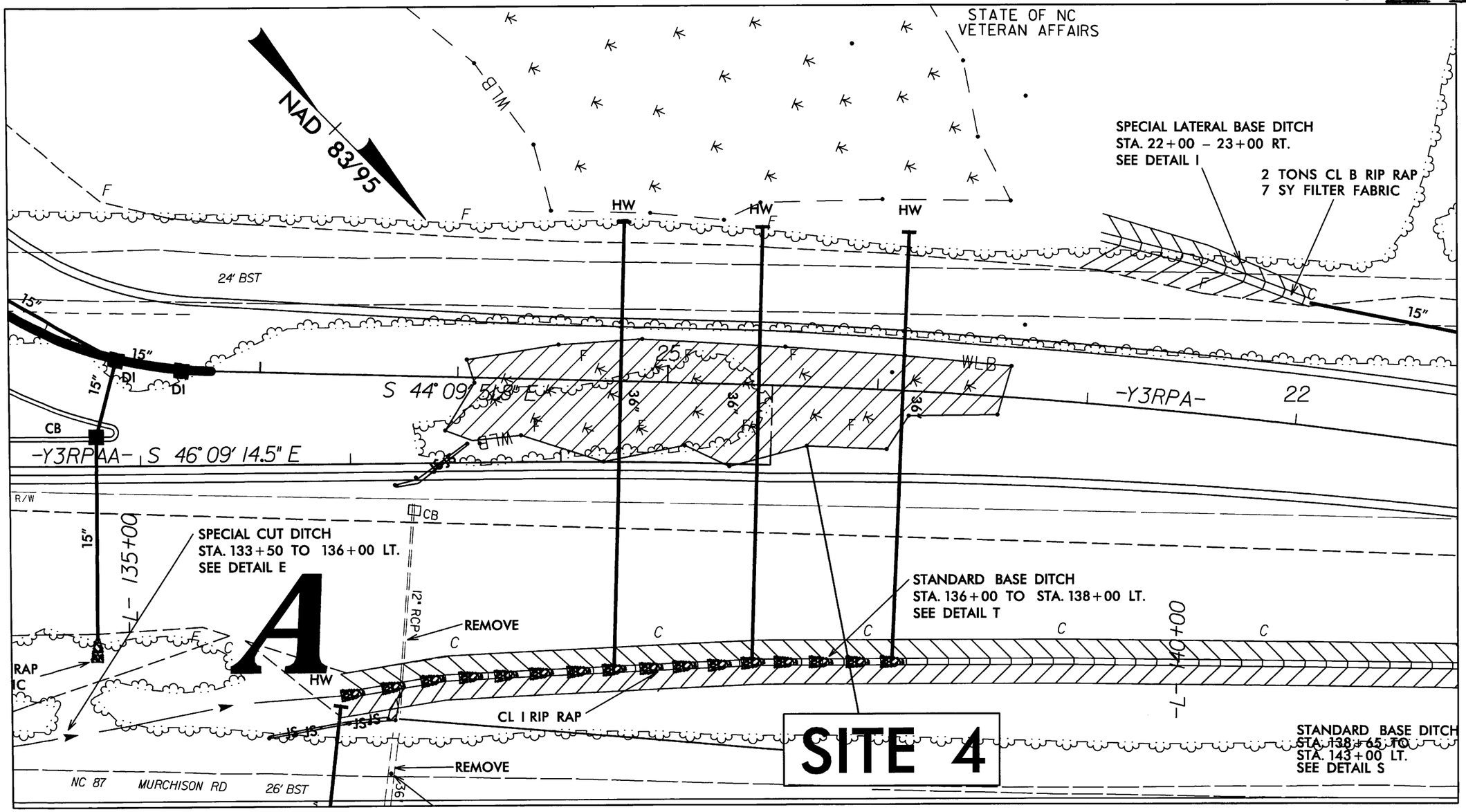
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 21 of 51

F F DENOTES FILL IN WETLAND

S S DENOTES IMPACTS IN SURFACE WATER



PROJECT: 36492.1.2 (U-4444AB) (STREAM 6TB, 7TB)
(WETLAND FTB)

SITE 4

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	11&12-INSET3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

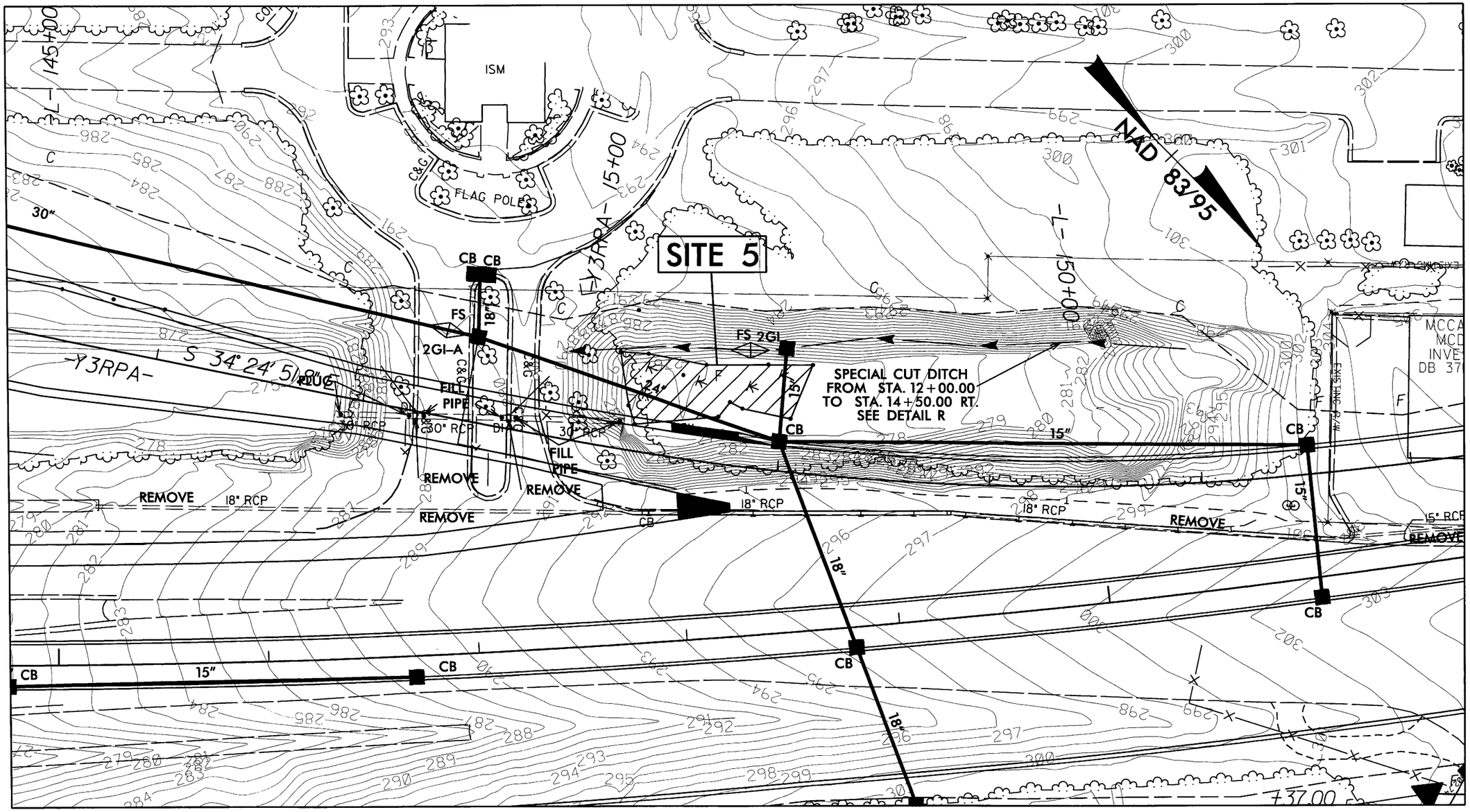
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 22 of 51

GRAPHIC SCALE
50 25 0 50 100

F/F DENOTES FILL IN WETLAND



PROJECT: 36492.1.2 (U-4444AB) (WETLAND HER)

SITE 5

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	11&12-INSET3
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

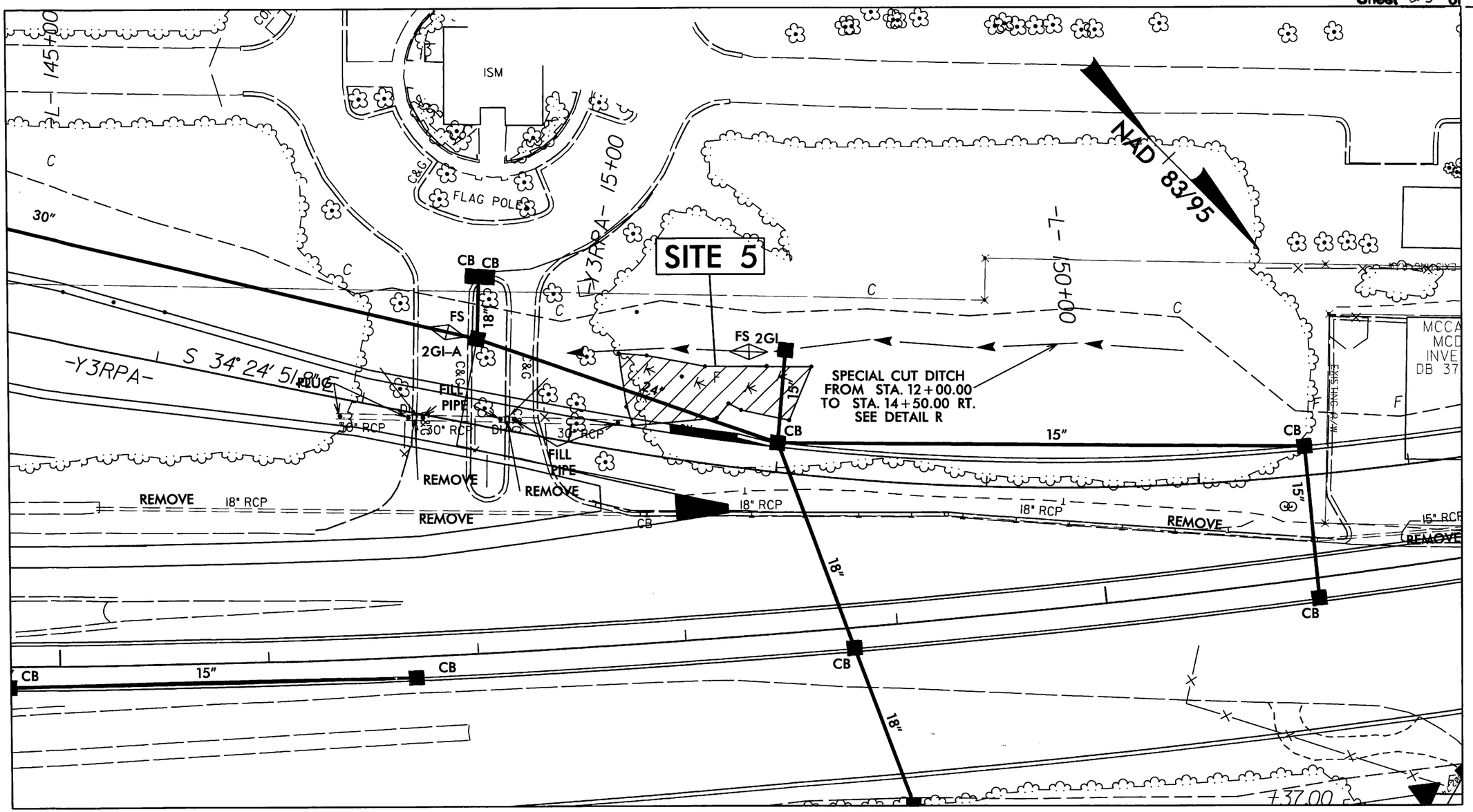
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Permit Drawing
Sheet 23 of 51

GRAPHIC SCALE
50 25 0 50 100

F F DENOTES FILL IN WETLAND



PROJECT: 36492.1.2 (U-4444AB) (WETLAND HER)

SITE 5

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444 A	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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

-L-

Permit Drawing
Sheet 24 of 51

BM80 ELEVATION 240.95'
-L- STA 41+06.68 195.88' RT
RR SPIKE IN BASE OF 24" PINE

SITE 1

PI = 47+10.00
EL = 228.09'
VC = 1,520'
K = 465

PROPOSED GRADE
EXISTING GROUND
(-)11.2189%
(+)12.0500%

See Sheet 6 for Plan view

BM81 ELEVATION 261.54'
-L- STA 63+08.15 41.45' RT
RR SPIKE IN BASE OF 24" PINE

-L-

PI = 67+70.00
EL = 272.20'
VC = 300'
K = 193

PI = 67+70.00
EL = 272.20'
VC = 300'
K = 193

PI = 58+20.00
EL = 250.84'
VC = 100'
K = 507

PROPOSED GRADE
EXISTING GROUND
(+)12.0500%
(+)12.2474%
(+)12.2474%
(+)12.2474%

See Sheet 7 for Plan view

LOCHNER

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444 A	20

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

Permit Drawing
Sheet 25 of 51

PI = 67+70.00
EL = 272.20'
VC = 300'
K = 193

PROPOSED GRADE

(+)3.8000%

EXISTING GROUND

PI = 75+80.00
EL = 302.98'
VC = 700'
K = 152

(+)3.8000%

(-)10.8100%

BEGIN BRIDGE
-L- STA. 78+41.24

END BRIDGE
-L- STA. 80+71.18

(-)10.8100%

℄ -Y2- STA. 33+09.48
EL = 276.81

See Sheet 8 for Plan view

340 330 320 310 300 290 280 270 260 250

68 69 70 71 72 73 74 75 76 77 78 79 80 81

BM82 ELEVATION 274.92'
-L- STA 82+68.45 30.65' LT
RR SPIKE IN BASE OF 15" PINE

-L-

PI = 82+50.00
EL = 297.55'
VC = 490'
K = 154

(-)10.8100%

(-)14.0000%

PROPOSED GRADE

EXISTING GROUND

SITE 2

PI = 91+50.00
EL = 261.55'
VC = 1,050'
K = 150

(-)14.0000%

(+)13.0000%

(+)13.0000%

See Sheet 8 for Plan view

330 320 310 300 290 280 270 260 250 240

81 82 83 84 85 86 87 88 89 90 91 92 93 94 95

BM84 ELEVATION 294.07'
-L- STA 132+39.74 66.52' RT
RR SPIKE IN BASE OF 24" PINE

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444 A	22

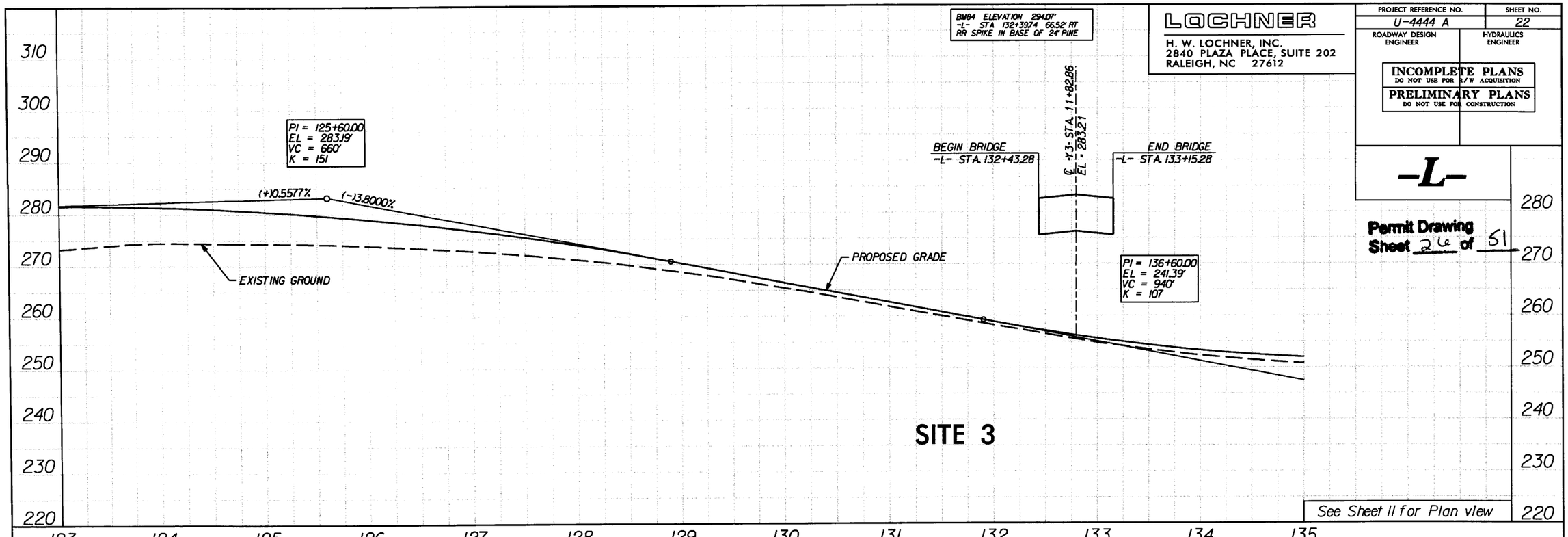
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

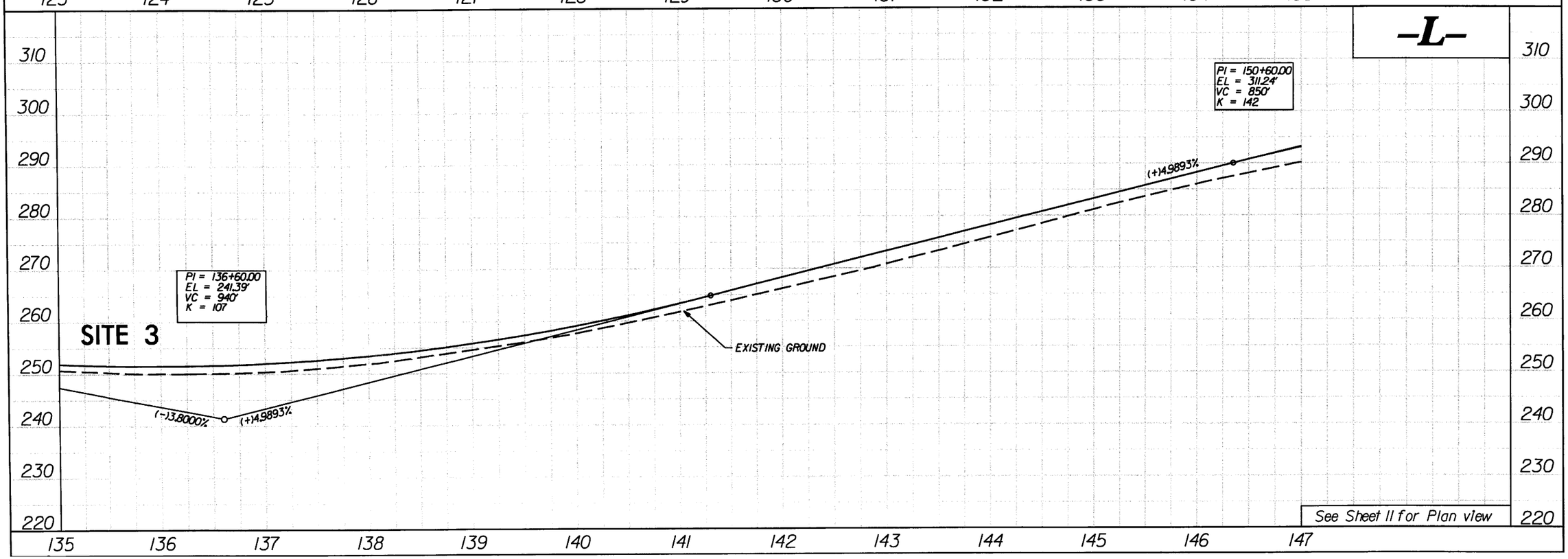
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-

Permit Drawing
Sheet 26 of 51





PROJECT REFERENCE NO.	SHEET NO.
U-4444 A	33
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y3RPA-

Permit Drawing
Sheet 27 of 51

BEGIN GRADE
-Y3RPA- STA. 10+00.00
EL = 306.67

PI = 11+25.00
EL = 305.64'
VC = 165'
K = 96

PI = 12+60.00
EL = 302.21'
VC = 100'
K = 111

PI = 14+20.00
EL = 296.70'
VC = 180'
K = 106

(-)10.8250%

(-)12.5397%

(-)13.4428%

EXISTING GROUND

SITE 5

(-)15.1404%

PI = 19+00.00
EL = 272.03'
VC = 210'
K = 96

SITE 4

(-)12.9633%

PI = 23+60.00
EL = 258.40'
VC = 550'
K = 98

(-)12.9633%

(+)12.6521%

See Sheet 11 & 12 for Plan view

-Y3RPA-

END GRADE
-Y3RPA- STA. 31+33.85
EL = 281.86

PI = 30+60.00
EL = 279.70'
VC = 100'
K = 59

PI = 29+20.00
EL = 273.25'
VC = 180'
K = 92

(+)12.9263%

(+)14.6071%

(+)12.6521%

PI = 23+60.00
EL = 258.40'
VC = 550'
K = 98

SITE 4

(+)12.6521%

EXISTING GROUND

See Sheet 11 for Plan view

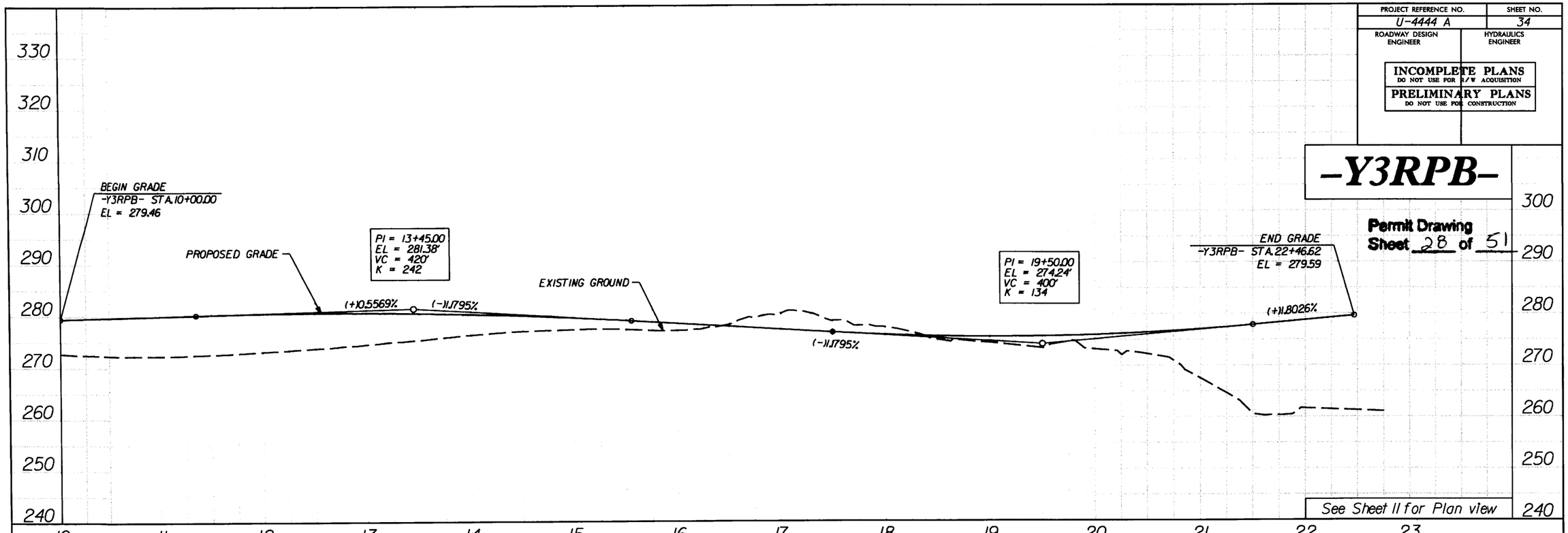
PROJECT REFERENCE NO.	SHEET NO.
U-4444 A	34
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

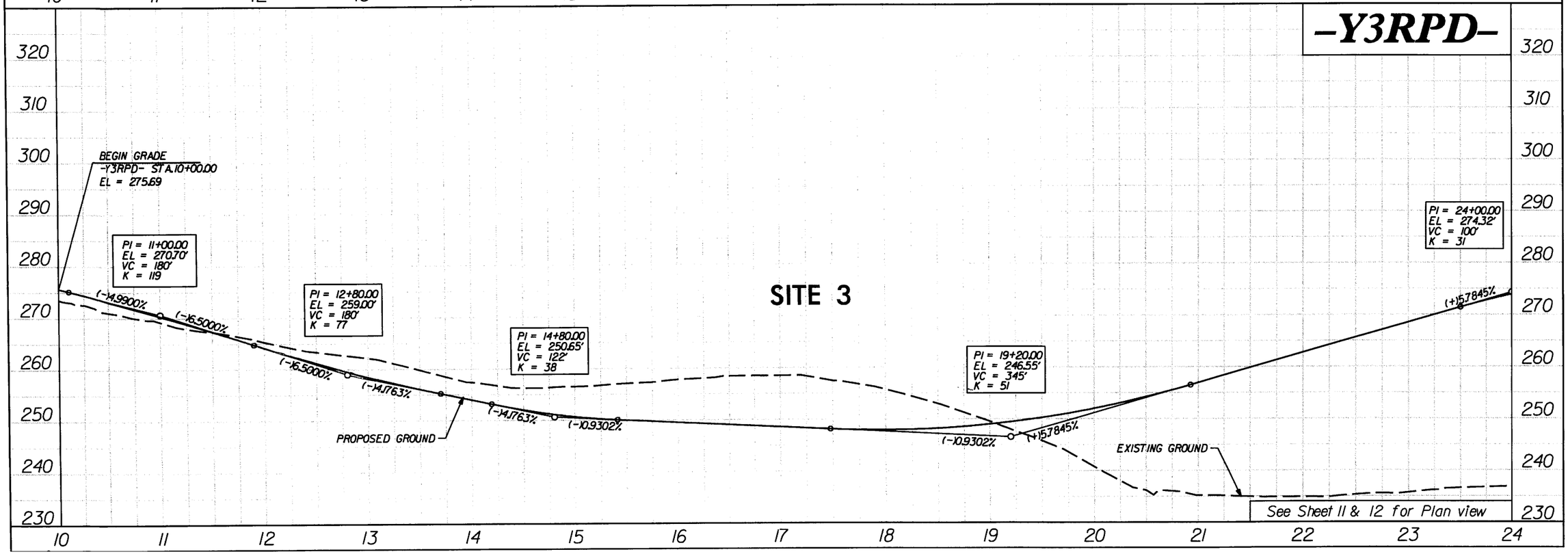
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y3RPB-

Permit Drawing
Sheet 28 of 51

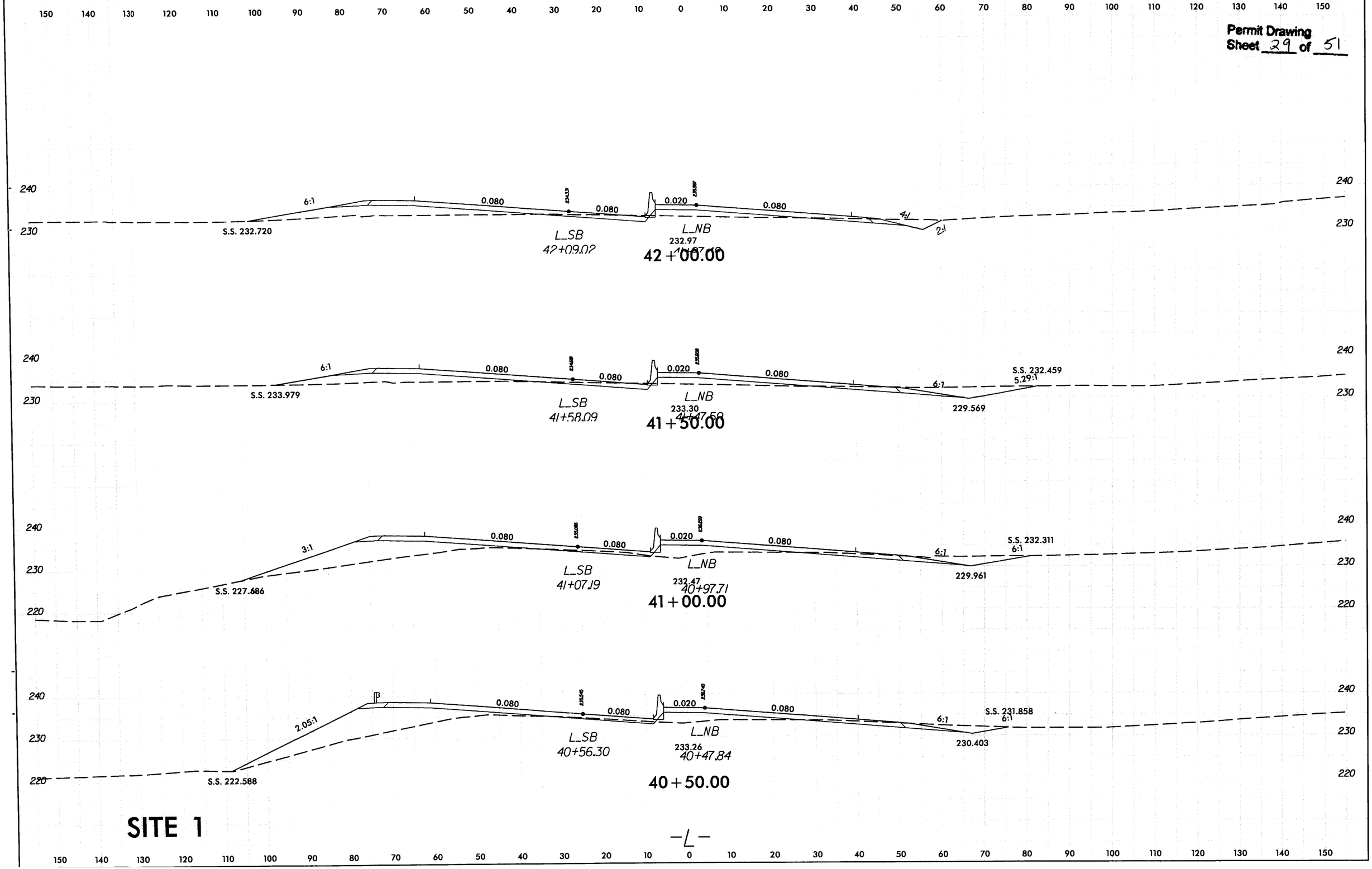


-Y3RPD-



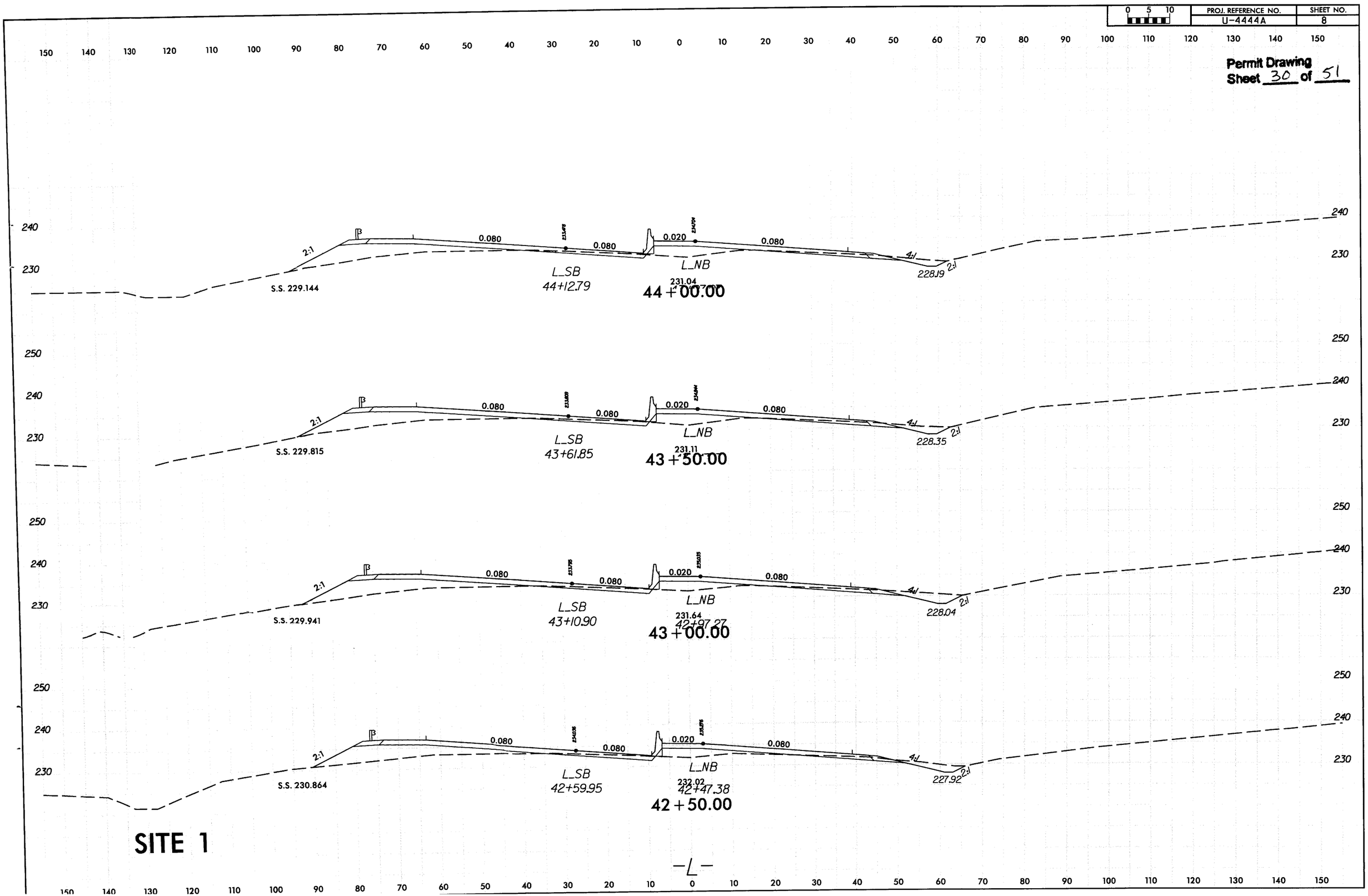
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	7

Permit Drawing
Sheet 29 of 51



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	8

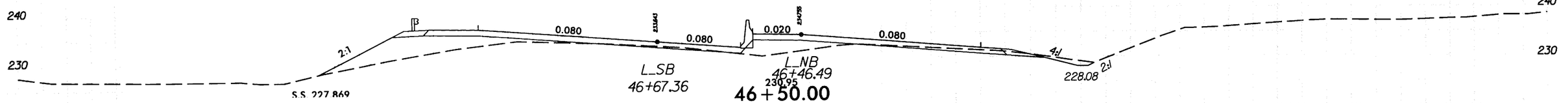
Permit Drawing
Sheet 30 of 51

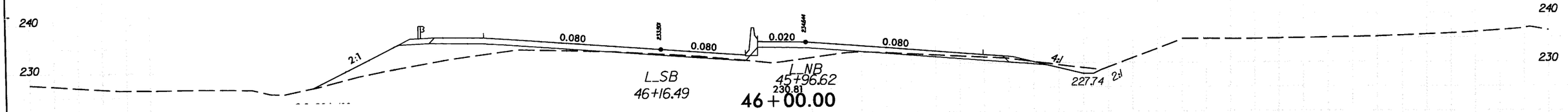


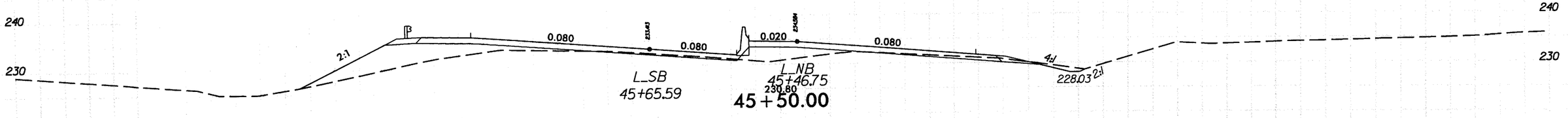
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	9

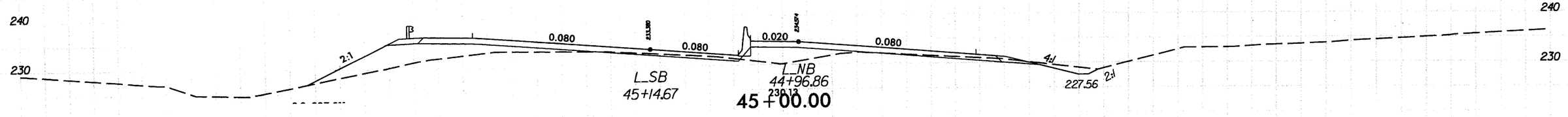
Permit Drawing
Sheet 31 of 51

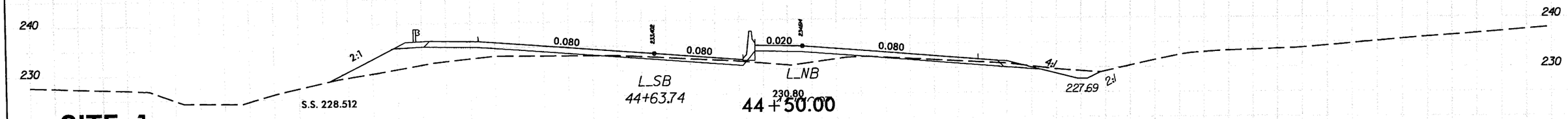
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150











SITE 1

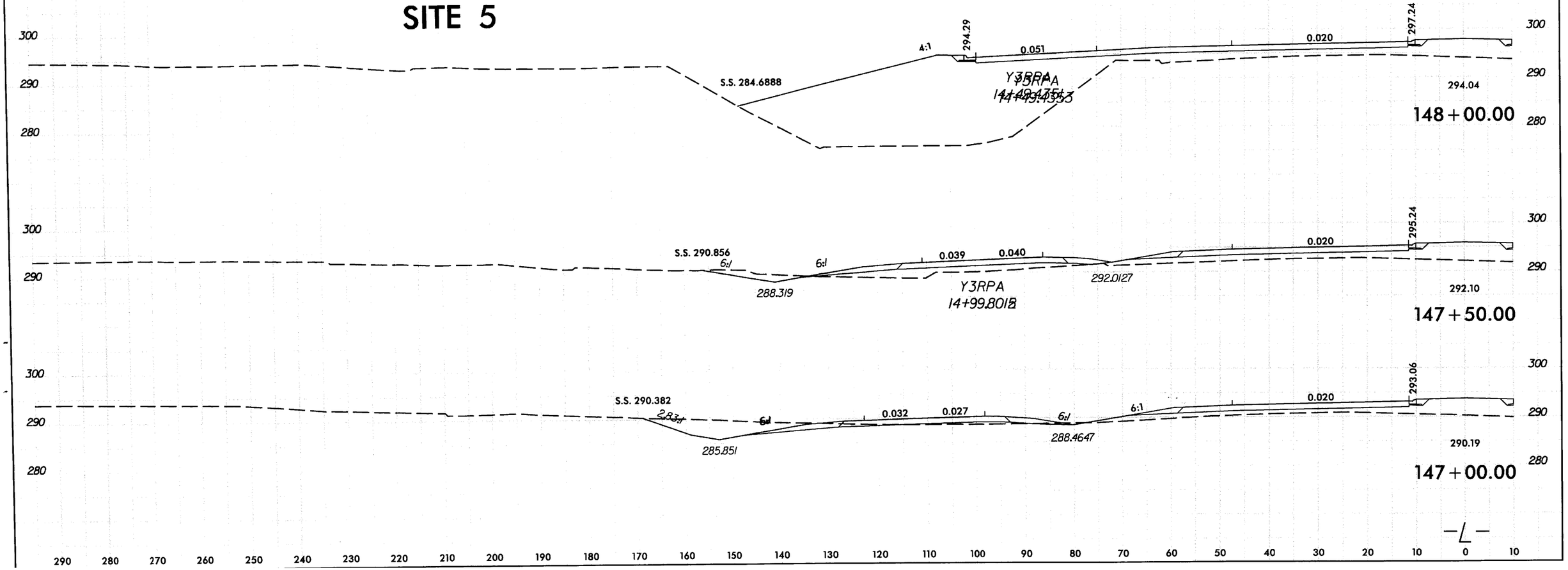
—L—

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

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	58

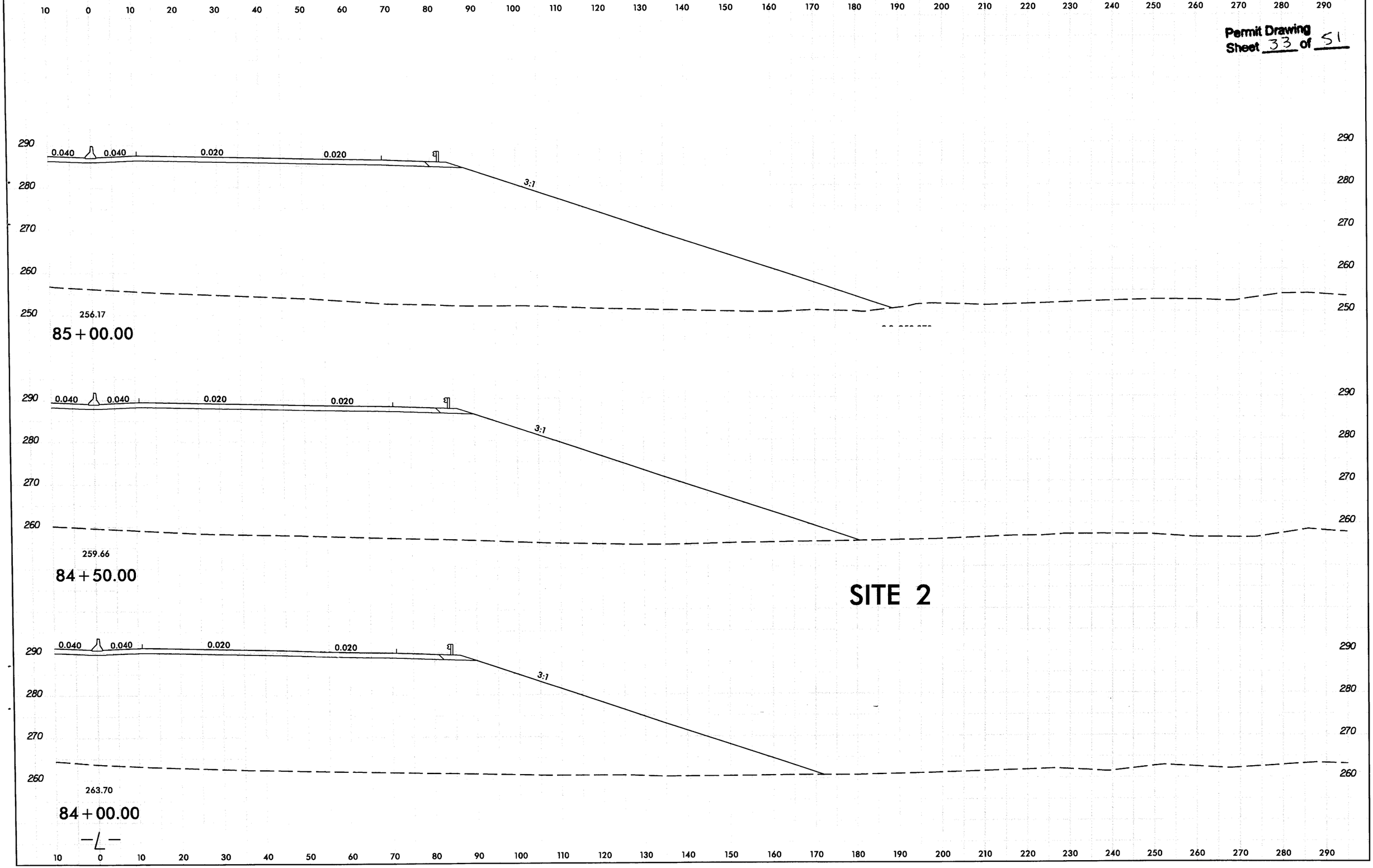
Permit Drawing
Sheet 32 of 51

SITE 5



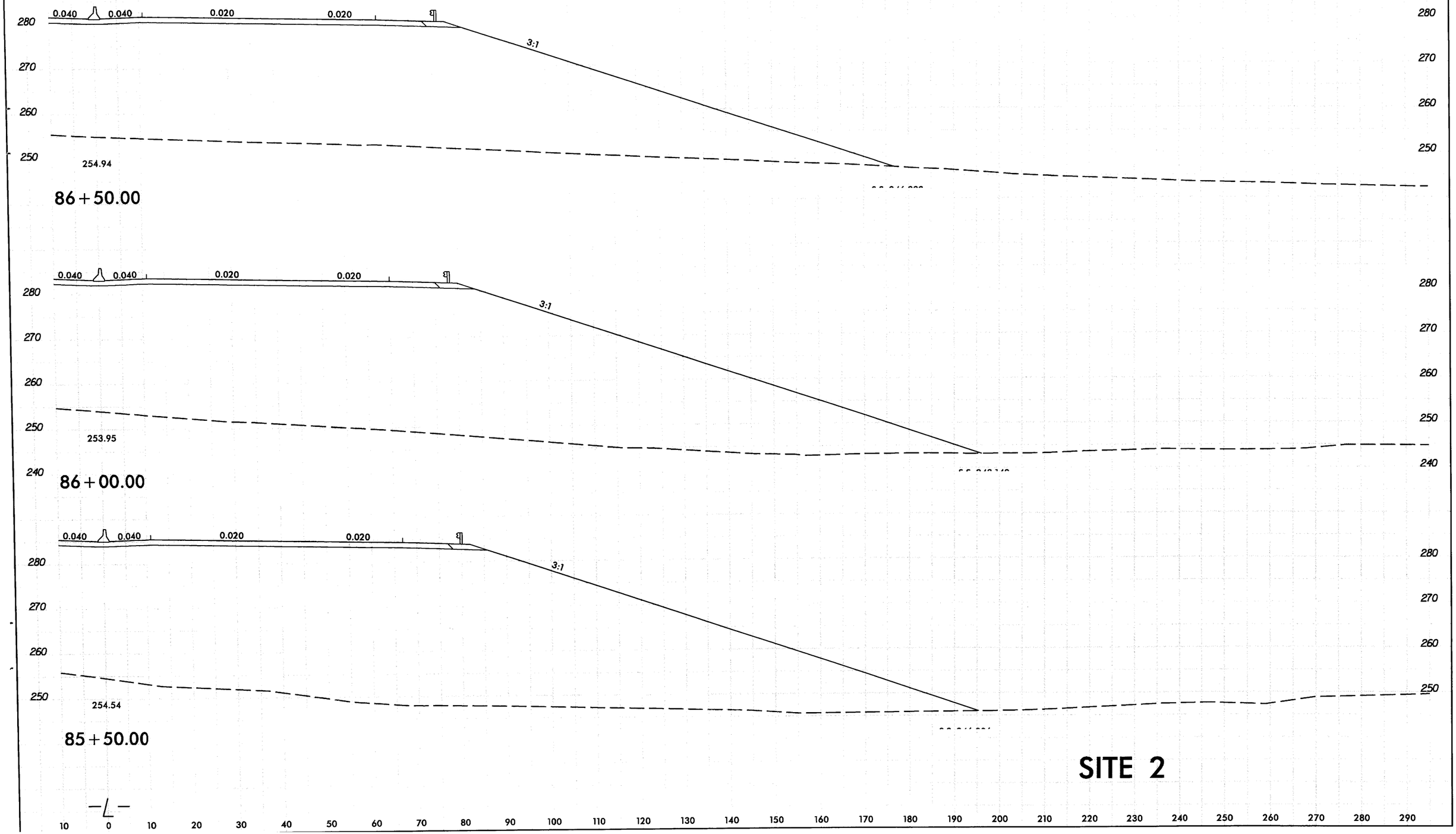
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	71

Permit Drawing
Sheet 33 of 51



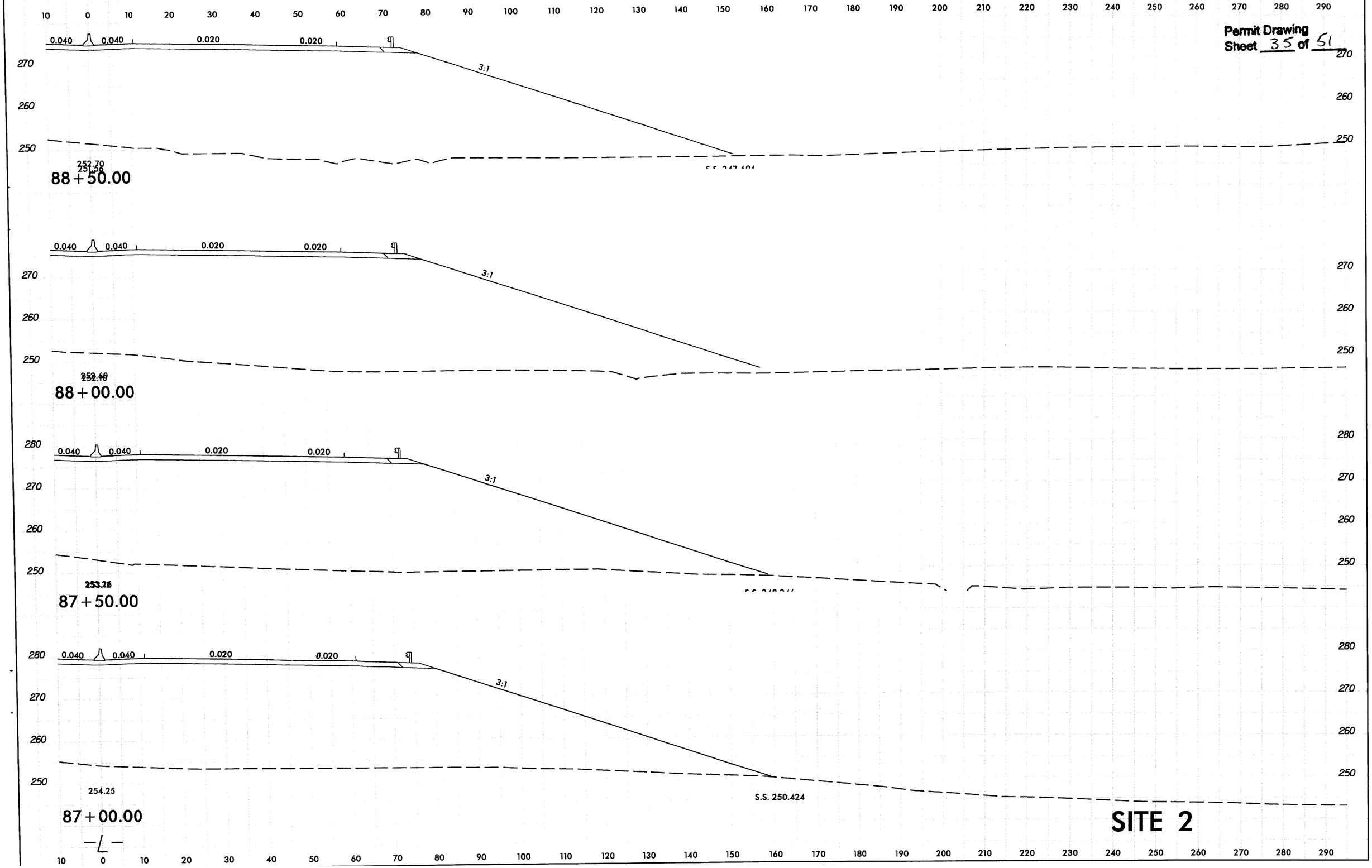
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	72

Permit Drawing
Sheet 34 of 51



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	73

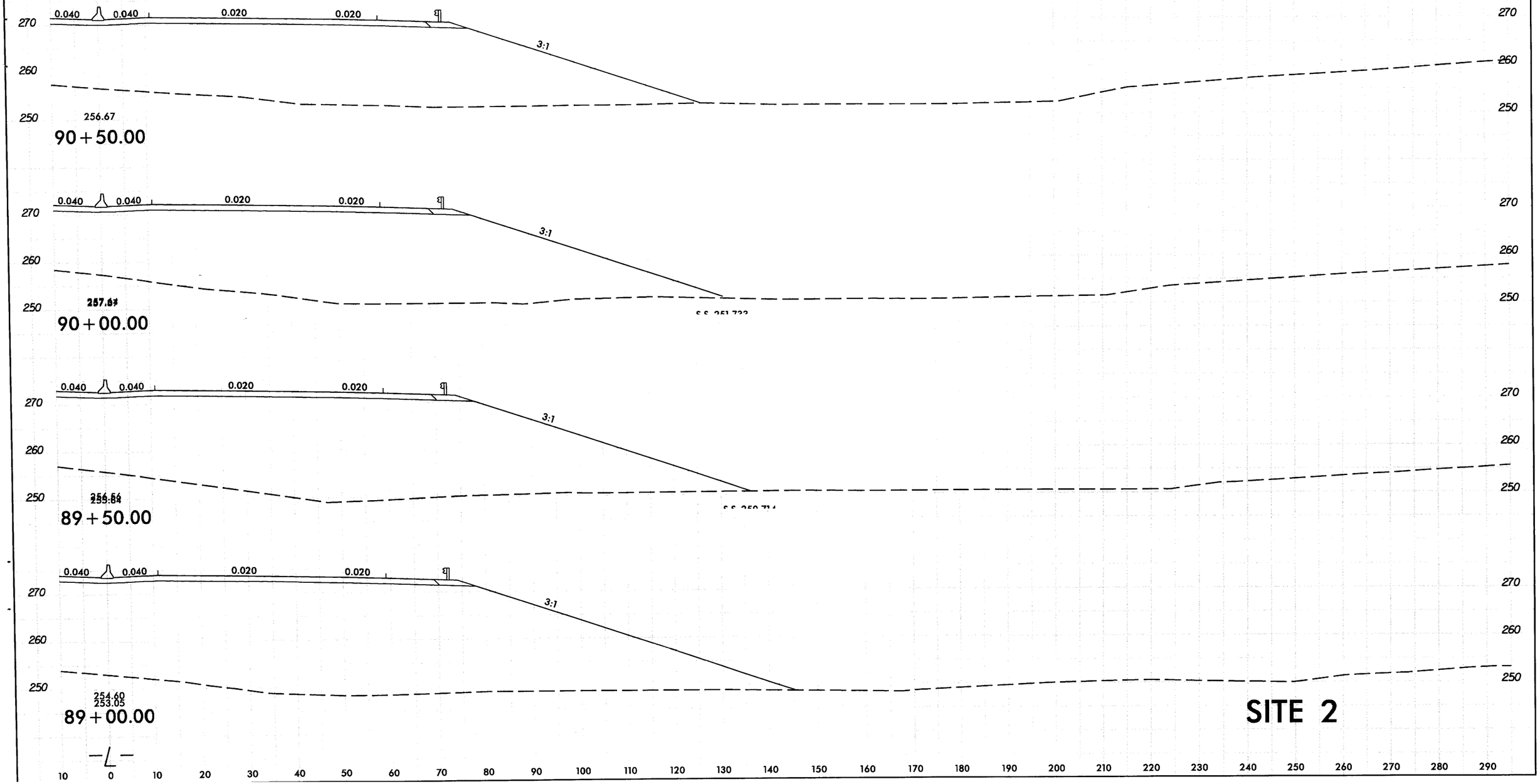
Permit Drawing
Sheet 35 of 51



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	74

Permit Drawing
Sheet 36 of 51

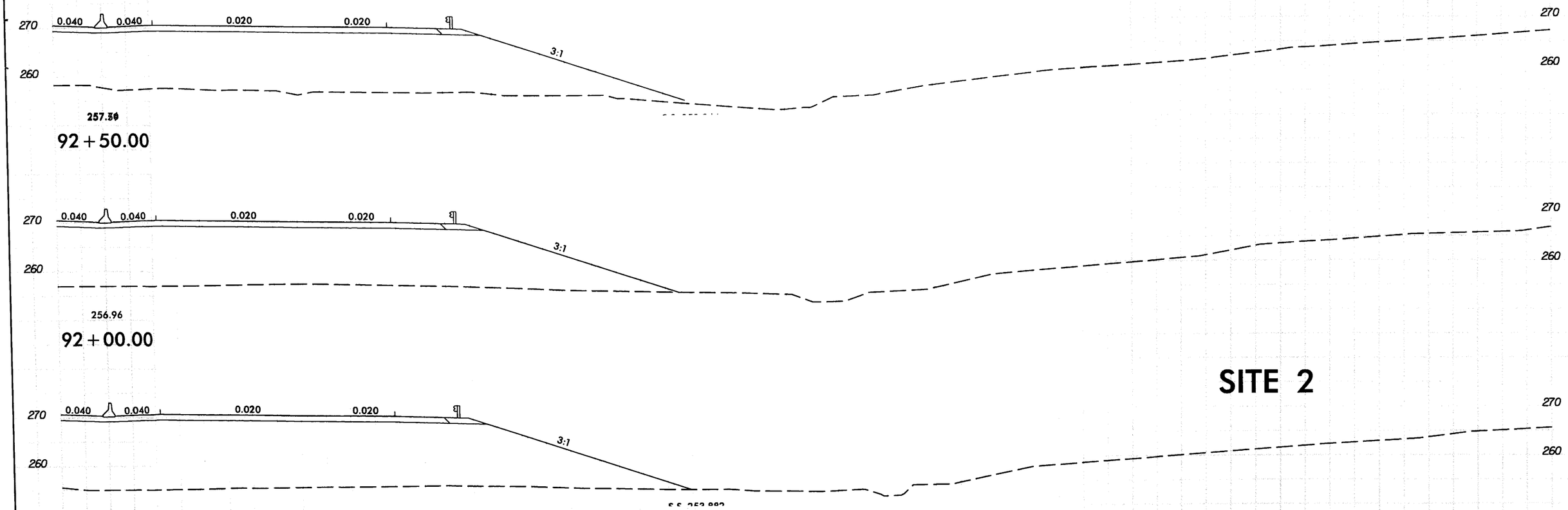
10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	75

Permit Drawing
Sheet 37 of 51

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290



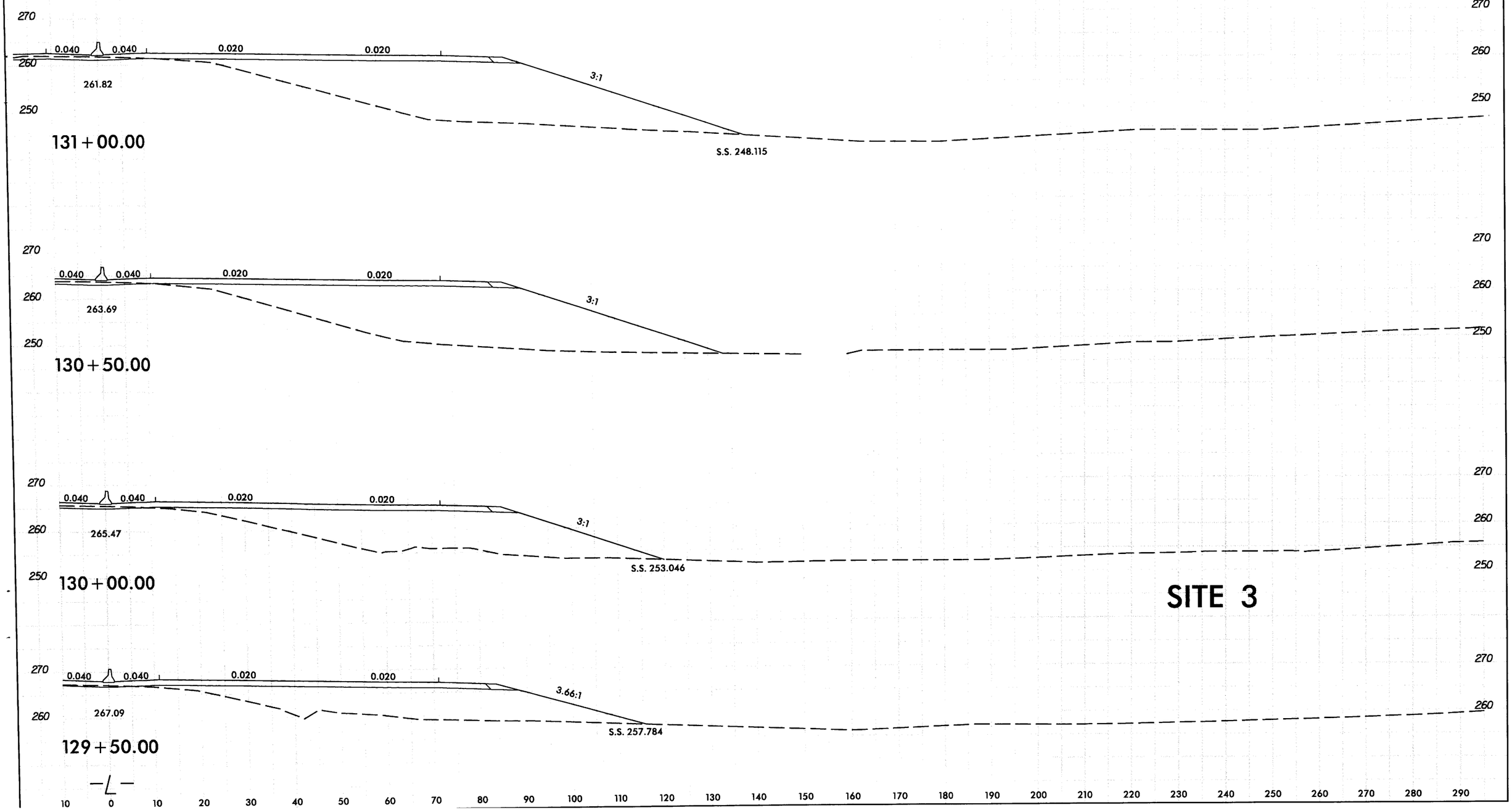
SITE 2

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	91

Permit Drawing
Sheet 38 of 51

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290



SITE 3

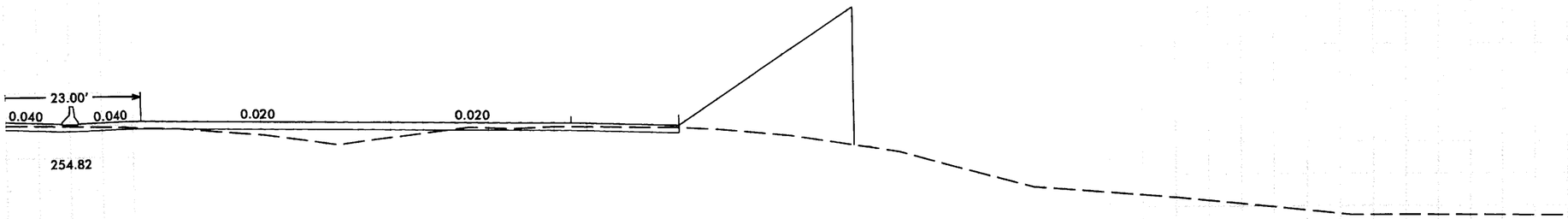
10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	92

Permit Drawing
Sheet 39 of 51

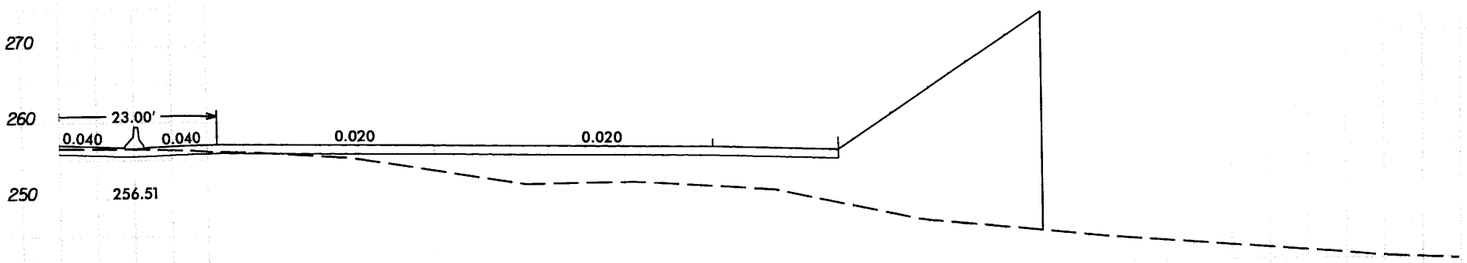
10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

270 260 250 240



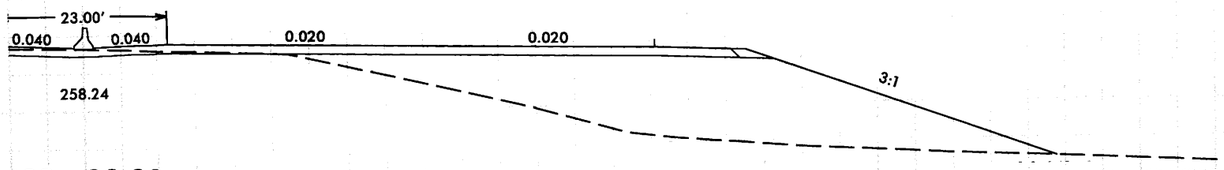
133 + 00.00

270 260 250 240



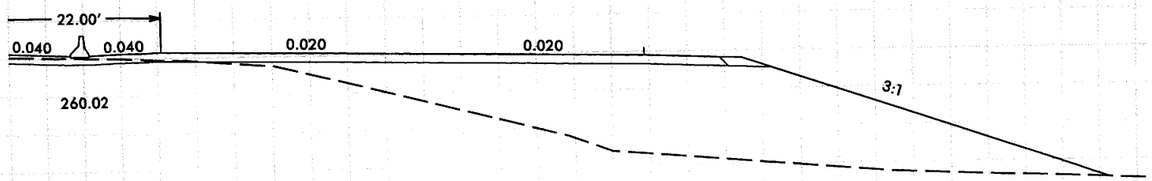
132 + 50.00

270 260 250 240



132 + 00.00

270 260 250 240



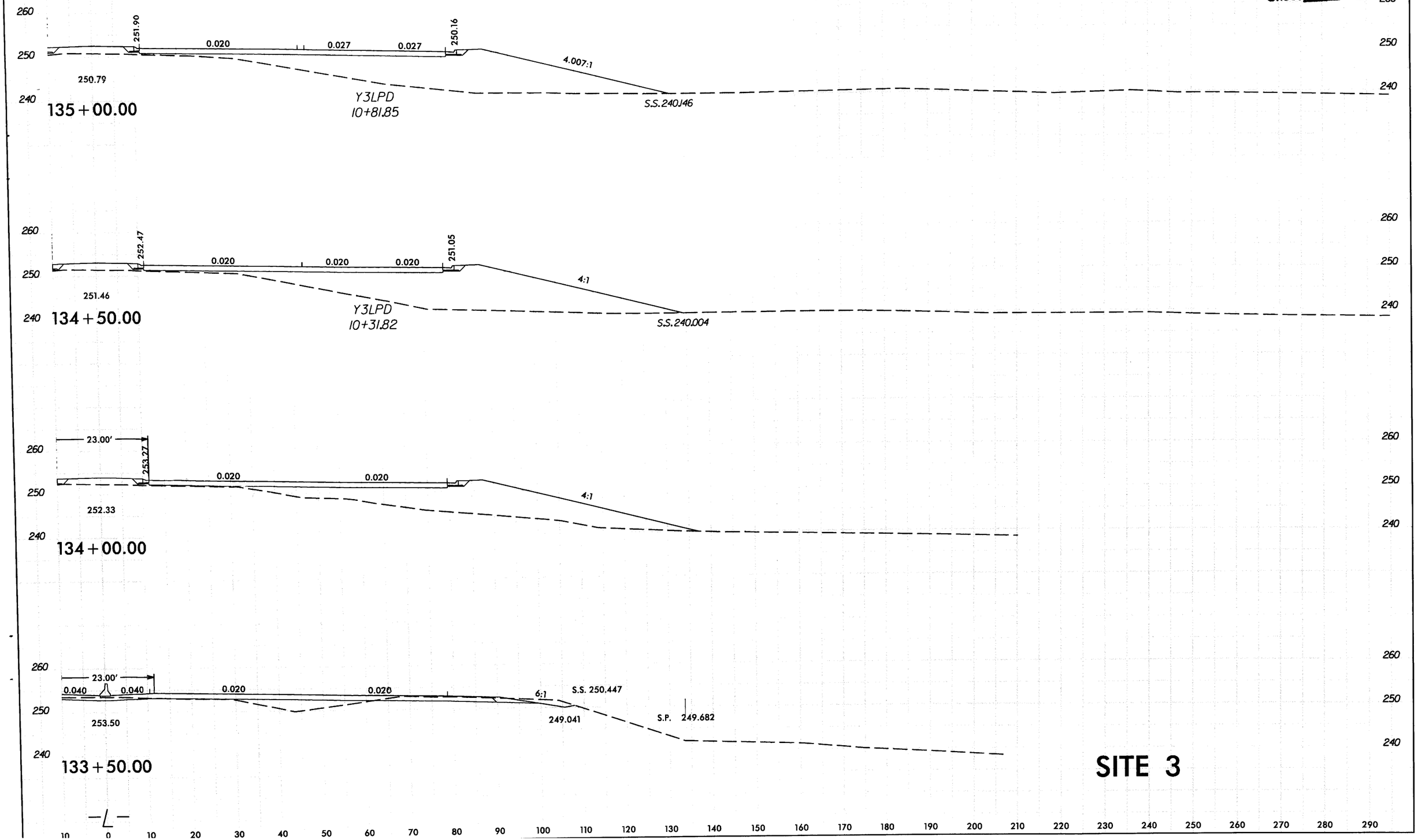
131 + 50.00

SITE 3

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	93

Permit Drawing
Sheet 40 of 51



0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	94

Permit Drawing
Sheet 41 of 51

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

260
250

252.57
0.020
6:1
251.05

137+50.00

260
250

251.97
0.020
5.66:1
7.72:1
0.064
0.060
246.99
5.776:1
250.42
247.014
Y3LPD
S.S. 244.398

137+00.00

250
240

251.60
0.020
0.070
0.074
247.38
4.599:1
250.11
Y3LPD
12+37.20
S.S. 242.844

136+50.00

250
240

251.46
0.020
0.057
0.060
248.22
4.189:1
250.09
11+83.31
S.S. 241.989

136+00.00

260
250
240

251.56
0.020
0.043
0.045
249.07
4.048:1
250.34
Y3LPD
11+32.1106
S.S. 241.040

135+50.00

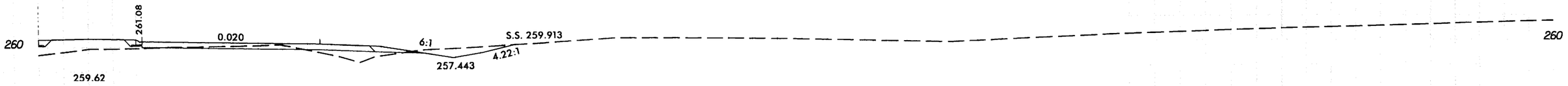
SITE 3

10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

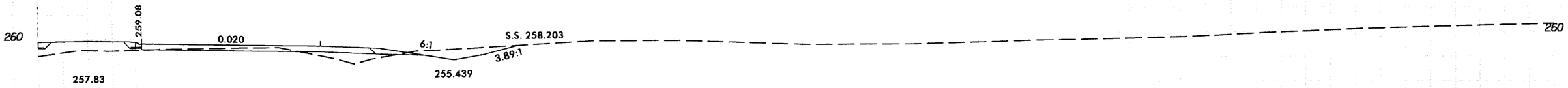
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	95

Permit Drawing
Sheet 42 of 51

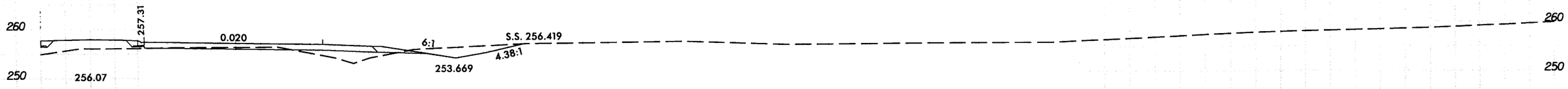
10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290



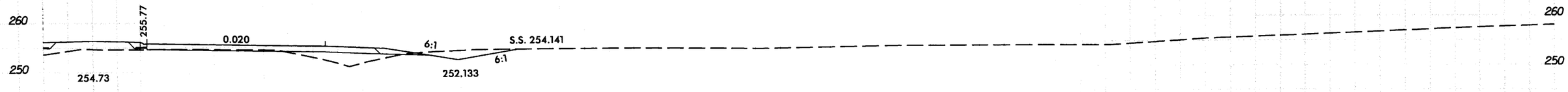
140+50.00



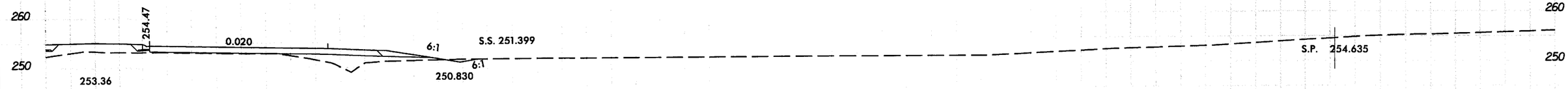
140+00.00



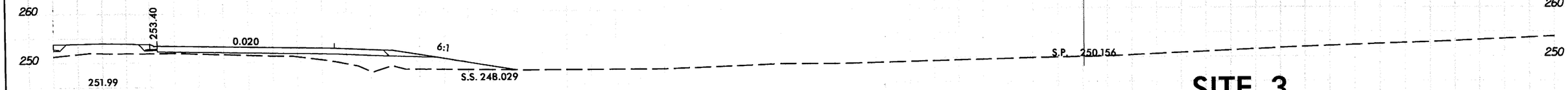
139+50.00



139+00.00



138+50.00



138+00.00

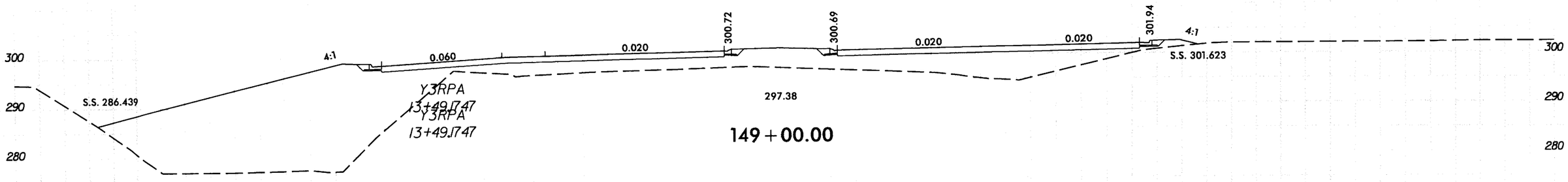
SITE 3

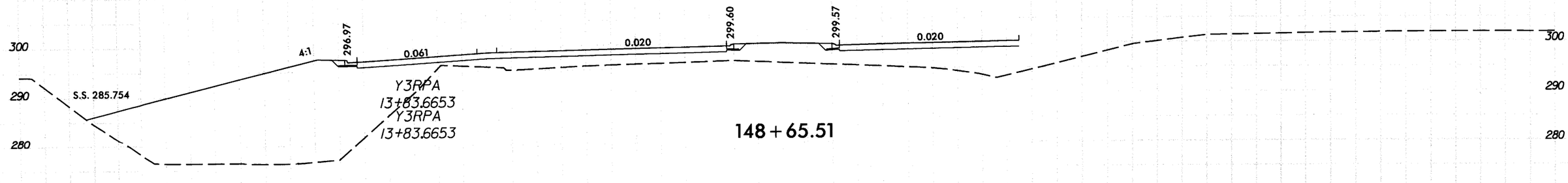
10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	99

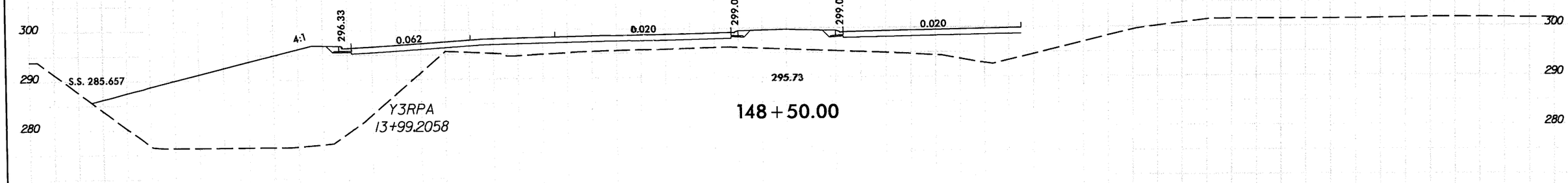
Permit Drawing
Sheet 43 of 51

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





SITE 5

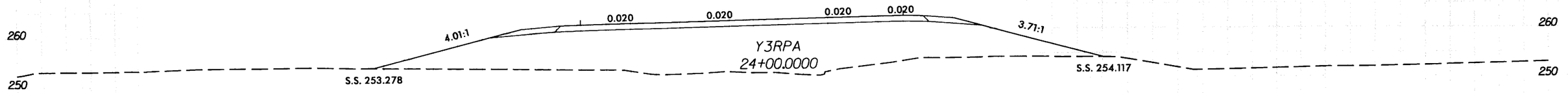


150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

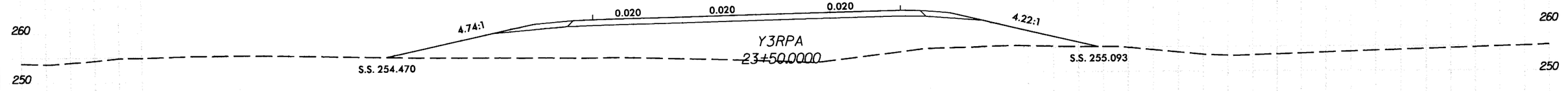
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	140

Permit Drawing
Sheet 44 of 51

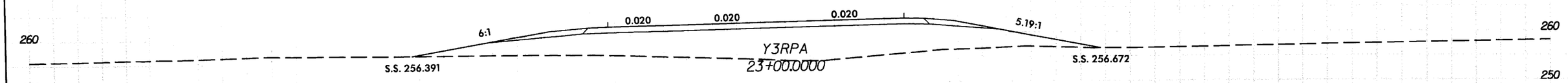
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150



24 + 00.00

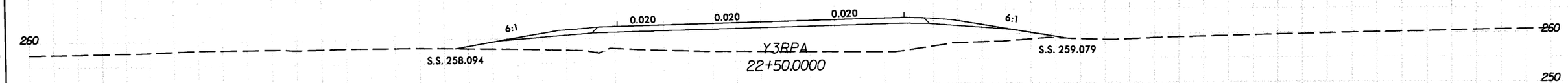


23 + 50.00

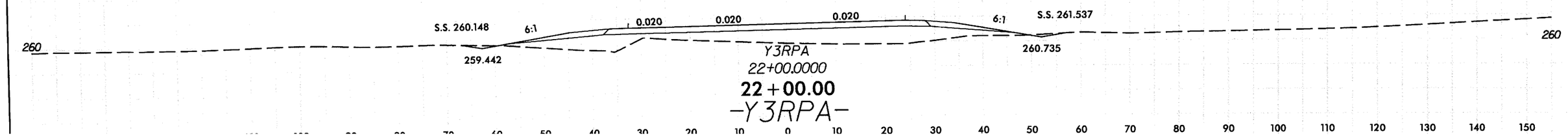


23 + 00.00

SITE 4



22 + 50.00



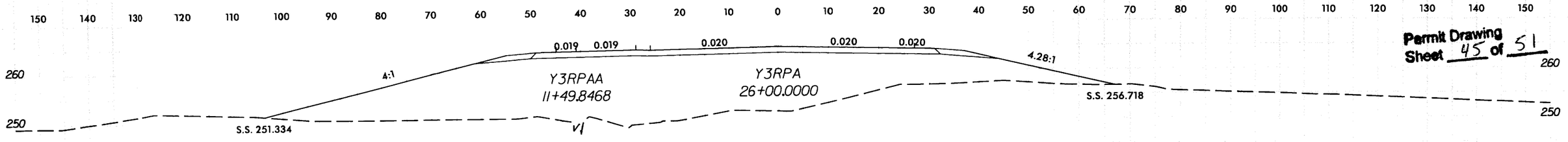
22 + 00.00

-Y3RPA-

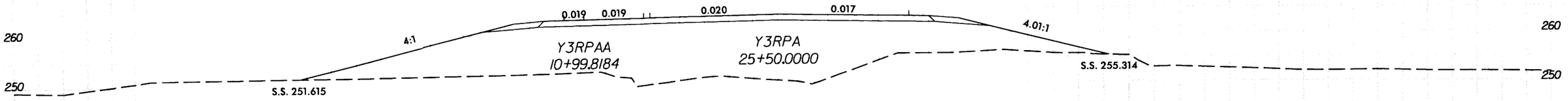
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	141

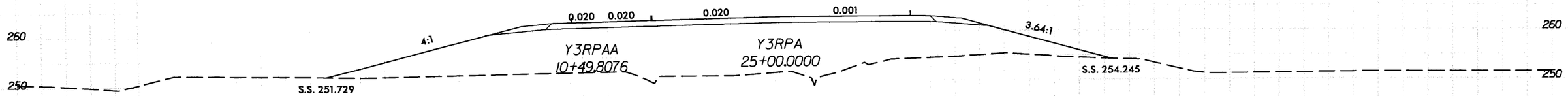
Permit Drawing
Sheet 45 of 51



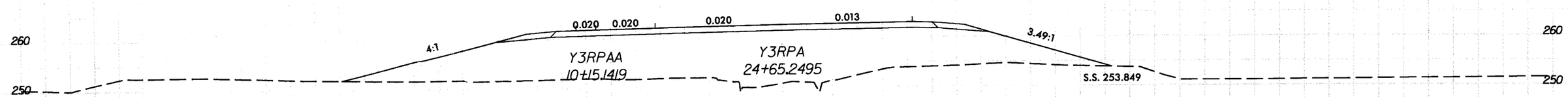
26 + 00.00



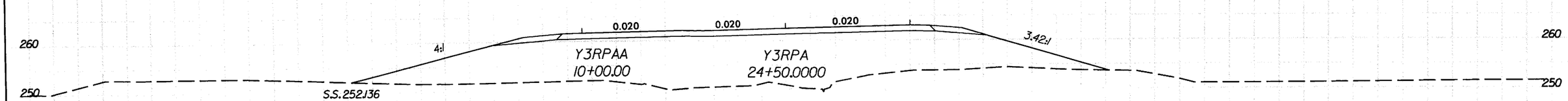
25 + 50.00



25 + 00.00



24 + 65.25



24 + 50.00

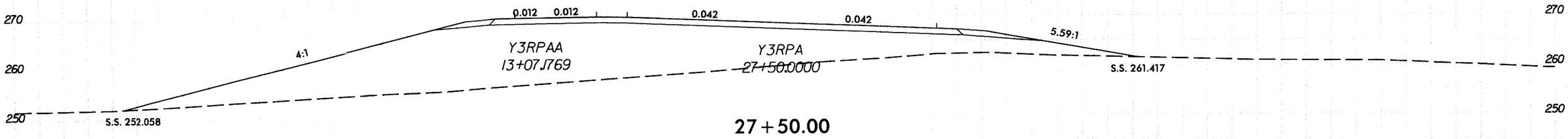
-Y3RPA-

SITE 4

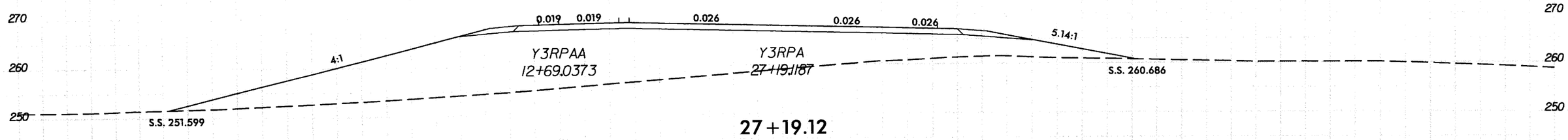
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	142

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

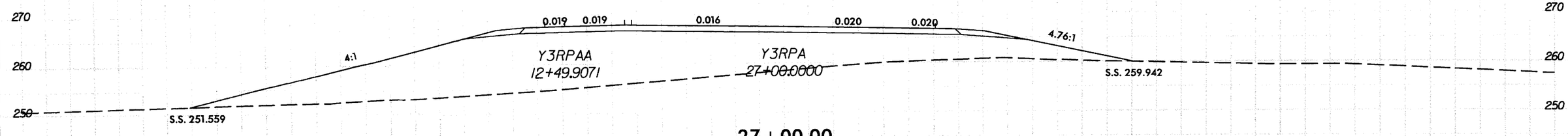
Permit Drawing
Sheet 46 of 51



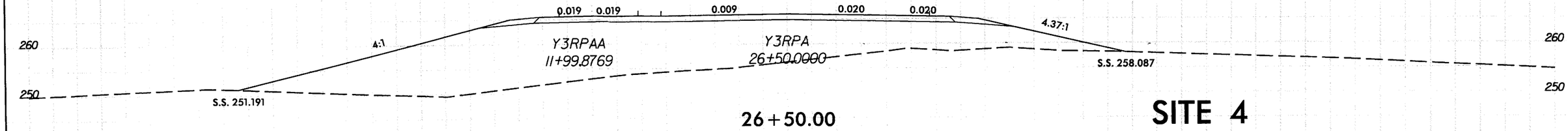
27 + 50.00



27 + 19.12



27 + 00.00



26 + 50.00

SITE 4

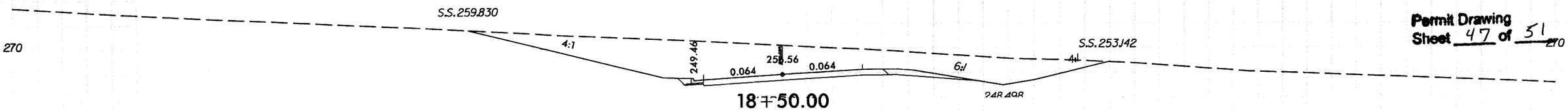
-Y3RPA-

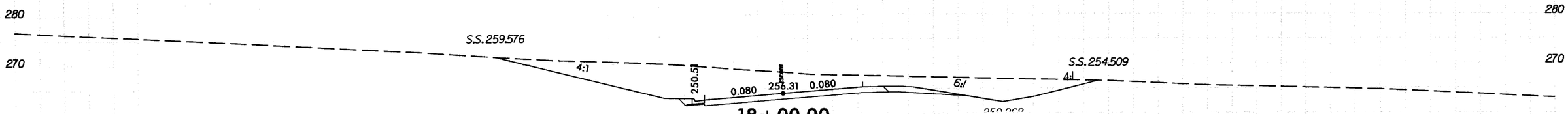
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

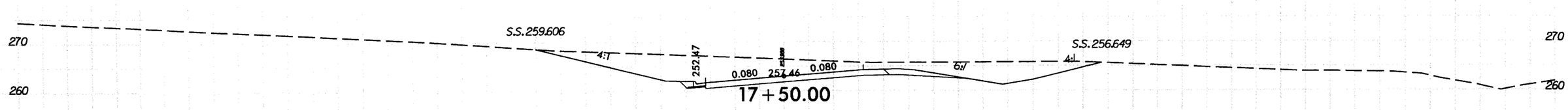
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	144

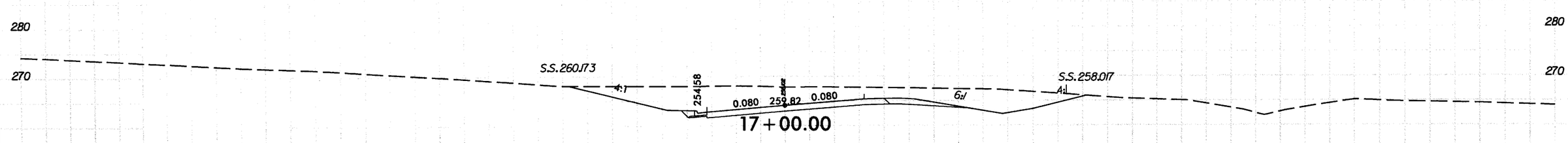
Permit Drawing
Sheet 47 of 51

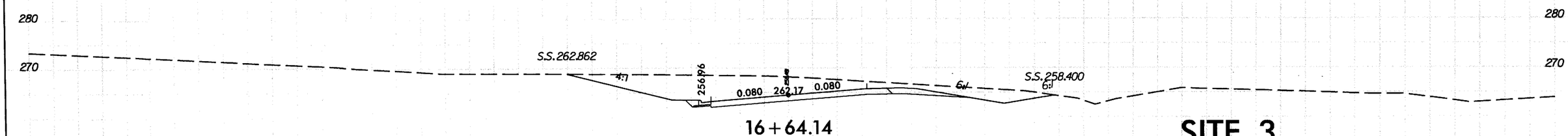
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150











SITE 3

-Y3RPD-

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

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 48 of 51

270
260

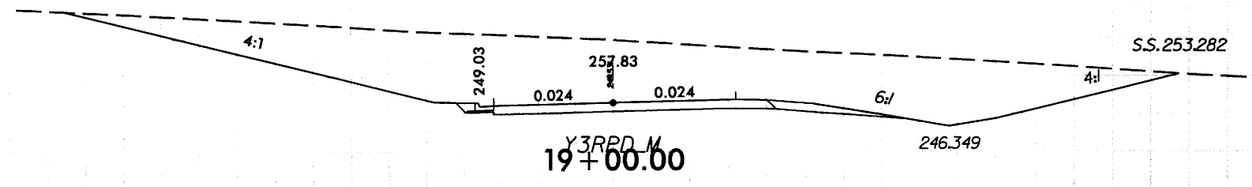
20+50.00

270
260

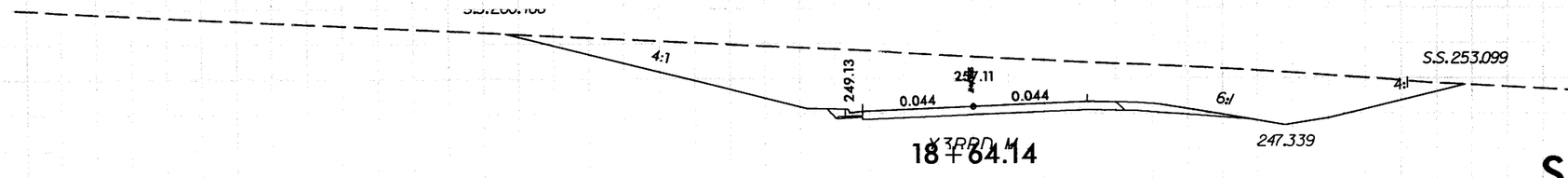
20+00.00

270
260

19+50.00



19+00.00



18+64.14

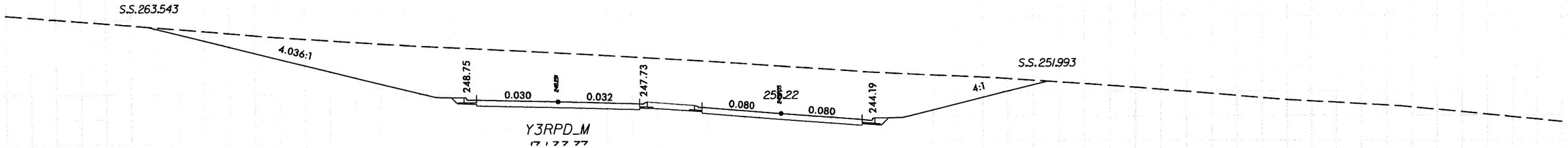
SITE 3

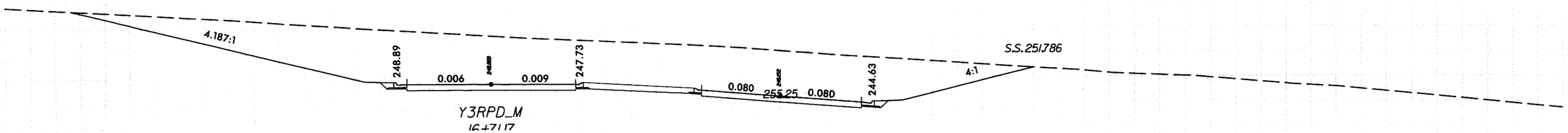
-Y3RPD-

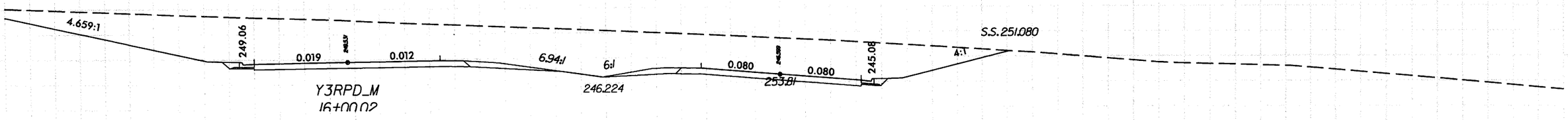
150 140 130 120 110 100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150

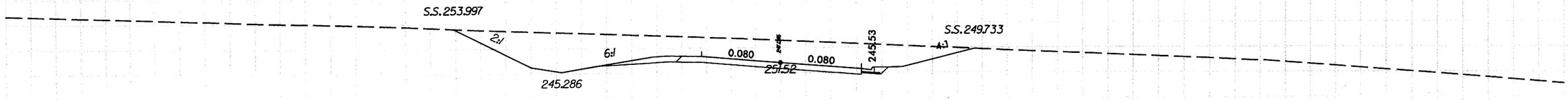
0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	159

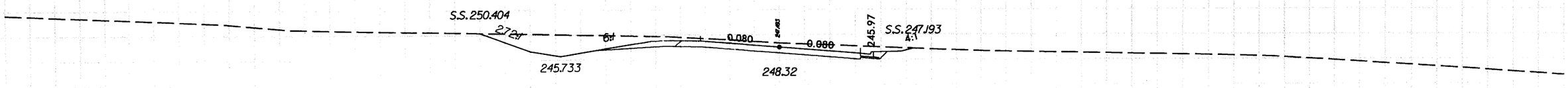
Permit Drawing
Sheet 49 of 51









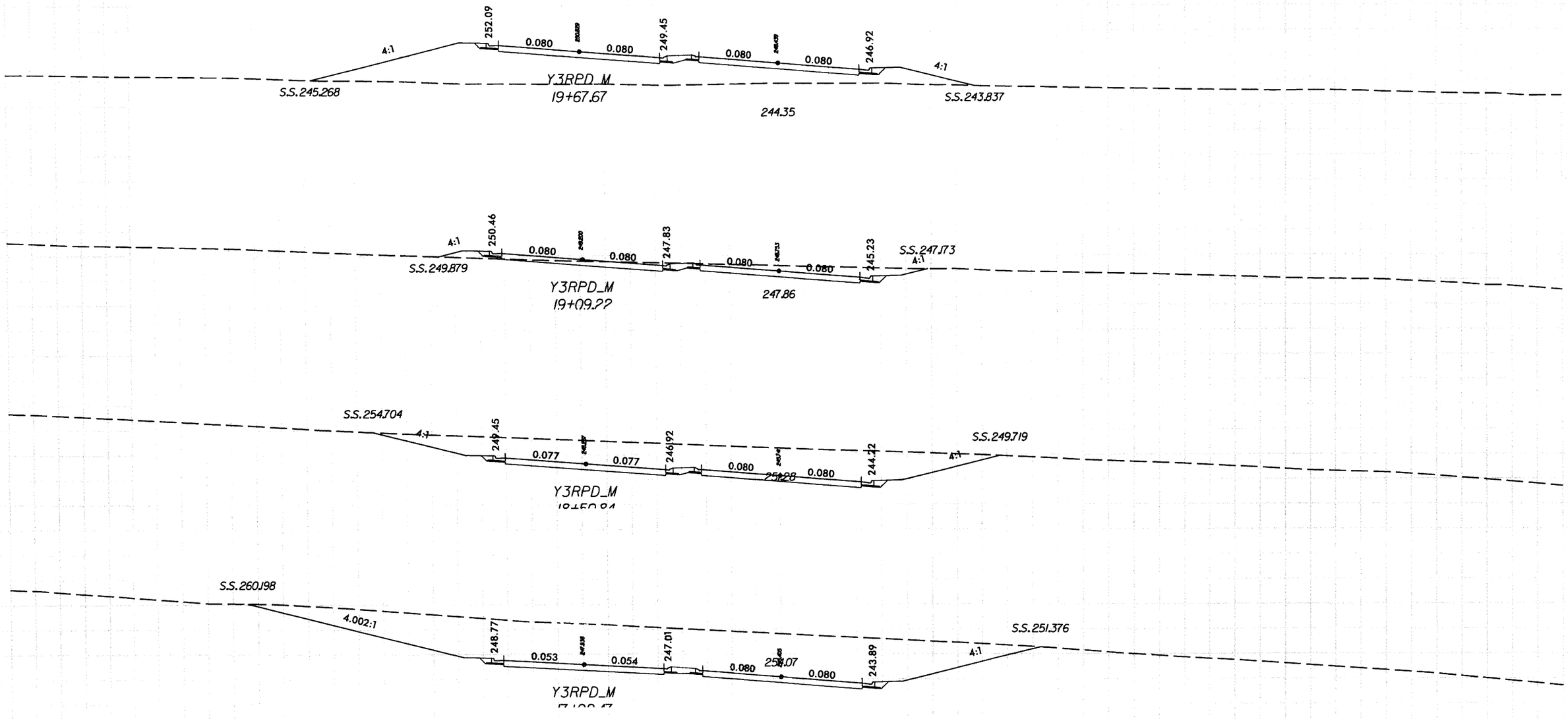


SITE 3

-Y3LPD-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	160

Permit Drawing
Sheet 50 of 51

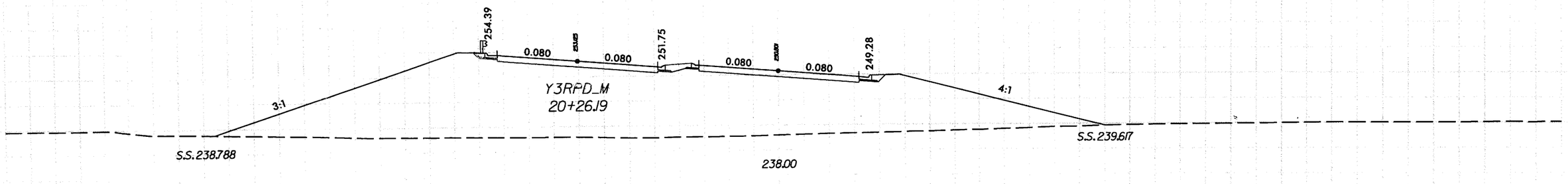


SITE 3

-Y3LPD-

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4444A	161

Permit Drawing
Sheet 51 of 51



SITE 3

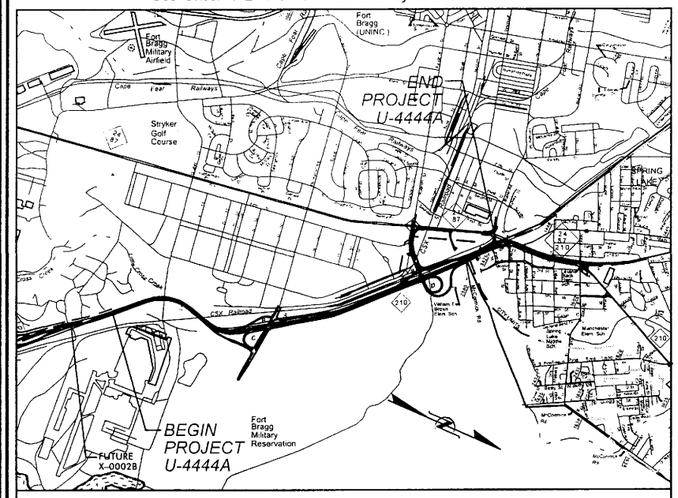
-Y3LPD-

09/08/09

TIP PROJECT: U-4444A

CONTRACT:

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



VICINITY MAP FOR STATE PROJECT U-4444A

25% PLANS

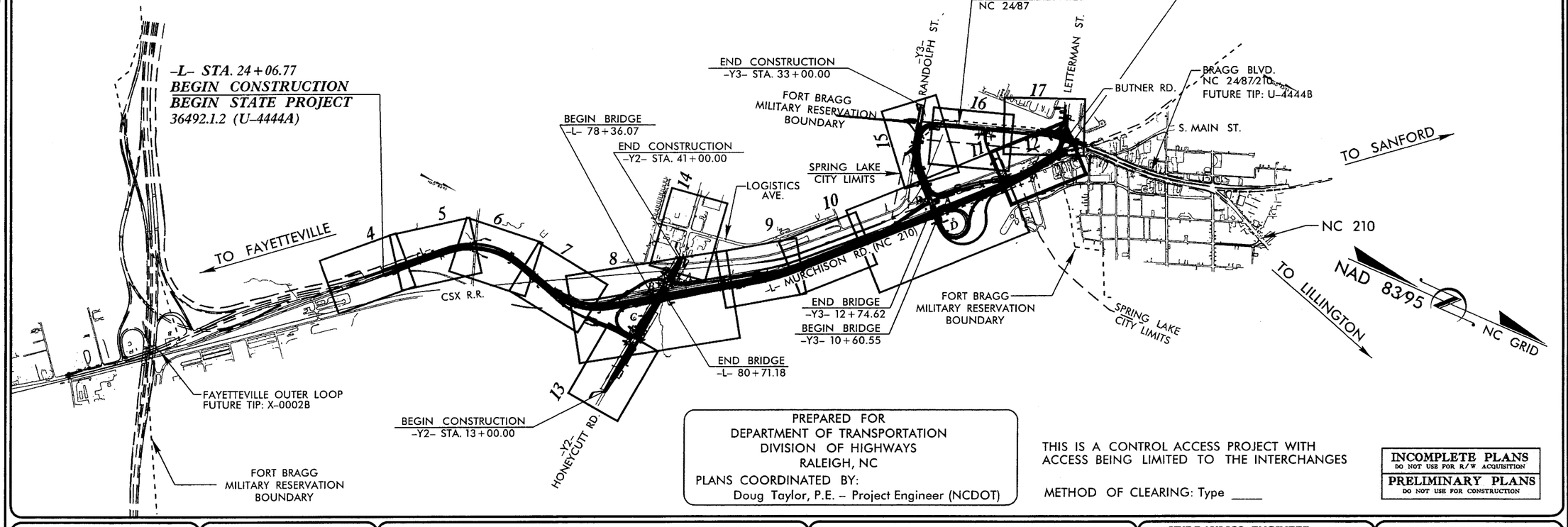
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CUMBERLAND COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4444A	1	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION	
36492.1.2	STP-210(11)	PE	

LOCATION: NC 210 (MURCHISON ROAD) FROM FAYETTEVILLE OUTER LOOP TO BUTNER RD.

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



PREPARED FOR
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, NC
PLANS COORDINATED BY:
Doug Taylor, P.E. – Project Engineer (NCDOT)

THIS IS A CONTROL ACCESS PROJECT WITH ACCESS BEING LIMITED TO THE INTERCHANGES

METHOD OF CLEARING: Type ____

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

GRAPHIC SCALES

50' 25' 0 50' 100'
PLANS
50' 25' 0 50' 100'
PROFILE (HORIZONTAL)
10' 5' 0 10' 20'
PROFILE (VERTICAL)

DESIGN DATA

ADT 2005 = 45,400
ADT 2035 = 77,000
DHV = 11 %
D = 55 %
T = 6 % *
V = 60 MPH

* TTST 2% DUAL 4%
FUNC. CLASS. = URBAN FREEWAY

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4444A = 2.530 Miles
LENGTH STRUCTURES TIP PROJECT U-4444A = 0.044 Miles
TOTAL LENGTH STATE TIP PROJECT U-4444A = 2.574 Miles

Prepared In the Office of:
LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: March 20, 2009

LETTING DATE: September 15, 2009

BRIAN K. EASON, PE
PROJECT ENGINEER

JEFFREY R. HEXT
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 P.E.

03-DEC-2008 15:43
R:\ROADWAY\Proj\U-4444A\U-4444A_RDY_TSH.dgn
$$$$USERNAME$$$$

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	04
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

NAD 83/95

REVISIONS

8/17/05

FORT BRAGG MILITARY RESERVATION

-L- 15+00

-L- 20+00

-L- 25+00

-L-
PI Sta 16+53.91
Δ = 9° 01' 27.6" (LT)
D = 0° 41' 54.8"
L = 1,291.86'
T = 647.27'
R = 8,202.08'
e = 2.5%

BUILT UNDER TIP PROJECT X-0002B

-L- PT Sta. 22+98.50

-L- STA. 24+06.77 BEGIN STATE PROJECT U-4444A
BEGIN CONSTRUCTION

700' MEDIAN TAPER

+07.18 (EOP OFF 8')

N 43° 43' 36.9" W

BEGIN MEDIAN BARRIER
+95.69 -L-

MATCH TO SHEET 5 -L- STA. 29+00

INV=237.28'

INV=230.54'

MC 81 WILKINSON RD 36' BST

MC 81 WILKINSON RD 28' BST

CANOPY

FORT BRAGG MILITARY RESERVATION

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCGS FOR MONUMENT ""ACACIA""
WITH NAD 1983/95 STATE PLANE GRID COORDINATES OF
NORTHING: 466066.2792(ft) EASTING: 1984258.8792(ft)
THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.999874730
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM ""ACACIA"" TO -L- STATION 10+06.64 IS N 42° 23' 05.53" E AT 48,030.56'
ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES
VERTICAL DATUM USED IS NAVD 88

BL-152 (U2519X2-52)
POT 5+00.00 =
-L-STA. 28+60.50 (68.27' RT)

See Sheet 18 for -L- Profile

03-DEC-2008 15:54
R:\Roadway\Projects\U-4444A\U-4444A_RDY_PSH04.dgn
$$$$USERNAME$$$$

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	05
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

NAD 83/95

FORT BRAGG MILITARY RESERVATION

-L- 30+00

-L- 35+00

-L- 48+00

-L-
Pls Sta 36+58.28
Θs = 9° 25' 06.5"
Ls = 480.00'
LT = 320.45'
ST = 160.41'

Pl Sta 43+66.28
Δ = 41° 10' 40.8" (RT)
D = 10° 55' 27.7"
L = 1,049.29'
T = 548.46'
R = 525.00'
e = 8%

Pls Sta 50+27.53
Θs = 9° 25' 06.5"
Ls = 480.00'
LT = 320.45'
ST = 160.41'

-L- STA. 37+22.62, 48.18' (RT)

-L_SB- ST Sta. 34+21.66

-L_SB- SC Sta. 38+51.66

4 -L- STA. 29+00

MATCH TO SHEET 4

SHEET 6 -L- STA. 41+00

MATCH TO SHEET

700' MEDIAN TAPER

+06.77

5375' INC.

22' MED.

MEDIAN BARRIER

N 43° 43' 36.9" W

N 47° 05' 14.7" W

N 31° 03' 28.3" W

MC 87 MURCHISON RD 24' BST

72' CHL 35BW

INV=225.82'

INV=221.53'

INV=231.79'

INV=231.16'

INV=223.99'

TOP=240.54'
INV=234.18'

TOP=236.25'

-L_NB- TS Sta. 33+88.82

-L_NB- SC Sta. 38+18.82

-L- SC Sta. 38+17.82

-L- TS Sta. 33+37.82 =
-L_NB- POT Sta. 33+37.82
-L_SB- POT Sta. 33+37.82

18.5' BST

15' BST

18' BST

FORT BRAGG MILITARY RESERVATION

-L_SB-

Pls Sta 37+08.70
Θs = 8° 59' 30.0"
Ls = 430.00'
LT = 287.04'
ST = 143.67'

Pl Sta 43+77.99
Δ = 42° 01' 53.9" (RT)
D = 4° 10' 55.8"
L = 1,005.02'
T = 526.33'
R = 1,370.00'
e = 8%

Pls Sta 50+00.35
Θs = 8° 59' 30.0"
Ls = 430.00'
LT = 287.04'
ST = 143.67'

-L_NB-

Pls Sta 36+75.84
Θs = 8° 46' 03.7"
Ls = 430.00'
LT = 287.02'
ST = 143.65'

Pl Sta 43+64.91
Δ = 42° 28' 46.3" (RT)
D = 4° 04' 40.8"
L = 1,041.68'
T = 546.09'
R = 1,405.00'
e = 8%

Pls Sta 50+04.15
Θs = 8° 46' 03.7"
Ls = 430.00'
LT = 287.02'
ST = 143.65'

See Sheet 18 for -L- Profile

REVISIONS

8/17/99

03-DEC-2008 15:55
R:\Roadway\Proj\U-4444A\U-4444A_RDY_PSH05.dgn
$$$$USERNAME$$$$

LOCHNER

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	06
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

8/17/95

REVISIONS

NAD 83/95

BL-1
PINC 17+60.17 =
-L- STA 41+21.51 (1.90' LT)

BL-2
PINC 23+81.72 =
-L- STA. 47+45.59 (-8.37 LT)

FORT BRAGG MILITARY RESERVATION

BARRIER (MOVEABLE)
FOR ROAD CLOSURE

BARRIER (MOVEABLE)
FOR ROAD CLOSURE

MATCH TO SHEET 5 -L- STA. 41+00

MATCH TO SHEET 7 -L- STA. 54+00

-L- ST Sta. 53+47.11

-L_SB- CS Sta. 48+56.68

-L_NB- CS Sta. 48+60.50

-L- CS Sta. 48+67.11

-L_SB- ST Sta. 52+86.68

-L_NB- ST Sta. 52+90.50

N 10° 43' 40.9" W

N 13° 03' 56.8" E

BM #80
BL STA 17+18
186' RIGHT
ELEV.240.95

COULDN'T LOCATE END OF PIPE

SEABOARD COASTLINE RR

GRUBER RD 30' BST

GUARD HOUSE GATE

MURCHISON RD 28' BST

-L-

PIs Sta 36+58.28	PI Sta 43+66.28	PIs Sta 50+27.53
θs = 9° 25' 06.5"	Δ = 41° 10' 40.8" (RT)	θs = 9° 25' 06.5"
Ls = 480.00'	D = 3° 55' 27.7"	Ls = 480.00'
LT = 320.45'	L = 1,049.29'	LT = 320.45'
ST = 160.41'	T = 548.46'	ST = 160.41'
	R = 1,460.00'	
	e = 8%	

-L_NB-

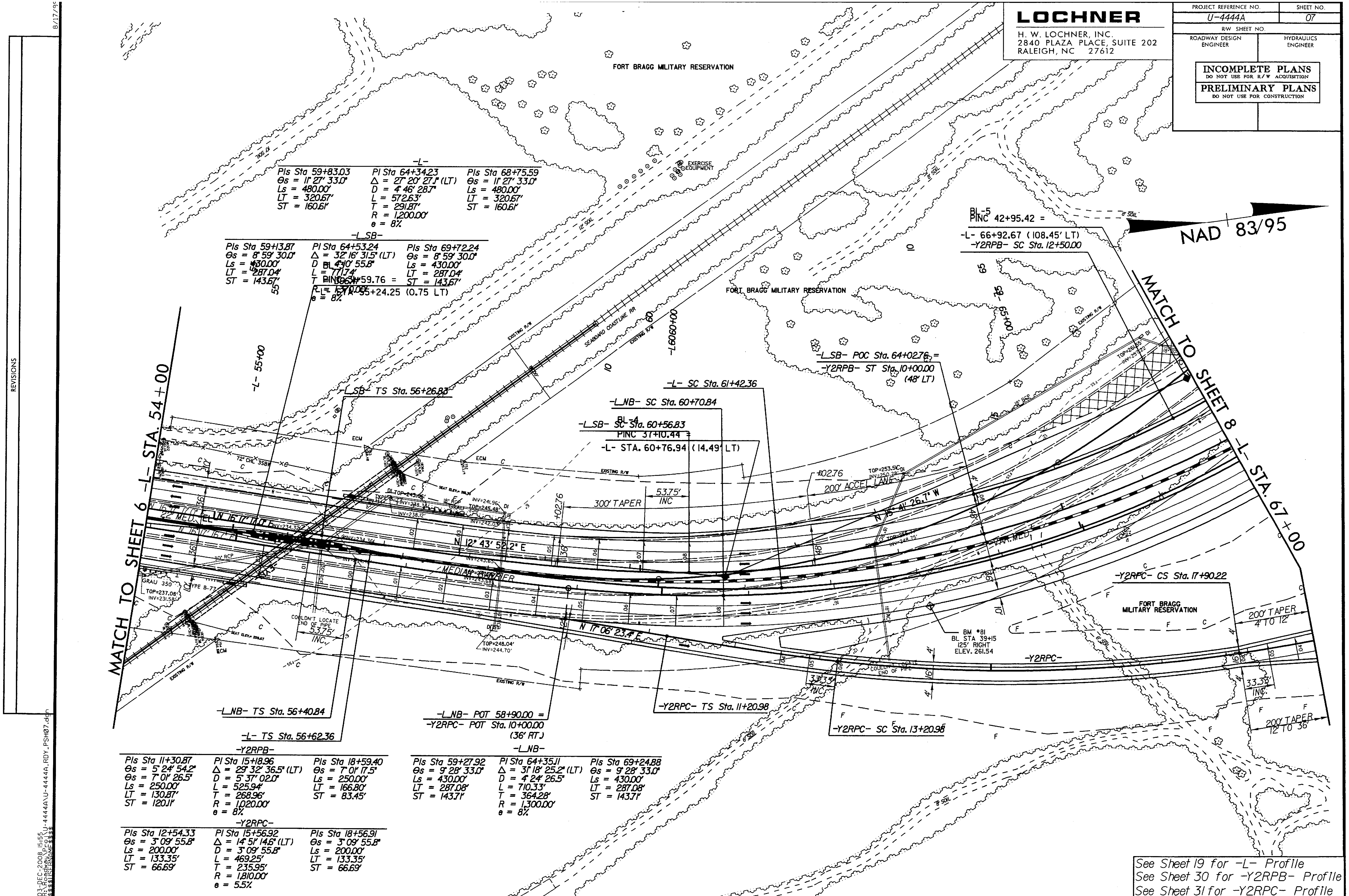
PIs Sta 36+75.84	PI Sta 43+64.91	PIs Sta 50+04.15
θs = 8° 46' 03.7"	Δ = 42° 28' 46.3" (RT)	θs = 8° 46' 03.7"
Ls = 430.00'	D = 4° 04' 40.8"	Ls = 430.00'
LT = 287.02'	L = 1,041.68'	LT = 287.02'
ST = 143.65'	T = 546.09'	ST = 143.65'
	R = 1,405.00'	
	e = 8%	

-L_SB-

PIs Sta 37+08.70	PI Sta 43+77.99	PIs Sta 50+00.35
θs = 8° 59' 30.0"	Δ = 42° 01' 53.9" (RT)	θs = 8° 59' 30.0"
Ls = 430.00'	D = 4° 10' 55.8"	Ls = 430.00'
LT = 287.04'	L = 1,005.02'	LT = 287.04'
ST = 143.67'	T = 526.33'	ST = 143.67'
	R = 1,370.00'	
	e = 8%	

See Sheet 19 for -L- Profile

03-DEC-2008 15:55
R:\Roadway\Proj\U-4444\U-4444A_RDY_PSH06.dgn
$$$$USERNAME$$$$

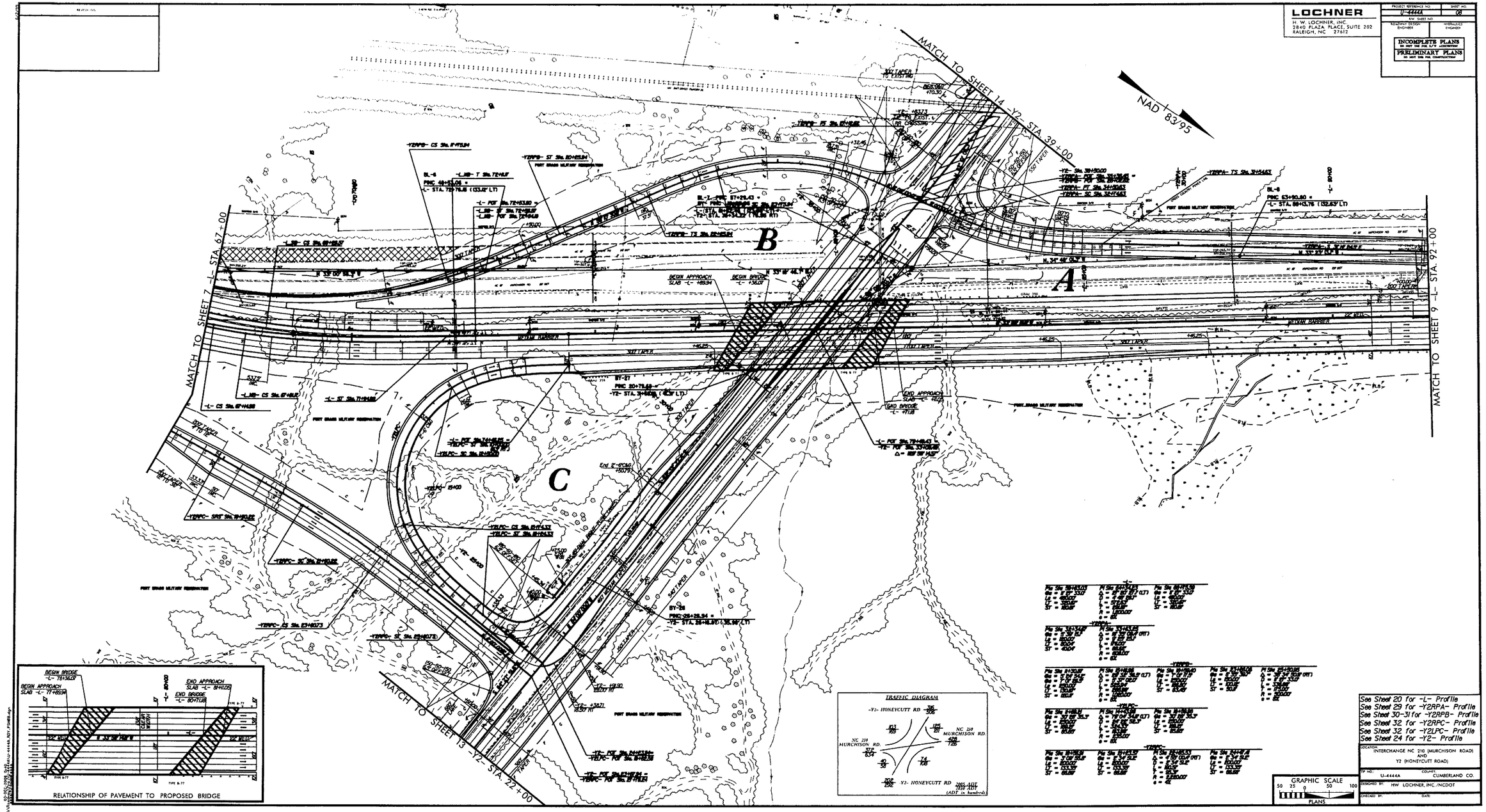

LOCHNER
H. W. LOCHNER, INC.
2840 PLAZA PLACE, SUITE 202
RALEIGH, NC 27612
PROJECT REFERENCE NO. U-4444A
SHEET NO. 07
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
REVISIONS
FORT BRAGG MILITARY RESERVATION
EXERCISE EQUIPMENT
SEABOARD COASTLINE RR
NAD 83/95
MATCH TO SHEET 6 -L- STA. 54+00
MATCH TO SHEET 8 -L- STA. 67+00
-L-
PIs Sta 59+83.03
Θs = 11° 27' 33.0"
Ls = 480.00'
LT = 320.67'
ST = 160.61'
PI Sta 64+34.23
Δ = 27° 20' 27.1" (LT)
D = 4° 46' 28.7"
L = 572.63'
T = 291.87'
R = 1,200.00'
e = 8%
PIs Sta 68+75.59
Θs = 11° 27' 33.0"
Ls = 480.00'
LT = 320.67'
ST = 160.61'
-L_SB-
PIs Sta 59+13.87
Θs = 8° 59' 30.0"
Ls = 430.00'
LT = 287.04'
ST = 143.67'
PI Sta 64+53.24
Δ = 32° 16' 31.5" (LT)
D = 4° 10' 55.8"
L = 771.74'
e = 8%
PIs Sta 69+72.24
Θs = 8° 59' 30.0"
Ls = 430.00'
LT = 287.04'
ST = 143.67'
BL-4 PINC 36+59.76 =
-L- STA. 55+24.25 (0.75 LT)
BL-5
PINC 42+95.42 =
-L- 66+92.67 (108.45' LT)
-Y2RPB- SC Sta. 12+50.00
-L_SB- POC Sta. 64+02.76 =
-Y2RPB- ST Sta. 10+00.00 (48' LT)
-L- SC Sta. 61+42.36
-L_NB- SC Sta. 60+70.84
-L_SB- SC Sta. 60+56.83
BL-4
PINC 37+10.44 =
-L- STA. 60+76.94 (14.49' LT)
-L_SB- TS Sta. 56+26.83
300' TAPER
53.75' INC
200' ACCEL LANE
N 12° 43' 52.2" E
N 17° 06' 23.4" E
MEDIAN BARRIER
VAR. MED.
EXISTING R/W
COULDN'T LOCATE END OF PIPE
53.75' INC.
BM #81
BL STA 39+15
125' RIGHT
ELEV. 261.54
-Y2RPC- CS Sta. 17+90.22
FORT BRAGG MILITARY RESERVATION
200' TAPER 4' TO 12'
-Y2RPC-
33.38' INC
200' TAPER 12' TO 36'
-Y2RPC- TS Sta. 11+20.98
-Y2RPC- SC Sta. 13+20.98
-L_NB- TS Sta. 56+40.84
-L- TS Sta. 56+62.36
-L_NB- POT 58+90.00 =
-Y2RPC- POT Sta. 10+00.00 (36' RT)
-Y2RPB-
PIs Sta 11+30.87
Θs = 5° 24' 54.2"
Θs = 7° 01' 26.5"
Ls = 250.00'
LT = 130.87'
ST = 120.11'
PI Sta 15+18.96
Δ = 29° 32' 36.5" (LT)
D = 5° 37' 02.0"
L = 525.94'
T = 268.96'
R = 1,020.00'
e = 8%
PIs Sta 18+59.40
Θs = 7° 01' 17.5"
Ls = 250.00'
LT = 166.80'
ST = 83.45'
-L_NB-
PIs Sta 59+27.92
Θs = 9° 28' 33.0"
Ls = 430.00'
LT = 287.08'
ST = 143.71'
PI Sta 64+35.11
Δ = 31° 18' 25.2" (LT)
D = 4° 24' 26.5"
L = 710.33'
T = 364.28'
R = 1,300.00'
e = 8%
PIs Sta 69+24.88
Θs = 9° 28' 33.0"
Ls = 430.00'
LT = 287.08'
ST = 143.71'
-Y2RPC-
PIs Sta 12+54.33
Θs = 3° 09' 55.8"
Ls = 200.00'
LT = 133.35'
ST = 66.69'
PI Sta 15+56.92
Δ = 14° 51' 14.6" (LT)
D = 3° 09' 55.8"
L = 469.25'
T = 235.95'
R = 1,810.00'
e = 5.5%
PIs Sta 18+56.91
Θs = 3° 09' 55.8"
Ls = 200.00'
LT = 133.35'
ST = 66.69'
See Sheet 19 for -L- Profile
See Sheet 30 for -Y2RPB- Profile
See Sheet 31 for -Y2RPC- Profile
03-DEC-2008 15:55

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	08
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



RELATIONSHIP OF PAVEMENT TO PROPOSED BRIDGE

TRAFFIC DIAGRAM

See Sheet 20 for -L- Profile
See Sheet 29 for -Y2RPA- Profile
See Sheet 30-31 for -Y2RPB- Profile
See Sheet 32 for -Y2LPC- Profile
See Sheet 32 for -Y2LPC- Profile
See Sheet 24 for -Y2- Profile

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION: INTERCHANGE NC 210 (MURCHISON ROAD) AND Y2 (HONEYCUTT ROAD)
TIP NO.: U-4444A
COUNTY: CUMBERLAND CO.
DESIGNED BY: HW LOCHNER, INC./NCDOT
CHECKED BY:
DATE:

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	09
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

REVISIONS 8/17/95

NAD 83/95

FORT BRAGG MILITARY RESERVATION

CROSS COUNTRY POWER LINE

CONC

CANOPY

GR

-Y2RPA- 25+00

-Y2RPA- 20+00

-Y2RPA- ST Sta. 18+14.63

-Y2RPA- CS Sta. 16+14.63

-Y2RPA- 15+00

-Y2RPA- SC Sta. 12+00.00

-L- 100+00

-L- 95+00

SEABOARD COASTLINE RR

BL-9
PINC 69+89.73 =
-L- STA. 94+12.66 (126.53' LT)

BL-10
PINC 75+94.42 =
-L- STA. 100+26.92 (115.66' LT)

MATCH TO SHEET 8 -L- STA. 92+00

MATCH TO SHEET 10 -L- STA. 105+00

-Y2RPA-
S 31° 14' 24.5" E

N 34° 11' 15.4" W

N 40° 18' 44.2" W

+85.00

200' TAPER

120' TAPER

40' INC.

80' INC.

+15.83

+95.83

22' MED.

MEDIAN BARRIER

N 33° 58' 46" W

-L-

EXISTING R/W

ECM

GRAU 350

INV=252.17'

FORT BRAGG MILITARY RESERVATION

SOIL

-Y2RPA-

PIs Sta 11+33.35	PI Sta 14+07.83	PIs Sta 16+81.30
Θs = 2° 23' 14.4"	Δ = 9° 53' 54.5" (RT)	Θs = 2° 23' 14.4"
Ls = 200.00'	D = 2° 23' 14.4"	Ls = 200.00'
LT = 133.35'	L = 414.63'	LT = 133.35'
ST = 66.68'	T = 207.83'	ST = 66.68'
	R = 2,400.00'	
	e = 5%	

-L-

PIs Sta 97+69.18	PI Sta 101+21.56	PIs Sta 104+73.32
Θs = 2° 21' 23.9"	Δ = 7° 13' 44.9" (LT)	Θs = 2° 21' 23.9"
Ls = 320.00'	D = 1° 28' 22.4"	Ls = 320.00'
LT = 213.35'	L = 490.81'	LT = 213.35'
ST = 106.68'	T = 245.73'	ST = 106.68'
	R = 3,890.00'	
	e = 4%	

-L- TS Sta. 95+55.83

-L- SC Sta. 98+75.83

-L- CS Sta. 103+66.64

See Sheet 21 for -L- Profile
See Sheet 29 for -Y2RPA- Profile

03-DEC-2008 15:55
C:\Projects\U-4444A\U-4444A_RDY_PSH09.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	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

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

8/17/94

REVISIONS

MATCH TO SHEET 9 -L- STA. 105+00

MATCH TO SHEET 11 -L- STA. 119+00

ISMTL ISMTL ISMTL

PA

CANOPY

BROKEN BST

GR

FORT BRAGG MILITARY RESERVATION

BST END UNKNOWN

22' BST

24' BST

RANDOLF ST 24' BST

COULDN'T LOCATE

N 44° 41' 54.6" W

GATE

BY9-56
POT 5+00.00

INV=278.30'

BL-11
PINC 82+35.58 =
-L- STA. 106+81.22 (85.28' LT)

-L- Sta. 107+00.00 =
-Y2RPA- ST Sta. 10+00.00
(47' LT)

-L- 110+00

-L- 115+00

EXISTING R/W

SEABOARD COASTLINE RR

INV=284.18'

TOP=287.45'
INV=284.05'

BL-12
PINC 88+91.08 =
-L- STA. 113+36.50 (68.36' LT)

TOP=282.54'
INV=279.59'

15" RCP

INV=278.36'

INV=276.59'

INV=274.71'

CONC

N 40° 18' 44.2" W

N 44° 26' 03.8" W

N 45° 20' 09.1" W

NC 87 MURCHISON RD 28' BST

-L- N 45° 54' 47.7" W

22' MED.

MEDIAN BARRIER

48'

80' INC.

10'

EXISTING R/W

ECM

BM #83
BL STA 85+20
89' RIGHT
ELEV. 294.07

FORT BRAGG MILITARY RESERVATION

-L- ST Sta. 106+86.64

8" SOIL

NAD 83/95

See Sheet 21 for -L- Profile

03-DEC-2008 15:55
R:\Roadway\Proj\U-4444A\U-4444A_RDY_PSH10.dgn
$$$$USERNAME$$$$

REVISIONS

MATCH TO SHEET 15 -L- STA. 18+20

MATCH TO SHEET 10 -L- STA. 119+00

MATCH TO SHEET 12 -L- STA. 148+00

NAD 83/95

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	11
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

A

B

D

TRAFFIC DIAGRAM

RANDOLPH ST. 460 / 60
157 / 272
303 / 540
422 / 118
574 / 992
NC 210 MURCHISON RD.
1995 ADT
2020 ADT
(ADT in hundreds)

RELATIONSHIP OF PAVEMENT TO PROPOSED BRIDGE

END BRIDGE -Y3- 13+97.62B
END APPROACH SLAB -Y3- 13+99.62
BEGIN BRIDGE -Y3- 15+40.05
BEGIN APPROACH SLAB -Y3- 13+35.55

See Sheet 21-23 for -L- Profile
See Sheet 25 for -Y3- Profile
See Sheet 33 for -Y3RPA- Profile
See Sheet 36 for -Y3RPAA- Profile
See Sheet 34 for -Y3RPB- Profile
See Sheet 35 for -Y3LPD- Profile
See Sheet 34 for -Y3RPD- Profile

GRAPHIC SCALE
50 25 0 50 100
PLANS

LOCATION:
INTERCHANGE NC 210 (MURCHISON ROAD)
AND
Y3 RANDOLPH STREET EXTENSION

TIP NO.	COUNTY
U-4444A	CUMBERLAND
DESIGNED BY	
HW LOCHNER, INC./NCDOT	
CHECKED BY	DATE

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

LOCHNER

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

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

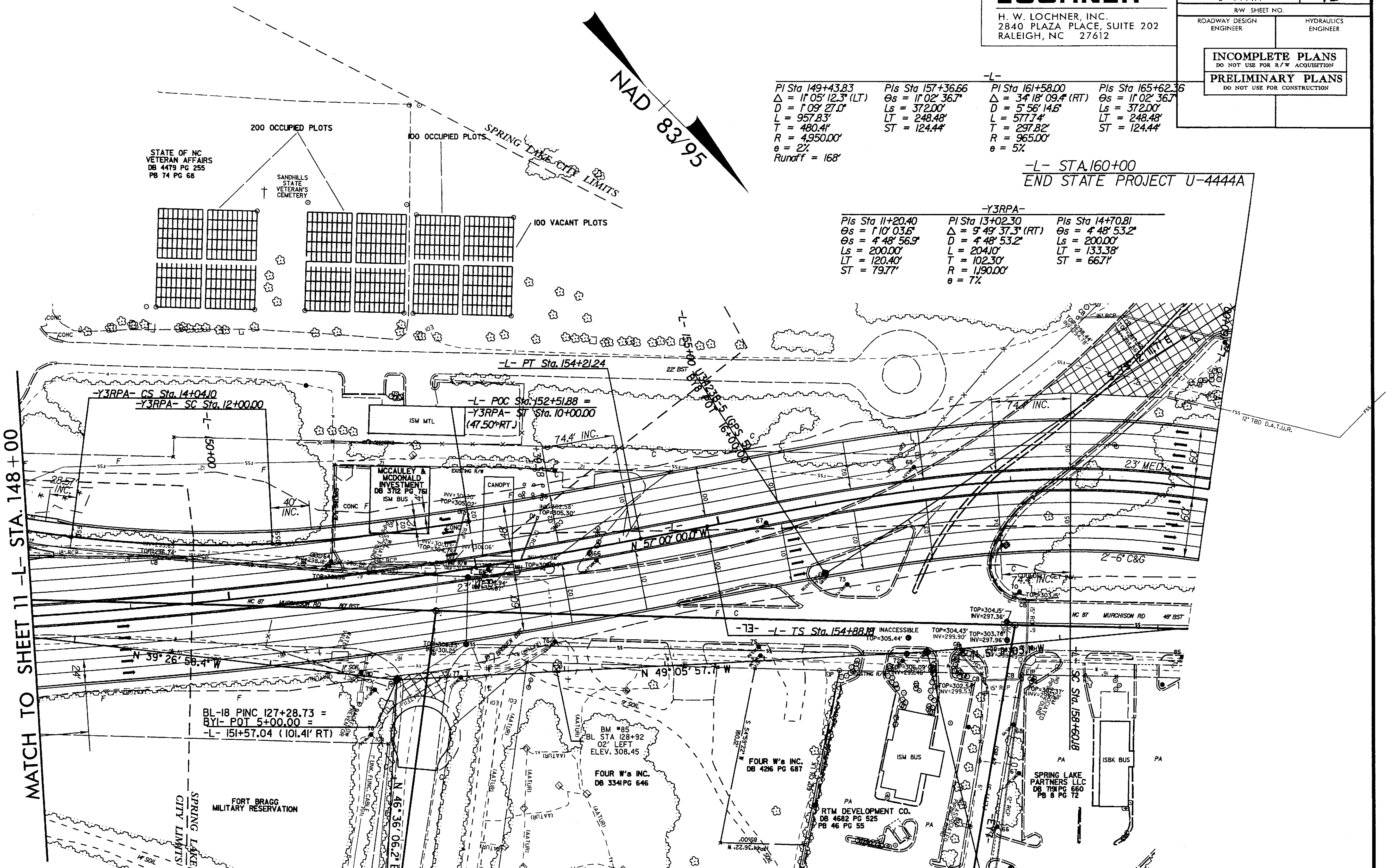
-L-

PI Sta 149+43.83	PIs Sta 157+36.66	PI Sta 161+58.00	PIs Sta 165+62.36
Δ = 11°05′12.3″ (LT)	Θs = 11°02′36.7″	Δ = 34°18′09.4″ (RT)	Θs = 11°02′36.7″
D = 1°09′27.0″	Ls = 372.00′	D = 5°56′14.6″	Ls = 372.00′
L = 957.83′	LT = 248.48′	L = 577.74′	LT = 248.48′
T = 480.41′	ST = 124.44′	T = 297.82′	ST = 124.44′
R = 4,950.00′		R = 965.00′	
e = 2%		e = 5%	
Runoff = 168′			

-L- STA.160+00
END STATE PROJECT U-4444A

-Y3RPA-

PIs Sta 11+20.40	PI Sta 13+02.30	PIs Sta 14+70.81
Θs = 1°10′03.6″	Δ = 9°49′37.3″ (RT)	Θs = 4°48′53.2″
Θs = 4°48′56.9″	D = 4°48′53.2″	Ls = 200.00′
Ls = 200.00′	L = 204.10′	LT = 133.38′
LT = 120.40′	T = 102.30′	ST = 66.71′
ST = 79.77′	R = 1,190.00′	
	e = 7%	



NAD 83/95
200 OCCUPIED PLOTS
100 OCCUPIED PLOTS
SPRING LAKE CITY LIMITS
STATE OF NC VETERAN AFFAIRS DB 4479 PG 255 PB 74 PG 68
SANDHILLS STATE VETERAN'S CEMETERY
100 VACANT PLOTS
-L- PT Sta. 154+21.24
-Y3RPA- CS Sta. 14+04.10
-Y3RPA- SC Sta. 12+00.00
-L- POC Sta. 152+51.88 = -Y3RPA- ST Sta. 10+00.00 (47.50′ RT)
ISM MTL
74.4′ INC.
MCCAULEY & MCDONALD INVESTMENT DB 3712 PG 761 ISM BUS
CANOPY
40′ INC.
28.57′ INC.
N 57°00′00.0″ W
23′ MED.
2′-6″ C&G
NC 87 MURCHISON RD
-Y3- -L- TS Sta. 154+88.18
INACCESSIBLE
N 39°26′58.4″ W
N 49°05′57.7″ W
BL-18 PINC 127+28.73 = BY1- POT 5+00.00 = -L- 151+57.04 (101.41′ RT)
BM #85 BL STA 128+92 02′ LEFT ELEV. 308.45
FOUR W's INC. DB 3341 PG 646
FOUR W's INC. DB 4216 PG 687
RTM DEVELOPMENT CO. DB 4682 PG 525 PB 46 PG 55
ISM BUS
SPRING LAKE PARTNERS LLC DB 7191 PG 660 PB 8 PG 72
ISBK BUS
SC Sta. 158+60.18
FORT BRAGG MILITARY RESERVATION
SPRING LAKE CITY LIMITS
N 46°36′06.2″ E
MATCH TO SHEET 11 -L- STA. 148+00

REVISIONS

03-DEC-2008 15:55

See Sheet 23 for -L- Prof
See Sheet 33 for -Y3RPA-

8/17/99

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	13
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

NAD 83/95

-Y2- POT Sta. 10+00.00

BEGIN CONSTRUCTION
-Y2- STA. 13+00.00

-Y2- 15+00

BY-29
PINC 31+51.11 =
-Y2- STA. 20+96.72 (31.75' LT)

-Y2- 20+00

-Y2- STA. 22+00

480' TAPER TO EXISTING (LEFT SIDE)

CROSS COUNTRY POWER

660' LANE

S 84° 18' 40" E

S 84° 27' 51.6" E

HONEYCUTT RD 48' BST

MONOLITHIC ISLAND

N 84° 00' 00.0" W

360' TAPER

150' LEFT TURN TAPER

-Y2- PRC Sta. 16+00.48

BY-30
POT 38+30.33 =
-Y2- STA. 14+17.50 (28.06' LT)

-Y2- Sta. 13+00.00 =
-Y2WBL- PC Sta. 13+00.00

-Y2- Sta. 18+99.25 =
-Y2WBL- PT Sta. 19+00.96

-Y2WBL-

PI Sta 14+50.45	PI Sta 17+50.93
Δ = 7° 29' 07.2" (RT)	Δ = 7° 29' 07.2" (LT)
D = 2° 29' 28.0"	D = 2° 29' 28.0"
L = 300.48'	L = 300.48'
T = 150.45'	T = 150.45'
R = 2,300.00'	R = 2,300.00'
e = nc	e = nc

MATCH TO SHEET 8 -Y2-

See Sheet 23 for -Y2- Profile

04-DEC-2008 08:42
R:\Roadway\PER\U-4444A\U-4444A_ROY_PSH13.dgn
$$$$USERNAME$$$$

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	14
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

REVISIONS
8/17/99

-Y2- PI Sta 40+42.00
Δ = 13° 52' 00.0" (LT)
D = 7° 38' 22.0"
L = 181.51'
T = 91.20'
R = 750.00'
e = warped to existing

BY-26
PINC 12+10.09 =
-Y2- STA. 40+08.03 (37.32' LT)

-Y2- PT Sta. 41+32.31

END CONSTRUCTION
-Y2- STA. 41+00.00

-Y2- PC Sta. 39+50.80

-Y2- 40+00

-Y2- 45+00

-Y2- 50+00

-Y2- POT Sta. 50+71.11

BY-25
POT 5+00.00
-Y2- STA. 47+19.37 (40.86' RT)

NAD 83/95

MATCH TO SHEET 8 -Y2- STA. 39+00

300' TAPER TO EXISTING

-Y2- +12.93
TIE TO EXIST. RR CROSSING

-Y2- +81.92
END C&G TIE TO EXIST

(TO MATCH EXISTING ASP ALIGNMENT)

-Y2- I S 82° 08' 00.0" W

N 89° 14' 52.1" E

UNABLE TO DETERMINE EOP FROM SOIL

UNABLE TO DETERMINE EOP FROM SOIL

HONEYCUTT RD 45' BST

LOGISTICS AVE 44' BST

RANDOLF ST 24' BST

22' BST

ISMTL

ISM

RAMP

CANOPY

HOUSE GUARD

STEAM PLANT 2SBK

STACK

WATER TOWER

A/C TANK

A/C

HTR

SOIL

CONC

PA

GR

See Sheet 24 for -Y2- Profile

04-DEC-2008 08:44
R:\Roadway\Plans\U-4444\U-4444A_RDY_PSH14.dgn
$$$$USERNAME$$$$

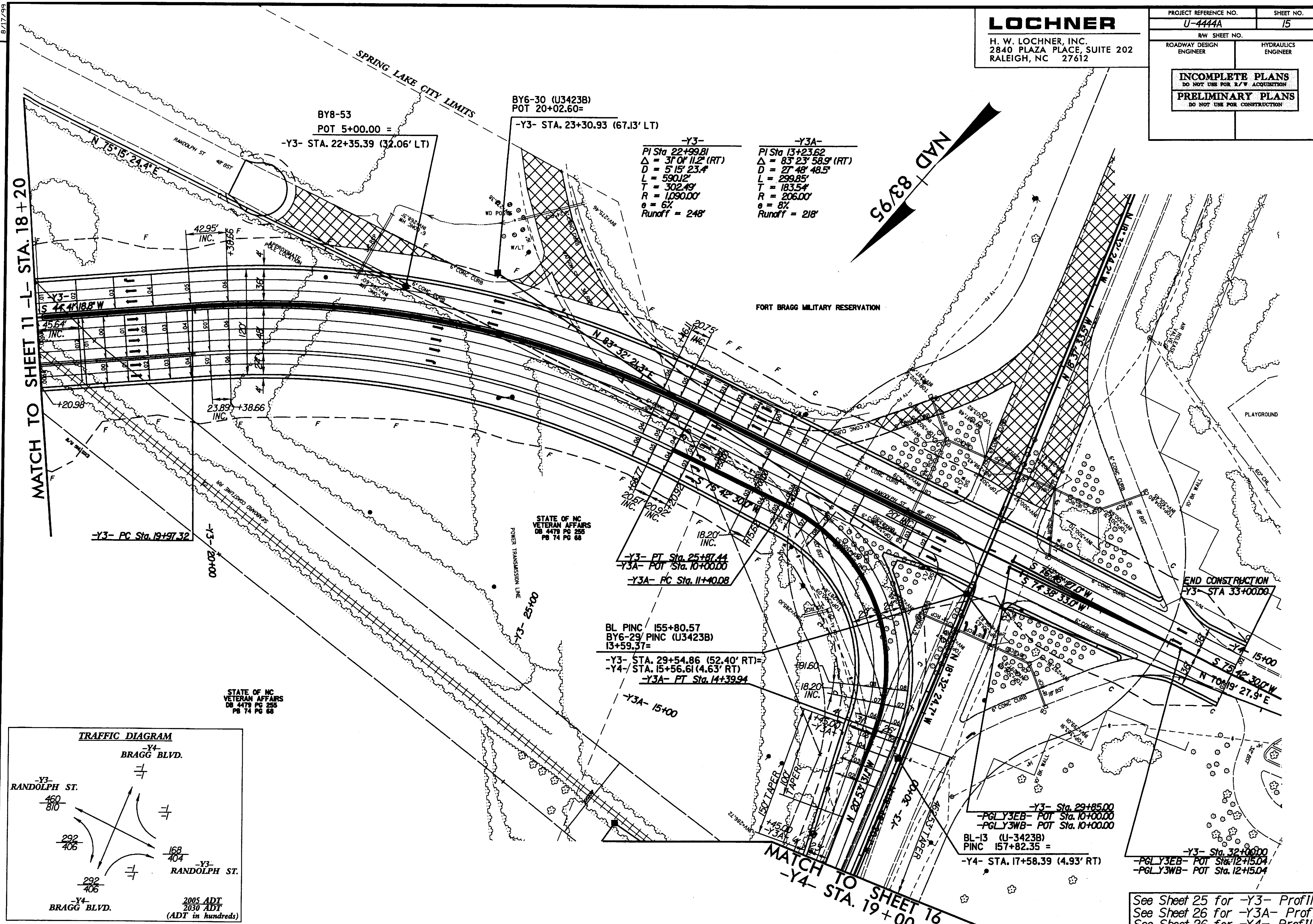
LOCHNER

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

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	15
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



SPRING LAKE CITY LIMITS
BY8-53
POT 5+00.00 =
-Y3- STA. 22+35.39 (32.06' LT)
BY6-30 (U3423B)
POT 20+02.60=
-Y3- STA. 23+30.93 (67.13' LT)
-Y3-
PI Sta 22+99.81
Δ = 31° 01' 11.2" (RT)
D = 5° 15' 23.4"
L = 590.12'
T = 302.49'
R = 1,090.00'
e = 6%
Runoff = 248'
-Y3A-
PI Sta 13+23.62
Δ = 83° 23' 58.9" (RT)
D = 27° 48' 48.5"
L = 299.85'
T = 183.54'
R = 206.00'
e = 8%
Runoff = 218'
NAD 83/95
MATCH TO SHEET 11 -L- STA. 18+20
FORT BRAGG MILITARY RESERVATION
STATE OF NC VETERAN AFFAIRS DB 4479 PG 255 PB 74 PG 68
POWER TRANSMISSION LINE
PLAYGROUND
-Y3- PC Sta. 19+97.32
-Y3- PT Sta. 25+87.44
-Y3A- POT Sta. 10+00.00
-Y3A- PC Sta. 11+40.08
BL PINC 155+80.57
BY6-29/ PINC (U3423B)
13+59.37=
-Y3- STA. 29+54.86 (52.40' RT)=
-Y4- STA. 15+56.61 (4.63' RT)
-Y3A- PT Sta. 14+39.94
END CONSTRUCTION
-Y3- STA 33+00.00
-Y3- Sta. 29+85.00
-PGL_Y3EB- POT Sta. 10+00.00
-PGL_Y3WB- POT Sta. 10+00.00
BL-13 (U-3423B)
PINC 157+82.35 =
-Y4- STA. 17+58.39 (4.93' RT)
-Y3- Sta. 32+00.00
-PGL_Y3EB- POT Sta. 12+15.04
-PGL_Y3WB- POT Sta. 12+15.04
MATCH TO SHEET 16
-Y4- STA. 19+00
TRAFFIC DIAGRAM
-Y4- BRAGG BLVD.
-Y3- RANDOLPH ST.
460/810
292/406
168/404
292/406
2005 ADT
2030 ADT
(ADT in hundreds)

See Sheet 25 for -Y3- Profile
See Sheet 26 for -Y3A- Profile
See Sheet 26 for -Y4- Profile

04-DEC-2008 08:57
R:\Roadway\Proj\U-4444A\U-4444A_RDY_PSH15.dgn

PROJECT REFERENCE NO.	SHEET NO.
U-4444A	16
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

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

8/17/99

REVISIONS

MATCH TO SHEET 15
-Y4- STA. 19+00

MATCH TO SHEET 17
-Y4- STA. 31+50

BL PINC (U3423B) 160+31.01
BYT-31 POT 5+00.00 =
-Y4- STA. 20+07.05 (4.29' RT)

-Y4- Sta. 27+50 =
-Y4SR- POT Sta. 18+00.00

BL -L- (U3423B)
PINC 169+04.29=
-L- STA. 28+80.32 (2.07' RT)

FORT BRAGG MILITARY RESERVATION

BASEBALL FIELD

6' CONC CURB

30' C&G

BST

462.53' TAPER

200' TAPER

NC 24 BRAGG BLVD 24' BST SBL

NC 24 BRAGG BLVD 24' BST NBL

2.5' BST

N 18° 46' 17.5" W

N 18° 31' 33.5" W

N 20° 53' 38" W

RR SIG BOX

ORR SIG

W/L

EXISTING R/W

-Y3A-
PI Sta 18+23.38
Δ = 2° 15' 57.7" (RT)
D = 1° 25' 56.6"
L = 158.20'
T = 79.11'
R = 4,000.00'
e = 2%

-Y4SR-
PI Sta 15+74.29
Δ = 25° 33' 18.7" (RT)
D = 12° 35' 32.9"
L = 202.94'
T = 103.19'
R = 455.00'
e = 4%

180-60-180
6' OFFSET

+29.27

27.23' INC.

-Y3A- PC Sta. 17+44.27

-Y3A- PT Sta. 19+02.47

-Y4SR- PT Sta. 16+74.04

-Y4SR- 15+00

-Y4SR- PC Sta. 14+71.10

STATE OF NC
VETERAN AFFAIRS
DB 4479 PG 255
PB 74 PG 68

SPRING LAKE CITY LIMITS

NAD 83/95

S 45° 41' 09" W

+95.79

27.50' INC.

-Y4SR- POT Sta. 10+00.00

ISM

See Sheet 27 for -Y4- Profile
See Sheet 29 for -Y4SR- Profile

04-DEC-2008 09:08
C:\Projects\U-4444A\U-4444A_RDY_PSH16.dgn
$$$$USERNAME$$$$

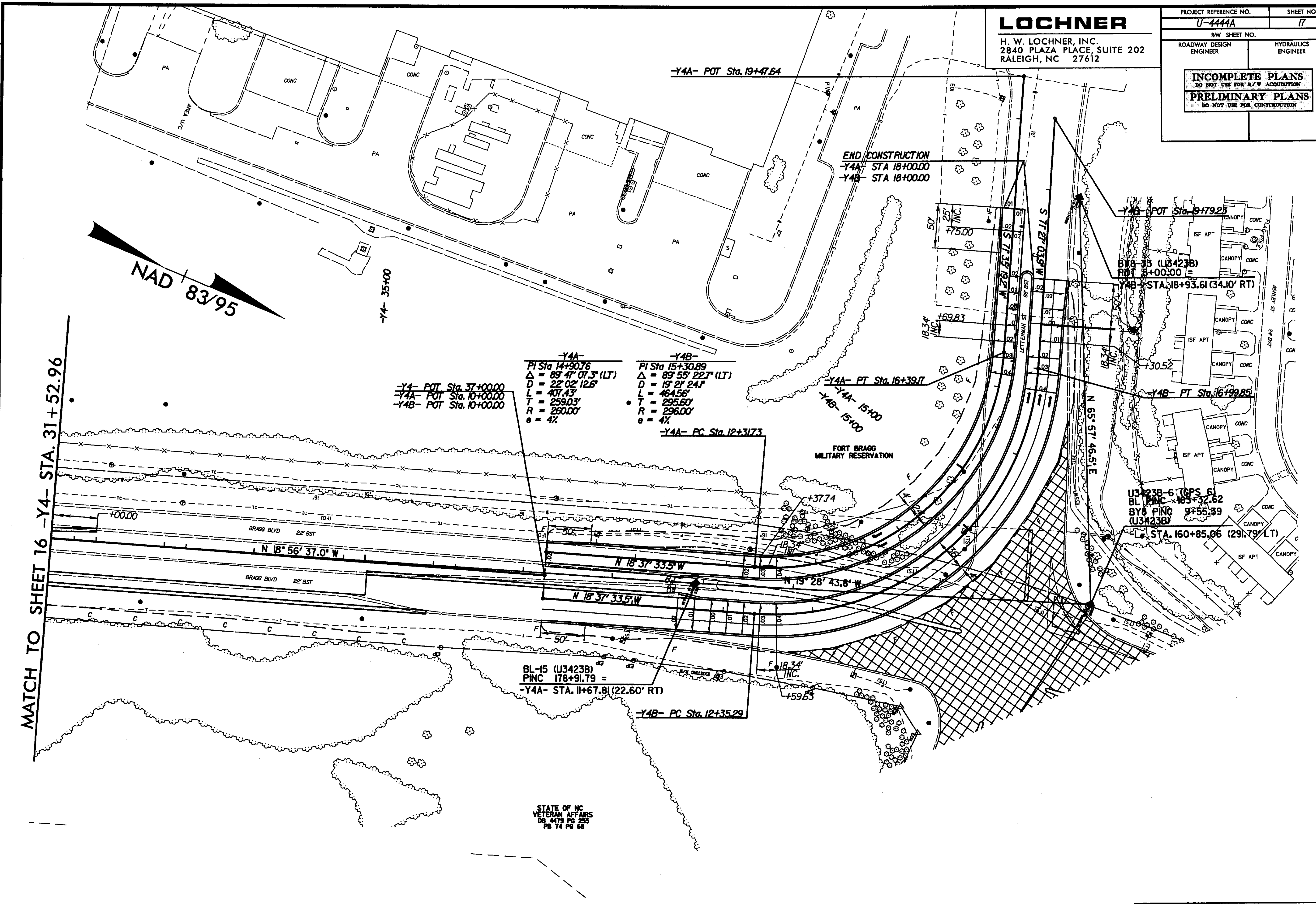
PROJECT REFERENCE NO.	SHEET NO.
U-4444A	17
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

LOCHNER

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

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



NAD 83/95
MATCH TO SHEET 16 -Y4- STA. 31+52.96
-Y4A- POT Sta. 19+47.64
END CONSTRUCTION
-Y4A- STA 18+00.00
-Y4B- STA 18+00.00
-Y4B- POT Sta. 19+79.23
BY8-33 (U3423B)
POT 5+00.00 =
-Y4B- STA. 18+93.61 (34.10' RT)
-Y4- 35+00
-Y4A-
PI Sta 14+90.76
Δ = 89° 47' 07.3" (LT)
D = 22° 02' 12.6"
L = 407.43'
T = 259.03'
R = 260.00'
e = 4%
-Y4B-
PI Sta 15+30.89
Δ = 89° 55' 22.7" (LT)
D = 19° 21' 24.1"
L = 464.56'
T = 295.60'
R = 296.00'
e = 4%
-Y4- POT Sta. 37+00.00
-Y4A- POT Sta. 10+00.00
-Y4B- POT Sta. 10+00.00
-Y4A- PC Sta. 12+31.73
-Y4A- PT Sta. 16+39.17
-Y4A- 15+00
-Y4B- 15+00
-Y4B- PT Sta. 16+99.85
FORT BRAGG MILITARY RESERVATION
S 71° 27' 03.9" W
S 71° 35' 19.2" W
N 65° 57' 46.5" E
LETTERMAN ST
ASHLEY ST
ISF APT
CANOPY
CONC
PA
U3423B-6 (GPS 6)
BL PINC 183+32.62
BY8 PINC 9+55.39
(U3423B)
-L- STA. 160+85.06 (291.79' LT)
N 18° 56' 37.0" W
N 18° 37' 33.5" W
N 19° 28' 43.8" W
BRAGG BLVD 22' BST
+00.00
+37.74
+69.83
+75.00
+30.52
+59.53
18.34' INC.
25' INC.
50'
BL-15 (U3423B)
PINC 178+91.79 =
-Y4A- STA. 11+67.81 (22.60' RT)
-Y4B- PC Sta. 12+35.29
STATE OF NC VETERAN AFFAIRS DB 4479 PG 255 PB 74 PG 68

See Sheet 27 for -Y4- Profile
See Sheet 28 for -Y4A- Profile
See Sheet 28 for -Y4B- Profile

REVISIONS

8/17/99

04-DEC-2008 09:15
R:\Roadway\Proj\U-4444A\U-4444A_RDY_PSH17.dgn
$$$$USERNAME$$$$