STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

May 20, 2010

N.C. Division of Coastal Management
1638 Mail Service Center
Raleigh, NC 27699-1638

ATTN: Mr. Steve Sollod
NCDOT Coordinator

Dear Sir:

Subject: **Submittal of DCM Consistency Certification** for the proposed US 17 Improvements From the Jacksonville Bypass to Drummer Kellum Road Jacksonville, Onslow County, TIP U-4007, WBS 35008.1.1

The purpose of this letter and information package is to request concurrence from the Division of Coastal Management (DCM) for the North Carolina Department of Transportation's (NCDOT) consistency certification for the above-mentioned project. This package consists of the supporting information, half size plan sheets, permit drawings, utility plans, the Ecosystem Enhancement Program (EEP) request letter, and Hydraulic Design Merger Concurrence meeting (4B, 4C) minutes for U-4007.

NCDOT, in consultation with the Federal Highway Administration (FHWA), proposes to improve US 17 from the Jacksonville Bypass sour of Country Club Road, to northeast Drummer Kellum Road, a distance of 2.9 miles. The NCDOT has submitted an application for a U.S. Army Corps of Engineers (USACE) Section 404 Individual Permit as well as a N.C. Division of Water Quality (DWQ) Individual 401 Water Quality Certification, and State Stormwater Permit.

NCDOT has reviewed 15 CFR 930.57-62 as well as relevant portions of the State's coastal program under 15A NCAC 07M. Specifically, we have considered the coastal water quality policies, mitigation candidacy, the Jacksonville Draft Land Use Plan, and the Onslow County Land Use Plan. The NCDOT certifies that the proposed activity complies with the enforceable policies of North Carolina's approved management program and will be conducted in a manner consistent with such program.

If you have any questions or need additional information please contact John Merritt at (919) 431-6749 or jsmerritt@ncdot.gov.

Sincerely,

E. L. Lusk

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

cc: Stephen Lane, NCDCM

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Coastal Zone Consistency Certification Supporting Information for the NCDOT's Request to Construct the US 17 Improvements from the Jacksonville Bypass to Drummer Kellum Road of the City of New Jacksonville, in Onslow Counties (US 17 Improvements). NCDOT TIP U-4007.

History

In accordance with the National Environmental Policy Act and the North Carolina Department of Transportation (NCDOT) policy, a Scoping Letter for the proposed US 17 New Bern Bypass project was sent on October 2003, initiating coordination with specific agencies and local officials. Details of the Purpose and Need key issues associated with the project and a map of proposed study corridors were included as part of the letter.

A US 17 corridor improvement project has been included in various Jacksonville thoroughfare plans since the late 1960s. In 1985, the Jacksonville Bypass was programmed in the NCDOT TIP (Project No. U-2107). This improvement terminates at an at-grade intersection with US 17, approximately 2,500 feet southwest of the Western Boulevard intersection.

In 1995, a feasibility study was prepared for the Jacksonville Bypass Extension from the U-2107D terminus, proceeding on new location northwest of US 17 and connecting to existing US 17 near Drummer Kellum Road (SR 1326). To avoid intense development, the corridor was located about one mile northwest of the existing US 17. The proposed corridor was so far west that NCDOT transportation engineers determined it would fail to attract traffic from existing US 17. As a result, the Jacksonville Thoroughfare Plan was revised to show improvements to US 17 along the existing road. In 1999, Project No. U-4007 was added to the NCDOT TIP. Because of the significant amount of commercial development along Western Boulevard and the traffic demand in this commercial area, the Jacksonville Thoroughfare Plan also included these proposed interchanges: Jacksonville Bypass at Country Club Road, Jacksonville Bypass at US 17, and US 17 at Piney Green Road. Also included in the Thoroughfare Plan is a proposed Western Parkway that parallels Western Boulevard and intersects with Western Boulevard Extension in the vicinity of Gateway North Drive. The Jacksonville Urban Area 2035 Transportation Plan, adopted March 21, 2005, removed the proposed Jacksonville Bypass interchange with Country Club Road but indicates a proposed interchange to the south (see Figure 5). The project is included in the 2007–2013 Draft TIP as Project No. U-4007.

The Environmental Assessment (EA) for this project was circulated in 2006 and the Finding of No Significant Impact (FONSI), in 2008. In the EA, three build alternatives and the No Build Alternative were evaluated. Alternative US 17 Expressway (A) had eight variations, Western Parkway Option (B) had four variations, and White Street Extension and Interchange Option (C) also had four variations.

Project Description

The NCDOT, Division of Highways, in consultation with the Federal Highway Administration (FHWA) proposes to provide route continuity and make improvements on US 17. US 17 is the major north-south route for eastern North Carolina east of I-95. In Jacksonville, US 17 carries traffic in a northeast/southwest direction. This route is on North Carolina's intrastate system and is identified by NCDOT as a Strategic Highway Corridor. The intrastate system was established to provide high-speed, safe travel throughout the state. The intrastate system was designed to support

statewide growth and development objectives and to connect to major highways of adjoining states. NCDOT "Strategic Highway Corridors" are a network of the most important roads in the state. These Strategic Highway Corridors require mobility and safety as the primary functions of the facility. The Jacksonville Bypass will intersect existing US 17 with a T-type intersection, forcing the bypass traffic at US 17 to stop and make a right or left turn. This stop-and-turn condition does not meet the goal of mobility and is not desirable on a major transportation facility. Improvements are needed to incrementally achieve the vision proposed for US 17 by the Strategic Highway Corridor initiative.

In addition, the proposed project is needed to improve safety along US 17 within the study area. A review of the reported accidents in the project study area indicated a higher frequency of accidents at the intersections and along the mainline as compared with the statewide average. If improvements are not made and traffic volumes increase, the number of accidents may continue to increase.

Alternatives

A No-Build Alternative and 16 Build Alternatives were considered for this project. An A and B section of this project was included in the Merger process at Concurrence Point 4. The preferred Alternative (A1) was selected and consists of; upgrading US 17 to an expressway facility with the extension of Commerce Drive, Western Parkway (Gateway North variation, and the White Street Extension and Interchange (Huff Drive variation). This was decided at an environmental project team meeting consisting of the U.S. Army Corps of Engineers; The NC Department of Environment and Natural Resources' Division of Water Quality, Division of Coastal Management, and Wildlife Resources Commission; the National Marine Fisheries Service, The U.S. Fish and Wildlife Service; the NCDOT; and the FHWA.

Mitigation

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 off-site mitigation. The EEP will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the unavoidable impacts to 8.25 acres of wetlands and 3,039 linear feet of stream resulting from the construction of U-4007 A and B .

Threatened and Endangered Species

The United States Fish and Wildlife Service list 14 federally protected species for Onslow Counties as of the January 31, 2008 listing (Table 1).

Plant re-surveys will be conducted prior to let for the plant species that have habitat in the study area.

Table 1. Federally protected species of Onslow County.

Scientific Name	Common Name	Habitat Present	Status	Biological Conclusion
Puma concolor couguar	Eastern cougar	No	E	No Effect
Trichechus manatus	West Indian manatee	No	E	No Effect
Lindera melissifolia	Pond berry	Yes	E	No Effect
Charadrius melodus	Piping plover	No	T	No Effect
Picoides borealis	Red-cockaded woodpecker	No	E	No Effect
Alligator mississippiensis	American alligator	No	T(S/A)	N/A
Caratta carretta	Loggerhead sea turtle	No	T	No Effect
Chelonia mydas	Green sea turtle	No	T	No Effect
Dermochelys coriacea	Leatherback sea turtle	No	E	No Effect
Carex lutea	Golden sedge	No	E	No Effect
Acipenser brevirostrum	Shortnose sturgeon	No	E	No Effect
Thalictrum cooleyi	Cooley's meadowrue	Yes	E	No Effect
Amaranthus pumilus	Seabeach amaranth	No	T	No Effect
Lysimachia asperulaefolia	Rough leaved loosestrife	Yes	E	No Effect

Note: E – endangered
T – threatened
T(S/A) - threatened due to similarity of appearance

Cultural Resources

Archaeology and Historic Architecture

There are no known historic resources in the project's area of potential affect. The State Historic Preservation Office (HPO) and NCDOT concurred that the project will have no effect on any known historic architectural or archaeological resources and do not recommend further architectural or archaeological surveys.

Other Permits

In addition to the DCM Consistency Determination, permits to be obtained for this project include an Individual 404 permit and an Individual 401 Water Quality Certification (applications submitted May 11, 2010). Other permits required for this project include a Division of Water Resources (DWR) Central Coastal Plain Capacity Use Area (CCPCUA) permit and a State Stormwater permit.

Division of Coastal Management (DCM) General Policy Guidelines for the Coastal Area

The general policy guidelines in 15A NCAC 07M have been reviewed for applicability to this project. Explicitly, the .0700 rules (mitigation), and the .0800 rules (water quality) were reviewed. This project will not affect shoreline erosion or shoreline access. However, this project will require compensatory mitigation and impact water quality. This project has been designed to avoid and minimize jurisdictional areas to the largest extent possible. Best Management Practices will be in place during construction; compensatory mitigation will be provided through EEP.

Onslow County Land Use Plan

The 2009 Onslow County Land Use Plan was reviewed for policies and statements that would pertain to this project. The purpose and need for this project, as identified in the EA, is based on the economic development of Onslow County and on projected traffic volumes.

The Onslow County Community Vision listed on page 10 of the 2009 Onslow County Land Use Plan states, "Onslow County shall employ advanced planning for orderly growth, so as to ensure the efficient use of land according to its suitability for development; the cost-effective, coordinated provision of infrastructure and services; the proper design and livability of its communities, neighborhoods and rural areas; harmony with the Marine Corps Air Station Camp Lejeune; and the continued preservation and productivity of its farms, woodlands, wetlands, and estuarine areas." Recommendation three on page 11 in the Community Vision section states, "Onslow County shall provide (or encourage others to provide) necessary infrastructure and services consistent with properly managed growth and desirable economic development. Priorities shall include a balanced, multi-modal transportation system" (Onslow County, 2000).

Improvements to US 17 would help promote economic development in Onslow County by providing a reduction in congestion, provide route continuity, and improve safety on US 17 from the Jacksonville Bypass to a logical termini north of Drummer Kellum Road. Benefits to both local and through traffic include reduced travel times and improved level of service. The proposed improvements are expected to provide a continual movement for traffic on the bypass through this area of Jacksonville. This falls in line with the Community Vision detailed in the Onslow County Strategic Plan for 2009, which includes the creation of a stable economy through the attainment, retention and expansion of desirable businesses and industries.

After reviewing the various policy statements, NCDOT concludes that this project is consistent with the 2009 Onslow County Land Use Plan.

CAMA Land Use Plan, City of Jacksonville – Review Draft

The 2007 Jacksonville Land Use Plan (Draft) was reviewed for policies and statements that would pertain to this project. The purpose of and need for this project, as identified in the EA, is based on the economic development of Jacksonville and on projected traffic volumes.

Based on the information stated above, NCDOT concludes this project is consistent with the goals set in the Draft 2007 Jacksonville Land Use Plan.

Subject: Minutes from Interagency 4B Hydraulic Design Review Meeting
On August 20, 2008 for U-4007A in Onslow County

Team Members:

Brad Shaver-USACOE	(present)
David Wainright-NCDWQ	(present)
Travis Wilson-NCWRC	(absent)
Steve Sollod-NCDCM	(present)
Steven Lane-NCDCM	(absent)
Gary Jordan-USFWS	(present)
Kathy Matthews-EPA	(absent)
Chris Militscher-EPA	(present)
Donnie Brew-FHWA	(present)
Chris Rivenbark-NEU	(present)
John Merritt-NEU	(present)

Participants:

Marshall Clawson, NCDOT Hydraulics
Dan Duffield, NCDOT Hydraulics
Josh Dalton, Sungate Design Group
Brian Elam, Sungate Design Group
Mason Herndon, NCDOT Division 3
Timmy Zepeda, NCDOT Division 3
Brian Yamamoto, NCDOT PDEA
Jim Rerko, NCDOT Division 6
Omar Azizi, NCDOT Structures
Emily Murray, NCDOT Structures

General Comments:

Marshall Clawson started the meeting by introducing the project and stating that the purpose of the meeting was to review the 30% hydraulic designs and show that the commitments made at the 4A meeting were met. Mr. Clawson then handed the meeting over to Josh Dalton. Mr. Dalton proceeded through the project sheet by sheet explaining the proposed drainage design and fielding questions.

Plan Sheets 4:

There are no streams or wetlands on this sheet.

Plan Sheets 5:

Mr. Dalton noted that there is an existing culvert under US 17 Bypass that will be extended on both ends. Two jurisdictional streams converge just upstream of the existing culvert. The existing culvert is a double barrel 6' by 8' RCBC. The barrels of the culvert will be extended separately in the direction of the two channels.

Downstream of the existing culvert, Scales Creek will be conveyed under Loop A and Ramp A by double barrel 6' by 8' RCBC's. The culverts will be separated by approximately 220 feet of open channel. Photographs of Scales Creek and the UT to Scales were passed around and the extreme amount of garbage in the streams was noted.

A small portion of the wetland will be left in the gore area between Ramp A and Loop A. This wetland will be considered a total take.

A wetland will be impacted along Ramp B. Discussion occurred regarding the installation of an equalizer pipe to provide hydrology to the isolated wetland between Ramp B and Loop B. Chris Rivenbark will discuss with Lelani Paugh and inform us of the decision. If an equalizer pipe is installed and the wetland not considered a total take, a commitment will need to be added that this area is not mowed.

Plan Sheets 6:

Mr. Dalton noted that the road crosses the UT to Scales Creek. A 66-inch RCP buried 1-foot will be installed at this location. A small wetland will also be impacted at this location. Mr. Dalton mentioned that preformed scour holes will be used outside of the wetland areas.

Photographs of the stream were passed around and again the garbage and tires in the stream were noted.

Plan Sheet 7:

Mr. Dalton stated that a wetland exists right of stations 42+50 to 45+00 –L-. This area is currently shown as cut, but expressway gutter will be installed to remove the cut ditch from the wetland area.

Plan Sheets 8:

Mr. Dalton stated that a small wetland exists right of stations 55+00 to 58+00 –L-. This area is currently shown as cut, but the curb and gutter will be extended past the wetland to remove the cut ditch from the wetland area.

Mr. Dalton stated that there is a jurisdictional stream parallel to and north of Huff Drive. This stream enters an existing 36-inch RCP and exits the system from an existing 60-inch RCP on the west side of Western Boulevard. A portion of this system will be revised.

Additional Discussion

A layout of the culvert extension at US 17 was provided to Mr. Zepeda for constructability issues and input regarding construction phasing.

Meeting Adjourned

Subject: Minutes from Interagency 4C Permit Drawing Review Meeting
On April 15, 2009 for U-4007A in Onslow County

Team Members:

Brad Shaver-USACOE	(present)
David Wainright-NCDWQ	(present)
Travis Wilson-NCWRC	(absent)
Steve Sollod-NCDCM	(present)
Steven Lane-NCDCM	(present)
Gary Jordan-USFWS	(absent)
Kathy Matthews-EPA	(present)
Chris Militscher-EPA	(absent)
Ron Lucas-FHWA	(absent)
Chris Rivenbark-NEU	(present)
John Merritt-NEU	(present)

Participants:

Marshall Clawson, NCDOT Hydraulics
Josh Dalton, Sungate Design Group
Mason Herndon, NCDOT Division 3
Jackson Provost, NCDOT Division 3
Todd Murray, NCDOT Roadway Design
Kevin Bowen, NCDOT Construction Unit
Mark Staley, NCDOT REU

General Comments:

Marshall Clawson started the meeting by introducing the project and stating that the purpose of the meeting was to review the permit drawings. Mr. Clawson then handed the meeting over to Josh Dalton. Mr. Dalton proceeded through the project sheet by sheet explaining the proposed sites and impacts to streams and wetlands.

Site 1:

There is a small wetland impact at this site. No comments.

Site 2:

Mr. Dalton noted that there is a stream impact and wetland impact at this site. Ms.Matthews asked why the wetland between Loop A and Ramp A was hatched as 'mechanized clearing'. Mr. Dalton explained that after clearing 10 feet from the top of the proposed new channel and fill slopes there would only be a sliver of wetland left.

Site 3:

Mr. Dalton noted that there is a large wetland impacted by the proposed Ramp B. There was a discrepancy in the wetland limits. The plan sheet that contained the enlarged view of the site showed the wetland closed off adjacent to the proposed right-of-way line. The plan sheet that shows the entire interchange showed the wetland continuing away from the project limits. Mr. Rivenbark and Mr. Merritt stated they would verify the correct wetland limits. Mr. Shaver stated that if the wetland was closed off and did not continue away from the project, the remaining

wetland should be considered as a total take. If the wetland continues, then the impact was fine as depicted.

Several agency members asked if the wetland inside Ramp B would be protected. Mr. Shaver requested adding a commitment to the permit application that mowing would not occur inside the remaining wetland limits. Mr. Provost stated that current mowing guidelines are to mow 10 feet outside shoulder points and to ditch limits so this should not be an area that would be mowed. Mr. Herndon stated that blaze orange fencing would be used during construction to delineate the wetlands.

Site 4:

Mr. Dalton stated that Site 4 consisted of a small wetland impact. No comments.

Site 5:

Site 5 consists of a small wetland impact. This impact will now be included with Site 2 impacts.

Site 6:

Site 6 consists of a small temporary stream impact at the outlet of the existing box culverts. Impacts also include stream impacts to Scales Creek and UT to Scales Creek. Since these impacts are all part of Scales Creek, they will now be included with Site 2 impacts. No comments.

Site 7:

Site 7 consists of a large wetland impact. This site will now be referred to as Site 5. No comments.

Site 8:

Site 8 consists of jurisdictional stream and wetland impacts. This site will now be referred to as Site 6. Mr. Shaver requested that the small remaining portion of the wetland to the north be considered a 'take'.

Site 9:

Site 9 consists of a large wetland impact. This site will now be referred to as Site 7. Mr. Shaver requested that the small remaining portion of the wetland to the left of station 43+50 –L- be considered a 'take'. There also appears to be a stray wetland line bisecting the wetland.

Site 10:

Site 10 consists of a wetland impact right of station 56+50 –L-. There appears to be a stray wetland line that crosses the proposed roadway. Mr. Rivenbark and Mr. Merritt stated they would verify the wetland limits in this area. This site will now be referred to as Site 8.

Site 11:

Site 11 consists of a small pocket wetland impact left of station 58+50 –L-. Mr. Dalton stated that this small wetland has been included as a 'total take'. This site will now be referred to as Site 9. No comments.

Site 12:

Site 12 consists of a small temporary jurisdictional stream impact left of station 66+00 –L-. Mr. Wainright asked for an explanation of the stream path. Mr. Dalton stated that the stream flows from the east toward the west and enters an existing 36" RCP left of station 65+57 –L-. This pipe then flows to a blind junction box of which the location was unable to be determined. The flow eventually reaches the existing 60" RCP and outlets the system right of station 17+18 –Y5-. This site will now be referred to as Site 10. No comments.

Meeting adjourned.

Subject: Minutes from Interagency 4B Hydraulic Design Review Meeting
On October 15, 2008 for U-4007B in Onslow County

Team Members:

Brad Shaver-USACOE	(present)
David Wainright-NCDWQ	(present)
Travis Wilson-NCWRC	(present)
Steve Sollod-NCDCM	(present)
Steven Lane-NCDCM	(present)
Gary Jordan-USFWS	(present)
Kathy Matthews-EPA	(present)
Chris Militscher-EPA	(absent)
Donnie Brew-FHWA	(present)
Chris Rivenbark-NEU	(present)
John Merritt-NEU	(present)
David Harris-REU	(absent)
Bryan Taylor-Roadway	(absent)

Participants:

Marshall Clawson, NCDOT Hydraulics
Frank Fleming, Sungate Design Group
Brian Elam, Sungate Design Group
Kenny Smith, Stantec
Joe Blair, NCDOT Division 3
Mason Herndan, NCDOT Division 3
Brian Yamamoto, NCDOT TPDEA
Omar Azizi, NCDOT Structures
Emily Murray, NCDOT Structures
Amy Simes, DENR
Todd Murray, NCDOT Roadway

General Comments:

Marshall Clawson started the meeting by introducing the project and stating that the purpose of the meeting was to review the 30% hydraulic designs and show that the commitments made at the 4A meeting were met. After introductions, Mr. Clawson then handed the meeting over to Frank Fleming. Mr. Fleming proceeded through the project sheet by sheet explaining the proposed drainage design and fielding questions.

Plan Sheets 4:

There are no streams or wetlands impacted on this sheet. Mr. Fleming noted an existing ditch will be replaced right of the project in the vicinity of Scales Creek. The proposed ditch will tie to the existing ditch before impacting Scales Creek.

Plan Sheets 5:

Mr. Fleming noted that there is an existing 2 @ 6' X 7' box culvert under US 17 Bypass that will be extended on both ends. The jurisdictional stream is Sandy Run Branch. The two extensions will use bends to line the box culvert with the channel. The extensions cannot be buried the traditional 1.0' on either end. The inlet extension is proposed to be on a 0.0% grade and will be at bed level. The outlet will be extended on 0.3% grade, the same as the existing grade, and will be buried +/-0.7'. The inlet side cannot be buried because of the existing culvert elevation and existing channel elevation. DWQ requested a note be provided for not burying the extensions in the permit application.

Mr. Fleming stated the stormwater will be handled with pre-formed scour holes and grass swales.

Plan Sheets 6:

Mr. Fleming noted the wetland system that is conveyed from the right of -NBL-Ramp at +/- 48+00 through two crossing on the future construction of Loop-1A- to an extension of an existing system that runs south parallel to Marine Blvd. Mr. Jordan of USFWS asked will the system be a total take. NCDOT PDEA and Division requested clarification on why it would be a total take. Mr. Blair stated inside the loop would not be cleared. EPA and USACOE stated there may be water quality benefit. Mr. Jordan stated the system would not support habitat. There was an agreement that two small areas would be a total take. These areas are between -L- and Loop -1A- and the area between the loop and –Y-1A- (Marine Blvd.). Many suggestions from NCDOT were offered for the area inside the loop, from photo monitoring, additional floodplain pipes, and/or reduced mitigation ratios. There was no conclusion at this time. It was agreed that a decision should be made before the field inspection.

Ms. Matthews questioned the timing of the "future loop". Mr. Smith and Mr. Blair agreed the embankment would be constructed but not paved.

Mr. Fleming stated the stormwater will be handled with pre-formed scour holes and grass swales.

Plan Sheet 7:

Mr. Fleming stated that the wetland system and jurisdictional stream at +/- station 16+00 –L- will be conveyed with a 60" RC pipe buried 1.0'. Mr. Fleming stated the stormwater will be handled with pre-formed scour holes and grass swales.

Mr. Wainwright expressed concern about the wetland boundary that appears incomplete along -Y4-. Mr. Wainwright made it clear that he cannot "sign off" on –Y4- alignment until he receives documentation that the alignment minimizes wetland impact as previously agreed upon. Mr. Fleming stated a request for clarification of the boundary had been sent to Hydraulics. (9/26/08). NEU stated they had received the request and is looking into the situation.

Mr. Fleming stated that the wetland system at +/-26+00 –L- will be conveyed with a proposed 36" RC pipe. This system is a wetland with no channel. Mr. Fleming also proposes to use standard rip rap pads at the outlet of this pipe and others that convey flow in a wetland system with no channel. He expressed concern for using scour holes and/or energy dissipaters in wetlands. He expressed that the construction of these outlet protections would disturb the system more than a standard pad to dissipate the energy. Mr. Fleming explained that this is not an equalizer pipe but it's a crosspipe with discernable drainage area. Mr. Fleming there are equalizer pipes proposed on the project and they will be flat (0.0% grade) and require no outlet protection. Mr. Fleming explained the size of the stone proposed and the length of the proposed rip rap pads (std. 876.02 of *Roadway Standard Drawings*). Mr. Wilson stated that the pads are not a detriment to wildlife passage since the pipe sizes are relatively small. Mr. Lane expressed

concern over rip rap staying in place. Mr. Fleming stated there is a problem with the type of stone available in the area being light. Mr. Blair stated granite is being used in the area and it was agreed granite would be used for outlet protection.

Plan Sheet 8:

Mr. Fleming stated that the wetland system at +/-32+00 –L- will be conveyed with 2 proposed lines of 24" RC pipe. Mr. Fleming stated that a double line is being used for a reduction of storm elevation in a wide floodplain and should help wetland hydrology connectivity. This system also does not have a defined channel and they are not equalizer pipes.

Mr. Fleming stated the stormwater will be handled with pre-formed scour holes and grass swales.

Plan Sheet 9:

Mr. Fleming stated that the wetland system and jurisdictional stream at +/-40+00 –L- will be conveyed with a proposed 72" RC pipe buried 1.0'. This crossing is just downstream of the water quality pond behind Target and Lowes. The pond will be impacted by roadway fill but no runoff from the proposed –L- alignment will be discharged into these ponds. Mr. Fleming is proposing to minimize impact to the pond by utilizing rock-plated 1.5:1 fill slopes in the pond. Mr. Fleming stated a reduction in volume of the pond has not been finalized at this time. Mr. Wainwright stated NCDOT should notify the Stormwater Section of DWQ of the proposed construction, reduction in volume, and their process and proposal to mitigate the impact to the water quality pond. Mr. Fleming asked if that was Sungate's responsibility. Mr. Clawson stated that the process will occur during the R/W stage and will be considered apart of the property settlement. Sungate will supply NCDOT with the volume reduction of the pond(s). This data will be used to compensate the pond owner in regards to their existing stormwater permit. It will be the pond's owner responsibility to satisfy their permit with DWQ. Mr. Wainwright requested this information to be included in the permit application.

Mr. Fleming stated the stormwater will be handled with pre-formed scour holes and grass swales.

Plan Sheet 10:

Mr. Fleming stated that the wetland system and jurisdictional stream at +/-57+00 –L- will be conveyed with a proposed 42" RC pipe buried 1.0'. Also a stream that intersects with the previous stream south of the proposed alignment was discussed. This stream crosses –L- at +/-60+00. This stream is called jurisdictional beginning at +/- 30' south of the centerline. Mr. Fleming stated this stream is proposed to be conveyed with a 36'RC pipe and both pipes will be buried 20%. Mr. Sollod stated the pipes need to be buried 1.0' since the project is in a CAMA county if the stream is a "blue line" on the USGS Quad. Mr. Fleming stated he was unaware of this and will bury the pipes 1', if the streams are "blue-lines".

Mr. Fleming stated the stormwater will be handled with pre-formed scour holes and grass swales.

Plan Sheet 11:

Mr. Fleming stated there are no wetlands or jurisdictional streams impacted on this sheet.

Plan Sheet 12:

Mr. Fleming stated there is a wetland left of 100+00 Y-2 that may constitute as an impact. He noted there is an existing deep roadside ditch that runs along Marine Blvd. This ditch is proposed to be replaced in-kind at about the same elevation, but will move horizontally +/-40' to 50'. Mr. Fleming noted that the dimension stated was an estimate and needs to be verified once drainage is approved by NCDOT. Mr. Wainwright stated the "Skaggs Method" could be used to estimate the impact. Mr. Fleming stated he is familiar with the method but has never implicated it. Mr. Fleming expressed concern that past uses of the methods by others seem to over estimate the impact. Mr. Fleming also suggested that the proposed ditch will be at the same elevation as the existing. Mr. Shaver stated it seemed to be reasonable to estimate the impact by the horizontal distance the ditch will be moved. There was agreement among all.

Plan Sheet 13:

Mr. Fleming reiterated the wetland delineation problem on –Y4-.

Mr. Fleming stated the jurisdictional stream that crosses –Y4- at +/- 23+00 is proposed to be conveyed by 2 lines of 36" RC pipe. The pipe in the channel will be buried 1' if it's a "blue line", therefore the pipe size may increase.

Mr. Fleming stated there is a grade revision for Moosehaven Road that is not complete at this time and that the designers have been notified to reduce impacts to water quality ponds and the jurisdictional stream. This stream previously was not going to be impacted by Moosehaven Road. A discussion commenced upon which impact, to the pond or the stream, should be minimized the most. It was agreed to attempt to not impact the pond behind Ruby Tuesdays.

Mr. Fleming stated the pond at the SECU will be impacted. Again Mr. Wainwright requested the stormwater section of DWQ be notified.

Mr. Fleming also added that along –Y4- equalizer pipes are proposed. The number of pipes and their location will be determined once a complete wetland file is received.

Plan Sheet 14:

Mr. Fleming stated there are no wetlands or jurisdictional streams impacted on this sheet. The stormwater from the retail area will be discharged into the same water quality ponds as it does now.

Meeting adjourned.

Subject: Minutes from Interagency 4C Permit Drawing Review Meeting
On April 15, 2009 for U-4007B in Onslow County

Team Members:

Brad Shaver-USACOE	(present)
David Wainright-NCDWQ	(present)
Travis Wilson-NCWRC	(absent)
Steve Sollod-NCDCM	(present)
Steven Lane-NCDCM	(present)
Gary Jordan-USFWS	(absent)
Kathy Matthews-EPA	(present)
Chris Militscher-EPA	(absent)
Ron Lucas-FHWA	(absent)
Chris Rivenbark-NEU	(present)
John Merritt-NEU	(present)
David Harris-REU	(absent)
Bryan Taylor-Roadway	(absent)

Participants:

Marshall Clawson, NCDOT Hydraulics
Frank Fleming, Sungate Design Group
Jackson Provost, NCDOT Division 3
Mason Herndan, NCDOT Division 3
Kevin Bowen, NCDOT Division 3
Mark Staley, NCDOT-REU
Todd Murray, NCDOT Roadway

General Comments:

Marshall Clawson started the meeting by introducing the project and stating that the purpose of the meeting was to review the final hydraulic design and show that the commitments made at the 4A and 4B meeting were met. After introductions, Mr. Clawson then handed the meeting over to Frank Fleming. Mr. Fleming proceeded with discussion of site numbers for the interchange. The wetland system through the interchange on sheet #6 sites will be consolidated into one site. The site will be site #3. Mr. Fleming then proceeded by going through project site by site and fielding questions and comments for each site.

Plan Sheets 5-Site #1

Mr. Shaver asked if the impacts had increased from 4B. Mr. Fleming stated the impacts have not increased. The permits now show ditches that connect to the existing stream. Mr. Fleming stated that these ditches are replacing existing ditches that are being filled by the proposed widening. Ms. Matthews asked if any of these ditches are jurisdictional. Mr. Fleming responded that none of the ditches are jurisdictional.

Plan Sheet 6-Site #2

Mr. Fleming noted the wetland system that is located Right of Y2-SBL will considered a total take and impacted. There was agreement.

Plan Sheet 6-Site #3 (Old Site #3,#4,#5,#6)

This site is the wetland system that is being crossed by –L-, Loop 1A, Ramp 1A, and widening of Y1-SBL. Site #3 is now what was Site #'s 3, 4, 5, & 6. It was discussed to revise the site numbers but retain the station breakout and quantities in the summary sheet, as is. Mr. Fleming requested on an open issue concerning how to show and calculate impacts to Site #3 through the interchange. After Mr. Shaver, Mr. Rivenbark, and Division 3, discussed impacts and mitigation, it was decided the following. The areas between Y1-SBL (Marine Blvd.) and Ramp Y1 and the area inside the loop will not be a total take. The area between –L- and Loop 1A will be a total take. These areas will not be filled or cleared and no mitigation is required. The impact from roadway fill will be documented in the summary but the area not being filled will only be documented in the remarks on the summary. The area upstream of –L- also will not be a total take.

It was discussed to change the hatching for pavement and embankment removal on Hawkside Drive. Also add a note to "Remove Embankment to Natural Ground".

Plan Sheet 7: Site #4 and #5 (OLD Site #7 & Site #8)

Mr. Fleming discussed the combining of Site #7 & #8. It was decided to leave as is.
No other comments.

Plan Sheet 8-(No Site)

Mr. Shaver asked why there wasn't a sheet #8 in the permit package. Mr. Fleming stated that Sungate Design had received a new wetland file which eliminated any impact. Upon investigation, Sungate Design received the file on 3/27/09 from Dan Duffield of Hydraulics. There was discussion between Mr. Shaver and Mr. Rivenbark concerning verification. Mr. Rivenbark stated the area was verified by a co-worker of Mr. Shavers.

Plan Sheet 9-Site #6 (Old Site #9 & #10)

Mr. Shaver reminded Mr. Fleming that the ponds called Site #10 and Site #14 (Sheet #13) are not jurisdictional. There is no need for the sites. Mr. Fleming advised that DWQ needs to see this on the permit somewhere. It was decided to explain the filling of stormwater ponds in the remarks in the summary. Mr. Wainwright asked if these ponds have been discussed with the stormwater group of DWQ. Mr. Clawson stated that the ponds have been discussed with DWQ-Stormwater.

Mr. Herndon expressed that the sliver wetland on the right of –L- at Site #6 (old Site #9) should be a total take. There was agreement. The additional area will be shown in the remarks of the summary sheet.

Plan Sheet 10-Site #7 (Old Site #11)

No comments

Plan Sheet 12-Site #8 (Old Site #12)

Mr. Fleming discussed the procedure for drawing the limits of impact to the wetland left of 100+00 Y-1A. Mr. Fleming also stated the label will be revised to "Limits of Wetland **Impact** Drawn To Potential Effects Of Replacing Roadway Ditch." There was agreement.

Plan Sheet 13: Site #9 (Old Site #13 & #14)

No comments (Site #9)

As discussed before, Site #14 will be removed. This is an impact to a stormwater pond. Mr. Clawson stated that the impact has been coordinated with Stormwater Group of DWQ. The pond impact will be documented in the remarks of the summary.

Meeting Adjoined

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ONSLOW COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4007A	1	

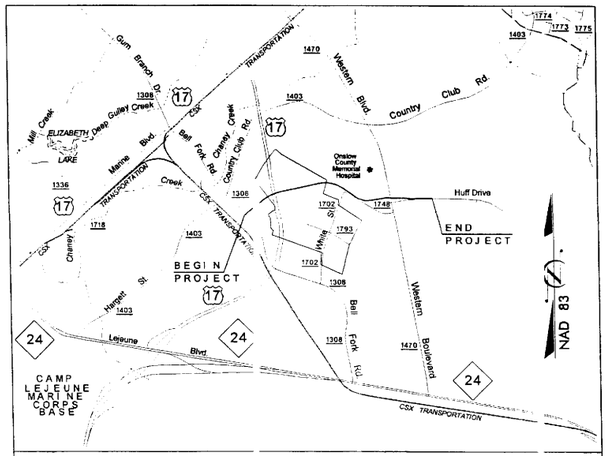
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35008.1.1	STPNHF-17(31)	PE
35008.3.1	STPNHF-17(63)	R/W & UTILS.

LOCATION: *SR 1702 (WHITE STREET EXTENSION) FROM SR 1808 (BELL FORK ROAD) TO SR 1470 (WESTERN BOULEVARD)*

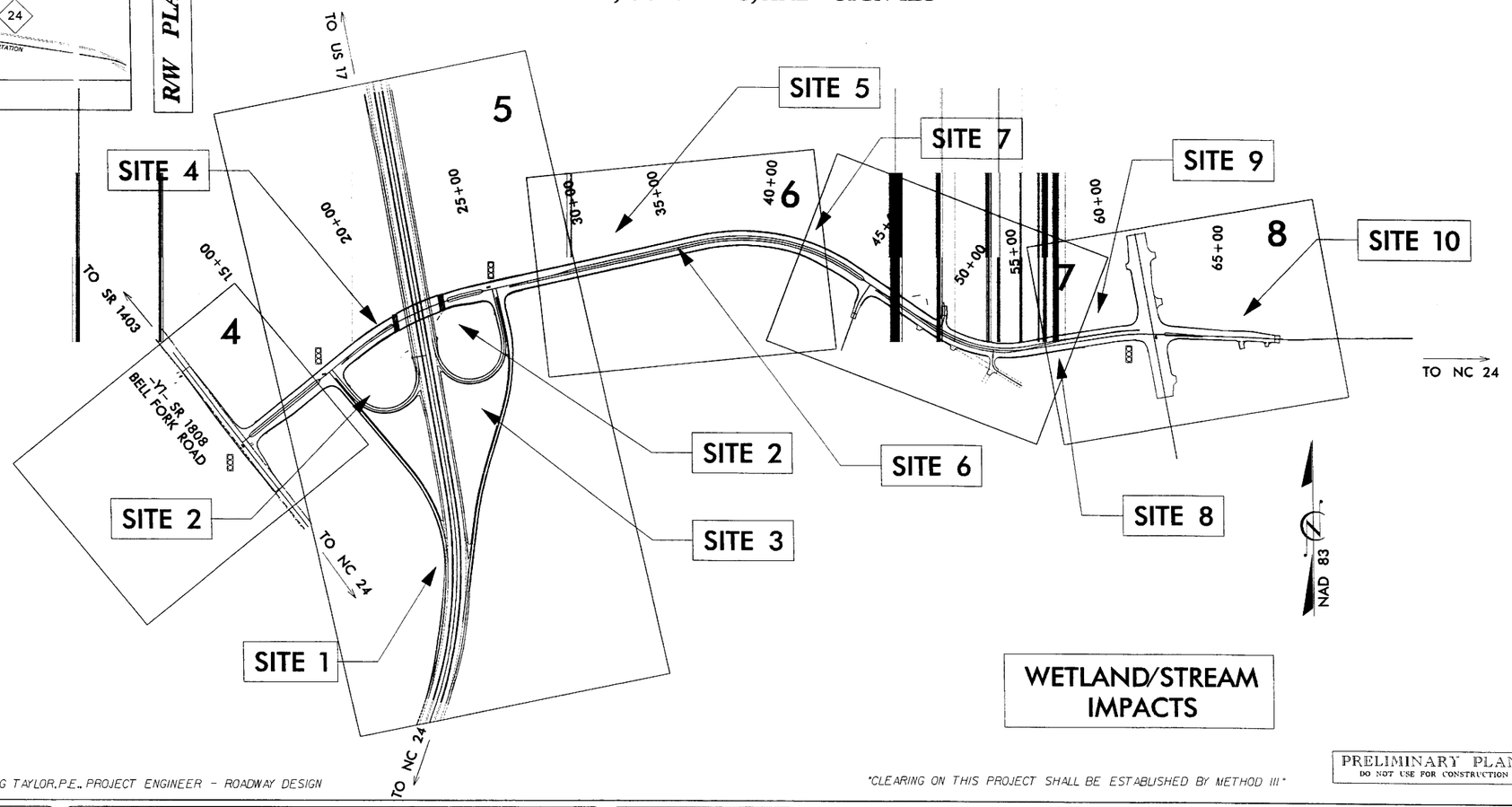
TYPE OF WORK: *GRADING, DRAINAGE, PAVING, STRUCTURE, CULVERTS, AND SIGNALS*

ENGLISH

RW PLANS



VICINITY MAP



WETLAND/STREAM IMPACTS

THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF JACKSONVILLE.

NCDOT CONTACT: DOUG TAYLOR, P.E., PROJECT ENGINEER - ROADWAY DESIGN

"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III"

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

TIP PROJECT: U-4007A

CONTRACT:

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 2011 = 14,500
ADT 2031 = 18,400
DHV = 10 %
D = 65 %
T = 2 % *
V = 40 MPH

* (TTST 1 % + DUAL 1 %)
URBAN MAJOR COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4007A	= 1.060 mi.
LENGTH STRUCTURE TIP PROJECT U-4007A	= 0.044 mi.
TOTAL LENGTH TIP PROJECT U-4007A	= 1.104 mi.

Prepared in the Office of:
WANG ENGINEERING COMPANY, INC.
CARY, N.C.
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: FEBRUARY 20, 2009

LETTING DATE: OCTOBER 19, 2010

CLIFTON T. REGISTER, P.E.
PROJECT ENGINEER

SCOTT L. KENNEDY
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SUNGATE DESIGN GROUP, PA

SIGNATURE: P.E.

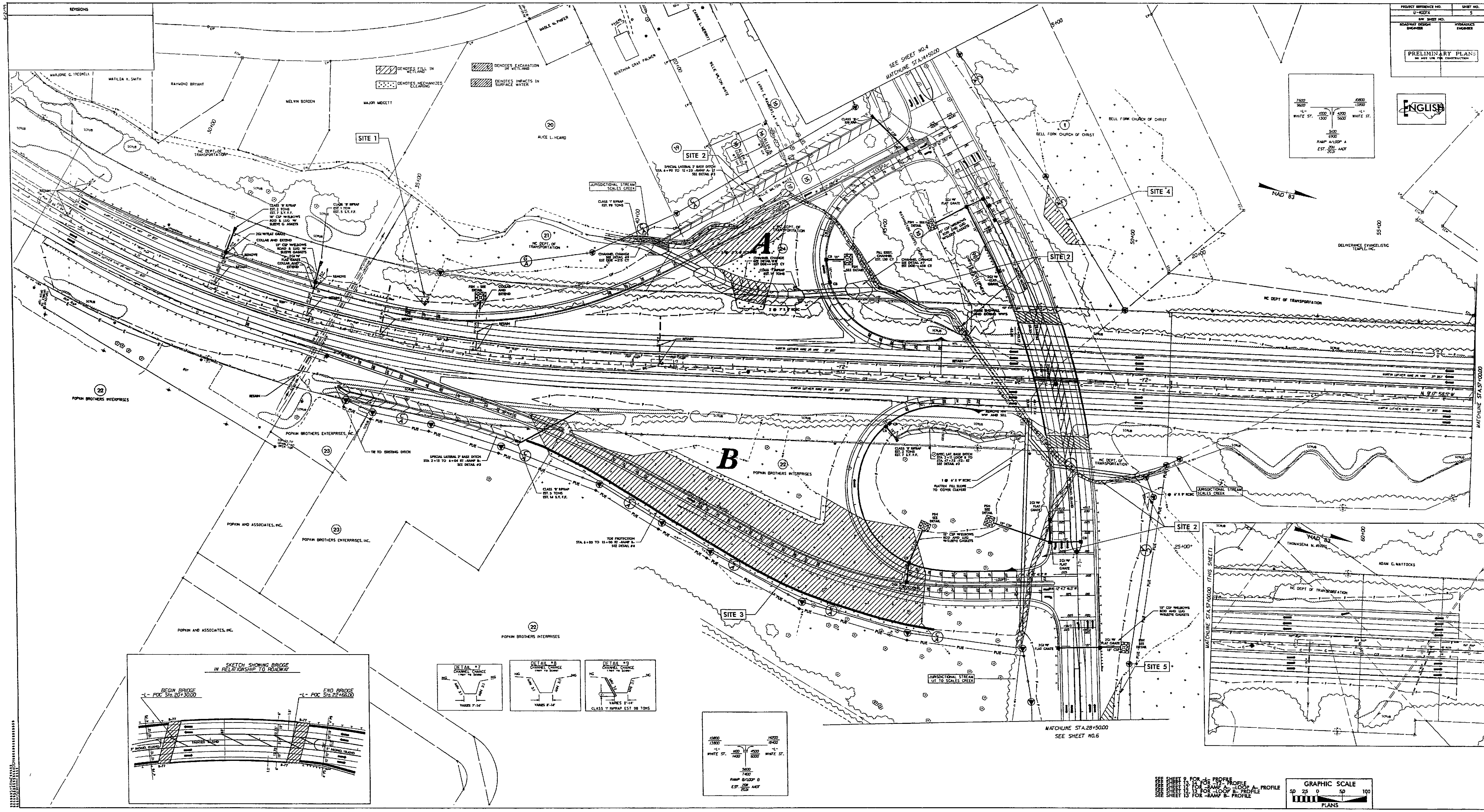
ROADWAY DESIGN ENGINEER
WANG ENGINEERING

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

Permit Drawing
Sheet 1 of 35

P.E.
STATE HIGHWAY DESIGN ENGINEER



Permit Drawing
Sheet 2 of 35

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
NO RIGHT OF WAY OR CONSTRUCTION

ENGLISH

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES EXCAVATION IN WETLAND

DENOTES IMPACTS IN SURFACE WATER

SITE 1

SITE 2

SITE 3

SITE 4

SITE 5

A

B

SEE SHEET 10.4
MATCHLINE STA.14+50.00

MATCHLINE STA.28+50.00
SEE SHEET NO.6

MATCHLINE STA.57+00.00
THIS SHEET

NAD 83

SKETCH SHOWING BRIDGE
IN RELATIONSHIP TO ROADWAY

BEGIN BRIDGE
-L- POC Sta.24+30.00

END BRIDGE
-L- POC Sta.27+66.00

DETAIL #7
CHANNEL CHANGE
(NOT to Scale)

DETAIL #8
CHANNEL CHANGE
(NOT to Scale)

DETAIL #9
CHANNEL CHANGE
(NOT to Scale)

RAMP B LOOP B
EST. DIR. ADT

RAMP A LOOP A
EST. DIR. ADT

SEE SHEET 9 FOR -L- PROFILE
SEE SHEET 12 FOR -L- PROFILE
SEE SHEET 12 FOR RAMP A LOOP A PROFILE
SEE SHEET 13 FOR RAMP B LOOP B PROFILE
SEE SHEET 13 FOR -RAMP B- PROFILE

GRAPHIC SCALE
50 25 0 50 100
PLANS

Permit Drawing
Sheet 3 of 35

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	PSH05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

25 12.5 0 25 50
PLANS

SITE 1

BLOWUP OF SHEET 5

21

NC DEPT. OF TRANSPORTATION

CLASS 'B' RIPRAP
EST. 2 TONS
EST. 7 S.Y. F.F.
18" CSP W/ELBOWS
ROD & LUG W/
SLEEVE G ASKETS

2GI W/FLAT GRATE
COLLAR AND EXTEND
15" CSP W/ELBOWS
ROAD & LUG W/
SLEEVE GASKETS

CLASS 'B' RIPRAP
EST. 1 TON
EST. 5 S.Y. F.F.

2GI W/
FLAT GRATE
COLLAR AND
EXTEND

REMOVE

RETAIN

REMOVE

RETAIN

RETAIN

RETAIN

PSH – SEE DETAIL

COLLAR AND EXTEND

F/C 15"

GRAU-350

CAT-1

35+00

+40.00

SCRUB

RIP RAP

18" RCP

15" RCP

48" RCP

36" RCP

DI

WLB

F

C

A

Permit Drawing
Sheet 4 of 35

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	PSH05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

F/F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

25 12.5 0 25 50
PLANS

SITE 1

BLOWUP OF SHEET 5

CLASS 'B' RIPRAP
EST. 2 TONS
EST. 7 S.Y. F.F.
18" CSP W/ELBOWS
ROD & LUG W/
SLEEVE G ASKETS

2GI W/FLAT GRATE
COLLAR AND EXTEND

15" CSP W/ELBOWS
ROAD & LUG W/
SLEEVE GASKETS

2GI W/
FLAT GRATE
COLLAR AND
EXTEND

CLASS 'B' RIPRAP
EST. 1 TON
EST. 5 S.Y. F.F.

REMOVE

RETAIN

REMOVE

RETAIN

GRAU-350

RETAIN

RETAIN

PSH – SEE DETAIL

COLLAR AND EXTEND

F/C 15"

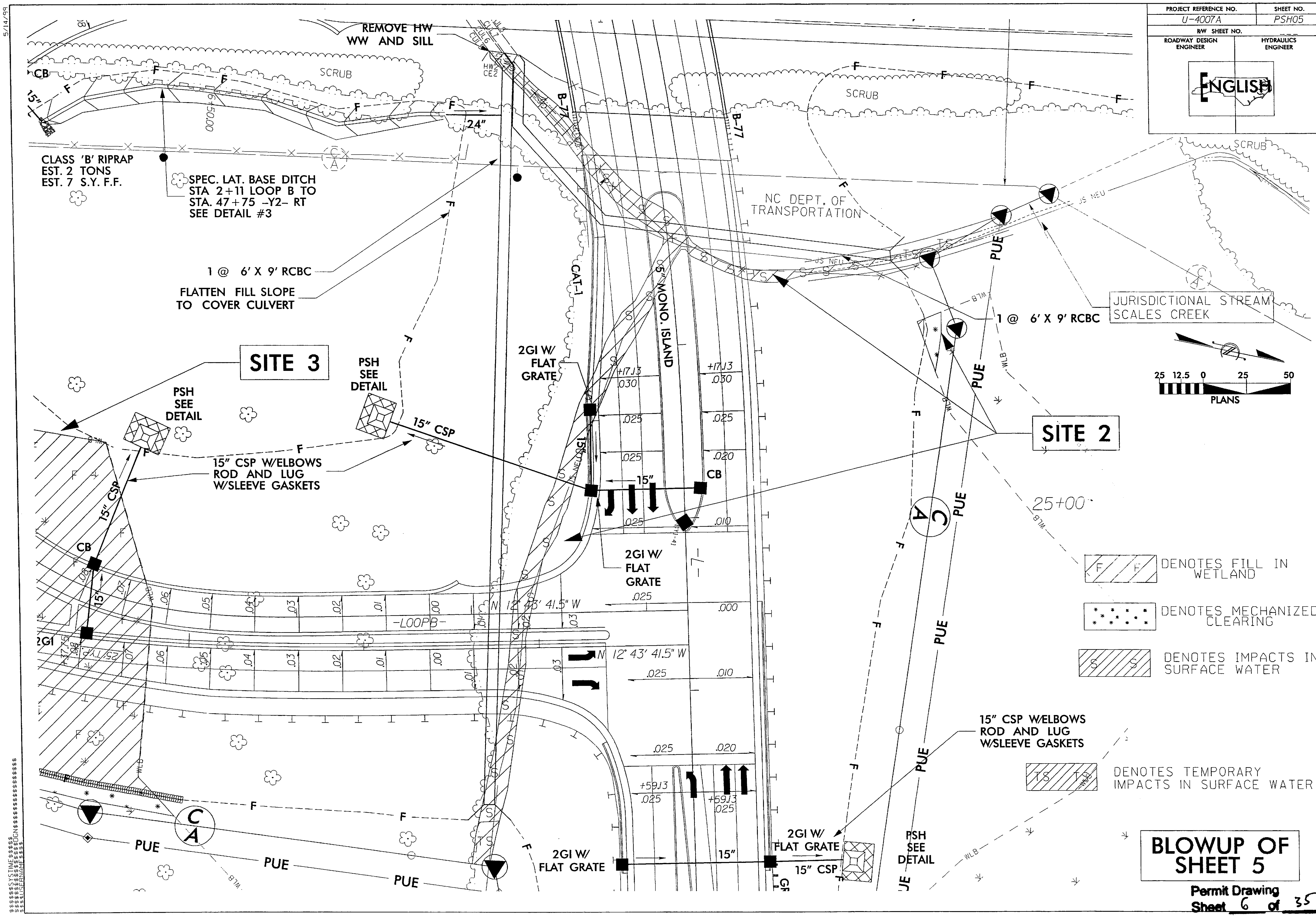
CAT 1

35+00

21

NC DEPT. OF TRANSPORTATION

Permit Drawing
Sheet 5 of 55



PROJECT REFERENCE NO.
U-4007A
SHEET NO.
PSH05
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
ENGLISH
REMOVE HW WW AND SILL
SCRUB
24"
CLASS 'B' RIPRAP EST. 2 TONS EST. 7 S.Y. F.F.
SPEC. LAT. BASE DITCH STA 2+11 LOOP B TO STA. 47+75 -Y2- RT SEE DETAIL #3
1 @ 6' X 9' RCBC
FLATTEN FILL SLOPE TO COVER CULVERT
NC DEPT. OF TRANSPORTATION
JURISDICTIONAL STREAM SCALES CREEK
SITE 3
PSH SEE DETAIL
15" CSP
15" CSP W/ELBOWS ROD AND LUG W/SLEEVE GASKETS
2GI W/ FLAT GRATE
MONO. ISLAND
CB
SITE 2
25+00
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-LOOPB-
N 12° 43' 41.5" W
PUE
2GI
PLANS
25 12.5 0 25 50
BLOWUP OF SHEET 5
Permit Drawing Sheet 6 of 35

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	PSH05
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

5/14/99

REMOVE HW WW AND SILL

CB

15"

SCRUB

CLASS 'B' RIPRAP
EST. 2 TONS
EST. 7 S.Y. F.F.

SPEC. LAT. BASE DITCH
STA 2+11 LOOP B TO
STA. 47+75 –Y2– RT
SEE DETAIL #3

1 @ 6' X 9' RCBC

FLATTEN FILL SLOPE
TO COVER CULVERT

SITE 3

PSH SEE DETAIL

PSH SEE DETAIL

15" CSP

15" CSP W/ELBOWS
ROD AND LUG
W/SLEEVE GASKETS

15" CSP

CB

2GI

25 TYP.

-LOOP B-

24"

B-77

CAT-1

55" MONO. ISLAND

2GI W/ FLAT GRATE

+59.13

.050

.025

.030

.020

.010

15"

CB

2GI W/ FLAT GRATE

N 12° 43' 41.5" W

.000

.03

.02

.01

.00

.04

.05

.06

.07

.08

.09

.10

-L-

NC DEPT. OF TRANSPORTATION

1 @ 6' X 9' RCBC

PUE

JURISDICTIONAL STREAM
SCALES CREEK

25 12.5 0 25 50
PLANS

SITE 2

25+00

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

S S DENOTES IMPACTS IN SURFACE WATER

15" CSP W/ELBOWS
ROD AND LUG
W/SLEEVE GASKETS

T5 T5 DENOTES TEMPORARY IMPACTS IN SURFACE WATER

2GI W/ FLAT GRATE

15" CSP

PSH SEE DETAIL

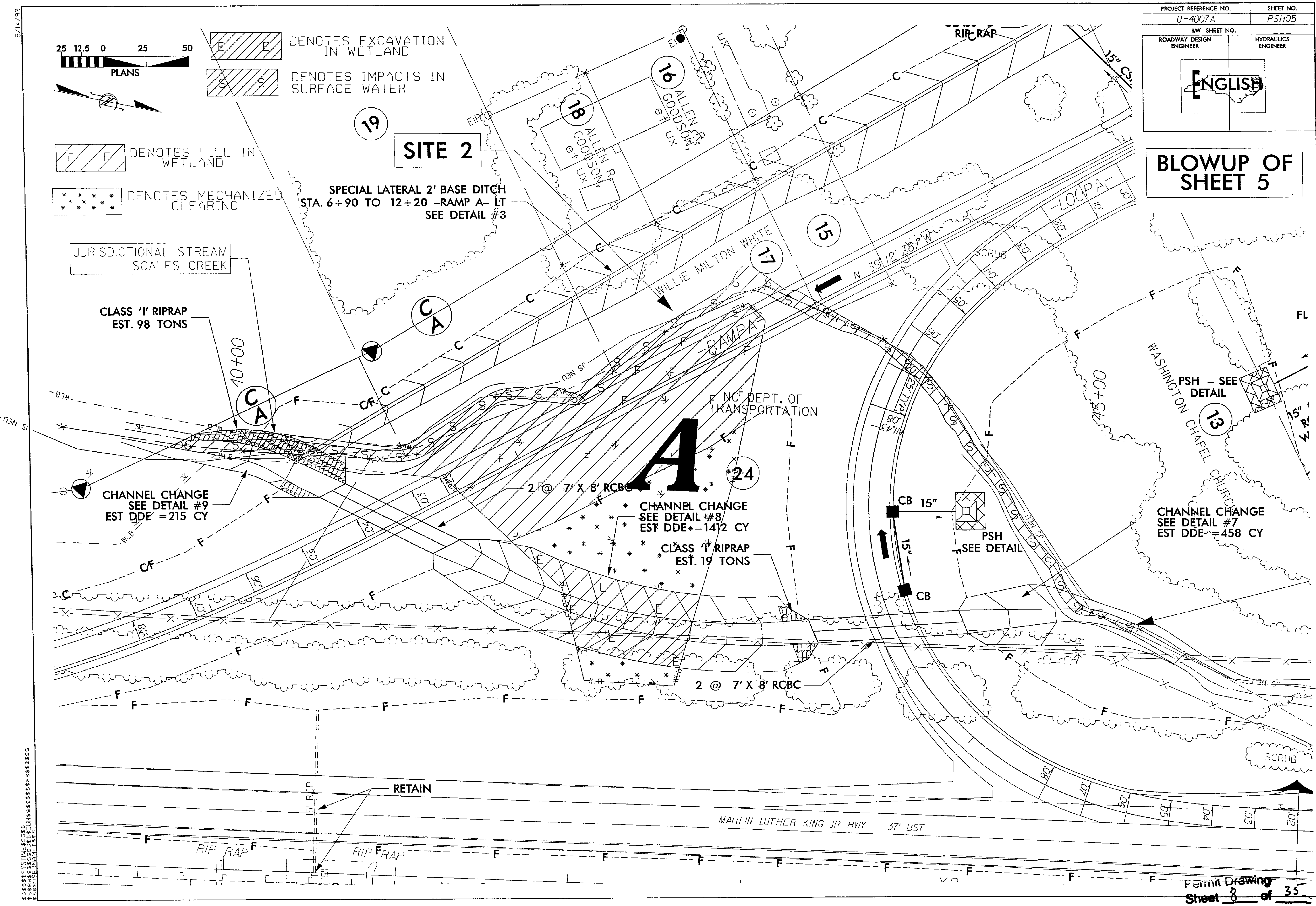
WLB

PUE

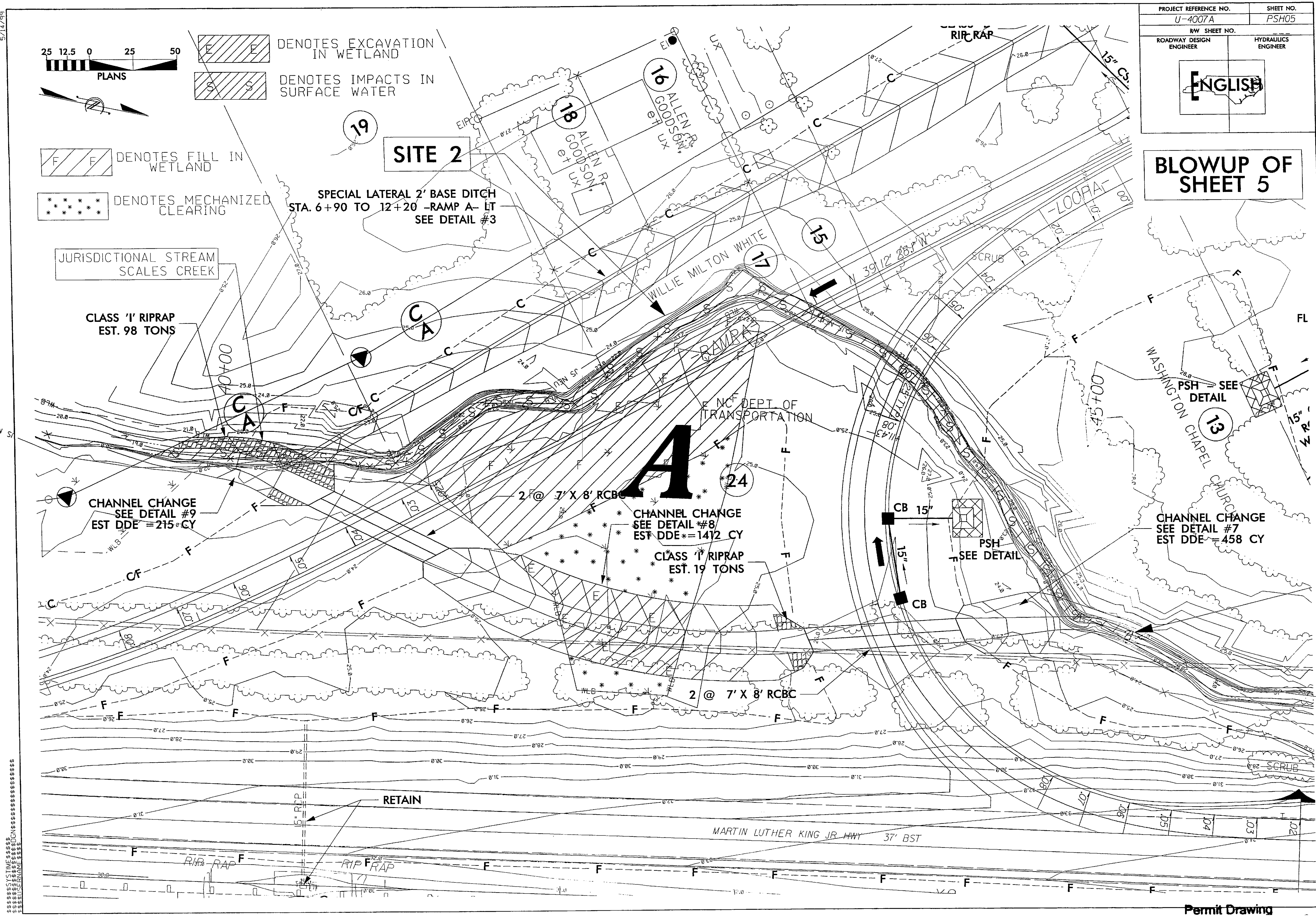
BLOWUP OF SHEET 5

Permit Drawing Sheet 7 of 35

$$$$$$$SYSTIMES$$$$$
$$$$$$$ORIENTATION$$$$$$$$$$$$$$$$$$$$$
$$$$$$$PLANAME$$$$$$


PROJECT REFERENCE NO.
U-4007A
SHEET NO.
PSH05
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
ENGLISH
BLOWUP OF SHEET 5
25 12.5 0 25 50
PLANS
DENOTES EXCAVATION IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
JURISDICTIONAL STREAM SCALES CREEK
SITE 2
SPECIAL LATERAL 2' BASE DITCH
STA. 6+90 TO 12+20 -RAMP A- LT
SEE DETAIL #3
CLASS 'I' RIPRAP
EST. 98 TONS
CHANNEL CHANGE
SEE DETAIL #9
EST DDE =215 CY
2 @ 7' X 8' RCBC
CHANNEL CHANGE
SEE DETAIL #8
EST DDE =1412 CY
CLASS 'I' RIPRAP
EST. 19 TONS
2 @ 7' X 8' RCBC
CHANNEL CHANGE
SEE DETAIL #7
EST DDE =458 CY
PSH - SEE DETAIL
PSH
SEE DETAIL
CB
CB
15"
RIP RAP
ALLEN R. GOODSON, et ux
WILLIE MILTON WHITE
NC DEPT. OF TRANSPORTATION
WASHINGTON CHAPEL CHURCH
N 39°12'28" W
-RAMP A-
-LOOP A-
40+00
45+00
A
RETAIN
MARTIN LUTHER KING JR HWY 37' BST
SCRUB
Permit Drawing
Sheet 8 of 35

5/14/99



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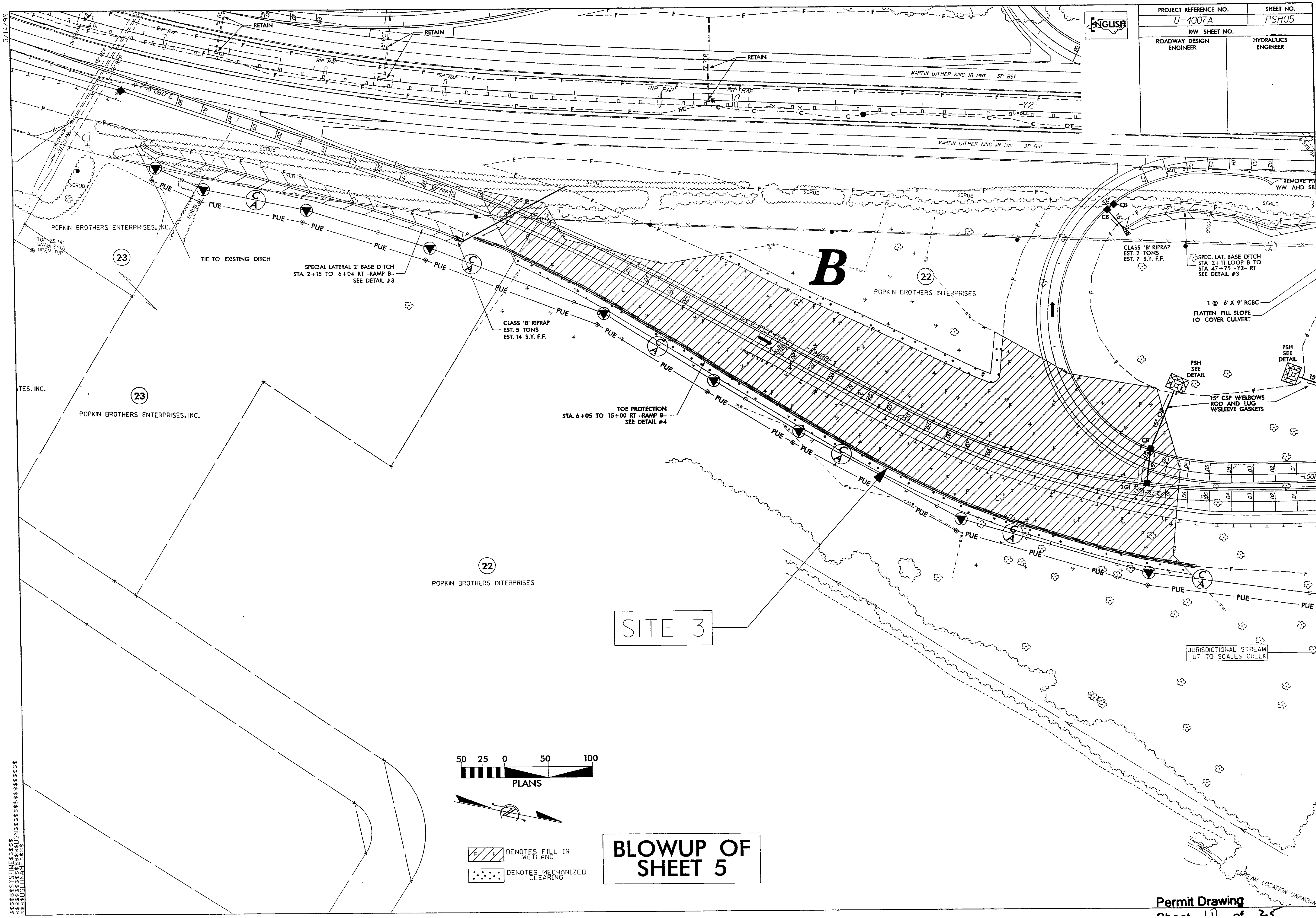
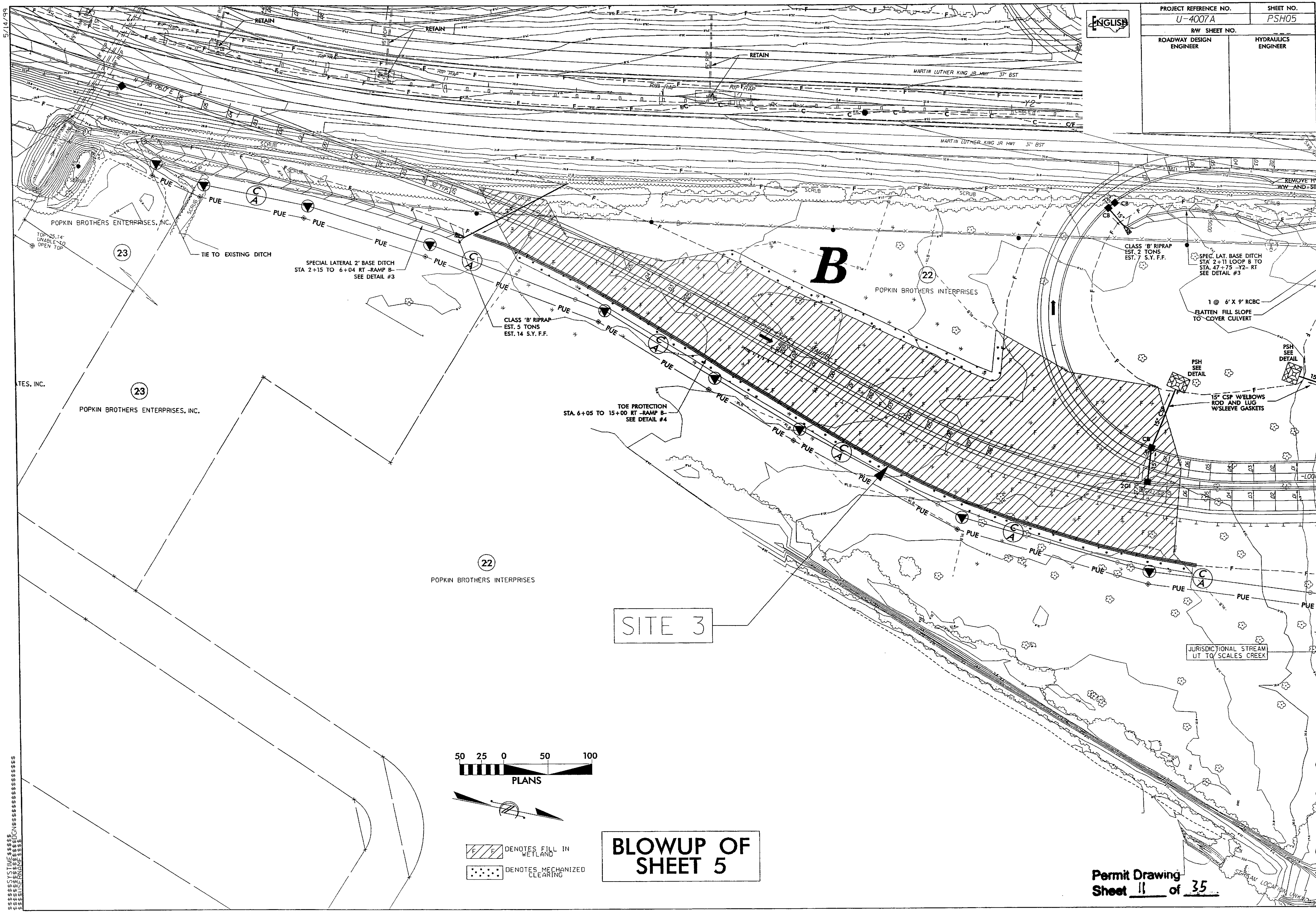

PROJECT REFERENCE NO.
U-4007A
SHEET NO.
PSH05
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
ENGLISH
RETAIN
RIP RAP
MARTIN LUTHER KING JR HWY 37' BST
-Y2-
SCRUB
PUE
POPKIN BROTHERS ENTERPRISES, INC.
23
TIE TO EXISTING DITCH
SPECIAL LATERAL 2' BASE DITCH
STA 2+15 TO 6+04 RT -RAMP B-
SEE DETAIL #3
CLASS 'B' RIPRAP
EST. 5 TONS
EST. 14 S.Y. F.F.
B
22
POPKIN BROTHERS INTERPRISES
CLASS 'B' RIPRAP
EST. 2 TONS
EST. 7 S.Y. F.F.
SPEC. LAT. BASE DITCH
STA 2+11 LOOP B TO
STA. 47+75 -Y2- RT
SEE DETAIL #3
1 @ 6' X 9' RCBC
FLATTEN FILL SLOPE
TO COVER CULVERT
PSH SEE DETAIL
15" CSP W/ELBOWS
ROD AND LUG
W/SLEEVE GASKETS
REMOVE HW
WW AND SIL
TOE PROTECTION
STA. 6+05 TO 15+00 RT -RAMP B-
SEE DETAIL #4
SITE 3
JURISDICTIONAL STREAM
UT TO SCALES CREEK
STREAM LOCATION UNKNOWN
50 25 0 50 100
PLANS
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
BLOWUP OF SHEET 5
Permit Drawing


PROJECT REFERENCE NO.
U-4007A
SHEET NO.
PSH05
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
ENGLISH
5/14/99
RETAIN
RIP RAP
MARTIN LUTHER KING JR HWY 37' BST
SCRUB
REMOVE HW WW AND SIL
POPKIN BROTHERS ENTERPRISES, INC.
TIE TO EXISTING DITCH
SPECIAL LATERAL 2' BASE DITCH STA 2+15 TO 6+04 RT -RAMP B- SEE DETAIL #3
CLASS 'B' RIPRAP EST. 5 TONS EST. 14 S.Y. F.F.
B
POPKIN BROTHERS INTERPRISES
CLASS 'B' RIPRAP EST. 2 TONS EST. 7 S.Y. F.F.
SPEC. LAT. BASE DITCH STA 2+11 LOOP B TO STA. 47+75 -Y2- RT SEE DETAIL #3
1 @ 6' X 9' RCBC
FLATTEN FILL SLOPE TO COVER CULVERT
PSH SEE DETAIL
15" CSP W/ELBOWS ROD AND LUG W/SLEEVE GASKETS
TOE PROTECTION STA. 6+05 TO 15+00 RT -RAMP B- SEE DETAIL #4
SITE 3
JURISDICTIONAL STREAM UT TO SCALES CREEK
50 25 0 50 100
PLANS
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
BLOWUP OF SHEET 5
Permit Drawing Sheet 11 of 35

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	PSH05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

BLOWUP OF SHEET 5

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

25 12.5 0 25 50
PLANS

SITE 4

SITE 2

BELL FORK CHURCH OF CHRIST

15" CSP

TBDI

N 39° 52' 28.1" W

SCRUB

2GI W/ FLAT GRATE

15"

DI

PSH – SEE DETAIL

15" CSP W/ELBOWS ROD AND LUG W/SLEEVE GASKETS

WASHINGTON CHAPEL CHURCH

CHIPPER DEVELOPMENT GROUP, LLC.

5" MONO. ISLAND

2GI W/ FLAT GRATE

RAISE ENDWALL AND EXTEND WW'S

48" WW SBW

RETAIN

MTL

WLB

ECM

45+00

50+00

20+00

Permit Drawing
Sheet 12 of 35

5/14/99

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	PSH05
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

ENGLISH

BLOWUP OF SHEET 5

F F DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

S S DENOTES IMPACTS IN SURFACE WATER

25 12.5 0 25 50
PLANS

SITE 4

SITE 2

BELL FORK CHURCH OF CHRIST

WASHINGTON CHAPEL CHURCH

CHIPPER GROVE DEVELOPMENT, LLC.

15" CSP

TBDI

2GI W/ FLAT GRATE

15"

DI

PSH SEE DETAIL

15" CSP W/ELBOWS ROD AND LUG W/SLEEVE GASKETS

5' MONO. ISLAND

2GI W/ FLAT GRATE

48" WW SBW

RAISE ENDWALL AND EXTEND WW'S

RETAIN

SCRUB

MTL

WLB

ECM

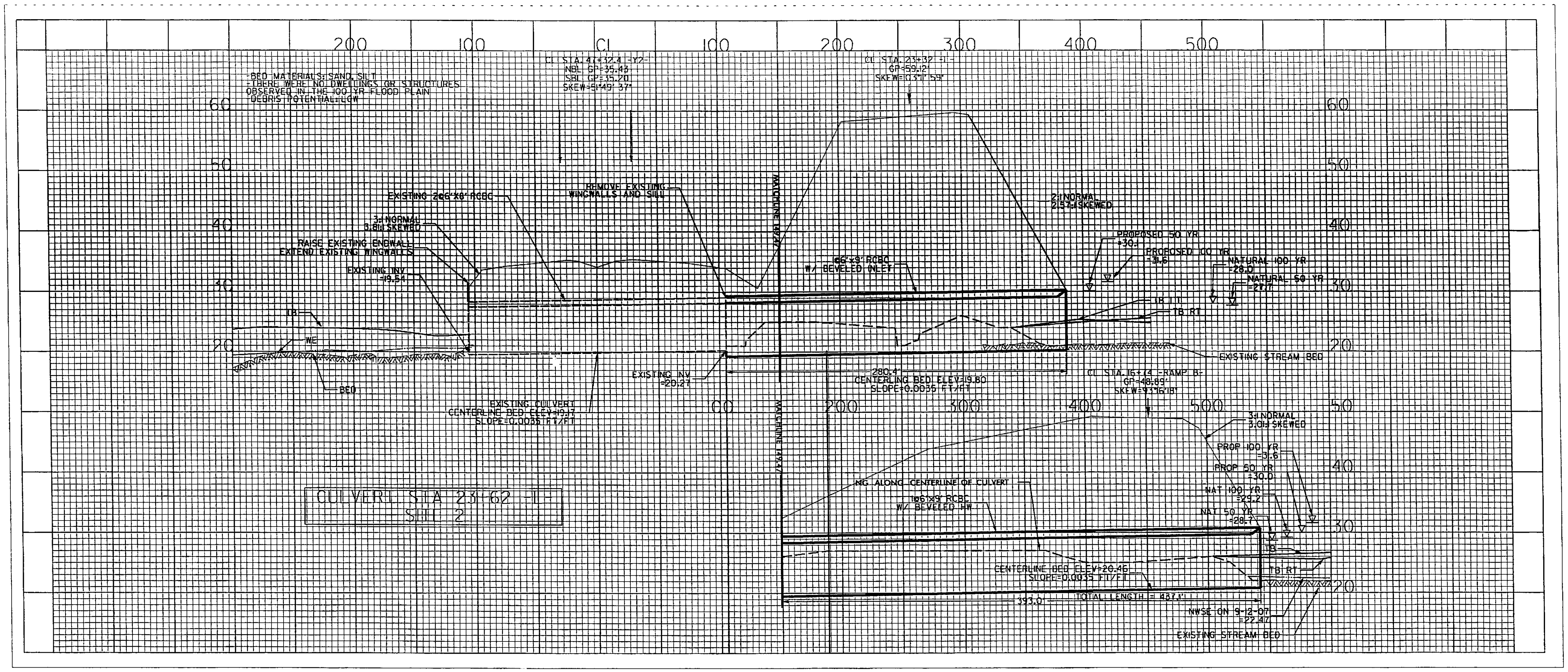
EIP

45+00

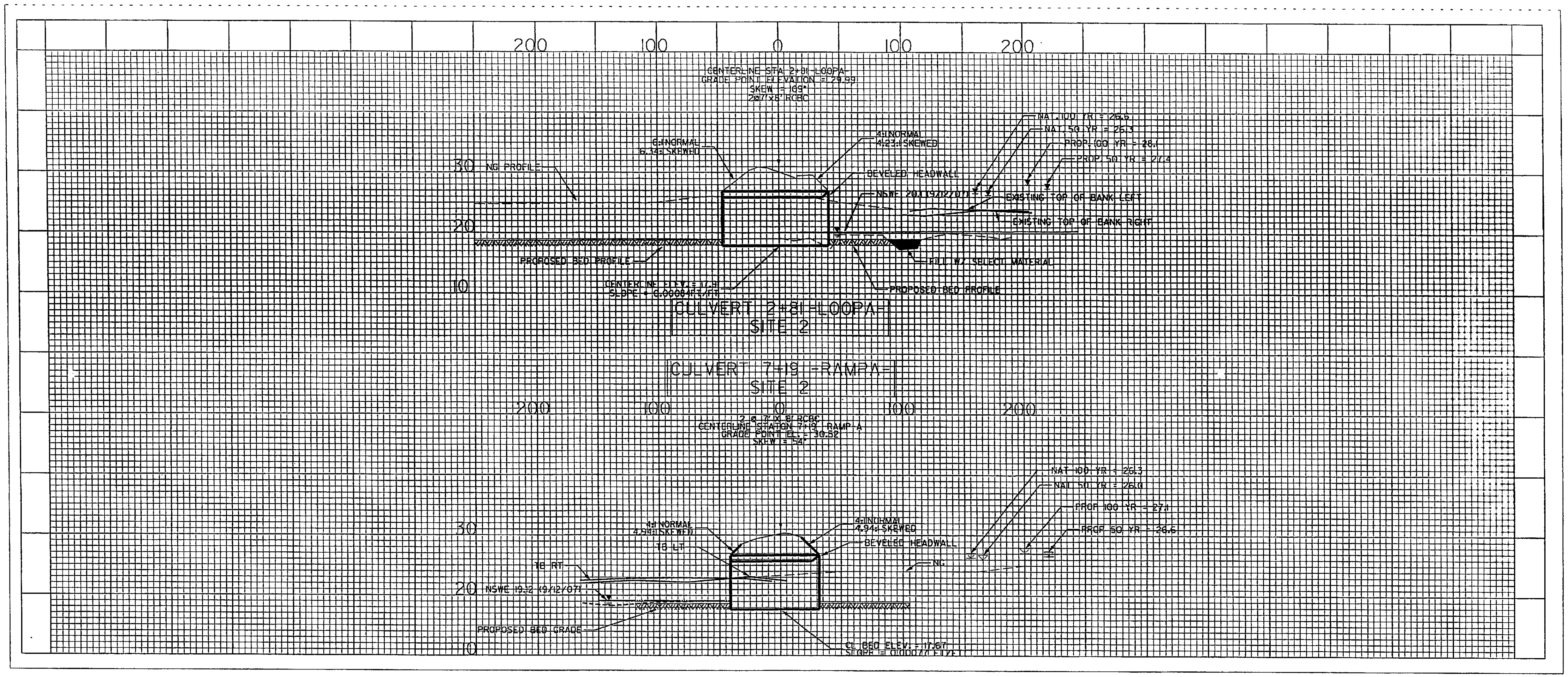
50+00

20+00

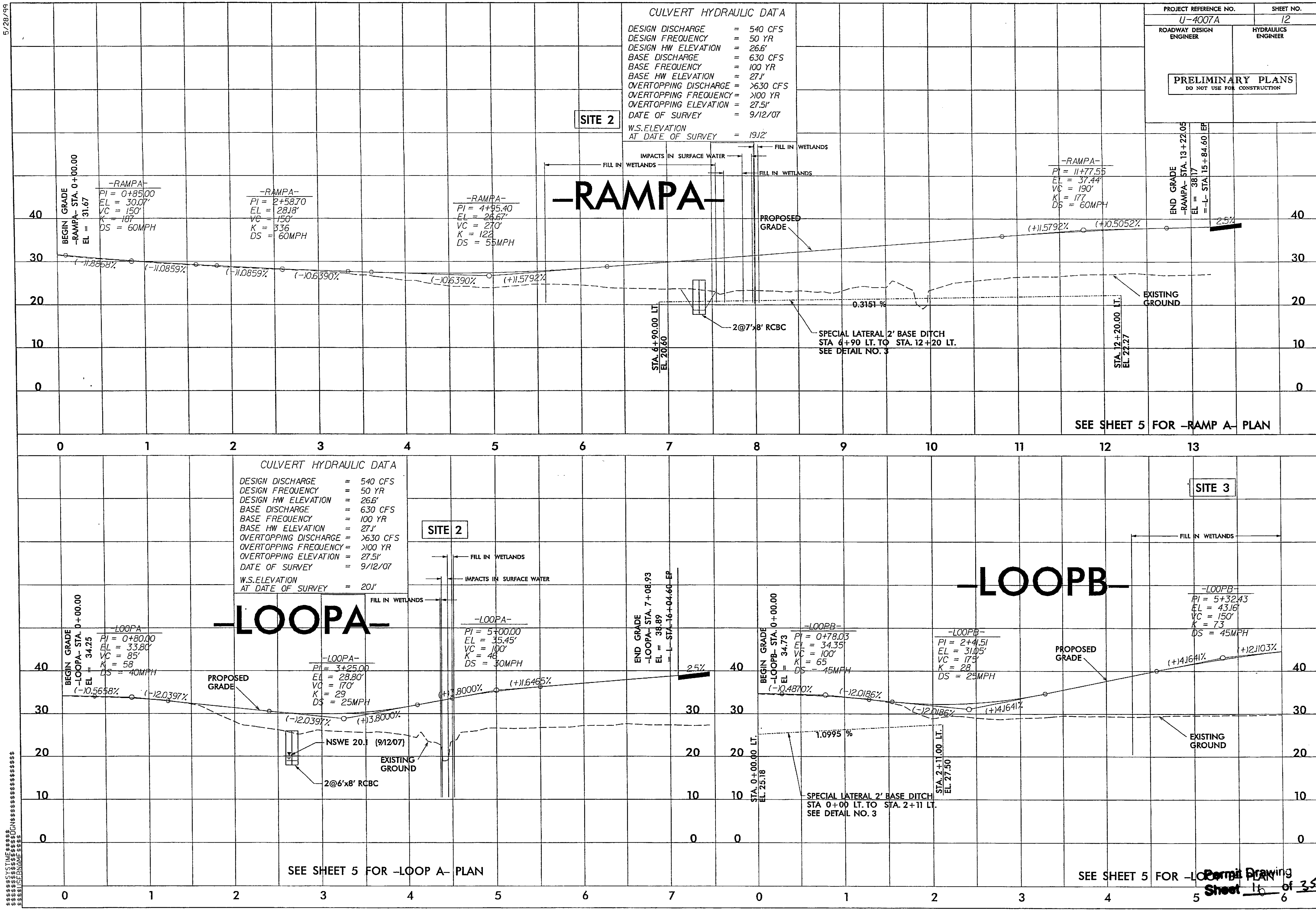
Permit Drawing
Sheet 12 of 35

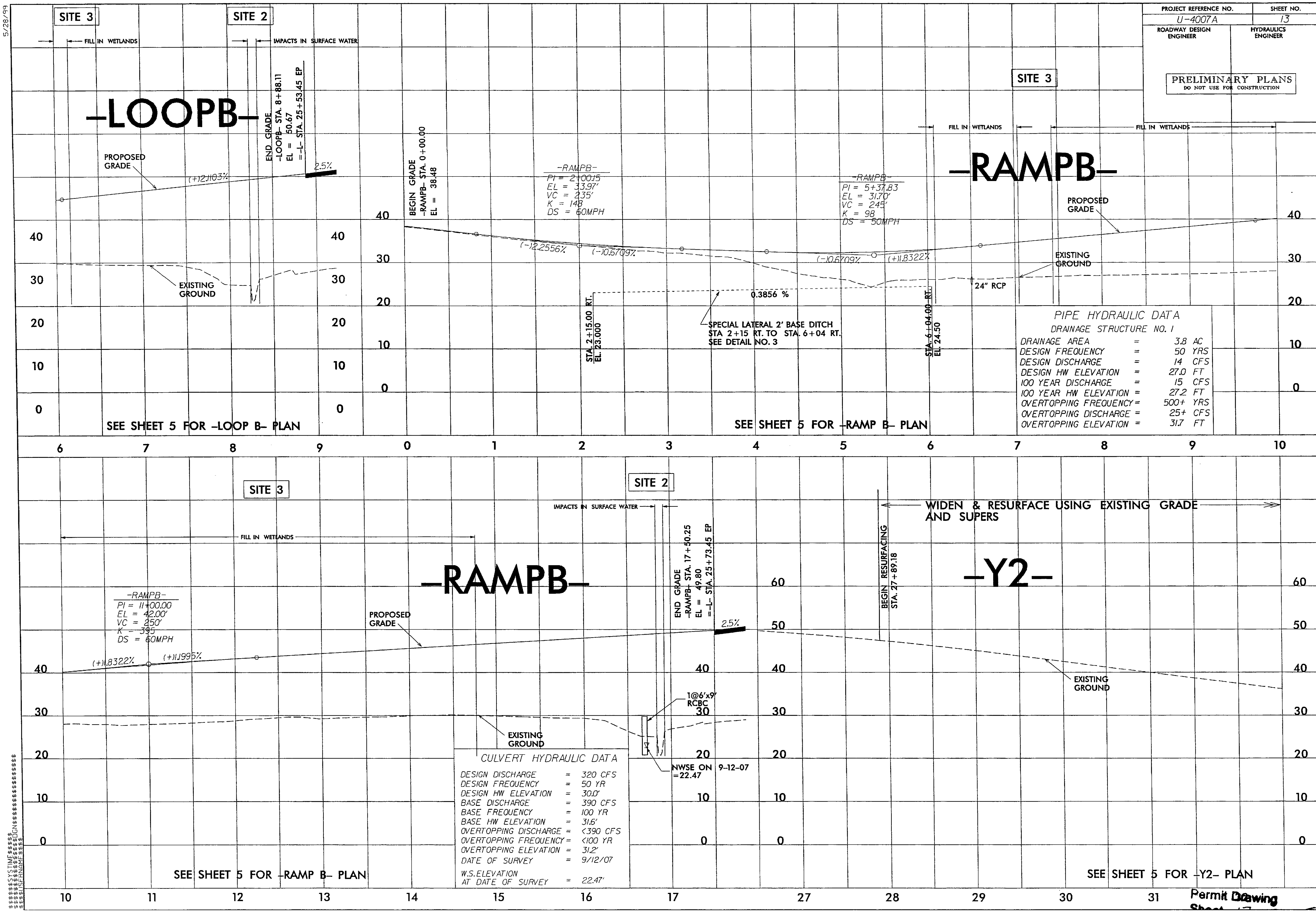


Permit Drawing
Sheet 14 of 35



Permit Drawing
Sheet 15 of 35


5/28/99
PROJECT REFERENCE NO. U-4007A
SHEET NO. 12
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
CULVERT HYDRAULIC DATA
DESIGN DISCHARGE = 540 CFS
DESIGN FREQUENCY = 50 YR
DESIGN HW ELEVATION = 26.6'
BASE DISCHARGE = 630 CFS
BASE FREQUENCY = 100 YR
BASE HW ELEVATION = 27.1'
OVERTOPPING DISCHARGE = >630 CFS
OVERTOPPING FREQUENCY = >100 YR
OVERTOPPING ELEVATION = 27.51'
DATE OF SURVEY = 9/12/07
W.S. ELEVATION AT DATE OF SURVEY = 19.12'
SITE 2
-RAMPA-
BEGIN GRADE -RAMPA- STA. 0+00.00 EL = 31.67
-RAMPA- PI = 0+85.00 EL = 30.07' VC = 150' K = 187 DS = 60MPH
-RAMPA- PI = 2+58.70 EL = 28.18' VC = 150' K = 336 DS = 60MPH
-RAMPA- PI = 4+95.40 EL = 26.67' VC = 270' K = 122 DS = 55MPH
-RAMPA- PI = 11+77.55 EL = 37.44' VC = 190' K = 177 DS = 60MPH
END GRADE -RAMPA- STA. 13+22.05 EL = 38.17 = -L- STA. 15+84.60 EP
(-)1.8868% (-)1.0859% (-)1.0859% (-)0.6390% (-)0.6390% (+)1.5792% (+)1.5792% (+)0.5052% 2.5%
FILL IN WETLANDS
IMPACTS IN SURFACE WATER
PROPOSED GRADE
EXISTING GROUND
0.3151 %
2@7'x8' RCBC
STA. 6+90.00 LT. EL. 20.60
STA. 12+20.00 LT. EL. 22.27
SPECIAL LATERAL 2' BASE DITCH STA 6+90 LT. TO STA. 12+20 LT. SEE DETAIL NO. 3
SEE SHEET 5 FOR -RAMP A- PLAN
CULVERT HYDRAULIC DATA
DESIGN DISCHARGE = 540 CFS
DESIGN FREQUENCY = 50 YR
DESIGN HW ELEVATION = 26.6'
BASE DISCHARGE = 630 CFS
BASE FREQUENCY = 100 YR
BASE HW ELEVATION = 27.1'
OVERTOPPING DISCHARGE = >630 CFS
OVERTOPPING FREQUENCY = >100 YR
OVERTOPPING ELEVATION = 27.51'
DATE OF SURVEY = 9/12/07
W.S. ELEVATION AT DATE OF SURVEY = 20.1'
SITE 2
-LOOPA-
BEGIN GRADE -LOOPA- STA. 0+00.00 EL = 34.25
-LOOPA- PI = 0+80.00 EL = 33.80' VC = 85' K = 58 DS = 40MPH
-LOOPA- PI = 3+25.00 EL = 28.80' VC = 170' K = 29 DS = 25MPH
-LOOPA- PI = 5+00.00 EL = 35.45' VC = 100' K = 46 DS = 30MPH
END GRADE -LOOPA- STA. 7+08.93 EL = 38.89 = -L- STA. 16+04.60 EP
(-)0.5658% (-)2.0397% (-)2.0397% (+)3.8000% (+)3.8000% (+)1.6465% 2.5%
PROPOSED GRADE
NSWE 20.1 (9/12/07)
EXISTING GROUND
2@6'x8' RCBC
SEE SHEET 5 FOR -LOOP A- PLAN
SITE 3
-LOOPB-
BEGIN GRADE -LOOPB- STA. 0+00.00 EL = 34.73
-LOOPB- PI = 0+78.03 EL = 34.35' VC = 100' K = 65 DS = 45MPH
-LOOPB- PI = 2+41.51 EL = 31.05' VC = 175' K = 28 DS = 25MPH
-LOOPB- PI = 5+32.43 EL = 43.16' VC = 150' K = 73 DS = 45MPH
(-)0.4870% (-)2.0186% (-)2.0186% (+)4.1641% (+)4.1641% (+)2.1103%
1.0995 %
STA. 0+00.00 LT. EL. 25.18
STA. 2+11.00 LT. EL. 27.50
SPECIAL LATERAL 2' BASE DITCH STA 0+00 LT. TO STA. 2+11 LT. SEE DETAIL NO. 3
PROPOSED GRADE
EXISTING GROUND
SEE SHEET 5 FOR -LOOP B- PLAN
Permit Drawing
Sheet 16 of 35

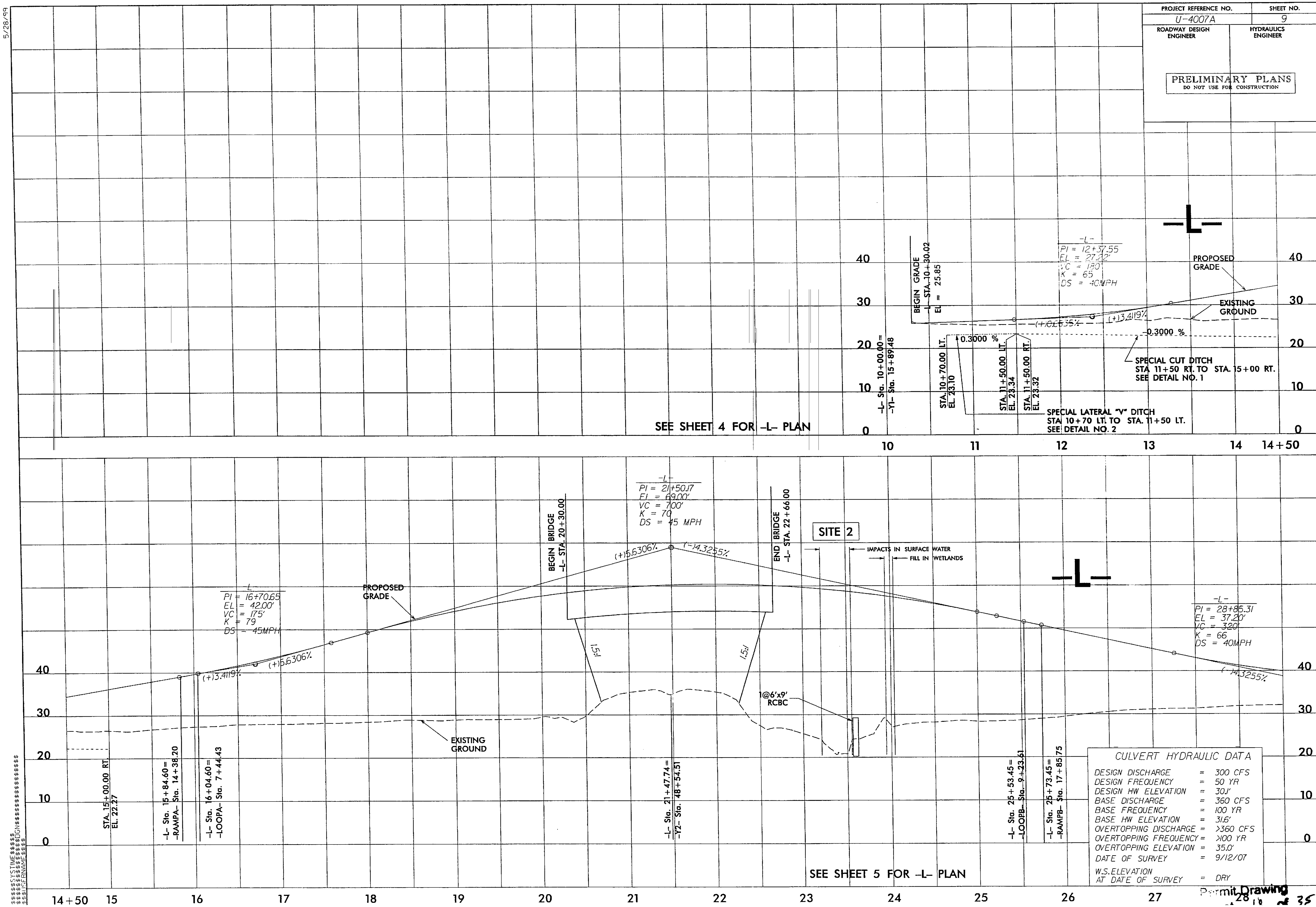

5/28/99
PROJECT REFERENCE NO. U-4007A
SHEET NO. 13
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
SITE 3
SITE 2
FILL IN WETLANDS
IMPACTS IN SURFACE WATER
-LOOPB-
END GRADE -LOOPB- STA. 8+88.11 EL = 50.67 =-L- STA. 25+53.45 EP
PROPOSED GRADE
(+)2.1103%
2.5%
EXISTING GROUND
SEE SHEET 5 FOR -LOOP B- PLAN
BEGIN GRADE -RAMPB- STA. 0+00.00 EL = 38.48
-RAMPB- PI = 2+00.15 EL = 33.97' VC = 235' K = 148 DS = 60MPH
(-)2.2556%
(-)0.6709%
-RAMPB- PI = 5+37.83 EL = 31.70' VC = 245' K = 98 DS = 50MPH
(+)1.8322%
-RAMPB-
PROPOSED GRADE
EXISTING GROUND
24" RCP
0.3856 %
STA. 2+15.00 RT. EL. 23.000
SPECIAL LATERAL 2' BASE DITCH STA 2+15 RT. TO STA. 6+04 RT. SEE DETAIL NO. 3
STA. 6+04.00 RT. EL. 24.50
PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 1
DRAINAGE AREA = 3.8 AC
DESIGN FREQUENCY = 50 YRS
DESIGN DISCHARGE = 14 CFS
DESIGN HW ELEVATION = 27.0 FT
100 YEAR DISCHARGE = 15 CFS
100 YEAR HW ELEVATION = 27.2 FT
OVERTOPPING FREQUENCY = 500+ YRS
OVERTOPPING DISCHARGE = 25+ CFS
OVERTOPPING ELEVATION = 31.7 FT
SEE SHEET 5 FOR -RAMP B- PLAN
-RAMPB- PI = 11+00.00 EL = 42.00' VC = 250' K = 395 DS = 60MPH
(+)1.8322%
(+)1.1995%
-RAMPB-
PROPOSED GRADE
EXISTING GROUND
END GRADE -RAMPB- STA. 17+50.25 EL = 49.80 =-L- STA. 25+73.45 EP
2.5%
1@6'x9' RCBC
NWSE ON 9-12-07 =22.47
CULVERT HYDRAULIC DATA
DESIGN DISCHARGE = 320 CFS
DESIGN FREQUENCY = 50 YR
DESIGN HW ELEVATION = 30.0'
BASE DISCHARGE = 390 CFS
BASE FREQUENCY = 100 YR
BASE HW ELEVATION = 31.6'
OVERTOPPING DISCHARGE = <390 CFS
OVERTOPPING FREQUENCY = <100 YR
OVERTOPPING ELEVATION = 31.2'
DATE OF SURVEY = 9/12/07
W.S.ELEVATION AT DATE OF SURVEY = 22.47'
SEE SHEET 5 FOR -RAMP B- PLAN
-Y2-
BEGIN RESURFACING STA. 27+89.18
WIDEN & RESURFACE USING EXISTING GRADE AND SUPERS
EXISTING GROUND
SEE SHEET 5 FOR -Y2- PLAN
Permit Drawing

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	9

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

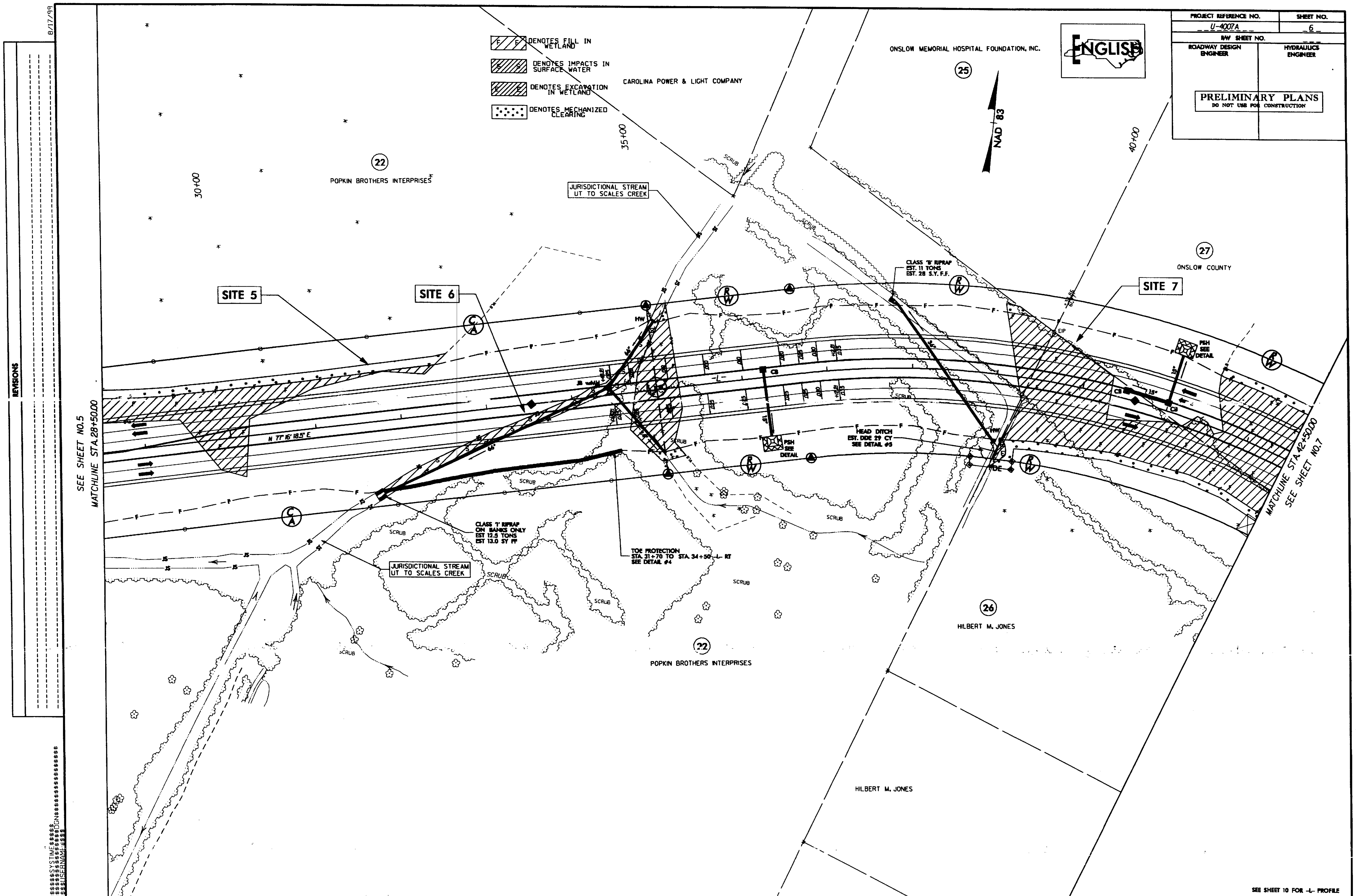
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	300 CFS
DESIGN FREQUENCY	=	50 YR
DESIGN HW ELEVATION	=	30.1'
BASE DISCHARGE	=	360 CFS
BASE FREQUENCY	=	100 YR
BASE HW ELEVATION	=	31.6'
OVERTOPPING DISCHARGE	=	>360 CFS
OVERTOPPING FREQUENCY	=	>100 YR
OVERTOPPING ELEVATION	=	35.0'
DATE OF SURVEY	=	9/12/07
W.S. ELEVATION AT DATE OF SURVEY	=	DRY

Permit Drawing 16 of 35



Permit Drawing
Sheet 19 of 35

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	6
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

ENGLISH

8/17/99

REVISIONS

DENOTES FILL IN WETLAND
DENOTES IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING

CAROLINA POWER & LIGHT COMPANY

ONSLOW MEMORIAL HOSPITAL FOUNDATION, INC.

(25)

NAD 83

(22)

POPKIN BROTHERS INTERPRISES

30+00

35+00

40+00

JURISDICTIONAL STREAM
UT TO SCALES CREEK

SITE 5

SITE 6

SITE 7

(27)

ONSLOW COUNTY

CLASS 'B' RIPRAP
EST. 11 TONS
EST. 28 S.Y. F.F.

HEAD DITCH
EST. DDE 29 CY
SEE DETAIL #3

PSH
SEE DETAIL

CLASS 'I' RIPRAP
ON BANKS ONLY
EST 12.5 TONS
EST 13.0 SY FF

TOE PROTECTION
STA. 31+78 TO STA. 34+90 -L- RT
SEE DETAIL #4

JURISDICTIONAL STREAM
UT TO SCALES CREEK

SCRUB

N 77° 16' 18.5" E

SEE SHEET NO.5
MATCHLINE STA 28+50.00

SEE SHEET NO.7
MATCHLINE STA 42+50.00

(26)

HILBERT M. JONES

POPKIN BROTHERS INTERPRISES

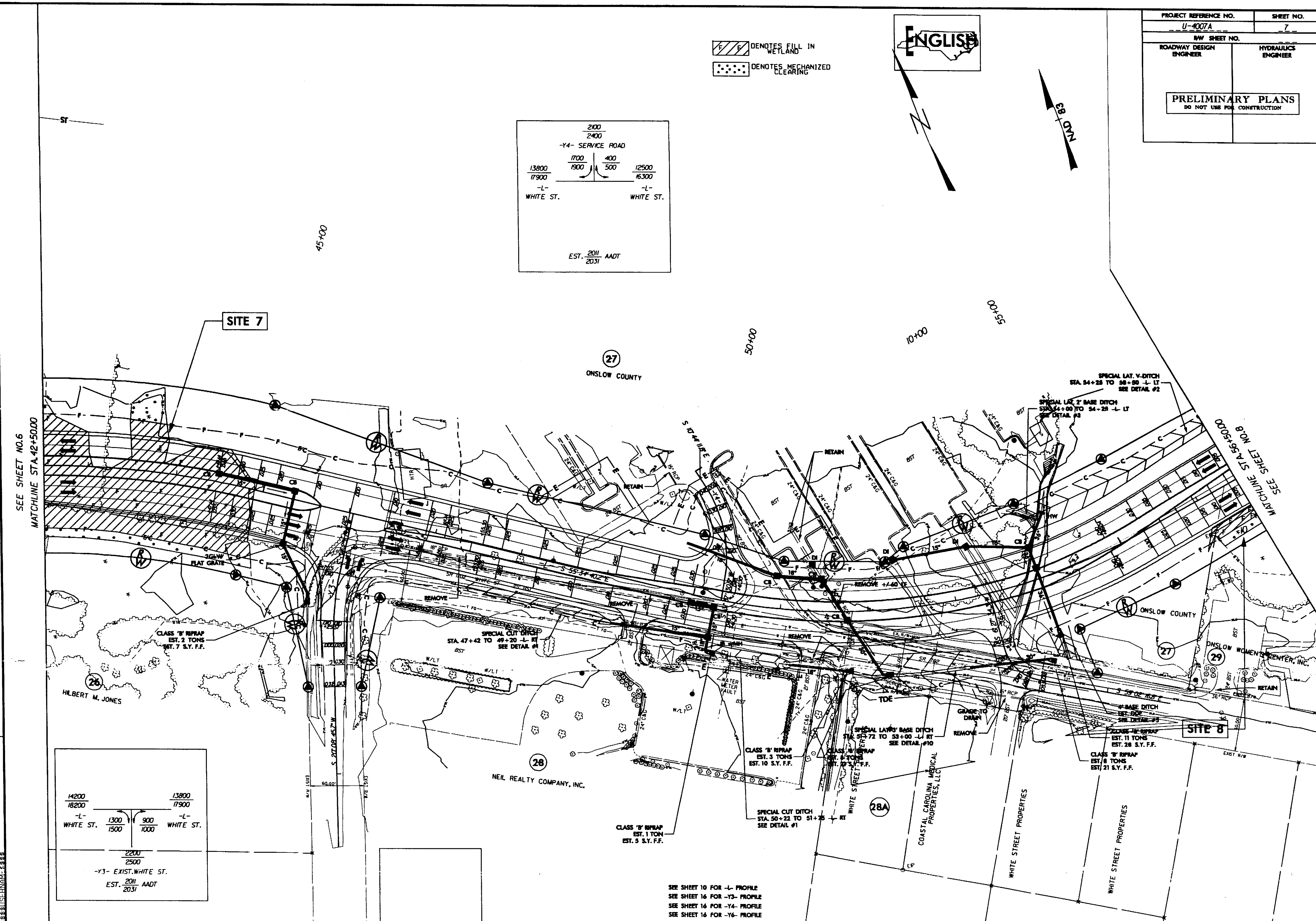
HILBERT M. JONES

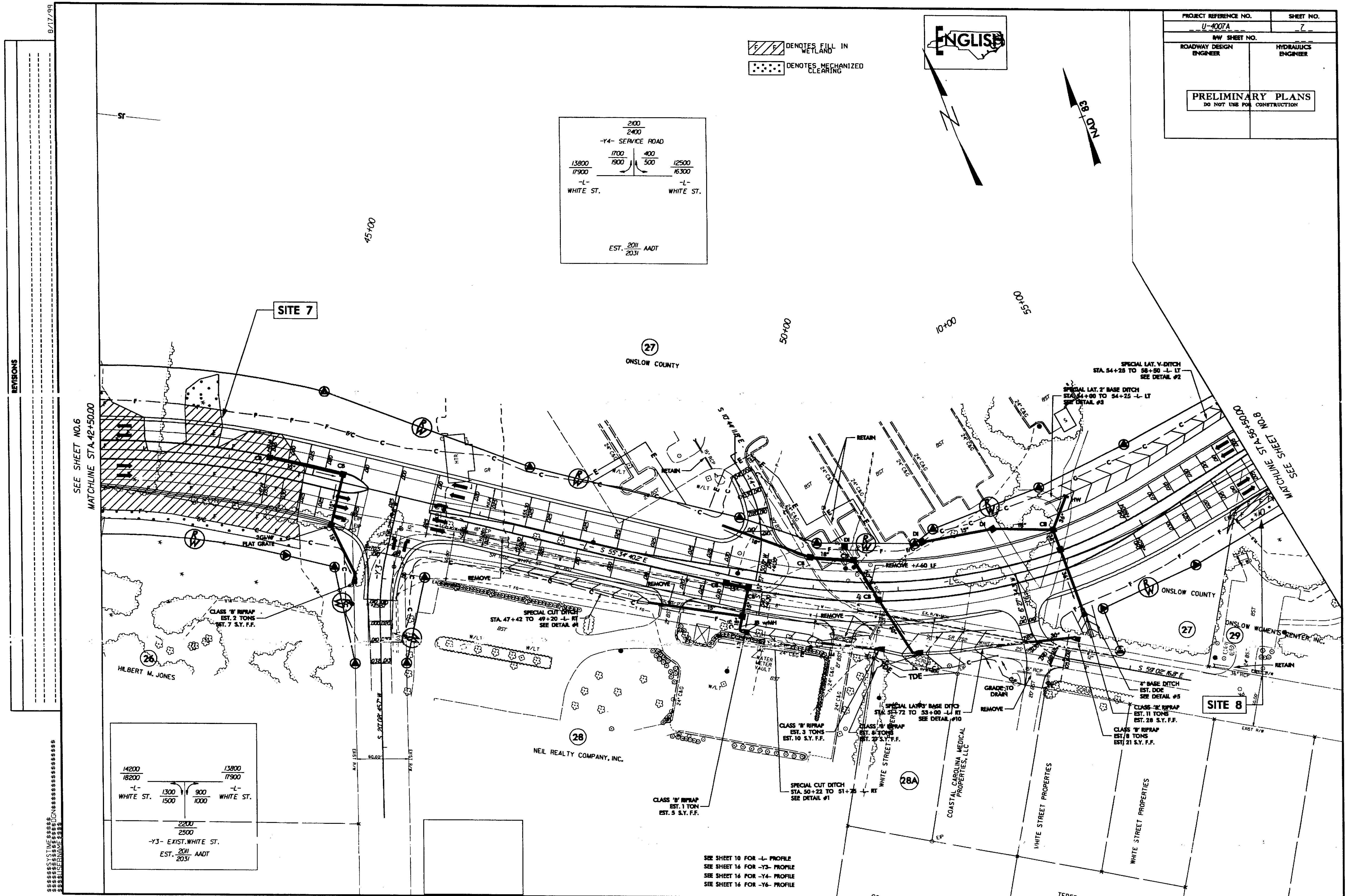
SEE SHEET 10 FOR -L- PROFILE

Permit Drawing
Sheet 7-0 of 35

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION





Permit Drawing
Sheet 32 of 35

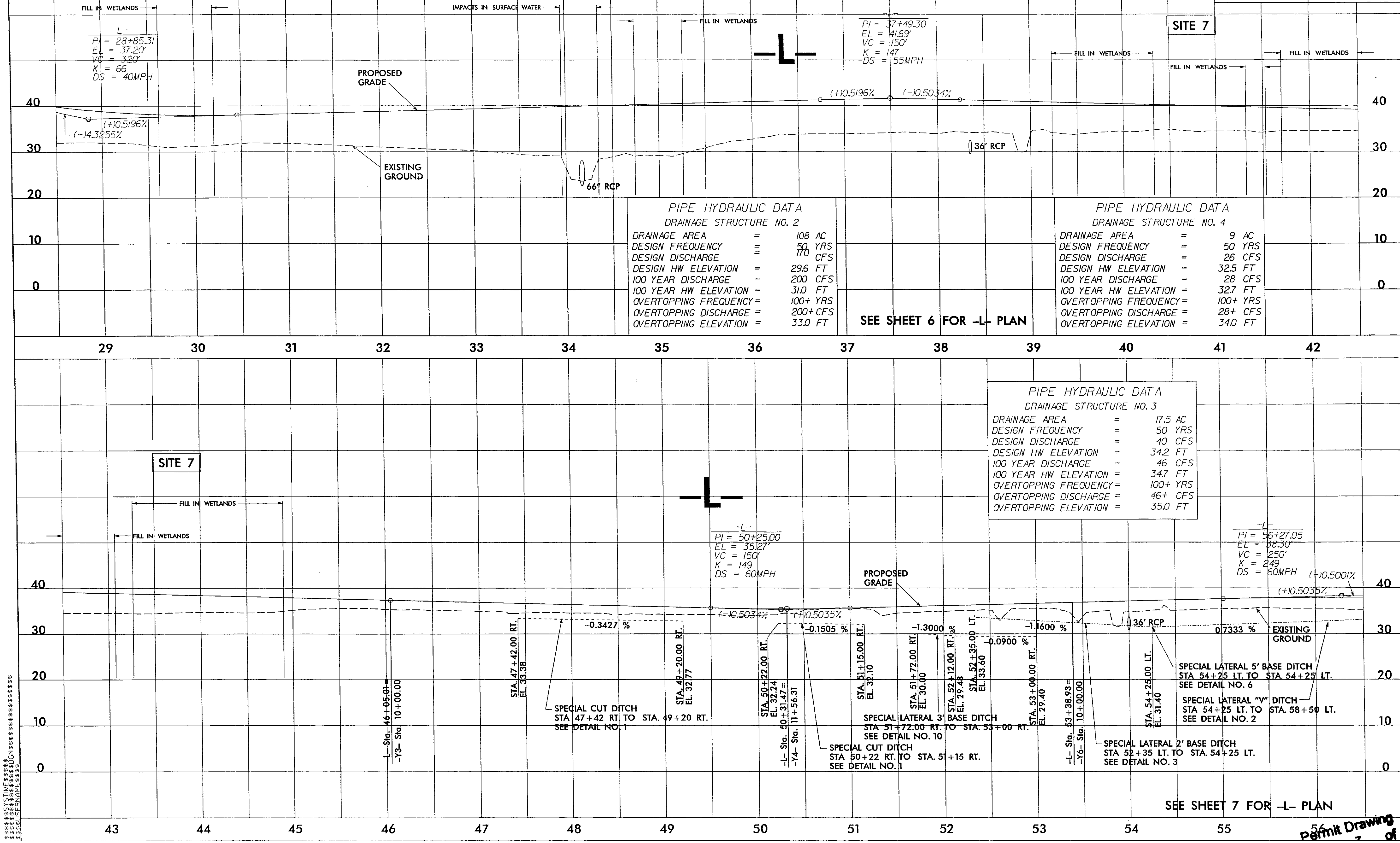
PROJECT REFERENCE NO.	SHEET NO.
U-4007A	10

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

5/28/99



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 2

DRAINAGE AREA	=	108 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	170 CFS
DESIGN HW ELEVATION	=	29.6 FT
100 YEAR DISCHARGE	=	200 CFS
100 YEAR HW ELEVATION	=	31.0 FT
OVERTOPPING FREQUENCY	=	100+ YRS
OVERTOPPING DISCHARGE	=	200+ CFS
OVERTOPPING ELEVATION	=	33.0 FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 4

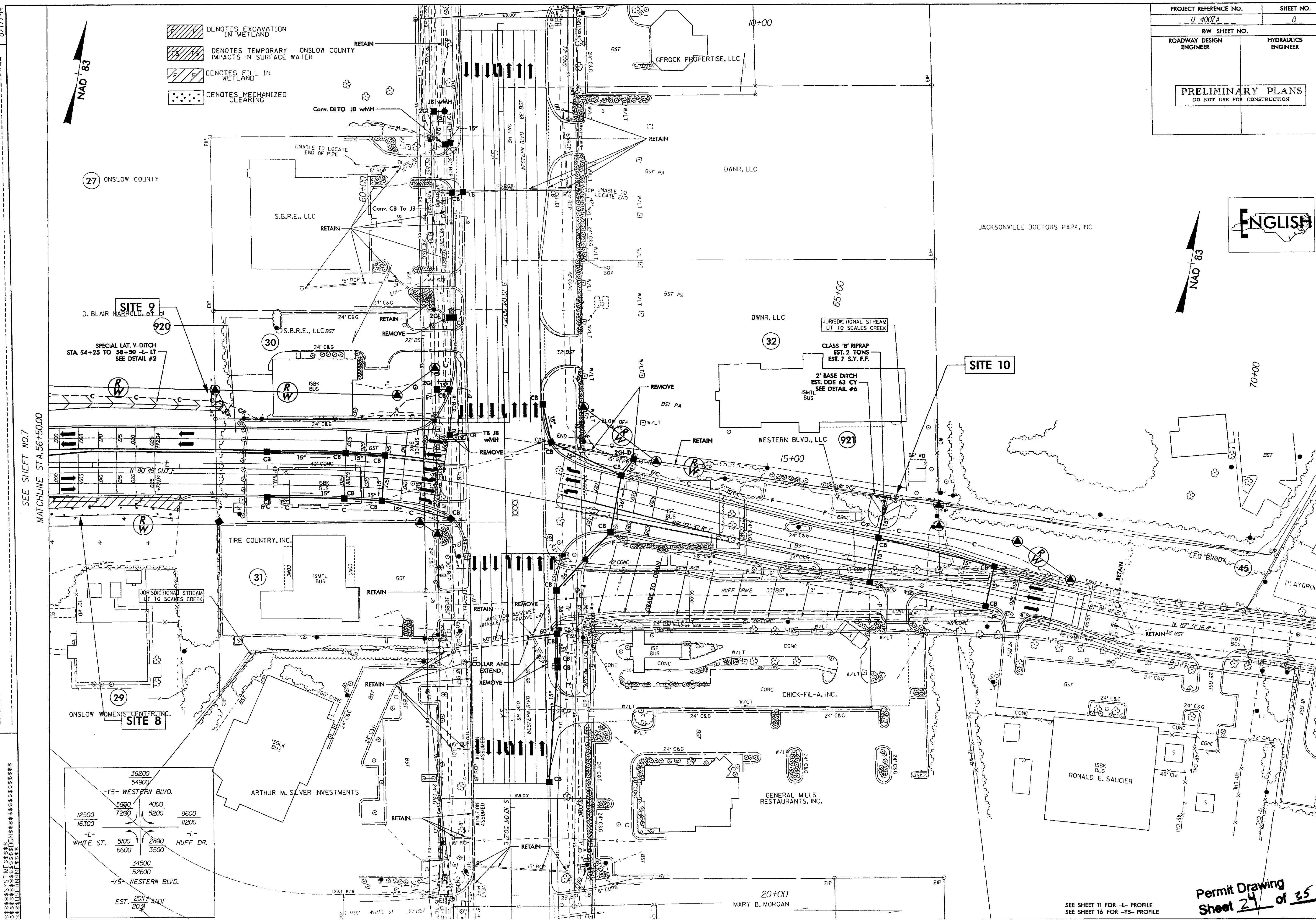
DRAINAGE AREA	=	9 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	26 CFS
DESIGN HW ELEVATION	=	32.5 FT
100 YEAR DISCHARGE	=	28 CFS
100 YEAR HW ELEVATION	=	32.7 FT
OVERTOPPING FREQUENCY	=	100+ YRS
OVERTOPPING DISCHARGE	=	28+ CFS
OVERTOPPING ELEVATION	=	34.0 FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 3

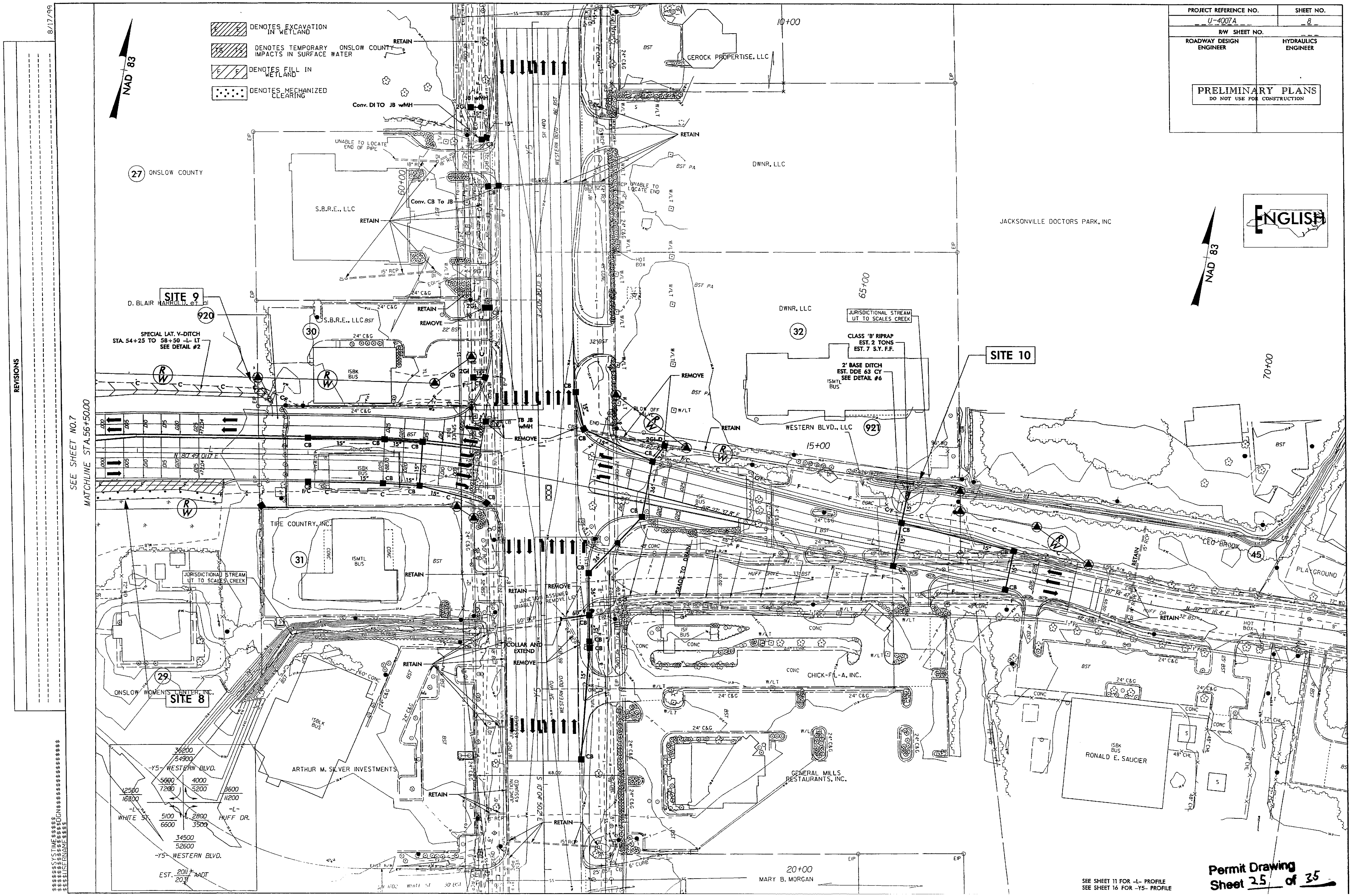
DRAINAGE AREA	=	17.5 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	40 CFS
DESIGN HW ELEVATION	=	34.2 FT
100 YEAR DISCHARGE	=	46 CFS
100 YEAR HW ELEVATION	=	34.7 FT
OVERTOPPING FREQUENCY	=	100+ YRS
OVERTOPPING DISCHARGE	=	46+ CFS
OVERTOPPING ELEVATION	=	35.0 FT

$$$$$$SYSTIME$$$$$$ $$$$$$DGN$$$$$$ $$$$$$USERNAME$$$$$$

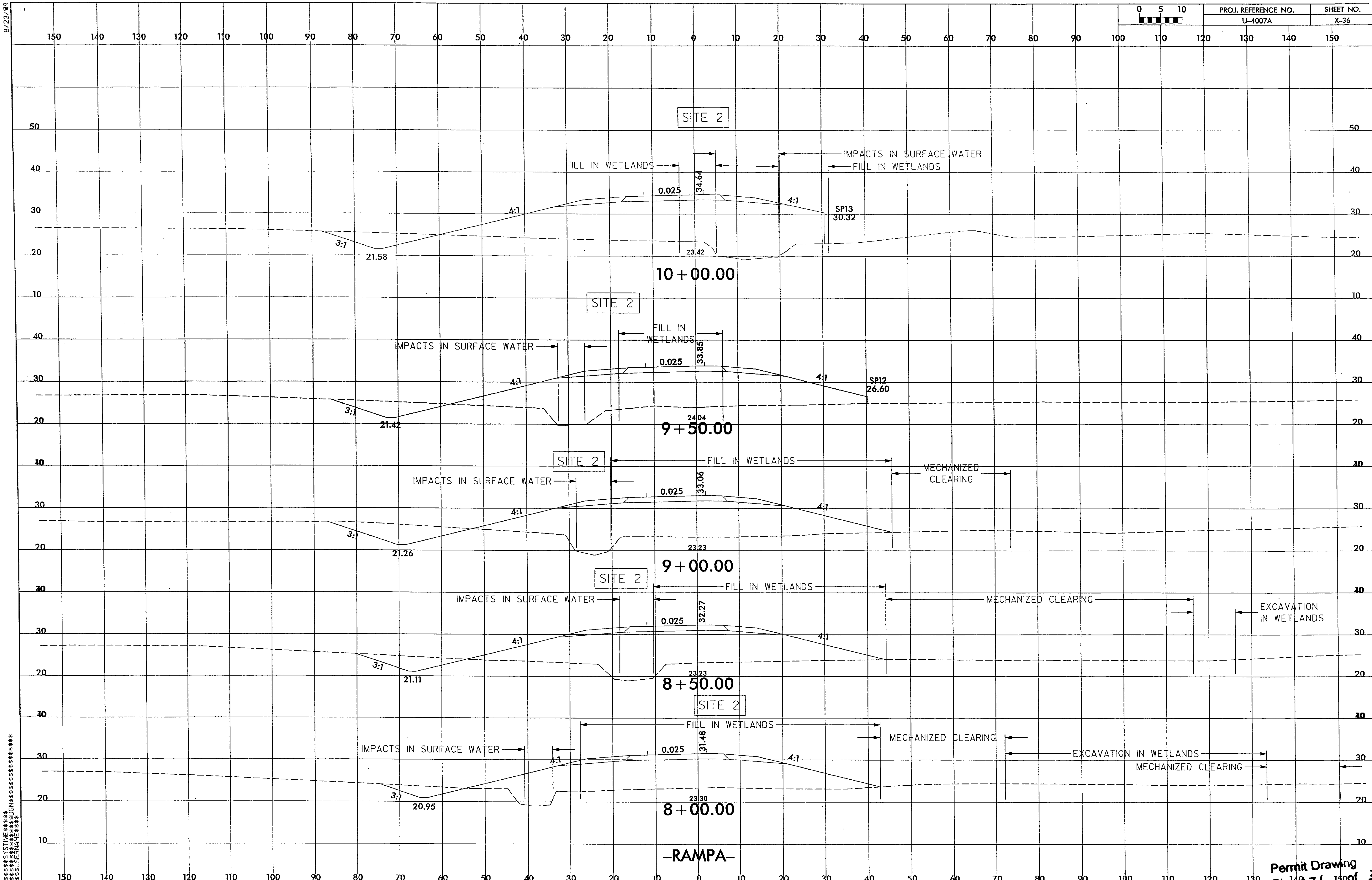
Permit Drawing 7 of 35



Permit Drawing
Sheet 24 of 35


PROJECT REFERENCE NO. U-4007A
SHEET NO. 8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
ENGLISH
NAD 83
8/17/99
REVISIONS
DENOTES EXCAVATION IN WETLAND
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
SEE SHEET NO.7
MATCHLINE STA.56+50.00
SITE 8
SITE 9
SITE 10
ONSLOW COUNTY
S.B.R.E., LLC
D. BLAIR HARROLD, et al
SPECIAL LAT. V-DITCH
STA. 54+25 TO 58+50 -L- LT
SEE DETAIL #2
TIRE COUNTRY, INC.
JURISDICTIONAL STREAM
UT TO SCALES CREEK
ONSLOW WOMEN'S CENTER, INC.
ARTHUR M. SILVER INVESTMENTS
GEROCK PROPERTISE, LLC
DWNR, LLC
JACKSONVILLE DOCTORS PARK, INC
CLASS 'B' RIPRAP
EST. 2 TONS
EST. 7 S.Y. F.F.
2' BASE DITCH
EST. DDE 63 CY
SEE DETAIL #6
WESTERN BLVD., LLC
CHICK-FIL-A, INC.
GENERAL MILLS RESTAURANTS, INC.
MARY B. MORGAN
LEO BRODY
PLAYGROUND
RONALD E. SAUCIER
HUFF DRIVE
GRADE TO DRAIN
SR 1470
WESTERN BLVD
Y5
RETAIN
REMOVE
COLLAR AND EXTEND
Conv. DI TO JB wMH
Conv. CB To JB
JUNCTION ASSUMED UNABLE TO REMOVE LID
10+00
15+00
20+00
60+00
65+00
70+00
N 80° 49' 01.0" E
S 10° 04' 50.2" E
N 88° 27' 37.8" E
S 87° 14' 47.2" E
N 87° 31' 16.4" E
-Y5- WESTERN BLVD.
-L- WHITE ST
-L- HUFF DR.
36200 / 54900
5600 / 7200
4000 / 5200
12500 / 16300
3600 / 11200
5100 / 6600
2800 / 3500
34500 / 52600
EST. 2011 / 2031 AADT
SEE SHEET 11 FOR -L- PROFILE
SEE SHEET 16 FOR -Y5- PROFILE
Permit Drawing
Sheet 25 of 35

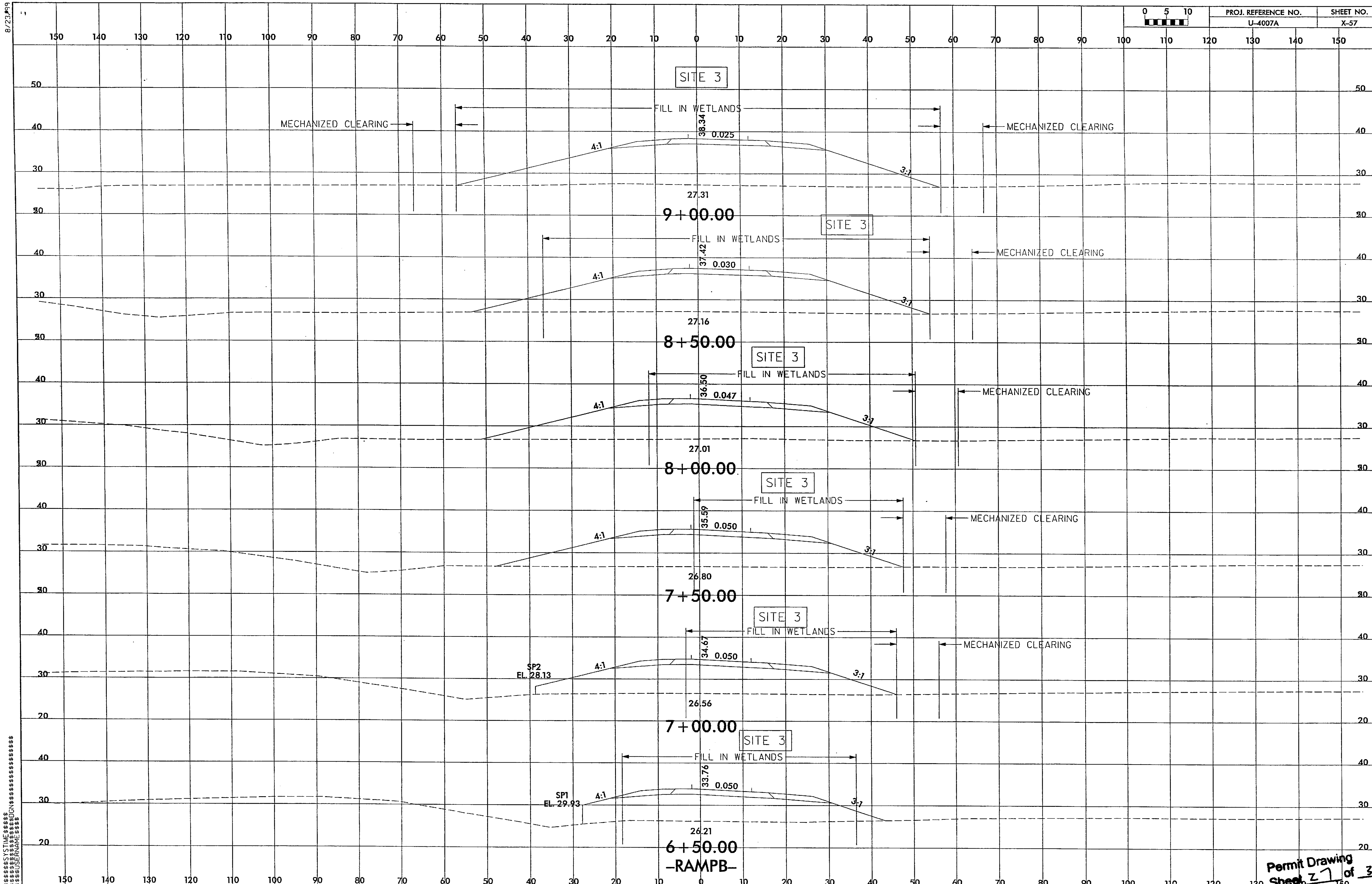
PROJ. REFERENCE NO.	SHEET NO.
U-4007A	X-36



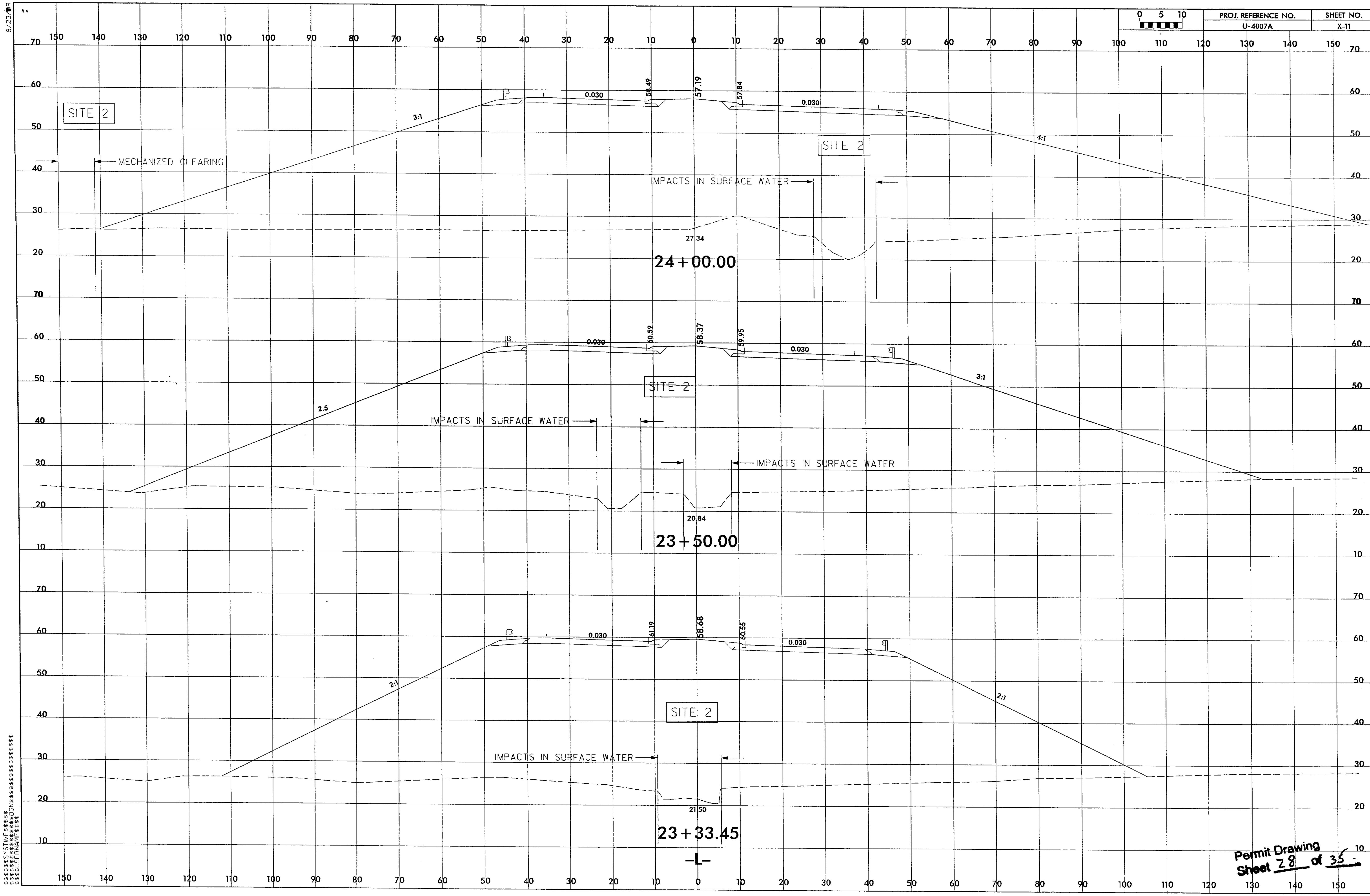
8/23/99

Permit Drawing
Sheet 26 of 35

PROJ. REFERENCE NO.	SHEET NO.
U-4007A	X-57



Permit Drawing Sheet 27 of 35


PROJ. REFERENCE NO.
U-4007A
SHEET NO.
X-11
0 5 10
SITE 2
MECHANIZED CLEARING
3:1
0.030
58.49
57.19
57.84
4:1
IMPACTS IN SURFACE WATER
27.34
24+00.00
60.59
58.37
59.95
3:1
2.5
IMPACTS IN SURFACE WATER
IMPACTS IN SURFACE WATER
20.84
23+50.00
61.19
58.68
60.55
2:1
2:1
IMPACTS IN SURFACE WATER
21.50
23+33.45
-L-
Permit Drawing
Sheet 28 of 35

8/23/19

PROJ. REFERENCE NO. U-4007A | SHEET NO. X-16

0 5 10

SITE 5

MECHANIZED CLEARING

FILL IN WETLANDS

3:1 | 0.025 | 38.28 | 38.58 | 38.28 | 0.025 | 4:1

31.53

31+50.00

SITE 5

MECHANIZED CLEARING

FILL IN WETLANDS

3:1 | 0.025 | 38.02 | 38.32 | 38.02 | 0.025 | 4:1

31.84

31+00.00

SITE 5

MECHANIZED CLEARING

FILL IN WETLANDS

3:1 | 0.025 | 37.76 | 38.06 | 37.76 | 0.025 | 4:1

31.83

30+50.00

SITE 5

MECHANIZED CLEARING

FILL IN WETLANDS

3:1 | 0.025 | 37.66 | 37.96 | 37.66 | 0.025 | 4:1

31.44

30+23.45

SITE 5

MECHANIZED CLEARING

FILL IN WETLANDS

3:1 | 0.025 | 37.70 | 37.95 | 37.65 | 0.025 | 4:1

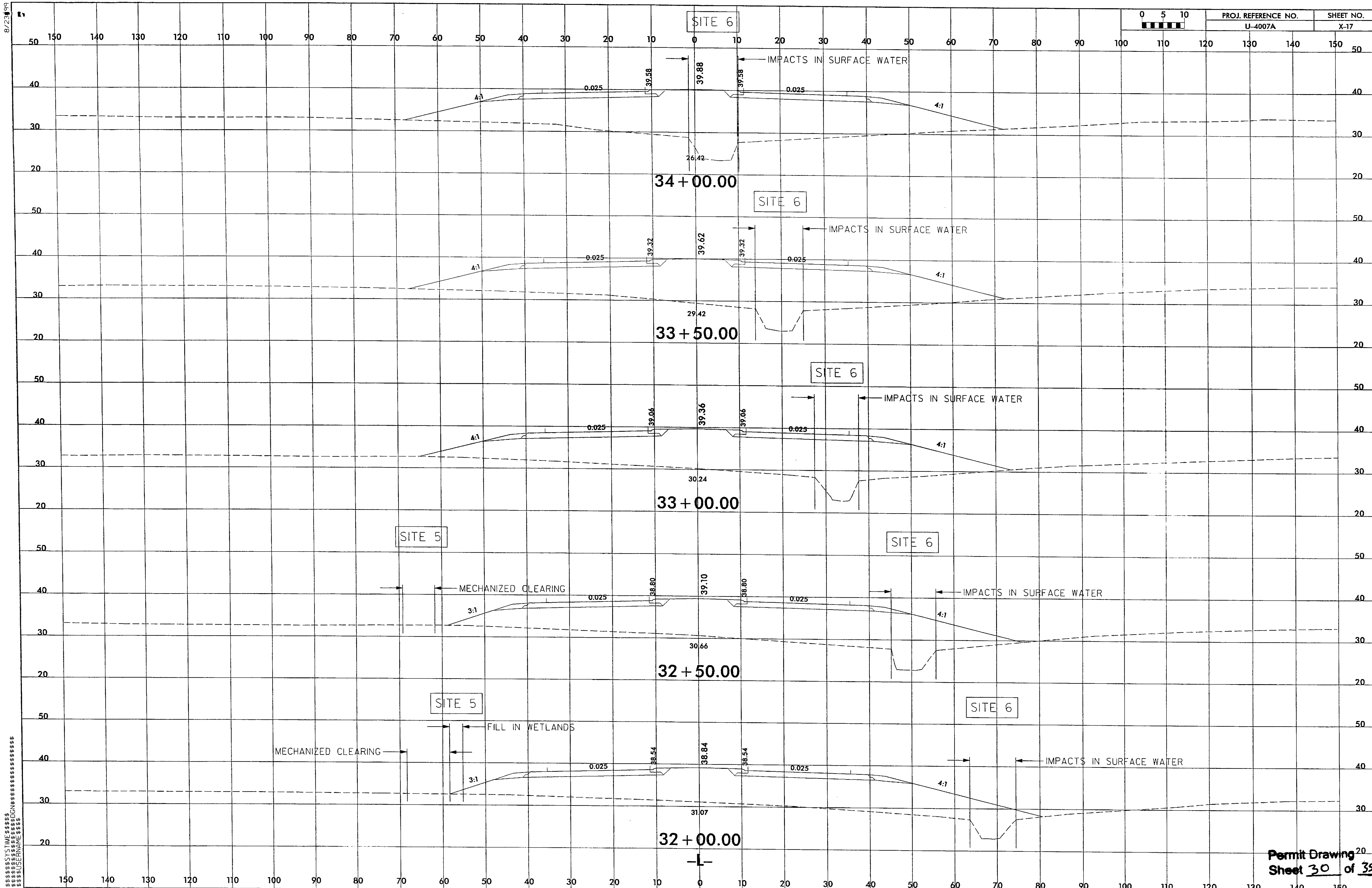
31.23

30+00.00

-L-

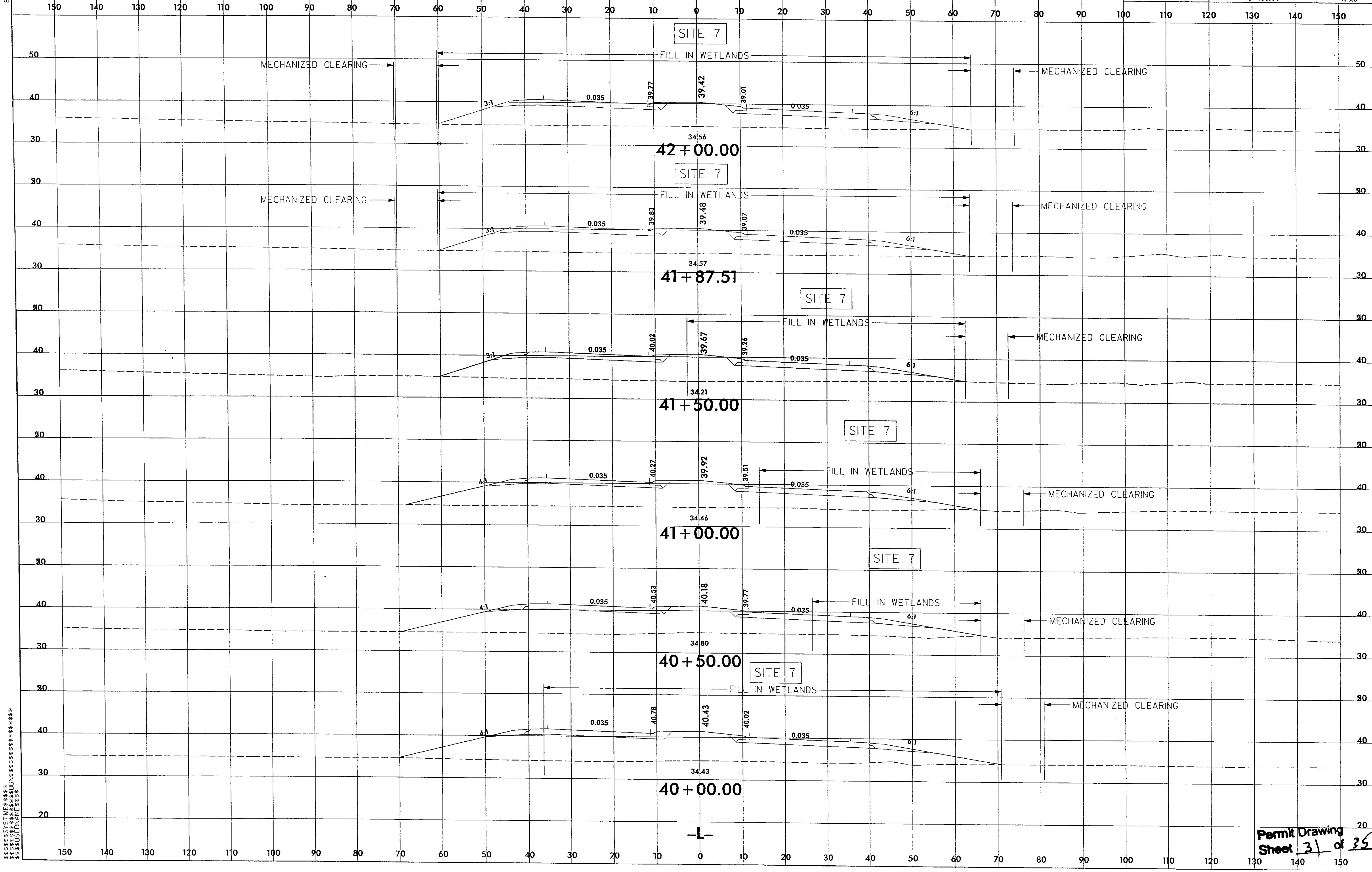
Permit Drawing
Sheet 29 of 35

$$$$$$$SYSTIME$$$$$
$$$$$$$FILE$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$$$$USERNAME$$$$$

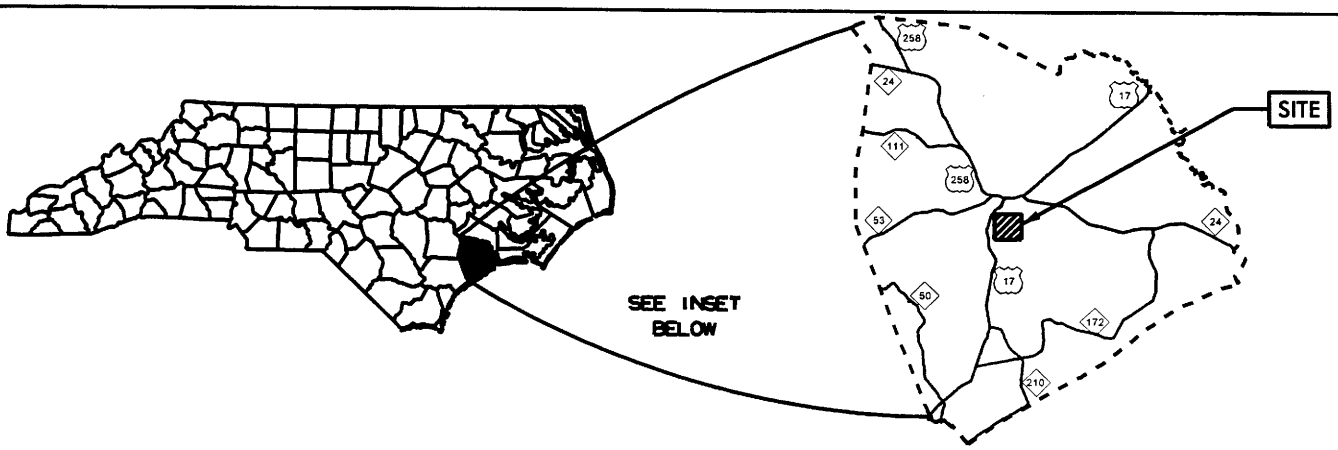


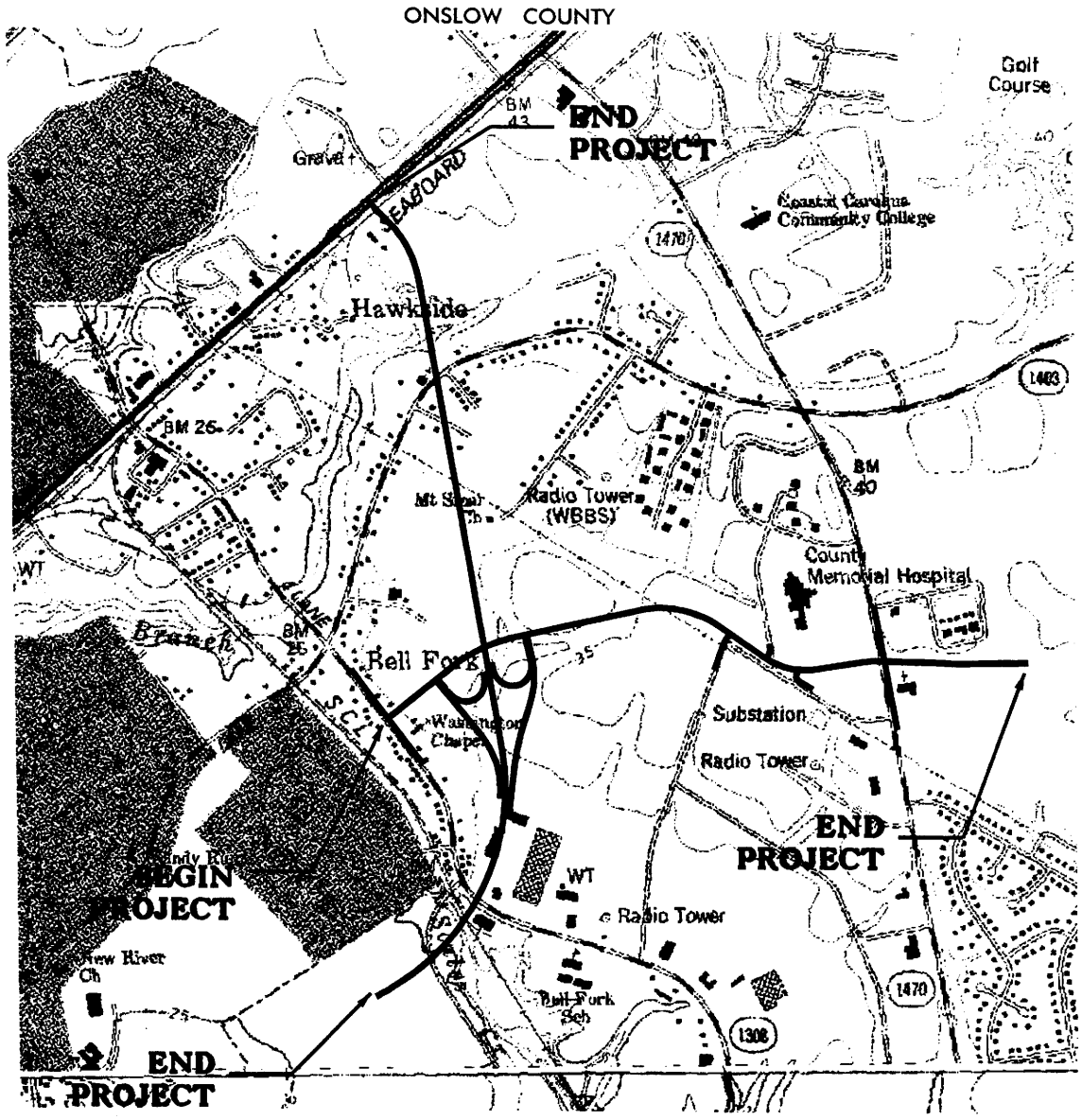
Permit Drawing
Sheet 30 of 35

PROJ. REFERENCE NO.	SHEET NO.
U-4007A	X-20



Permit Drawing
Sheet 31 of 35





WETLAND/STREAM
IMPACTS

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

ONSLOW COUNTY
PROJECT:35008.1.1 (U-4007A)
SR 1702 (WHITE STREET EXTENSION)
FROM SR 1808 (BELL FORK ROAD) TO
SR 1470 (WESTERN BOULEVARD)

SHEET ___ OF ___ 3-17-09

Permit Drawing
Sheet 32 of 35

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
21	N.C. DEPT OF TRANSPORTATION	306 DIVISION DR. WILMINGTON NC 28401
20	ALICE L. HEARD	312 GREENBRIAR DRIVE JACKSONVILLE NC 28540
19	BERTHINA GRAY PALMER	355 BELL FORK RD. JACKSONVILLE NC 28540
24	N.C. DEPT OF TRANSPORTATION	306 DIVISION DR. WILMINGTON NC 28401
27	WILLIE MILTON WHITE	700 WINCHESTER RD. JACKSONVILLE NC 28546
28	LARRY E. RAMBERT, ET UX	128 A ARNOLD RD. JACKSONVILLE NC 28546
5	WASHINGTON CHAPEL CHURCH	347 BELL FORK RD, JACKSONVILLE NC 28540
22	POPKIN BROTHERS INTERPRISES	625 NEW BRIDGE STREET JACKSONVILLE NC 28540

NCDOT

DIVISION OF HIGHWAYS

ONSLOW COUNTY

PROJECT: 35008.1.1 (U-4007A)

SR 1702 (WHITE STREET EXTENSION)

FROM SR 1808 TO SR 1470

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
32	HILBERT M. JONES	1409 E. HOUSTON RIVER RD. SULPHUR, LA 70663
31	ONSLOW MEMORIAL HOSPITAL FOUNDATION, INC	317 WESTERN BLVD. JACKSONVILLE NC 28546
33	ONSLOW COUNTY	ADDRESS
37	ONSLOW WOMENS CENTER, INC	PO BOX 1622 JACKSONVILLE NC 28541
38	S.B.R.E., LLC	2225 MARINE BLVD. N JACKSONVILLE NC 28540
41	DWNR, LLC	PO BOX 706 JACKSONVILLE NC 28540
?	WESTERN BLVD., LLC	4940 HILL BROOK LANE NW WASHINGTON DC 20016

NCDOT

DIVISION OF HIGHWAYS

ONSLOW COUNTY

PROJECT: 35008.1.1 (U-4007A)

SR 1702 (WHITE STREET EXTENSION)

FROM SR 1808 TO SR 1470

SHEET 2 OF 2 **6/10/09**

Permit Drawing
Sheet 34 of 35.

WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS				
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	1+70-RAMP A- RT	ROADWAY FILL	<0.01			<0.01						
2	6+00-10+70 -RAMP A-	ROADWAY FILL	0.28		0.08	0.16		0.11		680		
	23+62 -L-	CULVERT EXT						0.14	0.02	640	80	
	24+00 -L- LT	ROADWAY FILL	<0.01			<0.01						
3	6+00-14+95 -RAMP B-	ROADWAY FILL	2.43			0.29						
4	17+88-19+15 -L- LT	ROADWAY FILL	0.07			0.03						
5	28+13-32+61 -L- LT	ROADWAY FILL	0.28			0.11						
6	32+57-35+26 -L-	66" RCP	0.15			0.01		0.11		420		
7	39+00-45+00 -L-	ROADWAY FILL	1.32		0.01	0.19						
8	55+83-58+00 -L- RT	ROADWAY FILL	0.07			0.05						
9	58+50 -L- LT	ROADWAY FILL	0.01									
10	66+00 -L- LT	BASE DITCH							<.01		35	
TOTALS:			4.62		0.09	0.84		0.36	0.02	1740	115	

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

ONSLOW COUNTY
WBS - 35008.1.1 (U-4007A)

SHEET 1 4/8/2010

ATN Revised 3/31/05

Permit Drawing
Sheet 35 of 35

See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ONSLOW COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4007A	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
35008.1.1	STPNHF-17(31)	PE
35008.3.1	STPNHF-17(63)	R/W & UTILS.

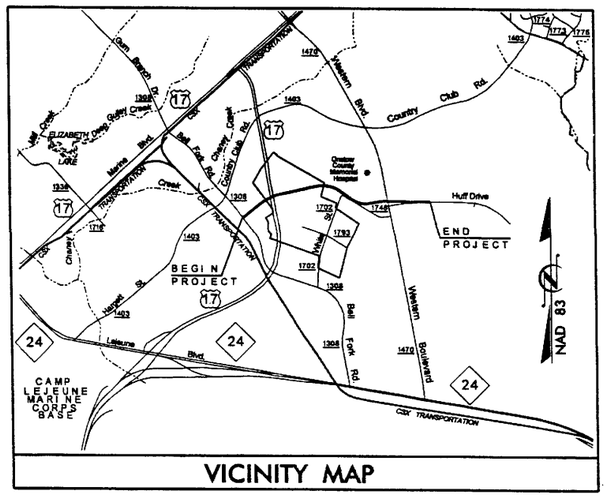
LOCATION: *SR 1702 (WHITE STREET EXTENSION) FROM SR 1808 (BELL FORK ROAD) TO SR 1470 (WESTERN BOULEVARD)*

TYPE OF WORK: *GRADING, DRAINAGE, PAVING, STRUCTURE, CULVERTS, AND SIGNALS*

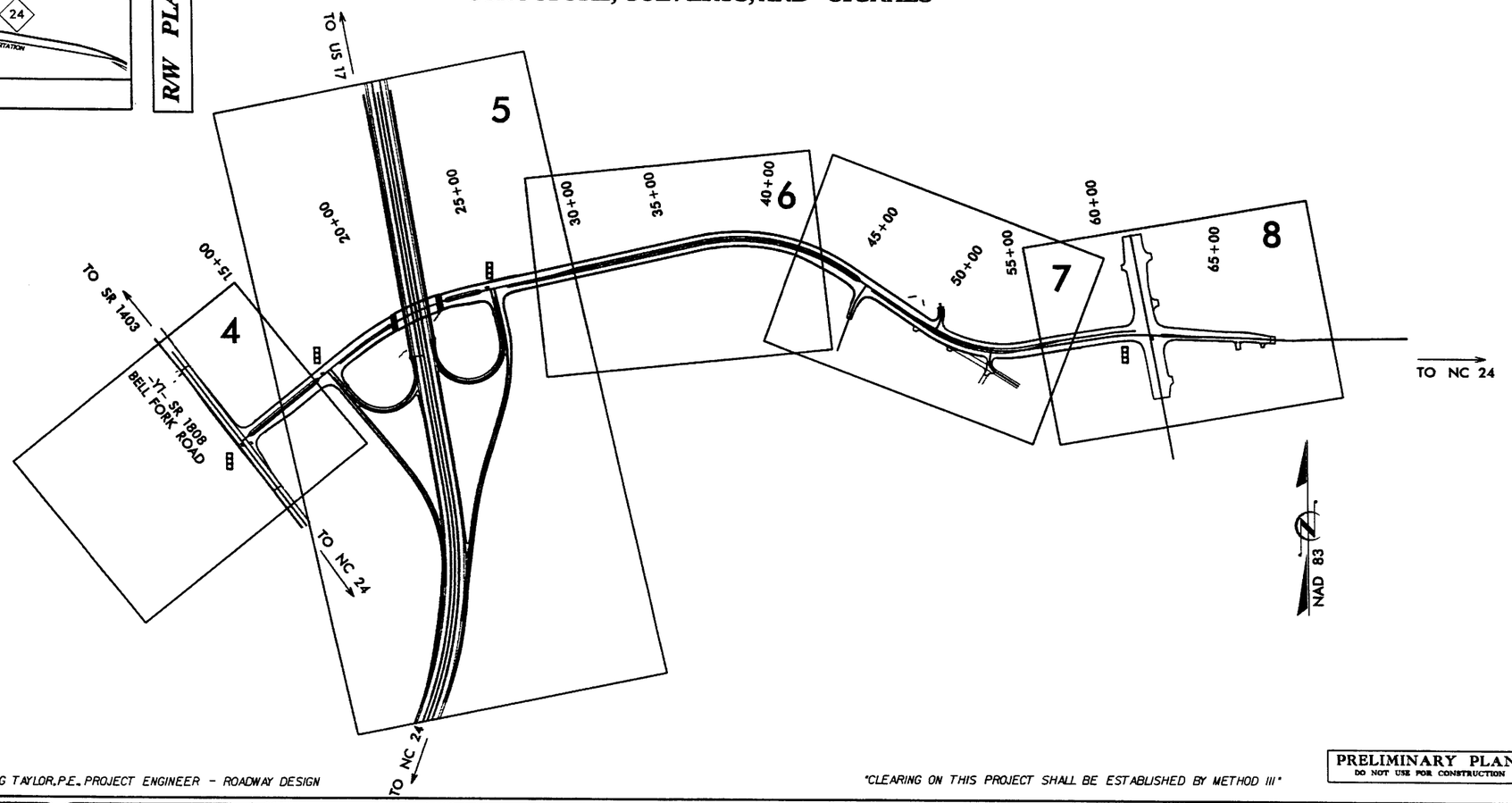
TIP PROJECT: U-4007A

CONTRACT:

R/W PLANS



VICINITY MAP



THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF JACKSONVILLE.

NCDOT CONTACT: DOUG TAYLOR, P.E. PROJECT ENGINEER - ROADWAY DESIGN

"CLEARING ON THIS PROJECT SHALL BE ESTABLISHED BY METHOD III"

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 2011 = 14,500
ADT 2031 = 18,400
DHV = 10 %
D ÷ 65 %
T = 2 % *
V = 40 MPH

* (TTST 1 % + DUAL 1 %)
URBAN MAJOR COLLECTOR

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4007A	= 1.060 mi.
LENGTH STRUCTURE TIP PROJECT U-4007A	= 0.044 mi.
TOTAL LENGTH TIP PROJECT U-4007A	= 1.104 mi.

Prepared In the Office of:
WANG ENGINEERING COMPANY, INC.
CARY, N.C.
FOR NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: FEBRUARY 20, 2009

LETTING DATE: OCTOBER 19, 2010

CLIFTON T. REGISTER, P.E.
PROJECT ENGINEER

SCOTT L. KENNEDY
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER
SUNGATE DESIGN GROUP, PA

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER
WANG ENGINEERING

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	1-B

Note: Not to Scale

****S.U.E. = Subsurface Utility Engineering***

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CONVENTIONAL PLAN SHEET SYMBOLS

BOUNDARIES AND PROPERTY:

- State Line
- County Line
- Township Line
- City Line
- Reservation Line
- Property Line
- Existing Iron Pin — IP
- Property Corner
- Property Monument — EOM
- Parcel/Sequence Number — 123
- Existing Fence Line
- Proposed Woven Wire Fence
- Proposed Chain Link Fence
- Proposed Barbed Wire Fence
- Existing Wetland Boundary — WLB
- Proposed Wetland Boundary — WLB
- Existing Endangered Animal Boundary — EAB
- Existing Endangered Plant Boundary — EPB

BUILDINGS AND OTHER CULTURE:

- Gas Pump Vent or U/G Tank Cap
- Sign — S
- Well — W
- Small Mine
- Foundation
- Area Outline
- Cemetery
- Building
- School
- Church
- Dam

HYDROLOGY:

- Stream or Body of Water
- Hydro, Pool or Reservoir
- Jurisdictional Stream — JS
- Buffer Zone 1 — BZ 1
- Buffer Zone 2 — BZ 2
- Flow Arrow
- Disappearing Stream
- Spring
- Wetland
- Proposed Lateral, Tail, Head Ditch — FLOW
- False Sump

RAILROADS:

- Standard Gauge — CSX TRANSPORTATION
- RR Signal Milepost — MILEPOST 35
- Switch — SWITCH
- RR Abandoned
- RR Dismantled

RIGHT OF WAY:

- Baseline Control Point
- Existing Right of Way Marker
- Existing Right of Way Line — RW
- Proposed Right of Way Line — RW
- Proposed Right of Way Line with Iron Pin and Cap Marker — RW
- Proposed Right of Way Line with Concrete or Granite Marker — RW
- Existing Control of Access — CA
- Proposed Control of Access — CA
- Existing Easement Line — E
- Proposed Temporary Construction Easement — E
- Proposed Temporary Drainage Easement — TDE
- Proposed Permanent Drainage Easement — PDE
- Proposed Permanent Utility Easement — PUE
- Proposed Temporary Utility Easement — TUE
- Proposed Permanent Easement with Iron Pin and Cap Marker

ROADS AND RELATED FEATURES:

- Existing Edge of Pavement
- Existing Curb
- Proposed Slope Stakes Cut — C
- Proposed Slope Stakes Fill — F
- Proposed Wheel Chair Ramp — WCR
- Existing Metal Guardrail
- Proposed Guardrail
- Existing Cable Guiderail
- Proposed Cable Guiderail
- Equality Symbol
- Pavement Removal

VEGETATION:

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

EXISTING STRUCTURES:

MAJOR:

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

MINOR:

- Head and End Wall — CONC HW
- Pipe Culvert
- Footbridge
- Drainage Box: Catch Basin, DI or JB — CB
- Paved Ditch Gutter
- Storm Sewer Manhole — S
- Storm Sewer — S

UTILITIES:

POWER:

- Existing Power Pole
- Proposed Power Pole
- Existing Joint Use Pole
- Proposed Joint Use Pole
- Power Manhole — P
- Power Line Tower
- Power Transformer
- U/G Power Cable Hand Hole — HH
- H-Frame Pole
- Recorded U/G Power Line — P
- Designated U/G Power Line (S.U.E.*) — P

TELEPHONE:

- Existing Telephone Pole
- Proposed Telephone Pole
- Telephone Manhole — T
- Telephone Booth
- Telephone Pedestal — T
- Telephone Cell Tower
- U/G Telephone Cable Hand Hole — HH
- Recorded U/G Telephone Cable — T
- Designated U/G Telephone Cable (S.U.E.*) — T
- Recorded U/G Telephone Conduit — TC
- Designated U/G Telephone Conduit (S.U.E.*) — TC
- Recorded U/G Fiber Optics Cable — T FO
- Designated U/G Fiber Optics Cable (S.U.E.*) — T FO

WATER:

- Water Manhole — W
- Water Meter
- Water Valve
- Water Hydrant
- Recorded U/G Water Line — W
- Designated U/G Water Line (S.U.E.*) — W
- Above Ground Water Line — A/G Water

TV:

- TV Satellite Dish
- TV Pedestal — C
- TV Tower
- U/G TV Cable Hand Hole — HH
- Recorded U/G TV Cable — TV
- Designated U/G TV Cable (S.U.E.*) — TV
- Recorded U/G Fiber Optic Cable — TV FO
- Designated U/G Fiber Optic Cable (S.U.E.*) — TV FO

GAS:

- Gas Valve
- Gas Meter
- Recorded U/G Gas Line — G
- Designated U/G Gas Line (S.U.E.*) — G
- Above Ground Gas Line — A/G Gas

SANITARY SEWER:

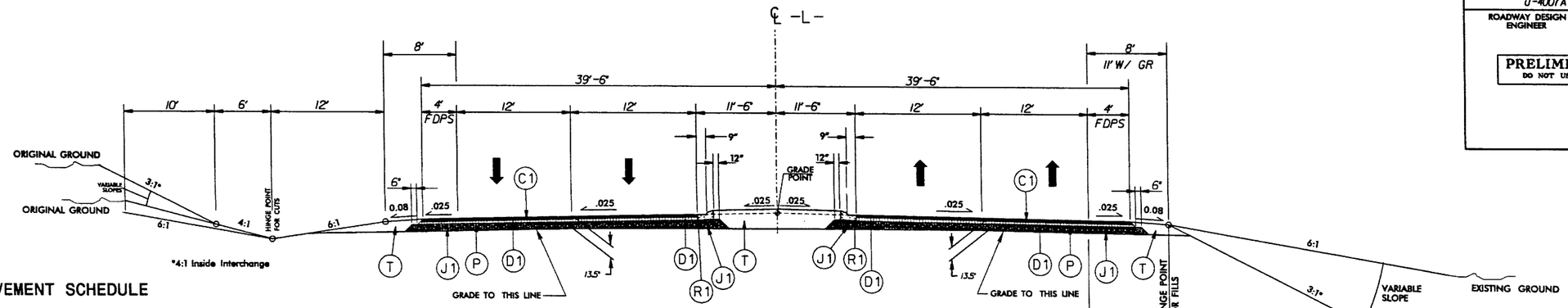
- Sanitary Sewer Manhole
- Sanitary Sewer Cleanout
- U/G Sanitary Sewer Line — SS
- Above Ground Sanitary Sewer — A/G Sanitary Sewer
- Recorded SS Forced Main Line — FSS
- Designated SS Forced Main Line (S.U.E.*) — FSS

MISCELLANEOUS:

- Utility Pole
- Utility Pole with Base
- Utility Located Object
- Utility Traffic Signal Box — S
- Utility Unknown U/G Line — ?UTL
- U/G Tank; Water, Gas, Oil
- A/G Tank; Water, Gas, Oil
- U/G Test Hole (S.U.E.*)
- Abandoned According to Utility Records — AATUR
- End of Information — E.O.I.

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



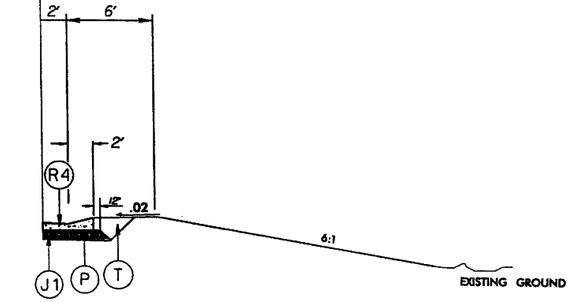
TYPICAL SECTION NO. 1

-L- STA. 10+46.12 TO STA. 15+24.60
-L- STA. 17+59.60 TO STA. 19+89.60
-L- STA. 23+10.75 TO STA. 25+08.45
-L- STA. 27+43.45 TO STA. 45+67.51
-L- STA. 47+42.51 TO STA. 56+98.70
-L- STA. 16+59.60 TO STA. 17+59.60
-L- STA. 19+89.60 TO STA. 23+10.75
-L- STA. 23+43.45 TO STA. 27+43.45
-L- STA. 46+42.51 TO STA. 47+42.51
-L- STA. 56+98.70 TO STA. 60+98.70
-L- STA. 62+30.50 TO STA. 64+29.30

PAVEMENT SCHEDULE

C1	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS PER SQ. YD. IN EACH OF TWO LAYERS.
C2	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONC. SURFACE COURSE, TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2" IN DEPTH.
C4	PROP. APPROX. 1.5" ASPHALT CONC. SURFACE COURSE, TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS PER SQ. YD.
D1	PROP. APPROX. 2.5" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 228 LBS PER SQ. YD.
D2	PROP. APPROX. 4" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD.
D3	PROP. APPROX. 3" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS PER SQ. YD.
D4	PROP. VAR. DEPTH ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS PER SQ. YD PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 2.25" OR GREATER THAN 4" IN DEPTH.
E1	PROP. APPROX. 4" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD.
E2	PROP. APPROX. 3.5" ASPHALT CONC BASE COURSE, TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS PER SQ. YD.
E3	PROP. VAR. DEPTH ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS PER SQ. YD. PER 1" DEPTH TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5.5" IN DEPTH.
E4	PROP. APPROX. 4" ASPHALT CONC. BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS PER SQ. YD.
J1	8" AGGREGATE BASE COURSE
J2	10" AGGREGATE BASE COURSE
J3	VAR. DEPTH AGGREGATE BASE COURSE
R1	1'-6" CONCRETE CURB AND GUTTER
R2	2'-6" CONCRETE CURB AND GUTTER
R3	5" MON. CONCRETE ISLAND (KEY IN)
R4	EXPRESSWAY GUTTER
P	PRIME COAT
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING (SEE DETAIL)

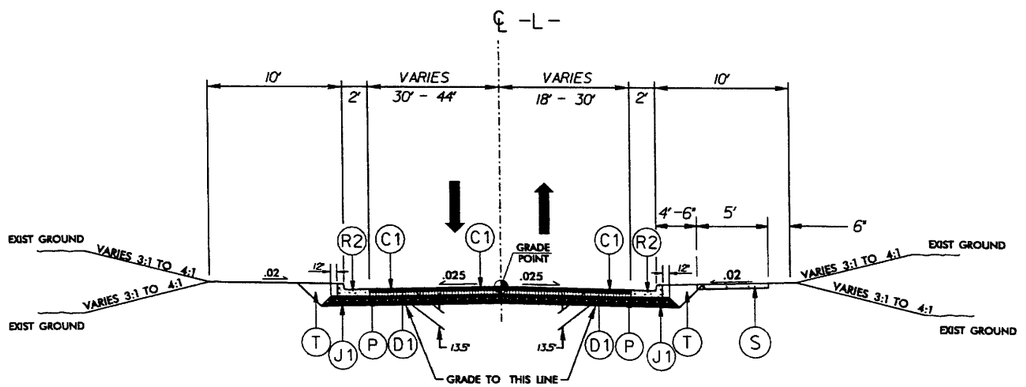
NOTE: ALL SLOPES 1:1 UNLESS OTHERWISE SPECIFIED
EOT = EDGE OF TRAVEL LANE



TYPICAL SECTION NO. 1A

USE THIS TYPICAL IN CONJUCTION WITH TYPICAL NO. 1

-L- STA. 42+50.00 TO STA. 45+40.00



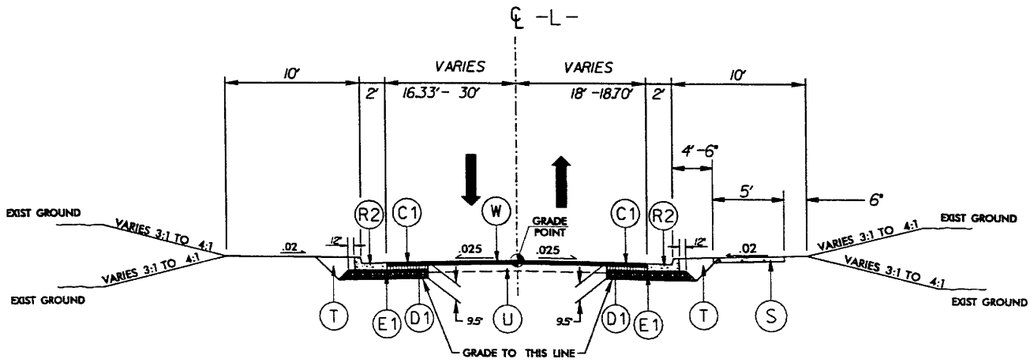
TYPICAL SECTION NO. 2

-L- STA. 58+28.70 TO STA. 61+28.95
-L- STA. 62+15.69 TO STA. 65+99.78

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	2-A
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

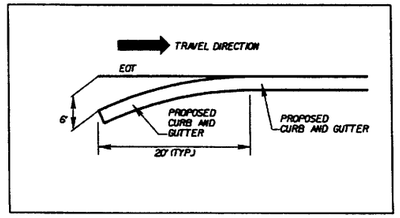
℄ -L-



TYPICAL SECTION NO. 3

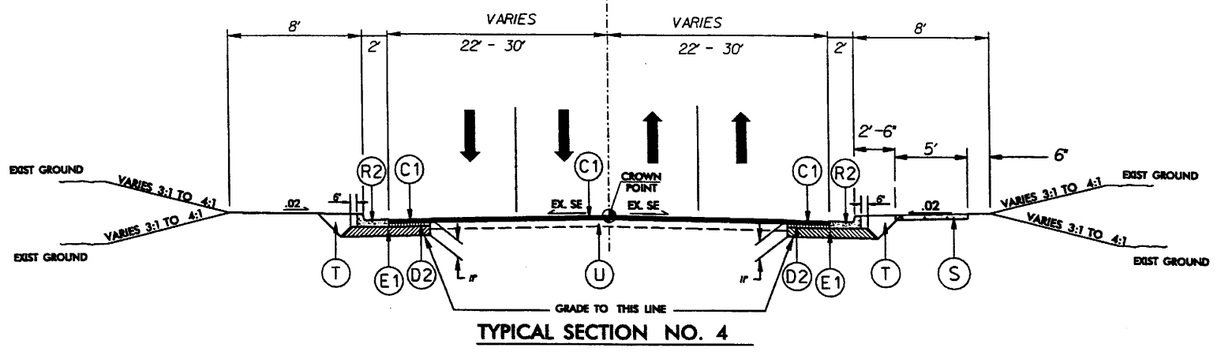
USE TYPICAL SECTION NO.3

-L- STA. 65+99.78 TO STA. 68+30.50



DETAIL SHOWING FLARE OF CURB AND GUTTER (APPROACH END)

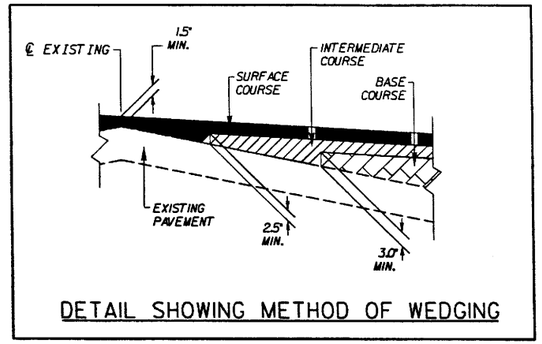
℄ -Y1-



TYPICAL SECTION NO. 4

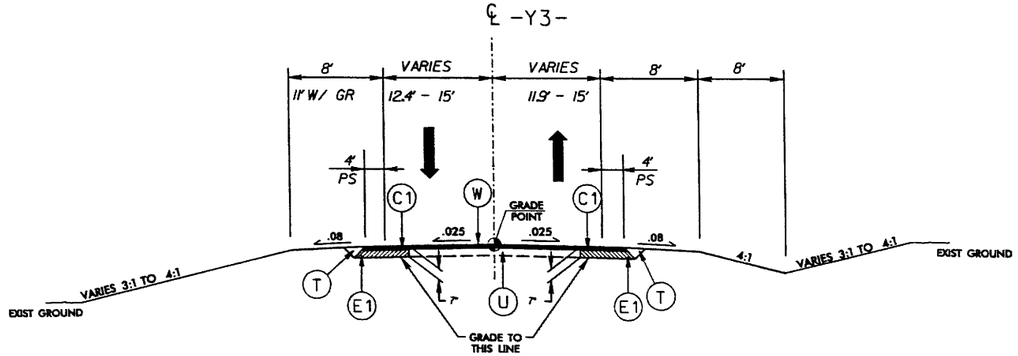
USE TYPICAL SECTION NO.4

-Y1- STA. 11+08.82 TO STA. 18+95.01



DETAIL SHOWING METHOD OF WEDGING

℄ -Y3-

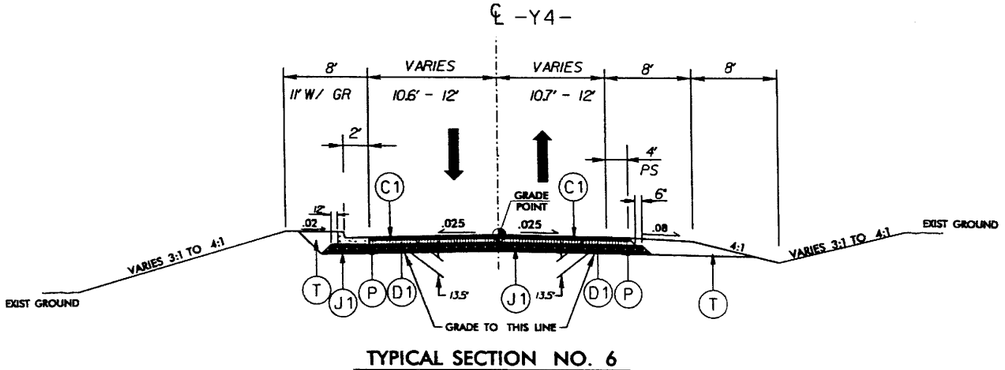


TYPICAL SECTION NO. 5

USE TYPICAL SECTION NO.5

-Y3- STA. 10+35.50 TO STA. 11+75.57

℄ -Y4-



TYPICAL SECTION NO. 6

USE TYPICAL SECTION NO.6

-Y4- STA. 10+21.70 TO STA. 11+20.79

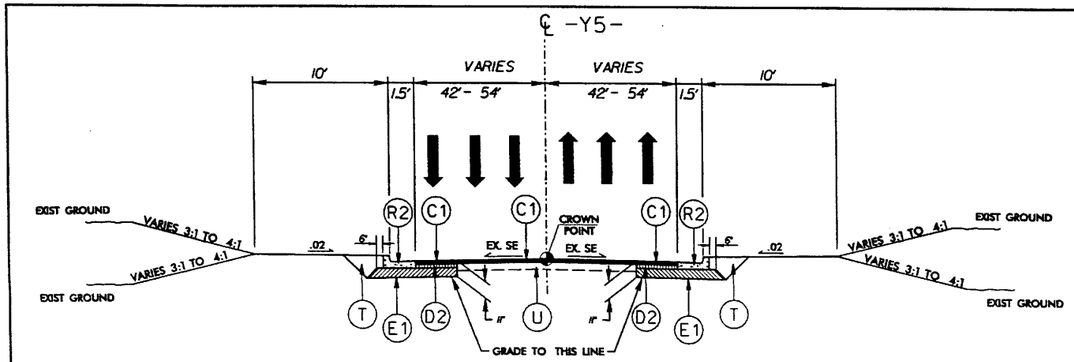
PAVEMENT SCHEDULE (*)

C1	3" A.C.S.C. TYPE S9.5B
C2	3" A.C.S.C. TYPE S9.5C
C3	VAR. DEPTH A.C.S.C. TYPE S9.5B
C4	1.5" A.C.S.C. TYPE S9.5C
D1	2.5" A.C.I.C. TYPE I19.0B
D2	4" A.C.I.C. TYPE I19.0B
D3	3" A.C.I.C. TYPE I19.0C
D4	VAR. DEPTH A.C.I.C. TYPE I19.0B
E1	4" A.C.B.C. TYPE B25.0B
E2	3.5" A.C.B.C. TYPE B25.0C
E3	VAR. DEPTH A.C.B.C. TYPE B25.0B
E4	4" A.C.B.C. TYPE B25.0B
J1	8" AGGREGATE BASE COURCE
J2	10" AGGREGATE BASE COURCE
J3	VAR. DEPTH AGGREGATE BASE COURCE
P	PRIME COAT
R1	1'-6" CONC. CURB & GUTTER
R2	2'-0" CONC. CURB & GUTTER
R3	2'-6" CONC. CURB & GUTTER
R4	EXPRESSWAY GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

(*) = REFER TO SHEET No 2 FOR FULL DESCRIPTIONS.

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	2-B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

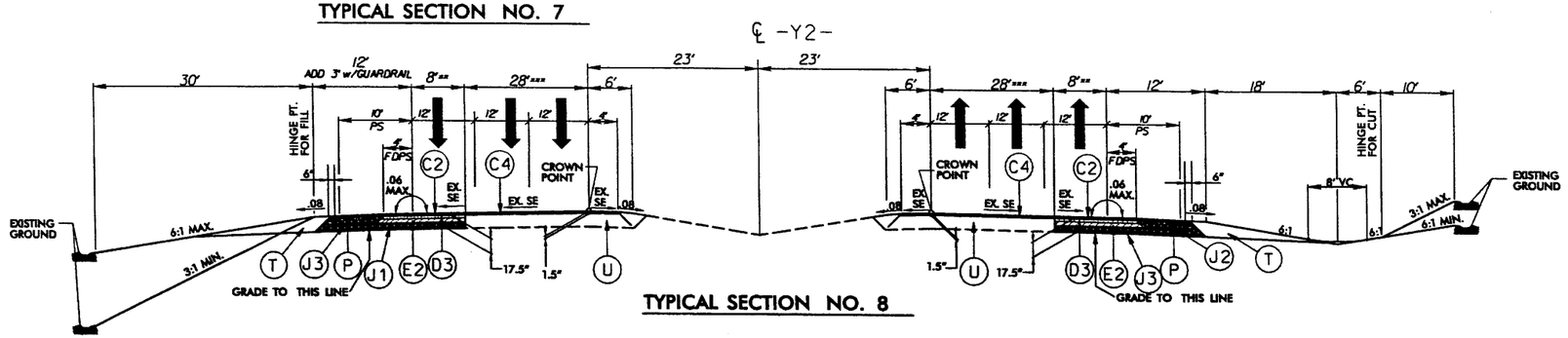
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



TYPICAL SECTION NO. 7

USE TYPICAL SECTION NO.7

-Y5- STA. 10+07.32 TO STA. 18+72.45



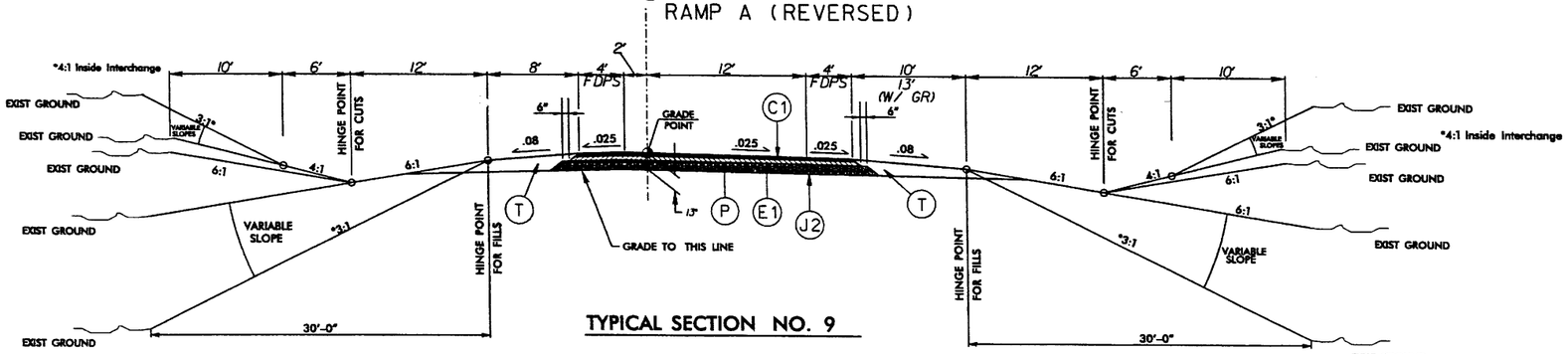
TYPICAL SECTION NO. 8

USE TYPICAL SECTION NO.8

-Y2- STA. 27+89.18 TO STA. 62+00.00

** EXISTING 6' PARTIAL-DEPTH PAVED SHOULDER TO BE REMOVED.

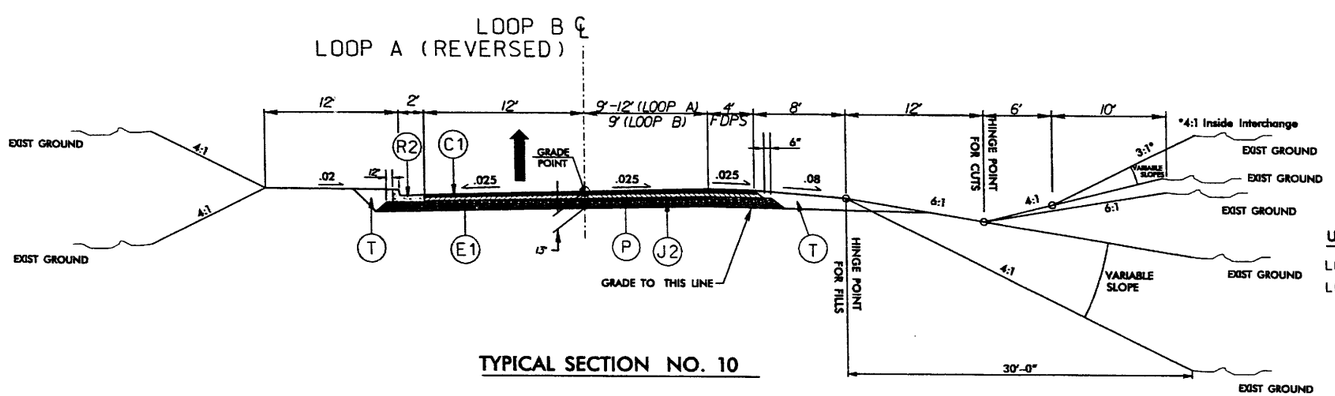
*** THIS WIDTH INCLUDES 2 EXISTING LANES PLUS 4' FULL-DEPTH PAVED SHOULDER.



TYPICAL SECTION NO. 9

USE TYPICAL SECTION NO.9

RAMP A STA. 0+00.00 TO STA. 13+22.05
RAMP B STA. 0+00.00 TO STA. 17+50.25



TYPICAL SECTION NO. 10

USE TYPICAL SECTION NO.10

LOOP A STA. 0+00.00 TO STA. 7+08.93
LOOP B STA. 0+00.00 TO STA. 8+88.11

PAVEMENT SCHEDULE (*)

C1	3" A.C.S.C. TYPE S9.5B
C2	3" A.C.S.C. TYPE S9.5C
C3	VAR. DEPTH A.C.S.C. TYPE S9.5B
C4	1.5" A.C.S.C. TYPE S9.5C
D1	2.5" A.C.I.C. TYPE I19.0B
D2	4" A.C.I.C. TYPE I19.0B
D3	3" A.C.I.C. TYPE I19.0C
D4	VAR. DEPTH A.C.I.C. TYPE I19.0B
E1	4" A.C.B.C. TYPE B25.0B
E2	3.5" A.C.B.C. TYPE B25.0C
E3	VAR. DEPTH A.C.B.C. TYPE B25.0B
E4	4" A.C.B.C. TYPE B25.0B
J1	8" AGGREGATE BASE COURCE
J2	10" AGGREGATE BASE COURCE
J3	VAR. DEPTH AGGREGATE BASE COURCE
P	PRIME COAT
R1	1'-6" CONC. CURB & GUTTER
R2	2'-0" CONC. CURB & GUTTER
R3	2'-6" CONC. CURB & GUTTER
R4	EXPRESSWAY GUTTER
S	4" CONCRETE SIDEWALK
T	EARTH MATERIAL
U	EXISTING PAVEMENT
W	WEDGING

(*) = REFER TO SHEET No 2 FOR FULL DESCRIPTIONS.

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

23100/30000

6700/8000 — 7900/9600 — -L- WHITE ST.

1300/1500

17700/23500

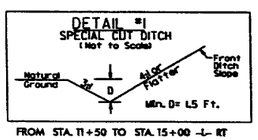
SR 1808 BELL FORK ROAD

EST. 2011/2031 AADT

WARP GUTTERS
FROM 0.04 AT STA. 12+33 -Y1- LT AND RT
TO 0.12 AT STA. 12+83 -Y1- LT AND RT
TO 0.04 AT STA. 13+33 -Y1- LT AND RT
TO 0.12 AT STA. 14+10 -Y1- LT AND RT
TO 0.04 AT STA. 14+60 -Y1- LT AND RT

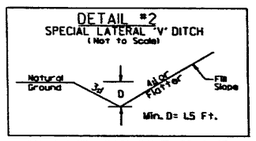
FROM 0.04 AT STA. 14+98 -Y1- RT
TO 0.12 AT STA. 15+48 -Y1- RT
TO 0.04 AT STA. 15+98 -Y1- RT

DETAIL #1
SPECIAL CUT DITCH
(Not to Scale)



FROM STA. 11+50 TO STA. 15+00 -L- RT

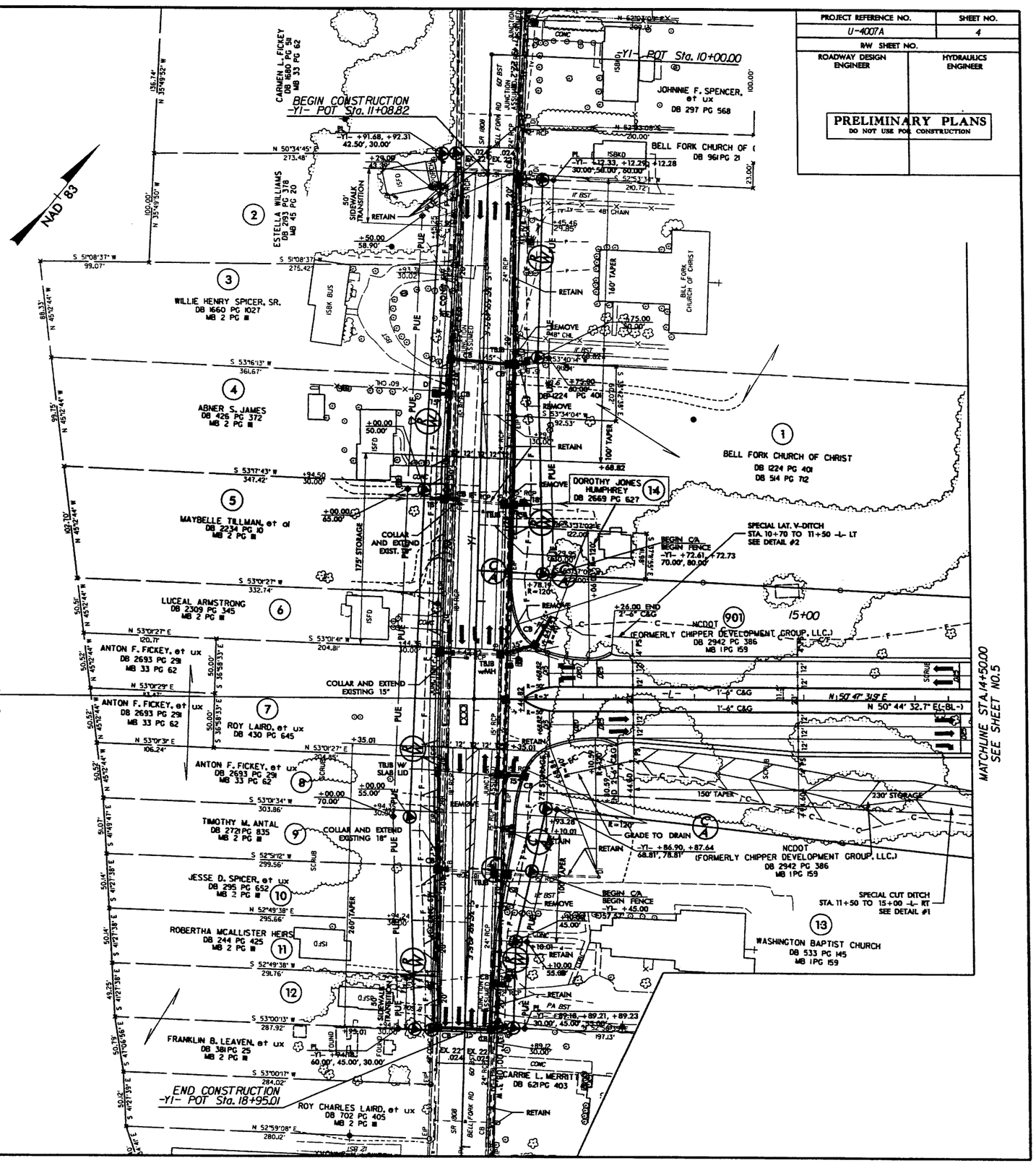
DETAIL #2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 10+70 TO STA. 11+50 -L- LT

BEGIN TIP PROJECT U-4007A
-L- POT Sta. 10+00.00=
-Y1- POT Sta.15+89.48

SEE SHEET 9 FOR -L- PROFILE
SEE SHEET 11 FOR -Y1- PROFILE



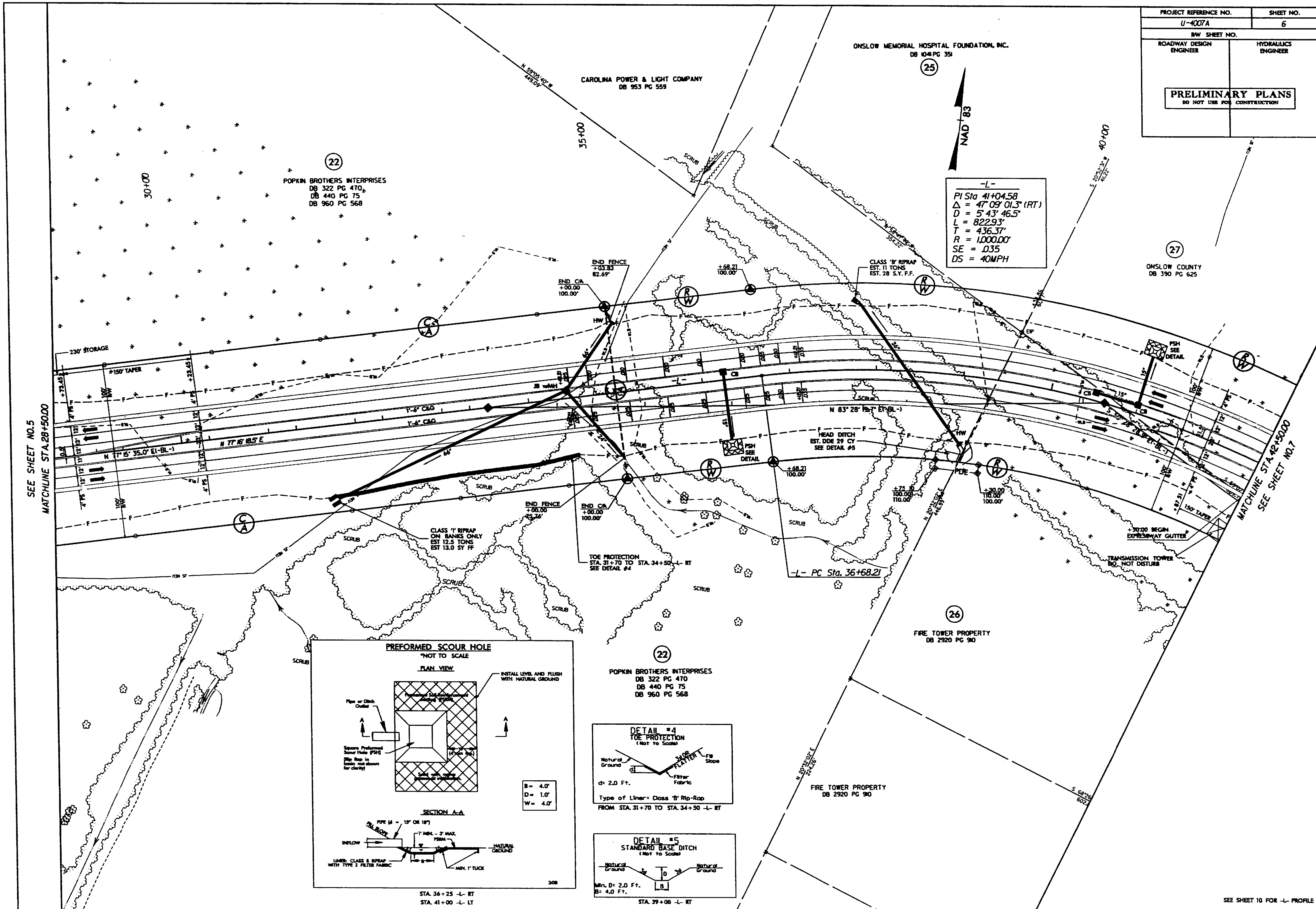
PRELIMINARY PLANS

NOT FOR CONSTRUCTION

GRAPHIC SCALE

50 25 0 50 100

PLANS



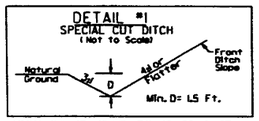
PROJECT REFERENCE NO.
SHEET NO.
U-4007A
6
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
ONSLOW MEMORIAL HOSPITAL FOUNDATION, INC.
DB 1041 PG 351
25
CAROLINA POWER & LIGHT COMPANY
DB 953 PG 559
NAD 83
22
POPKIN BROTHERS INTERPRISES
DB 322 PG 470
DB 440 PG 75
DB 960 PG 568
-L-
PI Sta 41+04.58
Δ = 47° 09' 01.3" (RT)
D = 5° 43' 46.5"
L = 822.93'
T = 436.37'
R = 1,000.00'
SE = .035
DS = 40MPH
27
ONSLOW COUNTY
DB 390 PG 625
SEE SHEET NO.5
MATCHLINE STA.28+50.00
MATCHLINE STA.42+50.00
SEE SHEET NO.7
END FENCE
END C/A
CLASS 'B' RIPRAP
EST. 11 TONS
EST. 28 S.Y. F.F.
HEAD DITCH
EST. DDE 29 CY
SEE DETAIL #5
CLASS 'I' RIPRAP
ON BANKS ONLY
EST 12.5 TONS
EST 13.0 SY FF
TOE PROTECTION
STA. 31+70 TO STA. 34+50 -L- RT
SEE DETAIL #4
-L- PC Sta. 36+68.21
N 77° 15' 35.0" E(-BL-)
N 83° 28' 19.7" E(-BL-)
230' STORAGE
150' TAPER
+50.00 BEGIN EXPRESSWAY GUTTER
TRANSMISSION TOWER
DO NOT DISTURB
26
FIRE TOWER PROPERTY
DB 2920 PG 910
22
POPKIN BROTHERS INTERPRISES
DB 322 PG 470
DB 440 PG 75
DB 960 PG 568
FIRE TOWER PROPERTY
DB 2920 PG 910
PREFORMED SCOUR HOLE
*NOT TO SCALE
PLAN VIEW
SECTION A-A
INSTALL LEVEL AND FLUSH WITH NATURAL GROUND
B= 4.0'
D= 1.0'
W= 4.0'
STA. 36+25 -L- RT
STA. 41+00 -L- LT
DETAIL #4
TOE PROTECTION
(Not to Scale)
d= 2.0 Ft.
Type of Liner= Class 'B' Rip-Rap
FROM STA. 31+70 TO STA. 34+50 -L- RT
DETAIL #5
STANDARD BASE DITCH
(Not to Scale)
Min. D= 2.0 Ft.
B= 4.0 Ft.
STA. 39+00 -L- RT
SEE SHEET 10 FOR -L- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

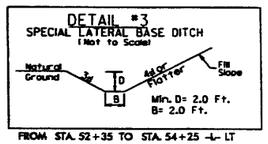
NAD 83

DETAIL #1
SPECIAL CUT DITCH
(Not to Scale)



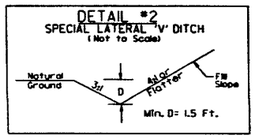
FROM STA. 47+42 TO STA. 49+20 -L- RT
FROM STA. 50+22 TO STA. 51+15 -L- RT

DETAIL #3
SPECIAL LATERAL BASE DITCH
(Not to Scale)



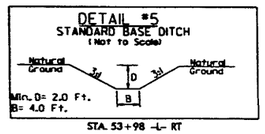
FROM STA. 52+35 TO STA. 54+25 -L- LT

DETAIL #2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



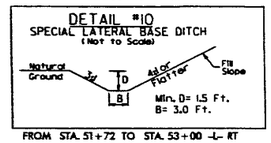
FROM STA. 54+25 TO STA. 58+50 -L- LT

DETAIL #5
STANDARD BASE DITCH
(Not to Scale)



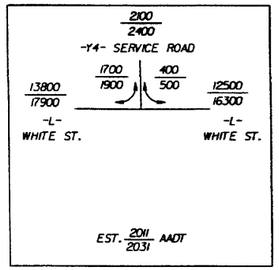
STA. 53+98 -L- RT

DETAIL #10
SPECIAL LATERAL BASE DITCH
(Not to Scale)

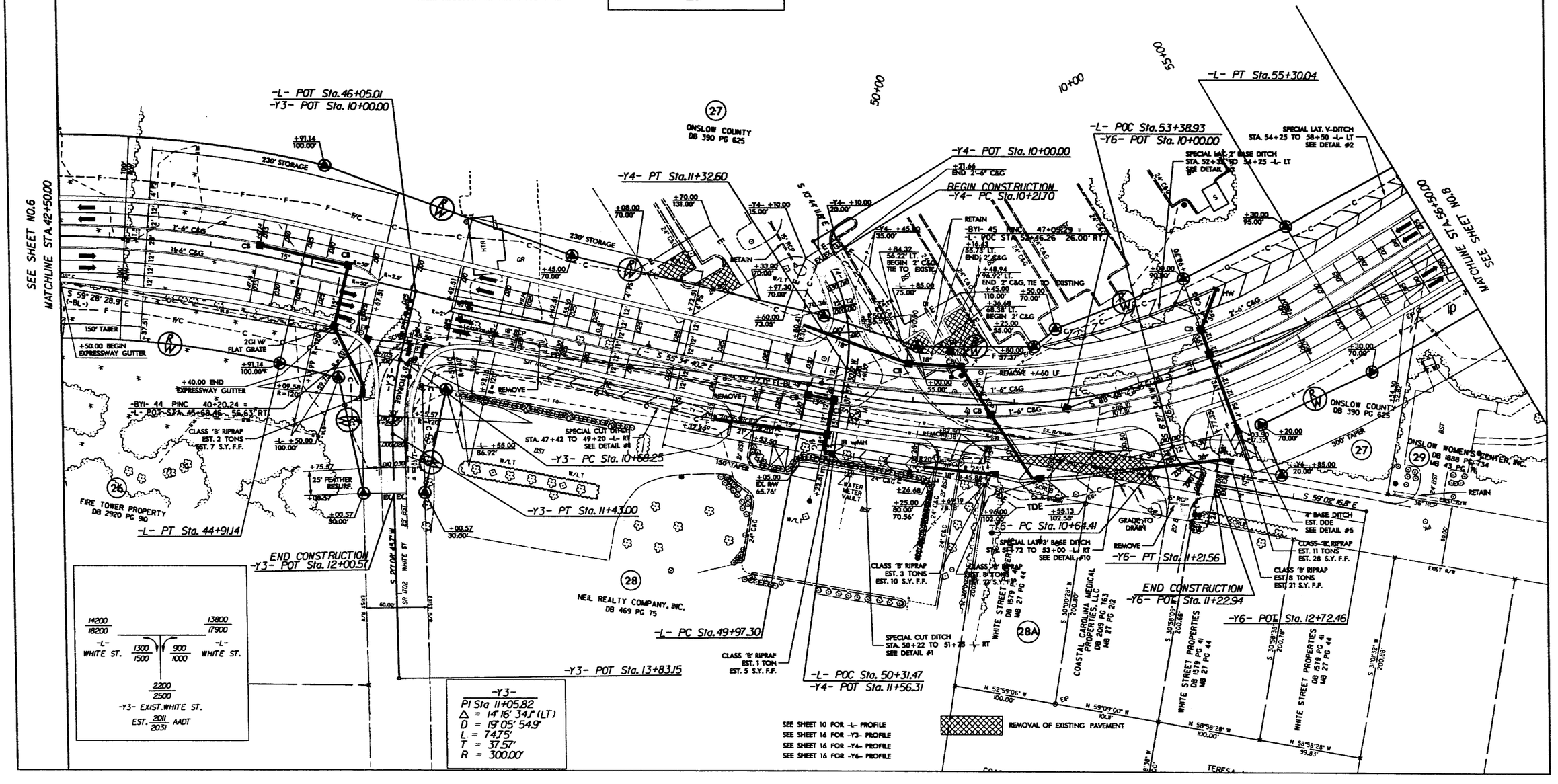


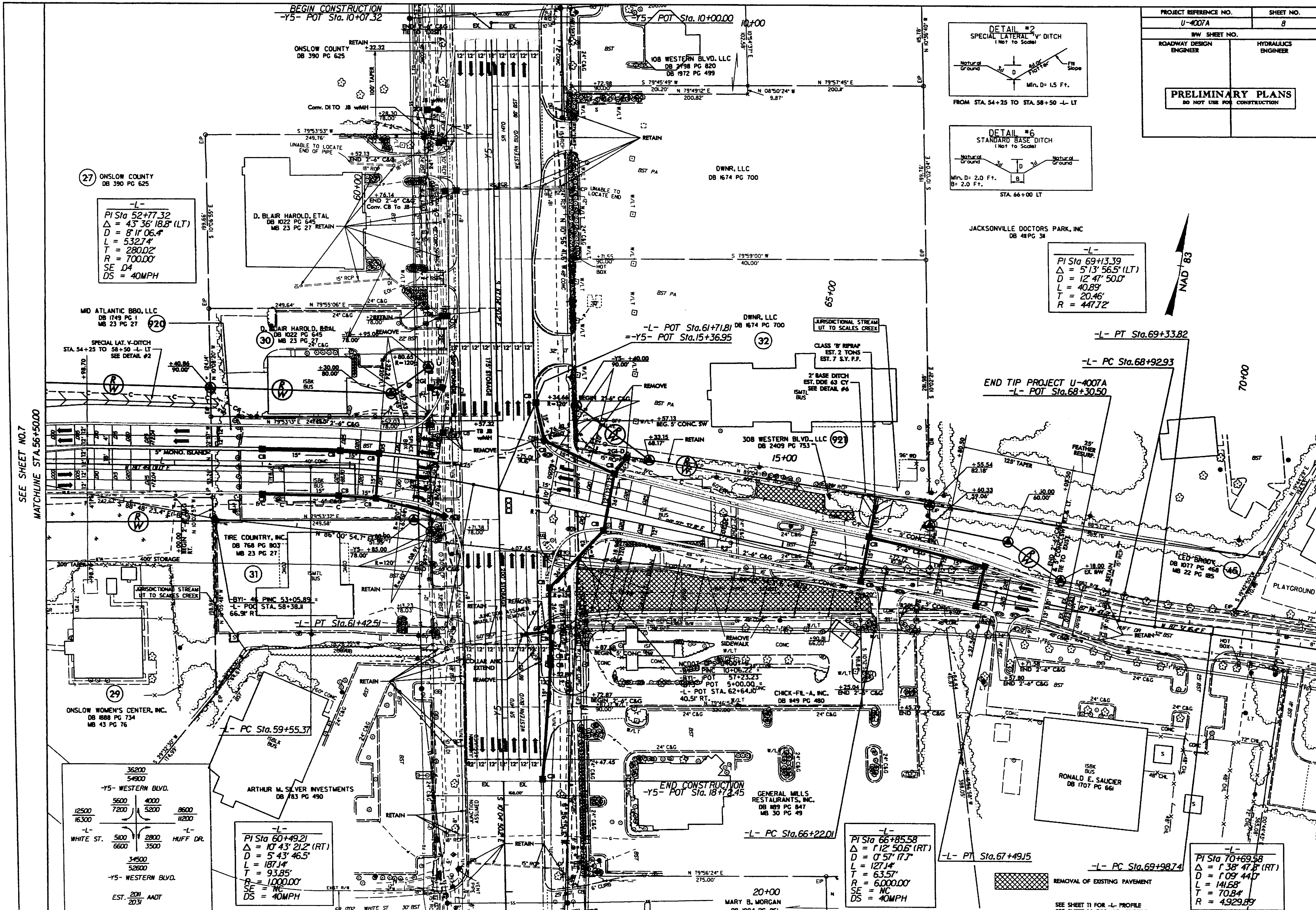
FROM STA. 51+72 TO STA. 53+00 -L- RT

-L-
PI Sta 41+04.58
Δ = 41° 09' 01.3" (RT)
D = 5° 43' 46.5"
L = 822.93'
T = 436.37'
R = 1,000.00'
SE = .035
DS = 40MPH



-Y4-	-L-	-Y6-
PI Sta 10+79.82	PI Sta 52+77.32	PI Sta 10+96.57
Δ = 42° 21' 41.8" (RT)	Δ = 43° 36' 18.8" (LT)	Δ = 65° 29' 51.1" (LT)
D = 38° 11' 49.9"	D = 8° 11' 06.4"	D = 114° 35' 29.6"
L = 110.90'	L = 532.74'	L = 57.16'
T = 58.12'	T = 280.02'	T = 32.16'
R = 150.00'	R = 700.00'	R = 50.00'
	SE .04	
	DS = 40MPH	



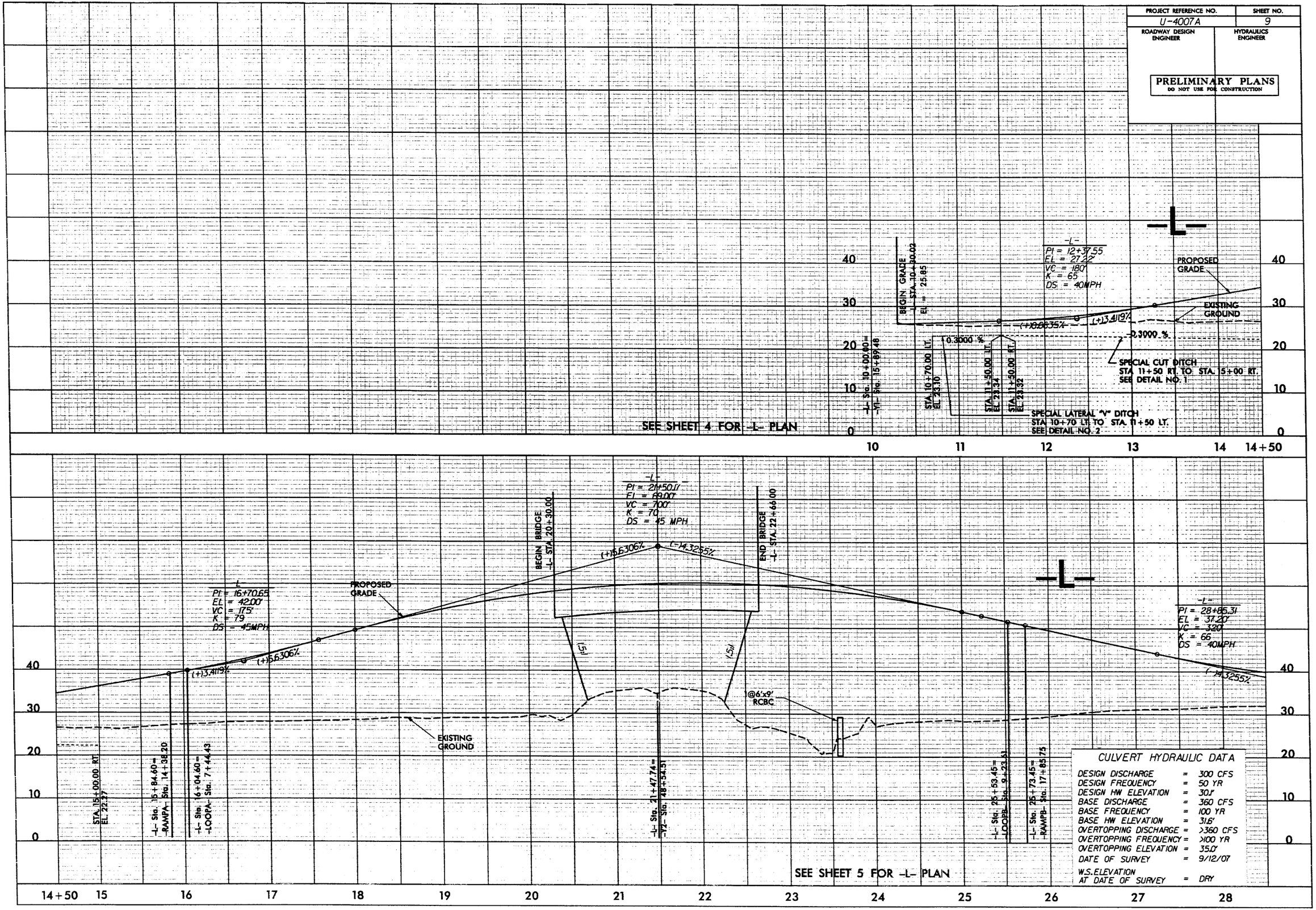


PROJECT REFERENCE NO. U-4007A
SHEET NO. 8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
BEGIN CONSTRUCTION
-Y5- POT Sta. 10+07.32
-Y5- POT Sta. 10+00.00
DETAIL #2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Min. D= 1.5 Ft.
FROM STA. 54+25 TO STA. 58+50 -L- LT
DETAIL #6
STANDARD BASE DITCH
(Not to Scale)
Min. D= 2.0 Ft.
B= 2.0 Ft.
STA. 66+00 LT
ONSLOW COUNTY
DB 390 PG 625
108 WESTERN BLVD. LLC
DB 2798 PG 820
DB 1972 PG 499
OWNR, LLC
DB 1674 PG 700
JACKSONVILLE DOCTORS PARK, INC
DB 411 PG 31
NAD 83
-L-
PI Sta 52+77.32
Δ = 43° 36' 18.8" (LT)
D = 8° 11' 06.4"
L = 532.74'
T = 280.02'
R = 700.00'
SE .04
DS = 40MPH
-L-
PI Sta 69+13.39
Δ = 5° 13' 56.5" (LT)
D = 12° 47' 50.0"
L = 40.89'
T = 20.46'
R = 447.72'
D. BLAIR HAROLD, ETAL
DB 1022 PG 645
MB 23 PG 27
MID ATLANTIC BBQ, LLC
DB 1749 PG 1
MB 23 PG 27
SPECIAL LAT. V-DITCH
STA. 54+25 TO 58+50 -L- LT
SEE DETAIL #2
-L- POT Sta. 61+71.81
=-Y5- POT Sta. 15+36.95
JURISDICTIONAL STREAM
UT TO SCALES CREEK
CLASS 'B' RIPRAP
EST. 2 TONS
EST. 7 S.Y. F.F.
2' BASE DITCH
EST. DDE 63 CY
SEE DETAIL #6
-L- PT Sta. 69+33.82
-L- PC Sta. 68+92.93
END TIP PROJECT U-4007A
-L- POT Sta. 68+30.50
308 WESTERN BLVD., LLC
DB 2409 PG 753
SEE SHEET NO. 7
MATCHLINE STA. 56+50.00
TIRE COUNTRY, INC.
DB 768 PG 803
MB 23 PG 27
-BYI- 46 PINC 53+05.89 =
-L- POC STA. 58+38.11
66.91' RT
-L- PT Sta. 61+42.51
LEO BROOKS
DB 1077 PG 468
MB 22 PG 185
PLAYGROUND
ONSLOW WOMEN'S CENTER, INC.
DB 1888 PG 734
MB 43 PG 76
-L- PC Sta. 59+55.37
ARTHUR M. SILVER INVESTMENTS
DB 783 PG 490
CHICK-FIL-A, INC.
DB 1149 PG 480
END CONSTRUCTION
-Y5- POT Sta. 18+72.45
GENERAL MILLS RESTAURANTS, INC.
DB 1189 PG 847
MB 30 PG 49
RONALD E. SAUCIER
DB 1707 PG 661
-L- PC Sta. 66+22.01
-L- PT Sta. 67+49.15
-L- PC Sta. 69+98.74
-Y5- WESTERN BLVD.
-L- WHITE ST.
-L- HUFF DR.
EST. 2011/2031 AADT
-L-
PI Sta 60+49.21
Δ = 10° 43' 21.2" (RT)
D = 5° 43' 46.5"
L = 187.14'
T = 93.85'
R = 1,000.00'
SE = NC
DS = 40MPH
-L-
PI Sta 66+85.58
Δ = 1° 12' 50.6" (RT)
D = 0° 57' 17.7"
L = 127.14'
T = 63.57'
R = 6,000.00'
SE = NC
DS = 40MPH
-L-
PI Sta 70+69.58
Δ = 1° 38' 47.8" (RT)
D = 1° 09' 44.0"
L = 141.68'
T = 70.84'
R = 4,929.89'
MARY B. MORGAN
DB 1004 PG 961
REMOVAL OF EXISTING PAVEMENT
SEE SHEET 11 FOR -L- PROFILE
SEE SHEET 16 FOR -Y5- PROFILE

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	9

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

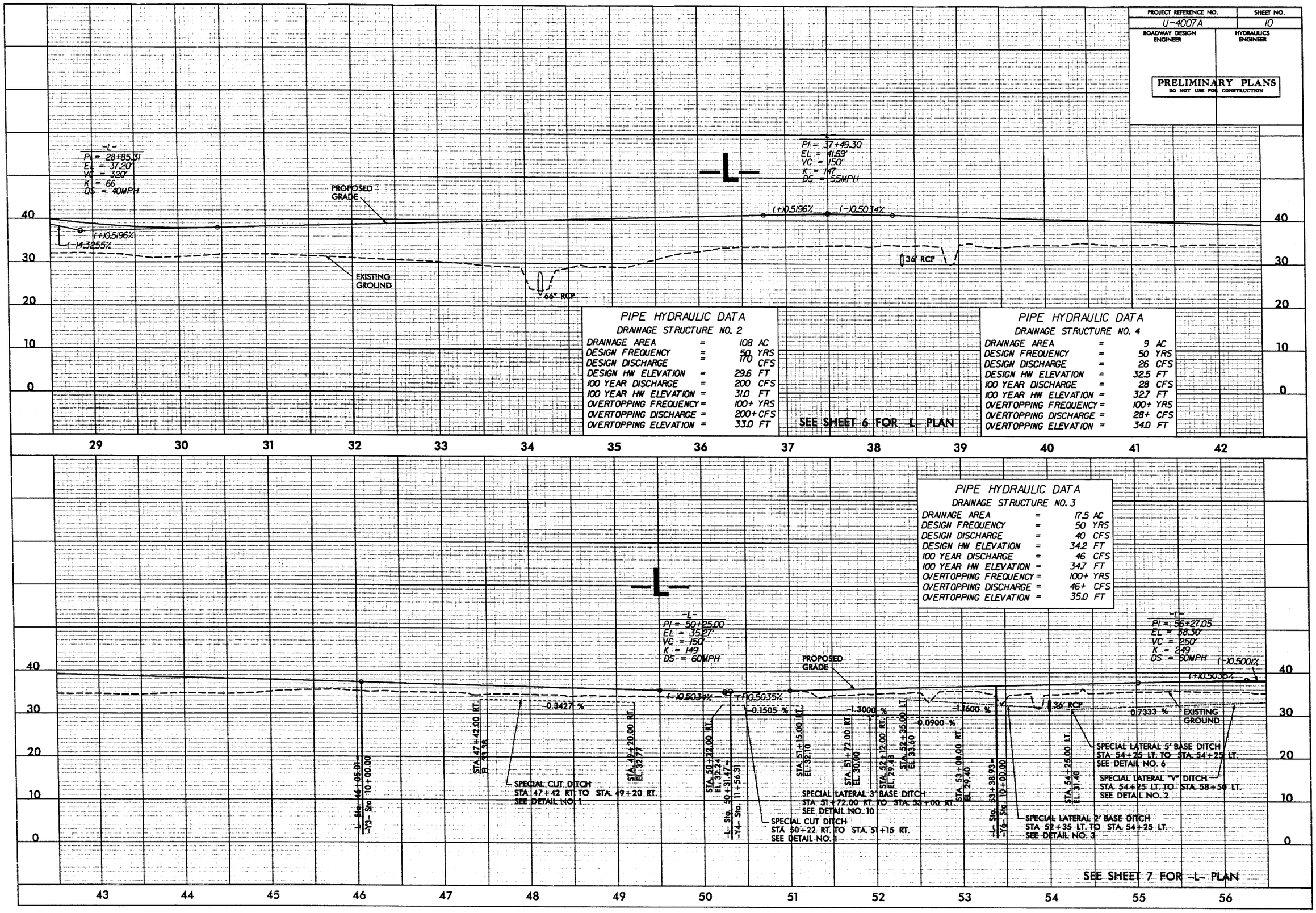


CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	300 CFS
DESIGN FREQUENCY	=	50 YR
DESIGN HW ELEVATION	=	30.1'
BASE DISCHARGE	=	360 CFS
BASE FREQUENCY	=	100 YR
BASE HW ELEVATION	=	31.6'
OVERTOPPING DISCHARGE	=	>360 CFS
OVERTOPPING FREQUENCY	=	>100 YR
OVERTOPPING ELEVATION	=	35.0'
DATE OF SURVEY	=	9/12/07
W.S.ELEVATION AT DATE OF SURVEY	=	DRY

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	10
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 2

DRAINAGE AREA	=	108 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	170 CFS
DESIGN HW ELEVATION	=	29.6 FT
100 YEAR DISCHARGE	=	200 CFS
100 YEAR HW ELEVATION	=	31.0 FT
OVERTOPPING FREQUENCY	=	100+ YRS
OVERTOPPING DISCHARGE	=	200+ CFS
OVERTOPPING ELEVATION	=	33.0 FT

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 4

DRAINAGE AREA	=	9 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	26 CFS
DESIGN HW ELEVATION	=	32.5 FT
100 YEAR DISCHARGE	=	28 CFS
100 YEAR HW ELEVATION	=	32.7 FT
OVERTOPPING FREQUENCY	=	100+ YRS
OVERTOPPING DISCHARGE	=	28+ CFS
OVERTOPPING ELEVATION	=	34.0 FT

SEE SHEET 6 FOR -L- PLAN

PIPE HYDRAULIC DATA
DRAINAGE STRUCTURE NO. 3

DRAINAGE AREA	=	17.5 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	40 CFS
DESIGN HW ELEVATION	=	34.2 FT
100 YEAR DISCHARGE	=	46 CFS
100 YEAR HW ELEVATION	=	34.7 FT
OVERTOPPING FREQUENCY	=	100+ YRS
OVERTOPPING DISCHARGE	=	46+ CFS
OVERTOPPING ELEVATION	=	35.0 FT

SEE SHEET 7 FOR -L- PLAN

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-L-
PI = 56+27.65
EL = 38.30'
VC = 250'
K = 249
DS = 50MPH

(-)0.5001%

0.7333 %

STA. 58+50.00 LT.
EL. 34.50

SPECIAL LATERAL "V" DITCH
STA 54+25 LT. TO STA. 58+50 LT.
SEE DETAIL NO. 2

END GRADE
-L- STA. 61+28.25
EL = 35.79
=-Y5- STA. 15+28.41 EP

-L- POT Sta. 61+71.81 = WESTERN BLVD.
-Y5- POT Sta. 15+34.95

BEGIN GRADE
-L- STA. 62+14.69
EL = 35.87
=-Y6- STA. 15+45.59 EP

2.2%
2.0%
(-)0.5001%
(+)0.0933%
(+)1.2600%

-L-
PI = 63+83.74
EL = 38.00'
VC = 150'
K = 77
DS = 45MPH

(+)1.2600%
(-)0.6956%

PROPOSED GRADE

EXISTING GROUND

(-)0.6956%

25' TAPER TO EXIST.

END GRADE
-L- STA. 68+05.50
EL = 36.07

END RESURFACING
-L- STA. 68+30.60
EL = 34.75

SEE SHEET 8 FOR -L- PLAN

WIDEN & RESURFACE USING EXISTING GRADE AND SUPERS

BEGIN RESURFACING & WIDENING
STA. 11+08.82
EL = 26.28

-Y1-
BELL FORK ROAD

BEGIN GUTTER GRADE
STA 12+33.00 RT ELEV 25.77

GUTTER GRADE
STA 12+43.00 RT ELEV 25.77

GUTTER GRADE
STA 13+33.00 RT ELEV 25.77

GUTTER GRADE
STA 14+00.00 RT ELEV 25.77

ENDGUTTER GRADE
STA 14+20.00 RT ELEV 25.77

BEGIN GUTTER GRADE
STA 14+40.00 RT ELEV 25.77

GUTTER GRADE
STA 15+40.00 RT ELEV 25.77

END GUTTER GRADE
STA 15+60.00 RT ELEV 25.77

-Y1- Sta. 15+89.48 =
-T- Sta. 10+00.00

-0.3400%
-0.2600%
+0.7200%
+0.3600%
-0.3000%
-0.2300%
+0.3600%
+0.3600%
-0.5000%
+0.3000%

EXISTING GROUND

END RESURFACING & WIDENING
STA. 118+96.01
EL = 26.49

SEE SHEET 4 FOR -Y1- PLAN

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	540 CFS
DESIGN FREQUENCY	=	50 YR
DESIGN HW ELEVATION	=	26.6'
BASE DISCHARGE	=	630 CFS
BASE FREQUENCY	=	100 YR
BASE HW ELEVATION	=	27.1'
OVERTOPPING DISCHARGE	=	>630 CFS
OVERTOPPING FREQUENCY	=	>100 YR
OVERTOPPING ELEVATION	=	27.5'
DATE OF SURVEY	=	9/12/07
W.S.ELEVATION AT DATE OF SURVEY	=	19.2'

-RAMPA-

BEGIN GRADE -RAMPA- STA. 0+00.00
EL = 31.67

-RAMPA-
PI = 0+85.00
EL = 30.07'
VC = 150'
K = 187
DS = 60MPH

-RAMPA-
PI = 2+58.70
EL = 28.18'
VC = 150'
K = 336
DS = 60MPH

-RAMPA-
PI = 4+95.40
EL = 26.67'
VC = 270'
K = 122
DS = 55MPH

-RAMPA-
PI = 11+77.55
EL = 37.44'
VC = 190'
K = 177
DS = 60MPH

END GRADE -RAMPA- STA. 13+22.05
EL = 38.17
=L= STA 15+84.60 EP
2.5%

(-)1.8868%
(-)1.0859%
(-)1.0859%
(-)1.0639%
(-)1.0639%
(+)1.5792%
(+)1.5792%
(+)0.5052%

PROPOSED GRADE
EXISTING GROUND
0.3151 %

STA. 6+90.00 LT.
EL. 20.60

2@7'x8' RCBC

SPECIAL LATERAL 2' BASE DITCH
STA. 6+90 LT. TO STA. 12+20 LT.
SEE DETAIL NO. 3

STA. 12+20.00 LT.
EL. 24.27

SEE SHEET 5 FOR -RAMP A- PLAN

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	540 CFS
DESIGN FREQUENCY	=	50 YR
DESIGN HW ELEVATION	=	26.6'
BASE DISCHARGE	=	630 CFS
BASE FREQUENCY	=	100 YR
BASE HW ELEVATION	=	27.1'
OVERTOPPING DISCHARGE	=	>630 CFS
OVERTOPPING FREQUENCY	=	>100 YR
OVERTOPPING ELEVATION	=	27.5'
DATE OF SURVEY	=	9/12/07
W.S.ELEVATION AT DATE OF SURVEY	=	20.1'

-LOOPA-

BEGIN GRADE -LOOPA- STA. 0+00.00
EL = 34.25

-LOOPA-
PI = 0+80.00
EL = 33.80'
VC = 85'
K = 58
DS = 40MPH

-LOOPA-
PI = 3+25.00
EL = 28.80'
VC = 170'
K = 29
DS = 25MPH

-LOOPA-
PI = 5+00.00
EL = 35.45'
VC = 100'
K = 46
DS = 30MPH

END GRADE -LOOPA- STA. 7+08.93
EL = 38.89
=L= STA. 16+04.60 EP
2.5%

(-)0.5658%
(-)2.0397%
(-)2.0397%
(+)3.8000%
(+)3.8000%
(+)1.6466%

PROPOSED GRADE
EXISTING GROUND

NSWE 20.1' (9/12/07)

2@6'x8' RCBC

SEE SHEET 5 FOR -LOOP A- PLAN

-LOOPB-

BEGIN GRADE -LOOPB- STA. 0+00.00
EL = 34.73

-LOOPB-
PI = 0+78.03
EL = 34.35
VC = 100'
K = 65
DS = 45MPH

-LOOPB-
PI = 2+41.51
EL = 31.05'
VC = 175'
K = 28
DS = 25MPH

-LOOPB-
PI = 5+32.43
EL = 43.16'
VC = 150'
K = 73
DS = 45MPH

(-)0.4870%
(-)2.0186%
(-)2.0186%
(+)4.1641%
(+)4.1641%
(+)2.1103%

PROPOSED GRADE
EXISTING GROUND

1.0995 %

STA. 0+00.00 LT.
EL. 25.18

SPECIAL LATERAL 2' BASE DITCH
STA 0+00 LT. TO STA. 2+11 LT.
SEE DETAIL NO. 3

STA. 2+11.00 LT.
EL. 27.50

SEE SHEET 5 FOR -LOOP B- PLAN

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	13
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-LOOPB-

PROPOSED GRADE

(+)2.1103%

END GRADE
-LOOPB- STA. 8+48.11
EL = 50.67
=-L- STA. 25+53.45 EP

2.5%

EXISTING GROUND

SEE SHEET 5 FOR -LOOP B- PLAN

BEGIN GRADE
-RAMPB- STA. 0+00.00
EL = 38.48

-RAMPB-
PI = 2+00.15
EL = 33.97'
VC = 235'
K = 148
DS = 60MPH

(-)2.2556%

(-)0.6709%

STA. 2+15.00 RT.
EL 23.000

0.3856 %

SPECIAL LATERAL 2' BASE DITCH
STA 2+15 RT. TO STA. 6+04 RT.
SEE DETAIL NO. 3

-RAMPB-
PI = 5+37.83
EL = 31.70'
VC = 245'
K = 98
DS = 50MPH

(-)0.6709%

(+)1.8322%

STA. 6+04.00 RT.
EL 24.50

-RAMPB-

PROPOSED GRADE

EXISTING GROUND

24" RCP

SEE SHEET 5 FOR -RAMP B- PLAN

PIPE HYDRAULIC DATA

DRAINAGE STRUCTURE NO. 1

DRAINAGE AREA	=	3.8 AC
DESIGN FREQUENCY	=	50 YRS
DESIGN DISCHARGE	=	14 CFS
DESIGN HW ELEVATION	=	27.0 FT
100 YEAR DISCHARGE	=	15 CFS
100 YEAR HW ELEVATION	=	27.2 FT
OVERTOPPING FREQUENCY	=	500+ YRS
OVERTOPPING DISCHARGE	=	25+ CFS
OVERTOPPING ELEVATION	=	31.7 FT

-RAMPB-
PI = 11+00.00
EL = 42.00'
VC = 250'
K = 345
DS = 60MPH

(+)1.8322%

(+)1.1995%

PROPOSED GRADE

END GRADE
-RAMPB- STA. 17+50.25
EL = 49.80
=-L- STA. 25+73.45 EP

2.5%

-RAMPB-

BEGIN RESURFACING
STA. 27+89.18

WIDEN & RESURFACE USING EXISTING GRADE AND SUPERS

-Y2-

EXISTING GROUND

EXISTING GROUND

1@6'x9' RCBC

NWSE ON 9-12-07
=22.47

CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	=	320 CFS
DESIGN FREQUENCY	=	50 YR
DESIGN HW ELEVATION	=	30.0'
BASE DISCHARGE	=	390 CFS
BASE FREQUENCY	=	100 YR
BASE HW ELEVATION	=	31.6'
OVERTOPPING DISCHARGE	=	<390 CFS
OVERTOPPING FREQUENCY	=	<100 YR
OVERTOPPING ELEVATION	=	31.2'
DATE OF SURVEY	=	9/12/07
W.S.ELEVATION AT DATE OF SURVEY	=	22.47'

SEE SHEET 5 FOR -RAMP B- PLAN

SEE SHEET 5 FOR -Y2- PLAN

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

WIDEN & RESURFACE USING EXISTING GRADE AND SUPERS

-Y2-

EXISTING GROUND

SEE SHEET 5 FOR -Y2- PLAN

70 60 50 40 30 20 10 0

33 34 35 36 37 38 39 40 41 42 43 44 45 46

WIDEN & RESURFACE USING EXISTING GRADE AND SUPERS

-Y2-

EXISTING GROUND

1.0833 %

STA. 47+03.00 RT.
EL. 25.18

STA. 47+75.00 RT.
EL. 24.40

SPECIAL LATERAL 2' BASE DITCH
STA. 47+03 RT. TO STA. 47+75 RT.
SEE DETAIL NO. 3

SEE SHEET 5 FOR -Y2- PLAN

70 60 50 40 30 20 10 0

47 48 49 50 51 52 53 54 55 56 57 58 59 60

PROJECT REFERENCE NO.	SHEET NO.
U-4007A	15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

-Y2-

RESURFACE USING EXISTING GRADE AND SUPERS

END RESURFACING STA. 62+00.00

EXISTING GROUND

SEE SHEET 5 FOR -Y2- PLAN

-Y3-

BEGIN GRADE -Y3- STA. 10+35.50
EL = 36.49
=L= STA. 46+05.51 EP

2.5%

PROPOSED GRADE

(-)2.1564%

(-)0.5291%

END GRADE -Y3- STA. 11+75.57
EL = 34.74

25' TAPER TO EXIST.

END RESURFACING -Y3- STA. 12+00.57
EL = 34.40

EXISTING GROUND

-Y3-
PI = 10+97.64
EL = 35.15'
VC = 90'
K = 55
DS = 35MPH

SEE SHEET 7 FOR -Y3- PLAN

-Y4-

BEGIN GRADE -Y4- STA. 10+21.70
EL = 35.73

(-)0.4432%

(-)2.7600%

PROPOSED GRADE

BEGIN GRADE -Y4- STA. 11+20.79
EL = 34.15
=L= STA. 50+30.99 EP

4.0%

(-)0.3367%

EXISTING GROUND

-Y4-
PI = 10+50.00
EL = 35.60'
VC = 50.00'
K = 22
DS = 30MPH

-Y4-
PI = 11+00.00
EL = 34.22'
VC = 40.00'
K = 17
DS = 20MPH

SEE SHEET 7 FOR -Y4- PLAN

-Y5-

RESURFACE USING EXISTING GRADE & SUPERS

BEGIN RESURFACING STA. 10+07.32

END RESURFACING STA. 18+72.45

EXISTING GROUND

SEE SHEET 8 FOR -Y5- PLAN

-Y6-

BEGIN GRADE -Y6- STA. 10+35.50
EL = 38.27
=L= STA. 53+36.93 EP

4.0%

(+)5.5919%

(-)0.0228%

(-)0.0228%

(+)0.0000%

END GRADE -Y6- STA. 11+22.94
EL = 36.90

PROPOSED GRADE

EXISTING GROUND

-Y6-
PI = 10+56.00
EL = 38.60'
VC = 40'
K = 5
DS = 15MPH

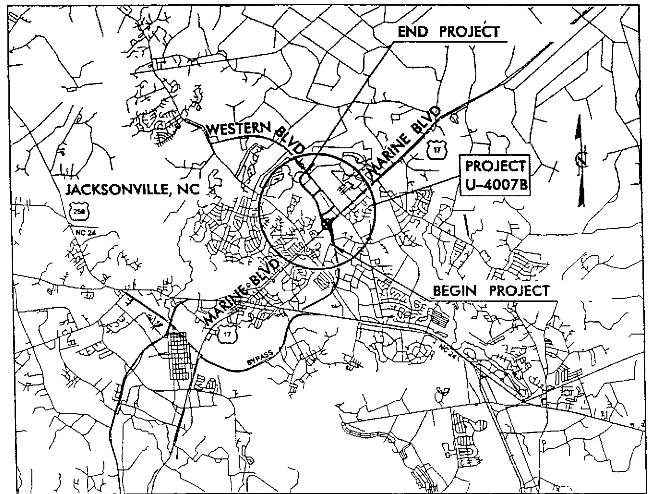
-Y6-
PI = 11+02.94
EL = 35.30'
VC = 40'
K = 6

SEE SHEET 7 FOR -Y6- PLAN

09/08/99

TIP PROJECT: U-4007B

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

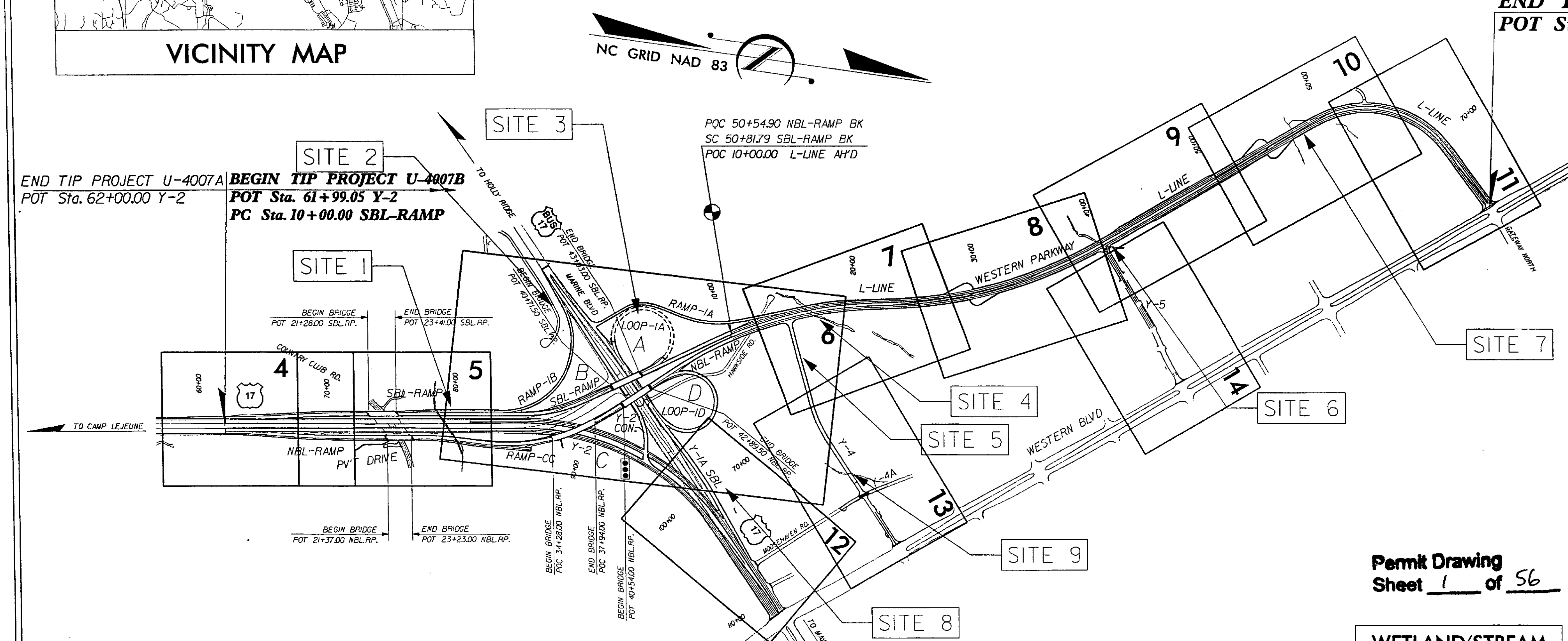
ONSLOW COUNTY

LOCATION: WESTERN PARKWAY FROM APPROXIMATELY 1300' SOUTH OF COUNTRY CLUB RD. TO WESTERN BLVD.

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS CURB, GUTTER, STRUCTURES, & CULVERTS.

STATE	STATE PROJECT REFERENCE NO.		SHEET NO.	TOTAL SHEETS
N.C.	U-4007B		1	
WBS NO.	F.A. PROJ. NO.	DESCRIPTION		
35008.1.1	STPNHF-17(31)	PE		
35008.3.4	NHF-0017(77)	ROW & UTILS.		

ENGLISH



- THIS PROJECT IS WITHIN THE JACKSONVILLE CITY LIMITS.
- THIS PROJECT IS A FULLY CONTROLLED ACCESS BEING LIMITED TO AN INTERCHANGE.
- CLEARING FOR THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

Permit Drawing
Sheet 1 **of** 56

WETLAND/STREAM IMPACTS

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 2011 = 36,300
ADT 2031 = 57,600
DHV = 10 %
D = 60 %
T = 8 % *
V = 50 MPH
(* TTST 3% + DUAL 5%)
FUNC. CLASS: FWY./EXPWY.

PROJECT LENGTH

LENGTH OF ROADWAY T.I.P. PROJECT U-4007B	= 1.177 MI.
LENGTH OF STRUCTURE T.I.P. PROJECT U-4007B	= 0.857 MI
TOTAL LENGTH OF T.I.P. PROJECT U-4007B	= 2.034 MI

PREPARED IN THE OFFICE OF:

Stantec
Stantec Consulting Inc.
Suite 300, 801 Jones Franklin Road
Raleigh, NC U.S.A.
27606
Tel. 919.851.6866
Fax. 919.851.7024
www.stantec.com

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
FEB 20, 2009

LETTING DATE:
OCT. 19, 2010

KENNETH W. SMITH, PE
PROJECT ENGINEER

ROBERT A. WILLIAMS, PE
PROJECT DESIGN ENGINEER

KEITH F. HUDSON, PE
PROJECT DESIGN ENGINEER

NCDOT CONTACT: B. DOUG TAYLOR, PE
PROJECT ENGINEER - ROADWAY DESIGN

HYDRAULICS ENGINEER

P.E.
SIGNATURE:

ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

P.E.
STATE HIGHWAY DESIGN ENGINEER

CONTRACT

$$$$$$SYSTIME$$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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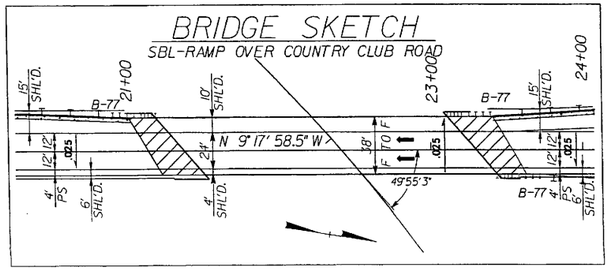
Permit Drawing
Sheet 2 of 56

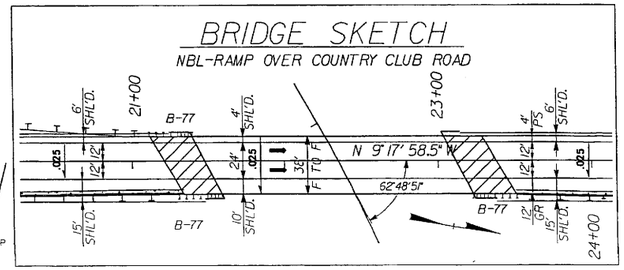
BRIDGE SKETCH
SBL-RAMP OVER COUNTRY CLUB ROAD



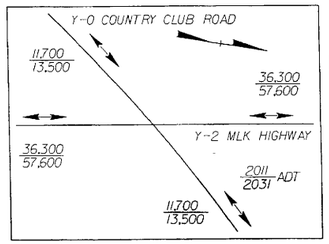
DENOTES IMPACTS IN SURFACE WATER

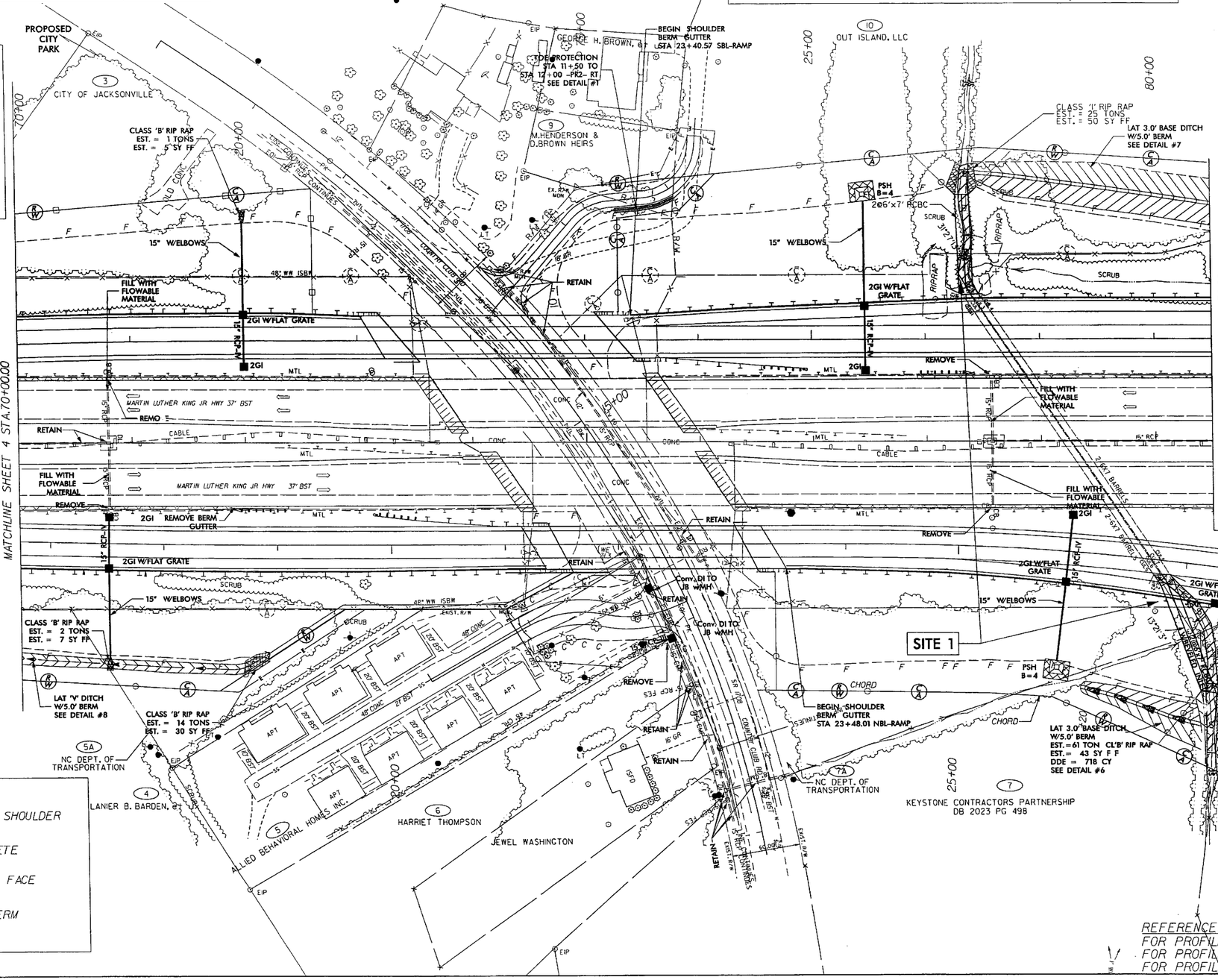
ENGLISH

BRIDGE SKETCH
NBL-RAMP OVER COUNTRY CLUB ROAD



TRAFFIC COUNTS





LEGEND

- PROPOSED PAVED SHOULDER
- PROPOSED CONCRETE
- PROPOSED SINGLE FACE CONC.BARRIER
- EXISTING SHL'D.BERM GUTTER REMOVAL

REFERENCES:
FOR PROFILE OF SBL-RAMP SEE SHEETS 20-21
FOR PROFILE OF NBL-RAMP SEE SHEETS 18-19
FOR PROFILE OF PR-1 AND PR-2 SEE SHEET 30

$$$$$$$SYSTIME$$$$$$$
$$$$$$$USERNAME$$$$$$$

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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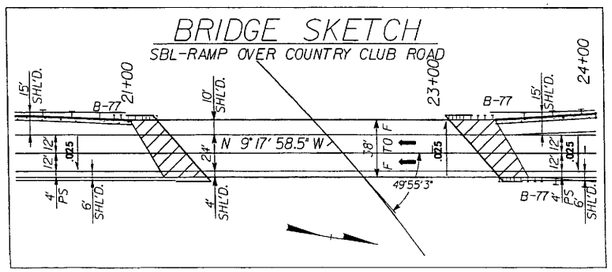
www.stantec.com

Permit Drawing
Sheet 3 of 56

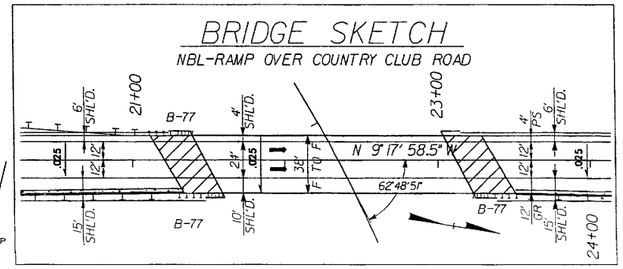
BRIDGE SKETCH
SBL-RAMP OVER COUNTRY CLUB ROAD



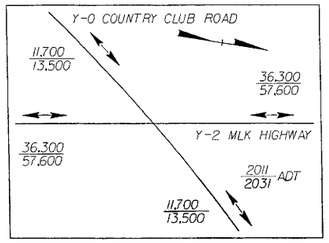
DENOTES IMPACTS IN SURFACE WATER

ENGLISH

BRIDGE SKETCH
NBL-RAMP OVER COUNTRY CLUB ROAD



TRAFFIC COUNTS



LEGEND

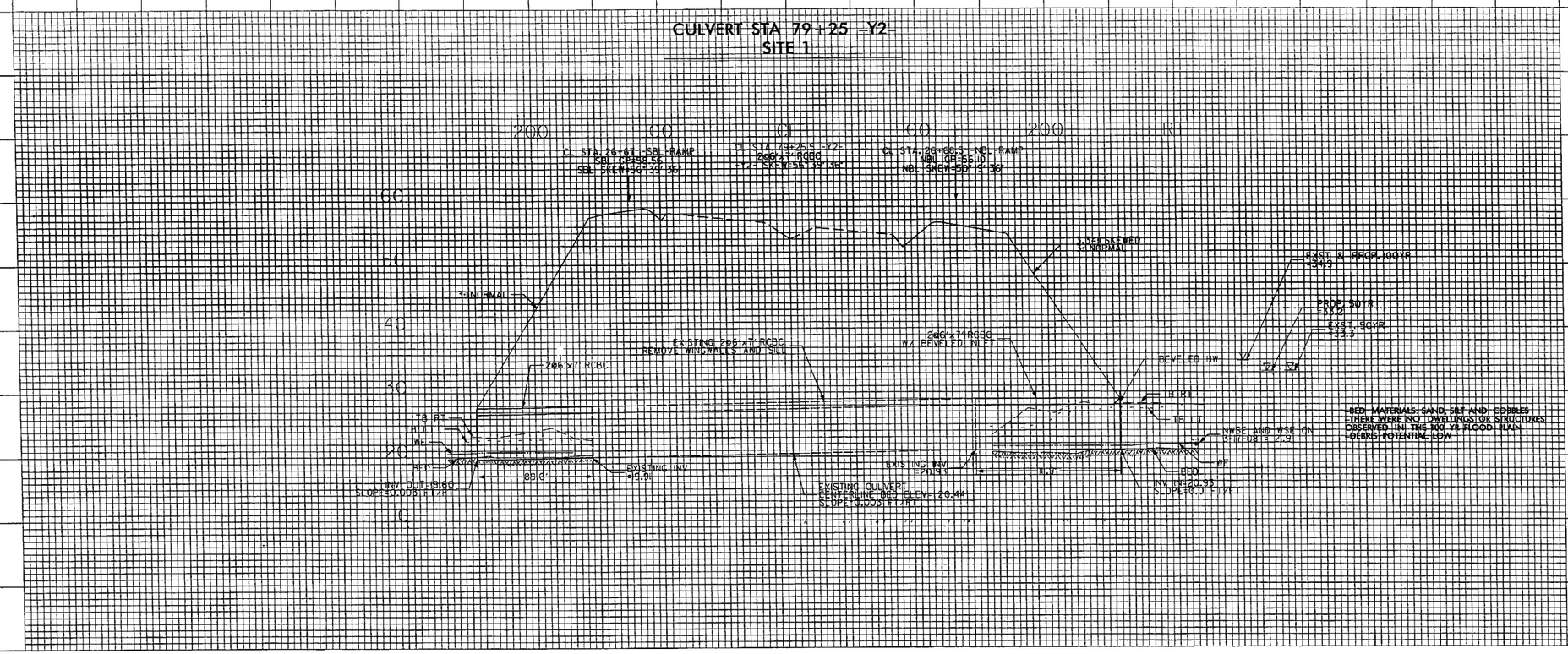
- PROPOSED PAVED SHOULDER
- PROPOSED CONCRETE
- PROPOSED SINGLE FACE CONC. BARRIER
- EXISTING SHL'D. BERM GUTTER REMOVAL

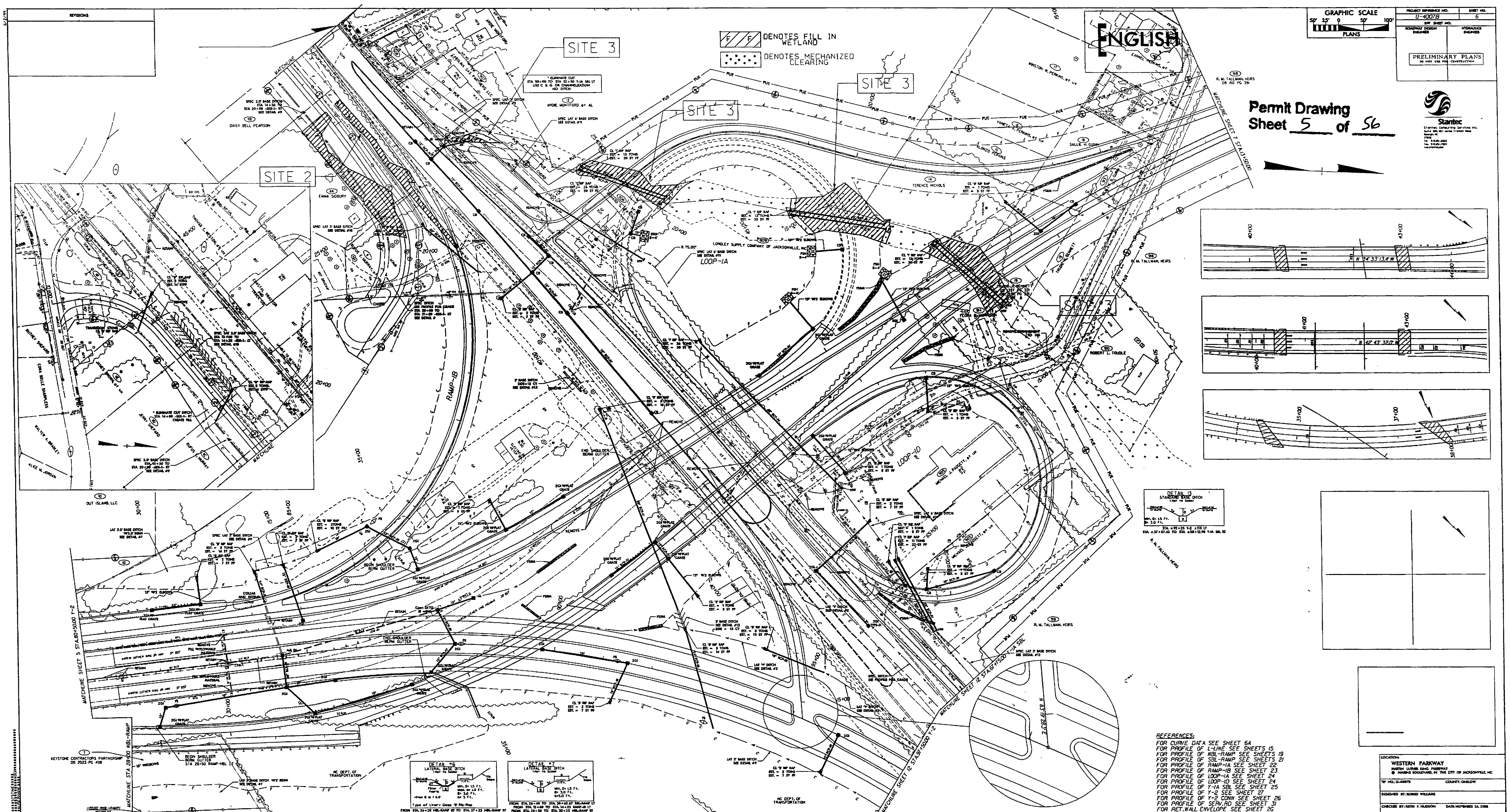
REFERENCES:
FOR PROFILE OF SBL-RAMP SEE SHEETS 20-21
FOR PROFILE OF NBL-RAMP SEE SHEETS 18-19
FOR PROFILE OF PR-1 AND PR-2 SEE SHEET 30

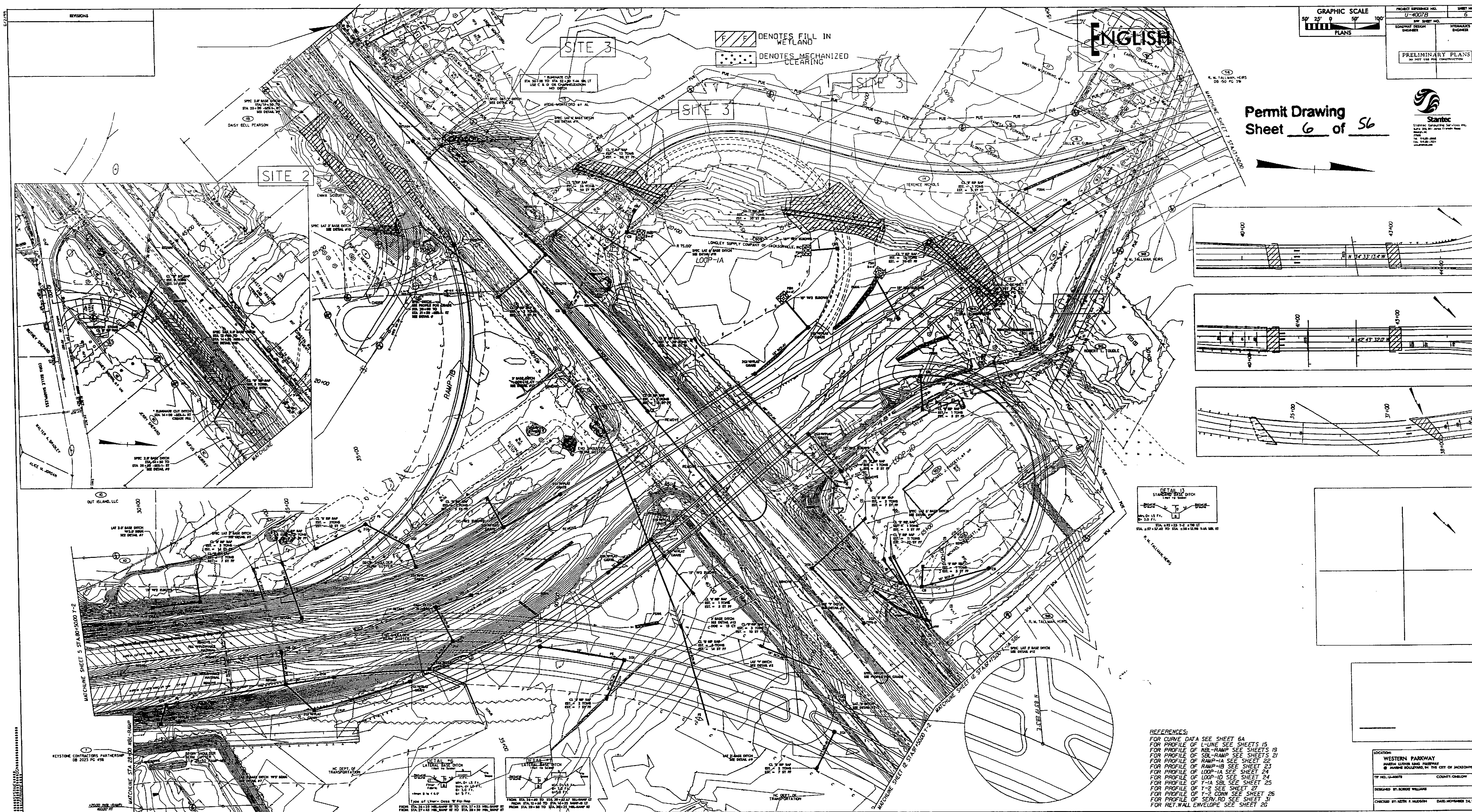
$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$

Permit Drawing
Sheet 4 of 56

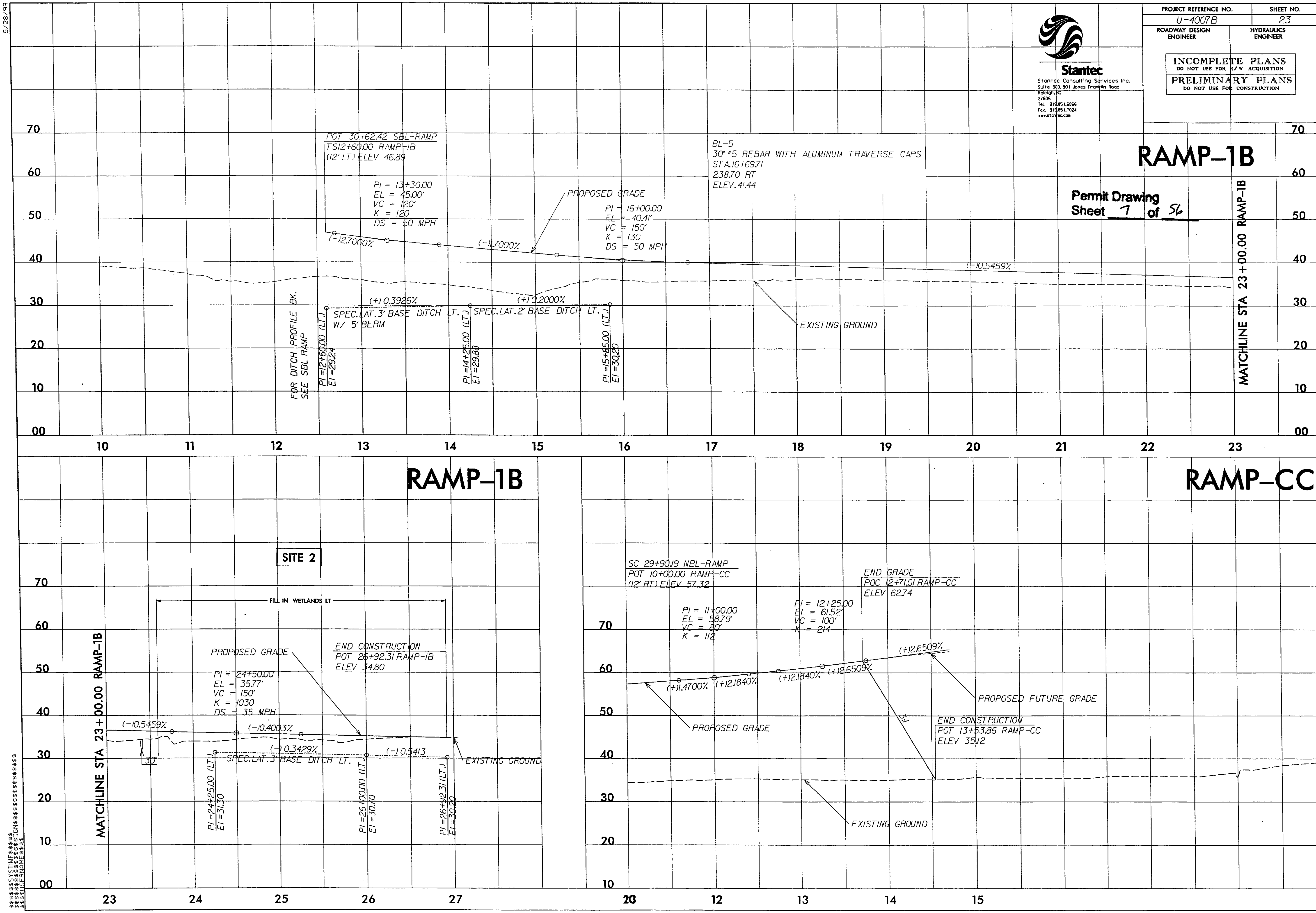
CULVERT STA 79+25 -Y2-
SITE 1




GRAPHIC SCALE
50' 25' 0 50' 100'
PLANS
PROJECT REFERENCE NO. U-4007B
SHEET NO. 6
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 5 of 56
Stantec
Stantec Consulting Services Inc.
ENGLISH
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
SITE 3
SITE 3
SITE 3
SITE 2
REVISIONS
LOOP-1A
LOOP-1D
RAMP-1B
LONGLEY SUPPLY COMPANY OF JACKSONVILLE, INC.
TERENCE NICHOLS
DAISY BELL PEARSON
EMMA SIDBURY
R. M. TALLMAN, HEIRS
ROBERT L. TOUDLE
KEYSTONE CONTRACTORS PARTNERSHIP
NC DEPT. OF TRANSPORTATION
DETAIL 13 STANDARD BASE DITCH
DETAIL 6 LATERAL BASE DITCH
DETAIL 7 LATERAL BASE DITCH
MATCHLINE SHEET 5 STA.80+50.00 Y-2
MATCHLINE SHEET 12 STA.91+50.00 Y-2
MATCHLINE STA 28+00 NBL-RAMP
REFERENCES:
FOR CURVE DATA SEE SHEET 6A
FOR PROFILE OF L-LINE SEE SHEETS 15
FOR PROFILE OF NBL-RAMP SEE SHEETS 19
FOR PROFILE OF SBL-RAMP SEE SHEETS 21
FOR PROFILE OF RAMP-1A SEE SHEET 22
FOR PROFILE OF RAMP-1B SEE SHEET 23
FOR PROFILE OF LOOP-1A SEE SHEET 24
FOR PROFILE OF LOOP-1D SEE SHEET 24
FOR PROFILE OF Y-1A SBL SEE SHEET 25
FOR PROFILE OF Y-2 SEE SHEET 27
FOR PROFILE OF Y-2 CONN SEE SHEET 26
FOR PROFILE OF SERV.RD SEE SHEET 31
FOR RET.WALL ENVELOPE SEE SHEET 2G
LOCATION:
WESTERN PARKWAY
MARTIN LUTHER KING FREEWAY
@ MARINE BOULEVARD, IN THE CITY OF JACKSONVILLE, NC
TIP NO.: U-4007B
COUNTY: ONSLOW
DESIGNED BY: ROBERT WILLIAMS
CHECKED BY: KEITH F. HUDSON
DATE: NOVEMBER 24, 2008



REVISIONS
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
SITE 2
SITE 3
ENGLISH
GRAPHIC SCALE
50' 25' 0 50' 100'
PLANS
PROJECT REFERENCE NO.
U-4007B
SHEET NO.
6
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Permit Drawing
Sheet 6 of 56
Stantec
LOOP-1A
LOOP-1D
RAMP-1B
LONGLEY SUPPLY COMPANY OF JACKSONVILLE, INC
DAISY BELL PEARSON
EMMA SIDBURY
TERENCE NICHOLS
R. M. TALLMAN, HEIRS
OUT ISLAND, LLC
KEYSTONE CONTRACTORS PARTNERSHIP
NC DEPT. OF TRANSPORTATION
REFERENCES:
FOR CURVE DATA SEE SHEET 6A
FOR PROFILE OF L-LINE SEE SHEETS 15
FOR PROFILE OF NBL-RAMP SEE SHEETS 19
FOR PROFILE OF SBL-RAMP SEE SHEETS 21
FOR PROFILE OF RAMP-1A SEE SHEET 22
FOR PROFILE OF RAMP-1B SEE SHEET 23
FOR PROFILE OF LOOP-1A SEE SHEET 24
FOR PROFILE OF LOOP-1D SEE SHEET 24
FOR PROFILE OF Y-1A SBL SEE SHEET 25
FOR PROFILE OF Y-2 SEE SHEET 27
FOR PROFILE OF Y-2 CONN SEE SHEET 26
FOR PROFILE OF SERV.RD SEE SHEET 31
FOR RET.WALL ENVELOPE SEE SHEET 2G
LOCATION:
WESTERN PARKWAY
MARTIN LUTHER KING FREEWAY
@ MARINE BOULEVARD, IN THE CITY OF JACKSONVILLE, NC
TIP NO.: U-4007B
COUNTY: ONSLOW
DESIGNED BY: ROBERT WILLIAMS
CHECKED BY: KEITH F. HUDSON
DATE: NOVEMBER 24, 2008


5/28/99
PROJECT REFERENCE NO. U-4007B
SHEET NO. 23
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
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www.stantec.com
RAMP-1B
Permit Drawing
Sheet 7 of 56
MATCHLINE STA 23+00.00 RAMP-1B
POT 30+62.42 SBL-RAMP
TS12+60.00 RAMP-IB
(12' LT) ELEV 46.89
PI = 13+30.00
EL = 45.00'
VC = 120'
K = 120
DS = 50 MPH
(−)2.7000%
(−)1.7000%
PROPOSED GRADE
PI = 16+00.00
EL = 40.41'
VC = 150'
K = 130
DS = 50 MPH
BL-5
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.16+69.71
238.70 RT
ELEV.41.44
(−)0.5459%
EXISTING GROUND
FOR DITCH PROFILE BK.
SEE SBL RAMP
(+) 0.3926%
(+) 0.2000%
SPEC.LAT.3' BASE DITCH LT.
W/ 5' BERM
SPEC.LAT.2' BASE DITCH LT.
PI =12+60.00 (LT.)
El =29.24
PI =14+25.00 (LT.)
El =29.88
PI =15+85.00 (LT.)
El =30.20
RAMP-1B
SITE 2
FILL IN WETLANDS LT
MATCHLINE STA 23+00.00 RAMP-1B
PROPOSED GRADE
END CONSTRUCTION
POT 26+92.31 RAMP-IB
ELEV 34.80
PI = 24+50.00
EL = 35.77'
VC = 150'
K = 1030
DS = 35 MPH
(−)0.5459%
(−)0.4003%
(−) 0.3429%
(−) 0.5413
30"
SPEC.LAT.3' BASE DITCH LT.
EXISTING GROUND
PI =24+25.00 (LT.)
El =31.30
PI =26+00.00 (LT.)
El =30.70
PI =26+92.31 (LT.)
El =30.20
RAMP-CC
SC 29+90.19 NBL-RAMP
POT 10+00.00 RAMP-CC
(12' RT) ELEV 57.32
PI = 11+00.00
EL = 58.79'
VC = 80'
K = 112
PI = 12+25.00
EL = 61.52'
VC = 100'
K = 214
END GRADE
POC 12+71.01 RAMP-CC
ELEV 62.74
(+)1.4700%
(+)2.1840%
(+)2.1840%
(+)2.6509%
(+)2.6509%
PROPOSED FUTURE GRADE
PROPOSED GRADE
3:1
END CONSTRUCTION
POT 13+53.86 RAMP-CC
ELEV 35.12
EXISTING GROUND
$$$$SYSTIME$$$$
$$$$DGN$$$$
$$$$USERNAME$$$$

5/28/99

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	31
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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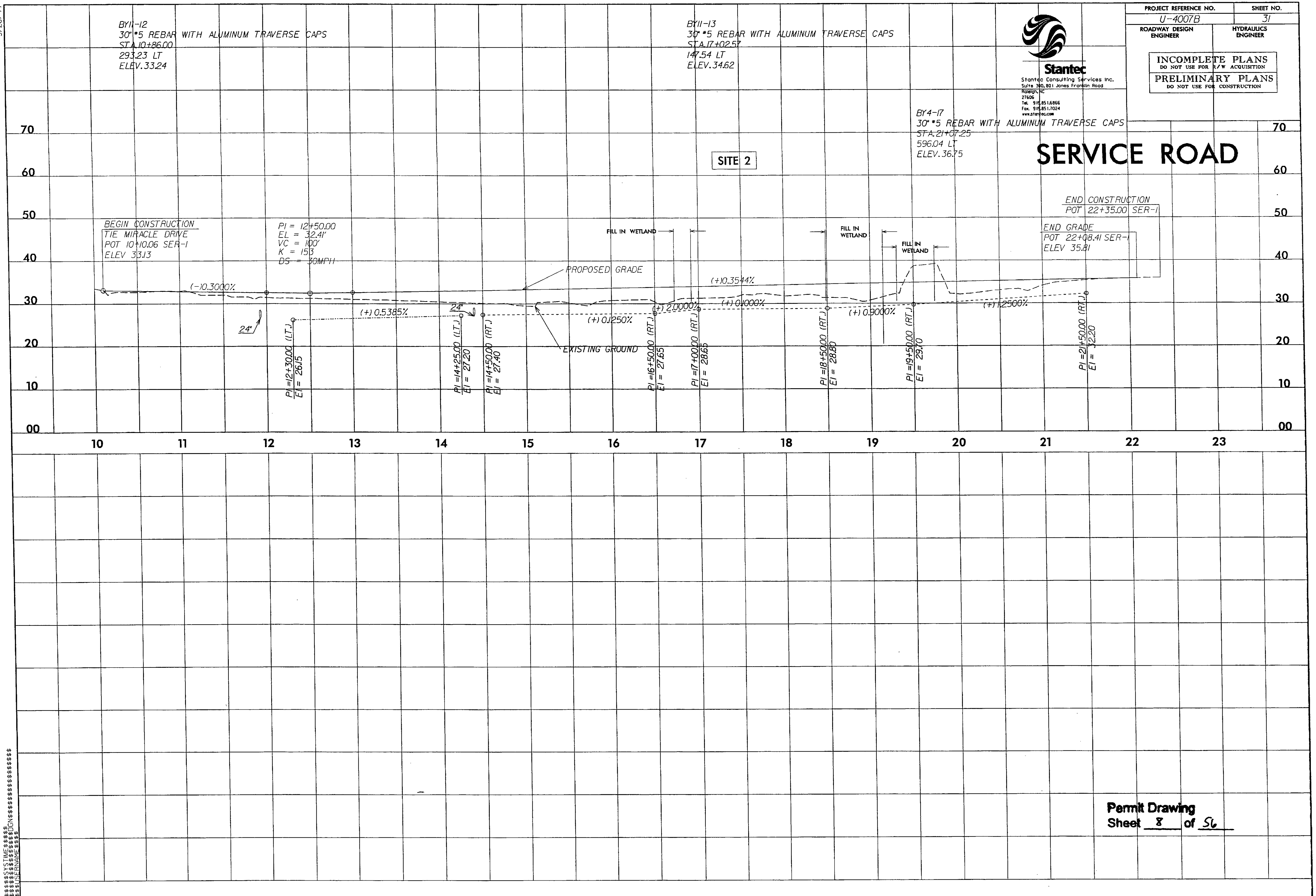
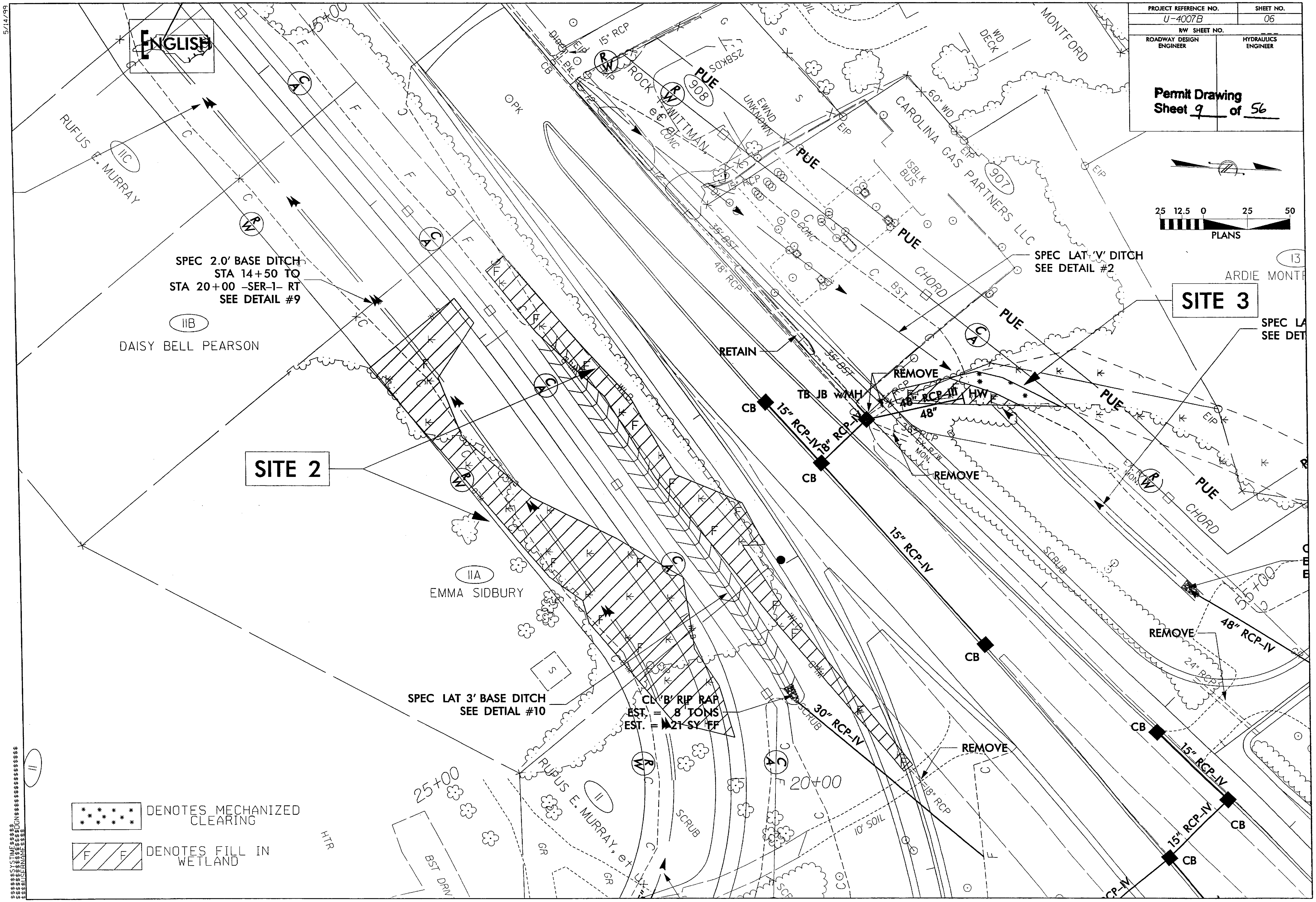
SERVICE ROAD

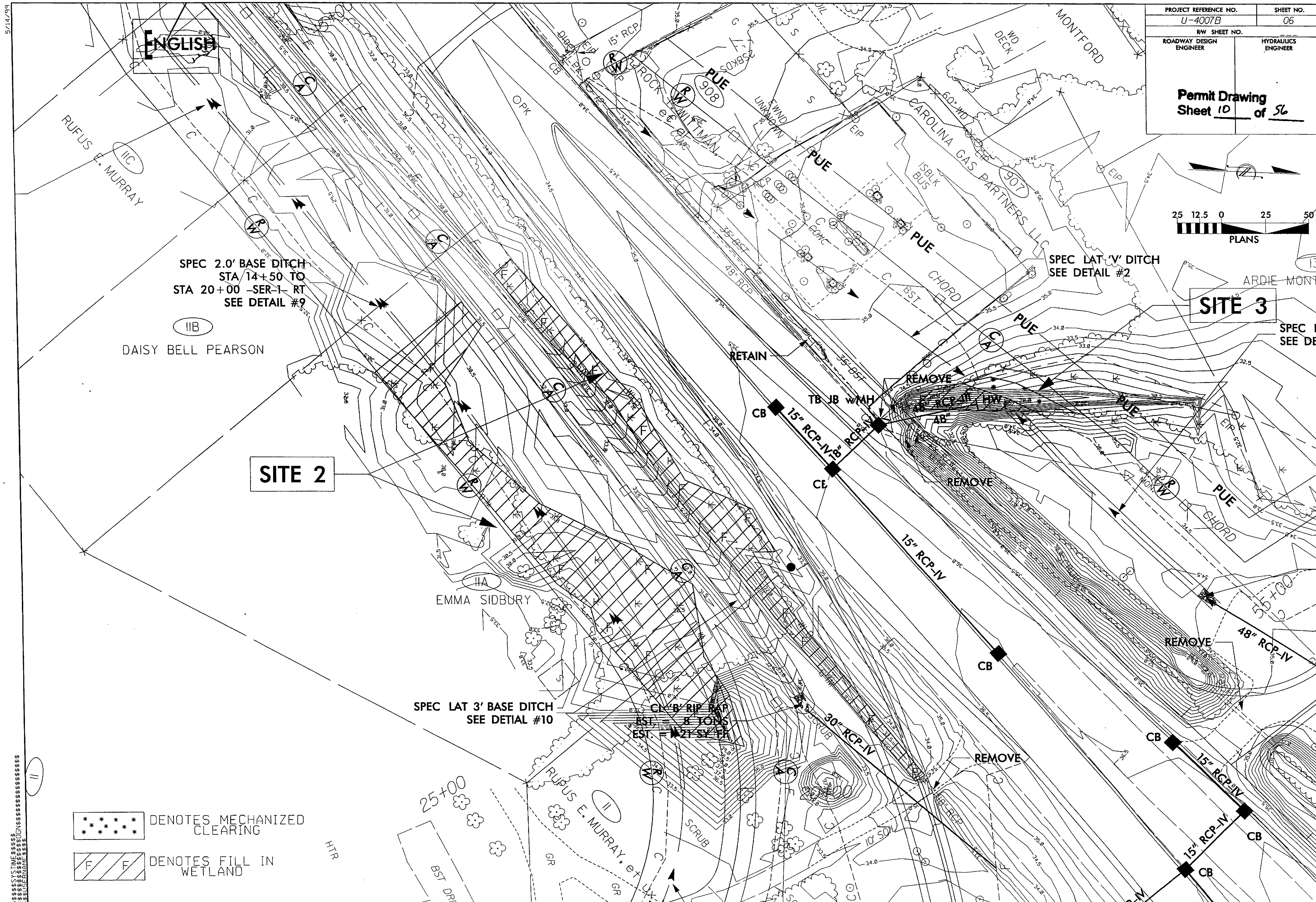


Permit Drawing
Sheet 8 of 56

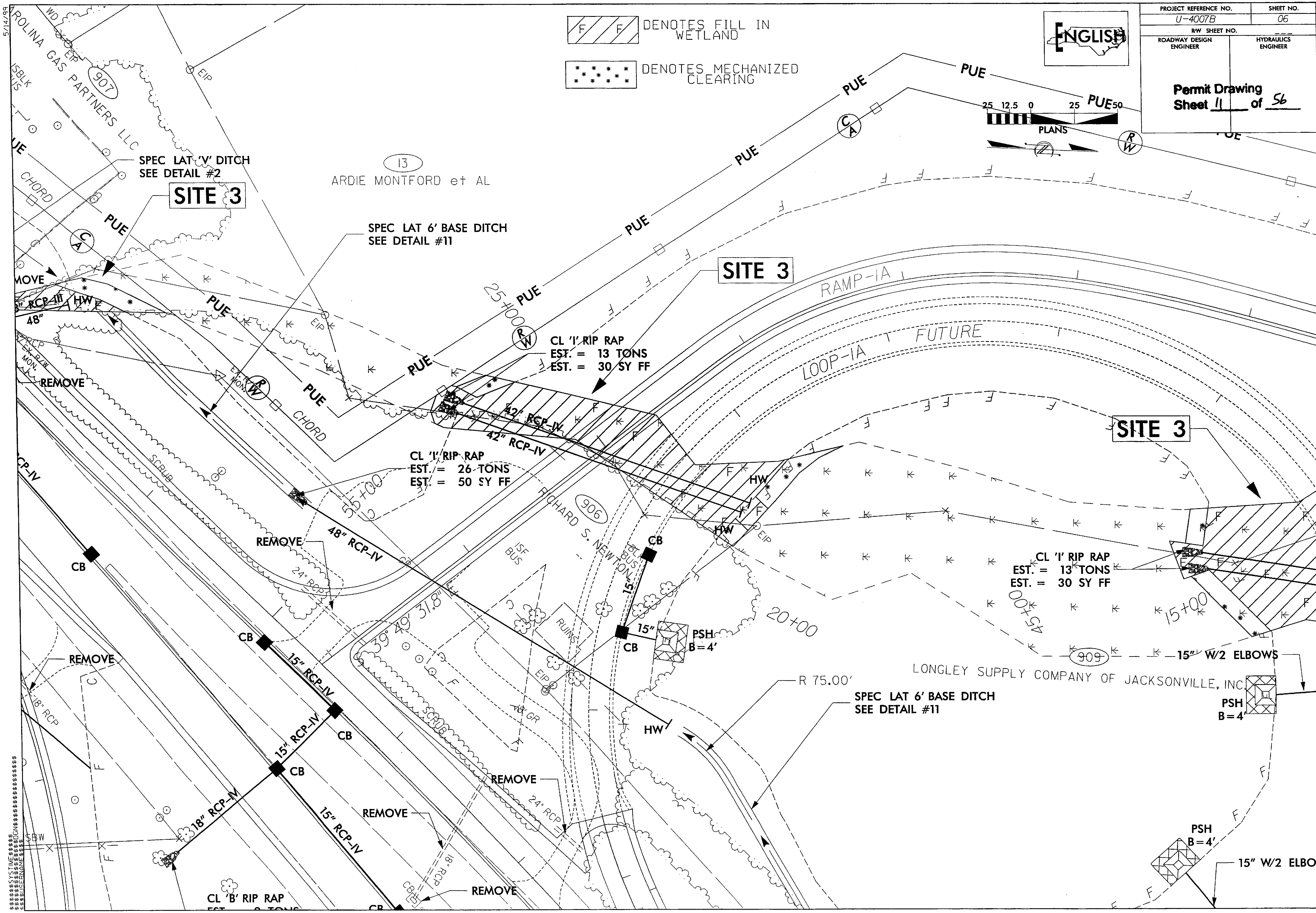
$$$$$$SYSTIME$$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$



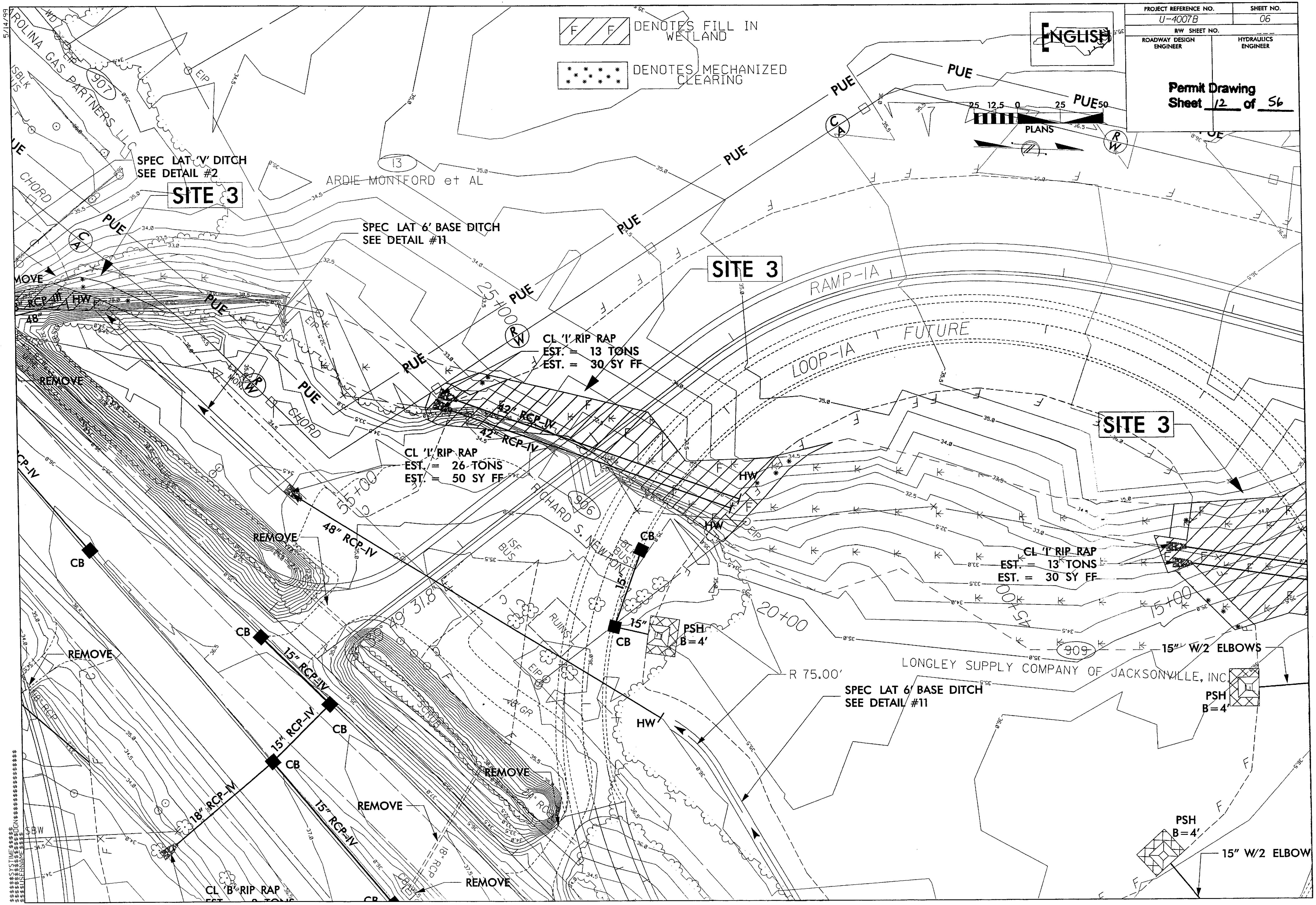
PROJECT REFERENCE NO. U-4007B
SHEET NO. 06
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing Sheet 9 of 56
25 12.5 0 25 50
PLANS
5/14/99
ENGLISH
SITE 2
SITE 3
SPEC 2.0' BASE DITCH STA 14+50 TO STA 20+00 -SER-1- RT SEE DETAIL #9
SPEC LAT 'V' DITCH SEE DETAIL #2
SPEC LAT 3' BASE DITCH SEE DETIAL #10
CL 'B' RIP RAP EST. = 8 TONS EST. = 21 SY FF
RUFUS E. MURRAY
DAISY BELL PEARSON
EMMA SIDBURY
CAROLINA GAS PARTNERS LLC
ARDIE MONTF
MONTFORD
RETAIN
REMOVE
TB JB w/MH
CB
15" RCP-IV
30" RCP-IV
48" RCP-IV
20+00
25+00
15+00
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND

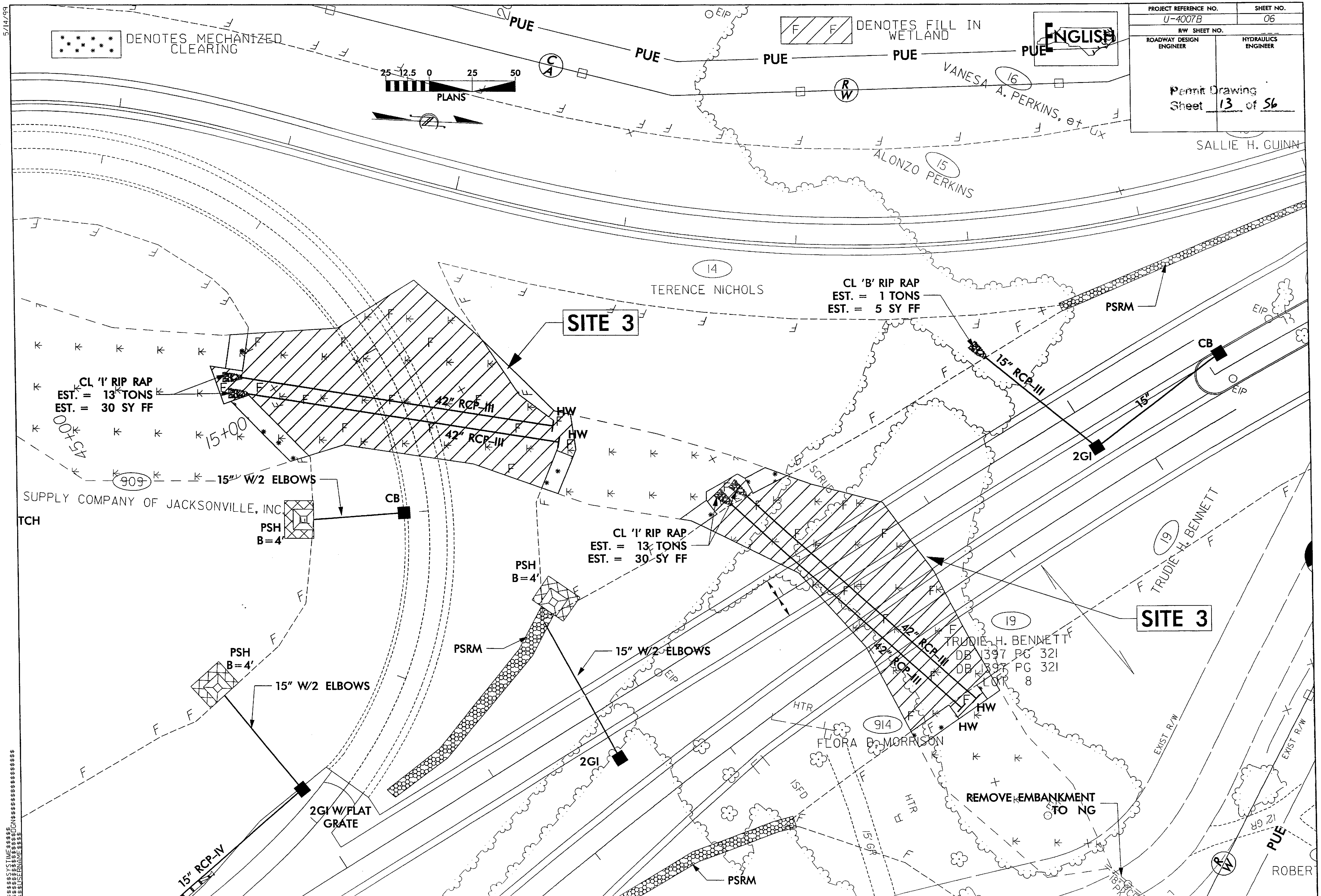


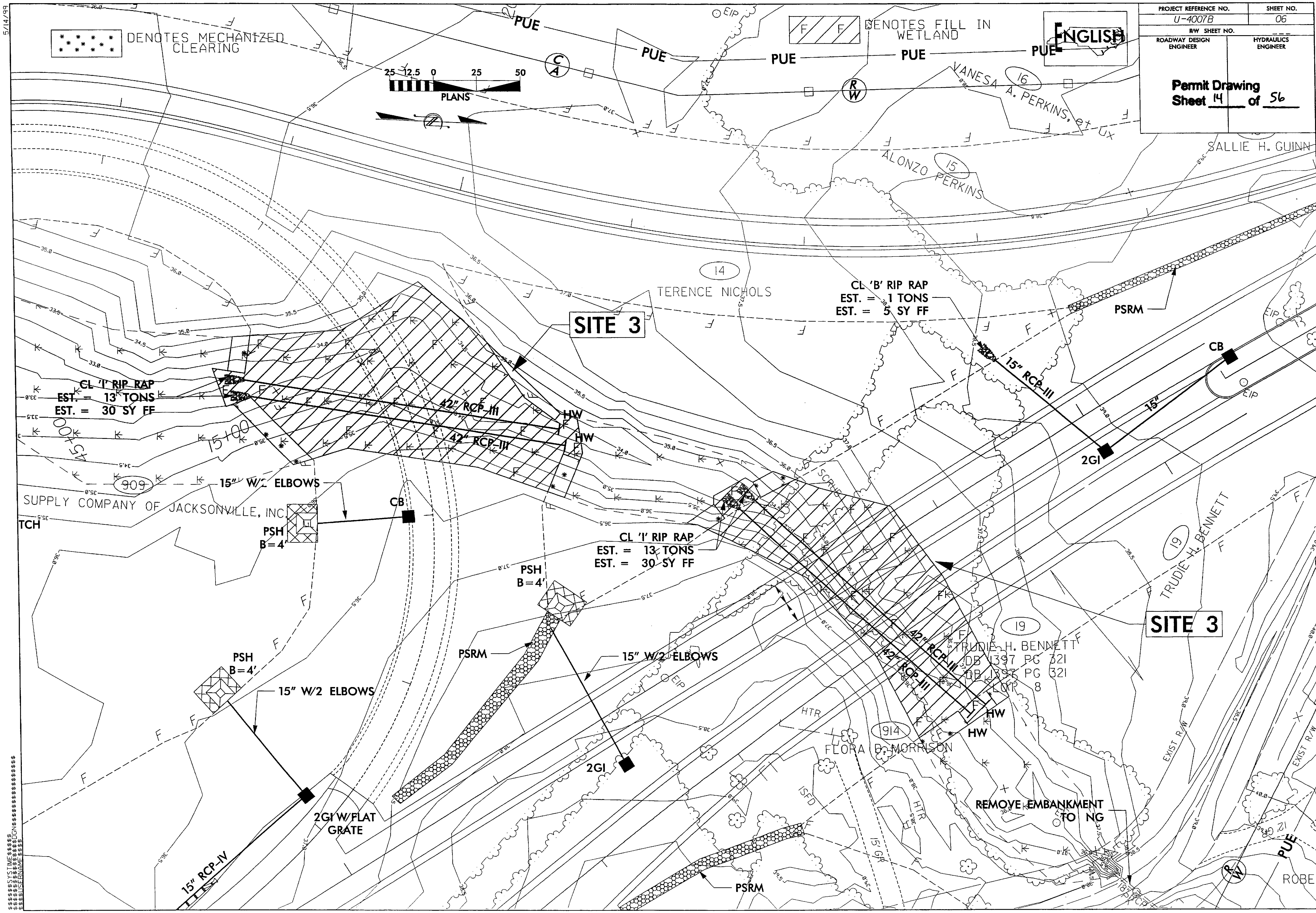
PROJECT REFERENCE NO.
SHEET NO.
U-4007B
06
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing Sheet 10 of 56
PLANS
ENGLISH
SITE 2
SITE 3
SPEC 2.0' BASE DITCH STA 14+50 TO STA 20+00 -SER-1- RT SEE DETAIL #9
SPEC LAT 'V' DITCH SEE DETAIL #2
SPEC LAT 3' BASE DITCH SEE DETIAL #10
CL 'B' RIP RAP EST. = 8 TONS EST. = 21 SY. FF
RETAIN
REMOVE
TB JB w/MH
15" RCP-IV
30" RCP-IV
48" RCP-IV
CB
PUE
RUFUS E. MURRAY
DAISY BELL PEARSON
EMMA SIDBURY
CAROLINA GAS PARTNERS LLC
MONTFORD
ARDIE MONTF
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND



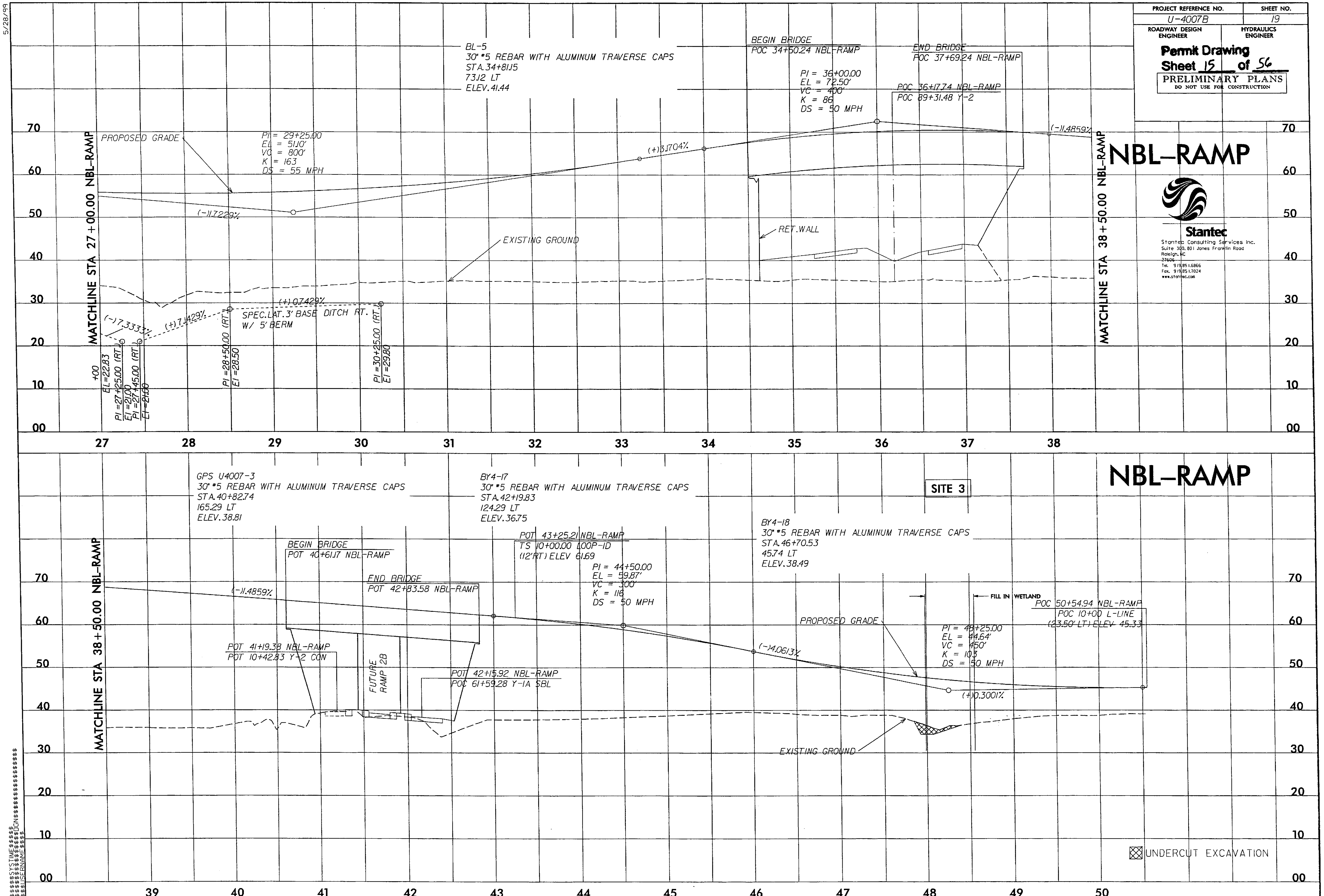
PROJECT REFERENCE NO.
U-4007B
SHEET NO.
06
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing
Sheet 11 of 56
ENGLISH
25 12.5 0 25 50
PLANS
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
5/14/99
CAROLINA GAS PARTNERS LLC
907
13
ARDIE MONTFORD et AL
SPEC LAT 'V' DITCH
SEE DETAIL #2
SITE 3
SPEC LAT 6' BASE DITCH
SEE DETAIL #11
SITE 3
RAMP-1A
FUTURE
LOOP-1A
SITE 3
CL 'I' RIP RAP
EST. = 13 TONS
EST. = 30 SY FF
42" RCP-IV
42" RCP-IV
CL 'I' RIP RAP
EST. = 26 TONS
EST. = 50 SY FF
48" RCP-IV
REMOVE
REMOVE
REMOVE
REMOVE
REMOVE
REMOVE
REMOVE
RICHARD S. NEWTON
906
CB
CB
CB
CB
CB
CB
15" RCP-IV
15" RCP-IV
15" RCP-IV
18" RCP-IV
15"
15"
PSH
B=4'
HW
HW
HW
CL 'I' RIP RAP
EST. = 13 TONS
EST. = 30 SY FF
15+00
20+00
25+00
45+00
55+00
909
15" W/2 ELBOWS
LONGLEY SUPPLY COMPANY OF JACKSONVILLE, INC.
PSH
B=4'
R 75.00'
SPEC LAT 6' BASE DITCH
SEE DETAIL #11
PSH
B=4'
15" W/2 ELBOW
CL 'B' RIP RAP
PUE
CHORD
SCRUB
RUINS
24" RCP
18" RCP


PROJECT REFERENCE NO. U-4007B
SHEET NO. 06
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing Sheet 12 of 56
ENGLISH
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
PLANS
5/14/99
CAROLINA GAS PARTNERS LLC
907
ARDIE MONTFORD et AL
13
SPEC LAT 'V' DITCH SEE DETAIL #2
SITE 3
SPEC LAT 6' BASE DITCH SEE DETAIL #11
PUE
CL 'I' RIP RAP EST. = 13 TONS EST. = 30 SY FF
CL 'I' RIP RAP EST. = 26 TONS EST. = 50 SY FF
42" RCP-IV
48" RCP-IV
RAMP-1A
FUTURE LOOP-1A
RICHARD S. NEWTON
906
REMOVE
CB
HW
15" RCP-IV
18" RCP-IV
PSH B=4'
R 75.00'
LONGLEY SUPPLY COMPANY OF JACKSONVILLE, INC.
909
15" W/2 ELBOWS
15" W/2 ELBOW
SPEC LAT 6' BASE DITCH SEE DETAIL #11
CL 'B' RIP RAP
RUINS
20+00
15+00
25+00
55+00


PROJECT REFERENCE NO.
U-4007B
SHEET NO.
06
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing
Sheet 13 of 56
ENGLISH
5/14/99
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
25 12.5 0 25 50
PLANS
PUE
VANESA A. PERKINS, et ux
SALLIE H. GUINN
ALONZO PERKINS
TERENCE NICHOLS
SITE 3
CL 'I' RIP RAP
EST. = 13 TONS
EST. = 30 SY FF
CL 'B' RIP RAP
EST. = 1 TONS
EST. = 5 SY FF
42" RCP-III
HW
15" RCP-III
CB
2GI
PSRM
15" W/2 ELBOWS
SUPPLY COMPANY OF JACKSONVILLE, INC.
PSH
B=4'
TRUDIE H. BENNETT
DB 1397 PG 321
LOT 8
FLORA D. MORRISON
REMOVE EMBANKMENT TO NG
2GI W/FLAT GRATE
15" RCP-IV
EXIST R/W
ROBER



PROJECT REFERENCE NO. U-4007B
SHEET NO. 06
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing
Sheet 14 of 56
ENGLISH
5/14/99
DENOTES MECHANIZED CLEARING
DENOTES FILL IN WETLAND
PLANS
PUE
VANESA A. PERKINS, et ux
SALLIE H. GUINN
ALONZO PERKINS
TERENCE NICHOLS
SITE 3
CL 'B' RIP RAP
EST. = 1 TONS
EST. = 5 SY FF
PSRM
CB
15" RCP-III
2GI
CL 'I' RIP RAP
EST. = 13 TONS
EST. = 30 SY FF
42" RCP-III
HW
15" W/2 ELBOWS
SUPPLY COMPANY OF JACKSONVILLE, INC.
PSH
B=4'
TRUDIE H. BENNETT
DB 1397 PG 321
LOT 8
FLORA B. MORRISON
REMOVE EMBANKMENT TO NG
2GI W/FLAT GRATE
15" RCP-IV
EXIST R/W
HTR
ROBER


PROJECT REFERENCE NO. U-4007B
SHEET NO. 19
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing
Sheet 15 of 56
PRELIMINARY PLANS
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NBL-RAMP
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Fax. 919.851.7024
www.stantec.com
MATCHLINE STA 27+00.00 NBL-RAMP
MATCHLINE STA 38+50.00 NBL-RAMP
BL-5
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.34+81.15
73.12 LT
ELEV.41.44
BEGIN BRIDGE
POC 34+50.24 NBL-RAMP
END BRIDGE
POC 37+69.24 NBL-RAMP
PI = 36+00.00
EL = 72.50'
VC = 400'
K = 86
DS = 50 MPH
POC 36+17.74 NBL-RAMP
POC 89+31.48 Y-2
(-)1.4859%
PROPOSED GRADE
PI = 29+25.00
EL = 51.10'
VC = 800'
K = 163
DS = 55 MPH
(+)3.1704%
(-)1.7229%
RET.WALL
EXISTING GROUND
(+)0.7429%
(-)7.3333%
(+)7.1429%
SPEC.LAT.3' BASE DITCH RT.
W/ 5' BERM
+00
EL =22.83
PI =27+25.00 (RT.)
EI =21.00
PI =27+45.00 (RT.)
EI =21.00
PI =28+50.00 (RT.)
EI =28.50
PI =30+25.00 (RT.)
EI =29.80
70
60
50
40
30
20
10
00
27
28
29
30
31
32
33
34
35
36
37
38
NBL-RAMP
SITE 3
GPS U4007-3
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.40+82.74
165.29 LT
ELEV.38.81
BY4-17
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.42+19.83
124.29 LT
ELEV.36.75
BY4-18
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.46+70.53
45.74 LT
ELEV.38.49
BEGIN BRIDGE
POT 40+61.17 NBL-RAMP
END BRIDGE
POT 42+83.58 NBL-RAMP
POT 43+25.21 NBL-RAMP
TS 10+00.00 LOOP-ID
(12'RT) ELEV 61.69
PI = 44+50.00
EL = 59.87'
VC = 300'
K = 116
DS = 50 MPH
(-)1.4859%
POT 41+19.38 NBL-RAMP
POT 10+42.83 Y-2 CON
FUTURE RAMP 2B
POT 42+15.92 NBL-RAMP
POC 61+59.28 Y-1A SBL
PROPOSED GRADE
(-)4.0613%
FILL IN WETLAND
POC 50+54.94 NBL-RAMP
POC 10+00 L-LINE
(23.50' LT) ELEV 45.33
PI = 48+25.00
EL = 44.64'
VC = 450'
K = 103
DS = 50 MPH
(+)0.3001%
EXISTING GROUND
UNDERCUT EXCAVATION
39
40
41
42
43
44
45
46
47
48
49
50
$$$$$$SYSTIME$$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO. U-4007B | SHEET NO. 21

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

Permit Drawing Sheet 16 of 56

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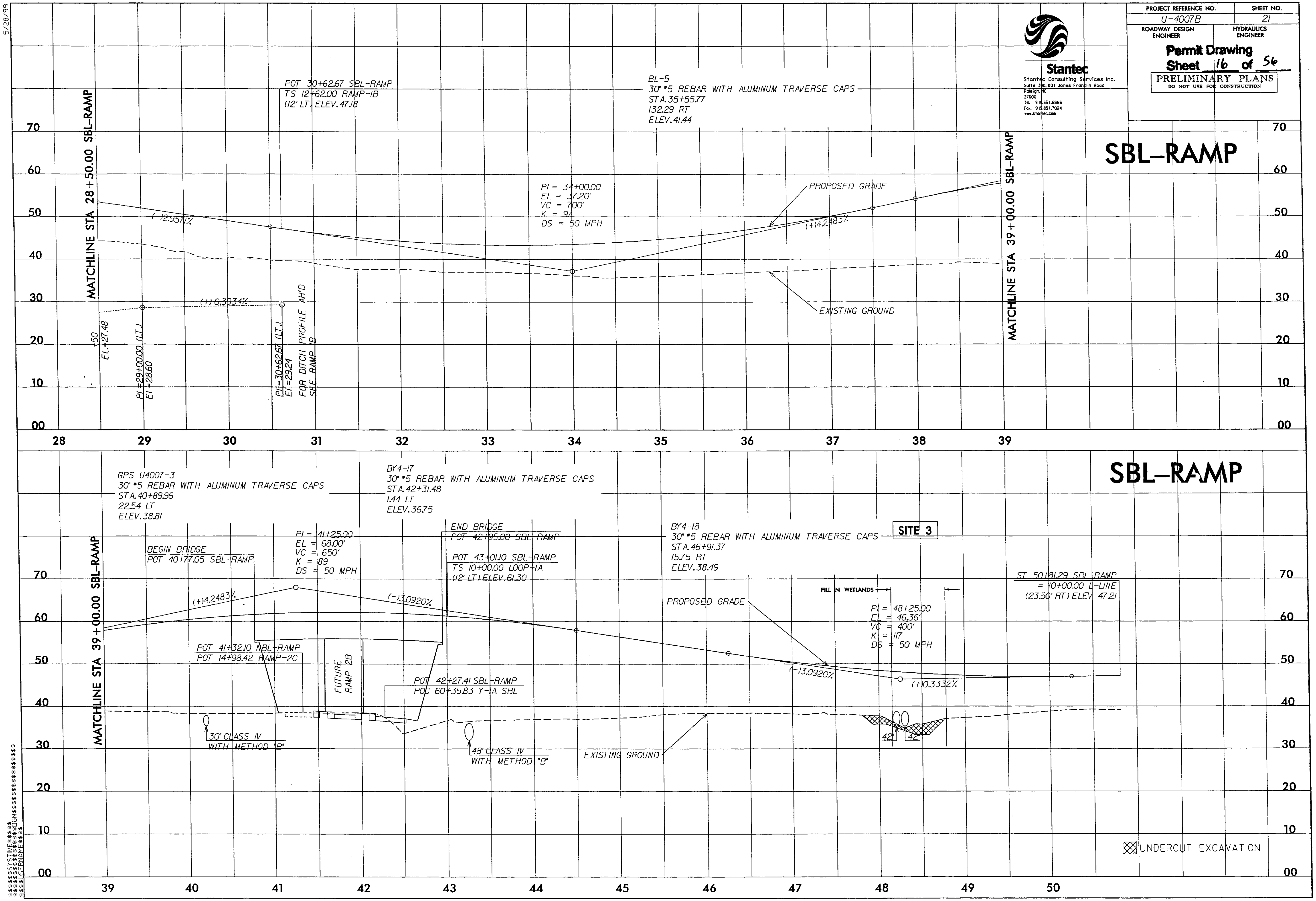

$$$$SYSTIME$$$$ $$$$DGN$$$$ $$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

Permit Drawing
Sheet 17 of 56

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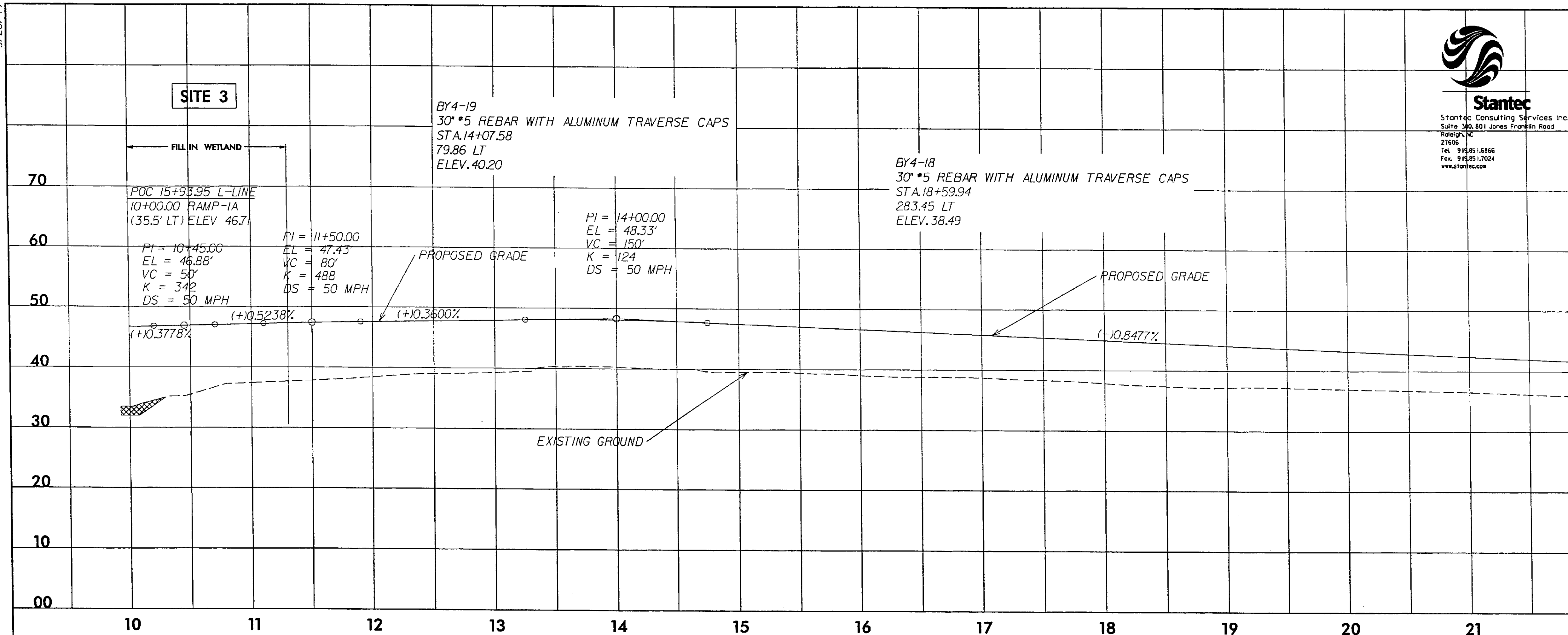

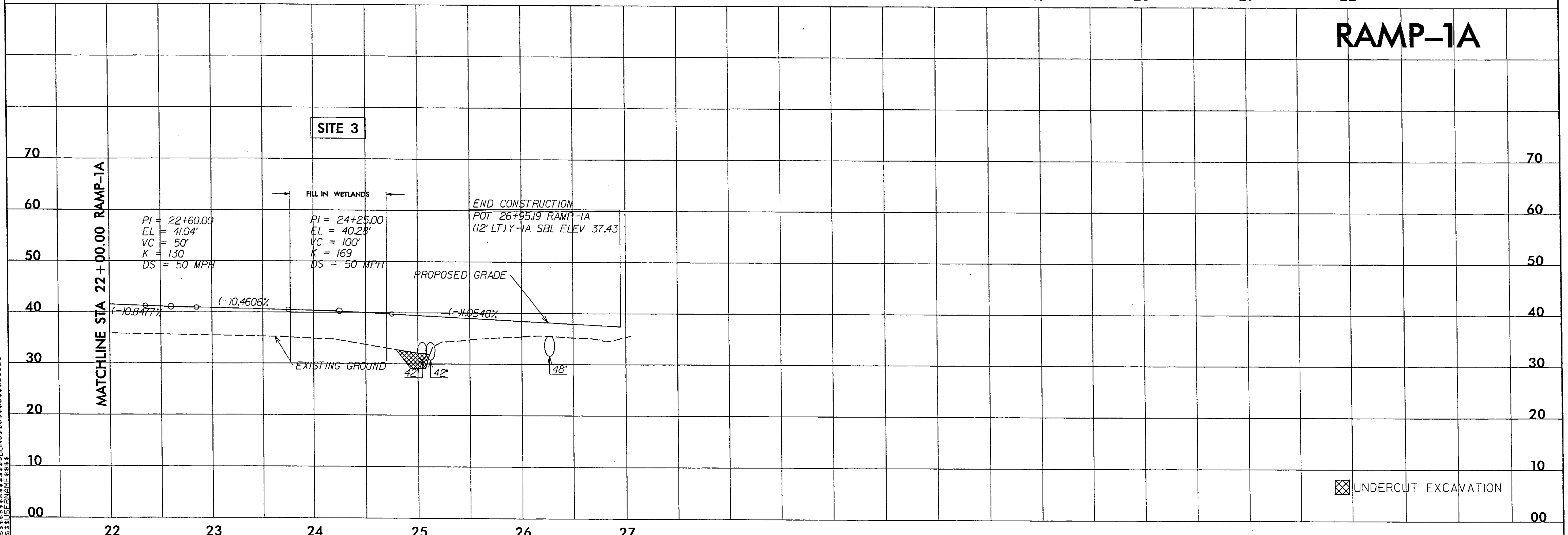

UNDERCUT EXCAVATION

$$$$$$SYSTIME$$$$$$ $$$$$$USERNAME$$$$$$ $$$$$$DGN$$$$$$$$$$$$$$$$$$

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PROJECT REFERENCE NO.	SHEET NO.
U-4007B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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Sheet 18 of 56

ENGLISH

15+00

SHERWOOD PARK, SECTION ONE
MB 18 PG 41

JURISDICTIONAL STREAM

CL 'A' RIP RAP
(BANKS ONLY)
EST. = 50 TONS
EST. = 70 SY FF

918
R. M. TALLMAN, HEIRS

SITE 4

TOE PROTECTION
EST. = 47 TONS
EST. = 36X SY FF
SEE DETAIL #1

PSH B=4'

15" RCP-IV

CB

CHORD

MATCHLINE SHEET 6 STA.13+50.00

20+00

25+00

DENOTES IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

CL 'B' RIP RAP
EST. = 7 TONS
EST. = 22 SY FF

18" RCP-IV

MATCHLINE SHEET 8 STA.26+50.00

TOE PROTECTION
EST. = 90 TONS
EST. = 67 SY FF
SEE DETAIL #1

SPECIAL LAT 'V' DITCH
SEE DETAIL #2

24" RCP-III

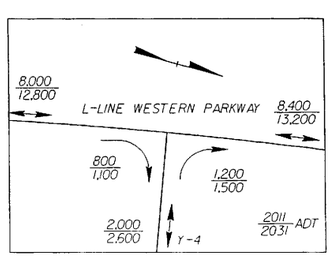
SITE 5

CL 'B' RIP RAP
EST.=3 TONS
EST.=11 SY FF

EQUALIZER PIPE

MATCHLINE SHEET 13 STA.16+75.00

TRAFFIC COUNTS



LEGEND

PROPOSED PAVED SHOULDER

PROPOSED CONCRETE ISLAND

REFERENCES:
FOR PROFILE OF L-LINE, SEE SHEET 15
FOR PROFILE OF Y-4, SEE SHEET 29
FOR PREFORMED SCOUR HOLE, SEE DETAIL SHEET 2G

$$$$SYSTIME$$$$
$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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Sheet 19 of 56

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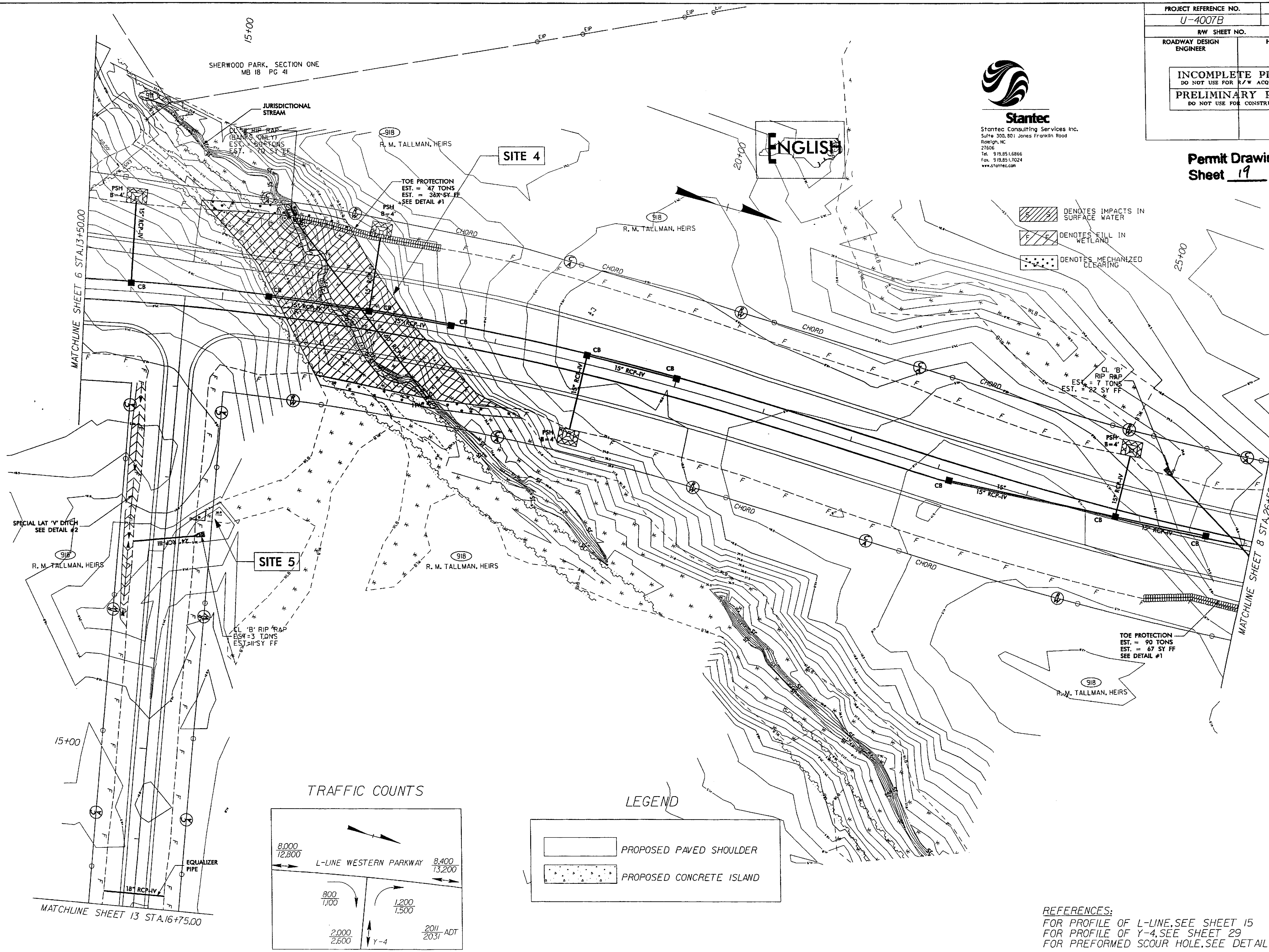
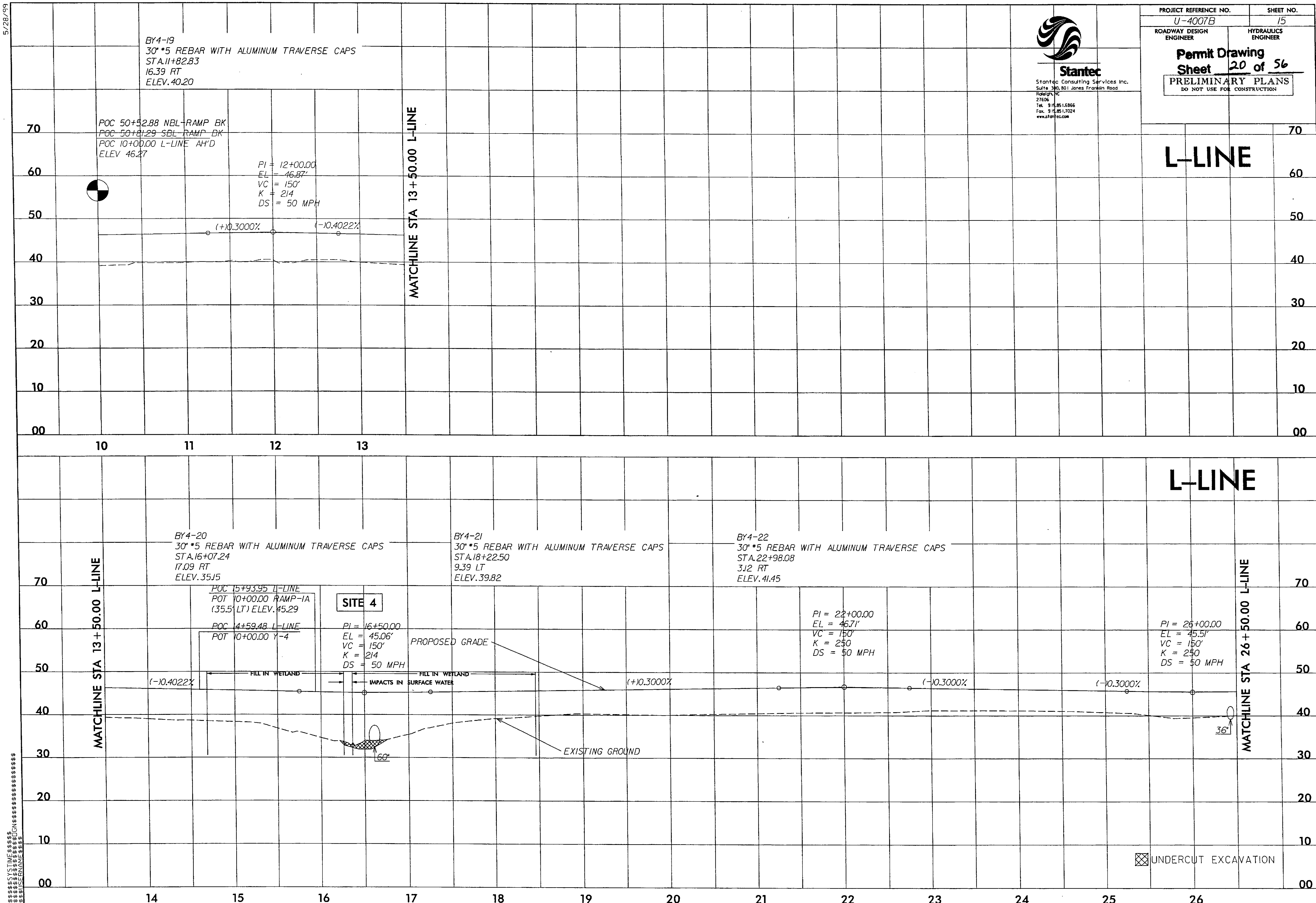


REFERENCES:
FOR PROFILE OF L-LINE, SEE SHEET 15
FOR PROFILE OF Y-4, SEE SHEET 29
FOR PREFORMED SCOUR HOLE, SEE DETAIL SHEET 2G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PROJECT REFERENCE NO.
U-4007B
SHEET NO.
15
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Permit Drawing
Sheet 20 of 56
PRELIMINARY PLANS
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L-LINE
BY4-19
30" *5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.11+82.83
16.39 RT
ELEV.40.20
POC 50+52.88 NBL-RAMP BK
POC 50+81.29 SBL-RAMP BK
POC 10+00.00 L-LINE AH'D
ELEV 46.27
PI = 12+00.00
EL = 46.87'
VC = 150'
K = 214
DS = 50 MPH
(+)0.3000%
(-)0.4022%
MATCHLINE STA 13+50.00 L-LINE
70
60
50
40
30
20
10
00
10
11
12
13
L-LINE
BY4-20
30" *5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.16+07.24
17.09 RT
ELEV.35.15
POC 15+93.95 L-LINE
POT 10+00.00 RAMP-1A
(35.5' LT) ELEV.45.29
POC 14+59.48 L-LINE
POT 10+00.00 Y-4
SITE 4
PI = 16+50.00
EL = 45.06'
VC = 150'
K = 214
DS = 50 MPH
BY4-21
30" *5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.18+22.50
9.39 LT
ELEV.39.82
BY4-22
30" *5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.22+98.08
3.12 RT
ELEV.41.45
PI = 22+00.00
EL = 46.71'
VC = 150'
K = 250
DS = 50 MPH
PI = 26+00.00
EL = 45.51'
VC = 150'
K = 250
DS = 50 MPH
PROPOSED GRADE
(-)0.4022%
FILL IN WETLAND
IMPACTS IN SURFACE WATER
FILL IN WETLAND
(+)0.3000%
(-)0.3000%
(-)0.3000%
60"
36"
EXISTING GROUND
MATCHLINE STA 13+50.00 L-LINE
MATCHLINE STA 26+50.00 L-LINE
UNDERCUT EXCAVATION
14
15
16
17
18
19
20
21
22
23
24
25
26

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PROJECT REFERENCE NO.	SHEET NO.
U-4007B	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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Sheet 21 of 56

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L-LINE

BY4-23
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 29+00.12
16.19 RT
ELEV. 41.86

BY4-24
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 35+14.22
31.17 RT
ELEV. 41.12

MATCHLINE STA 26+50 L-LINE

MATCHLINE STA 38+50 L-LINE

PROPOSED GRADE

EXISTING GROUND

(+)0.3000%

24"

24"

(-) 2.0000%

(-) 0.6250%

SPEC.LAT."V" DITCH LT.

PI = 35+00.00 (LT.)
EI = 40.00

PI = 35+50.00 (LT.)
EI = 39.00

PI = 37+10.00 (LT.)
EI = 38.00

70 60 50 40 30 20 10 00

27 28 29 30 31 32 33 34 35 36 37 38

L-LINE

SITE 6

BY4-25
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 40+08.67
37.90 RT
ELEV. 41.48

BY4-26
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 44+58.53
39.58 RT
ELEV. 50.62

MATCHLINE STA 38+50 L-LINE

MATCHLINE STA 51+00 L-LINE

POS | 40+12.77 L-LINE
POT | 10+00.00 Y-5

IMPACTS IN SURFACE WATER

FILL IN WETLAND

FILL IN WETLAND

PROPOSED GRADE

EXISTING GROUND

72" RCP

(+)0.3000%

(+)0.3200%

(+)0.7500%

SPEC.LAT."V" DITCH LT.

PI = 40+25.00 (LT.)
EI = 40.80

PI = 44+00.00 (LT.)
EI = 42.00

PI = 46+00.00 (LT.)
EI = 43.50

PI = 48+00.00
EL = 52.11'
VC = 150'
K = 250
DS = 50 MPH

(-)0.3000%

UNDERCUT EXCAVATION

70 60 50 40 30 20 10 00

39 40 41 42 43 44 45 46 47 48 49 50 51

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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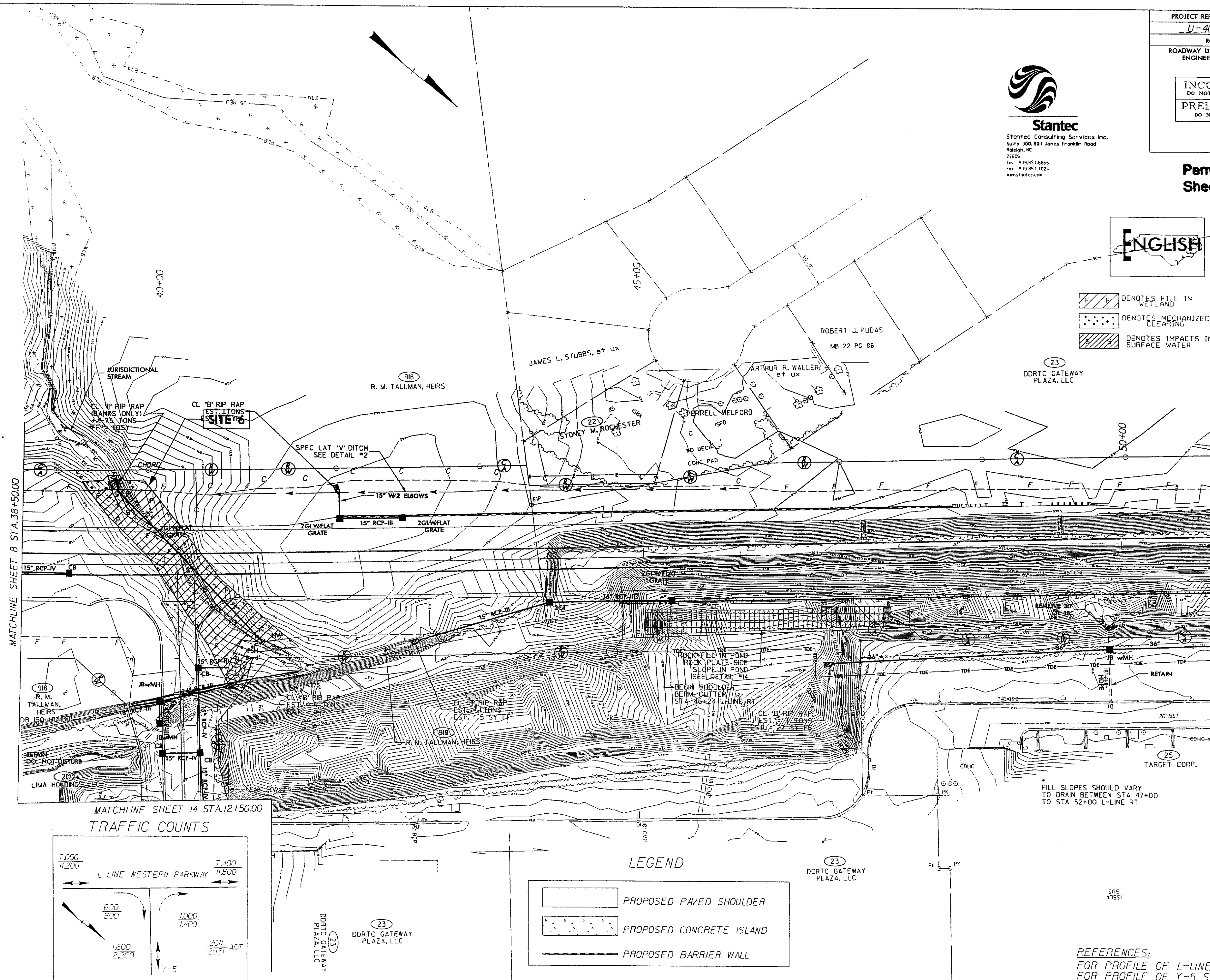
Sheet 22 of 56

ENGLISH



LEGEND

PROPOSED PAVED SHOULDER

PROPOSED CONCRETE ISLAND

PROPOSED BARRIER WALL

REFERENCES:
FOR PROFILE OF L-LINE SEE SHEET 16
FOR PROFILE OF Y-5 SEE SHEET 30
FOR POND PROTECTION DETAIL SEE SHEET 2

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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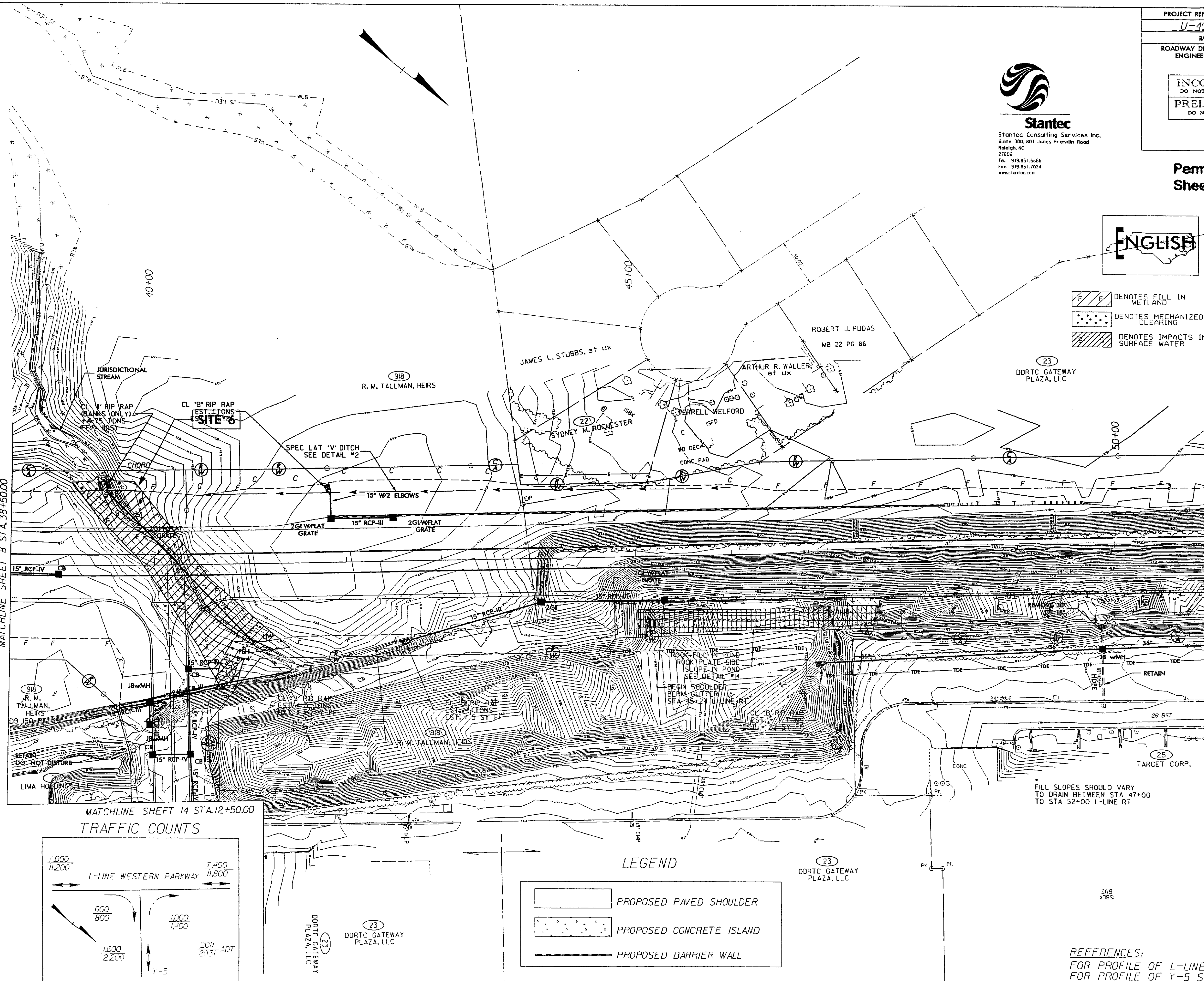
Sheet 23 of 56



LEGEND

PROPOSED PAVED SHOULDER
PROPOSED CONCRETE ISLAND
PROPOSED BARRIER WALL

REFERENCES:
FOR PROFILE OF L-LINE SEE SHEET 16
FOR PROFILE OF Y-5 SEE SHEET 30
FOR POND PROTECTION DETAIL SEE SHEET 2

REVISIONS

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	10
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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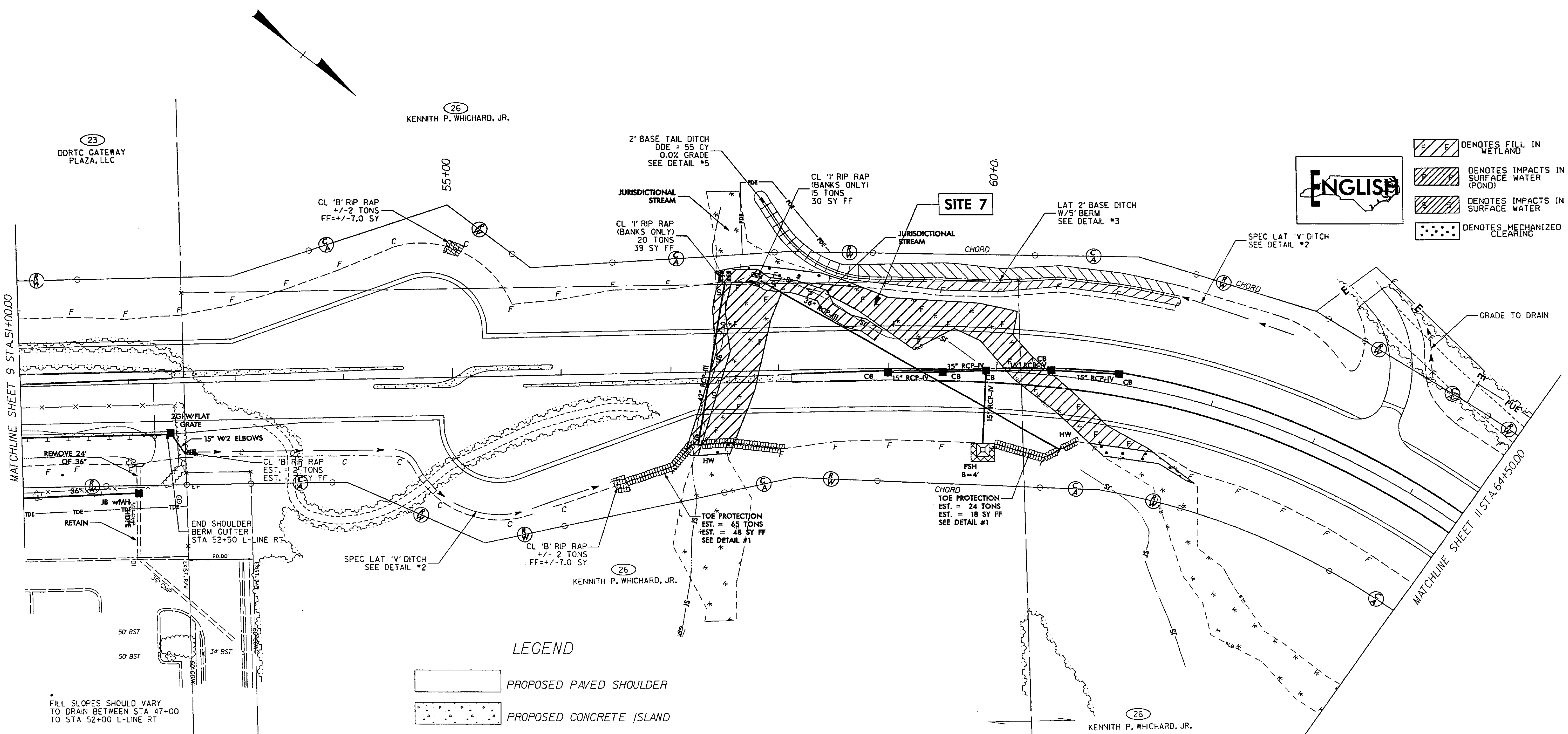
Sheet 24 of 56



* FILL SLOPES SHOULD VARY TO DRAIN BETWEEN STA 47+00 TO STA 52+00 L-LINE RT

LEGEND

PROPOSED PAVED SHOULDER

PROPOSED CONCRETE ISLAND

PROPOSED SINGLE FACE CONCRETE BARRIER

REFERENCES:

FOR PROFILE OF L-LINE SEE SHEET 17
FOR NOISE WALL DETAILS,SEE SHEET 2-

$$$$SYSTIME$$$$
$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

8/17/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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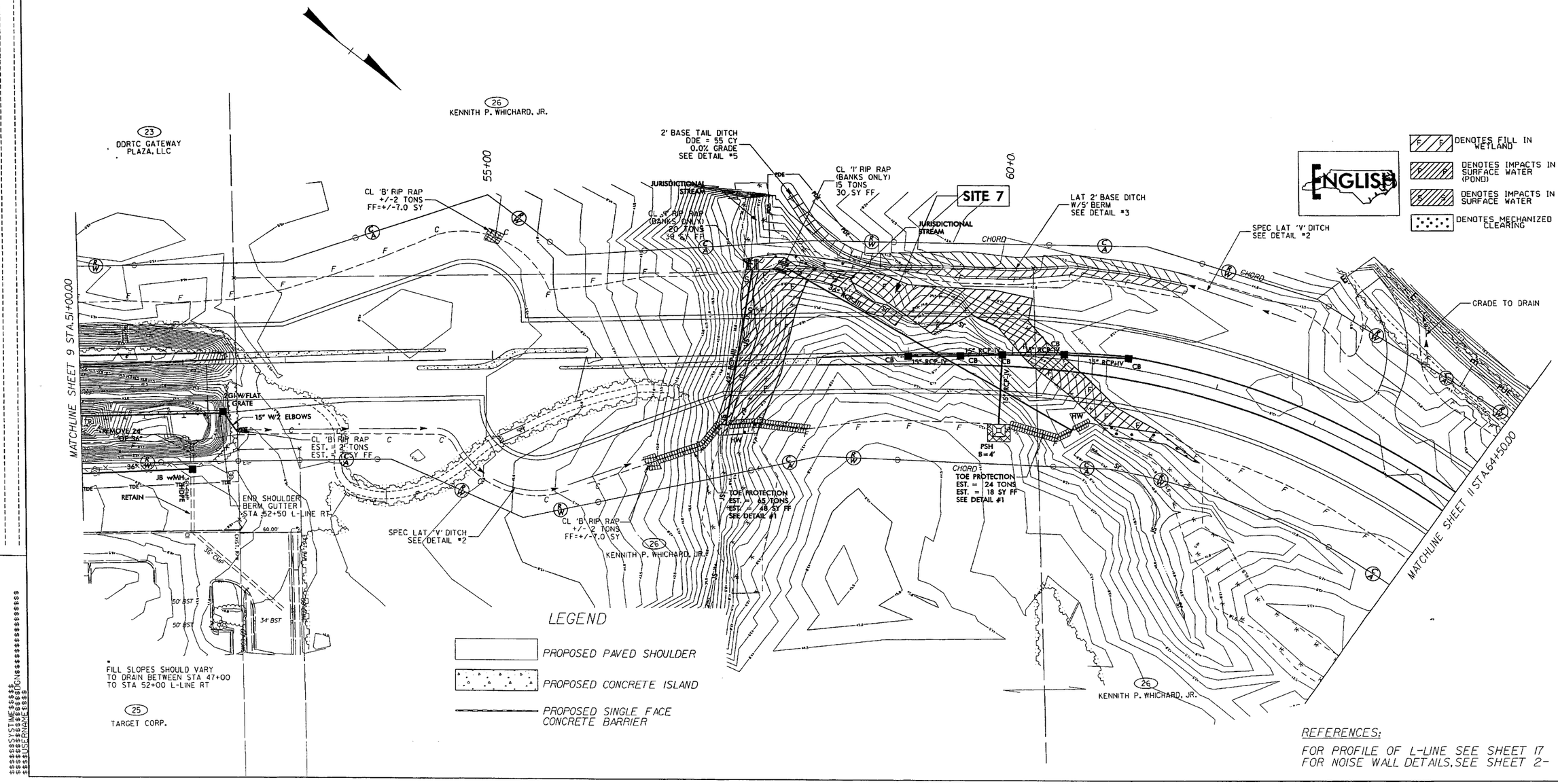
Sheet 25 of 56



REFERENCES:

FOR PROFILE OF L-LINE SEE SHEET 17
FOR NOISE WALL DETAILS, SEE SHEET 2-

$$$$SYSTIME$$$$
$$$$USERNAME$$$$

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PROJECT REFERENCE NO.	SHEET NO.
U-4007B	17

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

Permit Drawing
Sheet 26 of 56

PRELIMINARY PLANS
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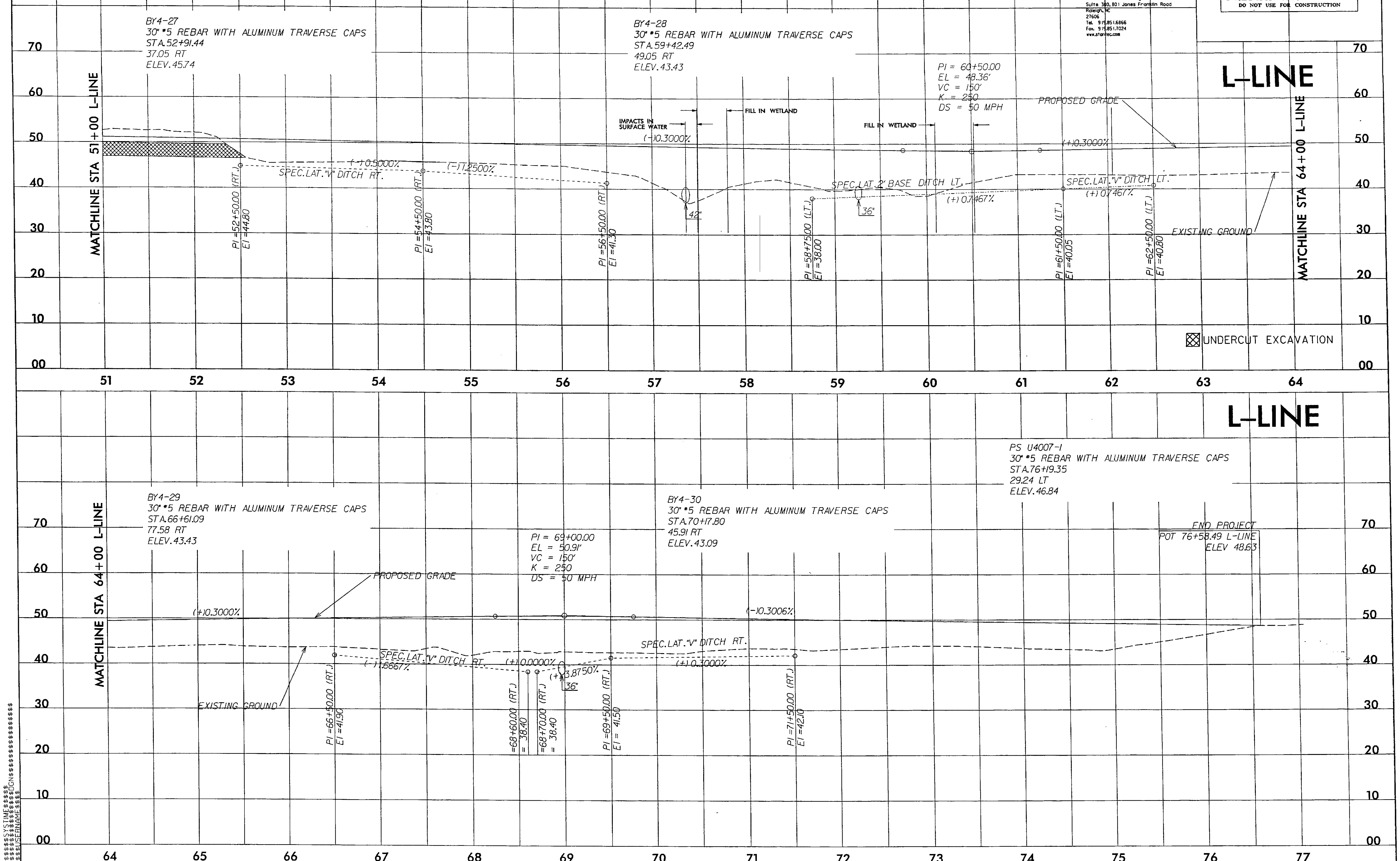
SITE 7



$$$$$$SYSTIME$$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

8/17/99

REVISIONS

$$$$$$$$SYSTIME$$$$$$$$

$$$$$$$$USERNAME$$$$$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

INCOMPLETE PLANS
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PRELIMINARY PLANS
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Permit Drawing
Sheet 27 of 56

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ENGLISH

SITE 8

LIMITS OF WETLAND IMPACT DRAWN TO POTENTIAL EFFECTS OF REPLACING ROADWAY DITCH

MATCHLINE SHEET 6 STA.67+75.00 Y-1A SBL

MATCHLINE SHEET 6 STA.97+50.00 Y-2

(918) R. M. TALLMAN, HEIRS

MOOSEHAVEN PROPERTY OWNERS ASSOCIATION, INC

TEXAS ROADHOUSE HOLDINGS, LLC

(29) 4 CORNERS PROPERTIES, LLC
CAPE FEAR MEDICAL CENTER

(30A) TEXAS ROADHOUSE HOLDINGS, LLC

CAPE FEAR MEDICAL CENTER CONDOMINIUM

NC DEPT. OF TRANSPORTATION

(903)

SHIVA TWO, INC.

H&M FARMS, LLC

NEW SOUTH PROPERTIES

BAILEY & FULLER PROPERTIES

SPECIAL LAT. 5.0' BASE DITCH SEE DETAIL #12

LAT 2' BASE DITCH SEE DETAIL #9

SPEC LAT 'C' DITCH SEE DETAIL #2

CL 'B' RIP RAP EST. = 11 TONS EST. = 28 SY FF

CL 'B' RIP RAP EST. 2 TONS EST. 7 SYFF

REMOVE

RETAIN

GRADE TO DRAIN

DENOTES FILL IN WETLAND

TRAFFIC COUNTS

WESTERN BLVD.

7,700 / 15,400	38,000 / 57,900
37,300 / 60,300	8,400 / 15,000
11,800 / 19,600	6,900 / 13,700
40,600 / 60,800	2,011 / 2,031 ADT

MARINE BLVD.

LEGEND

- PROPOSED PAVED SHOULDER
- OBLITERATE REMOVE AND GRADE TO DRAIN
- EXISTING SIGNAL TO BE MODIFIED

REFERENCES:

FOR PROFILE OF Y-2 SEE SHEET 28
FOR PROFILE OF Y-1A SBL SEE SHEETS 26

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	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 28 of 56

Stantec
Stantec Consulting Services Inc.
Suite 300, 801 Jones Franklin Road
Raleigh, NC
27606
Tel. 919.851.6866
Fax. 919.851.7024
www.stantec.com

ENGLISH

REVISIONS
8/17/99

SITE 8

LIMITS OF WETLAND IMPACT DRAWN TO POTENTIAL EFFECTS OF REPLACING ROADWAY DITCH

MATCHLINE SHEET 6 STA.67+75.00 Y-1A SBL

MATCHLINE SHEET 6 STA.97+50.00 Y-2

R. M. TALLMAN, HEIRS (918)

MOOSEHAVEN PROPERTY OWNERS ASSOCIATION, INC

TEXAS ROADHOUSE HOLDINGS, LLC

4 CORNERS PROPERTIES, LLC
CAPE FEAR MEDICAL CENTER (29)

CAPE FEAR MEDICAL CENTER CONDOMINIUM

TEXAS ROADHOUSE HOLDINGS, LLC (30A)

70+00

75+00

105+00

SPECIAL LAT. 5.0' BASE DITCH SEE DETAIL #12

SPECIAL 'V' DITCH SEE DETAIL #2

CL 'B' RIP RAP EST. = TONS EST. = 28 SY

CL 'B' RIP RAP EST. 2 TONS EST. 7 SYFF

GRADE TO DRAIN

REMOVE

RETAIN

END NOT FOUND

UST 17' BST

NC DEPT. OF TRANSPORTATION

LAT 2' BASE DITCH SEE DETAIL #9

DENOTES FILL IN WETLAND

SHIVA TWO, INC. (903)

NEW SOUTH PROPERTIES

HAM FARMS, LLC

BAILEY & FULLER PROPERTIES

TRAFFIC COUNTS

WESTERN BLVD.

7,700 / 15,400	38,000 / 57,900
37,300 / 60,300	8,400 / 15,000
11,800 / 19,600	6,900 / 13,700
40,600 / 60,800	2,011 / 2,031 ADT

MARINE BLVD.

LEGEND

- PROPOSED PAVED SHOULDER
- OBLITERATE REMOVE AND GRADE TO DRAIN
- EXISTING SIGNAL TO BE MODIFIED

REFERENCES:

FOR PROFILE OF Y-2 SEE SHEET 28
FOR PROFILE OF Y-1A SBL SEE SHEETS 26

$$$$SYSTIME$$$$
$$$$SYSTIME$$$$
$$$$USERNAME$$$$

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	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

Permit Drawing
Sheet 29 of 56

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REVISIONS

$$$$USERNAME$$$$
$$$$DESIGN$$$$
$$$$DRAWN$$$$
$$$$CHECKED$$$$
$$$$SYSTIME$$$$

DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER (POND)

MATCHLINE SHEET 7 STA 16+75.00

20+00

25+00

30+00

15+00

(918) R. M. TALLMAN, HEIRS

(31) CONRAD HAUGEN HEIRS

(32) ED BROWN, HEIRS

(33) STATE EMPLOYEES CREDIT UNION
DB 962 PG 269
PB 34 PG 72

(34) RUBY TUESDAY, INC.

SITE 9

JURISDICTIONAL STREAM

TOE PROTECTION SEE DETAIL #1
CLASS 'B' RIP RAP
EST. = 33 TONS
EST. = 23 SY FF

CLASS 'I' RIP RAP ON BANKS ONLY
15 TONS
30 SY FF

CLASS 'B' RIP RAP
EST. = 3 TONS
EST. = 11 SY FF

SPECIAL LAT. 3' BASE DITCH
SEE DETAIL #8
CLASS 'B' RIP RAP
EST. = 4 TONS
EST. = 14 SY FF
*DAYLIGHT DITCH IN WETLANDS

SPEC DITCH
STA 14+70 TO
STA 16+25 -Y4A- RT
SEE PROFILE FOR GRADE

USE 1.5:1 FILL SLOPE
ROCK FILL IN POND
W/ROCK PLATE 1.5:1 SIDE SLOPE IN POND

TOE PROTECTION SEE DETAIL #1
CLASS 'B' RIP RAP
EST. = 47 TONS
EST. = 35 SY FF

ENGLISH

STATE EMPLOYEES CREDIT UNION
DB 962 PG 269
PB 34 PG 72

RUBY TUESDAY, INC.

OUTBACK GROUP

SR 1470 WESTERN BLVD

TRAFFIC COUNTS

WESTERN BLVD.

800 / 1,700		30,900 / 48,300
8,000 / 10,500		3,800 / 6,100
Y-4		SHOPPING ENT. 12,500 / 16,700
5,100 / 7,800		6,600 / 9,600
38,000 / 57,900		2,011 / 2,031 ADT

LEGEND

PROPOSED PAVED SHOULDER

OBLITERATE

EXISTING SIGNAL TO BE MODIFIED

REFERENCES:
FOR PROFILE OF Y-4 SEE SHEET 29
FOR PROFILE OF Y-4A SEE SHEET 30
FOR ROADWAY GEOMETRY SEE SHEET 2H

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	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

Permit Drawing
Sheet 30 of 56

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DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER (POND)

ENGLISH

MATCHLINE SHEET 7 STA.16+75.00

20+00

R. M. TALLMAN, HEIRS (918)

CONRAD HAUGEN HEIRS (31)

USE 1.5:1 FILL SLOPE
ROCK FILL IN POND
W/ROCK PLATE 1.5:1 SIDE SLOPE IN POND

SITE 9

JURISDICTIONAL STREAM

TOE PROTECTION
SEE DETAIL #1
CLASS 'B' RIP RAP
EST. = 33 TONS
EST. = 23 SY FF

ED BROWN HEIRS (32)

25+00

CLASS 'B' RIP RAP
EST. = 3 TONS
EST. = 11 SY FF

CLASS 'I' RIP-RAP ON BANKS ONLY
15 TONS
30 SY FF

5+00

SPECIAL LAT. 3' BASE DITCH
SEE DETAIL #8
CLASS 'B' RIP RAP
EST. = 4 TONS
EST. = 14 SY FF
*DAYLIGHT DITCH IN WETLANDS

SPEC DITCH
STA 14+70 TO
STA 16+25 -Y4A- RT
SEE PROFILE FOR GRADE

STATE EMPLOYEES CREDIT UNION
DB 962 PG 269
PB 34 PG 72

RUBY TUESDAY, INC. (34)

OUTBACK GROUP

TOE PROTECTION
SEE DETAIL #1
CLASS 'B' RIP RAP
EST. = 7 TONS
EST. = 35 SY FF

REMOVE DI

UNABLE TO RAISE ENDS OF PIPE

RETAIN

REMOVE

GRADE TO DRAIN

30+00

SR 1470 WESTERN BLVD

TRAFFIC COUNTS

WESTERN BLVD.

800 / 1,700		30,900 / 48,300
8,000 / 10,500		3,800 / 6,100
Y-4		
5,100 / 7,800		SHOPPING ENT. 12,500 / 16,700
		6,600 / 9,600
38,000 / 57,900		2,011 / 2,031 ADT

LEGEND

PROPOSED PAVED SHOULDER

OBLITERATE

EXISTING SIGNAL TO BE MODIFIED

REFERENCES:
FOR PROFILE OF Y-4 SEE SHEET 29
FOR PROFILE OF Y-4A SEE SHEET 30
FOR ROADWAY GEOMETRY SEE SHEET 2H

$$$$USERNAME$$$$
$$$$TIME$$$$
$$$$DATE$$$$

PROJECT REFERENCE NO. U-4007B | SHEET NO. 29

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

Permit Drawing
Sheet 31 of 56

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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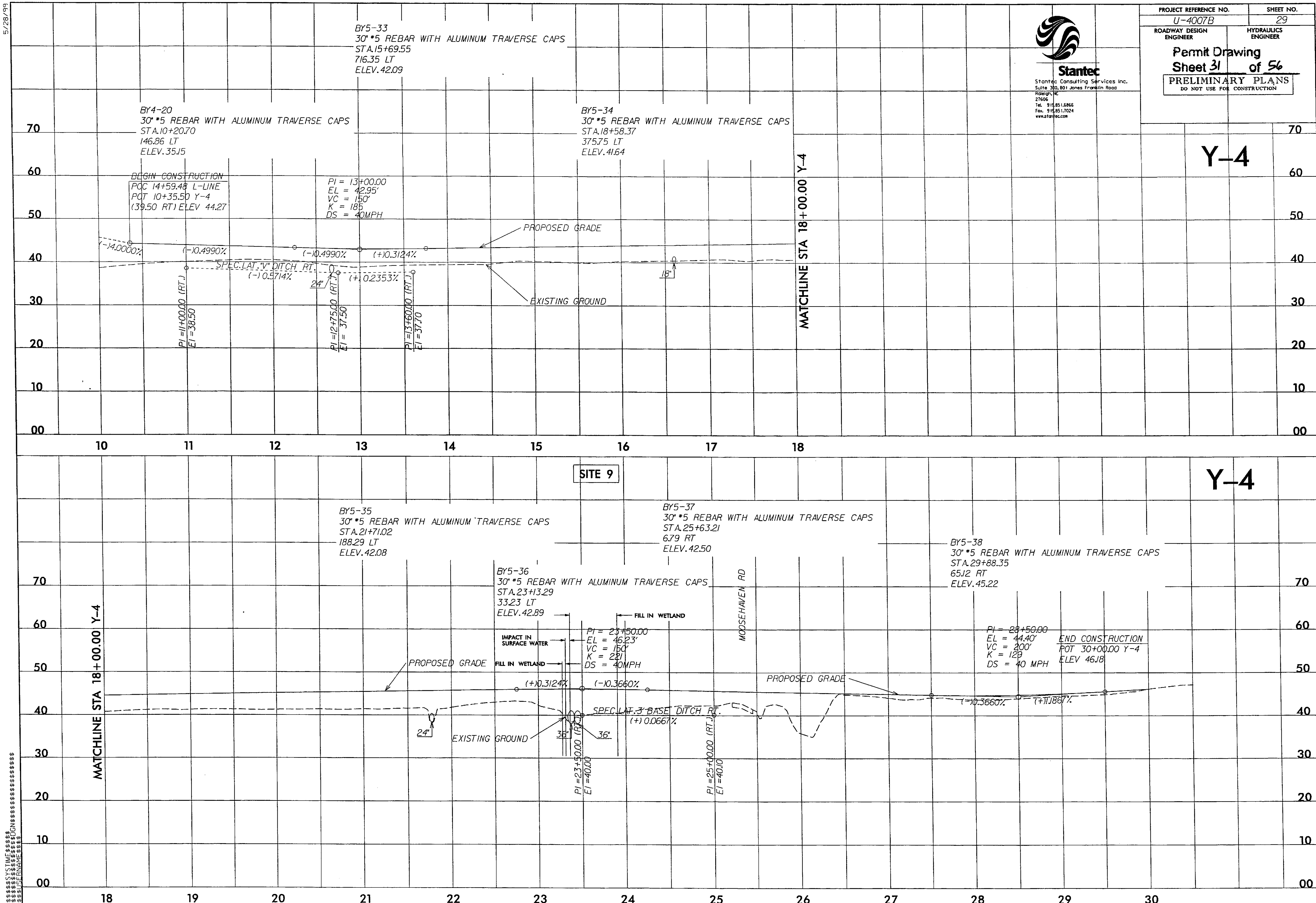
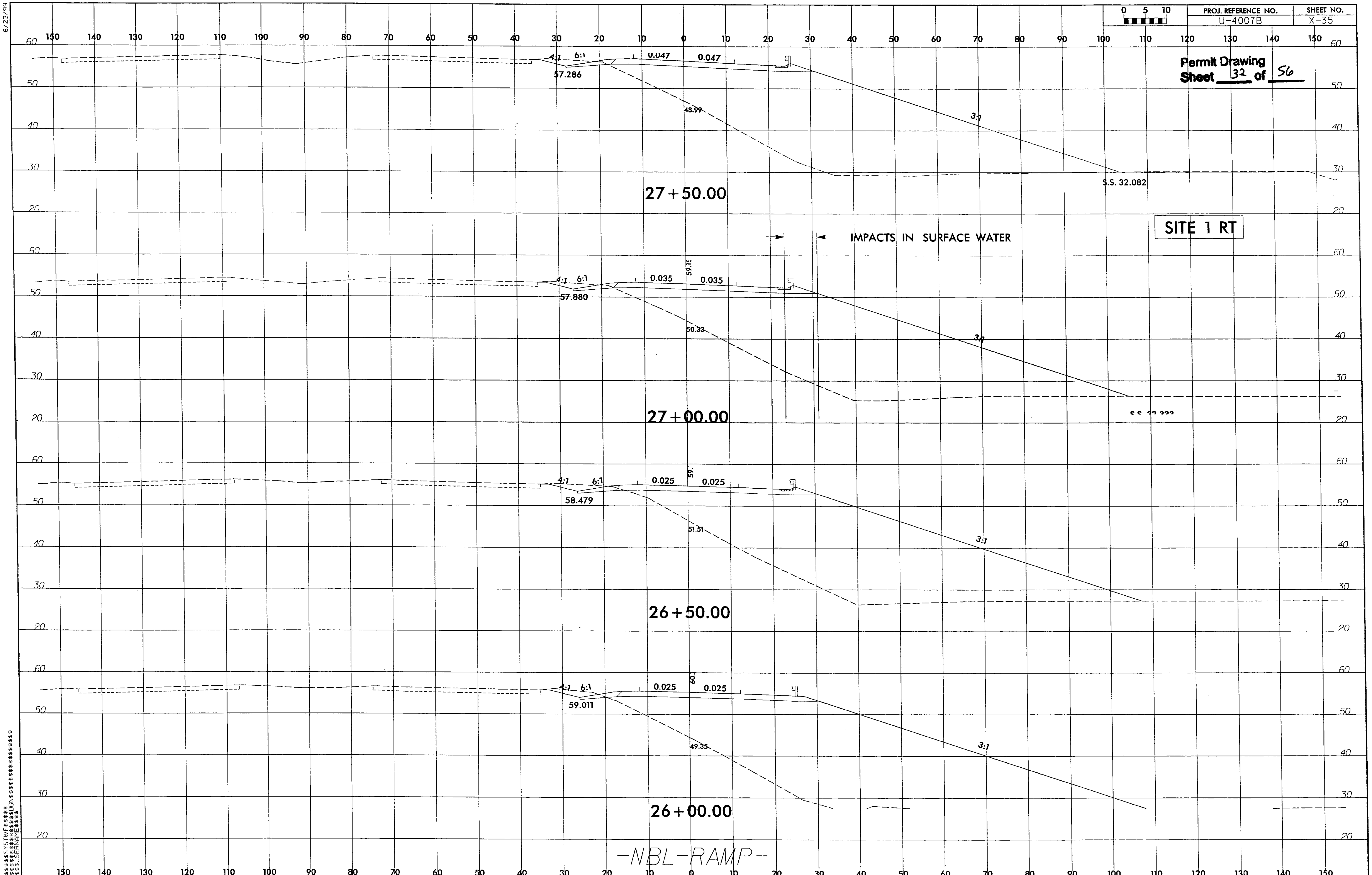
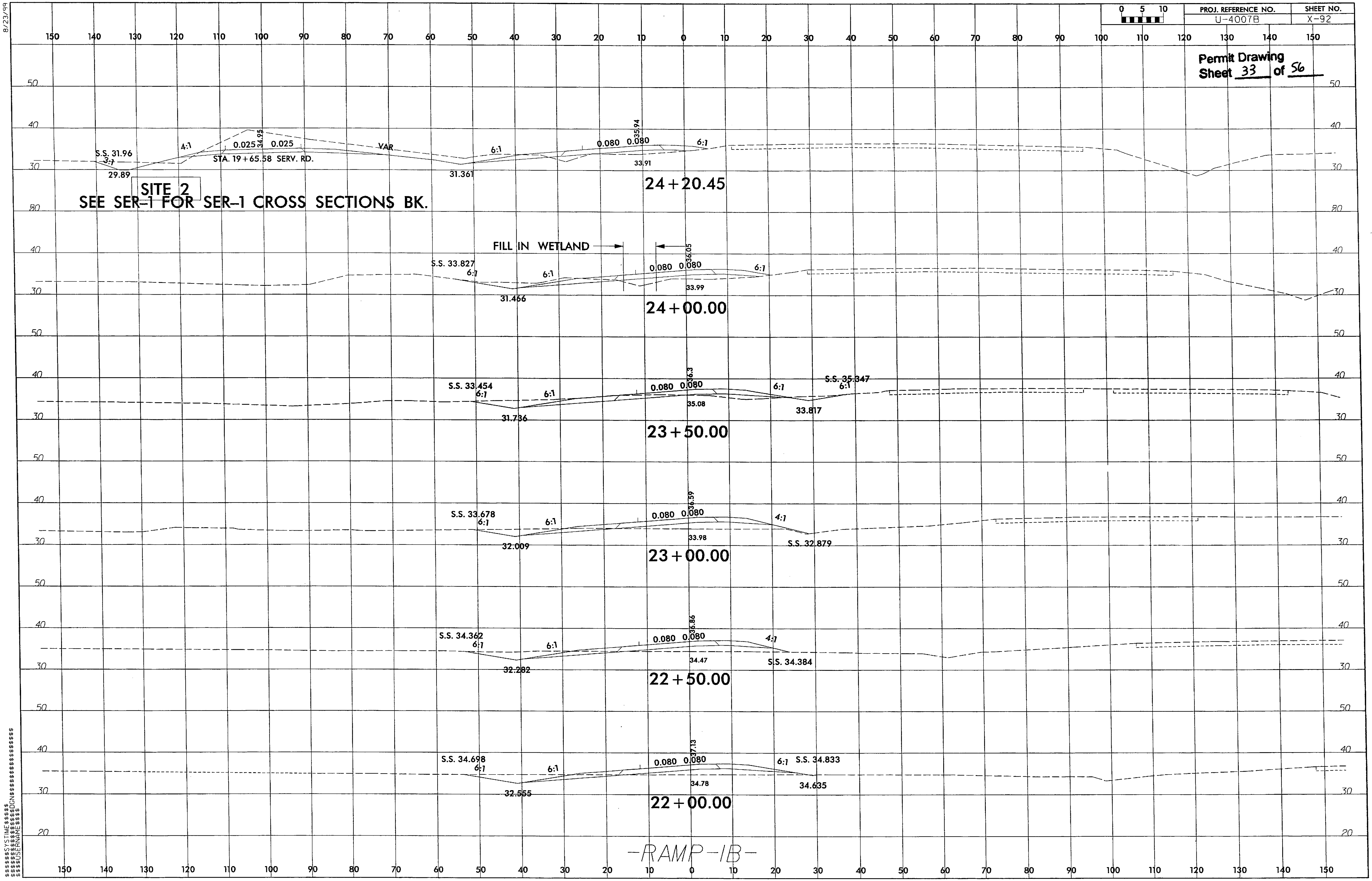

Y-4
BY5-33
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.15+69.55
716.35 LT
ELEV.42.09
BY4-20
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.10+20.70
146.86 LT
ELEV.35.15
BY5-34
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.18+58.37
375.75 LT
ELEV.41.64
BEGIN CONSTRUCTION
POC 14+59.48 L-LINE
POT 10+35.50 Y-4
(39.50 RT) ELEV 44.27
PI = 13+00.00
EL = 42.95'
VC = 150'
K = 185
DS = 40MPH
PROPOSED GRADE
(-)4.0000%
(-)0.4990%
(-)0.4990%
(+)0.3124%
SPEC.LAT."V" DITCH RT.
(-)0.5714%
(+)0.2353%
24"
18"
EXISTING GROUND
PI =11+00.00 (RT.)
EI =38.50
PI =12+75.00 (RT.)
EI = 37.50
PI =13+60.00 (RT.)
EI =37.70
MATCHLINE STA 18+00.00 Y-4
70
60
50
40
30
20
10
00
10
11
12
13
14
15
16
17
18
SITE 9
Y-4
BY5-35
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.21+71.02
188.29 LT
ELEV.42.08
BY5-37
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.25+63.21
6.79 RT
ELEV.42.50
BY5-38
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.29+88.35
65.12 RT
ELEV.45.22
BY5-36
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.23+13.29
33.23 LT
ELEV.42.89
FILL IN WETLAND
IMPACT IN SURFACE WATER
FILL IN WETLAND
PI = 23+50.00
EL = 46.23'
VC = 150'
K = 221
DS = 40MPH
MOOSEHAVEN RD
PI = 28+50.00
EL = 44.40'
VC = 200'
K = 129
DS = 40 MPH
END CONSTRUCTION
POT 30+00.00 Y-4
ELEV 46.18
PROPOSED GRADE
(+)0.3124%
(-)0.3660%
PROPOSED GRADE
SPEC.LAT.3' BASE DITCH RT.
(+)0.0667%
(-)0.3660%
(+)1.1867%
24"
EXISTING GROUND
36"
36"
PI =23+50.00 (RT.)
EI =40.00
PI =25+00.00 (RT.)
EI =40.10
MATCHLINE STA 18+00.00 Y-4
18
19
20
21
22
23
24
25
26
27
28
29
30

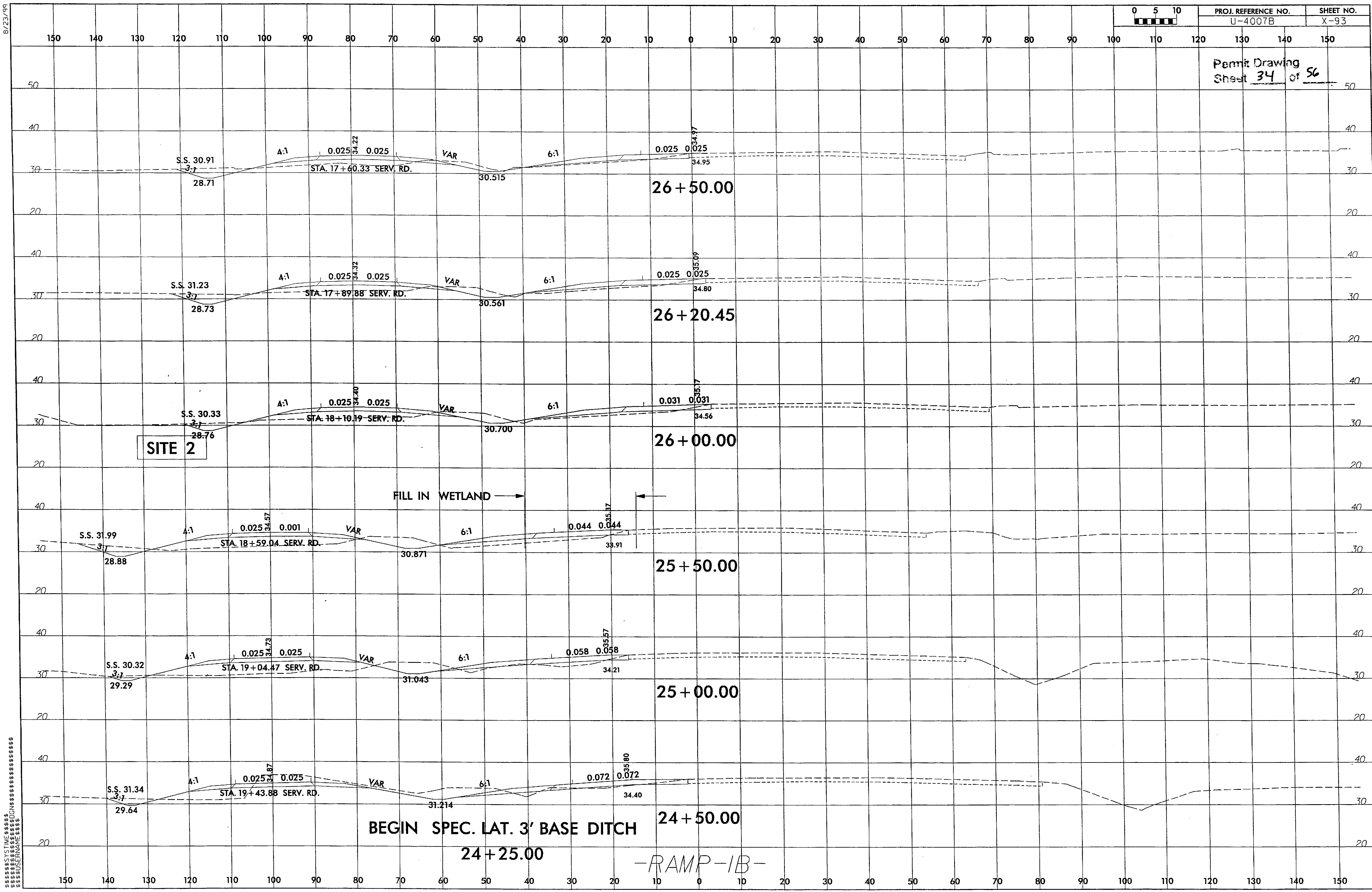
PROJ. REFERENCE NO.	SHEET NO.
U-4007B	X-35

Permit Drawing Sheet 32 of 56

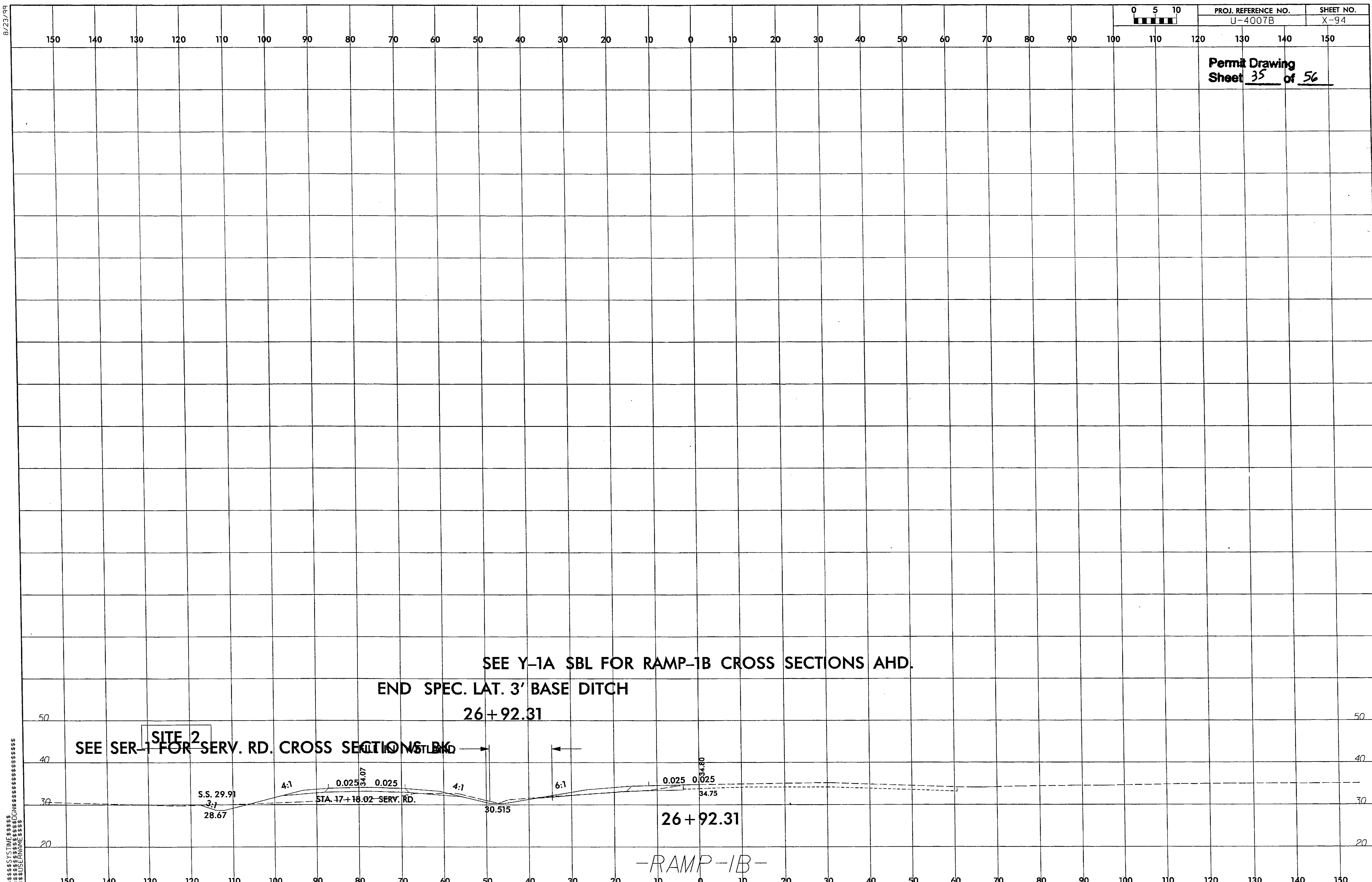


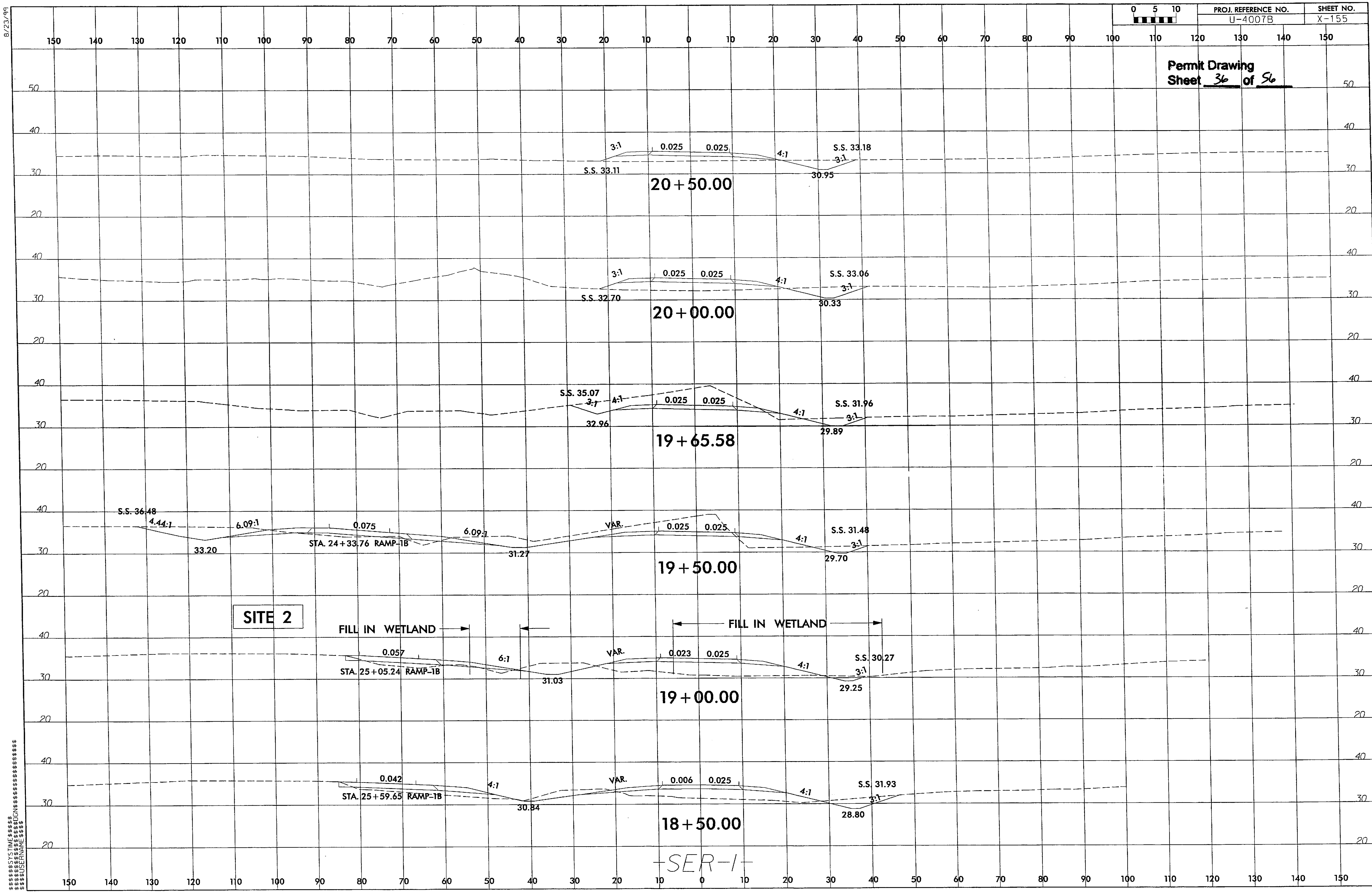


8/23/99
0 5 10
PROJ. REFERENCE NO.
U-4007B
SHEET NO.
X-92
Permit Drawing
Sheet 33 of 56
S.S. 31.96
3:1
29.89
4:1
0.025
34.95
0.025
STA. 19+65.58 SERV. RD.
VAR
31.361
6:1
0.080 0.080
35.94
33.91
6:1
24+20.45
SITE 2
SEE SER-1 FOR SER-1 CROSS SECTIONS BK.
FILL IN WETLAND
S.S. 33.827
6:1
6:1
31.466
0.080 0.080
36.05
33.99
6:1
24+00.00
S.S. 33.454
6:1
6:1
31.736
0.080 0.080
36.3
35.08
6:1
33.817
S.S. 35.347
6:1
23+50.00
S.S. 33.678
6:1
6:1
32.009
0.080 0.080
36.59
33.98
4:1
S.S. 32.879
23+00.00
S.S. 34.362
6:1
6:1
32.282
0.080 0.080
36.86
34.47
4:1
S.S. 34.384
22+50.00
S.S. 34.698
6:1
6:1
32.555
0.080 0.080
37.13
34.78
6:1
S.S. 34.833
34.635
22+00.00
-RAMP-IB-
$$$$$$SYSTIME$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$

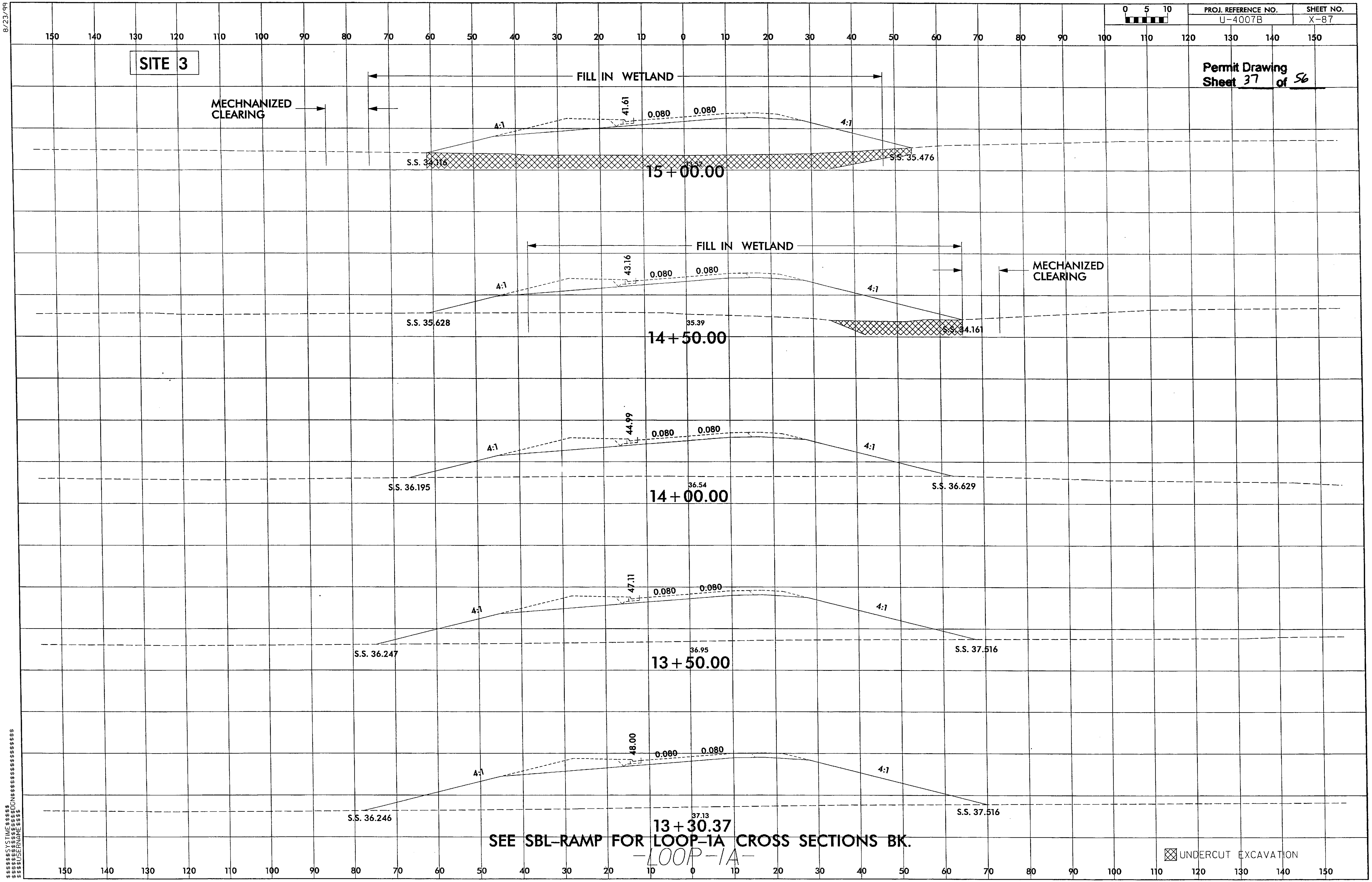

8/23/99
PROJ. REFERENCE NO.
U-4007B
SHEET NO.
X-93
0 5 10
Permit Drawing
Sheet 34 of 56
S.S. 30.91
3:1
28.71
4:1
0.025
34.22
0.025
STA. 17+60.33 SERV. RD.
VAR
30.515
6:1
0.025
34.97
0.025
34.95
26+50.00
S.S. 31.23
3:1
28.73
4:1
0.025
34.32
0.025
STA. 17+89.88 SERV. RD.
VAR
30.561
6:1
0.025
35.09
0.025
34.80
26+20.45
S.S. 30.33
3:1
28.76
SITE 2
4:1
0.025
34.40
0.025
STA. 18+10.19 SERV. RD.
VAR
30.700
6:1
0.031
35.17
0.031
34.56
26+00.00
FILL IN WETLAND
S.S. 31.99
3:1
28.88
4:1
0.025
34.57
0.001
STA. 18+59.04 SERV. RD.
VAR
30.871
6:1
0.044
35.37
0.044
33.91
25+50.00
S.S. 30.32
3:1
29.29
4:1
0.025
34.73
0.025
STA. 19+04.47 SERV. RD.
VAR
31.043
6:1
0.058
35.57
0.058
34.21
25+00.00
S.S. 31.34
3:1
29.64
4:1
0.025
34.87
0.025
STA. 19+43.88 SERV. RD.
VAR
31.214
6:1
0.072
35.80
0.072
34.40
24+50.00
BEGIN SPEC. LAT. 3' BASE DITCH
24+25.00
-RAMP-IB-
$$$$$$SYSTIME$$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

Permit Drawing
Sheet 35 of 56





8/23/99
0 5 10
PROJ. REFERENCE NO.
U-4007B
SHEET NO.
X-155
Permit Drawing
Sheet 36 of 56
S.S. 33.11
3:1
0.025
0.025
4:1
S.S. 33.18
3:1
30.95
20+50.00
S.S. 32.70
3:1
0.025
0.025
4:1
S.S. 33.06
3:1
30.33
20+00.00
S.S. 35.07
3:1
4:1
0.025
0.025
4:1
S.S. 31.96
3:1
32.96
29.89
19+65.58
S.S. 36.48
4.44:1
6.09:1
0.075
6.09:1
VAR.
0.025
0.025
4:1
S.S. 31.48
3:1
33.20
STA. 24+33.76 RAMP-1B
31.27
29.70
19+50.00
SITE 2
FILL IN WETLAND
FILL IN WETLAND
0.057
6:1
VAR.
0.023
0.025
4:1
S.S. 30.27
3:1
STA. 25+05.24 RAMP-1B
31.03
29.25
19+00.00
0.042
4:1
VAR.
0.006
0.025
4:1
S.S. 31.93
3:1
STA. 25+59.65 RAMP-1B
30.84
28.80
18+50.00
-SER-1-


8/23/99
PROJ. REFERENCE NO.
U-4007B
SHEET NO.
X-87
0 5 10
Permit Drawing
Sheet 37 of 56
SITE 3
MECHNANIZED CLEARING
FILL IN WETLAND
41.61
0.080
0.080
4:1
4:1
S.S. 34.116
S.S. 35.476
33.52
15+00.00
FILL IN WETLAND
MECHANIZED CLEARING
43.16
0.080
0.080
4:1
4:1
S.S. 35.628
S.S. 34.161
35.39
14+50.00
44.99
0.080
0.080
4:1
4:1
S.S. 36.195
S.S. 36.629
36.54
14+00.00
47.11
0.080
0.080
4:1
4:1
S.S. 36.247
S.S. 37.516
36.95
13+50.00
48.00
0.080
0.080
4:1
4:1
S.S. 36.246
S.S. 37.516
37.13
13+30.37
SEE SBL-RAMP FOR LOOP-1A CROSS SECTIONS BK.
-LOOP-1A-
UNDERCUT EXCAVATION
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
$$$$$$SYSTIME$$$$$
$$$$$$DGN$$$$$$$$$$$$$$$$$
$$$$$$USERNAME$$$$$

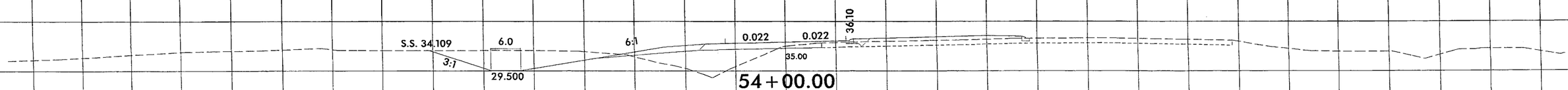
8/23/99

0 5 10

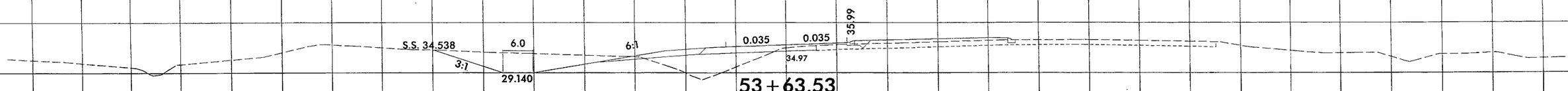
PROJ. REFERENCE NO.	SHEET NO.
U-4007B	X-99

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

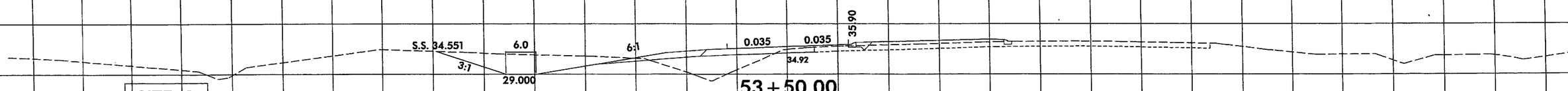
Permit Drawing
Sheet 38 of 56



54 + 00.00

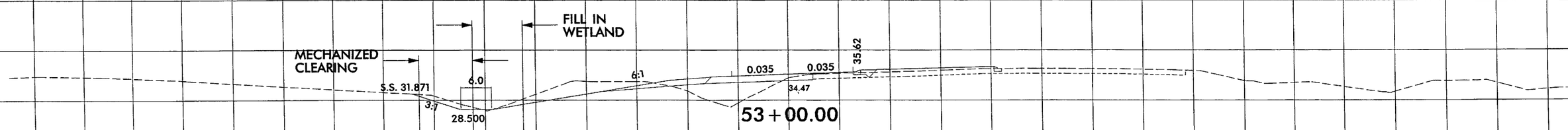


53 + 63.53



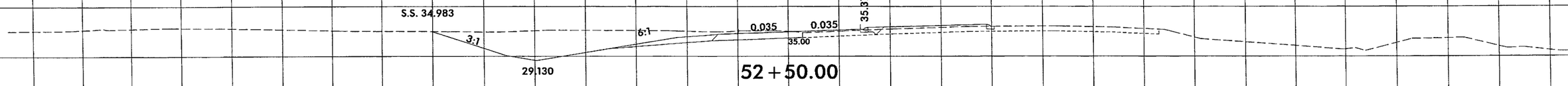
53 + 50.00

SITE 3

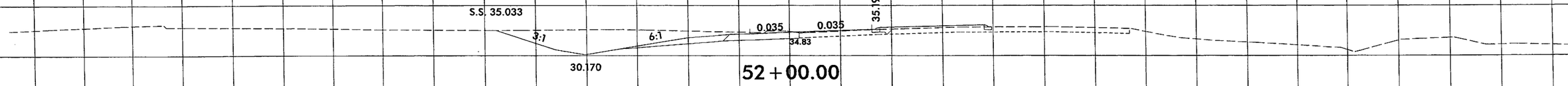


53 + 00.00

BEGIN SPEC. LAT. 6' BASE DITCH
STA. 53 + 00.00



52 + 50.00



52 + 00.00

-Y-IA SBL-

$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-4007B	X-56

Permit Drawing
Sheet 39 of 56

100 90 80 70 60 50 40 30 20 10 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200

SITE 3

FILL IN WETLAND

LS

SEE SBL-RAMP CROSS SECTIONS

4:1 4:1 45.423 0.040 0.040 3.71:1 S.S. 37.287

36.78
48 + 50.00

FILL IN WETLAND

MECHANIZED CLEARING

LS

SEE SBL-RAMP CROSS SECTIONS

4:1 4:1 45.980 0.040 0.040 3.08:1 S.S. 36.559

36.34
48 + 00.00

LS

SEE SBL-RAMP CROSS SECTIONS

4:1 4:1 46.651 0.040 0.040 3.34:1 S.S. 38.508

38.83
47 + 50.00

SEE LOOP-1D FOR CROSS SECTIONS AHD.

LS

SEE SBL-RAMP CROSS SECTIONS

4:1 4:1 47.394 0.040 0.040 3.09:1 S.S. 39.210 S.S. 39.211

38.85
47 + 00.00

LOOP-1D 4:1 0.080 0.080 48.64 4:1 S.S. 40.038

13 + 49.25

LS

SEE SBL-RAMP CROSS SECTIONS

4:1 4:1 48.265 0.040 0.040 3:1 4:1

39.07
46 + 50.00

LOOP-1D 0.080 0.080 50.08 4:1 S.S. 39.592

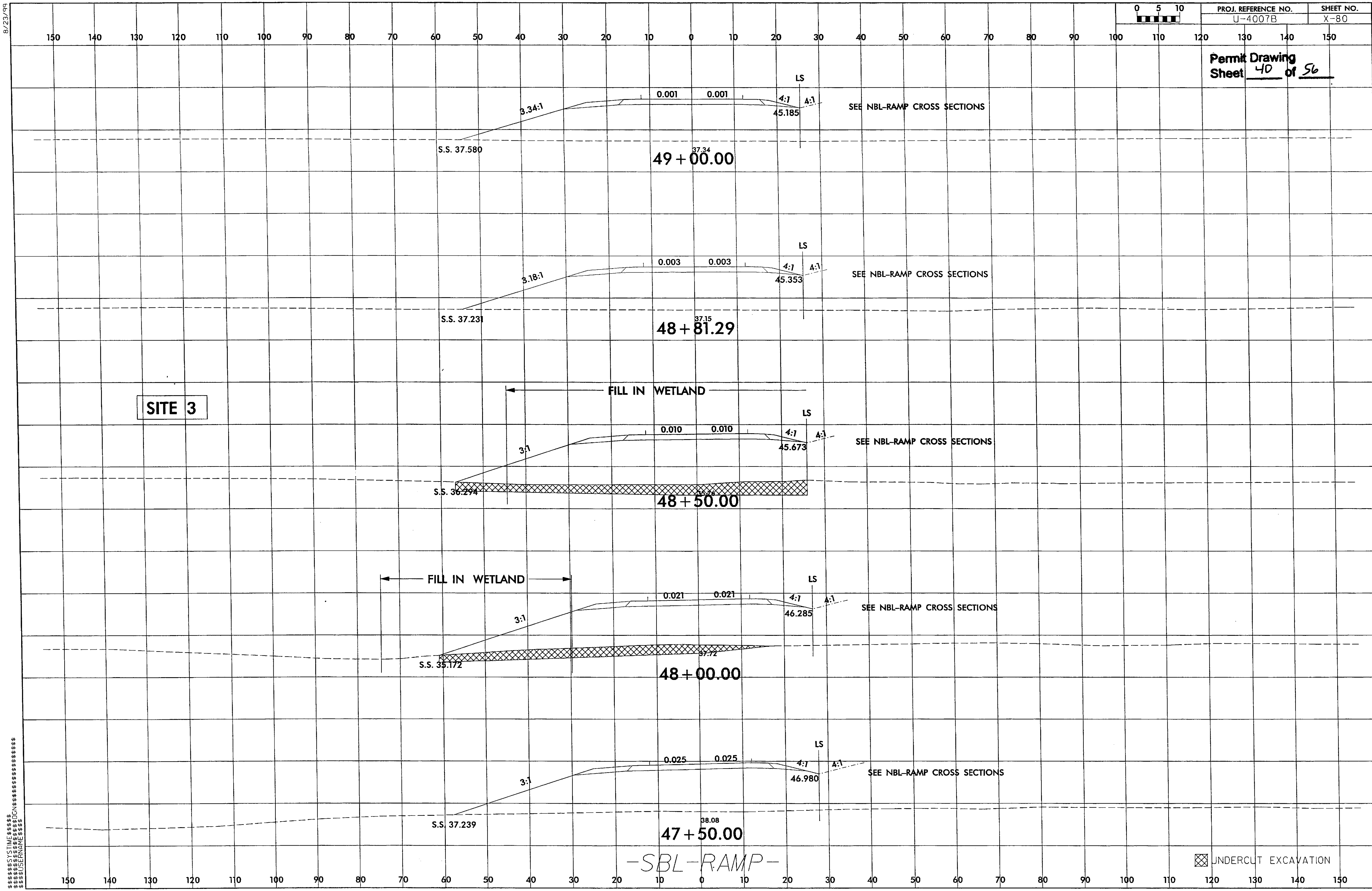
13 + 09.35

-NBL-RAMP-

UNDERCUT EXCAVATION

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

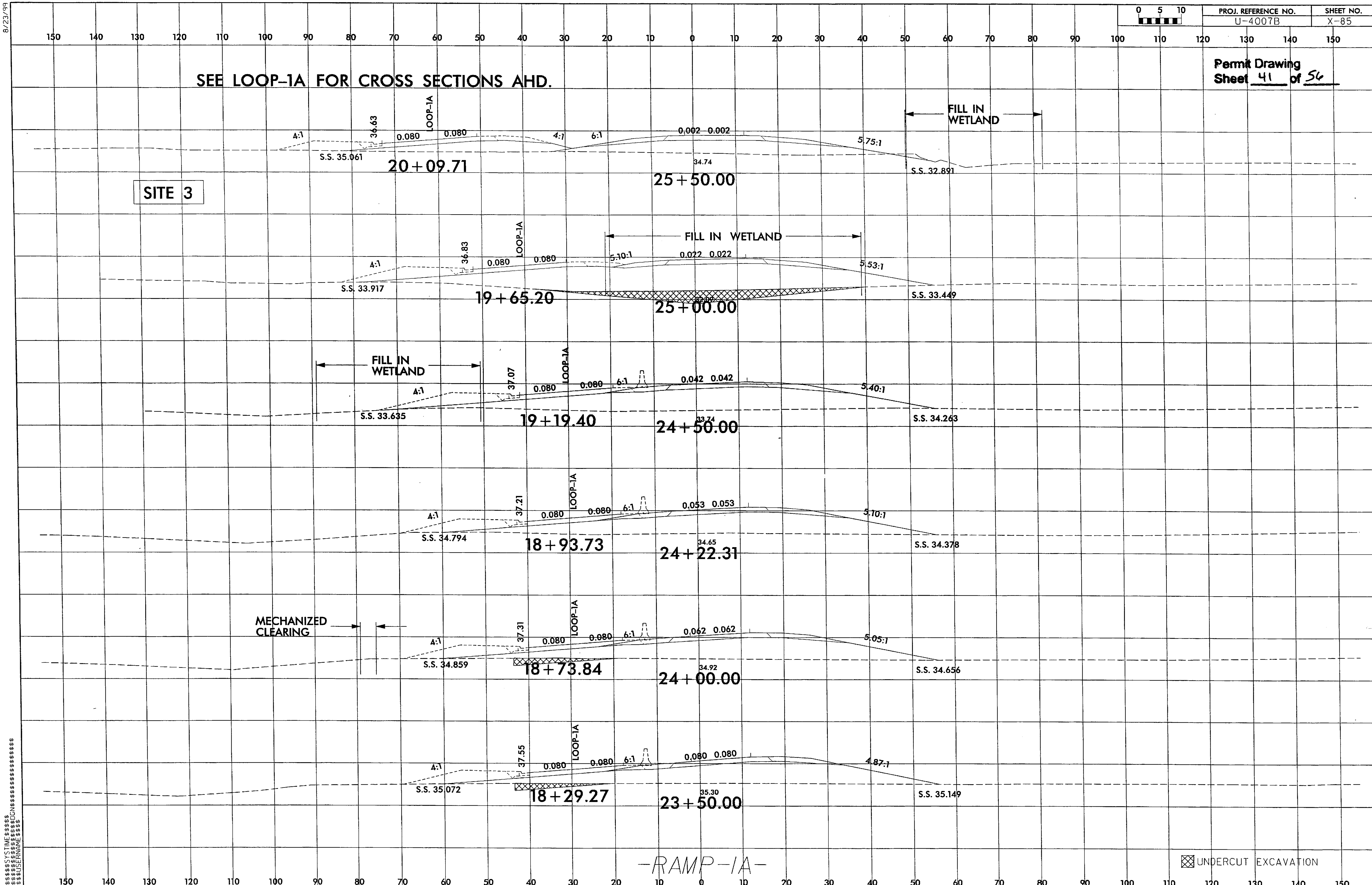
$$$$$SYSTIME$$$$$
$$$$$FILENAME$$$$$
$$$$$USERNAME$$$$$



8/23/99
0 5 10
PROJ. REFERENCE NO.
U-4007B
SHEET NO.
X-80
Permit Drawing
Sheet 40 of 56
SITE 3
LS
0.001
0.001
3.34:1
4:1
4:1
45.185
SEE NBL-RAMP CROSS SECTIONS
S.S. 37.580
37.34
49 + 00.00
LS
0.003
0.003
3.18:1
4:1
4:1
45.353
SEE NBL-RAMP CROSS SECTIONS
S.S. 37.231
37.15
48 + 81.29
FILL IN WETLAND
LS
0.010
0.010
3:1
4:1
4:1
45.673
SEE NBL-RAMP CROSS SECTIONS
S.S. 36.294
48 + 50.00
FILL IN WETLAND
LS
0.021
0.021
3:1
4:1
4:1
46.285
SEE NBL-RAMP CROSS SECTIONS
S.S. 35.172
37.72
48 + 00.00
LS
0.025
0.025
3:1
4:1
4:1
46.980
SEE NBL-RAMP CROSS SECTIONS
S.S. 37.239
38.08
47 + 50.00
-SBL-RAMP-
UNDERCUT EXCAVATION
$$$$$$SYSTIME$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

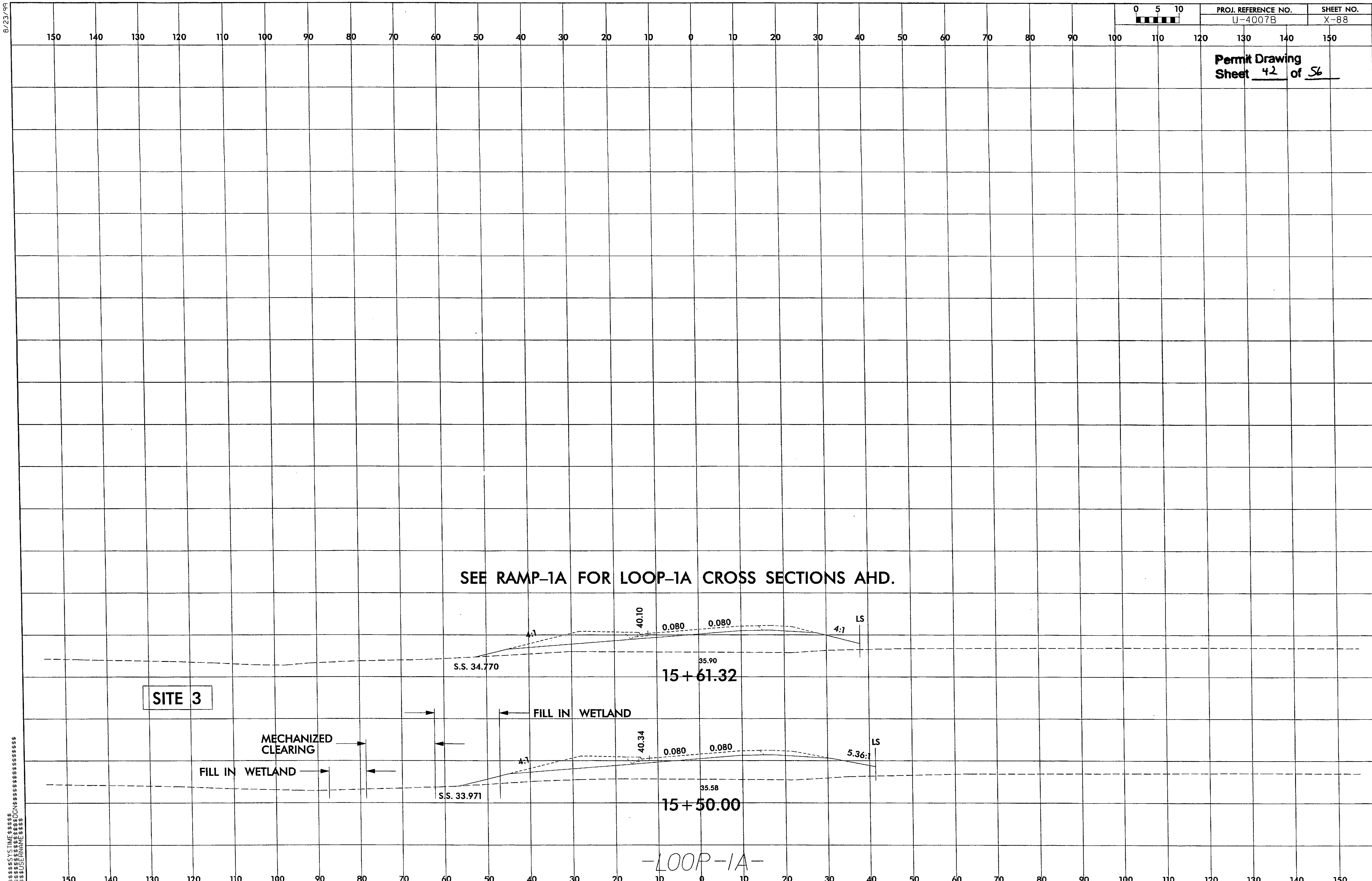
PROJ. REFERENCE NO.	SHEET NO.
U-4007B	X-85

Permit Drawing
Sheet 41 of 56



PROJ. REFERENCE NO. U-4007B | SHEET NO. X-88

Permit Drawing
Sheet 42 of 56



8/23/99

$$$$$$SYSTIME$$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

8/23/99

0 5 10	PROJ. REFERENCE NO.	SHEET NO.
	U-4007B	X-3

Permit Drawing
Sheet 43 of 56

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 4

MECHANIZED CLEARING

FILL IN WETLAND

IMPACTS IN SURFACE WATER

FILL IN WETLAND

0.040 0.040 0.040 45.68 44.81 0.040 0.040

3:1 3:1

S.S. 34.362

S.S. 36.138

34.60

16+00.00

BEGIN RAMP-1A
STA. 10+00.00

RAMP-1A

0.040 0.040 0.040 45.86 44.99 0.040 0.040

3:1 6:1

S.S. 35.462

S.S. 38.267

36.80

10+44.47

15+50.00

RAMP-1A

0.040 0.040 0.040 45.97 45.0 0.040 0.040

LS BK

3:1 6:1

S.S. 34.233

S.S. 39.323

38.11

10+71.50

15+23.30

SITE 4

MECHANIZED CLEARING

FILL IN WETLAND

RAMP-1A

0.040 0.040 0.040 46.06 45.20 0.040 0.040 LS

SEE Y-4 CROSS SECTIONS

3:1

S.S. 34.922

38.36

10+95.09

15+00.00

RAMP-1A

0.028 0.028 0.040 0.040 46.26 45.40 0.040 0.040 LS

SEE Y-4 CROSS SECTIONS

3:1

S.S. 36.179

38.70

11+45.67

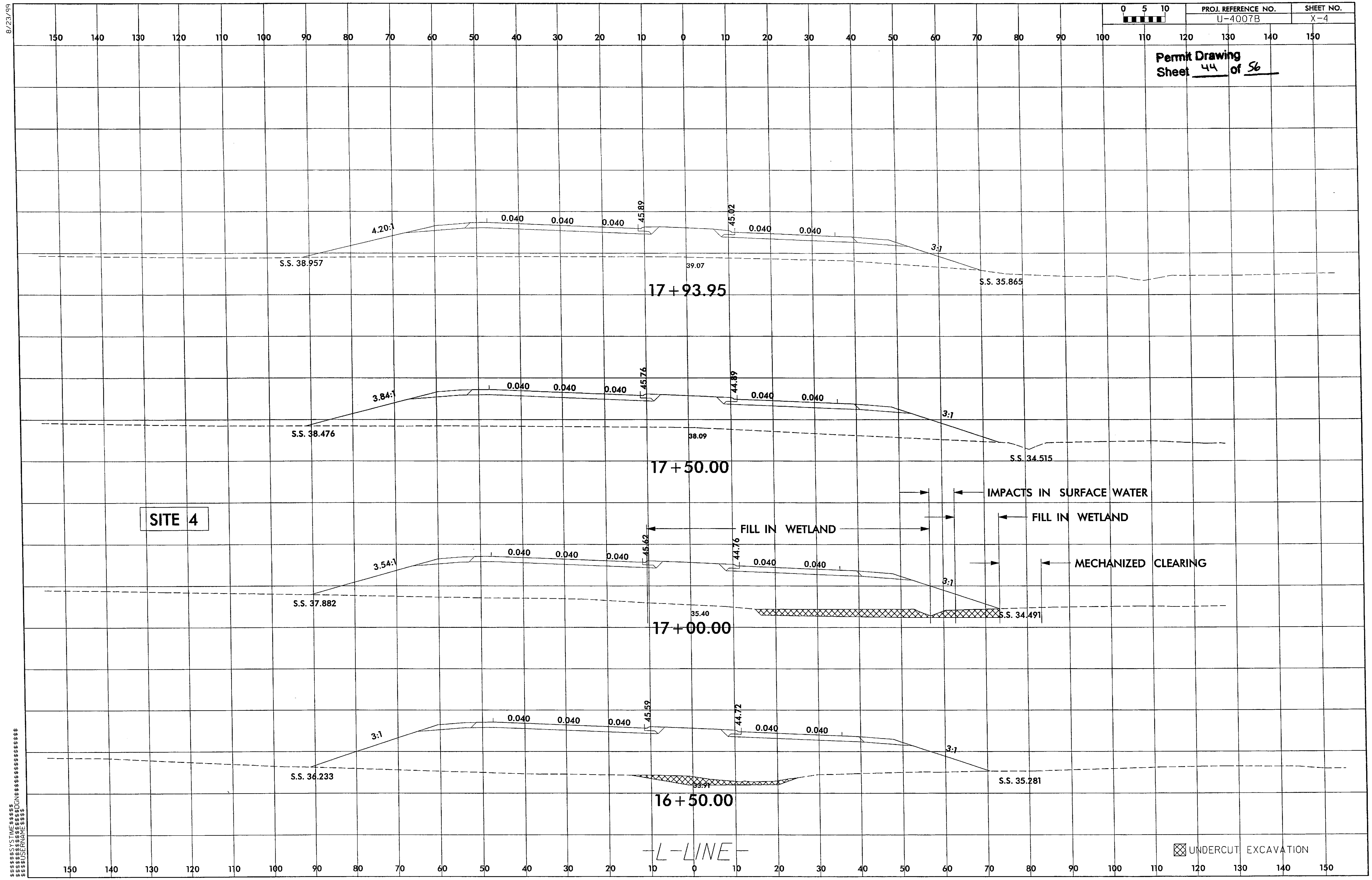
14+50.00

-L-LINE-

UNDERCUT EXCAVATION

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

$$$$$$$$SYSTIME$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$



0 5 10
PROJ. REFERENCE NO.
U-4007B
SHEET NO.
X-4
Permit Drawing
Sheet 44 of 56
8/23/99
4.20:1
0.040
0.040
0.040
45.89
45.02
0.040
0.040
3:1
S.S. 38.957
39.07
S.S. 35.865
17+93.95
3.84:1
45.76
44.89
S.S. 38.476
38.09
S.S. 34.515
17+50.00
SITE 4
IMPACTS IN SURFACE WATER
FILL IN WETLAND
FILL IN WETLAND
MECHANIZED CLEARING
3.54:1
45.62
44.76
S.S. 37.882
35.40
S.S. 34.491
17+00.00
45.59
44.72
S.S. 36.233
33.91
S.S. 35.281
16+50.00
-L-LINE-
UNDERCUT EXCAVATION
$$$$SYSTIME$$$$
$$$$$$$$$$$$$$$$$$$$$$DGN$$$$
$$$$USERNAME$$$$

8/23/99

PROJ. REFERENCE NO.	SHEET NO.
U-4007B	X-14

0 5 10

Permit Drawing
Sheet 45 of 56

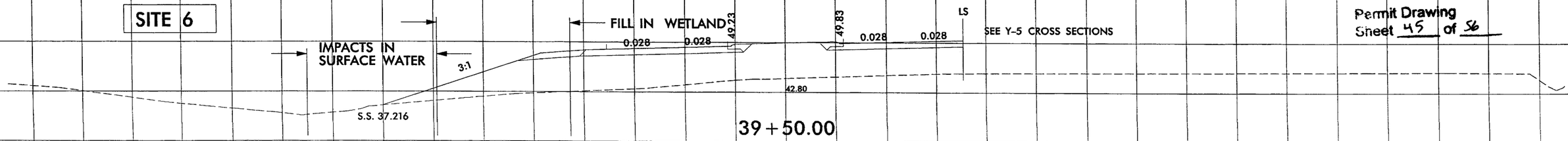
SITE 6

IMPACTS IN SURFACE WATER

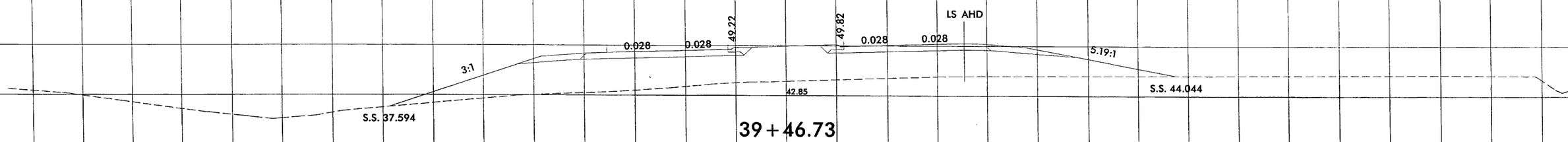
FILL IN WETLAND

SEE Y-5 CROSS SECTIONS

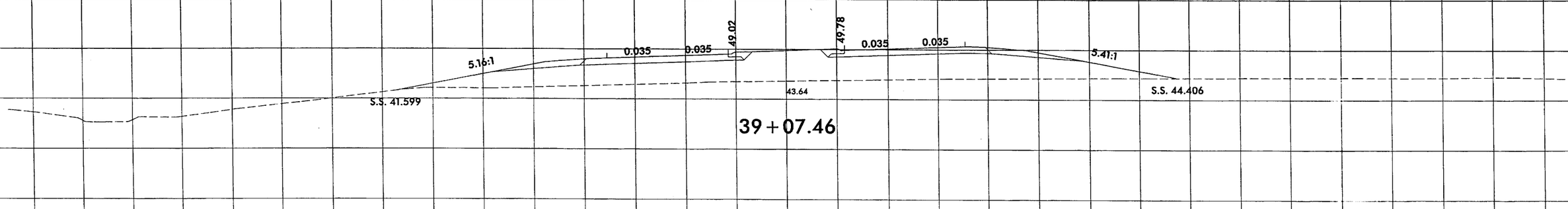
39+50.00



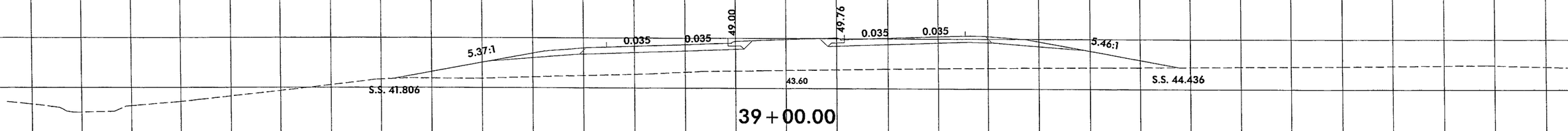
39+46.73



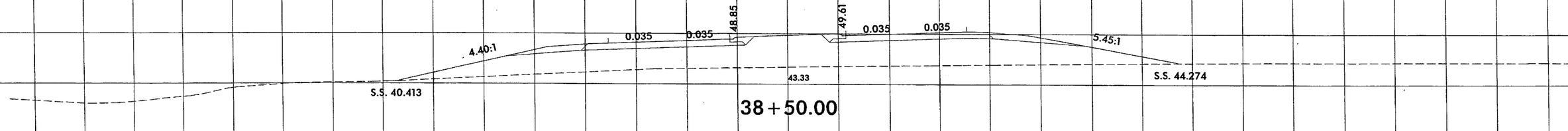
39+07.46



39+00.00

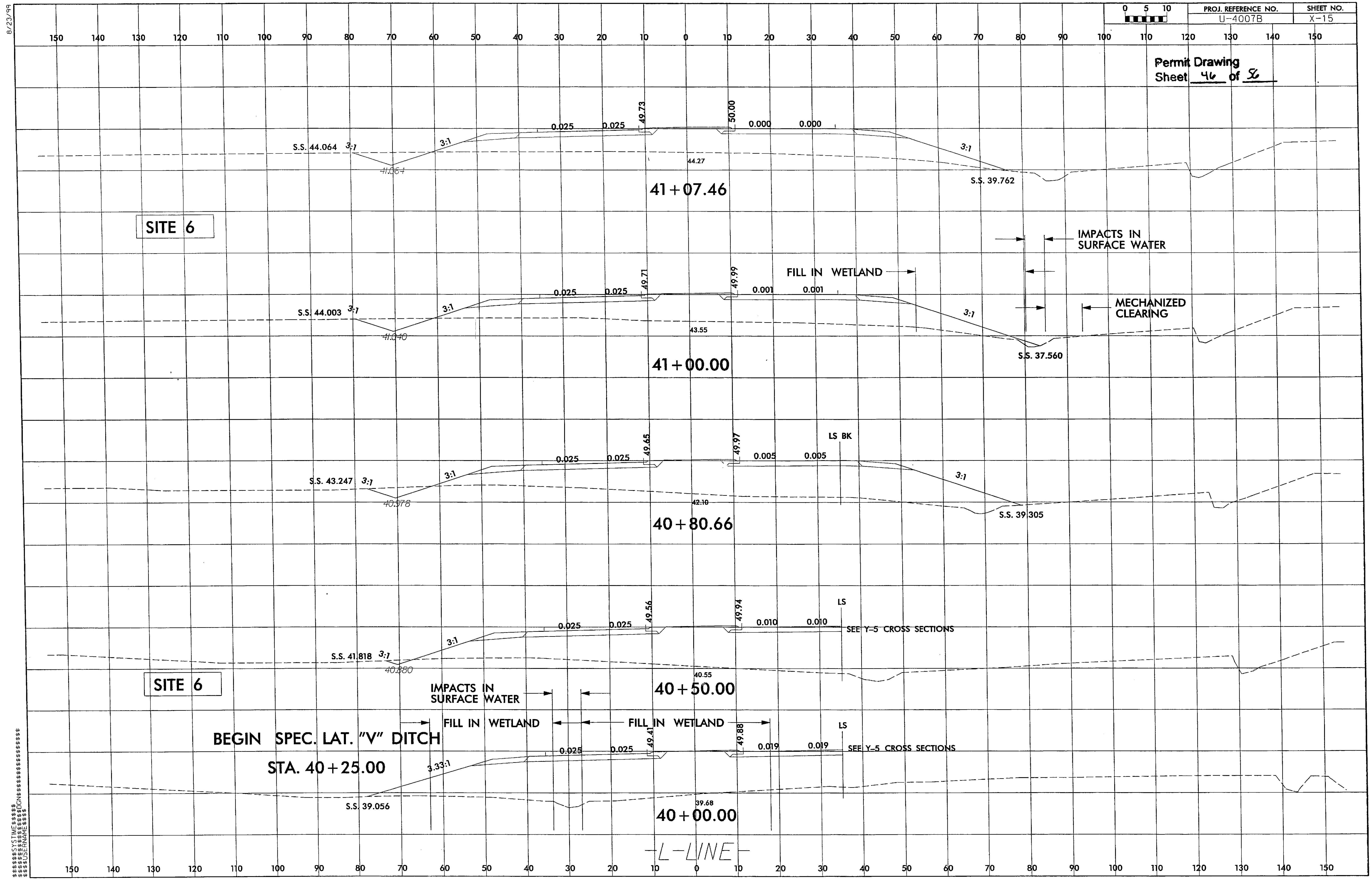


38+50.00

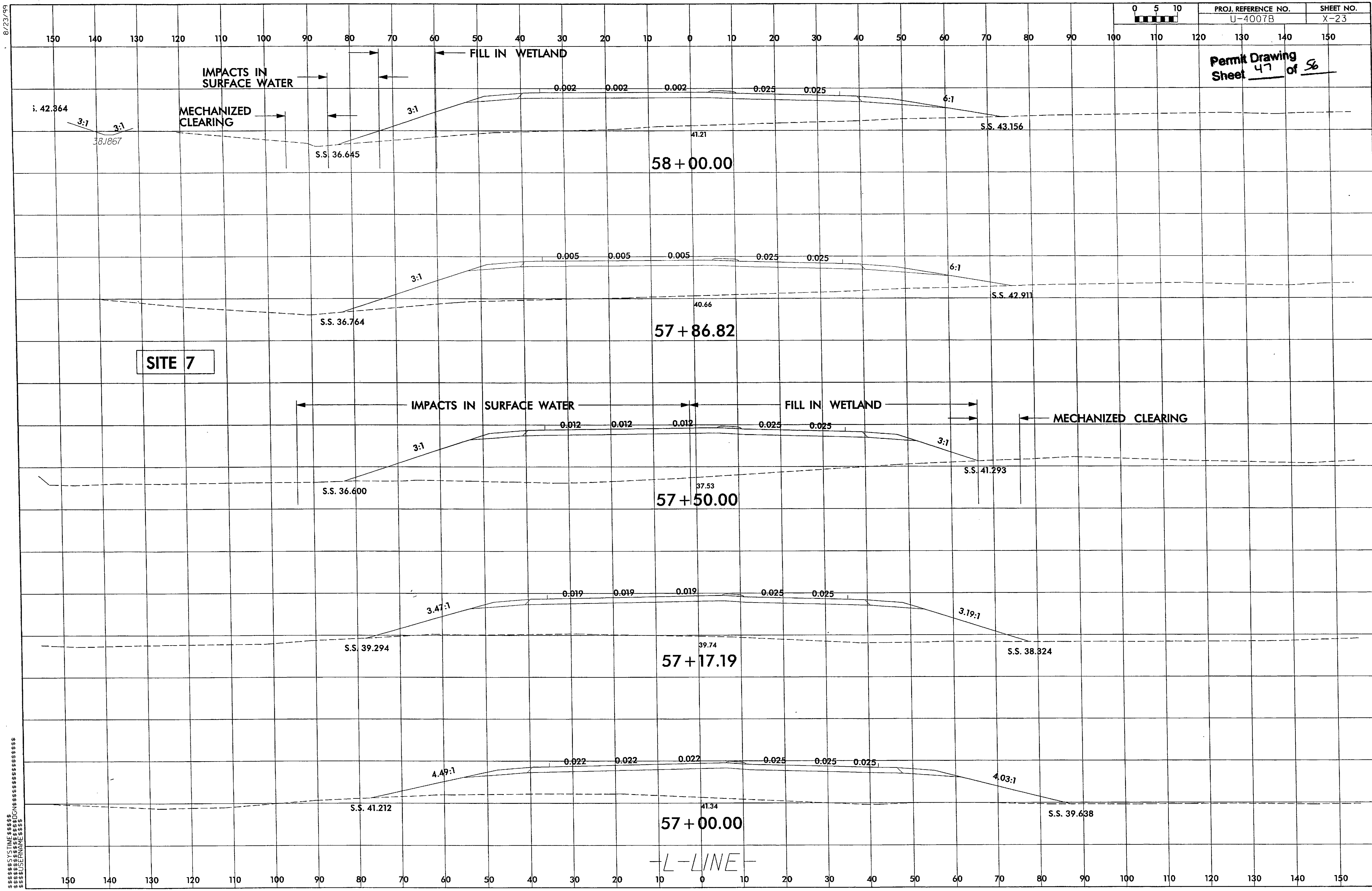


-L-LINE-

$$$$$$$$SYSTIME$$$$$
$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$


8/23/99
0 5 10
PROJ. REFERENCE NO.
U-4007B
SHEET NO.
X-15
Permit Drawing
Sheet 46 of 56
SITE 6
S.S. 44.064
3:1
41.064
0.025
0.025
49.73
50.00
0.000
0.000
44.27
S.S. 39.762
41+07.46
IMPACTS IN
SURFACE WATER
FILL IN WETLAND
MECHANIZED
CLEARING
S.S. 44.003
41.040
49.71
49.99
0.001
0.001
43.55
S.S. 37.560
41+00.00
LS BK
S.S. 43.247
40.978
49.65
49.97
0.005
0.005
42.10
S.S. 39.305
40+80.66
LS
S.S. 41.818
40.880
49.56
49.94
0.010
0.010
SEE Y-5 CROSS SECTIONS
40.55
SITE 6
40+50.00
IMPACTS IN
SURFACE WATER
FILL IN WETLAND
FILL IN WETLAND
BEGIN SPEC. LAT. "V" DITCH
STA. 40+25.00
3.33:1
49.41
49.88
0.019
0.019
SEE Y-5 CROSS SECTIONS
S.S. 39.056
39.68
40+00.00
-L-LINE-
$$$$$$$SYSTIME$$$$
$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$$
$$$$$USERNAME$$$$

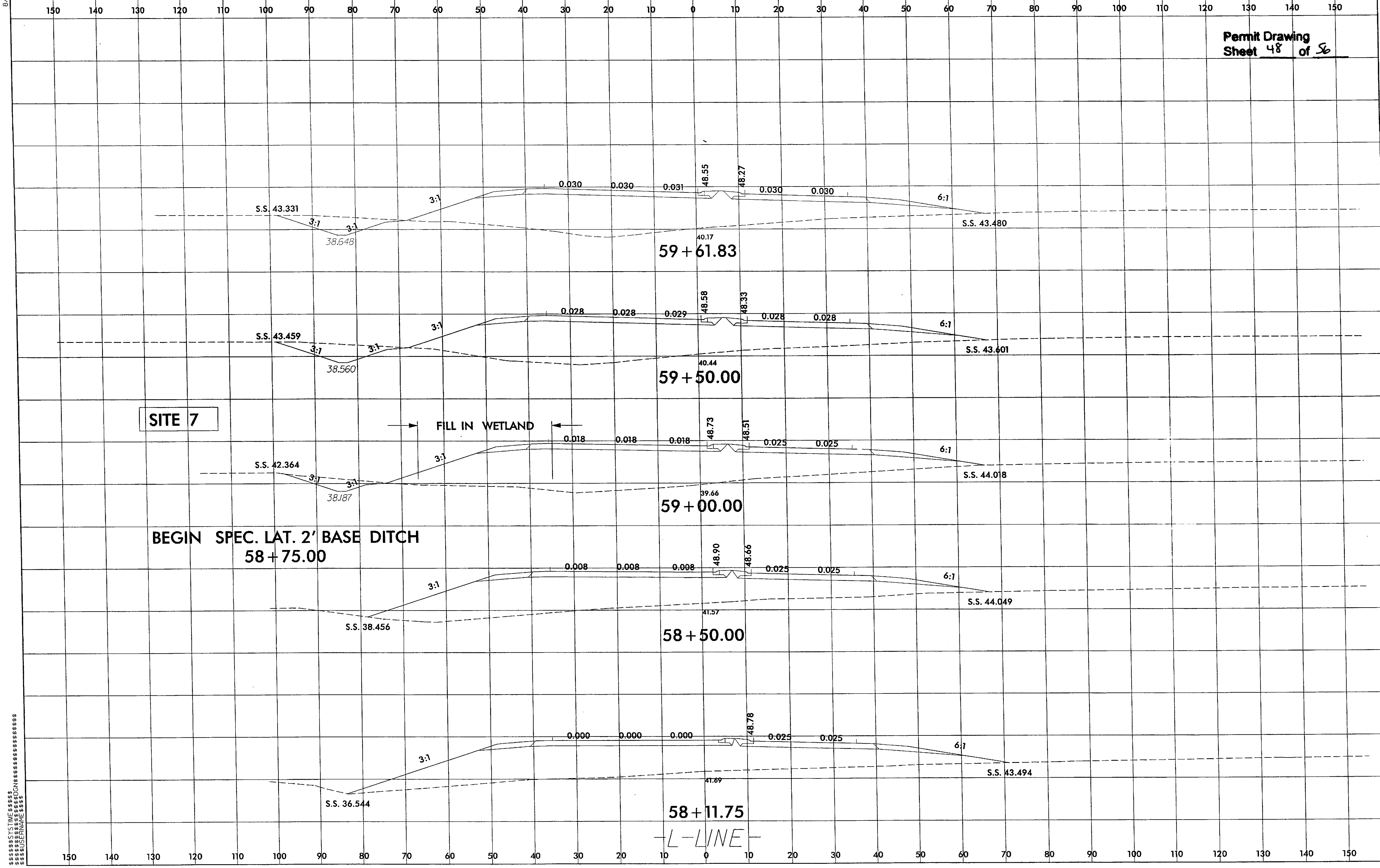
8/23/99

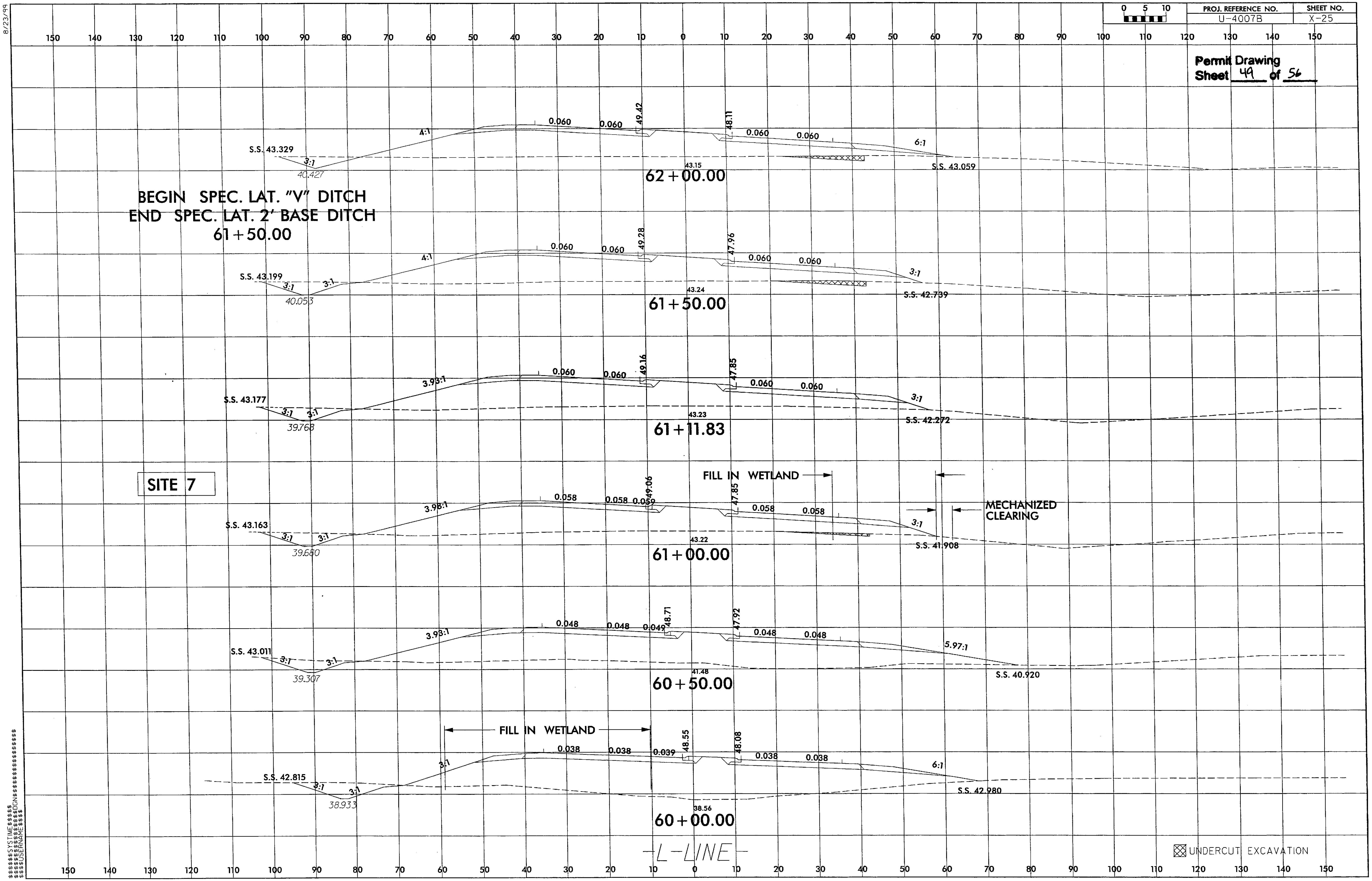


$$$$$SYSTIME$$$$$$$$$$$$$$$$$$$$$$$ $$$$$$$$$$$$DGN$$$$$$$ $$$$USERNAME$$$$$

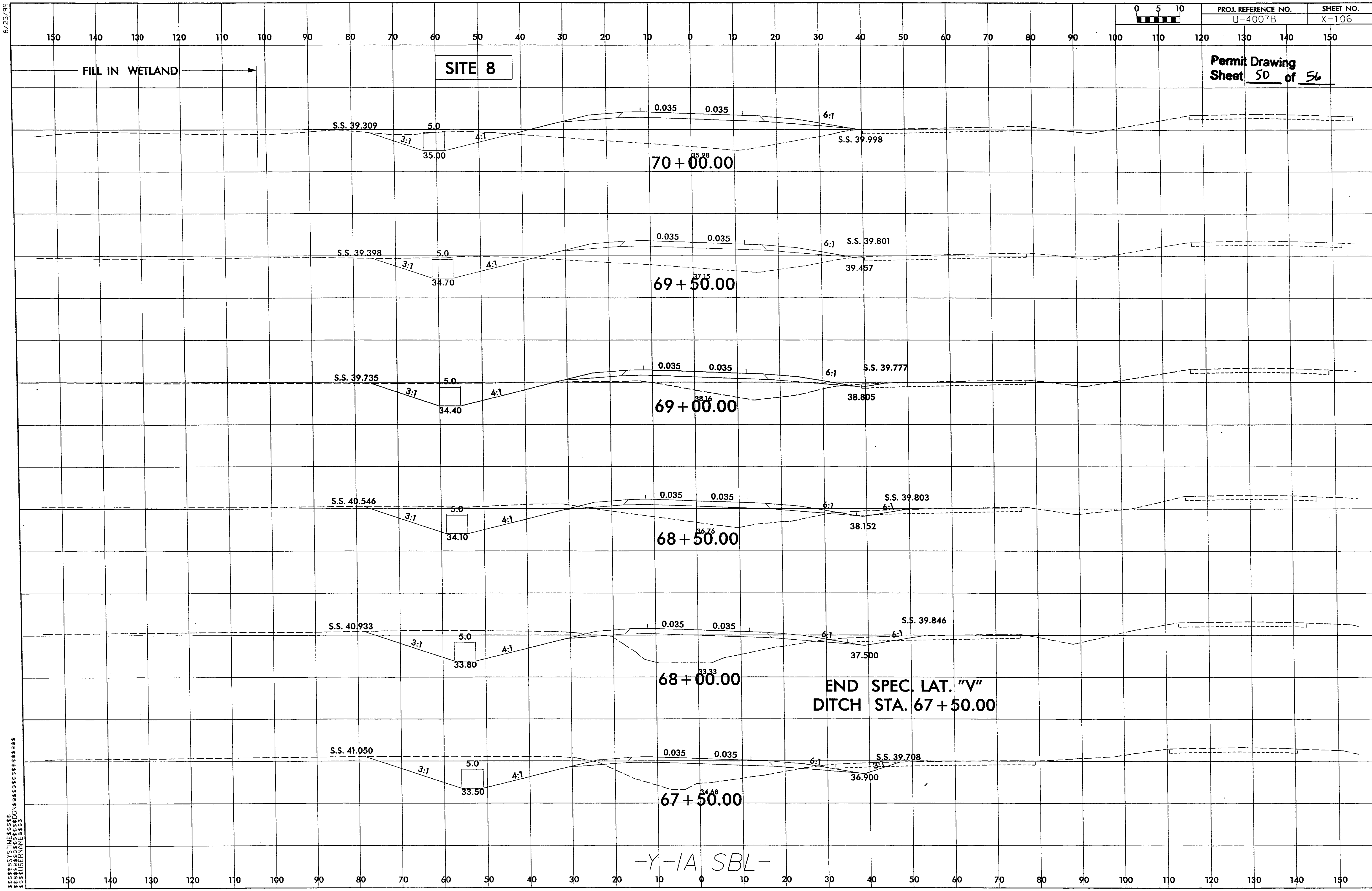
PROJ. REFERENCE NO.	SHEET NO.
U-4007B	X-24

Permit Drawing
Sheet 48 of 56

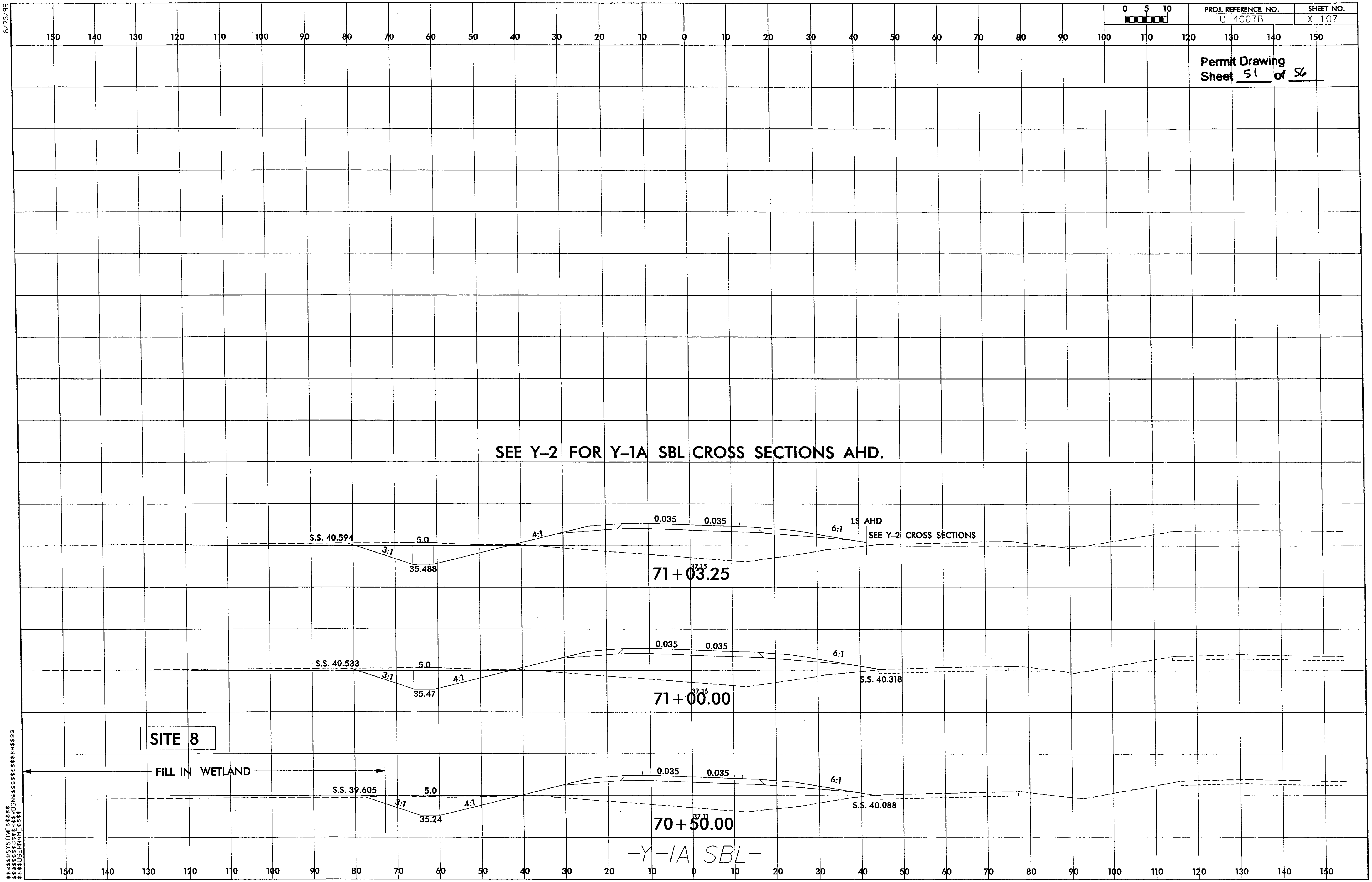




8/23/99
PROJ. REFERENCE NO.
U-4007B
SHEET NO.
X-25
0 5 10
Permit Drawing
Sheet 49 of 56
S.S. 43.329
3:1
40.427
4:1
0.060
0.060
49.42
48.11
0.060
0.060
6:1
43.15
62+00.00
S.S. 43.059
BEGIN SPEC. LAT. "V" DITCH
END SPEC. LAT. 2′ BASE DITCH
61+50.00
S.S. 43.199
3:1
3:1
40.053
4:1
0.060
0.060
49.28
47.96
0.060
0.060
3:1
43.24
61+50.00
S.S. 42.739
S.S. 43.177
3:1
3:1
39.768
3.93:1
0.060
0.060
49.16
47.85
0.060
0.060
3:1
43.23
61+11.83
S.S. 42.272
SITE 7
FILL IN WETLAND
MECHANIZED CLEARING
S.S. 43.163
3:1
3:1
39.680
3.98:1
0.058
0.058
0.059
49.06
47.85
0.058
0.058
3:1
43.22
61+00.00
S.S. 41.908
S.S. 43.011
3:1
3:1
39.307
3.93:1
0.048
0.048
0.049
48.71
47.92
0.048
0.048
5.97:1
41.48
60+50.00
S.S. 40.920
FILL IN WETLAND
S.S. 42.815
3:1
3:1
38.933
3:1
0.038
0.038
0.039
48.55
48.08
0.038
0.038
6:1
38.56
60+00.00
S.S. 42.980
-L-LINE-
UNDERCUT EXCAVATION
$$$$$$SYSTIME$$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

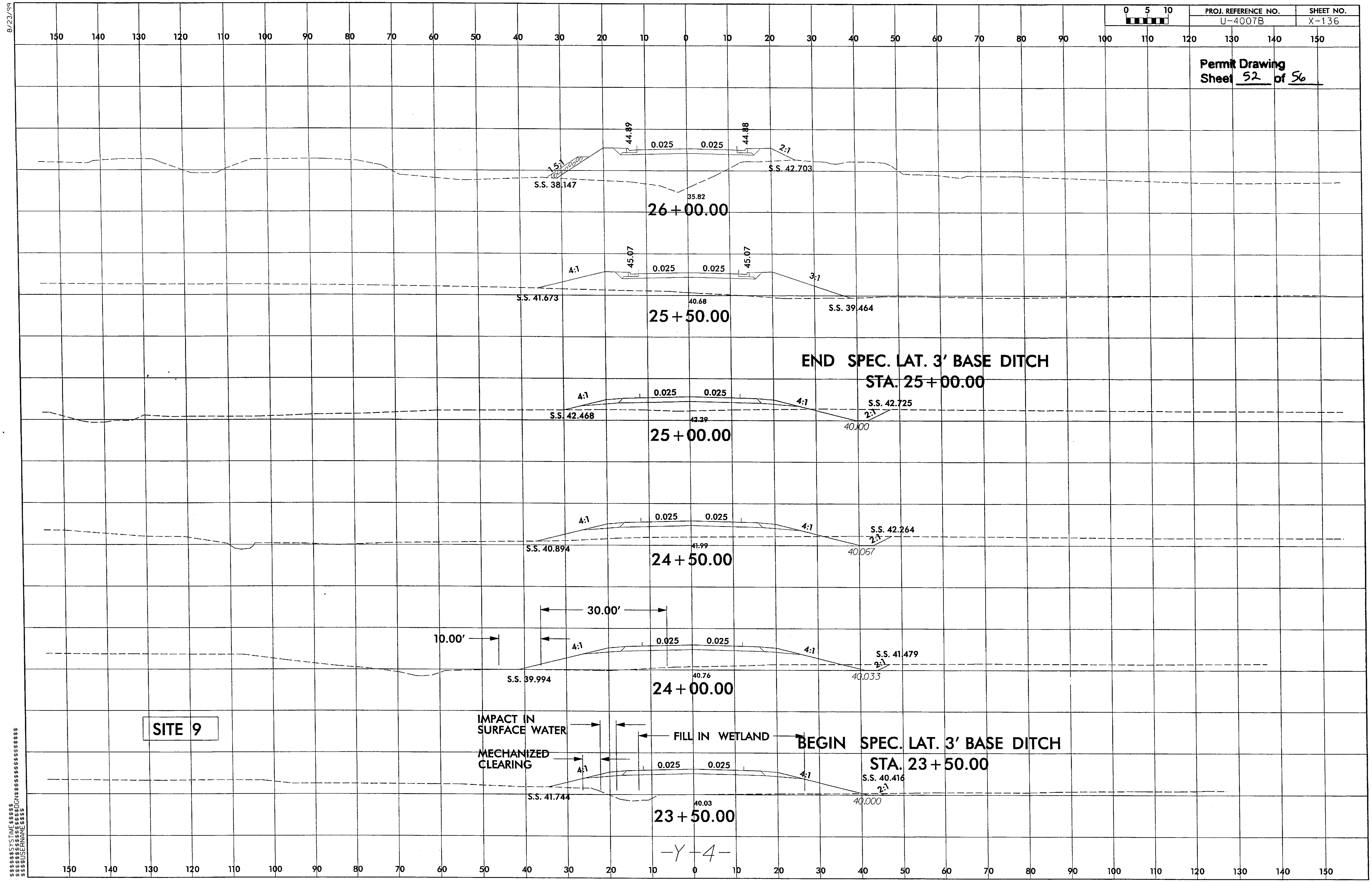


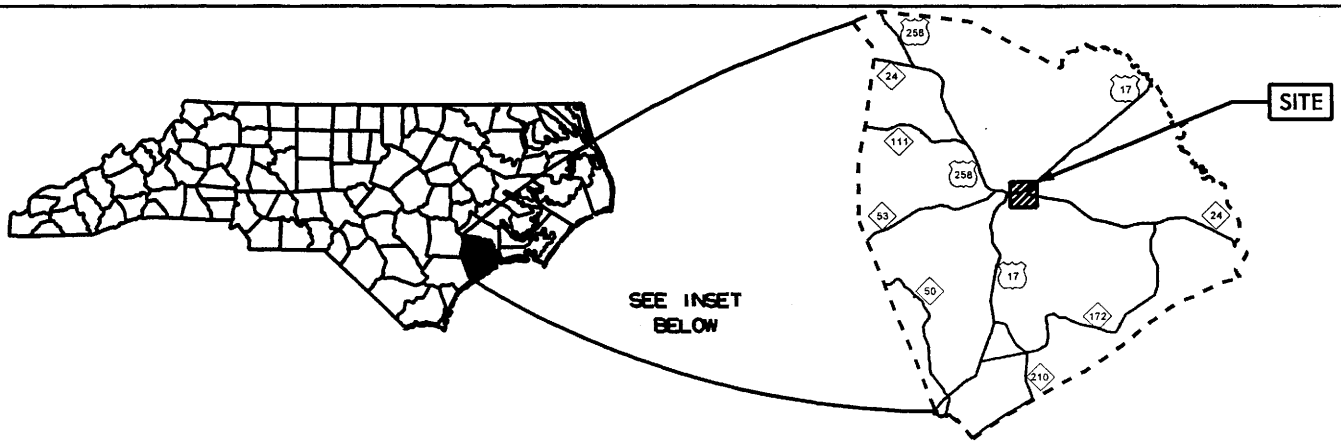
PROJ. REFERENCE NO. U-4007B
SHEET NO. X-106
0 5 10
SITE 8
FILL IN WETLAND
Permit Drawing Sheet 50 of 56
S.S. 39.309
5.0
3:1
4:1
35.00
35.98
0.035
0.035
6:1
S.S. 39.998
70+00.00
S.S. 39.398
34.70
37.15
S.S. 39.801
39.457
69+50.00
S.S. 39.735
34.40
38.16
S.S. 39.777
38.805
69+00.00
S.S. 40.546
34.10
36.76
S.S. 39.803
38.152
68+50.00
S.S. 40.933
33.80
33.33
S.S. 39.846
37.500
68+00.00
END SPEC. LAT. "V"
DITCH STA. 67+50.00
S.S. 41.050
33.50
34.68
S.S. 39.708
36.900
67+50.00
-Y-1A SBL-
8/23/99

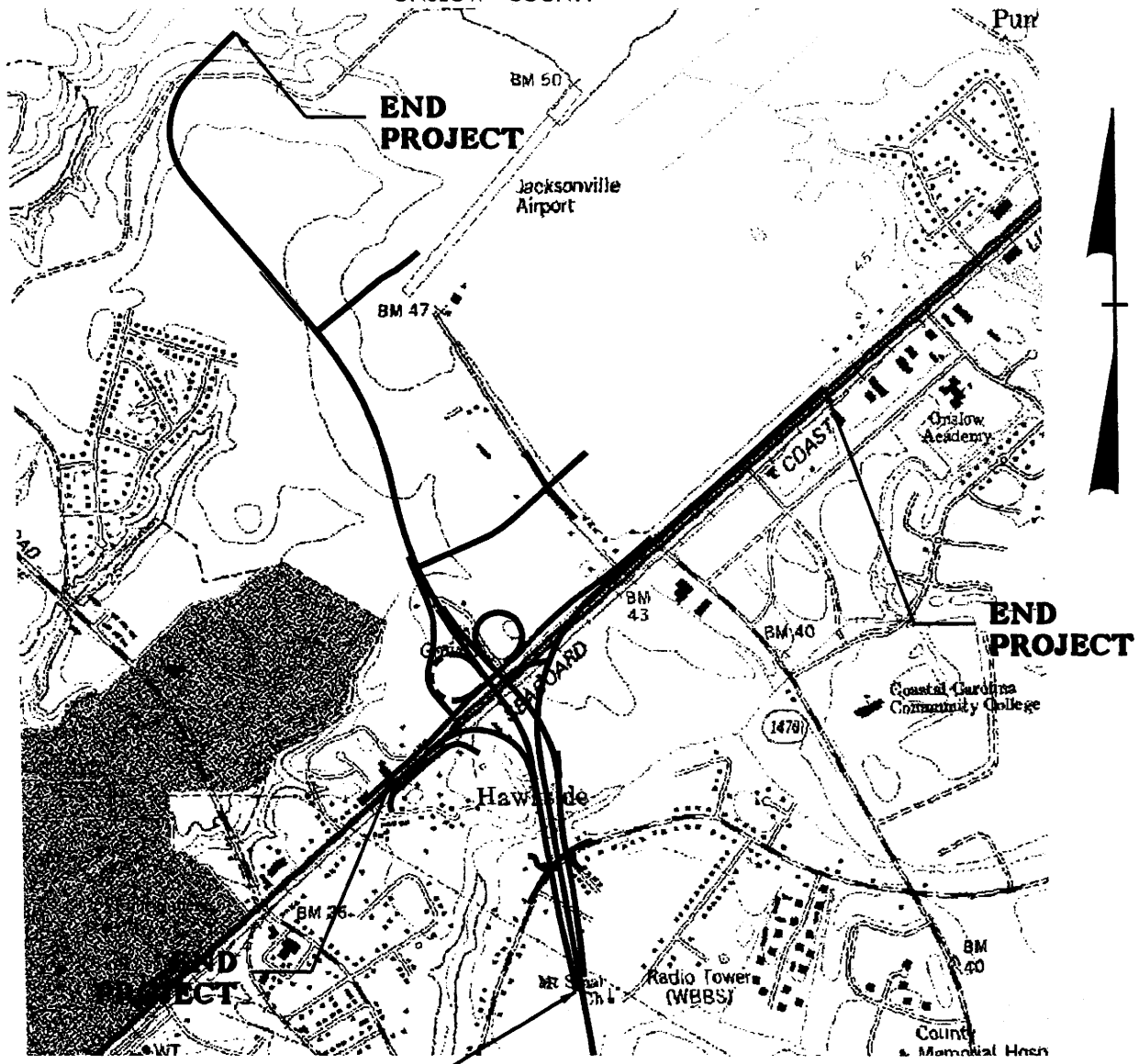

8/23/99
0 5 10
PROJ. REFERENCE NO.
U-4007B
SHEET NO.
X-107
Permit Drawing
Sheet 51 of 56
SEE Y-2 FOR Y-1A SBL CROSS SECTIONS AHD.
S.S. 40.594
5.0
3:1
35.488
4:1
0.035
0.035
6:1
LS AHD
SEE Y-2 CROSS SECTIONS
37.15
71+03.25
S.S. 40.533
5.0
3:1
4:1
35.47
0.035
0.035
6:1
S.S. 40.318
37.16
71+00.00
SITE 8
FILL IN WETLAND
S.S. 39.605
5.0
3:1
4:1
35.24
0.035
0.035
6:1
S.S. 40.088
37.11
70+50.00
-Y-1A SBL-
$$$$$$SYSTIME$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
U-4007B	X-136

Permit Drawing
Sheet 52 of 56







WETLAND/STREAM
IMPACTS

Permit Drawing
Sheet 53 of 56

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

ONSLOW COUNTY
PROJECT:35008.1.1 (U-4007B)
WESTERN PARKWAY FROM
APPROXIMATELY 1300' SOUTH
OF COUNTRY CLUB RD.
TO WESTERN BLVD.

SHEET ___ OF ___ 2-12-10

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
7	KEYSTONE CONTRACTORS PARTNERS	PO BOX 1237 JACKSONVILLE NC 28540
10	OUT ISLAND, LLC	ADDRESS
12	SEABOARD COSTLINE RAILROAD (DISMANTLED)	ADDRESS
907	CAROLINA GAS PARTNERS, LLC	1841 PEELER RD., SUITE D. ATLANTA GA 30338
906	RICHARD S. NEWTON	310 PRESTON RD JACKSONVILLE NC 28540
13	ARDIE MONTFORD	302 MONTFORD LN. JACKSONVILLE NC 28546
909	LONGLEY SUPPLY COMPANY OF JACKSONVILLE, INC	PO BOX 5318 JACKSONVILLE NC 28540
14	TERENCE NICHOLS	2414 CHESTNUT HILL DRIVE CINAMINSON NJ 08077
19	TRUDIE H. BENNETT	127 HAWKSIDE ROAD JACKSONVILLE NC 28546
914	FLORA D. MORRISON	113 HAWKSIDE RD. JACKSONVILLE NC 28540
24	DDRTC GATEWAY PLAZA, LLC	ADDRESS

Permit Drawing
Sheet 54 of 56

NCDOT
DIVISION OF HIGHWAYS
ONSLOW COUNTY
PROJECT: 35008.1.1 (U-4007B)
WESTERN PARKWAY
FROM APPROX. 1300' SOUTH OF
COUNTRY CLUB RD TO
WESTERN BLVD.

SHEET 1 OF 2 2/12/10

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
26	KENNITH P. WHICHARD, JR.	125 EDGEBROOK DR. GREENVILLE NC 27858
31	CONRAD HAUGEN	129 MOOSEHAVEN RD. JACKSONVILLE NC 28546
32	JAMES BROWN, ET AL	235 MARINE PLAZA JACKSONVILLE NC 28546
918	R. M. TALLMAN, HEIRS	321 PELICAN WALK HAMPSTEAD NC 28443
25	DAYTON HUDSON CORP.	ADDRESS
33	STATE EMPLOYEES CREDIT UNION	PO BOX 26807 RALEIGH NC 27611

Permit Drawing
Sheet 55 of 56

NCDOT
DIVISION OF HIGHWAYS
ONSLOW COUNTY
PROJECT: 35008.1.1 (U-4007B)
WESTERN PARKWAY
FROM APPROX. 1300'S OF
COUNTRY CLUB RD TO
WESTERN BLVD.

SHEET 2 OF 2 2/12/10

Permit Drawing
Sheet 56 of 56

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	29+25 -Y2-	2 AT 6'x7' RCBC						0.05		290		
2	23+60-27+59 -RAMP1B- LT	ROADWAY FILL	0.11									
	16+30-19+76 -SER-1	ROADWAY FILL	0.24									
3	52+58-53+32 -Y1A SBL- LT	48" RCP	0.02			0.01						
	23+85-25+70 -RAMP 1A-	2 AT 42" RCP	0.14			0.02						
	14+00-15+50 -LOOP 1A-	2 AT 42" RCP	0.30			0.03						
	47+73-48+82 -SBL RAMP-	2 AT 42" RCP	0.24			0.02						
4	14+72-18+45 -L-	60" RCP	0.57			0.08		0.04		301		
5	12+43 -Y4- LT	ROADWAY FILL	<.01			<.01						
6	39+14-41+39 -L-	72" RCP	0.26			0.03		0.03		260		
7	57+11-62+05 -L-	42" RCP	0.33			0.04		0.09		326		
		ROADWAY FILL										
8	69+71-70+78 -Y1A SBL- LT	DITCH EFFECT	0.16									
9	23+00-24+41 -Y4-	2 AT 36" RCP	0.09			0.02		0.01		122		
TOTALS:			2.45	0.00	0.00	0.25	0.00	0.22	0	1299		

ATN Revised 3/31/05

REMARKS: SITE 1)THE EXISTING SILLS TO BE REMOVED TO SATISFY FEMA REGULATIONS FOR THE CULVERT EXTENSION.

SITE 2) SITE 2 IS A TOTAL TAKE.

SITE 3) THE AREA BETWEEN -L- AND LOOP 1A WILL BE A TOTAL TAKE. ADDITIONAL TOTAL TAKE (NO IMPACT) = 0.09 AC

SITE 6) THE SLIVER WETLAND TO THE RIGHT OF -L- WILL BE A TOTAL TAKE. ADDITIONAL TOTAL TAKE (NO IMPACT SW = <0.01AC CHANNEL = 45 ft WETLANDS = 0.02AC

Note: FILL IN STORMWATER PONDS STA. 45+OO TO 52+23 -L- RT (PSH 09)* AND 25+88 TO 26+27 -Y4- LT (PSH 13)** HAVE BEEN COORDINATED WITH DWQ-STORMWATER SECTION.

* THE FILL IN THE STORMWATER POND ON PLAN SHEET (PSH) #9 IS 0.51 AC. AND THE VOL. REDUCTION IS 0.59 AC-FT

** THE FILL IN THE STORMWATER POND ON PLAN SHEET (PSH) #13 IS 0.03 AC. AND THE VOL. REDUCTION IS 0.1 AC-FT

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

ONSLOW COUNTY
WBS - 35008.1.1 (U-4007B)

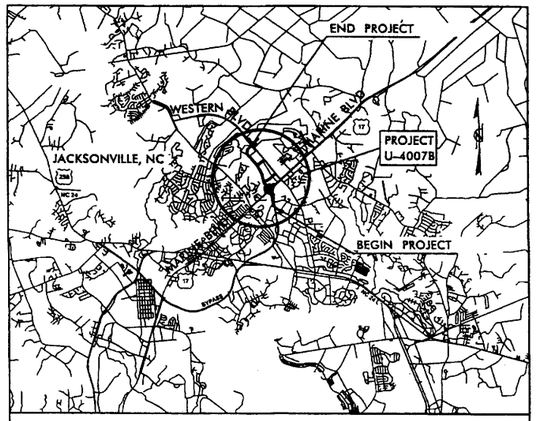
SHEET 1 REV 3/04/2010

09/08/5

TIP PROJECT: U-4007B

CONTRACT C202558

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

ONSLOW COUNTY

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4007B	1	

WBS NO.	F. A. PROJ. NO.	DESCRIPTION
35008.1.1	STPNHF-17(31)	PE
35008.3.4	NHF-0017(77)	ROW & UTILS.

LOCATION: WESTERN PARKWAY FROM APPROXIMATELY 1300' SOUTH OF COUNTRY CLUB RD. TO WESTERN BLVD.

TYPE OF WORK: GRADING, PAVING, DRAINAGE, SIGNALS CURB, GUTTER, STRUCTURES, & CULVERTS.

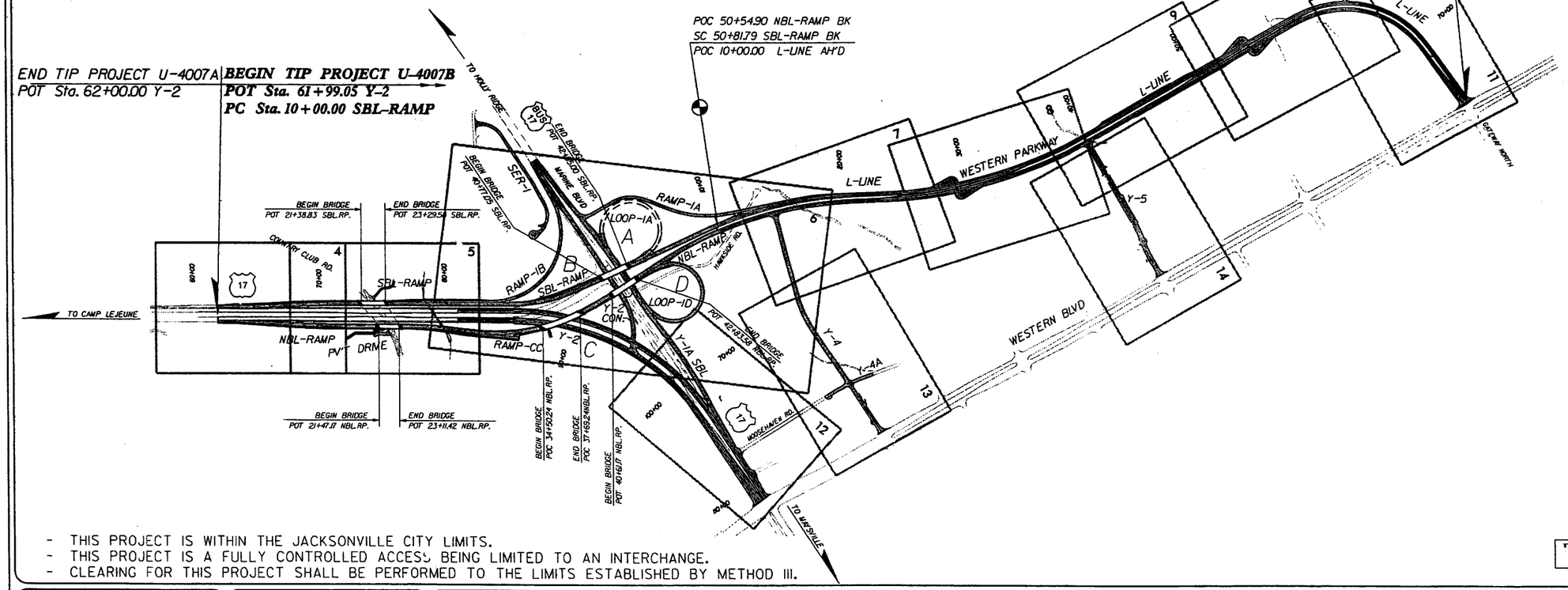
END TIP PROJECT U-4007B
POT Sta. 76+58.49 L-LINE

NC GRID NAD 83

END TIP PROJECT U-4007A
POT Sta. 62+00.00 Y-2

BEGIN TIP PROJECT U-4007B
POT Sta. 61+99.05 Y-2
PC Sta. 10+00.00 SBL-RAMP

POC 50+54.90 NBL-RAMP BK
SC 50+81.79 SBL-RAMP BK
POC 10+00.00 L-LINE AH'D



- THIS PROJECT IS WITHIN THE JACKSONVILLE CITY LIMITS.
- THIS PROJECT IS A FULLY CONTROLLED ACCESS BEING LIMITED TO AN INTERCHANGE.
- CLEARING FOR THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.

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 2011 = 36,300
ADT 2031 = 57,600
DHV = 10 %
D = 60 %
T = 8 % *
V = 50 MPH
(* TTST 3% + DUAL 5%)
FUNC. CLASS: FWY./EXPWY.

PROJECT LENGTH

LENGTH OF ROADWAY T.I.P. PROJECT U-4007B	= 1.177 MI.
LENGTH OF STRUCTURE T.I.P. PROJECT U-4007B	= 0.857 MI
TOTAL LENGTH OF T.I.P. PROJECT U-4007B	= 2.034 MI

PREPARED IN THE OFFICE OF:
Stantec
Stantec Consulting Inc.
Suite 300, 801 Jones Franklin Road
Raleigh, NC U.S.A.
27606
Tel. 919.851.6866
Fax. 919.851.7024
www.stantec.com

FOR THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: FEB 20, 2009

LETTING DATE: OCT. 19, 2010

NCDOT CONTACT: B. DOUG TAYLOR, PE
PROJECT ENGINEER - ROADWAY DESIGN

ROBERT A. WILLIAMS, PE
PROJECT ENGINEER

KEITH F. HUDSON, PE
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

P.E.
STATE HIGHWAY DESIGN ENGINEER

2/18/2010
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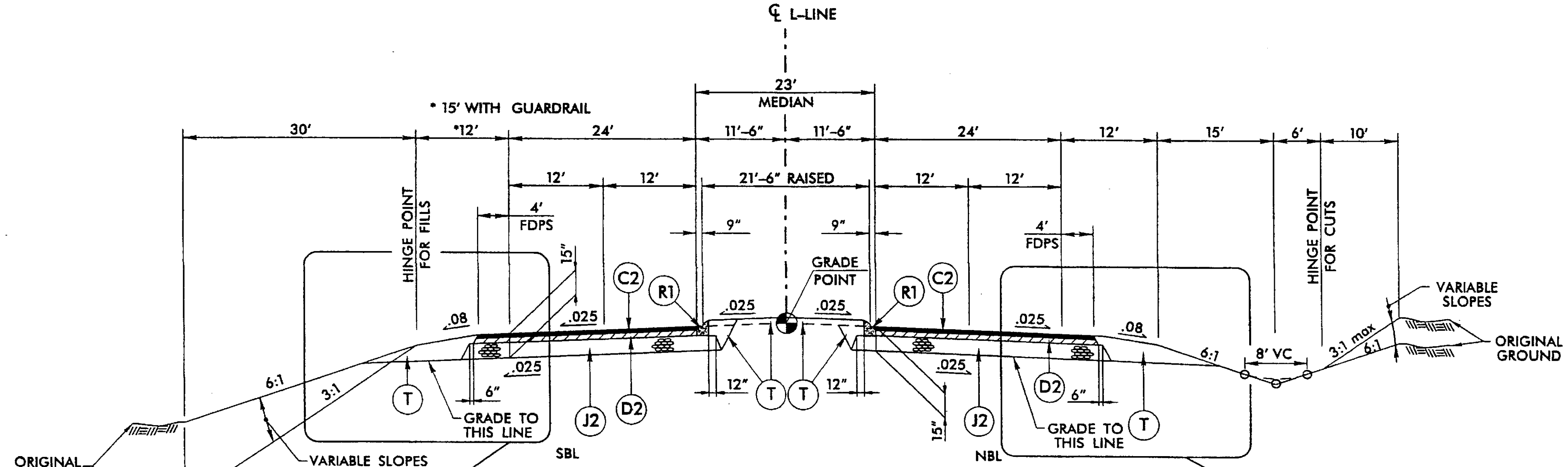
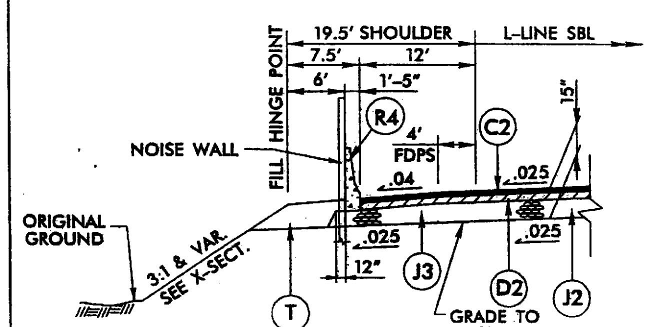


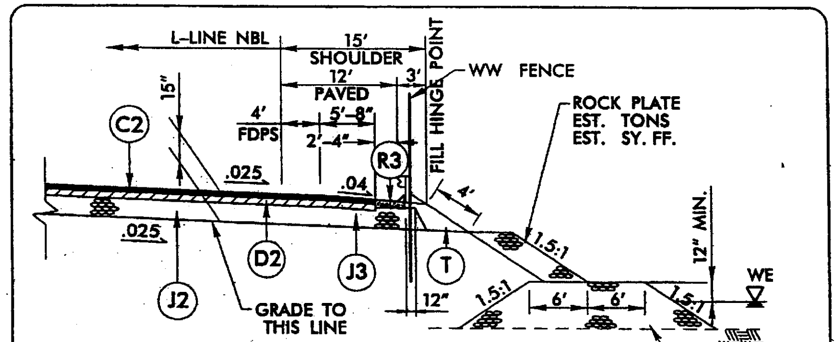
ROADWAY	FROM STA.	TO STA.	REMARKS
L-LINE	10+00.00	40+25.00	SEE INSERTS A&B
L-LINE	40+25.00	52+50.00	
L-LINE	52+50.00	76+58.49	

TYPICAL SECTION NO 1



ROADWAY	SIDE	FROM STA.	TO STA.
L-LINE	LT.	41+85.00	48+25.00

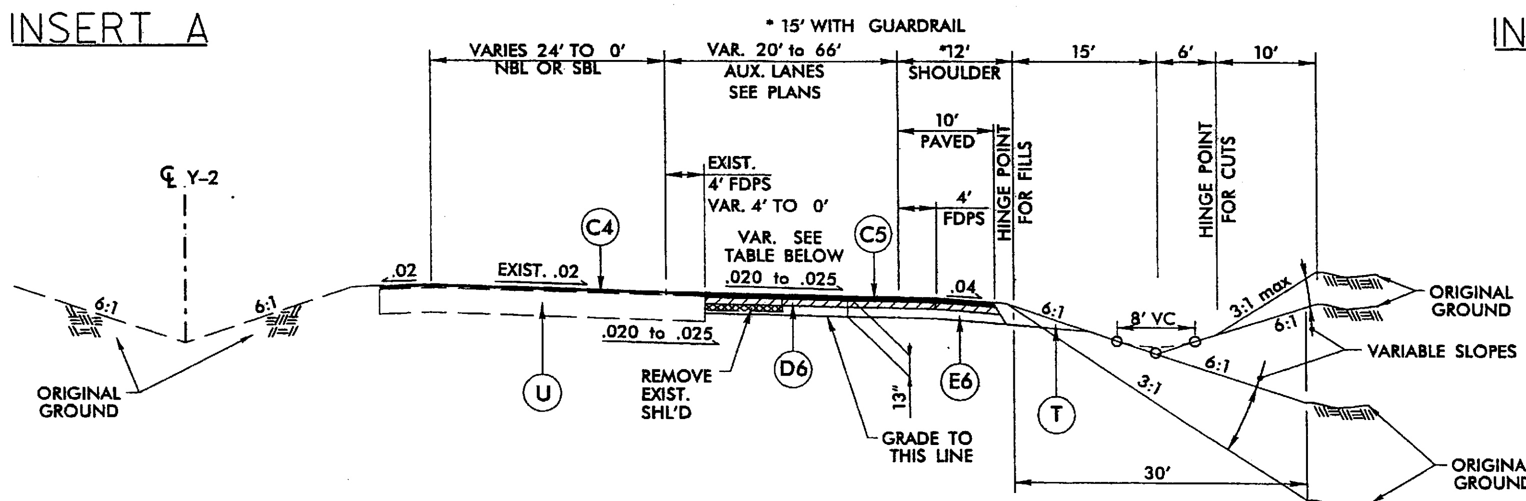
INSERT A



ROADWAY	SIDE	FROM STA.	TO STA.
L-LINE	RT.	45+10.00	47+03.00

ROCK EMBANKMENT FOR POND PROTECTION

INSERT B



ROADWAY	FROM STA.	TO STA.	CROSS SLOPE	REMARKS
Y-2 NBL	61+99.05	63+25.00	.020	AUX. LINE
NBL-RAMP	10+00.00	12+21.71	.020	
NBL-RAMP	12+21.71	12+46.78	VAR. .020 to .025	
NBL-RAMP	12+46.78	16+27.75	.025	
SBL-RAMP	10+00.00	12+49.67	.020	MIRROR IMAGE
SBL-RAMP	12+49.67	12+74.64	VAR. .020 to .025	MIRROR IMAGE
SBL-RAMP	12+74.64	17+13.55	.025	MIRROR IMAGE

TYPICAL SECTION NO 2

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PROJECT REFERENCE NO.	SHEET NO.
U-4007B	2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

C1	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C2	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5B, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C3	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE. TYPE S9.5B, AT AN AVERAGE RATE OF 112 LBS. PER. SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2.0"
C4	PROP. APPROX. 1.5" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD.
C5	PROP. APPROX. 3.0" ASPHALT CONCRETE SURFACE COURSE TYPE S9.5C, AT AN AVERAGE RATE OF 168 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
C6	PROP. VAR. DEPTH ASPHALT CONCRETE SURFACE COURSE. TYPE S9.5C, AT AN AVERAGE RATE OF 112 LBS. PER. SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 1.5" OR GREATER THAN 2.0"
D1	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE. TYPE I19.0B, AT AN AVERAGE RATE OF 342 LBS. PER. SQ. YD.
D2	PROP. APPROX. 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE. TYPE I19.0B, AT AN AVERAGE RATE OF 456 LBS. PER. SQ. YD.
D3	PROP. VAR DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE. TYPE I19.0B, AT AN AVERAGE RATE OF 114 LBS. PER. SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4.0"
D4	PROP. APPROX. 2.5" ASPHALT CONCRETE INTERMEDIATE COURSE. TYPE I19.0C, AT AN AVERAGE RATE OF 285 LBS. PER. SQ. YD.
D5	PROP. APPROX. 3.0" ASPHALT CONCRETE INTERMEDIATE COURSE. TYPE I19.0C, AT AN AVERAGE RATE OF 342 LBS. PER. SQ. YD.
D6	PROP. APPROX 4.0" ASPHALT CONCRETE INTERMEDIATE COURSE. TYPE I19.0C, AT AN AVERAGE RATE OF 456 LBS. PER. SQ. YD.
D7	PROP. VAR DEPTH ASPHALT CONCRETE INTERMEDIATE COURSE. TYPE I19.0C, AT AN AVERAGE RATE OF 114 LBS. PER. SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 2.5" OR GREATER THAN 4.0"
E1	PROP. APPROX. 4.0" ASPHALT CONCRETE BASE COURSE TYPE B25.0B, AT AN AVERAGE RATE OF 456 LBS. PER SQ. YD.
E2	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE. TYPE B25.0B, AT AN AVERAGE RATE OF 114 LBS. PER. SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5.5".
E3	PROP. APPROX. 3.0" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD.
E4	PROP. APPROX. 3.5" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 399 LBS. PER SQ. YD.
E5	PROP. APPROX. 4.5" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 513 LBS. PER SQ. YD.
E6	PROP. APPROX. 6.0" ASPHALT CONCRETE BASE COURSE TYPE B25.0C, AT AN AVERAGE RATE OF 342 LBS. PER SQ. YD. IN EACH OF TWO LAYERS.
E7	PROP. VAR. DEPTH ASPHALT CONCRETE BASE COURSE. TYPE B25.0C, AT AN AVERAGE RATE OF 114 LBS. PER. SQ. YD. PER 1" DEPTH. TO BE PLACED IN LAYERS NOT LESS THAN 3" OR GREATER THAN 5.5"
J1	PROP. 6" AGGREGATE BASE COURSE
J2	PROP. 8" AGGREGATE BASE COURSE
J3	PROP. VAR DEPTH AGGREGATE BASE COURSE
P	PRIME COAT AT THE RATE OF .35 GAL. PER SQ. YARD.
R1	1'-6" CONCRETE CURB AND GUTTER
R2	2'-6" CONCRETE CURB AND GUTTER
R3	3'-0" CONCRETE SHOULDER BERM GUTTER
R4	SINGLE FACE CONCRETE BARRIER WALL
R5	CONCRETE COVER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	RETAINING WALL
V2	CONCRETE COPING
W	WEDGING

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

TYPICAL SECTIONS
& PAVEMENT SCHEDULE

2/18/2010
O:\Roadway\Proj\u-4007b_rdy_typ.dgn
rowilliams

ROADWAY DESIGN ENGINEER | PAVEMENT DESIGN ENGINEER

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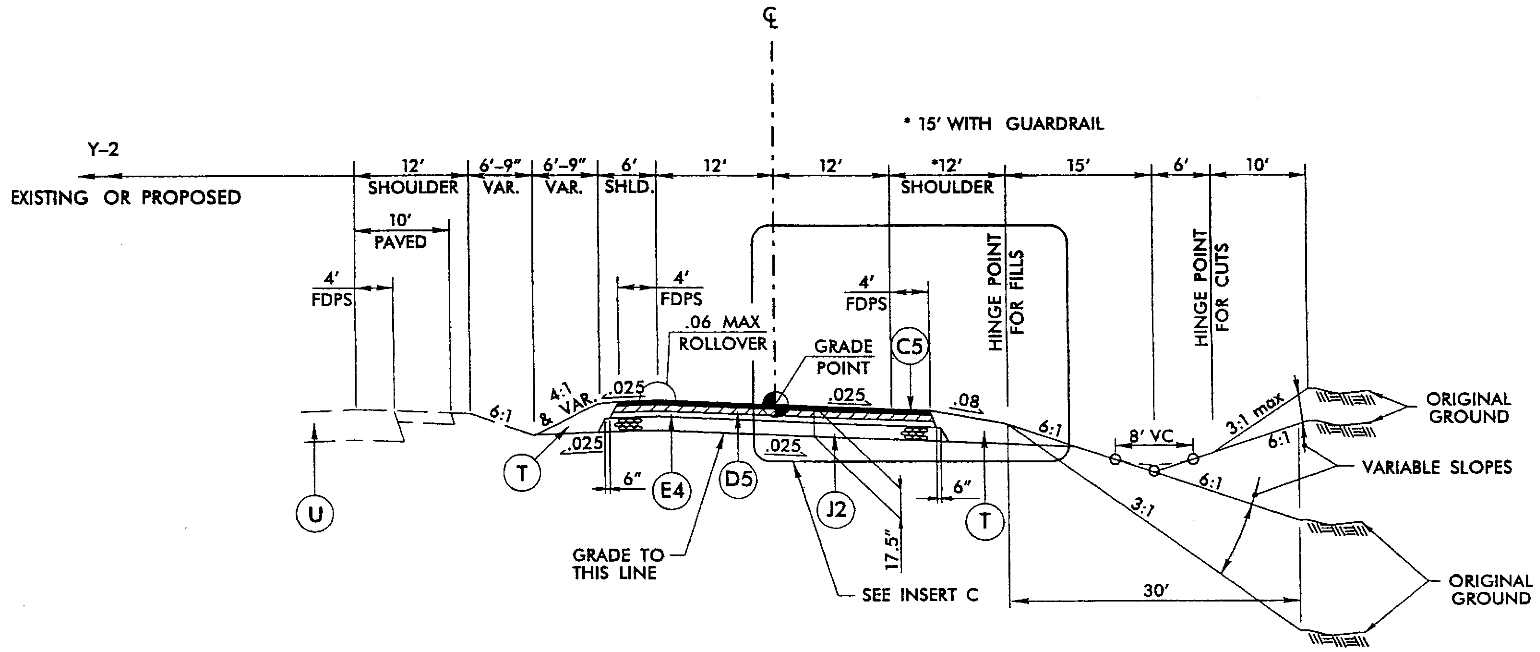
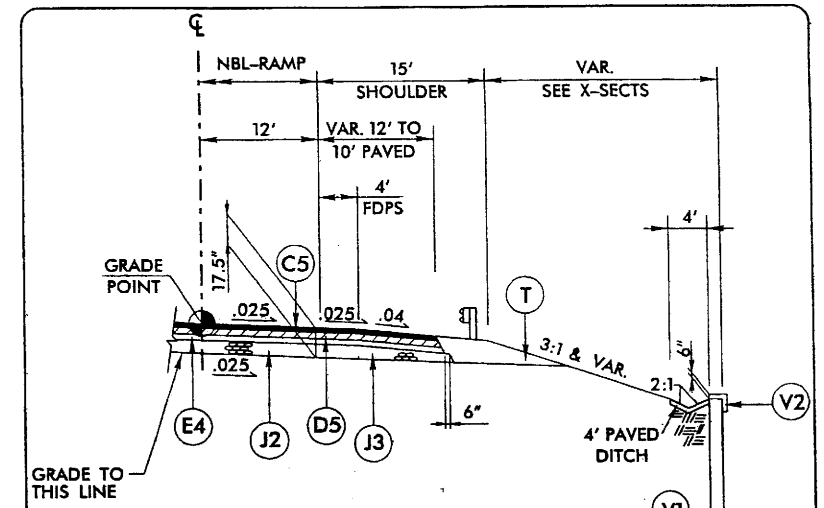
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



ROADWAY	FROM STA.	TO STA.	REMARKS
NBL-RAMP	16+27.75	21+47.17 BEGIN BR.	SEE INSERT C
NBL-RAMP	23+11.42 END BR.	27+45.00	
SBL-RAMP	17+13.55	21+38.83 BEGIN BR.	MIRROR IMAGE
SBL-RAMP	23+29.58 END BR.	32+24.00	MIRROR IMAGE

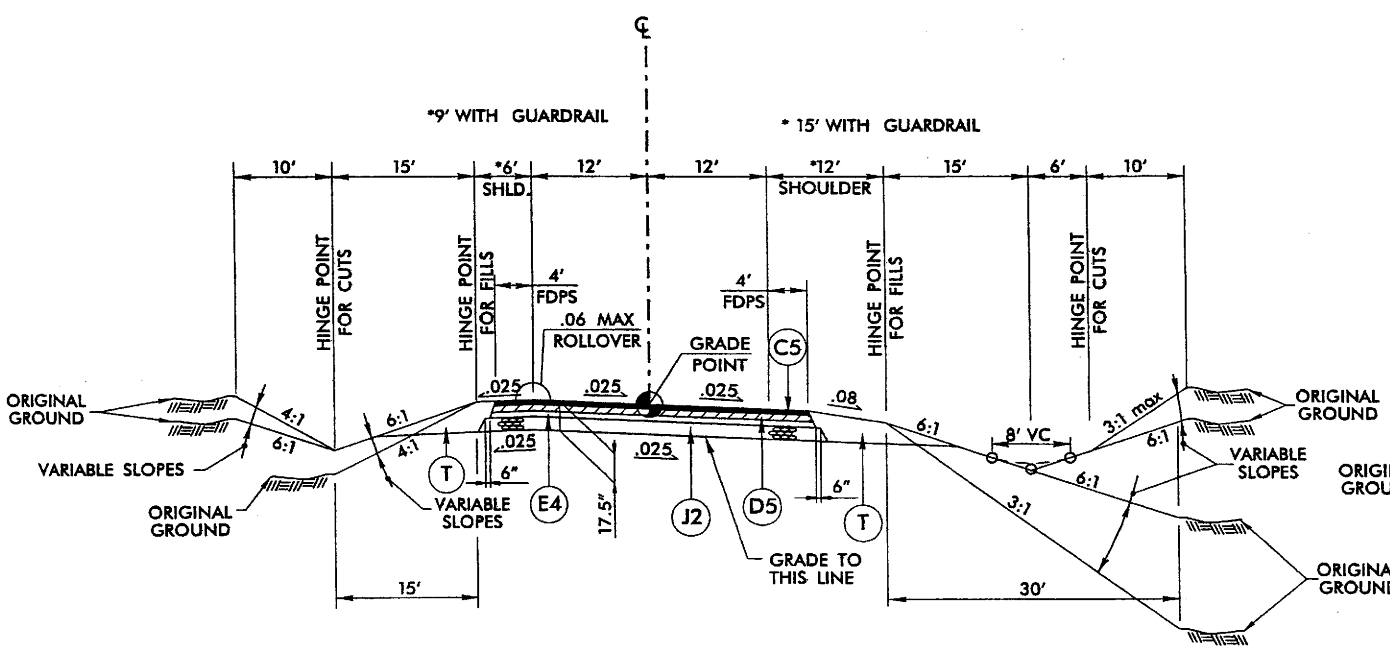
TYPICAL SECTION NO 3



ROADWAY	SIDE	FROM STA.	TO STA.
NBL-RAMP	RIGHT	19+75.00	22+00.00

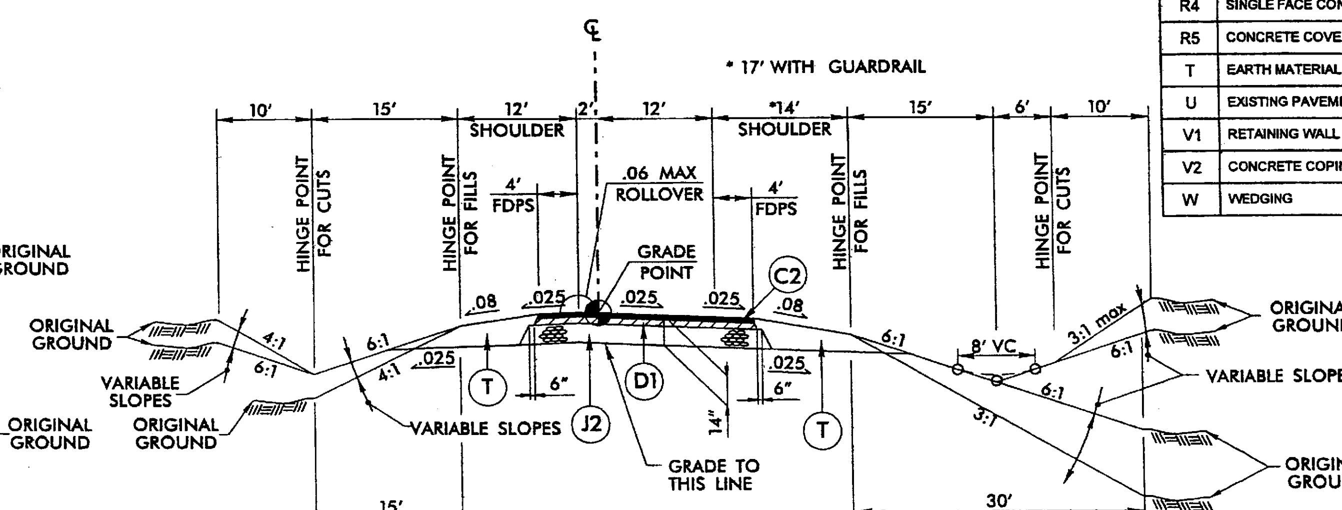
INSERT C

	PAVEMENT SCHEDULE
C1	1.5" TYPE S9.5B
C2	3.0" TYPE S9.5B
C3	VARIABLE DEPTH TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3.0" TYPE S9.5C
C6	VARIABLE DEPTH TYPE S9.5C
D1	3.0" TYPE I19.0B
D2	4.0" TYPE I19.0B
D3	VARIABLE DEPTH TYPE I19.0B
D4	2.5" TYPE I19.0C
D5	3.0" TYPE I19.0C
D6	4.0" TYPE I19.0C
D7	VARIABLE DEPTH TYPE I19.0C
E1	4.0" TYPE B25.0B
E2	VARIABLE DEPTH TYPE B25.0B
E3	3.0" TYPE B25.0C
E4	3.5" TYPE B25.0C
E5	4.5" TYPE B25.0B
E6	6.0" TYPE B25.0C
E7	VARIABLE DEPTH TYPE B25.0C
J1	6" ABC
J2	8" ABC
J3	VAR DEPTH ABC
P	PRIME COAT
R1	1'-6" CONCRETE CURB AND GUTTER
R2	2'-6" CONCRETE CURB AND GUTTER
R3	3'-0" CONCRETE SHOULDER BERM GUTTER
R4	SINGLE FACE CONCRETE BARRIER WALL
R5	CONCRETE COVER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	RETAINING WALL
V2	CONCRETE COPING
W	WEDGING



ROADWAY	FROM STA.	TO STA.	REMARKS
NBL-RAMP	27+45.00	34+50.24 BEGIN BR.	
NBL-RAMP	37+69.24 END BR.	40+61.17 BEGIN BR.	
NBL-RAMP	42+83.58 END BR.	50+54.94	
SBL-RAMP	32+24.00	40+77.05 BEGIN BR.	MIRROR IMAGE
SBL-RAMP	42+95.00 END BR.	50+81.29	MIRROR IMAGE

TYPICAL SECTION NO 4



ROADWAY	FROM STA.	TO STA.	REMARKS
RAMP-1A	14+37.14	26+31 ±	
RAMP-1B	15+09.29	24+36.38	MIRROR IMAGE

TYPICAL SECTION NO 5

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
2. FOR COMPLETE PAVEMENT SCHEDULE, SEE SHEET NO. 2.

TYPICAL SECTIONS RAMPS

2/18/2010
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PROJECT REFERENCE NO.	SHEET NO.
U-4007B	2B
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

Stantec
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27606
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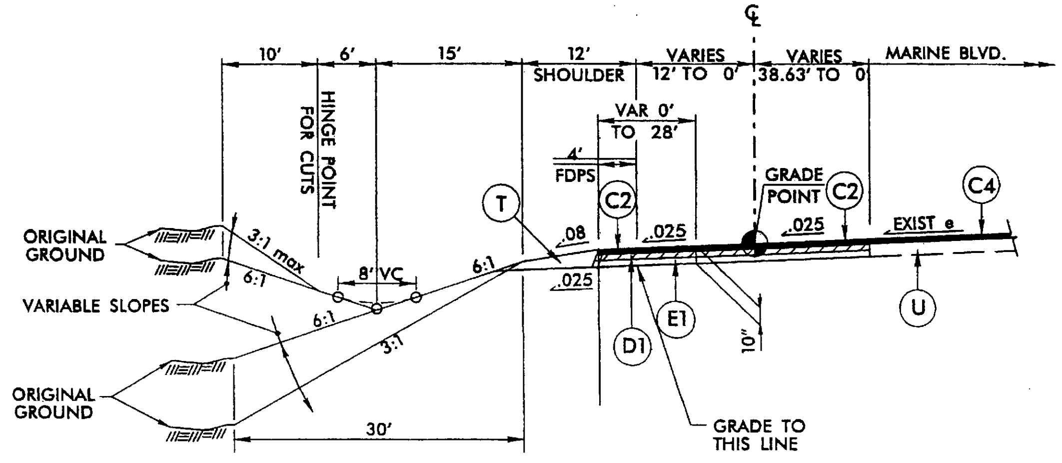
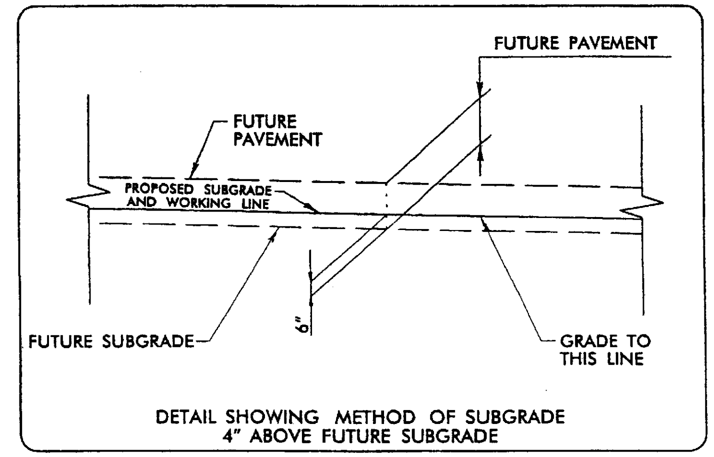
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

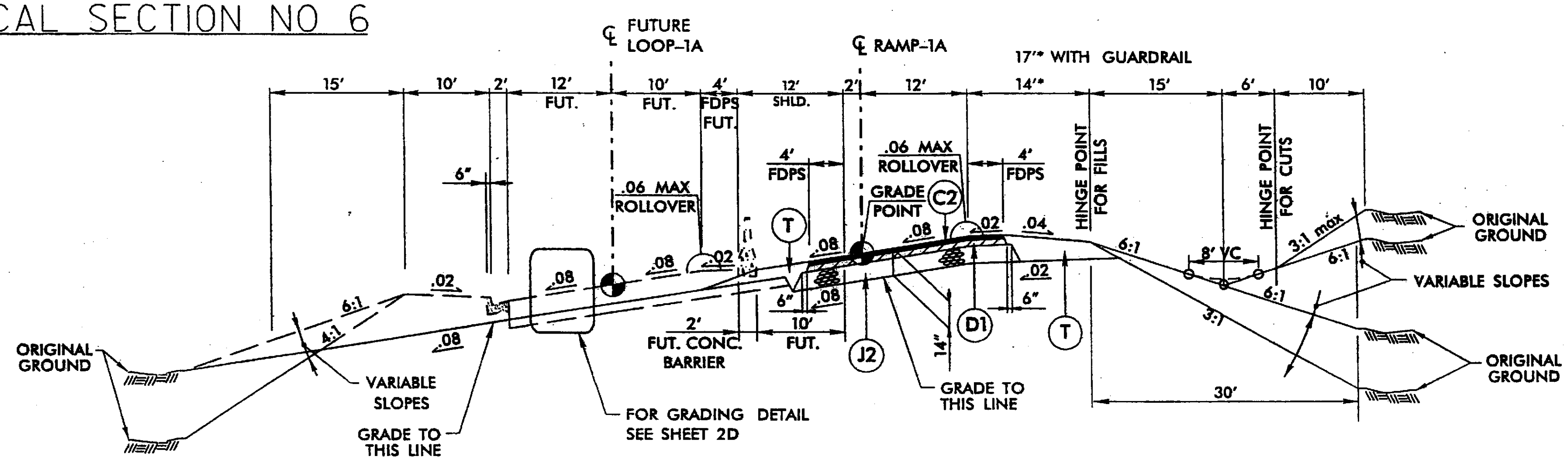


ROADWAY	FROM STA.	TO STA.	REMARKS
RAMP 1B	24+36.38	26+92.31	

TYPICAL SECTION NO 6

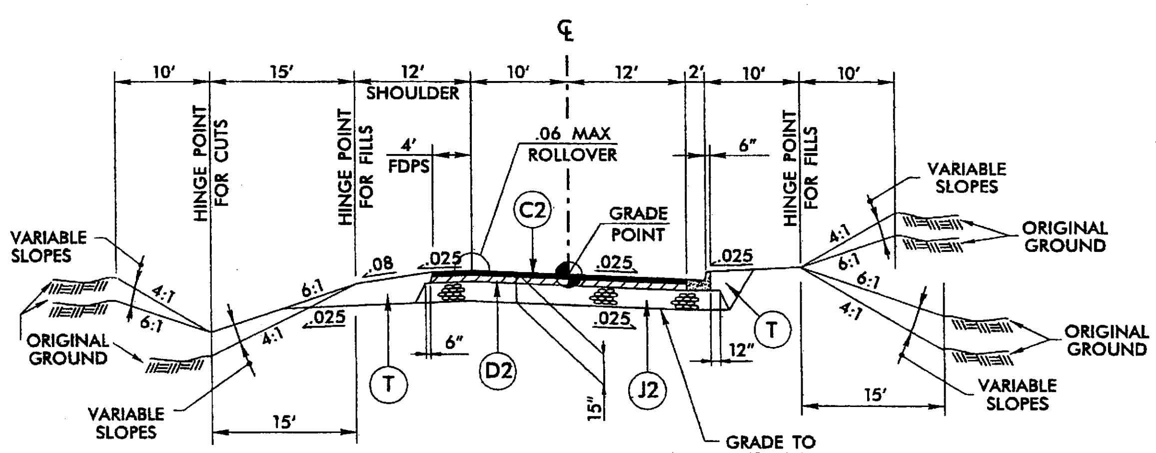


GRADING ONLY DETAIL



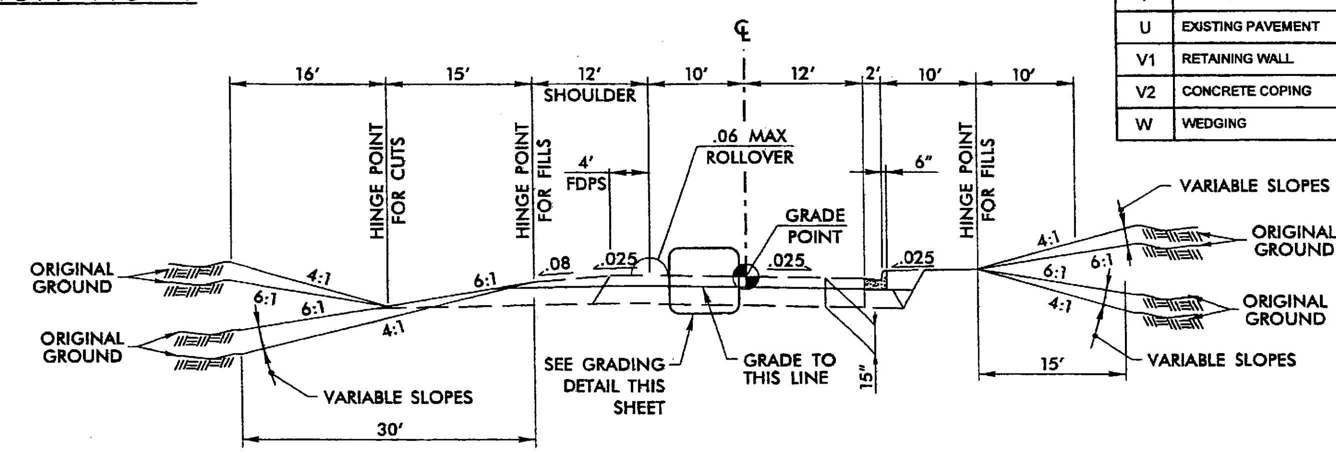
ROADWAY	FROM STA.	TO STA.
RAMP-1A	21+38.50	24+77.00
FUTURE LOOP-1A	16+38.80	19+44.50

TYPICAL SECTION NO 7



ROADWAY	FROM STA.	TO STA.
LOOP-1D	12+66.26	21+38.46

TYPICAL SECTION NO 8



ROADWAY	FROM STA.	TO STA.
LOOP-1A	12+29.75	21+62.50

TYPICAL SECTION NO 9

PAVEMENT SCHEDULE

C1	1.5" TYPE S9.5B
C2	3.0" TYPE S9.5B
C3	VARIABLE DEPTH TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3.0" TYPE S9.5C
C6	VARIABLE DEPTH TYPE S9.5C
D1	3.0" TYPE I19.0B
D2	4.0" TYPE I19.0B
D3	VARIABLE DEPTH TYPE I19.0B
D4	2.5" TYPE I19.0C
D5	3.0" TYPE I19.0C
D6	4.0" TYPE I19.0C
D7	VARIABLE DEPTH TYPE I19.0C
E1	4.0" TYPE B25.0B
E2	VARIABLE DEPTH TYPE B25.0B
E3	3.0" TYPE B25.0C
E4	3.5" TYPE B25.0C
E5	4.5" TYPE B25.0B
E6	6.0" TYPE B25.0C
E7	VARIABLE DEPTH TYPE B25.0C
J1	6" ABC
J2	8" ABC
J3	VAR DEPTH ABC
P	PRIME COAT
R1	1'-6" CONCRETE CURB AND GUTTER
R2	2'-6" CONCRETE CURB AND GUTTER
R3	3'-0" CONCRETE SHOULDER BERM GUTTER
R4	SINGLE FACE CONCRETE BARRIER WALL
R5	CONCRETE COVER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	RETAINING WALL
V2	CONCRETE COPING
W	WEDGING

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
2. FOR COMPLETE PAVEMENT SCHEDULE, SEE SHEET NO. 2.

TYPICAL SECTIONS
RAMPS CON'T

6/2/99
2/18/2010
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U-4007B | 2C

ROADWAY DESIGN ENGINEER | PAVEMENT DESIGN ENGINEER

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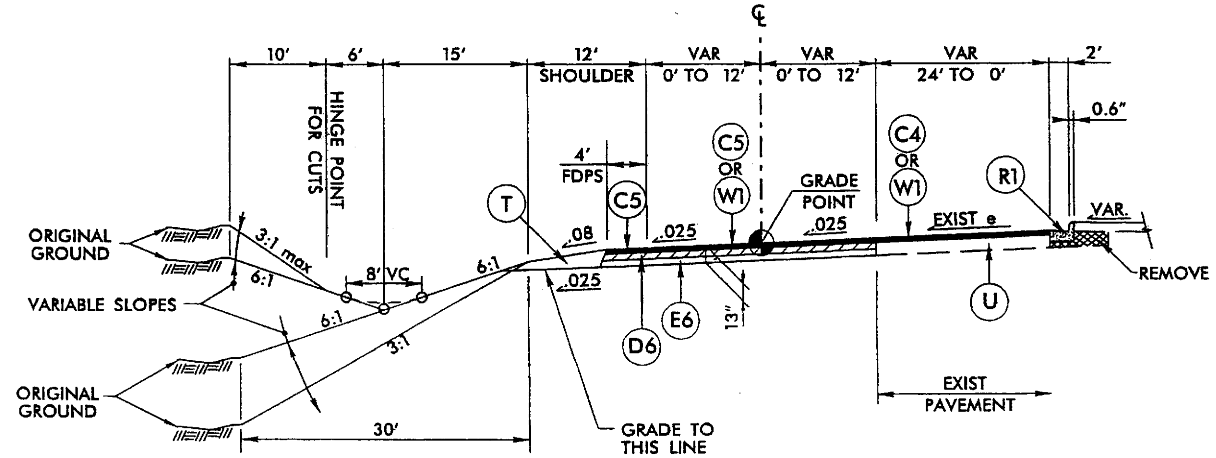
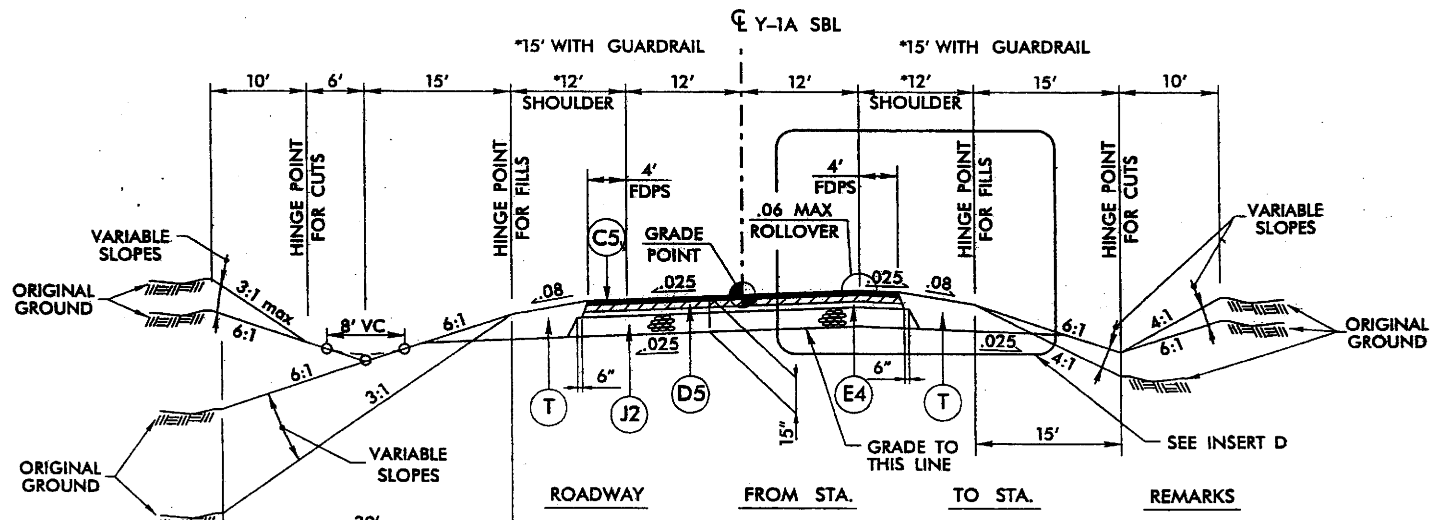
Raleigh, NC 27606

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



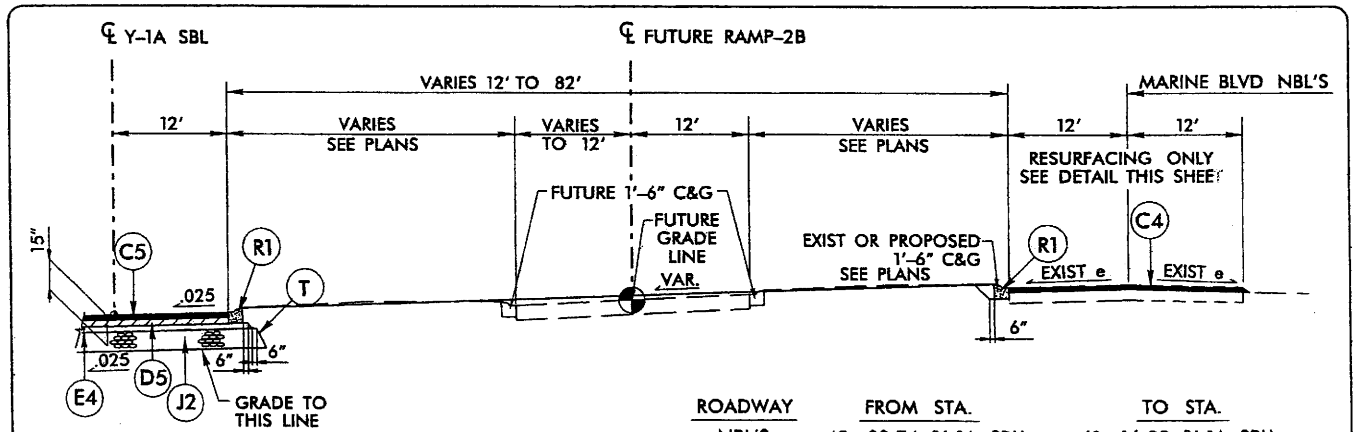
ROADWAY	FROM STA.	TO STA.	REMARKS
Y-1A SBL	49+33.74	50+07.00	RESURFACING ONLY
Y-1A SBL	50+07.00	54+25.00	

TYPICAL SECTION NO 10



ROADWAY	FROM STA.	TO STA.	REMARKS
Y-1A SBL	54+25.00	62+16.00	SEE INSERT D
Y-1A SBL	62+16.00	73+41.10	
Y-1A SBL	73+41.10	77+30.50	SEE TYP. SECTION NO. 12

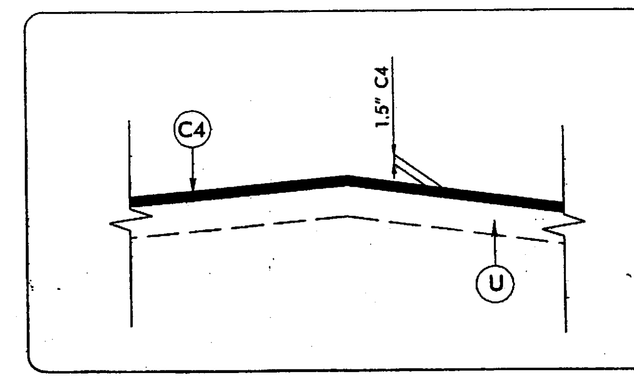
TYPICAL SECTION NO II



ROADWAY	FROM STA.	TO STA.
Y-1A SBL	54+25.00	62+16.00

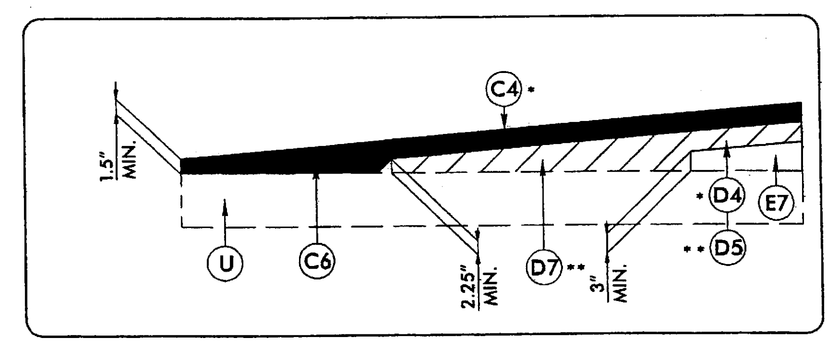
ROADWAY	FROM STA.	TO STA.
NBL'S	49+33.74 (Y-1A SBL)	61+16.00 (Y-1A SBL) =10+00.00 (Y-2 CONN)

INSERT D



RESURFACING ONLY DETAIL

ROADWAY	FROM STA.	TO STA.
Y-2 (SBL)	61+99.05	73+63.00
Y-2 (SBL)	75+83.00	81+10.00
Y-2 (NBL)	61+99.05	74+22.00
Y-2 (NBL)	76+29.00	81+10.00
Y-2 (NBL)	105+00.00	111+30.27
Y-2 (SBL)	106+05.00	111+30.27
Y-1A SBL (NBL)	49+33.02	61+16.00



ROADWAY	FROM STA.	TO STA.	REMARKS
* Y-2	81+10.00	83+50.00	LT SIDE
* Y-2	81+10.00	87+00.00	RT SIDE
* Y-2 CONN	10+00.00	12+93.00	

WEDGING DETAIL NO I

PAVEMENT SCHEDULE

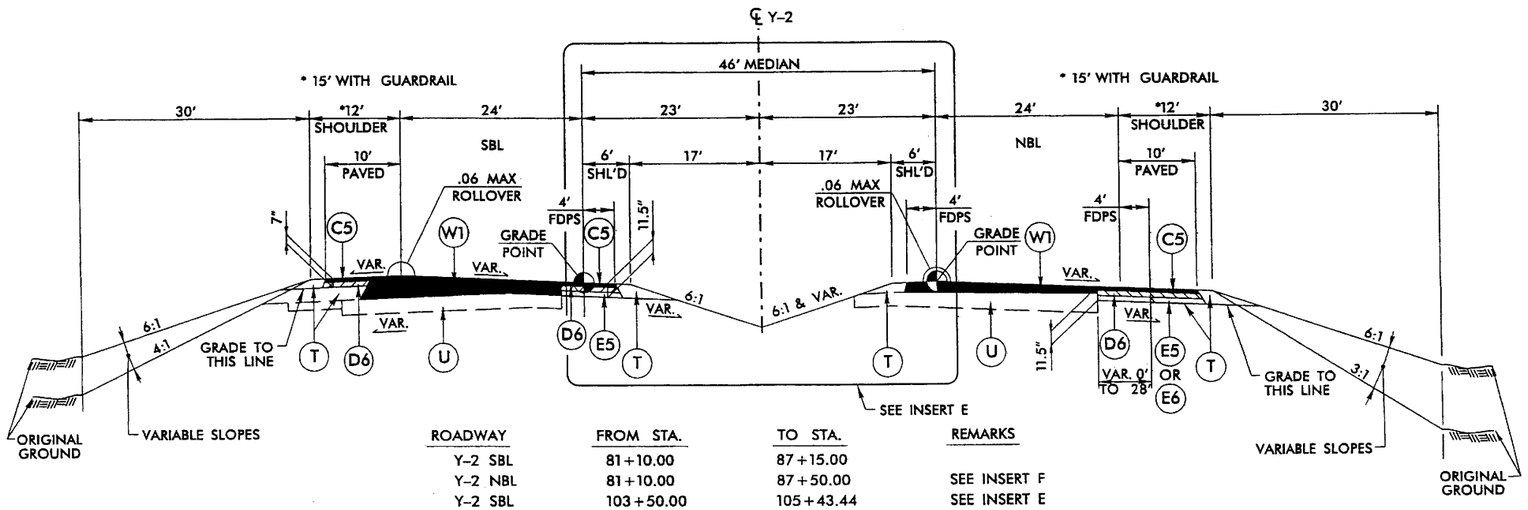
C1	1.5" TYPE S9.5B
C2	3.0" TYPE S9.5B
C3	VARIABLE DEPTH TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3.0" TYPE S9.5C
C6	VARIABLE DEPTH TYPE S9.5C
D1	3.0" TYPE I19.0B
D2	4.0" TYPE I19.0B
D3	VARIABLE DEPTH TYPE I19.0B
D4	2.5" TYPE I19.0C
D5	3.0" TYPE I19.0C
D6	4.0" TYPE I19.0C
D7	VARIABLE DEPTH TYPE I19.0C
E1	4.0" TYPE B25.0B
E2	VARIABLE DEPTH TYPE B25.0B
E3	3.0" TYPE B25.0C
E4	3.5" TYPE B25.0C
E5	4.5" TYPE B25.0B
E6	6.0" TYPE B25.0C
E7	VARIABLE DEPTH TYPE B25.0C
J1	6" ABC
J2	8" ABC
J3	VAR DEPTH ABC
P	PRIME COAT
R1	1'-6" CONCRETE CURB AND GUTTER
R2	2'-6" CONCRETE CURB AND GUTTER
R3	3'-0" CONCRETE SHOULDER BERM GUTTER
R4	SINGLE FACE CONCRETE BARRIER WALL
R5	CONCRETE COVER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	RETAINING WALL
V2	CONCRETE COPING
W	WEDGING

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
2. FOR COMPLETE PAVEMENT SCHEDULE, SEE SHEET NO. 2.

TYPICAL SECTIONS Y-LINES

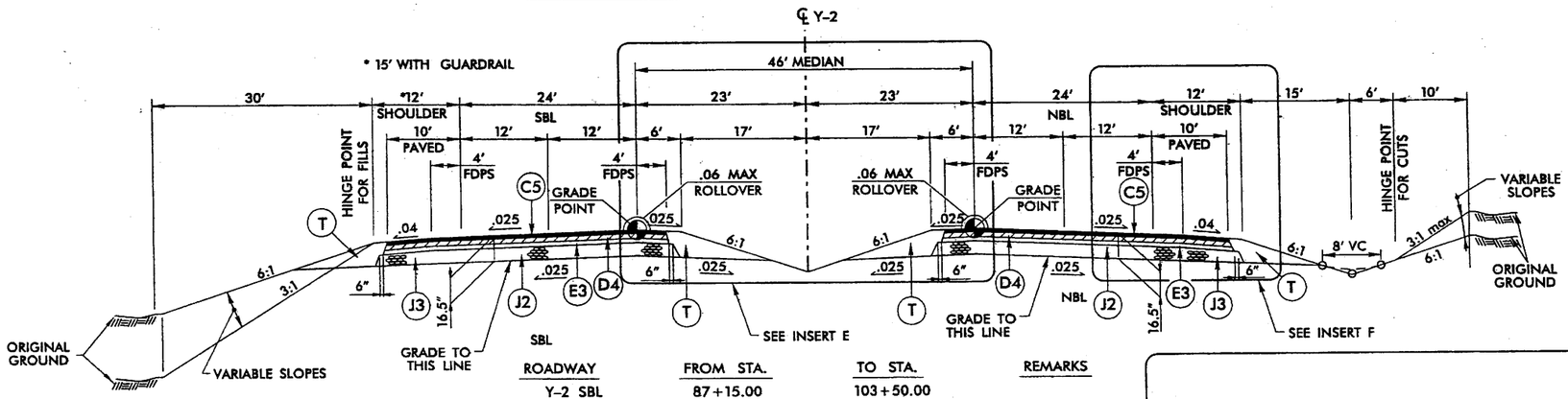
2/18/2010
U:\Roadway\Proj\u-4007b_rdy_typ.dgn

6/2/9



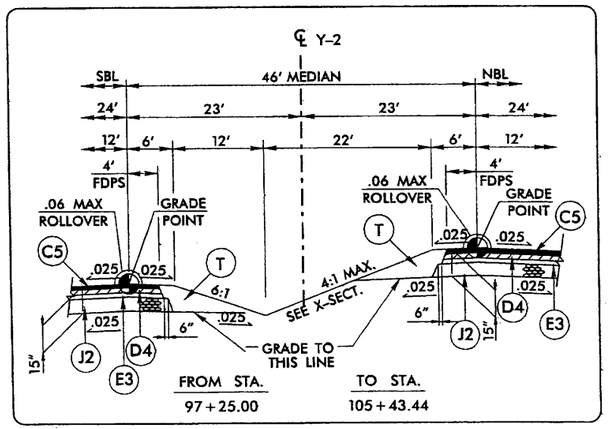
ROADWAY	FROM STA.	TO STA.	REMARKS
Y-2 SBL	81+10.00	87+15.00	
Y-2 NBL	81+10.00	87+50.00	SEE INSERT F
Y-2 SBL	103+50.00	105+43.44	SEE INSERT E
Y-2 NBL	99+70.00	104+52.53	SEE INSERT E
Y-2 SBL	105+43.44	111+30.27	RESURFACING ONLY
Y-2 NBL	104+52.53	111+30.27	RESURFACING ONLY
Y-1A SBL (LT. SIDE)	73+41.10	77+30.50	USE E-6 BASE COURSE

TYPICAL SECTION NO 12



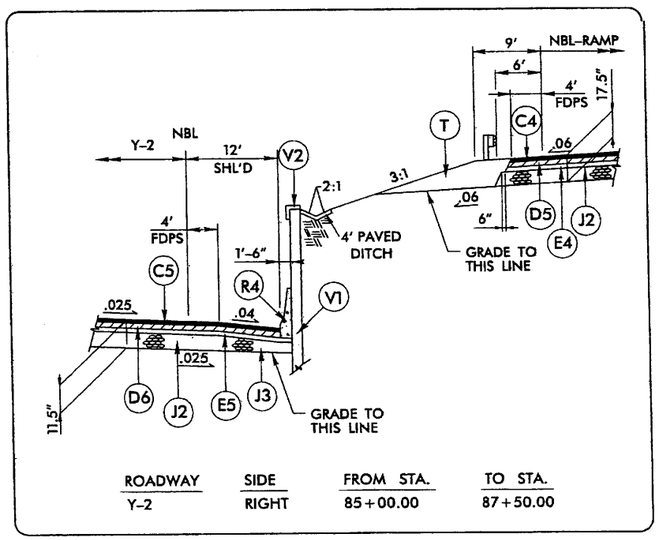
ROADWAY	FROM STA.	TO STA.	REMARKS
Y-2 SBL	87+15.00	103+50.00	
Y-2 NBL	87+50.00	99+70.00	SEE INSERT E

TYPICAL SECTION NO 13



FROM STA.	TO STA.
97+25.00	105+43.44

INSERT E



ROADWAY	SIDE	FROM STA.	TO STA.
Y-2	RIGHT	85+00.00	87+50.00

INSERT F

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
2. FOR COMPLETE PAVEMENT SCHEDULE, SEE SHEET NO. 2.
3. FOR WEDGING DETAIL NO. 2, SEE SHEET NO. 2C.

TYPICAL SECTIONS Y-LINES CON'T

Stantec
Stantec Consulting Services Inc.
Suite 300, 801 Jones Franklin Road
Raleigh, NC
27606
Tel. 919.85 1.6866
Fax. 919.85 1.7024
www.stantec.com

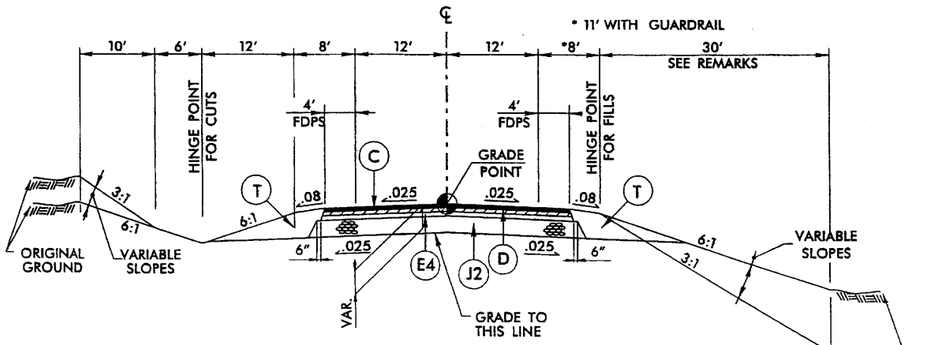
PROJECT REFERENCE NO.	SHEET NO.
U-4007B	2D
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PAVEMENT SCHEDULE

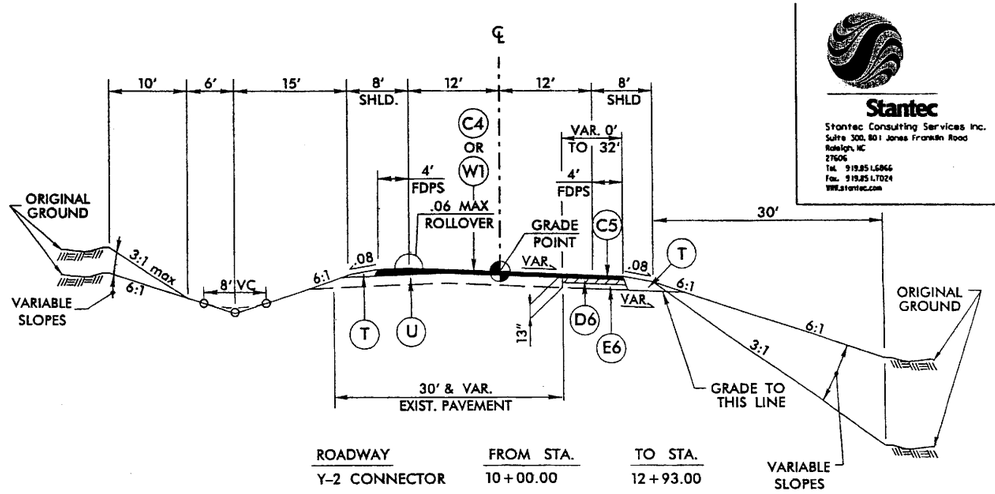
C1	1.5" TYPE S9.5B
C2	3.0" TYPE S9.5B
C3	VARIABLE DEPTH TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3.0" TYPE S9.5C
C6	VARIABLE DEPTH TYPE S9.5C
D1	3.0" TYPE I19.0B
D2	4.0" TYPE I19.0B
D3	VARIABLE DEPTH TYPE I19.0B
D4	2.5" TYPE I19.0C
D5	3.0" TYPE I19.0C
D6	4.0" TYPE I19.0C
D7	VARIABLE DEPTH TYPE I19.0C
E1	4.0" TYPE B25.0B
E2	VARIABLE DEPTH TYPE B25.0B
E3	3.0" TYPE B25.0C
E4	3.5" TYPE B25.0C
E5	4.5" TYPE B25.0B
E6	6.0" TYPE B25.0C
E7	VARIABLE DEPTH TYPE B25.0C
J1	6" ABC
J2	8" ABC
J3	VAR DEPTH ABC
P	PRIME COAT
R1	1'-6" CONCRETE CURB AND GUTTER
R2	2'-6" CONCRETE CURB AND GUTTER
R3	3'-0" CONCRETE SHOULDER BERM GUTTER
R4	SINGLE FACE CONCRETE BARRIER WALL
R5	CONCRETE COVER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	RETAINING WALL
V2	CONCRETE COPING
W	WEDGING

2/18/2010
G:\NCDOT\Roadway\Projects\u-4007b_rdy_typ.dgn
mattthomas



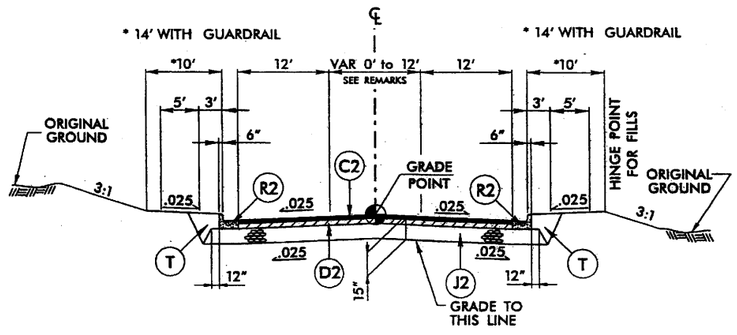
PAVEMENT SCHEDULE								
ROADWAY	FROM STA.	TO STA.	C	D	E	J	DEPTH	REMARKS
Y-2 CONNECTOR	12+93.00	13+80.00	C5	D5	E4	J2	17.5"	
Y-4	10+85.50	25+12.00	C2	D2	–	J2	15"	HOLD 4:1 FILL SLOPES

TYPICAL SECTION NO 14



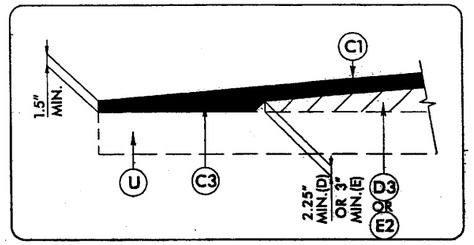
ROADWAY	FROM STA.	TO STA.
Y-2 CONNECTOR	10+00.00	12+93.00

TYPICAL SECTION NO 15

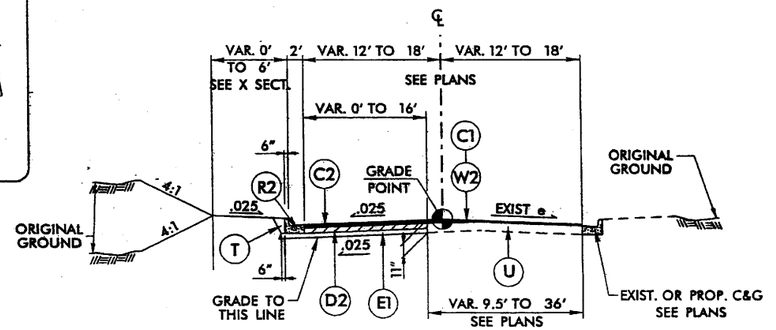


ROADWAY	FROM STA.	TO STA.	REMARKS
Y-4	25+40.00	26+42.71	0'
Y-5	10+85.50	22+41.44	12'

TYPICAL SECTION NO 16

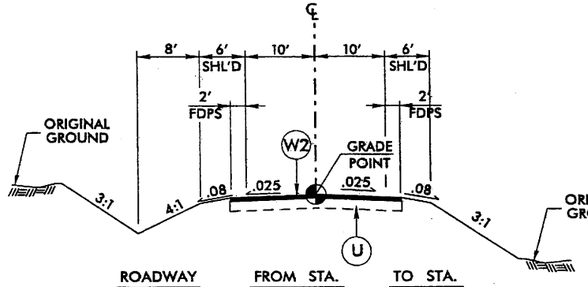


WEDGING DETAIL NO 2



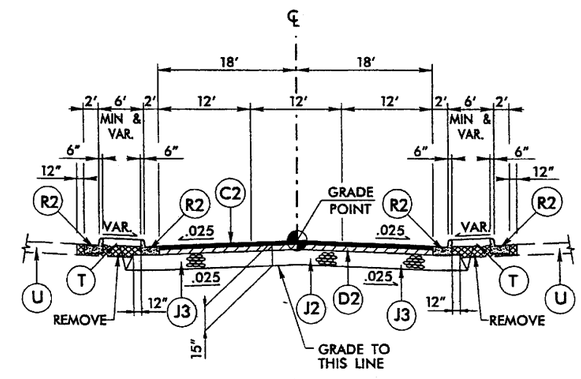
ROADWAY	FROM STA.	TO STA.	SIDE	REMARKS
Y-4	26+83.23	29+70.00	LEFT	
Y-4	26+42.71	27+40.90	RIGHT	MIRROR IMAGE
Y-5	17+70.00	21+14.38	LEFT	
Y-5	17+70.00	20+77.04	RIGHT	MIRROR IMAGE
Y-5	21+14.38	22+41.44	LEFT & RIGHT	

TYPICAL SECTION NO 17



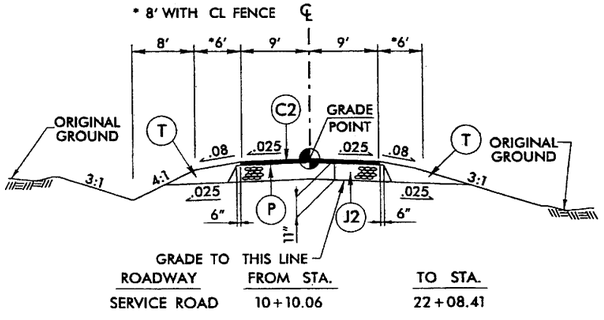
ROADWAY	FROM STA.	TO STA.
Y-4A	12+25.00	16+43.50

TYPICAL SECTION NO 19



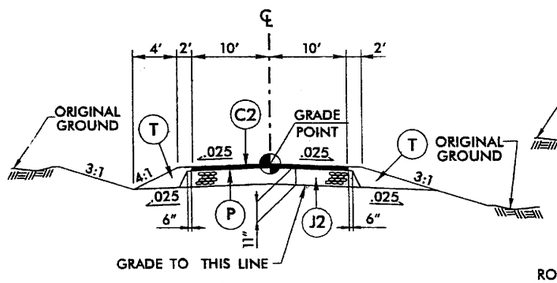
ROADWAY	FROM STA.	TO STA.	SIDE
Y-5	12+74.5 ±	17+70.00	LEFT
Y-5	13+20.0 ±	17+70.00	RIGHT

TYPICAL SECTION NO 18



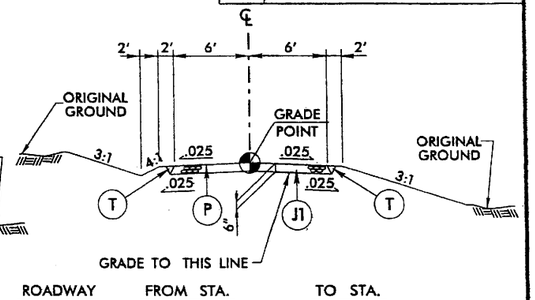
ROADWAY	FROM STA.	TO STA.
SERVICE ROAD	10+10.06	22+08.41

TYPICAL SECTION NO 22



ROADWAY	FROM STA.	TO STA.
PVT DR. NO 1	10+86.84	12+27.20

TYPICAL SECTION NO 20



ROADWAY	FROM STA.	TO STA.
PVT DR. NO 2	10+19.55	12+55.00

TYPICAL SECTION NO 21

NOTES:
1. PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
2. FOR COMPLETE PAVEMENT SCHEDULE, SEE SHEET NO. 2.
3. FOR WEDGING DETAIL NO 1, SEE SHEET NO. 2C.

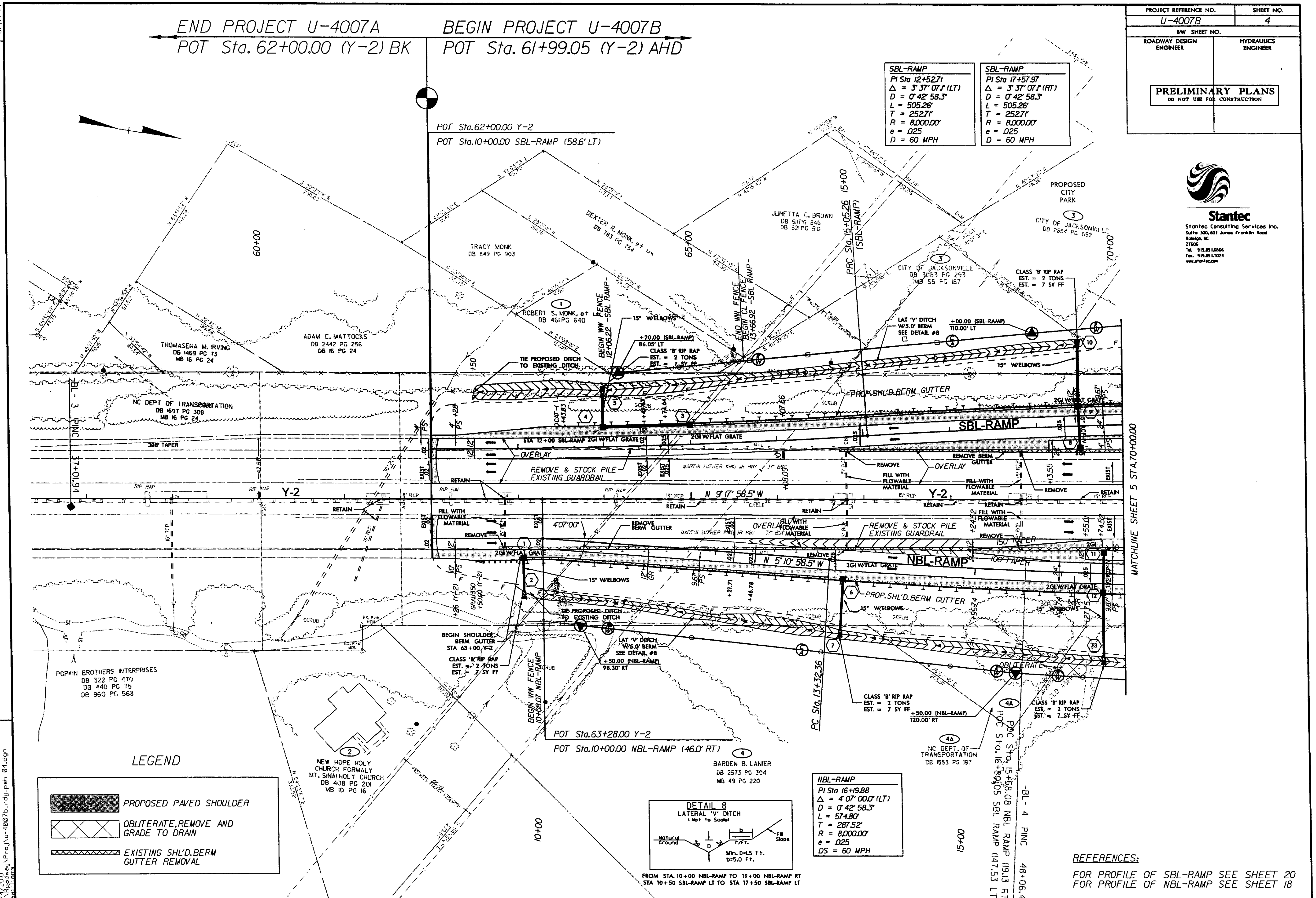
Stantec
Stantec Consulting Services Inc.
Suite 300, 801 Jones Franklin Road
Raleigh, NC
27606
Tel. 919.851.6866
Fax. 919.851.7024
www.stantec.com

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	2E
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER

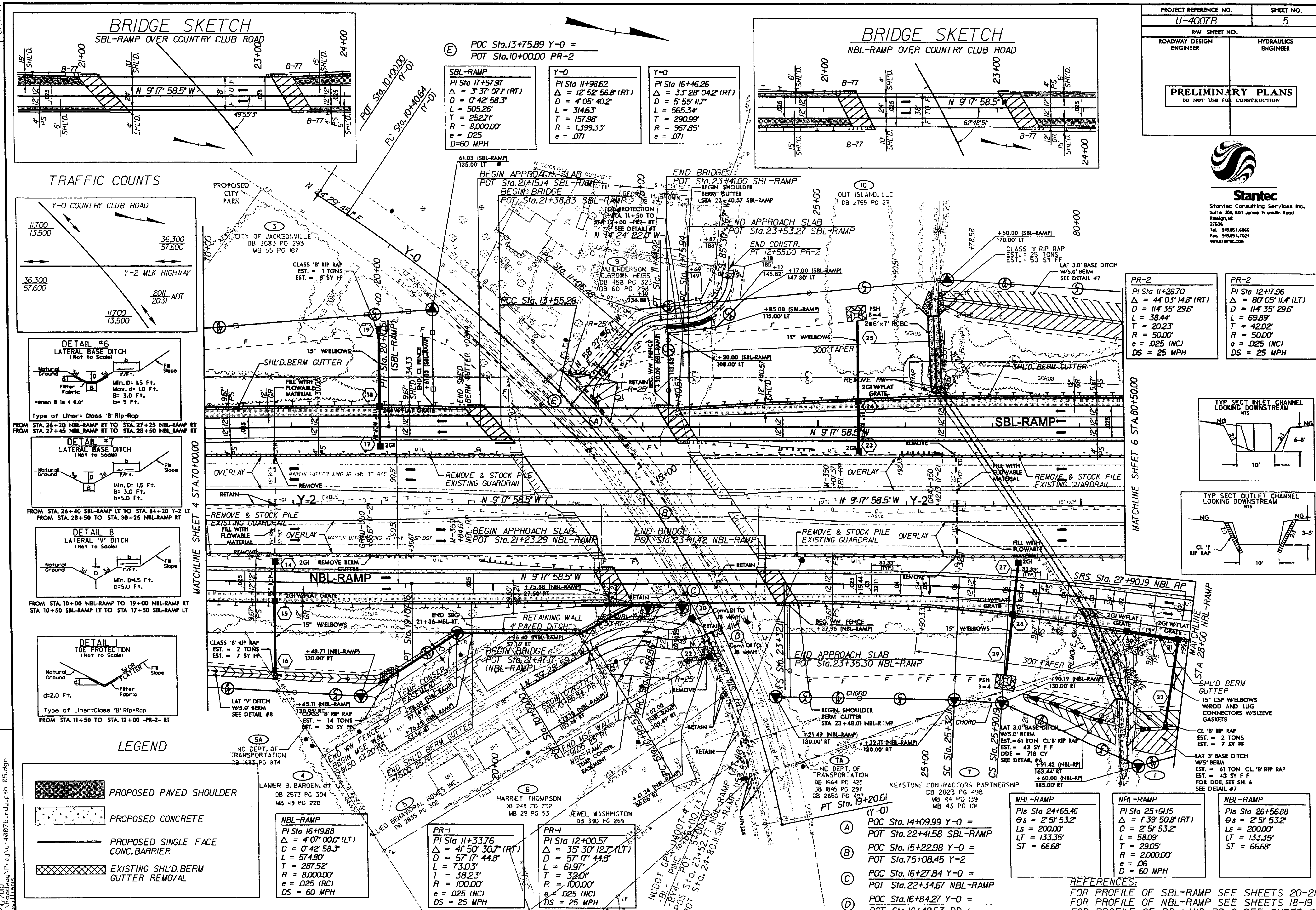
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

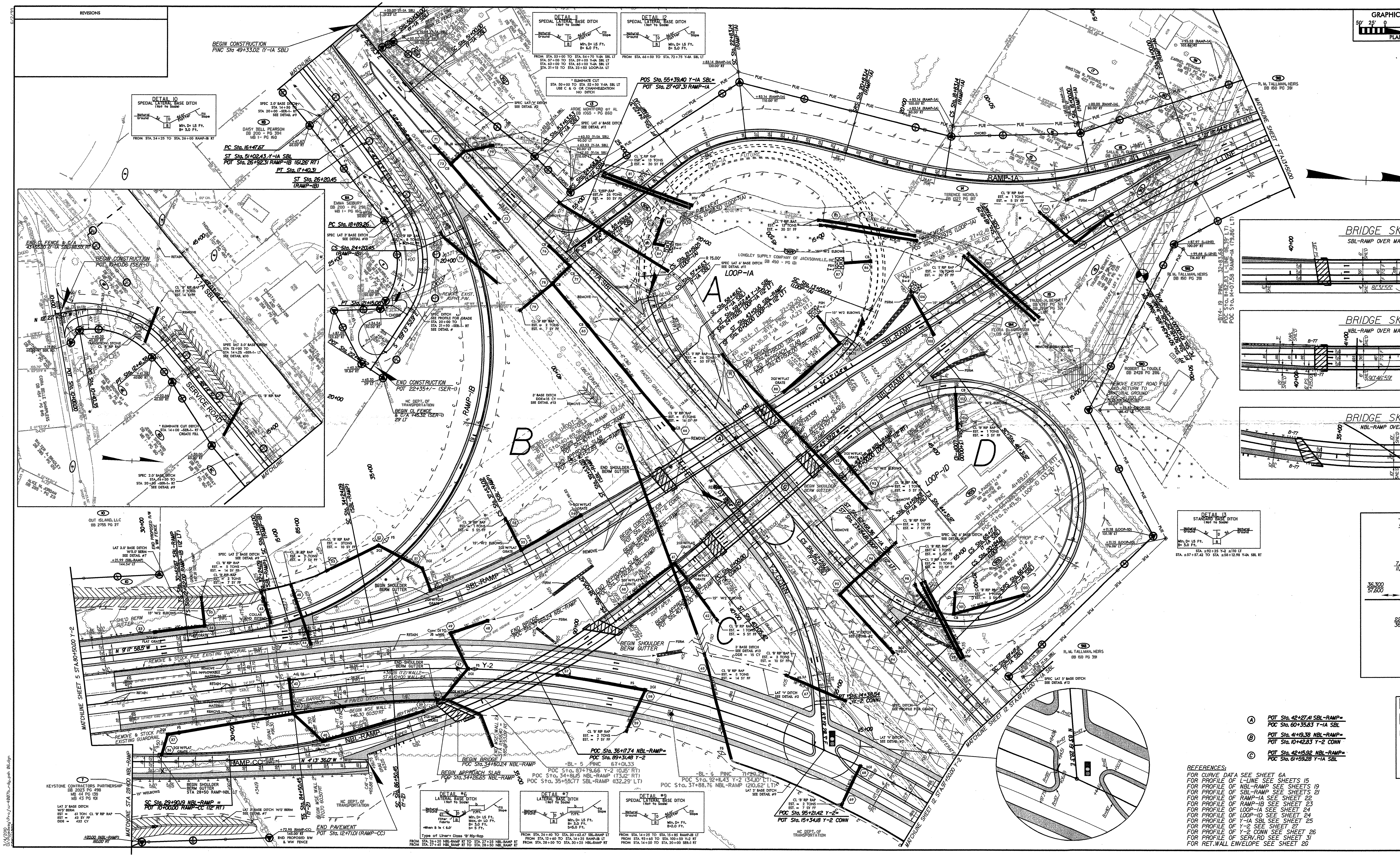
PAVEMENT SCHEDULE	
C1	1.5" TYPE S9.5B
C2	3.0" TYPE S9.5B
C3	VARIABLE DEPTH TYPE S9.5B
C4	1.5" TYPE S9.5C
C5	3.0" TYPE S9.5C
C6	VARIABLE DEPTH TYPE S9.5C
D1	3.0" TYPE I19.0B
D2	4.0" TYPE I19.0B
D3	VARIABLE DEPTH TYPE I19.0B
D4	2.5" TYPE I19.0C
D5	3.0" TYPE I19.0C
D6	4.0" TYPE I19.0C
D7	VARIABLE DEPTH TYPE I19.0C
E1	4.0" TYPE B25.0B
E2	VARIABLE DEPTH TYPE B25.0B
E3	3.0" TYPE B25.0C
E4	3.5" TYPE B25.0C
E5	4.5" TYPE B25.0B
E6	6.0" TYPE B25.0C
E7	VARIABLE DEPTH TYPE B25.0C
J1	6" ABC
J2	8" ABC
J3	VAR DEPTH ABC
P	PRIME COAT
R1	1'-6" CONCRETE CURB AND GUTTER
R2	2'-6" CONCRETE CURB AND GUTTER
R3	3'-0" CONCRETE SHOULDER BERM GUTTER
R4	SINGLE FACE CONCRETE BARRIER WALL
R5	CONCRETE COVER
T	EARTH MATERIAL
U	EXISTING PAVEMENT
V1	RETAINING WALL
V2	CONCRETE COPING
W	WEDGING

TYPICAL SECTIONS Y-LINES CON'T



PROJECT REFERENCE NO. U-4007B
SHEET NO. 4
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Stantec
Stantec Consulting Services Inc.
END PROJECT U-4007A
POT Sta. 62+00.00 (Y-2) BK
BEGIN PROJECT U-4007B
POT Sta. 61+99.05 (Y-2) AHD
POT Sta.62+00.00 Y-2
POT Sta.10+00.00 SBL-RAMP (58.6' LT)
POT Sta.63+28.00 Y-2
POT Sta.10+00.00 NBL-RAMP (46.0' RT)
SBL-RAMP
PI Sta 12+52.71
Δ = 3° 37' 07.1" (LT)
D = 0° 42' 58.3"
L = 505.26'
T = 252.71'
R = 8,000.00'
e = .025
D = 60 MPH
SBL-RAMP
PI Sta 17+57.97
Δ = 3° 37' 07.1" (RT)
D = 0° 42' 58.3"
L = 505.26'
T = 252.71'
R = 8,000.00'
e = .025
D = 60 MPH
NBL-RAMP
PI Sta 16+19.88
Δ = 4° 07' 00.0" (LT)
D = 0° 42' 58.3"
L = 574.80'
T = 287.52'
R = 8,000.00'
e = .025
DS = 60 MPH
TRACY MONK DB 849 PG 903
DEXTER R. MONK, et ux DB 783 PG 754
JUNETTA C. BROWN DB 511 PG 846 DB 521 PG 510
PROPOSED CITY PARK
CITY OF JACKSONVILLE DB 2854 PG 692
CITY OF JACKSONVILLE DB 3083 PG 293 MB 55 PG 187
ROBERT S. MONK, et ux DB 461 PG 640
ADAM C. MATTOCKS DB 2442 PG 256 DB 16 PG 24
THOMASENA M. IRVING DB 1469 PG 73 MB 16 PG 24
NC DEPT OF TRANSPORTATION DB 1697 PG 308 MB 16 PG 24
POPKIN BROTHERS INTERPRISES DB 322 PG 470 DB 440 PG 75 DB 960 PG 568
NEW HOPE HOLY CHURCH FORMALY MT. SINAI HOLY CHURCH DB 408 PG 201 MB 10 PG 16
BARDEN B. LANIER DB 2573 PG 304 MB 49 PG 220
NC DEPT. OF TRANSPORTATION DB 1553 PG 197
Y-2
N 9° 17' 58.5" W
N 5° 10' 58.5" W
SBL-RAMP
NBL-RAMP
PROP. SHL'D. BERM GUTTER
REMOVE & STOCK PILE EXISTING GUARDRAIL
OVERLAY
FILL WITH FLOWABLE MATERIAL
REMOVE BERM GUTTER
RETAIN
REMOVE
15" W/ELBOWS
2GI W/FLAT GRATE
TIE PROPOSED DITCH TO EXISTING DITCH
CLASS 'B' RIP RAP EST. = 2 TONS EST. = 7 SY FF
LAT 'V' DITCH W/5.0' BERM SEE DETAIL #8
BEGIN SHOULDER BERM GUTTER STA 63+00 Y-2
150' TAPER
100' TAPER
380' TAPER
BEGIN WW FENCE 12+06.22 -SBL RAMP-
END WW FENCE BEGIN CL FENCE 13+66.92 -SBL RAMP-
PRC Sta. 15+05.26 (SBL-RAMP)
PC Sta. 13+32.36
BEGIN WW FENCE 10+08.07 NBL-RAMP
PRC Sta. 15+58.08 NBL RAMP (119.13 RT)
POC Sta. 16+30.05 SBL RAMP (147.53 LT)
-BL-3 PINC 37+01.94
-BL-4 PINC 48+06.45
MATCHLINE SHEET 5 STA.70+00.00
60+00
65+00
70+00
10+00
15+00
DETAIL 8
LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
Fill Slope
Min. D=1.5 Ft.
b=5.0 Ft.
FROM STA. 10+00 NBL-RAMP TO 19+00 NBL-RAMP RT
STA 10+50 SBL-RAMP LT TO STA 17+50 SBL-RAMP LT
LEGEND
PROPOSED PAVED SHOULDER
OBLITERATE, REMOVE AND GRADE TO DRAIN
EXISTING SHL'D. BERM GUTTER REMOVAL
REFERENCES:
FOR PROFILE OF SBL-RAMP SEE SHEET 20
FOR PROFILE OF NBL-RAMP SEE SHEET 18
REVISIONS
8/17/99
3/4/2010


PROJECT REFERENCE NO. U-4007B
SHEET NO. 5
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Stantec
Stantec Consulting Services Inc.
BRIDGE SKETCH
SBL-RAMP OVER COUNTRY CLUB ROAD
N 9°17' 58.5" W
BRIDGE SKETCH
NBL-RAMP OVER COUNTRY CLUB ROAD
N 9°17' 58.5" W
POC Sta.13+75.89 Y-O =
POT Sta.10+00.00 PR-2
SBL-RAMP
PI Sta 17+57.97
Δ = 3°37' 07.1" (RT)
D = 0°42' 58.3"
L = 505.26'
T = 252.71'
R = 8,000.00'
e = .025
D=60 MPH
Y-O
PI Sta 11+98.62
Δ = 12°52' 56.8" (RT)
D = 4°05' 40.2"
L = 314.63'
T = 157.98'
R = 1,399.33'
e = .071
Y-O
PI Sta 16+46.26
Δ = 33°28' 04.2" (RT)
D = 5°55' 11.1"
L = 565.34'
T = 290.99'
R = 967.85'
e = .071
TRAFFIC COUNTS
Y-O COUNTRY CLUB ROAD
Y-2 MLK HIGHWAY
2011/2031 ADT
DETAIL #6
LATERAL BASE DITCH
DETAIL #7
LATERAL BASE DITCH
DETAIL 8
LATERAL 'V' DITCH
DETAIL I
TOE PROTECTION
PR-2
PI Sta 11+26.70
Δ = 44°03' 14.8" (RT)
D = 114°35' 29.6"
L = 38.44'
T = 20.23'
R = 50.00'
e = .025 (NC)
DS = 25 MPH
PR-2
PI Sta 12+17.96
Δ = 80°05' 11.4" (LT)
D = 114°35' 29.6"
L = 69.89'
T = 42.02'
R = 50.00'
e = .025 (NC)
DS = 25 MPH
TYP SECT INLET CHANNEL LOOKING DOWNSTREAM
TYP SECT OUTLET CHANNEL LOOKING DOWNSTREAM
MATCHLINE SHEET 4 STA.70+00.00
MATCHLINE SHEET 6 STA.80+50.00
SBL-RAMP
NBL-RAMP
Y-2
LEGEND
PROPOSED PAVED SHOULDER
PROPOSED CONCRETE
PROPOSED SINGLE FACE CONC.BARRIER
EXISTING SHL'D.BERM GUTTER REMOVAL
NBL-RAMP
PI Sta 16+19.88
Δ = 4°07' 00.0" (LT)
D = 0°42' 58.3"
L = 574.80'
T = 287.52'
R = 8,000.00'
e = .025 (RC)
DS = 60 MPH
PR-1
PI Sta 11+33.76
Δ = 41°50' 30.7" (RT)
D = 57°17' 44.8"
L = 73.03'
T = 38.23'
R = 100.00'
e = .025 (NC)
DS = 25 MPH
PR-1
PI Sta 12+00.57
Δ = 35°30' 12.7" (LT)
D = 57°17' 44.8"
L = 61.97'
T = 32.01'
R = 100.00'
e = .025 (NC)
DS = 25 MPH
(A) POC Sta.14+09.99 Y-O = POT Sta.22+41.58 SBL-RAMP
(B) POC Sta.15+22.98 Y-O = POT Sta.75+08.45 Y-2
(C) POC Sta.16+27.84 Y-O = POT Sta.22+34.67 NBL-RAMP
(D) POC Sta.16+84.27 Y-O = POT Sta.12+42.53 PR-1
NBL-RAMP
PIs Sta 24+65.46
θs = 2°51' 53.2"
Ls = 200.00'
LT = 133.35'
ST = 66.68'
NBL-RAMP
PI Sta 25+61.15
Δ = 1°39' 50.8" (RT)
D = 2°51' 53.2"
L = 58.09'
T = 29.05'
R = 2,000.00'
e = .06
D = 60 MPH
NBL-RAMP
PIs Sta 26+56.88
θs = 2°51' 53.2"
Ls = 200.00'
LT = 133.35'
ST = 66.68'
REFERENCES:
FOR PROFILE OF SBL-RAMP SEE SHEETS 20-21
FOR PROFILE OF NBL-RAMP SEE SHEETS 18-19
FOR PROFILE OF PR-1 AND PR-2 SEE SHEET 30



GRAPHIC SCALE

50' 25' 0 50' 100'

PLANS

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	6
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

(A) POT Sta. 42+27.41 SBL-RAMP= POC Sta. 60+35.83 Y-1A SBL

(B) POT Sta. 41+19.38 NBL-RAMP= POT Sta. 10+42.83 Y-2 CONN

(C) POT Sta. 42+15.92 NBL-RAMP= POC Sta. 61+59.28 Y-1A SBL

PROPOSED PAVED SHOULDER

OBLITERATE REMOVE & GRADE TO DRAIN

EXISTING SHL'D.BERM GUTTER REMOVAL

PROPOSED PSRM (PERMANENT SOIL REINFORCEMENT MATTING)

PROPOSED SINGLE FACED CONC.BARRIER

REFERENCES:

FOR CURVE DATA SEE SHEET 6A
FOR PROFILE OF L-LINE SEE SHEETS 15
FOR PROFILE OF NBL-RAMP SEE SHEETS 19
FOR PROFILE OF SBL-RAMP SEE SHEETS 21
FOR PROFILE OF RAMP-1A SEE SHEET 22
FOR PROFILE OF RAMP-1B SEE SHEET 23
FOR PROFILE OF LOOP-1A SEE SHEET 24
FOR PROFILE OF LOOP-1D SEE SHEET 24
FOR PROFILE OF Y-1A SBL SEE SHEET 25
FOR PROFILE OF Y-2 SEE SHEET 27
FOR PROFILE OF Y-2 CONN SEE SHEET 26
FOR PROFILE OF SERV.RD SEE SHEET 31
FOR RET.WALL ENVELOPE SEE SHEET 2G

LOCATION:
WESTERN PARKWAY
MARTIN LUTHER KING FREEEWAY
@ MARINE BOULEVARD, IN THE CITY OF JACKSONVILLE, NC

TIP NO.: U-4007B	COUNTY: ONSLOW
DESIGNED BY: ROBERT WILLIAMS	
CHECKED BY: KEITH F. HUDSON	DATE: NOVEMBER 24, 2008

8/17/99

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	6A

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

L-LINE
PI Sta 15+10.06
Δ = 19° 17' 54.5" (RT)
D = 1° 54' 35.5"
L = 1,010.47'
T = 510.06'
R = 3,000.00'
e = .04
DS = 50 MPH

NBL-RAMP
PIs Sta 26+56.88
Θs = 2° 51' 53.2"
Ls = 200.00'
LT = 133.35'
ST = 66.68'

NBL-RAMP
PIs Sta 29+23.56
Θs = 4° 01' 14.7"
Ls = 200.00'
LT = 133.37'
ST = 66.70'

NBL-RAMP
PI Sta 34+09.30
Δ = 32° 46' 41.2" (LT)
D = 4° 01' 14.7"
L = 815.22'
T = 419.10'
R = 1,425.00'
e = .06
DS = 50 MPH

NBL-RAMP
PIs Sta 38+72.11
Θs = 4° 01' 14.7"
Ls = 200.00'
LT = 133.37'
ST = 66.70'

NBL-RAMP
PIs Sta 45+65.31
Θs = 1° 55' 29.8"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

NBL-RAMP
PI Sta 48+43.81
Δ = 8° 08' 30.9" (RT)
D = 1° 55' 29.8"
L = 422.97'
T = 211.84'
R = 2,976.50'
e = .040
DS = 60 MPH

SBL-RAMP
PIs Sta 33+57.48
Θs = 4° 46' 28.7"
Ls = 200.00'
LT = 133.38'
ST = 66.71'

SBL-RAMP
PI Sta 35+89.59
Δ = 15° 42' 17.4" (LT)
D = 4° 46' 28.7"
L = 328.92'
T = 165.50'
R = 1,200.00'
e = .08
DS = 45 MPH

SBL-RAMP
PIs Sta 38+19.73
Θs = 4° 46' 28.7"
Ls = 200.00'
LT = 133.38'
ST = 66.71'

SBL-RAMP
PIs Sta 50+14.63
Θs = 1° 53' 42.1"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

RAMP-1A
PIs Sta 15+33.44
Θs = 7° 09' 43.1"
Ls = 200.00'
LT = 133.44'
ST = 66.77'

RAMP-1A
PI Sta 17+43.07
Δ = 20° 16' 42.9" (RT)
D = 7° 09' 43.1"
L = 283.14'
T = 143.07'
R = 800.00'
e = .075
DS = 45 MPH

RAMP-1A
PIs Sta 19+49.91
Θs = 7° 09' 43.1"
Ls = 200.00'
LT = 133.44'
ST = 66.77'

RAMP-1A
PIs Sta 22+17.54
Θs = 22° 12' 27.6"
Ls = 200.00'
LT = 134.40'
ST = 67.64'

RAMP-1A
PI Sta 23+54.46
Δ = 30° 54' 18.8" (LT)
D = 22° 12' 27.6"
L = 139.16'
T = 71.32'
R = 258.00'
e = .08
DS = 45 MPH

LOOP-1A
PIs Sta 12+04.65
Θs = 37° 22' 00.5"
Ls = 300.00'
LT = 204.65'
ST = 104.24'

LOOP-1A
PI Sta 23+80.49
Δ = 204° 02' 02.6" (LT)
D = 24° 54' 40.4"
L = 819.05'
T = 1,080.49'
R = 230.00'
e = .08
DS = 30 MPH

LOOP-1A
PIs Sta 22+23.28
Θs = 37° 22' 00.5"
Ls = 300.00'
LT = 204.65'
ST = 104.24'

RAMP-1B
PIs Sta 13+95.55
Θs = 10° 13' 53.0"
Ls = 200.00'
LT = 133.56'
ST = 66.87'

RAMP-1B
PI Sta 21+06.92
Δ = 98° 03' 47.1" (LT)
D = 10° 13' 53.0"
L = 958.45'
T = 644.92'
R = 560.00'
e = .08
DS = 45 MPH

RAMP-1B
PIs Sta 24+87.32
Θs = 10° 13' 53.0"
Ls = 200.00'
LT = 133.56'
ST = 66.87'

LOOP-1D
PIs Sta 12+04.65
Θs = 37° 22' 00.5"
Ls = 300.00'
LT = 204.65'
ST = 104.24'

LOOP-1D
PI Sta 29+89.33
Δ = 195° 30' 22.2" (RT)
D = 24° 54' 40.4"
L = 784.81'
T = 1,689.33'
R = 230.00'
e = .075
DS = 30 MPH

LOOP-1D
PIs Sta 21+89.05
Θs = 37° 22' 00.5"
Ls = 300.00'
LT = 204.65'
ST = 104.24'

Y-1A SBL
PIs Sta 50+66.67
Θs = 0° 49' 06.6"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

Y-1A SBL
PI Sta 52+31.83
Δ = 4° 18' 50.6" (LT)
D = 1° 38' 13.3"
L = 263.53'
T = 131.83'
R = 3,500.00'
e = .035
DS = 50 MPH

Y-1A SBL
PIs Sta 53+96.87
Θs = 0° 49' 06.6"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

Y-1A SBL
PIs Sta 55+30.20
Θs = 0° 49' 06.6"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

Y-1A SBL
PI Sta 56+52.60
Δ = 2° 54' 55.7" (RT)
D = 1° 38' 13.3"
L = 178.10'
T = 89.07'
R = 3,500.00'
e = .035
DS = 50 MPH

Y-1A SBL
PIs Sta 57+79.22
Θs = 0° 07' 11.6"
Fs = 0° 49' 06.7"
Ls = 100.00'
LT = 62.41'
ST = 37.59'

Y-1A SBL
PI Sta 60+50.46
Δ = 1° 00' 05.6" (RT)
D = 0° 14' 23.3"
L = 417.65'
T = 208.83'
R = 23,892.78'
e = NC LT
DS = 50 MPH

Y-1A SBL
PIs Sta 63+25.94
Θs = 0° 49' 47.6"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

Y-1A SBL
PI Sta 64+38.21
Δ = 2° 37' 10.6" (LT)
D = 1° 39' 35.2"
L = 157.83'
T = 78.93'
R = 3,452.00'
e = .035
DS = 50 MPH

Y-1A SBL
PIs Sta 65+50.44
Θs = 0° 49' 47.6"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

Y-1A SBL
PIs Sta 66+83.77
Θs = 0° 49' 06.6"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

Y-1A SBL
PI Sta 69+61.09
D = 1° 38' 13.3"
L = 487.18'
T = 243.98'
R = 3,500.00'
e = .035
DS = 50 MPH

Y-2
PIs Sta 85+83.81
Θs = 3° 10' 59.2"
Ls = 200.00'
LT = 133.35'
ST = 66.69'

Y-2
PI Sta 95+08.92
Δ = 50° 59' 44.2" (RT)
D = 3° 10' 59.2"
L = 1,602.07'
T = 858.47'
R = 1,800.00'
e = .055
DS = 50 MPH

Y-2 CONN
PI Sta 12+74.83
Δ = 35° 15' 59.9" (RT)
D = 10° 25' 02.7"
L = 338.54'
T = 174.82'
R = 550.00'
e = .04
DS = 35 MPH

SER-1
PI Sta 11+51.42
Δ = 60° 37' 17.2" (RT)
D = 30° 09' 20.4"
L = 201.03'
T = 111.07'
R = 190.00'
e = .025
DS = 30 MPH

SER-1
PI Sta 16+94.01
Δ = 4° 25' 23.1" (RT)
D = 4° 46' 28.7"
L = 92.64'
T = 46.34'
R = 1,200.00'
e = .025
DS = 30 MPH

SER-1
PI Sta 20+17.66
Δ = 68° 05' 52.8" (RT)
D = 30° 09' 20.4"
L = 225.82'
T = 128.39'
R = 190.00'
e = .025
DS = 30 MPH

2/18/2010
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INTERCHANGE CURVE DATA

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Stantec
Stantec Consulting Services Inc.
Suite 300, 801 Jones Franklin Road
Raleigh, NC
27606
Tel. 919.851.6866
Fax. 919.851.7024
www.stantec.com

8/17/99

REVISIONS

L-LINE	L-LINE	L-LINE	L-LINE
PI Sta 15+10.06	PIs Sta 20+77.14	PIs Sta 23+43.80	PI Sta 31+70.59
Δ = 19° 17' 54.5" (RT)	Θs = 1° 54' 35.5"	Θs = 1° 38' 13.3"	Δ = 24° 30' 22.3" (LT)
D = 1° 54' 35.5"	Ls = 200.00'	Ls = 200.00'	D = 1° 38' 13.3"
L = 1,010.47'	LT = 133.34'	LT = 133.34'	L = 1,497.00'
T = 510.06'	ST = 66.67'	ST = 66.67'	T = 760.12'
R = 3,000.00'			R = 3,500.00'
e = .04			e = .035
DS = 50 MPH			DS = 50 MPH

EARNEL PERKINS, et ux
DB 1893 PG 471
MB 13 PG 50

SHERWOOD PARK, SECTION ONE
MB 18 PG 41

R. M. TALLMAN, HEIRS
DB 150 PG 391

JURISDICTIONAL STREAM

CL "A" RIP RAP (BANKS ONLY)
EST. = 50 TONS
EST. = 70 SY FF

TOE PROTECTION
EST. = 47 TONS
EST. = 36X SY FF
SEE DETAIL #1

POC Sta. 14+59.48 L-LINE = POT Sta. 10+00.00 Y-4

POC Sta. 15+93.95 L-LINE
END CL FENCE
POT 10+00 35.5L LT
BEGIN WW FENCE

MATCHLINE SHEET 6 STA.13+50.00

200' AUX LANE

300' TAPER

150' TAPER

L-LINE

N 39° 13' 50.2" W

PROP. 1'-6" CURB & GUTTER

CL "B" RIP RAP
EST. = 7 TONS
EST. = 22 SY FF

60' ACCESS POINT

END FENCE & C/A
+20.00 (L-LINE)

END FENCE & C/A
+80.00 (L-LINE)

END CHAIN-LINK FENCE
BEGIN WW FENCE
STA. 11+00.00 (Y-4)

SPECIAL LAT 'V' DITCH
SEE DETAIL #2

Y-4

EQUALIZER PIPE

MATCHLINE SHEET 13 STA.16+75.00

TOE PROTECTION
EST. = 90 TONS
EST. = 67 SY FF
SEE DETAIL #1

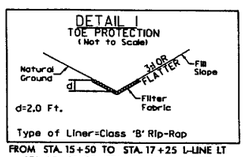
MATCHLINE SHEET 8 STA.26+50.00

CS Sta. 20+10.47 (L-LINE)

SCS Sta. 22+10.47 (L-LINE)

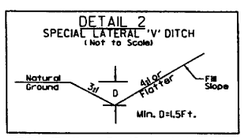
SC Sta. 24+10.47 (L-LINE)

DETAIL 1
TOE PROTECTION
(Not to Scale)



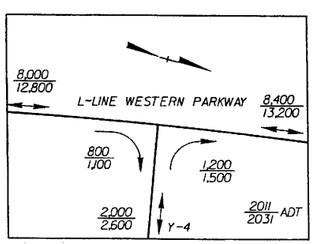
d=2.0 Ft.
Type of Liner=Class 'B' Rip-Rap
FROM STA. 15+50 TO STA. 17+25 L-LINE LT
STA. 25+50 TO STA. 28+50 L-LINE RT

DETAIL 2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D=1.5Ft.
FROM STA. 11+00 TO STA. 13+60 Y-4 RT

TRAFFIC COUNTS



LEGEND

PROPOSED PAVED SHOULDER

PROPOSED CONCRETE ISLAND

REFERENCES:
FOR PROFILE OF L-LINE, SEE SHEET 15
FOR PROFILE OF Y-4, SEE SHEET 29
FOR PREFORMED SCOUR HOLE, SEE DETAIL SHEET 26

3/4/2000
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cwilliams

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Stantec
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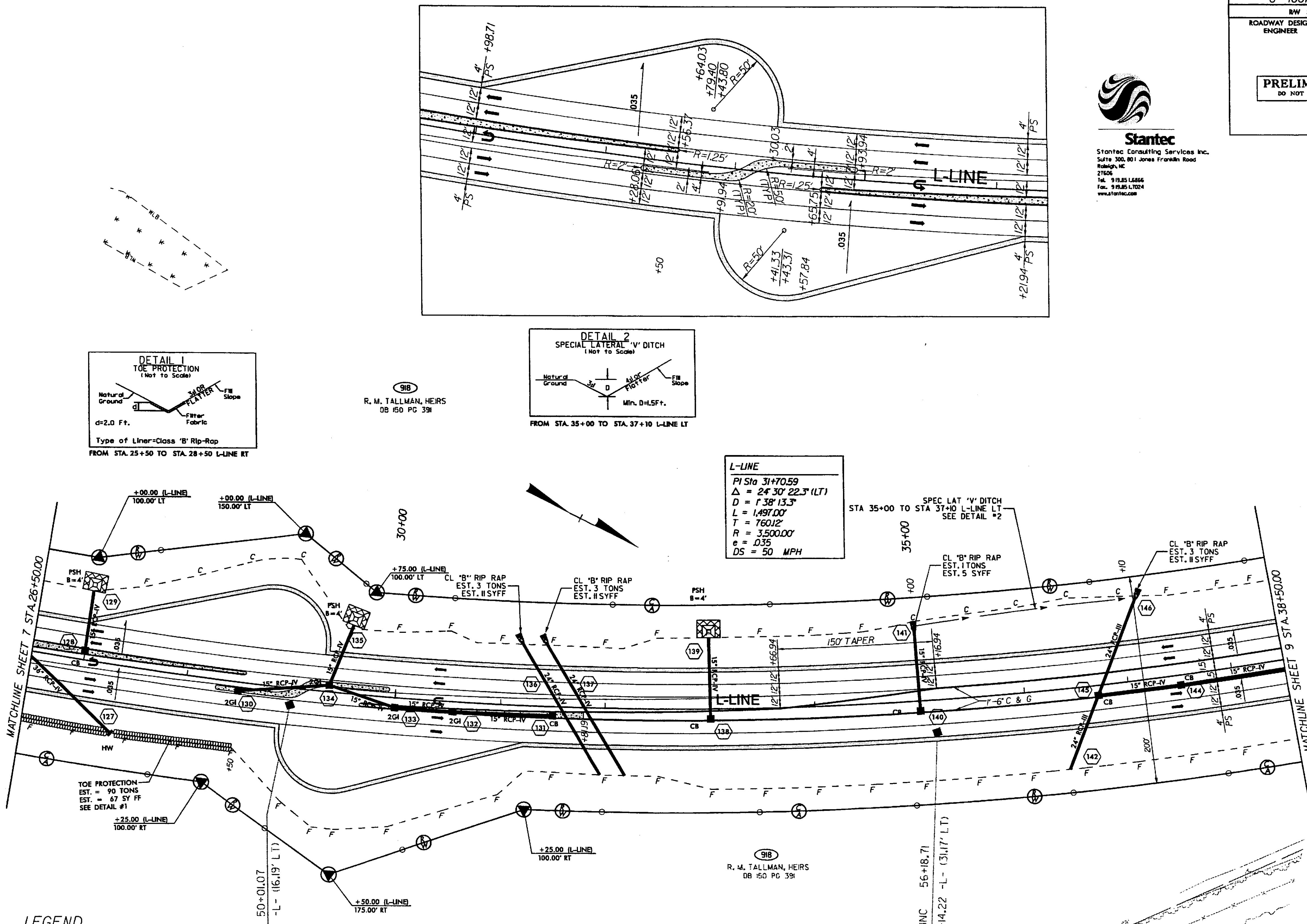
27606



LEGEND

▒	PROPOSED PAVED SHOULDER
▒	PROPOSED CONCRETE ISLANDS

REFERENCES:
FOR PROFILE OF L-LINE SEE SHEET 16

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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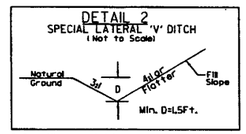
8/17/99

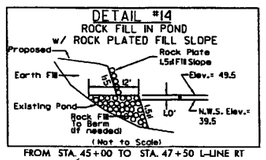
REVISIONS

DETAIL 2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



FROM STA. 40+25 TO STA. 46+00 L-LINE LT

DETAIL #14
ROCK FILL IN POND
w/ ROCK PLATED FILL SLOPE



FROM STA. 45+00 TO STA. 47+50 L-LINE RT

L-LINE
PI Sta 31+70.59
Δ = 24° 30' 22.3" (LT)
D = 1° 38' 13.3"
L = 1,497.00'
T = 760.12'
R = 3,500.00'
DS = 50 MPH

L-LINE
PIs Sta 39+74.14
θs = 1° 38' 13.3"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

40+00 -BY4- 25 PINC 61+17.42
-BY6- POT 5+00.00
POC 40+08.67 -L- (37.90' LT)
POT 10+37.88 Y-5 (4.29' LT)

POS Sta. 40+12.77 L-LINE=
POT Sta. 10+00.00 Y-5

L-LINE CSL Sta. 39+07.46

JURISDICTIONAL STREAM

CL 'A' RIP RAP (BANKS ONLY)
+/- 75 TONS
+/- 110SY

+07.46 (L-LINE)
100.00' LT

CHORD

CL 'B' RIP RAP
EST. 1 TONS
EST. 5 SYFF
+07.46 (L-LINE)
100.00' LT

SPEC LAT 'V' DITCH
SEE DETAIL #2

BEGIN NOISE WALL & CONC. BARRIER STA 41+85.00 (49.0' LT)

15" W/2 ELBOWS

15" RCP-III

2GI W/FLAT GRATE

15" RCP-IV

CB

+35.50

+64.47

+97.90

+07.46 (L-LINE)
100.00' RT

+47.40 (Y-5)
56.81' RT

RETAIN
DO NOT DISTURB

LIMA HOLDINGS, LLC
DB 1438 PG 285
MB 34 PG 187

MATCHLINE SHEET 8 STA. 38+50.00

MATCHLINE SHEET 14 STA. 12+50.00

R. M. TALLMAN, HEIRS
DB 150 PG 391

JAMES L. STUBBS, et UX
DB 1346 PG 453
MB 22 PG 86

SYDNEY W. ROCHESTER
DB 1590 PG 883
MB 22 PG 86

[PROPERTY LINE]
+81.05 (L-LINE)
100.00' LT

[PROPERTY LINE]
+82.23 (L-LINE)
88.00' LT

TEMP. CONSTR. EASEMENT

[PROPERTY LINE]
+83.13 (L-LINE)
78.44' LT

(PROPERTY CORNER)
+12.91 (L-LINE)
78.44' LT

ROBERT J. PUDAS
DB 1873 PG 782
MB 22 PG 86

ARTHUR R. WALLER, et UX
DB 1081 PG 453
MB 22 PG 86

TERRELL WELFORD
DB 1439 PG 551
MB 22 PG 86

[PROPERTY CORNER]
+31.28 (L-LINE)
97.85' RT

+71.21 (L-LINE)
88.00' LT
[PROPERTY LINE]

23
DDRTC GATEWAY PLAZA, LLC
DB 2829 PG 718
MB 41 PG 183

END NOISE WALL & BARRIER WALL STA 48+25.00

B-77
425.00

GRAL 350
+74.00

50+00

+47.00

51+00.00

PROP. NOISE WALL

PROP. BARRIER WALL

L-LINE

N 39° 13' 50.2" W

150' TAPER

REMOVE 30" OF 18"

+75.71 (L-LINE)
79.49' RT

ROCK FILL IN POND
ROCK PLATE SIDE SLOPE IN POND
SEE DETAIL #14

BEGIN SHOULDER BERM GUTTER
STA 45+24 L-LINE RT

+75.00
100' RT

+75
130' RT

+90.00 (L-LINE)
92.55' RT

[PROPERTY LINE]
TEMP. DRAINAGE EASEMENT

RETAIN

CL 'B' RIP RAP
EST. = 7 TONS
EST. = 22 SY FF

CL 'B' RIP RAP
EST. = 1 TONS
EST. = 5 SY FF

+54.80 (Y-5)
50.00' LT

+67.00 (Y-5)
40.00' LT

+12.12 (Y-5)
40.00' LT

TEMP. CONSTR. EASEMENT

+65.00 (L-LINE)
100.00' RT

+76.43 (L-LINE)
85.70' RT

65+67.55 PINC
-BY4- 25 -L- (39.58' LT)
POT 14+89.53

TARGET CORP.
DB 1516 PG 941
MB 36 PG 231

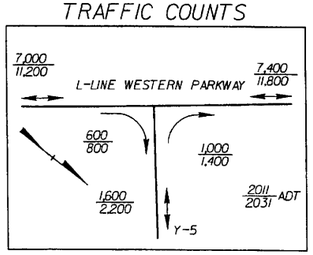
CONC

LOADING DOCK

FILL SLOPES SHOULD VARY TO DRAIN BETWEEN STA 47+.) TO STA 52+00 L-LINE RT

MATCHLINE SHEET 10 STA. 51+00.00

TRAFFIC COUNTS



LEGEND

PROPOSED PAVED SHOULDER
PROPOSED CONCRETE ISLAND
PROPOSED BARRIER WALL

REFERENCES:
FOR PROFILE OF L-LINE SEE SHEET 16
FOR PROFILE OF Y-5 SEE SHEET 30
FOR POND PROTECTION DETAIL, SEE SHEET 2

3/4/2010
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cwilliams

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	10
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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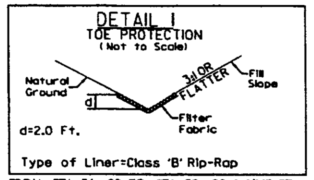
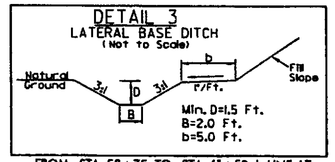
www.stantec.com

REVISIONS

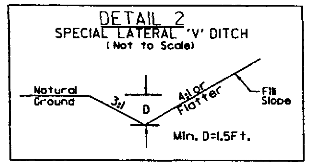
8/17/99



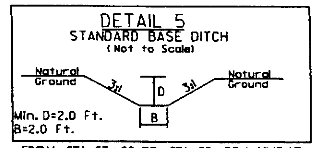
FROM STA. 56+50 TO STA. 58+00 L-LINE RT
FROM STA. 60+00 TO STA. 60+80 L-LINE RT



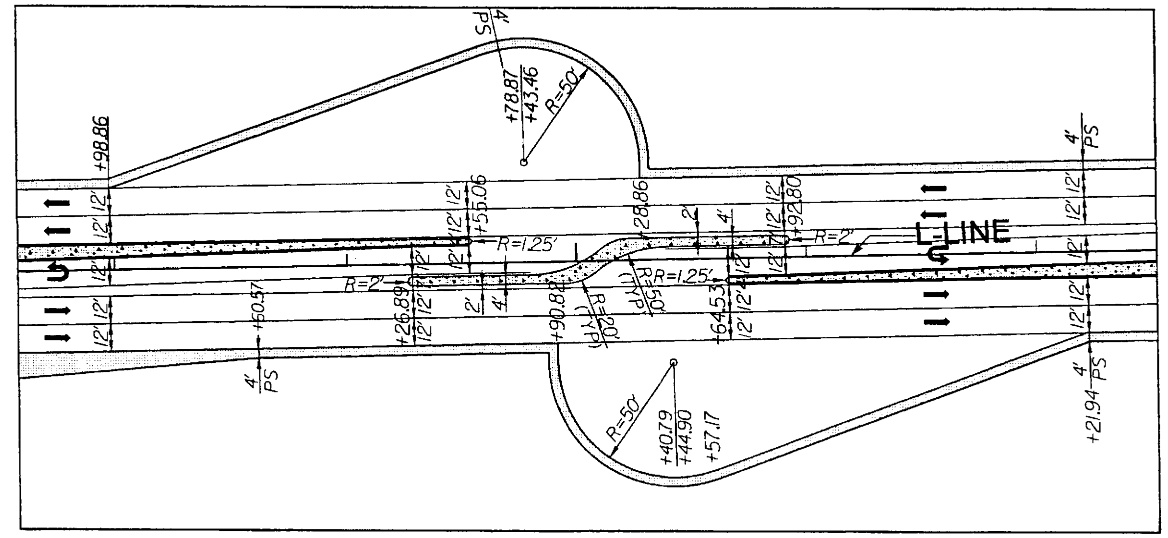
FROM STA. 58+75 TO STA. 61+50 L-LINE LT

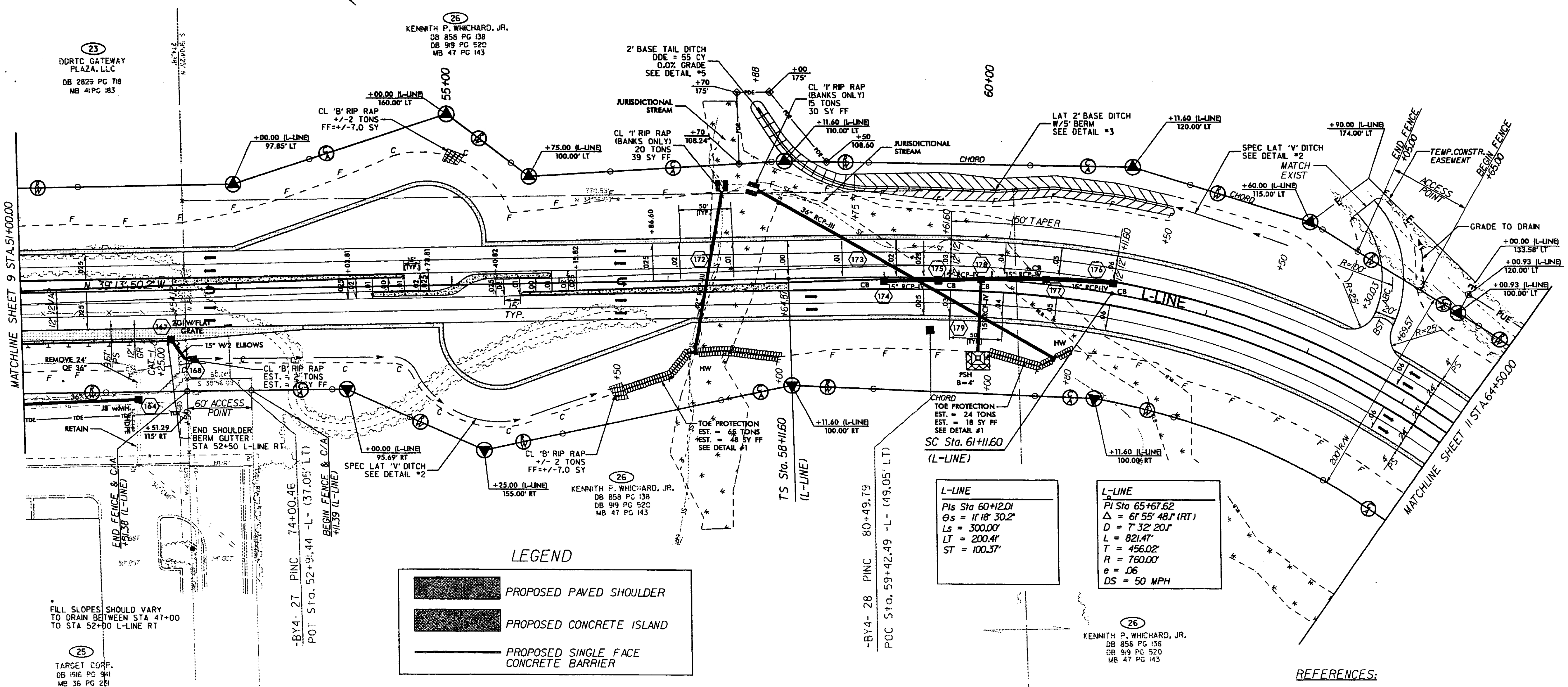


FROM STA. 52+50 TO STA. 56+50 L-LINE RT
FROM STA. 61+50 TO STA. 62+50 L-LINE LT



FROM STA. 57+88 TO STA. 58+75 L-LINE LT





* FILL SLOPES SHOULD VARY TO DRAIN BETWEEN STA 47+00 TO STA 52+00 L-LINE RT

L-LINE
PIs Sta 60+12.01
Θs = 11°18' 30.2"
Ls = 300.00'
LT = 200.41'
ST = 100.37'

L-LINE
PI Sta 65+67.62
Δ = 61°55' 48.1" (RT)
D = 7°32' 20.1"
L = 821.47'
T = 456.02'
R = 760.00'
e = .06
DS = 50 MPH

LEGEND

▒	PROPOSED PAVED SHOULDER
▒	PROPOSED CONCRETE ISLAND
—	PROPOSED SINGLE FACE CONCRETE BARRIER

REFERENCES:

FOR PROFILE OF L-LINE SEE SHEET 17
FOR NOISE WALL DETAILS, SEE SHEET 2-

3/4/2010
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cawilliams

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

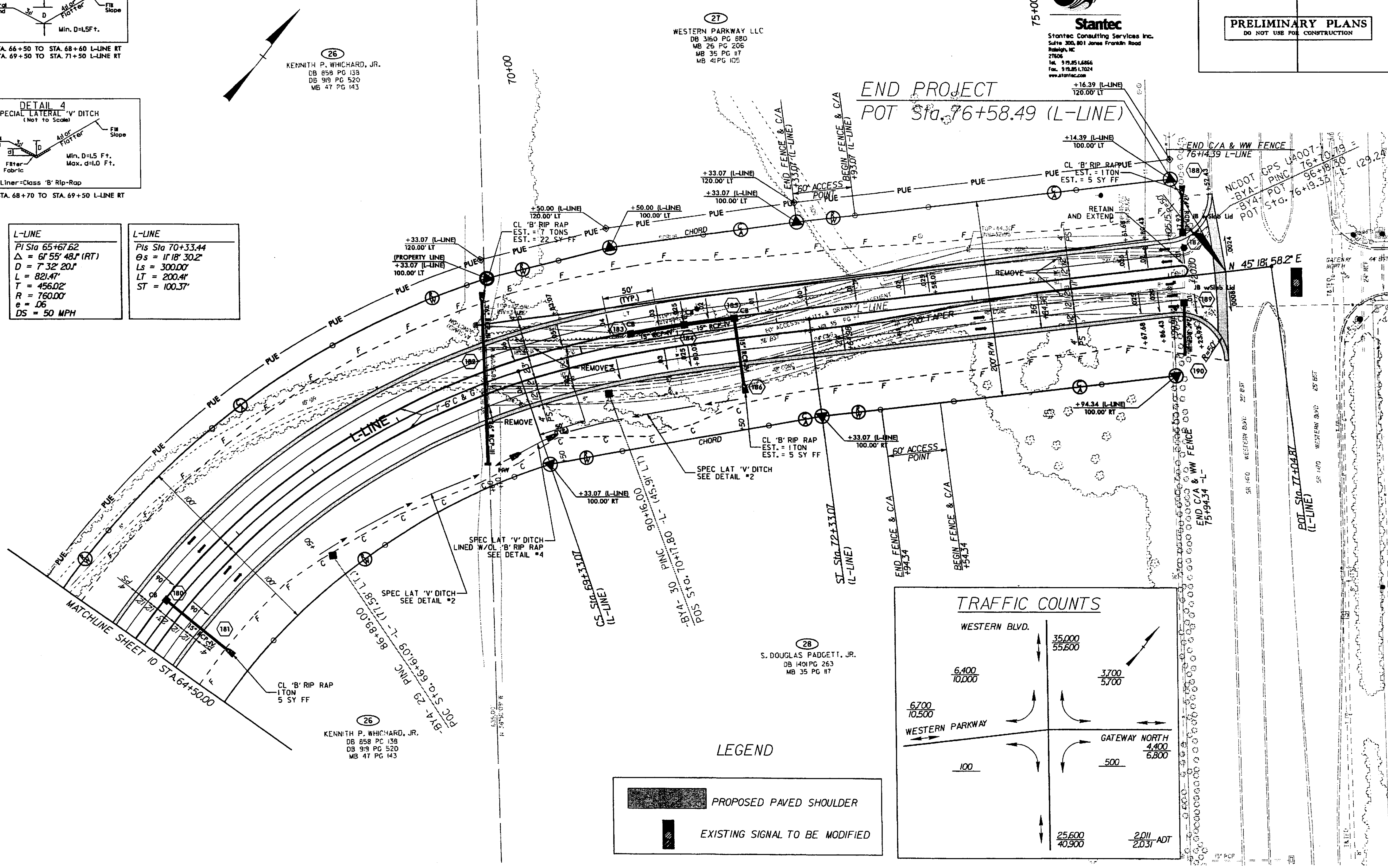
Stantec
Stantec Consulting Services Inc.
Suite 300, 801 Jones Franklin Road
Raleigh, NC
27606
Tel. 919.851.6866
Fax. 919.851.7024
www.stantec.com

DETAIL 2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground — 3:1 — D — 4:1 or Flatter — Fill Slope
Min. D=1.5Ft.
FROM STA. 66+50 TO STA. 68+60 L-LINE RT
FROM STA. 69+50 TO STA. 71+50 L-LINE RT

DETAIL 4
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground — 3:1 — 4:1 or Flatter — Fill Slope — Filter Fabric
Min. D=1.5 Ft.
Max. d=1.0 Ft.
Type of Liner=Class 'B' Rip-Rap
FROM STA. 68+70 TO STA. 69+50 L-LINE RT

L-LINE
PI Sta 65+67.62
Δ = 61° 55' 48.1" (RT)
D = 7° 32' 20.1"
L = 821.47'
T = 456.02'
R = 760.00'
e = .06
DS = 50 MPH

L-LINE
PIs Sta 70+33.44
θs = 11° 18' 30.2"
Ls = 300.00'
LT = 200.41'
ST = 100.37'



TRAFFIC COUNTS

LEGEND

PROPOSED PAVED SHOULDER

EXISTING SIGNAL TO BE MODIFIED

REFERENCES:
FOR PROFILE OF L-LINE SEE SHEETS 17

REVISIONS

8/17/99

3/4/2010
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PROJECT REFERENCE NO.	SHEET NO.
U-4007B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

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Suite 300, 801 Jones Franklin Road
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Tel. 919.851.6866
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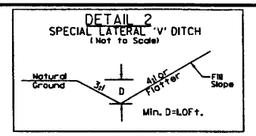
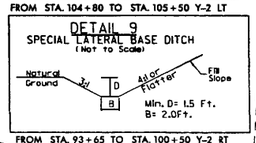
REVISIONS

DETAIL 2
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



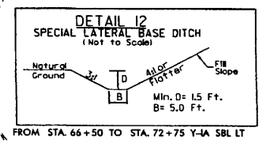
FROM STA. 104+80 TO STA. 105+50 Y-2 LT

DETAIL 9
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 93+65 TO STA. 100+50 Y-2 RT

DETAIL 12
SPECIAL LATERAL BASE DITCH
(Not to Scale)



FROM STA. 66+50 TO STA. 72+75 Y-1A SBL LT

Y-2 CONN
PI Sta 12+74.83
Δ = 35° 15' 59.9" (RT)
D = 10° 25' 02.7"
L = 338.54'
T = 174.82'
R = 550.00'
e = .04
DS = 35 MPH

Y-2
PI Sta 95+08.92
Δ = 50° 59' 44.2" (RT)
D = 3° 10' 59.2"
L = 1602.07'
T = 858.47'
R = 1,800.00'
e = .055
DS = 50 MPH

Y-2
PIs Sta 103+19.21
Θs = 3° 10' 59.2"
Ls = 200.00'
LT = 133.35'
ST = 66.69'

Y-1A SBL
PI Sta 69+61.09
D = 1° 58' 30.9" (RT)
D = 1° 38' 13.3"
L = 487.18'
T = 243.98'
R = 3,500.00'
e = .035
DS = 50 MPH

Y-1A SBL
PIs Sta 72+37.62
Θs = 0° 49' 06.6"
Ls = 100.00'
LT = 66.67'
ST = 33.33'

Y-1A SBL
PI Sta 77+27.65
Δ = 4° 30' 09.4" (LT)
D = 0° 57' 17.7"
L = 471.51'
T = 235.88'
R = 6,000.00'
e = .025
DS = 50 MPH

TRAFFIC COUNTS

LEGEND

PROPOSED PAVED SHOULDER

OBLITERATE REMOVE AND GRADE TO DRAIN

EXISTING SIGNAL TO BE MODIFIED

REFERENCES:

FOR PROFILE OF Y-2 SEE SHEET 28
FOR PROFILE OF Y-1A SBL SEE SHEETS 26

3/4/2010
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Phillips

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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Fax. 919.85 1.7024
www.stantec.com

8/17/99

REVISIONS

INSERT 1

Y-4
PI Sta 18+69.42
Δ = 18° 12' 13.1" (LT)
D = 5° 43' 46.5"
L = 317.71'
T = 160.21'
R = 1,000.00'
e = .06
DS = 45 MPH

Y-4A
PI Sta 14+42.65
Δ = 11° 18' 36.3" (LT)
D = 4° 46' 28.7"
L = 236.88'
T = 118.83'
R = 1,200.00'
e = .06
DS = 45 MPH

BEGIN CONSTRUCTION
POT Sta. 12+25.00 Y-4A

POT Sta. 10+00.00

PC Sta. 13+23.83

POT Sta. 25+32.65 Y-4 =
POC Sta. 14+26.5 Y-4A

PT Sta. 15+60.71

PT Sta. 20+26.93 (Y-4)

PC Sta. 17+09.21 (Y-4)

MATCHLINE SHEET 7 STA 16+75.00

END CONSTRUCTION
POT Sta. 30+00.00 (Y-4)

END CONSRUCTION
POT Sta. 16+43.50 Y-4A

POT Sta. 18+41.88

MATCH EXISTING

DETAIL 1
TOE PROTECTION
(Not to Scale)

Natural Ground — 3:1 OR FLATTER — Fill Slope — Filter Fabric — d — d=2.0 Ft.

Type of Liner: Class 'B' Rip-Rap
FROM STA. 23+00 TO STA. 24+00 Y-4 LT
FROM STA. 12+95 TO STA. 13+85 Y-4A LT
FROM STA. 14+70 TO STA. 16+25 Y-4A LT

DETAIL #8
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground — 3:1 — D — 4:1 OR FLATTER — Fill Slope — B — Min. D=1.0 Ft. B= 3.0 Ft.

FROM STA. 23+50 TO STA. 25+00 Y-4 RT

LEGEND

PROPOSED PAVED SHOULDER
OBLITERATE
EXISTING SIGNAL TO BE MODIFIED

TRAFFIC COUNTS

WESTERN BLVD.

30,900 / 48,300
800 / 1,700
3,800 / 6,100
8,000 / 10,500
Y-4
SHOPPING ENT. 12,500 / 16,700
6,600 / 9,600
5,100 / 7,800
38,000 / 57,900
2011 / 2031 ADT

REFERENCES:
FOR PROFILE OF Y-4 SEE SHEET 29
FOR PROFILE OF Y-4A SEE SHEET 30
FOR ROADWAY GEOMETRY SEE SHEET 2H

3/4/2010
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anthams

PROJECT REFERENCE NO.	SHEET NO.
U-4007B	14
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PRELIMINARY PLANS
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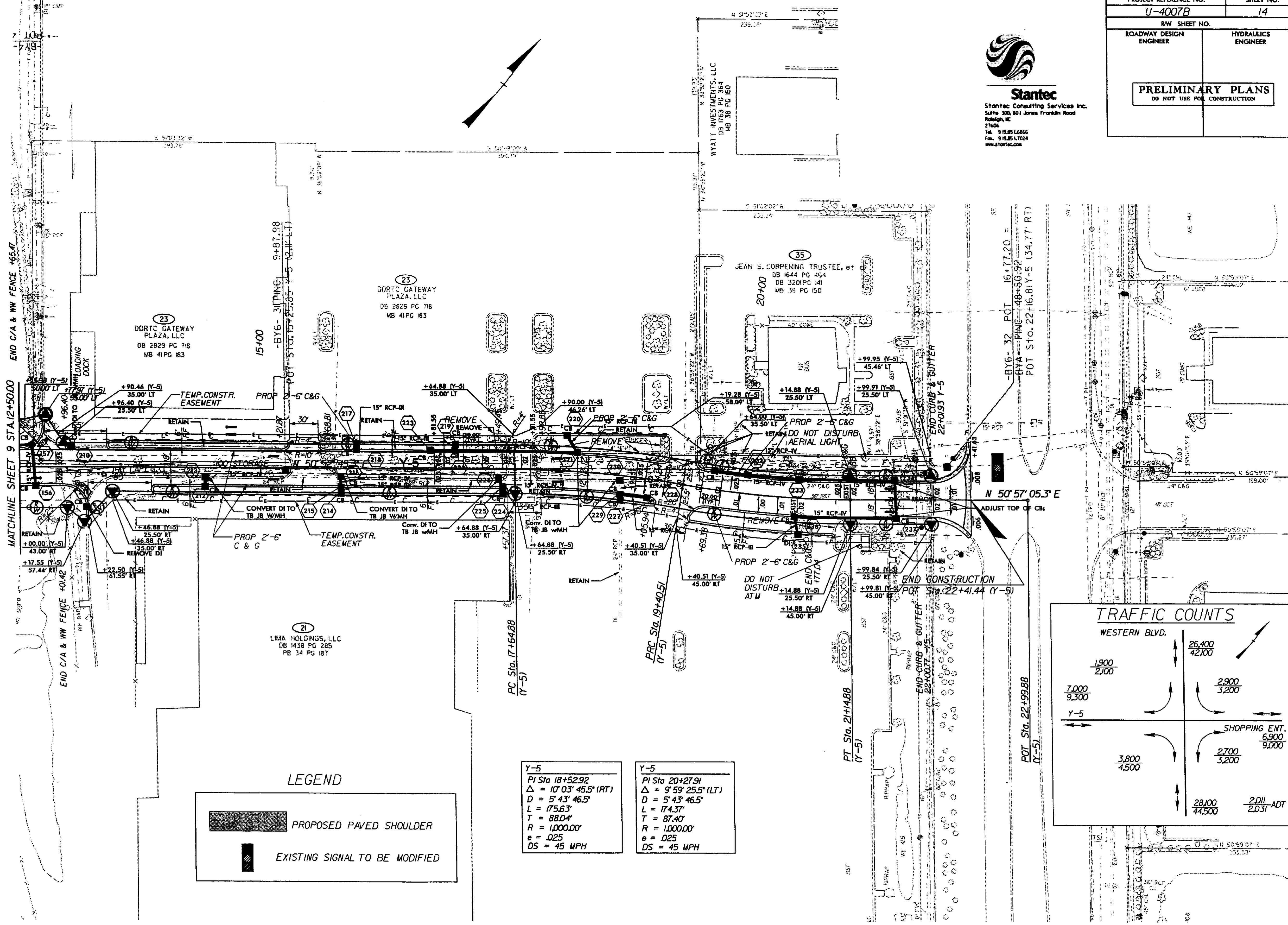

Y-5	
PI Sta	18+52.92
Δ =	10° 03' 45.5" (RT)
D =	5° 43' 46.5"
L =	175.63'
T =	88.04'
R =	1,000.00'
e =	.025
DS =	45 MPH

Y-5	
PI Sta	20+27.91
Δ =	9° 59' 25.5" (LT)
D =	5° 43' 46.5"
L =	174.37'
T =	87.40'
R =	1,000.00'
e =	.025
DS =	45 MPH

LEGEND

PROPOSED PAVED SHOULDER

EXISTING SIGNAL TO BE MODIFIED

TRAFFIC COUNTS

WESTERN BLVD.

26,400 / 42,100
1,900 / 2,100
7,000 / 9,300
2,900 / 3,200
Y-5
SHOPPING ENT.
6,900 / 9,000
3,800 / 4,500
2,700 / 3,200
28,100 / 44,500
2,011 / 2,031 ADT

REFERENCES:
FOR PROFILE OF Y-5 SEE SHEET 30

REVISIONS

8/17/99

3/4/2010
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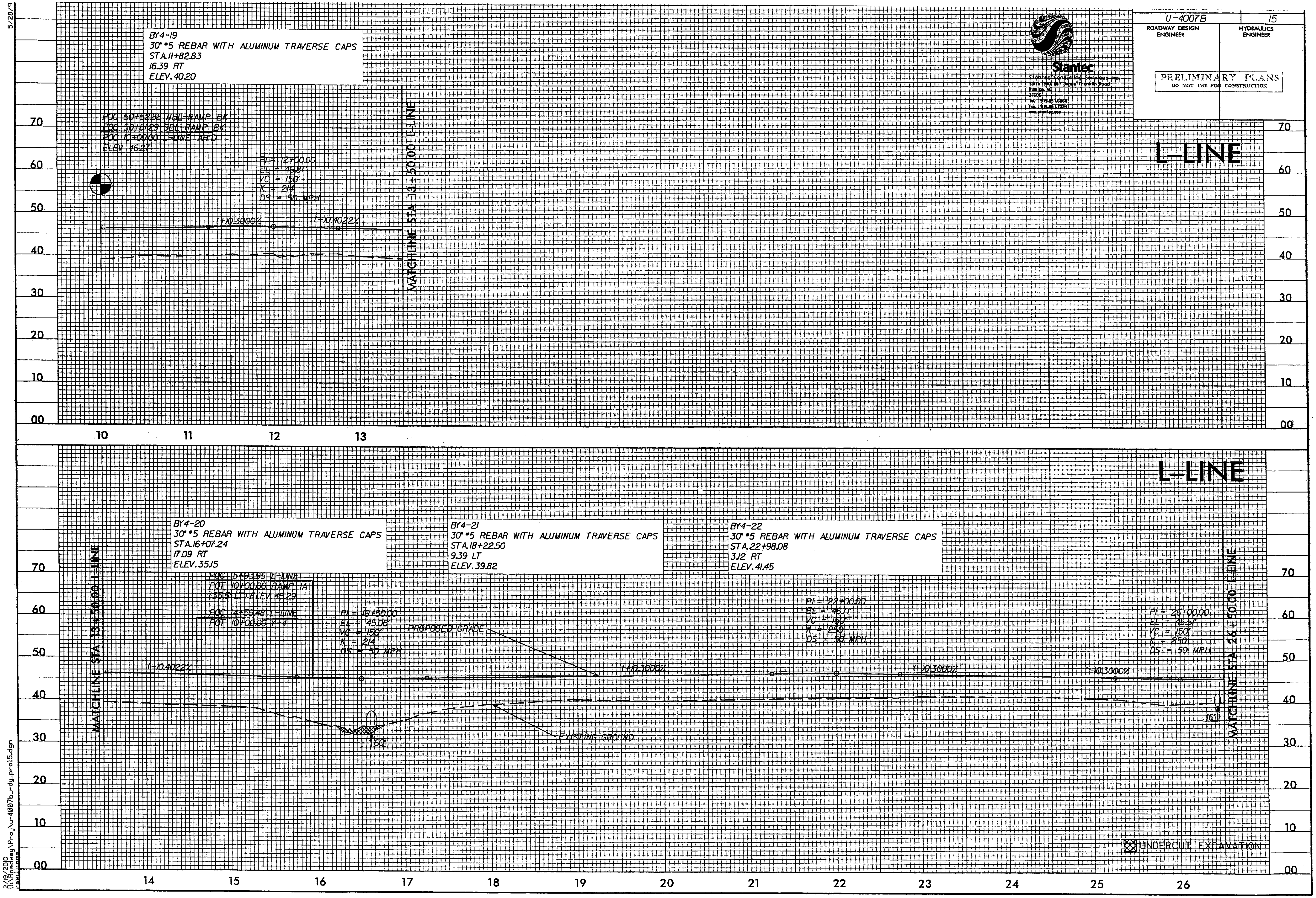
U-4007B
15
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Stantec
Stantec Consulting Services Inc.
L-LINE
BY4-19
30" •5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.11+82.83
16.39 RT
ELEV.40.20
POC 50+52.58 NBL-RAMP BK
POC 50+81.29 SBL RAMP BK
POC 10+00.00 L-LINE AH'D
ELEV 46.27
PI = 12+00.00
EL = 46.87'
VC = 150'
K = 214
DS = 50 MPH
(+)0.3000%
(-)0.4022%
MATCHLINE STA 13+50.00 L-LINE
70
60
50
40
30
20
10
00
10
11
12
13
L-LINE
MATCHLINE STA 13+50.00 L-LINE
BY4-20
30" •5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.16+07.24
17.09 RT
ELEV.35.15
POC 15+93.95 L-LINE
POT 10+00.00 RAMP 1A
(35.5' LT) ELEV 45.29
POC 14+59.48 L-LINE
POT 10+00.00 Y-4
PI = 16+50.00
EL = 45.06'
VC = 150'
K = 214
DS = 50 MPH
PROPOSED GRADE
(-)0.4022%
60"
BY4-21
30" •5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.18+22.50
9.39 LT
ELEV.39.82
EXISTING GROUND
(+)0.3000%
BY4-22
30" •5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.22+98.08
3.12 RT
ELEV.41.45
PI = 22+00.00
EL = 46.71'
VC = 150'
K = 250
DS = 50 MPH
(-)0.3000%
PI = 26+00.00
EL = 45.51'
VC = 150'
K = 250
DS = 50 MPH
(-)0.3000%
36"
MATCHLINE STA 26+50.00 L-LINE
UNDERCUT EXCAVATION
14
15
16
17
18
19
20
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25
26
2/19/2010
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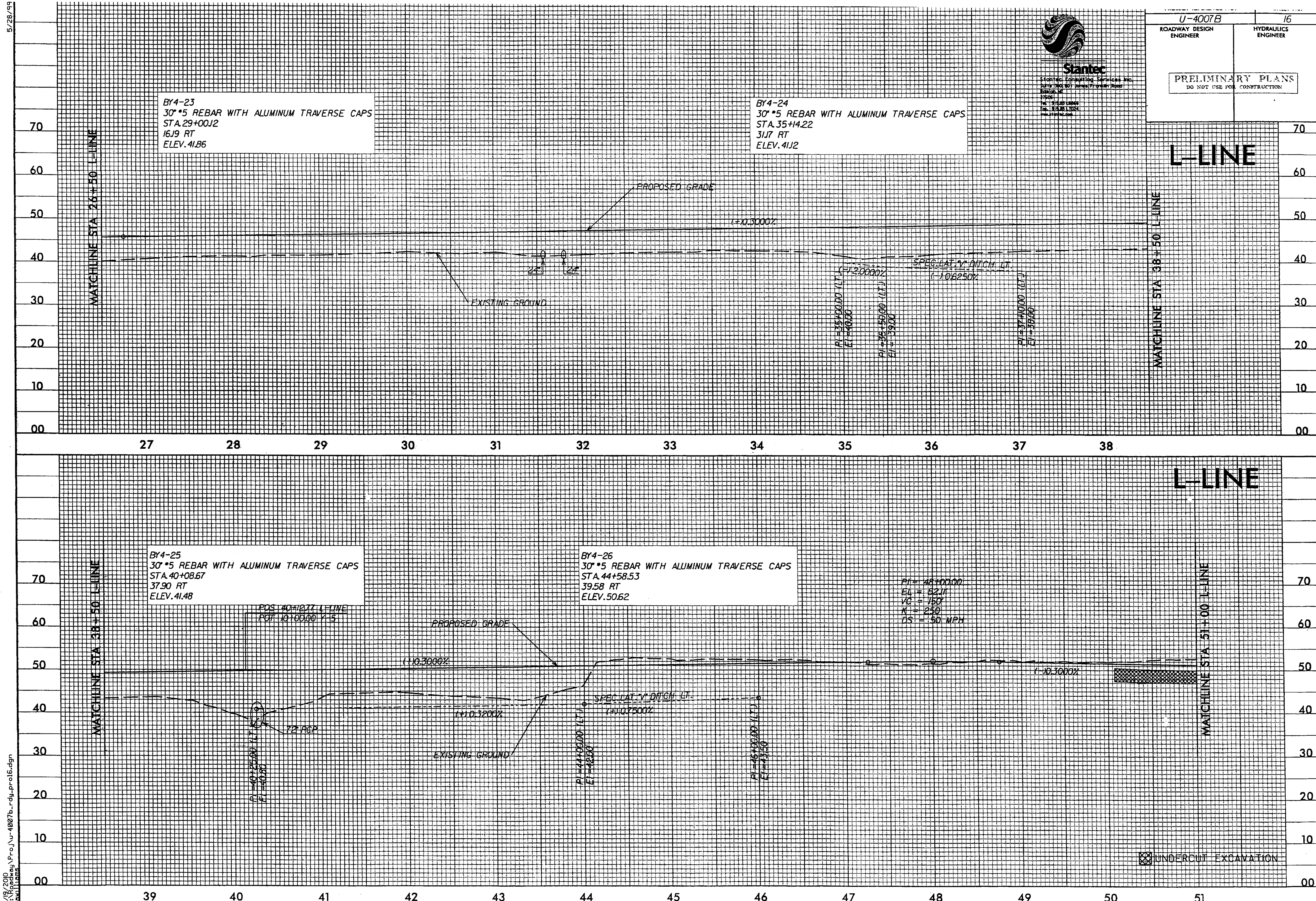
5/28/9

5/28/99



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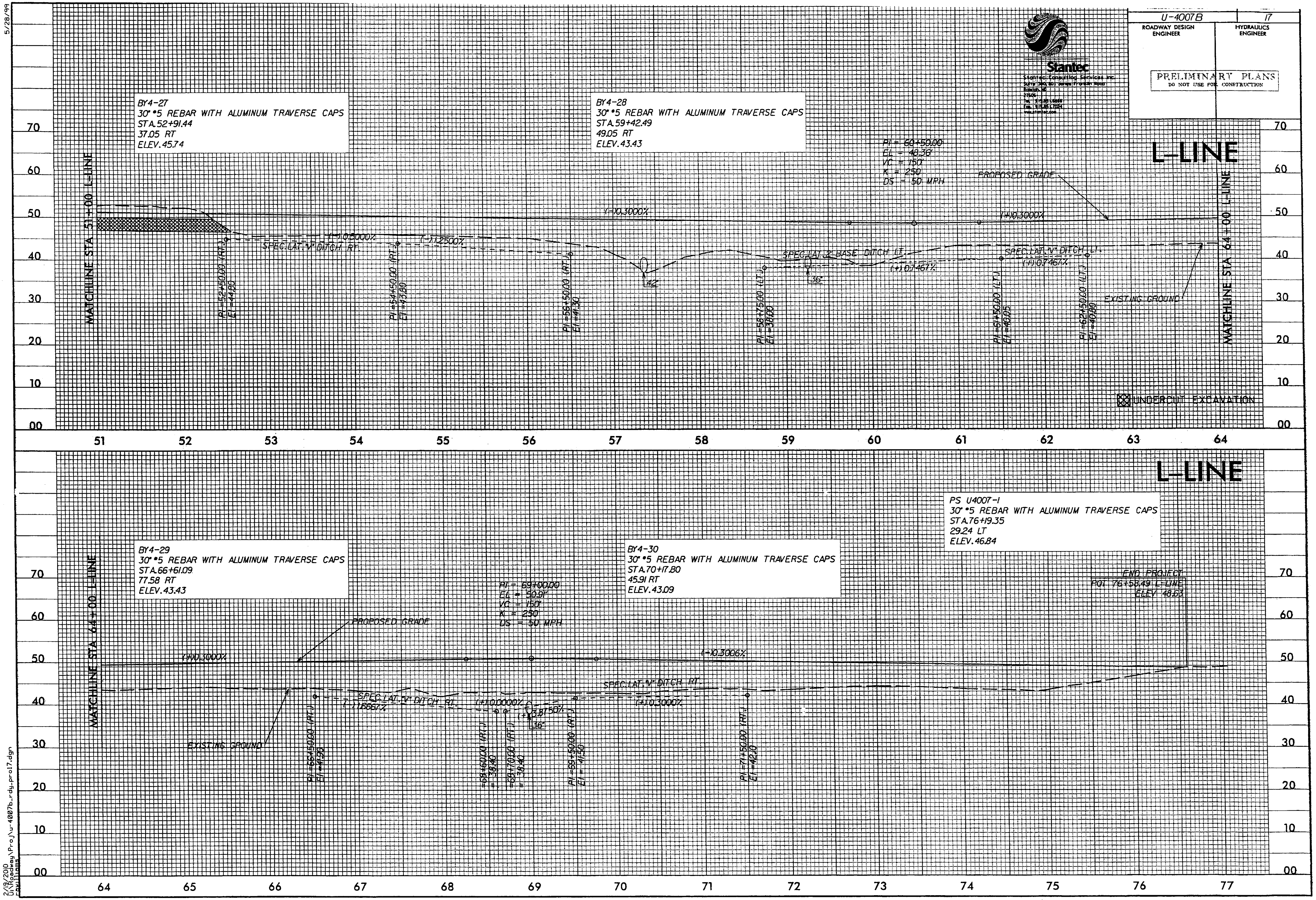

U-4007B
17
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Stantec
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
5/28/99
L-LINE
BY4-27
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.52+91.44
37.05 RT
ELEV.45.74
BY4-28
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.59+42.49
49.05 RT
ELEV.43.43
PI = 60+50.00
EL = 48.36'
VC = 150'
K = 250
DS = 50 MPH
PROPOSED GRADE
(-)0.3000%
(+)0.3000%
(-)0.5000%
(-)1.2500%
SPEC.LAT."V" DITCH RT.
SPEC.LAT.2' BASE DITCH LT.
SPEC.LAT."V" DITCH LT.
(+)0.7467%
EXISTING GROUND
MATCHLINE STA. 51+00 L-LINE
MATCHLINE STA. 64+00 L-LINE
PI =52+50.00 (RT.) EI =44.80
PI =54+50.00 (RT.) EI =43.80
PI =56+50.00 (RT.) EI =41.30
PI =58+75.00 (LT.) EL =38.00
PI =61+50.00 (LT.) EI =40.05
PI =62+50.00 (LT.) EI =40.80
UNDERCUT EXCAVATION
70 60 50 40 30 20 10 00
51 52 53 54 55 56 57 58 59 60 61 62 63 64
L-LINE
PS U4007-1
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.76+19.35
29.24 LT
ELEV.46.84
BY4-29
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.66+61.09
77.58 RT
ELEV.43.43
BY4-30
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.70+17.80
45.91 RT
ELEV.43.09
PI = 69+00.00
EL = 50.91'
VC = 150'
K = 250
DS = 50 MPH
END PROJECT
POT 76+58.49 L-LINE
ELEV 48.63
PROPOSED GRADE
(+)0.3000%
(+)0.3006%
SPEC.LAT."V" DITCH RT.
(-)1.6667%
(+)0.0000%
(+)0.3000%
EXISTING GROUND
MATCHLINE STA. 64+00 L-LINE
PI =66+50.00 (RT.) EI =41.90
=68+60.00 (RT.) =38.40
=68+70.00 (RT.) =38.40
PI =69+50.00 (RT.) EI =41.50
PI =71+50.00 (RT.) EI =42.10
70 60 50 40 30 20 10 00
64 65 66 67 68 69 70 71 72 73 74 75 76 77
2/19/2010
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PROJECT REFERENCE NO. U-4007B | SHEET NO. 18

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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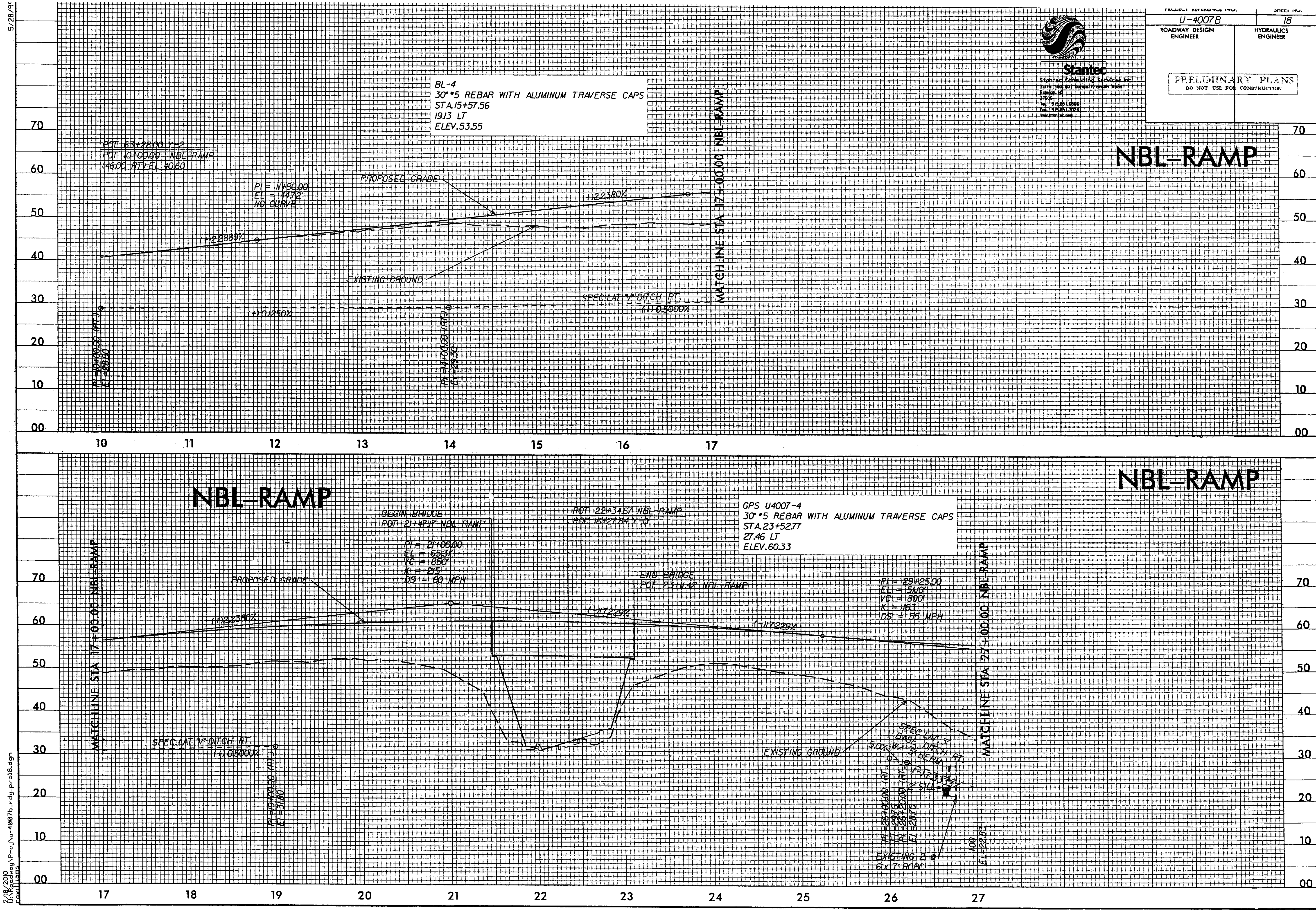

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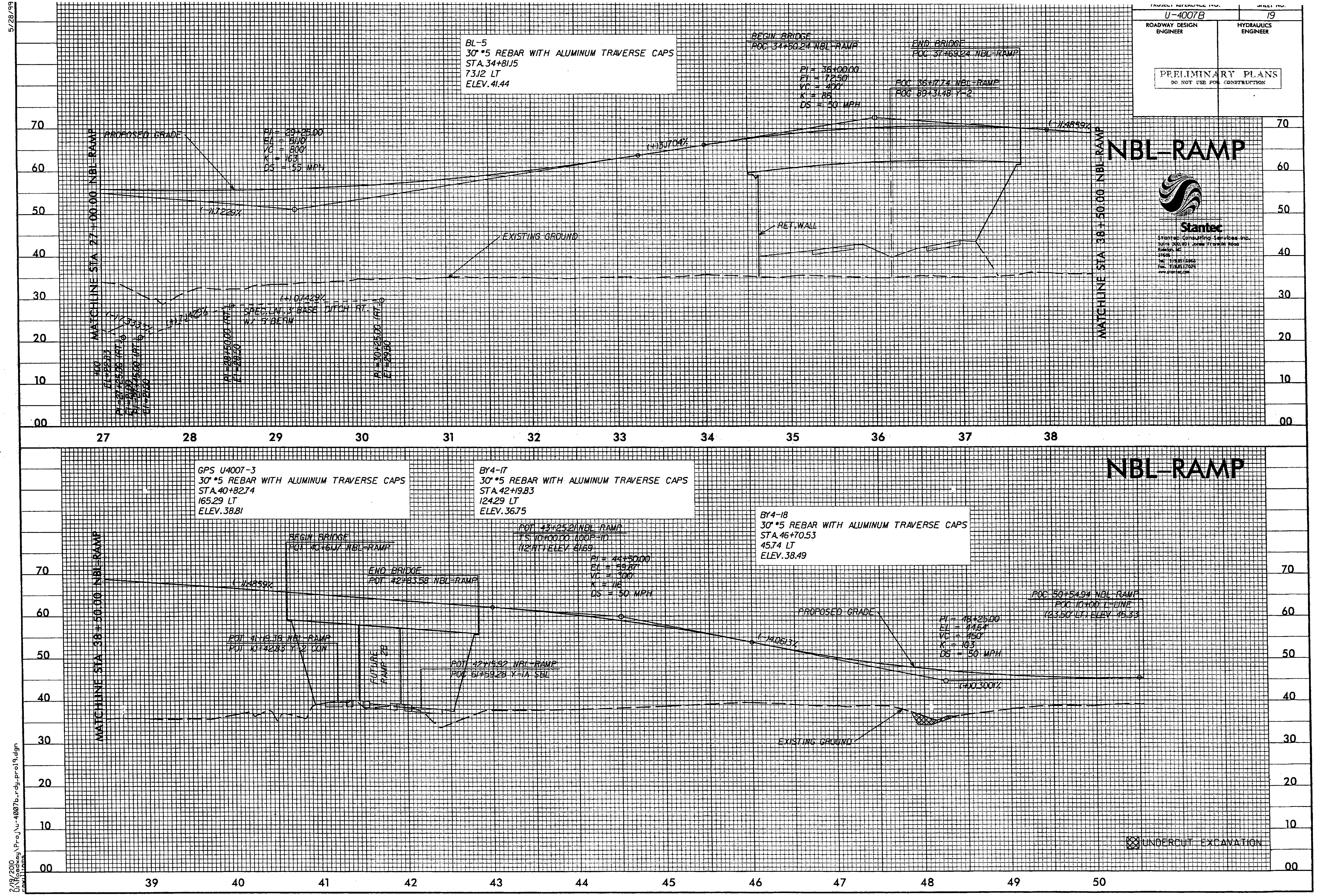

U-4007B
19
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
5/28/99
BL-5
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 34+81.15
73.12 LT
ELEV. 41.44
BEGIN BRIDGE
POC 34+50.24 NBL-RAMP
END BRIDGE
POC 37+69.24 NBL-RAMP
PI = 36+00.00
EL = 72.50
VC = 400'
K = 88
DS = 50 MPH
POC 36+17.74 NBL-RAMP
POC 89+31.48 Y-2
NBL-RAMP
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Stantec Consulting Services Inc.
PROPOSED GRADE
PI = 29+25.00
EL = 51.10
VC = 800'
K = 163
DS = 55 MPH
(-)1.7229%
(+)3.1704%
(-)1.4859%
RET. WALL
EXISTING GROUND
(+)0.7429%
SPEC. LN. 3' BASE DITCH RT. W/ 5' BERM
MATCHLINE STA. 27+00.00 NBL-RAMP
MATCHLINE STA. 38+50.00 NBL-RAMP
70
60
50
40
30
20
10
00
27
28
29
30
31
32
33
34
35
36
37
38
NBL-RAMP
GPS U4007-3
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 40+82.74
165.29 LT
ELEV. 38.81
BY4-17
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 42+19.83
124.29 LT
ELEV. 36.75
BY4-18
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 46+70.53
45.74 LT
ELEV. 38.49
BEGIN BRIDGE
POT 40+61.17 NBL-RAMP
END BRIDGE
POT 42+83.58 NBL-RAMP
POT 43+25.21 NBL-RAMP
TS 10+00.00 LOOP-1D
PI = 44+50.00
EL = 59.87
VC = 300'
K = 118
DS = 50 MPH
(-)1.4859%
(-)4.0613%
(+)0.3001%
PROPOSED GRADE
PI = 48+25.00
EL = 44.64
VC = 450'
K = 103
DS = 50 MPH
POC 50+54.94 NBL-RAMP
POC 10+00 L-LINE
POT 41+19.38 NBL-RAMP
POT 10+42.83 Y-2 CON
FUTURE RAMP 2B
POT 42+15.92 NBL-RAMP
POC 61+59.28 Y-1A SBL
EXISTING GROUND
UNDERCUT EXCAVATION
MATCHLINE STA. 38+50.00 NBL-RAMP
39
40
41
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50
2/19/2010
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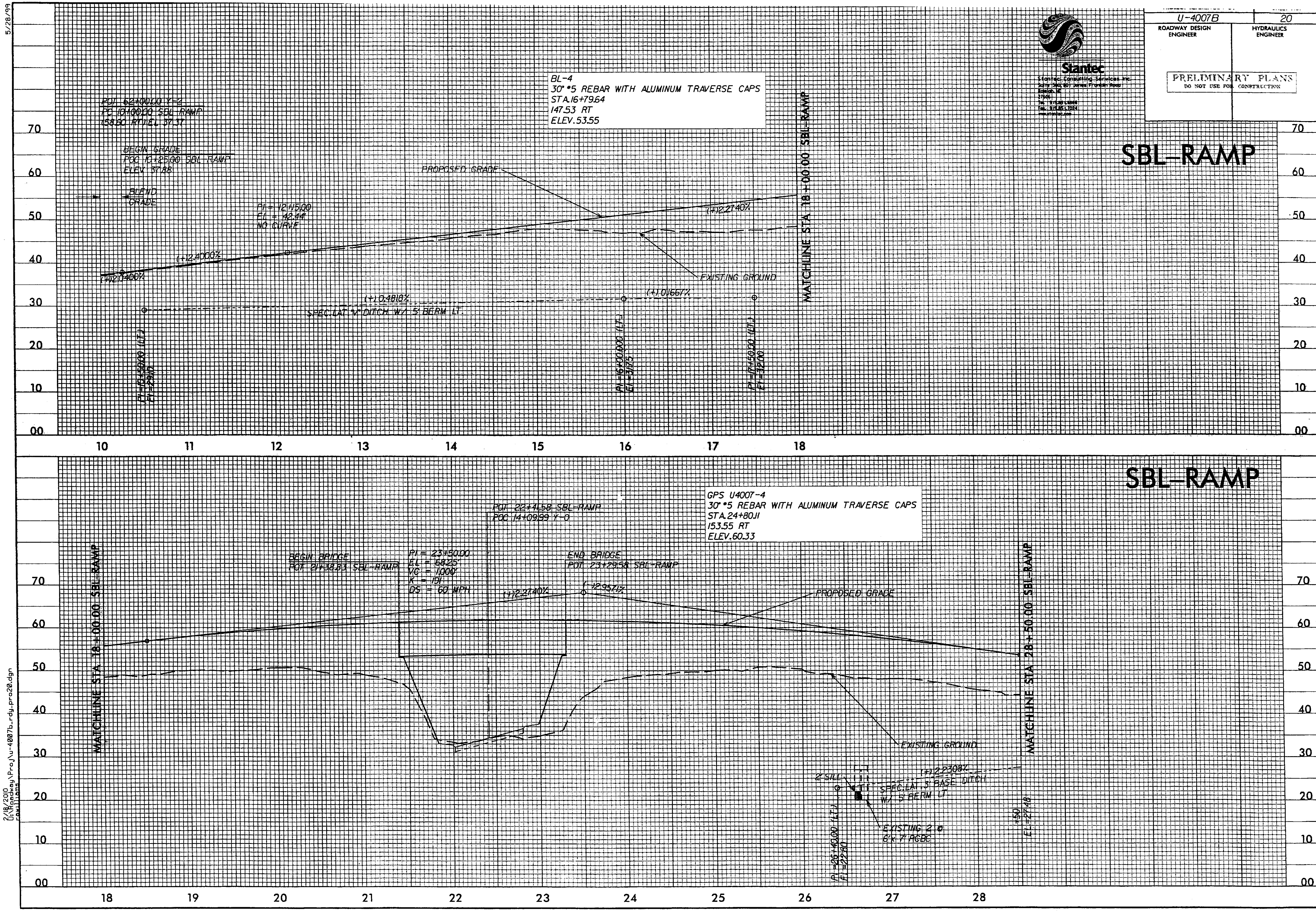
5/28/99



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5/28/99

U-4007B	21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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27609
Tel. 919.881.2700
Fax. 919.881.2724
www.stantec.com

SBL-RAMP

BL-5
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 35+55.77
132.29 RT
ELEV. 41.44

POT 30+62.67 SBL-RAMP
TS 12+66.00 RAMP 1B
12 LT ELEV. 47.18

MATCHLINE STA 28+50.00 SBL-RAMP

(-)2.95712

(-)0.97034

PI = 34+00.00
EL = 37.20'
VC = 700'
K = 97
DS = 50 MPH

PROPOSED GRADE

(+)4.24837

EXISTING GROUND

MATCHLINE STA 39+00.00 SBL-RAMP

GPS U4007-3
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 40+89.96
22.54 LT
ELEV. 38.81

BY4-17
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 42+31.48
1.44 LT
ELEV. 36.75

BY4-18
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 46+91.37
15.75 RT
ELEV. 38.49

BEGIN BRIDGE
POT 40+77.05 SBL-RAMP

END BRIDGE
POT 42+95.00 SBL-RAMP

PI = 41+25.00
EL = 68.00'
VC = 650'
K = 89
DS = 50 MPH

POT 43+10.10 SBL-RAMP
TS 10+00.00 LOOP-1A
112 LT ELEV. 61.30

(+)4.24837

(-)3.09207

POT 41+32.10 SBL-RAMP
POT 14+98.42 RAMP 2C

FUTURE RAMP 2D

POT 42+27.41 SBL-RAMP
POT 60+35.83 Y-1A SBL

30" CLASS IV WITH METHOD "B"

48" CLASS IV WITH METHOD "B"

EXISTING GROUND

PROPOSED GRADE

PI = 48+25.00
EL = 46.36'
VC = 400'
K = 117
DS = 50 MPH

(-)3.09207

(+)10.33324

ST 50+91.29 SBL-RAMP
= 10+00.00 Q-LINE
(235.0' RT) ELEV. 47.21

42"

42"

UNDERCUT EXCAVATION

8/19/2010
C:\Documents and Settings\cwilliams\Desktop\Proj\u-4007b_rdy_pro21.dgn
cwilliams

5/28/99

U-4007B	22
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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27606
Tel. 919.859.6800
Fax. 919.851.7024
www.stantec.com

RAMP-1A

BY4-19
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 14+07.58
79.86 LT
ELEV. 40.20

BY4-18
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA. 18+59.94
283.45 LT
ELEV. 38.49

POT 16+93.95 = LINE
10+00.00 RAMP-1A
(35.5' LT) = ELEV. 46.11

PI = 10+45.00
EL = 46.68
VC = 150'
K = 342
DS = 50 MPH

PI = 11+50.00
EL = 47.43
VC = 80'
K = 488
DS = 50 MPH

PI = 14+00.00
EL = 48.33
VC = 150'
K = 124
DS = 50 MPH

(+)0.5238%
(+)0.3600%
(+)0.3177%
(-)0.8477%

PROPOSED GRADE
EXISTING GROUND

MATCHLINE STA 22+00.00 RAMP-1A

RAMP-1A

PI = 22+60.00
EL = 41.04
VC = 50'
K = 130
DS = 50 MPH

PI = 24+25.00
EL = 40.28
VC = 100'
K = 169
DS = 50 MPH

END CONSTRUCTION
POT 26+95.19 RAMP-1A
112' LT L1-1A SBL ELEV. 37.43

(-)0.4605%
(-)0.8477%
(-)1.0547%

PROPOSED GRADE
EXISTING GROUND

42"
42"
48"

UNDERCUT EXCAVATION

2/19/2010
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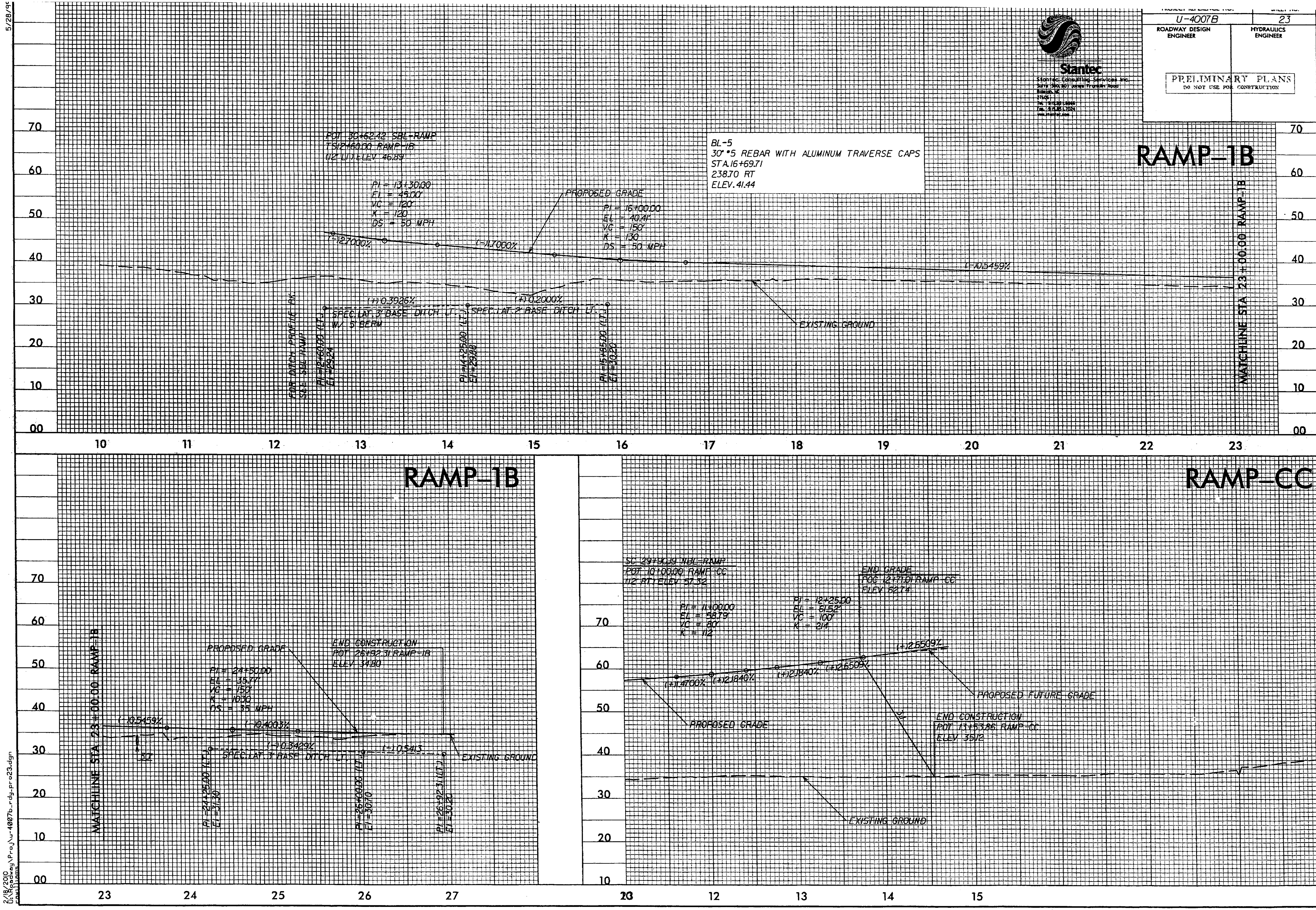
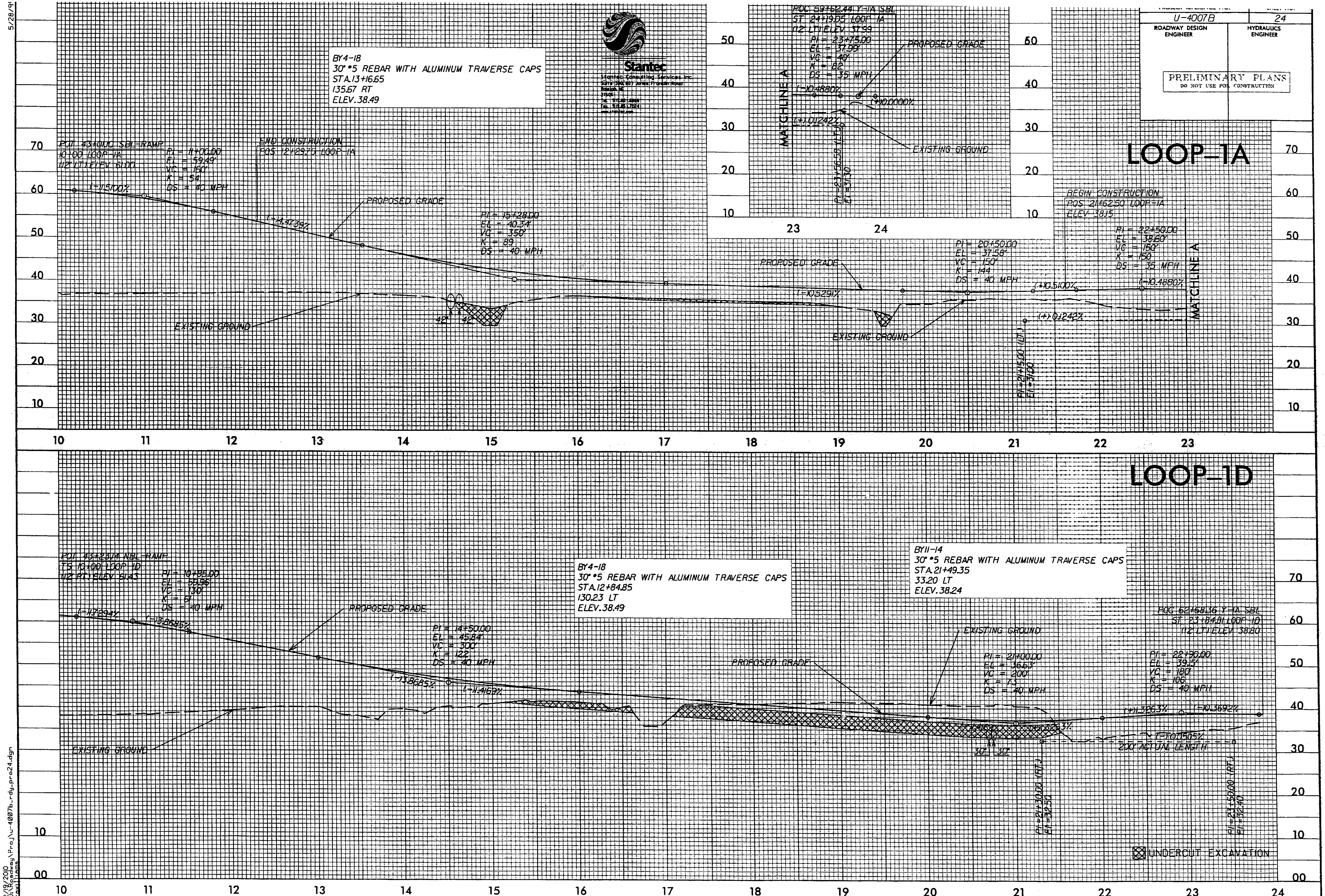
ewilliams



U-4007B
23
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Stantec
RAMP-1B
POT 30+62.42 SBL-RAMP
TS 12+60.00 RAMP-1B
(12' LT) ELEV. 46.89
BL-5
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.16+69.71
238.70 RT
ELEV. 41.44
PI = 13+30.00
EL = 45.00'
VC = 120'
K = 120
DS = 50 MPH
PROPOSED GRADE
PI = 16+00.00
EL = 40.41'
VC = 150'
K = 130
DS = 50 MPH
(-)2.7000%
(-)1.7000%
(-)0.5459%
(+)0.3926%
(+)0.2000%
SPEC.LAT. 3' BASE DITCH LT.
W/ 5' BERM
SPEC.LAT. 2' BASE DITCH LT.
EXISTING GROUND
FOR DITCH PROFILE BK. SEE SBL RAMP
PI=12+60.00 (LT) El=29.24
PI=14+25.00 (LT) El=29.88
PI=15+85.00 (LT) El=30.20
MATCHLINE STA 23+00.00 RAMP-1B
RAMP-1B
PROPOSED GRADE
END CONSTRUCTION
POT 26+92.31 RAMP-1B
ELEV. 34.90
PI = 24+50.00
EL = 35.77'
VC = 150'
K = 1030
DS = 35 MPH
(-)0.5459%
(-)0.4003%
(-)0.3429%
(+)0.5413
SPEC.LAT. 3' BASE DITCH LT.
EXISTING GROUND
PI=24+25.00 (LT) El=31.30
PI=26+00.00 (LT) El=30.70
PI=26+92.31 (LT) El=30.20
RAMP-CC
SC 29+90.19 NBL-RAMP
POT 10+00.00 RAMP-CC
(12' RT) ELEV. 57.32
END GRADE
POC 12+71.01 RAMP-CC
ELEV. 62.74
PI = 11+00.00
EL = 58.79
VC = 80'
K = 112
PI = 12+25.00
EL = 61.52'
VC = 100'
K = 214
(+)1.4700%
(+)2.1840%
(+)2.1840%
(+)2.6509%
(+)2.6509%
PROPOSED FUTURE GRADE
PROPOSED GRADE
END CONSTRUCTION
POT 13+53.86 RAMP-CC
ELEV. 35.12
EXISTING GROUND



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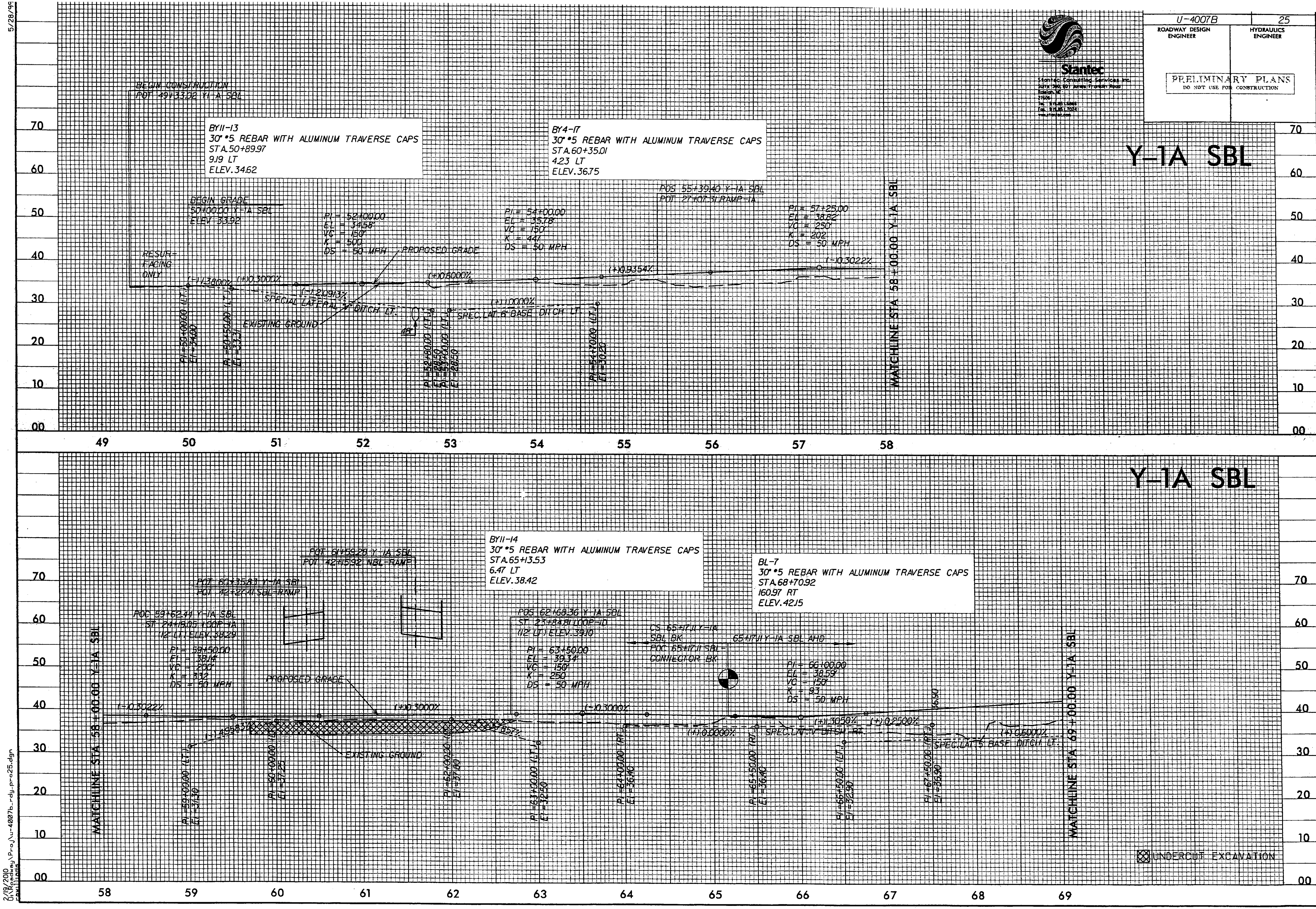
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25
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Stantec
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Y-1A SBL
BEGIN CONSTRUCTION
POT 49+33.02 Y-1A SBL
BY11-13
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.50+89.97
9.19 LT
ELEV.34.62
BY4-17
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.60+35.01
4.23 LT
ELEV.36.75
BEGIN GRADE
50+00.00 Y-1A SBL
ELEV 33.92
PI = 52+00.00
EL = 34.58'
VC = 150'
K = 500
DS = 50 MPH
PROPOSED GRADE
PI = 54+00.00
EL = 35.78'
VC = 150'
K = 447
DS = 50 MPH
POS 55+39.40 Y-1A SBL
POT 27+07.51 RAMP-1A
PI = 57+25.00
EL = 38.82
VC = 250'
K = 202
DS = 50 MPH
RESURFACING ONLY
(+)0.3000%
(+)0.6000%
(+)0.9354%
(-)0.3022%
SPECIAL LATERAL V DITCH LT.
SPEC. LAT. 6' BASE DITCH LT.
EXISTING GROUND
(+)1.0000%
MATCHLINE STA 58+00.00 Y-1A SBL
49 50 51 52 53 54 55 56 57 58
Y-1A SBL
BY11-14
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.65+13.53
6.47 LT
ELEV.38.42
BL-7
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.68+70.92
160.97 RT
ELEV.42.15
POT 61+59.28 Y-1A SBL
POT 42+15.92 NBL-RAMP
POT 60+35.83 Y-1A SBL
POT 42+22.41 SBL-RAMP
POC 59+62.41 Y-1A SBL
ST. 24+18.05 LOOP-1A
(12' LT) ELEV. 38.29
PI = 59+50.00
EL = 38.14'
VC = 200'
K = 332
DS = 50 MPH
PROPOSED GRADE
POS 62+68.36 Y-1A SBL
ST. 23+84.81 LOOP-1D
(12' LT) ELEV. 39.10
PI = 63+50.00
EL = 39.34'
VC = 150'
K = 250
DS = 50 MPH
CS 65+17.11 Y-1A SBL BK
65+17.11 Y-1A SBL AHD
POC 65+17.11 SBL-CONNECTOR BK
PI = 66+00.00
EL = 38.59'
VC = 150'
K = 93
DS = 50 MPH
(-)0.3022%
(+)0.3000%
(-)0.3000%
(+)0.0000%
(+)1.3050%
(+)0.2500%
(+)0.6000%
EXISTING GROUND
SPEC. LAT. V DITCH RT.
SPEC. LAT. 5' BASE DITCH LT.
MATCHLINE STA 58+00.00 Y-1A SBL
MATCHLINE STA 69+00.00 Y-1A SBL
UNDERCUT EXCAVATION
58 59 60 61 62 63 64 65 66 67 68 69
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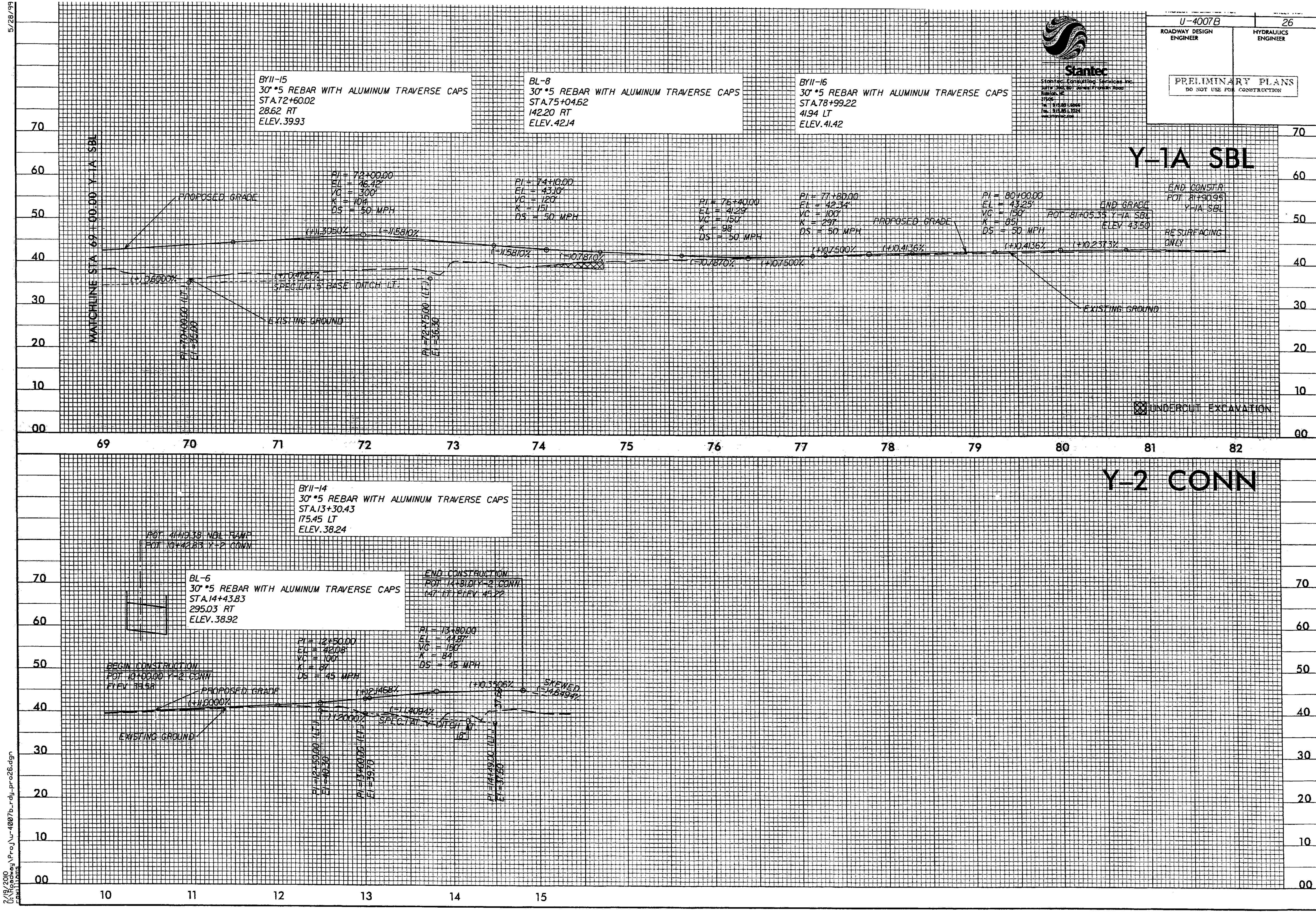
2/19/2010



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26
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Stantec
Stantec Consulting Services Inc.
BYII-15
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.72+60.02
28.62 RT
ELEV. 39.93
BL-8
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.75+04.62
142.20 RT
ELEV. 42.14
BYII-16
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.78+99.22
41.94 LT
ELEV. 41.42
Y-1A SBL
MATCHLINE STA 69+00.00 Y-1A SBL
PROPOSED GRADE
PI = 72+00.00
EL = 46.42'
VC = 300'
K = 104
DS = 50 MPH
PI = 74+10.00
EL = 43.10'
VC = 120'
K = 151
DS = 50 MPH
PI = 76+40.00
EL = 41.29'
VC = 150'
K = 98
DS = 50 MPH
PI = 77+80.00
EL = 42.34'
VC = 100'
K = 297
DS = 50 MPH
PI = 80+00.00
EL = 43.25'
VC = 150'
K = 851
DS = 50 MPH
END CONSTR.
POT 81+90.95
Y-1A SBL
END GRADE
POT 81+05.35 Y-1A SBL
ELEV 43.50
RESURFACING ONLY
(+)1.3050%
(-)1.5810%
(-)1.5810%
(-)0.7870%
(-)0.7870%
(+)0.7500%
(+)0.7500%
(+)0.4136%
(+)0.4136%
(+)0.2373%
(+)0.6000%
SPECIAL 5' BASE DITCH LT.
EXISTING GROUND
PI = 70+00.00 (LT.)
EL = 35.00
PI = 72+75.00 (LT.)
EL = 36.30
EXISTING GROUND
UNDERCUT EXCAVATION
70
60
50
40
30
20
10
00
69
70
71
72
73
74
75
76
77
78
79
80
81
82
Y-2 CONN
BYII-14
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.13+30.43
175.45 LT
ELEV. 38.24
POT 41+19.38 NBL RAMP
POT 10+42.83 Y-2 CONN
BL-6
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.14+43.83
295.03 RT
ELEV. 38.92
END CONSTRUCTION
POT 14+81.01 Y-2 CONN
(47' LT) ELEV 45.22
PI = 13+80.00
EL = 44.87'
VC = 150'
K = 84
DS = 45 MPH
PI = 12+50.00
EL = 42.08'
VC = 100'
K = 87
DS = 45 MPH
BEGIN CONSTRUCTION
POT 10+00.00 Y-2 CONN
ELEV 39.58
PROPOSED GRADE
(+)1.0000%
(+)2.1458%
(+)0.3506%
SKEWED
(-)14.6494%
(-)1.2000%
(-)1.4094%
SPECIAL V DITCH
EXISTING GROUND
PI = 12+50.00 (LT.)
EL = 40.30
PI = 13+00.00 (LT.)
EL = 39.70
PI = 14+49.00 (LT.)
EL = 37.30
10
11
12
13
14
15
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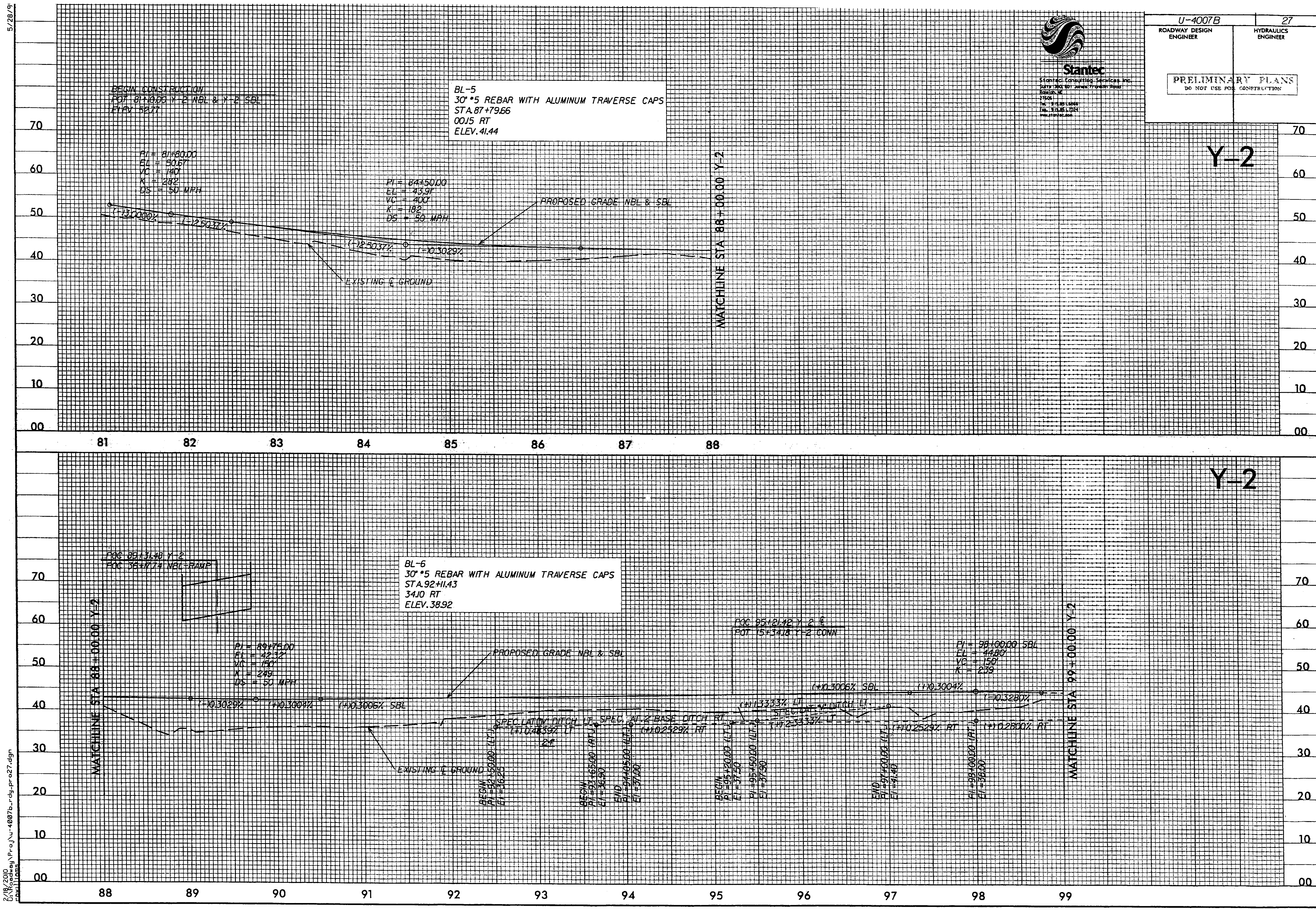
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27
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Stantec
Y-2
BEGIN CONSTRUCTION
POT 81+10.00 Y-2 NBL & Y-2 SBL
ELEV. 52.77
BL-5
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA 87+79.66
00.15 RT
ELEV. 41.44
PI = 81+80.00
EL = 50.67
VC = 140'
K = 282
DS = 50 MPH
PI = 84+50.00
EL = 43.91
VC = 400'
K = 182
DS = 50 MPH
(-)3.0000%
(-)2.5037%
(-)2.5037%
(-)0.3029%
PROPOSED GRADE NBL & SBL
EXISTING ℄ GROUND
MATCHLINE STA 88+00.00 Y-2
POC 88+31.48 Y-2
POC 36+17.74 NBL-RAMP
BL-6
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA 92+11.43
34.10 RT
ELEV. 38.92
PI = 89+75.00
EL = 42.32
VC = 150'
K = 249
DS = 50 MPH
(-)0.3029%
(+)0.3004%
(+)0.3006% SBL
PROPOSED GRADE NBL & SBL
EXISTING ℄ GROUND
POC 95+21.42 Y-2 ℄
POT 15+34.18 Y-2 CONN
PI = 98+00.00 SBL
EL = 44.80
VC = 150'
K = 239
(+)0.3006% SBL
(+)0.3004%
(-)0.3280%
SPEC LATERAL V DITCH LT
SPEC. LAT. V DITCH LT
SPEC. ALT. 2 BASE DITCH RT
(+)0.4839% LT
(+)0.2529% RT
(+)1.3333% LT
(+)2.3333% LT
(+)0.2529% RT
(+)0.2800% RT
BEGIN PI=92+50.00 (LT) EI=36.25
BEGIN PI=93+65.00 (RT) EI=36.90
END PI=94+05.00 (LT) EI=37.00
BEGIN PI=95+20.00 (LT) EI=37.50
PI=95+50.00 (LT) EI=37.90
END PI=97+00.00 (LT) EI=41.40
PI=98+00.00 (RT) EI=38.00
MATCHLINE STA 99+00.00 Y-2
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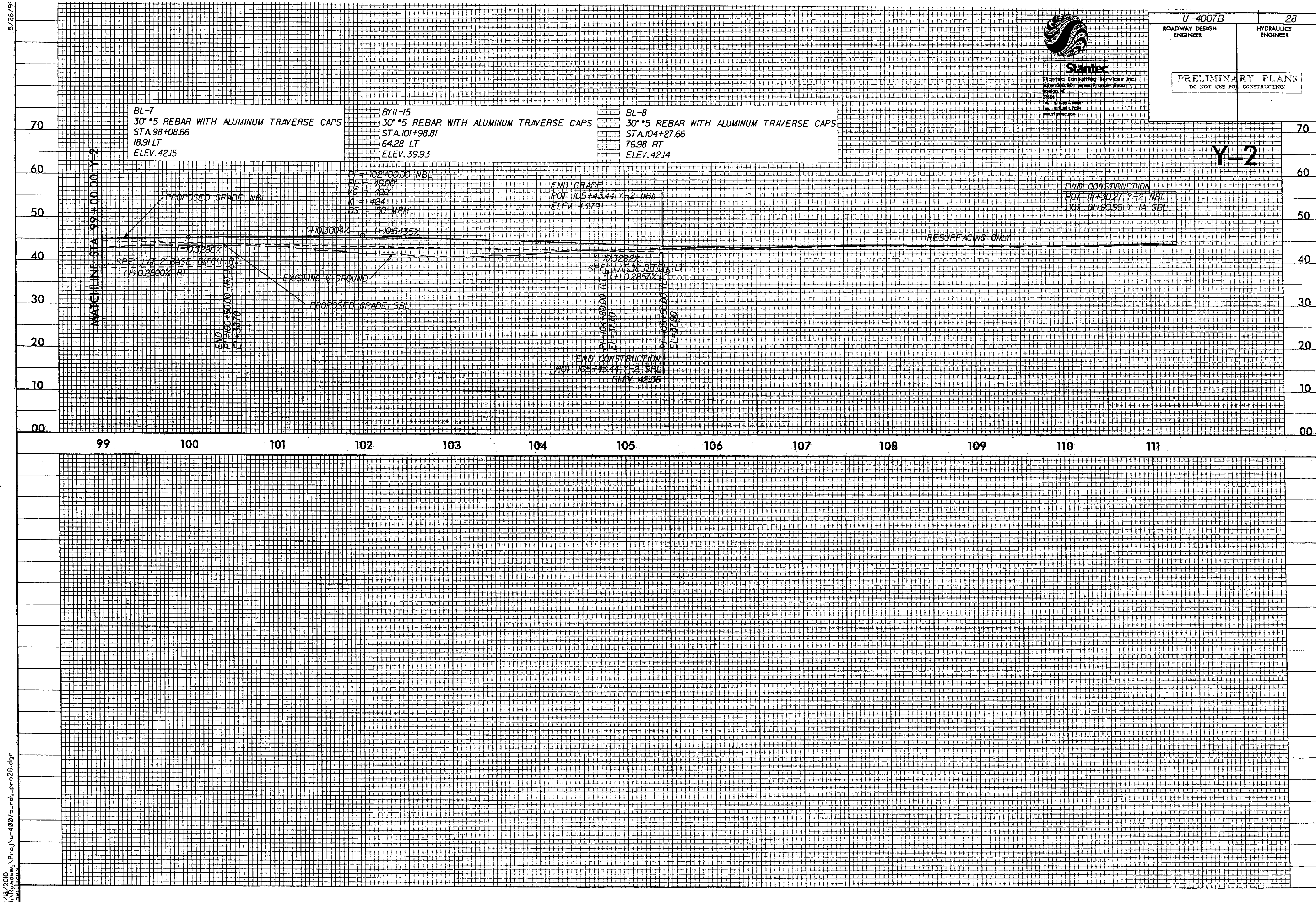
ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Stantec
Stantec Consulting Services Inc.

Y-2



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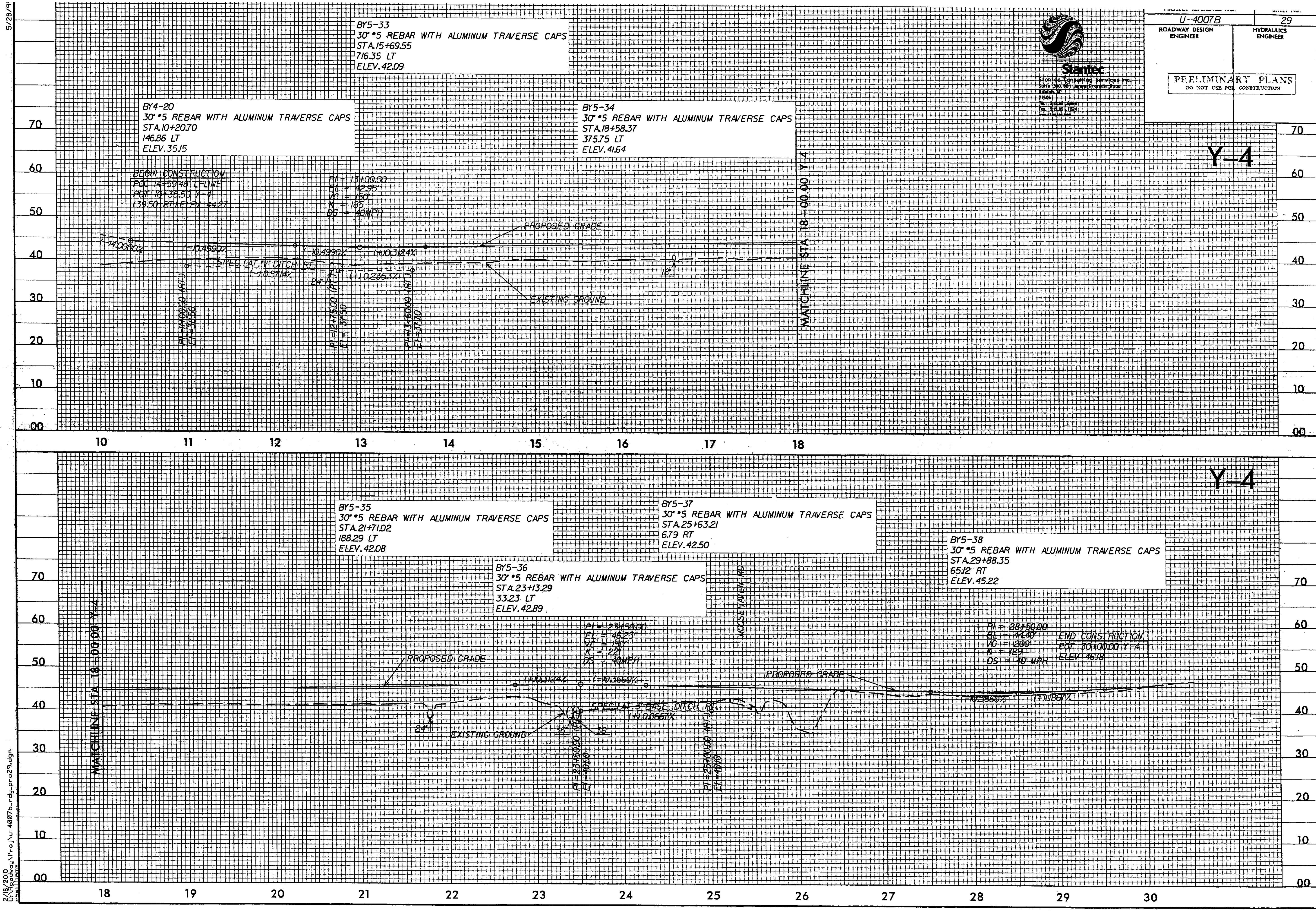
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29
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Stantec
Stantec Consulting Services Inc.
Y-4
BY5-33
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.15+69.55
716.35 LT
ELEV.42.09
BY4-20
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.10+20.70
146.86 LT
ELEV.35.15
BY5-34
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.18+58.37
375.75 LT
ELEV.41.64
BEGIN CONSTRUCTION
POC 14+59.48 -L- LINE
POT 10+35.50 -Y-4
(39.50 RT) ELEV. 44.27
PI = 13+00.00
EL = 42.95'
VC = 150'
K = 185
DS = 40MPH
PROPOSED GRADE
(-)4.0000%
(-)0.4990%
(-)0.4990%
(+)0.3124%
SPEC. LAT. "V" DITCH RT.
(-)0.8714%
(+)0.2353%
24"
18"
EXISTING GROUND
PI=11+00.00 (RT.)
EL=38.50
PI=12+75.00 (RT.)
EL=37.50
PI=13+60.00 (RT.)
EL=37.70
MATCHLINE STA. 18+00.00 -Y-4
10 11 12 13 14 15 16 17 18
BY5-35
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.21+71.02
188.29 LT
ELEV.42.08
BY5-37
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.25+63.21
6.79 RT
ELEV.42.50
BY5-38
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.29+88.35
65.12 RT
ELEV.45.22
BY5-36
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.23+13.29
33.23 LT
ELEV.42.89
HOUSEHAVEN RD.
PI = 23+50.00
EL = 46.23'
VC = 150'
K = 221
DS = 40MPH
PI = 28+50.00
EL = 44.40
VC = 200'
K = 129
DS = 40 MPH
END CONSTRUCTION
POT 30+00.00 -Y-4
ELEV. 46.18
PROPOSED GRADE
(+)0.3124%
(-)0.3660%
(-)0.3660%
(+)1.1860%
SPEC. LAT. 3' BASE DITCH RT.
(+)0.0667%
24"
36"
36"
EXISTING GROUND
PI=23+50.00 (RT.)
EL=40.00
PI=25+00.00 (RT.)
EL=40.10
18 19 20 21 22 23 24 25 26 27 28 29 30
00 10 20 30 40 50 60 70
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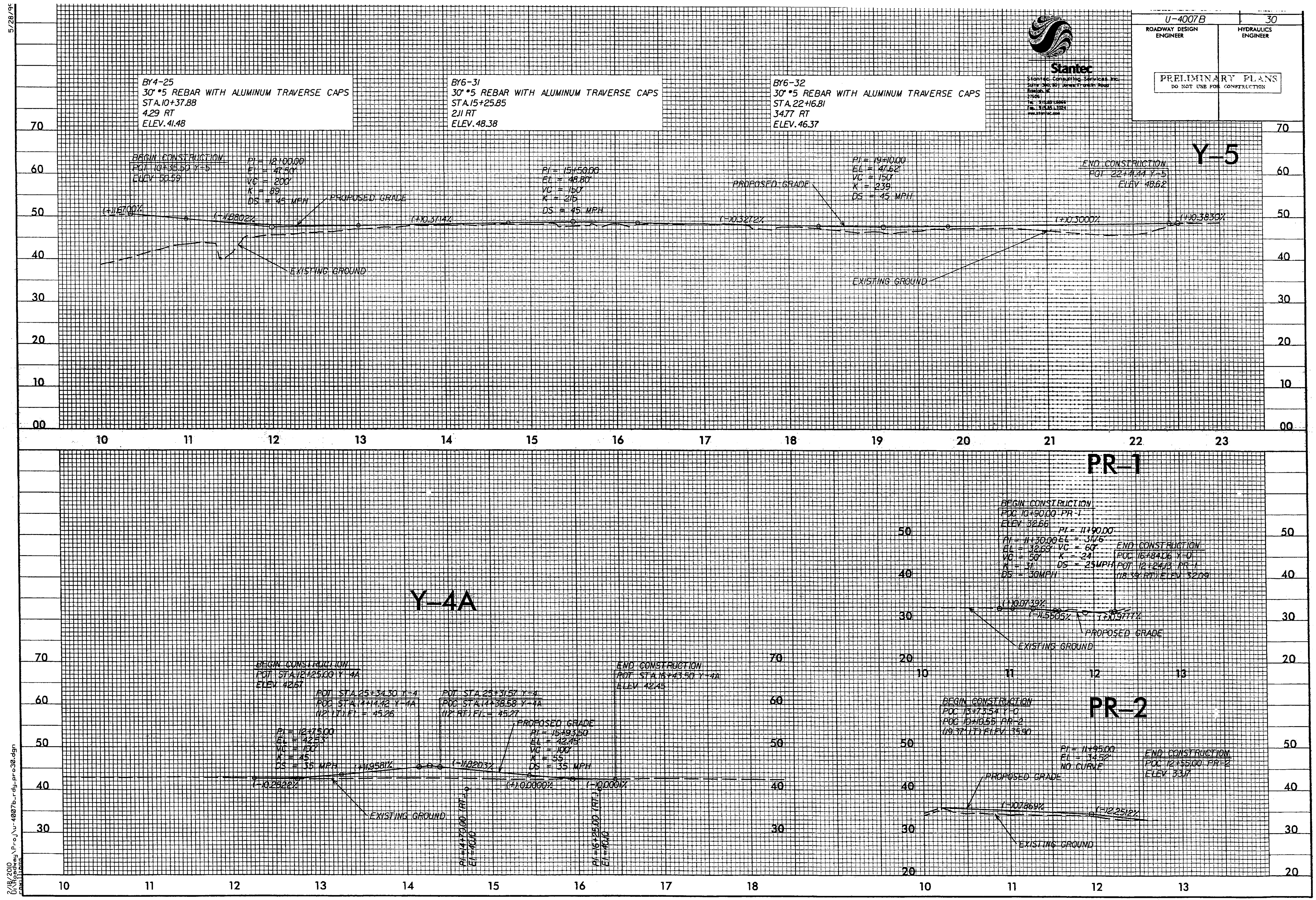
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30
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
Stantec
Stantec Consulting Services Inc.
Y-5
BY4-25
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.10+37.88
4.29 RT
ELEV. 41.48
BY6-31
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.15+25.85
2.11 RT
ELEV. 48.38
BY6-32
30" #5 REBAR WITH ALUMINUM TRAVERSE CAPS
STA.22+16.81
34.77 RT
ELEV. 46.37
BEGIN CONSTRUCTION
POT 10+35.50 Y-5
ELEV 50.59
PI = 12+00.00
EL = 47.50'
VC = 200'
K = 89
DS = 45 MPH
PROPOSED GRADE
PI = 15+50.00
EL = 48.80'
VC = 150'
K = 216
DS = 45 MPH
PI = 19+10.00
EL = 47.62'
VC = 150'
K = 239
DS = 45 MPH
END CONSTRUCTION
POT 22+14.44 Y-5
ELEV 48.62
(+)1.6700%
(-)1.8802%
(+)0.3714%
(-)0.3272%
(+)0.3000%
(+)0.3830%
EXISTING GROUND
PR-1
BEGIN CONSTRUCTION
POC 10+90.00 PR-1
ELEV 32.66
PI = 11+30.00
EL = 32.69
VC = 50'
K = 31
DS = 30MPH
PI = 11+90.00
EL = 31.76
VC = 60'
K = 24
DS = 25MPH
END CONSTRUCTION
POC 16+84.06 Y-0
POT 12+24.13 PR-1
(18.39' RT) ELEV 32.09
(-)0.0739%
(-)1.5505%
(+)0.9177%
PROPOSED GRADE
EXISTING GROUND
Y-4A
BEGIN CONSTRUCTION
POT STA.12+25.00 Y-4A
ELEV 42.67
POT STA.25+34.30 Y-4
POC STA.14+1.42 Y-4A
(12' LT) EL = 45.26
POT STA.25+31.57 Y-4
POC STA.14+38.58 Y-4A
(12' RT) EL = 45.27
PROPOSED GRADE
PI = 12+75.00
EL = 42.53
VC = 100'
K = 45
DS = 35 MPH
PI = 15+93.50
EL = 42.45
VC = 100'
K = 55
DS = 35 MPH
END CONSTRUCTION
POT STA.16+43.50 Y-4A
ELEV 42.45
(-)0.2822%
(+)1.9581%
(-)1.8203%
(+)0.0000%
(-)0.0001%
PI=14+70.00 (RT)
EL=40.10
PI=16+25.00 (RT)
EL=40.10
EXISTING GROUND
PR-2
BEGIN CONSTRUCTION
POC 13+73.54 Y-0
POC 10+10.55 PR-2
(19.37' LT) ELEV 35.90
PI = 11+95.00
EL = 34.52'
NO CURVE
END CONSTRUCTION
POC 12+55.00 PR-2
ELEV 33.17
PROPOSED GRADE
(-)0.7869%
(-)2.2512%
EXISTING GROUND
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2/18/2010
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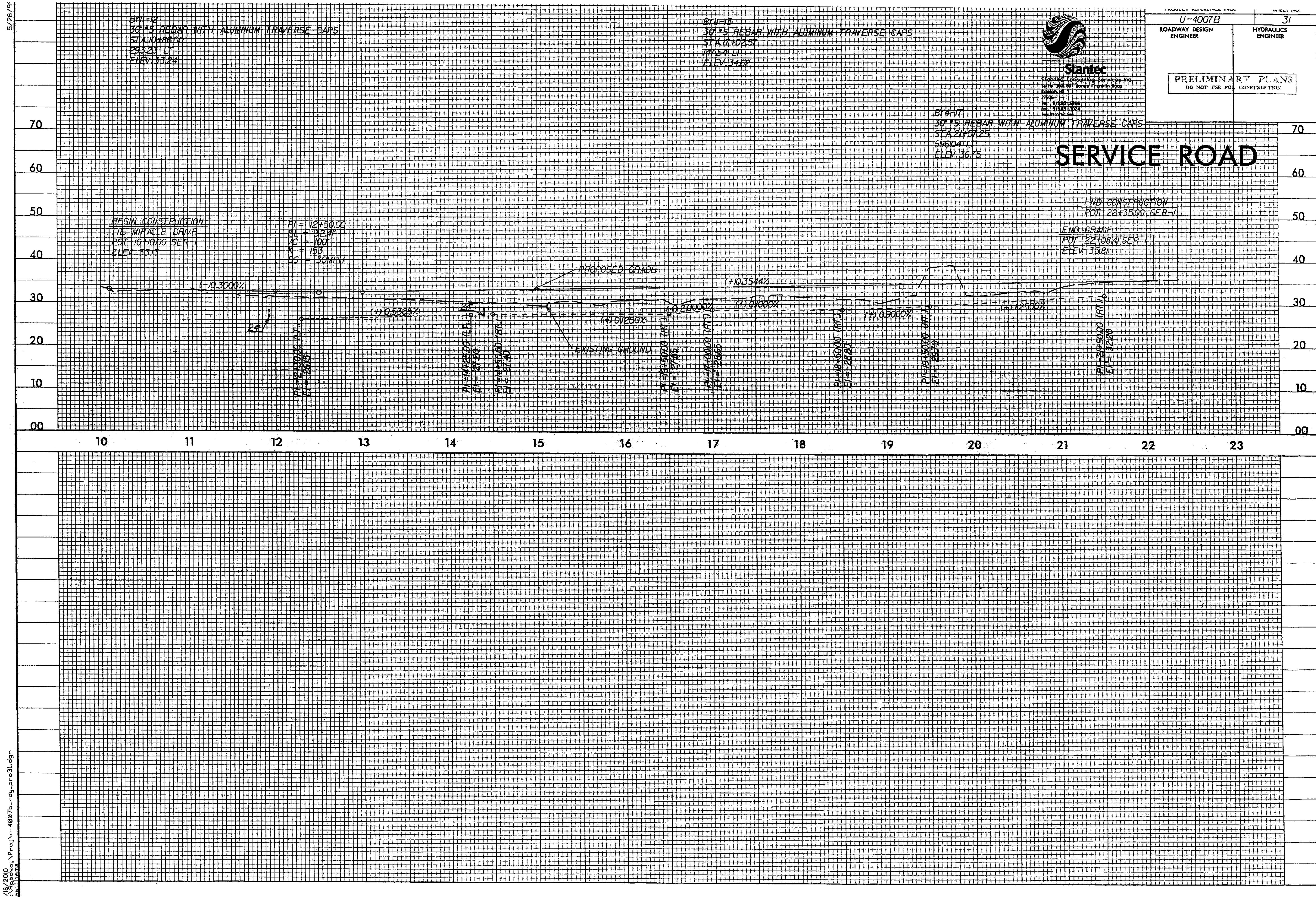
ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

Stantec

SERVICE ROAD



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