



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

June 29, 2011

MEMORANDUM TO: Mr. Michael Pettyjohn, PE
Division 11 Engineer

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

SUBJECT: Watauga and Caldwell Counties, Widening of US 321 from SR
1500 (Blackberry Road) to US 221 at Blowing Rock; State Project
No. 6.739001T; NCDOT Division 11; WBS Element No.
34402.2.6; **TIP No. R-2237C.**

A handwritten signature in black ink, appearing to read "E. F. Fushk".

Attached are the U.S. Army Corps of Engineers Section 404 Individual Permit and the N.C. Division of Water Quality Section 401 Water Quality Certification for the above referenced project. All environmental permits have been received for the construction of this project.

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

Cc: w/o attachment (see website for attachments):

Mr. Randy Garris, P.E. State Contract Officer
Mr. Heath Slaughter, Division Environmental Officer
Mr. Majed Alghandour, P. E., Programming and TIP
Mr. Jay Bennett, P.E., Roadway Design Unit
Mr. Dewayne Sykes, P.E. Utilities Unit
Dr. David Chang, P.E., Hydraulics Unit
Mr. Art McMillan, P.E., Highway Design Branch
Mr. Tom Koch, P.E., Structure Design Unit
Mr. Mark Staley, Roadside Environmental Unit
Mr. Ron Hancock, P.E., State Roadway Construction Engineer
Mr. Mike Robinson, P.E., State Bridge Construction Engineer
Ms. Teresa Hart, P.E., PDEA Western Region Unit Head
Ms. Beth Harmon, EEP
Mr. Phillip Ayscue, NCDOT External Audit Branch

PROJECT COMMITMENTS

US 321 Improvements Project
From SR 1500 (Blackberry Road) to US 221
Blowing Rock
Caldwell and Watauga Counties
State Project No. 6.739001T
WBS 34402.1.1
TIP Project R-2237C

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Roadway Design

Plan Review. NCDOT will provide preliminary roadway design plans at approximately 25 percent, 50 percent, and 80 percent of completion to the Blowing Rock Town Board and the State Historic Preservation Officer (SHPO) for review and comment. A set at each of these stages of completion also will be placed in the Blowing Rock Town Library for public review and comment.

Guardrail. Where guardrail is required, the NCDOT will install approved wooden-faced guardrail where it can be installed and meet safety requirements. If, during final design, locations are identified where wooden-faced guardrail cannot be installed, or where, in order to meet safety requirements, installation would cause an undesirable increase in project right of way to provide necessary roadside clear areas, the NCDOT will coordinate with the Town (and the SHPO within the Green Park Historic District) to find an acceptable guardrail alternative prior to finalizing the plans.

Lane Width. The width of lanes within the limits of the Green Park Historic District will be limited to 11-feet; 12-foot lanes will be constructed elsewhere along the project.

Current design plans reflect this.

Goforth Road. The NCDOT will terminate Goforth Road just east of US 321 rather than rebuild its intersection with US 321.

Current design plans reflect this.

Median. The NCDOT will not construct a median within the limits of the Green Park Historic District. The NCDOT will not construct a median between Green Hill Road and US 321 Business in order to narrow the footprint of the proposed improvement.

Current design plans reflect this.

Sidewalks. The NCDOT will provide a sidewalk, five feet in width, on the east side of US 321 from Green Hill Road to US 321 Business (which includes the part of the project within the historic district) so that the west side berm may be used for more concentrated landscaping. The NCDOT will fund and construct sidewalks on both sides of US 321 from US 321 Business to Possum Hollow Road. Pedestrian crossings (crosswalks and/or pedestrian signals) may be provided at signalized intersections.

Current design plans reflect this. Bring to the attention of the RTE (or appropriate party).

Emergency Vehicle Access. The NCDOT will rebuild the emergency vehicle access at The Pines (a residential subdivision), or replace it with something that will serve the same function. The goal is to insure that emergency vehicles can access the subdivision directly from US 321 since the neighborhood streets and turning radii are too narrow for emergency vehicles to navigate.

Current design plans reflect this. NCDOT will provide a driveway cut, a grassed slope flat enough for an emergency vehicle to drive up, and a replacement gate.

Fire/EMS Crossover. The NCDOT will provide an emergency crossover (with pavers that will allow grass to grow through 'them) at the planned Fire/EMS station (parcel no. 1504 on the Corridor Public Hearing Map). This crossover will permit volunteer fire fighters to turn left into the station and fire trucks to turn left out of the station. No signal of any kind will be provided at this location, but it will be signed for emergency use only.

Current design plans reflect this. Bring to the attention of the ATE (or appropriate party).

Retaining Wall to Reduce Wetland Impact. A retaining wall will be used to reduce the 0.07-acre impact on wetlands associated with jurisdictional crossing 2. The retaining wall will be included in the area of design stations 679+00 to 681+00. At the other locations where jurisdictional areas will be affected, the design depicted in the EIS minimizes impacts.

No retaining wall is proposed, and the entire wetland being counted as a take. Hydraulics and Roadway Design have discussed the changes in this area with the Merger Team at Concurrence Points 4B and 4C to everyone's satisfaction.

Highway Lighting. The NCDOT will not install highway lighting within the limits of the Green Park Historic District. If the Town wants highway lighting outside of the Green Park Historic District, the Town will purchase, install, and maintain the roadway lighting equipment of its choice. The NCDOT will reimburse the Town for the cost of said roadway lights. The NCDOT will coordinate with the Town to ensure American Association of State Highway and Transportation Officials' (AASHTO) lighting requirements are met. The NCDOT's Utility Agent will handle any right of way encroachment associated with Town lighting. If right of way and berm widths are not wide enough to accommodate poles outside the clear zone, breakaway poles will be required. Any breakaway or non-breakaway light poles will be placed behind the sidewalk.

Blue Ridge Electric Membership Corp will install wiring and bases for any pedestrian lighting desired by the Town of Blowing Rock. Blue Ridge will also install any roadway lighting desired by the Town. Blue Ridge is currently developing plans for both pedestrian lights and roadway

lighting for NCDOT review, and then subsequently for Town review. If lighting that meets DOT standards is too much for the Town, the Town may decide not to install.

Stone Walls. The NCDOT will replace all existing stone walls within the Town of Blowing Rock's limits (including the Green Park Historic District) removed by the undertaking with new in-kind stone walls. All other retaining walls along the undertaking within the town limits will be formed concrete walls with simulated masonry surface treatment. The surface treatment will be designed to resemble the existing stone walls in the historic district (e.g., the low wall in front of the Green Park Inn). The appearance of the surface treatment will be coordinated with the Town, and a sample of the surface treatment will be fabricated for the Town's and the SHPO's comment and the NCDOT's approval prior to permanent installation on the project.

Need to work out with contracting staff how best to put this in the contract documents. This would not be the first time this has been done. Contract office can write special provisions for the walls that do not get addressed by some other business unit (i.e. Geotechnical, Structure Design, etc.).

Blowing Rock Country Club Golf Course. The NCDOT will construct a retaining wall on the east side of US 321 at the Blowing Rock Country Club (Hole No. 4) in order to minimize impacts to the course.

Current design plans reflect this.

Tree Preservation. The NCDOT will make a special effort to preserve trees of particular value identified by the Town that are outside the clear recovery area. Any trees within 14 feet of the face of curb would need to meet the NCDOT guidelines for plantings before they could be preserved.

The Town has to date not identified what trees have particular value. The minutes from the December 2007 meeting gave the Town till May 9, 2008 to do this. On August 24, 2010, the Town further indicated they did not have concerns about any particular trees. The Blowing Rock Country Club has asked that we preserve the trees alongside the course where it borders the project.

Traffic Engineering Branch

Plan Review. NCDOT will provide preliminary traffic control plans, preliminary pavement marking plans, and preliminary signing plans to the Blowing Rock Town Board and the SHPO for review and comment. A set will also be placed in the Blowing Rock Town Library for public review and comment.

The TCP/TMP will be completed for the October 2010 PLFI. The TCP/TMP will utilize temporary pavement, temporary shoring and temporary barrier/guardrail during construction, so that the majority of the project can be constructed away from traffic. However, flagging operations, lane closures, off-site detours and stopping traffic (15 minutes or less) will be utilized as required during construction.

(update 5-17-11): TMP has been completed and we are waiting for Temporary Shoring Data to insert into TMP and Roadway Construction Quantities to determine ICTs.

Signal Poles. NCDOT will use standard mast-arm signal poles for traffic signals, including the one(s) proposed in the Green Park Historic District. If the Town of Blowing chooses a decorative mast arm pole that exceeds the cost of the NCDOT-standard mast-arm pole, then the Town will pay the incremental cost difference.

Coordinated Signal System. The NCDOT will design and install a coordinated traffic signal system as part of the undertaking.

The ITS Signals Communications Squad (Neil Avery) will have our plans turned in on schedule. The Division has agreed to use wireless communications to interconnect the signals on this project. We are scheduled to do our radio field tests week of 10-18-10.

Fog Safety Study. The NCDOT will evaluate flashing warning lights, pavement markers, rumble strips and/or stripes, delineation, warning signs, and/or lighting that would be appropriate to increase safety and improve driver behavior during fog occurrences. The plans submitted by the NCDOT to the SHPO and the Town for review will show the results of the NCDOT's evaluation and the resulting recommendations.

Signs. The Town will identify locations where proposed signs may create an aesthetic concern. The NCDOT will coordinate with the Town to establish the number, size, and placement of signs to the degree that the *Manual on Uniform Traffic Control Devices* allows.

Restriction of Traffic Detours from US 321 to US 321 Business (Main Street). If a decision is made to restrict traffic detours on this stretch of Main Street, it must be carefully articulated in the contractor documents (bid package). The NCDOT will discuss this matter with the Town of Blowing Rock during final design development to decide on appropriate restrictions to include.

Update (5-17-2011): The project has been divided into two Areas. Area I is from just south of the intersection of US 321 & US 321 Bus to the end of the project. Area II is from that intersection south to the beginning of the project. Lane Closure Time Restrictions (including Holidays/Special Events), Blasting Times and off-site detours for both blasting and -Y- line constructions was discussed with representatives of the Town of Blowing Rock & Division 11 on 10-19-2010 and with the Division at the PLFI on 4-24-2011 (Note: The Town of Blowing Rock representatives elected not to attend the TMP review).

The revised times for Blasting are as follows:

Area I & II - Tuesday & Thursday between 11:00 am to 3:00 pm.

Area II, from beginning of project to the Green Park Historic District (approximately Sta. 400+00 +/- -L-) – Either Monday or Wednesday (limited to one day per week) between 7:00 pm to 5:00 am the next morning.

There may be other times that portions of US 321 Bus will temporary be utilized as an off-site detour to construct proposed Sunset Dr. (-Y13-) and West Cornish Dr. (-Y14-).

Note: The off-site restrictions/durations will have Liquidated Damages associated with each operation.

Speed Limit. The speed limit within the Green Park Historic District will be posted 35 mph after construction of the Preferred Alternative.

The default speed limit in the Town Limits is 35 mph, barring any petition from the Town for something higher. The design speed for the entire project is 40 mph, with some design exceptions. The current NCDOT recommendation is to continue the 35 mph speed limit south of the Town Limits to the project terminus at Blackberry Road.

Roadside Environmental Unit

Plan Review. NCDOT will provide preliminary post-construction landscape design plans and preliminary sedimentation and erosion control plans to the Blowing Rock Town Board and the SHPO for review and comment. A set of each will also be placed in the Blowing Rock Town Library for public review and comment.

Jeff Lackey ok with this as of 9/3/10. Town said no need to send erosion and sedimentation control plans for review in a Dec 2010 email.

Post Construction Landscape Plan. The NCDOT will design and implement a post-construction landscape plan that will include the following elements:

- A median on US 321 from US 321 Business to the project terminus at Possum Hollow Road. The median will either be vegetated or decorative concrete (the Town's choice). If the median is vegetated, it will be planted with vegetation of the NCDOT's choosing that is both cold-hardy and salt-hardy where safety conditions allow. If the median is to be decorative concrete, then the aesthetic details will be coordinated with the Town, and a sample will be fabricated for the Town's review and comment and the NCDOT's approval prior to permanent installation on the project.
- Decorative pedestrian lights (i.e., "coach" lights), the style of which is to be agreed to by the Town, the SHPO, and the NCDOT, at selected locations within the Town limits. All decorative pedestrian light locations within the NCDOT right of way (e.g., in areas of more concentrated landscaping) must be approved the Special Design Section of the NCDOT's Roadway Design Unit. The NCDOT will pay for the lighting equipment and installation, and the NCDOT will install the lights as part of the landscape plan implementation. The NCDOT may choose to do a two-phase post-construction landscape implementation. The first phase would be the hardscape elements, which would include pedestrian lights, to be overseen by the Resident Engineer. The second phase would be the landscape design and development, which would be overseen by the Roadside Environmental Unit. The Town will assume ownership of the lights and will pay for utility (electricity) costs.
- Broader areas of more concentrated landscaping where right of way, roadway elements, terrain, and safety conditions allow.
- Plantings planned in accordance with the NCDOT's *Guidelines for Planting within Highway Right-of-Way*.
- Design and construction of a park on Business/Main Street at US 321 (near Shoppes on the Parkway). The park construction will be part of the landscape contract, which will be

awarded to a landscape contractor after the roadway construction contract is complete. The NCDOT will convey its interest in this property to the Town, and the Town will assume maintenance for the park.

- The blueberry bushes near Rock Road will be relocated or replaced if they are in the right of way of the Preferred Alternative.

MEDIAN TREATMENT: Town has not yet indicated their desire. Closure needs to be reached. Jeff Lackey is coordinating with the Town.

PEDESTRIAN LIGHTS: For pedestrian lights proposed along the project, Blue Ridge Electric Membership Corps will install the wiring and boxes for these prior to project construction. BREMCO's engineer is preparing pedestrian light plans now. NCDOT will review the plans, and once NCDOT approves, the Town will review the plans. If the Town wants different lighting levels, etc., than what the plans specify, NCDOT, the Town, and BREMCO will discuss. BREMCO's engineer will need to identify areas where pedestrian lights are proposed adjacent to retaining walls. There may not be enough room in those areas for the light bases.

Utilities Coordination Unit

Utilities. The NCDOT will place existing overhead utility lines (electrical, telephone, and cable television) underground between Green Hill Road and Possum Hollow Road.

Blue Ridge Electric Membership Corps will place the overhead utilities underground. NCDOT will reimburse for the cost of relocating the utilities. Coordination between the Town, Blue Ridge, and NCDOT is currently underway.

Division 11

Unanticipated Discovery of Archaeological Resources. In accordance with Title 36 of the *Code of Federal Regulations*, Section 800.11(a), and prior to initiation of construction activities, the NCDOT will ensure preparation of a plan of action should archaeological or architectural resources be inadvertently or accidentally discovered during the construction phase of the project. The plan will provide for an assessment of the significance of the discovery in consultation amongst the NCDOT, the USACE, and the SHPO. Inadvertent or accidental discovery of human remains will be handled in accordance with North Carolina General Statutes 65 and 70.

Blasting. The NCDOT and the contractor will limit blasting to specific times. Those times will be posted on the aforementioned project website. In addition, blasting activities will be announced to the media as to be outlined in the PIP.

Contract office can include Intermediate Contract Time special provision to limit the times during which the contractor can blast. Posting to the project website and announcement to the media will be the Divisions (Resident Engineer) responsibility.

Dust Minimization. The NCDOT and the contractor will utilize a truck to periodically spray water on dry, exposed soil to control dust to the greatest extent possible.

Article 107-13(E) of the 2006 NCDOT Standard Specifications (page 1-66) requires the contractor to control dust on all projects so this should already be covered.

Reseeding Exposed Dirt. In accordance with the NCDOT's Best Management Practices for Protection of Surface Waters, the NCDOT and the contractor will seed exposed soil with grass in order to control run-off, erosion, and dust.

This is a standard practice and should be handled by Roadside Environmental Unit

Covered Truck Beds. The NCDOT will require all construction trucks traveling at speeds greater than 25 mph to cover their truck beds in order to reduce the amount of dust and debris.

Contract Office will include a provision to address this.

Staging Areas. The NCDOT will not permit staging areas within the Green Park Historic District. The NCDOT may permit overnight parking of equipment and storage of materials, associated with current construction needs, within the construction right-of-way limits along any part of the project corridor.

Contract Office will include a provision telling the contractor that staging areas are not permitted in the Historic District. Division personnel (Resident Engineer) will need to address with the Contractor where overnight parking may be permitted.

Waste Sites, Borrow Pits, and Construction Offices. The NCDOT will not permit waste deposits, borrow pits, or construction offices within the Green Park Historic District.

Contract Office will include a provision to address this.

Pre-Construction Surveys. The NCDOT will conduct pre-construction surveys of all structures adjacent to US 321 within the historic district to record a "before" condition so that any construction-related damage can be accurately identified.

Will be put in contract blasting provisions.

Contact with Resident Engineer. The NCDOT's construction project manager will be the Resident Engineer. He or she is the only individual with the authority to stop construction. Citizens may directly contact the Resident Engineer (and assistants) with questions or concerns so that the Resident Engineer can immediately address any project concerns.

Division will likely designate an individual through CEI contract to be the community liaison.

Construction Unit

"Smart Zone" Techniques. The NCDOT will use "Smart Zone" techniques in the maintenance of traffic during construction. These techniques may include methods such as advance notification of delays, lane closures, real time monitoring, and the use of Digital Message Systems. In

addition, the NCDOT will maintain a website that will provide information on anticipated delays based on scheduled construction activities.

Jesse Gilstrap will be POC for this item. The TCP/TMP will utilize CMS, DMS (if available), Advance Warning signs, detour signing, etc. during the construction of this project. Note: The last sentence will be covered under the Project Website commitment. (Jesse Gilstrap)

Public Information Plan. The NCDOT's Construction Unit IMPACT Public Information Program will work with the Town of Blowing Rock to develop an appropriate public information plan (PIP).

"Kick-Off" Meeting. As part of the PIP, the NCDOT will hold a pre-construction "kick-off" meeting to introduce the contractor and the construction process to area residents.

Project Website. The NCDOT will develop, maintain, and consistently update a project website to provide current information about the schedule and development of the project, project progress, project contact information, and notification of any anticipated delays based on scheduled construction activities.

See "Smart Zone Techniques" commitment.

Geotechnical Unit

Development of Vibration Monitoring Plan. The NCDOT will develop a vibration monitoring plan for the project, to include on-site research during final design as well as monitoring during construction. The recommendations of the plan will be provided to the USACE, the SHPO, the Town, and other parties concurring with the MOA for their comments prior to adoption of the plan.

Hired blasting expert.

Baseline Studies. On-site research, done prior to construction, will measure existing vibration exposure, determine sensitivity of nearby structures, and assign thresholds accordingly.

Hired blasting expert.

Vibration Monitoring. Vibration monitoring will be conducted on key structures within the historic district (to be recommended in the aforementioned vibration monitoring plan). When a reading exceeds an established threshold, an alarm will sound and anyone who hears it, e.g., property owners/staff or contractor personnel, will immediately contact the NCDOT's Resident Engineer.

Hired blasting expert.

Project Development and Environmental Analysis Branch

Historic Resources Documentation

Green Park Historic District. Prior to the initiation of construction activities, the NCDOT will record the existing conditions of the Green Park Historic District and its surroundings in accordance with the Historic Structures and Landscape Recordation Plan contained in the Appendix of the Memorandum of Agreement for the Preferred Alternative. This will include a video to document US 321 and the surrounding landscape and structures within the historic district, as well as keying the locations of the filming to an aerial photograph of the historic district adjacent to US 321.

The video recordation is complete. The filmed locations in the video have not yet been tied to a map; discussions about how to practically achieve this are underway.

Individual Structures. Prior to the initiation of construction activities, the NCDOT will record the existing conditions of the following structures and their immediate surroundings in accordance with the Historic Structures and Landscape Recordation Plan. The structures are: the Green Park Inn, Cottage No. 21 (as referred to in the 1994 National Register Nomination), and the A.G. Jonas Cottage.

The recordation of the individual structures is complete.

Existing Stone Walls. Prior to the initiation of construction activities, the NCDOT will record the existing stone walls along US 321 within the historic district. The NCDOT will replace all existing stone walls within the town limits removed by the project with new in-kind stone walls.

The recordation of the stone walls is complete.

Blowing Rock Country Club Golf Course Hole Number 4. Prior to the initiation of construction activities, the NCDOT will record the existing conditions of hole number 4 in accordance with the Historic Structures and Landscape Recordation Plan.

Blowing Rock Country Club Golf course Hole Number 4 has been recorded and the photos have been delivered to SHPO. Video should be completed by the end of July 2011.

Other Mitigation at Individual Properties

Green Park Inn. The NCDOT, in consultation with SHPO and the property owners, will develop measures to reduce the Adverse Effect of the undertaking on the Green Park Inn. These measures may include, but are not limited to the following:

- Replacement of the existing stone walls;
- Replacement of the existing sidewalk;
- Reconfiguration of the existing parking lot;
- Sound abatement/buffering; and/or
- Landscaping.

The new owner has contacted Mary Pope Furr / HEU, and she provided him the MOA, the MOU, and some key contacts. He has not followed up. Per Mary Pope, the burden is on the property owner to approach us about additional mitigation that may be needed.

A.G. Jonas Cottage. The NCDOT, in consultation with SHPO and the property owners, will develop measures to reduce the Adverse Effect of the undertaking on the A.G. Jonas Cottage. These measures may include, but are not limited to the following:

- Construction of a retaining wall;
- Construction of a privacy fence;
- Sound abatement/buffering; and/or
- Landscaping.

Being worked out (some) as part of ROW negotiations. Fence or no fence still being worked out. Retaining wall is in.

Cottage No.21 (as referred to in the 1994 National Register Nomination). In the event that this property is not determined to be a relocation in the final design, the NCDOT, in consultation with the SHPO, and the property owners, will develop measures to reduce the adverse effect of the undertaking on Cottage No.21. These measures may include, but are not limited to the following:

- Providing alternative access to the property;
- Construction of a retaining wall; and/or
- Landscaping.

Cottage No. 21 is a relocation.

Bollinger-Hartley House. The NCDOT will construct a retaining wall at the Bollinger-Hartley House to minimize the project's impact on that property. Landscaping on the Bollinger-Hartley House property will be discussed with the SHPO and the property owners and will be included in the post-construction landscape plan.

Retaining wall is in Design Plans.

Issue Resolution

Dispute Resolution Related to the Memorandum of Agreement. Should the North Carolina SHPO object within (30) days to any plans or documentation provided for review pursuant to the Section 106 Memorandum of Agreement, the NCDOT will consult with the SHPO to resolve the objection. If the USACE or the SHPO determines that the objection cannot be resolved, the USACE will forward all documentation relevant to the dispute to the Advisory Council on Historic Preservation (Council). Within thirty (30) days after receipt of all pertinent documentation, the Council will either:

- Provide the USACE with recommendations that the USACE will take into account in reaching a final decision regarding the dispute, or
- Notify the USACE that it will comment pursuant to Title 36 of the *Code of Federal Regulations*, Section 800.7(c) and proceed to comment. Any Council comment provided in

response to such a request will be taken into account by the USACE in accordance with Title 36 of the Code of *Federal Regulations*, Section 800.7 (c) (4) with reference to the subject of the dispute.

Issue Resolution Related to the Memorandum of Understanding. The NCDOT and the Town recognize that engineering constraints may arise and engineering standards may change between the date of the MOU and the time of project completion. Should an engineering issue arise that complicates the fulfillment of any of the measures contained in the MOU, the NCDOT will initiate discussions with the Town to resolve the issue.

Stream Construction Moratoriums

During final design, NCDOT will coordinate with the North Carolina Wildlife Resources Commission on moratoriums for in-stream construction activities and land disturbance within 25 feet of trout and bass waters.

A condition for a trout moratorium is included in the "Comments From Permitting" section of this Greensheet.

COMMITMENTS FROM PERMITTING

Division 11 Construction Unit / Roadside Environmental Unit

The permittee shall use Design Standards for Sensitive Watersheds [15A NCAC 4B.0124(a)-(e)] in areas draining to Tr waters. However, due to the size of the project, NCDOT shall not be required to meet 15A NCAC 4B.0124(a) regarding the maximum amount of uncovered acres. Temporary cover (wheat, millet, or similar annual grain) or permanent herbaceous cover shall be planted on all bare soil within 15 business days of ground disturbing activities to provide erosion control.

All channel relocations will be constructed in a dry work area and stabilized before stream flows are diverted. Channel relocations will be completed and stabilized, and must be approved on site by NCDWQ staff, prior to diverting water into the new channel. Whenever possible, channel relocations shall be allowed to stabilize for an entire growing season. Vegetation used for bank stabilization shall be limited to native woody species, and should include establishment of a 30 foot wide wooded and an adjacent 20 foot wide vegetated buffer on both sides of the relocated channel to the maximum extent practical. All stream banks shall be matted with coir fiber matting. Also, rip-rap may be allowed if it is necessary to maintain the physical integrity of the stream, but the applicant must provide written justification and any calculations used to determine the extent of rip-rap coverage requested. Note: Regarding this condition (the 401 Water Quality Certification Condition #6), pursuant to an e.mail dated March 18, 2011, from Amy Euliss with the NCDWQ (attached), a 50-foot buffer is not a requirement on the stream relocations for R-2237C.

For the 283 linear feet of streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native vegetation.

The stream channel shall be excavated no deeper than the natural bed material of the stream, to the maximum extent practicable. Efforts must be made to minimize impacts to the stream banks, as well as to vegetation responsible for maintaining the stream bank stability.

At Sites 1, 2, 6, 10, and 11, pipe burial is not required. For all other sites, placement of culverts and other structures in open waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in disequilibrium of wetlands or streambanks or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWQ. **If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.**

To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent wetlands and streams, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. The permittee shall provide the USACE with appropriate maps indicating the locations of proposed borrow or waste sites as soon as the permittee has that information. The permittee will coordinate with the USACE before approving any borrow or waste sites that are within 400 feet of any streams or wetlands.

All conditions of the attached October 18, 2010, North Carolina Wildlife Resources Commission Letter are included as commitments for this project including Conditions 1 & 2 which state, respectively: "Sediment and erosion control measures shall adhere to the Design Standards for Sensitive Watersheds and be strictly maintained until project completion"; and "In-stream work and land disturbance within the 25-foot wide buffer zone are prohibited during the trout spawning seasons of October 15 through April 15 to protect the egg and fry stages of trout".

Division 11 Construction Unit & HEU

NCDOT shall abide by all stipulations identified in the Memorandum of Agreement between the United States Army Corp of Engineers and the North Carolina State Historic Preservation Officer, executed 15 November 2004, copy attached and identified as Exhibit C.

If the permittee discovers any previously unknown historic or archaeological sites while accomplishing the authorized work, he shall immediately stop work and notify the Corp of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager who will initiate the required State/Federal coordination.

Natural Environment Unit

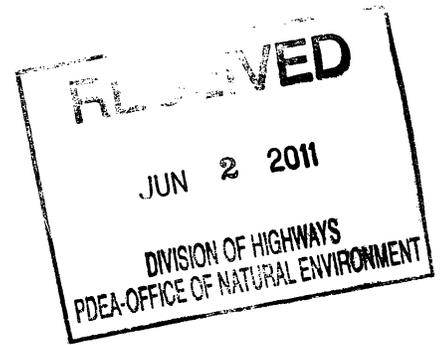
Compensatory mitigation for the unavoidable impacts to 1,646 linear feet of stream and 0.10 acre of riparian wetland impact associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated November 23, 2010, from William D. Gilmore, EEP Director. Pursuant to the In-Lieu-Fee Instrument signed July 28, 2010,

between the State of North Carolina, EEP and the US Army Corps of Engineers, the EEP will provide 1,910 linear feet of restoration equivalent cold water stream channel and 0.26 acre of riparian wetland restoration equivalent in the Yadkin River basin (Hydrologic Cataloging Unit 03040101); and 1,250 linear feet of restoration equivalent cold water stream channel and 0.12 acre of riparian wetland restoration equivalent in the New River basin (Hydrologic Cataloging Unit 05050001) in accordance with Section F of the instrument. For wetlands, a minimum of 1:1 (impact to mitigation) must be in the form of wetland restoration.



REPLY TO
ATTENTION OF:

DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343



May 27, 2011

Regulatory Division

Action ID: SAW-2002-31262; TIP No. R-2237C

Dr. Gregory J. Thorpe, PhD, Manager
Project Development and Environmental Analysis Branch
N.C. Department of Transportation
Division of Highways
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Dr. Thorpe:

Enclosed is a Department of the Army permit to authorize the proposed permanent placement of fill material into 1,646 linear feet of streams and 0.19 acres of wetlands. Additional temporary impacts to 283 linear feet of streams are also proposed to facilitate the widening and improving of US 321 (TIP R-2237C) between SR 1500, Blackberry Road, and US 221 at Blowing Rock in Watauga and Caldwell Counties, North Carolina.

Any deviation in the authorized work will likely require modification of this permit. If a change in the authorized work is necessary, you should promptly submit revised plans to the Corps showing the proposed changes. You may not undertake the proposed changes until the Corps notifies you that your permit has been modified.

Carefully read your permit. The general and special conditions are important. Your failure to comply with these conditions could result in a violation of Federal law. Certain significant conditions require that:

- a. You must complete construction before December 31, ~~2016~~ ^{2018 per Monte Matthews -eu}.
- b. You must allow representatives from this office to make periodic visits to your worksite as deemed necessary to assure compliance with permit plans and conditions.

You must notify this office in advance as to when you intend to commence and complete work.

You should address all questions regarding this authorization to Mr. Monte Matthews, Raleigh Regulatory Field Office, at telephone (919) 554-4884, extension 30.

Sincerely,



Jefferson M. Ryscavage
Colonel, U.S. Army
District Commander

Enclosures

Copy Furnished (with enclosures):

Chief, Source Data Unit
NOAA/National Ocean Service
ATTN: Sharon Tear N/CS261
1315 East-West Hwy., Rm 7316
Silver Spring, Maryland 20910-3282

Copies Furnished (with special conditions and plans):

Mr. Ronald J. Mikulak, Chief
Wetlands Regulatory Section
61 Forsyth Street
Atlanta, Georgia 30303

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

Mr. Ron Sechler
National Marine Fisheries Service, NOAA
Habitat Conservation Division
Pivers Island
Beaufort, North Carolina 28516

Mr. Doug Huggett
Division of Coastal Management
N.C. Department of Environment
and Natural Resources
400 Commerce Avenue
Morehead City, North Carolina 28557

Mr. David Rackley
National Marine Fisheries Service
219 Fort Johnson Road
Charleston, South Carolina 29412-9110

DEPARTMENT OF THE ARMY PERMIT

Permittee: NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

RECEIVED

Permit No: SAW-2002-31262

MAY 16 2011

Issuing Office: USAED, WILMINGTON

REG. WILM. FLD. OFC.

NOTE: The term “you” and its derivatives, as used in this permit, means the permittee or any future transferee. The term “this office” refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of the office acting under the authority of the commanding officer.

You are authorized to perform work in the accordance with the terms and conditions specified below.

Project Description: The North Carolina Department of Transportation (NCDOT) has identified this project as TIP R-2237C, which involves the widening and improving of US 321 between SR 1500 (Blackberry Road) and US 221 at Blowing Rock in Watauga and Caldwell Counties, North Carolina. Specifically, the project includes widening and/or improving the existing road by: 1) curves would be eased south of Blowing Rock and in the Country Club Drive and Norwood Circle area of Blowing Rock; 2) a four-lane section with shoulders south of Gideon Ridge and the Blowing Rock town limits; 3) a four-lane section with curb and gutter and some turn lanes in Blowing Rock south of US 321 Business; 4) a four-lane section with a landscaped median north of US 321 Business; and 5) improving several intersections. The project would permanently impact a total of 1,646 linear feet of perennial streams of which 975 linear feet occur in the Yadkin-Pee Dee River Basin and 671 linear feet in the New River Basin. In addition, 0.13-acre of wetland is proposed for impact in the Yadkin Pee-Dee Basin and 0.06-acre within the New River Basin for a total of 0.19-acre of total wetland impact. Additional temporary impacts to 283 linear feet of streams are also proposed to facilitate the construction of this project. To mitigate for all unavoidable permanent impacts to jurisdictional features, the applicant has proposed payment into the North Carolina Ecosystem Enhancement Program (NCEEP) in the amount to provide 1,910 linear feet of restoration equivalent cold water stream channel and 0.26 acre of riparian wetland restoration equivalent in the Yadkin River basin (Hydrologic Cataloging Unit 03040101); and 1,250 linear feet of restoration equivalent cold water stream channel and 0.12 acre of riparian wetland restoration equivalent in the New River Basin (Hydrologic Cataloging Unit 05050001). By letter dated November 23, 2010, the NCEEP has agreed to provide the stream restoration stated above.

Project Location: The project, known as TIP R-2237C, is a 4.0 mile length along the existing US 321, from SR 1500 (Blackberry Road) in Caldwell County to US 221 at Blowing Rock, Watauga County, North Carolina. The project crosses Bailey Camp Creek, the Middle Fork of the South Fork of the New River, and unnamed tributaries (approximate center of project at 36.12° N., -81.66° W). The site is located within the Yadkin and New River Basins, Hydrologic Unit 03040101 and 05050001, respectively.

Permit Conditions:

General Conditions:

1. The time Limit for completing the work authorized ends on December 31, 2018. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Conditions 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and state coordination required to determine if the remains warrant a recovery effort or if the site eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.
5. If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

*SEE ATTACHED SPECIAL CONDITIONS

Further Information:

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:
 - () Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. C. 403).
 - (X) Section 404 of the clean Water Act (33 U.S.C. 1344).
 - () Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (33 U.S.C. 1413).
2. Limits of this authorization.
 - a. This permit does not obviate the need to obtain other Federal, state, or local authorizations required by law.
 - b. This permit does not grant any property rights or exclusive privileges.
 - c. This permit does not authorize any injury to the property or rights of others.
 - d. This permit does not authorize interference with any existing or proposed Federal project.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

- a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.**
- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.**
- c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.**
- d. Design or construction deficiencies associated with the permitted work.**
- e. Damage claims associated with any future modification, suspension, or revocation of this permit.**

4. Reliance on Applicant's Data: The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.

5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:

- a. You fail to comply with the terms and conditions of this permit.**
- b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).**
- c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.**

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measure by contract or otherwise and bill you for the cost.

6. Extensions. General condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.

E. L. Lusk for Gregory J. Thorpe, PhD May 13, 2011
(PERMITTEE) NORTH CAROLINA DEPARTMENT OF (DATE)
TRANSPORTATION

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.

Henry Wicks 5.26.2011
(DISTRICT Engineer) JEFFERSON M. RYSCAVAGE, COLONEL (DATE)
For

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(Transferee) (Date)

SPECIAL CONDITIONS
Action ID. SAW-2002-31262
North Carolina Department of Transportation - TIP R-2237C

Failure to institute and carry out the details of the following special conditions below (listed as a-y) will result in a directive to cease all ongoing and permitted work within waters of the United States, including wetlands, associated with the permitted project, or such other remedies and/or fines as the U.S. Army Corps of Engineers District Commander or his authorized representatives may seek.

- a) The North Carolina Division of Water Quality (DWQ) permit/certification number WQC003852 was issued for this project on March 9, 2011. Special conditions were issued associated with this water quality permit/certification and a copy of these conditions is attached as Exhibit A. These referenced conditions are hereby incorporated as special conditions of this permit.
- b) All work authorized by this permit must be performed in strict compliance with the attached revised plans which were received on October 18, 2010. These plans are a part of this permit and identified as Exhibit B. Any modification to these plans must be approved by the US Army Corps of Engineers (USACE) prior to implementation.
- c) The permittee shall schedule a preconstruction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Raleigh Regulatory Field Office, NCDOT Regulatory Project Manager, prior to any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all of the terms and conditions contained within this Department of the Army Permit. The permittee shall provide the USACE, Raleigh Regulatory Field Office, NCDOT Regulatory Project Manager, with a copy of the final plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to the project's design, construction methodology or construction timeframe. The permittee shall schedule the preconstruction meeting for a time when the USACE and North Carolina Division of Water Quality (NCDWQ) Project Managers can attend. The permittee shall invite the Corps and NCDWQ Project Managers a minimum of thirty (30) days in advance of the scheduled meeting in order to provide those individuals with ample opportunity to schedule and participate in the required meeting.
- d) Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands. This permit does not authorize temporary placement or double handling of excavated or fill material within waters or wetlands outside the permitted area. This prohibition applies to all borrow and fill activities connected with this project.

SPECIAL CONDITIONS
Action ID. SAW-2002-31262
North Carolina Department of Transportation - TIP R-2237C

e) Except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within waters or wetlands or to reduce the reach of waters or wetlands.

f) Compensatory mitigation for the unavoidable impacts to 1,646 linear feet of stream and 0.19 acre of riparian wetland impact associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated November 23, 2010, from William D. Gilmore, EEP Director. Pursuant to the In-Lieu-Fee Instrument signed July 28, 2010, between the State of North Carolina, Ecosystem Enhancement Program and the US Army Corps of Engineers the EEP will provide 1,910 linear feet of restoration equivalent cold water stream channel and 0.26 acre of riparian wetland restoration equivalent in the Yadkin River basin (Hydrologic Cataloging Unit 03040101); and 1,250 linear feet of restoration equivalent cold water stream channel and 0.12 acre of riparian wetland restoration equivalent in the New River Basin (Hydrologic Cataloging Unit 05050001) in accordance with Section F of the instrument. For wetlands, a minimum of 1:1 (impact to mitigation) must be in the form of wetland restoration.

g) All mechanized equipment will be regularly inspected and maintained to prevent contamination of waters and wetlands from fuels, lubricants, hydraulic fluids, or other toxic materials. In the event of a spill of petroleum products or any other hazardous waste, the permittee shall immediately report it to the N.C. Division of Water Quality at 1 (800) 858-0368 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

h) The permittee shall advise the Corps in writing prior to beginning the work authorized by this permit and again upon completion of the work authorized by this permit.

i) Unless otherwise authorized by this permit, all fill material placed in waters or wetlands shall be generated from an upland source and will be clean and free of any pollutants except in trace quantities. Metal products, organic materials (including debris from land clearing activities), or unsightly debris will not be used.

j) The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit. A copy of this permit, including all conditions, shall be available at the project site during construction and maintenance of this project

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- k) The permittee shall employ all sedimentation and erosion control measures necessary to prevent an increase in sedimentation or turbidity within waters and wetlands outside the permit area. This shall include, but is not limited to, the immediate installation of silt fencing or similar appropriate devices around all areas subject to soil disturbance or the movement of earthen fill, and the immediate stabilization of all disturbed areas. Additionally, the project must remain in full compliance with all aspects of the Sedimentation Pollution Control Act of 1973 (North Carolina General Statutes Chapter 113A Article 4).
- l) The permittee shall remove all sediment and erosion control measures placed in wetlands or waters, and shall restore natural grades in those areas, prior to project completion.
- m) During the clearing phase of the project, heavy equipment must not be operated in surface waters or stream channels. Temporary stream crossings will be used to access the opposite sides of stream channels. All temporary diversion channels and stream crossings will be constructed of non-erodable materials. Grubbing of riparian vegetation will not occur until immediately before construction begins on a given segment of stream channel.
- n) No fill or excavation for the purposes of sedimentation and erosion control shall occur within jurisdictional waters, including wetlands, unless it is included on the plan drawings and specifically authorized by this permit.
- o) The permittee, upon receipt of a notice of revocation of this permit or upon its expiration before completion of the work will, without expense to the United States and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the water or wetland to its pre-project condition.
- p) Violations of these conditions or violations of Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act must be reported in writing to the Wilmington District U.S. Army Corps of Engineers within 24 hours of the permittee's discovery of the violation.
- q) The permittee will ensure that the construction design plans for this project do not deviate from the permit plans attached to this authorization. Written verification shall be provided that the final construction drawings comply with the attached permit drawings prior to any active construction in waters of the United States, including wetlands. Any deviation in the construction design plans will be brought to the attention of the Corps of

SPECIAL CONDITIONS
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Engineers, Raleigh Regulatory Field Office prior to any active construction in waters or wetlands.

r) Prior to commencing construction within jurisdictional waters of the United States for any portion of the proposed project, the permittee shall forward the latest version of project construction drawings to the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager. Half-size drawings will be acceptable.

s) The permittee shall take measures to prevent live or fresh concrete from coming into contact with any surface waters until the concrete has hardened.

t) Measures will be included in the construction/installation that will promote the safe passage of fish and other aquatic organisms. The dimension, pattern, and profile of the stream above and below a pipe or culvert should not be modified by widening the stream channel or by reducing the depth of the stream in connection with the construction activity. The width, height, and gradient of a proposed opening should be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. Spring flow should be determined from gauge data, if available. In the absence of such data, bankfull flow can be used as a comparable level.

u) Culverts greater than 48 inches in diameter will be buried at least one foot below the bed of the stream. Culverts 48 inches in diameter or less shall be buried or placed on the stream bed as practicable and appropriate to maintain aquatic passage, and every effort shall be made to maintain the existing channel slope. The bottom of the culvert must be placed at a depth below the natural stream bottom to provide for passage during drought or low flow conditions. Destabilizing the channel and head cutting upstream should be considered in the placement of the culvert. A waiver from the depth specifications in this condition may be requested in writing. The waiver will be issued if it can be demonstrated that the proposal would result in the least impacts to the aquatic environment.

v) To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent wetlands and streams, except as authorized by this permit, the permittee shall require its contractors and/or agents to identify all areas to be used to borrow material, or to dispose of dredged, fill, or waste material. The permittee shall provide the USACE with appropriate maps indicating the locations of proposed borrow or waste sites as soon as the permittee has that information. The permittee will coordinate with the USACE before approving any borrow or waste sites that are within 400 feet of any streams or wetlands.

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w) NCDOT shall abide by all stipulations identified in the Memorandum of Agreement between the United States Army Corps of Engineers and the North Carolina State Historic Preservation Officer, executed 15 November 2004, copy attached and identified as Exhibit C.

x) If the permittee discovers any previously unknown historic or archaeological sites while accomplishing the authorized work, he shall immediately stop work and notify the Corps of Engineers, Raleigh Regulatory Field Office NCDOT Regulatory Project Manager who will initiate the required State/Federal coordination.

y) All recommendations in the letter from the North Carolina Wildlife Resources Commission, dated October 18, 2010, are hereby incorporated as special conditions of this permit. This letter is attached as Exhibit D.



RECEIVED

North Carolina Department of Environment and Natural Resources MAR 14 2011

Division of Water Quality
Coleen H. Sullins
Director

Beverly Eaves Perdue
Governor

RALEIGH REGULATORY FIELD OFFICE
Dee Freeman
Secretary

March 9, 2011

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

Subject: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with
ADDITIONAL CONDITIONS for Proposed widening of US 321 from SR 1500 (Blackberry Road) to US
221 at Blowing Rock in Watauga and Caldwell Counties, State Project No. 6.739001T, TIP R-2237 C.
NCDWQ Project No. 20100752

Dear Dr. Thorpe:

Attached hereto is a copy of Certification No. WQC003852 issued to The North Carolina Department of
Transportation (NCDOT) dated March 9, 2011.

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

Sincerely,

Coleen H. Sullins
Director

Attachments

- cc: Monte Matthews, US Army Corps of Engineers, Raleigh Field Office
- Heath Slaughter, Division 1 Environmental Officer
- Chris Militscher, Environmental Protection Agency (electronic copy only)
- Marla Chambers, NC Wildlife Resources Commission (electronic copy only)
- Beth Harmon, Ecosystem Enhancement Program
- Wetlands/401 Transportation Permitting Unit
- File Copy

EXHIBIT A

**401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act
with ADDITIONAL CONDITIONS**

THIS CERTIFICATION is issued in conformity with the requirements of Section 401 Public Laws 92-500 and 95-217 of the United States and subject to the North Carolina Division of Water Quality (NCDWQ) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact 0.19 acres of jurisdictional wetlands and 1,929 linear feet of jurisdictional streams in Watauga and Caldwell Counties. The project shall be constructed pursuant to the application dated received September 9, 2010 with additional information dated received March 1, 2011. The authorized impacts are as described below:

Stream Impacts in the Yadkin-Pee Dee River Basin

Site	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
1	294	36	330	294
2	119	33	152	0
3a	53	0	53	0
3b	160	43	203	160
4	317	46	363	317
5	32	6	38	32
Total	975	164	1,139	803

Stream Impacts in the New River Basin

Site	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear ft)	Stream Impacts Requiring Mitigation (linear ft)
6	294	0	294	294
7	160	26	186	160
9	133	10	143	0
10a	59	19	78	0
10b	25	19	44	0
12	0	45	45	0
Total	671	119	790	454

Total Stream Impact for Project: 1,929 linear feet

Wetland Impacts in the Yadkin-Pee Dee River Basin (Riverine)

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Area under Bridge (ac)	Total Wetland Impact (ac)
3	0.01	0	0	0.02	0	0	0.03
4	0.07	0	0.02	0.01	0	0	0.10
Total	0.08	0	0.02	0.03	0	0	0.13

Wetland Impacts in the New River Basin (Riverine)

Site	Fill (ac)	Fill (temporary) (ac)	Excavation (ac)	Mechanized Clearing (ac)	Hand Clearing (ac)	Area under Bridge (ac)	Total Wetland Impact (ac)
6	0.01	0	0	0	0	0	0.01
7	0	0	0.01	0	0	0	0.01
11	0.04	0	0	0	0	0	0.04
Total	0.05	0	0.01	0	0	0	0.06

Total Wetland Impact for Project: 0.19 acres.

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

This approval is only valid for the purpose and design that you submitted in your application dated received September 9, 2010 with additional information dated received March 1, 2011. Should your project change, you are required to notify the NCDWQ and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If any additional wetland impacts, or stream impacts, for this project (now or in the future) exceed one acre or 150 linear feet, respectively, additional compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). For this approval to remain valid, you are required to comply with all the conditions listed below. In addition, you should obtain all other federal, state or local permits before proceeding with your project including (but not limited to) Sediment and Erosion control, Coastal Stormwater, Non-discharge and Water Supply watershed regulations. This Certification shall expire on the same day as the expiration date of the corresponding Corps of Engineers Permit.

Condition(s) of Certification:

1. The NCDOT Division Environmental Officer or Environmental Assistant will conduct a pre-construction meeting with all appropriate staff to ensure that the project supervisor and essential staff understand the potential issues with stream and pipe alignment at the permitted site. NCDWQ staff shall be invited to the pre-construction meeting.
2. In-stream work and land disturbance within the 25-foot buffer zone are prohibited during the trout-spawning season of October 15 through April 15 to protect the egg and fry stages of trout.
3. The permittee shall use /Design Standards in Sensitive Watersheds/[15A NCAC 4B.0124(a)-(e)] in areas draining to Tr waters. However, due to the size of the project, NC DOT shall not be required to meet 15A NCAC 4B .0124(a) regarding the maximum amount of uncovered acres. Temporary cover (wheat, millet, or similar annual grain) or permanent herbaceous cover shall be planted on all bare soil within 15 business days of ground disturbing activities to provide erosion control.
4. Tall fescue shall not be used in the establishment of temporary or permanent groundcover within riparian areas. For the establishment of permanent herbaceous cover, erosion control matting shall be used in conjunction with an appropriate native seed mix on disturbed soils within the riparian area and on disturbed steep slopes with the following exception. Erosion control matting is not necessary if the area is contained by perimeter erosion control devices such as silt fence, temporary sediment ditches, basins, etc. Matting should be secured in place with staples, stakes, or wherever possible, live stakes of native trees. Erosion control matting placed in riparian areas shall not contain a nylon mesh grid, which can impinge and entrap small animals. For the establishment of temporary groundcover within riparian areas, hydroseeding along with wood or cellulose based hydro mulch applied from a fertilizer- and limestone-free tank is allowable at the appropriate rate in conjunction with the erosion control measures. Discharging hydroseed mixtures and wood or cellulose mulch into surface waters is prohibited. Riparian areas are defined as a distance 25 feet landward from top of stream bank.
5. Compensatory mitigation for 803 linear feet of impact to streams in the Yadkin-Pee Dee River Basin and 454 linear feet in the New River Baskin is required. We understand that you have chosen to perform compensatory mitigation for impacts to streams through the North Carolina Ecosystem Enhancement Program (EEP), and that the EEP has agreed to implement the mitigation for the project. EEP has indicated in a letter dated August 30, 2010 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the Tri-Party MOA signed on July 22, 2003 and the Dual-Party MOA signed on April 12, 2004.
6. All channel relocations will be constructed in a dry work area and stabilized before stream flows are diverted. Channel relocations will be completed and stabilized, and must be approved on site by NCDWQ staff, prior to diverting water into the new channel. Whenever possible, channel relocations shall be allowed to stabilize for an entire growing season. Vegetation used for bank stabilization shall be limited to native woody species, and should include establishment of a 30 foot wide wooded and an adjacent 20 foot wide vegetated buffer on both sides of the relocated channel to the maximum extent practical. All stream banks shall be matted with coir fiber matting. Also, rip-rap may be allowed if it is necessary to maintain the physical integrity of the stream, but the applicant must provide written justification and any calculations used to determine the extent of rip-rap coverage requested.
7. If multiple pipes or barrels are required, they shall be designed to mimic natural stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate.

- Widening the stream channel should be avoided. Stream channel widening at the inlet or outlet end of structures typically decreases water velocity causing sediment deposition that requires increased maintenance and disrupts aquatic life passage.
8. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Any riprap placed in the channel bottom shall be keyed into the stream bed and banks below the normal high water mark. Bioengineering boulders or structures should be properly designed, sized and installed.
 9. For the 283 linear feet of streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species.
 10. The stream channel shall be excavated no deeper than the natural bed material of the stream, to the maximum extent practicable. Efforts must be made to minimize impacts to the stream banks, as well as to vegetation responsible for maintaining the stream bank stability.
 11. At sites 1, 2, 6, 10, and 11, pipe burial is not required. For all other sites, placement of culverts and other structures in open waters and streams shall be placed below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20 percent of the culvert diameter for culverts having a diameter less than 48 inches, to allow low flow passage of water and aquatic life. Design and placement of culverts and other structures including temporary erosion control measures shall not be conducted in a manner that may result in dis-equilibrium of wetlands or streambeds or banks, adjacent to or upstream and down stream of the above structures. The applicant is required to provide evidence that the equilibrium is being maintained if requested in writing by NCDWQ. **If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact NCDWQ for guidance on how to proceed and to determine whether or not a permit modification will be required.**
 12. If concrete is used during construction, a dry work area shall be maintained to prevent direct contact between curing concrete and stream water. Water that inadvertently contacts uncured concrete shall not be discharged to surface waters due to the potential for elevated pH and possible aquatic life and fish kills.
 13. During the construction of the project, no staging of equipment of any kind is permitted in waters of the U.S., or protected riparian buffers.
 14. The dimension, pattern and profile of the stream above and below the crossing shall not be modified. Disturbed floodplains and streams shall be restored to natural geomorphic conditions.
 15. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval.
 16. All work in or adjacent to stream waters shall be conducted in a dry work area. Approved BMP measures from the most current version of NCDOT Construction and Maintenance Activities manual such as sandbags, rock berms, cofferdams and other diversion structures shall be used to prevent excavation in flowing water.
 17. Heavy equipment shall be operated from the banks rather than in the stream channel in order to minimize sedimentation and reduce the introduction of other pollutants into the stream.
 18. All mechanized equipment operated near surface waters must be regularly inspected and maintained to prevent contamination of stream waters from fuels, lubricants, hydraulic fluids, or other toxic materials.
 19. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.
 20. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.
 21. A copy of this Water Quality Certification shall be maintained on the construction site at all times. In addition, the Water Quality Certification and all subsequent modifications, if any, shall be maintained with the Division Engineer and the on-site project manager.
 22. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization shall be clearly marked by highly visible fencing prior to any land disturbing activities. Impacts to areas within the fencing are prohibited unless otherwise authorized by this certification.
 23. The issuance of this certification does not exempt the Permittee from complying with any and all statutes, rules, regulations, or ordinances that may be imposed by other government agencies (i.e. local, state, and federal) having jurisdiction, including but not limited to applicable buffer rules, stormwater management rules, soil erosion and sedimentation control requirements, etc.
 24. The Permittee shall report any violations of this certification to the Division of Water Quality within 24 hours of discovery.
 25. Upon completion of the project (including any impacts at associated borrow or waste sites), the NCDOT Division Engineer shall complete and return the enclosed "Certification of Completion Form" to notify NCDWQ when all work included in the 401 Certification has been completed.
 26. Native riparian vegetation must be reestablished in the riparian areas within the construction limits of the project by the end of the growing season following completion of construction.

27. There shall be no excavation from, or waste disposal into, jurisdictional wetlands or waters associated with this permit without appropriate modification. Should waste or borrow sites, or access roads to waste or borrow sites, be located in wetlands or streams, compensatory mitigation will be required since that is a direct impact from road construction activities.
28. Erosion and sediment control practices must be in full compliance with all specifications governing the proper design, installation and operation and maintenance of such Best Management Practices in order to protect surface waters standards:
 - a. The erosion and sediment control measures for the project must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Sediment and Erosion Control Planning and Design Manual*.
 - b. The design, installation, operation, and maintenance of the sediment and erosion control measures must be such that they equal, or exceed, the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*. The devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) projects, including contractor-owned or leased borrow pits associated with the project.
 - c. For borrow pit sites, the erosion and sediment control measures must be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*.
 - d. The reclamation measures and implementation must comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act.
29. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification.
30. Violations of any condition herein set forth may result in revocation of this Certification and may result in criminal and/or civil penalties. This Certification shall become null and void unless the above conditions are made conditions of the Federal 404 and/or Coastal Area Management Act Permit. This Certification shall expire upon the expiration of the 404 or CAMA permit.

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

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

Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919)-733-2698, Facsimile: (919)-733-3478

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

Ms. Mary Penny Thompson, General Counsel
Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, NC 27699-1601

This the 9th day of March 2011


DIVISION OF WATER QUALITY
for Coleen H. Sullins
Director

NCDWQ Project No.: _____ County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Quality, 1650 Mail Service Center, Raleigh, NC, 27699-1650. This form may be returned to NCDWQ by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

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

Signature: _____ Date: _____

Agent's Certification

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

Signature: _____ Date: _____

Engineer's Certification

_____ Partial _____ Final

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

Signature _____ Registration No. _____

Date _____

Barrett, William A

From: Euliss, Amy
Sent: Friday, March 18, 2011 12:44 PM
To: Dagnino, Carla S; Barrett, William A
Cc: Wrenn, Brian
Subject: RE: R-2237C

50 foot buffer are not a requirement on the stream relocations for R-2237C. Let me know if you have anymore issues.
Amy

From: Wrenn, Brian
Sent: Thursday, March 17, 2011 3:17 PM
To: Dagnino, Carla S
Cc: Euliss, Amy
Subject: RE: R-2237C

I guess I'm missing the issue. The condition states "should" establish a buffer. In regulatory language that is not a requirement but a suggestion. As part of the green sheet commitments, it carries no more regulatory authority than the 401. I expect the contractor will construct the relocation per the approved plans. If those plans don't show a buffer and we approved them, then essentially we are not requiring a 50 ft buffer. We can also address this in the precon meeting. If I'm missing something else, let me know. Thanks.

Brian

Brian Wrenn
Transportation Permitting Unit, Supervisor
NC Division of Water Quality
brian.wrenn@ncdenr.gov

585 Waughtown Street
Winston-Salem, NC 27107-2241
336-771-4952 (Winston-Salem no.)
336-771-4631 (Fax)
or
1650 Mail Service Center
Raleigh, NC 27699-1650
919-807-6432
919-807-6494 (Fax)

From: Dagnino, Carla S
Sent: Thursday, March 17, 2011 2:59 PM
To: Wrenn, Brian
Cc: Barrett, William A; Lusk, Elizabeth L; Euliss, Amy
Subject: R-2237C

Hi Brian,

I have attached a 401 that includes language for a relocated channel (see condition number 6). The relocated channel on this project does not have natural stream design. The language in condition number 6 seems appropriate when we are relocating into natural stream design and getting credit for onsite mitigation. But it does not seem appropriate when

we are mitigating off site for the loss of the channel. We checked with Amy and she responded that this is standard language for relocated channels and if it is not practicable to establish the 50 foot buffer, it is OK. The issue here is that conditions 1 – 11 are specific project conditions that will be included on the Green Sheet with the permit. It is concerning that there would be any language that includes establishing a 50 foot buffer for a stream where we are paying for mitigation. I checked another WQC that had a relocated channel and the language was different (see DWQ Project 20090838, Bridge 134, B-4034 – condition number 8). Is it possible to have the B-4034 language in WQ Certifications for projects where channel relocations are occurring without natural stream design?

I looked at the WQC General Conditions to be used in every permit (you sent us last September) and did not see a condition for relocated channels.

If you would like to discuss further, please call.

Thanks.

Carla

*Carla Dagnino
Project Management Group
Natural Environment Unit
NCDOT-Project Development and Environmental Analysis
Voicemail 919-707-6110
FAX 919-212-5785*

Email correspondence to and from this sender is subject to the N.C. Public Records Law and may be disclosed to third parties.

EXHIBIT C

**MEMORANDUM OF AGREEMENT
AMONG
THE UNITED STATES ARMY CORPS OF ENGINEERS,
WILMINGTON DISTRICT,
THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION,
AND
THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER
FOR
US 321 IMPROVEMENTS
FROM SR 1500 (BLACKBERRY ROAD)
TO SR 1632 (POSSUM HOLLOW ROAD)
TOWN OF BLOWING ROCK, NORTH CAROLINA
WATAUGA AND CALDWELL COUNTIES
TIP PROJECT R-2237C**

WHEREAS, the Regulatory Division of the United States Army Corps of Engineers (USACE), Wilmington District, is considering the issuance of a permit to the North Carolina Department of Transportation (NCDOT), pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344), for the widening of US 321 from SR 1500 (Blackberry Road) to SR 1632 (Possum Hollow Road) within Blowing Rock, North Carolina (the Undertaking), which is NCDOT's Preferred Alternative; and

WHEREAS, this Memorandum of Agreement (Agreement) applies only if NCDOT decides to construct the Preferred Alternative (that is, proceed with the Undertaking); and

WHEREAS, the duration for the Undertaking from Right-of-Way acquisition to completion of construction is likely to take up to ten years during which time traffic management will be required; and

WHEREAS, the terrain in the area of the Undertaking is mountainous and requires blasting during construction and constrains the options for minimization of impacts; and

WHEREAS, the Town of Blowing Rock is a unique destination community with rural mountain resort character, and the Green Park Inn, the State's second oldest surviving resort hotel, is a element within of the National Register-listed Green Park Historic District and considered a local landmark; and

WHEREAS, NCDOT has determined that the Undertaking will have an adverse effect upon the National Register-listed Green Park Historic District; and

WHEREAS, the USACE and NCDOT have consulted with the North Carolina State Historic Preservation Officer (SHPO) pursuant to 36 CFR Part 800, regulations implementing Section 106 of the National Historic Preservation Act (16 U.S.C. 470f); and

WHEREAS, the Town of Blowing Rock (Town), Concerned Citizens of Blowing Rock, Blowing Rock Historical Society, Caldwell County Commissioners, and owners of historic properties within the Green Park Historic District have participated in the consultation and have been invited to concur in this Agreement; and

WHEREAS, NCDOT and the Town of Blowing Rock have entered into a Memorandum of Understanding (MOU) to implement measures related to the design, implementation, and mitigation of the Undertaking outside of the Green Park Historic District and it is understood that no stipulation in the MOU can override any stipulation of this Agreement;

NOW, THEREFORE, the USACE, NCDOT, and SHPO agree that the Undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the Undertaking on historic properties.

STIPULATIONS

The USACE will include the following stipulations as part of any permit issued to NCDOT for the Undertaking:

I. DOCUMENTATION

- A. Green Park Historic District: Prior to the initiation of construction activities, NCDOT shall record the existing conditions of the Green Park Historic District and its surroundings in accordance with the attached Historic Structures and Landscape Recordation Plan (Appendix A). This will include a video to document US 321 and the surrounding landscape and structures within the historic district as well as keying the locations of the filming to an aerial photograph of the historic district adjacent to US 321.
- B. Individual Structures: Prior to the initiation of construction activities, NCDOT shall record the existing conditions of the following structures and their immediate surroundings in accordance with Appendix A. The structures are:
 - Green Park Inn
 - Cottage No. 21 (as referred to in the 1994 National Register Nomination)
 - A.G. Jonas Cottage
- C. Existing Stone Walls: Prior to the initiation of construction activities, NCDOT shall record the existing stone walls along US 321 within the historic district in accordance with Appendix A.
- D. Blowing Rock Country Club Golf Course Hole Number 4: Prior to the initiation of construction activities, NCDOT shall record the existing conditions of Hole No. 4 in accordance with Appendix A.

II. BASELINE STUDIES AND VIBRATION MONITORING

- A. Development of Vibration Monitoring Plan: NCDOT's Geotechnical Engineering Unit, in consultation with NCDOT Division 11, shall develop a

vibration monitoring plan for the project, to include on-site research during final design as well as monitoring during construction. The recommendations of the plan shall be provided to the USACE, SHPO, Town, and other concurring parties for their comments prior to adoption of the plan.

- B. Baseline Studies: On-site research, done prior to construction, will measure existing vibration exposure, determine sensitivity of nearby structures, and assign thresholds accordingly.
- C. Vibration Monitoring: Vibration monitoring will be conducted on key structures within the historic district (to be recommended in the aforementioned vibration-monitoring plan). When a reading exceeds an established threshold, the alarm will sound and anyone who hears it, e.g., property owners/staff or contractor personnel, shall immediately contact the Resident Engineer.
- D. Pre-construction Surveys: NCDOT will conduct pre-construction surveys of all structures adjacent to US 321 within the historic district to record a “before” condition so that any construction-related damage can be accurately identified.

III. COMMUNITY COMMUNICATIONS

- A. Public Information Plan: NCDOT’s Construction Unit IMPACT Public Information Program will work with the Town of Blowing Rock to develop an appropriate public information plan (PIP).
- B. “Kick-Off” Meeting: As part of the PIP, NCDOT will hold a pre-construction “kick-off” meeting to introduce the contractor and the construction process to area residents.
- C. Project Website: NCDOT will develop, maintain, and consistently update a project website to provide current information about the schedule and development of the project, project progress, project contact information, and notification of any anticipated delays based on scheduled construction activities.
- D. Contact with Resident Engineer: NCDOT’s construction project manager shall be the Resident Engineer. He or she is the only individual with the authority to stop construction. Citizens may directly contact the Resident Engineer (and assistants) with questions or concerns so that the Resident Engineer can immediately address any project concerns.

IV. PROJECT DESIGN

- A. Review of Plans: To insure that the Town of Blowing Rock, and the SHPO are consulted and the Residents of the Green Park Historic District are given an opportunity for review, NCDOT will provide the following plans for comment. Plans will be provided to the Blowing Rock Town Board, the SHPO, and available for review at the Blowing Rock Town Library.
 - Roadway Design Plans at 25%, 50%, and 80% of completion
 - Preliminary Post-Construction Landscape Design Plans
 - Preliminary Traffic Control Plans
 - Preliminary Pavement Marking Plans

- Preliminary Signing Plans
 - Preliminary Sedimentation and Erosion Control Plans
- B. Guardrail: Where guardrail is required, NCDOT shall install approved wooden-faced guardrail where it can be installed and meet safety requirements. If, during final design, locations are identified where wooden-faced guardrail cannot be installed, or where, in order to meet safety requirements, installation would cause an undesirable increase in project right of way to provide necessary roadside clear areas, NCDOT will coordinate with the Town and SHPO to find an acceptable guardrail alternative prior to finalizing the plans.
- C. Lane Width: The width of lanes within the boundary of the Green Park Historic District will be limited to 11-feet.
- D. Goforth Road: NCDOT shall terminate Goforth Road just east of US 321 rather than rebuild its intersection with US 321.
- E. Median: NCDOT will not construct a median within the limits of the Green Park Historic District.
- F. Highway Lighting: NCDOT will not install highway lighting within the limits of the Green Park Historic District.
- G. Signal Poles: NCDOT shall use standard mast-arm signal poles for traffic signals, including the one(s) proposed in the Green Park Historic District. If the Town chooses a decorative mast arm pole that exceeds the cost of the NCDOT-standard mast-arm pole, the Town will pay the incremental cost difference.
- H. Utilities: NCDOT will place existing overhead utility lines (electrical, telephone, and cable television) underground between Green Hill Road and Possum Hollow Road.
- I. Stone Walls: NCDOT will replace all existing stone walls in the Town limits (including the Green Park Historic District) removed by the Undertaking with new in-kind stone walls. All other retaining walls along the Undertaking within the Town limits will be formed concrete walls with simulated masonry surface treatment. The surface treatment will be designed to resemble the existing stone walls in the historic district (e.g., the low wall in front of the Green Park Inn). The appearance of the surface treatment will be coordinated with the Town of Blowing Rock, and a sample of the surface treatment shall be fabricated for the Town's and SHPO's review and comment and the Department's approval prior to permanent installation on the project.
- J. Sidewalks: NCDOT will provide a sidewalk, five feet in width, on the east side of US 321 from Green Hill road to US 321 Business (which includes the part of the project within the historic district), so that the west side berm may be used for more concentrated landscaping. Pedestrian crossings (crosswalks and/or pedestrian signals) may be provided at signalized intersections.
- K. Decorative Pedestrian Lights: NCDOT shall include, as a part of the post-construction landscape plan, decorative pedestrian lights, the style of which is to be agreed upon by the Town, SHPO, and NCDOT, at selected locations within the Town limits. Any decorative pedestrian light locations within NCDOT right-of-way (e.g., in areas of more concentrated landscaping) must

be approved by the Special Design Section of NCDOT's Roadway Design Unit. NCDOT will pay for the lighting equipment and installation, and NCDOT will install the lights as part of the landscape plan implementation. The Town will assume ownership of the lights and will pay all utility (electricity) costs.

- L. Landscaping: Plantings will be planned in accordance with NCDOT's Guidelines for Planting within Highway Right-of-Way. Broader areas of more concentrated landscaping will be included where right-of-way, roadway elements, terrain, and safety conditions allow. Design and landscape characteristics will be developed through discussions with the Town Board, SHPO and Residents of the Green Park Historic District to maintain the rural mountain resort character of the district.
- M. Coordinated Signal System: NCDOT will design and install a coordinated traffic signal system as part of the Undertaking.
- N. Speed Limit: The speed limit within the historic district shall be posted 35 mph after construction.
- O. Fog Safety Study: NCDOT will evaluate flashing warning lights, pavement markers, rumble strips and/or stripes, delineation, warning signs, and/or lighting that would be appropriate to increase safety and improve driver behavior during fog occurrences. The plans submitted by NCDOT to SHPO and the Town for review and comment (Item IV.A) will show the results of NCDOT's evaluation and the resulting recommendations.

V. CONSTRUCTION ACTIVITIES

- A. Blasting: NCDOT and the contractor shall limit blasting to specific times. Those times will be posted on the aforementioned project website. In addition, blasting activities will be announced to the media as outlined in the PIP.
- B. Dust Minimization: NCDOT and the contractor shall utilize a truck to periodically spray water on dry, exposed soil to control dust to the greatest extent possible.
- C. Reseeding Exposed Dirt: In accordance with NCDOT's Best Management Practices for Protection of Surface Waters, NCDOT and the contractor shall seed exposed soil with grass in order to control run-off, erosion, and dust.
- D. Covered Truck Beds: NCDOT shall require all construction trucks traveling at speeds greater than 25 mph to cover their truck beds in order to reduce the amount of dust and debris.
- E. Staging Areas: NCDOT shall not permit staging areas within the Green Park Historic District. NCDOT may permit overnight parking of equipment and storage of materials, associated with current construction needs, within the construction right-of-way limits along any part of the project corridor.
- F. Waste Sites, Borrow Pits, and Construction Offices: NCDOT shall not permit waste deposits, borrow pits, or construction offices within the Green Park Historic District.
- G. "Smart Zone" Techniques: NCDOT shall use "Smart Zone" techniques in the maintenance of traffic during construction. These techniques may include

methods such as advance notification of delays, lane closures, real time monitoring, and the use of Digital Message Systems. In addition, NCDOT shall maintain a website that will provide information on anticipated delays based on scheduled construction activities.

VI. GREEN PARK INN

NCDOT, in consultation with SHPO and the property owners, shall develop measures to reduce the adverse effect of the Undertaking on the Green Park Inn. These measures may include, but are not limited to, the following:

- Replacement of the existing stone walls;
- Replacement of the existing sidewalk;
- Reconfiguration of the existing parking lot;
- Sound abatement/buffering; and/or
- Landscaping.

VII. A.G. JONAS COTTAGE

NCDOT, in consultation with SHPO and the property owners, shall develop measures to reduce the adverse effect of the Undertaking on the A.G. Jonas Cottage. These measures may include, but are not limited to, the following:

- Construction of a retaining wall;
- Construction of a privacy fence;
- Sound abatement/buffering; and/or
- Landscaping.

VIII. COTTAGE NO.21 (as referred to in the 1994 National Register Nomination)

In the event that this property is not determined to be a relocation in the final design, NCDOT, in consultation with SHPO and the property owners, shall develop measures to reduce the adverse effect of the Undertaking on Cottage No.21. These measures may include, but are not limited to, the following:

- Providing alternative access to the property;
- Construction of a retaining wall; and/or
- Landscaping.

IX. BLOWING ROCK COUNTRY CLUB GOLF COURSE

NCDOT will construct a retaining wall on the east side of US 321 at the Blowing Rock Country Club Golf Course (Hole No. 4) in order to minimize impacts to the course.

IX. UNANTICIPATED DISCOVERY

In accordance with 36 CFR 800.11(a), and prior to initiation of construction activities, NCDOT shall ensure preparation of a plan of action should archaeological or architectural resources be inadvertently or accidentally discovered during the construction phase of the project. The plan shall provide for an assessment of the significance of the discovery in consultation amongst NCDOT, USACE, and the SHPO. Inadvertent or accidental discovery of human remains will be handled in accordance with North Carolina General Statutes 65 and 70.

X. DISPUTE RESOLUTION

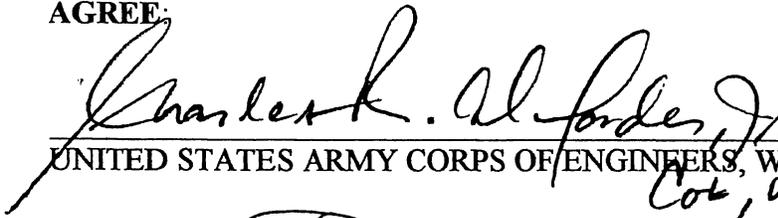
Should the North Carolina SHPO or any parties to this agreement object within (30) days to any plans or documentation provided for review pursuant to this agreement, NCDOT shall consult with the North Carolina SHPO to resolve the objection. If the USACE or the North Carolina SHPO determines that the objection cannot be resolved, USACE will forward all documentation relevant to the dispute to the Advisory Council on Historic Preservation (Council). Within thirty (30) days after receipt of all pertinent documentation, the Council will either:

- A. Provide USACE with recommendations which USACE will take into account in reaching a final decision regarding the dispute, or
- B. Notify USACE that it will comment pursuant to 36 CFR Section 800.7(c) and proceed to comment. Any Council comment provided in response to such a request will be taken into account by USACE in accordance with 36 CFR Section 800.7 (c) (4) with reference to the subject of the dispute.

Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute; USACE's responsibility to carry out all the actions under this agreement that are not the subject of the dispute will remain unchanged.

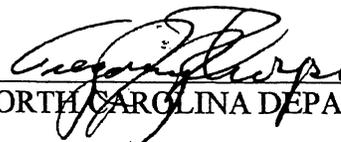
Execution of this Memorandum of Agreement by USACE, the NCDOT, and the North Carolina SHPO, its subsequent filing with the Advisory Council on Historic Preservation, and implementation of its terms evidence that USACE has afforded the Council an opportunity to comment on the US 321 improvements from SR 1500 to SR 1632 in the Town of Blowing Rock, and its effects on the Green Park Historic District and that USACE has taken into account the effects of the Undertaking on this National Register-listed historic district.

AGREE:


UNITED STATES ARMY CORPS OF ENGINEERS, WIMINGTON DISTRICT
Col, USA

11/15/04

DATE


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

4 Nov 04

DATE


NORTH CAROLINA HISTORIC PRESERVATION OFFICER

10/25/04

DATE

FILED BY:

ADVISORY COUNCIL ON HISTORIC PRESERVATION

DATE

APPENDIX

Historic Structures and Landscape Recordation Plan
For the widening of US 321 from SR 1500 (Blackberry Road) to
SR 1632 (Possum Hollow Road) within Blowing Rock, North Carolina

Photographic Requirements

- A. Green Park Historic District: Prior to the initiation of construction activities, NCDOT shall record the existing conditions of the Green Park Historic District and its surroundings in a video documenting US 321 and the surrounding landscape and structures within the historic district and keying the locations of the filming on an aerial photograph.
- B. Individual Structures: Prior to the initiation of construction activities, NCDOT shall photographically record the existing conditions of the Green Park Inn, Cottage No. 21, and A.G. Jonas Cottage and their immediate surroundings. For each structure NCDOT shall collect selected views of each building including, but not limited to:
 - Overall views of each building (elevations and oblique views)
 - Interior views of the main areas and noted interior architectural elements
 - Overall views of the project area, showing the relationship of each building to its setting
- C. Existing Stone Walls: Prior to the initiation of construction activities, NCDOT shall photographically record the conditions of existing stone walls along US 321 within the historic district. For each NCDOT shall collect selected views of each stone wall including, but not limited to:
 - Overall views of each wall (elevations and oblique views)
 - Overall views of the project area, showing the relationship of each wall to its setting

Photographic Format

- ◆ Digital video transferred to a CD-ROM
- ◆ Color slides (all views)
- ◆ 35 mm or larger black and white negatives (all views)
- ◆ Two Black and white contact sheets (all views)
- ◆ All processing to be done to archival standards
- ◆ All photographs and negatives to be labeled according to Division of Archives and History standards

Copies and Curation

One (1) set of all photographic documentation will be deposited with the North Carolina Division of Archives and History/State Historic Preservation Office to be made a permanent part of the statewide survey and iconographic collection.



North Carolina Department of Cultural Resources
State Historic Preservation Office

Peter B. Sandbeck, Administrator

Michael F. Easley, Governor
Lisbeth C. Evans, Secretary
Jeffrey J. Crow, Deputy Secretary

Office of Archives and History
Division of Historical Resources
David Brook, Director

October 20, 2004

MEMORANDUM

TO: Gregory G. Thorpe, PhD
Project Development & Environmental Analysis
Department of Transportation

FROM: Jeffrey J. Crow 
State Historic Preservation Officer

SUBJECT: MOA for improvements for US 321 from SR 1500 to SR 1632, Blowing Rock,
R-2237C, Caldwell and Watauga Counties, ER92-7799

As requested by Missy Dickens, project engineer, we have printed and signed the Memorandum of Agreement (MOA) for the above referenced project, and provide it to you for signature by the agreeing and concurring parties. The signature pages for the concurring parties have been printed separately so that you may provide the appropriate page to each party with instructions on how to go about signing the MOA or providing you with confirmation that they do not wish to sign the agreement.

While this has proven to be a particularly complex project, requiring extensive and protracted consultation among the many parties, we trust the MOA and the implementation of its stipulations by the Department of Transportation will help mitigate the adverse effect of the proposed improvements on the Green Park Historic District. The agreement should provide guidance for all the parties during the many years the project will be under right-of-way negotiations and construction.

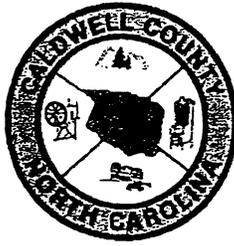
We look forward to receipt of the recordation materials specified in Appendix A and to further consultation as outlined in the stipulations. Once a fully executed copy of the agreement is available, we would appreciate a copy for our files. Thank you.

Attachment

cc:  Missy Dickens, NCDOT
Steve Lund, ACOE

	Location	Mailing Address	Telephone/Fax
ADMINISTRATION	507 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-4763/733-8653
RESTORATION	515 N. Blount Street, Raleigh NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6547/715-4801
SURVEY & PLANNING	515 N. Blount Street, Raleigh, NC	4617 Mail Service Center, Raleigh NC 27699-4617	(919)733-6545/715-4801

Commissioners
Timothy E. Sanders, Chairman
Faye R. Higgins, Vice Chairman
Herbert H. Greene
Alden E. Starnes
Dr. John W. Thuss



County Manager
Bobby White
bwhite@co.caldwell.nc.us
Clerk to the Board
Kathy T. Myers, CMC
kmyers@co.caldwell.nc.us

COUNTY OF CALDWELL

Post Office Box 2200
Lenoir, North Carolina 28645-2200
Phone (828) 757-1300 Fax (828) 757-1295

December 9, 2004

Ms. Missy Dickens, PE, Project Manager
Project Development and Environmental Analysis Branch
NC Department of Transportation
1548 Mail Service Center
Raleigh, North Carolina 27699-1548

Dear Ms. Dickens:

During the meeting of the Caldwell County Board of Commissioners on December 6, 2004, the enclosed signatory page was officially approved and executed as documented support of the stipulations outlined in the memorandum of agreement.

The Board of Commissioners appreciates your work as well as that of the U.S. Army Corps of Engineers in bringing about this apparent successful negotiated agreement dealing with the highway construction.

Should the Board of Commissioners be of additional assistance for this project, please don't hesitate to contact us.

Sincerely,

Bobby White
County Manager

/ktm

c: Steve Lund, U.S. Army Corps of Engineers
Renee Gledhill-Earley, State Historic Preservation Office

**MEMORANDUM OF AGREEMENT
AMONG
THE UNITED STATES ARMY CORPS OF ENGINEERS,
WILMINGTON DISTRICT,
THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER
FOR
US 321 IMPROVEMENTS
FROM SR 1500 (BLACKBERRY ROAD)
TO SR 1632 (POSSUM HOLLOW ROAD)
TOWN OF BLOWING ROCK, NORTH CAROLINA
WATAUGA AND CALDWELL COUNTIES
TIP PROJECT R-2237C**

Execution of this Memorandum of Agreement by USACE, the NCDOT, and the North Carolina SHPO, its subsequent filing with the Advisory Council on Historic Preservation, and implementation of its terms evidence that USACE has afforded the Council an opportunity to comment on the US 321 improvements from SR 1500 to SR 1632 in the Town of Blowing Rock, and its effects on the Green Park Historic District and that USACE has taken into account the effects of the Undertaking on this National Register-listed historic district.

Adopted this the 6th day of December, 2004.



Chairman
Caldwell County Board of Commissioners

Attest:



Kathy T. Myers, Clerk to the Board

MEMORANDUM OF AGREEMENT
AMONG
THE UNITED STATES ARMY CORPS OF ENGINEERS,
WILMINGTON DISTRICT,
THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION,
AND
THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER
FOR
US 321 IMPROVEMENTS
FROM SR 1500 (BLACKBERRY ROAD)
TO SR 1632 (POSSUM HOLLOW ROAD)
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CONCUR:



Watauga County Commissioners

12-6-04

Date

James Deal

Watauga County Commissioners (PLEASE PRINT)

**MEMORANDUM OF AGREEMENT
AMONG
THE UNITED STATES ARMY CORPS OF ENGINEERS,
WILMINGTON DISTRICT,
THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION,
AND
THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER
FOR
US 321 IMPROVEMENTS
FROM SR 1500 (BLACKBERRY ROAD)
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CONCUR:


TOWN OF BLOWING ROCK

11/24/04
DATE

**MEMORANDUM OF AGREEMENT
AMONG
THE UNITED STATES ARMY CORPS OF ENGINEERS,
WILMINGTON DISTRICT,
THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION,
AND
THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER
FOR
US 321 IMPROVEMENTS
FROM SR 1500 (BLACKBERRY ROAD)
TO SR 1632 (POSSUM HOLLOW ROAD)
TOWN OF BLOWING ROCK, NORTH CAROLINA
WATAUGA AND CALDWELL COUNTIES
TIP PROJECT R-2237C.**

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CONCUR:

HFW Properties, Inc. by William H. Carter, Dec 12/10/04

Owner(s) Cottage #21 Date

HFW PROPERTIES, INC. by William H. CARTER, PRESIDENT

Owner(s) Cottage #21 (PLEASE PRINT)

**MEMORANDUM OF AGREEMENT
AMONG
THE UNITED STATES ARMY CORPS OF ENGINEERS,
WILMINGTON DISTRICT,
THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION,
AND
THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER
FOR
US 321 IMPROVEMENTS
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CONCUR:

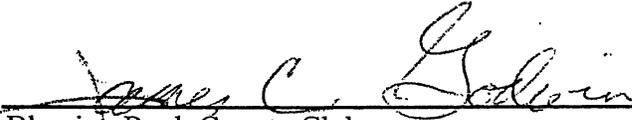
Ronnie E. Wrenn 12-9-04
Owner(s) of Green Park Inn Date

RONNIE E. WRENN
Owner(s) of Green Park Inn (PLEASE PRINT)

MEMORANDUM OF AGREEMENT
AMONG
THE UNITED STATES ARMY CORPS OF ENGINEERS,
WILMINGTON DISTRICT,
THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION,
AND
THE NORTH CAROLINA STATE HISTORIC PRESERVATION OFFICER
FOR
US 321 IMPROVEMENTS
FROM SR 1500 (BLACKBERRY ROAD)
TO SR 1632 (POSSUM HOLLOW ROAD)
TOWN OF BLOWING ROCK, NORTH CAROLINA
WATAUGA AND CALDWELL COUNTIES
TIP PROJECT R-2237C

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CONCUR:


Blowing Rock County Club

12/8/04
Date

James C. Godwin
Blowing Rock County Club (PLEASE PRINT)



North Carolina Wildlife Resources Commission

TO: Monte Matthews, NCDOT Coordinator
Raleigh Regulatory Field Office, USACE

FROM: Marla Chambers, Western NCDOT Permit Coordinator *Marla Chambers*
Habitat Conservation Program, NCWRC

DATE: October 18, 2010

SUBJECT: Review of NCDOT's application for Individual Section 404 and 401 Permits for the widening of US 321 from SR 1500 (Blackberry Road) to US 221 at Blowing Rock, Watauga and Caldwell Counties. TIP No. R-2237C.

North Carolina Department of Transportation (NCDOT) has submitted an application to obtain a Section 404 Permit from the U.S. Army Corps of Engineers (USACE) and a 401 Water Quality Certification from the Division of Water Quality (NCDWQ). Staff biologists with the North Carolina Wildlife Resources Commission (NCWRC) have reviewed the information provided and have participated in the Merger process for the development of this state-funded project. These comments are provided in accordance with the provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d) and the Clean Water Act of 1977 (33 U.S.C. 466 et seq.).

NCDOT proposes to widen and improve a four-mile section of US 321 from SR 1500 (Blackberry Road) to US 221 at Blowing Rock to a four-lane facility. There will be 1,636 linear feet of permanent impacts to perennial streams and 0.19 acres of permanent impacts to wetlands. All streams impacted by the project are expected to support trout reproduction. We are pleased that NCDOT has committed to implementing the trout moratorium and erosion control measures that adhere to the Design Standards in Sensitive Watersheds.

NCWRC can concur with the issuance of Section 404 and 401 permits provided that the following conditions are implemented:

1. Sediment and erosion control measures shall adhere to the Design Standards for Sensitive Watersheds and be strictly maintained until project completion.

2. In-stream work and land disturbance within the 25-foot wide buffer zone are prohibited during the trout spawning seasons of October 15 through April 15 to protect the egg and fry stages of trout.
3. Herbaceous vegetation shall be planted on all bare soil as soon as possible following the completion of permanent or temporary ground disturbing activities to provide appropriate long-term erosion control.
4. Tall fescue should not be used in riparian areas. We encourage NCDOT to utilize onsite vegetation and materials for bank stabilization when practicable. Erosion control matting should be used on banks and steep slopes, instead of straw mulch and well anchored with 12" staples, wooden survey stakes or live stakes.
5. Stormwater should be directed to buffer areas or retention basins and should not be routed directly into the waterways.
6. The natural dimension, pattern, and profile of the streams above and below the crossing should not be modified by widening the stream channels or changing the depth of the waterway.
7. Removal of vegetation in riparian areas should be minimized. Native trees and shrubs should be planted along the banks, as appropriate to the setting, to reestablish the riparian zone and to provide long-term erosion control.
8. Grading and backfilling should be minimized, and tree and shrub growth should be retained if possible to ensure long term availability of shoreline cover for fish and wildlife. Backfill materials should be obtained from upland sites.
9. Riprap should be minimized and installed in a manner so as not to interfere with aquatic life passage during low flow conditions. Riprap placed for bank stabilization should be limited to the banks below the high water mark, and vegetation should be used for stabilization above the high water elevation.
10. If concrete will be used during construction, work must be accomplished so that wet (uncured) concrete does not contact surface waters. This will lessen the chance of altering the water chemistry and causing a fish kill.
11. Discharging hydroseeding mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is strictly prohibited.
12. Heavy equipment should be operated from the banks rather than in the stream channels whenever possible in order to minimize sedimentation and reduce the likelihood of introducing other pollutants into the waterway. All mechanized equipment operated near surface waters should be inspected and maintained regularly to prevent contamination of surface waters from fuels, lubricants, hydraulic fluids or other toxic materials.

Thank you for the opportunity to review and comment on this project. If you have any questions regarding these comments, please contact me at (704) 485-8291.

cc: Marella Buncick, USFWS
Amy Euliss, NCDWQ
Carla Dagnino, NCDOT
Elizabeth Lusk, NCDOT

EXHIBIT E

The following factors and determinations are used to determine the appropriate scope of analysis within the NEPA framework.

- (i) **“Whether or not the regulated activity comprises “merely a link” in a corridor type project.”** The Corps regulatory control over this project (TIP R-2237 C) involves the discharge of fill within 1,929 linear feet of streams and 0.19-acre of wetland over a 4.0 mile roadway proposal. As such, the regulatory activity provides more than a link in the overall project and encompasses substantial portions of roadway spread evenly throughout the total length of the project.
- (ii) **“Whether there are aspects of the upland facility in the immediate vicinity of the regulated activity which affect the location and configuration of the regulated activity.”** Aspects of upland facilities such as topography, other roadways, human alterations, etc., are common in the general vicinity of each regulated activity. Because of this, they affect the location and aspect of each activity subject to Corps jurisdiction.
- (iii) **“The extent to which the entire project will be within the Corps jurisdiction.”** Due to the large number of regulated activities spread fairly uniformly throughout the project, the entire project is dictated by these activities. Therefore, the entire project should be within Corps jurisdiction.
- (iv) **“The extent of cumulative Federal control and responsibility.”** There are a total of 12 different regulated impact sites throughout the project, which extends a total of 4.0 miles. The portions of the roadway project for which a Corps permit is required are essential for the development of the project as a whole, especially considering the linear nature of this proposal.

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION:
34402.1.1		FE
34402.2.6		R/W

DIVISION OF HIGHWAYS

CALDWELL & WATAUGA COUNTIES

LOCATION: US 321 FROM SR 1500 (BLACKBERRY ROAD)
TO US 221 AT BLOWING ROCK

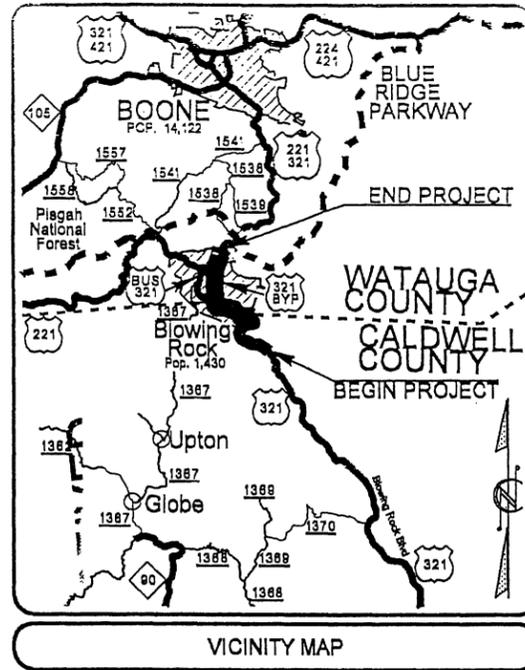
TYPE OF WORK: GRADING, DRAINAGE, PAVING, CULVERT, RETAINING WALLS,
AND SIGNALS

RECEIVED

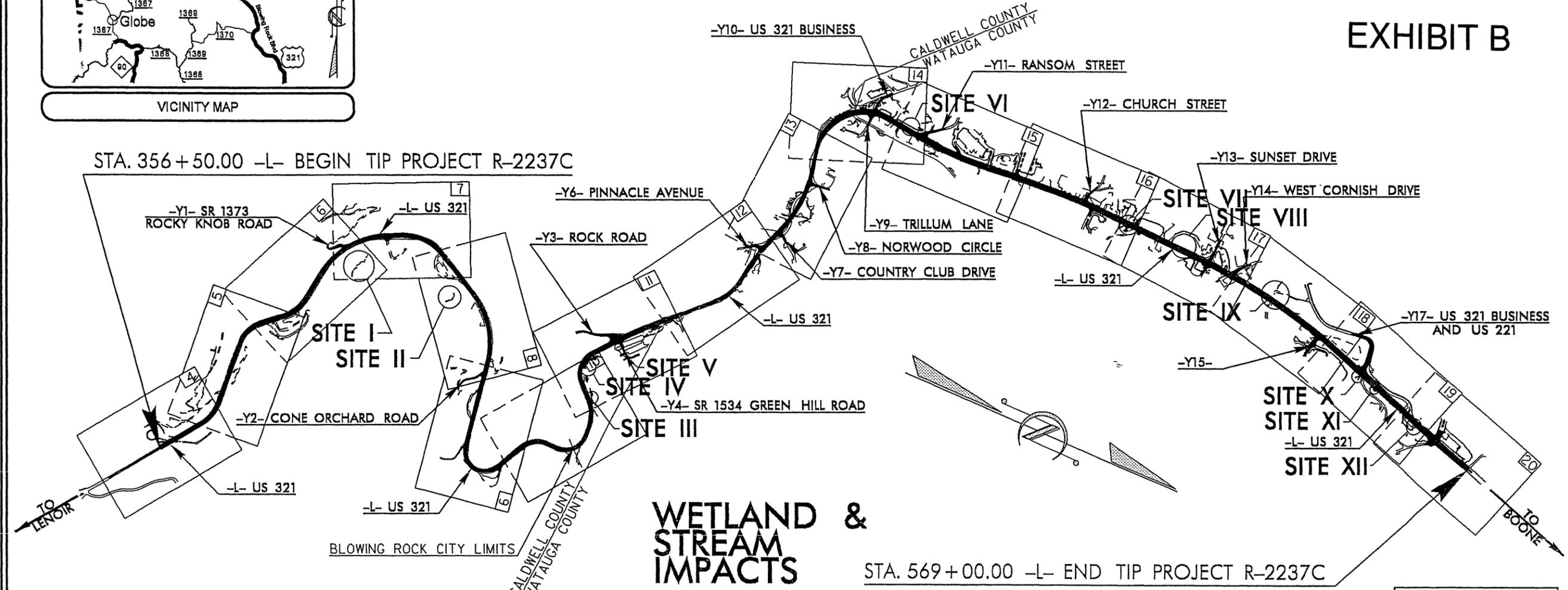
OCT 18 2010

Regulatory Branch

EXHIBIT B



TIP PROJECT: R-2237C



**WETLAND &
STREAM
IMPACTS**

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF BLOWING ROCK
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II

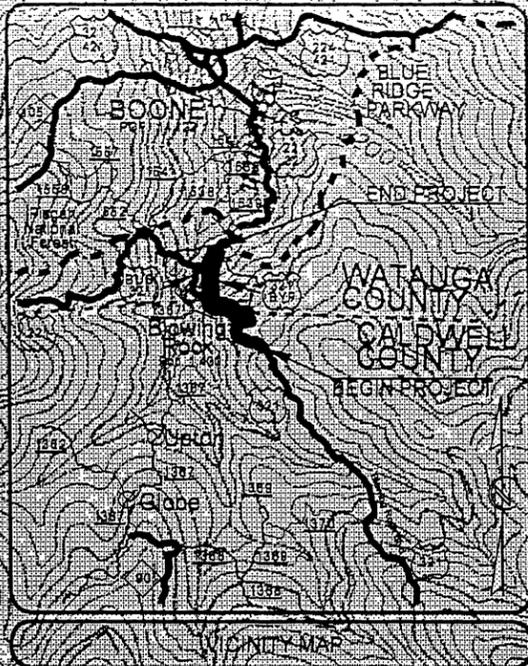
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:

<p>GRAPHIC SCALES</p> <p>50 25 0 50 100 PLANS</p> <p>50 25 0 50 100 PROFILE (HORIZONTAL)</p> <p>10 5 0 10 20 PROFILE (VERTICAL)</p>	<p>DESIGN DATA</p> <p>ADT 2006 = 18,935 ADT 2025 = 27,450 DHV = 7 % D = 60 % T = 8 % * V = 50 MPH * TTST 3% + DUAL 5%</p>	<p>PROJECT LENGTH</p> <p>LENGTH ROADWAY TIP PROJECT R-2237C = 4.025 MILES TOTAL LENGTH OF TIP PROJECT R-2237C = 4.025 MILES</p>	<p>Prepared in the Office of: DIVISION OF HIGHWAYS 1000 Birch Ridge Dr., Raleigh NC, 27610</p>		<p>HYDRAULICS ENGINEER</p> <p>SIGNATURE: _____ P.E.</p> <p>ROADWAY DESIGN ENGINEER</p> <p>SIGNATURE: _____ P.E.</p>	<p>DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA</p>  <p>STATE HIGHWAY DESIGN ENGINEER</p>
			<p>2006 STANDARD SPECIFICATIONS</p> <p>RIGHT OF WAY DATE: JUNE 27, 2008</p> <p>LETTING DATE: OCTOBER 19, 2010</p>	<p>G. E. BREW, PE PROJECT ENGINEER</p> <p>W. T. BEST PROJECT DESIGN ENGINEER</p>		

\$\$\$\$\$ SYSTEM \$\$\$\$\$
\$\$\$\$\$ USER \$\$\$\$\$
\$\$\$\$\$ DGN \$\$\$\$\$
\$\$\$\$\$ \$\$\$\$\$

CONTRACT NO. TIP PROJECT R-2237C



CALDWELL & WATAUGA COUNTIES

LOCATION: US 321 FROM SR 1500 (BLACKBERRY ROADS) TO US 221 AT BLOWING ROCK

TYPE OF WORK: GRADING, DRAINAGE, DITCHES, CURBS, RETAINING WALLS, AND SIGNALS

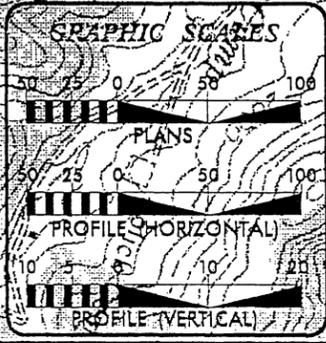
TO US 321 BUSINESS

STA. 356+00.00 - BEGIN TIP PROJECT R-2237C

STA. 569+00.00 - END TIP PROJECT R-2237C

WETLAND & STREAM IMPACTS

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF BLOWING ROCK. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD A.



DESIGN DATA	
ADT 2006	18,935
ADT 2025	27,450
DIV	7%
D	60%
T	8%
V	30 MPH
TTST	3%
DUAL	5%

PROJECT LENGTH	
LENGTH ROADWAY TIP PROJECT R-2237C	4.075 MILES
TOTAL LENGTH OF TIP PROJECT R-2237C	4.025 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
 1008 Birch Ridge Dr., Raleigh, NC, 27610

RIGHT OF WAY DATE: JUNE 27, 2008

WRITING DATE: OCTOBER 19, 2010

G. E. BREW, PE
PROJECT ENGINEER

W. T. BEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

ROADWAY DESIGN ENGINEER

SIGNATURE

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE HIGHWAY DESIGN ENGINEER

SIGNATURE

PRELIMINARY PLANS

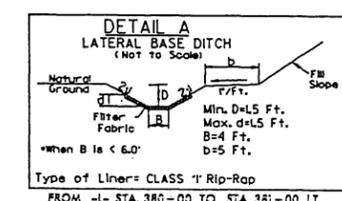
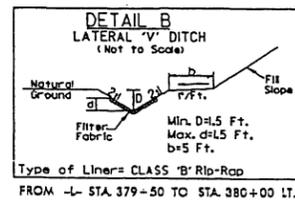
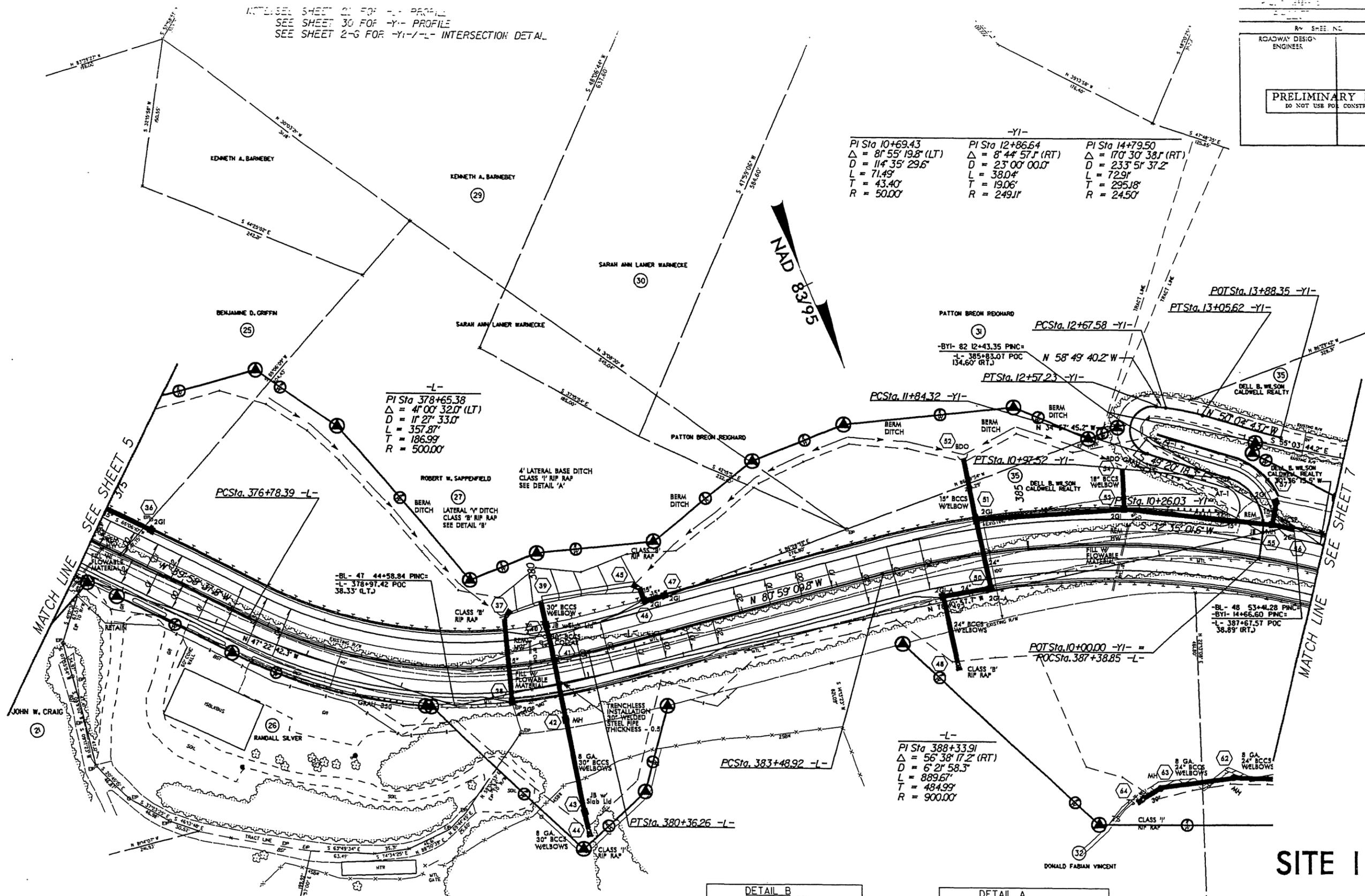
NOTE: SEE SHEET 21 FOR --P-- PROFILE
 SEE SHEET 30 FOR --Y-- PROFILE
 SEE SHEET 2-6 FOR --Y1--/--L-- INTERSECTION DETAIL

Rd. SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULIC ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

-Y1-		
PI Sta 10+69.43	PI Sta 12+86.64	PI Sta 14+79.50
$\Delta = 8^{\circ} 55' 19.8" (LT)$	$\Delta = 8^{\circ} 44' 57.1" (RT)$	$\Delta = 170^{\circ} 30' 38.1" (RT)$
$D = 114^{\circ} 35' 29.6"$	$D = 23^{\circ} 00' 00.0"$	$D = 233^{\circ} 51' 37.2"$
$L = 71.49'$	$L = 38.04'$	$L = 72.91'$
$T = 43.40'$	$T = 19.06'$	$T = 295.18'$
$R = 50.00'$	$R = 249.11'$	$R = 24.50'$

-L-	
PI Sta 378+65.38	
$\Delta = 4^{\circ} 00' 32.0" (LT)$	
$D = 11^{\circ} 27' 33.0"$	
$L = 357.87'$	
$T = 186.99'$	
$R = 500.00'$	

-L-	
PI Sta 388+33.91	
$\Delta = 56^{\circ} 38' 17.2" (RT)$	
$D = 6^{\circ} 21' 58.3"$	
$L = 889.67'$	
$T = 484.99'$	
$R = 900.00'$	



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

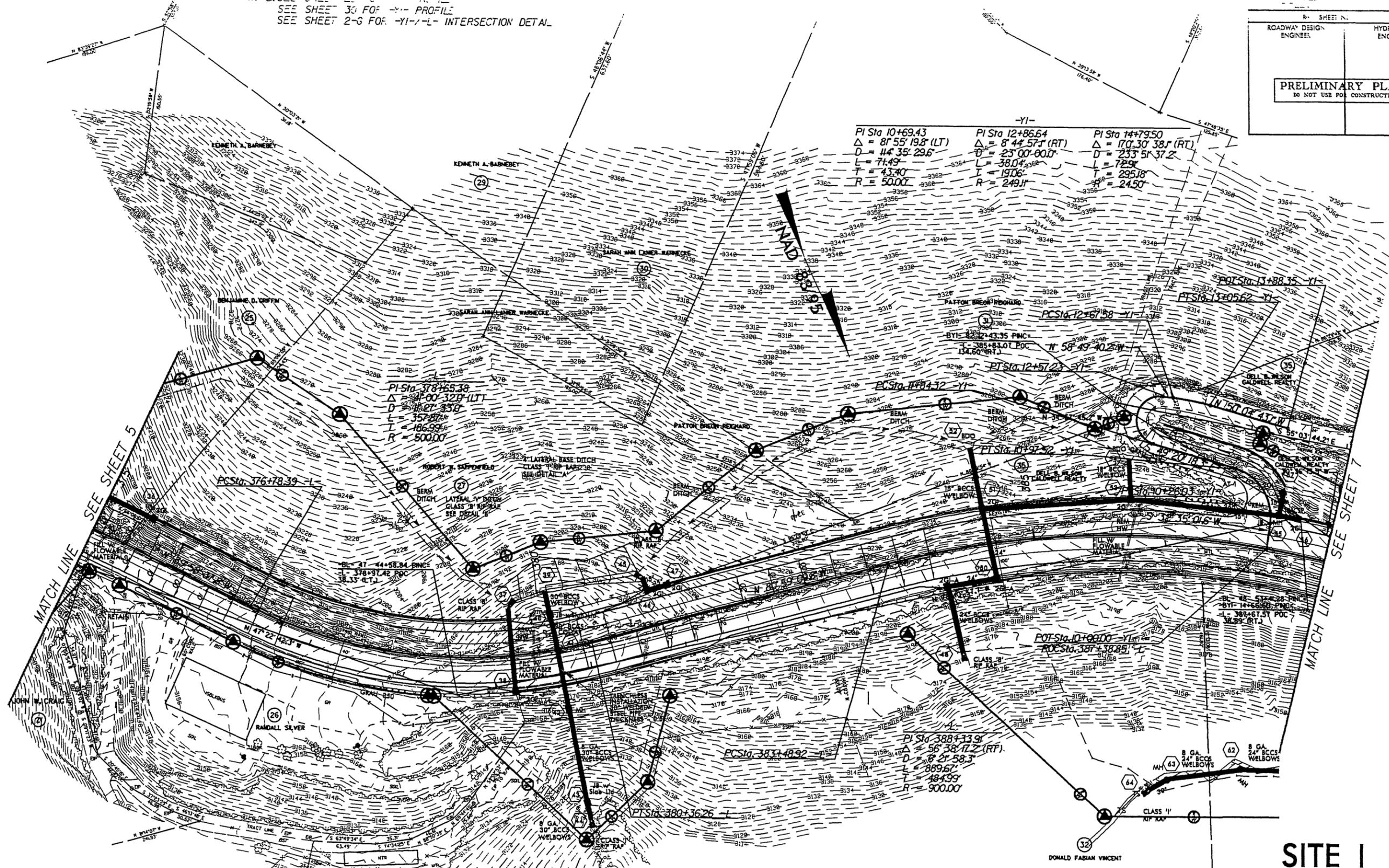


SITE 1

REVISIONS

ATTENDED SHEET 21 FOR -Y- PROFILE
 SEE SHEET 30 FOR -Y- PROFILE
 SEE SHEET 2-G FOR -Y-/-L- INTERSECTION DETAIL

R. SHEET N.	L.
ROADWAY DESIGN ENGINEER	HYDRAULIC ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	



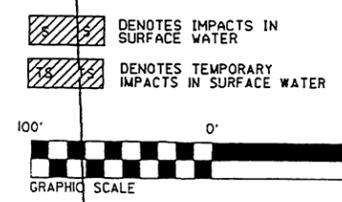
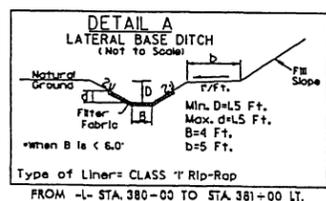
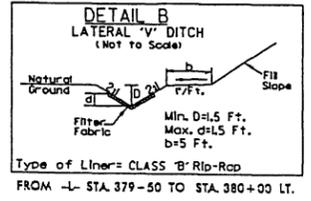
-YI-
 PI Sta 10+69.43 Δ = 8° 55' 19.8" (LT) D = 114' 35" 29.6" L = 74.49 T = 43.40 R = 500.00
 PI Sta 12+86.64 Δ = 8° 44' 57.7" (RT) D = 233' 51' 37.2" L = 38.04 T = 19.06 R = 249.11
 PI Sta 14+79.50 Δ = 17° 30' 38.7" (RT) D = 233' 51' 37.2" L = 72.9 T = 295.18 R = 24.50

PI Sta 378+65.38 Δ = 34° 00' 32.0" (LT) D = 311' 27' 35.0" L = 357.07 T = 186.95 R = 500.00

PI Sta 388+33.91 Δ = 56° 38' 17.2" (RT) D = 82' 21' 58.3" L = 88.67 T = 48.49 R = 900.00

MATCH LINE SEE SHEET 5

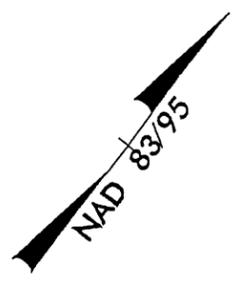
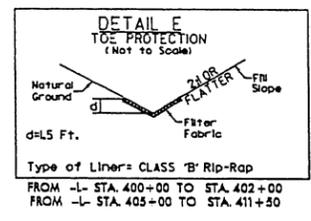
MATCH LINE SEE SHEET 7



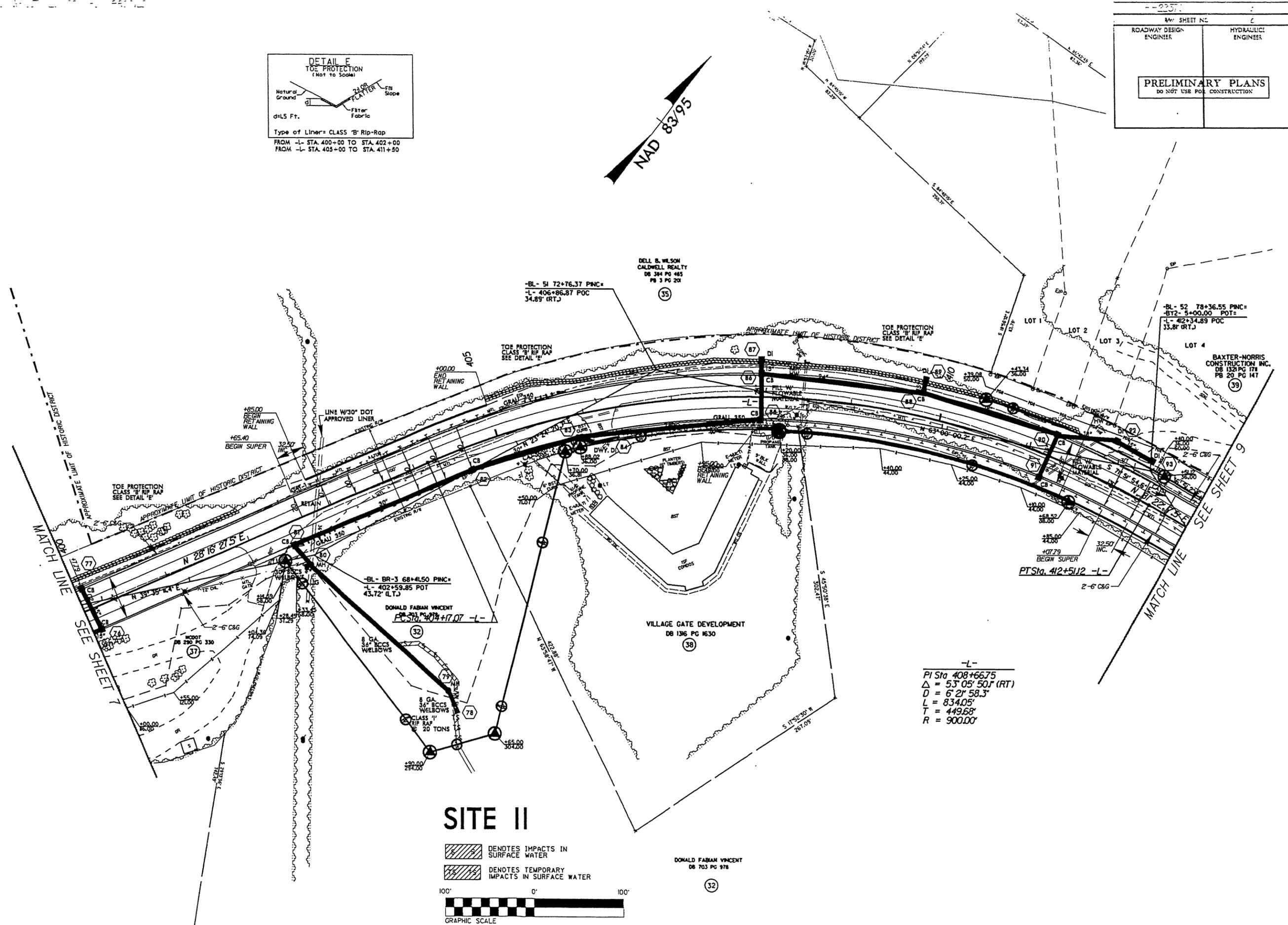
SITE I

REVISIONS

DATE TIME DRAWN BY CHECKED BY

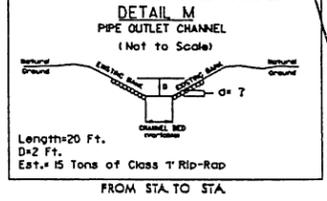
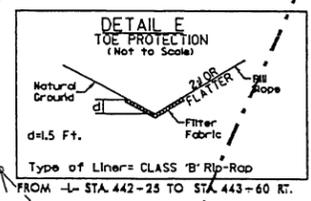
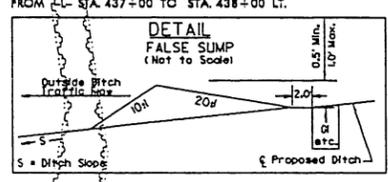
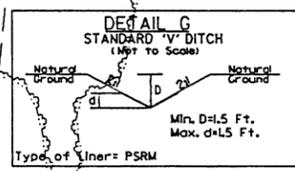
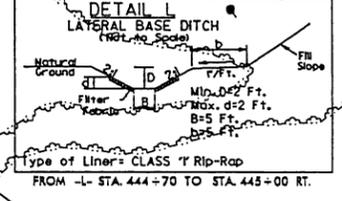
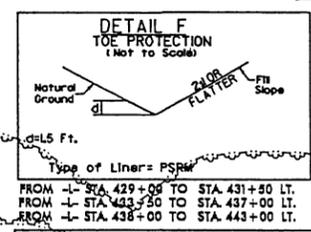
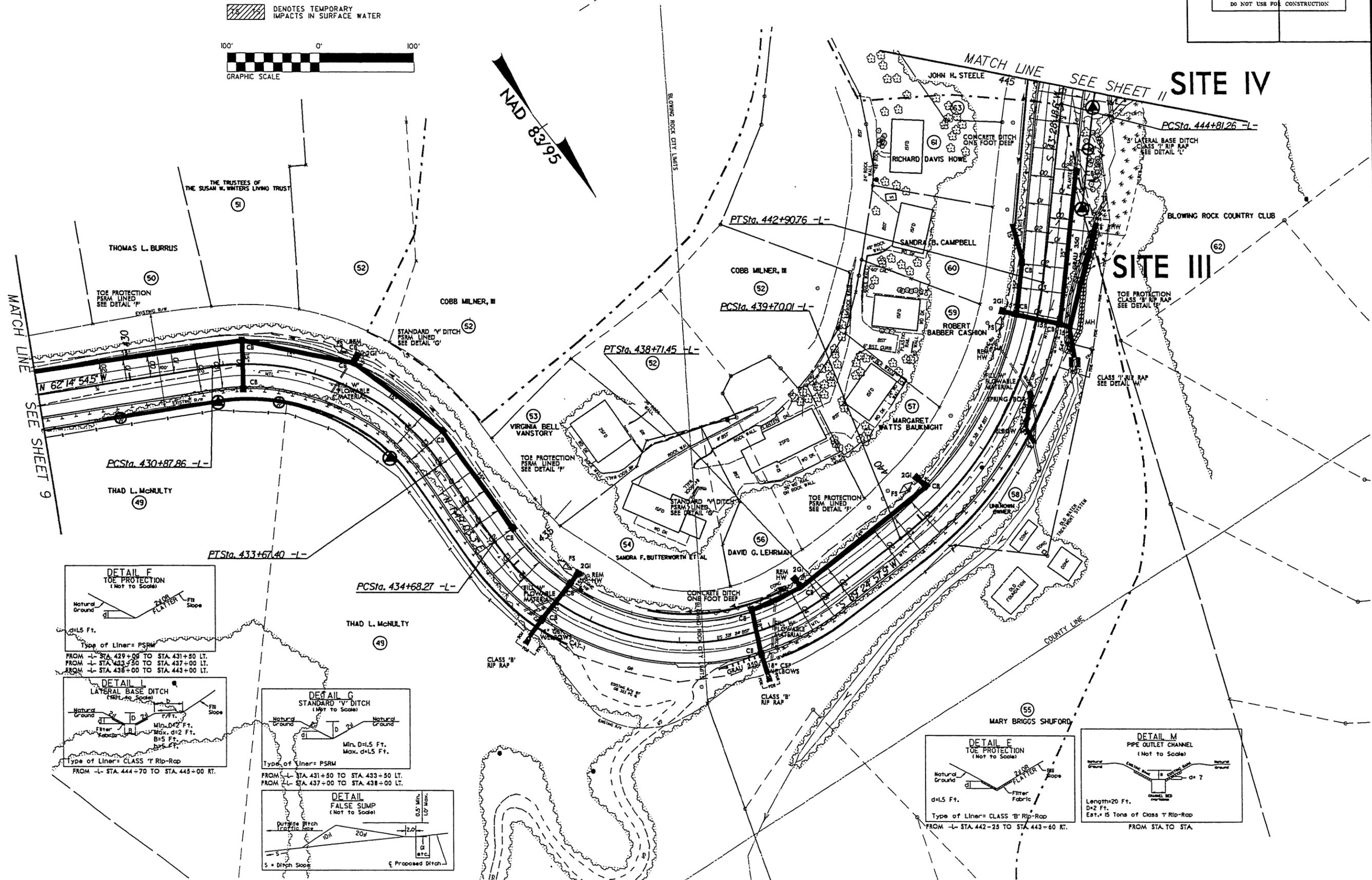
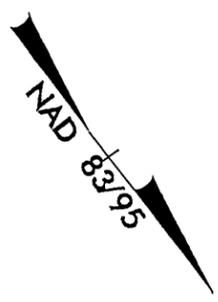


REVISIONS
 Right of Way: This revision consists of adding temporary construction easement to Parcel 37.



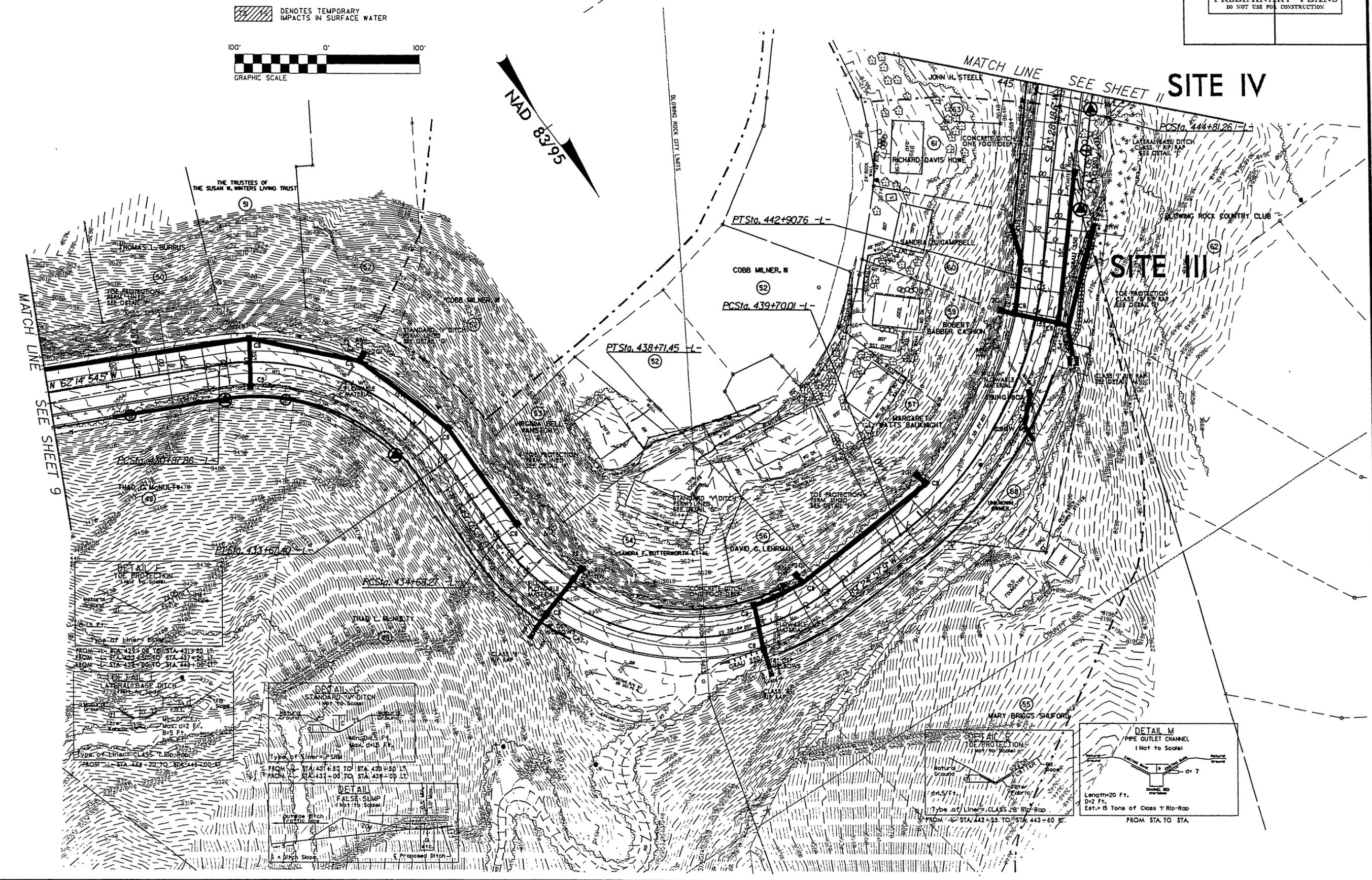
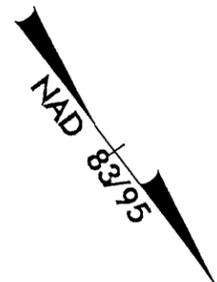
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULIC ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

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



PROJECT REFERENCE SHEET	
P-22371	1
RAW SHEET NO. 10	
ROADWAY DESIGN ENGINEER	HYDRAULICE ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

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

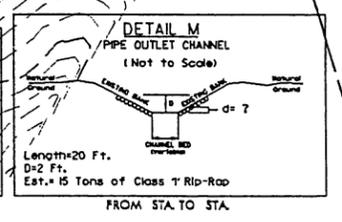
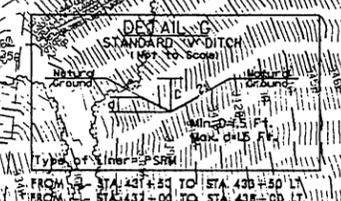


MATCH LINE SEE SHEET 9

MATCH LINE SEE SHEET 11

SITE IV

SITE III

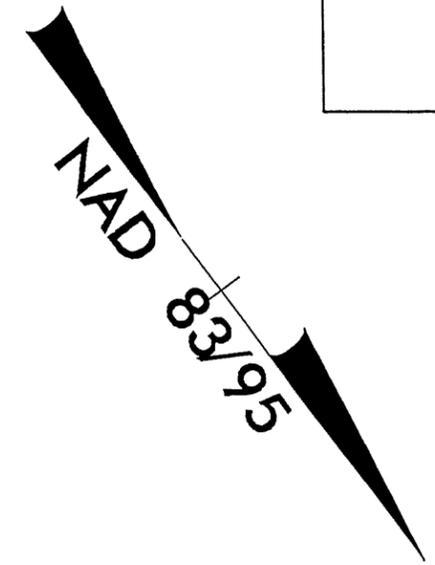


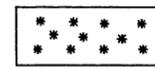
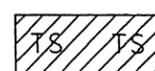
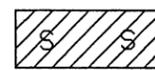
*****SUON*****

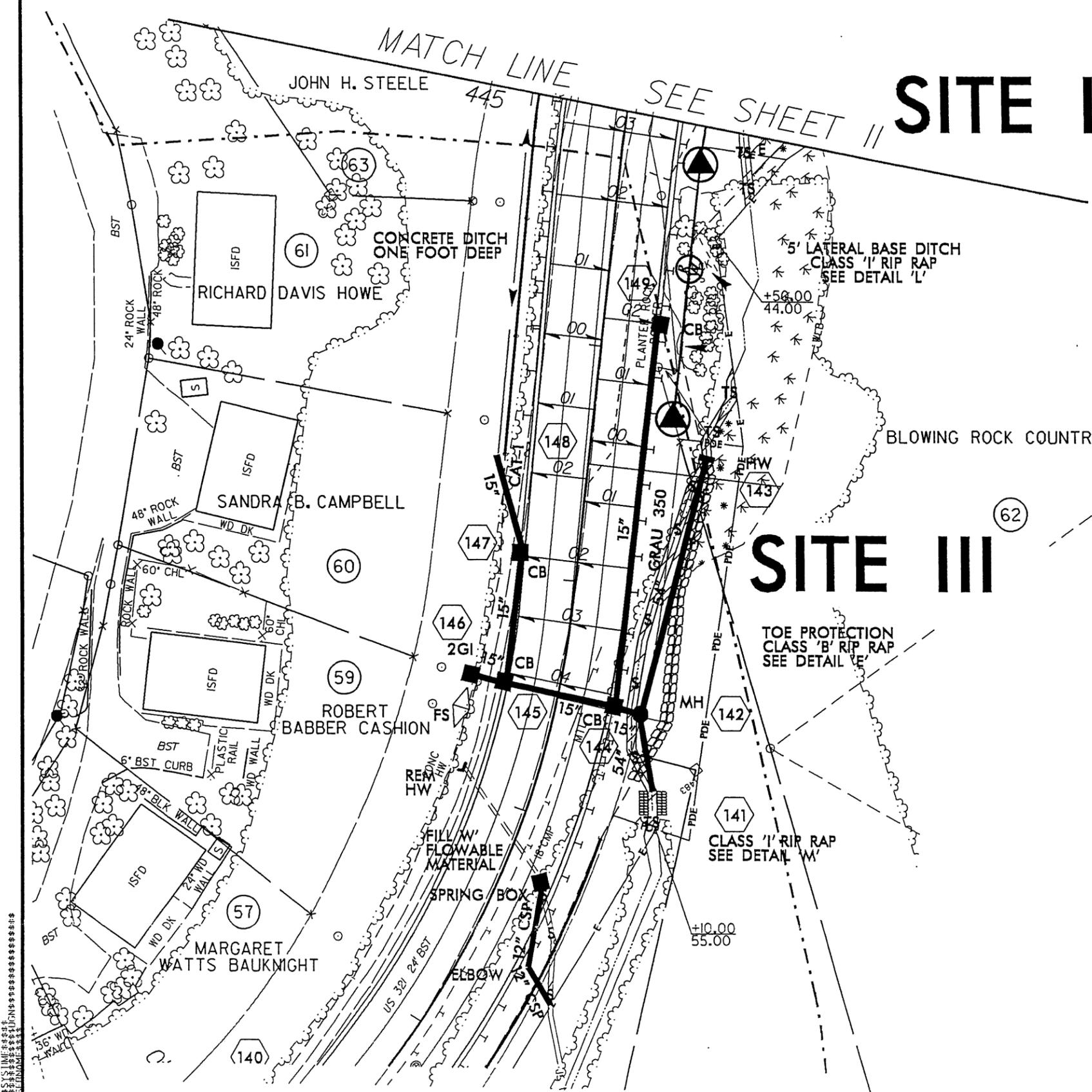
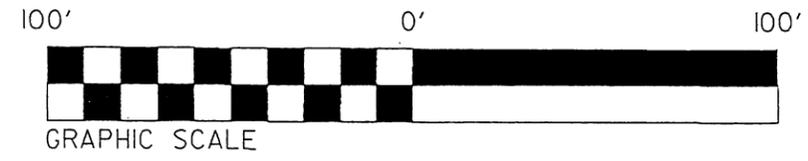
PROJECT REFERENCE		SHEET NO.	
F-223		K	
RAW SHEET NO.		IC	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

SITE IV

SITE III



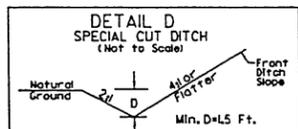
-  DENOTES MECHANIZED CLEARING
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES FILL IN WETLAND



SYSTEMS INC. 11111 N. 111TH ST. SUITE 100, OMAHA, NE 68164
 TEL: 402-426-1111 FAX: 402-426-1112
 WWW: WWW.SYSTEMSINC.COM

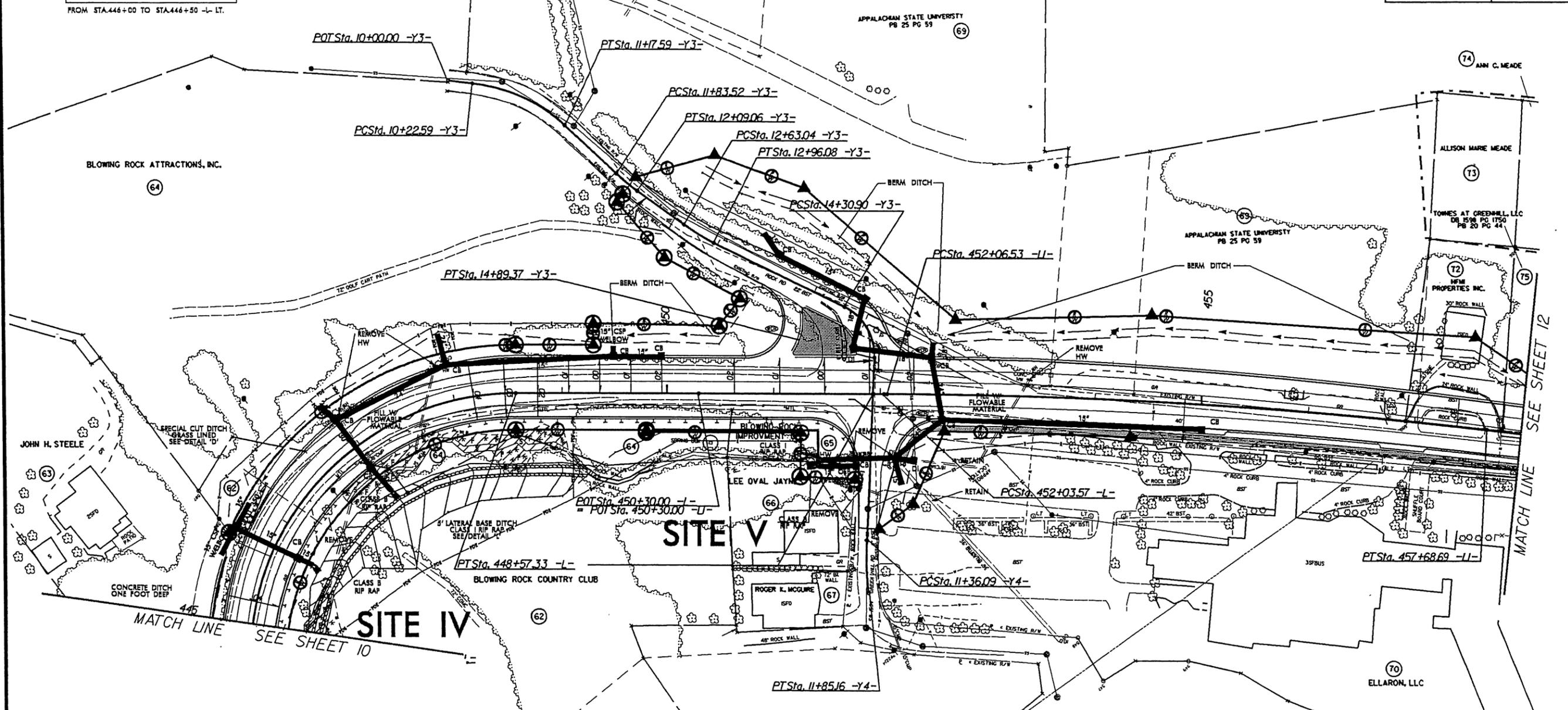
NOTE: SEE SHEET 25 FOR -Y3- & -Y4- PROFILES
 SEE SHEET 30 FOR -Y3- & -Y4- PROFILES
 SEE SHEET 2-G FOR -Y3- & -Y4-/-L- INTERSECTION DETAILS

PROJECT REFERENCE NO. F-2237	
SHEET NO. 1	
ROADWAY DESIGN ENGINEER	HYDRAULIC ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	



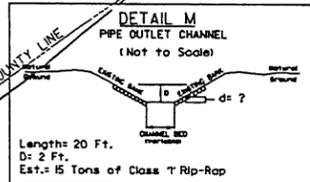
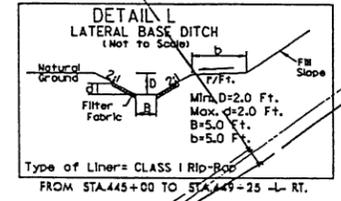
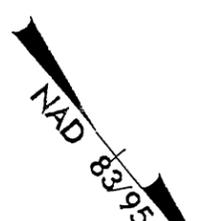
FROM STA.446+00 TO STA.446+50 -L- LT.

REVISIONS THE REVISION CONSISTS OF CHANGING THE RIGHT OF WAY ON PARCEL 69.



SITE V

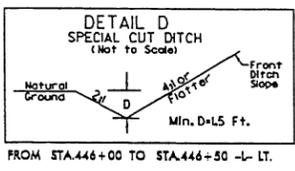
SITE IV



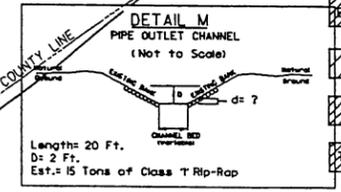
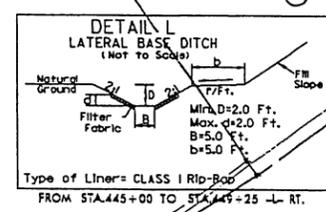
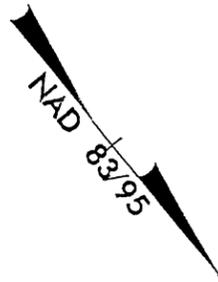
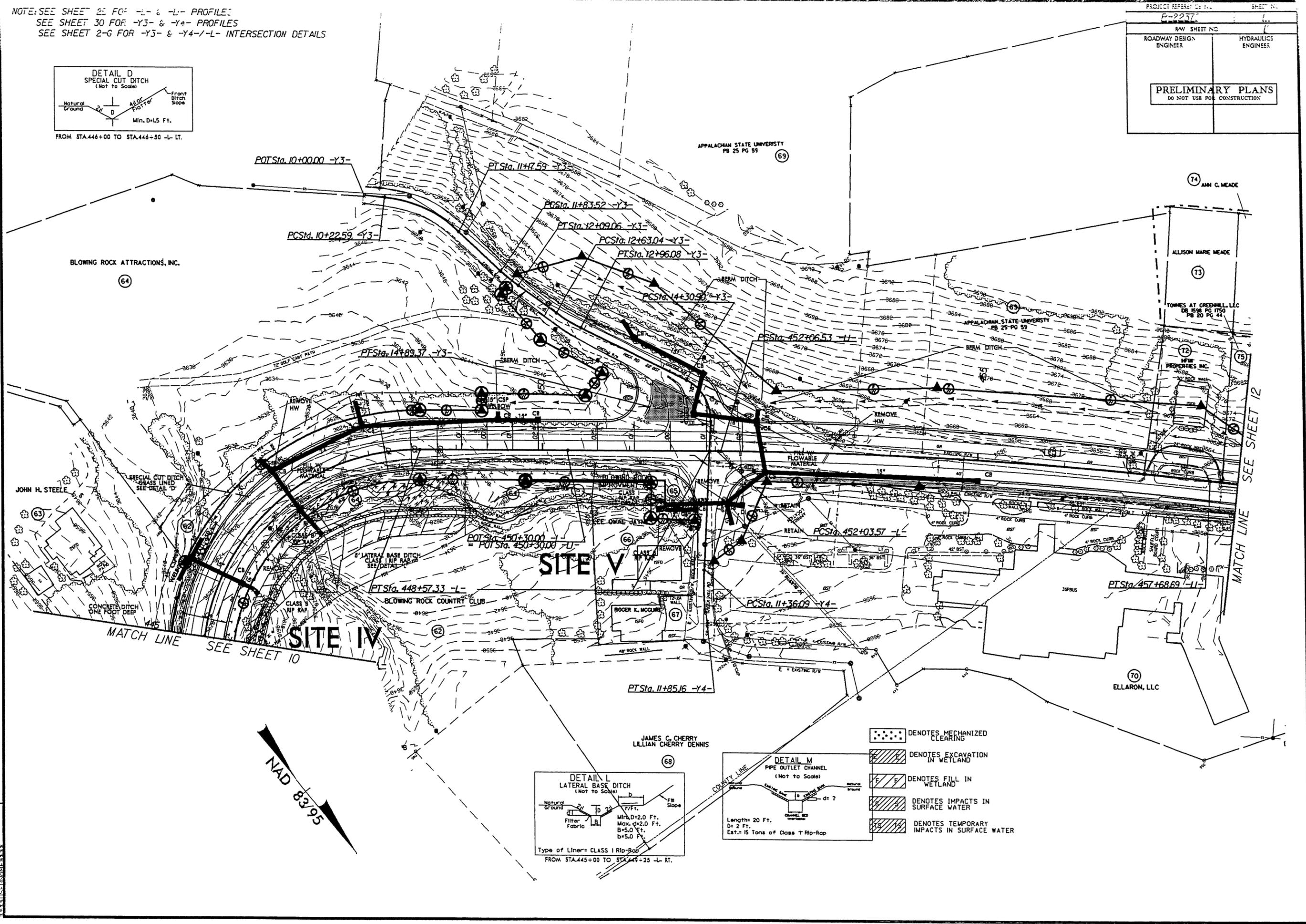
- DENOTES MECHANIZED CLEARING
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

***** SYSTEMS ENGINEERING *****

NOTE: SEE SHEET 2-G FOR -L- & -L- PROFILES
 SEE SHEET 30 FOR -Y3- & -Y4- PROFILES
 SEE SHEET 2-G FOR -Y3- & -Y4-/-L- INTERSECTION DETAILS



THE REVISION CONSISTS OF CHANGING THE RIGHT OF WAY ON PARCEL 69.

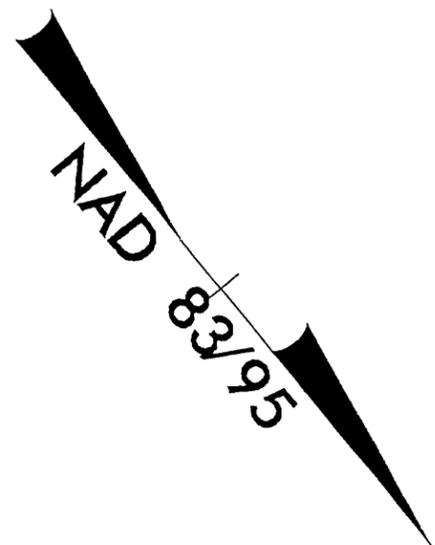
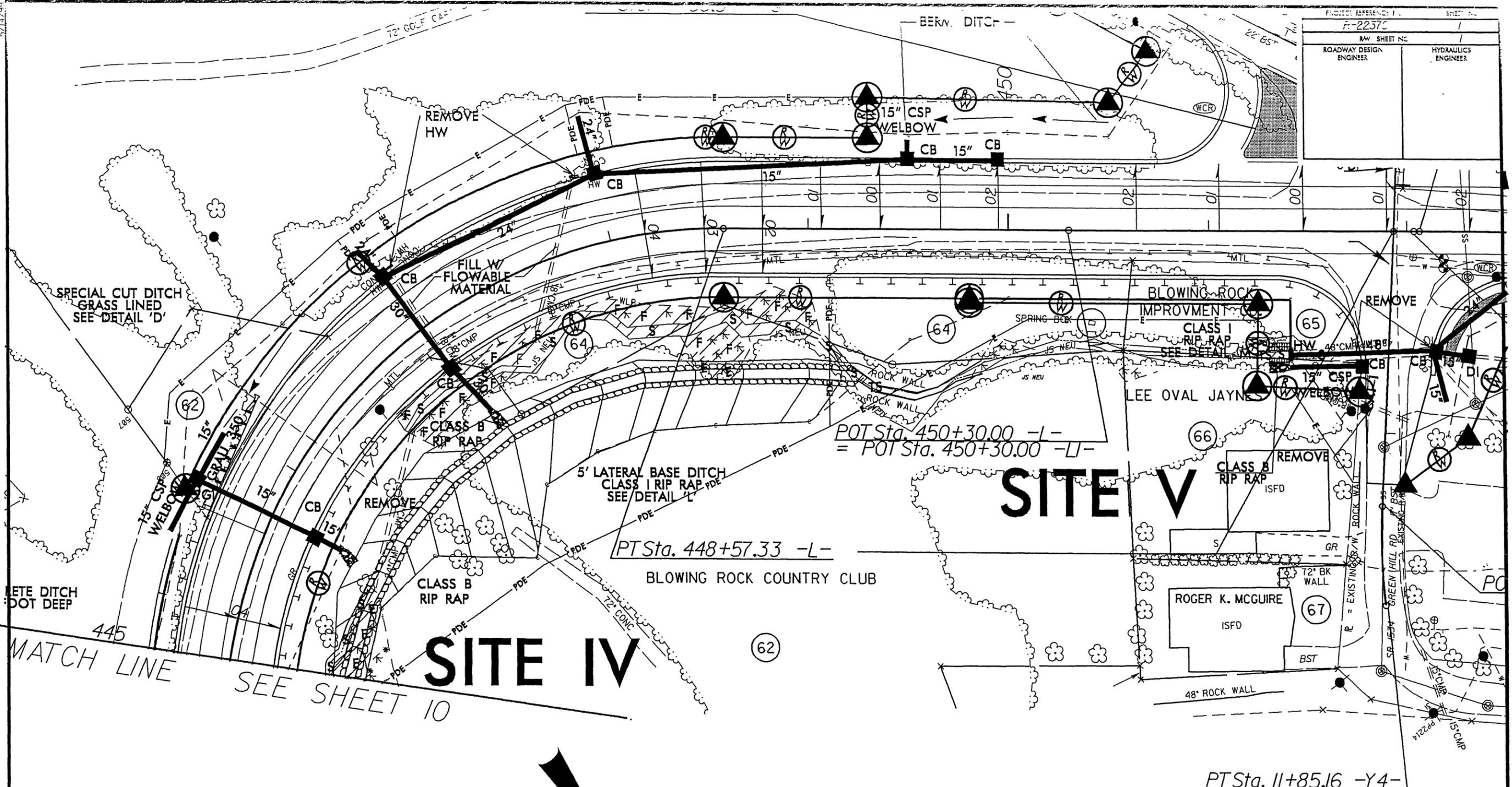


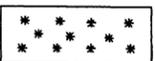
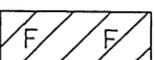
- DENOTES MECHANIZED CLEARING
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

REVISIONS

MATCH LINE SEE SHEET 12

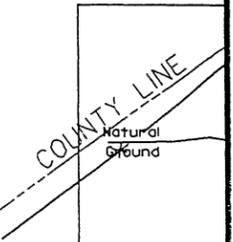
MATCH LINE SEE SHEET 10

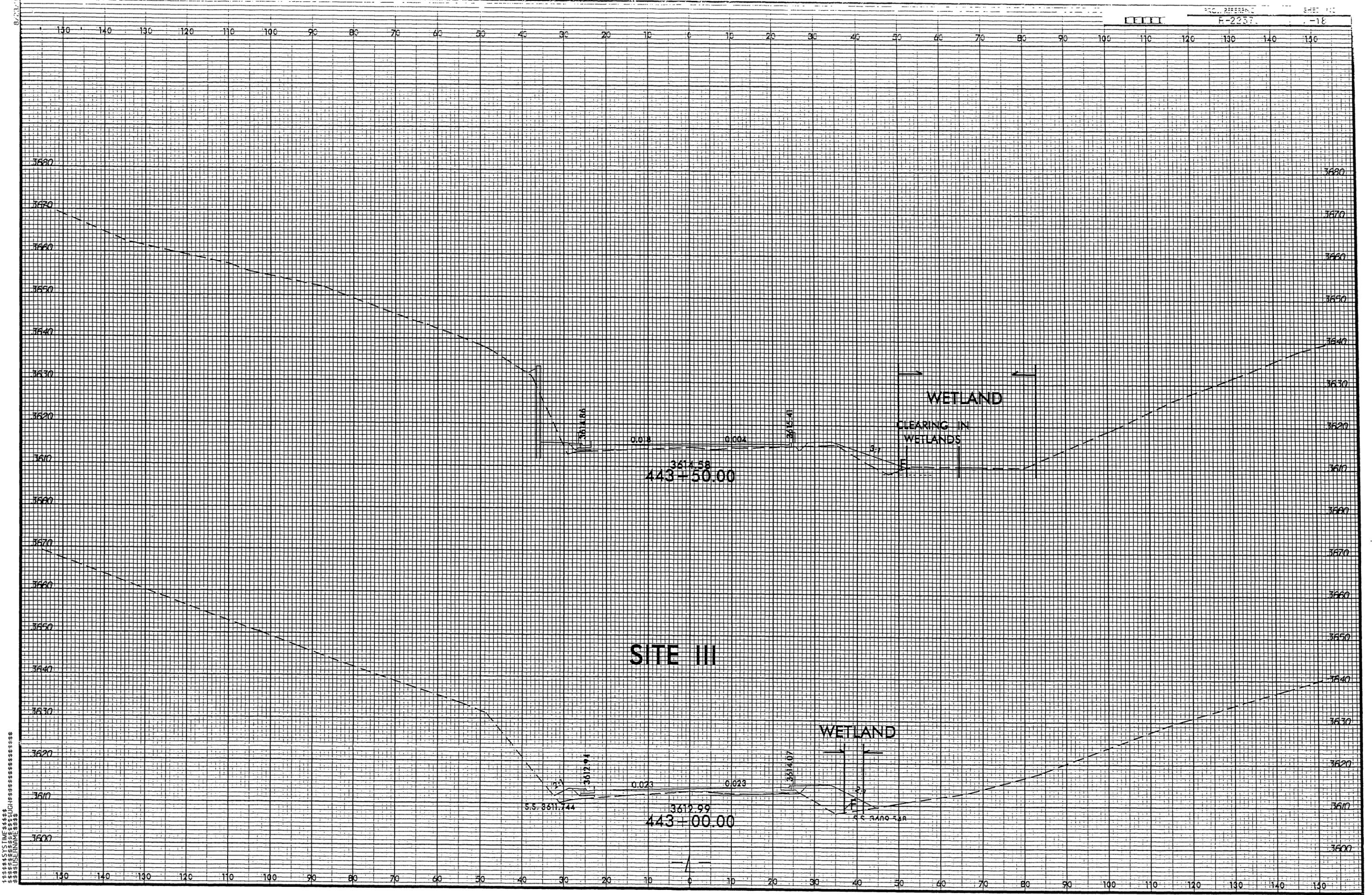


-  DENOTES MECHANIZED CLEARING
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES FILL IN WETLAND
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER

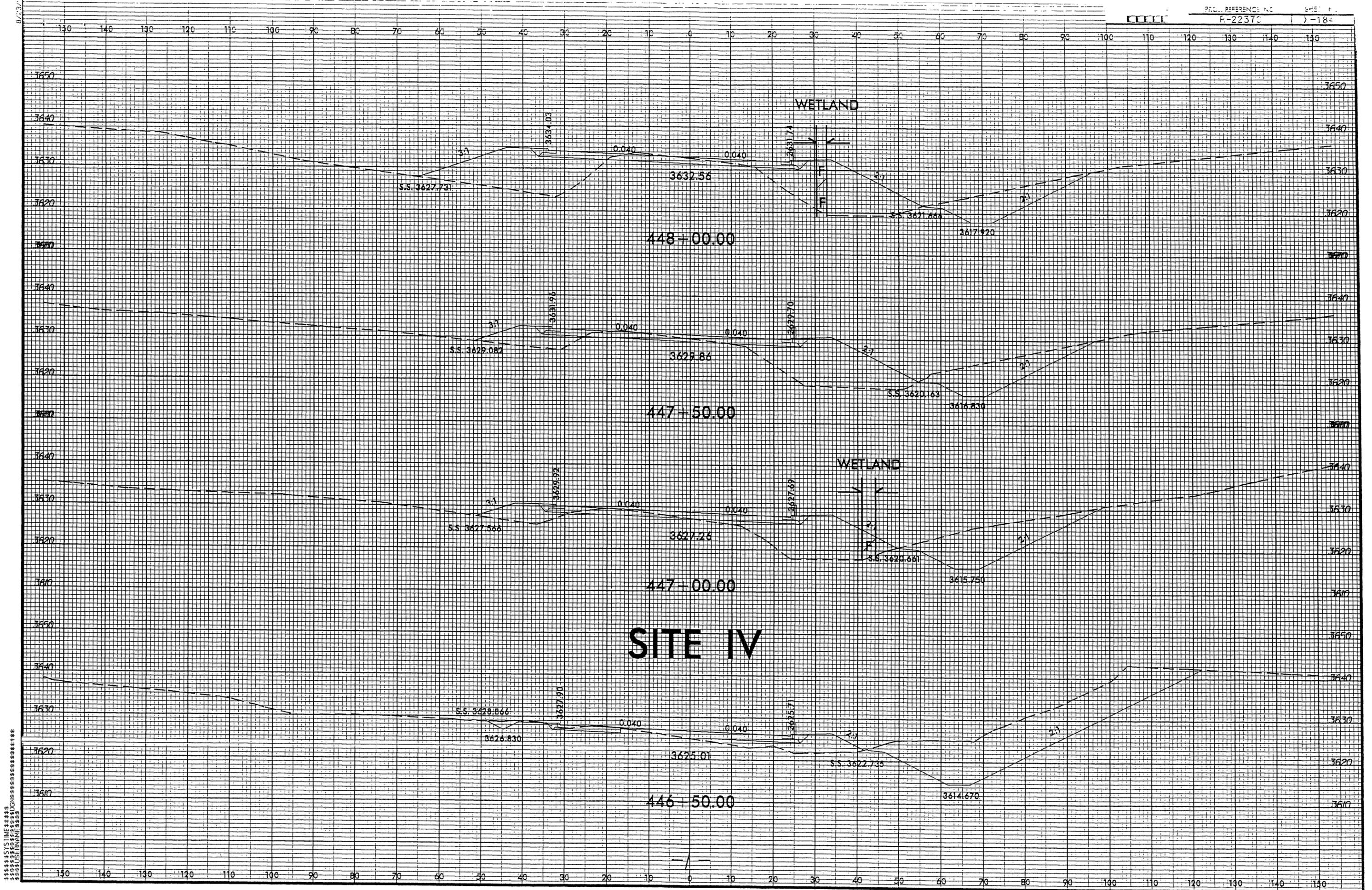
JAMES C. CHERRY
 LILLIAN CHERRY DENNIS

(68)





1:1000 SYSTEM TIME 4:44:44
3:30:00 AM 10/10/00
3:30:00 AM 10/10/00

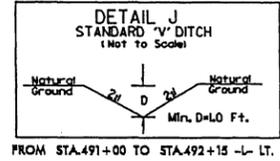
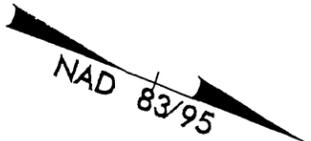


SITE IV

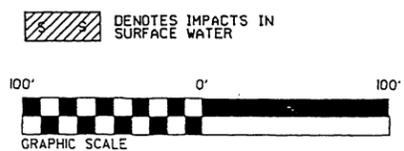
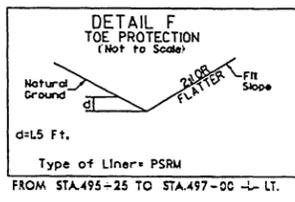
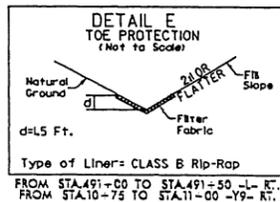
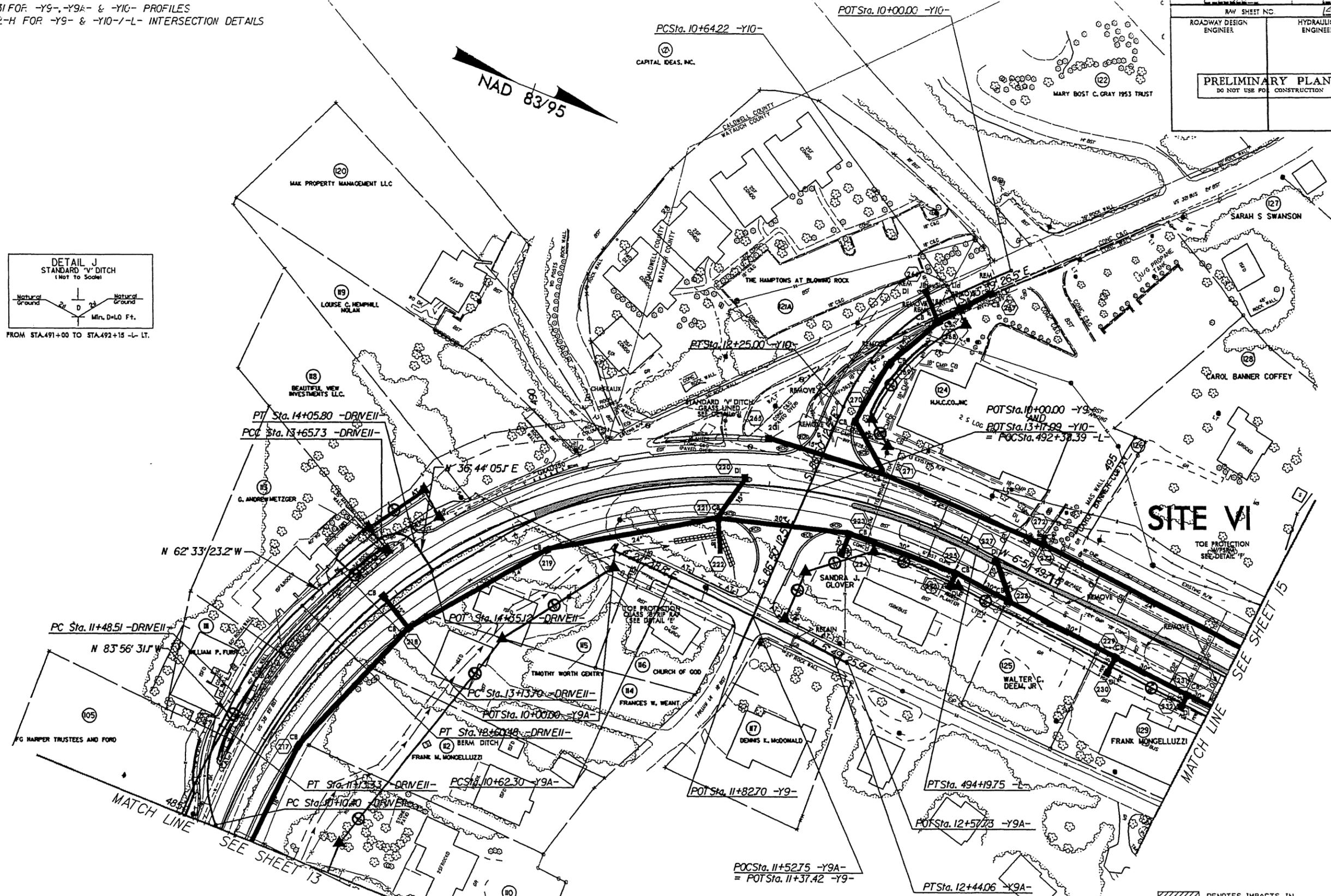
8/23/21

NOTE: SEE SHEETS 26 & 27 FOR -L- PROFILE
 SEE SHEET 31 FOR -Y9-, -Y9A- & -Y10- PROFILES
 SEE SHEET 2-H FOR -Y9- & -Y10-/-L- INTERSECTION DETAILS

PROJECT REFERENCE NO. E-2237C	SHEET NO. 15
RAW SHEET NO. 15	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



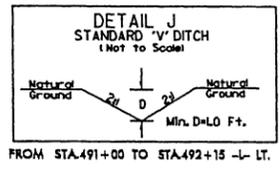
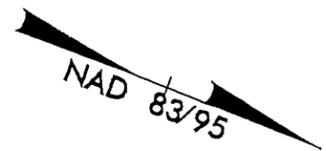
REVISIONS



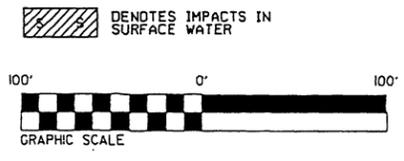
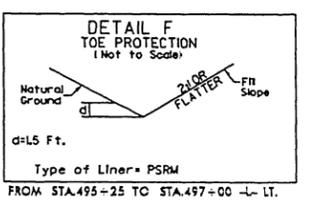
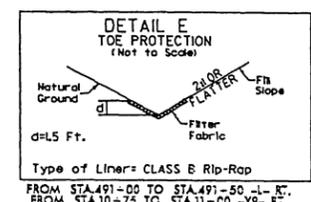
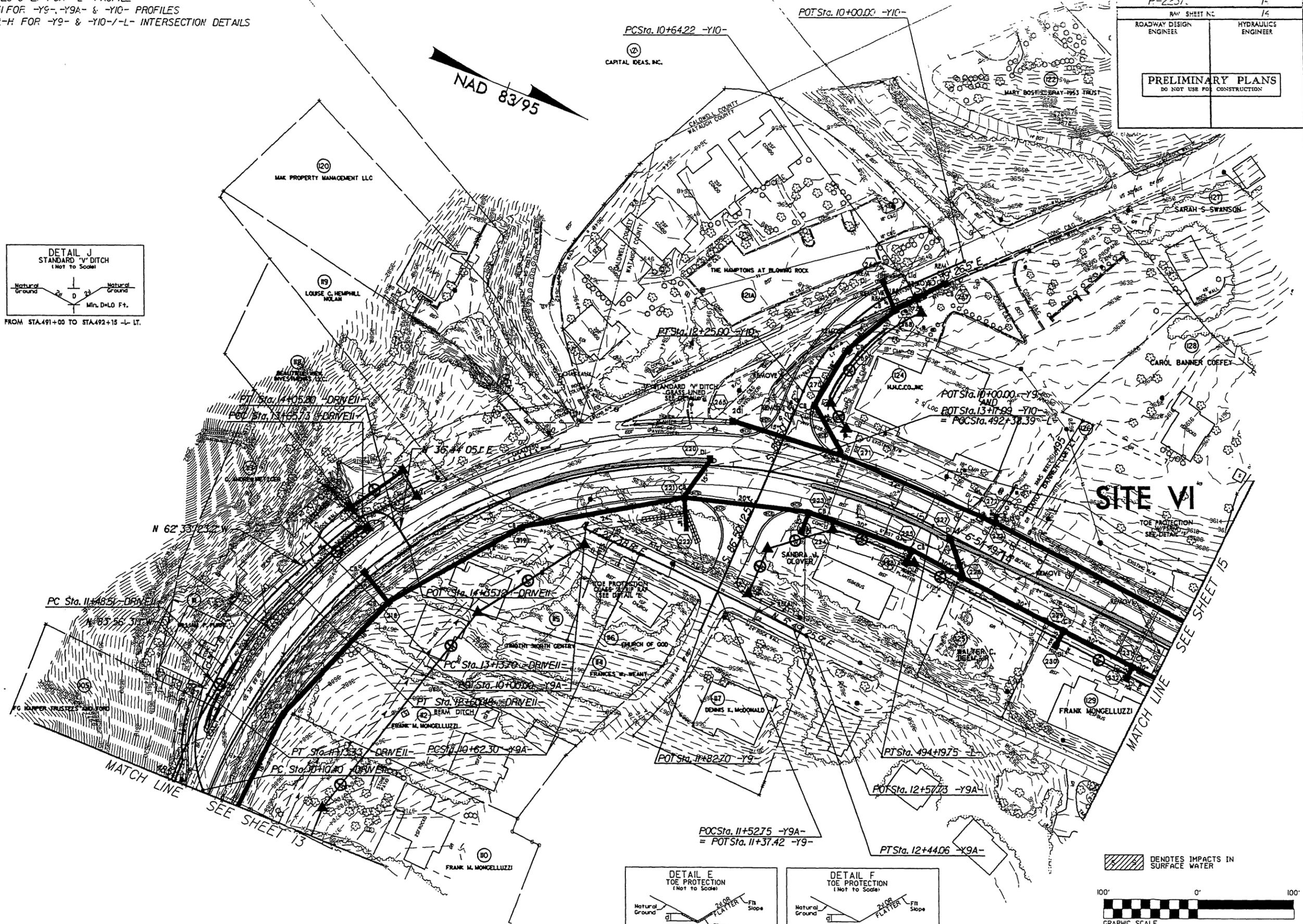
***** SYSTEMS TIME *****

NOTE: SEE SHEETS 26 & 27 FOR -- PROFILE
 SEE SHEET 31 FOR -Y9-, -Y9A- & -Y10- PROFILES
 SEE SHEET 2-H FOR -Y9- & -Y10-/L- INTERSECTION DETAILS

PROJECT REFERENCE NO. F-2237		SHEET NO. 14	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

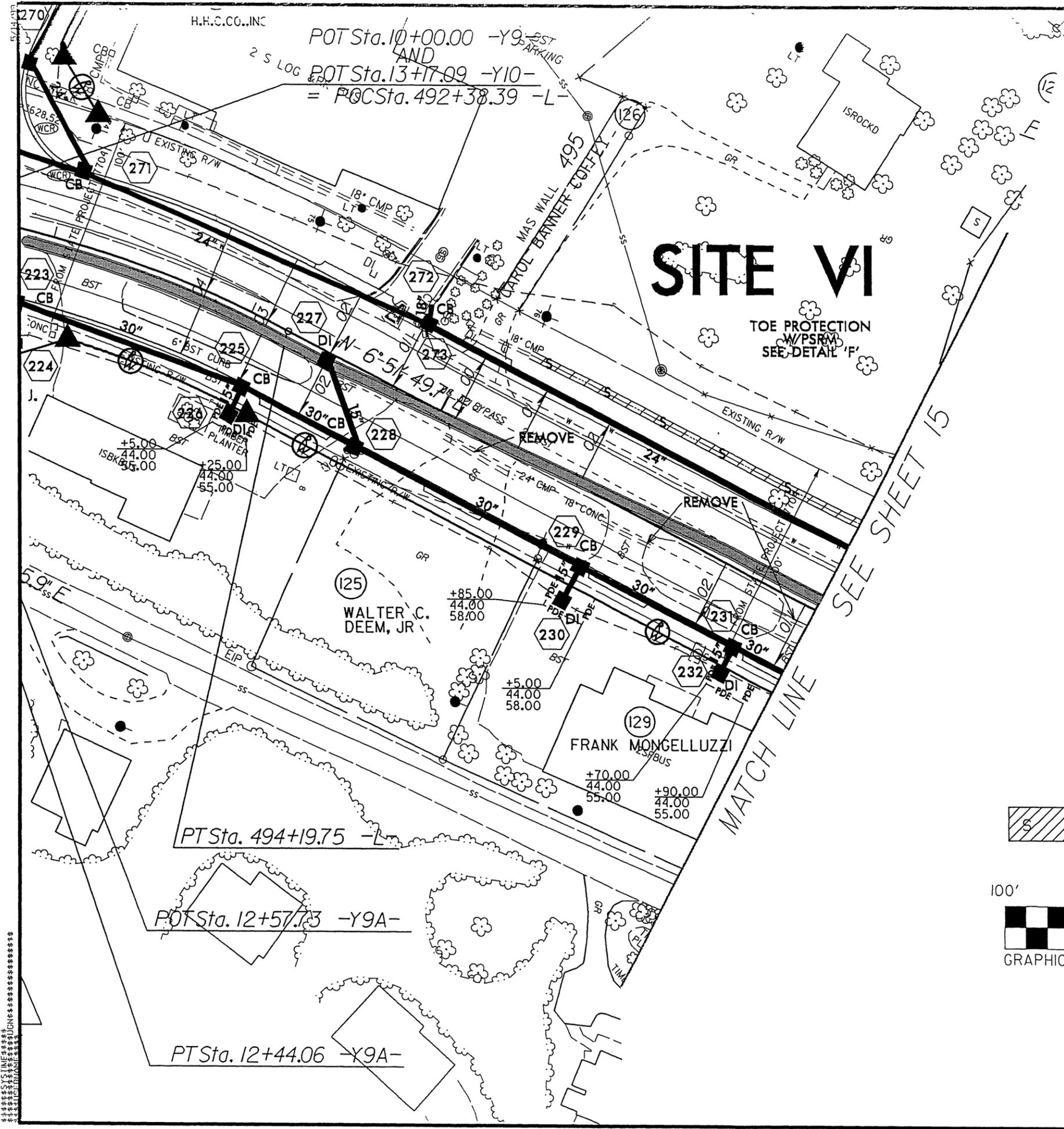


REVISIONS



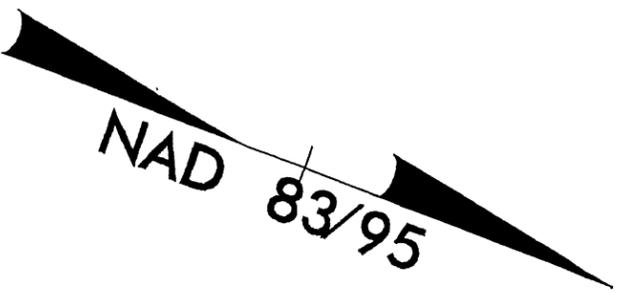
*****SYTIME*****
 *****DON*****

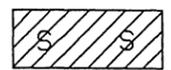
PROJECT REFERENCE NO.	SHEET NO.
R-2237C	16
MW SHEET NO.	16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

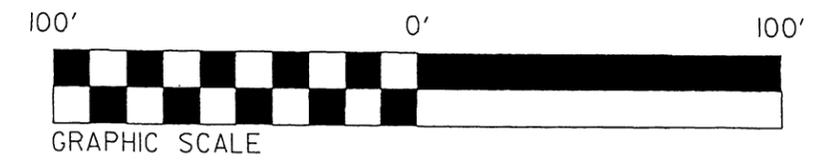


SITE VI

TOE PROTECTION
W/PSRMS
SEE DETAIL 'F'

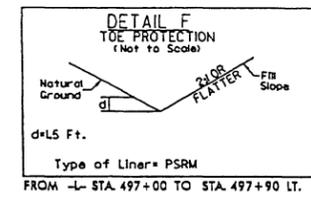


 DENOTES IMPACTS IN SURFACE WATER

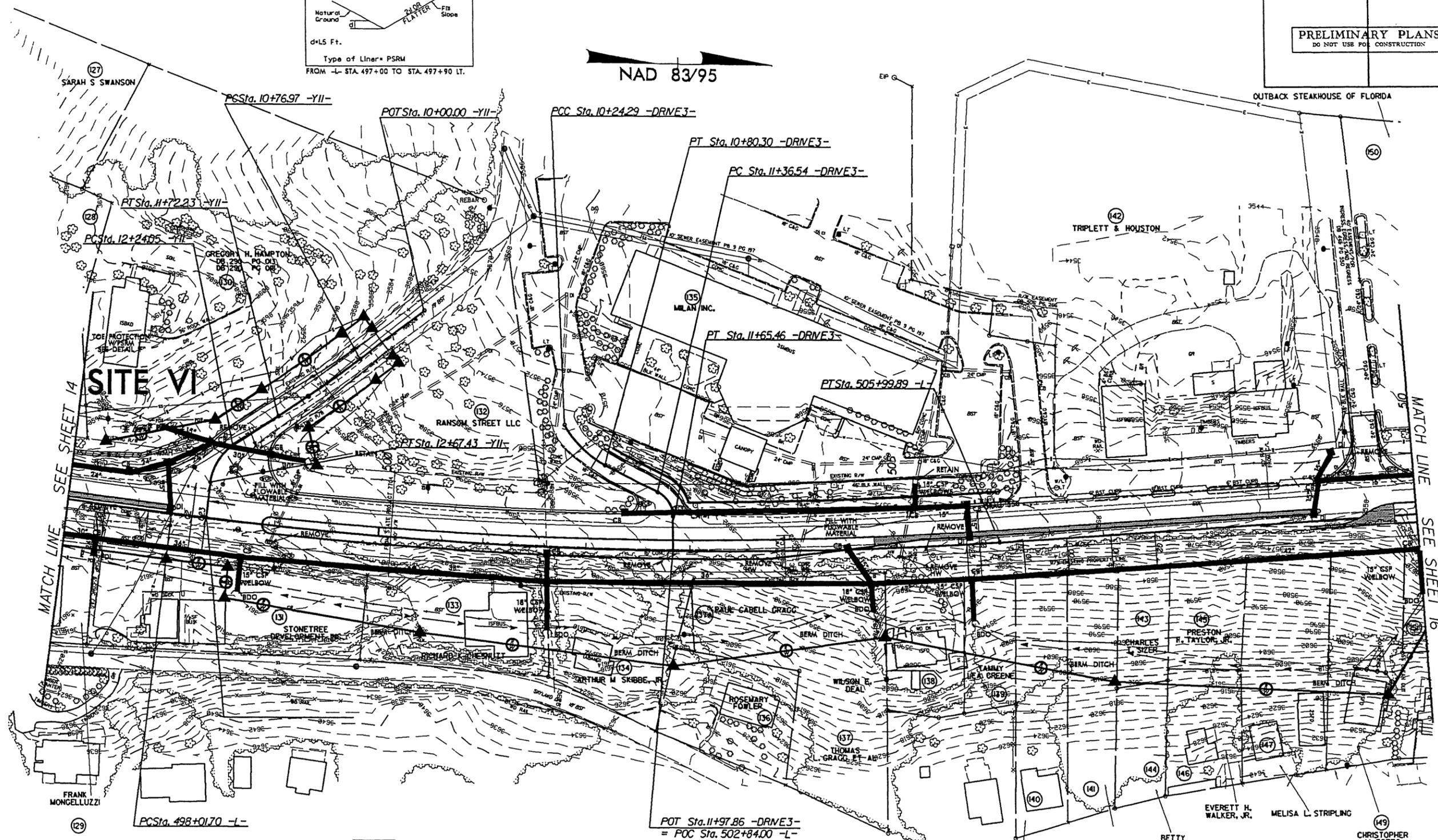


SYSTEMS

NOTE: SEE SHEET 27 FOR -L- PROFILE
 SEE SHEET 31 FOR -YII- PROFILE
 SEE SHEET 2-H FOR -YII-/-L- INTERSECTION DETAIL
 SEE SHEET 33 FOR -DRVE3- PROFILE

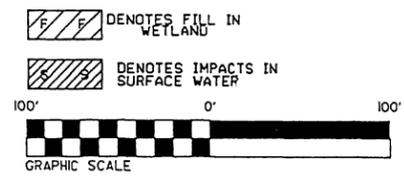


NAD 83/95



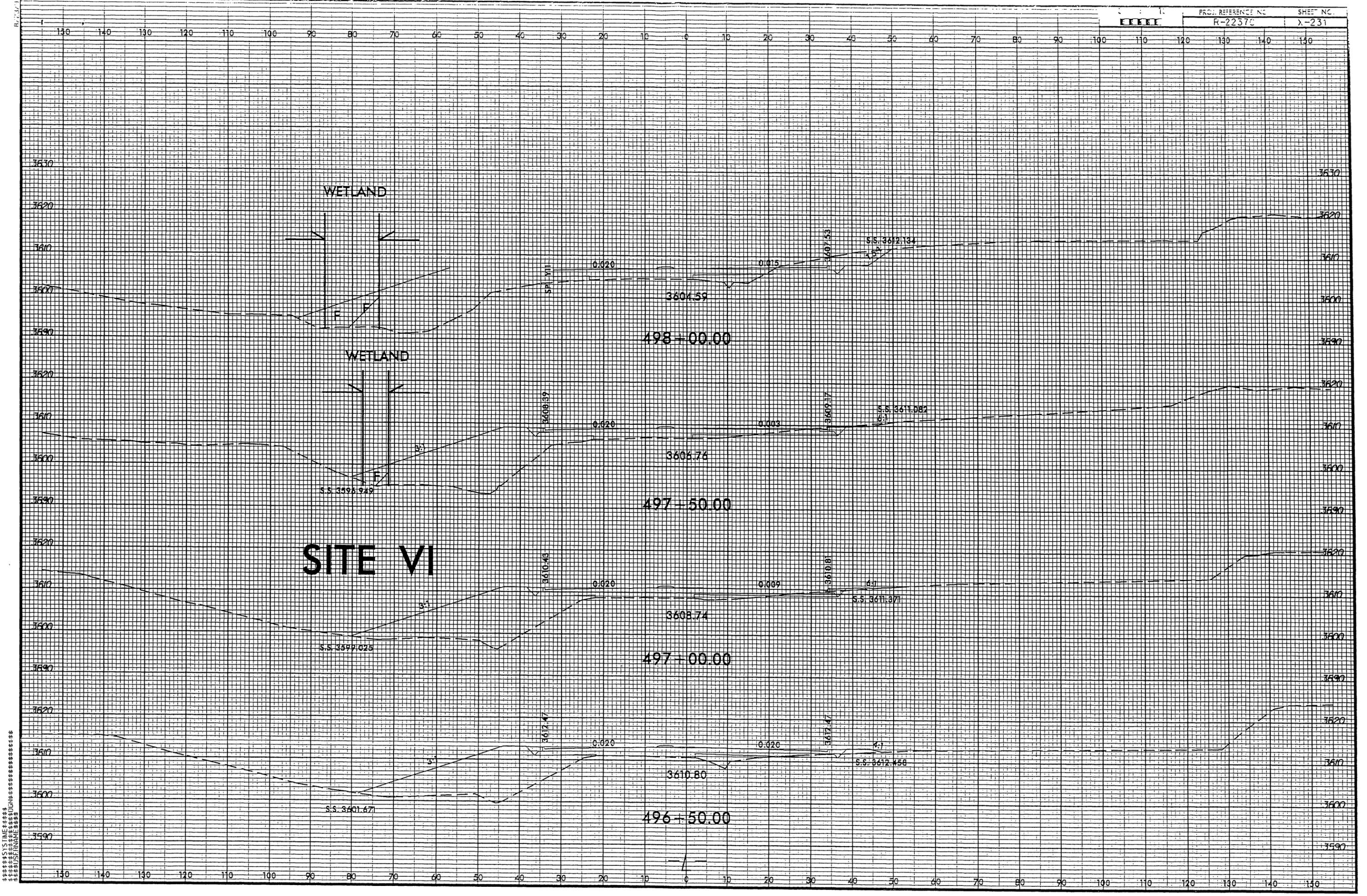
MATCH LINE SEE SHEET 14

MATCH LINE SEE SHEET 16



REVISIONS

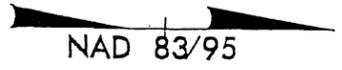
SYNOPSIS OF REVISIONS



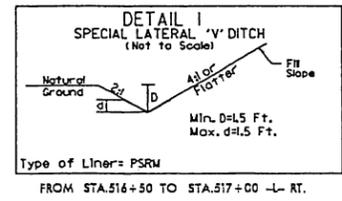
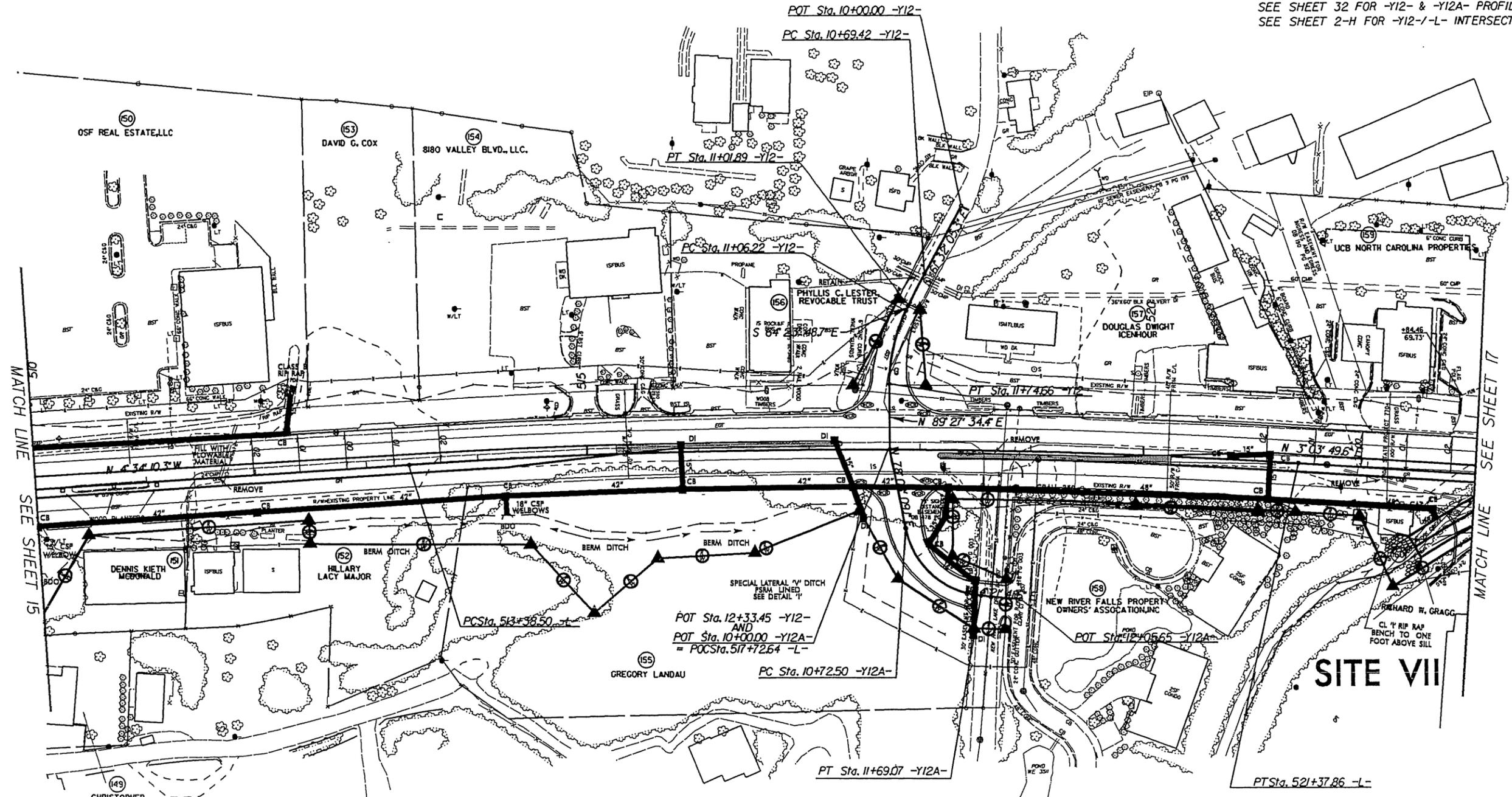
SITE VI

*****SYTIME*****
*****SYTIME*****
*****SYTIME*****

PROJECT REFERENCE NO. P-22570	SHEET NO. 16
RAW SHEET NO. 16	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



NOTE: SEE SHEETS 27 & 28 FOR -L- PROFILE
SEE SHEET 32 FOR -Y12- & -Y12A- PROFILE
SEE SHEET 2-H FOR -Y12-/-L- INTERSECTION DETAIL



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



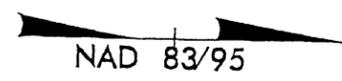
REVISIONS

MATCH LINE SEE SHEET 15

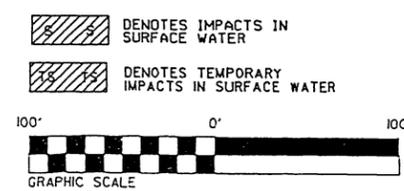
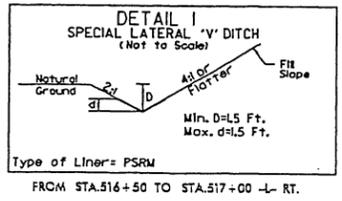
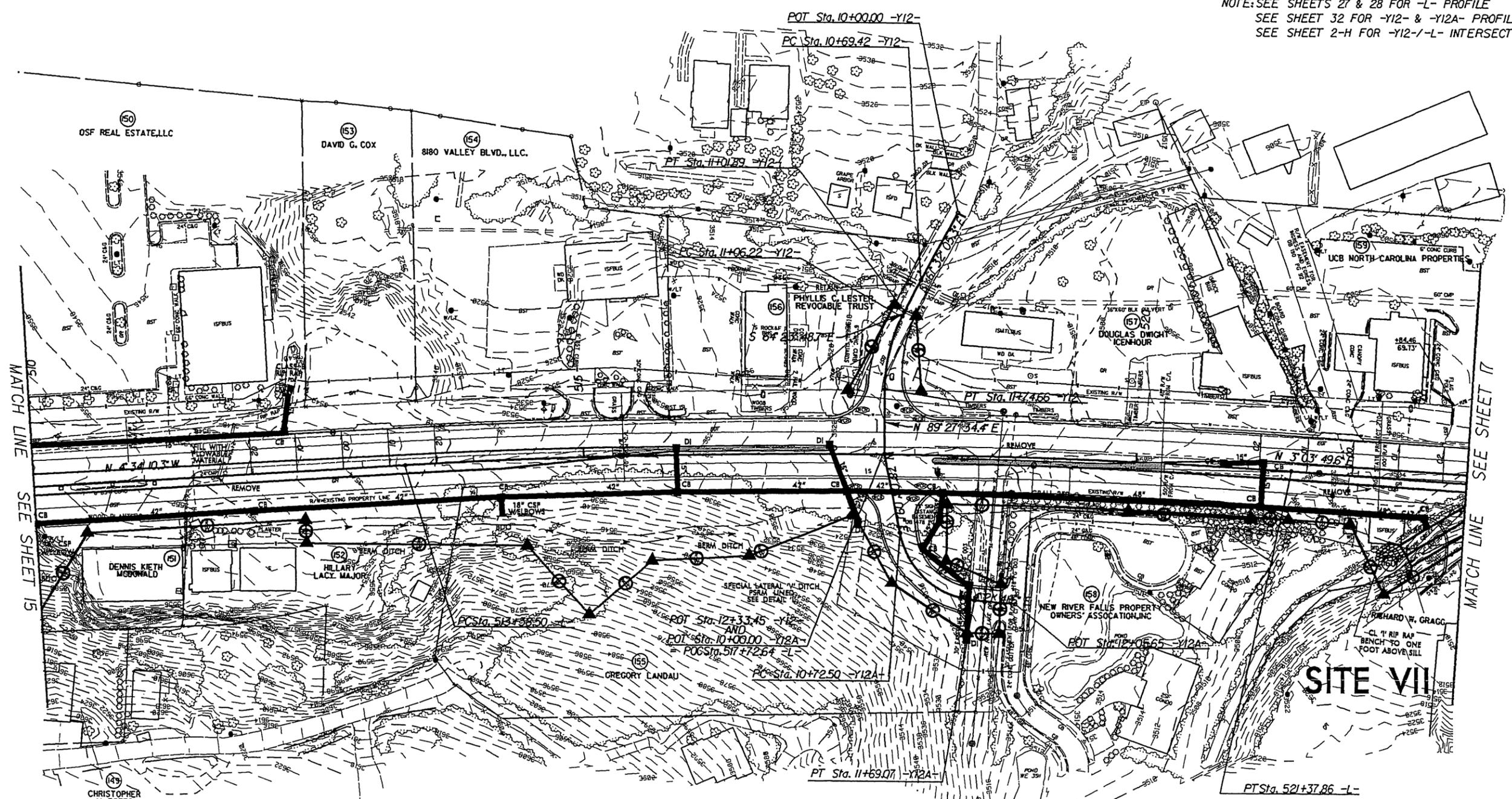
MATCH LINE SEE SHEET 17

*****SYSTEMS DESIGN*****

PROJECT REFERENCE NO.		SHEET NO.	
R-2237C		16	
RAW SHEET NO.		16	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS			
DO NOT USE FOR CONSTRUCTION			



NOTE: SEE SHEETS 27 & 28 FOR -L- PROFILE
 SEE SHEET 32 FOR -Y12- & -Y12A- PROFILE
 SEE SHEET 2-H FOR -Y12-/-L- INTERSECTION DETAIL



REVISIONS

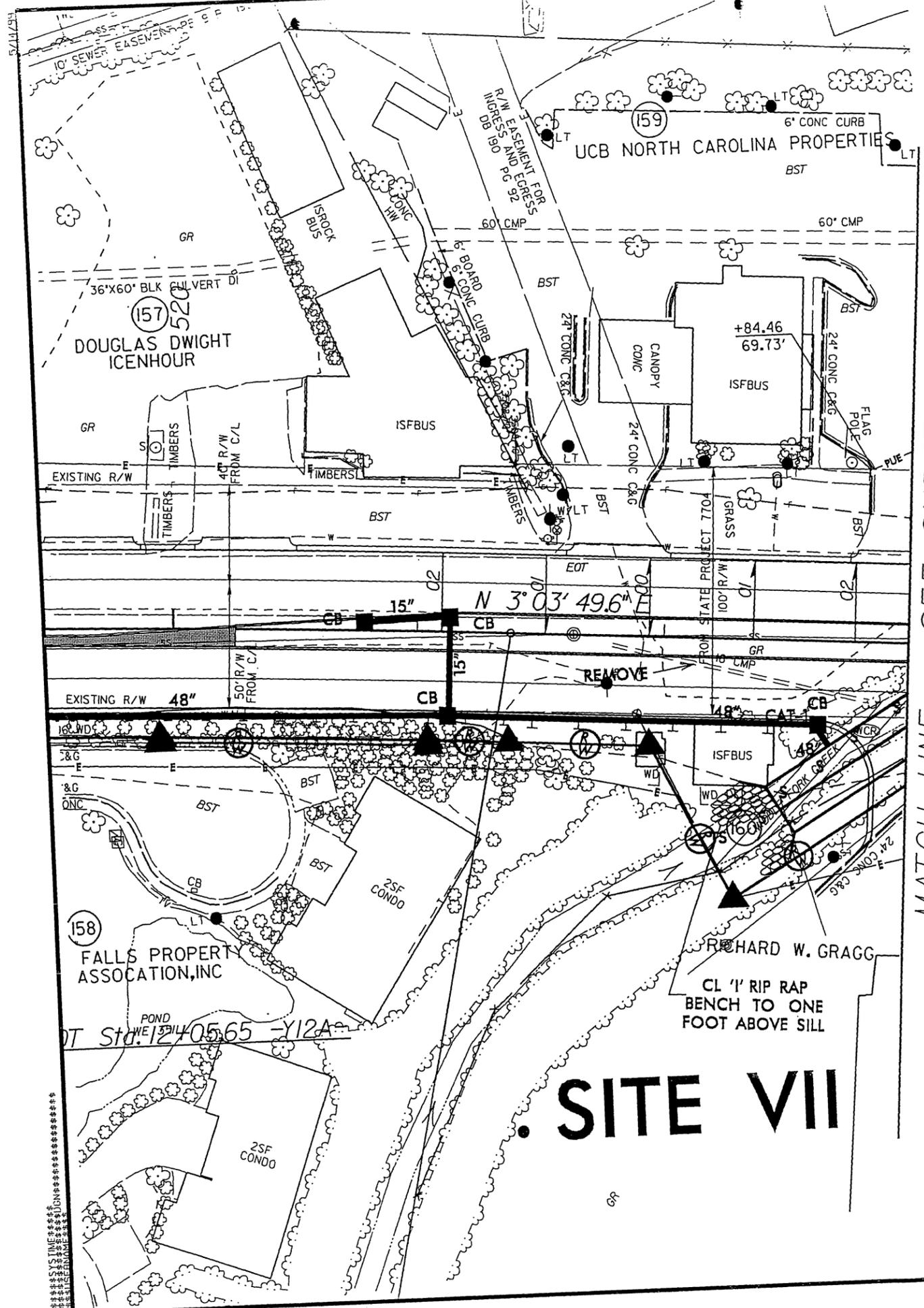
MATCH LINE SEE SHEET 15

MATCH LINE SEE SHEET 17

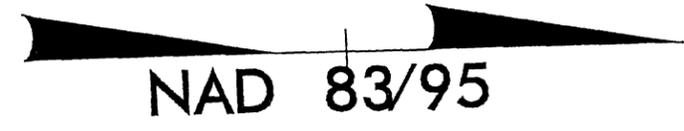
SITE VII

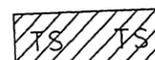
 SYSTEMS

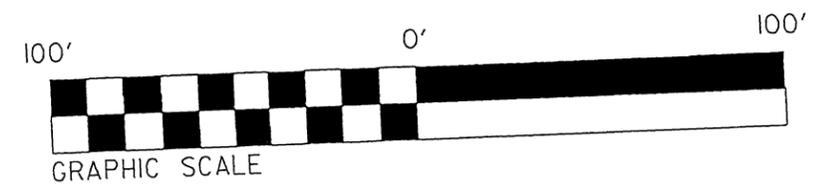
R-2237C		16
RW SHEET NO		16
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER



MATCH LINE SEE SHEET 17



-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER

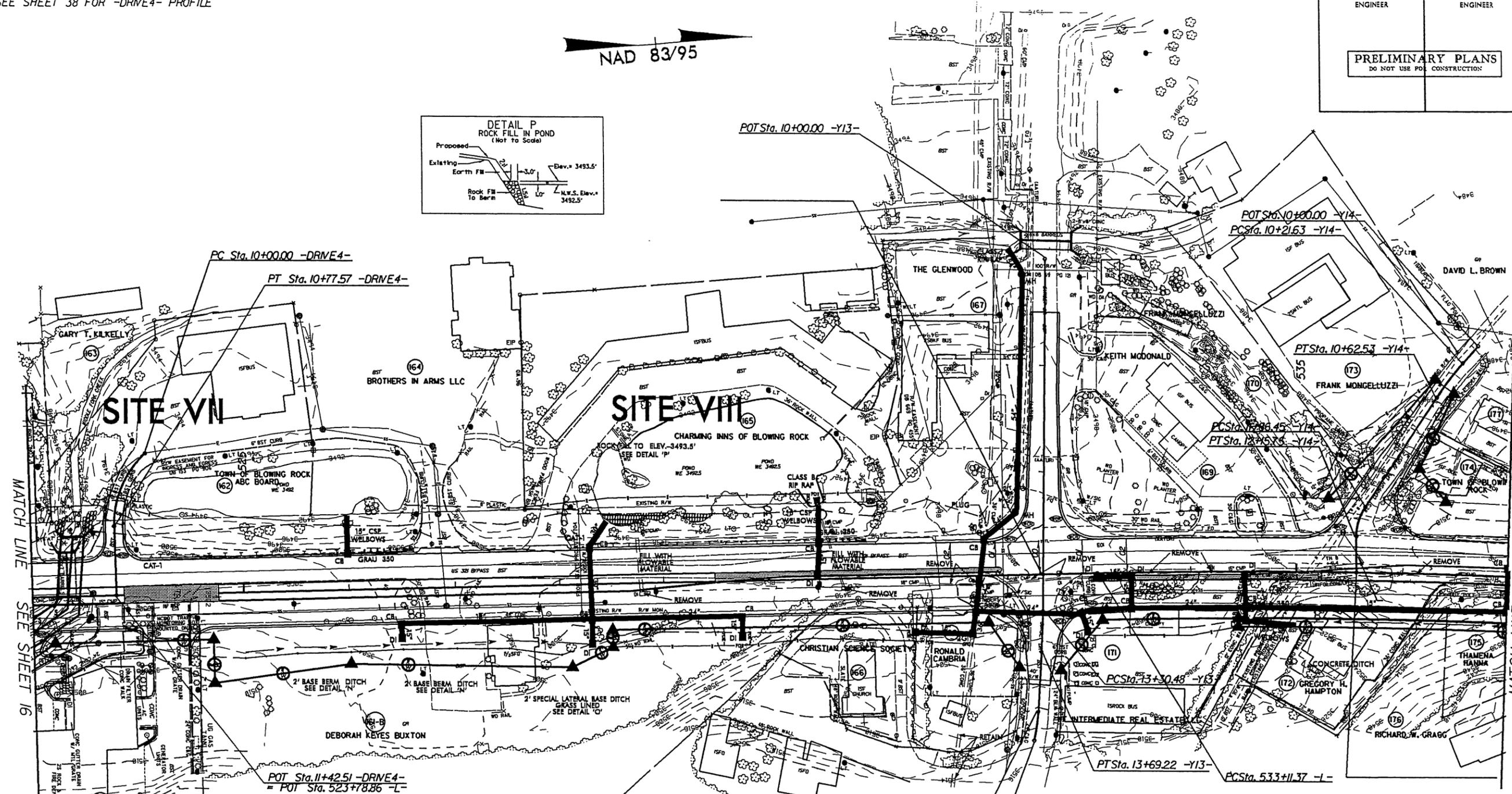
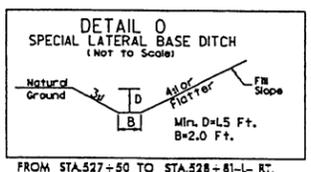
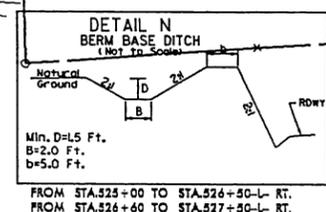
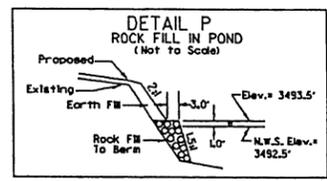


SITE VII

NOTE: SEE SHEET 28 FOR -L- PROFILE
 SEE SHEET 32 FOR -Y13- & -Y14- PROFILE
 SEE SHEET 2-1 FOR -Y13- & -Y14- / -L- INTERSECTION DETAILS
 SEE SHEET 38 FOR -DRIVE4- PROFILE

PROJECT REFERENCE NO. R-2237C	SHEET NO. 17
RAW SHEET NO. 17	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

NAD 83/95



- DENOTES EXCAVATION IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



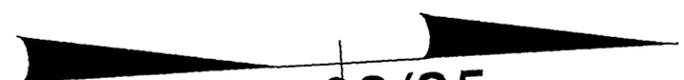
REVISIONS

MATCH LINE SEE SHEET 16

MATCH LINE SEE SHEET 18

 SYSTEM TIME *****

NAD 83/95

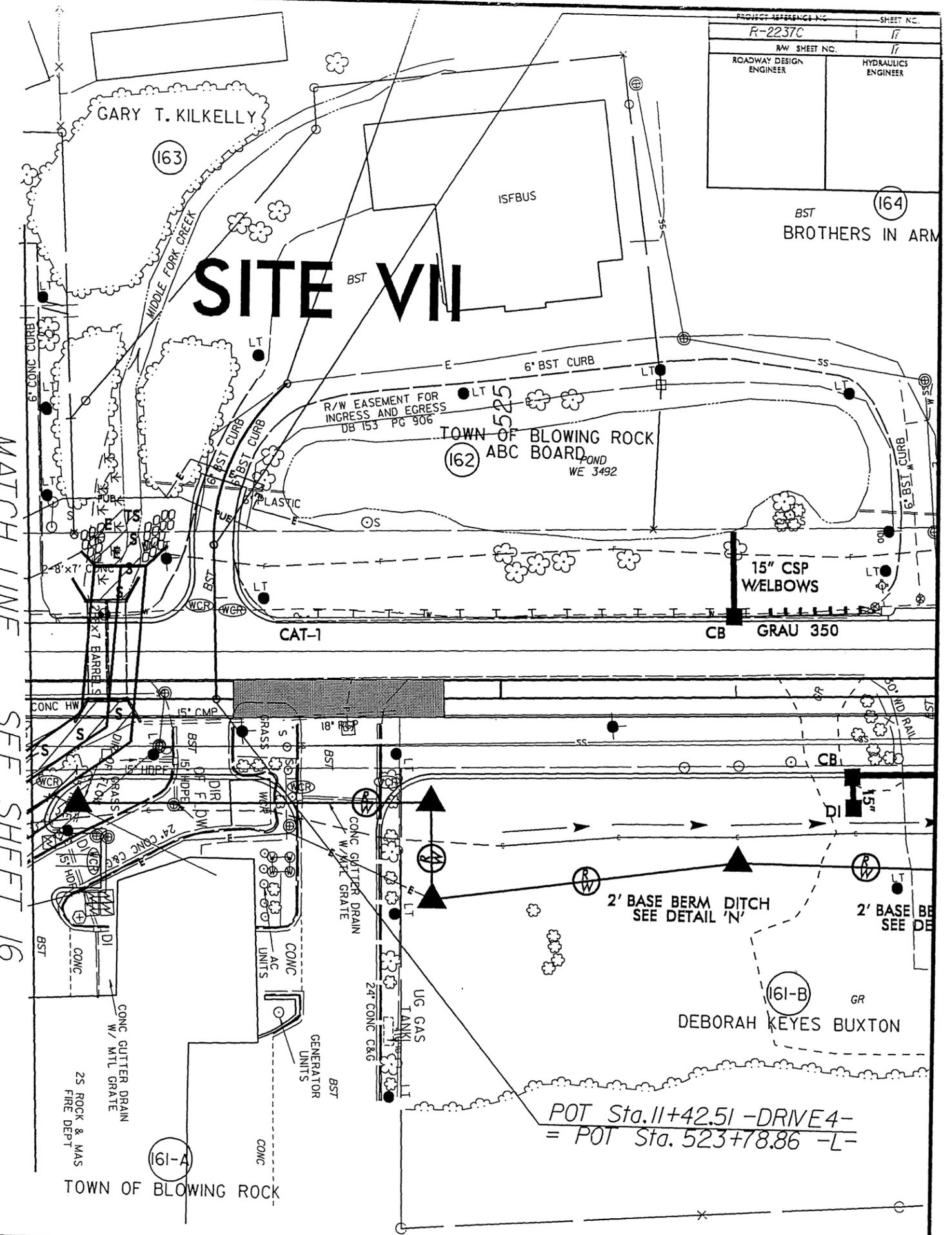
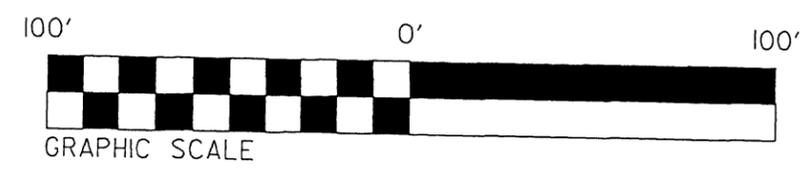


PROJECT APPROPRIATION INC.		SHEET NO.
R-2237C		17
RW SHEET NO.		17
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	

SITE VII

MATCH LINE SEE SHEET 16

-  DENOTES EXCAVATION IN WETLAND
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER

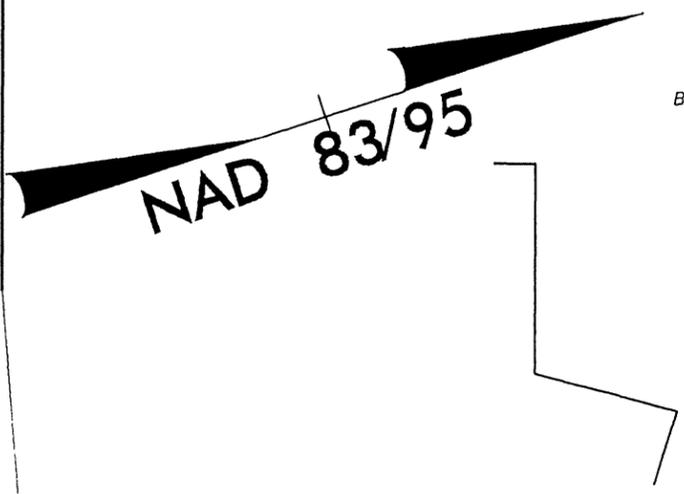
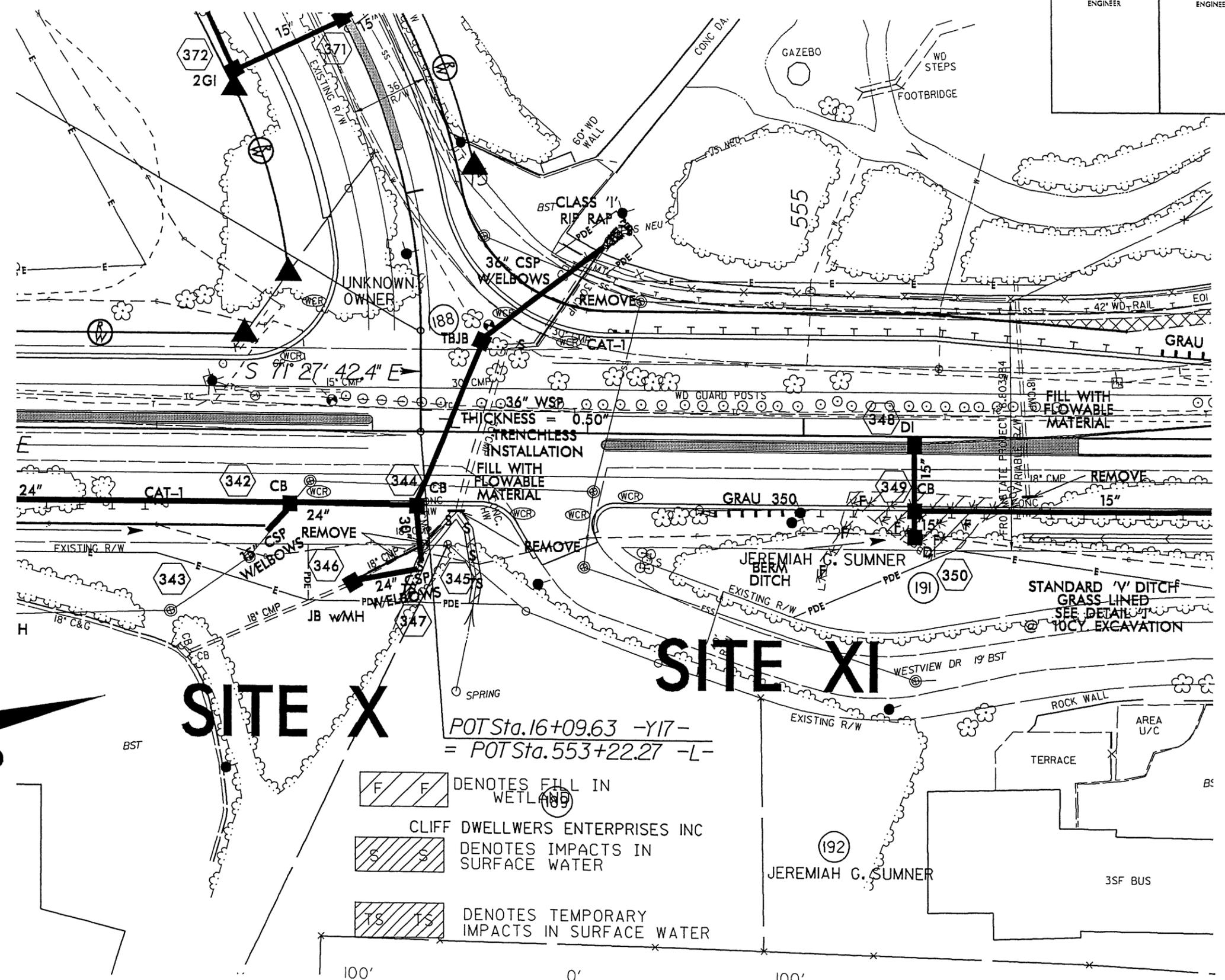


POT Sta. 11+42.51 - DRIVE 4 -
= POT Sta. 523+78.86 -L-

*****SYSDRAWING SYSTEMS*****

PROJECT REFERENCE NO.	SHEET NO.
R-2237C	15
RAW SHEET NO.	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

MATCH LINE SEE SHEET 18

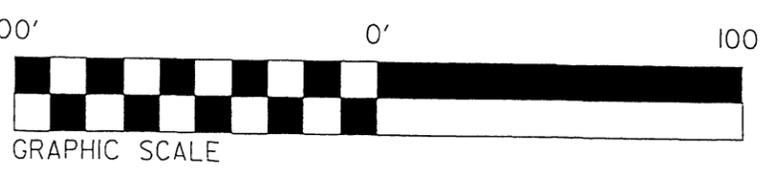


SITE X

SITE XI

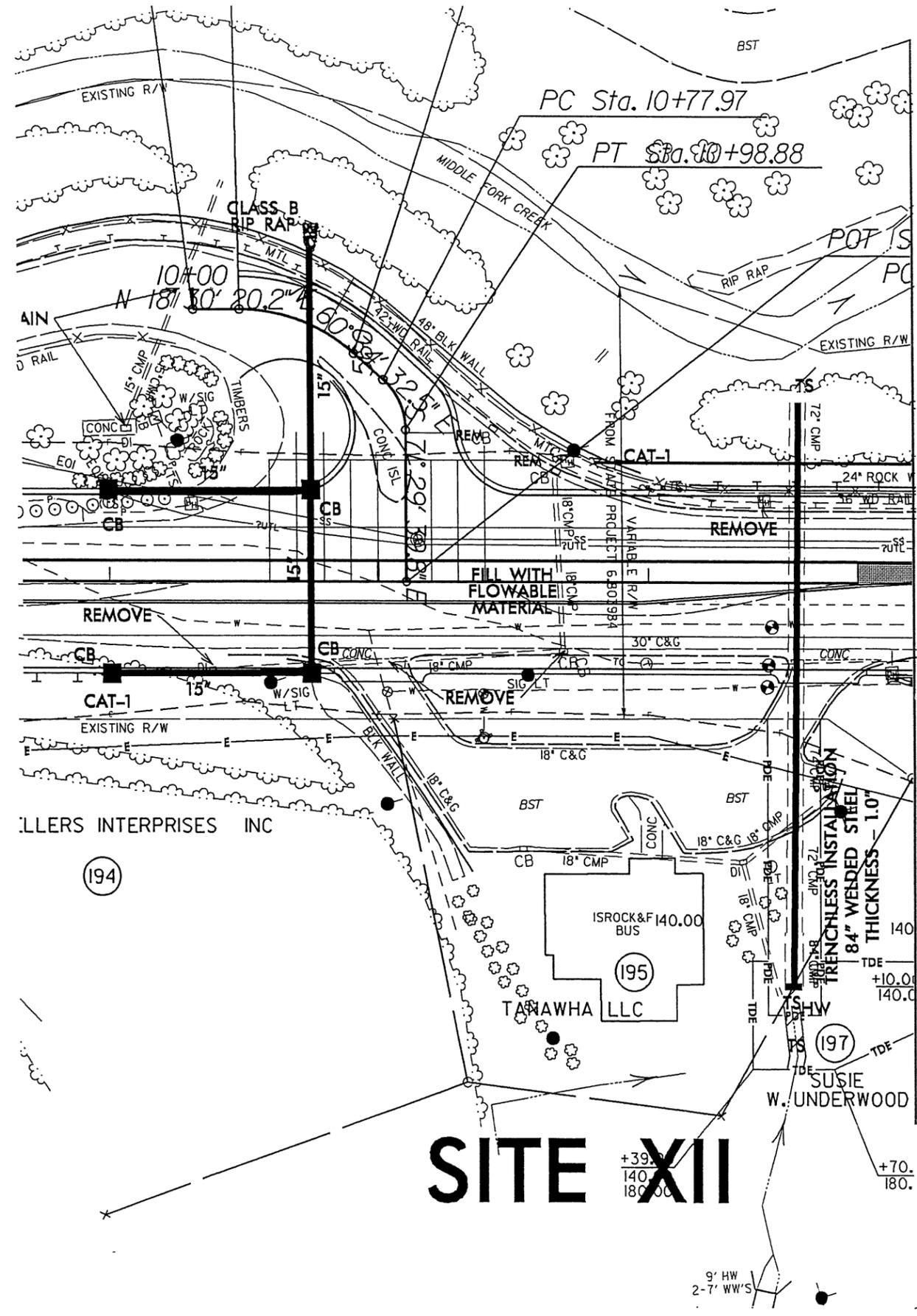
POT Sta. 16+09.63 -Y17-
= POT Sta. 553+22.27 -L-

- DENOTES FILL IN WELLS
- CLIFF DWELLERS ENTERPRISES INC DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

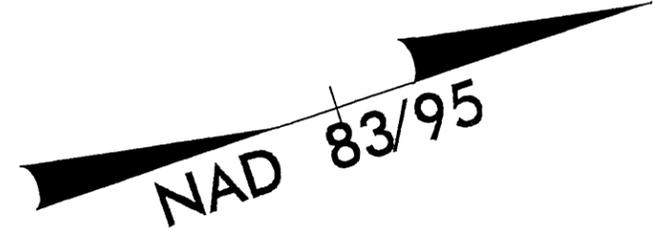


***** SYSTEMS INFORMATION *****

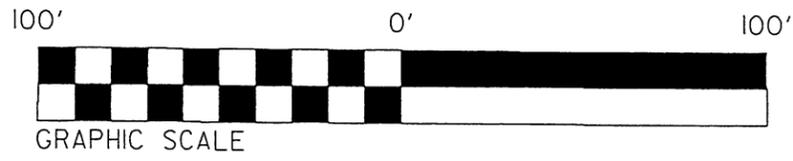
PROJECT REFERENCE NO.	SHEET NO.
R-2237C	19
RAW SHEET NO.	19
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



MATCH LINE SEE SHEET 20



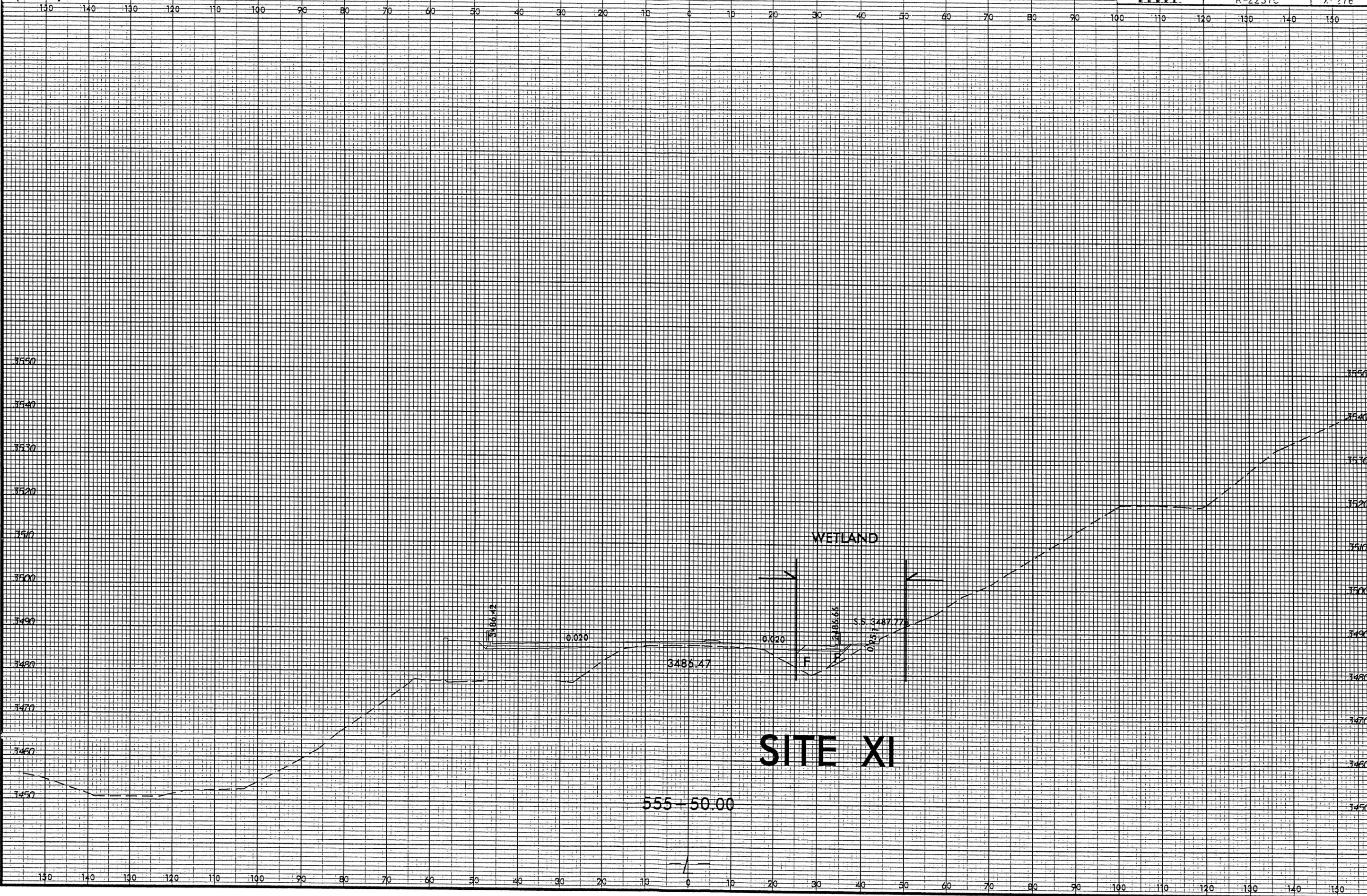
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER



SITE XII

SYSTEMS DESIGN ENGINEERING

B.23.A



***** TIME *****
 ***** DATE *****
 ***** USER NAME *****

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
32	DONALD FABIAN VINCENT	315 CAMELTOWN HILL RD. DANVILLE, PA 17821
36	NEAL C. FORD	4708 BILLS LANE LENOIR, NC 28645
62	BLOWING ROCK COUNTRY CLUB	P.O. BOX 628 BLOWING ROCK, NC 28605
65	BLOWING ROCK IMPROVEMENT CO.	P.O. BOX 905 BLOWING ROCK, NC 28605
66	LEE OVAL JAYNES	314 HUFFMAN ST. MORGANTON, NC 28655
	NCDOT	P.O. BOX 250 NORTH WILKESBORO, NC 28659
130	GEORGE H. HAMPTON	P.O. BOX 1849 BLOWING ROCK, NC 28605
160	RICHARD W. GRAGG	P.O. BOX 12 BLOWING ROCK, NC 28605
161-A	TOWN OF BLOWING ROCK	1036 MAIN ST. BLOWING ROCK, NC 28605
162	TOWN OF BLOWING ROCK ABC BOARD	7960 VALLEY BLVD. BLOWING ROCK, NC 28605
164	BROTHERS IN ARMS LLC	226 MULBERRY ST. NW LENOIR, NC 28645
165	CHARMING INNS OF BLOWING ROCK	18 BROAD ST. (SUITE 400) CHARLESTON, SC 29401
178	GREGORY LANDAU	16425 COLLINS AVE. (APT. 291) NORTH MIAMI BEACH, FL 33160
181	BLOWING ROCK COMMUNITY ART CENTER FOUNDATION INC.	P.O. BOX 1009 BLOWING ROCK, NC 28605

NCDOT
 DIVISION OF HIGHWAYS
 CALDWELL/ WATAUGA CO.
 PROJECT: 34402.11 (R-2237C)
 US 321 FROM SR 1500
 TO US 221 AT
 BLOWING ROCK

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
182	MICHAEL FILIPSKI	7890 EVERSFIELD RD. STOKESDALE, NC 27357
187	BR WATAUGA LLC	600 GREEN VALLEY RD. (SUITE 202) GREENSBORO, NC 27404
189	CLIFF DWELLERS ENTERPRISES INC.	5885 N. ROSE BARK WAY BEVERLY HILLS, FL 33465
191	JEREMIAH G. SUMNER	P.O. BOX 2125 BLOWING ROCK, NC 28605
195	TANAWHA LLC	P.O. BOX 2701 BLOWING ROCK, NC 28605
197	SUSIE W. UNDERWOOD	148 POSSUM HOLLOW RD. BLOWING ROCK, NC 28605

NCDOT

DIVISION OF HIGHWAYS
CALDWELL/ WATAUGA CO.

PROJECT: 34402.1.1 (R-2237C)

US 321 FROM SR 1500

TO US 221 AT

BLOWING ROCK

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)		
I	385+70 TO 389+45 -L-	24" CSP								0.02	<0.01	294	36	
II	403+30 -L-	36" CSP								0.01	<0.01	119	33	
III	442+00 TO 444+00 -L-	54" RCP BANK STABILIZATION FILL IN STREAM	0.01		0.02					0.01	0.01	150	43	
IV	444+65 TO 449+50 -L-		0.07		0.02					0.03	0.01	317	46	
V	451+40 -L-	BANK STABILIZATION								<0.01	<0.01	22	6	
VI	495+20 TO 498+15 -L-		0.01							0.03		294		
VII	523+33.5 -L-	2 @ 11'X8' RCBC BANK STABILIZATION			0.01					0.04	0.01	128	26	
VIII	528+40 TO 530+50 -L-	30" RCP 15" CSP	NON-JURISDICTIONAL											
TOTALS:			0.09		0.03	0.03			0.15	0.04	1429	190		

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CALDWELL/WATAUGA COUNTIES
WRS - 34-102.1.1 (R-2237C)

SHEET

10/5/2010

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)	
IX	540+20 -I-	42" WELDED STEEL PIPE							0.01	<0.01	133	10	
X	553+50 -L-	30" RCP						0.01	<0.01	59	19		
XI	555+50 -L-	15" RCP	0.04					<0.01		25	19		
XII	561+56 -L-	84" WELDED STEEL PIPE							0.01		45		
TOTALS:			0.04					0.02	0.02	217	93		
GRAND TOTALS			0.13		0.03	0.03		0.17	0.05	1646	283		

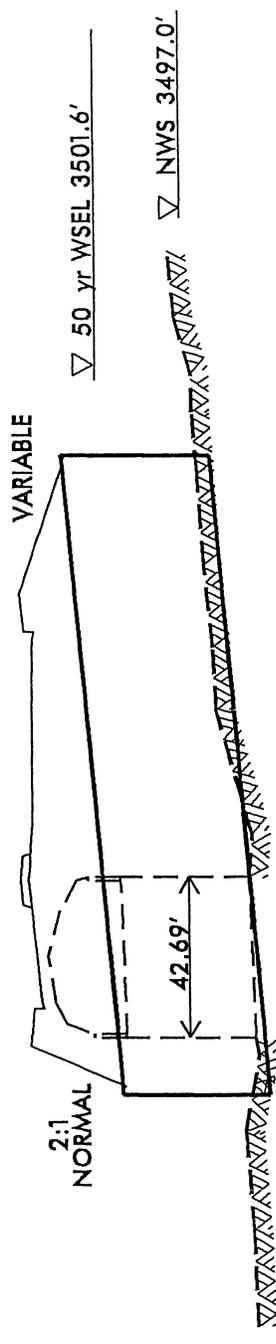
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

CALDWELL/WATAUGA COUNTIES
WBS - 34402.1.1 (R-2237C')

SHEET

10/5/2010

CL 523 + 33.51 -L-
 2 @ 11' X 8' RCBC
 GRADE FT. ELEV. 3505.26'
 SKEW = 96°



CL INV. ELEV. 3493.41
 SLOPE 0.018 FT./FT.

NOTE: BURY INLET
 AND OUTLET ONE FOOT. PLACE
 SILLS IN INLET AND OUTLET
 ACROSS BOTH BARRELS.

3510

3500

3490

3480

200

150

100

50

CL

50

100

150

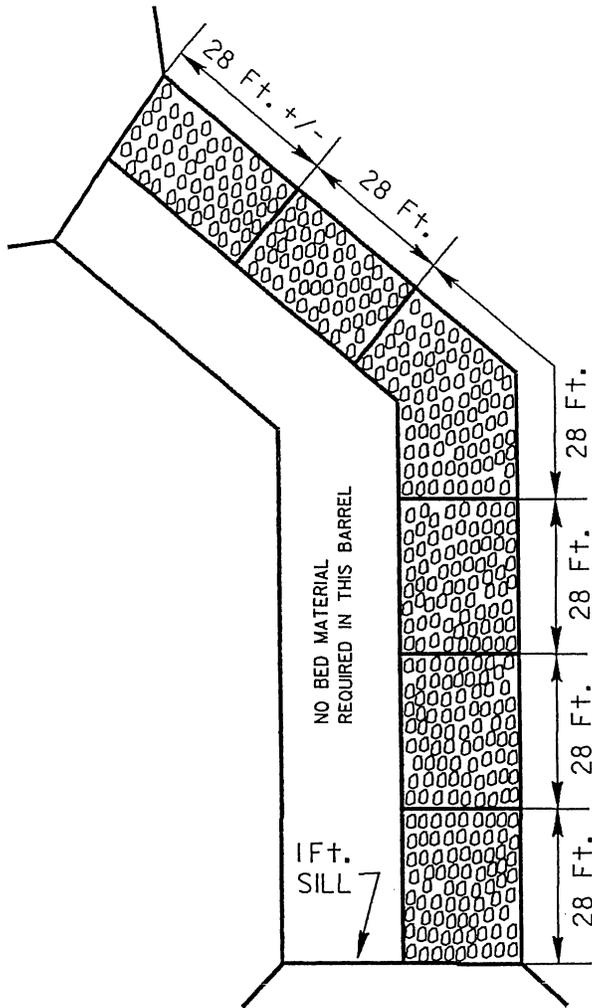
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PROFILE

SITE VII

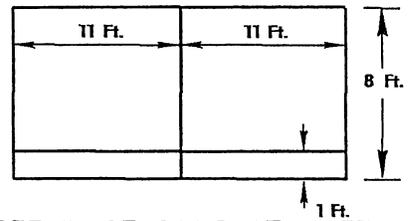
NCDOT

DIVISION OF HIGHWAYS
 CALDWELL/WATAUGA CO.
 PROJECT: 34402.1.1 (R-2237C)
 US 321 FROM SR 1500 TO
 US 221 AT BLOWING ROCK



NOTES:

1. Bed material placed in the culvert shall be natural stone with a gradation size similar to that of Class 'B' riprap. Bed material is subject to approval by the Engineer.
2. Sills are to be 1.0 Ft. wide and cast separately and attached by dowels.
3. Top of sill should match stream bed elevation in stream.



DETAIL OF SILLS AT INLET AND OUTLET
(not to scale)

DETAIL OF SILLS

-L- STA. 523 +33.51
2 @ 11 Ft. X 8 Ft. RCBC
MIDDLE FORK
(not to scale)

NCDOT
 DIVISION OF HIGHWAYS
 WATAUGA COUNTY
 PROJECT: 54402.1.1 (R-2237C)
 US 321 FROM SR 1500
 TO US 221 AT
 BLOWING ROCK

SHEET OF 9/30/09

STA. 561+56.5 -L-
 PROP. 84" WELDED STEEL PIPE
 SKEW 91
 ELEV. 3476.54'

RETAINING
 WALL

EXISTING
 JB

OHW- 3453.4'
 BED

3470'

3460'

3450'

3440'

150'

100'

50'

±

50'

100'

150'

200'

250'

SITE XII

PROFILE

NCDOT

DIVISION OF HIGHWAYS
 CALDWELL/WATAUGA CO.
 PROJECT: 34402.11 (R-2237C)

US 321 FROM SR 1500
 TO US 221 AT
 BLOWING ROCK

SHEET

OF

9 / 2 / 00

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

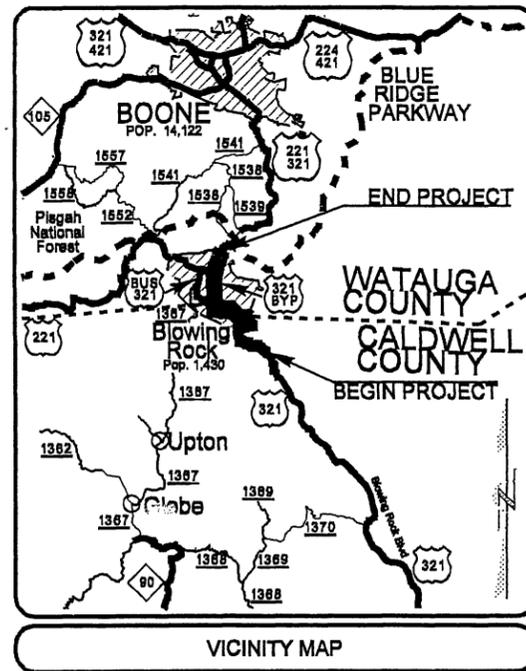
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N.C.	R-2237C	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION
34402.1.1		PE
34402.2.6		R/W

CALDWELL & WATAUGA COUNTIES

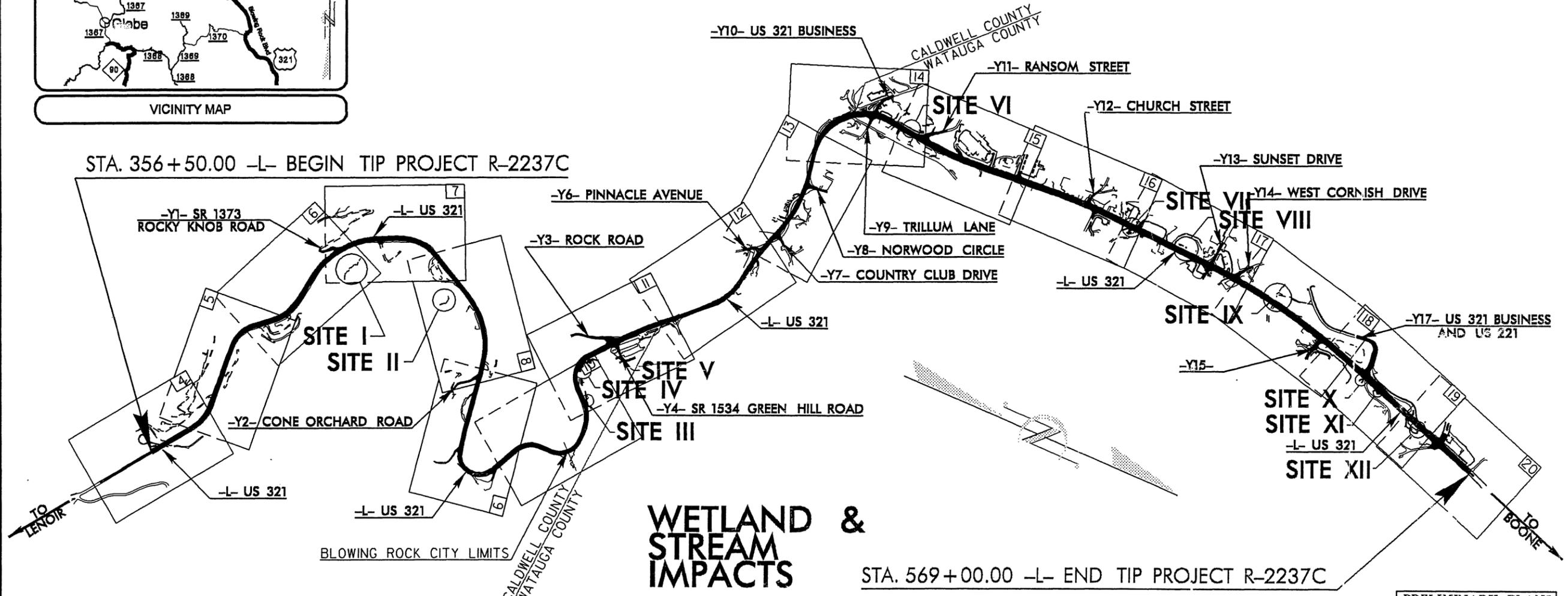
LOCATION: US 321 FROM SR 1500 (BLACKBERRY ROAD)
TO US 221 AT BLOWING ROCK

TYPE OF WORK: GRADING, DRAINAGE, PAVING, CULVERT, RETAINING WALLS,
AND SIGNALS

Permit Drawing
Sheet **1** of **45**



TIP PROJECT: R-2237C



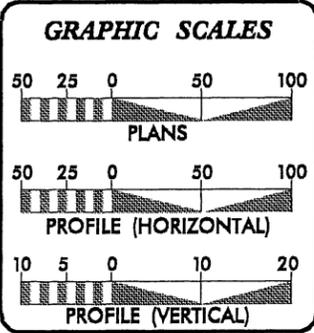
STA. 356+50.00 -L- BEGIN TIP PROJECT R-2237C

STA. 569+00.00 -L- END TIP PROJECT R-2237C

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF BLOWING ROCK
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

CONTRACT:



DESIGN DATA

ADT 2006 =	18,935
ADT 2025 =	27,450
DHV =	7 %
D =	60 %
T =	8 % *
V =	50 MPH
* TTST 3% + DUAL 5%	

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-2237C	=	4.025 MILES
TOTAL LENGTH OF TIP PROJECT R-2237C	=	4.025 MILES

Prepared in the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh NC, 27610

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 27, 2008

LETTING DATE:
OCTOBER 19, 2010

G. E. BREW, PE
PROJECT ENGINEER

W. T. BEST
PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

**DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA**

STATE HIGHWAY

24-NOV-2009 07:27
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PROJECT REFERENCE NO.	SHEET NO.
R-2237C	6
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS	
DO NOT USE FOR CONSTRUCTION	

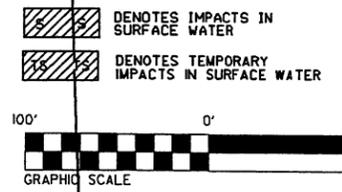
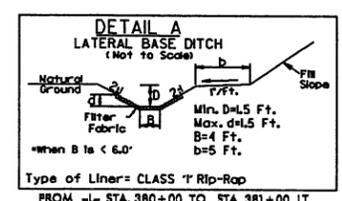
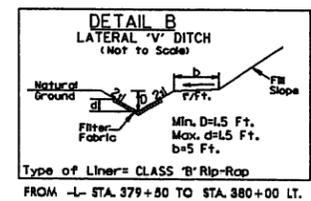
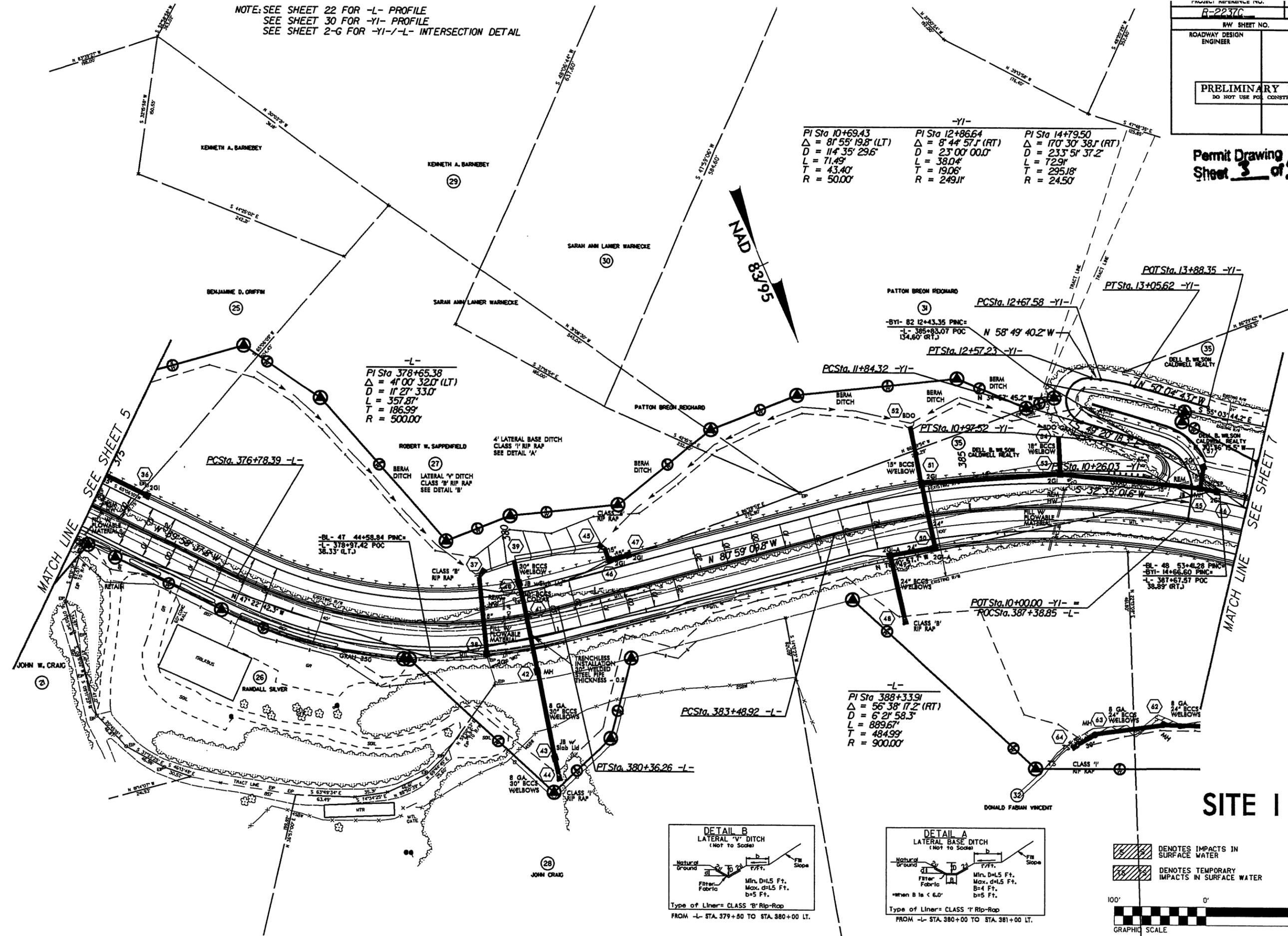
Permit Drawing
Sheet 3 of 45

NOTE: SEE SHEET 22 FOR -L- PROFILE
SEE SHEET 30 FOR -YI- PROFILE
SEE SHEET 2-G FOR -YI-/-L- INTERSECTION DETAIL

-YI-		
PI Sta 10+69.43	PI Sta 12+86.64	PI Sta 14+79.50
$\Delta = 81^{\circ}55'19.8"$ (LT)	$\Delta = 8^{\circ}44'57.1"$ (RT)	$\Delta = 170^{\circ}30'38.1"$ (RT)
D = 114'35".296'	D = 23'00".000'	D = 233'51".372'
L = 71.49'	L = 38.04'	L = 72.91'
T = 43.40'	T = 19.06'	T = 295.18'
R = 50.00'	R = 249.11'	R = 24.50'

-L-	
PI Sta 378+65.38	
$\Delta = 41^{\circ}00'32.0"$ (LT)	
D = 11'27".330'	
L = 357.87'	
T = 186.99'	
R = 500.00'	

-L-	
PI Sta 388+33.91	
$\Delta = 56^{\circ}38'17.2"$ (RT)	
D = 6'21".583'	
L = 889.67'	
T = 484.99'	
R = 900.00'	



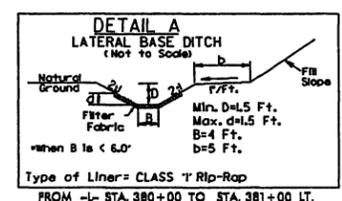
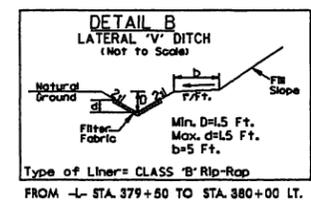
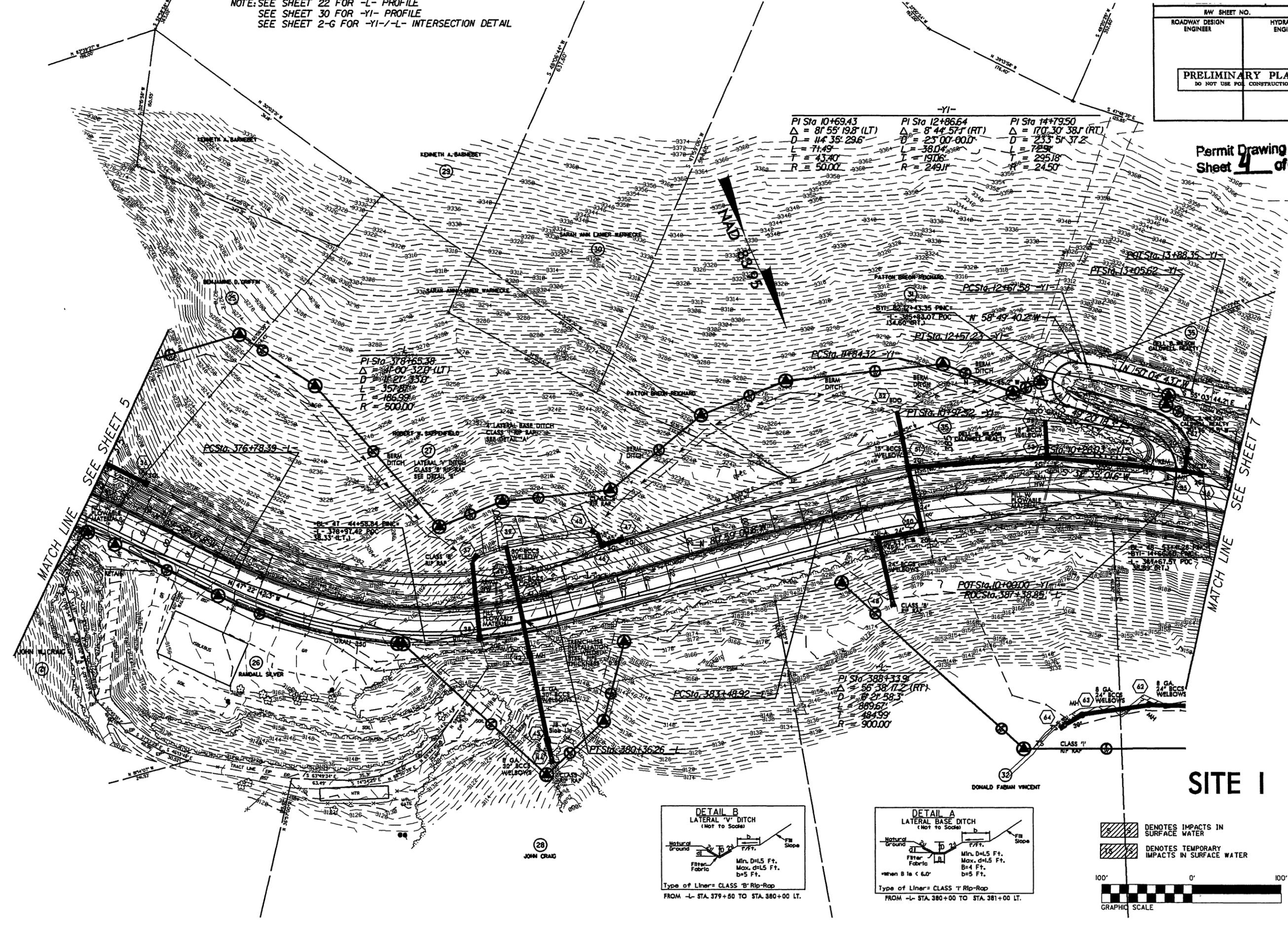
SITE I

REVISIONS

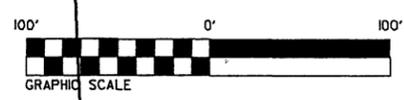
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Permit Drawing
 Sheet 4 of 95

NOTE: SEE SHEET 22 FOR -L- PROFILE
 SEE SHEET 30 FOR -YI- PROFILE
 SEE SHEET 2-G FOR -YI-/-L- INTERSECTION DETAIL



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



SITE I

REVISIONS

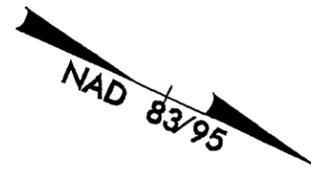
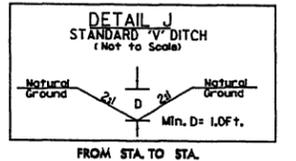
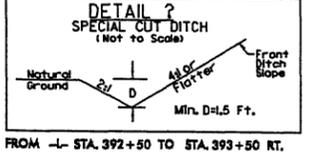
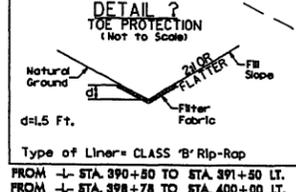
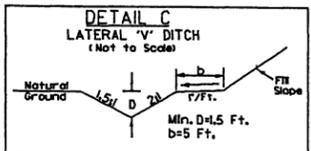
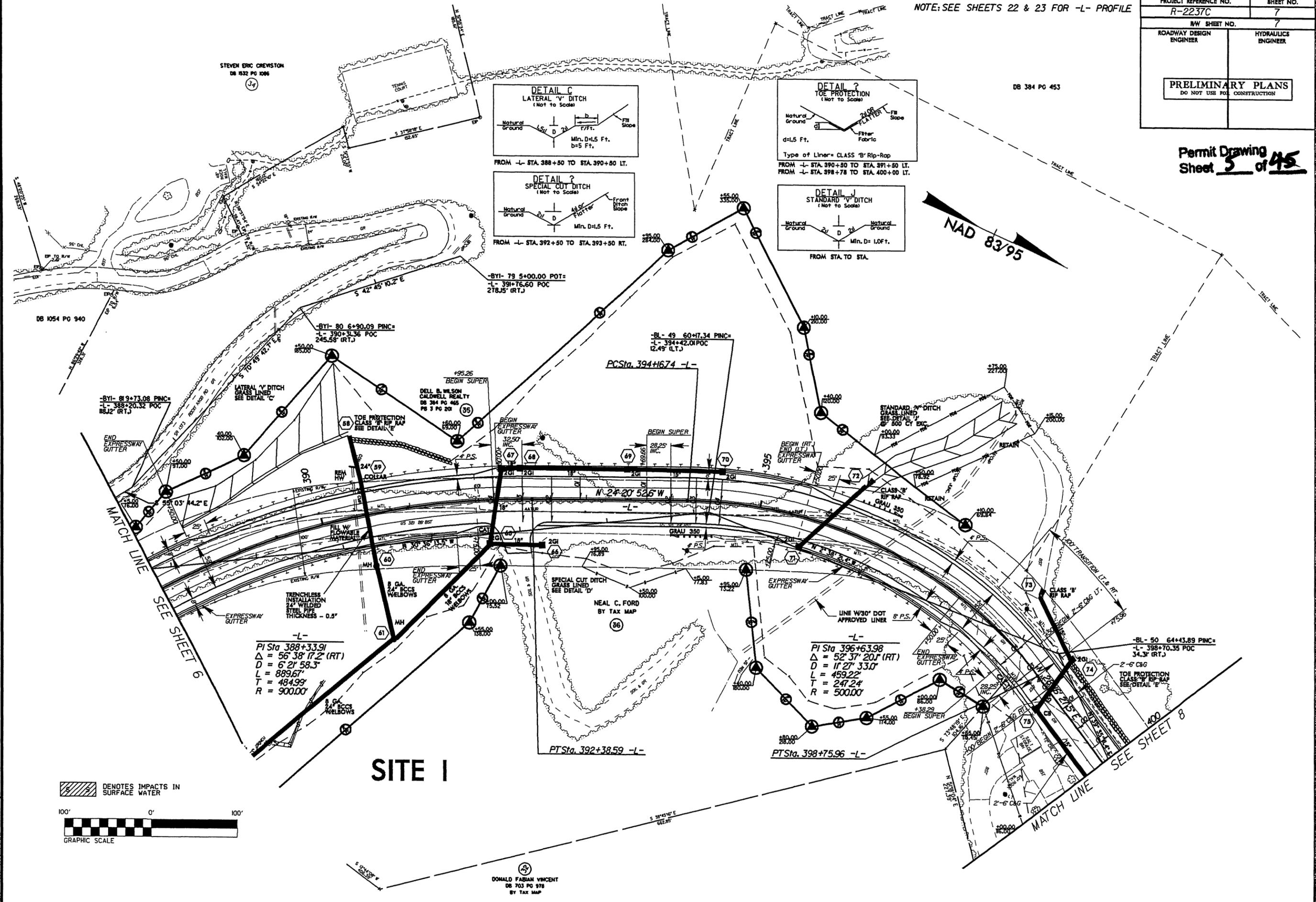
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 11-11-09

5/14

NOTE: SEE SHEETS 22 & 23 FOR -L- PROFILE

PROJECT REFERENCE NO. R-2237C	SHEET NO. 7
R/W SHEET NO. 7	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

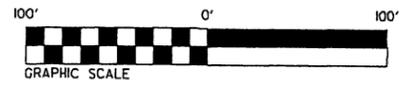
Permit Drawing
Sheet 5 of 45



-L-
PI Sta 388+33.91
Δ = 56° 38' 17.2" (RT)
D = 6' 21' 58.3"
L = 889.67'
T = 484.99'
R = 900.00'

-L-
PI Sta 396+63.98
Δ = 52° 37' 20.1" (RT)
D = 11' 27' 33.0"
L = 459.22'
T = 247.24'
R = 500.00'

/// DENOTES IMPACTS IN SURFACE WATER



SITE I

Ⓢ
DONALD FABIAN VINCENT
DB 703 PG 978
BY TAX MAP

REVISIONS
 Right of Way: This revision consists of adding temporary construction easement to Parcel 37.

23-NOV-2009 16:09
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 Drawn by: HYS

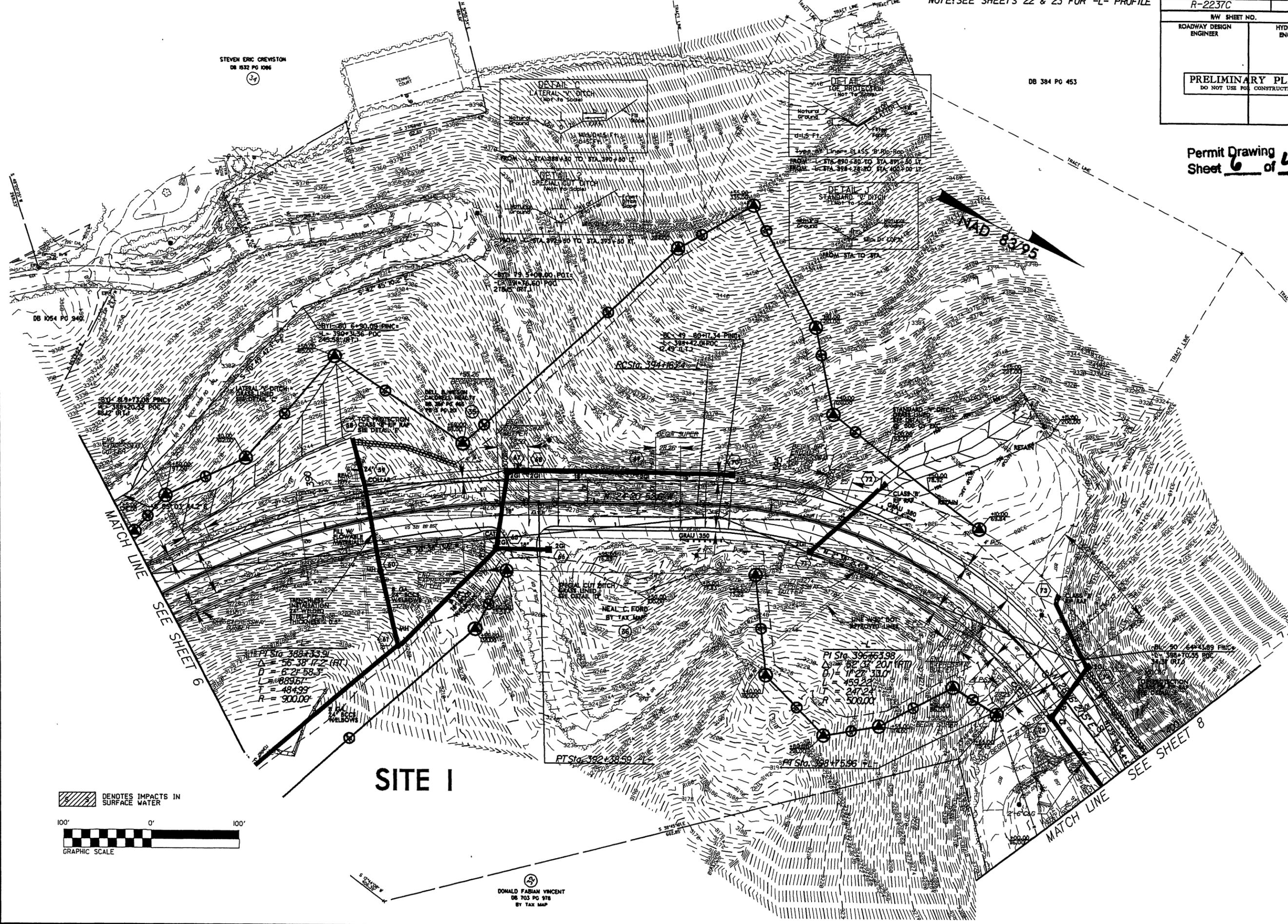
5/14

R-2237C		7
RW SHEET NO.		7
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS		
DO NOT USE FOR CONSTRUCTION		

Permit Drawing Sheet **6** of **45**

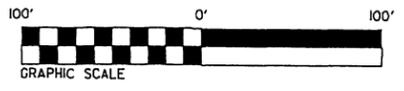
STEVEN ERIC CREWSTON
DB 032 PG 1066

DB 384 PG 453



REVISIONS
Right of Way This revision consists of adding temporary construction easement to Parcel 37.

/// DENOTES IMPACTS IN SURFACE WATER

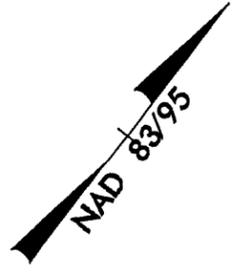
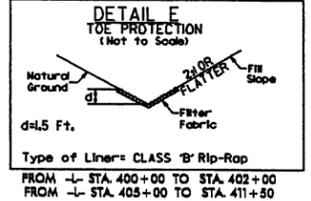


SITE I

37
DONALD FABIAN VINCENT
DB 703 PG 976
BY TAX MAP

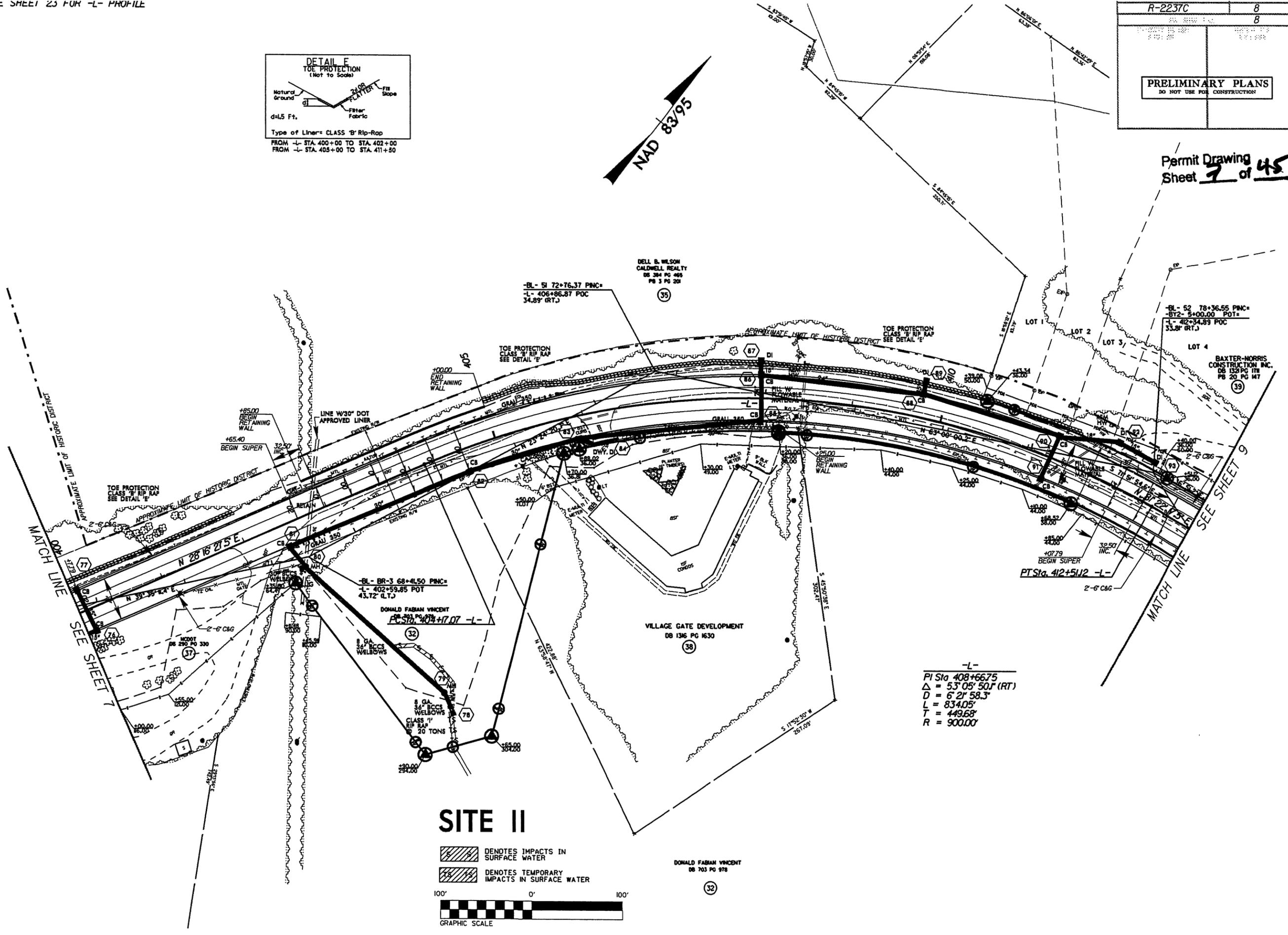
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R-2237C	8
	B
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



Permit Drawing
Sheet **7** of **45**

Right of Way: This revision consists of adding temporary construction easement to Parcel 37.



-L-
PI Sta 408+66.75
 $\Delta = 53^{\circ}05'50.1''$ (RT)
 $D = 6^{\circ}2'58.3''$
 $L = 834.05'$
 $T = 449.68'$
 $R = 900.00'$

SITE II

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

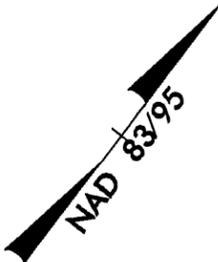
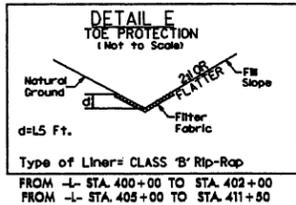


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5/14

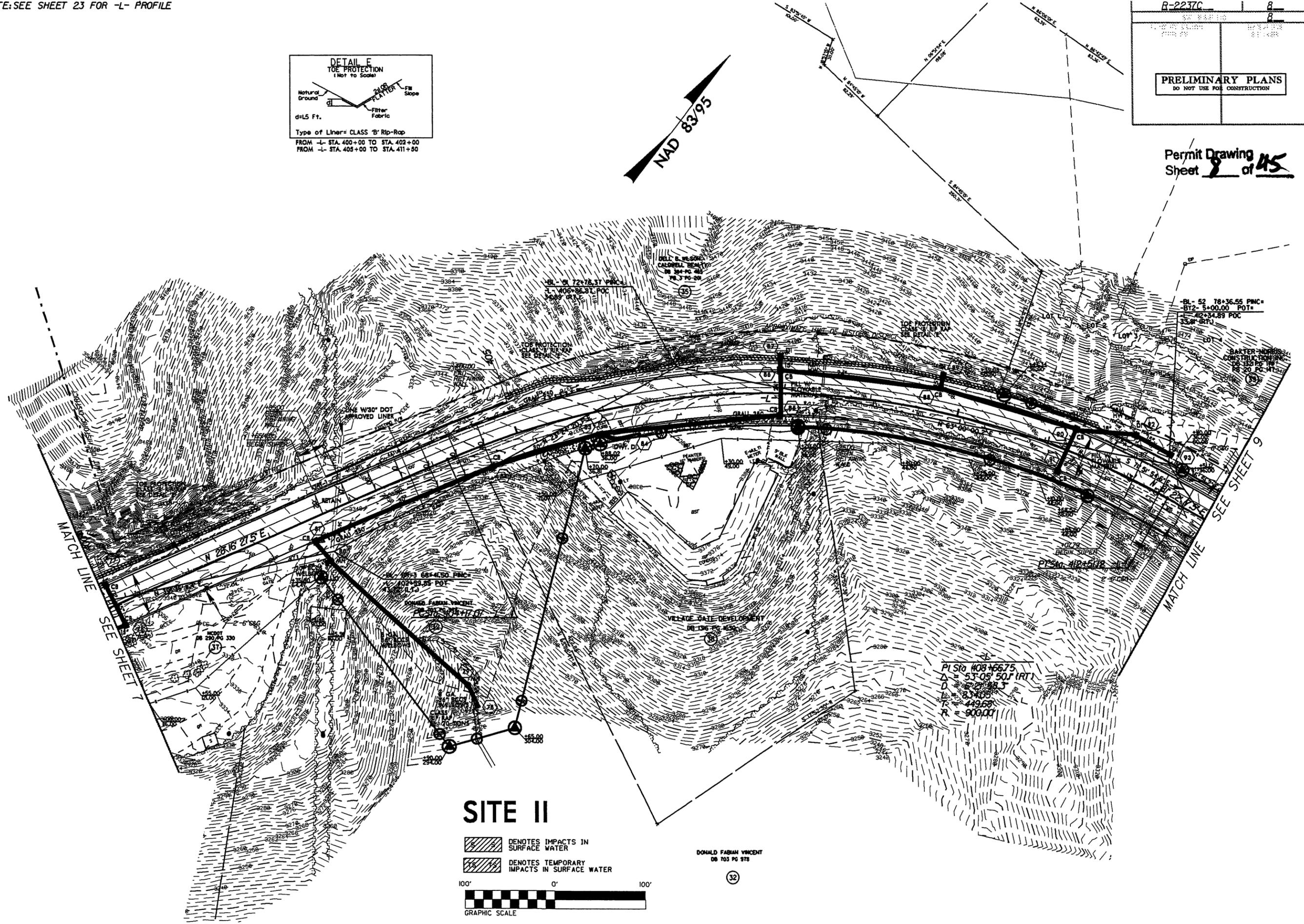
NOTE: SEE SHEET 23 FOR -L- PROFILE

R-2237C	8
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



Permit Drawing
Sheet 8 of 45

Right of Way: This revision consists of adding temporary construction easement to Parcel 37.



SITE II

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



DONALD FABIAN VINCENT
DB 103 PG 578
32

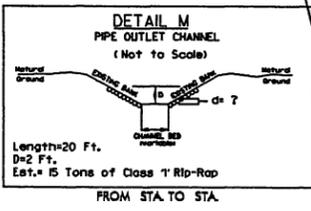
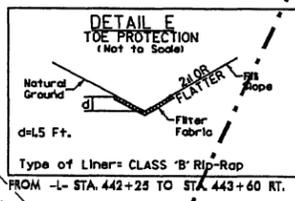
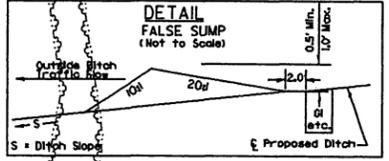
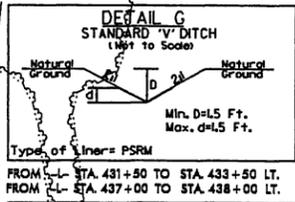
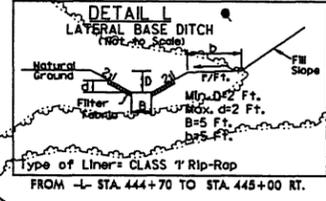
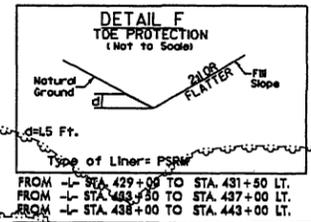
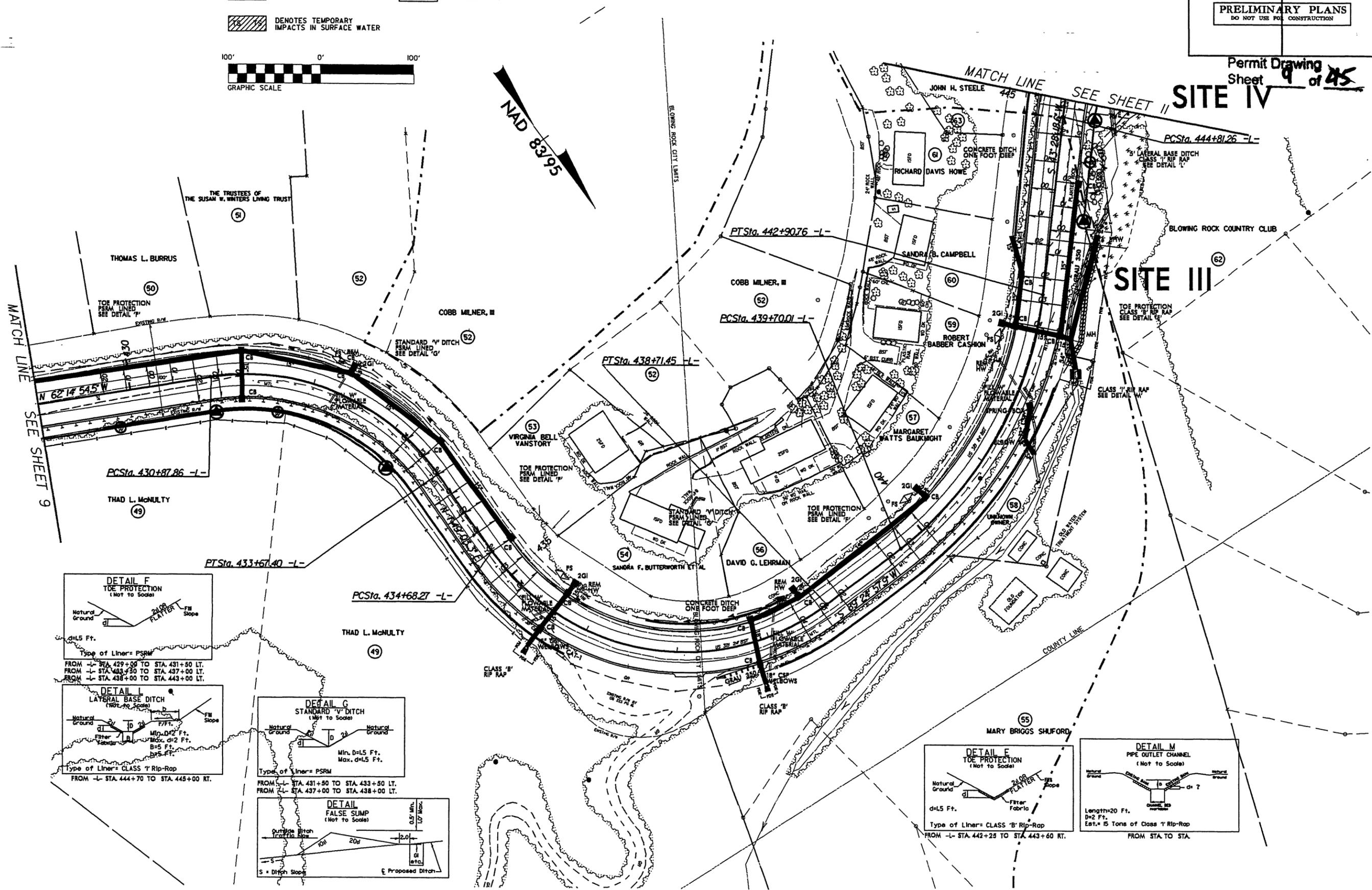
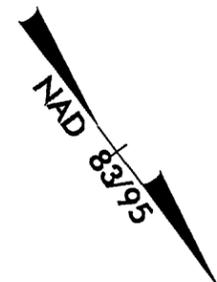
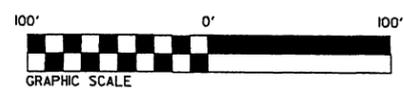
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NOTE: SEE SHEETS 24 & 25 FOR -L- PROFILE

PROJECT REFERENCE NO. R-2237C	SHEET NO. 10
R/W SHEET NO. 10	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing Sheet 9 of 45

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



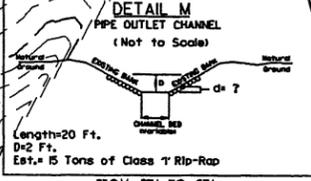
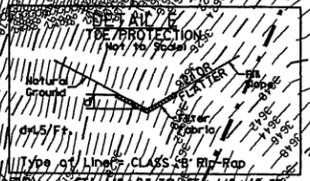
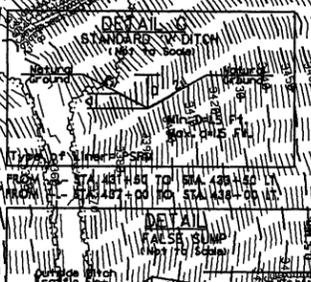
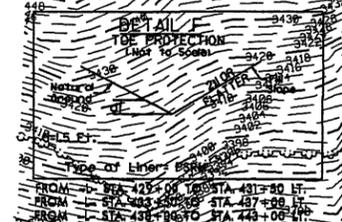
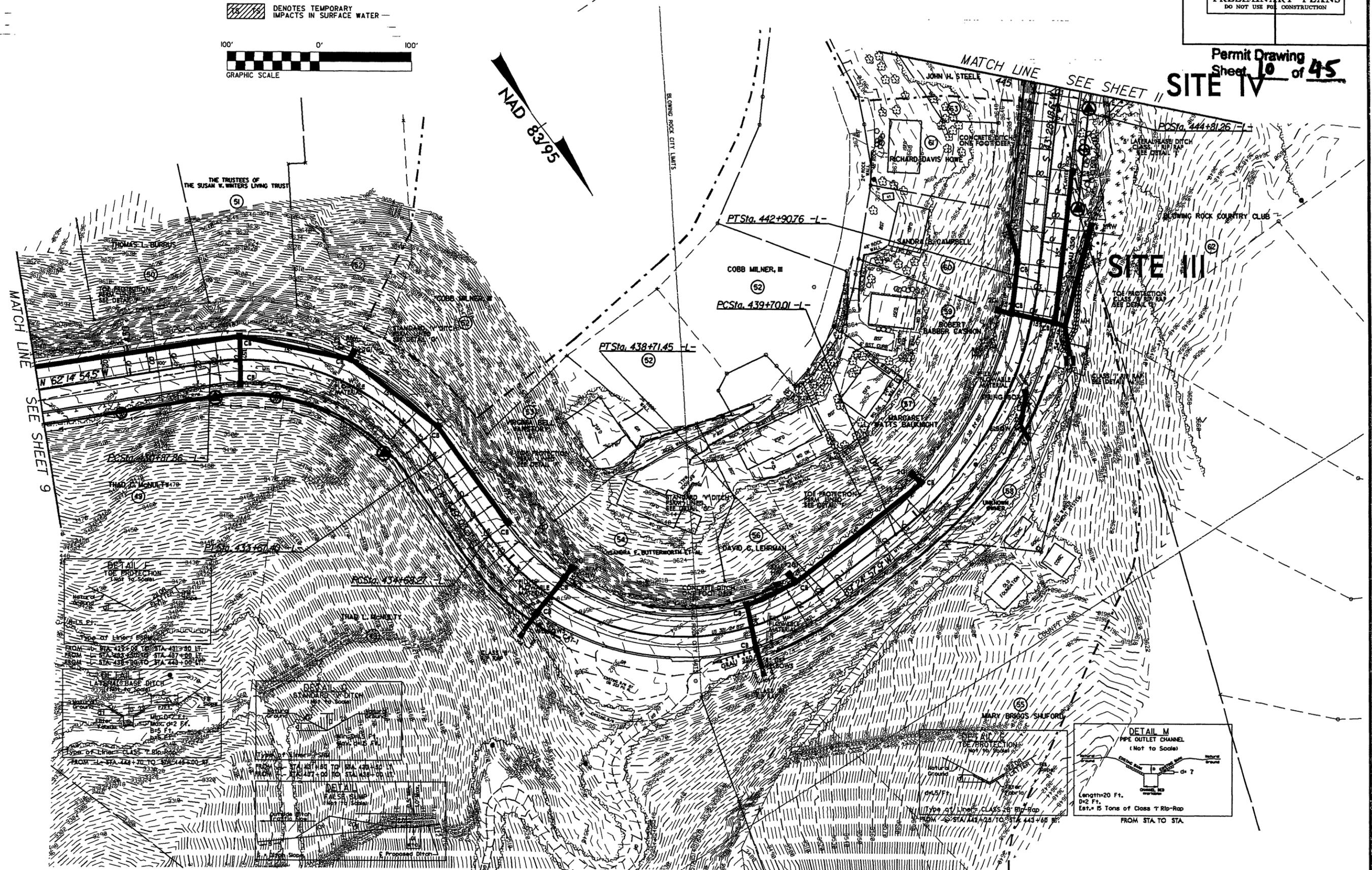
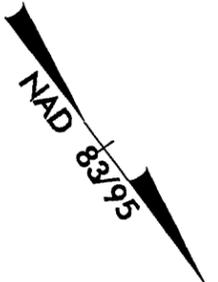
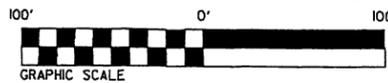
5/14/95
SYSTEMS DESIGN

5/14/99

NOTE: SEE SHEETS 24 & 25 FOR -L- PROFILE

PROJECT REFERENCE NO. R-2237C	SHEET NO. 10
RW SHEET NO. 10	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

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

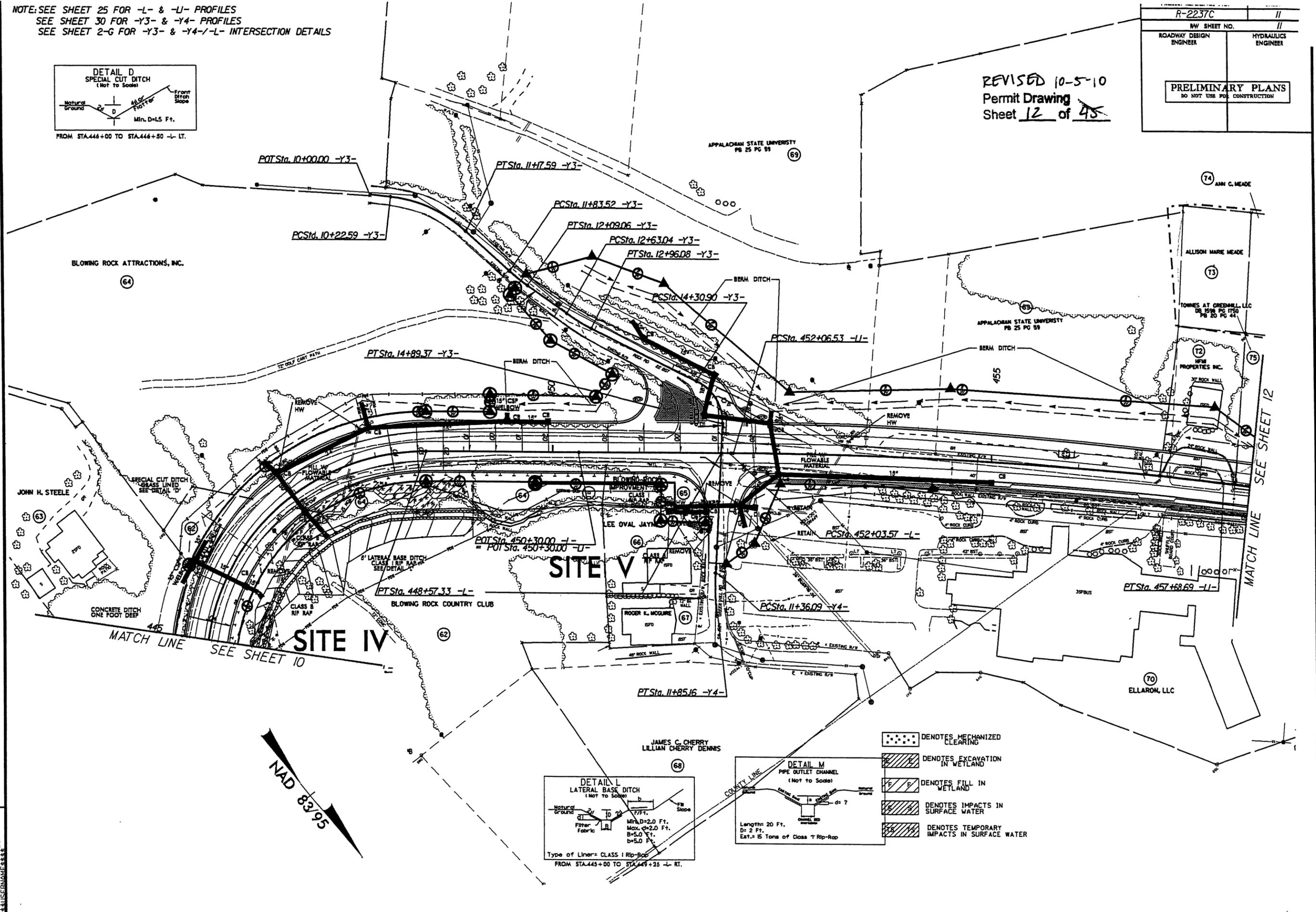
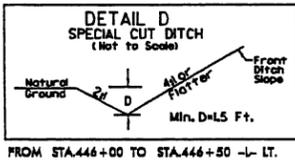


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NOTE: SEE SHEET 25 FOR -L- & -U- PROFILES
 SEE SHEET 30 FOR -Y3- & -Y4- PROFILES
 SEE SHEET 2-G FOR -Y3- & -Y4-/-L- INTERSECTION DETAILS

R-2237C		11
NW SHEET NO.		11
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		

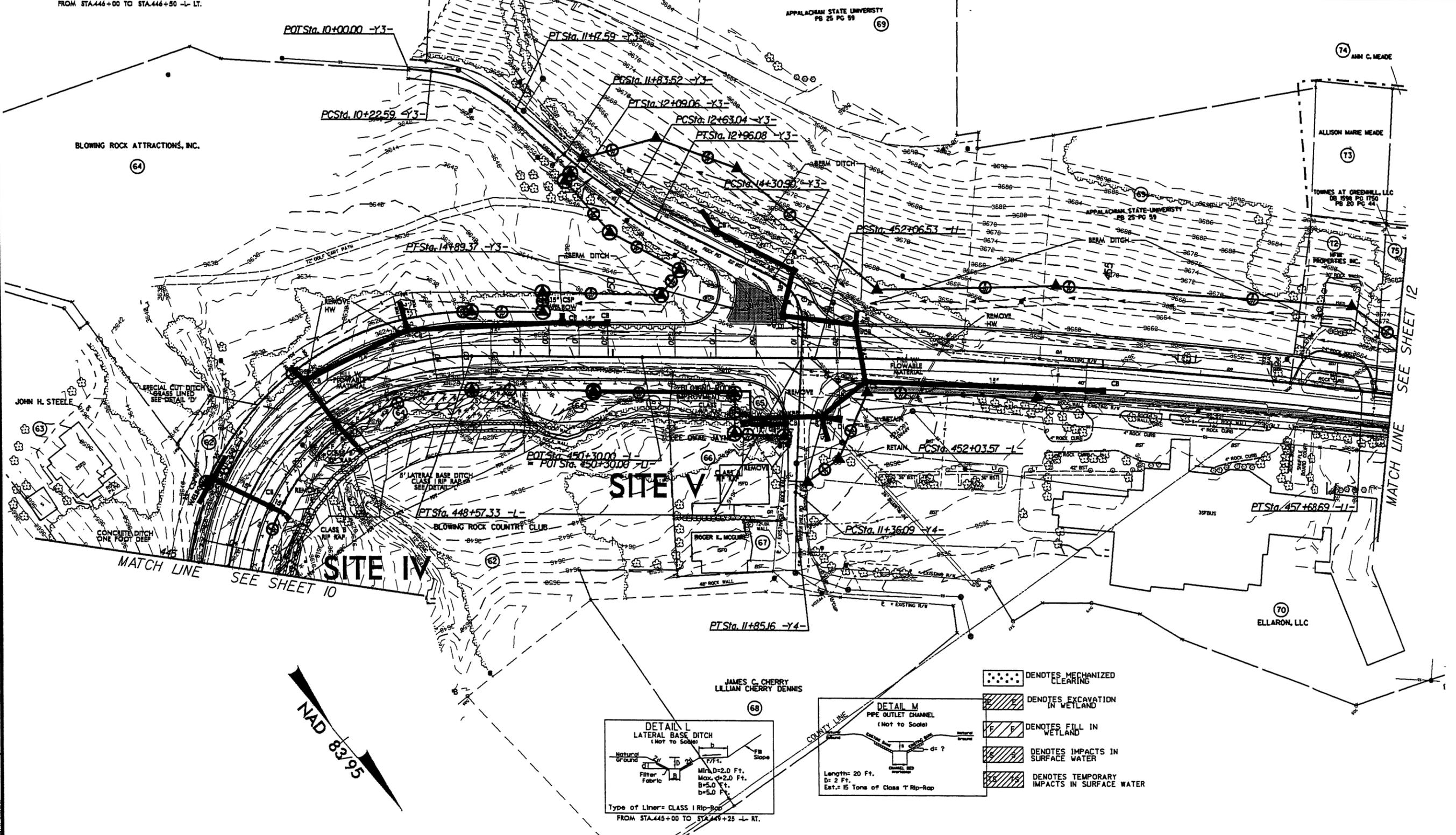
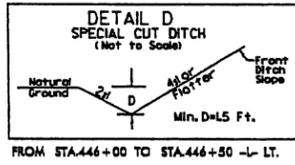
REVISED 10-5-10
 Permit Drawing
 Sheet 12 of 45



NOTE: SEE SHEET 25 FOR -L- & -U- PROFILES
 SEE SHEET 30 FOR -Y3- & -Y4- PROFILES
 SEE SHEET 2-G FOR -Y3- & -Y4-/-L- INTERSECTION DETAILS

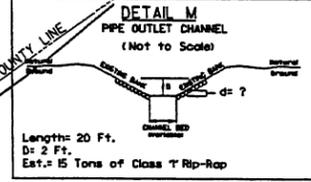
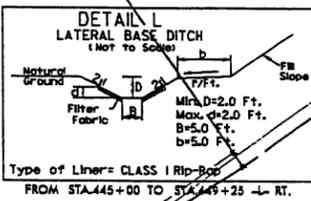
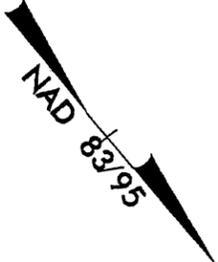
R-2237C	
HW SHEET NO. 11	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

REVISED 10-5-10
 Permit Drawing
 Sheet 13 of 45



REVISIONS
 THE REVISION CONSISTS OF CHANGING THE RIGHT OF WAY ON PARCEL 69.

MATCH LINE
 SEE SHEET 12

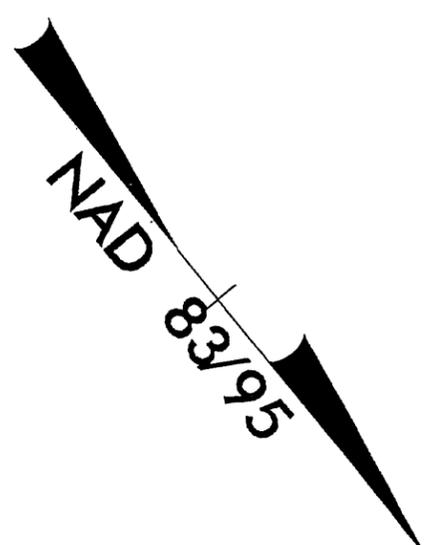
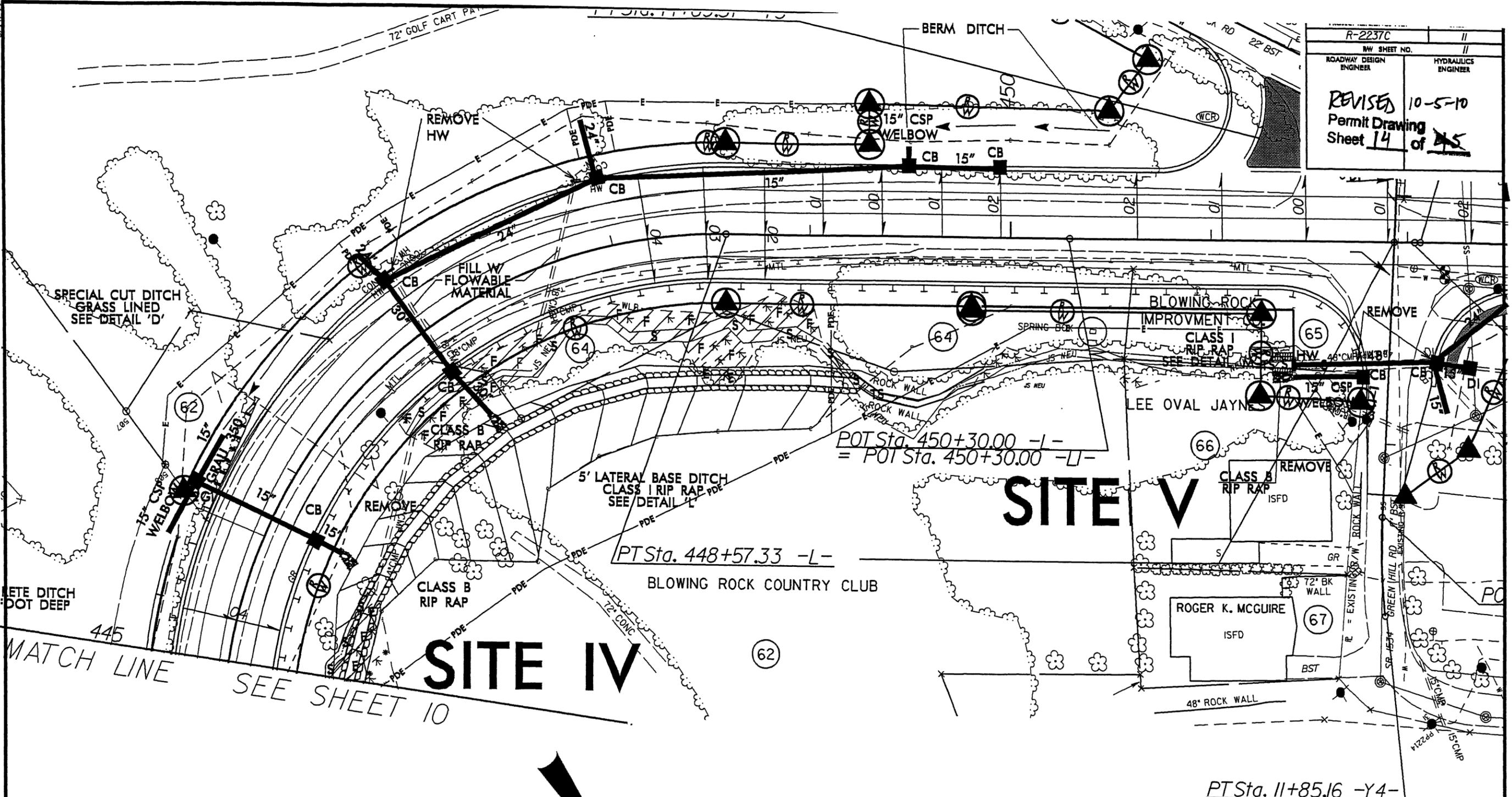


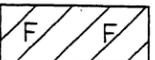
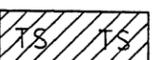
- DENOTES MECHANIZED CLEARING
- DENOTES EXCAVATION IN WETLAND
- DENOTES FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

 SYSTEMS ENGINEERING

5/14/95

R-2237C		II
HW SHEET NO.		II
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
REVISED 10-5-10		
Permit Drawing		
Sheet 14 of 15		



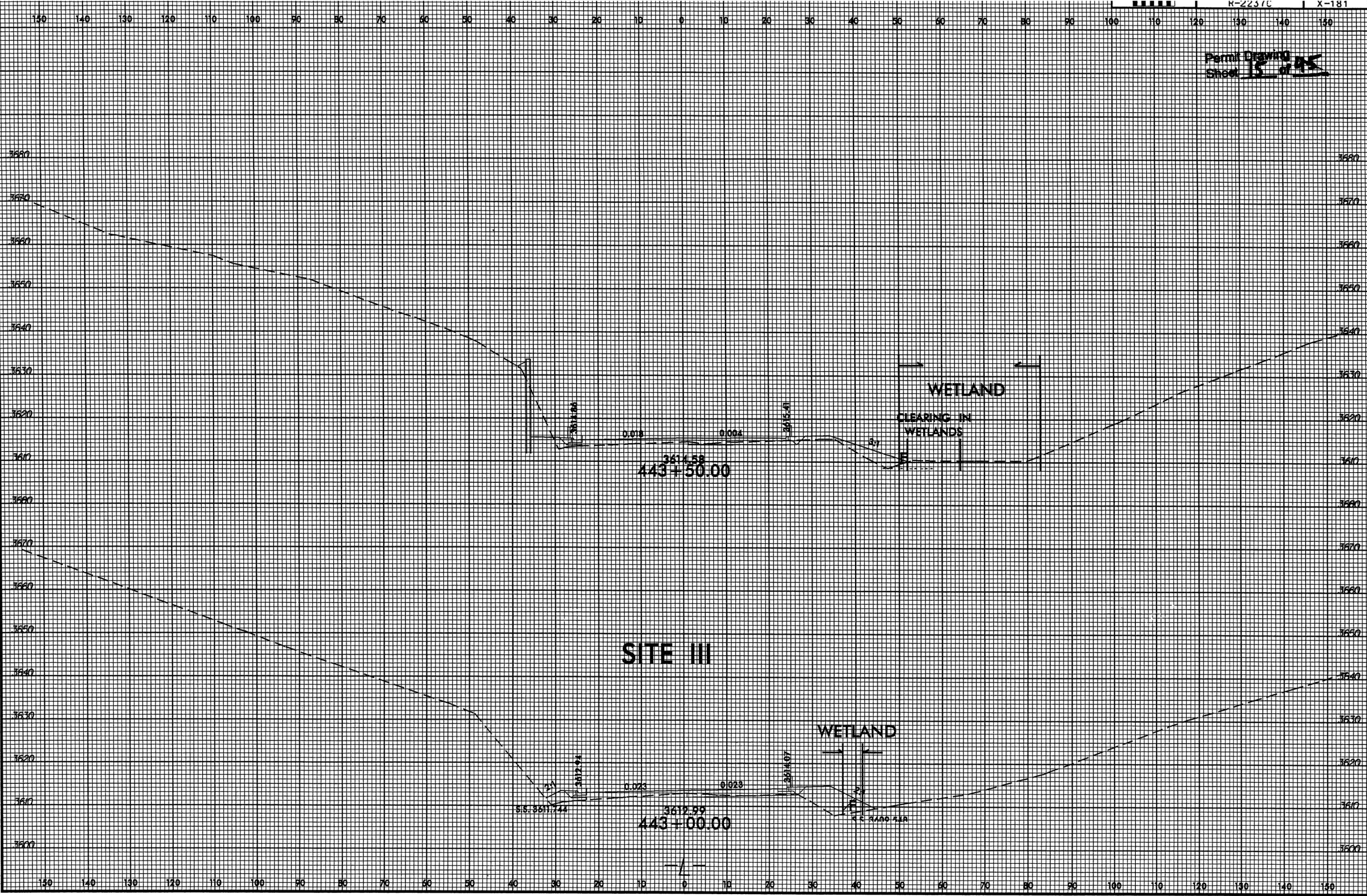
-  DENOTES MECHANIZED CLEARING
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES FILL IN WETLAND
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER

JAMES C. CHERRY
LILLIAN CHERRY DENNIS

68

COUNTY LINE
Natural Ground

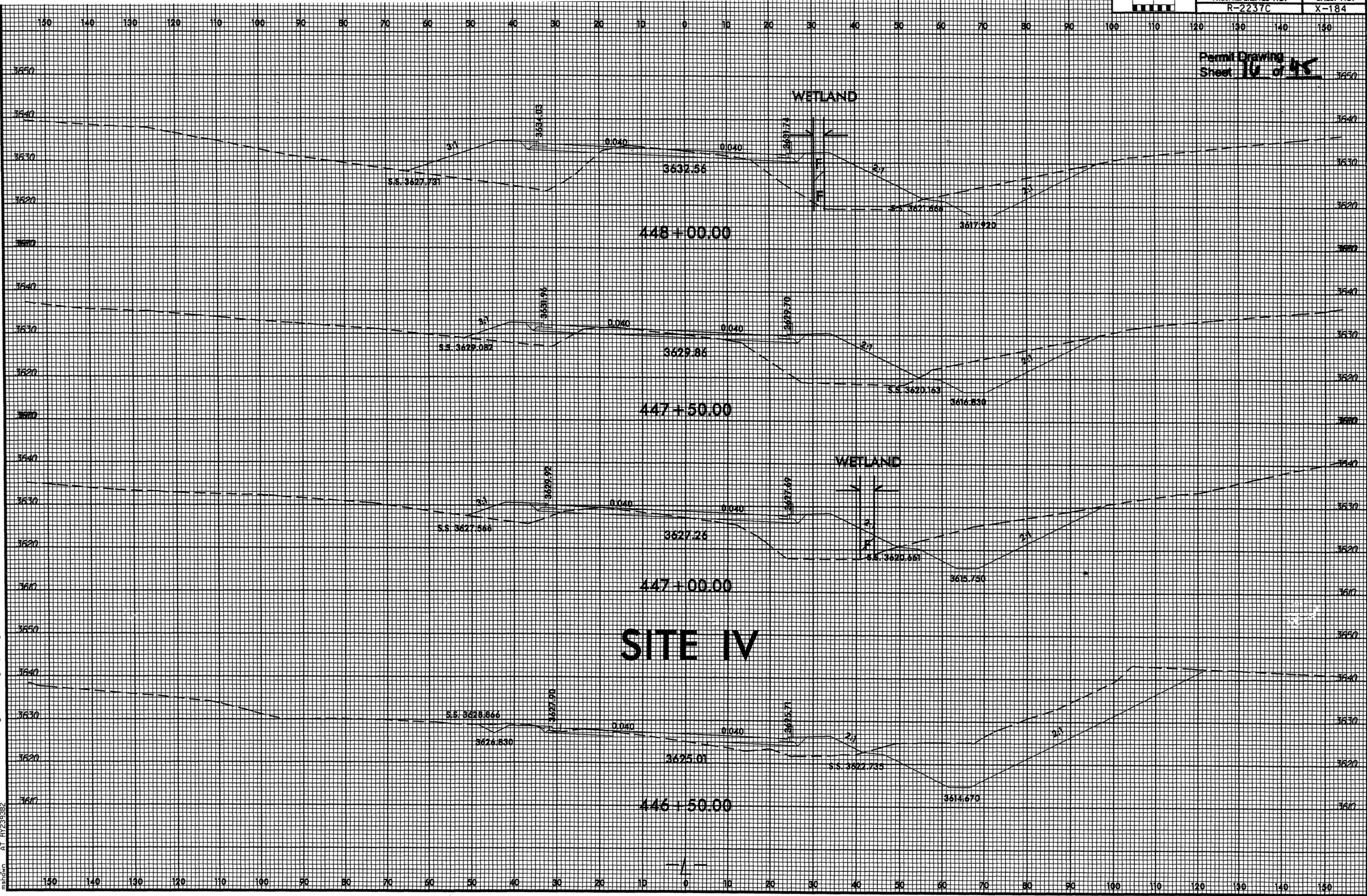
Permit Drawing
Sheet 15 of 15



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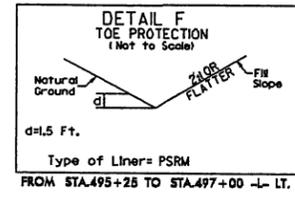
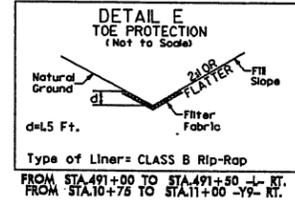
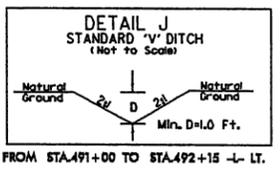
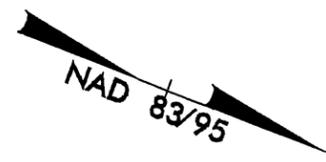
Permit Drawing
Sheet 10 of 45

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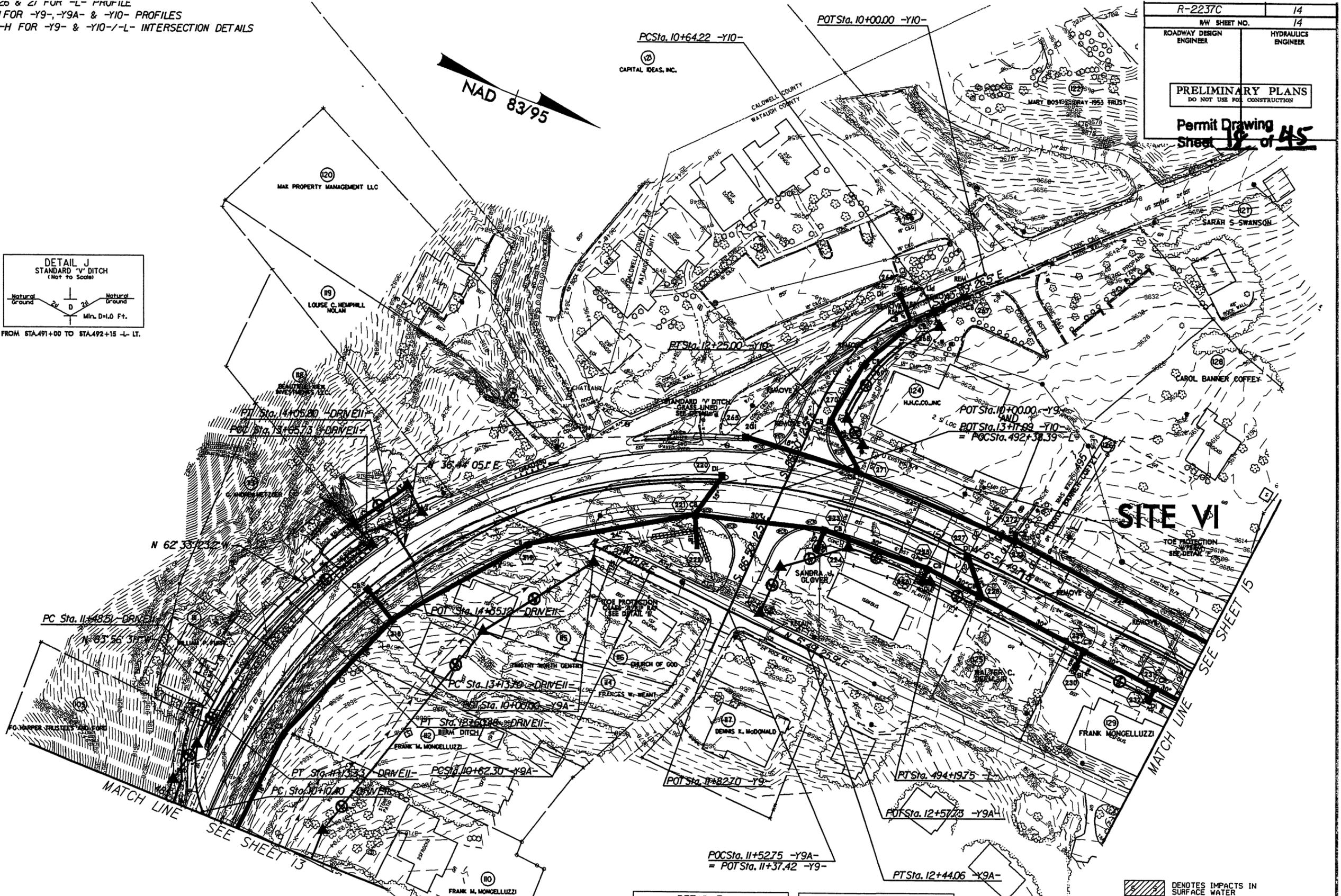
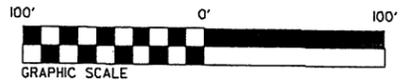


R-2237C	14
HW SHEET NO.	14
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
Permit Drawing Sheet 14 of 45	

NOTE: SEE SHEETS 20 & 21 FOR -L- PROFILE
SEE SHEET 31 FOR -Y9-, -Y9A- & -Y10- PROFILES
SEE SHEET 2-H FOR -Y9- & -Y10-/-L- INTERSECTION DETAILS



/// DENOTES IMPACTS IN SURFACE WATER



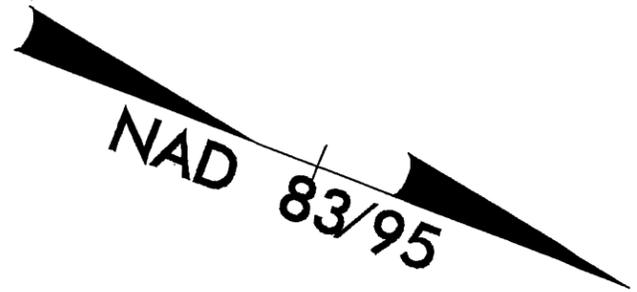
REVISIONS

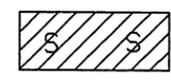
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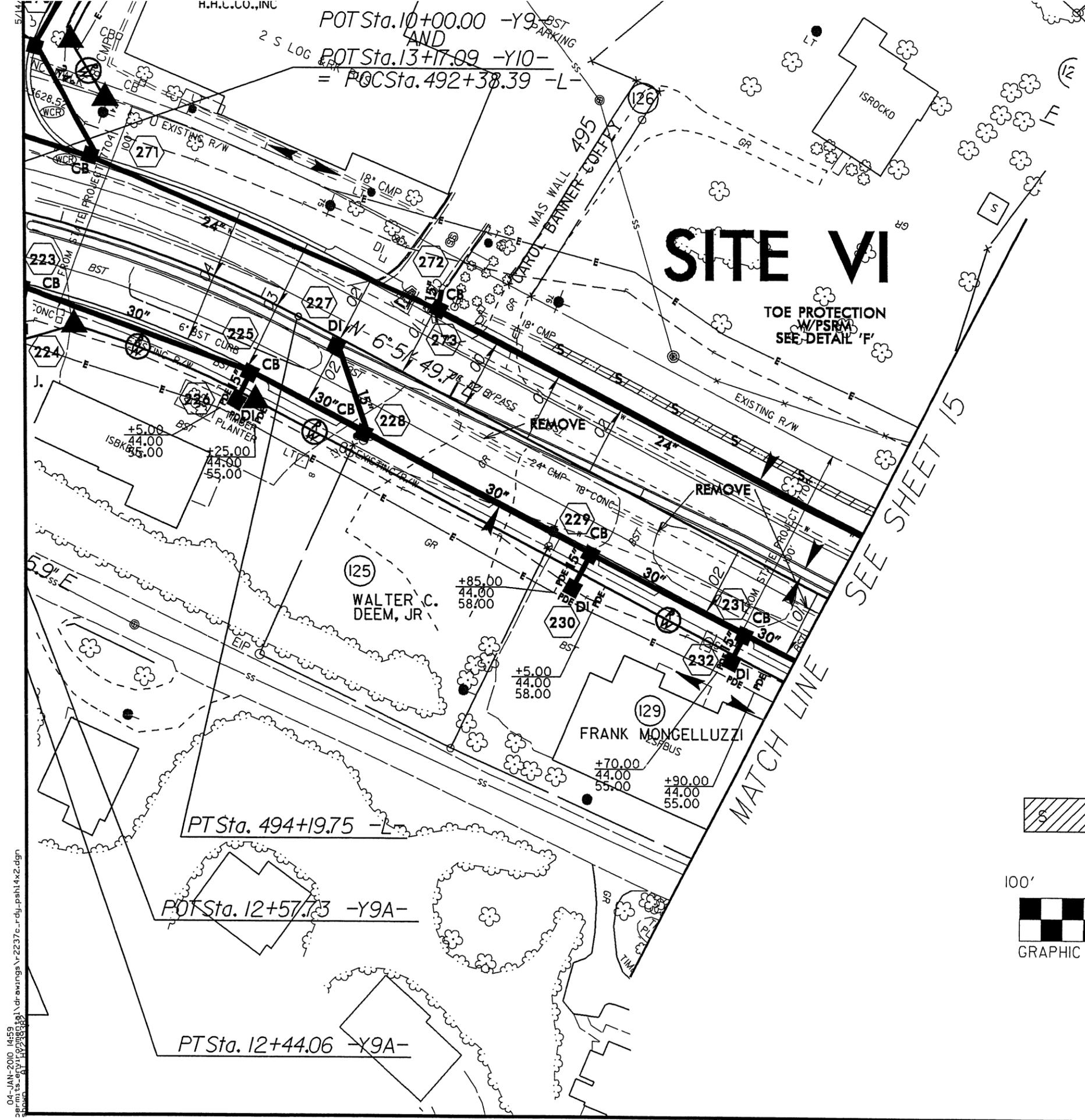
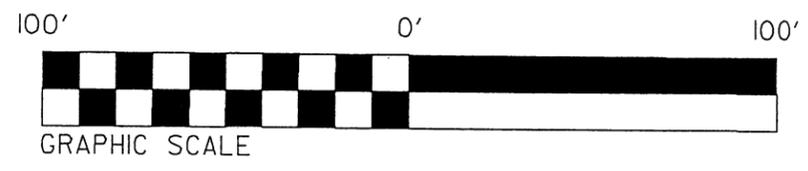
PROJECT REFERENCE NO.	SHEET NO.
R-2237C	14
RW SHEET NO. 14	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
Permit Drawing Sheet 19 of 45	

SITE VI

TOE PROTECTION
W/PSRM
SEE DETAIL 'F'



 DENOTES IMPACTS IN SURFACE WATER



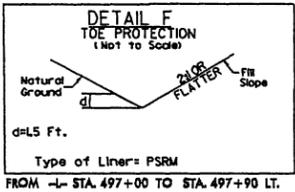
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PROJECT REFERENCE NO.	R-2237C	SHEET NO.	15
R/W SHEET NO.	15		
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	

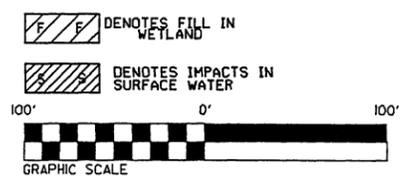
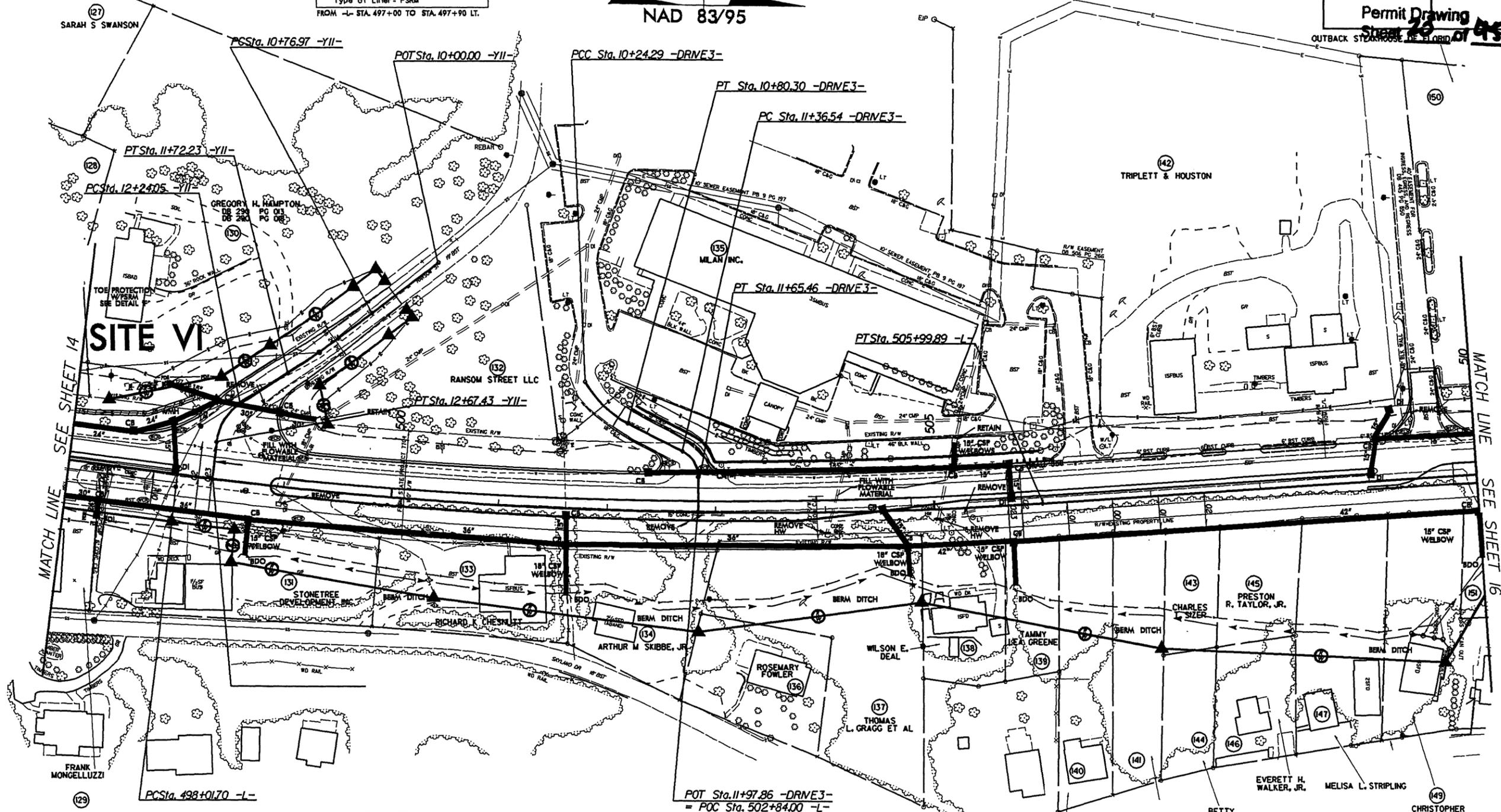
NOTE: SEE SHEET 27 FOR -L- PROFILE
 SEE SHEET 31 FOR -YII- PROFILE
 SEE SHEET 2-H FOR -YII-/L- INTERSECTION DETAIL
 SEE SHEET 33 FOR -DRIVE3- PROFILE

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION

Permit Drawing
 Street 20 of 95
 OUTBACK STEAKHOUSE DE FLORIDA



NAD 83/95



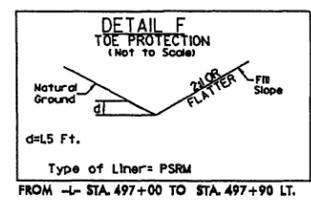
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REVISIONS

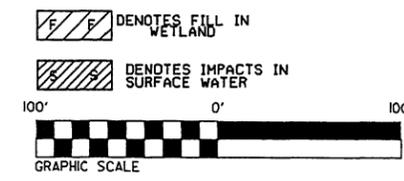
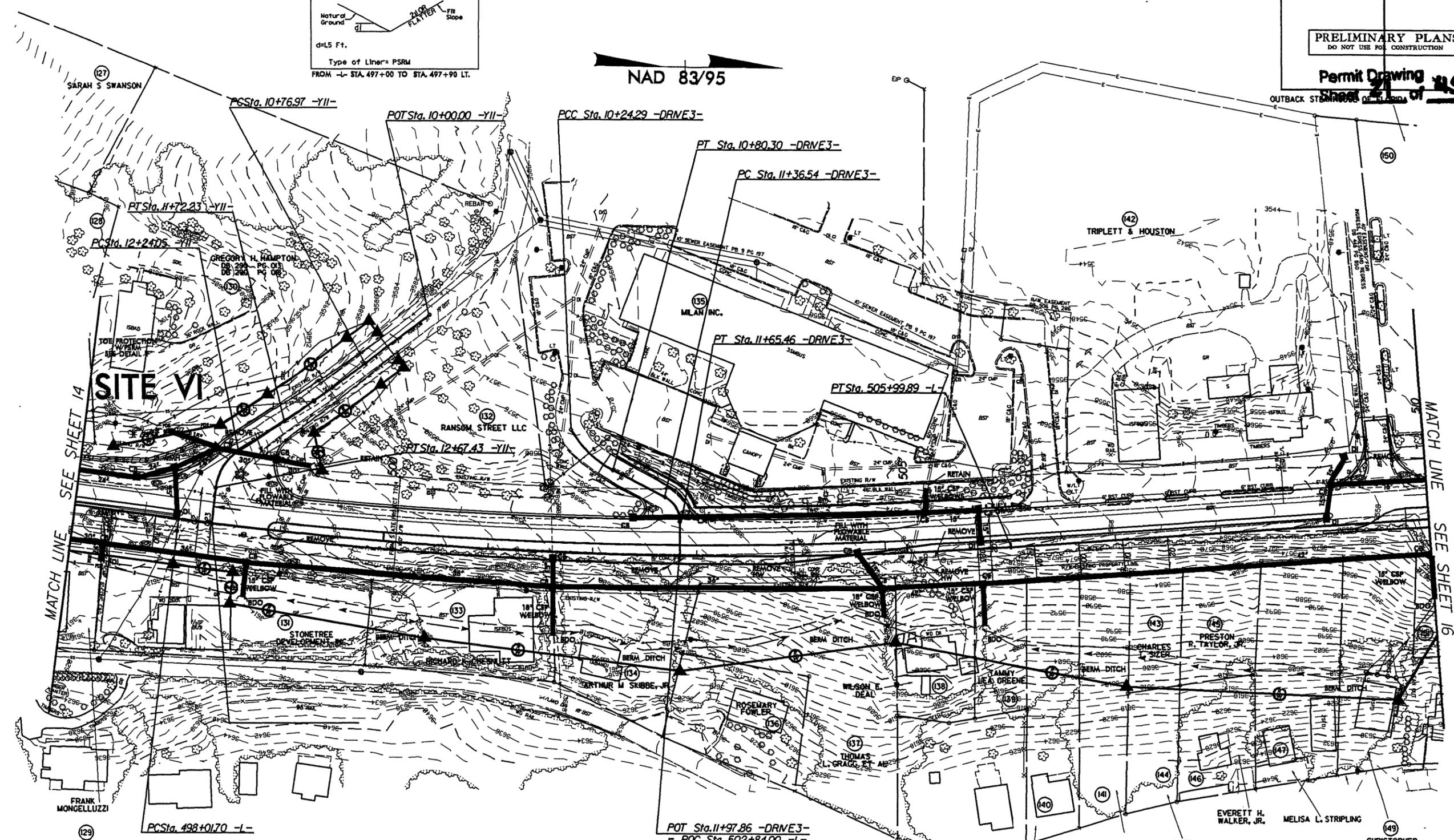
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SEE SHEET 31 FOR -YII- PROFILE
 SEE SHEET 2-H FOR -YII-/-L- INTERSECTION DETAIL
 SEE SHEET 33 FOR -DRIVE3- PROFILE

NW SHEET NO.	15
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
Permit Drawing Sheet 21 of 21	



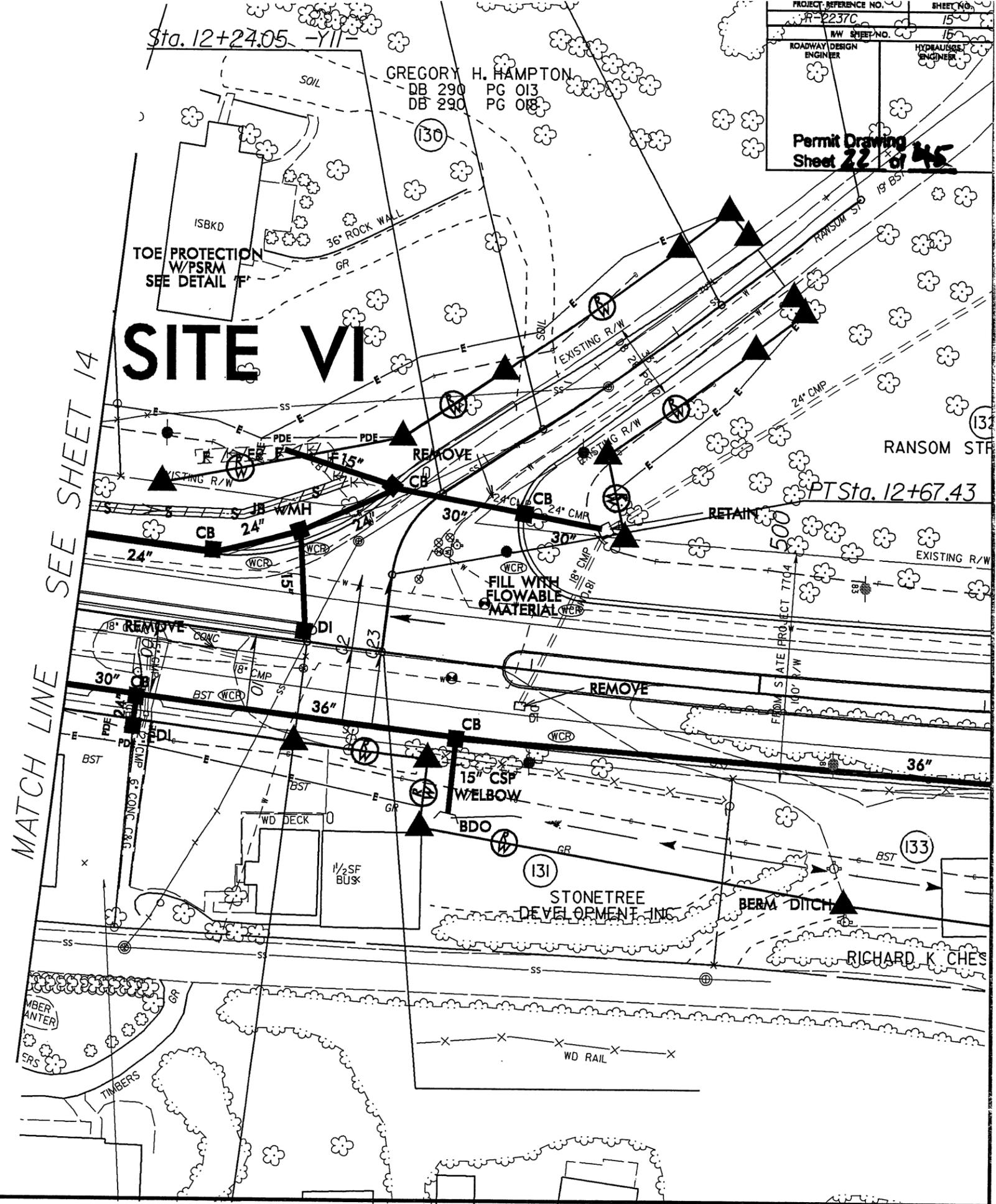
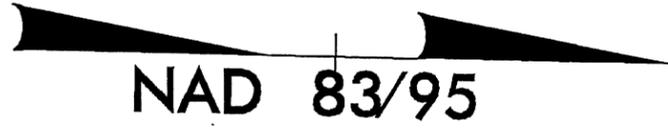
NAD 83/95



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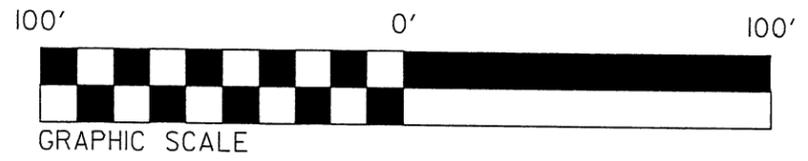
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-2237C	15
R/W SHEET NO.	15
ROADWAY DESIGN ENGINEER	HYDRAULIC ENGINEER
Permit Drawing Sheet 22 of 45	



 DENOTES FILL IN WETLAND

 DENOTES IMPACTS IN SURFACE WATER



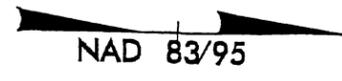
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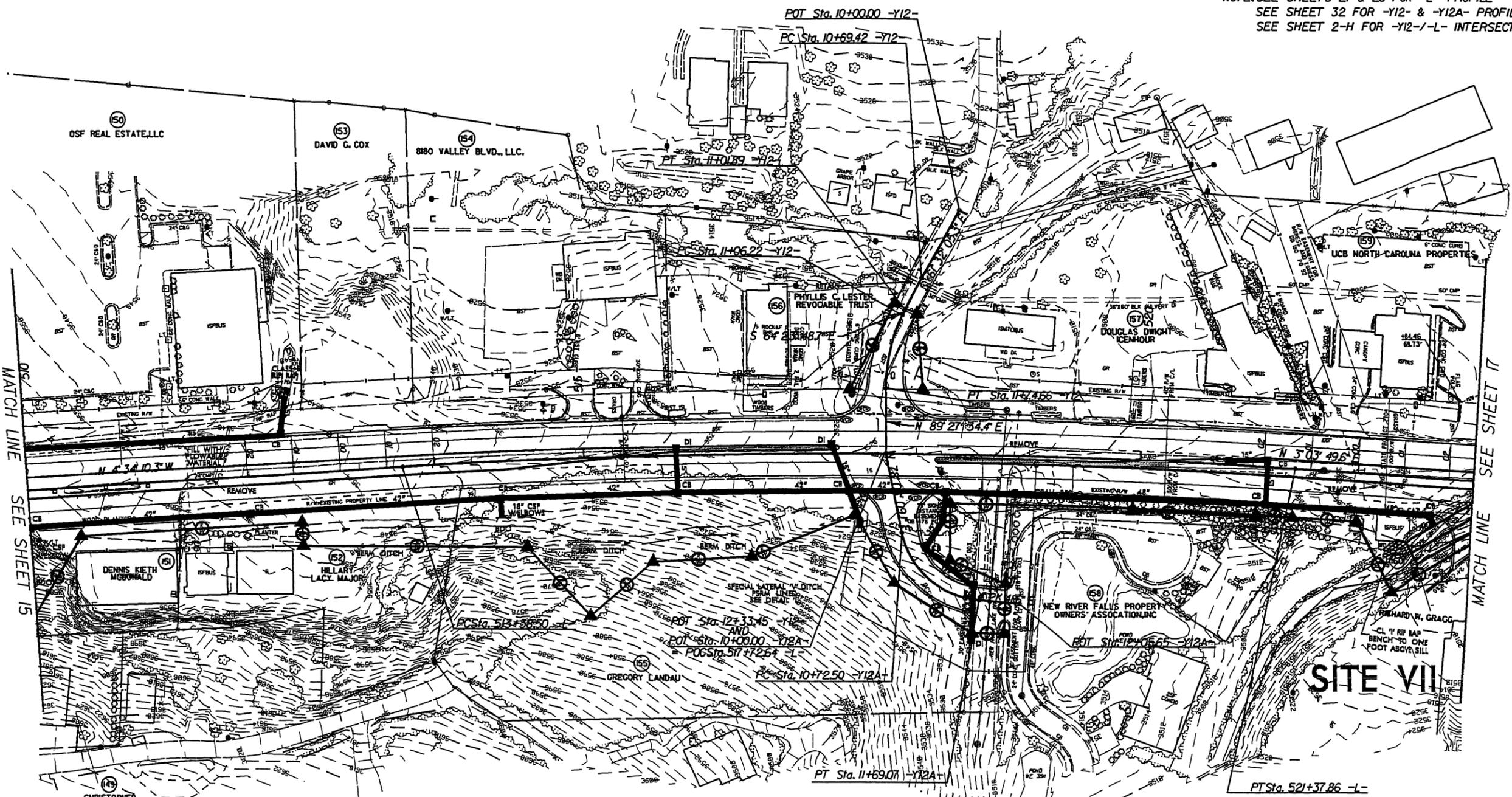
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R-2237C		16
RW SHEET NO.		16
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION		

REVISED 10-5-10
Permit Drawing
Sheet 25 of 43



NOTE: SEE SHEETS 27 & 28 FOR -L- PROFILE
SEE SHEET 32 FOR -Y12- & -Y12A- PROFILE
SEE SHEET 2-H FOR -Y12-/-L- INTERSECTION DETAIL

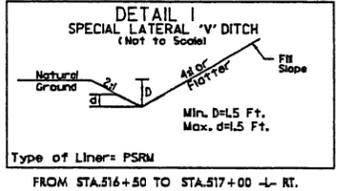


REVISIONS

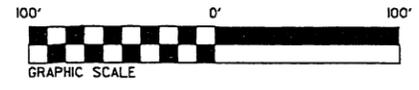
MATCH LINE SEE SHEET 15

MATCH LINE SEE SHEET 17

SITE VII

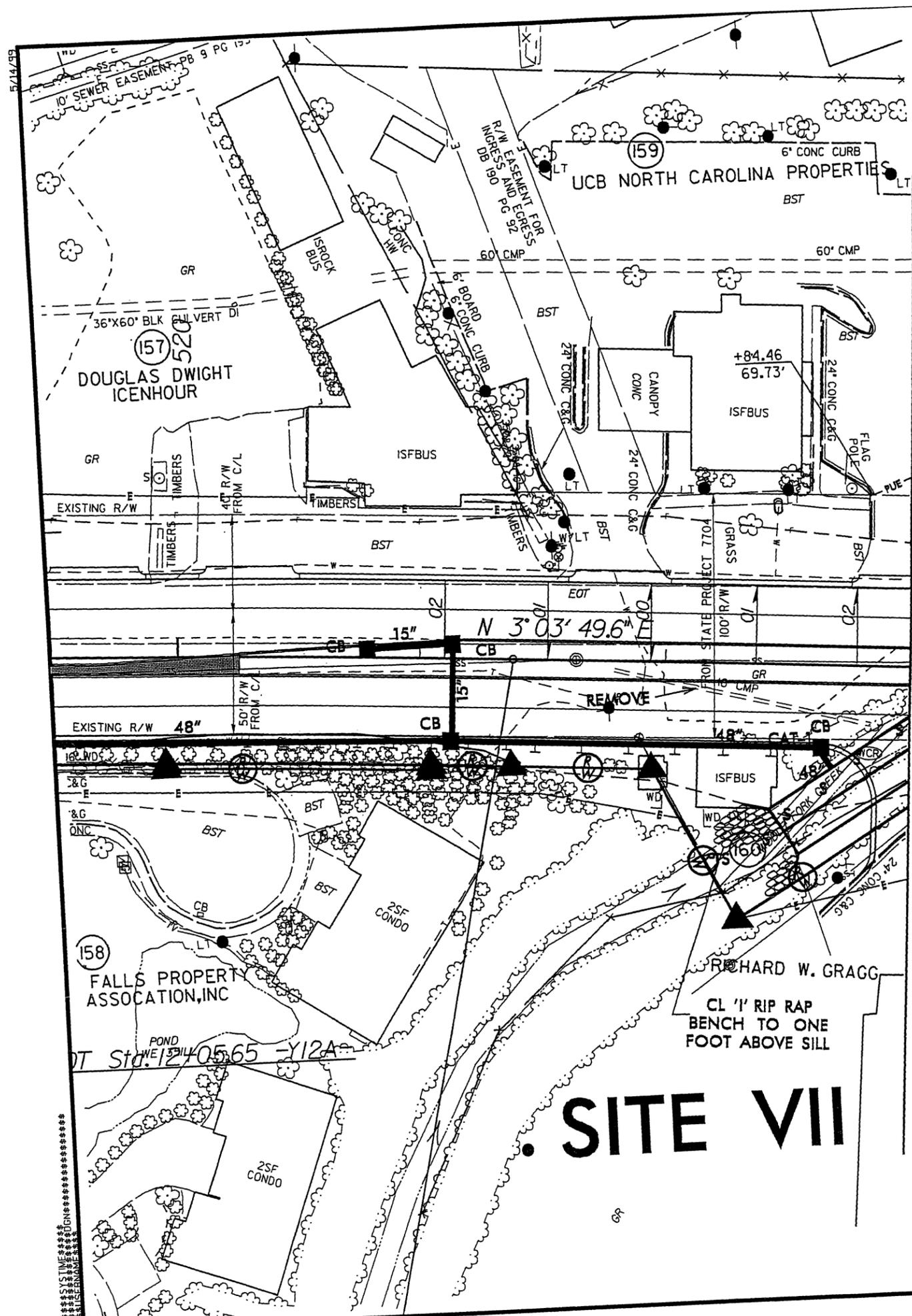


- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER

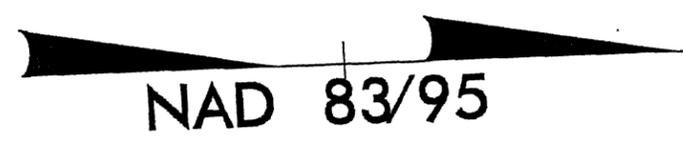


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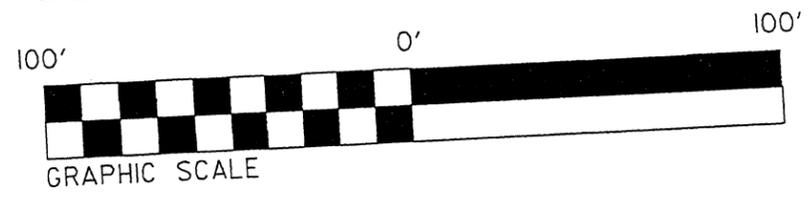
REVISED 10-5-10
 Permit Drawing
 Sheet 26 of 45



MATCH LINE SEE SHEET 17



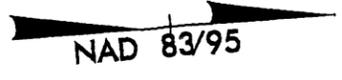
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER



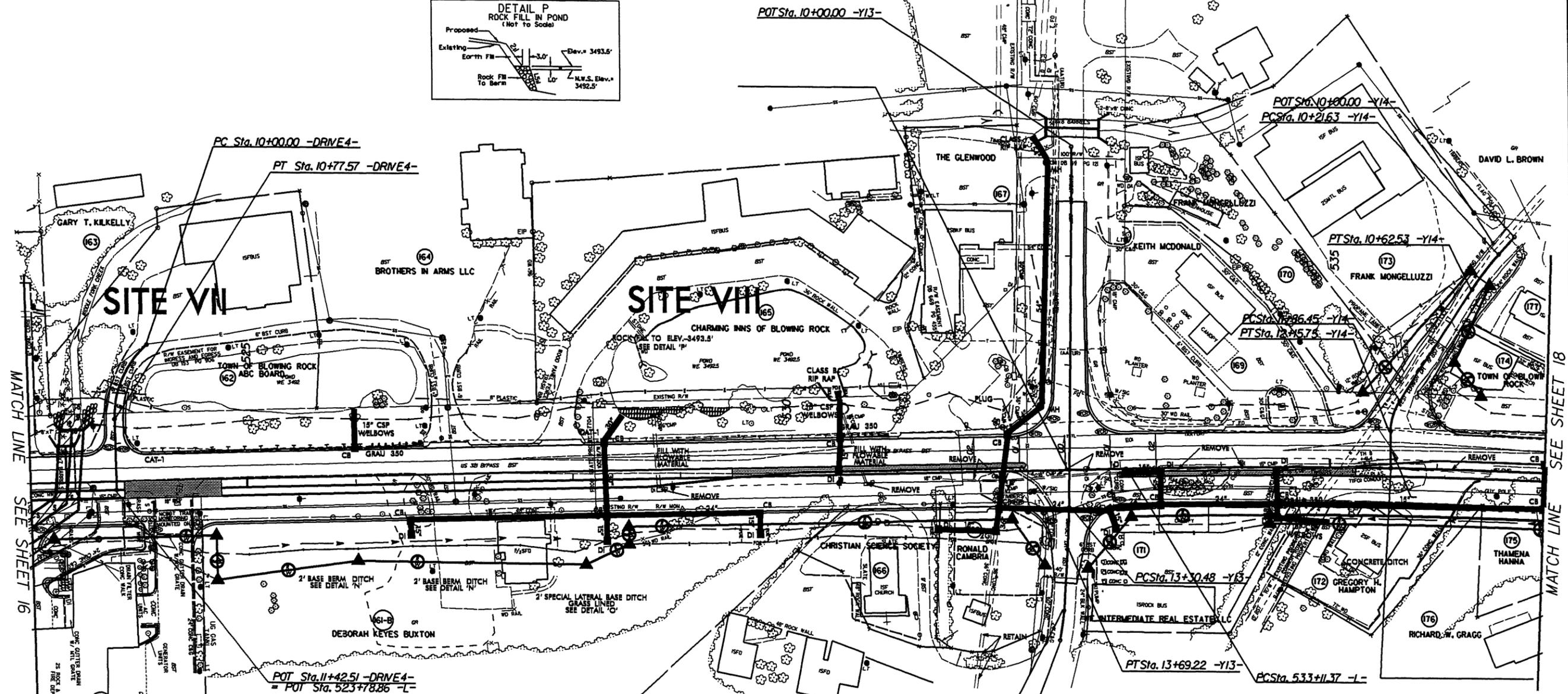
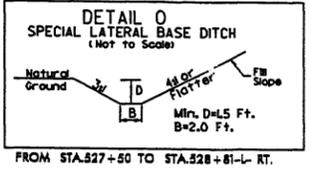
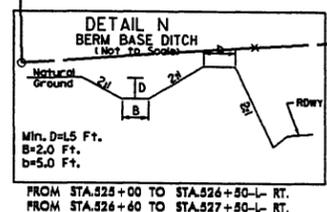
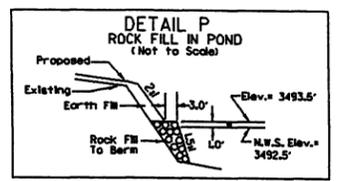
SITE VII

NOTE: SEE SHEET 28 FOR -L- PROFILE
 SEE SHEET 32 FOR -Y13- & -Y14- PROFILE
 SEE SHEET 2-I FOR -Y13- & -Y14-/-L- INTERSECTION DETAILS
 SEE SHEET 38 FOR -DRIVE4- PROFILE

PROJECT REFERENCE NO. R-2237C	SHEET NO. 17
R/W SHEET NO. 17	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



REVISED
 Permit Drawing
 Sheet 27 of 45



- DENOTES EXCAVATION IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



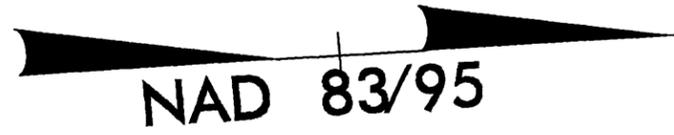
REVISIONS

MATCH LINE SEE SHEET 16

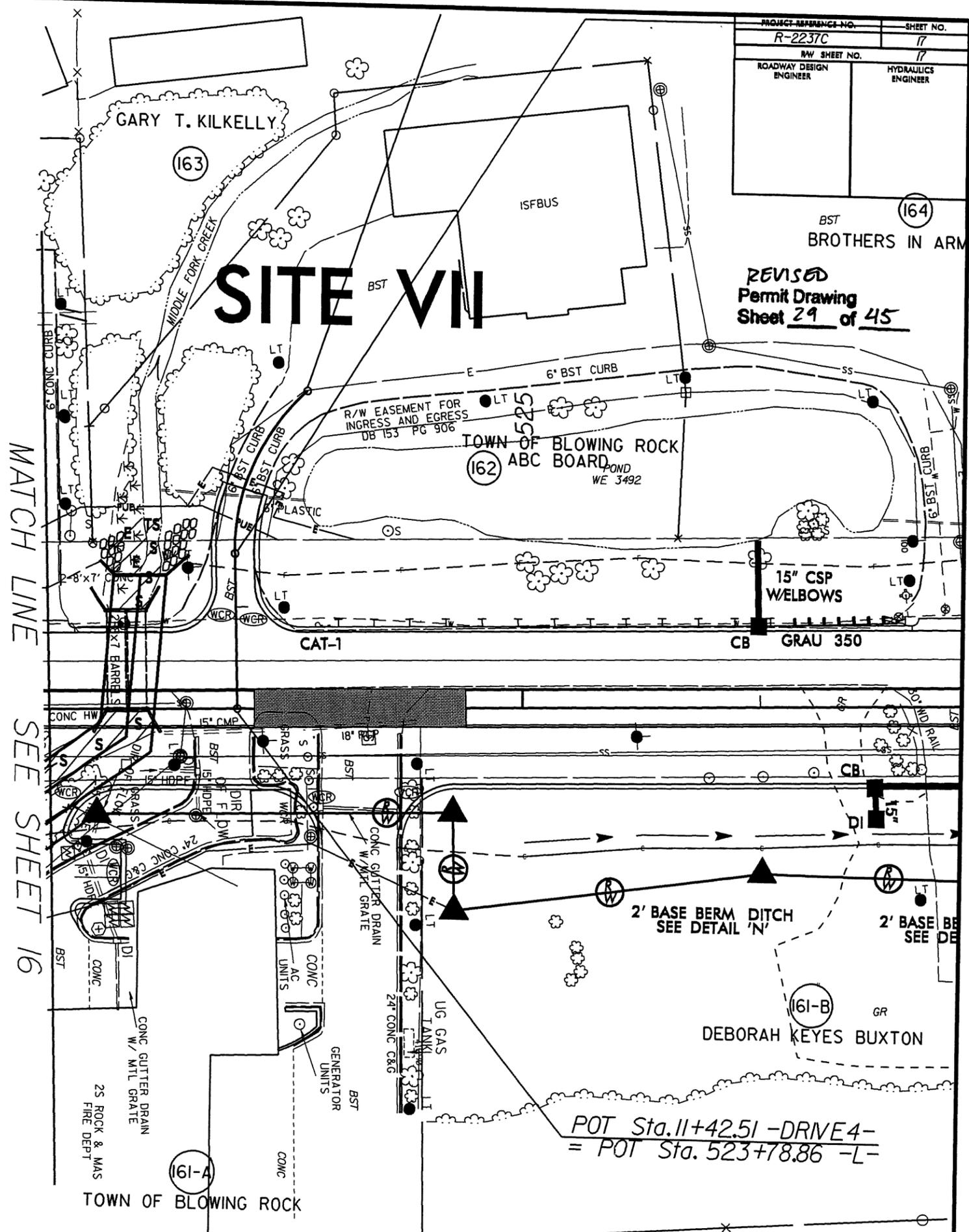
MATCH LINE SEE SHEET 18

 SYSTEMS DESIGN

5/14/95

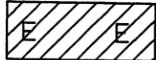
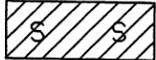


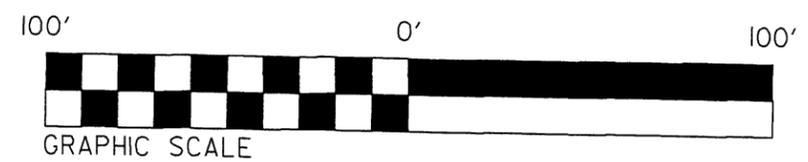
PROJECT REFERENCE NO. R-2237C	SHEET NO. 17
R/W SHEET NO. 17	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER



BST BROTHERS IN ARM (164)

REVISED Permit Drawing Sheet 29 of 45

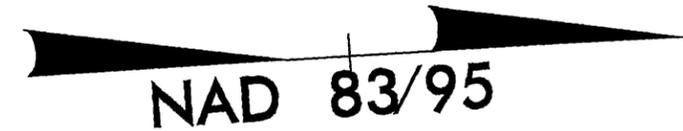
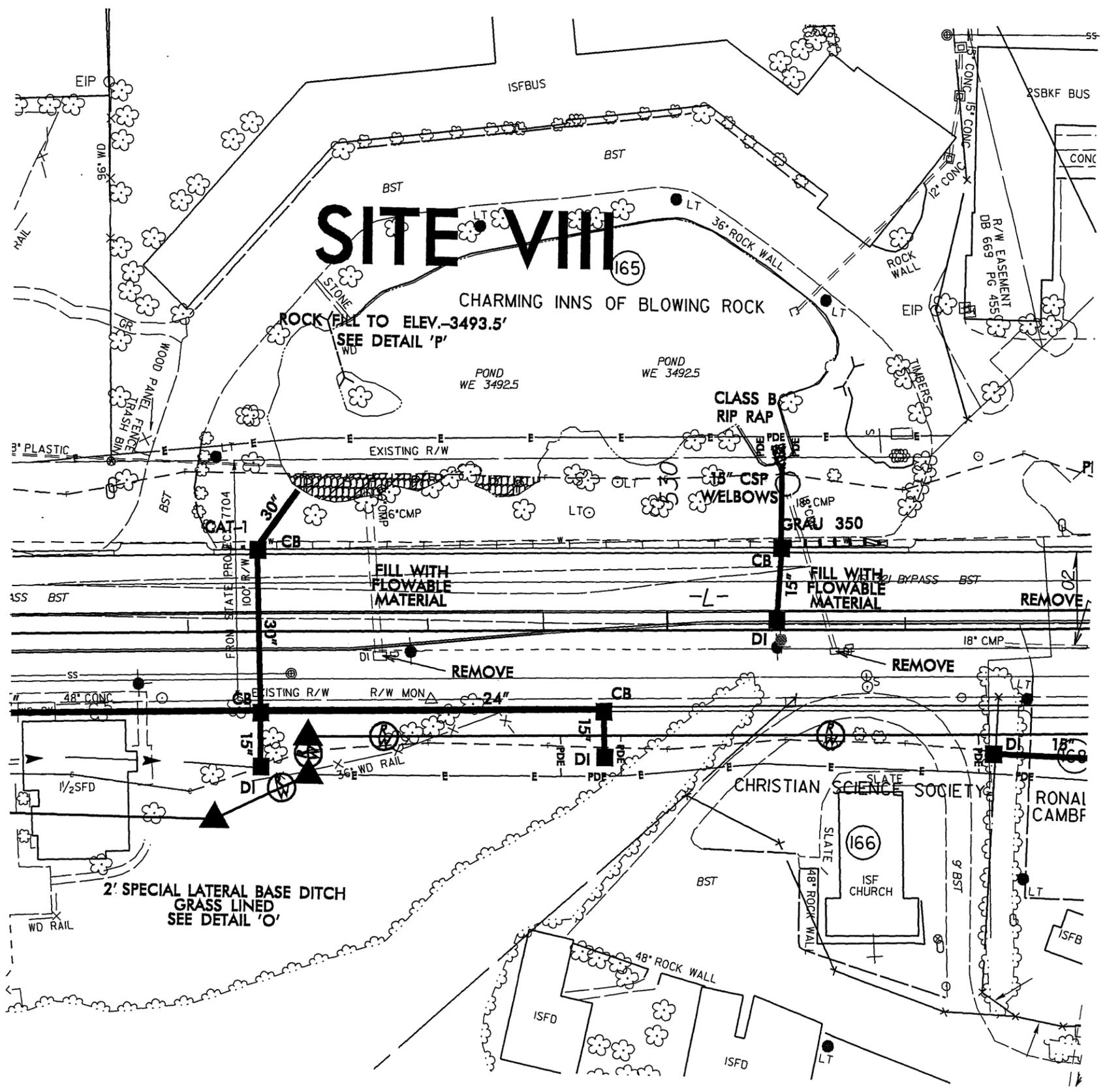
-  DENOTES EXCAVATION IN WETLAND
-  DENOTES IMPACTS IN SURFACE WATER
-  DENOTES TEMPORARY IMPACTS IN SURFACE WATER



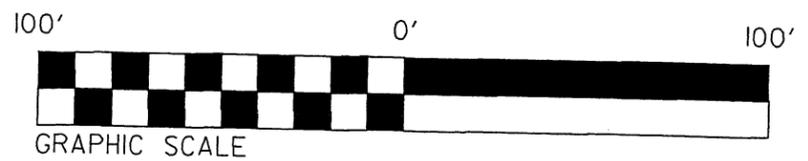
MATCH LINE SEE SHEET 16

POT Sta. 11+42.51 -DRIVE 4-
= POT Sta. 523+78.86 -L-

SYSTEMS DESIGN



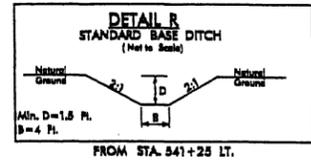
 DENOTES IMPACTS IN SURFACE WATER (POND)



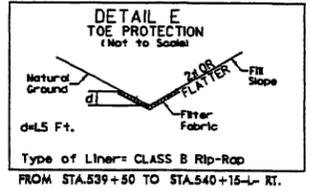
04-JAN-2010 15:59
 permits_erp\p\2237c\drawings\2237c_rdl.psh\7x2e.dgn

DATE: JUL 10	
RWY SHEET NO. 18	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

REVISED 10-5-10
 Permit Drawing
 Sheet 31 of 45

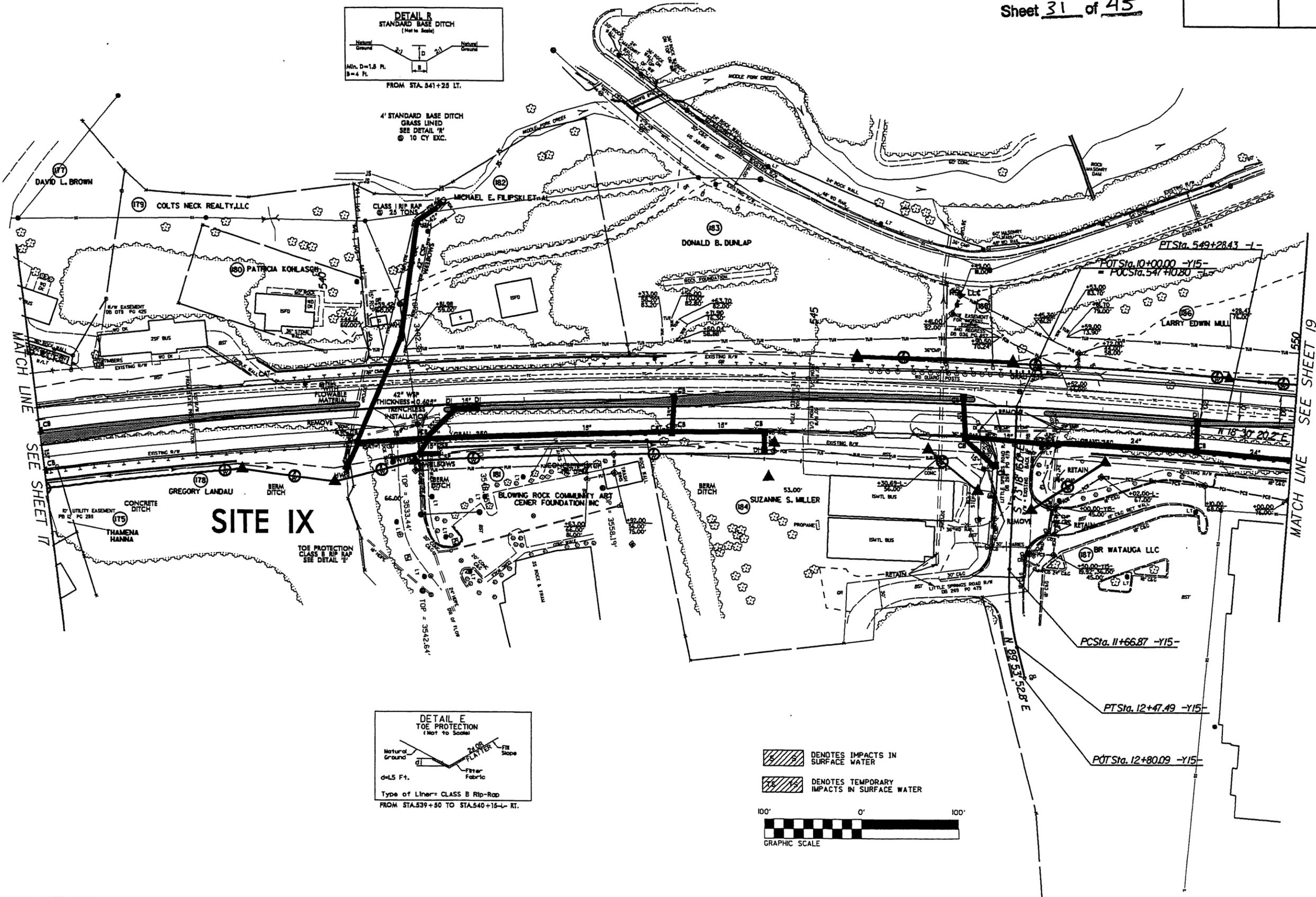
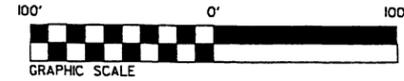


4' STANDARD BASE DITCH
 GRASS LINED
 SEE DETAIL 'R'
 @ 10 CY EXC.



Type of LIner= CLASS B Rip-Rap
 FROM STA. 539+50 TO STA. 540+15- RT.

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



REVISIONS

MATCH LINE
SEE SHEET 7

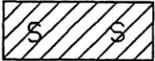
MATCH LINE
SEE SHEET 19

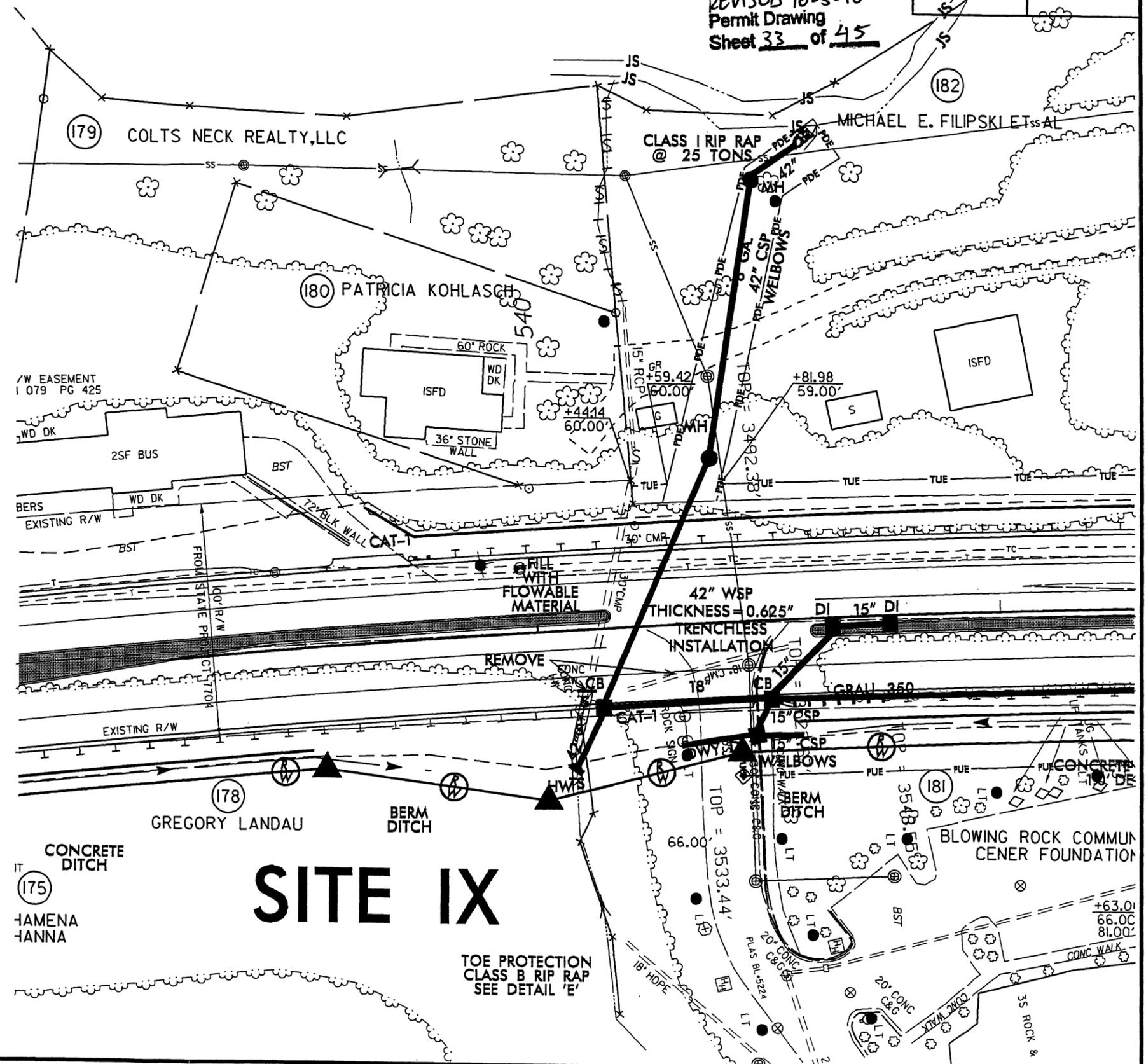
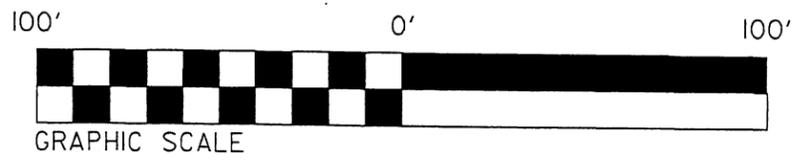
SYSTEMS TIME SIGNATURE

R-2237C	18
R/W SHEET NO.	18
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

4' STANDARD BASE DITCH
GRASS LINED
SEE DETAIL 'R'
@ 10 CY EXC.
REVISED 10-5-10
Permit Drawing
Sheet 33 of 45

NAD 83/95

 DENOTES IMPACTS IN SURFACE WATER
 DENOTES TEMPORARY IMPACTS IN SURFACE WATER



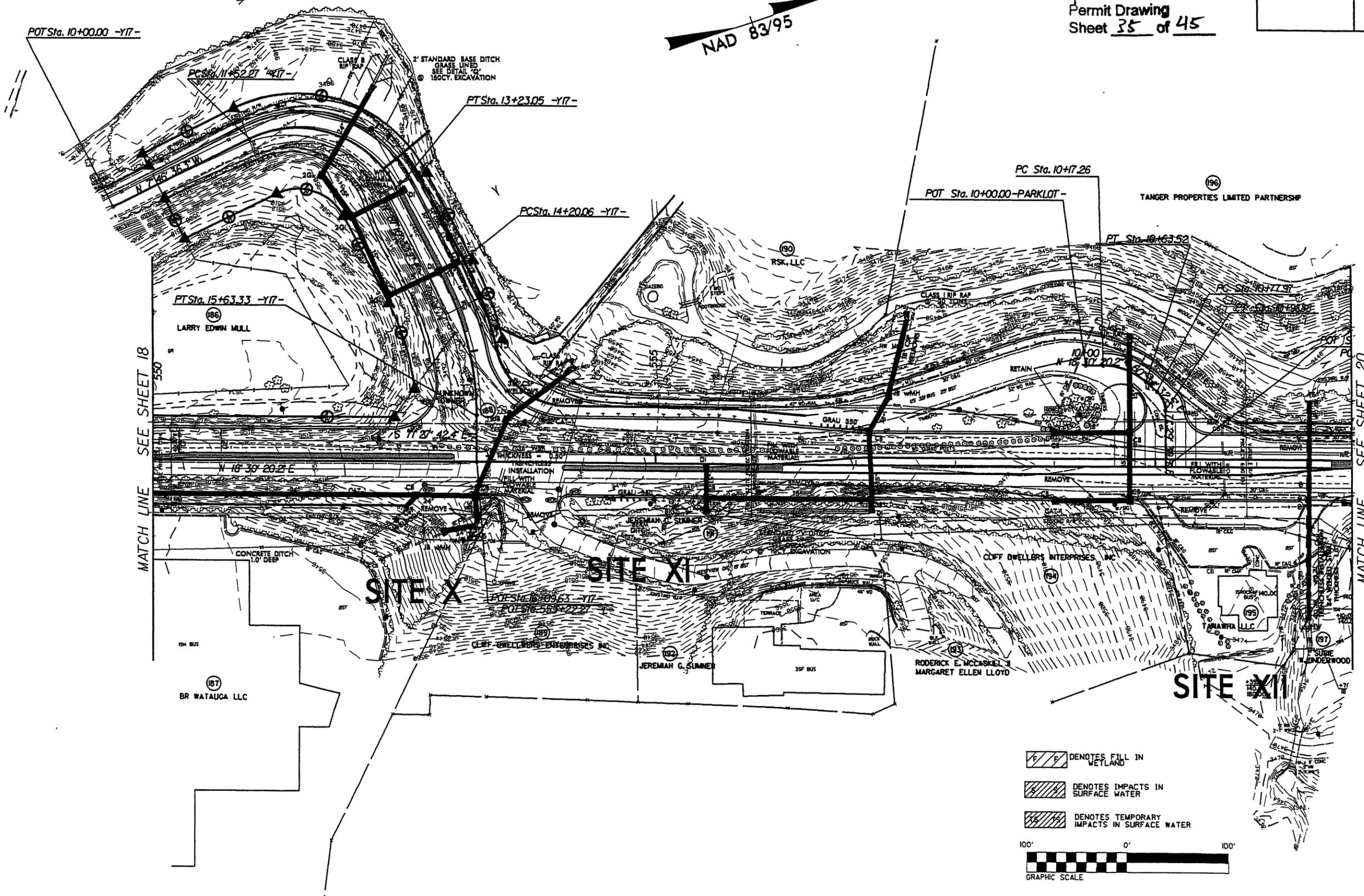
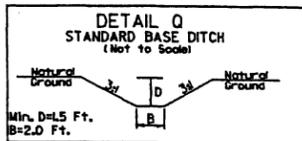
SITE IX

SYSTEMS

NOTE: SEE SHEET 29 FOR -L- PROFILE
 SEE SHEET 33 FOR -Y17- PROFILE
 SEE SHEET 2-1 FOR -Y17-/-L- INTERSECTION DETAIL

R-2237C	
RW SHEET NO. 19	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

REVISED 10-5-10
 Permit Drawing
 Sheet 35 of 45



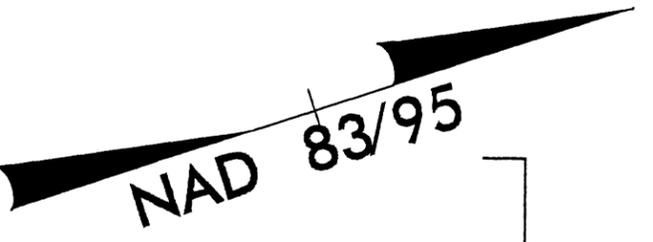
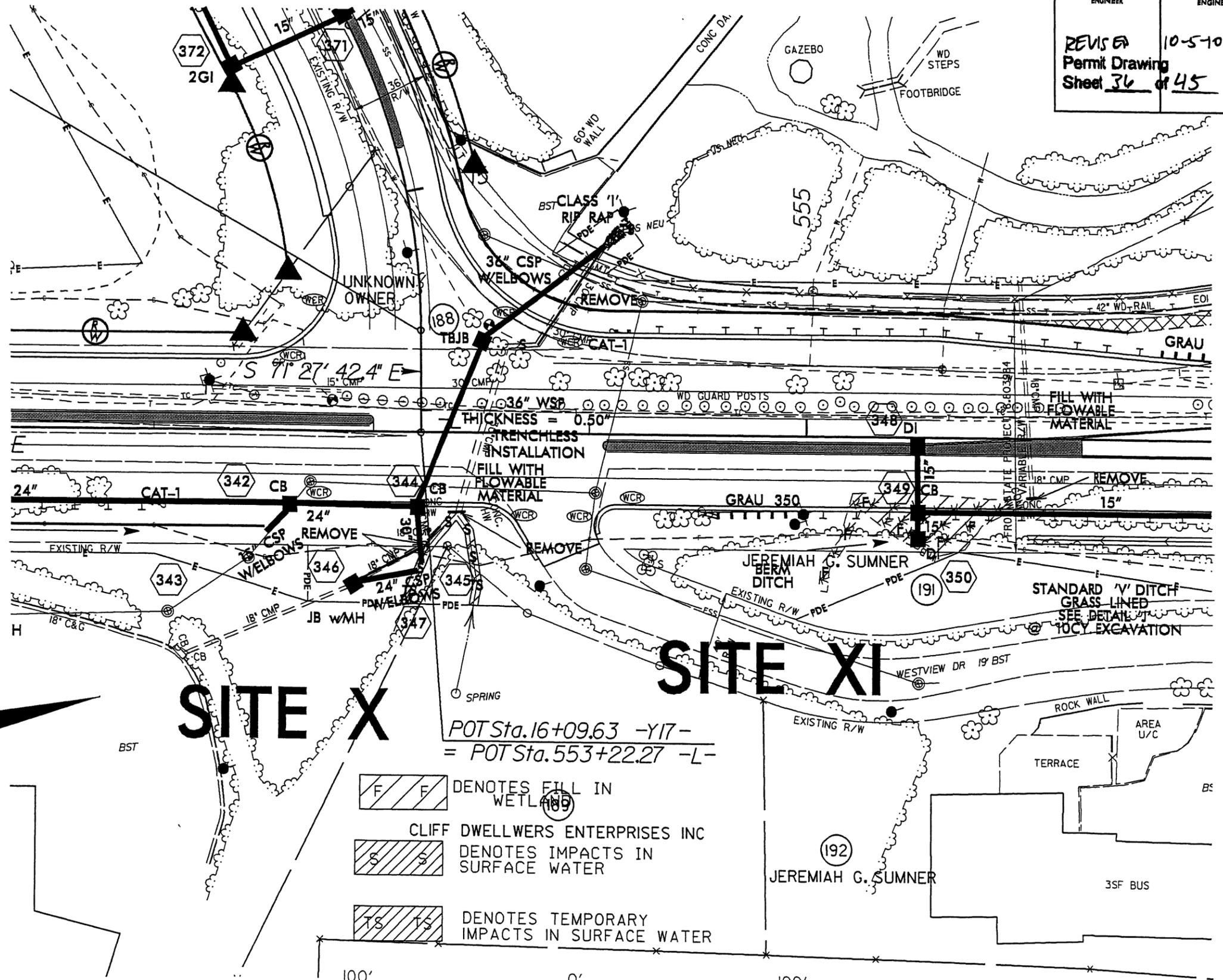
- DENOTES FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



SYSTEMS
 DESIGN
 GROUP
 5/14/10

PROJECT REFERENCE NO. R-2237C	SHEET NO. 19
R/W SHEET NO. 19	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
REVIS 6	10-5-10
Permit Drawing	Sheet 36 of 45

MATCH LINE SEE SHEET 18

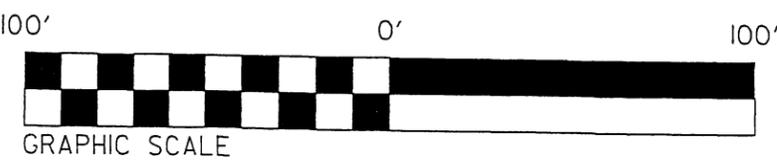


SITE X

SITE XI

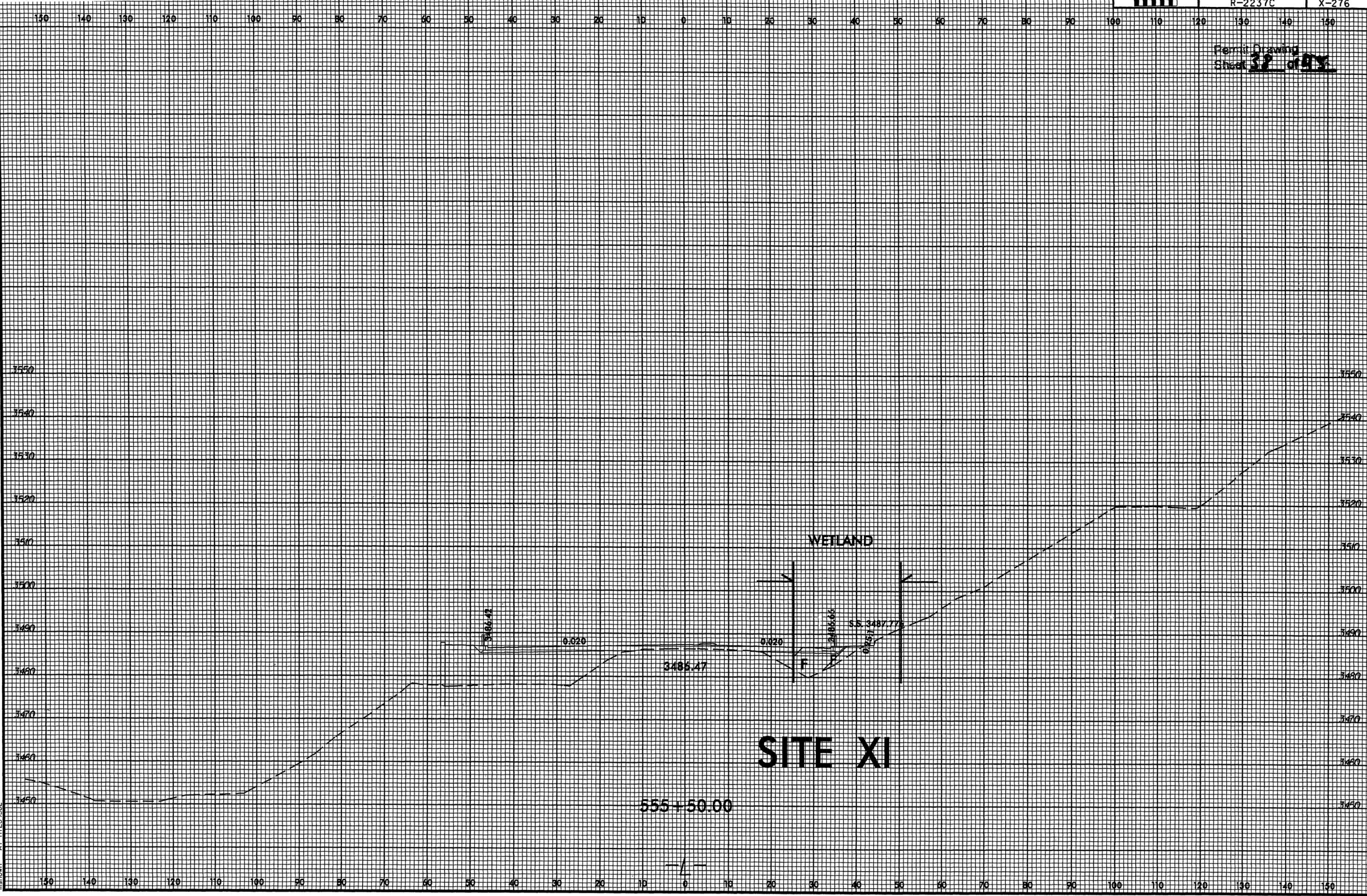
POT Sta. 16+09.63 -Y17-
= POT Sta. 553+22.27 -L-

- DENOTES FILL IN WETLAND (189)
- CLIFF DWELLERS ENTERPRISES INC DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER



***** SYSTEM TIME *****
***** DATE/TIME *****

Permit Drawing
Sheet 32 of 41



04-JAN-2010 16:43
m:\shawn\environmental\drawings\2237c_hyd_xpl.dgn

3510

± 523+33.51 -L-
2@ 11' X 8' RCBC
GRADE PT. ELEV. 3505.26'
SKEW = 96°

3500

2:1
NORMAL

VARIABLE

▽ 50 YR WSEL 3501.6'

▽ NWS 3497.0'

3490

± INV ELEV. 3493.41
SLOPE 0.018 FT./FT.

3480

NOTE: BURY INLET
AND OUTLET ONE FOOT. PLACE
SILS IN INLET AND OUTLET
ACROSS BOTH BARRELS.

200

150

100

50

±

50

100

150

200

PROFILE

SITE VII

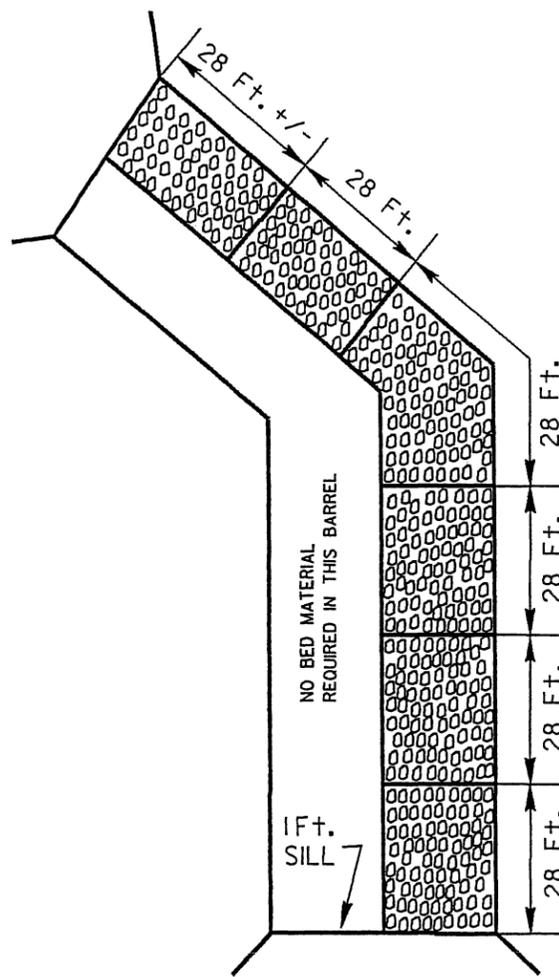
NCDOT
DIVISION OF HIGHWAYS
CALDWELL / WATAUGA CO.
PROJECT: 344021.1 (R-2237C)
US 321 FROM SR 1500 TO
US 221 AT BLOWING ROCK

SHEET

OF

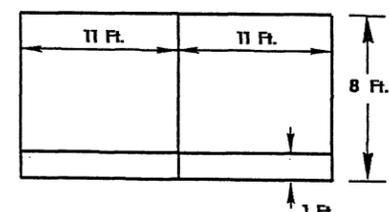
1 / 5 / 10

Permit Drawing
Sheet 59 of 45



NOTES:

1. Bed material placed in the culvert shall be natural stone with a gradation size similar to that of Class 'B' riprap. Bed material is subject to approval by the Engineer.
2. Sills are to be 1.0 Ft. wide and cast separately and attached by dowels.
3. Top of sill should match stream bed elevation in stream.



DETAIL OF SILLS AT INLET AND OUTLET (not to scale)

DETAIL OF SILLS

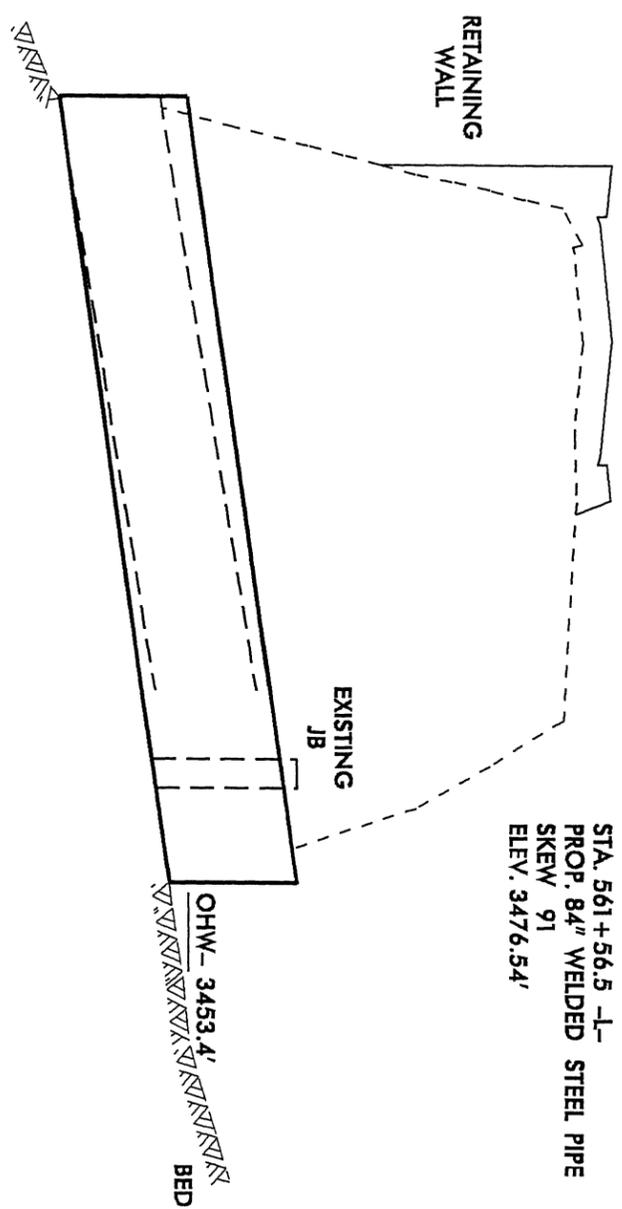
-L- STA. 523 +33.51
 2 @ 11 Ft. X 8 Ft. RCBC
 MIDDLE FORK
 (not to scale)

NCDOT
 DIVISION OF HIGHWAYS
 WATAUGA COUNTY
 PROJECT: 34402.L1 (R-2237C)
 US 321 FROM SR 1500
 TO US 221 AT
 BLOWING ROCK

SHEET OF 9/30/09

REVISED 10-5-10
 Permit Drawing
 Sheet 40 of 45

STA. 561+56.5 -L-
PROP. 84" WELDED STEEL PIPE
SKEW 91
ELEV. 3476.54'



3470'
3460'
3450'
3440'

150' 100' 50' 50' 100' 150' 200' 250'

SITE XII PROFILE

NCDDOT
DIVISION OF HIGHWAYS
CALDWELL/WATAUGA CO.
PROJECT: 34402.11 (R-2237C)
US 321 FROM SR 1500
TO US 291 AT
BLOWING ROCK

SHEET OF DRAWING
41 of 95
9/2/09

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
32	DONALD FABIAN VINCENT	315 CAMELTOWN HILL RD. DANVILLE, PA 17821
36	NEAL C. FORD	4708 BILLS LANE LENOIR, NC 28645
62	BLOWING ROCK COUNTRY CLUB	P.O. BOX 628 BLOWING ROCK, NC 28605
65	BLOWING ROCK IMPROVEMENT CO.	P.O. BOX 905 BLOWING ROCK, NC 28605
66	LEE OVAL JAYNES	314 HUFFMAN ST. MORGANTON, NC 28655
	NCDOT	P.O. BOX 250 NORTH WILKESBORO, NC 28659
130	GEORGE H. HAMPTON	P.O. BOX 1849 BLOWING ROCK, NC 28605
160	RICHARD W. GRAGG	P.O. BOX 12 BLOWING ROCK, NC 28605
161-A	TOWN OF BLOWING ROCK	1036 MAIN ST. BLOWING ROCK, NC 28605
162	TOWN OF BLOWING ROCK ABC BOARD	7960 VALLEY BLVD. BLOWING ROCK, NC 28605
164	BROTHERS IN ARMS LLC	226 MULBERRY ST. NW LENOIR, NC 28645
165	CHARMING INNS OF BLOWING ROCK	18 BROAD ST. (SUITE 400) CHARLESTON, SC 29401
178	GREGORY LANDAU	16425 COLLINS AVE. (APT. 291) NORTH MIAMI BEACH, FL 33160
181	BLOWING ROCK COMMUNITY ART CENTER FOUNDATION INC.	P.O. BOX 1009 BLOWING ROCK, NC 28605

NCDOT

DIVISION OF HIGHWAYS
CALDWELL / WATAUGA CO.
PROJECT: 34402.1.1 (R-2237C)
US 321 FROM SR 1500
TO US 221 AT
BLOWING ROCK

SHEET OF 1 / 24 / 09

Permit Drawing
Sheet 42 of 45

PROPERTY OWNERS

NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES
182	MICHAEL FILIPSKI	7890 EVERSFIELD RD. STOKESDALE, NC 27357
187	BR WATAUGA LLC	600 GREEN VALLEY RD. (SUITE 202) GREENSBORO, NC 27404
189	CLIFF DWELLERS ENTERPRISES INC.	5885 N. ROSE BARK WAY BEVERLY HILLS, FL 33465
191	JEREMIAH G. SUMNER	P.O. BOX 2125 BLOWING ROCK, NC 28605
195	TANAWHA LLC	P.O. BOX 2701 BLOWING ROCK, NC 28605
197	SUSIE W. UNDERWOOD	148 POSSUM HOLLOW RD. BLOWING ROCK, NC 28605

NCDOT

DIVISION OF HIGHWAYS
CALDWELL/ WATAUGA CO.

PROJECT: 34402.1.1 (R-2237C)

US 321 FROM SR 1500

TO US 221 AT
BLOWING ROCK

SHEET OF 11/24/09

Submit Drawing
Sheet 43 of 45

