



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

August 3, 2011

MEMORANDUM TO: Mr. Tim Johnson, PE
Division 8 Engineer

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

SUBJECT: Moore County; Widening of NC 211 from north of NC 73 in West
End to traffic circle east of SR 1208 in Pinehurst; Federal-Aid No.
STP-0211(26); W.B.S. No. 34504.1.1
T.I.P. Project No. R-2812

Attached are the U.S. Army Corps of Engineers Section 404 Individual Permit, N.C. Division of Water Quality Section (DWQ) 401 Water Quality Certification, and NC DWQ Section 401 Letter of Correction 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. Art King, 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
Mr. Eric Midkiff, P.E., PDEA Central Region Unit Head
Ms. Beth Harmon, EEP
Mr. Phillip Ayscue, NCDOT External Audit Branch

PROJECT COMMITMENTS

TIP Project R-2812
Widen NC 211 from NC 73 in West End to the traffic circle in Pinehurst
Moore County
Federal Project No. STP-211(5)
WBS Element 34504.1.1

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

GeoEnvironmental Section

Based on field reconnaissance and a database search, fourteen (14) sites were identified that could pose environmental concerns for the proposed project. Of these, ten (10) were underground storage tank (UST) facilities, three (3) were other potentially contaminated properties, and one (1) was a Superfund Site. The Geographical Information Service (GIS) was consulted for the project corridor. The research shows that no regulated or unregulated landfills or dumpsites occur within the project limits. If further design studies indicate right of way from these properties needs to be acquired, preliminary site assessments for soil and groundwater contamination will be performed prior to right of way purchase.

Potential contaminated properties were evaluated for soil and groundwater contamination prior to the purchase of right of way. Findings and recommendations were provided in a memo dated October 19, 2009.

Project Development and Environmental Analysis Branch, Roadway Design Unit, Program Development-Municipal Agreements

The Village of Pinehurst has requested sidewalks along NC 211 from SR 1210 (Beulah Church Hill Road) to the traffic circle in Pinehurst. Written requests from the Village of Pinehurst for the incorporation of sidewalks have been received. NCDOT will share the construction costs for sidewalks along both sides of NC 211, from SR 1210 (Beulah Church Hill Road) to the traffic circle, on an 80/20 cost sharing basis with the Village of Pinehurst. The Village of Pinehurst will be responsible for the maintenance and liability of the sidewalks once constructed. A municipal agreement between NCDOT and the Village of Pinehurst will be required prior to the construction of the sidewalks.

The Village of Pinehurst has requested sidewalks on both sides of NC 211 from the traffic circle to SR 1210 (Beulah Church Hill Road) and on the south side from Beulah Hill Church Road to Glasgow Drive. If Moore County agrees to participate in the cost and maintenance of sidewalks on the north side of NC 211 from Beulah Hill Church Road to Archie Road, the curb and gutter section can begin at Archie Road with the approval of the environmental agencies.

Pedestrian crossings and sidewalks can be considered at NC 73 if Moore County agrees to participate in the cost and maintenance.

Based on a written agreement with the Village of Pinehurst, signed on February 8, 2011, Sidewalks will be constructed from Beulah Hill Church Rd to Page Rd on the south side and from Beulah Hill Church Rd to Aviemore Drive on the north side.

Roadway Design and Traffic Engineering

NCDOT will investigate the queues to determine if a cross-over is warranted between the intersections of Archie Road and Horner Lane. If it is not feasible to have cross-overs at the requested locations, two U-turn cross-overs exclusively designed for a WB-50 truck will be recommended.

As result of the investigation into the queuing of vehicles at the intersections of Archie Road and Horner Lane, an exclusive WB-50 U-turn cross over was added to the final roadway design around -L- station 85+00 at the approximate location of Hoffman Road and Archie Road intersections. The second WB-50 truck turn around will be the traffic circle in Pinehurst.

Roadway Design Unit and Division 8

Yadkin Road Markers # 1 and # 2 are located outside of the proposed right of way. If upon completion of the proposed project, the road markers are determined to be a safety hazard NCDOT will consult with the State Historic Preservation Office (SHPO) to determine an appropriate course of action.

No further action is required at this time.

Roadway Design Unit, Traffic Engineering and Division 8

The intersection of NC 211 and Juniper Lake Road (SR1216) will be converted from being a stop sign controlled to a signal controlled intersection. This project has been added to the Spot Safety "On Hold" for funding for the signal.

This signal has been installed and will be upgraded if necessary to accommodate R-2812 project.

Project Development and Environmental Analysis Branch, Roadway Design Unit, Program Development-Municipal Agreements

NCDOT investigated the Village of Pinehurst's request for the inclusion of three (3) pedestrian tunnels along NC 211. NCDOT will share in the construction costs for one (1) pedestrian tunnel along NC 211 on an 80/20 cost sharing basis with the Village of Pinehurst. The Village of Pinehurst will be required to accept responsibility for the maintenance and liability of the tunnel once it is constructed. A municipal agreement between NCDOT and the Village of Pinehurst will be required prior to the construction of the tunnel. The pedestrian tunnel will be located just east of the intersection of NC 211 and Rattlesnake/Gun Club Road. This location will allow the pedestrian tunnel to link the area north of NC 211, which is primarily residential development, to the Rassie Wicker Park located immediately south of NC 211 in the vicinity of this intersection. The estimated construction cost for this tunnel is \$275,000.

Since the completion of the environmental assessment, there has been additional coordination between Roadway and the Village of Pinehurst concerning the location of the pedestrian tunnel. On April 13, 2006, representatives from Roadway Design and Hydraulics conducted an on site meeting with Mr. Jay Gibson, Village of Pinehurst Director of Engineering, to explain why the requested locations were not conducive for placement of a pedestrian tunnel. The topography in close proximity to Rattlesnake Trail prohibits the placement of a pedestrian tunnel without the emplacement of pumps to remove stormwater. A consensus was reached in the field that a more feasible location for a pedestrian tunnel would be in proximity to the Memorial Drive intersection. After the field meeting the Village of Pinehurst indicated via letter, the preferred location for a pedestrian tunnel is in the area of Rattlesnake Trail. NCDOT, Roadway Design, noted that the following conditions should be satisfied before considering a pedestrian tunnel in the area of the Rattlesnake Trail intersection:

- NCDOT will start design of the pedestrian tunnel (underpass) once a municipal agreement is executed.
- The Village of Pinehurst will be responsible for all costs associated with the design, construction and maintenance of the pumps.
- The Village of Pinehurst will assume all liability.
- Design of the pumps and grades on the underpass should be completed and provided to Roadway Design and the Hydraulics Unit no later than four months before the completion of the hydraulic design for the proposed project. The drainage design is scheduled for completion by October 2007; the pump and grade designs should be completed and submitted to the aforementioned NCDOT units not later than July 2007.
- As per the Pedestrian Policy Guidelines, Pinehurst is responsible for a percentage of the cost of the underpass. The percentage will be determined by the population of Pinehurst at the time of executing the agreement. The Village of Pinehurst will be responsible of 100% of all cost and maintenance of the pumps; will donate all required additional right of way and easement necessary to construct the underpass and ramps.

- Other conditions from NCDOT or from Pinehurst may be added as the agreement develops.

At the request of the Village of Pinehurst, due to the proposed costs, the pedestrian tunnel was not included in the project design.

Project Development and Environmental Analysis Branch (Office of Natural Environment)

An updated survey of the Michaux's sumac will be conducted prior to construction.

Survey updates are scheduled for August 2011.

Roadside Environmental Unit, Program Development Branch, and Division 8

The Village of Pinehurst is interested in introducing special landscaping in the median along NC-211. NCDOT will continue to correspond with the Village of Pinehurst through the final design. A municipal agreement will be required between the Village of Pinehurst and NCDOT for maintenance and landscaping purposes.

Division 8 and Roadside Environmental Unit are in contact with the Village of Pinehurst regarding landscaping in the median.

Roadway Design, Congestion Management and Division 8

NCDOT will determine whether to signalize NC 211 / Memorial Drive intersection prior to construction.

This signal has been installed and will be upgraded, if necessary, to accommodate R-2812 project.

Division 8 and Roadside Environmental Unit

In order to preserve the red-cockaded woodpecker habitat, no unnecessary cutting of any pine trees ten (10) inches or greater in diameter at breast height, beyond slope stake limits is to occur between the following stations: 96+00 thru 15+00, 214+00 thru 264+00, 285+00 thru 329+00 and 339+00 thru 415+00.

PDEA-HEU, Rail Division, Roadway Design and Division 8

Closing the railroad crossing at SR 1180 (Edgewood Terrace) will be considered during final design. Ed Lewis, NCDOT-PDEA-HEU, in coordination with the Rail Division will initiate a meeting with property owners in the vicinity of the railroad crossing at SR 1180 (Edgewood Terrace) to determine the most effective means.

meeting with property owners in the vicinity of the railroad crossing at SR 1180 (Edgewood Terrace) to determine the most effective means.

Edgewood Terrace crossing has been eliminated and this entrance / exit has been removed from the plans.

COMMITMENTS FROM PERMITTING

Division 8

At locations where ponds will be drained, proper measures will be taken to drain the pond with limited impact to upstream and downstream channel stability as well as to native aquatic species. Proper measures will be taken to avoid sediment release and/or sediment accumulation downstream as a result of pond draining. If typical pond draining techniques will create significant disturbance to native aquatic species, additional measures such as collection and relocation may be necessary to prevent a significant fish kill. NCDOT shall consult with NC Wildlife Resources staff to determine if there are any sensitive species, and the most appropriate measures to limit impacts to these species, NCDOT shall observe any natural channel re-establishment, or utilize natural channel construction techniques, to ensure that the jurisdictional stream channel above and below the drained pond remain stable, and that no additional impacts occur within the natural stream channel as a result of draining the pond.

During dewatering activities at Site I flow shall be maintained through the pond.

During construction NCDOT Division 8 will put orange fencing around RCW cavity trees located within the right-of-way (cavity tree #s 357E and 1839). RCW cavity trees will be marked and GPS coordinates and a "do not disturb" message will be placed on design plans.

At Site 4, where 14 linear feet of stream will be impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species.

Division 8 and Roadside Environmental Unit

With the exception of creeping red fescue (*Festuca rubra*), tall fescue shall not be used in the establishment of temporary or permanent groundcover within the riparian areas. For the establishment of permanent herbaceous cover, erosion control matting shall be used in conjunction with appropriate seeding 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 any nylon mesh grid, which can impinge and trap 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

R-2812 Permit Greensheet

July 2011

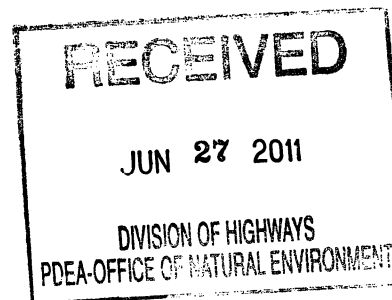
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conjunction with the erosion control measures. Discharging hydroseed mixtures and wood or cellulose mulch into surface waters is prohibited. Riparian areas are defined as a distance 25 feet landward from top of stream bank.



REPLY TO
ATTENTION OF:

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



June 22, 2011

Regulatory Division

Action ID : 1998-02180; NC 211 Widening from north of NC 73 in West End to east of SR 1208 in Pinehurst, Moore County, Transportation Improvements Project Number R-2812, State Permit Number 8.1560601

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 discharge dredged and or fill material into 388 linear feet of stream channel, 0.13 acres of open waters and 1.9 acres of wetlands to facilitate the widening of NC 211 from north of NC 73 in West End to east of SR 1208 in Pinehurst, Moore County, North Carolina.

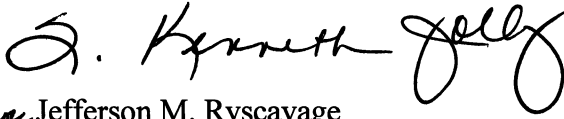
Any deviation in the authorized work will likely require modification of this permit. If a change in the authorized work is necessary, you should promptly submit revised plans to the Corps showing the proposed changes. You may not undertake the proposed changes until the Corps notifies you that your 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.
- 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.
- c. 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. Ronnie Smith, Wilmington Regulatory Field Office, at telephone (910) 251-4829.

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
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

RECEIVED

JUN 20 2011

REG. WILM. FLD. OFC.

Permittee North Carolina Department of Transportation/R-2812

Permit No. SAW-1998-02180

Issuing Office USAED, WILMINGTON

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 that office acting under the authority of the commanding officer.

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

Project Description: to discharge dredged and or fill material into 388 linear feet of stream channel, 0.13 acres of open waters and 1.9 acres of wetlands to facilitate the widening of NC 211 from north of NC 73 in West End to east of SR 1208 in Pinehurst, Moore County, North Carolina.

Project Location: The proposed project is widening of NC 211 from north of NC 73 in West End to east of SR 1208 in Pinehurst, Moore County, North Carolina.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **December 31, 2016** 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 Condition 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 is eligible for listing in the National Register of Historic Places.

ENG FORM 1721, Nov 86

EDITION OF SEP 82 IS OBSOLETE.

(33 CFR 325 (Appendix A))

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 33 CFR 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 measures 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. Luck for Gregory J. Thompson PhD July 17, 2011
 (PERMITTEE) NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (DATE)

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

S. Kenneth Jolly 6/22/11
 (DISTRICT ENGINEER) JEFFERSON M. RYSCAVAGE, COLONEL (DATE)

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.

 (TRANSFEREES) (DATE)

SPECIAL CONDITIONS (Action ID. 2008-02927, NC 211 Widening from north of NC 73 in West End to east of SR 1208 in Pinehurst, Moore County, Transportation Improvement Project Number R-2812, State Permit Number 8.1560601)

1. Failure to institute and carry out the details of the following special conditions below will result in a directive to cease all ongoing and permitted work within waters 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.
2. All work authorized by this permit must be performed in strict compliance with the attached plans, which are a part of this permit. Any modification to these plans must be approved by the US Army Corps of Engineers (USACE) prior to implementation.
3. The permittee shall schedule a preconstruction meeting between its representatives, the contractor's representatives, and the Corps of Engineers, Mr. Ronnie Smith, Wilmington Regulatory Field Office, 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 notify the Corps of Engineers Project Manager a minimum of thirty (30) days in advance of the scheduled meetings in order to provide that individual with ample opportunity to schedule and participate in the required meetings. One copy of the final half-size construction drawings shall be furnished to the Corps of Engineers, Mr. Ronnie Smith, Wilmington Regulatory Field Office prior to the pre-construction meeting.
4. The permittee shall 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 Engineers, Mr. Ronnie Smith, Wilmington Regulatory Field Office prior to any active construction in waters or wetlands.
5. The permittee shall require its contractors and/or agents to comply with the terms and conditions of this permit in the construction and maintenance of this project, and shall provide each of its contractors and/or agents associated with the construction or maintenance of this project with a copy of this permit and any authorized modifications. Copies of this permit and any modifications authorized by the USACE shall be available for review at the construction site at all times. All violations, including non-compliance of these conditions, of the authorized permit shall be reported to the District Engineer within 24 hours of the violation.
6. Compensatory mitigation for the unavoidable impacts to 1.9 acres of riparian wetlands and 388 linear feet of stream associated with the proposed project shall be provided by the Ecosystem Enhancement Program (EEP), as outlined in the letter dated April 26, 2011 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 3.29 acres of restoration equivalent riparian wetlands and 592 linear feet of restoration equivalent warm water stream channel in the Cape Fear River Basin (Hydrologic Cataloging Unit 03030004) in accordance with Section F of the instrument."

Action ID. 1998-02180, NC 211 Widening from north of NC 73 in West End to east of SR 1208 in Pinehurst, Moore County, Transportation Improvement Project Number R-2812, State Permit Number 8.1560601

7. Except as authorized by this permit or any USACE approved modification to this permit, no excavation, fill, or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, within waters or wetlands, or shall any activities take place that cause the degradation of waters or wetlands. There shall be no excavation from, waste disposal into, or degradation of, jurisdictional wetlands or waters associated with this permit without appropriate modification of this permit, including appropriate compensatory mitigation. This prohibition applies to all borrow and fill activities connected with this project. In addition, except as specified in the plans attached to this permit, no excavation, fill or mechanized land-clearing activities shall take place at any time in the construction or maintenance of this project, in such a manner as to impair normal flows and circulation patterns within, into, or out of waters or wetlands or to reduce the reach of waters or wetlands.

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

9. To ensure that all borrow and waste activities occur on high ground and do not result in loss or 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 ensure that all such areas comply with the preceding condition (#7) of this permit, and shall require and maintain documentation of the location and characteristics of all borrow and disposal sites associated with this project. This information will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with the preceding condition (#7). All information will be available to the Corps of Engineers upon request. NCDOT shall require its contractors to complete and execute reclamation plans for each waste and borrow site and provide written documentation that the reclamation plans have been implemented and all work is completed. This documentation will be provided to the Corps of Engineers within 30 days of the completion of the reclamation work.

10. The permittee shall comply with the conditions specified in the water quality certification, No. 3854, issued by the North Carolina Division of Water Quality on April 27, 2011. The water quality certification is attached for your convenience.

11. The permittee shall use appropriate sediment and erosion control practices which equal or exceed those outlined in the most recent version of the "North Carolina Sediment and Erosion Control Planning and Design Manual" to assure compliance with the appropriate turbidity water quality standard. 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 assure compliance with the appropriate turbidity water

Action ID. 1998-02180, NC 211 Widening from north of NC 73 in West End to east of SR 1208 in Pinehurst, Moore County, Transportation Improvement Project Number R-2812, State Permit Number 8.1560601

quality standards. 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). Adequate sedimentation and erosion control measures must be implemented prior to any ground disturbing activities to minimize impacts to downstream aquatic resources. These measures must be inspected and maintained regularly, especially following rainfall events. All fill material must be adequately stabilized at the earliest practicable date to prevent sediment from entering into adjacent waters or wetlands.

12. 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.

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

14. The permittee shall take measures to control any bottom sediment that may be sluiced by draining the ponds on the project site. Sediment sluicing from ponds is not authorized by this permit.

15. The permittee shall install barrier fencing or other acceptable forms of barrier around all wetlands that are not to be disturbed to make them readily visible and prevent construction equipment from inadvertently entering and disturbing the wetland areas that are to remain undisturbed.

16. 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. No equipment staging or storage of construction material will occur in wetlands. Hydro-seeding equipment will not be discharged or washed out into any surface waters or wetlands. 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 (800) 858-0368 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

17. The permittee shall abide by the project commitments identified in the FHWA/NCDOT EA and FONSI that pertain to historic properties and threatened and endangered species.

Action ID. 1998-02180, NC 211 Widening from north of NC 73 in West End to east of SR 1208 in Pinehurst, Moore County, Transportation Improvement Project Number R-2812, State Permit Number 8.1560601

18. If the permittee discovers any previously unknown historic or archeological sites while accomplishing the authorized work, he shall immediately stop work and notify the Wilmington District Engineer who will initiate the required State/Federal coordination.

19. The permittee shall maintain the authorized work in good condition and in conformance with the terms and conditions of this permit. The permittee is not relieved of this requirement if he abandons the permitted activity without transferring it to a third party.

20. 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.

21. A representative of the Corps of Engineers will periodically and randomly inspect the work for compliance with these conditions. Deviations from these procedures may result in cessation of work until the problem is resolved to the satisfaction of the Corps.

22. This Department of the Army permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

23. In issuing this permit, the Federal Government does not assume any liability for:

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 Federal activities initiated on behalf of the general public.

c. Damages to other permitted or un-permitted activities or structures caused by the authorized activity.

d. Design and construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension, or revocation of this permit.



North Carolina Department of Environment and Natural Resources

Division of Water Quality
Coleen H. Sullins
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

April 27, 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

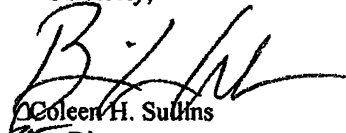
Subject: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with
ADDITIONAL CONDITIONS for Proposed widening of NC 211 from north of NC 73 in West End to
east of SR 1208 (traffic circle) in Pinehurst in Moore County, Federal Aid Project No. STIP 211(5),
State Project No. 8.1560601, TIP R-2812.
NCDWQ Project No. 20110136v.1

Dear Dr. Thorpe:

Attached hereto is a copy of Certification No. 3854 issued to The North Carolina Department of Transportation
(NCDOT) dated April 27, 2011.

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

Sincerely,



Coleen H. Sullins
Director

Attachments

cc: Ronnie Smith, US Army Corps of Engineers, Wilmington Field Office
Tim Johnson, PE, Division 8 Engineer
Art King, Division 8 Environmental Officer
Chris Militscher, Environmental Protection Agency
Travis Wilson, NC Wildlife Resources Commission
Beth Harmon, Ecosystem Enhancement Program
Mason Herndon, NCDWQ Fayetteville Regional Office
File Copy

RECEIVED

MAY 21 2011

REG. WILM. FLD. OFC.

Transportation Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
Phone: 919-807-6301 \ FAX: 919-807-6494

An Equal Opportunity \ Affirmative Action Employer

One
North Carolina
Naturally

**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 1.90 acres of jurisdictional wetlands, 388 linear feet of jurisdictional streams, and 2.96 acres of open water in Moore County. The project shall be constructed pursuant to the application dated received February 8, 2011. The authorized impacts are as described below:

Stream Impacts in the Cape Fear and Lumber River Basins

Site	Station	Permanent Fill in Intermittent Stream (linear ft)	Temporary Fill in Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Temporary Fill in Perennial Stream (linear ft)	Total Stream Impact (linear feet)	Stream Impacts Requiring Mitigation (linear ft)
3	-L- Sta. 280+00	-	-	163	-	163	205
3	-L- Sta. 280+00 LT	-	-	42	-	42	
4	-L- Sta. 340+50	-	-	133	-	133	169
4	-L- Sta. 340+50 LT	-	-	36	14	50	
TOTAL:		0	0	374	14	388	374

Total Stream Impact for Project: 388 linear feet

Wetland Impacts in the Cape Fear and Lumber River Basins

Site	Station	Wetland Type	Permanent Fill (acres)	Temporary Fill (acres)	Excavation (acres)	Mechanized Clearing (acres)	Hand Clearing (acres)	Total Wetland Impact (acres)
1	-L- Sta. 245+00	Riverine	0.19	<0.01	-	0.08	-	0.27
2	-L-270+00 LT	Riverine	0.04	-	0.02	0.02	-	0.08
3	-L- Sta. 280+00	Riverine	0.70	-	0.13	0.21	-	1.04
4	-L- Sta. 340+50	Riverine	0.37	-	-	0.14	-	0.51
TOTAL:			1.30	0.00	0.15	0.45	0.00	1.90

Total Wetland Impact for Project: 1.90 acres.

Open Water Impacts in the Cape Fear and Lumber River Basins

Site	Station	Permanent Fill in Open Waters (acres)	Temporary Fill in Open Waters (acres)	Total Fill in Open Waters (acres)	Temporary Dewatering (acres)
1	-L- Sta. 245+00	0.12	-	0.12	2.83
2	-L- Sta. 270+00 LT	0.01	-	0.01	-
TOTAL:		0.13	0	0.13	2.83

Total Open Water Impact for Project: 2.96 acres

The application provides adequate assurance that the discharge of fill material into the waters of the Cape Fear and Lumber 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 February 8, 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.

Conditions of Certification:

Project Specific Conditions

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. At locations where ponds will be drained, proper measures will be taken to drain the pond with limited impact to upstream and downstream channel stability as well as to native aquatic species. Proper measures will be taken to avoid sediment release and/or sediment accumulation downstream as a result of pond draining. If typical pond draining techniques will create significant disturbance to native aquatic species, additional measures such as collection and relocation may be necessary to prevent a significant fish kill. NCDOT shall consult with NC Wildlife Resources staff to determine if there are any sensitive species, and the most appropriate measures to limit impacts to these species. The permittee shall observe any natural channel re-establishment, or utilize natural channel construction techniques, to ensure that the jurisdictional stream channel above and below the drained pond remain stable, and that no additional impacts occur within the natural stream channel as a result of draining the pond.
3. During dewatering activities at Site 1 flow shall be maintained through the pond.
4. At Site 4, where 14 linear feet of stream will be impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species.
5. Unless otherwise approved in this certification, 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 downstream 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.
6. 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.
7. Riprap shall not be placed in the active thalweg channel or placed in the streambed in a manner that precludes aquatic life passage. Bioengineering boulders or structures should be properly designed, sized and installed.
8. 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. Any applicable riparian buffer impact for access to stream channel shall be temporary and be revegetated with native riparian species.

9. Equalizer pipes in wetlands shall be installed at grade and shall not be installed below the wetland ground level for purposes of aquatic organism passage.
10. With exception of Creeping Red Fescue (*Festuca rubra*), 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 appropriate seeding 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.
11. Compensatory mitigation shall be provided as follows:
 - a. Compensatory mitigation for 374 linear feet of impact to streams at a 1:1 ratio 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 revised letter dated April 26, 2011 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.
 - b. Compensatory mitigation for impacts to 1.90 acres riparian wetlands is required. A total of 1.82 acres shall be mitigated for at a 2:1 ratio. The remaining 0.08 acres, associated with Site 2, shall be mitigated at a 1:1 ratio. Total credits required for mitigation equal 3.72. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands 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 revised letter dated April 26, 2011 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.

General Conditions

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 use of rip-rap above the Normal High Water Mark shall be minimized. Any rip-rap placed for stream stabilization shall be placed in stream channels in such a manner that it does not impede aquatic life passage.
16. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval.
17. 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.

18. 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.
19. 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.
20. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification.
21. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited.
22. The permittee and its authorized agents shall conduct its activities in a manner consistent with State water quality standards (including any requirements resulting from compliance with §303(d) of the Clean Water Act) and any other appropriate requirements of State and Federal law. If NCDWQ determines that such standards or laws are not being met (including the failure to sustain a designated or achieved use) or that State or federal law is being violated, or that further conditions are necessary to assure compliance, NCDWQ may reevaluate and modify this certification.
23. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification.
24. 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.
25. 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.
26. Native riparian vegetation must be reestablished 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. 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.
31. The Permittee shall report any violations of this certification to the Division of Water Quality within 24 hours of discovery.
32. 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.

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:

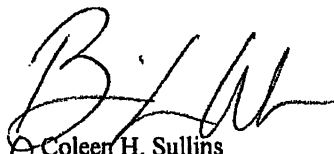
Office of Administrative Hearings
6714 Mail Service Center
Raleigh, NC 27699-6714
Telephone: (919)-733-2698, Facsimile: (919)-733-3478

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 27th day of April 2011

DIVISION OF WATER QUALITY


Coleen H. Sullins
Director

WQC No. 3854



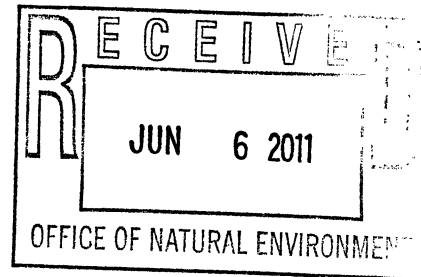
North Carolina Department of Environment and Natural Resources

Division of Water Quality
Coleen H. Sullins
Director

Beverly Eaves Perdue
Governor

Dee Freeman
Secretary

May 26, 2011



Dr. Greg Thorpe, PhD., Branch Manager
Project Development and Environmental Analysis Branch
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Subject: Correction to 401 Water Quality Certification for NC 211 from north of NC 73 in West End to east of SR 1208 (traffic circle) in Moore County, DWQ Project No. 20110136. *R-2812*
WQC No. 003854.

Dear Dr. Thorpe:

This letter is in regards to the 401 Water Quality Certification (WQC) issued on April 27, 2011 for NC 211 from north of NC 73 in West End to east of SR 1208 (traffic circle) in Moore County (DWQ Project No. 20110136; WQC No. 003854). Corrections to this certification are outlined below.

Condition No. 11(a) contains the following language:

“Compensatory mitigation for 374 linear feet of impact to streams at a 1:1 ratio 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 revised letter dated April 26, 2011 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.”

This language is hereby corrected to read as follows:

Compensatory mitigation for 374 linear feet of impact to streams 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 April 26, 2011 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the North Carolina Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument signed July 28, 2010.

Condition No. 11(b) contains the following language:

“Compensatory mitigation for impacts to 1.90 acres riparian wetlands is required. A total of 1.82 acres shall be mitigated for at a 2:1 ratio. The remaining 0.08 acres, associated with Site 2, shall be mitigated at a 1:1 ratio. Total credits required for mitigation equal 3.72. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands 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 revised letter dated April 26, 2011 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.”

Transportation Permitting Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
Location: 512 N. Salisbury Street, Raleigh, North Carolina 27604
Phone: 919-807-6301 \ FAX: 919-807-6494
Internet: <http://portal.ncdenr.org/web/wq>

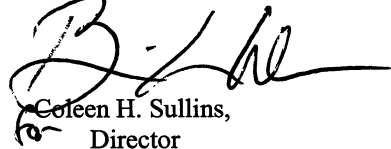


This language is hereby corrected to read as follows:

“Compensatory mitigation for impacts to 1.90 acres riparian wetlands is required. We understand that you have chosen to perform compensatory mitigation for impacts to wetlands 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 April 26, 2011 that they will assume responsibility for satisfying the federal Clean Water Act compensatory mitigation requirements for the above-referenced project, in accordance with the North Carolina Department of Environment and Natural Resources' Ecosystem Enhancement Program In-Lieu Fee Instrument signed July 28, 2010.”

Please attach a copy of this letter with any copies of the original Water Quality Certification. All other conditions written into the previous Water Quality Certification for this project dated April 27, 2011 still apply except where superseded by this correction. We apologize for any inconvenience this may have caused. If you have any questions please contact David Wainwright at (919) 807-6405.

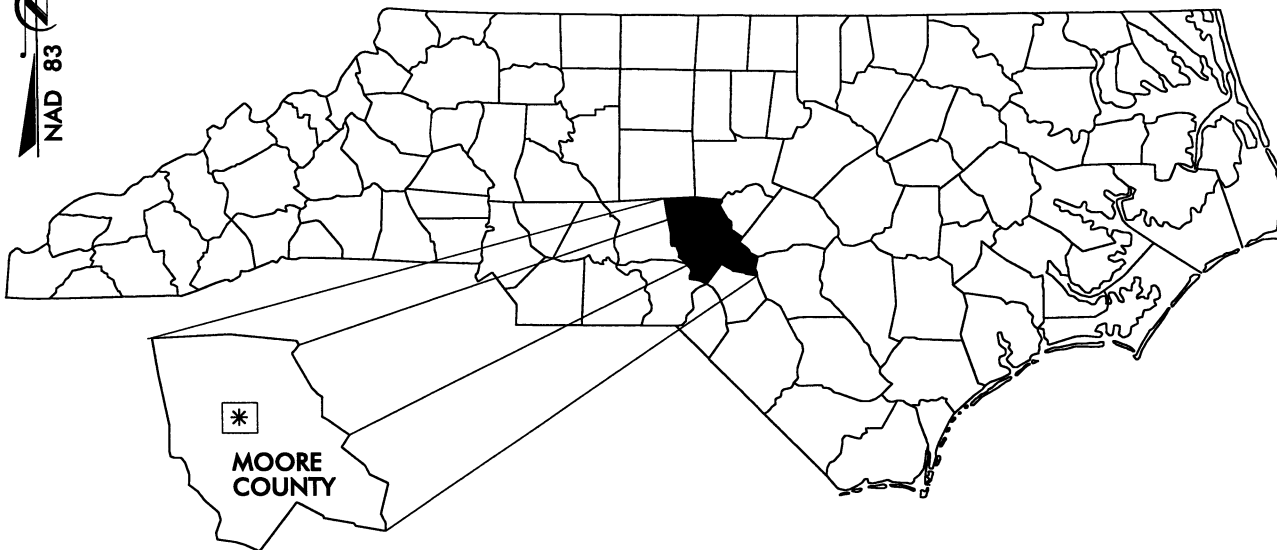
Sincerely,



Coleen H. Sullins,
Director

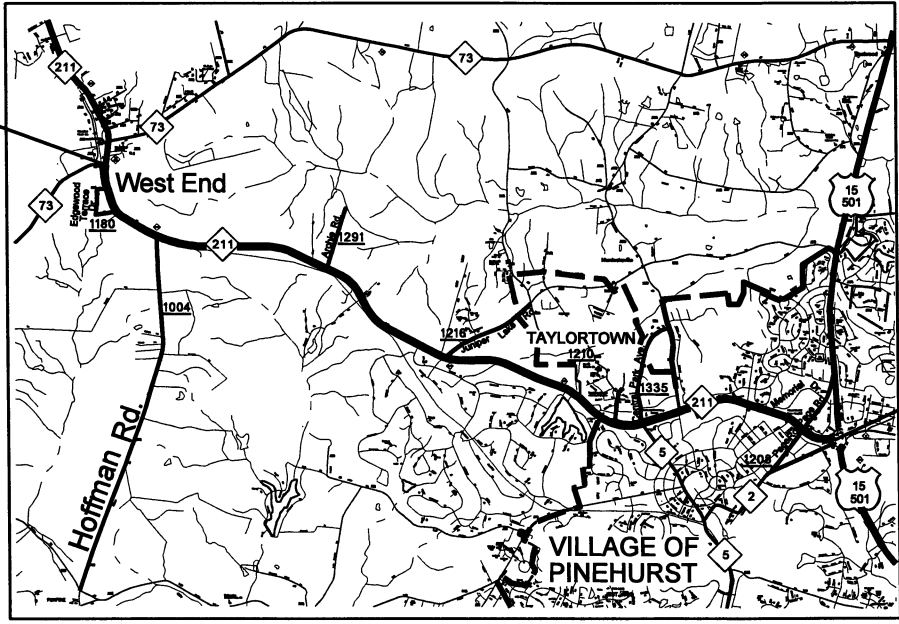
cc: Ronnie Smith, US Army Corps of Engineers, Wilmington Field Office
Art King, Division 8 Environmental Officer
Chris Militscher, Environmental Protection Agency (electronic copy only)
Travis Wilson, NC Wildlife Resources Commission (electronic copy only)
Mason Herndon, Fayetteville Regional Office
File Copy

NORTH CAROLINA



*
MOORE
COUNTY

BEGIN
PROJECT



END
PROJECT

VICINITY MAPS

NORTH CAROLINA

DIVISION OF HIGHWAYS
MOORE COUNTY
PROJECT: 34504.1.1 (R-2812)

PROPERTY OWNERS
NAMES AND ADDRESSES

PARCEL NO.	NAMES	ADDRESSES	SITE NO.
1	ESTELLE BRADSHAW	1106 EDGEWOOD DR CHARLESTON, WV 25302	1
2	RICHARD HAMOR	302 GOLDEN GROVE CR PIEDMONT, SC 29673	1
3	BAPTIST CHILDRENS HOME	P.O. BOX 338 THOMASVILLE, NC 27361	2
4	PHILIP BROWN	1700 CARTHAGE ST SANFORD, NC 27330	3
5	NANCY J. SMITH TIMKO	RR2 NORTH MAIN ANTRIM, NH 03440	4
6	BEN KAY	202 COUNTRY CLUB DR MELBOURN, FL 32940	4
7	MICHAEL T ROBINSON	P.O BOX 985 PINEHURST, NC 28370	4
8	VILLAGE OF PINEHURST	PO BOX 5589 PINEHURST, NC 28374	4

NORTH CAROLINA
 DIVISION OF HIGHWAYS
 MOORE COUNTY
 PROJECT: 34504.1.1 (R-2812)

WETLAND PERMIT IMPACT SUMMARY																				
Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS					SURFACE WATER IMPACTS												
			Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)								
1	-L- Sta. 245+00	Extend Exist 72" CMP	0.19			0.08														
1	-L- Sta. 245+00 LT	Fill in Pond								0.12										
1	-L- Sta. 245+00 LT	Drain Pond										2.83								
1	-L- Sta. 245+00 RT	Construction		<0.01																
2	-L- Sta. 270+00 LT	Pond and Wetland	0.04		0.02	0.02				0.01										
3	-L- Sta. 280+00	10x7 RCBC	0.70		0.13	0.21				0.03			163							
3	-L- Sta. 280+00 LT	Bank Stabilization											42							
4	-L- Sta. 340+50	60" RCP	0.37			0.14				0.02		<0.01	133	14						
4	-L- Sta. 340+50 LT	Bank Stabilization											36							
TOTALS:			1.30	0.00	0.15	0.45	0.00	0.00	0.18	2.83	0.18	374	14	0						

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 PROJECT 34504.1.1 (R-2812)
 MOORE COUNTY
 NC 211 FROM NC 73 IN WEST END
 TO THE TRAFFIC CIRCLE IN PINEHURST
 SHEET 3 OF 3 12/15/2010

09/08/09

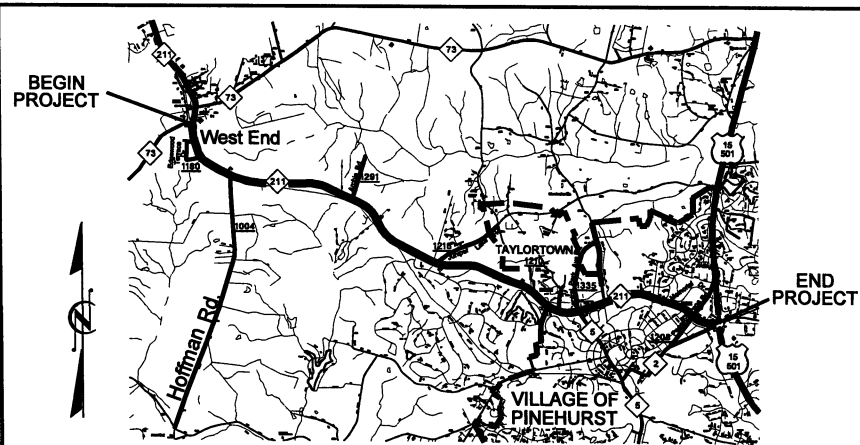
See Sheet 1-A For Index of Sheets

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

Permit Drawing
Sheet 4 of 31

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2812	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34504.1.1	STP-211 (5)	P.E.	

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



VICINITY MAP

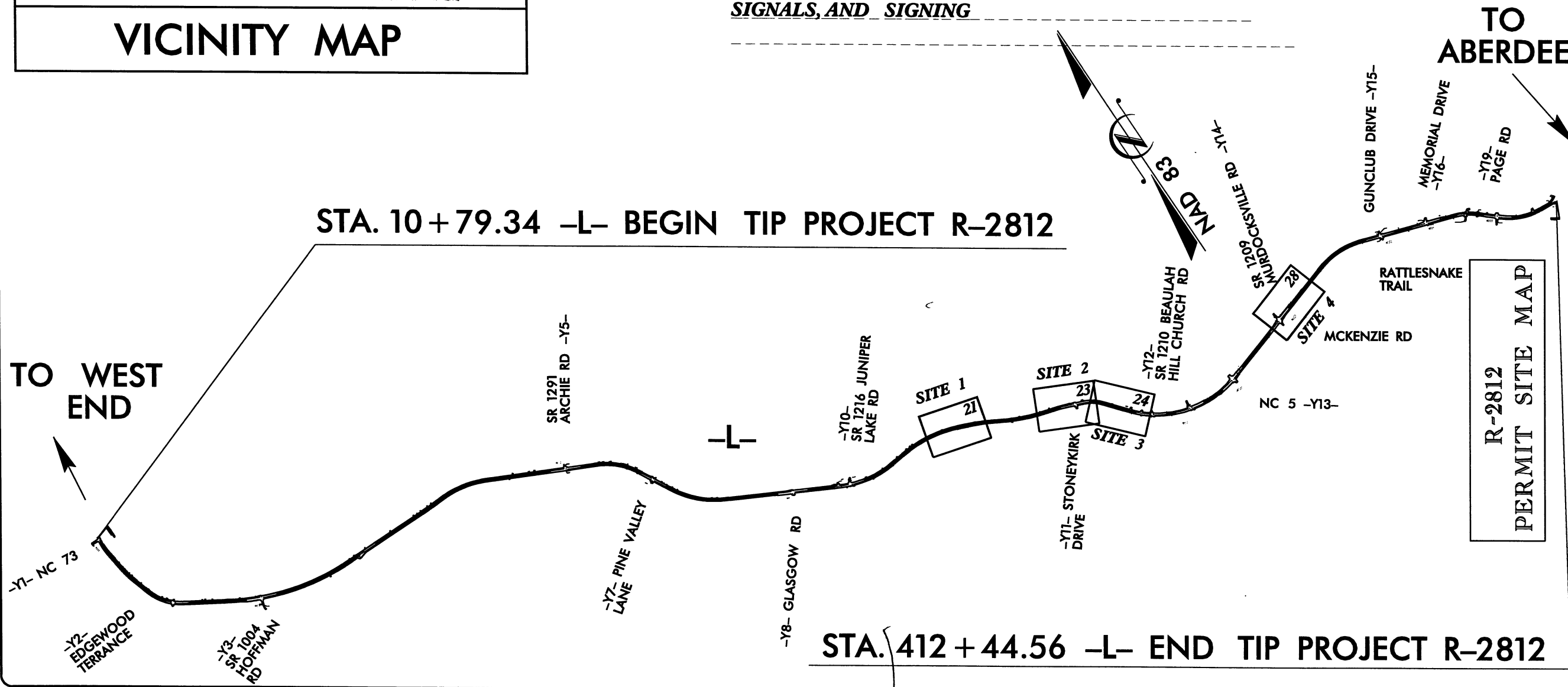
**LOCATION: NC 211 FROM NC 73 IN WEST END
TO THE TRAFFIC CIRCLE IN PINEHURST**

**TYPE OF WORK: GRADING, PAVING, DRAINAGE, CURB & GUTTER
SIGNALS, AND SIGNING**

TIP PROJECT: R-2812

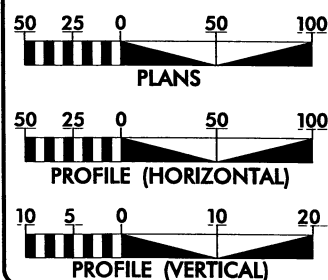
34504.1.1

WBS:



**R-2812
PERMIT SITE MAP**

GRAPHIC SCALES



DESIGN DATA

ADT 2004 = 15300
ADT 2025 = 20500
DHV = 9 %
D = 52 %
T = 5 % *
V = 50 MPH
* TTST 2 DUAL 3

PROJECT LENGTH

LENGTH ROADWAY F.A. PROJECT STP-211(5) = 7.61 MI.
TOTAL LENGTH STATE PROJECT 34504.1.1 = 7.61 MI.

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

2006 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
JUNE 20, 2008

LETTING DATE:
JUNE 15, 2010

JIMMY GOODNIGHT, PE
PROJECT ENGINEER

TIM GOINS
PROJECT DESIGN ENGINEER

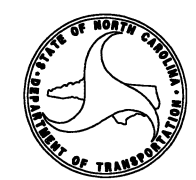
HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA



STATE HIGHWAY DESIGN ENGINEER P.E.

9/13/2010 3:34:46 PM hyd_permits_tsh.dgn

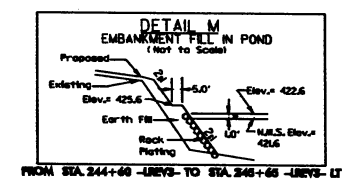
8/17/99

REVISIONS
01/09/08 REVISED THE LIMITS OF THE POND AND THE LIMITS OF THE TDE ON PARCEL 98
05/14/09 ADDED PUE ON PARCEL NOS. 96 & 98. REVISED TCE ON PARCEL NO. 98.

1/3/2012 hyd_perm.ta.a21.dgn

PROJECT REFERENCE NO. R-2812		SHEET NO. 21	
HW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

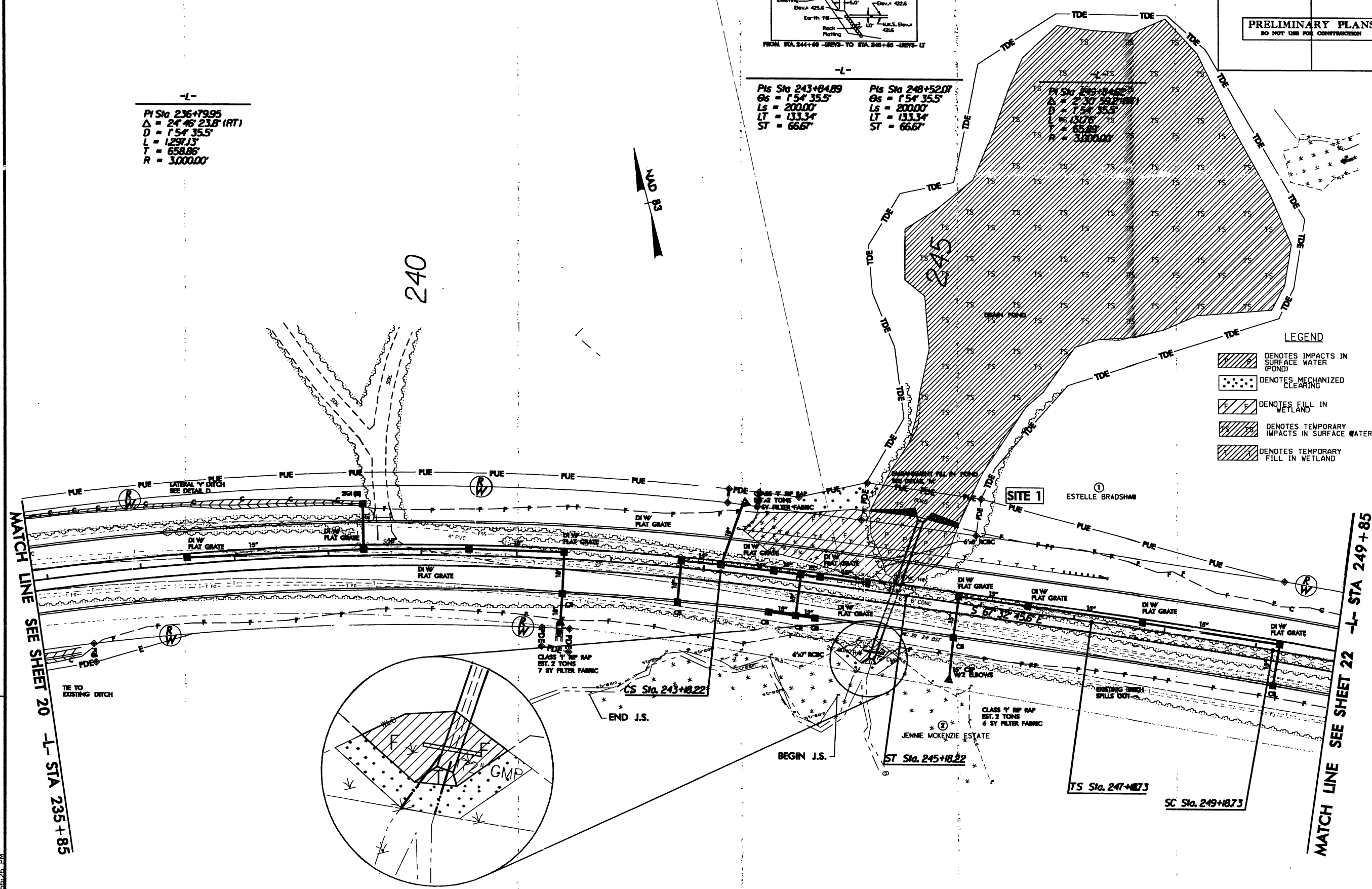
Permit Drawing Sheet 5 of 31



-L-
 P1 Sta 236+79.95
 $\Delta = 24^\circ 46' 23.6''$ (RT)
 $D = 154' 35.5''$
 $L = 1297.13'$
 $T = 658.86'$
 $R = 3000.00'$

-L-
 P1s Sta 243+84.89 P1s Sta 248+52.07
 $\Theta_s = 154^\circ 35.5''$ $\Theta_s = 154^\circ 35.5''$
 $L_s = 200.00'$ $L_s = 200.00'$
 $LT = 133.34'$ $LT = 133.34'$
 $ST = 66.67'$ $ST = 66.67'$

P1 Sta 245+84.89
 $\Delta = 2^\circ 30' 59.2''$ (RT)
 $D = 154' 35.5''$
 $L = 130.76'$
 $T = 65.89'$
 $R = 3000.00'$



- LEGEND**
- DENOTES IMPACTS IN SURFACE WATER (POND)
 - DENOTES MECHANIZED CLEARING
 - DENOTES FILL IN WETLAND
 - DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 - DENOTES TEMPORARY FILL IN WETLAND

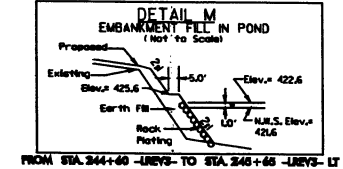
MATCH LINE SEE SHEET 20 -L- STA 235 + 85

MATCH LINE SEE SHEET 22 -L- STA 249 + 85

8/17/99

PROJECT REFERENCE NO. R-2812		SHEET NO. 21	
DW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION			

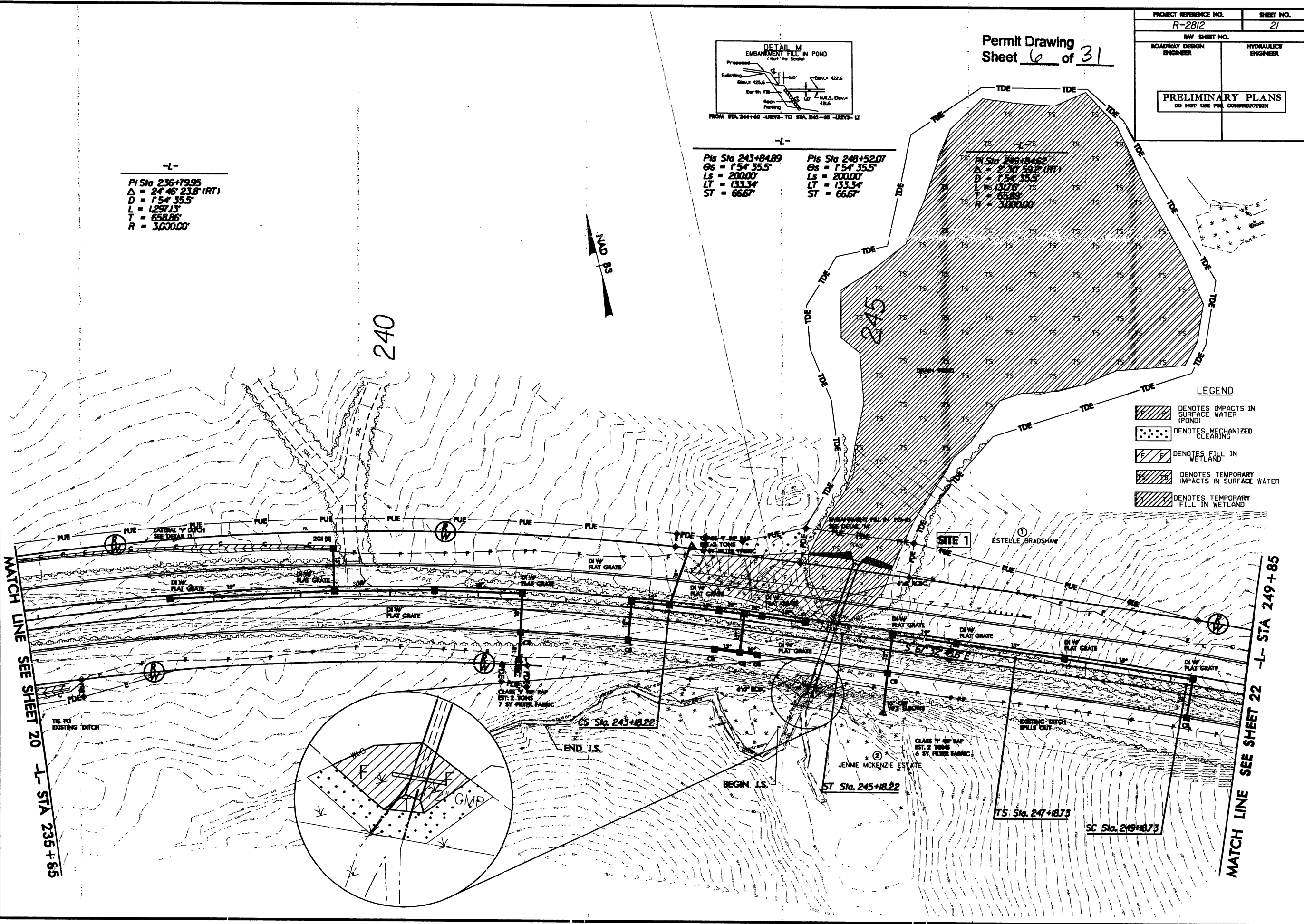
Permit Drawing
Sheet 6 of 31



-L-
 PI Sta 236+79.95
 $\Delta = 24^\circ 46' 23.8''$ (RT)
 $D = 154' 35.5''$
 $L = 1297.13'$
 $T = 658.86'$
 $R = 3000.00'$

-L-
 Pts Sta 243+84.89 Pts Sta 248+52.07
 $\Theta_s = 154^\circ 35.5'$ $\Theta_s = 154^\circ 35.5'$
 $L_s = 2000.0'$ $L_s = 2000.0'$
 $LT = 133.34'$ $LT = 133.34'$
 $ST = 66.67'$ $ST = 66.67'$

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



REVISIONS
 01/09/09 REVISED THE LIMITS OF THE POND AND THE LIMITS OF THE TDE ON PARCEL 98
 05/14/09 ADDED PUE ON PARCEL NOS. 96 & 98. REVISED TCE ON PARCEL NO. 98.

1/3/2012 hyd_perm.tss.s21.dgn
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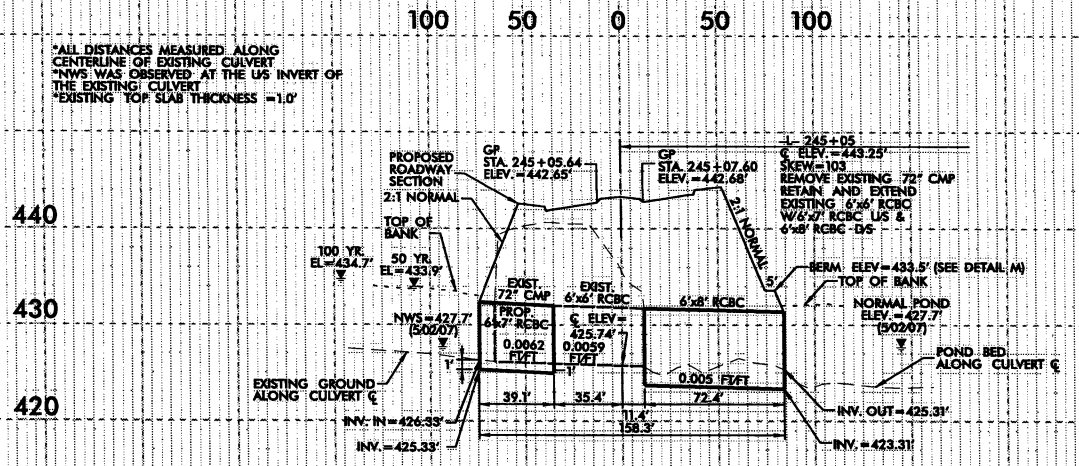
MATCH LINE SEE SHEET 20 -L- STA 235 + 65

MATCH LINE SEE SHEET 22 -L- STA 249 + 85

SITE 1 R-2812

Permit Drawing
Sheet 1 of 31

PROJECT REFERENCE NO. R-2233AA	SHEET NO. CSR-21
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

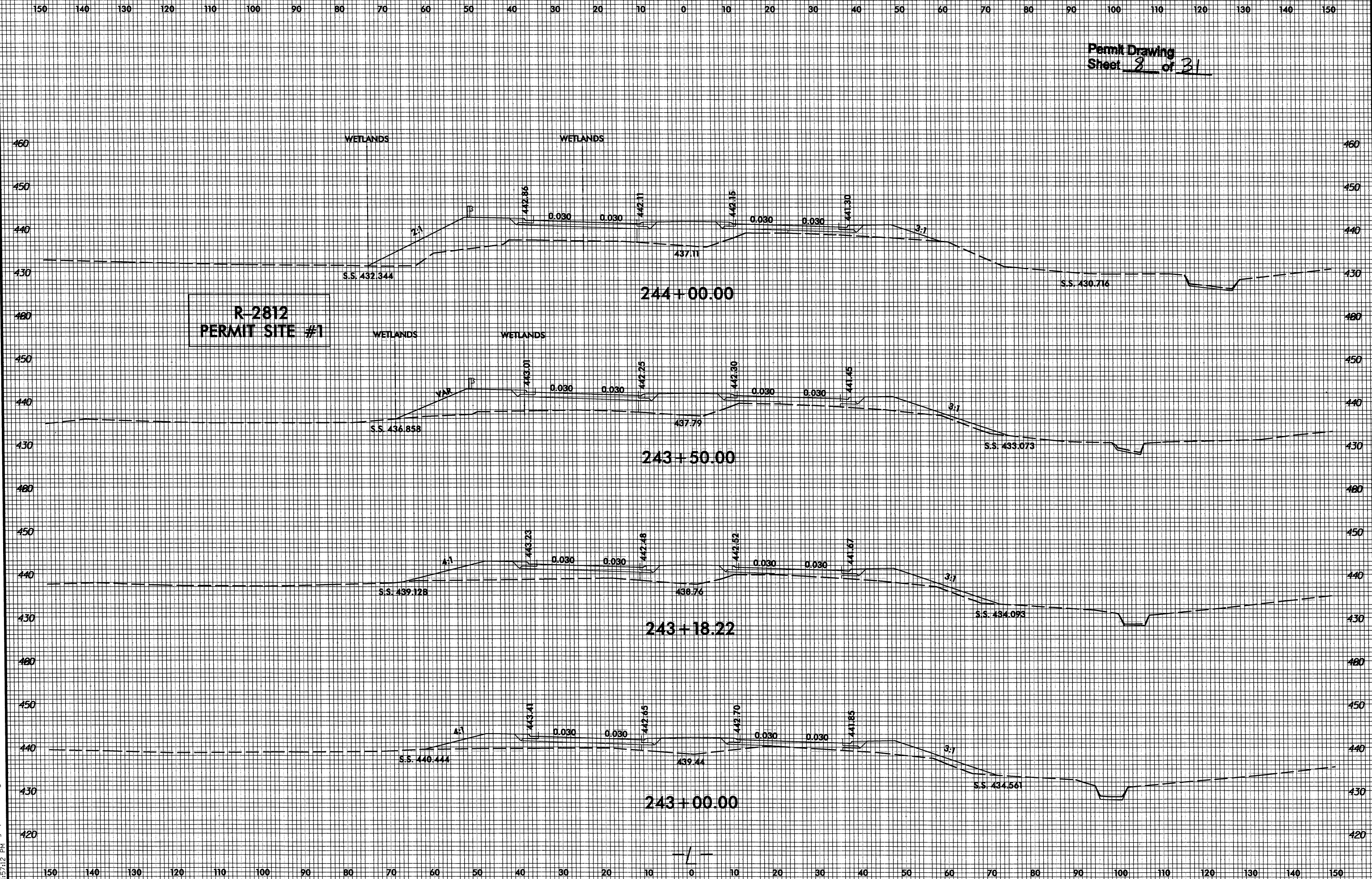


PROFILE ALONG C OF CULVERT

8/23/95



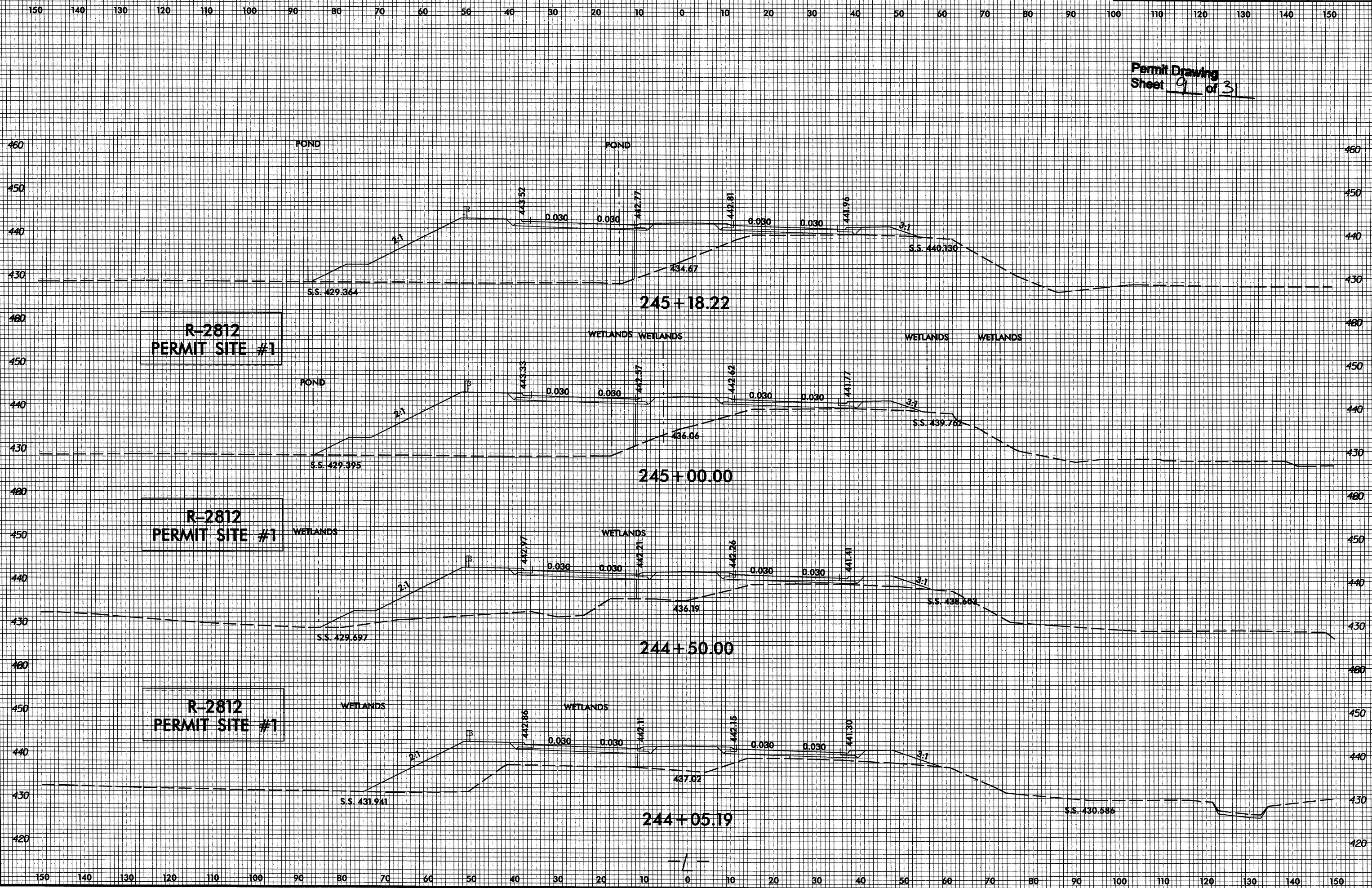
Permit Drawing
Sheet 8 of 31



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8/23/95

Permit Drawing
Sheet 9 of 31



R-2812
PERMIT SITE #1

R-2812
PERMIT SITE #1

R-2812
PERMIT SITE #1

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13:24:16
du_xpl.l.new.dgn

PROJECT REFERENCE NO. R-2812	SHEET NO. 23
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 10 of 31

Cur 45.3°
Ls = 200.00'
LT = 133.34'
ST = 66.67'

-L-

Pls Sta 268+59.75 Cs = 154° 35.5' Ls = 200.00' LT = 133.34' ST = 66.67'	PI Sta 269+91.91 Δ = 2° 30' 04.7" (RT) D = 154° 35.5' L = 130.97' T = 65.49' R = 3,000.00'	Pls Sta 271+24.06 Cs = 154° 35.5' Ls = 200.00' LT = 133.34' ST = 66.67'
---	---	---

-L-

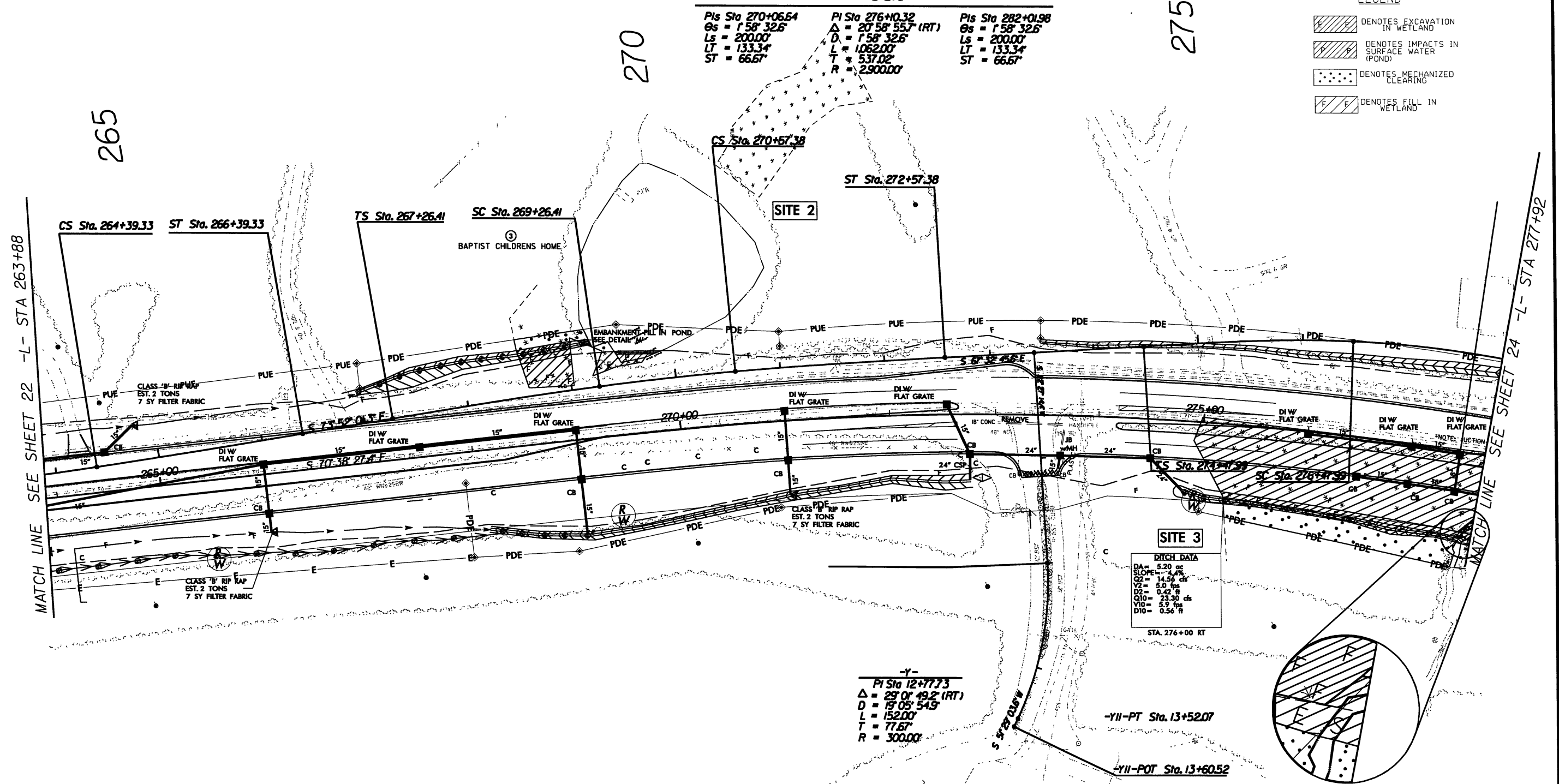
Pls Sta 275+81.39 Cs = 54° 43' 46.5" Ls = 200.00' LT = 133.40' ST = 66.73'	PI Sta 277+82.30 Δ = 15° 17' 55.9" (RT) D = 5° 43' 46.5" L = 267.02' T = 134.31' R = 1,000.00'
--	---

-LREV3-

Pls Sta 270+06.64 Cs = 158° 32.6' Ls = 200.00' LT = 133.34' ST = 66.67'	PI Sta 276+10.32 Δ = 20° 58' 55.7" (RT) D = 158° 32.6' L = 106.200' T = 537.02' R = 2,900.00'	Pls Sta 282+01.98 Cs = 158° 32.6' Ls = 200.00' LT = 133.34' ST = 66.67'
---	--	---

LEGEND

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



SITE 3

DITCH DATA

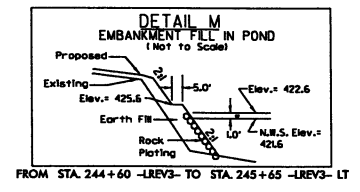
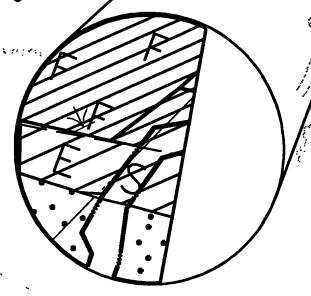
DA = 5.20 ac
SLOPE = 4.4%
C2 = 14.56 cfs
V2 = 5.0 fps
D2 = 0.42 ft
C10 = 23.30 cfs
V10 = 5.9 fps
D10 = 0.56 ft

STA. 276+00 RT

-Y-

PI Sta 12+77.73 Δ = 29° 0' 49.2" (RT) D = 19° 05' 54.9" L = 152.00' T = 77.67' R = 300.00'

-YII-PT Sta. 13+52.07
-YII-POT Sta. 13+60.52



FROM STA. 244+60 -LREV3- TO STA. 245+65 -LREV3- LT

REVISIONS

8/17/99
12/17/90 hyd_permit.s23.dgn

PROJECT REFERENCE NO. R-2812	SHEET NO. 23
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 11 of 31

1.00' 45.3"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

-L-
PI Sta 268+59.75
θs = 1° 54' 35.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 269+91.91
Δ = 2° 30' 04.7" (RT)
D = 1° 54' 35.5"
L = 130.97'
T = 65.49'
R = 3,000.00'

PI Sta 271+24.06
θs = 1° 54' 35.5"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

-L-
PI Sta 275+81.39
θs = 5° 43' 46.5"
Ls = 200.00'
LT = 133.40'
ST = 66.73'

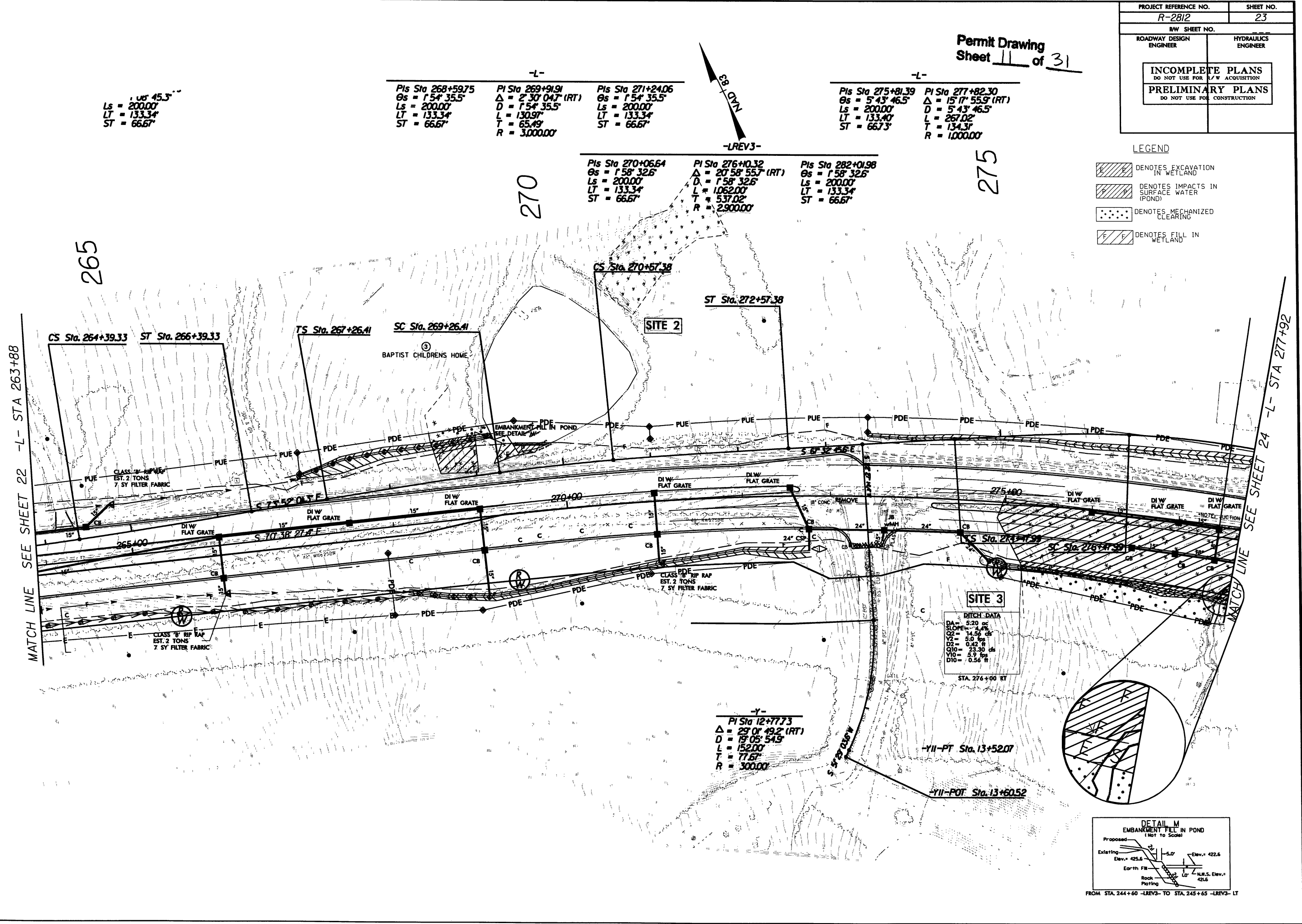
PI Sta 277+82.30
Δ = 15° 17' 55.9" (RT)
θs = 5° 43' 46.5"
Ls = 200.00'
L = 267.02'
T = 134.31'
R = 1,000.00'

-L-
PI Sta 270+06.64
θs = 1° 58' 32.6"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

PI Sta 276+10.32
Δ = 20° 58' 55.7" (RT)
D = 1° 58' 32.6"
L = 106.20'
T = 537.02'
R = 2,900.00'

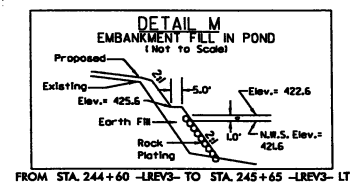
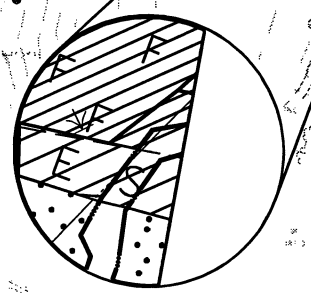
PI Sta 282+01.98
θs = 1° 58' 32.6"
Ls = 200.00'
LT = 133.34'
ST = 66.67'

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



SITE 3
DITCH DATA
DA = 5.20 ac
SLOPE = 4.4%
C2 = 14.56 ds
V2 = 5.0 fms
D2 = 0.42 ft
Q10 = 23.30 ds
Y10 = 5.9 fms
D10 = 0.56 ft
STA. 276+00 RT

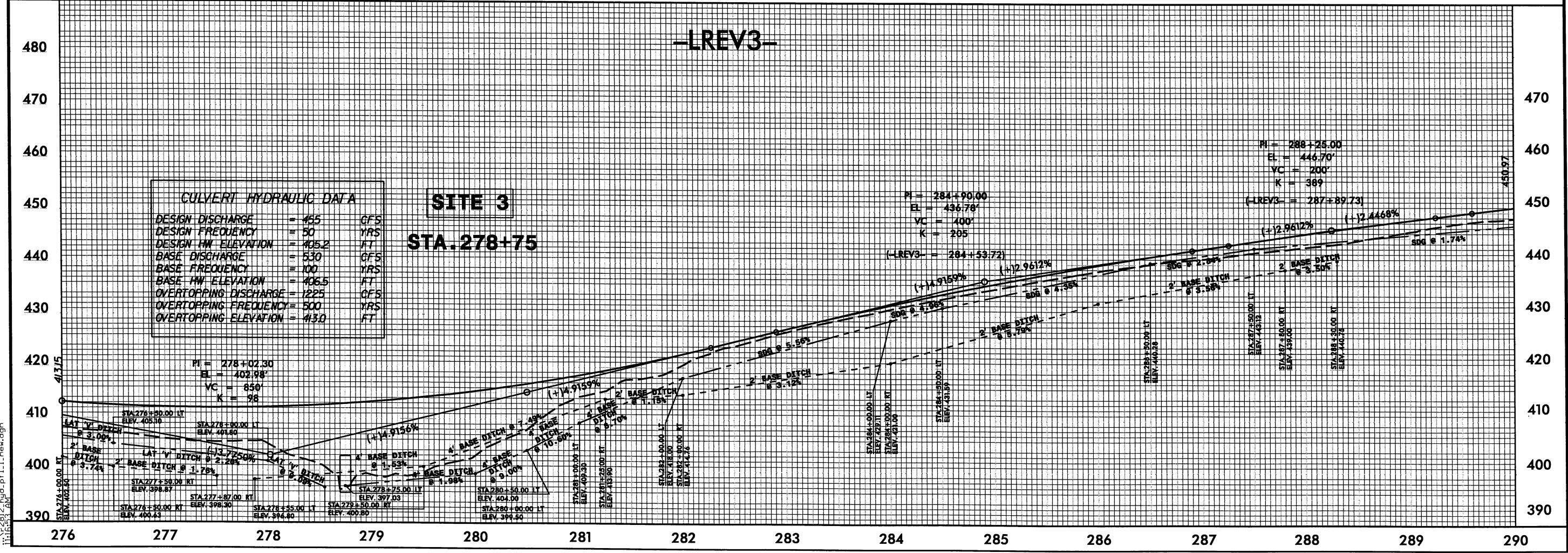
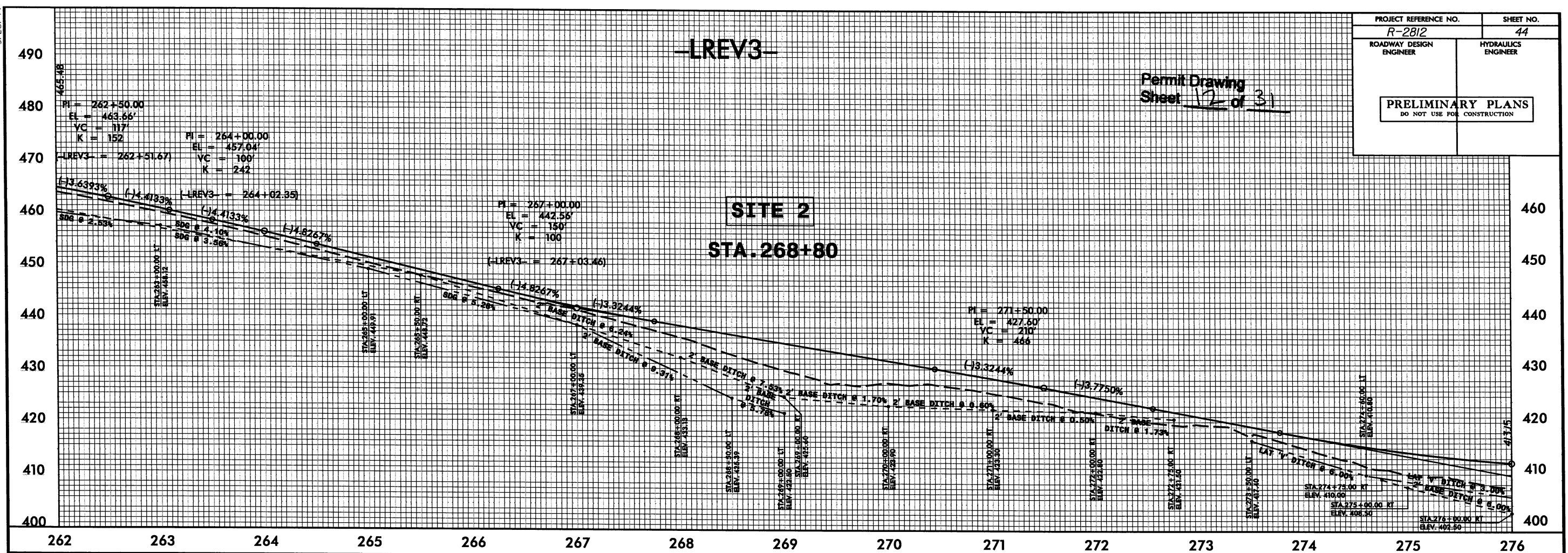
-Y-
PI Sta 12+77.73
Δ = 29° 01' 49.2" (RT)
D = 19° 05' 54.9"
L = 152.00'
T = 77.67'
R = 3,000.00'



REVISIONS

8/17/99
12/17/2000 hyd_permit.s23.dgn
2/21/01

Permit Drawing
Sheet **12 of 31**

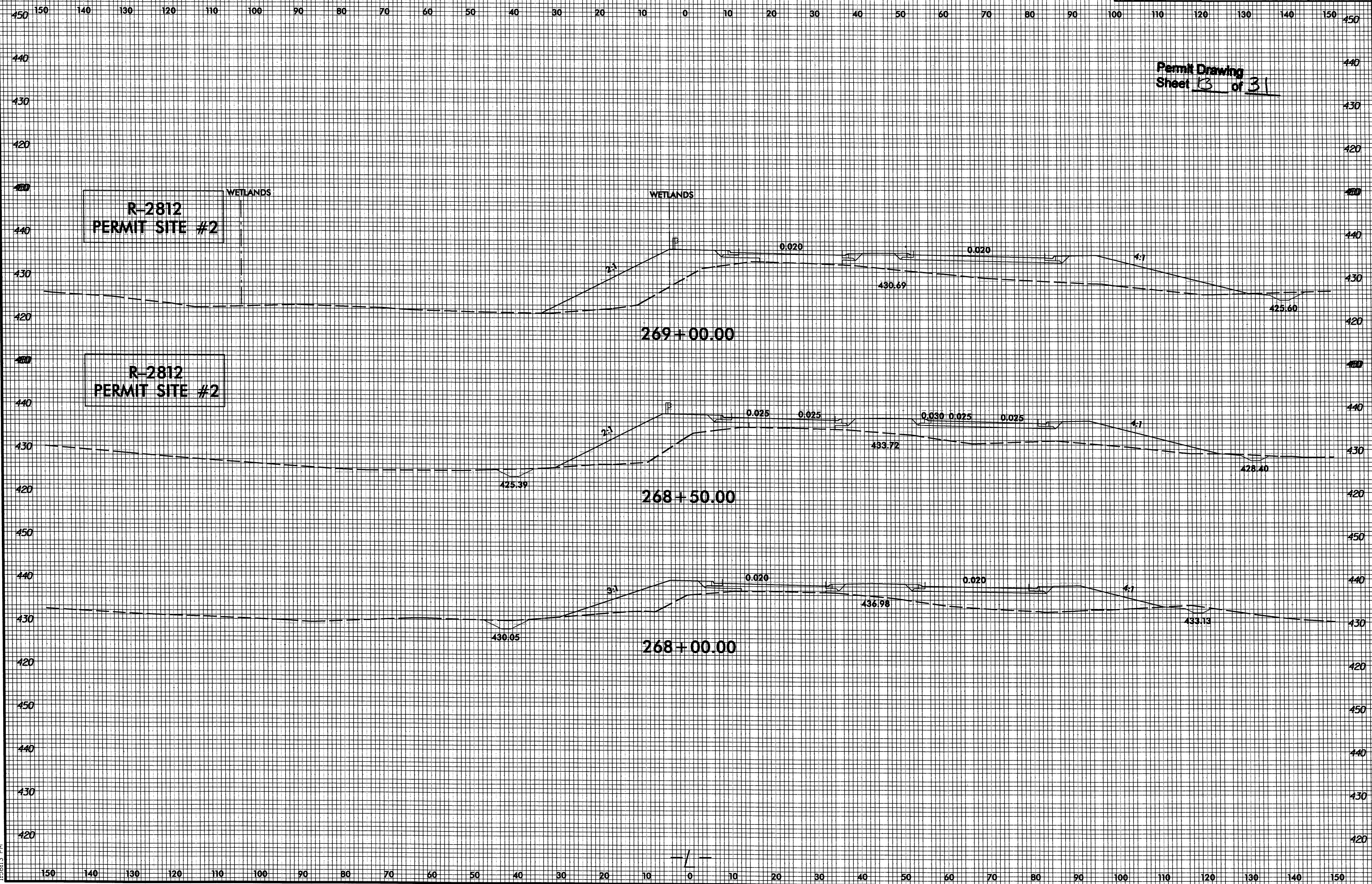


CULVERT HYDRAULIC DATA

DESIGN DISCHARGE	= 455	GFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 405.2	FT
BASE DISCHARGE	= 530	GFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 406.5	FT
OVERTOPPING DISCHARGE	= 1225	GFS
OVERTOPPING FREQUENCY	= 500	YRS
OVERTOPPING ELEVATION	= 413.0	FT

5/28/99
12/17/2000
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8/23/96



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8/23/96

Permit Drawing
Sheet 14 of 31

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450 450

440 440

430 430

420 420

410 410

R-2812
PERMIT SITE #2

POND

440 440

430 430

420 420

270+00.00

410 410

WETLANDS
POND WETLANDS

R-2812
PERMIT SITE #2

440 440

430 430

420 420

269+50.00

410 410

440 440

430 430

420 420

410 410

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

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PROJECT REFERENCE NO. R-2812	SHEET NO. 24
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

Permit Drawing
Sheet 5 of 31

LEGEND

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

-L-
Pls Sta 279+81.74
Gs = 5° 43' 46.5"
Ls = 200.00'
LT = 133.40'
ST = 66.73'

-L-
Pls Sta 287+13.10
Gs = 2° 17' 30.6"
Ls = 200.00'
LT = 133.34'
ST = 66.68'

SITE 3 PHILLIP BROWN

DITCH DATA
 DA = 5.14 ac
 SLOPE = 8.4%
 Q2 = 7.2 cfs
 Q72 = 5.4 fpm
 Q10 = 11.51 cfs
 V10 = 6.8 fpm
 D10 = 0.36 ft
 STA. 280+50 LT

DITCH DATA
 DA = 3.25 ac
 SLOPE = 7.49%
 Q2 = 9.10 cfs
 Q72 = 5.6 fpm
 Q10 = 14.56 cfs
 V10 = 6.5 fpm
 D10 = 0.45 ft
 STA. 279+50 RT

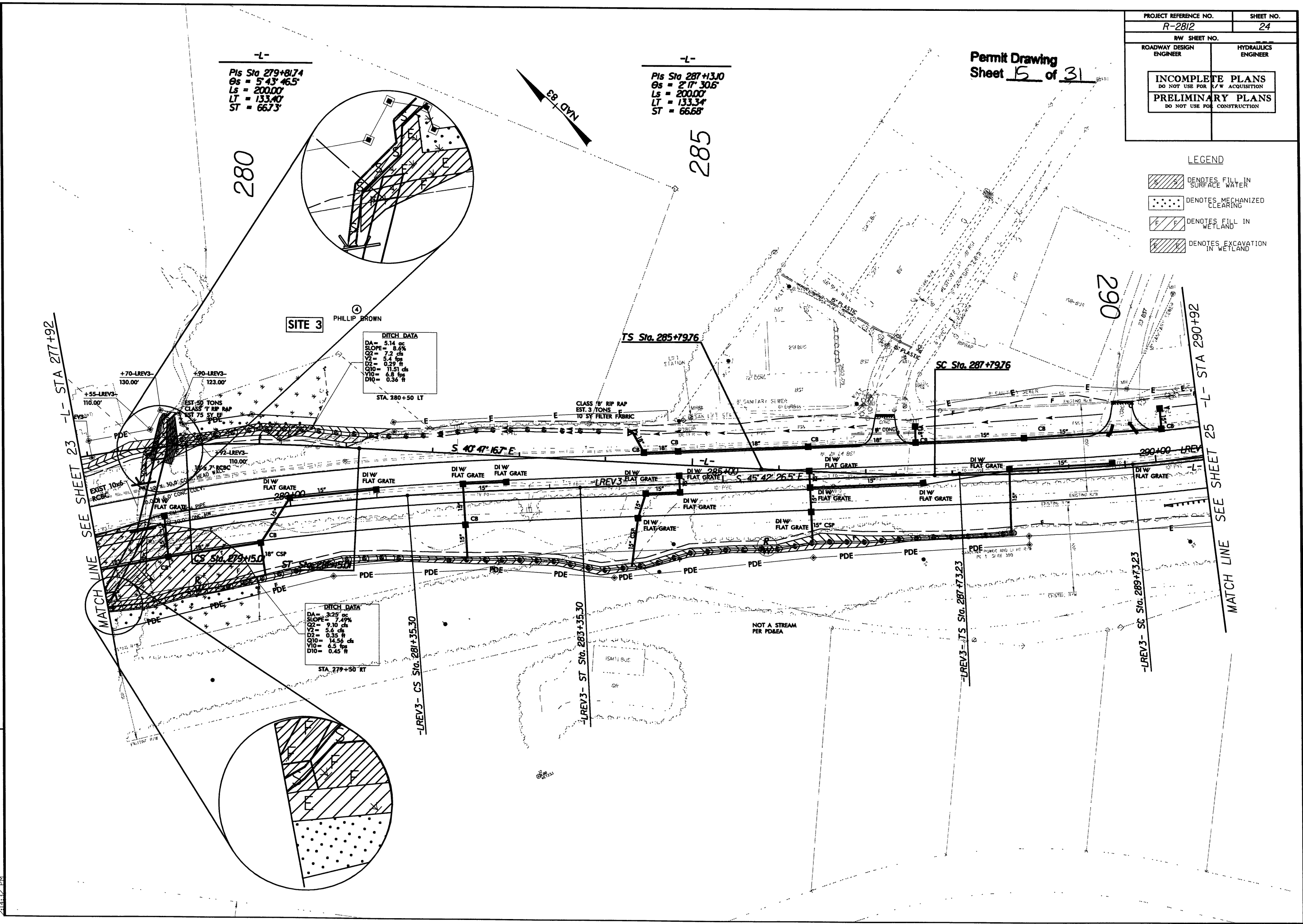
MATCH LINE SEE SHEET 23 -L- STA 277+92

MATCH LINE SEE SHEET 25 -L- STA 290+92

8/17/99

REVISIONS

12/17/2000 hvd.permits.a24.dgn
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PROJECT REFERENCE NO. R-2812	SHEET NO. 24
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

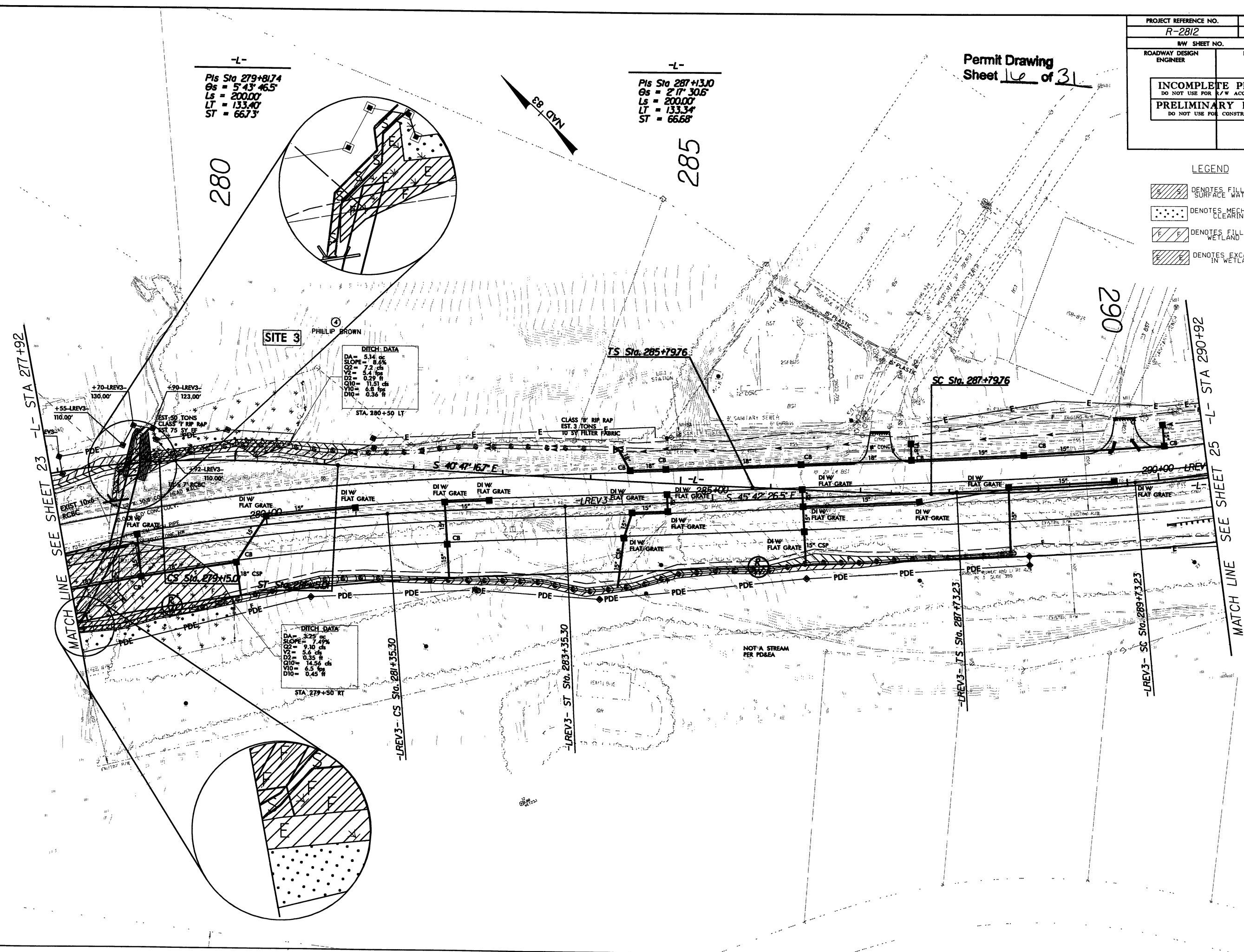
Permit Drawing
Sheet **16** of **31**

-L-
 PIs Sta 279+81.74
 Gs = 5'43" 46.5"
 Ls = 200.00'
 LT = 133.40'
 ST = 66.73'

-L-
 PIs Sta 287+13.10
 Gs = 2'17" 30.6"
 Ls = 200.00'
 LT = 133.34'
 ST = 66.68'

LEGEND

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



DITCH DATA
 DA = 5.14' ds
 SLOPE = 8.6%
 Q2 = 7.2' ds
 V2 = 0.23' ft
 Q10 = 11.51' ds
 V10 = 6.8' ft
 D10 = 0.36' ft
 STA 280+50 LT

DITCH DATA
 DA = 3.25' ds
 SLOPE = 7.4%
 Q2 = 9.10' ds
 V2 = 6.6' ds
 Q10 = 14.56' ds
 V10 = 6.5' ft
 D10 = 0.45' ft
 STA 279+50 RT

REVISIONS

12/17/2000 hyd_permits.s24.dgn

5/28/99

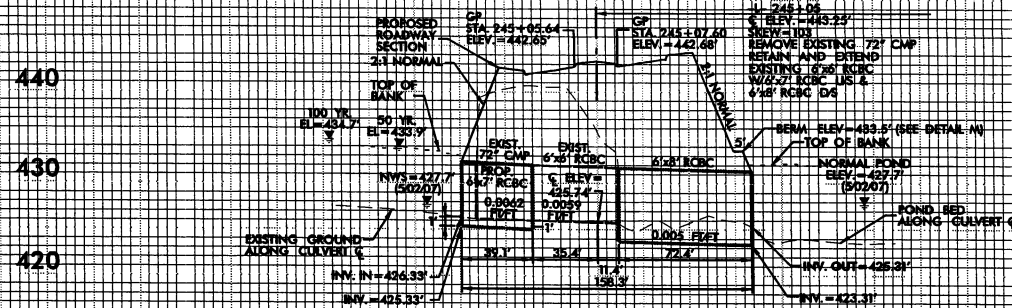
SITE 1 R-2812

Permit Drawing
Sheet 17 of 31

PROJECT REFERENCE NO. <i>R-2812</i>	SHEET NO. <i>CSR-21</i>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

100 50 0 50 100

*ALL DISTANCES MEASURED ALONG
CENTERLINE OF EXISTING CULVERT
*NWS WAS OBSERVED AT THE US INVERT OF
THE EXISTING CULVERT
*DESIGN TOP SLAB THICKNESS = 1.0'



PROFILE ALONG ζ OF CULVERT

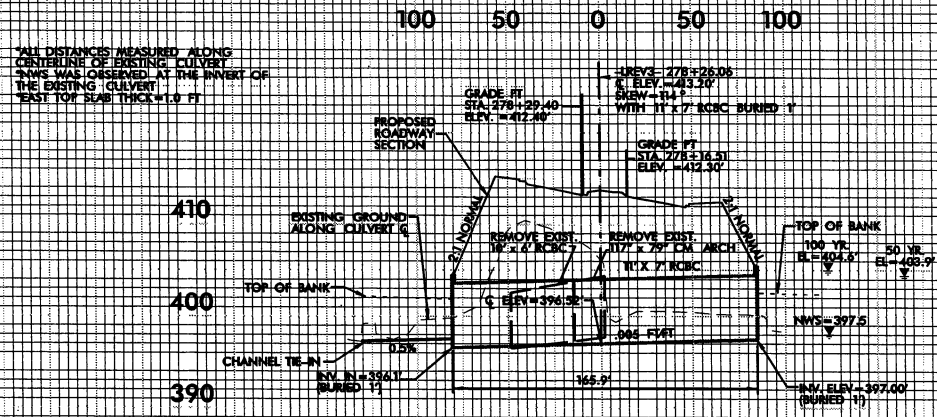
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5/28/99

SITE 3 R-2812

Permit Drawing
Sheet 18 of 31

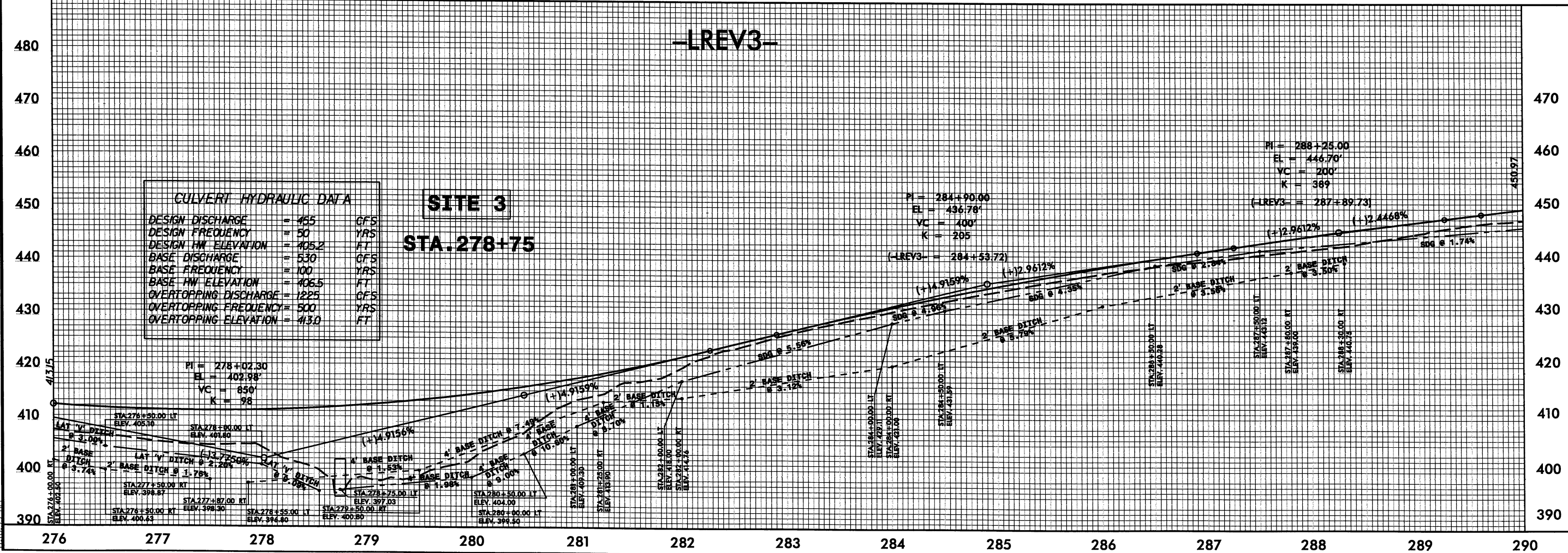
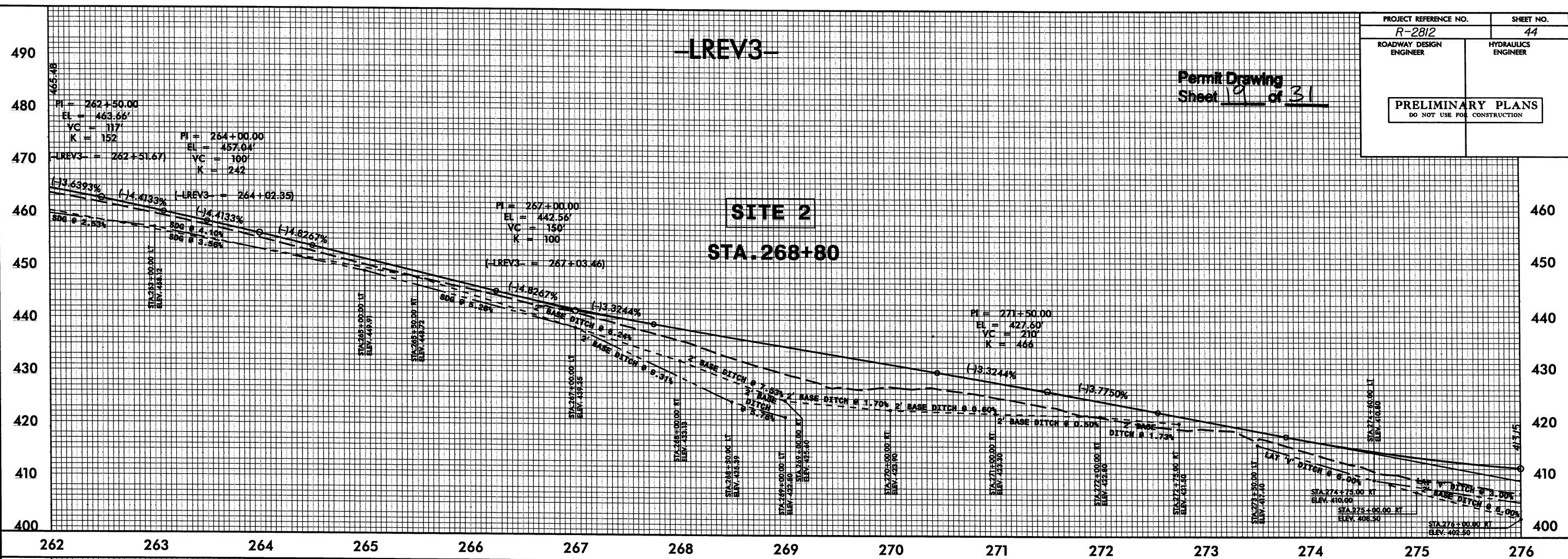
PROJECT REFERENCE NO. R-2812	SHEET NO. CSR-24
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



PROFILE ALONG C OF CULVERT

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Permit Drawing
Sheet 19 of 31

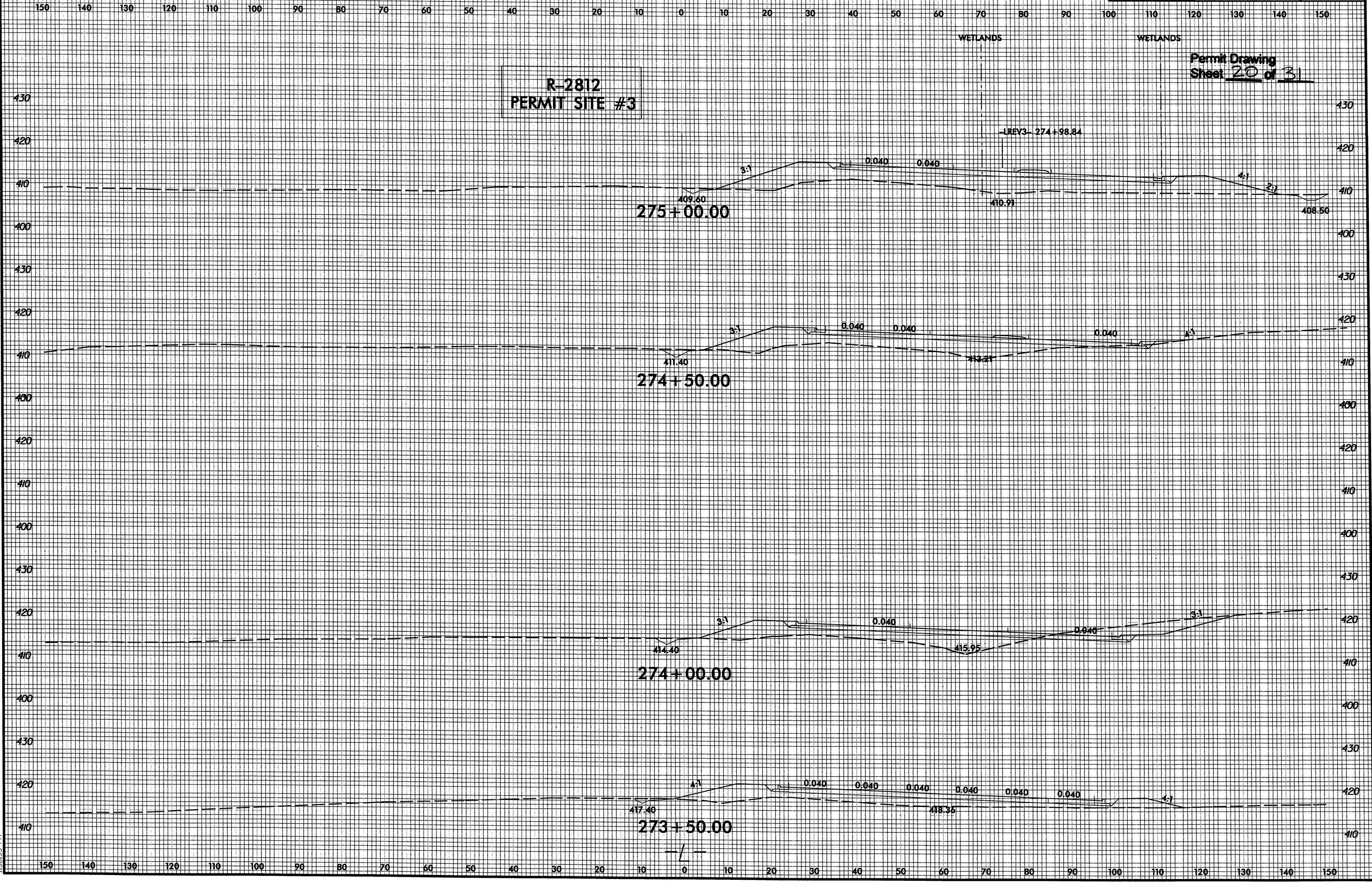


CULVERT HYDRAULIC DATA	
DESIGN DISCHARGE	= 465 GFS
DESIGN FREQUENCY	= 50 YRS
DESIGN HW ELEVATION	= 405.2 FT
BASE DISCHARGE	= 530 GFS
BASE FREQUENCY	= 100 YRS
BASE HW ELEVATION	= 406.5 FT
OVERTOPPING DISCHARGE	= 1225 GFS
OVERTOPPING FREQUENCY	= 500 YRS
OVERTOPPING ELEVATION	= 413.0 FT

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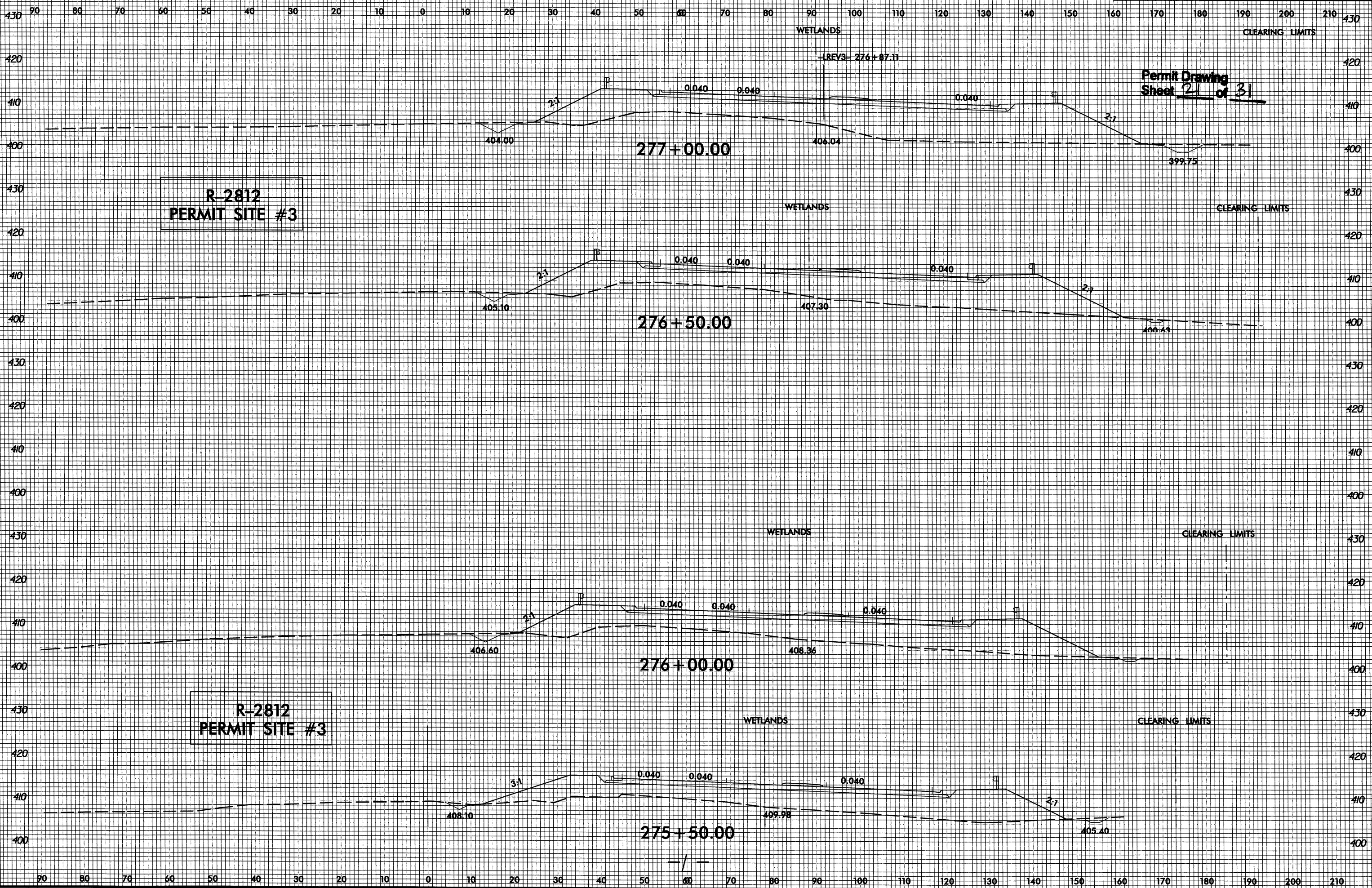
8/23/06

0 5 10	PROJ. REFERENCE NO. R-2812	SHEET NO. X-131
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8/23/95



R-2812
PERMIT SITE #3

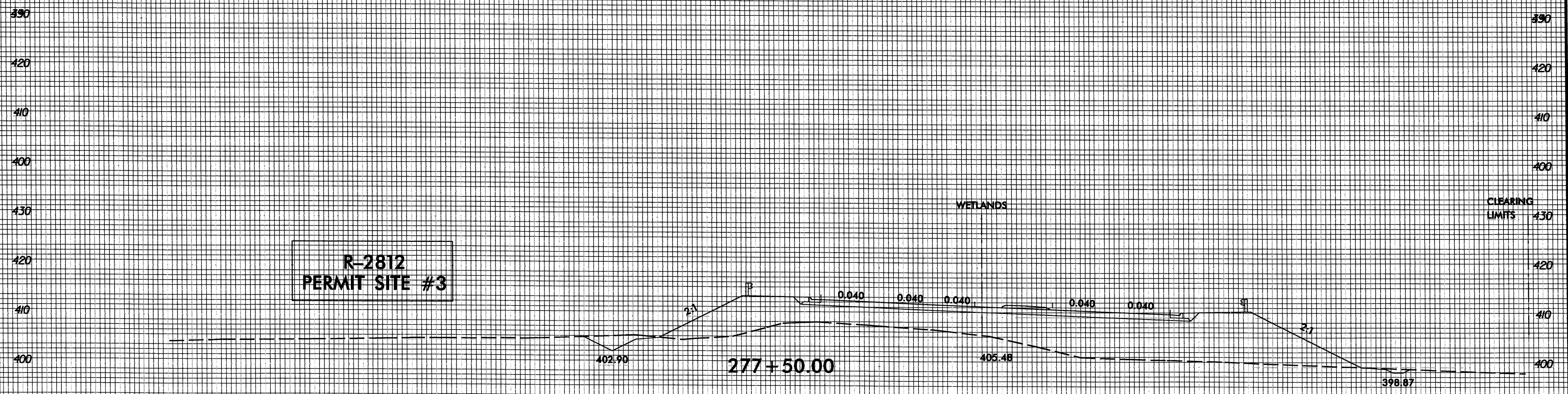
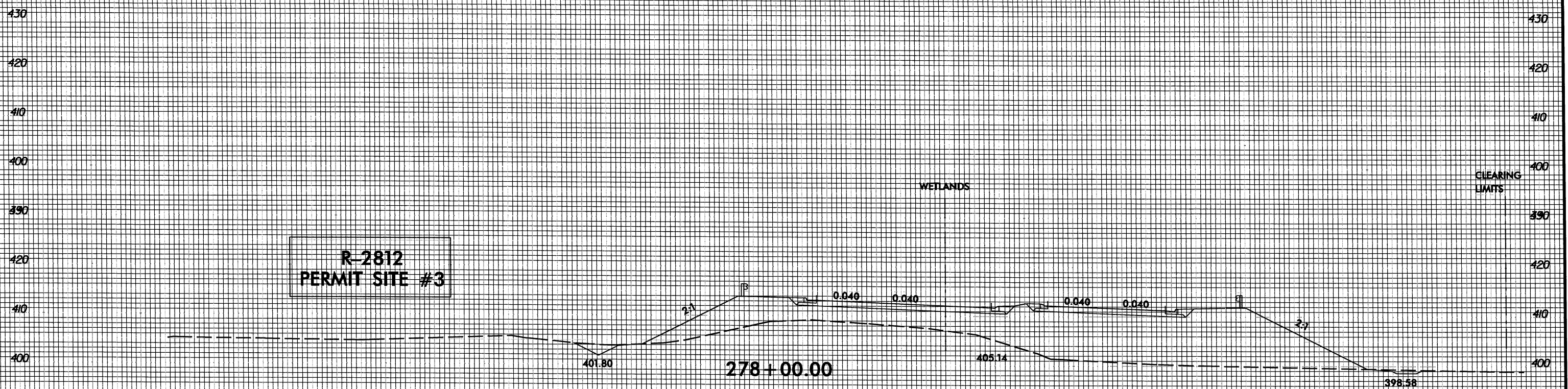
Permit Drawing
Sheet 21 of 31

R-2812
PERMIT SITE #3

12/17/2000
13553363.rdy_xpl1.new.dgn

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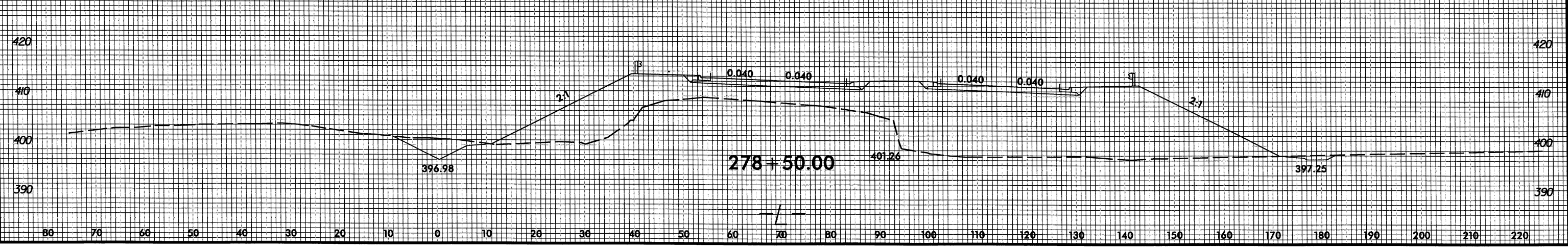
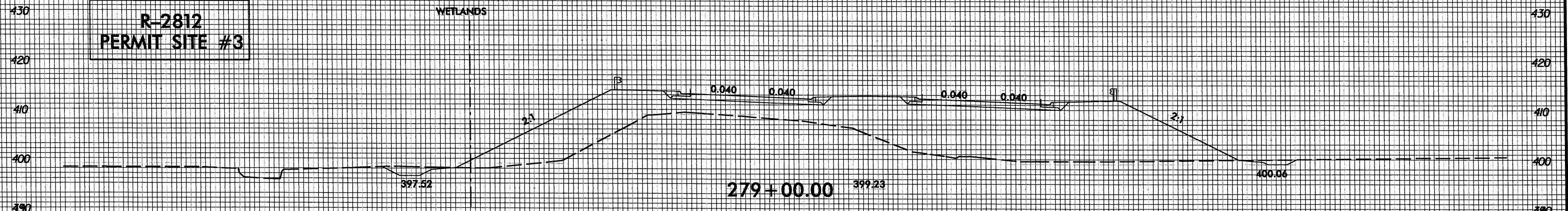
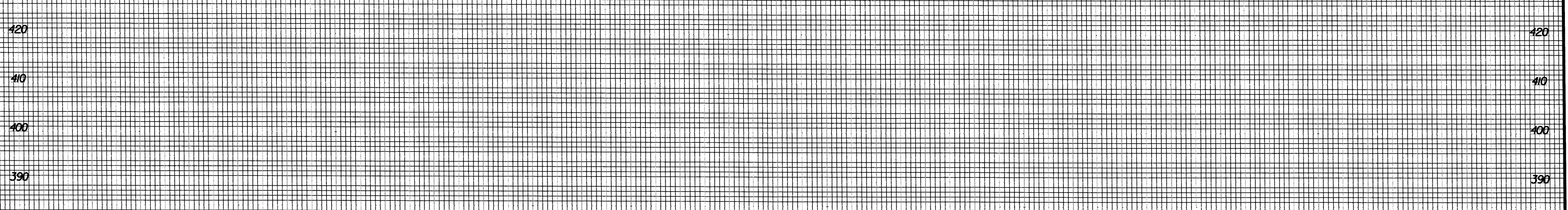
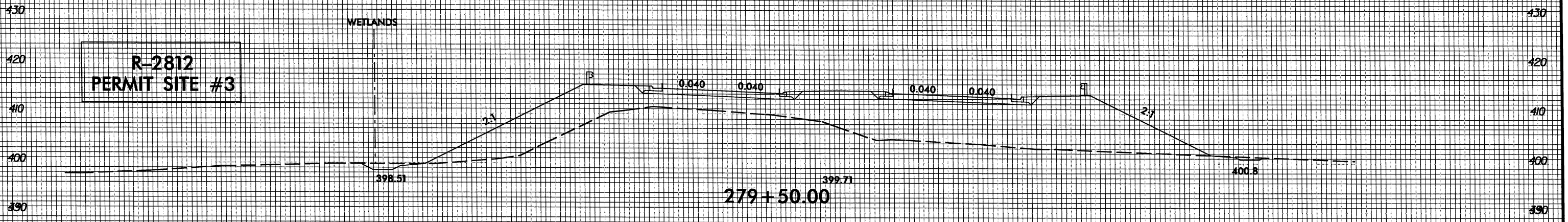
Permit Drawing
Sheet 22 of 31



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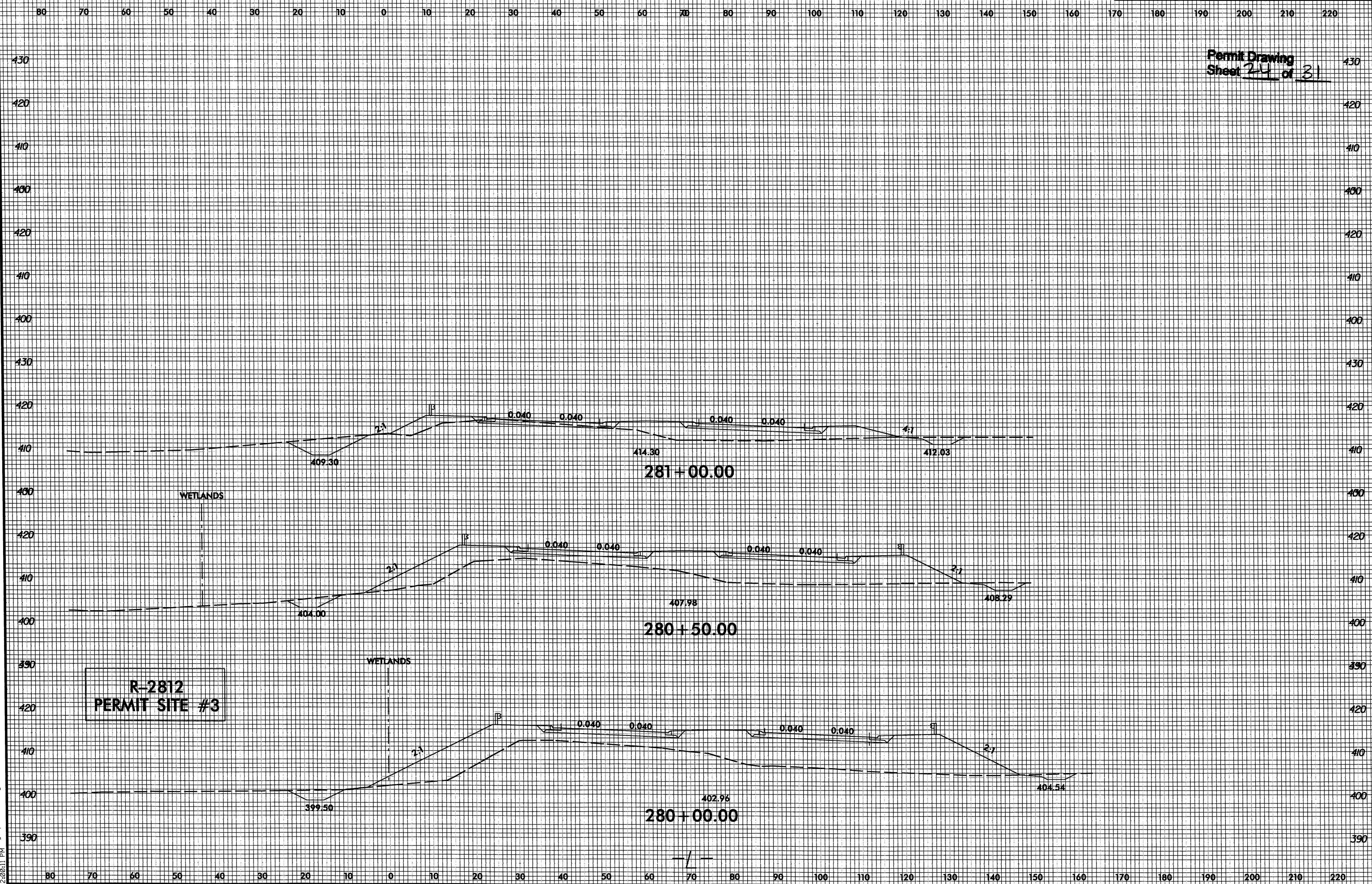
Permit Drawing
Sheet 23 of 31



8/23/99



PROJ. REFERENCE NO. R-2812	SHEET NO. X-135
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Permit Drawing
Sheet 24 of 31

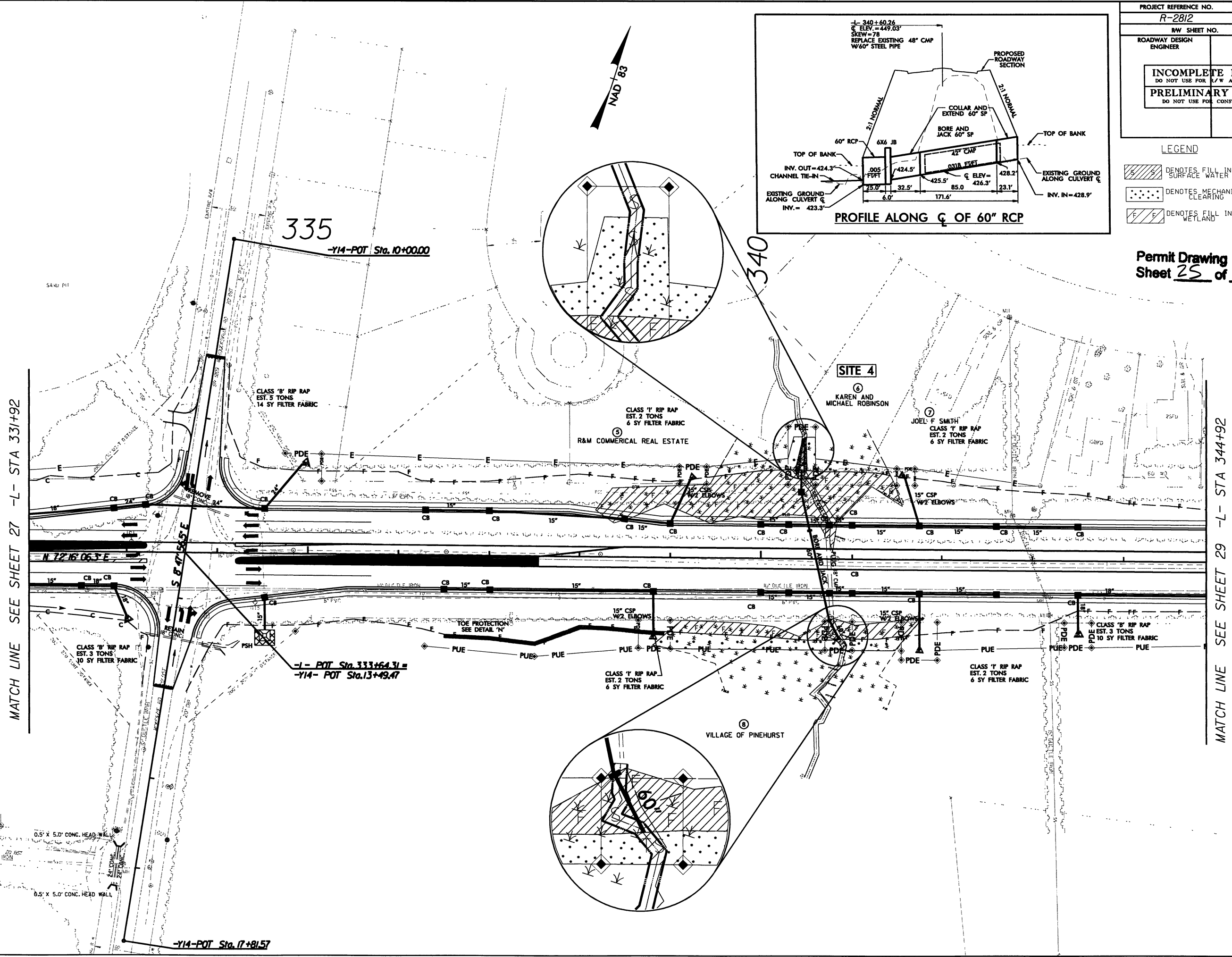
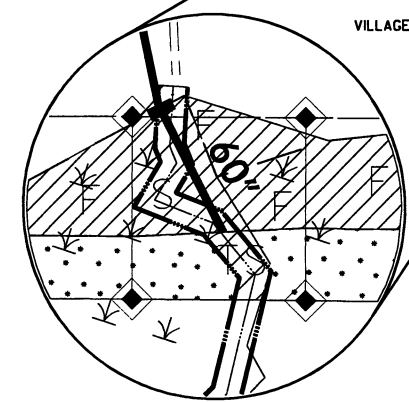
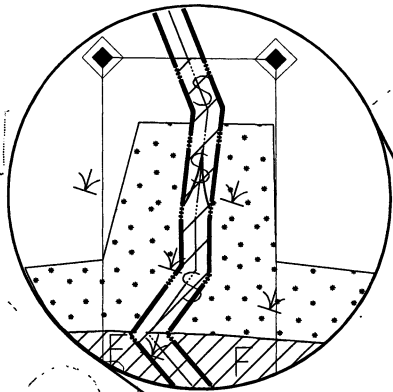
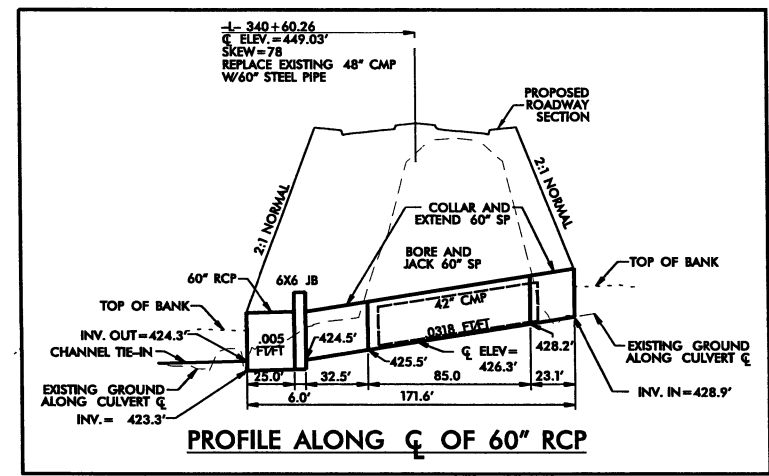
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PROJECT REFERENCE NO. R-2812	SHEET NO. 28
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

LEGEND

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

Permit Drawing
Sheet **25** of **31**



REVISIONS

MATCH LINE SEE SHEET 27 -L- STA 331+92

MATCH LINE SEE SHEET 29 -L- STA 344+92

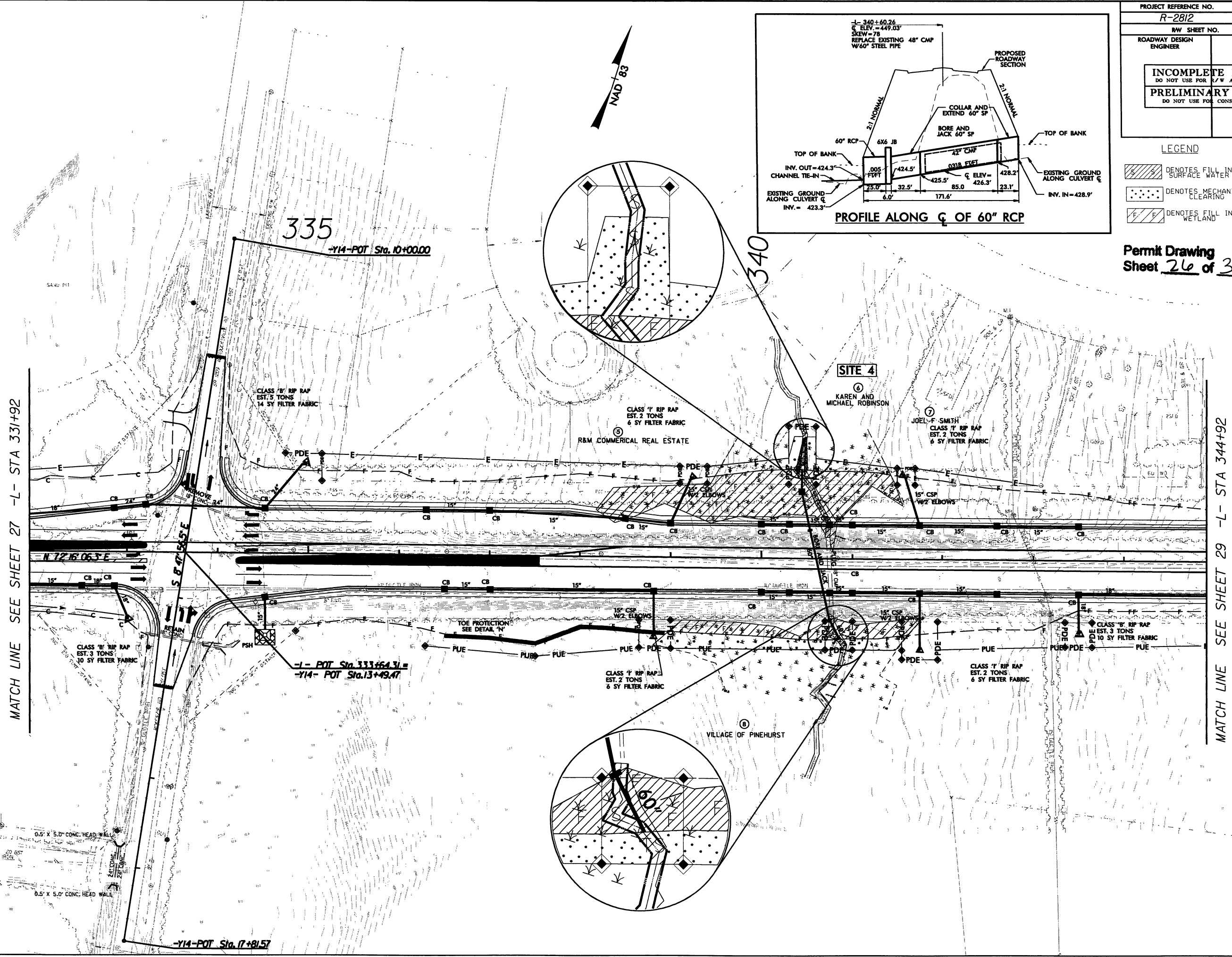
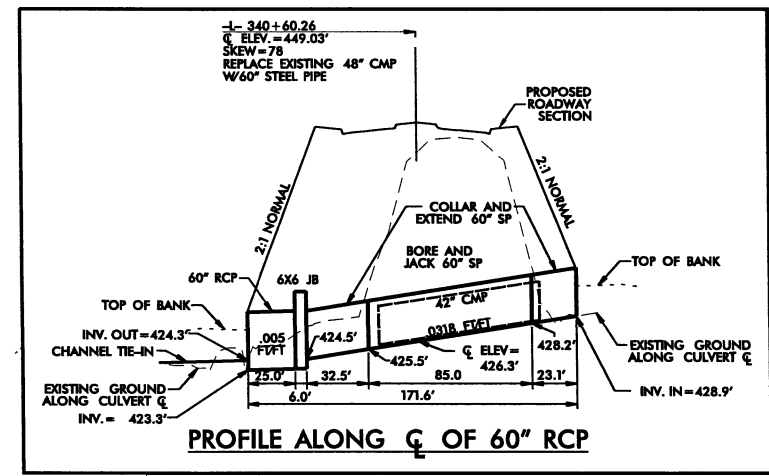
8/17/99

12/15/2000 hyd.permts.s28.dgn

LEGEND

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

Permit Drawing
Sheet 26 of 31



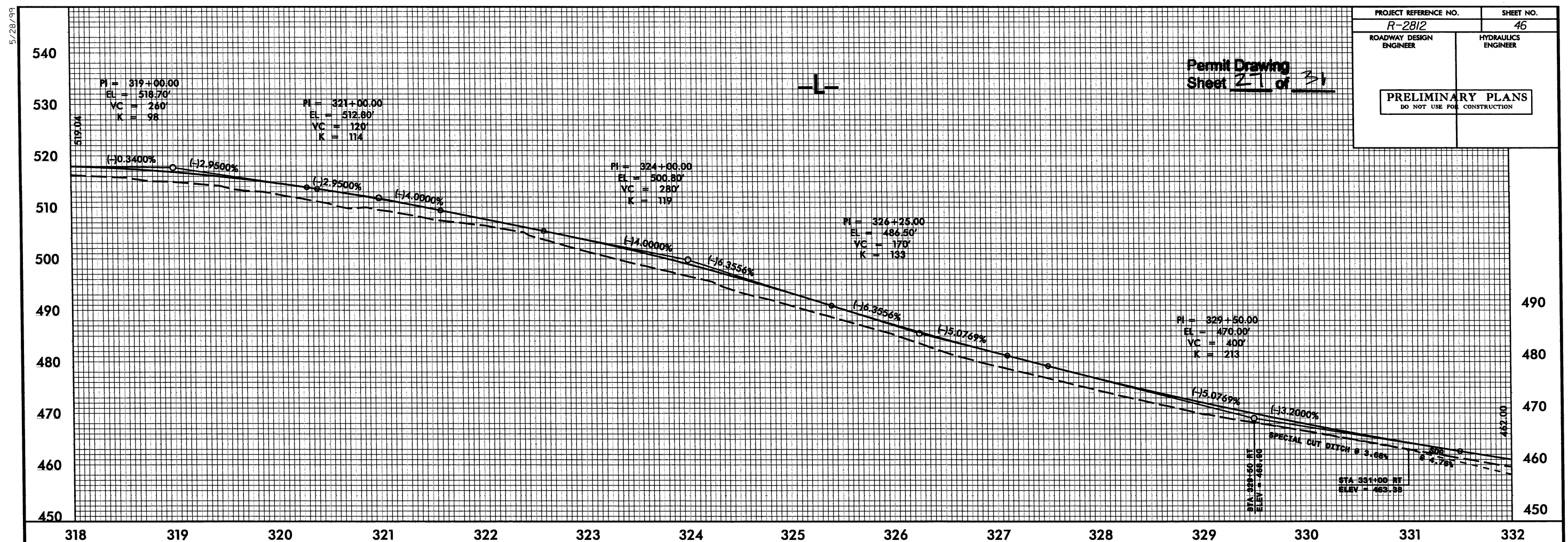
REVISIONS

MATCH LINE SEE SHEET 27 -L- STA 331+92

MATCH LINE SEE SHEET 29 -L- STA 344+92

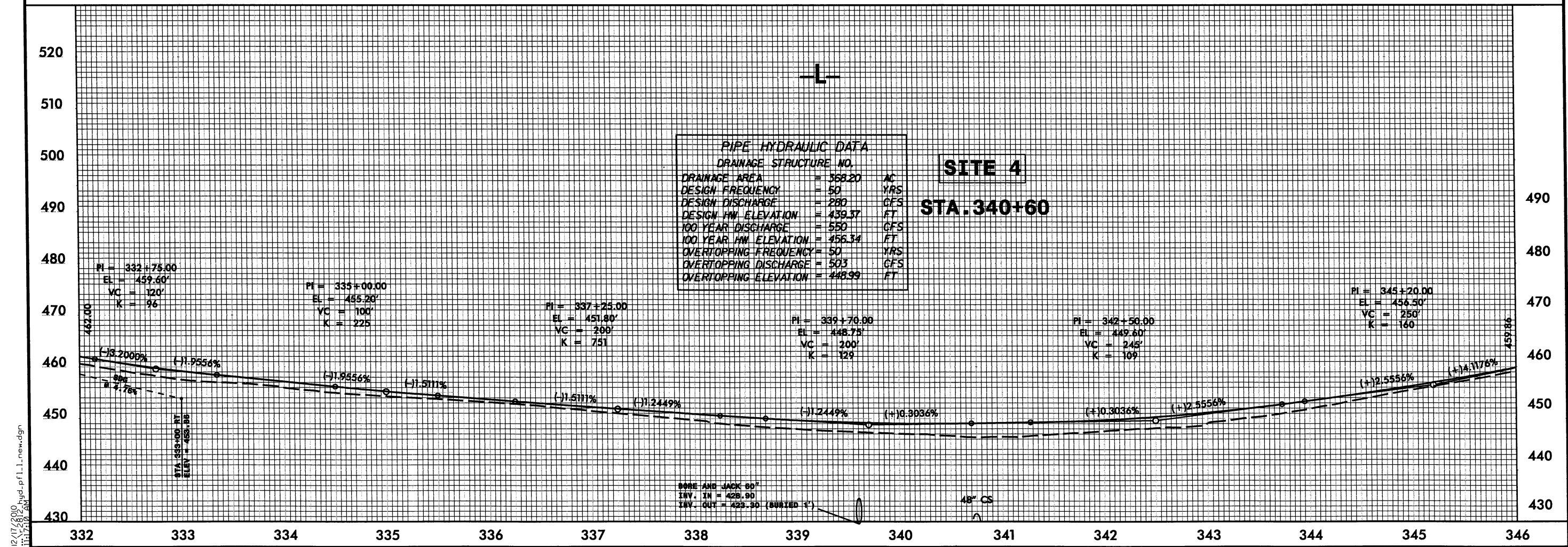
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Permit Drawing
Sheet 21 of 31



PIPE HYDRAULIC DATA	
DRAINAGE STRUCTURE NO.	
DRAINAGE AREA	= 368.20 AC
DESIGN FREQUENCY	= 50 YRS
DESIGN DISCHARGE	= 280 CFS
DESIGN HW ELEVATION	= 439.37 FT
100 YEAR DISCHARGE	= 550 CFS
100 YEAR HW ELEVATION	= 456.34 FT
OVERTOPPING FREQUENCY	= 50 YRS
OVERTOPPING DISCHARGE	= 503 CFS
OVERTOPPING ELEVATION	= 448.99 FT

SITE 4
STA. 340+60

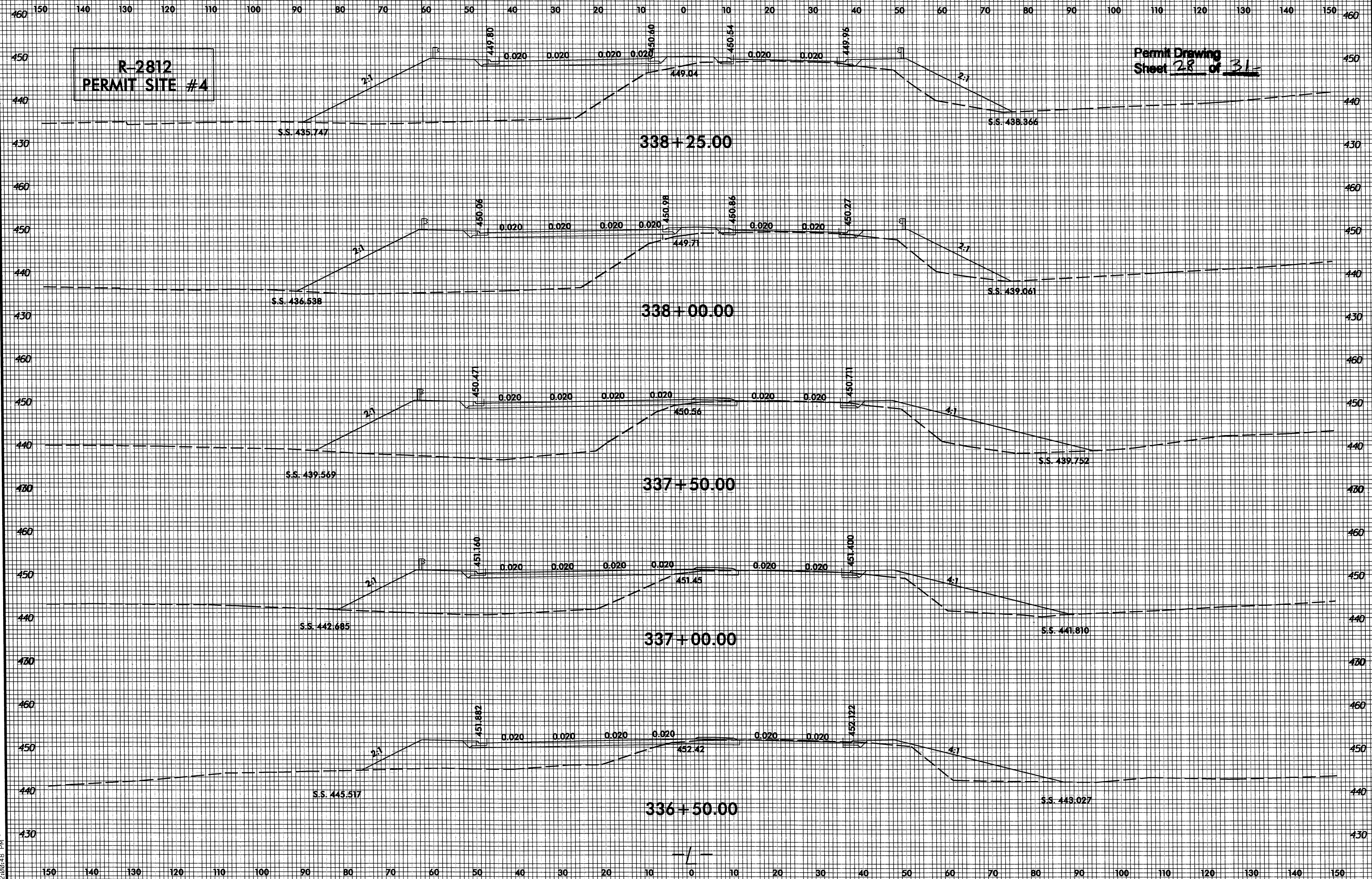


5/28/99
12/17/2010
11/17/10
11/17/10

8/23/95

R-2812
PERMIT SITE #4

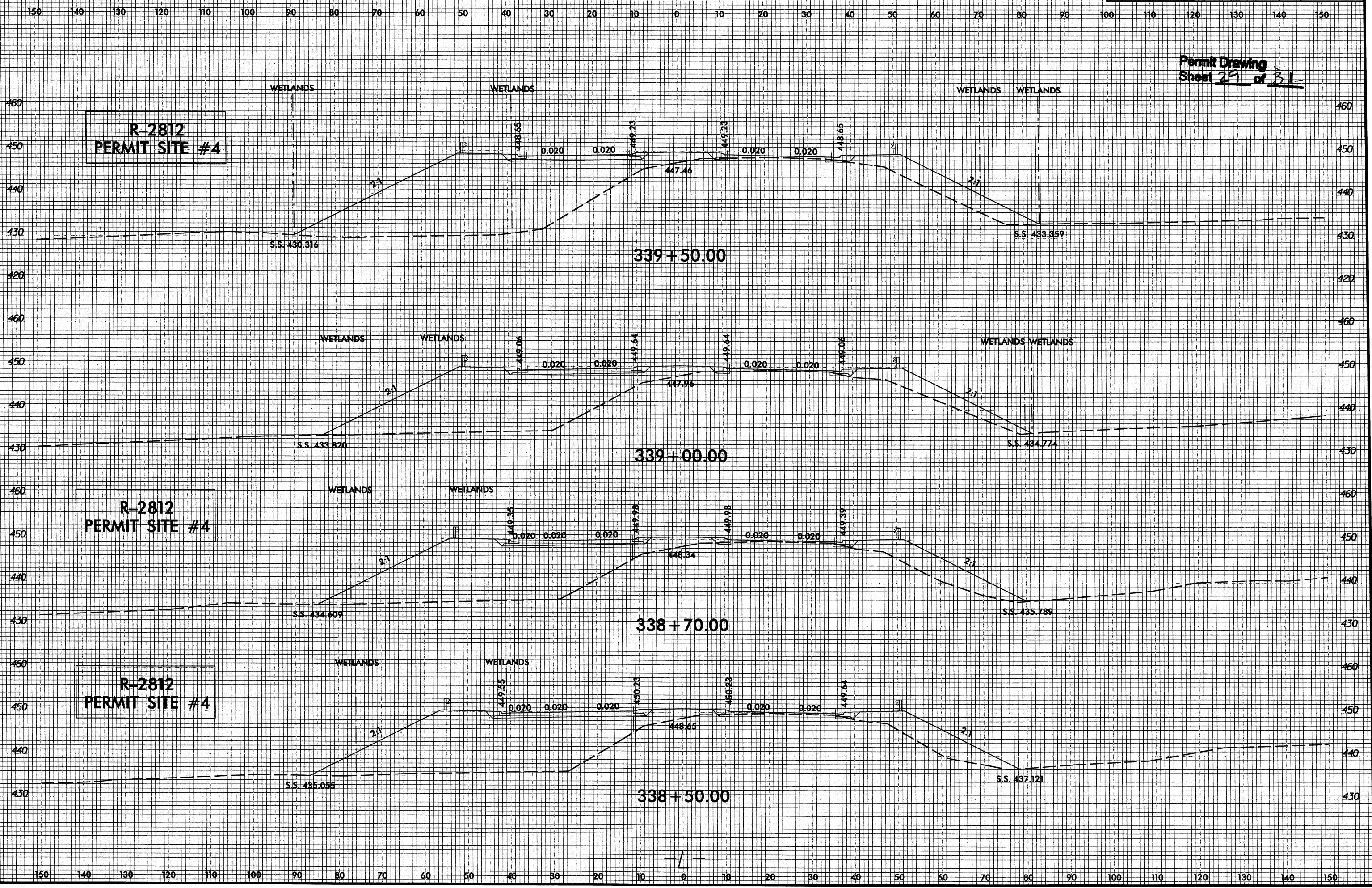
Permit Drawing
Sheet 28 of 31



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8/23/95

Permit Drawing
Sheet 29 of 31



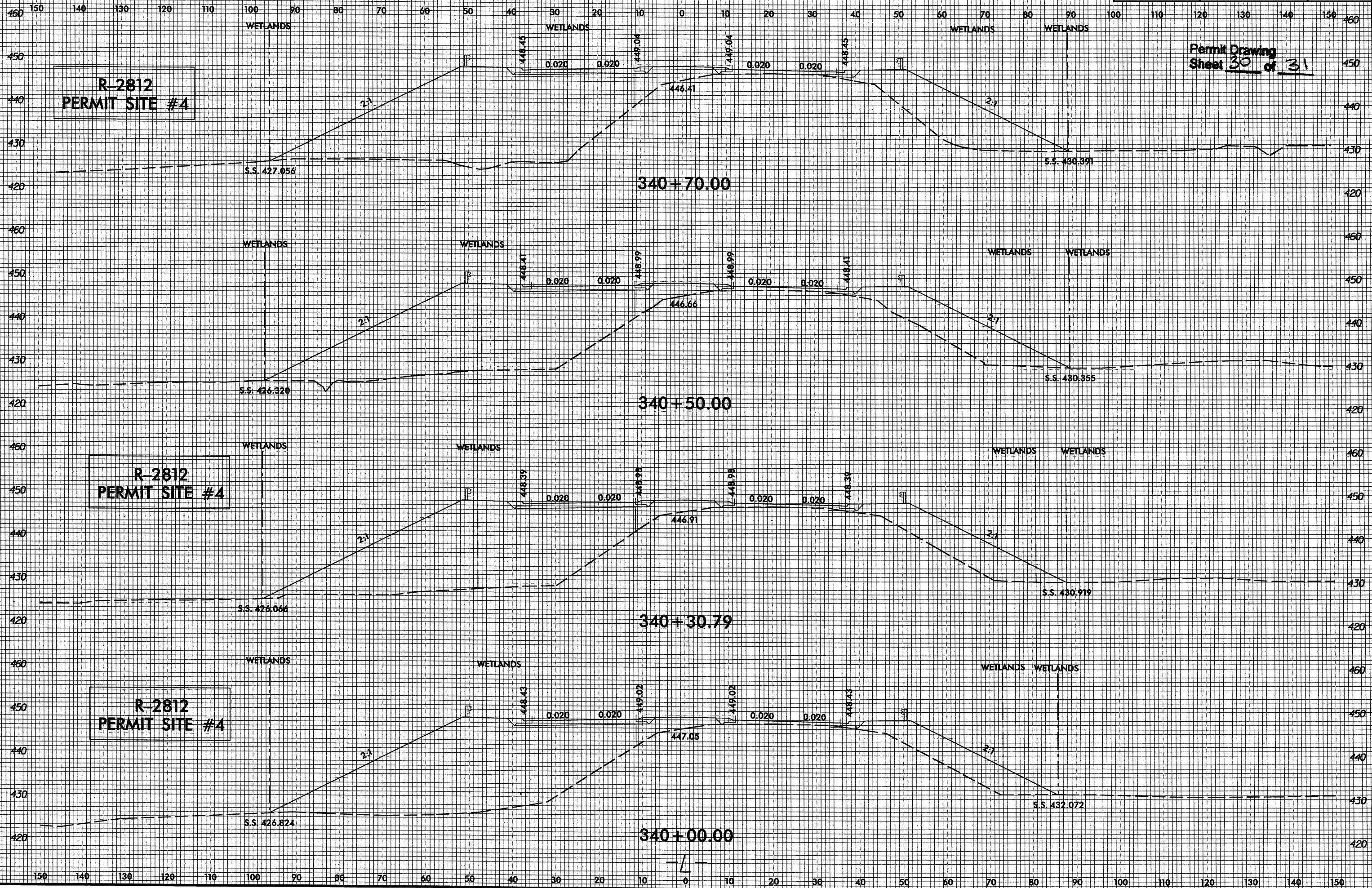
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PERMIT SITE #4

R-2812
PERMIT SITE #4

R-2812
PERMIT SITE #4

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8/23/95



R-2812
PERMIT SITE #4

Permit Drawing
Sheet 30 of 31

R-2812
PERMIT SITE #4

R-2812
PERMIT SITE #4

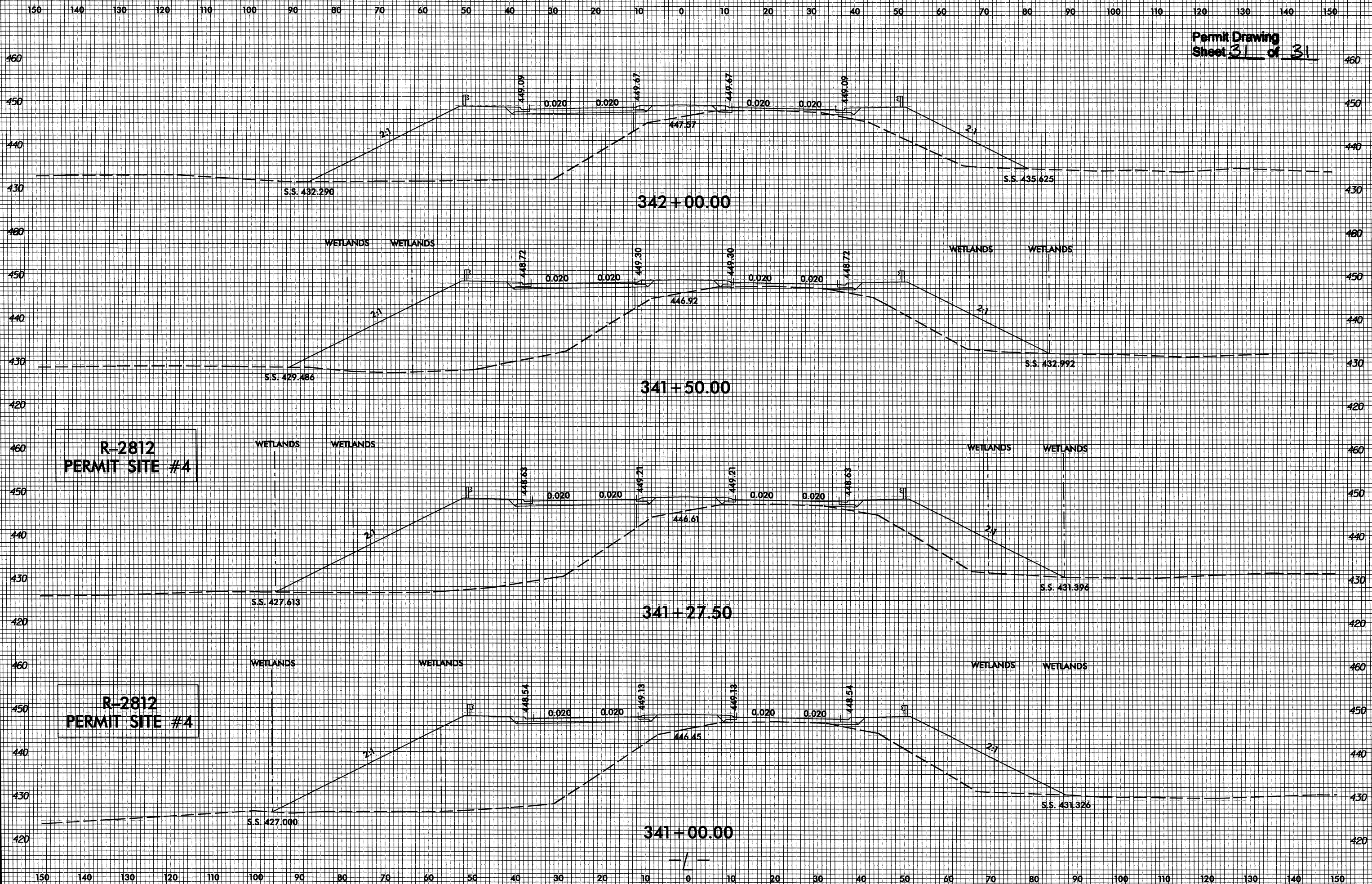
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8/23/98



PROJ. REFERENCE NO.	SHEET NO.
R-2812	X-167

Permit Drawing
Sheet 31 of 31



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