




PAT McCrory
Governor

NICHOLAS J. TENNYSON
Secretary

April 1, 2016

MEMORANDUM TO: Mr. Joey Hopkins, P.E.
Division 5 Engineer

FROM: *for* Philip S. Harris, III, P.E., Manager 
Natural Environment Section
Project Development and Environmental Analysis Unit

SUBJECT: Wake County; Proposed Interchange at the Triangle Expressway
(Toll NC 540) and Old Holly Springs-Apex Road (SR 1153);
WBS 35520.1.FS3; **TIP R-2635D.**

Attached are the US Army Corps of Engineers Individual Permit and N.C. Division of Water Resources (NCDWR) Water Quality Certification. 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:
<https://connect.ncdot.gov/resources/Environmental/Pages/default.aspx>
Quick Links>Permit Documents> Issued Permits.

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

Mr. Randy Garris, P.E. State Contract Officer
Mr. Chris Murray, Division Environmental Officer
Dr. Majed Al-Ghandour, P.E., Programming and TIP
Mr. Roger Thomas, P.E., Roadway Design
Mr. Robert Memory, Utilities Unit
Mr. Jay Twisdale, P.E., Hydraulics
Mr. Tom Koch, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Ron Hancock, P.E., State Roadway Construction Engineer
Mr. Rob Hanson, P.E., PDEA
Mr. Philip Ayscue, Office of Inspector General
Ms. Beth Harmon, Division of Mitigation Services
Ms. LeiLani Paugh, Natural Environment Section



PROJECT COMMITMENTS

T.I.P Project No. R-2635D
Proposed Interchange at the Triangle Expressway (Toll NC 540)
and Old Holly Springs-Apex Road (SR 1153)
Wake County
WBS Element 35520.1.FS3

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Division 5 Construction

NCDOT will evaluate options to minimize disruptions to bicycle mobility along Old Holly Springs-Apex Road during Construction.

Transportation Program Management

NCDOT will coordinate with the Town of Apex to prepare a municipal agreement for the construction of a sidewalk along Old Holly Springs-Apex Road.

2:1 slopes will be utilized in jurisdictional wetland fill areas.

COMMITMENTS FROM PERMITTING

No new commitments were developed during permitting.



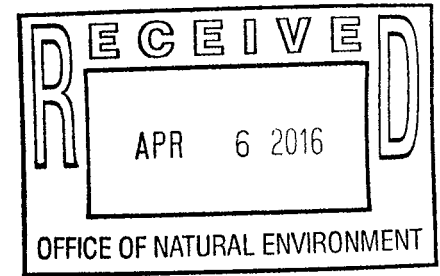
DEPARTMENT OF THE ARMY
WILMINGTON DISTRICT, CORPS OF ENGINEERS
69 DARLINGTON AVENUE
WILMINGTON, NORTH CAROLINA 28403-1343

REPLY TO
ATTENTION OF

April 4, 2016

Regulatory Division/1200A

Action ID: SAW-2014-00261



Mr. Philip S. Harris III, PE, CPM
Natural Environment Section Head
NCDOT - Project Development and Environmental Analysis Unit
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

In accordance with the written request of January 12, 2016, and the ensuing administrative record, enclosed is a Department of the Army (DA) Permit to authorize the following: Wetlands: 0.03 acre of permanent fill, 0.02 acre of mechanized clearing, 158 square feet of excavation, and 75 square feet of temporary fill; Streams: 599 linear feet of permanent impacts and 85 linear feet of temporary impacts; Pond: 2.43 acres permanent impact. These impacts are associated with the construction of the conversion of the existing grade separation at the Triangle Expressway and Old Holly Springs-Apex Road to an interchange, known as Access 540, STIP Project Number R-2635D, WBS Number 35520.1.FS3, at the Triangle Expressway (Toll NC 540), and Old Holly Springs-Apex Road (SR 1153), south of Apex, Wake 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 notified 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 general conditions require that:

- a. You must complete construction before December 31, 2021.
- b. You must notify this office in advance as to when you intend to commence and complete work.

c. 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 should address all questions regarding this authorization to Mr. Eric Alsmeyer in the Raleigh Regulatory Field Office, telephone number (919) 554-4884, extension 23.

Thank you in advance for completing our Customer Survey Form. This can be accomplished by visiting our web-site at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0 and completing the survey on-line. We value your comments and appreciate your taking the time to complete a survey each time you interact with our office.

Sincerely,



Kevin P. Landers Sr.
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. Pete Benjamin
U.S. Fish and Wildlife Service
Raleigh Ecological Service Field Office
Post Office Box 33726
Raleigh, North Carolina 27636-3726

Mr. Fritz Rohde
Habitat Conservation Division – Atlantic Branch
101 Pivers Island Road
Beaufort, North Carolina 28516

Mr. Todd Bowers
Oceans, Wetlands and Streams Protection Branch
Wetlands and Streams Regulatory Section
U.S. Environmental Protection Agency – Region 4
Sam Nunn Atlanta Federal Center
61 Forsyth Street, SW
Atlanta, Georgia 30303-8931

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

Dr. Pace Wilber
Habitat Conservation Division – Atlantic Branch
NOAA Fisheries Service
219 Fort Johnston Road
Charleston, South Carolina 29412

DEPARTMENT OF THE ARMY PERMIT

Permittee: **NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT)**
ATTN: PHILIP S. HARRIS III, PE, CPM

Permit No.: **SAW-2014-00261**

Issuing Office: **CESAW-RG-R**

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: The project, identified as STIP Access 540, STIP Project Number R-2635D, WBS Number 35520.1.FS3, consists of the conversion of the existing grade separation at the Triangle Expressway and Old Holly Springs-Apex Road to an interchange. **Impacts:** Wetlands: 0.03 acre of permanent fill, 0.02 acre of mechanized clearing, 158 square feet of excavation, and 75 square feet of temporary fill; Streams: 599 linear feet of permanent impacts and 85 linear feet of temporary impacts; Pond: 2.43 acres permanent impact.

Project Location: Triangle Expressway (Toll NC 540), and Old Holly Springs-Apex Road (SR 1153), south of Apex, Wake County, North Carolina; unnamed tributaries to Big Branch and Little Branch.

Permit Conditions:

General Conditions:

1. The time limit for completing the work authorized ends on **December 31, 2021**. 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.

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.



(PERMITTEE) **NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**
ATTN: PHILIP S. HARRIS III, PE, CPM 04/01/2016

(DATE)

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



(DISTRICT COMMANDER) **KEVIN P. LANDERS, SR., COLONEL** 05 April 2016

(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.

(TRANSFEREE) _____
(DATE)

SPECIAL CONDITIONS
ACTION ID: SAW-2014-00261
NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
STIP R-2635D

WORK LIMITS

1. CONSTRUCTION PLANS: All work authorized by this permit must be performed in strict compliance with the attached Permit Drawings (Permit Drawing Sheet 1 of 17 dated 1/5/2016), 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.

2. UNAUTHORIZED DREDGE OR FILL: 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.

3. MAINTAIN CIRCULATION AND FLOW OF WATERS: 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.

4. DEVIATION FROM PERMITTED PLANS: 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. Eric Alsmeyer, Raleigh Regulatory Field Office, prior to any active construction in waters or wetlands.

5. PRECONSTRUCTION MEETING: The permittee shall schedule and attend a preconstruction meeting between its representatives, the contractors representatives, and the Corps of Engineers, Raleigh 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 the terms and conditions contained with this Department of Army Permit. The permittee shall provide the USACE, Raleigh Field Office, NCDOT Project Manager, with a copy of the final permit plans at least two weeks prior to the preconstruction meeting along with a description of any changes that have been made to

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the project's design, construction methodology or construction timeframe. The permittee shall schedule the preconstruction meeting for a time frame when the USACE and NCDWR Project Managers can attend. The permittee shall invite the Corps, and NCDWR 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.

RELATED LAWS

6. WATER CONTAMINATION: 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 (919) 733-3300 or (800) 858-0368 and provisions of the North Carolina Oil Pollution and Hazardous Substances Control Act will be followed.

PROJECT MAINTENANCE

7. NOTIFICATION OF CONSTRUCTION COMMENCEMENT AND COMPLETION: 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.

8. CLEAN FILL: 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. Soils used for fill shall not be contaminated with any toxic substance in concentrations governed by Section 307 of the Clean Water Act.

9. PERMIT DISTRIBUTION: 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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10. SILT-FENCING: 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).

11. PERMIT REVOCATION: 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.

12. EROSION CONTROL MEASURES IN WETLANDS: The permittee shall remove all sediment and erosion control measures placed in wetlands or waters, and shall restore natural grades in those areas, prior to project completion.

ENFORCEMENT

13. REPORTING ADDRESS: All reports, documentation and correspondence required by the conditions of this permit shall be submitted to the following address: U.S. Army Corps of Engineers, Regulatory Division, Raleigh Regulatory Field Office, c/o Mr. Eric Alsmeyer, 3331 Heritage Trade Drive, Suite 105, Wake Forest, NC 27587, and by telephone at: 919.554.4884, ext. 23. The Permittee shall reference the following permit number, SAW-2011-00796, on all submittals.

14. REPORTING VIOLATIONS OF THE CLEAN WATER ACT AND RIVERS AND HARBORS ACT: Violation of these conditions or violation of Section 404 of the Clean Water Act of 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.

15. COMPLIANCE INSPECTION: 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 an administrative financial penalty and/or directive to cease work until the problem is resolved to the satisfaction of the Corps.

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STIP R-2635D

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

17. PROHIBITIONS ON CONCRETE: The permittee shall take measures to prevent live or fresh concrete, including bags of uncured concrete, from coming into contact with any water in or entering into waters of the United States. Water inside coffer dams or casings that has been in contact with concrete shall only be returned to waters of the United States when it no longer poses a threat to aquatic organisms (concrete is set and cured).

18. SEDIMENT SLUICING: 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.

19. CULVERTS:

A. Unless otherwise requested in the applicant's application and depicted on the approved work plans, 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 and 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 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.

B. 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.

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20. TEMPORARY FILLS: Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be vegetated, as appropriate.

21. BORROW AND WASTE: To ensure that all borrow and waste activities occur on high ground and do not result in the degradation of adjacent waters and wetlands, 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 Corps of Engineers with appropriate maps indicating the locations of proposed borrow or waste sites as soon as such information is available. The permittee will coordinate with the Corps of Engineers before approving any borrow or waste sites that are within 400 feet of any stream or wetland. All jurisdictional wetland delineations on borrow and waste areas shall be verified by the Corps of Engineers and shown on the approved reclamation plans. The permittee shall ensure that all such areas comply with the Special Condition 1 above, 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 documentation will include data regarding soils, vegetation and hydrology sufficient to clearly demonstrate compliance with Special Condition 1 above. All information will be available to the Corps of Engineers upon request. The permittee 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.



PAT MCCRORY

Governor

DONALD R. VAN DER VAART

Secretary

S. JAY ZIMMERMAN

Director

March 8, 2016

Mr. Colin Mellor, Group Leader
Project Development and Environmental Analysis
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina, 27699-1598

Subject: 401 Water Quality Certification Pursuant to Section 401 of the Federal Clean Water Act with
ADDITIONAL CONDITIONS for Proposed interchange at NC 540 and SR 1153 in Wake County, State
Project No. 35520.3.S5, TIP No. R-2635D
NCDWR Project No. 20160041

Dear Mr. Mellor:

Attached hereto is a copy of Certification No. 4055 issued to The North Carolina Department of Transportation (NCDOT) dated March 8, 2016.

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

Sincerely,

A handwritten signature in blue ink that reads 'S. Jay Zimmerman'.

S. Jay Zimmerman, Director
Division of Water Resources

Attachments

Electronic copy only distribution:

Eric Alsmeyer, US Army Corps of Engineers, Raleigh Field Office
Chris Murray, Division 5 Environmental Officer
Chris Rivenbark, NC Department of Transportation
Beth Reed, Kimley-Horn
File Copy

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 Resources (NCDWR) Regulations in 15 NCAC 2H .0500. This certification authorizes the NCDOT to impact 0.07 acres of jurisdictional wetlands, and 684 linear feet of jurisdictional streams in Wake County. The project shall be constructed pursuant to the application received February 3, 2016. The authorized impacts are as described below:

Stream Impacts in the Cape Fear River Basin

Site	Permanent Fill in Intermittent Stream (linear ft)	Bank Stabilization to Intermittent Stream (linear ft)	Temporary Impact to Intermittent Stream (linear ft)	Permanent Fill in Perennial Stream (linear ft)	Bank Stabilization to Perennial Stream (linear ft)	Temporary Impact to Perennial Stream (linear ft)	Total Stream Impact (linear ft)
1	0	0	0	18	55	20	93
2	0	0	0	117	0	35	152
4	275	46	20	0	0	0	341
5	74	14	10	0	0	0	98
Total	349	60	30	135	55	55	684

Total Stream Impact for Project: 684 linear feet

Wetland Impacts in the Cape Fear River Basin

Site	Permanent Fill (ac)	Temporary Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Wetland Impact (ac)
3	0.03	0	0	0.02	0.05
7	0	0.01	0.01	0	0.02
Total	0.03	0.01	0.01	0.02	0.07

Total Wetland Impact for Project: 0.07 acres.

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

Site	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
6	2.34	0	2.34
Total	2.34	0	2.34

Total Open Water Impact for Project: 2.34 acres.

The application provides adequate assurance that the discharge of fill material into the waters of the Cape Fear River Basin 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 received February 3, 2016. Should your project change, you are required to notify the NCDWR and submit a new application. If the property is sold, the new owner must be given a copy of this Certification and approval letter, and is thereby responsible for complying with all the conditions. If 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:

1. Unless otherwise approved in this certification, placement of new 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 the NCDWR. If this condition is unable to be met due to bedrock or other limiting features encountered during construction, please contact the NCDWR for guidance on how to proceed and to determine whether or not a permit modification will be required. [15A NCAC 02H.0506(b)(2)]
2. 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. [15A NCAC 02H.0506(b)(2)]
3. 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. [15A NCAC 02H.0506(b)(2)]
4. For all streams being impacted due to site dewatering activities, the site shall be graded to its preconstruction contours and revegetated with appropriate native species. [15A NCAC 02H.0506(b)(2)]
5. 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. [15A NCAC 2H.0506(b)(3)]
6. 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. [15A NCAC 02B.0200]
7. 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. [15A NCAC 02H.0506(b)(2)]
8. 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. [15A NCAC 02H.0506(b)(2)]

9. 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. [15A NCAC 02H.0506(b)(2)]
10. The Permittee shall ensure that the final design drawings adhere to the permit and to the permit drawings submitted for approval. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
11. 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. [15A NCAC 02H.0506(b)(3) and (c)(3)]
12. 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. [15A NCAC 02H.0506(b)(3)]
13. 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. [15A NCAC 02H.0506(b)(3)]
14. No rock, sand or other materials shall be dredged from the stream channel except where authorized by this certification. [15A NCAC 02H.0506(b)(3)]
15. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]
16. 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 the NCDWR 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, the NCDWR may reevaluate and modify this certification. [15A NCAC 02B.0200]
17. All fill slopes located in jurisdictional wetlands shall be placed at slopes no flatter than 3:1, unless otherwise authorized by this certification. [15A NCAC 02H.0506(b)(2)]
18. 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. [15A NCAC 02H .0507(c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]
19. 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. [15A NCAC 02H.0501 and .0502]
20. 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.
21. The Permittee shall report any violations of this certification to the Division of Water Resources within 24 hours of discovery. [15A NCAC 02B.0506(b)(2)]
22. 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 the NCDWR when all work included in the 401 Certification has been completed. [15A NCAC 02H.0502(f)]
23. Native riparian vegetation (i.e. trees and shrubs native to your geographic region) 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. [15A NCAC 02B.0506(b)(2)]

24. 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.[15A NCAC 02H.0506(b)(3) and (c)(3)]

25. 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 [15A NCAC 02H.0506(b)(3) and (c)(3)]:

- 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.

26. Sediment and erosion control measures shall not be placed in wetlands or waters unless otherwise approved by this Certification. [15A NCAC 02H.0506(b)(3) and (c)(3)]

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

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

Mr. Sam M. Hayes, General Counsel
Department of Environmental Quality
1601 Mail Service Center

This the 8th day of March 2016

DIVISION OF WATER RESOURCES

A handwritten signature in blue ink, appearing to read "S. Jay Zimmerman".

S. Jay Zimmerman, Director

WQC No. 4055



PAT MCCRORY

Governor

DONALD R. VAN DER VAART

Secretary

S. JAY ZIMMERMAN

Director

NCDWR Project No.: _____ County: _____

Applicant: _____

Project Name: _____

Date of Issuance of 401 Water Quality Certification: _____

Certificate of Completion

Upon completion of all work approved within the 401 Water Quality Certification or applicable Buffer Rules, and any subsequent modifications, the applicant is required to return this certificate to the 401 Transportation Permitting Unit, North Carolina Division of Water Resources, 1617 Mail Service Center, Raleigh, NC, 27699-1617. This form may be returned to NCDWR by the applicant, the applicant's authorized agent, or the project engineer. It is not necessary to send certificates from all of these.

Applicant's Certification

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

Signature: _____ Date: _____

Agent's Certification

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

Signature: _____ Date: _____

Engineer's Certification

_____ Partial _____ Final

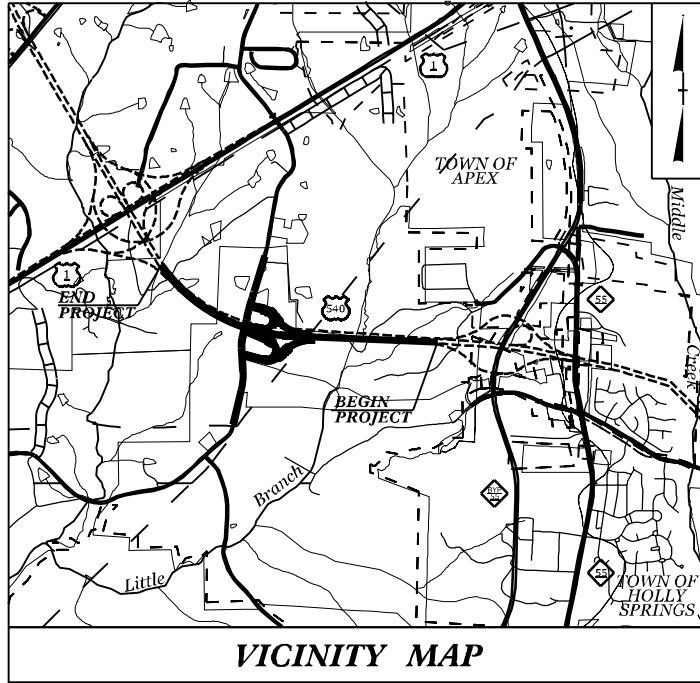
I, _____, as a duly registered Professional Engineer in the State of North Carolina, having been authorized to observe (periodically, weekly, full time) the construction of the project for the Permittee hereby state that, to the best of my abilities, due care and diligence was used in the observation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

Signature _____ Registration No. _____

Date _____

PROJECT: R-2635D

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



VICINITY MAP

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS
WAKE COUNTY

WETLAND AND SURFACE WATER IMPACTS PERMIT

**LOCATION: TRIANGLE EXPRESSWAY (TOLL NC-540) /
VERIDEA PARKWAY (SR 1153) INTERCHANGE**

**TYPE OF WORK: GRADING, PAVING, GUARDRAIL, DRAINAGE, STRUCTURE, WALLS,
CULVERT EXTENSIONS, SIGNING, AET INFRASTRUCTURE, & ITS**

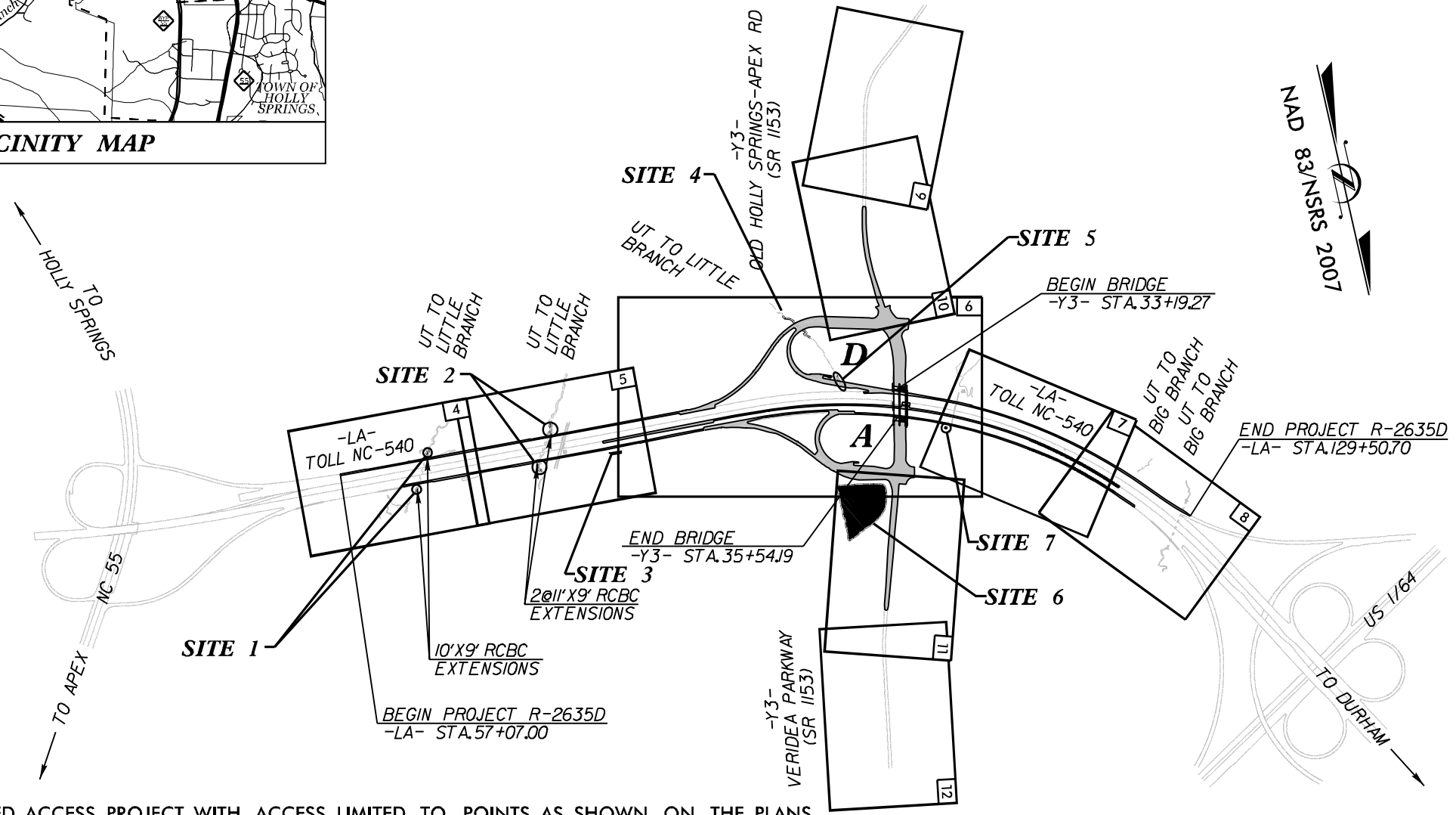
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-2635D	1	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION	
35520.1.S5		P.E.	
35520.2.S5		RIGHT-OF-WAY	
35520.2.S5		UTILITIES	
35520.3.S5		CONSTRUCTION	



Kimley»Horn

FINAL ROADWAY PLANS

PROJECT # R-2635D
SUBMITTAL # S-024R3
SUBMITTAL DATE: 1/6/2016

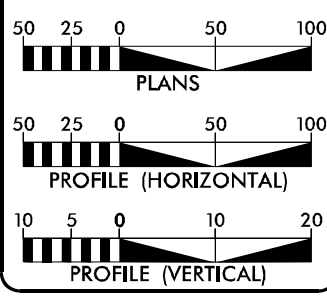


THIS IS A CONTROLLED-ACCESS PROJECT WITH ACCESS LIMITED TO POINTS AS SHOWN ON THE PLANS

PERMIT DRAWING
SHEET 1 OF 17

DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES



DESIGN DATA

ADT 2015 = 37,500
ADT 2035 = 72,400
DHV = 10 %
D = 65 %
T = 18 % *
V = 70 MPH
* TTST = 12% DUAL = 6%
FUNC CLASS =
URBAN FREEWAY
REGIONAL TIER

PROJECT LENGTH

LENGTH OF ROADWAY PROJECT R-2635D = 1.372 MILES
TOTAL LENGTH OF PROJECT R-2635D = 1.372 MILES

PLANS PREPARED FOR THE NCDOT BY: **Kimley»Horn**

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:

JUNE 26, 2015

LETTING DATE:

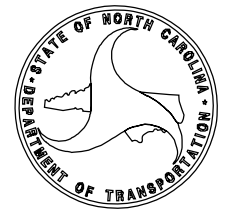
JUNE 26, 2015

JEFFREY W. MOORE, P.E.
PROJECT ENGINEER
CHADWICK W. BECK, P.E.
PROJECT DESIGN ENGINEER
K. ZAK HAMIDI, P.E.
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: _____
ROADWAY DESIGN ENGINEER

SIGNATURE: _____
P.E.



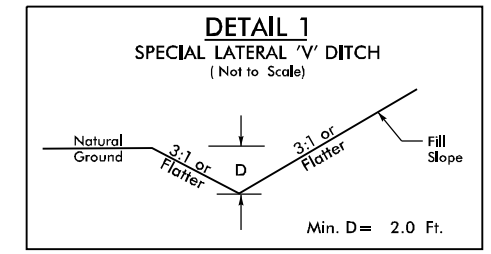
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CONTRACT: C203635

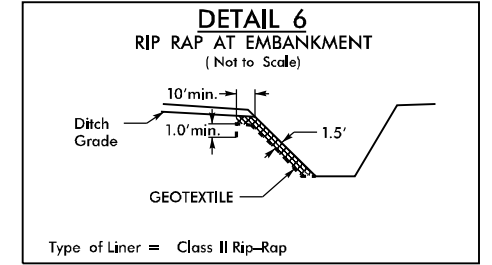
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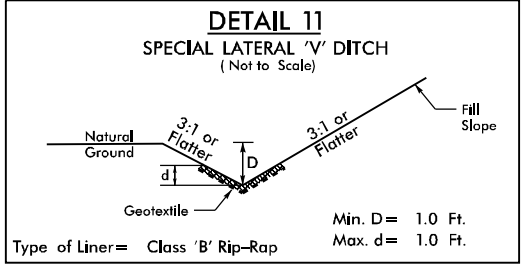
PERMIT DRAWING SHEET 2 OF 17



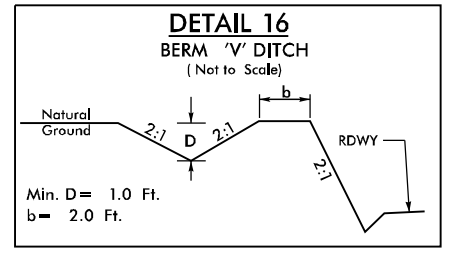
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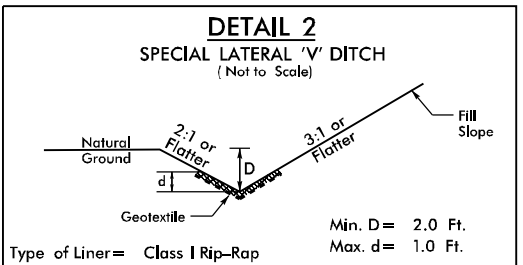
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STA. 23+50 -Y3RPD- (RT)
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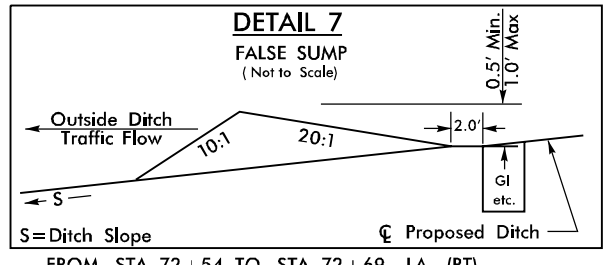
FROM STA. 113+50 TO STA. 114+50 -LA- (LT)
FROM STA. 24+50 TO STA. 27+50 -Y3RPD- (LT)
FROM STA. 19+23 TO STA. 21+00 -Y3- (RT)
FROM STA. 17+74 TO STA. 21+50 -Y3- (LT)
Type of Liner = Class 'B' Rip-Rap



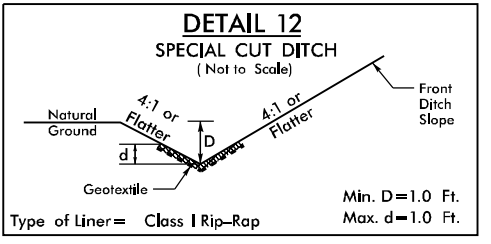
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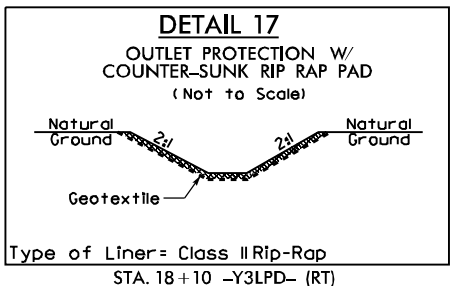
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FROM STA. 81+77 TO STA. 83+00 -LA- (RT)
FROM STA. 23+00 TO STA. 24+50 -Y3RPD- (LT)
FROM STA. 23+50 TO STA. 29+50 -Y3RPD- (RT)
FROM STA. 11+00 TO STA. 11+50 -Y3RPD- (LT)
Type of Liner = Class I Rip-Rap



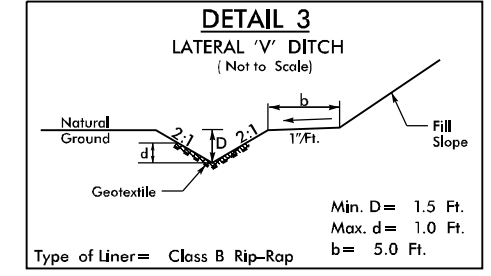
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FROM STA. 120+04 TO STA. 120+19 -LA- (RT)
FROM STA. 109+31 TO STA. 109+46 -LA- (LT)
FROM STA. 18+54 TO STA. 18+69 -Y3LPD- (LT)
FROM STA. 22+04 TO STA. 22+19 -Y3LPD- (LT)
FROM STA. 23+42 TO STA. 23+57 -Y3LPD- (RT)
FROM STA. 12+80 TO STA. 12+95 -Y3LPA- (RT)
FROM STA. 13+56 TO STA. 13+71 -Y3LPA- (RT)
FROM STA. 14+56 TO STA. 14+71 -Y3LPA- (LT)
FROM STA. 15+81 TO STA. 15+96 -Y3LPA- (LT)
FROM STA. 11+81 TO STA. 11+96 -Y3RPD- (LT)



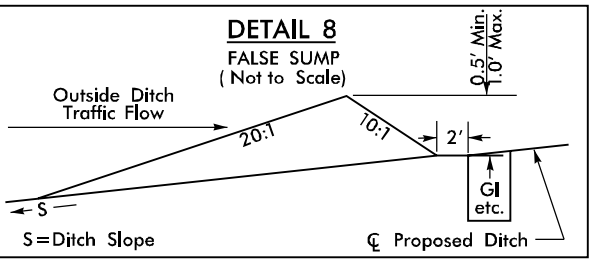
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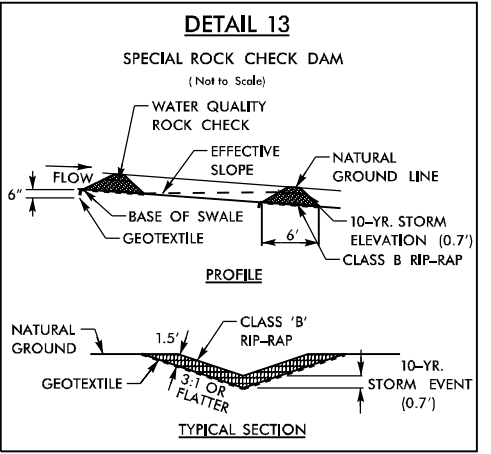
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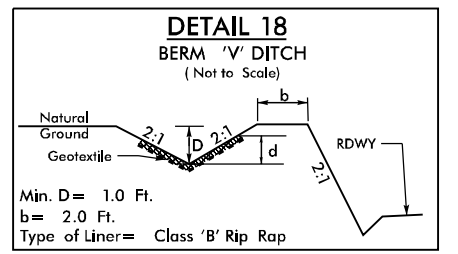
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Type of Liner = Class B Rip-Rap



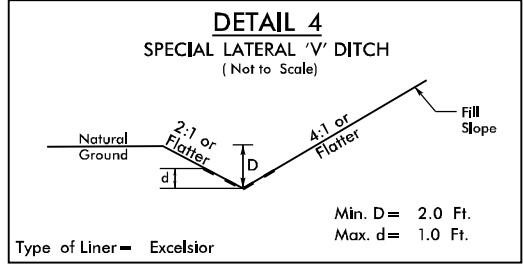
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FROM STA. 96+49 TO STA. 96+64 -LA- (RT)
FROM STA. 108+31 TO STA. 108+46 -LA- (RT)
FROM STA. 20+04 TO STA. 20+19 -Y3RPD- (LT)
FROM STA. 18+54 TO STA. 18+69 -Y3RPD- (LT)
FROM STA. 15+56 TO STA. 15+71 -Y3RPA- (RT)
FROM STA. 17+06 TO STA. 17+21 -Y3RPA- (RT)
FROM STA. 17+06 TO STA. 17+21 -Y3RPA- (LT)
FROM STA. 20+27 TO STA. 20+45 -Y3RPA- (RT)



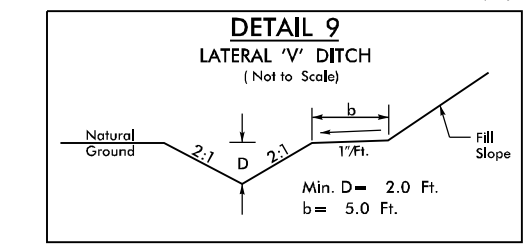
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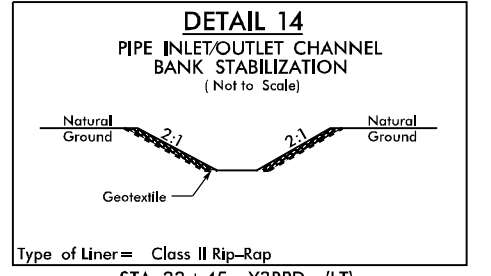
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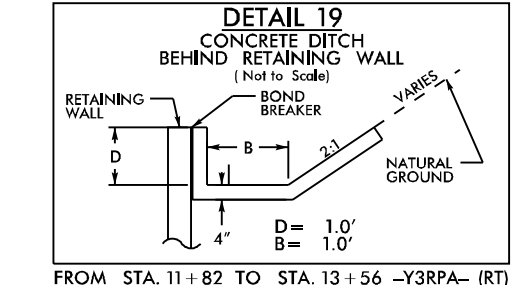
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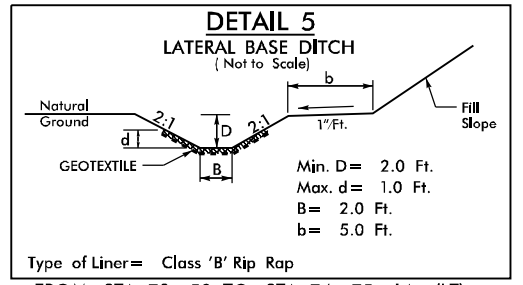
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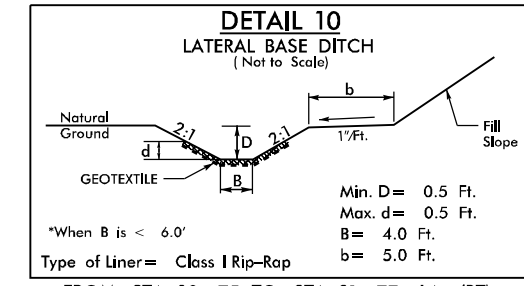
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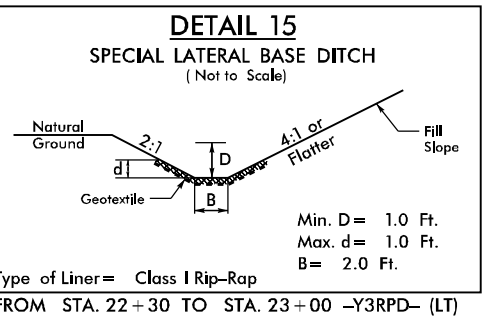
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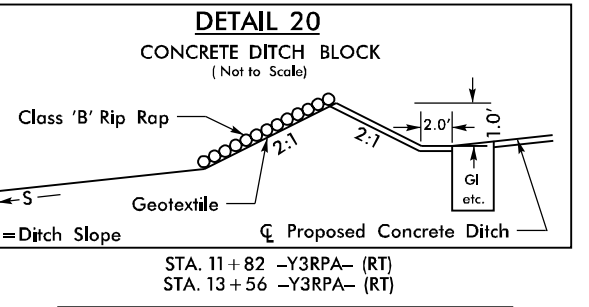
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Type of Liner = Class 'B' Rip-Rap



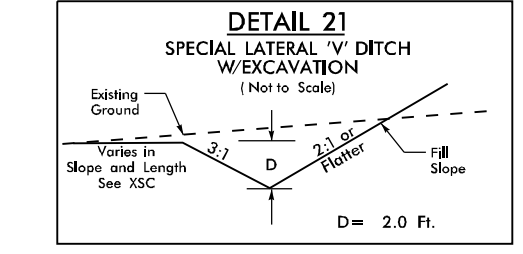
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*When B is < 6.0'
Type of Liner = Class I Rip-Rap



FROM STA. 22+30 TO STA. 23+00 -Y3RPD- (LT)
Type of Liner = Class I Rip-Rap



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STA. 13+56 -Y3RPA- (RT)



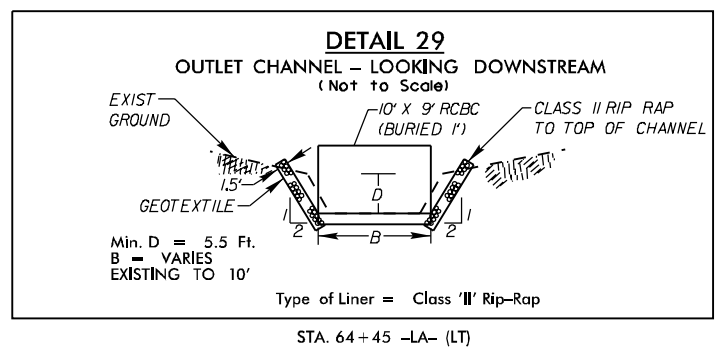
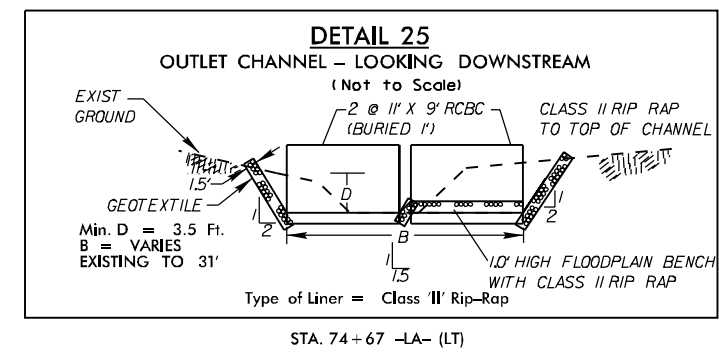
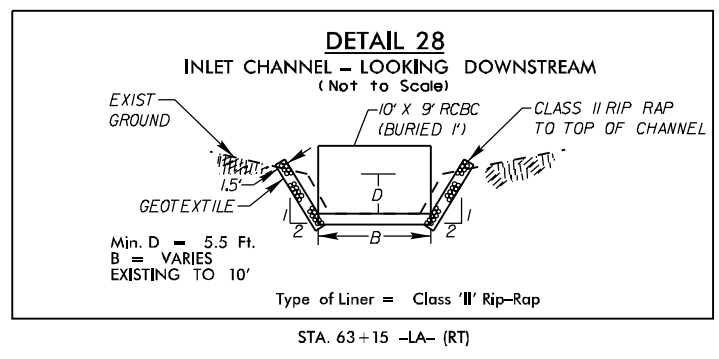
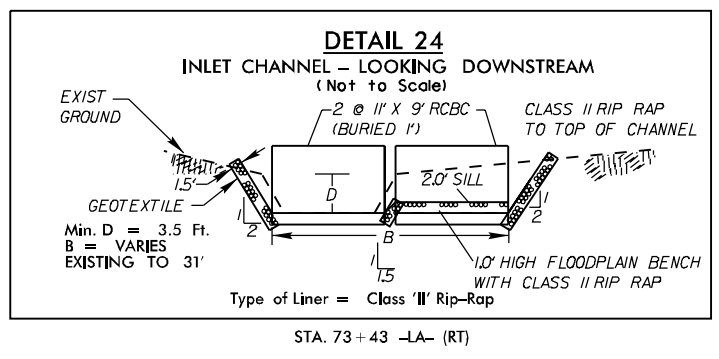
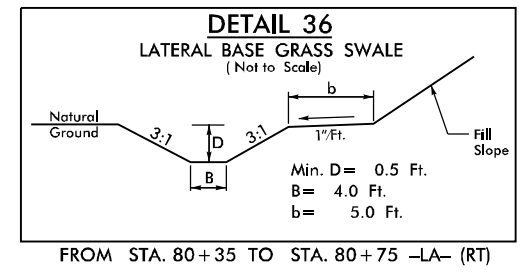
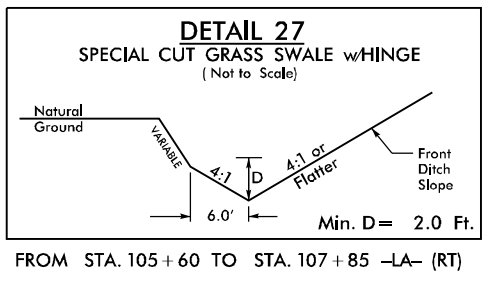
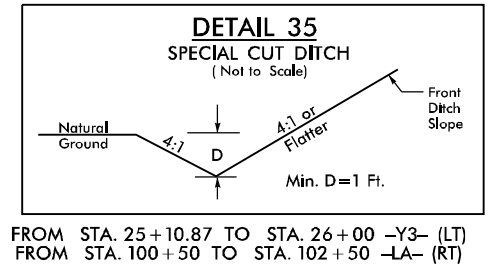
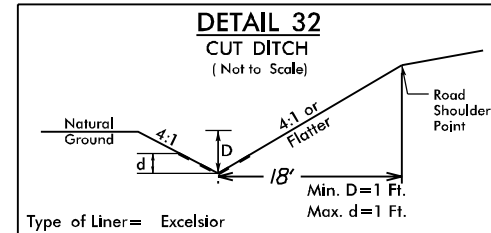
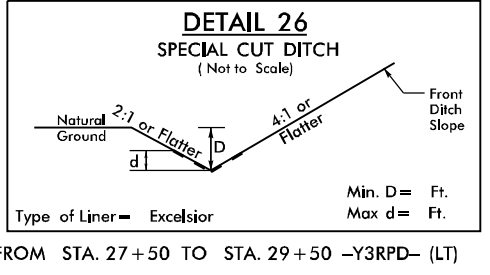
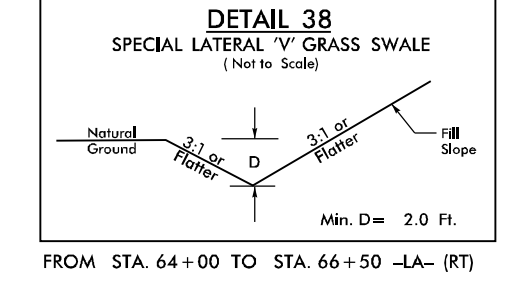
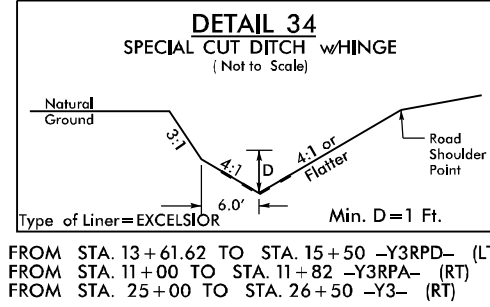
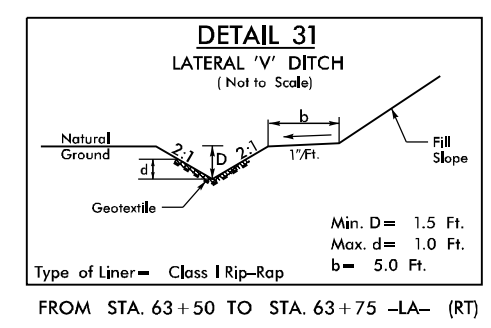
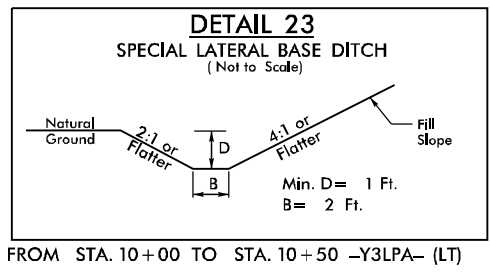
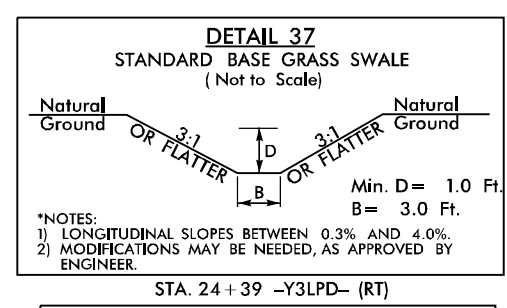
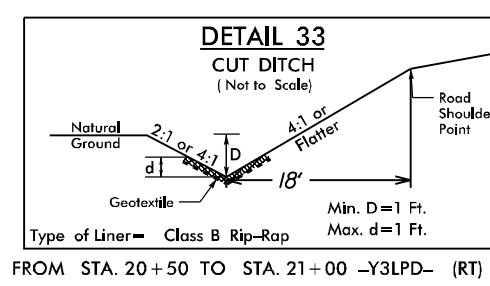
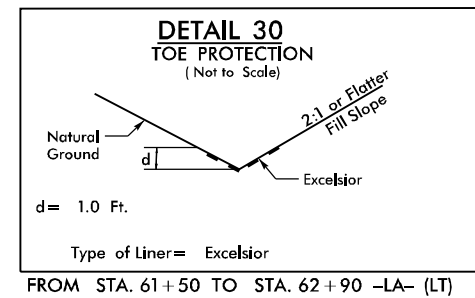
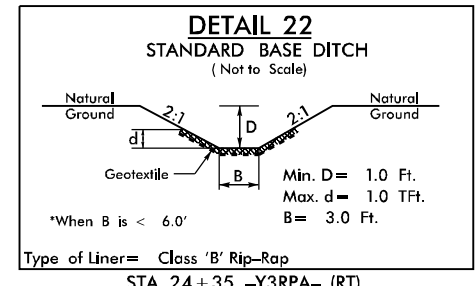
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PERMIT DRAWING SHEET 3 OF 17



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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

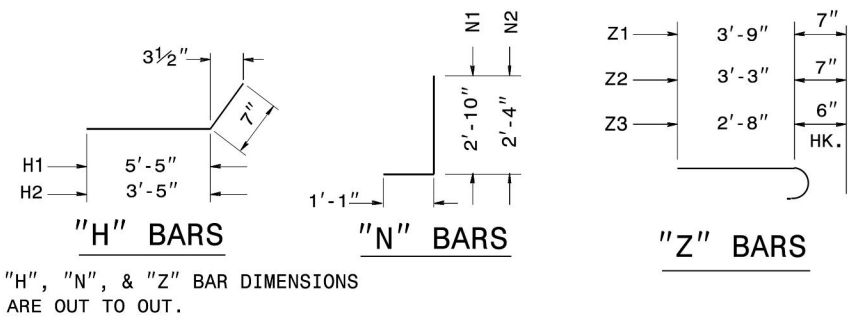
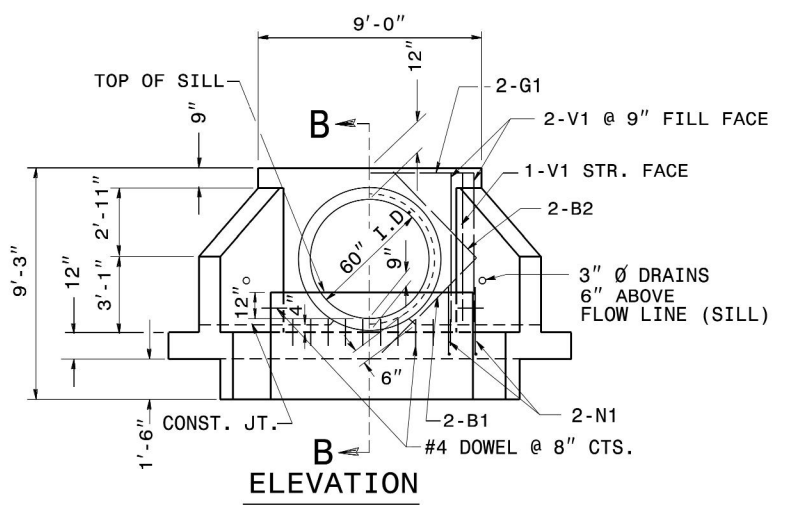
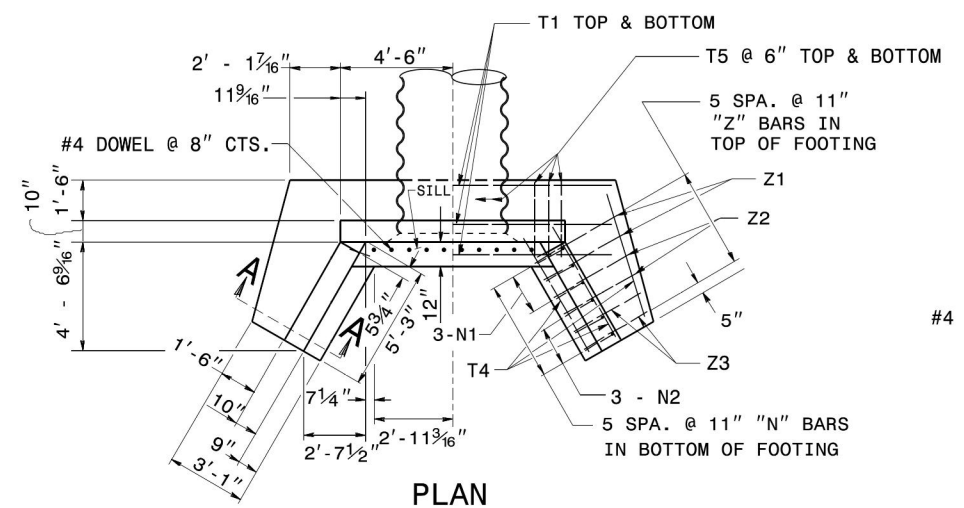


PERMIT DRAWING SHEET 4 OF 17

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

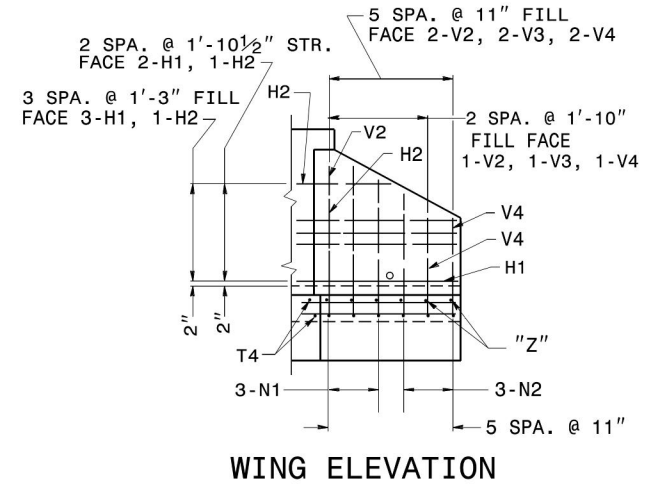
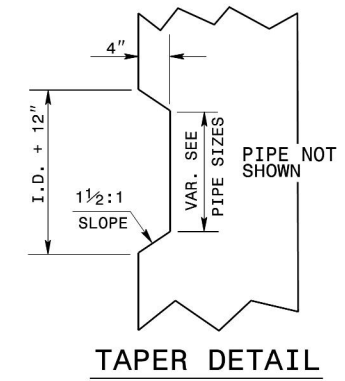
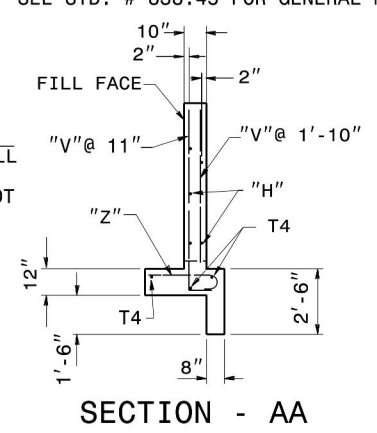
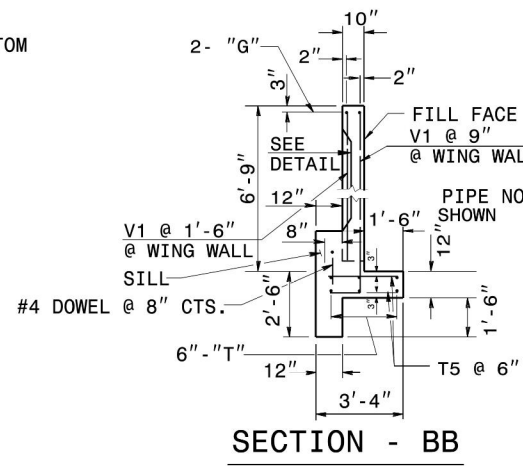
ENGLISH STANDARD DRAWING FOR REINFORCED CONCRETE ENDWALL SILL FOR SINGLE 60" PIPE - 90° SKEW

SHEET 1 OF 1 838D27



"H", "N", & "Z" BAR DIMENSIONS ARE OUT TO OUT.

SEE STD. # 838.45 FOR GENERAL NOTES.



BILL OF MATERIAL FOR ENDWALL				
REINF. STEEL 1 PIPE				
BAR	SIZE	LENGTH	NO.	WEIGHT
B1	#4	5'-6"	4	15
B2	#4	4'-6"	4	12
G1	#7	8'-8"	2	35
H1	#4	6'-0"	10	40
H2	#4	4'-0"	4	11
N1	#5	3'-11"	10	41
N2	#4	3'-5"	6	14
T1	#4	12'-8"	6	51
T4	#4	5'-6"	6	22
T5	#4	2'-6"	36	60
V1	#4	6'-3"	6	25
V2	#4	5'-1"	6	20
V3	#4	3'-11"	6	16
V4	#4	2'-9"	6	11
Z1	#5	4'-4"	4	18
Z2	#4	3'-10"	4	10
Z3	#4	3'-2"	4	8
DOWEL #4		1'-0"	12	8
REINF. STEEL LBS.				417
CON./C.S. CU. YDS				6.5

STATE OF NORTH CAROLINA DEPT. OF TRANSPORTATION DIVISION OF HIGHWAYS RALEIGH, N.C.

ENGLISH STANDARD DRAWING FOR REINFORCED CONCRETE ENDWALL SILL FOR SINGLE 60" PIPE - 90° SKEW

SHEET 1 OF 1 838D27

CONTRACT STANDARDS & DEVELOPMENT UNIT STANDARDS AND SPECIAL DESIGN Office 919-250-4128 FAX 919-250-4119

DETAIL OF REINFORCED CONCRETE ENDWALL SILL

ORIGINAL BY: DATE: MODIFIED BY: nbritt DATE: 08-25-05 CHECKED BY: DATE: FILE SPEC.: details/nbritt/english/rural/r3421concrendwallsill.dgn

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



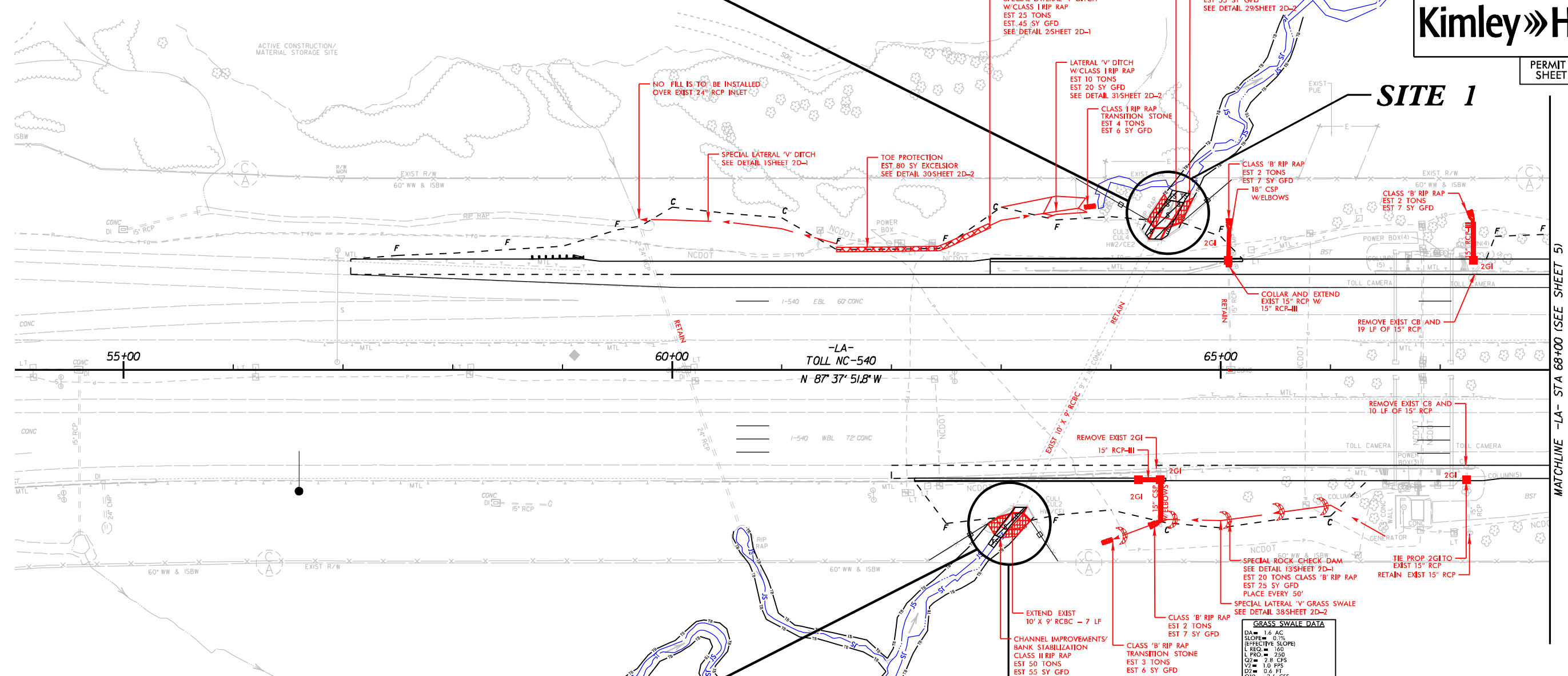
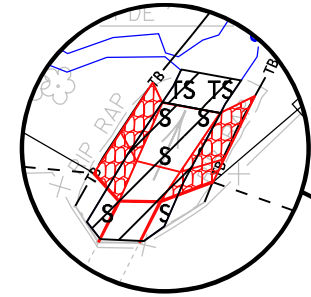
PERMIT DRAWING SHEET 5 OF 17

CULVERT #3 ONE BARREL

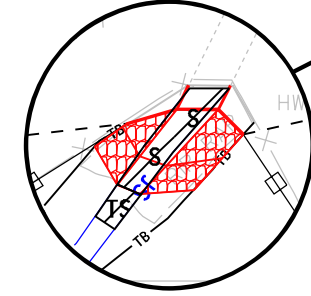
	NORTH	EAST	ELEV.
CUL1	705572.34	2045026.53	288.14
CUL2	705572.82	2045015.67	288.14
CUL3	705334.57	2044883.79	284.47
CUL4	705333.95	2044894.47	284.41
CE1	705572.36	2045020.67	297.30
CE2	705334.45	2044889.04	293.33
HW1	705572.37	2045020.76	299.30
HW2	705334.40	2044889.55	295.47

NAD 83/NSRS 2007

SITE 1 - IMPACT ZOOM-IN (SCALE: 1" = 50')



SITE 1 - IMPACT ZOOM-IN (SCALE: 1" = 50')



DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R2635D-43" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 705617.3920(ft) EASTING: 2041588.2019(ft) ELEVATION: 320.641(ft)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998902757

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R2635D-43" TO -LA- STATION 57+00.00 IS S 87° 14' 23.49" E 4049.68'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 DENOTES IMPACTS IN SURFACE WATER

SEE SHEET 13 FOR -LA- PROFILE

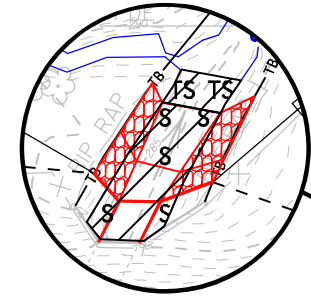
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DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



PERMIT DRAWING SHEET 6 OF 17

SITE 1 - IMPACT ZOOM-IN (SCALE: 1" = 50')

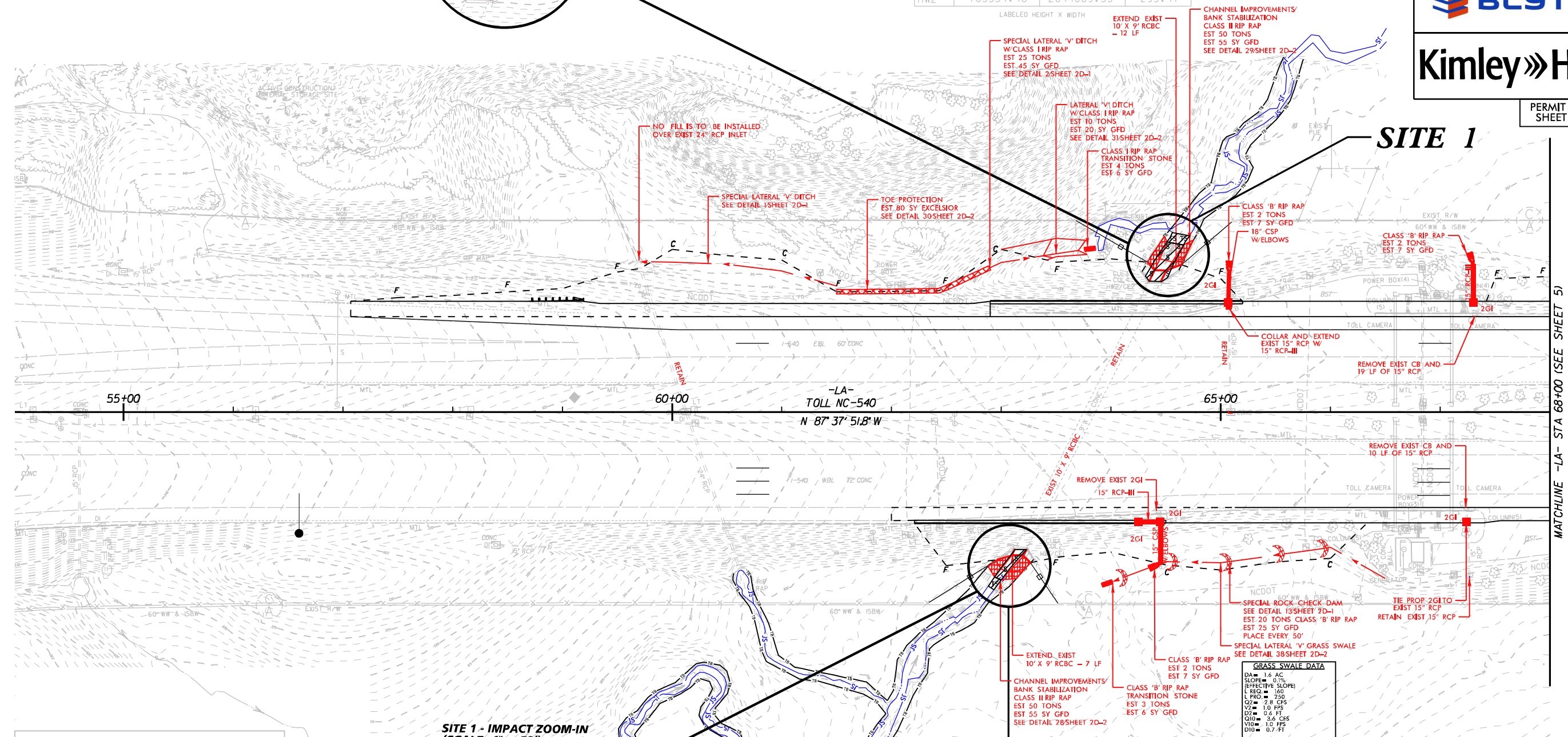


HIGHWAY 55 C&D LANDFILL, LLC

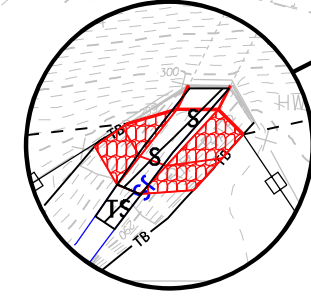
CULVERT #3 ONE BARREL

	NORTH	EAST	ELEV.
CUL1	705572.34	2045026.53	288.14
CUL2	705572.82	2045015.67	288.14
CUL3	705334.57	2044883.79	284.47
CUL4	705333.95	2044894.47	284.41
CE1	705572.36	2045020.67	297.30
CE2	705334.45	2044889.04	293.33
HW1	705572.37	2045020.76	299.30
HW2	705334.40	2044889.55	295.47

NAD 83 NSRS 2007



SITE 1 - IMPACT ZOOM-IN (SCALE: 1" = 50')



HIGHWAY 55 C&D LANDFILL, LLC

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDOT FOR MONUMENT "R2635D-43" WITH NAD 83/NA 2011 STATE PLANE GRID COORDINATES OF NORTHING: 705617.3920(±) EASTING: 2041588.2019(±) ELEVATION: 320.64(±)

THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998902757

THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "R2635D-43" TO -LA- STATION 57+00.00 IS S 87° 14' 23.49" E 4049.68'

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NAVD 88

DENOTES TEMPORARY IMPACTS IN SURFACE WATER
 DENOTES IMPACTS IN SURFACE WATER

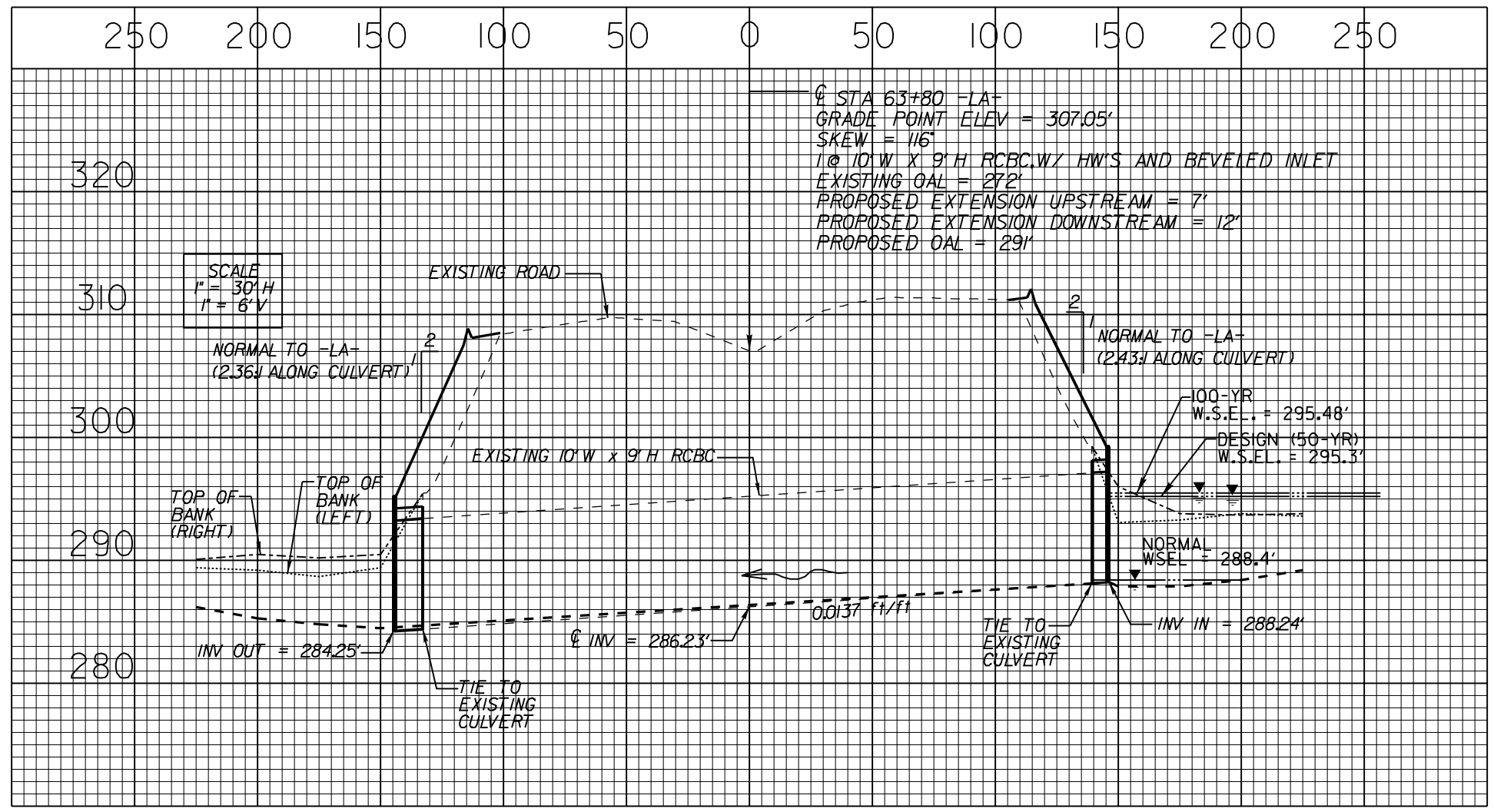
SEE SHEET 13 FOR -LA- PROFILE

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PERMIT DRAWING
SHEET 7 OF 17



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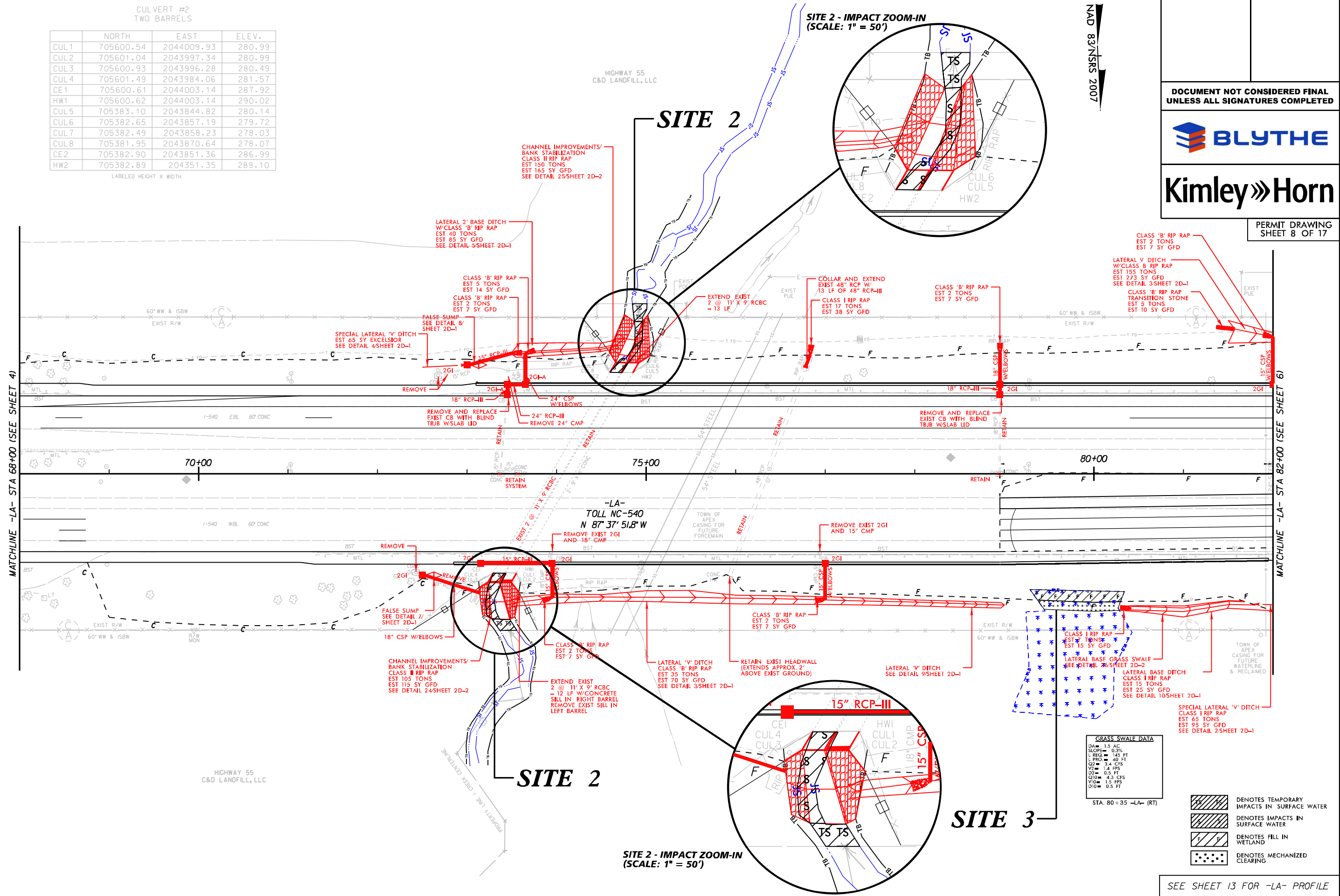
PERMIT DRAWING SHEET 8 OF 17

CULVERT #2
TWO BARRELS

	NORTH	EAST	ELEV.
CUL1	705600.54	2044009.93	280.99
CUL2	705601.04	2043997.34	280.99
CUL3	705600.93	2043996.28	280.49
CUL4	705601.49	2043984.06	281.57
CE1	705600.61	2044003.14	287.92
HW1	705600.62	2044003.14	290.02
CUL5	705383.10	2043844.82	280.14
CUL6	705382.65	2043857.19	279.72
CUL7	705382.49	2043858.23	278.03
CUL8	705381.95	2043870.64	278.07
CE2	705382.90	2043851.36	286.99
HW2	705382.89	204351.35	289.10

LABELLED HEIGHT X WIDTH

NAD 83/NRS 2007



SITE 2 - IMPACT ZOOM-IN (SCALE: 1" = 50')

SITE 2

SITE 3

SITE 2 - IMPACT ZOOM-IN (SCALE: 1" = 50')

GRASS SWALE DATA

DA	= 1.5 AC
SLOPE	= 0.3%
L REQ	= 145 FT
L PRO	= 40 FT
Q2	= 3.4 CFS
V2	= 1.4 FPS
D2	= 0.5 FT
Q10	= 4.3 CFS
V10	= 1.5 FPS
D10	= 0.5 FT

STA. 80+35 -LA- (RT)

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

SEE SHEET 13 FOR -LA- PROFILE

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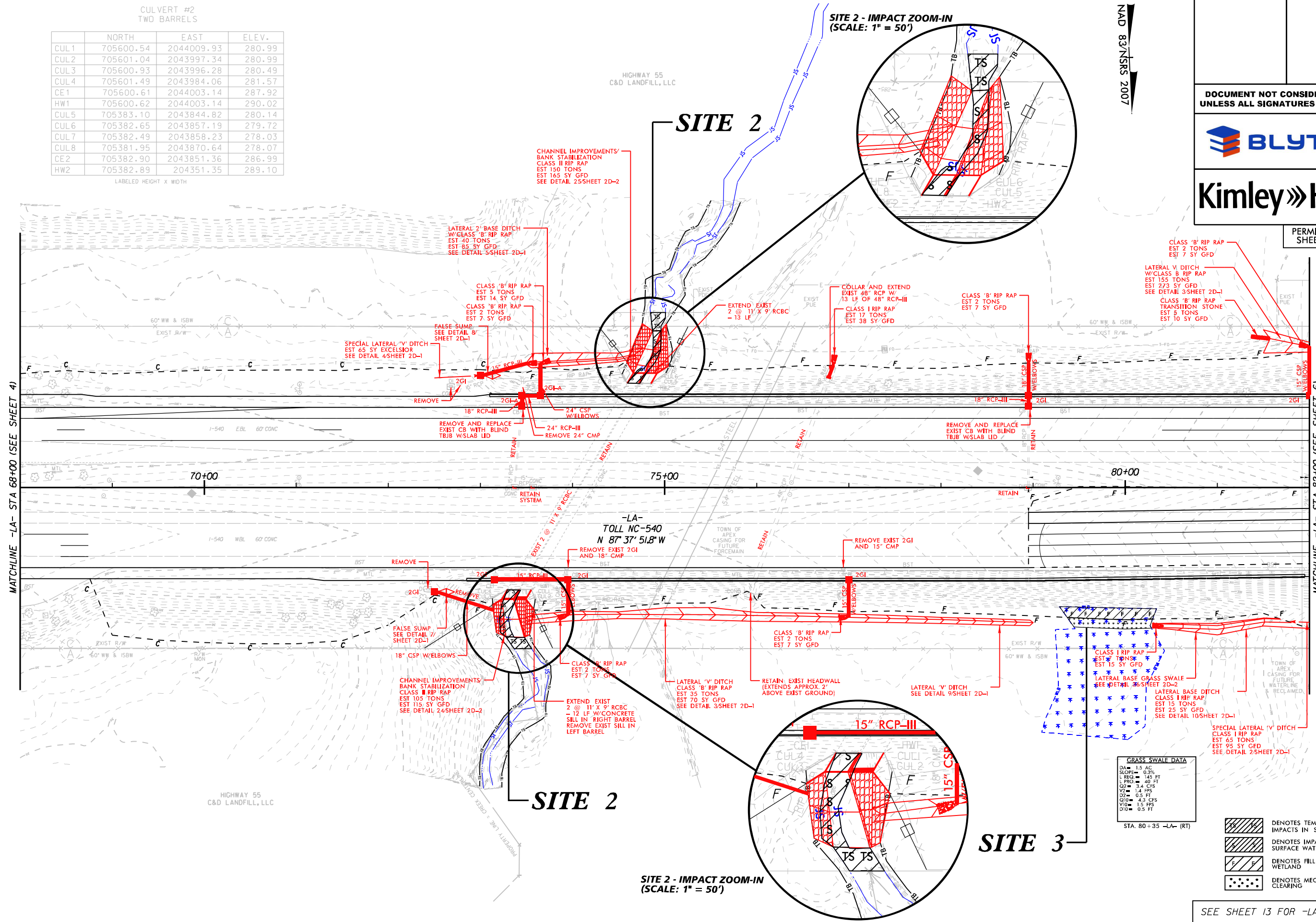
PERMIT DRAWING SHEET 9 OF 17

CULVERT #2
TWO BARRELS

	NORTH	EAST	ELEV.
CUL1	705600.54	2044009.93	280.99
CUL2	705601.04	2043997.34	280.99
CUL3	705600.93	2043996.28	280.49
CUL4	705601.49	2043984.06	281.57
CE1	705600.61	2044003.14	287.92
HW1	705600.62	2044003.14	290.02
CUL5	705383.10	2043844.82	280.14
CUL6	705382.65	2043857.19	279.72
CUL7	705382.49	2043858.23	278.03
CUL8	705381.95	2043870.64	278.07
CE2	705382.90	2043851.36	286.99
HW2	705382.89	204351.35	289.10

LABELLED HEIGHT X WIDTH

NAD 83/NSRS 2007



SITE 2 - IMPACT ZOOM-IN (SCALE: 1" = 50')

SITE 2

SITE 3

SITE 2 - IMPACT ZOOM-IN (SCALE: 1" = 50')

GRASS SWALE DATA

DA	1.5 AC
SLOPE	0.3%
L PRO	145 FT
L	40 FT
GZ	3.4 CFS
VZ	1.4 FPS
DZ	0.5 FT
Q10	4.3 CFS
V10	1.5 FPS
D10	0.5 FT

STA. 80+35 -LA- (RT)

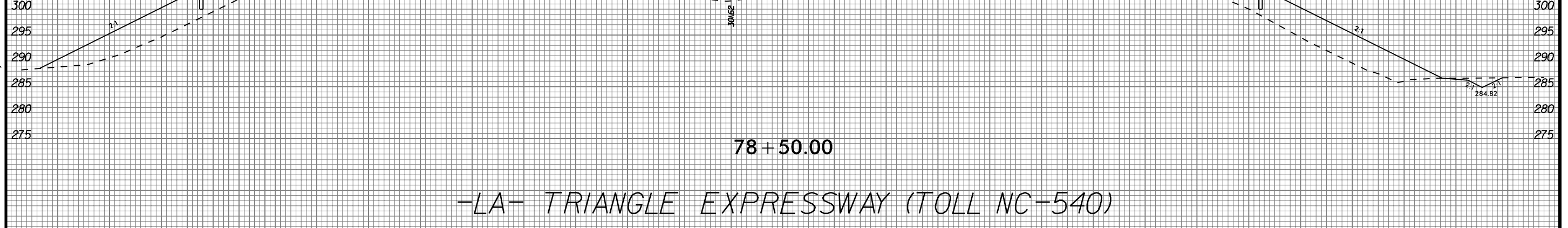
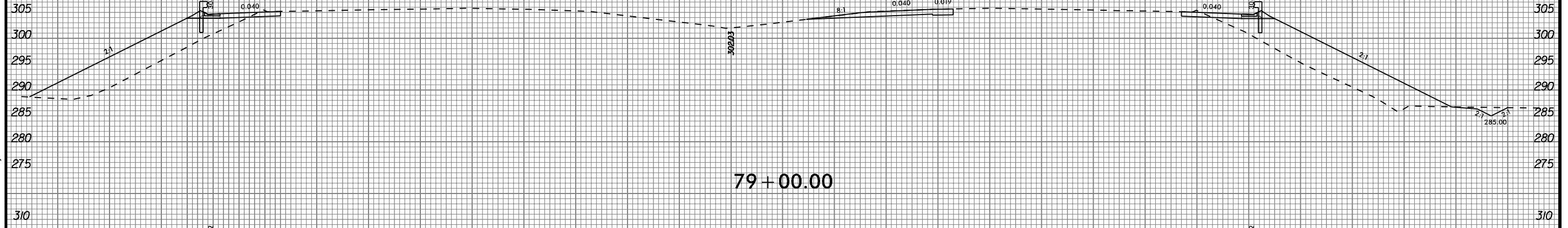
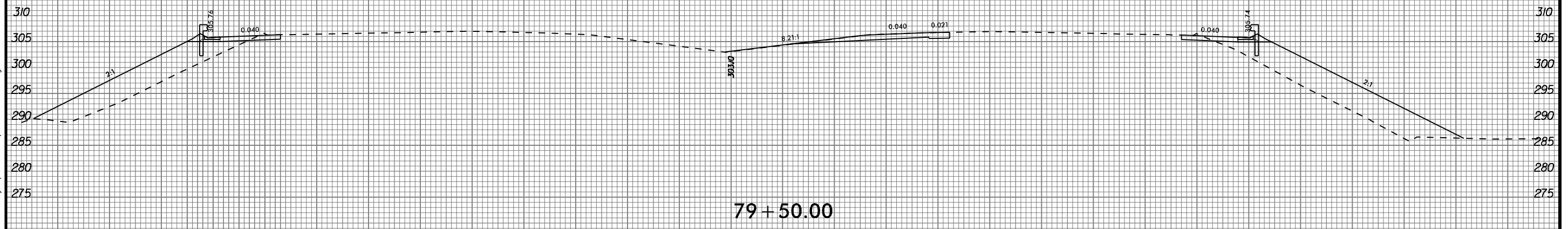
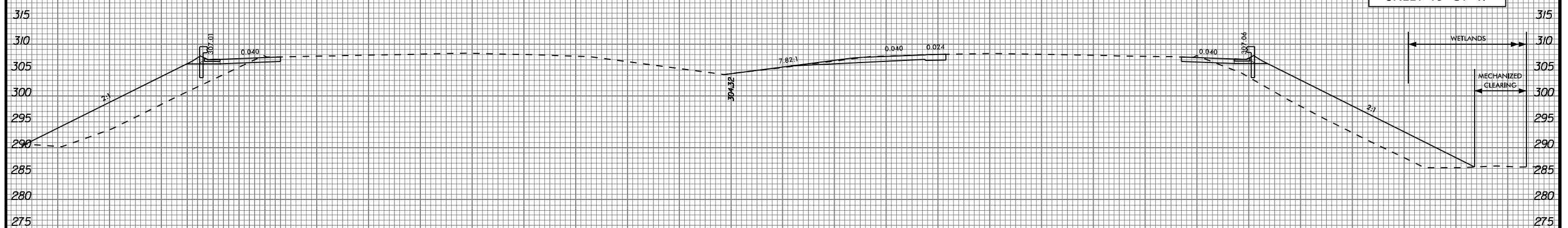
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING

SEE SHEET 13 FOR -LA- PROFILE

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12/17/2015

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12/17/2015



-LA- TRIANGLE EXPRESSWAY (TOLL NC-540)

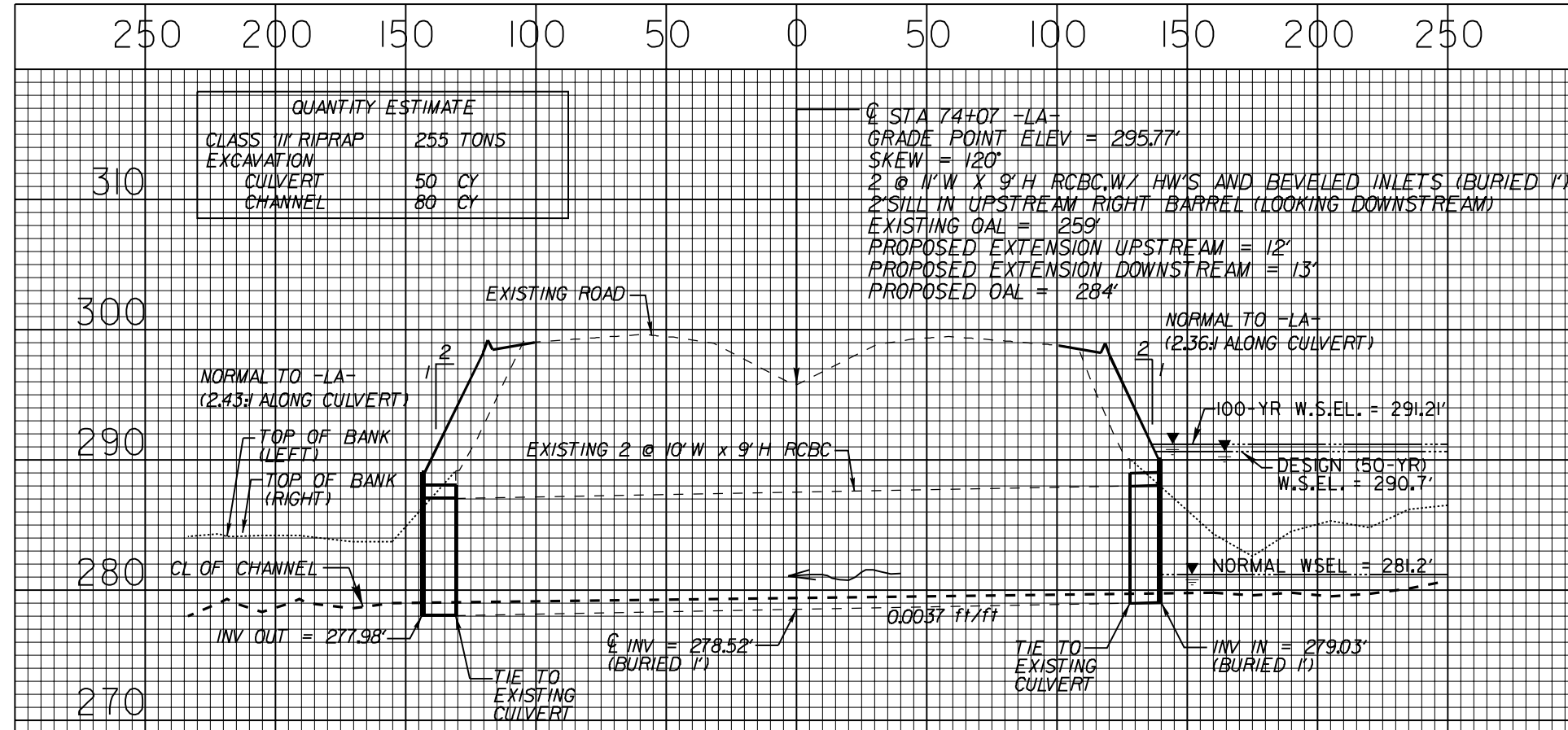
ROADWAY DESIGN ENGINEER HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



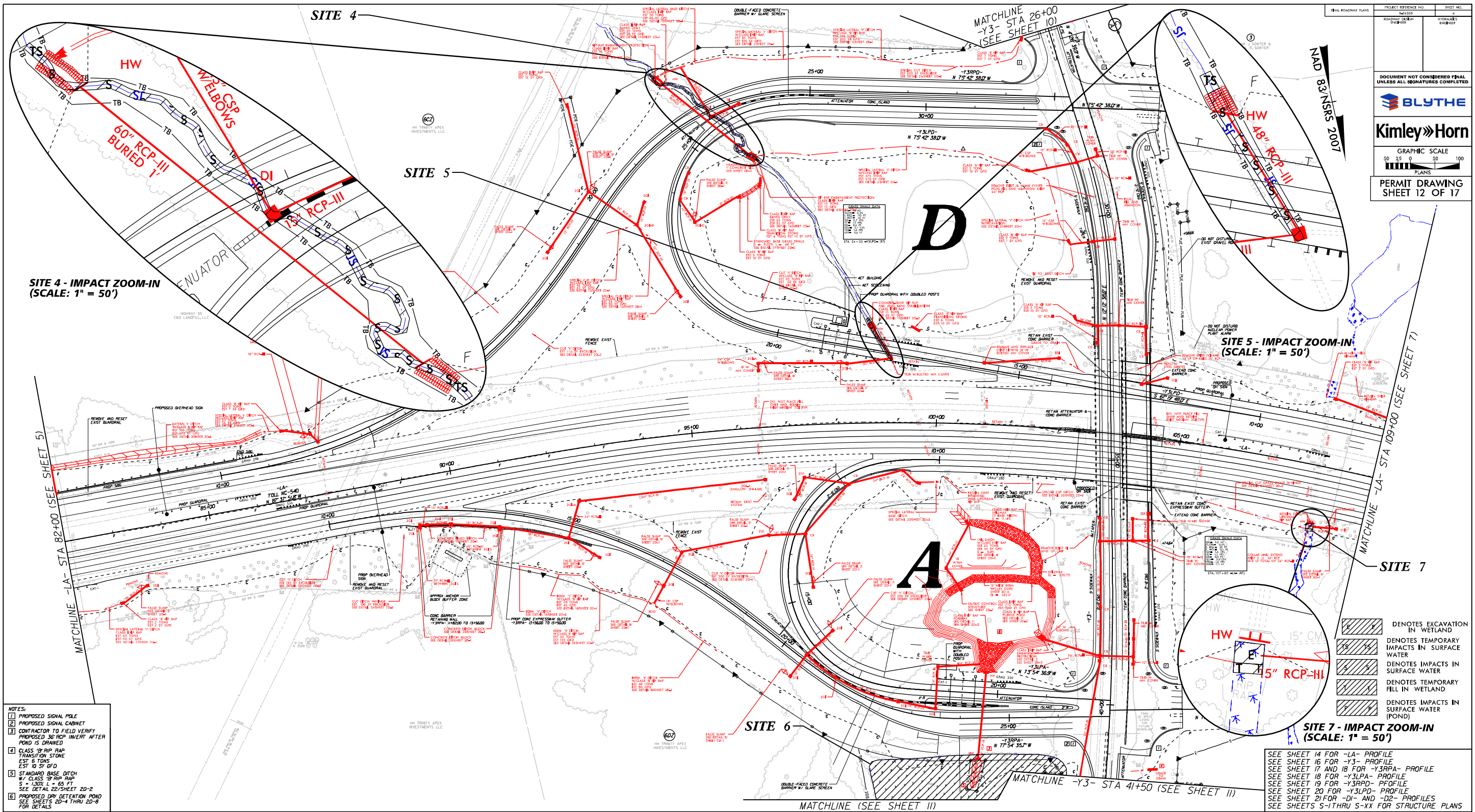
PERMIT DRAWING SHEET 11 OF 17

SCALE
1" = 30' H
1" = 6' V



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PROJECT REFERENCE NO. 12593013 SHEET NO. 12

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BLYTHE

KimleyHorn

GRAPHIC SCALE
50 25 0 50 100
PLANS

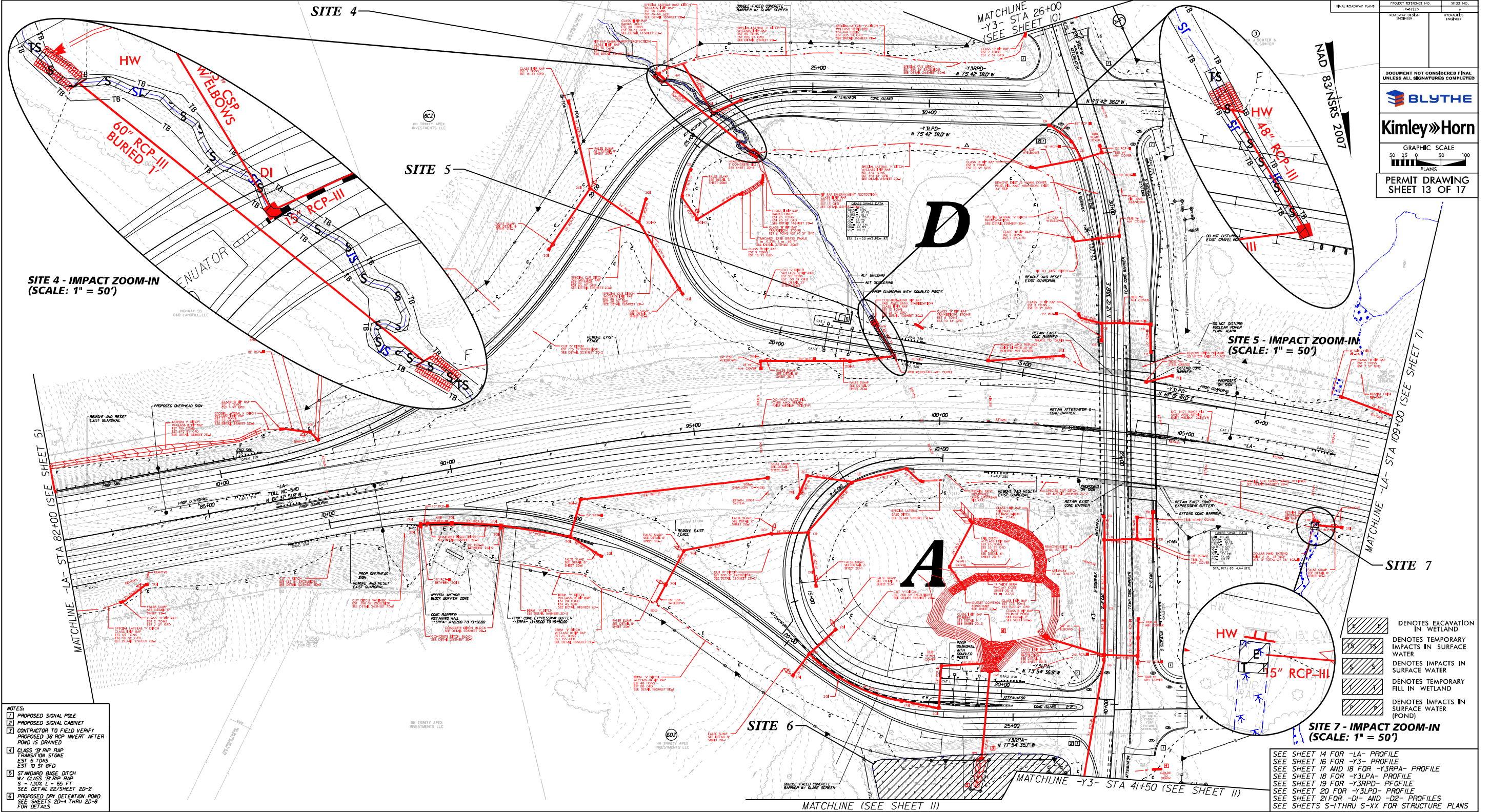
PERMIT DRAWING
SHEET 12 OF 17

- NOTES:
- PROPOSED SIGNAL POLE
 - PROPOSED SIGNAL CABINET
 - CONTRACTOR TO FIELD VERIFY PROPOSED 36" RCP INVERT AFTER POND IS DRAINED
 - CLASS 19" RCP RAMP TRANSITION STONE EST. 6 TONS EST. 0 ST GFD
 - STANDARD BASE DITCH W/ CLASS 19" RCP RAMP S = 1.00% L = 65 FT SEE DETAIL 22/SHEET 20-2
 - PROPOSED DRY DETENTION POND SEE SHEETS 20-4 THRU 20-8 FOR DETAILS

- DENOTES EXCAVATION IN WETLAND
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER (POND)

SEE SHEET 14 FOR -LA- PROFILE
 SEE SHEET 16 FOR -Y3- PROFILE
 SEE SHEET 17 AND 18 FOR -Y3RPA- PROFILE
 SEE SHEET 18 FOR -Y3LPA- PROFILE
 SEE SHEET 19 FOR -Y3RDP- PROFILE
 SEE SHEET 20 FOR -Y3LDP- PROFILE
 SEE SHEETS S-1 THRU S-XX FOR STRUCTURE PLANS

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SITE 4 - IMPACT ZOOM-IN (SCALE: 1" = 50')

SITE 5 - IMPACT ZOOM-IN (SCALE: 1" = 50')

SITE 7 - IMPACT ZOOM-IN (SCALE: 1" = 50')

- NOTES:
- 1 PROPOSED SIGNAL POLE
 - 2 PROPOSED SIGNAL CABINET
 - 3 CONTRACTOR TO FIELD VERIFY PROPOSED 36" RCP INVERT AFTER POND IS DRAINED
 - 4 CLASS 19" RCP RAMP TRANSITION STONE EST 6 TONS EST 0.5' OFD
 - 5 STANDARD BASE DITCH W/ CLASS 19" RCP RAMP S = 0.00' L = 65 FT SEE DETAIL 22/SHEET 20-2
 - 6 PROPOSED DRY DETENTION POND SEE SHEETS 20-4 THRU 20-8 FOR DETAILS

- DENOTES EXCAVATION IN WETLAND
- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER
- DENOTES TEMPORARY FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER (POND)

SEE SHEET 14 FOR -LA- PROFILE
 SEE SHEET 16 FOR -Y3- PROFILE
 SEE SHEET 17 AND 18 FOR -Y3RPA- PROFILE
 SEE SHEET 18 FOR -Y3LPA- PROFILE
 SEE SHEET 19 FOR -Y3RDP- PROFILE
 SEE SHEET 20 FOR -Y3LDP- PROFILE
 SEE SHEETS 5-THRU 5-XX FOR STRUCTURE PLANS

PROJECT REFERENCE NO. 12593013 SHEET NO. 11

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BLYTHE

KimleyHorn

GRAPHIC SCALE
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 FEET
 PLANS

PERMIT DRAWING SHEET 13 OF 17

NAD 83 NSRS 2007

MATCHLINE -LA- STA 109+00 (SEE SHEET 7)

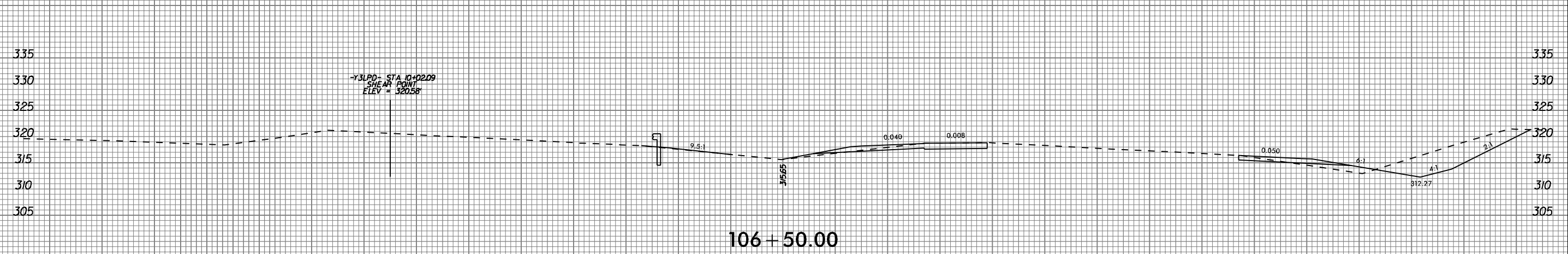
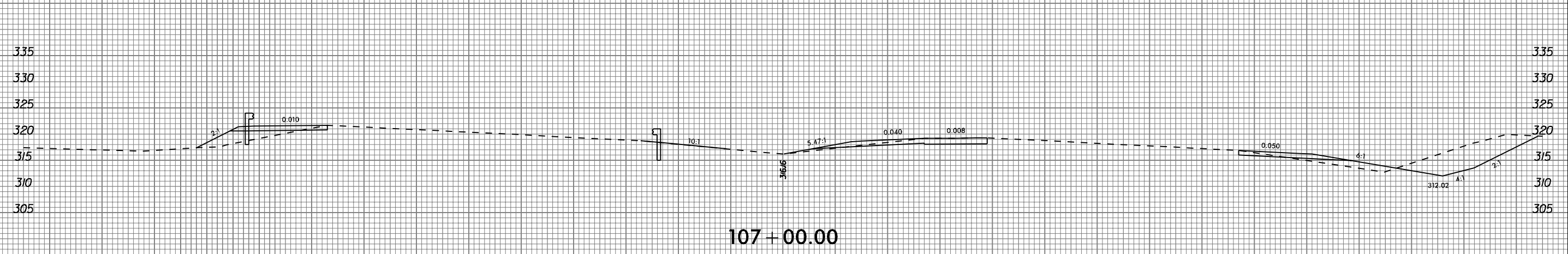
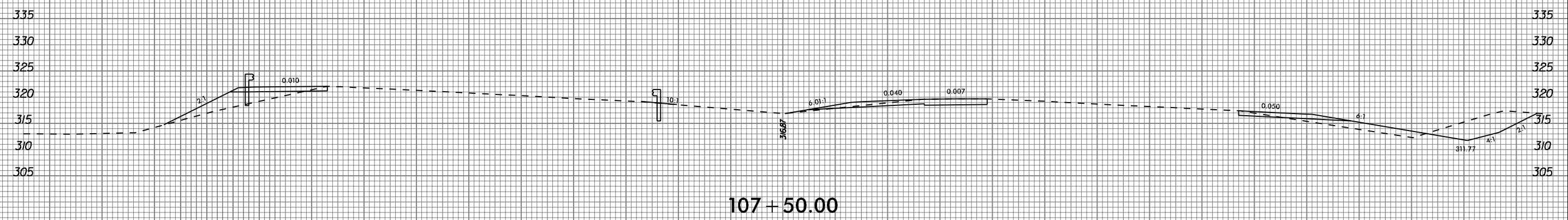
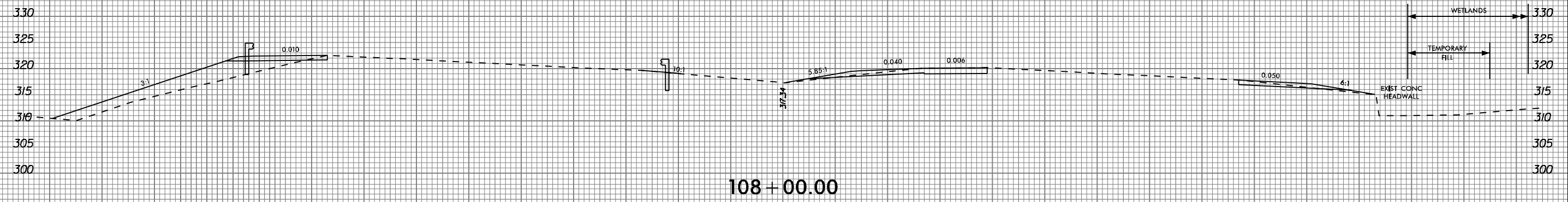
MATCHLINE -LA- STA 82+00 (SEE SHEET 5)

MATCHLINE -Y3- STA 26+00 (SEE SHEET 10)

MATCHLINE -Y3- STA 41+50 (SEE SHEET 11)



MATCHLINE (SEE SHEET 11)

PERMIT DRAWING
SHEET 14 OF 17



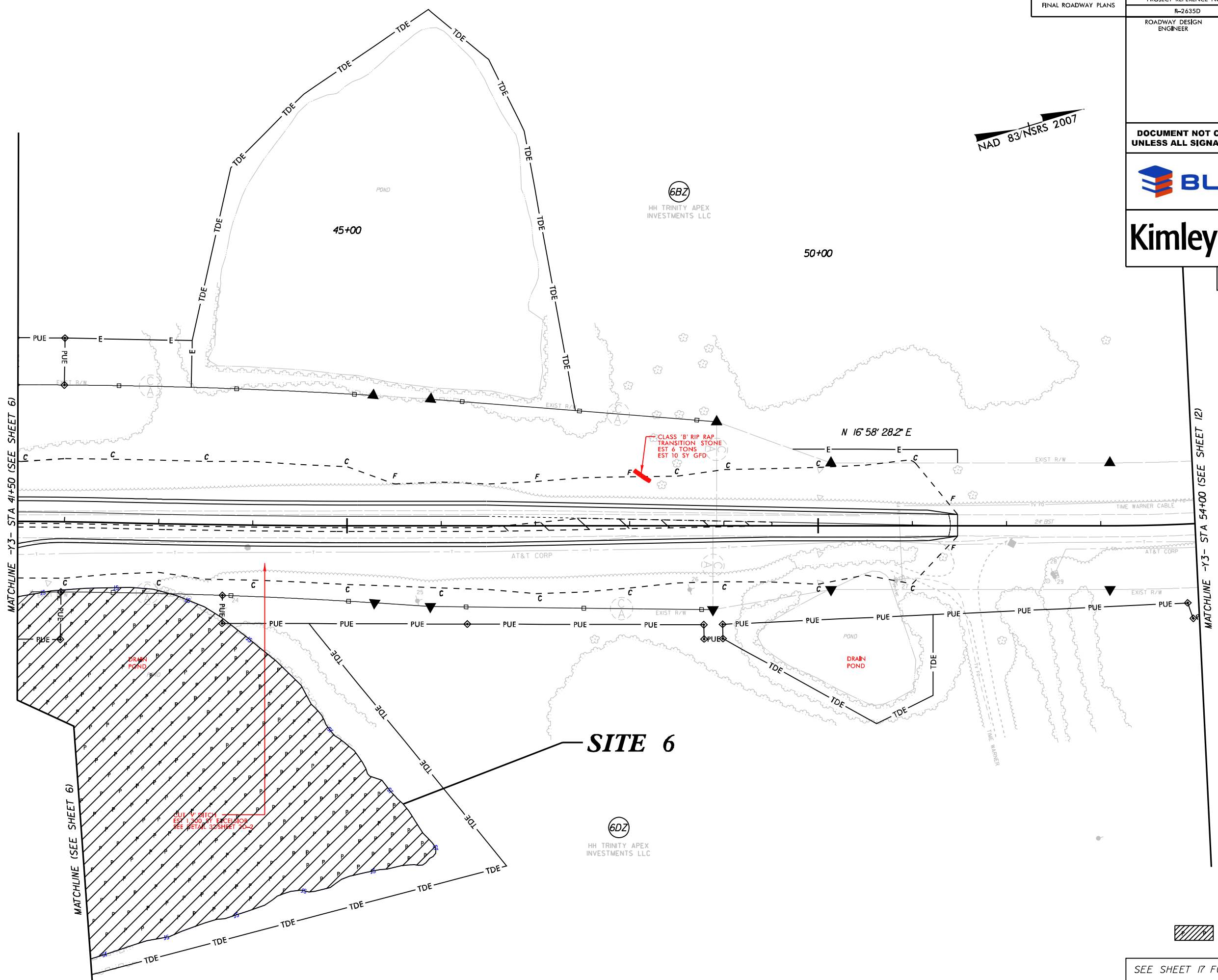
-LA- TRIANGLE EXPRESSWAY (TOLL NC-540)

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12/17/2015

FINAL ROADWAY PLANS		PROJECT REFERENCE NO. R-2635D	SHEET NO. 11
		ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
			
			

PERMIT DRAWING
SHEET 15 OF 17



NAD 83/NSRS 2007



 DENOTES IMPACTS IN SURFACE WATER POND

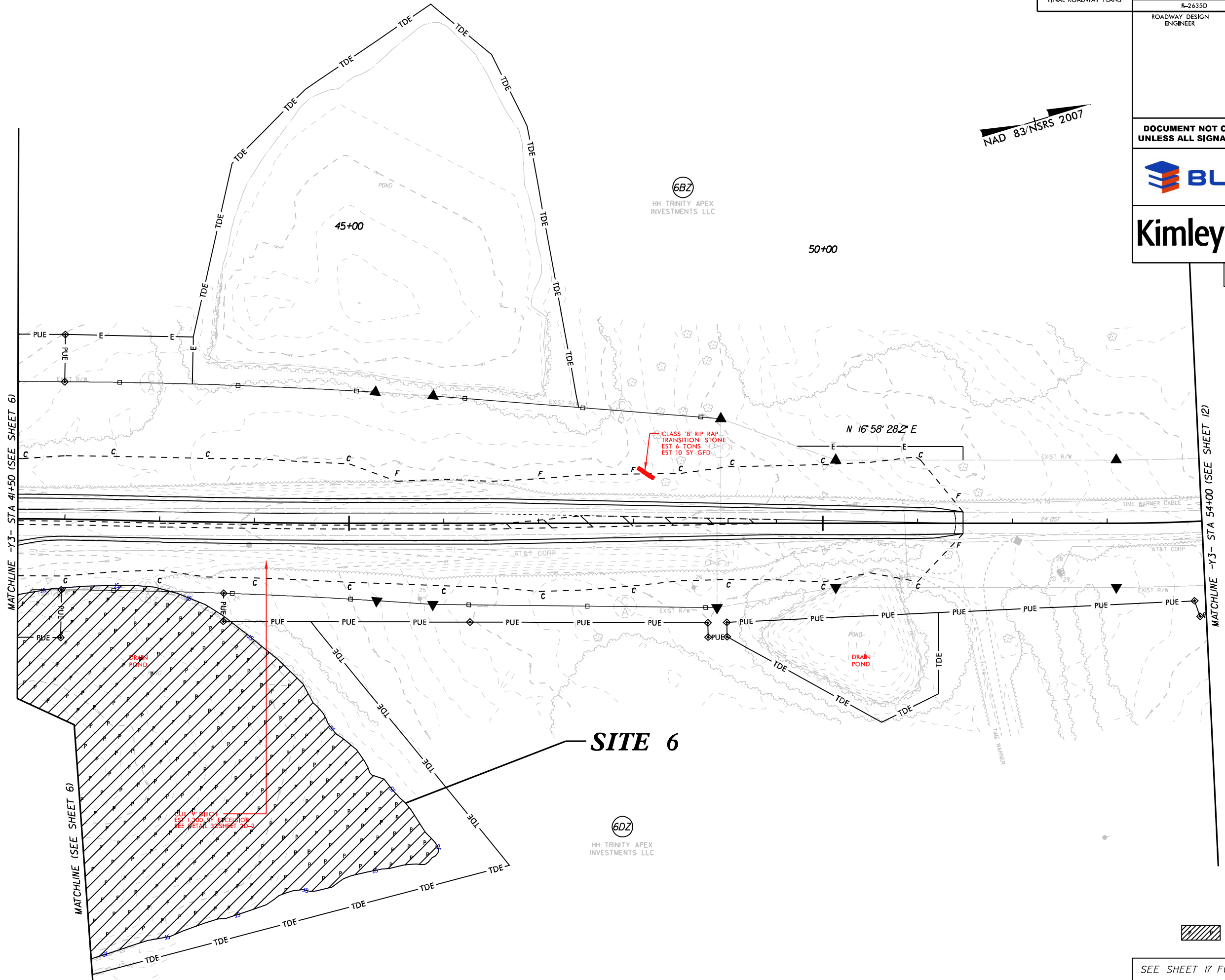
SEE SHEET 17 FOR -Y3- PROFILE

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FINAL ROADWAY PLANS		PROJECT REFERENCE NO. R-2635D	SHEET NO. 11
		ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			
			
			

PERMIT DRAWING
SHEET 16 OF 17

NAD 83/NSRS 2007



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 12/17/2015

 DENOTES IMPACTS IN SURFACE WATER POND

SEE SHEET 17 FOR -Y3- PROFILE

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	62+88/64+72 -LA-	10'x9' RCBC						< 0.01	< 0.01	18	20	
1	62+88/64+72 -LA-	Bank Stabilization						0.01		55		
2	73+21/74+99 -LA-	2 @ 11'x9' RCBC						0.03	0.01	117	35	
3	79+29/80+34 -LA-	Fill Slope	0.03			0.02						
4	22+23/23+61 -Y3RPD-	60" RCP Buried 1'						0.03	< 0.01	275	20	
4	22+23/23+61 -Y3RPD-	Bank Stabilization						< 0.01		46		
5	17+60/18+27 -Y3LPD-	48" RCP						< 0.01	< 0.01	74	10	
5	17+60/18+27 -Y3LPD-	Bank Stabilization						< 0.01		14		
6	41+10/45+94 -Y3-	Pond						2.34				
7	107+85/108+03 -LA-	Excavation		< 0.01	< 0.01							
TOTALS*:			0.03	< 0.01	< 0.01	0.02		2.43	0.02	599	85	0

*Rounded totals are sum of actual impacts

NOTES:

Wetland Impact Totals in SF:
 Permanent Fill in Wetlands - 1198 SF
 Temporary Fill in Wetlands - 75 SF
 Excavation in Wetlands - 158 SF
 Mechanized Clearing in Wetlands - 877 SF

NC DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 12-21-2015
 WAKE COUNTY
 R-2635D