STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

July 5, 2018

MEMORANDUM TO: Mr. Ronnie Keeter, P.E.
Division 4 Engineer

FROM: Philip S. Harris, III, P.E., Manager
for Environmental Analysis Unit

Chris Rivenbark
Digitally signed by Chris Rivenbark
DN: cn=Chris Rivenbark, o=NC Department of Transportation, ou=Project Development & Environmental Analysis, email=crivenbark@ncdot.gov, c=US
Date: 2018.07.13 11:03:45 -04'00'

SUBJECT: Johnston County; Widening of NC 42 from SR 1902 (Glen Laurel Road) to SR 1003 (Buffaloe Road); Federal Aid Project STP-0042(58); WBS 34552.1.FR3; **TIP R-3825B**

Attached are the U.S. Army Corps of Engineers General Permit, N.C. Division of Water Resources (NCDWR) Water Quality Certification, Neuse Riparian Buffer Authorization, and U.S. Coast Guard Advance Approval. 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. Ron Davenport, P.E. State Contract Officer
Mr. Chad Coggins, Division Environmental Officer
Dr. Majed Al-Ghandour, P.E., Programming and TIP
Mr. Gary Lovering, P.E., Roadway Design
Mr. Carl Barclay, P.E., Utilities Unit
Mr. Stephen Morgan, P.E., Hydraulics
Mr. Brian Hanks, P.E., Structure Design
Mr. Mark Staley, Roadside Environmental
Mr. Lamar Sylvester, P.E., State Construction Engineer
Ms. Cheterra Sheff, Single Audit Compliance Unit
Ms. Beth Harmon, Division of Mitigation Services
Ms. LeiLani Paugh, ICI/Onsite Mitigation

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL ANALYSIS UNIT
1598 MAIL SERVICE CENTER
RALEIGH NC 27699-1598

Telephone: (919) 707-6000
Fax: (919) 212-5785
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
1020 BIRCH RIDGE DRIVE
RALEIGH NC 27610

PROJECT COMMITMENTS

T.I.P Project No. R-3825B
NC 42 from SR 1902 (Glen Laurel Road) to SR 1003 (Buffalo Road)
Johnston County
Federal Aid Project No. STP-42(58)
WBS Element 34552.1.FR3

COMMITMENTS FROM PROJECT DEVELOPMENT AND DESIGN

Division Four Construction

NCDOT's Stream Crossing Guidelines for Anadromous Fish Passage will apply to the Neuse River and all stream crossings within the project area.

No in-water work will be performed in the Neuse River between February 15th and June 15th, due to the likely presence of anadromous fish.

NCDOT will implement Best Management Practices for Bridge Demolition and removal. The asphalt wearing surface of Bridge Number 75 and bridge rails will be removed without dropping into the water prior to bridge demolition.

During construction of the project, the driveway to Clayton Fire Station will be kept open at all times. No equipment or materials will be parked or placed in the fire station driveway at any time.

Construction near Clayton Fire Station was completed during the A Section of the project. No impacts to the fire station will occur due to construction of the B Section.

Timber workpads will be used for heavy equipment within fifty feet of streams or in other areas where sediment could enter the stream.

Notification will be sent to the NCDOT Natural Environment Section one month prior to the start of construction, in order that mussels at the Neuse River and Mill Creek crossings can be relocated. The notification should be sent to the following address:

Natural Environment Biological Surveys Group Supervisor
NCDOT Natural Environment Section
1598 Mail Service Unit
Raleigh, NC 27699-1598

Roadside Environmental Unit/Division Four Construction

If practical, turbidity curtains will be used during in-stream work in the Neuse River.

Sediment and erosion control measures shall adhere to the Design Standards in Sensitive Watersheds during construction of the project.

Special Sediment Control Fence will be used at the toe of slope parallel to the Neuse River and Mill Creek.

During active grading, all unstabilized areas of the project within fifty feet of streams will be temporarily stabilized prior to any rain event. This will be done utilizing erosion control blankets, fabric, plastic, or other material(s) approved by the Roadside Environmental Unit and as directed by the engineer on site. The Temporary stabilization should be adequately anchored and utilized to prevent the loss of sediment into the water course unless runoff from these areas can be diverted to an adequately designed sediment basin or until the area is stabilized with vegetation.

Structure Design Unit/Hydraulic Unit

Deck drains for the proposed bridge carrying NC 42 over the Neuse River will be designed so that runoff is not directly discharged into the Neuse River.

Where possible, proposed bridge bents will be no closer than 10 feet from the edge of the stream bank.

These project commitments are standard operating procedures and will be implemented during project design for that project.

Roadway Design Unit/Geotechnical Unit/Right of Way Branch

The proposed widening will require property from four sites potentially containing hazardous materials. A preliminary site assessment will be performed for all of the properties prior to right of way acquisition in order to determine the extent of any contamination. Right of way acquisition from the former Jimmy Flowers Store and the Percy Flowers Store will be by permanent easement rather than fee simple right of way due to the possibility of contamination on the properties. Permanent easements will be obtained from the former Peele Pesticide site and Caterpillar site, as well, if the preliminary site assessment determines there is a possibility of contamination in areas needed for right of way.

With the exception of former Jimmy Flowers Store and the Percy Flowers Store sites, all other sites potentially containing hazardous materials were contained with the already constructed A Section. The former Jimmy Flowers Store and Percy Flowers Store have been assessed and right of way acquisition has already occurred.

COMMITMENTS FROM PERMITTING (R-3825B)

Division 4 Construction

Section 7 Concurrence from National Marine Fisheries Service: Two workpads will be temporarily constructed under the existing bridge. They will be constructed so that there is only one in the river at a time. The west workpad will temporarily cover up to 9,920 ft^2 of river bottom and river bank and the east workpad will cover up to 6,930 ft^2. NCDOT estimated that the west workpad will extend approximately 90 ft into the river and the east workpad will extend approximately 65 ft. Since the river width at the project site is approximately 190 ft, neither workpad will extend more than 50% across the river channel. After the bridge construction is complete, all rip rap rock associated with the workpad causeways will be removed to the maximum extent practicable. Turbidity curtains will be used during construction and removal of the rip rap workpads.

The NCDOT has agreed to provide an additional measure of protection by requiring in-water construction activities to stop if a sturgeon is spotted within 50 ft of operations. No in-water work will be allowed in the Neuse River between February 15 and June 15. Construction will not block more than 50% of the river.

Environmental Analysis Unit, Roadside Environmental Unit, Division 4 Construction

404 Special Condition #18: **STREAM RELOCATION**: The Permittee shall fully implement the stream relocation plan, entitled UT to Mill Creek, dated June 29, 2018 for the unavoidable impacts to 498 linear feet of stream. Activities prescribed by this plan shall be initiated prior to, or concurrently with, commencement of any construction activities within jurisdictional areas authorized by this permit. The permittee shall re-establish 455 linear feet of in accordance with the plan with the following conditions:

-NCDOT shall monitor the relocated channel by visual observation and phot points along the channel.

-NCDOT shall monitor the site for three years or until the site is deemed successful.

-Monitoring will be initiated upon completion of the site construction.

-NCDOT will document monitoring activities on the site in an annual report distributed to the regulatory agencies.

-Any changes or modifications to the stream relocation plan shall be first approved by the Corps.

-If the compensatory mitigation fails to meet the performance standards 3 years after completion of the compensatory mitigation objectives, the compensatory mitigation will be deemed unsuccessful. Within 60 days of notification by the Corps that the compensatory mitigation is unsuccessful, the Permittee shall submit to the Corps an alternate compensatory mitigation proposal to fully offset the functional loss that occurred as a result of the project.

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **SAW-2011-01695** County: **Johnston County** U.S.G.S. Quad: **Flowers**

GENERAL PERMIT (REGIONAL AND NATIONWIDE) VERIFICATION

Permittee: **Phil Harris**
NC Department of Transportation
Address: **1598 Mail Service Center**
Raleigh NC, 27699-1598
Telephone Number:

Size (acres) **20 acres**
Nearest Waterway **Neuse River**
USGS HUC **03020201**
Nearest Town **Clayton**
River Basin **Neuse**
Coordinates Latitude: **35.6472263472768**
Longitude: **-78.3959483909154**

Location description: **6 mile stretch of NC 42 between US 70 in Clayton and SR1003 (Buffaloe Road), near Clayton, Johnson County, NC**

Description of projects area and activity: **Applicant proposes to widen existing 2 lane NC 42 from SR 1902 to SR 1003 (TIP R-3825-B) to a 4 lane median divided facility on best fit within/adjacent to existing ROW for approximately 4.5 miles. This RGP applies to Section B and is the last part of a phased project connecting to Section A to the south and west.**

Applicable Law: ☒ Section 404 (Clean Water Act, 33 USC 1344)
☒ Section 10 (Rivers and Harbors Act, 33 USC 403)

Authorization: Regional General Permit Number and/or Nationwide Permit Number: **GP 198200031 NCDOT Bridges, Widening Projects.... (Authorized 2015)**

SEE ATTACHED RGP or NWP GENERAL, REGIONAL AND/OR SPECIAL CONDITIONS

Your work is authorized by the above referenced permit provided it is accomplished in strict accordance with the attached conditions and your submitted application and attached information dated June 29, 2018. Any violation of the attached conditions or deviation from your submitted plans may subject the permittee to a stop work order, a restoration order, a Class I administrative penalty, and/or appropriate legal action.

This verification will remain valid until the expiration date identified below unless the nationwide and/or regional general permit authorization is modified, suspended or revoked. If, prior to the expiration date identified below, the nationwide and/or regional general permit authorization is reissued and/or modified, this verification will remain valid until the expiration date identified below, provided it complies with all requirements of the modified nationwide permit. If the nationwide and/or regional general permit authorization expires or is suspended, revoked, or is modified, such that the activity would no longer comply with the terms and conditions of the nationwide permit, activities which have commenced (i.e., are under construction) or are under contract to commence in reliance upon the nationwide and/or regional general permit, will remain authorized provided the activity is completed within twelve months of the date of the nationwide and/or regional general permit's expiration, modification or revocation, unless discretionary authority has been exercised on a case-by-case basis to modify, suspend or revoke the authorization.

Activities subject to Section 404 (as indicated above) may also require an individual Section 401 Water Quality Certification. You should contact the NC Division of Water Resources (telephone 919-807-6300) to determine Section 401 requirements.

For activities occurring within the twenty coastal counties subject to regulation under the Coastal Area Management Act (CAMA), prior to beginning work you must contact the N.C. Division of Coastal Management in Morehead City, NC, at (252) 808-2808.

This Department of the Army verification does not relieve the permittee of the responsibility to obtain any other required Federal, State or local approvals/permits.

If there are any questions regarding this verification, any of the conditions of the Permit, or the Corps of Engineers regulatory program, please contact **Thomas Steffens at (910) 251-4615 or Thomas.A.Steffens@usace.army.mil**.

Corps Regulatory Official: STEFFENS.THOMAS.ANCRUM.1284706273
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Date: 2018.07.03 06:59:31 -04'00'
Date: **July 2, 2018**
Expiration Date of Verification: **April 30, 2020**

A. Determination of Jurisdiction:

1. ☐ There are waters, including wetlands, on the above described project area that may be subject to Section 404 of the Clean Water Act (CWA) (33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction. Please note, if work is authorized by either a general or nationwide permit, and you wish to request an appeal of an approved JD, the appeal must be received by the Corps and the appeal process concluded prior to the commencement of any work in waters of the United States and prior to any work that could alter the hydrology of waters of the United States.

2. ☒ There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

3. ☐ There are waters, including wetlands, within the above described project area that are subject to the permit requirements of Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

4. ☐ A jurisdiction determination was not completed with this request. Therefore, this is not an appealable action. However, you may request an approved JD, which is an appealable action, by contacting the Corps for further instruction.

5. ☒ The aquatic resources within the above described project area have been identified under a previous action. Please reference the approved jurisdictional determination issued 05-11-2015 Action ID: **SAW-2011-01695** .

B. Basis For Jurisdictional Determination: See attached Approved JD form(s).

C. Remarks:

D. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

E. Appeals Information for Approved Jurisdiction Determinations (as indicated in A2 and A3 above).

If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers
South Atlantic Division
Attn: Jason Steele, Review Officer
60 Forsyth Street SW, Room 10M15
Atlanta, Georgia 30303-8801
Phone: (404) 562-5137

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by _____.

It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.

SAW-2011-01695
Corps Regulatory Official: STEFFENS.THOMAS.ANCRUM.1284706273 Digitally signed by STEFFENS.THOMAS.ANCRUM.1284706273 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=STEFFENS.THOMAS.ANCRUM.1284706273 Date: 2018.07.03 06:59:11 -04'00'

Thomas Steffens

Date of JD: **July 2, 2018** Expiration Date of JD:

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete our Customer Satisfaction Survey, located online at http://corpsmapu.usace.army.mil/cm_apex/f?p=136:4:0.

Copy furnished:

SPECIAL CONDITIONS

1. **CONSTRUCTION PLANS:** All work authorized by this permit must be performed in strict compliance with the attached plans dated June 27, 2018 , 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. **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
3. **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. Thomas Steffens, Washington Regulatory Field Office prior to any active construction in waters or wetlands.
4. **PRECONSTRUCTION MEETING**: The Permittee shall schedule an onsite preconstruction meeting between its representatives, the contractor's representatives and the appropriate Corps of Engineers Project Manager prior to undertaking any work within jurisdictional waters and wetlands to ensure that there is a mutual understanding of all terms and conditions contained within the 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 meeting in order to provide that individual with ample opportunity to schedule and participate in the required meeting.
5. **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.
6. **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).
7. Prior to construction within any jurisdictional areas, the permittee must correctly install silt fencing (with or without safety fencing) parallel with the utility line corridor, on both sides of the jurisdictional crossing. This barrier is to serve both as an erosion control measure and a visual identifier of the limits of construction within any jurisdictional area. The permittee must maintain the fencing, at minimum, until the wetlands have re-vegetated and stabilized.
8. **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.
9. **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.
10. **ANADROMOUS FISH:** To avoid adverse impacts to spawning populations of fish species at this project site, no in-water work will be conducted between February 15 and June 15 and its associated perennial tributaries. For the purpose of this moratorium, in water is defined as those waters within the Neuse River and its associated perennial tributaries, and its adjacent wetlands that during periods of inundation have an active connection to these tributaries.
11. **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.
12. **INSTALLATION OF CULVERTS:** For construction of culverts, measures will be included in the construction that will promote the safe passage of fish and other aquatic organisms. For all culvert construction activities, 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. Culvert inverts will be buried at least one foot below the bed of the stream for culverts greater than 48 inches in diameter. For culverts 48 inches in diameter or

smaller, culverts must be buried below the bed of the stream to a depth equal to or greater than 20 percent of the diameter of the culvert.

13. **NAVIGATION:** This permit does not authorize the interference with any existing or proposed Federal project, and the Permittee will not be entitled to compensation for damage or injury to the authorized structure or work which may be caused from existing or future operations undertaken by the United States in the public interest**.**
14. No attempt will be made by the Permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the authorized work. Use of the permitted activity must not interfere with the public's right to free navigation on all navigable waters of the United States.
15. **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).
16. **TURBIDITY BARRIERS**: Prior to the initiation of any of the work authorized by this permit the Permittee shall install floating turbidity barriers with weighted skirts that extend to within 1 foot of the bottom around all work areas that are in, or adjacent to, surface waters. The turbidity barriers shall remain in place and be maintained until the authorized work has been completed and all erodible materials have been stabilized.
17. **TEMPORARY FILLS: Temporary fills must be removed in their entirety and the affected areas returned to pre-project elevations and contours.**
18. **STREAM RELOCATION:** The Permittee shall fully implement the stream relocation plan, entitled UT to Mill Creek, dated June 29, 2018 for the unavoidable impacts to 498 linear feet of stream. Activities prescribed by this plan shall be initiated prior to, or concurrently with, commencement of any construction activities within jurisdictional areas authorized by this permit. The permittee shall re-establish 455 linear feet of in accordance with the plan with the following conditions:
    -NCDOT shall monitor the relocated channel by visual observation and photo points along the channel.
    -NCDOT shall monitor the site for three years or until the site is deemed successful.
    -Monitoring will be initiated upon completion of the site construction.
    -NCDOT will document monitoring activities on the site in an annual report distributed to the regulatory agencies.
    -Any changes or modifications to the stream relocation plan shall be first approved by the Corps.
    -If the compensatory mitigation fails to meet the performance standards 3 years after completion of the compensatory mitigation objectives, the compensatory mitigation will be deemed unsuccessful. Within 60 days of notification by the Corps that the compensatory mitigation is unsuccessful, the Permittee shall submit to the Corps an alternate compensatory mitigation proposal to fully offset the functional loss that occurred as a result of the project.

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Date: 2018.07.03 06:58:45 -04'00'

Action ID Number: **SAW-2011-01695** **County:** **Johnston County**

Permittee: **Phil Harris**
NC Department of Transportation

Project Name: **NCDOT / R-3825 AB / NC42 / Widening / US70 to SR1003**

Date Verification Issued: **July 2, 2018**

Project Manager: **Thomas Steffens**

Upon completion of the activity authorized by this permit and any mitigation required by the permit, sign this certification and return it to the following address:

US ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT
Attn: Thomas Steffens
Washington Regulatory Field Office
2407 West 5th Street
Washington, North Carolina
27889

Please note that your permitted activity is subject to a compliance inspection by a U. S. Army Corps of Engineers representative. Failure to comply with any terms or conditions of this authorization may result in the Corps suspending, modifying or revoking the authorization and/or issuing a Class I administrative penalty, or initiating other appropriate legal action.

I hereby certify that the work authorized by the above referenced permit has been completed in accordance with the terms and condition of the said permit, and required mitigation was completed in accordance with the permit conditions.

_____ _____

Signature of Permittee **Date**

UT to Mill Creek
NC 42
TIP R-3825B
Johnston County

The North Carolina Department of Transportation (NCDOT) plans to construct R-3825B, Widening of NC 42 from SR 1902 to SR 1003 in Johnston County. To avoid and minimize impacts to jurisdictional resources, NCDOT proposes relocation of the unnamed tributary to Mill Creek (UT) outside the roadway fill.

EXISTING CONDITIONS

NC 42 is a Rural Major Collector characterized by residential and commercial properties, interspersed with forested communities. The project involves the Widening of NC 42 from a two lane shoulder section to a four lane shoulder section with a raised median divider.

The UT to Mill Creek generally flows to the west parallel to the existing alignment of NC 42 to its confluence with Mill Creek near STA 167+20 LT. The drainage area comprises approximately 0.3 square miles. The headwater of the UT is mainly forested but within the project area, the channel runs along the toe of slope of the existing roadway. The channel is classified as intermittent and currently is dry. The channel has a wooded buffer on the right bank but only a narrow row of trees along the left bank. The stream channel has several localized areas of bank erosion and is subject to flashy storm water flows. The pattern and profile of the channel have been altered. There is also a large amount of debris and trash in the channel. The UT received a score of Low in the three primary stream function categories of Hydrology, Water Quality and Stream Habitat with an overall score of Low on the NCSAM evaluation.

PROPOSED CONDITIONS

Construction of the road project requires relocation of approximately 498 feet of the existing channel from approximately Station 167+20 to Station 171+75. The channel will be reconstructed for approximately 455 feet with a 4.0 foot base width and 4 foot depth at top of bank. A 10 foot bench will be constructed along the left bank between the channel and the proposed fill slope of the roadway. The right bank will tie to natural ground. Rock placed in the channel to improve stability will be embedded into the substrate of the bed and banks. Select boulders will be embedded along the toe of the channel and at alternating bank locations to constrain the base for a low flow channel and develop sinuosity. These measures will allow for sediment to be entrained in the bed and will provide bedform diversity and in-stream habitat physical structure. The stream side area will be stabilized with native seeding and straw while woody stems will be planted to the greatest extent practicable. A narrow stream side buffer is not optimal but will provide for thermoregulation and for instream habitat over time in the form of sticks and leaf packs. A projected NCSAM functional assessment was conducted based on the potential uplift the proposed mitigation would provide. The site could potentially generate a high

score in Water Quality function category and a medium score in the two stream function categories of Hydrology and Habitat with an overall score of Medium. In an effort to make a consistent NCSAM evaluation, Metric 12 on Aquatic Life on both the Pre-Construction and Post-Construction conditions was evaluated as though no water was present in the stream.

SUCCESS CRITERIA AND MONITORING

Success of the site will be determined based on stability of the channel. NCDOT shall monitor the relocated channel by visual observation and photo points along the channel. NCDOT shall monitor the site for three years or until the site is deemed successful. Monitoring will be initiated upon completion of the site construction. NCDOT will document monitoring activities on the site in an annual report distributed to the regulatory agencies.

DEPARTMENT OF THE ARMY
Wilmington District, Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403-1343
April 30, 2015

Regional General Permit No. 198200031
Name of Permittee: North Carolina Department of Transportation
Effective Date: April 30, 2015
Expiration Date: April 30, 2020

DEPARTMENT OF THE ARMY
REGIONAL GENERAL PERMIT

A regional general permit (RGP) to perform work in or affecting navigable waters of the United States and waters of the United States, upon recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403), and Section 404 of the Clean Water Act (33 U.S.C. 1344), is hereby modified and re-issued by authority of the Secretary of the Army by the

District Commander
U.S. Army Engineer District, Wilmington
Corps of Engineers
69 Darlington Avenue
Wilmington, North Carolina 28403-1343

TO AUTHORIZE THE DISCHARGE OF DREDGED OR FILL MATERIAL IN WATERS OF THE UNITED STATES (U.S.), INCLUDING WETLANDS, ASSOCIATED WITH MAINTENANCE, REPAIR, AND CONSTRUCTION PROJECTS CONDUCTED BY THE VARIOUS DIVISIONS OF THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION (NCDOT) INCLUDING THE NCDOT DIVISION OF HIGHWAYS, RAIL, BICYCLE/PEDESTRIAN, ECT.

Activities authorized are:

a. Construction, maintenance, and repair of bridges, to include work on the approaches, where permanent impacts resulting in a loss of waters of the U.S. will be less than or equal to 500 linear feet (lf) of stream and/or one (1) acre of wetland/non-tidal open water for each single and complete linear project*.

b. Best-fit widening projects that have undergone interagency review and completed the current interagency Merger Process, which merges the requirements of the National Environmental Policy Act (NEPA) with those found within Section 404 of the Clean Water Act (CWA).

While there is no impact threshold for these widening projects, the Corps has the discretion to require an individual permit if it determines that the proposed impacts will have more than a minimal impact on the aquatic environment or on other environmental factors, or if the project would normally require an Environmental Impact Statement (EIS) under current Federal Highway Administration (FHWA) guidelines. Best-fit projects may include a small amount of new location roadway for components such as interchanges or intersections, provided the new location portion has been concurred upon by the merger team.

c. Minor widening projects, such as paving and/or widening secondary roads, or interchange improvements, when permanent impacts which result in a loss of waters of the U.S. from installation and/or extension of culverts and/or pipes will be less than or equal to 500 lf of stream and/or one (1) acre of wetland/non-tidal open water for each single and complete linear project*.

d. Stream relocation(s) associated with projects identified in a-c above. Stream relocation lengths are to be evaluated independently and are not included within each respective maximum limit threshold for the authorized actions stated above.

****Single and complete linear project***: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term "single and complete project" is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the U.S. (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of this RGP. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Generally, off-site detours are preferred to avoid and minimize impacts to the human and natural environment. However, if an off-site detour is considered impracticable, then an on-site detour may be considered as a necessary component of the actions described above. Impacts from the detour may be considered temporary and may not require compensatory mitigation if the impacted area is restored to its pre-project condition after construction is complete. If the construction of a detour (on-site or off-site) includes standard undercutting methods, removal of all material and backfilling with suitable material is required.

1. Special Conditions.

a. The applicant must submit a pre-construction notification (PCN) with specified attachments to the District Engineer and receive written verification from the Corps that the proposed work complies with this RGP prior to commencing any activity authorized by this RGP.

b. If the project will not impact a designated "Area of Environmental Concern" (AEC) in the twenty (20) counties of North Carolina covered by the North Carolina Coastal Area Management Act (CAMA), then a consistency submission is not required. If the project will impact a designated AEC and meets the definition of "development", then the applicant must

obtain the required CAMA permit. Development activities may not commence until a copy of the approved CAMA permit is furnished to the appropriate Wilmington District Regulatory Field Office (Wilmington Field Office – 69 Darlington Avenue, Wilmington, NC 28403 or Washington Field Office – 2407 West 5th Street, Washington, NC 27889).

The twenty (20) CAMA counties in North Carolina include Beaufort, Bertie, Brunswick, Camden, Carteret, Chowan, Craven, Currituck, Dare, Gates, Hertford, Hyde, New Hanover, Onslow, Pamlico, Pasquotank, Pender, Perquimans, Tyrrell, and Washington.

c. Discharges into Waters of the U.S. designated by either the North Carolina Division of Marine Fisheries (NCDMF) or the North Carolina Wildlife Resources Commission (NCWRC) as anadromous fish spawning areas are prohibited during the period between February 1 and June 30, without prior written approval from NCDMF, NCWRC, National Marine Fisheries Service (NMFS), and the Corps. Discharges into waters of the U.S. designated by NCDMF as primary nursery areas and discharges into waters of the U.S. designated by NCWRC as primary nursery areas in inland waters shall be coordinated with NCDCM (per existing agreement with NCDMF) and NCWRC prior to being authorized by this RGP. Coordination with NCDCM and NCWRC may result in a required construction moratorium during periods of significant biological productivity or critical life stages.

The applicant should contact:

NC Division of Marine Fisheries
3441 Arendell Street
Morehead City, NC 28557
Telephone 252-726-7021
or 800-682-2632

North Carolina Wildlife Resources Commission
Habitat Conservation Program Manager
1721 Mail Service Center
Raleigh, NC 27699-1721
Telephone (919) 733-7638

d. This permit does not authorize the use of culverts in areas designated as anadromous fish spawning areas by the NCDMF or the NCWRC.

e. Waters of the U.S. designated as sturgeon spawning areas are excluded during the period between February 1 and June 30, without prior written approval from NMFS.

f. If the project is located within the twenty (20) counties of North Carolina designated as coastal counties by CAMA, then all pipe and culvert inverts will be buried at least one foot below normal bed elevation when they are placed within the Public Trust AEC and/or the Estuarine Waters AEC as designated by CAMA. If the project is not located within the twenty (20) counties of North Carolina designated as coastal counties by CAMA, then culvert inverts will be buried at least one foot below the bed of the stream for culverts greater than 48 inches in diameter. Culverts 48 inches in diameter or less shall be buried or placed on the stream bed as practicable and appropriate to maintain aquatic passage, and every effort shall be made to maintain the existing channel slope. The potential for destabilization of the channel and head cutting upstream should be considered in the placement of the culvert. A waiver from the depth specifications in this condition may be requested in writing. The waiver will only be issued if it can be demonstrated that the impacts of complying with this condition would result in more adverse impacts to the aquatic environment. Culverts placed in wetlands do not have to be buried.

g. No work shall be authorized by this RGP within the twenty coastal counties, as defined by the NCDCM, without prior consultation with NOAA Fisheries. For each activity reviewed by the Corps where it is determined that the activity may affect Essential Fish Habitat (EFH) for federally managed species, an EFH Assessment shall be prepared by the applicant and forwarded to the Corps and NOAA Fisheries for review and comment prior to authorization of work.

h. Discharges of dredged or fill material into waters of the U.S., including wetlands, must be minimized or avoided to the maximum extent practicable.

i. No activity may result in substantial permanent disruption of the movement of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area. 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. It is acceptable to use rock vanes at culvert outlets to ensure, enhance, or maintain aquatic passage. Pre-formed scour holes are acceptable when designed for velocity reduction. 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. Where adjacent floodplain is available, flows exceeding bank-full should be accommodated by installing culverts at the floodplain elevation, if practicable. If multiple culverts are used, the construction of floodplain benches and/or sills to maintain base flow is required, if practicable.

j. Upon completion of any work authorized by this RGP, all temporary fills (to include culverts, etc.) will be completely removed from waters of the U.S. and the areas will be restored to preconstruction conditions, to include pre-project elevations and contours, restoring natural hydrology and stream corridors, and reestablishing native vegetation/riparian corridors. This work will be completed within 60 days of completion of project construction. If this timeframe occurs while a required moratorium of this permit is in effect, the temporary fill shall be removed in its entirety within 60 days of the moratorium end date. If vegetation cannot be planted due to the time of the year, all disturbed areas will be seeded with a native mix appropriate for the impacted area, and vegetation will be planted in the fall. A native seed mix may contain non-invasive small grain annuals (e.g. millet and rye grain) to ensure adequate cover while native vegetation becomes established. The PCN must include a restoration plan showing how all temporary fills and structures will be removed and how the area will be restored to pre-project conditions.

k. All activities authorized by this RGP shall, to the extent practicable, be conducted "in the dry", with barriers installed between work areas and aquatic habitat to protect that habitat from sediment, concrete, and other pollutants. Where concrete is utilized, measures will be taken to prevent live or fresh concrete, including bags of uncured concrete, from coming into contact with waters of the U.S. until the concrete has cured/hardened. All water in the work area that has been in contact with concrete shall only be returned to waters of the U.S. when it no longer poses a threat to aquatic organisms (concrete is set and cured).

l. In cases where new alignment approaches are to be constructed and the existing approach fill in waters of the U.S. is to be abandoned and no longer maintained as a roadway, the

abandoned fill shall be removed and the area will be restored to preexisting wetland/stream conditions and elevations, to include restoring natural hydrology and stream corridors, and reestablishing native vegetation/riparian corridors, to the extent practicable. This activity may qualify as compensatory mitigation credit for the project and will be assessed on a case-by-case basis in accordance with Special Conditions "q" and "r" below. A restoration plan detailing this activity will be required with the submittal of the PCN.

m. To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization and storm water management activities, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

n. The project must be implemented and/or conducted so that all reasonable and practicable measures to ensure that equipment, structures, fill pads, and work associated with the project do not adversely affect upstream and/or downstream reaches. Adverse effects include, but are not limited to, channel instability, flooding, and/or shoreline/streambank erosion. During construction, the permittee shall routinely monitor for these effects, cease all work if/when detected, take initial corrective measures to correct actively eroding areas, and notify the Corps immediately. Permanent corrective measures may require additional authorization from the Corps.

o. All PCNs will describe sedimentation and erosion control structures and measures proposed for placement in waters of the U.S. To the extent practicable, structures and measures should be depicted on maps, surveys or drawings showing location and impacts to jurisdictional wetlands and streams. In addition, appropriate soil and erosion control measures must be established and maintained during construction. All fills, temporary and permanent, must be adequately stabilized at the earliest practicable date to prevent erosion of fill material into adjacent waters or wetlands.

p. Before discharging dredged or fill material into waters of the U.S. in the twenty-five (25) mountain counties of North Carolina, the applicant will submit a PCN to the NCWRC and the Corps concurrently. The PCN shall summarize alternatives to conducting work in mountain trout waters considered during the planning process, detail why alternatives were or were not selected, and contain a compensatory mitigation plan for all unavoidable adverse impacts to mountain trout waters. For proposals where a bridge is replaced with a culvert, the PCN must also include details of any on-site evaluations that were conducted to determine that installation of a culvert will not adversely affect passage of fish or other aquatic biota at the project site. This information must include factors such as the proposed slope of the culvert and determinations of how the slope will be expected to allow or impede passage, the necessity of baffles and/or sills to ensure passage, design considerations to ensure that expected baseflow will be maintained for passage and that post-construction velocities will not prevent passage, site conditions that will or will not allow proper burial of the culvert, existing structures (e.g., perched culverts, waterfalls, etc.) and/or stream patterns up and downstream of the culvert site that could affect passage and bank stability, and any other considerations regarding passage. The level of detail for this information should be based on site conditions (i.e., culverts on a slope over 3% will most likely

require more information than culverts on a slope that is less than 1%, etc.). Also, in order to evaluate potential impacts, describe bedforms that will be impacted by the proposed culvert – e.g., pools, glides, riffles, etc. The NCWRC will respond both to the proponent and directly to the Corps.

The twenty-five (25) designated trout counties of North Carolina include Alleghany, Caldwell, Watauga, Ashe, Mitchell, Wilkes, Avery, Burke, Stokes, Surry, Buncombe, Henderson, Polk, Cherokee, Jackson, Rutherford, Clay, Macon, Swain, Graham, Madison, Transylvania, Haywood, McDowell, and Yancey.

The applicant may contact NCWRC at:

North Carolina Wildlife Resources
Commission
Ms. Marla Chambers
Western NCDOT Permit Coordinator
206 Charter Street
Albemarle, NC 28001
Office: 704-982-9181

q. Compensatory mitigation will be required for permanent impacts resulting in a loss of waters of the U.S., including wetlands, from culverts/pipes and associated fill. Mitigation will also be required for stream relocation projects. The applicant will attach a proposed mitigation plan to the PCN. Mitigation proposals will be in accordance with currently approved Wilmington District and/or Corps-wide mitigation regulations and guidance. The Corps Project Manager will make the final determination concerning the appropriate amount and type of mitigation.

r. Stream relocation(s) associated with projects may be authorized under this RGP. As stated above, mitigation will be required for all relocation projects. If the stream relocation is conducted in accordance with the requirements stated below in 1-5, the relocated segment of stream may* be considered toward reducing the amount of compensatory mitigation required. A relocation plan must be submitted with the PCN that addresses all factors required within the current Wilmington District, Corps of Engineers Stream Mitigation Guidelines, which can include, but may not be limited to:

(1) The relocated stream has pattern, profile, and dimension based on natural channel design. If natural channel design construction is not possible due to site constraints, the relocated stream must have pattern, profile, and dimension similar to, or better than, the existing stream. Note that site constraints do not include those situations where NCDOT chooses not to acquire additional adjacent property that is available for purchase.

(2) The new stream meets the current buffer requirements as stated in current District stream mitigation guidance. If the required buffer widths cannot be obtained, a project-by-project decision will be completed to determine if additional compensatory mitigation is required.

(3) The new location allows the relocated stream to remain stable (e.g., in a

valley vs. on a slope, no bends that will impact stability, etc.).

(4) There is no loss of channel for any reason (e.g., old channel is 200' and new channel is 150' = 50' channel loss; part of the new channel is put in a culvert; the new channel (sides and bottom) is hardened with concrete, rip rap, etc.).

(5) The Corps will determine if monitoring and reporting will be required for a specific project and the parameters of any required monitoring and reporting. If monitoring is required, a monitoring plan must be included with the PCN and meet current requirements.

All relocation plans must clearly depict both the existing channel and the proposed (relocated) channel.

* Conducting stream relocation(s) in accordance with 1-5 above may not fully compensate for the impact and may require additional compensatory mitigation. The Corps Project Manager will determine if the proposed amount of mitigation is adequate on a project-by-project basis.

If stream relocation cannot be conducted in accordance with 1-5 above, mitigation at a 2:1 ratio will typically be required unless: (1) the applicant provides a Stream Quality Assessment Worksheet or NCSAM documentation (when available) that supports a different mitigation ratio; (2) the Corps Project Manager determines that the relocated stream, while not in full compliance with 1-5 above, warrants partial mitigation, or; (3) the Corps determines that the existing stream is an excellent quality stream, in which case a 3:1 mitigation ratio may be required. The Corps Project Manager will make the final determination concerning the appropriate amount and type of mitigation.

If the Corps determines that the proposed stream relocation is of such a magnitude that it cannot be authorized by this RGP, an Individual Permit will be required.

s. The applicant shall sign and return the compliance certificate that is attached to the RGP verification letter.

t. In the event that any Federal agency maintains an objection or any required State authorization is outstanding, no notice to proceed will be given until objections are resolved and State authorizations are issued.

u. The Corps may place additional special conditions, limitations, or restrictions on any verification of the use of RGP 31 on a project-by-project basis.

2. General Conditions.

a. Except as authorized by this RGP or any Corps approved modification to this RGP, no excavation, fill or mechanized land-clearing activities shall take place within waters or wetlands, at any time in the construction or maintenance of this project. 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.

b. Authorization under this RGP does not obviate the need to obtain other federal, state, or local authorizations.

c. All work authorized by this RGP must comply with the terms and conditions of the applicable CWA Section 401 Water Quality Certification for this RGP issued by the NCDWR.

d. 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).

e. The activities authorized by this RGP must not interfere with the public's right to free navigation on all navigable waters of the U.S. No attempt will be made by the permittee to prevent the full and free use by the public of all navigable waters at or adjacent to the authorized work for a reason other than safety.

f. The permittee understands and agrees that, if future operations by the U.S. require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the U.S. No claim shall be made against the U.S. on account of any such removal or alteration.

g. 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 U.S. and in such time and manner as the Secretary of the Army or his authorized representative may direct, restore the affected water of the U.S. to its former conditions.

h. The permittee will allow the Wilmington District Engineer or his representative to inspect the authorized activity at any time deemed necessary to assure that the activity is being performed or maintained in strict accordance with the Special and General Conditions of this permit.

i. This RGP does not grant any property rights or exclusive privileges.

j. This permit does not authorize any injury to the property or rights of others.

k. This RGP does not authorize the interference with any existing or proposed federal project.

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

(1) Damages to the permitted project or uses thereof as a result of other permitted

or unpermitted activities or from natural causes.

(2) Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the U.S. in the public interest.

(3) Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.

(4) Design or construction deficiencies associated with the permitted work.

(5) Damage claims associated with any future modification, suspension, or revocation of this permit.

m. Authorization provided by this RGP may be modified, suspended or revoked in whole or in part if the Wilmington District Engineer, acting for the Secretary of the Army, determines that such action is in the best public interest. The term of this RGP shall be five (5) years unless subject to modification, suspension or revocation. Any modification, suspension or revocation of this authorization will not be the basis for any claim for damages against the U.S. Government.

n. This RGP does not authorize any activity, which the District Engineer determines, after any necessary investigations, will adversely affect:

(1) Rivers named in Section 3 of the Wild and Scenic Rivers Act (15 U.S.C. 1273), those proposed for inclusion as provided by Sections 4 and 5 of the Act, and wild, scenic and recreational rivers established by state and local entities.

(2) Sites included in or determined eligible for listing in the National Registry of Natural Landmarks.

(3) NOAA designated marine sanctuaries, National Estuarine Research Reserves, and coral reefs.

(4) Submerged Aquatic Vegetation (SAV) as defined by the N.C. Division of Marine Fisheries at 15A NCAC 03I .0101(4)(i)).

o. Endangered Species.

(1) No activity is authorized under this RGP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under this RGP which "may affect" a listed species or critical habitat, unless Section 7 consultation addressing the effects of the proposed activity has been completed.

(2) Federal agencies should follow their own procedures for complying with the requirements of the ESA. Federal permittees (and when FHWA is the lead federal agency) must provide the district engineer with the appropriate documentation to demonstrate compliance with

those requirements. The district engineer will review the documentation and determine whether it is sufficient to address ESA compliance for the RGP activity, or whether additional ESA consultation is necessary.

(3) Non-federal permittees must submit a PCN to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the project, or if the project is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect federally-listed endangered or threatened species or designated critical habitat, the PCN must include the name(s) of the endangered or threatened species that might be affected by the proposed work or that utilize the designated critical habitat that might be affected by the proposed work. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-federal applicant of the Corps' determination within 45 days of receipt of a complete PCN notification. In cases where the non-federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the project, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activities will have "no effect" on listed species or critical habitat, or until Section 7 consultation has been completed. If the non-federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(4) As a result of formal or informal consultation with the U.S. Fish and Wildlife Service (USFWS) or NMFS, the district engineer may add species-specific endangered species conditions to the RGP.

(5) Authorization of an activity by a RGP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the USFWS or the NMFS, the ESA prohibits any person subject to the jurisdiction of the U.S. to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(6) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the USFWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.noaa.gov/fisheries.html respectively.

p. The permittee is responsible for obtaining any "take" permits required under the USFWS's regulations governing compliance with the Migratory Bird Treaty Act or the Bald and Golden Eagle Protection Act. The permittee should contact the appropriate local office of the USFWS to determine if such "take" permits are required for a particular activity.

q. For proposed activities the sixteen counties listed below, applicants must provide a

copy of the PCN to the USFWS, 160 Zillicoa Street, Asheville, North Carolina 28801. This PCN must be sent concurrently to the USFWS and the Corps Project Manager for that specific county.

Counties with tributaries that drain to designated critical habitat that require notification to the Asheville USFWS: Avery, Cherokee, Forsyth, Graham, Haywood, Henderson, Jackson, Macon Mecklenburg, Mitchell, Stokes, Surry, Swain, Transylvania, Union and Yancey.

Applicants may contact the appropriate USFWS office listed below or the US Army Corps of Engineers:

US Fish and Wildlife Service
Asheville Field Office
160 Zillicoa Street
Asheville, NC 28801
Telephone: (828) 258-3939

Asheville USFWS Office counties: All counties west of and including Anson, Stanly, Davidson, Forsyth and Stokes Counties.

US Fish and Wildlife Service
Raleigh Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
Telephone: (919) 856-4520

Raleigh USFWS Office counties: all counties east of and including Richmond, Montgomery, Randolph, Guilford, and Rockingham Counties.

r. Permittees are advised that development activities in or near a floodway may be subject to the National Flood Insurance Program that prohibits any development, including fill, within a floodway that results in any increase in base flood elevations. This RGP does not authorize any activity prohibited by the National Flood Insurance Program.

s. The permittee must make every reasonable effort to perform the work authorized herein in a manner so as to minimize any adverse impact on fish, wildlife and natural environmental values.

t. All activities authorized by this RGP that involve the use of riprap material for bank stabilization, the following measures shall be applied:

(1) Filter cloth must be placed underneath the riprap as an additional requirement of its use in North Carolina waters.

(2) The placement of riprap shall be limited to the areas depicted on submitted work plan drawings and not be placed in a manner that prevents or impedes fish passage.

(3) The riprap material shall be clean and free from loose dirt or any pollutant

except in trace quantities that will not have an adverse environmental effect.

(4) It shall be of a size sufficient to prevent its movement from the authorized alignment by natural forces under normal conditions.

(5) The riprap material shall consist of clean rock or masonry material such as, but not limited to, granite, marl, or broken concrete.

(6) A waiver from the specifications in this general condition may be requested in writing. The waiver will only be issued if it can be demonstrated that the impacts of complying with this condition will result in greater adverse impacts to the aquatic environment.

u. The permittee must install and maintain, at his expense, any signal lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, on authorized facilities. For further information, the permittee should contact the U.S. Coast Guard Marine Safety Office at (910) 772-2191.

v. The permittee must maintain any structure or work authorized by this permit in good condition and in conformance with the terms and conditions of this permit. The Permittee is not relieved of this requirement if the Permittee abandons the structure or work. Transfer in fee simple of the work authorized by this permit will automatically transfer this permit to the property's new owner, with all of the rights and responsibilities enumerated herein. The permittee must inform any subsequent owner of all activities undertaken under the authority of this permit and provide the subsequent owner with a copy of the terms and conditions of this permit.

w. At his sole discretion, any time during the processing cycle, the Wilmington District Engineer may determine that this RGP will not be applicable to a specific proposal. In such case, the procedures for processing an individual permit in accordance with 33 CFR 325 will be available.

x. The activity must comply with applicable FEMA approved state or local floodplain management requirements.

y. 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.

z. All excavated material will be disposed of in approved upland disposal areas.

aa. Historic Properties.

(1) In cases where the district engineer determines that the activity may affect properties listed, or eligible for listing, in the National Register of Historic Places (NRHP), the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(2) Federal permittees (or when FHWA is the lead federal agency) should follow their own procedures for complying with the requirements of Section 106 of the NHPA. Federal permittees must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will review the documentation and determine whether it is sufficient to address Section 106 compliance for this RGP activity, or whether additional Section 106 consultation is necessary.

(3) Non-federal permittees must submit a PCN to the district engineer if the authorized activity may have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the NRHP, including previously unidentified properties. For such activities, the PCN must state which historic properties may be affected by the proposed work or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of or potential for the presence of historic resources can be sought from the State Historic Preservation Officer (SHPO) or Tribal Historic Preservation Officer (THPO), as appropriate, and the NRHP (see 33 CFR 330.4(g)). When reviewing PCNs, district engineers will comply with the current procedures for addressing the requirements of Section 106 of the NHPA. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted and these efforts, the district engineer shall determine whether the proposed activity has the potential to cause an effect on the historic properties. Where the non-federal applicant has identified historic properties on which the activity may have the potential to cause effects and so notified the Corps, the non-federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects or that consultation under Section 106 of the NHPA has been completed.

(4) The district engineer will notify the prospective permittee within 45 days of receipt of a complete PCN whether NHPA Section 106 consultation is required. Section 106 consultation is not required when the Corps determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR §800.3(a)). If NHPA Section 106 consultation is required and will occur, the district engineer will notify the non-federal applicant that he or she cannot begin work until Section 106 consultation is completed. If the non-federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(5) Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit will relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the

undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

bb. 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 NRHP.

cc. There will be no unreasonable interference with navigation or the right of the public to riparian access by the existence or use of activities authorized by this RGP.

dd. Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

ee. This RGP will not be applicable to proposed construction when the Wilmington District Engineer determines that the proposed activity will significantly affect the quality of the human environment and determines that an EIS must be prepared.

ff. Activities which have commenced (i.e. are under construction) or are under contract to commence in reliance upon this general permit will remain authorized provided the activity is completed within twelve months of the date of the general permit's expiration, modification, or revocation. Activities completed under the authorization of this general permit which were in effect at the time the activity was completed continue to be authorized by the general permit.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

Kevin P. Landers Sr.
Colonel, U. S. Army
District Commander

Environmental Quality

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

LINDA CULPEPPER
Interim Director

July 3, 2018
Johnston County
NCDWR Project No. 20180904
NC 42
TIP No. R-3825B

APPROVAL of 401 WATER QUALITY CERTIFICATION, NEUSE BUFFER AUTHORIZATION, and ISOLATED WETLANDS PERMIT Pursuant to IWGP100000, with ADDITIONAL CONDITIONS

Mr. Philip S. Harris, P.E., CPM
Environmental Analysis Unit
NC Department of Transportation
1598 Mail Service Center
Raleigh, NC 27699-1598

Dear Mr. Harris:

You have our approval, in accordance with the conditions listed below, for the following impacts for the purpose of widening and upgrading NC Highway 42 in Johnston County:

Stream Impacts in the Neuse 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)	Temporary Impact to Perennial Stream (linear ft)	Total Stream Impact (linear ft)
1	213	0	87	0	0	300
2	108	0	4	0	0	112
4	0	0	0	0	209	209
5	523	20	14	0	0	557
6	187	0	31	0	0	218
7	117	25	54	0	0	196
8	320	0	66	0	0	386
9	257	0	30	0	0	287
10A	0	0	0	193	70	263
10B	498	11	31	0	0	540
14	72	0	20	0	0	92
Total	**2295**	**56**	**337**	**193**	**279**	**3160**

Total Stream Impact for Project: 3160 linear feet.

Wetland Impacts in the Neuse River Basin

Site	Permanent Fill (ac)	Excavation (ac)	Mechanized Clearing (ac)	Total Wetland Impact (ac)
1	0.06	0.05	0.03	0.14
5	0.02	0.02	0.01	0.05
8	0.03	0.06	0.04	0.13
11	0.04	0	< 0.01	0.05
12	0.35	0.02	0.06	0.43
13	< 0.01	0	< 0.01	0.02
14	0.11	0	0.01	0.12
Total	**0.61**	**0.15**	**0.16**	**0.92**

Total Wetland Impact for Project: 0.92 acres.

Isolated Wetland Impacts in the Neuse River Basin

Site	Permanent Fill (ac)	Mechanized Clearing (ac)	Total Wetland Impact (ac)
3	0.07	0.04	0.11
Total	**0.07**	**0.04**	**0.11**

Total Isolated Wetland Impact for Project: 0.11 acres.

Open Water (Ponds) Impacts in the Neuse River Basin

Site	Permanent Fill in Open Waters (ac)	Temporary Fill in Open Waters (ac)	Total Fill in Open Waters (ac)
15	0.01	0	0.01
Total	**0.01**	**0**	**0.01**

Total Open Water Impact for Project: 0.01 acres.

Neuse Riparian Buffer Impacts

Site	Zone 1 Impact (sq ft)	*minus* Wetlands in Zone 1 (sq ft)	= Zone 1 Buffers (not wetlands) (sq ft)	Zone 1 Buffer Mitigation Required (using 3:1 ratio)		Zone 2 Impact (sq ft)	*minus* Wetlands in Zone 2 (sq ft)	= Zone 2 Buffers (not wetlands) (sq ft)	Zone 2 Buffer Mitigation Required (using 1.5:1 ratio)
1	12849	0	12849	38547		7731	0	7731	11597
4-Bridge	15609	0	15609	N/A		9399	0	9399	N/A
4-Road	0	0	0	0		361	0	361	541
7	24293	0	24293	72879		16515	0	16515	24773
8	18071	1106	16965	50895		9040	820	8220	12330
10	34053	0	34053	102159		18207	0	18207	27310
Totals	**104875**	**1106**	**103769**	**264480**		**61253**	**820**	**60433**	**76551**

* n/a = Impact Allowable, no mitigation required

Total Buffer Impact for Project: 166128 square feet.

The project shall be constructed in accordance with your application received June 27, 2018. After reviewing your application, we have decided that these impacts are covered by General Water Quality Certification Number 4135. This certification corresponds to the Regional General Permit 31 issued by the Corps of Engineers. This approval is also valid for the Neuse Riparian Buffer Rules (15A NCAC 2B.0233) and Isolated Wetlands Permit Pursuant to IWGP100000. In addition, you should acquire any other federal, state or local permits before you proceed with your project including (but not limited to) Sediment and Erosion Control, Non-Discharge and Water Supply Watershed regulations. This approval will expire with the accompanying 404 permit.

This approval is valid solely for the purpose and design described in your application (unless modified below). Should your project change, you must 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 total wetland fills for this project (now or in the future) exceed one acre, or of total impacts to streams (now or in the future) exceed 150 linear feet, compensatory mitigation may be required as described in 15A NCAC 2H .0506 (h) (6) and (7). Additional buffer impacts may require compensatory mitigation as described in 15A NCAC 2B.0233. For this approval to remain valid, you must adhere to the conditions listed in the General Certifications, and any additional conditions listed below.

Conditions of Certification:

1. Compensatory mitigation for impacts to 88160 square feet of protected riparian buffers in Zone 1 and 51034 square feet of protected riparian buffers in Zone 2 shall be required. We understand that you have chosen to perform compensatory mitigation for impacts to protected buffers through use of the North Carolina Division of Mitigation Services (DMS) (formerly NCEEP). Mitigation for unavoidable impacts to Neuse Riparian Buffers shall be provided in the Neuse River Basin and done in accordance with 15A NCAC .02B .0295. The DMS has indicated in a letter dated June 18, 2018 that they will assume responsibility for satisfying the compensatory mitigation requirements for the above-referenced project, in accordance with DMS's Mitigation Banking Instrument signed June 14, 2016.

2. The permittee will need to adhere to all appropriate in-water work moratoria (including the use of pile driving or vibration techniques) prescribed by the National Marine Fisheries Service for the Atlantic sturgeon. No in-water work in the Neuse River is permitted between February 15 and June 15, of any year, without prior approval from the NC Division of Water Resources and the National Marine Fisheries Service. In addition, the permittee shall conform to the NCDOT policy entitled "Stream Crossing Guidelines for Anadromous Fish Passage (May 12, 1997) at all times. [15A NCAC 02H.0506(b)(2) and 15A NCAC 04B. 0125]

3. The post-construction removal of any temporary bridge structures must return the project site to its preconstruction contours and elevations. The impacted areas shall be revegetated with appropriate native species. [15A NCAC 02H .0506(b)(2)]

4. As a condition of this 401 Water Quality Certification, the bridge demolition and construction must be accomplished in strict compliance with the most recent version of NCDOT's Best Management Practices for Construction and Maintenance Activities. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]

5. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means (grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. To meet the requirements of NCDOT's NPDES permit NCS0000250, please refer to the most recent version of the *North Carolina Department of Transportation Stormwater Best Management Practices Toolbox* manual for approved measures. [15A NCAC 02H .0507(d)(2) and 15A NCAC 02H .0506(b)(5)]

6. Bridge piles and bents shall be constructed using driven piles (hammer or vibratory) or drilled shaft construction methods. More specifically, jetting or other methods of pile driving are prohibited without prior written approval from the NCDWR first. [15A NCAC 02H.0506(b)(2)]

7. No drill slurry or water that has been in contact with uncured concrete shall be allowed to enter surface waters. This water shall be captured, treated, and disposed of properly. [15A NCAC 02H .0506(b)(3)

8. A turbidity curtain will be installed in the stream if driving or drilling activities occur within the stream channel, on the stream bank, or within 5 feet of the top of bank, or during the removal of bents from an old bridge. This condition can be waived with prior approval from the NCDWR. [15A NCAC 02H .0506(b)(3)

9. All bridge construction shall be performed from the existing bridge, temporary work bridges, temporary causeways, or floating or sunken barges. If work conditions require barges, they shall be floated into position and then sunk. The barges shall not be sunk and then dragged into position. Under no circumstances should barges be dragged along the bottom of the surface water. [15A NCAC 02H .0506(b)(3)]

10. 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 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)]

11. 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)]

12. 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)]

13. 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)]

14. 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. [15A NCAC 02H.0506(b)(2)]

15. All portions of the proposed project draining to 303(d) listed watersheds that are impaired due to turbidity shall be designed, constructed, and operated with sediment and erosion control measures that meet Design Standards in Sensitive Watersheds (15A NCAC 4B .0124). However, due to the size of the project, NC DOT shall not be required to meet 15A NCAC 4B .0124(a) regarding the maximum amount of uncovered acres.

16. All portions of the proposed project draining to 303(d) listed watersheds that are impaired due to biological criteria exceedances shall not discharge stormwater directly to surface waters. Stormwater shall be treated using appropriate best management practices (e.g., vegetated conveyances, constructed wetlands, detention ponds, etc.) prior to discharging to surface waters.

17. Channel relocations shall be completed and stabilized, prior to diverting water into the new channel. Stream banks shall be matted with coir-fiber matting. Vegetation used for bank stabilization shall be limited to native riparian vegetation, and should include establishment of a vegetated buffer on both sides of the relocated channel to the maximum extent practical. Also, rip-rap may be allowed if it is necessary to maintain the physical integrity of the stream, but the applicant must provide written justification and any calculations used to determine the extent of rip-rap coverage requested. Once the stream has been turned into the new channel, it may be necessary to relocate stranded fish to the new channel to prevent fish kills. [15A NCAC 02H .0506(b)(3)]

18. All stormwater runoff shall be directed as sheetflow through stream buffers at non-erosive velocities, unless otherwise approved by this certification. [15A NCAC 2B.0233]

19. All riparian buffers impacted by the placement of temporary fill or clearing activities shall be restored to the preconstruction contours and revegetated. Maintained buffers shall be permanently revegetated with non-woody species by the end of the growing season following completion of construction. For the purpose of this condition, maintained buffer areas are defined as areas within the transportation corridor that will be subject to regular NCDOT maintenance activities including mowing. The area with non-maintained buffers shall be permanently revegetated with native woody species before the next growing season following completion of construction. [15A NCAC 2B.0233]

20.Pursuant to 15A NCAC 2B.0233(6), sediment and erosion control devices shall not be placed in Zone 1 of any Neuse Buffer without prior approval by the NCDWR. At this time, the NCDWR has approved no sediment and erosion control devices in Zone 1, outside of the approved project impacts, anywhere on this project. Moreover, sediment and erosion control devices shall be allowed in Zone 2 of the buffers provided that Zone 1 is not compromised and that discharge is released as diffuse flow.

21. 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]

22. 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)]

23. 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)]

24. 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)]

25. 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)]

26. 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)]

27. 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)]

28. 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)]

29. 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)]

30. Discharging hydroseed mixtures and washing out hydroseeders and other equipment in or adjacent to surface waters is prohibited. [15A NCAC 02H.0506(b)(3)]

31. 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]

32. 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)]

33. 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)]

34. The outside buffer, wetland or water boundary located within the construction corridor approved by this authorization, including all non-commercial borrow and waste sites associated with the project, 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]

35. 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.

36. 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)]

37. 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)]

38. 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.0233(10)] & [15A NCAC 02B.0506(b)(2)]

39. 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)]

40. 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.

41. Sediment and erosion control measures shall not be placed in wetlands or surface waters, or within 5 feet of the top of bank, without prior approval from DWR. [15A NCAC 02H.0506(b)(3) and (c)(3)]

42. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506{b)(3) and (c)(3) and 15A NCAC 02B.0200]

43. Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual,* or for linear transportation projects, the *NCDOT Sediment and Erosion Control Manual.*
All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.
For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual.* Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971. [15A NCAC 02H.0506(b)(3) and (c)(3); GC 4135]

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 letter completes the review of the Division of Water Resources under Section 401 of the Clean Water Act. If you have any questions, please contact Rob Ridings at 919-707-8786.

Sincerely,

Robert Ridings

for Linda Culpepper, Interim Director
Division of Water Resources

Electronic copy only distribution:
Tom Steffens, US Army Corps of Engineers, Washington Field Office
Chad Coggins, Division 4 Environmental Officer
Chris Rivenbark, NC Department of Transportation
Beth Harmon, Division of Mitigation Services
File Copy

Environmental Quality

ROY COOPER
Governor

MICHAEL S. REGAN
Secretary

LINDA CULPEPPER
Interim 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 _____

STATE OF NORTH CAROLINA
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER RESOURCES

WATER QUALITY GENERAL CERTIFICATION NO. 4135

GENERAL CERTIFICATION FOR PROJECTS ELIGIBLE FOR US ARMY CORPS OF ENGINEERS

- **NATIONWIDE PERMIT NUMBER 14 (LINEAR TRANSPORTATION PROJECTS), AND**
- **REGIONAL GENERAL PERMIT 198200031 (NCDOT BRIDGES, WIDENING PROJECTS, INTERCHANGE IIMPROVEMENTS)**

Water Quality Certification Number 4135 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 Regulations in 15A NCAC 02H .0500 and 15A NCAC 02B .0200 for the discharge of fill material to surface waters and wetland areas as described in 33 CFR 330 Appendix A (B) (14) of the US Army Corps of Engineers regulations and Regional General Permit 198200031.

The State of North Carolina certifies that the specified category of activity will not violate applicable portions of Sections 301, 302, 303, 306 and 307 of the Public Laws 92-500 and 95-217 if conducted in accordance with the conditions hereinafter set forth.

Effective date: December 1, 2017

Signed this day: December 1, 2017

By

for Linda Culpepper
Interim Director

Activities meeting any one (1) of the following thresholds or circumstances require *written approval* for a 401 Water Quality Certification from the Division of Water Resources (DWR):

a) If any of the conditions of this Certification (listed below) cannot be met; or
b) Any temporary or permanent impacts to wetlands, open waters and/or streams, except for construction of a driveway to a single family residential lot that is determined to not be part of a larger common plan of development, as long as the driveway involves a travel lane of less than 25 feet and total stream impacts of less than 60 feet, including any topographic/slope stabilization or in-stream stabilization needed for the crossing; or
c) Any stream relocation or stream restoration; or
d) Any high-density project, as defined in 15A NCAC 02H .1003(2)(a) and by the density thresholds specified in 15A NCAC 02H .1017, which:
    i. Disturbs one acre or more of land (including a project that disturbs less than one acre of land that is part of a larger common plan of development or sale); and
    ii. Has permanent wetland, stream or open water impacts; and
    iii. Is proposing new built-upon area; and
    iv. Does not have a stormwater management plan reviewed and approved under a state stormwater program[1] or a state-approved local government stormwater program[2].

    Projects that have vested rights, exemptions, or grandfathering from state or locally-implemented stormwater programs and projects that satisfy state or locally-implemented stormwater programs through use of community in-lieu programs **require written approval**; or
e) Any permanent impacts to waters, or to wetlands adjacent to waters, designated as: ORW (including SAV), HQW (including PNA), SA, WS-I, WS-II, or North Carolina or National Wild and Scenic River.
f) Any permanent impacts to waters, or to wetlands adjacent to waters, designated as Trout except for driveway projects that are below threshold (b) above provided that:
    i. The impacts are not adjacent to any existing structures
    ii. All conditions of this General Certification can be met, including adherence to any moratoriums as stated in Condition #10; and
    iii. A *Notification of Work in Trout Watersheds Form* is submitted to the Division at least 60 days prior to commencement of work; or
g) Any permanent impacts to coastal wetlands [15A NCAC 07H .0205], or Unique Wetlands (UWL); or
h) Any impact associated with a Notice of Violation or an enforcement action for violation(s) of NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), NC Surface Water or Wetland Standards (15A NCAC 02B .0200), or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200); or

[1] e.g. Coastal Counties, HQW, ORW, or state-implemented Phase II NPDES
[2] e.g. Delegated Phase II NPDES, Water Supply Watershed, Nutrient-Sensitive Waters, or Universal Stormwater Management Program

i) Any impacts to subject water bodies and/or state regulated riparian buffers along subject water bodies in the Neuse, Tar-Pamlico, or Catawba River Basins or in the Randleman Lake, Jordan Lake or Goose Creek Watersheds (or any other basin or watershed with State Regulated Riparian Area Protection Rules [Buffer Rules] in effect at the time of application) *unless:*
   i. The activities are listed as "EXEMPT" from these rules; or
   ii. A Buffer Authorization Certificate is issued by the NC Division of Coastal Management (DCM); or
   iii. A Buffer Authorization Certificate or a Minor Variance is issued by a delegated or designated local government implementing a state riparian buffer program pursuant to 143-215.23

Activities included in this General Certification that do not meet one of the thresholds listed above do not require written approval.

I. ACTIVITY SPECIFIC CONDITIONS:

1. If this Water Quality Certification is used to access residential, commercial or industrial building sites, then all parcels owned by the applicant that are part of the single and complete project authorized by this Certification must be buildable without additional impacts to streams or wetlands. If required in writing by DWR, the applicant shall provide evidence that the parcels are buildable without requiring additional impacts to wetlands, waters, or state regulated riparian buffers. [15A NCAC 02H .0506(b)(4) and (c)(4)]

2. For road and driveway construction purposes, this Certification shall only be utilized from natural high ground to natural high ground. [15A NCAC 02H .0506(b)(2) and (c)(2)]

3. Deed notifications or similar mechanisms shall be placed on all lots with retained jurisdictional wetlands, waters, and state regulated riparian buffers within the project boundaries in order to assure compliance with NC Wetland Rules (15A NCAC 02H .0500), NC Isolated Wetland Rules (15A NCAC 02H .1300), and/or State Regulated Riparian Buffer Rules (15A NCAC 02B .0200). These mechanisms shall be put in place at the time of recording of the property or individual parcels, whichever is appropriate. [15A NCAC 02H .0506(b)(4) and (c)(4)]

4. For the North Carolina Department of Transportation, compliance with the NCDOT's individual NPDES permit NCS000250 shall serve to satisfy this condition. All other high-density projects that trigger threshold item (d) above shall comply with one of the following requirements: [15A NCAC 02H .0506(b)(5) and (c)(5)]

a. Provide a completed Stormwater Management Plan (SMP) for review and approval, including all appropriate stormwater control measure (SCM) supplemental forms and associated items, that complies with the high-density development requirements of 15A NCAC 02H .1003. Stormwater management shall be provided throughout the entire project area in accordance with 15A NCAC 02H .1003. For the purposes of 15A NCAC 02H .1003(2)(a), density thresholds shall be determined in accordance with 15A NCAC 02H .1017.

b. Provide documentation (including calculations, photos, etc.) that the project will not cause degradation of downstream surface waters. Documentation shall include a detailed analysis of the hydrological impacts from stormwater runoff when considering the volume and velocity of stormwater runoff from the project built upon area and the size and existing condition of the receiving stream(s).

Exceptions to this condition require application to and written approval from DWR.

II. GENERAL CONDITIONS:

1. When written authorization is required, the plans and specifications for the project are incorporated into the authorization by reference and are an enforceable part of the Certification. Any modifications to the project require notification to DWR and may require an application submittal to DWR with the appropriate fee. [15A NCAC 02H .0501 and .0502]

2. No waste, spoil, solids, or fill of any kind shall occur in wetlands or waters beyond the footprint of the impacts (including temporary impacts) as authorized in the written approval from DWR; or beyond the thresholds established for use of this Certification without written authorization. [15A NCAC 02H .0501 and .0502]

   No removal of vegetation or other impacts of any kind shall occur to state regulated riparian buffers beyond the footprint of impacts approved in a Buffer Authorization or Variance or as listed as an exempt activity in the applicable riparian buffer rules. [15A NCAC 02B .0200]

3. In accordance with 15A NCAC 02H .0506(h) and Session Law 2017-10, compensatory mitigation may be required for losses of greater than 300 linear feet of perennial streams and/or greater than one (1) acre of wetlands. Impacts associated with the removal of a dam shall not require mitigation when the removal complies with the requirements of Part 3 of Article 21 in Chapter 143 of the North Carolina General Statutes. Impacts to isolated and other non-404 jurisdictional wetlands shall not be combined with 404 jurisdictional wetlands for the purpose of determining when impact thresholds trigger a mitigation requirement. For linear publicly owned and maintained transportation projects that are not determined to be part of a larger common plan of development by the US Army Corps of Engineers, compensatory mitigation may be required for losses of greater than 300 linear feet per perennial stream.

Compensatory stream and/or wetland mitigation shall be proposed and completed in compliance with G.S. 143-214.11. For applicants proposing to conduct mitigation within a project site, a complete mitigation proposal developed in accordance with the most recent guidance issued by the US Army Corps of Engineers Wilmington District shall be submitted for review and approval with the application for impacts.

4. All activities shall be in compliance with any applicable State Regulated Riparian Buffer Rules in Chapter 2 of Title 15A.

5. When applicable, all construction activities shall be performed and maintained in full compliance with G.S. Chapter 113A Article 4 (Sediment and Pollution Control Act of 1973). Regardless of applicability of the Sediment and Pollution Control Act, all projects shall incorporate appropriate Best Management Practices for the control of sediment and erosion so that no violations of state water quality standards, statutes, or rules occur. [15A NCAC 02H .0506(b)(3) and (c)(3) and 15A NCAC 02B .0200]

   Design, installation, operation, and maintenance of all sediment and erosion control measures shall be equal to or exceed the requirements specified in the most recent version of the *North Carolina Sediment and Erosion Control Manual*, or for linear transportation projects, the *NCDOT Sediment and Erosion Control Manual*.

   All devices shall be maintained on all construction sites, borrow sites, and waste pile (spoil) sites, including contractor-owned or leased borrow pits associated with the project. Sufficient materials required for stabilization and/or repair of erosion control measures and stormwater routing and treatment shall be on site at all times.

   For borrow pit sites, the erosion and sediment control measures shall be designed, installed, operated, and maintained in accordance with the most recent version of the *North Carolina Surface Mining Manual*. Reclamation measures and implementation shall comply with the reclamation in accordance with the requirements of the Sedimentation Pollution Control Act and the Mining Act of 1971.

   If the project occurs in waters or watersheds classified as Primary Nursery Areas (PNAs), SA, WS-I, WS-II, High Quality Waters (HQW), or Outstanding Resource Waters (ORW), then the sedimentation and erosion control designs shall comply with the requirements set forth in 15A NCAC 04B .0124, *Design Standards in Sensitive Watersheds*.

6. Sediment and erosion control measures shall not be placed in wetlands or waters except within the footprint of temporary or permanent impacts authorized under this Certification. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0501 and .0502]

7. Erosion control matting that incorporates plastic mesh and/or plastic twine shall not be used along streambanks or within wetlands. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02B .0201]

8. An NPDES Construction Stormwater Permit (NCG010000) is required for construction projects that disturb one (1) or more acres of land. The NCG010000 Permit allows stormwater to be discharged during land disturbing construction activities as stipulated in the conditions of the permit. If the project is covered by this permit, full compliance with permit conditions including the erosion & sedimentation control plan, inspections and maintenance, self-monitoring, record keeping and reporting requirements is required. [15A NCAC 02H .0506(b)(5) and (c)(5)]

   The North Carolina Department of Transportation (NCDOT) shall be required to be in full compliance with the conditions related to construction activities within the most recent version of their individual NPDES (NCS000250) stormwater permit. [15A NCAC 02H .0506(b)(5) and (c)(5)]

9. All work in or adjacent to streams shall be conducted so that the flowing stream does not come in contact with the disturbed area. Approved best management practices from the most current version of the *NC Sediment and Erosion Control Manual*, or the *NC DOT Construction and Maintenance Activities Manual*, such as sandbags, rock berms, cofferdams, and other diversion structures shall be used to minimize excavation in flowing water. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(3) and (c)(3)]

10. If activities must occur during periods of high biological activity (e.g. sea turtle nesting, fish spawning, or bird nesting), then biological monitoring may be required at the request of other state or federal agencies and coordinated with these activities. [15A NCAC 02H .0506 (b)(2) and 15A NCAC 04B .0125]

    All moratoriums on construction activities established by the NC Wildlife Resources Commission (WRC), US Fish and Wildlife Service (USFWS), NC Division of Marine Fisheries (DMF), or National Marine Fisheries Service (NMFS) shall be implemented. Exceptions to this condition require written approval by the resource agency responsible for the given moratorium. A copy of the approval from the resource agency shall be forwarded to DWR.

    Work within a designated trout watershed of North Carolina (as identified by the Wilmington District of the US Army Corps of Engineers), or identified state or federal endangered or threatened species habitat, shall be coordinated with the appropriate WRC, USFWS, NMFS, and/or DMF personnel.

11. Culverts shall be designed and installed in such a manner that the original stream profiles are not altered and allow for aquatic life movement during low flows. The dimension, pattern, and profile of the stream above and below a pipe or culvert shall 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 culvert shall be such as to pass the average historical low flow and spring flow without adversely altering flow velocity. [15A NCAC 02H .0506(b)(2) and (c)(2)]

Placement of culverts and other structures in streams shall be below the elevation of the streambed by one foot for all culverts with a diameter greater than 48 inches, and 20% of the culvert diameter for culverts having a diameter less than or equal to 48 inches, to allow low flow passage of water and aquatic life.

If multiple pipes or barrels are required, they shall be designed to mimic the existing stream cross section as closely as possible including pipes or barrels at flood plain elevation and/or sills where appropriate. Widening the stream channel shall be avoided.

When topographic constraints indicate culvert slopes of greater than 5%, culvert burial is not required, provided that all alternative options for flattening the slope have been investigated and aquatic life movement/connectivity has been provided when possible (e.g. rock ladders, cross vanes, etc.). Notification, including supporting documentation to include a location map of the culvert, culvert profile drawings, and slope calculations, shall be provided to DWR 60 calendar days prior to the installation of the culvert.

When bedrock is present in culvert locations, culvert burial is not required provided that there is sufficient documentation of the presence of bedrock. Notification, including supporting documentation such as, a location map of the culvert, geotechnical reports, photographs, etc. shall be provided to DWR a minimum of 60 calendar days prior to the installation of the culvert. If bedrock is discovered during construction, then DWR shall be notified by phone or email within 24 hours of discovery.

If other site-specific topographic constraints preclude the ability to bury the culverts as described above and/or it can be demonstrated that burying the culvert would result in destabilization of the channel, then exceptions to this condition require application to and written approval from DWR.

Installation of culverts in wetlands shall ensure continuity of water movement and be designed to adequately accommodate high water or flood conditions. When roadways, causeways, or other fill projects are constructed across FEMA-designated floodways or wetlands, openings such as culverts or bridges shall be provided to maintain the natural hydrology of the system as well as prevent constriction of the floodway that may result in destabilization of streams or wetlands.

The establishment of native woody vegetation and other soft stream bank stabilization techniques shall be used where practicable instead of rip-rap or other bank hardening methods.

12. Bridge deck drains shall not discharge directly into the stream. Stormwater shall be directed across the bridge and pre-treated through site-appropriate means to the maximum extent practicable (e.g. grassed swales, pre-formed scour holes, vegetated buffers, etc.) before entering the stream. Exceptions to this condition require application to and written approval from DWR. [15A NCAC 02H .0506(b)(5)]

13. Application of fertilizer to establish planted/seeded vegetation within disturbed riparian areas and/or wetlands shall be conducted at agronomic rates and shall comply with all other Federal, State and Local regulations. Fertilizer application shall be accomplished in a manner that minimizes the risk of contact between the fertilizer and surface waters. [15A NCAC 02B .0200 and 15A NCAC 02B .0231]

14. If concrete is used during construction, then all necessary measures shall be taken to prevent direct contact between uncured or curing concrete and waters of the state. Water that inadvertently contacts uncured concrete shall not be discharged to waters of the state. [15A NCAC 02B .0200]

15. All proposed and approved temporary fill and culverts shall be removed and the impacted area shall be returned to natural conditions within 60 calendar days after the temporary impact is no longer necessary. The impacted areas shall be restored to original grade, including each stream's original cross sectional dimensions, planform pattern, and longitudinal bed profile. For projects that receive written approval, no temporary impacts are allowed beyond those included in the application and authorization. All temporarily impacted sites shall be restored and stabilized with native vegetation. [15A NCAC 02H .0506(b)(2) and (c)(2)]

16. All proposed and approved temporary pipes/culverts/rip-rap pads etc. in streams shall be installed as outlined in the most recent edition of the *North Carolina Sediment and Erosion Control Planning and Design Manual* or the *North Carolina Surface Mining Manual* or the *North Carolina Department of Transportation Best Management Practices for Construction and Maintenance Activities* so as not to restrict stream flow or cause dis-equilibrium during use of this Certification. [15A NCAC 02H .0506(b)(2) and (c)(2)]

17. Any rip-rap required for proper culvert placement, stream stabilization, or restoration of temporarily disturbed areas shall be restricted to the area directly impacted by the approved construction activity. All rip-rap shall be placed such that the original stream elevation and streambank contours are restored and maintained. Placement of rip-rap or other approved materials shall not result in de-stabilization of the stream bed or banks upstream or downstream of the area or in a manner that precludes aquatic life passage. [15A NCAC 02H .0506(b)(2)]

18. Any rip-rap used for stream or shoreline stabilization shall be of a size and density to prevent movement by wave, current action, or stream flows and shall consist of clean rock or masonry material free of debris or toxic pollutants. Rip-rap shall not be installed in the streambed except in specific areas required for velocity control and to ensure structural integrity of bank stabilization measures. [15A NCAC 02H .0506(b)(2)]

19. Applications for rip-rap groins proposed in accordance with 15A NCAC 07H .1401 (NC Division of Coastal Management General Permit for construction of Wooden and Rip-rap Groins in Estuarine and Public Trust Waters) shall meet all the specific conditions for design and construction specified in 15A NCAC 07H .1405.

20. All mechanized equipment operated near surface waters shall be inspected and maintained regularly to prevent contamination of surface waters from fuels, lubricants, hydraulic fluids, or other toxic materials. Construction shall be staged in order to minimize the exposure of equipment to surface waters to the maximum extent practicable. Fueling, lubrication and general equipment maintenance shall be performed in a manner to prevent, to the maximum extent practicable, contamination of surface waters by fuels and oils. [15A NCAC 02H .0506(b)(3) and (c)(3) and 15A NCAC 02B .0211 (12)]

21. Heavy equipment working in wetlands shall be placed on mats or other measures shall be taken to minimize soil disturbance. [15A NCAC 02H .0506(b)(3) and (c)(3)]

22. In accordance with 143-215.85(b), the applicant shall report any petroleum spill of 25 gallons or more; any spill regardless of amount that causes a sheen on surface waters; any petroleum spill regardless of amount occurring within 100 feet of surface waters; and any petroleum spill less than 25 gallons that cannot be cleaned up within 24 hours.

23. If an environmental document is required under the State Environmental Policy Act (SEPA), then this General Certification is not valid until a Finding of No Significant Impact (FONSI) or Record of Decision (ROD) is issued by the State Clearinghouse. If an environmental document is required under the National Environmental Policy Act (NEPA), then this General Certification is not valid until a Categorical Exclusion, the Final Environmental Assessment, or Final Environmental Impact Statement is published by the lead agency. [15A NCAC 01C .0107(a)]

24. This General Certification does not relieve the applicant of the responsibility to obtain all other required Federal, State, or Local approvals before proceeding with the project, including those required by, but not limited to, Sediment and Erosion Control, Non-Discharge, Water Supply Watershed, and Trout Buffer regulations.

25. The applicant and their authorized agents shall conduct all 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 DWR determines that such standards or laws are not being met, including 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, then DWR may revoke or modify a written authorization associated with this General Water Quality Certification. [15A NCAC 02H .0507(d)]

26. 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 Certification. A copy of this Certification, including all conditions shall be available at the project site during the construction and maintenance of this project. [15A NCAC 02H .0507 (c) and 15A NCAC 02H .0506 (b)(2) and (c)(2)]

27. When written authorization is required for use of this Certification, upon completion of all permitted impacts included within the approval and any subsequent modifications, the applicant shall be required to return a certificate of completion (available on the DWR website https://edocs.deq.nc.gov/Forms/Certificate-of-Completion). [15A NCAC 02H .0502(f)]

28. Additional site-specific conditions, including monitoring and/or modeling requirements, may be added to the written approval letter for projects proposed under this Water Quality Certification in order to ensure compliance with all applicable water quality and effluent standards. [15A NCAC 02H .0507(c)]

29. If the property or project is sold or transferred, the new permittee shall be given a copy of this Certification (and written authorization if applicable) and is responsible for complying with all conditions. [15A NCAC 02H .0501 and .0502]

III. GENERAL CERTIFICATION ADMINISTRATION:

1. In accordance with North Carolina General Statute 143-215.3D(e), written approval for a 401 Water Quality General Certification must include the appropriate fee. An applicant for a CAMA permit under Article 7 of Chapter 113A of the General Statutes for which a Water Quality Certification is required shall only make one payment to satisfy both agencies; the fee shall be as established by the Secretary in accordance with 143-215.3D(e)(7).

2. This Certification neither grants nor affirms any property right, license, or privilege in any waters, or any right of use in any waters. This Certification does not authorize any person to interfere with the riparian rights, littoral rights, or water use rights of any other person and this Certification does not create any prescriptive right or any right of priority regarding any usage of water. This Certification shall not be interposed as a defense in any action respecting the determination of riparian or littoral rights or other rights to water use. No consumptive user is deemed by virtue of this Certification to possess any prescriptive or other right of priority with respect to any other consumptive user regardless of the quantity of the withdrawal or the date on which the withdrawal was initiated or expanded.

3. This Certification grants permission to the Director, an authorized representative of the Director, or DWR staff, upon the presentation of proper credentials, to enter the property during normal business hours. [15A NCAC 02H .0502(e)]

4. This General Certification shall expire on the same day as the expiration date of the corresponding Nationwide Permit and/or Regional General Permit. The conditions in effect on the date of issuance of Certification for a specific project shall remain in effect for the life of the project, regardless of the expiration date of this Certification. This General Certification is rescinded when the US Army Corps of Engineers reauthorizes any of the corresponding Nationwide Permits and/or Regional General Permits or when deemed appropriate by the Director of the Division of Water Resources.

5. Non-compliance with or violation of the conditions herein set forth by a specific project may result in revocation of this General Certification for the project and may also result in criminal and/or civil penalties.

6. The Director of the North Carolina Division of Water Resources may require submission of a formal application for Individual Certification for any project in this category of activity if it is deemed in the public's best interest or determined that the project is likely to have a significant adverse effect upon water quality, including state or federally listed endangered or threatened aquatic species, or degrade the waters so that existing uses of the water or downstream waters are precluded.

History Note: Water Quality Certification (WQC) Number 4135 issued December 1, 2017 replaces WQC Number 4088 issued March 3, 2017; WQC 3886 issued March 12, 2012; WQC Number 3820 issued April 6, 2010; WQC Number 3627 issued March 2007; WQC Number 3404 issued March 2003; WQC Number 3375 issued March 18, 2002; WQC Number 3289 issued June 1, 2000; WQC Number 3103 issued February 11, 1997; WQC Number 2732 issued May 1, 1992; WQC Number 2666 issued January 21, 1992; WQC Number 2177 issued November 5, 1987.

U.S. Department of Homeland Security

United States Coast Guard

Commander
United States Coast Guard
Fifth Coast Guard District

431 Crawford Street
Portsmouth, VA 23704-5004
Staff Symbol: dpb
Phone: (757) 398-6227
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CGDFiveBridges@uscg.mil

16593
2 FEB 2018

Mr. Philip S. Harris III, P.E.
Environmental Analiysis Unit
1598 Mail Service Center
Raleigh, NC 27699-1598

Dear Mr. Philip Harris:

Coast Guard review of your proposed project as provided in email dated August 7, 2017, is complete.

Based on the documentation provided and our research, it is determined that a Coast Guard bridge permit will not be required for the proposed replacement of NC 42 Bridge across the Neuse River, at mile 1.2, at Johnston County, NC.

The project will be placed in our Coast Guard Authorization Act of 1982 exemption category for the location and structure described above and **is valid for five years from the date of this letter**. If the construction project does not commence within this time period, you must contact this office for reaffirmation of this authorization. The Coast Guard Authorization Act of 1982 exempts bridge projects from Coast Guard Bridge permits when the bridge project crosses non-tidal waters which are not used, susceptible to use in their natural condition, or susceptible to use by reasonable improvement as a means to transport interstate commerce.

In addition, the requirement to display navigational lighting at the aforementioned bridge is hereby waived, as per Title 33 Code of Federal Regulations, Part 118.40(b). This waiver may be rescinded at anytime in the future should nighttime navigation through the proposed bridge be increased to a level determined by the District Commander to warrant lighting.

The fact that a Coast Guard bridge permit is not required does not relieve you of the responsibility for compliance with the requirements of any other Federal, State, or local agency who may have jurisdiction over any aspect of the project.

If you have any further questions, please contact Ms. Kashanda Booker at the above listed address or telephone number.

Sincerely,

HAL R. PITTS
Bridge Program Manager
By direction of the Commander
Fifth Coast Guard District

Encl: Coast Guard Bridge Lighting & Other Signals

Copy: CG Sector North Carolina, Waterways Management
U. S. Army Corps of Engineers, North Carolina District

LIGHTING REQUIREMENTS FOR BARGES AND STRUCTURES NOT PART OF A BRIDGE OR APPROACH STRUCTURE

33 CFR 83.30 Lights on barges.

(h) The following barges shall display at night and if practicable in periods of restricted visibility the lights described in paragraph (b) of this section:

(1) Every barge projecting into a buoyed or restricted channel.
(2) Every barge so moored that it reduces the available navigable width of any channel to less than 80 meters.
(3) Barges moored in group's more than two barges wide or to a maximum width of over 25 meters.
(4) Every barge not moored parallel to the bank or dock.

(i) Barges described in paragraph (h) of this section shall carry two unobstructed all-round white lights of an intensity to be visible for at least 1 nautical mile and meeting the technical requirements as prescribed in Annex I (33 CFR part 84).

(j) A barge or group of barges at anchor or made fast to one or more mooring buoys or other similar device, in lieu of the provisions of Inland Navigation Rule 30, may carry unobstructed all-round white lights of an intensity to be visible for at least 1 nautical mile that meet the requirements of Annex I (33 CFR part 84) and shall be arranged as follows:

(i) Any barge that projects from a group formation shall be lighted on its outboard corners.
(ii) On a single barge moored in water where other vessels normally navigate on both sides of the barge, lights shall be placed to mark the corner extremities of the barge.
(iii) On barges moored in group formation, moored in water where other vessels normally navigate on both sides of the group, lights shall be placed to mark the corner extremities of the group.

(k) The following are exempt from the requirements of this Rule:

(1) A barge or group of barges moored in a slip or slough used primarily for mooring purposes.
(2) A barge or group of barges moored behind a pier head.
(3) A barge less than 20 meters in length when moored in a special anchorage area designated in accordance with §109.10 of this chapter.

33 CFR 118.95 Lights on structures not part of a bridge or approach structure.

Lights on sheer booms, isolated piers, obstructions, and other structures not part of a bridge or approach structure must meet the requirements for aids to navigation in Subpart 66.01 of Part 66 of this chapter.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Southeast Regional Office
263 13th Avenue South
St. Petersburg, Florida 33701-5505
http://sero.nmfs.noaa.gov

JUN 22 2018

F/SER31:KBD

Philip S. Harris III, P.E., CPM, Unit Head
Environmental Analysis Unit
North Carolina Department of Transportation
1598 Mail Service Center
Raleigh, North Carolina 27699-1598

Dear Mr. Harris:

This letter responds to your request for consultation with us, the National Marine Fisheries Service (NMFS), pursuant to Section 7 of the Endangered Species Act (ESA) for the following action.

SER Number	Project Type
SER-2017-18974	North Carolina Highway 42 (NC 42) Neuse River Bridge replacement

Consultation History
We received your letter requesting consultation and a completed ESA Section 7 checklist on November 3, 2017. We requested additional information from NCDOT on March 8, 2018. On March 9, 2018, we also consulted with a NMFS sturgeon specialist concerning the distribution of Atlantic sturgeon in this part of the Neuse River. We were told there has been no occurrence of Atlantic sturgeon this far up the Neuse River; however, we are unsure of the presence of sturgeon in this portion of the river so we are still consulting to err on the side of protecting the species. After receiving NCDOT's final response to our inquiries about the project on May 2, 2018, we initiated consultation that same day. On May 25, 2018, NCDOT informed us that it had been determined that the proposed construction of temporary work platforms using metal piles for support would not be feasible due to the presence of shallow bedrock in the project site. Instead of using elevated work platforms on piles, NCDOT has now proposed the construction of temporary rock rip rap workpads.

Project Location

Address	Latitude/Longitude	Water body
Highway 42 Bridge over Neuse River, Johnston County, North Carolina	35.647270°N, 78.405656°W (North American Datum 1983)	Neuse River

Image of the project location and surrounding area (©2018 Google)

Existing Site Conditions
The existing 2-lane NC 42 Bridge, built in 1939, spans the Neuse River in Johnston County and is located approximately 195 miles upstream from the Pamlico Sound. The bottom substrate is comprised of sand, cobble, and boulders. The width of the river at the project area is approximately 190 feet (ft) and the water depths range from 4 to 6 ft deep.

Project Description
The NCDOT proposes to replace the existing 7-span bridge with a 3-span structure. Existing bents will be removed. The new bridge will be 73.5 ft wide and 380 ft in length. It will be 22.7 ft above mean high water and the area over water will be 36,378 square ft (ft^2). Traffic will be maintained on the existing bridge during construction. Upon completion of the new bridge, traffic will be routed onto the new bridge and the old bridge will be demolished.

In-water and over-water construction and demolition work will be accomplished from temporary workpad causeways comprised of rock rip rap. As with similar bridge projects, construction equipment such as trucks, bulldozers, and cranes will be used to accomplish demolition and construction activities. It is estimated that demolition of the old bridge and construction of the new bridge will take 507 days to complete. The demolition of the old bridge is expected to involve sawing the superstructure into manageable pieces that would be removed by crane for appropriate upland disposal. The use of jack hammers and/or hoe rams may be required to demolish the other portions of the bridge. The substructure elements (e.g., piles) are typically removed using a crane possibly in association with a vibratory device. Some parts of the substructure demolition may use sawing or shattering equipment as well. The use of explosives is not anticipated as part of the demolition process.

Two workpads will be temporarily constructed under the existing bridge. They will be constructed so that there is only one in the river at a time. The west workpad will temporarily cover up to 9,920 ft^2 of river bottom and river bank and the east workpad will cover up to 6,930 ft^2. NCDOT estimated that the west workpad will extend approximately 90 ft into the river and the east workpad will extend approximately 65 ft. Since the river width at the project site is approximately 190 ft, neither workpad will extend more than 50% across the river channel. After the bridge construction is complete, all rip rap rock associated with the workpad causeways will be removed to the maximum extent practicable. Turbidity curtains will be used during construction and removal of the rip rap workpads. The new bridge will be supported by ten 54-in diameter concrete piles that will be formed inside auger-drilled shafts with metal casings. The metal casings have "teeth" and will be auger drilled into the bedrock and then left in place after the concrete pile is formed. Slurry from the augering process will be pumped out of the casings and removed from the site. The 10 concrete piles will permanently displace about 202.5 ft^2 of river bottom.

Construction Conditions

The contractor will comply with NCDOT's Best Management Practices (BMPs). NCDOT's BMPs for the Protection of Surface Waters will be strictly enforced during the entire life of the project to minimize impacts to water resources in the entire impact area. Since the existing bridge is being removed also, NCDOT's BMPs for Bridge Demolition and Removal will be used as well. These BMPs require the use of turbidity curtains. The NCDOT has agreed to provide an additional measure of protection by requiring in-water construction activities to stop if a sturgeon is spotted within 50 ft of operations. No in-water work will be allowed in the Neuse River between February 15 and June 15. Construction will not block more than 50% of the river.

Effects Determination(s) for Species the Action Agency or NMFS Believes May Be Affected by the Proposed Action

Species	ESA Listing Status	Action Agency Effect Determination	NMFS Effect Determination
Fish			
Atlantic sturgeon (Carolina DPS)	E	NLAA	NLAA
E = endangered; NLAA = may affect, not likely to adversely affect			

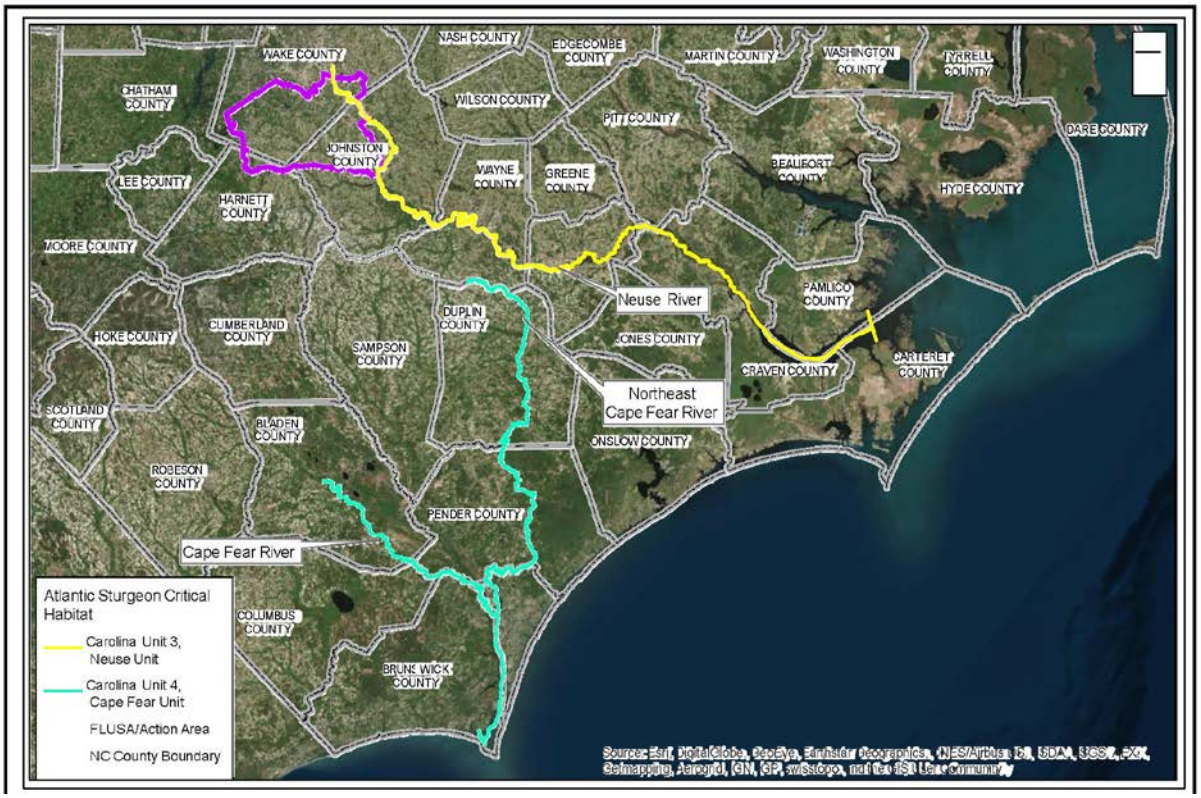

Image of the project location and Atlantic Sturgeon Critical Habitat in the Neuse River (Provided by NCDOT)

Critical Habitat

The project is located in Atlantic sturgeon critical habitat Carolina Unit 3 (Neuse Unit). The physical and biological features (PBFs) of the critical habitat are described in the table below. We believe the proposed action may affect the salinity gradient and soft substrate and unobstructed water of appropriate depth PBFs.

Atlantic Sturgeon Critical Habitat PBFs and their Purpose/Function		
PBF		**Purpose/Role of PBF**
Hard Substrate (PBF 1)	Hard bottom substrate (e.g., rock, cobble, gravel, limestone, boulder, etc.) in low salinity waters (i.e., 0.0-0.5 parts per thousand range)	Necessary for settlement of fertilized eggs, refuge, growth, and development of early life stages
Salinity Gradient and Soft Substrate (PBF 2)	Aquatic habitat with a gradual downstream salinity gradient of 0.5 up to as high as 30 parts per thousand and soft substrate (e.g., sand, mud) between the river mouth and spawning sites	Necessary for juvenile foraging and physiological development
Unobstructed Water of Appropriate Depth (PBF 3)	Water of appropriate depth and absent physical barriers to passage (e.g., locks, dams, thermal plumes, turbidity, sound, reservoirs, gear, etc.) between the river mouth and spawning sites	Necessary to support: • Unimpeded movement of adults to and from spawning sites; • Seasonal and physiologically-dependent movement of juvenile Atlantic sturgeon to appropriate salinity zones within the river estuary; and • Staging, resting, or holding of subadults or spawning condition adults. Water depths in main river channels must also be deep enough (at least 1.2 meters) to ensure continuous flow in the main channel at all times when any sturgeon life stage would be in the river
Water Quality (PBF 4)	Water quality conditions, especially in the bottom meter of the water column, with the appropriate combination of temperature and oxygen values	Necessary to support: • Spawning; • Annual and inter-annual adult, subadult, larval, and juvenile survival; and • Larval, juvenile, and subadult growth, development, and recruitment. Appropriate temperature and oxygen values will vary interdependently, and depending on salinity in a particular habitat.

Analysis of Potential Routes of Effects to Species

Atlantic sturgeon may be affected by the potential risk of injury from direct impact by construction machinery and associated in-water activities (e.g., crane use and rip rap workpad construction). We believe these effects are discountable due to the complete moratorium on in-water work from February 15-June 15. Because of the moratorium, Atlantic sturgeon (adult, larval, and small juvenile sturgeon) are extremely unlikely to be exposed to the risk of injury because they are not expected to be in the action area during the moratorium time period.

Atlantic sturgeon may also be affected by the inability to use the project area for foraging and refuge habitat due to temporarily avoiding the area because of exposure to noise from demolition and construction activities (most equipment used for this work will be staged from the upland, the bridge, or workpads) and the effects of temporarily avoiding the project site due to the use of turbidity curtains. We believe these effects are insignificant since Atlantic sturgeon are not expected to be in the action area during the moratorium time period.

The permanent installation of 10 concrete piles (54-in diameter) will result in the loss of 202.5 ft^2 of unvegetated river bottom (i.e., course sand, cobble and boulders) where sturgeon might forage for invertebrate prey. In addition, up to 16,850 ft^2 of river bottom will be temporarily displaced

by the construction of the rip rap workpads. We believe the effects on sturgeon caused by the loss of river bottom due to this project will be insignificant. Because sturgeon are opportunistic feeders and forage over large areas, they would be able to locate prey beyond the immediate area of the piles and rip rap. The temporary workpads will be removed once the new bridge is built and demolition of the old bridge is completed. Additionally, the new bridge will have less supports in the river therefore potentially increasing the available amount of substrate, so river bottom may once again made available for use by sturgeon when the old bridge's substructure (i.e., piles) are removed during the demolition process. Invertebrates, which are prey for Atlantic sturgeon, will quickly recolonize this river bottom upon removal of these substructures.

Analysis of Potential Routes of Effect to Critical Habitat

The project may affect aquatic habitat with a gradual salinity gradient and soft substrate (PBF 2) by covering soft substrate with new concrete bridge piles and temporary rip rap workpads. However, we believe this effect to PBF 2 will be insignificant. The soft substrate in the river bottom surrounding the bridge piles will continue to support juvenile foraging and development. Similarly, once the temporary workpads are removed those areas of soft substrate will become accessible again as foraging or developmental habitat. Also, additional soft substrate may become available when the old bridge's substructure is removed from the river bottom during demolition.

Unobstructed water of appropriate depth (PBF 3) that supports staging, resting, holding, or movement of various life stages of Atlantic sturgeon may be affected by the installation of piles and the temporary workpads. We believe the obstructions created by the installation of new bridge piles, temporary workpads, and the use of turbidity curtains at each new bridge pile and workpad location will have an insignificant effect on PBF 3. The temporary workpads, new bridge piles, and the use of turbidity curtains will only affect limited portions of the main channel. Significant portions of the channel will remain unobstructed. Also, the temporary workpads will be removed at the completion of the project. Obstructions created by the turbidity barriers deployed around new bridge pile and temporary workpad locations will also only affect limited portions of the main channel and will be removed after installation is completed.

Conclusion

Because all potential project effects to listed species and critical habitat were found to be discountable, insignificant, or beneficial, we conclude that the proposed action is not likely to adversely affect listed species and critical habitat under NMFS's purview. This concludes your consultation responsibilities under the ESA for species under NMFS's purview. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or if the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action. NMFS's findings on the project's potential effects are based on the project description in this response. Any changes to the proposed action may negate the findings of this consultation and may require reinitiation of consultation with NMFS.

We look forward to further cooperation with you on other projects to ensure the conservation of our threatened and endangered marine species and designated critical habitat. If you have any

questions on this consultation, please contact Kay Davy, Consultation Biologist, at (727) 415-9271 or by email at kay.davy@noaa.gov.

Sincerely,

Roy E. Crabtree, Ph.D.
Regional Administrator

File: 1514-22.F.1

United States Department of the Interior

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

April 6, 2005

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

Dear Dr. Thorpe:

This letter is in response to your letter of March 23, 2005 which provided the U.S. Fish and Wildlife Service (Service) with the biological determination of the North Carolina Department of Transportation (NCDOT) that the proposed widening of NC 42 in Johnston County (TIP No. R-3825) may affect, but is not likely to adversely affect the federally endangered dwarf wedgemussel (*Alasmidonta heterodon*) and red-cockaded woodpecker (*Picoides borealis*). In addition, NCDOT has determined that the project will have no effect on the federally endangered Tar spinymussel (*Elliptio steinstansana*) and Michaux's sumac (*Rhus michauxii*). These comments are provided in accordance with section 7 of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531-1543).

According to the information provided, mussel surveys were conducted at the project site on the Neuse River in 2001 and 2002. Although neither of the federally endangered mussel species were found, the surveys are now more than two years old. In addition, your submitted information does not indicate that Mill Creek was surveyed. As a perennial tributary to the Neuse River, the presence of dwarf wedgemussel should not be ruled out if potential habitat exists in the stream. The Service cannot concur with your determination that the project may affect, but is not likely to adversely affect the dwarf wedgemussel. The Service recommends that new surveys be conducted at the Neuse River and Mill Creek crossings. All surveys must extend 100 meters upstream and 400 meters downstream of the project limits where suitable habitat is present. Upon receiving new survey results, the Service will reconsider concurrence for the dwarf wedgemussel.

The Service concurs that the project will have no effect on the Tar spinymussel and Michaux's sumac. Also, due to the lack of cavity trees within ½ mile of the project limits, the Service would also concur with a "no effect" determination for the red-cockaded woodpecker (as per revised 2003 Recovery Plan).

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

Sincerely,

Pete Benjamin
Ecological Services Supervisor

cc: Eric Alsmeyer, USACE, Raleigh, NC
Nicole Thomson, NCDWQ, Raleigh, NC
Travis Wilson, NCWRC, Creedmoor, NC
Chris Militscher, USEPA, Raleigh, NC

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

LOCATION: NC 42 FROM SR 1902 (GLEN LAUREL RD) TO SR 1003 (BUFFALO RD)

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

PERMIT DRAWING
SHEET 1 OF 53

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3825B	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34552.1.FR3	STP-0042(58)	P.E.	
34552.2.4	STP-0042(58)	R/W & UTL.	

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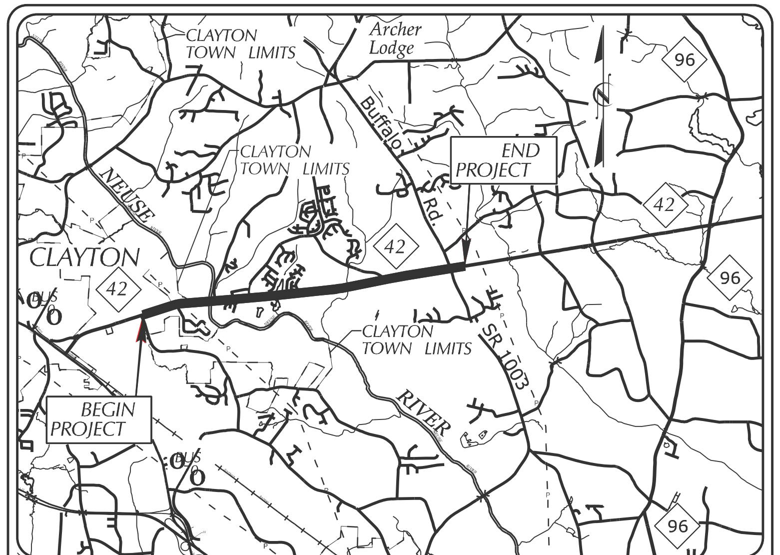
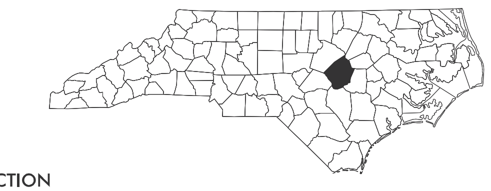
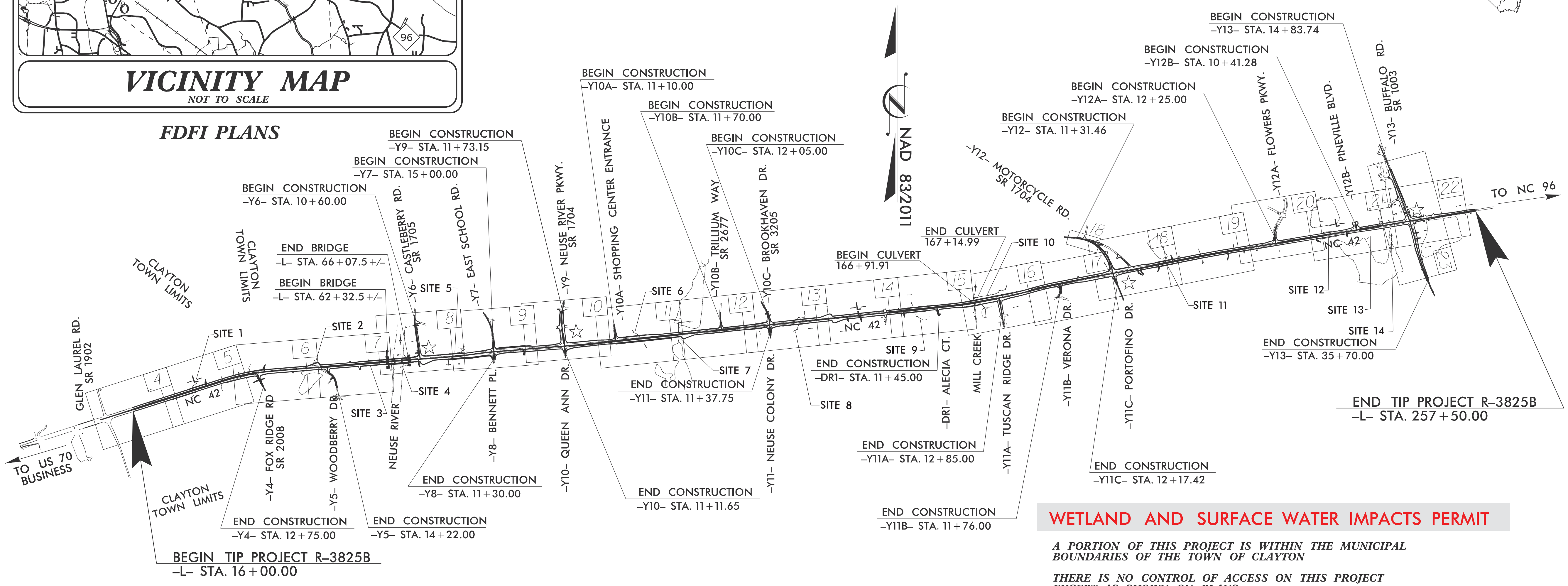
TIP PROJECT: R-3825B



VICINITY MAP
NOT TO SCALE



FDFI PLANS



WETLAND AND SURFACE WATER IMPACTS PERMIT

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CLAYTON

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT EXCEPT AS SHOWN ON PLANS

A DESIGN EXCEPTION IS REQUIRED FOR MAXIMUM GRADE.

CLEARING ON THIS PROJECT WILL BE PERFORMED TO THE LIMITS ESTABLISHED BY NCDOT METHOD III.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

GRAPHIC SCALES

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

DESIGN DATA

ADT 2015 = 19,000
ADT 2040 = 37,400
K = 9%
D = 65%
T = 6% *
V = 60 MPH
* (TTST % + DUAL %)
FUNC. CLASS = RURAL MINOR ARTERIAL REGIONAL TIER
DESIGN EXCEPTION (GRADE)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3825B = 4.503 MILES
LENGTH STRUCTURE TIP PROJECT R-3825B = 0.071 MILES
TOTAL LENGTH OF TIP PROJECT R-3825B = 4.574 MILES

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 8, 2016

LETTING DATE: AUGUST 21, 2018

ED EDENS, P.E.
PROJECT ENGINEER

KEVIN VAN METRE, P.E.
PROJECT DESIGN ENGINEER

GARY R. LOVERING, P.E.
PROJECT ENGINEER
NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

P.E.
SIGNATURE:
ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

CONTRACT:

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URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0293

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 2 OF 53

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REVISIONS 8/17/99

S S DENOTES IMPACTS IN SURFACE WATER
TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER
E E DENOTES EXCAVATION IN WETLAND
F F DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING

NAD 83/2011

3 ROBERT B HUNT AND WIFE MARGARET H HUNT

3 ROBERT B HUNT AND WIFE MARGARET H HUNT

5 FALCON HAMLET LLC

25.00

30.00

35.00

SEE ENLARGMENT SHEET 4 OF 53

MATCHLINE -L- STA. 23+00.00 SEE SHEET 4

MATCHLINE -L- STA. 36+00.00 SEE SHEET 6

50' ACCESS ESMT PB 76 PG 150

2' SPECIAL LATERAL BASE DITCH w/PSRM SEE DETAIL 1

4' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 7

TOE PROTECTION SEE DETAIL 4

PERMANENT IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER

SITE 1

WOODS

EXISTING R/W

PROPOSED 60' R/W

PDE

DUE

PUE

30" RCP

54" RCP

30" WELDED STEEL TRANSITION

JB w/SLAB

REMOVE

FL GR 2GI

15" w/2 ELBOWS

30" RCP w/FES

JB w/MH

12" DIP

8" PL

30" CMP

RETAIN

EXISTING R/W MON

NC 42 248' BST

NC 42 260' BST

-EL-

-L- 27+50.71 104.09

-L- 27+50.47 74.01

MATCH DITCH INVERT TO STREAM INVERT

6' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 3

TOE PROTECTION SEE DETAIL 8

TOE PROTECTION SEE DETAIL 4

TEMPORARY IMPACTS IN SURFACE WATER

PERMANENT IMPACTS IN SURFACE WATER

SITE 1

SPECIAL CUT 'V' DITCH w/PSRM SEE DETAIL 6

6' STANDARD BASE DITCH w/CLASS I RIPRAP SEE DETAIL 5

BERM DITCH w/CLASS B RIP RAP SEE DETAIL 19

BM#2
N: 690,566
E: 2,173,786
ELEV=262.50'

REMOVE

-L- 27+58 -L- RT
Q10 = 2.3 cfs
V10 Pipe = 9.3 fps
V10 Riprap = 2 fps

2 THE SHOPPES AT GLEN LAUREL

4 PINES AT GLEN LAUREL, LLC

DETAIL 1
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, 6:1, Fill Slope, D, d, B

Min. D=1.5. Ft.
Max. d=1.5 Ft.
B=2 Ft.

Type of Liner= PSRM

FROM -L- STA. 17+50 LT TO -L- STA. 25+50 LT
EST. 1935 SY

DETAIL 8
TOE PROTECTION
(Not to Scale)

Natural Ground, b, 2:1 or Flatter Fill Slope, d, Geotextile

d=2 Ft.
b=5 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 24+15 RT TO -L- STA. 25+00 RT
EST. 55 TONS CLASS B RIP RAP
EST. 120 SY GEOTEXTILE

FROM -L- STA. 27+15 RT TO -L- STA. 29+00 RT
EST. 90 TONS CLASS B RIP RAP
EST. 204 SY GEOTEXTILE

DETAIL 7
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, 3:1, Fill Slope, Geotextile, d, D, B

Min. D=2 Ft.
Max. d=2 Ft.
B=4 Ft.

Type of Liner= Class I Rip-Rap

FROM -L- STA. 27+50 LT TO -L- STA. 28+35 LT
EST. 110 TONS CLASS I RIP RAP
EST. 190 SY GEOTEXTILE

DETAIL 9
FALSE SUMP
(Not to Scale)

0.5', Outside Ditch Traffic Flow, 10:1, 20:1, 2.0', Gt etc., S

S=Ditch Slope

℄ Proposed Ditch

-L- STA. 32+49 RT

DETAIL 3
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, 3:1, Fill Slope, b, d, D, B, GEOTEXTILE

Min. D=2 Ft.
Max. d=2 Ft.
B=4 Ft.
b=5 Ft.

EST. DDE=615 CY
Type of Liner= Class I Rip-Rap

FROM -L- STA. 24+10 RT TO -L- STA. 27+05 RT
EST. 350 TONS CLASS I RIP RAP
EST. 600 SY GEOTEXTILE

DETAIL 4
TOE PROTECTION
(Not to Scale)

Natural Ground, b, 2:1 or Flatter Fill Slope, d, Geotextile

d= 1 Ft.
b = 6 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 25+50 LT TO -L- STA. 27+50 LT
EST. 65 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE

DETAIL 5
STANDARD BASE DITCH
(Not to Scale)

Natural Ground, 4:1, 4:1, Natural Ground, Geotextile, D, B

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=6 Ft.

Type of Liner= Class I Rip-Rap

FROM -L- STA. 32+16 RT TO -L- STA. 32+28 RT
EST. 80 TONS CLASS I RIP RAP, EST. DDE 101 CY,
EST. 134 SY GEOTEXTILE

DETAIL 6
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground, 3:1, 6:1, Front Ditch Slope, d, D

Min. D=1 Ft.
Max d=1 Ft.

Type of Liner= PSRM

FROM -L- STA. 31+90 RT TO -L- STA. 32+28 RT
EST. 40 SY PSRM

DETAIL 19
BERM DITCH
(Not to Scale)

SLOPE STAKE, 5.0', 13.5', 9.0', 5.0', CLEARING LIMITS, 10.0' V.C., 3:1, D, 1:A.R., d, Geotextile

Min. D=1.5 Ft.
Max. d=1.0 Ft.

Type of Liner= CLASS B RIP RAP

FROM -L- STA. 34+50 RT TO -L- STA. 38+00 RT
EST. 110 TONS CLASS B RIP RAP
EST. 250 SY GEOTEXTILE

50 25 0 50 100

1/4/2018
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smithcg

PROJECT REFERENCE NO. R-3825B | SHEET NO. 5

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

Prepared by URS

URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560

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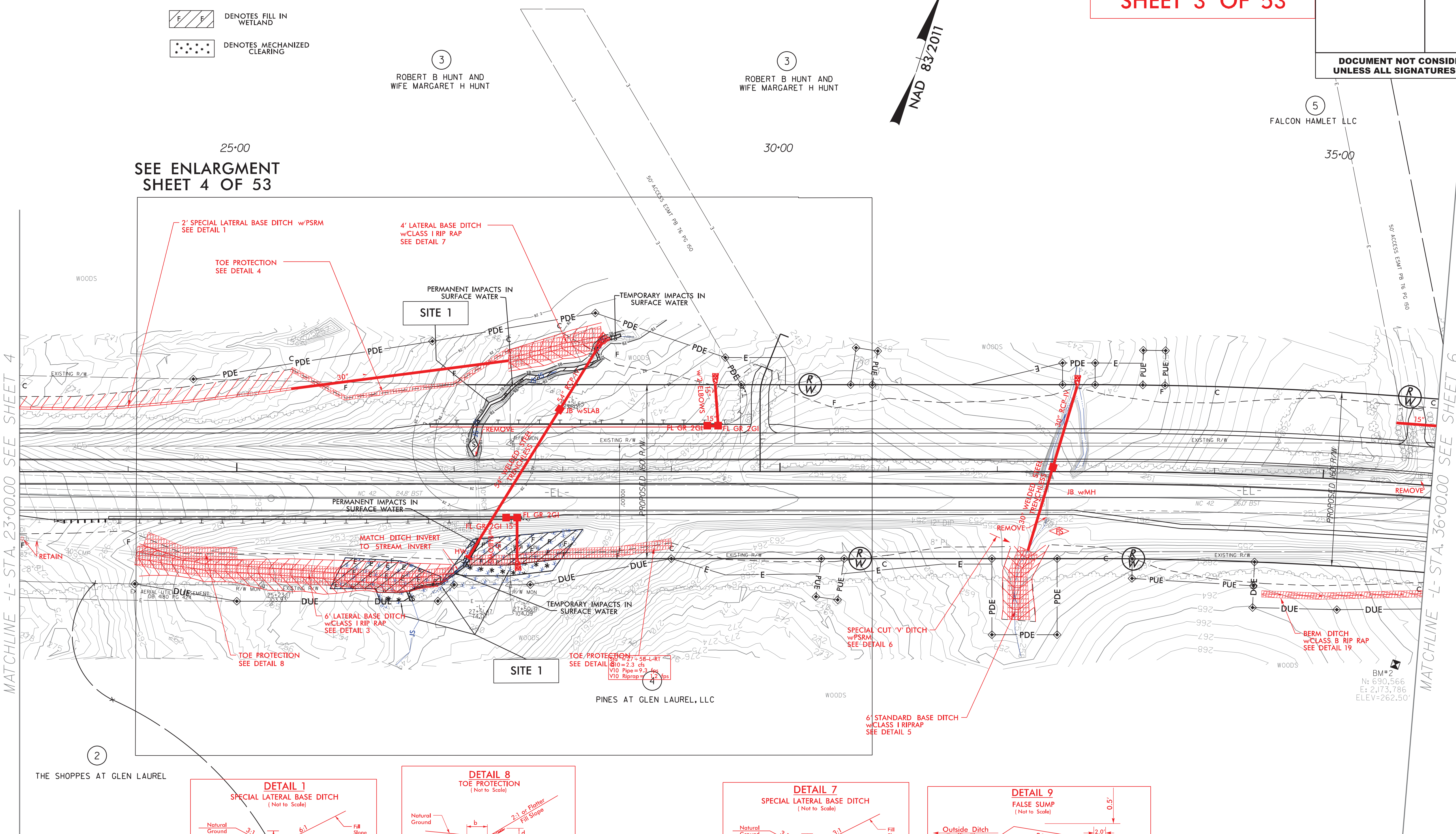
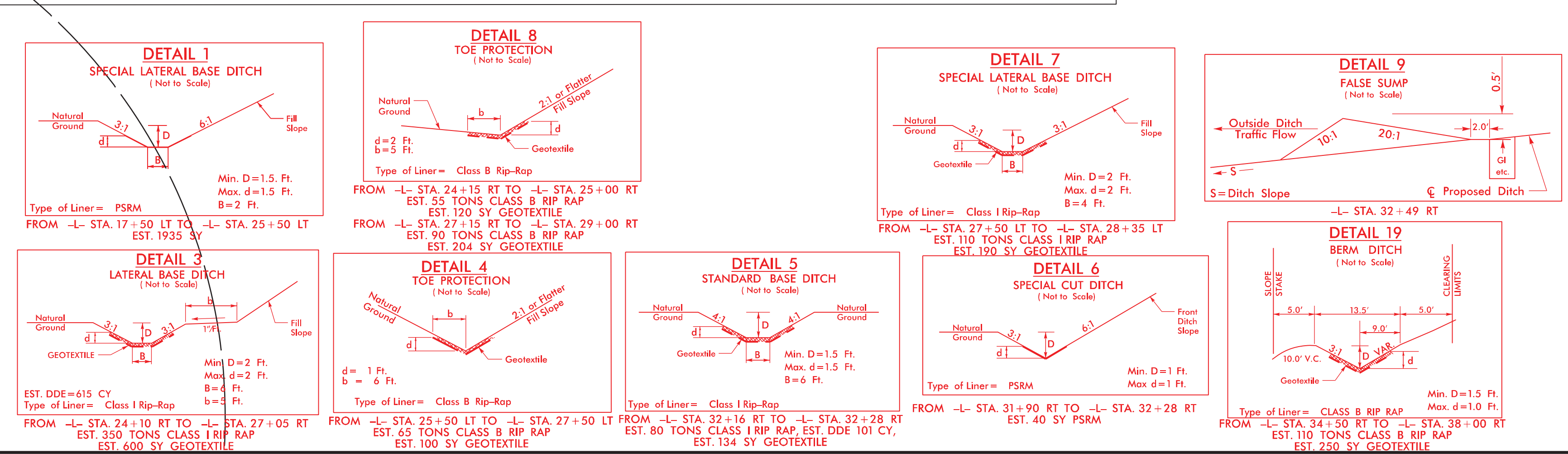
PERMIT DRAWING SHEET 3 OF 53

S S	DENOTES IMPACTS IN SURFACE WATER
TS TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER
E E	DENOTES EXCAVATION IN WETLAND
F F	DENOTES FILL IN WETLAND
· · ·	DENOTES MECHANIZED CLEARING





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REVISIONS

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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	5

R/W SHEET NO.

ROADWAY DESIGN ENGINEER | HYDRAULICS ENGINEER

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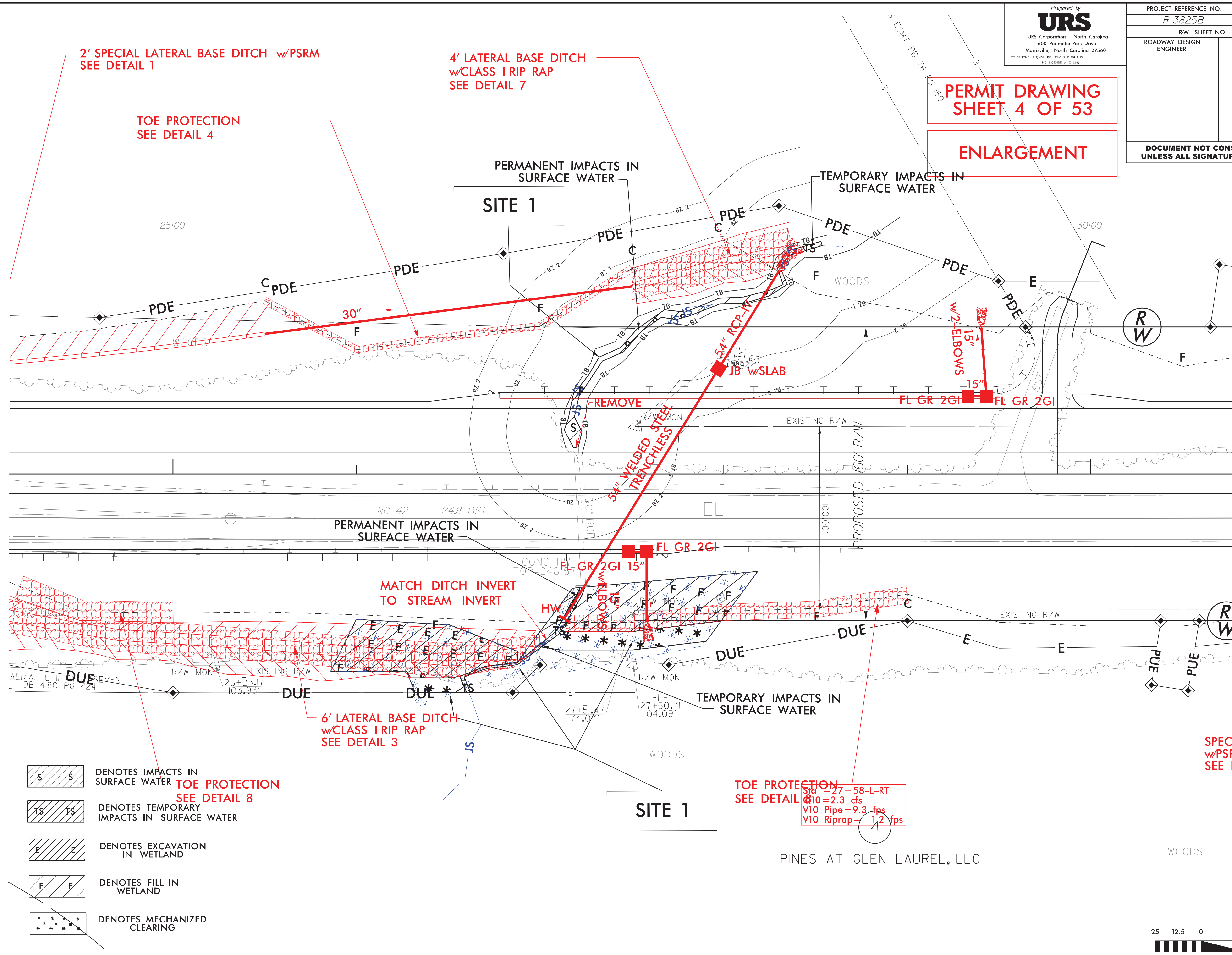
PERMIT DRAWING SHEET 4 OF 53

ENLARGEMENT


2' SPECIAL LATERAL BASE DITCH w/PSRM
SEE DETAIL 1
TOE PROTECTION
SEE DETAIL 4
4' LATERAL BASE DITCH
w/CLASS I RIP RAP
SEE DETAIL 7
PERMANENT IMPACTS IN
SURFACE WATER
TEMPORARY IMPACTS IN
SURFACE WATER
SITE 1
25+00
30+00
PDE
30"
54" RCP
JB w/SLAB
REMOVE
FL GR 2GI
15"
w/2-ELBOWS
EXISTING R/W
PROPOSED 160' R/W
100.00'
54" WELDED STEEL TRENCHLESS
NC 42
24.8' BST
-EL-
MATCH DITCH INVERT
TO STREAM INVERT
HW
DUE
6' LATERAL BASE DITCH
w/CLASS I RIP RAP
SEE DETAIL 3
TOE PROTECTION
SEE DETAIL 8
WOODS
AERIAL UTIL EASEMENT
DB 4180 PG 424
R/W MON
PUE
Sta =27+58-L-RT
Q10=2.3 cfs
V10 Pipe=9.3 fps
V10 Riprap=1.2 fps
PINES AT GLEN LAUREL, LLC
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES EXCAVATION IN WETLAND
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
25 12.5 0 25 50

REVISIONS

8/17/99

8/23/99

PROJ. REFERENCE NO.

SHEET NO.

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

265 260 255 250 245 240

255.32 0.020 260.02 260.02 0.020 255.32

3:1 3:1

WLB WLB WLB

JS

S.S.247.64 3:1 3:1 243.59

27+00.00 SITE 1

265 260 255 250 245 240 235 200

257.36 0.020 258.26 258.26 0.020

3.4:1 3.33:1

WLB WLB

4:1 237.54 S.S.248.26

28+00.00 SITE 1

PERMIT DRAWING
SHEET 5 OF 53

1/4/2018
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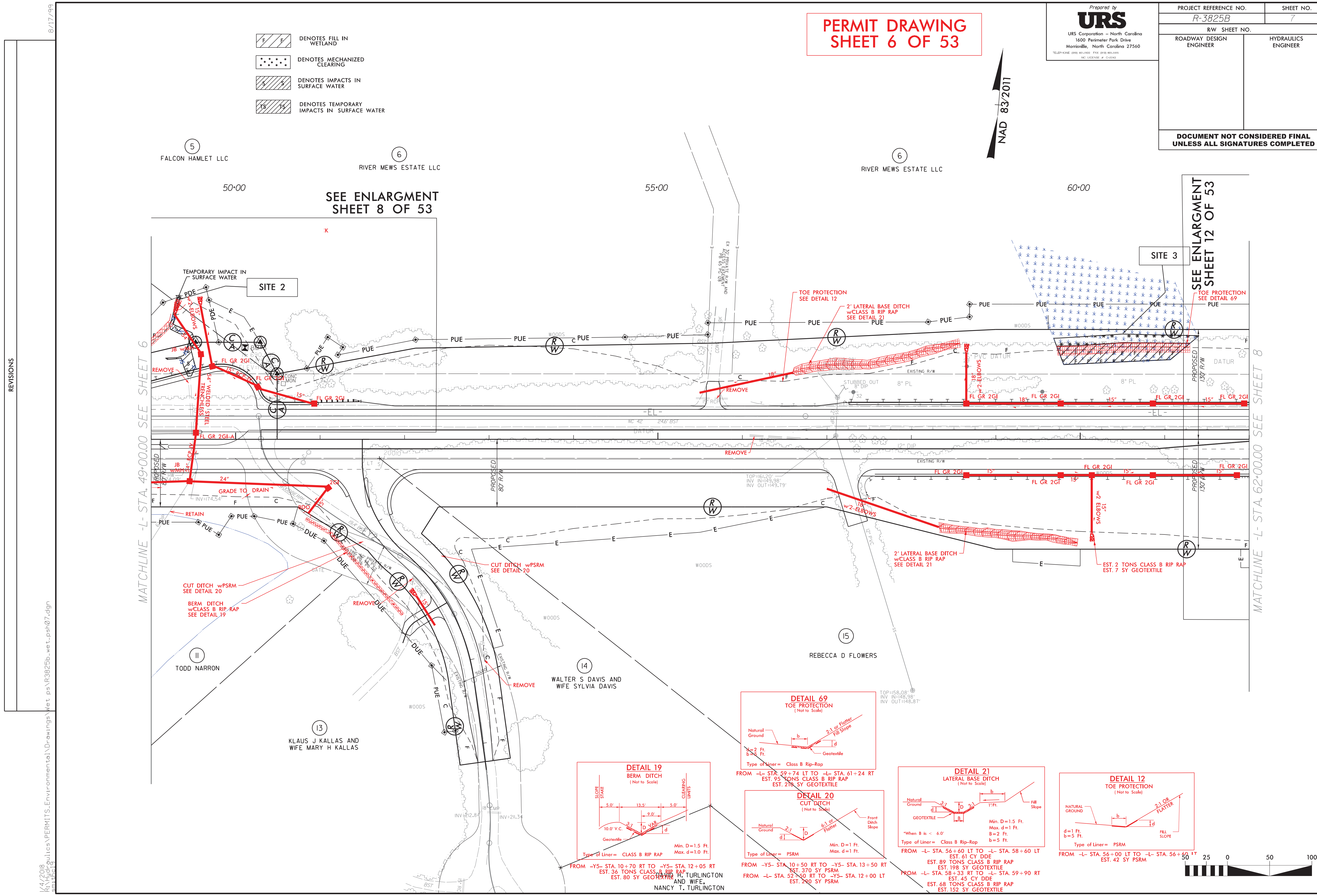
smithcl9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SHEET 6 OF 53
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Morrisville, North Carolina 27560
PROJECT REFERENCE NO.
R-3825B
SHEET NO.
7
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
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DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
NAD 83/2011
REVISIONS
5 FALCON HAMLET LLC
6 RIVER MEWS ESTATE LLC
6 RIVER MEWS ESTATE LLC
50+00
55+00
60+00
SEE ENLARGMENT SHEET 8 OF 53
SEE ENLARGMENT SHEET 12 OF 53
SITE 2
SITE 3
TEMPORARY IMPACT IN SURFACE WATER
MATCHLINE -L- STA. 49+00.00 SEE SHEET 6
MATCHLINE -L- STA. 62+00.00 SEE SHEET 8
TOE PROTECTION SEE DETAIL 12
2' LATERAL BASE DITCH w/CLASS B RIP RAP SEE DETAIL 21
TOE PROTECTION SEE DETAIL 69
CUT DITCH w/PSRM SEE DETAIL 20
BERM DITCH w/CLASS B RIP RAP SEE DETAIL 19
EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE
GRADE TO DRAIN
RETAIN
REMOVE
11 TODD NARRON
13 KLAUS J KALLAS AND WIFE MARY H KALLAS
14 WALTER S DAVIS AND WIFE SYLVIA DAVIS
15 REBECCA D FLOWERS
DAVID H. TURLINGTON AND WIFE, NANCY T. TURLINGTON
DETAIL 69
TOE PROTECTION
(Not to Scale)
Type of Liner= Class B Rip-Rap
FROM -L- STA. 59+74 LT TO -L- STA. 61+24 RT
EST. 95 TONS CLASS B RIP RAP
EST. 210 SY GEOTEXTILE
DETAIL 19
BERM DITCH
(Not to Scale)
Type of Liner= CLASS B RIP RAP
Min. D=1.5 Ft.
Max. d=1.0 Ft.
FROM -Y5- STA. 10+70 RT TO -Y5- STA. 12+05 RT
EST. 36 TONS CLASS B RIP RAP
EST. 80 SY GEOTEXTILE
DETAIL 20
CUT DITCH
(Not to Scale)
Type of Liner= PSRM
Min. D=1 Ft.
Max. d=1 Ft.
FROM -Y5- STA. 10+50 RT TO -Y5- STA. 13+50 RT
EST. 370 SY PSRM
FROM -L- STA. 52+50 RT TO -Y5- STA. 12+00 LT
EST. 290 SY PSRM
DETAIL 21
LATERAL BASE DITCH
(Not to Scale)
Type of Liner= Class B Rip-Rap
Min. D=1.5 Ft.
Max. d=1 Ft.
B=2 Ft.
b=5 Ft.
FROM -L- STA. 56+60 LT TO -L- STA. 58+60 LT
EST. 61 CY DDE
EST. 89 TONS CLASS B RIP RAP
EST. 198 SY GEOTEXTILE
FROM -L- STA. 58+33 RT TO -L- STA. 59+90 RT
EST. 45 CY DDE
EST. 68 TONS CLASS B RIP RAP
EST. 152 SY GEOTEXTILE
DETAIL 12
TOE PROTECTION
(Not to Scale)
Type of Liner= PSRM
FROM -L- STA. 56+00 LT TO -L- STA. 56+60 LT
EST. 42 SY PSRM
50 25 0 50 100
8/17/99
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8/17/99

REVISIONS

PERMIT DRAWING
SHEET 7 OF 53

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE AND FACSIMILE: FAX (919) 461-1415
NC LICENSE # C-0243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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NAD 83/2011

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

(5) FALCON HAMLET LLC

(6) RIVER MEWS ESTATE LLC

50+00 55+00 60+00

SEE ENLARGMENT SHEET 8 OF 53

SEE ENLARGMENT SHEET 12 OF 53

SITE 2

SITE 3

TEMPORARY IMPACT IN SURFACE WATER

TOE PROTECTION SEE DETAIL 12

2' LATERAL BASE DITCH w/CLASS B RIP RAP SEE DETAIL 21

TOE PROTECTION SEE DETAIL 69

CUT DITCH w/PSRM SEE DETAIL 20

BERM DITCH w/CLASS B RIP RAP SEE DETAIL 19

(11) TODD NARRON

(13) KLAUS J KALLAS AND WIFE MARY H KALLAS

(14) WALTER S DAVIS AND WIFE SYLVIA DAVIS

(15) REBECCA D FLOWERS

DAVID H. TURLINGTON AND WIFE, NANCY T. TURLINGTON

MATCHLINE -L- STA. 49+00.00 SEE SHEET 6

MATCHLINE -L- STA. 62+00.00 SEE SHEET 8

DETAIL 19
BERM DITCH
(Not to Scale)

Type of Liner = CLASS B RIP RAP
Min. D=1.5 Ft.
Max. d=1.0 Ft.

FROM -Y5- STA. 10+70 RT TO -Y5- STA. 12+05 RT
EST. 36 TONS CLASS B RIP RAP
EST. 80 SY GEOTEXTILE

DETAIL 69
TOE PROTECTION
(Not to Scale)

Type of Liner = Class B Rip-Rap

FROM -L- STA. 59+74 LT TO -L- STA. 61+24 RT
EST. 95 TONS CLASS B RIP RAP
EST. 218 SY GEOTEXTILE

DETAIL 20
CUT DITCH
(Not to Scale)

Type of Liner = PSRM

FROM -Y5- STA. 10+50 RT TO -Y5- STA. 13+50 RT
EST. 370 SY PSRM
FROM -L- STA. 52+50 RT TO -Y5- STA. 12+00 LT
EST. 220 SY PSRM

DETAIL 21
LATERAL BASE DITCH
(Not to Scale)

*When B is < 6.0'
Min. D=1.5 Ft.
Max. d=1 Ft.
B=2 Ft.
b=5 Ft.
Type of Liner = Class B Rip-Rap

FROM -L- STA. 56+60 LT TO -L- STA. 58+60 LT
EST. 61 CY DDE
EST. 89 TONS CLASS B RIP RAP
EST. 198 SY GEOTEXTILE
FROM -L- STA. 58+33 RT TO -L- STA. 59+90 RT
EST. 45 CY DDE
EST. 68 TONS CLASS B RIP RAP
EST. 152 SY GEOTEXTILE

DETAIL 12
TOE PROTECTION
(Not to Scale)

Type of Liner = PSRM

FROM -L- STA. 56+00 LT TO -L- STA. 56+60 LT
EST. 42 SY PSRM

50 25 0 50 100

1/4/2018
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smith69

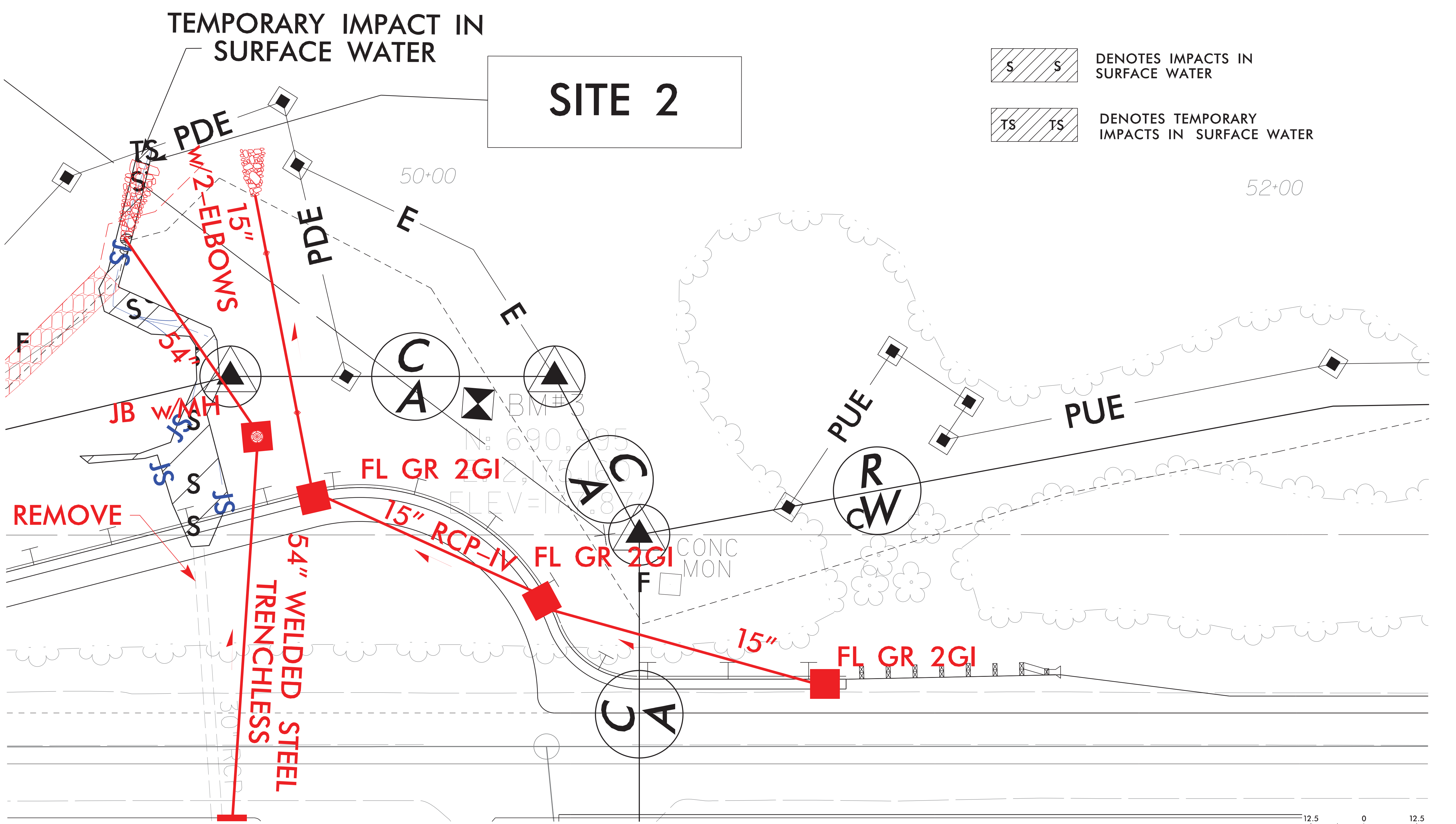
Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560

PROJECT REFERENCE NO. R-3825B
SHEET NO. 7
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING
SHEET 8 OF 53

ENLARGEMENT



REVISIONS
8/17/99

8/23/99

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PROJ. REFERENCE NO.

SHEET NO.

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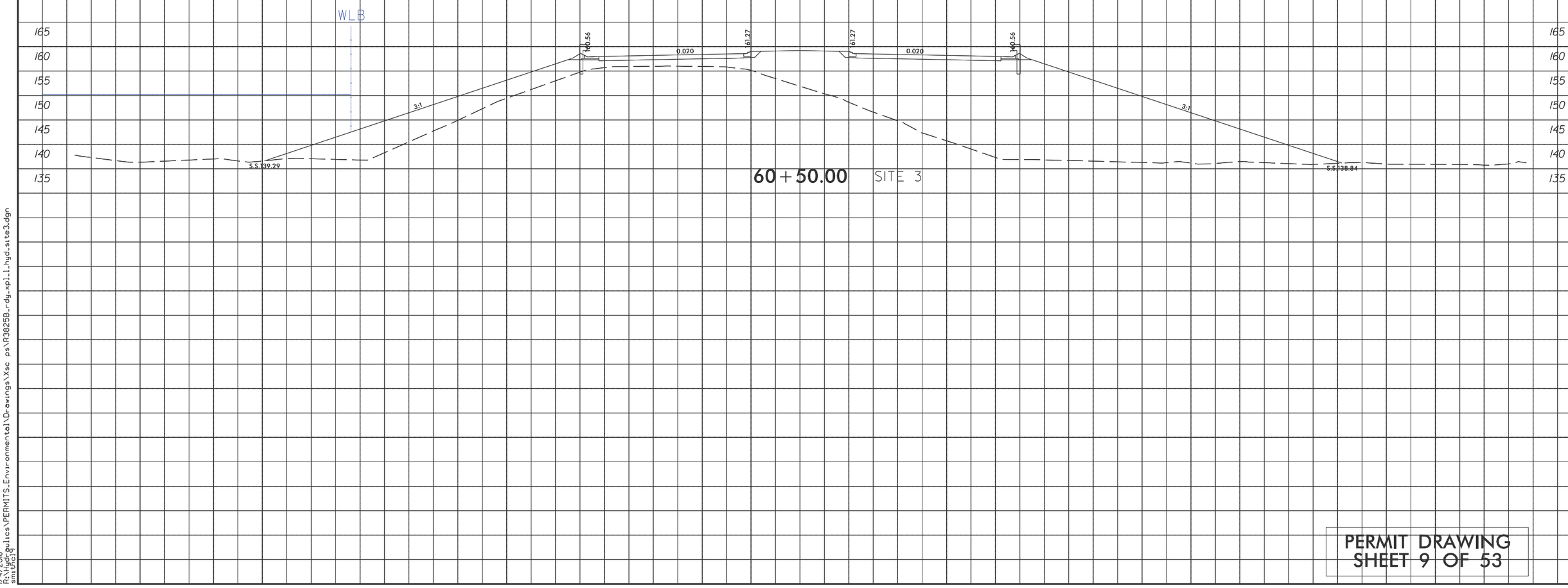

60 + 50.00 SITE 3

PERMIT DRAWING
SHEET 9 OF 53

1/4/2018
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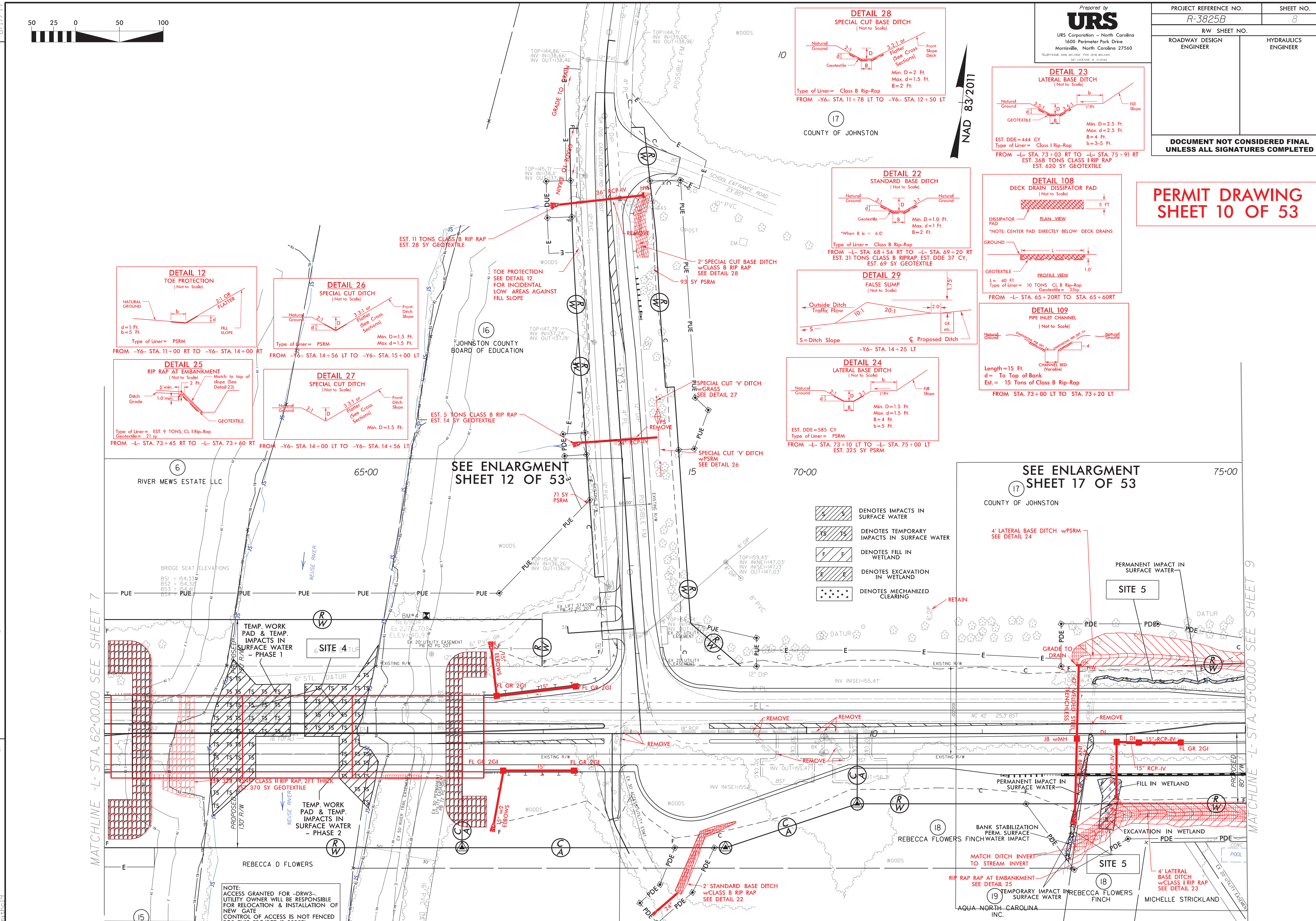
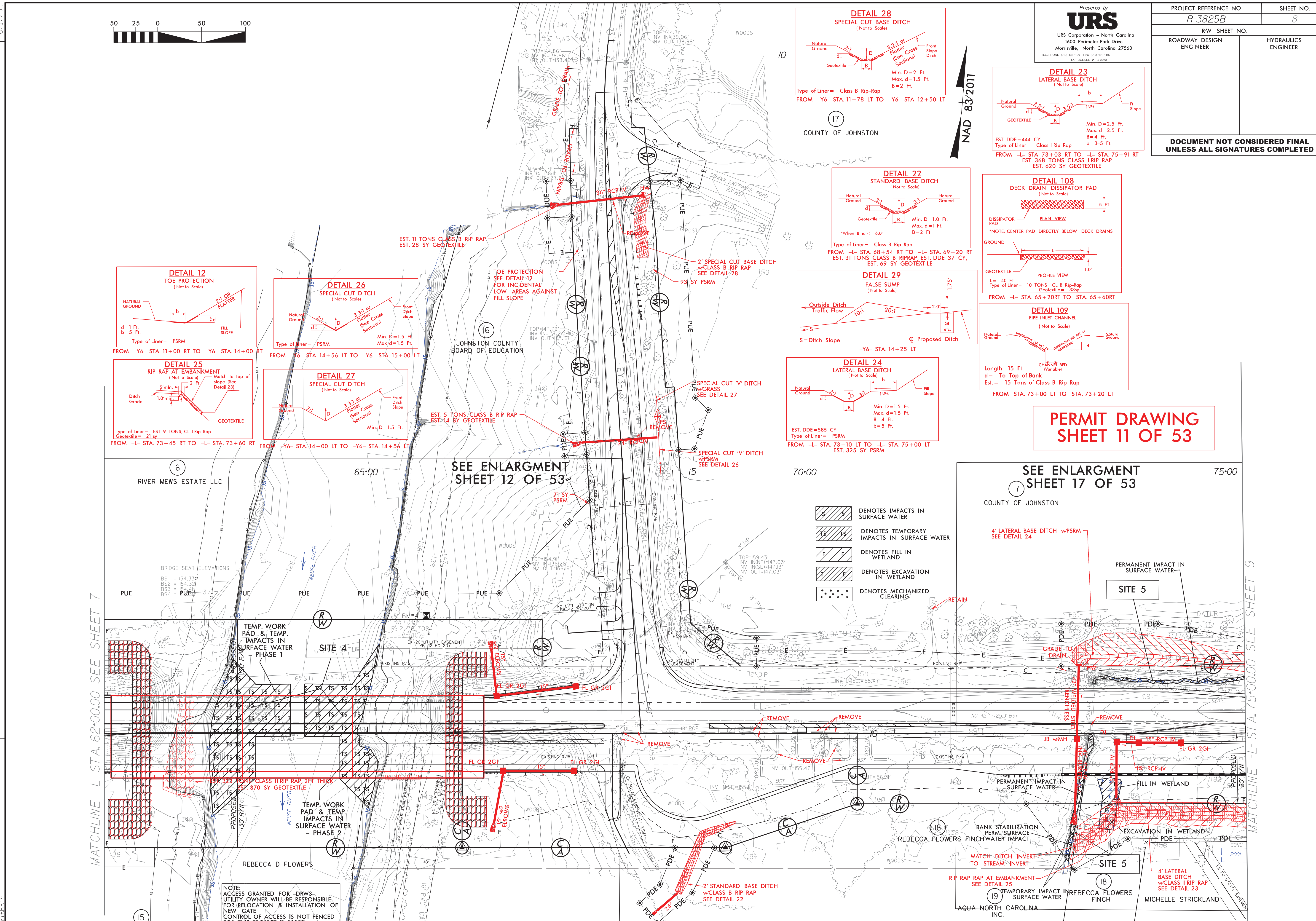
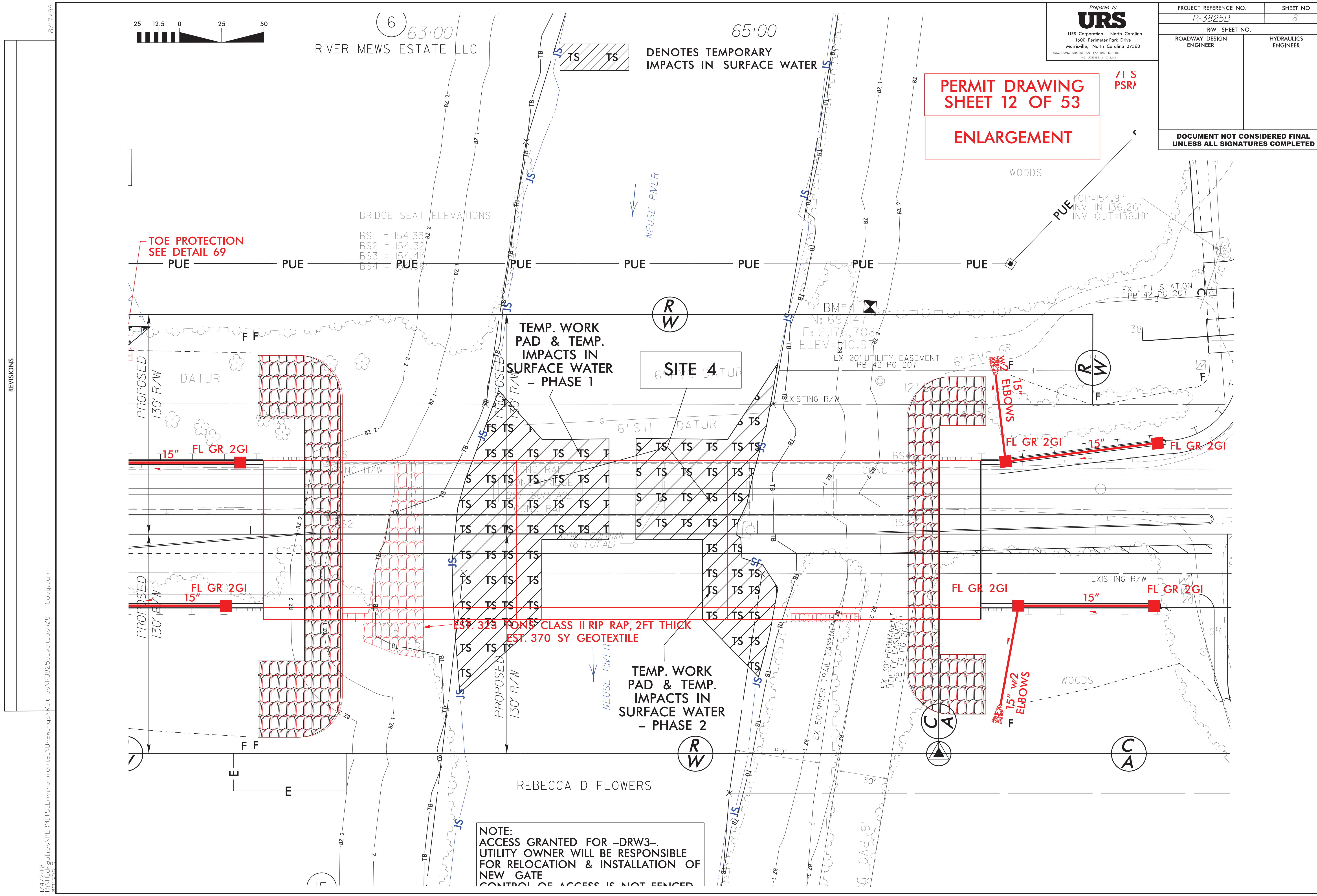
smithcl



PROJECT REFERENCE NO.
R-3825B
SHEET NO.
8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
PERMIT DRAWING SHEET 10 OF 53
NAD 83/2011
REVISIONS
DETAIL 28
SPECIAL CUT BASE DITCH
(Not to Scale)
Min. D=2 Ft.
Max. d=1.5 Ft.
B=2 Ft.
Type of Liner= Class B Rip-Rap
FROM -Y6- STA. 11+78 LT TO -Y6- STA. 12+50 LT
DETAIL 23
LATERAL BASE DITCH
(Not to Scale)
Min. D=2.5 Ft.
Max. d=2.5 Ft.
B=4 Ft.
b=3-5 Ft.
EST. DDE=444 CY
Type of Liner= Class I Rip-Rap
FROM -L- STA. 73+03 RT TO -L- STA. 75+91 RT
EST. 368 TONS CLASS I RIP RAP
EST. 620 SY GEOTEXTILE
DETAIL 22
STANDARD BASE DITCH
(Not to Scale)
Min. D=1.0 Ft.
Max. d=1 Ft.
B=2 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 68+54 RT TO -L- STA. 69+20 RT
EST. 31 TONS CLASS B RIPRAP, EST. DDE 37 CY,
EST. 69 SY GEOTEXTILE
DETAIL 108
DECK DRAIN DISSIPATOR PAD
(Not to Scale)
*NOTE: CENTER PAD DIRECTLY BELOW DECK DRAINS
L= 40 FT
Type of Liner= 10 TONS CL B Rip-Rap
Geotextile= 33sy
FROM -L- STA. 65+20RT TO STA. 65+60RT
DETAIL 29
FALSE SUMP
(Not to Scale)
S=Ditch Slope
-Y6- STA. 14+25 LT
DETAIL 109
PIPE INLET CHANNEL
(Not to Scale)
Length=15 Ft.
d= To Top of Bank
Est.= 15 Tons of Class B Rip-Rap
FROM STA. 73+00 LT TO STA. 73+20 LT
DETAIL 24
LATERAL BASE DITCH
(Not to Scale)
Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=4 Ft.
b=5 Ft.
EST. DDE=585 CY
Type of Liner= PSRM
FROM -L- STA. 73+10 LT TO -L- STA. 75+00 LT
EST. 325 SY PSRM
DETAIL 12
TOE PROTECTION
(Not to Scale)
d=1 Ft.
b=5 Ft.
Type of Liner= PSRM
FROM -Y6- STA. 11+00 RT TO -Y6- STA. 14+00 RT
DETAIL 26
SPECIAL CUT DITCH
(Not to Scale)
Min. D=1.5 Ft.
Max d=1.5 Ft.
Type of Liner= PSRM
FROM -Y6- STA. 14+56 LT TO -Y6- STA. 15+00 LT
DETAIL 25
RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner= EST. 9 TONS, CL I Rip-Rap
Geotextile= 21 sy
FROM -L- STA. 73+45 RT TO -L- STA. 73+60 RT
DETAIL 27
SPECIAL CUT DITCH
(Not to Scale)
Min. D=1.5 Ft.
FROM -Y6- STA. 14+00 LT TO -Y6- STA. 14+56 LT
COUNTY OF JOHNSTON
JOHNSTON COUNTY BOARD OF EDUCATION
RIVER MEWS ESTATE LLC
REBECCA D FLOWERS
REBECCA FLOWERS FINCH
AQUA NORTH CAROLINA INC.
MICHELLE STRICKLAND
EST. 11 TONS CLASS B RIP RAP
EST. 28 SY GEOTEXTILE
TOE PROTECTION
SEE DETAIL 12
FOR INCIDENTAL
LOW AREAS AGAINST
FILL SLOPE
2' SPECIAL CUT BASE DITCH
w/CLASS B RIP RAP
SEE DETAIL 28
93 SY PSRM
SPECIAL CUT 'V' DITCH
w/GRASS
SEE DETAIL 27
EST. 5 TONS CLASS B RIP RAP
EST. 14 SY GEOTEXTILE
SPECIAL CUT 'V' DITCH
w/PSRM
SEE DETAIL 26
SEE ENLARGMENT SHEET 12 OF 53
SEE ENLARGMENT SHEET 17 OF 53
71 SY PSRM
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
4' LATERAL BASE DITCH w/PSRM
SEE DETAIL 24
PERMANENT IMPACT IN SURFACE WATER
SITE 5
SITE 4
TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER – PHASE 1
TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER – PHASE 2
EST. 329 TONS CLASS II RIP RAP, 2FT THICK
EST. 370 SY GEOTEXTILE
NEUSE RIVER
BRIDGE SEAT ELEVATIONS
FILL IN WETLAND
EXCAVATION IN WETLAND
BANK STABILIZATION PERM. SURFACE WATER IMPACT
MATCH DITCH INVERT TO STREAM INVERT
RIP RAP AT EMBANKMENT SEE DETAIL 25
TEMPORARY IMPACT IN SURFACE WATER
4' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 23
2' STANDARD BASE DITCH w/CLASS B RIP RAP SEE DETAIL 22
GRADE TO DRAIN
REMOVE
RETAIN
MATCHLINE -L- STA. 62+00.00 SEE SHEET 7
MATCHLINE -L- STA. 75+00.00 SEE SHEET 9
65+00
70+00
75+00
NOTE:
ACCESS GRANTED FOR -DRW3-.
UTILITY OWNER WILL BE RESPONSIBLE
FOR RELOCATION & INSTALLATION OF
NEW GATE
CONTROL OF ACCESS IS NOT FENCED
FOR THIS PROJECT (R-3825B)
8/17/99

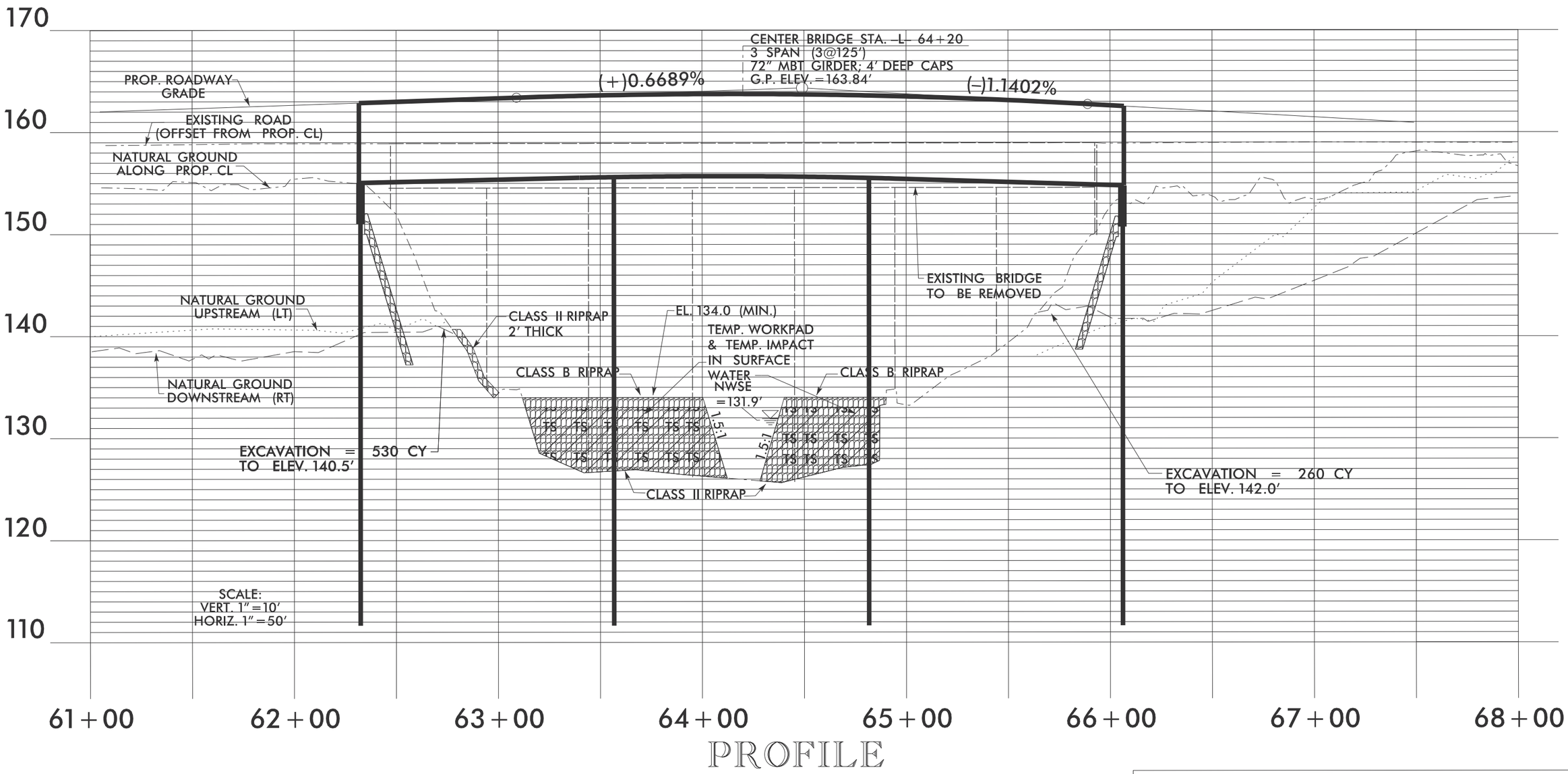


PROJECT REFERENCE NO. R-3825B
SHEET NO. 8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
NAD 83/2011
PERMIT DRAWING SHEET 11 OF 53
DETAIL 28 SPECIAL CUT BASE DITCH (Not to Scale)
Type of Liner= Class B Rip-Rap
FROM -Y6- STA. 11+78 LT TO -Y6- STA. 12+50 LT
DETAIL 23 LATERAL BASE DITCH (Not to Scale)
EST. DDE=444 CY
Type of Liner= Class I Rip-Rap
FROM -L- STA. 73+03 RT TO -L- STA. 75+91 RT
EST. 368 TONS CLASS I RIP RAP
EST. 620 SY GEOTEXTILE
DETAIL 22 STANDARD BASE DITCH (Not to Scale)
Type of Liner= Class B Rip-Rap
FROM -L- STA. 68+54 RT TO -L- STA. 69+20 RT
EST. 31 TONS CLASS B RIPRAP, EST. DDE 37 CY,
EST. 69 SY GEOTEXTILE
DETAIL 108 DECK DRAIN DISSIPATOR PAD (Not to Scale)
FROM -L- STA. 65+20RT TO STA. 65+60RT
DETAIL 29 FALSE SUMP (Not to Scale)
-Y6- STA. 14+25 LT
DETAIL 109 PIPE INLET CHANNEL (Not to Scale)
FROM STA. 73+00 LT TO STA. 73+20 LT
DETAIL 24 LATERAL BASE DITCH (Not to Scale)
EST. DDE=585 CY
Type of Liner= PSRM
FROM -L- STA. 73+10 LT TO -L- STA. 75+00 LT
EST. 325 SY PSRM
DETAIL 12 TOE PROTECTION (Not to Scale)
FROM -Y6- STA. 11+00 RT TO -Y6- STA. 14+00 RT
DETAIL 26 SPECIAL CUT DITCH (Not to Scale)
FROM -Y6- STA. 14+56 LT TO -Y6- STA. 15+00 LT
DETAIL 25 RIP RAP AT EMBANKMENT (Not to Scale)
FROM -L- STA. 73+45 RT TO -L- STA. 73+60 RT
DETAIL 27 SPECIAL CUT DITCH (Not to Scale)
FROM -Y6- STA. 14+00 LT TO -Y6- STA. 14+56 LT
COUNTY OF JOHNSTON
JOHNSTON COUNTY BOARD OF EDUCATION
RIVER MEWS ESTATE LLC
SEE ENLARGMENT SHEET 12 OF 53
SEE ENLARGMENT SHEET 17 OF 53
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
SITE 4
SITE 5
TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER – PHASE 1
TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER – PHASE 2
REBECCA D FLOWERS
REBECCA FLOWERS FINCH
MICHELLE STRICKLAND
AQUA NORTH CAROLINA INC.
MATCHLINE -L- STA. 62+00.00 SEE SHEET 7
MATCHLINE -L- STA. 75+00.00 SEE SHEET 9
NOTE: ACCESS GRANTED FOR -DRW3-. UTILITY OWNER WILL BE RESPONSIBLE FOR RELOCATION & INSTALLATION OF NEW GATE. CONTROL OF ACCESS IS NOT FENCED FOR THIS PROJECT (R-3825B)



PROJECT REFERENCE NO. R-3825B
SHEET NO. 8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared by URS
PERMIT DRAWING SHEET 12 OF 53
ENLARGEMENT
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
RIVER MEWS ESTATE LLC
63+00
65+00
NEUSE RIVER
BRIDGE SEAT ELEVATIONS
TOE PROTECTION SEE DETAIL 69
PUE
WOODS
TOP=154.91'
INV IN=136.26'
INV OUT=136.19'
EX LIFT STATION PB 42 PG 207
BM#4
EX 20' UTILITY EASEMENT PB 42 PG 207
TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER - PHASE 1
SITE 4
TEMP. WORK PAD & TEMP. IMPACTS IN SURFACE WATER - PHASE 2
FL GR 2GI
15"
15" w/2 ELBOWS
PROPOSED 130' R/W
EXISTING R/W
EST. 323 TONS CLASS II RIP RAP, 2FT THICK
EST. 370 SY GEOTEXTILE
EX 50' RIVER TRAIL EASEMENT
EX 30' PERMANENT UTILITY EASEMENT PB 72 PG 209
REBECCA D FLOWERS
NOTE:
ACCESS GRANTED FOR -DRW3-.
UTILITY OWNER WILL BE RESPONSIBLE FOR RELOCATION & INSTALLATION OF NEW GATE
REVISIONS

SITE 4 – PROFILE VIEW ALONG STRUCTURE



PROFILE

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: 34552.1.FR3 (R-3825B)
NC 42 FROM SR 1902
TO SR 1003 (R-3825B)
SITE 4

PERMIT DRAWING
SHEET 13 OF 53

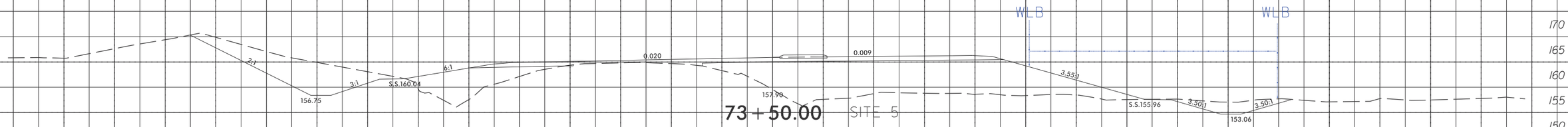
8/23/99

0

PROJ. REFERENCE NO.	SHEET NO.

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

170
165
160
155
150



73+50.00 SITE 5

175
170
165
160
155

76+00.00 SITE 5

PERMIT DRAWING
SHEET 14 OF 53

1/4/2018
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smithcl9

8/17/99

REVISIONS

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0340

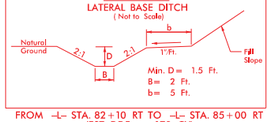
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 15 OF 53

NAD 83/2011

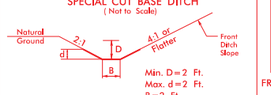
DETAIL 30
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
B= 2 Ft.
b= .5 Ft.

FROM –L– STA. 82+10 RT TO –L– STA. 85+00 RT (EST. DDE = 173 CY)
FROM –L– STA. 86+00 RT TO –L– STA. 90+50 RT (EST. DDE = 378 CY)
FROM –L– STA. 92+00 RT TO –L– STA. 93+24 RT (EST. DDE = 36 CY)

DETAIL 31
SPECIAL CUT BASE DITCH
(Not to Scale)



Min. D=2 Ft.
Max. d=2 Ft.
B=2 Ft.

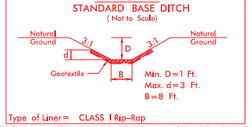
Type of Liner= PSRM
FROM –L– STA. 81+80 LT TO –L– STA. 83+00 LT EST. 154 SY PSRM
FROM –Y7– STA. 15+67 LT TO –L– STA. 16+54 LT EST. 110 SY PSRM

DETAIL 32
SPECIAL CUT DITCH
(Not to Scale)

Min. D=1.5 Ft.

FROM –Y7– STA. 15+67 RT TO –L– STA. 80+28 LT

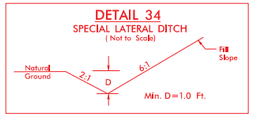
DETAIL 33
STANDARD BASE DITCH
(Not to Scale)



Min. D=1 Ft.
Max. d=3 Ft.
B=8 Ft.

Type of Liner= CLASS I Rip-Rap
FROM –L– STA. 87+50 LT TO –L– STA. 87+55 LT EST. 46 TONS CLASS I RIPRAP, EST. DDE 58 CY, EST. 78 SY GEOTEXTILE

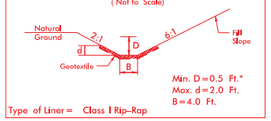
DETAIL 34
SPECIAL LATERAL DITCH
(Not to Scale)



Min. D=1.0 Ft.

FROM –L– STA. 76+10 LT TO –L– STA. 79+00 LT

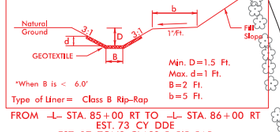
DETAIL 35
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D=0.5 Ft.*
Max. d=2.0 Ft.
B=4.0 Ft.

Type of Liner= Class I Rip-Rap
FROM –L– STA. 75+00 LT TO –L– STA. 76+10 LT
*DITCH ELEVATION AND DEPTH SET TO INTERCEPT STREAM FROM POND

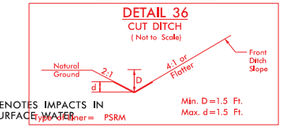
DETAIL 21
LATERAL BASE DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1 Ft.
B=2 Ft.
b=5 Ft.
*When B is < 6.0'

Type of Liner= Class B Rip-Rap
FROM –L– STA. 85+00 RT TO –L– STA. 86+00 RT EST. 73 CY DDE
EST. 87 TONS CLASS B RIP RAP
EST. 194 SY GEOTEXTILE
FROM –L– STA. 90+50 RT TO –L– STA. 92+00 RT EST. 95 CY DDE
EST. 95 TONS CLASS B RIP RAP
EST. 155 SY GEOTEXTILE

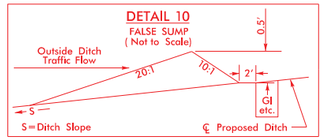
DETAIL 36
CUT DITCH
(Not to Scale)



Min. D=1.5 Ft.
Max. d=1.5 Ft.

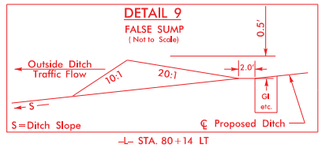
Type of Liner= PSRM
FROM –L– STA. 83+00 LT TO –L– STA. 85+00 LT EST. 280 SY PSRM

DETAIL 10
FALSE SUMP
(Not to Scale)



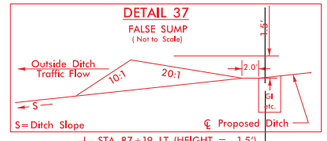
–L– STA. 87+41 RT
–L– STA. 84+91 RT
–L– STA. 78+41 RT

DETAIL 9
FALSE SUMP
(Not to Scale)



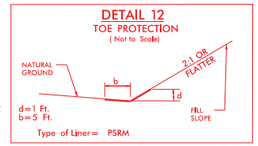
–L– STA. 80+14 LT

DETAIL 37
FALSE SUMP
(Not to Scale)



–L– STA. 87+19 LT (HEIGHT = 1.5')

DETAIL 12
TOE PROTECTION
(Not to Scale)



Type of Liner= PSRM
FROM –L– STA. 84+80 LT TO –L– STA. 87+30 LT EST. 260 SY PSRM

SEE ENLARGMENT SHEET 17 OF 53

S S DENOTES IMPACTS IN SURFACE WATER
E E DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING

MATCHLINE -L- STA. 75+00.00 SEE SHEET 8

MATCHLINE -L- STA. 88+00.00 SEE SHEET 10

17 COUNTY OF JOHNSTON

18 REBECCA FLOWERS FINCH

21 CARE OF CLAYTON, LLC

22 WOODARD INSURANCE, INC

23 JORDAN W. FINCH

24 GEORGE EDWARD NICHOALDS

25 BHH, LLC

62 NEUSE COLONY ASSOCIATION INC.

SITE 5

PERMANENT IMPACT IN SURFACE WATER

4' SPECIAL LATERAL BASE DITCH wCLASS I RIP RAP SEE DETAIL 35. DITCH GRADING WILL NOT ENCROACH INTO THE PONDED AREA OF THE WETLANDS

SPECIAL LATERAL DITCH SEE DETAIL 34

SPECIAL CUT DITCH SEE DETAIL 32

2' SPECIAL CUT BASE DITCH wPSRM SEE DETAIL 31

2' SPECIAL CUT BASE DITCH wPSRM SEE DETAIL 31

CUT DITCH wPSRM SEE DETAIL 36

8' STANDARD BASE DITCH wCLASS I RIP RAP SEE DETAIL 33

2' LATERAL BASE DITCH SEE DETAIL 30

2' LATERAL BASE DITCH wCLASS B RIP RAP SEE DETAIL 21

4' LATERAL BASE DITCH wCLASS I RIP RAP SEE DETAIL 23

EXCAVATION IN WETLAND

ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

POSSIBLE AQUA WATER LINE

EAST SCHOOL RD 24' BST

EXISTING R/W

PROPOSED 150' R/W

PROPOSED 150' R/W

EX 20' SEWER EASEMENT

EX 40' DRAINAGE EASEMENT

JOHN DAVID MCBRYDE II AND LORI L. MCBRYDE

ANTHONY V FISCELLA AND WIFE WENDY K FISCELLA

JEFFREY ROBINSON AND WIFE TAMEKA ROBINSON

STEVEN MICHAEL DAVENPORT AND WIFE ALISHA C. DAVENPORT

BRENTT S. WALKER AND WIFE LINDSEY WALKER

JUAN JIMENEZ AND WIFE CHELSEY JIMENEZ

CLIFTON P. BEAN AND WIFE DIANE M. BEAN

JONATHAN RANDOLPH JONES AND WIFE NANDA LANGDON JONES

50 25 0 50 100

I:\Hydraulics\PERMITS\Environmental\Drawings\Wet ps\R3825b_wet_psh09.dgn
1/4/2018
R:\Hydraulics
smiller

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

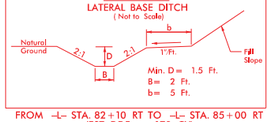
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 16 OF 53

NAD 83/2011

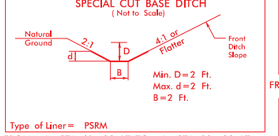
REVISIONS 8/17/99

DETAIL 30
LATERAL BASE DITCH
(Not to Scale)



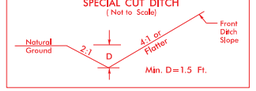
FROM –L– STA. 82+10 RT TO –L– STA. 85+00 RT (EST. DDE = 173 CY)
FROM –L– STA. 86+00 RT TO –L– STA. 90+50 RT (EST. DDE = 378 CY)
FROM –L– STA. 92+00 RT TO –L– STA. 93+24 RT (EST. DDE = 36 CY)

DETAIL 31
SPECIAL CUT BASE DITCH
(Not to Scale)



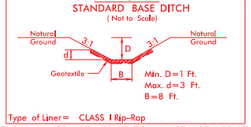
Type of Liner= PSRM
FROM –L– STA. 81+80 LT TO –L– STA. 83+00 LT EST. 154 SY PSRM
FROM –Y7– STA. 15+67 LT TO –L– STA. 16+54 LT EST. 110 SY PSRM

DETAIL 32
SPECIAL CUT DITCH
(Not to Scale)



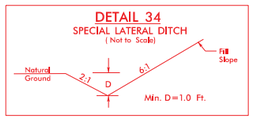
FROM –Y7– STA. 15+67 RT TO –L– STA. 80+28 LT

DETAIL 33
STANDARD BASE DITCH
(Not to Scale)



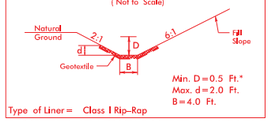
Type of Liner= CLASS I Rip-Rap
FROM –L– STA. 87+50 LT TO –L– STA. 87+55 LT EST. 46 TONS CLASS I RIPRAP, EST. DDE 58 CY, EST. 78 SY GEOTEXTILE

DETAIL 34
SPECIAL LATERAL DITCH
(Not to Scale)



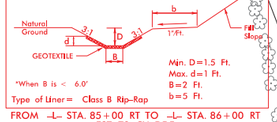
FROM –L– STA. 76+10 LT TO –L– STA. 79+00 LT

DETAIL 35
SPECIAL LATERAL BASE DITCH
(Not to Scale)



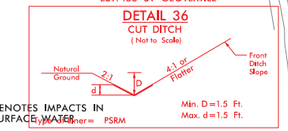
Type of Liner= Class I Rip-Rap
FROM –L– STA. 75+00 LT TO –L– STA. 76+10 LT
*DITCH ELEVATION AND DEPTH SET TO INTERCEPT STREAM FROM POND

DETAIL 21
LATERAL BASE DITCH
(Not to Scale)



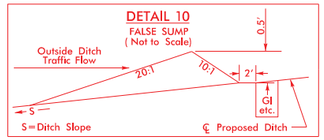
*When B is < 6.0'
Type of Liner= Class B Rip-Rap
FROM –L– STA. 85+00 RT TO –L– STA. 86+00 RT EST. 73 CY DDE
EST. 87 TONS CLASS B RIP RAP
EST. 194 SY GEOTEXTILE
FROM –L– STA. 90+50 RT TO –L– STA. 92+00 RT EST. 95 CY DDE
EST. 95 TONS CLASS B RIP RAP
EST. 155 SY GEOTEXTILE

DETAIL 36
CUT DITCH
(Not to Scale)



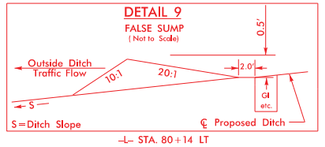
Type of Liner= PSRM
FROM –L– STA. 83+00 LT TO –L– STA. 85+00 LT EST. 280 SY PSRM

DETAIL 10
FALSE SUMP
(Not to Scale)



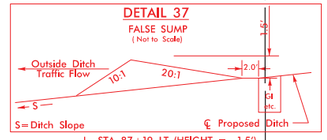
–L– STA. 87+41 RT
–L– STA. 84+91 RT
–L– STA. 78+41 RT

DETAIL 9
FALSE SUMP
(Not to Scale)



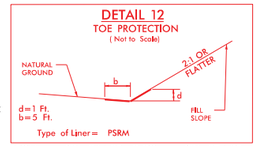
–L– STA. 80+14 LT

DETAIL 37
FALSE SUMP
(Not to Scale)



–L– STA. 87+19 LT (HEIGHT = 1.5')

DETAIL 12
TOE PROTECTION
(Not to Scale)



Type of Liner= PSRM
FROM –L– STA. 84+80 LT TO –L– STA. 87+30 LT EST. 260 SY PSRM

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

SEE ENLARGMENT SHEET 17 OF 53

MATCHLINE -L- STA. 75+00.00 SEE SHEET 8
MATCHLINE -L- STA. 88+00.00 SEE SHEET 10

75+00 80+00 85+00

(17) COUNTY OF JOHNSTON
(18) REBECCA FLOWERS FINCH
(21) CARE OF CLAYTON, LLC
(22) WOODARD INSURANCE, INC
(23) JORDAN W. FINCH
(24) GEORGE EDWARD NICHOALDS
(25) BHH, LLC
(62) NEUSE COLONY ASSOCIATION INC.

PERMANENT IMPACT IN SURFACE WATER
4' SPECIAL LATERAL BASE DITCH wCLASS I RIP RAP SEE DETAIL 35. DITCH GRADING WILL NOT ENCROACH INTO THE PONDED AREA OF THE WETLANDS
SPECIAL LATERAL DITCH SEE DETAIL 34
SITE 5
PERMANENT IMPACT IN SURFACE WATER
RETAIN
EXCAVATION IN WETLAND
SPECIAL CUT DITCH SEE DETAIL 32
2' SPECIAL CUT BASE DITCH wPSRM SEE DETAIL 31
RETAIN
2' SPECIAL CUT BASE DITCH wPSRM SEE DETAIL 31
CUT DITCH wPSRM SEE DETAIL 36
8' STANDARD BASE DITCH wCLASS I RIP RAP SEE DETAIL 33
2' LATERAL BASE DITCH wCLASS B RIP RAP SEE DETAIL 21
2' LATERAL BASE DITCH SEE DETAIL 30
4' LATERAL BASE DITCH wCLASS I RIP RAP SEE DETAIL 23

JOHN DAVID MCBRYDE II AND LORI L. MCBRYDE
ANTHONY V FISCELLA AND WIFE WENDY K FISCELLA
JEFFREY ROBINSON AND WIFE TAMEKA ROBINSON
STEVEN MICHAEL DAVENPORT AND WIFE ALISHA C. DAVENPORT
BRENTT S. WALKER AND WIFE LINDSEY WALKER
JUAN JIMENEZ AND WIFE CHELSEY JIMENEZ
CLIFTON P. BEAN AND WIFE DIANE M. BEAN
JONATHAN RANDOLPH JONES AND WIFE NANDA LANGDON JONES
ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

50 25 0 50 100

1/4/2018
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smiller

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0293

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	9
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 17 OF 53

ENLARGEMENT

8/17/99

REVISIONS

17

COUNTY OF JOHNSTON

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

F F DENOTES FILL IN WETLAND

E E DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

75+00 75+00

4' LATERAL BASE DITCH w/PSRM SEE DETAIL 24

PERMANENT IMPACT IN SURFACE WATER

SITE 5

PERMANENT IMPACT IN SURFACE WATER

4' SPECIAL LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 35. DITCH GRADING WILL NOT ENCROACH INTO THE PONDED AREA OF THE WETLANDS

SPECIAL LATERAL DITCH SEE DETAIL 34

SITE 5

RETAIN

6" DIP

PERMANENT IMPACT IN SURFACE WATER

PUE

DATUR

POND WS=162.5

GRADE TO DRAIN

12" DIP

42" WELDED STEEL TRENCHLESS

HW

CONC HW TOP 56.43

24" RCP

REMOVE

NC 42 25.3' BST

JB w/MH

DI

15"-RCP-IV

FL GR 2GI

INV. BURIED RCP

15" RCP-IV

PROPOSED 80' R/W

12" 8" PVC DATUR

PROPOSED 160' R/W

15" RCP-IV

JB w/MH

66"

PERMANENT IMPACT IN SURFACE WATER

FILL IN WETLAND

EXCAVATION IN WETLAND

REBECCA FLOWERS FINCH

18

BANK STABILIZATION PERM. SURFACE WATER IMPACT

OUTFALL ANALYSIS D

MATCH DITCH INVERT TO STREAM INVERT

RAP RAP AT EMBANKMENT SEE DETAIL 25

SITE 5

18

TEMPORARY IMPACT IN SURFACE WATER

19

REBECCA FLOWERS FINCH

MICHELLE STRICKLAND

CONC POOL CONC

EX 20' UTILITY EASEMENT

4' LATERAL BASE DITCH w/CLASS I RIP RAP SEE DETAIL 23

4' LATERAL BASE DITCH w/CLASS I RIP RAP

JEFFREY ROBINSON AND WIFE

25 12.5 0 25 50

1/4/2018
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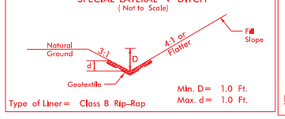
smithg

8/17/99

REVISIONS

PERMIT DRAWING SHEET 18 OF 53

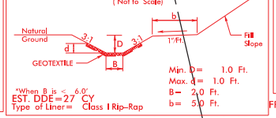
DETAIL 38
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
Type of Liner= Class B Rip-Rap

FROM –L– STA. 100+00 LT TO –L– STA. 102+40 LT
EST. 51 TONS CLASS B RIP RAP
EST. 115 SY GEOTEXTILE

DETAIL 42
LATERAL BASE DITCH
(Not to Scale)

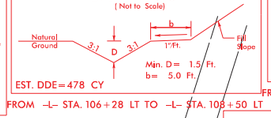


*When B is < 6.0'
EST. DDE=27 CY
Type of Liner= Class I Rip-Rap

Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.

FROM –L– STA. 106+00 LT TO –L– STA. 106+25 LT
EST. 12 TONS CLASS I RIP RAP
EST. 32 SY GEOTEXTILE

DETAIL 43
LATERAL 'V' DITCH
(Not to Scale)

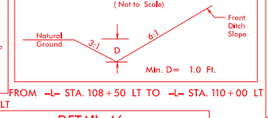


Min. D= 1.5 Ft.
b= 5.0 Ft.

EST. DDE=478 CY

FROM –L– STA. 106+28 LT TO –L– STA. 108+50 LT

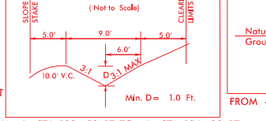
DETAIL 44
SPECIAL CUT DITCH
(Not to Scale)



Min. D= 1.0 Ft.

FROM –L– STA. 108+50 LT TO –L– STA. 110+00 LT

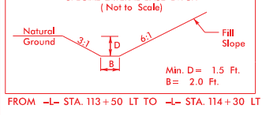
DETAIL 45
BERM DITCH
(Not to Scale)



Min. D= 1.0 Ft.

FROM –L– STA. 103+50 RT TO –L– STA. 104+20 RT

DETAIL 47
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
B= 2.0 Ft.

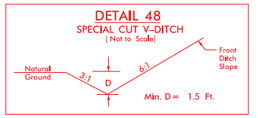
FROM –L– STA. 113+50 LT TO –L– STA. 114+30 LT

DETAIL 46
BERM DITCH
(Not to Scale)

Min. D=1.0 Ft.
Max. d=1.0 Ft.
Type of Liner= CL B Rip Rap

FROM –L– STA. 104+20 RT TO –L– STA. 104+50 RT
EST. 10 TONS CLASS B RIP RAP
EST. 30 SY GEOTEXTILE
FROM –L– STA. 105+50 RT TO –L– STA. 106+00 RT

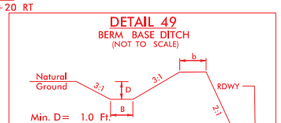
DETAIL 48
SPECIAL CUT V-DITCH
(Not to Scale)



Min. D= 1.5 Ft.

FROM –L– STA. 111+50 LT TO –L– STA. 113+50 LT

DETAIL 49
BERM BASE DITCH
(NOT TO SCALE)



Min. D= 1.0 Ft.
B= 2.0 Ft.
b= 5.0 Ft.

FROM –L– STA. 110+00 LT TO –L– STA. 114+00 LT

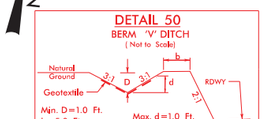
NAD 83 2011

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0343

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	11
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 50
BERM 'V' DITCH
(Not to Scale)



Min. D=1.0 Ft.
b=5.0 Ft.
Type of Liner= CL B Rip Rap
Max. d=1.0 Ft.

FROM –L– STA. 104+50 RT TO –L– STA. 105+50 RT
EST. 35 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE
BERM DITCH GRADE

DETAIL 51
SPECIAL CUT V-DITCH
(Not to Scale)

Min. D= 1 Ft.

FROM –L– STA. 111+50 RT TO –L– STA. 112+25 RT

SUSO 4 FLOWERS LP

SEE ENLARGMENT SHEET 20 OF 53

105+00

110+00

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER

PERMANENT IMPACTS IN SURFACE WATER

EX 20' PUBLIC UTILITY EASEMENT

EX 40' DRAINAGE & UTILITY EASEMENT

EX 20' DRAINAGE EASEMENT

EX 20' SEWER EASEMENT

EX 20' UTILITY & SEWER EASEMENT

EX DRAINAGE EASEMENT STORM WATER POND

35 CLAYTON 99, LLC

36 CLAYTON 99, LLC

37 THE GARDENS AT FLOWERS PLANTATION ASSOCIATION

REMOVE EXIST. CB

RETAIN

INSTALL DI ON EXISTING 30" RCP

INSTALL CB ON EXISTING 30" RCP

REMOVE 47 LF

REMOVE EXIST. CB

REMOVE

2' BASE LATERAL DITCH W/CL I RIP RAP SEE DETAIL 42

LATERAL V-DITCH SEE DETAIL 43

SPECIAL CUT DITCH SEE DETAIL 44

2' BASE BERM DITCH SEE DETAIL 49

SPECIAL LATERAL BASE DITCH SEE DETAIL 47

SPECIAL CUT V-DITCH SEE DETAIL 48

THE BERM DITCH TO SPECIAL LATERAL DITCH

SPECIAL LATERAL V DITCH W/CL B RIP RAP SEE DETAIL 38

FL. GR. 2GI

JB W/SLAB

TRENCHLESS INSTALLATION BURIED 10.0' OR MORE

PLUG

PLUG AND FILL

SITE 6

POSSIBLE ABANDONED FM

8" PVC

12" PVC

15" W/ELBOW

W/1-ELBOW

BDO

2GI-A

2GI-D

FL. GR. 2GI-D

15" RCP-IV

30" CSP

2' STANDARD BASE DITCH W/CL I RIP RAP SEE DETAIL 39

2' BASE LATERAL DITCH W/CL I RIP RAP SEE DETAIL 52

BERM DITCH SEE DETAIL 45

BERM DITCH W/CL B RIP RAP SEE DETAIL 46

BERM DITCH W/CL B RIP RAP SEE DETAIL 50

CL B RIP RAP TOE PROTECTION SEE DETAIL 53

STANDARD 3' BASE DITCH W/CL I RIP RAP SEE DETAIL 54

SPECIAL CUT V-DITCH SEE DETAIL 51

EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE

39 AQUA NORTH CAROLINA, INC FORMALLY (HEATER UTILITIES, INC)

40 CHARLES RAY WILLIAMS

41 INSPIRED, LLC

42 IRENA V. DAVYDOVA-FORQUER

43 AQUA NORTH CAROLINA, INC

44 BRADLEY SCOTT SIMMONS AND WIFE JILL DAVIS SIMMONS

45 RICHARD TODD STUTTS

46 PETER JOSEPH BIGNESS AND CINDY JOHNSON BIGNESS

62 NEUSE COLONY ASSOCIATION INC.

ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

TEMPORARY IMPACTS IN SURFACE WATER

PERMANENT IMPACTS IN SURFACE WATER

BRADLEY SCOTT SIMMONS AND WIFE JILL DAVIS SIMMONS

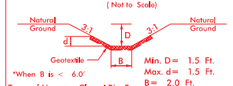
RICHARD TODD STUTTS

PETER JOSEPH BIGNESS AND CINDY JOHNSON BIGNESS

MATCHLINE -L- STA. 101+00.00 SEE SHEET 10

MATCHLINE -L- STA. 114+00.00 SEE SHEET 12

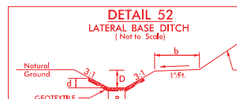
DETAIL 39
STANDARD BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
*When B is < 6.0'
Type of Liner= Class I Rip-Rap
Est. 38 Tons Class I Rip Rap
Est. 65 SY Geotextile. Est. DDE 18 CY

FROM –L– STA. 100+95 RT TO –L– STA. 101+30 RT

DETAIL 52
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
EST. DDE=50 CY
Type of Liner= Class I Rip-Rap

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2.0 Ft.
b= 5.0 Ft.

FROM –L– STA. 101+08 RT TO –L– STA. 101+50 RT
EST. 27 TONS CLASS I RIP RAP
EST. 69 SY GEOTEXTILE

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)

*When B is < 6.0'
EST. DDE= 140 CY
Type of Liner= CL B Rip-Rap

Min. D=1.0 Ft.
Max. d=1.0 Ft.
B=2.0 Ft.
b=5.0 Ft.

FROM –L– STA. 98+70 RT TO –L– STA. 101+08 RT

DETAIL 55
FALSE SUMP
(Not to Scale)

STA. –L– 103+74 RT
STA. –L– 106+24 RT
STA. –L– 112+48 RT
STA. –L– 107+24 RT

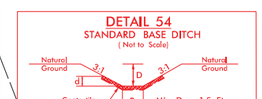
DETAIL 53
TOE PROTECTION
(Not to Scale)

d= 1.0 Ft.

Type of Liner= Class B Rip-Rap

FROM –L– STA. 106+00 RT TO –L– STA. 109+50 RT
EST. 125 TONS CLASS B RIP RAP
EST. 295 SY GEOTEXTILE

DETAIL 54
STANDARD BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 3.0 Ft.
*When B is < 6.0'
Type of Liner= Class I Rip -Rap
Est. 25 Tons Class I Rip Rap
Est. 45 SY Geotextile. Est. DDE 20 CY

FROM –L– STA. 107+70 RT TO –L– STA. 108+00 RT

50 25 0 50 100

1/4/2018
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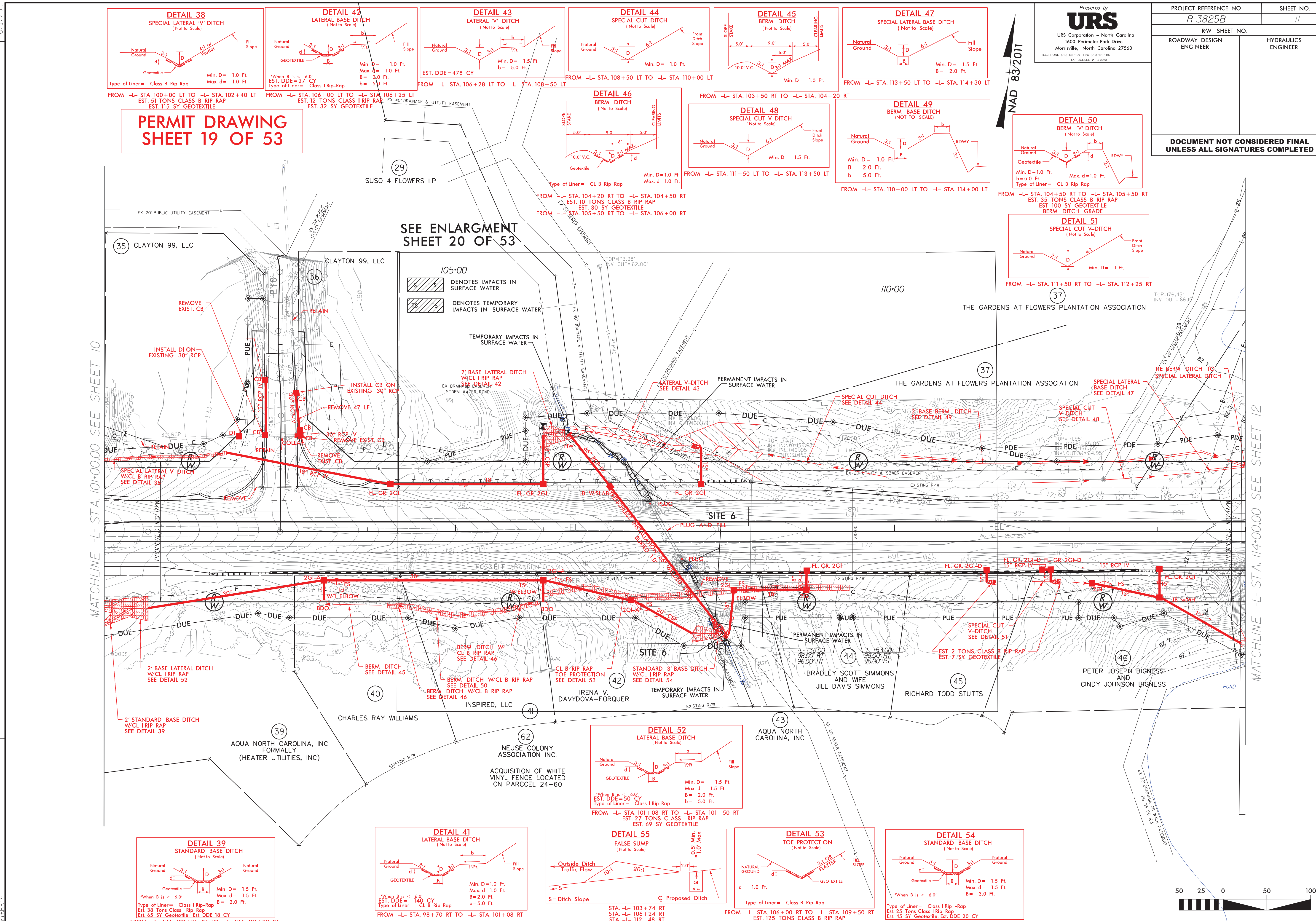
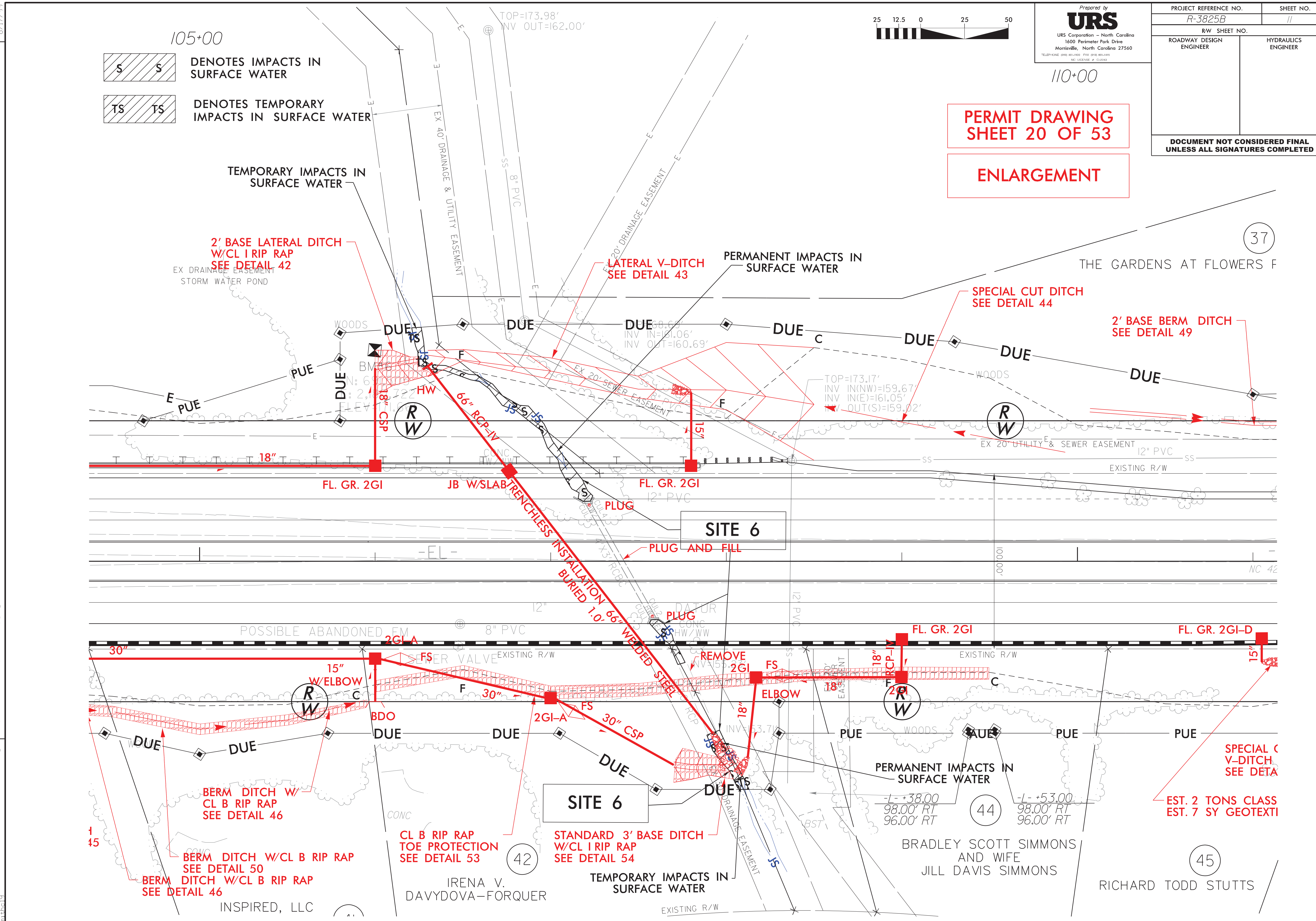
smith613

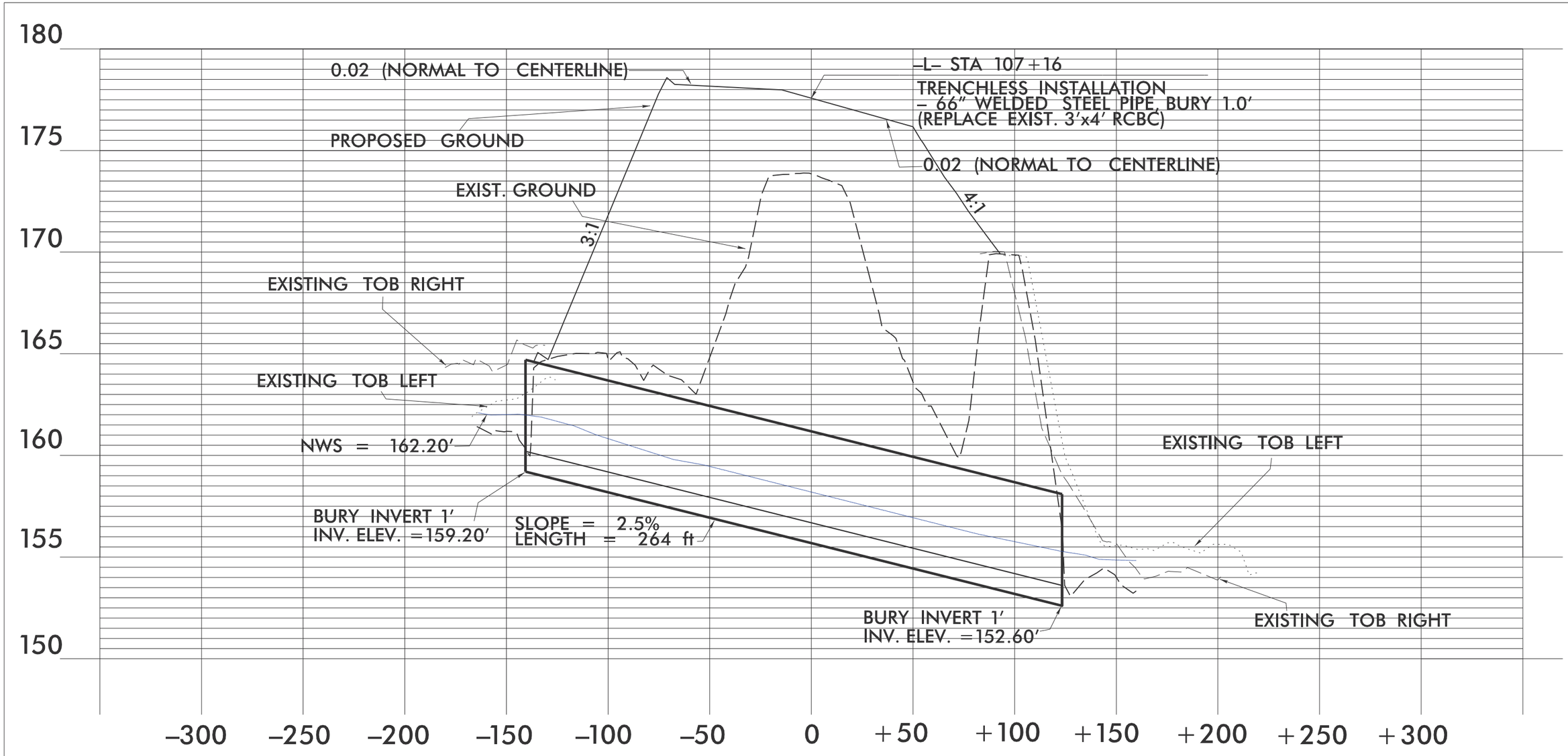


PERMIT DRAWING
SHEET 19 OF 53
Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
PROJECT REFERENCE NO.
R-3825B
SHEET NO.
11
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
NAD 83/2011
REVISIONS
DETAIL 38
SPECIAL LATERAL 'V' DITCH
FROM -L- STA. 100+00 LT TO -L- STA. 102+40 LT
EST. 51 TONS CLASS B RIP RAP
EST. 115 SY GEOTEXTILE
DETAIL 42
LATERAL BASE DITCH
FROM -L- STA. 106+00 LT TO -L- STA. 106+25 LT
EST. 12 TONS CLASS I RIP RAP
EST. 32 SY GEOTEXTILE
DETAIL 43
LATERAL 'V' DITCH
EST. DDE = 478 CY
FROM -L- STA. 106+28 LT TO -L- STA. 108+50 LT
DETAIL 44
SPECIAL CUT DITCH
FROM -L- STA. 108+50 LT TO -L- STA. 110+00 LT
DETAIL 45
BERM DITCH
FROM -L- STA. 103+50 RT TO -L- STA. 104+20 RT
DETAIL 47
SPECIAL LATERAL BASE DITCH
FROM -L- STA. 113+50 LT TO -L- STA. 114+30 LT
DETAIL 46
BERM DITCH
FROM -L- STA. 104+20 RT TO -L- STA. 104+50 RT
EST. 10 TONS CLASS B RIP RAP
EST. 30 SY GEOTEXTILE
FROM -L- STA. 105+50 RT TO -L- STA. 106+00 RT
DETAIL 48
SPECIAL CUT V-DITCH
FROM -L- STA. 111+50 LT TO -L- STA. 113+50 LT
DETAIL 49
BERM BASE DITCH
FROM -L- STA. 110+00 LT TO -L- STA. 114+00 LT
DETAIL 50
BERM 'V' DITCH
FROM -L- STA. 104+50 RT TO -L- STA. 105+50 RT
EST. 35 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE
BERM DITCH GRADE
DETAIL 51
SPECIAL CUT V-DITCH
FROM -L- STA. 111+50 RT TO -L- STA. 112+25 RT
SEE ENLARGMENT
SHEET 20 OF 53
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
MATCHLINE -L- STA. 101+00.00 SEE SHEET 10
MATCHLINE -L- STA. 114+00.00 SEE SHEET 12
SITE 6
PERMANENT IMPACTS IN SURFACE WATER
TEMPORARY IMPACTS IN SURFACE WATER
29 SUSO 4 FLOWERS LP
35 CLAYTON 99, LLC
36 CLAYTON 99, LLC
37 THE GARDENS AT FLOWERS PLANTATION ASSOCIATION
39 AQUA NORTH CAROLINA, INC FORMALLY (HEATER UTILITIES, INC)
40 CHARLES RAY WILLIAMS
41 INSPIRED, LLC
42 IRENA V. DAVYDOVA-FORQUER
43 AQUA NORTH CAROLINA, INC
44 BRADLEY SCOTT SIMMONS AND WIFE JILL DAVIS SIMMONS
45 RICHARD TODD STUTTS
46 PETER JOSEPH BIGNESS AND CINDY JOHNSON BIGNESS
62 NEUSE COLONY ASSOCIATION INC.
ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60
DETAIL 52
LATERAL BASE DITCH
FROM -L- STA. 101+08 RT TO -L- STA. 101+50 RT
EST. 27 TONS CLASS I RIP RAP
EST. 69 SY GEOTEXTILE
DETAIL 39
STANDARD BASE DITCH
FROM -L- STA. 100+95 RT TO -L- STA. 101+30 RT
DETAIL 41
LATERAL BASE DITCH
FROM -L- STA. 98+70 RT TO -L- STA. 101+08 RT
DETAIL 55
FALSE SUMP
STA. -L- 103+74 RT
STA. -L- 106+24 RT
STA. -L- 112+48 RT
STA. -L- 107+24 RT
DETAIL 53
TOE PROTECTION
FROM -L- STA. 106+00 RT TO -L- STA. 109+50 RT
EST. 125 TONS CLASS B RIP RAP
EST. 295 SY GEOTEXTILE
DETAIL 54
STANDARD BASE DITCH
FROM -L- STA. 107+70 RT TO -L- STA. 108+00 RT
50 25 0 50 100



PERMIT DRAWING SHEET 20 OF 53
ENLARGEMENT
PROJECT REFERENCE NO. R-3825B
SHEET NO. 11
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
REVISIONS
105+00
110+00
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
TEMPORARY IMPACTS IN SURFACE WATER
2' BASE LATERAL DITCH W/CL I RIP RAP SEE DETAIL 42
EX DRAINAGE EASEMENT
STORM WATER POND
LATERAL V-DITCH SEE DETAIL 43
PERMANENT IMPACTS IN SURFACE WATER
SPECIAL CUT DITCH SEE DETAIL 44
2' BASE BERM DITCH SEE DETAIL 49
THE GARDENS AT FLOWERS F
37
TOP=173.98'
INV OUT=162.00'
EX 40' DRAINAGE & UTILITY EASEMENT
EX 20' DRAINAGE EASEMENT
EX 20' SEWER EASEMENT
EX 20' UTILITY & SEWER EASEMENT
TOP=173.17'
INV IN(NW)=159.67'
INV IN(E)=161.05'
INV OUT(S)=159.02'
WOODS
66" RCP-IV
18" CSP
HW
15"
18"
FL. GR. 2GI
JB W/SLAB
PLUG
SITE 6
PLUG AND FILL
TRENCHLESS INSTALLATION BURIED 1.0' 66" WELDED STEEL
-EL-
12" PVC
8" PVC
EXISTING R/W
POSSIBLE ABANDONED FM
SEWER VALVE
2GI-A
30"
15" W/ELBOW
BDO
FS
REMOVE
2GI
ELBOW
18" RCP-IV
FL. GR. 2GI-D
30" CSP
DUE
PUE
BERM DITCH W/ CL B RIP RAP SEE DETAIL 46
BERM DITCH W/CL B RIP RAP SEE DETAIL 50
BERM DITCH W/CL B RIP RAP SEE DETAIL 46
CL B RIP RAP TOE PROTECTION SEE DETAIL 53
STANDARD 3' BASE DITCH W/CL I RIP RAP SEE DETAIL 54
TEMPORARY IMPACTS IN SURFACE WATER
PERMANENT IMPACTS IN SURFACE WATER
-L- +38.00 98.00' RT 96.00' RT
-L- +53.00 98.00' RT 96.00' RT
EST. 2 TONS CLASS
EST. 7 SY GEOTEXTI
SPECIAL V-DITCH SEE DETA
INSPIRED, LLC
42
IRENA V. DAVYDOVA-FORQUER
44
BRADLEY SCOTT SIMMONS AND WIFE JILL DAVIS SIMMONS
45
RICHARD TODD STUTTS

SITE 6 – PROFILE VIEW ALONG STRUCTURE



PROFILE

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: 34552.1.FR3 (R-3825B)
NC 42 FROM SR 1902
TO SR 1003 (R-3825B)
SITE 6

PERMIT DRAWING
SHEET 21 OF 53

8/17/99

REVISIONS

PERMIT DRAWING SHEET 22 OF 53

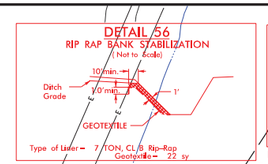
NAD 83/2011

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0043

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

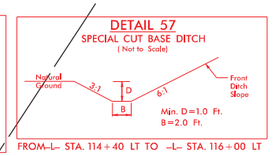
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 56
RIP RAP BANK STABILIZATION
(Not to Scale)



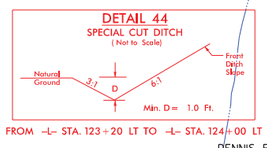
FROM –L– STA. 113+95 RT TO –L– STA. 114+08 RT
FROM –L– STA. 114+28 LT TO –L– STA. 114+21 LT
FROM –L– STA. 114+10 LT TO –L– STA. 114+30 LT

DETAIL 57
SPECIAL CUT BASE DITCH
(Not to Scale)



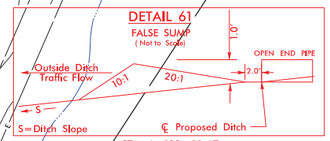
FROM –L– STA. 114+40 LT TO –L– STA. 116+00 LT

DETAIL 44
SPECIAL CUT DITCH
(Not to Scale)



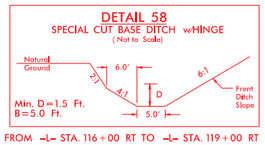
FROM –L– STA. 123+20 LT TO –L– STA. 124+00 LT

DETAIL 61
FALSE SUMP
(Not to Scale)



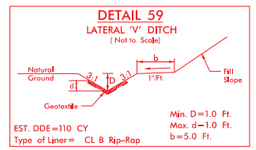
STA. –L– 123+00 LT

DETAIL 58
SPECIAL CUT BASE DITCH wHINGE
(Not to Scale)



FROM –L– STA. 116+00 RT TO –L– STA. 119+00 RT

DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)



EST. DDE=110 CY
Type of Liner = CL B Rip-Rap

FROM –L– STA. 122+55 RT TO –L– STA. 124+50 RT

115.00

120.00

125.00

(37) THE GARDENS AT FLOWERS PLANTATION ASSOCIATION

DENNIS R. BAKAYSA AND WIFE, DEBORAH A. BAKAYSA

TIMOTHY DWANE MARTIN AND WIFE, WENDY NELSON NARTIN

JENNA A. EGGLESTON AND SPOUSE, JOHNATHAN D. EGGLESTON

GEORGE W. BROCK AND WIFE, SHIRLEY BROCK

GUSTAVO A. MENJIVAR-RODRIGUEZ AND WIFE, AILEEN MENJIVAR

JOSEPH MARK AND SPOUSE, MARKETA MARK

BRIAN M. HENDERSON AND WIFE, STACEY S. HENDERSON

SEE ENLARGMENT SHEET 24 OF 53

SPECIAL LATERAL BASE DITCH SEE DETAIL 47

REMOVE 5'x4' RCBC AS NEEDED. FILL REMAINDER WITH FLOWABLE FILL.

HW W/ TRASH RACK RETAIN

SEE STRUCTURE GENERAL DRAWING FOR CONFIGURATION OF UPSTREAM CULVERT END

BANK STABILIZATION SEE DETAIL 56

TEMPORARY SHORING –L– 114+05 TO 114+30 39.0' LT SEE TMP

TEMPORARY IMPACTS IN SURFACE WATER

2' BASE SPECIAL CUT DITCH SEE DETAIL 57

POND WE = 1700

BANK STABILIZATION PERMANENT IMPACTS IN SURFACE WATER

PERMANENT IMPACTS IN SURFACE WATER

SITE 7

SPECIAL CUT BASE DITCH SEE DETAIL 58

BANK STABILIZATION PERMANENT IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER

RETAIN

GRADE TO DRAIN

REMOVE

SPECIAL CUT DITCH SEE DETAIL 44

SPECIAL LATERAL V-DITCH W/CL B RIP RAP EST. 70 TONS CLASS B RIP RAP EST. 155 SY GEOTEXTILE SEE DETAIL 59

EST. 3 TONS CLASS B RIP RAP EST. 10 SY GEOTEXTILE

2' STANDARD BASE DITCH w/CLASS I RIP RAP SEE DETAIL 60

(46) PETER JOSEPH BIGNESS AND CINDY JOHNSON BIGNESS

(49) M. ANDREW JONES, JR. AND WIFE NANCY S. JONES

(50) MARSHALL H. MALPASS AND WIFE ROBIN M. MALPASS

(51) CHRISTOPHER V. CIPRIANI AND WIFE PATRICIA S. CIPRIANI

(52) RODNEY GEOHAGAN, JR.

(47) NEUSE PARK DEVELOPMENT CO., LLC

(48) CENTEX HOMES

(62) NEUSE COLONY ASSOCIATION INC.

ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60

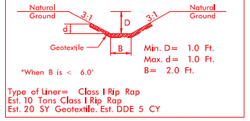
25LF OF OUTLET CHANNEL IMPROVEMENT APPROX 9 TON CLASS I RIP RAP APPROX 6 SY GEOTEXTILE SEE DETAIL 107

BANK STABILIZATION SEE DETAIL 56

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

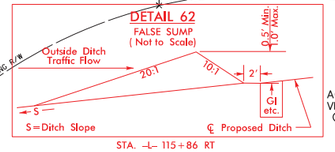
DETAIL 60
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= Class I Rip Rap
Est. 10 Tons Class I Rip Rap
Est. 20 SY Geotextile. Est. DDE 5 CY

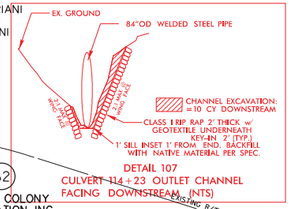
FROM –L– STA. 114+17 RT TO STA. 114+35 RT

DETAIL 62
FALSE SUMP
(Not to Scale)



STA. –L– 115+86 RT

DETAIL 107
CULVERT 114+23 OUTLET CHANNEL FACING DOWNSTREAM (NTS)

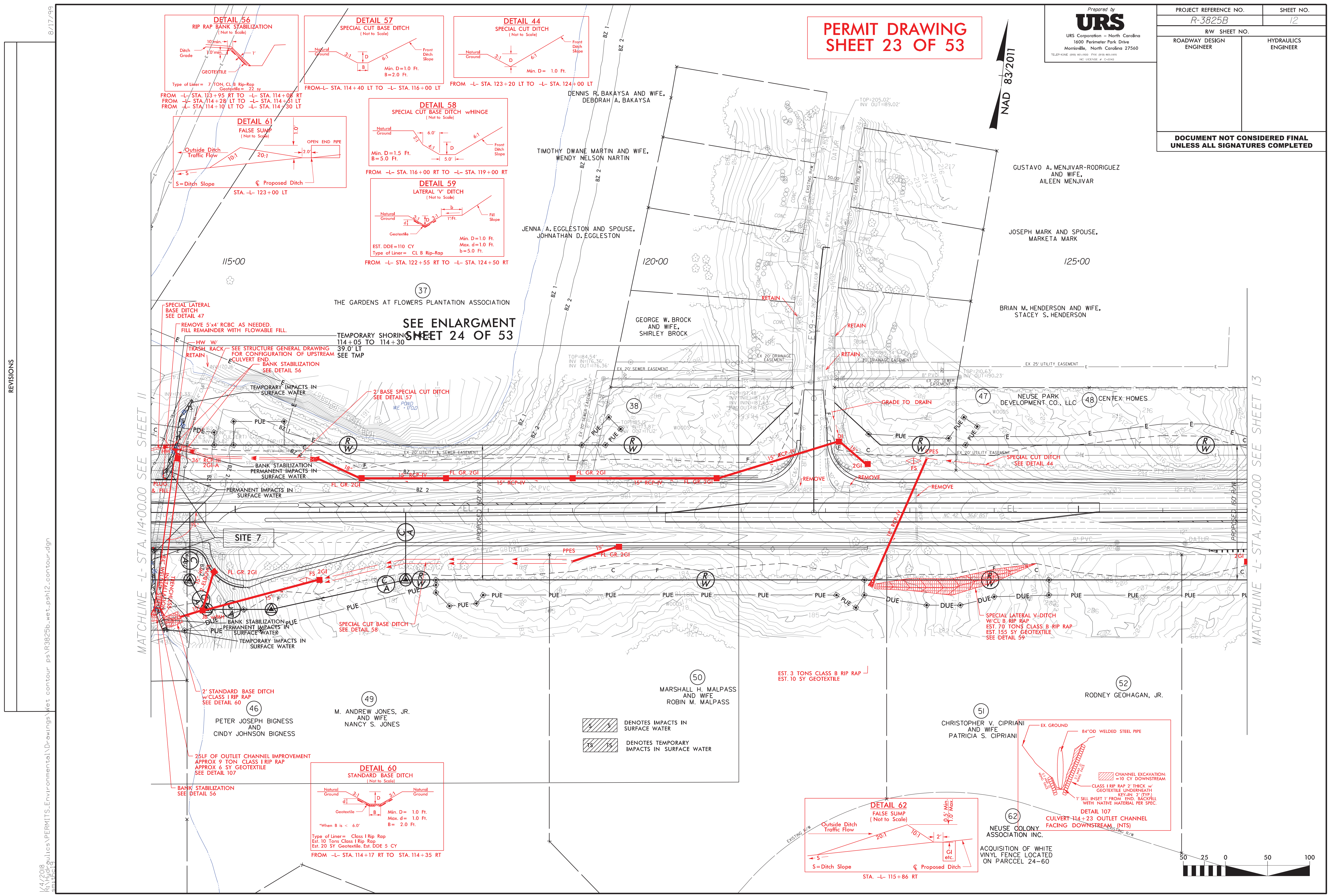


MATCHLINE -L- STA. 114+00.00 SEE SHEET 11

MATCHLINE -L- STA. 127+00.00 SEE SHEET 13

50 25 0 50 100

1/4/2018
R:\Hydraulics\PERMITS\Environmental\Drawings\Wet ps\R3825b_wet_psh12.dgn
smiller


PERMIT DRAWING SHEET 23 OF 53
PROJECT REFERENCE NO. R-3825B
SHEET NO. 12
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
NAD 83/2011
REVISIONS
DETAIL 56
RIP RAP BANK STABILIZATION
(Not to Scale)
FROM -L- STA. 113+95 RT TO -L- STA. 114+05 RT
FROM -L- STA. 114+28 LT TO -L- STA. 114+61 LT
FROM -L- STA. 114+10 LT TO -L- STA. 114+30 LT
DETAIL 57
SPECIAL CUT BASE DITCH
(Not to Scale)
Min. D=1.0 Ft.
B=2.0 Ft.
FROM -L- STA. 114+40 LT TO -L- STA. 116+00 LT
DETAIL 44
SPECIAL CUT DITCH
(Not to Scale)
Min. D= 1.0 Ft.
FROM -L- STA. 123+20 LT TO -L- STA. 124+00 LT
DETAIL 61
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
STA. -L- 123+00 LT
DETAIL 58
SPECIAL CUT BASE DITCH w/HINGE
(Not to Scale)
Min. D=1.5 Ft.
B=5.0 Ft.
FROM -L- STA. 116+00 RT TO -L- STA. 119+00 RT
DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)
EST. DDE=110 CY
Type of Liner= CL B Rip-Rap
Min. D=1.0 Ft.
Max. d=1.0 Ft.
b=5.0 Ft.
FROM -L- STA. 122+55 RT TO -L- STA. 124+50 RT
DENNIS R. BAKAYSA AND WIFE, DEBORAH A. BAKAYSA
TIMOTHY DWANE MARTIN AND WIFE, WENDY NELSON NARTIN
JENNA A. EGGLESTON AND SPOUSE, JOHNATHAN D. EGGLESTON
GUSTAVO A. MENJIVAR-RODRIGUEZ AND WIFE, AILEEN MENJIVAR
JOSEPH MARK AND SPOUSE, MARKETA MARK
BRIAN M. HENDERSON AND WIFE, STACEY S. HENDERSON
GEORGE W. BROCK AND WIFE, SHIRLEY BROCK
37 THE GARDENS AT FLOWERS PLANTATION ASSOCIATION
SEE ENLARGMENT SHEET 24 OF 53
TEMPORARY SHORING 114+05 TO 114+30 39.0' LT SEE TMP
SPECIAL LATERAL BASE DITCH SEE DETAIL 47
REMOVE 5'x4' RCBC AS NEEDED. FILL REMAINDER WITH FLOWABLE FILL.
HW W/ TRASH RACK SEE STRUCTURE GENERAL DRAWING FOR CONFIGURATION OF UPSTREAM CULVERT END.
BANK STABILIZATION SEE DETAIL 56
TEMPORARY IMPACTS IN SURFACE WATER
PERMANENT IMPACTS IN SURFACE WATER
2' BASE SPECIAL CUT DITCH SEE DETAIL 57
SITE 7
47 NEUSE PARK DEVELOPMENT CO., LLC
48 CENTEX HOMES
SPECIAL CUT DITCH SEE DETAIL 44
SPECIAL CUT BASE DITCH SEE DETAIL 58
SPECIAL LATERAL V-DITCH W/CL B RIP RAP EST. 70 TONS CLASS B RIP RAP EST. 155 SY GEOTEXTILE SEE DETAIL 59
EST. 3 TONS CLASS B RIP RAP EST. 10 SY GEOTEXTILE
2' STANDARD BASE DITCH W/CLASS I RIP RAP SEE DETAIL 60
46 PETER JOSEPH BIGNESS AND CINDY JOHNSON BIGNESS
49 M. ANDREW JONES, JR. AND WIFE NANCY S. JONES
50 MARSHALL H. MALPASS AND WIFE ROBIN M. MALPASS
51 CHRISTOPHER V. CIPRIANI AND WIFE PATRICIA S. CIPRIANI
52 RODNEY GEOHAGAN, JR.
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
25LF OF OUTLET CHANNEL IMPROVEMENT APPROX 9 TON CLASS I RIP RAP APPROX 6 SY GEOTEXTILE SEE DETAIL 107
BANK STABILIZATION SEE DETAIL 56
DETAIL 60
STANDARD BASE DITCH
(Not to Scale)
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
Type of Liner= Class I Rip Rap
Est. 10 Tons Class I Rip Rap
Est. 20 SY Geotextile. Est. DDE 5 CY
FROM -L- STA. 114+17 RT TO STA. 114+35 RT
DETAIL 62
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
STA. -L- 115+86 RT
62 NEUSE COLONY ASSOCIATION INC.
ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60
DETAIL 107
CULVERT 114+23 OUTLET CHANNEL FACING DOWNSTREAM (NTS)
MATCHLINE -L- STA. 114+00.00 SEE SHEET 11
MATCHLINE -L- STA. 127+00.00 SEE SHEET 13
115+00
120+00
125+00
8/17/99

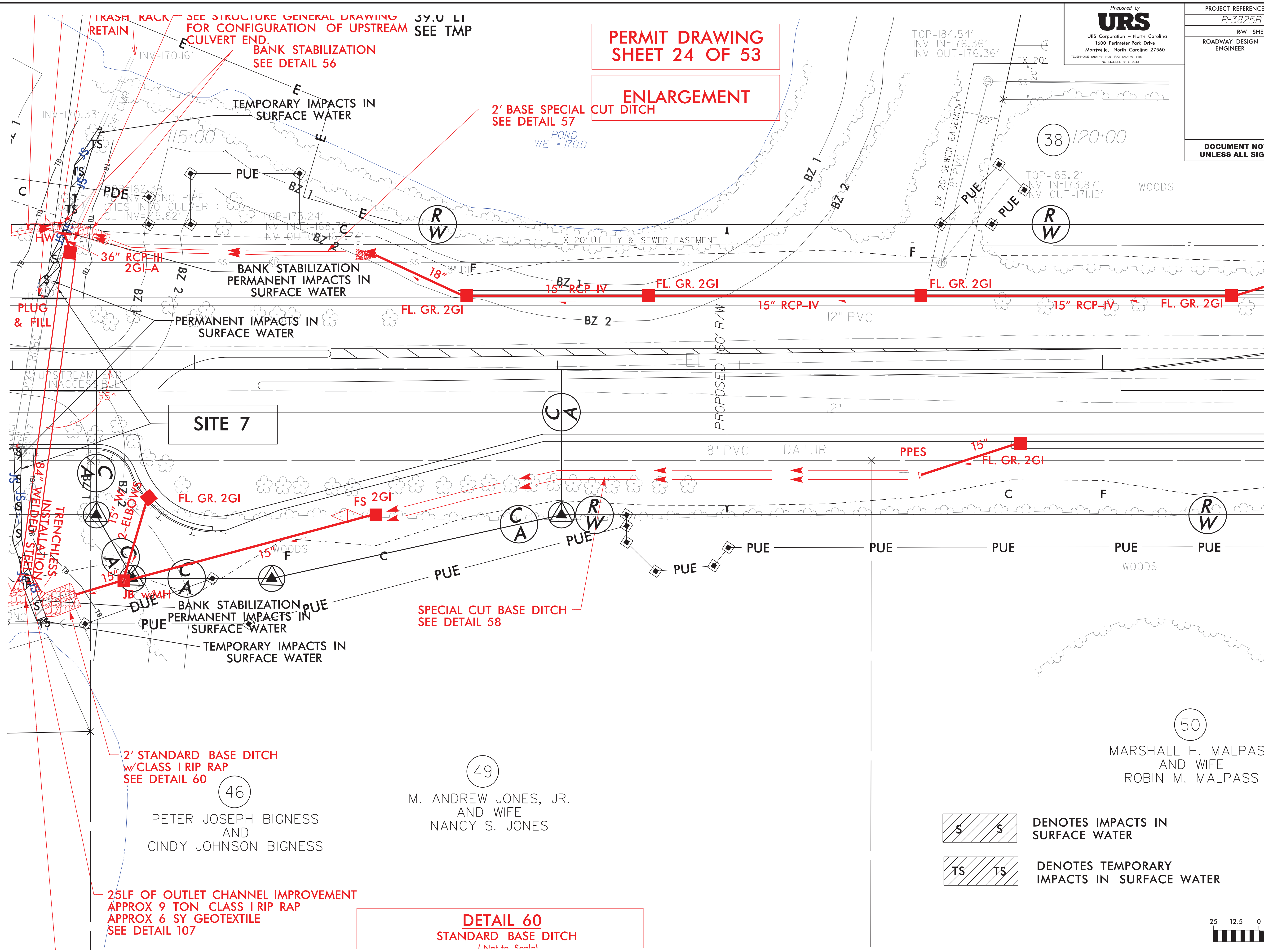
PERMIT DRAWING
SHEET 24 OF 53

ENLARGEMENT

Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	12
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



TRASH RACK
RETAIN
SEE STRUCTURE GENERAL DRAWING FOR CONFIGURATION OF UPSTREAM CULVERT END.
39.0' LT SEE TMP
BANK STABILIZATION SEE DETAIL 56
INV=170.16'
INV=170.33'
TEMPORARY IMPACTS IN SURFACE WATER
2' BASE SPECIAL CUT DITCH SEE DETAIL 57
POND WE = 170.0
115+00
PUE
PDE
TOP=173.24'
36" RCP-III
2GI-A
HW
BANK STABILIZATION PERMANENT IMPACTS IN SURFACE WATER
18"
EX 20' UTILITY & SEWER EASEMENT
FL. GR. 2GI
15" RCP-IV
PLUG & FILL
PERMANENT IMPACTS IN SURFACE WATER
BZ 1
BZ 2
12" PVC
UPSTREAM END INACCESSIBLE
PROPOSED 160' R/W
SITE 7
8" PVC
DATUR
PPES
15"
FL. GR. 2GI
FS 2GI
84" WELDED STEEL
TRENCHLESS INSTALLATION
15" W/ 2-ELBOWS
WOODS
JB w/MH
DUE
PUE
BANK STABILIZATION PERMANENT IMPACTS IN SURFACE WATER
TEMPORARY IMPACTS IN SURFACE WATER
SPECIAL CUT BASE DITCH SEE DETAIL 58
TOP=184.54'
INV IN=176.36'
INV OUT=176.36'
EX 20'
EX 20' SEWER EASEMENT
8" PVC
38
120+00
TOP=185.12'
INV IN=173.87'
INV OUT=171.12'
WOODS
2' STANDARD BASE DITCH w/CLASS I RIP RAP SEE DETAIL 60
46
PETER JOSEPH BIGNESS AND CINDY JOHNSON BIGNESS
49
M. ANDREW JONES, JR. AND WIFE NANCY S. JONES
50
MARSHALL H. MALPASS AND WIFE ROBIN M. MALPASS
25LF OF OUTLET CHANNEL IMPROVEMENT
APPROX 9 TON CLASS I RIP RAP
APPROX 6 SY GEOTEXTILE
SEE DETAIL 107
DETAIL 60
STANDARD BASE DITCH
(Not to Scale)
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
25 12.5 0 25 50

REVISIONS

8/17/99

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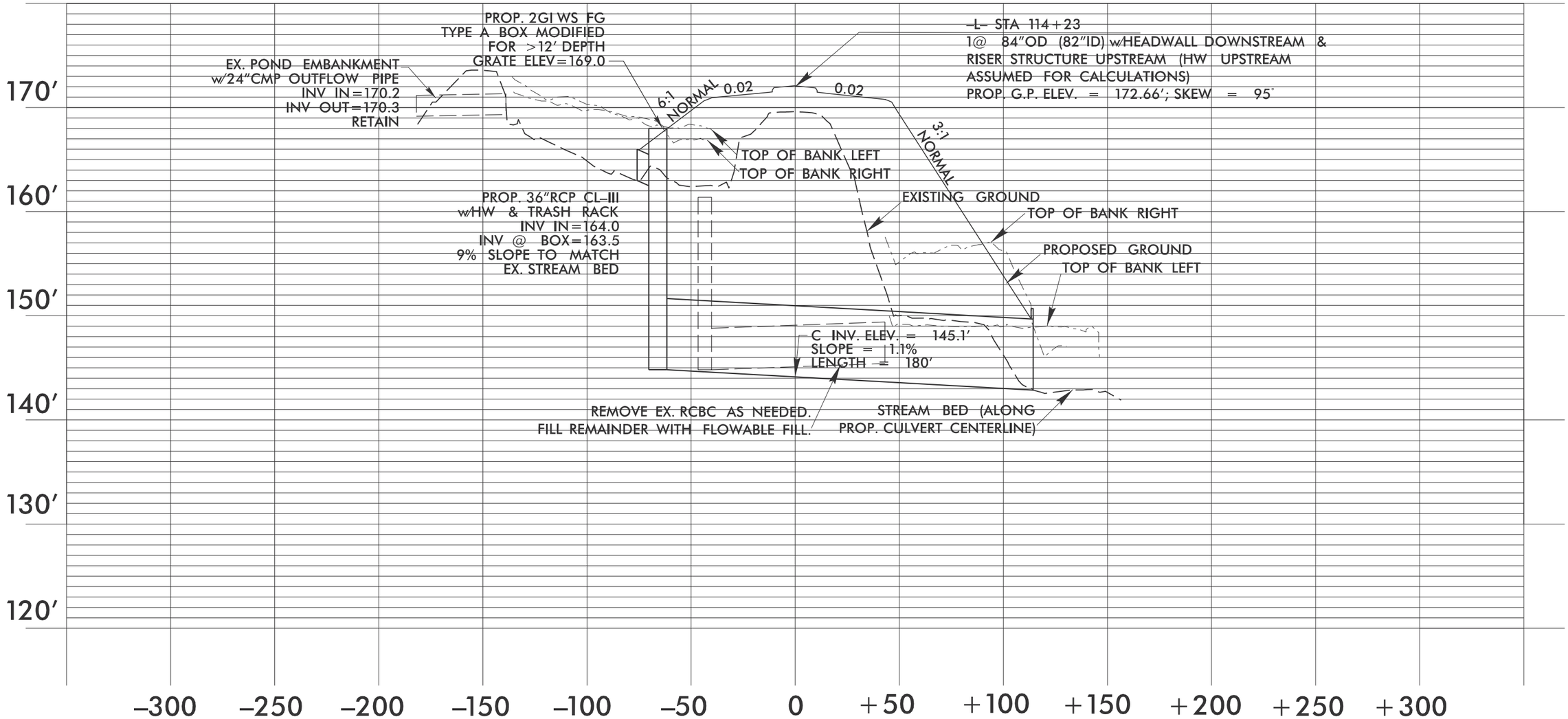
SITE 7 – PROFILE VIEW ALONG STRUCTURE



PROFILE

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: 34552.1.FR3 (R-3825B)
NC 42 FROM SR 1902
TO SR 1003 (R-3825B)
SITE 7

PERMIT DRAWING
SHEET 25 OF 53

8/17/99

REVISIONS

PERMIT DRAWING SHEET 26 OF 53

NAD 83/2011

Prepared by
URS
URS Corporation – North Carolina
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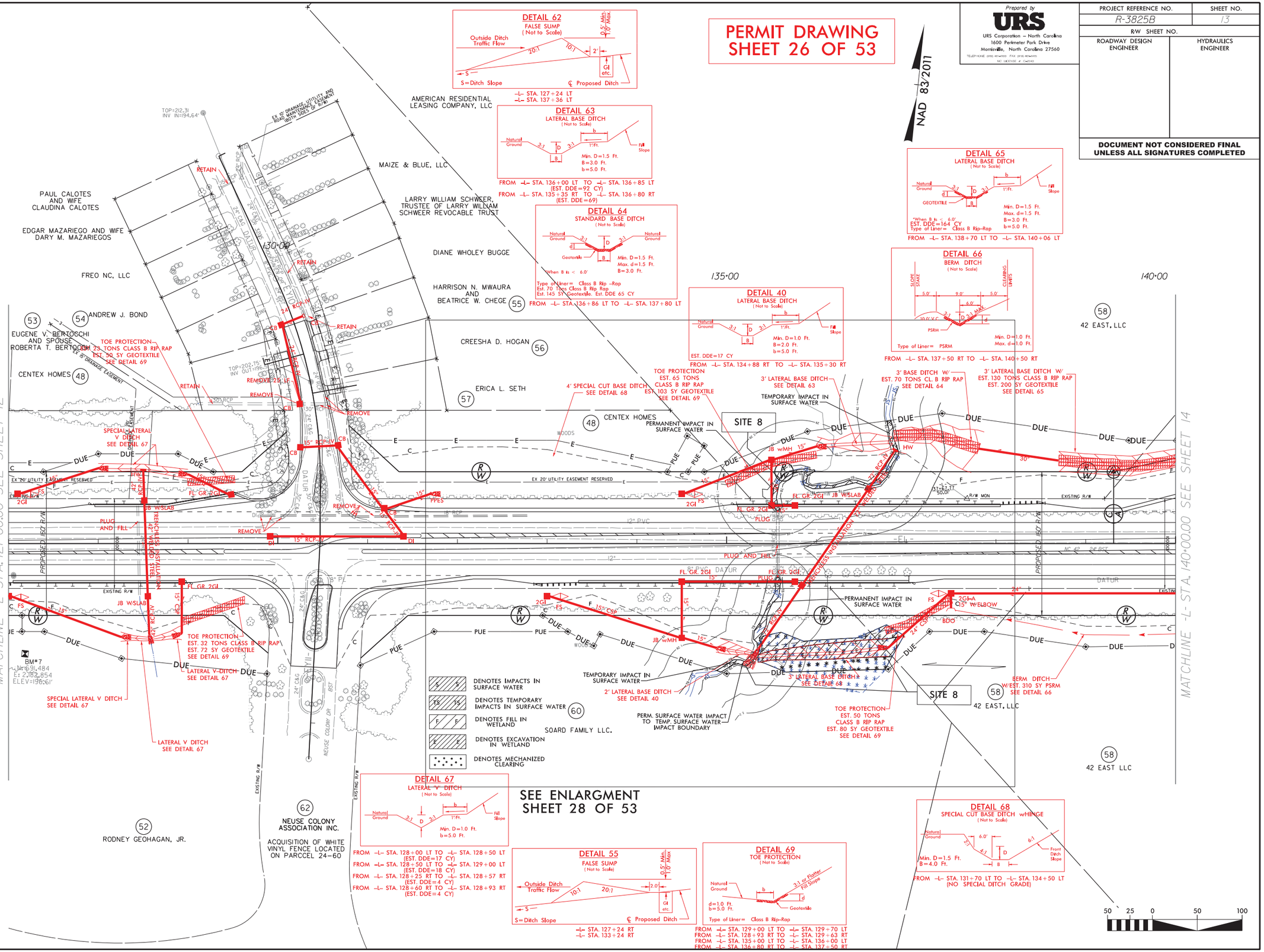
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-0343

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	13
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED



1/4/2018
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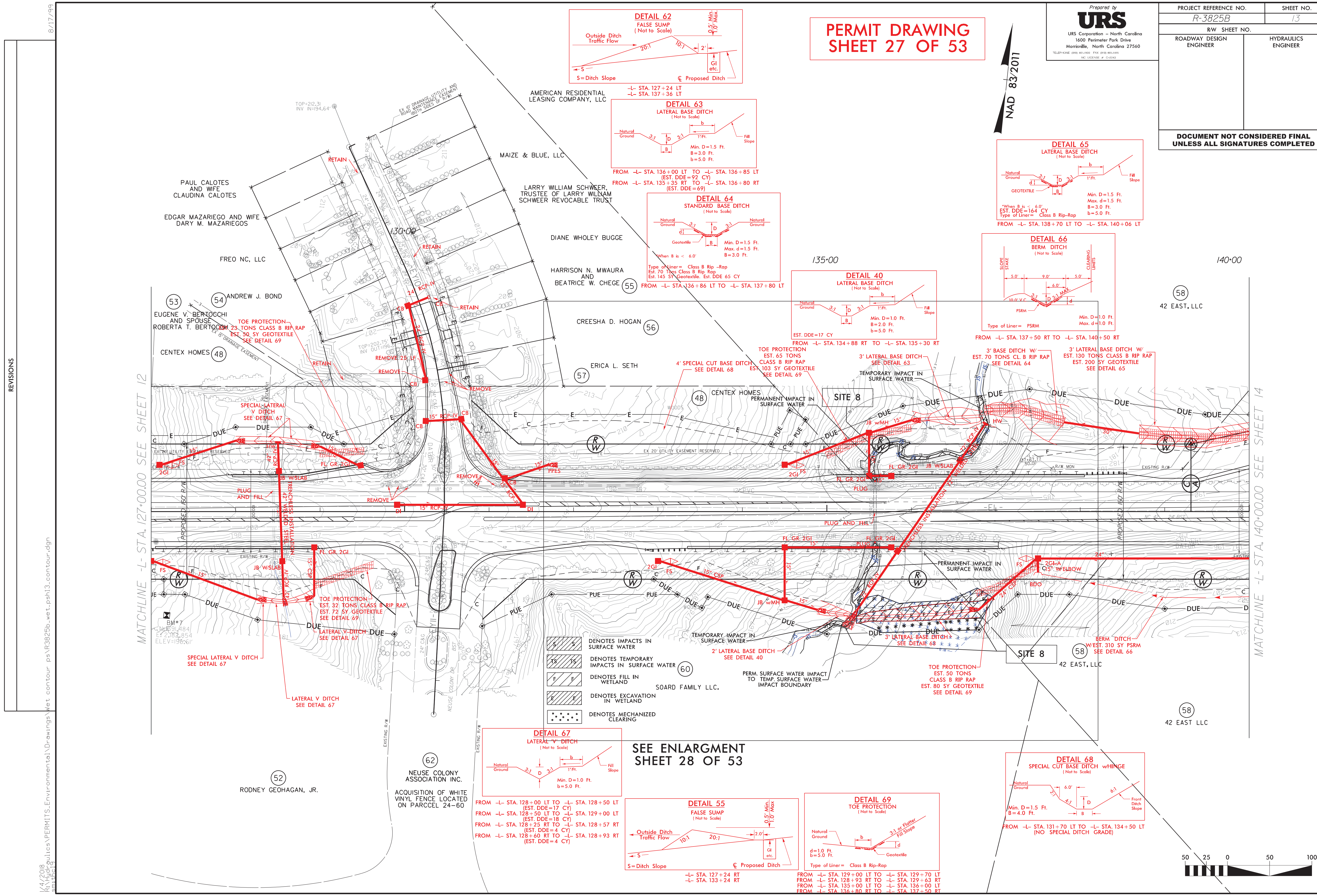
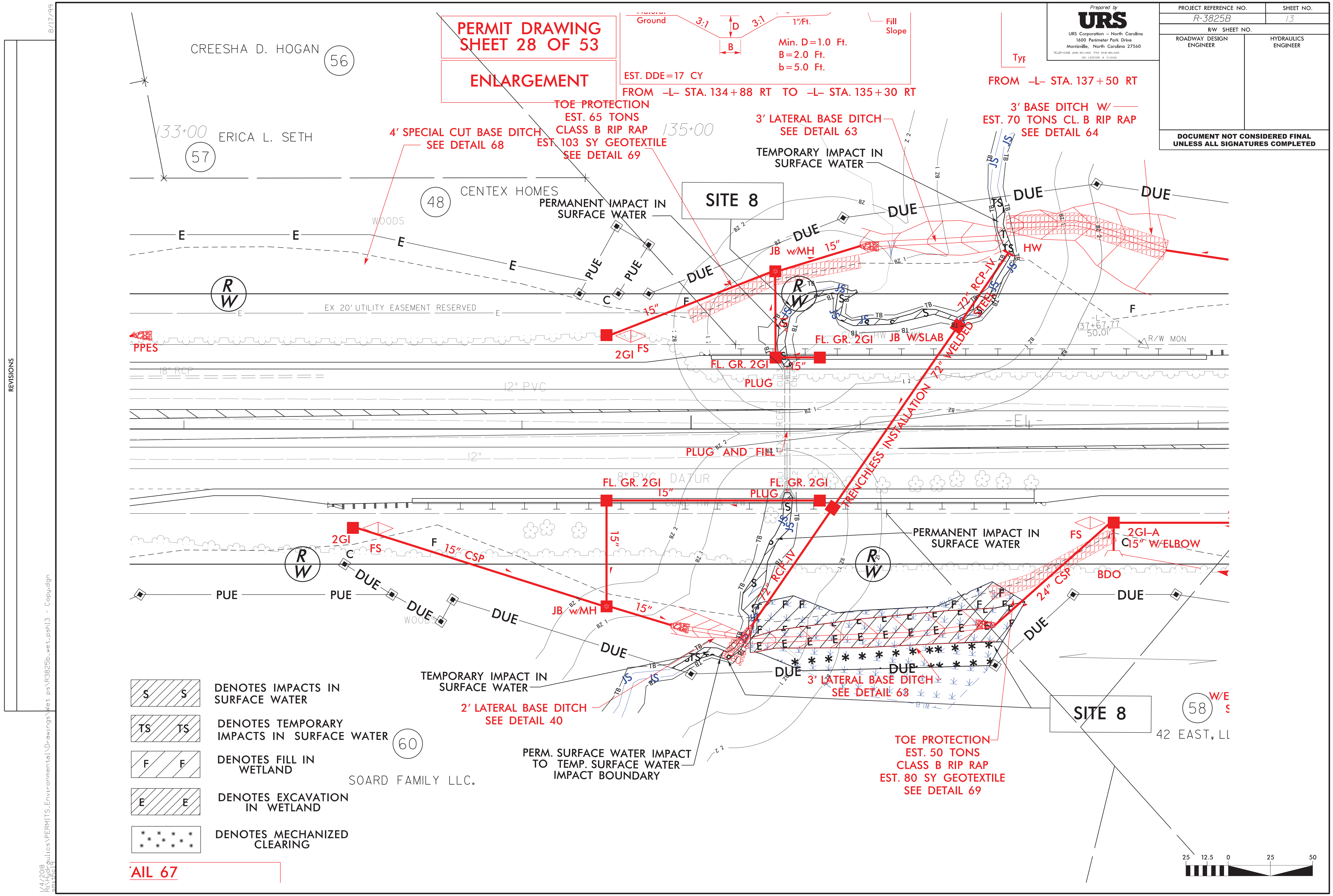
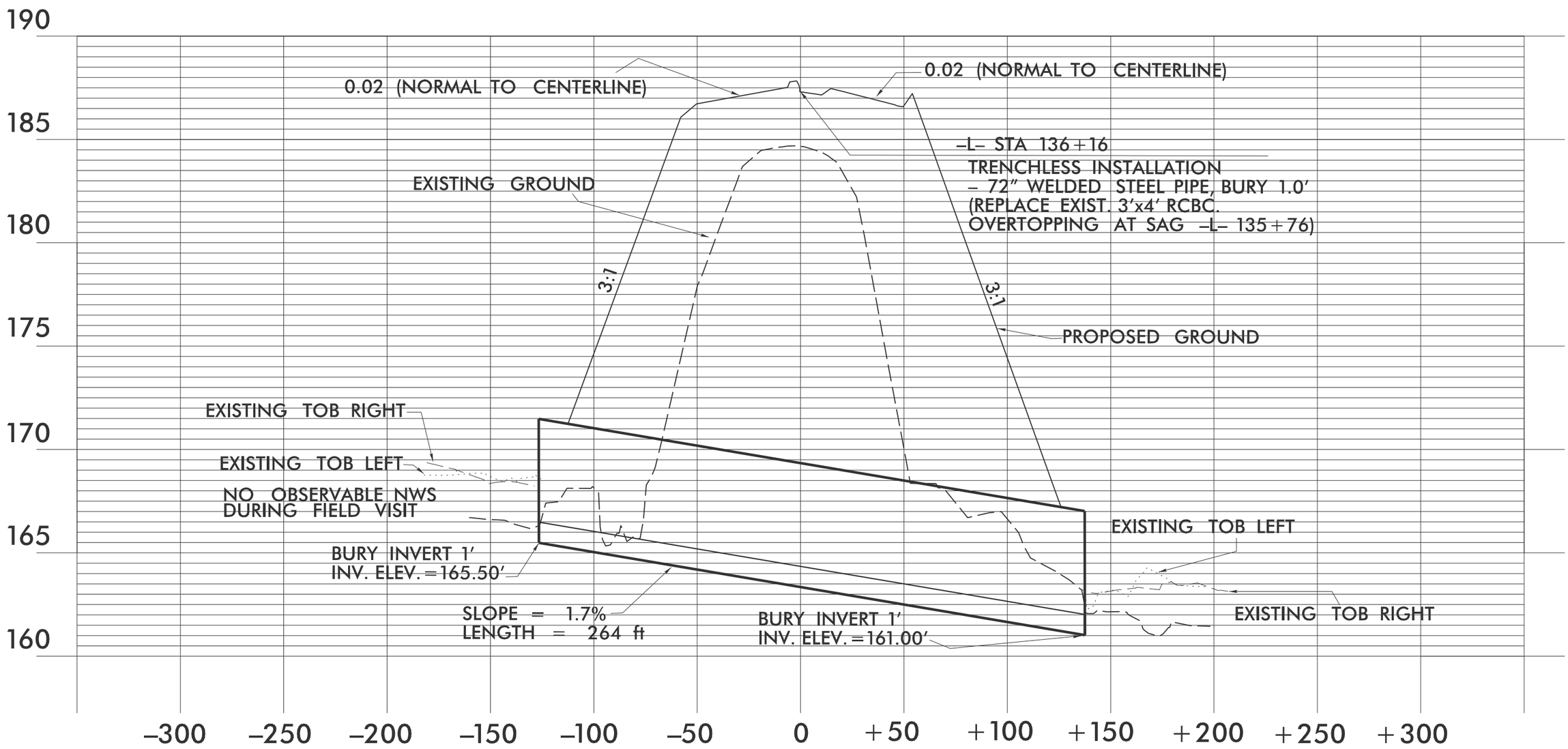
smithcg


PERMIT DRAWING
SHEET 27 OF 53
PROJECT REFERENCE NO. R-3825B
SHEET NO. 13
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
NAD 83/2011
DETAIL 62
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
-L- STA. 127+24 LT
-L- STA. 137+36 LT
DETAIL 63
LATERAL BASE DITCH
(Not to Scale)
Min. D=1.5 Ft.
B=3.0 Ft.
b=5.0 Ft.
FROM -L- STA. 136+00 LT TO -L- STA. 136+85 LT
(EST. DDE=92 CY)
FROM -L- STA. 135+35 RT TO -L- STA. 136+80 RT
(EST. DDE=69)
DETAIL 64
STANDARD BASE DITCH
(Not to Scale)
Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=3.0 Ft.
Type of Liner= Class B Rip-Rap
Est. 70 Tons Class B Rip Rap
Est. 145 SY Geotextile. Est. DDE 65 CY
FROM -L- STA. 136+86 LT TO -L- STA. 137+80 LT
DETAIL 65
LATERAL BASE DITCH
(Not to Scale)
EST. DDE=164 CY
Type of Liner= Class B Rip-Rap
Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=3.0 Ft.
b=5.0 Ft.
FROM -L- STA. 138+70 LT TO -L- STA. 140+06 LT
DETAIL 66
BERM DITCH
(Not to Scale)
Type of Liner= PSRM
Min. D=1.0 Ft.
Max. d=1.0 Ft.
FROM -L- STA. 137+50 RT TO -L- STA. 140+50 RT
DETAIL 40
LATERAL BASE DITCH
(Not to Scale)
Min. D=1.0 Ft.
B=2.0 Ft.
b=5.0 Ft.
EST. DDE=17 CY
FROM -L- STA. 134+88 RT TO -L- STA. 135+30 RT
AMERICAN RESIDENTIAL LEASING COMPANY, LLC
MAIZE & BLUE, LLC
PAUL CALOTES AND WIFE CLAUDINA CALOTES
LARRY WILLIAM SCHWEER, TRUSTEE OF LARRY WILLIAM SCHWEER REVOCABLE TRUST
EDGAR MAZARIEGO AND WIFE DARY M. MAZARIEGOS
DIANE WHOLEY BUGGE
FREO NC, LLC
HARRISON N. MWAURA AND BEATRICE W. CHEGE 55
53 54 ANDREW J. BOND
EUGENE V. BERTOCCHI AND SPOUSE ROBERTA T. BERTOCCHI
CREESHA D. HOGAN 56
CENTEX HOMES 48
ERICA L. SETH 57
CENTEX HOMES 48
42 EAST, LLC 58
TOE PROTECTION EST. 23 TONS CLASS B RIP RAP EST. 50 SY GEOTEXTILE SEE DETAIL 69
SPECIAL LATERAL V DITCH SEE DETAIL 67
TOE PROTECTION EST. 65 TONS CLASS B RIP RAP EST. 103 SY GEOTEXTILE SEE DETAIL 69
4' SPECIAL CUT BASE DITCH SEE DETAIL 68
3' LATERAL BASE DITCH SEE DETAIL 63
TEMPORARY IMPACT IN SURFACE WATER
PERMANENT IMPACT IN SURFACE WATER
SITE 8
3' BASE DITCH W/ EST. 70 TONS CL. B RIP RAP SEE DETAIL 64
3' LATERAL BASE DITCH W/ EST. 130 TONS CLASS B RIP RAP EST. 200 SY GEOTEXTILE SEE DETAIL 65
130+00
135+00
140+00
MATCHLINE -L- STA. 127+00.00 SEE SHEET 12
MATCHLINE -L- STA. 140+00.00 SEE SHEET 14
PLUG AND FILL
TRENCHLESS INSTALLATION 42" WELDED STEEL
TRENCHLESS INSTALLATION
PLUG AND FILL
TOE PROTECTION EST. 32 TONS CLASS B RIP RAP EST. 72 SY GEOTEXTILE SEE DETAIL 69
LATERAL V DITCH SEE DETAIL 67
SPECIAL LATERAL V DITCH SEE DETAIL 67
LATERAL V DITCH SEE DETAIL 67
TEMPORARY IMPACT IN SURFACE WATER
2' LATERAL BASE DITCH SEE DETAIL 40
3' LATERAL BASE DITCH SEE DETAIL 68
PERM. SURFACE WATER IMPACT TO TEMP. SURFACE WATER IMPACT BOUNDARY
TOE PROTECTION EST. 50 TONS CLASS B RIP RAP EST. 80 SY GEOTEXTILE SEE DETAIL 69
SITE 8
42 EAST, LLC 58
BERM DITCH W/EST. 310 SY PSRM SEE DETAIL 66
PERMANENT IMPACT IN SURFACE WATER
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
60 SOARD FAMILY LLC.
SEE ENLARGMENT SHEET 28 OF 53
52 RODNEY GEOHAGAN, JR.
62 NEUSE COLONY ASSOCIATION INC.
ACQUISITION OF WHITE VINYL FENCE LOCATED ON PARCCEL 24-60
42 EAST LLC 58
DETAIL 67
LATERAL 'V' DITCH
(Not to Scale)
Min. D=1.0 Ft.
b=5.0 Ft.
FROM -L- STA. 128+00 LT TO -L- STA. 128+50 LT
(EST. DDE=17 CY)
FROM -L- STA. 128+50 LT TO -L- STA. 129+00 LT
(EST. DDE=18 CY)
FROM -L- STA. 128+25 RT TO -L- STA. 128+57 RT
(EST. DDE=4 CY)
FROM -L- STA. 128+60 RT TO -L- STA. 128+93 RT
(EST. DDE=4 CY)
DETAIL 55
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
℄ Proposed Ditch
-L- STA. 127+24 RT
-L- STA. 133+24 RT
DETAIL 69
TOE PROTECTION
(Not to Scale)
d=1.0 Ft.
b=5.0 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 129+00 LT TO -L- STA. 129+70 LT
FROM -L- STA. 128+93 RT TO -L- STA. 129+63 RT
FROM -L- STA. 135+00 LT TO -L- STA. 136+00 LT
FROM -L- STA. 136+80 RT TO -L- STA. 137+50 RT
DETAIL 68
SPECIAL CUT BASE DITCH w/HINGE
(Not to Scale)
Min. D=1.5 Ft.
B=4.0 Ft.
FROM -L- STA. 131+70 LT TO -L- STA. 134+50 LT
(NO SPECIAL DITCH GRADE)
REVISIONS
8/17/99


PERMIT DRAWING
SHEET 28 OF 53
ENLARGEMENT
Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
PROJECT REFERENCE NO.
R-3825B
SHEET NO.
13
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Natural Ground
3:1
D
3:1
B
1"/Ft.
Fill Slope
Min. D=1.0 Ft.
B=2.0 Ft.
b=5.0 Ft.
EST. DDE=17 CY
FROM -L- STA. 134+88 RT TO -L- STA. 135+30 RT
FROM -L- STA. 137+50 RT
CREESHA D. HOGAN
56
ERICA L. SETH
57
CENTEX HOMES
48
133+00
135+00
4' SPECIAL CUT BASE DITCH
SEE DETAIL 68
TOE PROTECTION
EST. 65 TONS
CLASS B RIP RAP
EST 103 SY GEOTEXTILE
SEE DETAIL 69
3' LATERAL BASE DITCH
SEE DETAIL 63
3' BASE DITCH W/
EST. 70 TONS CL. B RIP RAP
SEE DETAIL 64
TEMPORARY IMPACT IN
SURFACE WATER
PERMANENT IMPACT IN
SURFACE WATER
SITE 8
JB w/MH
HW
FL. GR. 2GI
JB W/SLAB
72" RCP-IV
72" WELDED STEEL
TRENCHLESS INSTALLATION
PLUG
PLUG AND FILL
EX 20' UTILITY EASEMENT RESERVED
PPES
2GI
FS
15" CSP
2GI-A
15" W/ELBOW
24" CSP
BDO
-L- 137+67.77 50.01'
R/W MON
PERMANENT IMPACT IN
SURFACE WATER
TEMPORARY IMPACT IN
SURFACE WATER
2' LATERAL BASE DITCH
SEE DETAIL 40
PERM. SURFACE WATER IMPACT
TO TEMP. SURFACE WATER
IMPACT BOUNDARY
3' LATERAL BASE DITCH
SEE DETAIL 63
TOE PROTECTION
EST. 50 TONS
CLASS B RIP RAP
EST. 80 SY GEOTEXTILE
SEE DETAIL 69
SITE 8
58
42 EAST, LL
60
SOARD FAMILY LLC.
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
AIL 67
REVISIONS
8/17/99
25 12.5 0 25 50

SITE 8 – PROFILE VIEW ALONG STRUCTURE



PROFILE

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: 34552.1.FR3 (R-3825B)
NC 42 FROM SR 1902
TO SR 1003 (R-3825B)
SITE 8

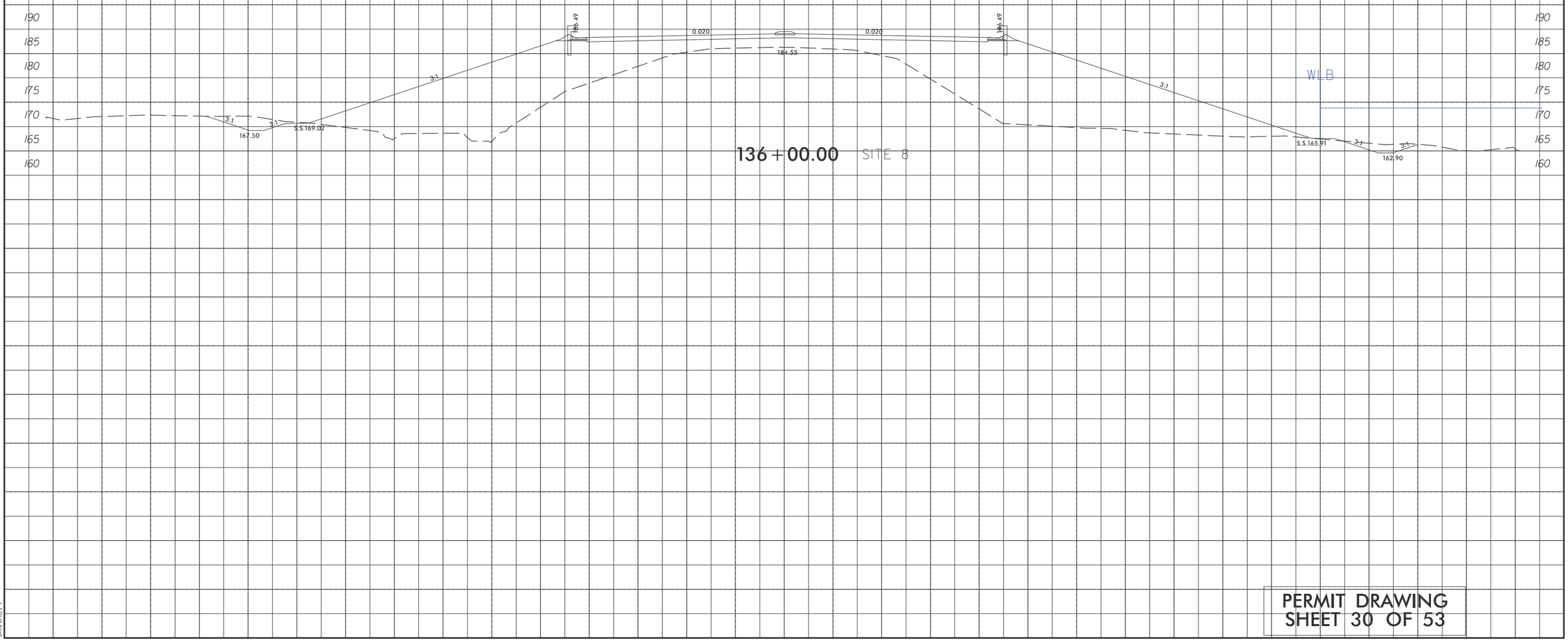
PERMIT DRAWING
SHEET 29 OF 53

8/23/99

0

PROJ. REFERENCE NO.	SHEET NO.

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



136+00.00 SITE 8

PERMIT DRAWING
SHEET 30 OF 53

1/4/2018
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smithcj

8/17/99

REVISIONS

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NC LICENSE # C-0340

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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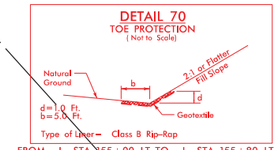
NAD 83/2011

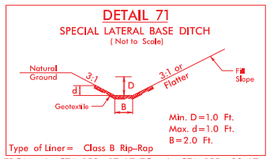
DETAIL 70
TOE PROTECTION
(Not to Scale)



Type of Liner= Class B Rip-Rap

FROM –L– STA. 155+00 LT TO –L– STA. 155+80 LT
FROM –L– STA. 156+60 RT TO –L– STA. 157+24 RT
FROM –L– STA. 153+90 LT TO –L– STA. 158+18 LT

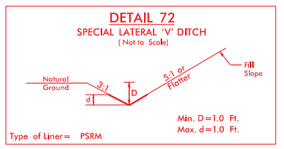
DETAIL 71
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

FROM –L– STA. 158+17 LT TO –L– STA. 159+00 LT

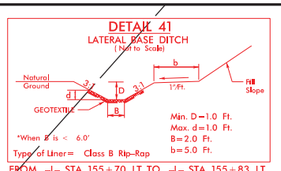
DETAIL 72
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Type of Liner= PSRM

FROM –L– STA. 153+50 RT TO –L– STA. 154+15 RT

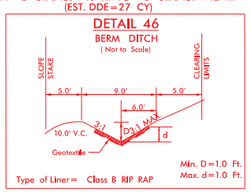
DETAIL 41
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip-Rap

FROM –L– STA. 155+70 LT TO –L– STA. 155+83 LT (EST. DDE=4 CY)
FROM –L– STA. 155+88 LT TO –L– STA. 156+00 LT (EST. DDE=4 CY)
FROM –L– STA. 157+10 RT TO –L– STA. 157+42 RT (EST. DDE=27 CY)

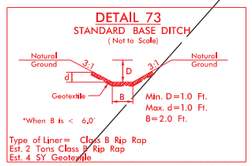
DETAIL 46
BERM DITCH
(Not to Scale)



Type of Liner= Class B RIP RAP
Min. D=1.0 Ft.
Max. d=1.0 Ft.

FROM –L– STA. 159+00 LT TO –L– STA. 161+80 LT

DETAIL 73
STANDARD BASE DITCH
(Not to Scale)



Type of Liner= Class B Rip Rap
Est. 2 Tons Class B Rip Rap
Est. 4 SY Geotextile

FROM –L– STA. 157+55 RT TO –L– STA. 157+58 RT

PERMIT DRAWING SHEET 31 OF 53

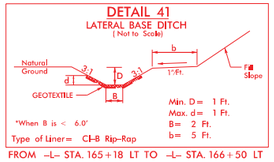
SEE ENLARGMENT SHEET 33 OF 53

155+00 160+00 165+00

(58) 42 EAST, LLC

(67) GERRY LYNCH

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)



Type of Liner= CI-B Rip-Rap

FROM –L– STA. 165+18 LT TO –L– STA. 166+50 LT

2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 67 TONS CLASS B RIP RAP
EST. 148 SY GEOTEXTILE
SEE DETAIL 41

2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 5 TONS CLASS B RIP RAP (EA)
EST. 11 SY GEOTEXTILE (EA)
SEE DETAIL 41

TOE PROTECTION
CLASS B RIP RAP
EST. 45 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE
SEE DETAIL 70

PERM. SURFACE WATER IMPACT TO TEMP. SURFACE WATER IMPACT BOUNDARY

TEMPORARY IMPACTS IN SURFACE WATER

CLASS B RIP RAP
EST. 108 TONS CLASS B RIP RAP
EST. 240 SY GEOTEXTILE
SEE DETAIL 70

2' SPECIAL LATERAL BASE DITCH W/CLASS B RIP RAP
EST. 36 TONS CLASS B RIP RAP
EST. 80 SY GEOTEXTILE
SEE DETAIL 71

TIE BERM DITCH TO SPECIAL LATERAL DITCH

BERM V-DITCH W/CLASS B RIP RAP
EST. 104 TONS CLASS B RIP RAP
EST. 230 SY GEOTEXTILE
SEE DETAIL 46

BERM V-DITCH
W/EST. 175 SY PSRM
SEE DETAL 74

SITE 9

REMOVE HW

PLUG

JB W/SLAB

PERMANENT IMPACTS IN SURFACE WATER

PLUG AND FILL

REMOVE

SPECIAL LATERAL V-DITCH W/PSRM
SEE DETAIL 72

TOE PROTECTION
CLASS B RIP RAP
EST. 265 SY GETOTEXTILE
SEE DETAIL 70

(68) CHRISTIE TRIPP MINGA

(66) 42 EAST, LLC

(69) 42 EAST, LLC

TEMPORARY IMPACTS IN SURFACE WATER
2' BASE DITCH W/ CLASS B RIP RAP
EST. 9 TONS CLASS B RIP RAP
EST. 21 SY GEOTEXTILE
SEE DETAIL 73

2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 15 TONS CLASS B RIP RAP
EST. 35 SY GEOTEXTILE
SEE DETAIL 41

DENOTES IMPACTS IN SURFACE WATER — RETAIN

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

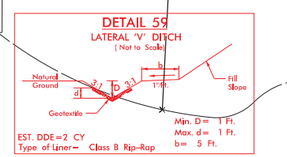
(70) JOYCE I. ARMSTRONG

(71) GREG R. DUNSTON AND WIFE, TAKICEY M. DUNSTON

(72) GEORGE P. MEREWETHER AND WIFE, MARIAN L. MEREWETHER

LATERAL V-DITCH W/CLASS B RIP RAP
EST. 19 TONS CLASS B RIP RAP
EST. 42 SY GEOTEXTILE
SEE DETAIL 59

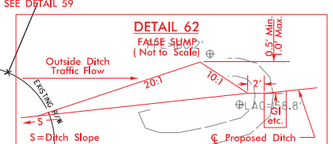
DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)



EST. DDE=2 CY
Type of Liner= Class B Rip-Rap

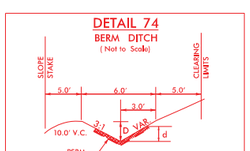
FROM –L– STA. 165+25 RT TO –L– STA. 165+93 RT

DETAIL 62
FALSE SUMP
(Not to Scale)



–L– STA. 164+64 LT

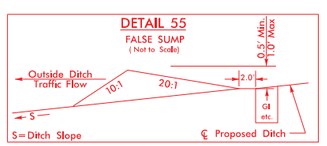
DETAIL 74
BERM DITCH
(Not to Scale)



Type of Liner= PSRM
Min. D= 1 Ft.
Max. d= 1 Ft.

FROM –L– STA. 161+80 LT TO –L– STA. 164+00 LT

DETAIL 55
FALSE SUMP
(Not to Scale)



–L– STA. 164+64 RT

EX. 20' DRAINAGE EASEMENT PB 6/PG 49

MATCHLINE -L- STA. 153+00.00 SEE SHEET 14

MATCHLINE -L- STA. 166+00.00 SEE SHEET 16

50 25 0 50 100

1/4/2018
R:\Hydraulics\PERMITS_Environmental\Drawings\Wet ps\R3825b_wet_psh15.dgn
smithcg

8/17/99
REVISIONS

Prepared by
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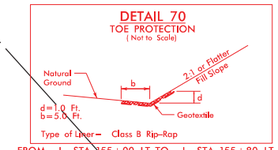
NC LICENSE # C-0293

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	15
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NAD 83/2011

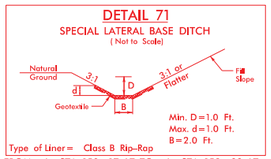
DETAIL 70
TOE PROTECTION
(Not to Scale)



d = 1.0 Ft.
b = 5.0 Ft.
Type of Liner = Class B Rip-Rap

FROM –L– STA. 155+00 LT TO –L– STA. 155+80 LT
FROM –L– STA. 156+60 RT TO –L– STA. 157+24 RT
FROM –L– STA. 153+90 LT TO –L– STA. 158+18 LT

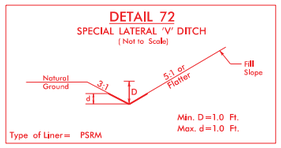
DETAIL 71
SPECIAL LATERAL BASE DITCH
(Not to Scale)



Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 2.0 Ft.
Type of Liner = Class B Rip-Rap

FROM –L– STA. 158+17 LT TO –L– STA. 159+00 LT

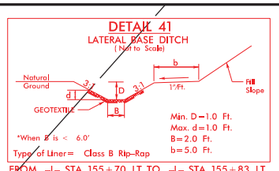
DETAIL 72
SPECIAL LATERAL 'V' DITCH
(Not to Scale)



Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
Type of Liner = PSRM

FROM –L– STA. 153+50 RT TO –L– STA. 154+15 RT

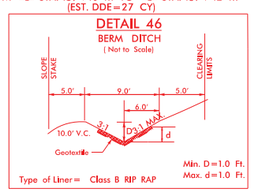
DETAIL 41
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 2.0 Ft.
b = 5.0 Ft.
Type of Liner = Class B Rip-Rap

FROM –L– STA. 155+70 LT TO –L– STA. 155+83 LT (EST. DDE = 4 CY)
FROM –L– STA. 155+88 LT TO –L– STA. 156+00 LT (EST. DDE = 4 CY)
FROM –L– STA. 157+10 RT TO –L– STA. 157+42 RT (EST. DDE = 27 CY)

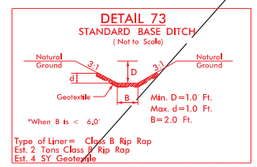
DETAIL 46
BERM DITCH
(Not to Scale)



Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
Type of Liner = Class B RIP RAP

FROM –L– STA. 159+00 LT TO –L– STA. 161+80 LT

DETAIL 73
STANDARD BASE DITCH
(Not to Scale)



Min. D = 1.0 Ft.
Max. d = 1.0 Ft.
B = 2.0 Ft.
*When B is < 6.0'
Type of Liner = Class B Rip Rap
Est. 2 Tons Class B Rip Rap
Est. 4 SY Geotextile

FROM –L– STA. 157+55 RT TO –L– STA. 157+58 RT

PERMIT DRAWING
SHEET 32 OF 53

SEE ENLARGMENT
SHEET 33 OF 53

MATCHLINE -L- STA. 153+00.00 SEE SHEET 14

MATCHLINE -L- STA. 166+00.00 SEE SHEET 16

155+00

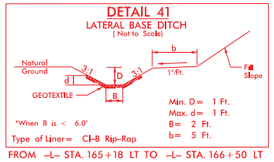
160+00

165+00

(58) 42 EAST, LLC

(67) GERRY LYNCH

DETAIL 41
LATERAL BASE DITCH
(Not to Scale)



*When B is < 6.0'
Min. D = 1 Ft.
Max. d = 1 Ft.
B = 2 Ft.
b = 5 Ft.
Type of Liner = CI-B Rip-Rap

FROM –L– STA. 165+18 LT TO –L– STA. 166+50 LT

2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 5 TONS CLASS B RIP RAP (EA)
EST. 11 SY GEOTEXTILE (EA)
SEE DETAIL 41

TEMPORARY IMPACTS IN SURFACE WATER

TOE PROTECTION
CLASS B RIP RAP
EST. 45 TONS CLASS B RIP RAP
EST. 100 SY GEOTEXTILE
SEE DETAIL 70

PERM. SURFACE WATER IMPACT TO TEMP. SURFACE WATER IMPACT BOUNDARY

CLASS B RIP RAP
EST. 108 TONS CLASS B RIP RAP
EST. 240 SY GEOTEXTILE
SEE DETAIL 70

2' SPECIAL LATERAL BASE DITCH W/CLASS B RIP RAP
EST. 36 TONS CLASS B RIP RAP
EST. 80 SY GEOTEXTILE
SEE DETAIL 71

TIE BERM DITCH TO SPECIAL LATERAL DITCH

BERM V-DITCH W/CLASS B RIP RAP
EST. 104 TONS CLASS B RIP RAP
EST. 230 SY GEOTEXTILE
SEE DETAIL 46

BERM V-DITCH
W/EST. 175 SY PSRM
SEE DETAIL 74

2' SPECIAL LATERAL BASE DITCH
W/CLASS B RIP RAP
EST. 67 TONS CLASS B RIP RAP
EST. 148 SY GEOTEXTILE
SEE DETAIL 41

SITE 9

PERMANENT IMPACTS IN SURFACE WATER

REMOVE HW

PLUG

JB W/SLAB

PLUG AND FILL

REMOVE

SPECIAL LATERAL V-DITCH W/PSRM
SEE DETAIL 72

PERM. SURFACE WATER IMPACT TO TEMP. SURFACE WATER IMPACT BOUNDARY

TOE PROTECTION
CLASS B RIP RAP
EST. 119 TONS CLASS B RIP RAP
EST. 265 SY GETOTEXTILE
SEE DETAIL 70

(68) CHRISTIE TRIPP MINGA

(66) 42 EAST, LLC

(69) 42 EAST, LLC

S S DENOTES IMPACTS IN SURFACE WATER

TS TS DENOTES TEMPORARY IMPACTS IN SURFACE WATER

TEMPORARY IMPACTS IN SURFACE WATER

2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 15 TONS CLASS B RIP RAP
EST. 35 SY GEOTEXTILE
SEE DETAIL 41

2' BASE DITCH W/ CLASS B RIP RAP
EST. 9 TONS CLASS B RIP RAP
EST. 21 SY GEOTEXTILE
SEE DETAIL 73

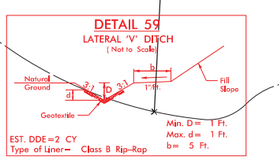
(70) JOYCE I. ARMSTRONG

(71) GREG R. DUNSTON AND WIFE, TAKICEY M. DUNSTON

(72) GEORGE P. MEREWETHER AND WIFE, MARIAN L. MEREWETHER

LATERAL V-DITCH W/CLASS B RIP RAP
EST. 19 TONS CLASS B RIP RAP
EST. 42 SY GEOTEXTILE
SEE DETAIL 59

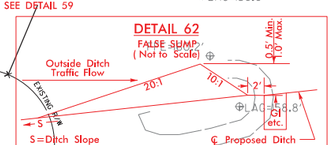
DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
b = 5 Ft.
EST. DDE = 2 CY
Type of Liner = Class B Rip-Rap

FROM –L– STA. 165+25 RT TO –L– STA. 165+93 RT

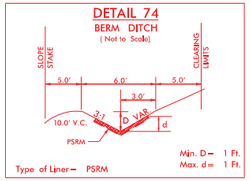
DETAIL 62
FALSE SUMP
(Not to Scale)



S = Ditch Slope
℄ Proposed Ditch

–L– STA. 164+64 LT

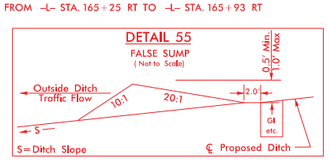
DETAIL 74
BERM DITCH
(Not to Scale)



Min. D = 1 Ft.
Max. d = 1 Ft.
Type of Liner = PSRM

FROM –L– STA. 161+80 LT TO –L– STA. 164+00 LT

DETAIL 55
FALSE SUMP
(Not to Scale)



S = Ditch Slope
℄ Proposed Ditch

–L– STA. 164+64 RT

EX. 20' DRAINAGE EASEMENT PB 6/PG 49

50 25 0 50 100

1/4/2018
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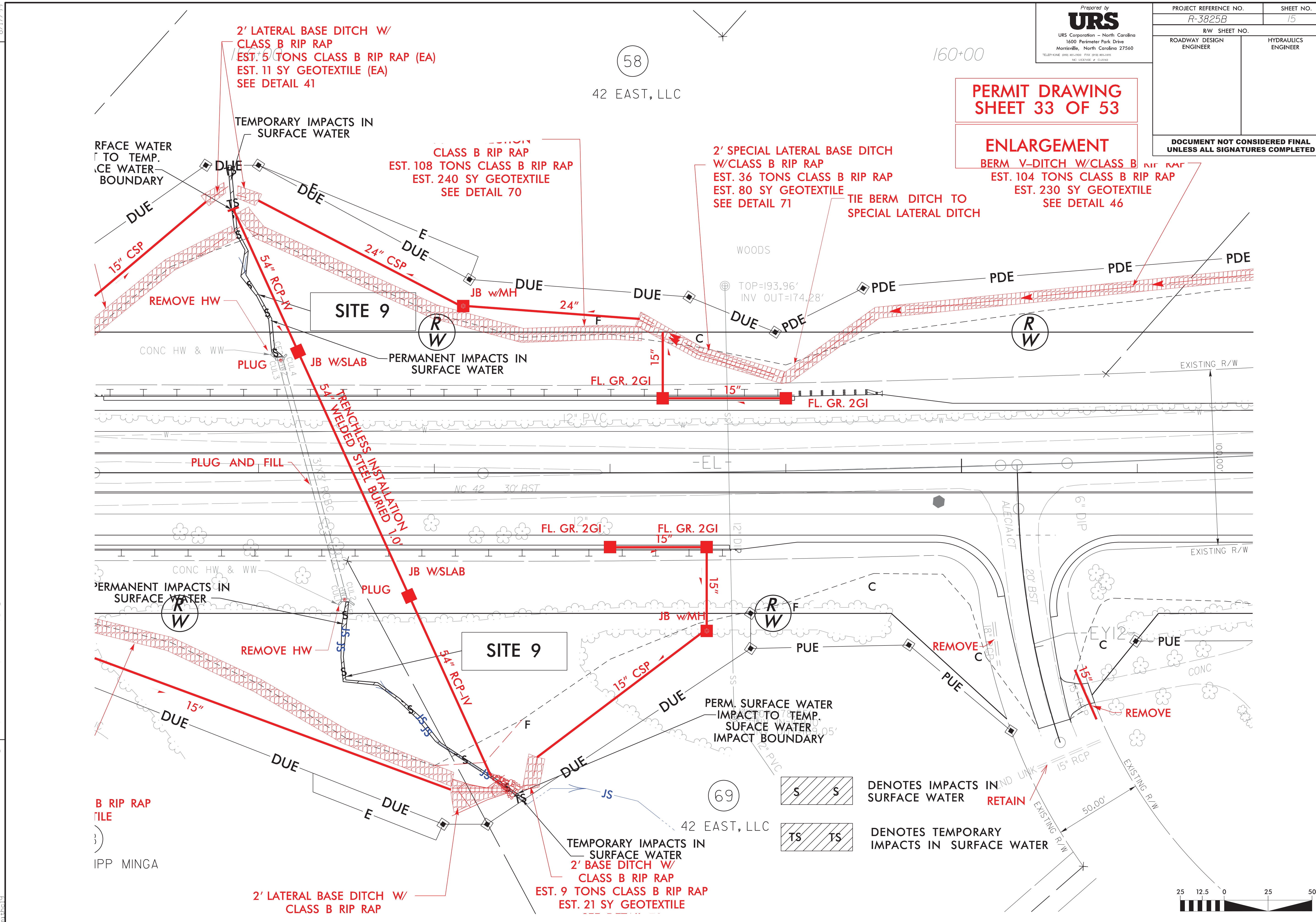
smith6g



PROJECT REFERENCE NO. R-3825B
SHEET NO. 15
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
PERMIT DRAWING
SHEET 33 OF 53
ENLARGEMENT
58
42 EAST, LLC
2' LATERAL BASE DITCH W/ CLASS B RIP RAP
EST. 5 TONS CLASS B RIP RAP (EA)
EST. 11 SY GEOTEXTILE (EA)
SEE DETAIL 41
TEMPORARY IMPACTS IN SURFACE WATER
CLASS B RIP RAP
EST. 108 TONS CLASS B RIP RAP
EST. 240 SY GEOTEXTILE
SEE DETAIL 70
2' SPECIAL LATERAL BASE DITCH W/CLASS B RIP RAP
EST. 36 TONS CLASS B RIP RAP
EST. 80 SY GEOTEXTILE
SEE DETAIL 71
TIE BERM DITCH TO SPECIAL LATERAL DITCH
BERM V-DITCH W/CLASS B RIP RAP
EST. 104 TONS CLASS B RIP RAP
EST. 230 SY GEOTEXTILE
SEE DETAIL 46
SITE 9
JB w/MH
JB W/SLAB
REMOVE HW
PLUG
PERMANENT IMPACTS IN SURFACE WATER
CONC HW & WW
FL. GR. 2GI
54" RCP-IV
54" WELDED STEEL BURIED 1.0'
TRENCHLESS INSTALLATION
PLUG AND FILL
24" CSP
15" CSP
15"
WOODS
TOP=193.96'
INV OUT=174.28'
EXISTING R/W
-EL-
NC 42 30' BST
ALECIA CT
20' BST
6" DIP
12" PVC
PERM. SURFACE WATER IMPACT TO TEMP. SUFACE WATER IMPACT BOUNDARY
REMOVE
PUE
DUE
PDE
69
42 EAST, LLC
TEMPORARY IMPACTS IN SURFACE WATER
2' BASE DITCH W/ CLASS B RIP RAP
EST. 9 TONS CLASS B RIP RAP
EST. 21 SY GEOTEXTILE
2' LATERAL BASE DITCH W/ CLASS B RIP RAP
RETAIN
15" RCP
50.00'
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
160+00
100.00'
REVISIONS
8/17/99

PERMIT DRAWING SHEET 34 OF 53

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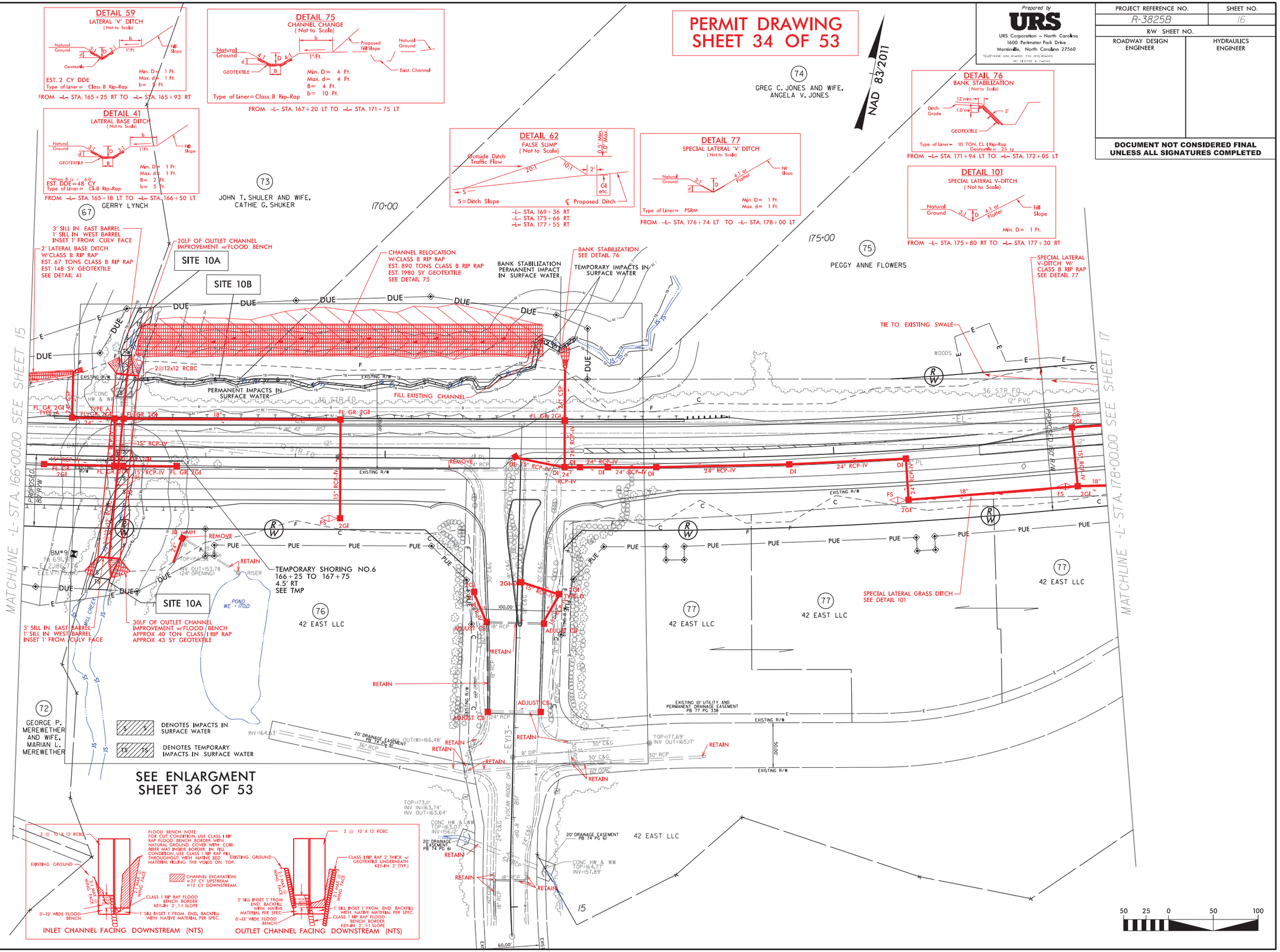
NC LICENSE # C-0340

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS 8/17/99

NAD 83/2011



1/4/2018
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smith619

PERMIT DRAWING
SHEET 35 OF 53

Prepared by
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TELEPHONE AND FACSIMILE FOR SITE REVIEWS
NC LICENSE # C-0910

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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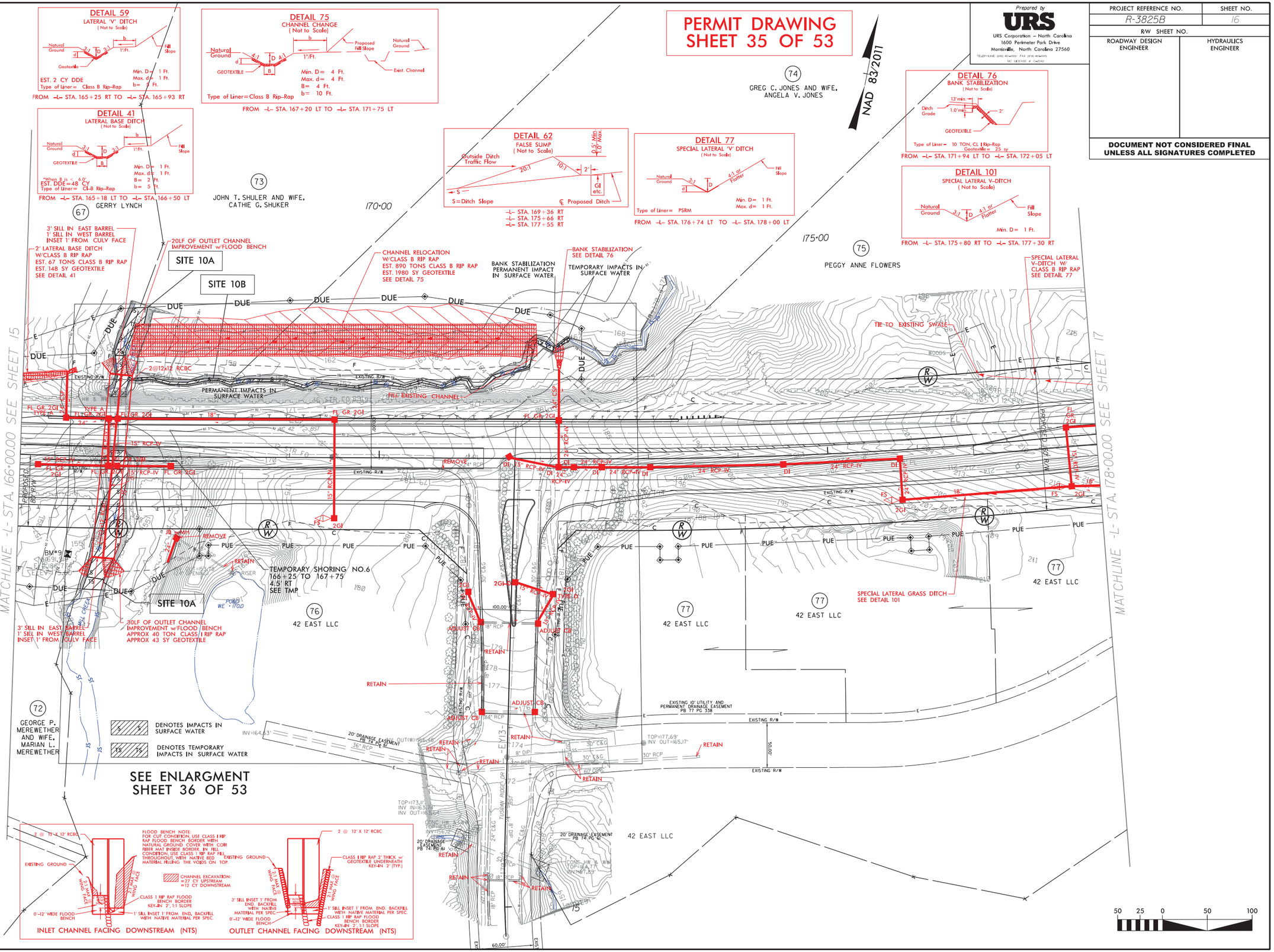
NAD 83/2011

REVISIONS 8/17/99



Prepared by URS

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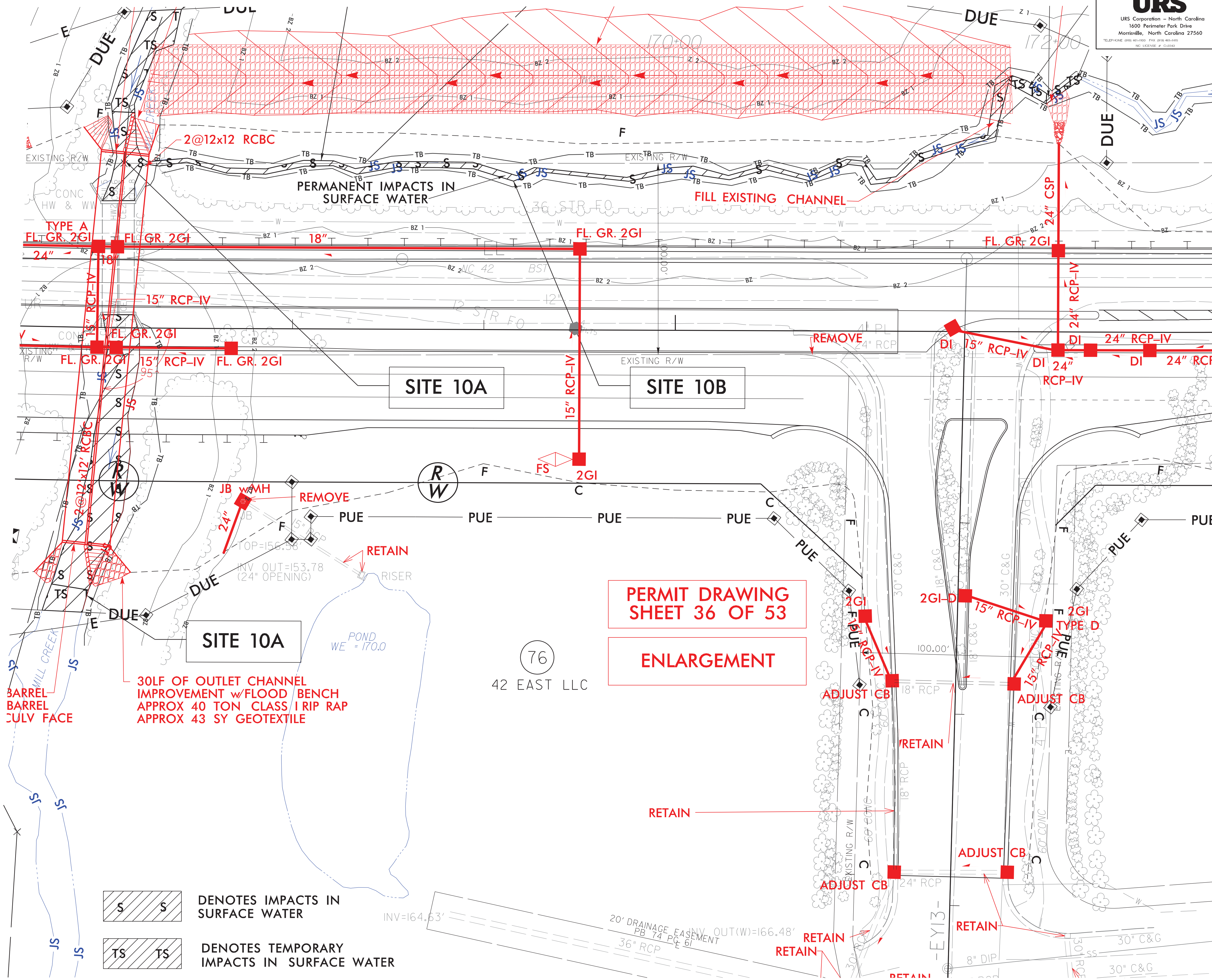
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	16
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

REVISIONS



SITE 10A
SITE 10B
SITE 10A
PERMIT DRAWING
SHEET 36 OF 53
ENLARGEMENT
2@12x12 RCBC
PERMANENT IMPACTS IN SURFACE WATER
FILL EXISTING CHANNEL
TYPE A
FL. GR. 2GI
24" CSP
15" RCP-IV
24" RCP-IV
REMOVE
RETAIN
RISER
POND
WE = 170.0
JB w/MH
2GI
DI
ADJUST CB
2GI TYPE D
30LF OF OUTLET CHANNEL
IMPROVEMENT w/FLOOD BENCH
APPROX 40 TON CLASS I RIP RAP
APPROX 43 SY GEOTEXTILE
BARREL
BARREL
CULV FACE
76
42 EAST LLC
20' DRAINAGE EASEMENT
PB 74 PG 61
DENOTES IMPACTS IN SURFACE WATER
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
25 12.5 0 25 50

8/17/99

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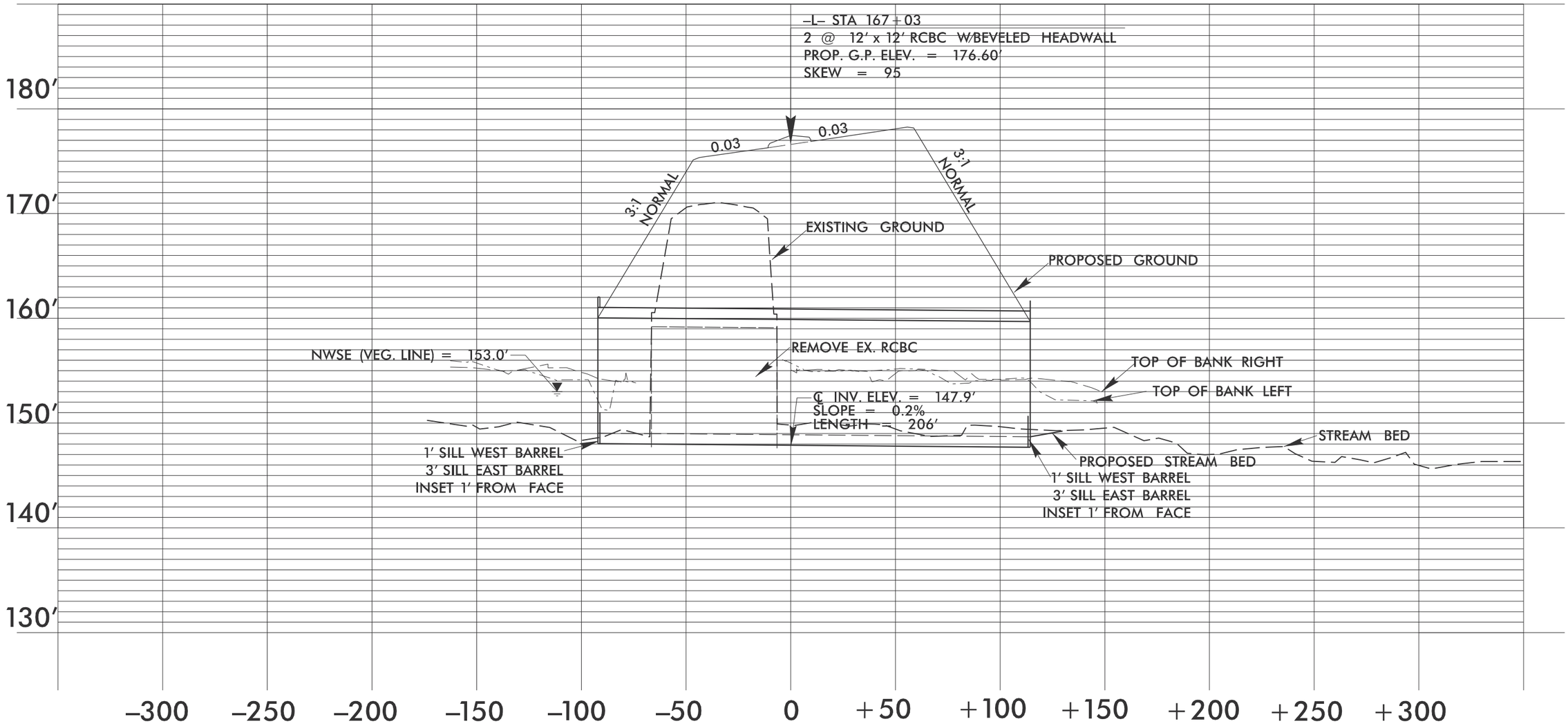
1/4/2008

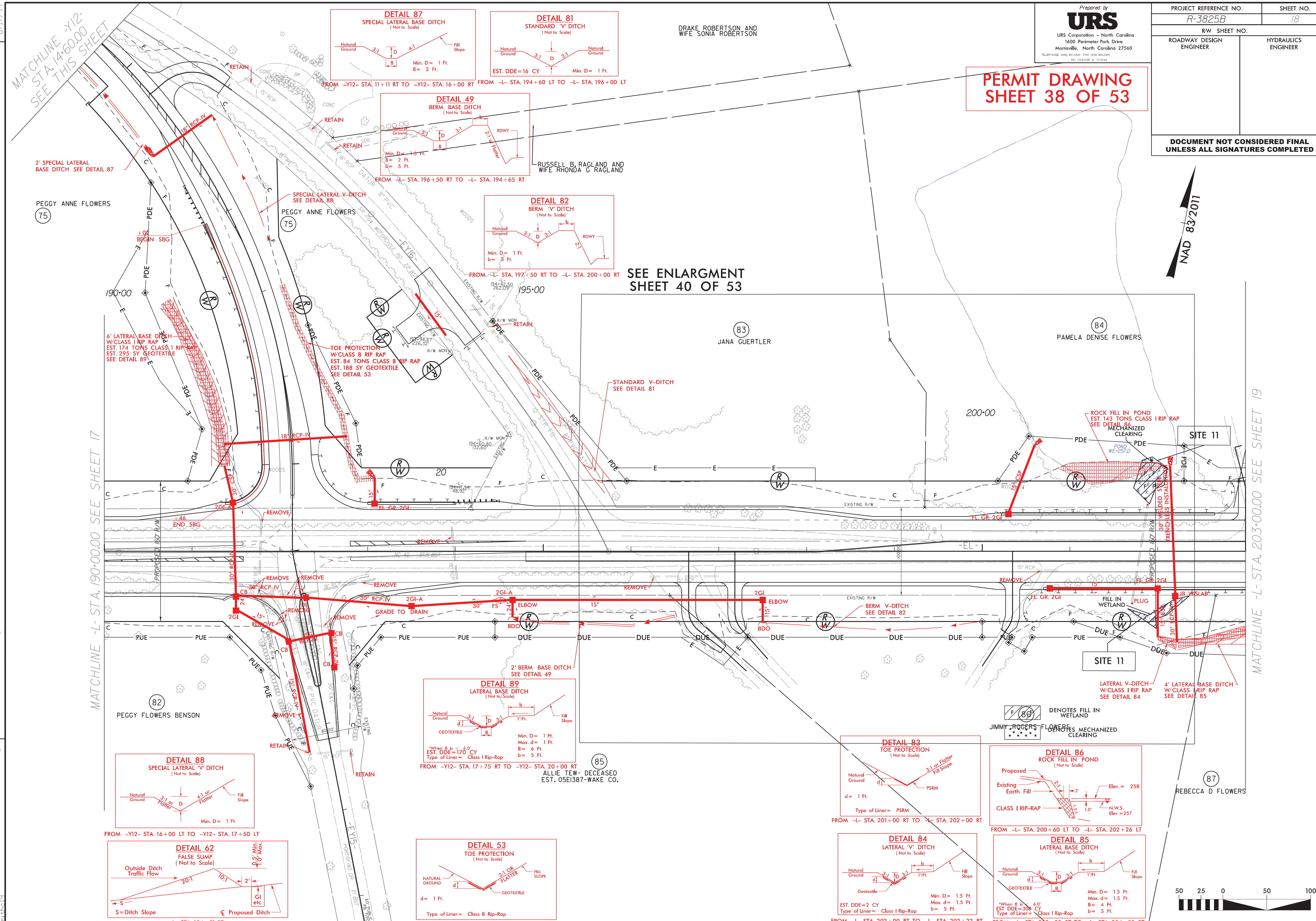
SITE 10 – PROFILE VIEW ALONG STRUCTURE



PROFILE

NCDOT
DIVISION OF HIGHWAYS
JOHNSTON COUNTY
PROJECT: 34552.1.FR3 (R-3825B)
NC 42 FROM SR 1902
TO SR 1003 (R-3825B)
SITE 10

PERMIT DRAWING
SHEET 37 OF 53



PROJECT REFERENCE NO.
SHEET NO.
R-3825B
18
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Prepared by URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
PERMIT DRAWING
SHEET 38 OF 53
SEE ENLARGMENT
SHEET 40 OF 53
NAD 83/2011
MATCHLINE -Y12- STA. 14+60.00 SEE THIS SHEET
MATCHLINE -L- STA. 190+00.00 SEE SHEET 17
MATCHLINE -L- STA. 203+00.00 SEE SHEET 19
REVISIONS
DETAIL 87
SPECIAL LATERAL BASE DITCH
(Not to Scale)
FROM -Y12- STA. 11+11 RT TO -Y12- STA. 16+00 RT
DETAIL 81
STANDARD 'V' DITCH
(Not to Scale)
EST. DDE=16 CY
FROM -L- STA. 194+60 LT TO -L- STA. 196+00 LT
DETAIL 49
BERM BASE DITCH
(Not to Scale)
FROM -L- STA. 196+50 RT TO -L- STA. 194+65 RT
DETAIL 82
BERM 'V' DITCH
(Not to Scale)
FROM -L- STA. 197+50 RT TO -L- STA. 200+00 RT
DETAIL 89
LATERAL BASE DITCH
(Not to Scale)
EST. DDE=170 CY
Type of Liner= Class I Rip-Rap
FROM -Y12- STA. 17+75 RT TO -Y12- STA. 20+00 RT
DETAIL 88
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
FROM -Y12- STA. 16+00 LT TO -Y12- STA. 17+50 LT
DETAIL 62
FALSE SUMP
(Not to Scale)
-L- STA. 194+51 RT
DETAIL 53
TOE PROTECTION
(Not to Scale)
Type of Liner= Class B Rip-Rap
FROM -Y12- STA. 18+00 LT TO -Y12- STA. 20+25 LT
DETAIL 83
TOE PROTECTION
(Not to Scale)
Type of Liner= PSRM
FROM -L- STA. 201+00 RT TO -L- STA. 202+00 RT
DETAIL 86
ROCK FILL IN POND
(Not to Scale)
CLASS I RIP-RAP
FROM -L- STA. 200+60 LT TO -L- STA. 202+26 LT
DETAIL 84
LATERAL 'V' DITCH
(Not to Scale)
EST. DDE=2 CY
Type of Liner= Class I Rip-Rap
FROM -L- STA. 202+00 RT TO -L- STA. 202+22 RT
DETAIL 85
LATERAL BASE DITCH
(Not to Scale)
EST. DDE=309 CY
Type of Liner= Class I Rip-Rap
FROM -L- STA. 202+22 RT TO -L- STA. 204+50 RT
DRAKE ROBERTSON AND WIFE SONIA ROBERTSON
RUSSELL B. RAGLAND AND WIFE RHONDA G RAGLAND
PEGGY ANNE FLOWERS 75
JANA GUERTLER 83
PAMELA DENISE FLOWERS 84
PEGGY FLOWERS BENSON 82
ALLIE TEW- DECEASED EST. 05E1387-WAKE CO. 85
JIMMY ROGERS FLOWERS 86
REBECCA D FLOWERS 87
SITE 11
DENOTES FILL IN WETLAND
DENOTES MECHANIZED CLEARING
6' LATERAL BASE DITCH W/CLASS I RIP RAP EST. 174 TONS CLASS 1 RIP RAP EST. 295 SY GEOTEXTILE SEE DETAIL 89
TOE PROTECTION W/CLASS B RIP RAP EST. 84 TONS CLASS B RIP RAP EST. 188 SY GEOTEXTILE SEE DETAIL 53
2' SPECIAL LATERAL BASE DITCH SEE DETAIL 87
SPECIAL LATERAL V-DITCH SEE DETAIL 88
STANDARD V-DITCH SEE DETAIL 81
ROCK FILL IN POND EST. 143 TONS CLASS I RIP RAP SEE DETAIL 86
BERM V-DITCH SEE DETAIL 82
2' BERM BASE DITCH SEE DETAIL 49
LATERAL V-DITCH W/CLASS I RIP RAP SEE DETAIL 84
4' LATERAL BASE DITCH W/CLASS I RIP RAP SEE DETAIL 85
FILL IN WETLAND
MECHANIZED CLEARING
190+00
195+00
200+00

Prepared by
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1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 854-6200 FAX (919) 854-6259
NC LICENSE # C-0910

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	18
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PERMIT DRAWING SHEET 39 OF 53

NAD 83/2011

8/17/99

REVISIONS

MATCHLINE -Y12 STA. 14+60.00 SEE THIS SHEET

MATCHLINE -L- STA. 190+00.00 SEE SHEET 17

MATCHLINE -L- STA. 203+00.00 SEE SHEET 19

SEE ENLARGMENT SHEET 40 OF 53

DRAKE ROBERTSON AND WIFE SONIA ROBERTSON

RUSSELL B. RAGLAND AND WIFE RHONDA G RAGLAND

PEGGY ANNE FLOWERS (75)

PEGGY FLOWERS BENSON (82)

JANA GUERTLER (83)

ALLIE TEW- DECEASED EST. 05EI387-WAKE CO. (85)

PAMELA DENISE FLOWERS (84)

REBECCA D FLOWERS (87)

JIMMY ROGERS FLOWERS (86)

SITE 11

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DETAIL 87
SPECIAL LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 2:1, D, 4:1, Fill Slope, B

Min. D= 1 Ft.
B= 2 Ft.

FROM -Y12- STA. 11+11 RT TO -Y12- STA. 16+00 RT

DETAIL 81
STANDARD 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, Natural Ground

EST. DDE=16 CY
Min. D= 1 Ft.

FROM -L- STA. 194+60 LT TO -L- STA. 196+00 LT

DETAIL 49
BERM BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, RDWY, 2:1 or Flatter, B

Min. D= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.

FROM -L- STA. 196+50 RT TO -L- STA. 194+65 RT

DETAIL 82
BERM 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, b, RDWY, 2:1

Min. D= 1 Ft.
b= 3 Ft.

FROM -L- STA. 197+50 RT TO -L- STA. 200+00 RT

DETAIL 88
SPECIAL LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 3:1 or Flatter, D, 3:1 or Flatter, Fill Slope

Min. D= 1 Ft.

FROM -Y12- STA. 16+00 LT TO -Y12- STA. 17+50 LT

DETAIL 62
FALSE SUMP
(Not to Scale)

Outside Ditch Traffic Flow, 20:1, 10:1, 2', 0.5' Min. 1.0' Max., GI etc., S

S=Ditch Slope
℄ Proposed Ditch

-L- STA. 194+51 RT

DETAIL 89
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, b, 1' Ft., Fill Slope, d, GEOTEXTILE, B

Min. D= 1 Ft.
Max. d= 1 Ft.
B= 6 Ft.
b= 5 Ft.

*When B is 6.0'
EST. DDE=170 CY
Type of Liner= Class I Rip-Rap

FROM -Y12- STA. 17+75 RT TO -Y12- STA. 20+00 RT

DETAIL 53
TOE PROTECTION
(Not to Scale)

NATURAL GROUND, d, 3:1 OR FLATTER, FILL SLOPE, GEOTEXTILE

d= 1 Ft.

Type of Liner= Class B Rip-Rap

FROM -Y12- STA. 18+00 LT TO -Y12- STA. 20+25 LT

DETAIL 83
TOE PROTECTION
(Not to Scale)

Natural Ground, d, 3:1 or Flatter Fill Slope, PSRM

d= 1 Ft.

Type of Liner= PSRM

FROM -L- STA. 201+00 RT TO -L- STA. 202+00 RT

DETAIL 86
ROCK FILL IN POND
(Not to Scale)

Proposed, Existing Earth Fill, 2:1, 2', Elev.= 258, CLASS I RIP-RAP, 1.5', 1.0', N.W.S. Elev.=257

FROM -L- STA. 200+60 LT TO -L- STA. 202+26 LT

DETAIL 84
LATERAL 'V' DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, b, 1' Ft., Fill Slope, d, GEOTEXTILE

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
b= 5 Ft.

EST. DDE=2 CY
Type of Liner= Class I Rip-Rap

FROM -L- STA. 202+00 RT TO -L- STA. 202+22 RT

DETAIL 85
LATERAL BASE DITCH
(Not to Scale)

Natural Ground, 3:1, D, 3:1, b, 1' Ft., Fill Slope, d, GEOTEXTILE, B

Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 4 Ft.
b= 5 Ft.

*When B is 3.0'
EST. DDE=309 CY
Type of Liner= Class I Rip-Rap

FROM -L- STA. 202+22 RT TO -L- STA. 204+50 RT

50 25 0 50 100

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smithcg

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NC LICENSE # C–2243

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	18

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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PERMIT DRAWING
SHEET 40 OF 53

ENLARGEMENT

8/17/99

REVISIONS

1/4/2018
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smithc19

8/23/99

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PROJ. REFERENCE NO.	SHEET NO.

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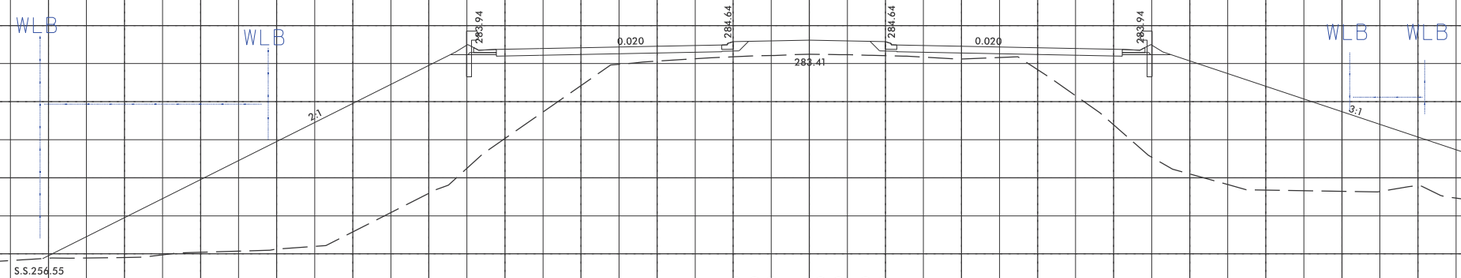
290 285 280 275 270 265 260 255 250



202+00.00 SITE II

PERMIT DRAWING
SHEET 41 OF 53

1/4/2018
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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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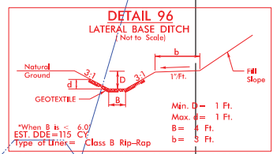
PERMIT DRAWING SHEET 42 OF 53

8/17/99

REVISIONS

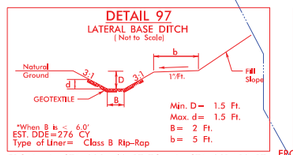
DETAIL 96
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1 Ft.
Max. d= 1 Ft.
B= 4 Ft.
b= 3 Ft.

*When B is < 6.0'
EST. DDE=115 CY
Type of Liner= Class B Rip-Rap
FROM -L- STA. 228+00 LT TO -L- STA. 229+72 LT

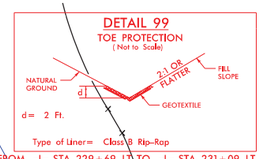
DETAIL 97
LATERAL BASE DITCH
(Not to Scale)



Min. D= 1.5 Ft.
Max. d= 1.5 Ft.
B= 2 Ft.
b= 5 Ft.

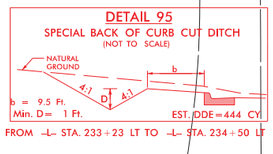
*When B is < 6.0'
EST. DDE=276 CY
Type of Liner= Class B Rip-Rap
FROM -L- STA. 228+60 RT TO -L- STA. 231+10 RT

DETAIL 99
TOE PROTECTION
(Not to Scale)



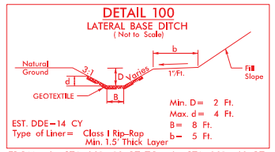
d= 2 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 229+69 LT TO -L- STA. 231+09 LT
FROM -L- STA. 231+16 LT TO -L- STA. 233+03 LT

DETAIL 95
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



b = 9.5 Ft.
Min. D= 1 Ft.
EST. DDE=444 CY
FROM -L- STA. 233+23 LT TO -L- STA. 234+50 LT

DETAIL 100
LATERAL BASE DITCH
(Not to Scale)



Min. D= 2 Ft.
Max. d= 4 Ft.
B= 8 Ft.
b= 5 Ft.

EST. DDE=14 CY
Type of Liner= Class I Rip-Rap
Min. 1.5' Thick Layer
FROM -L- STA. 231+10 RT TO -L- STA. 231+63 RT

NAD 83/2011

F F DENOTES FILL IN WETLAND

F F DENOTES EXCAVATION IN WETLAND

DENOTES MECHANIZED CLEARING

230+00

235+00

240+00

SEE ENLARGMENT SHEET 44 OF 53

SEE ENLARGMENT SHEET 49 OF 53

MATCHLINE -L- STA. 229+00.00 SEE SHEET 20

MATCHLINE -L- STA. 242+00.00 SEE SHEET 22

99 REBECCA D FLOWERS

102 REBECCA D FLOWERS

103 FLOWERS PLANTATION COMMERCIAL, LLC

100 REBECCA D FLOWERS

Sta.=229+72 -L- LT
DA=4.01 Acres
C=0.43
I=6.20 INHR
s= 0.005 FT/FT
n=0.063
SS=3:1
SS=3:1
BASE=4 ft
Q=2= 10.7 cfs
V=2= 1.35 fps
d= 0.50 ft.
Liner=Class B Rip Rap

4' LATERAL BASE DITCH
W/CLASS B RIP RAP
EST. 86 TONS CLASS B RIP RAP
EST. 190 SY GEOTEXTILE
SEE DETAIL 96

TOE PROTECTION
CLASS B RIP RAP
EST. 62 TONS CLASS B RIP RAP
EST. 128 SY GEOTEXTILE
SEE DETAIL 99

TOE PROTECTION
CLASS B RIP RAP
EST. 83 TONS CLASS B RIP RAP
EST. 183 SY GEOTEXTILE
SEE DETAIL 99

SPECIAL BACK OF CURB CUT DITCH
SEE DETAIL 95

2' LATERAL BASE DITCH
W/CLASS B RIP RAP
EST. 123 TONS CLASS B RIP RAP
EST. 273 SY GEOTEXTILE
SEE DETAIL 97

8' LATERAL BASE DITCH
W/CLASS I RIP RAP
SEE DETAIL 100

EXCAVATION IN WETLANDS

SITE 12

SITE 13

SITE 14

PERMANENT IMPACT IN SURFACE WATER

MECH. CLEARING

FILL IN WETLANDS

TEMPORARY IMPACT IN SURFACE WATER

PINEVILLE BLVD
VARIABLE WIDTH PRIVATE R/W

EX 42' ACCESS ESMT

PROPOSED 60' R/W

EXISTING R/W

50 25 0 50 100

1/4/2018
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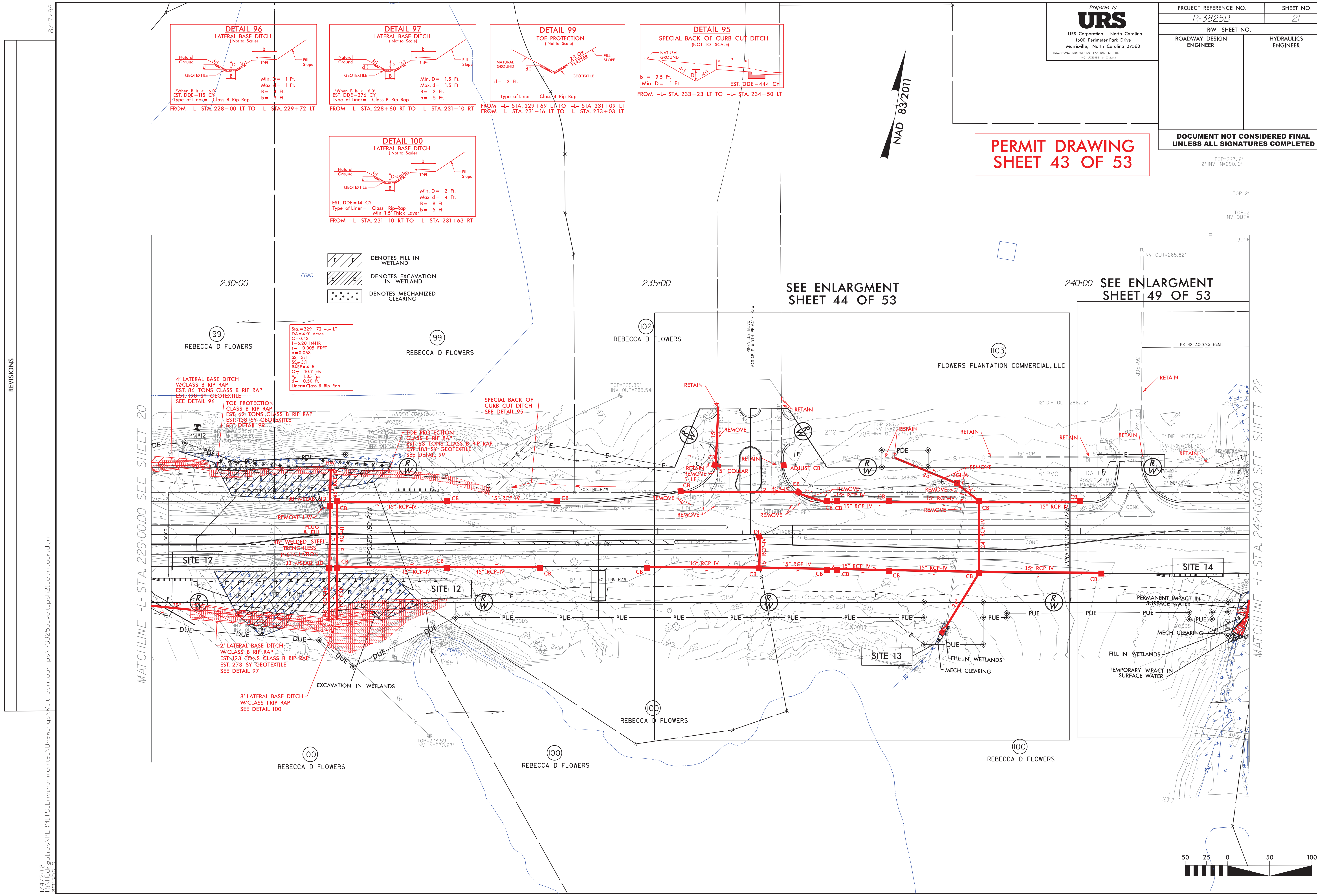
smithcg



PROJECT REFERENCE NO. R-3825B
SHEET NO. 21
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
Prepared by URS
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PERMIT DRAWING
SHEET 43 OF 53
NAD 83/2011
DETAIL 96
LATERAL BASE DITCH
(Not to Scale)
FROM -L- STA. 228+00 LT TO -L- STA. 229+72 LT
DETAIL 97
LATERAL BASE DITCH
(Not to Scale)
FROM -L- STA. 228+60 RT TO -L- STA. 231+10 RT
DETAIL 99
TOE PROTECTION
(Not to Scale)
FROM -L- STA. 229+69 LT TO -L- STA. 231+09 LT
FROM -L- STA. 231+16 LT TO -L- STA. 233+03 LT
DETAIL 95
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)
FROM -L- STA. 233+23 LT TO -L- STA. 234+50 LT
DETAIL 100
LATERAL BASE DITCH
(Not to Scale)
FROM -L- STA. 231+10 RT TO -L- STA. 231+63 RT
DENOTES FILL IN WETLAND
DENOTES EXCAVATION IN WETLAND
DENOTES MECHANIZED CLEARING
SEE ENLARGMENT SHEET 44 OF 53
SEE ENLARGMENT SHEET 49 OF 53
REBECCA D FLOWERS
FLOWERS PLANTATION COMMERCIAL, LLC
SITE 12
SITE 13
SITE 14
EXCAVATION IN WETLANDS
FILL IN WETLANDS
MECH. CLEARING
PERMANENT IMPACT IN SURFACE WATER
TEMPORARY IMPACT IN SURFACE WATER
MATCHLINE -L- STA. 229+00.00 SEE SHEET 20
MATCHLINE -L- STA. 242+00.00 SEE SHEET 22
REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	21
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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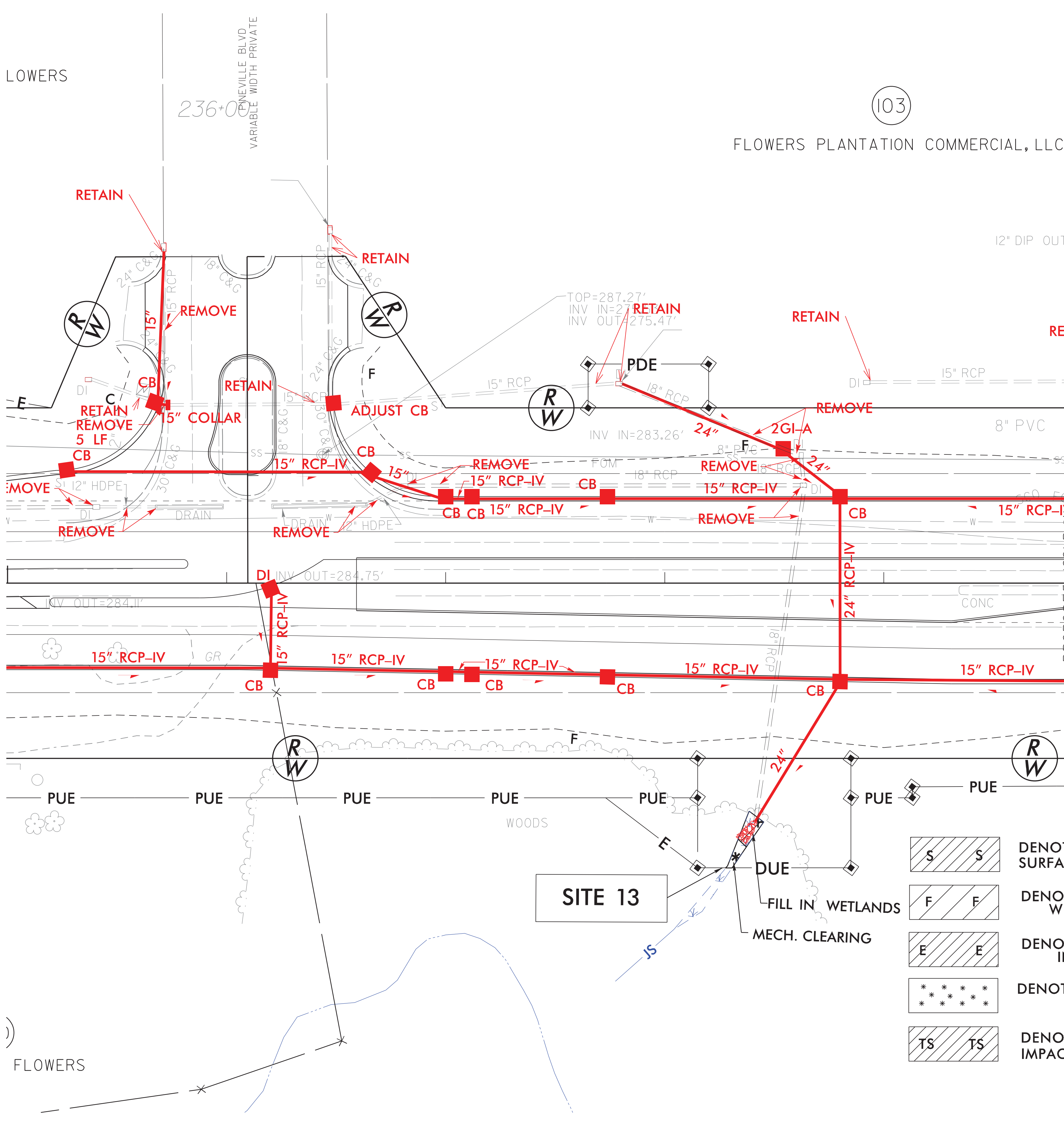
SHEET 44 OF 53

ENLARGEMENT



S / S	DENOTES IMPACTS IN SURFACE WATER
F / F	DENOTES FILL IN WETLAND
E / E	DENOTES EXCAVATION IN WETLAND
* * *	DENOTES MECHANIZED CLEARING
TS / TS	DENOTES TEMPORARY IMPACTS IN SURFACE WATER

25 12.5 0 25 50

REVISIONS

8/17/99

8/23/99

0	PROJ. REFERENCE NO.	SHEET NO.

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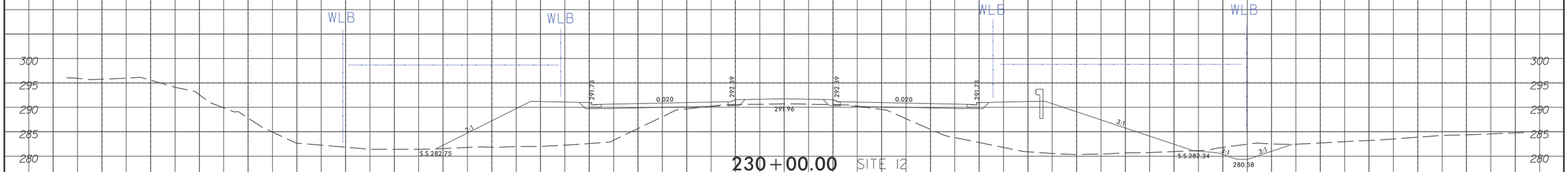
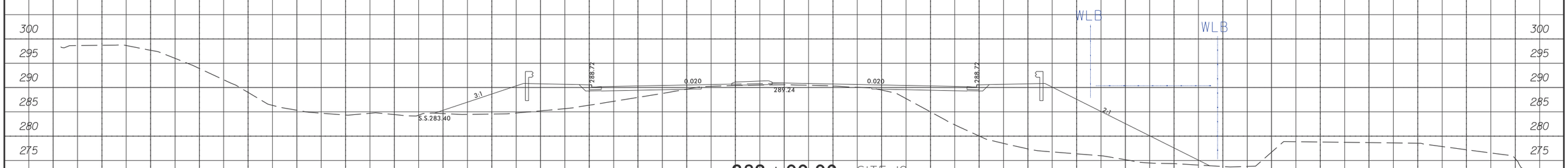


230+00.00 SITE 12



232+00.00 SITE 12

PERMIT DRAWING
SHEET 45 OF 53

1/4/2018
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smithcl9

8/23/99

0	PROJ. REFERENCE NO.	SHEET NO.

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

238+50.00 SITE 13

PERMIT DRAWING
SHEET 46 OF 53

1/4/2018
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smithcj

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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 47 OF 53

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REVISIONS 8/17/99

MATCHLINE -Y13- STA. 19+00.00 SEE SHEET 23

NAD 83/2011

SEE ENLARGMENT SHEET 49 OF 53

SEE ENLARGMENT SHEET 50 OF 53

245+00

250+00

255+00

MATCHLINE -L- STA. 242+00.00 SEE SHEET 21

MATCHLINE -L- STA. 255+00.00 SEE THIS SHEET

MATCHLINE -Y13- STA. 28+00.00 SEE SHEET 23

117 FPC MENAGERIE OUTLOT, LLC

103 FLOWERS PLANTATION COMMERCIAL, LLC

105 FPC DRUGSTORE OUTPARCEL LLC

106 PERCY FLOWERS STORE LLC

107 REBECCA D FLOWERS

108 REBECCA FLOWERS FINCH

114 REBECCA FLOWERS FINCH

112 REBECCA D FLOWERS

100 REBECCA D FLOWERS

SITE 14

SITE 15

SPECIAL BACK OF CURB CUT DITCH SEE DETAIL 105

SPECIAL LATERAL V-DITCH SEE DETAIL 101

2' SPECIAL CUT BASE DITCH SEE DETAIL 102

SPECIAL CUT DITCH SEE DETAIL 103

SPECIAL CUT DITCH SEE DETAIL 104

TEMPORARY IMPACT IN SURFACE WATER

PERMANENT IMPACT IN SURFACE WATER

CLASS B RIP RAP TOE PROTECTION EST. 10 TONS CLASS B RIP RAP EST. 21 SY GEOTEXTILE SEE DETAIL 53

CLASS B RIP RAP TOE PROTECTION EST. 33 TONS CLASS B RIP RAP EST. 74 SY GEOTEXTILE SEE DETAIL 69

Sta.=242+63 -L- RT
Rip-Rap Pad Outlet
Q10= 7.3 cfs
V10= 1.68 fps
d= 0.26 ft
s= 6.3%
n=0.079

PERMANENT IMPACT IN SURFACE WATER (POND)

TEMPORARY IMPACT IN SURFACE WATER

POND WE=286.0

PLUG & FILL

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DETAIL 69
TOE PROTECTION
(Not to Scale)

Natural Ground; 3:1 or Flatter Fill Slope; b; d; Geotextile

d= 1 Ft.
b= 5 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 241+86 RT TO -L- STA. 242+63 RT

DETAIL 53
TOE PROTECTION
(Not to Scale)

NATURAL GROUND; 3:1 OR FLATTER FILL SLOPE; d; GEOTEXTILE

d= 1 Ft.

Type of Liner= Class B Rip-Rap

FROM -L- STA. 242+23 LT TO -L- STA. 242+50 LT

DETAIL 101
SPECIAL LATERAL "V" DITCH
(Not to Scale)

Natural Ground; 3:1; D; 4:1 or Flatter; Fill Slope

Min. D= 1 Ft.

FROM -L- STA. 250+40 LT TO -L- STA. 251+00 LT

DETAIL 102
SPECIAL CUT BASE DITCH
(Not to Scale)

Natural Ground; 3:1; D; 6:1; Front Ditch Slope; B

Min. D= 2.5 Ft.
B= 2 Ft.

FROM -L- STA. 251+07 LT TO -L- STA. 252+50 LT

DETAIL 103
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground; 3:1; D; 6:1; Front Ditch Slope

Min. D= 2 Ft.

FROM -L- STA. 252+50 LT TO -L- STA. 257+50 LT

DETAIL 104
SPECIAL CUT DITCH
(Not to Scale)

Natural Ground; 3:1; D; 4:1 or Flatter; Front Ditch Slope

Min. D= 1 Ft.

FROM -L- STA. 254+25 RT TO -L- STA. 255+50 RT

DETAIL 105
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)

NATURAL GROUND; 3:1; D; 6:1

Min. D= 1 Ft.

EST. DDE=52 CY

FROM -Y13- STA. 21+00 LT TO -Y13- STA. 21+50 LT

DETAIL 55
FALSE SUMP
(Not to Scale)

0.5' Min. 1.0' Max; Outside Ditch Traffic Flow; 10:1; 20:1; 2.0'; S; GI etc.; S=Ditch Slope; ℄ Proposed Ditch

-Y13- STA. 21+72 LT

50 25 0 50 100

1/4/2018
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smith6g

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NC LICENSE # C-0340

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

PERMIT DRAWING SHEET 48 OF 53

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REVISIONS 8/17/99

MATCHLINE -Y13- STA. 19+00.00 SEE SHEET 23

MATCHLINE -L- STA. 242+00.00 SEE SHEET 21

MATCHLINE -L- STA. 255+00.00 SEE THIS SHEET

MATCHLINE -Y13- STA. 28+00.00 SEE SHEET 23

NAD 83/2011

SEE ENLARGMENT SHEET 49 OF 53

SEE ENLARGMENT SHEET 50 OF 53

117 FPC MENAGERIE OUTLOT, LLC

103 FLOWERS PLANTATION COMMERCIAL, LLC

105 FPC DRUGSTORE OUTPARCEL LLC

106 PERCY FLOWERS STORE LLC

107 REBECCA D FLOWERS

108 REBECCA FLOWERS FINCH

100 REBECCA D FLOWERS

112 REBECCA D FLOWERS

114 REBECCA FLOWERS FINCH

SITE 14

SITE 15

POND WE=286.0

SPECIAL BACK OF CURB CUT DITCH SEE DETAIL 105

SPECIAL LATERAL V-DITCH SEE DETAIL 101

2' SPECIAL CUT BASE DITCH SEE DETAIL 102

SPECIAL CUT DITCH SEE DETAIL 103

SPECIAL CUT DITCH SEE DETAIL 104

TEMPORARY IMPACT IN SURFACE WATER

PERMANENT IMPACT IN SURFACE WATER

EX. ESMT AND LANDSCAPE BUFFER PB 79 PG 235

CLASS B RIP RAP TOE PROTECTION EST. 10 TONS CLASS B RIP RAP EST. 21 SY GEOTEXTILE SEE DETAIL 53

CLASS B RIP RAP TOE PROTECTION EST. 33 TONS CLASS B RIP RAP EST. 74 SY GEOTEXTILE SEE DETAIL 69

Sta.=242+63 -L- RT
Rip-Rap Pad Outlet
Q10= 7.3 cfs
V10= 1.68 fps
d= 0.26 ft
s= 6.3%
n=0.079

PLUG & FILL

PERMANENT IMPACT IN SURFACE WATER (POND)

TEMPORARY IMPACT IN SURFACE WATER

DENOTES IMPACTS IN SURFACE WATER

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

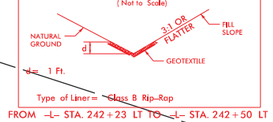
DENOTES IMPACTS IN SURFACE WATER (POND)

DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DETAIL 69
TOE PROTECTION
(Not to Scale)

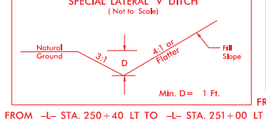
d= 1 Ft.
b= 5 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 241+86 RT TO -L- STA. 242+63 RT

DETAIL 53
TOE PROTECTION
(Not to Scale)



d= 1 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 242+23 LT TO -L- STA. 242+50 LT

DETAIL 101
SPECIAL LATERAL "V" DITCH
(Not to Scale)



Min. D= 1 Ft.
FROM -L- STA. 250+40 LT TO -L- STA. 251+00 LT

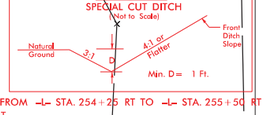
DETAIL 102
SPECIAL CUT BASE DITCH
(Not to Scale)

Min. D= 2.5 Ft.
B= 2 Ft.
FROM -L- STA. 251+07 LT TO -L- STA. 252+50 LT

DETAIL 103
SPECIAL CUT DITCH
(Not to Scale)

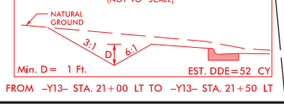
Min. D= 2 Ft.
FROM -L- STA. 252+50 LT TO -L- STA. 257+50 LT

DETAIL 104
SPECIAL CUT DITCH
(Not to Scale)



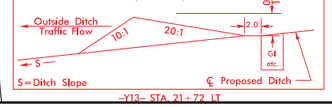
Min. D= 1 Ft.
FROM -L- STA. 254+25 RT TO -L- STA. 255+50 RT

DETAIL 105
SPECIAL BACK OF CURB CUT DITCH
(NOT TO SCALE)



Min. D= 1 Ft.
EST. DDE=52 CY
FROM -Y13- STA. 21+00 LT TO -Y13- STA. 21+50 LT

DETAIL 55
FALSE SUMP
(Not to Scale)



-Y13- STA. 21+72 LT

50 25 0 50 100

1/4/2008
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smith6g

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	22
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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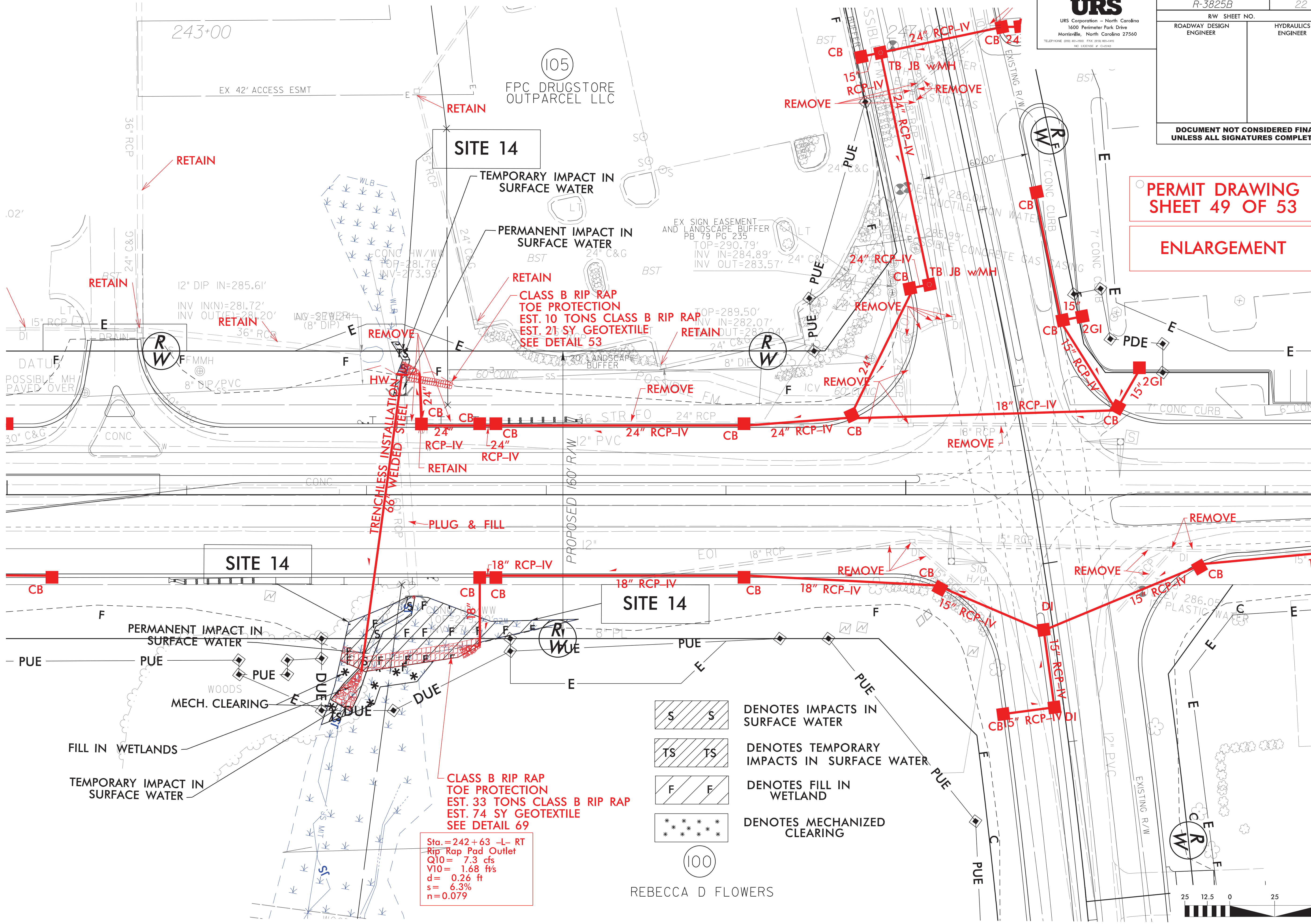
Morrisville, North Carolina 27560

PERMIT DRAWING
SHEET 49 OF 53

ENLARGEMENT


243+00
EX 42' ACCESS ESMT
105
FPC DRUGSTORE OUTPARCEL LLC
SITE 14
TEMPORARY IMPACT IN SURFACE WATER
PERMANENT IMPACT IN SURFACE WATER
RETAIN
REMOVE
CLASS B RIP RAP TOE PROTECTION
EST. 10 TONS CLASS B RIP RAP
EST. 21 SY GEOTEXTILE
SEE DETAIL 53
EX SIGN EASEMENT AND LANDSCAPE BUFFER PB 79 PG 235
TOP=290.79'
INV IN=284.89'
INV OUT=283.57'
TOP=289.50'
INV IN=282.07'
12" DIP IN=285.61'
INV IN(N)=281.72'
INV OUT(E)=281.20'
TOP=281.76'
INV=273.93'
20' LANDSCAPE BUFFER
TRENCHLESS INSTALLATION 66" WELDED STEEL
PROPOSED 160' R/W
24" RCP-IV
18" RCP-IV
15" RCP-IV
CB
TB JB w/MH
2GI
DI
PDE
PUE
DUE
PLUG & FILL
24" C&G
7' CONC CURB
EXISTING R/W
PERMANENT IMPACT IN SURFACE WATER
MECH. CLEARING
FILL IN WETLANDS
TEMPORARY IMPACT IN SURFACE WATER
WOODS
CLASS B RIP RAP TOE PROTECTION
EST. 33 TONS CLASS B RIP RAP
EST. 74 SY GEOTEXTILE
SEE DETAIL 69
Sta.=242+63 -L- RT
Rip Rap Pad Outlet
Q10= 7.3 cfs
V10= 1.68 ft/s
d= 0.26 ft
s= 6.3%
n=0.079
100
REBECCA D FLOWERS
25 12.5 0 25 50

DENOTES IMPACTS IN SURFACE WATER

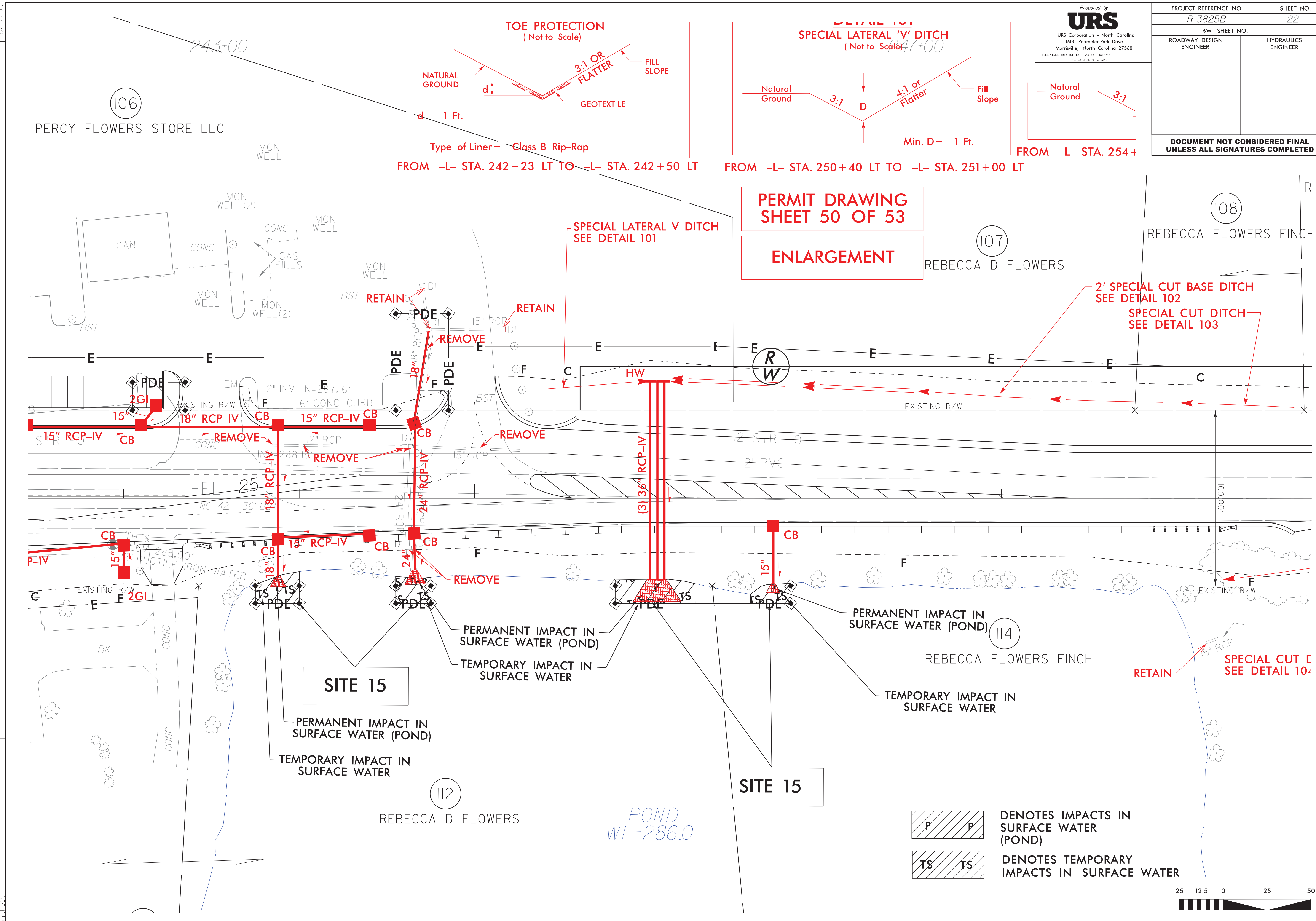
DENOTES TEMPORARY IMPACTS IN SURFACE WATER

DENOTES FILL IN WETLAND

DENOTES MECHANIZED CLEARING

REVISIONS

8/17/99


PROJECT REFERENCE NO.
R-3825B
SHEET NO.
22
RW SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
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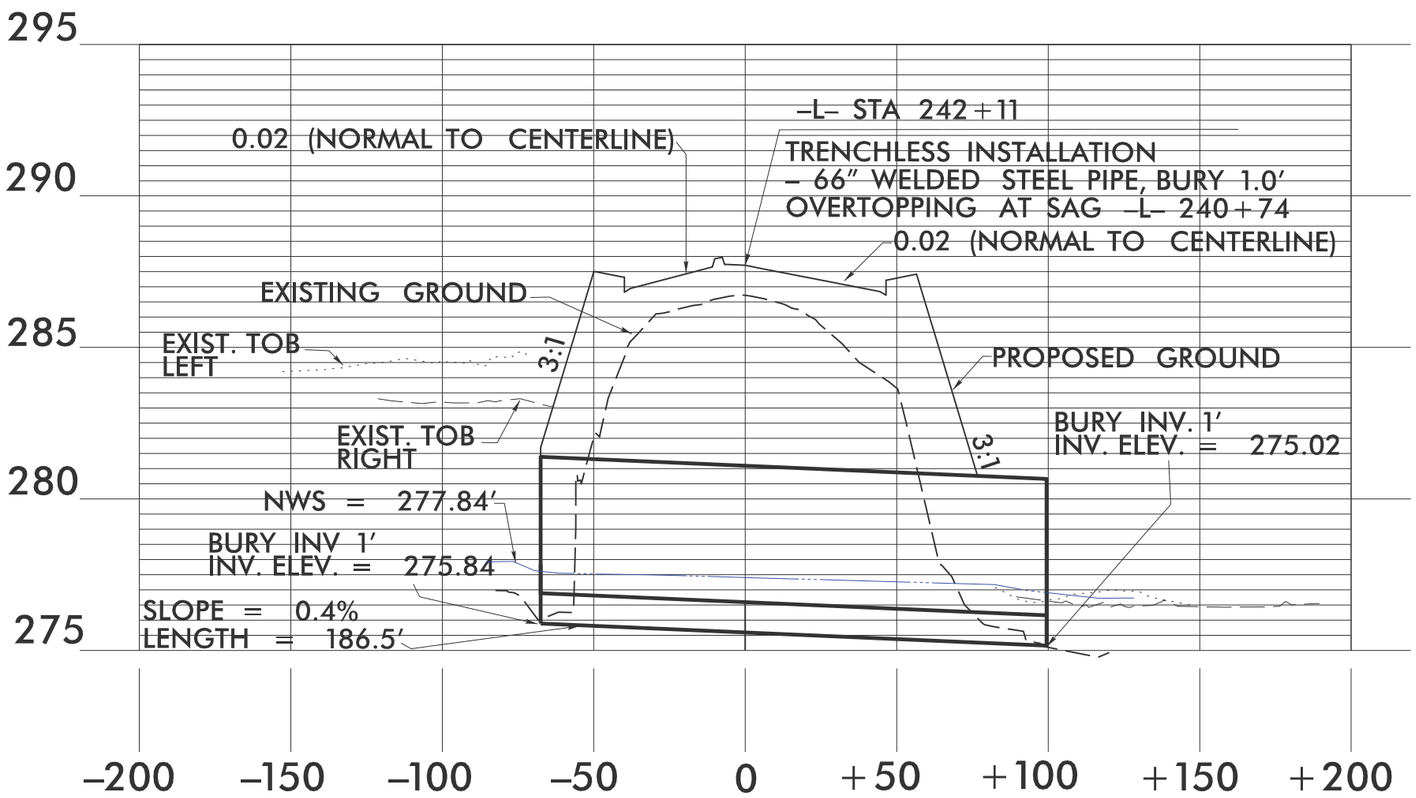
TOE PROTECTION
(Not to Scale)
NATURAL GROUND
3:1 OR FLATTER
FILL SLOPE
GEOTEXTILE
d= 1 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 242+23 LT TO -L- STA. 242+50 LT
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Natural Ground
3:1
D
4:1 or Flatter
Fill Slope
Min. D= 1 Ft.
FROM -L- STA. 250+40 LT TO -L- STA. 251+00 LT
Natural Ground
3:1
FROM -L- STA. 254+
PERMIT DRAWING
SHEET 50 OF 53
ENLARGEMENT
106
PERCY FLOWERS STORE LLC
107
REBECCA D FLOWERS
108
REBECCA FLOWERS FINCH
SPECIAL LATERAL V-DITCH
SEE DETAIL 101
2' SPECIAL CUT BASE DITCH
SEE DETAIL 102
SPECIAL CUT DITCH
SEE DETAIL 103
RETAIN
REMOVE
PDE
CB
2GI
HW
15" RCP-IV
18" RCP-IV
24" RCP-IV
(3) 36" RCP-IV
EXISTING R/W
PERMANENT IMPACT IN SURFACE WATER (POND)
TEMPORARY IMPACT IN SURFACE WATER
SITE 15
112
REBECCA D FLOWERS
114
REBECCA FLOWERS FINCH
POND
WE=286.0
SPECIAL CUT D
SEE DETAIL 10
DENOTES IMPACTS IN SURFACE WATER (POND)
DENOTES TEMPORARY IMPACTS IN SURFACE WATER
REVISIONS
8/17/99

SITE 14 – PROFILE VIEW ALONG STRUCTURE



PROFILE

NCDOT

DIVISION OF HIGHWAYS
JOHNSTON COUNTY

PROJECT: 34552.1.FR.3 (R-3825B)
NC 42 FROM SR 1902
TO SR 1003 (R-3825B)
SITE 14

PERMIT DRAWING
SHEET 51 OF 53

8/23/99

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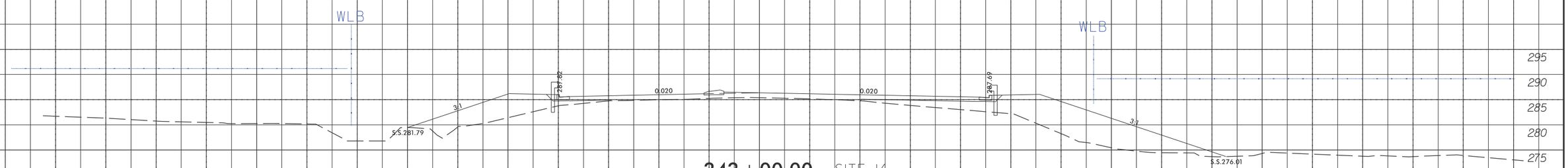

242 + 00.00 SITE 14

PERMIT DRAWING
SHEET 52 OF 53

1/4/2018
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smitchel

WETLAND AND SURACE WATER IMPACTS SUMMARY

			WETLAND IMPACTS					SURFACE WATER IMPACTS				
Site No.	Station (From/To)	Structure Size / Type	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- 25+86 - 28+54	54" Welded Steel Trenchless	0.06		0.05	0.03		0.01	< 0.01	213	87	
2	-L- 49+17 - 49+52	54" Welded Steel Trenchless						0.02	< 0.01	108	4	
3**	-L- 59+70 - 61+36	Proposed Roadway Fill	0.07			0.04						
4	-L- 63+47 - 64+93	Proposed Bridge							0.37		209	
5	-L- 73+01 - 76+59	42" Welded Steel Trenchless/ Proposed Roadway Cut & Fill	0.02		0.02	0.01		0.04	< 0.01	523	14	
5	-L- 73+01 - 76+59	Bank Stabilization Impact						< 0.01	< 0.01	20	6	
6	-L- 106+21 - 108+13	66" Welded Steel Trenchless						0.02	< 0.01	187	31	
7	-L- 114+00 - 114+37	84" Welded Steel Trenchless						0.01	< 0.01	117	54	
7	-L- 114+00 - 114+37	Bank Stabilization Impact						< 0.01	< 0.01	25	3	
8	-L- 134+89 - 136+96	72" Welded Steel Trenchless	0.03		0.06	0.04		0.03	< 0.01	320	66	
9	-L- 156+48 - 157+51	54" Welded Steel Trenchless						< 0.01	< 0.01	257	30	
10A	-L- 166+72 - 167+20	2@12'x12' RCBC						0.08	0.02	193	70	
10B	-L- 167+20 - 172+25	Channel Relocation						0.03	< 0.01	498	11	
10B	-L- 171+75 - 172+25	Bank Stabilization Impact						< 0.01	< 0.01	11	20	
11	-L- 201+66 - 202+26	Propsed Roadway Cut/Fill	0.04			< 0.01						
12	-L- 229+74- 232+19	Propsed Roadway Cut/Fill	0.35		0.02	0.06						
13	-L- 238+26- 238+45	24" RCP-IV	< 0.01			< 0.01						
14	-L- 241+84 - 243+18	66" Welded Steel Trenchless / Proposed Roadway Cut & Fill	0.11			0.01		< 0.01	< 0.01	72	20	
15	-L- 248+70 - 252+00	18", 24", 3 x 36" RCP-IV, 15" Pipes to Pond						< 0.01	0.03			
TOTALS*:			0.68		0.16	0.19		0.27	0.45	2544	624	0

*Rounded totals are sum of actual impacts

NOTES:
** - Isolated Wetland
Bridge Pier Permanent Impact Area (Not included in above quanitites) = 159 Sq. ft (Ten 4.5 ft. diameter piers)

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
2018 05 25
JOHNSTON COUNTY
R-3825B (NC-42)
34552.1.FR3
SHEET 53 OF 53

Revised 2016 09 09

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

LOCATION: NC 42 FROM SR 1902 (GLEN LAUREL RD) TO SR 1003 (BUFFALO RD)

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

BUFFER DRAWING
SHEET 1 OF 9

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3825B	1	

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34552.1.FR3	STP-0042(58)	P.E.
34552.2.4	STP-0042(58)	R/W & UTL.

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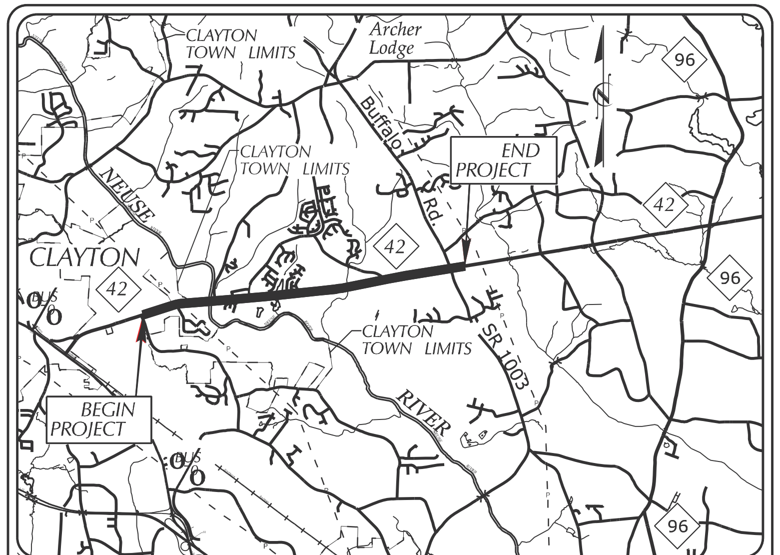
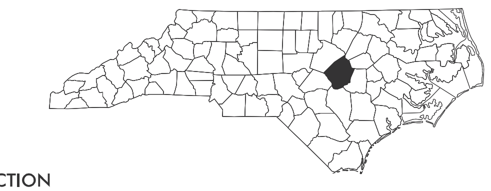
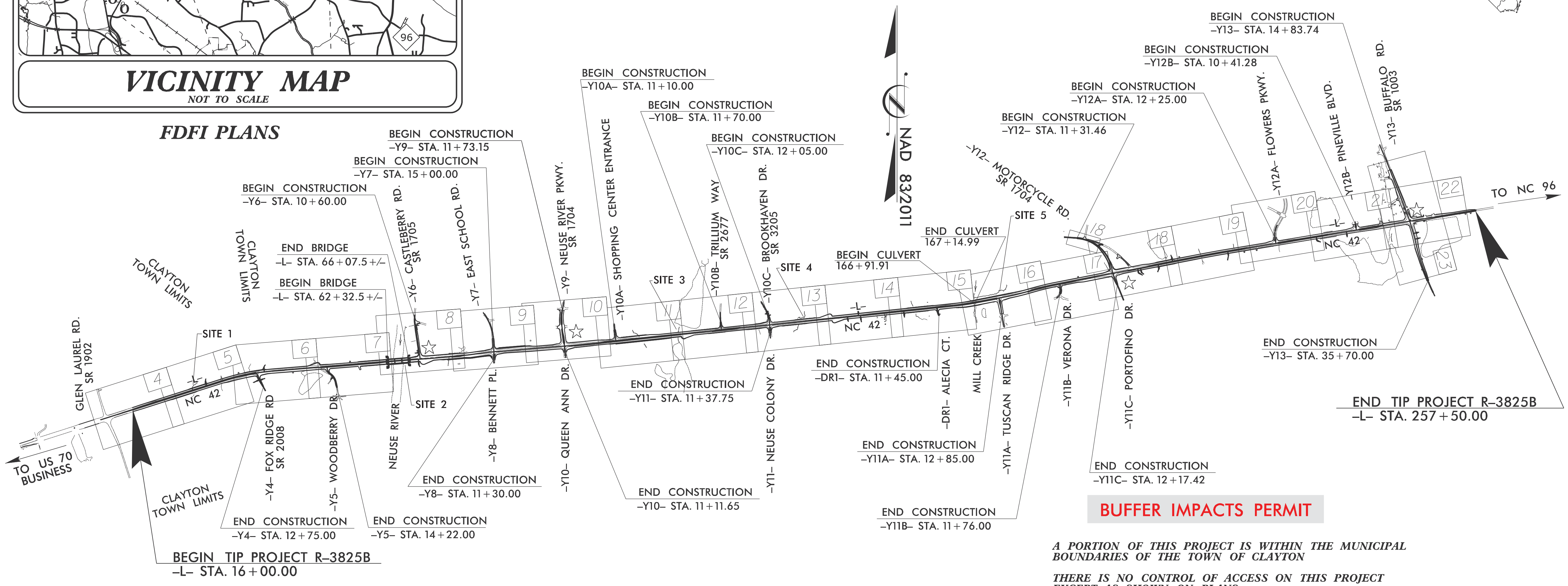


VICINITY MAP
NOT TO SCALE



FDFI PLANS



BUFFER IMPACTS PERMIT

A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CLAYTON

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT EXCEPT AS SHOWN ON PLANS

A DESIGN EXCEPTION IS REQUIRED FOR MAXIMUM GRADE.

CLEARING ON THIS PROJECT WILL BE PERFORMED TO THE LIMITS ESTABLISHED BY NCDOT METHOD III.

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

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TIP PROJECT: R-3825B

CONTRACT:

GRAPHIC SCALES

PLANS: 50 25 0 50 100

PROFILE (HORIZONTAL): 50 25 0 50 100

PROFILE (VERTICAL): 10 5 0 10 20

DESIGN DATA

ADT 2015 = 19,000
ADT 2040 = 37,400
K = 9%
D = 65%
T = 6% *
V = 60 MPH
* (TTST % + DUAL %)
FUNC. CLASS = RURAL MINOR ARTERIAL REGIONAL TIER
DESIGN EXCEPTION (GRADE)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3825B = 4.503 MILES
LENGTH STRUCTURE TIP PROJECT R-3825B = 0.071 MILES
TOTAL LENGTH OF TIP PROJECT R-3825B = 4.574 MILES

Prepared by
URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 8, 2016

LETTING DATE: AUGUST 21, 2018

ED EDENS, P.E.
PROJECT ENGINEER

KEVIN VAN METRE, P.E.
PROJECT DESIGN ENGINEER

GARY R. LOVERING, P.E.
PROJECT ENGINEER
NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

SIGNATURE: P.E.
ROADWAY DESIGN ENGINEER

SIGNATURE: P.E.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

8/23/2017
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8/17/99

REVISIONS

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Morrisville, North Carolina 27560

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

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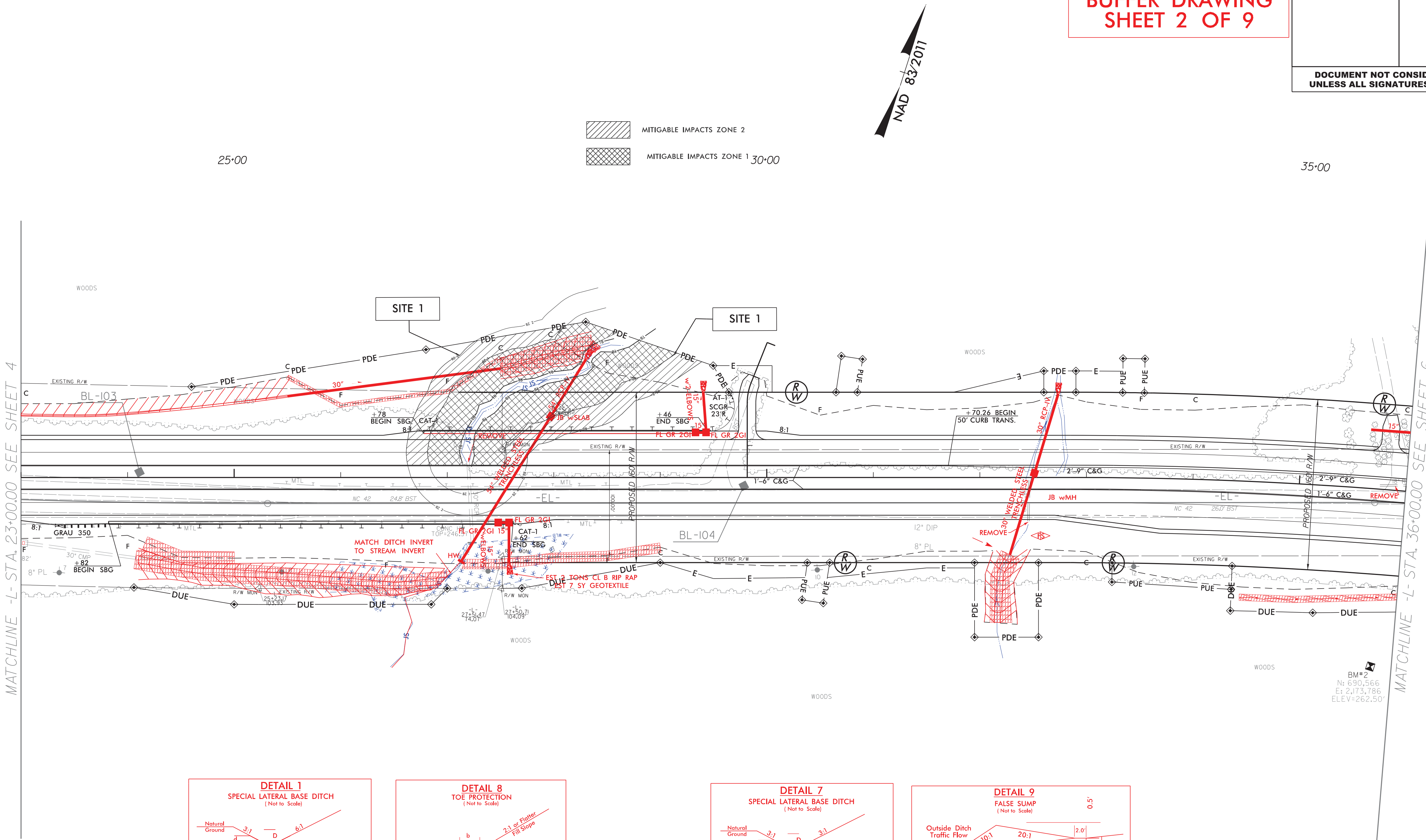
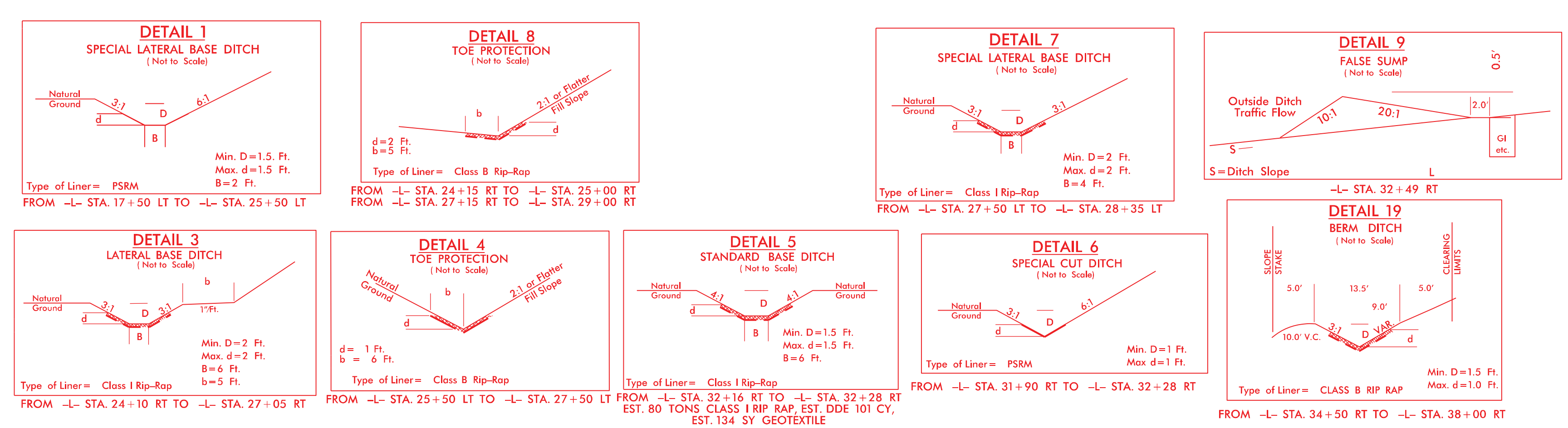
BUFFER DRAWING SHEET 2 OF 9





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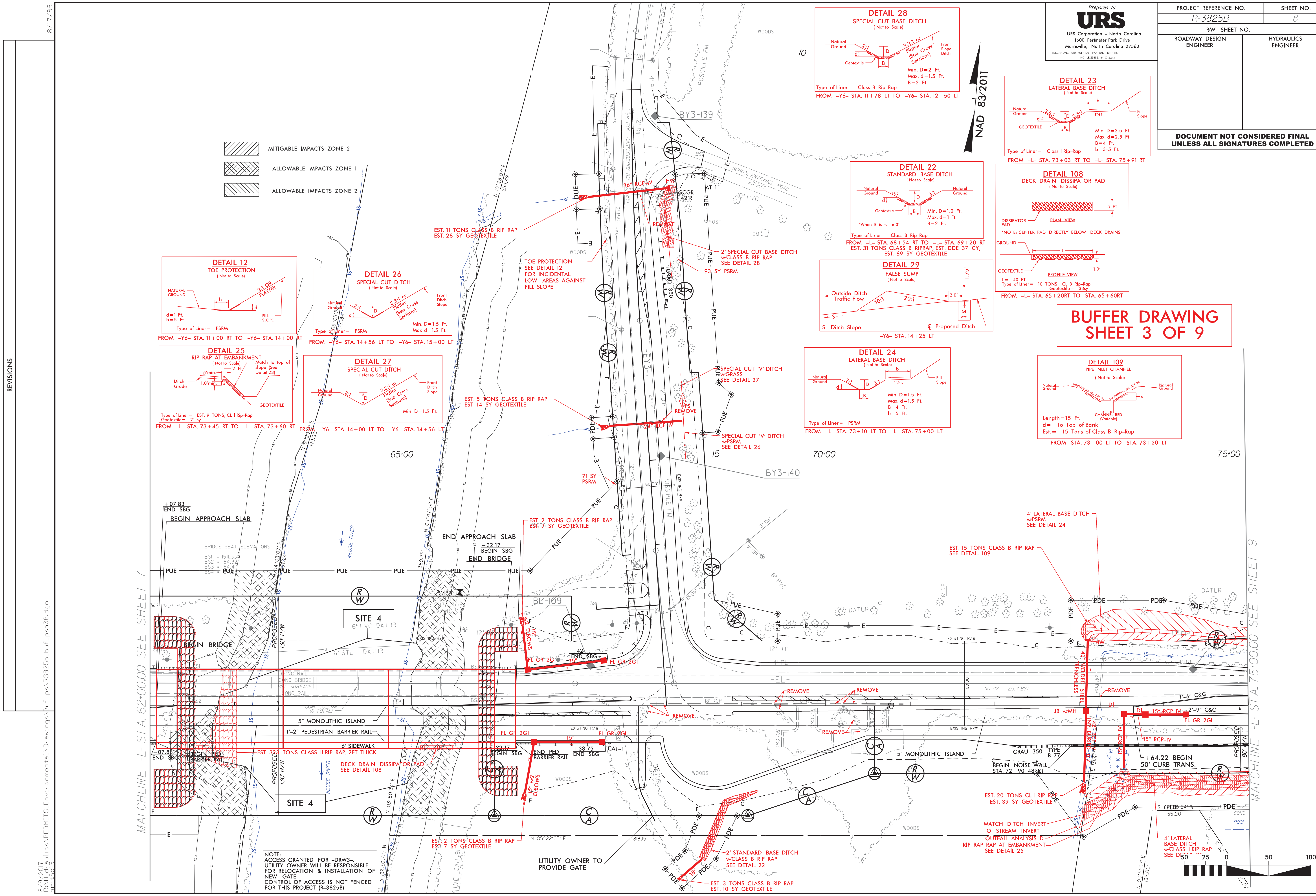

PROJECT REFERENCE NO.
R-3825B
SHEET NO.
8
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
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BUFFER DRAWING
SHEET 3 OF 9
NAD 83/2011
MITIGABLE IMPACTS ZONE 2
ALLOWABLE IMPACTS ZONE 1
ALLOWABLE IMPACTS ZONE 2
DETAIL 28
SPECIAL CUT BASE DITCH
(Not to Scale)
Min. D=2 Ft.
Max. d=1.5 Ft.
B=2 Ft.
Type of Liner= Class B Rip-Rap
FROM -Y6- STA. 11+78 LT TO -Y6- STA. 12+50 LT
DETAIL 23
LATERAL BASE DITCH
(Not to Scale)
Min. D=2.5 Ft.
Max. d=2.5 Ft.
B=4 Ft.
b=3-5 Ft.
Type of Liner= Class I Rip-Rap
FROM -L- STA. 73+03 RT TO -L- STA. 75+91 RT
DETAIL 22
STANDARD BASE DITCH
(Not to Scale)
Min. D=1.0 Ft.
Max. d=1 Ft.
B=2 Ft.
Type of Liner= Class B Rip-Rap
FROM -L- STA. 68+54 RT TO -L- STA. 69+20 RT
EST. 31 TONS CLASS B RIPRAP, EST. DDE 37 CY,
EST. 69 SY GEOTEXTILE
DETAIL 108
DECK DRAIN DISSIPATOR PAD
(Not to Scale)
PLAN VIEW
PROFILE VIEW
*NOTE: CENTER PAD DIRECTLY BELOW DECK DRAINS
L= 40 FT
Type of Liner= 10 TONS CL B Rip-Rap
Geotextile= 33sy
FROM -L- STA. 65+20RT TO STA. 65+60RT
DETAIL 29
FALSE SUMP
(Not to Scale)
Outside Ditch
Traffic Flow
S=Ditch Slope
Proposed Ditch
-Y6- STA. 14+25 LT
DETAIL 24
LATERAL BASE DITCH
(Not to Scale)
Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=4 Ft.
b=5 Ft.
Type of Liner= PSRM
FROM -L- STA. 73+10 LT TO -L- STA. 75+00 LT
DETAIL 109
PIPE INLET CHANNEL
(Not to Scale)
Length=15 Ft.
d= To Top of Bank
Est.= 15 Tons of Class B Rip-Rap
FROM STA. 73+00 LT TO STA. 73+20 LT
DETAIL 12
TOE PROTECTION
(Not to Scale)
d=1 Ft.
b=5 Ft.
Type of Liner= PSRM
FROM -Y6- STA. 11+00 RT TO -Y6- STA. 14+00 RT
DETAIL 26
SPECIAL CUT DITCH
(Not to Scale)
Min. D=1.5 Ft.
Max d=1.5 Ft.
Type of Liner= PSRM
FROM -Y6- STA. 14+56 LT TO -Y6- STA. 15+00 LT
DETAIL 25
RIP RAP AT EMBANKMENT
(Not to Scale)
Type of Liner= EST. 9 TONS, CL I Rip-Rap
Geotextile= 21 sy
FROM -L- STA. 73+45 RT TO -L- STA. 73+60 RT
DETAIL 27
SPECIAL CUT DITCH
(Not to Scale)
Min. D=1.5 Ft.
FROM -Y6- STA. 14+00 LT TO -Y6- STA. 14+56 LT
EST. 11 TONS CLASS B RIP RAP
EST. 28 SY GEOTEXTILE
TOE PROTECTION
SEE DETAIL 12
FOR INCIDENTAL
LOW AREAS AGAINST
FILL SLOPE
2' SPECIAL CUT BASE DITCH
w/CLASS B RIP RAP
SEE DETAIL 28
93 SY PSRM
SPECIAL CUT 'V' DITCH
w/GRASS
SEE DETAIL 27
SPECIAL CUT 'V' DITCH
w/PSRM
SEE DETAIL 26
EST. 5 TONS CLASS B RIP RAP
EST. 14 SY GEOTEXTILE
71 SY PSRM
EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE
BY3-139
BY3-140
BL-109
SCHOOL ENTRANCE ROAD
4' LATERAL BASE DITCH
w/PSRM
SEE DETAIL 24
EST. 15 TONS CLASS B RIP RAP
SEE DETAIL 109
BEGIN APPROACH SLAB
END APPROACH SLAB
BEGIN BRIDGE
END BRIDGE
SITE 4
NEUSE RIVER
5' MONOLITHIC ISLAND
1'-2" PEDESTRIAN BARRIER RAIL
6' SIDEWALK
EST. 323 TONS CLASS II RIP RAP, 2FT THICK
DECK DRAIN DISSIPATOR PAD
SEE DETAIL 108
END PED BARRIER RAIL
BEGIN PED BARRIER RAIL
EST. 2 TONS CLASS B RIP RAP
EST. 7 SY GEOTEXTILE
UTILITY OWNER TO PROVIDE GATE
2' STANDARD BASE DITCH
w/CLASS B RIP RAP
SEE DETAIL 22
EST. 3 TONS CLASS B RIP RAP
EST. 10 SY GEOTEXTILE
BEGIN NOISE WALL
STA. 72+90 48' RT
EST. 20 TONS CL I RIP RAP
EST. 39 SY GEOTEXTILE
MATCH DITCH INVERT
TO STREAM INVERT
OUTFALL ANALYSIS D
RIP RAP AT EMBANKMENT
SEE DETAIL 25
4' LATERAL BASE DITCH
w/CLASS I RIP RAP
+64.22 BEGIN
50' CURB TRANS.
65+00
70+00
75+00
MATCHLINE -L- STA. 62+00.00 SEE SHEET 7
MATCHLINE -L- STA. 75+00.00 SEE SHEET 9
NOTE:
ACCESS GRANTED FOR -DRW3-.
UTILITY OWNER WILL BE RESPONSIBLE
FOR RELOCATION & INSTALLATION OF
NEW GATE
CONTROL OF ACCESS IS NOT FENCED
FOR THIS PROJECT (R-3825B)
REVISIONS
8/17/99
8/9/2017
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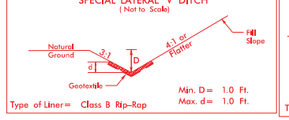

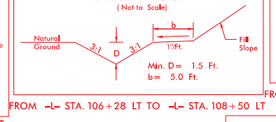

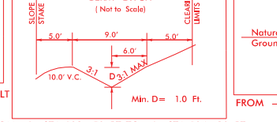

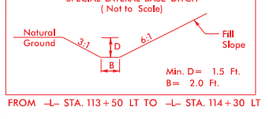

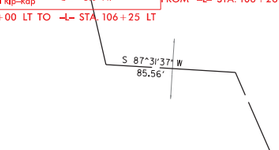

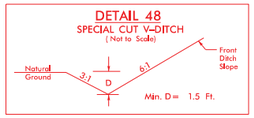

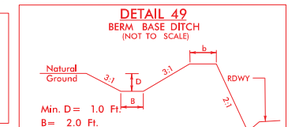

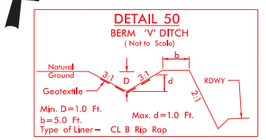

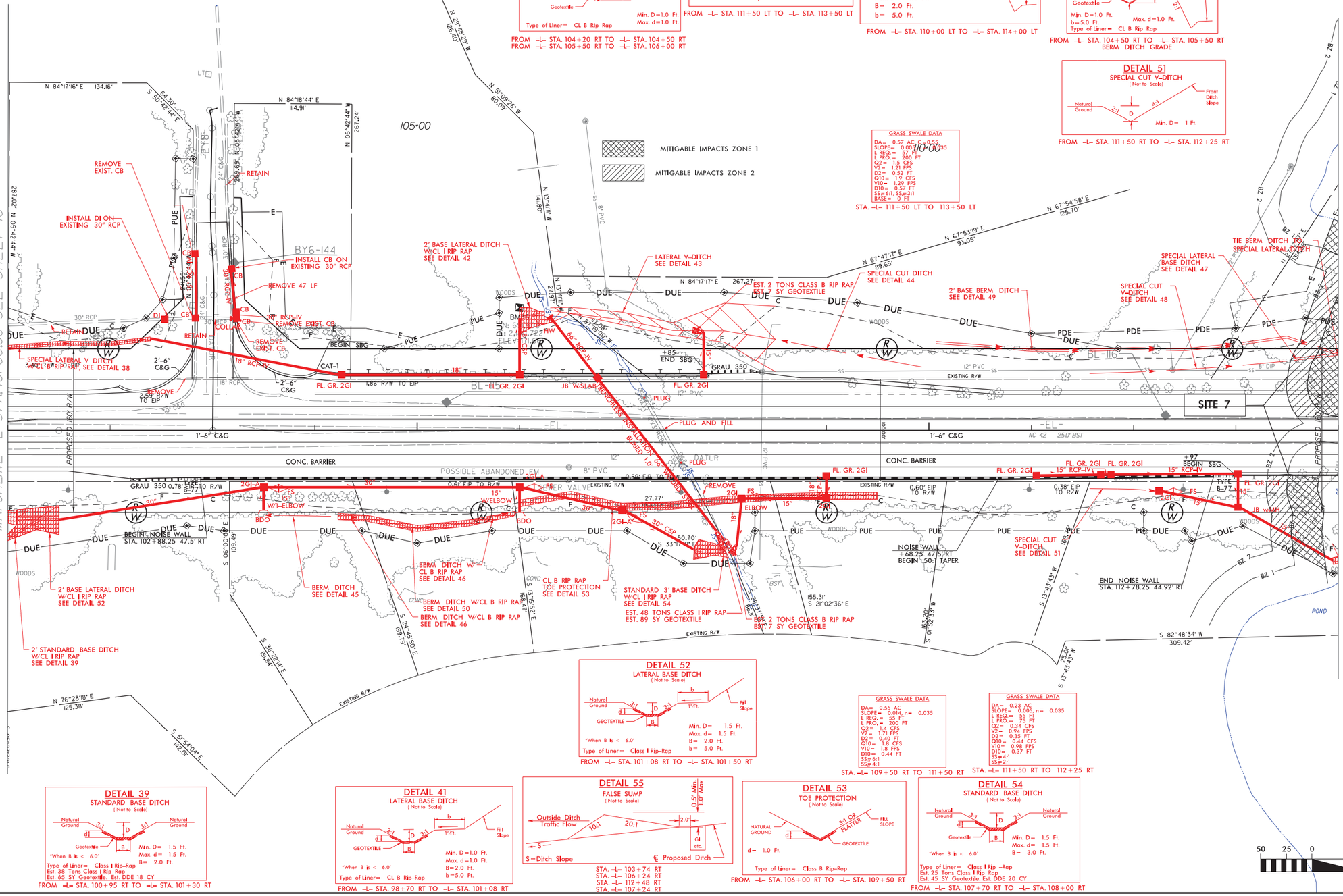

8/17/99

REVISIONS

8/3/2017
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Prepared by
URS
URS Corporation – North Carolina
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TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE # C-2243

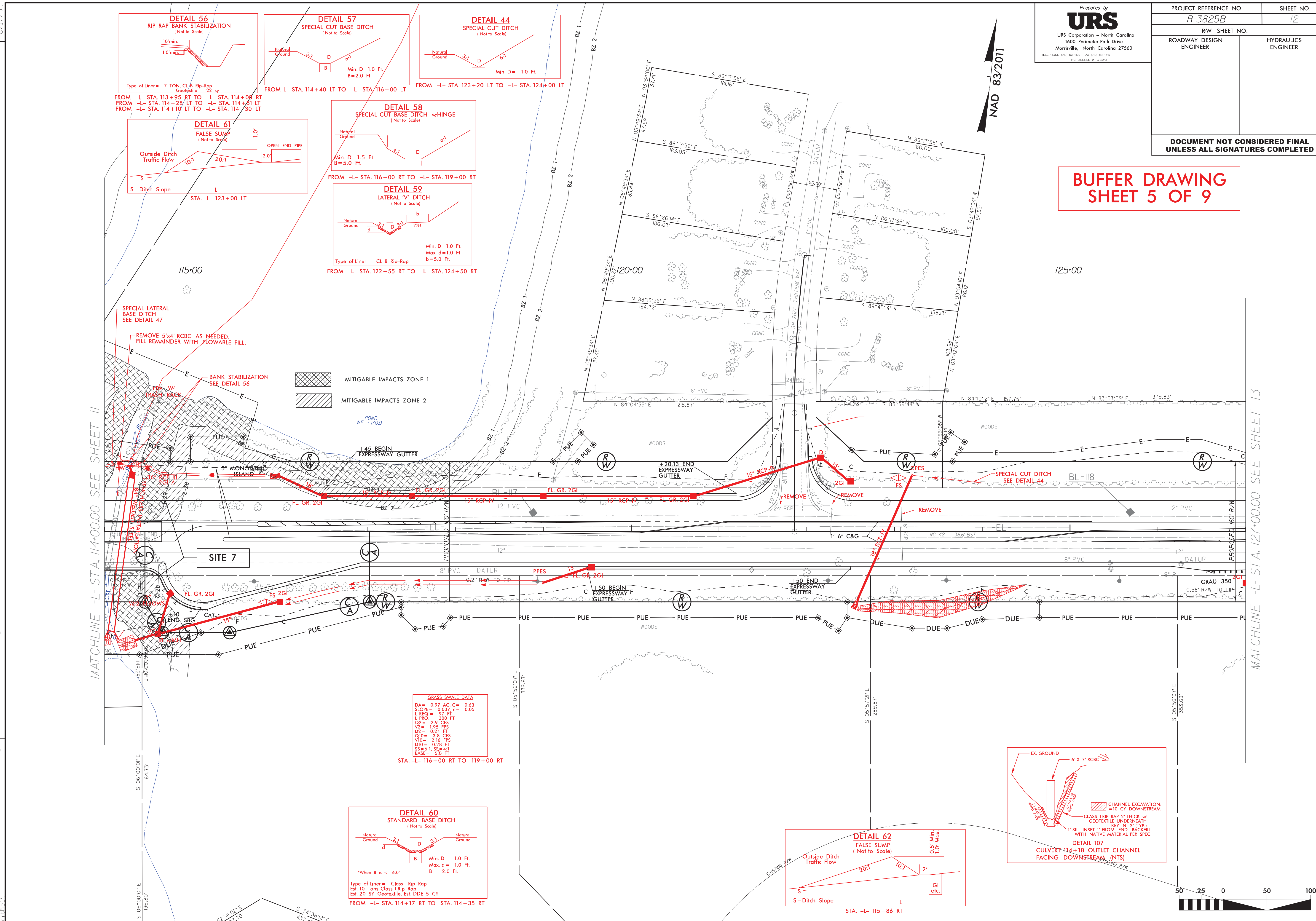
PROJECT REFERENCE NO.	SHEET NO.
R-3825B	11

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

BUFFER DRAWING SHEET 4 OF 9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URS
URS Corporation – North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
PROJECT REFERENCE NO.
R-3825B
SHEET NO.
12
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
BUFFER DRAWING SHEET 5 OF 9
NAD 83/2011
REVISIONS
DETAIL 56
RIP RAP BANK STABILIZATION
(Not to Scale)
Type of Liner= 7 TON, CL B Rip-Rap
Geotextile= 22 sy
FROM -L- STA. 113+95 RT TO -L- STA. 114+08 RT
FROM -L- STA. 114+28 LT TO -L- STA. 114+31 LT
FROM -L- STA. 114+10 LT TO -L- STA. 114+30 LT
DETAIL 57
SPECIAL CUT BASE DITCH
(Not to Scale)
Min. D=1.0 Ft.
B=2.0 Ft.
FROM -L- STA. 114+40 LT TO -L- STA. 116+00 LT
DETAIL 44
SPECIAL CUT DITCH
(Not to Scale)
Min. D= 1.0 Ft.
FROM -L- STA. 123+20 LT TO -L- STA. 124+00 LT
DETAIL 61
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
STA. -L- 123+00 LT
DETAIL 58
SPECIAL CUT BASE DITCH w/HINGE
(Not to Scale)
Min. D=1.5 Ft.
B=5.0 Ft.
FROM -L- STA. 116+00 RT TO -L- STA. 119+00 RT
DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)
Min. D=1.0 Ft.
Max. d=1.0 Ft.
b=5.0 Ft.
Type of Liner= CL B Rip-Rap
FROM -L- STA. 122+55 RT TO -L- STA. 124+50 RT
SPECIAL LATERAL BASE DITCH SEE DETAIL 47
REMOVE 5'x4' RCBC AS NEEDED. FILL REMAINDER WITH FLOWABLE FILL.
BANK STABILIZATION SEE DETAIL 56
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2
SITE 7
MATCHLINE -L- STA. 114+00.00 SEE SHEET 11
MATCHLINE -L- STA. 127+00.00 SEE SHEET 13
115+00
120+00
125+00
SPECIAL CUT DITCH SEE DETAIL 44
GRASS SWALE DATA
DA= 0.97 AC, C= 0.63
SLOPE= 0.037, n= 0.05
L REQ.= 97 FT
L PRO.= 300 FT
Q2= 2.9 CFS
V2= 1.95 FPS
D2= 0.24 FT
Q10= 3.8 CFS
V10= 2.16 FPS
D10= 0.28 FT
SS=6:1, SS=4:1
BASE= 5.0 FT
STA. -L- 116+00 RT TO 119+00 RT
DETAIL 60
STANDARD BASE DITCH
(Not to Scale)
Min. D= 1.0 Ft.
Max. d= 1.0 Ft.
B= 2.0 Ft.
*When B is < 6.0'
Type of Liner= Class I Rip Rap
Est. 10 Tons Class I Rip Rap
Est. 20 SY Geotextile. Est. DDE 5 CY
FROM -L- STA. 114+17 RT TO STA. 114+35 RT
DETAIL 62
FALSE SUMP
(Not to Scale)
Outside Ditch Traffic Flow
S=Ditch Slope
STA. -L- 115+86 RT
DETAIL 107
CULVERT 114+18 OUTLET CHANNEL FACING DOWNSTREAM (NTS)
CHANNEL EXCAVATION: ≈10 CY DOWNSTREAM
CLASS I RIP RAP 2' THICK w/ GEOTEXTILE UNDERNEATH
50 25 0 50 100
8/17/99
8/3/2017
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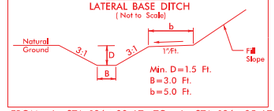

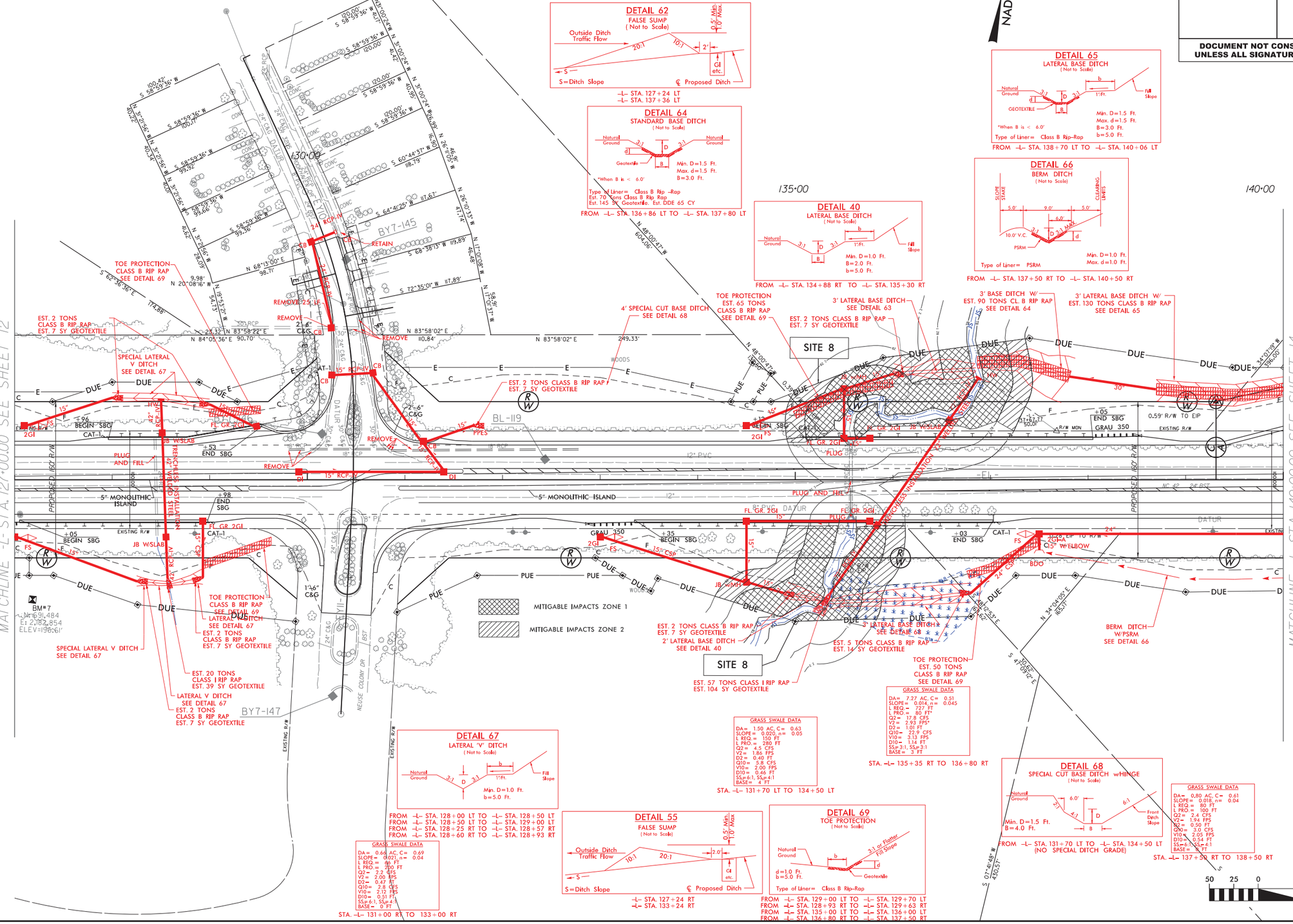

8/17/99

REVISIONS

BUFFER DRAWING
SHEET 6 OF 9

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PROJECT REFERENCE NO.	SHEET NO.
R-3825B	13

R/W SHEET NO.

ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

DETAIL 63
LATERAL BASE DITCH
(Not to Scale)

Min. D=1.5 Ft.
B=3.0 Ft.
b=5.0 Ft.

FROM –L– STA. 136+00 LT TO –L– STA. 136+85 LT
FROM –L– STA. 135+35 RT TO –L– STA. 136+80 RT

DETAIL 62
FALSE SUMP
(Not to Scale)

–L– STA. 127+24 LT
–L– STA. 137+36 LT

DETAIL 64
STANDARD BASE DITCH
(Not to Scale)

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=3.0 Ft.
*When B is < 6.0'
Type of Liner= Class B Rip –Rap
Est. 70 Tons Class B Rip Rap
Est. 145 SY Geotextile. Est. DDE 65 CY

FROM –L– STA. 136+86 LT TO –L– STA. 137+80 LT

DETAIL 65
LATERAL BASE DITCH
(Not to Scale)

Min. D=1.5 Ft.
Max. d=1.5 Ft.
B=3.0 Ft.
b=5.0 Ft.
*When B is < 6.0'
Type of Liner= Class B Rip–Rap

FROM –L– STA. 138+70 LT TO –L– STA. 140+06 LT

DETAIL 66
BERM DITCH
(Not to Scale)

Min. D=1.0 Ft.
Max. d=1.0 Ft.
Type of Liner= PSRM

FROM –L– STA. 137+50 RT TO –L– STA. 140+50 RT

DETAIL 40
LATERAL BASE DITCH
(Not to Scale)

Min. D=1.0 Ft.
B=2.0 Ft.
b=5.0 Ft.

FROM –L– STA. 134+88 RT TO –L– STA. 135+30 RT

GRASS SWALE DATA
DA= 7.27 AC, C= 0.51
SLOPE= 0.014, n= 0.045
L REQ.= 727 FT
L PRO.= 80 FT*
Q2= 17.8 CFS
V2= 2.93 FPS*
D2= 1.01 FT
Q10= 22.9 CFS
V10= 3.13 FPS
D10= 1.14 FT
SS_{LT}=3:1, SS_{RT}=3:1
BASE= 3 FT

STA. –L– 135+35 RT TO 136+80 RT

GRASS SWALE DATA
DA= 1.50 AC, C= 0.63
SLOPE= 0.020, n= 0.05
L REQ.= 150 FT
L PRO.= 280 FT
Q2= 4.5 CFS
V2= 1.86 FPS
D2= 0.40 FT
Q10= 5.8 CFS
V10= 2.00 FPS
D10= 0.46 FT
SS_{LT}=6:1, SS_{RT}=4:1
BASE= 4 FT

STA. –L– 131+70 LT TO 134+50 LT

DETAIL 67
LATERAL 'V' DITCH
(Not to Scale)

Min. D=1.0 Ft.
b=5.0 Ft.

FROM –L– STA. 128+00 LT TO –L– STA. 128+50 LT
FROM –L– STA. 128+50 LT TO –L– STA. 129+00 LT
FROM –L– STA. 128+25 RT TO –L– STA. 128+57 RT
FROM –L– STA. 128+60 RT TO –L– STA. 128+93 RT

GRASS SWALE DATA
DA= 0.66 AC, C= 0.69
SLOPE= 0.021, n= 0.04
L REQ.= 66 FT
L PRO.= 200 FT
Q2= 2.2 CFS
V2= 2.00 FPS
D2= 0.47 FT
Q10= 2.8 CFS
V10= 2.12 FPS
D10= 0.51 FT
SS_{LT}=6:1, SS_{RT}=4:1
BASE= 0 FT

STA. –L– 131+00 RT TO 133+00 RT

DETAIL 55
FALSE SUMP
(Not to Scale)

–L– STA. 127+24 RT
–L– STA. 133+24 RT

DETAIL 69
TOE PROTECTION
(Not to Scale)

d=1.0 Ft.
b=5.0 Ft.
Type of Liner= Class B Rip–Rap

FROM –L– STA. 129+00 LT TO –L– STA. 129+70 LT
FROM –L– STA. 128+93 RT TO –L– STA. 129+63 RT
FROM –L– STA. 135+00 LT TO –L– STA. 136+00 LT
FROM –L– STA. 136+80 RT TO –L– STA. 137+50 RT

DETAIL 68
SPECIAL CUT BASE DITCH w/HINGE
(Not to Scale)

Min. D=1.5 Ft.
B=4.0 Ft.

FROM –L– STA. 131+70 LT TO –L– STA. 134+50 LT
(NO SPECIAL DITCH GRADE)

GRASS SWALE DATA
DA= 0.80 AC, C= 0.61
SLOPE= 0.018, n= 0.04
L REQ.= 80 FT
L PRO.= 100 FT
Q2= 2.4 CFS
V2= 1.94 FPS
D2= 0.50 FT
Q10= 3.0 CFS
V10= 2.05 FPS
D10= 0.54 FT
SS_{LT}=6:1, SS_{RT}=4:1
BASE= 0 FT

STA. –L– 137+50 RT TO 138+50 RT

8/3/2017
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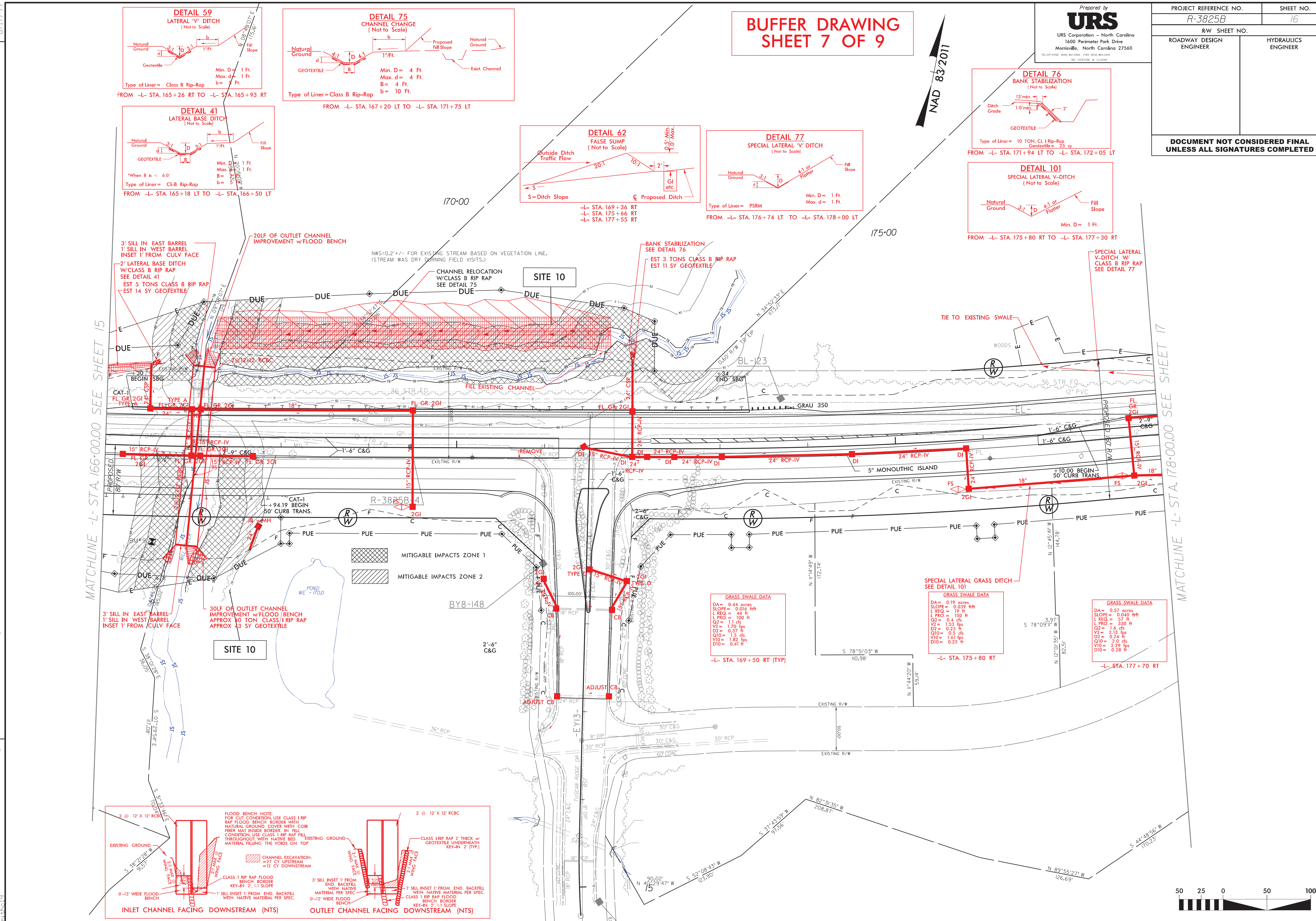
BUFFER DRAWING
SHEET 7 OF 9
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NC LICENSE # C-2243
PROJECT REFERENCE NO.
R-3825B
SHEET NO.
16
R/W SHEET NO.
ROADWAY DESIGN ENGINEER
HYDRAULICS ENGINEER
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED
NAD 83/2011
REVISIONS
DETAIL 59
LATERAL 'V' DITCH
(Not to Scale)
FROM -L- STA. 165+26 RT TO -L- STA. 165+93 RT
DETAIL 75
CHANNEL CHANGE
(Not to Scale)
Type of Liner = Class B Rip-Rap
FROM -L- STA. 167+20 LT TO -L- STA. 171+75 LT
DETAIL 41
LATERAL BASE DITCH
(Not to Scale)
FROM -L- STA. 165+18 LT TO -L- STA. 166+50 LT
DETAIL 62
FALSE SUMP
(Not to Scale)
S = Ditch Slope
-L- STA. 169+36 RT
-L- STA. 175+66 RT
-L- STA. 177+55 RT
DETAIL 77
SPECIAL LATERAL 'V' DITCH
(Not to Scale)
Type of Liner = PSRM
FROM -L- STA. 176+74 LT TO -L- STA. 178+00 LT
DETAIL 76
BANK STABILIZATION
(Not to Scale)
Type of Liner = 10 TON, CL I Rip-Rap
Geotextile = 25 sy
FROM -L- STA. 171+94 LT TO -L- STA. 172+05 LT
DETAIL 101
SPECIAL LATERAL V-DITCH
(Not to Scale)
FROM -L- STA. 175+80 RT TO -L- STA. 177+30 RT
SITE 10
SITE 10
MATCHLINE -L- STA. 166+00.00 SEE SHEET 15
MATCHLINE -L- STA. 178+00.00 SEE SHEET 17
CHANNEL RELOCATION W/CLASS B RIP RAP SEE DETAIL 75
BANK STABILIZATION SEE DETAIL 76
EST 3 TONS CLASS B RIP RAP
EST 11 SY GEOTEXTILE
20LF OF OUTLET CHANNEL IMPROVEMENT w/FLOOD BENCH
30LF OF OUTLET CHANNEL IMPROVEMENT w/FLOOD BENCH APPROX 40 TON CLASS I RIP RAP APPROX 43 SY GEOTEXTILE
3' SILL IN EAST BARREL 1' SILL IN WEST BARREL INSET 1' FROM CULV FACE
2' LATERAL BASE DITCH W/CLASS B RIP RAP SEE DETAIL 41
EST 5 TONS CLASS B RIP RAP
EST 14 SY GEOTEXTILE
FILL EXISTING CHANNEL
TIE TO EXISTING SWALE
SPECIAL LATERAL V-DITCH W/ CLASS B RIP RAP SEE DETAIL 77
SPECIAL LATERAL GRASS DITCH SEE DETAIL 101
MITIGABLE IMPACTS ZONE 1
MITIGABLE IMPACTS ZONE 2
GRASS SWALE DATA
DA = 0.44 acres
SLOPE = 0.016 ft/ft
L REQ. = 44 ft
L PRO. = 100 ft
Q2 = 1.1 cfs
V2 = 1.70 fps
D2 = 0.37 ft
Q10 = 1.5 cfs
V10 = 1.82 fps
D10 = 0.41 ft
-L- STA. 169+50 RT (TYP)
GRASS SWALE DATA
DA = 0.19 acres
SLOPE = 0.039 ft/ft
L REQ. = 19 ft
L PRO. = 150 ft
Q2 = 0.4 cfs
V2 = 1.53 fps
D2 = 0.23 ft
Q10 = 0.5 cfs
V10 = 1.61 fps
D10 = 0.25 ft
-L- STA. 175+80 RT
GRASS SWALE DATA
DA = 0.57 acres
SLOPE = 0.040 ft/ft
L REQ. = 57 ft
L PRO. = 330 ft
Q2 = 1.6 cfs
V2 = 2.13 fps
D2 = 0.24 ft
Q10 = 2.0 cfs
V10 = 2.29 fps
D10 = 0.28 ft
-L- STA. 177+70 RT
INLET CHANNEL FACING DOWNSTREAM (NTS)
OUTLET CHANNEL FACING DOWNSTREAM (NTS)
2 @ 12' X 12' RCBC
FLOOD BENCH NOTE:
CHANNEL EXCAVATION: =27 CY UPSTREAM =12 CY DOWNSTREAM
170+00
175+00

BUFFER IMPACTS SUMMARY

			IMPACT									BUFFER REPLACEMENT	
			TYPE			ALLOWABLE			MITIGABLE				
*SITE NO.	STRUCTURE SIZE / TYPE	STATION (FROM/TO)	ROAD CROSSING	BRIDGE	PARALLEL IMPACT	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)	TOTAL (ft^2)	ZONE 1 (ft^2)	ZONE 2 (ft^2)
1	54" Welded Steel Trenchless	-L- 26+62 - 29+24	X						12849	7731	20580		
4	Bridge Construction	-L- 62+24 - 65+82	X	X		15609	9399	25008		361	361		
7	84" Welded Steel Trenchless	-L- 113+29 - 114+99	X		X				24293	16515	40807		
8	72" Welded Steel Trenchless	-L- 134+18 - 137+36	X		X				18071	9040	27110		
10	2@12'x12' RCBC	-L- 166+20- 172+25	X		X				34053	18207	52260		
TOTAL:						15609	9399	25008	89266	51852	141118		

*Buffer sites are not numbered sequentially. However, they correspond to the respective wetland / stream site number.

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

JOHNSTON COUNTY
PROJECT: 34552.1.FR3
R-3825B NC-42

2/27/2017
SHEET 8 OF 9

Rev. May 2006

WETLANDS IN BUFFER IMPACTS SUMMARY

SITE NO.	STATION (FROM/TO)		WETLANDS IN BUFFERS ZONE 1 (ft^2)	WETLANDS IN BUFFERS ZONE 2 (ft^2)
8	134+18 - 137+36		1106	820
TOTAL:			1106	820

*Buffer sites are not numbered sequentially. However, they correspond to the respective wetland / stream site number.

N.C. DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS

JOHNSTON COUNTY
PROJECT: 34552.1.FR3
R-3825B NC-42

2/27/2017
SHEET 9 OF 9

Rev. Jan 2009

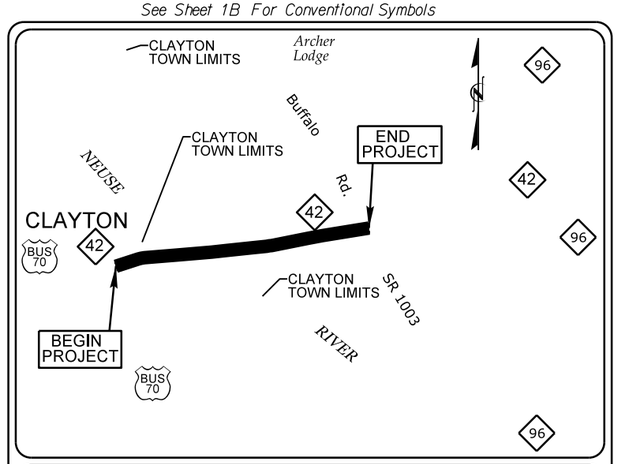
9/09/99

REVISIONS

TIP PROJECT: R-3825B

CONTRACT:

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



VICINITY MAP
NOT TO SCALE

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

JOHNSTON COUNTY

LOCATION: NC 42 FROM SR 1902 (GLEN LAUREL RD) TO SR 1003 (BUFFALO RD)

ENVIRONMENTAL PERMIT PLANS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-3825B	1	3

STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION
34552.1.FR3	STP-0042(58)	P.E.
34552.2.4	STP-0042(58)	R/W & UTL.

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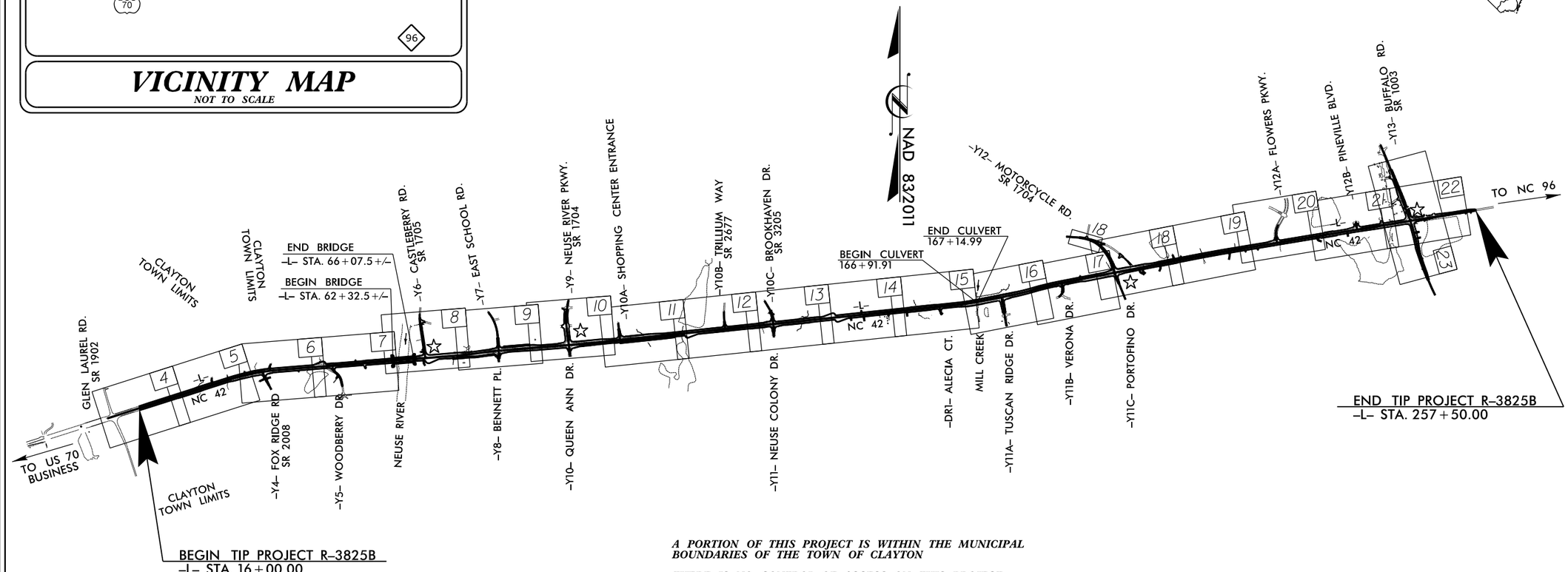


A PORTION OF THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE TOWN OF CLAYTON

THERE IS NO CONTROL OF ACCESS ON THIS PROJECT EXCEPT AS SHOWN ON PLANS

A DESIGN EXCEPTION IS REQUIRED FOR MAXIMUM GRADE.

CLEARING ON THIS PROJECT WILL BE PERFORMED TO THE LIMITS ESTABLISHED BY NCDOT METHOD III.

GRAPHIC SCALES

50 25 0 50 100
PLANS

50 25 0 50 100
PROFILE (HORIZONTAL)

10 5 0 10 20
PROFILE (VERTICAL)

DESIGN DATA

ADT 2015 = 19,000
ADT 2040 = 37,400
K = 9%
D = 65%
T = 6% *
V = 60 MPH
* (TTST % + DUAL %)
FUNC. CLASS = RURAL MINOR ARTERIAL
REGIONAL TIER
DESIGN EXCEPTION (GRADE)

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT R-3825B = 4.503 MILES
LENGTH STRUCTURE TIP PROJECT R-3825B = 0.071 MILES
TOTAL LENGTH OF TIP PROJECT R-3825B = 4.574 MILES

2012 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: SEPTEMBER 8, 2016

LETTING DATE: AUGUST 21, 2018

PROJECT ENGINEER

PROJECT DESIGN ENGINEER
GARY R. LOVERING, P.E.
PROJECT ENGINEER NCDOT ROADWAY DESIGN

HYDRAULICS ENGINEER

P.E.
SIGNATURE:
ROADWAY DESIGN ENGINEER

P.E.
SIGNATURE:

STATE OF NORTH CAROLINA • DEPARTMENT OF TRANSPORTATION •

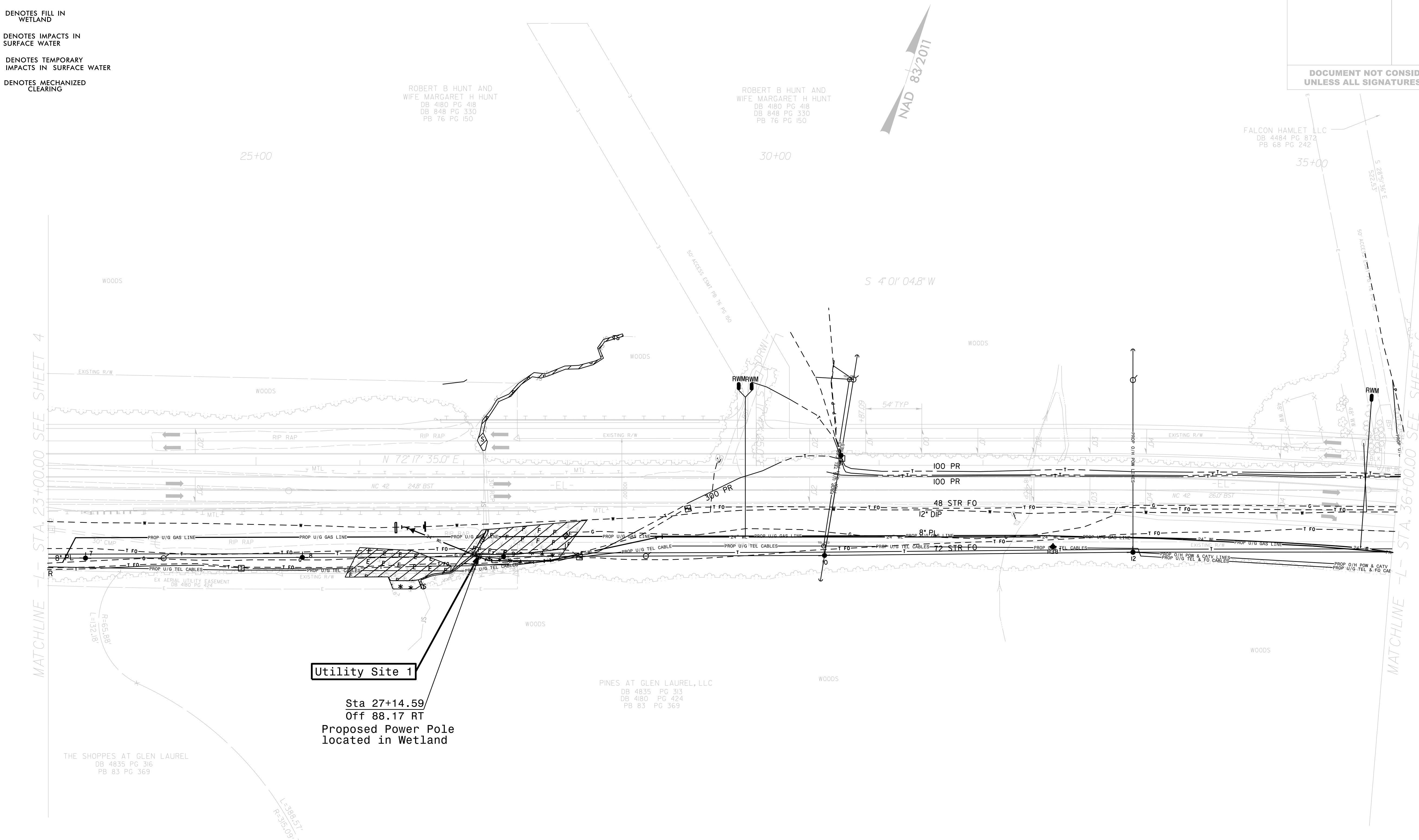
31-AUG-2017 13:34
R:\Utilities\Engineering\NEUVPermit Plans and Narrative\R3825B_Ut_tsh_UEI_psh.dgn
$$$$USERNAME$$$$

WETLAND AND SURFACE WATER IMPACTS
SHEET 2 OF 3

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	5
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



NAD 83/2011
ROBERT B HUNT AND WIFE MARGARET H HUNT
DB 4180 PG 418
DB 848 PG 330
PB 76 PG 150
FALCON HAMLET LLC
DB 4484 PG 872
PB 68 PG 242
25+00
30+00
35+00
S 4°01' 04.8" W
N 72°17' 35.0" E
WOODS
RIP RAP
EXISTING R/W
MATCHLINE -L- STA 23+00.00 SEE SHEET 4
MATCHLINE -L- STA 36+00.00 SEE SHEET 6
100 PR
300 PR
48 STR FO
12" DIP
8" PL
72 STR FO
PROP U/G GAS LINE
PROP U/G TEL CABLES
PROP O/H POW & CATV
PROP U/G TEL & FO CABLES
RWM
Utility Site 1
Sta 27+14.59
Off 88.17 RT
Proposed Power Pole
located in Wetland
PINES AT GLEN LAUREL, LLC
DB 4835 PG 313
DB 4180 PG 424
PB 83 PG 369
THE SHOPPES AT GLEN LAUREL
DB 4835 PG 316
PB 83 PG 369

REVISIONS

1 - PARCEL INFORMATION UPDATED ON PARCELS 3, 4 AND 5 (10/02/2017) TLH
2 - NEW PARCEL 2 ADDED ON SOUTHSIDE OF ROAD ALONG WITH NEW PROPERTY LINE (10/02/2017) TLH

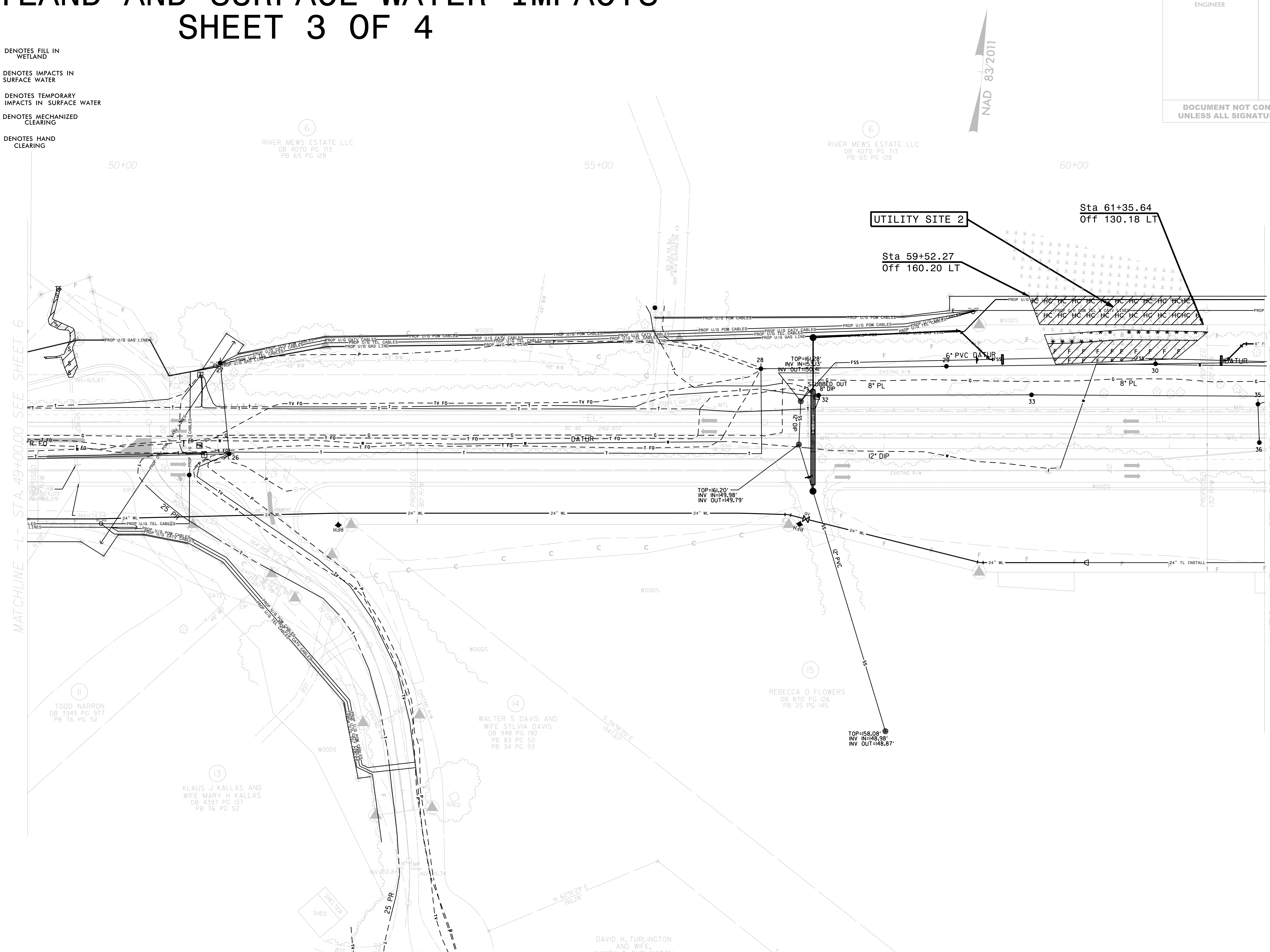
8/17/99

WETLAND AND SURFACE WATER IMPACTS
SHEET 3 OF 4

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	7
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

- F F — DENOTES FILL IN WETLAND
- S S — DENOTES IMPACTS IN SURFACE WATER
- TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES MECHANIZED CLEARING
- HC HC — DENOTES HAND CLEARING



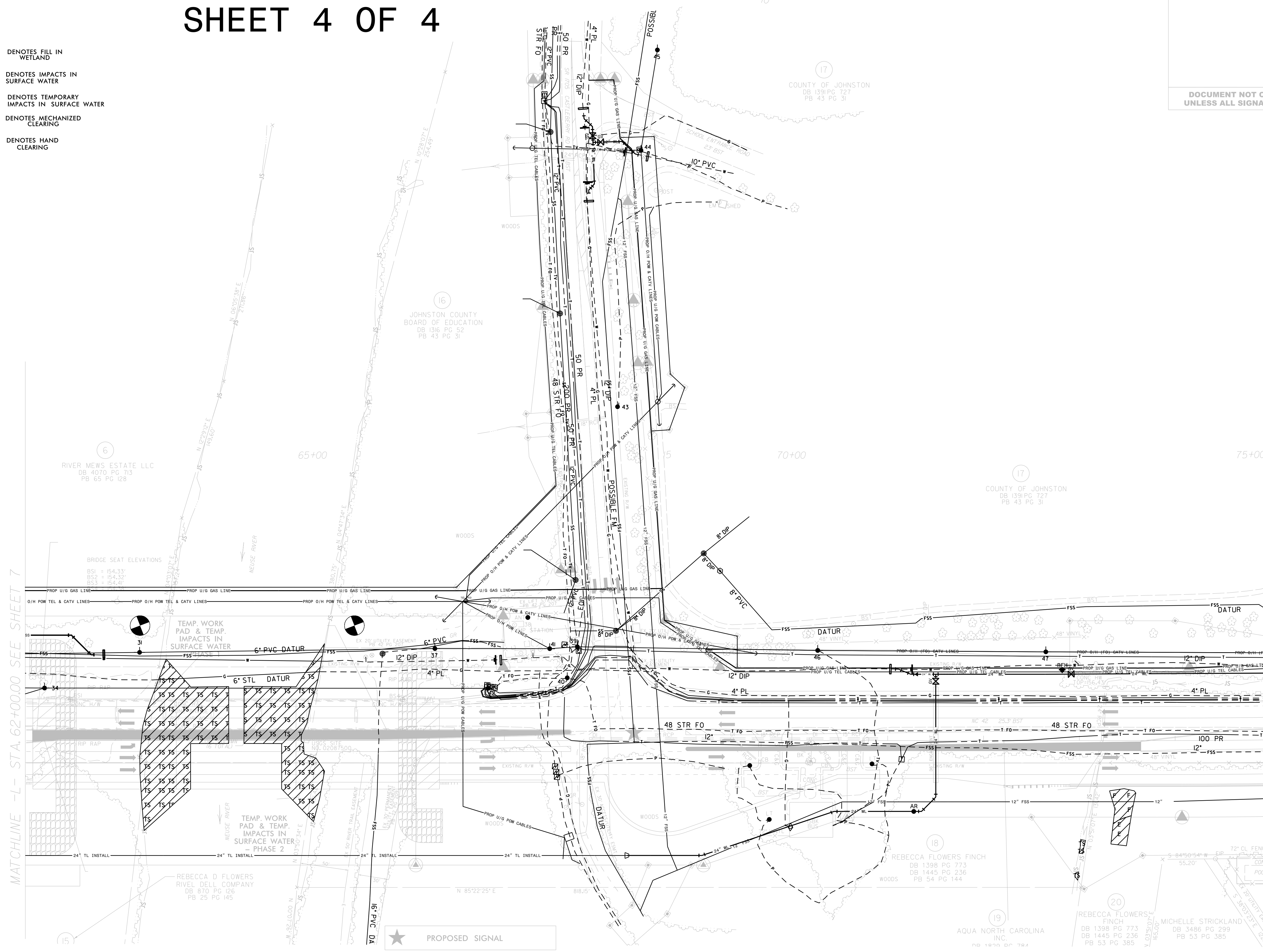
NAD 83/2011
RIVER MEWS ESTATE LLC
DB 4070 PG 713
PB 65 PG 128
50+00
55+00
60+00
UTILITY SITE 2
Sta 61+35.64
Off 130.18 LT
Sta 59+52.27
Off 160.20 LT
6" PVC DATUR
8" PL
12" DIP
24" WL
12" PVC
TOP=161.28'
INV IN=150.53'
INV OUT=150.41'
TOP=161.20'
INV IN=149.98'
INV OUT=149.79'
TOP=158.08'
INV IN=148.98'
INV OUT=148.87'
MATCHLINE -L- STA 49+00.00 SEE SHEET 6
MATCHLINE -L- STA 62+00.00 SEE SHEET 8
25 PR
TODD NARRON
DB 3949 PG 977
PB 76 PG 52
KLAUS J KALLAS AND WIFE MARY H KALLAS
DB 4397 PG 137
PB 76 PG 52
WALTER S DAVIS AND WIFE SYLVIA DAVIS
DB 948 PG 190
PB 83 PG 50
PB 34 PG 93
REBECCA D FLOWERS
DB 870 PG 126
PB 25 PG 145
DAVID H. TURLINGTON AND WIFE, NANCY T. TURLINGTON
WOODS

WETLAND AND SURFACE WATER IMPACTS
SHEET 4 OF 4

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	8
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

- F F — DENOTES FILL IN WETLAND
- S S — DENOTES IMPACTS IN SURFACE WATER
- TS TS — DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES MECHANIZED CLEARING
- HC HC — DENOTES HAND CLEARING



WETLAND PERMIT IMPACT SUMMARY

Site No.	Station (From/To)	Structure Size / Type	WETLAND IMPACTS: Permanent Fill In Wetlands (ac)	Temp. Fill In Wetlands (ac)	Excavation in Wetlands (ac)	Mechanized Clearing in Wetlands (ac)	Hand Clearing in Wetlands (ac)	SURFACE WATER IMPACTS: Permanent SW impacts (ac)	Temp. SW impacts (ac)	Existing Channel Impacts Permanent (ft)	Existing Channel Impacts Temp. (ft)	Natural Stream Design (ft)
1	Sta 27+14.59 RT	Utility Pole	<0.01									
2	Sta 59+52.27 - Sta 61+35.64	Maintained Utility Easement					0.12					
TOTALS*:			<0.01 ac				0.12					

*Rounded totals are sum of actual impacts

NOTES:
1 Power Pole = 4sqft of fill.

NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
August 29, 2017
Johnston County
R-3825B
46047.1.1
SHEET 1 OF 1

Revised 2013 10 24