



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

ROY COOPER  
GOVERNOR

JAMES H. TROGDON, III  
SECRETARY

July 27, 2018

**Addendum No. 1**

RE: Contract # C204107

WBS # 39049.3.1

F. A. # STPDA-0401(230)

**Cumberland County (U-4405)**

US-401 (Raeford Road) From Old Raeford Road To East  
Of Fairway Drive In Fayetteville

**August 21, 2018 Letting- Advertisement extended from the July 17, 2018 Letting**

To Whom It May Concern:

Reference is made to the plans and proposal form furnished to you on this project.

The following revision has been made to the Structure plans:

Sheet No.	Revisions
Title Sheet	Revised the letting date to August 21, 2018
C1-1	Revised the quantity for Channel Excavation within the Culvert Extension Bill of Material from Lump Sum to Cubic Yard

Please void the above listed sheet in your plans and staple the revised sheet thereto.

The following revisions have been made to the Roadway plans:

Sheet No.	Revisions
Title Sheet	Revised the letting date to August 21, 2018
3B-1	Revised Summary of Asphalt Pavement Removal
3D-41	Revised the quantity in the column for Concrete Pipe plug. Filled in drainage elbow quantities.
6	Added historic boundary at Parcel 55
17	Temporary Utility Easement was revised so as not to affect existing building
28	Added historic boundary and pavement removal at Parcel 55

Mailing Address:  
NC DEPARTMENT OF TRANSPORTATION  
CONTRACT STANDARDS AND DEVELOPMENT  
1591 MAIL SERVICE CENTER  
RALEIGH, NC 27699-1591

Telephone: (919) 707-6900  
Fax: (919) 250-4127  
Customer Service: 1-877-368-4968

Location:  
1020 BIRCH RIDGE DR.  
RALEIGH, NC 27610

Website: [www.ncdot.gov](http://www.ncdot.gov)

Please void the above listed sheets in your plans and staple the revised sheets thereto.

The following revisions have been made to the proposal:

<b>Page No.</b>	<b>Revisions</b>
Proposal Cover	Note added that reads "Includes Addendum No. 1 Dated 07-27-2018".
Table of Contents	Revised to reflect the addition of the project special provisions entitled "Payout Schedule" and "Major Items" and deletion of "No Major Contract Items"
G-1	Revised the availability and completion date within the project special provision entitled "Contract Time and Liquidated Damages"
G-1 and G-2(no revision)	Revised the availability date and completion date and added bonus clause within the project special provision entitled "Intermediate Contract Time Number 1 and Liquidated Damages"
G-7	Revised the availability and completion date within the project special provision entitled "Intermediate Contract Time Number 16 and Liquidated Damages"
G-10	Revised the project special provision entitled "No Major Contract Items" with the project special provision entitled "Major Items"
G-11	Revised the percentages within the project special provision entitled "Schedule of Estimated Completion Progress"
G-37	Added the project special provision entitled "Payout Schedule"
R-12	Revised the installation method within the project special provision entitled "4 Inch PVC Sleeve"
R-33 and New R-34 and R-35	Added the project special provision entitled "Tree Protection Fence"
GT-0.1 and GT-3.1 thru GT-3.4	New Pages to include the project special provision entitled "Standard Shoring"

Please void the above listed pages in your proposal and staple the revised pages thereto. Please staple New Page Nos. R-34 and R-35 after revised Page No. R-33.

On the item sheets the following pay item quantity revisions have been made:

<u>Item</u>	<u>Description</u>	<u>Old Quantity</u>	<u>New Quantity</u>
391-0000910000-N-SP	Exploratory Excavation - Standard	<b>NEW ITEM</b>	50 HR
010-0156000000-E-250	Removal of Existing Asphalt Pavement	1,880 SY	2,640 SY
068-1220000000-E-545	Incidental Stone Base	4,000 TON	10,000 TON
392-1308000000-E-607	Milling Asphalt Pavement, 0" to 3"	<b>NEW ITEM</b>	15,000 SY
071-1491000000-E-610	Asphalt Concrete Base Course, Type B25.0C	13,650 TON	52,830 TON
072-1503000000-E-610	Asphalt Concrete Intermediate Course, Type I19.0C	8,850 TON	61,440 TON

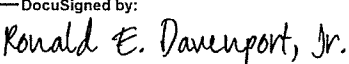
<u>Item</u>	<u>Description</u>	<u>Old Quantity</u>	<u>New Quantity</u>
073-1519000000-E-610	Asphalt Concrete Surface Course, Type S9.5B	3,070 TON	7,570 TON
074-1523000000-E-610	Asphalt Concrete Surface Course, Type S9.5C	7,200 TON	52,880 TON
075-1575000000-E-620	Asphalt Binder For Plant Mix	1,685 TON	9,010 TON
086-2264000000-E-840	Pipe Plugs	1.25 CY	10 CY
112-2845000000-N-858	Adjustment Of Meter Boxes Or Valve Boxes	11.01 EA	150 EA
129-3649000000-E-876	Rip Rap, Class B	100 TON	1,500 TON
160-4510000000-N-1190	Law Enforcement	100 HR	200 HR
252-5882000000-N-SP	Adjustment Of Brick and Mortar Manholes	44 EA	<b>DELETED</b>
253-5882000000-N-SP	Adjustment Of Precast Manholes	35 EA	<b>DELETED</b>
339-7576000000-N-SP	Metal Strain Signal Pole	73 EA	46 EA
340-7613000000-N-SP	Soil Test	73 EA	46 EA
341-7614100000-N-SP	Drilled Pier Foundation	438 CY	276 CY
391-0000930000-E-SP	Tree Protection Fence	<b>NEW ITEM</b>	1,700 LF

The Contractor's bid must be based on the revised pay item quantities and include the new pay item.

**Please delete the EBS file you previously downloaded for the July 17, 2018 letting and download the new EBS file listed for the August 21, 2018 letting. Please download the Expedite Addendum File and follow the instructions for applying the addendum. Bid Express will not accept your bid unless the new EBS file associated with the August 21, 2018 letting with the addendum file applied is used.**

The contract will be prepared accordingly.

Sincerely,

DocuSigned by:  
  
 F81B6038A47A442...

Ronald E. Davenport, Jr., PE  
 State Contract Officer

RED/jag  
Attachments

cc: Mr. Lamar Sylvester, PE  
Mr. Greg Burns, PE  
Mr. Ron Hancock, PE  
Mr. Jon Weathersby, PE  
Mr. Ken Kennedy, PE  
Ms. Lori Strickland  
Project File (2)

Mr. Ray Arnold, PE  
Ms. Theresa Canales, PE  
Mr. Mike Gwyn  
Ms. Jaci Kincaid  
Ms. Penny Higgins  
Mr. Mitchell Dixon  
Mr. Alex Foster

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
RALEIGH, N.C.

PROPOSAL

**INCLUDES ADDENDUM NO.1 DATED 7-27-2018**

DATE AND TIME OF BID OPENING: **AUGUST 21, 2018 AT 2:00 PM**

CONTRACT ID C204107

WBS 39049.3.1

FEDERAL-AID NO. STPDA-0401(230)

COUNTY CUMBERLAND

T.I.P. NO. U-4405

MILES 6.231

ROUTE NO. US 401

LOCATION US-401 (RAEFORD RD) FROM OLD RAEFORD RD TO EAST OF FAIRWAY DR IN FAYETTEVILLE.

TYPE OF WORK GRADING, DRAINAGE, PAVING, SIGNALS, WALLS, AND STRUCTURES.

**NOTICE:**

ALL BIDDERS SHALL COMPLY WITH ALL APPLICABLE LAWS REGULATING THE PRACTICE OF GENERAL CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA WHICH REQUIRES THE BIDDER TO BE LICENSED BY THE N.C. LICENSING BOARD FOR CONTRACTORS WHEN BIDDING ON ANY NON-FEDERAL AID PROJECT WHERE THE BID IS \$30,000 OR MORE, EXCEPT FOR CERTAIN SPECIALTY WORK AS DETERMINED BY THE LICENSING BOARD. BIDDERS SHALL ALSO COMPLY WITH ALL OTHER APPLICABLE LAWS REGULATING THE PRACTICES OF ELECTRICAL, PLUMBING, HEATING AND AIR CONDITIONING AND REFRIGERATION CONTRACTING AS CONTAINED IN CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA. NOTWITHSTANDING THESE LIMITATIONS ON BIDDING, THE BIDDER WHO IS AWARDED ANY FEDERAL - AID FUNDED PROJECT SHALL COMPLY WITH CHAPTER 87 OF THE GENERAL STATUTES OF NORTH CAROLINA FOR LICENSING REQUIREMENTS WITHIN 60 CALENDAR DAYS OF BID OPENING.

**BIDS WILL BE RECEIVED AS SHOWN BELOW:**

**THIS IS A ROADWAY & STRUCTURE PROPOSAL**

**5% BID BOND OR BID DEPOSIT REQUIRED**

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**TABLE OF CONTENTS**

**COVER SHEET  
PROPOSAL SHEET**

**PROJECT SPECIAL PROVISIONS**

CONTRACT TIME AND LIQUIDATED DAMAGES: ..... G-1  
INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES: ..... G-1  
INTERMEDIATE CONTRACT TIME NUMBER 2 AND LIQUIDATED DAMAGES ..... G-2  
INTERMEDIATE CONTRACT TIME NUMBER 3 AND LIQUIDATED DAMAGES ..... G-3  
INTERMEDIATE CONTRACT TIME NUMBER 4 AND LIQUIDATED DAMAGES ..... G-3  
INTERMEDIATE CONTRACT TIME NUMBER 5 AND LIQUIDATED DAMAGES ..... G-4  
INTERMEDIATE CONTRACT TIME NUMBER 6 AND LIQUIDATED DAMAGES ..... G-4  
INTERMEDIATE CONTRACT TIME NUMBER 7 AND LIQUIDATED DAMAGES ..... G-4  
INTERMEDIATE CONTRACT TIME NUMBER 8 AND LIQUIDATED DAMAGES ..... G-5  
INTERMEDIATE CONTRACT TIME NUMBER 9 AND LIQUIDATED DAMAGES ..... G-5  
INTERMEDIATE CONTRACT TIME NUMBER 10 AND LIQUIDATED DAMAGES ..... G-5  
INTERMEDIATE CONTRACT TIME NUMBER 11 AND LIQUIDATED DAMAGES ..... G-6  
INTERMEDIATE CONTRACT TIME NUMBER 12 AND LIQUIDATED DAMAGES ..... G-6  
INTERMEDIATE CONTRACT TIME NUMBER 13 AND LIQUIDATED DAMAGES ..... G-6  
INTERMEDIATE CONTRACT TIME NUMBER 14 AND LIQUIDATED DAMAGES ..... G-6  
INTERMEDIATE CONTRACT TIME NUMBER 15 AND LIQUIDATED DAMAGES ..... G-7  
INTERMEDIATE CONTRACT TIME NUMBER 16 AND LIQUIDATED DAMAGES: ... G-7  
PERMANENT VEGETATION ESTABLISHMENT:..... G-7  
DELAY IN RIGHT OF ENTRY:..... G-8  
MAJOR CONTRACT ITEMS: ..... G-10  
SPECIALTY ITEMS:..... G-10  
FUEL PRICE ADJUSTMENT:..... G-11  
SCHEDULE OF ESTIMATED COMPLETION PROGRESS:..... G-11  
DISADVANTAGED BUSINESS ENTERPRISE: ..... G-12  
CERTIFICATION FOR FEDERAL-AID CONTRACTS: ..... G-24  
CONTRACTOR'S LICENSE REQUIREMENTS: ..... G-25  
U.S. DEPARTMENT OF TRANSPORTATION HOTLINE: ..... G-25  
CARGO PREFERENCE ACT: ..... G-26  
SUBSURFACE INFORMATION:..... G-26  
PORTABLE CONCRETE BARRIER - (Partial Payments for Materials):..... G-26  
MAINTENANCE OF THE PROJECT: ..... G-26  
BID DOCUMENTATION: ..... G-27  
TWELVE MONTH GUARANTEE:..... G-30  
EROSION AND SEDIMENT CONTROL/STORMWATER CERTIFICATION: ..... G-31  
PROCEDURE FOR MONITORING BORROW PIT DISCHARGE:..... G-36  
PAYOUT SCHEDULE: ..... G-37

ROADWAY..... R-1

**PROJECT SPECIAL PROVISIONS****GENERAL****CONTRACT TIME AND LIQUIDATED DAMAGES:**

(8-15-00) (Rev. 12-18-07)

108

SP1 G07 A

The date of availability for this contract is **October 29, 2018**, except that work in jurisdictional waters and wetlands shall not begin until a meeting between the DOT, Regulatory Agencies, and the Contractor is held as stipulated in the permits contained elsewhere in this proposal. This delay in availability has been considered in determining the contract time for this project.

The completion date for this contract is **November 11, 2023**.

Except where otherwise provided by the contract, observation periods required by the contract will not be a part of the work to be completed by the completion date and/or intermediate contract times stated in the contract. The acceptable completion of the observation periods that extend beyond the final completion date shall be a part of the work covered by the performance and payment bonds.

The liquidated damages for this contract are **Two Hundred Dollars (\$ 200.00)** per calendar day. These liquidated damages will not be cumulative with any liquidated damages which may become chargeable under Intermediate Contract Time Number 1.

**INTERMEDIATE CONTRACT TIME NUMBER 1 AND LIQUIDATED DAMAGES:**

(7-1-95) (Rev. 2-21-12)

108

SP1 G13 A

Except for that work required under the Project Special Provisions entitled *Planting, Reforestation* and/or *Permanent Vegetation Establishment*, included elsewhere in this proposal, the Contractor will be required to complete all work included in this contract and shall place and maintain traffic on same.

The date of availability for this intermediate contract time is **October 29, 2018**.

The completion date for this intermediate contract time is **May 15, 2023**.

In addition to the above time limit for completing this intermediate contract work, the Department desires that this intermediate contract work be completed by **October 1, 2022** and that the Contractor pursue the work with such labor, equipment and materials as necessary to ensure that an **October 1, 2022** completion date will be met without regard to time extensions and time reliefs provided for in the Specifications. **This date shall be utilized in determining Bonus payment and it shall not be revised for any reason whatsoever.** Therefore, as full compensation for all extra costs involved, the Department agrees to pay as a bonus, the sum of **One Million Dollars (\$ 1,000,000.00)** to the Contractor for satisfactorily completing this intermediate contract work on or prior to **October 1, 2022**. Should the Contractor fail to complete this intermediate contract work by **October 1, 2022**, then normal time extension and time reliefs provided in the Specifications will apply and no bonus will be allowed.

The liquidated damages for this intermediate contract time are **Four Thousand Dollars (\$ 4,000.00)** per calendar day.

Upon apparent completion of all the work required to be completed by this intermediate date, a final inspection will be held in accordance with Article 105-17 and upon acceptance, the

Department will assume responsibility for the maintenance of all work except *Planting, Reforestation* and/or *Permanent Vegetation Establishment*. The Contractor will be responsible for and shall make corrections of all damages to the completed roadway caused by his planting operations, whether occurring prior to or after placing traffic through the project.

**INTERMEDIATE CONTRACT TIME NUMBER 2 AND LIQUIDATED DAMAGES**

(2-20-07)

108

SP1 G14 B

The Contractor shall not narrow or close a lane of traffic on **Any Road**, detain and /or alter the traffic flow on or during holiday weekends, special events, or any other time when traffic is unusually heavy, including the following schedules:

**HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS**

1. For **unexpected occurrence** that creates unusually high traffic volumes, as directed by the Engineer.
2. For **Easter**, between the hours of **6:00 AM** Thursday and **7:00 PM** Monday.
3. For **Memorial Day**, between the hours of **6:00 AM** Friday and **7:00 PM** Tuesday.
4. For **Independence Day**, between the hours of **6:00 AM** the day before Independence Day and **7:00 PM** the day after Independence Day.

If **Independence Day** is on a Friday, Saturday, Sunday, or Monday, then between the hours of **6:00 AM** the Thursday before Independence Day and **7:00 PM** the Tuesday after Independence Day.

5. For **Labor Day**, between the hours of **6:00 AM** Friday and **7:00 AM** Tuesday.

In addition, the Contractor shall not narrow or close a lane of traffic on **-L- Section 1, -L- Section 2, -Y50-, -Y51-, -Y52-, -Y53-, -Y1-, -Y2-, -Y4-, -Y5-, -Y6-, -Y7-, -Y9-, -Y10-, -Y11-, and -Y12-**, detain and /or alter the traffic flow on or during holiday weekends, special events, or any other time when traffic is unusually heavy, including the following schedules:

**HOLIDAY AND HOLIDAY WEEKEND LANE CLOSURE RESTRICTIONS**

6. For **New Year's Day**, between the hours of **6:00 AM** December 31<sup>st</sup> and **7:00 PM** January 2<sup>nd</sup>. If New Year's Day is on a Friday, Saturday, Sunday or Monday, then until **7:00 PM** the following Tuesday.
7. For **Thanksgiving**, between the hours of **6:00 AM** Tuesday and **7:00 PM** Monday.
8. For **Christmas**, between the hours of **6:00 AM** the Friday before the week of Christmas Day and **7:00 PM** the following Tuesday after the week of Christmas Day.

Holidays and holiday weekends shall include New Year's, Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. The Contractor shall schedule his work so that lane closures are not required during these periods, unless otherwise directed by the Engineer.

The time of availability for this intermediate contract work shall be the time the Contractor begins to install all traffic control devices for lane closures according to the time restrictions listed herein.



The completion time for this intermediate contract time will be the following **Monday at 5:00 AM** after the time of availability.

The liquidated damages are **Two Thousand Dollars (\$2,000.00)** per hour.

**INTERMEDIATE CONTRACT TIME NUMBER 15 AND LIQUIDATED DAMAGES**

(2-20-07)

SP1 G14 G

The Contractor shall complete the work required of **Phase II, Step #3C** as shown on Sheet TMP-3A and shall place and maintain traffic on same.

The time of availability for this intermediate contract time will be the **Friday at 9:00 PM** that the Contractor elects to begin the work.

The completion time for this intermediate contract time will be the following **Monday at 5:00 AM** after the time of availability.

The liquidated damages are **Two Thousand Dollars (\$2,000.00)** per hour.

**INTERMEDIATE CONTRACT TIME NUMBER 16 AND LIQUIDATED DAMAGES:**

(2-20-07) (Rev. 6-18-13)

108

SP1 G14 H

The Contractor shall complete all work required of **Buckhead Creek Sanitary Sewer Outfall Relocation (from -L- STA 220+75 +/- to -L- STA. 223+25 +/-)** as shown on Sheet UC-20.

The date of availability for this intermediate contract time is **October 29, 2018**.

The completion date for this intermediate contract time is **April 27, 2019**.

The liquidated damages are **Six Hundred Dollars (\$ 600.00)** per calendar day.

**PERMANENT VEGETATION ESTABLISHMENT:**

(2-16-12) (Rev. 10-15-13)

104

SP1 G16

Establish a permanent stand of the vegetation mixture shown in the contract. During the period between initial vegetation planting and final project acceptance, perform all work necessary to establish permanent vegetation on all erodible areas within the project limits, as well as, in borrow and waste pits. This work shall include erosion control device maintenance and installation, repair seeding and mulching, supplemental seeding and mulching, mowing, and fertilizer topdressing, as directed. All work shall be performed in accordance with the applicable section of the *2018 Standard Specifications*. All work required for initial vegetation planting shall be performed as a part of the work necessary for the completion and acceptance of the Intermediate Contract Time (ICT). Between the time of ICT and Final Project acceptance, or otherwise referred to as the vegetation establishment period, the Department will be responsible for preparing the required National Pollutant Discharge Elimination System (NPDES) inspection records.

Once the Engineer has determined that the permanent vegetation establishment requirement has been achieved at an 80% vegetation density (the amount of established vegetation per given area to stabilize the soil) and no erodible areas exist within the project limits, the Contractor will be notified to remove the remaining erosion control devices that are no longer needed. The Contractor

330	VD Neal Properties, LLC
331	Highland Commercial, LLC
332	Waterville Equities I, LLC
334	Highland Diaries, Inc.
335	PBM of Fayetteville, LLC
336	Randy S. Gregory & wife, Anne
337	Weeks Rental Properties
339	Weeks Rental Properties
340	Fayetteville Association of Realtors
346	W. A. Maxwell, Inc
347	Highland Country Club
349	Highland Country Club
350	Frederick L. Graham
351	WJ Wiggs et al C/O Pamela Griffin
353	2401 Robeson Bend, LLC
375	Buckhead Plaza, Inc.
377	Luke Nwosu, Trustee of the Maxiorie Irrevocable Trust
378	William H. Owen, III
379	(Curtis M. Dail) Dail Center, LLC
380	Louis W. Hackett
381	Ernest L. Nelon, II
382	Donald Deitz Bell
385	Betty M. Reeves
386	Bennie C. Benton
387	Buckhead Plaza, Inc.
388	Pedro's Mexican Food, Inc.

**MAJOR CONTRACT ITEMS:**

(2-19-02)

104

SP1 G28

The following listed items are the major contract items for this contract (see Article 104-5 of the 2018 Standard Specifications):

Line #	Description
-	-
-	-
-	-
-	-
-	-

**SPECIALTY ITEMS:**

(7-1-95)(Rev. 1-17-12)

108-6

SP1 G37

Items listed below will be the specialty items for this contract (see Article 108-6 of the 2018 Standard Specifications).

Line #	Description
115 thru 120	Guardrail
121 thru 126	Fencing
131 thru 147	Signing
162 thru 169	Long-Life Pavement Markings
175	Permanent Pavement Markers
177 thru 262	Utility Construction
263 thru 297	Erosion Control
298 thru 364	Signals/ITS System

**FUEL PRICE ADJUSTMENT:**

(11-15-05) (Rev. 2-18-14)

109-8

SP1 G43

Revise the *2018 Standard Specifications* as follows:

**Page 1-83, Article 109-8, Fuel Price Adjustments**, add the following:

The base index price for DIESEL #2 FUEL is \$ **2.4505** per gallon. Where any of the following are included as pay items in the contract, they will be eligible for fuel price adjustment.

The pay items and the fuel factor used in calculating adjustments to be made will be as follows:

Description	Units	Fuel Usage Factor Diesel
Unclassified Excavation	Gal/CY	0.29
Borrow Excavation	Gal/CY	0.29
Class IV Subgrade Stabilization	Gal/Ton	0.55
Aggregate Base Course	Gal/Ton	0.55
Sub-Ballast	Gal/Ton	0.55
Asphalt Concrete Base Course, Type _____	Gal/Ton	2.90
Asphalt Concrete Intermediate Course, Type _____	Gal/Ton	2.90
Asphalt Concrete Surface Course, Type _____	Gal/Ton	2.90
Open-Graded Asphalt Friction Course	Gal/Ton	2.90
Permeable Asphalt Drainage Course, Type _____	Gal/Ton	2.90
Sand Asphalt Surface Course, Type _____	Gal/Ton	2.90
Aggregate for Cement Treated Base Course	Gal/Ton	0.55
Portland Cement for Cement Treated Base Course	Gal/Ton	0.55
___" Portland Cement Concrete Pavement	Gal/SY	0.245
Concrete Shoulders Adjacent to ___" Pavement	Gal/SY	0.245

**SCHEDULE OF ESTIMATED COMPLETION PROGRESS:**

(7-15-08) (Rev. 6-19-18)

108-2

SP1 G58

The Contractor's attention is directed to the Standard Special Provision entitled *Availability of Funds Termination of Contracts* included elsewhere in this proposal. The Department of Transportation's schedule of estimated completion progress for this project as required by that Standard Special Provision is as follows:

	<b><u>Fiscal Year</u></b>	<b><u>Progress (% of Dollar Value)</u></b>
2019	(7/01/18 - 6/30/19)	<b>22%</b> of Total Amount Bid
2020	(7/01/19 - 6/30/20)	<b>28%</b> of Total Amount Bid
2021	(7/01/20 - 6/30/21)	<b>23%</b> of Total Amount Bid
2022	(7/01/21 - 6/30/22)	<b>17%</b> of Total Amount Bid
2023	(7/01/22 - 6/30/23)	<b>10%</b> of Total Amount Bid

The Contractor shall also furnish his own progress schedule in accordance with Article 108-2 of the *2018 Standard Specifications*. Any acceleration of the progress as shown by the Contractor's progress schedule over the progress as shown above shall be subject to the approval of the Engineer.

represents natural background conditions. Downstream sampling location shall be located at the point where complete mixing of the discharge and receiving water has occurred.

The discharge shall be closely monitored when water from the dewatering activities is introduced into jurisdictional wetlands. Any time visible sedimentation (deposition of sediment) on the wetland surface is observed, the dewatering activity will be suspended until turbidity levels in the stilling basin can be reduced to a level where sediment deposition does not occur. Staining of wetland surfaces from suspended clay particles, occurring after evaporation or infiltration, does not constitute sedimentation. No activities shall occur in wetlands that adversely affect the functioning of a wetland. Visible sedimentation will be considered an indication of possible adverse impacts on wetland use.

The Engineer will perform independent turbidity tests on a random basis. These results will be maintained in a log within the project records. Records will include, at a minimum, turbidity test results, time, date and name of sampler. Should the Department's test results exceed those of the Contractor's test results, an immediate test shall be performed jointly with the results superseding the previous test results of both the Department and the Contractor.

The Contractor shall use the *NCDOT Turbidity Reduction Options for Borrow Pits Matrix*, available at [http://www.ncdot.gov/doh/operations/dp\\_chief\\_eng/roadside/fieldops/downloads/Files/TurbidityReductionOptionSheet.pdf](http://www.ncdot.gov/doh/operations/dp_chief_eng/roadside/fieldops/downloads/Files/TurbidityReductionOptionSheet.pdf) to plan, design, construct, and maintain BMPs to address water quality standards. Tier I Methods include stilling basins which are standard compensatory BMPs. Other Tier I methods are noncompensatory and shall be used when needed to meet the stream turbidity standards. Tier II Methods are also noncompensatory and are options that may be needed for protection of rare or unique resources or where special environmental conditions exist at the site which have led to additional requirements being placed in the DWQ's 401 Certifications and approval letters, Isolated Wetland Permits, Riparian Buffer Authorization or a DOT Reclamation Plan's Environmental Assessment for the specific site. Should the Contractor exhaust all Tier I Methods on a site exclusive of rare or unique resources or special environmental conditions, Tier II Methods may be required by regulators on a case by case basis per supplemental agreement.

The Contractor may use cation exchange capacity (CEC) values from proposed site borings to plan and develop the bid for the project. CEC values exceeding 15 milliequivalents per 100 grams of soil may indicate a high potential for turbidity and should be avoided when dewatering into surface water is proposed.

No additional compensation for monitoring borrow pit discharge will be paid.

#### **PAYOUT SCHEDULE:**

(1-19-10) (Rev. 1-17-12)

108

SP1 G57

Submit an Anticipated Monthly Payout Schedule prior to beginning construction. The Anticipated Monthly Payout Schedule will be used by the Department to monitor funding levels for this project. Include a monthly percentage breakdown (in terms of the total contract amount) of the work anticipated to be completed. The schedule should begin with the date the Contractor plans to begin construction and end with the anticipated completion date. Submit updates of the Anticipated Monthly Payout Schedule on March 15, June 15, September 15, and December 15 of each calendar year until project acceptance. Submit the original Anticipated Monthly Payout Schedule and all subsequent updates to the Resident Engineer with a copy to the State Construction Engineer at 1 South Wilmington Street, 1543 Mail Service Center, Raleigh, NC 27699-1543.

Page 10-30, Table 1012-1, AGGREGATE CONSENSUS PROPERTIES, replace with the following:

Mix Type	Coarse Aggregate Angularity <sup>B</sup>	Fine Aggregate Angularity % Minimum	Sand Equivalent % Minimum	Flat and Elongated 5 : 1 Ratio % Maximum
<i>Test Method</i>	<i>ASTM D5821</i>	<i>AASHTO T 304</i>	<i>AASHTO T 176</i>	<i>ASTM D4791</i>
S4.75A; S9.5B	75 / -	40	40	-
S9.5C; I19.0C; B25.0C	95 / 90	45	45	10
S9.5D	100 / 100	45	50	10
OGFC	100 / 100	45	45	10
UBWC	100 / 85	45	45	10

A. Requirements apply to the design aggregate blend.

B. 95 / 90 denotes that 95% of the coarse aggregate has one fractured face and 90% has 2 or more fractured faces.

#### **4" PVC SLEEVE**

##### **General**

The work covered by the provision shall consist of furnishing and installing duct pipe, including elbows, as shown on the plans (or as directed by the Engineer) under sidewalks and roadway. Place sleeve at a depth of 2' below finished grade to extend 18" beyond pavement on each side.

**Mark the location of the sleeve by driving a rebar stake in line at each end (1" exposed above finished grade).**

##### **Material**

The duct shall be rigid (Polyvinyl Chloride) heavy wall, UL approved for underground use without concrete encasement per UL 651 "Rigid Non-Metallic Conduit or Encasement".

##### **Installation**

Install duct pipe using a trenchless method as specified in Section 1550-4.

##### **Measurement and Payment**

Measurement and payment for PVC Duct shall be at the contract unit price per linear foot for "4" PVC Sleeve" as installed, and will be full compensation for all work covered by this section.

Payment will be made under:

**Pay Item**  
4" PVC Sleeve

**Pay Unit**  
LF

PCB will be measured and paid in accordance with Section 1170 of the *2018 Standard Specifications*. No additional payment will be made for anchoring PCB for temporary shoring. Costs for anchoring PCB will be incidental to temporary shoring.

Temporary guardrail will be measured and paid for in accordance with Section 862 of the *2018 Standard Specifications*.

Payment will be made under:

**Pay Item**  
Temporary Shoring

**Pay Unit**  
Square Foot

**PERMANENT SEEDING AND MULCHING:**

(7-1-95)

1660

SP16 R02

The Department desires that permanent seeding and mulching be established on this project as soon as practical after slopes or portions of slopes have been graded. As an incentive to obtain an early stand of vegetation on this project, the Contractor's attention is called to the following:

For all permanent seeding and mulching that is satisfactorily completed in accordance with the requirements of Section 1660 in the *2018 Standard Specifications* and within the following percentages of elapsed contract times, an additional payment will be made to the Contractor as an incentive additive. The incentive additive will be determined by multiplying the number of acres of seeding and mulching satisfactorily completed times the contract unit bid price per acre for Seeding and Mulching times the appropriate percentage additive.

Percentage of Elapsed Contract Time	Percentage Additive
0% - 30%	30%
30.01% - 50%	15%

Percentage of elapsed contract time is defined as the number of calendar days from the date of availability of the contract to the date the permanent seeding and mulching is acceptably completed divided by the total original contract time.

**TREE PROTECTION FENCE**

**General:** "Tree Protection Fence" consists of furnishing, installing, maintaining, and removing wood or steel post, yellow poly-barricade fence fabric and signs at locations directed by the Engineer in the field and in accordance with the special provisions included herein. **Tree protection fence will be installed after the slope-stake line is staked and prior to all other work.**

**Materials:** Use *wood posts* that are nominal 4" x 4", length as required, structural light framing, grade No. 2, Southern Pine or *steel posts* that are a minimum of 1 3/8" wide measured parallel to the fence, with a weight of 1.25 lb./ft. of length. Post must have a means for retaining wire in desired position without displacement. Use of steel posts will be required in any area where the tree protection fence is in close proximity to the tree's trunk or any major roots.

Use neon lime/yellow polyethylene or polypropylene prefabricated safety/barricade type fence fabric that is a minimum of 48 inches high and approved by the Engineer.

Treat wood posts if used, with a preservative in accordance with Section 1082 of the *Standard Specifications*.

Use a durable, weatherproof lightweight material to fabricate 'Tree Protection Area' signs. Signs will be a minimum of five square feet and lettering will be a minimum of two inches tall and text will be clearly legible. Each sign will contain the following wording in both English and Spanish on the same sign:

**TREE PROTECTION AREA  
DO NOT ENTER**

Use a red background with white lettering. **Submit sample sign to the Engineer for approval prior to installation.**

**Installation:** Erect fence to conform to the general contour of the ground. Do not remove existing plant material or perform any grading unless indicated on the plans or directed by the Engineer. Avoid soil compaction within tree protection area; do not use heavy equipment and stay outside the perimeter of the tree protection area where possible.

Install posts and maintain in a vertical position. Post may be hand set or set with a post driver. If hand set tamp backfill material thoroughly. Power driven wood posts may be sharpened to a dull point. Remove and replace posts damaged by power driving prior to final acceptance. At the direction of the Engineer use steel post instead of wood post when installing fence in close proximity to a tree's trunk or any major roots.

Stretch neon lime/yellow safety/barricade fence fabric taut and attach to post with appropriate means according to post type used. In sections where signs will be located, reinforce top of fabric by weaving a 12 gauge galvanized wire in the fabric and firmly attach to a post at each end of the section. Attach signs to fence fabric at all four corners. Locate signs every one hundred feet, at all corners, changes in direction and as directed by the Engineer.

**Maintenance:** Maintain tree protection fence with required signs in good condition, fully upright with no loose attachments or missing links for the duration of the project. Signs must be visible and legible throughout the duration of the contract. ***The Engineer must approve in writing, prior to entering the tree protection area, access for the contractor and subcontractor for anything other than routine vegetation maintenance and liter pick-up.*** Approval must be made for each access occurrence.

**Removal:** As a last item of work after construction and all related work is complete, and at the direction of the Engineer, remove the tree protection fence, backfill post holes and remove, and properly dispose of fence materials off the construction site. While performing this work do not use heavy equipment and stay on the outside perimeter of the tree protection area where possible to avoid soil compaction within root zone.

**Method of Measurement:** Tree protection fence to be paid for will be the actual number of linear feet installed in place and accepted.

**Basis of Payment:** The quantity of tree protection fence will be paid for at the contract unit price per linear foot. Such payment will be full compensation for the work as described above, including but not limited to furnishing, installing, maintaining and removing the tree protection fence and signs.

*Payment will be made under*

Tree Protection Fence.....LF



U-4405

# GT-0.1

Cumberland County

## PROJECT SPECIAL PROVISIONS

### GEOTECHNICAL

MECHANICALLY STABILIZED EARTH RETAINING WALLS (SPECIAL)	GT-1.1 - GT-1.12
SOUND BARRIER WALL (SPECIAL)	GT-2.1 - GT-2.7
STANDARD SHORING - (1/16/2018)	GT-3.1 - GT-3.4

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*Geotechnical Engineering Unit*

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6/15/2018

**STANDARD SHORING:****(1-16-18)****Description**

Standard shoring includes standard temporary shoring and standard temporary mechanically stabilized earth (MSE) walls. At the Contractor's option, use standard shoring as noted in the plans or as directed. When using standard shoring, a temporary shoring design submittal is not required. Construct standard shoring based on actual elevations and shoring dimensions in accordance with the contract and Geotechnical Standard Detail No. 1801.01 or 1801.02.

Define "standard temporary shoring" as cantilever shoring that meets the standard temporary shoring detail (Geotechnical Standard Detail No. 1801.01). Define "standard temporary wall" as a temporary MSE wall with geotextile or geogrid reinforcement that meets the standard temporary wall detail (Geotechnical Standard Detail No. 1801.02). Define "standard temporary geotextile wall" as a standard temporary wall with geotextile reinforcement and "standard temporary geogrid wall" as a standard temporary wall with geogrid reinforcement.

Provide positive protection for standard shoring at locations shown in the plans and as directed. See *Temporary Shoring* provision for positive protection types and definitions.

**Materials**

Refer to the *Standard Specifications*.

<b>Item</b>	<b>Section</b>
Concrete Barrier Materials	1170-2
Flowable Fill, Excavatable	1000-6
Geosynthetics	1056
Neat Cement Grout, Type 1	1003
Portland Cement Concrete, Class A	1000
Select Materials	1016
Steel Beam Guardrail Materials	862-2
Steel Sheet Piles and H-Piles	1084
Untreated Timber	1082-2
Welded Wire Reinforcement	1070-3

Provide Type 6 material certifications for shoring materials. Use Class IV select material for temporary guardrail. Use Class A concrete that meets Article 450-2 of the *Standard Specifications* or grout for drilled-in piles.

Based on actual shoring height, positive protection, groundwater elevation, slope or surcharge case and traffic impact at each standard temporary shoring location, use sheet piles with the minimum required section modulus or H-piles with the sizes shown in Geotechnical Standard Detail No. 1801.01. Use untreated timber with a thickness of at least 3" and a bending stress of at least 1,000 psi for timber lagging.

**(A) Shoring Backfill**

Use Class II, Type 1, Class III, Class V or Class VI select material or material that meets AASHTO M 145 for soil classification A-2-4 with a maximum PI of 6 for shoring backfill except do not use the following:

- (1) A-2-4 soil for backfill around culverts,

- (2) A-2-4 soil in the reinforced zone of standard temporary walls with a back slope and
- (3) Class VI select material in the reinforced zone of standard temporary geotextile walls.

**(B) Standard Temporary Walls**

Use welded wire reinforcement for welded wire facing, struts and wires with the dimensions and minimum wire sizes shown in Geotechnical Standard Detail No. 1801.02. Provide Type 2 geotextile for separation and retention geotextiles. Do not use more than 4 different reinforcement strengths for each standard temporary wall.

**(1) Geotextile Reinforcement**

Provide Type 5 geotextile for geotextile reinforcement with a mass per unit area of at least 8 oz/sy in accordance with ASTM D5261. Based on actual wall height, groundwater elevation, slope or surcharge case and shoring backfill to be used in the reinforced zone at each standard temporary geotextile wall location, provide geotextiles with ultimate tensile strengths as shown in Geotechnical Standard Detail No. 1801.02.

**(2) Geogrid Reinforcement**

Use geogrids with a roll width of at least 4 ft and an “approved” or “approved for provisional use” status code. The list of approved geogrids is available from:

[connect.ncdot.gov/resources/Materials/Pages/Materials-Manual-by-Material.aspx](http://connect.ncdot.gov/resources/Materials/Pages/Materials-Manual-by-Material.aspx)

Based on actual wall height, groundwater elevation, slope or surcharge case and shoring backfill to be used in the reinforced zone at each standard temporary geogrid wall location, provide geogrids for geogrid reinforcement with short-term design strengths as shown in Geotechnical Standard Detail No. 1801.02. Geogrids are typically approved for ultimate tensile strengths in the machine direction (MD) and cross-machine direction (CD) or short-term design strengths for a 3-year design life in the MD based on material type. Define material type from the website above for shoring backfill as follows:

Material Type	Shoring Backfill
Borrow	A-2-4 Soil
Fine Aggregate	Class II, Type 1 or Class III Select Material
Coarse Aggregate	Class V or VI Select Material

If the website does not list a short-term design strength for an approved geogrid, use a short-term design strength equal to the ultimate tensile strength divided by 3.5 for the geogrid reinforcement.

**Preconstruction Requirements**

**(A) Concrete Barrier**

Define “clear distance” behind concrete barrier as the horizontal distance between the barrier and edge of pavement. The minimum required clear distance for concrete barrier is shown in the plans. At the Contractor’s option or if the minimum required clear

distance is not available, set concrete barrier next to and up against traffic side of standard shoring except for barrier above standard temporary walls. Concrete barrier with the minimum required clear distance is required above standard temporary walls.

**(B) Temporary Guardrail**

Define “clear distance” behind temporary guardrail as the horizontal distance between guardrail posts and standard shoring. At the Contractor’s option or if clear distance for standard temporary shoring is less than 4 ft, attach guardrail to traffic side of shoring as shown in the plans. Place ABC in clear distance and around guardrail posts instead of pavement. Do not use temporary guardrail above standard temporary walls.

**(C) Standard Shoring Selection Forms**

Before beginning standard shoring construction, survey existing ground elevations in the vicinity of standard shoring locations to determine actual shoring or wall heights (H). Submit a standard shoring selection form for each location at least 7 days before starting standard shoring construction. Standard shoring selection forms are available from: [connect.ncdot.gov/resources/Geological/Pages/Geotech\\_Forms\\_Details.aspx](http://connect.ncdot.gov/resources/Geological/Pages/Geotech_Forms_Details.aspx)

**Construction Methods**

Construct standard shoring in accordance with the *Temporary Shoring* provision.

**(A) Standard Temporary Shoring Installation**

Based on actual shoring height, positive protection, groundwater elevation, slope or surcharge case and traffic impact at each standard temporary shoring location, install piles with the minimum required embedment and extension for each shoring section in accordance with Geotechnical Standard Detail No. 1801.01. For concrete barrier above and next to standard temporary shoring and temporary guardrail above and attached to standard temporary shoring, use “surcharge case with traffic impact” in accordance with Geotechnical Standard Detail No. 1801.01. Otherwise, use “slope or surcharge case with no traffic impact” in accordance with Geotechnical Standard Detail No. 1801.01. If refusal is reached before driven piles attain the minimum required embedment, use drilled-in H-piles with timber lagging for standard temporary shoring.

**(B) Standard Temporary Walls Installation**

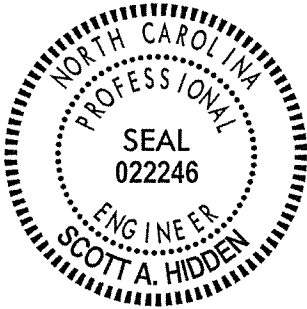
Based on actual wall height, groundwater elevation, slope or surcharge case, geotextile or geogrid reinforcement and shoring backfill in the reinforced zone at each standard temporary wall location, construct walls with the minimum required reinforcement length and number of reinforcement layers for each wall section in accordance with Geotechnical Standard Detail No. 1801.02. For standard temporary walls with pile foundations in the reinforced zone, drive piles through reinforcement after constructing temporary walls.

For standard temporary walls with interior angles less than 90°, wrap geosynthetics at acute corners as directed by the Engineer. Place geosynthetics as shown in Geotechnical Standard Detail No. 1801.02. Place separation geotextiles between shoring backfill and backfill, natural ground or culverts along the sides of the reinforced zone perpendicular to the wall face. For Class V or VI select material in the reinforced zone, place separation geotextiles between shoring backfill and backfill or natural ground on top of and at the

back of the reinforced zone.

**Measurement and Payment**

Standard shoring will be measured and paid in accordance with the *Temporary Shoring* provision.



DocuSigned by:  
*Scott A. Hidden*  
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6/15/2018

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
<b>ROADWAY ITEMS</b>						
0001	0000100000-N	800	MOBILIZATION	Lump Sum	L.S.	
0002	0000400000-N	801	CONSTRUCTION SURVEYING	Lump Sum	L.S.	
0003	0001000000-E	200	CLEARING & GRUBBING .. ACRE(S)	Lump Sum	L.S.	
0004	0008000000-E	200	SUPPLEMENTARY CLEARING & GRUB- BING	1 ACR		
0005	0022000000-E	225	UNCLASSIFIED EXCAVATION	18,000 CY		
0006	0029000000-N	SP	TYPE III REINFORCED APPROACH FILL, STATION ***** (26+78.00 -RPB-)	Lump Sum	L.S.	
0007	0036000000-E	225	UNDERCUT EXCAVATION	3,200 CY		
0008	0106000000-E	230	BORROW EXCAVATION	165,000 CY		
0009	0134000000-E	240	DRAINAGE DITCH EXCAVATION	3,740 CY		
0010	0156000000-E	250	REMOVAL OF EXISTING ASPHALT PAVEMENT	2,640 SY		
0011	0195000000-E	265	SELECT GRANULAR MATERIAL	3,200 CY		
0012	0196000000-E	270	GEOTEXTILE FOR SOIL STABILIZA- TION	19,300 SY		
0013	0199000000-E	SP	TEMPORARY SHORING	40,949.37 SF		
0014	0223000000-E	275	ROCK PLATING	935 SY		
0015	0255000000-E	SP	GENERIC GRADING ITEM HAULING & DISPOSAL OF PETRO- LEUM CONTAMINATED SOIL	100 TON		
0016	0318000000-E	300	FOUNDATION CONDITIONING MATE- RIAL, MINOR STRUCTURES	20,826.79 TON		
0017	0320000000-E	300	FOUNDATION CONDITIONING GEO- TEXTILE	48,703.99 SY		
0018	0335000000-E	305	*** DRAINAGE PIPE (54")	416 LF		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0019	0335000000-E	305	*** DRAINAGE PIPE (60")	52 LF		
0020	0335000000-E	305	*** DRAINAGE PIPE (66")	52 LF		
0021	0335100000-E	305	12" DRAINAGE PIPE	52 LF		
0022	0335200000-E	305	15" DRAINAGE PIPE	2,656 LF		
0023	0335300000-E	305	18" DRAINAGE PIPE	1,456 LF		
0024	0335400000-E	305	24" DRAINAGE PIPE	468 LF		
0025	0335500000-E	305	30" DRAINAGE PIPE	704 LF		
0026	0335600000-E	305	36" DRAINAGE PIPE	120 LF		
0027	0335700000-E	305	42" DRAINAGE PIPE	824 LF		
0028	0335800000-E	305	48" DRAINAGE PIPE	704 LF		
0029	0335850000-E	305	*** DRAINAGE PIPE ELBOWS (12")	2 EA		
0030	0335850000-E	305	*** DRAINAGE PIPE ELBOWS (15")	2 EA		
0031	0335850000-E	305	*** DRAINAGE PIPE ELBOWS (24")	2 EA		
0032	0335850000-E	305	*** DRAINAGE PIPE ELBOWS (30")	4 EA		
0033	0335850000-E	305	*** DRAINAGE PIPE ELBOWS (48")	2 EA		
0034	0343000000-E	310	15" SIDE DRAIN PIPE	60 LF		
0035	0354000000-E	310	**** RC PIPE CULVERTS, CLASS ***** (66", V)	100 LF		
0036	0366000000-E	310	15" RC PIPE CULVERTS, CLASS III	28 LF		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0037	0402000000-E	310	48" RC PIPE CULVERTS, CLASS III	20 LF		
0038	0414000000-E	310	60" RC PIPE CULVERTS, CLASS III	284 LF		
0039	0420000000-E	310	66" RC PIPE CULVERTS, CLASS III	48 LF		
0040	0426000000-E	310	72" RC PIPE CULVERTS, CLASS III	404 LF		
0041	0448000000-E	310	***** RC PIPE CULVERTS, CLASS IV (12")	40 LF		
0042	0448000000-E	310	***** RC PIPE CULVERTS, CLASS IV (48")	3,264 LF		
0043	0448000000-E	310	***** RC PIPE CULVERTS, CLASS IV (54")	2,248 LF		
0044	0448000000-E	310	***** RC PIPE CULVERTS, CLASS IV (60")	344 LF		
0045	0448200000-E	310	15" RC PIPE CULVERTS, CLASS IV	25,220 LF		
0046	0448300000-E	310	18" RC PIPE CULVERTS, CLASS IV	6,996 LF		
0047	0448400000-E	310	24" RC PIPE CULVERTS, CLASS IV	6,916 LF		
0048	0448500000-E	310	30" RC PIPE CULVERTS, CLASS IV	4,372 LF		
0049	0448600000-E	310	36" RC PIPE CULVERTS, CLASS IV	5,148 LF		
0050	0448700000-E	310	42" RC PIPE CULVERTS, CLASS IV	4,452 LF		
0051	0588000000-E	310	18" CS PIPE CULVERTS, 0.064" THICK	40 LF		
0052	0636000000-E	310	*** CS PIPE ELBOWS, ***** THICK (18", 0.064")	2 EA		



County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0053	0973100000-E	330	*** WELDED STEEL PIPE, **** THICK, GRADE B IN SOIL (30", 0.500")	22 LF		
0054	0973100000-E	330	*** WELDED STEEL PIPE, **** THICK, GRADE B IN SOIL (36", 0.500")	46 LF		
0055	0973100000-E	330	*** WELDED STEEL PIPE, **** THICK, GRADE B IN SOIL (60", 0.875")	140 LF		
0056	0973100000-E	330	*** WELDED STEEL PIPE, **** THICK, GRADE B IN SOIL (72", 1")	216 LF		
0057	0973300000-E	330	*** WELDED STEEL PIPE, **** THICK, GRADE B NOT IN SOIL (30", 0.500")	22 LF		
0058	0973300000-E	330	*** WELDED STEEL PIPE, **** THICK, GRADE B NOT IN SOIL (36", 0.500")	46 LF		
0059	0973300000-E	330	*** WELDED STEEL PIPE, **** THICK, GRADE B NOT IN SOIL (60", 0.875")	140 LF		
0060	0973300000-E	330	*** WELDED STEEL PIPE, **** THICK, GRADE B NOT IN SOIL (72", 1")	216 LF		
0061	0986000000-E	SP	GENERIC PIPE ITEM 15" CS SLOTTED DRAIN, 0.064" THICK	30 LF		
0062	0986000000-E	SP	GENERIC PIPE ITEM 4" PVC SLEEVE	950 LF		
0063	0995000000-E	340	PIPE REMOVAL	28,887 LF		
0064	0996000000-N	350	PIPE CLEAN OUT	4 EA		
0065	1011000000-N	500	FINE GRADING	Lump Sum	L.S.	
0066	1099500000-E	505	SHALLOW UNDERCUT	4,300 CY		
0067	1099700000-E	505	CLASS IV SUBGRADE STABILIZA- TION	9,800 TON		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0068	1220000000-E	545	INCIDENTAL STONE BASE	10,000 TON		
0069	1297000000-E	607	MILLING ASPHALT PAVEMENT, **** DEPTH (1-1/2")	16,490 SY		
0070	1330000000-E	607	INCIDENTAL MILLING	15,000 SY		
0071	1491000000-E	610	ASPHALT CONC BASE COURSE, TYPE B25.0C	52,830 TON		
0072	1503000000-E	610	ASPHALT CONC INTERMEDIATE COURSE, TYPE I19.0C	61,440 TON		
0073	1519000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5B	7,570 TON		
0074	1523000000-E	610	ASPHALT CONC SURFACE COURSE, TYPE S9.5C	52,880 TON		
0075	1575000000-E	620	ASPHALT BINDER FOR PLANT MIX	9,010 TON		
0076	1693000000-E	654	ASPHALT PLANT MIX, PAVEMENT REPAIR	14,879.1 TON		
0077	2022000000-E	815	SUBDRAIN EXCAVATION	385.4 CY		
0078	2026000000-E	815	GEOTEXTILE FOR SUBSURFACE DRAINS	1,600 SY		
0079	2036000000-E	815	SUBDRAIN COARSE AGGREGATE	268.8 CY		
0080	2044000000-E	815	6" PERFORATED SUBDRAIN PIPE	1,600 LF		
0081	2070000000-N	815	SUBDRAIN PIPE OUTLET	4 EA		
0082	2077000000-E	815	6" OUTLET PIPE	24 LF		
0083	2209000000-E	838	ENDWALLS	21 CY		
0084	2220000000-E	838	REINFORCED ENDWALLS	12.6 CY		
0085	2253000000-E	840	PIPE COLLARS	22.95 CY		
0086	2264000000-E	840	PIPE PLUGS	10 CY		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0087	2275000000-E	SP	FLOWABLE FILL	185 CY		
0088	2286000000-N	840	MASONRY DRAINAGE STRUCTURES	773 EA		
0089	2297000000-E	840	MASONRY DRAINAGE STRUCTURES	98.374 CY		
0090	2308000000-E	840	MASONRY DRAINAGE STRUCTURES	480.5 LF		
0091	2364000000-N	840	FRAME WITH TWO GRATES, STD 840.16	252 EA		
0092	2366000000-N	840	FRAME WITH TWO GRATES, STD 840.24	12 EA		
0093	2367000000-N	840	FRAME WITH TWO GRATES, STD 840.29	27 EA		
0094	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (E)	58 EA		
0095	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (F)	193 EA		
0096	2374000000-N	840	FRAME WITH GRATE & HOOD, STD 840.03, TYPE ** (G)	199 EA		
0097	2396000000-N	840	FRAME WITH COVER, STD 840.54	49 EA		
0098	2451000000-N	852	CONCRETE TRANSITIONAL SECTION FOR DROP INLET	143 EA		
0099	2535000000-E	846	***X*** CONCRETE CURB (8" X 12")	7,970 LF		
0100	2542000000-E	846	1'-6" CONCRETE CURB & GUTTER	22,170 LF		
0101	2549000000-E	846	2'-6" CONCRETE CURB & GUTTER	69,178.18 LF		
0102	2556000000-E	846	SHOULDER BERM GUTTER	490 LF		
0103	2580000000-E	846	CONCRETE VALLEY GUTTER	64 LF		
0104	2591000000-E	848	4" CONCRETE SIDEWALK	35,905.85 SY		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0105	2605000000-N	848	CONCRETE CURB RAMPS	306 EA		
0106	2612000000-E	848	6" CONCRETE DRIVEWAY	4,908.89 SY		
0107	2655000000-E	852	5" MONOLITHIC CONCRETE ISLANDS (KEYED IN)	14,770 SY		
0108	2724000000-E	857	PRECAST REINFORCED CONCRETE BARRIER, SINGLE FACED	2,372 LF		
0109	2800000000-N	858	ADJUSTMENT OF CATCH BASINS	12 EA		
0110	2815000000-N	858	ADJUSTMENT OF DROP INLETS	3 EA		
0111	2830000000-N	858	ADJUSTMENT OF MANHOLES	7 EA		
0112	2845000000-N	858	ADJUSTMENT OF METER BOXES OR VALVE BOXES	150 EA		
0113	2860000000-N	859	CONVERT EXISTING CATCH BASIN TO JUNCTION BOX	4 EA		
0114	2905000000-N	859	CONVERT EXISTING DROP INLET TO JUNCTION BOX	2 EA		
0115	3030000000-E	862	STEEL BEAM GUARDRAIL	3,625 LF		
0116	3150000000-N	862	ADDITIONAL GUARDRAIL POSTS	5 EA		
0117	3210000000-N	862	GUARDRAIL END UNITS, TYPE CAT-1	12 EA		
0118	3287000000-N	SP	GUARDRAIL END UNITS, TYPE TL-3	12 EA		
0119	3317000000-N	SP	GUARDRAIL ANCHOR UNITS, TYPE B-77	5 EA		
0120	3360000000-E	863	REMOVE EXISTING GUARDRAIL	1,101 LF		
0121	3503000000-E	866	WOVEN WIRE FENCE, 47" FABRIC	1,600 LF		
0122	3509000000-E	866	4" TIMBER FENCE POSTS, 7'-6" LONG	98 EA		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0123	3515000000-E	866	5" TIMBER FENCE POSTS, 8'-0" LONG	30 EA		
0124	3533000000-E	866	CHAIN LINK FENCE, *** FABRIC (72")	573 LF		
0125	3539000000-E	866	METAL LINE POSTS FOR *** CHAIN LINK FENCE (72")	56 EA		
0126	3545000000-E	866	METAL TERMINAL POSTS FOR *** CHAIN LINK FENCE (72")	49 EA		
0127	3628000000-E	876	RIP RAP, CLASS I	310 TON		
0128	3635000000-E	876	RIP RAP, CLASS II	2,800 TON		
0129	3649000000-E	876	RIP RAP, CLASS B	1,500 TON		
0130	3656000000-E	876	GEOTEXTILE FOR DRAINAGE	5,000 SY		
0131	4048000000-E	902	REINFORCED CONCRETE SIGN FOUNDATIONS	2 CY		
0132	4054000000-E	902	PLAIN CONCRETE SIGN FOUNDATIONS	1 CY		
0133	4057000000-E	SP	OVERHEAD FOOTING	18 CY		
0134	4060000000-E	903	SUPPORTS, BREAKAWAY STEEL BEAM	2,196 LB		
0135	4072000000-E	903	SUPPORTS, 3-LB STEEL U-CHANNEL	6,650 LF		
0136	4082100000-N	906	SUPPORTS, OVERHEAD SIGN STRUCTURE AT STA ***** (12+74 -RPB-)	Lump Sum	L.S.	
0137	4096000000-N	904	SIGN ERECTION, TYPE D	7 EA		
0138	4102000000-N	904	SIGN ERECTION, TYPE E	469 EA		
0139	4108000000-N	904	SIGN ERECTION, TYPE F	44 EA		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0140	4109000000-N	904	SIGN ERECTION, TYPE *** (OVER-HEAD) (A)	4	EA	
0141	4110000000-N	904	SIGN ERECTION, TYPE *** (GROUND MOUNTED) (A)	4	EA	
0142	4116100000-N	904	SIGN ERECTION, RELOCATE TYPE **** (GROUND MOUNTED) (D)	69	EA	
0143	4152000000-N	907	DISPOSAL OF SIGN SYSTEM, STEEL BEAM	2	EA	
0144	4155000000-N	907	DISPOSAL OF SIGN SYSTEM, U- CHANNEL	279	EA	
0145	4192000000-N	907	DISPOSAL OF SUPPORT, U-CHANNEL	69	EA	
0146	4234000000-N	907	DISPOSAL OF SIGN, A OR B (OVERHEAD)	5	EA	
0147	4360000000-N	SP	GENERIC SIGNING ITEM DISPOSAL OF SIGN SYSTEM SPAN WIRE	2	EA	
0148	4400000000-E	1110	WORK ZONE SIGNS (STATIONARY)	346	SF	
0149	4405000000-E	1110	WORK ZONE SIGNS (PORTABLE)	384	SF	
0150	4410000000-E	1110	WORK ZONE SIGNS (BARRICADE MOUNTED)	127	SF	
0151	4415000000-N	1115	FLASHING ARROW BOARD	4	EA	
0152	4420000000-N	1120	PORTABLE CHANGEABLE MESSAGE SIGN	6	EA	
0153	4430000000-N	1130	DRUMS	335	EA	
0154	4445000000-E	1145	BARRICADES (TYPE III)	152	LF	
0155	4455000000-N	1150	FLAGGER	300	DAY	
0156	4465000000-N	1160	TEMPORARY CRASH CUSHIONS	3	EA	

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0157	4480000000-N	1165	TMA	4	EA	
0158	4485000000-E	1170	PORTABLE CONCRETE BARRIER	403	LF	
0159	4490000000-E	1170	PORTABLE CONCRETE BARRIER (ANCHORED)	1,290	LF	
0160	4510000000-N	1190	LAW ENFORCEMENT	200	HR	
0161	4590000000-E	SP	GENERIC TRAFFIC CONTROL ITEM PEDESTRIAN BARRICADE	128	LF	
0162	4685000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 90 MILS)	58,600	LF	
0163	4686000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (4", 120 MILS)	88,560	LF	
0164	4695000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 90 MILS)	14,570	LF	
0165	4697000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (8", 120 MILS)	26,900	LF	
0166	4705000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (16", 120 MILS)	300	LF	
0167	4710000000-E	1205	THERMOPLASTIC PAVEMENT MARKING LINES (24", 120 MILS)	7,320	LF	
0168	4721000000-E	1205	THERMOPLASTIC PAVEMENT MARKING CHARACTER (120 MILS)	415	EA	
0169	4725000000-E	1205	THERMOPLASTIC PAVEMENT MARKING SYMBOL (90 MILS)	745	EA	
0170	4810000000-E	1205	PAINT PAVEMENT MARKING LINES (4")	233,461	LF	
0171	4820000000-E	1205	PAINT PAVEMENT MARKING LINES (8")	38,787	LF	
0172	4835000000-E	1205	PAINT PAVEMENT MARKING LINES (24")	1,336	LF	
0173	4840000000-N	1205	PAINT PAVEMENT MARKING CHARAC- TER	124	EA	

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0174	4845000000-N	1205	PAINT PAVEMENT MARKING SYMBOL	1,376 EA		
0175	4900000000-N	1251	PERMANENT RAISED PAVEMENT MARKERS	2,850 EA		
0176	5255000000-N	1413	PORTABLE LIGHTING	Lump Sum	L.S.	
0177	5325200000-E	1510	2" WATER LINE	619 LF		
0178	5325600000-E	1510	6" WATER LINE	1,324 LF		
0179	5325800000-E	1510	8" WATER LINE	13,019.07 LF		
0180	5326200000-E	1510	12" WATER LINE	13,252.27 LF		
0181	5326600000-E	1510	16" WATER LINE	880 LF		
0182	5327400000-E	1510	24" WATER LINE	14,230 LF		
0183	5328000000-E	1510	30" WATER LINE	7,842 LF		
0184	5329000000-E	1510	DUCTILE IRON WATER PIPE FITTINGS	327,584.15 LB		
0185	5536000000-E	1515	2" VALVE	38 EA		
0186	5540000000-E	1515	6" VALVE	124 EA		
0187	5546000000-E	1515	8" VALVE	59 EA		
0188	5558000000-E	1515	12" VALVE	28 EA		
0189	5558600000-E	1515	16" VALVE	1 EA		
0190	5559400000-E	1515	24" VALVE	18 EA		
0191	5560000000-E	1515	30" VALVE	5 EA		
0192	5571600000-E	1515	6" TAPPING SLEEVE & VALVE	3 EA		
0193	5571800000-E	1515	8" TAPPING SLEEVE & VALVE	4 EA		



County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0194	5572200000-E	1515	12" TAPPING SLEEVE & VALVE	3 EA		
0195	5573400000-E	1515	24" TAPPING SLEEVE & VALVE	8 EA		
0196	5600000000-E	1515	*** BLOW OFF (1")	2 EA		
0197	5606000000-E	1515	2" BLOW OFF	5 EA		
0198	5648000000-N	1515	RELOCATE WATER METER	173 EA		
0199	5649000000-N	1515	RECONNECT WATER METER	6 EA		
0200	5653100000-E	1515	RELOCATE *** DCV BACKFLOW PRE- VENTION ASSEMBLY (1")	1 EA		
0201	5653210000-E	1515	RELOCATE 2" DCV BACKFLOW PRE- VENTION ASSEMBLY	2 EA		
0202	5653610000-E	1515	RELOCATE 6" DCV BACKFLOW PRE- VENTION ASSEMBLY	2 EA		
0203	5666000000-N	1515	FIRE HYDRANT	110 EA		
0204	5672000000-N	1515	RELOCATE FIRE HYDRANT	7 EA		
0205	5673000000-E	1515	FIRE HYDRANT LEG	1,687.5 LF		
0206	5679600000-E	1515	24" LINE STOP	2 EA		
0207	5686000000-E	1515	*** WATER SERVICE LINE (2")	837.01 LF		
0208	5686500000-E	1515	WATER SERVICE LINE	1,862 LF		
0209	5691300000-E	1520	8" SANITARY GRAVITY SEWER	1,731.5 LF		
0210	5691400000-E	1520	10" SANITARY GRAVITY SEWER	90 LF		
0211	5691500000-E	1520	12" SANITARY GRAVITY SEWER	2,934.75 LF		
0212	5691600000-E	1520	16" SANITARY GRAVITY SEWER	302.39 LF		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0213	5768000000-N	1520	SANITARY SEWER CLEAN-OUT	68 EA		
0214	5768500000-E	1520	SEWER SERVICE LINE	3,018.52 LF		
0215	5775000000-E	1525	4' DIA UTILITY MANHOLE	30 EA		
0216	5776000000-E	1525	5' DIA UTILITY MANHOLE	2 EA		
0217	5781000000-E	1525	UTILITY MANHOLE WALL 4' DIA	165.39 LF		
0218	5782000000-E	1525	UTILITY MANHOLE WALL 5' DIA	11.41 LF		
0219	5798000000-E	1530	ABANDON *** UTILITY PIPE (15")	100 LF		
0220	5798000000-E	1530	ABANDON *** UTILITY PIPE (2")	877.01 LF		
0221	5800000000-E	1530	ABANDON 6" UTILITY PIPE	10,065.01 LF		
0222	5801000000-E	1530	ABANDON 8" UTILITY PIPE	2,569.66 LF		
0223	5804000000-E	1530	ABANDON 12" UTILITY PIPE	15,017.01 LF		
0224	5810000000-E	1530	ABANDON 16" UTILITY PIPE	665.01 LF		
0225	5813000000-E	1530	ABANDON 24" UTILITY PIPE	12,106 LF		
0226	5815000000-N	1530	REMOVE WATER METER	5 EA		
0227	5815500000-N	1530	REMOVE FIRE HYDRANT	37 EA		
0228	5816000000-N	1530	ABANDON UTILITY MANHOLE	6 EA		
0229	5828000000-N	1530	REMOVE UTILITY MANHOLE	3.01 EA		
0230	5835000000-E	1540	*** ENCASEMENT PIPE (4")	102 LF		
0231	5835000000-E	1540	*** ENCASEMENT PIPE (42")	125 LF		
0232	5835600000-E	1540	12" ENCASEMENT PIPE	75.01 LF		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0233	5835700000-E	1540	16" ENCASMENT PIPE	298	LF	
0234	5836000000-E	1540	24" ENCASMENT PIPE	648.01	LF	
0235	5836200000-E	1540	30" ENCASMENT PIPE	414	LF	
0236	5836400000-E	1540	36" ENCASMENT PIPE	588	LF	
0237	5872500000-E	1550	BORE AND JACK OF *** (12")	75.01	LF	
0238	5872500000-E	1550	BORE AND JACK OF *** (16")	454	LF	
0239	5872500000-E	1550	BORE AND JACK OF *** (24")	588.01	LF	
0240	5872500000-E	1550	BORE AND JACK OF *** (30")	414	LF	
0241	5872500000-E	1550	BORE AND JACK OF *** (36")	588	LF	
0242	5872500000-E	1550	BORE AND JACK OF *** (4")	102	LF	
0243	5872500000-E	1550	BORE AND JACK OF *** (42")	399	LF	
0244	5872600000-E	1550	DIRECTIONAL DRILLING OF *** (16")	368	LF	
0245	5872600000-E	1550	DIRECTIONAL DRILLING OF *** (30")	540	LF	
0246	5882000000-N	SP	GENERIC UTILITY ITEM 12" NITRILE GASKETS	22	EA	
0247	5882000000-N	SP	GENERIC UTILITY ITEM 16" NITRILE GASKETS	3	EA	
0248	5882000000-N	SP	GENERIC UTILITY ITEM 2" COMBINATION AIR RELEASE VALVE	1	EA	
0249	5882000000-N	SP	GENERIC UTILITY ITEM 24" NITRILE GASKETS	44	EA	

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0250	5882000000-N	SP	GENERIC UTILITY ITEM 30" NITRILE GASKETS	11 EA		
0251	5882000000-N	SP	GENERIC UTILITY ITEM 8" NITRILE GASKETS	34 EA		
0254	5882000000-N	SP	GENERIC UTILITY ITEM AERIAL WATER MAIN STEEL PILE PIER	6 EA		
0255	5882000000-N	SP	GENERIC UTILITY ITEM REMOVE EXISTING PIERS	4 EA		
0256	5888000000-E	SP	GENERIC UTILITY ITEM BRICK AND MORTAR MANHOLE	0.86 LF		
0257	5888000000-E	SP	GENERIC UTILITY ITEM POLYETHYLENE ENCASEMENT ON 12" DIA MAIN	297 LF		
0258	5888000000-E	SP	GENERIC UTILITY ITEM POLYETHYLENE ENCASEMENT ON 16" DIA MAIN	101 LF		
0259	5888000000-E	SP	GENERIC UTILITY ITEM POLYETHYLENE ENCASEMENT ON 24" DIA MAIN	540 LF		
0260	5888000000-E	SP	GENERIC UTILITY ITEM POLYETHYLENE ENCASEMENT ON 8" DIA MAIN	270 LF		
0261	5888000000-E	SP	GENERIC UTILITY ITEM PRECAST MANHOLE	0.33 LF		
0262	5888000000-E	SP	GENERIC UTILITY ITEM SEWER MANHOLE VENT	3.17 LF		
0263	6000000000-E	1605	TEMPORARY SILT FENCE	39,000 LF		
0264	6006000000-E	1610	STONE FOR EROSION CONTROL, CLASS A	1,850 TON		
0265	6009000000-E	1610	STONE FOR EROSION CONTROL, CLASS B	3,100 TON		
0266	6012000000-E	1610	SEDIMENT CONTROL STONE	13,050 TON		
0267	6015000000-E	1615	TEMPORARY MULCHING	60 ACR		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0268	6018000000-E	1620	SEED FOR TEMPORARY SEEDING	3,000 LB		
0269	6021000000-E	1620	FERTILIZER FOR TEMPORARY SEED- ING	16 TON		
0270	6024000000-E	1622	TEMPORARY SLOPE DRAINS	2,000 LF		
0271	6029000000-E	SP	SAFETY FENCE	200 LF		
0272	6030000000-E	1630	SILT EXCAVATION	6,000 CY		
0273	6036000000-E	1631	MATTING FOR EROSION CONTROL	60,000 SY		
0274	6037000000-E	SP	COIR FIBER MAT	100 SY		
0275	6038000000-E	SP	PERMANENT SOIL REINFORCEMENT MAT	300 SY		
0276	6042000000-E	1632	1/4" HARDWARE CLOTH	51,600 LF		
0277	6043000000-E	SP	LOW PERMEABILITY GEOTEXTILE	100 SY		
0278	6048000000-E	SP	FLOATING TURBIDITY CURTAIN	50 SY		
0279	6069000000-E	1638	STILLING BASINS	557 CY		
0280	6070000000-N	1639	SPECIAL STILLING BASINS	20 EA		
0281	6071012000-E	SP	COIR FIBER WATTLE	7,320 LF		
0282	6071020000-E	SP	POLYACRYLAMIDE (PAM)	4,515 LB		
0283	6071030000-E	1640	COIR FIBER BAFFLE	2,200 LF		
0284	6071050000-E	SP	*** SKIMMER (1-1/2")	5 EA		
0285	6084000000-E	1660	SEEDING & MULCHING	52 ACR		
0286	6087000000-E	1660	MOWING	26 ACR		
0287	6090000000-E	1661	SEED FOR REPAIR SEEDING	750 LB		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0288	6093000000-E	1661	FERTILIZER FOR REPAIR SEEDING	2.25	TON	
0289	6096000000-E	1662	SEED FOR SUPPLEMENTAL SEEDING	1,250	LB	
0290	6108000000-E	1665	FERTILIZER TOPDRESSING	37.5	TON	
0291	6111000000-E	SP	IMPERVIOUS DIKE	1,050	LF	
0292	6114500000-N	1667	SPECIALIZED HAND MOWING	25	MHR	
0293	6117000000-N	SP	RESPONSE FOR EROSION CONTROL	125	EA	
0294	6117500000-N	SP	CONCRETE WASHOUT STRUCTURE	10	EA	
0295	6120000000-E	SP	CULVERT DIVERSION CHANNEL	300	CY	
0296	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION DEVICE CLEANOUT	300	EA	
0297	6132000000-N	SP	GENERIC EROSION CONTROL ITEM FABRIC INSERT INLET PROTECTION DEVICE	100	EA	
0298	7048500000-E	1705	PEDESTRIAN SIGNAL HEAD (16", 1 SECTION W/COUNTDOWN)	132	EA	
0299	7060000000-E	1705	SIGNAL CABLE	109,620	LF	
0300	7120000000-E	1705	VEHICLE SIGNAL HEAD (12", 3 SECTION)	376	EA	
0301	7132000000-E	1705	VEHICLE SIGNAL HEAD (12", 4 SECTION)	61	EA	
0302	7144000000-E	1705	VEHICLE SIGNAL HEAD (12", 5 SECTION)	47	EA	
0303	7252000000-E	1710	MESSENGER CABLE (1/4")	3,480	LF	
0304	7264000000-E	1710	MESSENGER CABLE (3/8")	20,490	LF	
0305	7279000000-E	1715	TRACER WIRE	745	LF	

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0306	7288000000-E	1715	PAVED TRENCHING (***** (1, 2")	530 LF		
0307	7288000000-E	1715	PAVED TRENCHING (***** (3, 2")	30 LF		
0308	7300000000-E	1715	UNPAVED TRENCHING (***** (1, 2")	9,150 LF		
0309	7300000000-E	1715	UNPAVED TRENCHING (***** (2, 2")	2,570 LF		
0310	7300000000-E	1715	UNPAVED TRENCHING (***** (3, 2")	270 LF		
0311	7300000000-E	1715	UNPAVED TRENCHING (***** (4, 2")	420 LF		
0312	7300100000-E	1715	UNPAVED TRENCHING FOR TEMP- ORARY LEAD-IN	510 LF		
0313	7301000000-E	1715	DIRECTIONAL DRILL (***** (1, 2")	650 LF		
0314	7301000000-E	1715	DIRECTIONAL DRILL (***** (2, 2")	235 LF		
0315	7324000000-N	1716	JUNCTION BOX (STANDARD SIZE)	214 EA		
0316	7348000000-N	1716	JUNCTION BOX (OVER-SIZED, HEA- VY DUTY)	13 EA		
0317	7360000000-N	1720	WOOD POLE	71 EA		
0318	7372000000-N	1721	GUY ASSEMBLY	145 EA		
0319	7396000000-E	1722	1/2" RISER WITH WEATHERHEAD	18 EA		
0320	7408000000-E	1722	1" RISER WITH WEATHERHEAD	22 EA		
0321	7420000000-E	1722	2" RISER WITH WEATHERHEAD	54 EA		
0322	7432000000-E	1722	2" RISER WITH HEAT SHRINK TUBING	2 EA		
0323	7444000000-E	1725	INDUCTIVE LOOP SAWCUT	31,420 LF		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0324	7456000000-E	1726	LEAD-IN CABLE (***** (14-2)	127,800	LF	
0325	7481000000-N	SP	SITE SURVEY	20	EA	
0326	7481200000-N	SP	LUMINAIRE ARM FOR VIDEO SYSTEM	75	EA	
0327	7481240000-N	SP	CAMERA WITHOUT INTERNAL LOOP EMULATOR PROCESSING UNIT	75	EA	
0328	7481260000-N	SP	EXTERNAL LOOP EMULATOR PRO- CESSING UNIT	20	EA	
0329	7481280000-N	SP	RELOCATE CAMERA SENSOR UNIT	114	EA	
0330	7516000000-E	1730	COMMUNICATIONS CABLE (**FIBER) (12)	7,388	LF	
0331	7516000000-E	1730	COMMUNICATIONS CABLE (**FIBER) (24)	22,656	LF	
0332	7516000000-E	1730	COMMUNICATIONS CABLE (**FIBER) (72)	18,736	LF	
0333	7528000000-E	1730	DROP CABLE	7,045	LF	
0334	7540000000-N	1731	SPLICE ENCLOSURE	18	EA	
0335	7552000000-N	1731	INTERCONNECT CENTER	25	EA	
0336	7566000000-N	1733	DELINEATOR MARKER	19	EA	
0337	7575140000-N	SP	FIBER-OPTIC SPLICE CABINET (BASE MOUNTED)	4	EA	
0338	7575160000-E	1734	REMOVE EXISTING COMMUNICATIONS CABLE	30,854	LF	
0339	7576000000-N	SP	METAL STRAIN SIGNAL POLE	46	EA	
0340	7613000000-N	SP	SOIL TEST	46	EA	
0341	7614100000-E	SP	DRILLED PIER FOUNDATION	276	CY	
0342	7636000000-N	1745	SIGN FOR SIGNALS	57	EA	



County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0343	7642100000-N	1743	TYPE I POST WITH FOUNDATION	1 EA		
0344	7642200000-N	1743	TYPE II PEDESTAL WITH FOUNDATION	113 EA		
0345	7642300000-N	1743	TYPE III PEDESTAL WITH FOUNDATION	2 EA		
0346	7675000000-N	1747	LED BLANKOUT SIGN	2 EA		
0347	7684000000-N	1750	SIGNAL CABINET FOUNDATION	25 EA		
0348	7696000000-N	1751	CONTROLLERS WITH CABINET (***** (2070LX, BASE MOUNTED)	7 EA		
0349	7780000000-N	1751	DETECTOR CARD (TYPE 2070L)	216 EA		
0350	7901000000-N	1753	CABINET BASE EXTENDER	11 EA		
0351	7960000000-N	SP	METAL POLE FOUNDATION REMOVAL	10 EA		
0352	7972000000-N	SP	METAL POLE REMOVAL	10 EA		
0353	7980000000-N	SP	GENERIC SIGNAL ITEM CCTV METAL POLE (40')	1 EA		
0354	7980000000-N	SP	GENERIC SIGNAL ITEM DIGITAL CCTV CAMERA ASSEMBLY	1 EA		
0355	7980000000-N	SP	GENERIC SIGNAL ITEM DMS ELECTRICAL SERVICE	1 EA		
0356	7980000000-N	SP	GENERIC SIGNAL ITEM DMS STRUCTURE	1 EA		
0357	7980000000-N	SP	GENERIC SIGNAL ITEM DUAL DMS MOUNTED BACK TO BACK	1 EA		
0358	7980000000-N	SP	GENERIC SIGNAL ITEM ETHERNET EDGE SWITCH	7 EA		
0359	7980000000-N	SP	GENERIC SIGNAL ITEM HUB SPLICE CENTER	16 EA		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0360	7980000000-N	SP	GENERIC SIGNAL ITEM SOIL TEST FOR CCTV POLE	1 EA		
0361	7980000000-N	SP	GENERIC SIGNAL ITEM SOIL TEST FOR DMS FOUNDATION	1 EA		
0362	7990000000-E	SP	GENERIC SIGNAL ITEM BACK PULL FIBER OPTIC CABLE	1,550 LF		
0363	7992000000-E	SP	GENERIC SIGNAL ITEM DMS FOUNDATION	15 CY		
0364	7992000000-E	SP	GENERIC SIGNAL ITEM DRILLED PIER FOUNDATION FOR CCTV POLE	6 CY		
0391	0000910000-N	SP	GENERIC MISCELLANEOUS ITEM EXPLORATORY EXCAVATION - STANDARD	50 HR		
0392	1308000000-E	607	MILLING ASPHALT PAVEMENT, **** TO ***** (0" TO 3")	15,000 SY		
0393	6147000000-E	SP	GENERIC EROSION CONTROL ITEM TREE PROTECTION FENCE	1,700 LF		
<b>CULVERT ITEMS</b>						
0365	8056000000-N	402	REMOVAL OF EXISTING STRUCTURE AT STATION ***** (137+99.59 -L-)	Lump Sum	L.S.	
0366	8126000000-N	414	CULVERT EXCAVATION, STA ***** (137+99.59 -L-)	Lump Sum	L.S.	
0367	8133000000-E	414	FOUNDATION CONDITIONING MATER- IAL, BOX CULVERT	117 TON		
0368	8140000000-E	416	CHANNEL EXCAVATION	160 CY		
0369	8196000000-E	420	CLASS A CONCRETE (CULVERT)	247.2 CY		
0370	8245000000-E	425	REINFORCING STEEL (CULVERT)	32,201 LB		

County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0371	8847000000-E	SP	GENERIC RETAINING WALL ITEM ANCHORED SHEET PILE WALL	2,363 SF		
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<b>WALL ITEMS</b>						
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0372	8801000000-E	SP	MSE RETAINING WALL NO **** (1)	17,470 SF		
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0373	8801000000-E	SP	MSE RETAINING WALL NO **** (2)	11,360 SF		
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0374	8802030000-E	454	SEGMENTAL GRAVITY RETAINING WALLS	450 SF		
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0375	8847000000-E	SP	GENERIC RETAINING WALL ITEM ARCHITECTURAL SURFACE TREATMENT	45,110 SF		
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0376	8847000000-E	SP	GENERIC RETAINING WALL ITEM SOUND BARRIER WALL	27,855 SF		
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<b>STRUCTURE ITEMS</b>						
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0377	8112730000-N	450	PDA TESTING	1 EA		
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0378	8147000000-E	420	REINFORCED CONCRETE DECK SLAB	3,042 SF		
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0379	8161000000-E	420	GROOVING BRIDGE FLOORS	4,473 SF		
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0380	8182000000-E	420	CLASS A CONCRETE (BRIDGE)	89.5 CY		
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0381	8210000000-N	422	BRIDGE APPROACH SLABS, STATION ***** (26+78.00 -RPB-)	Lump Sum	L.S.	
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0382	8217000000-E	425	REINFORCING STEEL (BRIDGE)	12,844 LB		
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0383	8262000000-E	430	45" PRESTRESSED CONCRETE GIR- DERS	396.88 LF		
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County : Cumberland

Line #	Item Number	Sec #	Description	Quantity	Unit Cost	Amount
0384	8328200000-E	450	PILE DRIVING EQUIPMENT SETUP FOR *** STEEL PILES (HP 12 X 53)	14	EA	
0385	8364000000-E	450	HP12X53 STEEL PILES	1,225	LF	
0386	8393000000-N	450	PILE REDRIVES	8	EA	
0387	8503000000-E	460	CONCRETE BARRIER RAIL	220.3	LF	
0388	8531000000-E	462	4" SLOPE PROTECTION	28	SY	
0389	8657000000-N	430	ELASTOMERIC BEARINGS	Lump Sum	L.S.	
0390	8706000000-N	SP	EXPANSION JOINT SEALS	Lump Sum	L.S.	

1028/Jul27/Q2564088.094/D1821002832000/E391

Total Amount Of Bid For Entire Project :

TIP PROJECT: U-4405

CONTRACT: C204107

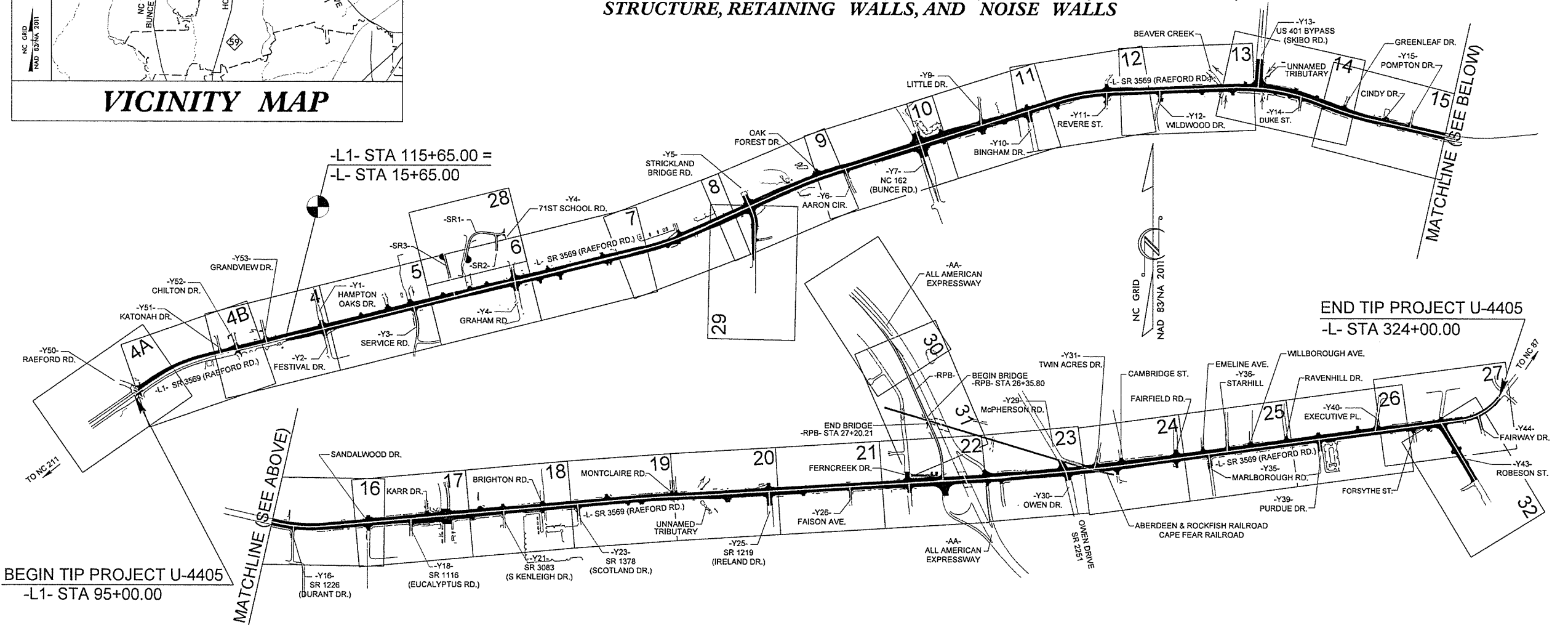
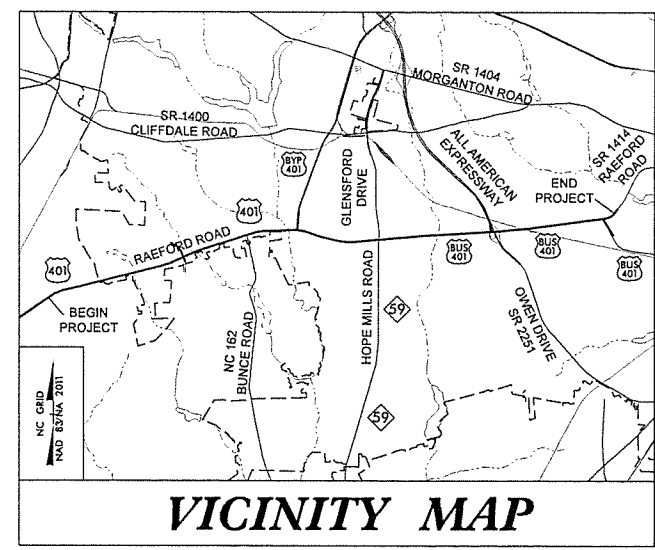
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

# CUMBERLAND COUNTY

LOCATION: US 401 FROM WEST OF HAPTON OAKS DRIVE TO EAST OF FAIRWAY DRIVE IN FAYETTEVILLE

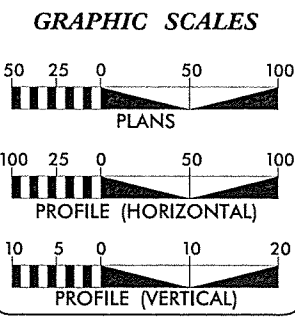
TYPE OF WORK: GRADING, DRAINAGE, PAVING, SIGNALS, WIDENING, RESURFACING, STRUCTURE, RETAINING WALLS, AND NOISE WALLS

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	1	26
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
39049.1.1	STPDA-0401(230)	PE	
39049.2.1	STPDA-0401(230)	RW	
39049.2.1	STPDA-0401(230)	UTIL	
39049.3.1	STPDA-0401(230)	CONST	



THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF THE CITY OF FAYETTEVILLE.  
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD II.  
\*\* A DESIGN EXCEPTION FOR LANE WIDTH IS REQUIRED

## STRUCTURES



DESIGN DATA

ADT 2018 =	63,150
ADT 2038 =	70,975
K =	10 %
D =	60 %
T =	3 %*
V =	50 MPH
*TTST =	1% DUAL=2%
FUNC CLASS =	URBAN ARTERIAL REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT U-4405 =	6.231 MILES
TOTAL LENGTH TIP PROJECT U-4405 =	6.231 MILES

NCDOT CONTACT: BRENDA MOORE, PE

Prepared for Division of Highways in the Office of:

**KCA**  
KISINGER CAMPO & ASSOCIATES

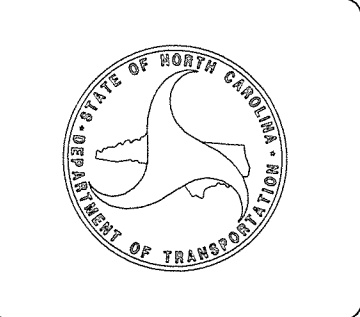
4800 SIX FORKS ROAD SUITE 120  
RALEIGH, NC 27609  
(919) 882-7839

2018 STANDARD SPECIFICATIONS

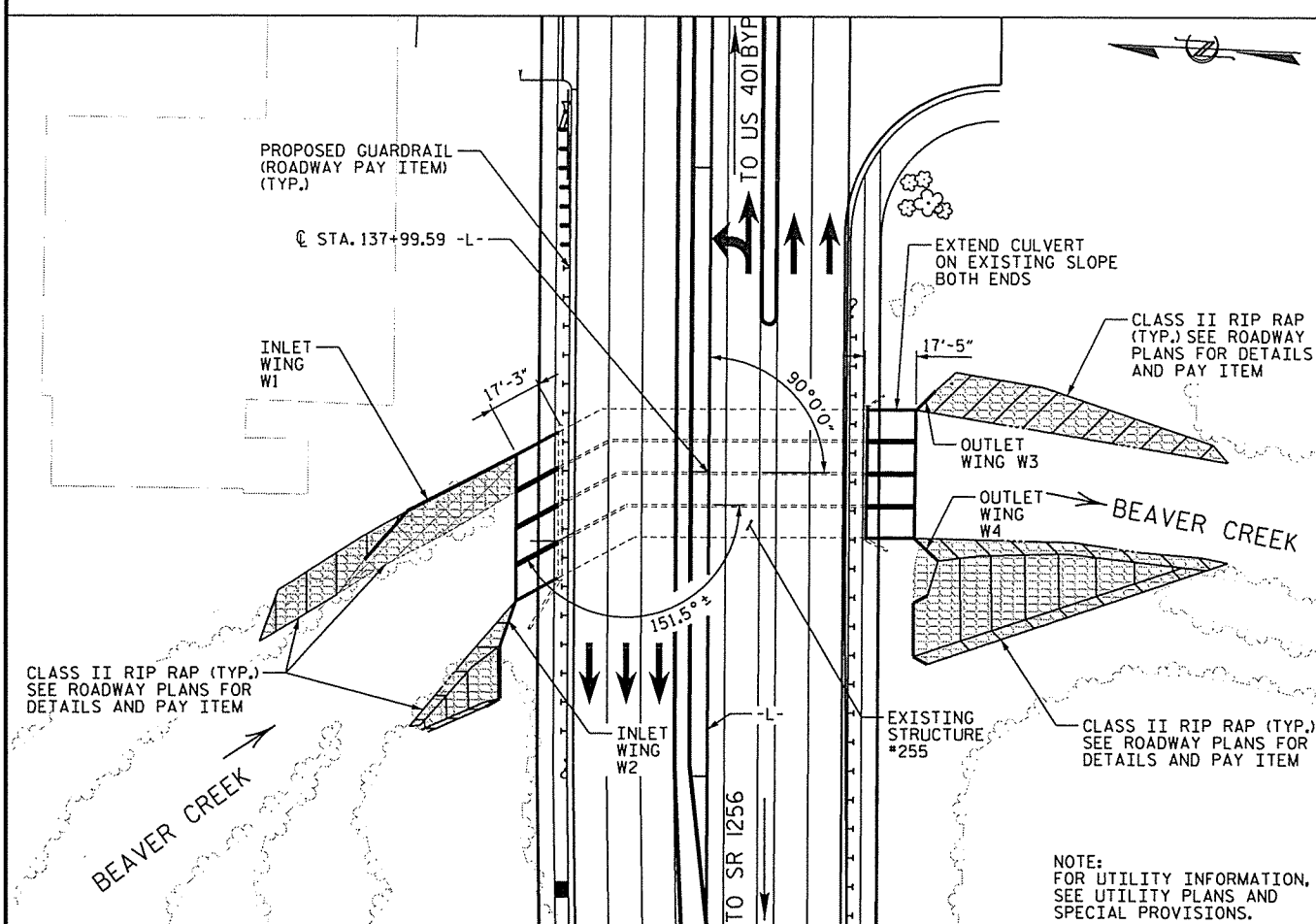
RIGHT OF WAY DATE: TIERRE R. PETERSON, PE  
PROJECT ENGINEER

LETTING DATE: KANAK PUROHIT, PE  
AUGUST 21, 2018  
PROJECT DESIGN ENGINEER

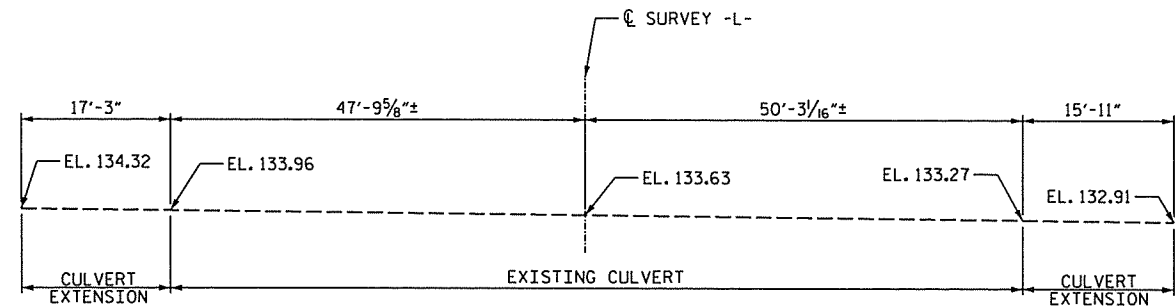
STRUCTURES MANAGEMENT UNIT



BM7 ELEVATION = 192.81, N 470648 E 2005724, -L- STATION 128+40.00, 366 RIGHT BENCH TIE IN POWER POLE



LOCATION SKETCH



PROFILE ALONG CULVERT

SPLICE CHART	
BAR SIZE	SPLICE LENGTH
#4	1'-11"
#5	2'-4"
#6	2'-9"

**KCA** 4800 SIX FORKS ROAD SUITE 120  
 KISINGER CAMPO & ASSOCIATES RALEIGH, NC 27609  
 (919) 882-7839

DRAWN BY : DIEGO A. AGUIRRE DATE : 5-18-18  
 CHECKED BY : JACOB H. DUKE DATE : 5-22-18  
 DESIGN ENGINEER OF RECORD : JACOB H. DUKE DATE : 5-25-18

HYDROGRAPHIC DATA	
GRADE POINT ELEV. @ STA. 137+99.59 -L-	= 150.07
BED ELEV. @ STA. 137+99.59 -L-	= 133.58
ROADWAY SLOPES	= 3:1
DESIGN DISCHARGE	= 4720 CFS
FREQUENCY OF DESIGN FLOOD	= 50 YRS
DESIGN HIGH WATER ELEVATION	= 150.0'
DRAINAGE AREA	= 25 SQ. MI.
BASE DISCHARGE (Q100)	= 5250 CFS
BASE HIGH WATER ELEVATION	= 150.7'

OVERTOPPING FLOOD DATA	
OVERTOPPING DISCHARGE	= 4540 CFS
FREQUENCY OF OVERTOPPING FLOOD	= 50+/- YRS
OVERTOPPING FLOOD ELEVATION	= 150.0'
OVERTOPPING LOCATION	= SAG AT STA. 136+32 -L- C

CULVERT EXTENSION - TOTAL QUANTITIES	
<b>CLASS A CONCRETE</b>	
PHASE I	79.2 C.Y.
PHASE II	82.4 C.Y.
PHASE III	57.6 C.Y.
<b>TOTAL</b>	<b>219.2 C.Y.</b>

<b>REINFORCING STEEL</b>	
PHASE I	11,067 LBS.
PHASE II	9,728 LBS.
PHASE III	8,404 LBS.
<b>TOTAL</b>	<b>29,199 LBS.</b>

<b>FOUNDATION CONDITIONING MATERIAL</b>	
PHASE I	62 TONS
PHASE II	55 TONS
PHASE III	- TONS
<b>TOTAL</b>	<b>117 TONS</b>

<b>CULVERT EXCAVATION</b>	LUMP SUM
---------------------------	----------

<b>CHANNEL EXCAVATION</b>	160 C.Y.
---------------------------	----------

<b>REMOVAL OF EXISTING STRUCTURE</b>	LUMP SUM
--------------------------------------	----------

<b>ANCHORED SHEET PILE WALL</b>	
PHASE I	2,363 SQ. FT.
<b>TOTAL</b>	<b>2,363 SQ. FT.</b>

<b>CONCRETE VALLEY GUTTER</b>	
PHASE III	64.0 LIN. FT.
<b>TOTAL</b>	<b>64.0 LIN. FT.</b>

<b>CHAIN LINK FENCE, 72" FABRIC</b>	
PHASE III	199 LIN. FT.
<b>TOTAL</b>	<b>199 LIN. FT.</b>

<b>METAL LINE POSTS FOR 72" CHAIN LINK FENCE</b>	
PHASE III	21 EA.
<b>TOTAL</b>	<b>21 EA.</b>

<b>METAL TERMINAL POSTS FOR 72" CHAIN LINK FENCE</b>	
PHASE III	13 EA.
<b>TOTAL</b>	<b>13 EA.</b>

NOTES:

- ASSUMED LIVE LOAD HL-93.
- INLET DESIGN FILL IS 2.9 FEET.
- OUTLET DESIGN FILL IS 4.0 FEET.
- FOR OTHER DESIGN DATA AND NOTES SEE STANDARD NOTES SHEET.
- INSTALL INLET WING W1 (ANCHORED SHEET PILE WALL) PRIOR TO POURING CONCRETE IN CULVERTS.
- CONCRETE IN CULVERTS TO BE CAST IN THE FOLLOWING ORDER:
  - PHASE I:
    - OUTLET WING W3 FOOTING AND FLOOR SLAB OF BARRELS #1 AND #2, INCLUDING 4" OF EXTERIOR WALL OF BARREL #1, AND INTERIOR WALLS OF BARREL #2.
    - THE REMAINING PORTIONS OF OUTLET WING W3 WALL, EXTERIOR WALL OF BARREL #1, AND INTERIOR WALLS OF BARREL #2.
  - PHASE II:
    - INLET WING W2 FOOTING AND FLOOR SLAB OF BARRELS #3 AND #4, INCLUDING 4" OF EXTERIOR WALL OF BARREL #4, AND INTERIOR WALLS OF BARREL #4.
    - THE REMAINING PORTIONS OF INLET WING W2 WALL, EXTERIOR WALL OF BARREL #4, AND INTERIOR WALLS OF BARREL #4.
  - PHASE III:
    - INLET AND OUTLET ROOF SLAB AND HEADWALLS ACROSS ALL BARRELS.

AT THE CONTRACTOR'S OPTION, HE MAY SPLICE THE VERTICAL REINFORCING STEEL IN THE INTERIOR FACE OF EXTERIOR WALL AND BOTH FACES OF INTERIOR WALLS ABOVE LOWER WALL CONSTRUCTION JOINT. THE SPLICE LENGTH SHALL BE PROVIDED AS IN THE SPLICE LENGTH CHART SHOWN ON THE PLANS. EXTRA WEIGHT OF STEEL DUE TO THE SPLICES SHALL BE PAID FOR BY THE CONTRACTOR.

THE RESIDENT ENGINEER SHALL CHECK THE LENGTH OF CULVERT BEFORE STAKING IT OUT TO MAKE CERTAIN THAT IT WILL PROPERLY TAKE CARE OF THE FILL.

DIMENSIONS FOR WING LAYOUT AS WELL AS ADDITIONAL REINFORCING STEEL EMBEDDED IN BARREL ARE SHOWN ON WING SHEET.

THE CONTRACTOR SHALL PROVIDE INDEPENDENT ASSURANCE SAMPLES OF REINFORCING STEEL AS FOLLOWS: FOR PROJECTS REQUIRING UP TO 400 TONS OF REINFORCING STEEL, ONE 30 INCH SAMPLE OF EACH SIZE BAR USED, AND FOR PROJECTS REQUIRING OVER 400 TONS OF REINFORCING STEEL, TWO 30 INCH SAMPLES OF EACH SIZE BAR USED. THE BARS FROM WHICH THE SAMPLES ARE TAKEN MUST THEN BE SPLICED WITH REPLACEMENT BARS OF THE SIZE AND LENGTH OF THE SAMPLE, PLUS A MINIMUM LAP SPLICE OF THIRTY BAR DIAMETERS. PAYMENT FOR THE SAMPLES OF REINFORCING STEEL SHALL BE CONSIDERED INCIDENTAL TO VARIOUS PAY ITEMS.

NO PRECAST REINFORCED BOX CULVERT OPTION WILL BE ALLOWED.

A 3 FOOT STRIP OF FILTER FABRIC SHALL BE ATTACHED TO THE FILL FACE OF THE WING WALLS COVERING THE ENTIRE LENGTH OF THE EXPANSION JOINTS.

IF APPROVED BY THE ENGINEER, THE CONTRACTOR MAY USE THE EXISTING WINGS AS TEMPORARY SHORING FOR THE CONSTRUCTION OF THE CULVERT EXTENSIONS. IN THIS CASE, THE BOTTOM SLAB OF THE EXTENSIONS SHALL BE POURED AT LEAST 72 HOURS PRIOR TO CUTTING THE WINGS. THE WINGS MAY BE CUT EARLIER PROVIDED THE SLAB CONCRETE STRENGTH HAS REACHED A MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.

3" DIAMETER WEEP HOLES INDICATED TO BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR CULVERT DIVERSION DETAILS AND PAY ITEM, SEE EROSION CONTROL PLANS.

FOR CONSTRUCTION SEQUENCE, SEE SHEETS C-2 THRU C-4.

FOR GROUT FOR STRUCTURES, SEE SPECIAL PROVISIONS.

FOR MAINTENANCE OF TRAFFIC, SEE TRAFFIC CONTROL PLANS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

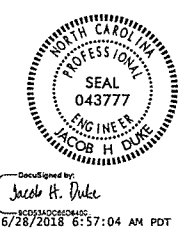
FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

FOR ANCHORED SHEET PILE WALL, SEE SPECIAL PROVISIONS.

PROJECT NO. U-4405  
CUMBERLAND COUNTY  
 STATION: 137+99.59 -L-

SHEET 1 OF 18 CULVERT No. 255

I HEREBY CERTIFY THESE PLANS ARE THE AS-BUILT PLANS



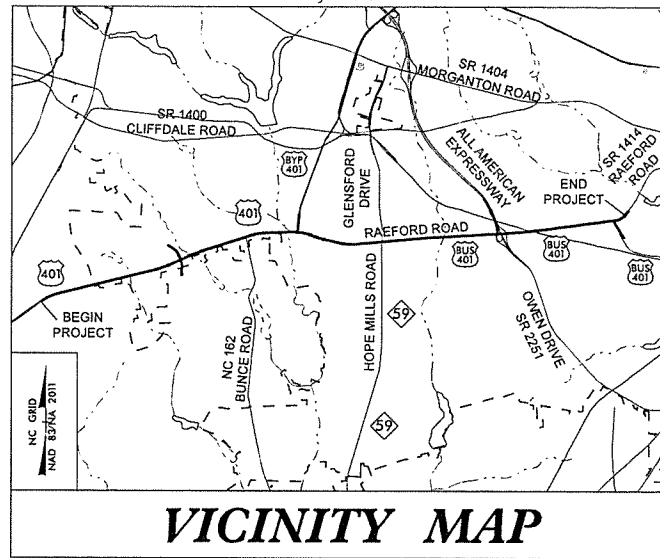
STATE OF NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RALEIGH

CULVERT EXTENSION  
 QUADRUPLE 10 FT. X 12 FT.  
 CONCRETE BOX CULVERT  
 LEFT AND RIGHT EXTENSION  
 TITLE SHEET

REVISIONS				SHEET NO.
NO.	BY	DATE	NO.	DATE
1			3	
2			4	

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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



**VICINITY MAP**

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**CUMBERLAND COUNTY**

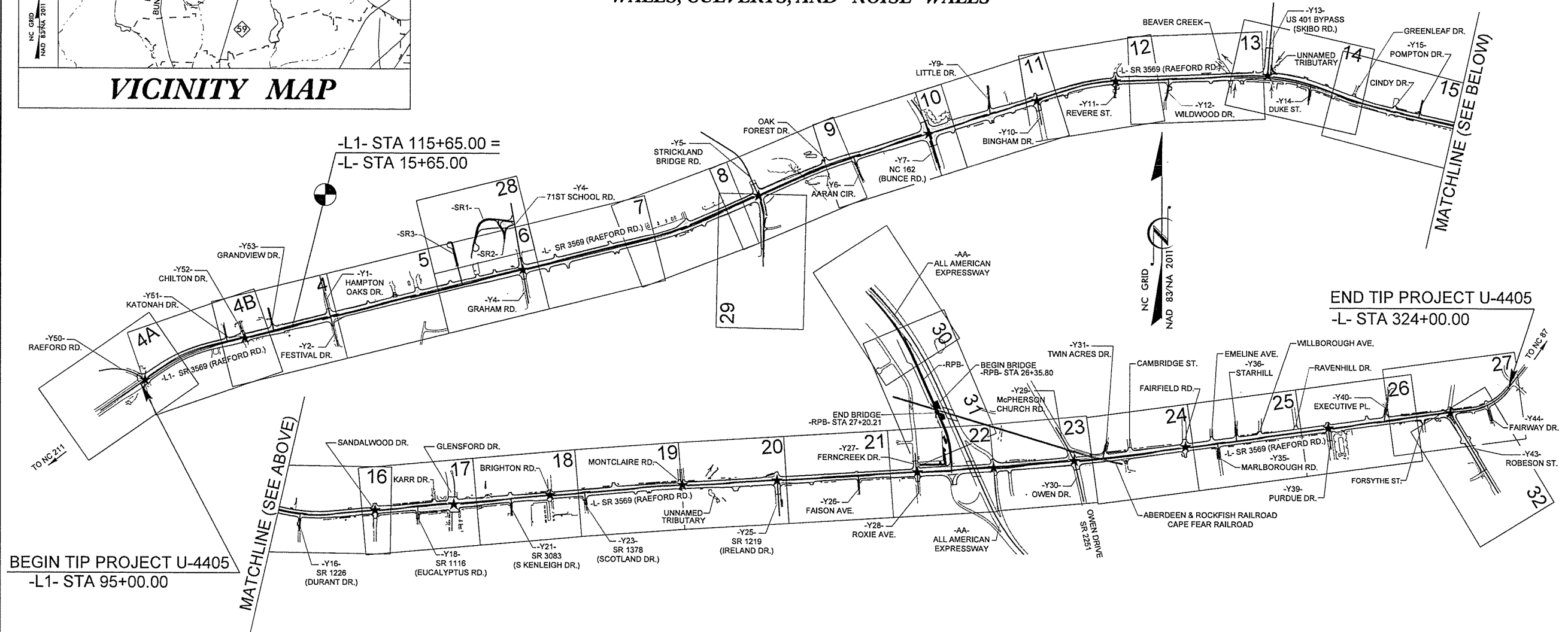
**LOCATION: US 401 FROM OLD RAEFORD ROAD TO EAST OF FAIRWAY DRIVE  
IN FAYETTEVILLE**

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

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-4405	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
39049.1.1	STPDA-0401(230)	PE	
39049.2.1	STPDA-0401(230)	RW	
39049.2.1	STPDA-0401(230)	UTIL	
39049.3.1	STPDA-0401(230)	CONST	

**TIP PROJECT: U-4405**

**CONTRACT: C204107**

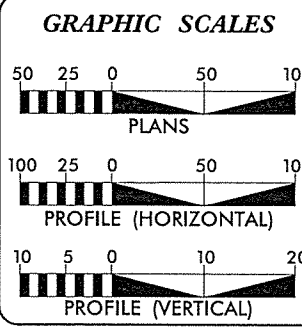


BEGIN TIP PROJECT U-4405  
-L1- STA 95+00.00

END TIP PROJECT U-4405  
-L- STA 324+00.00

★ PROPOSED SIGNAL

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



**DESIGN DATA**

ADT 2018 =	63,150
ADT 2038 =	70,975
K =	10 %
D =	60 %
T =	3 %*
V =	50 MPH
*(TTST = 1% & DUAL = 2%)	
FUNC CLASS =	URBAN ARTERIAL
	REGIONAL TIER

**PROJECT LENGTH**

LENGTH ROADWAY TIP PROJECT U-4405 =	6.231 MILES
TOTAL LENGTH TIP PROJECT U-4405 =	6.231 MILES

NCDOT CONTACT: LAURA SUTTON, PE CPM

Prepared in the Office of:

**ATKINS**  
1616 EAST MILLBROOK ROAD, SUITE 160  
RALEIGH, NORTH CAROLINA 27609  
(919) 876-6888 NCBES #F-0326

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: JULY 29, 2016

LETTING DATE: AUGUST 21, 2018

CLINTON J. MORGAN, PE  
PROJECT ENGINEER

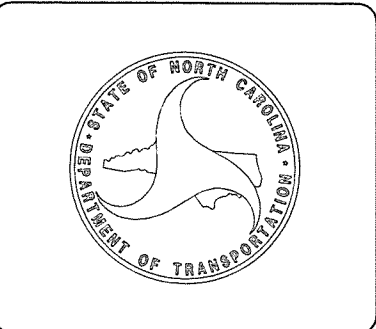
IAN BERDEAU, PE  
PROJECT DESIGN ENGINEER

**HYDRAULICS ENGINEER**

Seal: Frank F. Fleming, P.E., 2/26/2018

**ROADWAY DESIGN ENGINEER**

Seal: Clinton J. Morgan, PE, 2/25/2018







WKST1

COMPUTED BY: RBR DATE: 7/18/2018  
CHECKED BY: ECOLOGICAL ENGINEERING, LLP DATE: 7/18/2018

PROJECT NO. U-4405 SHEET NO. 3D-41

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

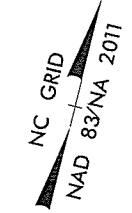
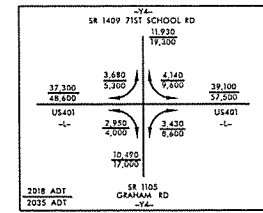
Note: Invert Elevations indicated are for Bid Purposes only and shall not be used for project construction stakeout.  
See "Standard Specifications For Roads and Structures, Section 300-5".

LIST OF PIPES, ENDWALLS, ETC. (FOR PIPES 48 INCHES & UNDER)

Table with columns for LINE & STATION, OFFSET, STRUCTURE NUMBER, Drainage Pipe (RCP, CSP, CAAP, HDPE, or PVC), C. S. PIPE, R. C. PIPE CLASS III, R. C. PIPE CLASS IV, QUANTITIES FOR DRAINAGE STRUCTURES, FRAME, GRATES, AND HOOD, GRATE TYPE, CONCRETE TRANSITIONAL SECTION, and REMARKS. Includes a summary table at the bottom for SHEET TOTALS and PROJECT TOTALS.

B/17/99

PROJECT REFERENCE NO. U-4405		SHEET NO. 6	
RW SHEET NO.			
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED			



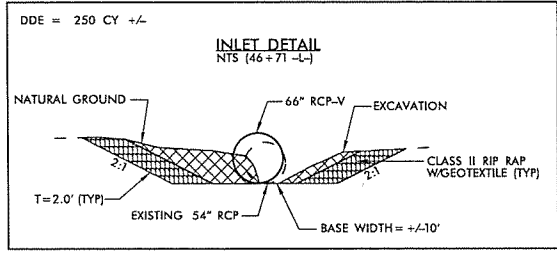
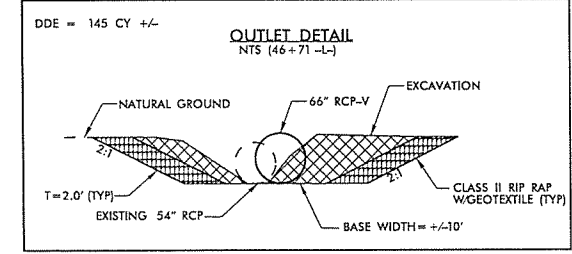
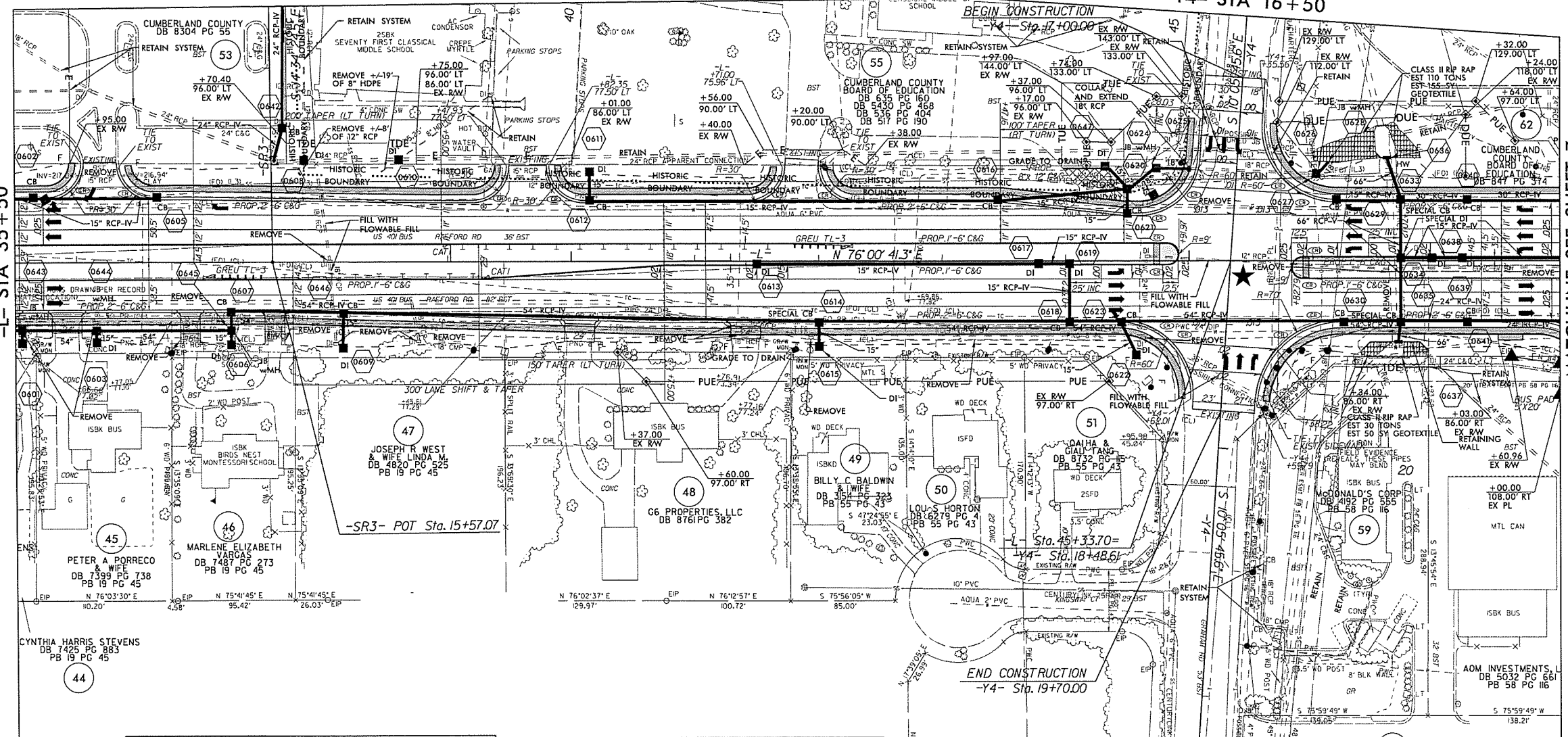
NOTE: COORDINATION WITH RESIDENT ENGINEER IS REQUIRED PRIOR TO ANY TREE REMOVAL ON PARCEL 55

MATCHLINE SEE SHEET 28  
-SR3- STA 13+50

MATCHLINE SEE SHEET 28  
-Y4- STA 16+50

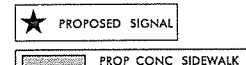
MATCHLINE SEE SHEET 5  
-L- STA 35+50

MATCHLINE SEE SHEET 7  
-L- STA 48+00



NOTE: BUS PADS WILL BE PAID FOR AS SIDEWALK  
SEE SHEET 33 & 34 FOR -L- PROFILE  
SEE SHEET 46 FOR -Y4- PROFILE  
SEE SHEET C1-1 THRU C1-18 FOR CULVERT PLANS

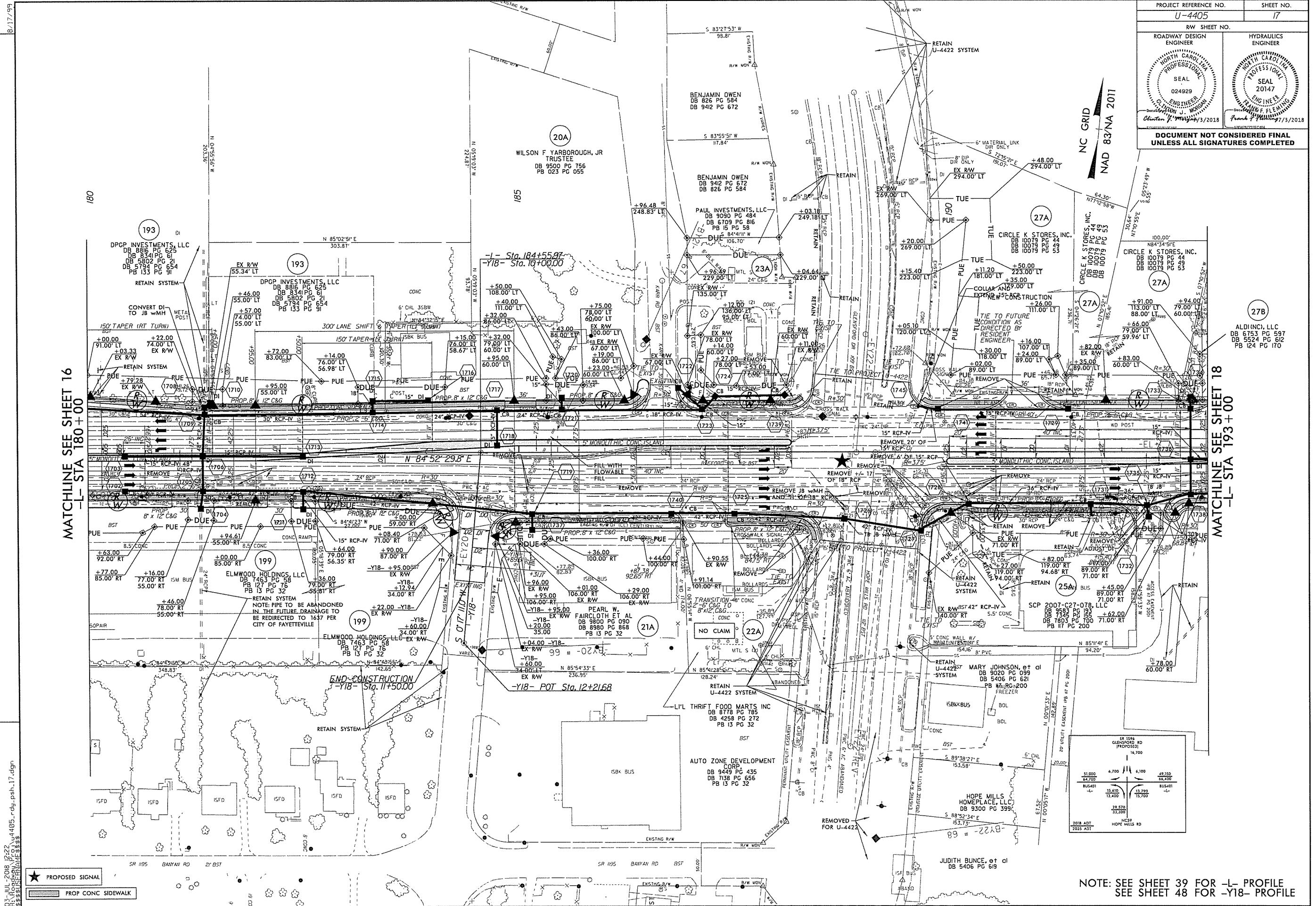
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PROJECT REFERENCE NO. U-4405	SHEET NO. 17
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	SEAL 20147
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

MATCHLINE SEE SHEET 16  
-L- STA 180+00

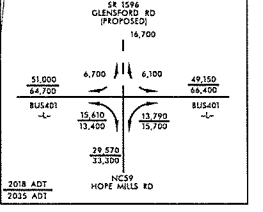
MATCHLINE SEE SHEET 18  
-L- STA 193+00



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★ PROPOSED SIGNAL

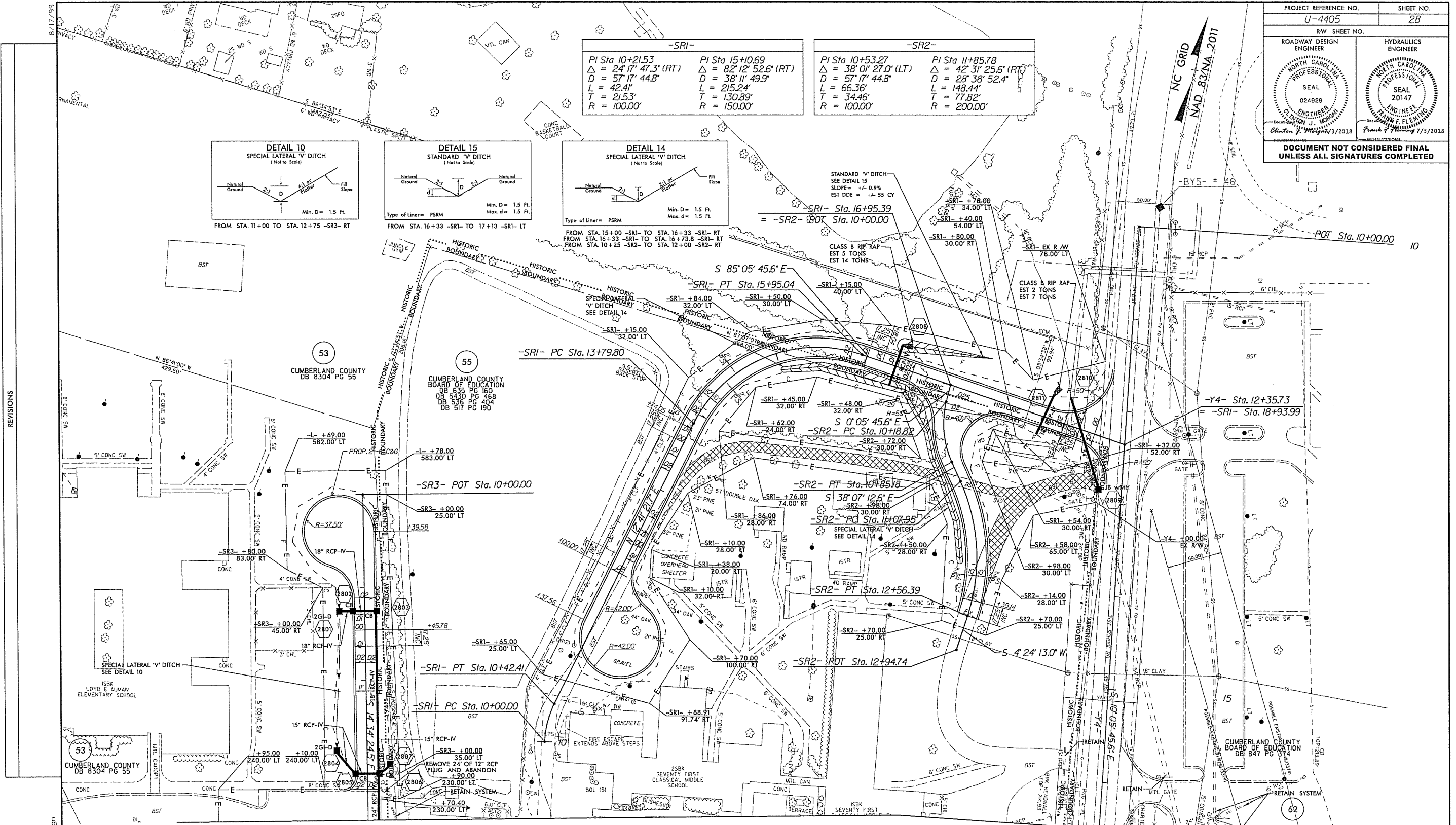
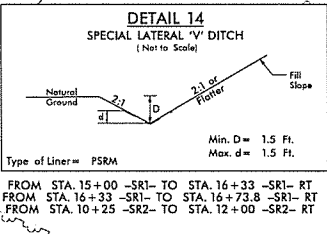
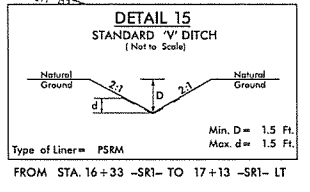
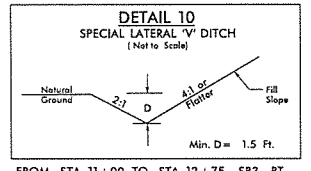
▬ PROP CONC SIDEWALK



NOTE: SEE SHEET 39 FOR -L- PROFILE  
 SEE SHEET 48 FOR -Y18- PROFILE

PROJECT REFERENCE NO. U-4405	SHEET NO. 28
RW SHEET NO.	
ROADWAY DESIGN ENGINEER SEAL 024929 Clinton J. Morgan 3/2018	HYDRAULICS ENGINEER SEAL 20147 Frank F. Fleming 7/3/2018
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	

-SR1-		-SR2-	
PI Sta 10+21.53	PI Sta 15+10.69	PI Sta 10+53.27	PI Sta 11+85.78
$\Delta = 24' 17" 47.3' (RT)$	$\Delta = 82' 12" 52.6' (RT)$	$\Delta = 38' 01" 27.0' (LT)$	$\Delta = 42' 31" 25.6' (RT)$
$D = 57' 17" 44.8'$	$D = 38' 11" 49.9'$	$D = 57' 17" 44.8'$	$D = 28' 38" 52.4'$
$L = 42.41'$	$L = 215.24'$	$L = 66.36'$	$L = 148.44'$
$T = 21.53'$	$T = 130.89'$	$T = 34.46'$	$T = 77.82'$
$R = 100.00'$	$R = 150.00'$	$R = 100.00'$	$R = 200.00'$



REVISIONS

MATCHLINE SEE SHEET 6  
-SR3- STA 13+50

MATCHLINE SEE SHEET 6  
-Y4- STA 16+50

NOTE: COORDINATION WITH RESIDENT ENGINEER  
IS REQUIRED PRIOR TO ANY TREE  
REMOVAL ON PARCEL 55

NOTE: SEE SHEET 50 FOR -SR1- PROFILE  
SEE SHEET 51 FOR -SR2- PROFILE  
SEE SHEET 51 FOR -SR3- PROFILE

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