

SEE SHEET 3 FOR PLAN SHEET LAYOUT  
AT TIME OF INVESTIGATION

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT

| STATE | STATE PROJECT REFERENCE NO. | SHEET NO. | TOTAL SHEETS |
|-------|-----------------------------|-----------|--------------|
| N.C.  | I-40                        | 1         | 6            |

**ROADWAY  
SUBSURFACE INVESTIGATION**

COUNTY NEW HANOVER  
PROJECT DESCRIPTION I-40 AT EXIT 420  
(GORDON ROAD / US 117 / NC 132)  
SITE DESCRIPTION SITE 16 AT STATION 12+77 -RPB 1-

**INVENTORY**

| SHEET NO. | DESCRIPTION          |
|-----------|----------------------|
| 1         | TITLE SHEET          |
| 2         | LEGEND (SOIL & ROCK) |
| 3         | PROJECT TITLE SHEET  |
| 4         | PLAN SHEETS          |
| 5         | CROSS SECTION        |
| 6         | BORE LOGS            |

REFERENCE: N/A

PROJECT: I-40

**CAUTION NOTICE**

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
- THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
  - BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PERSONNEL

BUNCH, C. M.

TURNAGE, J. R.

COLON-MIRANDA, J.

INVESTIGATED BY BUNCH, C. M.

DRAWN BY FIELDS, W. D.

CHECKED BY NASH, A. A.

SUBMITTED BY RIGGS, Jr., A. F.

DATE JANUARY 2020

Prepared in the Office of:

**Terracon**  
Consulting Engineers and Scientists

2401 BRENTWOOD ROAD, SUITE 107  
RALEIGH, NORTH CAROLINA 27604  
NC REGISTERED ENGINEERING FIRM: P-0869  
NC REGISTERED GEOLOGIC FIRM: C-387



DocuSigned by:

Abner F. Riggs, Jr.

8/5/2020

SIGNATURE

DATE

DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED



09/08/19

22-JAN-2020 17:58 N:\Projects\2019\_70195002\140 Slopes.GEO\_RDWY\_NewHanover\_Site 16\CADD\_GEO\TECH\PlanProf\I-40\_RDY\_TSH\_01.dgn w:\fields\_A\WXE-10023347

**TIP PROJECT: NA**

**CONTRACT: I-40**

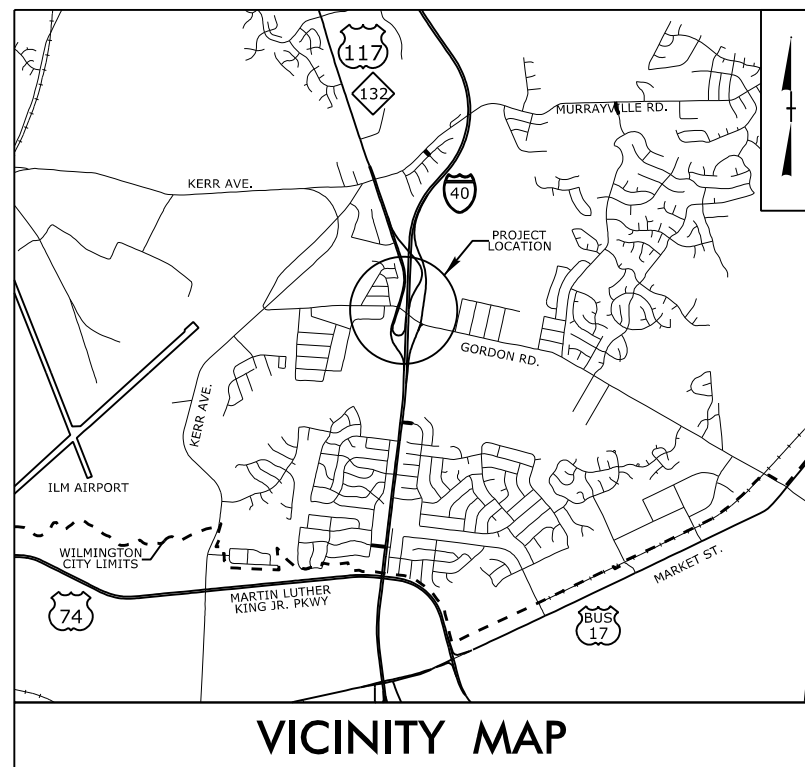
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**NEW HANOVER COUNTY**

**LOCATION: I-40 AT EXIT 420 (GORDON ROAD /US 117 /NC 132)**

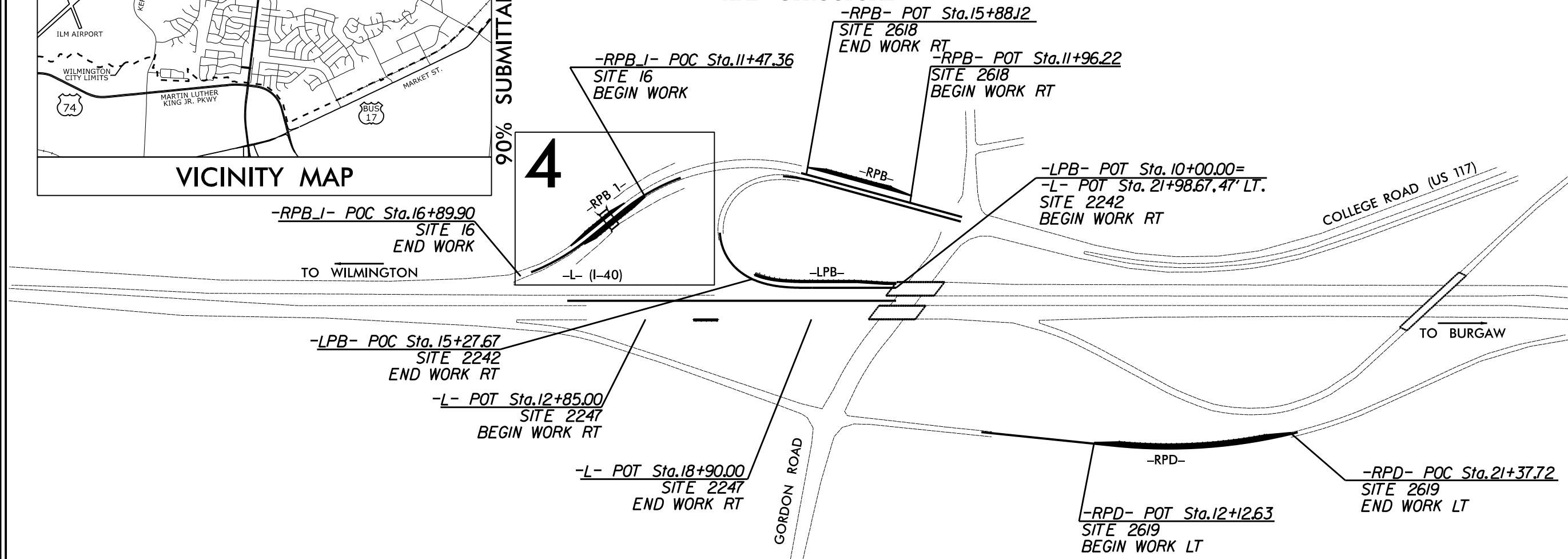
**TYPE OF WORK: GRADING, DRAINAGE, CULVERT, PAVING, AND STRUCTURE**

| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.   | TOTAL SHEETS |
|-----------------|-----------------------------|-------------|--------------|
| N.C.            | I-40                        | 3           | 6            |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION |              |
|                 |                             |             |              |
|                 |                             |             |              |
|                 |                             |             |              |
|                 |                             |             |              |
|                 |                             |             |              |



**VICINITY MAP**

**90% SUBMITTAL - NOVEMBER 14, 2019**

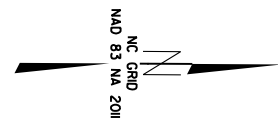


NCDOT CONTACT: KRISTA KIMMEL

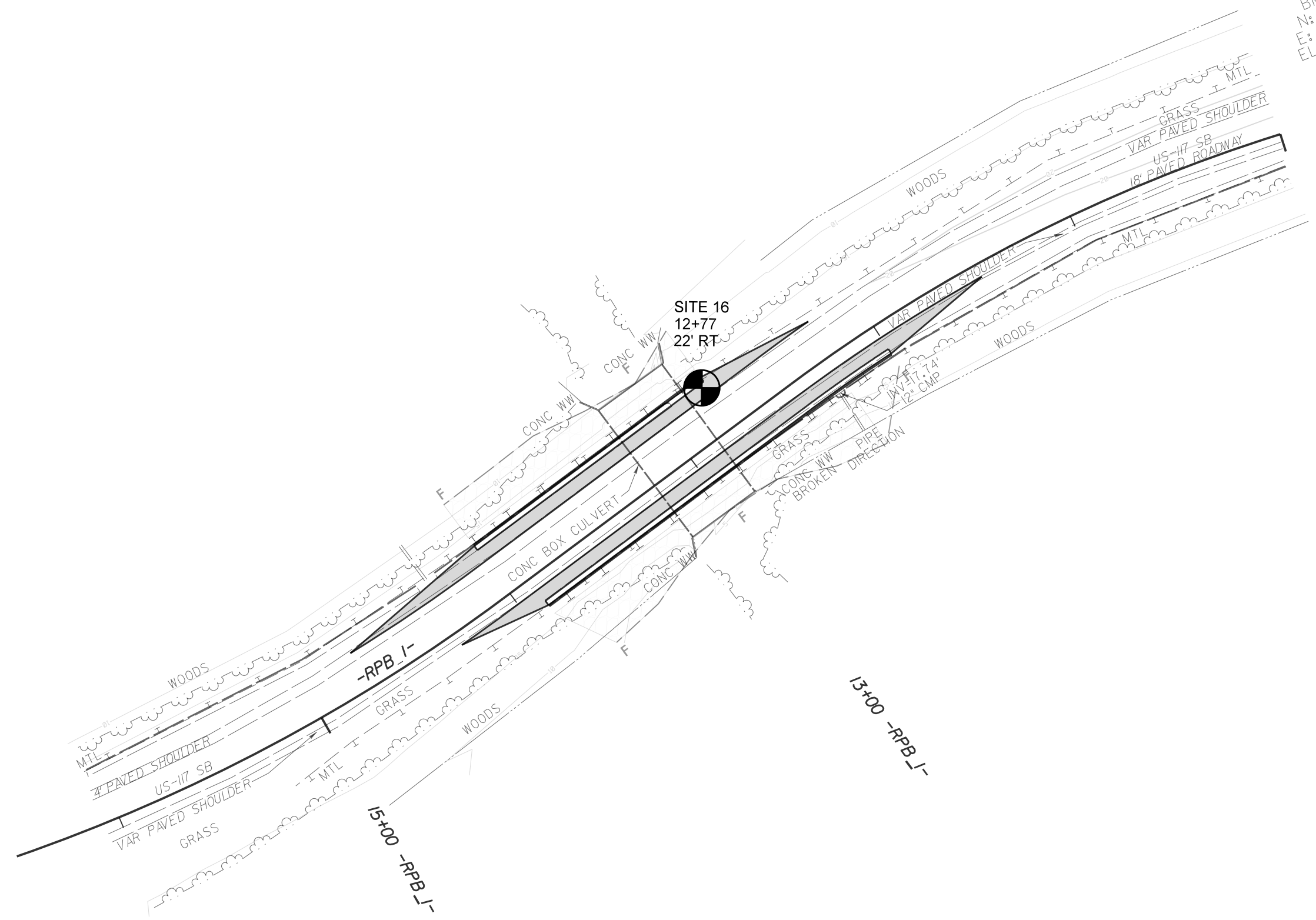
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

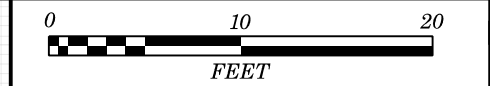
|                                                                                                                                                        |                                                                                                                                                                                        |                                                                                                                                    |                                                                                                                                                                                                                                                                                                         |                                                                                                                                   |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--|
| <p><b>GRAPHIC SCALES</b></p> <p>50 25 0 50 100<br/>PLANS</p> <p>50 25 0 50 100<br/>PROFILE (HORIZONTAL)</p> <p>10 5 0 10 20<br/>PROFILE (VERTICAL)</p> | <p><b>DESIGN DATA</b></p> <p>ADT 2018 = 30,500<br/>ADT =</p> <p>K = %<br/>D = %<br/>T = % *<br/>V = MPH</p> <p>* TTST = DUAL</p> <p>FUNC CLASS =<br/>INTERSTATE<br/>STATEWIDE TIER</p> | <p><b>PROJECT LENGTH</b></p> <p>LENGTH OF ROADWAY PROJECT I-40 = 0.115 MILES</p> <p>TOTAL LENGTH OF PROJECT I-40 = 0.115 MILES</p> | <p>Prepared for the North Carolina Department of Transportation in the office of:</p> <p><b>PARSONS</b></p> <p>2018 STANDARD SPECIFICATIONS</p> <p>RIGHT OF WAY DATE: EDWARD S. ROBBINS, PE<br/>PROJECT ENGINEER</p> <p>LETTING DATE: DAVID B. GARRETT<br/>PROJECT DESIGN ENGINEER<br/>JANUARY 2020</p> | <p><b>HYDRAULICS ENGINEER</b></p> <p>SIGNATURE: _____ P.E.</p> <p><b>ROADWAY DESIGN ENGINEER</b></p> <p>SIGNATURE: _____ P.E.</p> |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|--|

|                       |           |
|-----------------------|-----------|
| PROJECT REFERENCE NO. | SHEET NO. |
| I-40                  | 4         |
| <b>SITE PLAN</b>      |           |
| <br>0 50 100<br>FEET  |           |

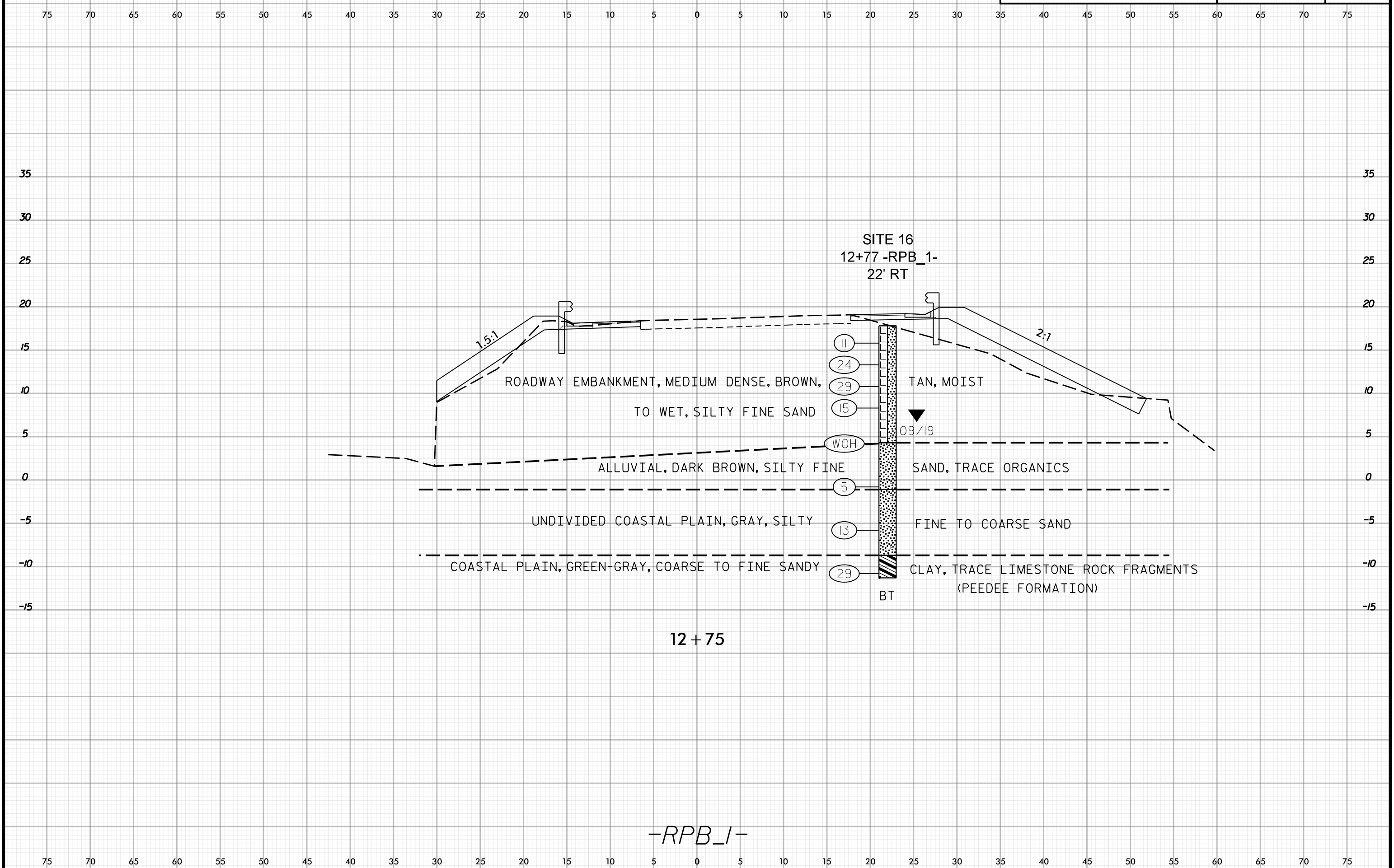


BM-2618-1  
 N: 193,207.8  
 E: 2,341,436.5  
 ELEV.: 20.033'





|                     |           |
|---------------------|-----------|
| PROJ. REFERENCE NO. | SHEET NO. |
| I-40                | 5         |



12 + 75

-RPB\_1-

|                                                                       |  |                                |  |                                    |  |                                |                        |
|-----------------------------------------------------------------------|--|--------------------------------|--|------------------------------------|--|--------------------------------|------------------------|
| <b>WBS</b> I-40                                                       |  | <b>TIP</b> N/A                 |  | <b>COUNTY</b> NEW HANOVER / PENDER |  | <b>GEOLOGIST</b> BUNCH, C. M.  |                        |
| <b>SITE DESCRIPTION</b> I-40 STORM REPAIRS                            |  |                                |  |                                    |  |                                | <b>GROUND WTR (ft)</b> |
| <b>BORING NO.</b> SITE 16                                             |  | <b>STATION</b> 12+77           |  | <b>OFFSET</b> 22 ft RT             |  | <b>ALIGNMENT</b> -RPB_1-       |                        |
| <b>COLLAR ELEV.</b> 17.8 ft                                           |  | <b>TOTAL DEPTH</b> 29.1 ft     |  | <b>NORTHING</b> 192,913            |  | <b>EASTING</b> 2,341,588       |                        |
| <b>DRILL RIG/HAMMER EFF./DATE</b> TER373 DIEDRICH D-50 84% 02/15/2019 |  | <b>DRILL METHOD</b> Mud Rotary |  | <b>HAMMER TYPE</b> Automatic       |  |                                |                        |
| <b>DRILLER</b> TURNAGE, J. R.                                         |  | <b>START DATE</b> 09/27/19     |  | <b>COMP. DATE</b> 09/27/19         |  | <b>SURFACE WATER DEPTH</b> N/A |                        |

| ELEV (ft) | DRIVE ELEV (ft) | DEPTH (ft) | BLOW COUNT |       |       | BLOWS PER FOOT |    |    |    |     | SAMP. NO. | MOI | LOG | SOIL AND ROCK DESCRIPTION | DEPTH (ft) |                                                                                           |                                                                                         |
|-----------|-----------------|------------|------------|-------|-------|----------------|----|----|----|-----|-----------|-----|-----|---------------------------|------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
|           |                 |            | 0.5ft      | 0.5ft | 0.5ft | 0              | 25 | 50 | 75 | 100 |           |     |     |                           |            | ELEV. (ft)                                                                                |                                                                                         |
| 20        |                 |            |            |       |       |                |    |    |    |     |           |     |     |                           |            |                                                                                           |                                                                                         |
|           | 16.8            | 1.0        | 5          | 5     | 6     | 11             |    |    |    |     |           |     |     |                           | 17.8       | GROUND SURFACE                                                                            |                                                                                         |
| 15        | 14.3            | 3.5        | 8          | 11    | 13    | 24             |    |    |    |     |           |     |     |                           |            | <b>ROADWAY EMBANKMENT</b>                                                                 |                                                                                         |
|           | 11.8            | 6.0        | 11         | 13    | 16    | 29             |    |    |    |     |           |     |     |                           |            | BROWN, TAN, SILTY FINE SAND                                                               |                                                                                         |
| 10        | 9.3             | 8.5        | 6          | 7     | 8     | 15             |    |    |    |     |           |     |     |                           |            |                                                                                           |                                                                                         |
| 5         | 5.2             | 12.6       | WOH        | WOH   | WOH   | 0              |    |    |    |     |           |     |     |                           | 4.3        | <b>ALLUVIAL</b>                                                                           |                                                                                         |
| 0         | 0.2             | 17.6       | 2          | 2     | 3     | 5              |    |    |    |     |           |     |     |                           |            | DARK BROWN, SILTY FINE SAND, TRACE ORGANICS                                               |                                                                                         |
| -5        | -4.8            | 22.6       | 6          | 5     | 8     | 13             |    |    |    |     |           |     |     |                           | -1.1       | <b>UNDIVIDED COASTAL PLAIN</b>                                                            |                                                                                         |
|           |                 |            |            |       |       |                |    |    |    |     |           |     |     |                           |            |                                                                                           | GRAY, SILTY FINE TO COARSE SAND                                                         |
| -10       | -9.8            | 27.6       | 12         | 12    | 17    | 29             |    |    |    |     |           |     |     |                           | -8.7       | <b>COASTAL PLAIN</b>                                                                      |                                                                                         |
|           |                 |            |            |       |       |                |    |    |    |     |           |     |     |                           | -11.3      | GREEN-GRAY, COARSE TO FINE SANDY CLAY, TRACE LIMESTONE ROCK FRAGMENTS (PEE DEE FORMATION) |                                                                                         |
|           |                 |            |            |       |       |                |    |    |    |     |           |     |     |                           |            |                                                                                           | Boring Terminated at Elevation -11.3 ft IN COASTAL PLAIN SILTY SAND (PEE DEE FORMATION) |

NCDOT BORE SINGLE I40 STORM REPAIRS NEW HANOVER CO. GEO\_RDWY.GPJ NC\_DOT.GDT 1/22/20