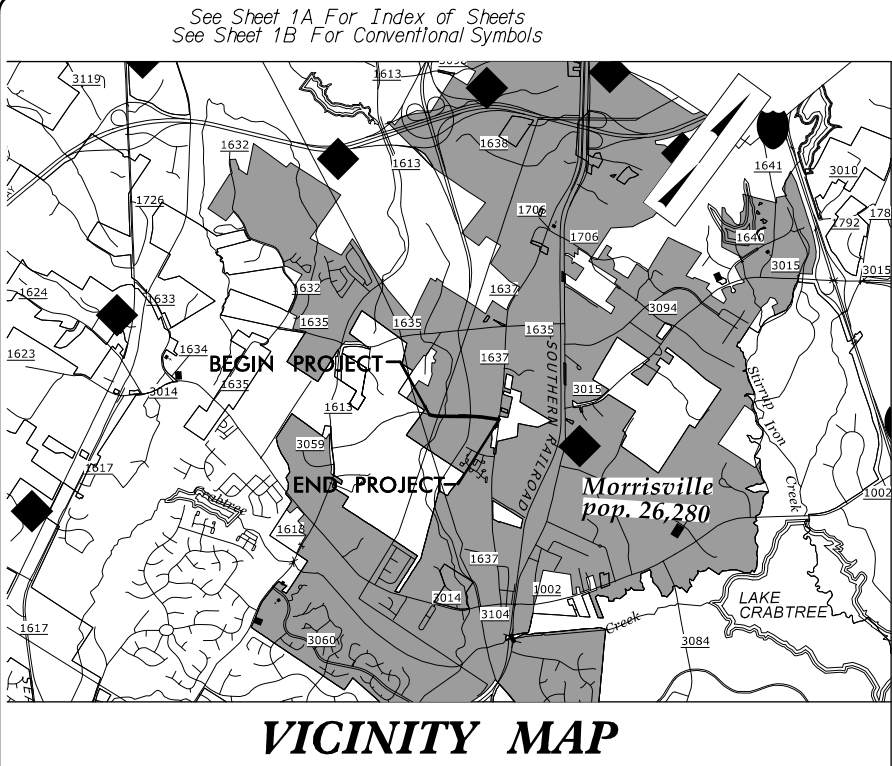


| <div style="display: flex; justify-content: space-between; align-items: center;">  <div style="text-align: center;"> <b>North Carolina Department of Transportation</b><br/> <b>Highway Stormwater Program</b><br/> <b>STORMWATER MANAGEMENT PLAN</b><br/> <b>FOR NCDOT PROJECTS</b> </div>  </div> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                  |  |                                                                                                      |  |                                     |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------|--|-------------------------------------|--|
| (Version 3.00; Released August 2021)                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                  |  |                                                                                                      |  |                                     |  |
| WBS Element:                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | TIP/Proj No:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | County(ies):                                                     |  | Page 1 of 1                                                                                          |  |                                     |  |
| <b>General Project Information</b>                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                  |  |                                                                                                      |  |                                     |  |
| WBS Element:                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | 36249.4033                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | TIP Number:                                                      |  | HL-0033                                                                                              |  | Project Type: New Location          |  |
| NCDOT Contact:                                                                                                                                                                                                                                                                                                                                                                                                                                                          |  | John Braxton                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | Contractor / Designer:                                           |  | Reid Robol, PE - VHB                                                                                 |  | Date: 3/2/2022                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Address: 1573 Mail Service Center<br>Raleigh, NC 27699-1573                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  |                                                                  |  | Address: 940 Main Campus Drive, Suite 500<br>Raleigh, NC 27606                                       |  |                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Phone: 919-707-6219                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                                                                  |  | Phone: 919-754-5005                                                                                  |  |                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Email: jwbraxton@ncdot.gov                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  |                                                                  |  | Email: rrobol@vhb.com                                                                                |  |                                     |  |
| City/Town:                                                                                                                                                                                                                                                                                                                                                                                                                                                              |  | Morrisville                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | County(ies):                                                     |  | Wake                                                                                                 |  |                                     |  |
| River Basin(s):                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Neuse                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | CAMA County?                                                     |  | No                                                                                                   |  |                                     |  |
| Wetlands within Project Limits?                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Yes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  |                                                                  |  |                                                                                                      |  |                                     |  |
| <b>Project Description</b>                                                                                                                                                                                                                                                                                                                                                                                                                                              |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                  |  |                                                                                                      |  |                                     |  |
| Project Length (lin. miles or feet):                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | 0.435 miles                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |  | Surrounding Land Use:                                            |  | Suburban residential                                                                                 |  |                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | <b>Proposed Project</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  |                                                                  |  | <b>Existing Site</b>                                                                                 |  |                                     |  |
| Project Built-Up Area (ac.)                                                                                                                                                                                                                                                                                                                                                                                                                                             |  | 9.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | ac.                                                              |  | 0.7                                                                                                  |  | ac.                                 |  |
| Typical Cross Section Description:                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | 20' grass median 4@12' lanes, 2' 6" curb and gutter, and 5' sidewalk on left and right                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |  |                                                                  |  | No road along proposed -L- line                                                                      |  |                                     |  |
| Annual Avg Daily Traffic (veh/hr/day):                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | Design/Future: 17,000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  | Year: 2045                                                       |  | Existing: 3,600                                                                                      |  | Year: 2021                          |  |
| General Project Narrative:<br>(Description of Minimization of Water Quality Impacts)                                                                                                                                                                                                                                                                                                                                                                                    |  | <p>This is a new location roadway project that was designed to minimize impacts to water quality as much as practicable. 2:1 side slopes with guardrail were used to reduce the length of jurisdictional stream impacts to UT to Crabtree creek. 2:1 side slopes were also used in the footprint of the wetland to minimize impacts. The roadway grade was also lowered as much as possible to maintain clearance from a Duke transmission line and still provide an adequate level of service for the roadway. Streams along UT to Crabtree Creek are subject to Neuse River Buffer Rules. Approaching drainage was design to minimize impact to adjacent riparian buffers by avoiding deep ditches for stormwater conveyance that would require clearing of buffers. In its place, storm drainage systems were connected to the 8'x7' RCBC to aid in energy dissipation prior to outfalling to UT to Crabtree Creek. Temporary diversion channels were utilized on the east side of the 78 inch RCP to minimize impacts of Wetland A. Phase II impacts were based on slope stakes +25'. Due to the new location nature of the project, excessive outside easement areas were minimized as construction access through the corridor will be possible.</p> |  |                                                                  |  |                                                                                                      |  |                                     |  |
| Surface Water Body (1):                                                                                                                                                                                                                                                                                                                                                                                                                                                 |  | UT to Crabtree Creek                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  | NCDWR Stream Index No.:                                          |  | 27-33-(1)                                                                                            |  |                                     |  |
| NCDWR Surface Water Classification for Water Body                                                                                                                                                                                                                                                                                                                                                                                                                       |  | Primary Classification:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | Class C                                                          |  |                                                                                                      |  |                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Supplemental Classification:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |  | Nutrient Sensitive Waters (NSW)                                  |  |                                                                                                      |  |                                     |  |
| Other Stream Classification:                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                  |  |                                                                                                      |  |                                     |  |
| Impairments:                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  | None                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |  |                                                                  |  |                                                                                                      |  |                                     |  |
| Aquatic T&E Species?                                                                                                                                                                                                                                                                                                                                                                                                                                                    |  | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Comments:                                                        |  |                                                                                                      |  |                                     |  |
| NRTR Stream ID:                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |  |                                                                  |  | Buffer Rules in Effect:                                                                              |  | Neuse                               |  |
| Project Includes Bridge Spanning Water Body?                                                                                                                                                                                                                                                                                                                                                                                                                            |  | No                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | Deck Drains Discharge Over Buffer?                               |  | N/A                                                                                                  |  | Dissipator Pads Provided in Buffer? |  |
| Deck Drains Discharge Over Water Body?                                                                                                                                                                                                                                                                                                                                                                                                                                  |  | N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |  | (If yes, provide justification in the General Project Narrative) |  | (If yes, describe in the General Project Narrative; if no, justify in the General Project Narrative) |  |                                     |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |  | (If yes, provide justification in the General Project Narrative)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |  |                                                                  |  |                                                                                                      |  |                                     |  |

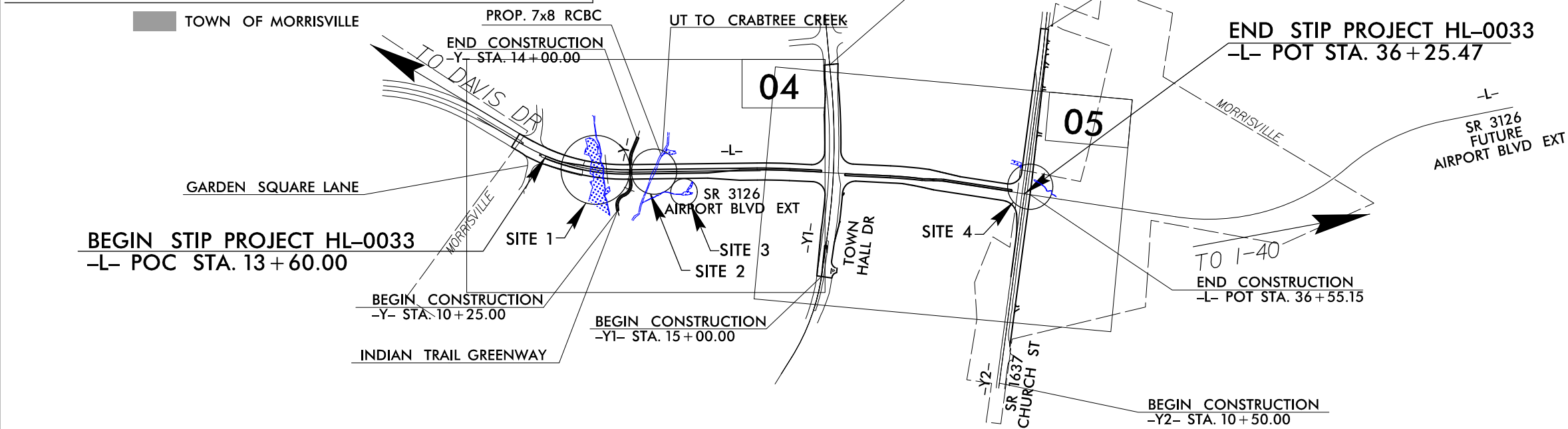
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TIP PROJECT: HL-0033

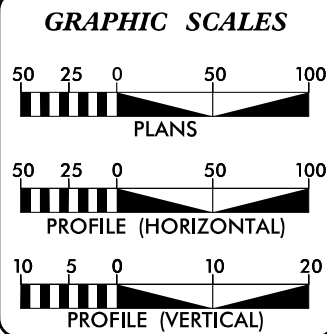
CONTRACT:



VICINITY MAP



CLEARING ON THIS PROJECT SHALL BE PREFORMED TO THE LIMITS ESTABLISHED BY METHOD III  
THIS IS NOT A CONTROL OF ACCESS PROJECT  
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF MORRISVILLE

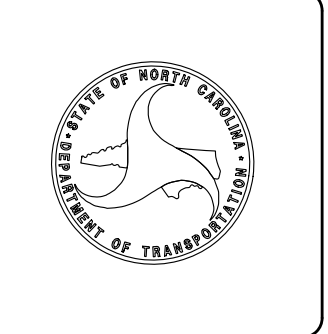


| DESIGN DATA       |                |
|-------------------|----------------|
| ADT 2021 =        | 3,600          |
| ADT 2045 =        | 17,000         |
| K =               | 10 %           |
| D =               | 60 %           |
| T =               | 4 % *          |
| V =               | 50 MPH         |
| * TTST =          | 1% DUAL 3%     |
| FUNC CLASS =      | MINOR ARTERIAL |
| SUB REGIONAL TIER |                |

| PROJECT LENGTH                     |               |
|------------------------------------|---------------|
| LENGTH ROADWAY TIP PROJECT HL-0033 | = 0.435 Miles |
| TOTAL LENGTH TIP PROJECT HL-0033   | = 0.435 Miles |

|                                                                                                                                                                        |                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|
| Prepared In the Office of:<br><b>LOCHNER</b><br>H. W. LOCHNER, INC.<br>2840 PLAZA PLACE, SUITE 202<br>RALEIGH, NC 27612<br>(919) 271-7111<br>NC License Number F-20397 |                                                   |
| 2018 STANDARD SPECIFICATIONS                                                                                                                                           |                                                   |
| RIGHT OF WAY DATE:<br>DEC. 08, 2021                                                                                                                                    | BRIAN K. EASON, PE<br>PROJECT ENGINEER            |
| LETTING DATE:<br>JULY 19, 2022                                                                                                                                         | CHRISTINA YOKEYLEY, PE<br>PROJECT DESIGN ENGINEER |
|                                                                                                                                                                        | JOHN BRAXTON<br>NCDOT CONTACT                     |

| HYDRAULICS ENGINEER     |      |
|-------------------------|------|
| SIGNATURE: _____        | P.E. |
| ROADWAY DESIGN ENGINEER |      |
| SIGNATURE: _____        | P.E. |



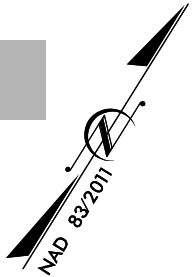
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**WAKE COUNTY**

LOCATION: EXTENSION OF AIRPORT BOULEVARD (SR 3126)  
FROM GARDEN SQUARE LANE TO CHURCH ST (SR 1637)  
IN MORRISVILLE  
TYPE OF WORK: GRADING, DRAINAGE, CULVERT, SIGNALS, AND PAVING

WETLAND AND SURFACE WATER IMPACTS PERMIT

| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.     | TOTAL SHEETS |
|-----------------|-----------------------------|---------------|--------------|
| N.C.            | HL-0033                     | 1             |              |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION   |              |
| 36249.4033      | N/A                         | PE, R/W, UTIL |              |
|                 |                             |               |              |
|                 |                             |               |              |
|                 |                             |               |              |
|                 |                             |               |              |
|                 |                             |               |              |

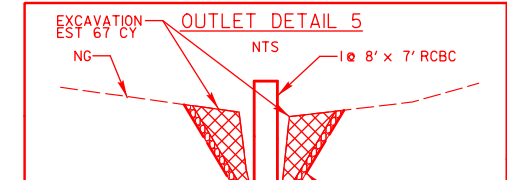
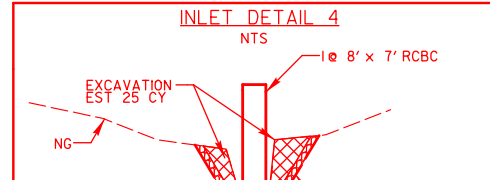
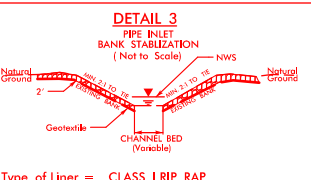
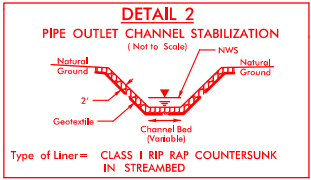
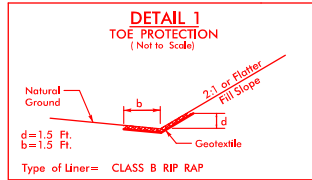
PERMIT DRAWING  
SHEET 1 OF 10



8/17/99

8/13/33 AM  
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NC License  
Number E-0159

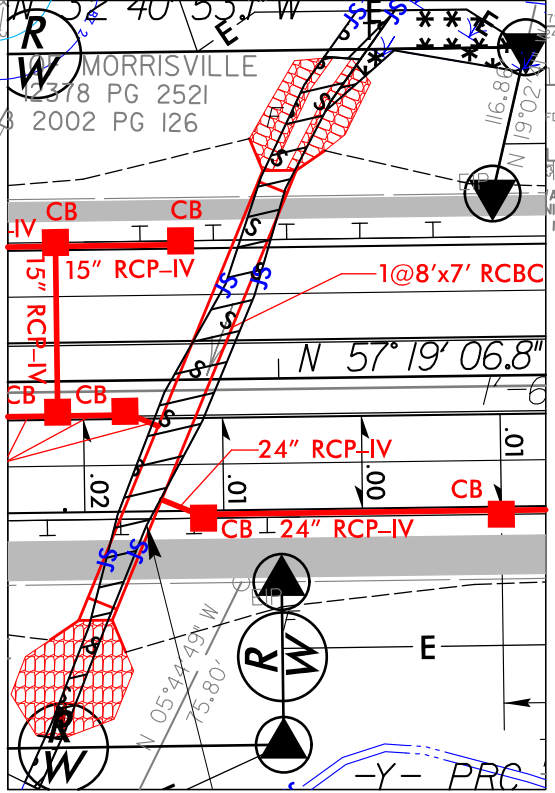
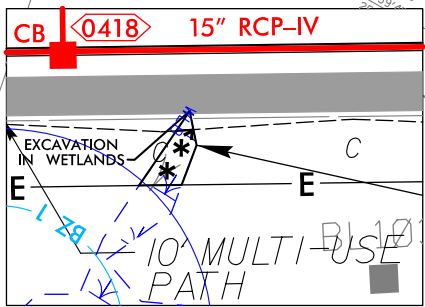
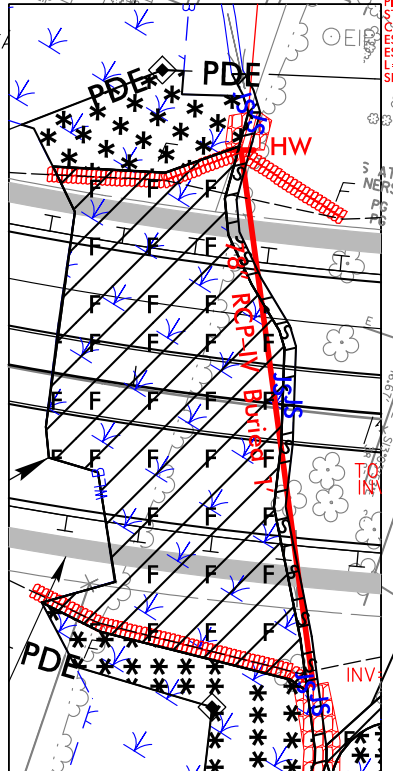
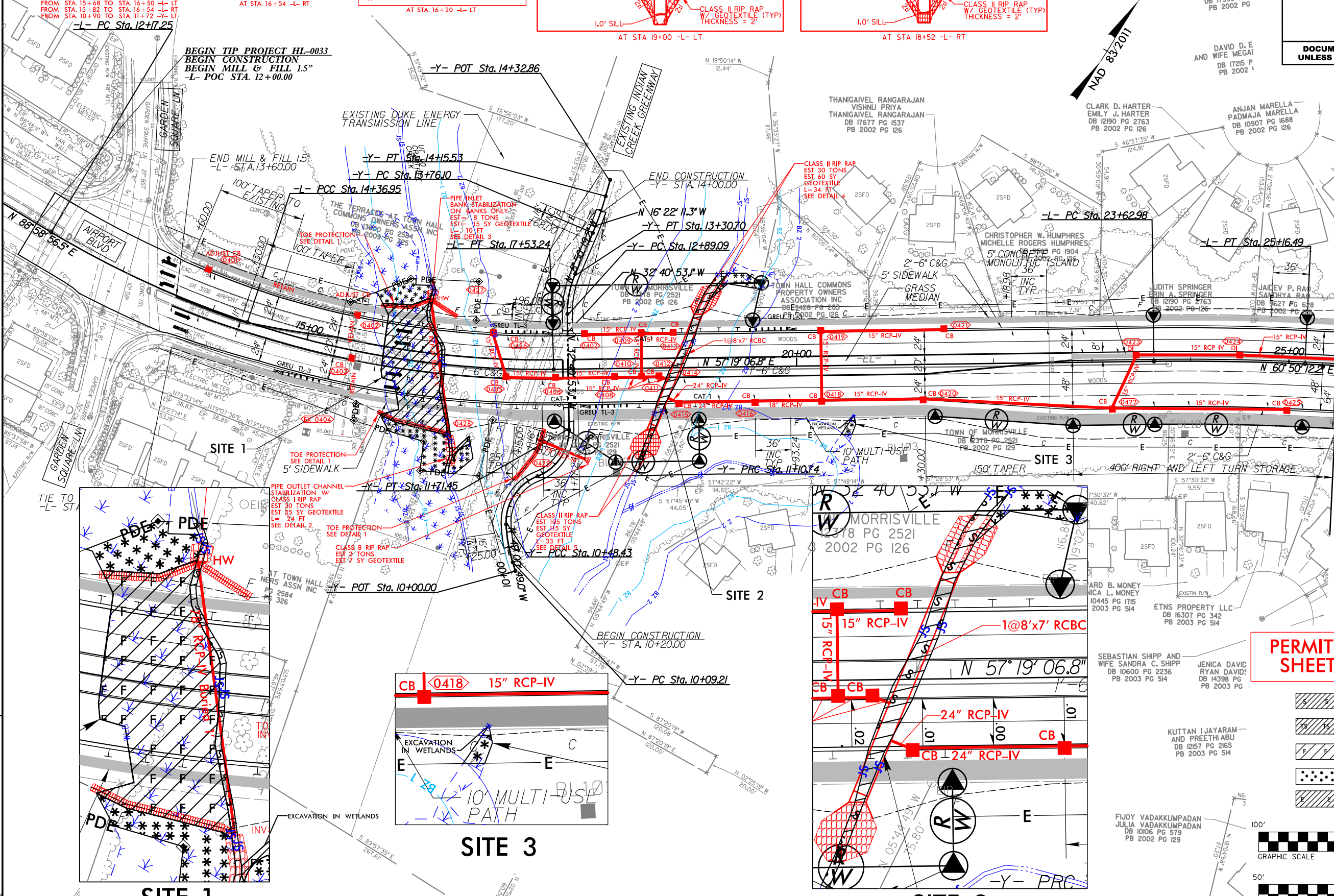


VHB Engineering NC, P.C. (C-3705)  
940 Main Campus Drive, Suite 500  
Raleigh, NC 27606

DB 17596 PG 2  
PB 2002 PG

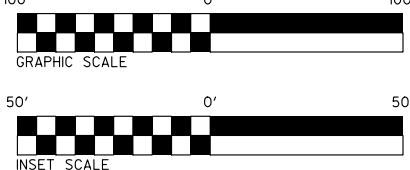
DAVID D.E.  
AND WIFE MEGAN  
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PB 2002 P

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| HL-0033                                                                      |  | 04                     |  |
| RW SHEET NO.                                                                 |  |                        |  |
| ROADWAY DESIGN<br>ENGINEER                                                   |  | HYDRAULICS<br>ENGINEER |  |
| <div>INCOMPLETE PLANS</div> <div>DO NOT USE FOR R/W ACQUISITION</div>        |  |                        |  |
| <div>DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</div> |  |                        |  |



**PERMIT DRAWING**  
**SHEET 2 OF 10**

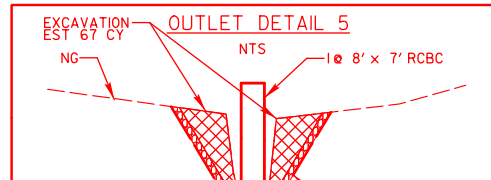
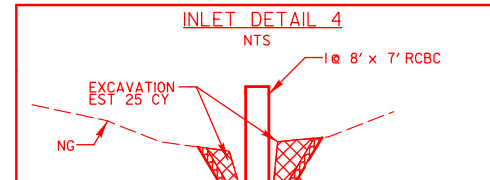
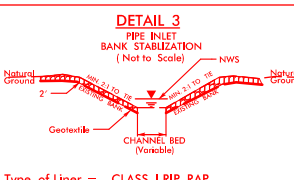
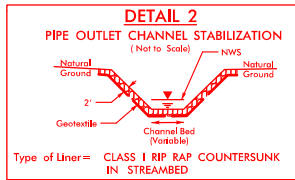
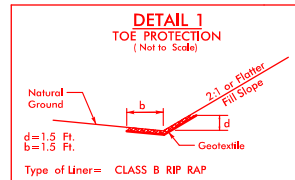
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- DENOTES TEMPORARY IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES MECHANIZED CLEARING
- DENOTES EXCAVATION IN WETLAND



8/17/99

8/15/37 AM  
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NC License  
Number E-0159

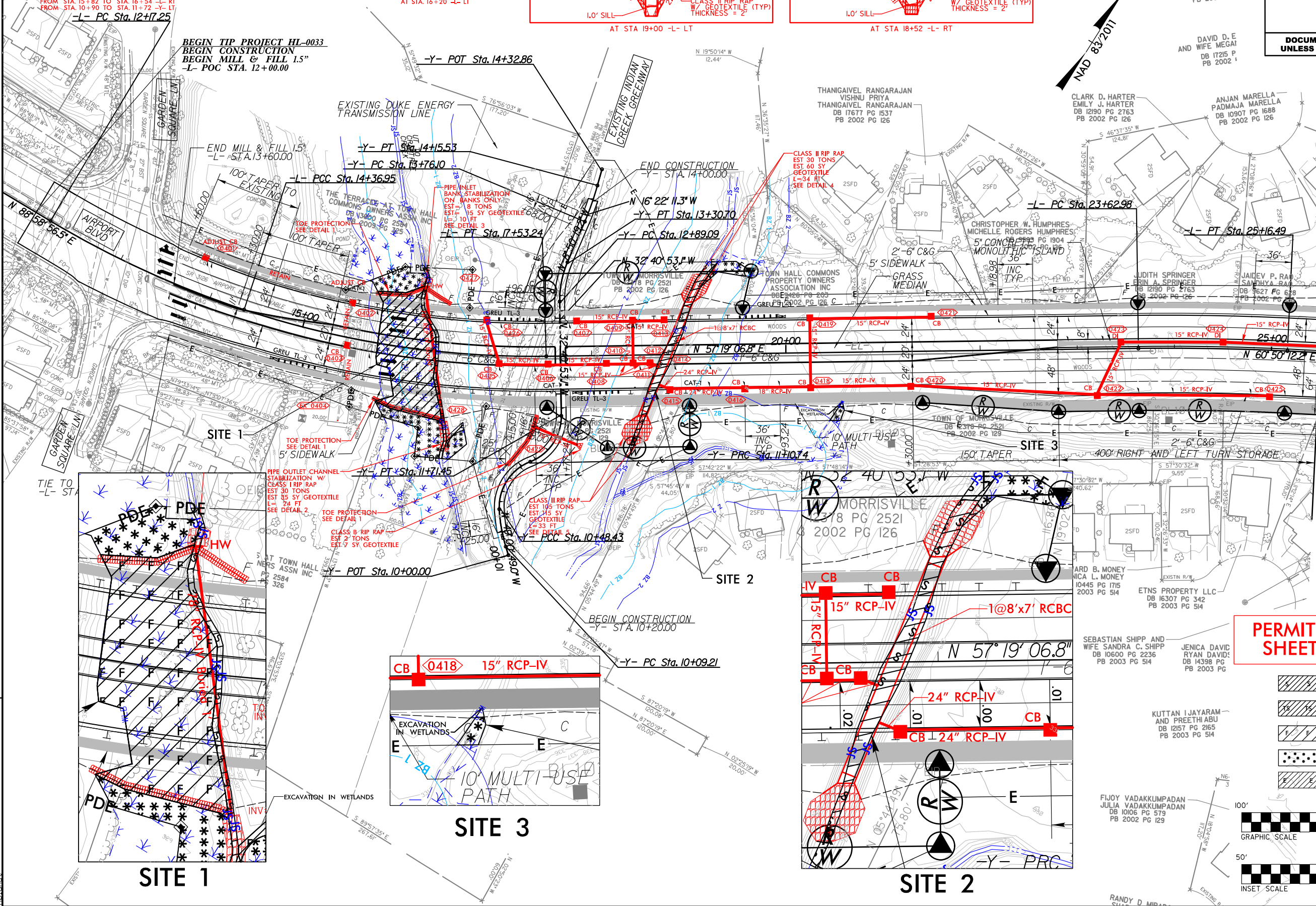


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940 Main Campus Drive, Suite 500  
Raleigh, NC 27606

DB 17596 PG 1  
PB 2002 PG

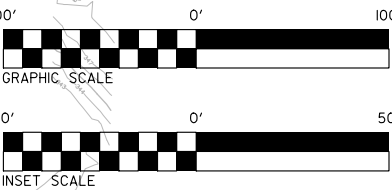
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PB 2002 1

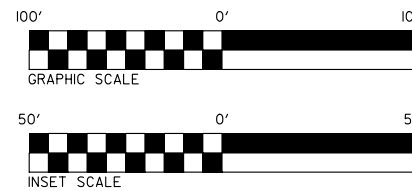
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| ROADWAY DESIGN<br>ENGINEER                                            |  | HYDRAULICS<br>ENGINEER |  |
| <div>INCOMPLETE PLANS</div> <div>DO NOT USE FOR R/W ACQUISITION</div> |  |                        |  |
|                                                                       |  |                        |  |
| DOCUMENT NOT CONSIDERED FINAL<br>UNLESS ALL SIGNATURES COMPLETED      |  |                        |  |



**PERMIT DRAWING**  
**SHEET 3 OF 10**

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





NAD 83/2015

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(919) 571-7111

NC License  
Number F-0159



VHB Engineering NC, P.C. (C-3705)  
940 Main Campus Drive, Suite 500  
Raleigh, NC 27606

PROJECT REFERENCE NO.

HL-0033

SHEET NO.

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05

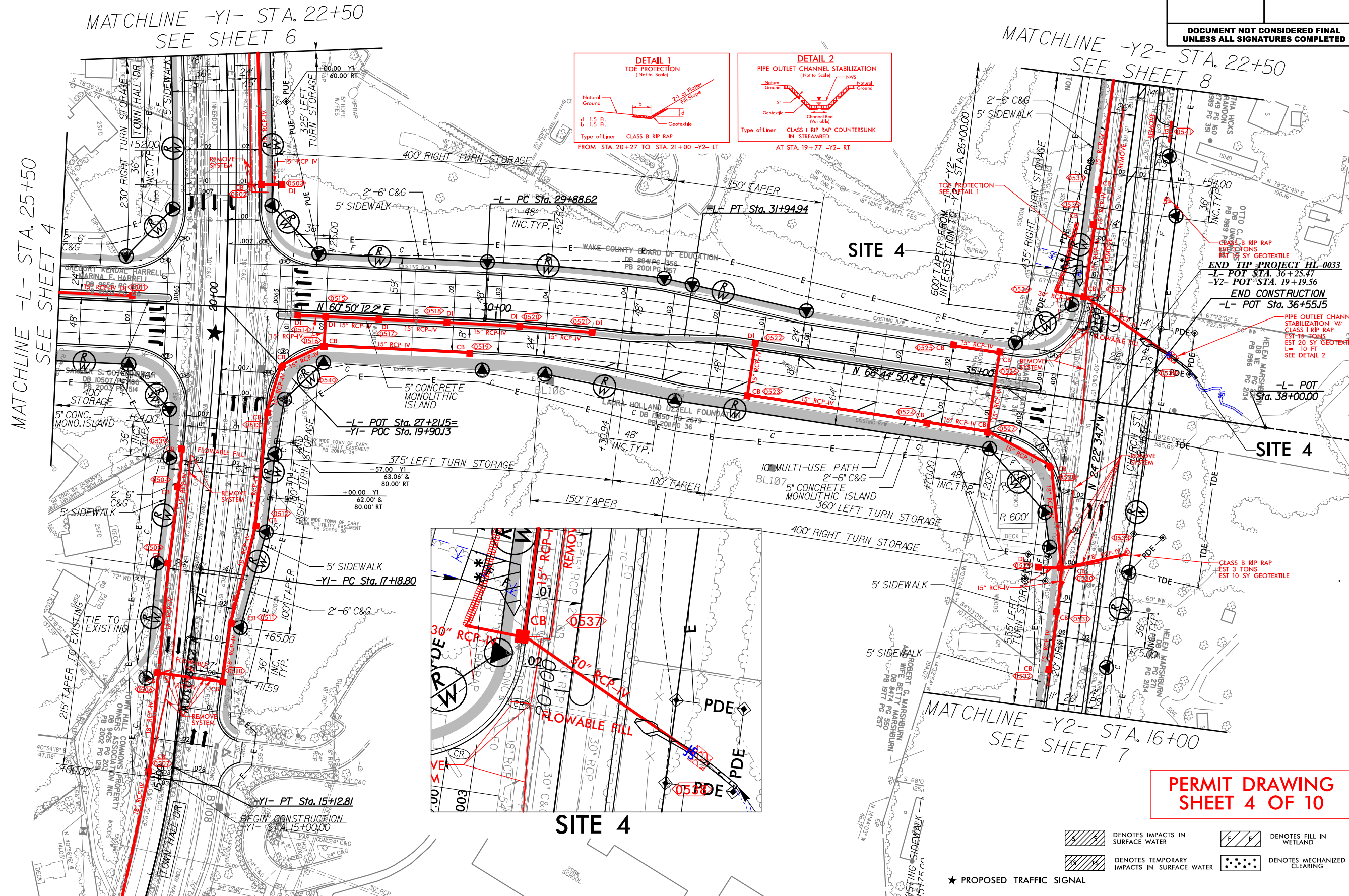
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**HYDRAULICS  
ENGINEER**

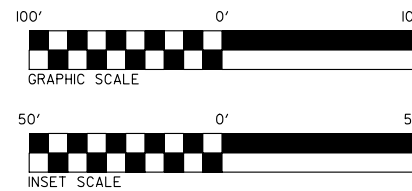
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UNLESS ALL SIGNATURES COMPLETED**



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SHEET 4 OF 10

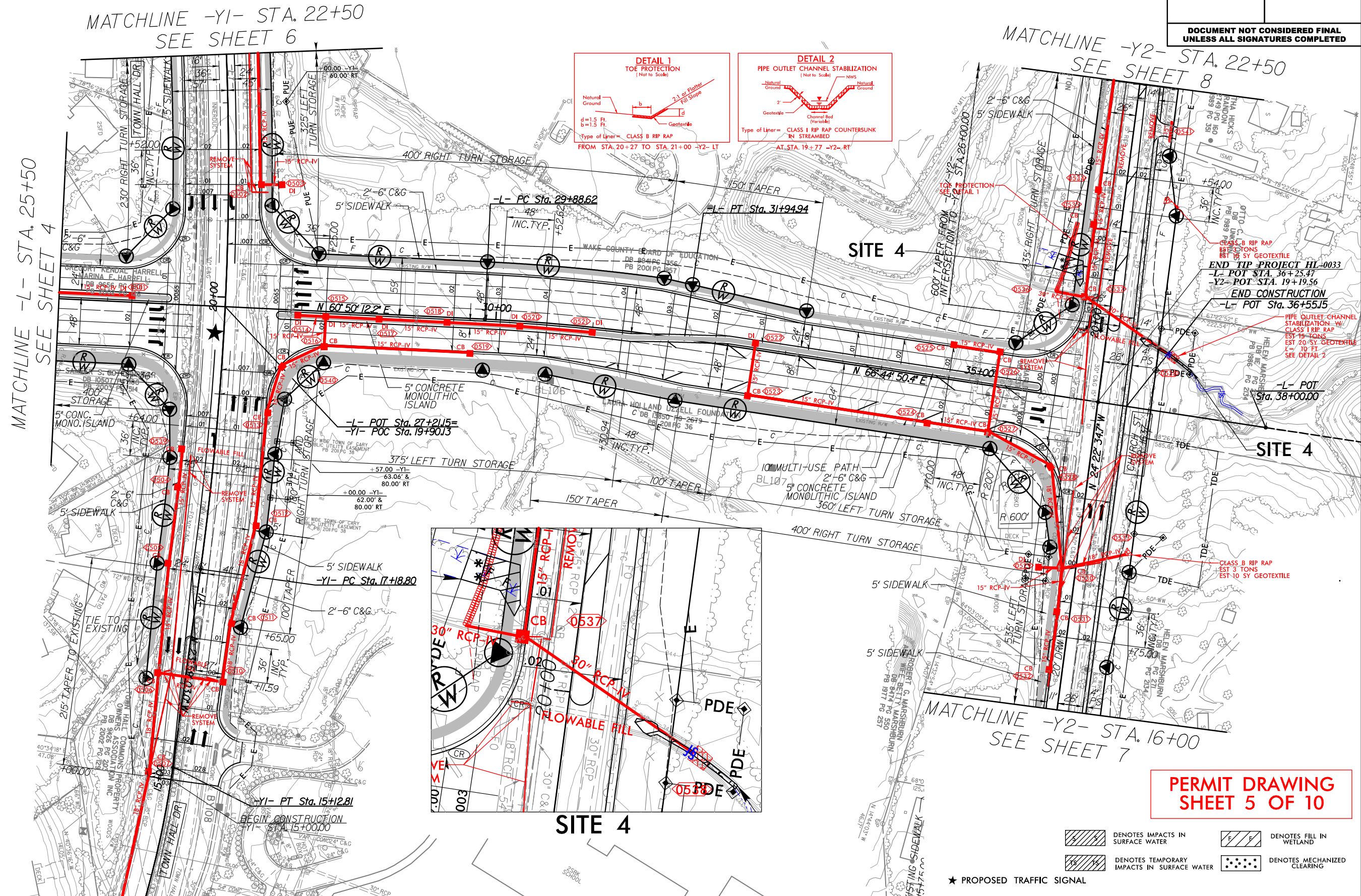
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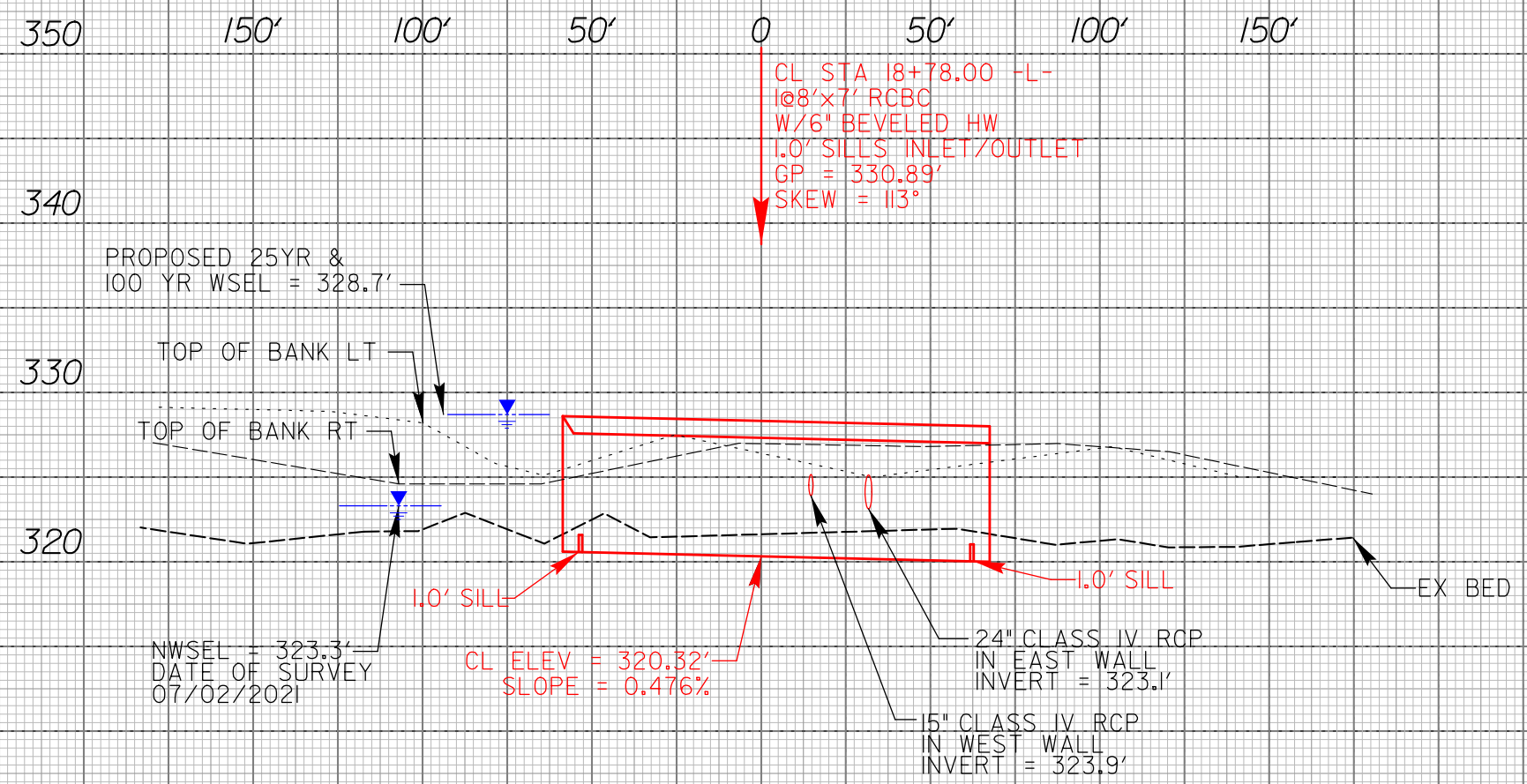
**LOCHNER**  
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 2840 PLAZA PLACE, SUITE 202  
 RALEIGH, NC 27612  
 (919) 571-7111  
 NC License  
 Number F-0159

|                                                                                                                                                                    |  |                        |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------|--|
| PROJECT REFERENCE NO.                                                                                                                                              |  | SHEET NO.              |  |
| HL-0033                                                                                                                                                            |  | 05                     |  |
| R/W SHEET NO.                                                                                                                                                      |  |                        |  |
| ROADWAY DESIGN<br>ENGINEER                                                                                                                                         |  | HYDRAULICS<br>ENGINEER |  |
| <div style="border: 1px solid black; padding: 10px; text-align: center;"> <b>INCOMPLETE PLANS</b><br/>             DO NOT USE FOR R/W ACQUISITION           </div> |  |                        |  |
| <b>DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</b>                                                                                           |  |                        |  |

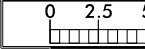


PERMIT DRAWING  
SHEET 6 OF 10

|                                                                                 |  |                        |  |
|---------------------------------------------------------------------------------|--|------------------------|--|
| PROJECT REFERENCE NO.<br><i>HL-0033</i>                                         |  | SHEET NO.<br><i>7</i>  |  |
| ROADWAY DESIGN<br>ENGINEER                                                      |  | HYDRAULICS<br>ENGINEER |  |
| <div>INCOMPLETE PLANS<br/>DO NOT USE FOR R/W ACQUISITION</div>                  |  |                        |  |
| DOCUMENT NOT CONSIDERED FINAL<br>UNLESS ALL SIGNATURES COMPLETED                |  |                        |  |
| <div>50' 0' 50'<br/>GRAPHIC SCALE</div> <div>50' 0' 50'<br/>GRAPHIC SCALE</div> |  |                        |  |



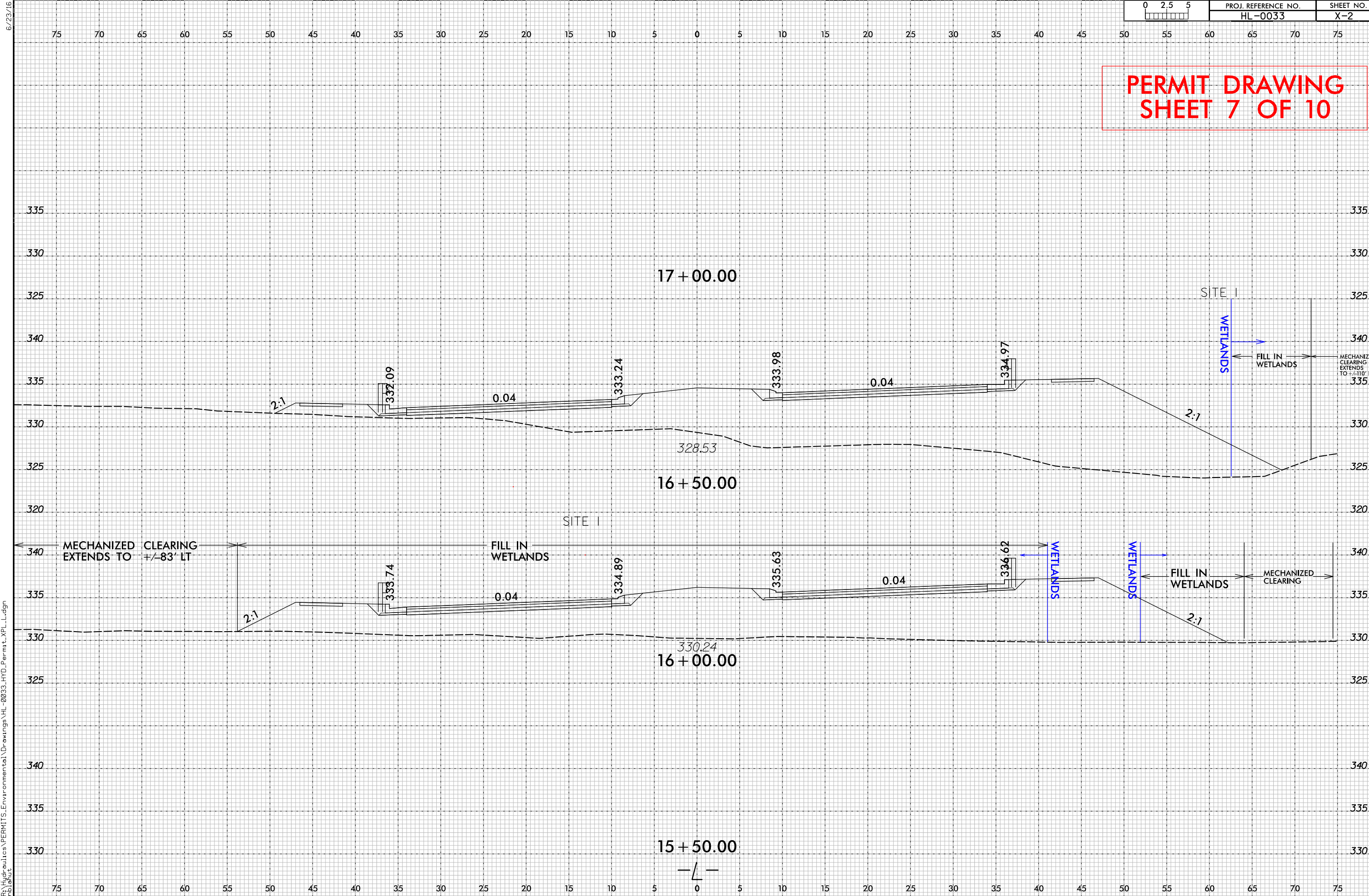
6/23/16



PROJ. REFERENCE NO.  
HL-0033

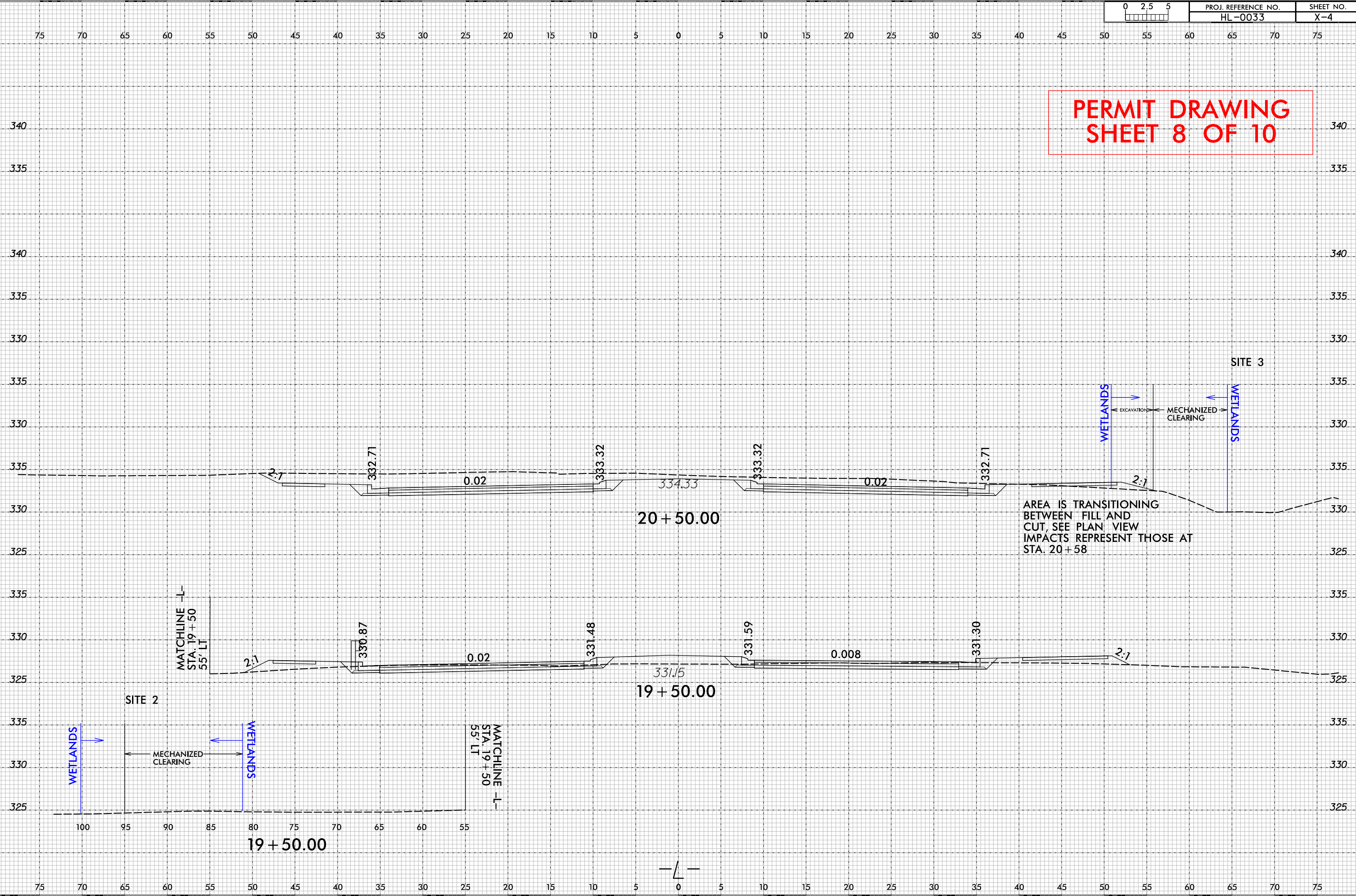
SHEET NO.  
X-2

PERMIT DRAWING  
SHEET 7 OF 10



6/23/16  
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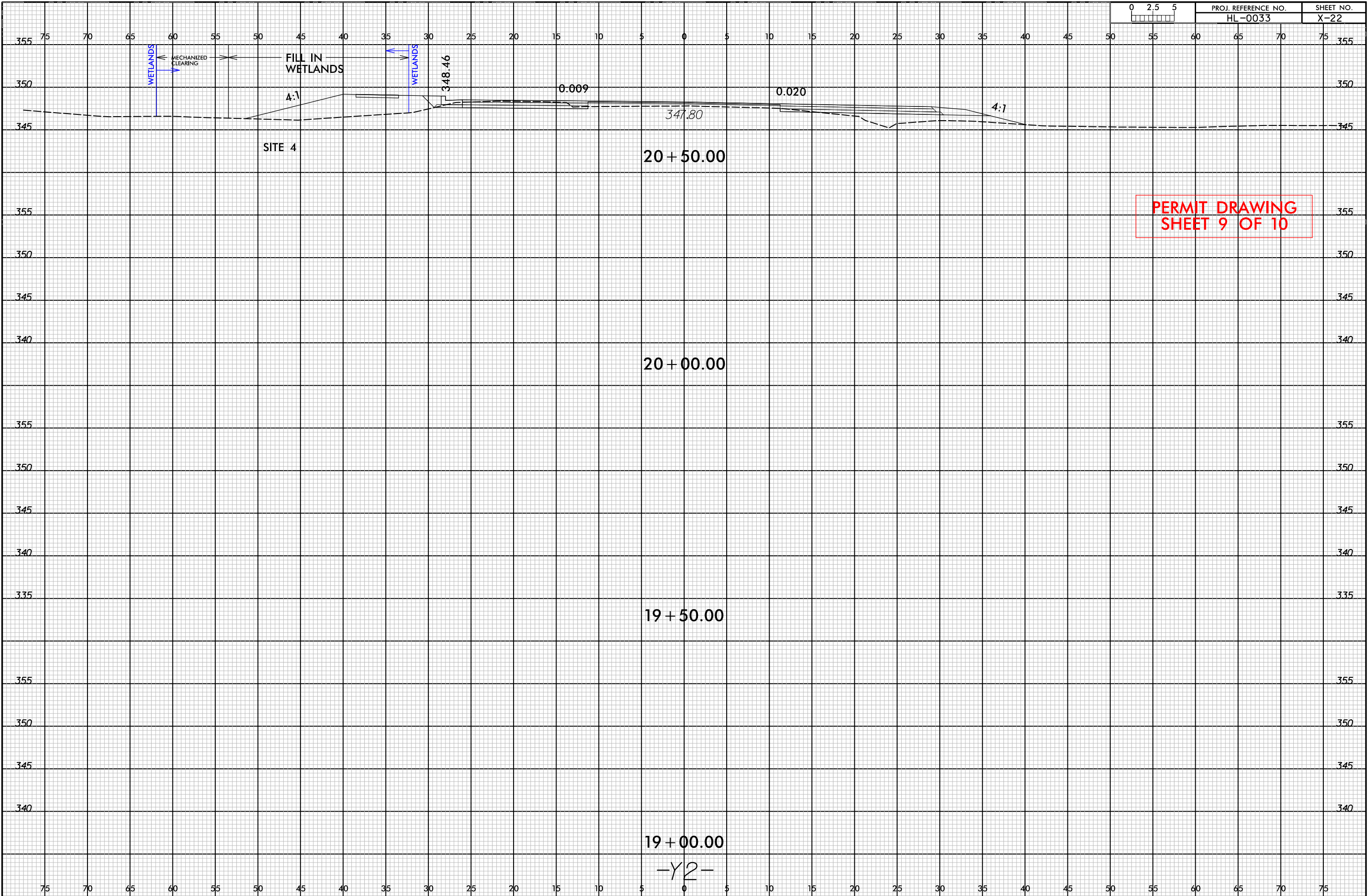
**PERMIT DRAWING  
SHEET 8 OF 10**



6/23/16

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nbl\aut

|                        |                                |                   |
|------------------------|--------------------------------|-------------------|
| 0 2.5 5<br>[Scale Bar] | PROJ. REFERENCE NO.<br>HL-0033 | SHEET NO.<br>X-22 |
|------------------------|--------------------------------|-------------------|



# WETLAND AND SURFACE WATER IMPACTS SUMMARY

| Site No. | Station (From/To) | Structure Size / Type                                                            | WETLAND IMPACTS                 |                             |                             |                                      |                                | SURFACE WATER IMPACTS     |                       |                                         |                                     |
|----------|-------------------|----------------------------------------------------------------------------------|---------------------------------|-----------------------------|-----------------------------|--------------------------------------|--------------------------------|---------------------------|-----------------------|-----------------------------------------|-------------------------------------|
|          |                   |                                                                                  | Permanent Fill In Wetlands (ac) | Temp. Fill In Wetlands (ac) | Excavation in Wetlands (ac) | Mechanized Clearing in Wetlands (ac) | Hand Clearing in Wetlands (ac) | Permanent SW impacts (ac) | Temp. SW impacts (ac) | Existing Channel Impacts Permanent (ft) | Existing Channel Impacts Temp. (ft) |
| 1        | -L- 15+49/16+72   | Fill, Toe Protection, Excavation to allow for installation of diversion channel. | 0.15                            |                             | < 0.01                      | 0.07                                 |                                |                           |                       |                                         |                                     |
| 1        | -L- 16+15/16+58   | 78" RCP-IV                                                                       |                                 |                             |                             |                                      |                                | 0.01                      | < 0.01                | 184                                     | 19                                  |
| 2        | -L- 18+34/19+29   | 1 @ 8'x7' RCBC                                                                   | < 0.01                          |                             |                             | 0.01                                 |                                | 0.03                      | < 0.01                | 192                                     | 29                                  |
| 3        | -L- 20+47/20+59   | Excavation                                                                       |                                 |                             | < 0.01                      | < 0.01                               |                                |                           |                       |                                         |                                     |
| 4        | -L- 35+56/35+92   | Fill, Toe Protection                                                             | < 0.01                          |                             |                             | < 0.01                               |                                |                           |                       |                                         |                                     |
| 4        | -L- 36+59/37+09   | 30" RCP-IV                                                                       |                                 |                             |                             |                                      |                                | < 0.01                    | < 0.01                | 44                                      | 19                                  |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
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|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
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|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
|          |                   |                                                                                  |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |
| TOTALS*: |                   |                                                                                  | 0.16                            |                             | < 0.01                      | 0.08                                 |                                | 0.05                      | < 0.01                | 420                                     | 67                                  |

\*Rounded totals are sum of actual impacts

## NOTES:

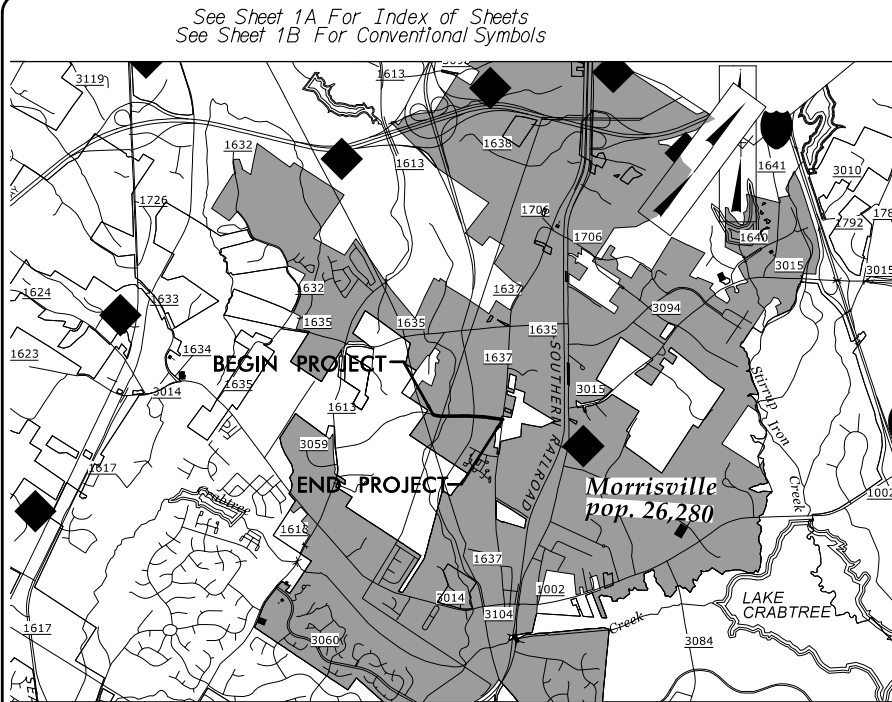
At station 16+20 -L- LT, the 10 ft of rip rap is to be placed on banks only at the inlet of the 78" RCP and at station 19+00 -L- LT, the 34 ft of rip rap is to be placed on banks only at the inlet of the 8'x7' RCBC

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 3/18/2022  
 WAKE COUNTY  
 HL-0033  
 36249.4033  
 SHEET 10 OF 10

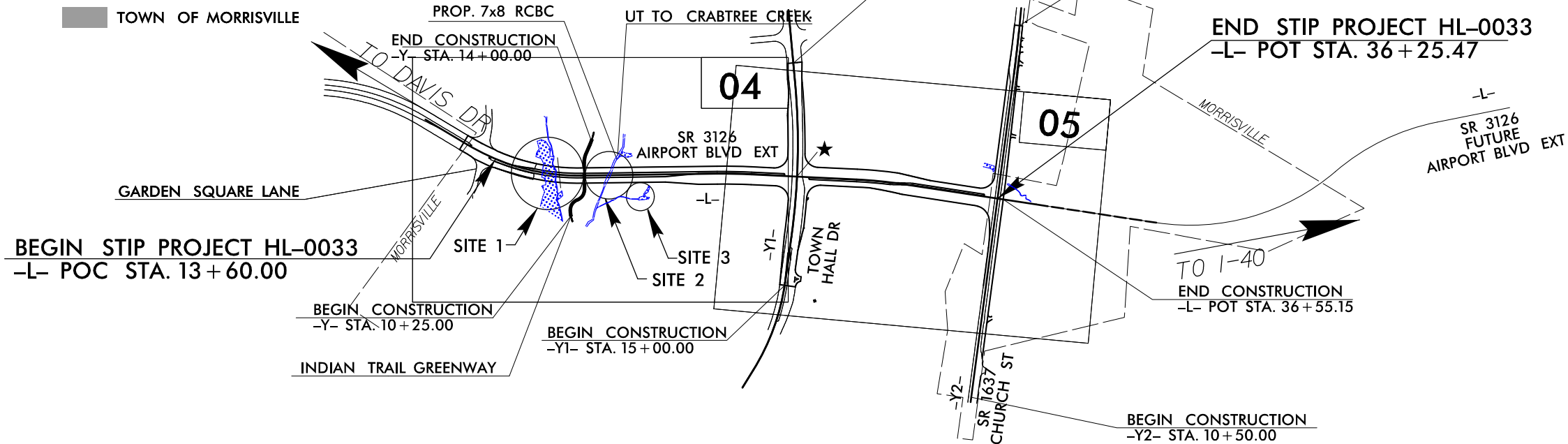
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nbahut

TIP PROJECT: HL-0033

CONTRACT:

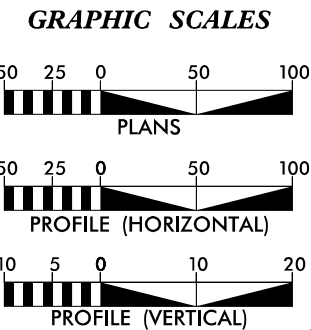


VICINITY MAP



CLEARING ON THIS PROJECT SHALL BE PREFORMED TO THE LIMITS ESTABLISHED BY METHOD III  
THIS IS NOT A CONTROL OF ACCESS PROJECT  
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF MORRISVILLE

★ PROPOSED TRAFFIC SIGNAL



DESIGN DATA

ADT 2021 = 3,600  
ADT 2045 = 17,000  
K = 10 %  
D = 60 %  
T = 4 % \*  
V = 50 MPH  
\* TTST = 1% DUAL 3%  
FUNC CLASS =  
MINOR ARTERIAL  
SUB REGIONAL TIER

PROJECT LENGTH

LENGTH ROADWAY TIP PROJECT HL-0033 = 0.435 Miles

TOTAL LENGTH TIP PROJECT HL-0033 = 0.435 Miles

Prepared In the Office of:

**LOCHNER**  
R. W. LOCHNER, INC.  
2840 PLAZA PLACE, SUITE 202  
RALEIGH, NC 27612  
(919) 271-2711  
NC License Number P-0159

2018 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:  
DEC. 08, 2021

LETTING DATE:  
JULY 19, 2022

BRIAN K. EASON, PE  
PROJECT ENGINEER

CHRISTINA YOKELEY, PE  
PROJECT DESIGN ENGINEER

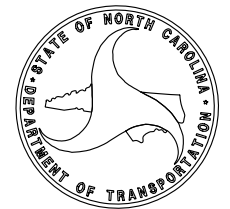
JOHN BRAXTON  
NCDOT CONTACT

HYDRAULICS ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: \_\_\_\_\_ P.E.



STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

WAKE COUNTY

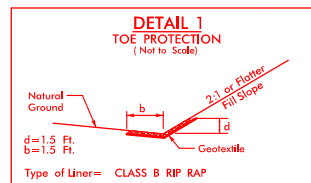
LOCATION: EXTENSION OF AIRPORT BOULEVARD (SR 3126)  
FROM GARDEN SQUARE LANE TO CHURCH ST (SR 1637)  
IN MORRISVILLE

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

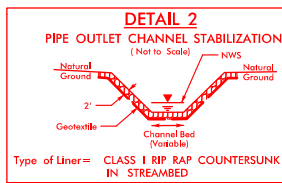
BUFFER IMPACTS PERMIT

| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.     | TOTAL SHEETS |
|-----------------|-----------------------------|---------------|--------------|
| N.C.            | HL-0033                     | 1             |              |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION   |              |
| 36249.4033      | N/A                         | PE, R/W, UTIL |              |
|                 |                             |               |              |
|                 |                             |               |              |
|                 |                             |               |              |
|                 |                             |               |              |
|                 |                             |               |              |

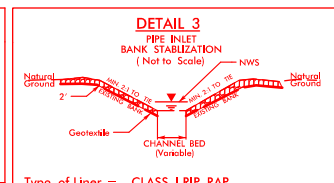
BUFFER DRAWING  
SHEET 1 OF 4



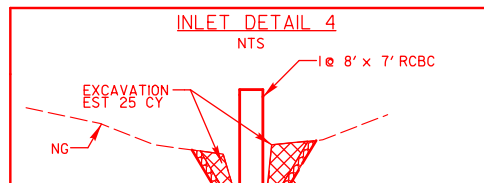
Type of Liner= CLASS B RIP RAP



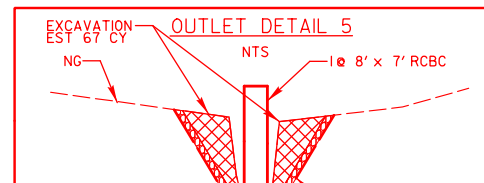
Type of Liner= CLASS I RIP RAP COUNTERSUNK  
IN STREAMBED



Type of Liner = CLASS LIRIP RAS



AT STA 19+00 -L- LT



AT STA 18+52 -L- RT

# LOCHNER

H. W. LOCHNER, INC.  
2840 PLAZA PLACE, SUITE 202  
RALEIGH, NC 27612  
(919) 571-7111

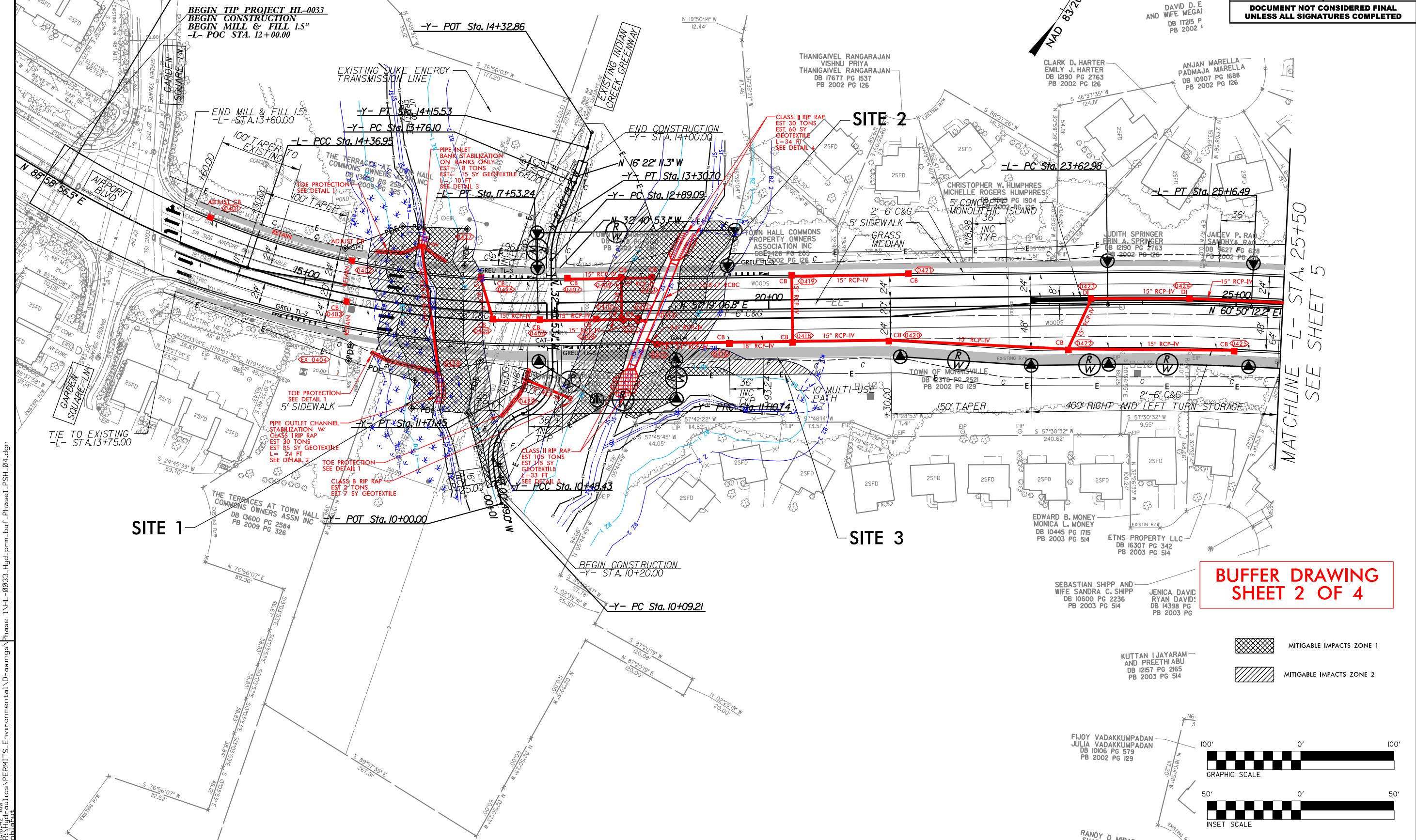
NC License  
Number F-0159



VHB Engineering NC, P.C. (C-3705)  
940 Main Campus Drive, Suite 500  
Raleigh, NC 27606

DB 17596 PG 2  
PB 2002 PG

|                                                                                                                                                                                                                                                     |                        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| PROJECT REFERENCE NO.<br><i>HL-0033</i>                                                                                                                                                                                                             | SHEET NO.<br><i>04</i> |
| RW SHEET NO.                                                                                                                                                                                                                                        |                        |
| ROADWAY DESIGN<br>ENGINEER                                                                                                                                                                                                                          | HYDRAULICS<br>ENGINEER |
| <div style="border: 2px solid black; padding: 10px; margin: 0 auto; width: 80%;"> <p style="font-size: 24pt; font-weight: bold; margin: 0;">INCOMPLETE PLANS</p> <p style="font-weight: bold; margin: 0;">DO NOT USE FOR R/W ACQUISITION</p> </div> |                        |
| <p style="font-weight: bold; margin: 0;">DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</p>                                                                                                                                      |                        |



## RIPARIAN BUFFER IMPACTS SUMMARY

| Site No. | Station (From/To) | Structure Size / Type | IMPACTS       |        |                 |              |              |             |              |              |             | BUFFER REPLACEMENT |              |
|----------|-------------------|-----------------------|---------------|--------|-----------------|--------------|--------------|-------------|--------------|--------------|-------------|--------------------|--------------|
|          |                   |                       | TYPE          |        |                 | ALLOWABLE    |              |             | MITIGABLE    |              |             | ZONE 1 (ft²)       | ZONE 2 (ft²) |
|          |                   |                       | ROAD CROSSING | BRIDGE | PARALLEL IMPACT | ZONE 1 (ft²) | ZONE 2 (ft²) | TOTAL (ft²) | ZONE 1 (ft²) | ZONE 2 (ft²) | TOTAL (ft²) |                    |              |
| 1        | -L- 15+62/17+25   | 78" RCP-IV            | X             |        |                 |              |              |             | 12565        | 8599         | 21164       |                    |              |
| 2        | -L- 17+58/19+74   | 1 @ 8'x7' RCBC        | X             |        |                 |              |              |             | 12643        | 7836         | 20480       |                    |              |
| 3        | -L- 18+92/20+46   | Stream C              |               |        | X               |              |              |             | 1293         | 2213         | 3506        |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
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|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
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|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
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|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
| TOTALS*: |                   |                       |               |        |                 | 0            | 0            | 0           | 26501        | 18648        | 45149       | 0                  | 0            |

NOTES:

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
3/18/2022  
WAKE COUNTY  
HL-0033  
36249.4033  
SHEET 3 OF 4

## WETLANDS IN BUFFER IMPACTS SUMMARY

| SITE NO.      | STATION (FROM/TO) | Structure / Type | Size | WETLANDS IN BUFFERS       |                           |
|---------------|-------------------|------------------|------|---------------------------|---------------------------|
|               |                   |                  |      | ZONE 1 (ft <sup>2</sup> ) | ZONE 2 (ft <sup>2</sup> ) |
| 1             | -L- 15+62/17+25   | 78" RCP-IV       |      | 6391                      | 2361                      |
| 2             | -L- 17+58/19+74   | 1 @ 8'x7' RCBC   |      | 107                       | 7                         |
| 3             | -L- 18+92/20+46   | Stream C         |      | 0                         | 1                         |
|               |                   |                  |      |                           |                           |
|               |                   |                  |      |                           |                           |
|               |                   |                  |      |                           |                           |
|               |                   |                  |      |                           |                           |
|               |                   |                  |      |                           |                           |
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|               |                   |                  |      |                           |                           |
|               |                   |                  |      |                           |                           |
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|               |                   |                  |      |                           |                           |
|               |                   |                  |      |                           |                           |
|               |                   |                  |      |                           |                           |
| <b>TOTAL:</b> |                   |                  |      | <b>6498</b>               | <b>2369</b>               |

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

3/18/2022  
WAKE COUNTY  
HL-0033  
36249.4033

SHEET 4 OF 4

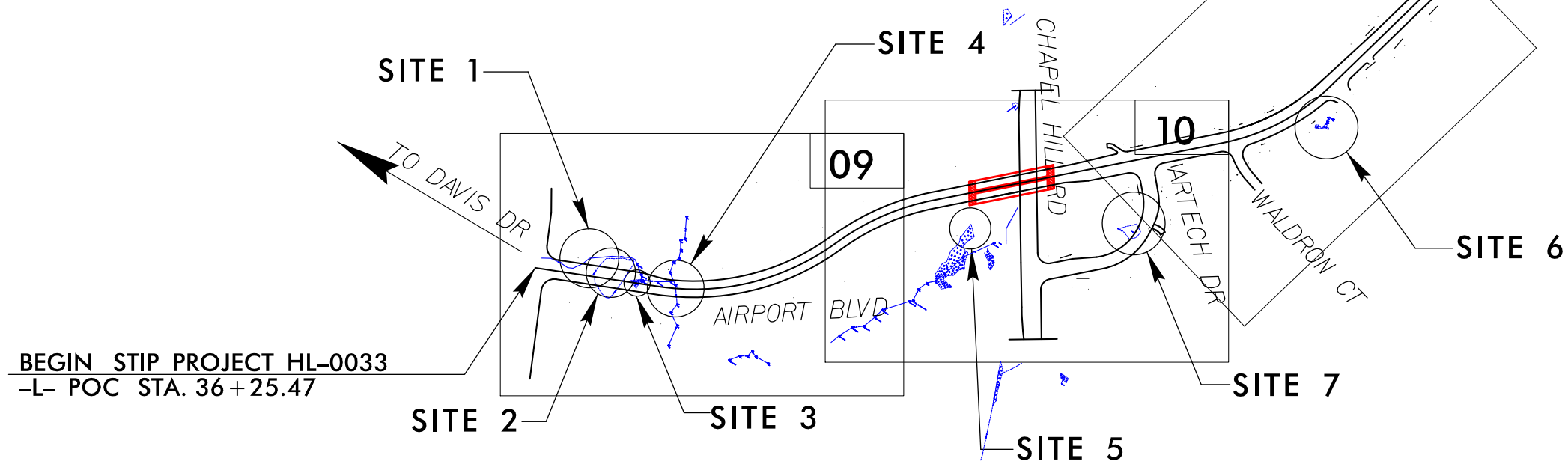
**WAKE COUNTY**

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

# PRELIMINARY PERMIT



TOWN OF MORRISVILLE



END STIP PROJECT HL-0033  
-L- POT STA. 78+64.86

***CLEARING ON THIS PROJECT SHALL BE PREFORMED TO THE LIMITS ESTABLISHED BY METHOD III  
THIS IS NOT A CONTROL OF ACCESS PROJECT  
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF MORRISVILLE***

**INCOMPLETE PLANS**  
**DO NOT USE FOR R/W ACQUISITION**

**DOCUMENT NOT CONSIDERED FINAL**  
**UNLESS ALL SIGNATURES COMPLETED**

50 25 0 50 100

PROFILE (HORIZONTAL)

10 5 0 10 20

PROFILE (VERTICAL)

\* TTST =1% DUAL 3%  
FUNC CLASS =  
MINOR ARTERIAL  
SUB REGIONAL TIER

TOTAL LENGTH TIP PROJECT HL-0033

**LOCHNER**  
H. W. LOCHNER, INC.  
2840 PLAZA PLACE, SUITE 202  
RALEIGH, NC 27612  
(919) 571-7111

NC License  
Number F-011

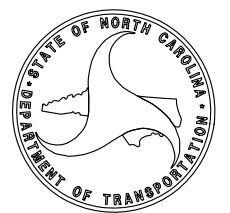
**LETTING DATE:**

 VHB Engineering NC, P.C. (C-3705)  
940 Main Campus Drive, Suite 500  
Raleigh, NC 27606

JOHN BRAXTON  
NCDOT CONTACT

P.E.

SIGNATURE: \_\_\_\_\_

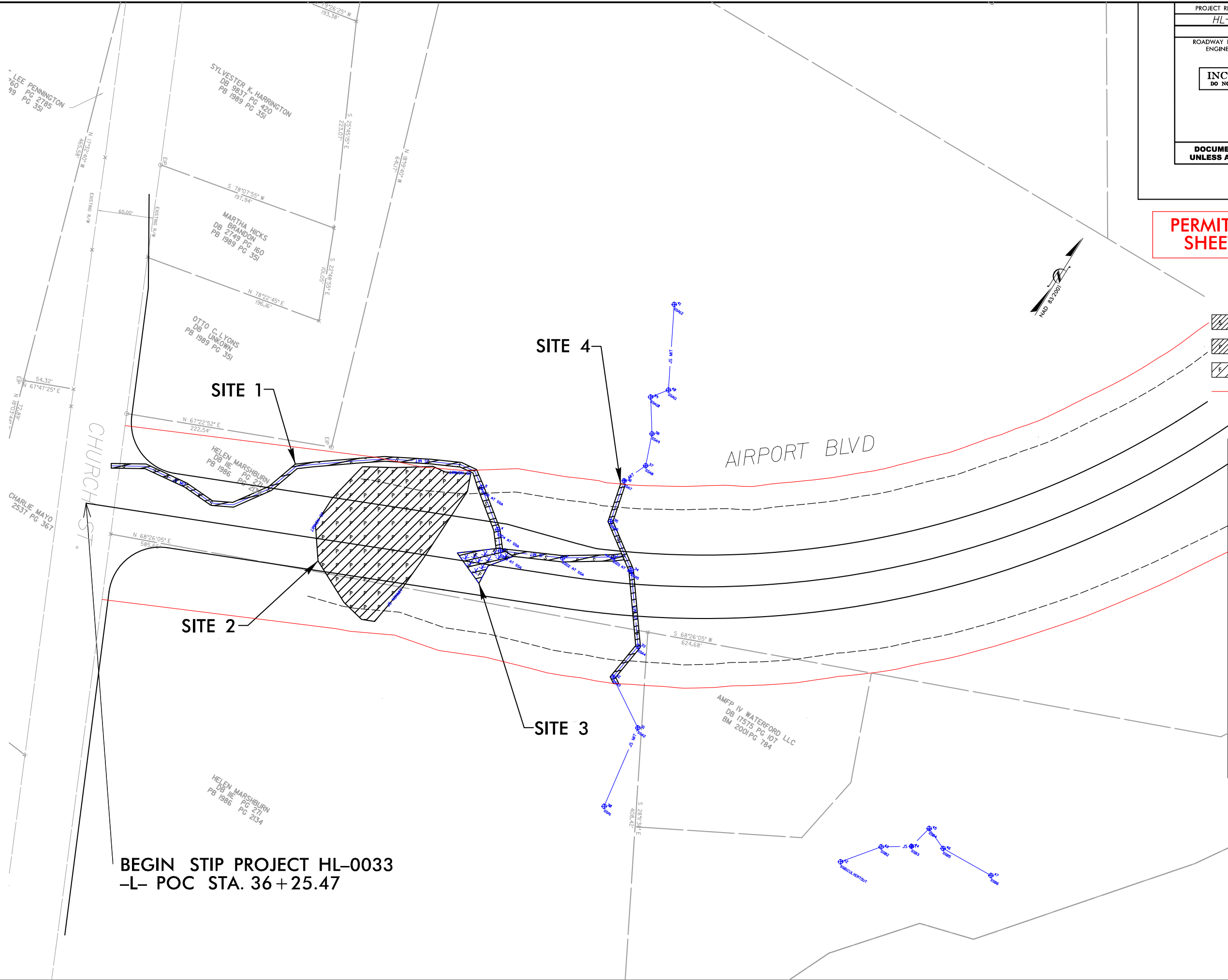


**CONTRACT: *TIP PROJECT: HL-0033 PHASE II - ALT 1***

8/17/99

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REVISIONS



PERMIT DRAWING  
SHEET 2 OF 8

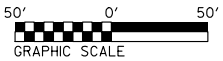
50' 0' 50'  
GRAPHIC SCALE

- DENOTES IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER (POND)
- DENOTES FILL IN WETLAND
- SLOPE STAKES +25'

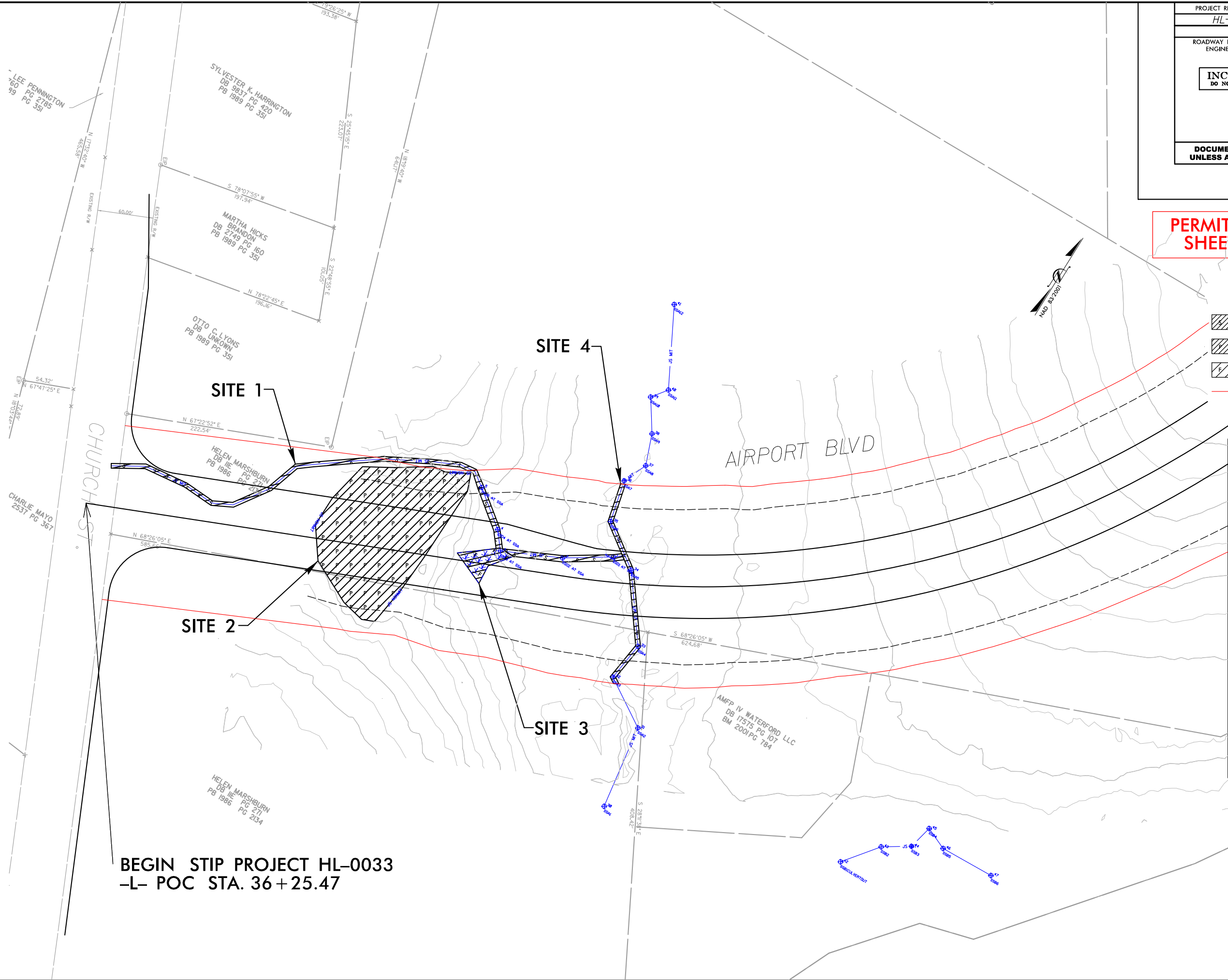
MATCHLINE  
STA. 48+62.90 -L-  
SEE SHEET PSH-10

|                                                                  |                     |
|------------------------------------------------------------------|---------------------|
| PROJECT REFERENCE NO.                                            | SHEET NO.           |
| HL-0033                                                          | 02                  |
| R/W SHEET NO.                                                    | 09                  |
| ROADWAY DESIGN ENGINEER                                          | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS<br>DO NOT USE FOR R/W ACQUISITION               |                     |
| DOCUMENT NOT CONSIDERED FINAL<br>UNLESS ALL SIGNATURES COMPLETED |                     |

PERMIT DRAWING  
SHEET 3 OF 8



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES IMPACTS IN SURFACE WATER (POND)
- DENOTES FILL IN WETLAND
- SLOPE STAKES +25'



BEGIN STIP PROJECT HL-0033  
-L- POC STA. 36+25.47

REVISIONS

8/17/99

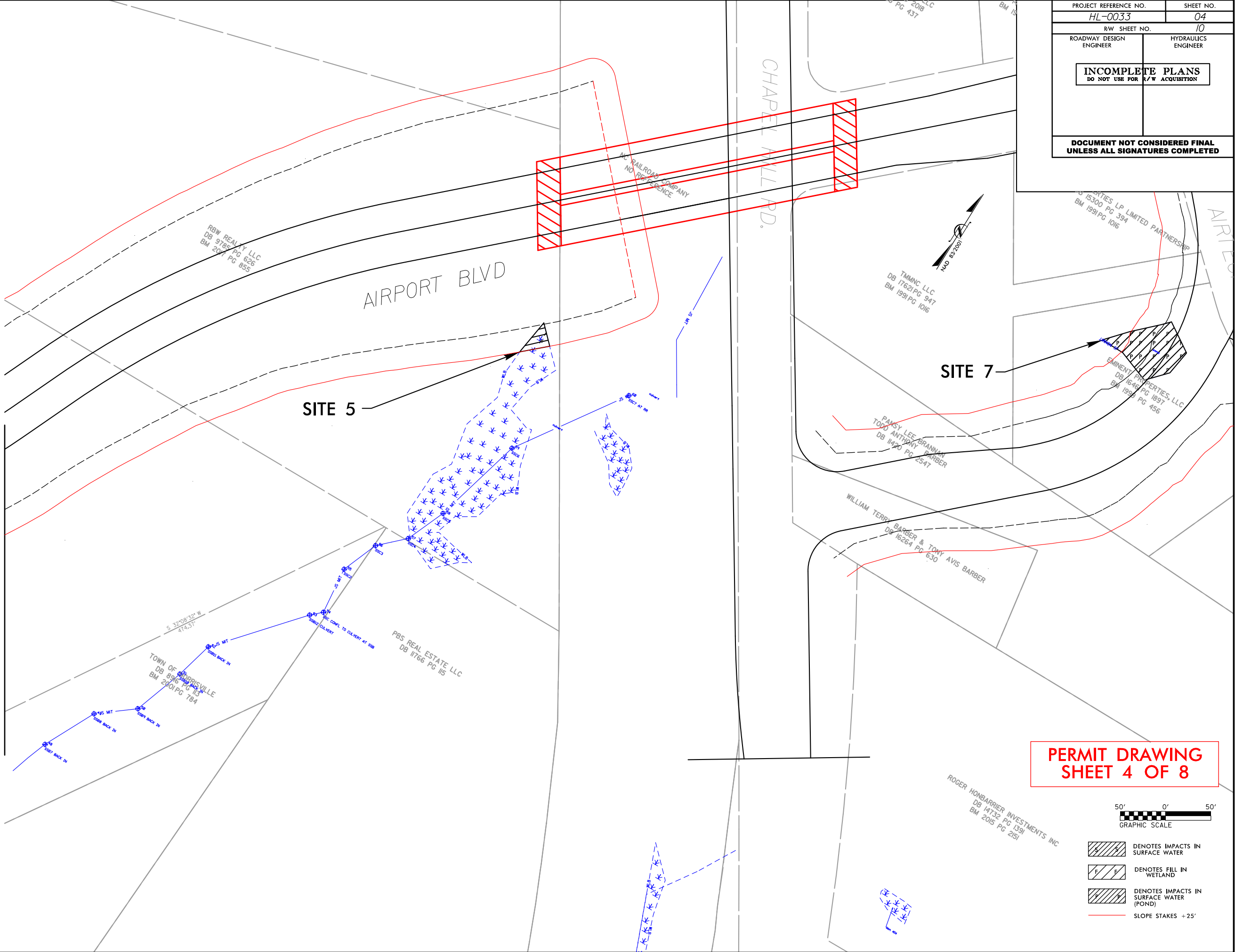
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8/17/99

REVISIONS

I:\23249 PM Hyd-aulics\PERMITS-Environmental\Drawings\Phase 2\Alternative 1\HL-0033\_Hyd.prm\_wet.Phase2\_Atl\_PSH10.dgn

MATCHLINE  
STA. 48+62.90 -L-  
SEE SHEET PSH-09



|                                                                  |  |                        |  |
|------------------------------------------------------------------|--|------------------------|--|
| PROJECT REFERENCE NO.                                            |  | SHEET NO.              |  |
| HL-0033                                                          |  | 04                     |  |
| R/W SHEET NO.                                                    |  | 10                     |  |
| ROADWAY DESIGN<br>ENGINEER                                       |  | HYDRAULICS<br>ENGINEER |  |
| <div>INCOMPLETE PLANS<br/>DO NOT USE FOR R/W ACQUISITION</div>   |  |                        |  |
| DOCUMENT NOT CONSIDERED FINAL<br>UNLESS ALL SIGNATURES COMPLETED |  |                        |  |

PERMIT DRAWING  
SHEET 4 OF 8



- DENOTES IMPACTS IN SURFACE WATER
- DENOTES FILL IN WETLAND
- DENOTES IMPACTS IN SURFACE WATER (POND)
- SLOPE STAKES +25%

PERMIT DRAWING  
SHEET 5 OF 8



- |                                                                                       |                                               |
|---------------------------------------------------------------------------------------|-----------------------------------------------|
|  | DENOTES IMPACTS IN<br>SURFACE WATER           |
|  | DENOTES FILL IN<br>WETLAND                    |
|  | DENOTES IMPACTS IN<br>SURFACE WATER<br>(POND) |
|  | SLOPE STAKES +25'                             |

MATCHLINE  
STA. 48+62.90 -L-  
SEE SHEET PSH-09

## REVISIONS

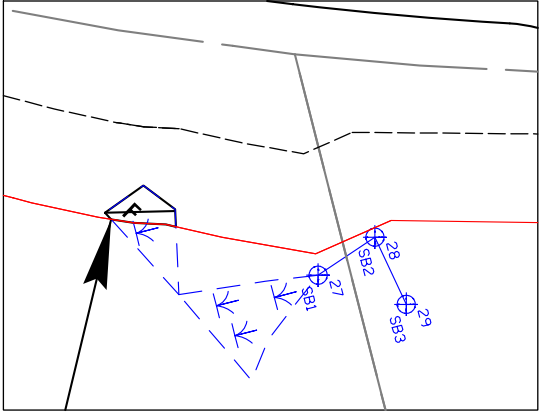
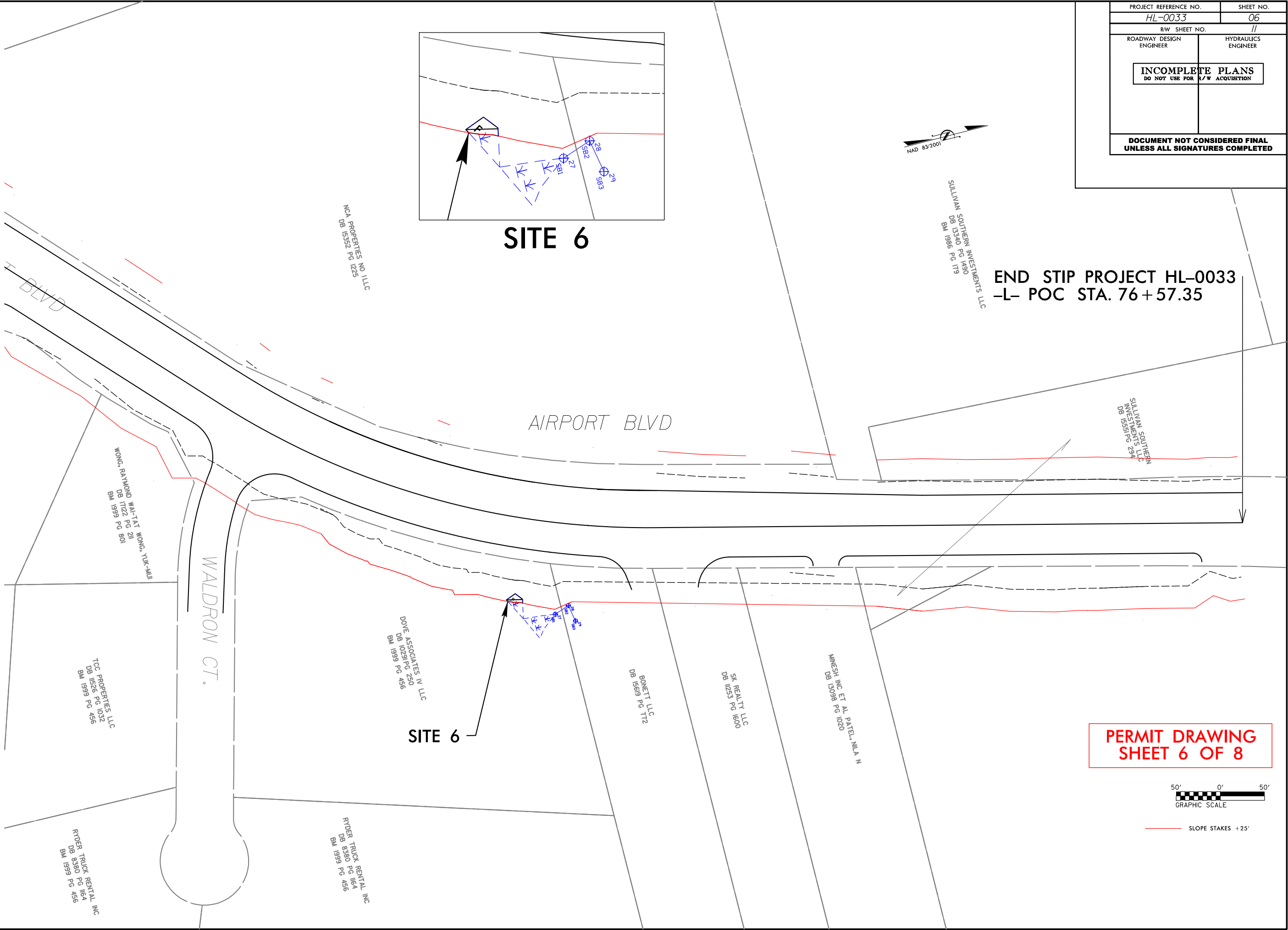
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8/17/99

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REVISIONS



SITE 6

END STIP PROJECT HL-0033  
-L- POC STA. 76+57.35

PERMIT DRAWING  
SHEET 6 OF 8

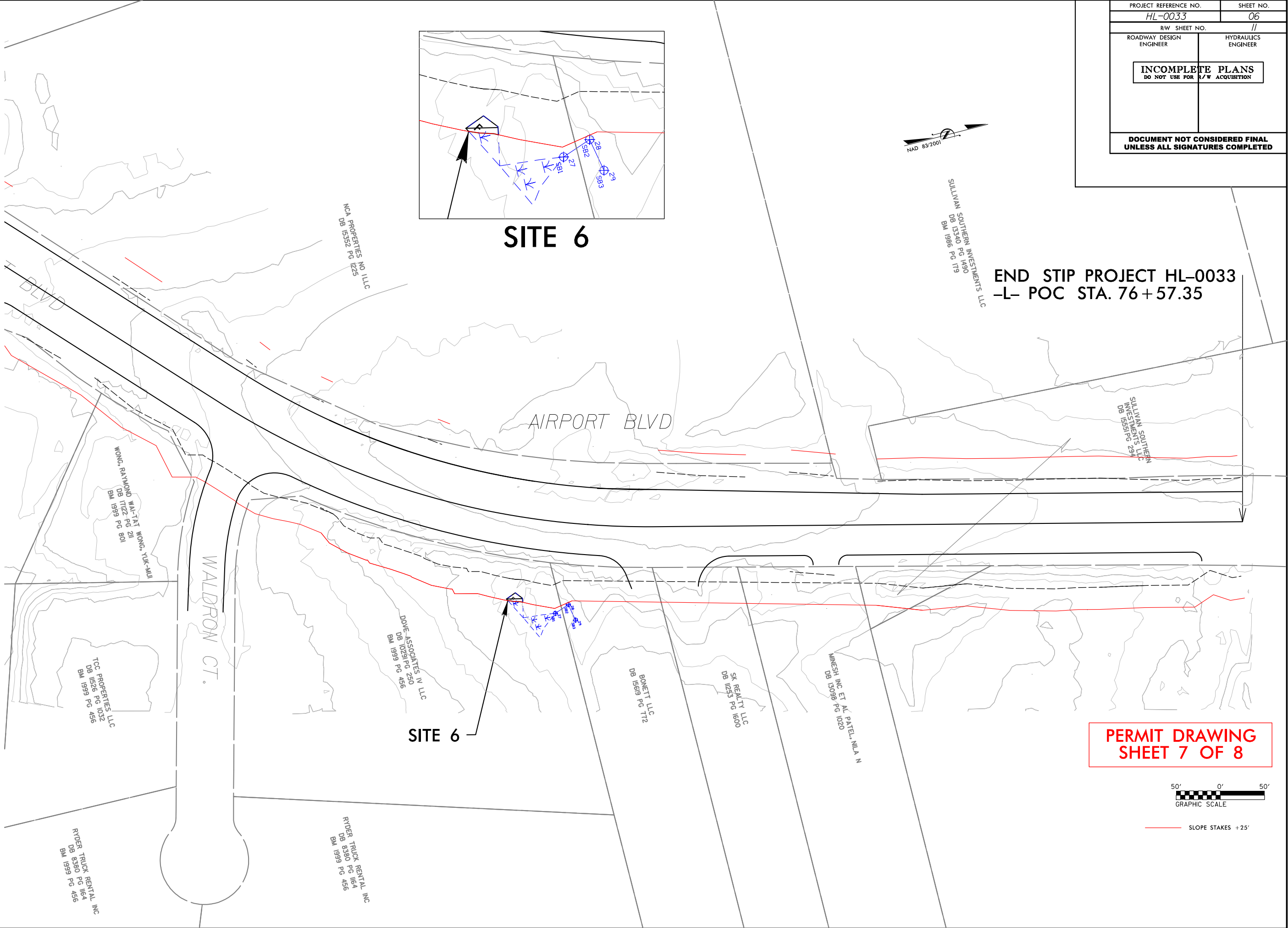


SLOPE STAKES +25'

8/17/99

I2:33:09 PM R:\Hydraulics\PERMITS-Environmental\Drawings\Phase 2\Alternative 1\HL-0033\_Hyd.prm\_wet\_Phase2\_Alt1\_PSH11\_CON.dgn

REVISIONS



|                                                                  |                     |
|------------------------------------------------------------------|---------------------|
| PROJECT REFERENCE NO.                                            | SHEET NO.           |
| HL-0033                                                          | 06                  |
| RW SHEET NO.                                                     | 11                  |
| ROADWAY DESIGN ENGINEER                                          | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS<br>DO NOT USE FOR R/W ACQUISITION               |                     |
| DOCUMENT NOT CONSIDERED FINAL<br>UNLESS ALL SIGNATURES COMPLETED |                     |

# WETLAND AND SURFACE WATER IMPACTS SUMMARY

| Site No. | Station (From/To) | Structure Size / Type | WETLAND IMPACTS                 |                             |                             |                                      |                                | SURFACE WATER IMPACTS     |                       |                                         |                                     |                            |
|----------|-------------------|-----------------------|---------------------------------|-----------------------------|-----------------------------|--------------------------------------|--------------------------------|---------------------------|-----------------------|-----------------------------------------|-------------------------------------|----------------------------|
|          |                   |                       | Permanent Fill In Wetlands (ac) | Temp. Fill In Wetlands (ac) | Excavation in Wetlands (ac) | Mechanized Clearing in Wetlands (ac) | Hand Clearing in Wetlands (ac) | Permanent SW impacts (ac) | Temp. SW impacts (ac) | Existing Channel Impacts Permanent (ft) | Existing Channel Impacts Temp. (ft) | Natural Stream Design (ft) |
| 1        | -L- 36+25/42+10   | Fill Stream D         |                                 |                             |                             |                                      |                                | 0.08                      |                       | 698                                     |                                     |                            |
| 2        | -L- 38+50/39+67   | Fill Open Water A     |                                 |                             |                             |                                      |                                | 0.40                      |                       |                                         |                                     |                            |
| 3        | -L- 39+67/40+25   | Fill Wetland G        | 0.02                            |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
| 4        | -L- 41+89/42+25   | Fill Stream A         |                                 |                             |                             |                                      |                                | 0.03                      |                       | 236                                     |                                     |                            |
| 5        | -L- 54+46/54+86   | Fill Wetland E        | 0.01                            |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
| 6        | -L- 69+40/69+60   | Fill Wetland D        | < 0.01                          |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
| 7        | -Y2- 23+60/24+30  | Fill Open Water B     |                                 |                             |                             |                                      |                                | 0.08                      |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
|          |                   |                       |                                 |                             |                             |                                      |                                |                           |                       |                                         |                                     |                            |
| TOTALS*: |                   |                       | 0.04                            |                             |                             |                                      |                                | 0.58                      |                       | 934                                     | 0                                   | 0                          |

\*Rounded totals are sum of actual impacts

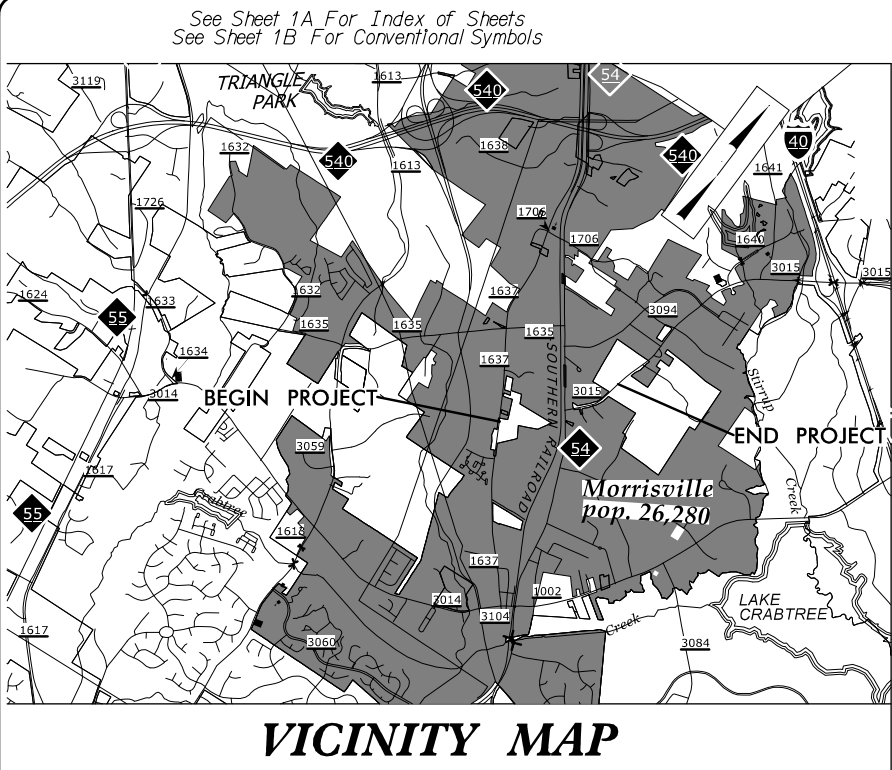
## NOTES:

Impacts are based on slope stakes +25'.

NC DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 03/01/2022  
 WAKE COUNTY  
 HL-0033

09/28/99  
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nblan

CONTRACT: TIP PROJECT: HL-0033 PHASE II - ALT 1



TOWN OF MORRISVILLE

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS  
**WAKE COUNTY**

**LOCATION: EXTENSION OF AIRPORT BOULEVARD (SR 3126)  
FROM CHURCH ST (SR 1637) TO NORTHEAST  
OF CHAPEL HILL RD (NC 54) IN MORRISVILLE**

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

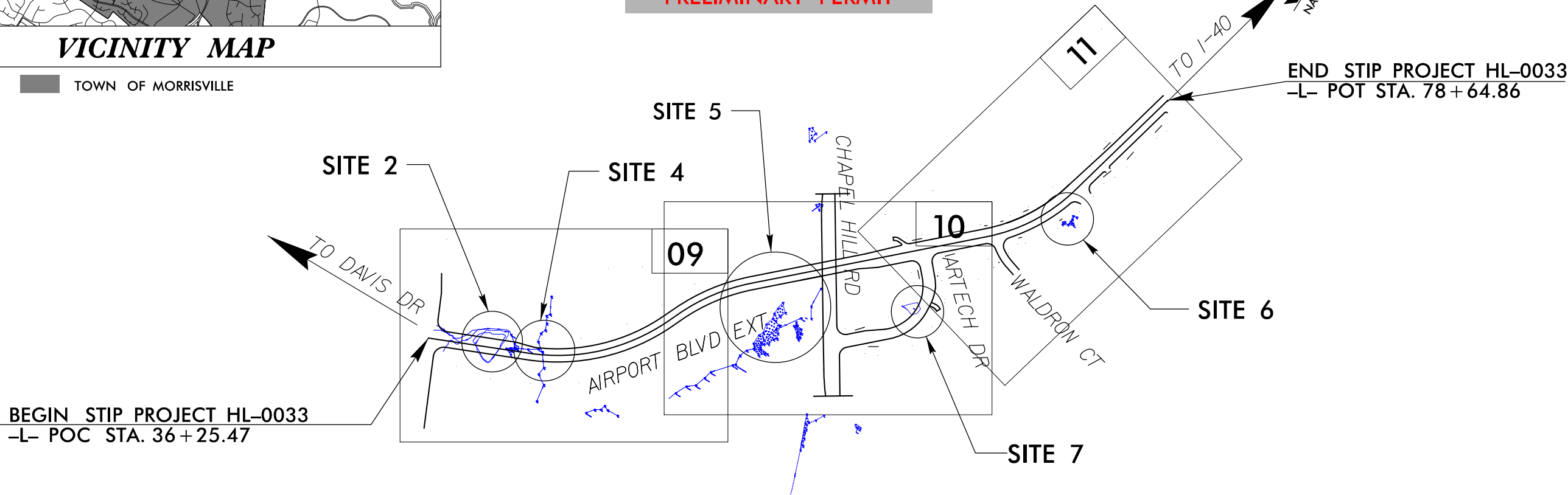
**BUFFER IMPACTS PERMIT**

**PHASE II - ALT 1**

**PRELIMINARY PERMIT**

| STATE           | STATE PROJECT REFERENCE NO. | SHEET NO.     | TOTAL SHEETS |
|-----------------|-----------------------------|---------------|--------------|
| N.C.            | HL-0033                     | 1             |              |
| STATE PROJ. NO. | F.A. PROJ. NO.              | DESCRIPTION   |              |
| 36249.4033      | N/A                         | PE, R/W, UTIL |              |
|                 |                             |               |              |
|                 |                             |               |              |
|                 |                             |               |              |
|                 |                             |               |              |
|                 |                             |               |              |
|                 |                             |               |              |

**BUFFER DRAWING  
SHEET 1 OF 9**



**CLEARING ON THIS PROJECT SHALL BE PREFORMED TO THE LIMITS ESTABLISHED BY METHOD III  
THIS IS NOT A CONTROL OF ACCESS PROJECT  
THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARY OF MORRISVILLE**

**INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION  
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 2021 =<br/>ADT 2045 =<br/>K =<br/>D =<br/>T =<br/>V =</p> <p>* TTST = 1% DUAL 3%<br/>FUNC CLASS =<br/>MINOR ARTERIAL<br/>SUB REGIONAL TIER</p> | <p><b>PROJECT LENGTH</b></p> <p><b>LENGTH ROADWAY TIP PROJECT HL-0033</b></p> <p><b>TOTAL LENGTH TIP PROJECT HL-0033</b></p> | <p>Prepared In the Office of:</p> <p><b>LOCHNER</b><br/>H.W. LOCHNER, INC.<br/>2840 PLAZA PLACE, SUITE 202<br/>RALEIGH, NC 27612<br/>(919) 271-7111<br/>NC License Number F-02399</p> <p><b>2018 STANDARD SPECIFICATIONS</b></p> <p><b>RIGHT OF WAY DATE:</b></p> <p><b>LETTING DATE:</b></p> | <p><b>HYDRAULICS ENGINEER</b></p> <p><b>BRIAN K. EASON, PE</b><br/>PROJECT ENGINEER</p> <p><b>CHRISTINA YOKEYLEY, PE</b><br/>PROJECT DESIGN ENGINEER</p> <p><b>JOHN BRAXTON</b><br/>NCDOT CONTACT</p> | <p><b>ROADWAY DESIGN ENGINEER</b></p> <p><b>SIGNATURE:</b> _____ <b>P.E.</b></p> <p><b>SIGNATURE:</b> _____ <b>P.E.</b></p> | <p><b>STATE OF NORTH CAROLINA<br/>DEPARTMENT OF TRANSPORTATION</b></p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|



|                                                                                                                                                                                                                                                         |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| PROJECT REFERENCE NO.                                                                                                                                                                                                                                   | SHEET NO.              |
| <i>HL-0033</i>                                                                                                                                                                                                                                          | <i>02</i>              |
| RW SHEET NO. <i>09</i>                                                                                                                                                                                                                                  |                        |
| ROADWAY DESIGN<br>ENGINEER                                                                                                                                                                                                                              | HYDRAULICS<br>ENGINEER |
| <div style="border: 2px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p style="font-size: 1.5em; font-weight: bold; margin: 0;">INCOMPLETE PLANS</p> <p style="font-weight: bold; margin: 0;">DO NOT USE FOR R/W ACQUISITION</p> </div> |                        |
| <p style="font-size: 1.2em; font-weight: bold; margin: 0;">DOCUMENT NOT CONSIDERED FINAL<br/>UNLESS ALL SIGNATURES COMPLETED</p>                                                                                                                        |                        |

### BUFFER DRAWING SHEET 3 OF 9

 MITIGABLE IMPACTS ZONE 1 MITIGABLE IMPACTS ZONE 2

**SLOPE STAKES +25'**

MATCHLINE  
STA. 48+62.90 - L -  
SEE SHEET PSH-10

## SITE 4

AIRPORT BLVD

## SITE 2

BEGIN STIP PROJECT HL-0033  
-L- POC STA. 36+25.47

LEE PENNINGTON  
60 PG 2785  
99 PG 351

SYLVESTER K. HARRINGTON  
DB 9837 PG 420  
PB 1989 PG 351

MARTHA HICKS  
DB BRANDON  
PB 2749 PG 160  
1989 PG 354

OTTO C. LYONS  
DB UNKNOWN  
PB 1989 PG 35J

HELEN MARSHBURN  
DB IIE PG 271  
PB 1986 PG 213

CHARLIE MAYO  
2537 PG 367

HELEN MARSHBURN  
DB IIE PG 271  
PB 1986 PG 2134

AMFP IV WATERFORD LLC  
DB 17575 PG 107  
BM 2001PG 784

## REVISIONS

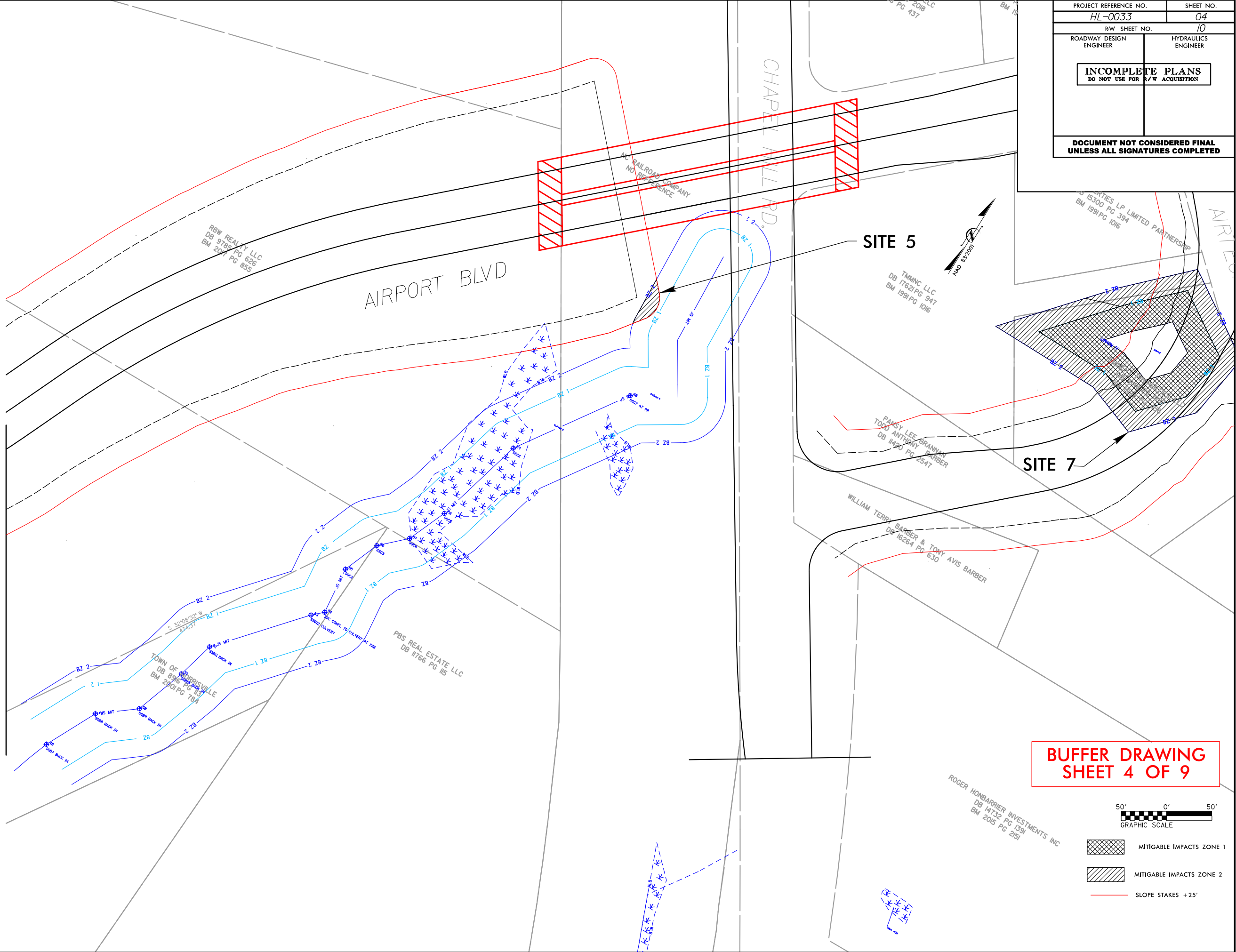
8/17/99

8/17/99

REVISIONS

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MATCHLINE  
STA. 48+62.90 -L-  
SEE SHEET PSH-09



**BUFFER DRAWING  
SHEET 4 OF 9**

50' 0' 50'  
GRAPHIC SCALE

MITIGABLE IMPACTS ZONE 1  
MITIGABLE IMPACTS ZONE 2  
SLOPE STAKES +25'

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**

**INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION**

ROADWAY DESIGN ENGINEER

HYDRAULICS ENGINEER

R/W SHEET NO.

HL-0033

SHEET NO.

04

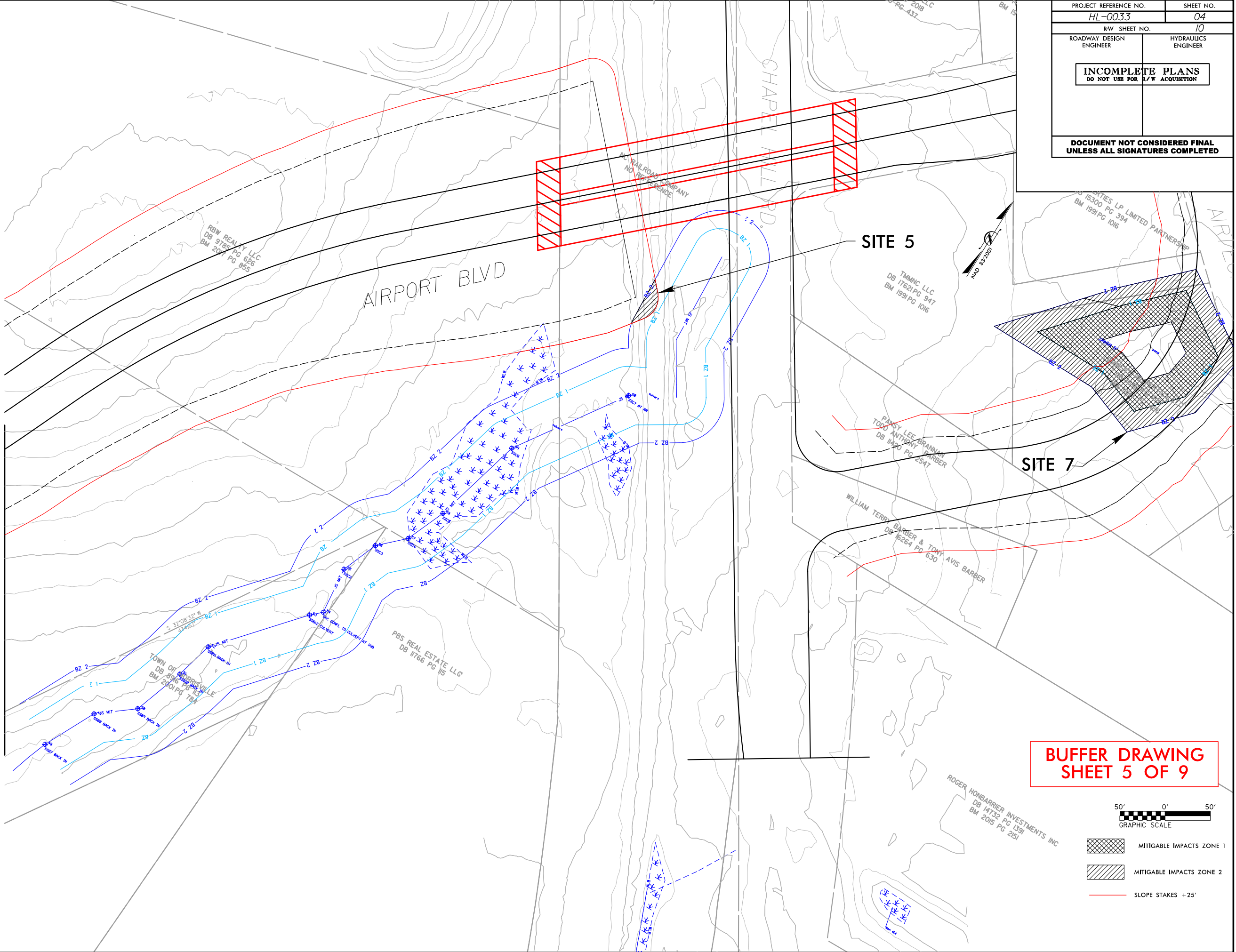
PROJECT REFERENCE NO.

8/17/99

REVISIONS

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MATCHLINE  
STA. 48+62.90 -L-  
SEE SHEET PSH-09



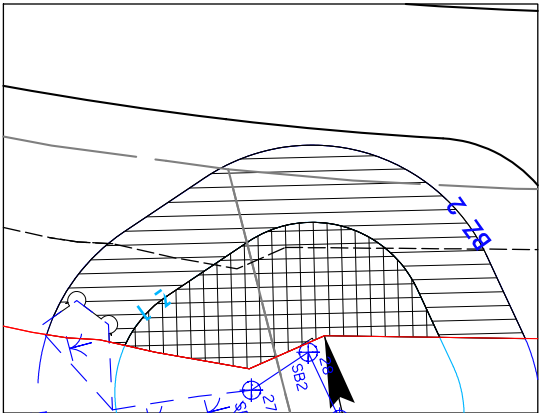
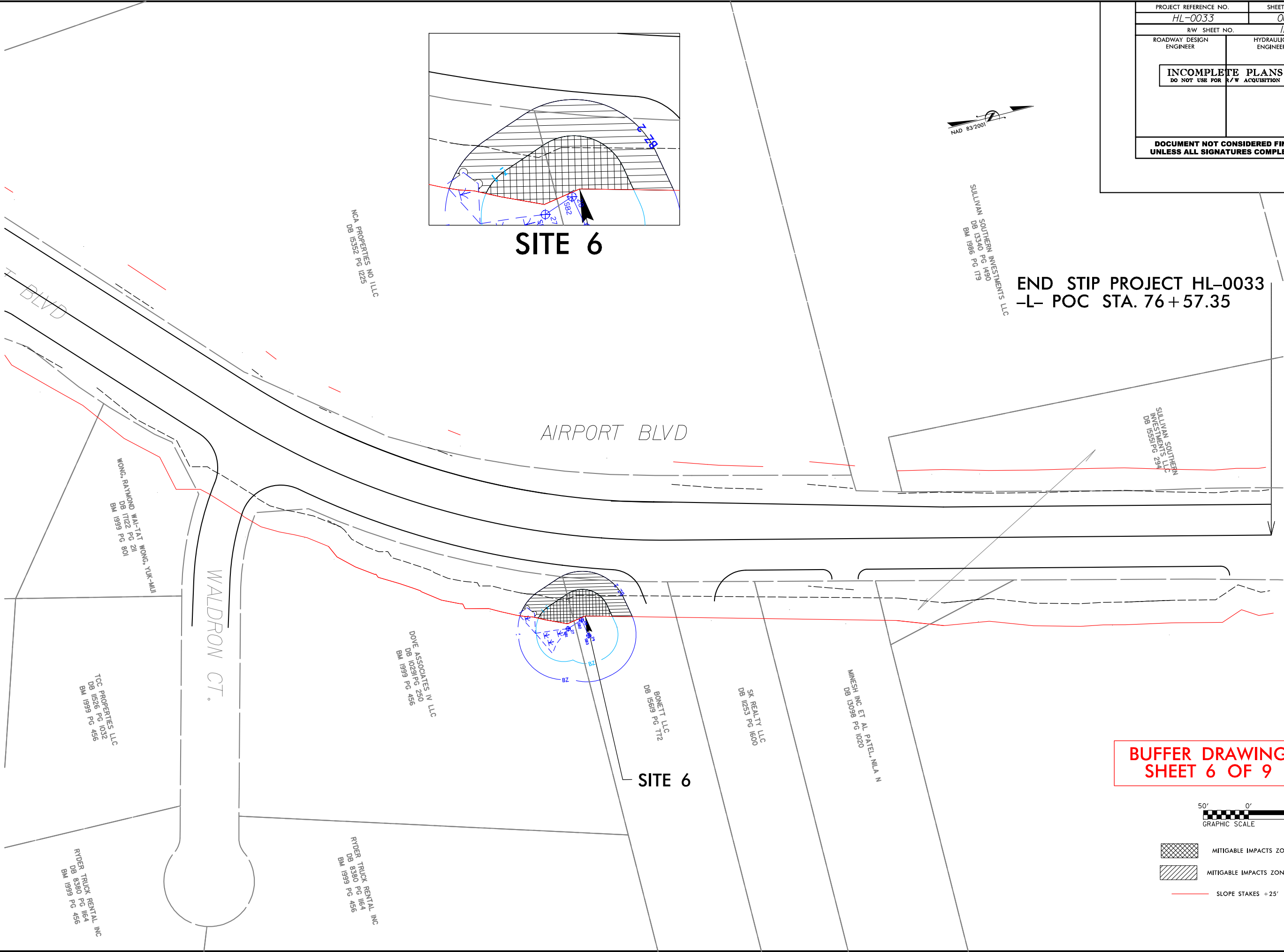
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| PROJECT REFERENCE NO.                                            | SHEET NO.           |
| HL-0033                                                          | 04                  |
| R/W SHEET NO.                                                    | 10                  |
| ROADWAY DESIGN ENGINEER                                          | HYDRAULICS ENGINEER |
| INCOMPLETE PLANS<br>DO NOT USE FOR R/W ACQUISITION               |                     |
| DOCUMENT NOT CONSIDERED FINAL<br>UNLESS ALL SIGNATURES COMPLETED |                     |

BUFFER DRAWING  
SHEET 5 OF 9



- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2
- SLOPE STAKES +25'

REVISIONS



SITE 6



SULLIVAN SOUTHERN INVESTMENTS LLC  
DB 13340 PG 1490  
BM 1986 PG 179

END STIP PROJECT HL-0033  
-L- POC STA. 76+57.35

SULLIVAN SOUTHERN INVESTMENTS LLC  
DB 1551 PG 294

WONG, RAYMOND WAI-TAI WONG, YUK-MUI  
DB 17122 PG 211  
BM 1939 PG 801

TCC PROPERTIES LLC  
DB 16526 PG 1032  
BM 1939 PG 456

RYDER TRUCK RENTAL INC  
DB 8380 PG 164  
BM 1939 PG 456

NCA PROPERTIES NO. LLC  
DB 15352 PG 1225

DOVE ASSOCIATES IV LLC  
DB 10291 PG 250  
BM 1939 PG 456

RYDER TRUCK RENTAL INC  
DB 8380 PG 164  
BM 1939 PG 456

BONETT LLC  
DB 15619 PG 772

SK REALTY LLC  
DB 11253 PG 1600

MINESH INC ET AL PATEL, NILA N  
DB 13098 PG 1020

BUFFER DRAWING  
SHEET 6 OF 9

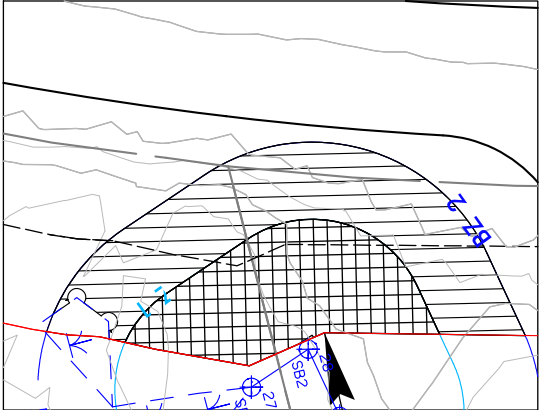
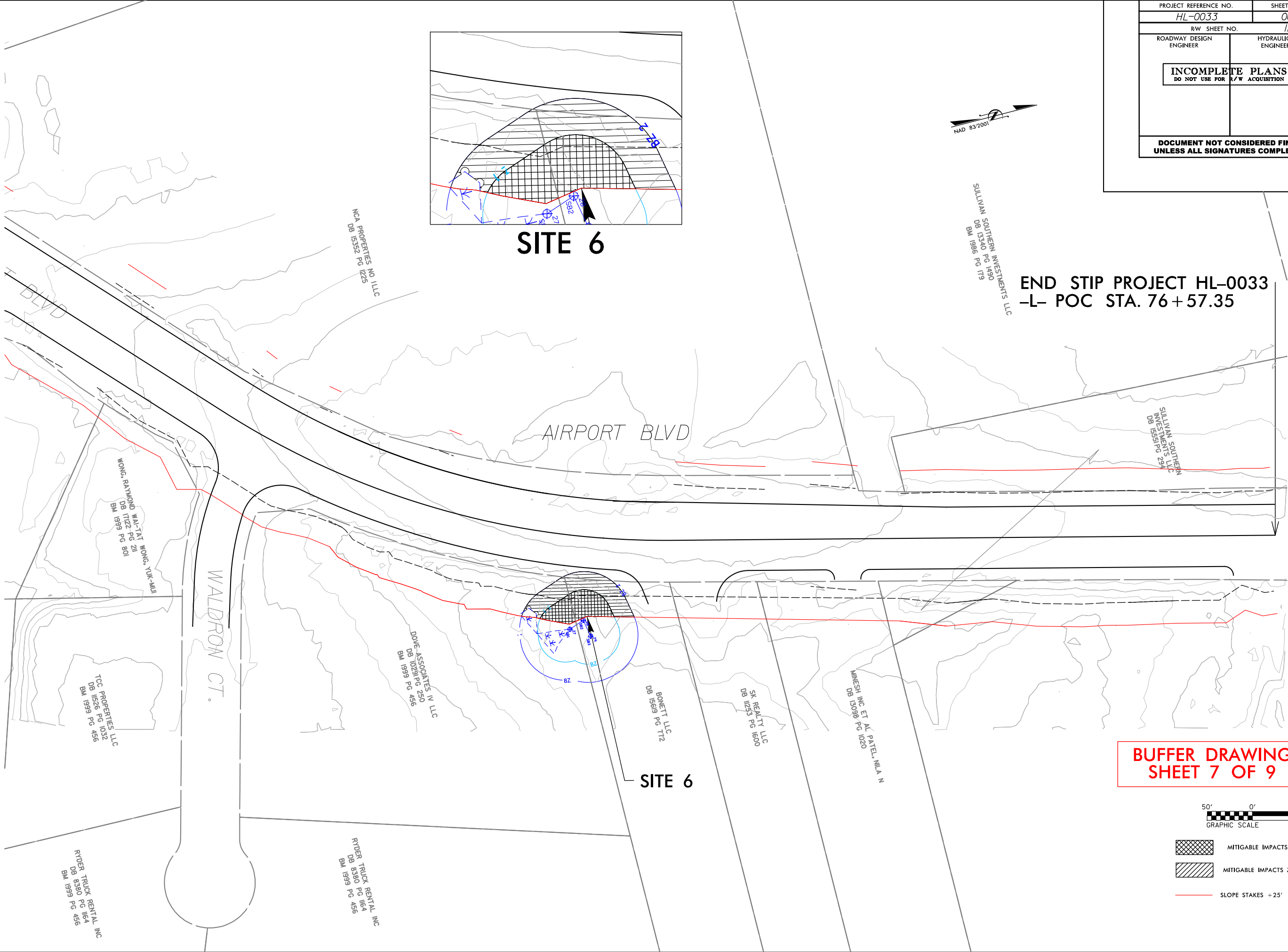


- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2
- SLOPE STAKES +25'

8/17/99

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REVISIONS



SITE 6

SITE 6



END STIP PROJECT HL-0033  
-L- POC STA. 76+57.35

BUFFER DRAWING  
SHEET 7 OF 9



- MITIGABLE IMPACTS ZONE 1
- MITIGABLE IMPACTS ZONE 2
- SLOPE STAKES +25'

## RIPARIAN BUFFER IMPACTS SUMMARY

| Site No. | Station (From/To) | Structure Size / Type | IMPACTS       |        |                 |              |              |             |              |              |             | BUFFER REPLACEMENT |              |
|----------|-------------------|-----------------------|---------------|--------|-----------------|--------------|--------------|-------------|--------------|--------------|-------------|--------------------|--------------|
|          |                   |                       | TYPE          |        |                 | ALLOWABLE    |              |             | MITIGABLE    |              |             | ZONE 1 (ft²)       | ZONE 2 (ft²) |
|          |                   |                       | ROAD CROSSING | BRIDGE | PARALLEL IMPACT | ZONE 1 (ft²) | ZONE 2 (ft²) | TOTAL (ft²) | ZONE 1 (ft²) | ZONE 2 (ft²) | TOTAL (ft²) |                    |              |
| 2        | -L- 38+19/40+78   | Open Water A          | X             |        |                 |              |              |             | 18460        | 15446        | 33906       |                    |              |
| 4        | -L- 41+29/42+80   | Stream A              | X             |        |                 |              |              |             | 13890        | 9286         | 23176       |                    |              |
| 5        | -L- 56+87/57+57   | Stream B              |               |        | X               |              |              |             | 0            | 558          | 558         |                    |              |
| 6        | -L- 69+72/70+77   | Stream C              |               |        | X               |              |              |             | 1855         | 2633         | 4488        |                    |              |
| 7        | -Y1- 20+75/25+01  | Open Water B          | X             |        |                 |              |              |             | 11204        | 11948        | 23152       |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
|          |                   |                       |               |        |                 |              |              |             |              |              |             |                    |              |
| TOTALS*: |                   |                       |               |        |                 | 0            | 0            | 0           | 45408        | 39871        | 85279       | 0                  | 0            |

NOTES:

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
3/2/2022  
WAKE COUNTY  
HL-0033

SHEET 8 OF 9

## WETLANDS IN BUFFER IMPACTS SUMMARY

| SITE NO.      | STATION (FROM/TO) | Structure Size / Type | WETLANDS IN BUFFERS       |                           |
|---------------|-------------------|-----------------------|---------------------------|---------------------------|
|               |                   |                       | ZONE 1 (ft <sup>2</sup> ) | ZONE 2 (ft <sup>2</sup> ) |
| 2             | -L- 38+19/40+78   | Open Water A          | 5                         | 309                       |
| 4             | -L- 69+72/70+00   | Stream C              | 0                         | 107                       |
|               |                   |                       |                           |                           |
|               |                   |                       |                           |                           |
|               |                   |                       |                           |                           |
|               |                   |                       |                           |                           |
|               |                   |                       |                           |                           |
|               |                   |                       |                           |                           |
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|               |                   |                       |                           |                           |
|               |                   |                       |                           |                           |
|               |                   |                       |                           |                           |
|               |                   |                       |                           |                           |
|               |                   |                       |                           |                           |
|               |                   |                       |                           |                           |
| <b>TOTAL:</b> |                   |                       | <b>5</b>                  | <b>416</b>                |

NC DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
3/2/2022  
WAKE COUNTY  
HL-0033



# Figure 1

## Project Vicinity

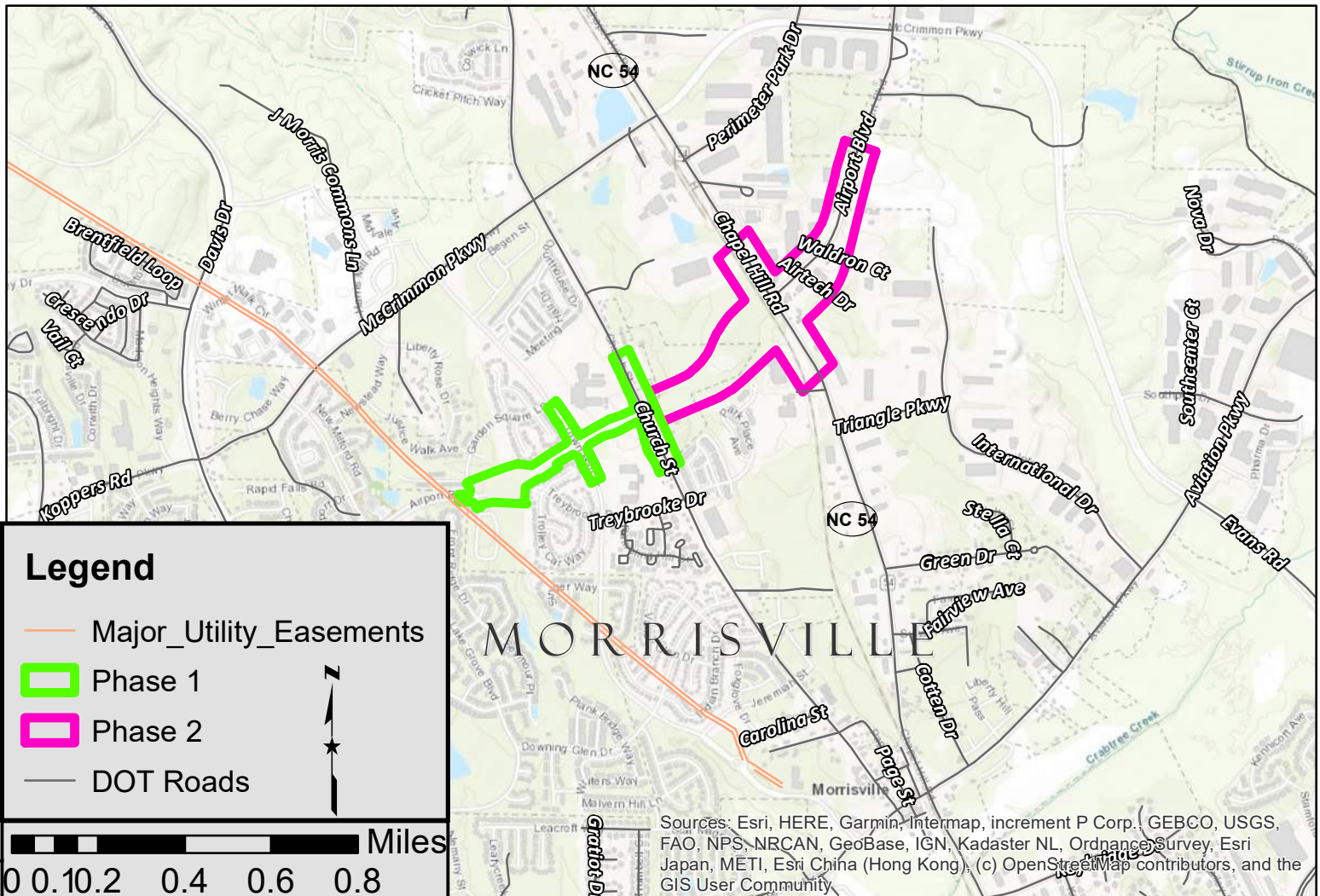
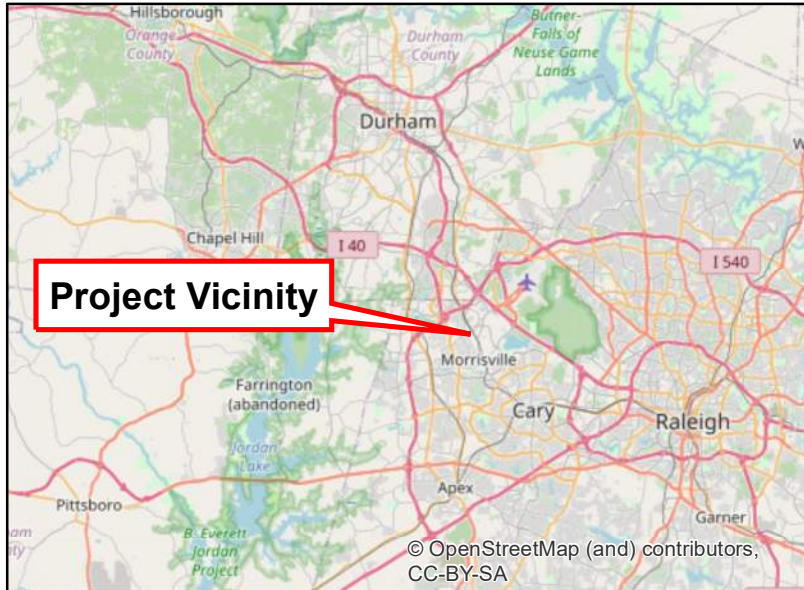
Airport Boulevard Extension, Morrisville, NC

Wake County

WBS: 36249.4033: STIP HL-0033

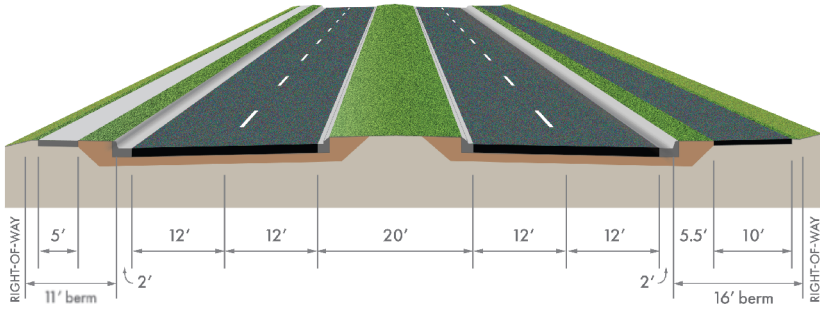


North Carolina  
Department of Transportation

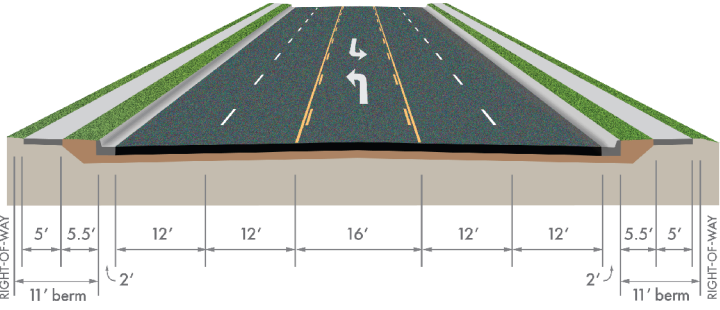


Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

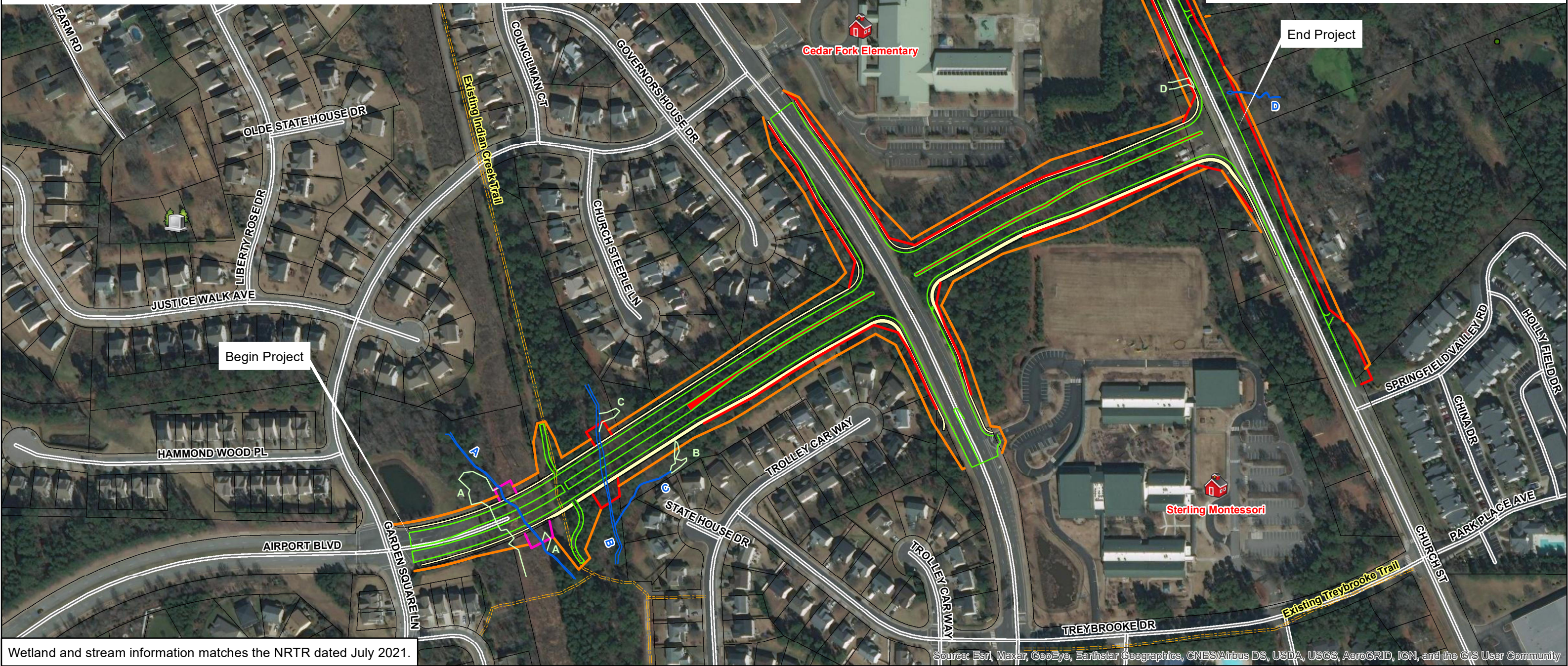
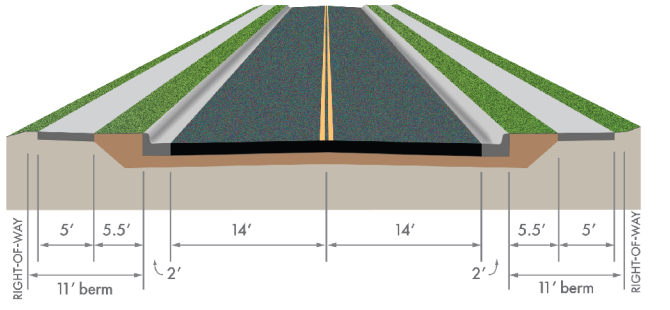
AIRPORT BLVD TYPICAL SECTION



TOWN HALL DRIVE TYPICAL SECTION



CHURCH STREET TYPICAL SECTION (FUTURE)



Wetland and stream information matches the NRTR dated July 2021.

Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



NORTH CAROLINA DEPARTMENT OF  
TRANSPORTATION  
PROJECT DEVELOPMENT AND  
ENVIRONMENTAL ANALYSIS UNIT



0 100 200 400  
Feet

**FIGURE 2**  
**PHASE 1 DESIGN**  
**AIRPORT BOULEVARD**  
WBS: 36249.4033  
TIP: HL-0033



NC Public Schools

Existing Greenway

Proposed Culvert

Proposed EOT

Proposed Construction Easement

Proposed PDE

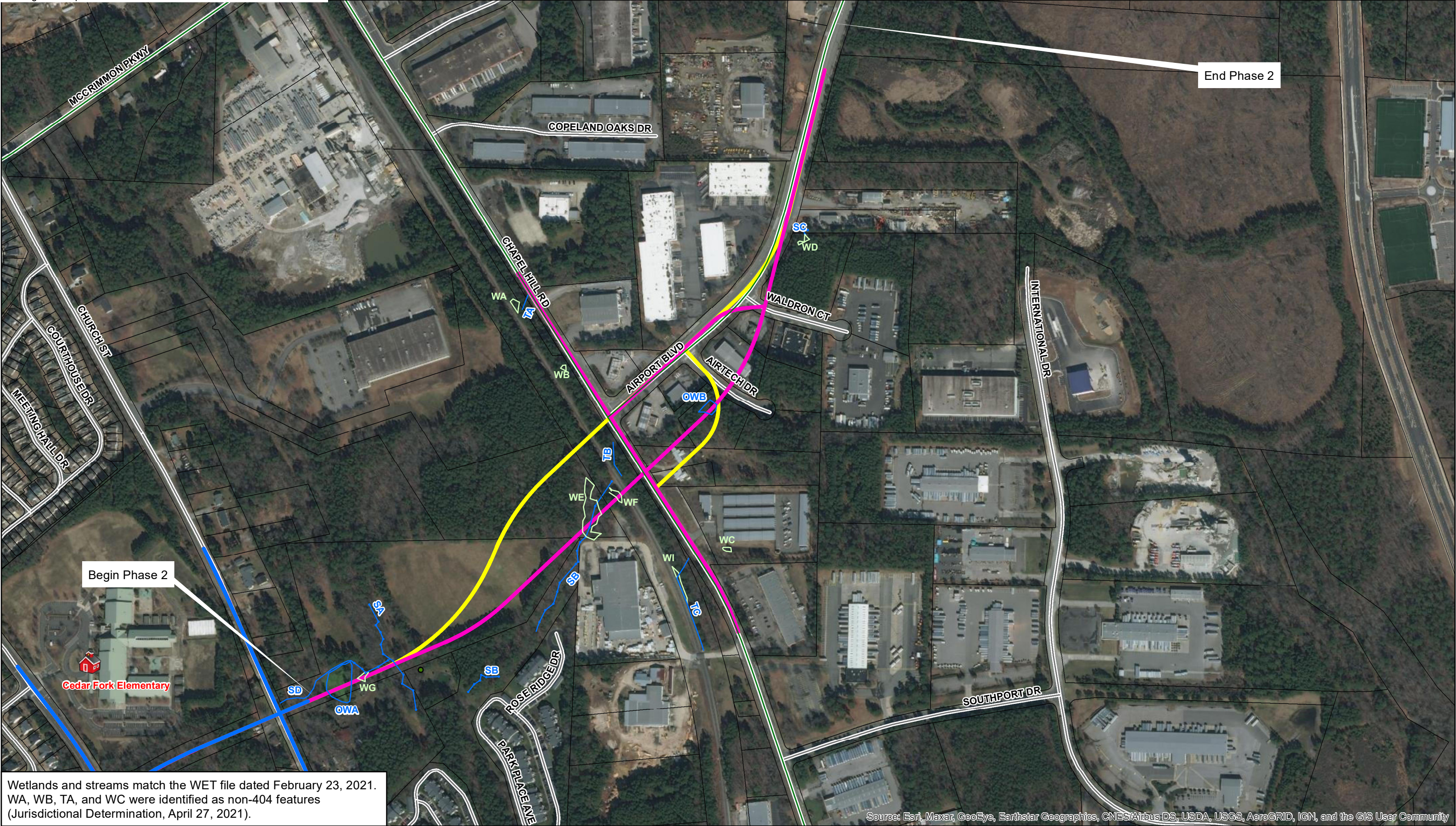
Proposed ROW

Proposed Sidewalk

Proposed Concrete Island



WAKE COUNTY



|                                                                                                                                                                                                       |                                                                                     |                                                                                      |                                                                                                                                 |                                                                                                                                                                                                                            |                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
|  <p>NORTH CAROLINA DEPARTMENT OF<br/>TRANSPORTATION<br/>PROJECT DEVELOPMENT AND<br/>ENVIRONMENTAL ANALYSIS UNIT</p> |  |  | <p><b>FIGURE 3</b><br/><b>FUTURE PHASE 2 ALTERNATIVES</b><br/><b>AIRPORT BOULEVARD</b><br/>WBS: 36249.4033<br/>TIP: HL-0033</p> | <p><b>Legend</b></p> <ul style="list-style-type: none"><li>Phase 2 Alternative 1 Alignment</li><li>Phase 2 Alternative 2 Alignment</li><li>Phase 2 Study Area</li><li>Phase 1 Alignment</li></ul> <p>NC Public Schools</p> |  <p><b>WAKE COUNTY</b></p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|