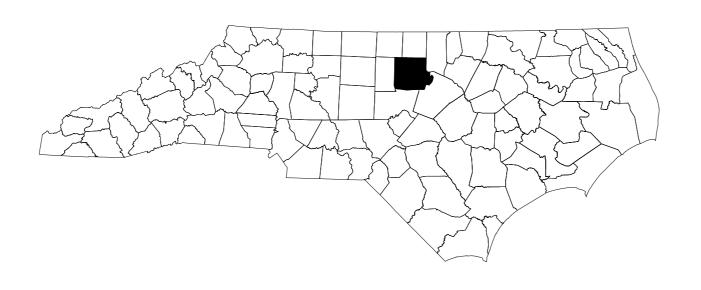
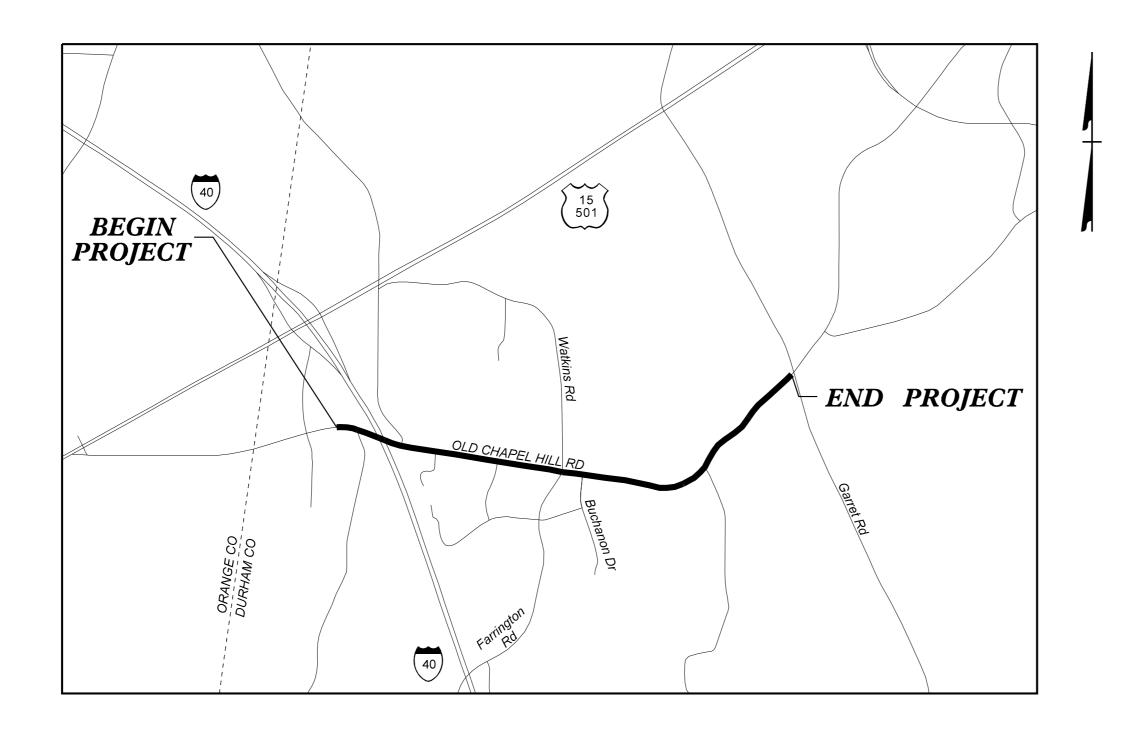
## STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

# TRANSPORTATION MANAGEMENT PLAN

# DURHAM COUNTY





# WORK ZONE SAFETY & MOBILITY

"from the MOUNTAINS to the COAST"

N.C.D.O.T. WORK ZONE TRAFFIC CONTROL

1561 MAIL SERVICE CENTER (MSC) RALEIGH, NC 27699-1561

750 N. GREENFIELD PARKWAY, GARNER, NC 27529 (DELIVERY)

PHONE: (919) 773-2800 FAX: (919) 771-2745

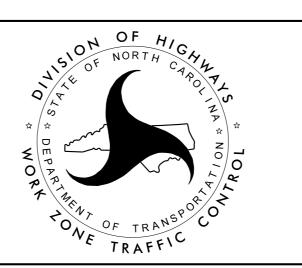
\_ TRAFFIC CONTROL DESIGN ENGINEER

J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER

DAVID BISSETTE, P.E. TRAFFIC CONTROL PROJECT ENGINEER

DONNIE RICHARDSON

MICHAEL STEELMAN TRAFFIC CONTROL PROJECT DESIGN ENGINEER



## INDEX OF SHEETS

ı		
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	TMP-18 THRU TMP-21	OMITTED (INCLUDED IN EB-4707A)
	TMP-31	TEMPORARY TRAFFIC CONTROL PHASE IV DETAIL

LANS PREPARED BY:

# **Kimley** »Horn

P.O. BOX 33068 RALEIGH, N.C. 27636–3068

MATT WEST, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER

DAVID SHINBARA, E.I. TRAFFIC CONTROL DESIGN ENGINEER

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APPROVED:	
SEAL  Docusigned by:  Matt West  AC71A1D0796B425	SEAL  029876  1/26/2017

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SHEET NO.

EB-4707E

PROJECT:

PROJ. REFERENCE NO. SHEET NO. TMP-1A EB-4707B

## ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS SHOWN IN "ROADWAY STANDARD DRAWINGS" -PROJECT SERVICES UNIT - N.C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N.C., DATED JANUARY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	<u>TITLE</u>								
1101.01	WORK ZONE ADVANCE WARNING SIGNS								
1101.02	TEMPORARY LANE CLOSURES								
1101.03	TEMPORARY ROAD CLOSURES								
1101.04	TEMPORARY SHOULDER CLOSURES								
1101.05	WORK ZONE VEHICLE ACCESSES								
1101.11	TRAFFIC CONTROL DESIGN TABLES								
1110.01	STATIONARY WORK ZONE SIGNS								
1110.02	PORTABLE WORK ZONE SIGNS								
1115.01	FLASHING ARROW BOARDS								
1130.01	DRUM								
1135.01	CONES								
1145.01	BARRICADES								
1150.01	FLAGGING DEVICES								
1160.01	TEMPORARY CRASH CUSHION								
1170.01	POSITIVE PROTECTION								
1180.01	SKINNY-DRUM								
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS								
1205.02	PAVEMENT MARKINGS - TWO-LANE AND MULTI-LANE ROADWAYS								
1205.04	PAVEMENT MARKINGS - INTERSECTIONS								
1205.05	PAVEMENT MARKINGS - TURN LANES								
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS								
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES								
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS								
1205.10	PAVEMENT MARKINGS - SCHOOL AREAS								
1205.11	PAVEMENT MARKINGS - RAILROAD CROSSINGS								
1205.13	PAVEMENT MARKINGS - LANE REDUCTIONS								
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING								
1251.01	RAISED PAVEMENT MARKERS - PERMANENT AND TEMPORARY								
1261.01	GUARDRAIL AND BARRIER DELINEATORS - INSTALLATION SPACING								
1261.02	GUARDRAIL AND BARRIER DELINEATORS - TYPES AND MOUNTING								
1262.01	GUARDRAIL END DELINEATION								
1264.01	OBJECT MARKERS - TYPES								

OBJECT MARKERS - INSTALLATION

## **LEGEND**

## **GENERAL**

DIRECTION OF TRAFFIC FLOW

DIRECTION OF PEDESTRIAN TRAFFIC FLOW

----- EXIST. PVMT.

<del>────</del> NORTH ARROW

PROPOSED PVMT.

TEMP. SHORING (LOCATION PURPOSES ONLY)

WORK AREA

REMOVAL

USER DEFINED (IF NEEDED)

USER DEFINED (IF NEEDED)

## SIGNALS





## PAVEMENT MARKINGS

——EXISTING LINES

——TEMPORARY LINES

## TRAFFIC CONTROL DEVICES

BARRICADE (TYPE III)

DRUM SKINNY DRUM O TUBULAR MARKER

TEMPORARY CRASH CUSHION

FLASHING ARROW BOARD

FLAGGER

LAW ENFORCEMENT

TRUCK MOUNTED ATTENUATOR (TMA)

CHANGEABLE MESSAGE SIGN

## TEMPORARY SIGNING

PORTABLE SIGN

— STATIONARY SIGN

STATIONARY OR PORTABLE SIGN

## PAVEMENT MARKERS

CRYSTAL/CRYSTAL

CRYSTAL/RED

◆ YELLOW/YELLOW

## PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

## TEMPORARY PAVEMENT MARKING

#### PAVEMENT MARKING LINES

PA - PAINT (4" WHITE, 2X) EDGELINE PB - PAINT (4" YELLOW, 2X) EDGELINE PC - PAINT (4" WHITE, 2X) 4" X 10' SKIP PD - PAINT (4" WHITE, 2X) 4" x 2' MINISKIP PE - PAINT (4" WHITE, 2X) SOLID LANE LINE PI - PAINT (4" YELLOW, 2X) DOUBLE CENTER LINE PV - PAINT (12" YELLOW, 2X) DIAGONAL LINE

#### PAVEMENT MARKING SYMBOLS

QA - PAINT 2X (LEFT TURN ARROW)

QB - PAINT 2X (RIGHT TURN ARROW)

QC - PAINT 2X (STRAIGHT ARROW)

QD - PAINT 2X (COMBINATION STRAIGHT & LEFT TURN ARROW) QE - PAINT 2X (COMBINATION STRAIGHT & RIGHT TURN ARROW)

QG - PAINT 2X (COMBINATION LEFT, STRAIGHT, & RIGHT TURN ARROW)

QI - PAINT 2X (ALPHANUMERIC CHARACTER) QS - PAINT 2X (YIELD LINE)

> DOCUMENT NOT CONSIDERED FINAL **UNLESS ALL SIGNATURES COMPLETED** NG INE ( ) 2/23/2017



ROADWAY STANDARD DRAWINGS & LEGEND

1264.02

PROJ. REFERENCE NO. SHEET NO. TMP-2 EB-4707B

## **GENERAL NOTES**

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAILED DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE TO MEET FIELD CONDITIONS, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES, AS DIRECTED BY THE ENGINEER.

## TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

**ROAD NAME** 

DAY AND TIME RESTRICTIONS

**GARRETT RD** 

6:00 AM TO 8:00 PM **MONDAY THRU SUNDAY** 

OLD CHAPEL HILL RD PIN OAK DR -Y16-**FIVE OAKS DR SW DURHAM DR BUCHANAN DR** 

7:00 AM TO 9:00 AM AND 3:00 PM TO 6:00 PM **MONDAY THRU FRIDAY** 

**EVERWOOD DR** JEAN AVE **GRAPEVINE TRL** 

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AS FOLLOWS:

#### **ROAD NAME**

**OLD CHAPEL HILL RD GARRETT RD** 

#### HOLIDAY

- 1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- 2. FOR NEW YEAR'S, BETWEEN THE HOURS OF 3:00 PM DECEMBER 31st TO 9:00 AM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 AM THE FOLLOWING TUESDAY.
- 3. FOR EASTER, BETWEEN THE HOURS OF 3:00 PM THURSDAY AND 9:00 AM MONDAY.
- 4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 3:00 PM FRIDAY TO 9:00 AM TUESDAY.
- 5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 3:00 PM THE DAY BEFORE INDEPENDENCE DAY AND 9:00 AM THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 3:00 PM THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 AM THE TUESDAY AFTER INDEPENDENCE DAY.

- 6. FOR LABOR DAY, BETWEEN THE HOURS OF 3:00 PM FRIDAY AND 9:00 AM TUESDAY.
- 7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 3:00 PM TUESDAY TO 9:00 AM MONDAY.

## TIME RESTRICTIONS (CONT.)

- 8. FOR CHRISTMAS, BETWEEN THE HOURS OF 3:00 PM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 AM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
- C) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME

OLD CHAPEL HILL RD

DAY AND TIME RESTRICTIONS

**DURATION AND OPERATION** 

PIN OAK DR -Y16-FIVE OAKS DR **SW DURHAM DR BUCHANAN DR EVERWOOD DR** JEAN AVE

**GRAPEVIEW TRL** 

7:00 AM TO 9:00 AM AND 3:00 PM TO 6:00 PM MONDAY THRU FRIDAY

15 MINUTES FOR **PAVEMENT MARKING** TIE-INS AS NEEDED

D) DO NOT CONDUCT MULTI-VEHICLE HAULING AS FOLLOWS:

**ROAD NAME** 

DAY AND TIME RESTRICTIONS

OLD CHAPEL HILL RD **GARRETT RD** 

6:00 AM TO 8:00 PM MONDAY THRU SUNDAY

E) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE HAULING OPERATION IS PROECTED BY BARRIER OR GUARDRAIL OR AS DIRECTED BY THE ENGINEER.

## LANE AND SHOULDER CLOSURE REQUIREMENTS

- F) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.
- G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE. CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- H) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL

## LANE AND SHOULDER **CLOSURE REQUIREMENTS (CONT.)**

- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO.1101.02 UNLES THE WORK ARE IS PROTECTED BY BARRIER OR GUARDRAIL.
- I) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUECT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REAMIN WITHIN THE CLOSED TRAVEL LANE.
- J) DO NOT WORK SIMULTANEOUSLY WITHIN 15 FT ON BOTH SIDES OF AN OPEN TRAVELWAY RAMP OR LOOP WITHIN THE SAME LOCATION UNLESS PROTECTED WITH GUARDRAIL OR BARRIER.

## PAVEMENT EDGE DROP OFF REQUIREMENTS

K) BACKFILL AT A 6:1 SLOPE UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT IN AREAS ADJACENT TO AN OPENED TRAVEL LANE THAT HAS AN EDGE OF PAVEMENT DROP-OFF AS FOLLOWS:

**BACKFILL DROP-OFFS THAT EXCEED 2 INCHES ON ROADWAYS** WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES ON ROADWAYS WITH POSTED SPEED LIMITS LESS THAN 45 MPH.

BACKFILL WITH SUITABLE COMPACTED MATERIAL, AS APPROVED BY THE ENGINEER, AT NO EXPENSE TO THE PROJECT.

L) DO NOT EXCEED A DIFFERENCE OF 2 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC FOR NOMINAL LIFTS OF 1.5 INCHES. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

## TRAFFIC PATTERN ALTERATIONS

M) NOTIFY THE ENGINEER TWENTY ONE (21) CALENDAR DAYS PRIOR TO ANY TRAFFIC PATTERN ALTERATION.

### **SIGNING**

- N) INSTALL ADVANCE WORK ZONE WARNING SIGNS WHEN WORK IS WITHIN 40 FT FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING **OF CONSTRUCTION**
- O) PROVIDE PERMANENT SIGNING.
- P) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.
- Q) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 500 FT IN ADVANCE OF THE UNEVEN AREA OR AS DIRECTED BY THE ENGINEER.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PROJECT NOTES

# PROJ. REFERENCE NO. SHEET NO. EB-4707B TMP-2A

## GENERAL NOTES (CONT.)

## TRAFFIC BARRIER

R) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATIONSONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION, PROCEED IN A CONTINUOUS MANNER TO COMPLETE THE PROPOSED WORK IN THAT LOCATION UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS OR AS DIRECTED BY THE ENGINEER.

DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

ONCE TEMPORARY BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE TEMPORARY BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE/RESET TEMPORARY BARRIER AT NO COST TO THE DEPARTMENT UNLESS OTHERWISE STATED IN THE TRAFFIC CONTROL PLANS, TEMPORARY BARRIER IS PROTECTING A HAZARD, OR AS DIRECTED BY THE ENGINEER.

INSTALL TEMPORARY BARRIER WITH THE TRAFFIC FLOW, BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE TEMPORARY BARRIER AGAINST THE TRAFFIC FLOW, BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP THE SECTION OF THE ROADWAY CLOSEDUNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

S) PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER AT ALL TIMES DURING THE INSTALLATION AND REMOVAL OF THE BARRIER BY EITHER A TRUCK MOUNTED IMPACT ATTENUATOR (MAXIMUM 72 HOURS) OR A TEMPORARY CRASH CUSHION.

PROTECT THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER FROM ONCOMING TRAFFIC AT ALL TIMES BY A TEMPORARY CRASH CUSHION UNLESS THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER IS OFFSET FROM ONCOMING TRAFFIC AS FOLLOWS OR AS SHOWN IN THE PLANS:

OSTED SPEED LIMIT	MINIMUM OFFSET
40 OR LESS	15 FT
<i>45 - 50</i>	20 FT
<i>55</i>	25 FT
60 MPH or HIGHER	30 FT

## TRAFFIC CONTROL DEVICES

- T) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ARE ALLOWED, REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- U) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.
- V) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

## **PAVEMENT MARKINGS AND MARKERS**

W) INSTALL TEMPORARY PAVEMENT MARKINGS AND TEMPORARY PAVEMENT MARKERS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:

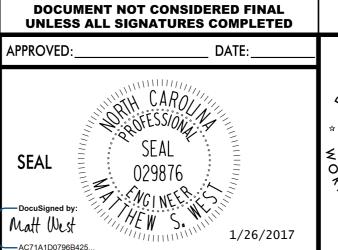
ROAD NAME MARKING MARKER
ALL ROADS PAINT TEMPORARY RAISED

- X) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS.
  PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE
  INITIAL APPLICATION AND EVERY SIX MONTHS AS DIRECTED BY THE
  ENGINEER.
- Y) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- Z) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.
- AA) TRACE THE PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO REMOVAL AND INSTALLATION. PLACE DRUMS TO DELINEATE ANY EXISTING AND PROPOSED MONOLITHIC ISLANDS AFTER REMOVAL AND BEFORE INSTALLATION.

## **MISCELLANEOUS**

- BB) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS, AS DIRECTED BY THE ENGINEER.
- CC) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAYS TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION, AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 500 FT AND 500 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.
- DD) ALL WHEELCHAIR RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.
- EE) CONTRACTOR SHALL MAINTAIN SIDEWALK ACCESS AT ALL TIMES AS STATED IN THE PHASING. CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE TEMPORARY SIDEWALKS (CONCRETE, ASPHALT, OR OTHER SUITABLE MATERIAL AS APPROVED BY THE ENGINEER) AT ALL LOCATIONS WHERE THE OPEN PEDESTRIAN TRAVELWAY HAS BEEN REMOVED FOR CONSTRUCTION OPERATIONS (UTILITIES, DRAINAGE, ETC.).

Kimley»Horn





PROJECT NOTES

## PROJECT PHASING

PROJ. REFERENCE NO. SHEET NO. EB-4707B TMP-3

## PHASE I

IF WORK IS NOT PURSUED WITHIN 3 DAYS OF SIGN INSTALLATION, THE WORK ZONE ADVANCE WARNING SIGNS SHALL BE COVERED OR REMOVED IN A METHOD APPROVED BY ENGINEER. THESE COVERINGS SHALL BE MADE IN ACCORDANCE WITH SECTION 1110 OF THE NCDOT SPECIFICATIONS.

STEP 1:

PRIOR TO ANY CONSTRUCTION ACTIVITY, INSTALL ALL ADVANCE WORK ZONE WARNING SIGNS IN ACCORDANCE WITH NCDOT RSD 1101.01.

STEP 2:

USING RSD 1101.02, SHEET 1 OF 15, PERFORM THE FOLLOWING: AT THE END OF EACH WORK PERIOD, RETURN TRAFFIC TO THE EXISTING PATTERN.

CONSTRUCT THE FOLLOWING TEMPORARY WIDENING UP THE EXISTING PAVEMENT ELEVATION, AS SHOWN ON SHEET TMP-4.

- -L- STA 60+00 TO STA 61+37 (RIGHT)
- -L- STA 104+75 TO STA 106+60 (LEFT)

STEP 3:

USING RSD 1101.02, SHEET 1 OF 15, INSTALL PORTABLE CONCRETE BARRIER FROM -L- STA 105+00 TO STA 106+70 (LEFT).

AWAY FROM TRAFFIC AND USING RSD 1101.02 SHEET 1 OF 15 FOR WORK NEAR TRAFFIC, PERFORM THE FOLLOWING:
AT THE END OF EACH WORKDAY, RETURN TRAFFIC TO THE EXISTING PATTERN.

REFER TO CULVERT PHASING SHEET TMP-3D FOR SUGGESTED CULVERT PHASING.

CONSTRUCT THE WIDENING AND NEW LOCATION OF THE DETOUR ALIGNMENT INCLUDING TEMPORARY DRAINAGE PIPES AS SHOWN ON SHEET TMP-4. PLACE PAVEMENT MARKINGS ON DETOUR ALIGNMENT UP TO THE EXISTING PAVEMENT.

## PHASE II

STEP 1:

WHILE MAINTAINING EXISTING SIDEWALK CONSTRUCT TEMPORARY WALKWAY PATHS IN THE FOLLOWING LOCATIONS: -L- STA 97+61 TO STA 99+30 (LEFT)

STEP 2:

WORKING IN A CONTINUOUS MANNER AND USING RSD 1101.02, SHEETS 1 AND 2 OF 15, WEDGE AS NECESSARY TO TIE DETOUR ALIGNMENT TO EXISTING PAVEMENT, AND INSTALL TEMPORARY PAVEMENT MARKINGS (PAINT) AND TEMPORARY PAVEMENT MARKERS (TEMPORARY RAISED) AS SHOWN ON SHEETS TMP-10 - TMP-16. BY THE END OF THE WORK PERIOD PLACE TRAFFIC IN NEW PATTERNS WHERE TEMPORARY MARKINGS WERE PLACED.

AFTER TRAFFIC IS PLACED INTO NEW PATTERN USING RSD 1101.02, SHEETS 1 AND 2 OF 15 INSTALL REMAINING PORTABLE CONCRETE BARRIER IN A SINGLE WORK PERIOD, AS SHOWN ON SHEETS TMP-13 AND TMP-14.

INSTALL SIDEWALK CLOSURE BARRICADES AND SIGNING, AND PLACE PEDESTRIAN TRAFFIC ON TEMPORARY PATHS, AS SHOWN ON SHEET TMP-13.

## PHASE II (CONT.)

STEP 3:

USING RSD 1101.02, SHEETS 1 AND 2 OF 15, PERFORM THE FOLLOWING: AT THE END OF EACH WORK PERIOD, RETURN TRAFFIC TO THE EXISTING PATTERN.

CONSTRUCT THE PROPOSED IMPROVEMENTS UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE AS SHOWN ON SHEETS TMP-10 - TMP-16.

**NOTES:** 

REFER TO CULVERT PHASING SHEETS TMP-3D FOR SUGGESTED CULVERT PHASING.

WHEN PLACING DRAINAGE STRUCTURES AND PIPE SYSTEMS ADJACENT TO TRAVEL LANES: AT THE END OF EACH WORK PERIOD COVER ANY INCOMPLETE CONSTRUCTION WITH TRAFFIC BEARING STEEL PLATE(S) AND RETURN TRAFFIC TO EXISTING PATTERN.

FOR DRAINAGE STRUCTURES AND ASSOCIATED PIPE SYSTEMS LOCATED WITHIN PARKING LOTS AND ON PRIVATE PROPERTY: IF STRUCTURES AND PIPES ARE NOT COMPLETED AT THE END OF THE WORK DAY, ENSURE AREA AROUND STRUCTURE IS BARRICADED AND/OR BLOCKED OFF TO PREVENT PEDESTRIANS OR VEHICLES FROM ENTERING THE WORK AREA AND/OR OPEN STRUCTURES AND SYSTEMS. MAINTAIN ACCESS AT ALL POSSIBLE TIMES.

STEP 4:

WORKING IN A CONTINUOUS MANNER AND USING RSD 1101.02, SHEETS 1 AND 2 OF 15, FOLLOWING PLACEMENT OF EACH LIFT OF PROPOSED ASPHALT PAVEMENT ALONG WIDENING OF THE ROAD, OR AS OTHERWISE DIRECTED BY THE ENGINEER, WEDGE UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE IN ORDER TO TIE THE NEW WIDENING PAVEMENT TO THE EXISTING SURFACE FROM -L- STA 57+65 TO -L- STA 140+53, SEE SHEETS TMP-10 THRU TMP-16. WEDGE AS NECESSARY TO PROMOTE POSITIVE DRAINAGE ACROSS THE ROADWAY OR TO NEAREST STRUCTURE, PROVIDE SMOOTH TRANSITIONS FROM THE EXISTINGSURFACE TO THE NEW PAVEMENT, AND PROVIDE A SMOOTH SURFACE ALONG THE ROADWAY. REPLACE EXISTING PAVEMENT MARKINGS PRIOR TO THE END OF EACH WORK PERIOD AND RETURN TRAFFIC TO THE EXISTING PATTERN.

**Kimley** » Horn

APPROVED:

SEAL

Docusigned by:

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DOCUMENT NOT CONSIDERED FINAL
UNLESS ALL SIGNATURES COMPLETED

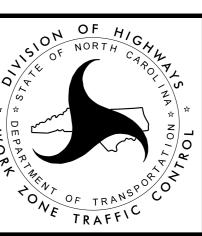
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1/26/2017



TRAFFIC CONTROL
SECTION III
PHASING

#### PROJ. REFERENCE NO. SHEET NO. TMP-3A EB-4707B

# PROJECT PHASING (CONTINUED)

## PHASE III

#### STEP 1:

**WORKING IN A CONTINUOUS MANNER AND USING RSD 1101.02, SHEETS** 1 AND 2 OF 15, INSTALL TEMPORARY PAVEMENT MARKINGS (PAINT) AND TEMPORARY PAVEMENT MARKERS (TEMPORARY RAISED) AS SHOWN ON SHEETS TMP-22 - TMP-30. BY THE END OF THE WORK PERIOD PLACE TRAFFIC IN NEW PATTERNS WHERE TEMPORARY MARKINGS WERE PLACED.

INSTALL SIDEWALK CLOSURE SIGNING AND BARRICADES, AS SHOWN ON SHEET TMP-30.

INSTALL AND COVER DETOUR SIGNING FOR CLOSURE OF -Y13-, AS SHOWN ON SHEET TMP-3E.

USING RSD 1101.02, SHEET 1 OF 15, INSTALL PORTABLE CONCRETE BARRIER ALONG -L-, AS SHOWN ON SHEETS TMP-26 AND TMP-27.

#### STEP 2:

**USING RSD 1101.02, SHEETS 1 AND 2 OF 15, PERFORM THE FOLLOWING:** AT THE END OF EACH WORK PERIOD, RETURN TRAFFIC TO THE EXISTING PATTERN.

CONSTRUCT THE PROPOSED IMPROVEMENTS UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE, AS SHOWN ON SHEETS TMP-22 - TMP-30.

#### **NOTES:**

REFER TO CULVERT PHASING SHEET TMP-3D FOR SUGGESTED CULVERT PHASING. ENSURE STRUCTURE 402 IS TRAFFIC BEARING. WHEN PLACING DRAINAGE STRUCTURES AND PIPE SYSTEMS ADJACENT TO TRAVEL LANES, AT THE END OF EACH WORK PERIOD, COVER ANY INCOMPLETE CONSTRUCTION WITH TRAFFIC BEARING STEEL PLATE(S) AND RETURN TRAFFIC TO EXISTING PATTERN.

FOR DRAINAGE STRUCTURES AND ASSOCIATED PIPE SYSTEMS LOCATED WITHIN PARKING LOTS AND ON PRIVATE PROPERTY: IF STRUCTURES AND PIPES ARE NOT COMPLETED AT THE END OF THE WORK DAY, ENSURE AREA AROUND STRUCTURE IS BARRICADED AND/OR BLOCKED OFF TO PREVENT PEDESTRIANS OF VEHICLES FROM ENTERING THE WORK AREA AND/OR OPEN STRUCTURES AND SYSTEMS. MAINTAIN ACCESS AT ALL POSSIBLE TIMES.

#### STEP 3:

**WORK IN A CONTINUOUS MANNER TO COMPLETE THE FOLLOWING WORK OF PHASE** III. STEP 3 IN 21 CONSECUTIVE CALENDAR DAYS. SEE CONTRACT TIME AND **LIQUIDATED DAMAGES:** 

**UNCOVER DETOUR SIGNING INSTALLED DURING STEP 1, USING RSD 1101.03** SHEETS 1 AND 2 OF 9, AS SHOWN ON SHEET TMP-3E AND TMP-23 AND CLOSE -Y13-.

CONSTRUCT ALL REMAINING ROADWAY IMPROVEMENTS, INCLUDING DRAINAGE STRUCTURES AND PIPE SYSTEMS, INSTALLATION OF THE FINAL SURFACE COURSE, PAVEMENT MARKINGS, CONCRETE ISLANDS, AND THE ROUNDABOUT TRUCK APRON AT THE INTERSECTION OF -Y13- WITH -L-, AS SHOWN ON SHEET TMP-23.

REOPEN -Y13-, PLACE TRAFFIC IN THE NEW PATTERN, AND REMOVE OR COVER ALL DETOUR SIGNING.

MONITOR TRAFFIC QUEUES AT -L- OLD DURHAM CHAPEL HILL ROAD AND FARRINGTON ROAD AND NOTIFY ENGINEER IF SIGNAL TIMING MODIFICATIONS ARE REQUIRED **DURING CLOSURE.** 

## PHASE III (CONT.)

#### STEP 4:

**WORKING IN A CONTINUOUS MANNER AND USING RSD 1101.02, SHEETS 1** AND 2 OF 15, FOLLOWING PLACEMENT OF EACH LIFT OF PROPOSED ASPHALT PAVEMENT ALONG WIDENING OF THE ROAD, OR AS OTHERWISE DIRECTED BY THE ENGINEER, WEDGE UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE IN ORDER TO TIE THE NEW WIDENING PAVEMENT TO THE EXISTING SURFACE FROM STATION -L- STA. 57+65.00 TO -L- STA. 144+14.34, SEE SHEETS TMP-22 THRU TMP-25. WEDGE AS NECESSARY TO PROMOTE POSITIVE DRAINAGE ACROSS THE ROADWAY OR TO NEAREST STRUCTURE, PROVIDE SMOOTH TRANSITIONS FROM THE EXISTING SURFACE TO THE NEW PAVEMENT, AND PROVIDE A SMOOTH SURFACE ALONG THE ROADWAY. REPLACE EXISTING PAVEMENT MARKINGS PRIOR TO THE END OF EACH WORK PERIOD AND RETURN TRAFFIC TO THE EXISTING PATTERN.

USING RSD 1101.02 SHEET 1 OF 15 REMOVE PORTABLE CONCRETE BARRIER ALONG -L-.

## PHASE IV

#### STEP 1:

**WORKING IN A CONTINUOUS MANNER AND USING RSD 1101.02, SHEETS 1 AND** 2 OF 15, INSTALL TEMPORARY PAVEMENT MARKINGS (PAINT) AND TEMPORARY PAVEMENT MARKERS (TEMPORARY RAISED) CONSISTENT WITH FINAL PAVEMENT MARKING PLANS, SHEETS PM-1 - PM-12, EXCEPT AS NOTED BELOW AND SHOWN ON SHEET TMP-31. BY THE END OF THE WORK PERIOD PLACE TRAFFIC IN THE NEW PATTERNS.

- -L- STA 61+09 TO STA 63+16
- -L- STA 83+20 TO STA 85+80
- -NOTE: DO NOT INSTALL BIKE LANE SYMBOLS.

INSTALL SIGNING AND BARRICADES, AND RESTRICT MOVEMENTS TO AND FROM -Y13- TO A RIGHT-IN, RIGHT-OUT ONLY CONFIGURATION, AS SHOWN ON SHEET TMP-31.

#### STEP 2:

USING RSD 1101.02, SHEETS 1 AND 2 OF 15, PERFORM THE FOLLOWING: AT THE END OF EACH WORK PERIOD, RETURN TRAFFIC TO THE EXISTING PATTERN.

CONSTRUCT THE PROPOSED MEDIAN AND REMAINING PORTION OF ROUNDABOUT AS SHOWN ON SHEET TMP-31.

## PHASE IV (CONT.)

#### STEP 3:

USING RSD 110.02, SHEETS 1 AND 2 OF 15, PERFORM THE FOLLOWING: AT THE END OF EACH DAY, RETURN TRAFFIC TO THE EXISTING PATTERN.

INSTALL THE FINAL ASPHALT SURFACE COURSE ON ALL ROADS.

#### STEP 4:

UPON COMPLETION OF ALL ASPHALT PAVING OPERATIONS, WHILE **WORKING IN A CONTINUOUS MANNER AND USING RSD 1101.02,** SHEETS 1 AND 2 OF 15, INSTALL THE FINAL PAVEMENT MARKINGS AND MARKERS ON ALL ROADS. AT THE END OF THE WORK PERIOD, PLACE TRAFFIC IN THE FINAL PATTERN. (SEE PAVEMENT MARKING PLANS)

#### STEP 5:

REMOVE ANY REMAINING DETOUR SIGNING AND ALL ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES.

OPEN ALL LANES TO TRAFFIC.

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

TRAFFIC CONTROL SECTION III PHASING

## TEMPORARY SHORING NOTES

# CONTRACTOR DESIGNED TEMPORARY SHORING NO. 1 -L- STA 105+40 TO STA 106+10 (9.25' LEFT)

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 105+40 TO STATION 106+10, (9.25' LT)

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -L- 105+40 TO STATION 106+10, (9.25' LT), FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT = 120 LB/CF FRICTION ANGLE = 25 DEGREES COHESION (c) = 0 LB/SF GROUNDWATER ELEVATION = UNKNOWN

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION
-L- 105+40 TO STATION 106+10, (9.25' LT), MAY NOT
PENETRATE BELOW ELEVATION 239' DUE TO OBSTRUCTIONS,
VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR
HARD ROCK.

# CONTRACTOR DESIGNED TEMPORARY SHORING NO. 2 -L- STA 105+40 TO STA 106+10 (14.25' LT)

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROVISION.

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -L- 105+40 TO STA 106+10 (14.25' LT)

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -L- 105+40 TO STATION 106+10 (14.25' LT), FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT = 120 LB/CF FRICTION ANGLE = 25 DEGREES COHESION (c) = 0 LB/SF GROUNDWATER ELEVATION = UNKNOWN

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION -L- 105+40 TO STATION 106+10 (14.25' LT), MAY NOT PENETRATE BELOW ELEVATION 239' DUE TO OBSTRUCTIONS, VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR HARD ROCK.

# CONTRACTOR DESIGNED TEMPORARY SHORING NO. 3 -LDET- STA 105+30 (24' RT) TO STA 105+41 (17' RT)

FOR TEMPORARY SHORING AND POSITIVE PROTECTION FOR TEMPORARY SHORING. SEE PLANS AND TEMPORARY SHORING PROVISION.

TEMPORARY SHORING IS REQUIRED FOR THE CULVERT INSTALLATION FROM STATION -LDET- 105+30 (24' RT) TO STATION 105+41 (17' RT)

BEFORE BEGINNING TEMPORARY SHORING DESIGN OR CONSTRUCTION, SURVEY EXISTING GROUND ELEVATIONS IN THE VICINITY OF SHORING LOCATIONS TO DETERMINE ACTUAL SHORING HEIGHTS.

DESIGN TEMPORARY SHORING FROM STATION -LDET- 105+30 (24' RT) TO STATION 105+41 (17' RT), FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT = 120 LB/CF FRICTION ANGLE = 25 DEGREES COHESION (c) = 0 LB/SF GROUNDWATER ELEVATION = UNKNOWN

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION
-LDET- 105+30 (24' RT) TO STATION 105+41 (17' RT), MAY NOT
PENETRATE BELOW ELEVATION 239' DUE TO OBSTRUCTIONS,
VERY DENSE OR HARD SOIL, BOULDERS OR WEATHERED OR
HARD ROCK.

**Kimley** » Horn

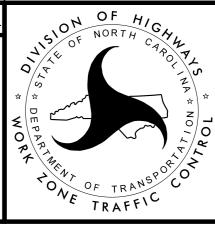
APPROVED:

DATE:

SEAL

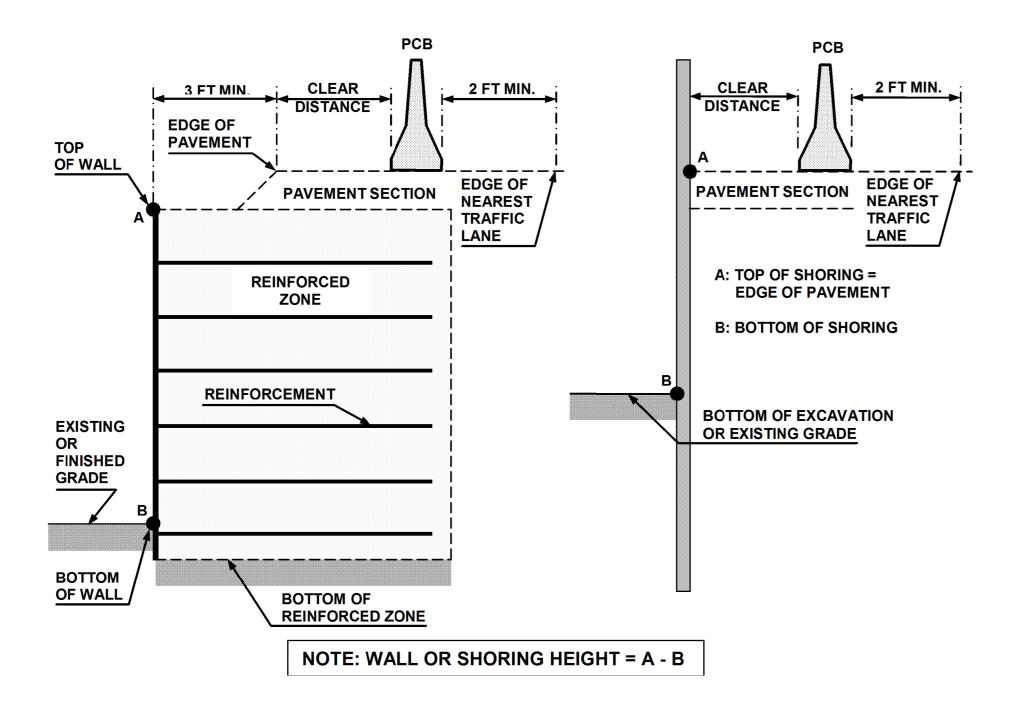
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TRAFFIC CONTROL
TEMPORARY SHORING NOTES

SEE SHEET TMP-3D, TMP-4, TMP-13, AND TMP-26, FOR SHORING LOCATIONS AND DETAILS



# FIGURE A

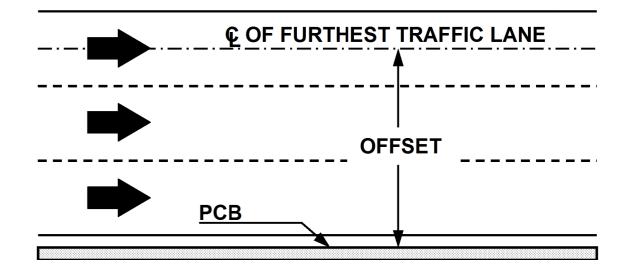
## **NOTES**

- 1- REFER TO THE TRAFFIC CONTROL PLANS FOR TEMPORARY SHORING LOCATIONS AND NOTES.
- 2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR INFORMATION ABOUT TEMPORARY SHORING AND PORTABLE CONCRETE BARRIER (PCB).
- 3- PCB IS REQUIRED IF TEMPORARY SHORING IS LOCATED WITHIN THE CLEAR ZONE IN ACCORDANCE WITH THE AASHTO ROADSIDE DESIGN GUIDE. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE.

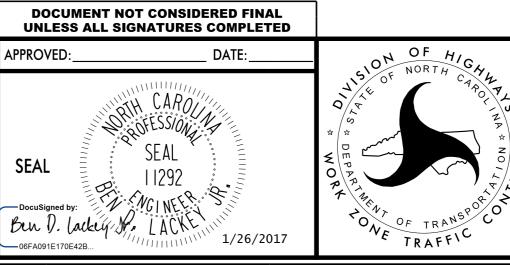
  (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).
- 4- BASED ON THE CLEAR DISTANCE, OFFSET, DESIGN SPEED AND PAVEMENT TYPE, CHOOSE AN UNANCHORED OR ANCHORED PCB FROM THE TABLE SHOWN IN FIGURE B. CLEAR DISTANCE IS DEFINED AS SHOWN IN FIGURE A AND OFFSET IS DEFINED AS SHOWN IN FIGURE B.
- 5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET PCB NEXT TO AND UP AGAINST THE TRAFFIC SIDE OF THE TEMPORARY SHORING EXCEPT FOR BARRIER ABOVE TEMPORARY WALLS. PCB WITH THE MINIMUM REQUIRED CLEAR DISTANCE IS REQUIRED ABOVE TEMPORARY WALLS.
- 6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- 7- PCB REQUIREMENTS FOR TEMPORARY WALLS APPLY TO TEMPORARY MECHANICALLY STABILIZED EARTH (MSE) WALLS AND TEMPORARY SOIL NAIL WALLS.
- 8- SET PCB WITH A MINIMUM HORIZONTAL DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A UNLESS OTHERWISE SHOWN IN THE PLANS AND OR AS APPROVED BY THE ENGINEER.
- 9- FOR PCB ABOVE AND BEHIND TEMPORARY WALLS, PROVIDE A MINIMUM DISTANCE OF 3 FT BETWEEN THE EDGE OF PAVEMENT AND THE WALL FACE AS SHOWN IN FIGURE A. IF THESE MINIMUM REQUIRED DISTANCES ARE NOT AVAILABLE, CONTACT THE ENGINEER.
- 10- TABLE SHOWN IN FIGURE B IS BASED ON NCDOT RESEARCH PROJECT NO. 2005-010 WITH VEHICLE TYPE USED FOR NCHRP 350 CRASH TESTS. BARRIER DEFLECTIONS AND RESULTING MINIMUM REQUIRED CLEAR DISTANCES MIGHT VARY SIGNIFICANTLY FOR LARGER HEAVIER VEHICLES, RUNS OF BARRIER LESS THAN 200 FT IN LENGTH AND WET OR DRY PAVEMENT.

Barrier	Pavement		Offset * Design Speed, mph								
Type	Type	ft	<30	31-40	41-50		51-60 61-70				
Турс	Турс	<8	24	26	29	31-00	36	71-80 40			
		8-14	26	28	31	35	38	42			
		14-20	27	29	34	36	39	43			
		20-26	28	31	35	38	40	44			
	Asphalt	26-32	29	32	36	39	42	45			
		32-38	30	34	38	41	43	46			
<b>~</b>		38-44	31	34	41	43	45	48			
PC		44-50	31	35	41	43	46	49			
<b>q</b>		50-56	32	36	42	44	47	50			
Unanchored PCB		>56	32	36	42	45	47	51			
ho		<8	17	18	21	22	25	26			
ne		8-14	19	20	23	25	26	29			
na		14-20	22	22	24	26	28	31			
n		20-26	23	24	26	27	30	34			
	Concrete	26-32	24	25	27	28	32	35			
		32-38	24	26	27	30	33	36			
		38-44	25	26	28	30	34	37			
		44-50	26	26	28	32	35	37			
		50-56	26	26	28	32	35	38			
		>56	26	27	29	32	36	38			
Anchored PCB	Asphalt	All Offsets	24 for All Design Speeds								
Anchored PCB	Concrete (including bridge approach slabs)	All Offsets	12 for All Design Speeds								

\* See Figure Below



# FIGURE B



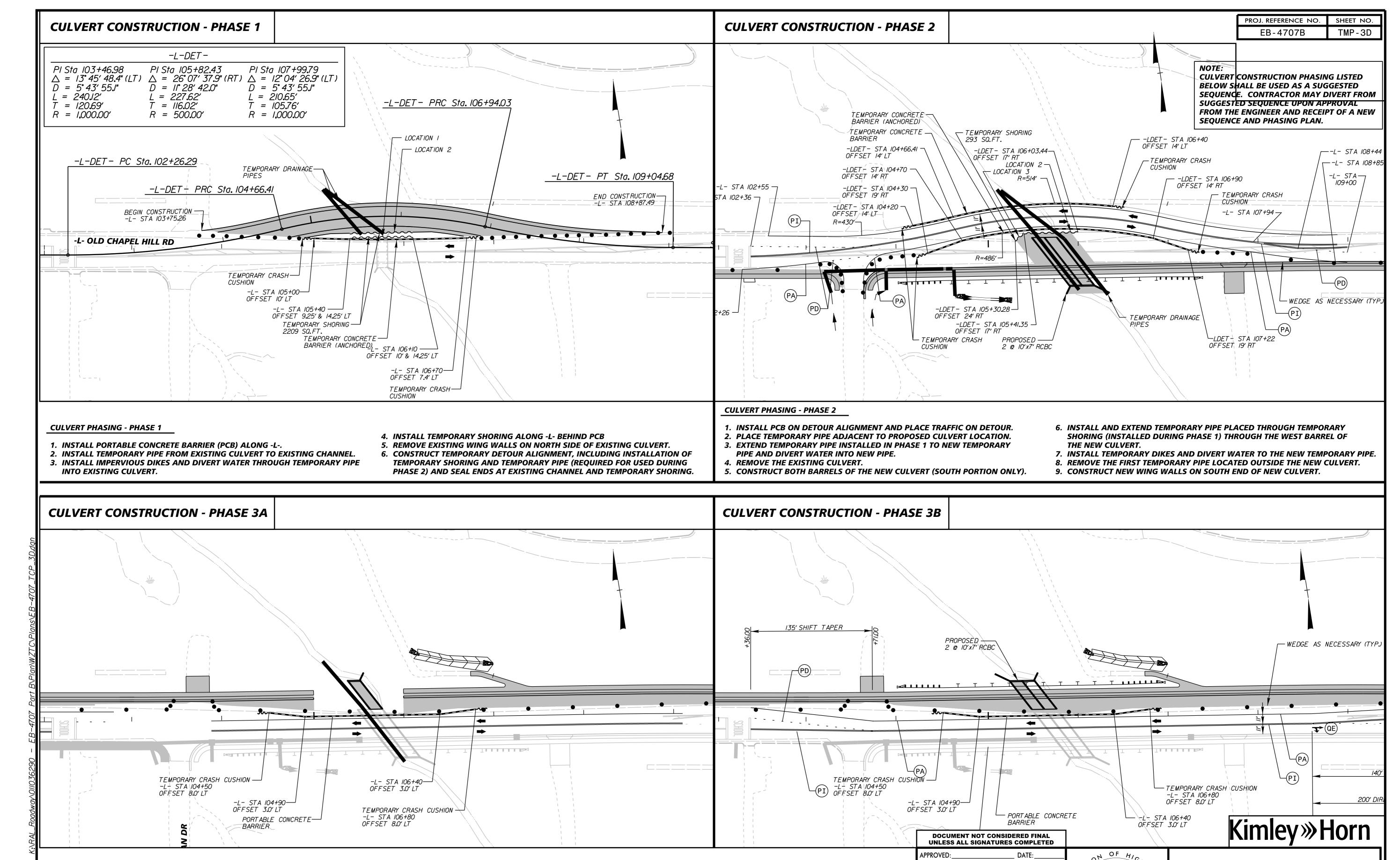
**Kimley Morn** 

PORTABLE CONCRETE BARRIER
AT
TEMPORARY SHORING LOCATIONS

**CULVERT PHASING - PHASE 3** 

1. INSTALL PCB ALONG -L- AND PLACE TRAFFIC ON NEW WIDENING SECTION 2. REMOVE DETOUR PAVEMENT AND FIRST TEMPORARY PIPE INSTALLED

3. CONSTRUCT FINAL PORTION OF THE EAST BARREL OF THE NEW CULVERT.



Matt West

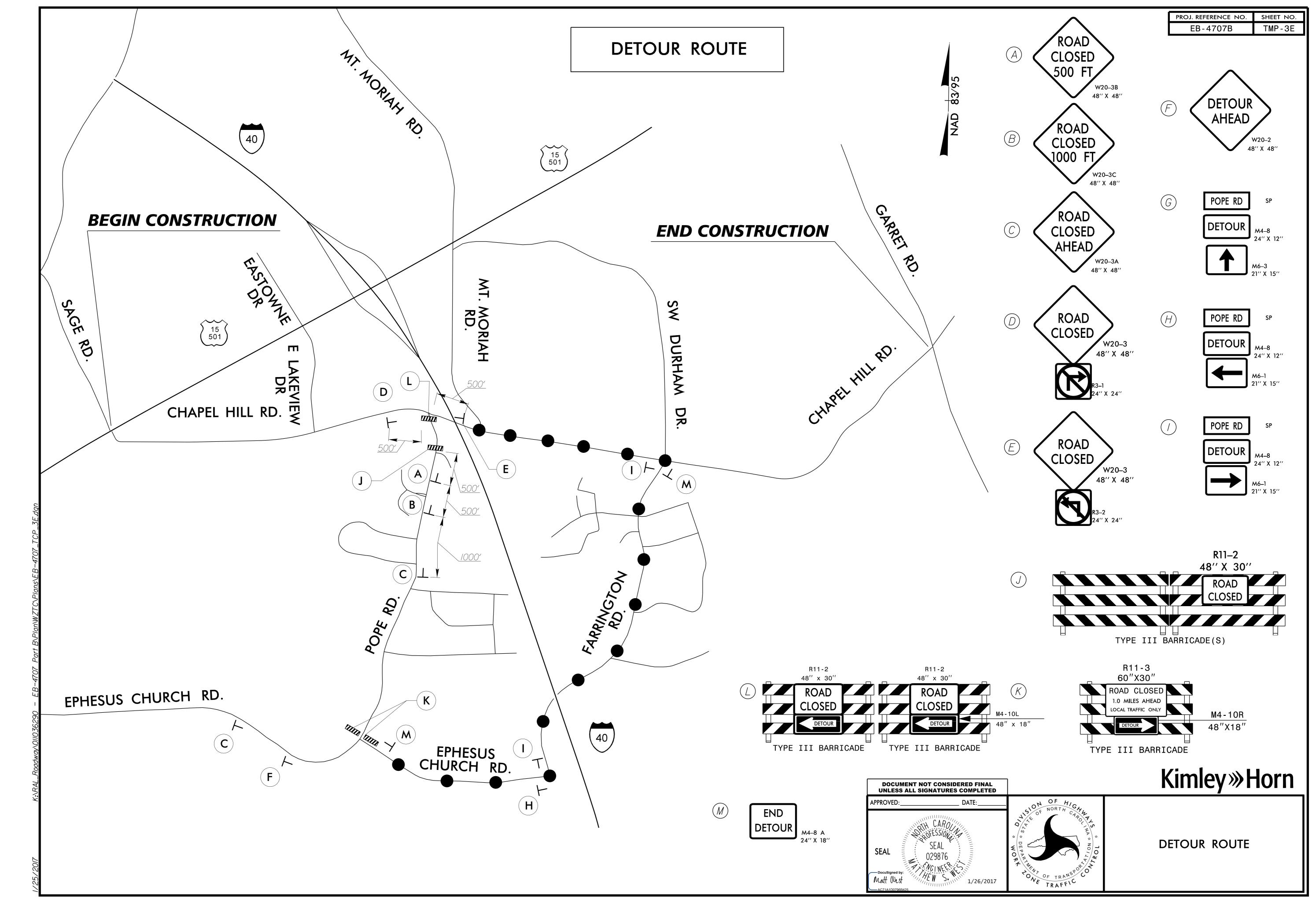
4. REVISE TEMPORARY DIKES AND DIVERT WATER INTO EAST BARREL OF NEW

5. REMOVE TEMPORARY PIPES AND CONSTRUCT REMAINING PORTION OF THE

**WEST BARREL OF THE NEW CULVERT.** 

TRAFFIC CONTROL

**CULVERT PHASING** 



DocuSign Envelope ID: B24CF841-7067-4F16-8A08-A14541113AF2

PROJ. REFERENCE NO. SHEET NO. EB-4707B TMP-3F

SIGN NUMBER: SD-1 BACKG COLOR: Fluorescent Orange COPY COLOR: **Black** TYPE: STATIONARY QUANTITY: SEE PLANS Υ WID HT SYMBOL SIGN WIDTH: 3'-0" **HEIGHT:** 1'-0" TOTAL AREA: 3.0 Sq.Ft. **BORDER TYPE: INSET** RECESS: 0.5" WIDTH: 0.5" RADII: 3"

NO. Z BARS: LENGTH: MAT'L: 0.080" (2.0 mm) ALUMINUM

USE NOTES: 1,2

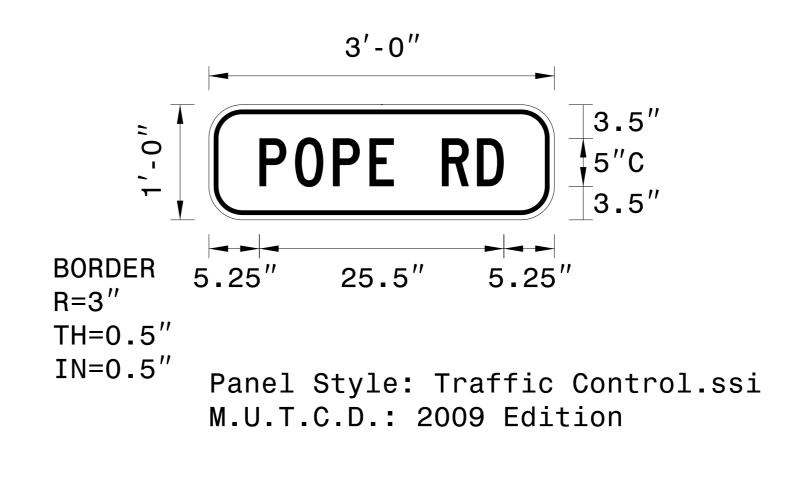
- Legend and border shall be direct applied black non-reflective sheeting.
- 2.Background shall be NC GRADE B fluoresent orange retroreflective sheeting.

DESIGN BY: D. SHINBARA CHECKED BY: M. WEST

PROJECT ID: EB-4707B

CHECKED BY: M. WEST

DATE: Jun 14, 2016

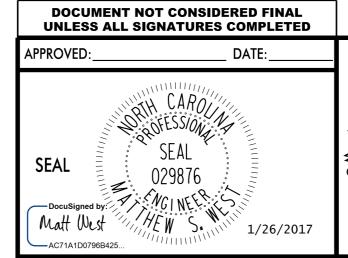


Spacing Factor is 1 unless specified otherwise

## LETTER POSITIONS

Letter spacings are to start of next letter												Text Lengt		
	Р	0	Р	E		R	D							C 200
5.3	3.7	4	3.8	2.5	5	3.7	2.8	5.3						25.5
			1											

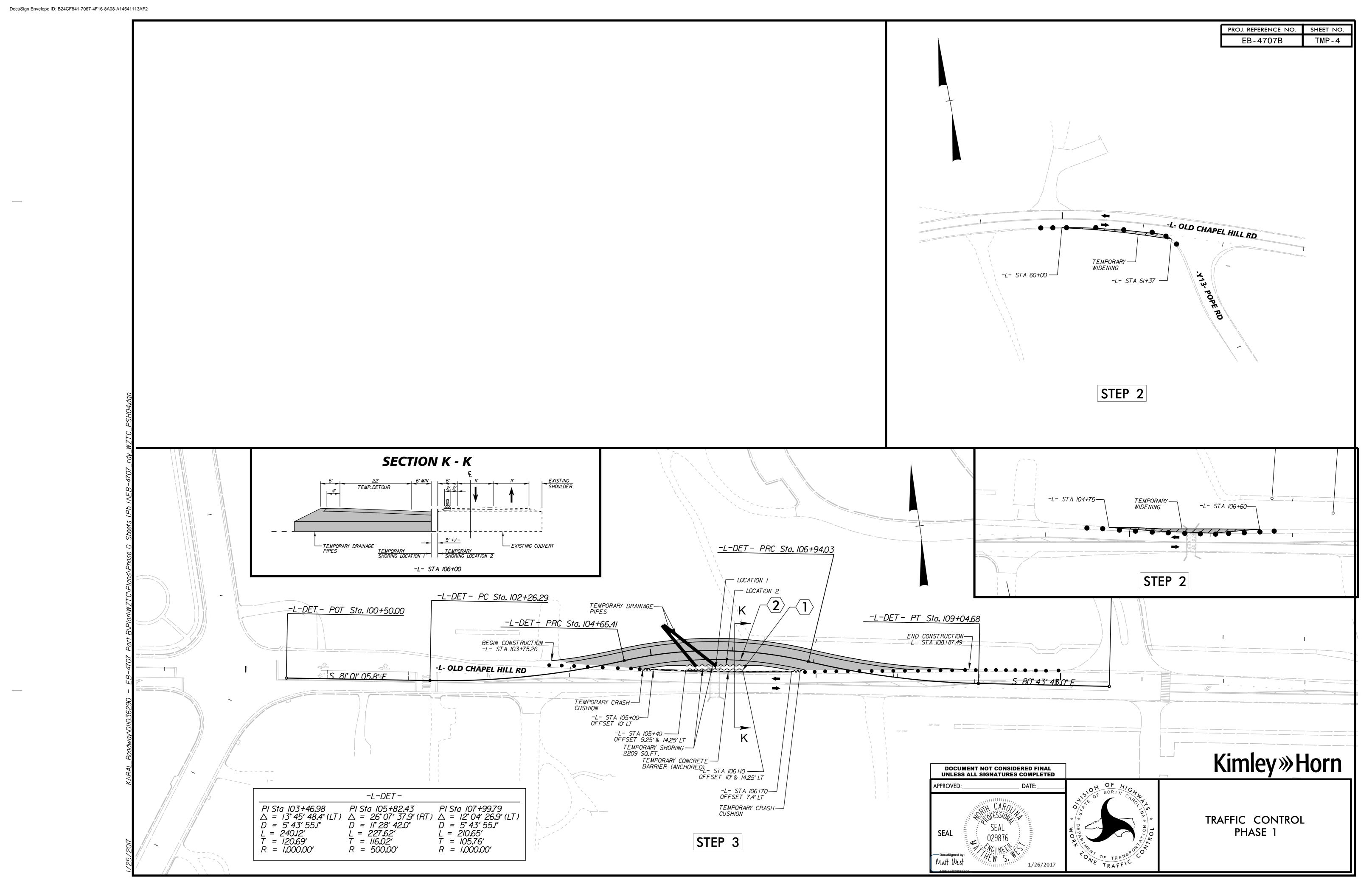
**Kimley** » Horn

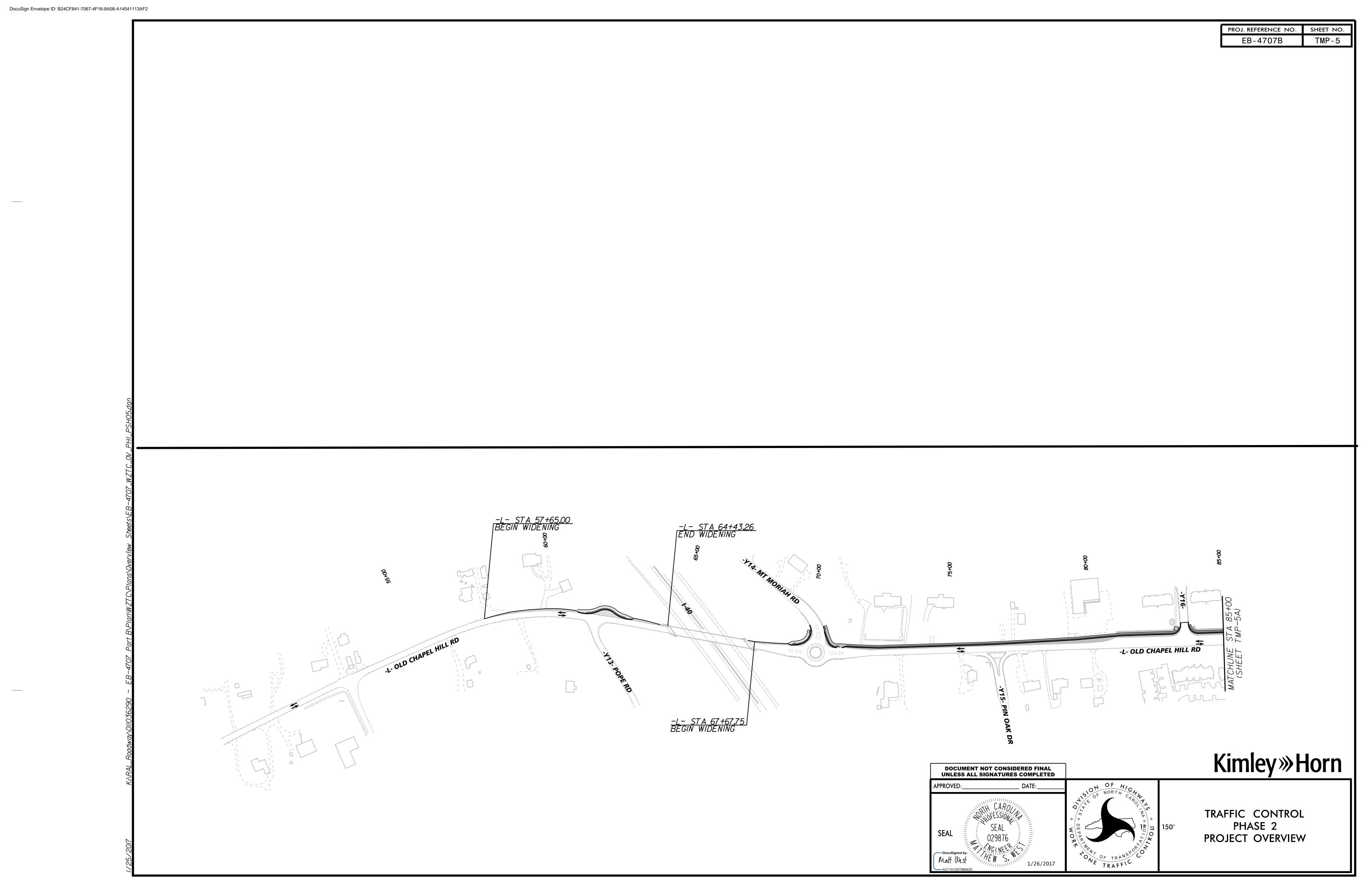


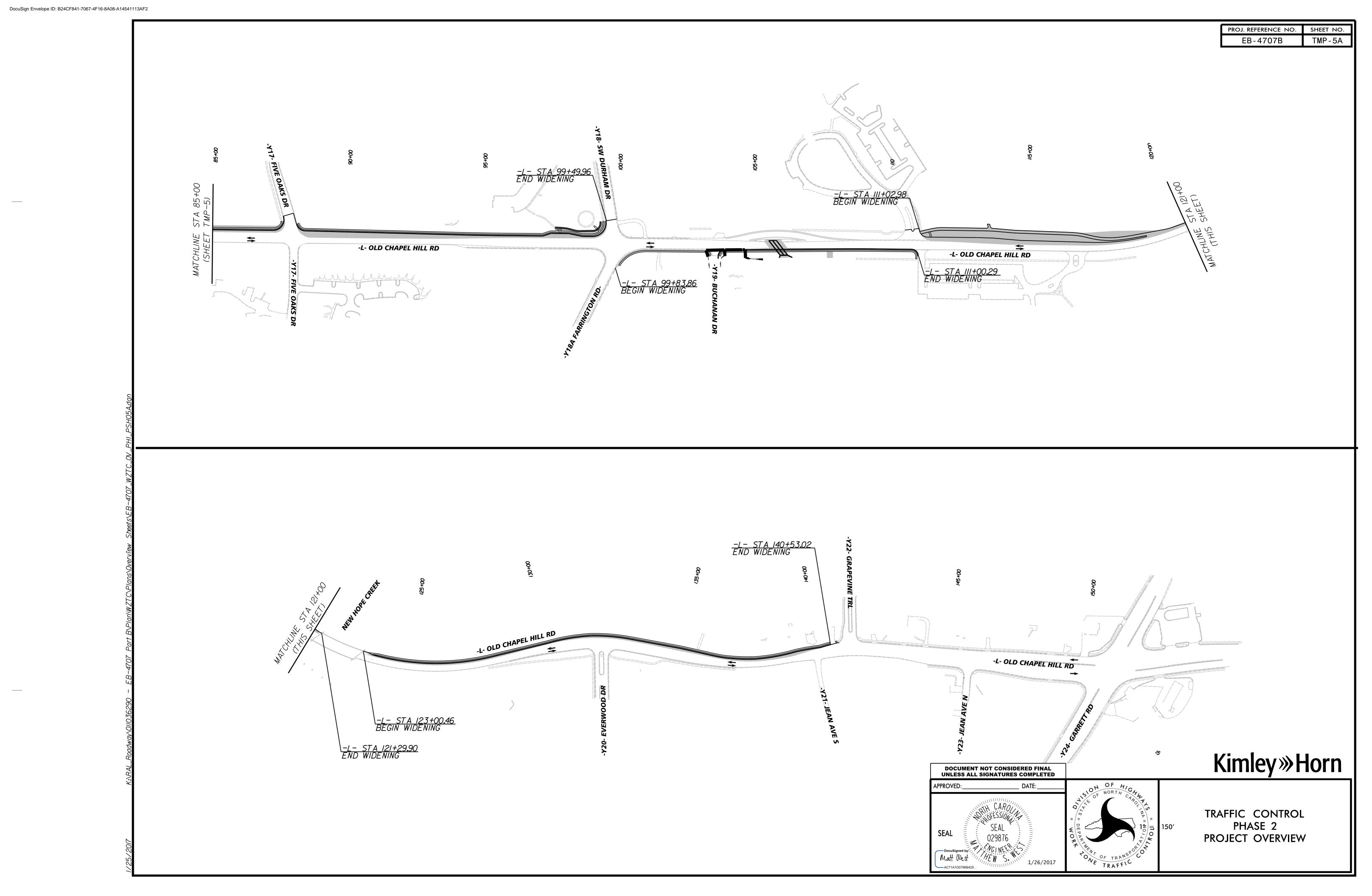


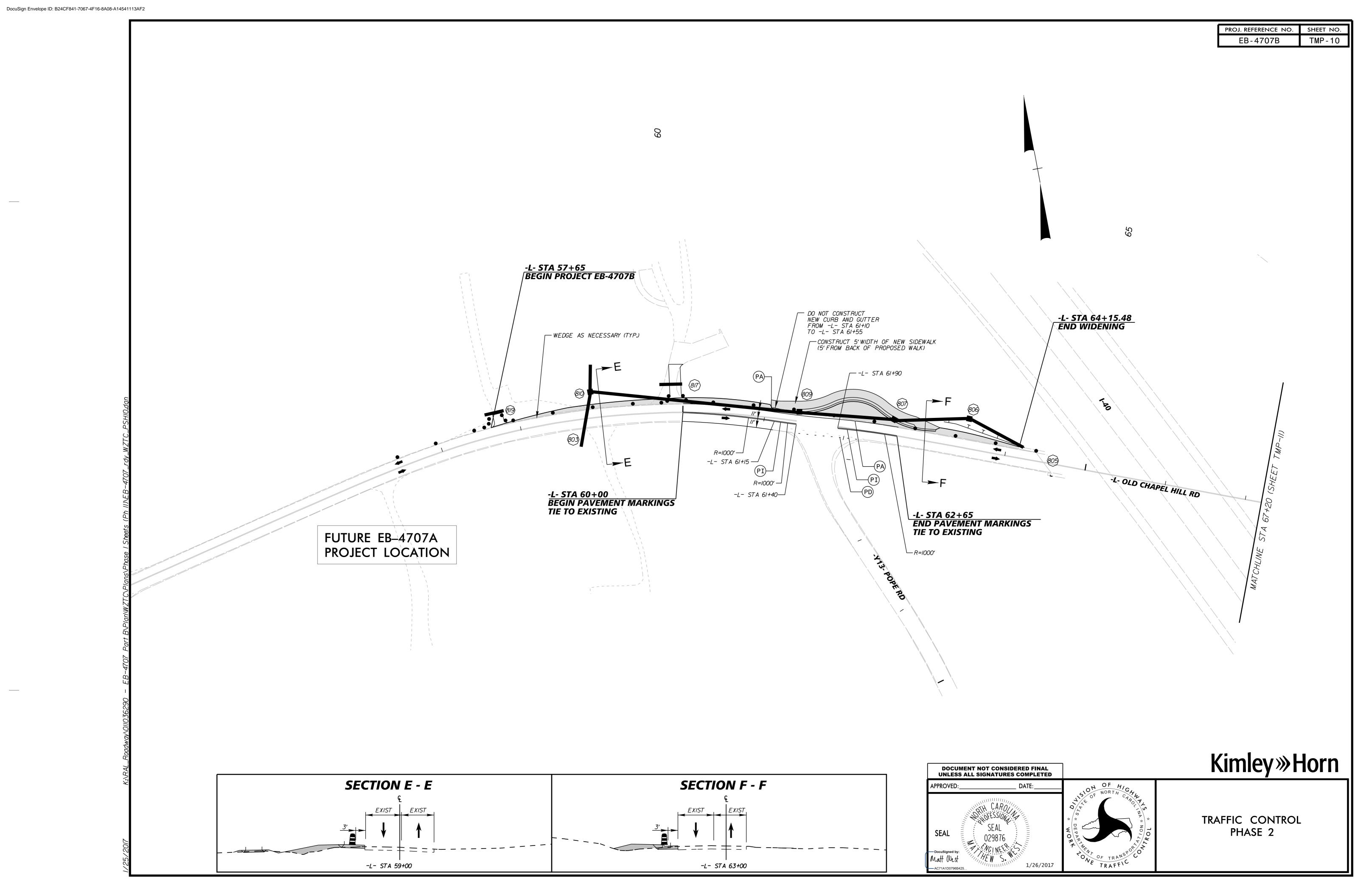
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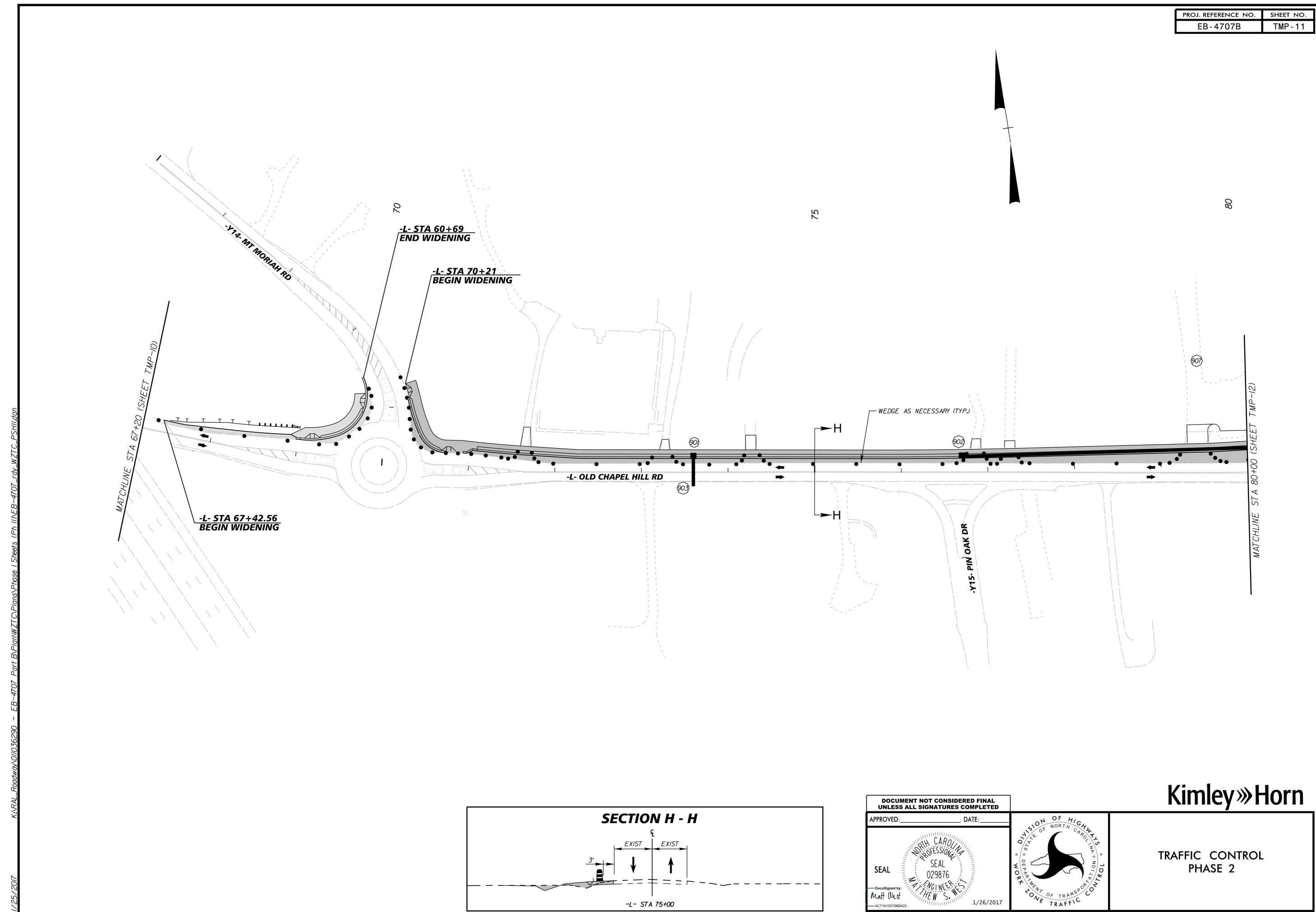
75/2017

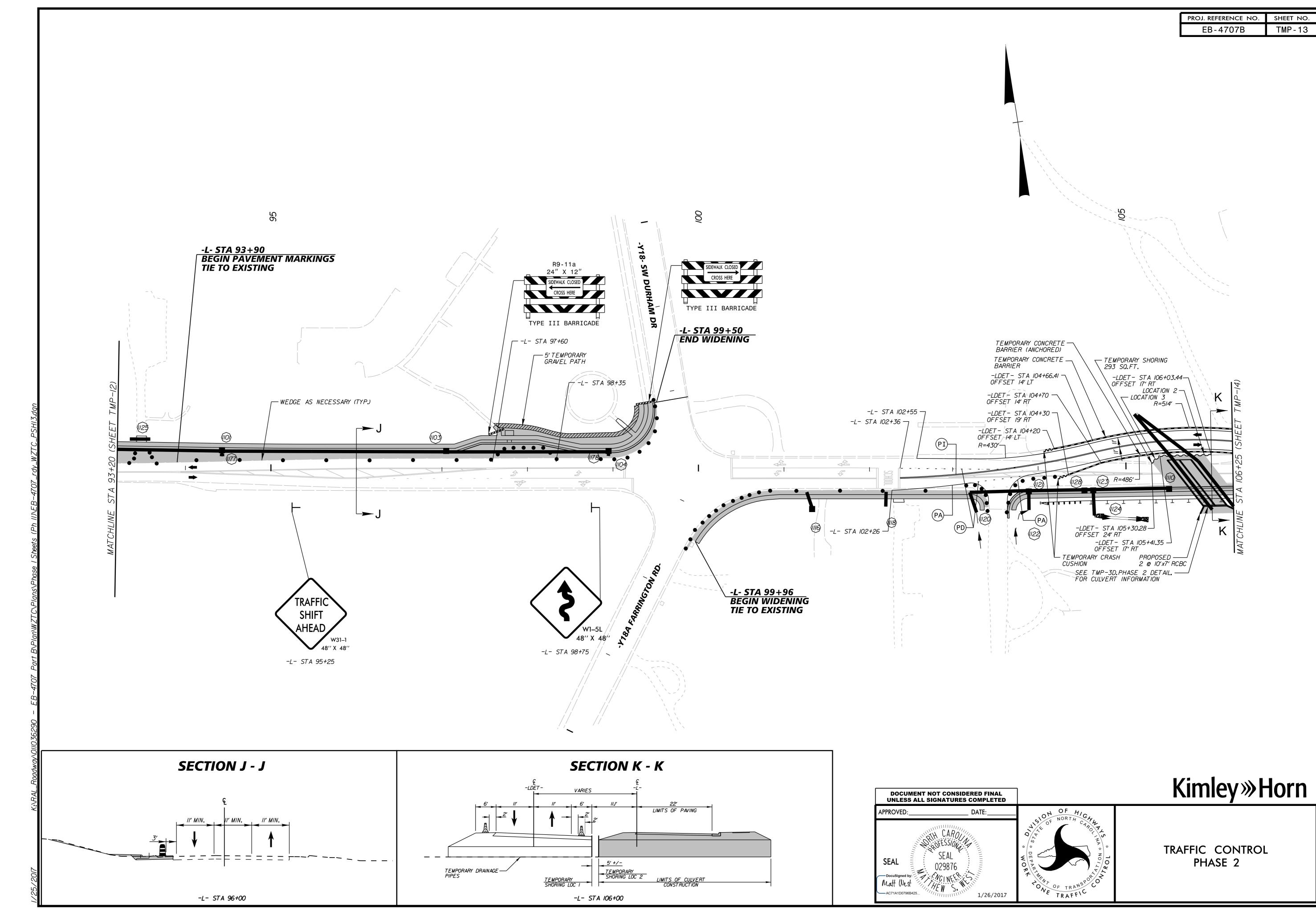


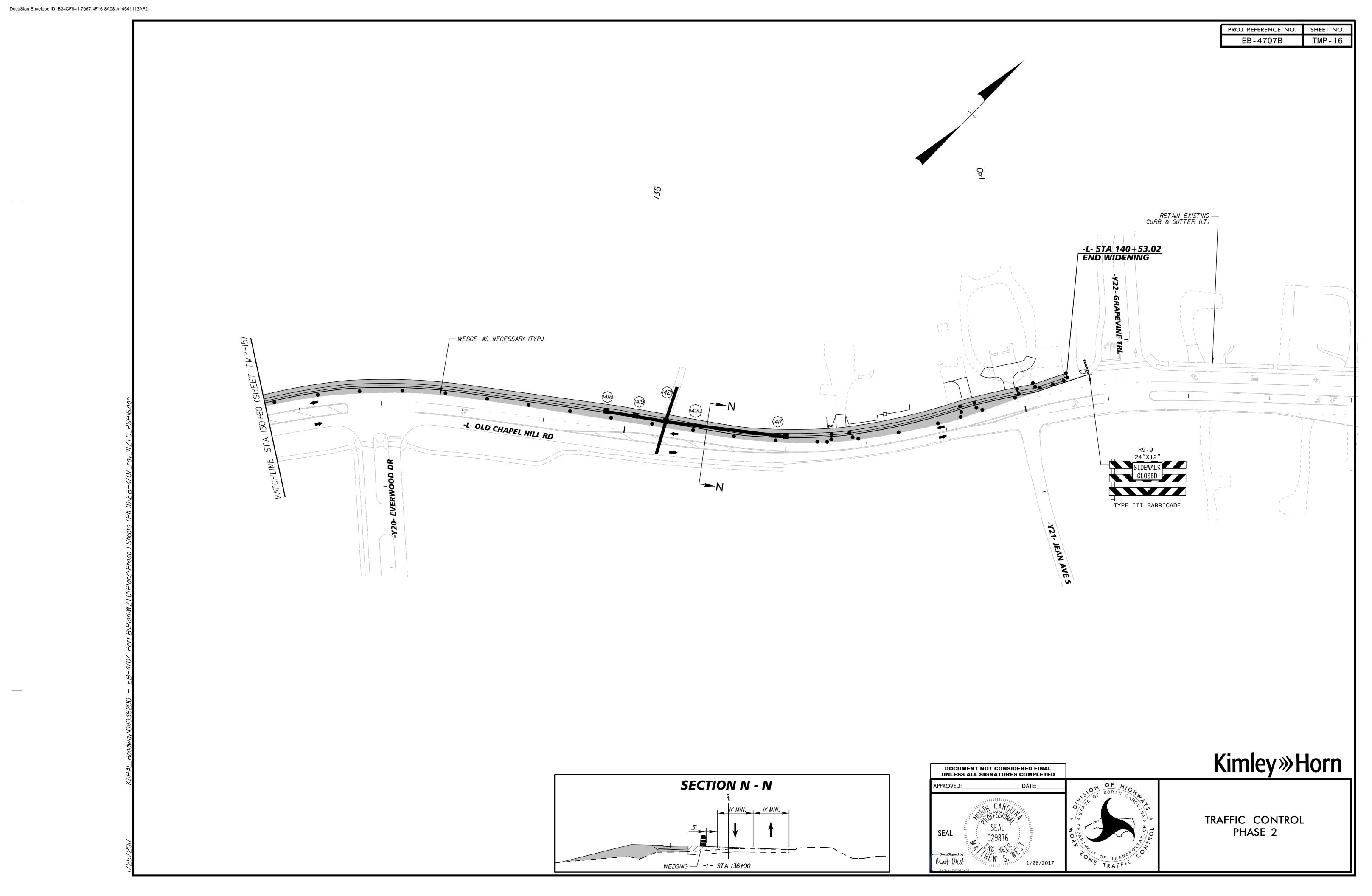


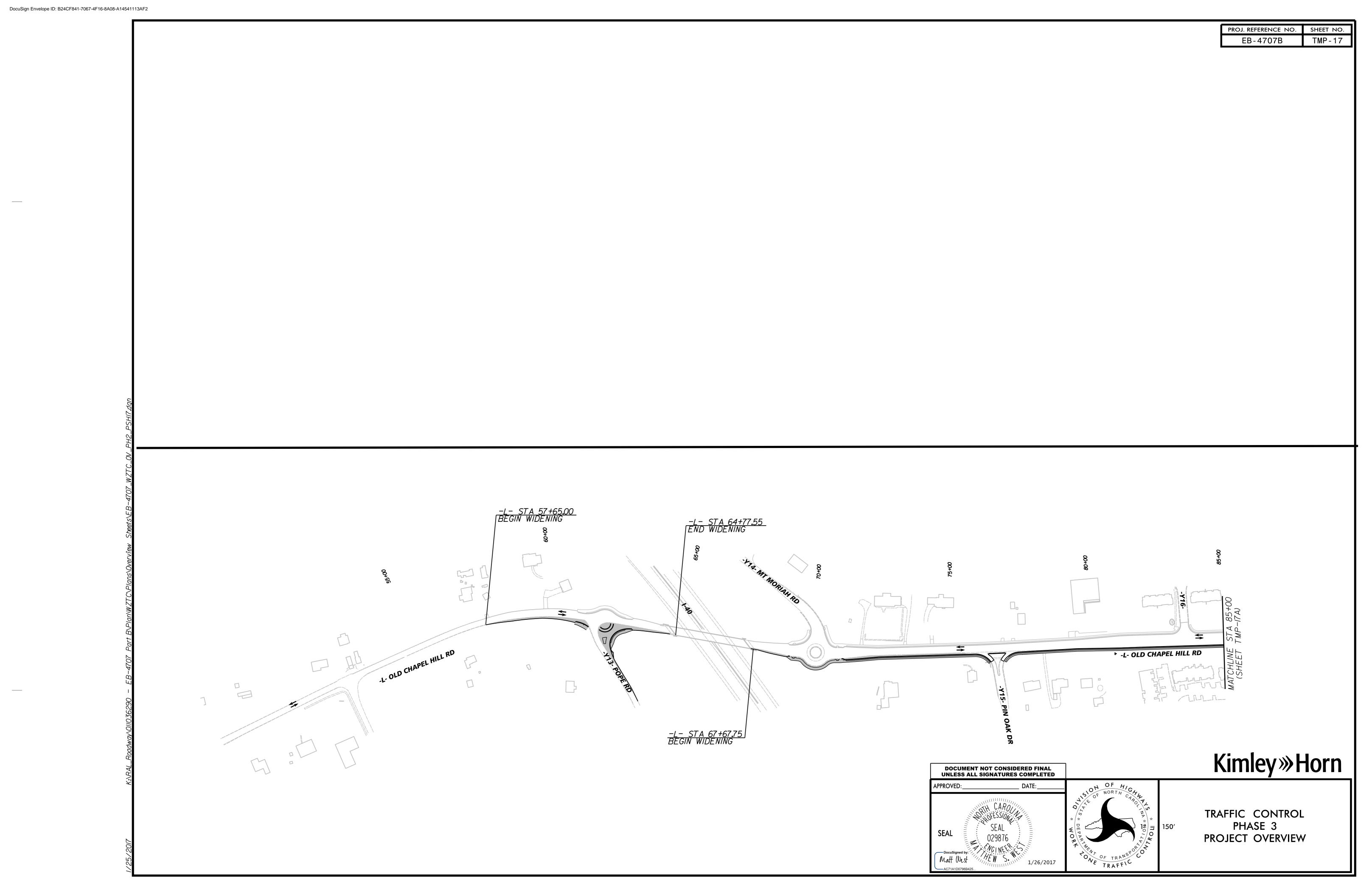


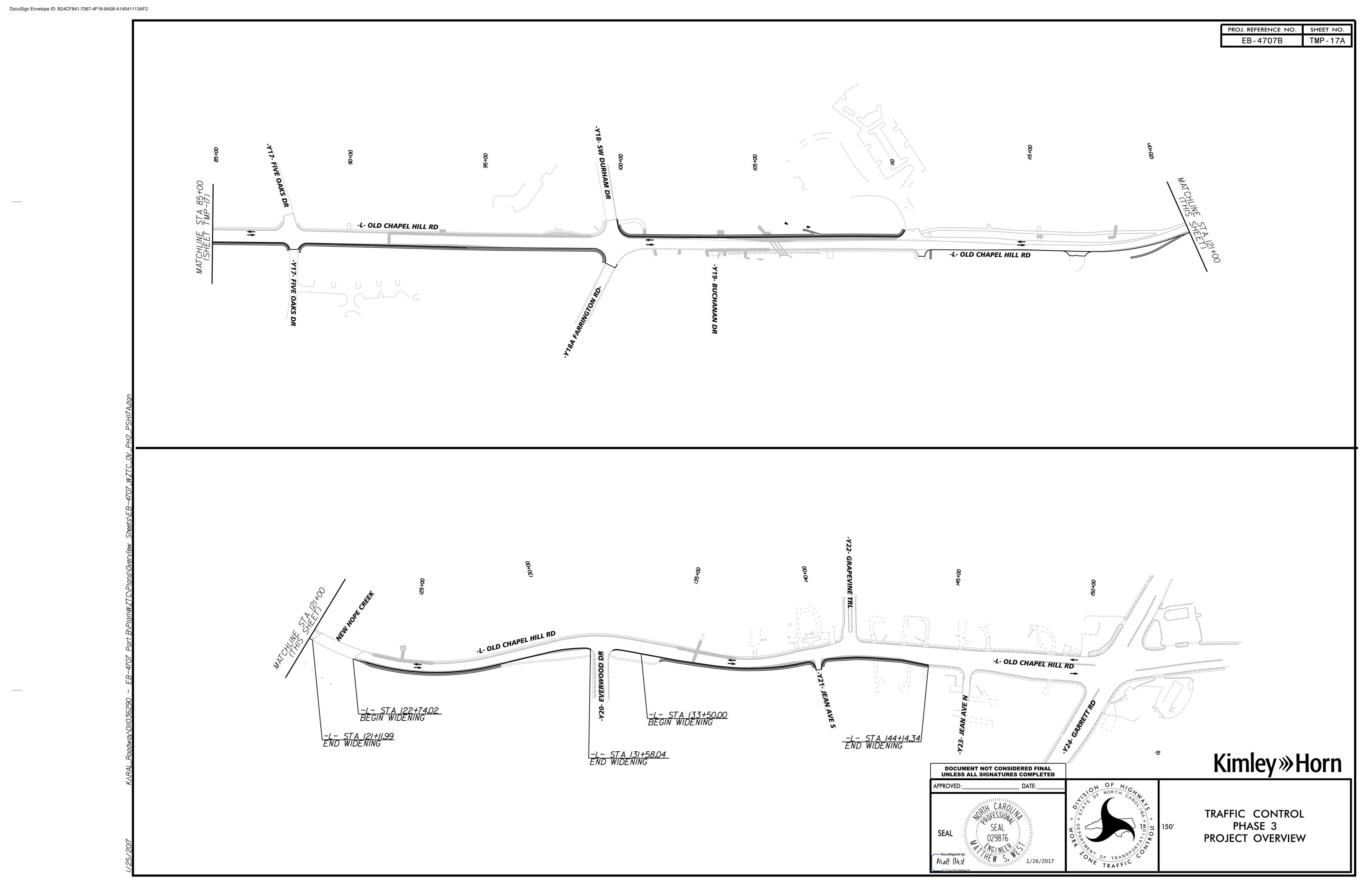


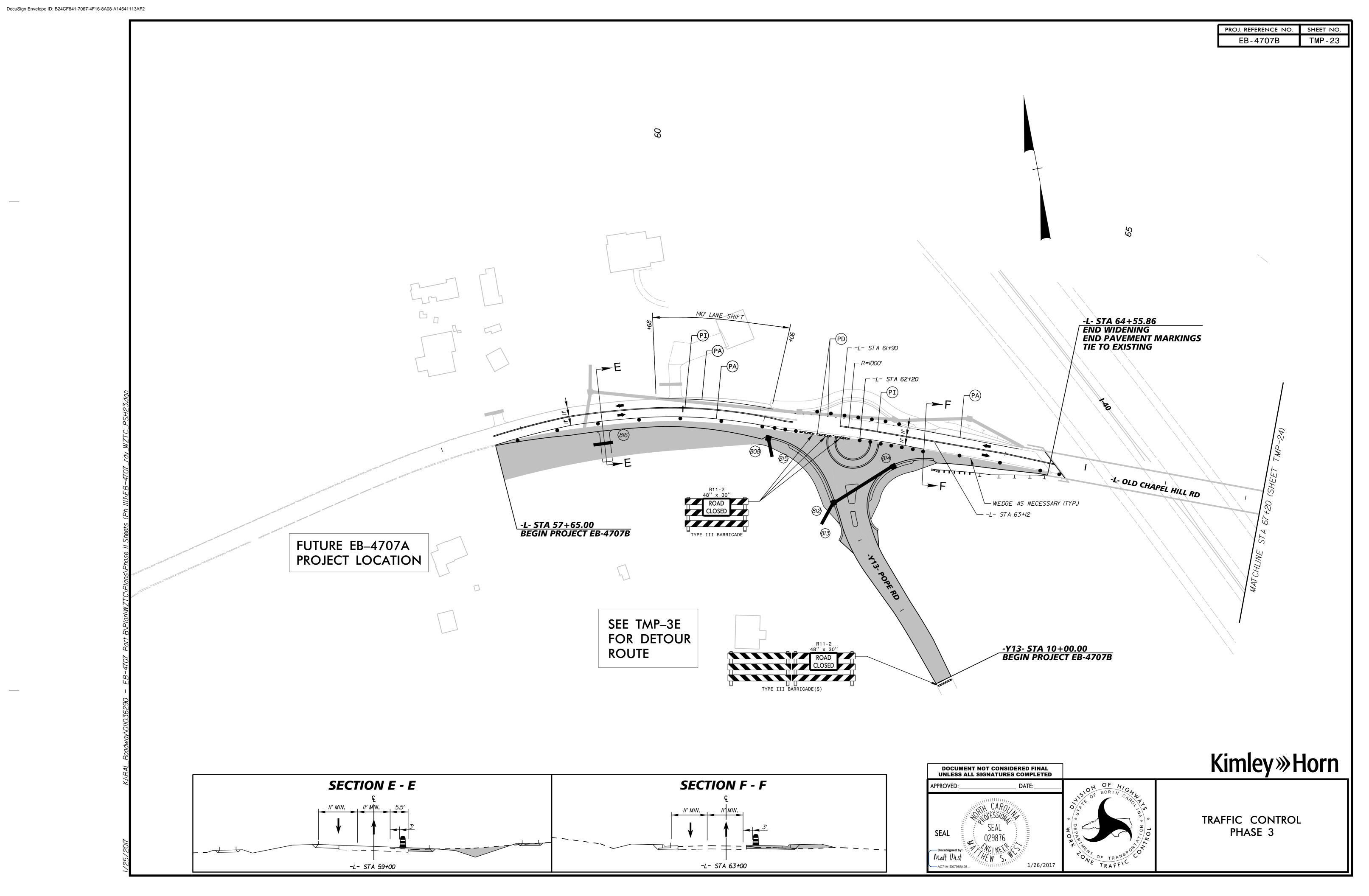




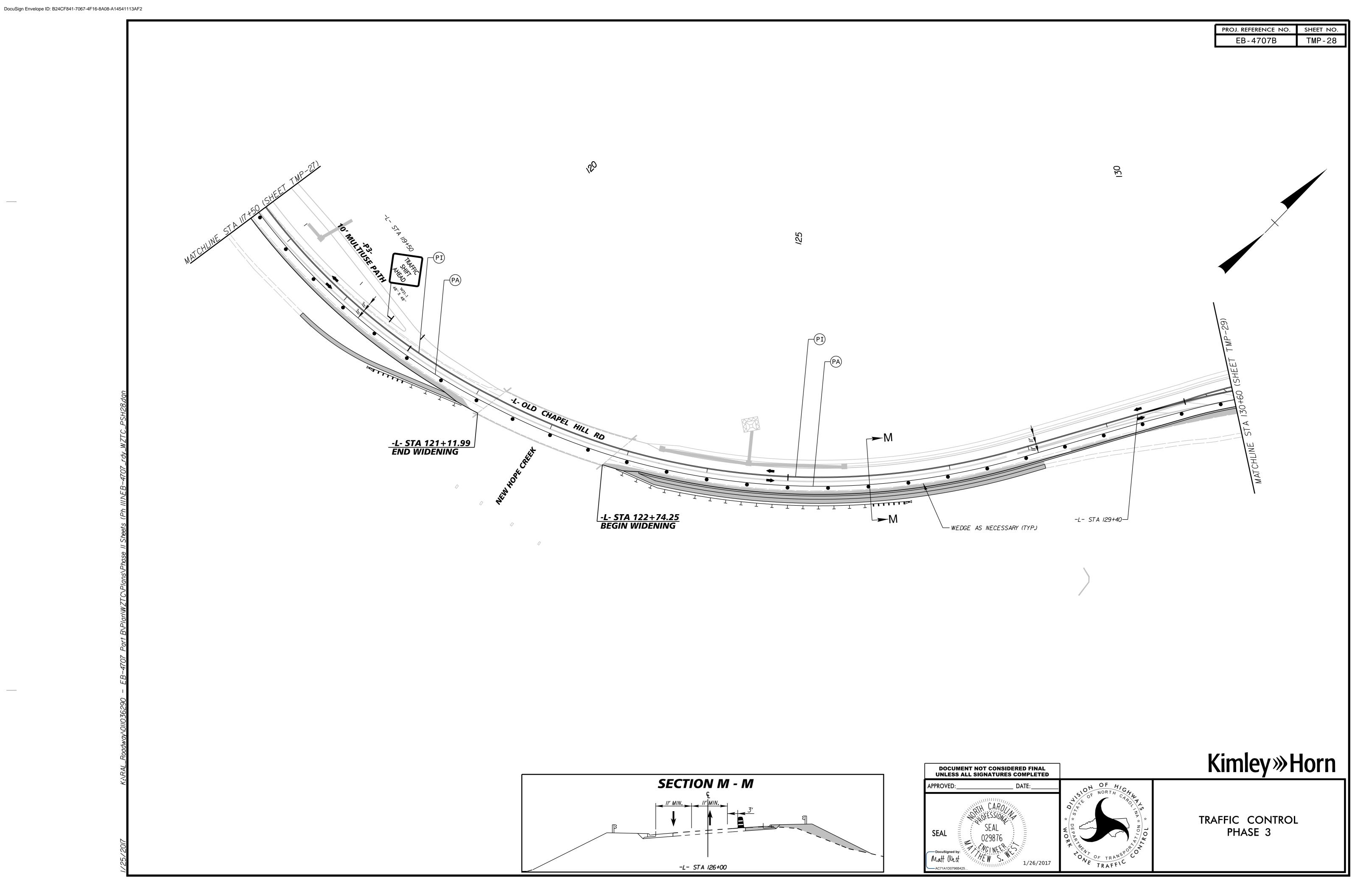








-L- STA 85+00



DocuSign Envelope ID: B24CF841-7067-4F16-8A08-A14541113AF2 PROJ. REFERENCE NO. SHEET NO. TMP-29 EB-4707B -L+ STA 140+95 \_ -L- STA 141+55 \_ -L- STA 140+25 -\_ -L- STA 131+60 \_ -L- STA 132+40 \_ -L- STA 138+25 \_ -L- STA 134+20 \_ -L- STA 135+20 \_\_ -L- STA 136+50 \_\_ -L- STA 139+25 **₹** (QA) -L- OLD CHAPEL HILL RD (409) (407) (408) (410) -L- STA 132+41.29 BEGIN WIDENING WEDGE AS NECESSARY (TYP.) -L- STA 131+58.04 END WIDENING **Kimley** »Horn DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED SECTION N - N TRAFFIC CONTROL PHASE 3 -L- STA 136+00