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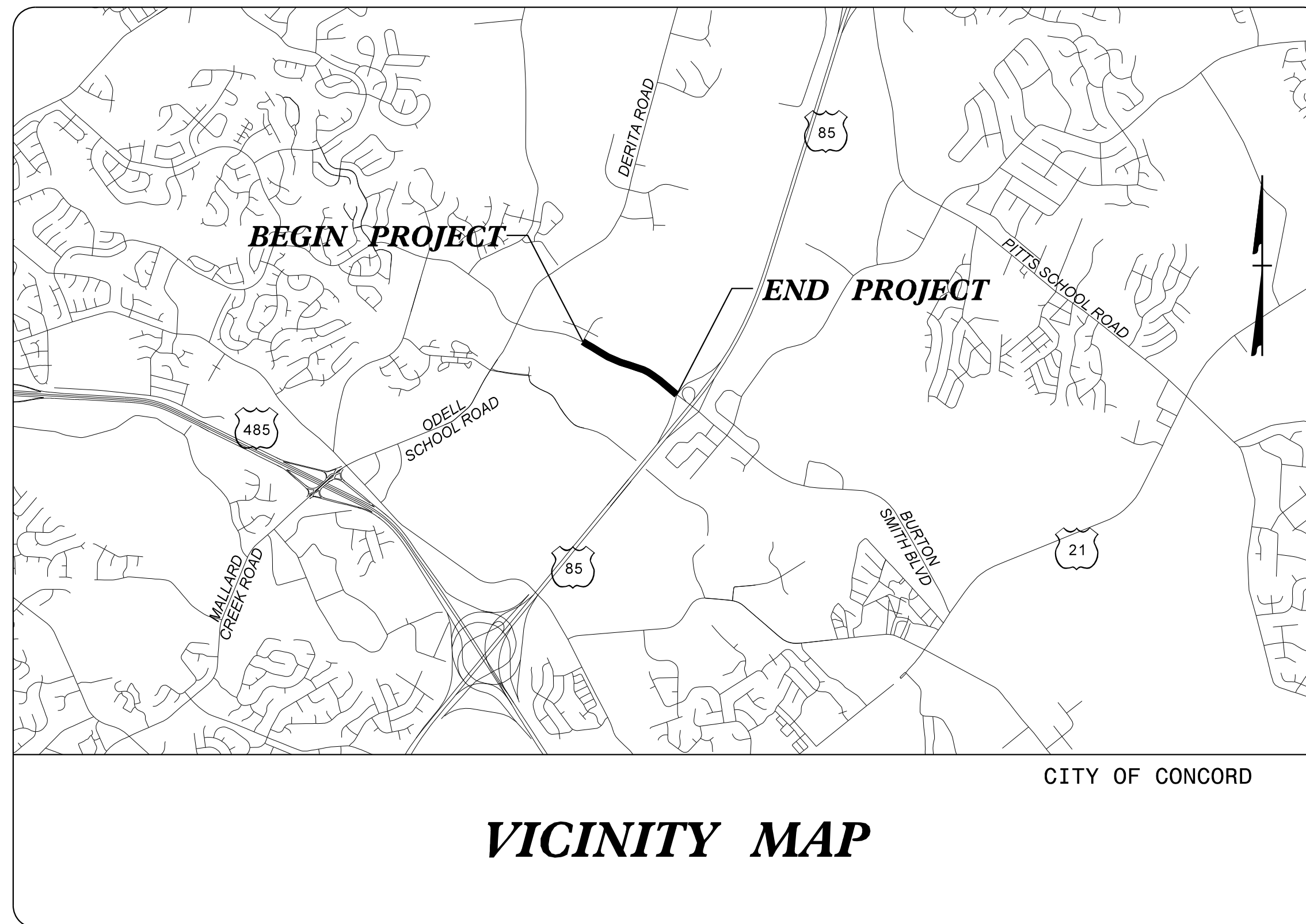
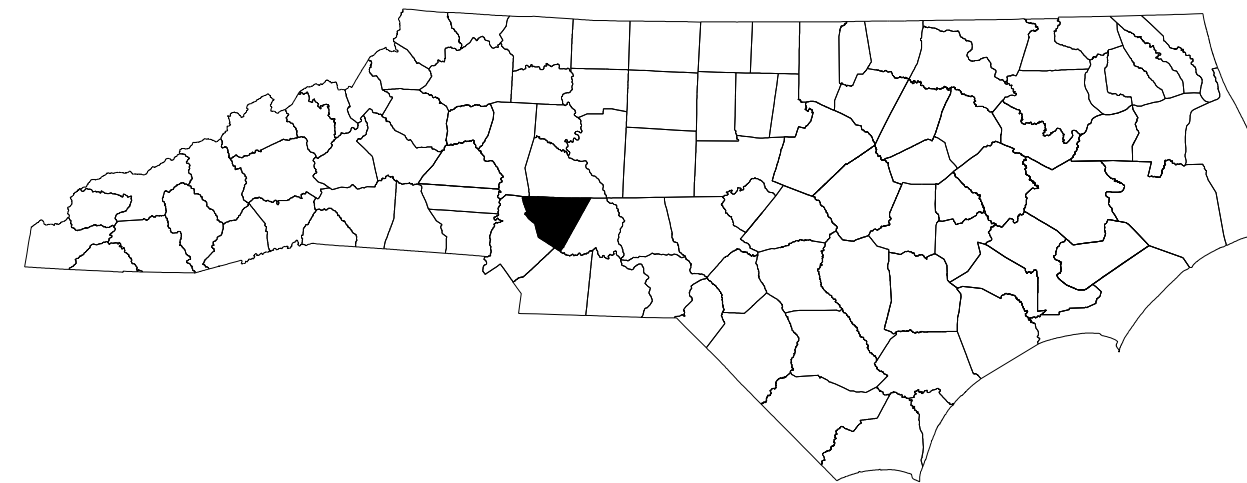
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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CABARRUS COUNTY



INDEX OF SHEETS

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|------------------|--|
| TMP-1 | TITLE SHEET, AND INDEX OF SHEETS |
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10/05/17 DATE SUBMITTED

SUBMITTAL:

STAGING CONCEPT

MIDPOINT

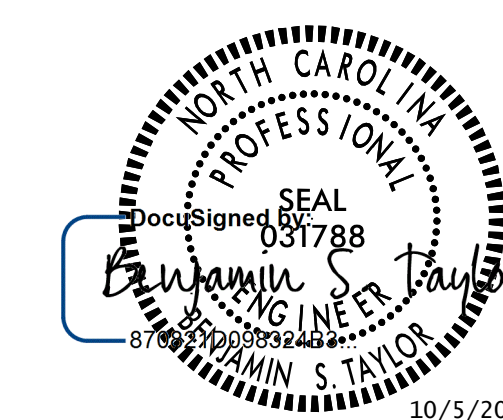
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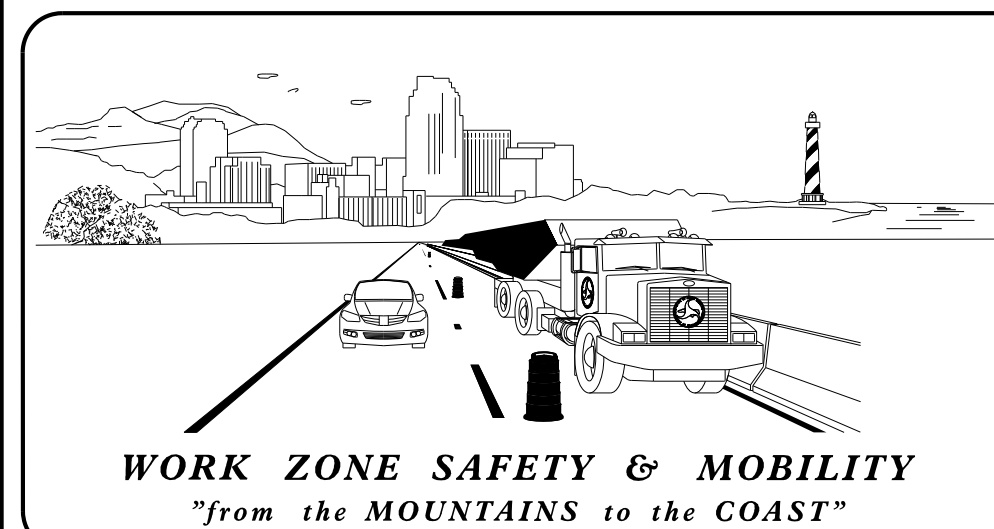
Kimley»Horn

BENJAMIN TAYLOR, P.E. TRAFFIC CONTROL PROJECT ENGINEER
DAVID SHINBARA, P.E. (VA) TRAFFIC CONTROL PROJECT DESIGN ENGINEER

APPROVED: _____
DATE: _____



SEAL



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

JOSEPH HUMMER, P.E. STATE TRAFFIC MANAGEMENT ENGINEER
DON PARKER, P.E. TRAFFIC CONTROL PROJECT ENGINEER
KEN THORNEWELL, P.E. TRAFFIC CONTROL PROJECT DESIGN ENGINEER



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. | TITLE |
|----------|---|
| 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 | DRUMS |
| 1135.01 | CONES |
| 1145.01 | BARRICADES |
| 1150.01 | FLAGGING DEVICES |
| 1160.01 | TEMPORARY CRASH CUSHION |
| 1165.01 | TRUCK MOUNTED IMPACT ATTENUATOR |
| 1170.01 | POSITIVE PROTECTION |
| 1180.01 | SKINNY-DRUM |
| 1205.01 | PAVEMENT MARKINGS - LINE TYPES & OFFSETS |
| 1205.02 | PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS |
| 1205.04 | PAVEMENT MARKINGS - INTERSECTIONS |
| 1205.05 | PAVEMENT MARKINGS - TURN LANES |
| 1205.06 | PAVEMENT MARKINGS - LANE DROPS |
| 1205.07 | PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS |
| 1205.08 | PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES |
| 1205.09 | PAVEMENT MARKINGS - PAINTED ISLANDS |
| 1205.10 | PAVEMENT MARKINGS - SCHOOL AREAS |
| 1205.11 | PAVEMENT MARKINGS - RAILROAD CROSSINGS |
| 1205.12 | PAVEMENT MARKINGS - BRIDGES |
| 1250.01 | PAVEMENT MARKER SPACING |
| 1251.01 | RAISED PAVEMENT MARKERS - (TEMPORARY & PERMANENT) |
| 1253.01 | SNOWPLOWABLE RAISED PAVEMENT MARKERS |
| 1261.01 | GUARDRAIL & BARRIER DELINEATOR SPACING |
| 1261.02 | GUARDRAIL & BARRIER DELINEATOR TYPES |
| 1262.01 | GUARDRAIL END DELINEATION |
| 1264.01 | OBJECT MARKERS |
| 1264.02 | PLACEMENT OF OBJECT MARKERS |
| 1267.01 | FLEXIBLE DELINEATOR INSTALLATION |
| 1267.02 | FLEXIBLE DELINEATOR SPACING |
| 1267.03 | FLEXIBLE DELINEATOR - INTERCHANGES |

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- REMOVAL

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM TUBULAR MARKER
- TEMPORARY CRASH CUSHION
- FLASHING ARROW PANEL (TYPE C)
- FLAGGER
- LAW ENFORCEMENT
- TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- CHANGEABLE MESSAGE SIGN

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

- EXISTING
- PROPOSED
- TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

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
- PF - PAINT (4" YELLOW, 2X) 4" X 10' SKIP
- PG - PAINT (4" YELLOW, 2X) 4" X 2' MINISKIP
- PH - PAINT (4" YELLOW, 2X) SINGLE CENTER LINE
- PI - PAINT (4" YELLOW, 2X) DOUBLE CENTER LINE
- PR - PAINT (8" WHITE, 2X) GORELINE
- PS - PAINT (8" WHITE, 2X) DIAGONAL
- PV - PAINT (8" YELLOW, 2X) DIAGONAL
- PX - PAINT (8" WHITE, 2X) CROSSWALK
- P2 - PAINT (24" WHITE, 2X) STOP BAR

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 STRAIGHT, RIGHT, & LEFT TURN ARROW)
- QI - PAINT 2X (ALPHANUMERIC CHARACTER)

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10/5/2017

Kimley»Horn

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| APPROVED: _____ DATE: _____ | | | <h2>ROADWAY STANDARD DRAWINGS & LEGEND</h2> |
| | | | |

MANAGEMENT STRATEGIES

PROPOSED IMPROVEMENTS ALONG CONCORD MILLS BOULEVARD AND ALL OTHER SIDE STREETS WILL BE CONSTRUCTED WHILE MAINTAINING TRAFFIC AND USING TEMPORARY TRAFFIC PATTERNS, TEMPORARY LANE CLOSURES, TRAFFIC STOPS, AND TEMPORARY ROAD CLOSURES WITH OFFSITE DETPOURS FOR SPECIFIC CONSTRUCTION ITEMS.

PROPOSED CONCORD MILLS FLYOVER, BRIDGE, AND MSE WALLS WILL BE CONSTRUCTED AWAY FROM TRAFFIC AND BEHIND BARRIER. BRIDGE CONSTRUCTION WILL REQUIRE A TEMPORARY CLOSURE OF CONCORD MILLS DRIVEWAY 2, MAINTAINING ACCESS USING DRIVEWAY 1. COMPLETE THE WORK FOR THE BRIDGE BETWEEN JANUARY 2 AND THE FOLLOWING OCTOBER 31.

GENERAL NOTES

CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL 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.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

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

| <u>ROAD NAME</u> | <u>DAY AND TIME RESTRICTIONS</u> |
|---|--|
| CONCORD MILLS BOULEVARD BRUTON SMITH BOULEVARD I-85 RAMP DRIVEWAYS | MONDAY THRU THURSDAY 6:00 AM TO 7:00 PM FRIDAY 6:00 AM TO 10:00 PM SATURDAY 10:00 AM TO 10:00 PM SUNDAY 10:00 AM TO 10:00 PM |

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

| <u>ROAD NAME</u> |
|---|
| CONCORD MILLS BOULEVARD BRUTON SMITH BOULEVARD I-85 RAMP DRIVEWAYS |

TIME RESTRICTIONS (CONT.)

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 AM DECEMBER 31st TO 7:00 PM JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 7:00 PM THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 AM THURSDAY AND 7:00 PM MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY TO 7:00 PM TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 AM THE DAY BEFORE INDEPENDENCE DAY AND 7:00 PM THE DAY AFTER INDEPENDENCE DAY.

IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 AM THE THURSDAY BEFORE INDEPENDENCE DAY AND 7:00 PM THE TUESDAY AFTER INDEPENDENCE DAY.

- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 AM FRIDAY AND 7:00 PM TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 AM TUESDAY TO 7:00 PM MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 AM THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 8:00 PM THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
- FOR ANY RACE EVENTS AT CHARLOTTE MOTOR SPEEDWAY, ZMAX DRAGWAY, OR THE DIRT TRACK FROM 6:00 AM THE WEDNESDAY BEFORE THE FIRST TRACK EVENT TO 7:00 PM THE DAY AFTER THE LAST TRACK EVENT.
- FOR THE CHARLOTTE AUTO FAIR, BETWEEN THE HOURS OF 6:00 AM THE WEDNESDAY OF THE WEEK OF THE FAIR UNTIL 6:00 AM THE FOLLOWING MONDAY AFTER THE FAIR.
- FOR THE COCA-COLA 600 RACE EVENT, THE CONTRACTOR SHALL SUSPEND ALL WORK OPERATIONS BY 12:00 AM THE SATURDAY TWO WEEKS BEFORE THE DAY OF THE EVENT AND RESUME WORK OPERATIONS AT 6:00 AM THE FOLLOWING TUESDAY AFTER THE EVENT.
- FOR THE BANK OF AMERICA 500 RACE EVENT, THE CONTRACTOR SHALL SUSPEND ALL WORK OPERATIONS BY 12:00 AM THE SATURDAY ONE WEEK BEFORE THE DAY OF THE EVENT AND RESUME WORK OPERATIONS AT 6:00 AM THE FOLLOWING MONDAY AFTER THE EVENT.

C) DO NOT STOP TRAFFIC AS FOLLOWS:

| <u>ROAD NAME</u> | <u>DAY AND TIME RESTRICTIONS</u> | <u>DURATION AND OPERATION</u> |
|---|---|---|
| CONCORD MILLS BOULEVARD BRUTON SMITH BOULEVARD | MONDAY THRU SUNDAY 4:00 AM TO 12:00 AM | 20 MINUTES OVERHEAD SIGN INSTALLATION |

TIME RESTRICTIONS (CONT.)

D) DO NOT CLOSE ROADS AS FOLLOWS:

| <u>ROAD NAME</u> | <u>DAY AND TIME RESTRICTIONS</u> | <u>OPERATION</u> |
|----------------------------------|--|---------------------------------|
| CONCORD MILLS BLVD EB | MONDAY THRU THURSDAY 5:00 AM TO 12:00 AM AND FRIDAY 5:00 AM TO MONDAY 12:00 AM | OVERHEAD GIRDER INSTALLATION |
| EXIT 49 I-85 RAMP SB OFF RAMP | MONDAY THRU SUNDAY 4:00 AM TO 12:00 AM | OVERHEAD SIGN INSTALLATION |

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

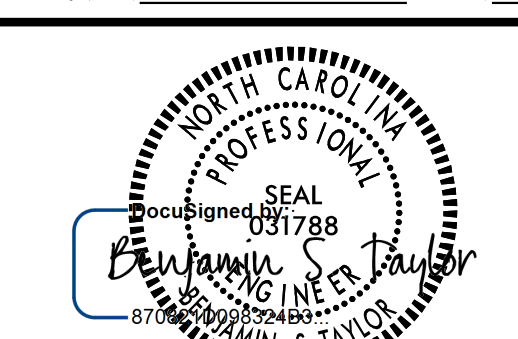
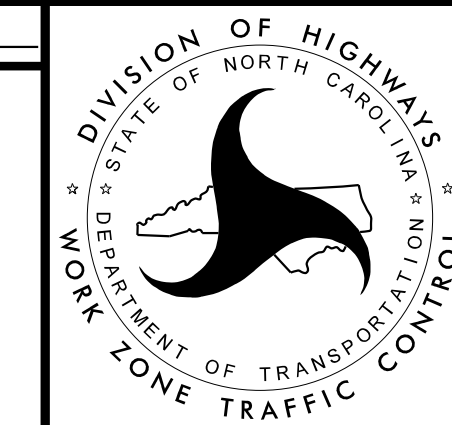
| <u>ROAD NAME</u> | <u>DAY AND TIME RESTRICTIONS</u> |
|----------------------------|--|
| CONCORD MILLS BOULEVARD | MONDAY THRU THURSDAY 6:00 AM TO 7:00 PM FRIDAY 6:00 AM TO 10:00 PM SATURDAY 10:00 AM TO 10:00 PM SUNDAY 10:00 AM TO 10:00 PM |

LANE AND SHOULDER CLOSURE REQUIREMENTS

- 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.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN 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 OR A LANE CLOSURE IS INSTALLED.
- 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.
- 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 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- 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. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.

- 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.

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| 10/5/2017 | | | <h2 style="margin: 0;">TRANSPORTATION OPERATIONS PLAN</h2> |

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GENERAL NOTES (CONT.)

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 DEPARTMENT.

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) PROVIDE SIGNING REQUIRED FOR THE OFF-SITE DETOUR ROUTES AS SHOWN IN THE TRAFFIC CONTROL PLANS.

Q) COVER OR REMOVE ALL SIGNS REQUIRED FOR THE OFF-SITE DETOUR WHEN THE DETOUR IS NOT IN OPERATION.

R) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

S) 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.

TRAFFIC BARRIER

T) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE 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 CLOSED UNTIL THE TEMPORARY BARRIER CAN BE PLACED OR AFTER THE TEMPORARY BARRIER IS REMOVED.

U) 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:

| POSTED SPEED LIMIT | MINIMUM OFFSET |
|--------------------|----------------|
| 40 OR LESS | 15 FT |
| 45 - 50 | 20 FT |
| 55 | 25 FT |
| 60 MPH or HIGHER | 30 FT |

TRAFFIC CONTROL DEVICES

V) 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 ALLOWED, REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.

W) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.

X) 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

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

| ROAD NAME | MARKING | MARKER |
|-----------|--------------------------------|------------------|
| ALL ROADS | PAINT | TEMPORARY RAISED |
| STRUCTURE | COLD APPLIED PLASTIC TYPE (IV) | |

Z) 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.

AA) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.

BB) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

CC) 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.

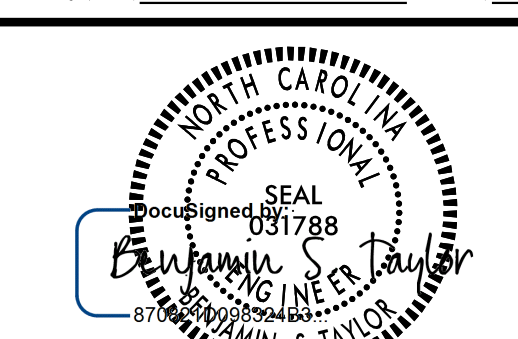
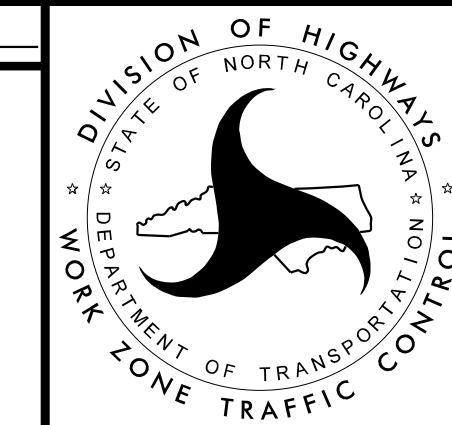
MISCELLANEOUS

DD) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS, AS DIRECTED BY THE ENGINEER.

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10/5/2017

Kimley»Horn

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| APPROVED: _____ | DATE: _____ |  |  |
| TRANSPORTATION OPERATIONS PLAN | | | |

CONSTRUCTION PHASING

PHASE 1

STEP 1:
INSTALL ADVANCE WARNING SIGNS AS SHOWN ON RSD 1101.01

STEP 2:
WHILE MAINTAINING TRAFFIC USING TEMPORARY LANE CLOSURES IN ACCORDANCE WITH RSD 1101.02 SHEETS 1 AND 3 OF 15 AND PROJECT TIME RESTRICTIONS, INSTALL TRAFFIC CONTROL DEVICES AND PERFORM THE FOLLOWING ALONG -L- CONCORD MILLS BOULEVARD, -DRW01-, -DRW02-, -DRW03-, -DRW04-, AND -DRW05- AS SHOWN ON SHEETS TMP-3 THRU TMP-5:

-OUTSIDE WIDENING UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE

-PAVED SHOULDER, GUARDRAIL, CURB AND GUTTER, AND ASSOCIATED DRAINAGE INSTALLATION

-INSTALL TEMPORARY SIGNALS AT -L- CONCORD MILLS BOULEVARD/-DRW01- AND -L- CONCORD MILLS BOULEVARD/-DRW02-, COVER SIGNAL HEADS AND DO NOT ACTIVATE (REFER TO SIGNAL PLANS)

PHASE 2

STEP 1:
WHILE MAINTAINING TRAFFIC USING TEMPORARY LANE CLOSURES IN ACCORDANCE WITH RSD 1101.02 SHEETS 1 AND 3 OF 15 AND PROJECT TIME RESTRICTIONS, PERFORM THE FOLLOWING ALONG -L- CONCORD MILLS BOULEVARD AS SHOWN ON SHEETS TMP-6 THRU TMP-7:

-REMOVE EXISTING CONFLICTING MARKINGS AND INSTALL TEMPORARY MARKINGS (PAINT)

-ACTIVATE TEMPORARY SIGNALS, PLACE TRAFFIC ONTO NEW PATTERN AND INSTALL TRAFFIC CONTROL DEVICES

STEP 2:
-CONSTRUCT PROPOSED MEDIANS AND ASSOCIATED DRAINAGE

-INSTALL TEMPORARY SIGNAL AT -L- CONCORD MILLS BOULEVARD AND I-85 RAMP. COVER SIGNAL HEADS AND DO NOT ACTIVATE

PHASE 3

COMPLETE THE WORK OF PHASE 3, STEPS 1 THRU 8 BETWEEN JANUARY 2 AND OCTOBER 31 OF THE SAME YEAR (SEE INTERMEDIATE CONTRACT TIMES AND LIQUIDATED DAMAGES)

WHILE MAINTAINING TRAFFIC USING TEMPORARY LANE CLOSURES IN ACCORDANCE WITH RSD 1101.02 SHEETS 1 AND 3 OF 15 AND PROJECT TIME RESTRICTIONS, INSTALL TRAFFIC CONTROL DEVICES AND PERFORM THE FOLLOWING ALONG -L- CONCORD MILLS BOULEVARD, -DRW02-, AND -DRW06- AS SHOWN ON SHEETS TMP-8 THRU TMP-10:

STEP 1:
-TEMPORARILY CLOSE -DRW02- AND INSTALL CHAIN LINK FENCE AROUND STAGING AREA AS SHOWN ON SHEET TMP-9.

-REMOVE EXISTING CONFLICTING MARKINGS AND INSTALL TEMPORARY MARKINGS (PAINT)

-MODIFY AND ACTIVATE TEMPORARY SIGNALS (REFER TO SIGNAL PLANS)

-PLACE TRAFFIC ONTO NEW PATTERN AND INSTALL TRAFFIC CONTROL DEVICES

STEP 2:
INSTALL PORTABLE CONCRETE BARRIER AND TEMPORARY CRASH CUSHIONS

NOTE: PHASE 3, STEPS 3 THRU 7 MAY BE PERFORMED CONCURRENTLY

STEP 3:
AWAY FROM TRAFFIC, BEGIN BRIDGE CONSTRUCTION, MSE WALL, AND MEDIAN WORK AS SHOWN ON SHEET TMP-9 (REFER TO STRUCTURE PLANS)

COMPLETE THE WORK OF PHASE 3, STEP 4 ASSOCIATED WITH THE TEMPORARY PARTIAL PARKING LOT CLOSURE SOUTH OF -DRW06- FROM STA 22+00 TO 27+00 WITHIN 30 CONSECUTIVE CALENDAR DAYS (SEE INTERMEDIATE CONTRACT TIMES AND LIQUIDATED DAMAGES)

STEP 4:
CLOSE THE RIGHT EAST BOUND LANE OF -DRW06- AND THE PARKING AREA SOUTH OF -DRW06- AS SHOWN ON TMP-9

AWAY FROM TRAFFIC, PERFORM THE FOLLOWING:
-CONSTRUCT -DRW06- CHANNELIZING BYPASS ISLAND AND PARKING LOT IMPROVEMENTS

-INSTALL NEW STRIPING IN PARKING AREA AND ALONG -DRW06- BYPASS LANE

-REMOVE TRAFFIC CONTROL DEVICES AND AND RE-OPEN -DRW06- EAST BOUND RIGHT LANE AND PARKING AREA TO TRAFFIC

STEP 5:
INSTALL DETOUR SIGNING AND CLOSE EAST BOUND LANES OF -L- CONCORD MILLS BOULEVARD USING AN OFFSITE DETOUR ROUTE AS SHOWN ON TMP-11 AND INSTALL BRIDGE GIRDERS. COVER DETOUR SIGNS WHEN NOT IN USE

STEP 6:
USE 20 MINUTE TRAFFIC STOPS IN ACCORDANCE WITH RSD 1101.03 SHEET 9 OF 9 AS APPROPRIATE TO INSTALL NEW OVERHEAD SIGNING, EXCEPT FOR OVERHEAD SIGN LOCATED ON THE SB I-85 OFF RAMP. USE LAW ENFORCEMENT AT RAMP TERMINAL SIGNALS TO MONITOR QUEUEING

PHASE 3 (CONT'D)

STEP 7:
INSTALL DETOUR SIGNING AND CLOSE EXIT 49 OF SOUTH BOUND I-85 USING AN OFFSITE DETOUR ROUTE AS SHOWN ON TMP-12. INSTALL OVERHEAD SIGN. COVER DETOUR SIGNS WHEN NOT IN USE

NOTE: COORDINATE WITH ENGINEER TO UTILIZE EXISTING DMS IN ADVANCE AND DURING CLOSURE AS DETAILED ON TMP-12

STEP 8:

WHILE MAINTAINING TRAFFIC USING TEMPORARY LANE CLOSURES IN ACCORDANCE WITH RSD 1101.02 SHEETS 1 AND 3 OF 15 AND PROJECT TIME RESTRICTIONS, INSTALL TRAFFIC CONTROL DEVICES AND PERFORM THE FOLLOWING ALONG -L- CONCORD MILLS BOULEVARD, -DRW01-, -DRW02-, -DRW03-, -DRW04-, AND -DRW05-

-COMPLETE WORK STARTED IN PHASE 3, STEP 3 UP TO BUT NOT INCLUDING THE FINAL SURFACE COURSE

-REMOVE PORTABLE CONCRETE BARRIER

-REMOVE CONFLICTING MARKINGS, INSTALL FINAL SIGNALS AND PLACE PAINT VERSION OF FINAL PAVEMENT MARKINGS (REFER TO PAVEMENT MARKING PLANS AND SIGNAL PLANS)

-ACTIVATE SIGNALS, REOPEN DRIVEWAY -DRW02-, AND PLACE TRAFFIC ONTO FINAL PATTERN ON NEXT TO FINAL LAYER OF PAVEMENT

NOTE: LAW ENFORCEMENT MAY BE USED AS NEEDED TO INSTALL FINAL SIGNALS

-REMOVE CHAIN LINK FENCE AND REOPEN TEMPORARILY CLOSED STAGING AREA WITHIN PARKING LOT

PHASE 4

WHILE MAINTAINING TRAFFIC USING TEMPORARY LANE CLOSURES IN ACCORDANCE WITH RSD 1101.02 SHEETS 1 AND 3 OF 15 AND PROJECT TIME RESTRICTIONS, INSTALL TRAFFIC CONTROL DEVICES AND PERFORM THE FOLLOWING ALONG -L- CONCORD MILLS BOULEVARD, -DRW01-, -DRW02-, -DRW03-, -DRW04-, AND -DRW05-:

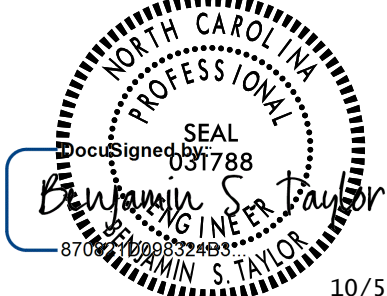
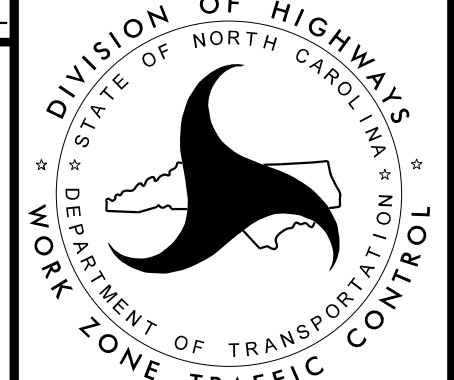
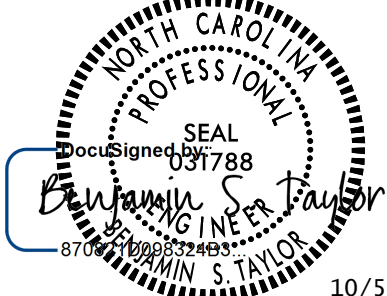
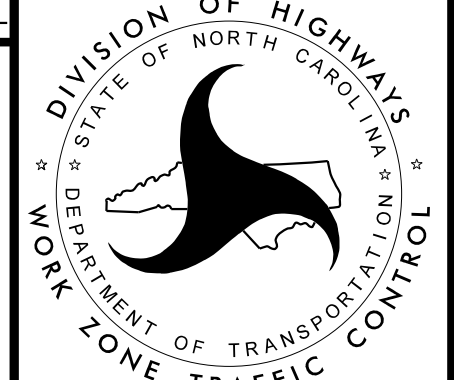
STEP 1:
-INSTALL FINAL SURFACE COURSE OF ASPHALT

STEP 2:
-INSTALL FINAL PAVEMENT MARKING AND SIGNING (REFER TO PAVEMENT MARKING AND SIGNING PLANS)

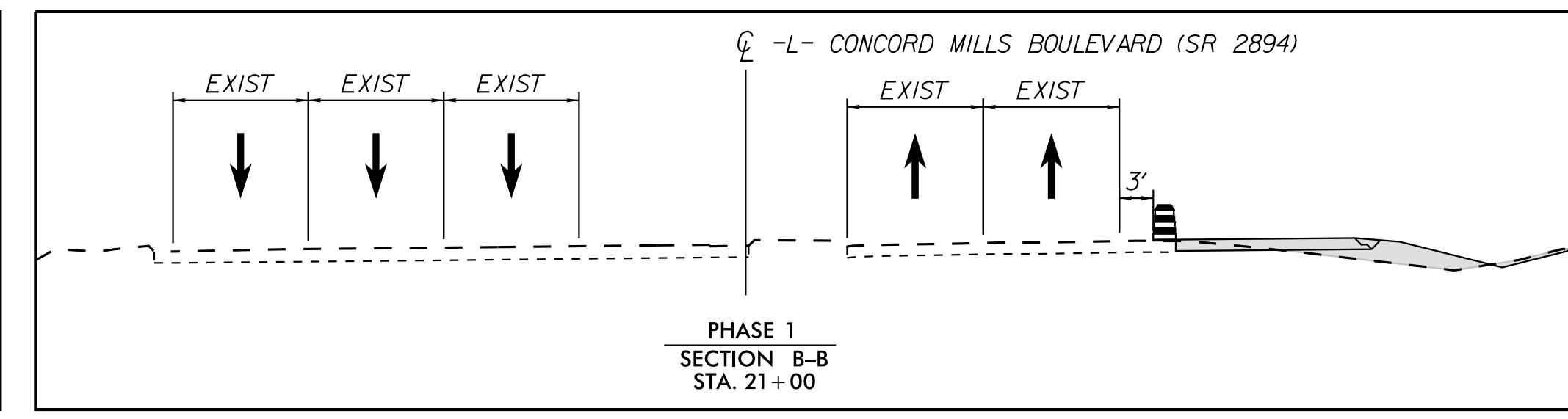
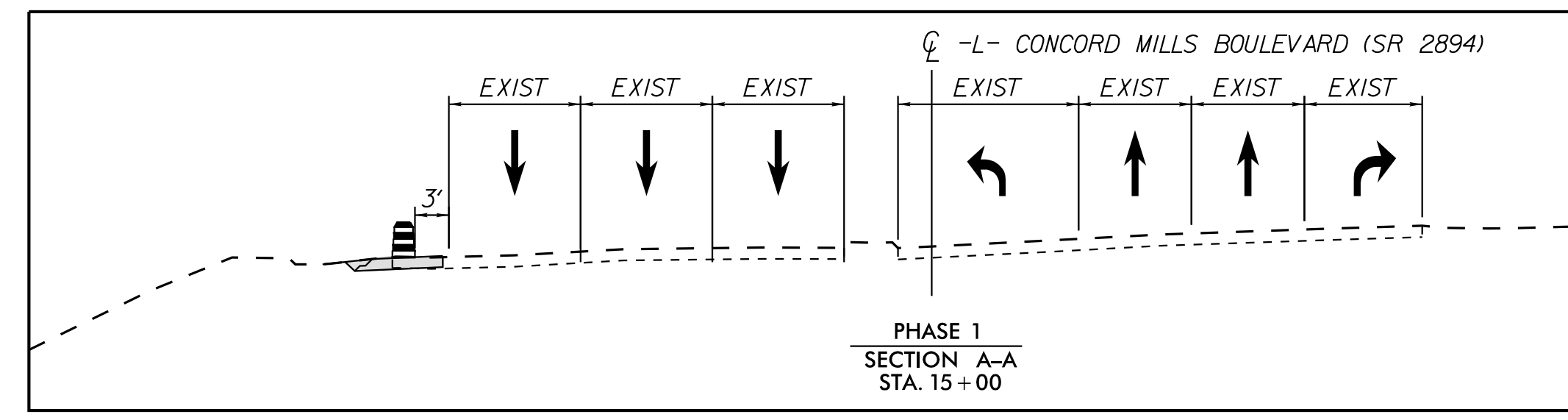
-REMOVE TRAFFIC CONTROL DEVICES AND OPEN ALL LANES TO TRAFFIC

Kimley»Horn

PHASING

| | | | |
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| APPROVED: _____ | DATE: _____ |  |  |
|  | |  | |

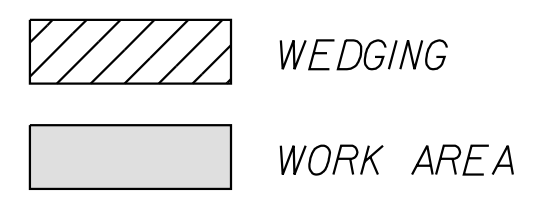
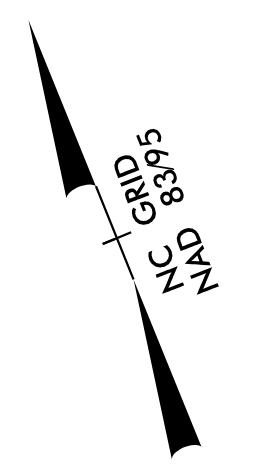
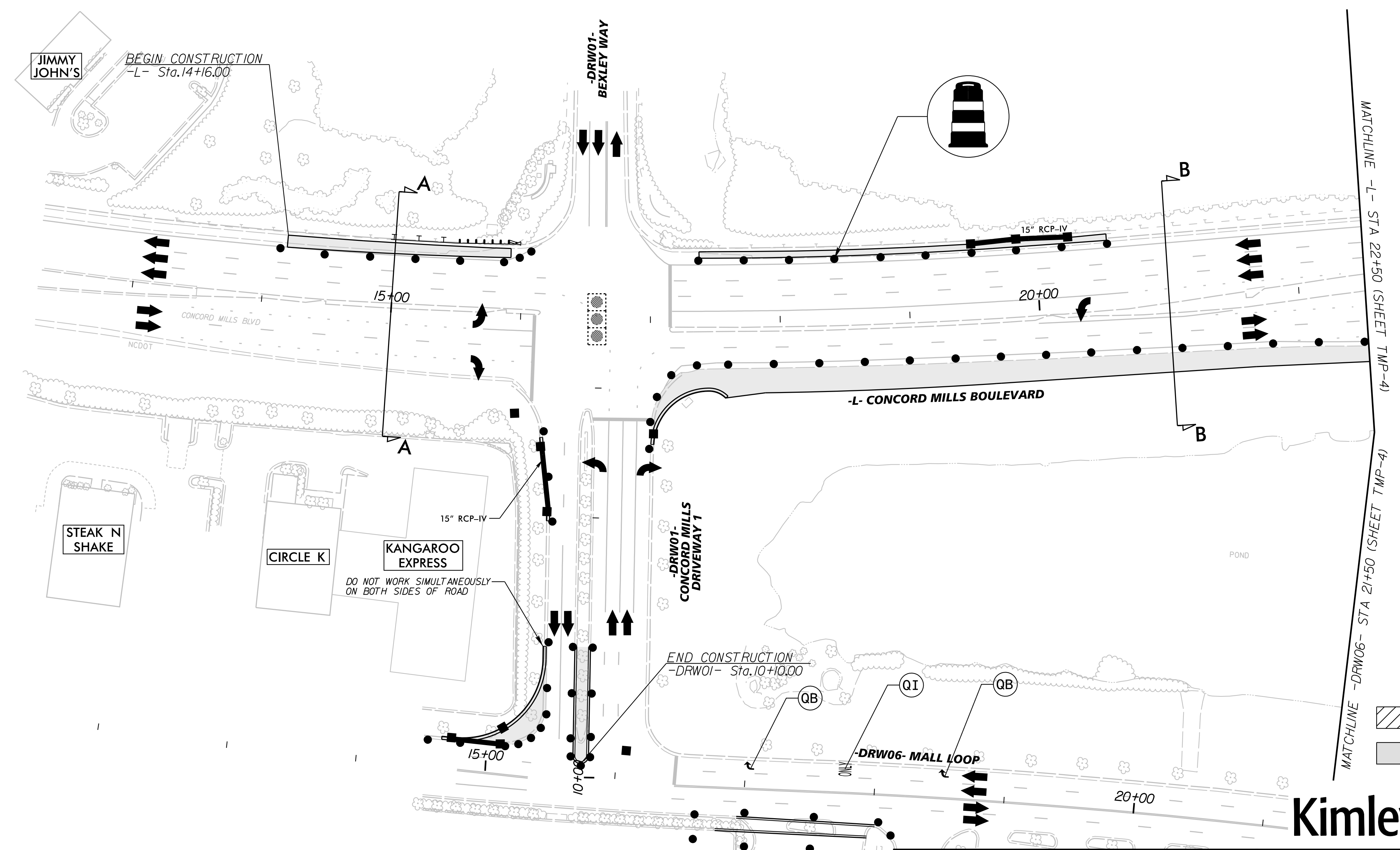
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REVISIONS

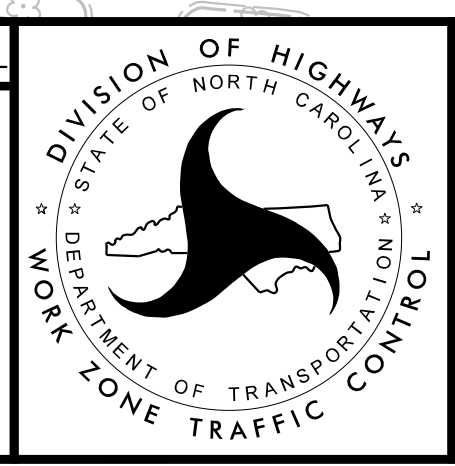
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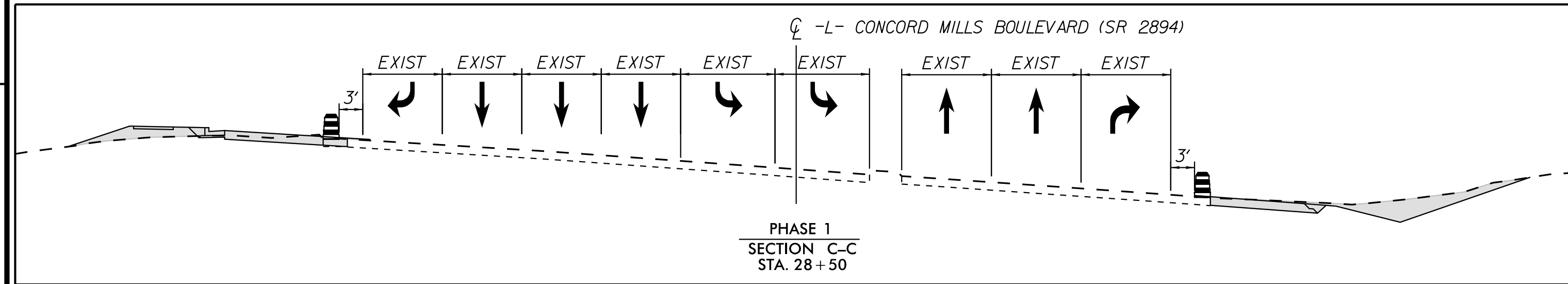


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APPROVED: DATE: 10/5/2017

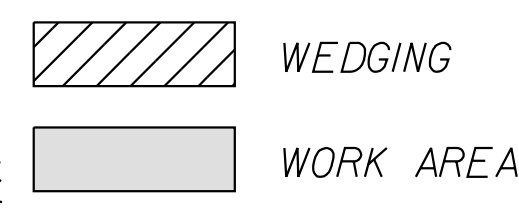
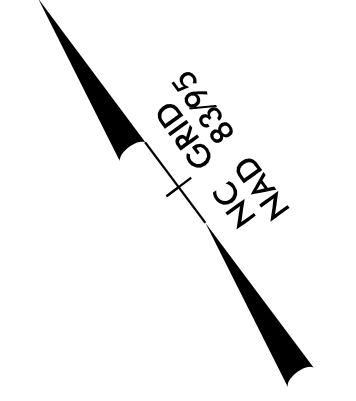
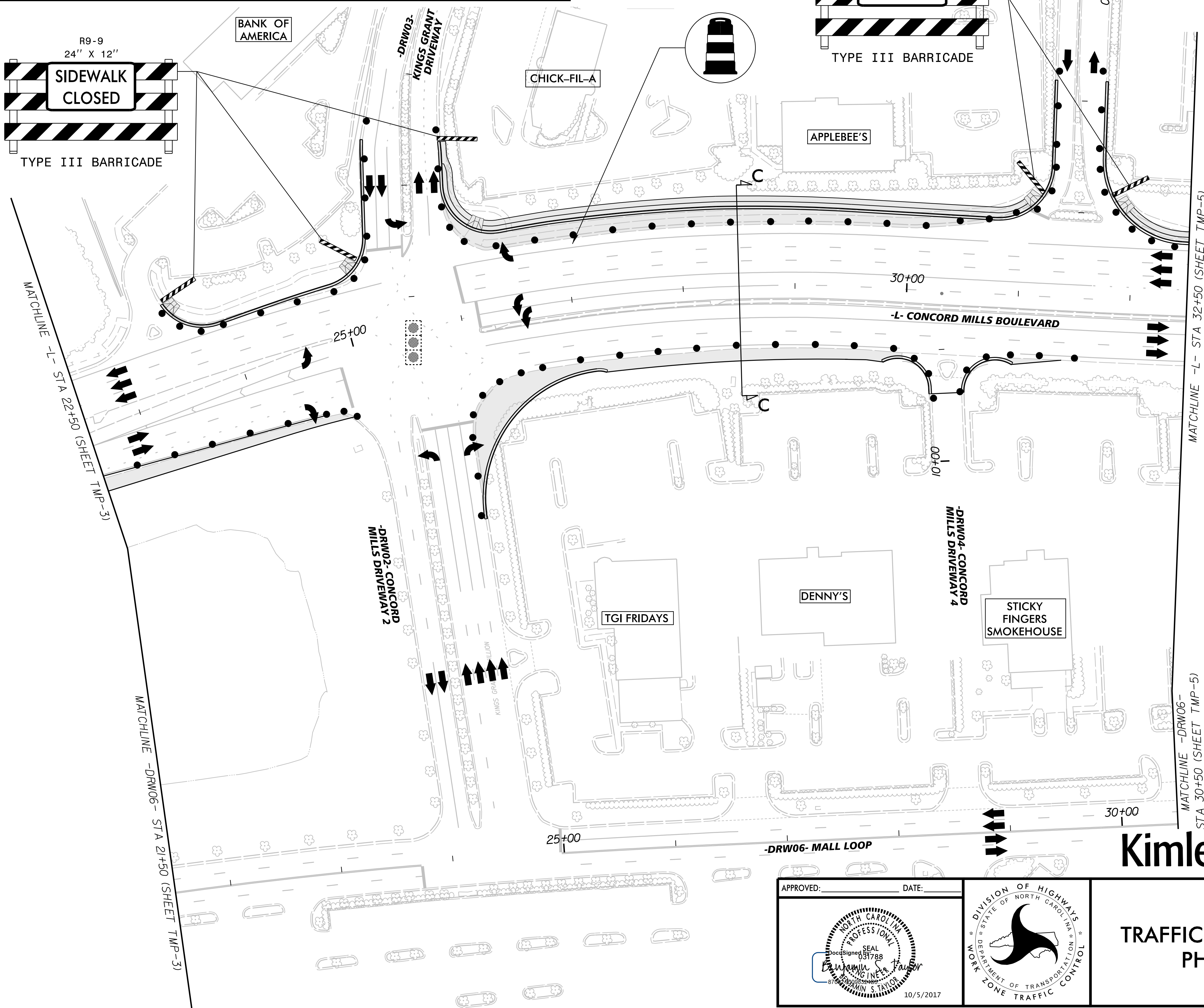
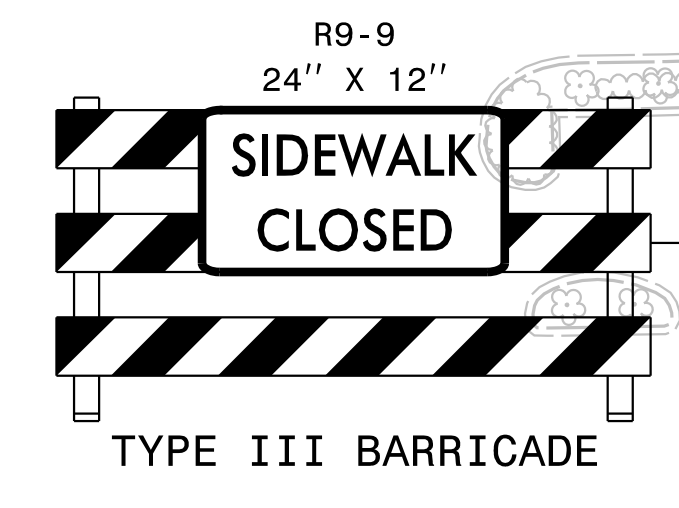
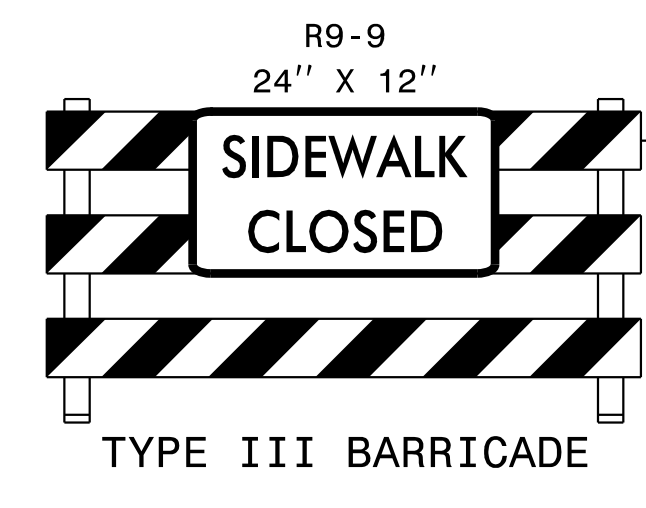


TRAFFIC CONTROL PHASE I



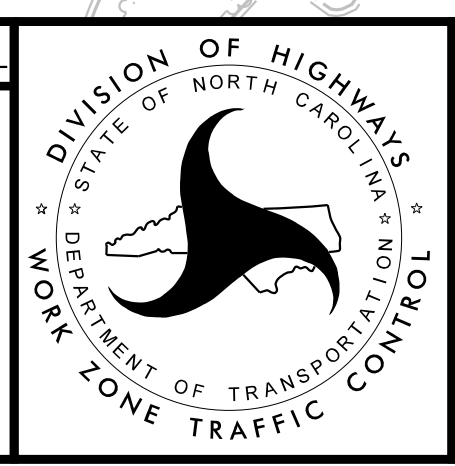
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Kimley»Horn

APPROVED: DATE: 10/5/2017



**TRAFFIC CONTROL
PHASE I**

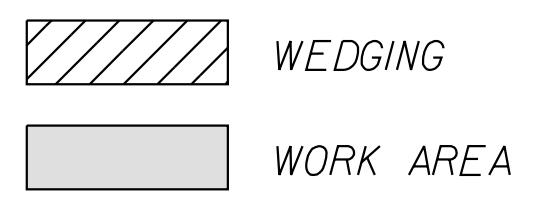
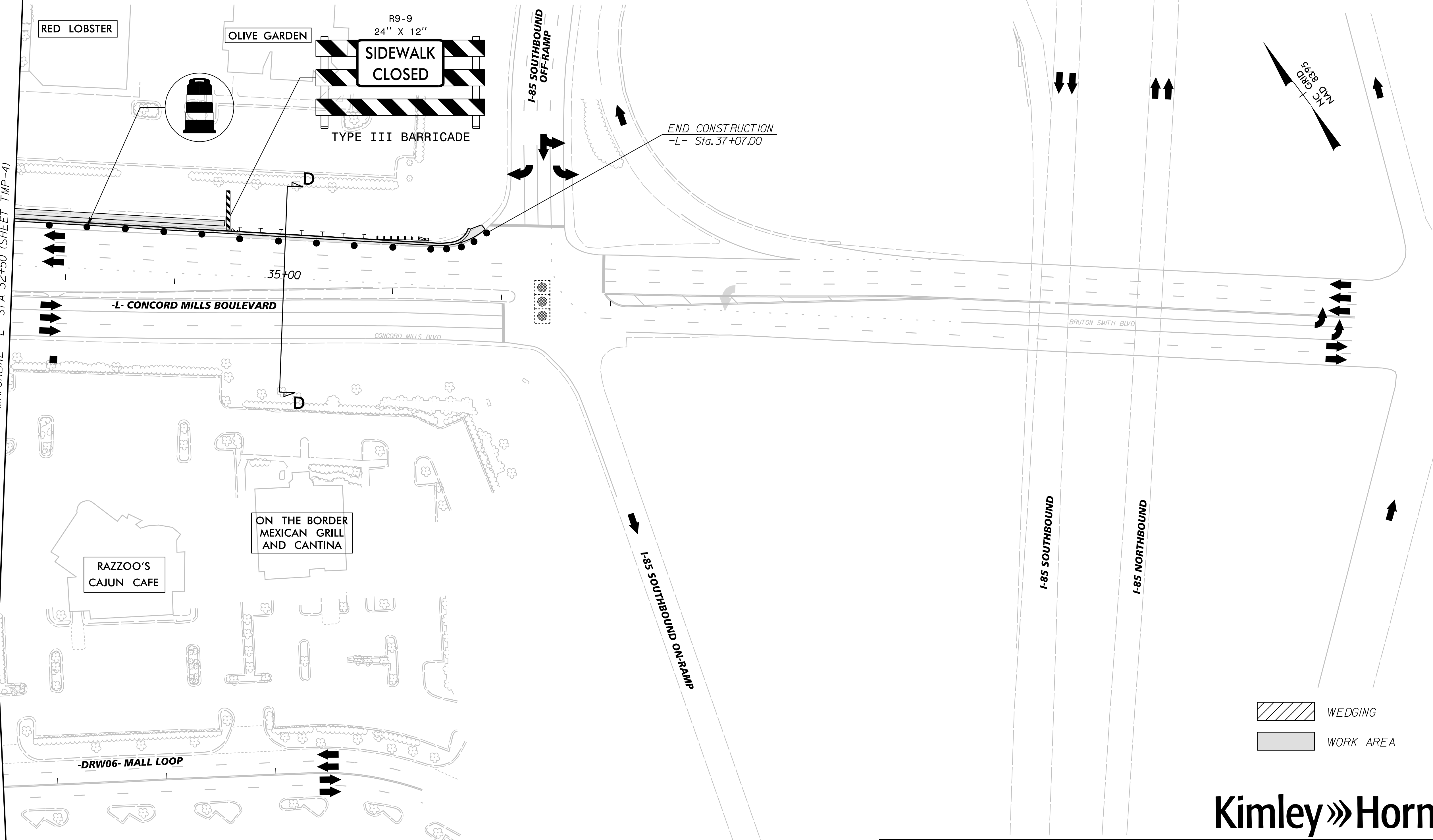
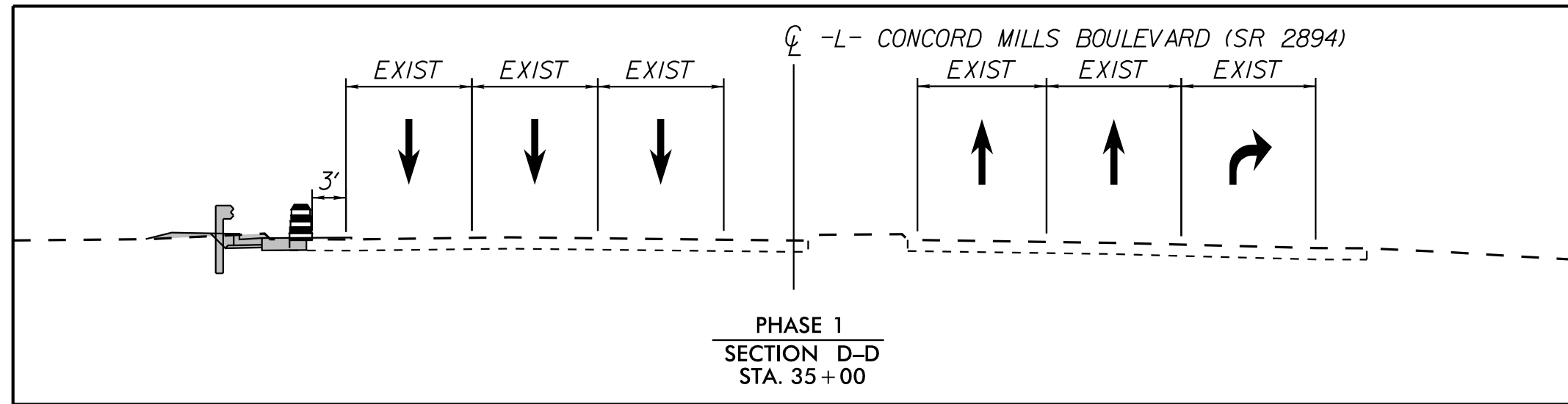
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REVISIONS

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MATCHLINE -L- STA 32+50 (SHEET TMP-4)

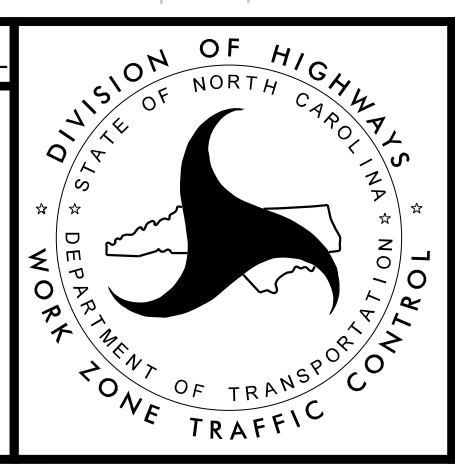
MATCHLINE -DRW06- STA 30+50 (SHEET TMP-4)



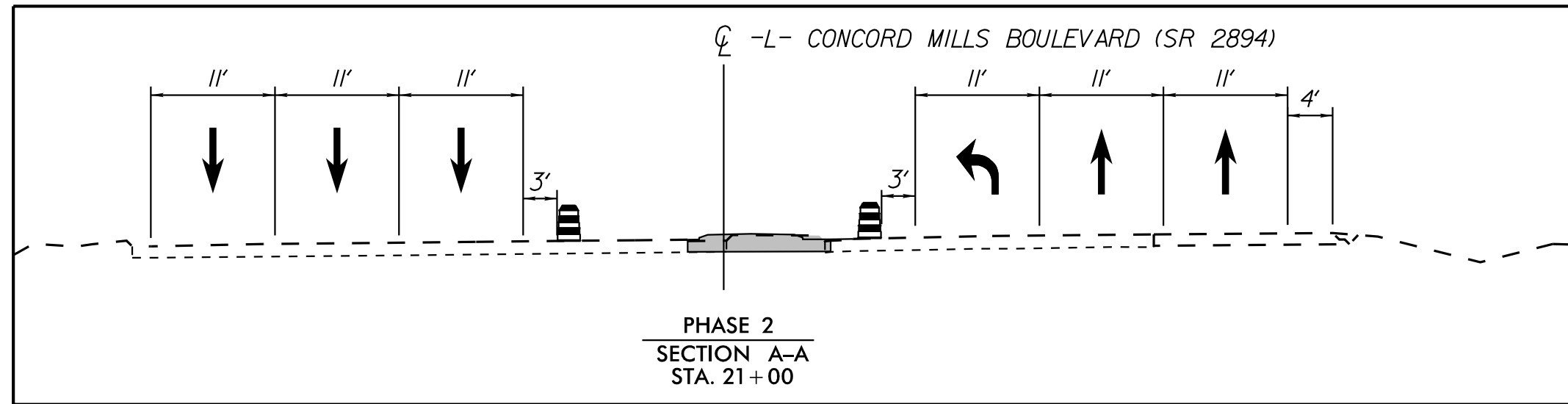
Kimley»Horn

APPROVED: _____ DATE: _____

10/5/2017



**TRAFFIC CONTROL
PHASE I**

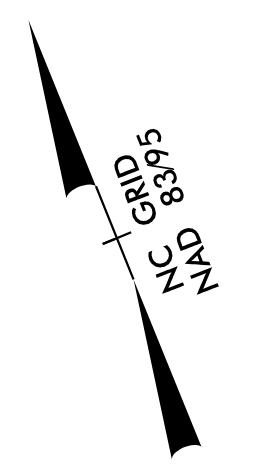
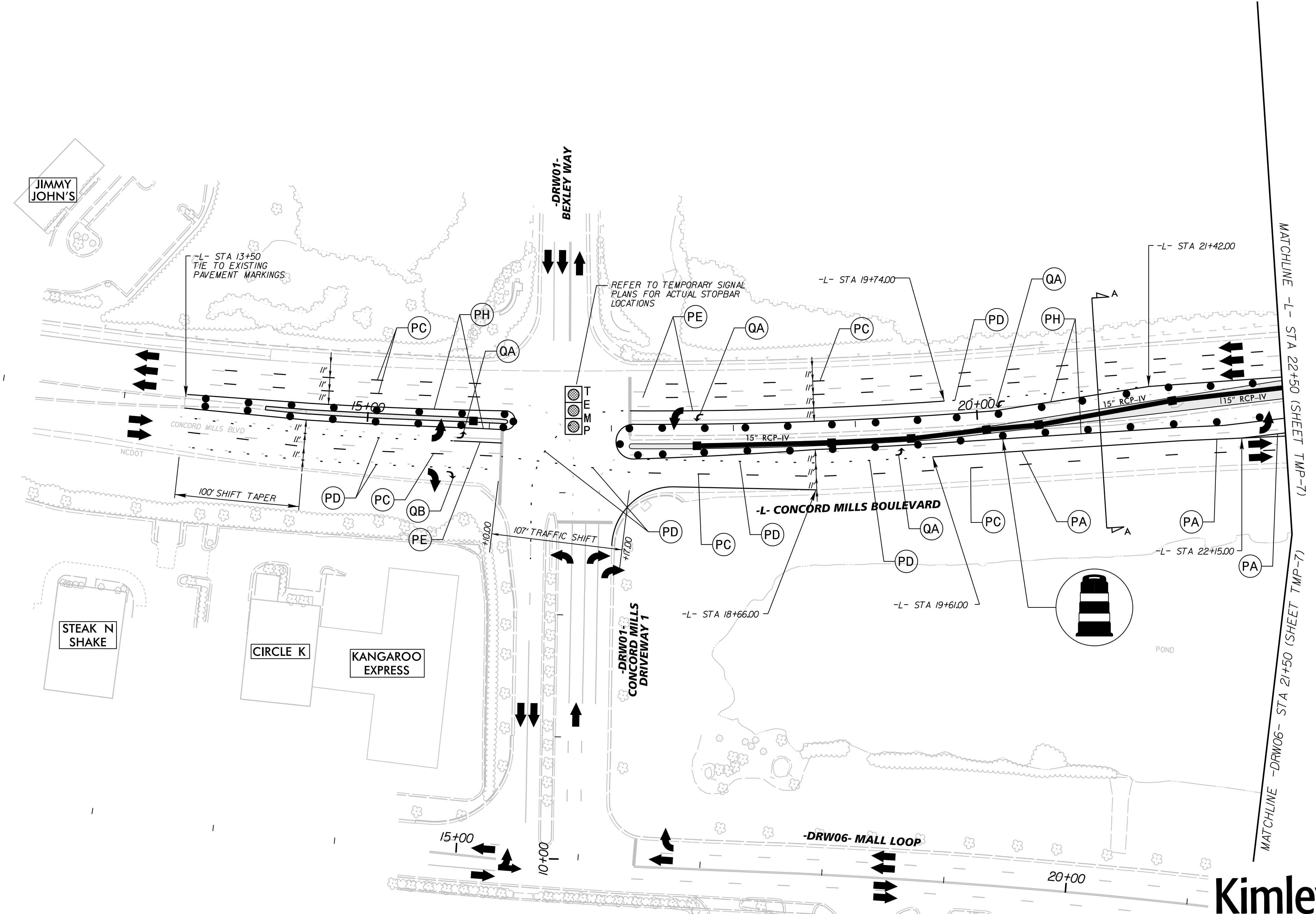


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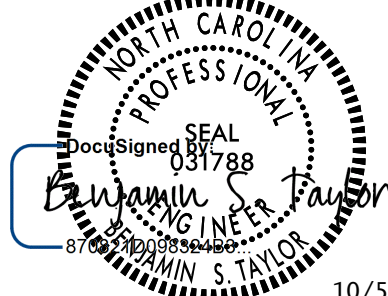
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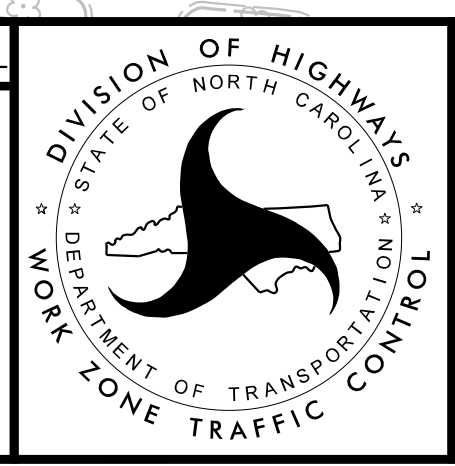
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 WORK AREA
 PAVEMENT REMOVAL

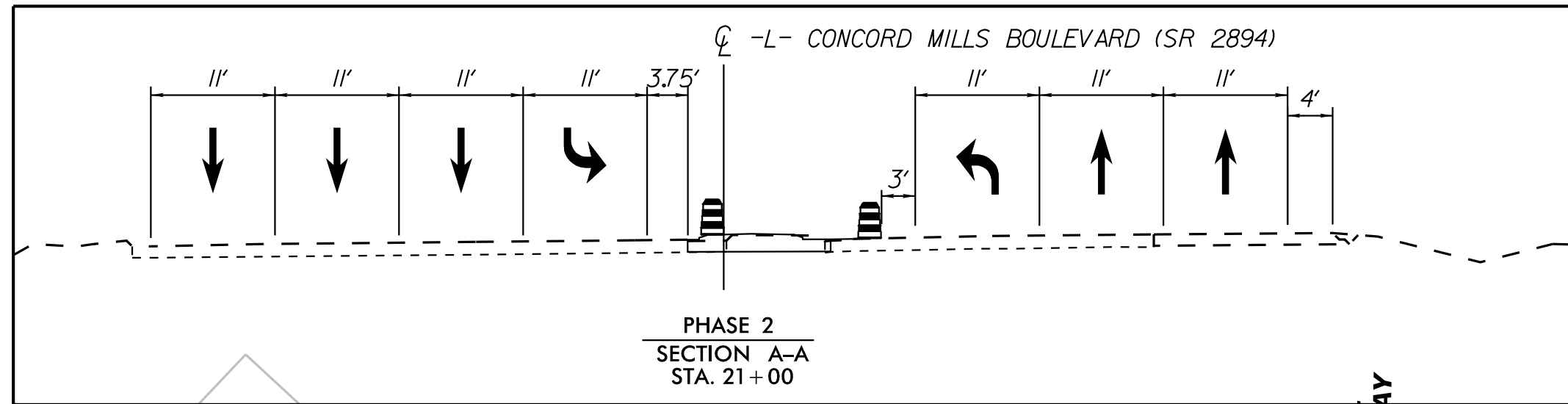
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TRAFFIC CONTROL PHASE II



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10/5/2017

10+00

10+00

WORK AREA
 PAVEMENT REMOVAL

JIMMY JOHN'S

STEAK N SHAKE

CIRCLE K

KANGAROO EXPRESS

-DRW01- BEXLEY WAY

REFER TO TEMPORARY SIGNAL PLANS FOR ACTUAL STOPBAR LOCATIONS

QA

QA

PD

PH

PE

-L- CONCORD MILLS BOULEVARD

30" RCP-IV

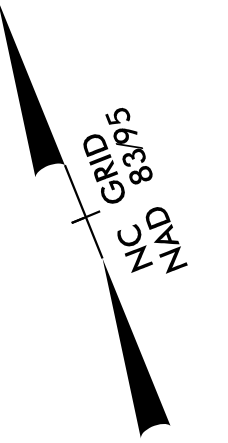
24" RCP-IV

-DRW01- CONCORD MILLS DRIVEWAY 1

-DRW06- MALL LOOP

MATCHLINE -DRW06- STA 21+50 (SHEET TMP-9)

MATCHLINE -L- STA 22+50 (SHEET TMP-9)



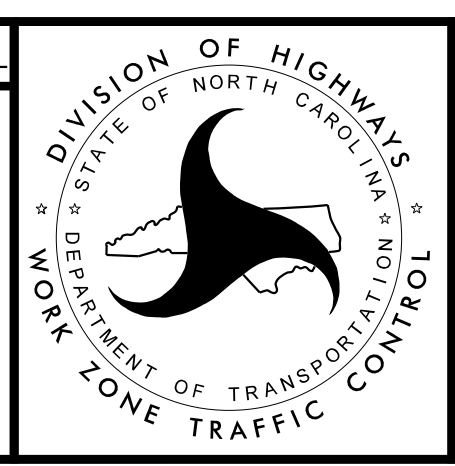
RIGHT LANE CLOSED AHEAD
W20-5 R
48" X 48"

W4-2R
48" X 48"

RIGHT LANE CLOSED
W20-5 R
48" X 48"

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APPROVED:
DATE: 10/5/2017

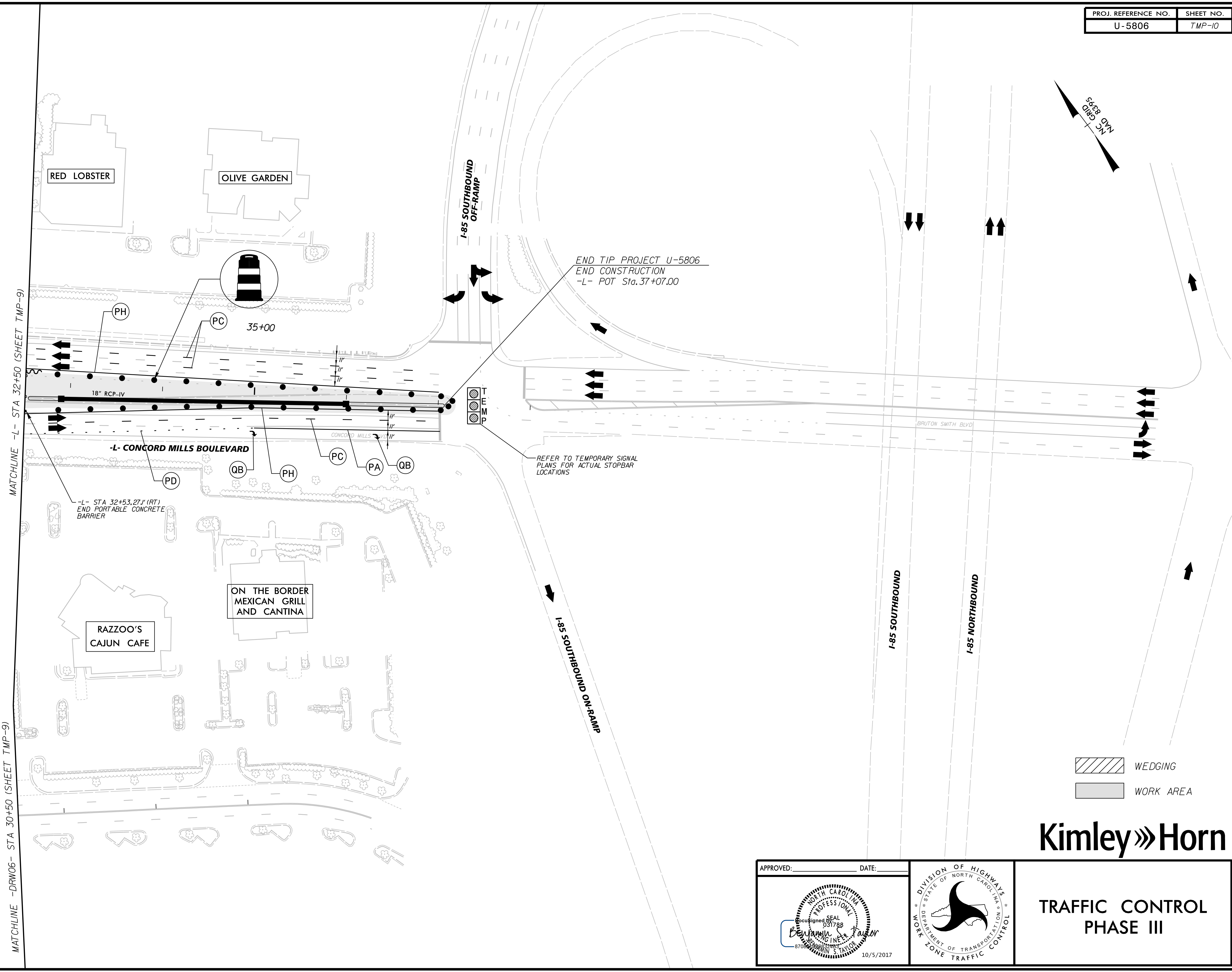


TRAFFIC CONTROL PHASE III

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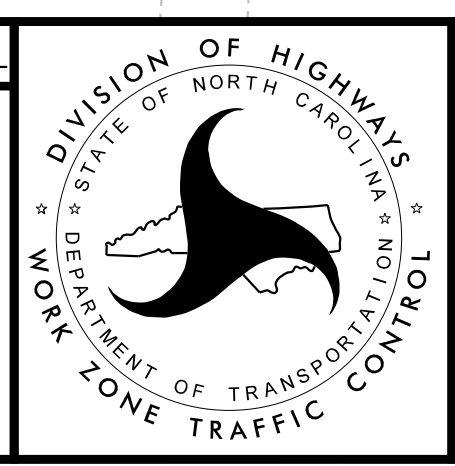
10/5/2017



MATCHLINE -L- STA 32+50 (SHEET TMP-9)

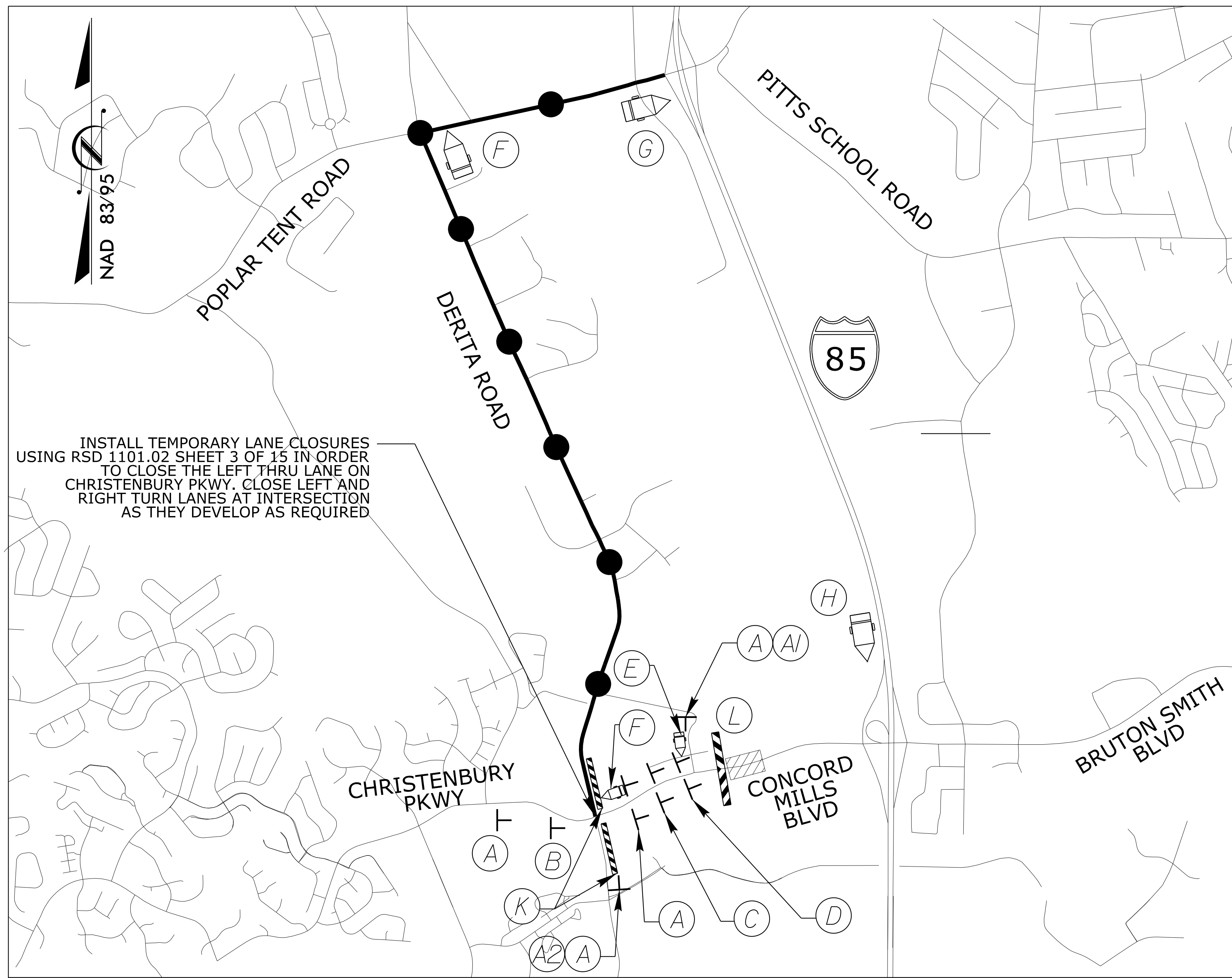
MATCHLINE -DRW06- STA 30+50 (SHEET TMP-9)

APPROVED: _____ DATE: _____

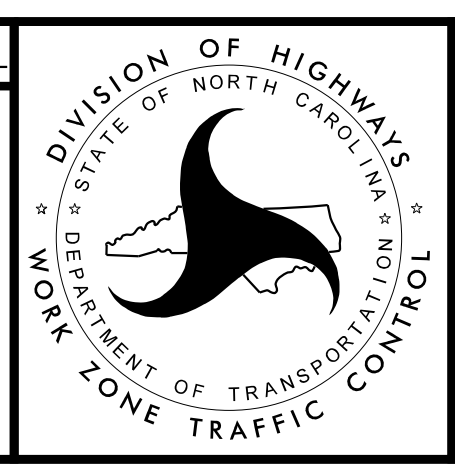
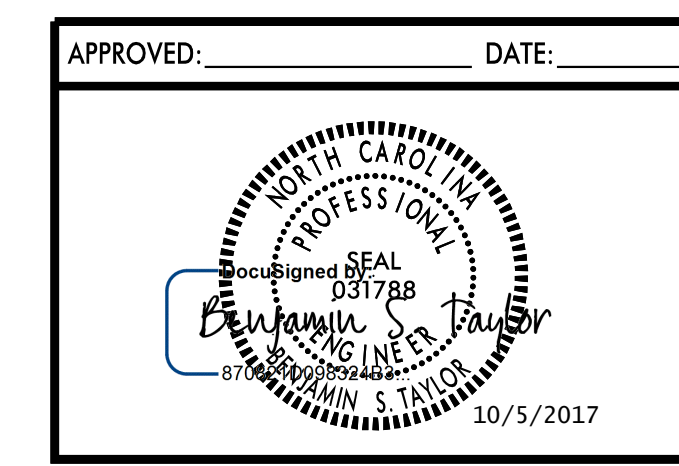
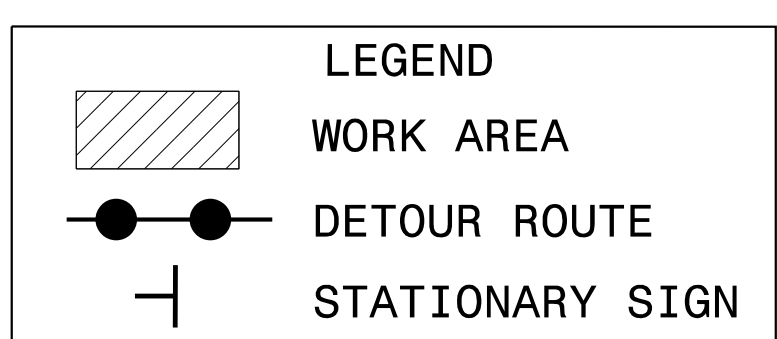
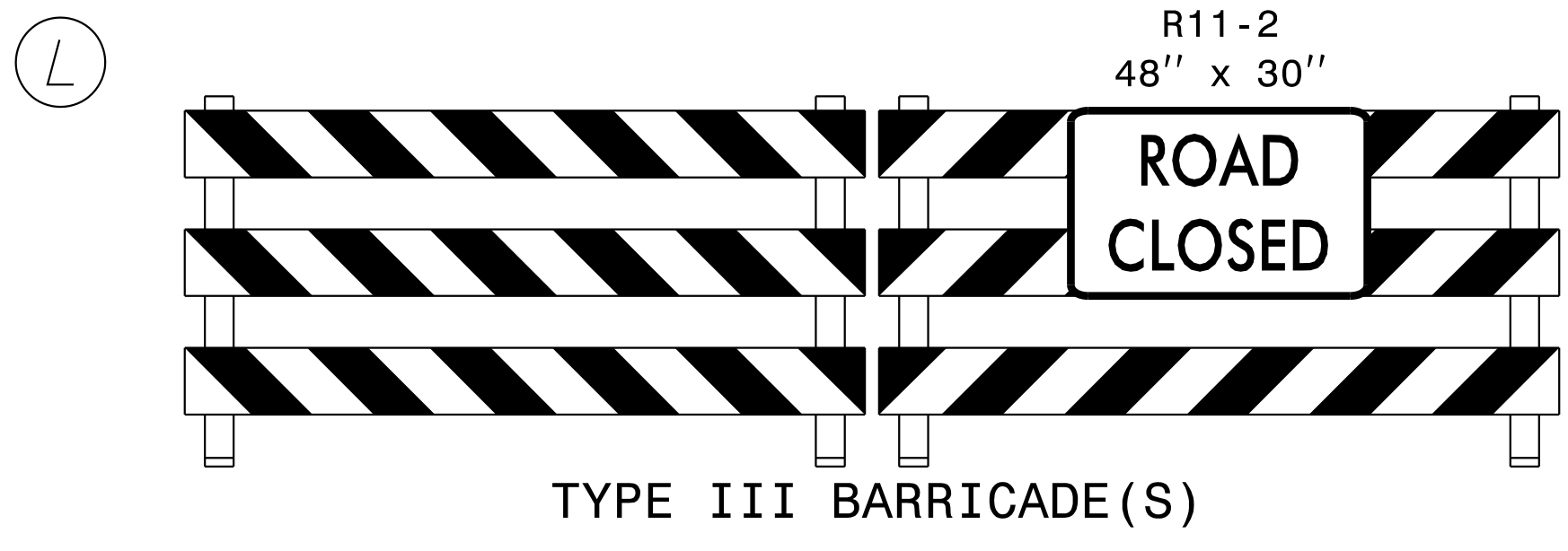
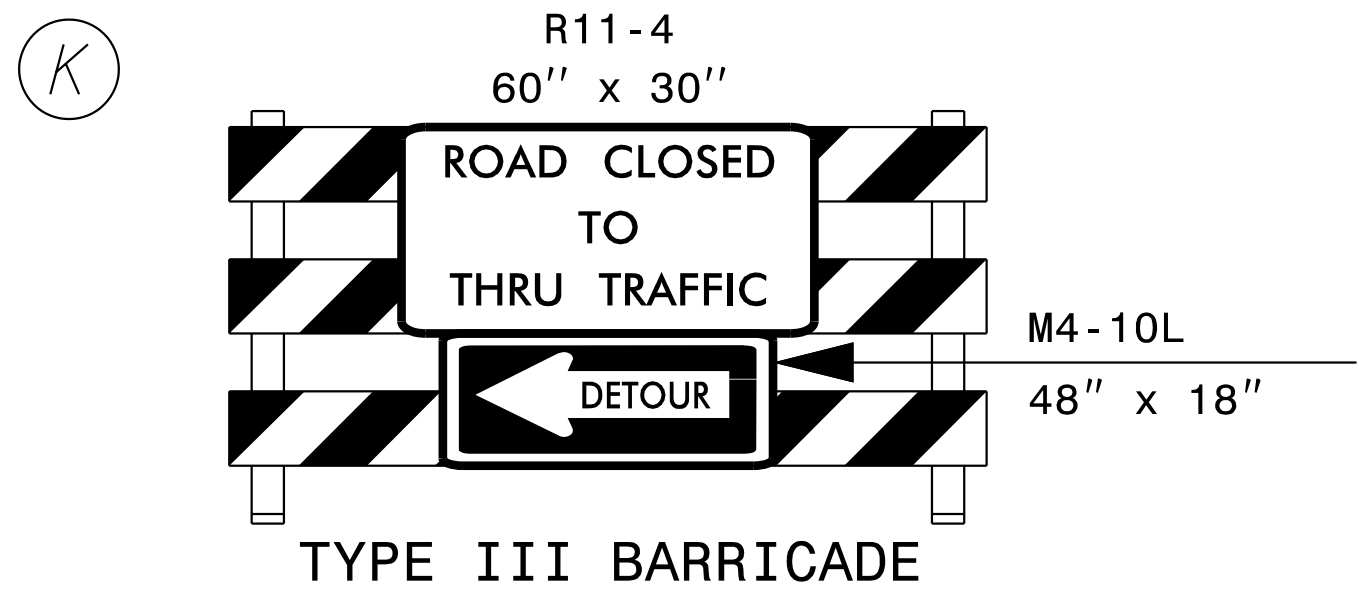
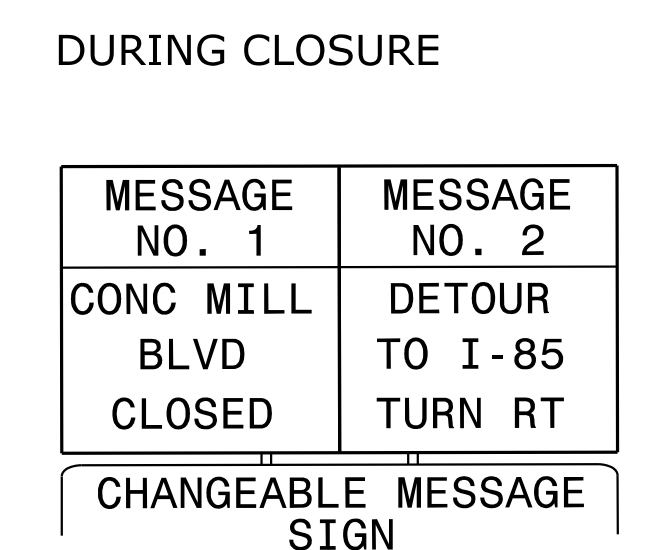
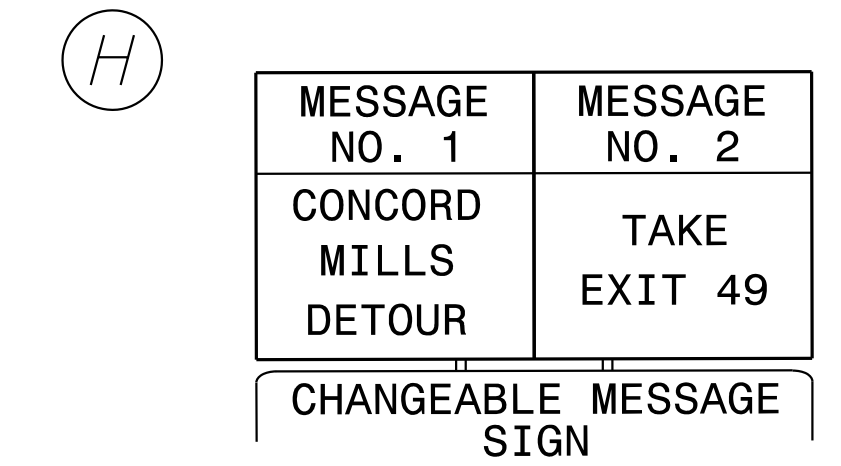
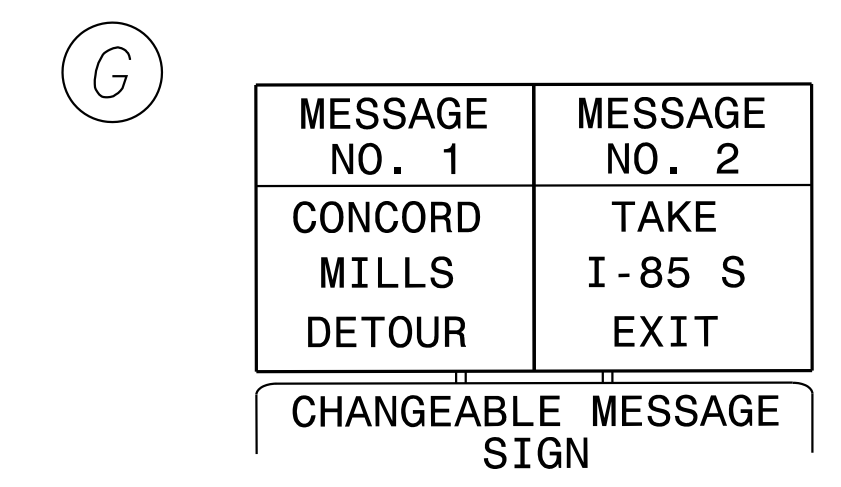
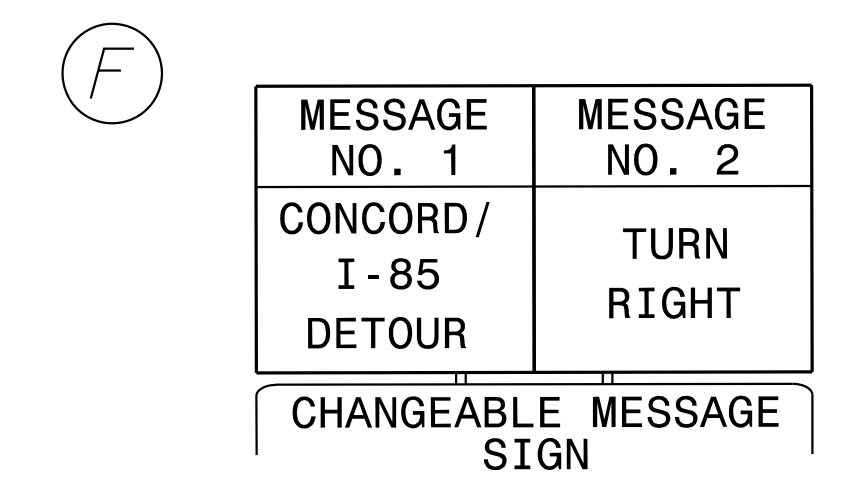
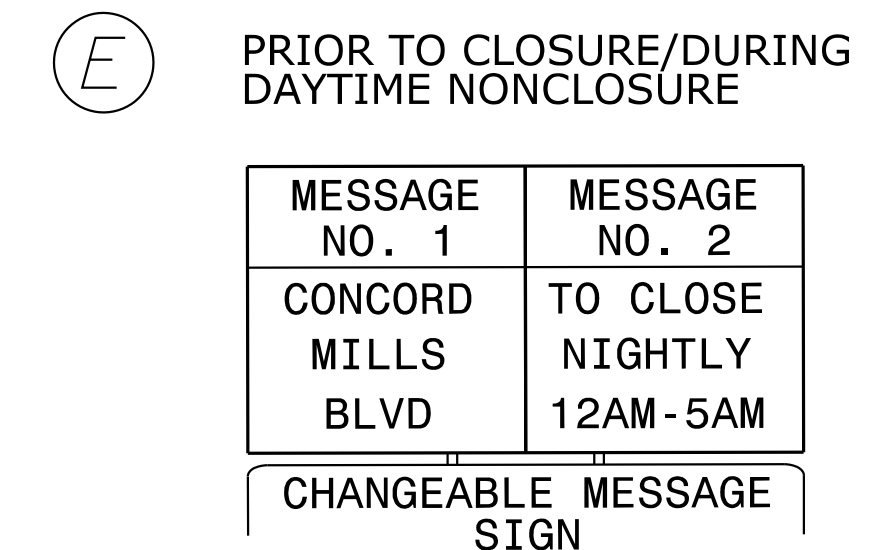
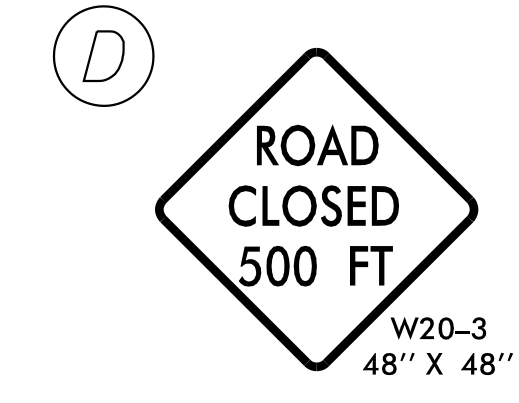
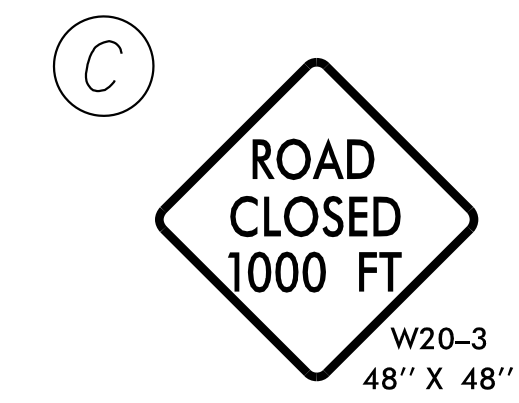
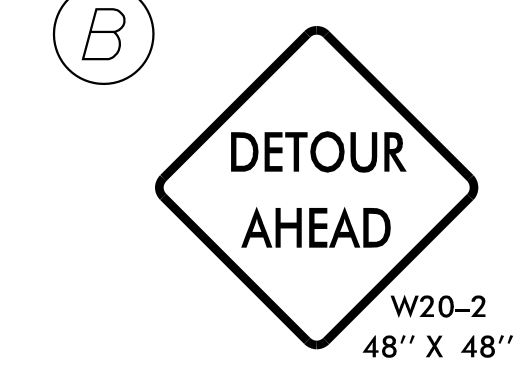
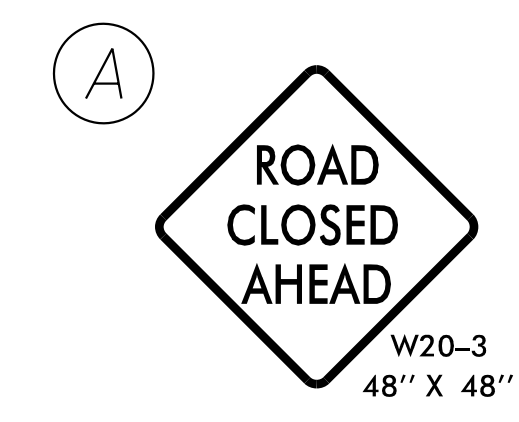


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TRAFFIC CONTROL PHASE III



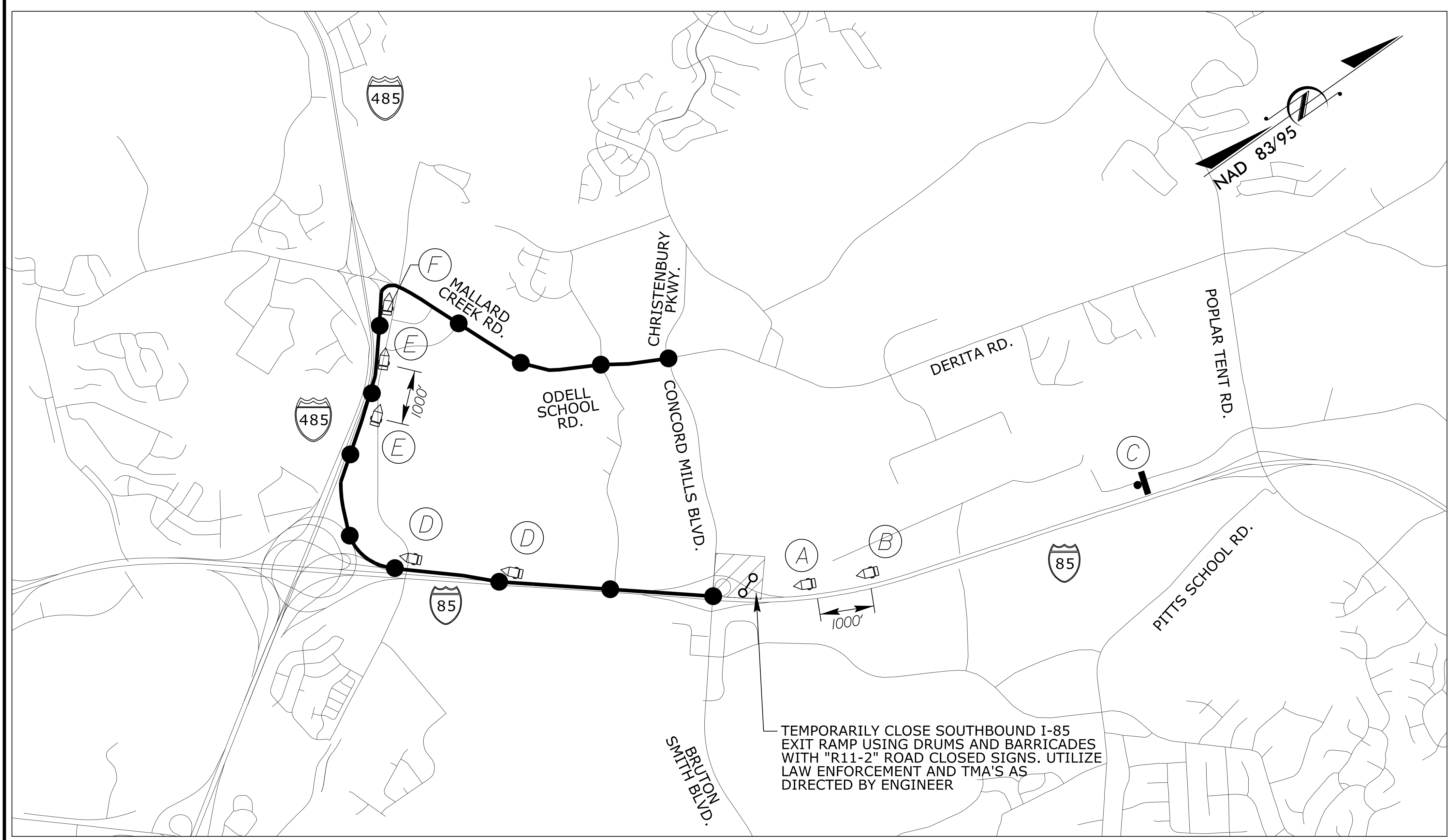
INSTALL TEMPORARY LANE CLOSURES USING RSD 1101.02 SHEET 3 OF 15 IN ORDER TO CLOSE THE LEFT THRU LANE ON CHRISTENBURY PKWY. CLOSE LEFT AND RIGHT TURN LANES AT INTERSECTION AS THEY DEVELOP AS REQUIRED



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PROPOSED DETOUR ROUTE EASTBOUND CONCORD MILLS BLVD

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TEMPORARILY CLOSE SOUTHBOUND I-85 EXIT RAMP USING DRUMS AND BARRICADES WITH "R11-2" ROAD CLOSED SIGNS. UTILIZE LAW ENFORCEMENT AND TMA'S AS DIRECTED BY ENGINEER

(D)

| | |
|----------------------|--------------------|
| MESSAGE NO. 1 | MESSAGE NO. 2 |
| CONCORD MILLS/BRUTON | SMITH TAKE EXIT 48 |

CHANGEABLE MESSAGE SIGN

(E)

| | |
|----------------------|--------------------|
| MESSAGE NO. 1 | MESSAGE NO. 2 |
| CONCORD MILLS/BRUTON | SMITH TAKE EXIT 28 |

CHANGEABLE MESSAGE SIGN

(F)

| | |
|----------------------|------------------|
| MESSAGE NO. 1 | MESSAGE NO. 2 |
| CONCORD MILLS/BRUTON | SMITH TURN RIGHT |

CHANGEABLE MESSAGE SIGN

(A)

| DISPLAY MESSAGE 7 DAYS PRIOR TO CLOSURE | |
|---|---------------|
| MESSAGE NO. 1 | MESSAGE NO. 2 |
| EXIT 49 NIGHT CLOSURES | DATE TO DATE |

CHANGEABLE MESSAGE SIGN

(B)

| DISPLAY MESSAGE DAY OF CLOSURE | |
|--------------------------------|---------------|
| MESSAGE NO. 1 | MESSAGE NO. 2 |
| EXIT 49 CLOSED TONIGHT | 12 AM TO 4 AM |

CHANGEABLE MESSAGE SIGN

(C)

| DISPLAY MESSAGE DURING CLOSURE | |
|--------------------------------|------------------------|
| MESSAGE NO. 1 | MESSAGE NO. 2 |
| EXIT 49 CLOSED | USE EX48 FOLLOW DETOUR |

CHANGEABLE MESSAGE SIGN

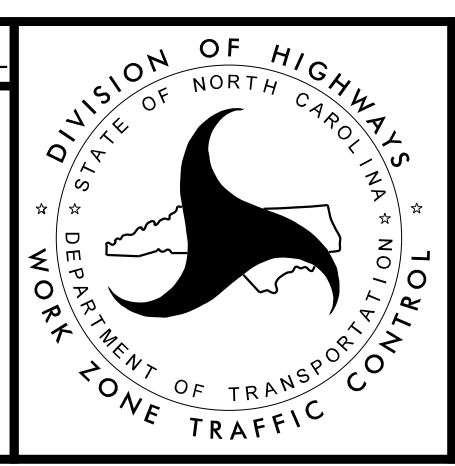
(C)

| DISPLAY 7 DAYS BEFORE CLOSURE | DISPLAY DAY OF CLOSURE | DISPLAY DURING CLOSURE |
|---|--|--|
| EXIT 49 CONCORD MILLS/BRUTON SMITH WILL BE CLOSED 12 AM - 4 AM DATE X TO DATE X | EXIT 49 CONCORD MILLS/BRUTON SMITH WILL BE CLOSED TONIGHT 12AM - 4AM | EXIT 49 CONCORD MILLS/BRUTON SMITH CLOSED AHEAD. USE EXIT 48 AND FOLLOW DETOUR |

LEGEND

- WORK AREA
- CONCORD MILLS BLVD/BRUTON SMITH BLVD DETOUR ROUTE
- STATIONARY SIGN
- PROPOSED OVERHEAD SIGN ASSEMBLY
- EXISTING DMS SIGN

APPROVED: DATE: 10/5/2017



Kimley»Horn

PROPOSED DETOUR ROUTE
I-85 SB
RAMP CLOSURE

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