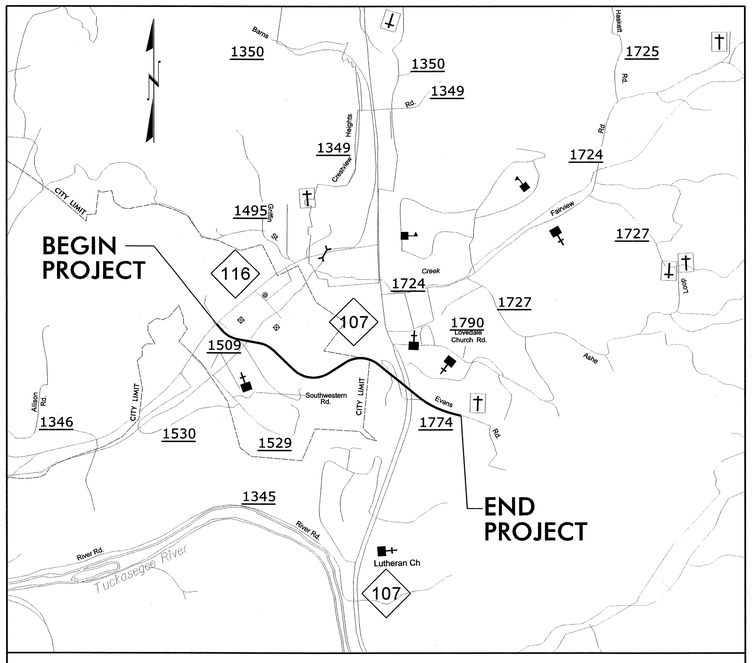
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

JACKSON COUNTY

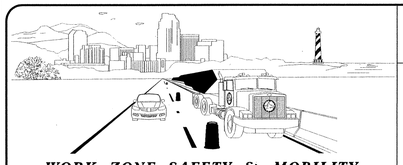


VICINITY MAP

INDEX OF SHEETS

SHEET NO.
TMP-1

TIP PROJECT: R-5000



WORK ZONE SAFETY & MOBILITY
"from the MOUNTAINS to the COAST"

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APPROVED:
DATE:

SEAL

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-1A

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 WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
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	WORK VEHICLE LIGHTING SYSTEMS AND TMA DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1250.01	RAISED PAVEMENT MARKERS - INSTALLATION SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- WORK AREA
- REMOVAL
- CONTINUOUS CONSTRUCTION
- USER DEFINED (IF NEEDED)

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 (TEMP)

PAVEMENT MARKERS

- CRYSTAL/CRYSTAL
- CRYSTAL/RED
- YELLOW/YELLOW

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

PA	PAINT WHITE EDGELINE (4")
PB	PAINT YELLOW EDGELINE (4")
PC	PAINT 10 FT. WHITE SKIP (4")
PD	PAINT 2 FT. WHITE MINISKIP (4")
PE	PAINT WHITE SOLID LANE LINE (4")
PI	PAINT YELLOW DOUBLE CENTER (4")
PP	PAINT YELLOW DIAGONAL (8")
P8	PAINT 2 FT.-6 FT./SP WHITE MINISKIP (4")
QA	PAINT LEFT TURN ARROW
QH	PAINT HANDICAP PARKING

TEMPORARY RAISED PAVEMENT MARKERS

MH	YELLOW & YELLOW

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APPROVED:_____ DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 21103 ENGINEER JAMES TIMOTHY JORDAN
6/28/12

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

ROADWAY STANDARD DRAWINGS & LEGEND

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-1B

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:

ROAD NAME	DAY AND TIME RESTRICTIONS	
ALL ROADS	7:15 A.M. TO 8:15 A.M.	MONDAY THRU FRIDAY
	2:45 P.M. TO 6:00 P.M.	MONDAY THRU FRIDAY

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

ROAD NAME

ALL ROADS

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 4:00 P.M. DECEMBER 31st TO 9:00 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 A.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 4:00 P.M. THURSDAY AND 9:00 A.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY TO 9:00 A.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 4:00 P.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 4:00 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY AND 9:00 A.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 4:00 P.M. TUESDAY TO 9:00 A.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 4:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT STOP TRAFFIC AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
NC 107	6:00 A.M. TO 10:00 P.M. MONDAY THRU SUNDAY	

30 MINUTES TO INSTALL GIRDERS AND OTHER TRAFFIC OPERATIONS

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

LANE AND SHOULDER CLOSURE REQUIREMENTS

E) 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.

F) 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 OR A LANE CLOSURE IS INSTALLED.

G) 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.

H) 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.

I) 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.

J) PROVIDE TRAFFIC CONTROL FOR APPROPRIATE LANE CLOSURES FOR SURVEYING DONE BY THE DEPARTMENT.

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) 350 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 SIGNING AND DEVICES REQUIRED TO CLOSE THE ROAD ACCORDING TO THE ROADWAY STANDARD DRAWINGS AND TRAFFIC CONTROL PLANS.

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

P) COVER OR REMOVE ALL SIGNS AND DEVICES REQUIRED TO CLOSE THE ROAD WHEN ROAD CLOSURE IS NOT IN OPERATION.

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

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

R) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1), 200 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

S) 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.

T) 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

U) WHEN LANE CLOSURES ARE NOT IN EFFECT SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER IN FEET THAN TWICE THE POSTED SPEED LIMIT (MPH) EXCEPT, 10 FT ON-CENTER IN RADII, AND 3 FT OFF THE EDGE OF AN OPEN TRAVELWAY. REFER TO STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES SECTIONS 1130 (DRUMS), 1135 (CONES) AND 1180 (SKINNY DRUMS) FOR ADDITIONAL REQUIREMENTS.

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

W) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

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

ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT	NONE

Y) 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.

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

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

MISCELLANEOUS

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

CC) 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.

DD) 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.).

APPROVED:________________ DATE:________

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JAMES TIMOTHY JORDAN

6/28/12

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GENERAL NOTES

TRAFFIC CONTROL PHASING

THE FOLLOWING NOTES ARE APPLICABLE FOR PHASE I AND PHASE II.

NOTE: CONTRACTOR SHALL CONSTRUCT ALL PAVEMENT (TEMPORARY AND/OR PROPOSED) TO MAINTAIN DRAINAGE AND NOT POND WATER IN THE TRAFFIC LANES.

NOTE: CONTRACTOR SHALL PLACE TRAFFIC BACK INTO THE EXISTING PATTERN AT THE END OF EACH WORK PERIOD.

NOTE: CONTRACTOR SHALL PLACE TYPE III BARRICADES & DRUMS AT ALL -Y LINES AND DRUMS AT ALL DRIVEWAYS TO KEEP PROPOSED/TEMPORARY WIDENING CLOSED TO TRAFFIC.

NOTE: TEMPORARY PAVEMENT MAY BE UTILIZED IN THE CONSTRUCTION OF PROPOSED PAVEMENT AS DIRECTED BY THE ENGINEER.

NOTE: WHEN CONSTRUCTING DRAINAGE STRUCTURES ADJACENT TO TRAFFIC, INSTALL TEMPORARY STEEL PLATES, AS DIRECTED BY THE ENGINEER. MAY WORK EACH LOCATION INDEPENDENTLY OR CONCURRENTLY, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. WORK IN A CONTINUOUS MANNER TO PERFORM THE WORK IN THE FOLLOWING SEQUENCE, IN STEPS 'A' THRU 'E'.

A: CLOSE THE APPROPRIATE TRAVEL LANE TO TRAFFIC USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1, 2 & 3 OF 15.

B: CONSTRUCT PROPOSED STRUCTURE OR INSTALL PRECAST DRAINAGE STRUCTURE AS SHOWN IN THE CONSTRUCTION PLANS AND COVER WITH STEEL PLATES TO PROTECT STRUCTURE DURING CURING.

C: OPEN TRAVEL LANE TO EXISTING TRAFFIC PATTERN BY THE END OF EACH WORK PERIOD.

D: WHEN PROPERLY CURED, CLOSE THE APPROPRIATE TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02, SHEETS 1, 2 & 3 OF 15. BACKFILL & PAVE, IF REQUIRED, UP TO THE EDGE AND ELEVATION OF EXISTING PAVEMENT (SEE CONSTRUCTION PLANS).

E: OPEN TRAVEL LANE TO EXISTING TRAFFIC PATTERN BY THE END OF THE WORK PERIOD.

NOTE: MEDIAN PAVED SHOULDERS MUST BE COMPLETED PRIOR TO THE ONSET OF MEDIAN DRAINAGE CONSTRUCTION IN ORDER TO ALLOW PLACEMENT OF WATER FILLED BARRIER AS SHOWN ON TYPICAL 5 (SEE SHEETS TMP-4E & 4F).

NOTE: LAW ENFORCEMENT WILL BE REQUIRED FOR ROUNDABOUT AND BRIDGE CONSTRUCTION.

NOTE: ADVANCE WARNING SIGNS SHALL BE INSTALLED A MINIMUM OF 3 DAYS PRIOR TO THE ONSET OF CONSTRUCTION.

PHASE I

STEP 1: BEFORE BEGINNING CONSTRUCTION, CONTRACTOR SHALL INSTALL ADVANCE WORK ZONE WARNING SIGNS ALONG EXISTING -L- AND ALL -Y- LINES IN ACCORDANCE WITH ROADWAY STANDARD DRAWING 1101.01, SHEETS 2 & 3 OF 3.

STEP 2: CONTRACTOR, USING ROADWAY STANDARD DRAWING 1101.02, SHEETS 1, 2 & 3 OF 15:

MAY BEGIN CLEARING/GRUBBING & GRADING OPERATIONS,AND CONSTRUCTION OF PROPOSED DRAINAGE (INCLUDING CURB & GUTTER) ALONG & ACROSS EXISTING (L) AND ALL -Y- LINES/DRIVEWAYS, AS DIRECTED BY THE ENGINEER (SEE CONSTRUCTION PLANS).

MAY BEGIN TRENCHLESS INSTALLATION OF PROPOSED DRAINAGE UNDER EXISTING -Y4- AS DIRECTED BY THE ENGINEER (SEE CONSTRUCTION PLANS).

MAY BEGIN CONSTRUCTION OF PROPOSED BRIDGE PROVIDED TEMPORARY CONCRETE BARRIER IS IN PLACE AS DIRECTED BY THE ENGINEER.

MAY BEGIN CONSTRUCTION OF THE FOLLOWING:
-L- 15+00+/- TO 18+80+/- (SEE TMP-3A & 3B)
-L- 26+68+/- TO 37+00+/- (SEE TMP-3B & 3C)
-Y4RPB- 10+49+/- TO 13+80+/- (SEE TMP-3C)
-Y4RPD- 15+00+/- TO 23+73+/- (SEE TMP-3C & 3D)

OUTSIDE & MEDIAN SHOULDERS AWAY FROM BRIDGE & RAMP AREAS AS FOLLOWS:
-Y4- 13+50+/- TO 15+00+/- (RT)(SEE TMP-3C)
-Y4- 17+50+/- TO 24+76+/- (RT)(SEE TMP-3C & 3D)
-Y4- 13+50+/- TO 16+02+/- (LT)(SEE TMP-3C)
-Y4- 19+68+/- TO 25+87+/- (LT)(SEE TMP-3C & 3D)
-Y4- 13+50+/- TO 33+82+/- (MED)(SEE TMP-3C & 3D)

SHALL PLACE TEMPORARY PAVEMENT MARKINGS(PAINT)ON THE FOLLOWING:
-Y1- 14+95+/- TO 21+55+/- (SEE TMP-3A)

SHALL BEGIN CONSTRUCTION OF THE FOLLOWING:
-L- 10+22+/- TO 13+00+/- (INCL. RETAIN WALL, DRAINAGE, ETC.) (SEE TMP-3A)
MAINTAIN ACCESS TO THE COUNTY BUS MAINTENANCE AREA, CLOSE SOUTHWEST COMMUNITY COLLEGE (SCC) PARKING LOT ENTRANCE ACROSS FROM BONNIE LANE AND CLOSE PARKING SPACES AS NECESSARY TO INSTALL TYPE III BARRICADES AND WATER FILLED BARRIER

-Y5A- 10+10+/- TO -Y5- 12+20+/- (SEE TMP-3A)
-L- 18+80+/- TO 26+68+/- (INCL. SIDEWALK)(SEE TMP-3B)
-Y3- 10+26+/- TO 18+00+/- (INCL. SIDEWALK) (SEE TMP-3B)
-Y1DET- 17+15+/- TO 19+68+/- (SEE TMP-3A)
-DR1DET- 13+53+/- TO 14+37+/- (SEE TMP-3A)
-Y6- 13+31+/- TO 14+25+/- (NEW HANDICAP PARKING & SIDEWALK) (SEE TMP-3A)
-Y4RPADET1- 10+45+/- TO 11+82+/- (SEE TMP-3D)
-Y4RPA- 16+50+/- TO 22+50+/- (SEE TMP-3C & 3D)
-Y4RPADET2- 21+20+/- TO 24+52+/- (SEE TMP-3C)
-Y4- 21+87+/- TO 24+85+/- (TEMP. MEDIAN OPENING)(SEE TMP-3D)

OUTSIDE SHOULDERS IN BRIDGE AREA FOR PLACEMENT OF DRAINAGE STRUCTURES AND TEMPORARY CONCRETE BARRIER
-Y4- 15+00+/- TO 17+50+/- (RT)(SEE TMP-3C)
-Y4- 16+02+/- TO 19+68+/- (LT)(SEE TMP-3C)

STEP 3: CONTRACTOR, USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 15:

SHALL COMPLETE CONSTRUCTION, PLACE TEMPORARY PAVEMENT MARKINGS(PAINT) AND OPEN TO TRAFFIC THE FOLLOWING:
-Y5A- 10+20+/- TO -Y5- 12+20+/- (SEE TMP-3E)

SHALL BEGIN CONSTRUCTION OF THE FOLLOWING:
-Y5- 10+52+/- TO 12+20+/- (INCL. RCBC)(SEE TMP-3E)

STEP 4: CONTRACTOR, USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 15:

SHALL COMPLETE CONSTUCTION, PLACE TEMPORARY PAVEMENT MARKINGS(PAINT) AND OPEN TO TRAFFIC THE FOLLOWING:
-L- 18+80+/- TO 26+68+/- (INCL. SIDEWALK) (SEE TMP-3F)
-Y3- 10+44+/- TO 18+00+/- (INCL. SIDEWALK)(SEE TMP-3F)
-Y5- 10+27+/- TO 12+20+/- (INCL. RCBC)(SEE TMP-4A)

-DR1DET- 13+53+/- TO 14+37+/- (PAVEMENT MARKINGS NOT REQUIRED)(SEE TMP-4A)
-Y6- 13+31+/- TO 14+25+/- (NEW HANDICAP PARKING & SIDEWALK) (SEE TMP-4A)

SHALL COMPLETE CONSTUCTION OF THE RETAINING WALL AS FOLLOWS:
-L- 10+43+/- TO 13+00+/- (SEE TMP-4A)

NOTE: CONTRACTOR SHALL WORK IN PHASE I, STEP 5 AND PHASE II SIMULTANEOUSLY.

CONTRACTOR SHALL WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN PHASE I, STEPS 5A THRU 5C (SEE INTERMEDIATE CONTRACT TIME AND SPECIAL PROVISIONS).

STEP 5: CONSTRUCTION OF PROPOSED CULVERT AND SCC PARKING LOT

A. CLOSE -Y6- AND SCC PARKING LOT AND DETOUR TRAFFIC ALONG -Y5- AND -Y5A- (SEE TMP-4A)

B. INSTALL SAFETY FENCE, WATER FILLED BARRIER AND TEMPORARY SHORING AND CONSTRUCT RCBC AND PROPOSED SCC PARKING LOT (SEE TMP-4A)

C. REMOVE TEMPORARY EMERGENCY ACCESS CONNECTOR (SEE TMP-4D)PLACE FINAL PAVEMENT MARKINGS ON SCC PARKING LOT(SEE FINAL PAVEMENT MARKING PLANS)AND OPEN -Y6- (PAVEMENT MARKINGS NOT REQUIRED) AND PARKING LOT TO TRAFFIC

PHASE II

STEP 1: CONTRACTOR, USING ROADWAY STANDARD DRAWING 1101.02, SHEETS 1, 2 & 3 OF 15:

SHALL COMPLETE CONSTRUCTION OF -Y1DET-, PLACE TEMPORARY PAVEMENT MARKINGS(PAINT) AND DETOUR TRAFFIC ALONG -Y1DET- AS FOLLOWS:
-Y1- 13+25+/- TO 22+55+/-(SEE TMP-4A)

SHALL COMPLETE CONSTRUCTION, PLACE TEMPORARY PAVEMENT MARKINGS(PAINT), CLOSE EVANS ROAD AND OPEN TO TRAFFIC THE FOLLOWING:
-Y4RPADET1- 10+45+/- TO 11+82 +/- (SEE TMP-4C)
-Y4RPA- 17+84+/- TO 21+20+/- (SEE TMP-4B & 4C)
-Y4RPADET2- 21+20+/- TO 25+14+/- (SEE TMP-4B)
-Y4- 21+87+/- TO 24+85+/- (TEMP. MEDIAN OPENING)(SEE TMP-4C)

SHALL COMPLETE CONSTRUCTION OF THE FOLLOWING:
OUTSIDE SHOULDERS IN BRIDGE AREA FOR PLACEMENT OF TEMPORARY CONCRETE BARRIER
-Y4- 15+00+/- TO 17+50+/- (RT)(SEE TMP-4B)
-Y4- 16+02+/- TO 19+68+/- (LT)(SEE TMP-4B)

STEP 2: CONTRACTOR, USING ROADWAY STANDARD DRAWING 1101.02, SHEETS 1, 2 & 3 OF 15:

SHALL PLACE TEMPORARY PAVEMENT MARKINGS (PAINT), INSTALL TEMPORARY CONCRETE BARRIER ON THE OUTSIDE SHOULDERS (BRIDGE AREA & ON\OFF RAMP AREAS) AND SHIFT TRAFFIC TO THE OUTSIDE. THEN,INSTALL TEMPORARY CONCRETE BARRIER ON THE MEDIAN SHOULDERS, INSTALL TEMPORARY SHORING AS SHOWN ON TMP-4E AND BEGIN CENTER BENT AND MSE WALL CONSTRUCTION.
-Y4- 12+50+/- TO 19+00+/- (RT) (PAVEMENT MARKINGS)(SEE TMP-4E)
-Y4- 14+50+/- TO 20+80+/- (LT) (PAVEMENT MARKINGS)(SEE TMP-4E)
-Y4- 14+19+/- TO 17+50+/- (RT) (BARRIER)(SEE TMP-4E)
-Y4- 16+02+/- TO 19+30+/- (LT) (BARRIER)(SEE TMP-4E)
-Y4- 24+63+/- TO 33+78+/- (RT) (BARRIER)(SEE TMP-4E)
-Y4- 25+08+/- TO 36+10+/- (LT) (BARRIER)(SEE TMP-4E)
-Y4- 13+98+/- TO 17+52+/- (MED) (BARRIER)(SEE TMP-4E)
-Y4- 16+13+/- TO 19+04+/- (MED) (BARRIER)(SEE TMP-4E)

SHALL BEGIN CONSTRUCTION OF THE FOLLOWING:
-L- 13+00+/- TO 15+00+/-(INCL. RETAINING WALL & DRIVE)(SEE TMP-4D)
-Y1- 14+80+/- TO 21+00+/-(LT)(INCL. SIDEWALK, CENT. ISLAND & APRON) (SEE TMP-4A)
-L- 37+00+/- TO 46+21+/- (INCL. BRIDGE, CENT. ISLAND & APRON) (SEE TMP-4E)
-Y4RPA- 10+00+/- TO 16+50+/- (SEE TMP-4F)
-Y4- 31+50+/- TO 35+00+/-(LT) (SEE TMP-4F)
-Y4RPD- 10+00+/- TO 15+00+/- (SEE TMP-4F)
-Y4- 28+50+/- TO 35+00+/- (RT) (SEE TMP-4F)

STEP 3: CONTRACTOR, USING ROADWAY STANDARD DRAWING 1101.02, SHEET 2 OF 15:

SHALL COMPLETE CONSTRUCTION, PLACE TEMPORARY PAVEMENT MARKINGS(PAINT)AND OPEN TO TRAFFIC THE FOLLOWING:
-Y1- 14+80+/- TO 21+00+/- (INCL. SIDEWALK) (SEE TMP-4D)

STEP 4: CONTRACTOR, USING ROADWAY STANDARD DRAWING 1101.02, SHEETS 1 & 2 OF 15:

SHALL BEGIN CONSTRUCTION OF THE FOLLOWING:
-Y1- 14+80+/- TO 21+00+/- RT.(INCL. SIDEWALK & ISLAND) (SEE TMP-4D)

STEP 5: CONTRACTOR, USING ROADWAY STANDARD DRAWING 1101.02, SHEETS 1, 2 & 3 OF 15:

SHALL COMPLETE CONSTRUCTION OF THE FOLLOWING:
-L- 13+00+/- TO 15+00+/-(INCL. RETAINING WALL)
-Y4- 12+50+/- TO 35+00+/- (INCL. ALL DRAINAGE, SHOULDERS, BRIDGE AND MSE WALLS)

STEP 6: CONTRACTOR, USING ROADWAY STANDARD DRAWING 1101.02, SHEETS 1, 2 & 3 OF 15:

SHALL INSTALL REMAINING CONCRETE MONOLITHIC ISLANDS, REMOVE TEMPORARY MEDIAN OPENING, COMPLETE ALL REMAINING CONSTRUCTION, PAVE THE FINAL LAYER OF SURFACE COURSE, PLACE FINAL PAVEMENT MARKINGS, INSTALL PERMANENT PAVEMENT MARKINGS ON ENTIRE PROJECT (-L- AND ALL -YLINES- AND RAMPS) AND OPEN TO FINAL TRAFFIC PATTERN (SEE CONSTRUCTION PLANS AND FINAL PAVEMENT MARKING PLANS).

STEP 7: CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL DEVICES FROM THE PROJECT.

APPROVED:__________ DATE:__________

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21102 JAMES TIMOTHY JORDAN

9/5/12

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LICENSE NO. F-0669

TRAFFIC CONTROL PHASING

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-2A

TEMPORARY SHORING NOTES

TEMPORARY SHORING NO. 1 (SEE SHEET TMP - 4A)

- For temporary shoring and positive protection for temporary shoring, see plans and temporary shoring provision.

- Before beginning temporary shoring design or construction, survey existing ground elevations in the vicinity of shoring locations to determine actual shoring heights.
Along the Culvert Main Line

- Design temporary shoring from station -Y6- 12+80, 48.9 ft RT. to station –L- 14+81, 65.4 ft. LT., for the following assumed soil parameters and groundwater elevation:
Unit weight (gamma) = 120 lb/cf.
Friction angle (phi) = 26 degrees
Cohesion = 0 lb/sf
Groundwater elevation = 2095 ft.

- Limited subsurface information is available for the proposed shoring along the culvert alignment. The information provided for design was assumed and may not be applicable to the actual site conditions encountered during construction. See subsurface inventory reports for additional information.

TEMPORARY SHORING NO. 2 AND NO. 3 (SEE SHEET TMP - 4E)

- For temporary shoring and positive protection for temporary shoring, see plans and temporary shoring provision.

- 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 –Y4- 16+37, 12.2 ft RT & LT to station –Y4- 17+00, 12.2 ft., RT & LT, for the following assumed soil parameters and groundwater elevation:
Above Elevation 2130 feet, NAVD
Unit weight (gamma) = 120 lb/cf
Friction angle (phi) = 26 degrees
Cohesion = 0 lb/sf
Groundwater elevation = 2140 ft.
Below Elevation 2130 feet, NAVD (For soils only)
Unit weight (gamma) = 125 lb/cf
Friction angle (phi) = 32 degrees
Cohesion = 0 lb/sf
Groundwater elevation = 2140 ft.

- Driven piling for temporary shoring from station –Y4- 16+37, 12.2 ft RT & LT to station –Y4- 17+00, 12.2 ft., RT & LT,, may not penetrate below elevation 2120 ft. due to obstructions, very dense to hard soils, boulders or weathered or hard rock.

TEMPORARY SHORING NO. 4 (SEE SHEET TMP - 4E)

- For temporary shoring and positive protection for temporary shoring, see plans and temporary shoring provision.

- 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 –Y4- 16+72, 46.1 ft. LT to station –Y4- 18+30, 43.3 ft. LT, for the following assumed soil parameters and groundwater elevation:
Above Elevation 2129 feet, NAVD
Unit weight (gamma) = 120 lb/cf
Friction angle (phi) = 26 degrees
Cohesion = 0 lb/sf
Groundwater elevation = 2144 ft.
Below Elevation 2129 feet, NAVD (for soils only)
Unit weight (gamma) = 125 lb/cf
Friction angle of soil = 32 degrees
Cohesion = 0 lb/sf
Groundwater elevation = 2144 ft.

- Driven piling for temporary shoring from –Y4- 16+72, 46.1 ft. LT to station –Y4- 18+30, 43.3 ft. LT, may not penetrate below elevation 2129 ft. due to obstructions, very dense to hard soils, boulders or weathered or hard rock.

- Limited subsurface information is available for the proposed shoring along the alignment. The information provided for design was assumed and may not be applicable to the actual site conditions encountered during construction. See subsurface inventory reports for any additional information.

- Undercut is required for the construction of End Bent 2. Coordinate shoring installation with undercut and excavation operations. The anticipated excavation elevation adjacent to NC107 is 2138 feet, NAVD, left to right facing of the shoring. The ground surface normal to the face of the shoring is anticipated to be 6(H):1(V) or flatter.

TEMPORARY SHORING NO. 5 (SEE SHEET TMP - 4F)

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

TEMPORARY SHORING IS REQUIRED FOR THE PIPE INSTALLATION FROM STATION -Y4- 25+08, 62.2 FEET LEFT, TO STATION -Y4- 26+97, 52.0 FEET LEFT.

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 -Y4- 25+08, 62.2 FEET LEFT, TO STATION -Y4- 26+97, 52.0 FEET LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
UNIT WEIGHT (gamma) = 120 LB/CF
FRICTION ANGLE (phi) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 2105 FEET

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -Y4- 25+08, 62.2 FEET LEFT, TO STATION -Y4- 26+97, 52.0 FEET LEFT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -Y4- 25+08, 62.2 FEET LEFT, TO STATION -Y4- 26+97, 52.0 FEET LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

TEMPORARY SHORING NO. 6 (SEE SHEET TMP - 4F)

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

TEMPORARY SHORING IS REQUIRED FOR THE PIPE INSTALLATION FROM STATION -Y4- 32+25, 70.9 FEET LEFT, TO STATION -Y4- 35+10, 59.8 FEET LEFT.

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 -Y4- 32+25, 70.9 FEET LEFT, TO STATION -Y4- 35+10, 59.8 FEET LEFT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:
UNIT WEIGHT (gamma) = 120 LB/CF
FRICTION ANGLE (phi) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 2090 FEET

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF TEMPORARY SHORING FROM STATION -Y4- 32+25, 70.9 FEET LEFT, TO STATION -Y4- 35+10, 59.8 FEET LEFT. THE INFORMATION PROVIDED FOR TEMPORARY SHORING DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

AT THE CONTRACTOR'S OPTION, USE STANDARD TEMPORARY SHORING FOR TEMPORARY SHORING FROM STATION -Y4- 32+25, 70.9 FEET LEFT, TO STATION -Y4- 35+10, 59.8 FEET LEFT. SEE STANDARD DRAWING NO. 1801.01 FOR STANDARD TEMPORARY SHORING.

FOR AREAS 1 THROUGH 4

The temporary shoring notes shown on this sheet were provided through a sealed document from Falcon Engineering, a consultant engineer to the NCDOT Geotechnical Engineering Unit . The document was submitted to the Roadway Design Engineer on August 3, 2012 and sealed by a Professional Engineer, Mahalingam Bahiradhan, PE , license #036072.

FOR AREAS 5 THROUGH 6

The temporary shoring notes shown on this sheet were provided through a sealed document from the NCDOT Geotechnical Engineering Unit. The document was submitted to the Roadway Design Engineer on August 9, 2012 and sealed by a Professional Engineer, J. Dean Hardister, PE , license #023481.

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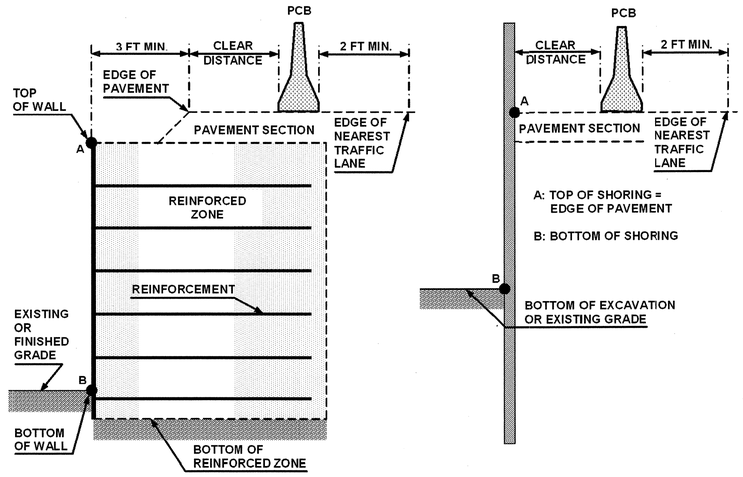
TEMPORARY SHORING NOTES



NOTE: WALL OR SHORING HEIGHT = A - B

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.

MINIMUM REQUIRED CLEAR DISTANCE, inches

Barrier Type	Pavement Type	Offset * ft	Design Speed, mph					
			<30	31-40	41-50	51-60	61-70	71-80
Unanchored PCB	Asphalt	<8	24	26	29	32	36	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
		26-32	29	32	36	39	42	45
		32-38	30	34	38	41	43	46
		38-44	31	34	41	43	45	48
		44-50	31	35	41	43	46	49
		50-56	32	36	42	44	47	50
		>56	32	36	42	45	47	51
	Concrete	<8	17	18	21	22	25	26
		8-14	19	20	23	25	26	29
		14-20	22	22	24	26	28	31
		20-26	23	24	26	27	30	34
		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**

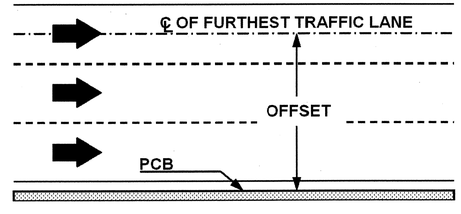


FIGURE B

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www.hatchmott.com
LICENSE NO. F-0669

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER JAMES TIMOTHY JORDAN

8/23/12

DIVISION OF HIGHWAYS * STATE OF NORTH CAROLINA * DEPARTMENT OF TRANSPORTATION * WORK ZONE TRAFFIC CONTROL

PORTABLE CONCRETE BARRIER
AT
TEMPORARY SHORING LOCATIONS

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-2C

SIGN NUMBER: SP12264
TYPE: D
QUANTITY: 1
SIGN WIDTH: 3'-0"
HEIGHT: 2'-0"
TOTAL AREA: 6.0 Sq.Ft.
BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 0.5"
RADII: 1.5"
NO. Z BARS:
LENGTH:

BACKG COLOR: Green
COPY COLOR: White

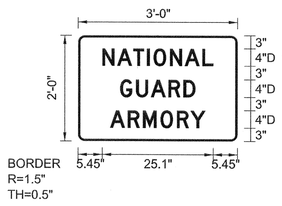
SYMBOL	X	Y	WID	HT

MAT'L: 0.125" (3.2 mm) ALUMINUM

USE NOTES: 1,2

1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade C reflective sheeting.

DESIGN BY: W. Johnson
PROJECT ID: R-5000
CHECKED BY:
DIV: 14
DATE: Aug 06, 2012



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																															Series/Size Text Length
		N	A	T	I	O	N	A	L																						D 2000
	5.5	3.3	3.6	3.1	1.5	3.7	3.3	4	2.5	5.5																					25.1
		G	U	A	R	D																									D 2000
	9.5	3.6	3.3	4	3.4	2.7	9.5																								17
		A	R	M	O	R	Y																								D 2000
	7.2	4	3.4	4	3.7	3	3.4	7.2																							21.6

FILENAME: R-5000
NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: SP12265
TYPE: D
QUANTITY: 1
SIGN WIDTH: 3'-0"
HEIGHT: 2'-0"
TOTAL AREA: 6.0 Sq.Ft.
BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 0.5"
RADII: 1.5"
NO. Z BARS:
LENGTH:

BACKG COLOR: Green
COPY COLOR: White

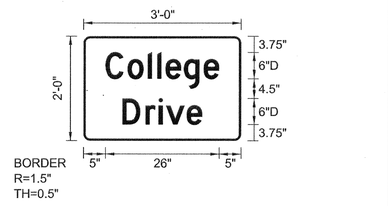
SYMBOL	X	Y	WID	HT

MAT'L: 0.125" (3.2 mm) ALUMINUM

USE NOTES: 1,2

1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade C reflective sheeting.

DESIGN BY: W. Johnson
PROJECT ID: R-5000
CHECKED BY:
DIV: 14
DATE: Aug 08, 2012



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

																															Series/Size Text Length
		C	o	l	l	e	g	e																							D 2000
	5	5	4.6	2.2	1.9	4.1	4.6	3.5	5																						26
		D	r	i	v	e																									D 2000
	8.9	5.3	3	1.7	4.7	3.5	8.9																								18.2

FILENAME: R-5000
NORTH CAROLINA D.O.T. SIGN DETAIL

SIGN NUMBER: SP12266
TYPE: D
QUANTITY: 1
SIGN WIDTH: 3'-0"
HEIGHT: 2'-0"
TOTAL AREA: 6.0 Sq.Ft.
BORDER TYPE: FLUSH
RECESS: 0"
WIDTH: 0.5"
RADII: 1.5"
NO. Z BARS:
LENGTH:

BACKG COLOR: Green
COPY COLOR: White

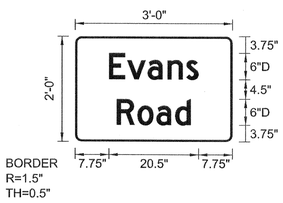
SYMBOL	X	Y	WID	HT

MAT'L: 0.125" (3.2 mm) ALUMINUM

USE NOTES: 1,2

1. Legend and border(except those that are colored black) shall be direct applied Grade C sheeting.
2. Background shall be Grade C reflective sheeting.

DESIGN BY: W. Johnson
PROJECT ID: R-5000
CHECKED BY:
DIV: 14
DATE: Aug 08, 2012



Spacing Factor is 1 unless specified otherwise

LETTER POSITIONS

Letter spacings are to start of next letter

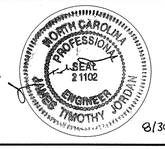
																															Series/Size Text Length
		E	v	a	n	s																									D 2000
	7.7	4.1	4.7	4.6	4.3	2.8	7.7																								20.5
		R	o	a	d																										D 2000
	9.5	4.7	4.3	4.3	3.6	9.5																									17

FILENAME: R-5000
NORTH CAROLINA D.O.T. SIGN DETAIL

The special sign designs shown on this sheet were provided through a sealed document from Signing and Delineation. The document was submitted to Hatch Mott MacDonald, a consultant engineer to WZTC on August 8, 2012 and sealed by a Professional Engineer, Ronald W. King, license # 022959

APPROVED:_____ DATE:_____

SEAL



8/30/12

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www.hatchmott.com
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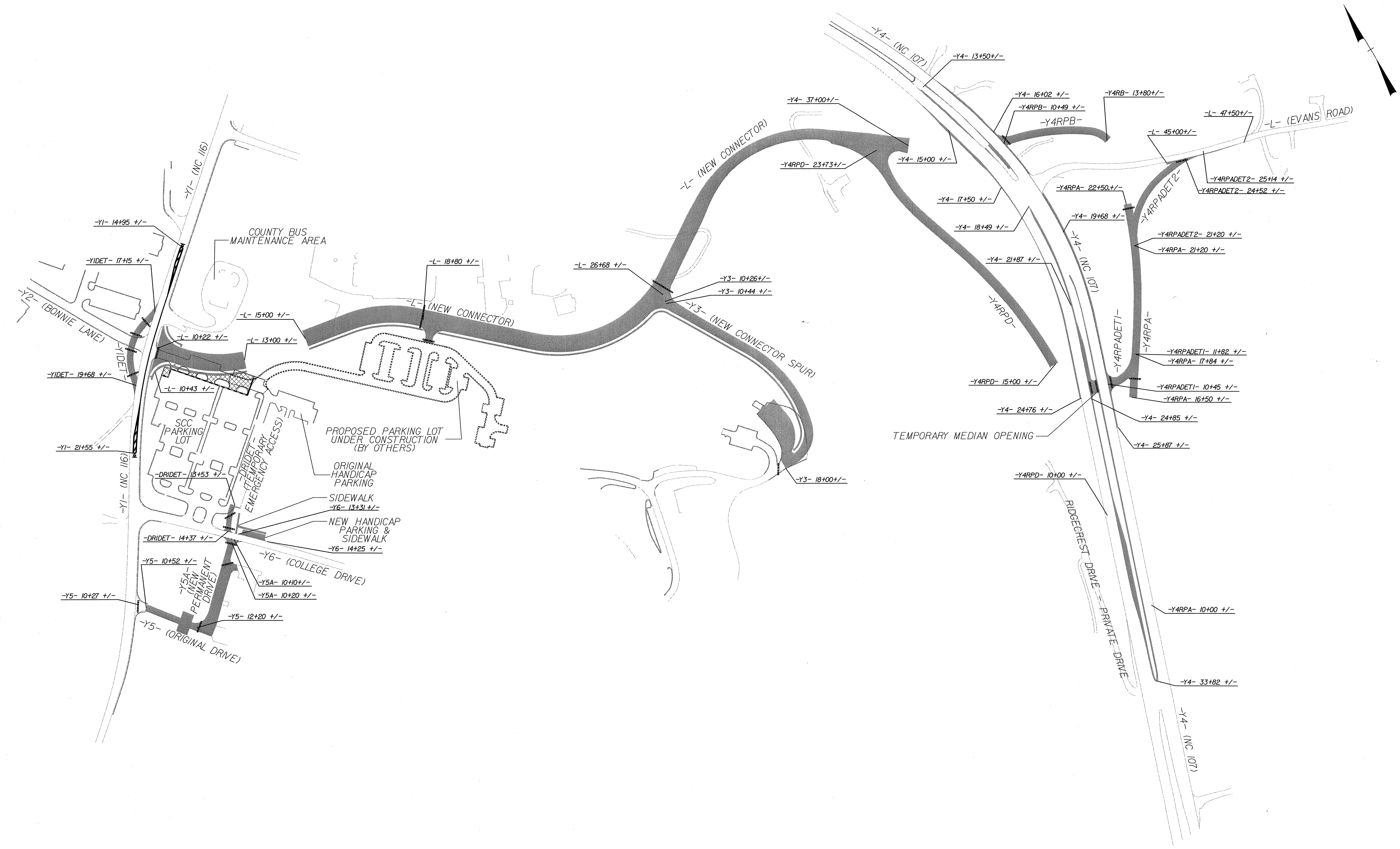
SPECIAL SIGN DESIGNS

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-3



APPROVED:________________ DATE:________

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21108 JAMES TIMOTHY JORDAN

6/28/12

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LICENSE NO. F-0669

PHASE I – OVERVIEW

11:38:26 AM
R:\Traffic Control\Tcp\R5000_TC_TMP_3.dgn
phl56855

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-3A

-YIDET- 19+68 +/-

-YI- 21+55 +/-

10+00

10+00

-YI- (NC 116)

20+00

20+00

-YIDET-

-Y2- (BONNIE LANE)

-YIDET- 17+15 +/-

15+00

-YI- 14+95 +/-

-YI- (NC 116)

-L- 10+22 +/-

-Y5- (ORIGINAL DRIVE)

-Y5- 12+20 +/-

-DRIDET- 14+37 +/-

-Y5A- 10+10 +/-

-Y5A- (NEW PERMANENT DRIVE)

-DRIDET- 13+53 +/-

BEGIN RETAINING WALL
-L- STA.10+43 +/-

SCC PARKING LOT

WATER FILLED BARRIER

-L- (NEW CONNECTOR)

-L- 13+00 +/-
END RETAINING WALL

COUNTY BUS
MAINTENANCE AREA

SIDEWALK

-DRIDET- (TEMPORARY EMERGENCY ACCESS)

NEW HANDICAP PARKING & SIDEWALK

-Y6- 13+31 +/-

-Y6- 14+25 +/-

-Y6- (COLLEGE DRIVE)

ORIGINAL HANDICAP PARKING 10+00

PROPOSED PARKING LOT
UNDER CONSTRUCTION
(BY OTHERS)

-L- 15+00 +/-

-L- (NEW CONNECTOR)

SEE TMP-3B

R11-2
48" x 30"
ROAD CLOSED
TYPE III BARRICADE

PP

PI

MH

1 2 3 4 5

TRAFFIC SHIFT AHEAD W31-1 48" X 48"

CENTER LANE CLOSED AHEAD W9-3 48" X 48"

CENTER LANE CLOSED W20-15 48" X 48"

W1-6 48" X 48" 25 M.P.H. W13-1 24" X 24"

W1-8 48" X 48" 25 M.P.H. W13-1 24" X 24"

LEGEND

- PROPOSED CONSTRUCTION
- ONGOING CONSTRUCTION
- PAVEMENT REMOVAL

APPROVED:_____ DATE:_____

SEAL

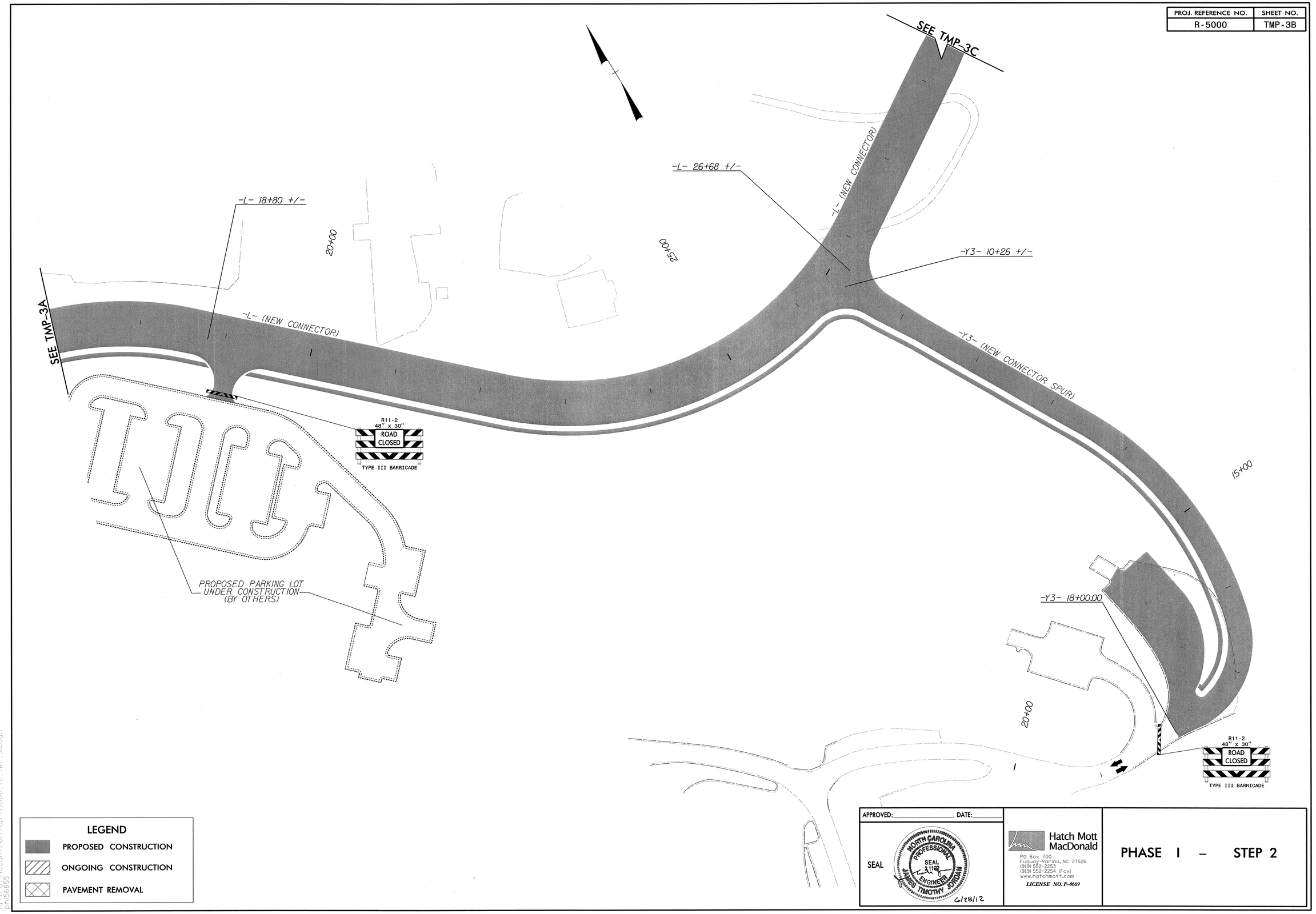
NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JAMES TIMOTHY JORDAN

6/28/12

Hatch Mott MacDonald
PO Box 700
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.hatchmott.com
LICENSE NO. F-0669

PHASE I – STEP 2

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-3B



LEGEND

- PROPOSED CONSTRUCTION
- ONGOING CONSTRUCTION
- PAVEMENT REMOVAL

APPROVED:_____ DATE:_____

SEAL

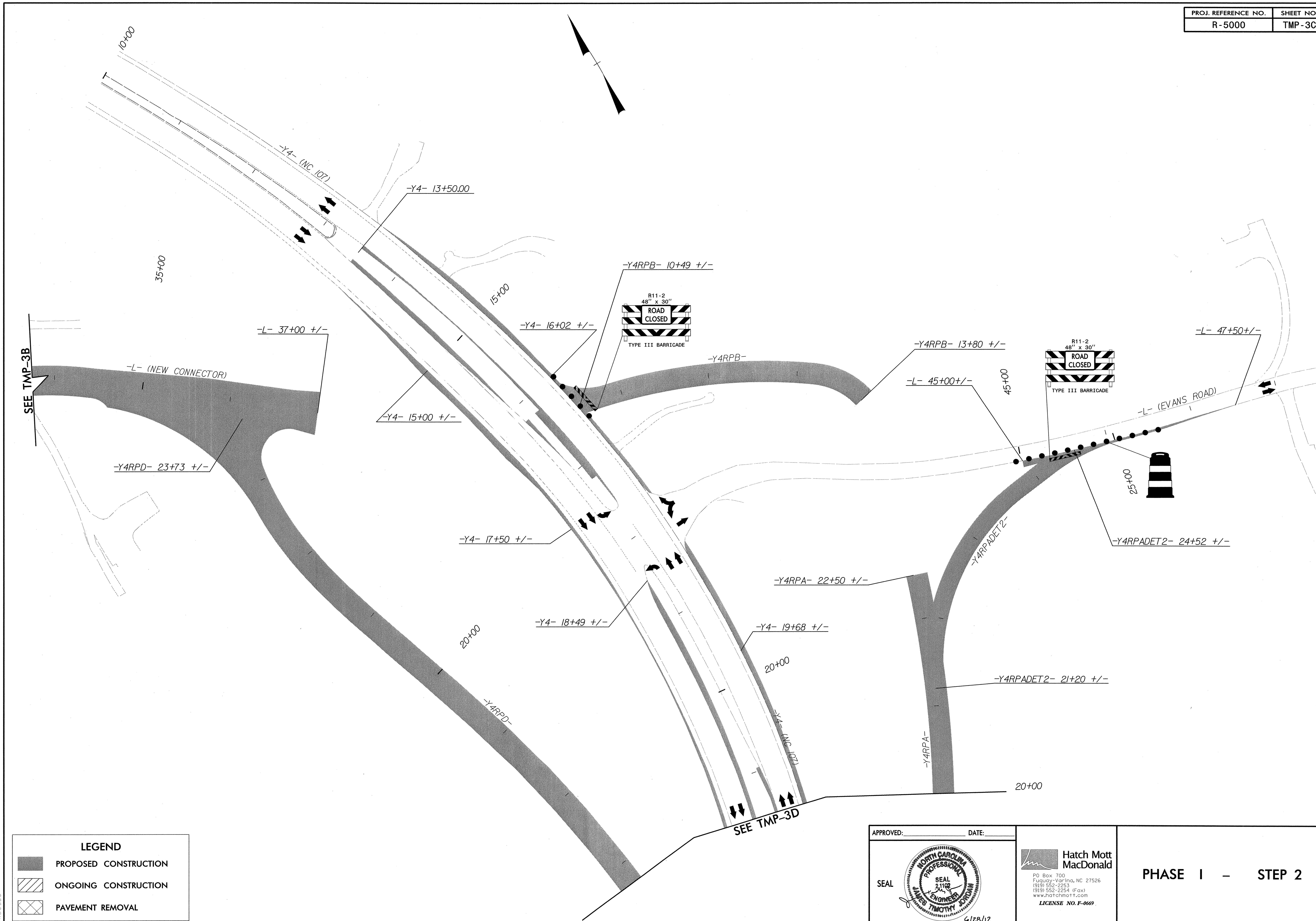
NORTH CAROLINA PROFESSIONAL SEAL 31198 ENGINEER JAMES TIMOTHY JORDAN

6/28/12

Hatch Mott MacDonald
PO Box 700
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.hatchmott.com
LICENSE NO. F-0669

PHASE 1 – STEP 2

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-3C



10+00
-Y4- (NC 107)
-Y4- 13+50.00
35+00
15+00
-Y4RPB- 10+49 +/-
R11-2
48" x 30"
ROAD CLOSED
TYPE III BARRICADE
-Y4- 16+02 +/-
-L- 37+00 +/-
SEE TMP-3B
-L- (NEW CONNECTOR)
-Y4RPB-
-Y4RPB- 13+80 +/-
-L- 45+00+/-
45+00
-L- 47+50+/-
-L- (EVANS ROAD)
-Y4- 15+00 +/-
-Y4RPD- 23+73 +/-
25+00
-Y4RPADET2- 24+52 +/-
-Y4RPADET2-
-Y4- 17+50 +/-
-Y4RPA- 22+50 +/-
20+00
-Y4- 18+49 +/-
-Y4- 19+68 +/-
-Y4RPADET2- 21+20 +/-
-Y4RPD-
-Y4- (NC 107)
-Y4RPA-
SEE TMP-3D
LEGEND
PROPOSED CONSTRUCTION
ONGOING CONSTRUCTION
PAVEMENT REMOVAL

APPROVED: ______ DATE: ______

SEAL

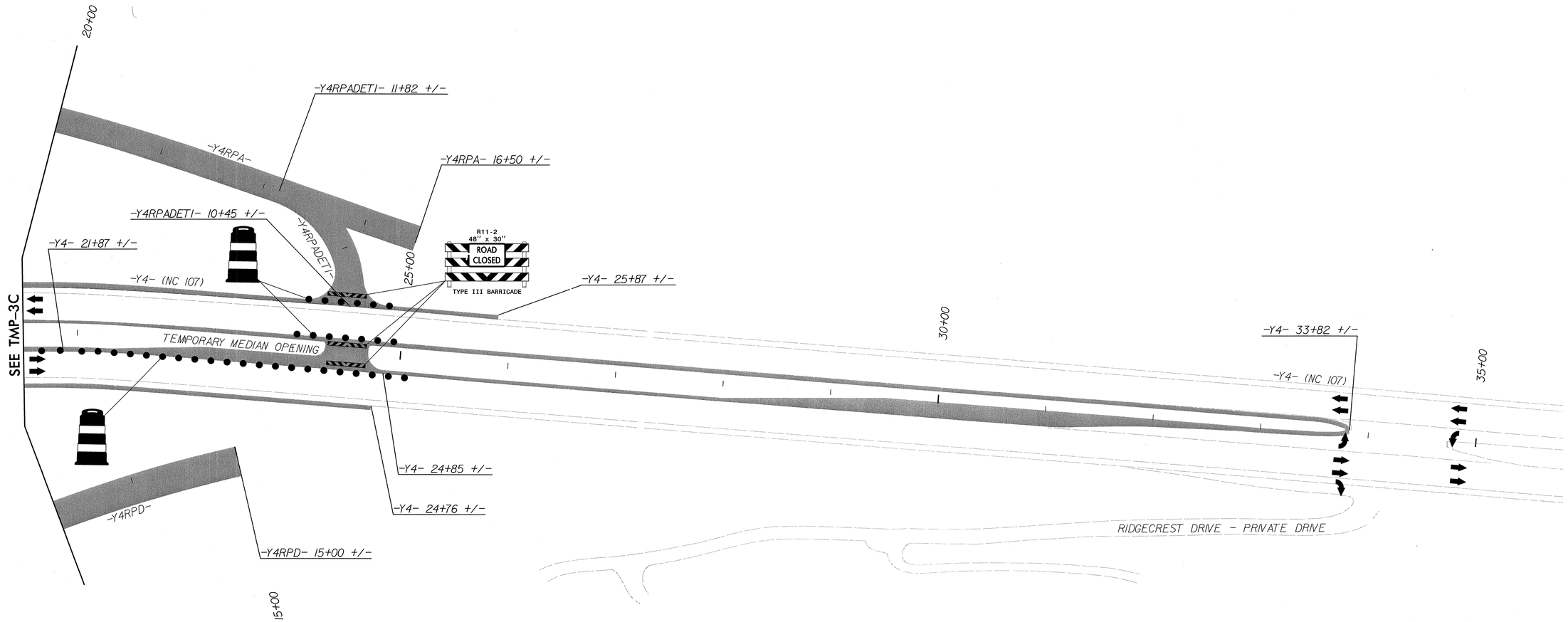
NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JAMES TIMOTHY JORDAN

6/28/12

Hatch Mott MacDonald
PO Box 700
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.hatchmott.com
LICENSE NO. F-0669

PHASE I – STEP 2

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-3D



LEGEND

- PROPOSED CONSTRUCTION
- ONGOING CONSTRUCTION
- PAVEMENT REMOVAL

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 31102 ENGINEER JAMES TIMOTHY SYNOAN

6/28/12

Hatch Mott MacDonald
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Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
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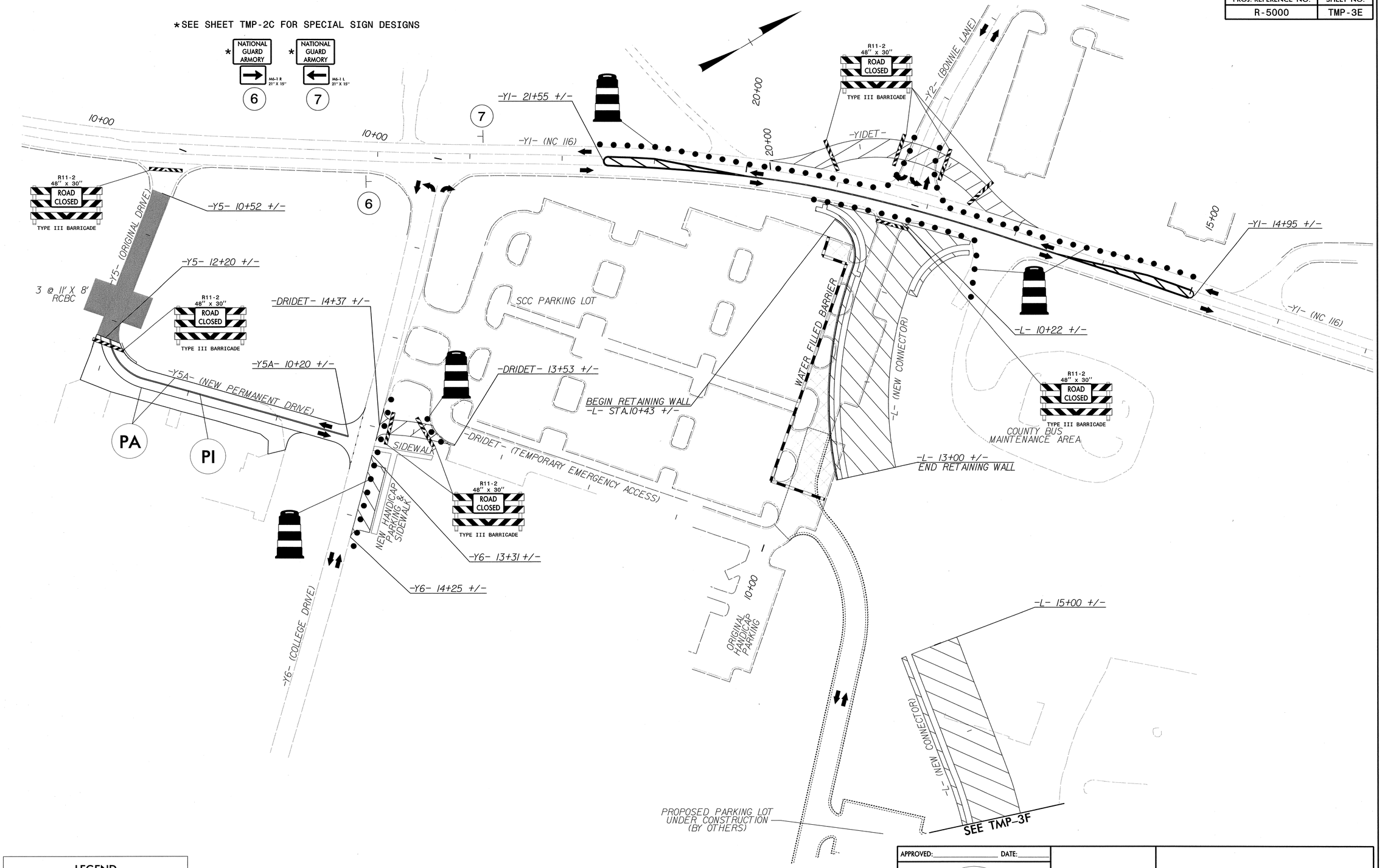
LICENSE NO. F-0669

PHASE 1 – STEP 2

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-3E

*SEE SHEET TMP-2C FOR SPECIAL SIGN DESIGNS



LEGEND

- PROPOSED CONSTRUCTION
- ONGOING CONSTRUCTION
- PAVEMENT REMOVAL

APPROVED:_____ DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 21102 ENGINEER JAMES TIMOTHY JOYNER

6/28/12

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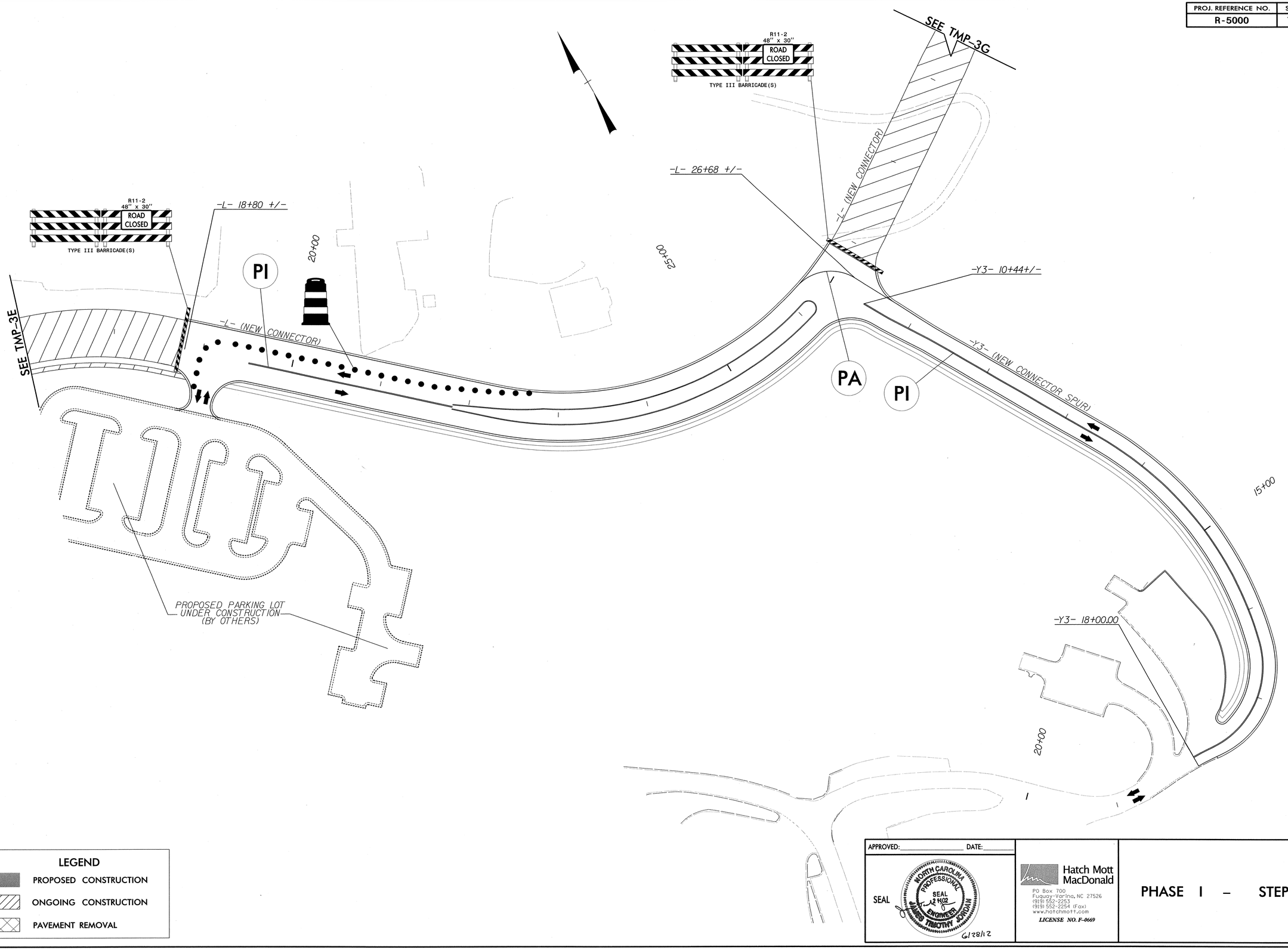
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.hatchmott.com
LICENSE NO. F-0669

PHASE I – STEP 3

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-3F



LEGEND

- PROPOSED CONSTRUCTION
- ONGOING CONSTRUCTION
- PAVEMENT REMOVAL

APPROVED:_____ DATE:_____

SEAL

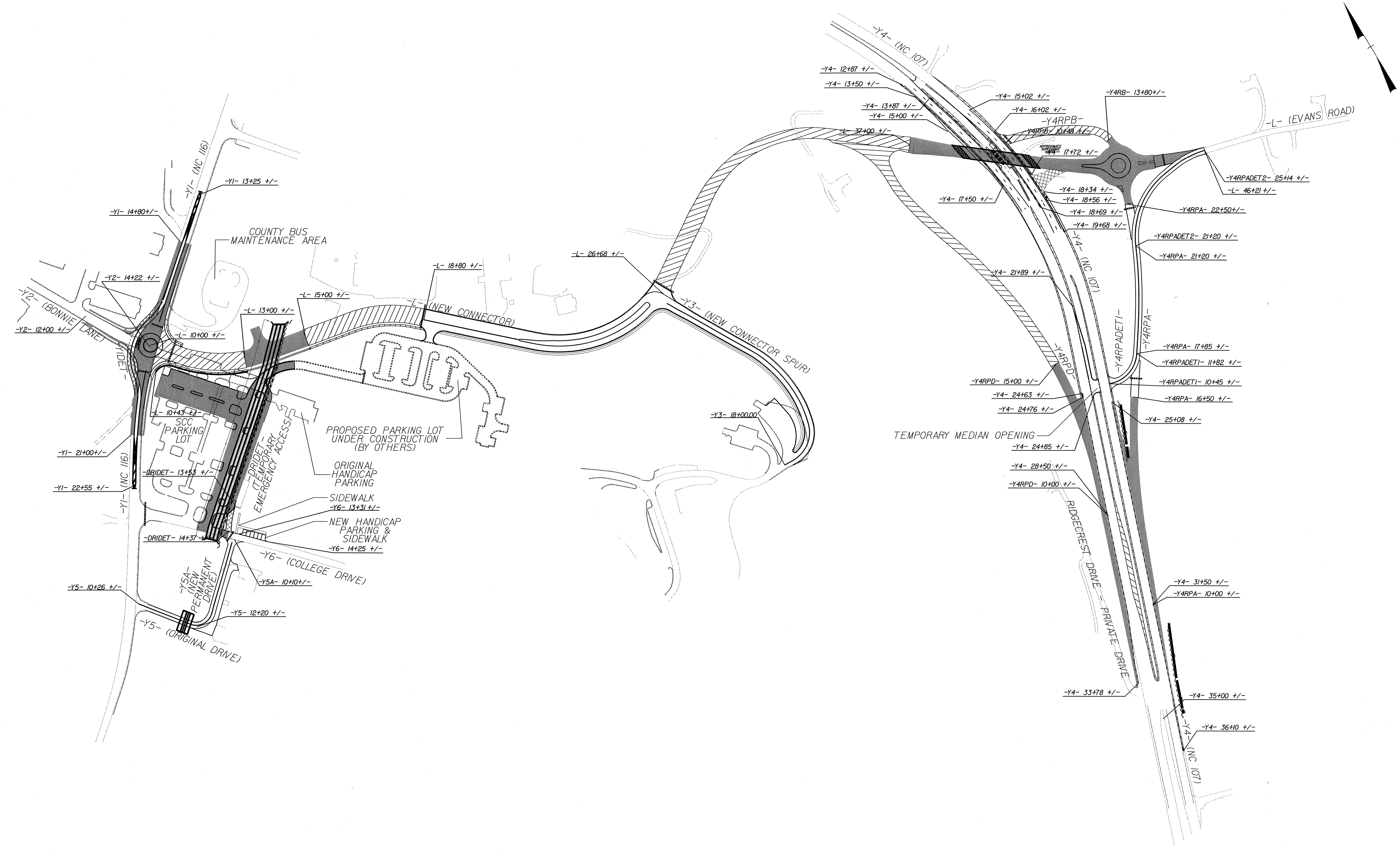
NORTH CAROLINA PROFESSIONAL SEAL 24402 ENGINEER JAMES TIMOTHY JORDAN

6/28/12

Hatch Mott MacDonald
PO Box 700
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.hatchmott.com
LICENSE NO. F-0669

PHASE I – STEP 4

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-4



APPROVED: __________ DATE: __________

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21102 JAMES TIMOTHY JORDAN

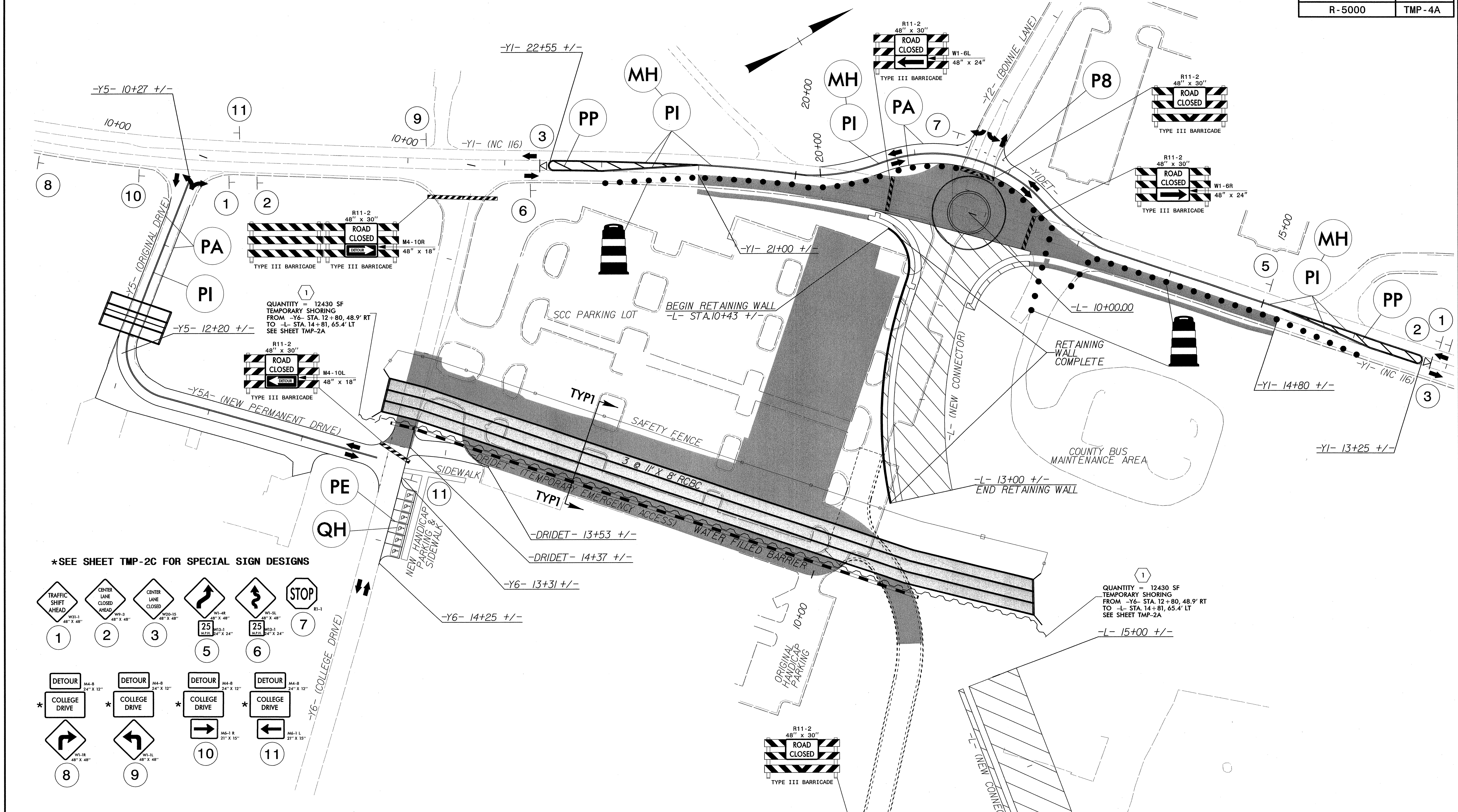
6/28/12

Hatch Mott MacDonald
PO Box 700
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.hatchmott.com
LICENSE NO. F-0669

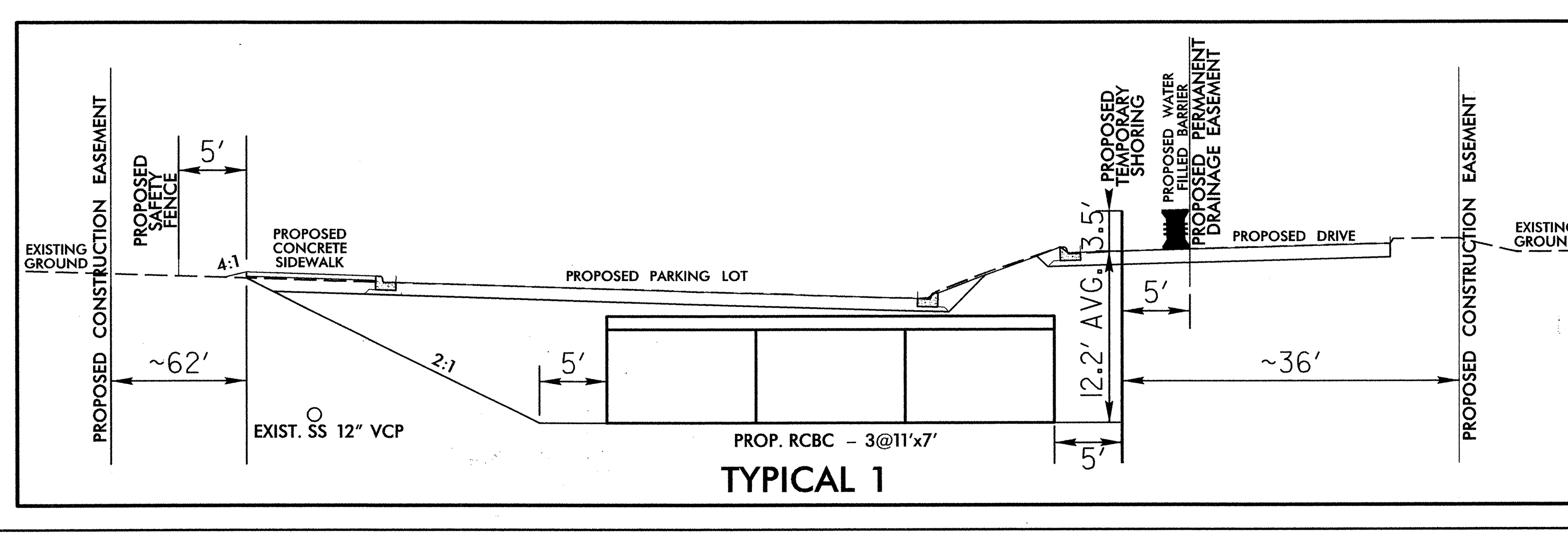
PHASE II – OVERVIEW

8:38:55 AM
R:\Traffic Control\Tcp\R5000_TC_TMP_4.dgn
phi56855

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-4A



-Y1- 22+55 +/-
-Y5- 10+27 +/-
-Y1- (NC 116)
MH
PI
PP
PA
P8
R11-2 48" x 30"
ROAD CLOSED
TYPE III BARRICADE
W1-6L 48" x 24"
W1-6R 48" x 24"
M4-10R 48" x 18"
M4-10L 48" x 18"
-Y2- (BONNIE LANE)
-Y1DET-
-Y1- 21+00 +/-
-Y5- (ORIGINAL DRIVE)
-Y5- 12+20 +/-
QUANTITY = 12430 SF
TEMPORARY SHORING
FROM -Y6- STA. 12+80, 48.9' RT
TO -L- STA. 14+81, 65.4' LT
SEE SHEET TMP-2A
SCC PARKING LOT
BEGIN RETAINING WALL
-L- STA.10+43 +/-
-L- 10+00.00
RETAINING WALL COMPLETE
-Y1- 14+80 +/-
-Y1- 13+25 +/-
-L- (NEW CONNECTOR)
COUNTY BUS MAINTENANCE AREA
-L- 13+00 +/-
END RETAINING WALL
-Y5A- (NEW PERMANENT DRIVE)
SAFETY FENCE
3 @ 11' X 8' RCBC
-DRIDET- (TEMPORARY EMERGENCY ACCESS)
WATER FILLED BARRIER
TYP1
SIDEWALK
PE
QH
NEW HANDICAP PARKING & SIDEWALK
-DRIDET- 13+53 +/-
-DRIDET- 14+37 +/-
-Y6- 13+31 +/-
-Y6- 14+25 +/-
-Y6- (COLLEGE DRIVE)
ORIGINAL HANDICAP PARKING
-L- 15+00 +/-
SEE TMP-4B
*SEE SHEET TMP-2C FOR SPECIAL SIGN DESIGNS
TRAFFIC SHIFT AHEAD
CENTER LANE CLOSED AHEAD
CENTER LANE CLOSED
STOP
DETOUR
COLLEGE DRIVE



PROPOSED CONSTRUCTION EASEMENT
PROPOSED SAFETY FENCE
EXISTING GROUND
PROPOSED CONCRETE SIDEWALK
PROPOSED PARKING LOT
PROPOSED TEMPORARY SHORING
PROPOSED WATER FILLED BARRIER
PROPOSED PERMANENT DRAINAGE EASEMENT
PROPOSED DRIVE
5'
4:1
2:1
~62'
~36'
12.2' AVG.
3.5'
EXIST. SS 12" VCP
PROP. RCBC - 3@11'x7'

TYPICAL 1

LEGEND

- PROPOSED CONSTRUCTION
- ONGOING CONSTRUCTION
- PAVEMENT REMOVAL

APPROVED: ______ DATE: ______

SEAL

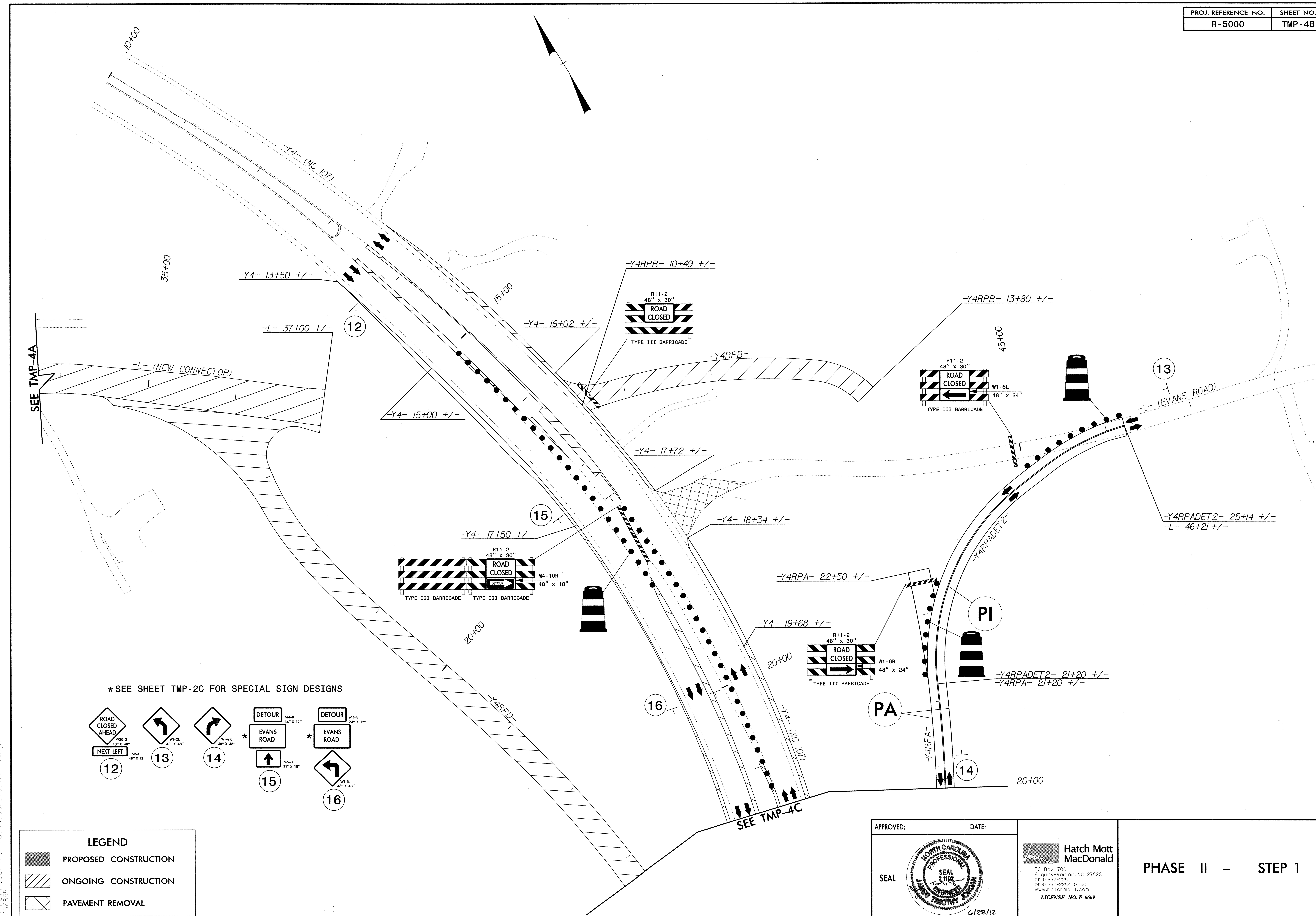
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21802 JAMES TIMOTHY JORDAN 8/14/12

Hatch Mott MacDonald
PO Box 700
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.hatchmott.com
LICENSE NO. F-0669

PHASE I – STEPS 4, 5A & 5B
PHASE II – STEPS 1 & 2

1:26:13 PM
R:\TrafficControl\Tcp\R5000_TC_TMP_4A.dgn
sar57116

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-4B


10+00
-Y4- (NC 107)
35+00
-Y4- 13+50 +/-
15+00
12
-L- 37+00 +/-
SEE TMP-4A
-L- (NEW CONNECTOR)
-Y4- 15+00 +/-
-Y4- 16+02 +/-
-Y4RPB- 10+49 +/-
R11-2
48" x 30"
ROAD CLOSED
TYPE III BARRICADE
-Y4RPB-
-Y4RPB- 13+80 +/-
45+00
R11-2
48" x 30"
ROAD CLOSED
W1-6L
48" x 24"
TYPE III BARRICADE
13
-L- (EVANS ROAD)
-Y4- 17+72 +/-
15
-Y4- 18+34 +/-
-Y4- 17+50 +/-
R11-2
48" x 30"
ROAD CLOSED
DETOUR
M4-10R
48" x 18"
TYPE III BARRICADE
TYPE III BARRICADE
-Y4RPADET2- 25+14 +/-
-L- 46+21 +/-
-Y4RPADET2-
-Y4RPA- 22+50 +/-
PI
-Y4- 19+68 +/-
R11-2
48" x 30"
ROAD CLOSED
W1-6R
48" x 24"
TYPE III BARRICADE
20+00
20+00
-Y4RPADET2- 21+20 +/-
-Y4RPA- 21+20 +/-
PA
16
-Y4- (NC 107)
-Y4RPA-
14
20+00
-Y4RPD-
SEE TMP-4C
*SEE SHEET TMP-2C FOR SPECIAL SIGN DESIGNS
ROAD CLOSED AHEAD
W20-3
48" X 48"
NEXT LEFT
SP-4L
48" X 12"
12
W1-2L
48" X 48"
13
W1-2R
48" X 48"
14
DETOUR
M4-8
24" X 12"
EVANS ROAD
M6-3
21" X 15"
15
DETOUR
M4-8
24" X 12"
EVANS ROAD
W1-1L
48" X 48"
16
LEGEND
PROPOSED CONSTRUCTION
ONGOING CONSTRUCTION
PAVEMENT REMOVAL

APPROVED: ____________ DATE: ________

SEAL

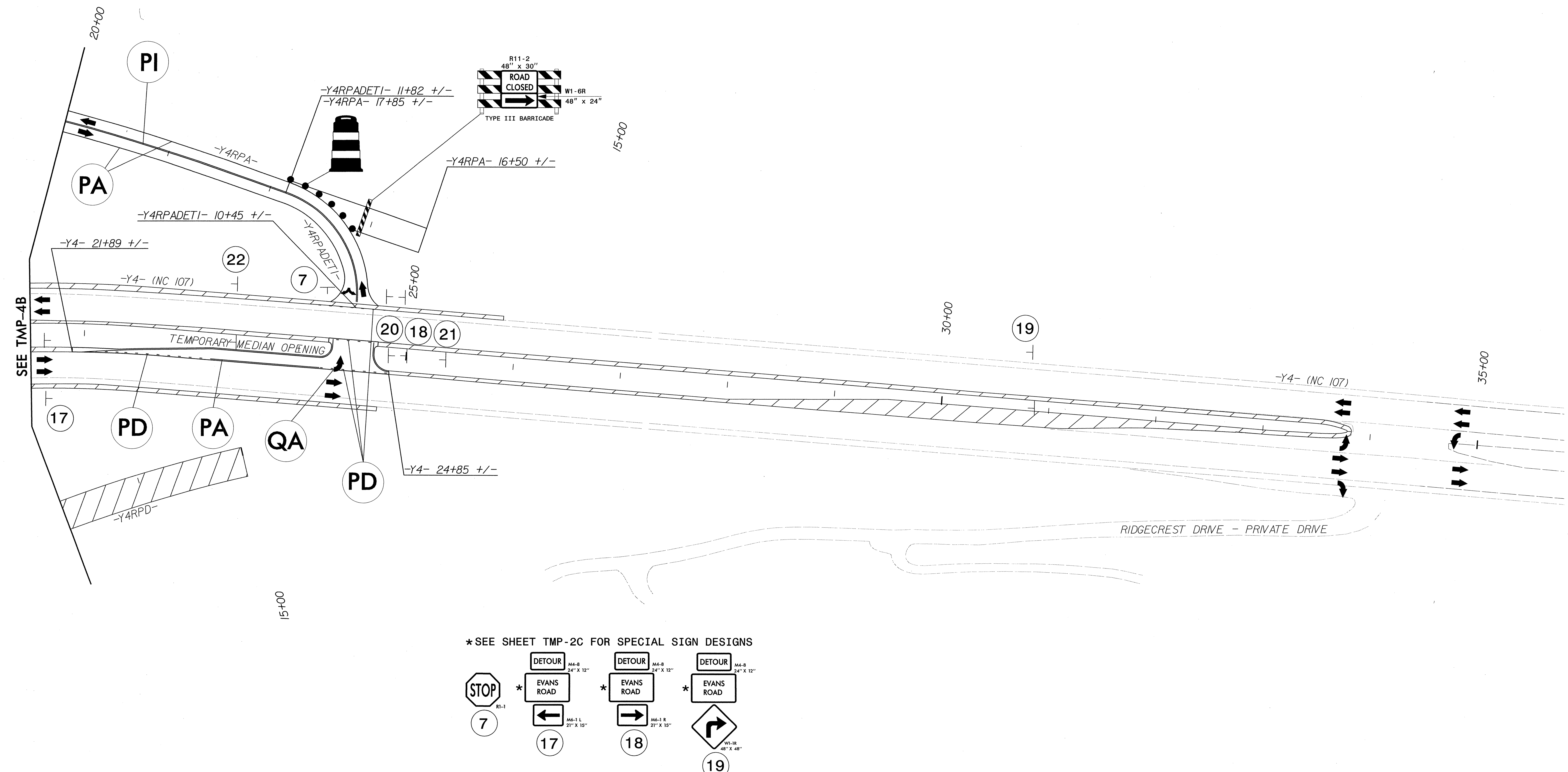
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21102 JAMES TIMOTHY JORDAN

6/28/12

Hatch Mott MacDonald
PO Box 700
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.hatchmott.com
LICENSE NO. F-0669

PHASE II – STEP 1

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-4C



LEGEND

- PROPOSED CONSTRUCTION
- ONGOING CONSTRUCTION
- PAVEMENT REMOVAL

APPROVED: ______ DATE: ______

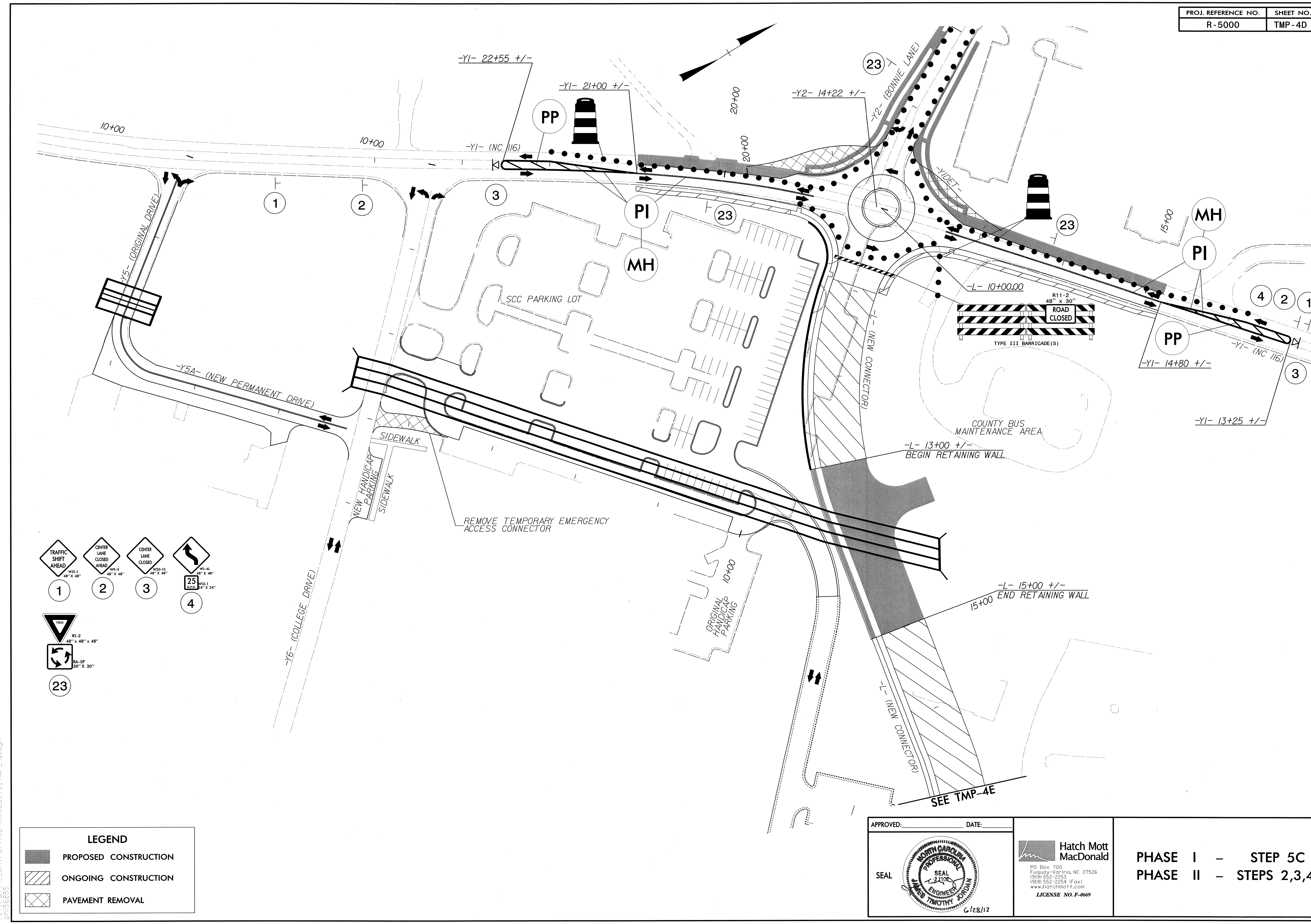
SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21102 JAMES TIMOTHY JORDAN

6/28/12

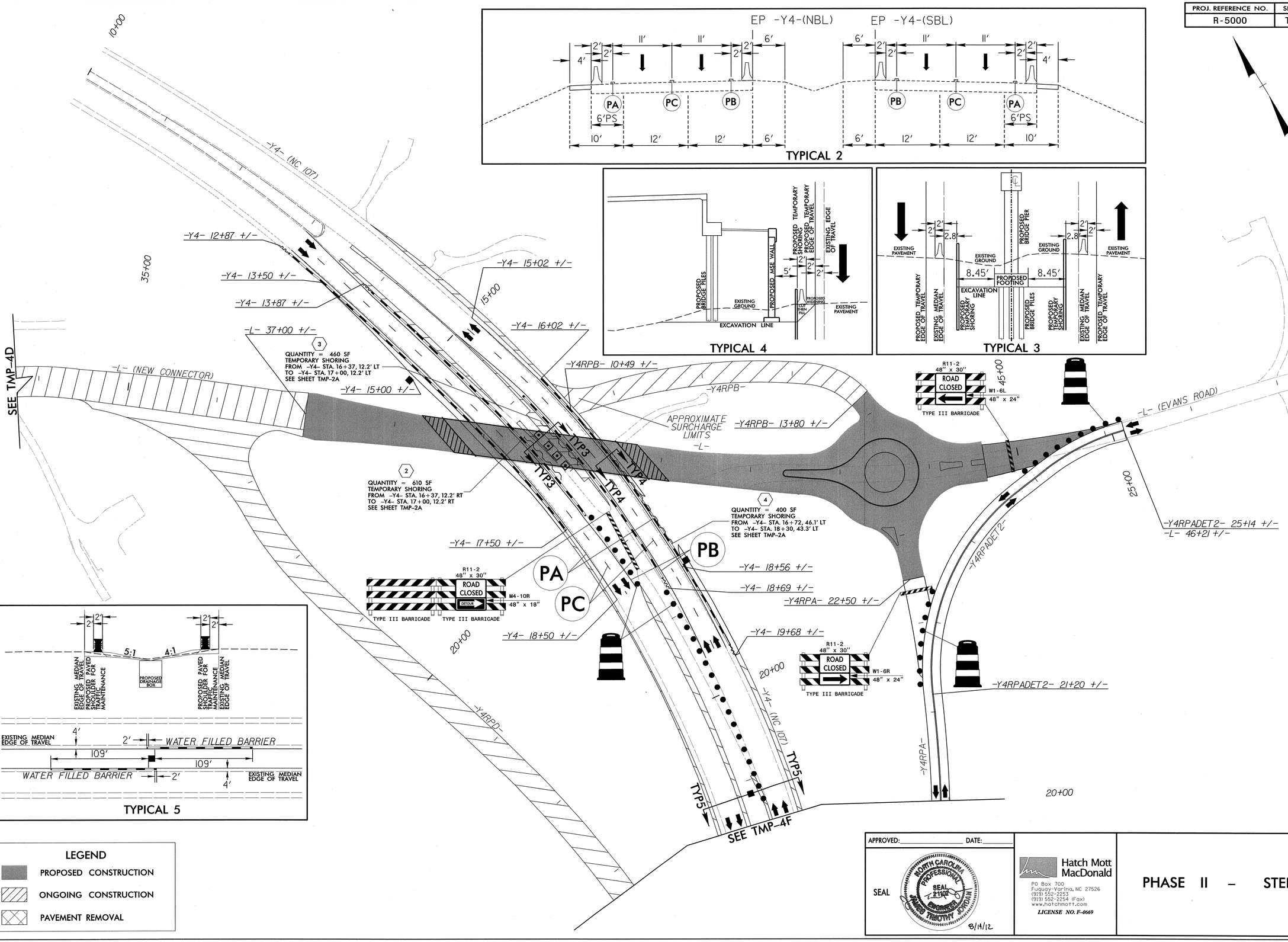
Hatch Mott MacDonald
PO Box 700
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.hatchmott.com
LICENSE NO. F-0669

PHASE II - STEP 1



PROJ. REFERENCE NO.
R-5000
SHEET NO.
TMP-4D
-Y1- 22+55 +/-
-Y1- 21+00 +/-
-Y2- 14+22 +/-
-Y2- (BONNIE LANE)
10+00
20+00
-Y1- (NC 116)
PP
PI
MH
23
SCC PARKING LOT
-Y5- (ORIGINAL DRIVE)
-Y5A- (NEW PERMANENT DRIVE)
SIDEWALK
NEW HANDICAP PARKING
REMOVE TEMPORARY EMERGENCY ACCESS CONNECTOR
-Y6- (COLLEGE DRIVE)
ORIGINAL HANDICAP PARKING
-L- (NEW CONNECTOR)
-L- 10+00.00
-Y1DET-
R11-2
48" x 30"
ROAD CLOSED
TYPE III BARRICADE(S)
-Y1- 14+80 +/-
-Y1- 13+25 +/-
15+00
COUNTY BUS MAINTENANCE AREA
-L- 13+00 +/-
BEGIN RETAINING WALL
-L- 15+00 +/-
END RETAINING WALL
SEE TMP-4E
TRAFFIC SHIFT AHEAD
W23-1
48" X 48"
CENTER LANE CLOSED AHEAD
W9-3
48" X 48"
CENTER LANE CLOSED
W20-15
48" X 48"
W1-4L
48" X 48"
25 M.P.H.
W13-1
24" X 24"
YIELD
R1-2
48" x 48" x 48"
R6-5P
30" X 30"
LEGEND
PROPOSED CONSTRUCTION
ONGOING CONSTRUCTION
PAVEMENT REMOVAL
APPROVED: DATE:
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 21104 ENGINEER JAMES TIMOTHY JORDAN
6/28/12
Hatch Mott MacDonald
PO Box 700
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.hatchmott.com
LICENSE NO. F-0669
PHASE I – STEP 5C
PHASE II – STEPS 2,3,4

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-4E



LEGEND

- PROPOSED CONSTRUCTION
- ONGOING CONSTRUCTION
- PAVEMENT REMOVAL

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 21142 ENGINEER TIMOTHY JORDAN

8/14/12

Hatch Mott MacDonald
PO Box 700
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
www.hatchmott.com
LICENSE NO. F-0669

PHASE II – STEP 2

12:57 PM
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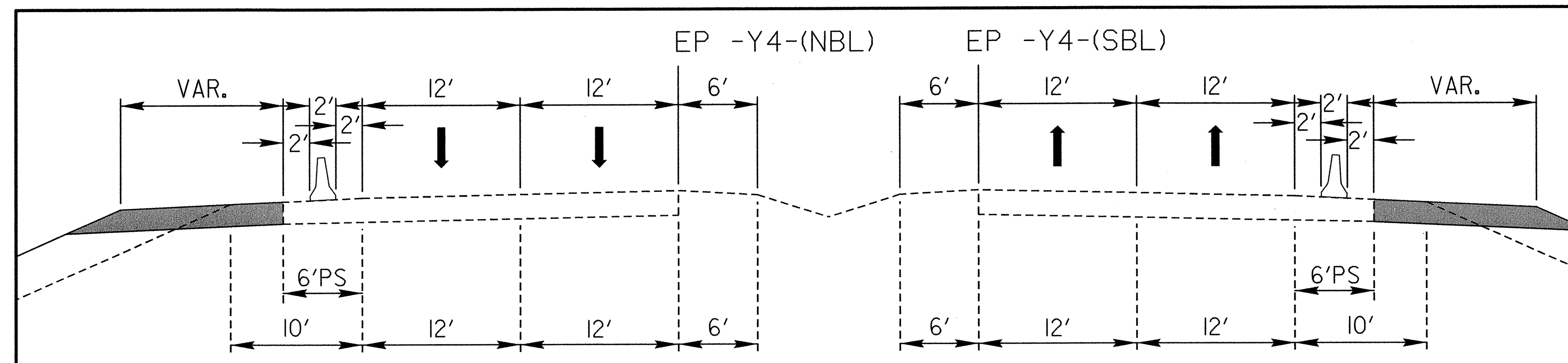
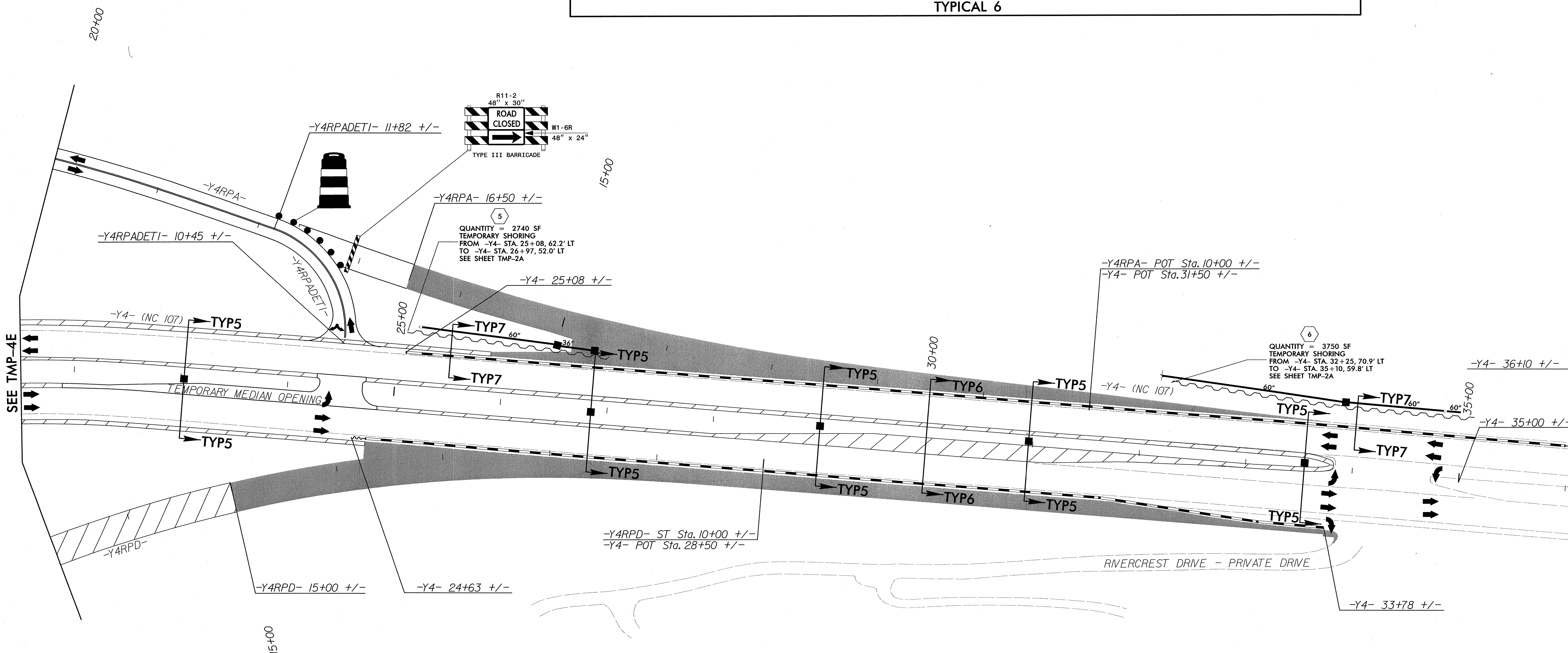
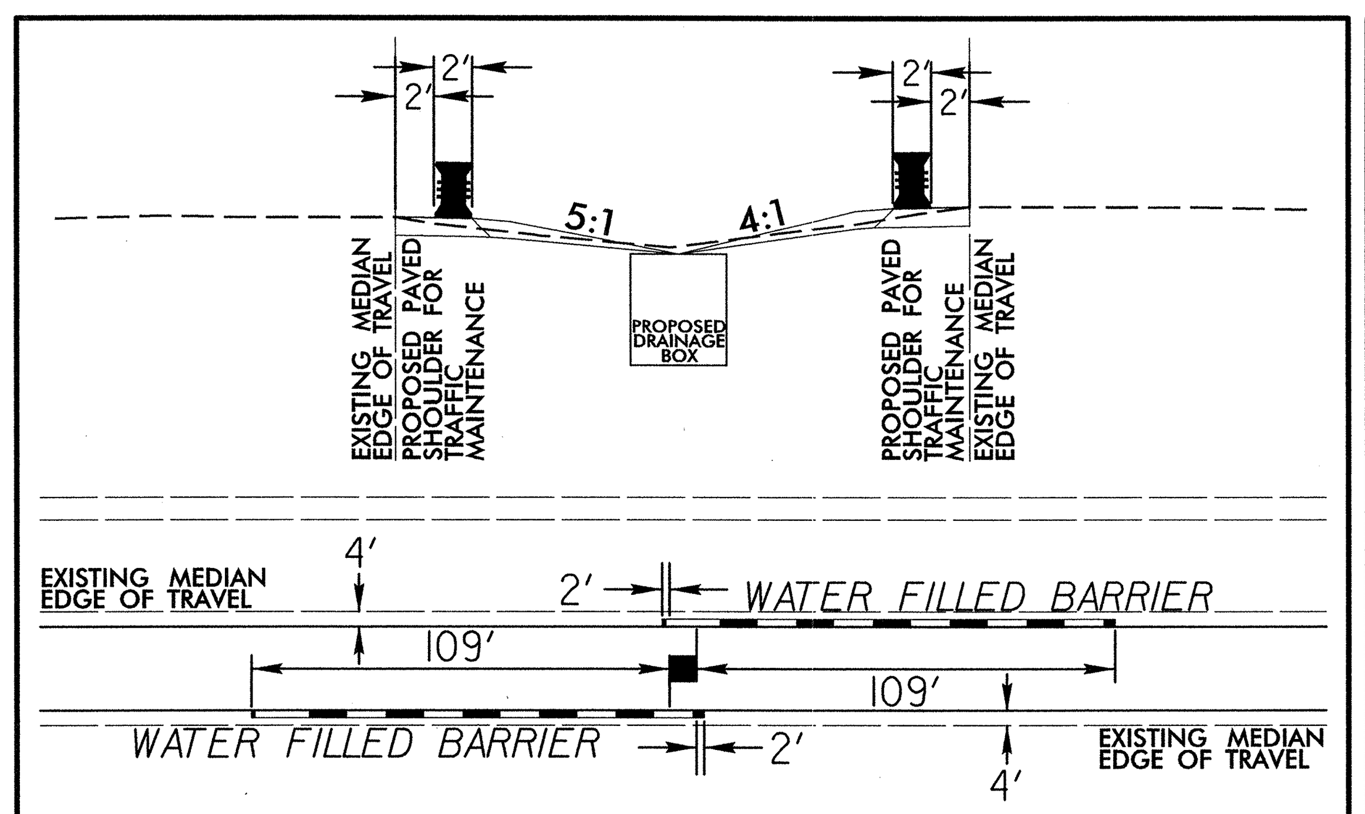
scr5716

PROJ. REFERENCE NO.	SHEET NO.
R-5000	TMP-4F

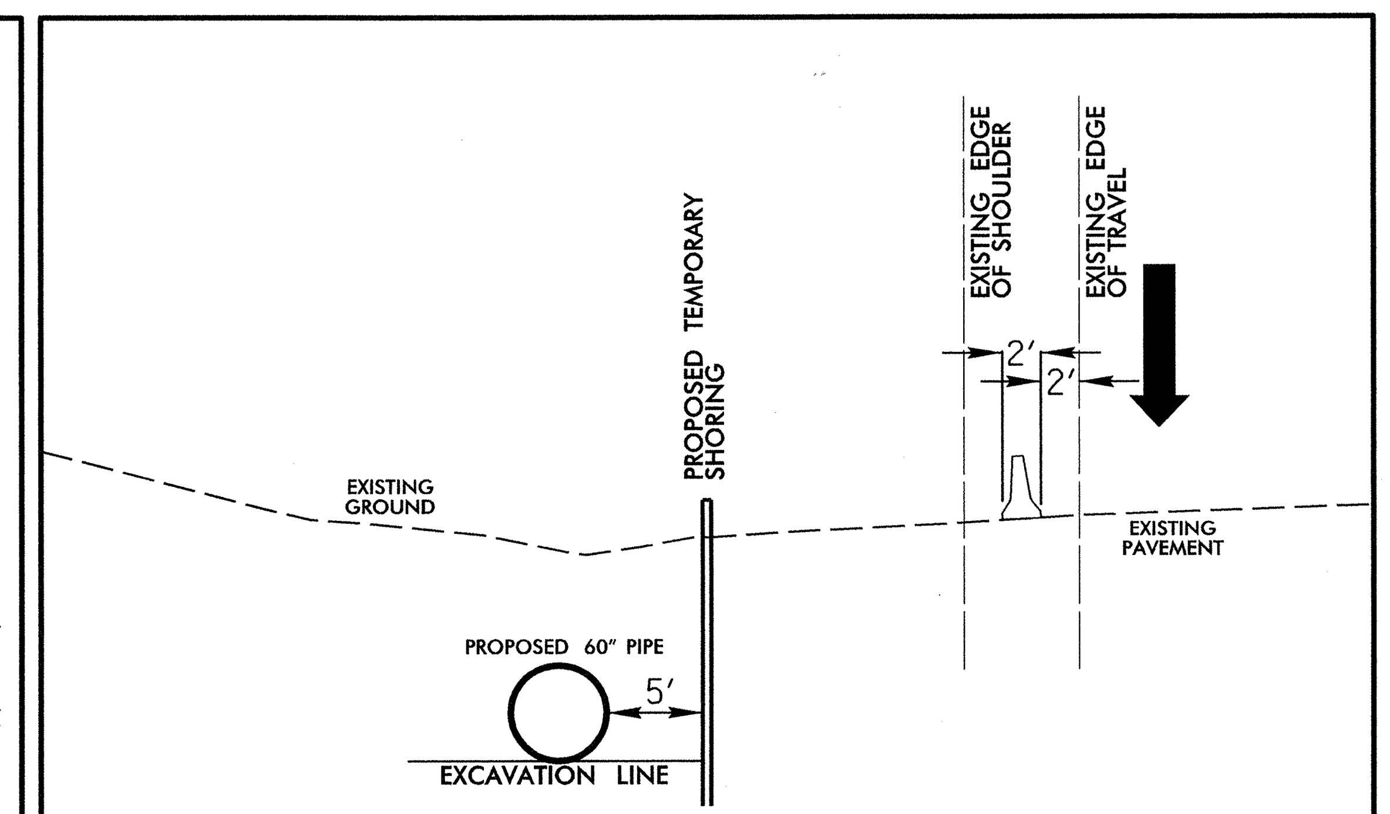


TYPICAL 6





TYPICAL 5



TYPICAL 7

LEGEND

- PROPOSED CONSTRUCTION
- ONGOING CONSTRUCTION
- PAVEMENT REMOVAL

APPROVED:______________ DATE:__________

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 21102 JAMES TIMOTHY JORDAN

8/14/12

Hatch Mott MacDonald
PO Box 700
Fuquay-Varina, NC 27526
(919) 552-2253
(919) 552-2254 (Fax)
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PHASE II – STEP 2

1:30:58 PM
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sar5716