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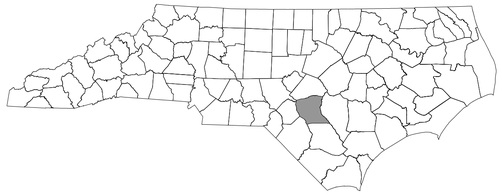
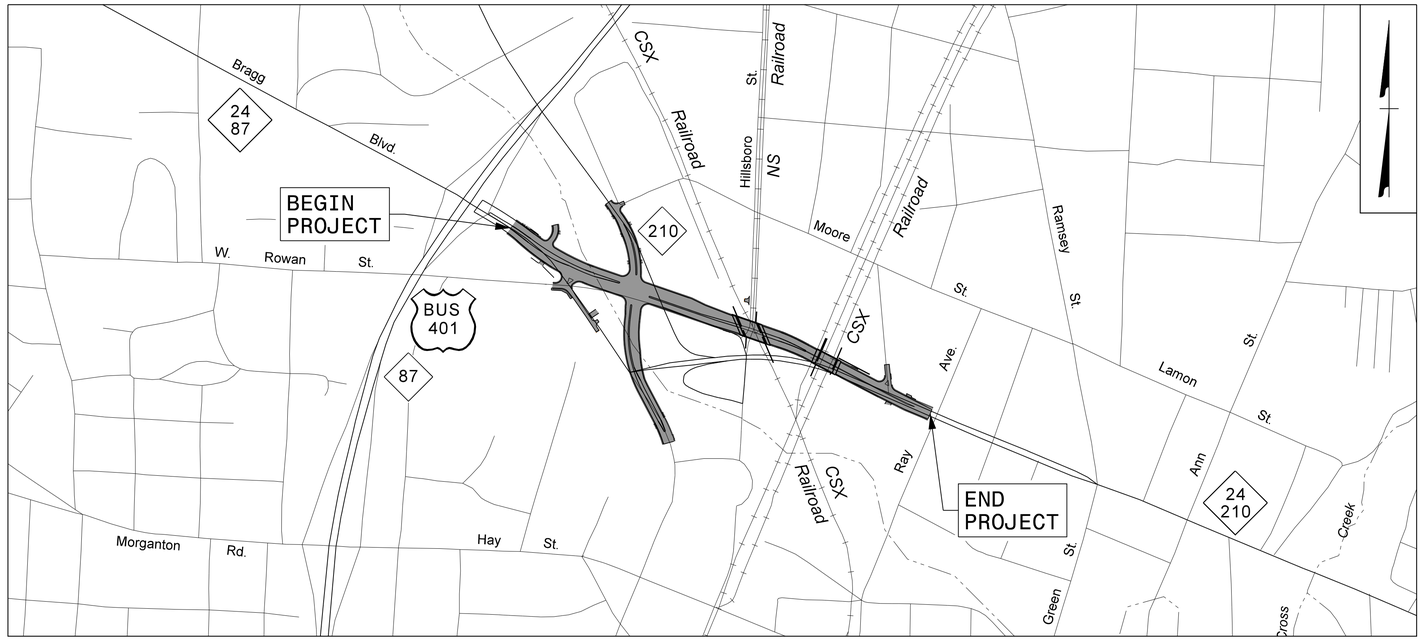
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

CUMBERLAND COUNTY



LOCATION: BRIDGE NO. 116 OVER CSX RR, NORFOLK SOUTHERN RR, AND HILLSBORO STREET ON NC 24/210



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

J. S. BOURNE, P.E. — *STATE TRAFFIC MANAGEMENT ENGINEER*
STEVE KITE, P.E. — *TRAFFIC CONTROL PROJECT ENGINEER*
DON PARKER — *TRAFFIC CONTROL PROJECT DESIGN ENGINEER*
_____ — *TRAFFIC CONTROL DESIGN ENGINEER*

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

INDEX OF SHEETS

PLAN PREPARED BY:

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N.C.B.E.L.S. License Number: F-0116

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ERSKINE BROOKS, P.E. — *TRAFFIC CONTROL PROJECT DESIGN ENGINEER*
CHRIS HARNDEN — *TRAFFIC CONTROL DESIGN ENGINEER*

APPROVED: DocuSigned by: R. Erskine Brooks
DATE: 3/30/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

SHEET NO.
TMP-1

B-4490

TIP PROJECT:

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-1A

HDR Engineering, Inc. of the Carolinas
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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
1101.11	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 AND OFFSETS
1205.02	PAVEMENT MARKINGS - TWO LANE AND 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 AND WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
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
1264.02	OBJECT MARKERS - INSTALLATION

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- DIRECTION OF PEDESTRIAN TRAFFIC FLOW
- EXIST. PVMT.
- NORTH ARROW
- PROPOSED PVMT.
- TEMP. SHORING (LOCATION PURPOSES ONLY)
- WORK AREA
- CONTINUING CONSTRUCTION
- REMOVAL
- WEDGEING
- TEMPORARY PAVEMENT

TRAFFIC CONTROL DEVICES

- BARRICADE (TYPE III)
- CONE
- DRUM SKINNY DRUM
- 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 MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

- PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

CA	COLD APPLIED PLASTIC 4" WHITE EDGELINE
CB	COLD APPLIED PLASTIC 4" YELLOW EDGELINE
CC	COLD APPLIED PLASTIC 4" 10'-30'/SP. WHITE SKIP
CI	COLD APPLIED PLASTIC 4" YELLOW DOUBLE CENTER
P2	PAINT 24" WHITE STOPBAR
P8	PAINT 4" 2'-6'/SP. WHITE MINI-SKIP
P9	PAINT 4" 2'-6'/SP. YELLOW MINI-SKIP
PA	PAINT 4" WHITE EDGELINE
PB	PAINT 4" YELLOW EDGELINE
PC	PAINT 4" 10'-30'/SP. WHITE SKIP
PD	PAINT 4" 3'-9'/SP. WHITE MINI-SKIP
PE	PAINT 4" WHITE SOLID LANE LINE
PI	PAINT 4" YELLOW DOUBLE CENTER
PN	PAINT 8" WHITE GORELINE
PO	PAINT 8" WHITE DIAGONAL
PP	PAINT 8" YELLOW DIAGONAL
QA	PAINT LEFT TURN ARROW
QB	PAINT RIGHT TURN ARROW
QC	PAINT STRAIGHT ARROW
QD	PAINT COMBO LEFT-STRAIGHT ARROW
QE	PAINT COMBO RIGHT-STRAIGHT ARROW
QI	PAINT ALPHANUMERIC CHARACTER
QP	PAINT MERGE ARROW

APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...

DATE: 3/30/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

ROADWAY STANDARD DRAWINGS & LEGEND

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-2

HDR Engineering, Inc. of the Carolinas
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PROJECT NOTES

MANAGEMENT STRATEGIES

THIS PROJECT WILL BE COMPLETED BY MAINTAINING TRAFFIC ON EXISTING NC 24 (GROVE STREET), NC 210 (MURCHISON ROAD), AND BRAGG BOULEVARD, EXCEPT AS NECESSARY TO COMPLETE DRAINAGE INSTALLATIONS AND UTILITY WORK. RECONSTRUCTION OF NC 24 (GROVE STREET), NC 210 (MURCHISON ROAD), AND BRAGG BOULEVARD WILL BE COMPLETED AWAY FROM TRAFFIC BY USE OF TEMPORARY TRAFFIC SHIFTS AND TEMPORARY TRAFFIC PATTERNS, AND BY USE OF FLAGGERS AS NECESSARY. ALL OTHER CONSTRUCTION AND Y-LINE WORK WILL BE COMPLETED AWAY FROM TRAFFIC DURING A CLOSURE OF EACH STREET, OR UNDER TRAFFIC AS NOTED IN THE PLANS. TIE-INS TO NC 24 (GROVE STREET), NC 210 (MURCHISON ROAD), AND BRAGG BOULEVARD WILL BE COMPLETED BY USE OF FLAGGERS AND LANE CLOSURES. TEMPORARY PAVEMENT AND TRAFFIC SHIFTS WILL BE REQUIRED TO MAINTAIN TRAFFIC AND ALLOW ADEQUATE ROOM FOR CONSTRUCTION. TEMPORARY PAVEMENT AND TEMPORARY WEDGING WILL BE REQUIRED TO TRANSITION FROM EXISTING PAVEMENT TO THE PERMANENT PAVEMENT WHERE THE PROPOSED GRADES DO NOT MATCH EXISTING.

PEDESTRIANS ACCESS WILL BE ALLOWED ALONG EXISTING FACILITIES AND NEW SECTIONS OF PERMANENT SIDEWALK WHERE NOT AFFECTED BY CONSTRUCTION.

THE EXISTING ROWAN STREET / HILLSBORO STREET INTERSECTION WILL BE PERMANENTLY CLOSED IN PHASE 1 TO ALLOW CONSTRUCTION OF THE PROPOSED BRIDGES OVER CSX AND NORFOLK SOUTHERN RAILROADS. NC 210 (MURCHISON ROAD) WILL BE PLACED IN A TEMPORARY PATTERN ALONG ROWAN STREET TO MAINTAIN ACCESS TO NC 24 (GROVE STREET) AND BRAGG BOULEVARD.

NC 24 (GROVE STREET) WILL BE PLACED IN A TEMPORARY PATTERN ON THE FINAL ALIGNMENT FOR PHASE 2 TO ALLOW FOR COMPLETION OF THE NEW BRIDGES AND REMOVAL OF THE EXISTING BRIDGE OVER CSX AND NORFOLK SOUTHERN RAILROADS. BRAGG BOULEVARD WILL BE PLACED IN A TEMPORARY TWO-LANE, TWO-WAY TRAFFIC PATTERN SOUTH OF NC 24 (GROVE STREET) FOR SIXTY (60) DAYS TO ALLOW FOR THE FINAL ALIGNMENT TIE-IN TO BE COMPLETED, THEN -Y3- WILL BE OPENED TO THE FINAL PATTERN.

NC 24 (GROVE STREET) WILL BE SHIFTED TO A TEMPORARY PATTERN ON THE FINAL ALIGNMENT IN PHASE 3 TO ALLOW FOR CONSTRUCTION OF THE FINAL -L-/-Y2-/-DR1- INTERSECTION.

NC 24 (GROVE STREET) AND BRAGG BOULEVARD WILL BE SHIFTED TO TEMPORARY PATTERNS ON THE FINAL ALIGNMENT TO ALLOW FOR FINAL MEDIAN CONSTRUCTION IN PHASE 4.

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
1) NC 24 (GROVE STREET) BRAGG BOULEVARD NC 210 (MURCHISON ROAD)	MON-FRI: 6:00 A.M. TO 9:00 P.M.
2) ROWAN STREET	MON-FRI: 6:00 A.M. TO 9:00 A.M. & 4:00 P.M. TO 7:00 P.M.

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

ROAD NAME
NC 24 (GROVE STREET)
BRAGG BOULEVARD
NC 210 (MURCHISON ROAD)
ROWAN STREET

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 6:00 A.M. DECEMBER 31st TO 9:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 9:00 P.M. THE FOLLOWING TUESDAY.
3. FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 9:00 P.M. MONDAY.
4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 9:00 P.M. TUESDAY.
5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
6. FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY AND 9:00 P.M. TUESDAY.
7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 9:00 P.M. MONDAY.
8. FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.
9. FOR THE DOGWOOD FESTIVAL, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY OF THE DOGWOOD FESTIVAL AND 9:00 P.M. THE MONDAY FOLLOWING THE DOGWOOD FESTIVAL.
10. FOR THE INTERNATIONAL FOLK FESTIVAL, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY OF THE INTERNATIONAL FOLK FESTIVAL WEEKEND AND 9:00 P.M. THE MONDAY FOLLOWING THE INTERNATIONAL FOLK FESTIVAL WEEKEND.
11. FOR EVENTS OCCURRING AT THE FOLLOWING VENUES BETWEEN TWO (2) HOURS BEFORE THE START AND TWO (2) HOURS AFTER THE END.
    - FAYETTEVILLE STATE UNIVERSITY
      * FOOTBALL GAMES
      * MEN'S BASKETBALL GAMES
      * WOMEN'S BASKETBALL GAMES
      * GRADUATION
    - AIRBORNE & SPECIAL OPERATIONS MUSEUM
    - OTHER EVENTS AS NOTED BY THE ENGINEER

C) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS	DURATION AND OPERATION
NC 24 (GROVE STREET) BRAGG BOULEVARD	MONDAY-SUNDAY: 6:00 A.M. TO 10:00 P.M.	30 MINUTES FOR GIRDER/MATERIAL DELIVERY

D) DO NOT CONDUCT MULTI-VEHICLE HAULING AS FOLLOWS; INGRESS AND EGRESS FROM RAMPS WILL BE ALLOWED:

ROAD NAME	DAY AND TIME RESTRICTIONS
NC 24 (GROVE STREET) BRAGG BOULEVARD NC 210 (MURCHISON ROAD)	MONDAY-FRIDAY: 6:00 A.M. TO 9:00 A.M. & 4:00 P.M. TO 7:00 P.M.

E) 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

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 OR A LANE CLOSURE IS INSTALLED.

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.

   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.

APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...
DATE: 3/30/2016
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

PROJECT NOTES

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-2A

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

PROJECT NOTES

GENERAL NOTES

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. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN 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 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 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) 500 FT. IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

S) INSTALL TEMPORARY BARRIER ACCORDING TO THE TRANSPORTATION MANAGEMENT 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 TRANSPORTATION MANAGEMENT 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 TRANSPORTATION MANAGEMENT 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 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: (SEE ALSO 1101.05)

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 (DRUMS/CONES/SKINNY DRUMS) PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
ALL ROADS	PAINT (ON ASPHALT) COLD APPLIED PLASTIC - TYPE IV (ON CONCRETE)	TEMPORARY RAISED

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.

BB) TRACE THE PROPOSED MONOLITHIC ISLAND LOCATIONS WITH PROPER COLOR PAVEMENT MARKINGS PRIOR TO INSTALLATION. PLACE DRUMS TO DELINEATE ANY PROPOSED MONOLITHIC ISLANDS BEFORE INSTALLATION.

APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...

DATE: 3/30/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

PROJECT NOTES

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PROJECT NOTES

GENERAL NOTES

MISCELLANEOUS

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

DD) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAY'S 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) 250 FT. AND 500 FT. RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

* TEMPORARY TIE-INS USING ABC STONE WILL NOT BE PERMITTED ON THE FOLLOWING ROADS:
NC 24 (GROVE STREET)
BRAGG BOULEVARD
NC 210 (MURCHISON ROAD)

EE) ALL CURB 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.

FF) 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.).

GG) ADJUST SIDEWALK CLOSURE BARRICADES AND SIGNING AS REQUIRED AND AS DIRECTED BY THE ENGINEER. REMOVE SIDEWALK CLOSURE BARRICADES AND SIGNING UPON COMPLETION AND OPENING OF FINAL SIDEWALK.

HH) CONTRACTOR SHALL COORDINATE WITH FAYETTEVILLE AREA SYSTEM OF TRANSIT (FAST) PRIOR TO ANY STREET CLOSURES AND/OR WORK THAT WILL IMPACT EXISTING BUS ROUTES AND BUS STOPS. ANY STOPS OR ROUTES THAT WILL BE IMPACTED BY CONSTRUCTION ACTIVITIES MUST BE TEMPORARILY CLOSED OR RELOCATED PRIOR TO BEGINNING WORK IN THAT LOCATION.

IMPACTED ROUTES INCLUDE: 12 AND 50

II) CONTRACTOR SHALL COORDINATE WITH CSX RAILROAD AND NORFOLK SOUTHERN RAILROAD PRIOR TO ALL WORK WITHIN THE RAILROAD RIGHT-OF-WAY.

LOCAL NOTES

LN-01) REFER TO THE CULVERT PHASING PLANS FOR CULVERT CONSTRUCTION SEQUENCING AND TEMPORARY DRAINAGE REQUIREMENTS.

LN-02) FOR HANGING OF GIRDERS DURING CONSTRUCTION OF THE BRIDGE OVER CSX RAILROAD, MATERIAL DELIVERY AND CONSTRUCTION STAGING MAY BE CONDUCTED WITHIN THE LANES AND ROAD CLOSURE TIME RESTRICTIONS AS DESCRIBED IN THE GENERAL NOTES AND INTERMEDIATE CONTRACT TIMES.

APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...

DATE: 3/30/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

PROJECT NOTES

PLOT DRIVER: NCDOT_pdf_color_eng_100.plt PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 3/28/2016 TIME: 10:22:02 AM
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TEMPORARY SHORING DATA

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-2C

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

NOTES FOR TEMPORARY SHORING No. 1

FOR TEMPORARY SHORING, AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROJECT SPECIAL 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 -L- 18+75 ±, 16.0 FT RIGHT, TO STATION -L- 19+00 ±, 7.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 87.0 FT ±

DO NOT USE CANTILEVER, BRACED, OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION -L- 18+75 ±, 16.0 FT RIGHT, TO STATION -L- 19+00 ±, 7.0 FT RIGHT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 18+75 ±, 16.0 FT RIGHT, TO STATION -L- 19+00 ±, 7.0 FT RIGHT. SEE STANDARD DETAIL NUMBER 1801.02 FOR STANDARD TEMPORARY WALLS.

NOTES FOR TEMPORARY SHORING No. 2

FOR TEMPORARY SHORING, AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROJECT SPECIAL 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 -L- 19+60 ±, CENTER LINE, TO STATION -L- 19+85 ±, CENTER LINE, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 87.0 FT ±

DO NOT USE CANTILEVER, BRACED, OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION -L- 19+60 ±, CENTER LINE, TO STATION -L- 19+85 ±, CENTER LINE.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 19+60 ±, CENTER LINE, TO STATION -L- 19+85 ±, CENTER LINE. SEE STANDARD DETAIL NUMBER 1801.02 FOR STANDARD TEMPORARY WALLS.

NOTES FOR TEMPORARY SHORING No. 3

FOR TEMPORARY SHORING, AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROJECT SPECIAL 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 -L- 31+32 ±, 110.0 FT RIGHT, TO STATION -L- 34+53 ±, 31.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 92.0 FT ±

DO NOT USE CANTILEVER, BRACED, OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION -L- 31+32 ±, 110.0 FT RIGHT, TO STATION -L- 34+53 ±, 31.0 FT RIGHT.

WHEN BACKFILL FOR RETAINING WALLS OVERLAPS WITH THE REINFORCED ZONE OF TEMPORARY WALLS, USE SHORING BACKFILL OR BACKFILL MATERIAL REQUIRED FOR RETAINING WALLS, WHICHEVER IS BETTER, IN THE REINFORCED ZONE OF TEMPORARY WALLS.

NOTES FOR TEMPORARY SHORING No. 3 ALTERNATE

FOR TEMPORARY SHORING, AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROJECT SPECIAL 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 -L- 31+32 ±, 110.0 FT RIGHT, TO STATION -L- 34+53 ±, 31.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 92.0 FT ±

DO NOT USE CANTILEVER, BRACED, OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION -L- 31+32 ±, 110.0 FT RIGHT, TO STATION -L- 34+53 ±, 31.0 FT RIGHT.

AT THE CONTRACTOR*S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 31+32 ±, 110.0 FT RIGHT, TO STATION -L- 34+53 ±, 31.0 FT RIGHT. SEE STANDARD DETAIL NO. 1801.02 FOR STANDARD TEMPORARY WALLS.

WHEN BACKFILL FOR RETAINING WALLS OVERLAPS WITH THE REINFORCED ZONE OF TEMPORARY WALLS, USE SHORING BACKFILL OR BACKFILL MATERIAL REQUIRED FOR RETAINING WALLS, WHICHEVER IS BETTER, IN THE REINFORCED ZONE OF TEMPORARY WALLS.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT.
THE DOCUMENT WAS SUBMITTED TO THE WZTC SECTION ON 07/22/2015
AND SEALED BY A PROFESSIONAL ENGINEER, JINYOUNG PARK, LICENSE # 032171.

APPROVED DocuSigned by: [signature] DATE: 10/16/2015
Authorized Signature

NORTH CAROLINA PROFESSIONAL SEAL 032171 ENGINEER JINYOUNG PARK

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

TEMPORARY SHORING DATA

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TEMPORARY SHORING DATA

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-2D

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

NOTES FOR TEMPORARY SHORING No. 4

AT THE CONTRACTOR'S OPTION, USE A 1.5:1 (H:V) OR FLATTER FILL SLOPE OR TEMPORARY SHORING FOR UTILITY INSTALLATION FROM STATION -L- 33+75 ±, 16.0 FT RIGHT, TO STATION -L- 34+53 ±, 16.0 FT RIGHT.

FOR TEMPORARY SHORING, AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROJECT SPECIAL 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 -L- 33+75 ±, 16.0 FT RIGHT, TO STATION -L- 34+53 ±, 16.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 92.0 FT ±

DO NOT USE CANTILEVER, BRACED, OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION -L- 33+75 ±, 16.0 FT RIGHT, TO STATION -L- 34+53 ±, 16.0 FT RIGHT.

AT THE CONTRACTOR'S OPTION, USE A STANDARD TEMPORARY WALL FOR TEMPORARY SHORING FROM STATION -L- 33+75 ±, 16.0 FT RIGHT, TO STATION -L- 34+53 ±, 16.0 FT RIGHT. SEE STANDARD DETAIL NUMBER 1801.02 FOR STANDARD TEMPORARY WALLS.

WHEN BACKFILL FOR RETAINING WALLS OVERLAPS WITH THE REINFORCED ZONE OF TEMPORARY WALLS, USE SHORING BACKFILL OR BACKFILL MATERIAL REQUIRED FOR RETAINING WALLS, WHICHEVER IS BETTER, IN THE REINFORCED ZONE OF TEMPORARY WALLS.

NOTES FOR TEMPORARY SHORING No. 5

FOR TEMPORARY SHORING, AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROJECT SPECIAL 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 -L- 35+50 ±, 17.5 FT RIGHT, TO STATION -L- 36+50 ±, 17.5 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 90.0 FT ±

DO NOT USE A TEMPORARY WALL FOR FOR TEMPORARY SHORING FROM STATION -L- 35+50 ±, 17.5 FT RIGHT, TO STATION -L- 36+50 ±, 17.5 FT RIGHT.

NOTES FOR TEMPORARY SHORING No. 6

FOR TEMPORARY SHORING, AND POSITIVE PROTECTION FOR TEMPORARY SHORING, SEE PLANS AND TEMPORARY SHORING PROJECT SPECIAL 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 -L- 35+64 ±, 16.0 FT RIGHT, TO STATION -L- 36+50 ±, 16.0 FT RIGHT, FOR THE FOLLOWING ASSUMED SOIL PARAMETERS AND GROUNDWATER ELEVATION:

UNIT WEIGHT (γ) = 120 LB/CF
FRICTION ANGLE (ϕ) = 30 DEGREES
COHESION (c) = 0 LB/SF
GROUNDWATER ELEVATION = 90.0 FT ±

DO NOT USE CANTILEVER, BRACED, OR ANCHORED SHORING FOR TEMPORARY SHORING FROM STATION -L- 35+64 ±, 16.0 FT RIGHT, TO STATION -L- 36+50 ±, 16.0 FT RIGHT.

WHEN BACKFILL FOR RETAINING WALLS OVERLAPS WITH THE REINFORCED ZONE OF TEMPORARY WALLS, USE SHORING BACKFILL OR BACKFILL MATERIAL REQUIRED FOR RETAINING WALLS, WHICHEVER IS BETTER, IN THE REINFORCED ZONE OF TEMPORARY WALLS.

THE TEMPORARY SHORING NOTES SHOWN ON THIS SHEET WERE PROVIDED THROUGH SEALED DOCUMENT FROM THE GEOTECHNICAL ENGINEERING UNIT.
THE DOCUMENT WAS SUBMITTED TO THE WZTC SECTION ON 07/22/2015
AND SEALED BY A PROFESSIONAL ENGINEER, JINYOUNG PARK, LICENSE # 032171.

APPROVED DocuSigned by: DATE: 10/16/2015

NORTH CAROLINA PROFESSIONAL SEAL 032171 ENGINEER JINYOUNG PARK

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

TEMPORARY SHORING DATA

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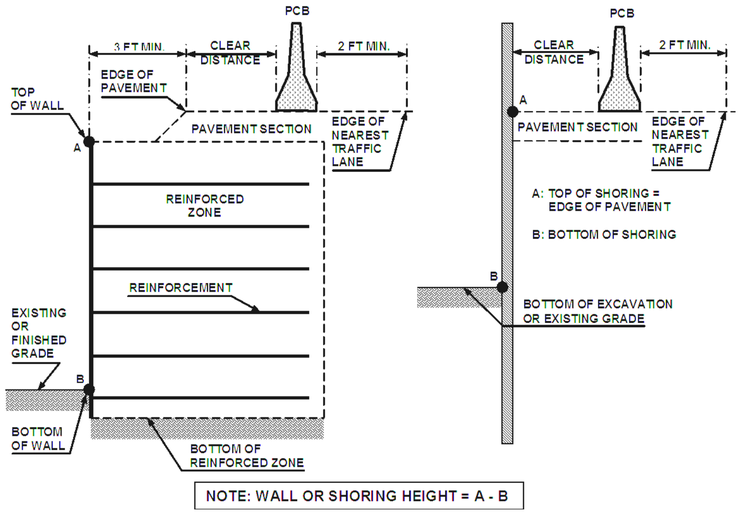

FIGURE A

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.

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USER: erbrooks DATE: 3/30/2016 TIME: 6:34:55 PM
FILE: c:\pw\working\tpa\d0507858\B-4490_TMP_TMP-02E.dgn

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**

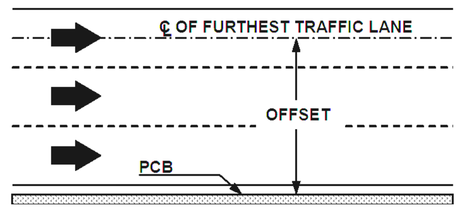


FIGURE B

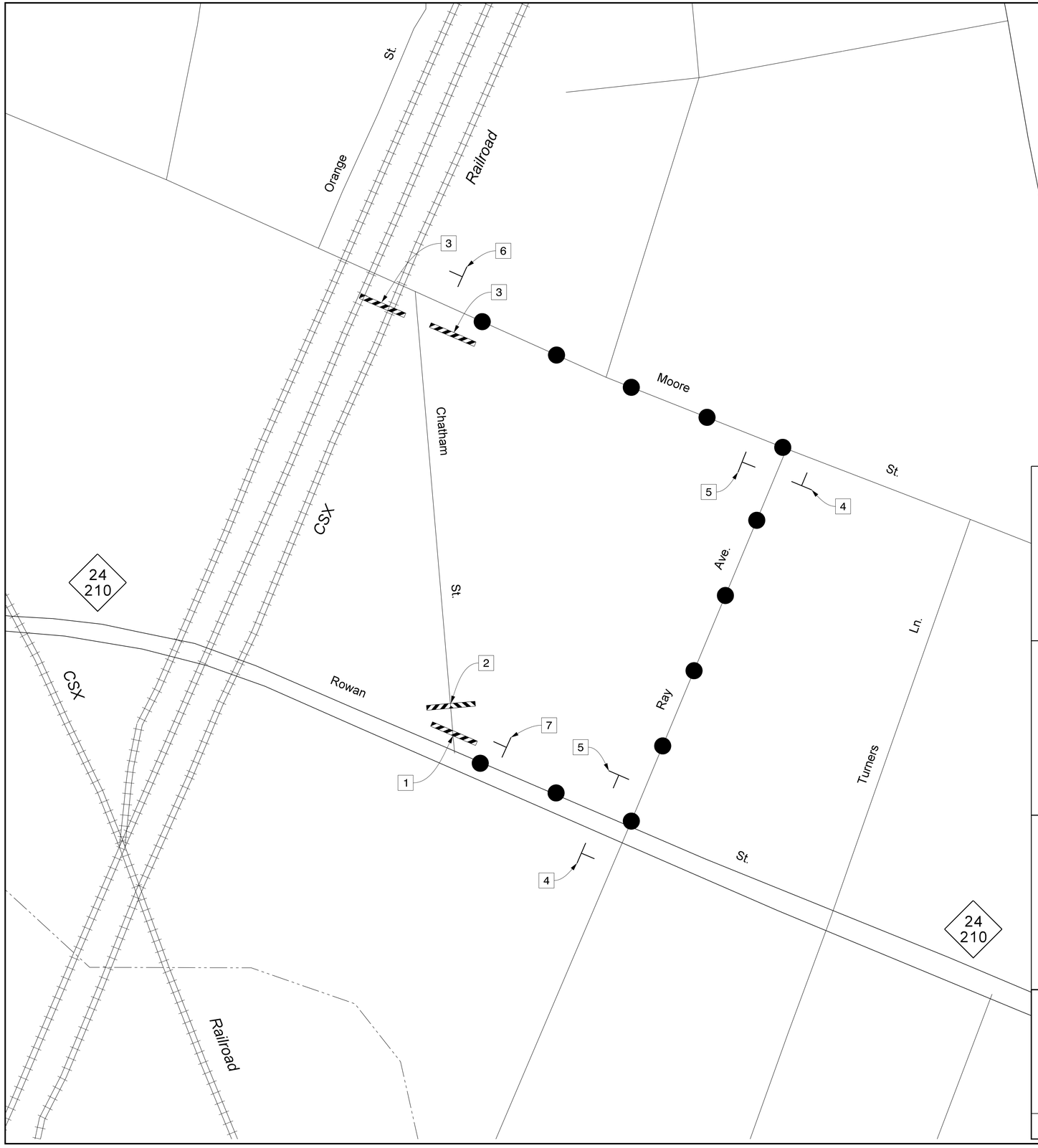
APPROVED: DocuSigned by: Steve Kite E27CE30E1DFC442...
DATE: 3/31/2016
SEAL
NORTH CAROLINA PROFESSIONAL SEAL 022104 ENGINEER JOHN S. KITE JR
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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.
B-4490	TMP-2F

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116



DETOUR ROUTE

*SEE TMP-2I FOR SPECIAL SIGN DESIGN

1

R11-2
48″ x 30″
ROAD CLOSED
DETOUR
M4-10R
48″ x 18″
TYPE III BARRICADE

2

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

3

R11-4
60″ x 30″
ROAD CLOSED TO THRU TRAFFIC
DETOUR
M4-10L
48″ x 18″
TYPE III BARRICADE

4 *

Chatham St
DETOUR M4-8 24″ X 12″
M6-1 L 21″ X 15″

5 *

Chatham St
DETOUR M4-8 24″ X 12″
M6-1 21″ X 15″

6 *

Chatham St
END DETOUR M4-8 A 24″ X 18″

APPROVED: DocuSigned by: R. Erskine Brooks E058C5F748484EE...

DATE: 3/30/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

CHATHAM ST DETOUR ROUTE

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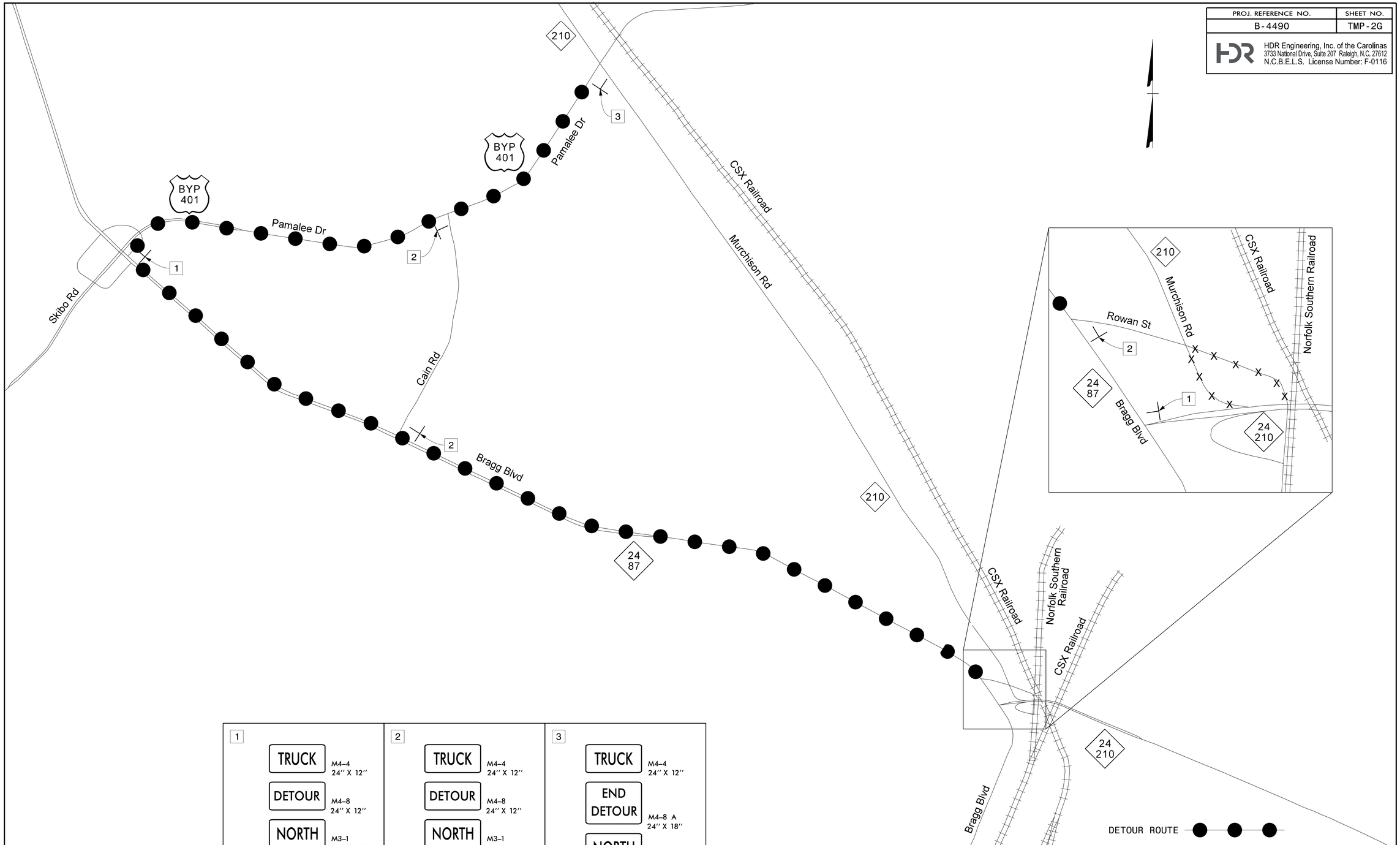
PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-2G

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116



1
- TRUCK — M4-4, 24″ X 12″
- DETOUR — M4-8, 24″ X 12″
- NORTH — M3-1, 24″ X 12″
- 210 — M1-5
- → — M6-1, 21″ X 15″

2
- TRUCK — M4-4, 24″ X 12″
- DETOUR — M4-8, 24″ X 12″
- NORTH — M3-1, 24″ X 12″
- 210 — M1-5
- ↑ — M6-3, 21″ X 15″

3
- TRUCK — M4-4, 24″ X 12″
- END DETOUR — M4-8 A, 24″ X 18″
- NORTH — M3-1, 24″ X 12″
- 210 — M1-5

APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...

DATE: 3/30/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

NORTH NC 210 TRUCK DETOUR ROUTE

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-2H

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

SIGN NUMBER: SP-01
TYPE: D
QUANTITY: 1

SIGN WIDTH: 3′-6″
HEIGHT: 1′-0″
TOTAL AREA: 3.5 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0.38″
WIDTH: 0.5″
RADII: 1.13″

NO. Z BARS:
LENGTH:

BACKG COLOR: Orange
COPY COLOR: Black

SYMBOL	X	Y	WIDTH	HEIGHT

MAT′L: 0.125″ (3.2 mm) ALUMINUM

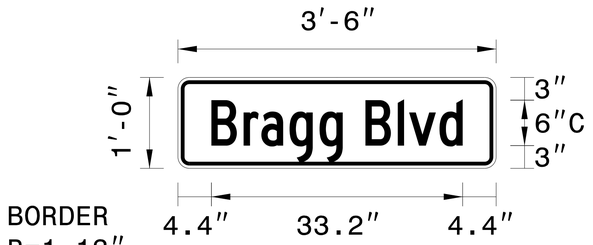
USE NOTES: 1,2

1. Legend and border shall be direct applied non-reflective sheeting.
2. Background shall be Grade B reflective sheeting.

DESIGN BY: DHK
PROJECT ID: B-4490

CHECKED BY:
DIV: 6

DATE: Jun 10, 2015



BORDER
R=1.13″
TH=0.5″
IN=0.38″

Letter spacings are to start of next letter

Series/Size
Text Length

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	4.4	8.7	11	14.7	18.7	21.8	24.8	29	30.5	34.5																	C 2000
																											33.2

APPROVED: DocuSigned by: David H K — 851F0FE9CE4447A...
DATE: 3/29/2016
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 030881 ENGINEER DAVID H. KERNS

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UNLESS ALL SIGNATURES COMPLETED

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

SPECIAL SIGN DESIGN

PLOT DRIVER: NCDOT_pdf_color_eng_100.plt PENTABLE: NCDOT_tcp.tbl
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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-2I

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

SIGN NUMBER: SP-02
TYPE: D
QUANTITY: 1

SIGN WIDTH: 3′-6″
HEIGHT: 1′-0″
TOTAL AREA: 3.5 Sq.Ft.

BORDER TYPE: FLUSH
RECESS: 0.38″
WIDTH: 0.5″
RADII: 1.13″

NO. Z BARS:
LENGTH:

BACKG COLOR: Orange
COPY COLOR: Black

SYMBOL	X	Y	WIDTH	HEIGHT

MAT′L: 0.125″ (3.2 mm) ALUMINUM

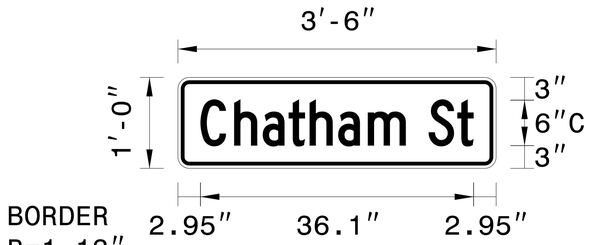
USE NOTES: 1,2

1. Legend and border shall be direct applied non-reflective sheeting.
2. Background shall be Grade B reflective sheeting.

DESIGN BY: DHK
PROJECT ID: B-4490

CHECKED BY:
DIV: 6

DATE: Jun 10, 2015



Letter spacings are to start of next letter

Series/Size
Text Length

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	3	7.4	11.2	14.6	17.4	21.2	25.1	30.1	33.1	36.9																	C 2000 36.1

APPROVED: DocuSigned by: David H K
851F6FE9CE4447A...
DATE: 3/29/2016

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NORTH CAROLINA PROFESSIONAL SEAL 030881 ENGINEER DAVID H. KERNS

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

SPECIAL SIGN DESIGN

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-2J

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N.C.B.E.L.S. License Number: F-0116

1 R11-2 48″ x 30″ ROAD CLOSED — TYPE III BARRICADE	2 R11-2 48″ x 30″ ROAD CLOSED — TYPE III BARRICADE	3 R11-2 48″ x 30″ ROAD CLOSED — TYPE III BARRICADE	4 R9-9 24″ X 12″ SIDEWALK CLOSED — TYPE III BARRICADE	5 R9-11a 24″ X 12″ SIDEWALK CLOSED CROSS HERE — TYPE III BARRICADE	6 R9-11a 24″ X 12″ SIDEWALK CLOSED CROSS HERE — TYPE III BARRICADE	7 SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11 24″ X 12″	8 SIDEWALK CLOSED AHEAD — SP-200 36″ X 36″
9 DETOUR M4-8 24″ X 12″ / NORTH M3-1 24″ X 12″ / 210 M1-5 / M5-1 R 21″ X 15″	10 DETOUR M4-8 24″ X 12″ / NORTH M3-1 24″ X 12″ / 210 M1-5 / M6-1 21″ X 15″	11 DETOUR M4-8 24″ X 12″ / NORTH M3-1 24″ X 12″ / 210 M1-5 / M5-1 21″ X 15″	12 DETOUR M4-8 24″ X 12″ / NORTH M3-1 24″ X 12″ / 210 M1-5 / M6-1 L 21″ X 15″	13 DETOUR M4-8 24″ X 12″ / SOUTH M3-3 24″ X 12″ / 210 M1-5 / M5-1 21″ X 15″	14 DETOUR M4-8 24″ X 12″ / SOUTH M3-3 24″ X 12″ / 210 M1-5 / M6-1 21″ X 15″	15 DETOUR M4-8 24″ X 12″ / SOUTH M3-3 24″ X 12″ / 210 M1-5 / M6-1 L 21″ X 15″	
16 EAST M3-2 24″ X 12″ / 24 M1-5 / M5-1 21″ X 15″	17 EAST M3-2 24″ X 12″ / 24 M1-5 / M6-1 L 21″ X 15″	18 * Bragg Blvd — M5-1 R 21″ X 15″	19 * Bragg Blvd — M6-1 21″ X 15″	20 * Bragg Blvd — M6-1 L 21″ X 15″	21 STOP R1-1 / R3-2 24″ X 24″	22 LEFT LANE MUST TURN LEFT — R3-7 L 30″ X 30″	23 R3-2 24″ X 24″
24 LEFT LANE ENDS — W9-1 L 48″ X 48″	25 W4-2L 48″ X 48″	26 LEFT LANE CLOSED — W20-5 L 48″ X 48″	27 RIGHT LANE CLOSED AHEAD — W20-5 R 48″ X 48″	28 W4-2R 48″ X 48″	29 RIGHT LANE CLOSED — W20-5 R 48″ X 48″	30 W6-3 48″ X 48″	31 W24-1L 48″ X 48″	32 W1-4R 48″ X 48″	33 W1-4L 48″ X 48″
34 W1-4R 48″ X 48″	35 RIGHT LANE ENDS — W9-1 R 48″ X 48″	36 RIGHT LANE MUST TURN RIGHT — R3-7 R 30″ X 30″	37 W12-1 48″ X 48″						

*SEE TMP-2H FOR SPECIAL SIGN DESIGN

APPROVED: DocuSigned by: R. Erskine Brooks F058C5F74846464E...

DATE: 3/30/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R ERSKINE BROOKS

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

WORK ZONE BARRICADE AND SIGNING LEGEND

PLOT DRIVER: NCDOT_pdf_color_eng_100.plt PENTABLE: NCDOT_tcp.tbl
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PHASING

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-3

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

NOTES:

BEFORE BEGINNING ANY CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL INSTALL ALL ADVANCE WARNING SIGNS AND TRAFFIC CONTROL DEVICES. FIELD VERIFY LOCATIONS WITH THE RESIDENT ENGINEER PRIOR TO INSTALLATION.

MAINTAIN ACCESS TO ALL RESIDENCES AND BUSINESSES DURING THE LIFE OF THE CONTRACT, UNLESS OTHERWISE NOTED IN THE PHASING OR AS DIRECTED BY THE ENGINEER.

COMPLETE ANY PROPOSED OR TEMPORARY WIDENING IN SUCH A MANNER THAT NO PONDING OF WATER WILL OCCUR WITHIN THE TRAVEL LANE.

WHEN USING LANE CLOSURES (RSD 1101.02), RETURN TRAFFIC TO EXISTING PATTERN(S) AT THE END OF THE ALLOWABLE WORK PERIOD.

PAVE PROPOSED CONSTRUCTION UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE, IN ALL PHASES, UNLESS OTHERWISE NOTED IN THE PHASING, UNTIL STATED TO INSTALL THE FINAL LAYER OF SURFACE COURSE IN THE PHASING.

COVER ALL OPEN DRAINAGE STRUCTURES ADJACENT TO TRAFFIC WITH TEMPORARY STEEL PLATES, OR AS DIRECTED BY THE ENGINEER.

PHASE 1 (SHEETS TMP-4 - TMP-14)

STEP 1:

AWAY FROM TRAFFIC, BEGIN CONSTRUCTION OF THE PROPOSED CULVERT NORTH OF EXISTING ROWAN STREET. (SEE SHEET TMP-4)
(SEE LOCAL NOTE LN-01, SHEET TMP-2B)

AWAY FROM TRAFFIC, BEGIN CONSTRUCTION OF THE PROPOSED CULVERT (EASTERN BARREL) BETWEEN EXISTING ROWAN STREET AND EXISTING NC 24.
(SEE SHEET TMP-4) (SEE LOCAL NOTE LN-01, SHEET TMP-2B)

PERMANENTLY CLOSE -Y5- (HILLSBORO STREET) AT THE EXISTING HILLSBORO STREET INTERSECTION WITH ROWAN STREET, AND COMPLETE THE ASSOCIATED WORK FOR THE TURNAROUND AREA ALONG -Y5- (-Y5- STA. 12+85 +/- TO STA. 13+45 +/-, AS SHOWN ON SHEET TMP-5, INCLUDING REMOVAL OF THE EXISTING TRAFFIC AND RAIL SIGNALS.

AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, BEGIN INSTALLATION OF TEMPORARY SIGNALS 06-0037T1 AND 06-0039T1.

STEP 2:

WORKING IN A CONTINUOUS MANNER, AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, COMPLETE THE FOLLOWING:

1. INSTALLATION AND ACTIVATION OF TEMPORARY SIGNAL 06-0037T1
2. INSTALL AND ACTIVE TEMPORARY SIGNAL 06-0071T1
3. USING RSD 1101.03, SHEET 2 OF 9, PERMANENTLY CLOSE THE FOLLOWING: (INSTALL NC 210 DETOUR SIGNING AS SHOWN ON SHEETS TMP-4 AND TMP-5 AND "TO NC 210 NORTH" TRUCK DETOUR SIGNING AS SHOWN ON SHEET TMP-2G)
   - EXISTING RAMP FROM NC 24 WB TO ROWAN STREET / NC 210
   - EXISTING ROWAN STREET FROM NC 210 TO HILLSBORO STREET
   - EXISTING HILLSBORO STREET FROM ROWAN STREET TO THE RAMP TO NC 24 EB
4. PLACE TEMPORARY PAVEMENT MARKINGS ON EXISTING NC 210 AND EXISTING ROWAN STREET IN THE TEMPORARY PATTERNS AS SHOWN ON SHEETS TMP-4 AND TMP-7
5. SHIFT TRAFFIC TO THE TEMPORARY PATTERNS ON EXISTING NC 210 AND EXISTING ROWAN STREET

USING RSD 1101.03 (SHEETS 1 AND 2 OF 9), CLOSE AND DETOUR -Y8- (CHATHAM STREET), THEN WORKING IN A CONTINUOUS MANNER, AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, COMPLETE INSTALLATION AND ACTIVATION OF TEMPORARY SIGNAL 06-0039T1, PLACE TEMPORARY PAVEMENT MARKINGS ON EXISTING NC 24 FROM -L- STA. 34+44 +/- TO STA. 43+05 +/- AS SHOWN ON SHEET TMP-6, THEN SHIFT TRAFFIC TO THE TEMPORARY PATTERN ON EXISTING NC 24.

STEP 3:

AWAY FROM TRAFFIC, COMPLETE CONSTRUCTION OF THE PROPOSED CULVERT NORTH OF EXISTING ROWAN STREET, INCLUDING SHORING NO. 1 AND NO. 2.
(SEE SHEET TMP-4) (SEE LOCAL NOTE LN-01, SHEET TMP-2B)

AWAY FROM TRAFFIC AND USING FLAGGERS AND LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AS NECESSARY, BEGIN CONSTRUCTION OF THE FOLLOWING:
(SEE SHEETS TMP-4 AND TMP-7)

- -L- FROM STA. 16+93 +/- TO STA. 22+25 +/- (LT),
- -Y1-
- -Y3- FROM STA. 13+65 +/- TO STA. 19+20 +/- (RT), INCLUDING FINAL WEDGING FROM STA. 13+65 +/- TO STA. 15+40 +/-, AND TEMPORARY WEDGING FROM STA. 15+40 +/- TO STA. 16+00 +/-

AWAY FROM TRAFFIC, BEGIN CONSTRUCTION OF -L- FROM STA. 24+00 +/- TO STA. 35+00 +/-, INCLUDING SHORING NO. 3 AND NO. 4.
(SEE SHEETS TMP-5 AND TMP-6)

USING FLAGGERS AND LANE CLOSURES (RSD 1101.02, SHEET 3 OF 15), AS NECESSARY, PLACE ANCHORED PORTABLE CONCRETE BARRIER FROM -L- STA. 35+80 +/- TO STA. 37+75 +/-, THEN AWAY FROM TRAFFIC AND USING FLAGGERS AND LANE CLOSURES (RSD 1101.02, SHEET 3 OF 15), AS NECESSARY, BEGIN CONSTRUCTION OF -L- FROM STA. 35+00 +/- TO STA. 38+50 +/-, INCLUDING INSTALLATION OF TEMPORARY SHORING NO. 5 AND NO. 6. (SEE SHEET TMP-6)

* SEE LOCAL NOTE LN-02 FOR CONSTRUCTION OF BRIDGE OVER CSX RAILROAD

AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, BEGIN INSTALLATION OF TEMPORARY SIGNALS 06-0037T2 AND 06-1336T1.

STEP 4:

AWAY FROM TRAFFIC AND USING FLAGGERS AND LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AS NECESSARY, COMPLETE CONSTRUCTION OF THE FOLLOWING AS PREVIOUSLY BEGUN:

- -L- FROM STA. 16+93 +/- TO STA. 22+25 +/- (LT), INCLUDING TEMPORARY PAVEMENT FOR TEMPORARY TIE TO EXISTING BRAGG BLVD
- -Y3- FROM STA. 13+65 +/- TO STA. 19+20 +/- (RT), INCLUDING WEDGING FROM STA. 13+65 +/- TO STA. 16+00 +/-

STEP 5:

WORKING IN A CONTINUOUS MANNER, AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, COMPLETE THE FOLLOWING:

1. INSTALLATION AND ACTIVATION OF TEMPORARY SIGNAL 06-0037T2
2. PLACE TEMPORARY PAVEMENT MARKINGS ON -L- AND -Y3- AS SHOWN ON SHEETS TMP-10 AND TMP-13
3. INSTALL PCB FROM -L- STA. 18+32 +/- TO STA. 20+00 +/- AS SHOWN ON SHEET TMP-10
4. SHIFT NC 210 TRAFFIC TO THE PHASE 1, STEP 6 TEMPORARY PATTERN
5. REMOVE OR COVER TRUCK DETOUR SIGNING TO NC 210 NORTH

STEP 6:

AWAY FROM TRAFFIC, COMPLETE CONSTRUCTION OF THE EASTERN MOST BARREL OF THE PROPOSED CULVERT UNDER -L- AND -Y3-, AND BEGIN CONSTRUCTION OF THE MIDDLE AND WESTERN MOST BARREL OF THE PROPOSED CULVERT, AS SHOWN ON SHEET TMP-10. (SEE SHEET TMP-10) (SEE LOCAL NOTE LN-01, SHEET TMP-2B)

AWAY FROM TRAFFIC AND USING FLAGGERS AND LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AS NECESSARY, BEGIN CONSTRUCTION OF THE FOLLOWING:
(SEE SHEET TMP-10)

- -L- FROM STA. 18+70 +/- TO STA. 24+00 +/- (RT), INCLUDING TEMPORARY PAVEMENT FROM -L- STA. 18+70 +/- TO STA. 20+46 +/-
- -Y3- FROM STA. 13+65 +/- TO STA. 17+56 +/-, INCLUDING FINAL WEDGING FROM STA. 13+65 +/- TO STA. 15+40 +/-
- -Y3- FROM STA. 20+45 +/- TO STA. 23+50 +/-
- -Y11-
- -Y11A-

STEP 7:

AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, BEGIN INSTALLATION OF TEMPORARY SIGNALS 06-0037T3, 06-0039T2, AND 06-1210T1.

AWAY FROM TRAFFIC AND USING FLAGGERS AND LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AS NECESSARY, CONSTRUCT THE FOLLOWING:
(SEE SHEET TMP-12)

- -L- FROM STA. 38+50 +/- TO STA. 42+75 +/- (LT), INCLUDING FINAL WEDGING FROM STA. 38+50 +/- TO STA. 42+75 +/-, AND TEMPORARY WEDGING FROM STA. 38+00 +/- TO STA. 38+50 +/-.
- -Y8-

AWAY FROM TRAFFIC AND USING FLAGGERS AND LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AS NECESSARY, COMPLETE CONSTRUCTION OF THE FOLLOWING AS PREVIOUSLY BEGUN: (SEE SHEET TMP-10 - TMP-13)

- -L- FROM STA. 18+70 +/- TO STA. 38+50 +/- (LT), INCLUDING TEMPORARY PAVEMENT FROM -L- STA. 18+70 +/- TO STA. 20+46 +/-
  (* CONSTRUCTION MAY CONTINUE ON -L- ON THE PROPOSED ROADWAY OUTSIDE OF THE PHASE 2 TEMPORARY TRAFFIC PATTERN, AS SHOWN ON SHEETS TMP-15 AND TMP-16.)
- -Y3- FROM STA. 13+65 +/- TO STA. 19+20 +/-, INCLUDING WEDGING FROM STA. 13+65 +/- TO STA. 15+40 +/-
- -Y11-
- -Y11A-

STEP 8:

WORKING IN A CONTINUOUS MANNER, AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, COMPLETE THE FOLLOWING:

1. INSTALL PCB IN THE FOLLOWING LOCATIONS:
   - -L- STA. 18+38 +/- TO STA. 20+50 +/-
     * DO NOT INSTALL THIS PCB IF PREVIOUSLY REMOVED DURING A PRIOR STEP DUE TO COMPLETION OF THE ROADWAY CULVERT AND BACKFILLING OF THE PROPOSED ROADWAY (REFER TO NOTE SHOWN ON SHEET TMP-10)
   - -L- STA. 32+50 +/- TO STA. 36+75 +/-
2. INSTALLATION AND ACTIVATION OF TEMPORARY SIGNALS 06-0037T3, 06-0039T2, AND 06-1336T1
3. INSTALL AND ACTIVATE TEMPORARY SIGNAL 06-0038T1
4. PLACE TEMPORARY PAVEMENT MARKINGS IN THE FOLLOWING LOCATIONS: (AS SHOWN ON SHEETS TMP-15 - TMP-17)
   - -L- FROM STA. 18+15 +/- TO STA. 42+75 +/-
   - EXISTING BRAGG BLVD FROM US 401 NB RAMPS TO THE EXISTING INTERSECTION WITH NC 24
   - -Y3- (NC 210/MURCHISON ROAD) FROM STA. 12+15 +/- TO STA. 18+84 +/- (TEMPORARY MARKINGS PLACED IN THE FINAL PATTERN)
5. PLACE TUBULAR MARKERS ALONG THE DOUBLE YELLOW CENTERLINE ON -L- FROM STA. 22+50 +/- TO STA. 42+50 +/-
6. SHIFT NC 24 AND NC 210 TRAFFIC TO THE PHASE 2, STEP 1 TEMPORARY PATTERNS (SEE GENERAL NOTE "M", SHEET TMP-2A)

APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...
DATE: 3/30/2016
SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

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PHASING

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-3A

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

PHASING

PHASE 2 (SHEETS TMP-15 - TMP-26)

STEP 1:

USING LANE CLOSURES (RSD 1101.02, SHEET 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, CONSTRUCT THE FOLLOWING, AS SHOWN ON SHEET TMP-15:
- -L- FROM STA. 12+35 +/- TO STA. 16+35 +/- (LT) INCLUDING TEMPORARY PAVEMENT FROM -L- STA. 15+53 +/- TO STA. 20+46 +/- FOR TEMPORARY TIE TO EXISTING BRAGG BLVD
- -L- FROM STA. 12+35 +/- TO STA. 14+50 +/- (RT)
- TEMPORARY PAVEMENT IN EXISTING BRAGG BLVD MEDIAN FROM -L- STA. 12+35 +/- TO STA. 16+33 +/-
- FINAL WEDGING ON EXISTING BRAGG BLVD FROM -L- STA. 12+35 +/- TO STA. 14+50 +/- (RT)
- FINAL WEDGING ON EXISTING BRAGG BLVD FROM -L- STA. 12+35 +/- TO STA. 15+50 +/- (LT)
- TEMPORARY WEDGING ON EXISTING BRAGG BLVD FROM -L- STA. 14+50 +/- TO STA. 16+45 +/-
- -Y1-

AWAY FROM TRAFFIC, COMPLETE CONSTRUCTION OF NEW CULVERT. (SEE SHEETS TMP-15 AND TMP-18) (SEE LOCAL NOTE LN-01, SHEET TMP-2B)

AWAY FROM TRAFFIC, BEGIN REMOVAL OF EXISTING NC 24 ROADWAY AND BRIDGE OVER CSX AND NORFOLK SOUTHERN RAILROADS.

AWAY FROM TRAFFIC AND USING LANE CLOSURES (RSD 1101.02, SHEET 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, BEGIN CONSTRUCTION OF -L- FROM STA. 33+75 +/- TO STA. 42+76 +/- (RT), AS SHOWN ON SHEETS TMP-16 AND TMP-17.

AWAY FROM TRAFFIC AND USING LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, BEGIN INSTALLATION OF TEMPORARY SIGNALS 06-0037T4, 06-0039T3, 06-1210T1, AND 06-1336T2.

COMPLETE PHASE 2, STEP 2 CONCURRENTLY WITH PHASE 2, STEP 3.

STEP 2:

AWAY FROM TRAFFIC AND USING LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, COMPLETE THE FOLLOWING:
- -L- FROM STA. 20+83 +/- TO STA. 22+83 +/- (RT)
- -Y3- FROM STA. 20+00 +/- TO STA. 23+50 +/- (LT)

THE CONTRACTOR SHALL COMPLETE THE WORK REQUIRED IN PHASE 2, STEPS 3 AND 4 IN SIXTY (60) CONSECUTIVE DAYS. (SEE INTERMEDIATE CONTRACT TIME AND LIQUIDATED DAMAGES)

STEP 3:

WORKING IN A CONTINUOUS MANNER, AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 AND 2 OF 15) AND LAW ENFORCEMENT AS NECESSARY, COMPLETE INSTALLATION AND ACTIVATION OF TEMPORARY SIGNAL 06-1210T1, INSTALL TEMPORARY PAVEMENT MARKINGS ON EXISTING BRAGG BLVD FROM ROWAN STREET INTERSECTION TO -Y12- (WALTER STREET), AS SHOWN ON SHEETS TMP-21 AND TMP-22, THEN SHIFT BRAGG BLVD TRAFFIC TO THE TEMPORARY PATTERN.

UPON SHIFTING OF TRAFFIC TO THE TEMPORARY PATTERN ON EXISTING BRAGG BLVD, AWAY FROM TRAFFIC AND USING FLAGGERS AND LANE CLOSURES (RSD 1101.02, SHEETS 1 AND 2 OF 15) AS NECESSARY, COMPLETE CONSTRUCTION OF -Y3- FROM STA. 23+50 +/- TO STA. 30+50 +/- (LT), INCLUDING ASPHALT WEDGING TO PROVIDE A SMOOTH TRANSITION AND TIE-IN TO THE EXISTING PAVEMENT, AS SHOWN ON SHEETS TMP-21 AND TMP-22.

UPON COMPLETION OF -Y3- (LT) WORK, WORKING IN A CONTINUOUS MANNER AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 AND 2 OF 15), AND LAW ENFORCEMENT AS NECESSARY, COMPLETE INSTALLATION AND ACTIVATION OF TEMPORARY SIGNAL 06-1336T2, INSTALL AND ACTIVATE TEMPORARY SIGNAL 06-1210T2, PLACE TEMPORARY MARKINGS ON -L- FROM STA. 18+52 +/- TO STA. 22+60 +/- (OPENING OF EB RIGHT TURN LANE TO -Y3-) AND ON -Y3- FROM STA. 20+00 +/- TO STA. 31+50 +/- (AS SHOWN ON SHEETS TMP-24 AND TMP-25), THEN SHIFT BRAGG BLVD TRAFFIC TO THE TEMPORARY PATTERN ON -Y3-.

STEP 4:

UPON SHIFTING OF BRAGG BLVD TRAFFIC TO THE TEMPORARY PATTERN ON -Y3-, AWAY FROM TRAFFIC AND USING FLAGGERS AND LANE CLOSURES (RSD 1101.02, SHEETS 1 AND 2 OF 15) AS NECESSARY, COMPLETE ALL REMAINING CONSTRUCTION OF -Y3-, INCLUDING ASPHALT WEDGING TO PROVIDE A SMOOTH TRANSITION AND TIE-IN TO THE EXISTING PAVEMENT, AS SHOWN ON SHEETS TMP-24 AND TMP-25.

UPON COMPLETION OF ALL -Y3- WORK, WORKING IN A CONTINUOUS MANNER AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, INSTALL AND ACTIVATE TEMPORARY SIGNAL 06-1336T3, INSTALL AND ACTIVATE FINAL SIGNAL 06-1210, PLACE TEMPORARY MARKINGS IN THE FINAL PATTERN ON -Y3- FROM STA. 20+00 +/- TO STA. 31+50 +/-, THEN SHIFT BRAGG BLVD TRAFFIC TO THE FINAL PATTERN ON -Y3-.

STEP 5:

AWAY FROM TRAFFIC AND USING LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, COMPLETE THE FOLLOWING:
- -L- FROM STA. 12+35 +/- TO STA. 16+93 +/- (LT)
- -Y1-

STEP 6:

WORKING IN A CONTINUOUS MANNER, AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, COMPLETE THE FOLLOWING:
1. PLACE TEMPORARY PAVEMENT MARKINGS IN THE FOLLOWING LOCATIONS: (AS SHOWN ON SHEET TMP-27)
   - -L- FROM STA. 12+35 +/- TO STA. 22+60 +/-
   - -Y2- - TEMPORARY TIE TO NC 24
   - -DR1-
2. COMPLETE INSTALLATION OF AND ACTIVATE TEMPORARY SIGNAL 06-0037T4
3. SHIFT NC 24, -Y2-, AND -DR1- TRAFFIC TO THE PHASE 3, STEP 1 TEMPORARY PATTERNS

PHASE 3 (SHEETS TMP-27 - TMP-28)

STEP 1:

AWAY FROM TRAFFIC AND USING LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, CONSTRUCT THE FOLLOWING: (SEE SHEET TMP-21)
- -L- FROM STA. 14+50 +/- TO STA. 18+67 +/- (RT)
- -Y2- (ROWAN STREET)
- -DR1-

AWAY FROM TRAFFIC AND USING LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, COMPLETE ALL CONSTRUCTION OF THE FOLLOWING AS PREVIOUSLY BEGUN:
- -L- FROM STA. 18+67 +/- TO STA. 20+83 +/- (RT)
- -L- FROM STA. 22+83 +/- TO STA. 42+76 +/- (RT)

AWAY FROM TRAFFIC AND USING LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, BEGIN INSTALLATION OF TEMPORARY SIGNAL 06-1336T4.

STEP 2:

WORKING IN A CONTINUOUS MANNER AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, COMPLETE INSTALLATION AND ACTIVATION OF TEMPORARY SIGNALS 06-0039T3 AND 06-1336T4, PLACE TEMPORARY MARKINGS ON -L- FROM STA. 12+35 +/- TO STA. 42+75 +/-, PLACE TEMPORARY MARKINGS IN THE FINAL PATTERN ON -Y2- AND -DR1-, THEN SHIFT TRAFFIC TO THE TEMPORARY AND FINAL PATTERNS AS SHOWN ON SHEETS TMP-29 - TMP-31.

PHASE 4 (SHEETS TMP-29 - TMP-32)

STEP 1:

USING LANE CLOSURES (RSD 1101.02, SHEET 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, CONSTRUCT ALL REMAINING MEDIAN ISLANDS ALONG -L-.

AWAY FROM TRAFFIC AND USING LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, BEGIN INSTALLATION OF FINAL SIGNALS 06-0039 AND 06-1336.

STEP 2:

WORKING IN A CONTINUOUS MANNER, AWAY FROM TRAFFIC AND USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 OF 15), AND LAW ENFORCEMENT AS NECESSARY, COMPLETE THE FOLLOWING:
1. PLACE TEMPORARY PAVEMENT MARKINGS IN THE FINAL PATTERN ON -L-
2. INSTALLATION AND ACTIVATION OF FINAL SIGNALS 06-0039 AND 06-1336
3. SHIFT -L- TRAFFIC TO THE FINAL PATTERN

STEP 3:

USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3 AND 5 - 8 OF 15), AND LAW ENFORCEMENT AS NECESSARY, PLACE THE FINAL LAYER OF ASPHALT SURFACE COURSE ON ALL ROADS.

USING FLAGGERS, LANE CLOSURES (RSD 1101.02, SHEETS 1 - 3, 5 - 8, 11, AND 12 OF 15), AND LAW ENFORCEMENT AS NECESSARY, PLACE ALL FINAL PAVEMENT MARKINGS AND MARKERS, THEN OPEN ALL LANES TO THE FINAL PATTERN.

REMOVE ALL REMAINING TRAFFIC CONTROL DEVICES.

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

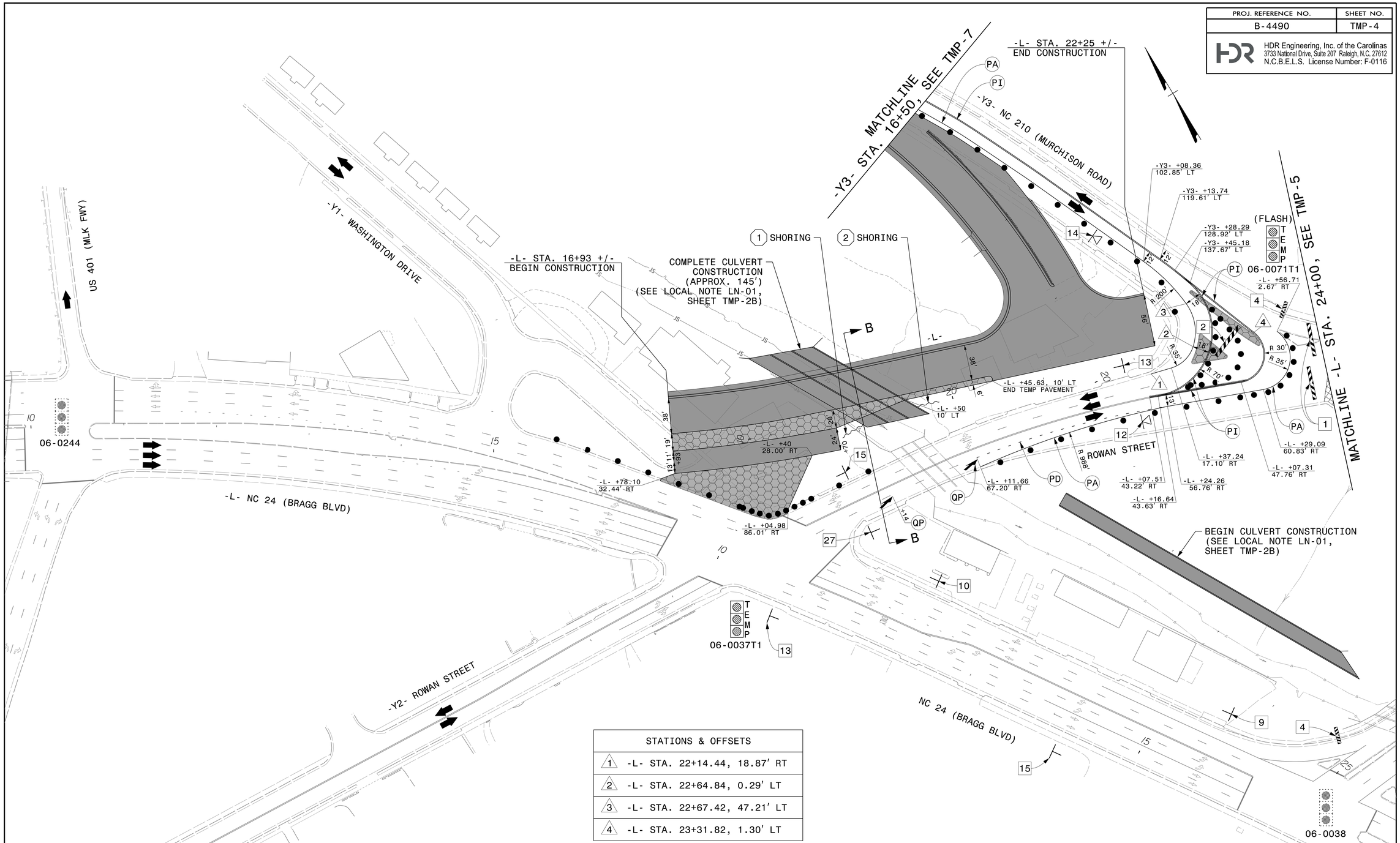
DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

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

PHASING

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-4

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116



STATIONS & OFFSETS	
1	-L- STA. 22+14.44, 18.87' RT
2	-L- STA. 22+64.84, 0.29' LT
3	-L- STA. 22+67.42, 47.21' LT
4	-L- STA. 23+31.82, 1.30' LT

1	TEMPORARY SHORING No. 1 QUANTITY = 154 SQ. FT. FROM -L- STA. 18+75 +/-, 16.0' +/- RT TO -L- STA. 19+00 +/-, 7.0' +/- RT
2	TEMPORARY SHORING No. 2 QUANTITY = 148 SQ. FT. FROM -L- STA. 19+60 +/-, 0.0' +/- RT TO -L- STA. 19+85 +/-, 0.0' +/- RT

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DATE: 3/30/2016

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NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

PHASE 1
STEPS 1-5

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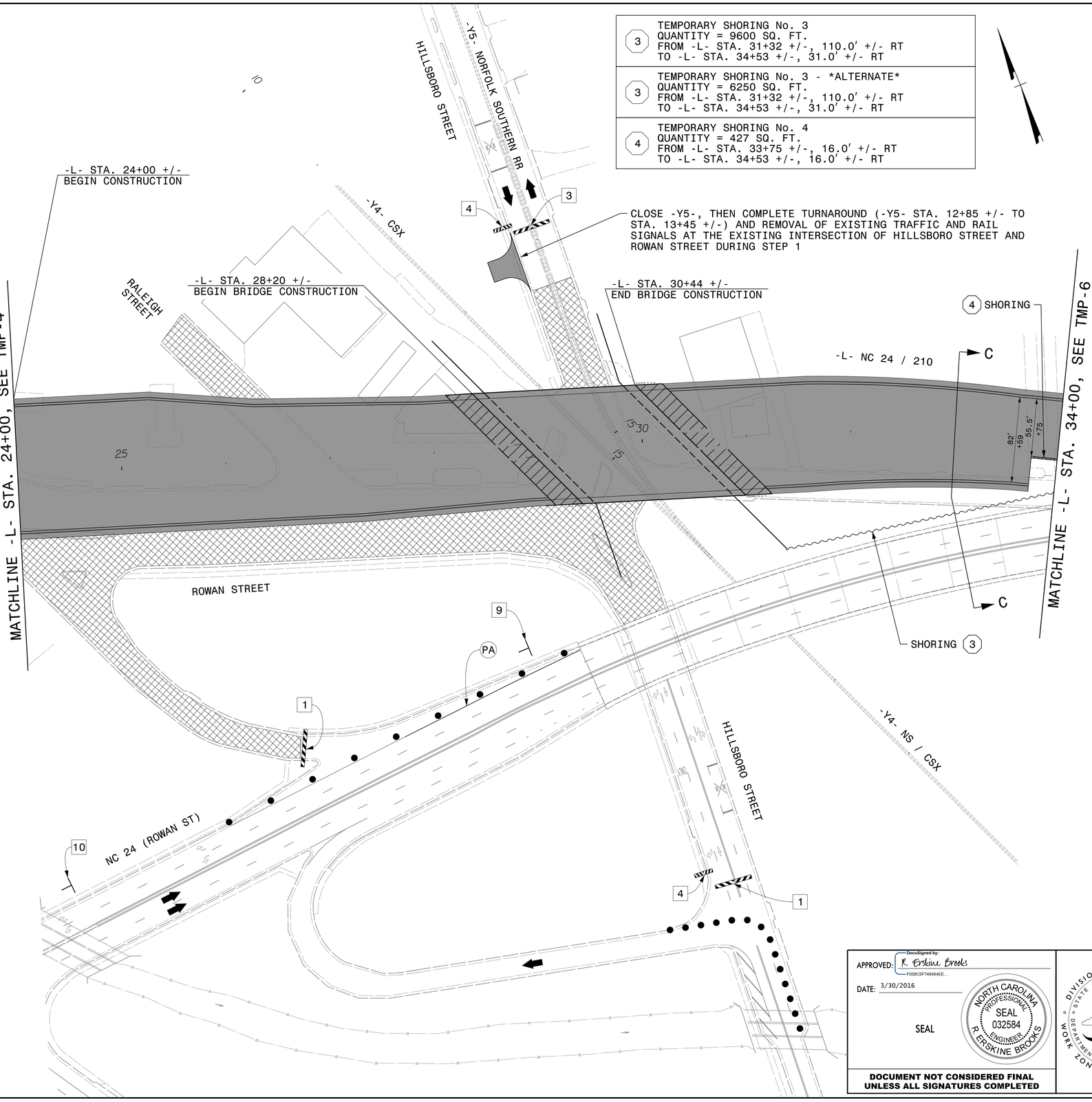
USER: charnden DATE: 3/28/2016 TIME: 10:23:50 AM
FILE: p:\!PWAPPTPA01\SouthEast_Tampa\Documents\000166\CON00797S9\0000000022096A\06.00_Project_Design\B-4490_TMP_TMP-04.dgn

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-5

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

3	TEMPORARY SHORING No. 3 QUANTITY = 9600 SQ. FT. FROM -L- STA. 31+32 +/-, 110.0′ +/- RT TO -L- STA. 34+53 +/-, 31.0′ +/- RT
3	TEMPORARY SHORING No. 3 - *ALTERNATE* QUANTITY = 6250 SQ. FT. FROM -L- STA. 31+32 +/-, 110.0′ +/- RT TO -L- STA. 34+53 +/-, 31.0′ +/- RT
4	TEMPORARY SHORING No. 4 QUANTITY = 427 SQ. FT. FROM -L- STA. 33+75 +/-, 16.0′ +/- RT TO -L- STA. 34+53 +/-, 16.0′ +/- RT



APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...

DATE: 3/30/2016

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NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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PHASE 1
STEPS 1-5

PLOT DRIVER: NCDOT_pdf_color_eng_100.plt
USER: charnden
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PENTABLE: NCDOT_Tcp.tbl
DATE: 3/28/2016
TIME: 10:24:02 AM

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-6

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-L- STA. 34+43 +/-
BEGIN BRIDGE CONSTRUCTION

FOR BRIDGE CONSTRUCTION OVER CSX RAILROAD, SEE LOCAL NOTE LN-02, SHEET TMP-2B

-L- STA. 35+72 +/-
END BRIDGE CONSTRUCTION

-L- STA. 35+80 +/-
BEGIN ANCHORED PCB
PLACE CRASH CUSHION

-L- STA. 38+50 +/-
END CONSTRUCTION

-L- STA. 37+75 +/-
END ANCHORED PCB
PLACE CRASH CUSHION

MATCHLINE -L- STA. 34+00, SEE TMP-5

-Y8- CHATHAM STREET

-Y9- RAY AVENUE

-Y9- +81.14
22.40' RT

-L- +75.80
11.26' LT

-L- +13.28
11.77' LT

-L- +76.56
23.67' LT

-L- +10.47
19.93' RT

-L- +77.18
33.22' RT

-L- NC 24 / 210
(ROWAN STREET)

-Y10- RAY AVENUE

SHORING 3
SHORING 4
SHORING 5
SHORING 6

ANCHORED PORTABLE CONCRETE BARRIER

MESSAGE NO. 1	MESSAGE NO. 2
NEW TRAF PATTERN AHEAD	STAY ALERT

CHANGEABLE MESSAGE SIGN

T E M P
06-0039T1

R11-2
48" x 30"
ROAD CLOSED
DETOUR
M4-10R
48" x 18"
TYPE III BARRICADE

3	TEMPORARY SHORING No. 3 QUANTITY = 9600 SQ. FT. FROM -L- STA. 31+32 +/-, 110.0′ +/- RT TO -L- STA. 34+53 +/-, 31.0′ +/- RT
3	TEMPORARY SHORING No. 3 - *ALTERNATE* QUANTITY = 6250 SQ. FT. FROM -L- STA. 31+32 +/-, 110.0′ +/- RT TO -L- STA. 34+53 +/-, 31.0′ +/- RT
4	TEMPORARY SHORING No. 4 QUANTITY = 427 SQ. FT. FROM -L- STA. 33+75 +/-, 16.0′ +/- RT TO -L- STA. 34+53 +/-, 16.0′ +/- RT
5	TEMPORARY SHORING No. 5 QUANTITY = 1650 SQ. FT. FROM -L- STA. 35+50 +/-, 17.5′ +/- RT TO -L- STA. 36+50 +/-, 17.5′ +/- RT
6	TEMPORARY SHORING No. 6 QUANTITY = 1700 SQ. FT. FROM -L- STA. 35+64 +/-, 16.0′ +/- RT TO -L- STA. 36+50 +/-, 16.0′ +/- RT

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DATE: 3/30/2016
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NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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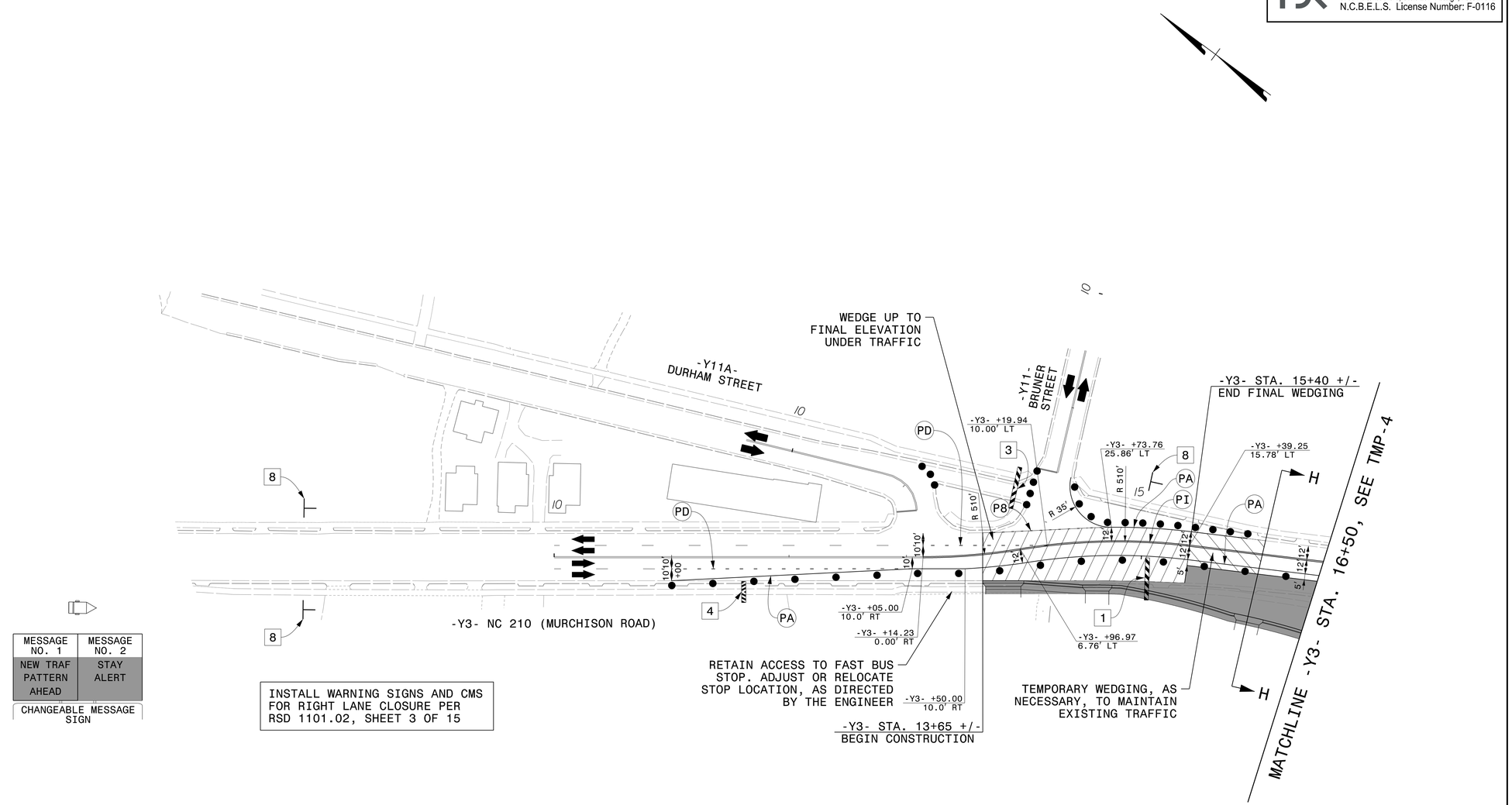
PHASE 1
STEPS 1-5

PLOT DRIVER: NCDOT_pdf_color_eng.100.plt PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 3/28/2016 TIME: 10:24:13 AM
FILE: p:\\PWAPPTPA01:SouthEast_Tampa\Documents\000166\CON0079759\0000000022964\06.00_Project_Design\B-4490_Traffic\TrafficControl\TCP\B-4490_TMP_TMP-06.dgn

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-7

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116



MESSAGE NO. 1	MESSAGE NO. 2
NEW TRAF PATTERN AHEAD	STAY ALERT

CHANGEABLE MESSAGE SIGN

INSTALL WARNING SIGNS AND CMS FOR RIGHT LANE CLOSURE PER RSD 1101.02, SHEET 3 OF 15

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DATE: 3/30/2016

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

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PHASE 1
STEPS 1-5

PLOT DRIVER: NCDOT_pdf_color_eng_100.pltPENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 3/28/2016 TIME: 10:24:23 AM
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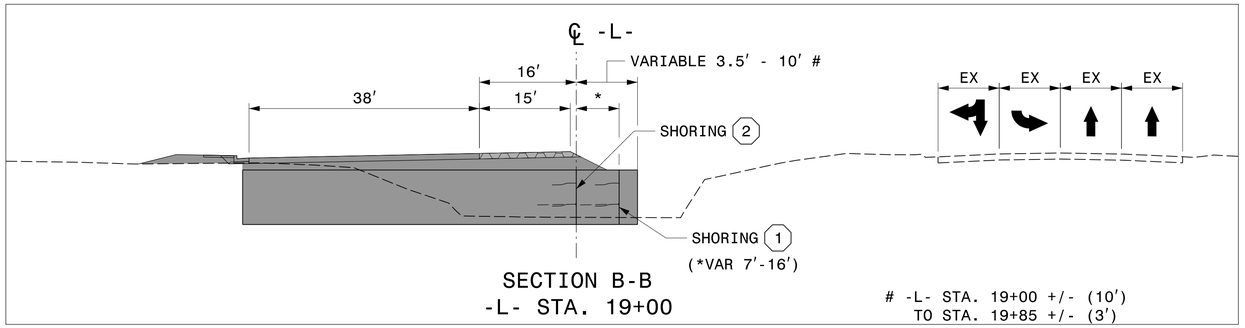
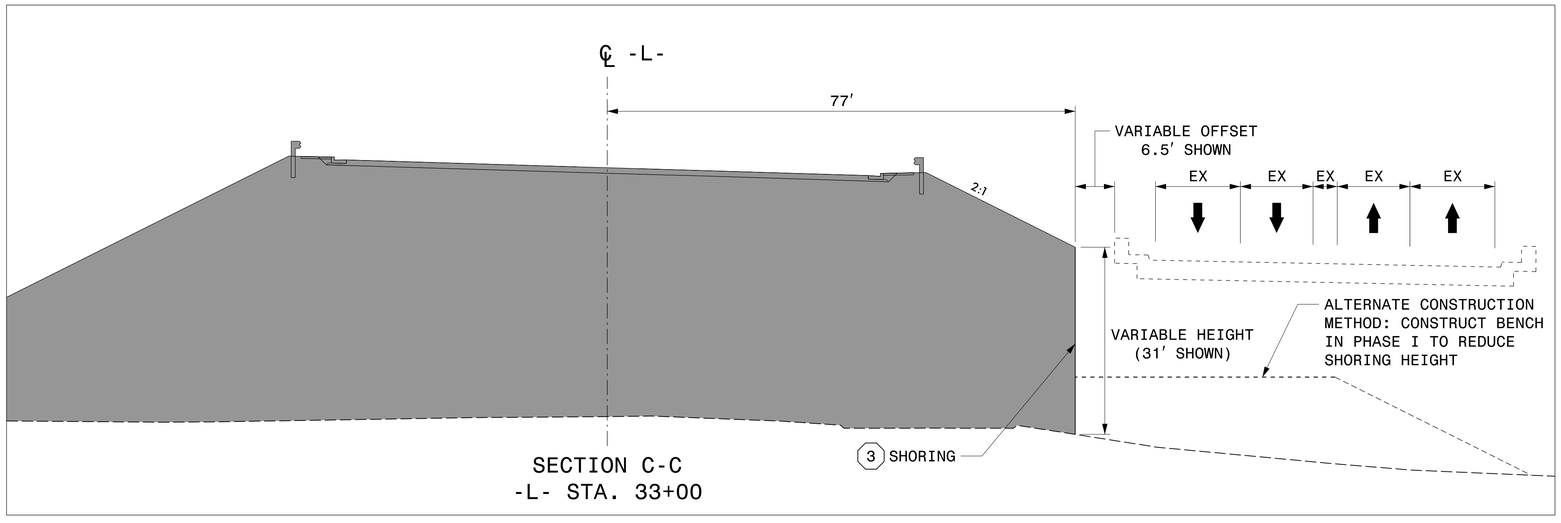
PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-8

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

1	TEMPORARY SHORING No. 1 QUANTITY = 154 SQ. FT. FROM -L- STA. 18+75 +/-, 16.0′ +/- RT TO -L- STA. 19+00 +/-, 7.0′ +/- RT
2	TEMPORARY SHORING No. 2 QUANTITY = 148 SQ. FT. FROM -L- STA. 19+60 +/-, 0.0′ +/- RT TO -L- STA. 19+85 +/-, 0.0′ +/- RT



3	TEMPORARY SHORING No. 3 QUANTITY = 9600 SQ. FT. FROM -L- STA. 31+32 +/-, 110.0′ +/- RT TO -L- STA. 34+53 +/-, 31.0′ +/- RT
3	TEMPORARY SHORING No. 3 - *ALTERNATE* QUANTITY = 6250 SQ. FT. FROM -L- STA. 31+32 +/-, 110.0′ +/- RT TO -L- STA. 34+53 +/-, 31.0′ +/- RT



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DATE: 3/30/2016

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PHASE 1
STEPS 1-5
TYPICAL SECTIONS

PLOT DRIVER: NCDOT_pdf_color_eng_100.pit PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 3/28/2016 TIME: 10:24:31 AM
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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-9

HDR Engineering, Inc. of the Carolinas
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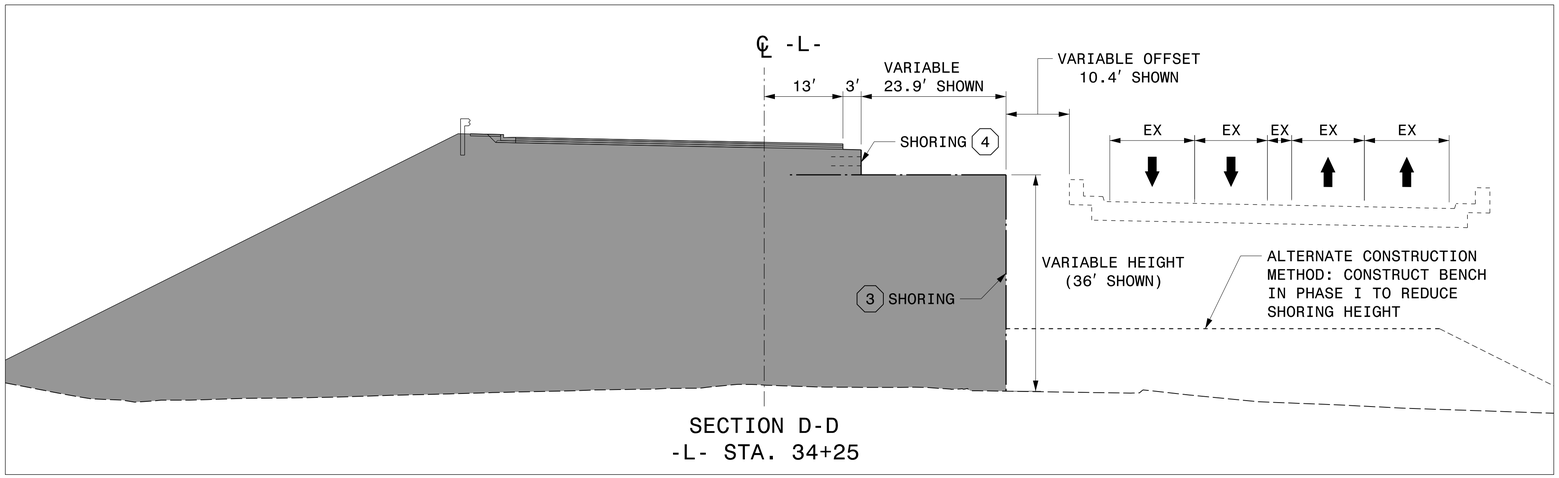
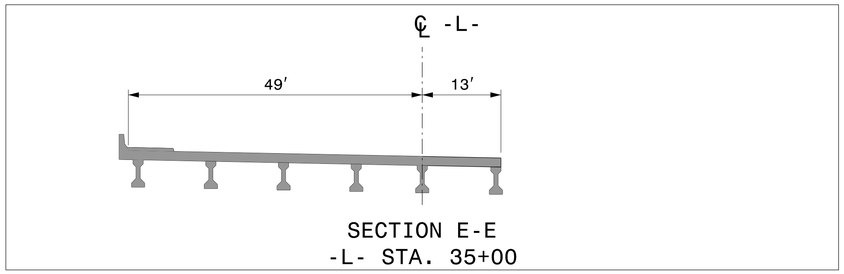
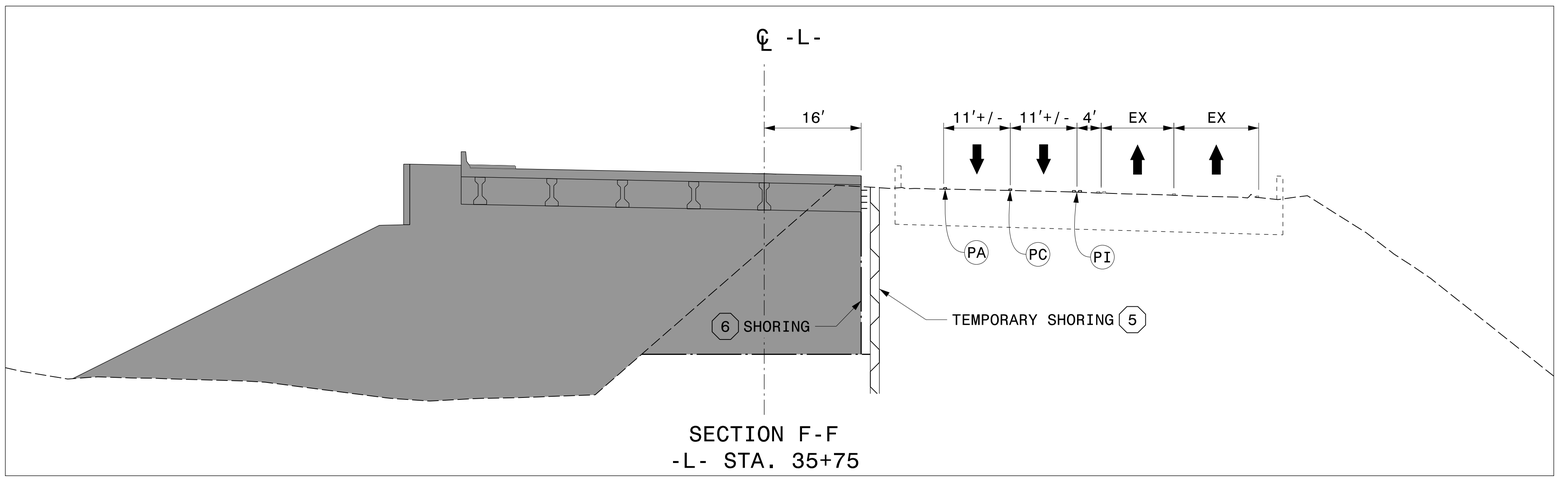
N.C.B.E.L.S. License Number: F-0116



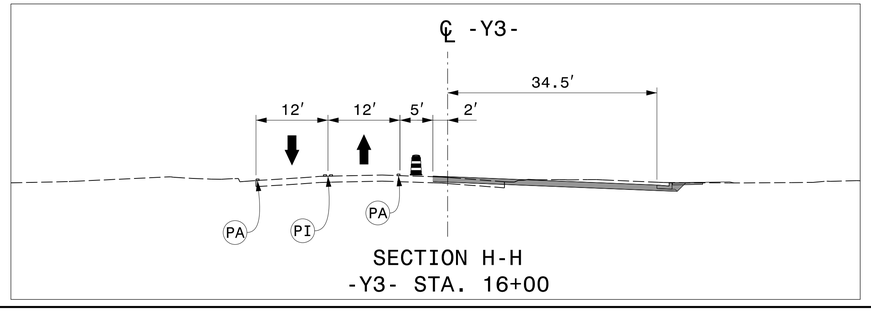
SECTION D-D
-L- STA. 34+25



SECTION E-E
-L- STA. 35+00



SECTION F-F
-L- STA. 35+75



SECTION H-H
-Y3- STA. 16+00

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DATE: 3/30/2016

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PHASE 1
STEPS 1-5
TYPICAL SECTIONS

PLOT DRIVER: NCDOT_pdf_color_eng_100.pit PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 3/28/2016 TIME: 10:24:40 AM
FILE: pw:\\PWAPPTPA01:SouthEast_Tampa\Documents\000166\CON0079759\D0000000022096 4\06.00_Project_Design\B-4490\Traffic\TrafficControl\TCP\B-4490_TMP_TMP-09.dgn

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-10

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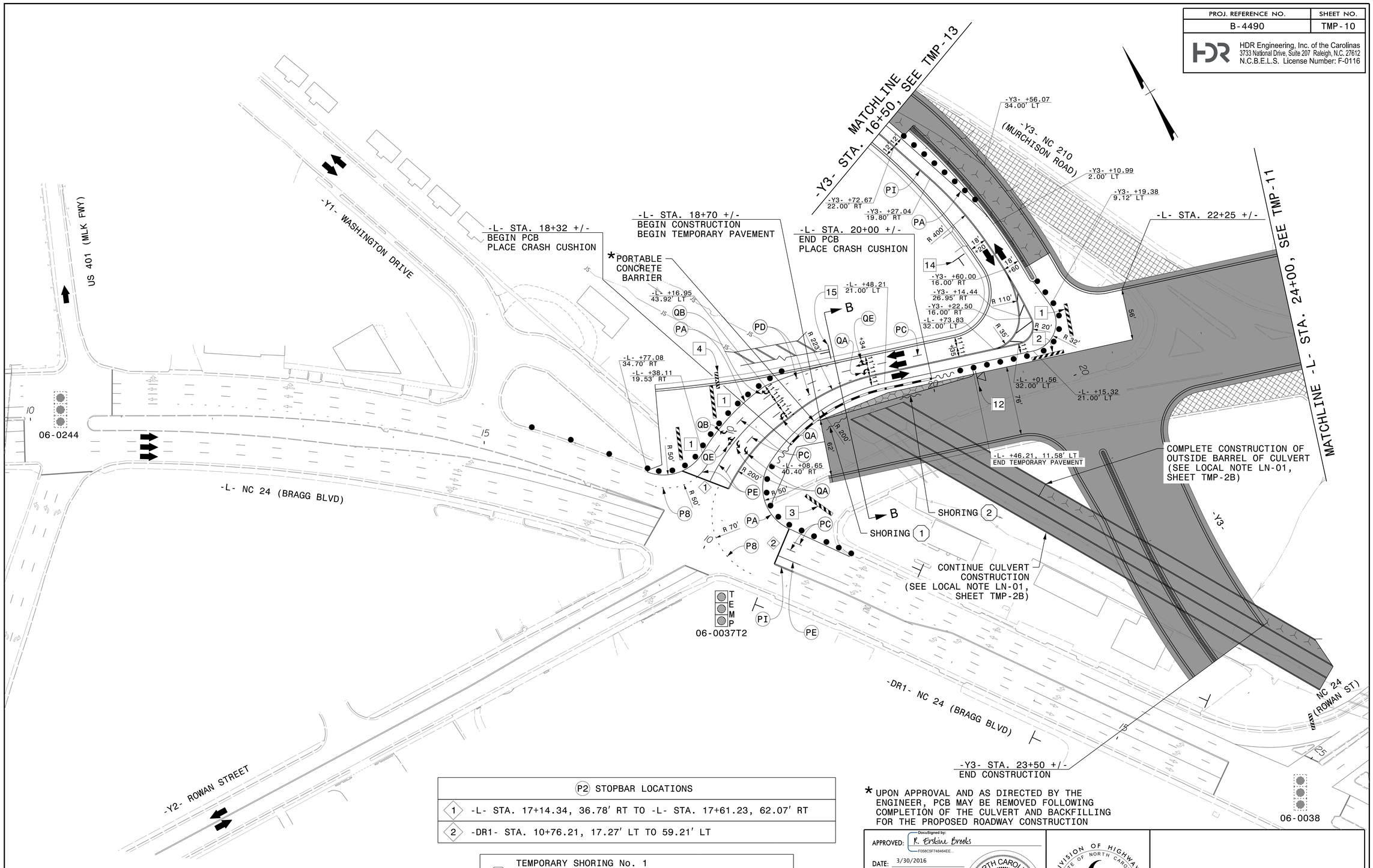

P2 STOPBAR LOCATIONS	
1	-L- STA. 17+14.34, 36.78' RT TO -L- STA. 17+61.23, 62.07' RT
2	-DR1- STA. 10+76.21, 17.27' LT TO 59.21' LT

1	TEMPORARY SHORING No. 1 QUANTITY = 154 SQ. FT. FROM -L- STA. 18+75 +/-, 16.0' +/- RT TO -L- STA. 19+00 +/-, 7.0' +/- RT
2	TEMPORARY SHORING No. 2 QUANTITY = 148 SQ. FT. FROM -L- STA. 19+60 +/-, 0.0' +/- RT TO -L- STA. 19+85 +/-, 0.0' +/- RT

* UPON APPROVAL AND AS DIRECTED BY THE ENGINEER, PCB MAY BE REMOVED FOLLOWING COMPLETION OF THE CULVERT AND BACKFILLING FOR THE PROPOSED ROADWAY CONSTRUCTION

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DATE: 3/30/2016

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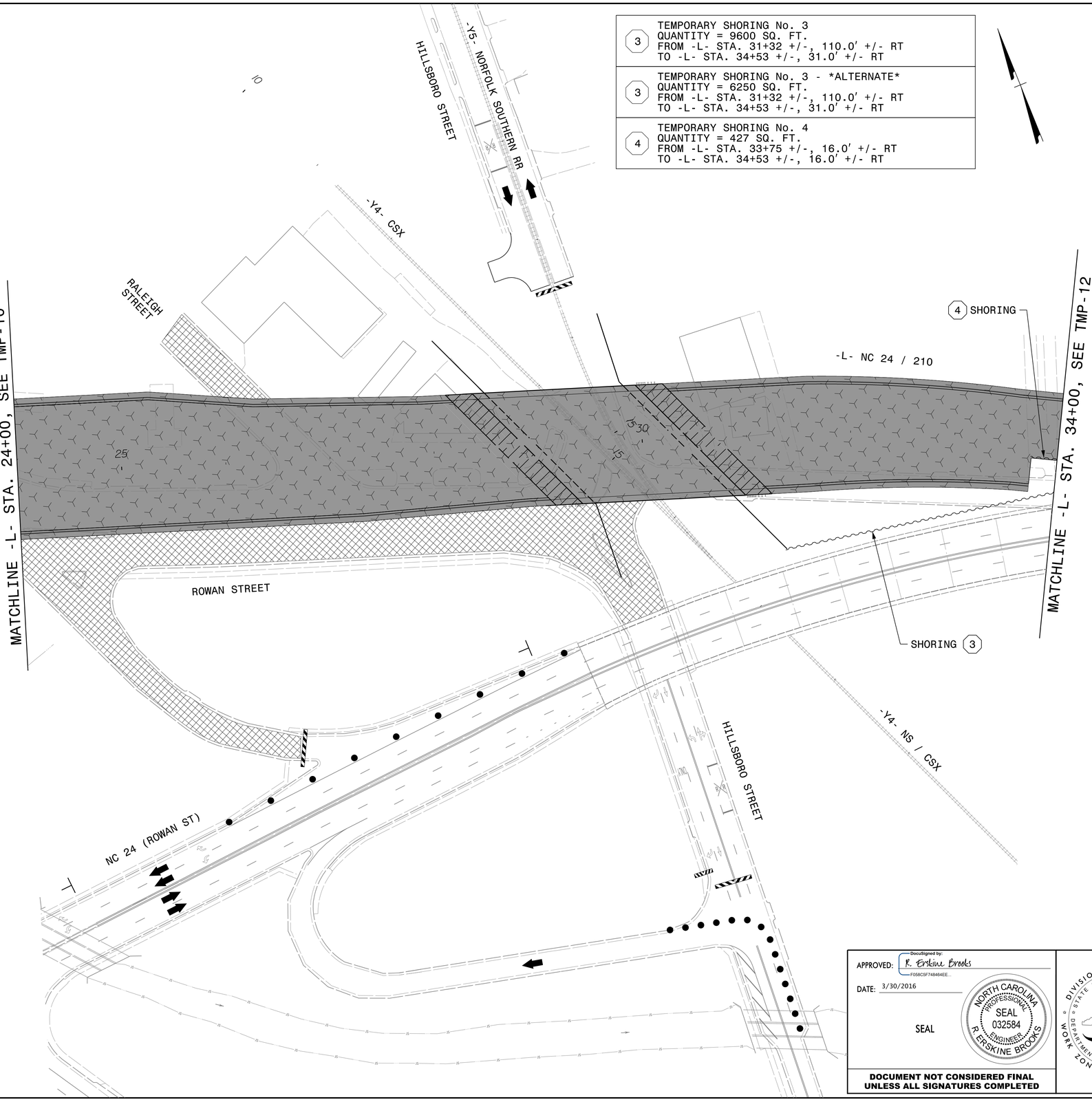
PHASE 1
STEPS 6-8

PLOT DRIVER: NCDOT_pdf_color_eng_100.pltPENTABLE: NCDOT_Tcp.tbl
USER: chornden DATE: 3/28/2016 TIME: 10:24:50 AM
FILE: pw:\\PWAPPTPA01:SouthEast_Tampa\Documents\00166\CON00079759\D0000000022096 4\06.00_Project_Design\B-4490_Design\B-4490\Traffic\TrafficControl\TCP\B-4490_TMP_TMP-10.dgn

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-11

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

3	TEMPORARY SHORING No. 3 QUANTITY = 9600 SQ. FT. FROM -L- STA. 31+32 +/-, 110.0′ +/- RT TO -L- STA. 34+53 +/-, 31.0′ +/- RT
3	TEMPORARY SHORING No. 3 - *ALTERNATE* QUANTITY = 6250 SQ. FT. FROM -L- STA. 31+32 +/-, 110.0′ +/- RT TO -L- STA. 34+53 +/-, 31.0′ +/- RT
4	TEMPORARY SHORING No. 4 QUANTITY = 427 SQ. FT. FROM -L- STA. 33+75 +/-, 16.0′ +/- RT TO -L- STA. 34+53 +/-, 16.0′ +/- RT



APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...

DATE: 3/30/2016

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NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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PHASE 1
STEPS 6-8

PLOT DRIVER: NCDOT_pdf_color_eng_100.plt PENTABLE: NCDOT_Tcp.tbl
USER: charnden DATE: 3/28/2016 TIME: 10:25:04 AM
FILE: pw:\\PWAPPTPA01:SouthEast_Tampa\Documents\00166\CON00079759\D0000000022096 4\06.00_Project_Design\B-4490\Traffic\TrafficControl\TCP\B-4490_TMP_TMP-11.dgn

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-12

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

CONSTRUCT -Y8- USING OFF-SITE DETOUR.
SEE SHEET TMP-2F FOR DETOUR ROUTE.

-Y8- CHATHAM STREET

-Y8- STA. 11+75 +/-
BEGIN CONSTRUCTION

-L- STA. 38+50 +/-
BEGIN CONSTRUCTION
BEGIN FINAL WEDGING

WEDGE UNDER TRAFFIC

-L- STA. 42+75 +/-
END CONSTRUCTION

-Y9- RAY AVENUE

SHORING 6

MATCHLINE -L- STA. 34+00, SEE TMP-11

SHORING 3

SHORING 4

SHORING 5

CSX

TEMPORARY WEDGING, AS NECESSARY, TO MAINTAIN EXISTING TRAFFIC

-L- NC 24 / 210
(ROWAN STREET)

WEDGE UP TO FINAL ELEVATION UNDER TRAFFIC

TEMP 06-0039T1

-Y10- RAY AVENUE

3	TEMPORARY SHORING No. 3 QUANTITY = 9600 SQ. FT. FROM -L- STA. 31+32 +/-, 110.0′ +/- RT TO -L- STA. 34+53 +/-, 31.0′ +/- RT
3	TEMPORARY SHORING No. 3 - *ALTERNATE* QUANTITY = 6250 SQ. FT. FROM -L- STA. 31+32 +/-, 110.0′ +/- RT TO -L- STA. 34+53 +/-, 31.0′ +/- RT
4	TEMPORARY SHORING No. 4 QUANTITY = 427 SQ. FT. FROM -L- STA. 33+75 +/-, 16.0′ +/- RT TO -L- STA. 34+53 +/-, 16.0′ +/- RT
5	TEMPORARY SHORING No. 5 QUANTITY = 1650 SQ. FT. FROM -L- STA. 35+50 +/-, 17.5′ +/- RT TO -L- STA. 36+50 +/-, 17.5′ +/- RT
6	TEMPORARY SHORING No. 6 QUANTITY = 1700 SQ. FT. FROM -L- STA. 35+64 +/-, 16.0′ +/- RT TO -L- STA. 36+50 +/-, 16.0′ +/- RT

APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...

DATE: 3/30/2016

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NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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PHASE 1
STEPS 6-8

PLOT DRIVER: NCDOT_pdf_color_eng_100.pltPENTABLE: NCDOT_tcp.tbl
USER: charndenDATE: 3/28/2016TIME: 10:25:14 AM
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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-13

HDR Engineering, Inc. of the Carolinas
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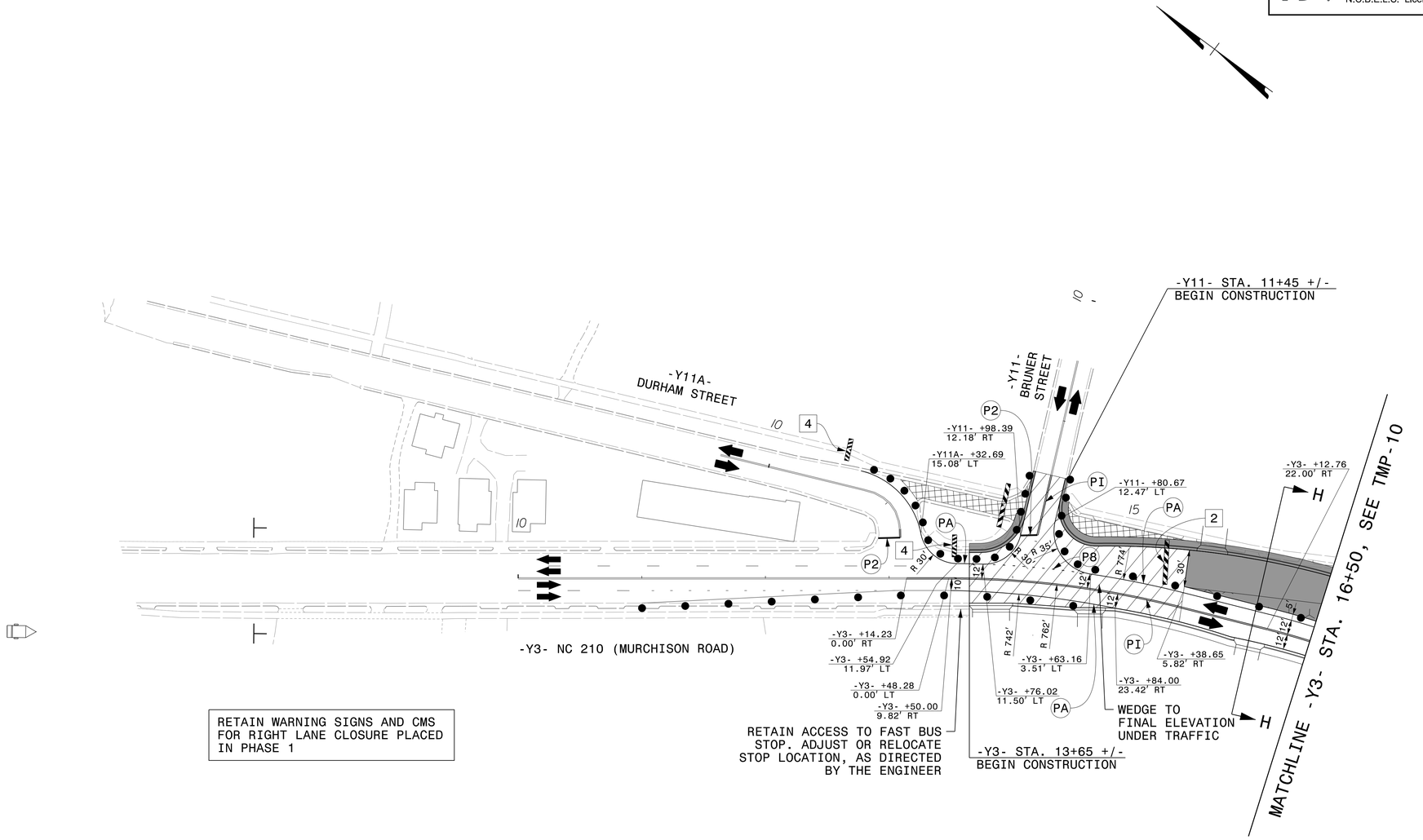
N.C.B.E.L.S. License Number: F-0116



RETAIN WARNING SIGNS AND CMS FOR RIGHT LANE CLOSURE PLACED IN PHASE 1

APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...

DATE: 3/30/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

PHASE 1
STEPS 6-8

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-14

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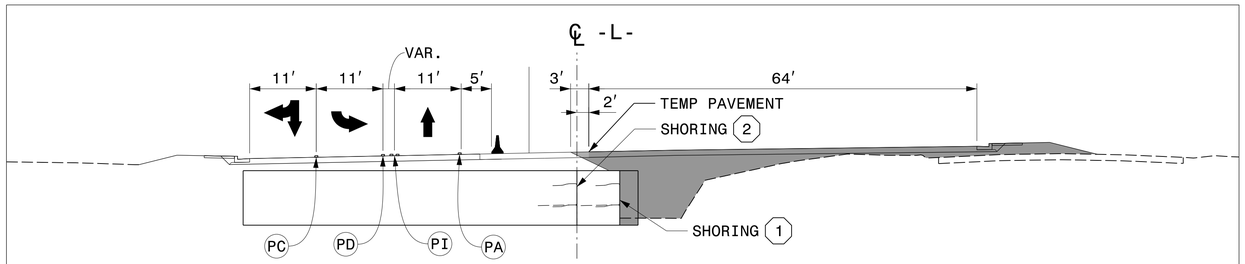
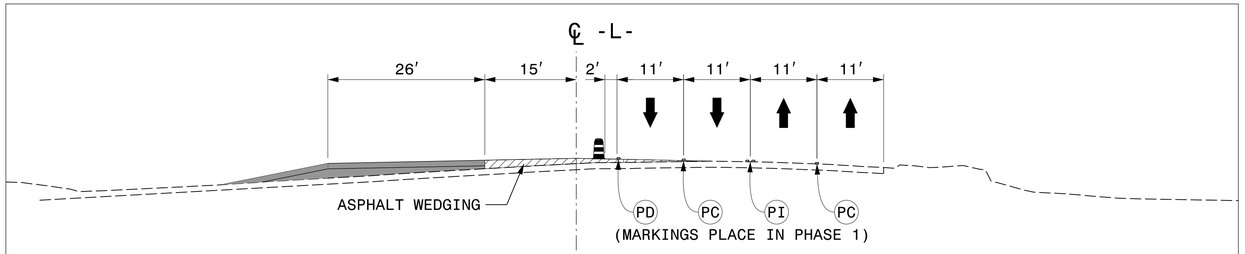
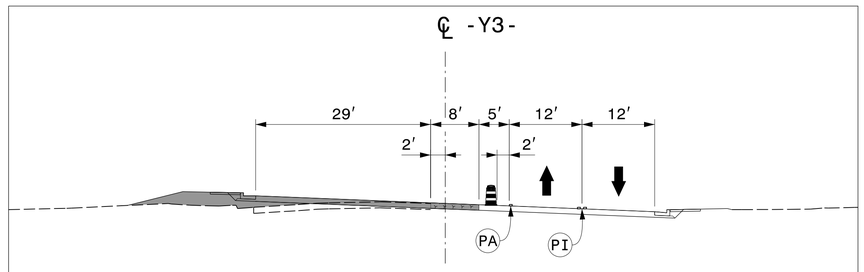


SECTION B-B
-L- STA. 19+00



SECTION G-G
-L- STA. 39+50



SECTION H-H
-Y3- STA. 16+00

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DATE: 3/30/2016

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

PHASE 1
STEPS 6-8
TYPICAL SECTIONS

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-15

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PLACE TEMPORARY MARKINGS IN THE FINAL PATTERN AND SHIFT TRAFFIC TO THE FINAL PATTERN ON -Y11- (BRUNNER ST) & -Y11A- (DURHAM ST) AND TO A MODIFIED FINAL PATTERN ON -Y3- (MURCHISON RD)

-Y3- NC 210 (MURCHISON ROAD)

CLOSE MIDDLE (THRU) LANE

PLACE TUBULAR MARKERS ALONG DOUBLE YELLOW CENTERLINE FROM -L- STA. 22+50 +/- TO STA. 42+50 +/-

-L- NC 24 / 210

MATCHLINE -L- STA. 24+00, SEE TMP-16

US 401 (MLK FWY)

-Y1- WASHINGTON DRIVE

-L- STA. 15+50 +/-
END FINAL WEDGING

-L- STA. 20+50 +/-
END PCB
PLACE CRASH CUSHION

*PORTABLE CONCRETE BARRIER

WEDGE UP TO FINAL ELEVATION UNDER TRAFFIC

WEDGE UNDER TRAFFIC

-L- STA. 12+35 +/-
BEGIN CONSTRUCTION

-L- STA. 18+38 +/-
BEGIN PCB
PLACE CRASH CUSHION

06-1336T1

06-0244

-L- STA. 22+83 +/-
BEGIN CONSTRUCTION, STEP 4

-L- STA. 20+83 +/-
END CONSTRUCTION, STEP 4

-L- NC 24
(BRAGG BLVD)

-L- +15.46
33.96' RT

-L- +13.92
1.00' RT

-Y3- STA. 23+50 +/-
END CONSTRUCTION

06-0037T3

-L- STA. 12+35 +/-
BEGIN CONSTRUCTION
BEGIN FINAL WEDGING
BEGIN TEMPORARY PAVEMENT

-L- STA. 14+50 +/-
END FINAL WEDGING

COMPLETE CULVERT CONSTRUCTION (SEE LOCAL NOTE LN-01, SHEET TMP-2B)

REMOVE EXISTING CONCRETE ISLAND AND REPLACE WITH TEMPORARY PAVEMENT

TEMPORARY WEDGING, AS NECESSARY, TO MAINTAIN EXISTING TRAFFIC

-DR1- +16.33
8.92' LT

RESTRIPE THE EXISTING EB THROUGH LANE ON BRAGG BLVD TO A DUAL LEFT TURN LANE

-Y2- ROWAN STREET

-L- STA. 16+93 +/-
END CONSTRUCTION

CLOSE LEFT TURN LANES TO NC 24

MATCHLINE -DR1- STA. 16+00 -Y3- STA. 24+00
SEE TMP-18

P2 STOPBAR LOCATIONS	
1	-L- STA. 21+07.92, 21.00′ LT TO -L- STA. 21+14.95, 1.00′ RT
2	-L- STA. 20+79.30, 32.00′ LT TO -L- STA. 20+82.92, 21.00′ LT
3	-Y3- STA. 18+81.20, 45.41′ RT TO -Y3- STA. 18+89.17, 2.00′ LT
4	-L- STA. 22+26.99, 66.00′ LT TO -L- STA. 22+42.29, 21.20′ LT

* UPON APPROVAL AND AS DIRECTED BY THE ENGINEER, PCB MAY BE REMOVED FOLLOWING COMPLETION OF THE CULVERT AND BACKFILLING FOR THE PROPOSED ROADWAY CONSTRUCTION

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NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

PHASE 2

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-16

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3733 National Drive, Suite 207 Raleigh, N.C. 27612
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PLACE COLD APPLIED PLASTIC, TYPE IV PAVEMENT MARKINGS ON CONCRETE BRIDGE APPROACHES AND DECK

PLACE TUBULAR MARKERS ALONG DOUBLE YELLOW CENTERLINE FROM -L- STA. 22+50 +/- TO STA. 42+50 +/-

PORTABLE CONCRETE BARRIER

-L- STA. 32+50 +/-
BEGIN PCB
PLACE CRASH CUSHION

4 SHORING

-L- STA. 33+75 +/-
BEGIN CONSTRUCTION

SHORING 3

REMOVE EXISTING ROADWAY AND BRIDGE

HILLSBORO STREET

-Y5- NORFOLK SOUTHERN RR

-Y4- CSX

-Y4- NS / CSX

-L- NC 24 / 210

-L- +18.11
2.41' RT

-L- +95.35
4.00' LT

-L- +00.00
1.00' RT

-L- +00.00
4.01' LT

MATCHLINE -L- STA. 24+00, SEE TMP-15

MATCHLINE -L- STA. 34+00, SEE TMP-17

MATCHLINE, SEE TMP-18

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DATE: 3/30/2016

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NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

PHASE 2

PLOT DRIVER: NCDOT_pdf_color-eng_100.plt PENTABLE: NCDOT_Tcp.tbl
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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-17

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N.C.B.E.L.S. License Number: F-0116

PLACE COLD APPLIED PLASTIC, TYPE IV PAVEMENT MARKINGS ON CONCRETE BRIDGE APPROACHES AND DECK

-L- STA. 34+43 +/-
BEGIN BRIDGE CONSTRUCTION

PORTABLE CONCRETE BARRIER

-L- STA. 35+72 +/-
END BRIDGE CONSTRUCTION

-L- STA. 36+75 +/-
END PCB
PLACE CRASH CUSHION

-L- NC 24 / 210

-Y8- CHATHAM STREET

PLACE TUBULAR MARKERS ALONG DOUBLE YELLOW CENTERLINE AT 40' SPACING FROM -L- STA. 22+50 +/- TO STA. 38+50 +/- AND FROM -L- STA. 40+00 +/- TO STA. 42+50 +/-

-Y9- RAY AVENUE

-L- +12.75
38.87' LT

-L- +77.06
32.64' LT

-L- +75.00
23.87' LT

-L- NC 24 / 210
(ROWAN STREET)

MESSAGE NO. 1	MESSAGE NO. 2
NEW TRAF PATTERN AHEAD	STAY ALERT

CHANGEABLE MESSAGE SIGN

MATCHLINE -L- STA. 34+00, SEE TMP-16

SHORING 3

SHORING 4

SHORING 6

CSX

FOR BRIDGE CONSTRUCTION OVER CSX RAILROAD, SEE LOCAL NOTE LN-02, SHEET TMP-2B

PLACE TUBULAR MARKERS ALONG DOUBLE YELLOW CENTERLINE AT 10' SPACING FROM -L- STA. 38+50 TO STA. 40+00 +/-

-L- +29.52
13.99' RT

-L- +40.27
3.46' RT

-L- +47.84
25.60' RT

T
E
M
P
06-0039T2

-L- STA. 42+76 +/-
END CONSTRUCTION

-Y10- RAY AVENUE

REFER TO GENERAL NOTE 'M' (SHEET TMP-2A) PRIOR TO SHIFTING TRAFFIC TO THIS PATTERN

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DATE: 3/30/2016

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PHASE 2

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-18

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SEE TMP-15

MATCHLINE, SEE TMP-16

MATCHLINE -Y3- STA. 24+00

MATCHLINE -DR1- STA. 16+00

COMPLETE CULVERT CONSTRUCTION
(SEE LOCAL NOTE LN-01, SHEET TMP-2B)

CLOSE RIGHT TURN LANE TO NC 24

HILLSBORO STREET

-Y12- WALTER STREET

BRAGG BLVD

-Y3- BRAGG BLVD

30

25

35

-Y3- +87.56
23.33' RT

-Y3- +37.79
7.30' RT

-Y3- +66.05
40.19' RT

-Y3- +47.59
84.23' RT

PA

PI

PC

(FLASH)

T
E
M
P

06-0038T1

06-1210

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DATE: 3/30/2016

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PHASE 2

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-19

HDR Engineering, Inc. of the Carolinas
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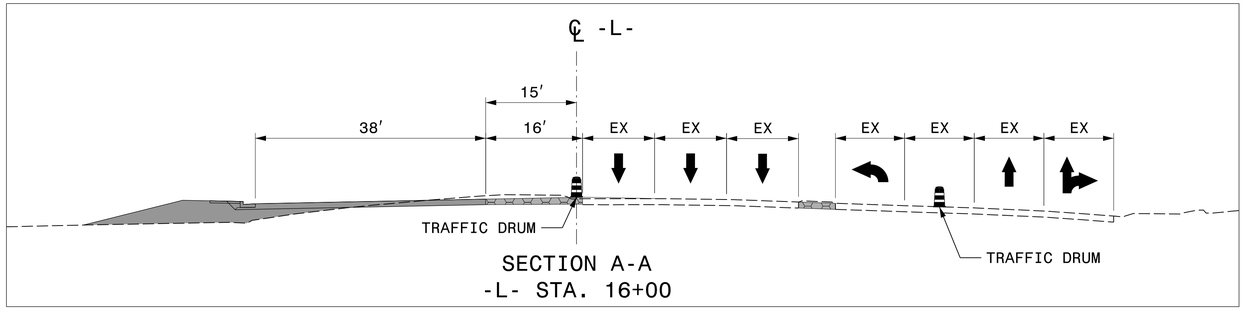
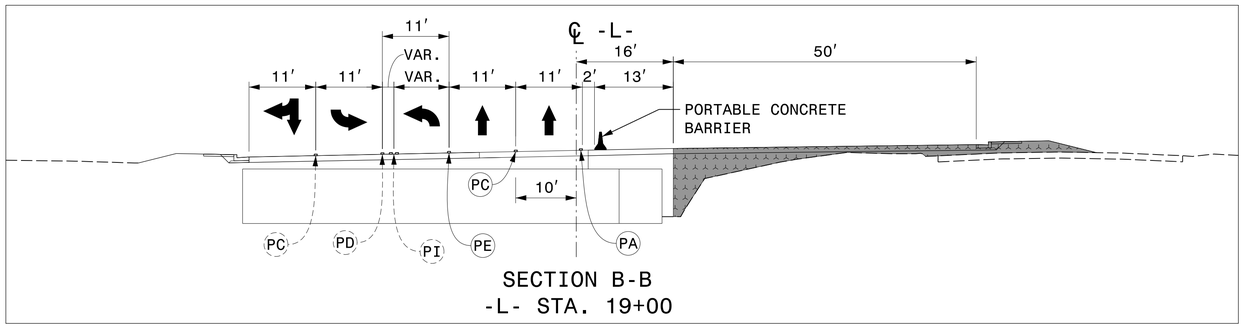
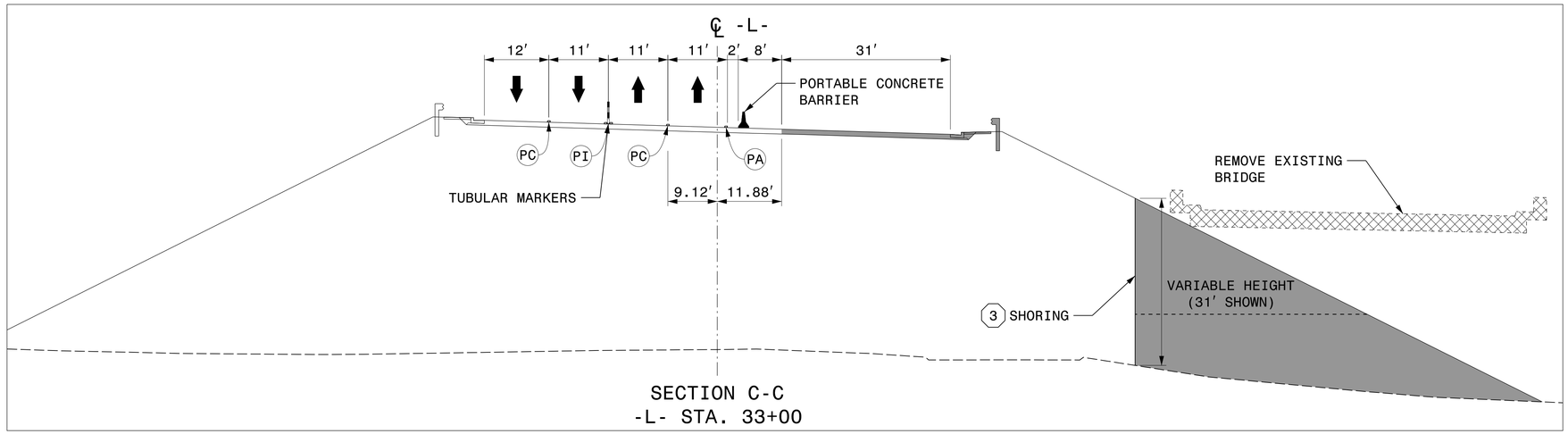
N.C.B.E.L.S. License Number: F-0116



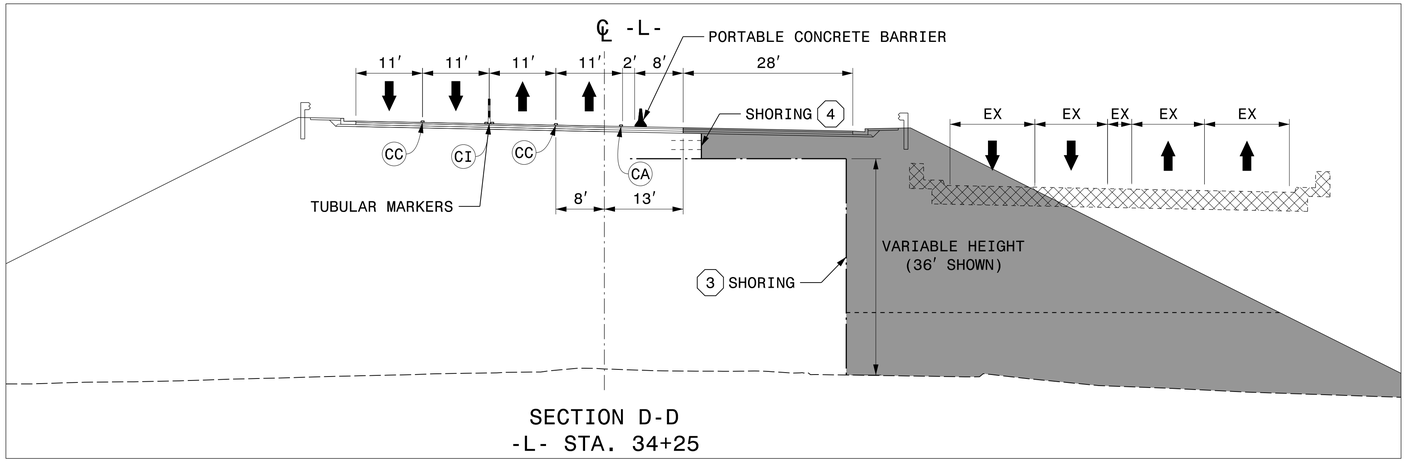
SECTION A-A
-L- STA. 16+00



SECTION B-B
-L- STA. 19+00



SECTION C-C
-L- STA. 33+00



SECTION D-D
-L- STA. 34+25

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DATE: 3/30/2016

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PHASE 2
TYPICAL SECTIONS

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-20

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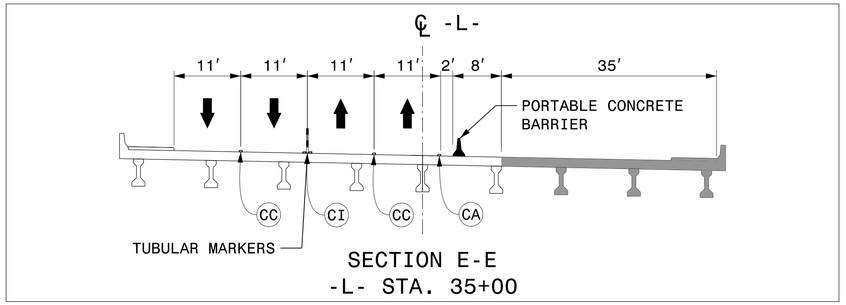
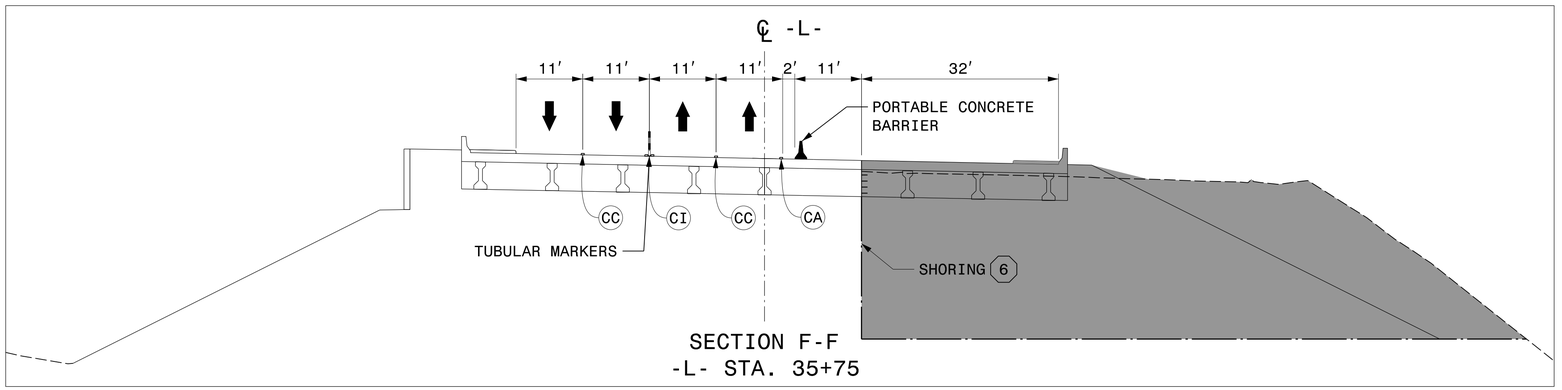
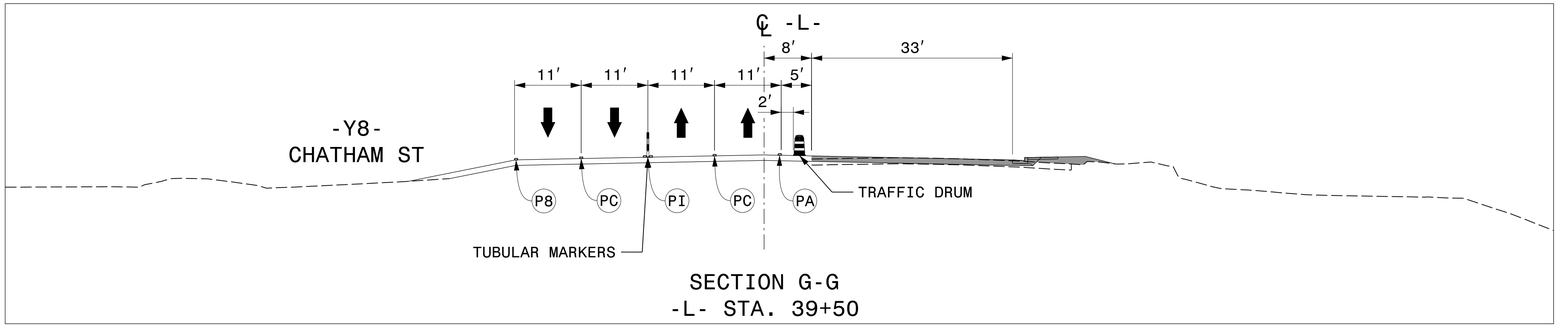


SECTION E-E
-L- STA. 35+00



SECTION F-F
-L- STA. 35+75



SECTION G-G
-L- STA. 39+50

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DATE: 3/30/2016

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PHASE 2
TYPICAL SECTIONS

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-21

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N.C.B.E.L.S. License Number: F-0116

PLACE TEMPORARY MARKINGS IN THE FINAL PATTERN AND SHIFT TRAFFIC TO THE FINAL PATTERN ON -Y11- (BRUNNER ST) & -Y11A- (DURHAM ST) AND TO A MODIFIED FINAL PATTERN ON -Y3- (MURCHISON RD)

-Y3- NC 210 (MURCHISON ROAD)

CLOSE MIDDLE (THRU) LANE

-L- NC 24 / 210

-Y1- WASHINGTON DRIVE

US 401 (MLK FWY)

WEDGE UP TO FINAL ELEVATION UNDER TRAFFIC

WEDGE UNDER TRAFFIC

TEMP 06-1336T1

MATCHLINE -L- STA. 24+00, SEE TMP-16

06-0244

-L- NC 24 (BRAGG BLVD)

TEMP 06-0037T3

-Y3- STA. 23+50 +/- BEGIN CONSTRUCTION, STEP 3

-Y3-

TEMPORARY WEDGING, AS NECESSARY, TO MAINTAIN EXISTING TRAFFIC

-Y2- ROWAN STREET

CLOSE LEFT TURN LANE

MESSAGE NO. 1	MESSAGE NO. 2
NEW TRAF PATTERN AHEAD	STAY ALERT

CHANGEABLE MESSAGE SIGN

PLACE CMS IN MEDIAN OF BRAGG BLVD 500' +/- PRIOR TO US 401 INTER.

-DR1- +00.04
10.41' LT

-Y3- +55.24
110.46' RT

MATCHLINE -DR1- STA. 16+00

MATCHLINE -Y3- STA. 24+00

SEE TMP-22

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DATE: 3/30/2016

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NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

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PHASE 2
STEP 3

PLOT DRIVER: NCDOT_pdf_color_eng_100.plt PENTABLE: NCDOT_Tcp.tbl
USER: charnden DATE: 3/28/2016 TIME: 10:27:03 AM
FILE: pw:\\PWAPPTPA01:SouthEast_Tampa\Documents\000166\CON00079759\D0000000022096 4\V06.00_Project_Design\B-4490\Design\B-4490\Traffic\TrafficControl\TCP\B-4490_TMP_TMP-21.dgn

PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-22

HDR Engineering, Inc. of the Carolinas
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N.C.B.E.L.S. License Number: F-0116

HILLSBORO STREET

-Y12- WALTER STREET

-Y3- STA. 30+50 +/-
END CONSTRUCTION,
STEP 3

WEDGE AS NECESSARY
TO COMPLETE TIE-IN
TO EXISTING

-Y3- STA. 29+69 +/-

-Y3- +32.21
4.46' LT

-Y3- +42.49
8.18' RT

MATCHLINE
-Y3- STA. 24+00

SEE TMP-21

-Y3-

BRAGG BLVD

-Y3- +66.05
54.05' RT

-Y3- +61.63
19.99' RT

-Y3- +45.50
18.53' RT

REMOVE EXISTING
CROSSWALK

T
E
M
P
06-1210T1

-Y3- STA. 34+00 +/-
BEGIN MERGE TAPER

-Y3- BRAGG BLVD

-Y3- STA. 36+45 +/-
END MERGE TAPER

MATCHLINE
-DR1- STA. 16+00

-Y3- +59.80
73.58' RT

-Y3- +53.10
92.57' RT

ADJUST SIGNS AND CMS AS
DIRECTED BY THE ENGINEER

-Y3- STA. 36+45 +/-
END MERGE TAPER

125' +/- 125' +/-

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

W4-2R
48" X 48"

HAY ST

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

FRANKLIN ST

MESSAGE NO. 1	MESSAGE NO. 2
NEW TRAFFIC PATTERN	RT LANE CLOSED AHEAD

CHANGEABLE MESSAGE SIGN

RUSSELL ST

APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...

DATE: 3/30/2016

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NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

PHASE 2
STEP 3

PLOT DRIVER: NCDOT_pdf_color_eng_100.pit PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 3/28/2016 TIME: 10:27:12 AM
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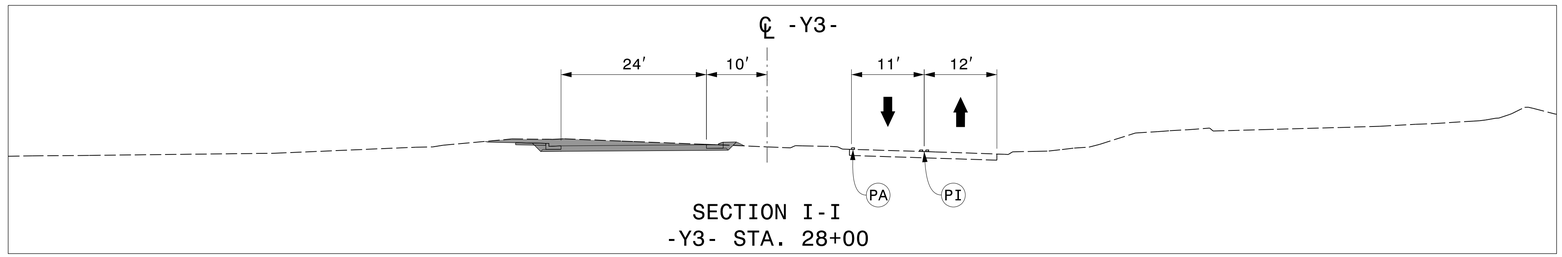
PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-23

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116



SECTION I-I
-Y3- STA. 28+00

APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...

DATE: 3/30/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED

PHASE 2
STEP 3
TYPICAL SECTIONS

PLOT DRIVER: NCDOT_pdf_color_eng_100.pit PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 3/28/2016 TIME: 10:27:23 AM
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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-24

HDR Engineering, Inc. of the Carolinas
3733 National Drive, Suite 207 Raleigh, N.C. 27612
N.C.B.E.L.S. License Number: F-0116

PLACE TEMPORARY MARKINGS IN THE FINAL PATTERN AND SHIFT TRAFFIC TO THE FINAL PATTERN ON -Y11- (BRUNNER ST) & -Y11A- (DURHAM ST) AND TO A MODIFIED FINAL PATTERN ON -Y3- (MURCHISON RD)

-Y3- NC 210 (MURCHISON ROAD)

-Y1- WASHINGTON DRIVE

US 401 (MLK FWY)

-L- NC 24 / 210

OPEN LEFT TURN LANE

OPEN RIGHT TURN LANE ON NC 24 TO -Y3-

MATCHLINE -L- STA. 24+00, SEE TMP-16

-L- +60.35
1.00' RT

-L- +14.36
12.00' RT

-Y3- +57.99
47.00' LT

-Y3- +37.72
2.00' LT

-L- +52.66
12.62' RT

06-1336T2

06-0244

06-0037T3

-L- NC 24
(BRAGG BLVD)

-Y2- ROWAN STREET

CLOSE LEFT TURN LANE

MATCHLINE -Y3- STA. 24+00
SEE TMP-25

MATCHLINE -DR1- STA. 16+00

-Y3- STA. 23+50 +/-
BEGIN CONSTRUCTION, STEP 4

MESSAGE NO. 1	MESSAGE NO. 2
NEW TRAF PATTERN AHEAD	STAY ALERT

CHANGEABLE MESSAGE SIGN

PLACE CMS IN MEDIAN OF BRAGG BLVD 500' +/- PRIOR TO US 401 INTER.

R11-4
60" x 30"

ROAD CLOSED TO THRU TRAFFIC
DETOUR

M4-10L
48" x 18"

TYPE III BARRICADE

(P2) STOPBAR LOCATIONS	
1	-Y3- STA. 20+25.62, 25.00' LT TO -Y3- STA. 20+25.62, 58.89' LT
2	-Y3- STA. 20+45.62, 14.00' LT TO -Y3- STA. 20+45.62, 25.00' LT
3	-L- STA. 21+14.95, 1.00' RT TO -L- STA. 21+18.51, 12.17' RT

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DATE: 3/30/2016

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

PHASE 2
STEP 4

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-25

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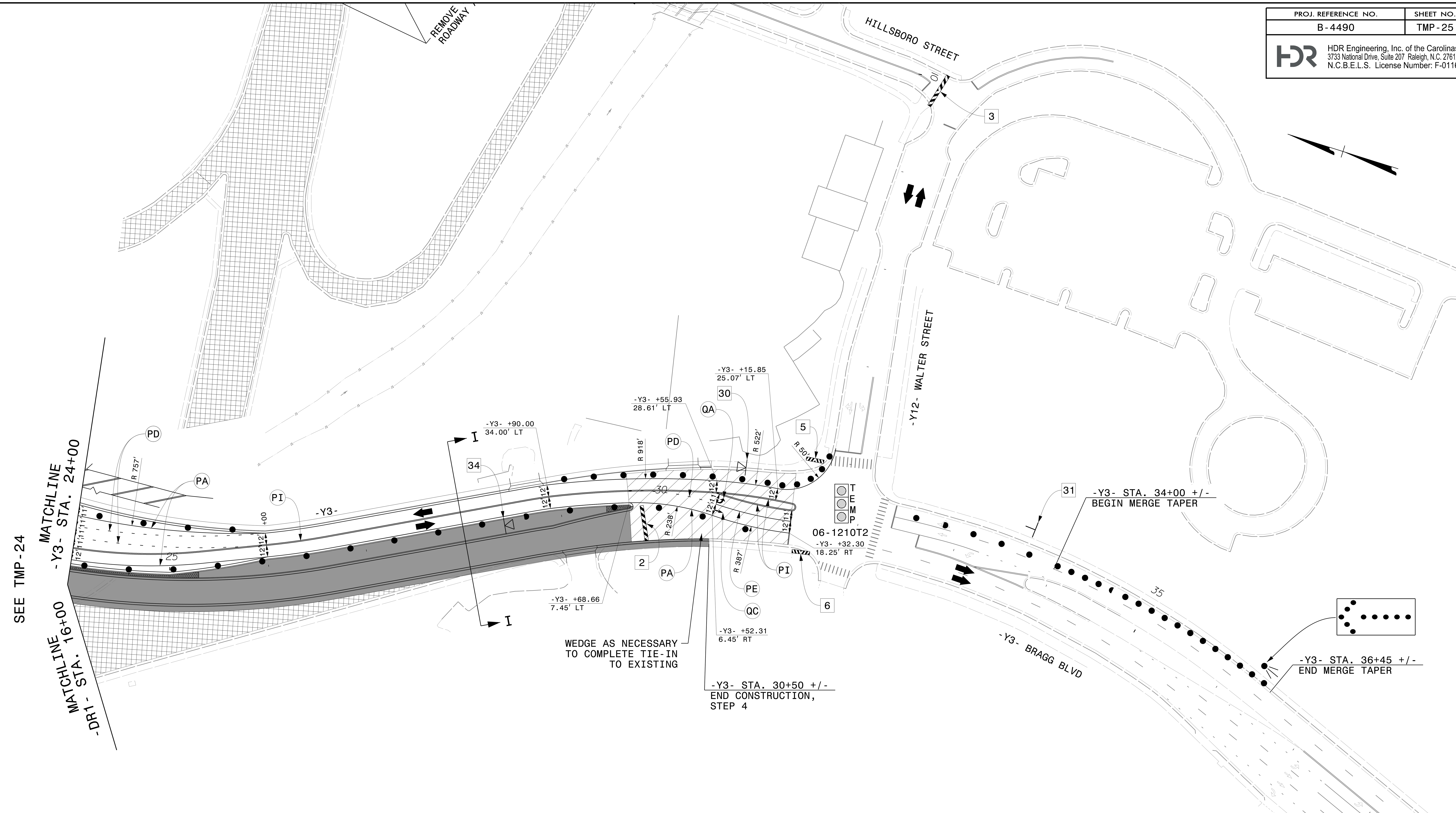
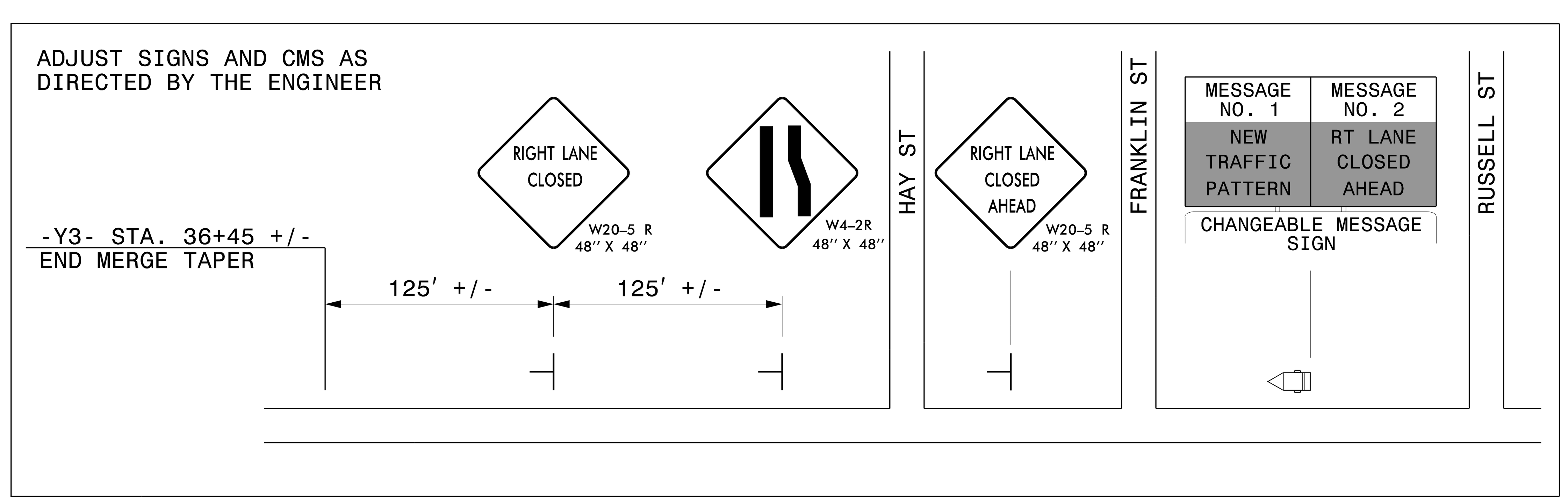


REMOVE ROADWAY
HILLSBORO STREET
3
-Y12- WALTER STREET
5
R 50'
TEMP
06-1210T2
-Y3- +32.30
18.25' RT
31
-Y3- STA. 34+00 +/-
BEGIN MERGE TAPER
35
-Y3- STA. 36+45 +/-
END MERGE TAPER
-Y3- BRAGG BLVD
6
PI
QC
PE
-Y3- +52.31
6.45' RT
-Y3- STA. 30+50 +/-
END CONSTRUCTION,
STEP 4
WEDGE AS NECESSARY
TO COMPLETE TIE-IN
TO EXISTING
-Y3- +15.85
25.07' LT
30
QA
R 522'
R 387'
-Y3- +55.93
28.61' LT
PD
R 918'
30
R 238'
2
PA
-Y3- +68.66
7.45' LT
-Y3- +90.00
34.00' LT
34
I
-Y3-
PI
PA
PD
R 757'
25
MATCHLINE
-Y3- STA. 24+00
SEE TMP-24
MATCHLINE
-DR1- STA. 16+00



ADJUST SIGNS AND CMS AS
DIRECTED BY THE ENGINEER
-Y3- STA. 36+45 +/-
END MERGE TAPER
125' +/-
125' +/-
RIGHT LANE CLOSED
W20-5 R
48" X 48"
W4-2R
48" X 48"
HAY ST
RIGHT LANE CLOSED AHEAD
W20-5 R
48" X 48"
FRANKLIN ST
MESSAGE NO. 1
NEW TRAFFIC PATTERN
MESSAGE NO. 2
RT LANE CLOSED AHEAD
CHANGEABLE MESSAGE SIGN
RUSSELL ST

APPROVED: R. Erskine Brooks
DATE: 3/30/2016

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 032584 R. ERSKINE BROOKS

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

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PHASE 2
STEP 4

PLOT DRIVER: NCDOT_pdf_color_eng_100.plt PENTABLE: NCDOT_tcp.tbl
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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-26

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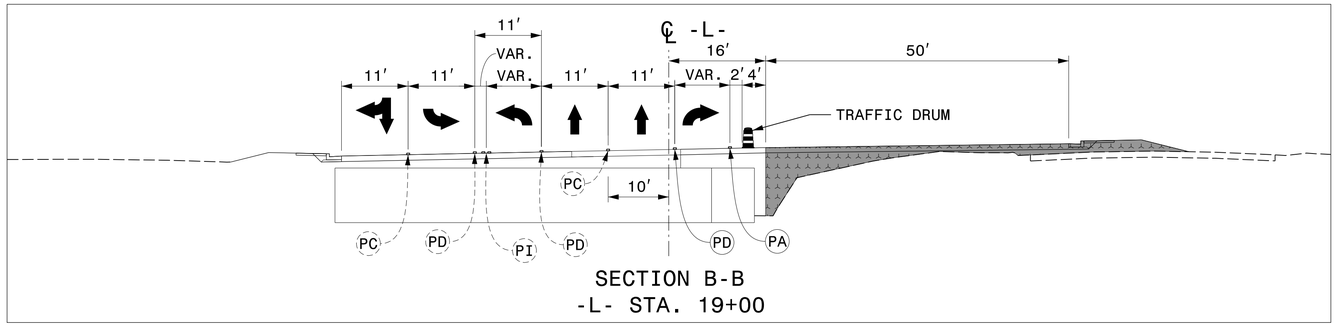
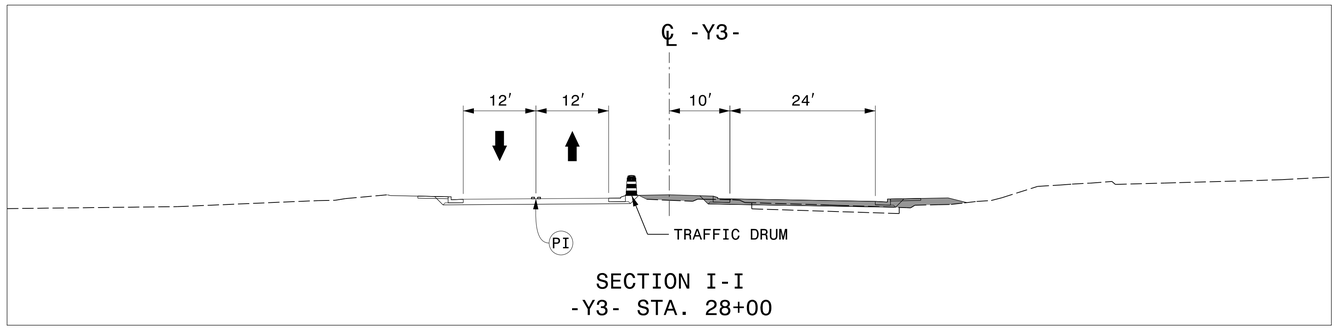


SECTION B-B
-L- STA. 19+00



SECTION I-I
-Y3- STA. 28+00

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DATE: 3/30/2016

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NORTH CAROLINA PROFESSIONAL SEAL 032584 ENGINEER R. ERSKINE BROOKS

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

PHASE 2
STEP 4
TYPICAL SECTIONS

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-27

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-Y3- NC 210 (MURCHISON ROAD)

-Y1- WASHINGTON DRIVE

US 401 (MLK FWY)

-L- NC 24 / 210

PLACE TUBULAR MARKERS ALONG DOUBLE YELLOW CENTERLINE FROM -L- STA. 13+75 +/- TO STA. 20+25 +/-

-L- STA. 18+67 +/-
END CONSTRUCTION

-L- STA. 12+35 +/-
BEGIN TEMP MARKINGS

-L- STA. 14+50 +/-
BEGIN CONSTRUCTION

-Y2- ROWAN STREET

-Y2- STA. 12+34 +/-
END CONSTRUCTION

-DR1- STA. 13+74 +/-
END CONSTRUCTION

-L- NC 24
(BRAGG BLVD)

06-0244

06-1336T3

06-0037T4

-Y3-

MATCHLINE - PHASE 2
-L- STA. 24+00,
SEE TMP-16

MESSAGE NO. 1	MESSAGE NO. 2
NEW TRAF PATTERN AHEAD	STAY ALERT

CHANGEABLE MESSAGE SIGN

PLACE CMS IN MEDIAN OF BRAGG BLVD 500′ +/- PRIOR TO US 401 INTER.

(P2) STOPBAR LOCATIONS	
1	-L- STA. 20+79.41, 32.00′ LT TO -L- STA. 20+95.45, 18.18′ RT
2	-Y3- STA. 20+25.62, 2.76′ RT TO -Y3- STA. 20+25.62, 72.09′ LT

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PHASE 3

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-28

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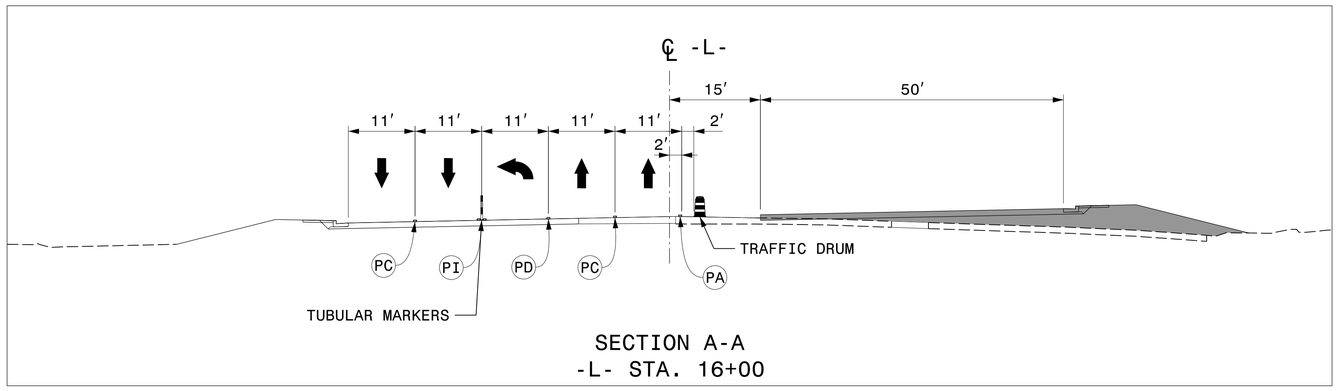
N.C.B.E.L.S. License Number: F-0116



SECTION A-A
-L- STA. 16+00

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DATE: 3/30/2016

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PHASE 3
TYPICAL SECTIONS

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-29

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-Y3- NC 210 (MURCHISON ROAD)

-Y1- WASHINGTON DRIVE

US 401 (MLK FWY)

COMPLETE MEDIAN ISLAND

COMPLETE MEDIAN ISLAND

-L- NC 24 / 210

SEE TMP-30, -L- STA. 24+00, MATCHLINE

-L- NC 24 (BRAGG BLVD)

BEGIN CONSTRUCTION
-L- STA. 12+35 +/-

06-0244

06-1336T4

-L- +65.00 32.00' LT

-L- +60.00 21.00' LT

-L- +65.00 22.00' RT

-L- +60.00 32.00' RT

-Y2- ROWAN STREET

-DR1-

-Y3-

MESSAGE NO. 1	MESSAGE NO. 2
NEW TRAF PATTERN AHEAD	STAY ALERT

CHANGEABLE MESSAGE SIGN

PLACE CMS IN MEDIAN
OF BRAGG BLVD 500' +/-
PRIOR TO US 401 INTER.

APPROVED: DocuSigned by: R. Erskine Brooks F058C5F748464EE...

DATE: 3/30/2016

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

PHASE 4

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-30

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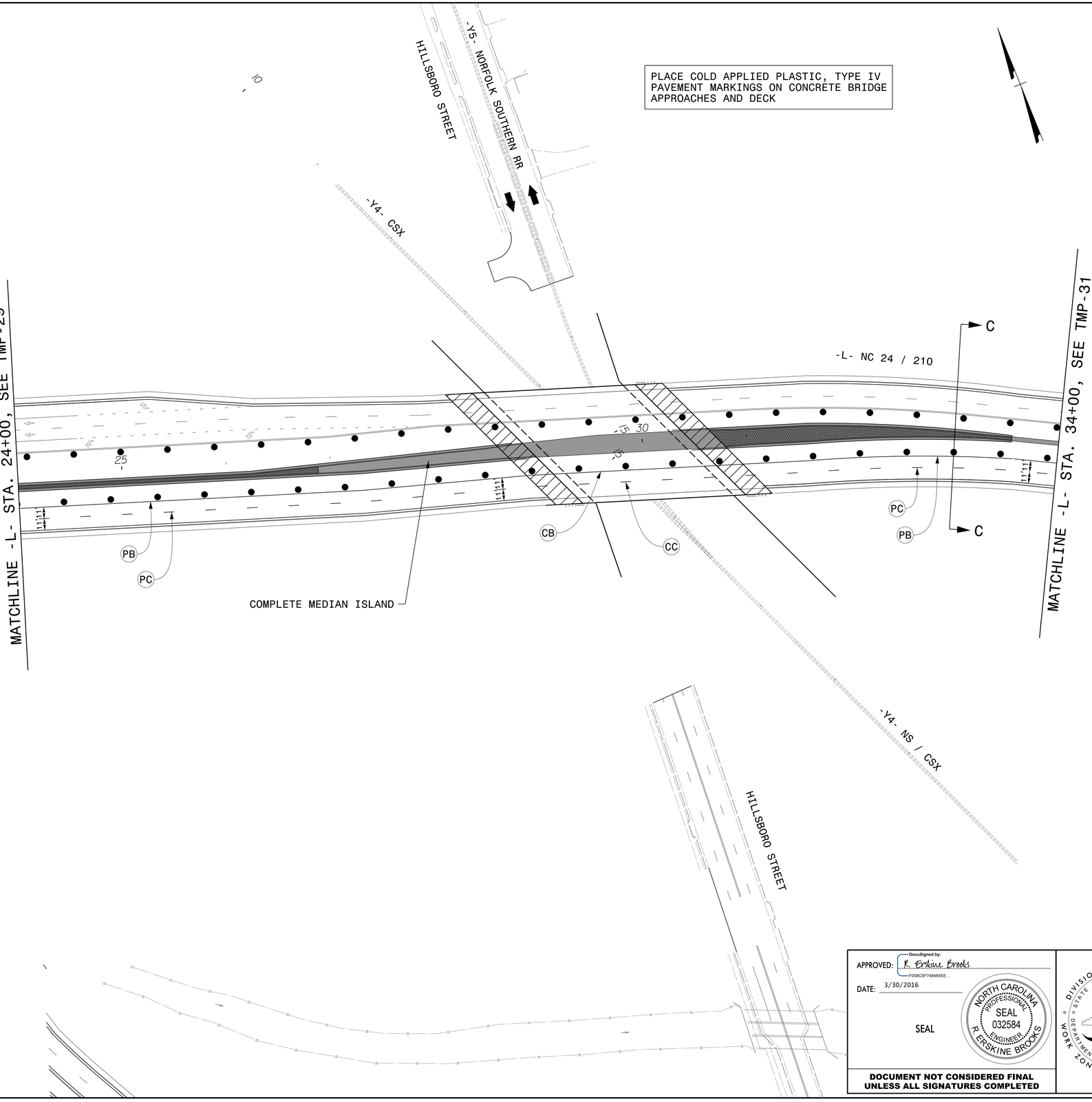
N.C.B.E.L.S. License Number: F-0116

PLACE COLD APPLIED PLASTIC, TYPE IV PAVEMENT MARKINGS ON CONCRETE BRIDGE APPROACHES AND DECK



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PHASE 4

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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-31

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N.C.B.E.L.S. License Number: F-0116

PLACE COLD APPLIED PLASTIC, TYPE IV PAVEMENT MARKINGS ON CONCRETE BRIDGE APPROACHES AND DECK

-Y8- CHATHAM STREET

-L- NC 24 / 210 (ROWAN STREET)

END CONSTRUCTION
-L- STA. 41+60 +/-

-Y9- RAY AVENUE

-L- NC 24 / 210 (ROWAN STREET)

MATCHLINE -L- STA. 34+00, SEE TMP-30

CSX 15

COMPLETE MEDIAN ISLAND

T E M P
06-0039T3

-Y10- RAY AVENUE

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DATE: 3/30/2016

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PHASE 4

PLOT DRIVER: NCDOT_pdf_color_eng.100.plt PENTABLE: NCDOT_tcp.tbl
USER: charnden DATE: 3/28/2016 TIME: 10:29:07 AM
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PROJ. REFERENCE NO.	SHEET NO.
B-4490	TMP-32

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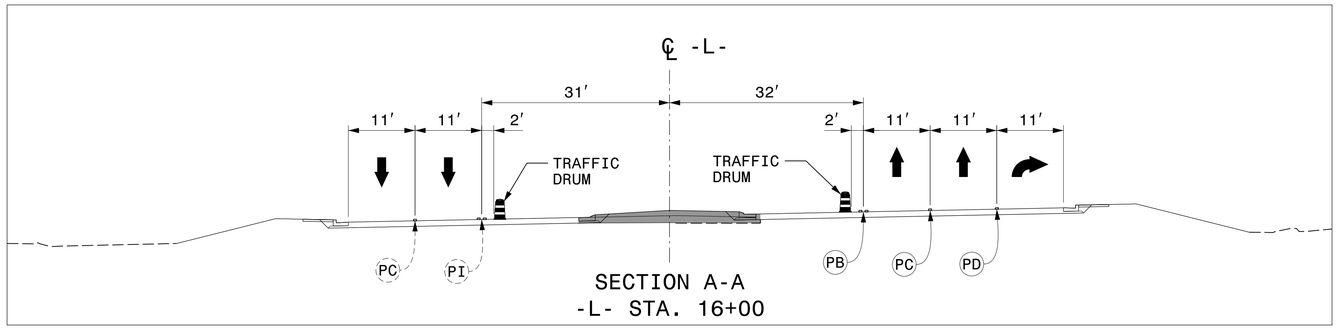
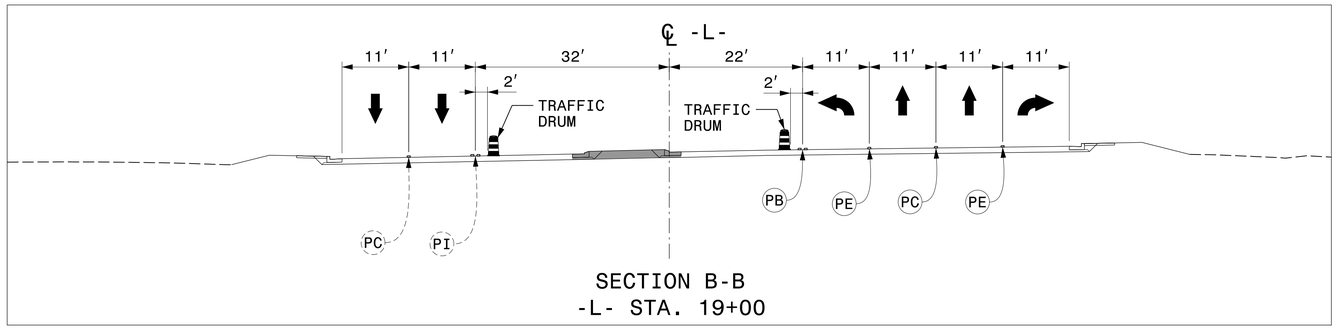
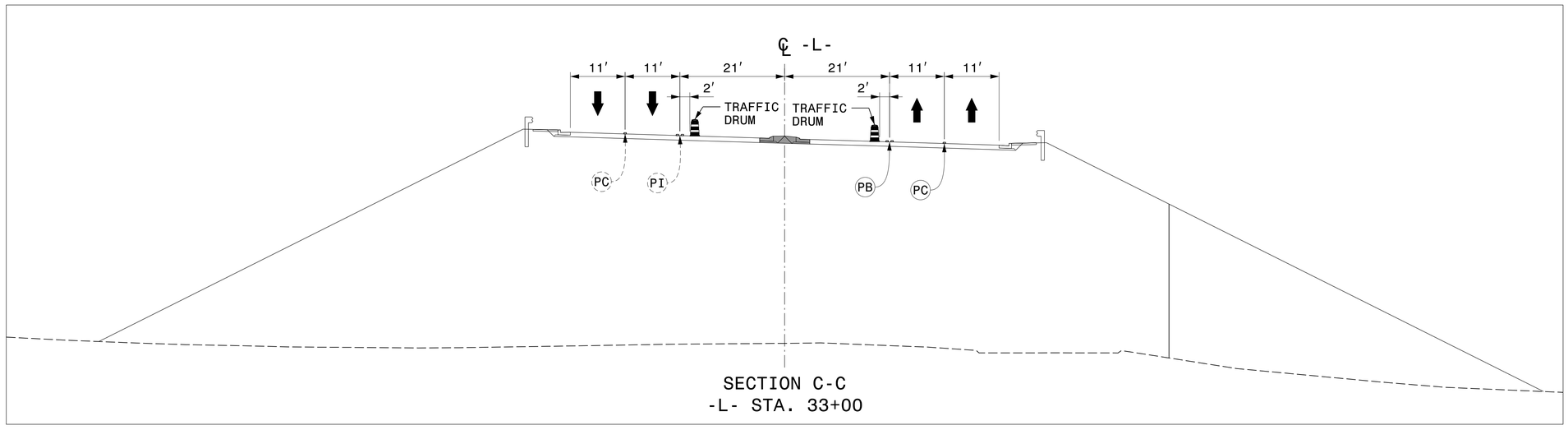


SECTION A-A
-L- STA. 16+00



SECTION B-B
-L- STA. 19+00



SECTION C-C
-L- STA. 33+00

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DATE: 3/30/2016

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PHASE 4
TYPICAL SECTIONS

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