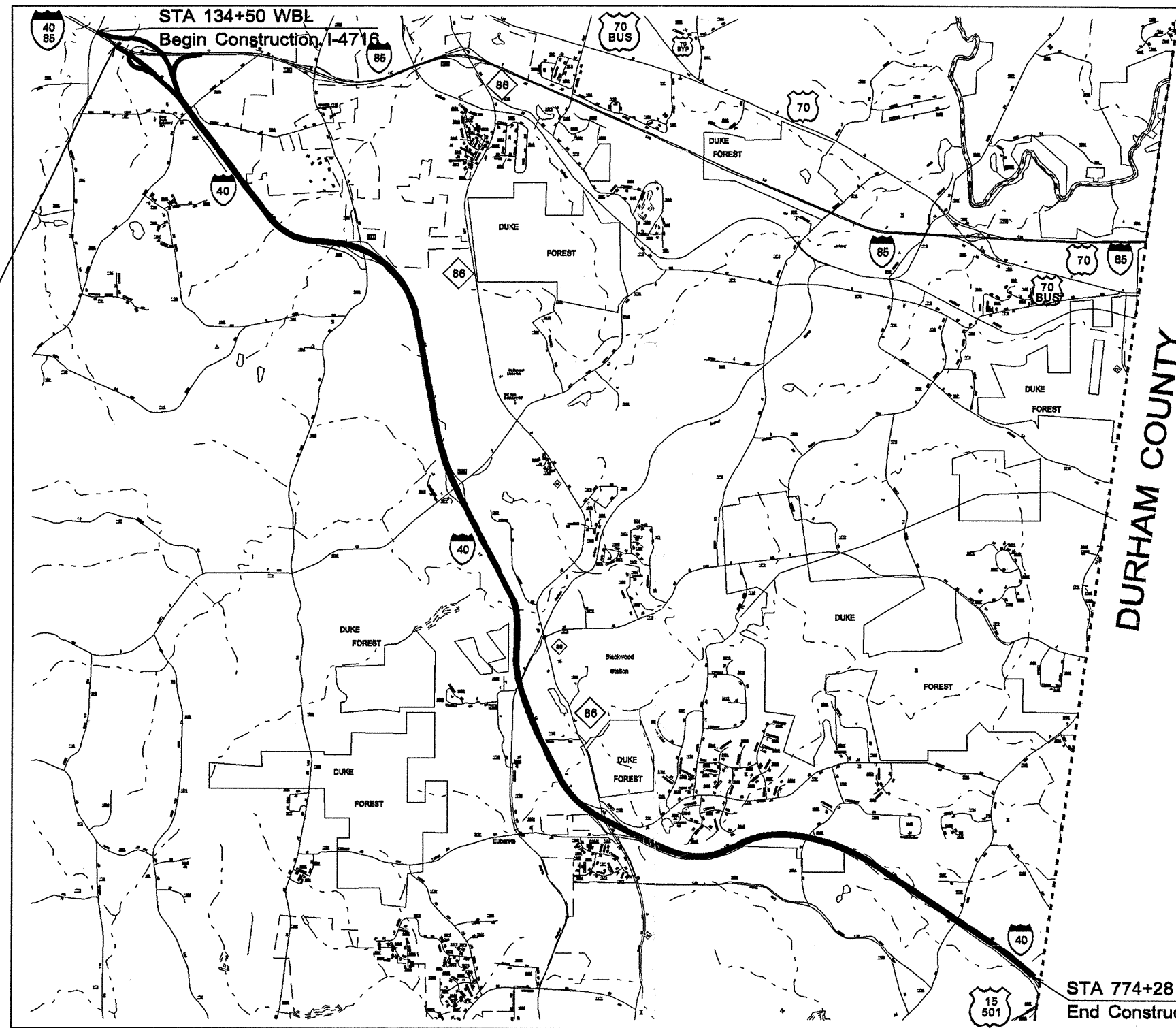


PROJECT REFERENCE NO. I-4716	SHEET NO. 1
ROADWAY DESIGN ENGINEER	PAYMENT DESIGN ENGINEER



STA 146+70 EBL
Begin Project I-4716

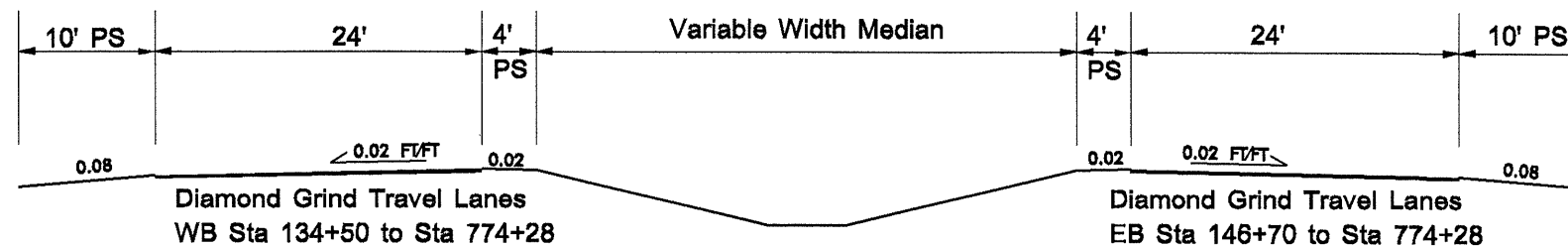
STA 134+50 WBL
Begin Construction I-4716

STA 774+28 EBL and WBL
End Construction I-4716

VICINITY MAP

ORANGE COUNTY

PROJECT REFERENCE NO. 1-4716	SHEET NO. 2
ROADWAY DESIGN ENGINEER	PAVEMENT DESIGN ENGINEER



On Ramps, Repair Spalls and Clean and Seal Joints
 Note: Contractor shall construct Milled Rumble Strips on inside and outside paved shoulders.

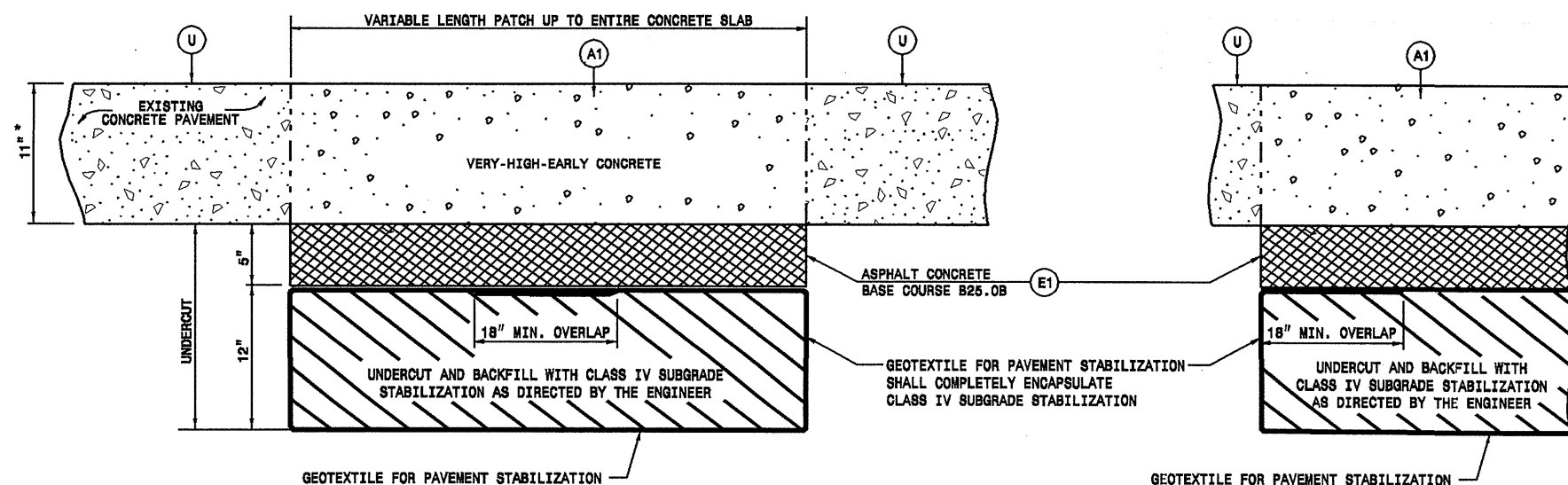
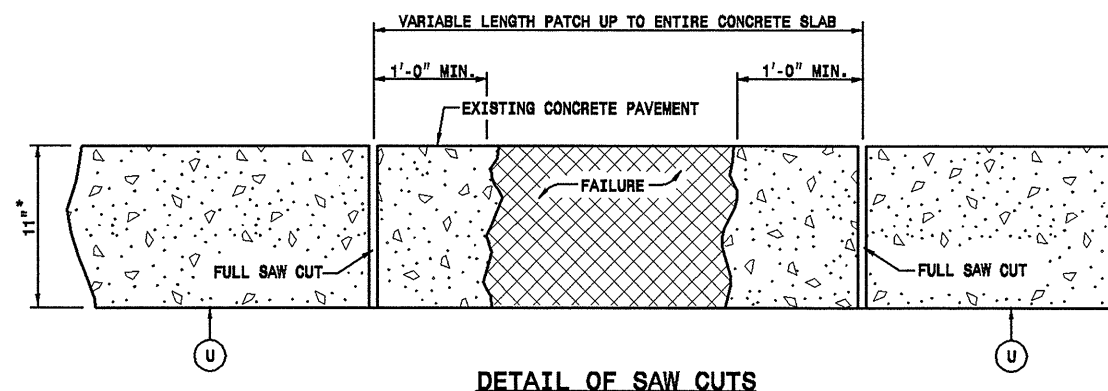
2006 ROADWAY ENGLISH STANDARD DRAWINGS

The following Roadway Standards as appear in "Roadway Standard Drawings" Highway Design Branch N. C. Department of Transportation - Raleigh, N. C., Dated July 18, 2006 are applicable to this project and by reference hereby are considered a part of these plans:

STD.NO. TITLE

DIVISION 7 - CONCRETE PAVEMENTS AND SHOULDERS

- 700.01 Concrete Pavement Joints - Construction and Contraction Joints (Beg. July 2006 Let Use Detail in Lieu of Standard)
- 700.02 Expansion Joint Layout - for Rigid Doweled Pavement at Bridges
- 700.03 Dowel Assembly (Beg. July 2006 Let Use Detail in Lieu of Standard)
- 700.04 Concrete Pavement Header Board
- 700.05 Tying Proposed Pavement to Existing



* DIMENSIONS ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED

PAVEMENT SCHEDULE	
A1	11" VERY HIGH-EARLY CONCRETE
E1	PROP. APPROX. 5" ASPHALT CONCRETE BASE COURSE, TYPE B25.0B, AT AN AVERAGE RATE OF 570 LBS. PER SQ. YD.
U	EXISTING PAVEMENT

Refer to the North Carolina Department of Transportation
 "Partial and Full Depth Repair Manual" when Replacing Slabs
 and when Repairing Concrete Pavement.

DETAIL FOR REPAIR OF
 CONCRETE PAVEMENT

16-DEC-2009 10:20
 s:\contracts\resurfacing projects\division 7\1-4716\package\vin map and typical2.dgn
 \$\$\$USERNAME\$\$\$

PROJECT NO.	SHEET NO.	TOTAL NO.
I-4716	3	4

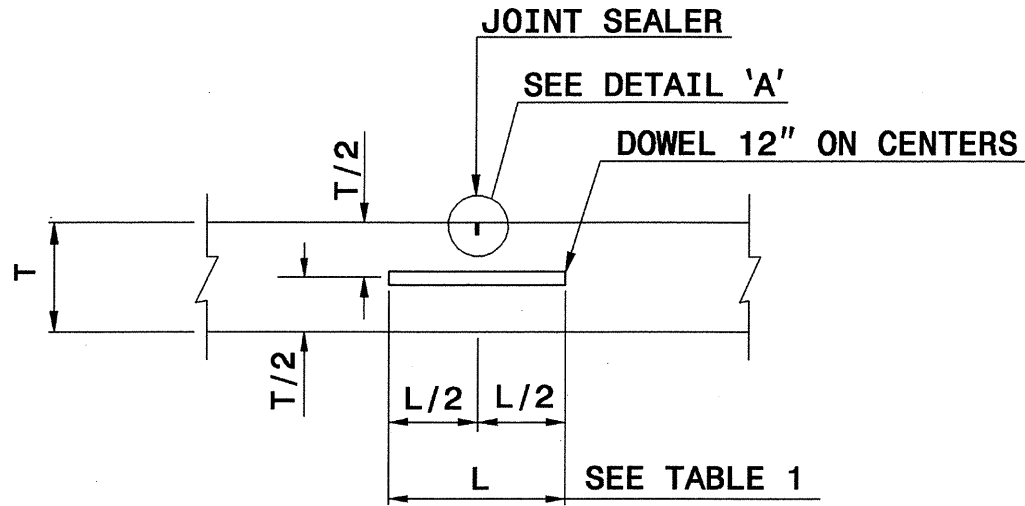
SUMMARY OF QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	TYP	FINAL SURFACE TESTING REQUIRED	LENGTH MI	WIDTH FT	MILLED RUMBLE STRIPS (CONCRETE) LF	GENERIC MISC. ITEM - DIAMOND GRIND SY	UNDERCUT EXCAVATION CY	CLASS IV SUBGRADE STABILIZATION TONS	BASE COURSE, B25.0B TONS	PG 64-22 PLANT MIX TONS	PATCHING CONCRETE PAVEMENT SPALLS SF	GENERIC PAVING ITEM - REPAIR OF JOINTED CONCRETE PAVEMENT SLABS SY	GENERIC PAVING ITEM - GEOTEXTILE FOR PAVEMENT STABILIZATION SY	GENERIC PAVING ITEM - JOINT CONSTRUCTION, REPAIR AND SEALING LF
I-4716	Orange	1	I-40	FROM THE I40/I-85 SPLIT TO THE DURHAM COUNTY LINE	1	NO	12.12	48	248,600	393,000	140	132	85	4	1,310	290	825	677,000
TOTAL FOR MAP NO. 1							12.12		248,600	393,000	140	132	85	4	1,310	290	825	677,000
TOTAL FOR PROJ NO. I-4716							12.12		248,600	393,000	140	132	85	4	1,310	290	825	677,000
GRAND TOTAL							12.12		248,600	393,000	140	132	85	4	1,310	290	825	677,000

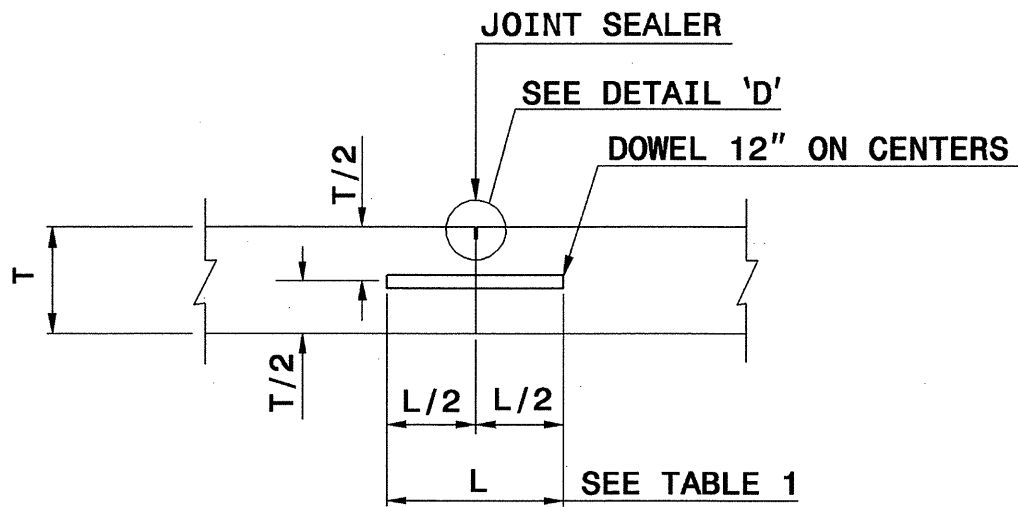
PROJECT NO.	SHEET NO.	TOTAL NO.
I-4716	4	4

THERMOPLASTIC AND PAINT QUANTITIES

PROJECT NO	COUNTY	MAP NO	ROUTE	DESCRIPTION	4589000000-N	5255000000-N	4810000000-E	4847100000-E	4847120000-E	4905000000-N
					GENERIC TRAFFIC CONTROL ITEM LUMP SUM TRAFFIC CONTROL LS	PORTABLE LIGHTING LS	4" WHITE PAINT LF	POLYUREA PAVEMENT MARKING LINES (6", HRE) LF	POLYUREA PAVEMENT MARKING LINES (12", HRE) LF	SNOW PLOWABLE MARKERS CRYSTAL & RED EA
I-4716	Orange	1	I-40	FROM THE I40/I-85 SPLIT TO THE DURHAM COUNTY LINE	1	1	300,000	300,000	22,000	3,000
TOTAL FOR MAP NO. 1					1	1	300,000	300,000	22,000	3,000
TOTAL FOR PROJ NO.					1	1	300,000	300,000	22,000	3,000
GRAND TOTAL					1	1	300,000	300,000	22,000	3,000



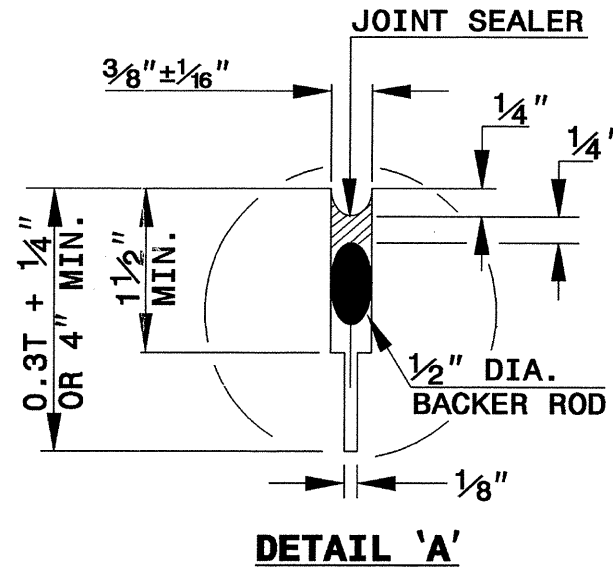
TRANSVERSE CONTRACTION JOINT



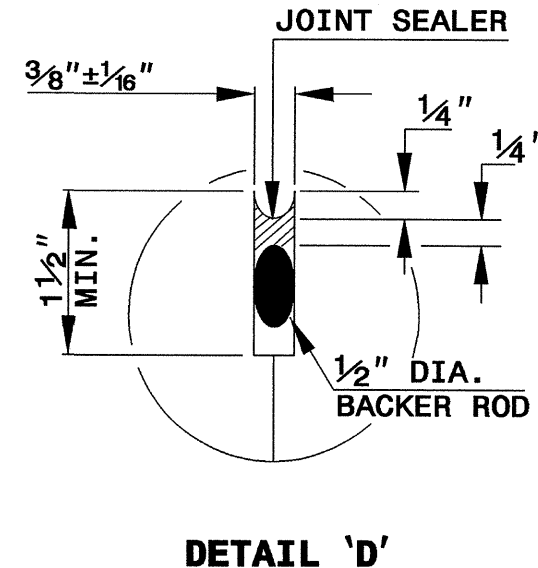
PLANNED TRANSVERSE CONSTRUCTION JOINT

GENERAL NOTES:

- FORM TRANSVERSE CONTRACTION JOINTS BY SAWING WITH APPROVED EQUIPMENT.
- SPACE TRANSVERSE CONTRACTION JOINTS AT INTERVALS OF 15'.
- USE A DOWEL ASSEMBLY OR OTHER APPROVED DOWEL INSERTION TECHNIQUE IN ALL TRANSVERSE CONTRACTION JOINTS. DOWEL ASSEMBLIES ARE COVERED IN DETAIL 700D03.
- PROVIDE SMOOTH DOWEL BARS. PROVIDE DEFORMED TIE BARS.
- WHEN UTILIZING AN EARLY ENTRY SAW, CUT THE JOINT TO A MINIMUM DEPTH OF 4".



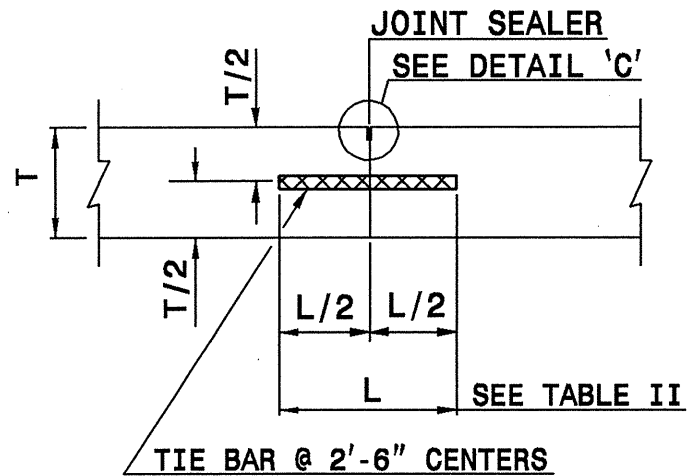
DETAIL 'A'



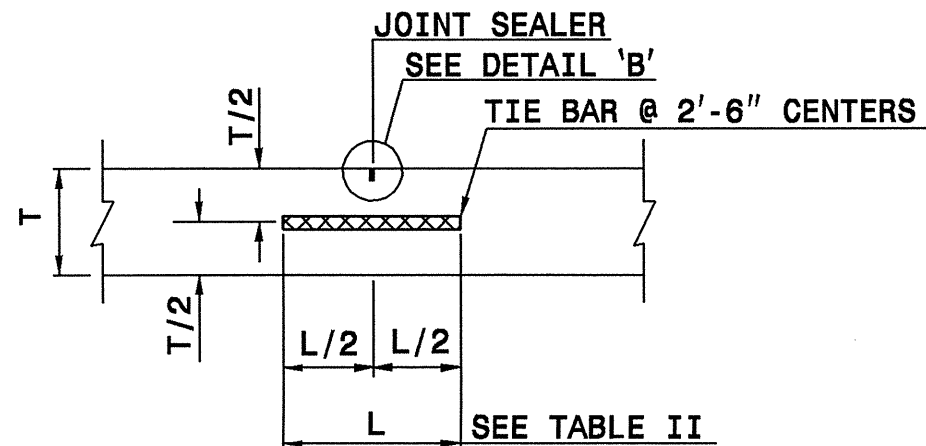
DETAIL 'D'

TABLE I - DOWEL BARS

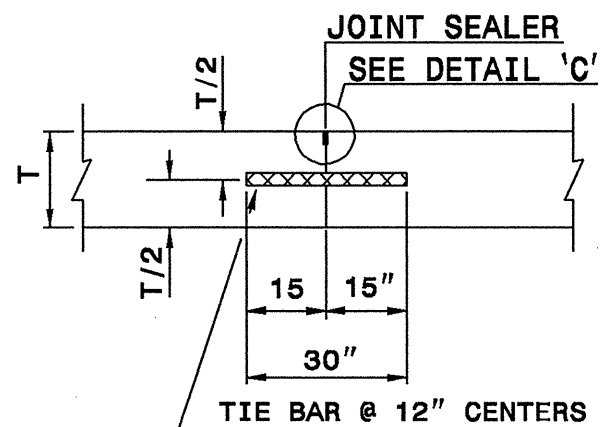
SLAB THICKNESS	DOWEL BAR "D"	DOWEL LENGTH "L"
8" OR LESS	1"	14"
8 1/2" TO 9 1/2"	1 1/8"	16"
10" TO 10 1/2"	1 1/4"	18"
11" AND ABOVE	1 1/2"	18"



LONGITUDINAL CONSTRUCTION JOINT



LONGITUDINAL JOINT



EMERGENCY TRANSVERSE CONSTRUCTION JOINT

GENERAL NOTES:

- CONSTRUCT TRANSVERSE CONSTRUCTION JOINTS AT THE END OF EACH DAY'S OPERATION (PLANNED JOINT) OR WHEN THE PLACING OF CONCRETE IS SUSPENDED FOR MORE THAN 30 MINUTES (EMERGENCY JOINT).
- USE AN APPROVED HEADER AT EMERGENCY JOINTS STD. DWG. 700.04 AND DESIGNED TO PERMIT THE PLACEMENT OF AND CORRECTLY HOLD IN PLACE TIE BARS.
- USE TIE BARS OF THE SAME DIAMETER AS DOWEL BARS FOR EMERGENCY TRANSVERSE CONSTRUCTION JOINTS.
- LOCATE PLANNED TRANSVERSE CONSTRUCTION JOINTS AT THE SPACING REQUIRED FOR CONTRACTION JOINTS. USE AN APPROVED METHOD OF INSTALLING DOWELS IN ALL PLANNED TRANSVERSE CONSTRUCTION JOINTS.
- DO NOT LOCATE EMERGENCY TRANSVERSE CONSTRUCTION JOINTS LESS THAN 6' FROM ANY CONTRACTION JOINT OR PLANNED CONSTRUCTION JOINT.
- DO NOT PLACE TIE BARS IN LONGITUDINAL JOINTS WITHIN 1'-4" OF A TRANSVERSE JOINT.
- WHEN UTILIZING AN EARLY ENTRY SAW, CUT THE JOINT TO A MINIMUM DEPTH OF 3".

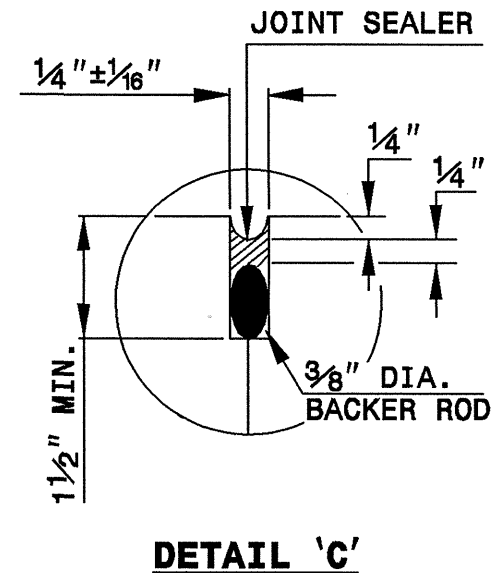
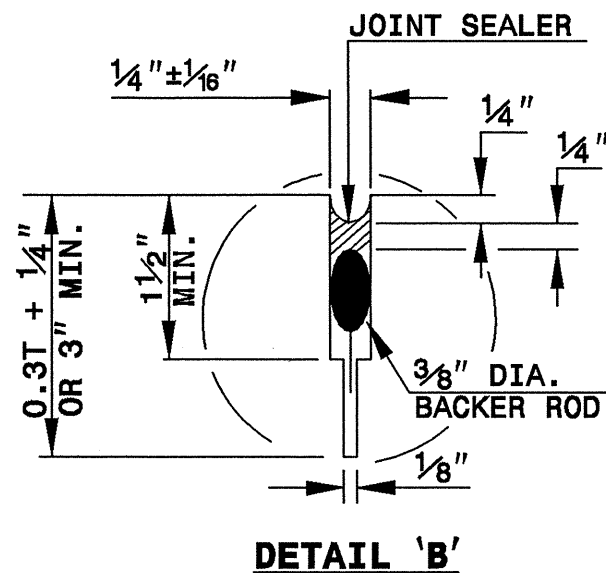
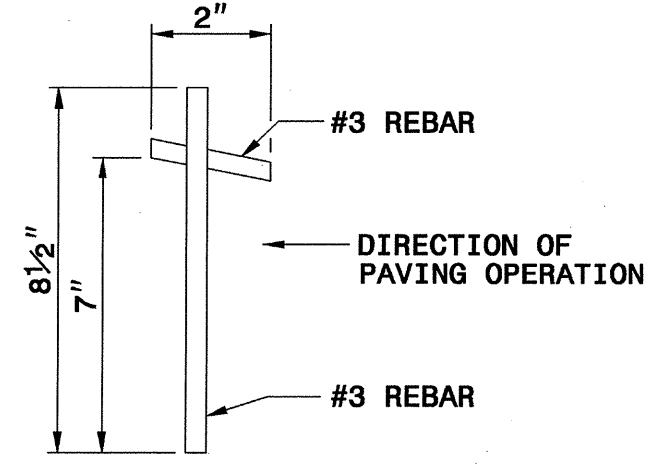
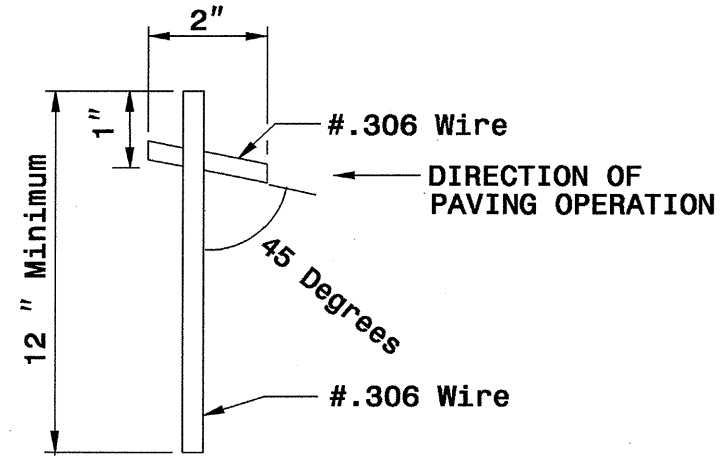


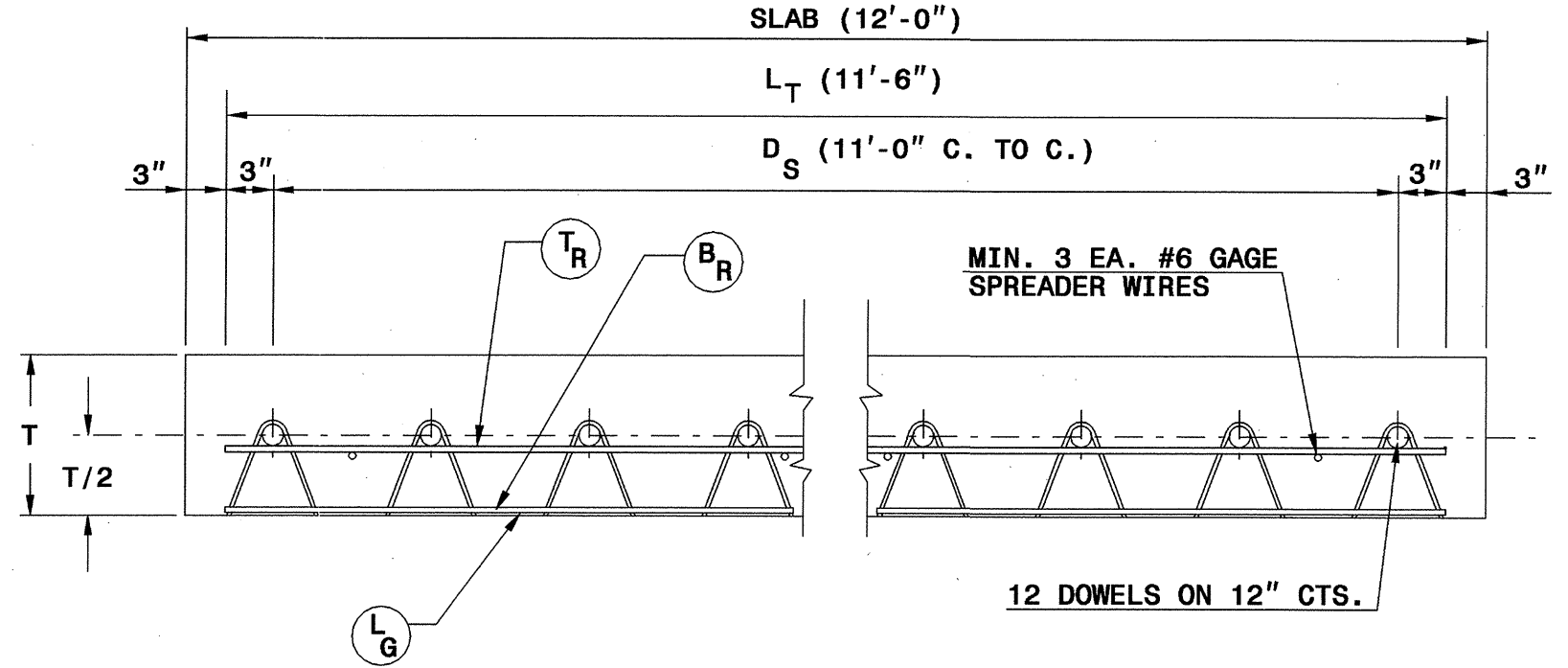
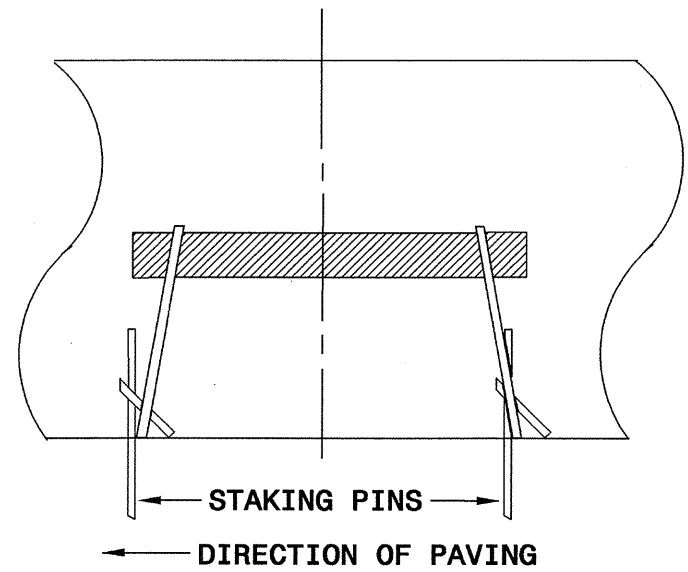
TABLE II - LONGITUDINAL TIE BARS		
SLAB THICKNESS	TIE BAR DIA. "D"	TIE BAR LENGTH "L"
8 1/2" OR LESS	1/2"	30"
9" OR ABOVE	5/8"	30"



STAKING PIN
(MIN. 8 PER BASKET)



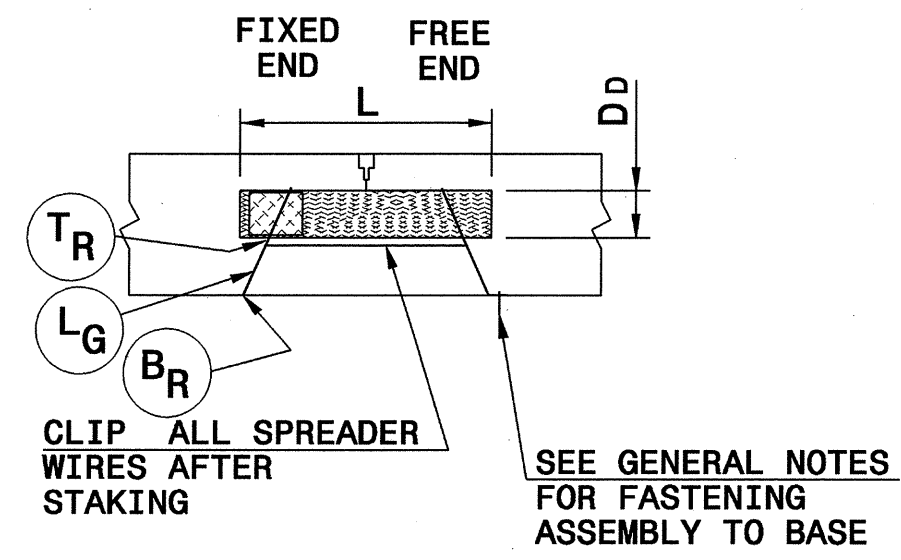
STAKING PIN ALTERNATE
(MIN. 8 PER BASKET)



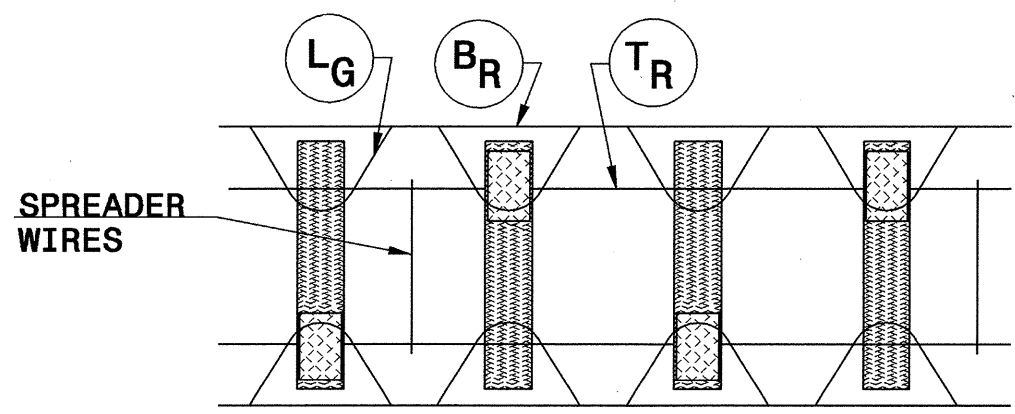
TYPICAL UNIT DIMENSIONS

"V" LEG ONLY			
SLAB THICKNESS	WIRE GAGE		
	T _R	B _R	L _G
8" OR LESS	2	2	2
8 1/2" - 10"	0	2	2
10 1/2" & ABOVE	2/0's	2/0's	2/0's

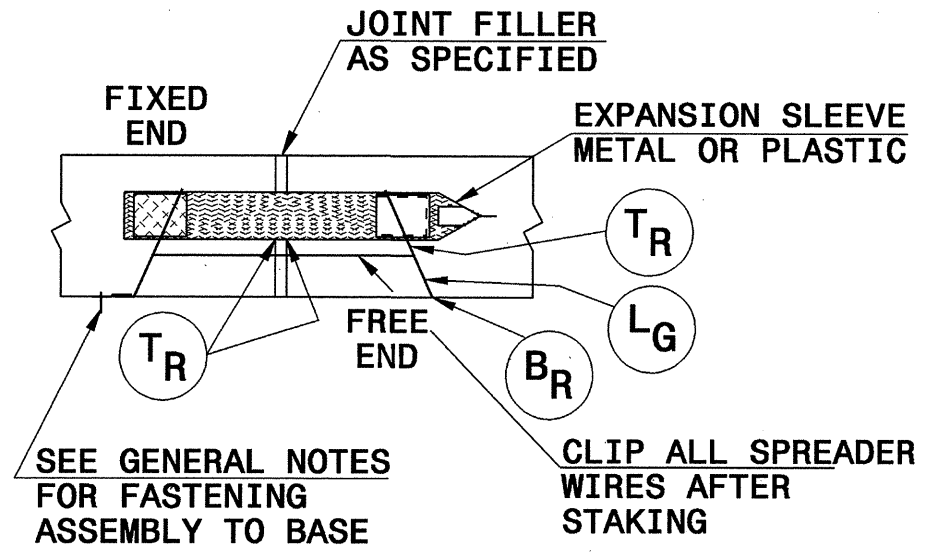
- GENERAL NOTES:**
- USE RIGID CONSTRUCTED DOWEL ASSEMBLY CAPABLE OF HOLDING THE DOWEL BAR IN PROPER POSITION DURING PLACMENT OF CONCRETE AND DESIGNED AS TO PERMIT UNRESTRICTED MOVEMENT OF THE SLAB. USE DOWEL ASSEMBLY APPROVED BY THE ENGINEER PRIOR TO USE.
 - USE DOWEL ASSEMBLIES MANUFACTURED WITH DOWELS ALTERNATELY WELDED TO FRAME MEMBERS.
 - USE STAKING PIN OR APPROVED ALTERNATE.
 - SAW CUT EPOXY COATED DOWELS, BUFFING AS NECESSARY TO FACILITATE PROPER WELDING OF THE DOWEL TO THE ASSEMBLY FRAME. TOUCH UP OF THE BUFFED AREA WILL NOT BE REQUIRED.
 - RESISTANCE WELD FRAME MEMBERS; DOWELS AND SPREADER WIRES MAY BE ARC WELDED. WELD IN ACCORDANCE WITH AWS WELDING CODE.
 - FULLY DIP THE DOWEL ASSEMBLIES TO ASSURE A COMPLETE COATING OF WAX.
 - SEE DETAIL 700D01 FOR DOWEL BAR SIZES.



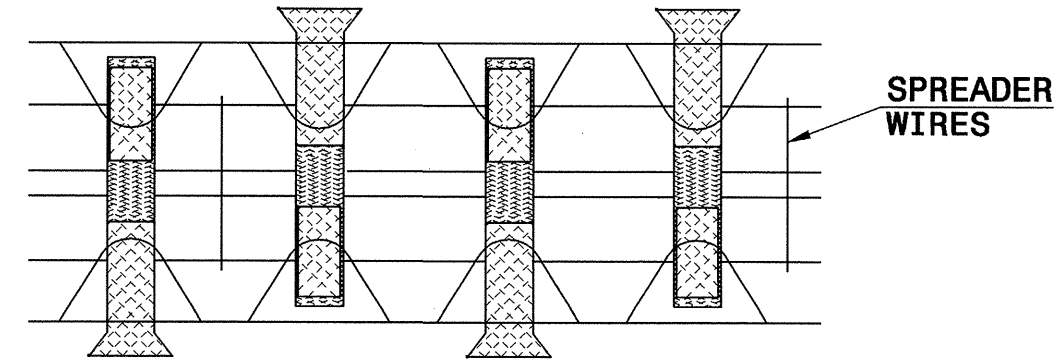
SECTION - CONTRACTION



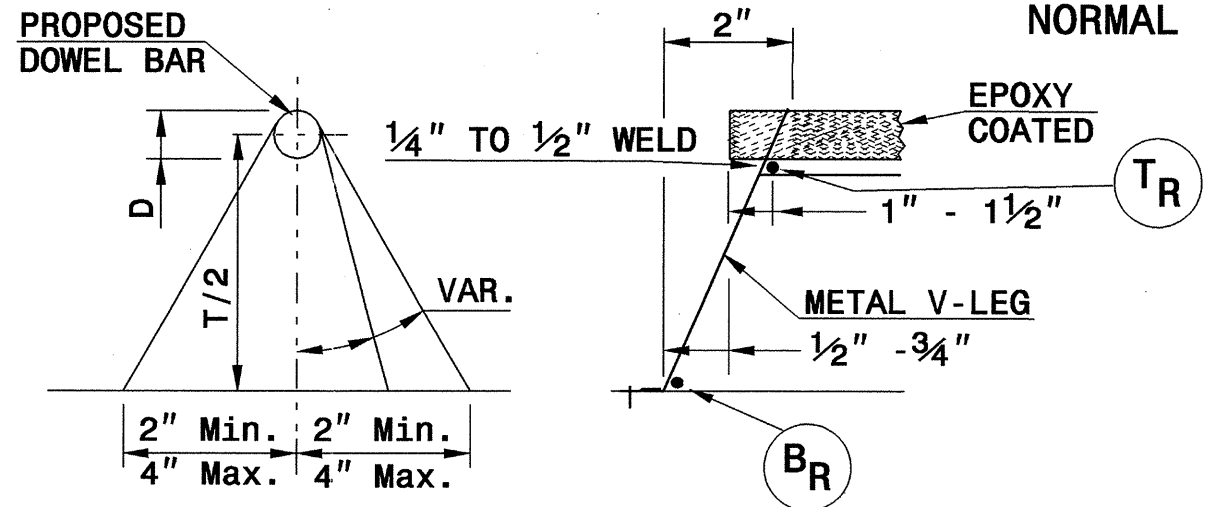
**PARTIAL PLAN CONTRACTION
NORMAL**



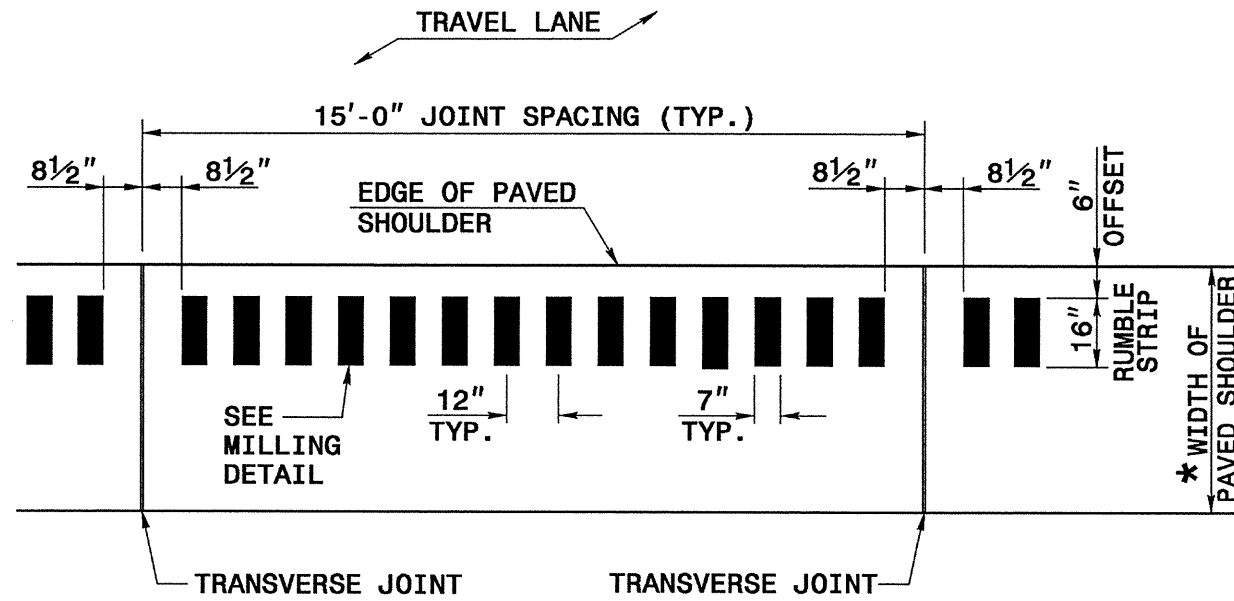
SECTION - EXPANSION



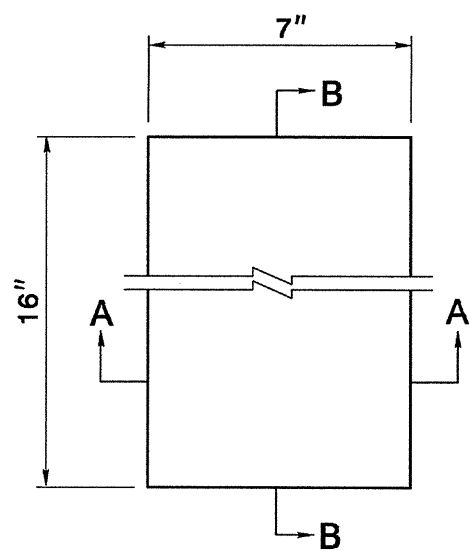
**PARTIAL PLAN EXPANSION
NORMAL**



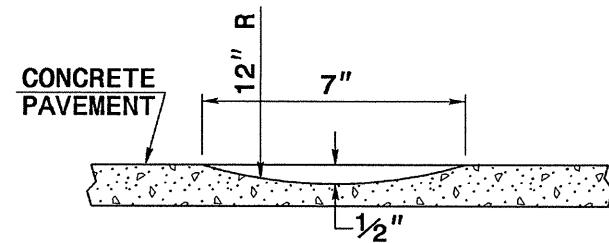
CROSS SECTIONAL VIEWS



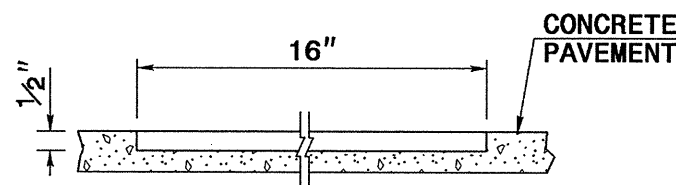
**PLAN VIEW
PAVED SHOULDER**



**PLAN VIEW
MILLING DETAIL**

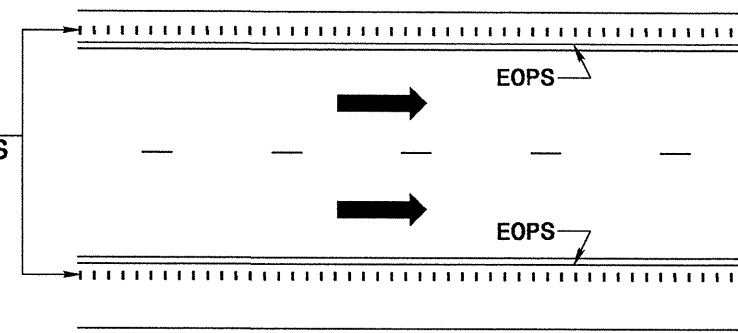


SECTION A-A



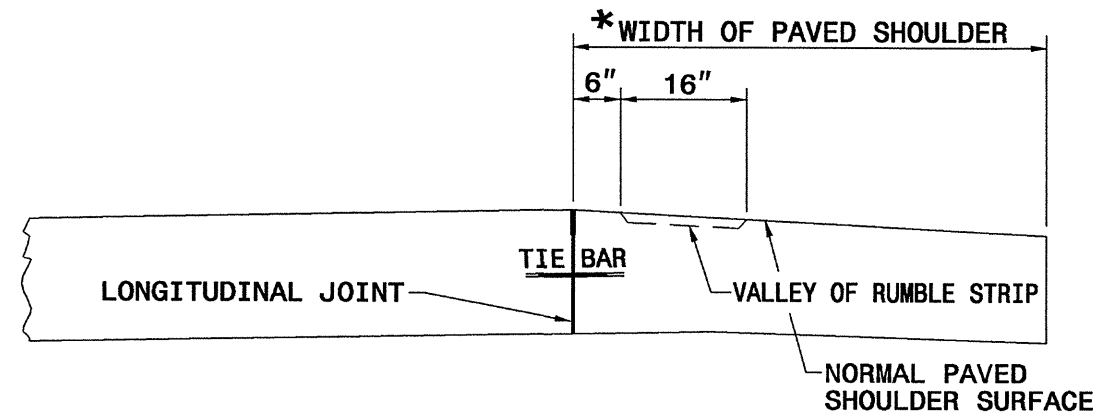
SECTION B-B

MILLED RUMBLE STRIPS
ON CONCRETE SHOULDERS



LANE TREATMENT

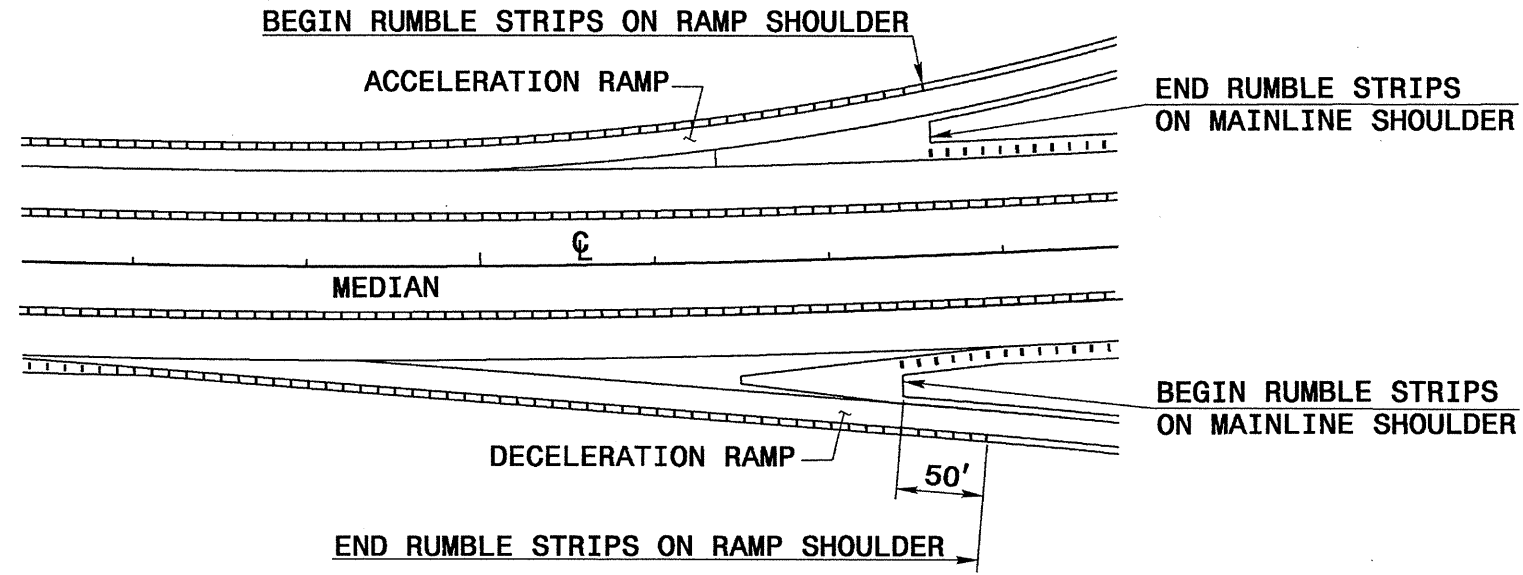
* FOR WIDTHS SEE TYPICAL SECTIONS, PLAN SHEETS, AND INTERCHANGE DETAILS.



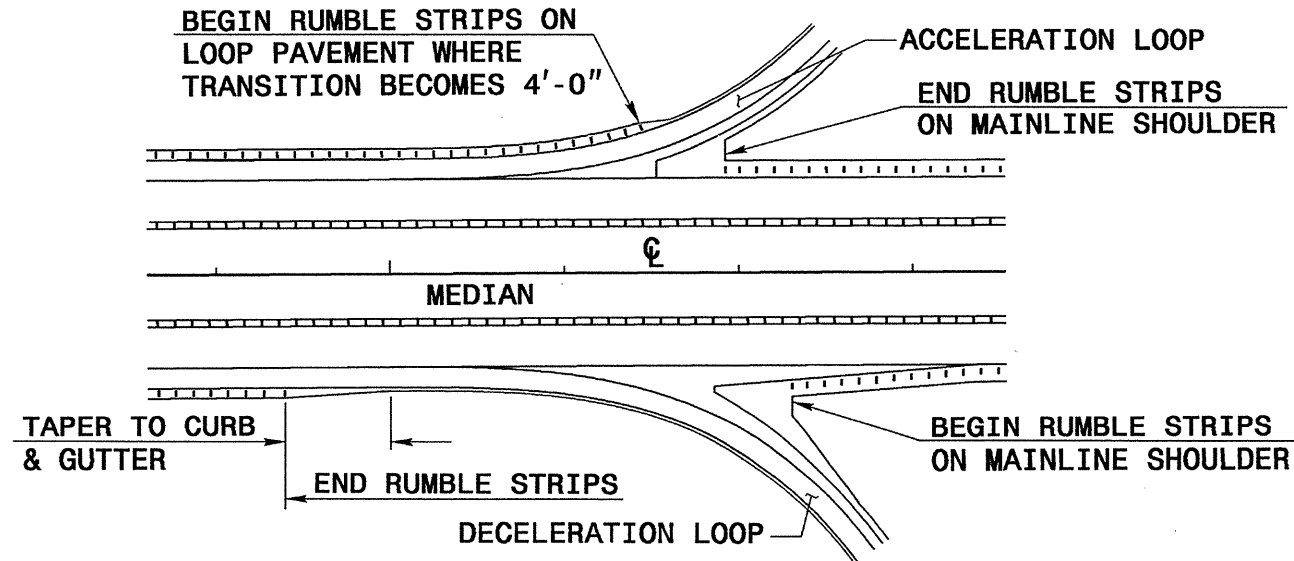
SECTION DETAILS SHOWING VALLEY OF RUMBLE STRIP

NOTES:

1. MATCH CONCRETE SHOULDER TRANSVERSE JOINTS TO THAT OF THE ADJACENT CONCRETE PAVEMENT.
2. SAW AND SEAL THE LONGITUDINAL JOINT AND TRANSVERSE JOINTS. SEE STD. DWG. 700.01 FOR DETAILS.
3. SEE DETAIL SHOWING "METHOD OF CONCRETE SHOULDER CONSTRUCTION" FOR PAVEMENT SLOPES.



TREATMENT AT RAMP TERMINALS



TREATMENT AT LOOP TERMINALS

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
I-4716	TCP-1

**PLAN FOR PROPOSED
TRAFFIC CONTROL, MARKING & DELINEATION
ORANGE COUNTY**

I-4716

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" HIGHWAY DESIGN BRANCH - N. C. DEPARTMENT OF TRANSPORTATION - RALEIGH, N. C., DATED JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW PANELS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1180.01	SKINNY - DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.03	PAVEMENT MARKINGS - INTERCHANGES
1205.08	PAVEMENT MARKINGS - SYMBOLS AND WORD MESSAGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - (PERMANENT AND TEMPORARY)
1253.01	SNOWPLOWABLE RAISED PAVEMENT MARKERS

INDEX OF SHEETS


SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND INDEX OF SHEETS
TCP-2	PROJECT NOTES & PHASING
TCP-3	ALTERNATE ROUTE FOR EB I-40
TCP-4	ALTERNATE ROUTE FOR WB I-40
TCP-5	OFFSITE DETOUR FOR RAMP CLOSURE FROM SB I-85 TO EB I-40
TCP-6	OFFSITE DETOUR FOR EB I-40 CLOSURE BETWEEN I-85 & OLD NC 86
TCP-7	OFFSITE DETOUR FOR WB I-40 CLOSURE BETWEEN I-85 & OLD NC 86
TCP-8	OFFSITE DETOUR FOR I-40 CLOSURE BETWEEN OLD NC 86 & NEW HOPE CHURCH RD
TCP-9	OFFSITE DETOUR FOR I-40 CLOSURE BETWEEN NEW HOPE CHURCH RD & NC 86
TCP-10	OFFSITE DETOUR FOR I-40 CLOSURE BETWEEN NC 86 & US 15/501
TCP-11	ADVANCED WORK ZONE WARNING SIGNS FOR FREEWAYS (4 LANES OF GREATER)
TCP-12	MOVING OPERATION CARAVAN
TCP-13 & 14	SIGN DESIGNS

LEGEND

- GENERAL**
- ← DIRECTION OF TRAFFIC FLOW
 - ↑ NORTH ARROW
 - PROPOSED PVMT. - - - - - EXIST. PVMT.
- TRAFFIC CONTROL DEVICES**
- I TYPE I BARRICADE
 - II TYPE II BARRICADE
 - ▨ TYPE III BARRICADE
 - ▲ CONE
 - DRUM ⊙ SKINNY DRUM
 - ⊙ FLASHING ARROW PANEL (TYPE C)
 - ⊥ STATIONARY SIGN
 - ⊏ PORTABLE SIGN
 - ⊕ STATIONARY OR PORTABLE SIGN
 - ~ CRASH CUSHION
 - ⊏ CHANGEABLE MESSAGE SIGN
 - ⊏ TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
 - ⊏ POLICE
 - ⊏ FLAGGER
- PAVEMENT MARKINGS**
- CRYSTAL/CRYSTAL PAVEMENT MARKER
 - ◆ YELLOW/YELLOW PAVEMENT MARKER
 - ▣ CRYSTAL/RED PAVEMENT MARKER
 - ↔ PAVEMENT MARKING SYMBOLS

TIP PROJECT:

11/23/2009 P:\TRAFFIC\I-4716\replans.091123\14716_tc_tcp_title.dgn KO & Associates, P.C.

PLAN REVIEWED BY: WORK ZONE TRAFFIC CONTROL UNIT J. S. BOURNE, P.E. STATE TRAFFIC MANAGEMENT ENGINEER J. ISHAK, P.E. CENTRAL WZTC ENGINEER J. PORTANOVA, P.E. TRAFFIC CONTROL PROJ. DESIGN ENGINEER TRAFFIC CONTROL DESIGN ENGINEER TRAFFIC CONTROL DESIGN TECHNICIAN		APPROVED: <i>Michael T. Rzepka</i> DATE: 11-23-09 SEAL 	PLAN PREPARED FOR N.C.D.O.T. BY: M. T. RZEPKA, P.E. PROJECT ENGINEER G. E. PARKER DESIGN ENGINEER Y. T. MARIOTTE DESIGN TECHNICIAN
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KO & ASSOCIATES, P.C.
A Florence & Shiloh, Inc. Company
111 KENNON WAY SUITE 100 RALEIGH, N.C. 27601
(919) 851-8100

PROJECT NOTES

PROJ. REFERENCE NO. SHEET NO.

I-4716

TCP-2

KO & ASSOCIATES, P.C.
 Consulting Engineers
 A Florence & Hutcheson, Inc. Company
 5121 KINGDOM WAY, SUITE 100 RALEIGH, N.C. 27607
 (919) 851-6866

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 UNDESIRABLE 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
I-40 & I-85	MONDAY TO SUNDAY 6:00 AM TO 8:00 PM

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

ROAD NAME
ALL ROADS

HOLIDAY

- FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 8:00 P.M. DECEMBER 31st TO 6:00 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 6:00 A.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 8:00 P.M. THURSDAY AND 6:00 A.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 8:00 P.M. FRIDAY TO 6:00 A.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 8:00 P.M. THE FRIDAY BEFORE INDEPENDENCE DAY AND 6:00 A.M. THE MONDAY AFTER INDEPENDENCE DAY.
- FOR LABOR DAY, BETWEEN THE HOURS OF 8:00 P.M. FRIDAY AND 6:00 A.M. TUESDAY.
- FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 8:00 P.M. TUESDAY TO 6:00 A.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 8:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

C) DO NOT CLOSE ROADS AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
I-40 & RAMPS	TUESDAY TO THURSDAY, 6:00 AM TO 10:00 PM FRIDAY 6:00 AM TO MIDNIGHT SATURDAY 9:00 AM TO MIDNIGHT SUNDAY 9:00 AM TO MONDAY 10:00 PM

LANE AND SHOULDER CLOSURE REQUIREMENTS

- D) 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.
- E) 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.
- F) 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.

- G) DO NOT INSTALL MORE THAN 3 MILES OF LANE CLOSURE ON I-40 MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
- H) DO NOT INSTALL MORE THAN ONE LANE CLOSURE IN ANY ONE DIRECTION ON I-40.

PAVEMENT EDGE DROP OFF REQUIREMENTS

- I) 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.
- J) 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 FEET IN ADVANCE AND A MINIMUM OF EVERY HALF MILE THROUGHOUT THE UNEVEN AREA.

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

- L) 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.
- M) 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.
- N) 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.
- O) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC CONTROL DEVICES

- P) 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 WHEN LANE CLOSURES ARE NOT IN EFFECT. WHEN SKINNY DRUMS ARE ALLOWED REFER TO SECTION 1180 OF STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES OR AS SHOWN IN THE PLANS.
- Q) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY.
- R) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.
- S) INSTALL TEMPORARY PAVEMENT MARKINGS ON INTERIM LAYERS OF PAVEMENT AS FOLLOWS:
- | ROAD NAME | MARKING |
|--------------|---------|
| I-40 & RAMPS | PAINT |
- T) 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.
- U) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- V) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

- W) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER (DEPARTMENT FURNISHED).

LOCAL NOTES

- 1) USE LAW ENFORCEMENT PROVIDED BY NCDOT AT RAMP TERMINALS.

PHASING

STEP 1

INSTALL THE FOLLOWING:

- ALL ADVANCE WARNING SIGNS.
- CHANGEABLE MESSAGE SIGNS
- ALTERNATE I-40 ROUTE SIGNS
- DETOUR SIGNS FOR OFFSITE DETOURS (KEEP COVERED)

NOTES: - REPEAT STEP 2 THROUGH STEP 4 FOR EACH WORK PERIOD INVOLVING I-40 ROAD CLOSURE.
 - WORK ON EB I-40 BETWEEN I-85 AND OLD NC 86 INTERCHANGES SHALL NOT BEGIN BEFORE MAY 16, 2010.
 - WORK ON WB I-40 BETWEEN I-85 AND OLD NC 86 INTERCHANGES SHALL BE COMPLETED BY MAY 16, 2010.

STEP 2

USING ROADWAY STANDARD DRAWING 1101.03 (SHEET 7 OF 9), CLOSE THE SECTION OF I-40 BETWEEN ADJACENT INTERCHANGES WHERE THE WORK WILL OCCUR. CLOSE ONLY ONE DIRECTION AT A TIME.

UNCOVER RELEVANT OFFSITE DETOUR SIGNING.

STEP 3

COMPLETE PROPOSED WORK IN CLOSED AREA.

PLACE TEMPORARY PAVEMENT MARKINGS.

STEP 4

REMOVE ROAD CLOSURE AND REOPEN SECTION OF I-40. COVER RELEVANT OFFSITE DETOUR SIGNING.

STEP 5

USING ROADWAY STANDARD DRAWING 1101.02 (SHEET 3 OF 9) OR SHEET TCP-12 (MOVING OPERATION CARAVAN), INSTALL FINAL PAVEMENT MARKINGS.

USING ROADWAY STANDARD DRAWING 1101.02 (SHEET 3 OF 9), INSTALL FINAL PAVEMENT MARKERS.

REMOVE ALL TEMPORARY SIGNING.

APPROVED: *Michael Rzepka* DATE: 11-23-09



PROJECT NOTES & PHASING

SCALE:	NONE	REVISIONS
DATE:	NOV 09	
DWG. BY:	YTM	
DESIGN BY:	GEP	
REVIEWED BY:	MTR	

PROJ. REFERENCE NO. SHEET NO.
I-4716 TCP-3

KO & ASSOCIATES, P.C.
Consulting Engineers
A Florence & Hutcheson, Inc. Company
5121 KINGDOM WAY, SUITE 100 RALEIGH, N.C. 27607
(919) 851-6665

ALTERNATE ROUTE FOR EB I-40

MESSAGE NO. 1	MESSAGE NO. 2
I40 WORK EXPECT DELAYS	ALT RTE I-85N TO NC 147S

CHANGEABLE MESSAGE SIGN

①

MESSAGE NO. 1	MESSAGE NO. 2
I40 WORK DELAYS XXMI AHD	ALT RTE I-85N TO NC 147S

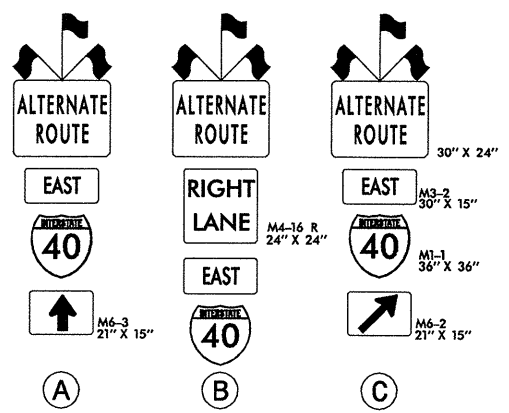
CHANGEABLE MESSAGE SIGN

②

MESSAGE NO. 1
I-40 ALT 3 LEFT LANES

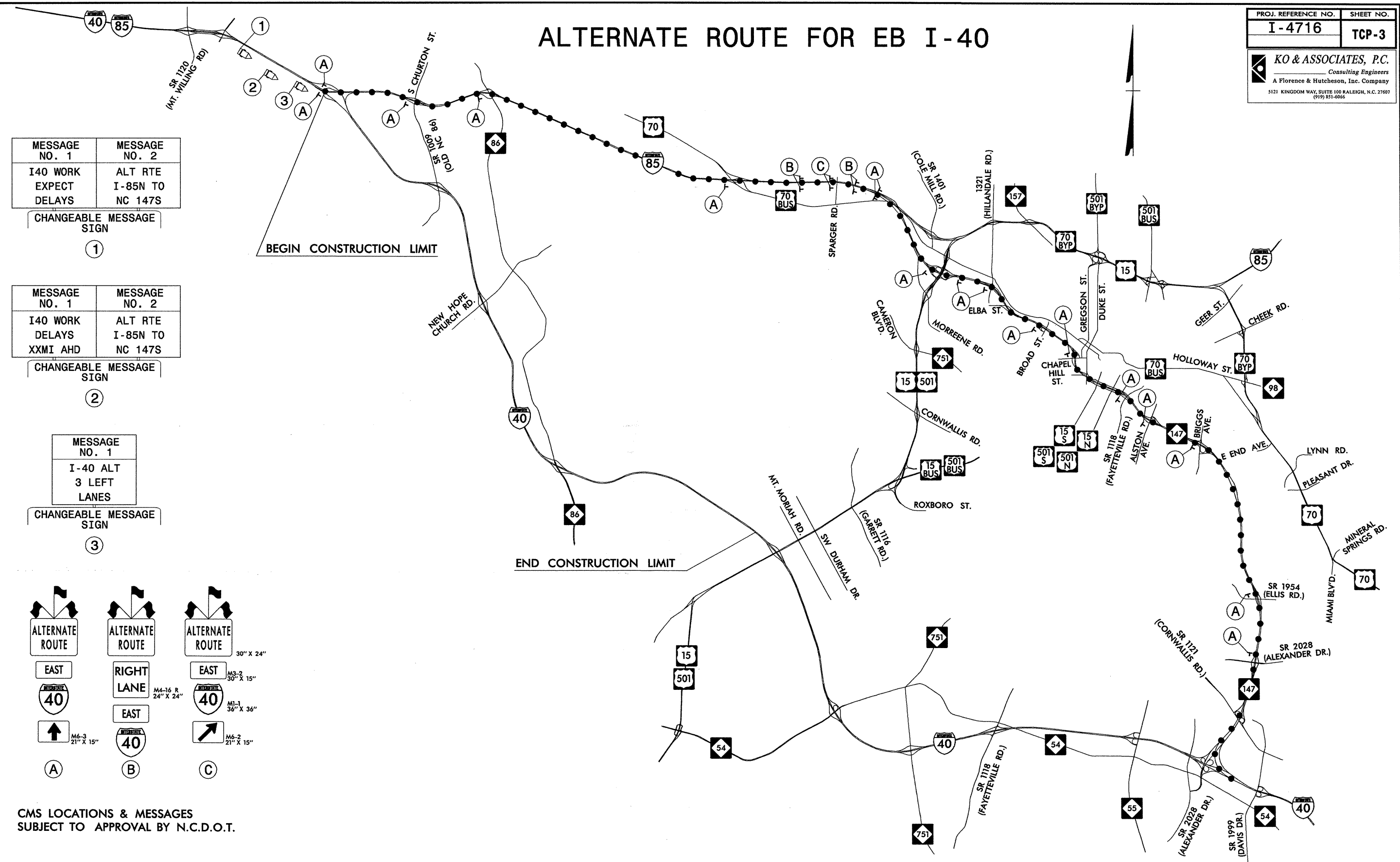
CHANGEABLE MESSAGE SIGN

③

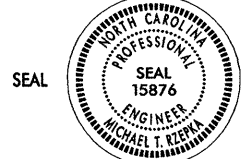


CMS LOCATIONS & MESSAGES SUBJECT TO APPROVAL BY N.C.D.O.T.

LEGEND



APPROVED: *[Signature]* DATE: 11-23-09



ALTERNATE ROUTE FOR EB I-40

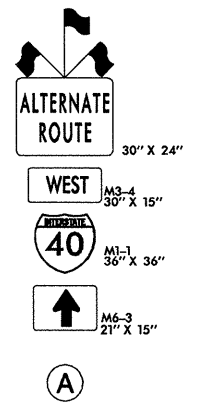
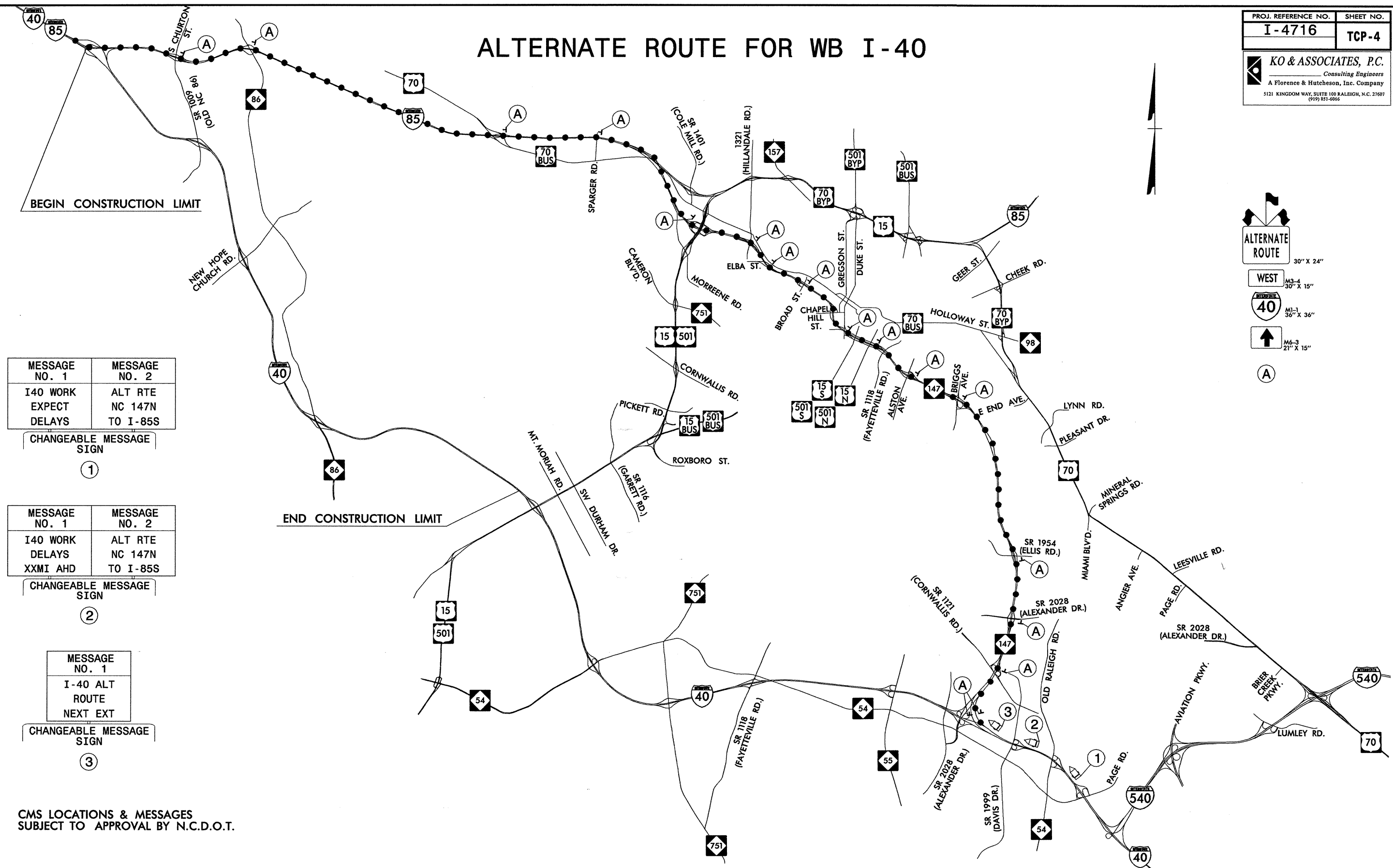
SCALE: NONE
DATE: NOV 09
DWG. BY: YTM
DESIGN BY: GEP
REVIEWED BY: MTR



REVISIONS

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11/20/2009 2:18:12 PM

ALTERNATE ROUTE FOR WB I-40



MESSAGE NO. 1	MESSAGE NO. 2
I40 WORK EXPECT DELAYS	ALT RTE NC 147N TO I-85S

CHANGEABLE MESSAGE SIGN

1

MESSAGE NO. 1	MESSAGE NO. 2
I40 WORK DELAYS XXMI AHD	ALT RTE NC 147N TO I-85S

CHANGEABLE MESSAGE SIGN

2

MESSAGE NO. 1
I-40 ALT ROUTE NEXT EXT

CHANGEABLE MESSAGE SIGN

3

CMS LOCATIONS & MESSAGES SUBJECT TO APPROVAL BY N.C.D.O.T.

LEGEND

●●●●● ALTERNATE ROUTE

APPROVED: <i>Michael T. Rzepa</i> DATE: 11-23-09	ALTERNATE ROUTE FOR WB I-40									
	SCALE: NONE	<table border="1"> <tr> <th colspan="2">REVISIONS</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	REVISIONS							
	REVISIONS									
DATE: NOV 09										
DESIGN BY: YTM										
DESIGN BY: GEP	REVIEWED BY: MTR									

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RAMP CLOSED FROM SB I-85 TO EB I-40

PROJ. REFERENCE NO.	SHEET NO.
I-4716	TCP-5

KO & ASSOCIATES, P.C.
 Consulting Engineers
 A Florence & Hutcheson, Inc. Company
 5121 KINGDOM WAY, SUITE 100 RALEIGH, N.C. 27607
 (919) 851-6866

MESSAGE NO. 1	MESSAGE NO. 2
RAMP TO I-40E CLOSED	DETOUR FOLLOW SB I-85

CHANGEABLE MESSAGE SIGN

①

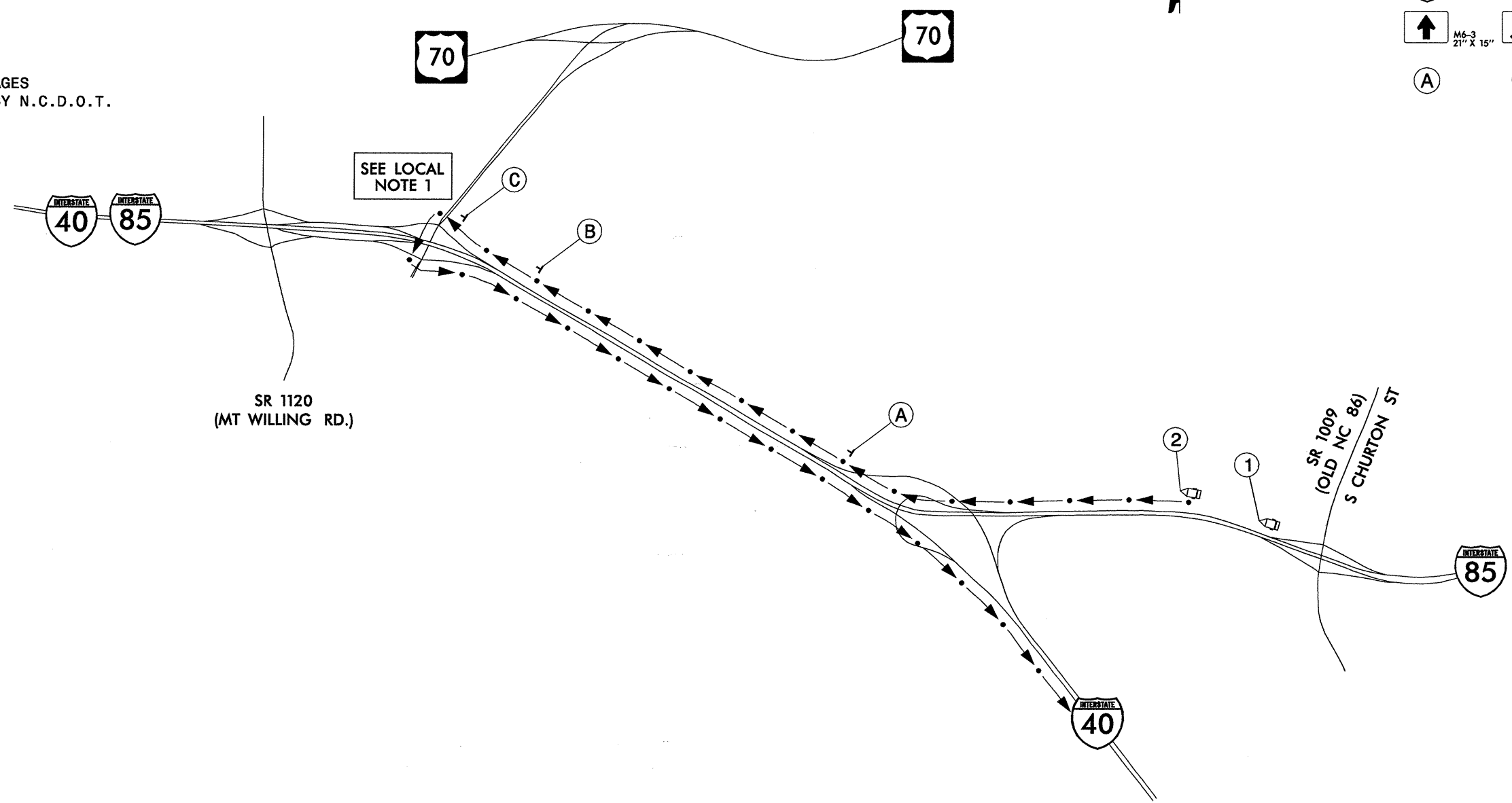
MESSAGE NO. 1	MESSAGE NO. 2
RAMP TO I-40E CLOSED	DETOUR FOLLOW SB I-85

CHANGEABLE MESSAGE SIGN

②

CMS LOCATIONS & MESSAGES
 SUBJECT TO APPROVAL BY N.C.D.O.T.

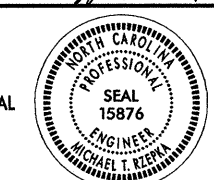

DETOUR TO EAST	DETOUR TO EAST	DETOUR TO EAST
M4-8 24" X 12"	M4-5 24" X 12"	M4-2 24" X 12"
M3-2 24" X 12"	M1-1 24" X 24"	M6-3 21" X 15"
M6-2 21" X 15"	M6-1 L 21" X 15"	
(A)	(B)	(C)



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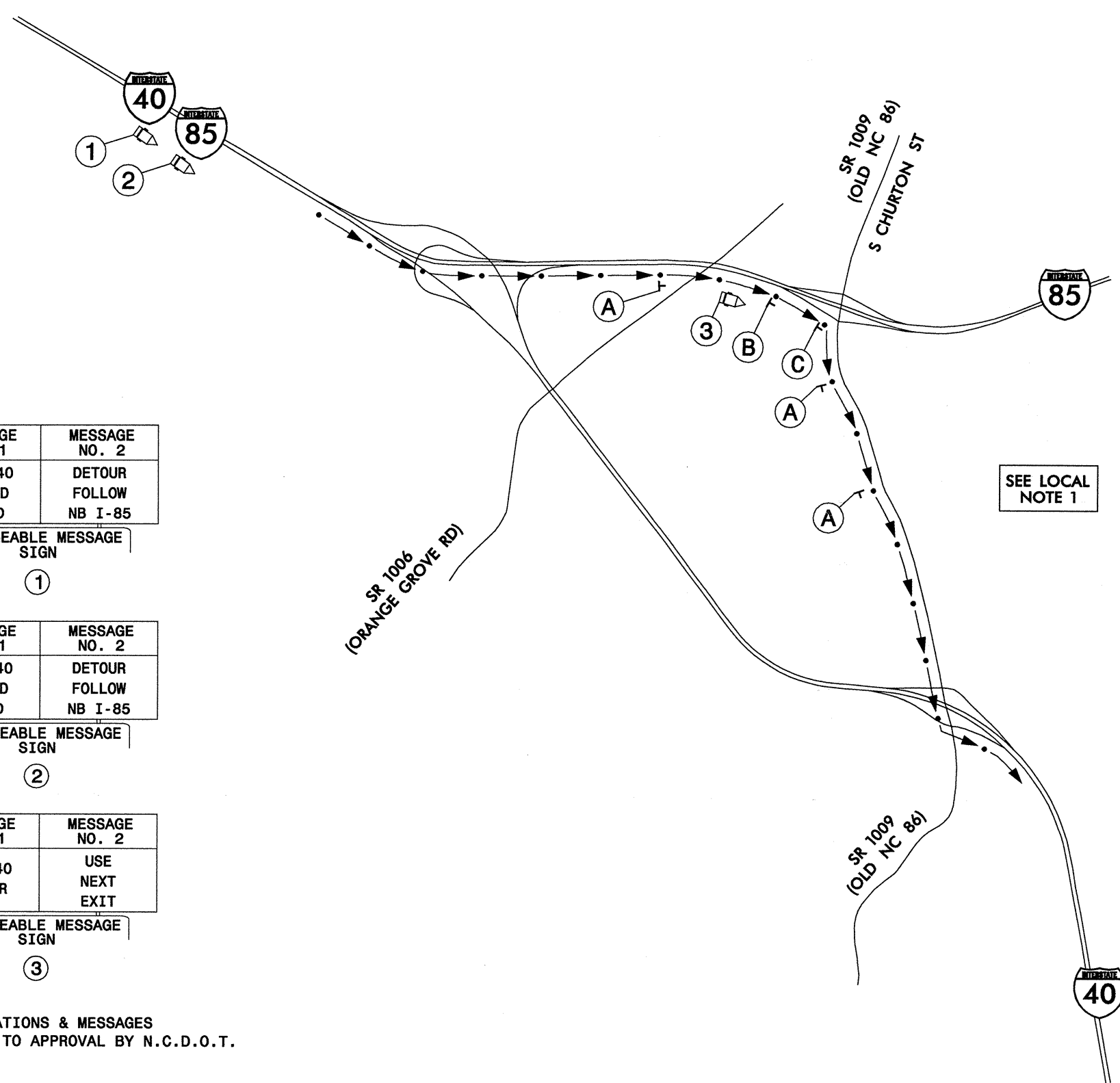
LEGEND

- ▶ DETOUR ROUTE FOR EASTBOUND TRAFFIC
- ◻▶ DETOUR ROUTE FOR WESTBOUND TRAFFIC

APPROVED: <i>[Signature]</i> DATE: 11-23-09	OFFSITE DETOUR FOR RAMP CLOSURE FROM SB I-85 TO EB I-40	
		
SCALE: NONE		REVISIONS
DATE: NOV 09		
DWG. BY: YTM		
DESIGN BY: GEP		
REVIEWED BY: MTR		CADD FILE

EB I-40 CLOSED BETWEEN I-85 AND OLD NC 86

PROJ. REFERENCE NO. I-4716	SHEET NO. TCP-6
KO & ASSOCIATES, P.C. Consulting Engineers A Florence & Hutcheson, Inc. Company <small>5121 KINGDOM WAY, SUITE 100 RALEIGH, N.C. 27607 (919) 851-6066</small>	



DETOUR TO EAST I-40	DETOUR TO EAST I-40	DETOUR TO EAST I-40
M4-8 24" X 12"	M4-5 24" X 12"	M3-2 24" X 12"
M1-1 24" X 24"	M6-3 21" X 15"	M6-2 21" X 15"
M6-1 R 21" X 15"	(A)	(B)
(C)		

MESSAGE NO. 1	MESSAGE NO. 2
EB I-40 CLOSED AHEAD	DETOUR FOLLOW NB I-85

CHANGEABLE MESSAGE SIGN

①

MESSAGE NO. 1	MESSAGE NO. 2
EB I-40 CLOSED AHEAD	DETOUR FOLLOW NB I-85

CHANGEABLE MESSAGE SIGN

②

MESSAGE NO. 1	MESSAGE NO. 2
EB I-40 DETOUR	USE NEXT EXIT

CHANGEABLE MESSAGE SIGN

③

CMS LOCATIONS & MESSAGES
SUBJECT TO APPROVAL BY N.C.D.O.T.

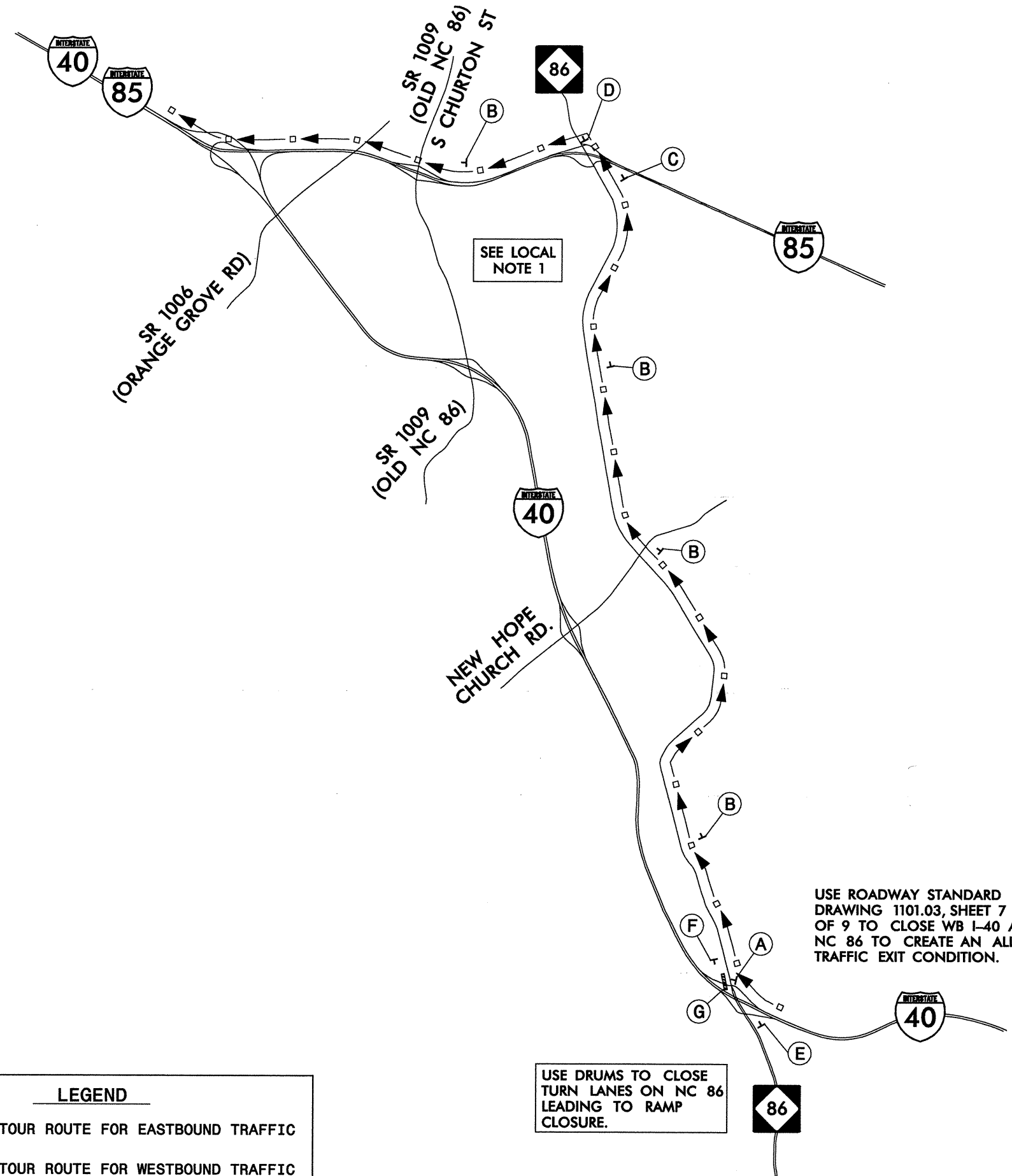
LEGEND	
→	DETOUR ROUTE FOR EASTBOUND TRAFFIC
←	DETOUR ROUTE FOR WESTBOUND TRAFFIC

APPROVED: <i>[Signature]</i> DATE: 11-23-09	OFFSITE DETOUR FOR I-40 CLOSURE BETWEEN I-85 & OLD NC 86	
	SCALE: NONE	
	DATE: NOV 09	
	DWG. BY: YTM	
	DESIGN BY: GEP	
REVIEWED BY: MTR	REVISIONS	

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WB I-40 CLOSED BETWEEN I-85 AND OLD NC 86

PROJ. REFERENCE NO. I-4716	SHEET NO. TCP-7
KO & ASSOCIATES, P.C. Consulting Engineers A Florence & Hutcheson, Inc. Company <small>5121 KINGDOM WAY, SUITE 100 RALEIGH, N.C. 27607 (919) 851-0666</small>	



DETOUR TO WEST 40 → M6-1 R 21" X 15"	DETOUR TO WEST 40 ↑ M6-3 21" X 15"	DETOUR TO WEST 40 ← M5-1 21" X 15"	DETOUR TO WEST 40 ← M6-1 L 21" X 15"
A	B	C	D

ROAD CLOSED W20-3 48" X 48" NEXT LEFT SP-4L 42" X 12"	ROAD CLOSED W20-3 48" X 48" NEXT RIGHT SP-4R 42" X 12"
E	F

R11-2
48" X 30"

ROAD CLOSED
DETOUR

M4-10R
48" X 18"

TYPE III BARRICADE

G

SEE LOCAL NOTE 1

USE ROADWAY STANDARD DRAWING 1101.03, SHEET 7 OF 9 TO CLOSE WB I-40 AT NC 86 TO CREATE AN ALL TRAFFIC EXIT CONDITION.

USE DRUMS TO CLOSE TURN LANES ON NC 86 LEADING TO RAMP CLOSURE.

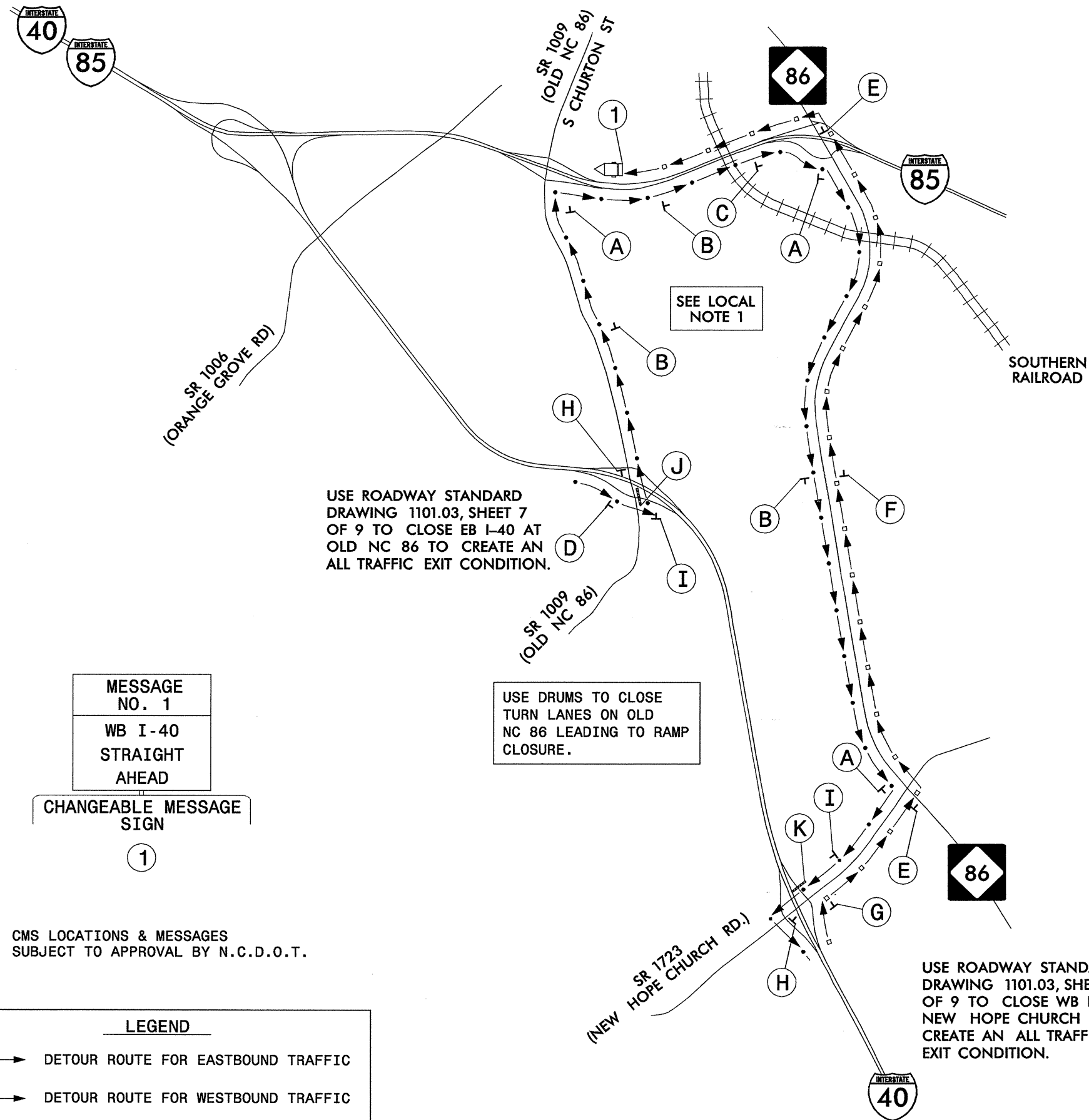
LEGEND	
→	DETOUR ROUTE FOR EASTBOUND TRAFFIC
◻→	DETOUR ROUTE FOR WESTBOUND TRAFFIC

APPROVED: <i>Michael T. Kieper</i> DATE: 11-23-09	OFFSITE DETOUR FOR I-40 CLOSURE BETWEEN NC 86 & US 15/501		
SEAL 	SCALE: NONE		
	DATE: NOV 09		REVISIONS
	DWG. BY: YTM		
	DESIGN BY: GEP		
REVIEWED BY: MTR			

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I-40 CLOSED BETWEEN OLD NC 86 AND NEW HOPE CHURCH RD

PROJ. REFERENCE NO.	SHEET NO.
I-4716	TCP-8
KO & ASSOCIATES, P.C. Consulting Engineers A Florence & Hutcheson, Inc. Company 5121 KINGDOM WAY, SUITE 100 RALEIGH, N.C. 27607 (919) 851-0905	



USE ROADWAY STANDARD DRAWING 1101.03, SHEET 7 OF 9 TO CLOSE EB I-40 AT OLD NC 86 TO CREATE AN ALL TRAFFIC EXIT CONDITION.

USE DRUMS TO CLOSE TURN LANES ON OLD NC 86 LEADING TO RAMP CLOSURE.

USE ROADWAY STANDARD DRAWING 1101.03, SHEET 7 OF 9 TO CLOSE WB I-40 AT NEW HOPE CHURCH RD TO CREATE AN ALL TRAFFIC EXIT CONDITION.

MESSAGE NO. 1
WB I-40
STRAIGHT AHEAD

CHANGEABLE MESSAGE SIGN

CMS LOCATIONS & MESSAGES
SUBJECT TO APPROVAL BY N.C.D.O.T.

LEGEND

- DETOUR ROUTE FOR EASTBOUND TRAFFIC
- ◻→ DETOUR ROUTE FOR WESTBOUND TRAFFIC

DETOUR	DETOUR	DETOUR	DETOUR
TO	TO	TO	TO
EAST	EAST	EAST	EAST
→	↑	↗	←
M6-1 R 21" X 15"	M6-3 21" X 15"	M6-2 21" X 15"	M6-1 L 21" X 15"
A	B	C	D

DETOUR	DETOUR	DETOUR
TO	TO	TO
WEST	WEST	WEST
←	↑	→
M6-1 L 21" X 15"	M6-3 21" X 15"	M6-1 R 21" X 15"
E	F	G

W20-3 48" X 48"	W20-3 48" X 48"
SP-4L 42" X 12"	SP-4R 42" X 12"
H	I

R11-2 48" X 30"	R11-2 48" X 30"
M4-10L 48" X 18"	M4-10R 48" X 18"
J	K

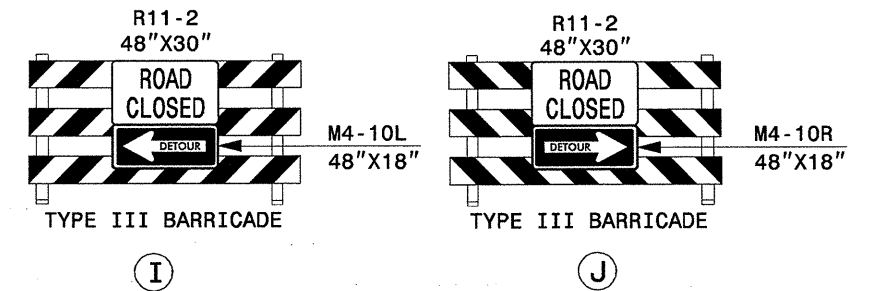
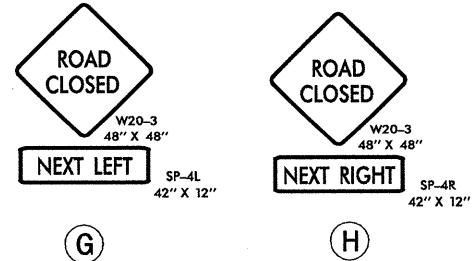
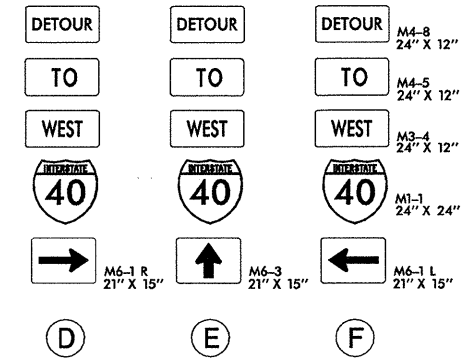
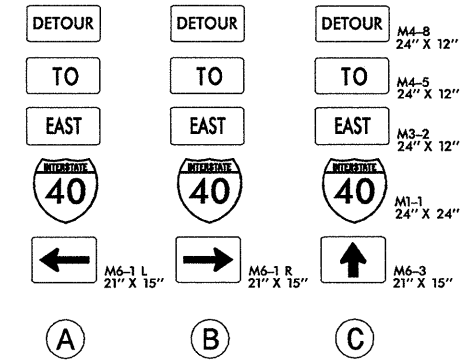
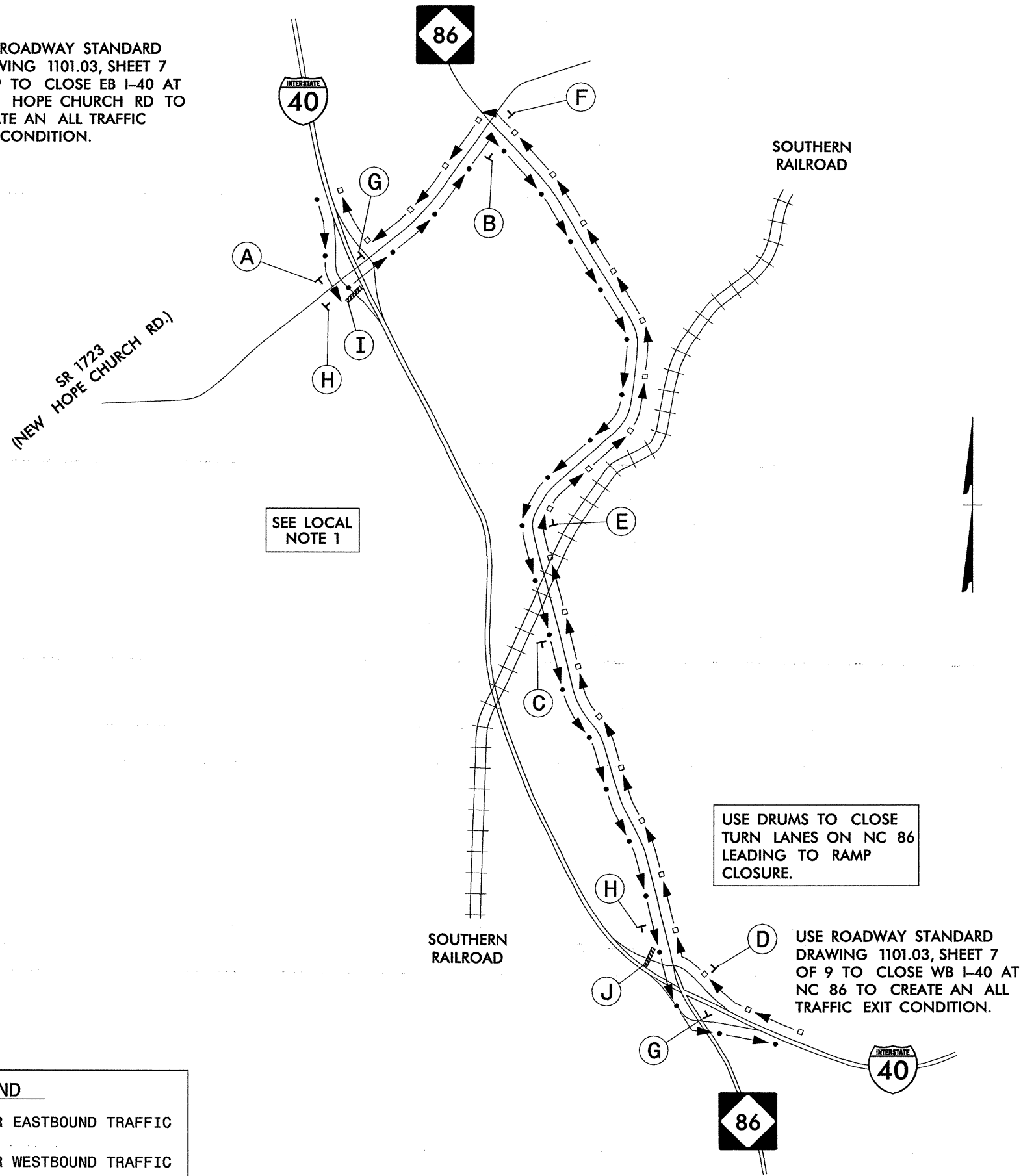
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SEAL		SCALE: NONE	REVISIONS
		DATE: NOV 09	
		DWG. BY: YTM	
		DESIGN BY: GEP	
		REVIEWED BY: MTR	

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I-40 CLOSED BETWEEN NEW HOPE CHURCH RD & NC 86

PROJ. REFERENCE NO.	SHEET NO.
I-4716	TCP-9
KO & ASSOCIATES, P.C. Consulting Engineers A Florence & Hutcheson, Inc. Company <small>5121 KINGDOM WAY, SUITE 100 RALEIGH, N.C. 27607 (919) 851-6066</small>	

USE ROADWAY STANDARD DRAWING 1101.03, SHEET 7 OF 9 TO CLOSE EB I-40 AT NEW HOPE CHURCH RD TO CREATE AN ALL TRAFFIC EXIT CONDITION.



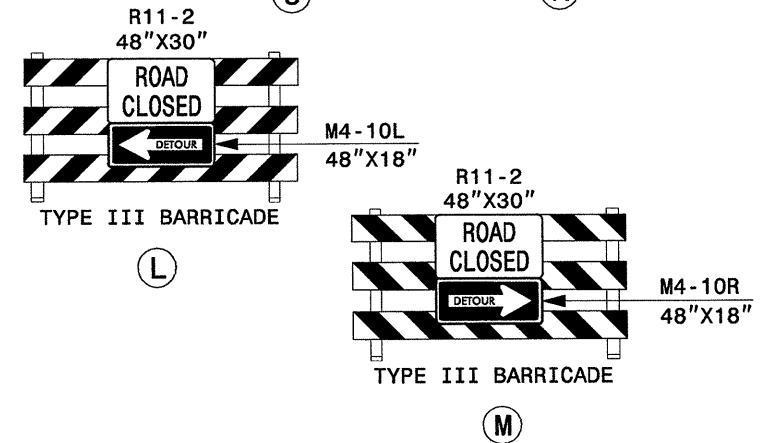
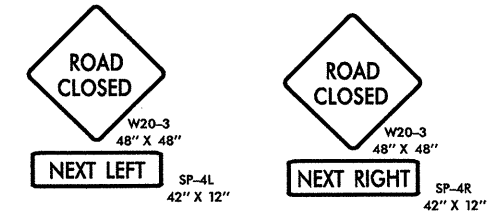
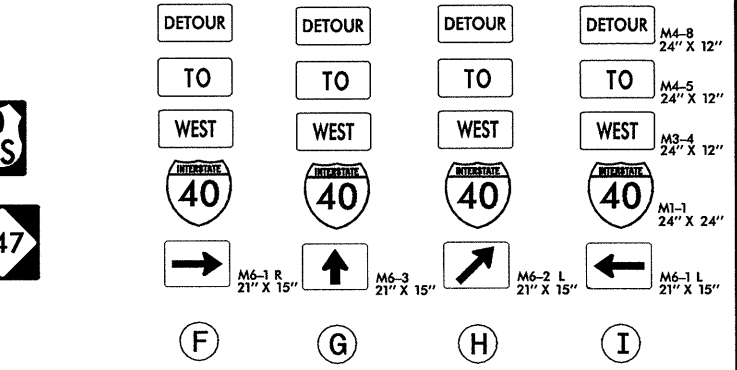
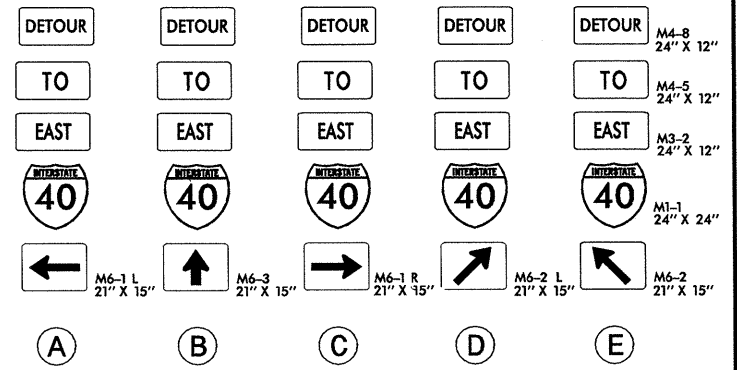
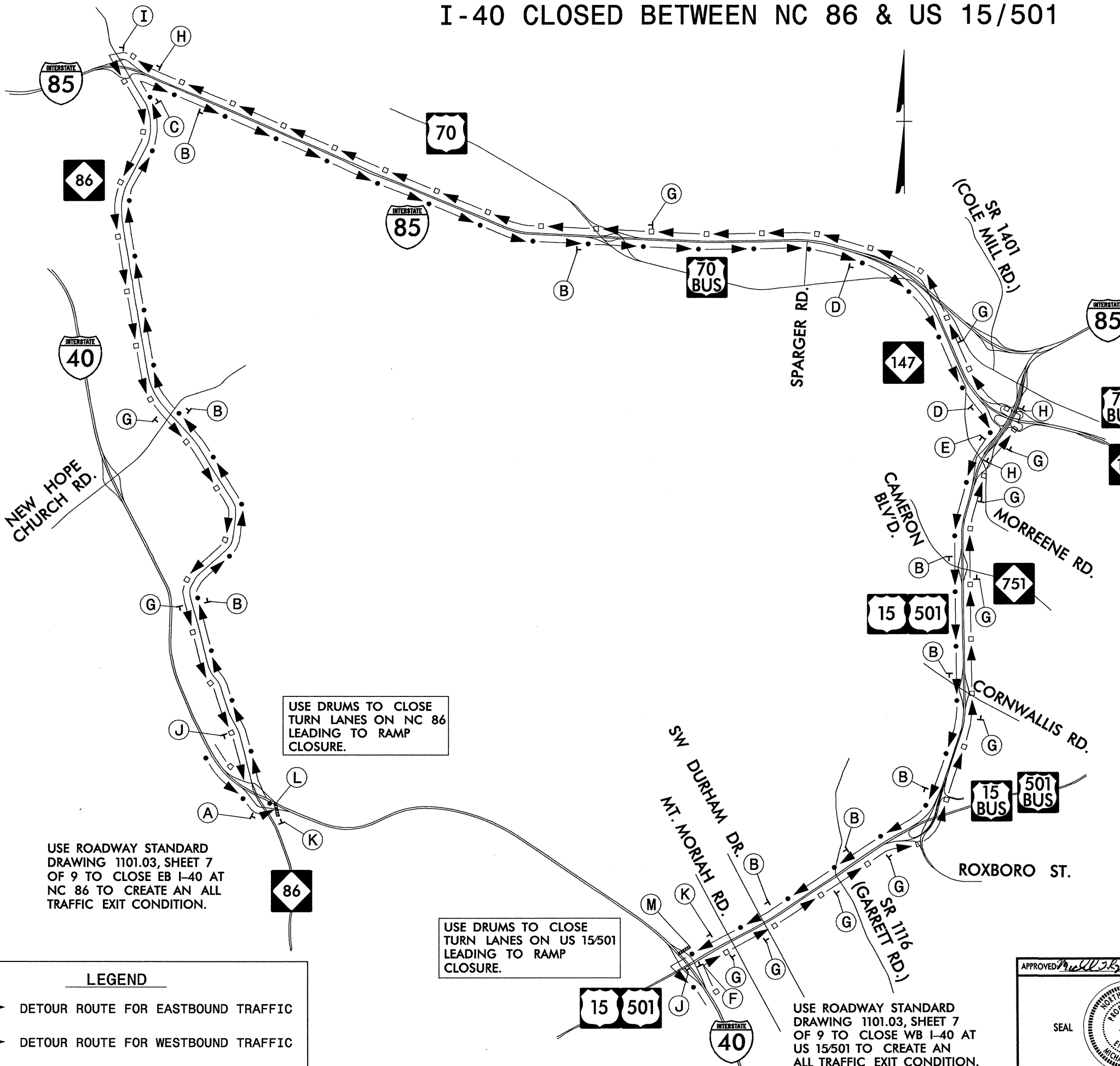
LEGEND	
• →	DETOUR ROUTE FOR EASTBOUND TRAFFIC
◻ →	DETOUR ROUTE FOR WESTBOUND TRAFFIC

APPROVED: <i>Michael T. Rzepka</i> DATE: 11-23-09	OFFSITE DETOUR FOR I-40 CLOSURE BETWEEN NEW HOPE CHURCH RD & NC 86	
	SCALE: NONE	
	DATE: NOV 09	
	DWG. BY: YTM	
	DESIGN BY: GEP	
REVIEWED BY: MTR	REVISIONS	

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I-40 CLOSED BETWEEN NC 86 & US 15/501

PROJ. REFERENCE NO. I-4716 SHEET NO. TCP-10
KO & ASSOCIATES, P.C.
 Consulting Engineers
 A Florence & Hutcheson, Inc. Company
 5121 KINGDOM WAY, SUITE 100 RALEIGH, N.C. 27607
 (919) 851-0066



USE DRUMS TO CLOSE TURN LANES ON NC 86 LEADING TO RAMP CLOSURE.

USE ROADWAY STANDARD DRAWING 1101.03, SHEET 7 OF 9 TO CLOSE EB I-40 AT NC 86 TO CREATE AN ALL TRAFFIC EXIT CONDITION.

USE DRUMS TO CLOSE TURN LANES ON US 15/501 LEADING TO RAMP CLOSURE.

USE ROADWAY STANDARD DRAWING 1101.03, SHEET 7 OF 9 TO CLOSE WB I-40 AT US 15/501 TO CREATE AN ALL TRAFFIC EXIT CONDITION.

LEGEND
 ●→ DETOUR ROUTE FOR EASTBOUND TRAFFIC
 ◻→ DETOUR ROUTE FOR WESTBOUND TRAFFIC

APPROVED: *Michael J. Rieber* DATE: 11-23-09
 SEAL
 NORTH CAROLINA PROFESSIONAL ENGINEER
 SEAL 15876
 MICHAEL J. RIEBER

OFFSITE DETOUR FOR I-40 CLOSURE BETWEEN NC 86 & US 15/501

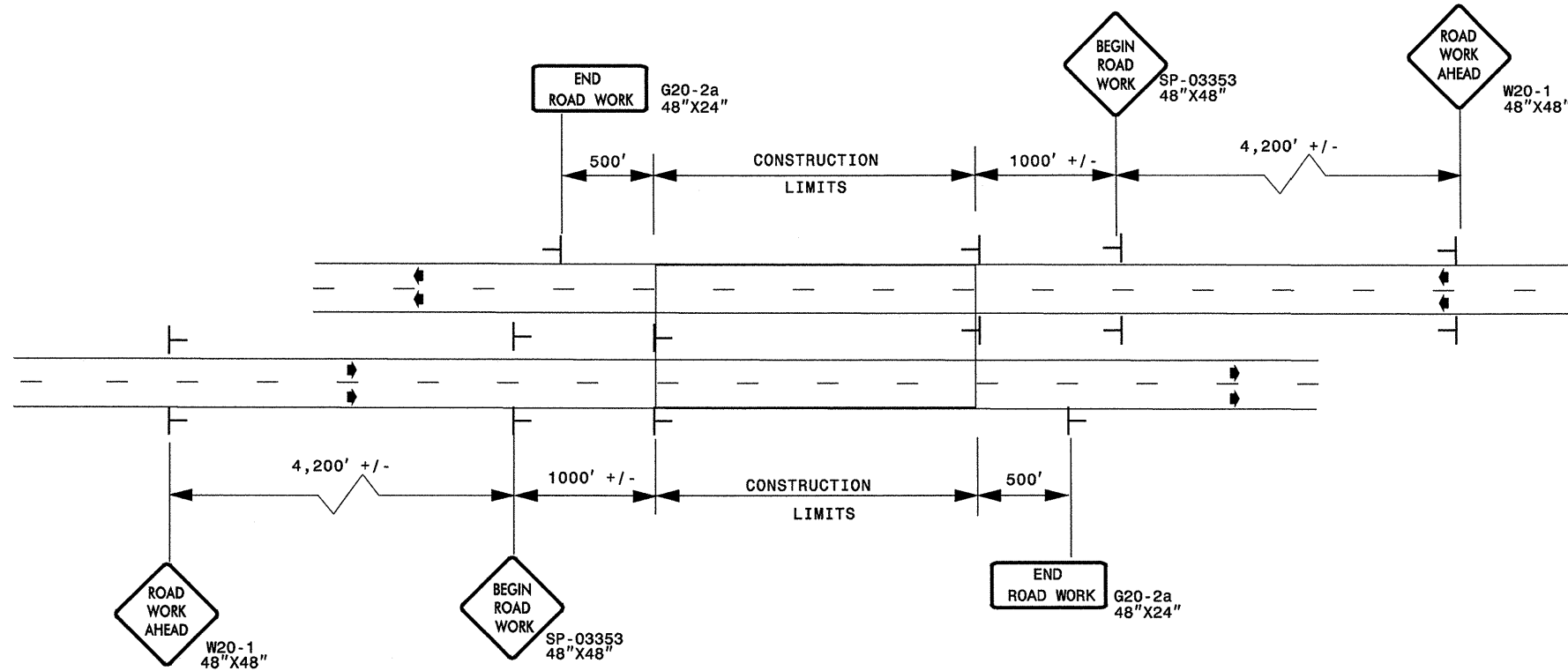
SCALE: NONE		REVISIONS
DATE: NOV 09		
DWG. BY: YTM		
DESIGN BY: GEP		
REVIEWED BY: MTR		

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ADVANCED WORK ZONE WARNING SIGNING FOR FREEWAYS (4 LANES OR GREATER)

PROJ. REFERENCE NO.	SHEET NO.
I-4716	TCP-11
KO & ASSOCIATES, P.C. Consulting Engineers A Florence & Hutcheson, Inc. Company <small>5121 KINGDOM WAY, SUITE 100 RALEIGH, N.C. 27607 (919) 851-0956</small>	

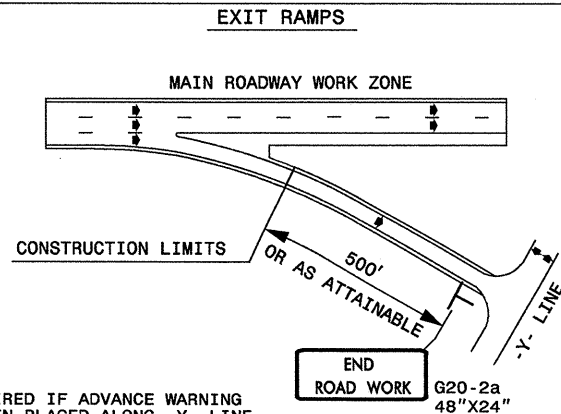
DETAIL A



LEGEND	
	STATIONARY SIGN
▶	DIRECTION OF TRAFFIC FLOW

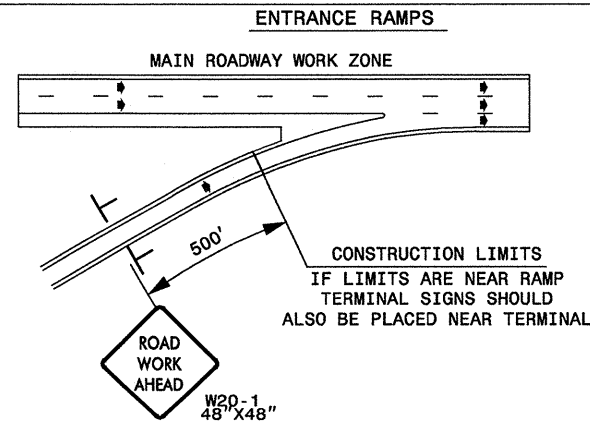
* USE THE "\$250 SPEEDING PENALTY" SIGN, SPEED LIMIT SIGN, AND ORANGE PANEL; ONLY WHEN A "\$250 SPEEDING PENALTY" ORDINANCE HAS BEEN ISSUED BY THE REGIONAL TRAFFIC ENGINEER.

DETAIL B

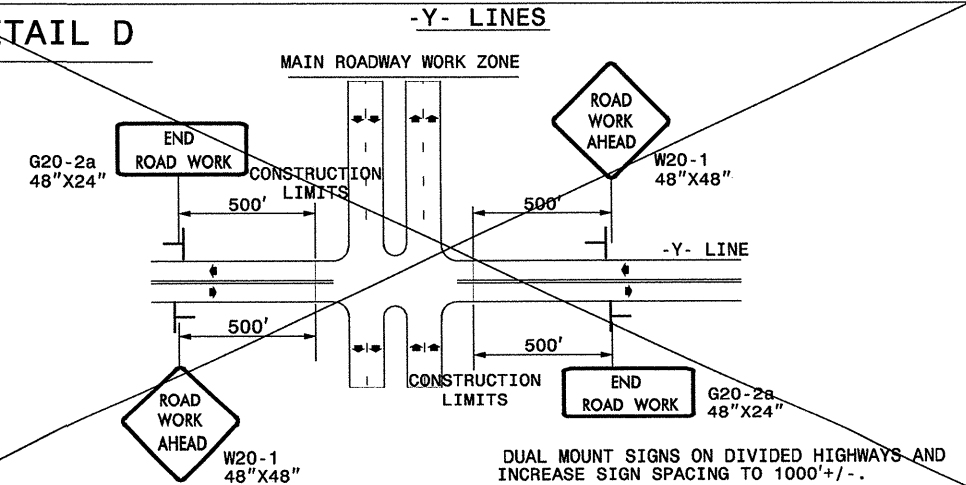


NOTE: SIGN NOT REQUIRED IF ADVANCE WARNING SIGNS HAVE BEEN PLACED ALONG -Y- LINE THAT RAMP INTERSECTS. IF CONSTRUCTION LIMITS ARE AT END OF RAMP, PLACE SIGN AT END OF RAMP.

DETAIL C



DETAIL D



GENERAL NOTES

- USE FLUORESCENT ORANGE SHEETING (TYPE VII OR HIGHER) ON ALL ADVANCED WORK ZONE SIGNS.
- DO NOT INSTALL ADVANCE WARNING SIGNS MORE THAN 3 DAYS PRIOR TO BEGINNING OF WORK.
- SIGNS SHOWN ARE REQUIRED FOR WORK ZONES THAT WILL REMAIN IN EFFECT OVERNIGHT. FOR SHORT-TERM DAILY MAINTENANCE TYPE OPERATIONS, THIS SIGNING APPLICATION IS OPTIONAL; MAY USE ONLY APPLICABLE ROADWAY STANDARD DRAWINGS INSTEAD. HOWEVER, IF THIS SIGNING APPLICATION IS USED, SIGNS MAY BE PORTABLE MOUNTED.
- ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE, FIELD ADJUST AS NECESSARY OR AS DIRECTED.
- USE 3LB STEEL U-CHANNEL POST OR 4" X 4" WOOD POST FOR ALL WORK ZONE SIGNS. 3LB STEEL U-CHANNEL POSTS MUST MEET THE REQUIREMENTS OF STANDARD SPECIFICATION SECTION 1094-1(B), MAY BE GALVANIZED STEEL, OR MAY BE PAINTED GREEN BY THE POST MANUFACTURER. SQUARE STEEL TUBING POSTS HAVING EQUIVALENT STRENGTH OF THE 3 LB STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 3LB STEEL U-CHANNEL AND SQUARE STEEL TUBING POSTS WITH SIGNS WILL BE MADE ACCORDING TO STANDARD SPECIFICATION "WORK ZONE SIGNS" SECTION 1110.
- WHEN NECESSARY, USE SPLICING IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1110.01. REMOVE ENTIRE POST WHEN REMOVING SIGNS WITH SPLICED POSTS.
- DO NOT BACK BRACE SIGN SUPPORTS.

APPROVED: DATE: 11-23-04

ADVANCED WORK ZONE WARNING SIGNS FOR FREEWAYS (4 LANES OR GREATER)	
SCALE: NONE	REVISIONS
DATE: 8/03	03/04
DWG. BY: JI	
DESIGN BY: JI	
REVIEWED BY: MTR	

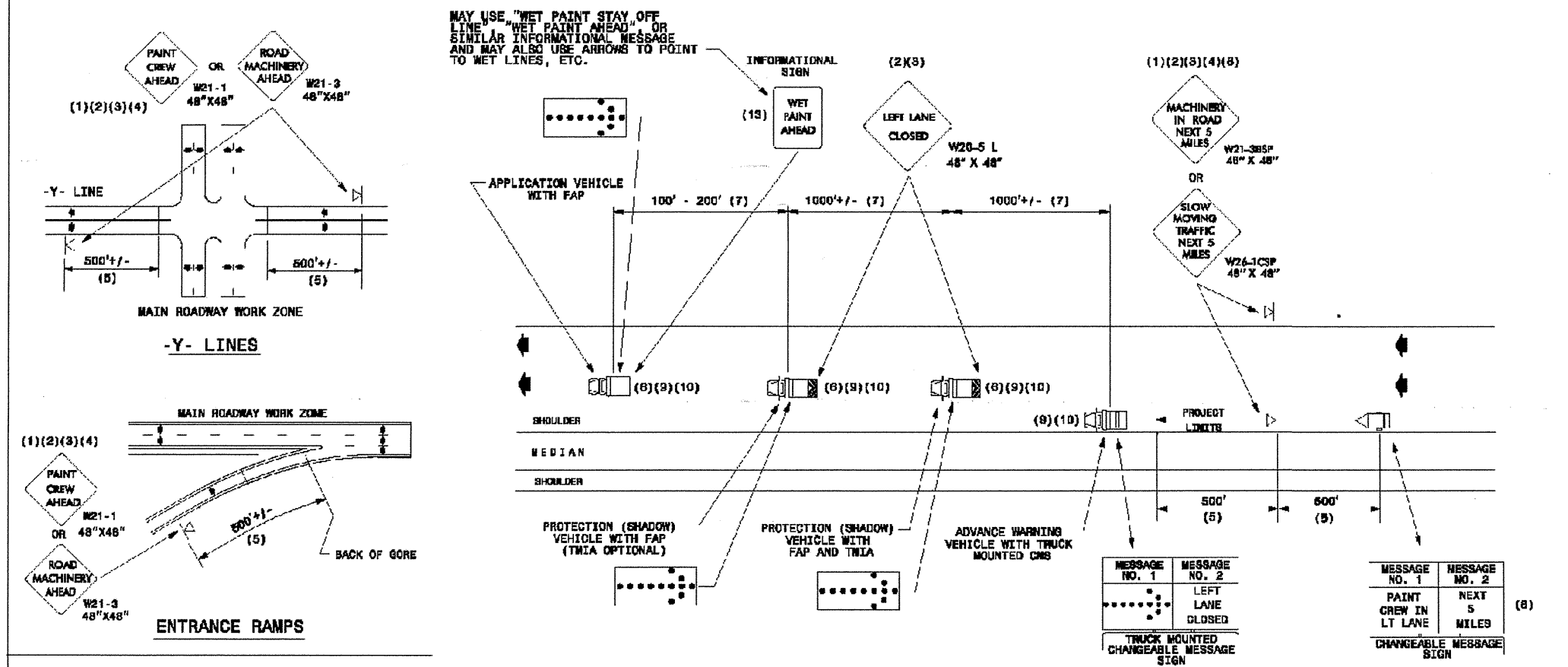
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GENERAL NOTES

- (1) THE FOLLOWING OPTIONS MAY BE USED FOR ADVANCE WARNING SIGNS:
 - A. TRUCK MOUNTED SIGNS
 - B. TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS)
 - C. GROUND MOUNTED ADVANCE WARNING SIGNS (MUST CIRCLE TO PICK UP SIGNS)
 - D. GROUND MOUNTED CHANGEABLE MESSAGE SIGN (CMS) (MUST USE CIRCLE TO PICK UP SIGNS)
- (2) ALL ADVANCE WARNING SIGNS MUST BE 48" X 48" WITH FLUORESCENT ORANGE TYPE VII, VIII OR IX SHEETING. IF SPACE LIMITATIONS ON SHOULDER PROHIBIT A 48" X 48" SIGN, A SMALLER SIGN CAN BE USED WITH APPROVAL FROM ENGINEER.
- (3) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S SIGHT OF THE FLASHING ARROW PANEL AND/OR LIGHTBAR.
- (4) GROUND MOUNTED ADVANCED WARNING SIGNS SHOULD BE MOUNTED A MINIMUM OF FIVE (5) FEET FROM THE GROUND TO BOTTOM OF SIGN.
- (5) SIGN SPACING SHOULD BE ADJUSTED FOR HORIZONTAL AND VERTICAL CURVES, ETC. TO IMPROVE SIGHT DISTANCES.
- (6) ADDITIONAL VEHICLES SHOULD BE USED IN WORK CARAVAN TO FACILITATE DRYING OF PAVEMENT MARKING MATERIAL (TMIA'S ARE OPTIONAL ON THESE ADDITIONAL VEHICLES). HOWEVER, THE FIRST VEHICLE MOTORISTS SEE IN THE TRAVEL LANE SHALL HAVE A TMIA.
- (7) ADJUST DISTANCE AS NEEDED TO PREVENT MOTORISTS FROM ENTERING SPACE BETWEEN THE APPLICATION AND PROTECTION VEHICLE. DISTANCE CAN BE LENGTHENED TO ACCOMMODATE SIGHT DISTANCE NEEDS.
- (8) ROUND UP MILEAGE TO NEXT WHOLE MILE. WORK ZONE SHOULD NOT EXCEED FIVE (5) MILES IN LENGTH.
- (9) RADIO COMMUNICATION BETWEEN VEHICLES IS REQUIRED.
- (10) USE OF A LIGHT BAR ON ALL VEHICLES IS PREFERRED, BUT A ROTATING BEACON MAY BE USED INSTEAD.
- (11) IF WORK IS PERFORMED AT NIGHT, THE WORK AREA MUST BE ILLUMINATED WITH MACHINE AND/OR TOWER LIGHTS AS APPROVED BY THE ENGINEER.
- (12) ALL TRAFFIC CONTROL DEVICES WILL BE CONSIDERED INCIDENTAL TO THE PAY ITEMS FOR PAVEMENT MARKING AND MARKERS.
- (13) INFORMATIONAL SIGNS SHOULD BE ACTIVITY SPECIFIC, I.E. "PAINT CREW IN ROAD" SIGNS MAY BE RECTANGULAR OR DIAMOND SHAPE. SIGN SIZE SHOULD BE BASED ON THE MOTORIST ABILITY TO RECOGNIZE SIGN WHEN TRAVELING FIVE (5) MILES ABOVE POSTED SPEED LIMIT.

LEGEND

- PORTABLE SIGN. SIGNS MUST BE NCHRP-350 AND NCDOT APPROVED.
- DIRECTION OF TRAFFIC FLOW
- APPLICATION VEHICLE WITH LIGHT BAR
- PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND LIGHT BAR (SEE ROADWAY STANDARD NO. 1185.01). TMIA MUST BE NCHRP-350 TEST LEVEL 3 (80+MPH) APPROVED.
- ADVANCE WARNING VEHICLE WITH TRUCK MOUNTED CHANGEABLE MESSAGE SIGN (CMS) AND LIGHT BAR. MESSAGE SIGN LETTER HEIGHT SHOULD BE A MINIMUM OF 10 INCHES.
- FLASHING ARROW PANEL, TYPE "B" (80"X30" MIN.), APPROPRIATE DIRECTION INDICATED
- CHANGEABLE MESSAGE SIGN



MOVING OPERATION CARAVAN
 (OPERATIONS TRAVELING 3 MPH OR FASTER)
 PLACING PAVEMENT MARKING OR MARKERS
 ON INTERSTATE ROADWAYS

DRAWING NUMBER 8
 IMPLEMENTATION DATE: 11/03/04
 REVISED:

PAT TRAFFIC - 4716 rev plans 0912314716 Tcp_tcp_moving_caravan.dgn
 11/20/2009 2:11:37 PM

APPROVED: *Michael T. Tepa* DATE: 11-23-09

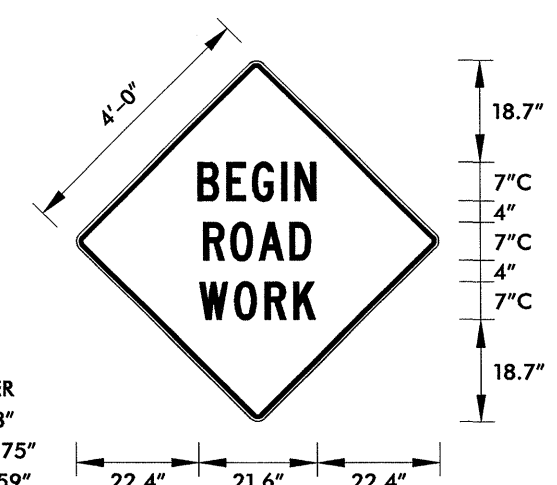
SEAL

MOVING OPERATION CARAVAN

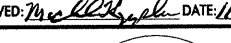
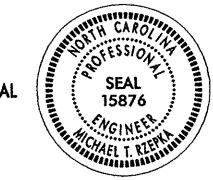

SCALE:	NONE
DATE:	NOV 09
DWG. BY:	YTM
DESIGN BY:	GEP
REVIEWED BY:	MTR

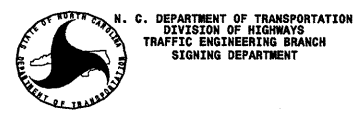
REVISIONS	

SP 03353

<p>SIGN NUMBER: SP-03353 BACKG COLOR: Fluorescent Orange TYPE: A COPY COLOR: Black QUANTITY: 1</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>SYMBOL</th> <th>X</th> <th>Y</th> <th>WID</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table> <p>SIGN WIDTH: 4'-0" HEIGHT: 4'-0" TOTAL AREA: 16.0 Sq.Ft.</p> <p>BORDER TYPE: FLUSH RECESS: 0.59" WIDTH: 0.75" RADII: 1.38"</p> <p>NO. Z BARS: N/A MAT'L: LENGTH: N/A</p> <p>USE NOTES: 2, 4 1. Legend and border shall be direct applied Type VII reflective sheeting. 2. Legend and border shall be direct applied non-reflective sheeting. 3. Shields shall be Type VII reflective sheeting on 0.032" (0.8mm) aluminum and demountable. 4. Background shall be Type VII reflective sheeting. 5. Background shall be Type I reflective sheeting. 6. Center arrow(s) vertically on sign. 7. Bottom panel shall be yellow Type III sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:</p>	SYMBOL	X	Y	WID																																									<p>DESIGN BY: CL DOWNEY CHECKED BY: CHECKED STD #: W20-1 PROJECT ID: ALL PROJECTS DIV: DIV DATE: Aug 20, 2003</p> <div style="text-align: center;">  </div> <p style="text-align: center;">BORDER R=1.38" TH=0.75" IN=0.59"</p>																																																																								
SYMBOL	X	Y	WID																																																																																																																		
<p>LETTER POSITIONS</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="10" style="text-align: center;">Letter spacings are to start of next letter</th> <th style="text-align: center;">Series/Size Text Length</th> </tr> <tr> <th>B</th> <th>E</th> <th>G</th> <th>I</th> <th>N</th> <th colspan="5"></th> <th></th> </tr> </thead> <tbody> <tr> <td>22.4</td> <td>5.3</td> <td>4.6</td> <td>5.4</td> <td>2.5</td> <td>3.8</td> <td>22.4</td> <td></td> <td></td> <td></td> <td></td> <td>C7</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>21.6</td> </tr> <tr> <th>R</th> <th>O</th> <th>A</th> <th>D</th> <th colspan="6"></th> <th></th> </tr> <tr> <td>23.4</td> <td>5</td> <td>5.2</td> <td>5.6</td> <td>3.8</td> <td>23.4</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>C7</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>19.6</td> </tr> <tr> <th>W</th> <th>O</th> <th>R</th> <th>K</th> <th colspan="6"></th> <th></th> </tr> <tr> <td>22.6</td> <td>6.4</td> <td>5.6</td> <td>5.2</td> <td>4</td> <td>22.6</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>C7</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>21.2</td> </tr> </tbody> </table> <p style="font-size: small;">Spacing Factor is 1 unless specified otherwise</p> <p style="text-align: center; font-size: x-small;">SPECISHAK</p>		Letter spacings are to start of next letter										Series/Size Text Length	B	E	G	I	N							22.4	5.3	4.6	5.4	2.5	3.8	22.4					C7												21.6	R	O	A	D								23.4	5	5.2	5.6	3.8	23.4						C7												19.6	W	O	R	K								22.6	6.4	5.6	5.2	4	22.6						C7												21.2
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PAT:RAFFICY-4716\evp\pms_09\123\4716_tc_top_s1gn_dcs1gn.sgn 11/20/2009 2:53:33 PM

APPROVED:  DATE: 11-23-09		SIGN DESIGN	
	SCALE: NONE		REVISIONS
	DATE: NOV 09		
	DWG. BY: YTM		
	DESIGN BY: GEP		
REVIEWED BY: MTR			



N. C. DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 TRAFFIC ENGINEERING BRANCH
 SIGNING DEPARTMENT

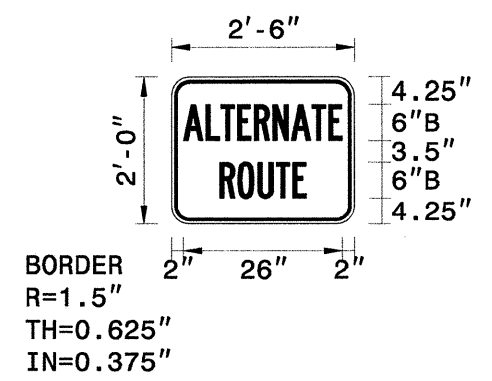
SIGN NUMBER: ALT. ROUTE
TYPE: D
QUANTITY: 90
SIGN WIDTH: 2'-6"
HEIGHT: 2'-0"
TOTAL AREA: 5.0 Sq.Ft.
BORDER TYPE: RECESSED
RECESS: 0.375"
WIDTH: 0.625"
RADII: 1.5"
NO. Z BARS:
LENGTH:

BACKG COLOR: White
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

MAT'L: 0.063" (1.6 mm) ALUMINUM

DESIGN BY: KO
PROJECT ID: I-4716
CHECKED BY: KO
DIV: 5
STD #: DATE:



- USE NOTES: 1 AND 4**
- Legend and border shall be direct applied Type III reflective sheeting.
 - Legend and border shall be direct applied non-reflective sheeting.
 - Shields shall be Type III reflective sheeting on 0.032" (0.8mm) aluminum and demountable.
 - Background shall be Type III reflective sheeting.
 - Background shall be Type I reflective sheeting.
 - Center arrow(s) vertically on sign.
 - Bottom panel shall be yellow Type III sheeting. Legend shall be direct applied black non-reflective sheeting. Yellow panel is:

LETTER POSITIONS

Letter spacings are to start of next letter

Letter Spacing Data											Series/Size
	A	L	T	E	R	N	A	T	E		Text Length
2	3.7	2.5	2.7	2.8	3.1	3	3.4	2.7	2.3	2	B 2000
											26
	R	O	U	T	E						B 2000
7.9	3	3.3	3	2.7	2.3	7.9					14.3

Spacing Factor is 0.5

FILENAME: NEW

NORTH CAROLINA D.O.T. SIGN DETAIL

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 11/20/2009 2:44:26 PM

APPROVED *[Signature]* DATE 11-23-09

SEAL

SIGN DESIGN

SCALE: NONE		REVISIONS
DATE: NOV 09		
DWG. BY: YTM		
DESIGN BY: GEP		
REVIEWED BY: MTR		

CADD FILE