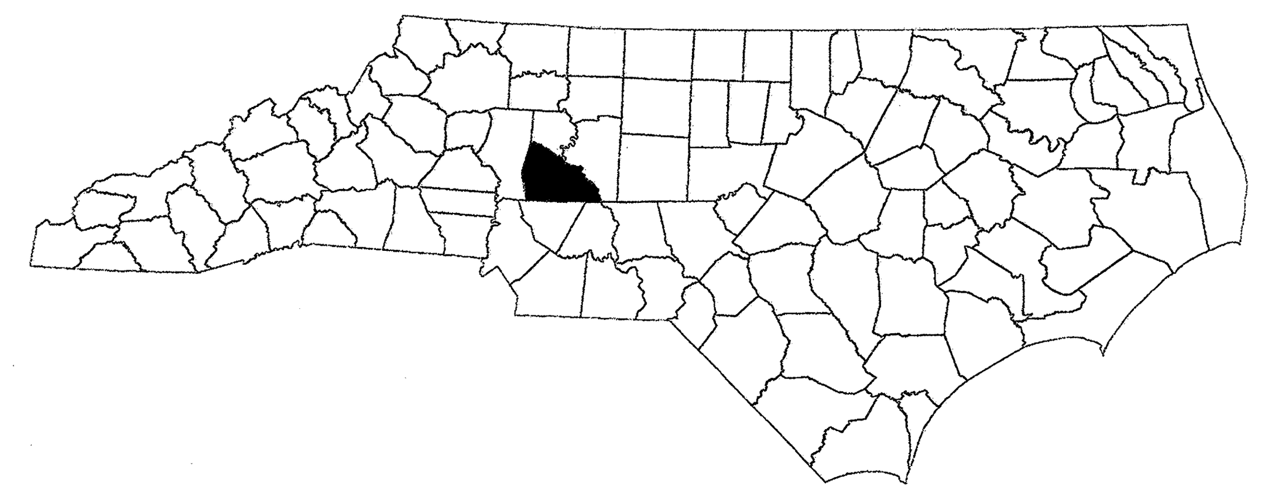
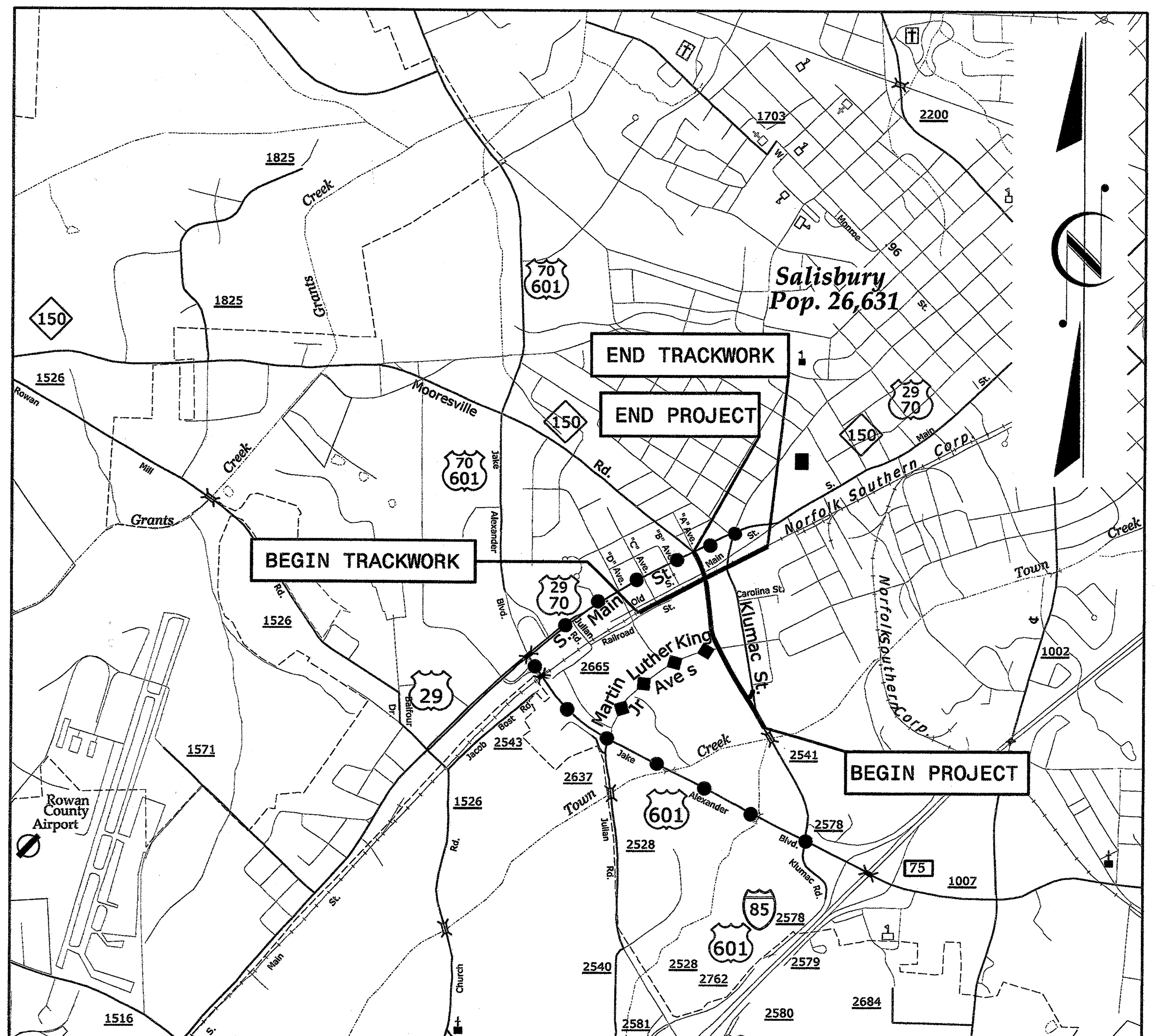
DCN 0302DEL P12

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

TRANSPORTATION MANAGEMENT PLAN

ROWAN COUNTY



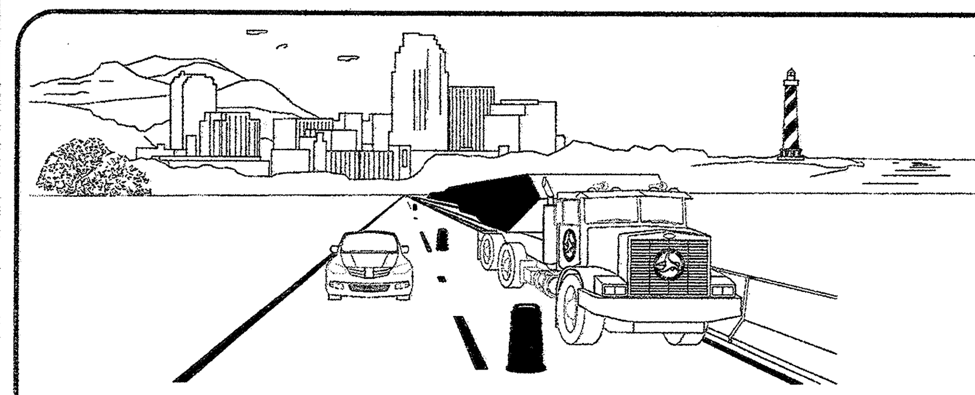


VICINITY MAP

●—●—● OFFICIAL DETOUR ROUTE ■—■—■ LOCAL TRAFFIC DETOUR

X

PROPOSED SR 2541 (KLUMAC ROAD) GRADE SEPARATION WITH THE NORTH CAROLINA RAILROAD/NORFOLK SOUTHERN CORPORATION.



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

PLAN PREPARED FOR N.C.D.O.T. BY:

TGS ENGINEERS
TGS ENGINEERS
SUITE 141
975 WALNUT STREET
CARY, NC 27511
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CORP. LICENSE NO.: C-0275

JIMMY L. TERRY, PE — *PROJECT ENGINEER*
SANDRA G. MELVIN — *DESIGN TECHNICIAN*

INDEX OF SHEETS

*APPROVED:*______________
*DATE:*______________

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY, JR. 7/17/12

SHEET NO. TMP-1

TIP PROJECT: U-3459

$$$$$$SYSTIME$$$$$
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$$$$USERNAME$$$$

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PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-1A

0302DEL P12

DGN

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 JULY 2012 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.01	WORK ZONE WARNING SIGNS
1101.02	TEMPORARY LANE CLOSURES
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUMS
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY-DRUM
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.07	PAVEMENT MARKINGS - PEDESTRIAN CROSSWALKS
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
1205.12	PAVEMENT MARKINGS - BRIDGES
1250.01	PAVEMENT MARKER SPACING
1251.01	RAISED PAVEMENT MARKERS - (TEMPORARY & PERMANENT)
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION
1264.01	OBJECT MARKERS
1264.02	PLACEMENT OF OBJECT MARKERS

$$$$$$SYSTIME$$$$
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$$$$$$SYSTIME$$$$
$$$$USERNAME$$$$

LEGEND

GENERAL

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

TRAFFIC CONTROL DEVICES

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

TEMPORARY SIGNING

- PORTABLE SIGN
- STATIONARY SIGN
- STATIONARY OR PORTABLE SIGN

SIGNALS

EXISTING PROPOSED TEMPORARY

PAVEMENT MARKINGS

- EXISTING LINES
- TEMPORARY LINES

PAVEMENT MARKERS

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

PAVEMENT MARKING SYMBOLS

PAVEMENT MARKING SYMBOLS

TEMPORARY PAVEMENT MARKING

SYMBOL	DESCRIPTION
	AVEMENT MARKINGS
	PAINT(24")
P4	WHITE STOPBAR
P5	WHITE CROSSWALK LINE
	PAINT(4")
PA	WHITE EDGELINE
PD	2 FT. WHITE MINISKIP
PE	WHITE SOLID LANE LINE
PI	YELLOW DOUBLE CENTER
	PAINT(8")
PV	YELLOW DIAGONAL
	PAINTMARKING SYMBOLS
QA	LEFT TURN ARROW
QB	RIGHT TURN ARROW

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JAMES L. TERRY JR.

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

ROADWAY STANDARD DRAWINGS & LEGEND

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-1B

PROJECT NOTES

0302DEL_P12

DGN

MANAGEMENT STRATEGIES

THE PROPOSED REALIGNED KLUMAC ROAD AND GRADE SEPARATION WITH NORTH CAROLINA RAILROAD/ NORFOLK SOUTHERN CORPORATION WILL BE CONSTRUCTED USING A COMBINATION OF TEMPORARY LANE CLOSURES UTILIZING FLAGGERS AS NEEDED, TEMPORARY PORTABLE CONCRETE BARRIES, TEMPORARY SHORING, AND AN OFFSITE DETOUR.

WHILE THE EXISTING KLUMAC ROAD IS CLOSED AT THE EXISTING RAILROAD CROSSING, KLUMAC ROAD TRAFFIC WILL BE MAINTAINED ON THE FOLLOWING OFFSITE DETOUR: FROM TO SOUTH MAIN STREET TO S JAKE ALEXANDER BLVD BACK TO KLUMAC ROAD.
LOCAL TRAFFIC IS PLACED ON S MARTIN LUTHER KING JR. AVE.

ALL TRACKWORK IS TO BE PERFORMED BY OTHERS.

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 DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME

US 29/70
S.MARTIN LUTHER KING JR. AVE

HOLIDAY

1. FOR ANY UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.

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

3. FOR EASTER, BETWEEN THE HOURS OF 4:00 P.M. THURSDAY AND 9:00 A.M. MONDAY.

4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY TO 9:00 A.M. TUESDAY.

5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 4:00 P.M. THE DAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE DAY AFTER INDEPENDENCE DAY.

   IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 4:00 P.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 9:00 A.M. THE TUESDAY AFTER INDEPENDENCE DAY.

6. FOR LABOR DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY AND 9:00 A.M. TUESDAY.

7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 4:00 P.M. TUESDAY TO 9:00 A.M. MONDAY.

8. FOR CHRISTMAS, BETWEEN THE HOURS OF 4:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

B) DO NOT PERFORM ANY WORK ON -Y2- (MAIN ST./US29/70) ON THE WEDNESDAY BEFORE THANKSGIVING DAY.

LANE AND SHOULDER CLOSURE REQUIREMENTS

C) 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.

D) 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.

E) 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.

F) 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.

G) 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

H) 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.

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

TRAFFIC PATTERN ALTERATIONS

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

SIGNING

K) 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.

L) 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.

M) 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.

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

TRAFFIC BARRIER

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

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

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

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

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

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

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

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

TRAFFIC CONTROL DEVICES

Q) 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.

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

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

ROAD NAME	MARKING	MARKER
KLUMAC RD	PAINT	NONE
S. MARTIN LUTHER KING JR. AVE	PAINT	NONE
S MAIN ST (US29/70)	PAINT	NONE

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.

W) ALL WHEELCHAIR RAMP LOCATIONS SHALL BE DERIVED FROM STATIONING SHOWN ON PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER IN COORDINATION WITH THE SIGNING AND DELINEATION UNIT.

X) 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.).

LOCAL NOTES

THE FOLLOWING LOCAL NOTES APPLY ONLY AT THE TIMES THEY ARE REFERENCE IN THE PLAN.

1) MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES USING INCIDENTAL STONE AND DRUMS TO DELINEATE THE TRAVELWAYS.
2) PROVIDE ACCESS TO THE DUKE POWER SUBSTATION LOCATED AT THE NORTHWEST CORNER OF A AVENUE AND OLD S MAIN STREET. ALSO MAINTAIN ACCESS TO THE DUKE POWER TRANSMISSION TOWER LOCATED SOUTH OF THE RAILROAD TRACK BETWEEN EXISTING AND PROPOSED KLUMAC RD.
3) PROVIDE ACCESS TO THE CONCRETE PLANT LOCATED TO THE SOUTH OF THE RAILROAD ALIGNMENT BETWEEN THE EXISTING ANS REALIGNED KLUMAC RD.
4) COORDINATE ALL WORK WITH THE DRIVESHAFT COMPANY DUE TO THEIR SENSIBILITY TO VIBRATIONS

$$$$$SYSTIME$$$$$
$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

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CORP. LICENSE NO.: C-0275

APPROVED:________________ DATE:________

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY, JR.

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

PROJECT NOTES

0302DEL_P12

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-2

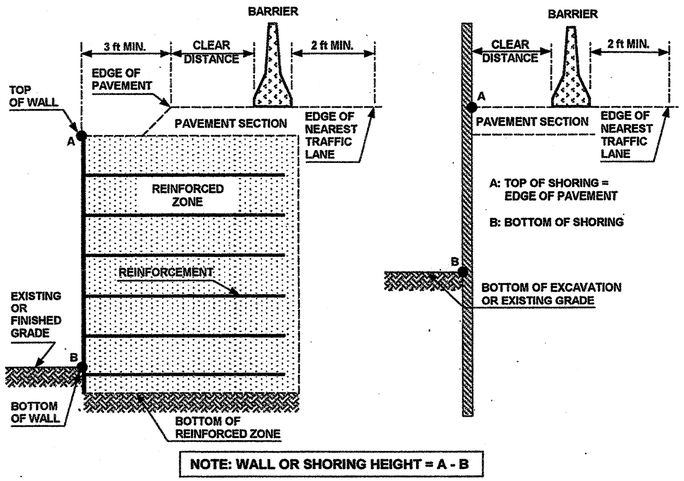

FIGURE A

NOTES

1- REFER TO THE TRAFFIC CONTROL PLANS FOR SHORING LOCATIONS AND SOIL PARAMETERS.

2- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR MORE INFORMATION ABOUT TEMPORARY SHORING, MEASUREMENT AND PAYMENT.

3- PROVIDE PORTABLE CONCRETE BARRIER TO PROTECT TEMPORARY SHORING IF SHORING IS LOCATED WITHIN THE CLEAR ZONE AS DEFINED IN 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 PCB, ANCHORED PCB OR AN OREGON BARRIER FROM THE TABLE SHOWN IN FIGURE B. FOR TRAFFIC LANES AND PORTABLE CONCRETE BARRIER LOCATED ABOVE AND BEHIND TEMPORARY SHORING, THE FOLLOWING ARE DEFINED AS:

CLEAR DISTANCE - HORIZONTAL DISTANCE FROM THE BACK FACE OF THE BARRIER TO THE EDGE OF PAVEMENT FOR TEMPORARY MSE WALL OR TO THE FACE OF NON-ANCHORED TEMPORARY SHORING AS SHOWN IN FIGURE A.

OFFSET - HORIZONTAL DISTANCE FROM THE FRONT FACE OF THE BARRIER TO CENTERLINE OF THE FURTHEST TRAFFIC LANE AS SHOWN IN FIGURE B FOR 3 TRAFFIC LANES.

5- AT THE CONTRACTOR'S OPTION OR IF THE MINIMUM REQUIRED CLEAR DISTANCE IS NOT AVAILABLE, SET AN UNANCHORED PCB AGAINST THE TRAFFIC SIDE OF THE SHORING AND DESIGN SHORING FOR TRAFFIC IMPACT OR USE THE "SURCHARGE CASE WITH TRAFFIC IMPACT" FOR THE STANDARD TEMPORARY SHORING. DO NOT PLACE BARRIER DIRECTLY ON ANY SURFACE OTHER THAN ASPHALT OR CONCRETE. (CONTACT NCDOT PAVEMENT MANAGEMENT UNIT FOR APPLICABLE PAVEMENT DESIGN).

6- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.

7- USE OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH DETAIL DRAWING AND SPECIAL PROVISION OBTAINED FROM: WORK ZONE TRAFFIC CONTROL UNIT WEB PAGE.

8- UNLESS NOTED OTHERWISE ON THE PLANS, SET PORTABLE CONCRETE BARRIER WITH A MINIMUM DISTANCE OF 2 FT BETWEEN THE FRONT FACE OF THE BARRIER AND THE EDGE OF THE NEAREST TRAFFIC LANE AS SHOWN IN FIGURE A.

9- FOR PORTABLE CONCRETE BARRIER ABOVE AND BEHIND TEMPORARY MSE 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' IN LENGTH AND WET OR DRY PAVEMENT.

MINIMUM REQUIRED CLEAR DISTANCE, inches

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

*** See Figure Below**

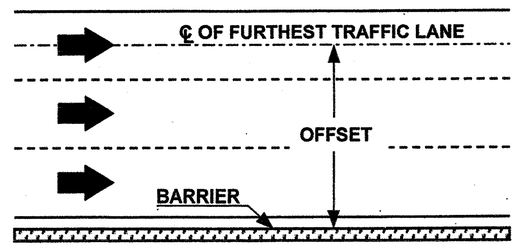

FIGURE B

APPROVED:_____ DATE:_____

SEAL

Sept 20, 2010

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

PORTABLE CONCRETE BARRIER
AT
TEMPORARY SHORING LOCATIONS

0302DEL P12

DXN

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-3

PHASING

PHASE I (SEE SHEETS TMP-4,5,6 & 13)

STEP1
PLACE ALL ADVANCED WORK ZONE WARNING SIGNS IN ACCORDANCE TO NCDOT RDWY. STD. 1101.01, SHT 3 OF 3.

STEP 2
WITHOUT DISTURBING EXISTING TRAFFIC PATTERNS PLACE CURB & GUTTER AND CONSTRUCT
THE FOLLOWING UP TO, BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE:
* -L- FROM STA. 14+00+/- TO STA. 24+00+/-
* -L- FROM STA. 25+00+/- TO STA. 33+00+/-
* -Y1- FROM STA. 10+14+/- TO 11+00+/-.

BEGIN ROADWAY DRAINAGE CONSTRUCTION.

TO ASSURE UNINTERUPTED ACCESS TO THE DUKE ENERGY SUBSTATION CONSTRUCT NEW DRIVEWAY
AT OLD S MAIN ST (APPROX. LOCTAION RT OF -MAIN2- STA. 8917+22+/-) AS SHOWN ON PLANS
(SEE SHEET TMP-6)
DURING PHASE 1 AND 2 ACCESS TO THE PROPERTY IN THE NW-CORNER OF THE OLD S MAIN ST/A AVE
INTERSECTION WILL BE MAINTAINED USING THE DRIVE ON A AVE.
(SEE SHEET TMP-6 & 8)

STEP 3
AFTER PLACING THE APPROPRIATE DETOUR SIGNAGE CLOSE THE KLUMAC RD AT-GRADE RAILROAD CROSSING AS
SHOWN ON SHEET TMP-6. THE THRU TRAFFIC IS TO BE DETOURED USING S MAIN ST AND S JAKE
ALEXANDER BLVD, WHILE LOCAL TRAFFIC IS PLACED ON S MARTIN LUTHER KING JR. AVE.
(SEE SHEET TMP-4, SEE NCDOT RDWY. STD 1101.03, SHT 1 OF 9). REMOVE EXISTING
KLUMAC RD PAVEMENT AS SHOWN ON PLAN.
CLOSE A AVE AT THE INTERSECTION WITH OLD S MAIN STREET TO TRAFFIC AND REMOVE OLD S MAIN
PAVEMENT AS SHOWN ON PLANS (SEE SHEET TMP-6, SEE NCDOT RDWY. STD 1101.03, SHT 1 OF 9).

STEP 4
INSTALL RAILROAD DRAINAGE DEVICES ACCORDING TO THE DETOUR DRAINAGE PLAN.
(SEE PLAN SHEETS RR-3 THRU RR-10)
CONSTRUCT RAILROAD DETOUR TRACKS AS FOLLOWS: (SEE TRACK PLANS, SHEET 4 (SEQUENCE OF CONSTRUCTION))
A. FURNISH AND PLACE SUB-BALLAST TO GRADE FOR DETOUR TRACKS.
B. TO MAINTAIN ACCESS TO SEVERAL PROPERTIES ON OLD S MAIN ST PLACE TEMPORARY SHORING,
INCLUDING PORTABLE CONCRETE BARRIERS, AS FOLLOWS :
* -MAIN2DET- STA. 8913+60+/- TO STA. 8914+70+/-
* -MAIN2DET- STA. 8917+00+/- TO STA. 8921+00+/-
ALSO PLACE TEMPORARY SHORING ADJACENT TO FUTURE RAILROAD BRIDGE AS FOLLOWS:
* -MAIN1DET- STA. 8915+70+/- TO STA. 8917+42+/-
(SEE SHEETS TMP-6 & 13)
C. NS RAILWAY TO CONSTRUCT DETOUR TRACKS AND TIE MAIN TRACK TO DETOUR TRACK.

NOTE: STEP 2 IN THIS PHASE CAN BE CONSTRUCTED CONCURRENTLY WITH STEPS 3 AND 4.
NOTE: MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES (SEE LOCAL NOTES 1 THRU 3)
COORDINATE WITH DRIVESHAFT COMPANY (SEE LOCAL NOTE 4)

PHASE II (SEE SHEETS TMP-7,8 & 14)

STEP 1
A.USING FLAGGERS AND LANE CLOSURES, CONSTRUCT THE -L-/-Y4- INTERSECTION UP TO, BUT NOT
INCLUDING THE FINAL LAYER OF SURFACE COURSE, AS FOLLOWS:
* -L- FROM STA. 24+00+/- TO STA. 25+00+/-
* -Y4- FROM STA. 13+05+/- TO STA. 15+90+/-
(SEE SHEET TMP-7 & 14, SEE NCDOT RDWY. STD 1101.02, SHT 1 OF 9).
INSTALL SIGNAL (SEE SIGNAL SHEET SIG-2)
B.USING FLAGGERS AND LANE CLOSURES,PLACE TEMPORARY PAVEMENT MARKINGS, AS FOLLOWS:
* -Y4- FROM STA. 13+05+/- TO STA. 15+90+/-
(SEE SHEET TMP-7, SEE NCDOT RDWY. STD 1101.02, SHT 1 OF 9).

STEP 2
INSTALL RAILROAD DRAINAGE DEVICES ACCORDING TO THE DRAINAGE PLAN.
(SEE PLAN SHEETS RR-11 THRU RR-17
CONSTRUCT RAILROAD MAIN TRACKS AS FOLLOWS: (SEE SHEET TMP-8)(SEE TRACK PLANS, SHEET 4
(SEQUENCE OF CONSTRUCTION)
1. CONSTRUCT RAILWAY BRIDGE FROM -MAIN1- STA. 8915+87.44 TO STA. 8917+34.13
2. FURNISH AND PLACE SUB-BALLAST TO GRADE FOR MAIN TRACKS.
3. NS CONTRACTOR TO CONSTRUCT NEW RAIL.
4. NS TO REMOVE DETOUR TRACK AND TIE IN MAIN TRACK.
5. PERFORM FINAL CLEANUP OF ALL TRACK MATERIALS. NCDOT CONTRACTOR TO REMOVE
ALL EXCESS MATERIAL AND PERFORM FINAL GRADING.

NOTE: STEP 1 AND STEP 2 IN THIS PHASE CAN BE CONSTRUCTED CONCURRENTLY.

NOTE: MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES (SEE LOCAL NOTES 1 THRU 3)
COORDINATE WITH DRIVESHAFT COMPANY (SEE LOCAL NOTE 4)

PHASE III (SEE SHEETS TMP- 9,10 & 15)
STEP 1
CONSTRUCT DRIVE AND ADJACENT ROADWAY AT OLD S MAIN ST AND OPEN TO TRAFFIC PRIOR TO
BEGIN WORK ON STEP 2.
(SEE TMP-10)
STEP 2
1. CLOSE A AVE TO TRAFFIC and REMOVE SIGNAGE PLACED IN PHASE 1, STEP 3.
PLACE SIGNAGE ON S MAIN ST ACCORDING TO NCDOT RDY. STD. 1101.03, SHEET 1 OF 9
2. PLACE RETAINING WALLS AS SHOWN ON PLANS AND CONSTRUCT -L- UP TO,
BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM STA. 33+00+/- TO STA. 40+17+/-.
(SEE SHEET TMP-10)

3. USING FLAGGERS AND LANE CLOSURES, CONSTRUCT THE FOLLOWING UP TO , BUT NOT INCLUDING
THE FINAL LAYER OF SURFACE COURSE :
* -L- FROM STA. 10+00+/- TO STA. 14+00+/-
(NOTE: TO ASSURE ACCESS TO EXISTING KLUMAC RD DO NOT PLACE THE RIGHT SIDE CURB & GUTTER
FROM -L- STA. 12+00+/- TO 13+50+/- AND TIE PROPOSED PAVEMENT TO EXISTING PAVEMENT UNTIL
OPENING REALIGNED KLUMAC RD TO TRAFFIC)
* -Y1- FROM STA. 10+75+/- TO STA. 12+25+/-
(NOTE: TO ASSURE ACCESS TO EXISTING KLUMAC RD DO NOT PLACE THE RIGHT SIDE CURB & GUTTER
FROM *-Y1- STA. 10+90+/- TO 11+50+/- AND TIE PROPOSED PAVEMENT TO EXISTING PAVEMENT UNTIL
OPENING REALIGNED KLUMAC RD TO TRAFFIC)
(SEE SHEET TMP-9 ,10, & 15, SEE NCDOT RDWY,. STD 1101.02, SHT 1 OF 9).
* -Y2- FROM STA. 11+45+/- TO 12+46+/-. MAINTAIN 2LN-2WAY TRAFFIC AT ALL TIMES.
USING THE APPROPRIATE SIGNAGE MOVE THE PEDESTRIAN TRAFFIC AWAY FROM THE WORK AREA.
WHILE CONSTRUCTING THE EASTBOUND LANE OF S MAIN ST PLACE THE PEDESTRIAN TRAFFIC
ON THE NORTHSIDE OF THE STREET, THEN TO CONSTRUCT THE WESTBOUND AND MEDIAN
LANES MOVE THE SIGNS AND PLACE THE PEDESTRIANS ON THE SOUTHSIDE OF THE STREET
(SEE TMP-16 FOR LOCATION OF PEDESTRIANS).
(SEE SHEET TMP-9 ,10, & 16 SEE NCDOT RDWY,. STD 1101.02, SHT 1 OF 9).
4. ADJUST THE SIGNAL AT THE INTERSECTION OF US29/70 (-Y2-) WITH THE REALIGNED
KLUMAC RD (-L-). (SEE SIGNAL SHT SIG-9)
5. USING LANE CLOSURES PLACE OVERLAY ON OLD S MAIN ST ADJACENT TO DUKE SUBSTATION.
MAINTAIN ACCESS TO PROPERTY AT ALL TIMES
(SEE SHEET TMP-10)

NOTE: MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES (SEE LOCAL NOTES 1 THRU 3)
COORDINATE WITH DRIVESHAFT COMPANT (SEE LOCAL NOTE 4)

PHASE IV (SEE SHEETS TMP-11 & 12)
STEP 1
1. REMOVE UNUSED BARRICADES AND TRAFFIC CONTROL DEVICES FROM THE REALIGNED
KLUMAC RD (-L-) AND ALL Y-LINES.
2. REMOVE ALL DETOUR SIGNAGE. ALSO REMOVE THE EXISTING SIGNAL FROM THE INTERECTION OF
OLD KLUMAC RD AND MARTIN LUTHER KING AVE AND PLACE THE APPROPRIATE SIGNAGE AND
REVISE THE PAVEMENT MARKINGS.
AT THE INTERSECTION OF S MAIN ST AND FULTON ST /OLD KLUMAC RD BAG/COVER THE SIGNAL
AND PLACE NEW SIGNAGE AND REVISE THE PAVEMENT MARKINGS.(NOTE: DO NOT REMOVE ANY SIGNAL
EQUIPMENT (POLES, WIRE ETC) AT THIS TIME. THE INTERSECTION NEEDS TO BE EVALUATE TO ASSURE
IT OPERATES SATISFACTORILY WITHOUT A SIGNAL.)
PLACE NEW PERMANENT SIGNAGE ON THE REST OF OLD KLUMAC RD, OLD S MAIN ST AND THE NEW ALIGNED
KLUMAC RD (-L-).
3. USING FLAGGERS AND LANE CLOSURES PLACE TEMPORARY PAVEMENT MARKINGS ACCORDING TO THE
FINAL PATTERN AND PLACE ALL TRAFFIC IN THE NEW PATTERN. (SEE TMP-17)
4. COMPLETE CONSTRUCTION OF CURB AND GUTTER FROM -L- STA. 12+00+/- TO 13+50+/- RT,
AND FROM -Y1- STA. 10+90+/- TO 11+50+/-RT.
5. REMOVE REMAINING BARRICADES AND TRAFFIC DEVICES AND REMOVE OLD KLUMAC RD
FROM -L- STA. 13+00+/- RT TO -Y1- STA. 11+00+/-RT AS SHOWN ON PLAN.
(SEE SHEET TMP-11,12 & 17 , SEE NCDOT RDWY. STD 1101.02, SHT 1 OF 9)
6. USING FLAGGERS AND TEMPORARY LANE CLOSURES PLACE THE FINAL LAYER OF SURFACE COURSE,
FINAL PAVEMENT MARKINGS, AND PAVEMENT MARKERS AS FOLLOWS:
* -L- FROM STA. 10+00+/- TO 40+17+/-
* -Y1- FROM STA. 10+14+/- TO 12+25+/-
* -Y2- FROM STA. 11+45+/- TO 14+65+/-
* -Y4- FROM STA. 13+05+/- TO 15+90+/-
(SEE SHEET TMP 11 & 12, AND PM-3 THRU PM-5 , SEE NCDOT RDWY. STD 1101.02, SHT 1 OF 9)

TGS
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975 WALNUT STREET
SUITE 141
CARY,NC 27511
PH (919) 319 8850
CORP.LICENSE NO.:C-0275

APPROVED:_____ DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER TERRY L. TERRY

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

Traffic Control Phasing

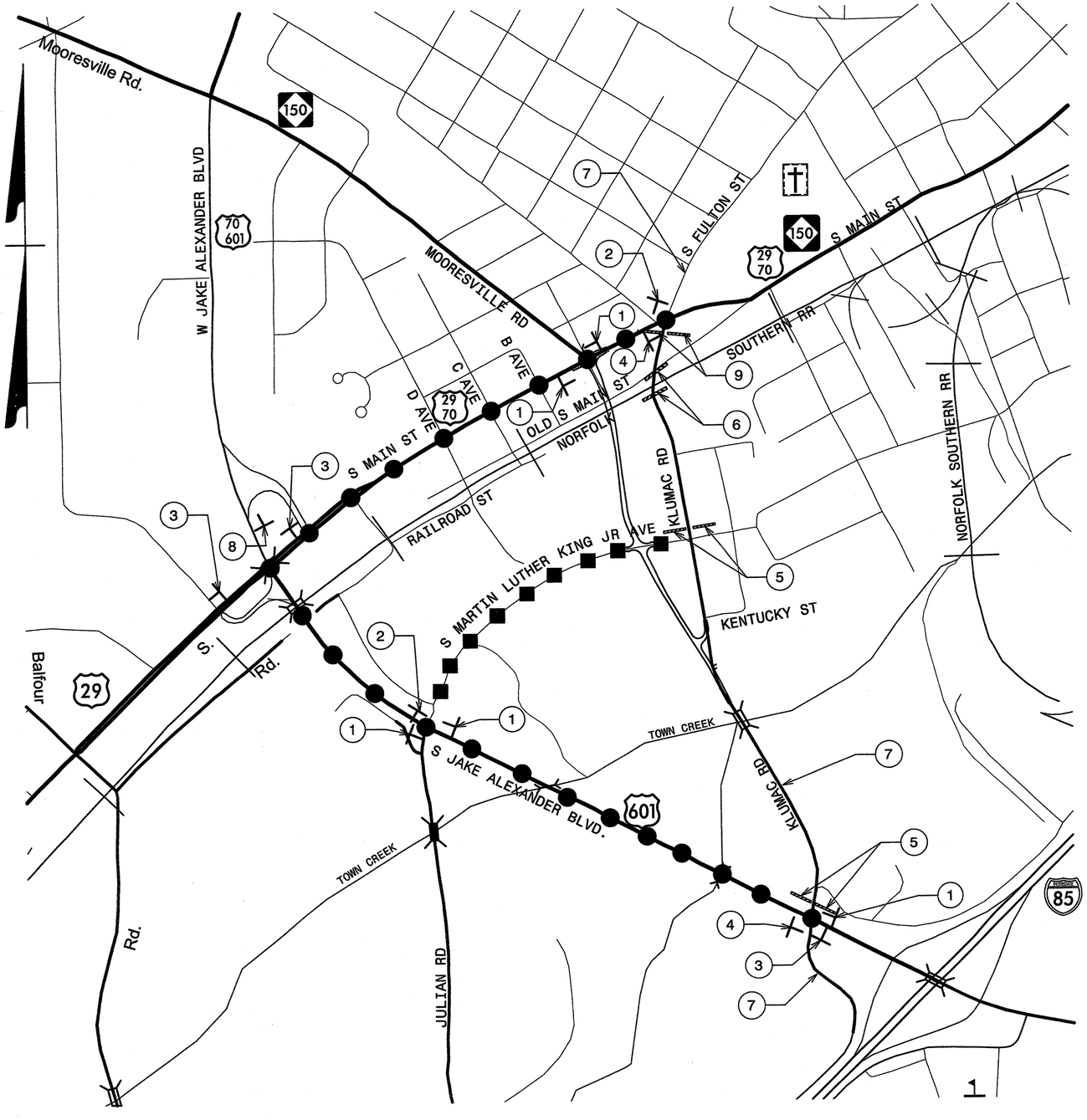
$$$$$$SYSTIME$$$$$
$$$$$$USERNAME$$$$$DGN$$$$$$$$$$$$$$$$$$$$

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-4

0302DEL P12

DICN

***SEE SHEET TMP-4A FOR SIGN DESIGN



1

KLUMAC RD ***
DETOUR M4-8 24" X 12"
M6-1 21" X 15"

2

KLUMAC RD ***
DETOUR M4-8 24" X 12"
M6-1 21" X 15"

3

KLUMAC RD ***
DETOUR M4-8 24" X 12"
M6-1 L 21" X 15"

4

KLUMAC RD ***
END DETOUR M4-8 A 24" X 18"

8

KLUMAC RD ***
DETOUR M4-8 24" X 12"
M6-2 21" X 15"

5

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

9

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

6

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

7 SEE ROADWAY STANDARD NO. 1101.03 SHEET 1 OF 9 FOR ADDITIONAL WORK ZONE SIGNS AND BARRICADES.

OFFICIAL DETOUR ROUTE

LOCAL TRAFFIC DETOUR

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CARY, NC 27511
PH (919) 319 8850
CORP. LICENSE NO.: C-0275

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JAMES L. TERRY

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

Detour Location

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-4A

0302DEL P12

DGN

SIGN NUMBER: **DET-1**
TYPE: **STATIONARY**
QUANTITY: **SEE PLANS**

SIGN WIDTH: **4'-0"**
HEIGHT: **1'-6"**
TOTAL AREA: **6.0 Sq. Ft**

BORDER TYPE: **INSET**
RECESS: **0.38"**
WIDTH: **0.63"**
RADII: **1.5"**

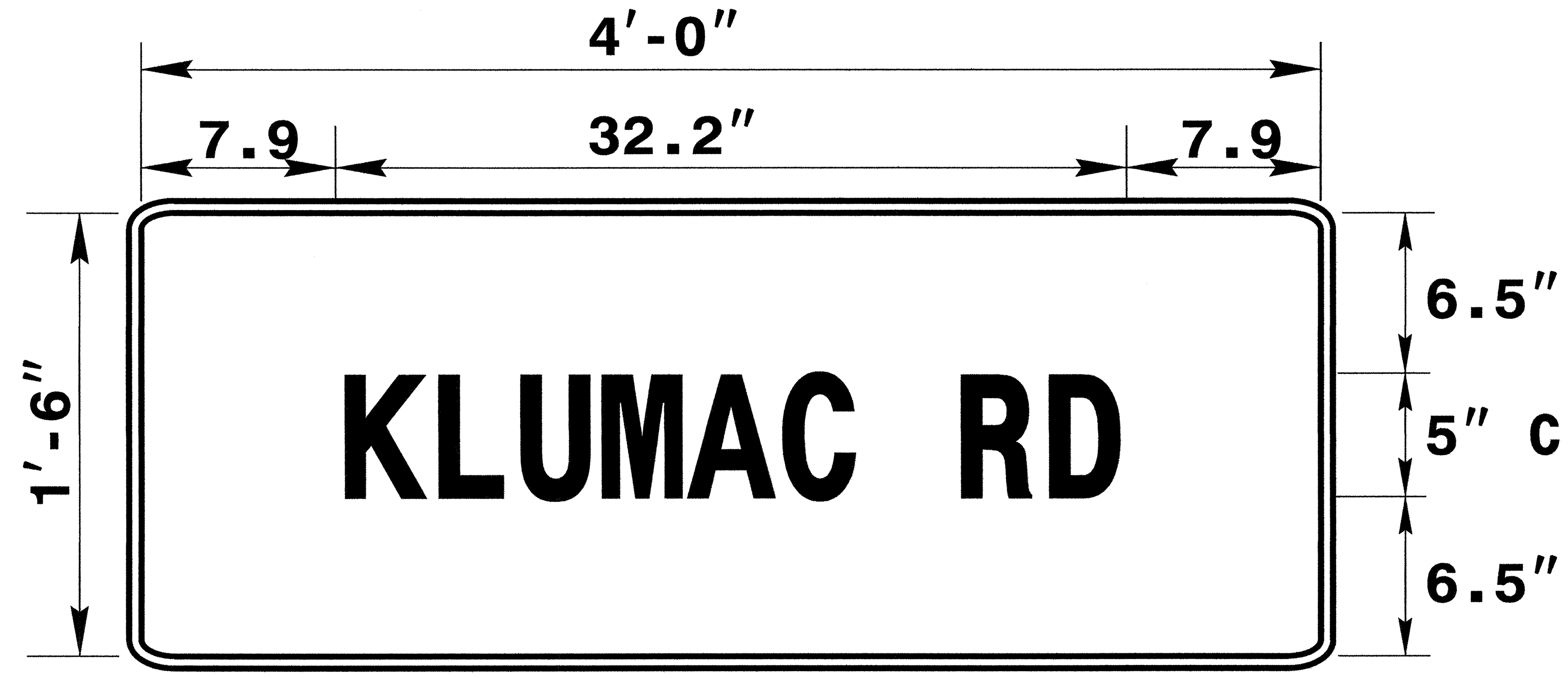
NO. Z BARS:
LENGTH:

BACKG COLOR: **Fluorescent Orange**
COPY COLOR: **Black**

SYMBOL	X	Y	WID	HT

MAT'L: **0.125" (3.0mm) ALUMINUM**

DESIGN BY: **SGM**
PROJECT ID: **U-3459**
CHECKED BY: **JLT**
DIV: **9**
DATE: **6/08/2012**



Spacing Factor is 1 unless specified otherwise

USE NOTES: 1,2

1. Legend and border shall be direct applied black non-reflective sheeting.
2. Background shall be Type VII, VIII, or IX (prismatic) fluorescent orange retroreflective sheeting.

LETTER POSITIONS

Letter spacings are to start of next letter

												Series/Size Text Length
		K	L	U	M	A	C		R	D		C 2000
	7.9	3.6	3.3	3.8	4.1	4.0	2.7	4.1	3.8	2.8	7.9	32.2

$$$$$SYSTIME$$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

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SUITE 141
CARY, NC 27511
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APPROVED:________ DATE:________

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY, JR.

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

DETOUR SIGN DESIGN

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-5

0302DEL P12

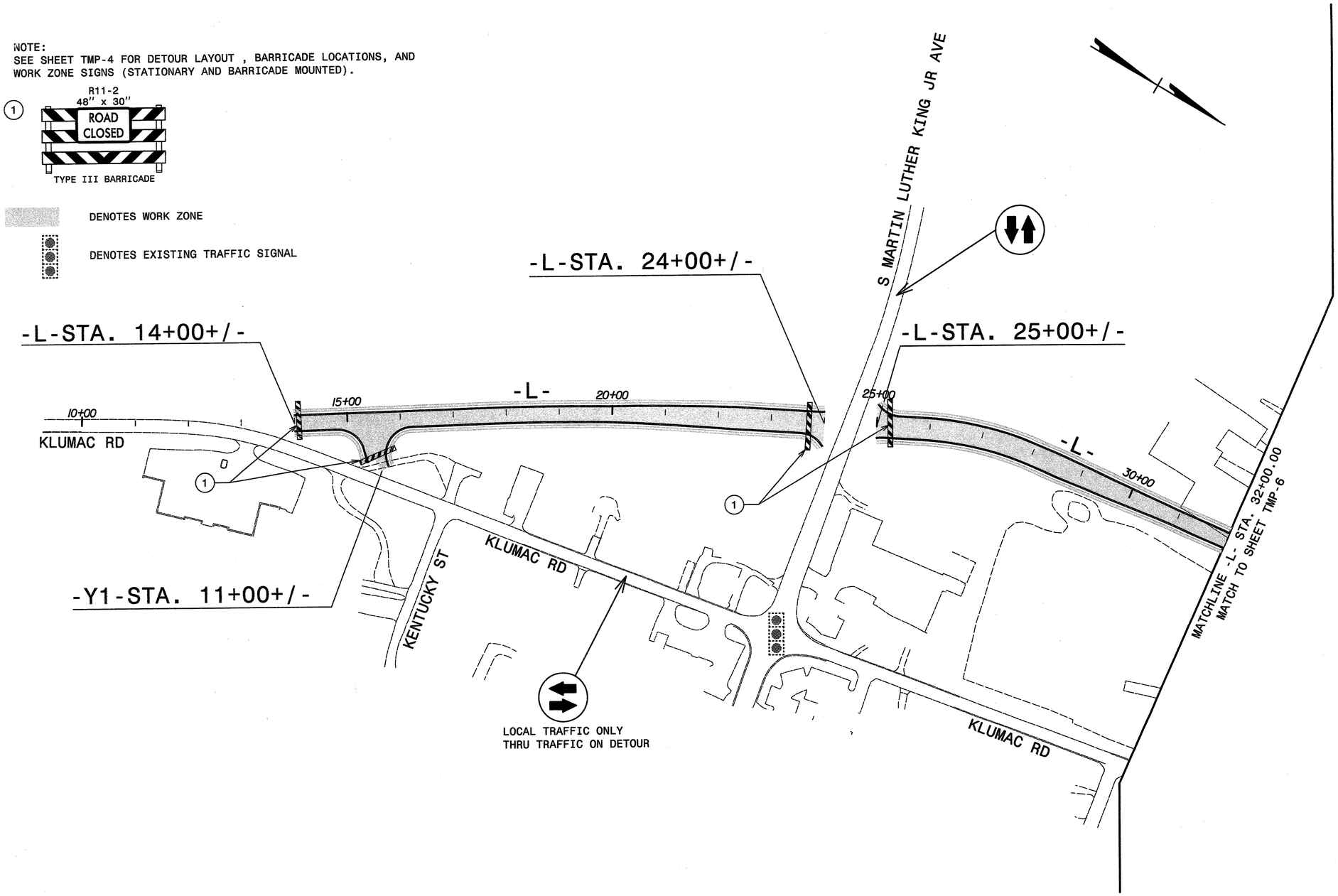
DGN

NOTE:
SEE SHEET TMP-4 FOR DETOUR LAYOUT , BARRICADE LOCATIONS, AND WORK ZONE SIGNS (STATIONARY AND BARRICADE MOUNTED).

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

DENOTES WORK ZONE

DENOTES EXISTING TRAFFIC SIGNAL



Sht 1 of 2

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER TIMOTHY L. TERRY, P.E.

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

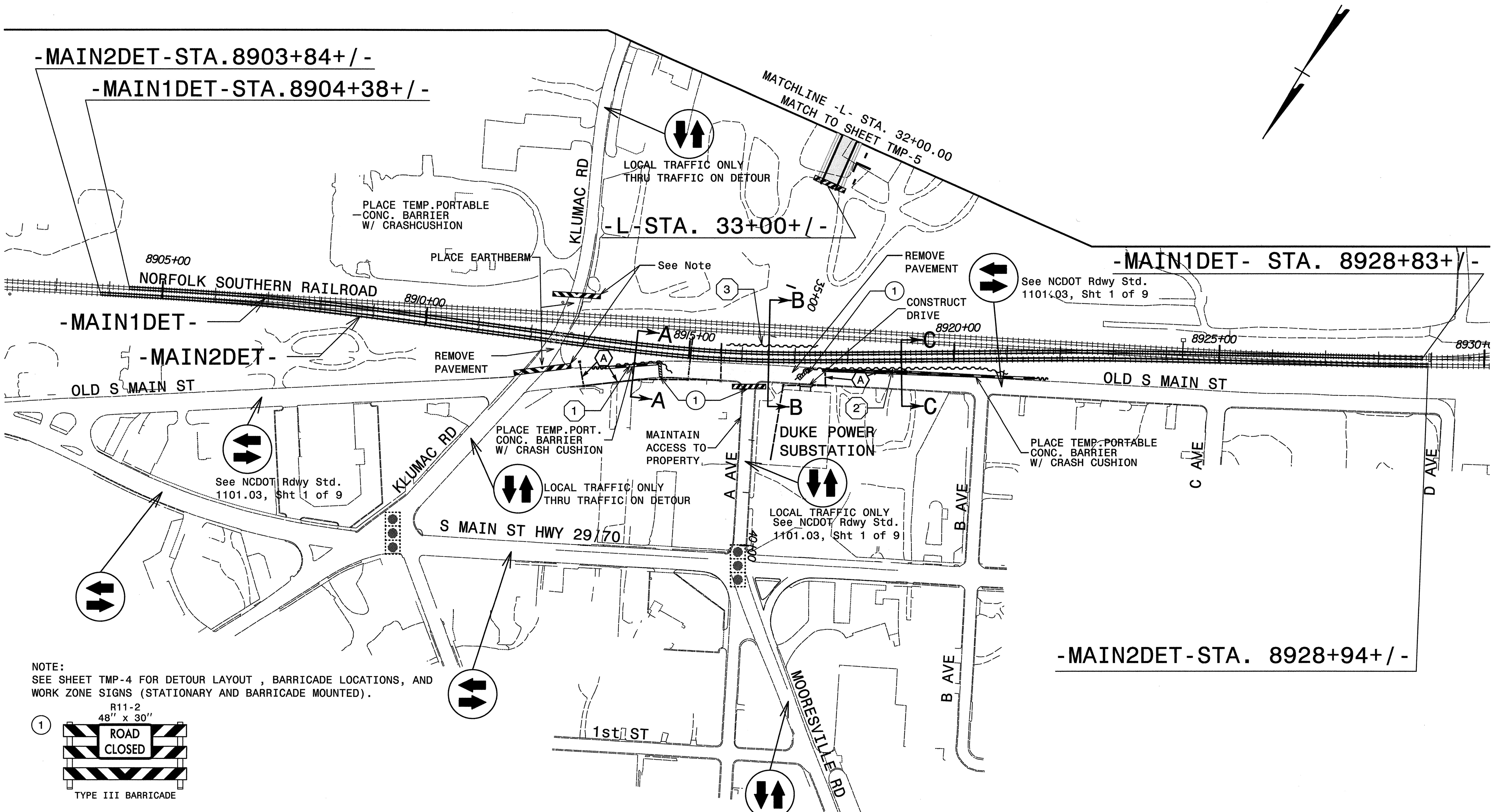
Phase I Overview

$$$$SYSTIME$$$$
$$$$USERNAME$$$$

0302DEL P12

DGN

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-6



NOTE:
SEE SHEET TMP-4 FOR DETOUR LAYOUT , BARRICADE LOCATIONS, AND WORK ZONE SIGNS (STATIONARY AND BARRICADE MOUNTED).

(1) R11-2 48" x 30" ROAD CLOSED

TYPE III BARRICADE

DENOTES PAVEMENT REMOVAL

DENOTES WORK ZONE

DENOTES EXISTING TRAFFIC SIGNAL

(A) PROP. AND TEMPORARY DRAINAGE STRUCTURES SEE RR AND/OR ROADWAY PLAN DETAILS

SEE SHEET TMP-13 FOR SECTIONS A, B, & C.

(1) TEMPORARY SHORING
FROM STA. -Main2det- 8913+60+/-,29.4' RT
TO STA. -Main2det- 8914+70+/-, 34.5' RT

(2) TEMPORARY SHORING
FROM STA. -Main2det- 8917+00+/-,33.7' RT
TO STA. -Main2det- 8921+00+/-, 24.7' RT

(3) TEMPORARY SHORING
FROM STA. -Main1det- 8915+70+/-, 14' LT
TO STA. -Main1det- 8917+42+/-, 14' LT

SEE RR PLANS FOR TEMPORARY SHORING DATA AND QUANTITIES

$$$$$$SYSTIME$$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

Sht 2 of 2

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SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY, JR.

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

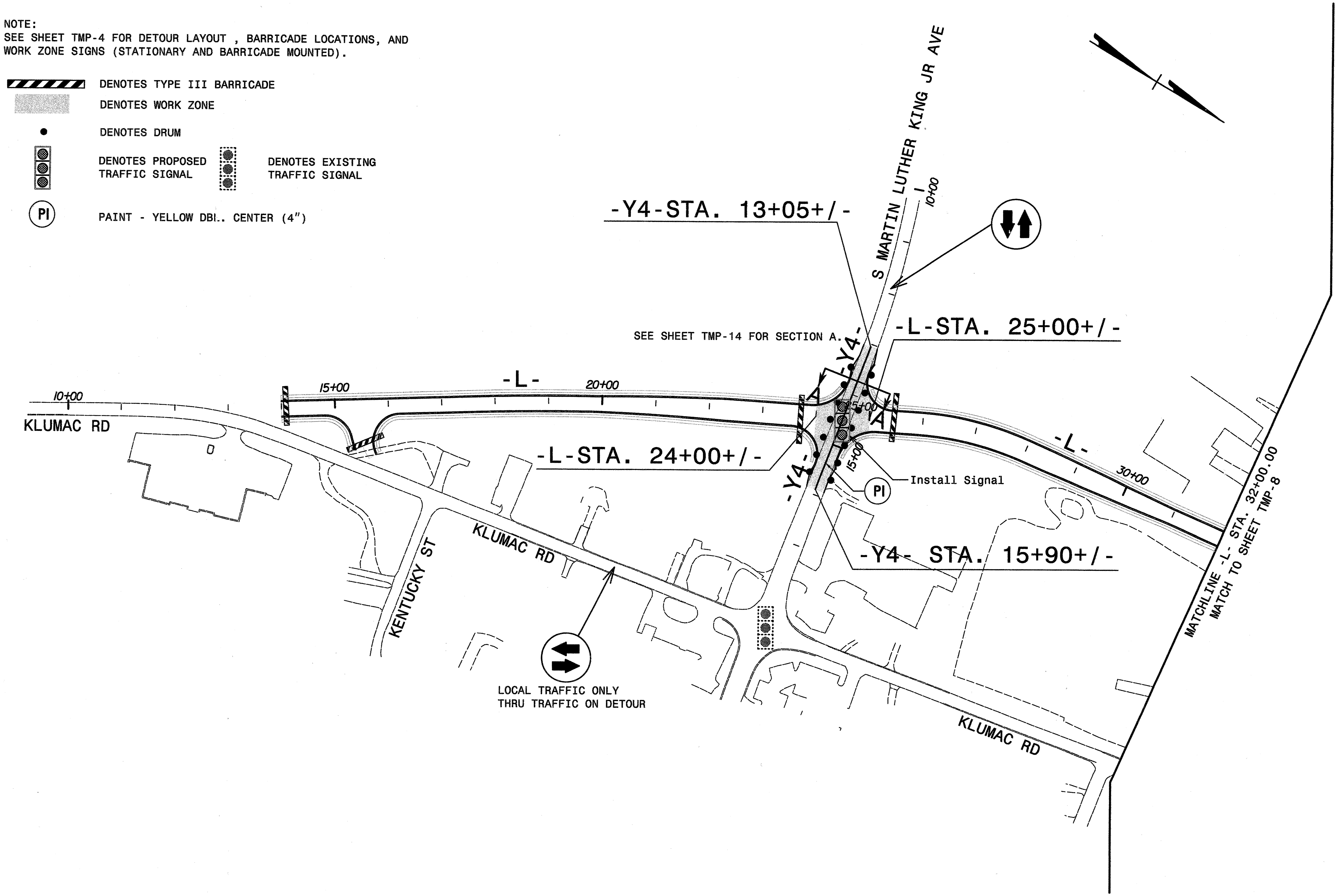
Phase I Overview

0302DEL P12

DGN

NOTE:
SEE SHEET TMP-4 FOR DETOUR LAYOUT , BARRICADE LOCATIONS, AND WORK ZONE SIGNS (STATIONARY AND BARRICADE MOUNTED).

▨	DENOTES TYPE III BARRICADE
▒	DENOTES WORK ZONE
●	DENOTES DRUM
	DENOTES PROPOSED TRAFFIC SIGNAL
	DENOTES EXISTING TRAFFIC SIGNAL
PI	PAINT - YELLOW DBL. CENTER (4")



Sht 1 of 2

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SEAL

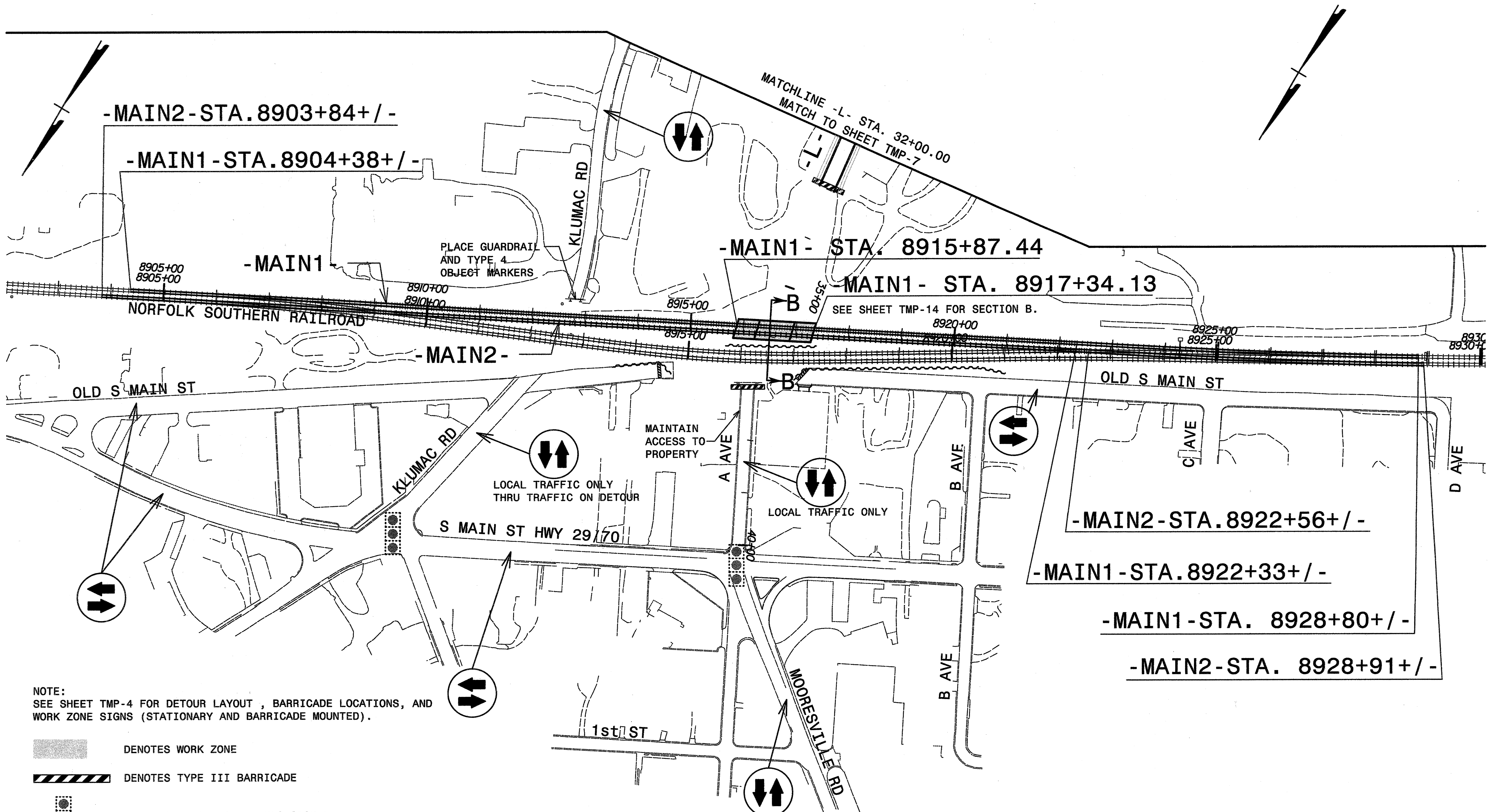
NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY, JR.

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

Phase II Overview

$$$$$SYSTIME$$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$
$$$USERNAME$$$$

0302DEL P12



NOTE:
SEE SHEET TMP-4 FOR DETOUR LAYOUT , BARRICADE LOCATIONS, AND WORK ZONE SIGNS (STATIONARY AND BARRICADE MOUNTED).

▨ DENOTES WORK ZONE

▨ DENOTES TYPE III BARRICADE

● DENOTES EXISTING TRAFFIC SIGNAL

$$$$$SYSTIME$$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

Sht 2 of 2

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY, JR.

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

Phase II Overview

0302DEL P12

NOTE:
SEE SHEET TMP-4 FOR DETOUR LAYOUT , BARRICADE LOCATIONS, AND WORK ZONE SIGNS (STATIONARY AND BARRICADE MOUNTED).

DENOTES TYPE III BARRICADE

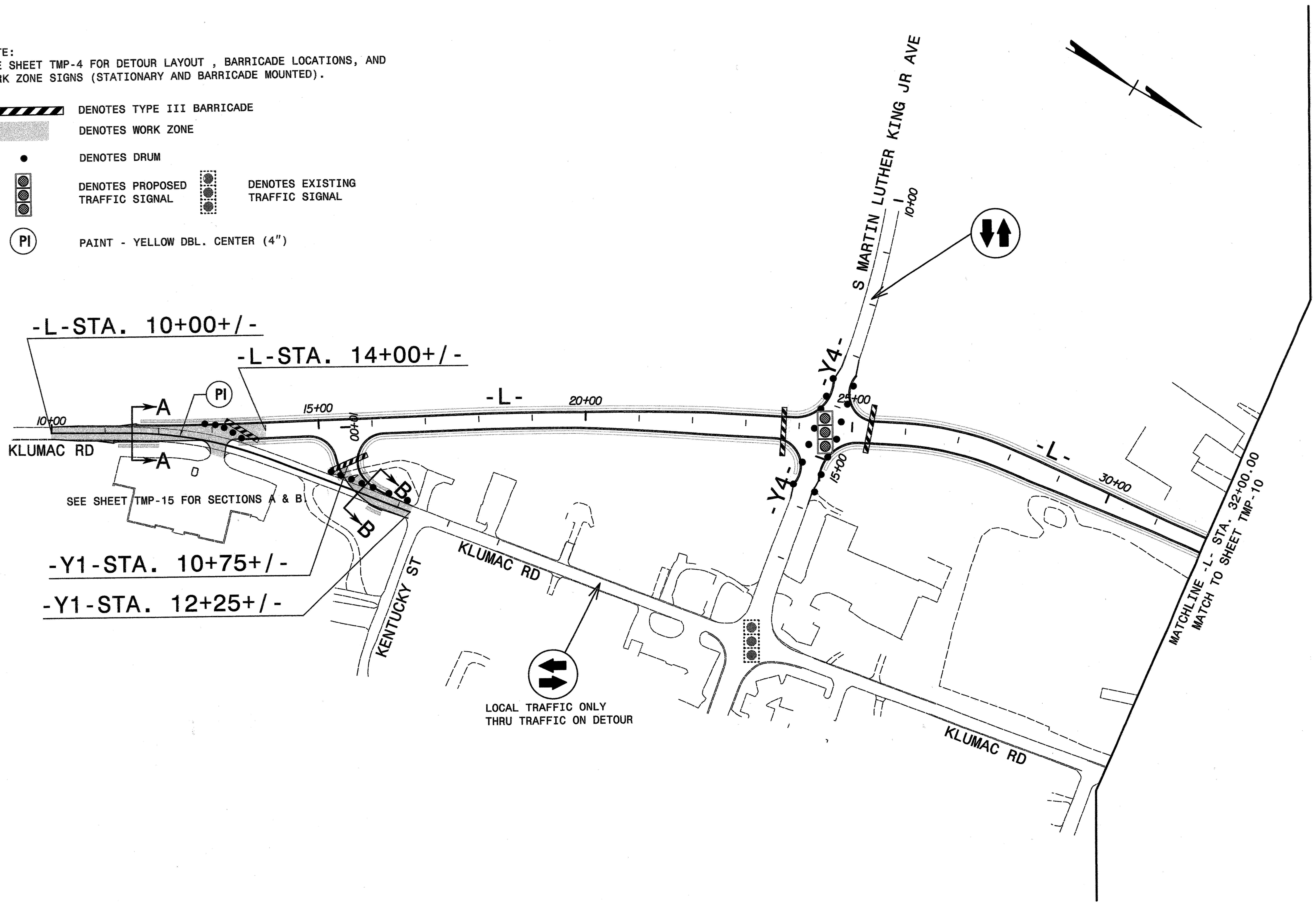
DENOTES WORK ZONE

DENOTES DRUM

DENOTES PROPOSED TRAFFIC SIGNAL

DENOTES EXISTING TRAFFIC SIGNAL

PI PAINT - YELLOW DBL. CENTER (4")



Sht 1 of 2

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SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY, JR.

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

Phase III Overview

$$$$$SYSTIME$$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-10

0302DEL_P12

NOTE 2:
CONSTRUCT DRIVE
AND ACCESS RD
PRIOR TO ALL OTHER
CONSTRUCTION IN THIS PHASE

MATCHLINE -L- STA. 32+00.00
MATCH TO SHEET TMP-9

KLUMAC RD

PROP.
RETAINING
WALL

34+80+/-

35+12+/-

-L-STA. 33+00+/-

8905+00

8910+00

8915+00

8920+00

8925+00

8930

NORFOLK SOUTHERN RAILROAD

SEE NOTE 2

36+78+/-

36+45+/-

MAINTAIN ACCESS TO
DRIVE DURING CONSTRUCTION

OLD S MAIN ST

OLD S MAIN ST

PLACE GUARDRAIL
AND TYPE 4
OBJECT MARKERS

37+74+/-

PROP. RETAINING
WALL

38+40+/-

KLUMAC RD

LOCAL TRAFFIC ONLY
THRU TRAFFIC ON DETOUR

A AVE

See NCDOT Rdwy Std.
1101.03, Sht 1 of 9

B AVE

C AVE

D AVE

SEE SHEET TMP-16 FOR SECTION C
SEE SHEET TMP-17 FOR TEMPORARY PAVEMENT MARKINGS ON MAIN ST HWY29/70

S MAIN ST HWY 29/70

60+51

60+01

See NCDOT Rdwy Std.
1101.03, Sht 1 of 9

-Y2-STA. 14+65+/-

B AVE

MOORESVILLE RD

1st ST

-L-STA. 40+17+/-

-Y2-STA. 11+45+/-

①* SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11 24" X 12"

②* SIDEWALK CLOSED — R9-9 24" X 12"

③* SIDEWALK CLOSED AHEAD / CROSS HERE — R9-11 24" X 12"

* NOTE: LOCATION VARIES
SEE PHASING AND
PHASE III DETAILS (TMP-16)

NOTE:
SEE SHEET TMP-4 FOR DETOUR LAYOUT , BARRICADE LOCATIONS, AND
WORK ZONE SIGNS (STATIONARY AND BARRICADE MOUNTED).

DENOTES WORK ZONE

DENOTES TYPE III BARRICADE

DENOTES PROPOSED
TRAFFIC SIGNAL

TEMP

DENOTES TEMPORARY
TRAFFIC SIGNAL

Ⓘ R11-2
48" x 30"
ROAD
CLOSED

TYPE III BARRICADE(S)

$$$$$$SYSTIME$$$$$$
$$$$$$USERNAME$$$$$$

TGS ENGINEERS
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SUITE 141
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PH (919) 319 8850
CORP. LICENSE NO.: C-0275

APPROVED: _____ DATE: _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER TIMOTHY TERRY

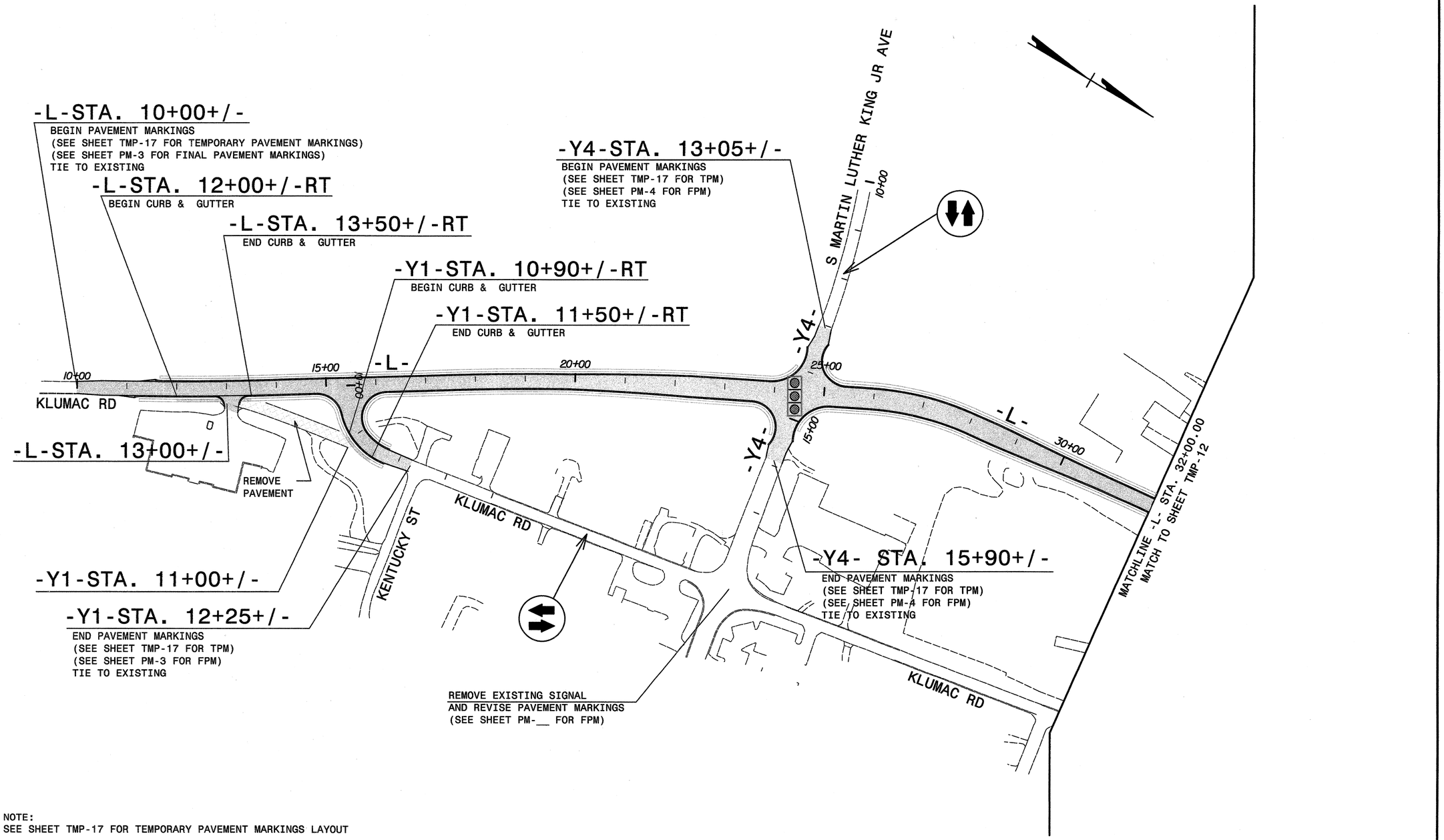
DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
WORK ZONE TRAFFIC CONTROL

Phase III Overview

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-11

0302DEL P12

DGN



NOTE:
SEE SHEET TMP-17 FOR TEMPORARY PAVEMENT MARKINGS LAYOUT

DENOTES PAVEMENT REMOVAL

DENOTES WORK ZONE (PLACE FINAL LAYER OF SURFACE COURSE)

DENOTES PROPOSED TRAFFIC SIGNAL

DENOTES EXISTING TRAFFIC SIGNAL

$$$$SYSTIME$$$$
$$$$USERNAME$$$$
$$$$DGN$$$$

TGS
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PH (919) 319 8850
CORP. LICENSE NO.: C-0275

APPROVED:_____ DATE:_____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 36018 ENGINEER MARK L. TERRY

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

Phase IV Overview

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-12

0302DEL P12

DGN

NOTE:
SEE SHEET TMP-17 FOR TEMPORARY PAVEMENT MARKINGS LAYOUT

DENOTES WORK ZONE (PLACE FINAL LAYER OF SURFACE COURSE)

DENOTES PROPOSED TRAFFIC SIGNAL

DENOTES EXISTING TRAFFIC SIGNAL

MATCHLINE -L- STA. 32+00.00
MATCH TO SHEET TMP-11

KLUMAC RD

8905+00

8910+00

8915+00

8920+00

8925+00

8930

NORFOLK SOUTHERN RAILROAD

1520

OLD S MAIN ST

OLD S MAIN ST

KLUMAC RD

B AVE

C AVE

D AVE

S MAIN ST HWY 29/70

40+00

15+00

10+00

S FULTON ST

B AVE

MOORESVILLE RD

1st ST

-Y2-STA. 14+65+/-
END PAVEMENT MARKINGS
(SEE SHEET TMP-17 FOR TPM)
(SEE SHEET PM-5 FOR FPM)
TIE TO EXISTING

REMOVE EXISTING SIGNAL
AND REVISE PAVEMENT MARKINGS
(SEE SHEET PM-__ FOR FPM)

-L-STA. 40+17+/-
END PAVEMENT MARKINGS
(SEE SHEET TMP-17 FOR TEMPORARY PAVEMENT MARKINGS)
(SEE SHEET PM-5 FOR FINAL PAVEMENT MARKINGS)
TIE TO EXISTING

-Y2-STA. 11+45+/-
BEGIN PAVEMENT MARKINGS
(SEE SHEET TMP-17 FOR TPM)
(SEE SHEET PM-5 FOR FPM)
TIE TO EXISTING

$$$$$$SYSTIME$$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

TGS
TGS ENGINEERS
975 WALNUT STREET
SUITE 141
CARY, NC 27511
PH (919) 319 8850
CORP. LICENSE NO.: C-0275

APPROVED:_____ DATE:_____

SEAL

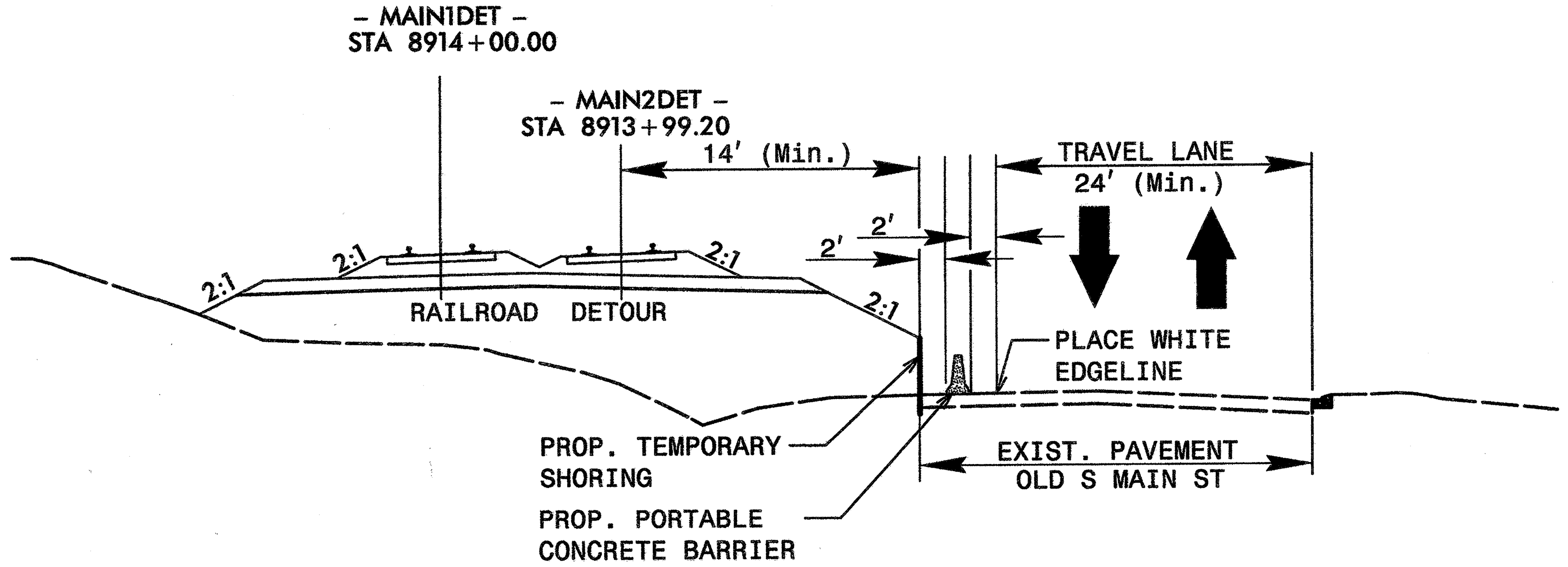
NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER TIMMY L. TERRY

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

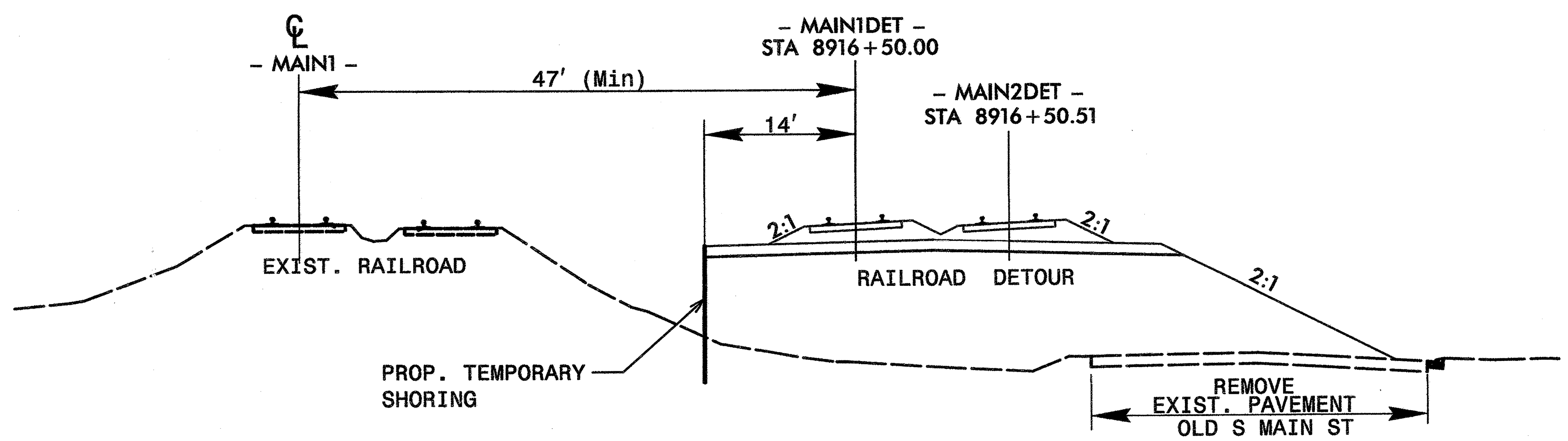
Phase IV Overview

DGN 0302DEL_P12

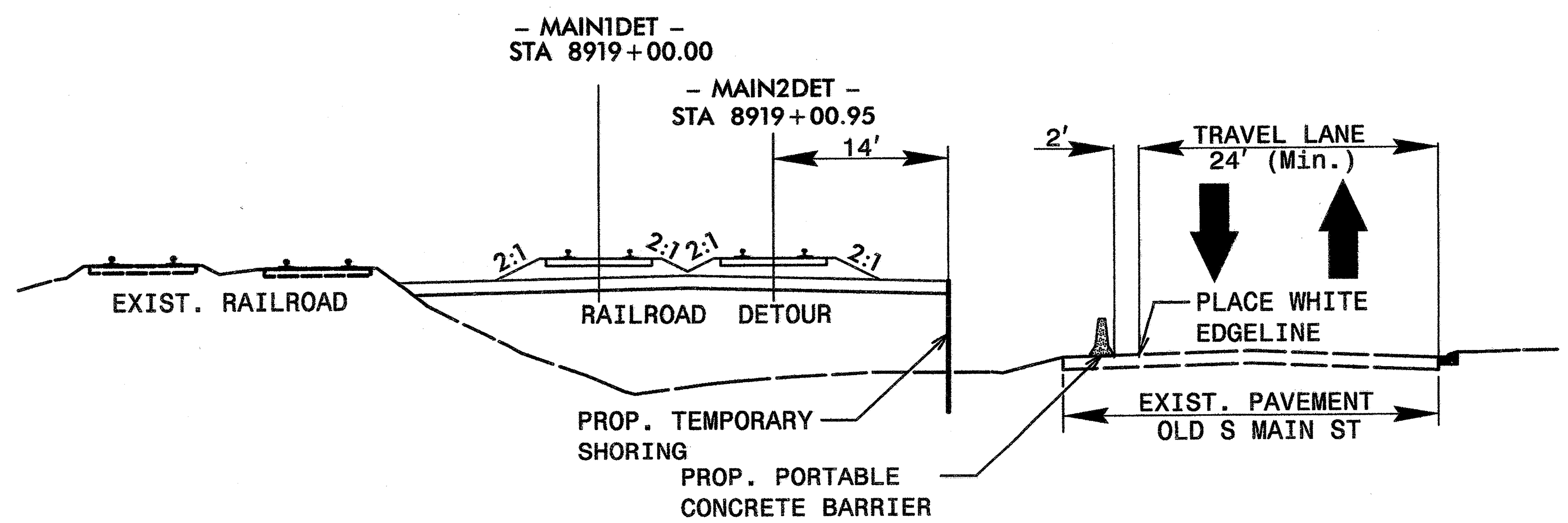
PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-13



SECTION A-A
SEE SHEET TCP-6



SECTION B-B
SEE SHEET TCP-6



SECTION C-C
SEE SHEET TMP-6

$$$$$SYSTIME$$$$$
$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$USERNAME$$$$

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY, JR.

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

Phase I Details

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-14

0302DEL_P12

DGN

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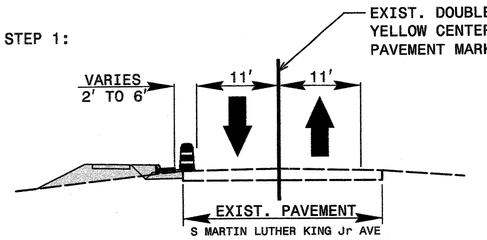

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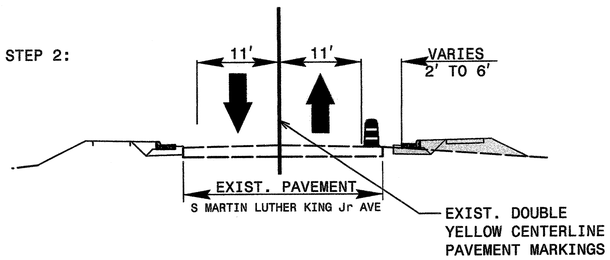

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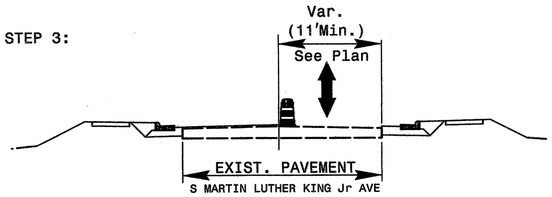

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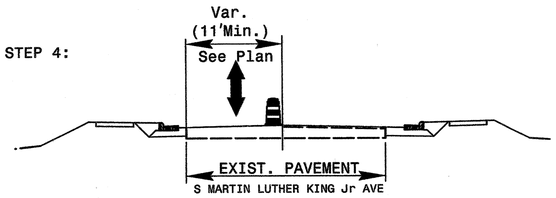

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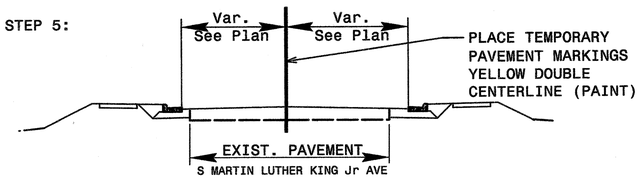
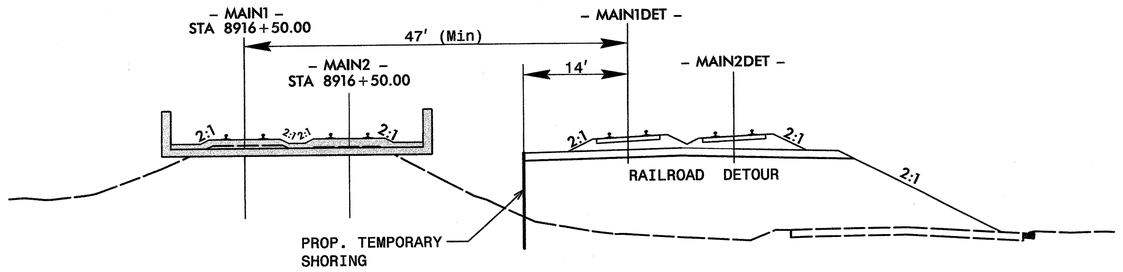


SECTION A-A

SEE SHEET TMP-7



SECTION B-B

SEE SHEET TMP-8

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY I. TERRY

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

Phase II Details

$$$$$$$SYSTIME$$$$$$
$$$$$$$$$$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-15

0302DEL_P12

DCN

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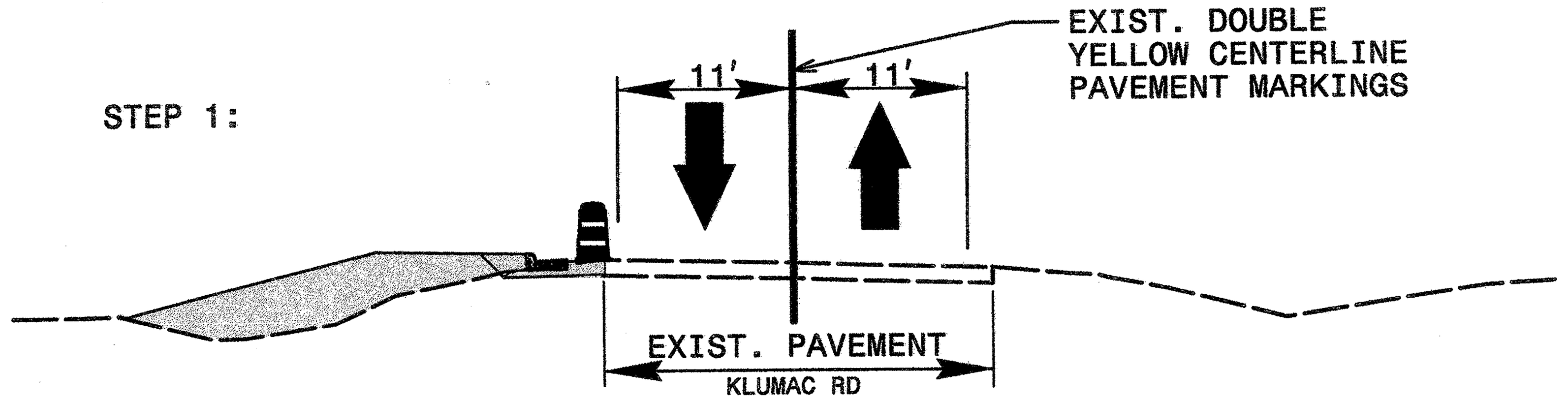

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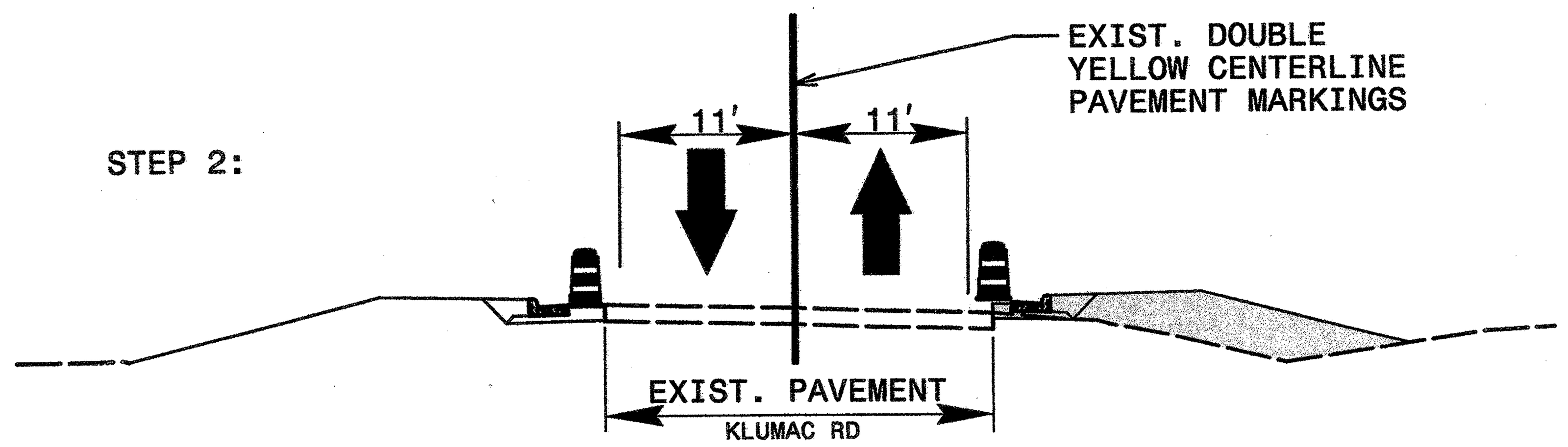

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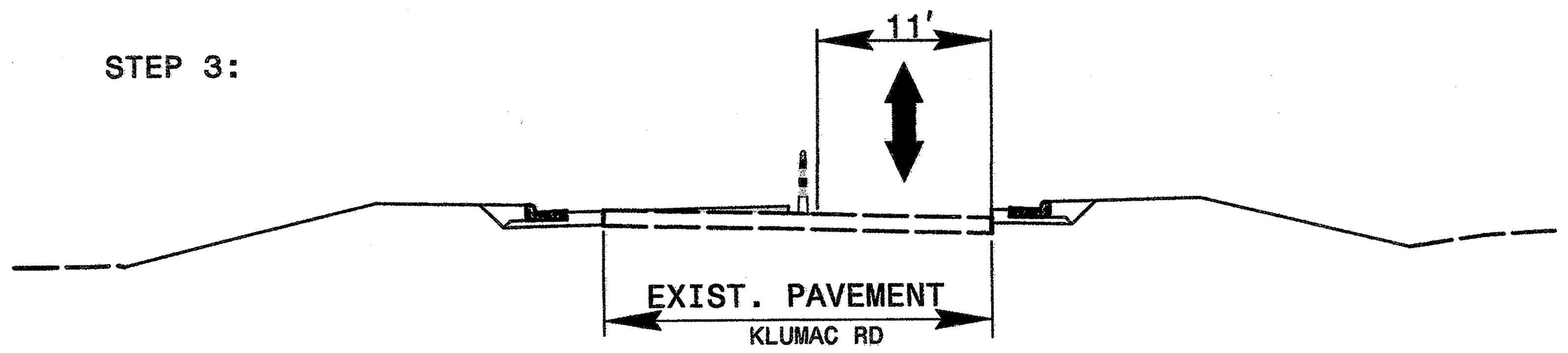

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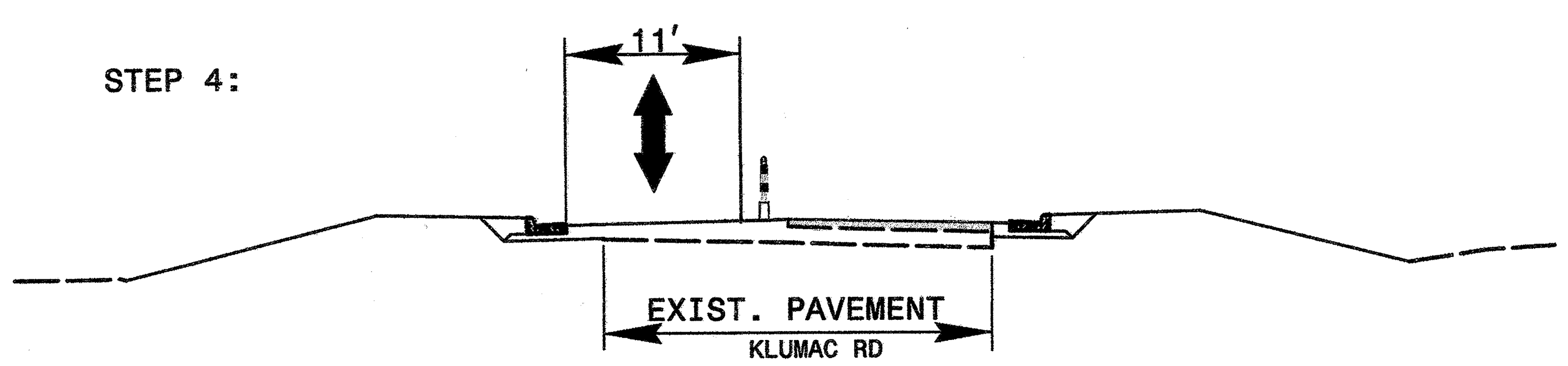
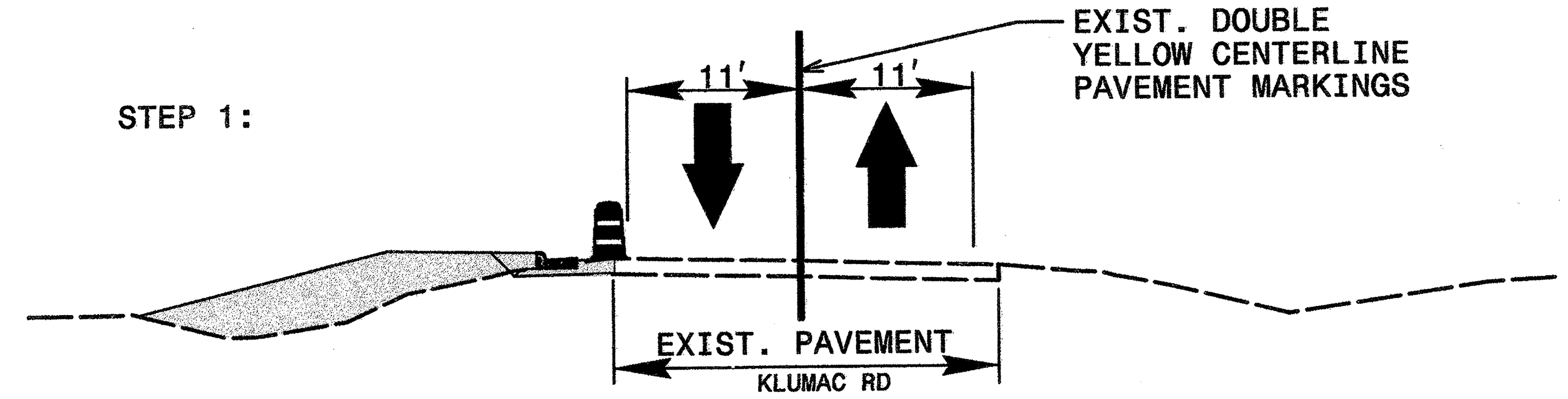


SECTION A-A

SEE SHEET TMP-9

Use Section A-A at the folowing Locations:
-L- Sta. 10+00+/- to 12+00+/
-L- Sta. 13+50+/- to 14+00+/
-Y1- Sta. 10+14+/- to 10+90+/-
-Y1- Sta. 11+50+/- to 12+25+/-

STEP 1:



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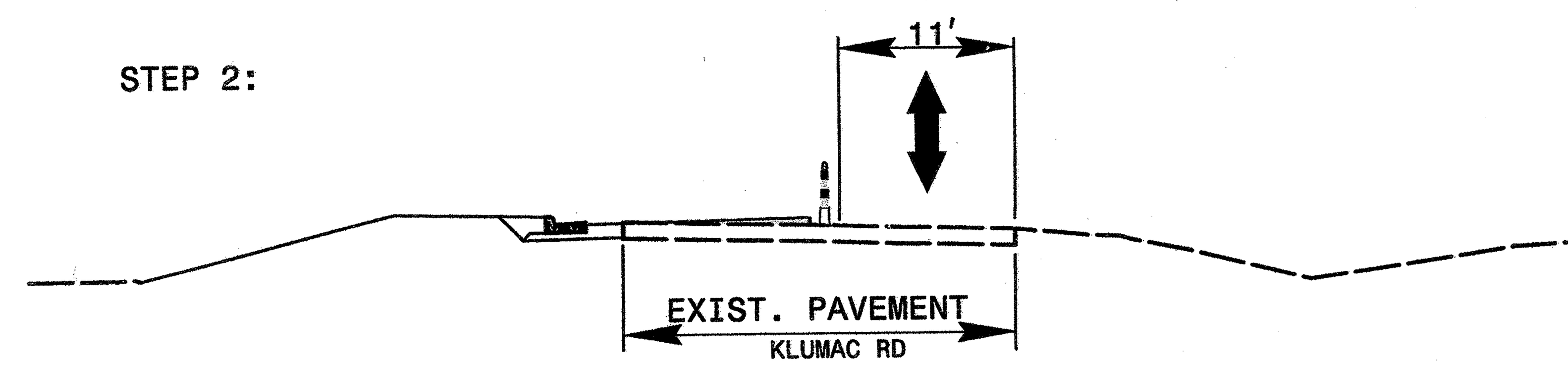

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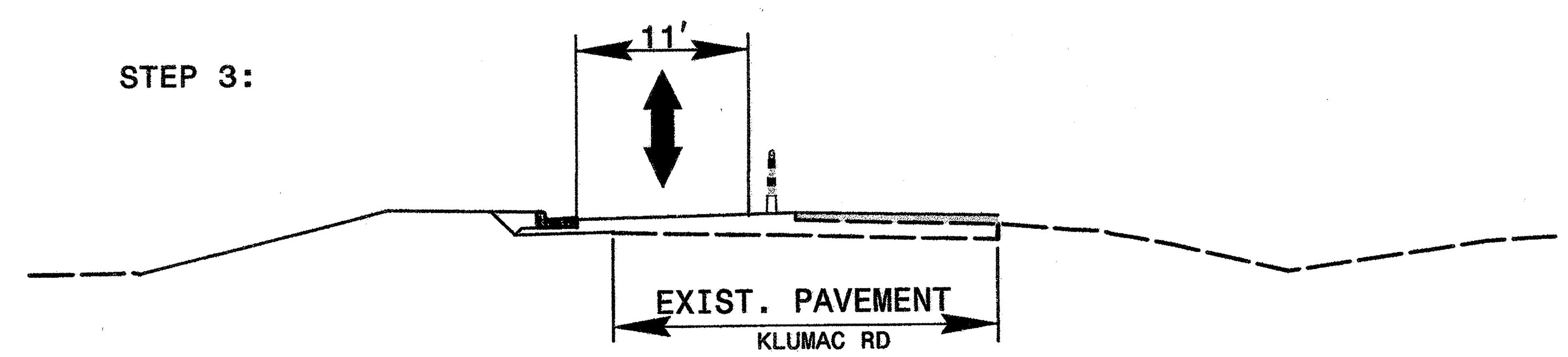

SECTION B-B

SEE SHEET TMP-9

Use Section B-B at the folowing Locations:
-L- Sta. 12+00+/- to 13+50+/-
-Y1- Sta. 10+90+/- to 11+50+/-

Sht 1 of 2

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SEAL

NORTH CAROLINA PROFESSIONAL SEAL 35018 ENGINEER JIMMY L. TERRY, JR.

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

Phase III Details

$$$$SYSTIME$$$$
$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-16

DCN 0302DEL P12

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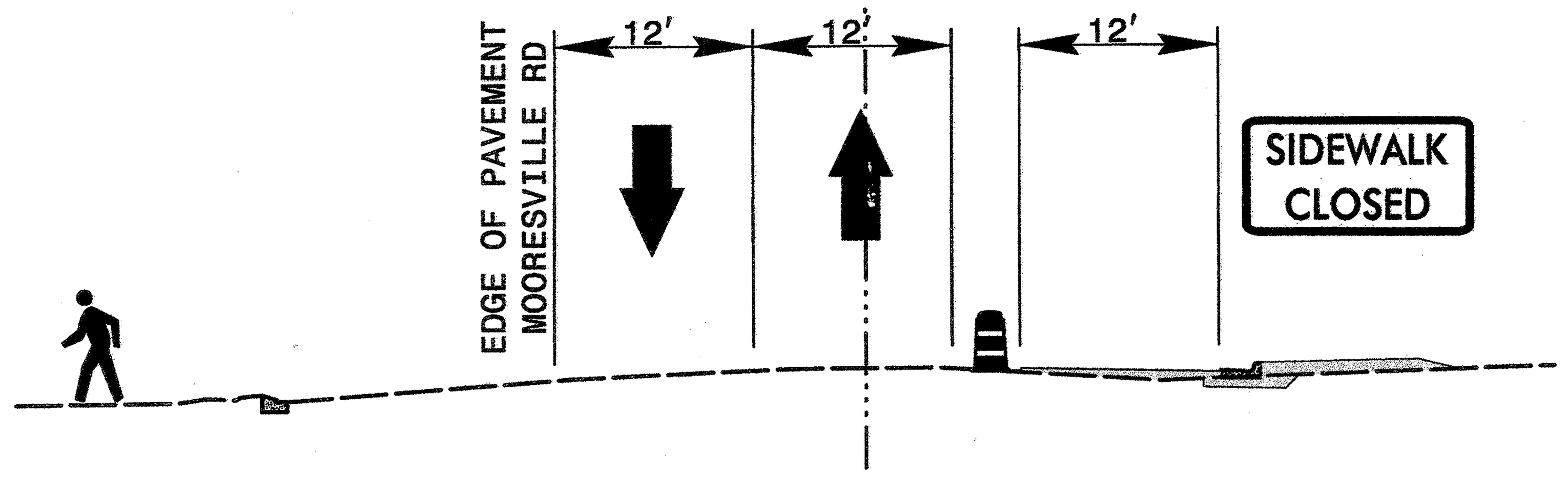

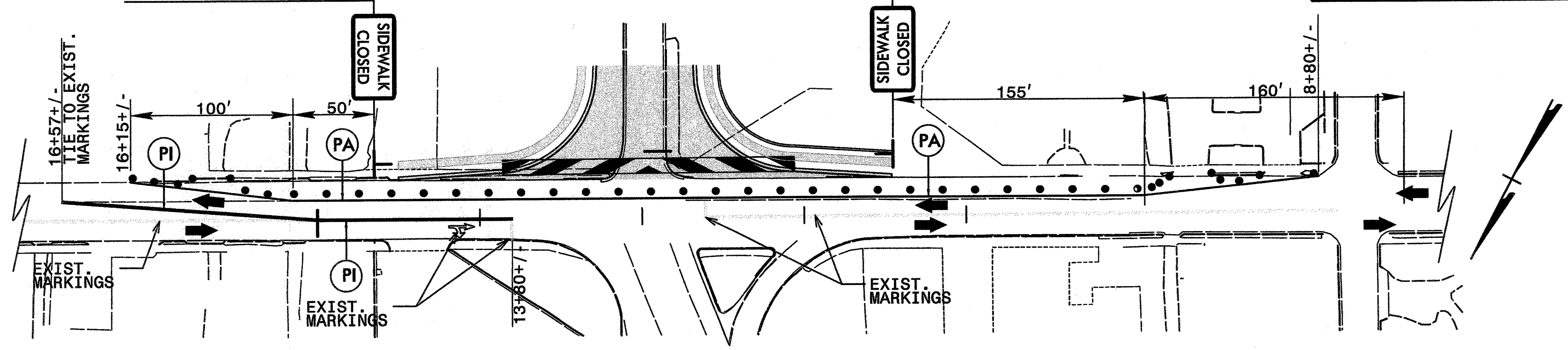

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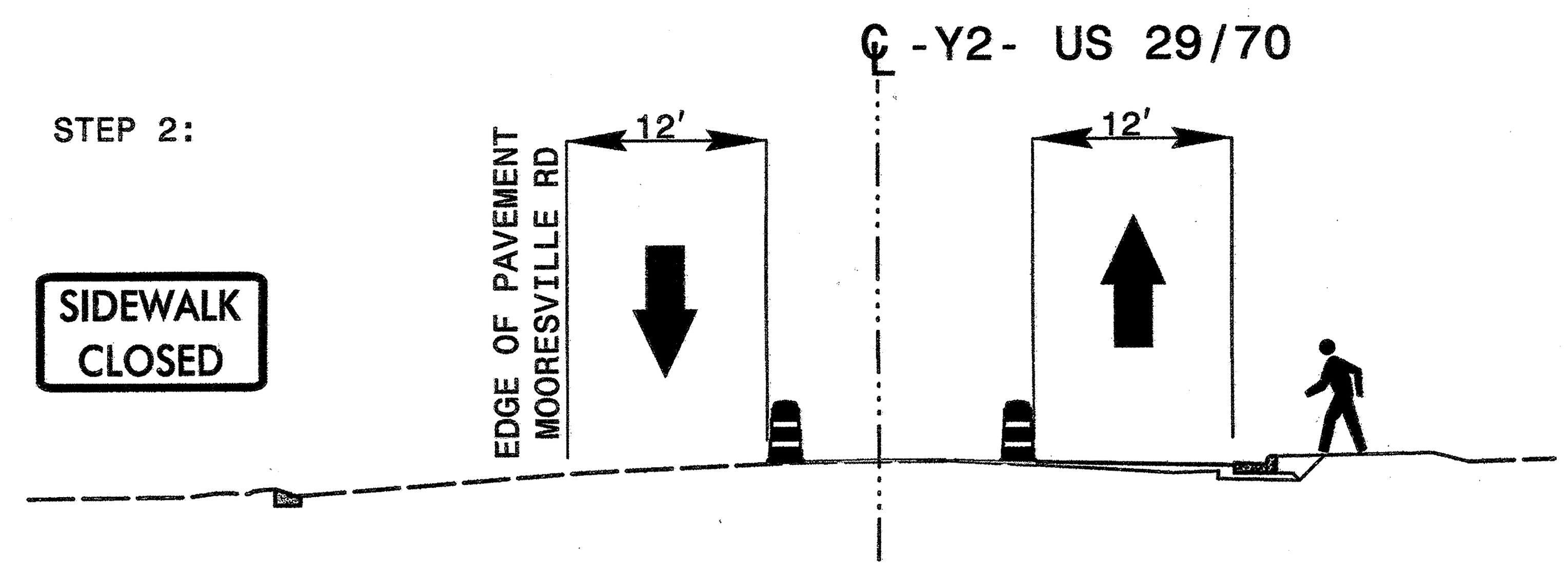

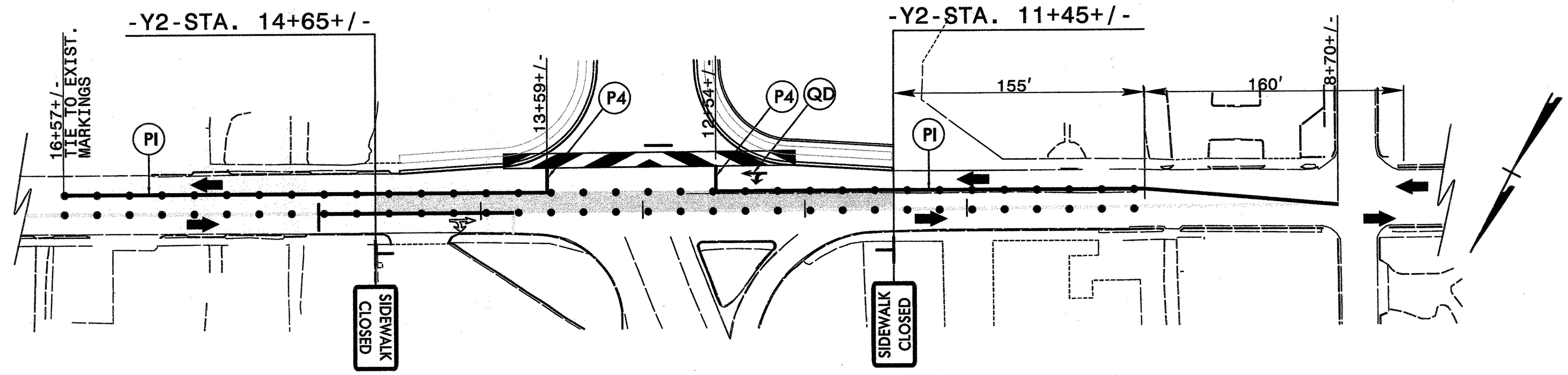

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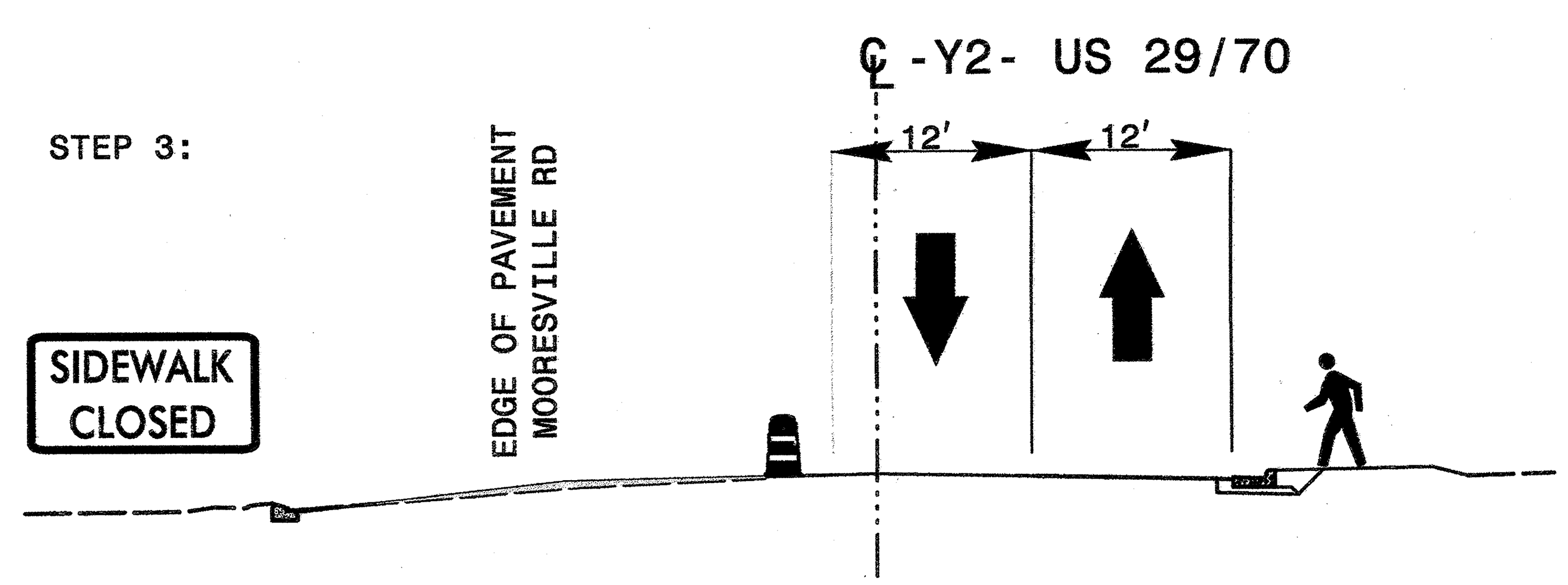

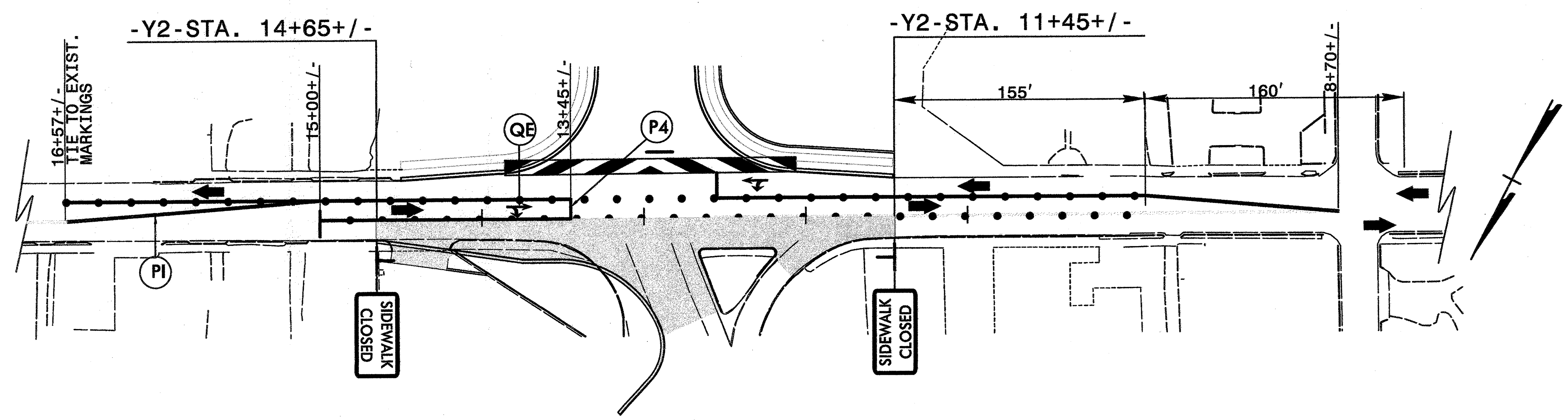

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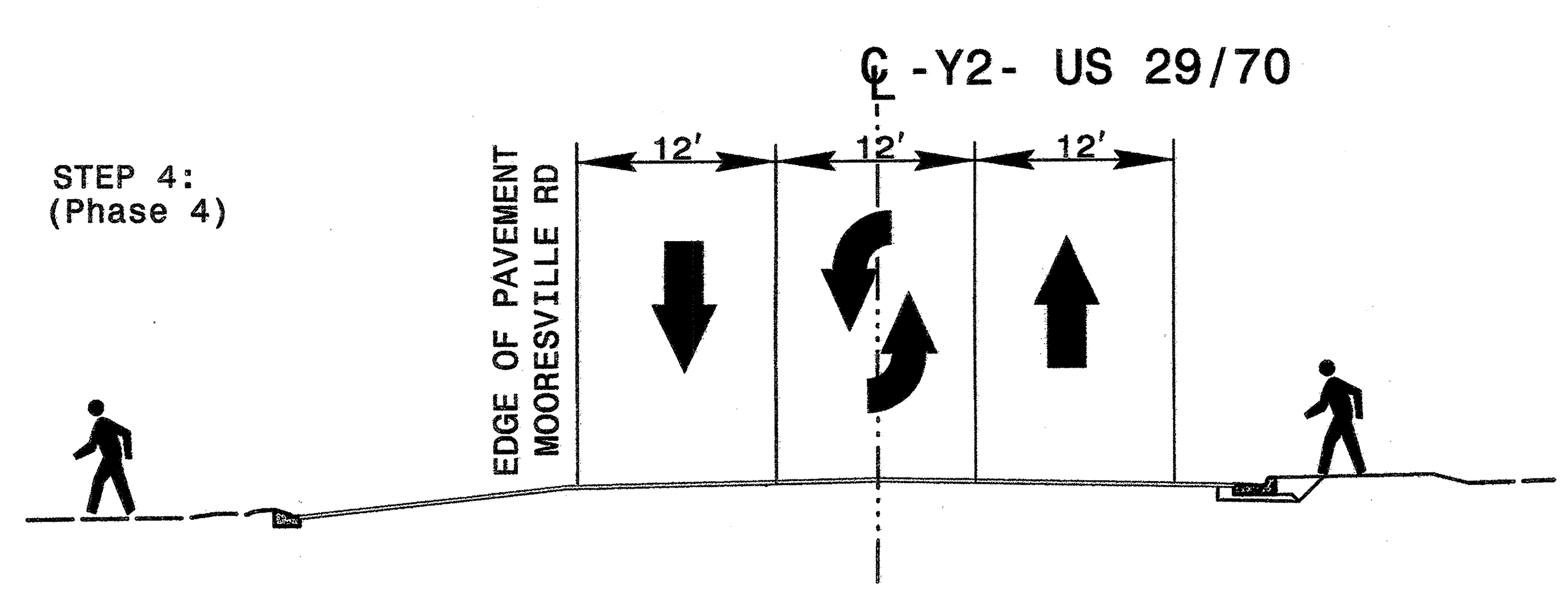
(Phase 4)



SECTION C-C

SEE SHEET TCP-10

Sht 2 of 2

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SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY, JR.

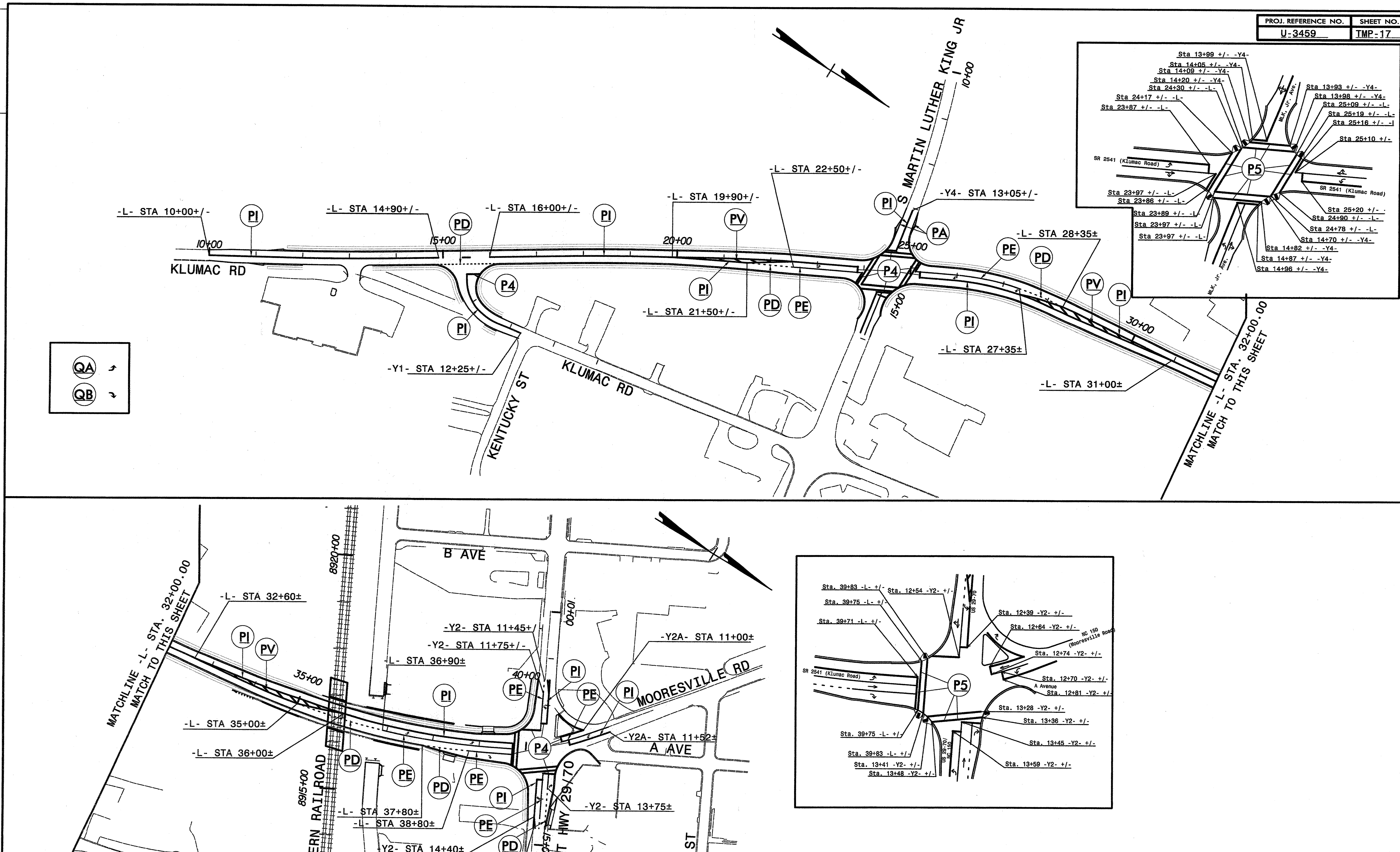
DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION WORK ZONE TRAFFIC CONTROL

Phase III Details

$$$$$SYSTIME$$$$
$$$$$$$$$$DGN$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$

PROJ. REFERENCE NO.	SHEET NO.
U-3459	TMP-17

0302DEL_P12



SEE SHEET TMP-1A FOR TEMPORARY PAVEMENT MARKING SCHEDULE

APPROVED:__________ DATE:__________

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 35018 JIMMY L. TERRY, JR. 7/19/02

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

Phase IV Temporary Pavement Markings

$$$$$SYSTIME$$$$$
$$$$$$$$$$$DGN$$$$$$$$$$$$$$$$$
$$$$USERNAME$$$$