TIP PROJECT: U-2905A

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

METRIC

STATE PROJECT REFERENCE NO.	SHEET NO.
U-2905A	TCP-1

PLAN FOR PROPOSED TRAFFIC CONTROL, MARKING & DELINEATION

ALAMANCE COUNTY

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"-ROADWAY DESIGN UNIT-N.C. DEPARTMENT OF TRANSPORTATION-RALEIGH, N.C., DATED JANUARY 2002 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.02	TEMPORARY LANE CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS - MOUNTING HEIGHT & LATERAL CLEARANCE
1110.02	PORTABLE WORK ZONE SIGNS - MOUNTING HEIGHT & LATERAL CLEARANCE
1115.01	FLASHING ARROW PANELS
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR - DELINEATION
1170.01	PORTABLE CONCRETE BARRIER
1205.01	PAVEMENT MARKINGS - LINE TYPES AND OFFSETS
1205.02	PAVEMENT MARKINGS - DIVIDED AND UNDIVIDED ROADWAYS
1205.03	PAVEMENT MARKINGS - INTERCHANGES
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1250.01	PAVEMENT MARKER SPACING
1253.01	SNOWPLOWABLE RAISED PAVEMENT MARKERS
1261.01	GUARDRAIL AND BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL AND BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION
1267.01	FLEXIBLE DELINEATOR INSTALLATION
1267.02	FLEXIBLE DELINEATOR SPACING
1267.03	FLEXIBLE DELINEATOR - INTERCHANGES

INDEX OF SHEETS

LEGEND

GENERAL

- DIRECTION OF TRAFFIC FLOW
- NORTH ARROW
- PROPOSED PVMT. / EXIST. PVMT.
- WORK AREA
- REMOVAL OF EXISTING PAVEMENT

TRAFFIC CONTROL DEVICES

- TYPE III BARRICADE
- CONE
- 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

APPROVED: [signature]
DATE: 16 AUG 06

PLAN PREPARED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT

SEAL — NORTH CAROLINA PROFESSIONAL SEAL 8973 ENGINEER G. L. GETTIER

J. S. BOURNE, P.E. — TRAFFIC CONTROL ENGINEER
G. L. GETTIER, P.E. — TRAFFIC CONTROL PROJECT ENGINEER
J. W. GILSTRAP — TRAFFIC CONTROL PROJECT DESIGN ENGINEER
M. WASHAYA — TRAFFIC CONTROL DESIGN ENGINEER

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mwashaya AT WZTC22468

GENERAL NOTES

ADAPT THE TRAFFIC CONTROL PLANS, WHEN DIRECTED BY THE ENGINEER, TO MEET FIELD CONDITIONS TO PROVIDE SAFE AND EFFICIENT TRAFFIC MOVEMENT. CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE, OR RESULT IN DUPLICATE, OR UNDESIRED OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES.

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

TIME RESTRICTIONS

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

ROAD NAME	DAY AND TIME RESTRICTIONS
1. UNIVERSITY DRIVE	MONDAY THRU FRIDAY, 6:00 AM TO 9:00 AM AND 4:00 PM TO 7:00 PM
2. I-85/40	MONDAY THRU SUNDAY, 7:00 AM TO 8:00 PM

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

ROAD NAME

1. UNIVERSITY DRIVE
2. I-85/40

HOLIDAY

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

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

C) DO NOT STOP TRAFFIC FOR MORE THAN 5 MINUTES AS FOLLOWS:

ROAD NAME	OPERATIONS
1. UNIVERSITY DRIVE	TRAFFIC SHIFTS

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 40 FT (12M) OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING DETAIL ON SHEET TCP-5 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT (15M) 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 (3M) 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) 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.

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

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 A DROP-OFF AS FOLLOWS:

BACKFILL DROP-OFFS THAT EXCEED 2 INCHES (50mm) ON ROADWAYS WITH POSTED SPEED LIMITS OF 45 MPH OR GREATER.

BACKFILL DROP-OFFS THAT EXCEED 3 INCHES (75mm) 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 1.5 INCHES (40mm) IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT (150M) IN ADVANCE AND A MINIMUM OF ONCE EVERY 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 100 FT (31M) FROM THE EDGE OF TRAVEL LANE AND NO MORE THAN THREE (3) DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

WHEN NO WORK IS BEING CONDUCTED FOR A PERIOD LONGER THAN ONE WEEK, REMOVE OR COVER ALL ADVANCE WORK ZONE WARNING SIGNS, AS DIRECTED BY THE ENGINEER, AT NO COST TO THE DEPARTMENT.

M) PROVIDE PERMANENT SIGNING.

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

TRAFFIC BARRIER

O) INSTALL MOVABLE/PORTABLE CONCRETE BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE MOVABLE/PORTABLE CONCRETE 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.

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

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
LESS THAN 50 MPH	20 FT
50 MPH or HIGHER	30 FT

INSTALL MOVABLE/PORTABLE CONCRETE BARRIER WITH THE TRAFFIC FLOW, BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE MOVABLE/PORTABLE CONCRETE BARRIER AGAINST THE TRAFFIC FLOW, BEGINNING WITH THE DOWNSTREAM SIDE OF TRAFFIC.

INSTALL AND SPACE DRUMS EQUAL IN METERS TO 2/3 THE POSTED SPEED LIMIT (MPH) TO CLOSE OF KEEP CLOSE THE SECTION OF THE ROADWAY UNTIL THE BARRIER CAN BE PLACED OR AFTER BARRIER IS REMOVED.

TRAFFIC CONTROL DEVICES

Q) SPACE CHANNELIZING DEVICES IN WORK AREAS EQUAL IN METERS TO 2/3 THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT (3M) ON-CENTER IN RADII, AND 3 FT (1M) OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT.

R) PLACE TYPE III BARRICADES, WITH "ROAD CLOSED" SIGN R11-2 ATTACHED, OF SUFFICIENT LENGTH TO CLOSE ENTIRE ROADWAY. STAGGER OR OVERLAP BARRICADES TO ALLOW FOR INGRESS OR EGRESS.

S) PLACE SETS OF THREE DRUMS PERPENDICULAR TO THE EDGE OF THE TRAVELWAY ON 500 FT (150M) CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC. THESE DRUMS SHALL BE IN ADDITION TO CHANNELIZING DEVICES.

PAVEMENT MARKINGS AND MARKERS

T) INSTALL PAVEMENT MARKINGS AND PAVEMENT MARKERS ON THE FINAL SURFACE AS FOLLOWS:

ROAD NAME	MARKING	MARKER
1. ALL ROADS	THERMOPLASTIC	SNOWPLOWABLE
2. STRUCTURE	COLD APPLIED PLASTIC	PERMANENT RAISED

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

V) REPLACE ANY PAVEMENT MARKINGS THAT HAVE BEEN DAMAGED BY THE END OF EACH DAY'S OPERATION.

W) REMOVE ALL CONFLICTING PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

TEMPORARY/FINAL SIGNALS

X) SHIFT AND REVISE ALL SIGNAL HEADS AS SHOWN ON THE SIGNAL PLANS.

MISCELLANEOUS

Y) POLICE MAY BE USED TO MAINTAIN TRAFFIC THROUGH INTERSECTIONS.

Z) PLACE DRUMS TO DELINEATE EXISTING ISLANDS AFTER REMOVAL AND PROPOSED ISLANDS BEFORE INSTALLATION.

APPROVED: [signature] DATE: 16 AUG 06

SEAL

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 8973 G. L. GETTIER

GENERAL NOTES

SCALE: NONE
DATE: 08/06
DWG. BY: MW
DESIGN BY: JWG
REVIEWED BY: JWG

REVISIONS

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PROJ. REFERENCE NO.	SHEET NO.
U-2905A	TCP-3

PHASE I

STEP 1: - CONTRACTOR SHALL INSTALL ADVANCE WORK ZONE SIGNS ON NORTH-EASTBOUND I-85/40 (-Y5-) AND UNIVERSITY DRIVE (-L-) AND ALL OTHER -Y- LINES AS SHOWN ON SHEET TCP-5.

CONTRACTOR SHALL WORK IN PHASE I STEPS 2, 3 AND 4 SIMULTANEOUSLY.

CONTRACTOR SHALL WORK IN A CONTINUOUS MANNER TO COMPLETE THE FOLLOWING WORK IN PHASE I, STEP 2 IN 60 CALENDAR DAYS (SEE INTERMEDIATE CONTRACT TIME AND SPECIAL PROVISIONS).

STEP 2: - CONTRACTOR SHALL, USING ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEETS 3 & 5 OF 7 AND "TEMPORARY SHOULDER CLOSURES" DETAIL ON SHEET TCP-6 INSTALL PORTABLE CONCRETE BARRIER (PCB) ON OUTSIDE LANE OF NORTH-EASTBOUND I-85/40 (-Y5-) AS SHOWN ON SHEET TCP-4. CONSTRUCT PROPOSED LOOP "C" (-LPC-) AND ACCELERATION LANE FROM STA. 13+10 +/- -LPC- TO STA. 21+93 +/- -Y5-(INCLUDING PROPOSED DRAINAGE AND TYPE T2 BARRIER), UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE (SEE CONSTRUCTION PLANS AND SHEET TCP-4).

NOTE: INSTALL STATIONARY WORK ZONE SIGNS FOR RIGHT LANE CLOSURE (SEE ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEET 3 OF 7).

NOTE: INSTALL CHANGEABLE MESSAGE SIGN ON THE OUTSIDE SHOULDER OF NORTH-EASTBOUND I-85/40 TWO MILES PRIOR TO LANE CLOSURE TO WARNING TRAFFIC OF RIGHT LANE CLOSURE AHEAD. ADDITIONAL CHANGEABLE MESSAGE SIGN MAY BE REQUIRED TO WARN TRAFFIC NOT TO FOLLOW CONSTRUCTION TRUCKS INTO THE WORK AREA.

- CONTRACTOR MAY PLACE FINAL PAVEMENT MARKINGS (THERMOPLASTIC, SNOWPLOWABLE RAISED PAVEMENT MARKERS & FLEXIBLE DELINEATORS ON PROPOSED LOOP "C" (-LPC-) AND ACCELERATION LANE FROM STA. 13+10 +/- -LPC- TO STA. 21+93 +/- -Y5- (SEE SHEET PM-1).

- UPON COMPLETION OF PROPOSED LOOP "C" (-LPC-) AND ACCELERATION LANE CONSTRUCTION FROM STA. 13+10 +/- -LPC- TO STA. 21+93 +/- -Y5- THE CONTRACTOR SHALL, USING ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEETS 3 & 5 OF 7 REMOVE PORTABLE CONCRETE BARRIER (PCB) ON OUTSIDE LANE OF NORTH-EASTBOUND I-85/40 (-Y5-) AND OPEN TO EXISTING FOUR LANE TRAFFIC PATTERN. INSTALL DRUMS TO KEEP PROPOSED LOOP "C" AND ACCELERATION LANE CLOSE TO TRAFFIC.

STEP 3: - CONTRACTOR SHALL, USING ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEET 3 OF 7 AND "TEMPORARY SHOULDER CLOSURES" DETAIL ON SHEET TCP-6:

-- CONSTRUCT PROPOSED LOOP "C" (-LPC-) (INCLUDING PROPOSED GUARDRAIL AND DRAINAGE) AND TIE-INS TO UNIVERSITY DRIVE (-L-) FROM STA. 9+94 +/- -LPC- TO STA. 13+10 +/- -LPC-, UP TO AND INCLUDING THE FINAL LAYER OF SURFACE COURSE (SEE CONSTRUCTION PLANS AND SHEET TCP-4).

NOTE: INSTALL TYPE III BARRICADES AND DRUMS TO KEEP PROPOSED LOOP "C" CLOSED TO TRAFFIC.

-- CONSTRUCT PROPOSED EXPRESSWAY GUTTER ON RAMP "C" (SEE CONSTRUCTION PLANS AND SHEET TCP-4).

-- PLACE FINAL PAVEMENT MARKINGS YELLOW EDGE LINE (THERMOPLASTIC) ON RAMP "C", IF REQUIRED, AND OPEN TO EXISTING TRAFFIC PATTERN (SEE SHEET PM-1).

STEP 4: - CONTRACTOR SHALL, USING ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEET 3 OF 7:

-- CLOSE BOTH INSIDE LANES OF UNIVERSITY DRIVE (-L-) AND CONSTRUCT/MODIFY EXISTING MEDIAN CONCRETE ISLANDS (SEE CONSTRUCTION PLANS AND SHEET TCP-4).

NOTE: INSTALL DRUMS TO KEEP PROPOSED MEDIAN WIDENING CLOSED UNTIL OPEN TO TRAFFIC, BUT MAINTAIN LEFT TURN LANE ACCESS OPEN TO RAMP "D".

-- INSTALL PROPOSED/REVISED SIGNS AND SIGNAL (SEE SIGNING & SIGNAL PLANS).

CONTRACTOR SHALL WORK IN A CONTINUOUS MANNER TO COMPLETE THE WORK IN PHASE I, STEP 5.

STEP 5: - CONTRACTOR SHALL, USING ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEET 3 OF 7:

-- REMOVE AND REPLACE FINAL PAVEMENT MARKINGS (THERMOPLASTIC & SNOWPLOWABLE RAISED PAVEMENT MARKERS ON ASPHALT, COLD APPLIED PLASTIC & PERMANENT RAISED MARKERS ON STRUCTURE AND FLEXIBLE DELINEATORS) ON UNIVERSITY DRIVE (-L-), REMAINDER OF PROPOSED LOOP "C"/ACCELERATION LANE (-LPC-/-Y5-), ACTIVATE REVISED SIGNAL, AND OPEN TO FINAL TRAFFIC PATTERN (SEE SHEET PM-1).

STEP 6: - CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL DEVICES.

APPROVED: _____ DATE: 30 OCT 06

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 8973 ENGINEER G L GETTIER

PHASING

SCALE:	NONE
DATE:	10/06
DWG. BY:	MW
DESIGN BY:	JWG
REVIEWED BY:	JWG

REVISIONS

CADD FILE

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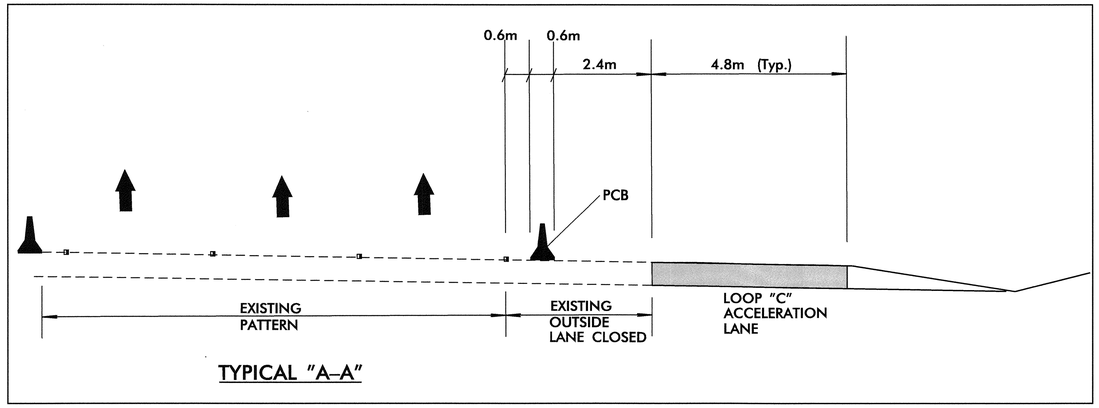
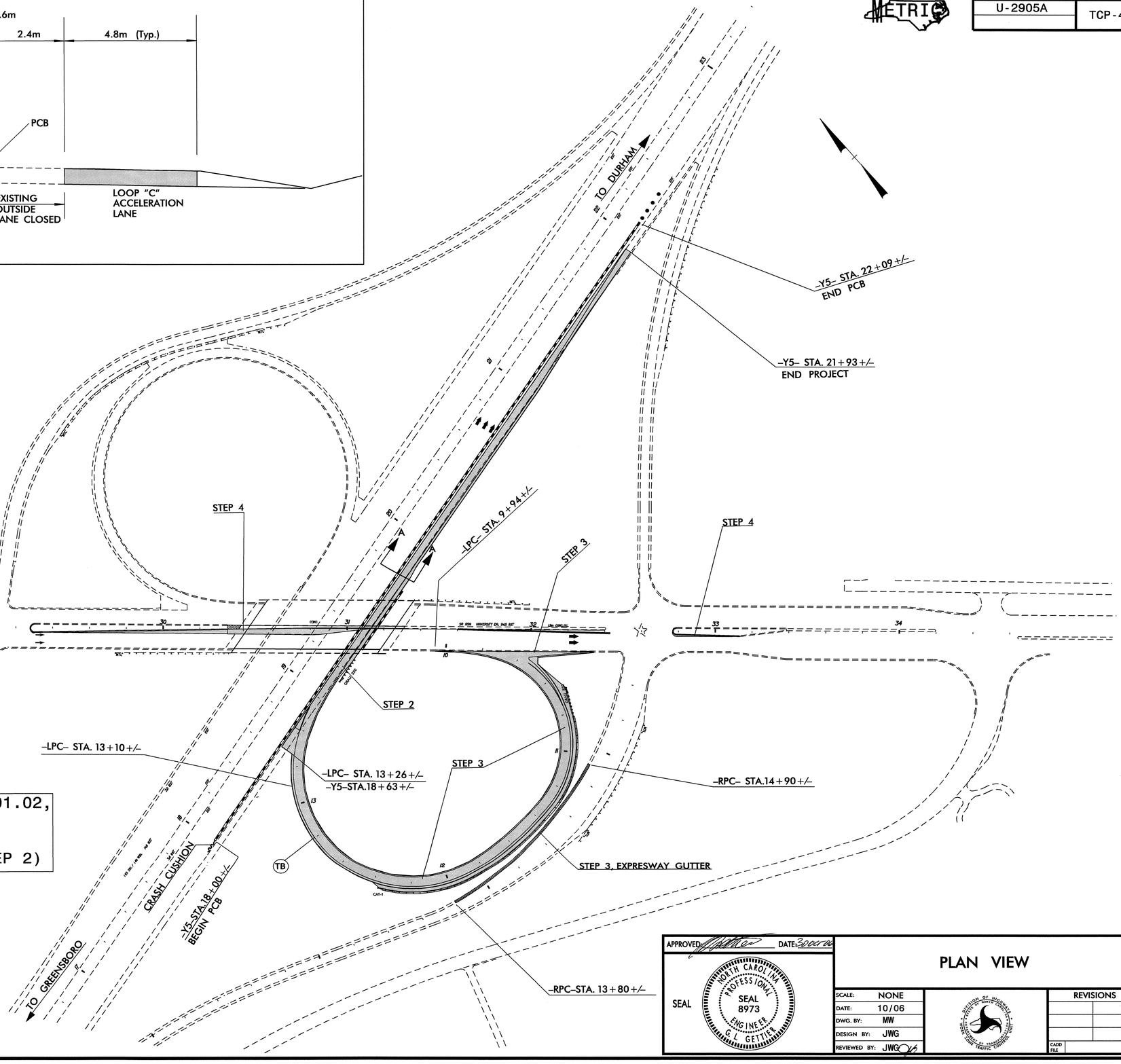
AT WZTC22468

PROJ. REFERENCE NO.	SHEET NO.
U-2905A	TCP-4



TYPICAL "A–A"



CLOSE RIGHT LANE, USE R.S.D 1101.02, SHEET 3 OF 7 AND TEMPORARY SHOULDER CLOSURE DETAIL ON SHEEET TCP-6. (SEE PHASE I, STEP 2)

APPROVED: _____ DATE: 3oct06

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 8973 ENGINEER G L GETTIER

PLAN VIEW

SCALE:	NONE
DATE:	10/06
DWG. BY:	MW
DESIGN BY:	JWG
REVIEWED BY:	JWG

REVISIONS

CADD FILE

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

PROJ. REFERENCE NO.	SHEET NO.
U-2905A	TCP-5

METRIC

SIGN SP 03353 DESIGN

SIGN NUMBER: SP-03349
TYPE: A
QUANTITY: 1

SIGN WIDTH: 1219mm
HEIGHT: 1219mm
TOTAL AREA: 1.5 Sq.m

BORDER TYPE: FLUSH
RECESS: 13mm
WIDTH: 19mm
RADII: 35mm

NO. Z BARS: N/A
LENGTH: N/A

BACKG COLOR: Fluorescent Orange
COPY COLOR: Black

SYMBOL	X	Y	WID	HT

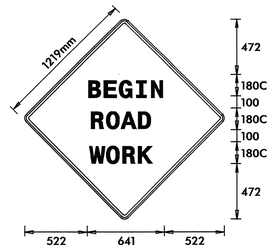
MAT'L:

DESIGN BY: CLD
PROJECT ID: ALL PROJECTS
CHECKED BY:
DIV:
STD #: W22-1
DATE: Sep 19,2003

USE NOTES: 2, 4, 8

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:
8. Use Type I and Type II sheetings until current sheeting inventories are exhausted. Otherwise use Type VII or higher.

(See Standard Practice S-68)



LETTER POSITIONS

Letter spacings are to start of next letter

								Series/Size Text Length
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	Z	O	N	E				C180
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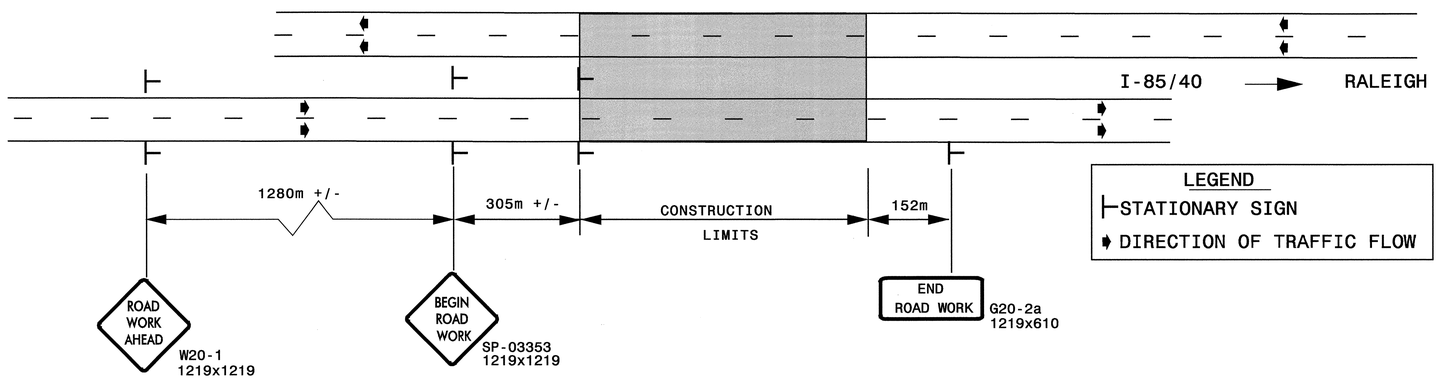
	A	H	E	A	D			C180
522	145	139	113	145	100	522		641

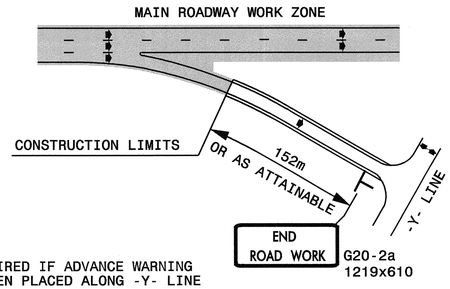
Spacing Factor is 1 unless specified otherwise

DETAIL A



DETAIL B

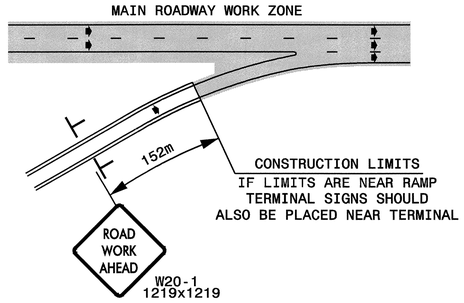
EXIT RAMPS



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.

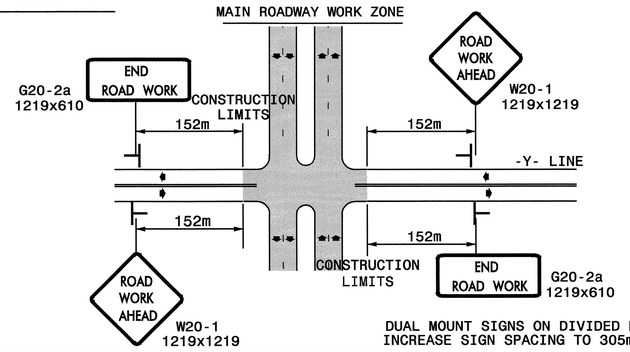
DETAIL C

ENTRANCE RAMPS



DETAIL D

-Y- LINES



DUAL MOUNT SIGNS ON DIVIDED HIGHWAYS AND INCREASE SIGN SPACING TO 305m +/-.

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 1.4Kg STEEL U-CHANNEL POST OR 90mm X 90mm WOOD POST FOR ALL WORK ZONE SIGNS. 1.4Kg 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 1.4Kg STEEL U-CHANNEL POST ARE ALSO ACCEPTABLE FOR USE. ERECT SIGNS PER ROADWAY STANDARD DRAWING 1110.01. PAYMENT FOR WOOD POSTS, 1.4Kg 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 10/20/04

SEAL
NORTH CAROLINA PROFESSIONAL SEAL 8973 ENGINEER G. L. GETTIER

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

SCALE:	NONE
DATE:	8/03
DWG. BY:	JI
DESIGN BY:	JI
REVIEWED BY:	

DIVISION OF HIGHWAYS TRAFFIC ENGINEERING BRANCH TRAFFIC ENGINEERING BRANCH TRAFFIC CONTROL UNIT

REVISIONS	
03/04	
CADD FILE	

16-AUG-2006 07:16
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mwashaya AT WZ122468

PROJ. REFERENCE NO.	SHEET NO.
U-2905A	TCP-6

METRIC

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-05

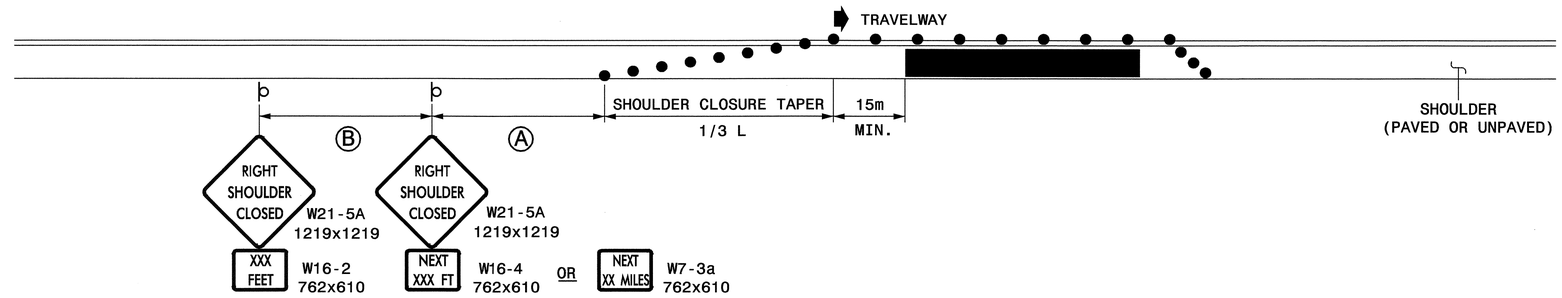
METRIC STANDARD DRAWING FOR

TEMPORARY SHOULDER CLOSURES

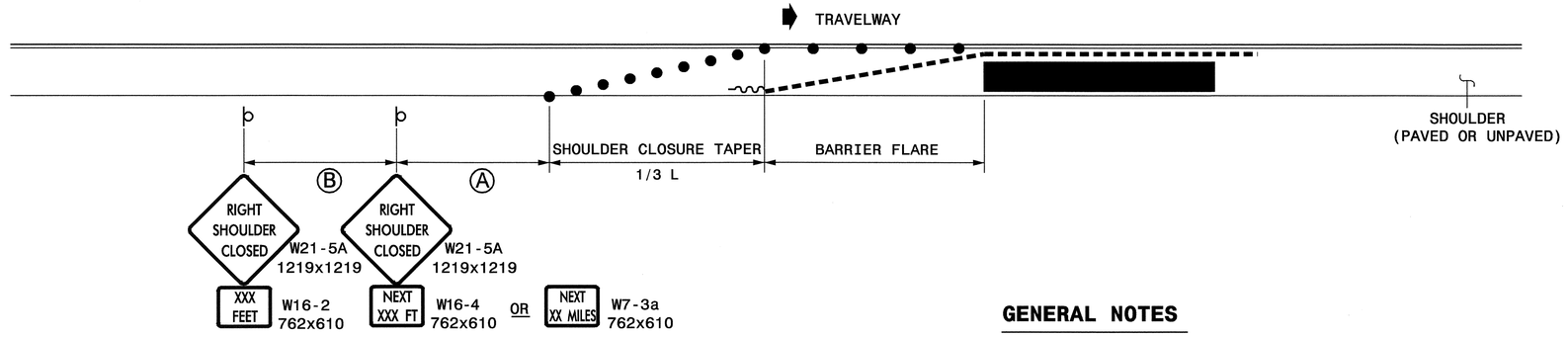
SHEET 1 OF 1

1101D04

SHOULDER CLOSURES UTILIZING DRUMS



SHOULDER CLOSURES UTILIZING TEMPORARY BARRIER



LEGEND

- TEMPORARY CRASH CUSHION
- PORTABLE CONCRETE BARRIER
- DRUM
- STATIONARY OR PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

-PLACE SHOULDER CLOSURE SIGNS ON THE SAME SIDE AS THE SHOULDER THAT IS CLOSED.

-PLACE DRUMS IN THE SHOULDER TAPER AT THE MAXIMUM SPACING EQUAL IN METERS TO 1/3rd THE POSTED SPEED LIMIT (mph). THE MAXIMUM SPACING OF DRUMS ALONG THE WORK AREA AND BARRIER FLARE IS EQUAL IN METERS TO 2/3rds THE POSTED SPEED LIMIT (mph).

-FLARE THE APPROACH END OF PORTABLE CONCRETE BARRIER BEYOND THE SHOULDER AND USE A CRASH CUSHION FOR PROTECTION IF THE EXPOSED END OF THE BARRIER IS WITHIN THE "CLEAR ZONE".

-USE STATIONARY SIGNS FOR LONG TERM OPERATIONS (LONGER THAN 3 DAYS).

-REFER TO STD. 1101.11 SHEETS 1, 3, & 4, FOR "L" DISTANCE, BARRIER FLARE RATES, AND SIGN SPACING.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-05

METRIC STANDARD DRAWING FOR

TEMPORARY SHOULDER CLOSURES

SHEET 1 OF 1

1101D04

APPROVED _____ DATE: 6/20/06

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 8973 ENGINEER L. L. GETTIER

TEMPORARY SHOULDER CLOSURES

SCALE: NONE	REVISIONS
DATE:	
DWG. BY:	
DESIGN BY:	
REVIEWED BY:	
CADD FILE	

16-AUG-2006 07:16
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mwashaya AT NZTC22468

PROJ. REFERENCE NO.	SHEET NO.
U-2905	TCP-7

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

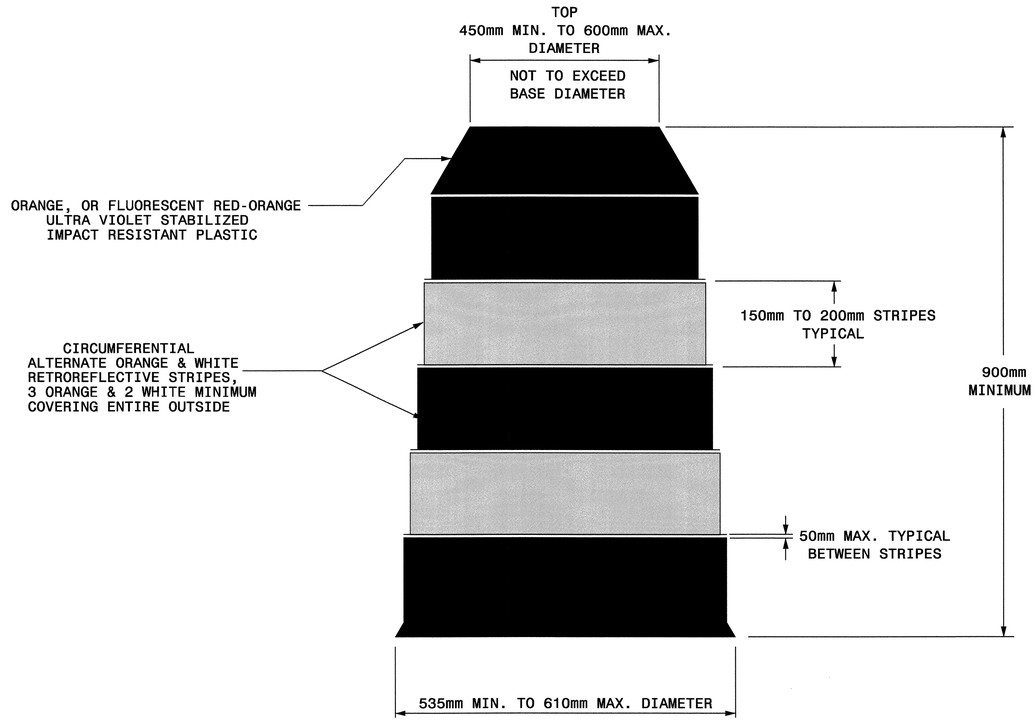
1-02

METRIC STANDARD DRAWING FOR

DRUMS

SHEET 1 OF 1

1130D01



GENERAL NOTES

-BALLASTING SHALL BE ACHIEVED BY THE SAND BAG, TIRE-SIDEWALL BALLAST, OR PREFORMED WEIGHTED BASE BALLASTING METHODS. DO NOT PLACE BALLAST ON TOP OF THE DRUM, NOR AS TO PRESENT A HAZARD WHEN STRUCK.

-IF NECESSARY PLACE THE NAME OF THE AGENCY, CONTRACTOR, OR SUPPLIER ON NON-RETROREFLECTIVE DRUM SURFACES. SHOW THE LETTERS AND NUMBERS USING A NON-RETROREFLECTIVE COLOR AND NOT OVER 50mm IN HEIGHT.

Note:
This drawing is dimensioned in millimeters unless otherwise depicted within the drawing.

STATE OF
NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-02

METRIC STANDARD DRAWING FOR

DRUMS

SHEET 1 OF 1

1130D01

APPROVED _____ DATE _____

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 8973 ENGINEER G. L. GETTIER

REPLACEMENT DETAIL FOR
RSD 1130.01

SCALE:	NONE
DATE:	8/02
DWG. BY:	MMM
DESIGN BY:	MMM
REVIEWED BY:	MMM

REVISIONS	
CADD FILE	

16-AUG-2006 07:17
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mwashgya AT WZTC224168

PROJ. REFERENCE NO.	SHEET NO.
U-2905	TCP-8

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALIGH, N.C.

1-05

METRIC STANDARD DRAWING FOR

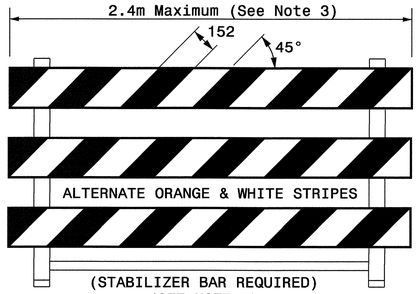
BARRICADES

TYPE-III

SHEET 1 OF 1

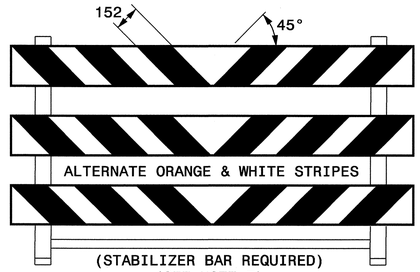
1145D01

TYPE III BARRICADE



TYPE III BARRICADE

END-OF-ROADWAY APPLICATIONS



GENERAL NOTES

1) HORIZONTAL RAILS FOR TYPE-III BARRICADES MAY BE HOLLOW/CORRUGATED EXTRUDED RIGID POLYOLEFIN, HIGH DENSITY POLYETHYLENE, OR OTHER NCDOT APPROVED RAILS. BARRICADE RAILS OF FRANGIBLE PLASTICS SUCH AS PVC MAY NOT BE USED. IF APPROVED PLASTIC TYPE RAILS ARE USED, THEY MUST BE FLAME TREATED BY THE MANUFACTURER SO THAT REFLECTIVE SHEETING MAY ADHERE PROPERLY.

2) BARRICADES AND BARRICADE RAILS ARE APPROVED AS A SINGLE UNIT.

3) BARRICADE SHALL BE LIMITED TO A MAXIMUM LENGTH OF 2.4m UNLESS NCHRP 350 CRASH TESTED AND NCDOT APPROVED.

4) ONLY NCDOT APPROVED COMPOSITE AND ROLL-UP SIGNS MAY BE MOUNTED ON THE BARRICADE.

5) SIGNS MOUNTED ON BARRICADES SHOULD NOT COVER MORE THAN 50 PERCENT OF THE TOP TWO RAILS OR 33 PERCENT OF THE TOTAL AREA OF THE THREE RAILS.

6) USE TYPE VII, VIII OR IX SHEETING ON BOTH SIDES OF THE RAILS.

7) BARRICADE MUST BE NCHRP 350 AND NCDOT APPROVED WITH STABILIZER BAR OR ADEQUATE LATERAL BRACING.

8) ASSEMBLY OF THE GENERIC BARRICADES MUST BE SELF CERTIFIED BY THE ASSEMBLER.

9) BARRICADES USED TO CLOSE A ROADWAY SHALL EXTEND ACROSS THE ENTIRE ROADWAY. WHERE LOCAL TRAFFIC MUST BE MAINTAINED, THEY MAY BE PLACED IN A STAGGERED PATTERN.

10) STRIPES ON WORK ZONE BARRICADE RAILS SHALL BE ALTERNATE ORANGE AND WHITE RETROREFLECTIVE STRIPES, SLOPED DOWNWARD TOWARDS THE SIDE WHICH TRAFFIC IS TO PASS OR TURN IN DETOURING. WHERE NO TURNS ARE INTENDED, THE STRIPES SHOULD SLOPE DOWNWARD TOWARD THE CENTER OF THE BARRICADE OR BARRICADES. USE RED AND WHITE STRIPES FOR PERMANENT BARRICADES.

11) SEE APPROVED PRODUCTS LIST FOR MANUFACTURERS OF APPROVED BARRICADES.

12) PLACE MANUFACTURER'S NAME AND FEDERAL HIGHWAY ADMINISTRATION'S NCHRP 350 APPROVAL LETTER NUMBER ON BARRICADE.

13) USE SANDBAGS PLACED ON THE LOWER PART OF THE FRAME FOR BALLASTING. DO NOT PLACE SANDBAGS ON TOP OF A STRIPED RAIL. DO NOT BALLAST BARRICADES BY HEAVY OBJECTS SUCH AS ROCKS, CHUNKS OF CONCRETE OR OTHER ITEMS THAT WOULD CAUSE DAMAGE IF THE BARRICADE IS STRUCK BY A VEHICLE.

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1-05

METRIC STANDARD DRAWING FOR

BARRICADES

TYPE-III

SHEET 1 OF 1

1145D01

APPROVED: _____ DATE: 6/6/06

SEAL

NORTH CAROLINA PROFESSIONAL SEAL 8973 ENGINEER G. L. GETTIER

TYPE III BARRICADE

SCALE:	NONE
DATE:	
DWG. BY:	
DESIGN BY:	
REVIEWED BY:	

DIVISION OF HIGHWAYS TRAFFIC ENGINEERING BRANCH TRAFFIC CONTROL UNIT

REVISIONS

CADD FILE

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mwashoya AT WZTC224168