# PROJECT: BK-5102H

# 4CT NO. D000080



# STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

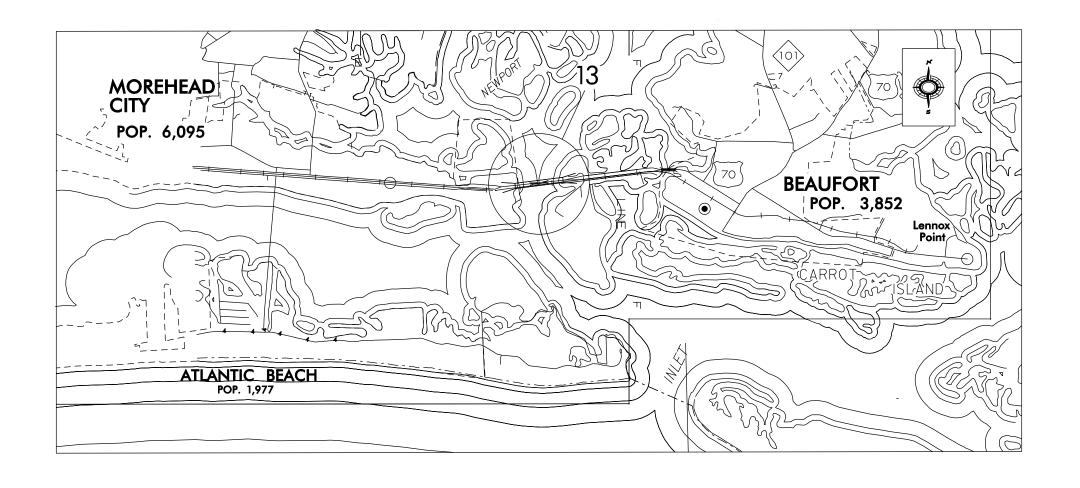
# **CARTERET COUNTY**

STATE	STATI	SHEET NO.	TOTAL SHEETS			
N.C.	$\mathbb{B}\mathbb{K}$	C-5102H	1 1			
STATE	PROJECT NO.	F. A. PROJ. NO.	DESCRIPTION			
42580.1.1 42580.3.8		BRNHS-0070(141)	PE	PE		
		BRNHS-0070(141)	CONS	TR		

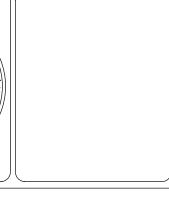
LOCATION: US 70 OVER NEWPORT RIVER

TYPE OF WORK: BRIDGE PRESERVATION – STRUCTURAL STEEL

REPAIRS & PAINTING







PROJECT LENGTH

Prepared in the Office of:

BRIDGE MANAGEMENT UNIT

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

2006 STANDARD SPECIFICATIONS

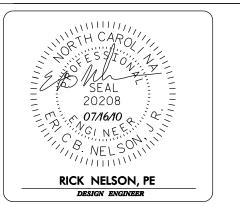
LETTING DATE:

AUGUST 19, 2010

DAN HOLDERMAN, PE

STATE BRIDGE
MANAGEMENT ENGINEER

MIKE SUMMERS





EXISTING BRIDGE AND REPAIR DETAILS INDICATED ON THE PLANS ARE FROM THE BEST INFORMATION AVAILABLE. SINCE THIS INFORMATION IS SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR, THE CONTRACTOR SHALL HAVE NO CLAIM WHATSOEVER AGAINST THE DEPARTMENT OF TRANSPORTATION FOR ANY DELAYS OR ADDITIONAL COST INCURRED BASED ON DIFFERENCES BETWEEN THE EXISTING BRIDGE AND REPAIR DETAILS SHOWN ON THE PLANS AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

REMOVAL AND REPAIR OF THE EXISTING PORTIONS OF THE BRIDGE SHALL BE PERFORMED SO AS NOT TO ALLOW DEBRIS TO FALL INTO THE WATER, THE CONTRACTOR SHALL SUBMIT PLANS FOR REMOVAL AND REPAIR IN ACCORDANCE WITH ARTICLE 402-2 OF THE STANDARD SPECIFICATIONS.

INASMUCH AS THE PAINT SYSTEM ON THE EXISTING STRUCTURAL STEEL CONTAINS LEAD, THE CONTRACTOR'S ATTENTION IS DIRECTED TO ARTICLE 107-1 OF THE STANDARD SPECIFICATIONS. ANY COSTS RESULTING FROM COMPLIANCE WITH APPLICABLE STATE OR FEDERAL REGULATIONS PERTAINING TO HANDLING OF MATERIALS CONTAINING LEAD BASED PAINT SHALL BE INCLUDED IN THE BID PRICE FOR "CLEAN AND PAINT EXISTING STRUCTURE".

FOR SUBMITTAL OF WORKING DRAWINGS, SEE SPECIAL PROVISIONS.

FOR FALSEWORK AND FORMWORK, SEE SPECIAL PROVISIONS.

FOR CRANE SAFETY, SEE SPECIAL PROVISIONS.

THE COST ASSOCIATED WITH WELDING THE STRUCTURAL STEEL REPAIR PLATES TO THE EXISTING GIRDERS SHALL BE INCLUDED IN THE BID PRICE FOR "STRUCTURAL STEEL REPAIR". SEE SPECIAL PROVISIONS.

ALL VISUAL AND NON DESTRUCTIVE WELD TESTING SHALL BE PERFORMED BY NCDOT.

STRUCTURAL STEEL REPAIR MATERIAL SHALL BE AASHTO M270 GRADE 50 AND PAINTED IN ACCORDANCE WITH SYSTEM 1 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS UNLESS OTHERWISE NOTED ON THE PLANS.

EXISTING STRUCTURAL STEEL SHALL BE PAINTED IN ACCORDANCE WITH SYSTEM 1 OF ARTICLE 442-7 OF THE STANDARD SPECIFICATIONS. SEE SPECIAL PROVISIONS.

ALL DIMENSIONS SHOWN ARE HORIZONTAL OR VERTICAL, UNLESS OTHERWISE NOTED.

ALL FIELD CONNECTIONS TO BE  $\frac{3}{4}$ "  $\varnothing$  HIGH STRENGTH BOLTS UNLESS OTHERWISE

WHEN REPLACING CONNECTOR PLATES FOR DIAPHRAGM CONNECTIONS, THE REPLACEMENT CONNECTOR PLATES ARE TO BE PLACED NORMAL TO THE WEB OF THE GIRDER AND SHALL BE PLUMB.

TENSION ON THE AASHTO M164 BOLTS SHALL BE CALIBRATED USING DIRECT TENSION INDICATOR WASHERS IN ACCORDANCE WITH ARTICLE 440-8 OF THE STANDARD SPECIFICATIONS.

REPLACEMENT CONNECTOR PLATES REQUIRE COPING WHEN ANGLE SECTIONS ARE ADDED TO THE BOTTOM FLANGE. SEE DETAIL ON "REPAIR DETAILS" SHEET.

FOR HIGH STRENGTH BOLTS, SEE SPECIAL PROVISIONS.

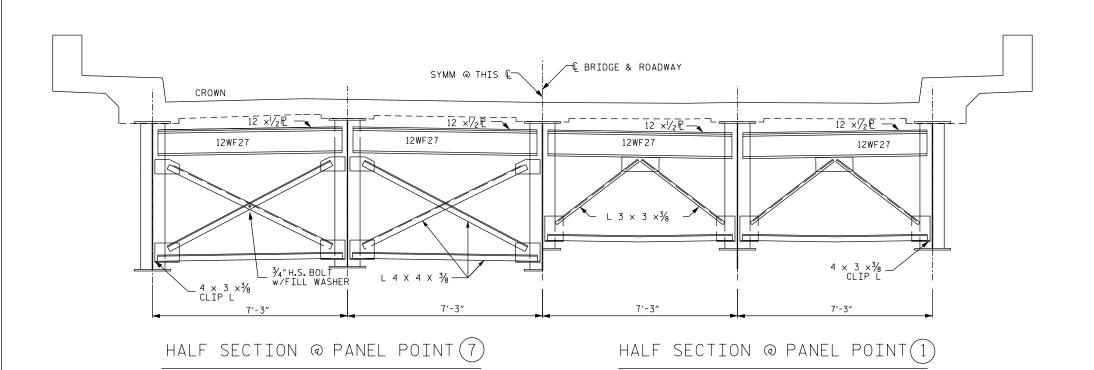
THE COST OF LABOR, MATERIALS, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO REMOVE THE EXISTING DIAPHRAGMS, CONNECTOR PLATES, GUSSET PLATES, PORTIONS OF CONNECTOR PLATES AND ANY MISCELLANEOUS STEEL SHALL BE INCLUDED IN THE BID PRICE FOR "STRUCTURAL STEEL REPAIR".

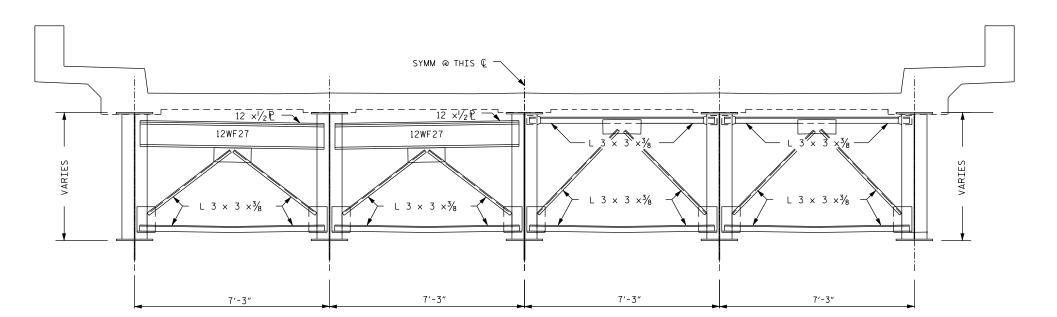
> BK-5102H PROJECT NO. CARTERET COUNTY: N/A STATION: 13 BRIDGE NO.

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

TYPICAL SECTION

	SHEET NO.				
BY:	DATE:	NO.	BY:	DATE:	S-2
		3			TOTAL SHEETS
		4			



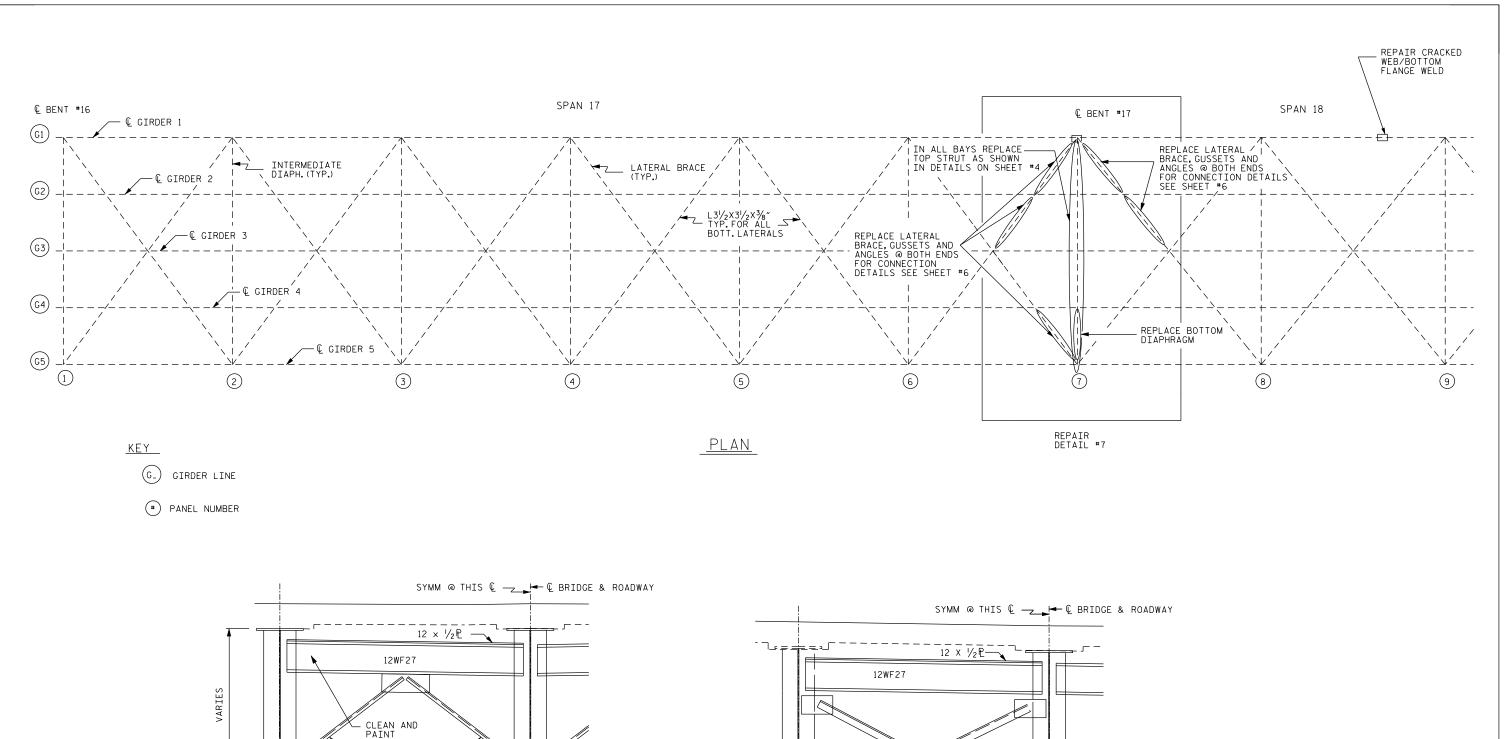


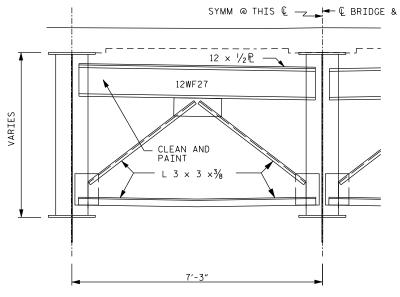
HALF SECTION @ PANEL POINT (4)& (10)

HALF SECTION @ PANEL POINT (2) (3) (5) (6) (8) (9)

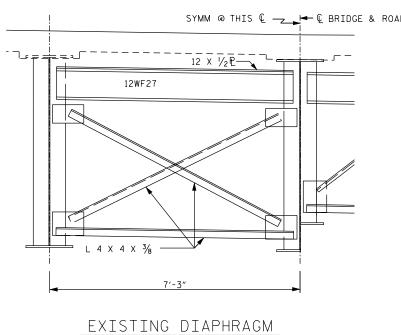
TOTAL BILL OF MATERIAL				
PAY ITEM	QUANTITY			
CLEAN AND PAINT EXISTING STRUCTURE (LS)	LS			
CLEAN AND PAINT EXISTING BEARING (EA.)	20 EA.			
STRUCTURAL STEEL REPAIR (APPROX.LBS.) 4,117 LBS.				
UNDER STRUCTURE PLATFORM (LS)				
POLLUTION CONTROL (LS)	LS			

DRAWN BY: MJW/RW DATE: 06/10 CHECKED BY: AGA DATE: 06/10 \$\$\$\$\$\$\$YSTIME\$\$\$\$\$ \$\$\$\$USERNAME\$\$\$\$





EXISTING DIAPHRAGM AT PANEL POINT 4



AT PANEL POINT 7 & 13

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION RALEIGH

PROJECT NO.

BRIDGE NO.

COUNTY:

STATION:

BK-5102H

CARTERET

N/A

13

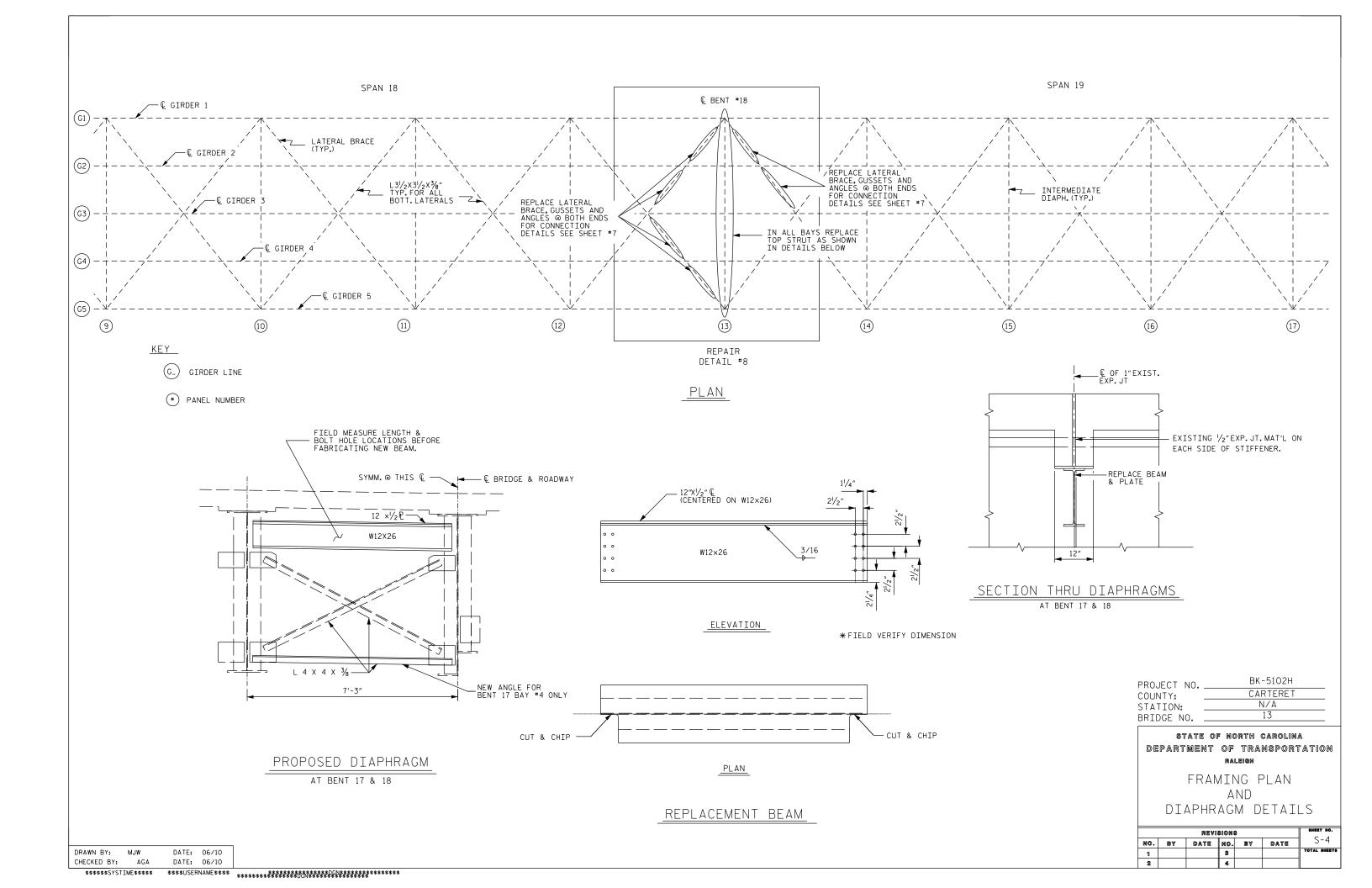
FRAMING PLAN

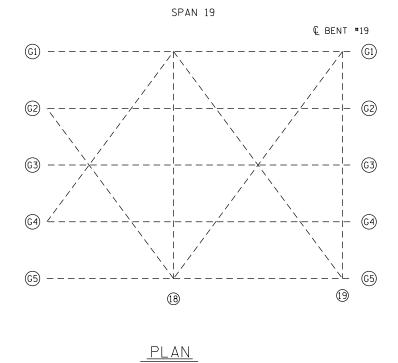
REVISIONS NO. BY DATE NO. BY DATE

CHECKED BY: AGA DATE: 06/10

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PROJECT NO. BK-5102H
COUNTY: CARTERET
STATION: N/A
BRIDGE NO. 13

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
RALEIGH

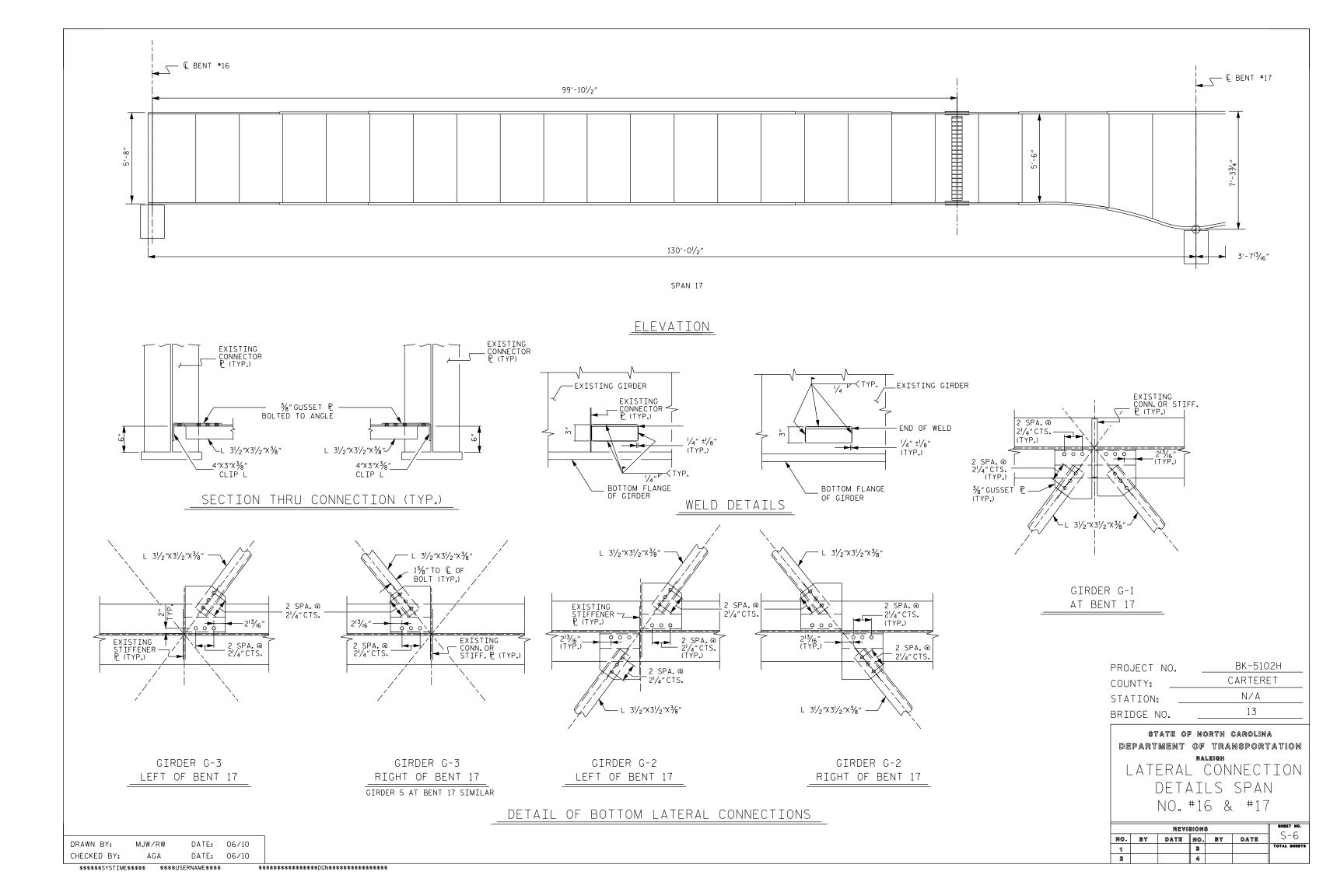
FRAMING PLAN

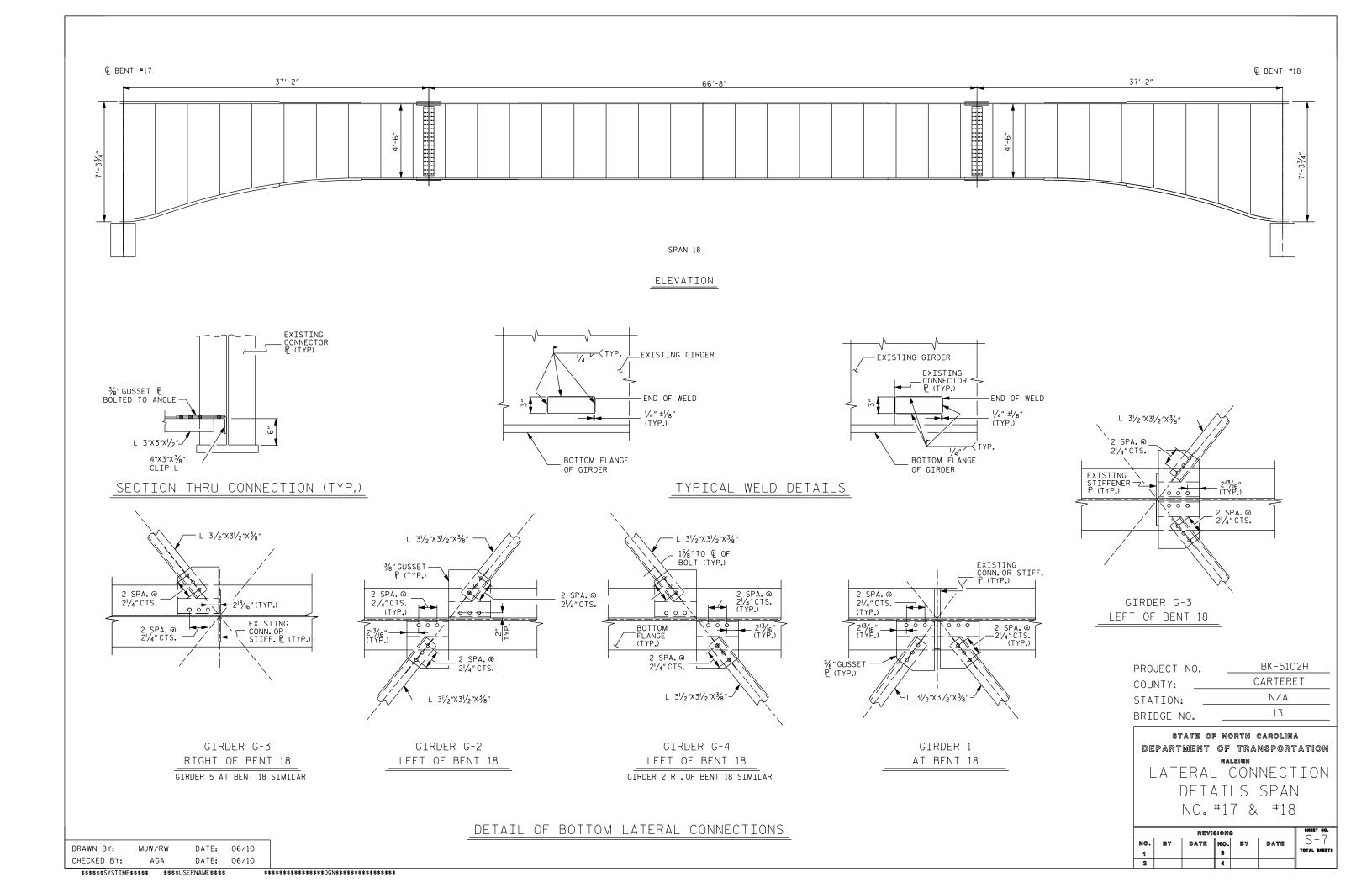
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NO.	BY	DATE	NO.	BY	DATE	S-5
1			3			TOTAL SHEETS
2			4			

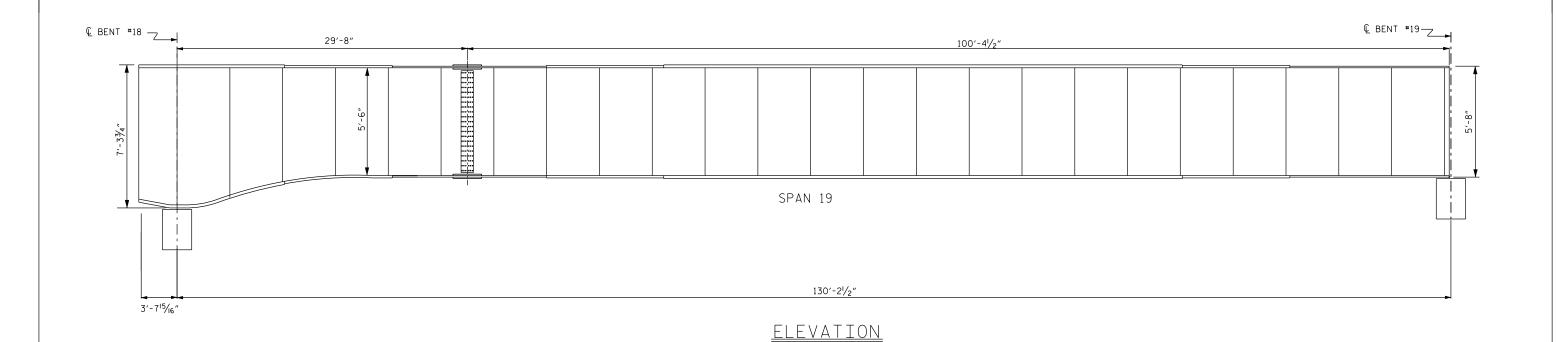
DRAWN BY: MJW DATE: 06/10 CHECKED BY: AGA DATE: 06/10

\$\$\$\$\$\$SYSTIME\$\$\$\$\$ \$\$\$\$USERNAME\$\$\$\$

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REPAIR 7				
REMOVAL	REMOVE BOTTOM LATERAL BRACES REMOVE TOP DIAPHRAGM REMOVE BOTTOM STRUT (BAY 4 ONLY)	INCIDENTAL		
REPLACE BOTTOM LATERIAL BRACES (PLUS GUSSET PLATES & ANGLE CLIPS & BOLTS w/NUTS.)	10- L4X3X¾″ANGLE CLIP 5 - L3½x3½x¾″LATERAL BRACE 60 - ¾″H.S.BOLT w/NUT 10- ¾″GUSSET ₾ (8)	117 LBS 342 LBS 35 LBS 122 LBS		
REPLACE TOP STRUT & BOLTS, BAYS 1-4  REPLACE BOTTOM STRUT (BAY #4 ONLY)	4 - W12X26 w/CHIPPED & CLIPPED ENDS 4 - ½ P X12"X7 FT 64 - ¾"X2" H.S. BOLT w/NUT 1 - L4X3X3/8" ANGLE CLIP	728 LBS 571 LBS 44 LBS 69 LBS		
TOTAL		2028 LBS		

REPAIR 13				
REMOVAL	REMOVE BOTTOM LATERAL PLATES REMOVE TOP DIAPHRAGM	INCIDENTAL		
REPLACE BOTTOM LATERIAL BRACES (PLUS GUSSET PLATES & ANGLE CLIPS & BOLTS w/NUTS.)	12 - L4X3X¾″ANGLE CLIP 6 - L3½x3½x¾″LATERAL BRACE 72 - ¾″H.S.BOLT w/NUT 12 - ¾″ GUSSET ₽	143 LBS 411 LBS 42 LBS 150 LBS		
REPLACE TOP STRUT & BOLTS, BAYS 1-4	4 - W12X26 w/CHIPPED & CLIPPED ENDS 4 - ½″ P X12″X7 FT 64 - ¾″H.S.BOLT w/NUT	728 LBS 571 LBS 44 LBS		
TOTAL		2089 LBS		

COUNTY: CARTERET

STATION: N/A

BRIDGE NO. 13

STATE OF NORTH CAROLINA

PROJECT NO.

BK-5102H

state of north carolina
department of transportation
raleigh
SPAN 19
BENTS
NO. #18 & #19

	SHEET NO.					
NO. BY DATE			NO.	BY	DATE	2-8
1			3			TOTAL SHEETS
ை			AI.			

DRAWN BY: MJW/RW DATE: 06/10 CHECKED BY: AGA DATE: 06/10

STATE OF NORTH CAROLINA DIVISION OF HIGHWAYS

# PLAN FOR PROPOSED TRAFFIC CONTROL

# CARTERET COUNTY

LOCATION: BRIDGE NO. 13 US HIGHWAY 70 OVER NEWPORT RIVER TYPE OF WORK: TRAFFIC CONTROL FOR BRIDGE PAINTING AND REPAIRS

# ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS" -PROJECT SERVICES UNIT - 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
1101.04	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
1150.01	FLAGGING DEVICES
1180.01	SKINNY DRUMS

# INDEX OF SHEETS

SHEET NO.

TITLE

TCP-1

LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, AND

INDEX OF SHEETS

TCP-2

GENERAL NOTES & TRAFFIC CONTROL PHASING

TCP-3, 3A, 3B

TEMPORARY LANE CLOSURE FLAGGER OPERATION

# LEGEND

## GENERAL

◆ DIRECTION OF TRAFFIC FLOW

STATE PROJECT REFERENCE NO

BK-5102H

SHEET NO.

TCP-1

- NORTH ARROW

WORK AREA

## TRAFFIC CONTROL DEVICES

TYPE III BARRICADE

▲ CONE

SKINNY DRUM

FLASHING ARROW PANEL (TYPE C)

STATIONARY SIGN

PORTABLE SIGN

STATIONARY OR PORTABLE SIGN

TEMPORARY CRASH CUSHION

CHANGEABLE MESSAGE SIGN

TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)

POLICE

FLAGGER

PLAN PREPARED BY:



Tel. 919.851.6866 Fax. 919.851.7024 www.stantec.com License No. F-0672

BETSY L. WATSON, PE

GEORGE KARAGEORGE

TRAFFIC CONTROL ENGINEER TRAFFIC CONTROL DESIGNER

BK-5102H

PROJECT REFERENCE NO.

TCP-2

SHEET NO

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

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

### TIME RESTRICTIONS

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

ROAD NAME US 70

DAY AND TIME RESTRICTIONS 5:00 A.M.-11:00 P.M. MONDAY THRU SUNDAY

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

ROAD NAME US 70

### HOLIDAYS AND SPECIAL EVENTS

- 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 5:00 A.M. DECEMBER 31st TO 11:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A FRIDAY, SATURDAY, SUNDAY, OR MONDAY THEN UNTIL 11:00 P.M. THE FOLLOWING TUESDAY.
- 3. FOR EASTER, BETWEEN THE HOURS OF 5:00 A.M. THURSDAY AND 11:00 P.M.
- 4. FOR MEMORIAL DAY, BETWEEN THE HOURS OF 5:00 A.M. FRIDAY AND 11:00 P.M. TUESDAY.
- 5. FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 5:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 11:00 P.M. THE DAY AFTER INDEPENDENCE DAY.
  - IF INDEPENDENCE DAY IS ON A FRIDAY, SATURDAY, SUNDAY OR MONDAY THEN BETWEEN THE HOURS OF 5:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 11:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.
- 6. FOR LABOR DAY, BETWEEN THE HOURS OF 5:00 A.M. FRIDAY AND 11:00 P.M. TUESDAY.
- 7. FOR THANKSGIVING DAY, BETWEEN THE HOURS OF 5:00 A.M. TUESDAY TO 11:00 P.M. MONDAY.
- 8. FOR CHRISTMAS, BETWEEN THE HOURS OF 5:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 11:00 P.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF CHRISTMAS.

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- C) LANE CLOSURES ARE REQUIRED WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN ANY PORTION OF A TRAVEL LANE. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL
- D) INSTALL ALL LANE CLOSURES ACCORDING TO THE TRAFFIC CONTROL PLAN. ROADWAY STANDARD DRAWINGS (1101.02), OR AS DIRECTED BY THE ENGINEER.
- E) REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED OR AS DIRECTED BY THE ENGINEER.
- F) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 15 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING ROADWAY STANDARD DRAWING NO. 1101.04 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR A LANE CLOSURE IS INSTALLED.
- G) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE 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 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.

- H) DURING FLAGGER OPERATIONS DO NOT STOP TRAFFIC FOR MORE THAN 5 MINUTES AT A TIME.
- I) FLAGGERS SHALL NOT STAND IN THE ROADWAY.
- J) USE FLAGGERS TO CONTROL VEHICLES AT INTERSECTIONS OR RAILROAD GRADE CROSSINGS AFFECTED BY THE LANE CLOSURE. USE FLAGGER SIGN W20-7a IN ADVANCE OF ALL FLAGGER STATIONS. WHEN AN INTERSECTION IS SIGNALIZED HAVE AUTHORIZED PERSONNEL PLACE THE SIGNAL IN FLASH MODE WHEN DIRECTED BY THE ENGINEER.
- K) FLAGGER STATIONS SHALL BE ILLUMINATED AT NIGHT.
- L) USE PILOT VEHICLES IN CONJUNCTION WITH FLAGGERS WHEN SHOWN IN THE PLAN OR WHEN DIRECTED BY THE ENGINEER. MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A VISIBLE LOCATION ON THE REAR OF PILOT VEHICLES.
- M) ADVISE RESIDENTS AND BUSINESSES AFFECTED BY THE LANE CLOSURE ABOUT METHODS OF SAFE INGRESS AND EGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

### MISCELLANEOUS

- N) LAW ENFORCEMENT MAY BE USED TO MAINTAIN TRAFFIC THROUGH THE WORK AREA AND/OR INTERSECTIONS AS DIRECTED BY THE ENGINEER.
- O) MAINTAIN PEDESTRIAN ACCESS AT ALL TIMES.
- P) ALL DIMENSIONS AND STATIONS IN THE TRAFFIC CONTROL PLAN AND PHASING ARE APPROXIMATE (+/-); FIELD ADJUST AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- Q) ENSURE THE OVERSIZE/OVERWEIGHT PERMIT UNIT (919) 733-4740 HAS BEEN ADVISED OF THE ONGOING TRAFFIC OPERATIONS THROUGH THE DIVISION OFFICE.

## TRAFFIC CONTROL PHASING

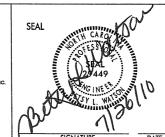
PRIOR TO BEGINNING ANY BRIDGE WORK, INSTALL CHANGEABLE MESSAGE SIGNS AND PROGRAM MESSAGES TO INFORM PUBLIC OF UPCOMING LANE CLOSURES OR WORK ZONE INFORMATION AS DIRECTED BY THE ENGINEER.

INSTALL AND REMOVE ALL PLATFORMS AND CONTAINMENT SYSTEMS FROM BELOW. ALL STAGING AREAS TO BE CONTAINED ON BARGES OR AS OTHERWISE ALLOWED BY THE ENGINEER. PERFORM BRIDGE WORK FROM UNDER BRIDGE.

IF LANE CLOSURES ARE NEEDED, USE FLAGGERS WITH PILOT CAR GUIDANCE AS SHOWN ON TCP-3, 3A, AND 3B UNLESS OTHERWISE DIRECTED BY THE ENGINEER. FLAGGER MAY BE LOCATED CLOSER TO THE WORK AREA IF APPROVED BY THE ENGINEER.



Stantec Consulting Services Inc 801 Jones Franklin Road Suite 300 Raleigh, NC 27606 Tel. (919) 851-6866 Fax (919) 851-7024 www.stantec.com License No. F-0672



GENERAL NOTES TRAFFIC CONTROL PHASING

NONE JULY 2010 GK DESIGN BY:



PEVISIONS

