B-3830

TIP PROJECT:

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STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B-3830	TCP-1

PLAN FOR PROPOSED TRAFFIC CONTROL, MARKING & DELINEATION

COLUMBUS COUNTY

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
1101.03	TEMPORARY ROAD CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.06	WARNING SIGNS FOR BLASTING ZONES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.01	STATIONARY WORK ZONE SIGNS
1110.02	PORTABLE WORK ZONE SIGNS
1130.01	DRUM
1135.01	CONES
1145.01	BARRICADES
1150.01	FLAGGING DEVICES
1160.01	TEMPORARY CRASH CUSHION
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
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

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 I BARRICADE
- 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

TEMPORARY PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	PAY ITEM QUANTITY BREAKDOWN	TOTAL QUANTITY
	TEMPORARY PAVEMENT MARKINGS PAINT(4")		
PA	WHITE EDGE LINE (2X)	18700 LF	
PI	YELLOW DOUBLE CENTER (2X)	10800 LF	
			TOTAL 29500 LF

NOTE: FOR EACH PAINT PAVEMENT MARKING ITEM, 1X IMPLIES A SINGLE APPLICATION, 2X IMPLIES TWO APPLICATIONS, AND 3X IMPLIES THREE APPLICATIONS.

APPROVED: _____

DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

June 3, 2008

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

STUART BOURNE, P.E. _____ *TRAFFIC CONTROL ENGINEER*

JOSEPH ISHAK, P.E. _____ *TRAFFIC CONTROL PROJECT ENGINEER*

HABIB LAWANDOS _____ *TRAFFIC CONTROL PROJECT DESIGN ENGINEER*

_____ *TRAFFIC CONTROL DESIGN ENGINEER*

GENERAL NOTES

PROJECT NOTES

PROJ. REFERENCE NO.	SHEET NO.
B-3830	TCP-2

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.

LANE AND SHOULDER CLOSURE REQUIREMENTS

A) 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.

B) 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.

C) 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.

D) 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.

E) 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.

F) DO NOT INSTALL MORE THAN 1 MILE OF LANE CLOSURE ON BELLA COOLA ROAD MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.

G) DO NOT INSTALL MORE THAN ONE LANE CLOSURE, IN ANY ONE DIRECTION, ON BELLA COOLA ROAD.

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 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 FT 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 PERMANENT SIGNING.

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

O) INSTALL BLACK ON ORANGE "DIP" SIGNS (W8-2) AND/OR "BUMP" SIGNS (W8-1) 100 FT IN ADVANCE OF THE UNEVEN AREA, OR AS DIRECTED BY THE ENGINEER.

TRAFFIC BARRIER

P) 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.

Q) 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

R) SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER 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.

S) PLACE ADDITIONAL SETS OF THREE CHANNELIZING DEVICES DRUMS PERPENDICULAR TO THE EDGE OF TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
BELLA COOLA ROAD	PAINT	NONE

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

ROAD NAME	MARKING	MARKER
BELLA COOLA ROAD	PAINT	PERMANENT RAISED

V) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.

W) 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.

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

Y) REMOVE/REPLACE ANY CONFLICTING/DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

TEMPORARY / FINAL SIGNALS

Z) NOTIFY THE ENGINEER TWO (2) MONTHS BEFORE A TRAFFIC SIGNAL INSTALLATION BY OTHERS IS REQUIRED.

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

MISCELLANEOUS

BB) IN THE EVENT A TIE-IN CANNOT BE MADE IN ONE DAYS TIME, BRING THE TIE-IN AREA TO AN APPROPRIATE ROADWAY ELEVATION, AS DETERMINED BY THE ENGINEER. PLACE BLACK ON ORANGE "LOOSE GRAVEL" SIGNS (W8-7) AND BLACK ON ORANGE "PAVEMENT ENDS" SIGNS (W8-3) 350 FT AND 350 FT RESPECTIVELY IN ADVANCE OF THE UNEVEN AREAS. USE DRUMS TO DELINEATE THE EDGE OF ROADWAY ALONG UNPAVED AREAS.

APPROVED:________________ DATE:________

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

Joseph Ishak June 3, 2008

PROJECT NOTES

SCALE:	NONE
DATE:	MAY 08
DWG. BY:	JLF
DESIGN BY:	JLF
REVIEWED BY:	HAL

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

REVISIONS

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halawandos AT WZTC224250

PROJ. REFERENCE NO.	SHEET NO.
B-3830	TCP-3

PROJECT OVERVIEW

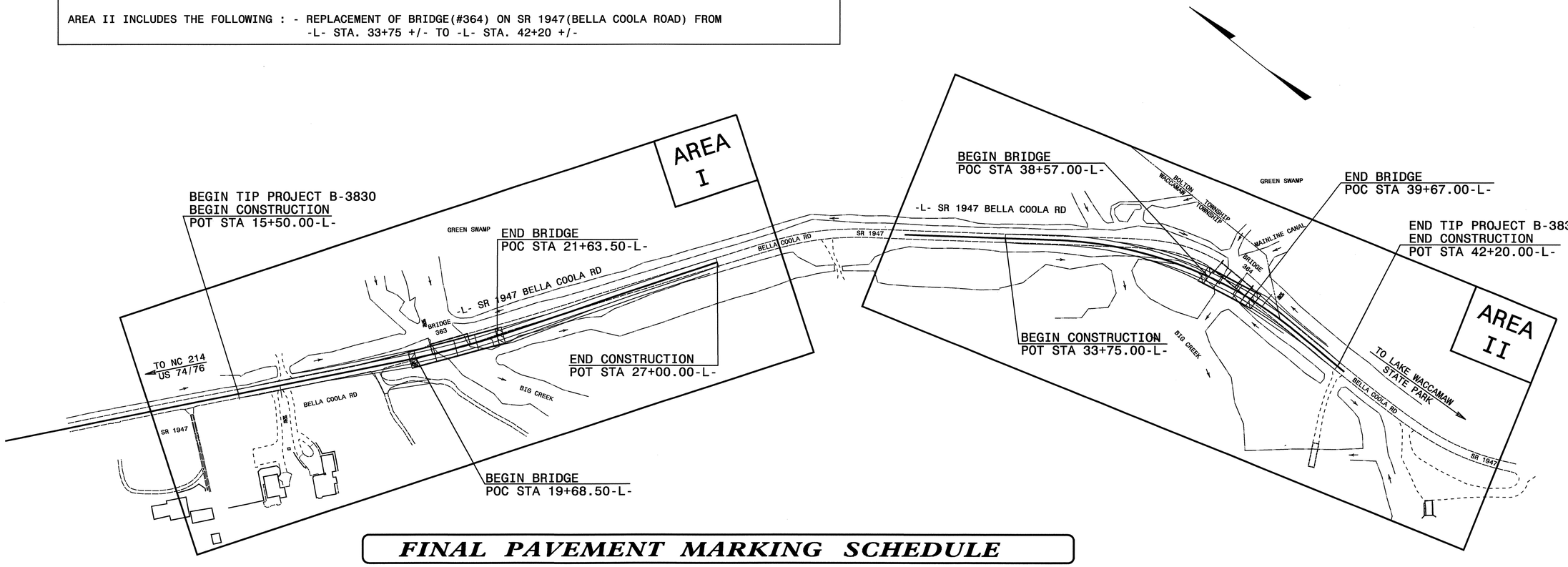
PROJECT INFORMATION

THIS PROJECT IS SUBDIVIDED INTO TWO AREAS. CONSTRUCTION IN ONE AREA SHALL PROCEED INDEPENDENTLY AND SIMULTANEOUSLY WITH CONSTRUCTION IN OTHER AREA UNLESS OTHERWISE NOTED IN THE PLAN.

THEREFORE, PHASES IN ONE AREA RELATE SOLELY TO THAT AREA AND DOES NOT AFFECT THE PHASING IN OTHER AREA.

AREA I INCLUDES THE FOLLOWING : - REPLACEMENT OF BRIDGE(#363) ON SR 1947(BELLA COOLA ROAD) FROM -L- STA. 15+50 +/- TO -L- STA. 27+00 +/-.

AREA II INCLUDES THE FOLLOWING : - REPLACEMENT OF BRIDGE(#364) ON SR 1947(BELLA COOLA ROAD) FROM -L- STA. 33+75 +/- TO -L- STA. 42+20 +/-



FINAL PAVEMENT MARKING SCHEDULE

SYMBOL	DESCRIPTION	PAY ITEM QUANTITY BREAKDOWN		TOTAL QUANTITY	
	FINAL PAVEMENT MARKINGS PAINT(4")				
PA	WHITE EDGE LINE (2X)	10800	LF		
PI	YELLOW DOUBLE CENTER (2X)	10800	LF		
				TOTAL 21600	LF
	FINAL RAISED PAVEMENT MARKERS				
MA	YELLOW & YELLOW	40	EA		
				TOTAL 40	EA

NOTE: FOR EACH PAINT PAVEMENT MARKING ITEM, 1X IMPLIES A SINGLE APPLICATION, 2X IMPLIES TWO APPLICATIONS, AND 3X IMPLIES THREE APPLICATIONS.

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

June 3, 2008

PROJECT OVERVIEW AND FINAL PAVEMENT MARKING SCHEDULE

SCALE:	NONE
DATE:	MAY 08
DWG. BY:	JLF
DESIGN BY:	JLF
REVIEWED BY:	HAL

REVISIONS

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PROJ. REFERENCE NO.	SHEET NO.
B-3830	TCP-4

PHASING

AREA I PHASING

PHASE I:

STEP 1:
INSTALL ADVANCE WORK ZONE WARNING SIGNS ON SR 1947. SEE SHEET TCP-10

STEP 2:
USING RSD 1101.02, SHEET 1 OF 9, PERFORM THE FOLLOWING: SEE SHEET TCP-5.

- CONSTRUCT PROPOSED REATAINING WALL # 1 ON LEFT SIDE OF -L-.
- INSTALL TEMPORARY GUARDRAIL ON LEFT SIDE OF -L- FROM -L- STA. 17+17 +/- TO -L- STA. 20+07 +/-.
- CONSTRUCT TEMPORARY PAVEMENT FROM -L- STA. 17+19 +/- TO -L- STA. 20+07 +/- UP TO THE EDGE AND ELEVATION OF EXISTING ROADWAY.
- BEGIN DRAINAGE WORK WITHIN AREA I.

PHASE II:

NOTE: MAINTAIN ACCESS TO DRIVEWAY LOCATED ON LEFT SIDE OF -L- AT -L- STA. 18+90 +/-.

STEP 1:
USING RSD 1101.02, SHEET 1 OF 9, PERFORM THE FOLLOWING: SEE SHEET TCP-6.
1- INSTALL TEMPORARY SIGNALS FOR THE TEMPORARY ONE LANE TRAFFIC PATTERN.
2- MODIFY PAVEMENT MARKINGS AS SHOWN ON TCP-6 AND PLACE TRAFFIC IN A ONE LANE /TWO WAY TEMPORARY TRAFFIC PATTERN ON EXISTING WESTBOUND LANE FROM -L- STA. 16+77 +/- TO -L- STA. 27+90 +/-.

STEP 2:
1- USING FLAGGERS, INSTALL PCB AND CRASH CUSHIONS FROM -L- STA. 17+68 +/- TO -L- STA. 23+53 +/-. SEE SHEET TCP-6.
2- BEHIND PCB INSTALL TEMPORARY SHORINGS # 1, 2, 3, AND 4. SEE SHEET TCP-6.
3- REMOVE A PORTION OF EXISTING BRIDGE AS SHOWN ON STRUCTURE PLANS.
4- CONSTRUCT STAGE I STRUCTURE AND ROADWAY UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE FROM -L- STA. 17+17 +/- TO -L- STA. 27+00 +/-, AND DRIVEWAY LOCATED ON THE LEFT SIDE OF -L- AT -L- STA. 18+90 +/-. SEE ROADWAY PLANS AND SHEET TCP-6.
5- PLACE TEMPORARY PAVEMENT MARKINGS (PAINT) ON THE CONSTRUCTED EB LANE FROM -L- STA. 16+77 +/- TO -L- STA. 27+90 +/- AS SHOWN ON SHEET TCP-7.

PHASE III:

STEP 1:
1- USING FLAGGERS, INSTALL PCB AND CRASH CUSHIONS ON CONSTRUCTED EB LANE FROM -L- STA. 17+72 +/- TO -L- STA. 23+62 +/-.
2- SHIFT TRAFFIC TO A TEMPORARY ONE LANE TRAFFIC PATTERN ONTO CONSTRUCTED EB LANE FROM -L- STA. 16+77 +/- TO -L- STA. 27+90 +/- AS SHOWN ON SHEET TCP-7.
3- CONSTRUCT STAGE II STRUCTURE AND ROADWAY UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE FROM -L- STA. 17+17 +/- TO -L- STA. 27+00 +/-. SEE ROADWAY PLANS AND SHEET TCP-7.
- COMPLETE DRAINAGE WORK WITHIN AREA I.
- REMOVE TEMPORARY PAVEMENT CONSTRUCTED IN PHASE I STEP 2.
- REMOVE TEMPORARY GUARDRAIL INSTALLED IN PHASE I STEP 2.
- REMOVE PCB INSTALLED IN PHASE II STEP 1.

PHASE IV:

STEP 1:
UPON COMPLETION OF WORK IN AREA II, PHASE II, AND USING RSD 1101.02 SHEET 1 OF 9, PERFORM THE FOLLOWING: SEE ROADWAY PLANS.
1- REMOVE TEMPORARY SHORINGS # 1, 2, 3, & 4, INSTALLED IN PHASE II STEP 2.
2- REMOVE PCB AND CRASH CUSHIONS INSTALLED IN PHASE III STEP 1.
3- PLACE TEMPORARY PAVEMENT MARKINGS (PAINT) FOR TWO LANE-TWO WAY TRAFFIC PATTERN FROM -L- STA. 17+17 +/- TO -L- STA. 27+00 +/-.
4- OPEN SR 1947, (AREA I) FROM -L- STA. 17+17 +/- TO -L- STA. 27+00 +/- AND (AREA) II FROM -L- STA. 33+75 +/- TO -L- STA. 42+20 +/- TO PROPOSED TRAFFIC PATTERN, AND REMOVE TEMPORARY SIGNALS INSTALLED IN PHASE II STEP 1.

STEP 2:
USING RSD 1101.02 SHEET 1 OF 9, PERFORM THE FOLLOWING:
- PLACE FINAL SURFACE COURSE AND FINAL PAVEMENT MARKINGS (PAINT) & PERMANENT MARKERS (PERMANENT RAISED) ON THE PROPOSED SR 1947 IN AREA I AND AREA II INCLUDING RESURFACING WORK FROM -L- STA. 27+00 TO -L- STA. 33+75.
- REMOVE ADVANCE WARNING SIGNS AND WORK ZONE DEVICES AND OPEN SR 1947 TO THE PROPOSED TRAFFIC PATTERN.

AREA II PHASING

PHASE I:

STEP 1:
INSTALL ADVANCE WORK ZONE WARNING SIGNS ON SR 1947. SEE SHEET TCP-10

STEP 2:
USING RSD 1101.02, SHEET 1 OF 9, PERFORM THE FOLLOWING: SEE SHEET TCP-8.

- CONSTRUCT PROPOSED REATAINING WALL # 4 ON LEFT SIDE OF -L-.
- BEGIN DRAINAGE WORK WITHIN AREA II.

STEP 3:
USING RSD 1101.02, SHEET 1 OF 9, PERFORM THE FOLLOWING: SEE SHEET TCP-8.
1- INSTALL TEMPORARY SIGNALS FOR THE TEMPORARY ONE LANE TRAFFIC PATTERN.
2- MODIFY PAVEMENT MARKINGS AS SHOWN ON TCP-8 AND PLACE TRAFFIC IN A ONE LANE TWO WAY TEMPORARY TRAFFIC PATTERN ON EXISTING WESTBOUND LANE FROM -L- STA. 32+85 +/- TO -L- STA. 41+90 +/-.

STEP 4:
1- USING FLAGGERS, INSTALL PCB AND CRASH CUSHIONS FROM -L- STA. 36+00 +/- TO -L- STA. 40+34 +/-. SEE SHEET TCP-8.
2- BEHIND PCB INSTALL TEMPORARY SHORING # 5. SEE SHEET TCP-8.
3- REMOVE A PORTION OF EXISTING BRIDGE AS SHOWN ON STRUCTURE PLANS.
4- CONSTRUCT STAGE I STRUCTURE AND ROADWAY UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE FROM -L- STA. 32+85 +/- TO -L- STA. 41+90 +/-. SEE ROADWAY PLANS AND SHEET TCP-8.
5- PLACE TEMPORARY PAVEMENT MARKINGS (PAINT) ON THE CONSTRUCTED EB LANE FROM -L- STA. 32+85 +/- TO -L- STA. 41+90 +/- AS SHOWN ON SHEET TCP-9.

PHASE II:

STEP 1:
1- USING FLAGGERS INSTALL PCB AND CRASH CUSHIONS ON CONSTRUCTED EB LANE FROM -L- STA. 37+27 +/- TO -L- STA. 40+45 +/-. SEE SHEET TCP-9.
2- SHIFT TRAFFIC TO A ONE LANE TWO WAY TEMPORARY TRAFFIC PATTERN ONTO CONSTRUCTED EB LANE FROM -L- STA. 32+85 +/- TO -L- STA. 41+90 +/- AS SHOWN ON SHEET TCP-9.
3- CONSTRUCT STAGE II STRUCTURE AND ROADWAY UP TO BUT NOT INCLUDING FINAL LAYER OF SURFACE COURSE FROM -L- STA. 32+85 +/- TO -L- STA. 41+90 +/-. SEE ROADWAY PLANS AND SHEET TCP-9.
- COMPLETE DRAINAGE WORK WITHIN AREA II.
- REMOVE PCB INSTALLED IN PHASE I STEP 4.

PHASE III:

STEP 1:
UPON COMPLETION OF WORK IN AREA I, PHASE III, AND USING RSD 1101.02 SHEET 1 OF 9, PERFORM THE FOLLOWING: SEE ROADWAY PLANS.
1- REMOVE TEMPORARY SHORING # 5 INSTALLED IN PHASE I STEP 4.
2- REMOVE PCB AND CRASH CUSHIONS INSTALLED IN PHASE II STEP 1.
3- PLACE TEMPORARY PAVEMENT MARKINGS (PAINT) FOR TWO LANE-TWO WAY TRAFFIC PATTERN FROM -L- STA. 32+85 +/- TO -L- STA. 41+90 +/-.
4- OPEN SR 1947, (AREA I) FROM -L- STA. 17+17 +/- TO -L- STA. 27+00 +/- AND (AREA) II FROM -L- STA. 33+75 +/- TO -L- STA. 42+20 +/- TO PROPOSED TRAFFIC PATTERN, AND REMOVE TEMPORARY SIGNALS INSTALLED IN PHASE I STEP 3.

STEP 2:
USING RSD 1101.02 SHEET 1 OF 9, PERFORM THE FOLLOWING: SEE PM SHEETS.
- PLACE FINAL SURFACE COURSE AND FINAL PAVEMENT MARKINGS (PAINT) & PERMANENT MARKERS (PERMANENT RAISED) ON THE PROPOSED SR 1947 IN AREA I AND AREA II.
- REMOVE ADVANCE WARNING SIGNS AND WORK ZONE DEVICES AND OPEN SR 1947 TO THE PROPOSED TRAFFIC PATTERN.

APPROVED:__________ DATE:______

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028380 JOSEPH ISHAK
June 3, 2008

PHASING

SCALE:	NONE
DATE:	MAY 08
DWG. BY:	JLF
DESIGN BY:	JLF
REVIEWED BY:	HAL

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

REVISIONS

CADD FILE

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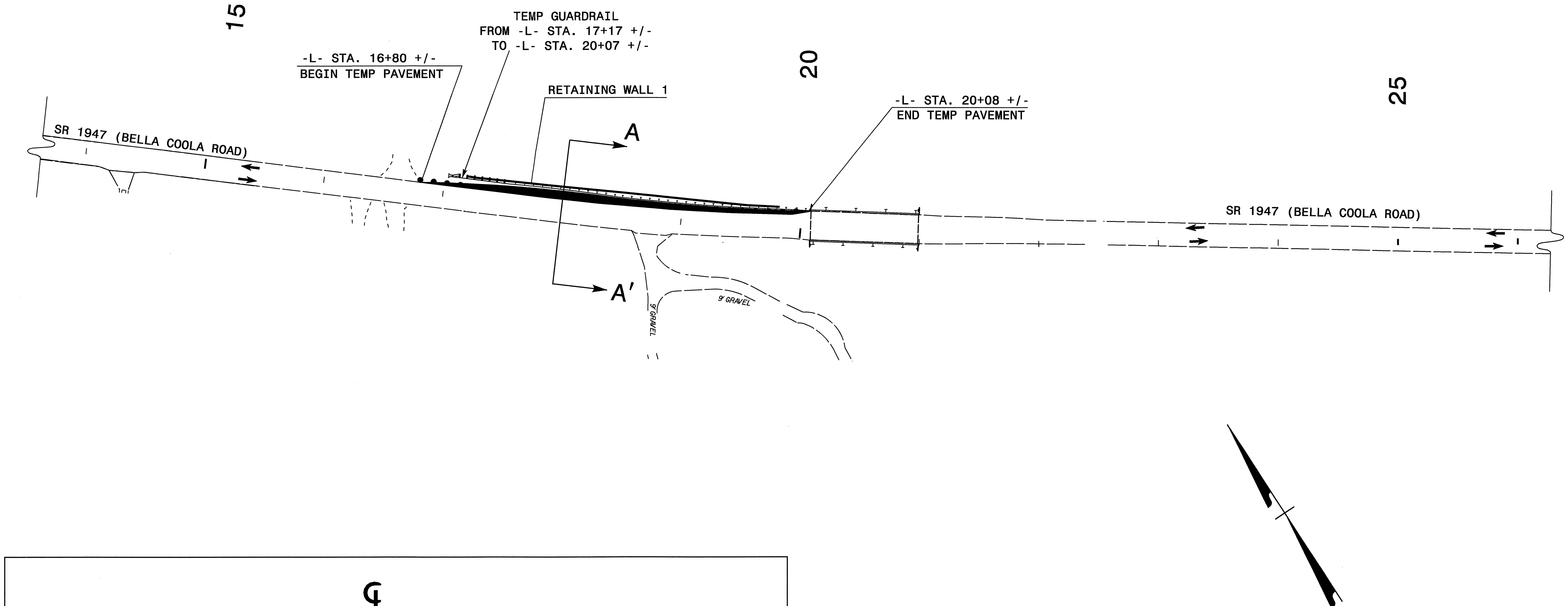
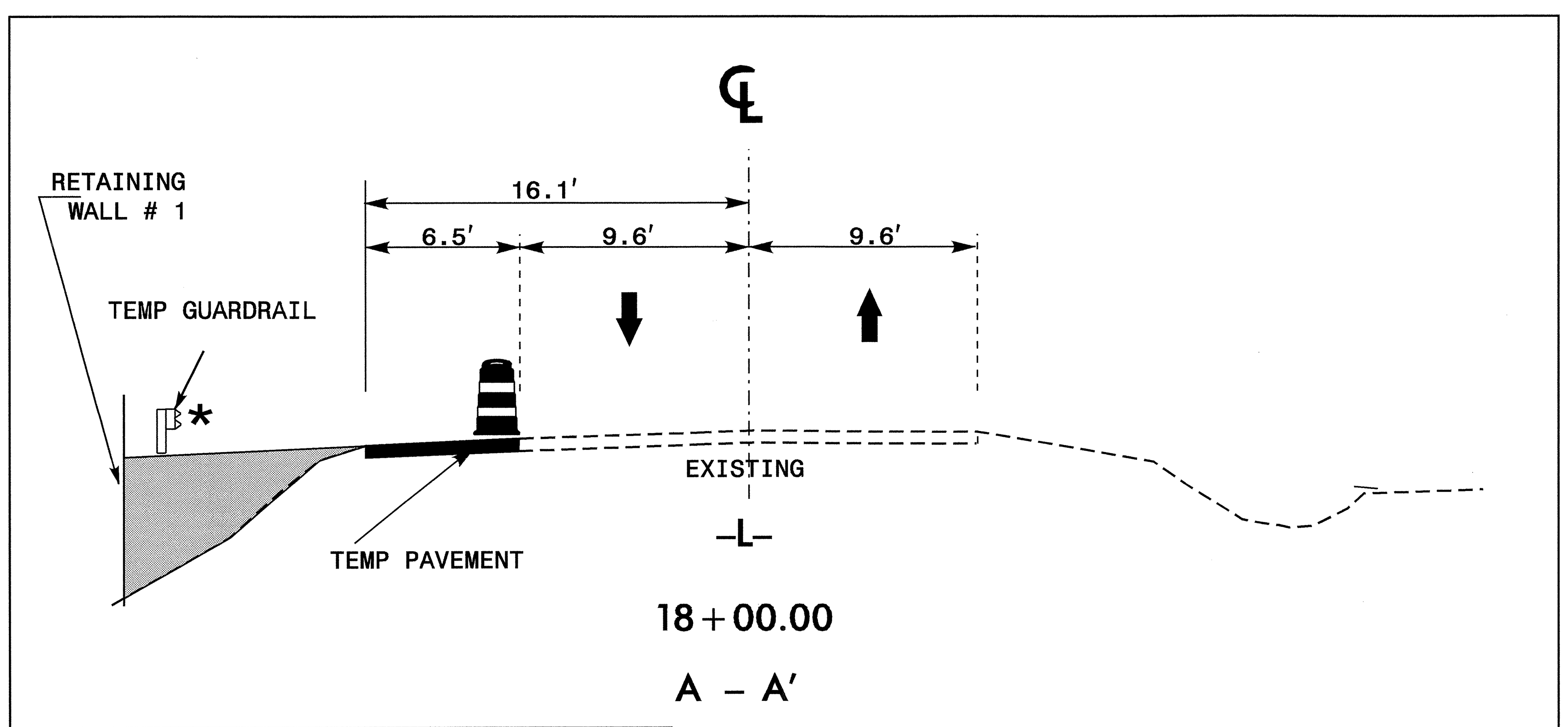
halawandos AT WZTC224250

PROJ. REFERENCE NO.	SHEET NO.
B-3830	TCP-5





* SEE ROADWAY PLAN FOR DESIGN AND PAY ITEM

APPROVED:________ DATE:________

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028380 JOSEPH ISHAK

June 3, 2008

AREA I, PHASE I

SCALE:	NONE
DATE:	MAY 08
DWG. BY:	JLF
DESIGN BY:	JLF
REVIEWED BY:	HAL

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

REVISIONS

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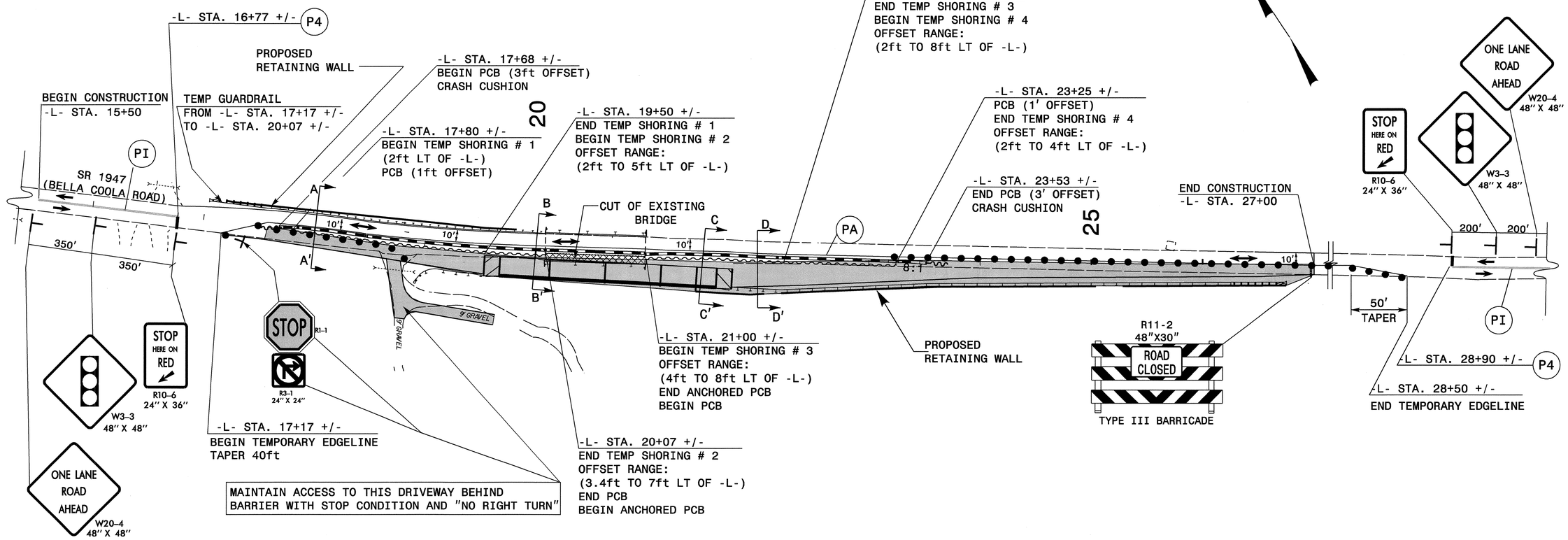
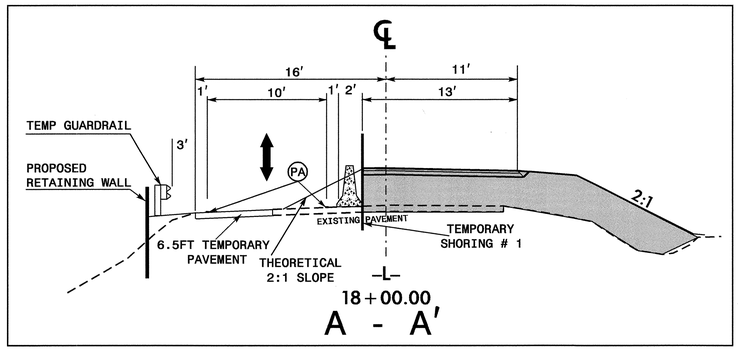
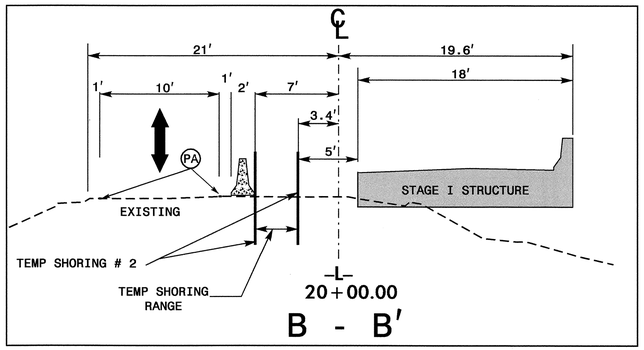
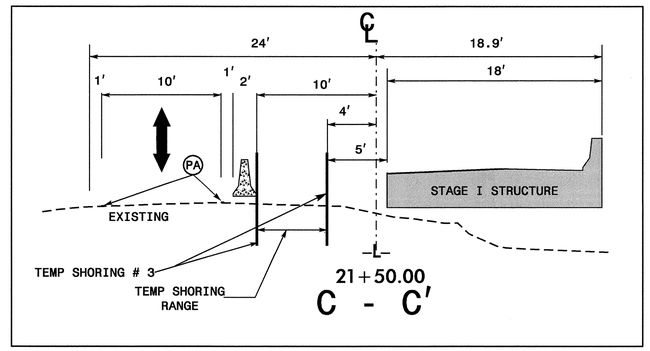
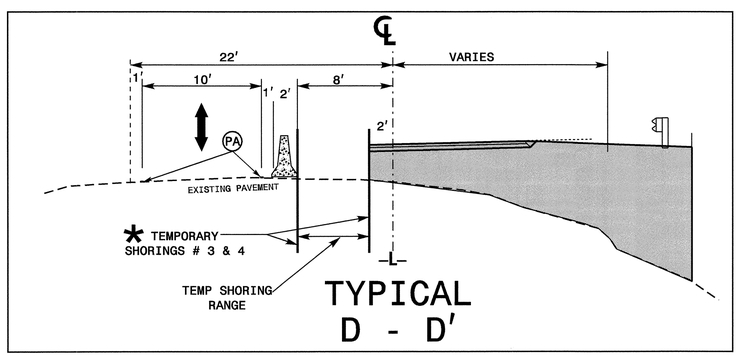
PROJ. REFERENCE NO.	SHEET NO.
B-3830	TCP-6











* THE PURPOSE OF TEMPORARY SHORINGS # 3 & 4 IS TO INSTALL TIE BACK FOR RETAINING WALL # 2. SEE STRUCTURE PLAN.

LEGEND

EXISTING MARKINGS

CONSTRUCTION

APPROVED: _____ DATE: _____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK

June 2, 2008

AREA I, PHASE II

SCALE:	NONE
DATE:	MAY 08
DWG. BY:	HAL
DESIGN BY:	HAL
REVIEWED BY:	JI

REVISIONS

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PROJ. REFERENCE NO.	SHEET NO.
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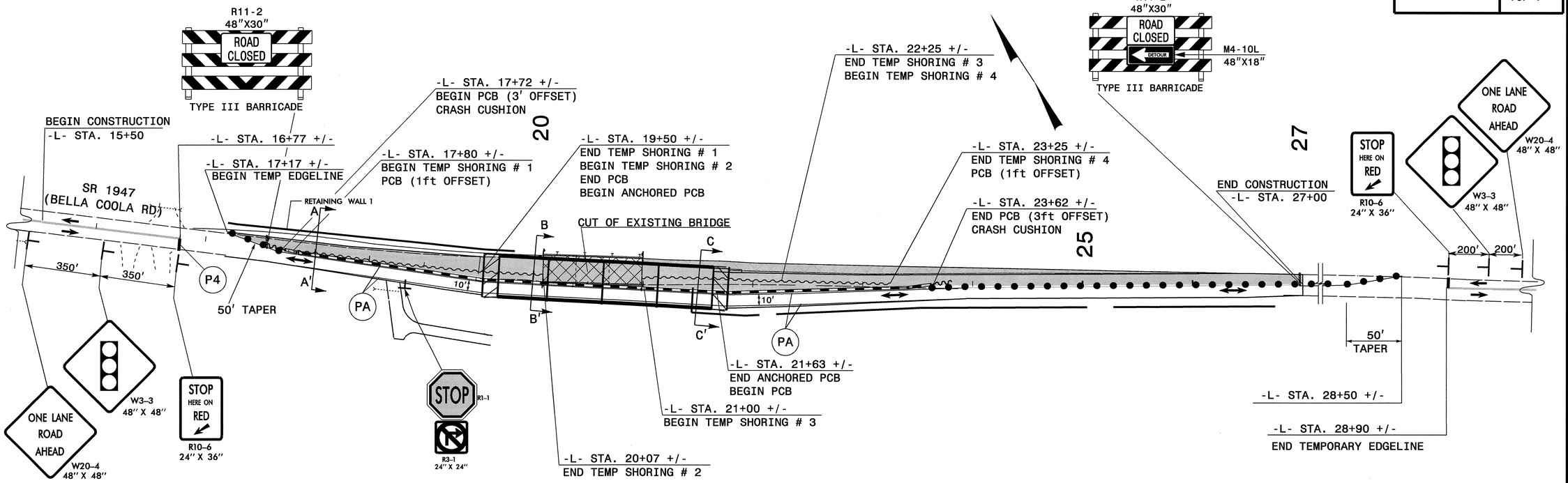

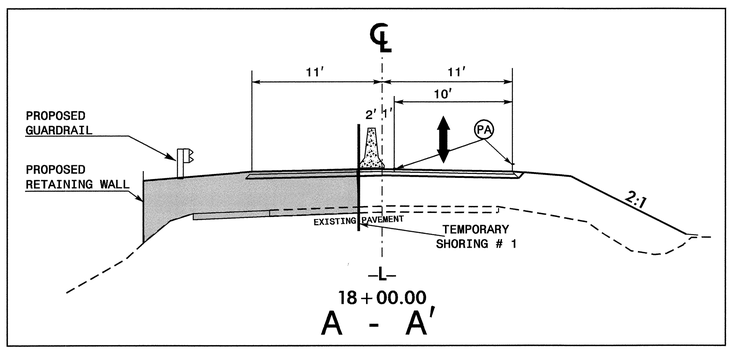

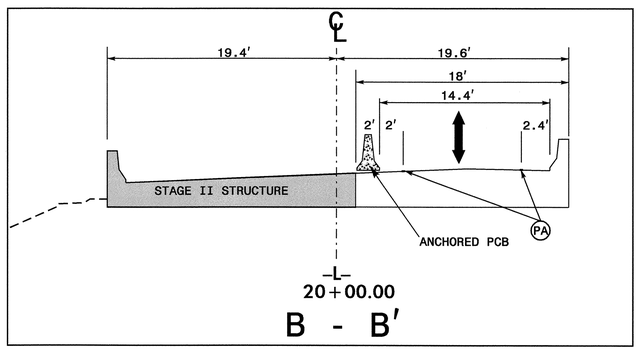

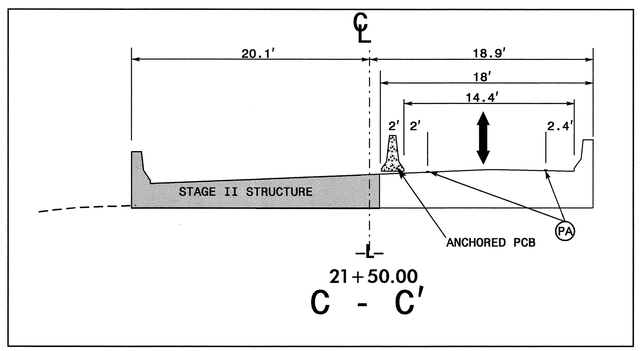

LEGEND

EXISTING MARKINGS

CONSTRUCTION

APPROVED:_____ DATE:_____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH L. ISHAK
June 3, 2008

AREA I, PHASE III

SCALE:	NONE
DATE:	MAY 08
DWG. BY:	JLF
DESIGN BY:	JLF
REVIEWED BY:	HAL

REVISIONS

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halawandos AT WZTC224250

PROJ. REFERENCE NO.	SHEET NO.
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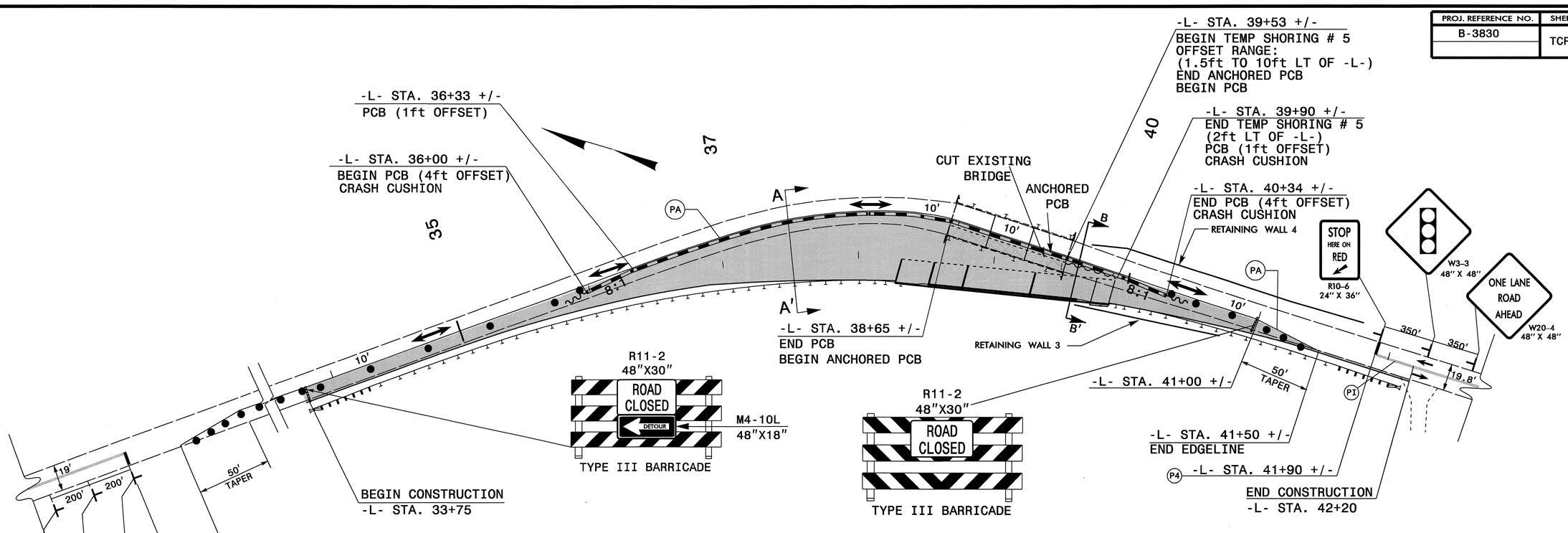

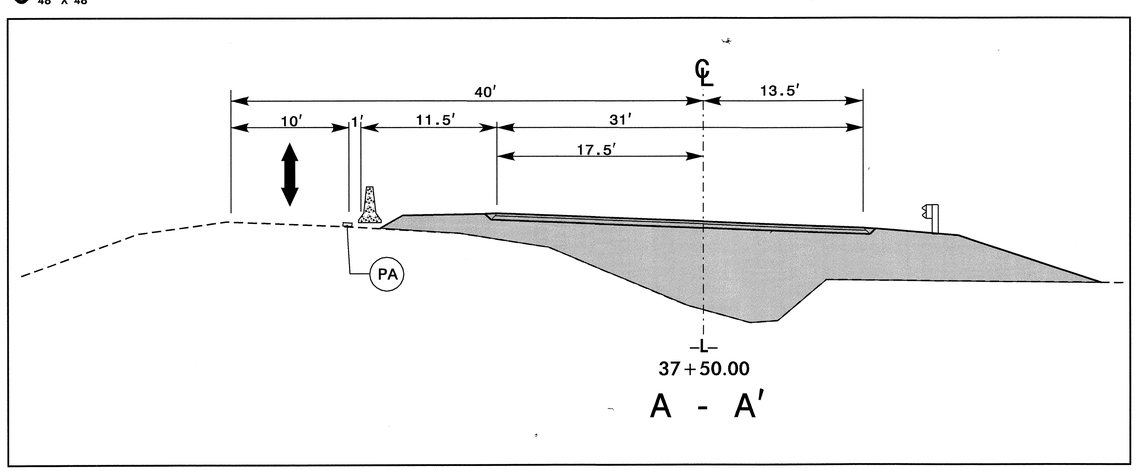

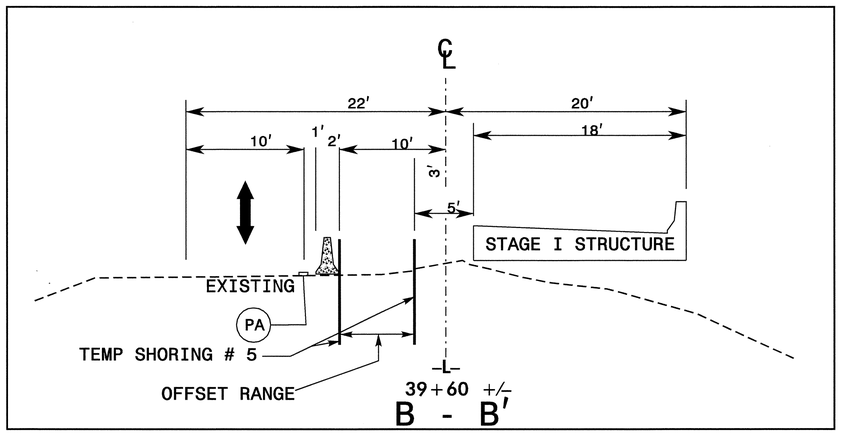

LEGEND

EXISTING MARKINGS

CONSTRUCTION

APPROVED: APPROVED: DATE: DATE:

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK June 9, 2008

AREA II PHASE I

SCALE:	NONE
DATE:	MAY 08
DWG. BY:	JLF
DESIGN BY:	JLF
REVIEWED BY:	HAL

REVISIONS

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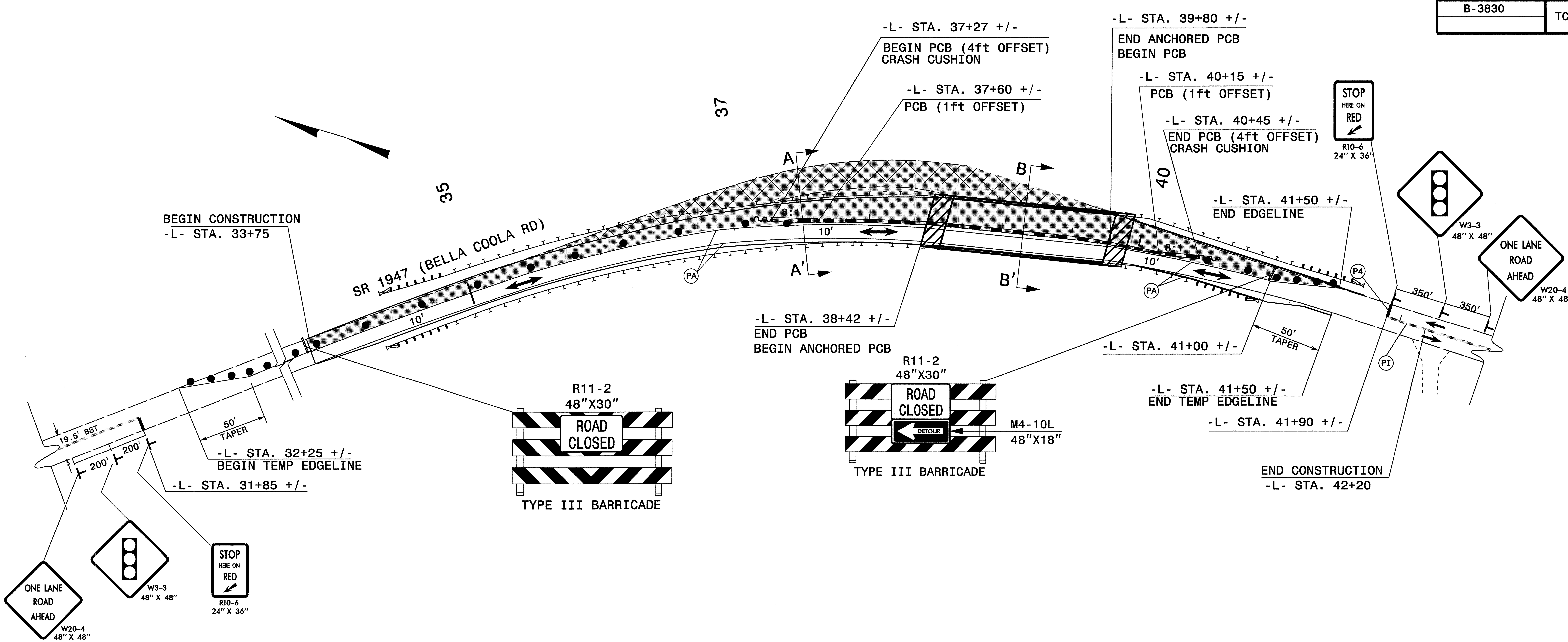
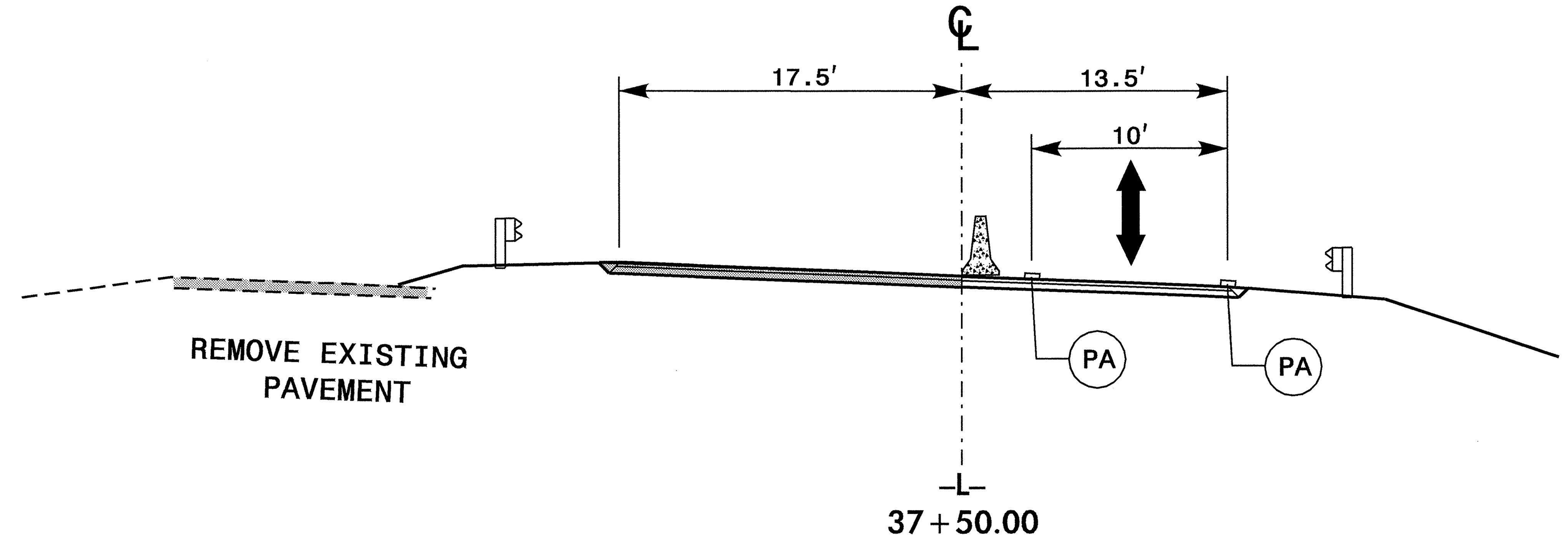
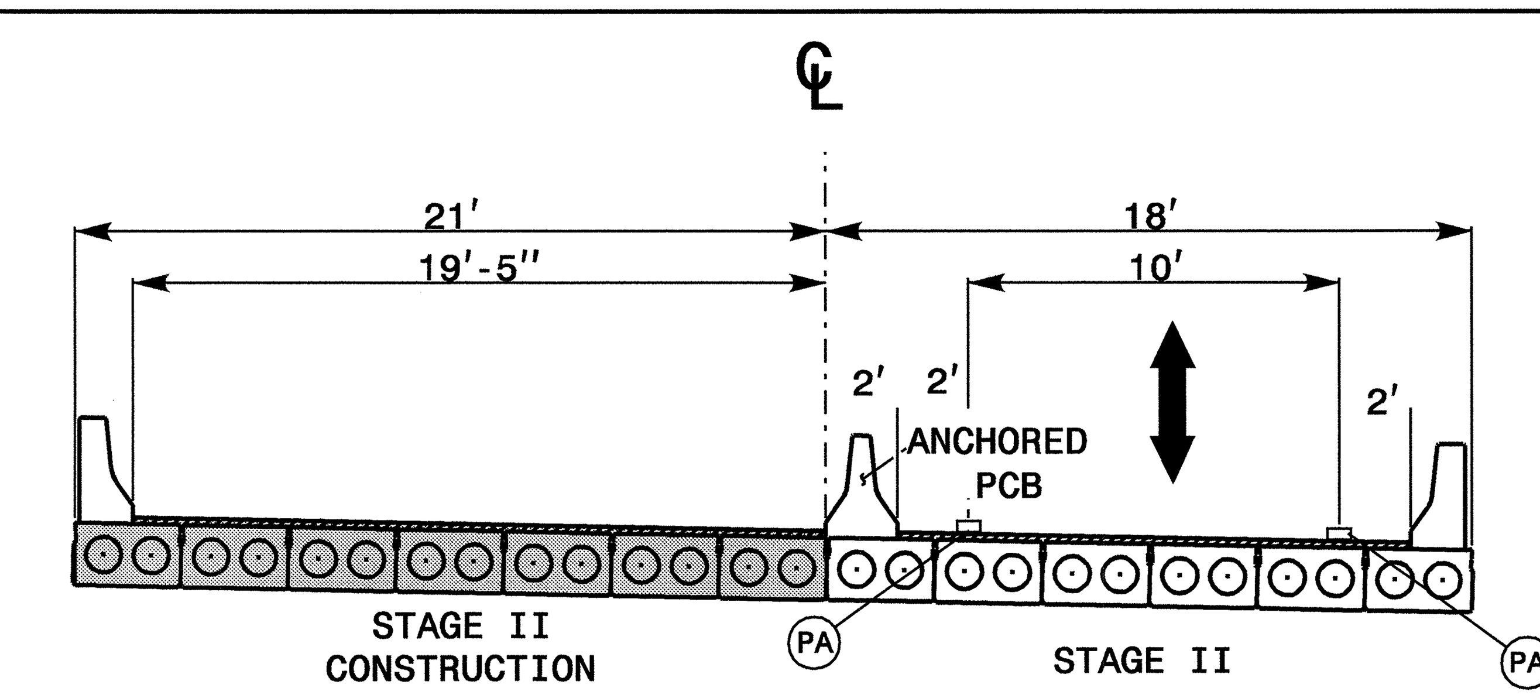




A - A'



B - B'
TYPICAL

LEGEND

- EXISTING MARKINGS
- REMOVE EXISTING
- CONSTRUCTION

APPROVED:__________ DATE:______

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 028380 JOSEPH ISHAK
June 3, 2008

AREA II, PHASE II

SCALE:	NONE
DATE:	MAY 08
DWG. BY:	JLF
DESIGN BY:	JLF
REVIEWED BY:	HAL

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

REVISIONS

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PROJ. REFERENCE NO.	SHEET NO.
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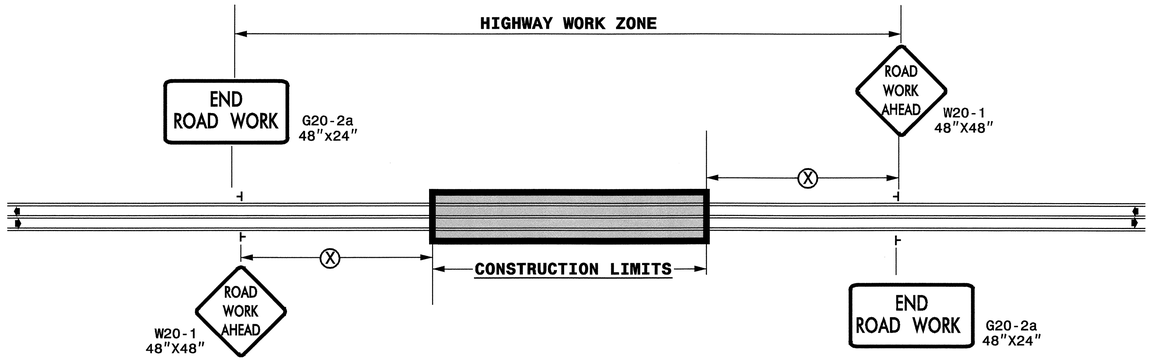
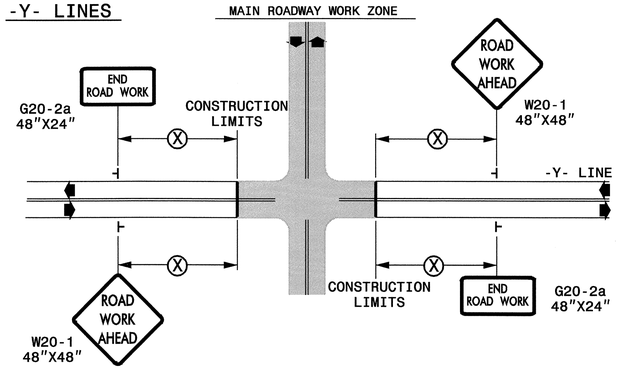
TWO-WAY UNDIVIDED ** (L-LINES)



POSTED SPEED LIMIT (M.P.H.)	RECOMMENDED MINIMUM SIGN SPACING (X)
≤ 50	500′
≥ 55	1000′

ROADWAYS INTERSECTING ALONG 2 WAY UNDIVIDED WORK ZONE (Y-LINES)



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.
- ** TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

- ⊢ STATIONARY SIGN
- ⬅ DIRECTION OF TRAFFIC FLOW

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

DETAIL DRAWING FOR TWO-WAY UNDIVIDED WORK ZONE WARNING SIGNS

SHEET 1 OF 1

APPROVED:_____ DATE:_____

NORTH CAROLINA PROFESSIONAL SEAL 028380 ENGINEER JOSEPH ISHAK
June 27, 2008

DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS

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

REVISIONS	
7-98	10/01
10-98	03/04
01/01	11/04
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TEMPORARY SHORING DATA

Temporary Shoring No. 1

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

IT MAY BE POSSIBLE TO USE A 1.5:1 (H:V) SLOPE OR FLATTER IN LIEU OF TEMPORARY SHORING FROM STATION 17 + 80 -L-, 2 FEET LEFT OF THE CENTER LINE, TO STATION 19 + 50 -L-, 2 TO 5 FEET LEFT OF THE CENTER LINE AS SHOWN ON THE PLANS.

WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 17+80.00 -L-, 2 FEET LEFT OF THE CENTER LINE, TO STATION 19+50 -L-, 2 TO 5 FEET LEFT OF CENTER LINE,
USE THE FOLLOWING SOIL PARAMETERS:
UNIT WEIGHT OF SOIL ABOVE WATER TABLE, γ = 120 PCF
UNIT WEIGHT OF SOIL BELOW WATER TABLE, γ = 60 PCF
FRICTION ANGLE, ϕ = 30 DEGREES
COHESION, c = 0 PSF

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

FOR PORTABLE CONCRETE BARRIERS AT THE TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS AND THE TEMPORARY SHORING SPECIAL PROVISION.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 17 + 80 -L-, 2 FEET LEFT OF THE CENTER LINE, TO STATION 19 + 50 -L-, 2 TO 5 FEET LEFT OF THE CENTER LINE. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

Temporary Shoring No. 2

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

IT MAY BE POSSIBLE TO USE A 1.5:1 (H:V) SLOPE OR FLATTER IN LIEU OF TEMPORARY SHORING FROM STATION 19 + 50 -L-, 2 TO 5 FEET LEFT OF THE CENTER LINE, TO STATION 20 + 07 -L-, 3.4 TO 7 FEET LEFT OF THE CENTER LINE AS SHOWN ON THE PLANS.

WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 19+50 -L-, 2 TO 5 FEET LEFT OF THE CENTER LINE, TO STATION 20+07 -L-, 3.4 TO 7 FEET LEFT OF CENTER LINE,
USE THE FOLLOWING SOIL PARAMETERS:
UNIT WEIGHT OF SOIL ABOVE WATER TABLE, γ = 120 PCF
UNIT WEIGHT OF SOIL BELOW WATER TABLE, γ = 60 PCF
FRICTION ANGLE, ϕ = 30 DEGREES
COHESION, c = 0 PSF

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

FOR PORTABLE CONCRETE BARRIERS AT THE TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS AND THE TEMPORARY SHORING SPECIAL PROVISION.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 19 + 50 -L-, 2 TO 5 FEET LEFT OF THE CENTER LINE, TO STATION 20+07 -L-, 3.4 TO 7 FEET LEFT OF THE CENTER LINE. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

Temporary Shoring No. 3

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

CONTRACTOR DESIGNED SHORING IS REQUIRED FROM STATION 21+00 -L-, 4 TO 8 FEET LEFT OF THE CENTER LINE TO STATION 22 + 25 -L-, 2 TO 8 8 FEET LEFT OF THE CENTER LINE.

TEMPORARY SHORING IS REQUIRED FOR THE MAINTENANCE OF TRAFFIC DURING THE PROPOSED UNDER CUT, PHASED BRIDGE CONSTRUCTION AND RETAINING WALL CONSTRUCTION. SEE ROADWAY, STRUCTURE AND TRAFFIC CONTROL PLANS FOR THE PROPOSED UNDER CUT, BRIDGE REPLACEMENT AND RETAINING WALL. FOR TEMPORARY SHORING CONSTRUCTION, SUBMIT WORKING DRAWINGS AND DESIGN CALCULATIONS WITH THE TEMPORARY SHORING DESIGN SUBMITTAL IN ACCORDANCE WITH THE PROPOSED UNDER CUT, PHASED BRIDGE CONSTRUCTION AND RETAINING WALL CONSTRUCTION.

DO NOT USE STANDARD SHORING FROM STATION 21 + 00 -L-, 4 TO 8 FEET LEFT OF THE CENTER LINE TO STATION 22 + 25 -L-, 2 TO 8 FEET LEFT OF THE CENTER LINE.

WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 21+00 -L-, 4 TO 8 FEET LEFT OF THE CENTER LINE, TO STATION 22+25 -L-, 2 TO 8 FEET LEFT OF CENTER LINE,
USE THE FOLLOWING SOIL PARAMETERS:
UNIT WEIGHT OF SOIL ABOVE WATER TABLE, γ = 120 PCF
UNIT WEIGHT OF SOIL BELOW WATER TABLE, γ = 60 PCF
FRICTION ANGLE, ϕ = 30 DEGREES
COHESION, c = 0 PSF

IT MAY BE PREFERRED OR NECESSARY TO ANCHOR TEMPORARY SHORING FROM STATION 21 + 00 -L-, 4 TO 8 FEET LEFT OF THE CENTER LINE TO STATION 22 + 25 -L-, 2 TO 8 FEET LEFT OF THE CENTER LINE. FOR ANCHORED TEMPORARY SHORING, SEE ANCHORED TEMPORARY SHORING SPECIAL PROVISION.

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 21+00 -L-, 4 TO 8 FEET LEFT OF THE CENTER LINE, TO STATION 22+25 -L-, 2 TO 8 FEET LEFT OF THE CENTER LINE. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

FOR PORTABLE CONCRETE BARRIERS AT THE TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS AND THE TEMPORARY SHORING SPECIAL PROVISION.

Temporary Shoring No. 4

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

IT MAY BE POSSIBLE TO USE A 1.5:1 (H:V) SLOPE OR FLATTER IN LIEU OF TEMPORARY SHORING FROM STATION 22+25 -L-, 2 TO 8 FEET LEFT OF THE CENTER LINE, TO STATION 23+25 -L-, 2 TO 4 FEET LEFT OF THE CENTER LINE AS SHOWN ON THE PLANS.

WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 22+25 -L-, 2 TO 8 FEET LEFT OF THE CENTER LINE, TO STATION 23+25 -L-, 2 TO 4 FEET LEFT OF CENTER LINE,
USE THE FOLLOWING SOIL PARAMETERS:
UNIT WEIGHT OF SOIL ABOVE WATER TABLE, γ = 120 PCF
UNIT WEIGHT OF SOIL BELOW WATER TABLE, γ = 60 PCF
FRICTION ANGLE, ϕ = 30 DEGREES
COHESION, c = 0 PSF

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

FOR PORTABLE CONCRETE BARRIERS AT THE TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS AND THE TEMPORARY SHORING SPECIAL PROVISION.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 22+25 -L-, 2 TO 8 FEET LEFT OF THE CENTER LINE, TO STATION 23+25 -L-, 2 TO 4 FEET LEFT OF THE CENTER LINE. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

Temporary Shoring No. 5

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISION.

IT MAY BE POSSIBLE TO USE A 1.5:1 (H:V) SLOPE OR FLATTER IN LIEU OF TEMPORARY SHORING FROM STATION 39+53 -L-, 1.5 TO 10 FEET LEFT OF THE CENTER LINE, TO STATION 39+90 -L-, 2 FEET LEFT OF THE CENTER LINE AS SHOWN ON THE PLANS.

WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 39+53 -L-, 1.5 TO 10 FEET LEFT OF THE CENTER LINE, TO STATION 39+90 -L-, 2 FEET LEFT OF CENTER LINE,
USE THE FOLLOWING SOIL PARAMETERS:
UNIT WEIGHT OF SOIL ABOVE WATER TABLE, γ = 120 PCF
UNIT WEIGHT OF SOIL BELOW WATER TABLE, γ = 60 PCF
FRICTION ANGLE, ϕ = 30 DEGREES
COHESION, c = 0 PSF

FOR CONTRACTOR DESIGNED SHORING, SURVEY THE SHORING LOCATION TO DETERMINE EXISTING ELEVATIONS AND ACTUAL DESIGN HEIGHTS BEFORE BEGINNING DESIGN.

FOR PORTABLE CONCRETE BARRIERS AT THE TEMPORARY SHORING, USE AN NCDOT PORTABLE CONCRETE BARRIER (UNANCHORED OR ANCHORED) OR AN OREGON TALL F-SHAPE CONCRETE BARRIER IN ACCORDANCE WITH THE TRAFFIC CONTROL PLANS AND THE TEMPORARY SHORING SPECIAL PROVISION.

LIMITED SUBSURFACE INFORMATION IS AVAILABLE IN THE VICINITY OF THE TEMPORARY SHORING FROM STATION 39+53 -L-, 1.5 TO 10 FEET LEFT OF THE CENTER LINE, TO STATION 39+90 -L-, 2 FEET LEFT OF THE CENTER LINE. THE INFORMATION PROVIDED FOR DESIGN WAS ASSUMED AND MAY NOT BE APPLICABLE TO THE ACTUAL SITE CONDITIONS ENCOUNTERED DURING CONSTRUCTION.

APPROVED:__________ DATE: 30-MAY-2008

NORTH CAROLINA PROFESSIONAL SEAL 029473 ENGINEER CHARLES ARTHUR GOVE

TEMPORARY SHORING DATA

SCALE:	NONE
DATE:	MAY 08
DWG. BY:	
DESIGN BY:	
REVIEWED BY:	

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

REVISIONS

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29-MAY-2008 13:08
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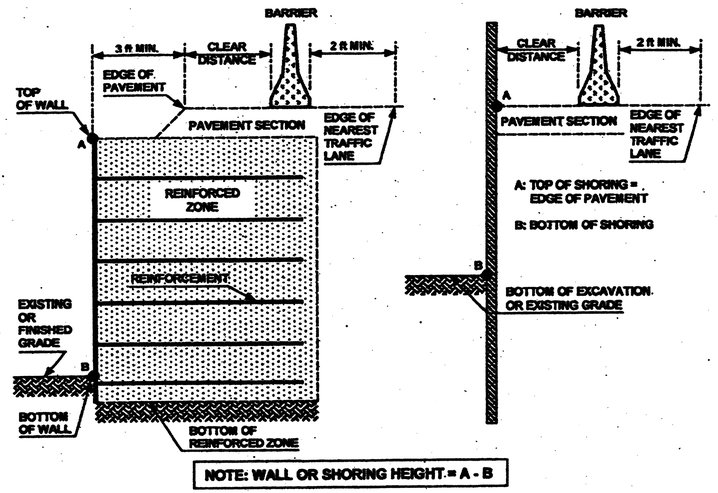

FIGURE A

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.

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.

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: HTTP://WWW.NCDOT.ORG/DOH/PRECONSTRUCT/WZTC/DESRES/ENGLISH/DESRESENG.HTML

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

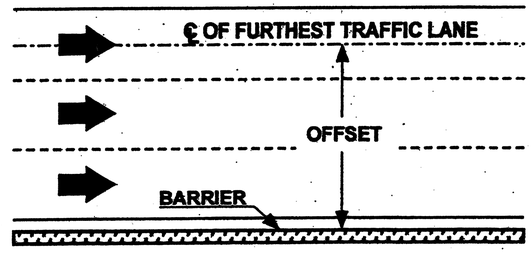

FIGURE B

APPROVED: _____ DATE: _____

SEAL 028380 ENGINEER NORTH CAROLINA PROFESSIONAL ENGINEER SEAL

Mark 3/2/07

PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS

SCALE:	NONE
DATE:	3/07
DRWG. BY:	JI
DESIGN BY:	JI
REVIEWED BY:	JI

REVISIONS

DATE	

22-MAR-2007 10:14
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rmorrell AT WZTC22291