

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
B - 4 1 2 9	TCP-1

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

B-4129

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 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
1101.11	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, TYPE III
1150.01	FLAGGERS
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1170.01	PORTABLE CONCRETE BARRIER
1180.01	SKINNY DRUMS
1205.01	PAVEMENT MARKINGS - LINE TYPES & OFFSETS
1205.02	PAVEMENT MARKINGS - 2 LANE & MULTILANE ROADWAYS
1205.04	PAVEMENT MARKINGS - NON-SIGNALIZED INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.08	PAVEMENT MARKINGS - SYMBOLS
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

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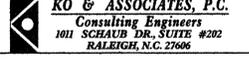
SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND INDEX OF SHEETS
TCP-2	PROJECT NOTES
TCP-3	PHASE I OVERVIEW AND PHASING
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TCP-16	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS
PM-1	PAVEMENT MARKING SCHEDULE AND PAVEMENT MARKING PLAN

LEGEND

- GENERAL**
- DIRECTION OF TRAFFIC FLOW
 - NORTH ARROW
 - PROPOSED PVMT. EXIST. PVMT.
 - PROPOSED CONSTRUCTION
 - PROPOSED REMOVAL
- TRAFFIC CONTROL DEVICES**
- TYPE I BARRICADE
 - TYPE II BARRICADE
 - TYPE III BARRICADE
 - CONE
 - DRUM
 - FLASHING ARROW PANEL (TYPE C)
 - TYPE 'B' WARNING LIGHT
 - STATIONARY SIGN
 - PORTABLE SIGN
 - STATIONARY OR PORTABLE SIGN
 - WARNING FLAGS
 - CRASH CUSHION
 - CHANGEABLE MESSAGE SIGN
 - TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
 - POLICE
 - FLAGGER
- PAVEMENT MARKINGS**
- CRYSTAL/CRYSTAL PAVEMENT MARKER
 - YELLOW/YELLOW PAVEMENT MARKER
 - CRYSTAL/RED PAVEMENT MARKER
 - PAVEMENT MARKING SYMBOLS

TIP PROJECT:

10/17/2007 P:\TIP\Group45\B4129\ko\B4129\TrafficControl\TCP\100\B4129_TC_TopLTitle.dgn Ko & Associates, P.C.

<p>PLAN REVIEWED BY: N.C.D.O.T. WORK ZONE TRAFFIC CONTROL UNIT</p> <p>J. S. BOURNE, P.E. WORK ZONE TRAFFIC CONTROL ENGINEER</p> <p>G. L. GETTIER, PE TRAFFIC CONTROL PROJECT ENGINEER</p> <p>J. W. WOOLARD, PE TRAFFIC CONTROL PROJ. DESIGN ENGINEER</p> <p>TRAFFIC CONTROL DESIGN ENGINEER</p> <p>TRAFFIC CONTROL DESIGN TECHNICIAN</p>	<p>APPROVED: <i>Michael Rzepka</i></p> <p>DATE: 10-17-07</p> <p>SEAL</p> 	<p>PLAN PREPARED FOR N.C.D.O.T. BY:</p> <p>M. T. RZEPKA, P.E. PROJECT ENGINEER</p> <p>B. L. MARIOTTE DESIGN ENGINEER</p> <p>B. L. MARIOTTE DESIGN TECHNICIAN</p> 
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PROJECT NOTES

Plans prepared by:
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 RALEIGH, N.C. 27606
 For Division of Highways

PROJ. REFERENCE NO.	SHEET NO.
B-4129	TCP-2

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 STOP TRAFFIC FOR MORE THAN 15 MINUTES AS FOLLOWS:

ROAD NAME	OPERATIONS
SR 3000, McCONNELL RD. SR 3143, MILLSTREAM RD.	TIE-INS, PAVEMENT MARKINGS, TRAFFIC SHIFTS

LANE AND SHOULDER CLOSURE REQUIREMENTS

- B) 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.
- C) WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 40 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.
- D) 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.
- E) 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.
- F) DO NOT WORK SIMULTANEOUSLY, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.
- G) DO NOT PERFORM WORK INVOLVING HEAVY EQUIPMENT WITHIN 15 FT OF THE EDGE OF TRAVELWAY WHEN WORK IS BEING PERFORMED BEHIND A LANE CLOSURE ON THE OPPOSITE SIDE OF THE TRAVELWAY.
- H) DO NOT INSTALL MORE THAN ONE SIMULTANEOUS LANE CLOSURE, IN ANY ONE DIRECTION, ON SR 3143, MILLSTREAM RD.

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 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 1.5 INCHES IN ELEVATION BETWEEN OPEN LANES OF TRAFFIC. INSTALL ADVANCE WARNING "UNEVEN LANES" SIGNS (W8-11) 500 FT 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 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) PROVIDE DETOUR SIGNING OFF THE PROJECT LIMITS.
- O) COVER OR REMOVE ALL DETOUR SIGNS THE PROJECT LIMITS WHEN A DETOUR IS NOT IN OPERATION.
- P) ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

TRAFFIC BARRIER

- Q) 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.
- R) 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 NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH) TO CLOSE OR KEEP CLOSED THE SECTION OF THE ROADWAY UNTIL THE BARRIER CAN BE PLACED OR AFTER BARRIER IS REMOVED.

TRAFFIC CONTROL DEVICES

- S) WHEN USING ROADWAY STANDARD NO. 1101.02, DRUMS MAY BE USED IN LIEU OF CONES ON SR 3000, McCONNELL RD. AND SR 3143, MILLSTREAM RD.
- T) 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.
- U) 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.

PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
SR 3000, McCONNELL RD. SR 3143, MILLSTREAM RD.	PAINT	PERMANENT RAISED

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

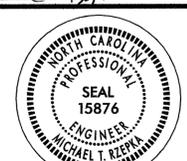
ROAD NAME	MARKING	MARKER
SR 3000, McCONNELL RD. SR 3143, MILLSTREAM RD.	PAINT	TEMPORARY RAISED

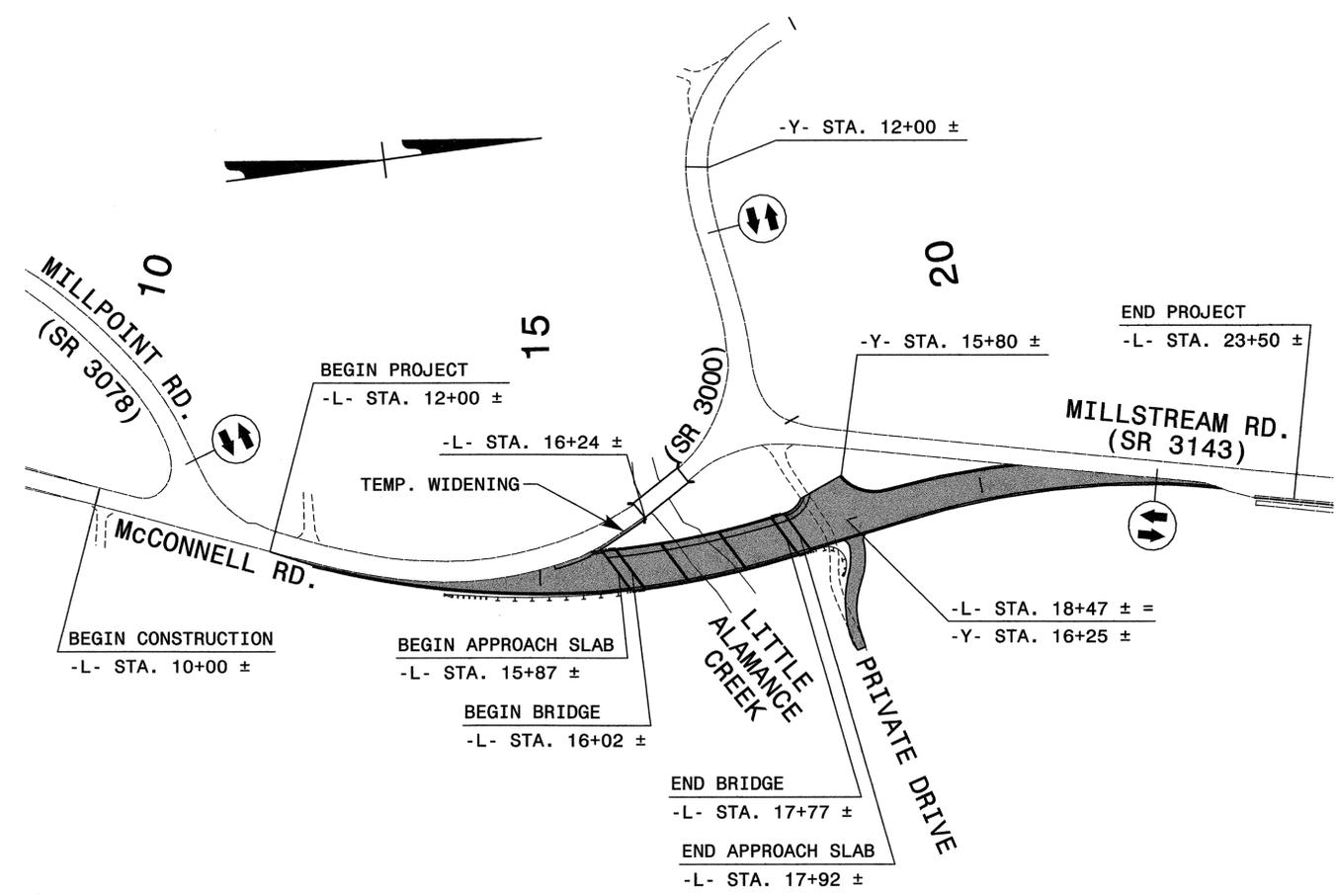
- X) PLACE TWO APPLICATIONS OF PAINT PAVEMENT MARKINGS ON THE FINAL WEARING SURFACE. PLACE THE SECOND APPLICATION OF PAINT UPON SUFFICIENT DRYING TIME OF THE FIRST.
- Y) PLACE ONE APPLICATION OF PAINT FOR TEMPORARY TRAFFIC PATTERNS. PLACE A SECOND APPLICATION OF PAINT SIX (6) MONTHS AFTER THE INITIAL APPLICATION AND EVERY SIX (6) MONTHS AS DIRECTED BY THE ENGINEER.
- Z) TIE PROPOSED PAVEMENT MARKING LINES TO EXISTING PAVEMENT MARKING LINES.
- AA) REMOVE / REPLACE ANY CONFLICTING / DAMAGED PAVEMENT MARKINGS AND MARKERS BY THE END OF EACH DAY'S OPERATION.

MISCELLANEOUS

- BB) MAINTAIN ACCESS TO DRIVEWAYS AT ALL TIMES.

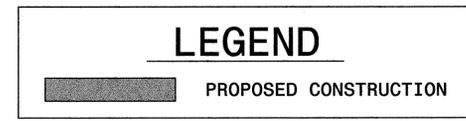
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APPROVED: <i>Michael T. Rzepka</i> DATE: 10-17-07	PROJECT NOTES	REVISIONS				
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PHASE I

- STEP 1: - INSTALL WORK ZONE WARNING SIGNS (SEE SHEET TCP-15).
- STEP 2: - USING ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEET 1 OF 9, CONSTRUCT THE FOLLOWING (SEE SHEETS TCP-4):
- TEMPORARY 4' WIDENING RIGHT OF EXISTING McCONNELL RD. (SR 3000) FROM -L- STA. 15+00 ± TO -L- STA. 15+66 ±
 - TEMPORARY 3' WIDENING RIGHT OF EXISTING McCONNELL RD. (SR 3000) FROM -L- STA. 15+66 ± TO -L- STA. 16+22 ±.
- STEP 3: - USING ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEET 1 OF 9, PLACE PORTABLE CONCRETE BARRIER ALONG THE RIGHT EXISTING EDGELINE FROM -L- STA. 15+20 ± TO -L- STA. 16+22 ± (SEE SHEETS TCP-5 AND TYPICAL SECTION A-A).
- PLACE TEMPORARY SHORING 3' RIGHT OF EXISTING EDGE OF PAVEMENT FROM -L- STA. 15+50 ± TO -L- STA. 16+10 ± (SEE SHEET TCP-5 AND TYPICAL SECTION A-A).
- STEP 4: - BEHIND PORTABLE CONCRETE BARRIER AND BEHIND DRUMS, BEGIN CONSTRUCTION OF PROPOSED -L- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE INCLUDING PROPOSED STRUCTURE AND PRIVATE DRIVE, FROM -L- STA. 15+87 ± TO -L- STA. 19+00 ± (SEE SHEETS TCP-5, ROADWAY PLANS AND STRUCTURE PLANS).
- STEP 5: - USING ROADWAY STANDARD DRAWING NUMBER 1101.04, BEGIN CONSTRUCTION OF -L- UP TO EXISTING EDGE OF PAVEMENT ELEVATION FROM -L- STA. 19+00 ± TO -L- STA. 22+70 ± (SEE SHEET TCP-6 AND ROADWAY PLANS, REFER TO ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEET 1 OF 9).
- STEP 6: - USING ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEET 1 OF 9, COMPLETE THE FOLLOWING (SEE SHEET TCP-7 AND ROADWAY PLANS):
- COMPLETE CONSTRUCTION BEGUN IN PHASE I, STEP 4.
 - REMOVE TEMPORARY SHORING FROM -L- STA. 15+50 ± TO -L- STA. 16+10 ±.
 - REMOVE PORTABLE CONCRETE BARRIER FROM -L- STA. 15+20 ± TO -L- STA. 15+70 ± AND RESET CRASH CUSHION.
 - CONSTRUCT WIDENING OF EXISTING McCONNELL RD. (SR 3000) UP TO EXISTING EDGE OF PAVEMENT ELEVATION INCLUDING GUARDRAIL ON RIGHT SIDE OF -L- FROM -L- STA. 12+00 ± TO -L- STA. 15+87 ±.
 - CONSTRUCT PROPOSED -L- UP TO THE EXISTING EDGE OF PAVEMENT ELEVATION FROM -L- STA. 19+00 ± TO -L- STA. 22+70 ±.



APPROVED: <i>M. Hall</i> DATE: 10-1-07	PHASE I OVERVIEW AND PHASING							
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 KO & ASSOCIATES, P.C.

TEMPORARY SHORING NO. 1

FOR TEMPORARY SHORING, SEE TEMPORARY SHORING SPECIAL PROVISIONS.

DO NOT USE A TEMPORARY MSE WALL FROM STATION 15+50 -L- TO 16+10 -L-, 3 FT. OFFSET FROM RIGHT EDGE OF EXISTING PAVEMENT. STANDARD TEMPORARY OR CONTRACTOR DESIGNED SHORING IS REQUIRED. SEE TEMPORARY SHORING SPECIAL PROVISION.

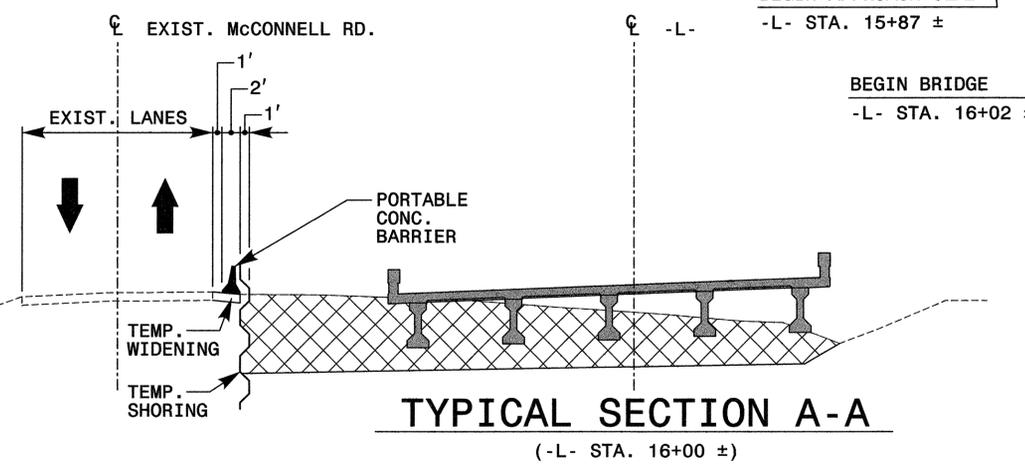
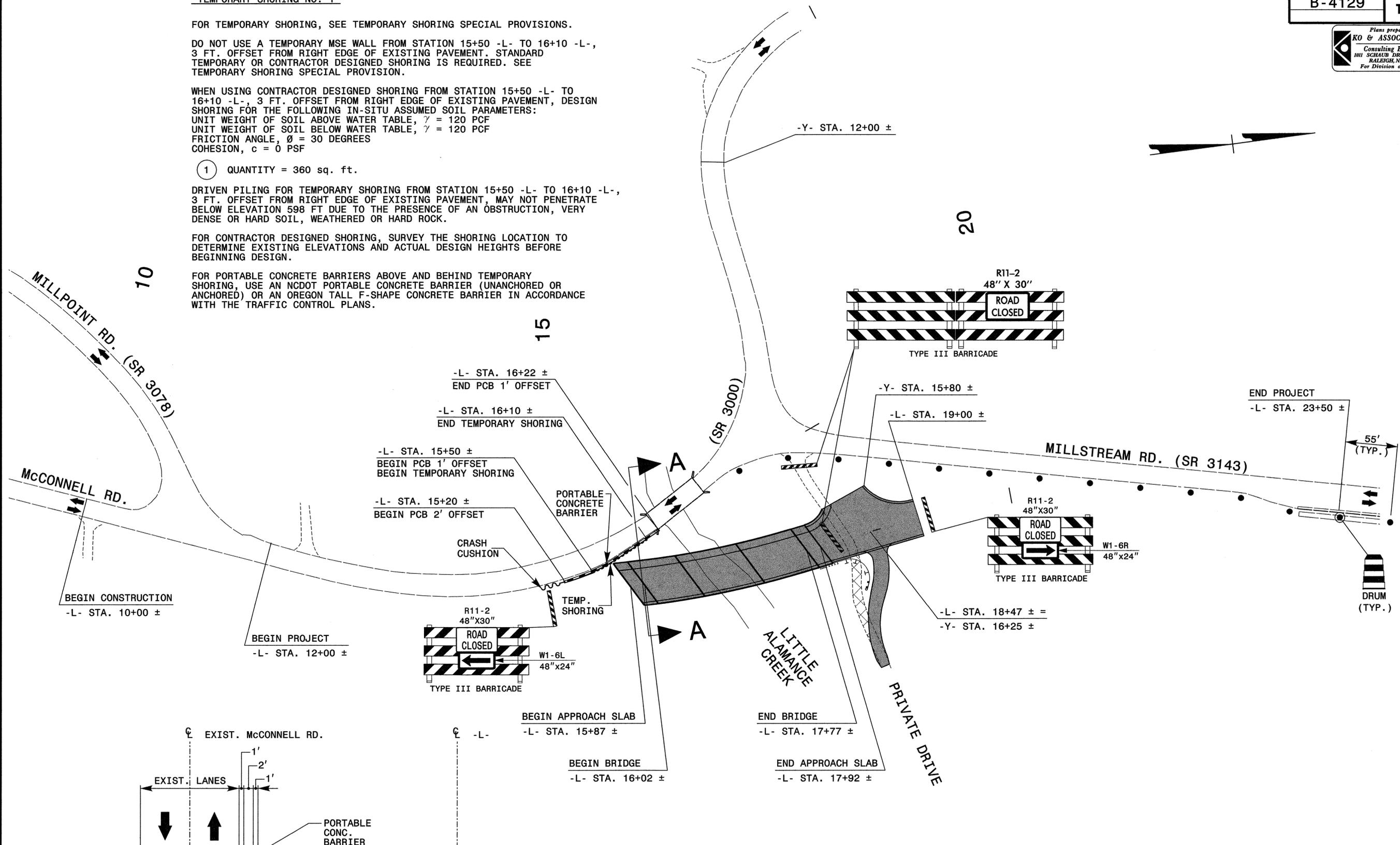
WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 15+50 -L- TO 16+10 -L-, 3 FT. OFFSET FROM RIGHT EDGE OF EXISTING PAVEMENT, DESIGN SHORING FOR THE FOLLOWING IN-SITU ASSUMED SOIL PARAMETERS:
 UNIT WEIGHT OF SOIL ABOVE WATER TABLE, $\gamma = 120$ PCF
 UNIT WEIGHT OF SOIL BELOW WATER TABLE, $\gamma = 120$ PCF
 FRICTION ANGLE, $\phi = 30$ DEGREES
 COHESION, $c = 0$ PSF

① QUANTITY = 360 sq. ft.

DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 15+50 -L- TO 16+10 -L-, 3 FT. OFFSET FROM RIGHT EDGE OF EXISTING PAVEMENT, MAY NOT PENETRATE BELOW ELEVATION 598 FT DUE TO THE PRESENCE OF AN OBSTRUCTION, VERY DENSE OR HARD SOIL, WEATHERED OR HARD ROCK.

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

FOR PORTABLE CONCRETE BARRIERS ABOVE AND BEHIND 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.



LEGEND	
	PROPOSED CONSTRUCTION
	PROPOSED REMOVAL

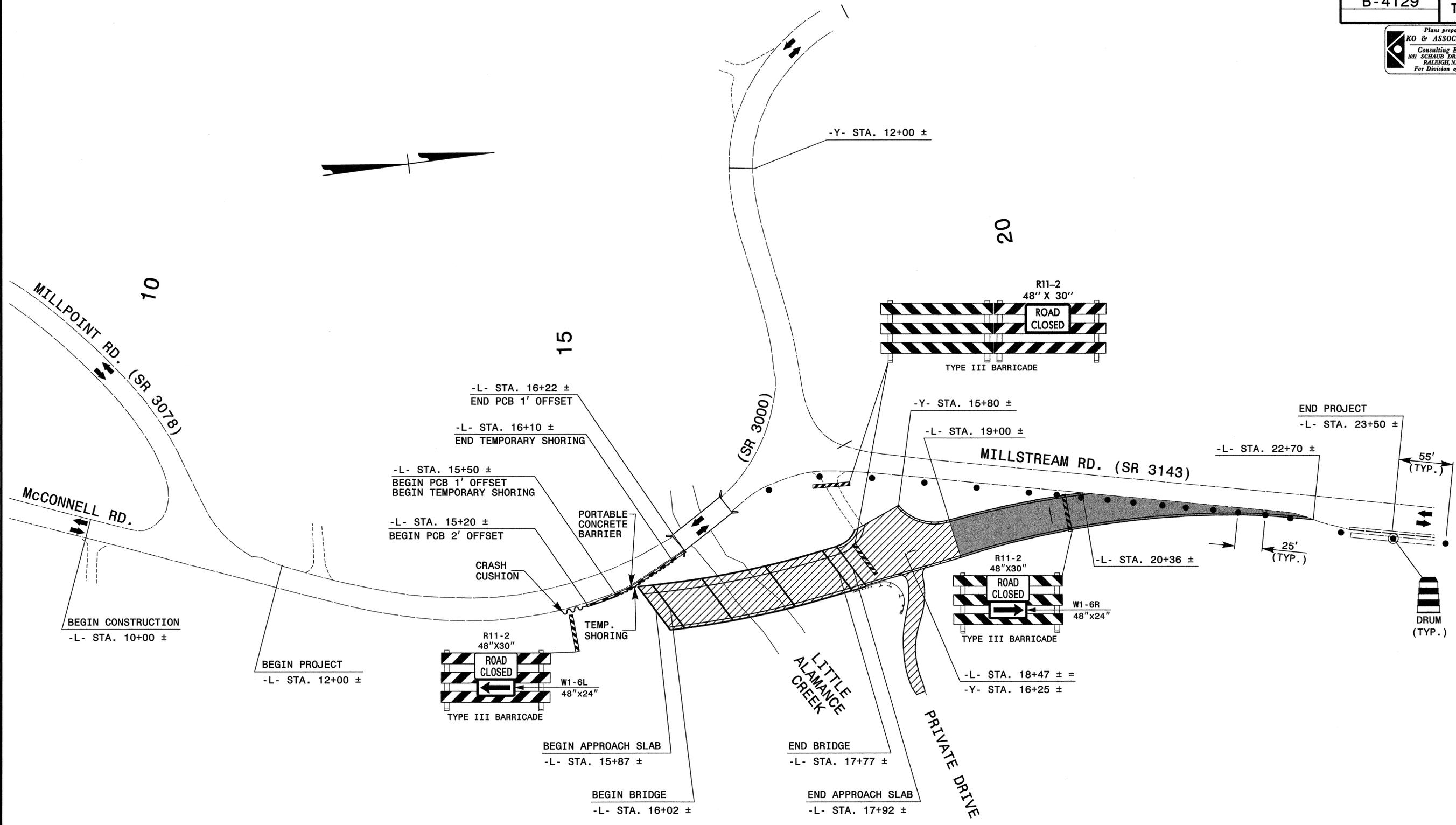
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DESIGN BY:	BLM
REVIEWED BY:	MTR
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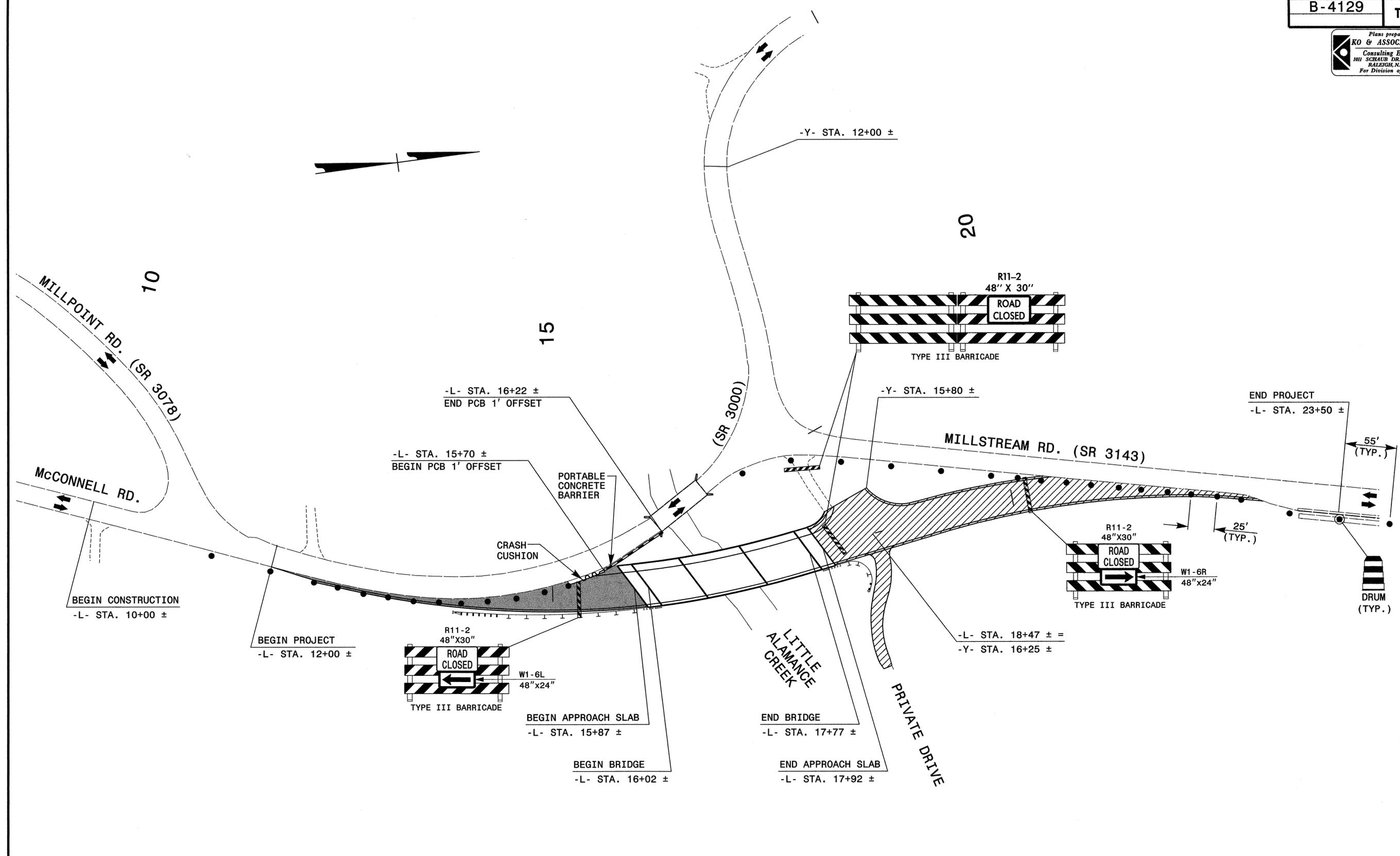
LEGEND	
	PROPOSED CONSTRUCTION
	ONGOING CONSTRUCTION

APPROVED: *M. J. Rzepka* DATE: 10-1-07

SEAL

PHASE I DETAILS		REVISIONS
SCALE:	NONE	
DATE:	7-07	
DWG. BY:	BLM	
DESIGN BY:	BLM	
REVIEWED BY:	MTR	

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LEGEND	
	PROPOSED CONSTRUCTION
	ONGOING CONSTRUCTION

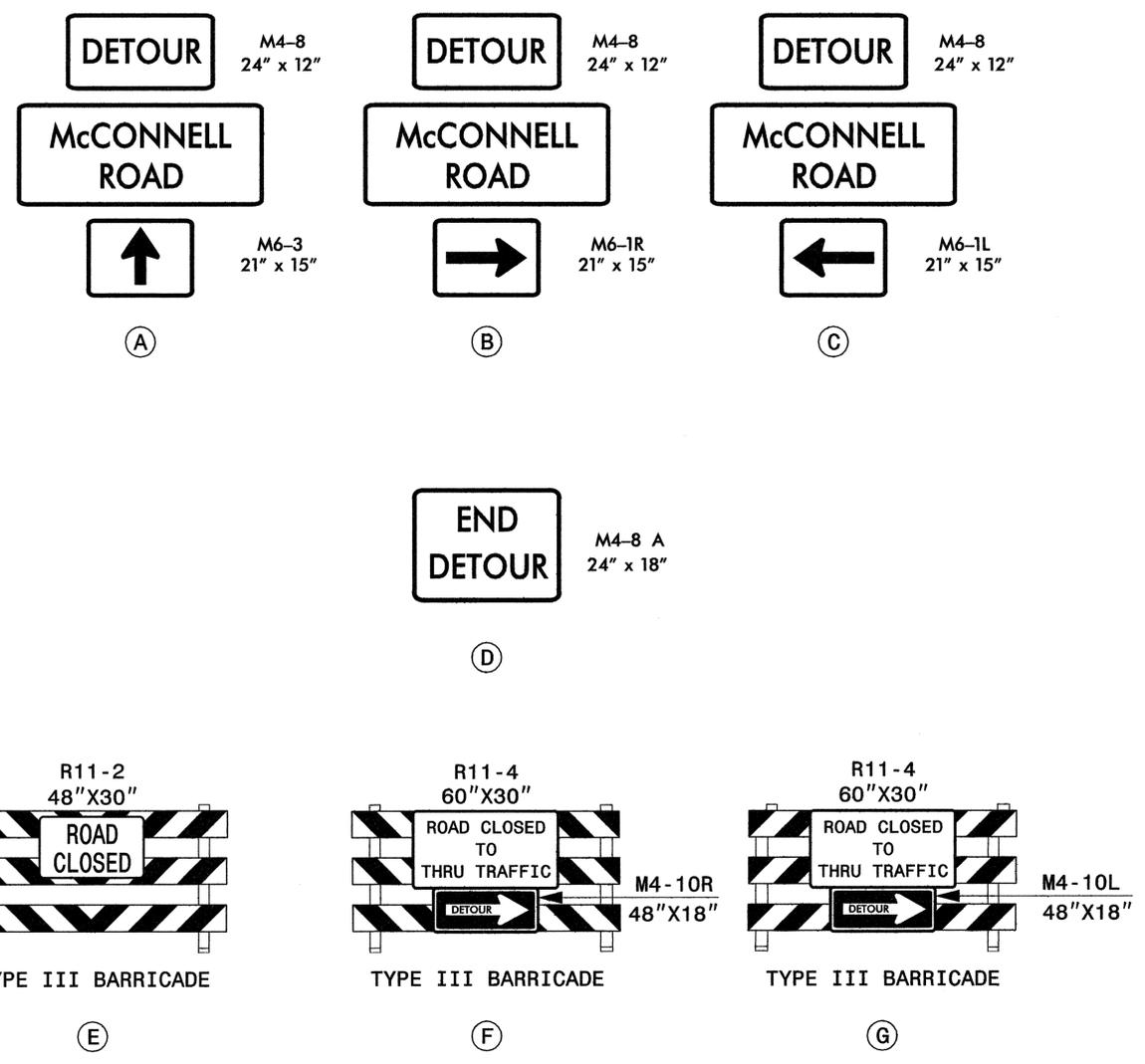
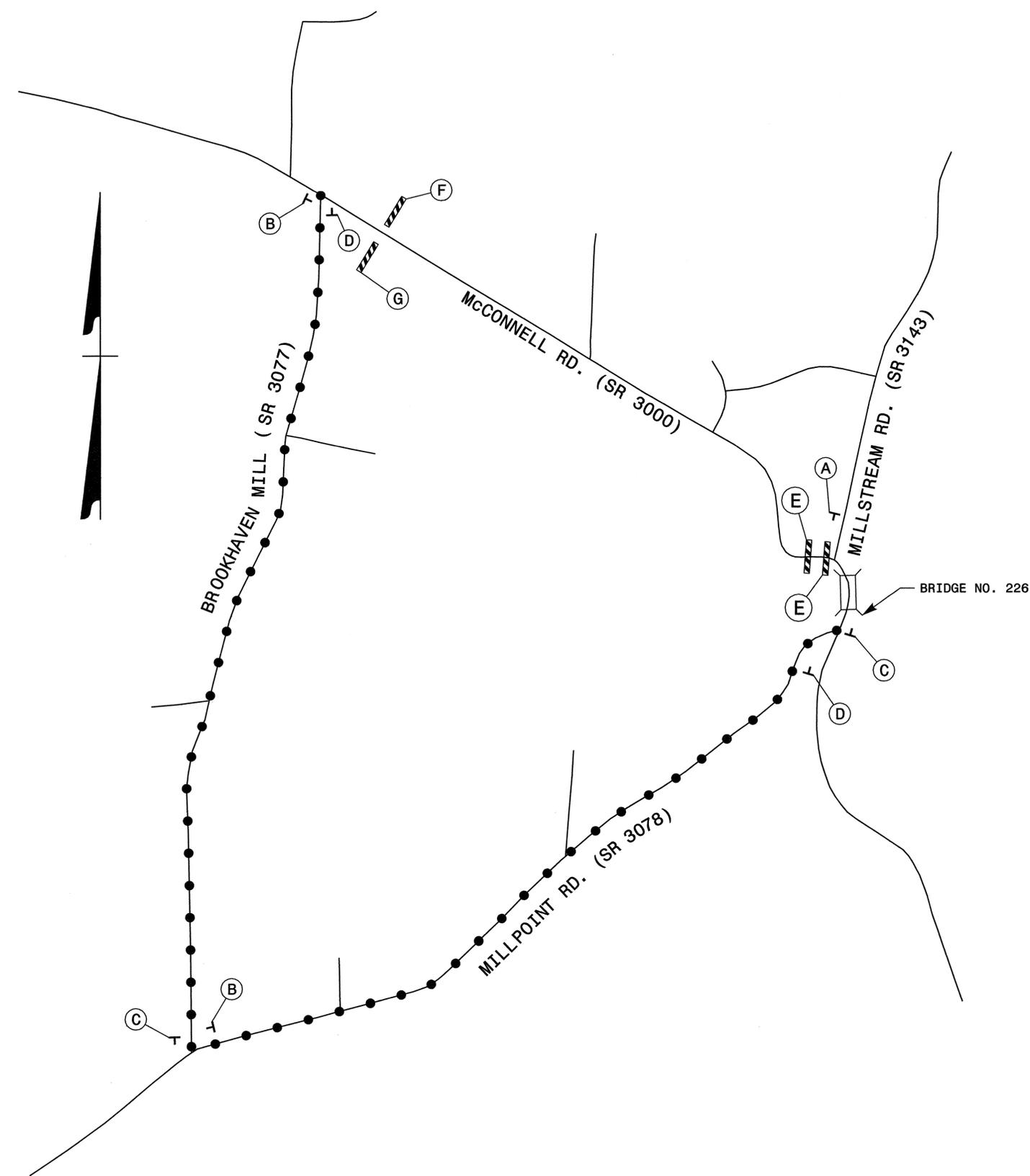
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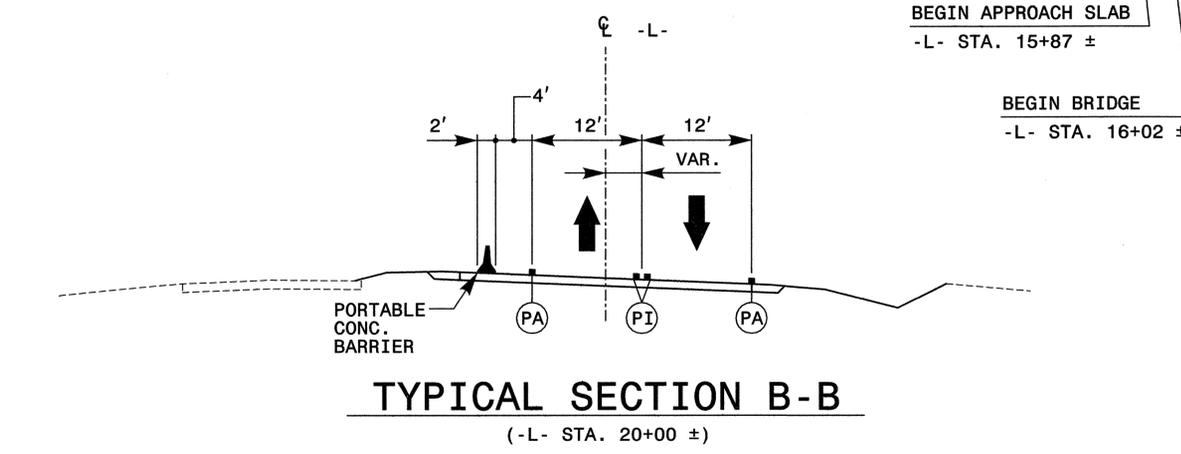
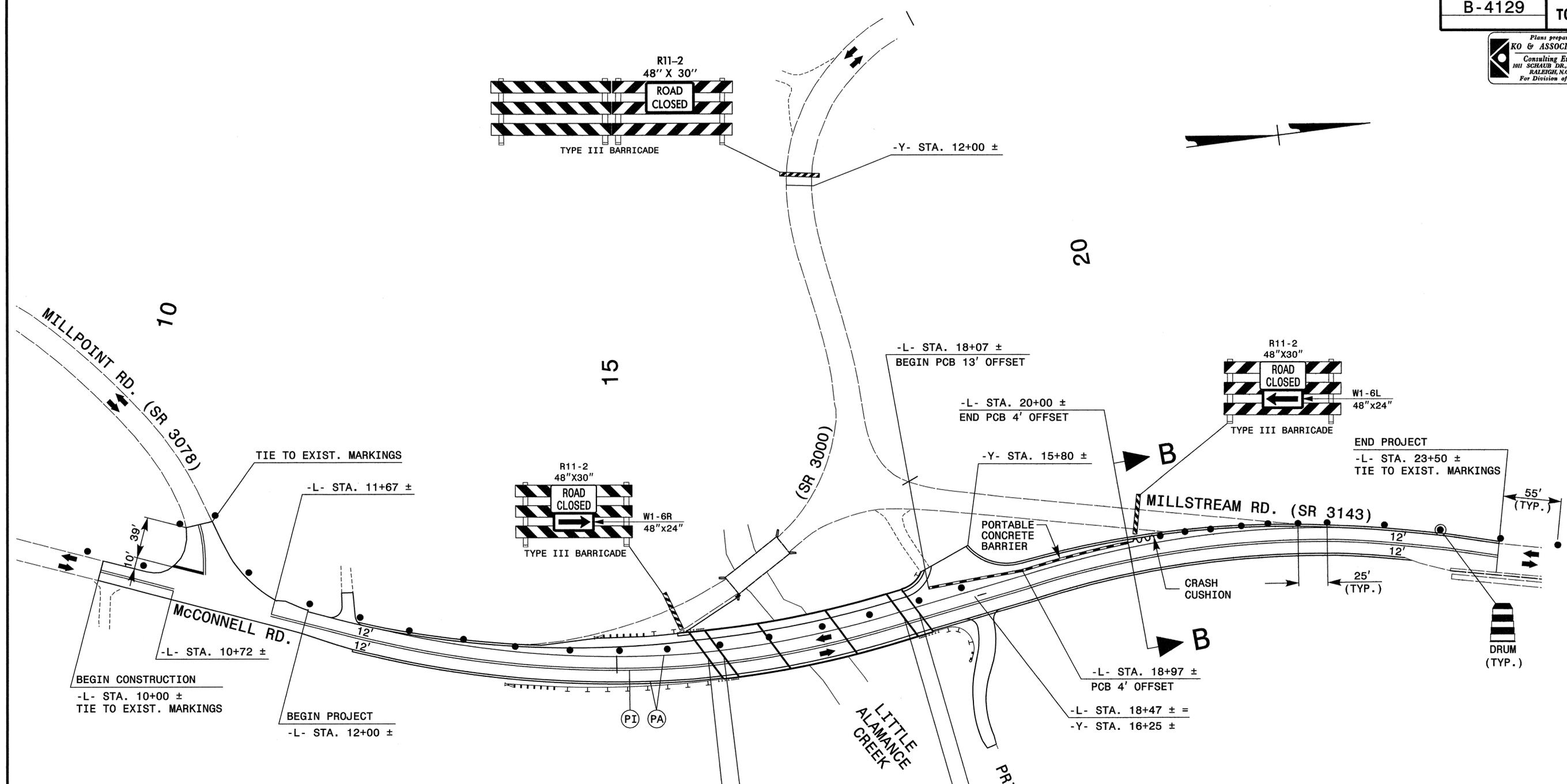
Plans prepared by:
KO & ASSOCIATES, P.C.
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 101 SCHAUB DR., SUITE #202
 RALEIGH, N.C. 27606
 For Division of Highways



LEGEND
 PROPOSED DETOUR ROUTE

APPROVED: <i>Michael T. Riemma</i> DATE: 10-1-07	PROPOSED DETOUR ROUTE	
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APPROVED: *Michael T. Rzesutka* DATE: 10-1-07

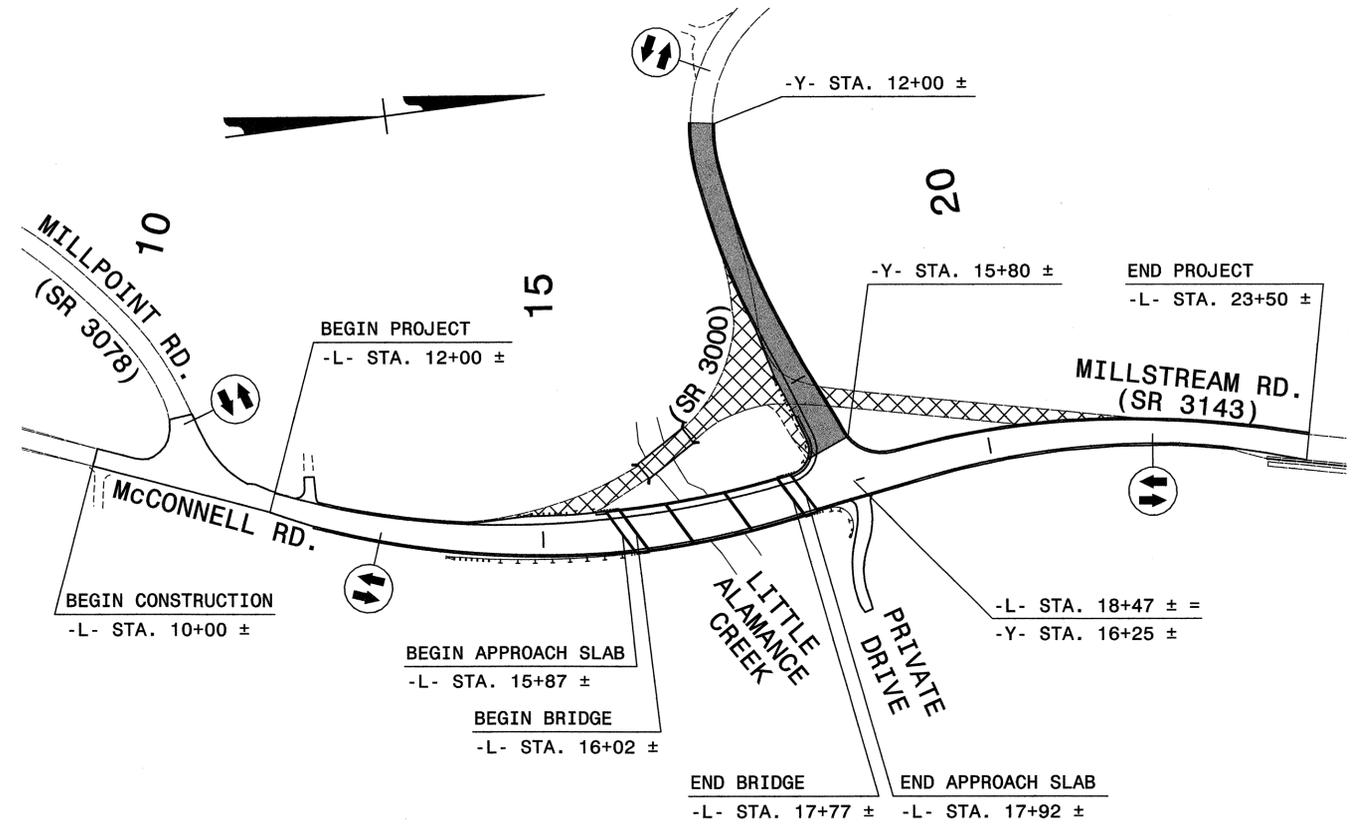
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 DESIGN BY: BLM
 REVIEWED BY: MTR

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REVISIONS	

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 KO & Associates, P.C.



PHASE III

- STEP 1: BEHIND BARRIER AND USING ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEET 1 OF 9, COMPLETE THE FOLLOWING (SEE SHEET TCP-13 AND ROADWAY PLANS):
- CONSTRUCT PROPOSED -Y- UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE FROM -Y- STA. 12+00 ± TO -Y- STA. 15+80 ±.
 - BEGIN REMOVAL OF EXISTING PAVEMENT AND EXISTING STRUCTURE.
- STEP 2: USING ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEET 1 OF 9, COMPLETE THE FOLLOWING (SEE SHEET TCP-14 AND ROADWAY PLANS):
- REMOVE PORTABLE CONCRETE BARRIER.
 - PLACE TEMPORARY PAVEMENT MARKINGS (PAINT) AND MARKERS (TEMPORARY RAISED) ON -Y- FROM -Y- STA. 12+00 ± TO -Y- STA. 16+04 ± AND TIE TO TEMPORARY PATTERN ON -L-.
 - OPEN -Y- TO TRAFFIC AND REMOVE DETOUR.
- STEP 3: COMPLETE REMOVAL OF EXISTING PAVEMENT AND EXISTING STRUCTURE.

WORKING IN A CONTINUOUS MANNER, COMPLETE THE FOLLOWING WORK IN PHASE III, STEP 4 USING ROADWAY STANDARD DRAWING NUMBER 1101.02, SHEET 1 OF 9.

- STEP 4: - PLACE THE FINAL LAYER OF SURFACE COURSE ON THE FOLLOWING (SEE ROADWAY PLANS):
- L- STA. 10+00 ± TO -L- STA. 23+50 ±
 - Y- STA. 12+00 ± TO -Y- STA. 16+25 ±
- PLACE THE FINAL PAVEMENT MARKINGS (PAINT) AND MARKERS (PERMANENT RAISED) ON THE FOLLOWING (SEE SHEET PM-1):
- L- STA. 10+00 ± TO -L- STA. 23+50 ±
 - Y- STA. 12+00 ± TO -Y- STA. 16+25 ±
- PLACE -L- LINE TRAFFIC IN THE FINAL PATTERN, OPEN -Y- LINE TO THE FINAL PATTERN AND REMOVE DETOUR SIGNING.
- STEP 5: - REMOVE ALL TRAFFIC CONTROL DEVICES.

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 KO & Associates, P.C.

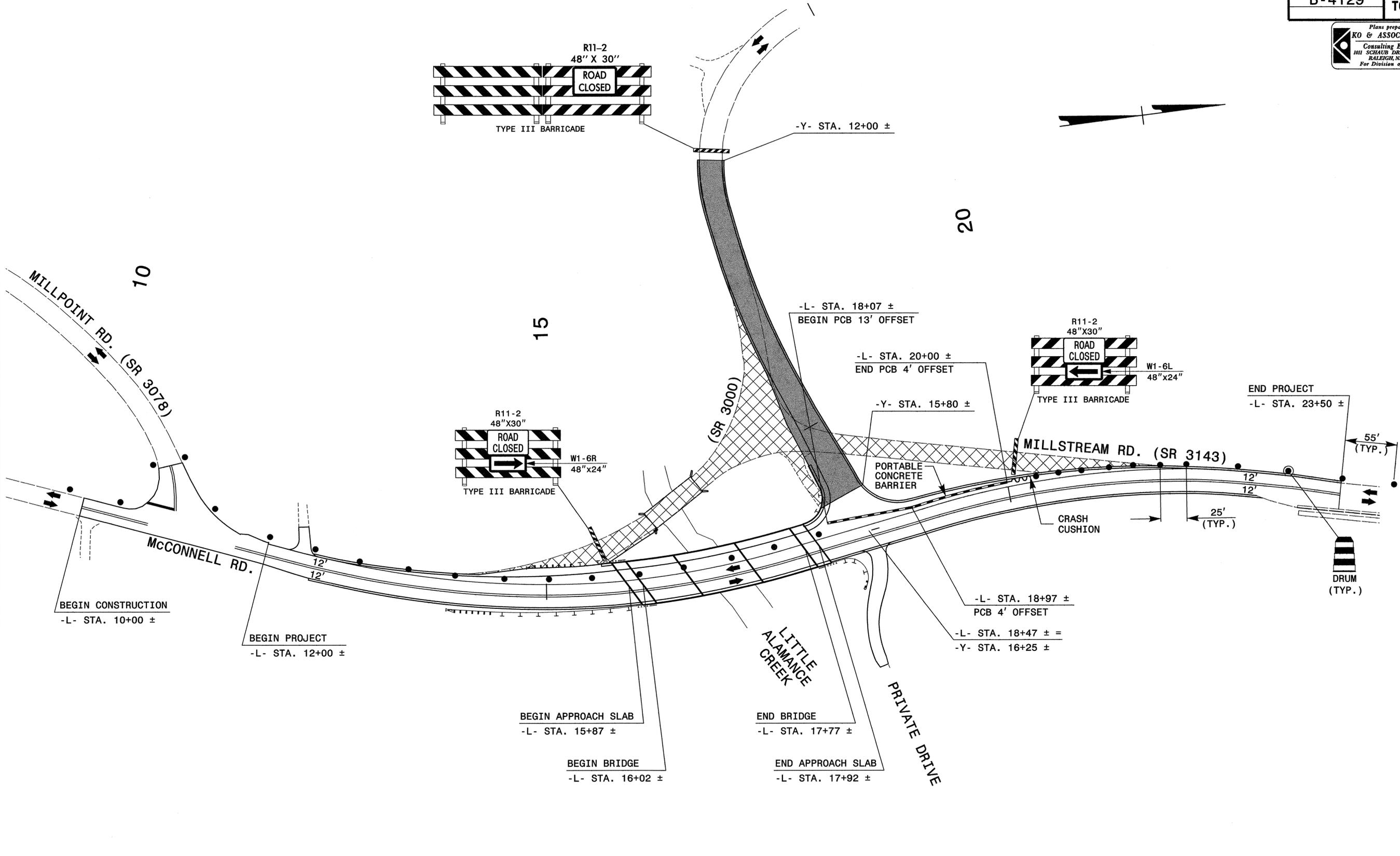
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■	PROPOSED CONSTRUCTION
▨	PROPOSED REMOVAL

APPROVED: *Michael T. Rzesma* DATE: 10-17-07

SEAL

PHASE III OVERVIEW AND PHASING

SCALE: NONE		REVISIONS	
DATE: 7-07			
DWG. BY: BLM			
DESIGN BY: BLM			
REVIEWED BY: MTR			



LEGEND

- PROPOSED CONSTRUCTION
- PROPOSED REMOVAL

APPROVED: *Michael T. Rietz* DATE: 10-1-07

SEAL

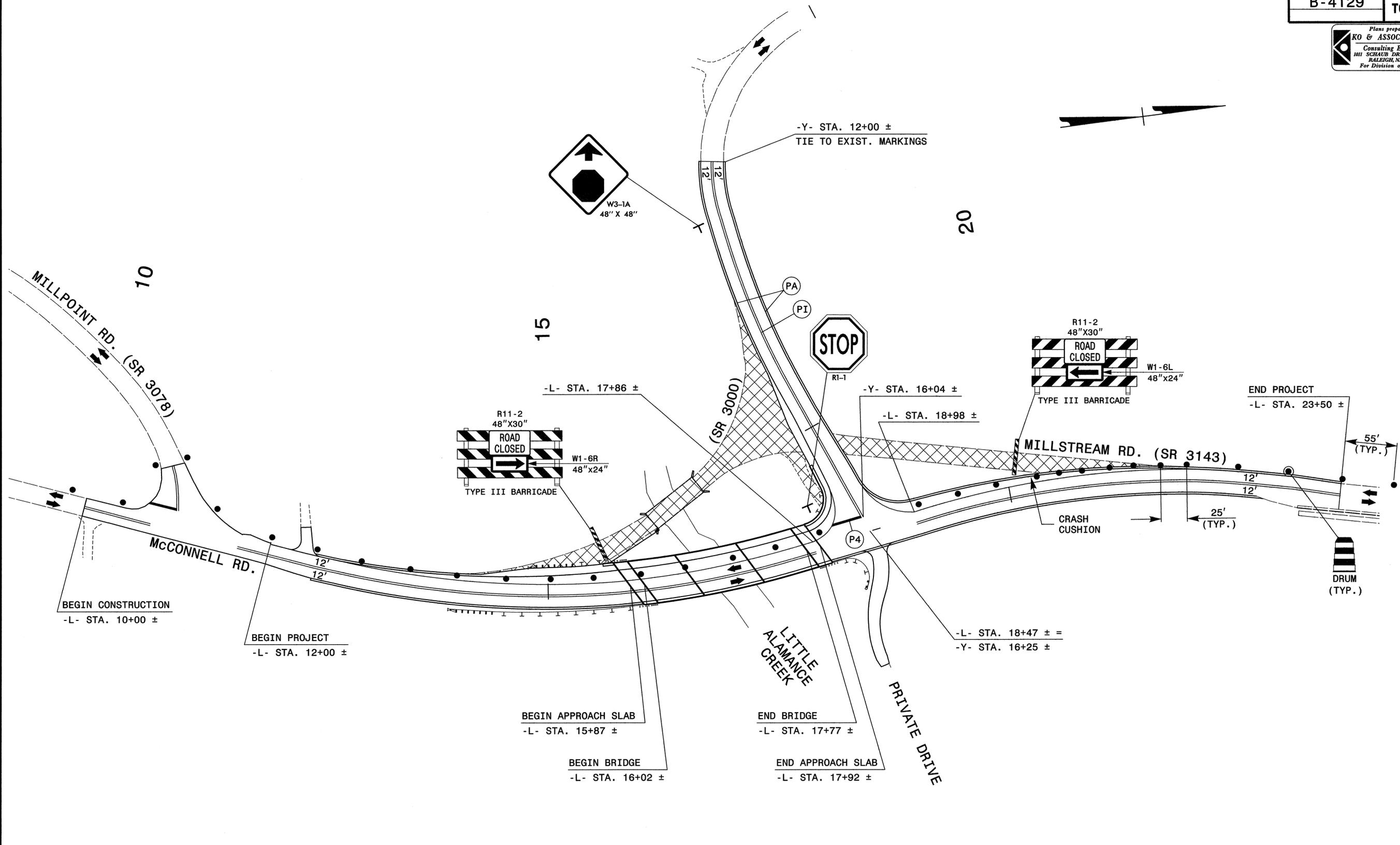
PHASE III DETAILS

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 REVIEWED BY: MTR

REVISIONS

9/28/2007
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 KO & Associates, P.C.

Plans prepared by:
KO & ASSOCIATES, P.C.
 Consulting Engineers
 101 SCHAUB DR., SUITE #202
 RALEIGH, N.C. 27606
 For Division of Highways



8/28/2007
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 KO & Associates, P.C.

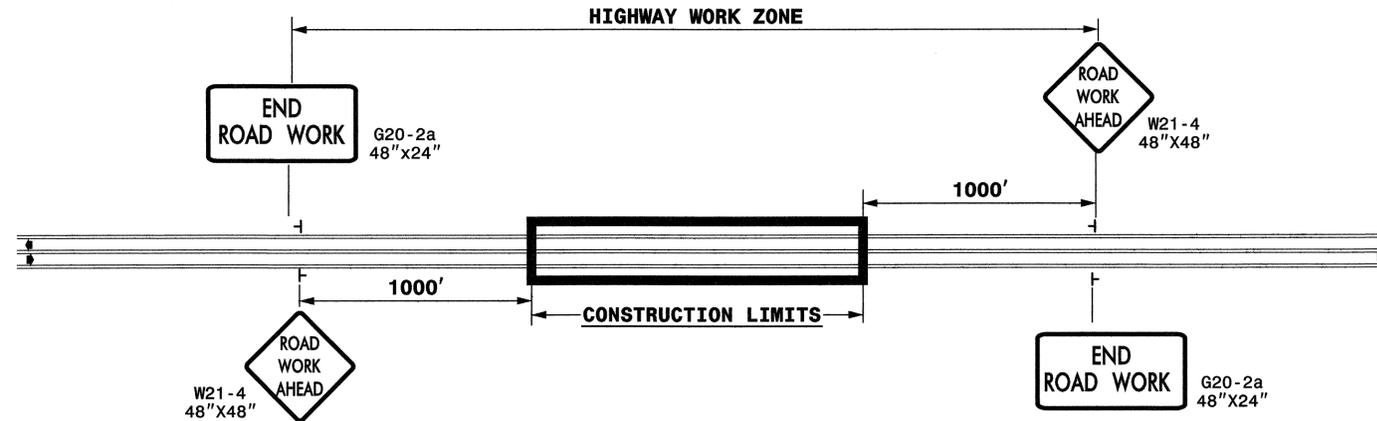
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	PROPOSED CONSTRUCTION
	PROPOSED REMOVAL

APPROVED: *M. J. Rupp* DATE: 10-1-07

SEAL

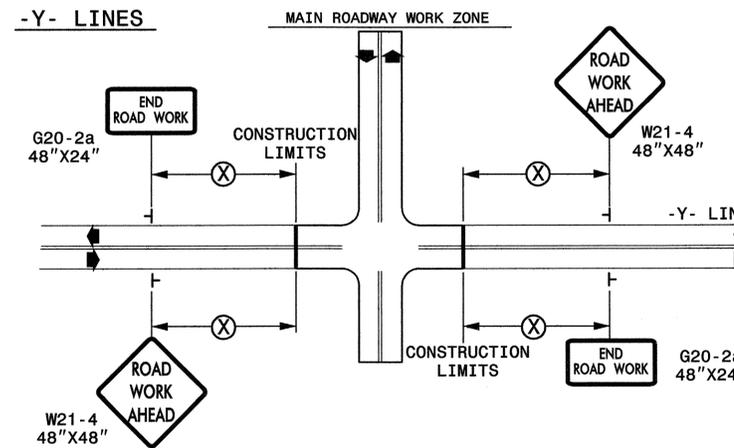
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TWO-WAY UNDIVIDED ** (L-LINES)



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

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



**DETAIL DRAWING FOR
TWO-WAY UNDIVIDED
WORK ZONE WARNING SIGNS**

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

SHEET 1 OF 1

APPROVED: <i>M. Kelly</i> DATE: 10-1-07	DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS	
	SCALE: NONE	
	DATE: 7-07	
	DWG. BY: BLM	
	DESIGN BY: BLM	
REVIEWED BY: MTR	REVISIONS	

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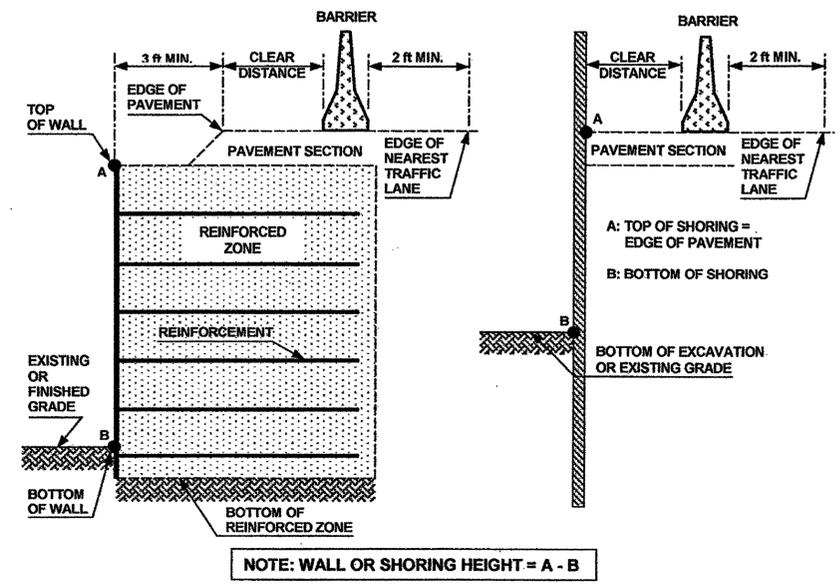


FIGURE A

NOTES

- REFER TO THE TRAFFIC CONTROL PLANS FOR SHORING LOCATIONS AND SOIL PARAMETERS.
- REFER TO THE "TEMPORARY SHORING" PROJECT SPECIAL PROVISION FOR MORE INFORMATION ABOUT TEMPORARY SHORING, MEASUREMENT AND PAYMENT.
- PROVIDE PORTABLE CONCRETE BARRIER TO PROTECT TEMPORARY SHORING IF SHORING IS LOCATED WITHIN THE CLEAR ZONE AS DEFINED IN THE AASHTO ROADSIDE DESIGN GUIDE.
- 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.
- 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.
- USE NCDOT PORTABLE CONCRETE BARRIER (PCB) IN ACCORDANCE WITH ROADWAY STANDARD DRAWING NO. 1170.01 AND SECTION 1170 OF THE STANDARD SPECIFICATIONS.
- 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](http://www.ncdot.org/DOH/PRECONSTRUCT/WZTC/DESRES/ENGLISH/DESRESENG.HTML)
- 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.
- 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.
- 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

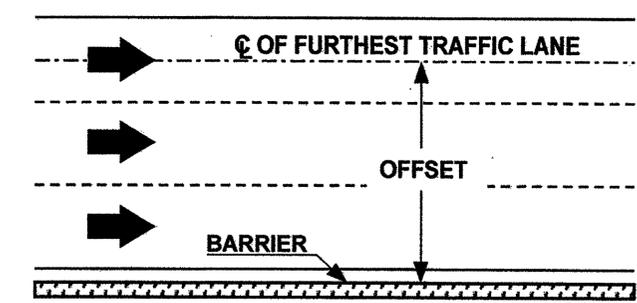
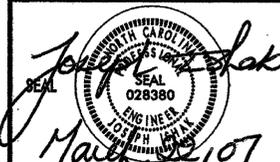


FIGURE B

APPROVED: _____ DATE: _____	PORTABLE CONCRETE BARRIER AT TEMPORARY SHORING LOCATIONS		REVISIONS						
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