

STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
U-3344 A	TCP-1

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

U-3344 A

**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
1101.05	WORK ZONE VEHICLE ACCESSES
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
1145.01	BARRICADES
1150.01	FLAGGERS
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
1205.04	PAVEMENT MARKINGS - INTERSECTIONS
1205.05	PAVEMENT MARKINGS - TURN LANES
1205.06	PAVEMENT MARKINGS - THRU LANE DROPS
1205.08	PAVEMENT MARKINGS - SYMBOLS & WORD MESSAGES
1205.09	PAVEMENT MARKINGS - PAINTED ISLANDS
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**

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND AND INDEX OF SHEETS
TCP-2	PROJECT NOTES
TCP-3	TEMPORARY PAVEMENT MARKING SCHEDULE
TCP-4 & 4A	PHASING
TCP-5 TO 8A	PHASE I
TCP-9 TO 11	PHASE II
TCP-12 TO 13	PHASE III
TCP-14	DETOUR ROUTE FOR WEEKEND CLOSURE OF AIRPORT BLVD.
TCP-15	BARRICADE LOCATIONS FOR WEEKEND CLOSURE OF AIRPORT BLVD.
TCP-16	WORK ZONE ADVANCED WARNING SIGNING
PMP-1	FINAL PAVEMENT MARKING SCHEDULE
PMP-2 TO 5	FINAL PAVEMENT MARKING PLANS

**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
  - 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:

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msteelman AT WZTC224162

APPROVED: DATE: April 5, 2006	PLAN PREPARED BY: N.C.D.O.T. TRAFFIC CONTROL, MARKING & DELINEATION UNIT
SEAL	J. S. BOURNE, P.E. <b>TRAFFIC CONTROL ENGINEER</b>
	J. S. KITE, P.E. <b>TRAFFIC CONTROL PROJECT ENGINEER</b>
	D. A. PARKER <b>TRAFFIC CONTROL PROJECT DESIGN ENGINEER</b>
	M. H. STEELMAN <b>TRAFFIC CONTROL DESIGN ENGINEER / TECHNICIAN</b>

## GENERAL NOTES

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.

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.

### TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES OR ALTER/DETAIN TRAFFIC FLOW AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. SR 3015 (AIRPORT BLVD.)	MONDAY THROUGH FRIDAY 6:00 A.M. TO 9:00 A.M. 3:00 P.M. TO 6:00 P.M.

B) DO NOT CLOSE OR NARROW TRAVEL LANES OR ALTER/DETAIN TRAFFIC FLOW DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME
1. SR 3015 (AIRPORT BLVD.)

### HOLIDAY

- FOR NEW YEAR'S, BETWEEN THE HOURS OF 6:00 A.M. DECEMBER 31ST TO 6:00 P.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A SATURDAY OR A SUNDAY, THEN UNTIL 6:00 P.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 6:00 A.M. THURSDAY AND 6:00 P.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 6:00 P.M. TUESDAY.
- FOR INDEPENDENCE DAY, BETWEEN THE HOURS OF 6:00 A.M. THE DAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE DAY AFTER INDEPENDENCE DAY.  
  
IF INDEPENDENCE DAY IS ON A SATURDAY OR SUNDAY, THEN BETWEEN THE HOURS OF 6:00 A.M. THE THURSDAY BEFORE INDEPENDENCE DAY AND 6:00 P.M. THE TUESDAY AFTER INDEPENDENCE DAY.

- FOR LABOR DAY, BETWEEN THE HOURS OF 6:00 A.M. FRIDAY TO 6:00 P.M. TUESDAY.
- FOR THANKSGIVING, BETWEEN THE HOURS OF 6:00 A.M. TUESDAY TO 6:00 P.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 6:00 A.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 6:00 P.M. THE FOLLOWING MONDAY AFTER THE WEEK OF CHRISTMAS.
- FOR ANY EVENT THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.

C) DO NOT STOP TRAFFIC FOR MORE THAN 15 MINUTES AS FOLLOWS:

ROAD NAME	OPERATION
1. SR 3015 (AIRPORT BLVD.)	TRAFFIC SHIFTS

D) DO NOT CONDUCT ANY HAULING OPERATIONS AGAINST THE FLOW OF TRAFFIC OF AN OPEN TRAVELWAY UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL OR OTHERWISE DIRECTED BY THE ENGINEER.

### LANE AND SHOULDER CLOSURE REQUIREMENTS

- 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.
- 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 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) DO NOT WORK SIMULTANEOUSLY, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.

### 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 OF 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.

- PROVIDE PERMANENT SIGNING.
- PROVIDE DETOUR SIGNING.
- COVER OR REMOVE ALL DETOUR SIGNS WHEN A DETOUR IS NOT IN OPERATION.
- ENSURE ALL NECESSARY SIGNING IS IN PLACE PRIOR TO ALTERING ANY TRAFFIC PATTERN.

### TRAFFIC BARRIER

Q) INSTALL PORTABLE CONCRETE BARRIER/WATER-FILLED BARRIER ACCORDING TO THE TRAFFIC CONTROL PLANS A MAXIMUM OF TWO (2) WEEKS PRIOR TO BEGINNING WORK IN ANY LOCATION. ONCE PORTABLE CONCRETE BARRIER/WATER-FILLED 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 PORTABLE CONCRETE BARRIER/WATER-FILLED BARRIER IS INSTALLED AT ANY LOCATION AND NO WORK IS PERFORMED BEHIND THE PORTABLE CONCRETE BARRIER/WATER-FILLED BARRIER FOR A PERIOD LONGER THAN TWO (2) MONTHS, REMOVE/RESET PORTABLE CONCRETE BARRIER/WATER-FILLED 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 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.

OFFSET THE APPROACH END OF MOVABLE/PORTABLE CONCRETE BARRIER A MINIMUM OF 40 FT FROM ONCOMING TRAFFIC OR PROTECT AT ALL TIMES BY A TEMPORARY CRASH CUSHION.

INSTALL PORTABLE CONCRETE BARRIER/WATER-FILLED BARRIER WITH THE TRAFFIC FLOW, BEGINNING WITH THE UPSTREAM SIDE OF TRAFFIC. REMOVE PORTABLE CONCRETE BARRIER/WATER-FILLED 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

- WHEN USING ROADWAY STANDARD NO. 1101.02, DRUMS MAY BE USED IN LIEU OF CONES ON ALL ROADS.
- 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.
- 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.
- PLACE SETS OF THREE DRUMS PERPENDICULAR TO THE EDGE OF THE TRAVELWAY ON 500 FT CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC. THESE DRUMS SHALL BE IN ADDITION TO CHANNELIZING DEVICES.

### PAVEMENT MARKINGS AND MARKERS

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

ROAD NAME	MARKING	MARKER
1. ALL ROADS	THERMOPLASTIC	RAISED

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

ROAD NAME	MARKING	MARKER
1. ALL ROADS	PAINT	RAISED

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

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

AA) PLACE AT LEAST TWO APPLICATIONS OF PAINT ON NEW ASPHALT WITH TEMPORARY TRAFFIC PATTERNS WHICH WILL REMAIN IN PLACE OVER THREE (3) MONTHS. PLACE ADDITIONAL APPLICATIONS OF PAINT UPON SUFFICIENT DRYING TIME, AS DETERMINED BY THE ENGINEER.

### TEMPORARY/FINAL SIGNALS

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


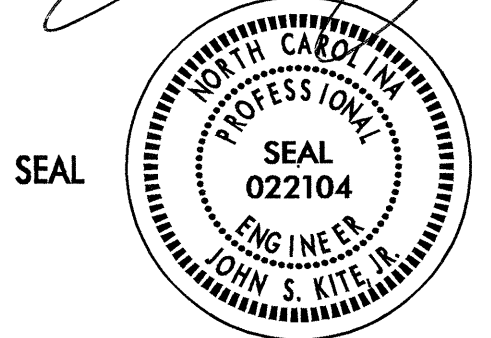
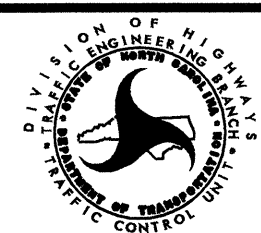
CC) SHIFT AND REVISE ALL SIGNAL HEADS AS SHOWN ON THE SIGNAL PLANS.

### MISCELLANEOUS

DD) USING INCIDENTAL STONE OR ASPHALT AS NECESSARY, MAINTAIN VEHICULAR ACCESS TO ALL RESIDENCES AND BUSINESSES DURING THE LIFE OF THE CONTRACT UNLESS OTHERWISE NOTED IN THE PHASING OR DIRECTED BY THE ENGINEER.

EE) RELOCATE EXISTING STOP SIGNS DURING CONSTRUCTION AS SHOWN IN THE PLANS OR AS DIRECTED BY THE ENGINEER.

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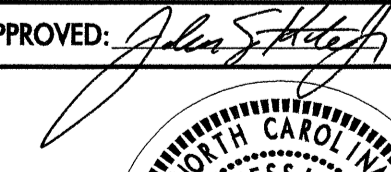
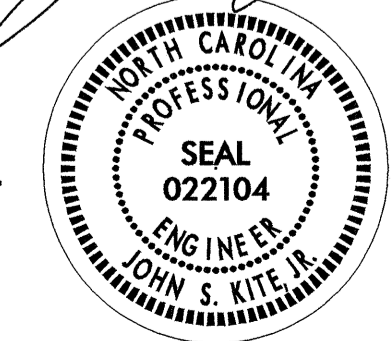
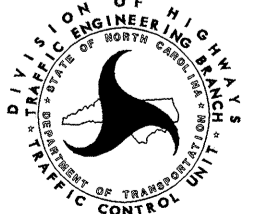
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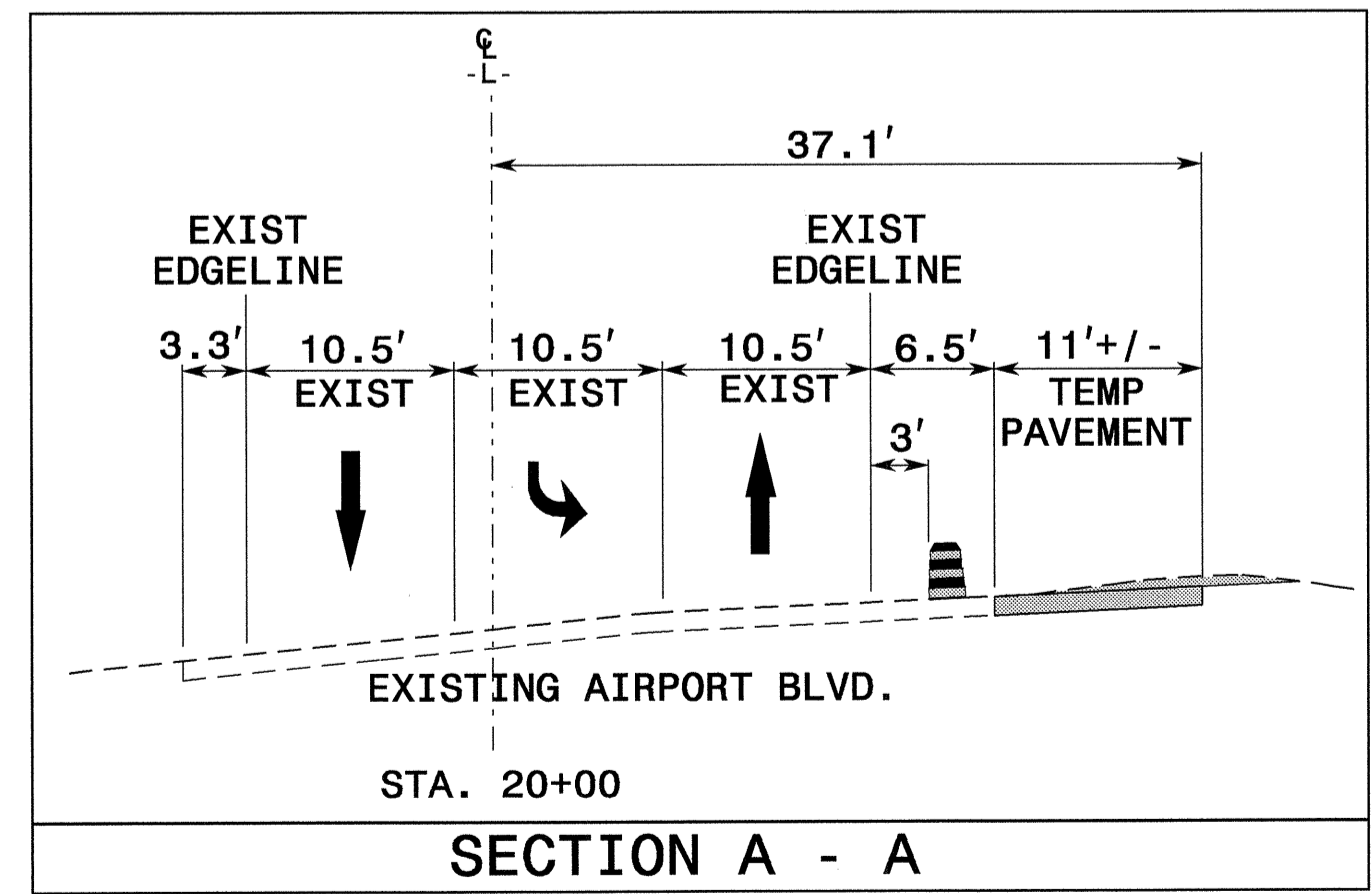
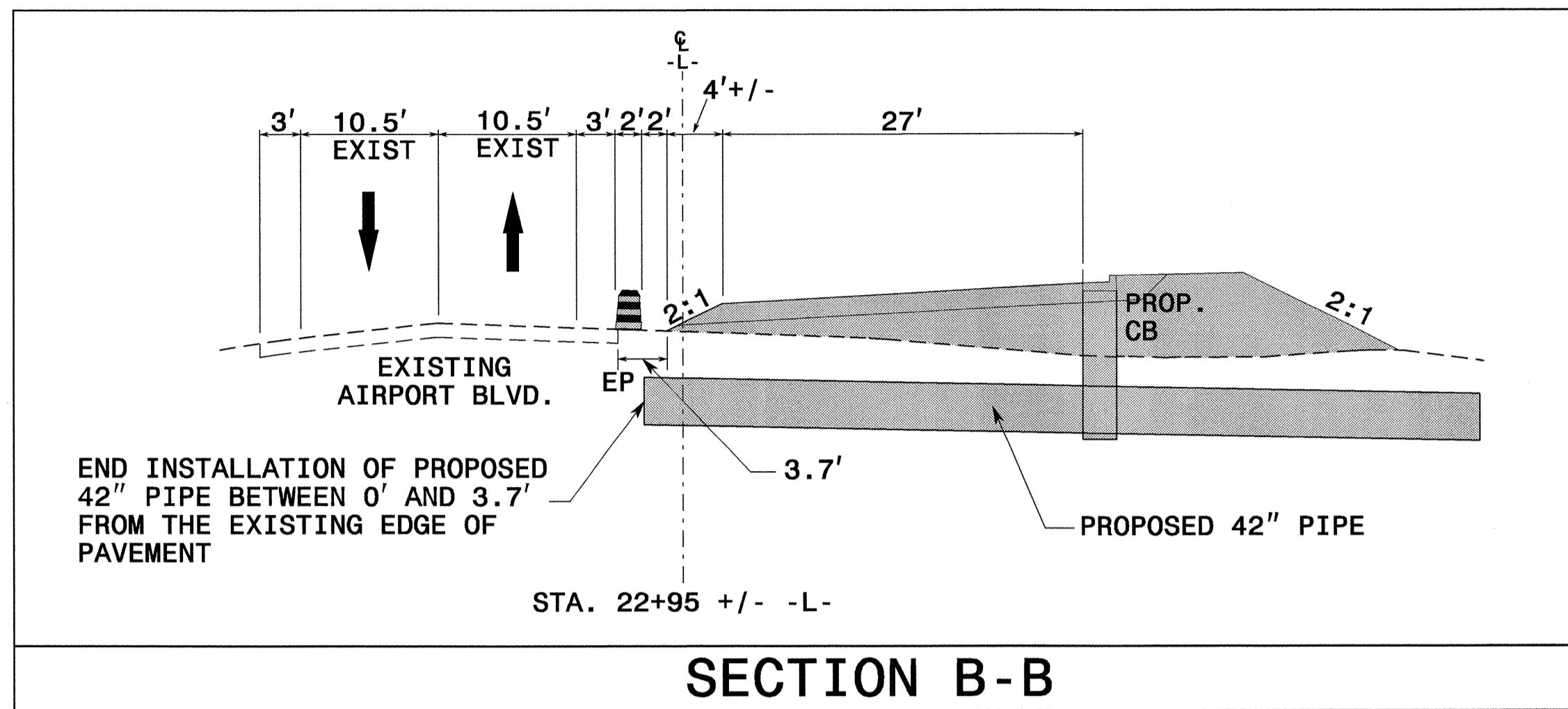
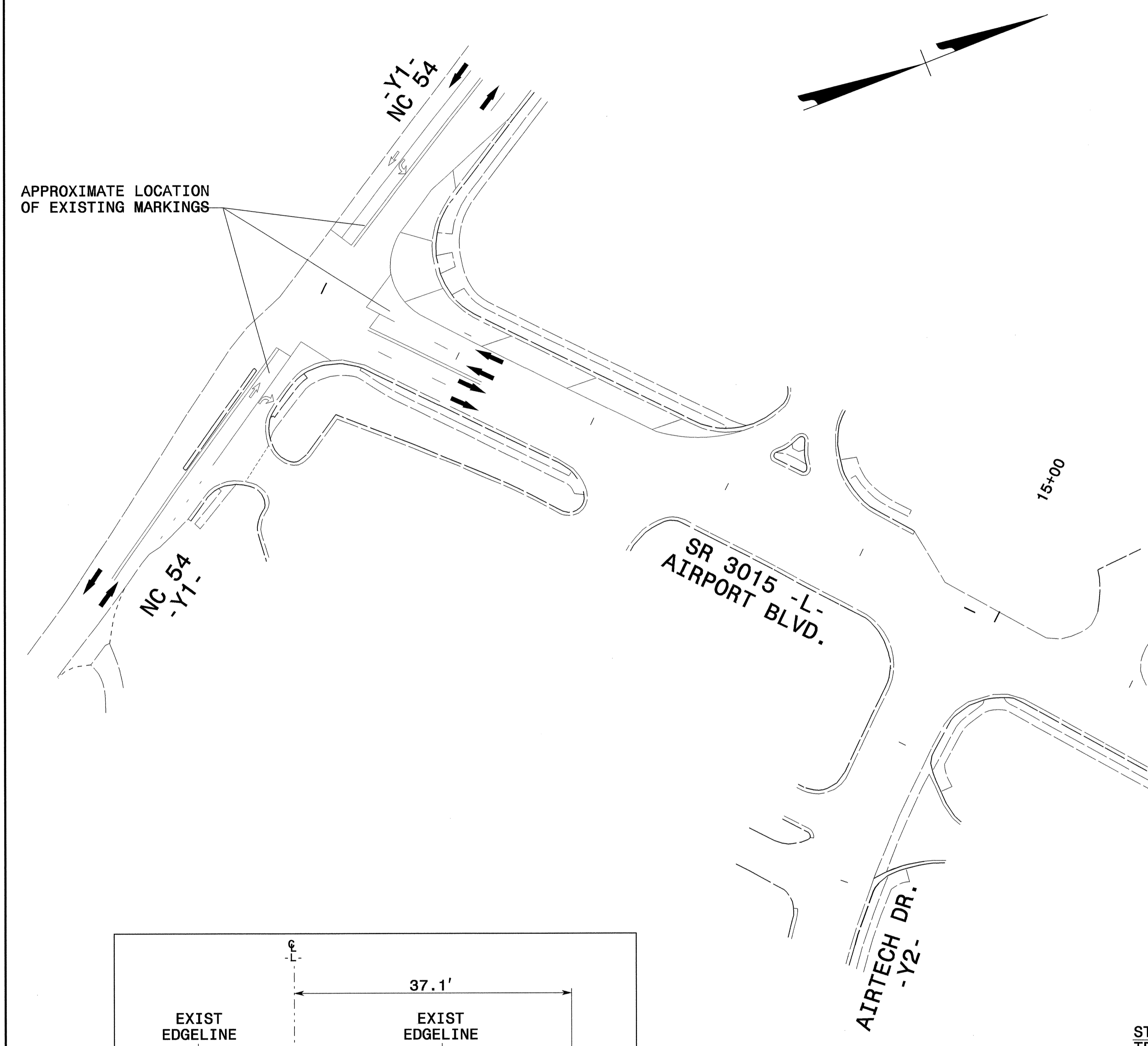
## PHASING

### PHASE III CONTINUED

- STEP 4) USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 7, AS NECESSARY, COMPLETE PROPOSED CULVERT AND CONSTRUCT PROPOSED PAVEMENT UP TO BUT NOT INCLUDING THE FINAL LAYER OF SURFACE COURSE AS SHOWN ON SHEET TCP-12B AND TCP-13.
- STEP 5) COMPLETE ALL WORK PREVIOUSLY BEGUN.
- STEP 6) INSTALL AS MUCH TEMPORARY (PAINT) PAVEMENT MARKINGS AND MARKERS IN THE FINAL 5-LANE, 2-WAY PATTERN AS POSSIBLE WITHOUT INTERFERING WITH EXISTING TRAFFIC. (SEE TCP-3 AND PM-2 THROUGH PM-4 FOR LAYOUT OF PAVEMENT MARKINGS).
- INSTALL AND COVER PERMANENT SIGNING. (SEE SIGNING PLANS)
- WORK IN A CONTINUOUS MANNER TO COMPLETE THE FOLLOWING WORK OF PHASE III, STEP 7.
- STEP 7) USING ROADWAY STANDARD DRAWING 1101.02, SHEET 1 OF 7 AND 4 OF 7, INSTALL THE REMAINING TEMPORARY PAVEMENT MARKINGS AND MARKERS IN THE FINAL PATTERN AND PLACE -L-, -Y2-, AND -Y3- TRAFFIC IN THE FINAL TRAFFIC PATTERN. (SEE TCP-3, AND PM-2 THROUGH PM-4).
- UNCOVER PERMANENT SIGNING.
- STEP 8) PERFORM MILLING AND PAVING BACK UP TO THE EXISTING PAVEMENT ELEVATION FROM -L- STA. 10+36 +/- TO STA. 13+50 +/- AND FROM -L- STA. 42+00 +/- TO STA. 46+33 +/- -L-. REPLACE TEMPORARY (PAINT) PAVEMENT MARKINGS AND MARKERS IN THE FINAL PATTERN.
- INSTALL PROPOSED LOOPS AND ACTIVATE FINAL SIGNAL (SEE SIGNAL PLANS).
- STEP 9) REMOVE THE TRAFFIC CONTROL DEVICES AND TEMPORARY PAVEMENT MARKINGS PREVIOUSLY INSTALLED PER SHEET TCP-8A AND INSTALL FINAL PAVEMENT MARKINGS AND MARKERS ON THIS SECTION OF AIRPORT BLVD. TO RETURN IT TO THE EXISTING 5-LANE, 2-WAY TRAFFIC PATTERN (SEE PM-5).
- STEP 10) USING ROADWAY STANDARD DRAWING 1101.02, SHEET 4 OF 7, PLACE THE FINAL LAYER OF SURFACE COURSE AND INSTALL THE FINAL PAVEMENT MARKINGS AND MARKERS ON ALL ROADS. (SEE PM-1 THROUGH PM-4).
- STEP 11) REMOVE ALL WORK ZONE TRAFFIC CONTROL DEVICES.

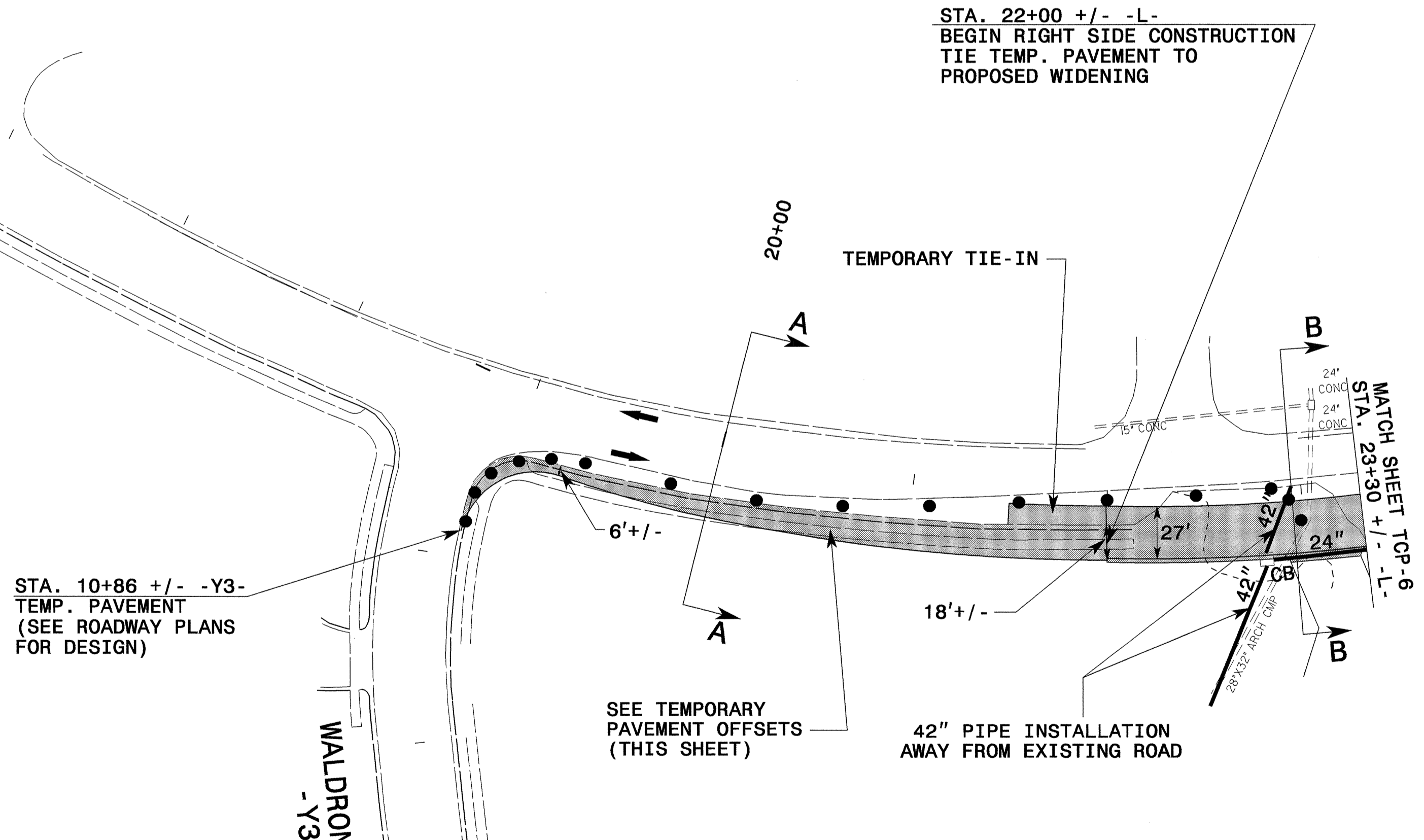
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TEMPORARY PAVEMENT OFFSETS

STATION	OFFSET FROM -L- CENTERLINE
19+00	49.6' RIGHT
19+50	38.1' RIGHT
20+00	37.1' RIGHT
20+50	35.4' RIGHT
21+00	33.9' RIGHT
21+50	32.4' RIGHT



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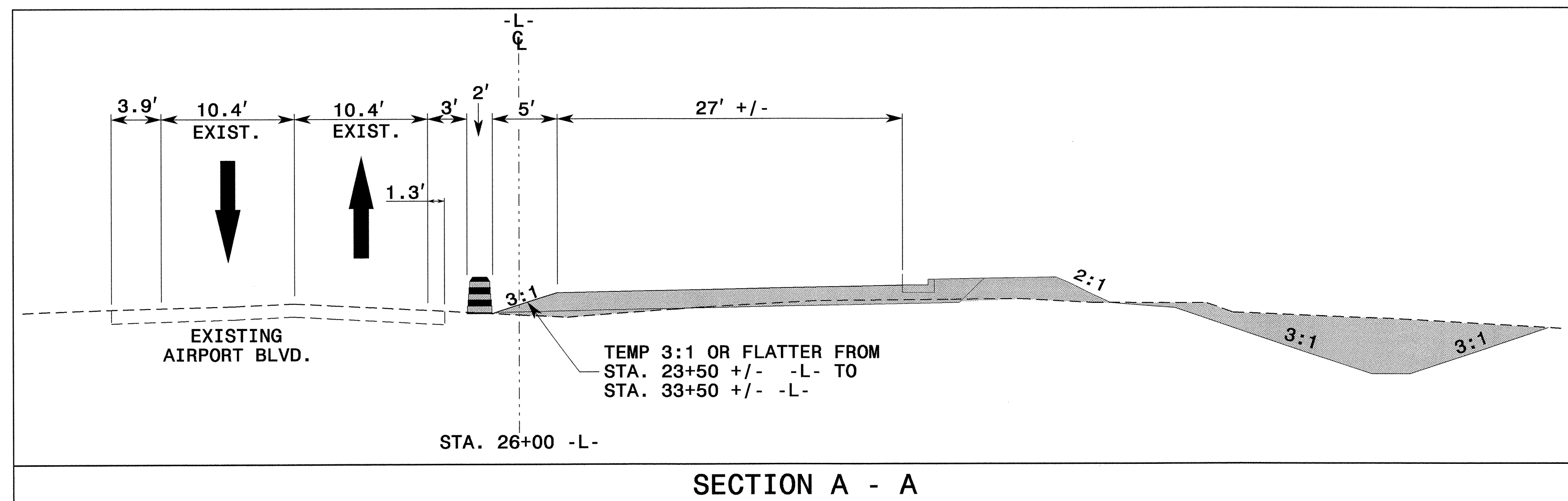
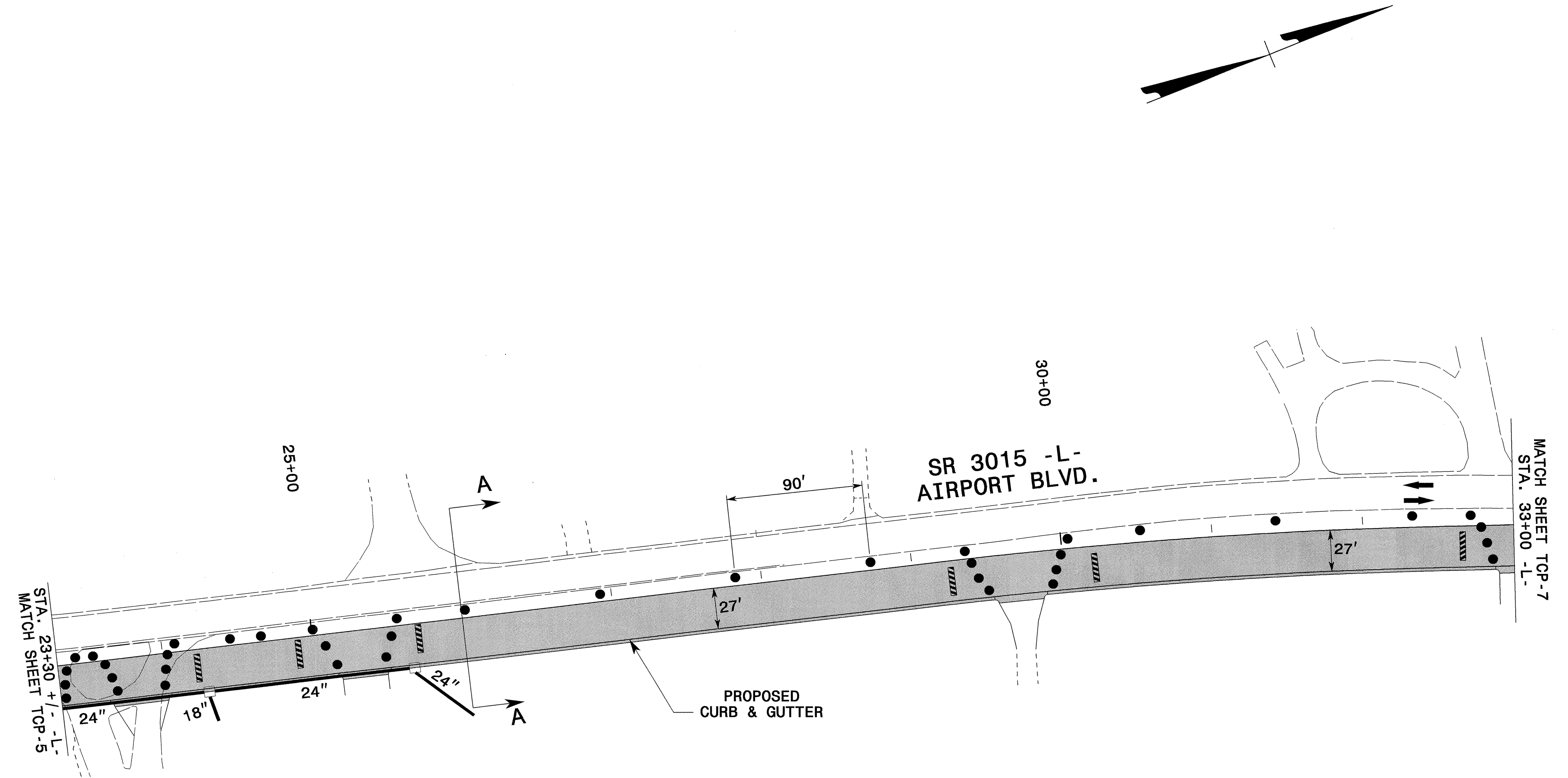
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**PHASE I**

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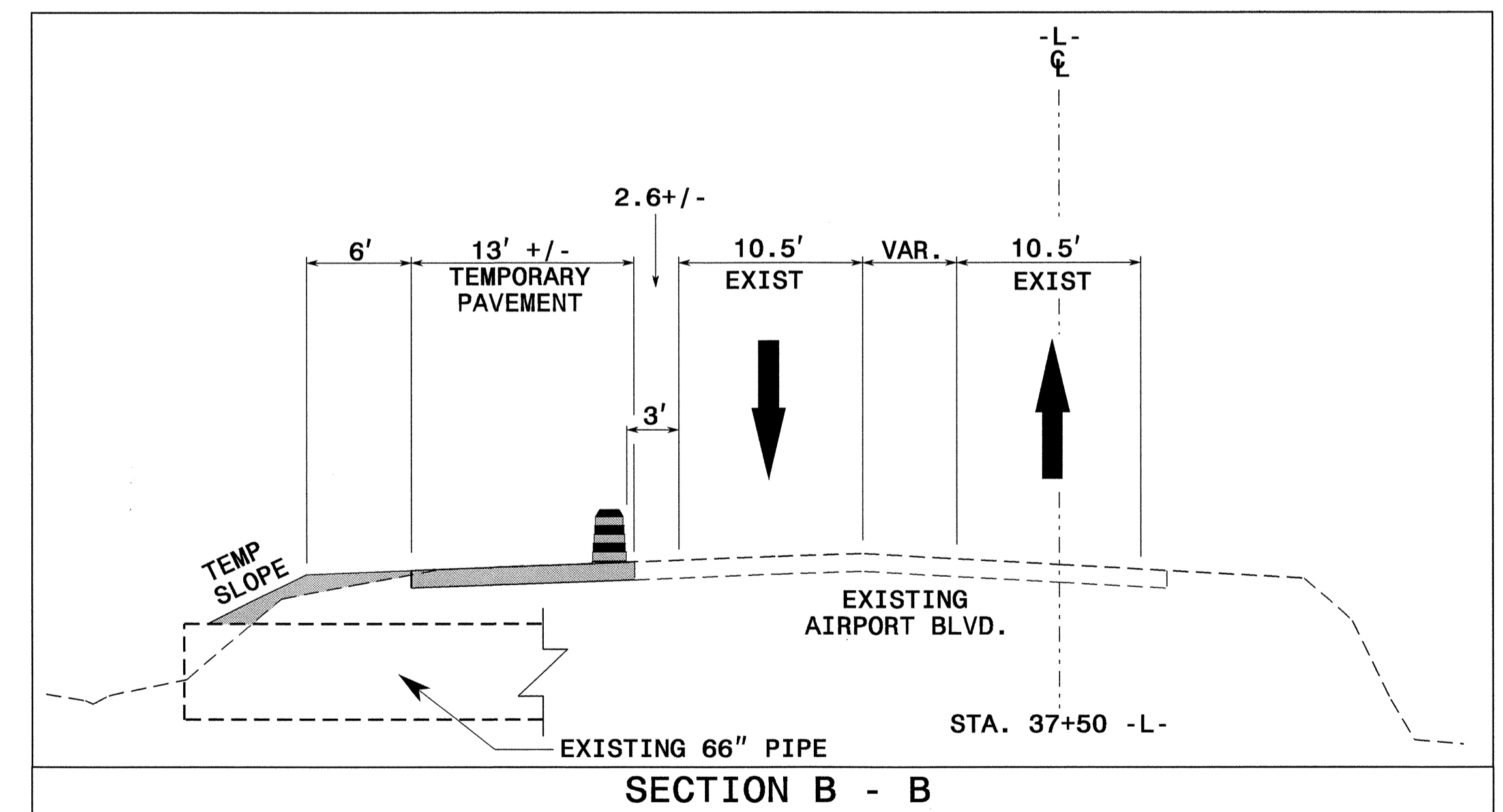
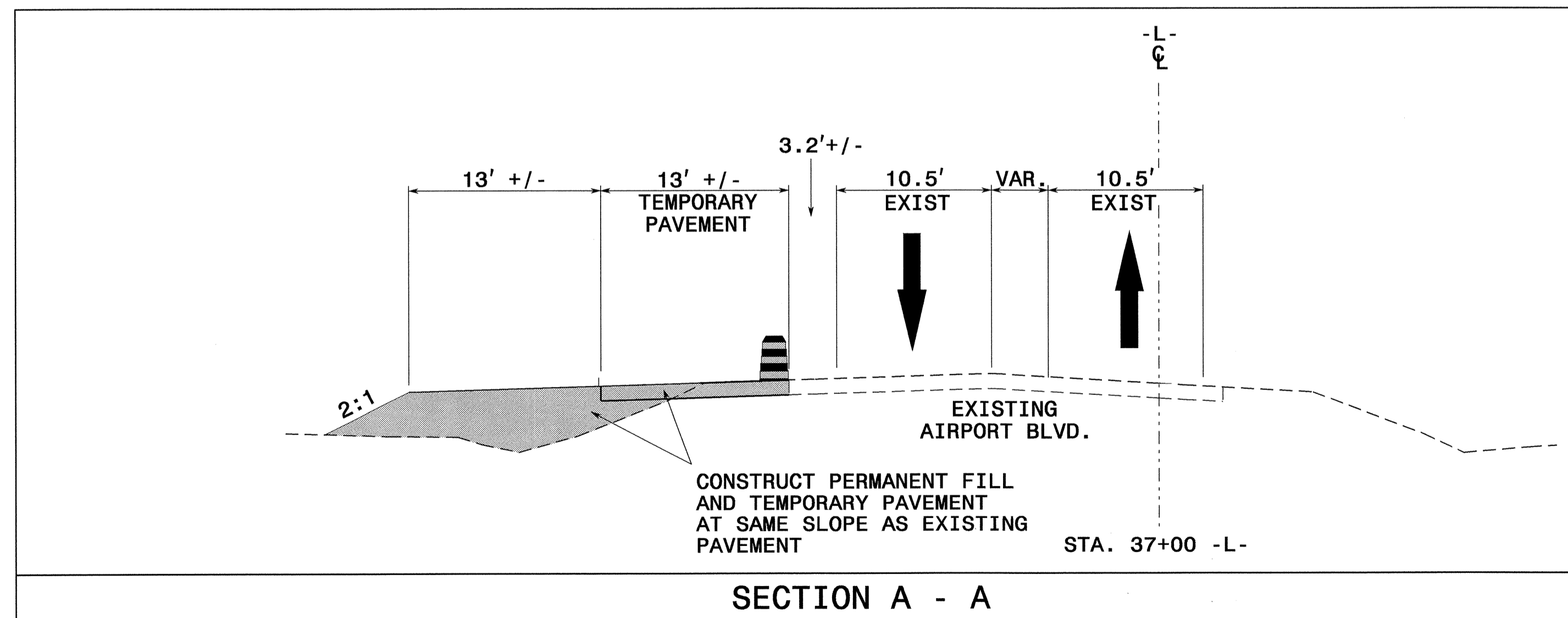
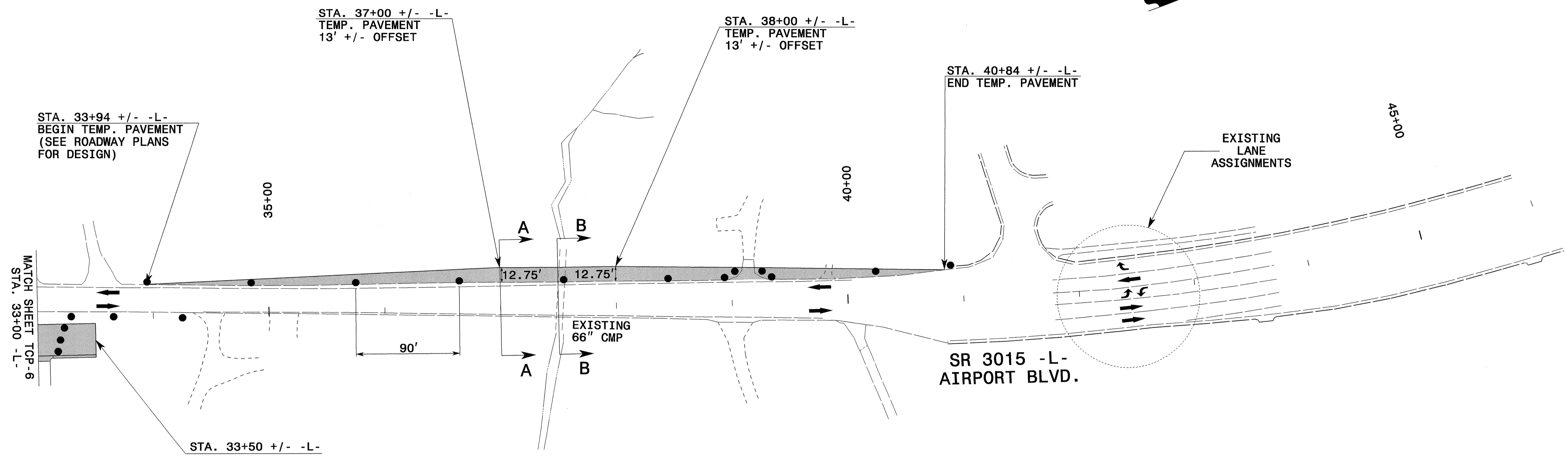
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PROFESSIONAL SEAL  
022104  
ENGINEER  
JOHN S. KITE JR.

**PHASE I**

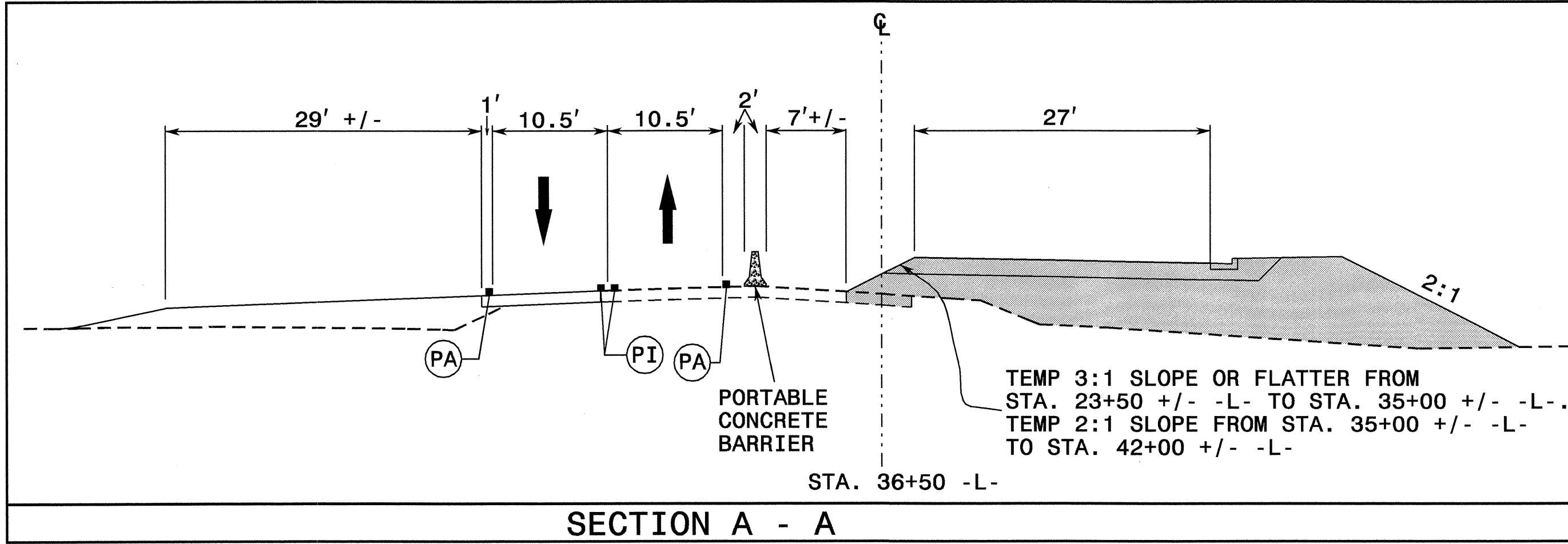
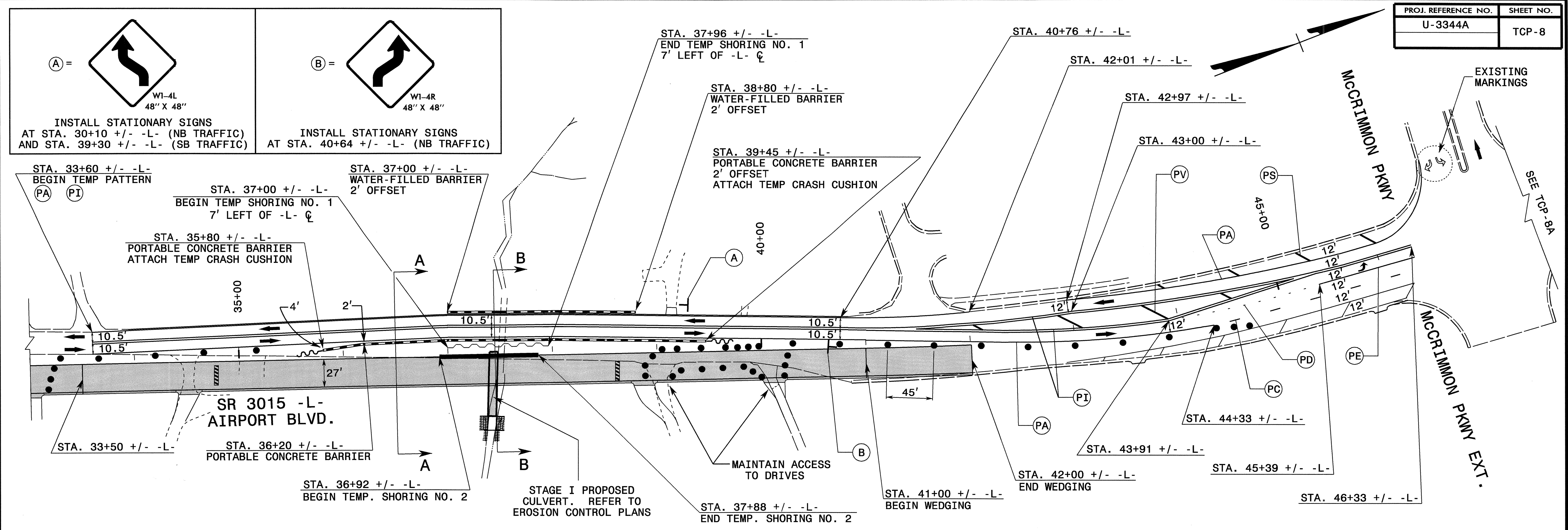
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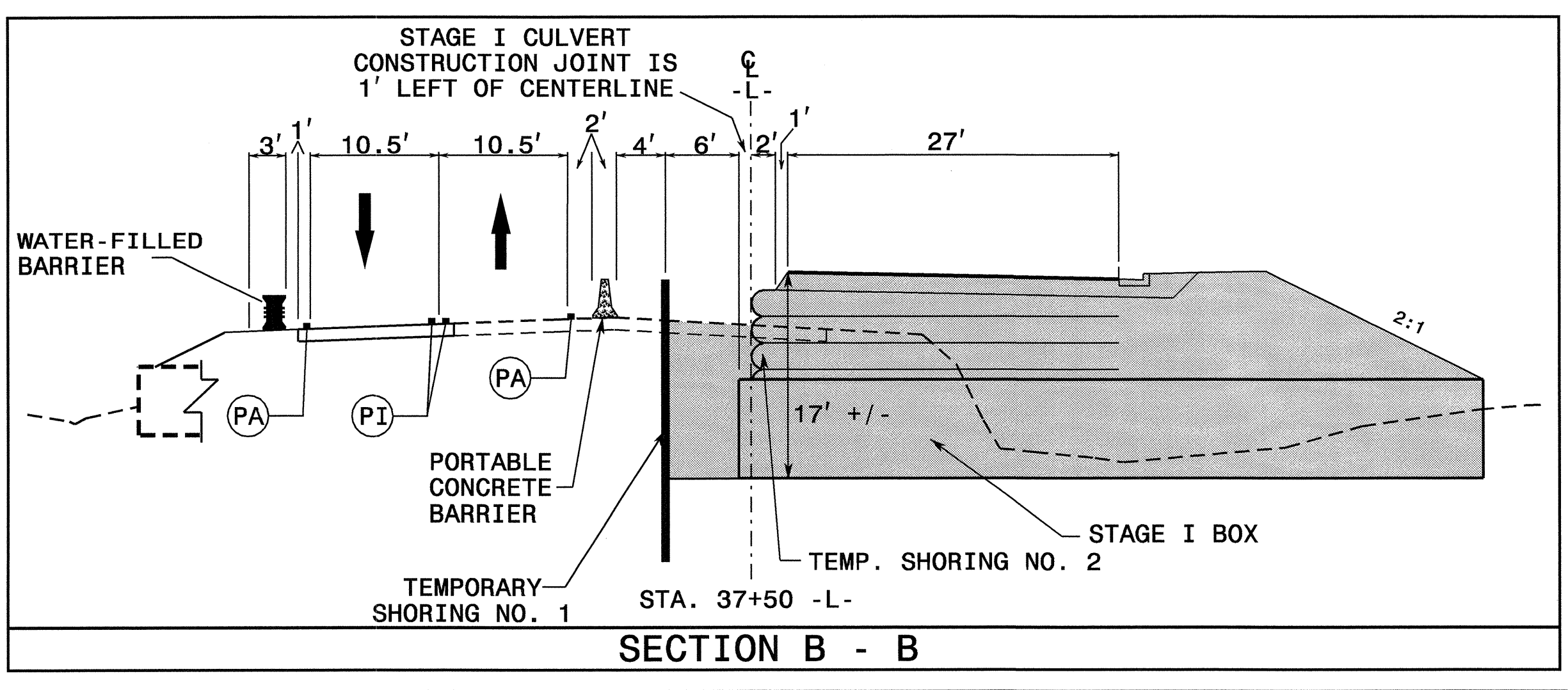




**TEMPORARY SHORING NO. 1**

ESTIMATED QUANTITY = 960 SQUARE FEET BASED ON AN AVERAGE ESTIMATE HEIGHT OF 10.0 FEET.

- DO NOT USE STANDARD TEMPORARY SHORING FROM STATION 37+00, 7 FT. LT, TO STATION 37+96, 7 FT. LT.
- WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 37+00, 7 FT LT, TO STATION 37+96, 7 FT LT, USE THE FOLLOWING SOIL PARAMETERS: UNIT WEIGHT OF SOIL ABOVE WATER TABLE,  $\gamma = 120\text{PCF}$  COHESION,  $c = 0\text{ PSF}$   
UNIT WEIGHT OF SOIL BELOW WATER TABLE,  $\gamma = 60\text{PCF}$
- DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 37+00, 7 FT LT, TO STATION 37+96, 7 FT LT, MAY NOT PENETRATE BELOW ELEVATION 309 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.
- CONTRACTOR DESIGNED SHORING FROM STATION 37+00, 7 FT LT, TO STATION 37+96, 7 FT LT, SHALL MAINTAIN FLOW IN THE EXISTING PIPE.



**TEMPORARY SHORING NO. 2**

ESTIMATED QUANTITY = 970 SQUARE FEET BASED ON AN AVERAGE ESTIMATE HEIGHT OF 10.1 FEET.

- DO NOT USE STANDARD TEMPORARY SHORING FROM STATION 36+92, 4 FT RT, TO STATION 37+96, 4 FT RT.
- WHEN USING CONTRACTOR DESIGNED SHORING FROM STATION 36+92, 4 FT RT, TO STATION 37+96, 4 FT RT, USE THE FOLLOWING SOIL PARAMETERS: UNIT WEIGHT OF SOIL ABOVE WATER TABLE,  $\gamma = 120\text{PCF}$  COHESION,  $c = 0\text{ PSF}$   
UNIT WEIGHT OF SOIL BELOW WATER TABLE,  $\gamma = 60\text{PCF}$
- DRIVEN PILING FOR TEMPORARY SHORING FROM STATION 36+92, 4 FT RT, TO STATION 37+96, 4 FT RT, MAY NOT PENETRATE BELOW ELEVATION 309 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.

ALL PAVEMENT MARKING SYMBOLS ARE PAINT

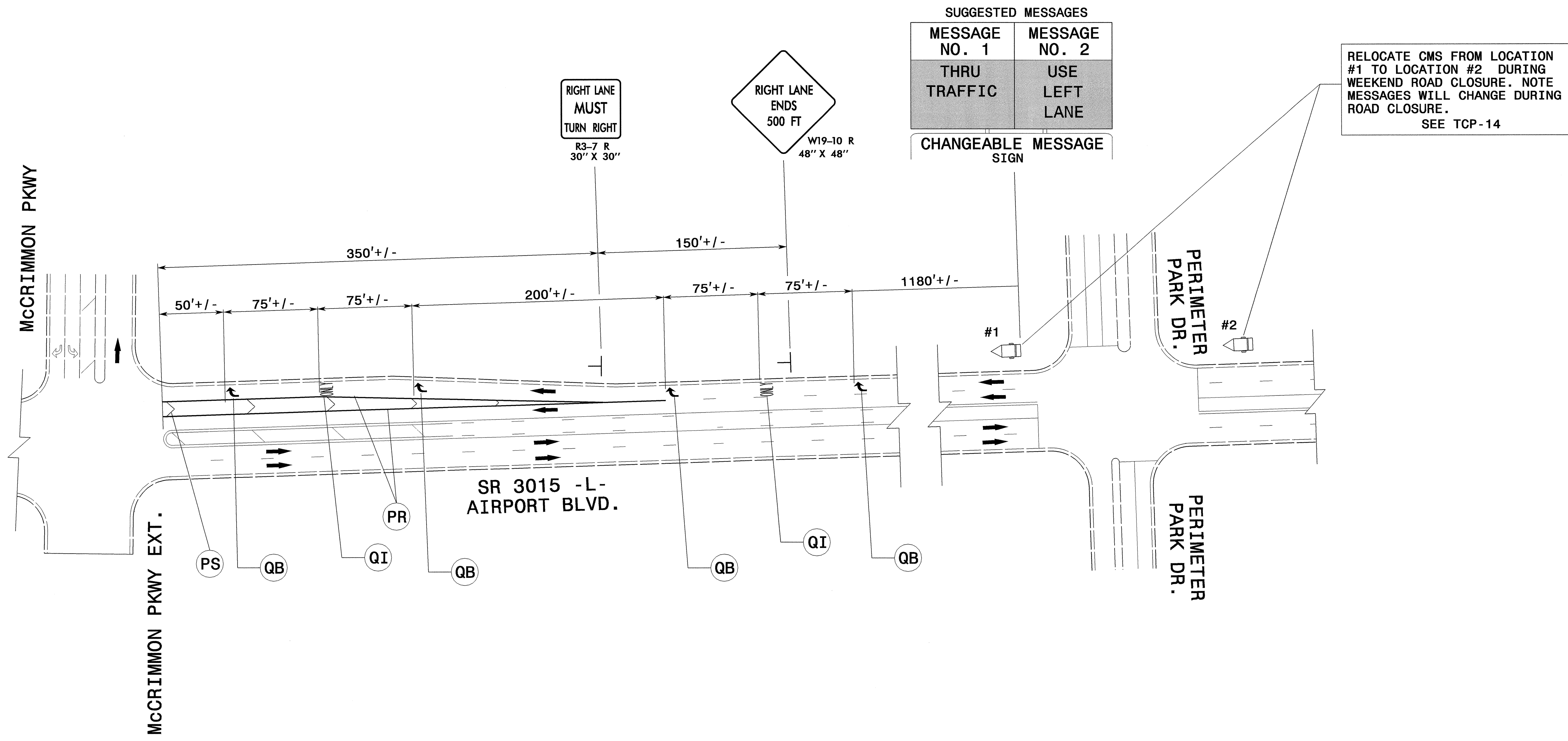
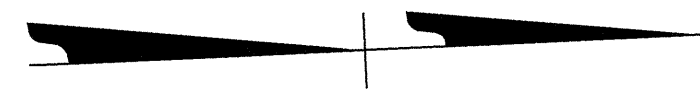
APPROVED: *[Signature]* DATE: 11/10/07

SEAL

**PHASE I**

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DATE:	10-04										
DWG. BY:	MHS										
DESIGN BY:	MHS										
REVIEWED BY:	CLM	CADD FILE									

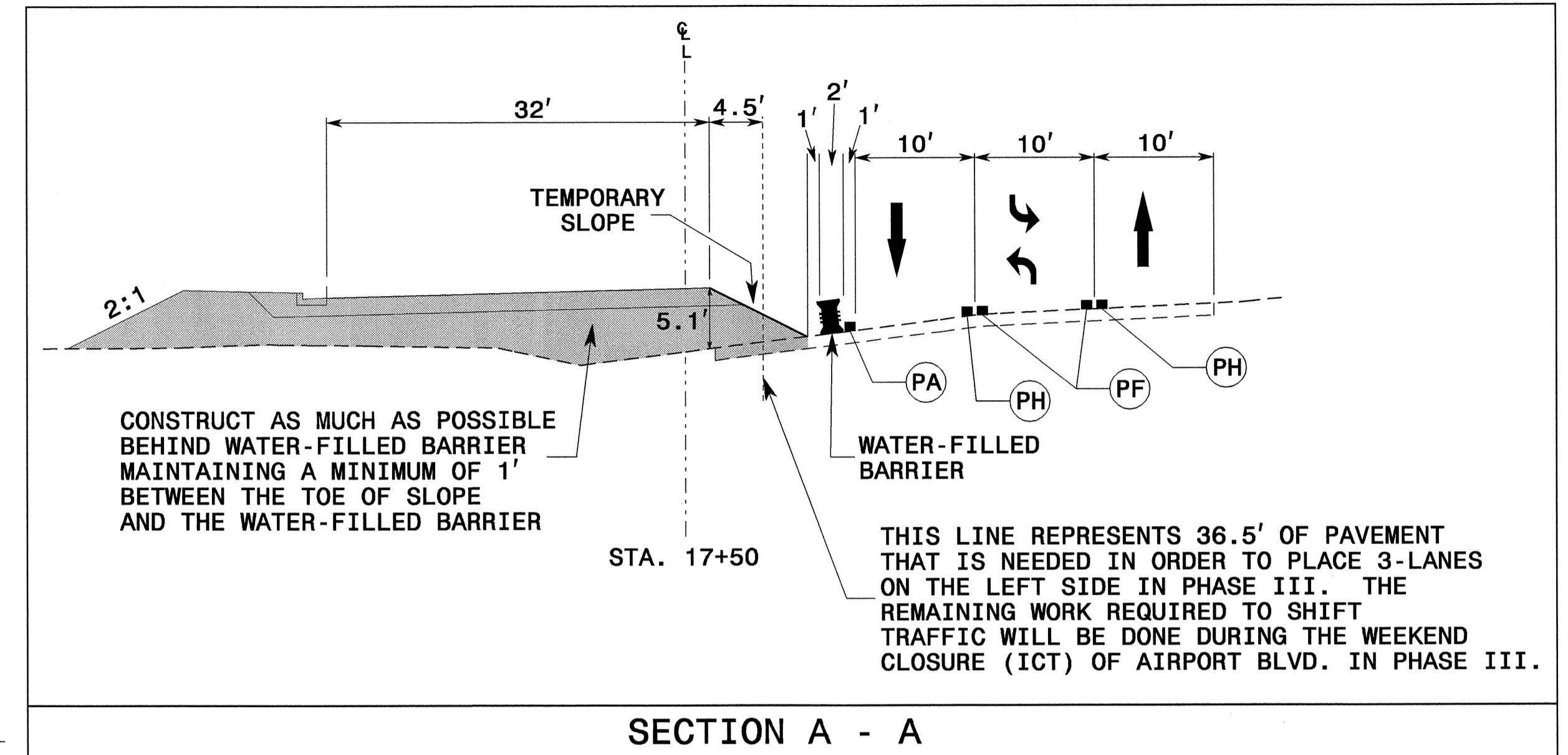
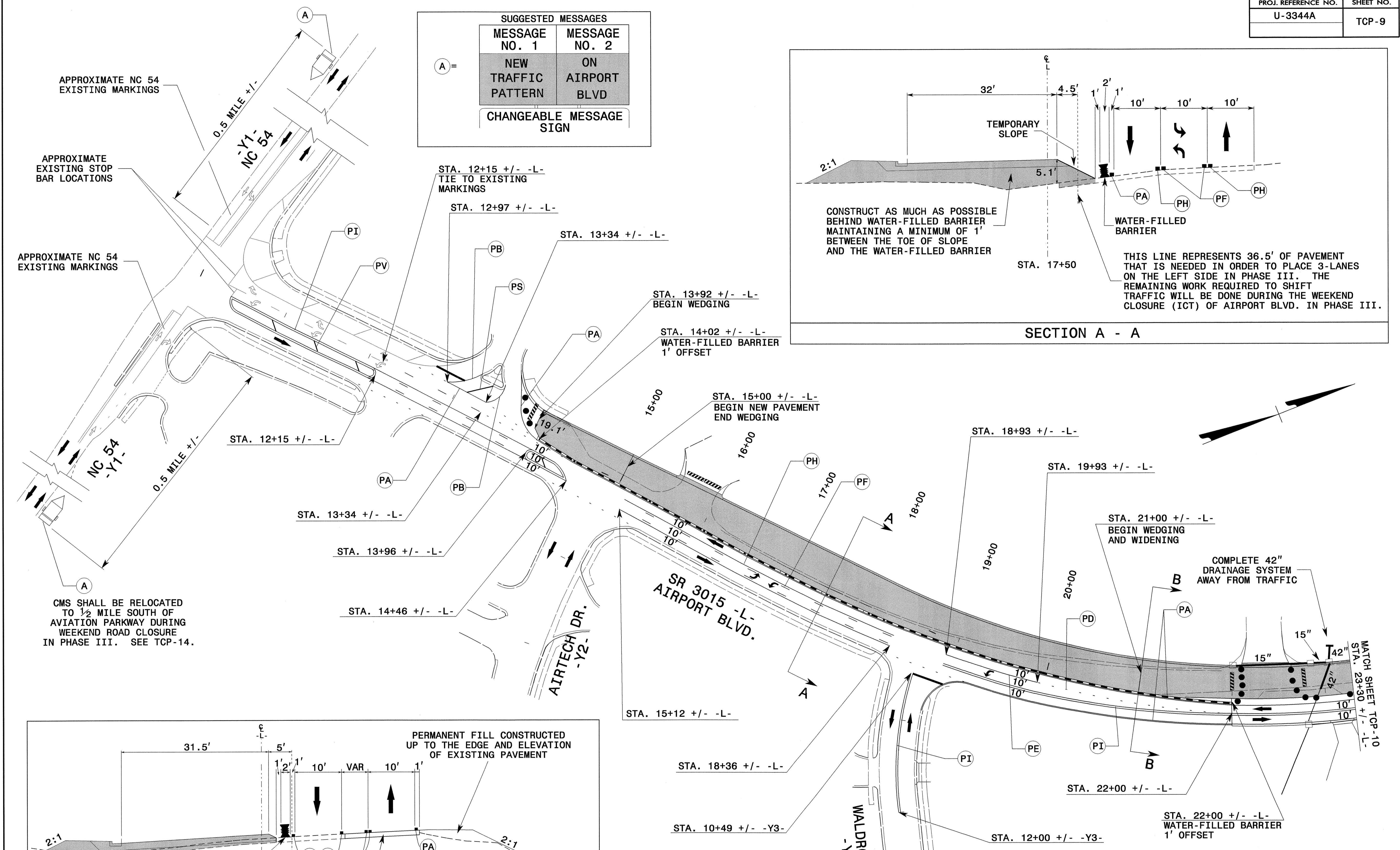
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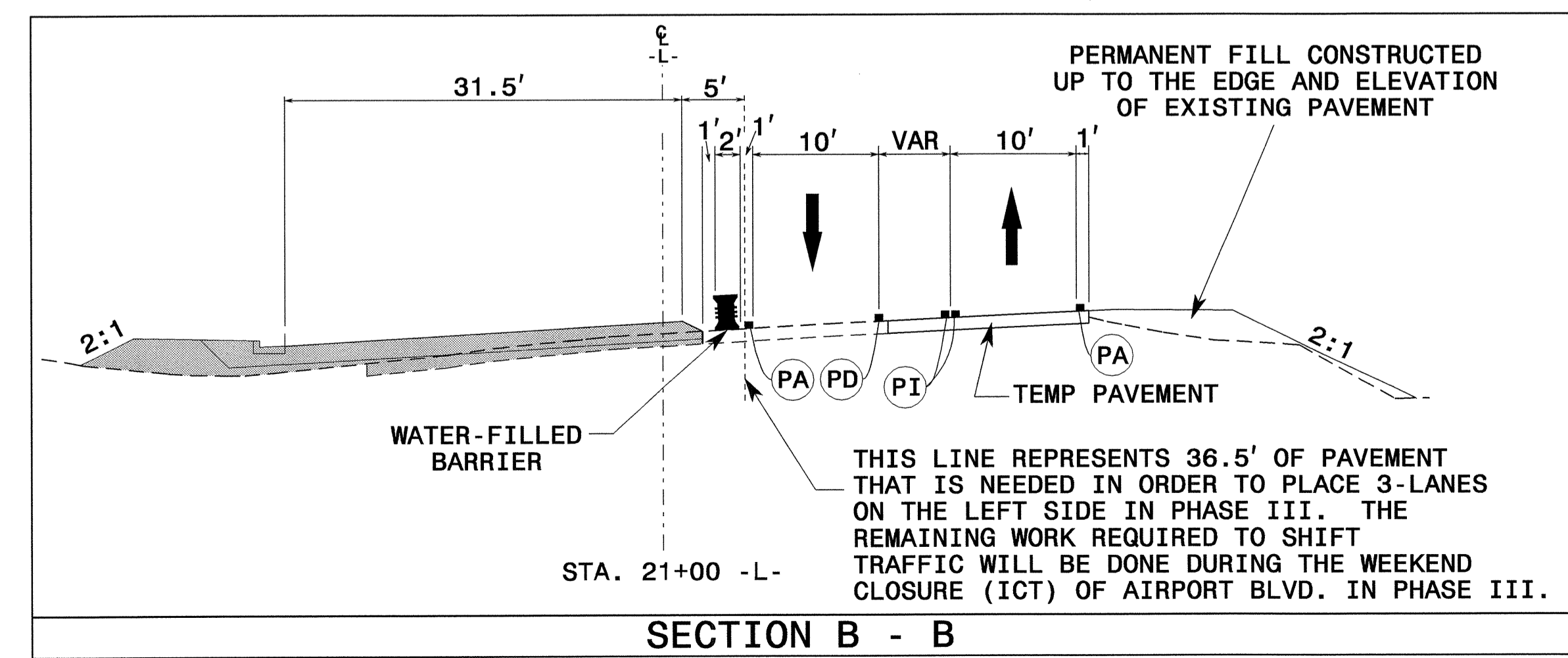
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 msteelinan AT 1E1C21231

APPROVED: <i>[Signature]</i> DATE: 12/10/04	<b>PHASE I</b>						
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	DATE: 10-04						
	DESIGN BY: MHS						
	REVIEWED BY: CLM						
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REVISIONS							
CADD FILE							

SUGGESTED MESSAGES	
MESSAGE NO. 1	MESSAGE NO. 2
NEW TRAFFIC PATTERN	ON AIRPORT BLVD
CHANGEABLE MESSAGE SIGN	



CMS SHALL BE RELOCATED TO 1/2 MILE SOUTH OF AVIATION PARKWAY DURING WEEKEND ROAD CLOSURE IN PHASE III. SEE TCP-14.



ALL PAVEMENT MARKING SYMBOLS ARE PAINT

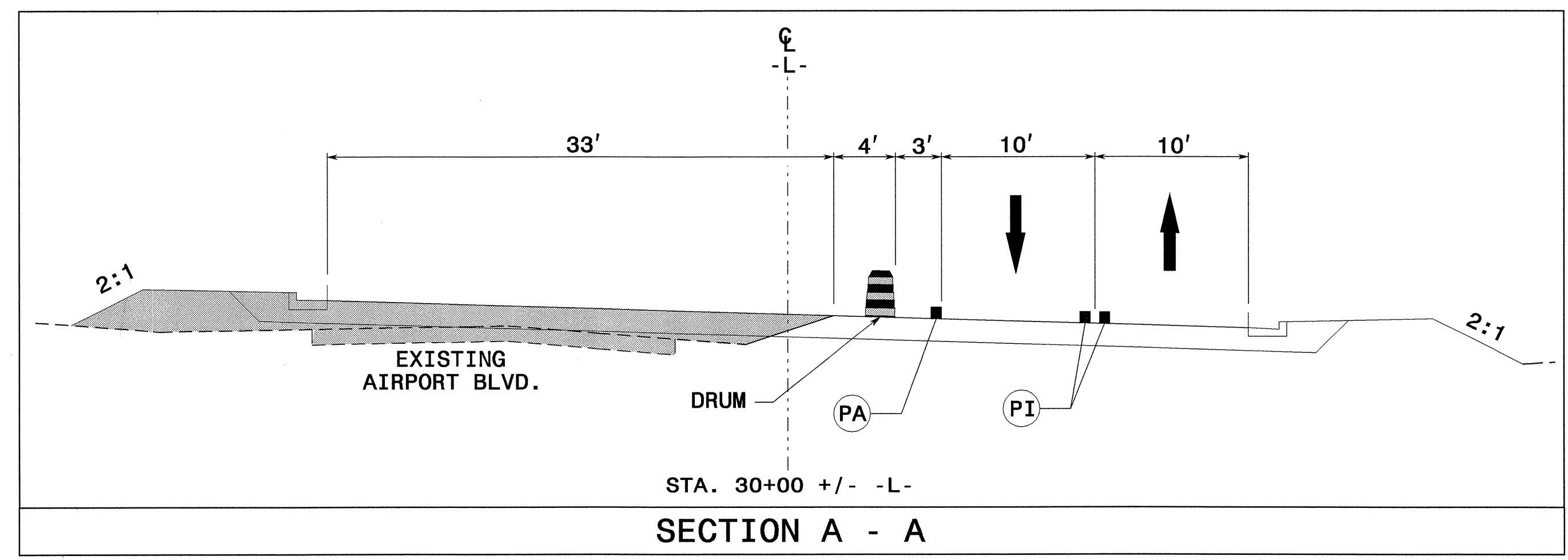
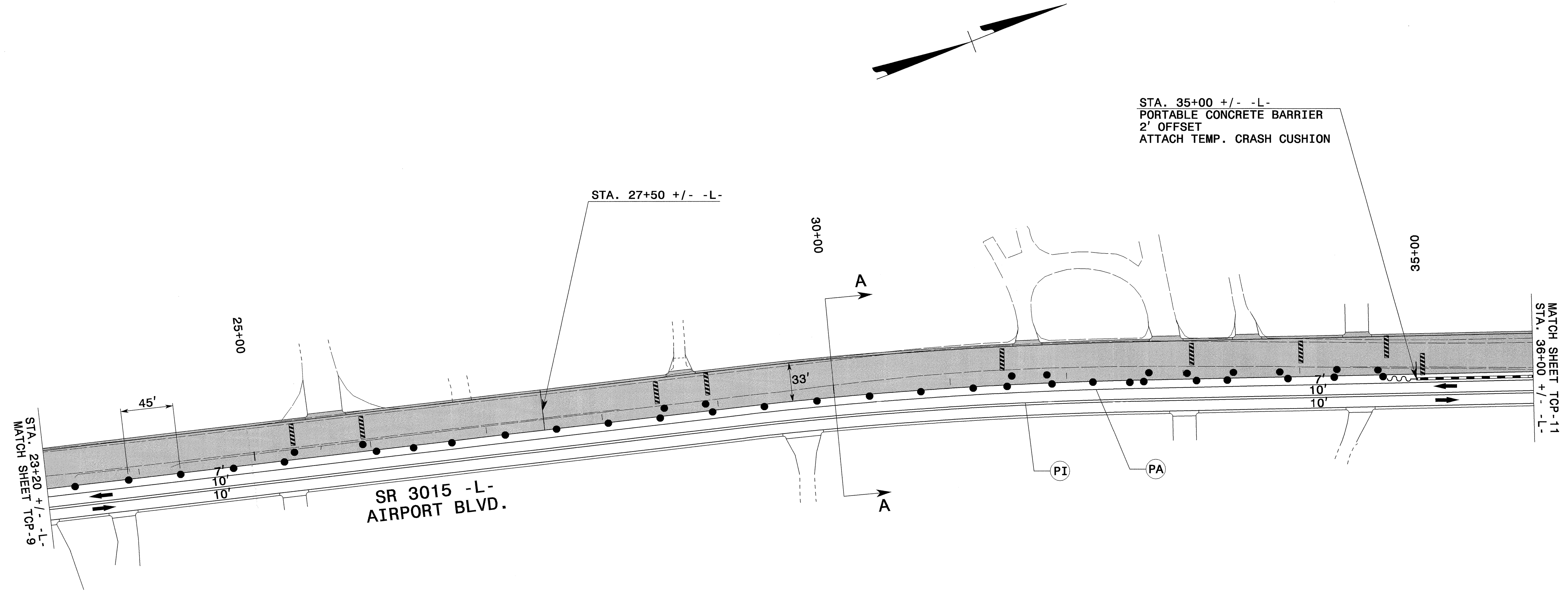
APPROVED: *[Signature]* DATE: 12/05

SEAL: NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 022104 JOHN S. KITE, II

**PHASE II**

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DATE: 12-04												
DWG. BY: MHS												
DESIGN BY: MHS												
REVIEWED BY: CLM												

PROJ. REFERENCE NO.	SHEET NO.
U-3344A	TCP-10



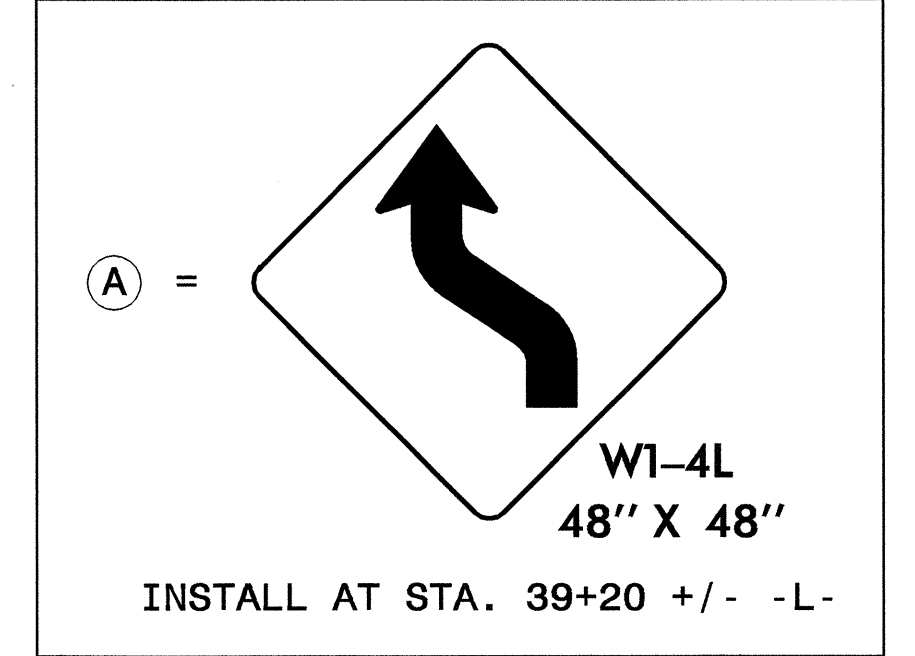
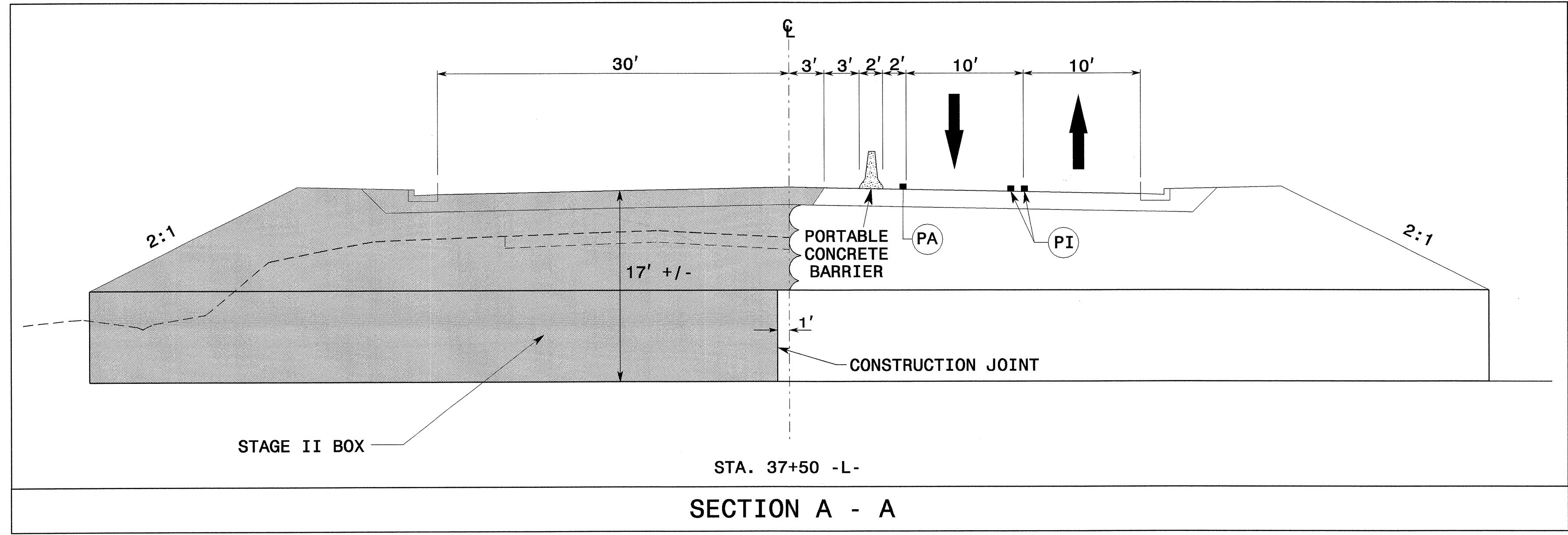
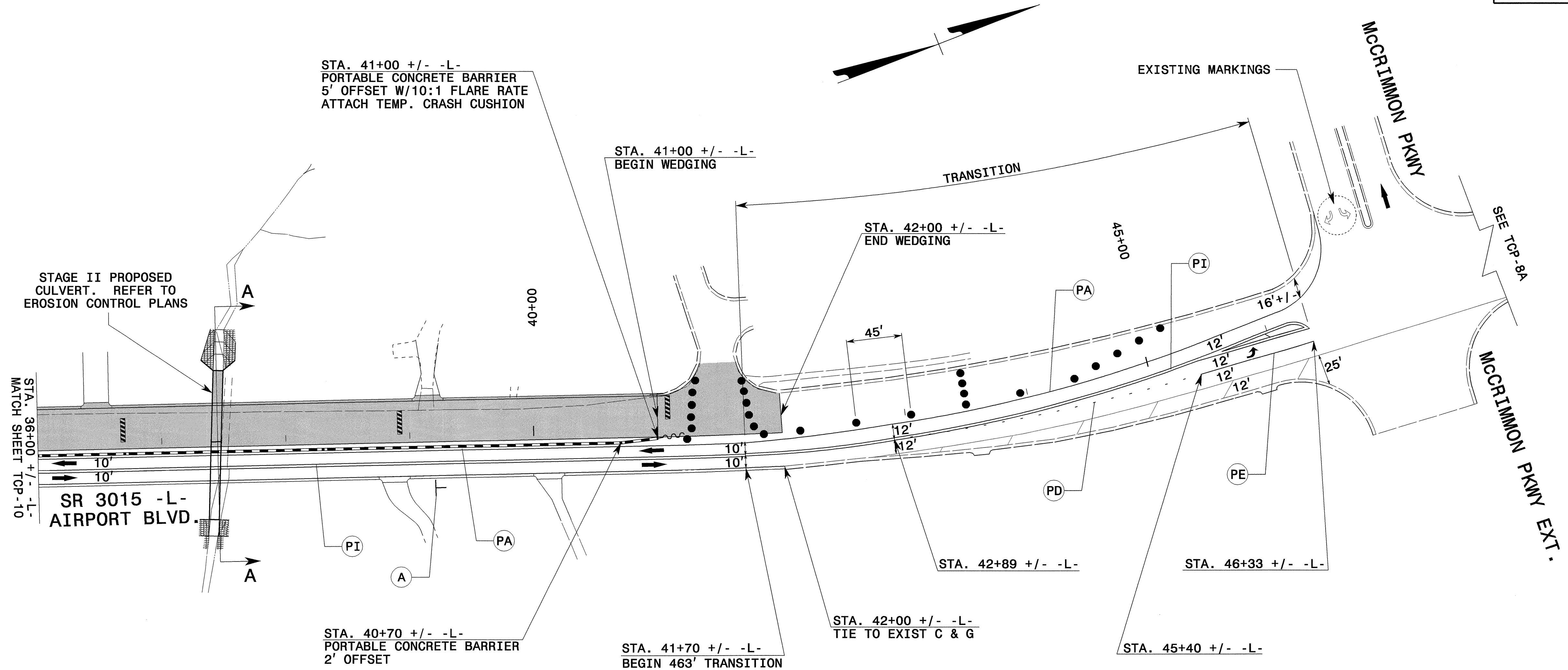
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 msfeelinan AT 1E1C21231

APPROVED: *John S. Kite, Jr.* DATE: 12/10/04

SEAL

**PHASE II**

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DATE: 10-04		
DESIGN BY: MHS		
REVIEWED BY: CLM		

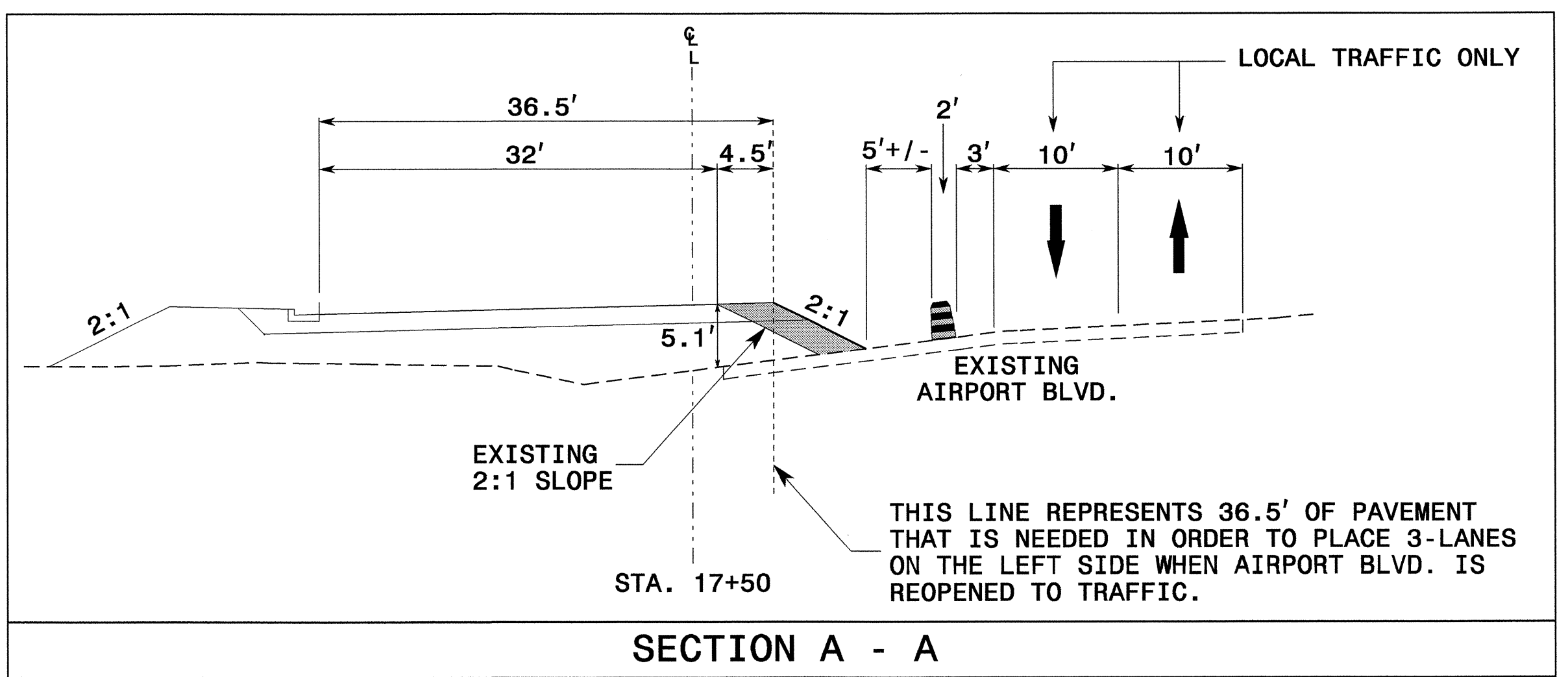
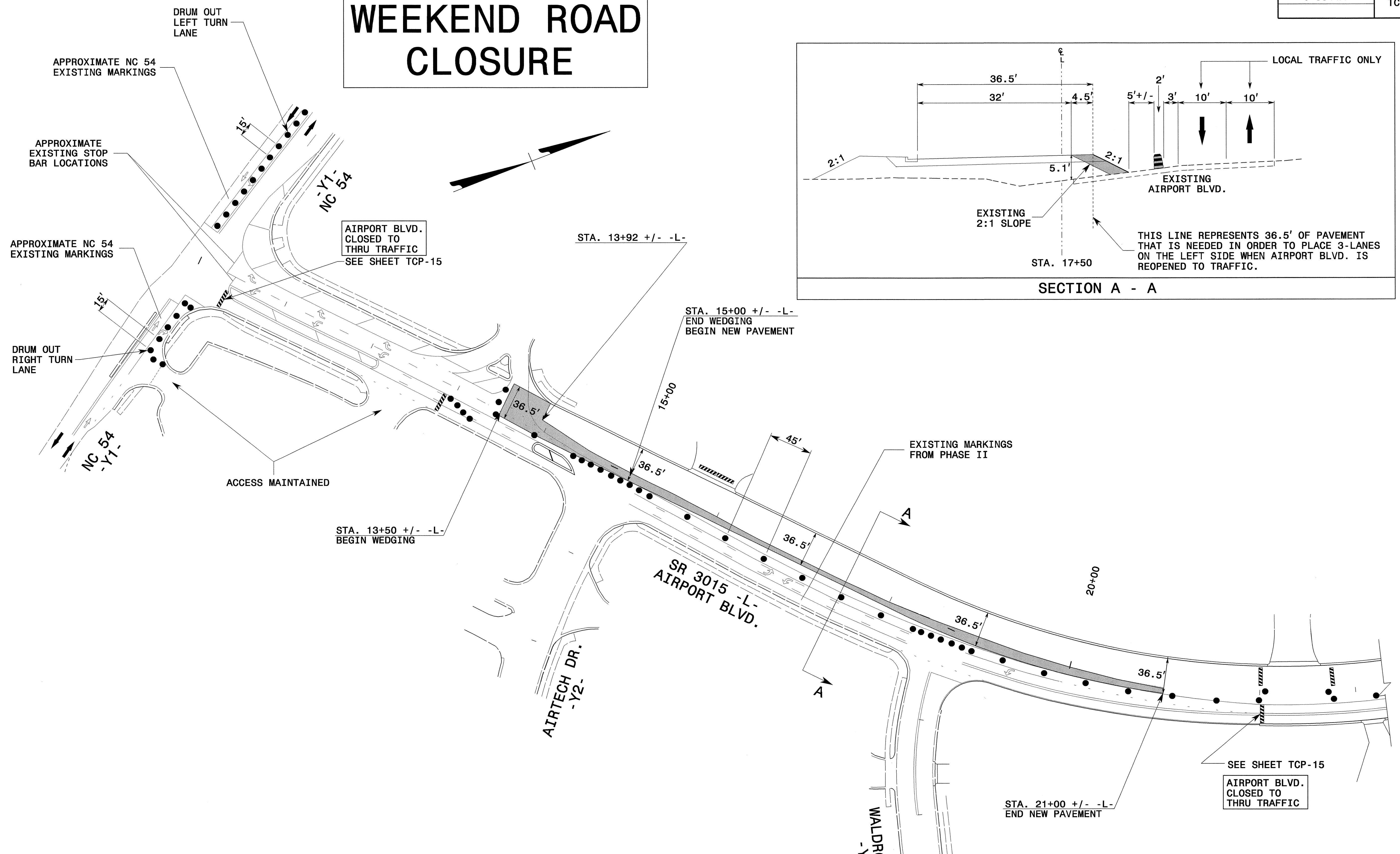


ALL PAVEMENT MARKING SYMBOLS ARE PAINT

APPROVED: <i>[Signature]</i> DATE: 1/21/05	<b>PHASE II</b>										
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 msfeilman AT TELC2231

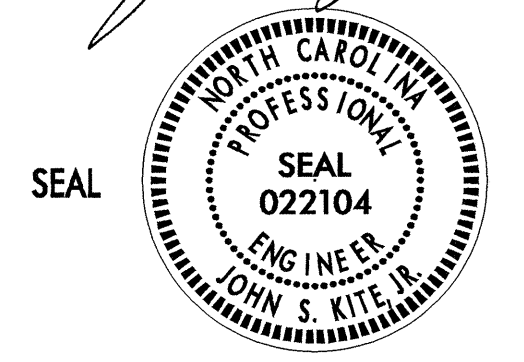
# WEEKEND ROAD CLOSURE



USE FLAGGERS OR POLICE TO MAINTAIN LOCAL TRAFFIC

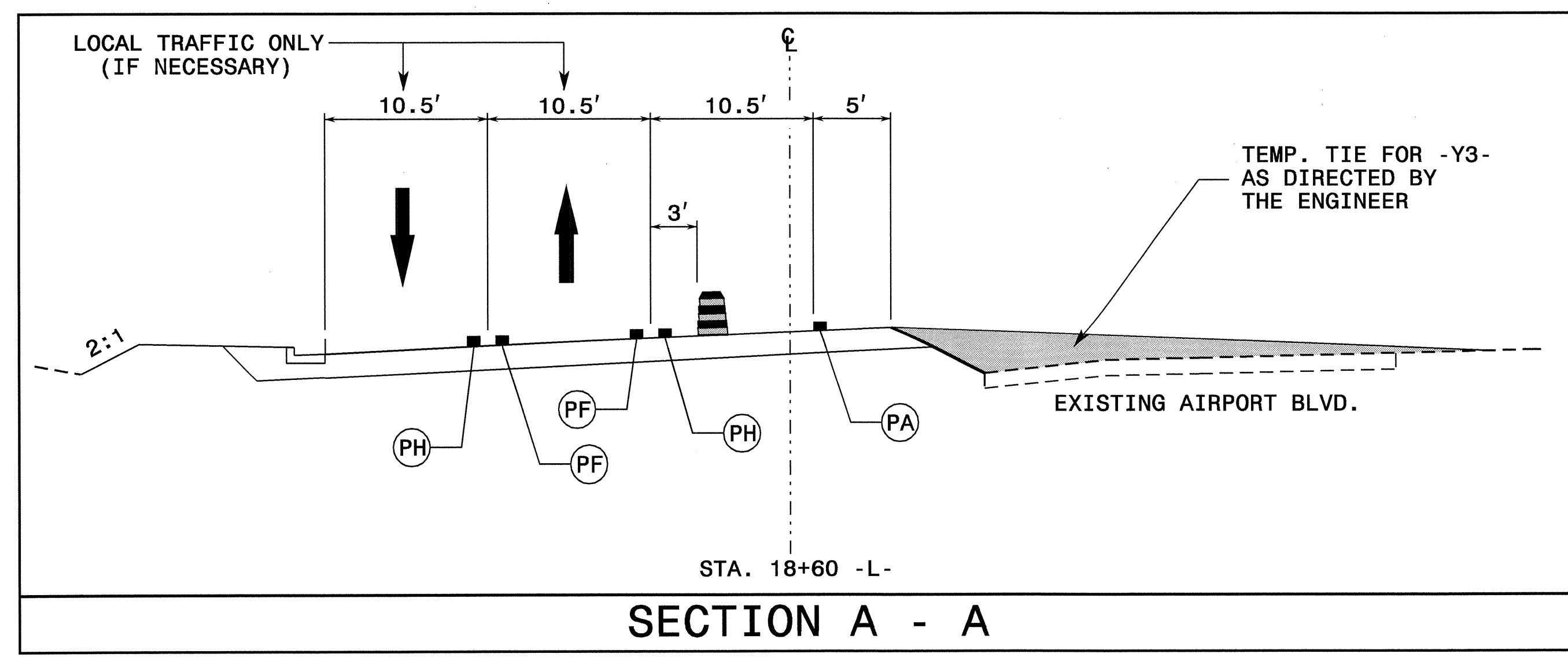
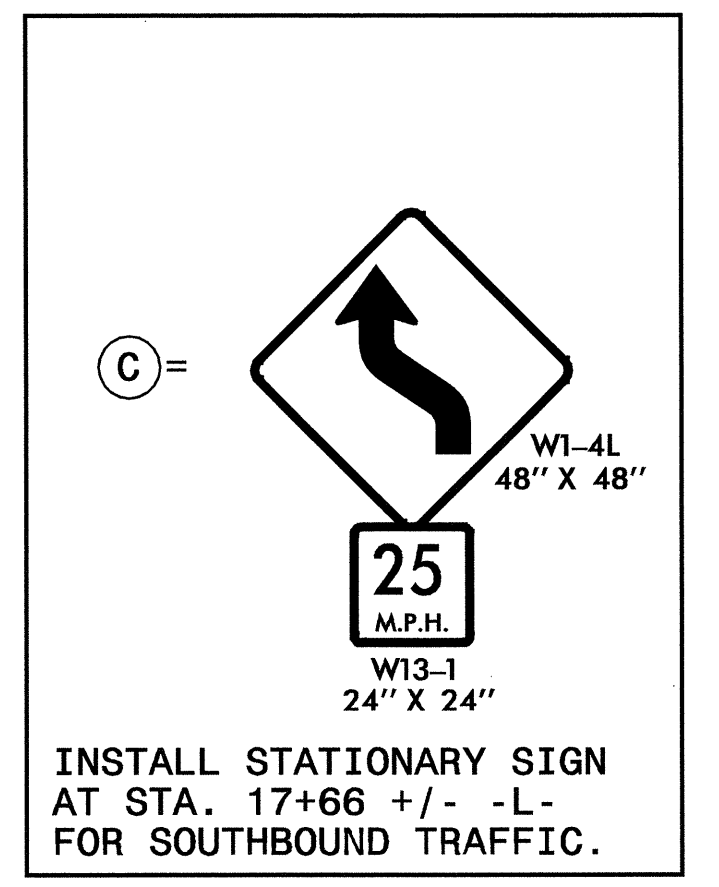
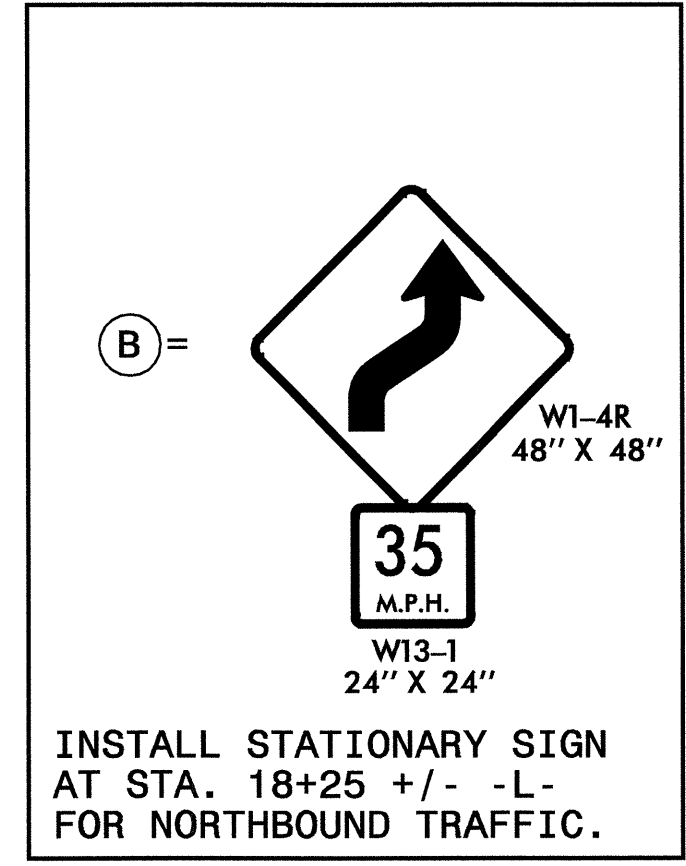
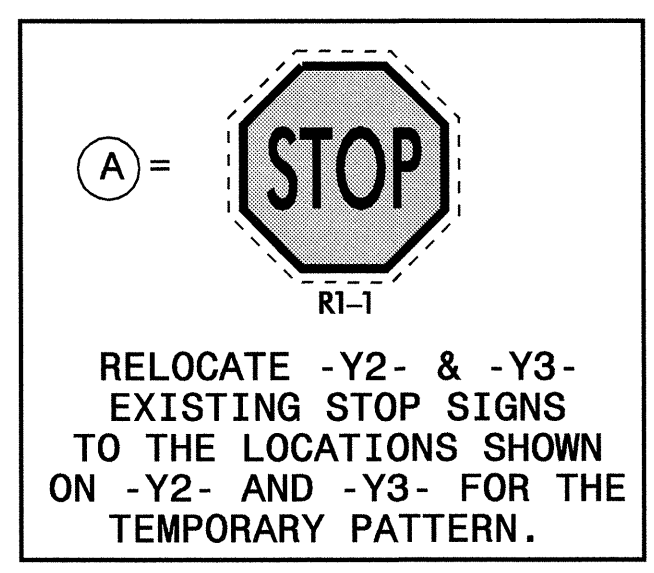
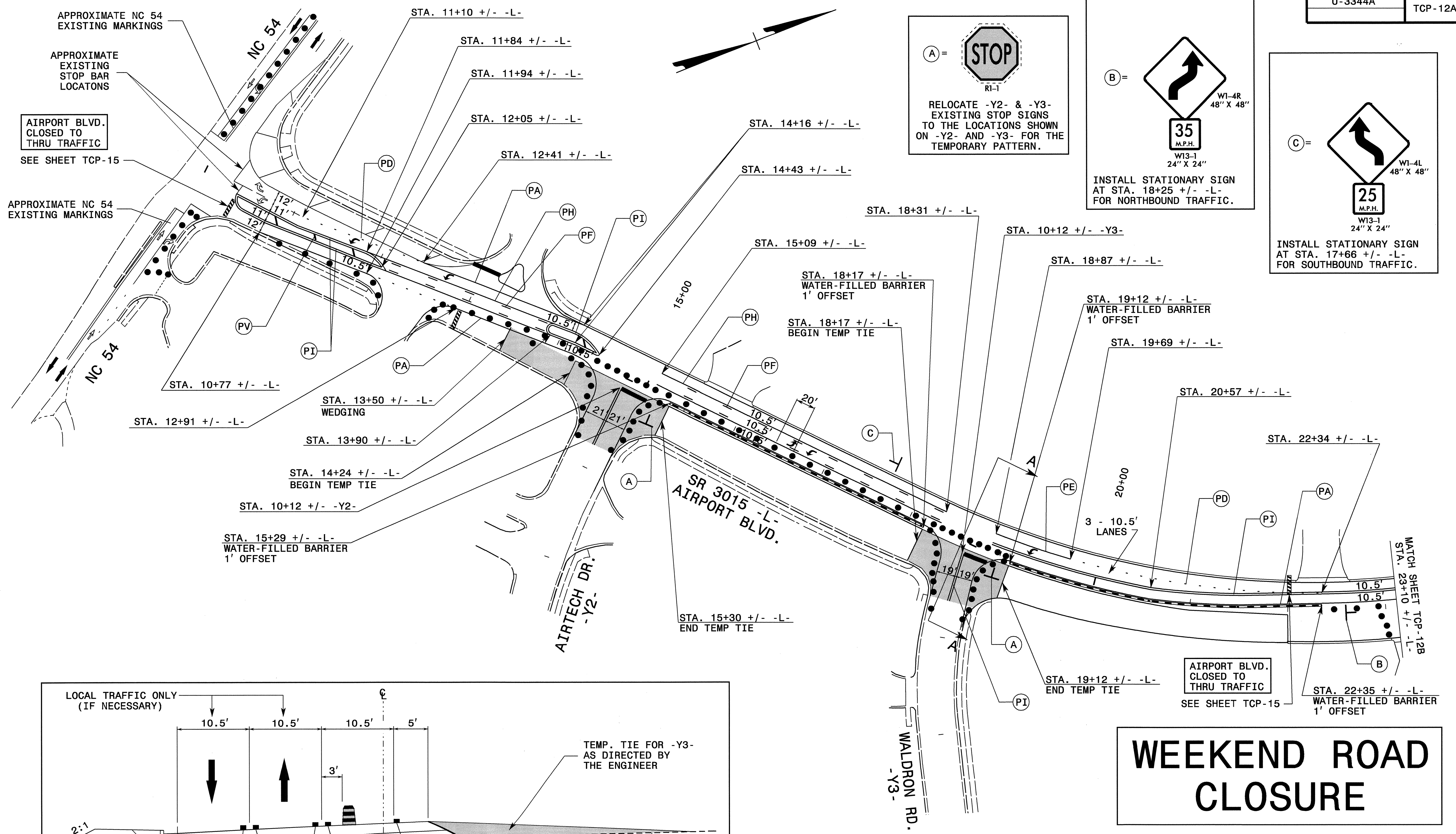
SEE SHEETS TCP-15 AND TCP-15A FOR OFFSITE DETOUR AND TYPE III BARRICADE LOCATIONS

APPROVED: *John S. Kite, Jr.* DATE: 12/04



## PHASE III

SCALE: NONE		REVISIONS
DATE: 12-04		
DWG. BY: MHS		
DESIGN BY: MHS		
REVIEWED BY: CLM		



# WEEKEND ROAD CLOSURE

ALL PAVEMENT MARKING SYMBOLS ARE PAINT

APPROVED: DATE: 4/5/04

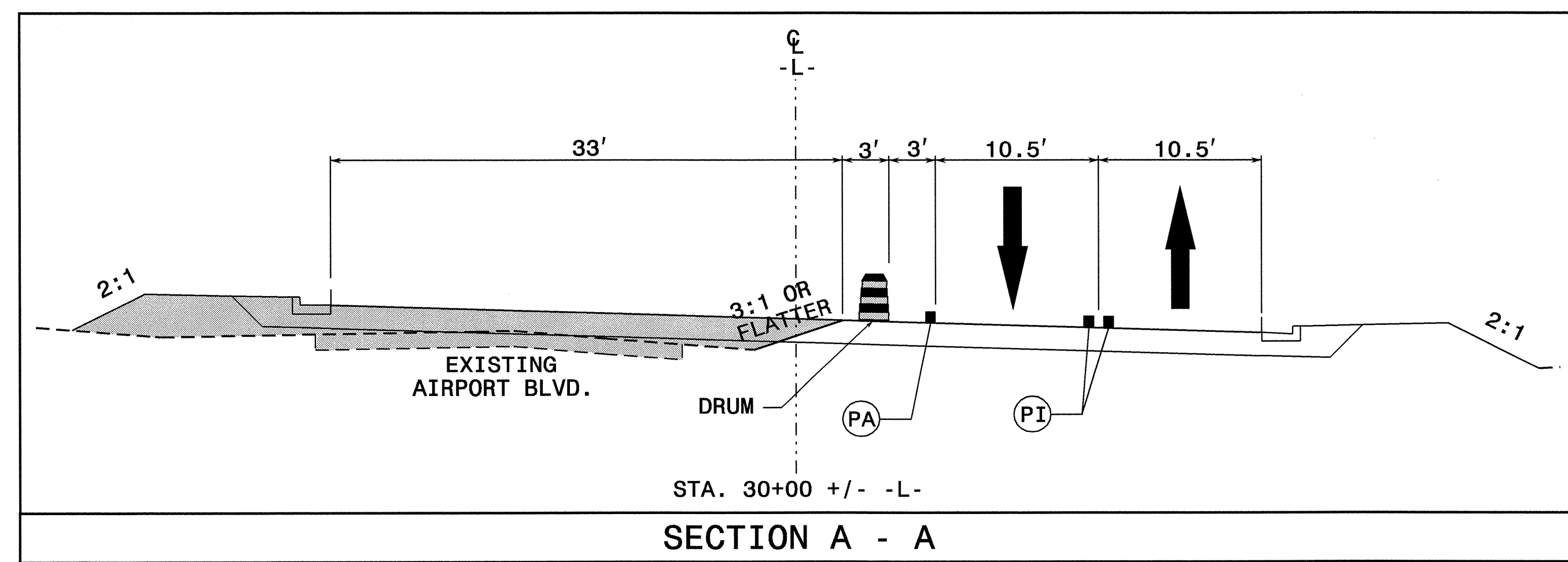
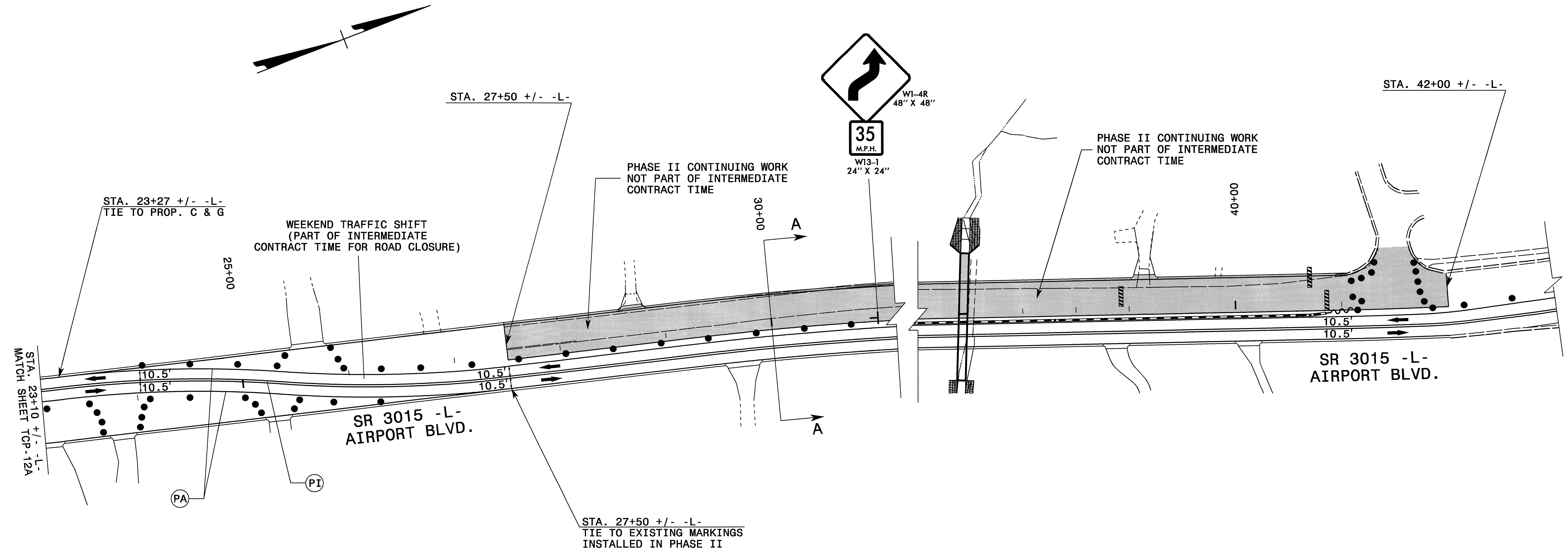
SEAL  
  
 JOHN S. KITE, JR.  
 ENGINEER  
 022104

PHASE III

SCALE: NONE		REVISIONS
DATE: 10-04		
DWG. BY: MHS		
DESIGN BY: MHS		
REVIEWED BY: CLM		

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INSTALL STATIONARY SIGN  
AT STA. 31+00 +/- -L-

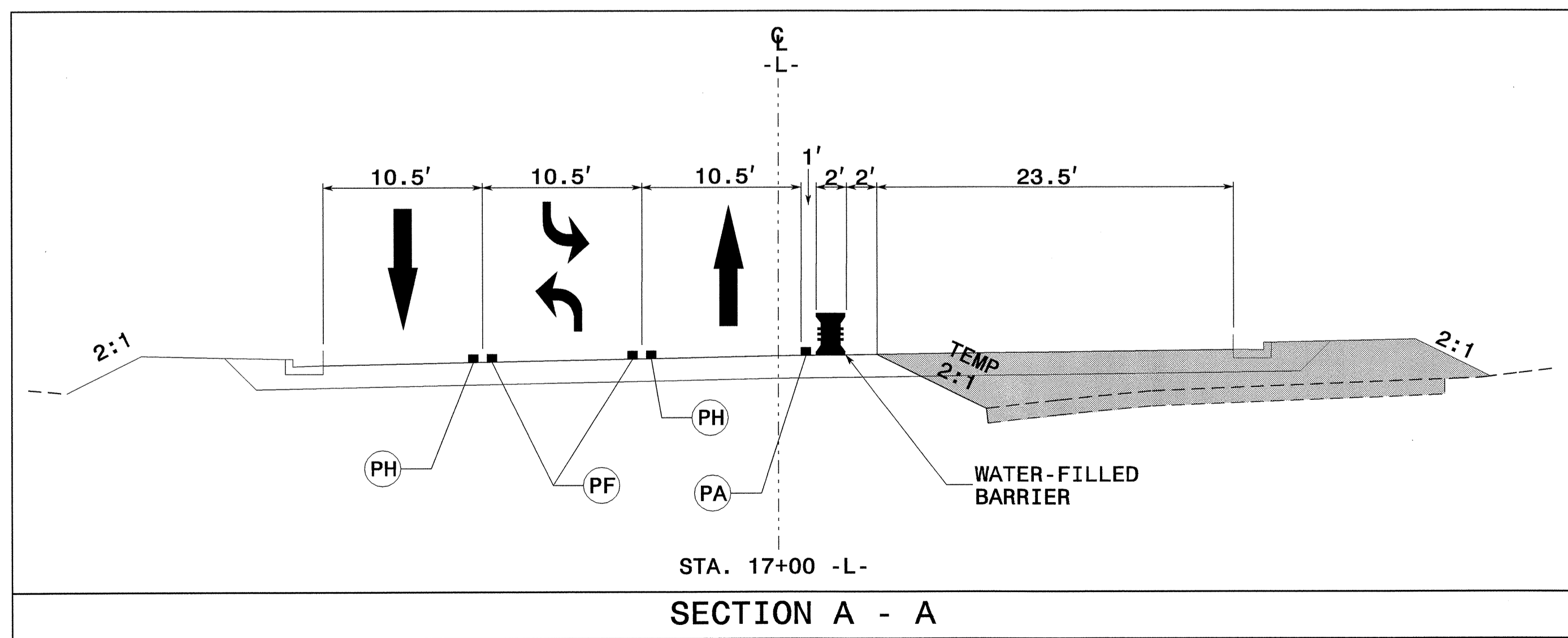
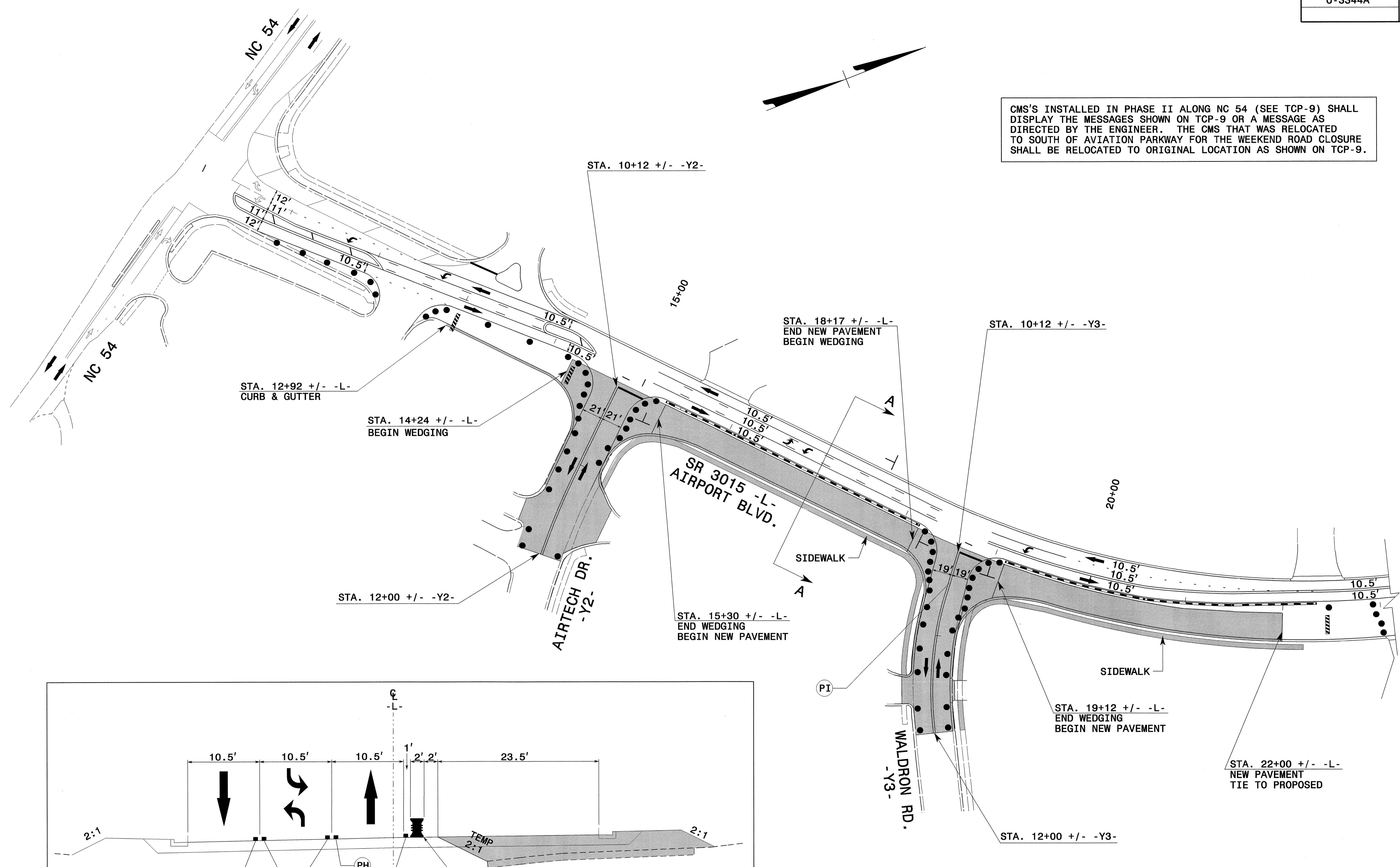


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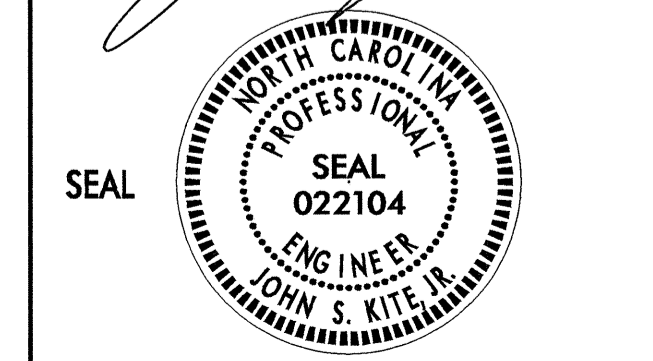
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REVIEWED BY: CLM	<table border="1"> <tr><td> </td><td> </td></tr> <tr><td> </td><td> </td></tr> </table>										



CMS'S INSTALLED IN PHASE II ALONG NC 54 (SEE TCP-9) SHALL DISPLAY THE MESSAGES SHOWN ON TCP-9 OR A MESSAGE AS DIRECTED BY THE ENGINEER. THE CMS THAT WAS RELOCATED TO SOUTH OF AVIATION PARKWAY FOR THE WEEKEND ROAD CLOSURE SHALL BE RELOCATED TO ORIGINAL LOCATION AS SHOWN ON TCP-9.

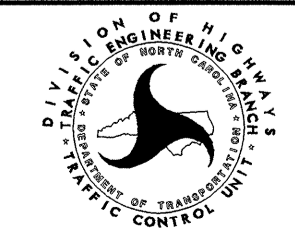


APPROVED: *[Signature]* DATE: 10/15/04



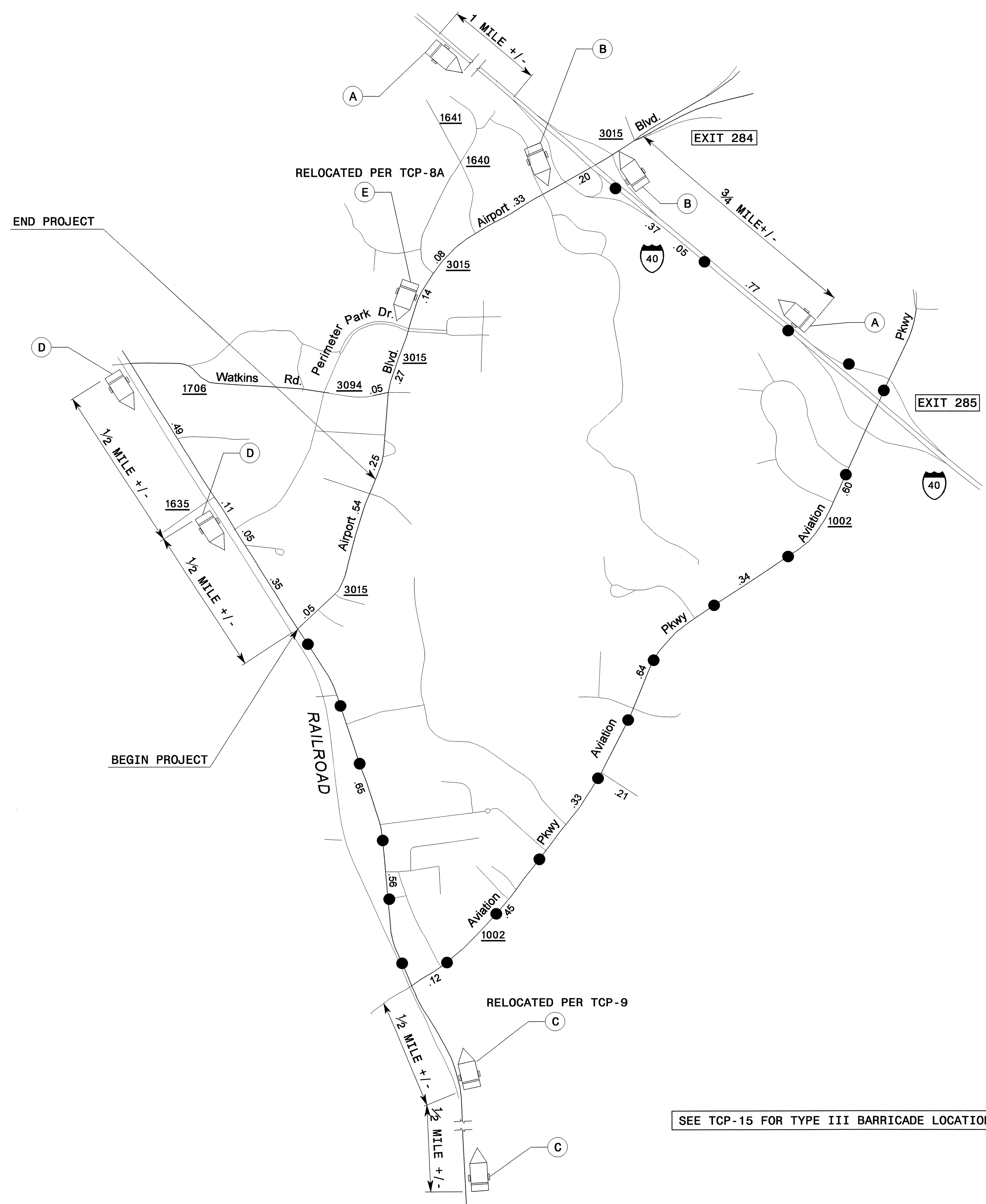
**PHASE III**

SCALE: NONE  
 DATE: 10-04  
 DWG. BY: MHS  
 DESIGN BY: MHS  
 REVIEWED BY: CLM



REVISIONS	

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 msteelman AT TELC2231

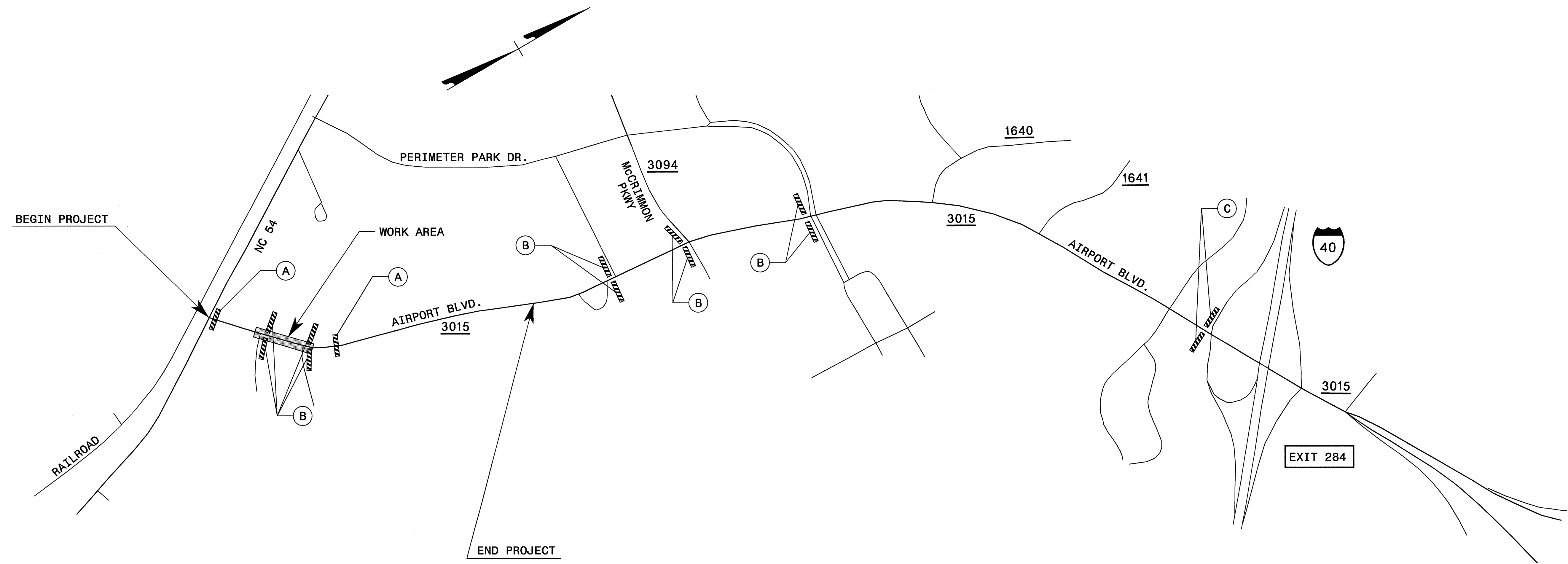
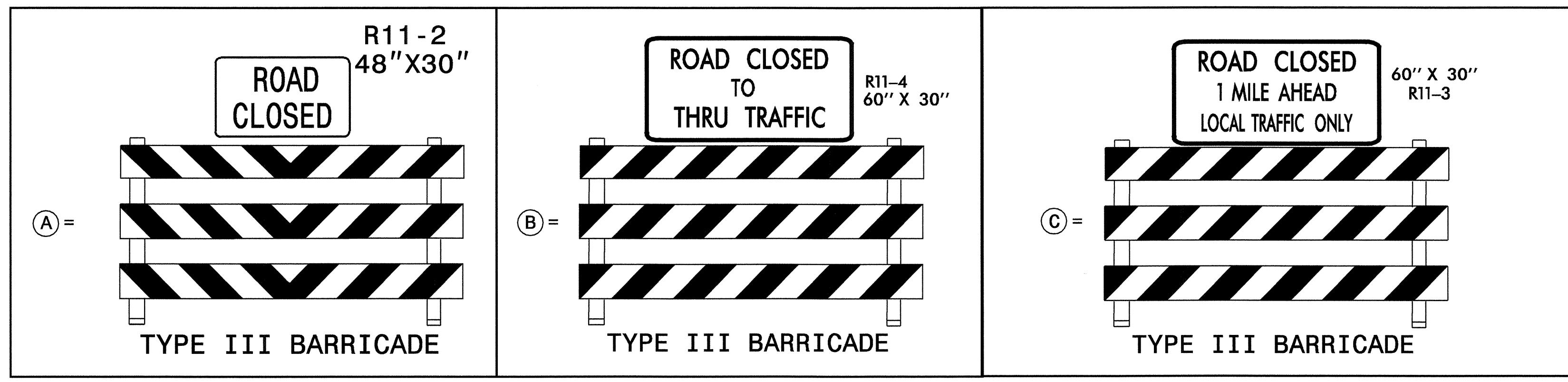


SEE TCP-15 FOR TYPE III BARRICADE LOCATIONS.

SUGGESTED MESSAGES			
A =	MESSAGE NO. 1	MESSAGE NO. 2	MESSAGE NO. 3
	AIRPORT BLVD TRAFFIC	ADVISORY INFO	AT RAMP
	CHANGEABLE MESSAGE SIGN		
SUGGESTED MESSAGES			
B =	MESSAGE NO. 1	MESSAGE NO. 2	
	AIRPORT BLVD CLOSED	AT NC 54	
	CHANGEABLE MESSAGE SIGN		
SUGGESTED MESSAGES			
C =	MESSAGE NO. 1	MESSAGE NO. 2	MESSAGE NO. 3
	AIRPORT BLVD CLOSED	AT NC 54	USE AVIATION PARKWAY
	CHANGEABLE MESSAGE SIGN		
SUGGESTED MESSAGES			
D =	MESSAGE NO. 1	MESSAGE NO. 2	MESSAGE NO. 3
	AIRPORT BLVD CLOSED	NO THRU TRAFFIC	USE AVIATION PKWY
	CHANGEABLE MESSAGE SIGN		
SUGGESTED MESSAGES			
E =	MESSAGE NO. 1	MESSAGE NO. 2	MESSAGE NO. 3
	AIRPORT BLVD CLOSED	1/2 MILE AHEAD	USE LOCAL ROUTES
	CHANGEABLE MESSAGE SIGN		

19-JAN-2005 14:00  
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 msteelmcn AT FETC21231

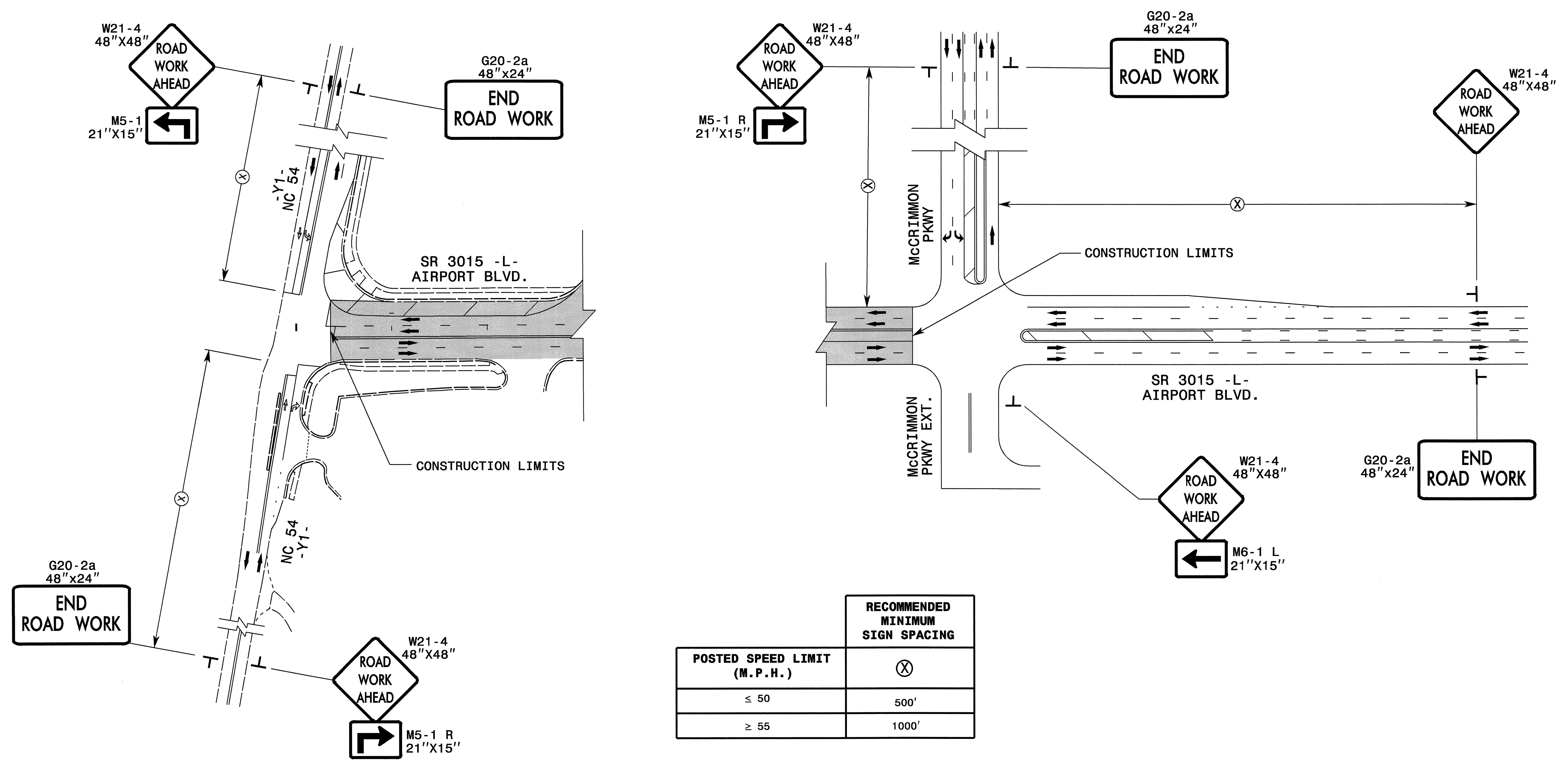
APPROVED: <i>[Signature]</i>	DATE: 1/21/05	<b>DETOUR ROUTE FOR WEEKEND CLOSURE OF AIRPORT BLVD.</b>	
SCALE: NONE	REVISIONS		
DATE:			
DWG. BY:			
DESIGN BY:			
REVIEWED BY:			



04-APR-2006 10:50  
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 mvspringer AT WZTC222410

APPROVED: <i>[Signature]</i> DATE: <i>12/16/04</i>	<b>BARRICADE LOCATIONS FOR WEEKEND CLOSURE OF AIRPORT BLVD.</b>									
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REVISIONS										
DWG. BY: MHS	DESIGN BY: MHS									
REVIEWED BY: CLM										

**TWO-WAY UNDIVIDED & URBAN FREEWAYS (L-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.

**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: <i>[Signature]</i> DATE: 4/5/04	<b>DETAIL DRAWING FOR TWO-WAY UNDIVIDED AND URBAN FREEWAYS ADVANCED WORK ZONE WARNING SIGNS</b>	
	SCALE: NONE	REVISIONS
	DATE: 10-04	7-98 10/01
	DWG. BY: MHS	10-98 03/04
	DESIGN BY: MHS	01/01
REVIEWED BY: CLM		<small>CHD FILE</small>

04-APR-2006 10:53  
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