

9-N

STATE OF OHIO DEPARTMENT OF TRANSPORTATION

1-IR-77-5 (21) 147
1-IR-90-1 (118) 08
1-IR-271-6 (49) 240

CUYAHOGA & LAKE COUNTIES CUY-77-(0.82)(1.62) CUY-271-(0.54)(1.60)(6.29)(13.90)(15.45) CUY-90-(0.95)(6.96)(7.45)(7.67) LAK-90-7.67	OHIO FHWA REGION 5	1 34
1-IR-77-5 (21) 147 1-IR-90-1 (118) 08 1-IR-271-6 (49) 240	FEDERAL PROJECT	

THE ABOVE SECTION DESIGNATION SHALL GOVERN IN LIEU OF SECTIONS CUY-77/271-0.82/0.54, CUY/LAK-90-0.95/7.67 SHOWN THROUGHOUT THE PLANS

**CUY-77-(0.82)(1.62)
CUY-90-(0.95)(6.96)(7.45)
CUY-90-(7.67)**

**CUY-271-(0.54)(1.60)(6.29)(13.90)(15.45)
LAK-90-7.67**

CITY OF BRECKSVILLE CITY OF MENTOR CITY OF WARRENSVILLE HTS. CITY OF LAKEWOOD
CITY OF WESTLAKE CITY OF BEDFORD VILLAGE OF OAKWOOD
CITY OF ROCKY RIVER CITY OF MAYFIELD HTS. VILLAGE OF MAYFIELD

**CUYAHOGA COUNTY
LAKE COUNTY**

CONVENTIONAL SIGNS

County Line	-----	Limited Access (only)	-----	LA
Township Line	-----	Right of Way (only)	-----	RW
Section Line	-----	Limited Access & Right of Way	-----	LA & RW
Corporation Line	----- or -----	Existing Right of Way	-----	
Fence Line (existing)	-x-x- (proposed) -x-x-	Property Line	----- (in existing fence) -x-x-	
Center Line	352 ----- 353	Railroad	----- or -----	
Trees, Stumps	(to be removed)	Guardrail (existing)	----- (proposed) -----	
Utility Poles: Telephone	φ			
Power	φ			
Light	φ			

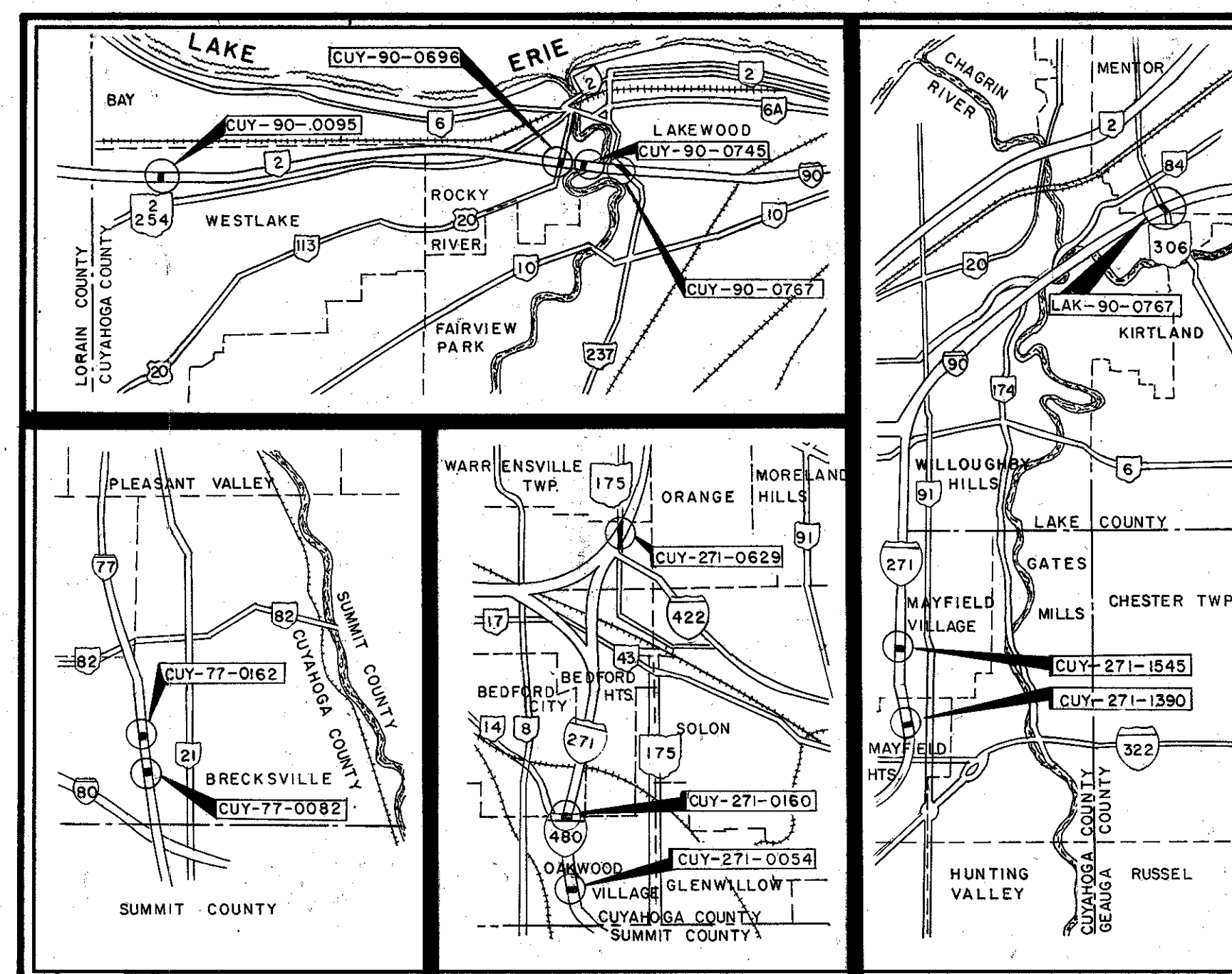
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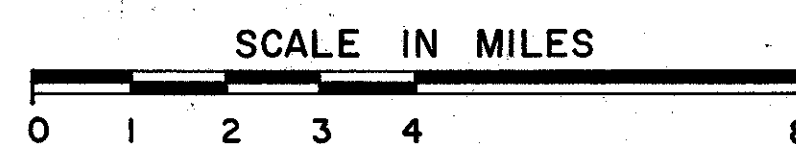
LINE DATA

FEATURE	PROJECT LENGTH	=	0.00	L.F.	=	0.000	MILES
MILLER RD.	CUY-77-0082	BEGIN WORK	STA. 70+30	END WORK	STA. 76+15	=	585 L.F.
HIGHLAND RD.	CUY-77-0162	BEGIN WORK	STA. 16+40	END WORK	STA. 22+00	=	560
S.R. 306	LAK-90-0767	BEGIN WORK	STA. 269+00	END WORK	STA. 285+60	=	1660
CROCKER RD.	CUY-90-0095	BEGIN WORK	STA. 123+80	END WORK	STA. 142+40	=	1860
WOOSTER RD.	CUY-90-0696	BEGIN WORK	STA. 10+20	END WORK	STA. 16+00	=	580
VALLEY VIEW DR.	CUY-90-0745	BEGIN WORK	STA. 10+25	END WORK	STA. 14+00	=	375
ALEXANDER RD.	CUY-271-0054	BEGIN WORK	STA. 4+55	END WORK	STA. 21+10	=	1655
FORBES RD.	CUY-271-0160	BEGIN WORK	STA. 11+35	END WORK	STA. 21+00	=	965
RICHMOND RD.	CUY-271-0629	BEGIN WORK	STA. 6+70	END WORK	STA. 21+00	=	1430
RIDGEBURY RD.	CUY-271-1390	BEGIN WORK	STA. 11+70	END WORK	STA. 18+30	=	660
HIGHLAND RD.	CUY-271-1545	BEGIN WORK	STA. 6+80	END WORK	STA. 12+70	=	590
RIVERSIDE DR.	CUY-90-0767	BEGIN WORK	STA. 14+42	END WORK	STA. 17+20	=	278

IR-77 NET LENGTH OF WORK = 1145.00 L.F. = 0.216 MILES
IR-90 NET LENGTH OF WORK = 4753 L.F. = 0.900 MILES
IR-271 NET LENGTH OF WORK = 5300.00 L.F. = 1.003 MILES
NET LENGTH OF WORK = 11,198.00 L.F. = 2.120 MILES



LOCATION MAP



Portion to be improved: -----
State & Federal Routes: =====
Other Roads: -----

SCALES

Plan: -----
Profile: ----- Horizontal -----, Vertical -----
Cross Section: Horizontal -----, Vertical -----

SUPPLEMENTAL SPECIFICATIONS	
836	3-12-75
845	6-27-77
921	12-4-72
1001	1-3-77
847	4-3-76
953	3-8-79

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS	
BP-5	4-16-79
BP-11	1-3-75
F-1	5-1-76
GR-1	12-6-76
GR-2B	12-6-76
GR-3A	12-6-76
MC-3	6-1-73
MC-4	7-26-76
TC-35.10	10-5-77
TC-71.10	4-9-79

1979 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway, except as noted on Sheets 3, 4 & 5, and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

MICROFILMED
JAN 3 1980

Approved: Thomas M. Kealogo
Date: 3-7-80 District Deputy Director of Transportation

Approved: Robert B. Plester
Date: 6-13-80 Engineer, Bureau of Bridges and Structural Design

Approved: Howard E. Nolan
Date: 9-25-80 Chief Engineer, Planning and Design

Approved: David A. Weir
Date: 9-15-80 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: _____
DIVISION ADMINISTRATOR DATE

Project: _____
Date of Letting: 19 Contract No. _____
LD0300 Rev. 11-1-78

SEAL

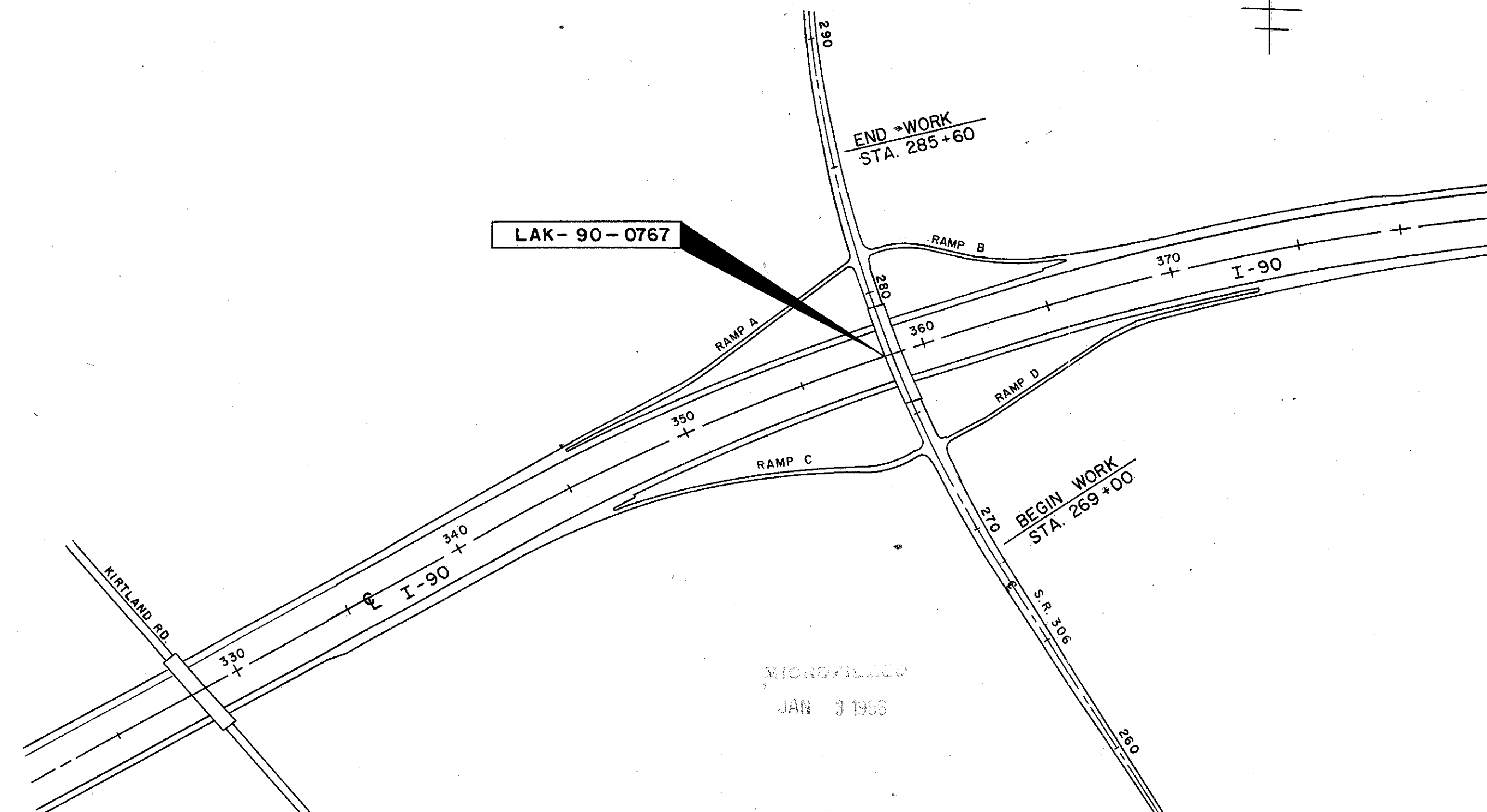
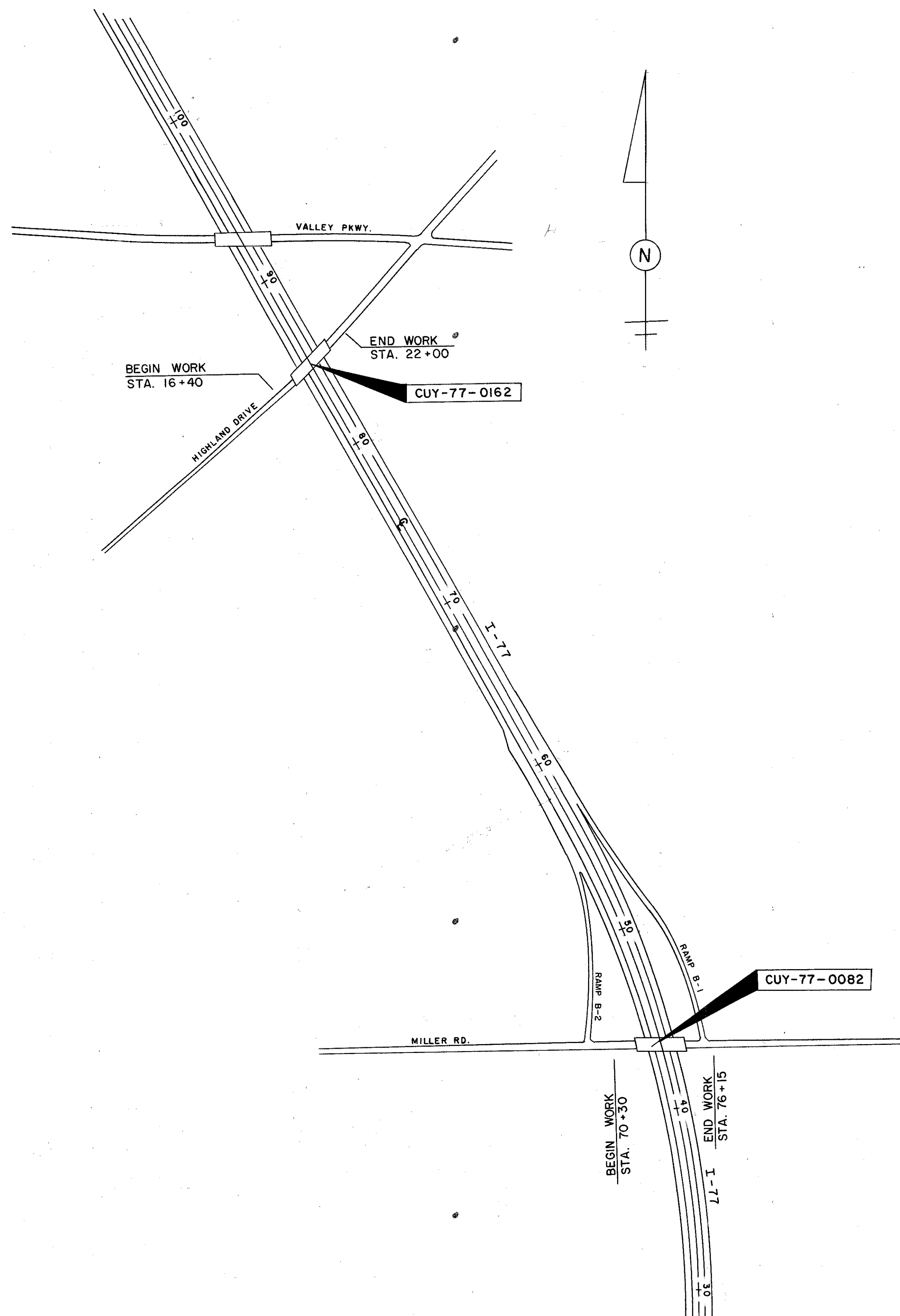
SCHEMATIC PLAN

FHWA REGION	STATE	PROJECT
5	OHIO	

2
34

CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/0.54
 CUY/LAK-90-0.95/7.67

SCALE 1" = 400'
 0 200 400 800



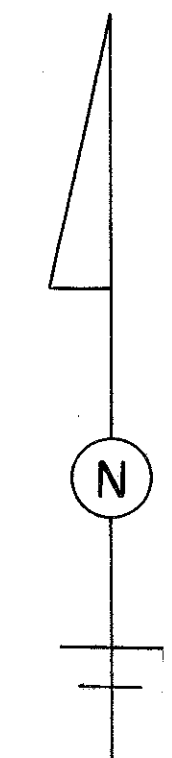
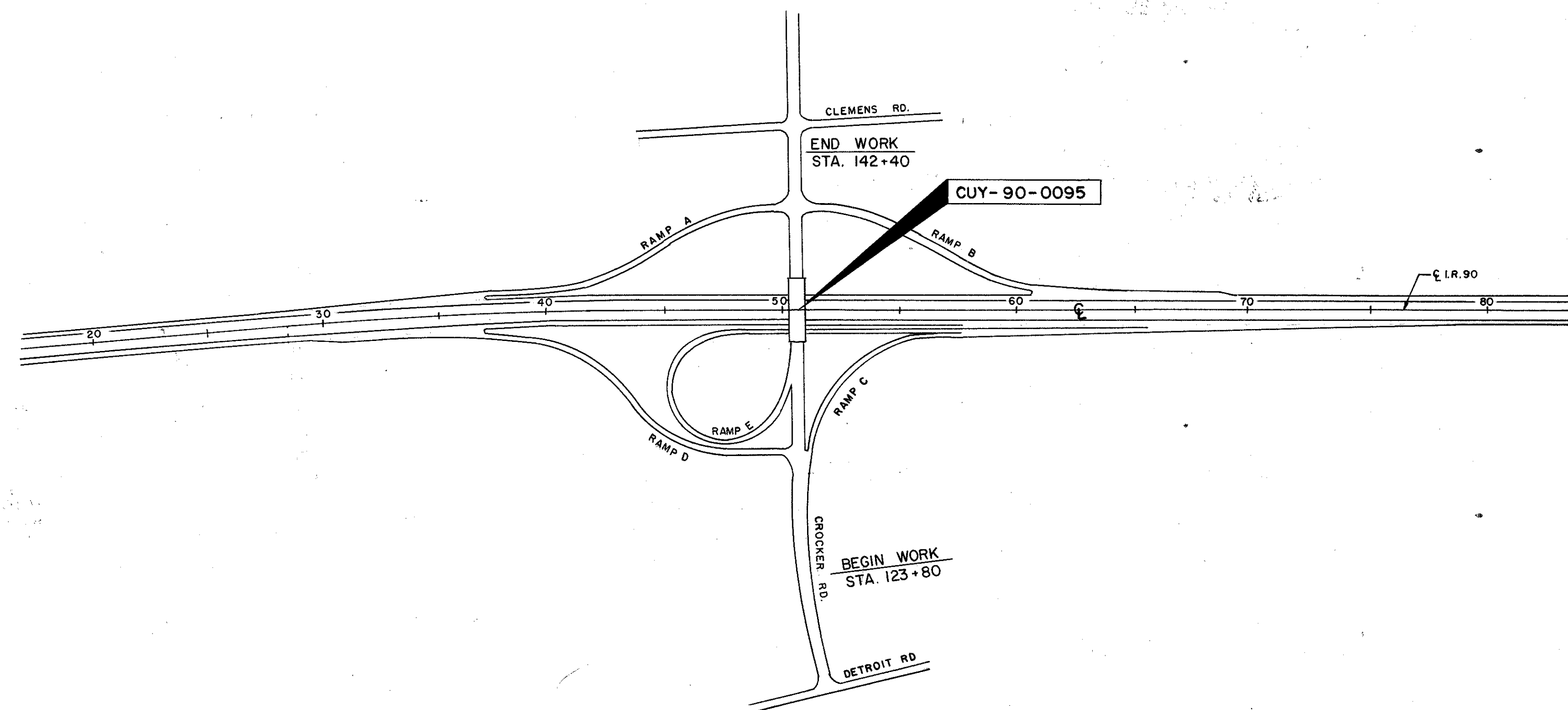
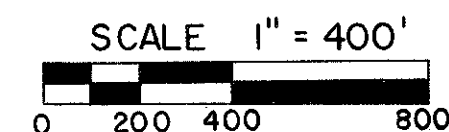
MICROFILMED
 JAN 3 1985

MICROFILMED
 JAN 3 1985

SCHEMATIC PLAN

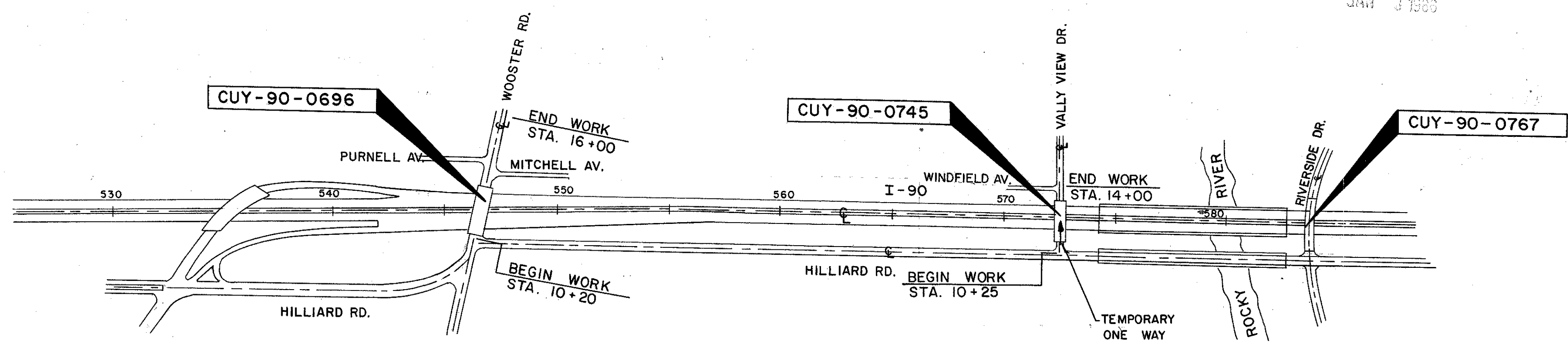
FHWA REGION	STATE	PROJECT	
5	OHIO		3 34

CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/0.54
 CUY/LAK-90-0.95/7.67



MICROFILMED
 JAN 3 1986

MICROFILMED
 JAN 3 1986

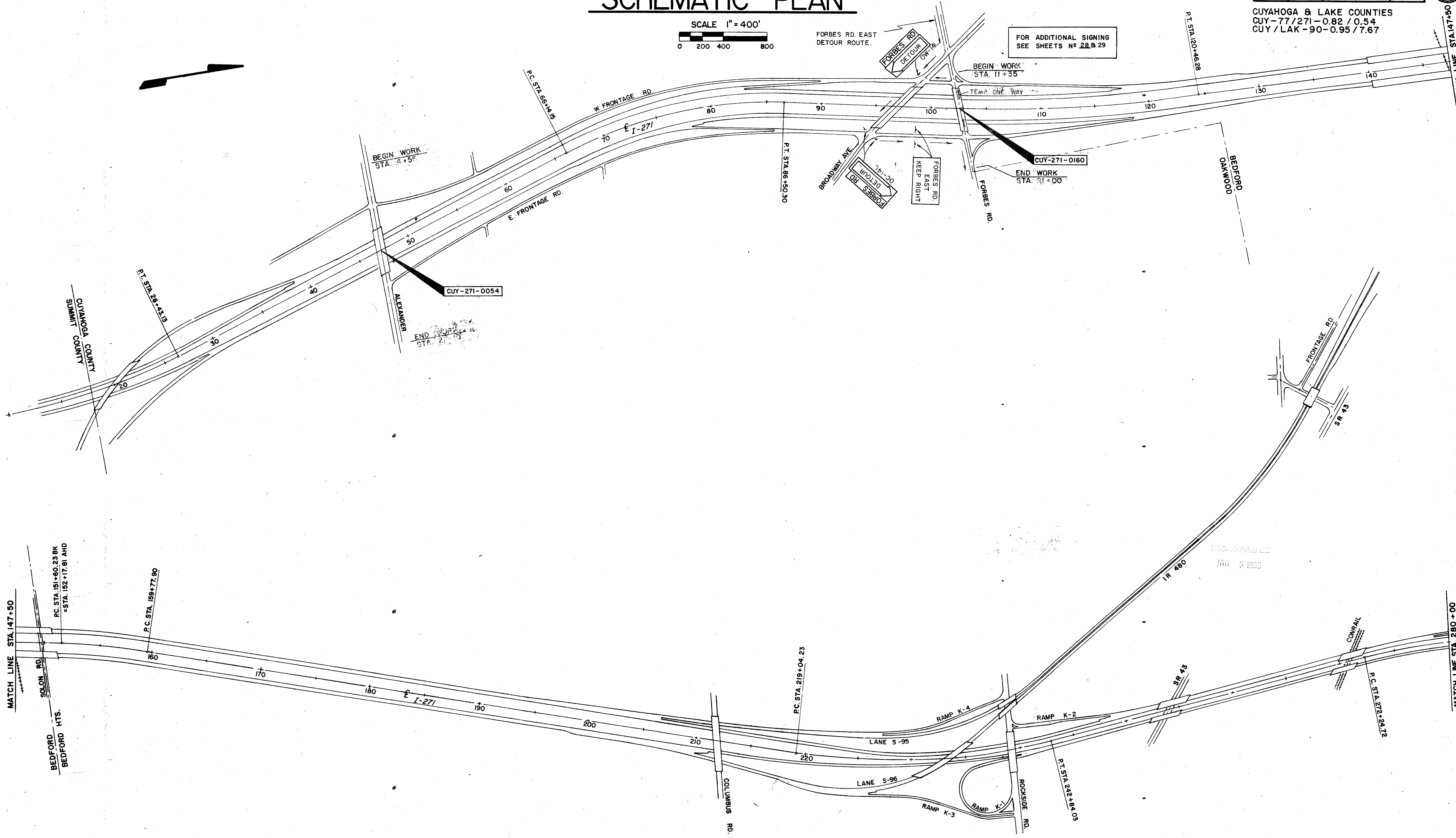
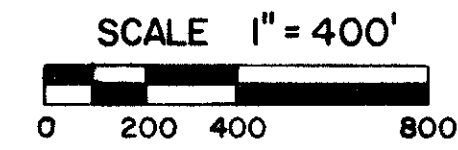


FOR SIGNING SEE SHEETS No. 25 & 26

SCHEMATIC PLAN

FHWA REGION	STATE	PROJECT	4
5	OHIO		34

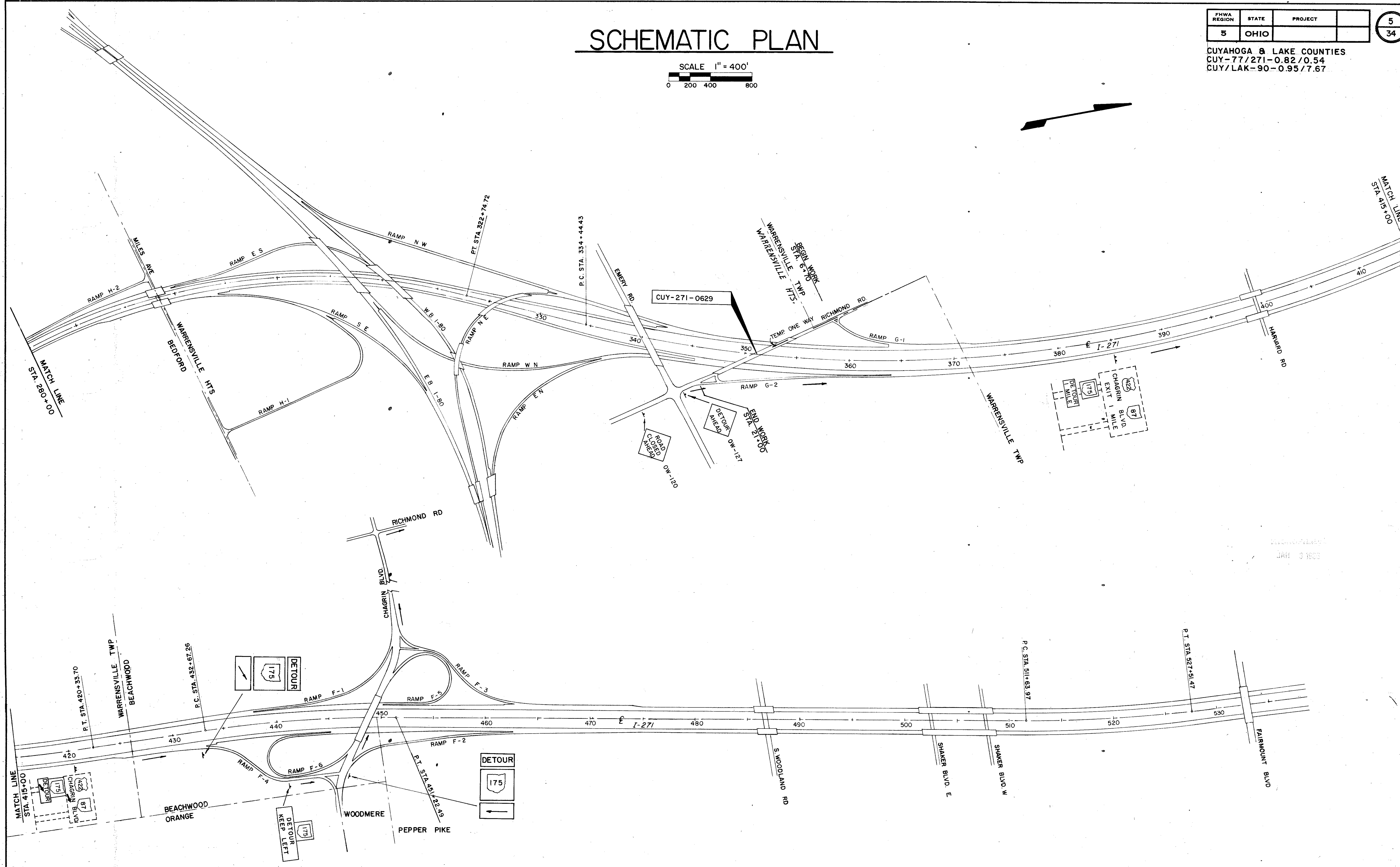
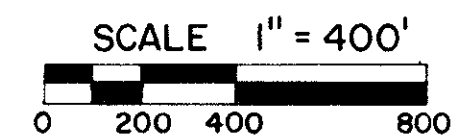
CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82 / 0.54
 CUY / LAK -90-0.95 / 7.67



SCHEMATIC PLAN

FHWA REGION	STATE	PROJECT	5 34
5	OHIO		

CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/0.54
 CUY/LAK-90-0.95/7.67



JAN 9 1988

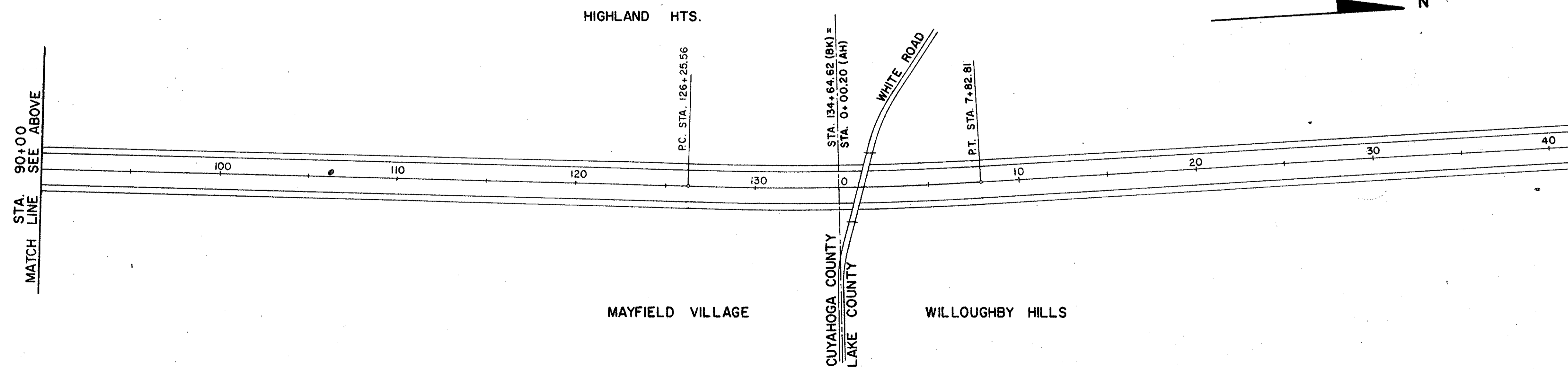
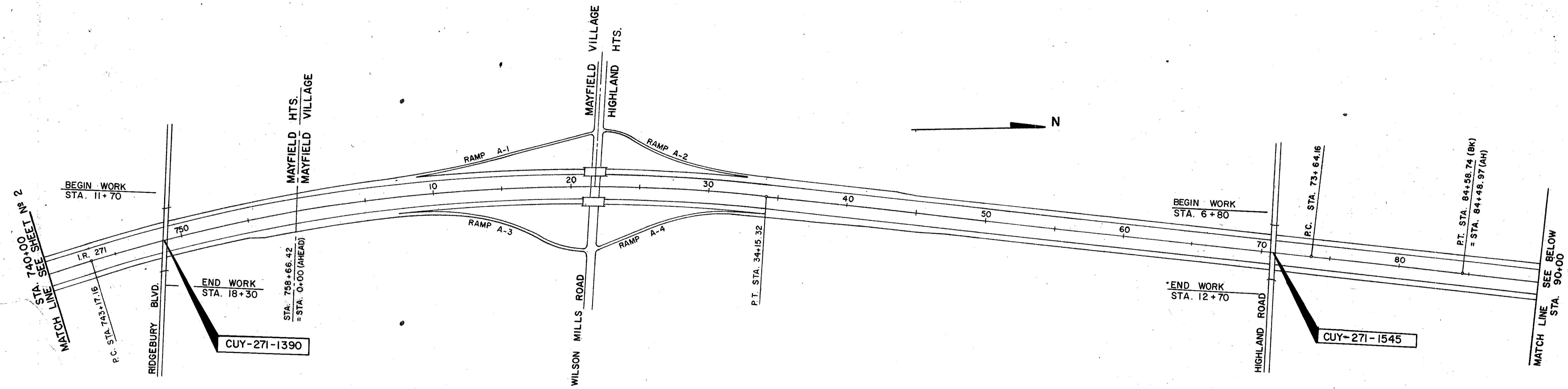
SCHEMATIC PLAN

SCALE 1" = 400'
 0 200' 400' 800'

FHWA REGION	STATE	PROJECT
5	OHIO	

6
34

CUYAHOGA & LAKE COUNTIES
 CUY - 77 / 271 - 0.82 / 0.54
 CUY / LAK - 90 - 0.95 / 7.67

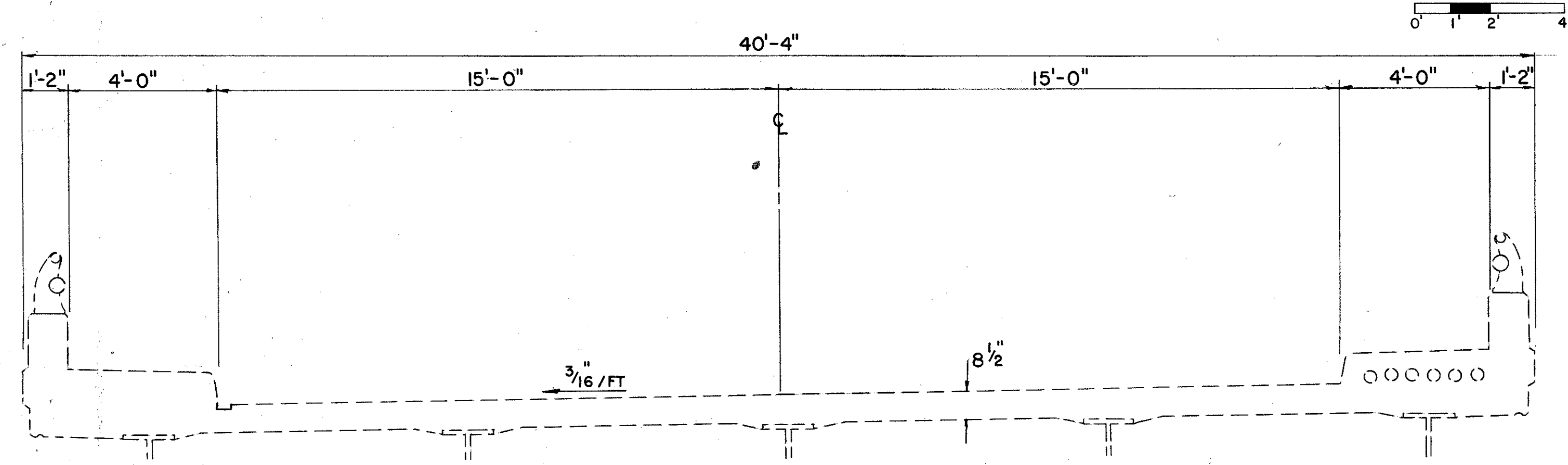


EXISTING TYPICAL SECTIONS

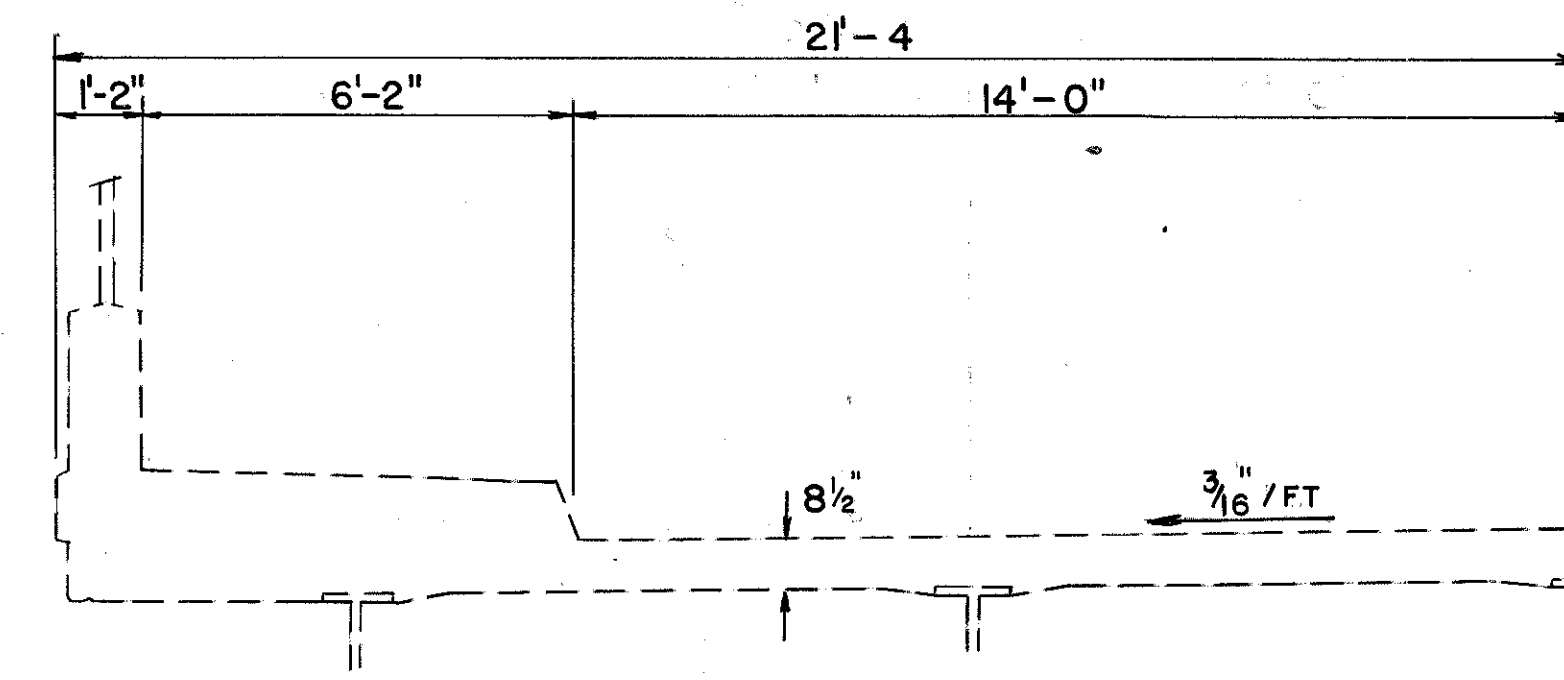
FHWA REGION	STATE	PROJECT
5	OHIO	

7
34

CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/0.54
 CUY/LAK-90-0.95/7.67

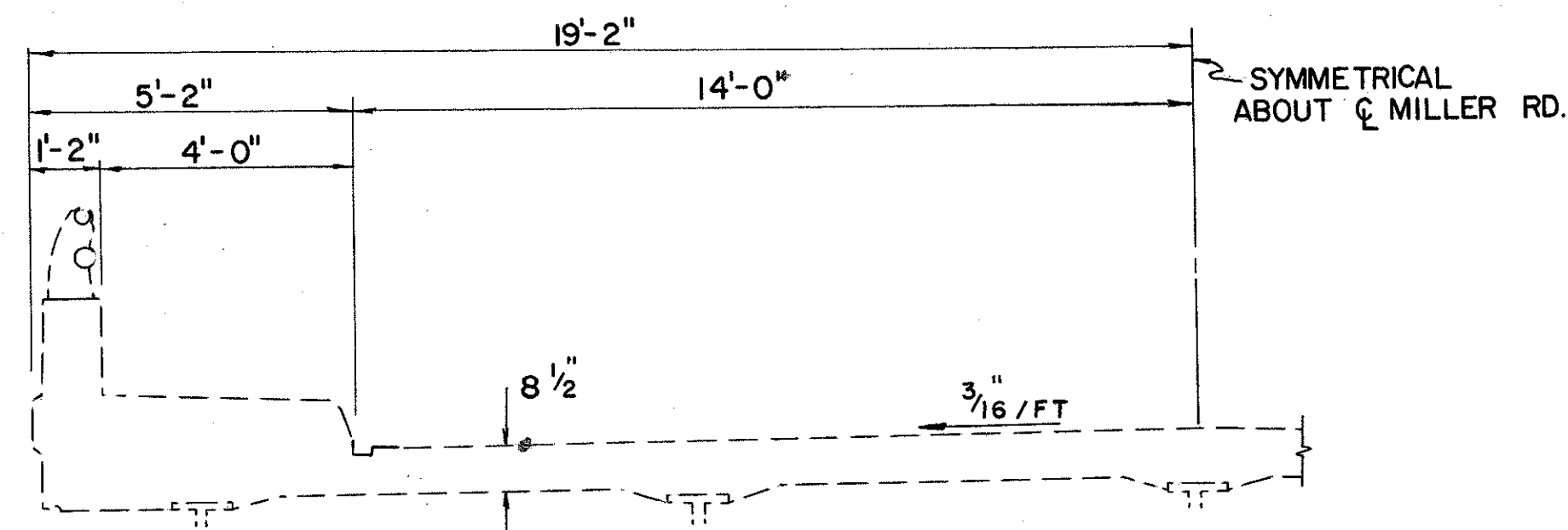


CUY-77-0162
 HIGHLAND RD.



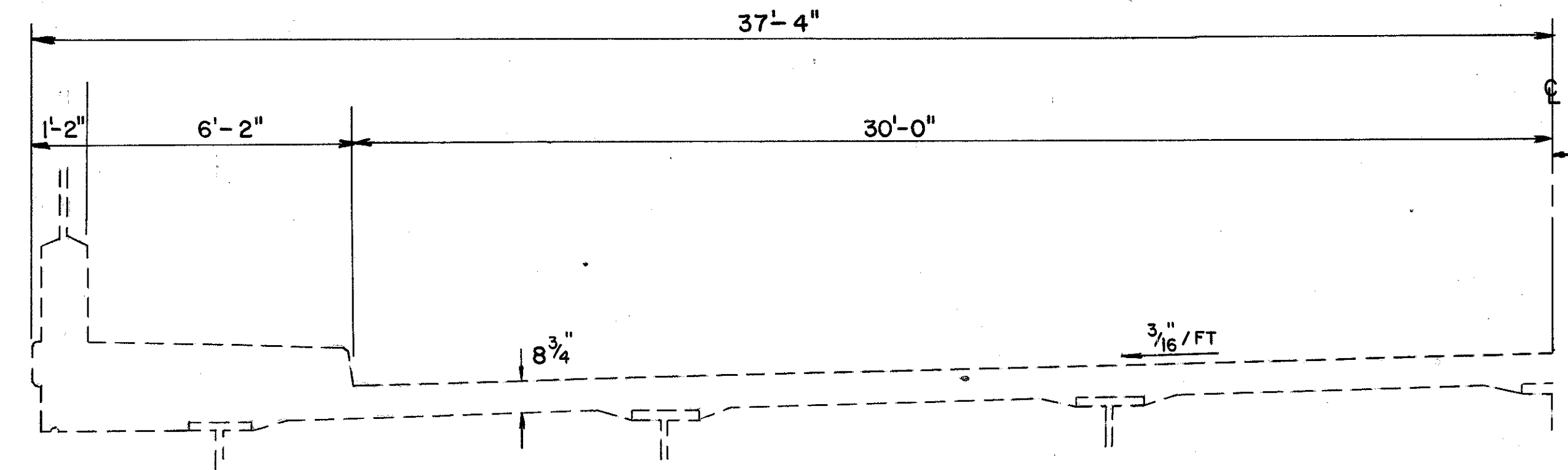
CUY-90-0745
 VALLEY VIEW DR.

SYMMETRICAL
 ABOUT VALLEY VIEW DR.



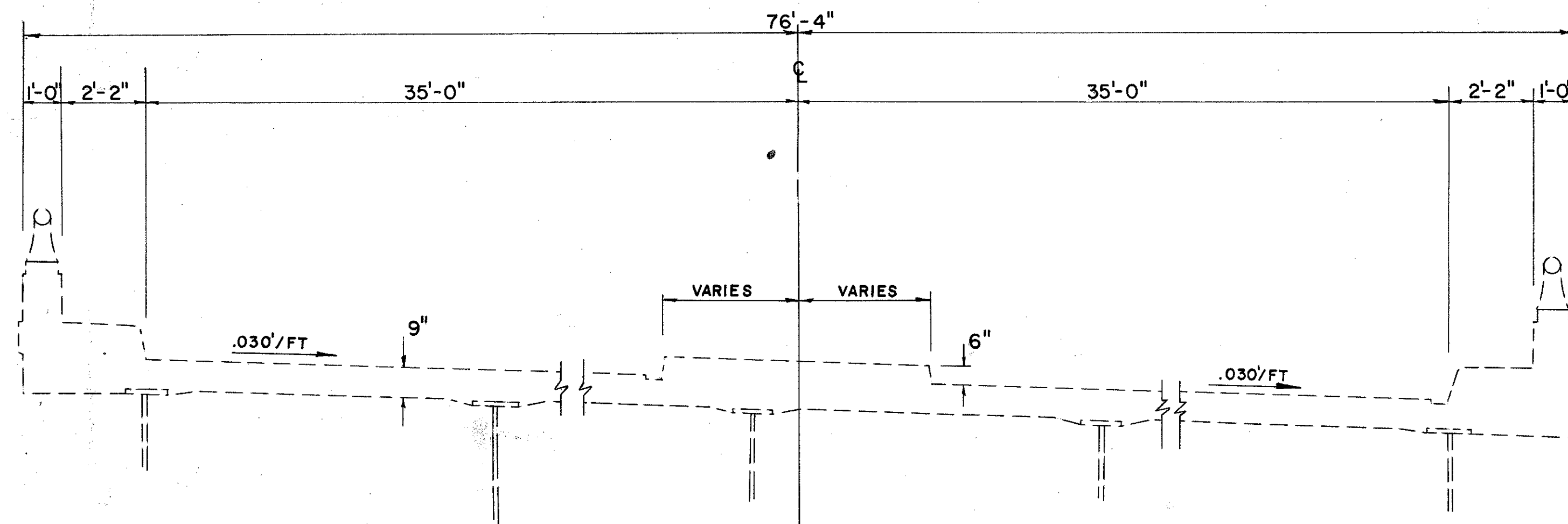
CUY-77-0082
 MILLER RD.

SYMMETRICAL
 ABOUT MILLER RD.



CUY-90-0696
 WOOSTER RD.

SYMMETRICAL
 ABOUT
 WOOSTER RD.



LAK-90-0767
 S.R. 306

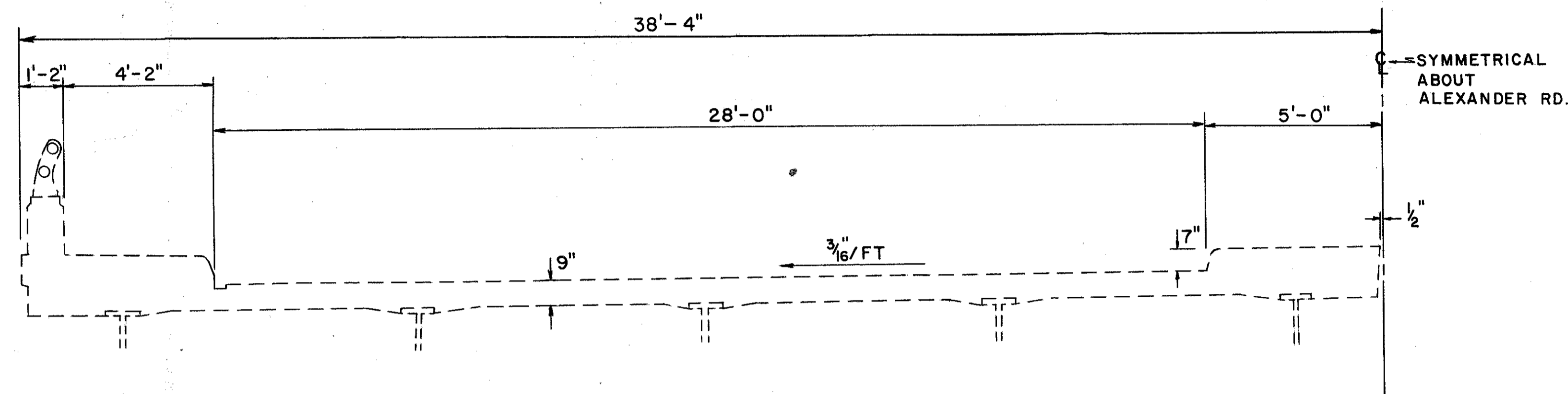
REWORK FILED
 JAN 3 1990

FHWA REGION	STATE	PROJECT
5	OHIO	

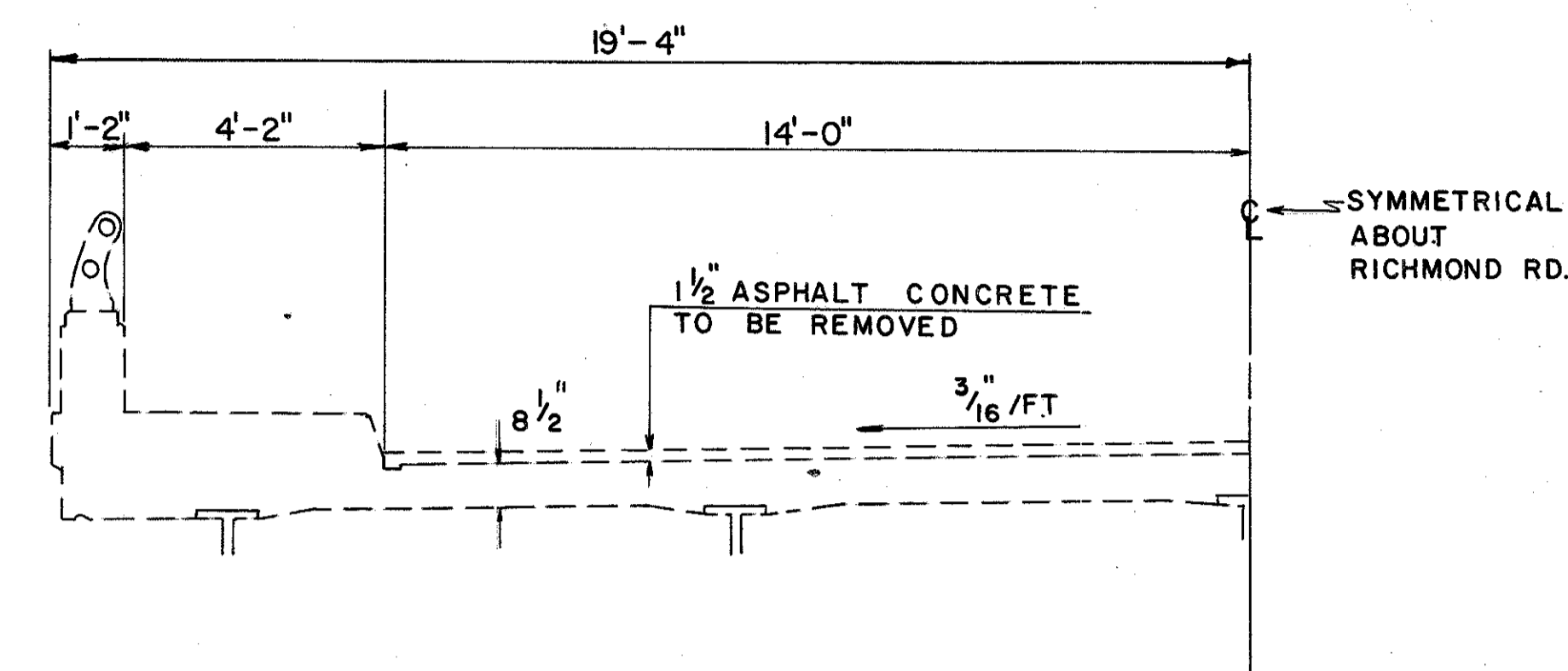
8
34

EXISTING TYPICAL SECTIONS

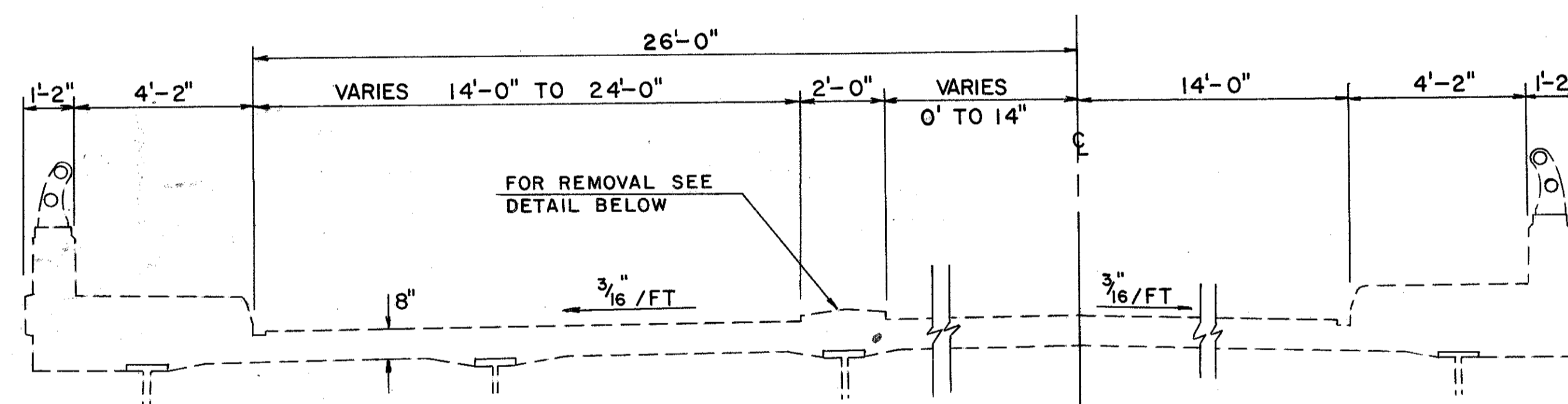
CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/054
 CUY/LAK-90-0.95/7.67



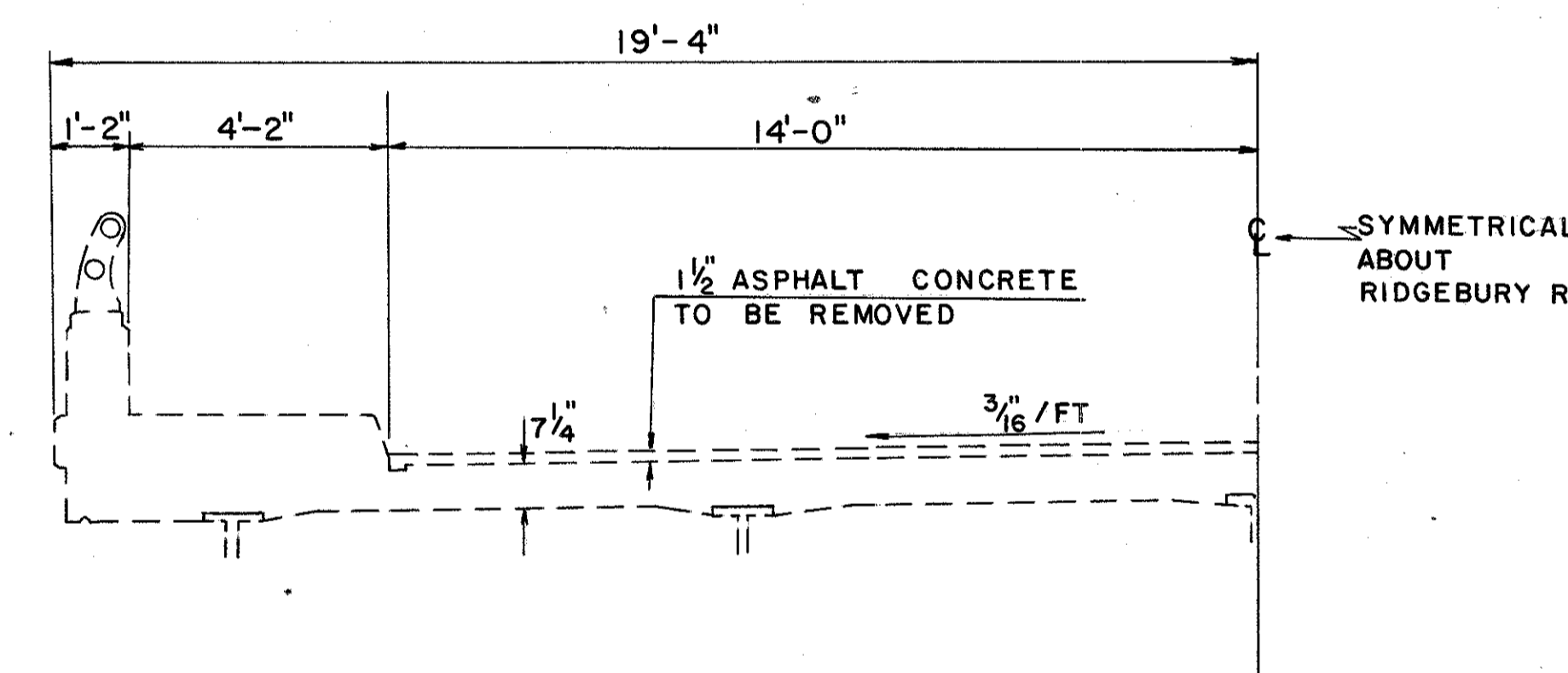
CUY-271-0054
ALEXANDER RD.



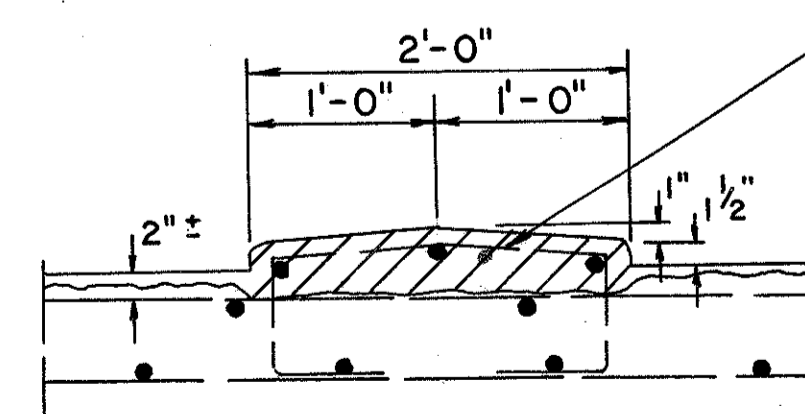
CUY-271-0629
RICHMOND RD.



CUY-271-0160
FORBES RD.

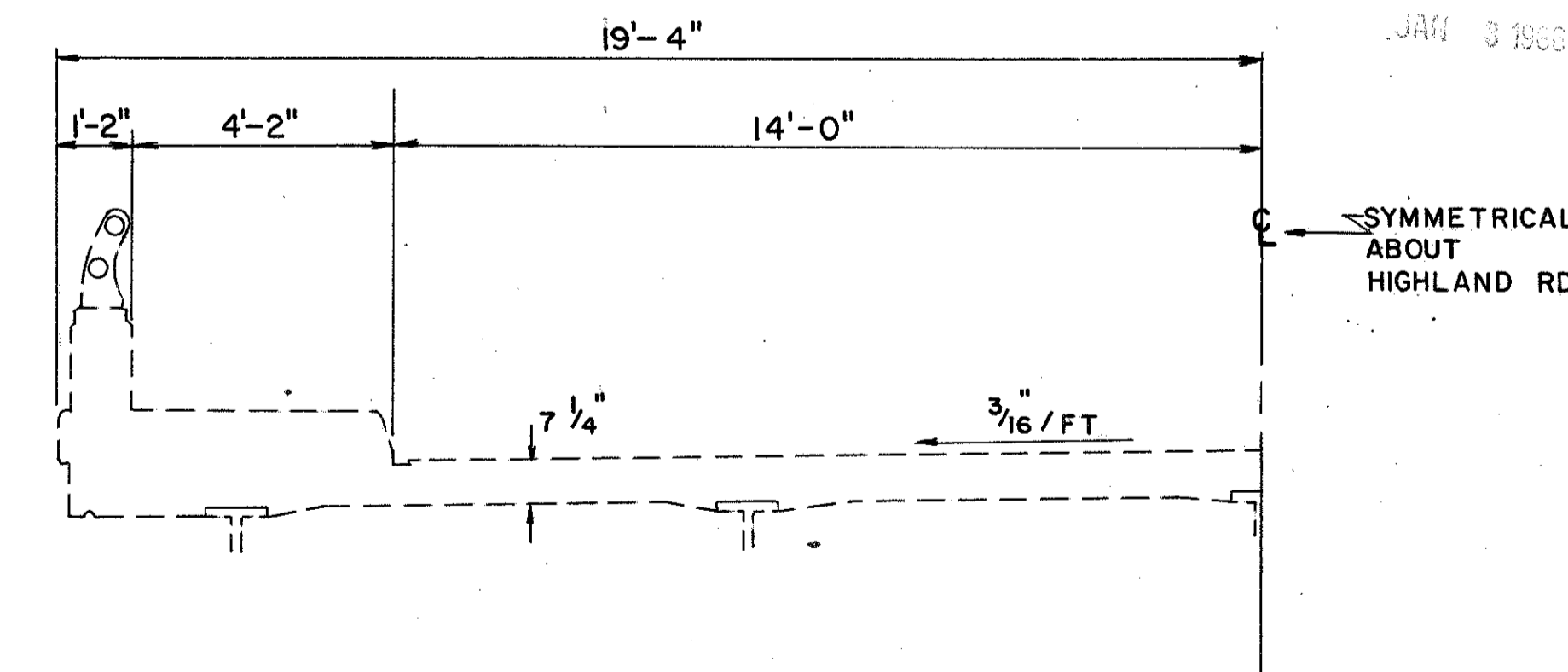


CUY-271-1390
RIDGEBURY RD.



MEDIAN REMOVAL DETAIL

REMOVE EXISTING STEEL AND CONCRETE MEDIAN TO APPROXIMATELY 2"± BELOW EXISTING DECK ELEVATION. ALL COSTS FOR REMOVALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 845 LATEX MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS).



CUY-271-1545
HIGHLAND RD.

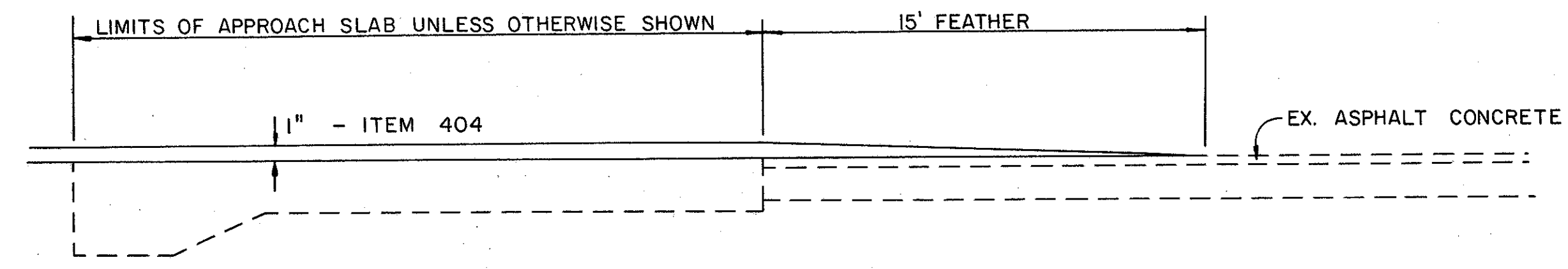
REVISIONS
 JAN 3 1980

FHWA REGION	STATE	PROJECT	
5	OHIO		

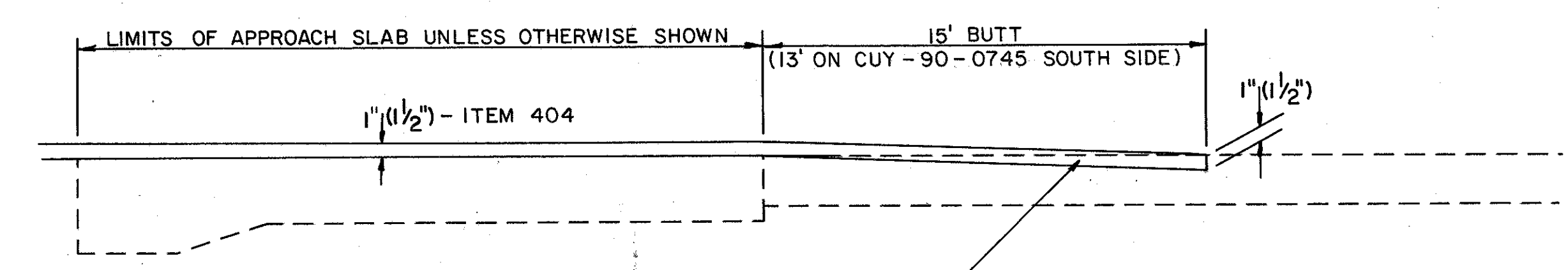
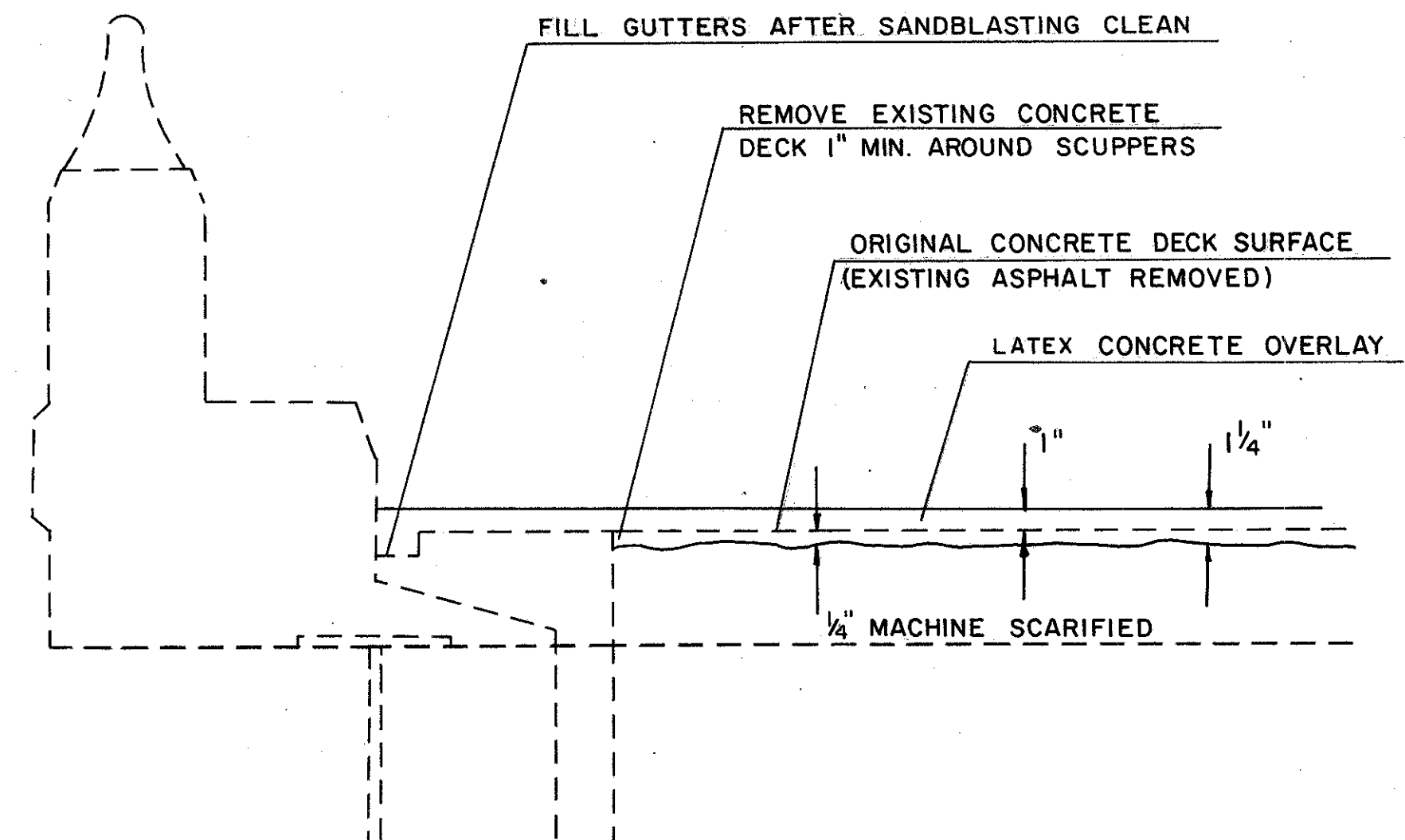
CUYAHOGA & LAKE COUNTIES
 CUY - 77 / 271 - 0.82 / 0.54
 CUY / LAK - 90 - 0.95 / 7.67

PROPOSED TYPICAL SECTION

NO SCALE



FEATHER DETAIL



COST FOR CHIPPING CONCRETE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 202. CHIPPING CONCRETE PAVEMENT.

() - THICKNESS FOR CUY - 271 - 0629 & CUY - 271 - 1390 ONLY.

BUTT JOINT

REPRODUCED
 JAN 3 1986

GENERAL NOTES

COMPUTED BY: D.A.S. 6/79
ED BY: F.A. 6/79

FHWA REGION	STATE	PROJECT	
5	OHIO		

10
34

CUYAHOGA & LAKE COUNTIES
CUY - 77/271 - 0.82 / 0.54
CUY / LAK - 90 - 0.95 / 7.67

FIELD OFFICE

THE CONTRACTOR SHALL PROVIDE A SUITABLE FIELD OFFICE HAVING A MINIMUM OF 400 SQ. FT. OF FLOOR SPACE.

ESTIMATED QUANTITIES

SPECIFIC LOCATIONS AND USAGE OF THE ESTIMATED QUANTITIES SET UP ON THIS PLAN TO BE USED "AS DIRECTED BY THE ENGINEER" SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT. ESTIMATED QUANTITIES OF MATERIALS SHALL NOT BE ORDERED FOR DELIVERY TO THE PROJECT UNLESS AUTHORIZED BY THE ENGINEER.

COST PARTICIPATION

THE QUANTITIES WHICH APPEAR IN THE PLANS HAVE BEEN PLACED IN ONE OF THE FOLLOWING PARTICIPATION AREAS:

COST PARTICIPATION I

FEDERAL INTERSTATE AND STATE PARTICIPATION

COST PARTICIPATION II

FEDERAL PRIMARY AND STATE PARTICIPATION

ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC (SEE NOTE IN PROPOSAL)

THIS ITEM SHALL BE USED TO TEMPORARILY REPAIR HOLES IN THE BRIDGE DECKS

THE CONTRACTOR SHALL USE THIS ITEM TO MAINTAIN THE HIGHWAY ACCORDING TO SEC. 614.02. THE CONTRACTOR SHALL PERFORM THE ABOVE WORK BETWEEN THE HOURS OF 9 A.M. AND 3 P.M. AND SHALL NOT CLOSE MORE THAN ONE ADDITIONAL LANE TO DO THIS WORK. THE FOLLOWING ESTIMATED QUANTITY IS INCLUDED IN THE GENERAL SUMMARY FOR THE MAINTENANCE OF TRAFFIC AS OUTLINED ABOVE, TO BE USED AS DIRECTED BY THE ENGINEER ON ALL PARTS OF THIS PROJECT.

ITEM 404 - BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC 20 CU YDS.

ITEM 606 - GUARDRAIL REBUILT, TYPE 5, AS PER PLAN

THIS ITEM SHALL INCLUDE THE ADDITIONAL COST FOR HEAVIER POSTS, CONCRETE ENCASUREMENT AND OTHER HARDWARE AS REQUIRED IN STD. DRAWING GR-3A. - *Dr. Form 4/79*

407 TACK COAT

THE TACK COAT AND COVER AGGREGATE OPERATION SHALL BE AS DETERMINED AT A PRE-CONSTRUCTION CONFERENCE AS PER 407.05. PLAN QUANTITIES INDICATE AVERAGE APPLICATION RATES OF 0.10 GALLONS PER SQUARE YARD OF TACK COAT AND 7 POUNDS PER SQUARE YARD OF COVER AGGREGATE.

ITEM 614 - MAINTAINING TRAFFIC

GENERALLY THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS AS TO MAKE THE PROPOSED DECK REPAIR WITH A MINIMUM OF HAZARD, DELAY AND INCONVENIENCE TO THE MOTORISTS USING THE HIGHWAY AFFECTED BY THE WORK DONE UNDER THIS CONTRACT; FURTHERMORE, IN ADDITION TO THE CONSTRUCTION AND MATERIAL SPECIFICATIONS, THE FOLLOWING SPECIFIC PROVISIONS ARE MANDATORY.

I. NOTIFICATION

SINCE FUNCTIONAL TRAFFIC CONTROL IS A MAJOR CONCERN ON THIS PROJECT IT IS ESSENTIAL THAT THE MOTORING PUBLIC BE ADEQUATELY FORWARDED OF FUTURE LANE CLOSURES AND TRAFFIC CONSTRUCTIONS. THEREFORE, THE CONTRACTOR SHALL SUBMIT A SCHEDULE TO THE OHIO DEPARTMENT OF TRANSPORTATION INDICATING THE LOCATION AND DATE OF EACH LANE CLOSURE AT LEAST 2 WKS. PRIOR TO THE IMPLEMENTATION OF ANY SUCH CLOSURES.

II. NIGHTTIME WORK

NIGHTTIME WORK SHALL BE PERMITTED. A PLAN FOR LIGHTING FOR NIGHTTIME OPERATIONS SHALL BE PRESENTED TO AND APPROVED BY THE ENGINEER. IN ORDER TO ASSURE THE SAFEST CONDITIONS DURING NIGHTTIME WORK THE CONTRACTOR SHALL PROVIDE FLOOD LIGHTING OF THE WORK AREA.

III. TRAFFIC CONTROL SYSTEMS

A. WHEN REQUIRED

WHENEVER ANY PART OF THE TRAVELED SURFACE IS BEING WORKED UPON OR IS OTHERWISE NOT SUITABLE FOR SAFE AND CONVENIENT USE BY VEHICLES, TRAFFIC CONTROL DEVICES SUFFICIENT TO PROTECT SUCH AREAS TO ASSURE THE SAFE AND CONVENIENT PASSAGE OF VEHICULAR TRAFFIC SHALL BE INSTALLED AND MAINTAINED. SUCH TRAFFIC CONTROL DEVICES AND THE MANNER IN WHICH THEY ARE USED SHALL BE CONSISTENT WITH THESE PLANS AND THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

HEREINAFTER REFERRED TO AS THE "MANUAL". THE TRAFFIC CONTROL DEVICE SYSTEM SHALL CONSTITUTE THE MINIMUM PROVISIONS FOR TRAFFIC CONTROL FOR EACH PARTICULAR SITUATION. WHENEVER THE ENGINEER DEEMS IT NECESSARY ESPECIALLY WHERE A GRADE, CURVE, OR MERGE CONDITION EXISTS, HE MAY DIRECT THAT ADDITIONAL OR ALTERNATIVE DEVICES BE USED. ALSO THE CONTRACTOR SHALL PROVIDE SUFFICIENT ADDITIONAL BARRICADES, ETC. TO PROTECT THE FRESH CONCRETE DURING THE CURING PERIOD FROM ANY VEHICLES WHICH DRIVE AROUND OR THROUGH THE TRAFFIC CONTROL.

B. CONDITIONS

DURING ALL PARTS OF THIS PROJECT, SIGNING, BARRICADES, TEMPORARY PAVEMENT MARKINGS, ETC. SHALL BE LOCATED AS INDICATED ON SHEETS NUMBERED 23 THROUGH 34. THE NUMBER OF LANES AND THE MINIMUM LANE WIDTHS MAINTAINED SHALL BE AS INDICATED ON THE TRAFFIC CONTROL SHEETS.

C. ADVANCE WARNING SIGNS

ALL ADVANCE WARNING SIGNS FOR ANY CONDITION WHICH RESTRICTS TRAFFIC SHALL BE ERECTED BEFORE ANY SUCH RESTRICTION IS PUT INTO EFFECT. ALL SUCH SIGNS SHALL BE COVERED OR REMOVED FROM THE VIEW OF TRAFFIC WHENEVER THEY ARE NOT APPLICABLE.

D. FLASHING ARROW REQUIREMENT

WHENEVER ANY PART OF THE TRAVELED SURFACE IS CLOSED, THE MOTORISTS SHALL BE WARNED AND DIRECTED BY THE CONTRACTOR THROUGH THE USE OF ONE FLASHING ARROW FOR EACH LANE CLOSED IN ADDITION TO THOSE PROVISIONS SET FORTH IN THE "MANUAL" AND STD. DRWG. TC-35-10. *Flash Arrow*

E. DECK CONDITION

NO TRAFFIC SHALL BE PERMITTED ON ANY PORTION OF THE DECK WHICH HAS BEEN MACHINE SCARIFIED UNLESS APPROVED IN WRITING BY THE ENGINEER.

F. BRIDGE WORK - GENERAL

WHENEVER ANY WORK IS BEING DONE DIRECTLY OVER A TRAVELED LANE OR SHOULDER THE CONTRACTOR SHALL SUPPLY SUFFICIENT SAFETY EQUIPMENT AS APPROVED BY THE ENGINEER TO PROTECT THE TRAVELING PUBLIC FROM ANY CONSTRUCTION DEBRIS.

G. TAPER RATES

ALL TAPER RATES ARE RELATIVE TO THE $\frac{C}{2}$ OF THE ROADS UNLESS SPECIFICALLY STATED AS BEING MEASURED TO A GIVEN EDGE OF PAVEMENT.

H. FAILURE TO COMPLY

IF THERE IS ANY FAILURE TO COMPLY WITH THE PROVISIONS FOR TRAFFIC CONTROL SET OUT IN THESE PLANS AND NOTES, OR WITH THE PROVISIONS OF THE "MANUAL", THE HIGHWAY IN THE VICINITY OF THE WORK AREA SHALL NOT BE CONSIDERED IN A CONDITION FOR THE SAFE AND CONVENIENT USE BY THE TRAVELING PUBLIC. ANY FAILURE TO KEEP THE HIGHWAY IN THE VICINITY OF THE WORK AREA IN A CONDITION FOR THE SAFE AND CONVENIENT USE BY THE TRAVELING PUBLIC SHALL BE CONSIDERED A BREACH OF THIS CONTRACT. WORK SHALL BE SUSPENDED UNTIL THE CONTRACTOR COMPLIES WITH THE PROVISIONS OF THE AFOREMENTIONED ITEMS.

IV. TRAFFIC CONTROL MATERIAL

A. SIGNS

SIGN DIMENSIONS AND SPECIFICATIONS, INCLUDING LETTER SIZES, SHALL BE AS PROVIDED IN THE "MANUAL", OR IN SIGN DESIGN DRAWINGS PROVIDED BY THE DEPARTMENT OF TRANSPORTATION. THE SIGNS SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER PRIOR TO THE START OF THE PROJECT.

B. SIGN SUPPORTS

SIGN SUPPORTS SHALL BE OF SUFFICIENT SIZE AND HEIGHT AS TO SUPPORT THE SIGNS AT THE HEIGHT INDICATED IN THE "MANUAL" ON PLATE C-1. SUPPORTS SHALL ALSO BE ADEQUATE IN MASS AND STABILITY TO PREVENT THE SIGNS BEING BLOWN OVER BY WIND OR VEHICULAR GENERATED AIR TURBULENCE.

C. LIGHTING DEVICES

FLASHERS SHALL BE 12 VOLT BATTERY-OPERATED MODELS WITH 7 INCH DIAMETER YELLOW LENSES ILLUMINATED BY RAPID INTERMITTENT FLASHES OF SHORT DURATION AND SHALL BE PLACED ON ALL SIGNS AT ALL TIMES.

CONTINUOUS BURN LIGHTS SHALL BE 12 VOLT BATTERY-OPERATED MODELS WITH MINIMUM 7 INCH DIAMETER YELLOW LENSES. THEY SHALL BE PLACED ABOVE THE GROUND ON THE TOPS OF DRUMS AND SPACED AT 50 FOOT INTERVALS WHENEVER DRUMS ARE REQUIRED. CONTINUOUS BURN LIGHTS AS DESCRIBED ABOVE SHALL BE REQUIRED WHENEVER ANY PORTION OF THE TRAVELED SURFACE IS CLOSED DURING TWILIGHT OR NIGHTTIME HOURS.

D. FLASHING ARROWS

THE ELECTRIC FLASHING ARROW SHALL BE OF TYPE A, AS SHOWN ON STANDARD CONSTRUCTION DRAWING, TC-35-10. PAYMENT FOR THIS SHALL BE INCLUDED UNDER ITEM 614 - MAINTAINING TRAFFIC.

E. DRUMS

WHENEVER DRUMS ARE REQUIRED THEY SHALL BE THE 55 GALLON CAPACITY SIZE. DRUMS SHALL BE LOCATED AS SHOWN ON THE TRAFFIC CONTROL PLANS. ALL COSTS FOR INSTALLING, MAINTAINING AND SUBSEQUENT REMOVAL OF SAID DRUMS SHALL BE INCLUDED IN THE LUMP SUM BID PRICE FOR ITEM 614 - MAINTAINING TRAFFIC.

V. PERMANENT PAVEMENT MARKINGS

THESE MARKINGS SHALL BE PLACED WITHIN 24 HOURS AFTER THE TRAFFIC CONTROL SYSTEM IS REMOVED. PAINTED LANE LINES (ITEM 621) MAY BE USED AS A TEMPORARY METHOD TO MEET THE FOREMENTIONED TIME RESTRICTION. PAYMENT FOR INTERIM PAINTED LINES SHALL BE INCLUDED IN THE COST OF THE PERMANENT PAVEMENT MARKINGS.

VI. TEMPORARY PLASTIC PAVEMENT MARKINGS - SEE SHEET N^o 11

MICROFILMED
JAN 3 1988

GENERAL NOTES

FHWA REGION	STATE	PROJECT	
5	OHIO		

11
34

CUYAHOGA & LAKE COUNTIES
 CUY - 77/271 - 0.82 / 0.54
 CUY / LAK - 90 - 0.95 / 7.67

COMPUTED BY: D.A.S. 6/79
 CHECKED BY: F.A. 6/79

614 - TEMPORARY PAVEMENT MARKINGS - INTERIM AND LANE CLOSURE

A. GENERAL

THE CONTRACTOR SHALL FURNISH, INSTALL, MAINTAIN, AND, WHEN NECESSARY, REMOVE TEMPORARY RETROREFLECTIVE PAVEMENT MARKINGS ON RECONSTRUCTED, RESURFACED OR TEMPORARY ROADS WITHIN THE WORK LIMITS, IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS.

THE TEMPORARY MARKINGS SHALL BE COMPLETE ON ALL PAVEMENT COURSES EXPOSED TO TRAFFIC AT THE END OF EACH DAY'S OPERATION. WHERE PERMANENT MARKINGS ARE CALLED FOR IN THESE PLANS, THE CONTRACTOR SHALL FURNISH AND PLACE THE PERMANENT MARKINGS WITHIN 30 CALENDAR DAYS, FOLLOWING COMPLETION OF ALL SURFACE COURSES IN A SINGLE ROADWAY OR PRIOR TO THE END OF THE CONSTRUCTION SEASON, WHICHEVER COMES FIRST.

THE MATERIAL FURNISHED SHALL BE FLEXIBLE RETROREFLECTIVE PERFORMED PRESSURE SENSITIVE TAPE FOR PAVEMENT LINES. IT SHALL BE FREE OF CRACKS WITH STRAIGHT EDGES AND CONSIST OF PIGMENT AND FILLERS, BUT HAVE SUFFICIENT BINDER AND PLASTICIZER TO RETAIN GLASS BEADS HAVING AN APPROPRIATE REFRACTIVE INDEX TO MEET MINIMUM REFLECTIVE INTENSITY STANDARDS OUTLINED IN THE MANUFACTURERS INFORMATION. MATERIAL SHALL BE FLEXOLITE "WET REFLECTIVE", 3M "SCOTCHLANE," OR APPROVED EQUAL.

GLASS BEADS SHALL BE MIXED UNIFORMLY THROUGHOUT THE MARKING MATERIAL WITH SUFFICIENT SURFACE BEADS TO PROVIDE OPTIMUM REFLECTORIZATION AT ALL TIMES.

THE MATERIAL SHALL HAVE A PRECOATED ADHESIVE LAYER FOR PAVEMENT APPLICATION WITHOUT THE USE OF HEAT, SOLVENTS OR ADDITIONAL ADHESIVES. THE ADHESIVE SHALL BE SUFFICIENT TO RETAIN COMPLETE MARKINGS ON THE PAVEMENT SURFACE THROUGHOUT THE USEFUL LIFE OF THE MARKINGS.

WHITE MARKING MATERIAL SHALL BE FREE OF TINT. YELLOW MATERIAL SHALL CONFORM TO COLOR NO. 33538 OF FEDERAL STANDARD 595.

IN ADDITION, ALL APPLICABLE MANUFACTURERS MATERIAL AND APPLICATION INSTRUCTIONS, IN FORCE AT THE TIME OF PLACEMENT, SHALL BE ADHERED TO. THE CONTRACTOR SHALL FURNISH TO THE ENGINEER CERTIFICATION THAT THE MATERIAL SUPPLIED MEETS THE PROPERTIES SPECIFIED HEREIN.

MARKINGS SHALL BE ACCURATELY LAID OUT IN CONFORMANCE WITH 621.051 AND SHALL BE LOCATED IN A TRUE LINE ON THE CENTER LINE, LANE LINE, OR CHANNELIZING LINE WHERE NORMAL PERMANENT MARKING WOULD LIE, UNLESS OTHERWISE SPECIFIED IN THE PLANS. THE TEMPORARY TAPE SHALL BE PLACED BY ROLLING THE MATERIAL INTO THE SURFACE.

THE CONTRACTOR SHALL PROVIDE COMPLETE PAVEMENT MARKINGS FOR ALL TEMPORARY ROADS CONSTRUCTED FOR THIS PROJECT, IN ACCORDANCE WITH MATERIAL AND PERFORMANCE REQUIREMENTS DESCRIBED HEREIN AND IN THE OHIO MANUAL AS DEFINED IN 614.03.

IN ADDITION TO THE REQUIREMENT OF 614.03, THE CONTRACTOR SHALL, PRIOR TO PLACING TEMPORARY MARKINGS, REMOVE ALL EXISTING CONFLICTING MARKINGS THAT ARE VISIBLE TO THE TRAVELING PUBLIC DURING DAYLIGHT OR NIGHTTIME HOURS. WHEN TEMPORARY MARKINGS ARE NO LONGER NEEDED, ANY CONFLICTING MARKINGS VISIBLE TO THE TRAVELING PUBLIC SHALL BE REMOVED BY THE CONTRACTOR BEFORE THE FLOW OF TRAFFIC IS DIVERTED TO THE NEXT PHASES. REMOVAL OF EXISTING OR TEMPORARY MARKINGS SHALL BE PERFORMED IN ACCORDANCE WITH 621.134. THE COST FOR REMOVAL OF CONFLICTING MARKINGS SHALL BE INCIDENTAL TO THE VARIOUS PAY ITEMS UNLESS SPECIFICALLY PAID FOR AS A SEPARATE ITEM.

THE CONTRACTOR MAY REDUCE THE NUMBER OF THROUGH TRAFFIC LANES BY 50% IN ORDER TO REMOVE PAVEMENT MARKINGS OR TO INSTALL PAVEMENT MARKINGS. HE SHALL LIMIT THE AFOREMENTIONED CLOSURE TO BETWEEN THE HOURS OF 9:00 A.M. AND 3:00 P.M. ALL TEMPORARY PAVEMENT MARKINGS FOR A PARTICULAR CLOSURE SHALL BE INSTALLED THE SAME DAY AND THE CORRESPONDING CLOSURE AS DETAILED ON THE TRAFFIC CONTROL SHEETS SHALL BE IMPLEMENTED IMMEDIATELY.

B. INTERIM

TEMPORARY MARKINGS SHALL BE PLACED IN ACCORDANCE WITH (LAYOUTS ON SHEETS 18-22 AND) THE FOLLOWING REQUIREMENTS, UNLESS OTHERWISE SPECIFIED IN THE PLANS:

CENTER LINES AND LANE LINES SHALL CONSIST OF 12" X 4" SEGMENTS SPACED AT A MAXIMUM 40' CENTER TO CENTER; CHANNELIZING LINES SHALL BE 12" X 4" SEGMENTS SPACED AT MAXIMUM 20' CENTER TO CENTER. GORE MARKINGS SHALL BE TWO CONTINUOUS LINES, 4" WIDE, 50' LONG.

AS AN ALTERNATE MATERIAL TO PAVEMENT MARKINGS TAPE, THE CONTRACTOR MAY FURNISH AND APPLY PAINTED RETROREFLECTIVE PAVEMENT MARKINGS CONFORMING TO 621. THE WIDTH AND LENGTH OF PAINTED SEGMENT SHALL BE THE SAME AS REQUIRED FOR TEMPORARY TAPE MATERIAL. THE PAINT APPLICATION RATE SHALL BE NOT LESS THAN 16 GALLONS PER MILE FOR A SOLID LINE NOR LESS THAN 0.4 GALLONS PER MILE FOR THE 12" X 4" DASHED LINE.

C. LANE CLOSURES

TEMPORARY MARKINGS SHALL BE PLACED IN ACCORDANCE WITH (LAYOUTS ON SHEETS 23-34 AND) THE FOLLOWING REQUIREMENTS, UNLESS OTHERWISE SPECIFIED IN THE PLANS:

CENTER LINES, LANE LINES AND CHANNELIZING LINES SHALL BE A CONTINUOUS 4" SEGMENT. PAINTED PAVEMENT MARKINGS WILL NOT BE ALLOWED FOR LANE CLOSURES.

D. PAYMENT

THE FOLLOWING ARE ESTIMATED QUANTITIES INCLUDED IN THE GENERAL SUMMARY FOR USE BY THE ENGINEER:

INTERIM:

ITEM 614	-	TEMPORARY LANE LINES -----	1.48 MILES
ITEM 614	-	TEMPORARY CHANNELIZING LINES-----	860 L.F.
ITEM 614	-	TEMPORARY GORE MARKING-----	200 L.F.
ITEM 614	-	TEMPORARY CENTERLINE	1.46 MILES

LANE CLOSURES:

ITEM 614	-	TEMPORARY DOTTED LINE-----	1265 L.F.
ITEM 614	-	TEMPORARY EDGE LINE-----	2.52 MILES
ITEM 614	-	TEMPORARY CONTINUOUS LANE LINE---	290 L.F.
ITEM 614	-	TEMPORARY 12" BROAD TRANSVERSE LINE (YELLOW)-----	530 L.F.
ITEM 614	-	12" TEMPORARY STOP LINES ---	90 L.F.
ITEM 614	-	TEMPORARY CONTINUOUS CENTERLINE--	3800 L.F.
ITEM 614	-	TEMPORARY LANE ARROW ----	2 EA.

REVISIONS
 JAN 3 1980

GENERAL NOTES

FHWA REGION	STATE	PROJECT
5	OHIO	

12
34

CUYAHOGA & LAKE COUNTIES
CUY - 77 / 271 - 0.82 / 0.54
CUY / LAK - 90 - 0.95 / 7.67

ITEM 511 - CLASS "C" CONCRETE, SUBSTRUCTURE, AS PER PLAN

DESCRIPTION

THIS ITEM SHALL BE USED TO REPAIR DAMAGED BACKWALLS AS DETAILED ON SHEET NO. 17, EXCEPT AS OTHERWISE NOTED.

REMOVAL OF CONCRETE

ALL LOOSE, SOFT, HONEYCOMBED, AND DISINTEGRATED CONCRETE PLUS ONE-FOURTH INCH DEPTH OF SOUND CONCRETE, SHALL BE REMOVED. WHERE THE BOND BETWEEN THE CONCRETE AND A REINFORCING BAR HAS BEEN DESTROYED, OR WHERE MORE THAN ONE-HALF OF THE PERIPHERY OF SUCH A BAR HAS BEEN EXPOSED, THE ADJACENT CONCRETE SHALL BE REMOVED TO A DEPTH THAT WILL PROVIDE A MINIMUM THREE-FOURTH INCH CLEARANCE AROUND THE BAR, EXCEPT WHERE OTHER REINFORCING BARS MAKE THIS IMPRACTICABLE. AFTER COMPLETION OF THE REMOVAL OPERATION, THE ENGINEER WILL SOUND THE BACKWALL TO INSURE THAT ONLY SOUND CONCRETE REMAINS. ALL WORK SHALL BE DONE IN SUCH A MANNER AS NOT TO DAMAGE OR SHATTER THE CONCRETE THAT IS TO REMAIN AND PREVENT THE REINFORCING STEEL THAT IS TO REMAIN FROM BEING CUT, ELONGATED OR DAMAGED IN ANY WAY. SQUARE OR PREFERABLY SLIGHTLY UNDERCUT SHOULDERS SHALL BE MADE AT THE EDGES OF ALL REPAIR AREAS.

CONCRETE MAY BE REMOVED BY CHIPPING OR HAND DRESSING. CHIPPING HAMMERS SHALL NOT BE HEAVIER THAN THE NOMINAL 35 POUND CLASS. WHERE EXISTING REINFORCING BARS WOULD BE LESS THAN ONE INCH FROM THE PROPOSED FINISHED SURFACE OF CONCRETE, THEY SHALL, IF PRACTICAL, BE DRIVEN BACK INTO RECESSES CUT IN THE MASONRY TO OBTAIN THAT COVERAGE, UNLESS OTHERWISE APPROVED BY THE ENGINEER.

SURFACE PREPARATION

NOT MORE THAN 24 HOURS PRIOR TO PLACING THE PATCH, ALL SURFACES TO WHICH THE PATCH IS TO BOND, INCLUDING EXPOSED REINFORCING AND STRUCTURAL STEEL SHALL BE CLEANED BY ABRASIVE BLASTING OR AN APPROVED METHOD OF WATER BLASTING. THESE SURFACES SHALL BE MADE FREE OF SPALLS, LAITANCE AND ALL TRACES OF FOREIGN MATERIAL. IF NECESSARY, DETERGENT CLEANING SHALL PRECEDE BLAST CLEANING TO INSURE THE REMOVAL OF CONTAMINANTS DETRIMENTAL TO ACHIEVING AN ADEQUATE BOND.

MATERIALS

HIGH EARLY PORTLAND CEMENT (701.02) SHALL BE USED

METHOD OF MEASUREMENT

ALL COST OF REMOVAL, SURFACE PREPARATION, MATERIALS, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THE BACKWALL REPAIR SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 511 - CLASS C CONCRETE, SUBSTRUCTURE, AS PER PLAN.

ITEM 520 - PNEUMATICALLY PLACED MORTAR, AS PER PLAN

THIS ITEM OF WORK SHALL BE USED TO REPAIR SPALLED OR UNSOUND SURFACE AREAS OF CONCRETE ON THE FACE OF BACKWALLS, PARAPETS, SIDEWALKS, CURBS, BRIDGE SEATS, ABUTMENTS, PIERS AND PIER CAPS WHERE DIRECTED BY THE ENGINEER.

IN ADDITION TO, OR EXCEPTION TO, THE REQUIREMENTS OF ITEM 520 THE FOLLOWING PROVISIONS SHALL APPLY:

520.01 DESCRIPTION

MINIMUM THICKNESS SHALL BE NOT LESS THAN 1/2 INCHES.

520.02 MATERIALS

PORTLAND CEMENT SHALL CONFORM TO 701.04. LATEX EMULSION SHALL MEET THE REQUIREMENTS OF SUPPLEMENTAL SPECIFICATION 953, AND SHALL MEET THE FOLLOWING BONDING TEST:

TEST TO EVALUATE BONDING CAPABILITIES OF THE POLYMER PORTLAND CEMENT MORTAR.

SPECIMENS SHALL BE PREPARED AND TESTED AS OUTLINED BELOW TO DETERMINE THE ACCEPTABILITY OF MATERIALS SELECTED FOR THE WORK.

THE MODIFIED COMPOSITION, MIXED ACCORDING TO THE SPECIFIED PROPORTIONS (POLYMER PORTLAND CEMENT MORTAR) USING MATERIALS CONTEMPLATED FOR THE PROJECT SHALL PRODUCE A SHEAR BOND STRENGTH VALUE EQUAL TO OR GREATER THAN THAT PRODUCED WITH THE SAME MATERIALS AND INCORPORATING A STANDARD LATEX MODIFIER WHEN TESTED ACCORDING TO THE FOLLOWING PROCEDURE.

CONCRETE CYLINDERS THREE INCHES IN DIAMETER BY SIX INCHES IN LENGTH SHALL BE MADE WITHOUT THE LATEX MODIFIER AND ALLOWED TO CURE 28 DAYS. THE TEST CYLINDER CONCRETE SHALL BE MADE FROM MATERIAL COMMONLY USED IN STRUCTURAL WORK MEETING APPLICABLE REQUIREMENTS. THESE CYLINDERS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5,000 POUNDS PER SQUARE INCH.

AFTER THE CONCRETE CYLINDERS HAVE CURED, ONE END SHALL BE WET SANDED TO A SMOOTH FINISH ON A BELT SANDER. THE AGGREGATE IN THE CONCRETE SHALL BE EXPOSED BY THE SANDING OPERATION. THE SURFACE OF THE CONCRETE CYLINDER SHALL BE KEPT WET WITH WATER DURING THE SANDING OPERATION TO AVOID OVERHEATING THE CURED CONCRETE SURFACE.

THE SANDED SURFACE SHALL BE DAMPENED WITH WATER JUST PRIOR TO CAPPING IT WITH A ONE INCH THICK LAYER OF POLYMER PORTLAND CEMENT MORTAR, (MIXED ACCORDING TO RECOMMENDED PROPORTIONS) FOLLOWING THE PROCEDURE LISTED IN ASTM DESIGNATION C109 AND BEING SURE THAT THE MATERIAL IS WELL BRUSHED INTO THE SURFACE. THE POLYMER PORTLAND CEMENT MORTAR SHALL BE ALLOWED TO CURE ONE DAY WET AND 7 DAYS DRY AT 50 PERCENT RH AND 75 F, FOLLOWED BY SEVEN DAYS WATER IMMERSION AT 75 F, THEN TESTED WET.

TO DETERMINE THE ACTUAL SHEAR BOND STRENGTH, THE CONCRETE CYLINDER SHALL BE INSERTED INTO A HEAVY-WALLED STEEL SLEEVE WHICH HAS BEEN SECURELY FASTENED TO THE BASE OF THE TESTING MACHINE. THE ONE INCH MORTAR CAP IS ALLOWED TO EXTEND OUT BEYOND THE EDGE OF THE METAL SLEEVE.

A CONSTANTLY INCREASING FORCE IS APPLIED TO THE POLYMER PORTLAND CEMENT MORTAR CAP BY A STEEL RAM CONFORMING TO ONE-HALF OF ITS PERIPHERY, PLACED ON THE MORTAR CAP PERPENDICULAR TO THE MAIN AXIS OF THE CYLINDER. THE SHEAR BOND STRENGTH IS DETERMINED BY THE FOLLOWING FORMULA:

$$F's = \frac{F}{A}$$

F's = SHEAR BOND STRENGTH (PSI)

F = FORCE (LBS)

A = CROSS SECTIONAL AREA OF THE CYLINDER.

A MINIMUM OF THREE SPECIMENS, TEST SPECIMENS PREPARED AS PROVIDED ABOVE, SHALL BE TESTED. THE SHEAR BOND STRENGTH SHALL BE THE AVERAGE OF THE TEST RESULTS OF THE THREE SPECIMENS TESTED. THE MINIMUM REQUIRED SHEAR BOND STRENGTH SHALL BE 300 PSI.

520.03 REMOVAL OF CONCRETE

WHERE THE BOND BETWEEN EXISTING CONCRETE AND REINFORCING STEEL HAS BEEN DESTROYED, OR WHERE MORE THAN ONE HALF THE PERIPHERY OF THE STEEL IS EXPOSED, THE CONCRETE ADJACENT TO THE BAR SHALL BE REMOVED TO A DEPTH OF ONE INCH WHICH WILL PERMIT SHOTCRETE TO BOND TO THE ENTIRE PERIPHERY OF THE BAR SO EXPOSED.

ALL EDGES SHALL BE TAPERED. SQUARE OR UNDERCUT SHOULDERS SHALL NOT BE MADE AT THE EDGES OF THE REPAIR AREAS. THE CHIPPED CAVITY SHALL NOT CONTAIN OFFSETS WHICH WOULD CAUSE ABRUPT CHANGES IN THE THICKNESS OF REPAIR.

FORTY-EIGHT HOURS OF GOOD CURING SHALL HAVE ELAPSED PRIOR TO CHIPPING ON ADJACENT CONCRETE WITHIN 15 FEET OF POLYMER PORTLAND CEMENT SHOTCRETE PREVIOUSLY PLACED.

BEFORE SHOTCRETING BEGINS AND WITHIN 24 HOURS, THE ENTIRE CONCRETE SURFACE SHALL BE SANDBLASTED AND REBARS SHALL BE SANDBLASTED TO WHITE METAL. THE SURFACES OF PREVIOUSLY PLACED SHOTCRETE LAYERS SHALL BE SANDBLASTED TO REMOVE THE AIR DRIED SURFACE AND PROMOTE BOND. IF THE SURFACE CONTAINS GREASE, OIL, DIRT, OR OTHER FOREIGN MATTER, SAND-BLASTING, DETERGENT CLEANING, WATERBLASTING, AND/OR AIR BLASTING OR ANY COMBINATION THEREOF, SHALL BE REQUIRED TO INSURE BOND. ALL UNCHIPPED SURFACES SHALL BE MECHANICALLY ROUGHENED PRIOR TO RECEIVING SHOTCRETE.

520.05 PREPARATION

THE PREPARED MASONRY SURFACE SHALL BE KEPT WET DURING THE 30 MINUTES PRECEDING THE PLACEMENT OF THE MORTAR.

520.07 PROPORTIONS

LATEX EMULSION SHALL BE ADDED AT THE RATE OF 4.0 GALLONS PER BAG OF CEMENT.

520.09 PLACING

ALL EQUIPMENT FOR THE CONCRETE PREPARATION, MIXING, PLACING, AND FINISHING OF POLYMER PORTLAND CEMENT SHOTCRETE SHALL BE APPROVED BY THE ENGINEER PRIOR TO START OF ANY WORK.

SURFACE PREPARATION EQUIPMENT SHALL BE OF THE FOLLOWING TYPES:

- PNEUMATIC HAMMERS SHALL BE NOMINAL 30 POUND CLASS OR LIGHTER.
- SANDBLASTING EQUIPMENT SHALL BE CAPABLE OF REMOVING RUST SCALE FROM REINFORCING BARS AND OR REMOVING SMALL CHIPS OF CONCRETE PARTIALLY LOOSENED BY THE CHIPPING OPERATION.

THE TYPE OF EQUIPMENT USED TO MIX MATERIALS AND APPLY PNEUMATICALLY PLACED MORTAR SHALL BE OF KNOWN REPUTATION AND APPROVED BY THE ENGINEER. IT SHALL BE EQUIPPED WITH PROPER AIR CONTROL VALVES AND GAUGES TO ALLOW NECESSARY ADJUSTMENTS REQUIRED FOR VARIOUS MATERIAL HOSE LENGTHS.

THE MINIMUM SIZE AIR COMPRESSOR SHALL BE AS SUGGESTED BY THE EQUIPMENT MANUFACTURER. THE AIR FROM THE COMPRESSOR SHALL BE FREE OF ANY OILS.

THE PREMIXED, DRY CEMENT AND SAND SHALL BE PLACED BY PNEUMATIC EQUIPMENT WITH THE PROPER AMOUNT OF LATEX EMULSION AND WATER APPLIED IN THE MIXING NOZZLE. ONLY THE RATE OF WATER SHALL BE VARIED TO ACHIEVE THE CORRECT PLACEMENT CONSISTENCY.

THE TOTAL WATER IN THE SYSTEM SHALL TAKE INTO ACCOUNT THE WATER IN THE LATEX EMULSION ITSELF. THE TOTAL WATER SHALL BE CONTROLLED SO THAT THE WATER-CEMENT RATIO IS MAINTAINED BETWEEN 0.22 AND 0.30 BY WEIGHT. THE MIX SHALL BE AS DRY AS CONDITIONS AND MATERIALS WILL ALLOW.

THE PNEUMATICALLY PLACED MORTAR PATCHES SHALL BE CURED ACCORDING TO 511.14 METHOD (B).

ITEM 509 - REINFORCING STEEL, AS PER PLAN

THIS ITEM SHALL BE USED TO REPLACE REINFORCING STEEL WHICH IS BENT, ELONGATED, MISSING, OR EXTREMELY CORRODED. BARS SHALL BE THE SAME SIZE AS THE ORIGINAL BARS AND SHALL BE PLACED AS NEAR AS POSSIBLE TO THEIR ORIGINAL PLAN LOCATION. BARS SHALL BE LAPPED ACCORDING TO SEC. 509.08. PAYMENT FOR THIS ITEM SHALL INCLUDE THE COST OF ALL MATERIALS AND LABOR NECESSARY TO COMPLETE THE ABOVE WORK, INCLUDING REMOVAL OF THE EXISTING STEEL.

THE FOLLOWING ESTIMATED QUANTITY OF REINFORCING STEEL IS TO BE USED WHERE AND AS DIRECTED BY THE ENGINEER.

ITEM 509 - REINFORCING STEEL, AS PER PLAN 500 POUNDS

ITEM 516 - VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS, MODIFIED A AND B AS PER PLAN

THE CONTRACTOR SHALL FURNISH AND WELD WITH A CONTINUOUS BEAD, A STEEL BAR TO THE EXISTING END DAM PLATE. FOR DETAILS NOT SHOWN SEE STANDARD CONSTRUCTION DRAWING BP-5. THE BAR SHALL CONFORM TO THE DIMENSIONS SHOWN ON THE RESURFACING DETAIL SHEETS. ALL COST OF MATERIALS AND INSTALLATION SHALL BE INCLUDED IN THE UNIT PRICE BID. FOR ITEM 516 - VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS, MODIFIED A AND B AS PER PLAN.

ITEM SPECIAL - PRESSURE RELIEF JOINTS, TYPE C

THIS ITEM SHALL BE AS PER BP-11 OF THE STANDARD DRAWINGS.

ITEM 203 - EMBANKMENT, AS PER PLAN

THE CONTRACTOR SHALL FURNISH EMBANKMENT MATERIAL MEETING REQUIREMENTS OF 203.02 OF THE STATE SPECIFICATIONS EXCEPT THAT IF GRANULAR MATERIAL IS FURNISHED, NO MORE THAN 40% SHALL PASS THE NO. 4 SIEVE.

IN ORDER TO COMPLETE THE EMBANKMENT UNDER THE APPROACH SLAB ON S.R. 306, THE CONTRACTOR SHALL MAKE USE OF THE MUD JACKING METHOD USING A CEMENT SLURRY COMPOSITION WHICH MEETS THE FOLLOWING SPECIFICATIONS.

MATERIALS CEMENT SHALL CONFORM TO 701

THE SLURRY SHALL CONSIST OF PORTLAND CEMENT, FINE SAND OR AGRICULTURAL LIMESTONE, WATER, AND SUCH ADMIXTURES AS MAY BE NECESSARY TO GIVE THE CONSISTENCY AS DIRECTED BY THE ENGINEER. COMPRESSIVE STRENGTH SHALL BE NOT LESS THAN 250 PSI AT 7 DAYS, DETERMINED ON TEST OF 6X12-INCH CYLINDERS.

EQUIPMENT THE MIXER SHALL BE CAPABLE OF PRODUCING A UNIFORMLY MIXED GROUT OF THE PROPER CONSISTENCY.

THE MUD JACK SHALL BE OF THE POSITIVE DISPLACEMENT TYPE CAPABLE OF INSTANTANEOUS CONTROL OF SLURRY PRESSURE.

DRILLING HOLES HOLES MAY BE DRILLED EITHER BY A CORE DRILL OR BY A PNEUMATIC DRILL. WHEN A PNEUMATIC DRILL IS USED, THE DRILL SHALL BE HELD RIGIDLY IN PLACE BY A TEMPLET PLACED ON THE PAVEMENT OR BY A FIXED BEARING NOT MORE THAN 12 INCHES ABOVE THE PAVEMENT SURFACE TO MINIMIZE SPALLING OF THE EDGE OF THE HOLE.

HOLES SHALL BE DRILLED NOT LESS THAN 12 INCHES NOR MORE THAN 8 INCHES FROM EACH TRANSVERSE JOINT. SPACING OF HOLES SHALL BE NOT MORE THAN 6 FEET CENTER TO CENTER. THE ENGINEER MAY REQUIRE ADDITIONAL HOLES WHEN NECESSARY. NO PUMPING SHALL BE DONE WHEN THE GROUND IS FROZEN OR WHEN THE AIR TEMPERATURE IS BELOW 40° F.

FILLING HOLES AFTER THE EMBANKMENT OPERATION IS COMPLETE, THE HOLES SHALL BE CLEANED THEN PAINTED WITH A GROUT, CONSISTING OF CEMENT AND WATER, HAVING THE CONSISTENCY OF A THICK PAINT. A STIFF MORTAR CONSISTING OF 1 PART CEMENT TO 3 PARTS SAND, SHALL BE RODDED INTO THE HOLE FOR ITS FULL DEPTH. THE SURFACE SHALL BE TROWELLED AND PAINTED WITH CURING MEMBRANE CONFORMING TO 705.07.

ALL COSTS FOR THE ABOVE MENTIONED WORK SHALL BE PAID FOR UNDER ITEM 203-EMBANKMENT, AS PER PLAN.

ITEM SPECIAL - RESET BEARINGS

RESETTING OF BEARINGS SHALL BE ACCOMPLISHED IN ACCORDANCE WITH SHEET NO. 16 OF THE PLANS AND SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE BID FOR ITEM SPECIAL, RESET BEARINGS. THIS PRICE SHALL BE PAYMENT IN FULL FOR ALL MATERIAL, EQUIPMENT AND LABOR NECESSARY TO COMPLETE THIS WORK.

MICROFILMED

JAN 3 1966

TYING REBARS

THE PURPOSE OF THIS ITEM IS TO TIE EXPOSED STEEL REINFORCING BARS WHICH ARE IN CROSS CONTACT OR ARE LAPPED. TACK WELDING SHALL NOT BE PERMITTED. THIS WORK SHALL BE PERFORMED WHERE AND AS DETERMINED BY THE ENGINEER TO RESTRICT THE RELATIVE MOVEMENT OF THE REINFORCING BARS.

PAYMENT FOR THIS WORK INCLUDING EXTRA REMOVAL OF CONCRETE AS REQUIRED TO PERMIT TYING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 845-LATEX MOD. CONC. (VARIABLE THICKNESS).

RIGHT OF WAY

ALL WORK WILL BE PERFORMED WITHIN THE EXISTING RIGHT OF WAY.

CUYAHOGA & LAKE COUNTIES
 CUY-77 / 271 - 0.82 / 0.54
 CUY/LAK - 90 - 0.95 / 7.67

DESIGNED BY: D. A. S. 4/79
 CHECKED BY: F. A. 4/79

ITEM 621 - PAVEMENT MARKINGS - PARTICIPATION I														
SHEET No	BRIDGE No's		4"	4"	4"	8"	24"	WORD	LANE	ISLAND	6"	4"	4"	
			LANE LINES	CENTER- LINE, DOUBLE YELLOW	DOTTED LINES	CHANNEL- IZING LINES	BROAD TRANSV. LINES (YELLOW)	STOP LINES	"ONLY" ON PAVEMENT, 72 IN.	ARROWS	MARKINGS (YELLOW)	CROSSWALK LINES	EDGE LINES (WHITE)	EDGE LINES (YELLOW)
			MILES	MILES	L.F.	L.F.	L.F.	L.F.	EA.	EA.	S.F.	L.F.	MILES	MILES
18	CUY-77-	0082		0.10										
18	CUY-77-	0162		0.11									0.22	
19	CUY-90-	0095	0.56	0.32	280	580	70							
19	CUY-90-	0696	0.06	0.11		390	130	32	1	4	57			
19	CUY-90-	0745		0.05				14				84		
20	CUY-271-	0054	0.42								157			
20	CUY-271-	0160		0.25		305	220	54		4	113			
21	CUY-271-	0629		0.27										
21	CUY-271-	1390		0.13										
21	CUY-271-	1545		0.11									0.22	
22	LAK-90-	0767	0.41								200		0.41	0.41
SUB-TOTALS - I-77				0.21									0.22	
SUB-TOTALS - I-90			1.03	0.48	280	970	200	46	1	4	257	84	0.41	0.41
SUB-TOTALS - I-271			0.42	0.76		305	220	54		4	270		0.22	
TOTALS			1.45	1.45	280	1275	420	100	1	8	527	84	0.85	0.41

Δ = IR Funding Participation II
 ⊕ = No FEDERAL PARTICIPATION

* THIS ITEM IS SUBJECT TO NONPERFORMANCE IF FOUND NOT TO BE REQUIRED

SHEET No	BRIDGE No's		PARTICIPATION I							PARTICIPATION II							
			604	202 Δ	202	404	516	516	845	605	520 ⊕	845	845	511	SPECIAL	SPECIAL	607
			CATCH BASIN ADJUSTED TO GRADE	WEARING COURSE REMOVED	CHIPPING CONCRETE PAVEMENT	ASPHALT CONCRETE AC-20	VERTICAL EXT. OF STRUCTURAL EXP. JOINTS MOD. A, A.P.P.	VERTICAL EXT. OF STRUCTURAL EXP. JOINTS MOD. B, A.P.P.	LATEX MODIFIED CONCRETE OVERLAY 1 1/4"	AGGREGATE DRAINS	PNEUMAT- ICALLY PLACED MORTAR A.P.P.	LATEX MOD. CONCRETE OVERLAY (VARIABLE THICKNESS)	FULL DEPTH REPAIR *	CLASS "C" CONCRETE SUBSTRUCT., AS PER PLAN	RESET BEARINGS	PRESSURE RELIEF JOINTS, TYPE C	FENCE TYPE CL MODIFIED AS PER PLAN
	E.A.	S.Y.	S.Y.	C.Y.	L.F.	L.F.	S.Y.	L.F.	S.F.	C.Y.	C.Y.	C.Y.	EACH	L.F.			
18	CUY-77-	0082			93	7		58	895	25	45	2			58		
18	CUY-77-	0162				6		64	985	100	57	2					
19	CUY-90-	0095			173	13		104	1692	10	127	2			116		
19	CUY-90-	0696				12		111	1131	100	57	2	18	14	54		
19	CUY-90-	0745			72	7		65	776	10	52	2			29		
20	CUY-271-	0054	1		203	15		138	2554	25	170	2			134		
20	CUY-271-	0160			208	13		82	1763	25	132	2			41		
21	CUY-271-	0629			2389	113	11	106		1000	179	100			60		
21	CUY-271-	1390			1240	93	10	59		300	93	2			58	827	
21	CUY-271-	1545				7		56		10	70	2					
22	LAK-90-	0767			200	16		140	2558	40	100	128	2	36	140		
19	CUY-90-	0767														499	
SUB-TOTAL - I-77					93	13		122	1880	125 ⊕	102	4			58		
SUB-TOTAL - I-90					445	48		420	6157	40	220 ⊕	364	8	54	14	339	499
SUB-TOTAL - I-271			1	3629 Δ	617	56	165	276	9142		1360 ⊕	644	108		293	827	
TOTALS			1	3629 Δ	1155	117	165	818	17179	40	1705 ⊕	1110	120	54	14	690	1326

ITEM 407 - TACK COAT RC-250, MS-2, RS-1, SS-1 OR SS-1h
 4000 ± S.Y. x 0.1 GAL. / S.Y. = 400 GALS.

ITEM 407 - COVER AGGREGATE
 4000 ± S.Y. x 7 lb. / S.Y. + 2000 = 14 TONS

PHOTOCOPIED
 JAN 3 1985

GENERAL SUMMARY

DESIGNED BY: D.A.S. 6/79
 CHECKED BY: F.A. 6/79

FHWA REGION	STATE	PROJECT	
5	OHIO		14 34

CUYAHOGA & LAKE
 CUY - 77/271 - 0.82/0.54
 CUY/LAK - 90 - 0.95/7.67

Ⓢ - NO FEDERAL PARTICIPATION

TYPE CODE 6706 UNLESS OTHERWISE SHOWN

ITEM	PARTICIPATION I						PARTICIPATION II						PARTICIPATION SUB-TOTALS		ITEM	QUANT.	UNIT	DESCRIPTION		
	10	12	13	11	SUB-TOTALS			13	22	12	10	SUB-TOTALS							I	II
					I-77	I-90	I-271					I-77	I-90	I-271						
ROADWAY																				
202			1155		93	445	617								1155		202	1155	S.Y.	CHIPPING CONCRETE PAVEMENT
202													25		25		202	25	L.F.	GUARDRAIL REMOVED FOR REUSE
202												3,629			3,629		202	3,629	S.Y.	WEARING COURSE REMOVED
203												240			240		203	240	C.Y.	EMBANKMENT, AS PER PLAN
606												25			25		606	25	L.F.	GUARDRAIL REBUILT, TYPE 5, AS PER PLAN
607												499	827		1,326		607	1,326	L.F.	FENCE, TYPE CL, MODIFIED AS PER PLAN
404	20				3	7	10								20		404	20	C.Y.	BITUMINOUS CONCRETE FOR MAINTAINING TRAFFIC
660													100		100		660	100	S.Y.	SODDING
STRUCTURE REPAIR																				
404			117		13	48	56								117		404	117	C.Y.	ASPHALT CONCRETE, AC-20
407			400		47	175	178								400		407	400	GAL.	TACK COAT; RC-250, MS-2, RS-1, SS-1 OR SS-1h
407			14		2	6	6								14		407	14	TONS	COVER AGGREGATE
SPECIAL												690			690		SPECIAL	690	L.F.	PRESSURE RELIEF JOINTS, TYPE C
509													500		500		509	500	LBS.	REINFORCING STEEL, AS PER PLAN
511												54			54		511	54	C.Y.	CLASS "C" CONCRETE SUBSTRUCTURE, AS PER PLAN
516			165				165								165		516	165	L.F.	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS, MODIFIED A, AS PER PLAN
516			818		122	420	276								818		516	818	L.F.	VERTICAL EXTENSION OF STRUCTURAL EXPANSION JOINTS, MODIFIED B, AS PER PLAN
520												1,705			1,705		520	1,705	S.F.	PNEUMATICALLY PLACED MORTAR, AS PER PLAN
845			17,179		1880	6157	9142								17,179		845	17,179	S.Y.	LATEX MODIFIED CONCRETE OVERLAY (1/4" THICK)
845												1,110			1,110		845	1,110	C.Y.	LATEX MODIFIED CONCRETE OVERLAY (VARIABLE THICKNESS)
845												120			120		845	120	C.Y.	FULL DEPTH REPAIR
SPECIAL												14			14		SPECIAL	14	EACH	RESET BEARINGS
DRAINAGE																				
605													40		40		605	40	L.F.	AGGREGATE DRAIN
604			1				1								1		604	1	EACH	CATCH BASIN ADJUSTED TO GRADE
603													20		20		603	20	L.F.	6" CONDUIT, TYPE F
TRAFFIC CONTROL																				
614			1.48				1.06	0.42							1.48		614	1.48	MI.	TEMPORARY LANE LINES
614			860				560	300							860		614	860	L.F.	TEMPORARY CHANNELIZING LINES
614			200				200								200		614	200	L.F.	TEMPORARY GORE MARKING
614			1.46		0.21		0.49	0.76							1.46		614	1.46	MI.	TEMPORARY CENTER LINE
614			1265				830	435							1265		614	1265	L.F.	TEMPORARY DOTTED LINE
614			2.52				1.61	0.91							2.52		614	2.52	MI.	TEMPORARY EDGE LINE
614			290				290								290		614	290	L.F.	TEMPORARY CONTINUOUS LANE LINE
614			530				343	187							530		614	530	L.F.	TEMPORARY 12" BROAD TRANVERSE LINE
614			90		40		50								90		614	90	L.F.	TEMPORARY 12" STOP LINE
614			3800				3512	288							3800		614	3800	L.F.	TEMPORARY CONTINUOUS CENTER LINE
614			2				2								2		614	2	EA.	TEMPORARY LANE ARROW
621			1.45				1.03	0.42							1.45		621	1.45	MILES	4" LANE LINES
621			1.45		0.21		0.48	0.76							1.45		621	1.45	MILES	CENTER LINE
621			280				280								280		621	280	L.F.	4" DOTTED LINE
621			1.26		0.22		0.82	0.22							1.26		621	1.26	MILES	EDGE LINES
621			84				84								84		621	84	L.F.	6" CROSSWALK LINES
621			1,275				970	305							1,275		621	1,275	L.F.	8" CHANNELIZING LINES
621			420				200	220							420		621	420	L.F.	24" BROAD TRANVERSE LINES
621			100				46	54							100		621	100	L.F.	24" STOP LINES
621			1				1								1		621	1	EACH	WORD "ONLY" ON PAVEMENT, 72 IN.
621			8				4	4							8		621	8	EACH	LANE ARROWS
621			527				257	270							527		621	527	S.F.	ISLAND MARKING
614	LUMP				LUMP	LUMP	LUMP					LUMP	LUMP	LUMP	LUMP	LUMP	614	LUMP		MAINTAINING TRAFFIC
619	LUMP				LUMP	LUMP	LUMP					LUMP	LUMP	LUMP	LUMP	LUMP	619	LUMP		FIELD OFFICE
624																	624	LUMP		MOBILIZATION

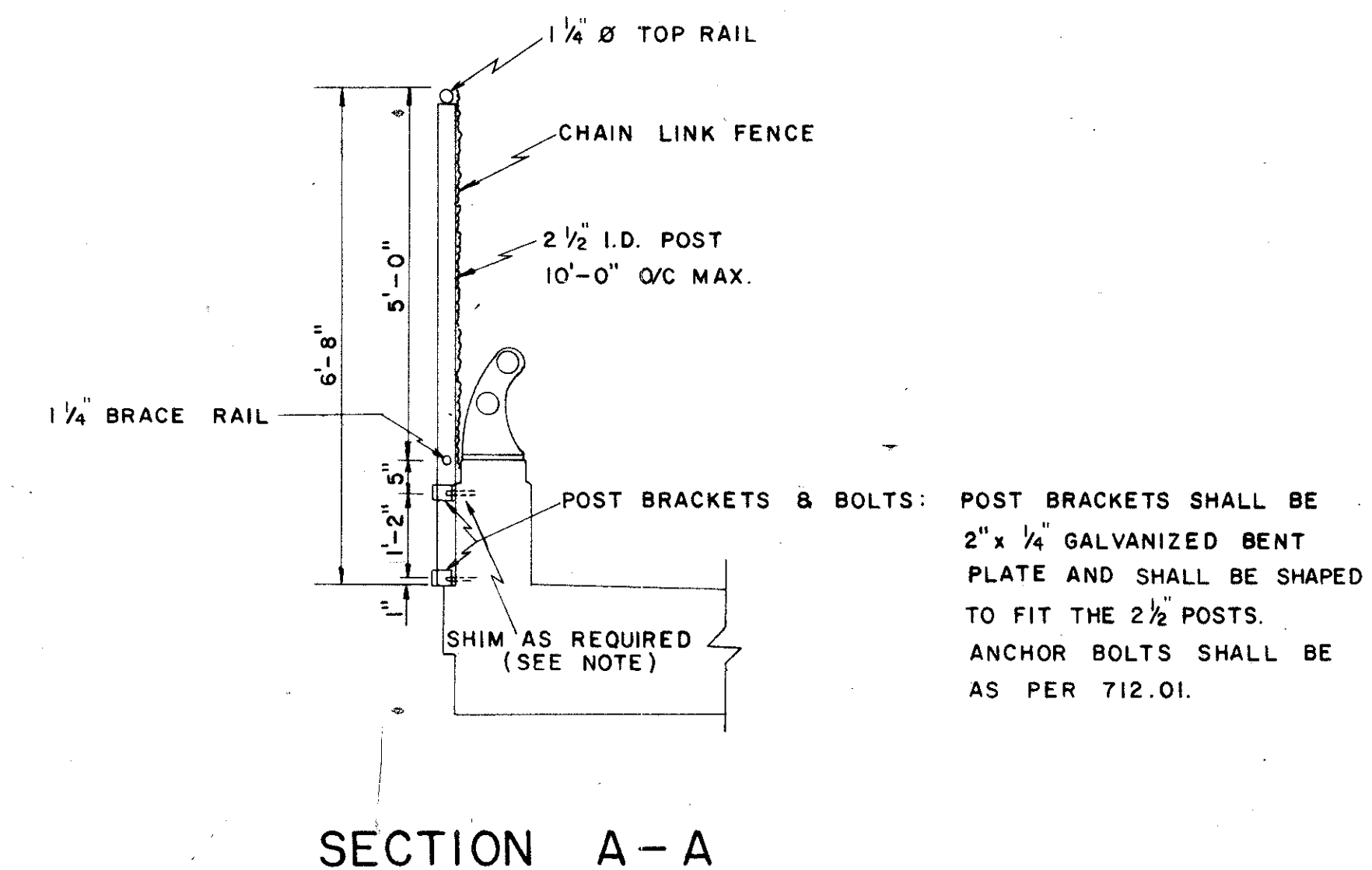
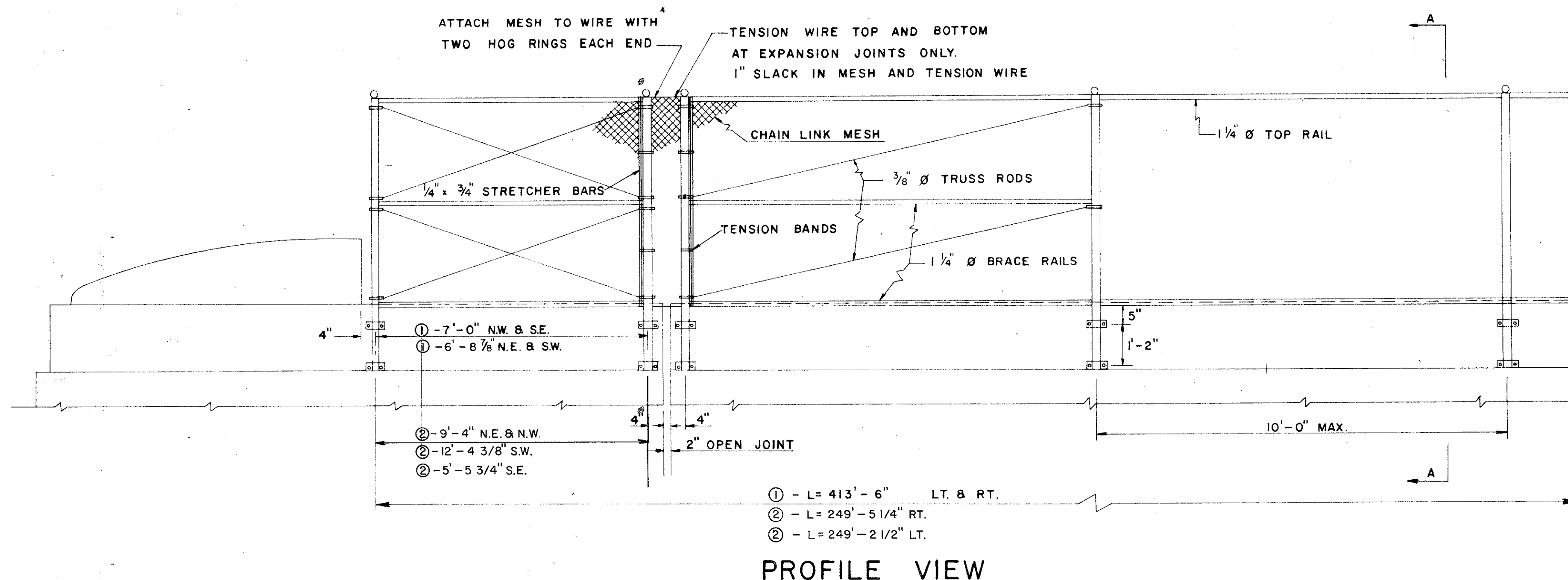
FENCE, TYPE CL, MODIFIED AS PER PLAN

- ① - CUY - 271 - 1390 (RIDGEBURY RD.)
- ② - CUY - 90 - 0767 (RIVERSIDE DR.)

FHWA REGION	STATE	PROJECT
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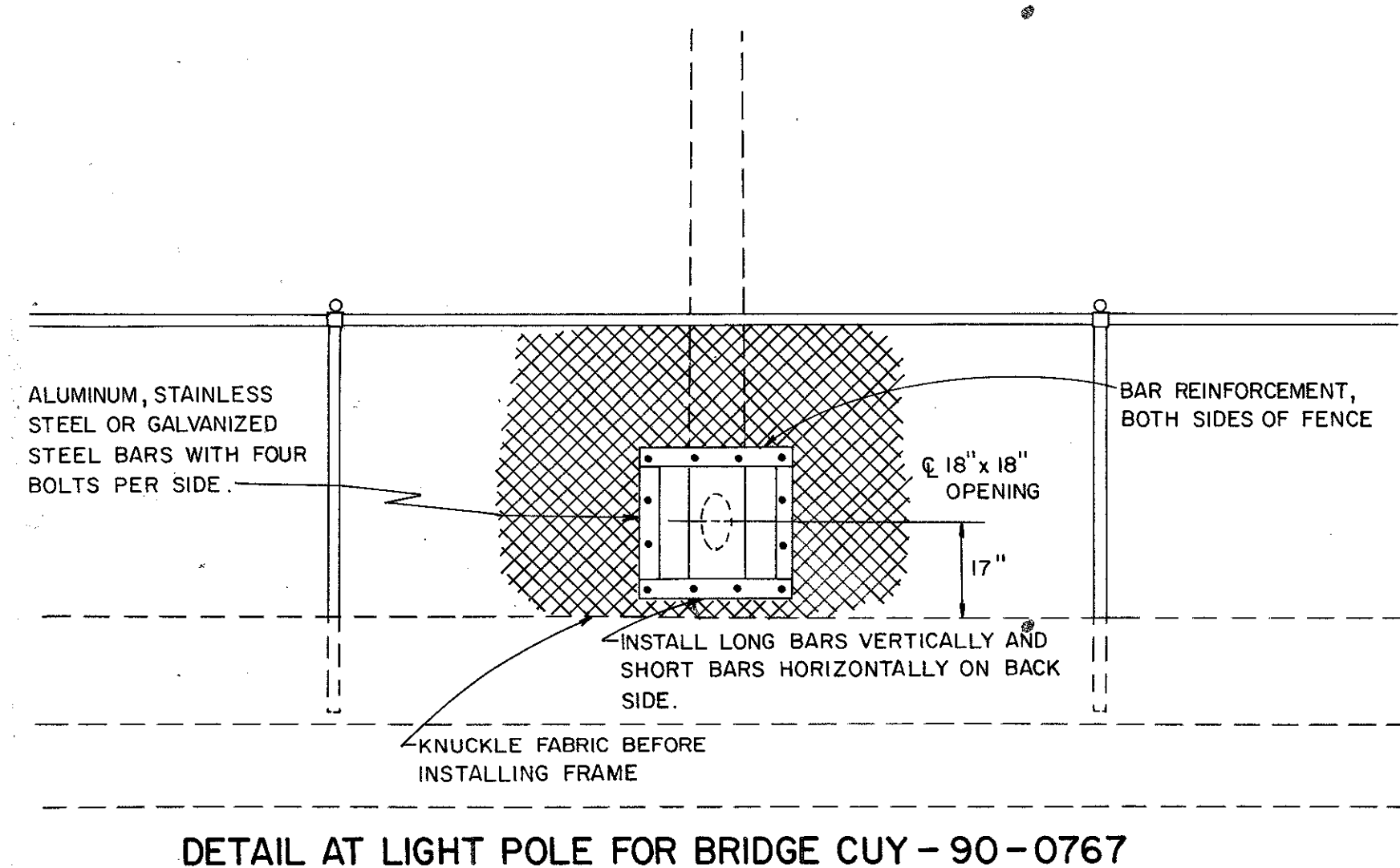
15
34

CUYAHOGA & LAKE COUNTIES
CUY - 77 / 271 - 0.82 / 0.54
CUY / LAK - 90 - 0.95 / 7.67



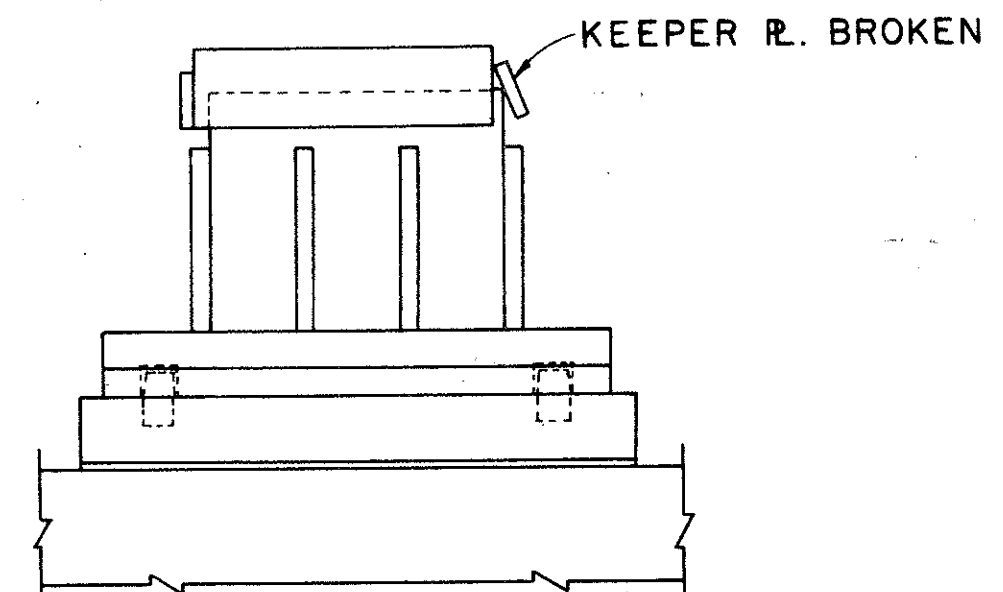
MICROFILMED
JAN. 3 1986

NOTES

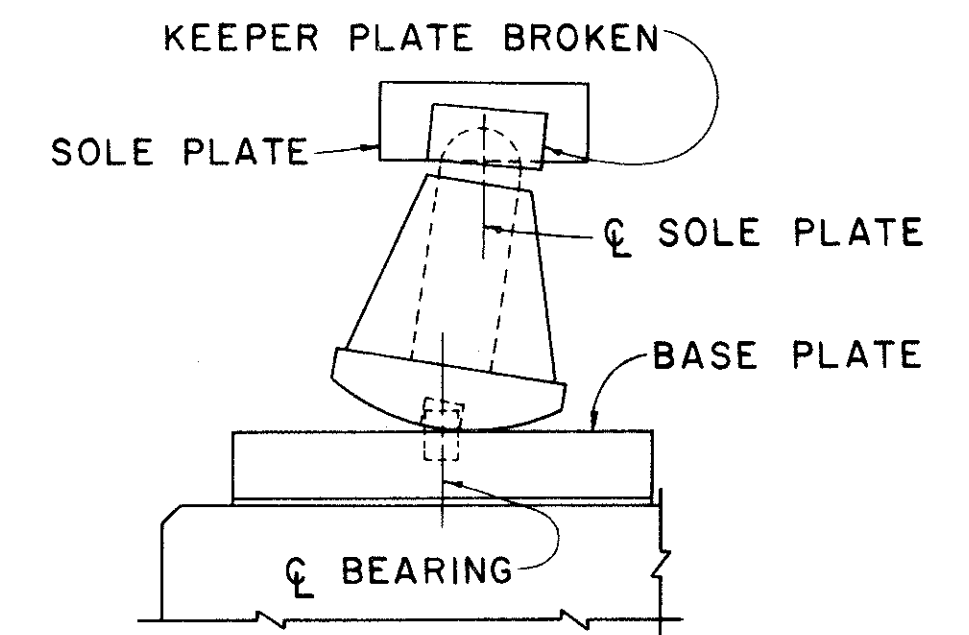


NOTE:
ALL COSTS OF MATERIAL AND LABOR NECESSARY TO INSTALL THE HANDHOLE FRAMES AS DETAILED ABOVE SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 607, FENCE, TYPE CL, MODIFIED AS PER PLAN.

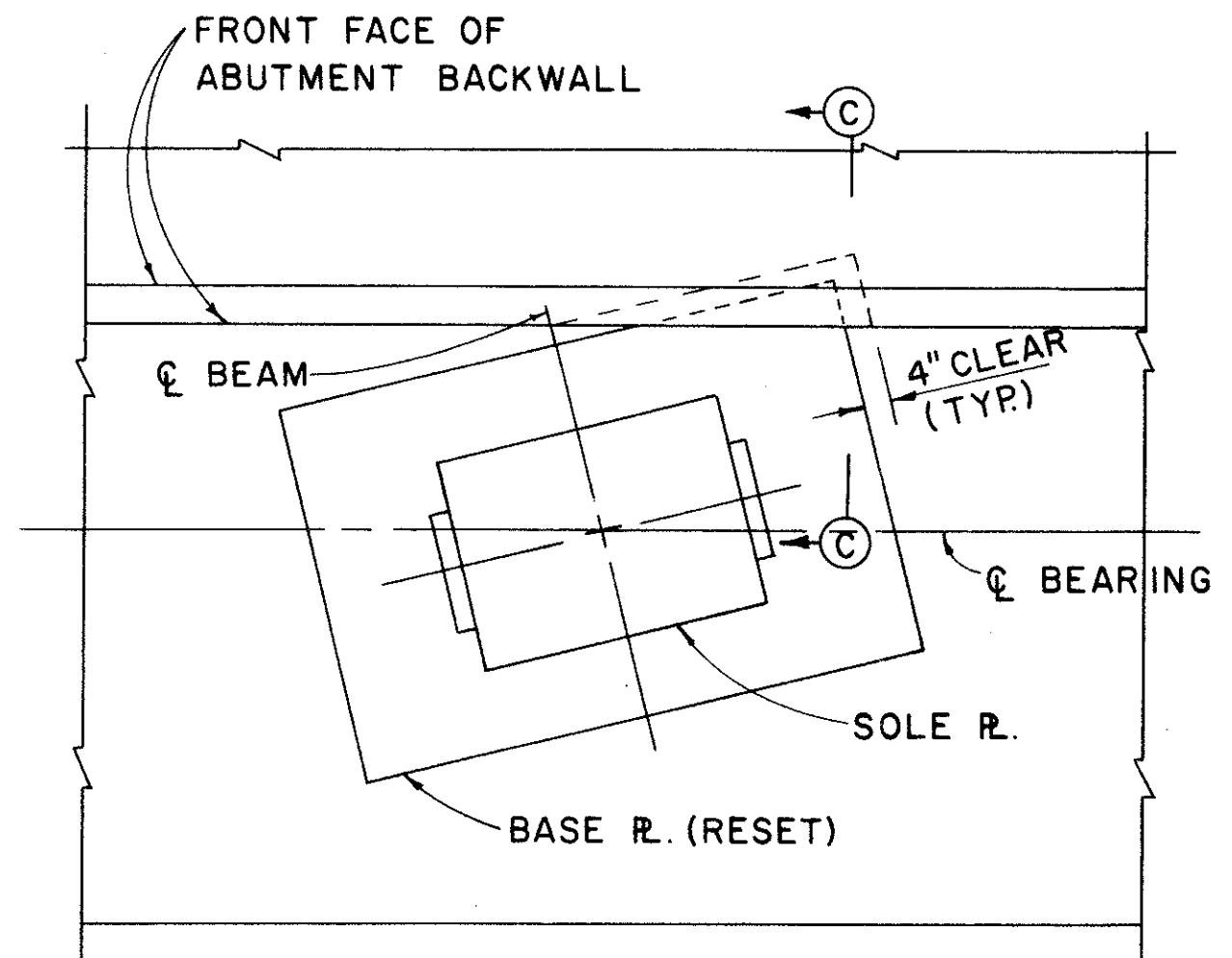
1. ALL POST AND PIPE SIZES ARE NOTED IN TERMS OF NOMINAL DIAMETER OF STANDARD WEIGHT AND WALL THICKNESS (ASTM A 120, SCHEDULE 40).
2. LINE, END AND PULL POSTS SHALL BE 2 1/2" INSIDE DIAMETER.
3. BRACE RAILS SHALL BE 1 1/4" INSIDE DIAMETER AND OF A LENGTH TO FIT BETWEEN END AND/OR LINE POSTS, TAKING INTO ACCOUNT VARIATIONS DUE TO VERTICAL CURVATURE.
4. TOP RAILS SHALL BE 1 1/4" INSIDE DIAMETER AND IN ACCORDANCE WITH ABOVE SPECIFICATION.
5. TENSION BAND SHALL BE 12 GAUGE STEEL x 7/8" WIDE ASSEMBLED WITH 5/16" DIA. BY 1 1/4" GALVANIZED CARRIAGE BOLTS. ONE TENSION BAND SHALL BE REQUIRED FOR EACH FOOT OF FABRIC HEIGHT.
6. ALL RAIL ATTACHMENTS TO POSTS SHALL BE BY USE OF BRACE BAR TRUSS ROD FITTINGS AND BRACE BANDS.
7. TENSION WIRE SHALL BE NO. 6 GAUGE, HIGH STRENGTH GALVANIZED STEEL WIRE AS CALLED FOR AT EXPANSION JOINTS (SEE DETAIL) WHERE TOP RAIL IS OMITTED.
8. CHAIN LINK FABRIC, SHALL BE NO. 9 GAUGE GALVANIZED STEEL WIRE, KNUCKLED TOP AND BOTTOM.
9. POST TOPS SHALL BE FITTED WITH A CAP SUITABLE FOR ACCOMMODATING A CONTINUOUS TOP RAIL. THE END POST CAPS SHALL BE OF A DESIGN TO CONTAIN THE TOP RAIL TO PREVENT HORIZONTAL MOVEMENT.
10. GALVANIZING: ALL PARTS OF THE FENCING SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M 131-74, TYPE 1 OR SECTION 711.02 OF THE CONSTRUCTION AND MATERIAL SPECIFICATIONS AS MAY BE APPLICABLE.
11. THE CONTRACTOR SHALL MAKE EVERY EFFORT TO PLACE POSTS IN A VERTICAL POSITION. IF NECESSARY, GALVANIZED METAL SHIMS SHALL BE USED TO SECURE POSTS IN A PLUMB AND ORGANIZED POSITION. COST OF SHIMS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 607.
12. THE COST OF ALL MATERIALS, INCLUDING CHAIN LINK FABRIC, POSTS, BRACKETS, BASE PLATES, BOLTS, AND BOLT HOLES, LABOR, TOOLS, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK SHALL BE INCLUDED IN THE UNIT PRICE BID PER LIN. FT. FOR ITEM 607, "FENCE TYPE CL", MODIFIED AS PER PLAN.



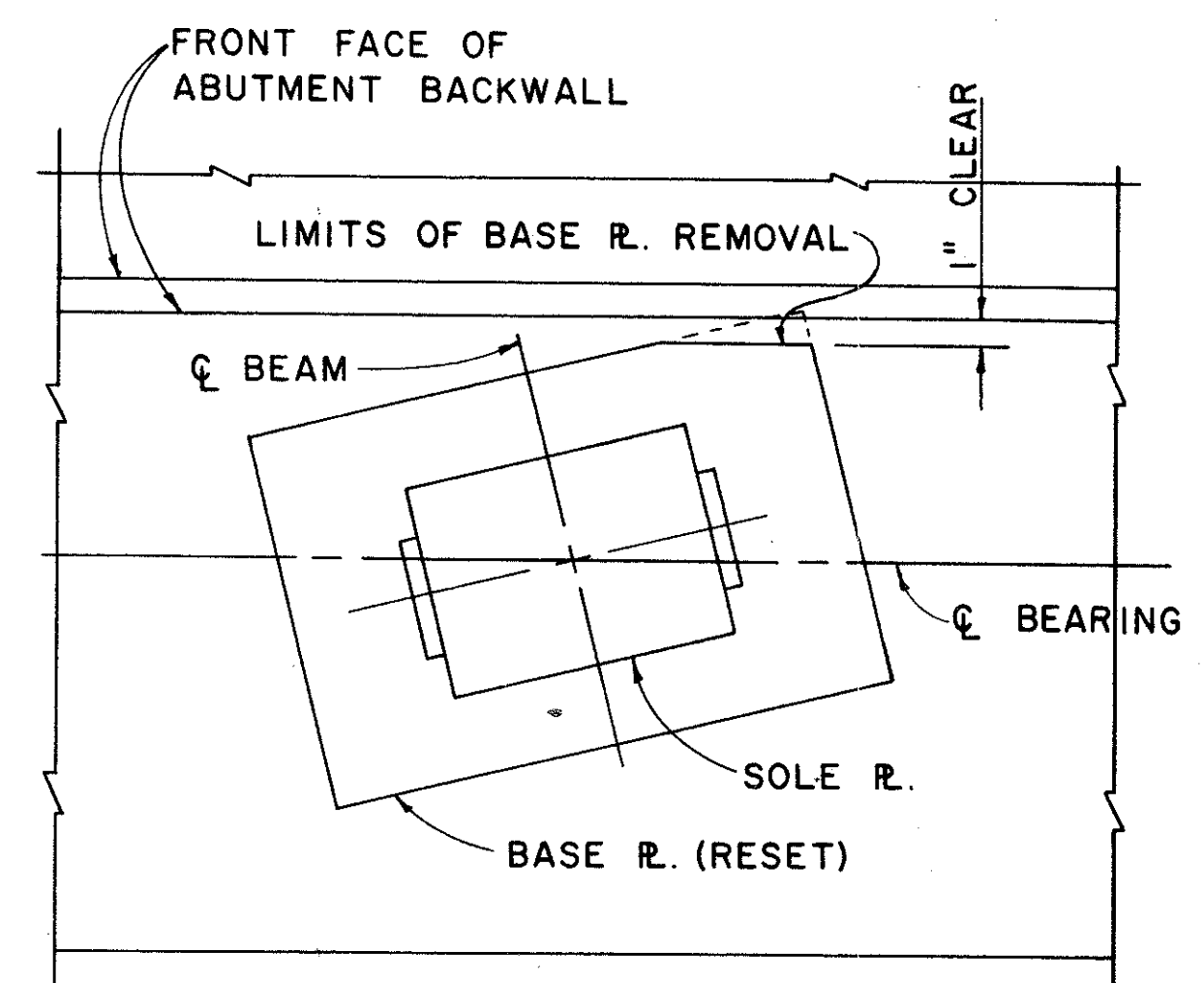
EXISTING FRONT ELEVATION



EXISTING SIDE ELEVATION

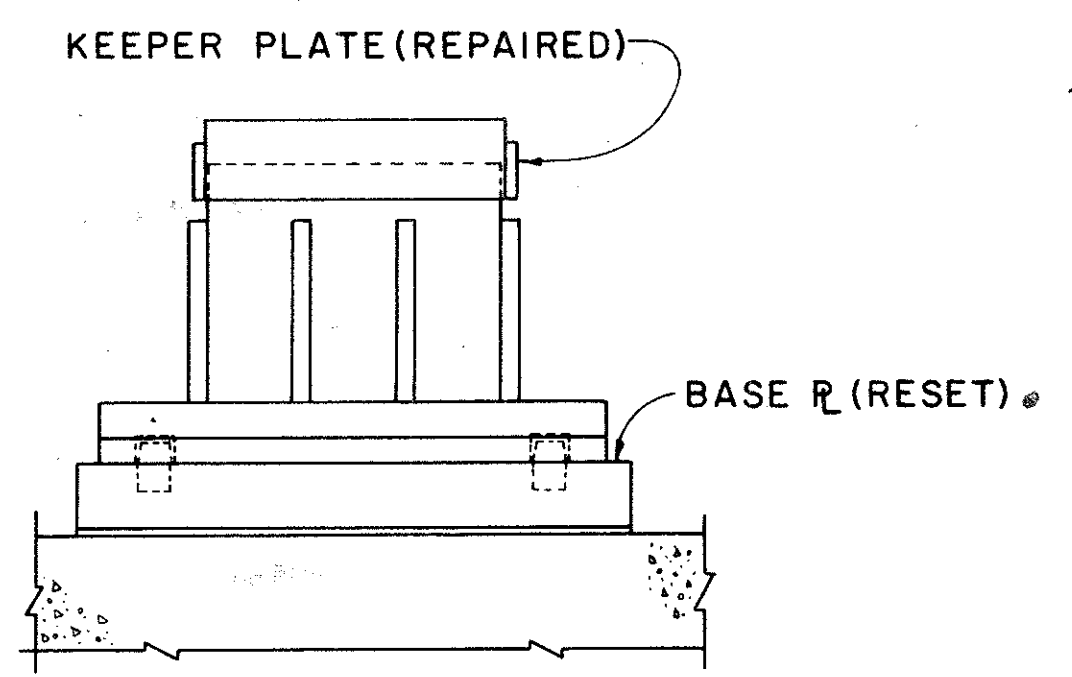


SECTION B-B*
(NOTCHING BACKWALL)

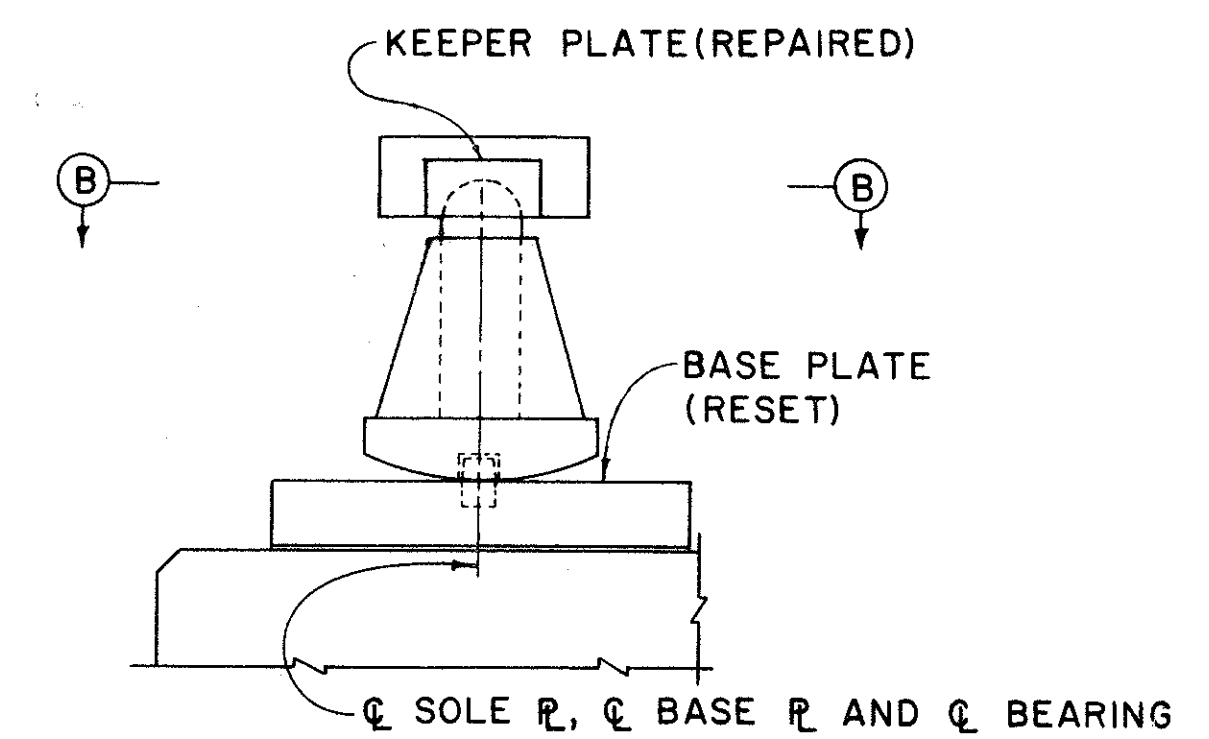


SECTION B-B*
(TRIMMING BASE PLATE)

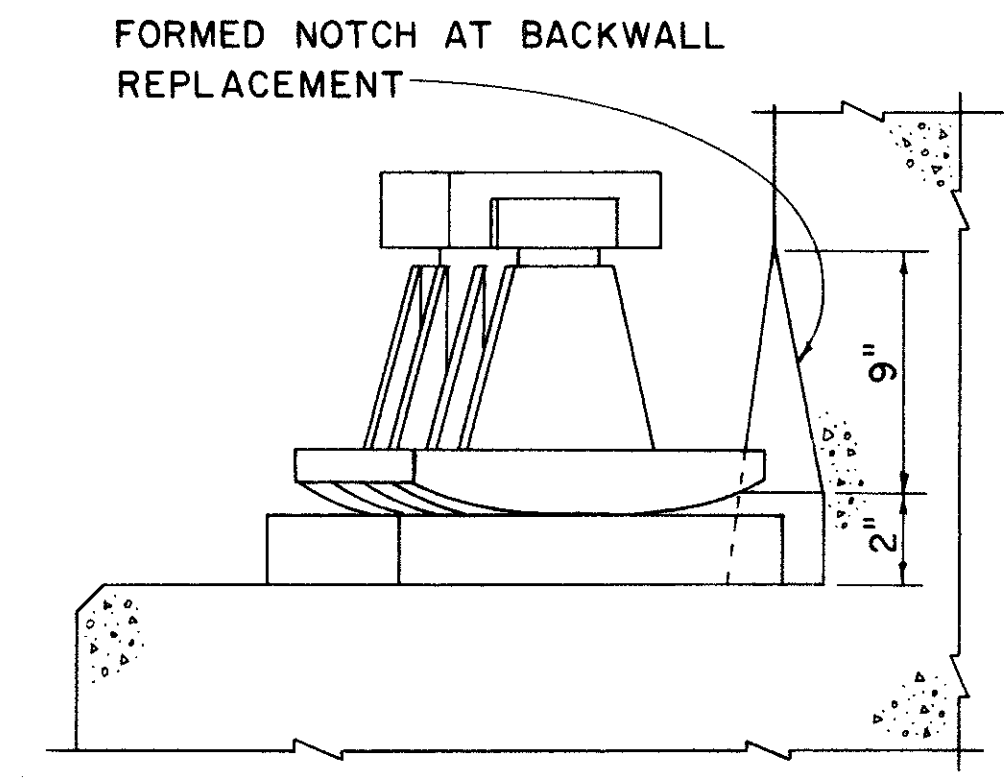
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 JAN 9 1986



MODIFIED FRONT ELEVATION



MODIFIED SIDE ELEVATION



SECTION C-C*

PROCEDURE FOR RESETTING BEARINGS ON CUY-90-0696

* AT LOCATIONS OF COMPLETE BACKWALL REPLACEMENT

1. RAISE THE ENTIRE SUPERSTRUCTURE AT THE ABUTMENT (ALL BEAMS SIMULTANEOUSLY) UNTIL THERE IS NO CONTACT BETWEEN THE SOLE PLATE AND THE BEARING.
2. RESET THE ROCKER AND BASE PLATE OR BASE PLATE ONLY IN FINAL POSITION, BY CENTERING THE BASE PLATE UNDER THE SOLE PLATE BOTH IN THE LONGITUDINAL AND TRANSVERSE DIRECTION.
3. REWELD KEEPER PLATE TO SOLE PLATE AS REQUIRED WITH A 5/16" FILLET WELD

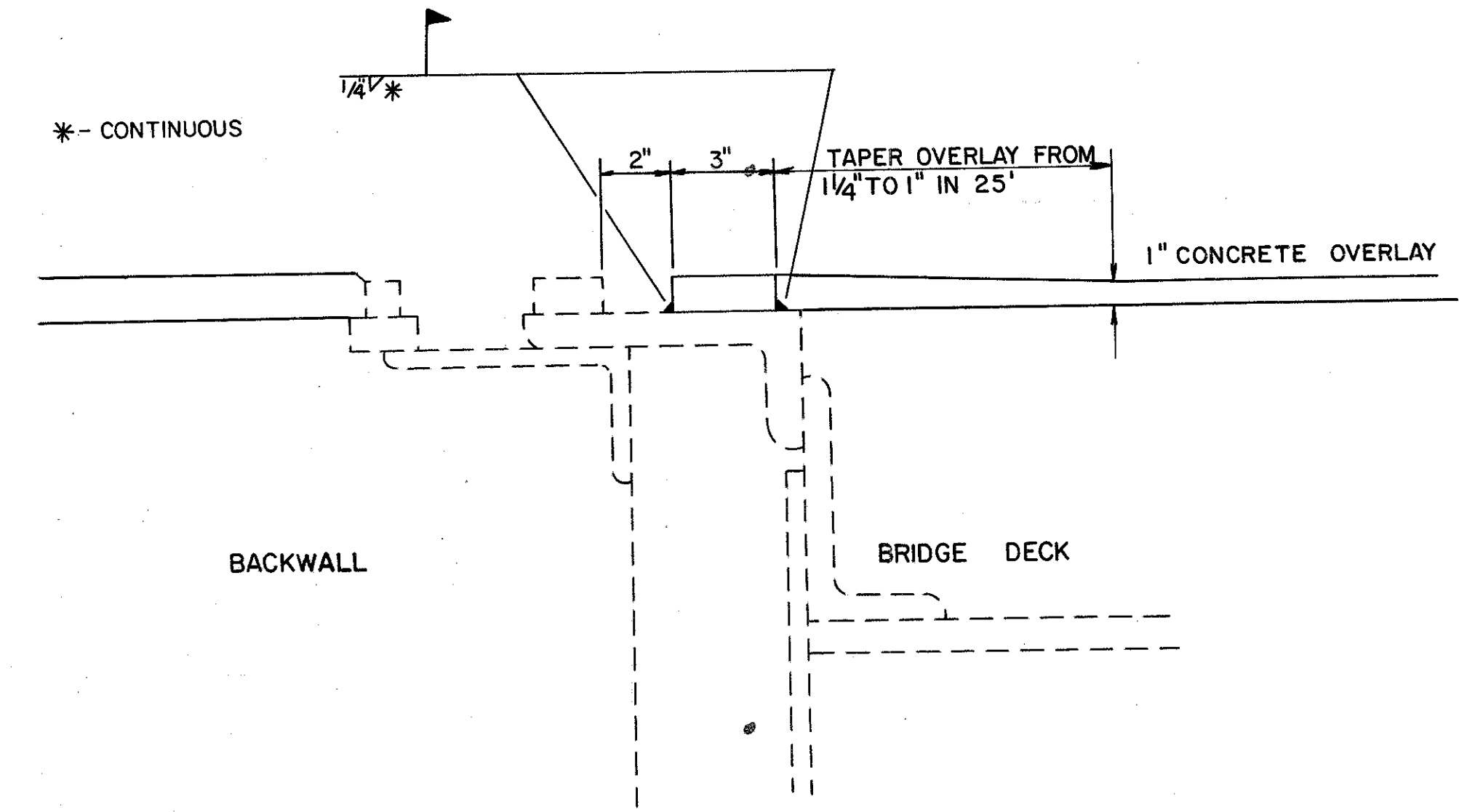
AT LOCATIONS WHERE BACKWALL IS RETAINED (CUY-90-0696)

1. RAISE THE ENTIRE SUPERSTRUCTURE AT THE ABUTMENT (ALL BEAMS SIMULTANEOUSLY) UNTIL THERE IS NO CONTACT BETWEEN THE SOLE PLATE AND THE BEARING.
2. RESET THE ROCKER AND BASE PLATE OR BASE PLATE ONLY IN FINAL POSITION, BY CENTERING THE BASE PLATE UNDER THE SOLE PLATE BOTH IN THE LONGITUDINAL AND TRANSVERSE DIRECTION.

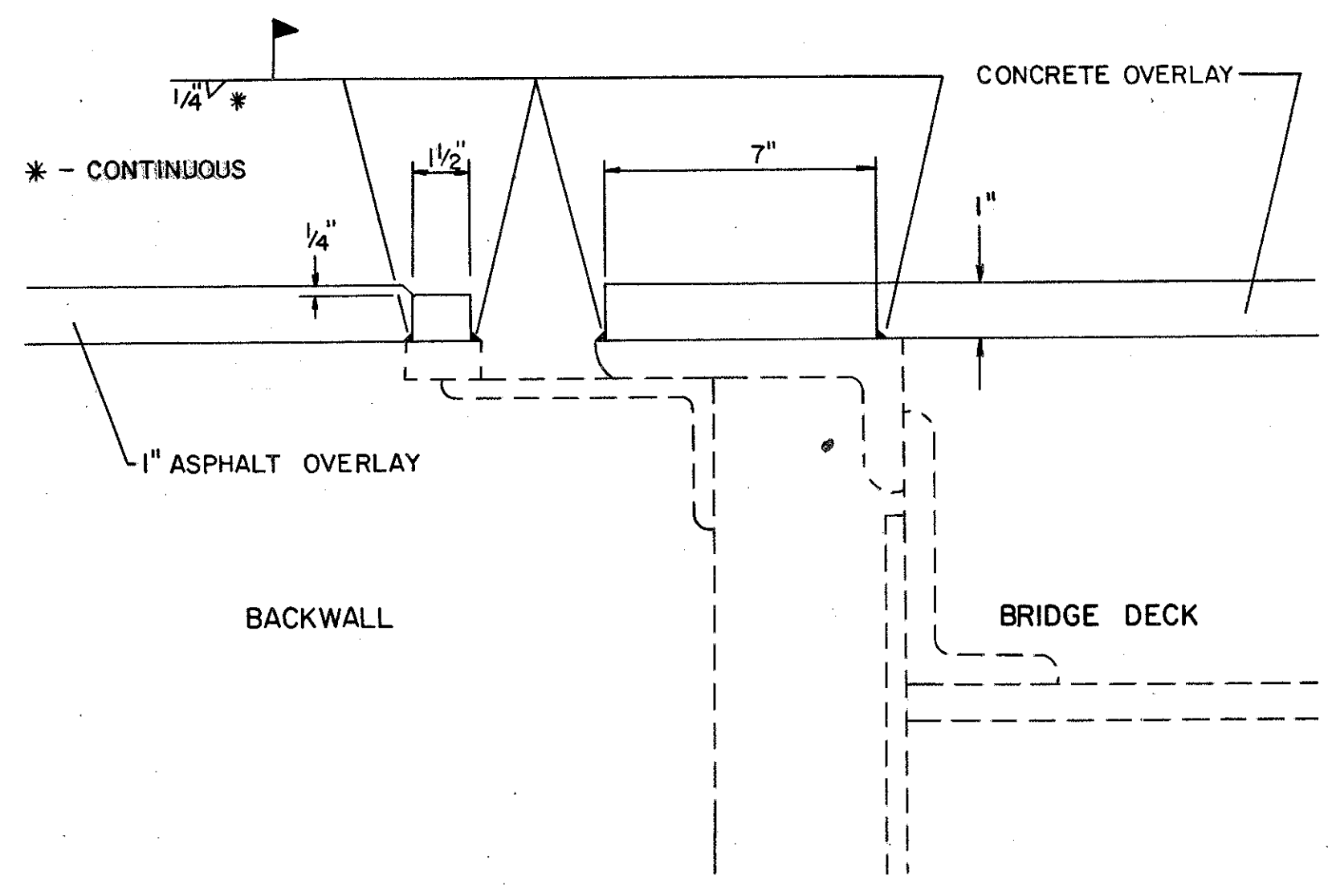
3. REWELD KEEPER PLATE TO SOLE PLATE AS REQUIRED WITH A 5/16" FILLET WELD.

*NOTE: WORK TO BE PERFORMED ONLY IF FOUND TO BE REQUIRED BY ENGINEER

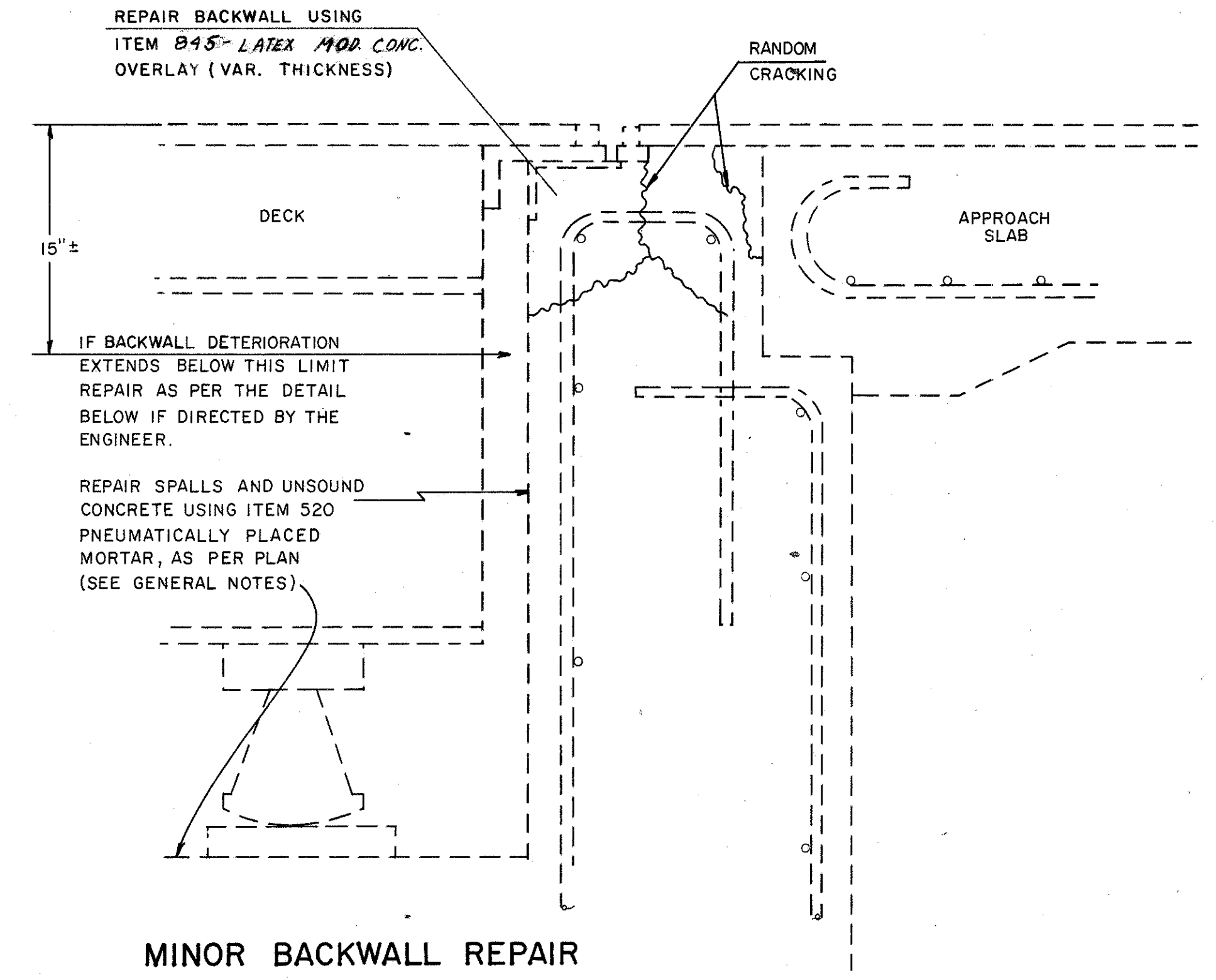
CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/0.54
 CUY/LAK-90-0.95/7.67



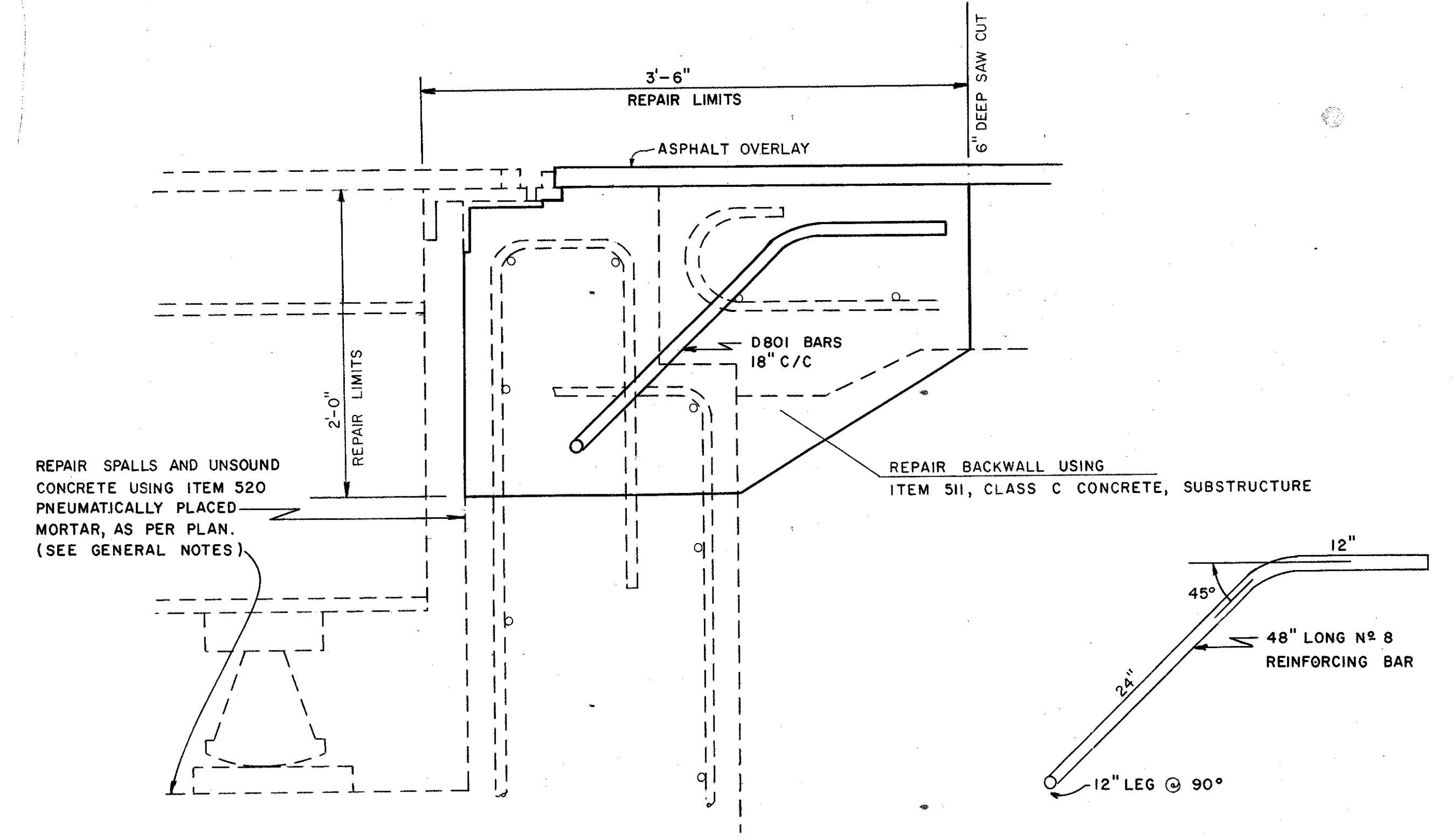
CUY-271-0629 & CUY-271-1390
**VERTICAL EXTENSION OF STRUCTURAL
 EXPANSION JOINTS, MODIFIED A, AS PER PLAN**
 SCALE 1/4" = 1'



**VERTICAL EXTENSION OF STRUCTURAL
 EXPANSION JOINTS, MODIFIED B, AS PER PLAN**
 SCALE 1/4" = 1'



MINOR BACKWALL REPAIR



MAJOR BACKWALL REPAIR

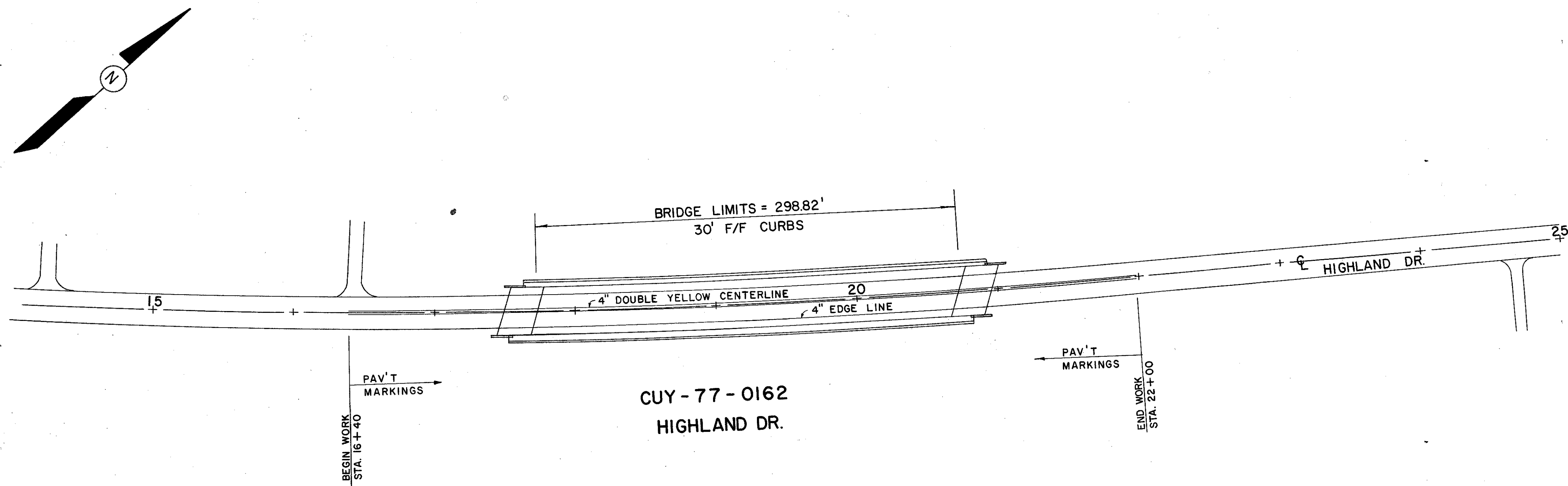
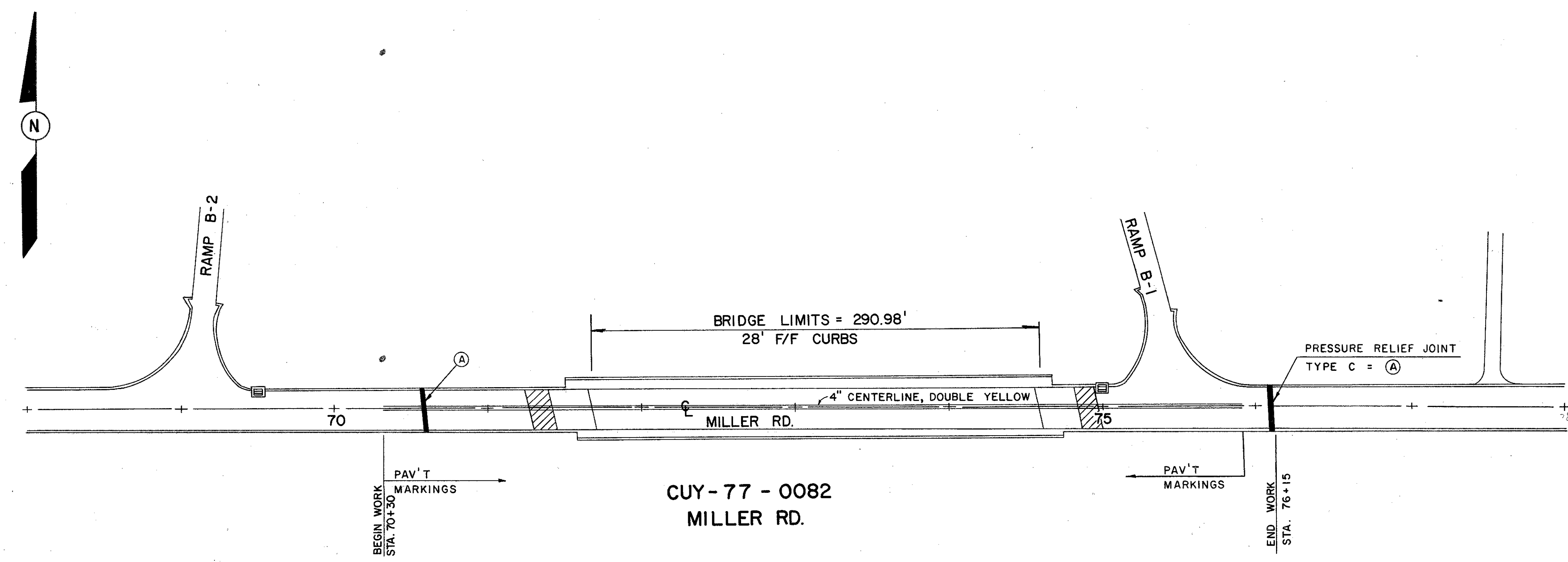
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FHWA REGION	STATE	PROJECT
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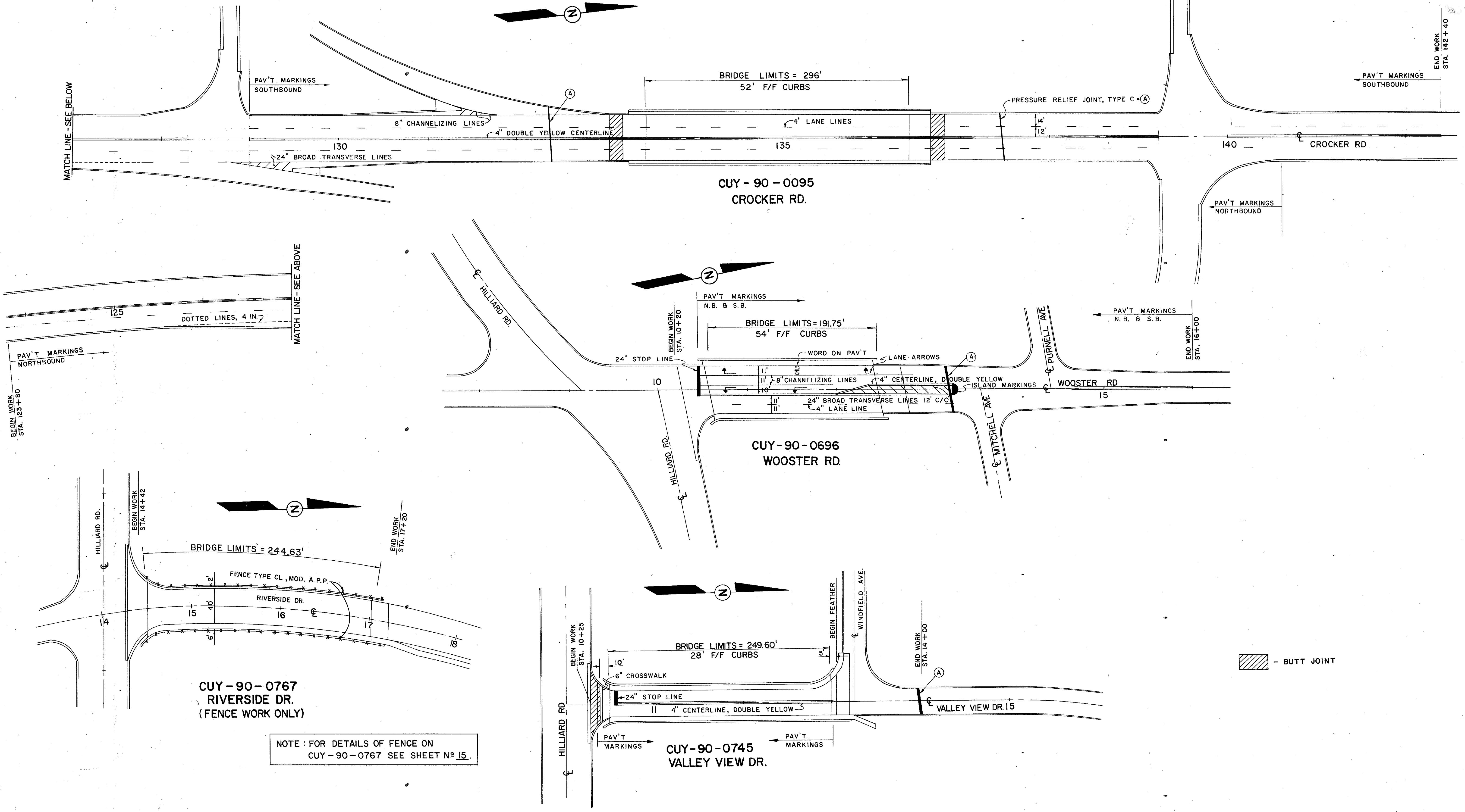
CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82 / 0.54
 CUY/LAK-90-0.95 / 7.67



- BUTT JOINT

FHWA REGION	STATE	PROJECT
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CUYAHOGA & LAKE COUNTIES
 CUY - 77 / 271 - 0.82 / 0.54
 CUY / LAK - 90 - 0.95 / 7.67

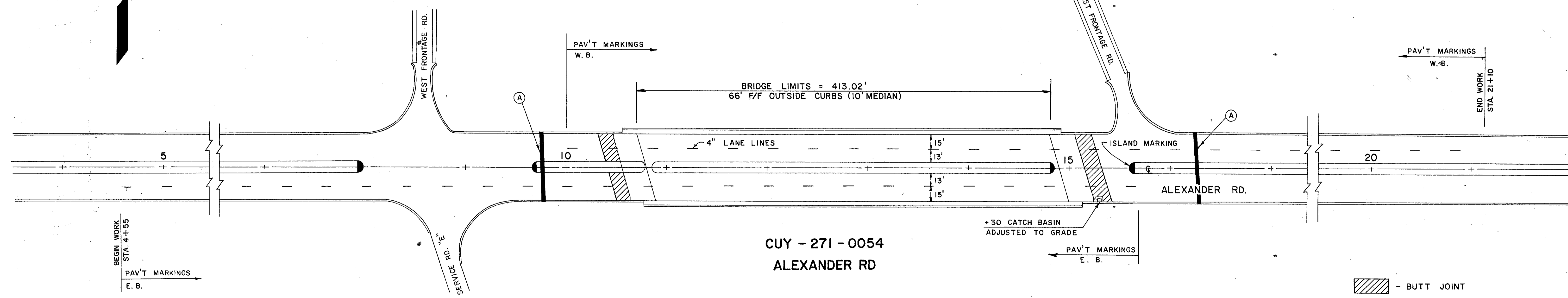
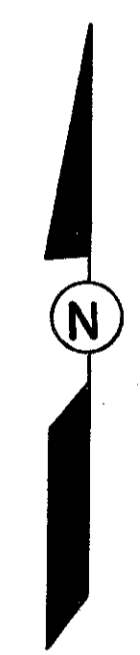
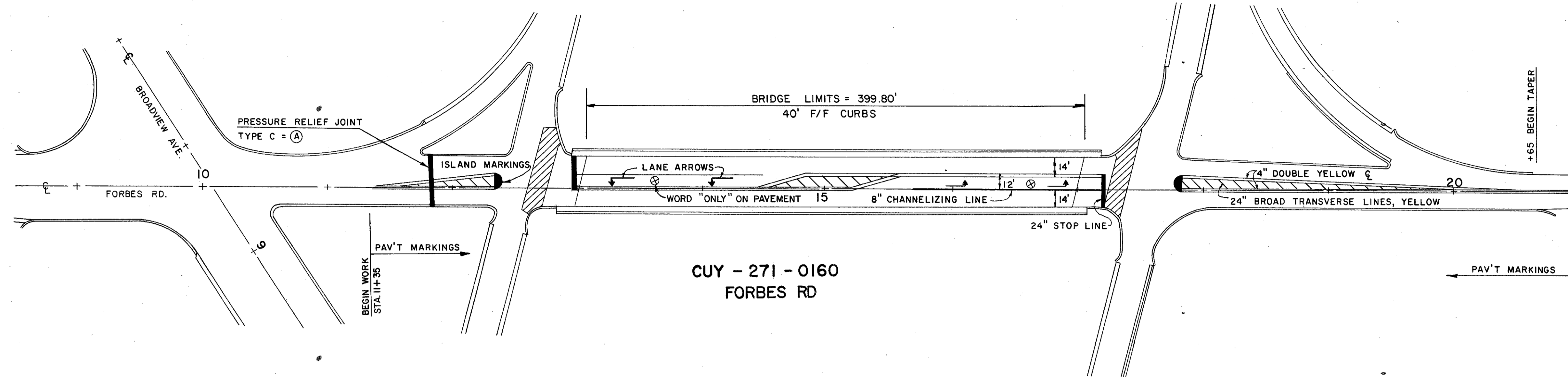
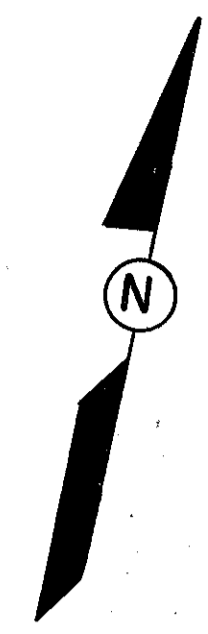


NOTE: FOR DETAILS OF FENCE ON
 CUY - 90 - 0767 SEE SHEET N^o 15.

FHWA REGION	STATE	PROJECT	
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CUYAHOGA & LAKE COUNTIES
 CUY - 77 / 271 - 0.82 / 0.54
 CUY / LAK - 90 - 0.95 / 7.67

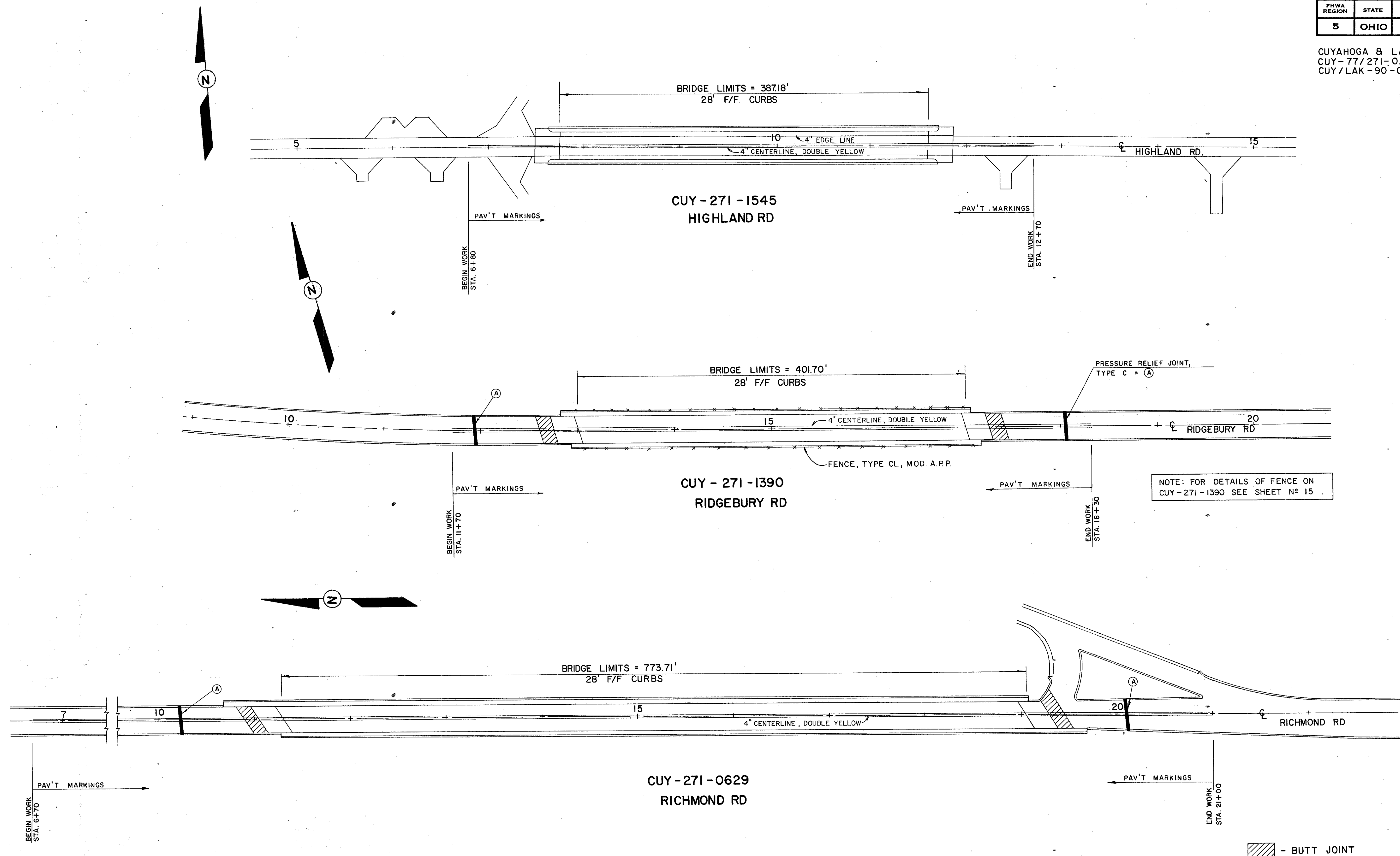


- BUTT JOINT

FHWA REGION	STATE	PROJECT
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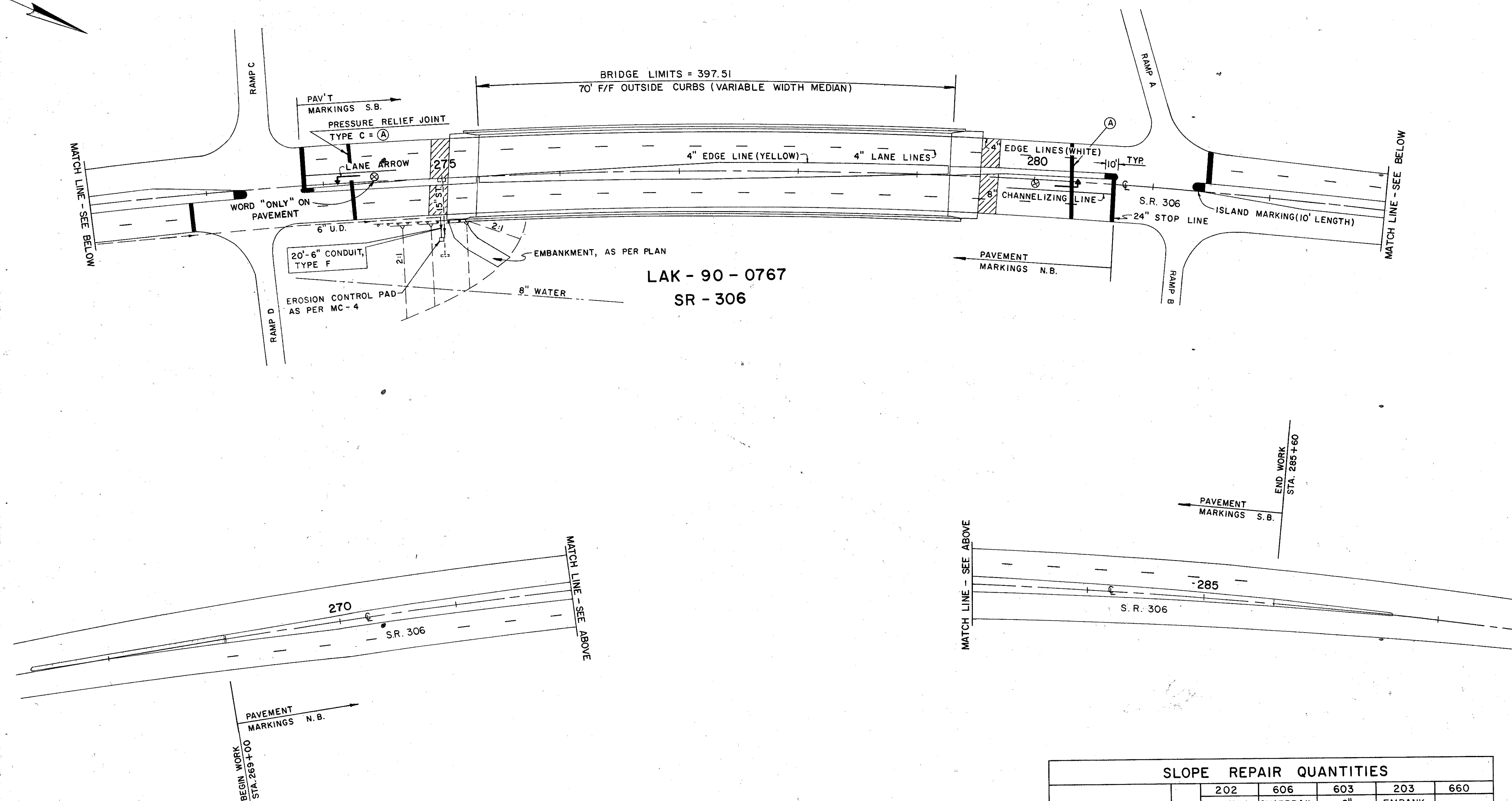
CUYAHOGA & LAKE COUNTIES
 CUY - 77 / 271 - 0.82 / 0.54
 CUY / LAK - 90 - 0.95 / 7.67



NOTE: FOR DETAILS OF FENCE ON
 CUY-271-1390 SEE SHEET N° 15

▨ - BUTT JOINT

COMPUTED BY: D.A.S. 6/79
 CHECKED BY: F.A. 6/79



LAK - 90 - 0767
 SR - 306

NOTE:
 AT STA. 275+00 ± R, CONTRACTOR SHALL OUTLET EXISTING 6" UNDERDRAIN USING 20' OF 6" CONDUIT, TYPE "F".
 FOR THE SLOPE EROSION AND UNDERMINED APPROACH SLAB, AN ESTIMATED QUANTITY OF ITEM 203 - EMBANKMENT, AS PER PLAN HAS BEEN PROVIDED FOR IN THE PLANS. THE SLOPE SHALL BE RESTORED TO ORIGINAL GRADE AS DETERMINED BY THE ENGINEER.
 THE ABOVE MENTIONED WORK SHALL BE PERFORMED PRIOR TO ANY DECK RECONSTRUCTION WORK.

SLOPE REPAIR QUANTITIES							
STATIONS		SIDE	202	606	603	203	660
			GUARDRAIL REMOVED FOR REUSE	GUARDRAIL REBUILT, TYPE 5, AS PER PLAN	6" CONDUIT, TYPE F	EMBANKMENT, AS PER PLAN	SODDING
FROM	TO		L.F.	L.F.	L.F.	C.Y.	S.Y.
274+93	275+18		25	25			
	274+98				20		
275+00	275+50					240	100
TOTALS			25	25	20	240	100

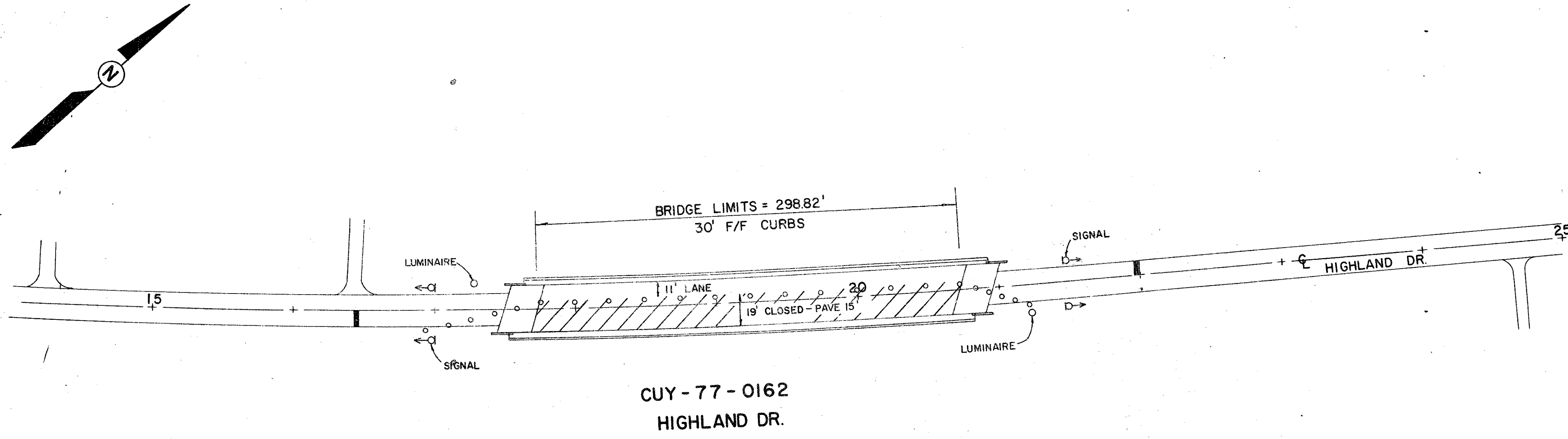
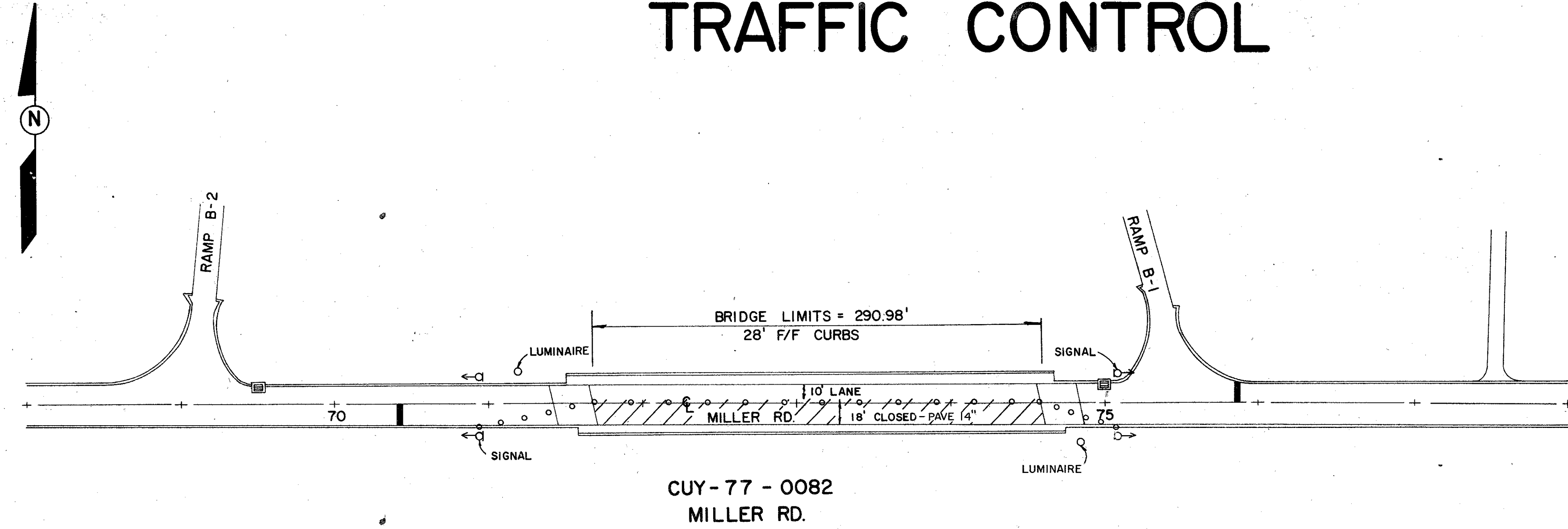
▨ - BUTT JOINT

FHWA REGION	STATE	PROJECT	
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TRAFFIC CONTROL

CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/0.54
 CUY/LAK-90-0.95/7.67



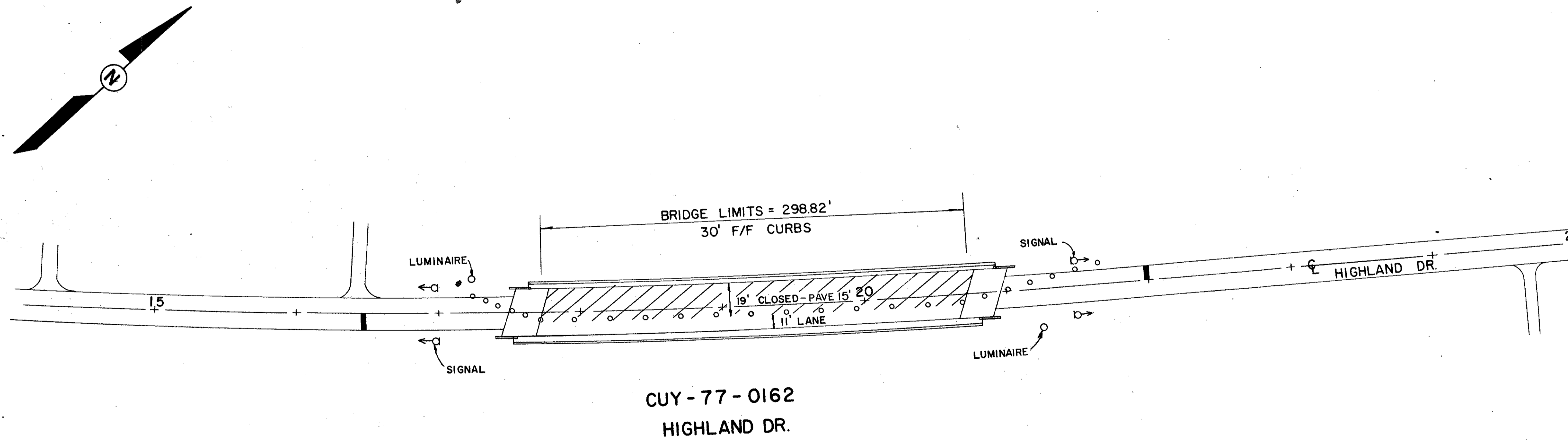
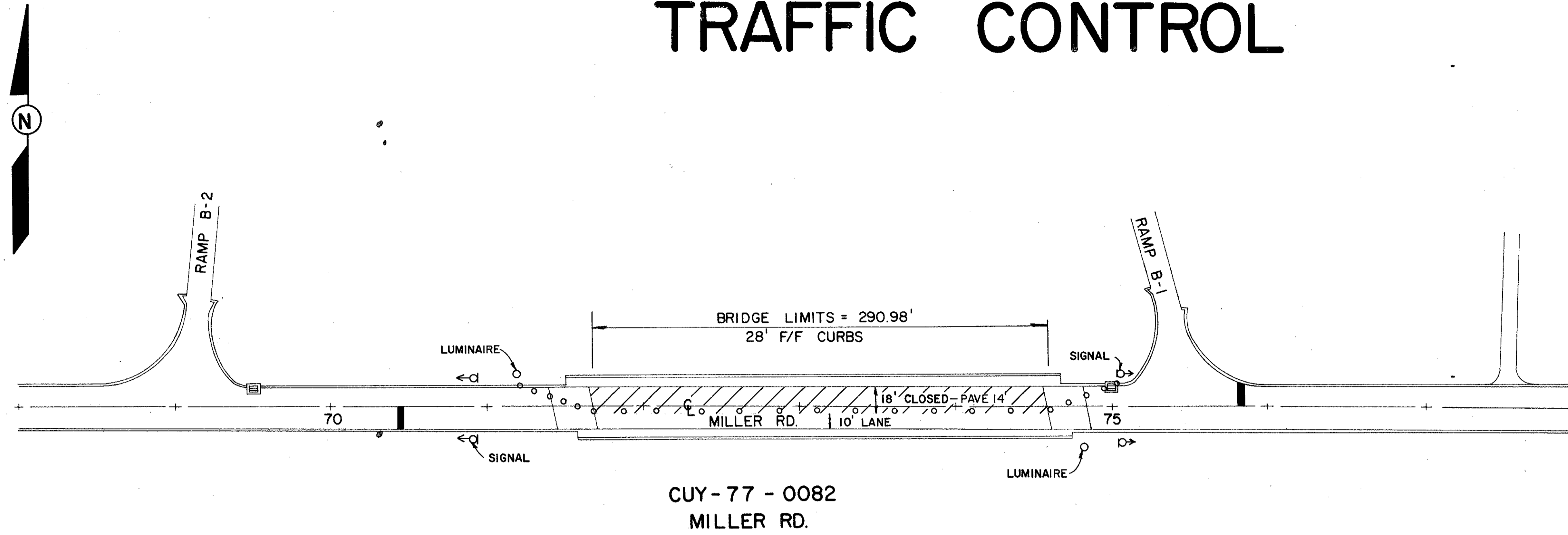
NOTE: FOR ADDITIONAL CLOSURE DETAILS SEE SHEET No. 34

FHWA REGION	STATE	PROJECT	
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TRAFFIC CONTROL

CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/0.54
 CUY/LAK-90-0.95/7.67



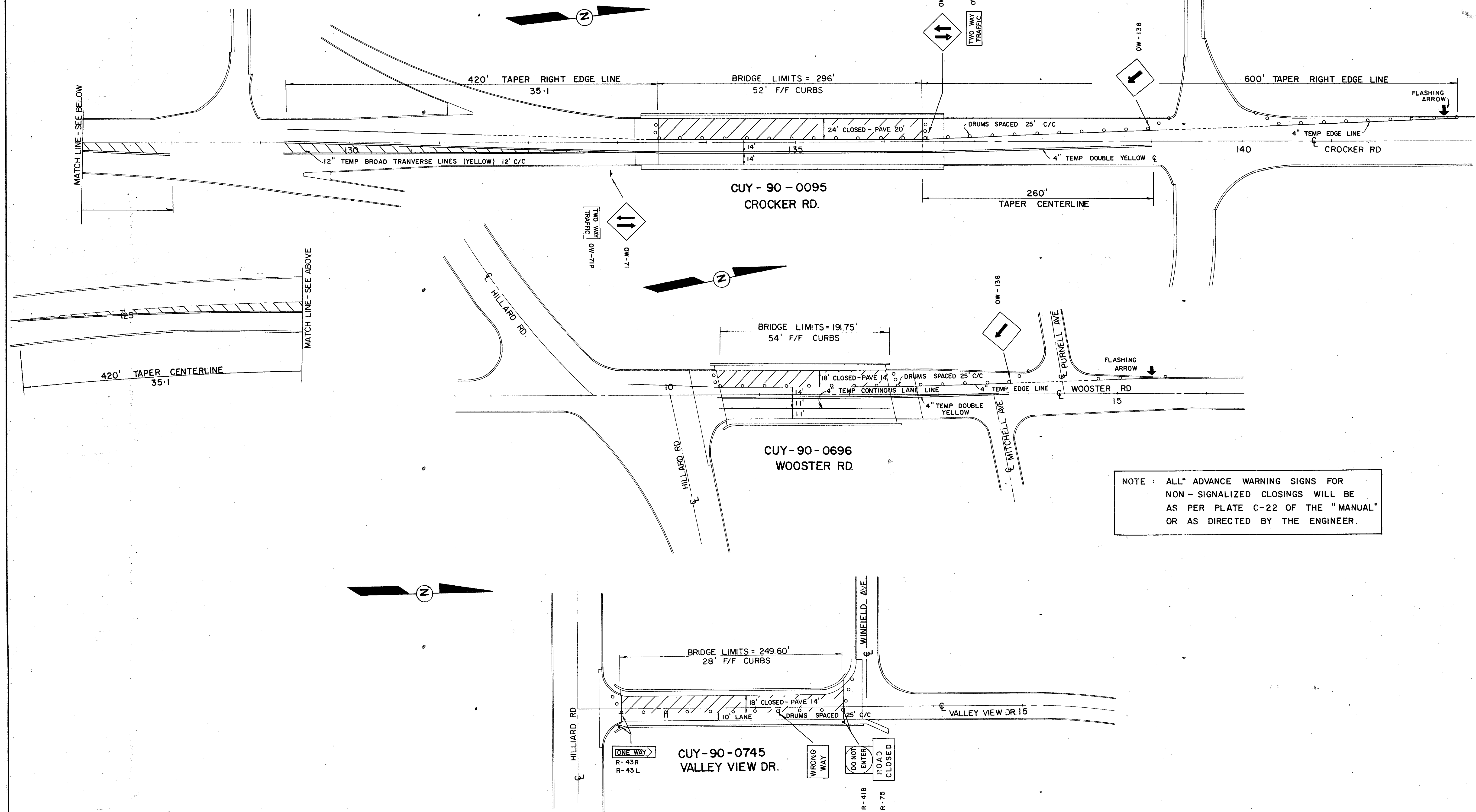
NOTE: FOR ADDITIONAL CLOSURE DETAILS SEE SHEET No. 34

FHWA REGION	STATE	PROJECT
5	OHIO	

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TRAFFIC CONTROL

CUYAHOGA & LAKE COUNTIES
 CUY - 77 / 271 - 0.82 / 0.54
 CUY / LAK - 90 - 0.95 / 7.67



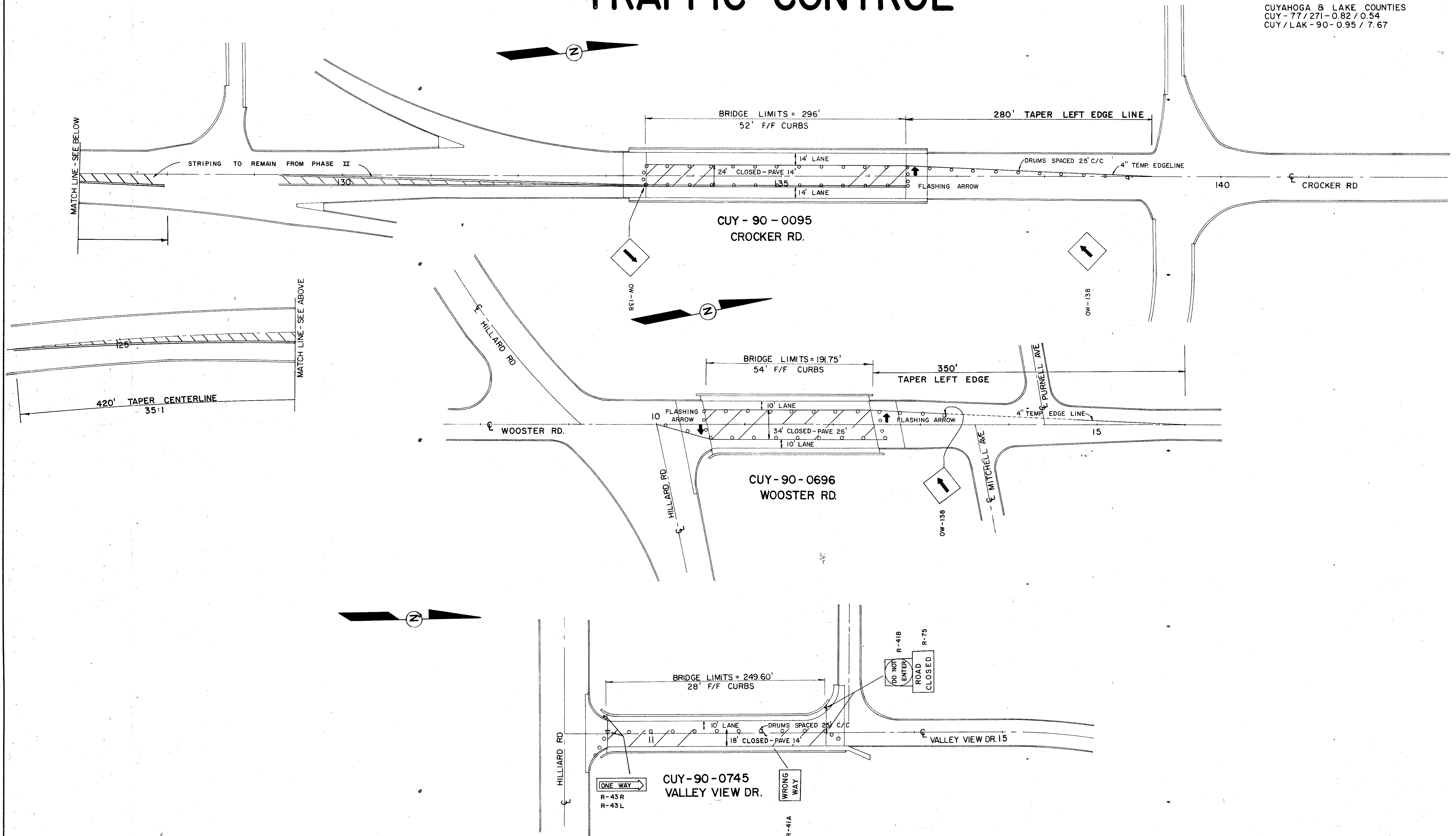
NOTE: ALL ADVANCE WARNING SIGNS FOR NON-SIGNALIZED CLOSINGS WILL BE AS PER PLATE C-22 OF THE "MANUAL" OR AS DIRECTED BY THE ENGINEER.

TRAFFIC CONTROL

FHWA REGION	STATE	PROJECT	
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CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/0.54
 CUY/LAK-90-0.95/7.67

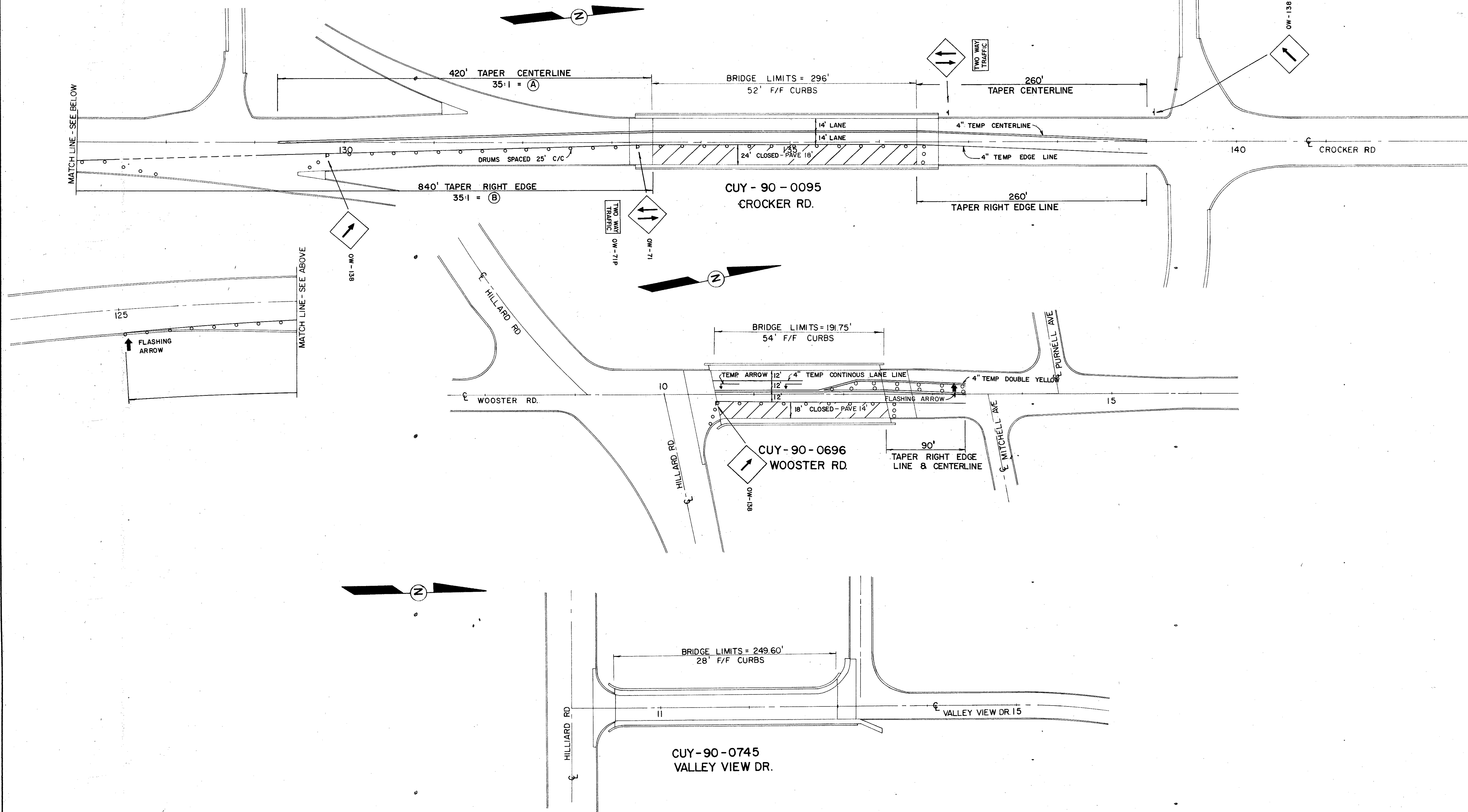


TRAFFIC CONTROL

FHWA REGION	STATE	PROJECT
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CUYAHOGA & LAKE COUNTIES
 CUY - 77 / 271 - 0.82 / 0.54
 CUY / LAK - 90 - 0.95 / 7.67

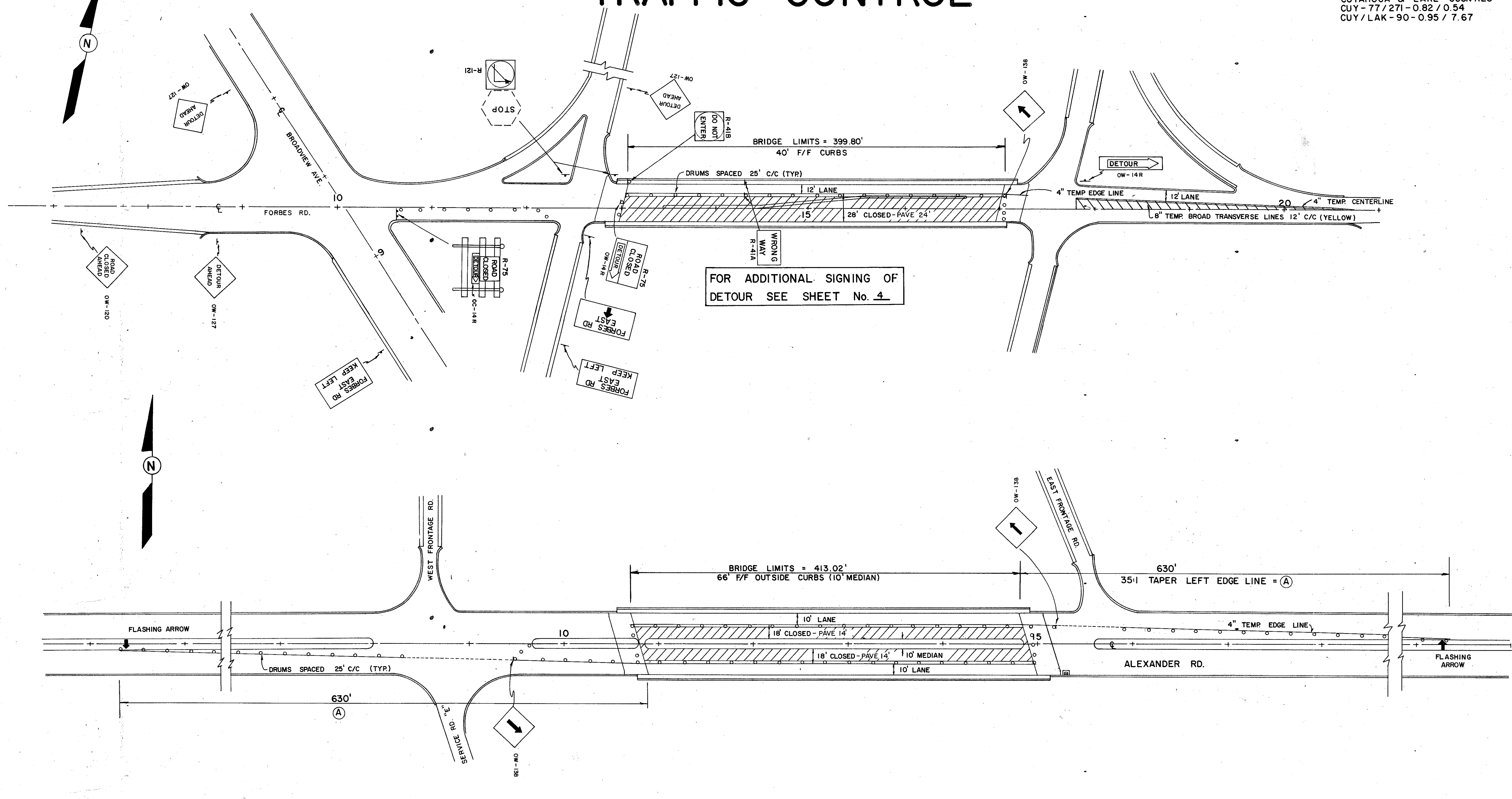


FHWA REGION	STATE	PROJECT
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CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/0.54
 CUY/LAK-90-0.95/7.67

TRAFFIC CONTROL

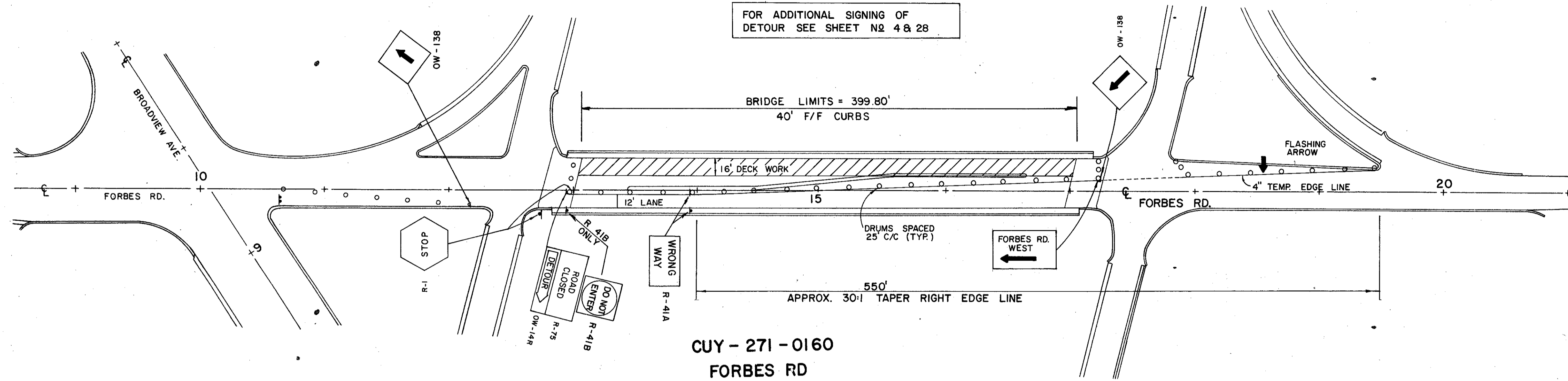
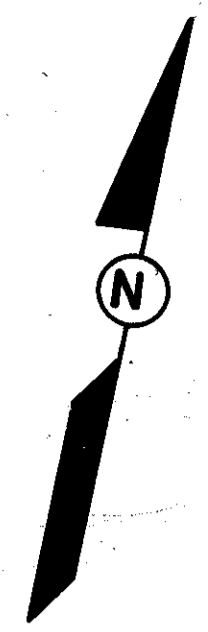


TRAFFIC CONTROL

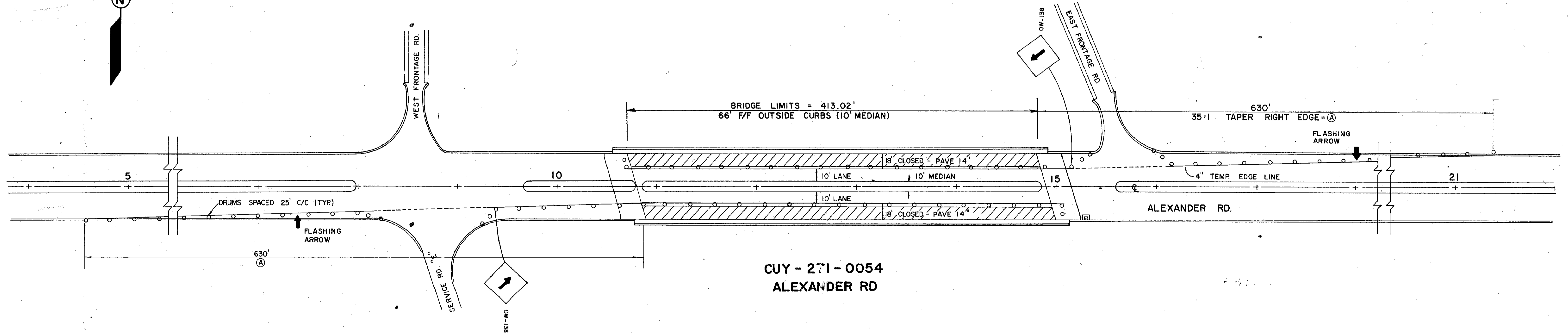
FHWA REGION	STATE	PROJECT
5	OHIO	

29
34

CUYAHOGA & LAKE COUNTIES
CUY-77/271-0.82 / 0.54
CUY/LAK-90-0.95 / 7.67



CUY - 271 - 0160
FORBES RD



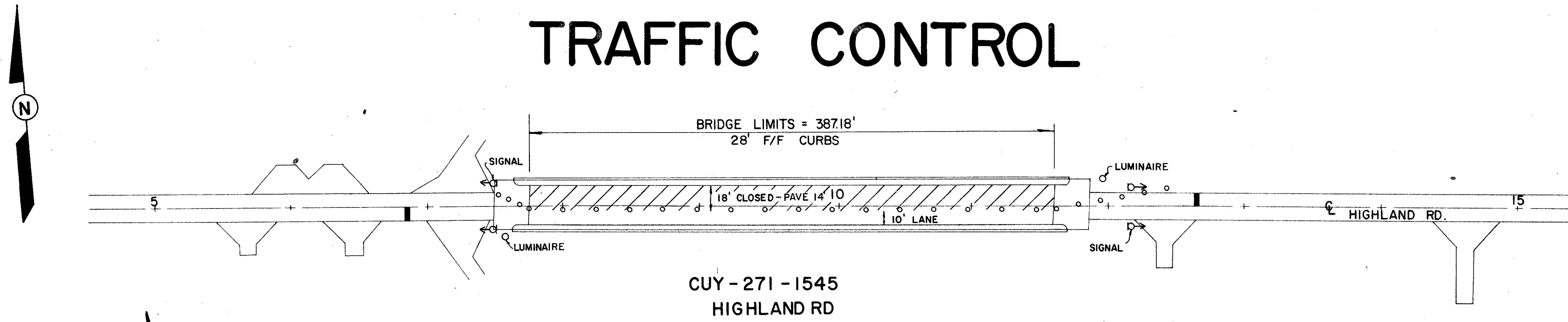
CUY - 271 - 0054
ALEXANDER RD

TRAFFIC CONTROL

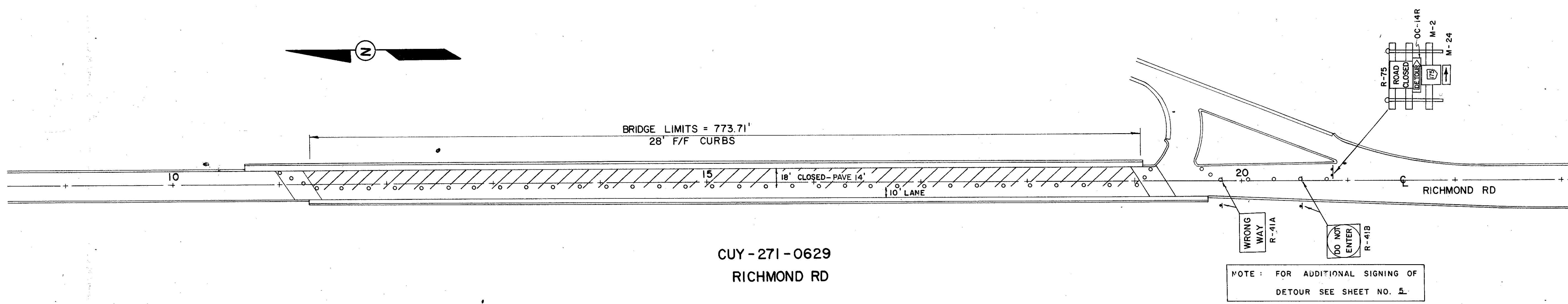
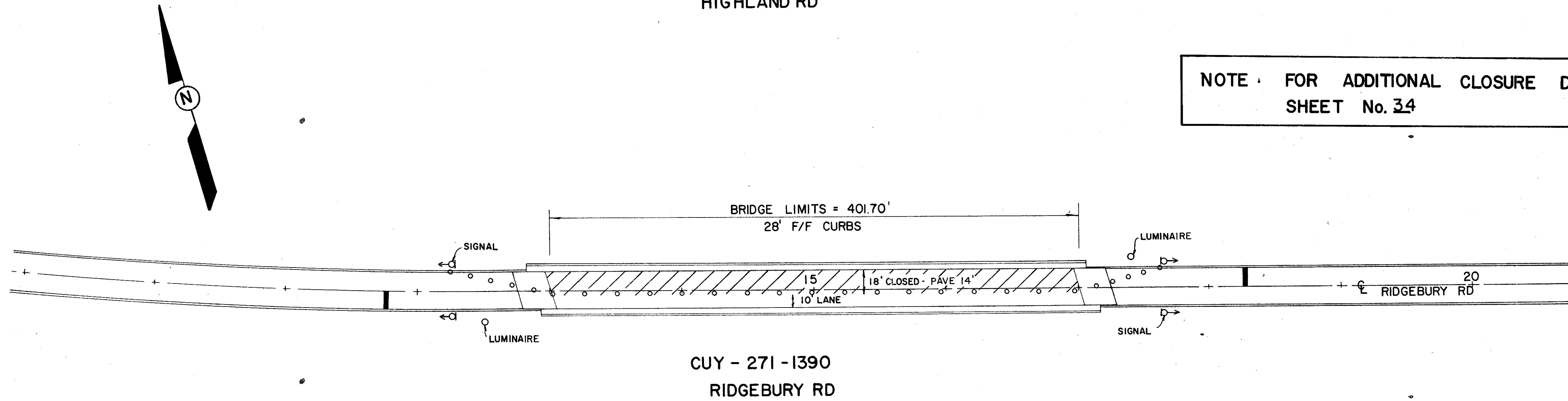
FHWA REGION	STATE	PROJECT
5	OHIO	

30
34

CUYAHOGA & LAKE COUNTIES
 CUY - 77 / 271 - 0.82 / 0.54
 CUY / LAK - 90 - 0.95 / 7.67



NOTE: FOR ADDITIONAL CLOSURE DETAILS SEE SHEET No. 34

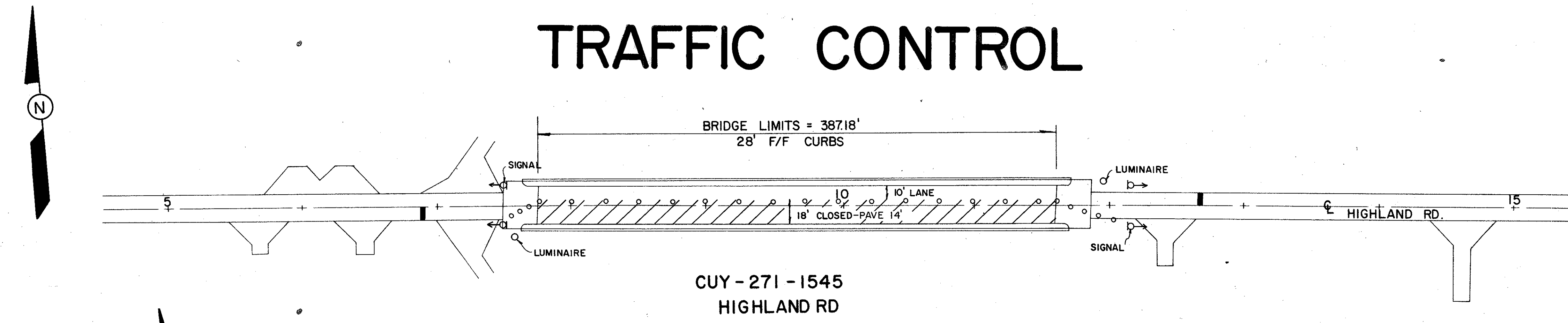


TRAFFIC CONTROL

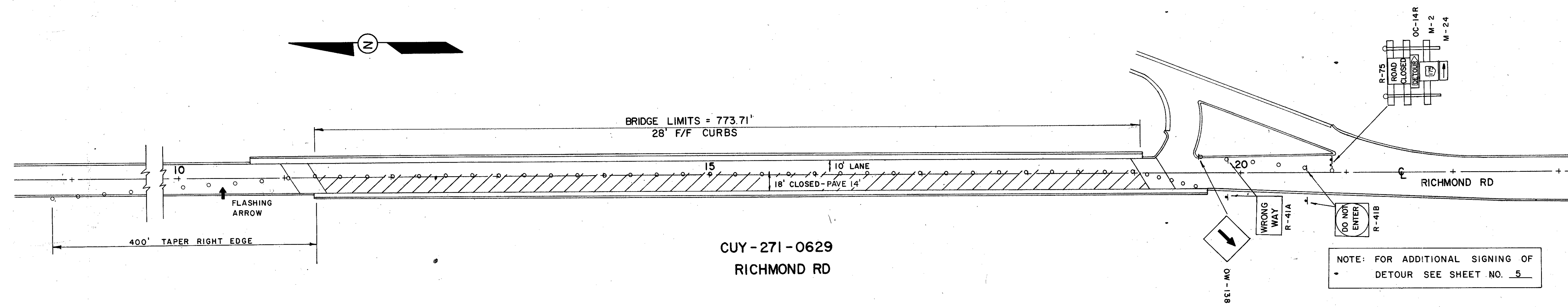
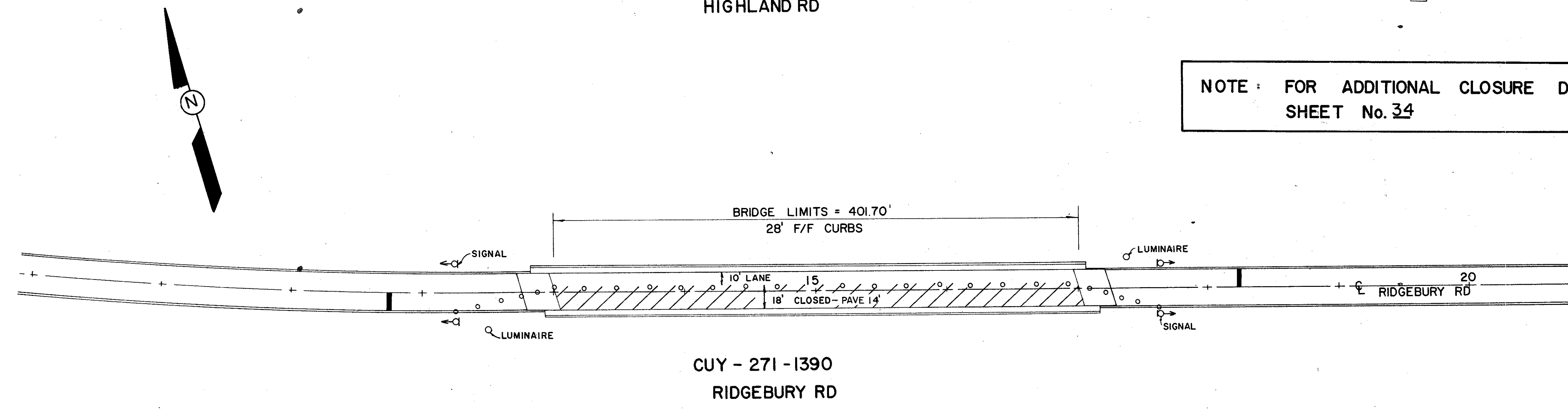
FHWA REGION	STATE	PROJECT	
5	OHIO		

31
34

CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/0.54
 CUY/LAK-90-0.95/7.67



NOTE: FOR ADDITIONAL CLOSURE DETAILS SEE SHEET No. 34

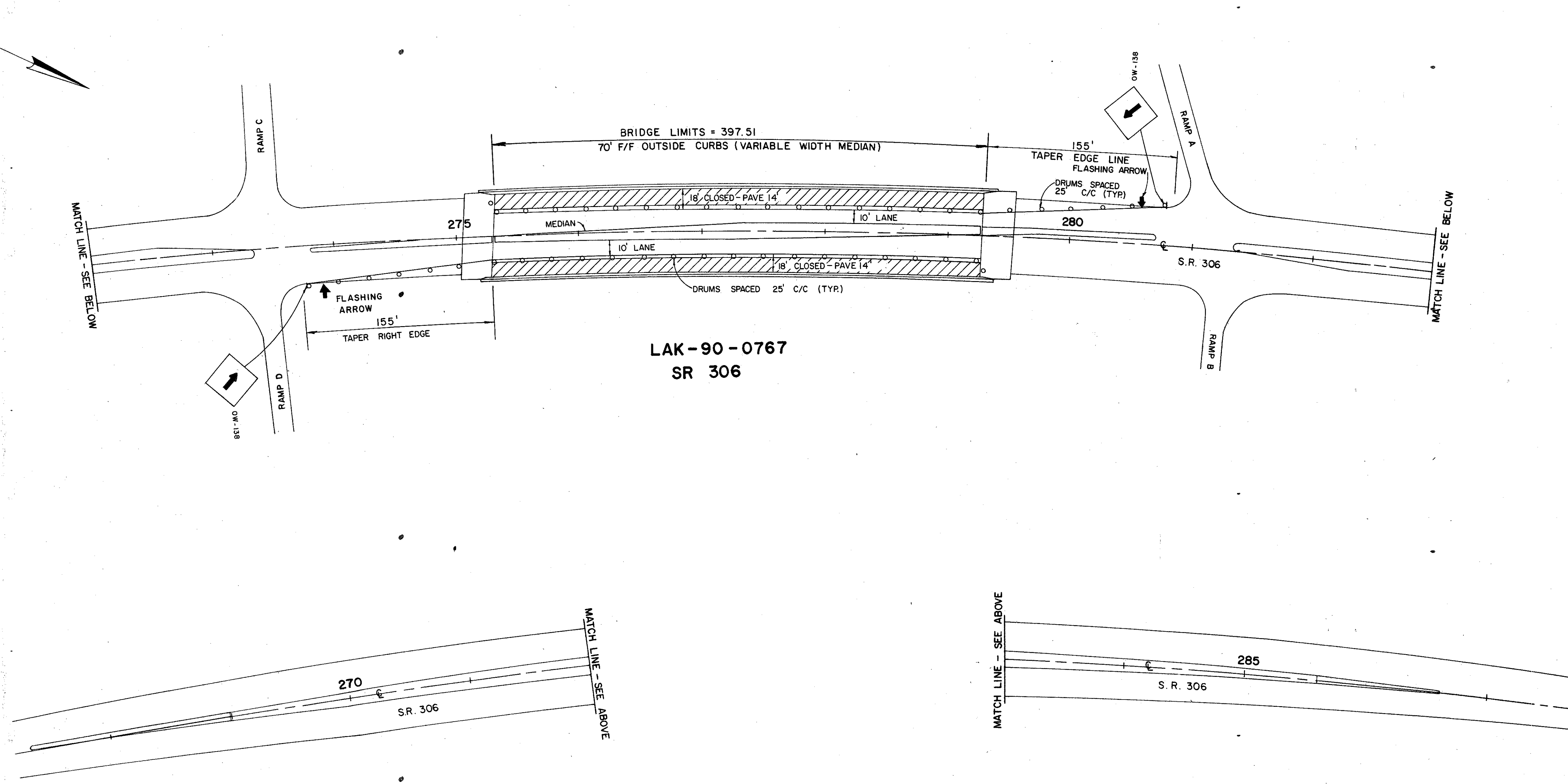


TRAFFIC CONTROL

FHWA REGION	STATE	PROJECT
5	OHIO	

32
34

CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/0.54
 CUY/LAK-90-0.95/7.67



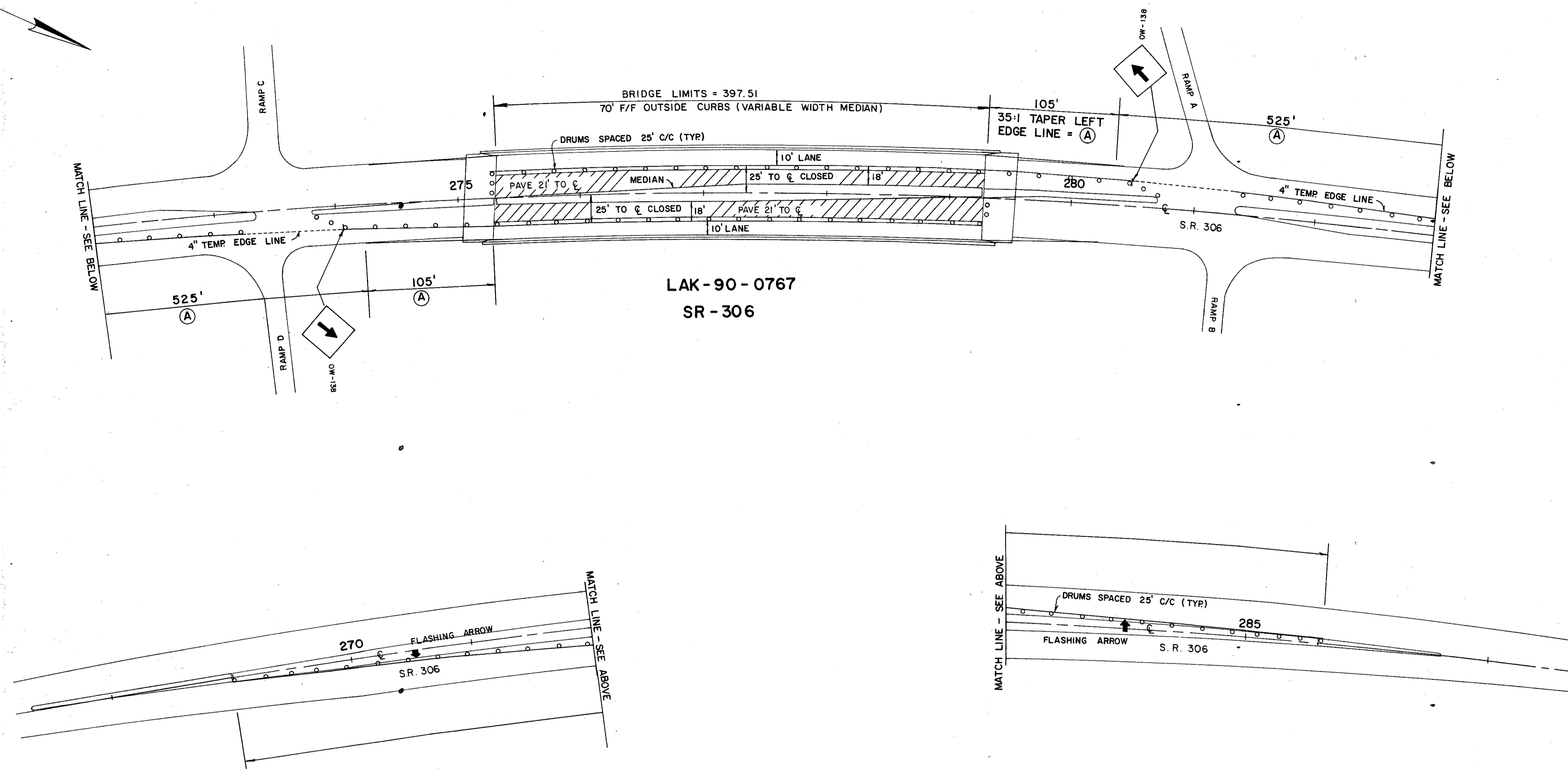
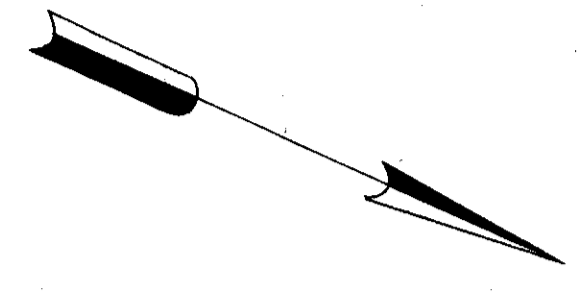
LAK-90-0767
 SR 306

TRAFFIC CONTROL

FHWA REGION	STATE	PROJECT
5	OHIO	

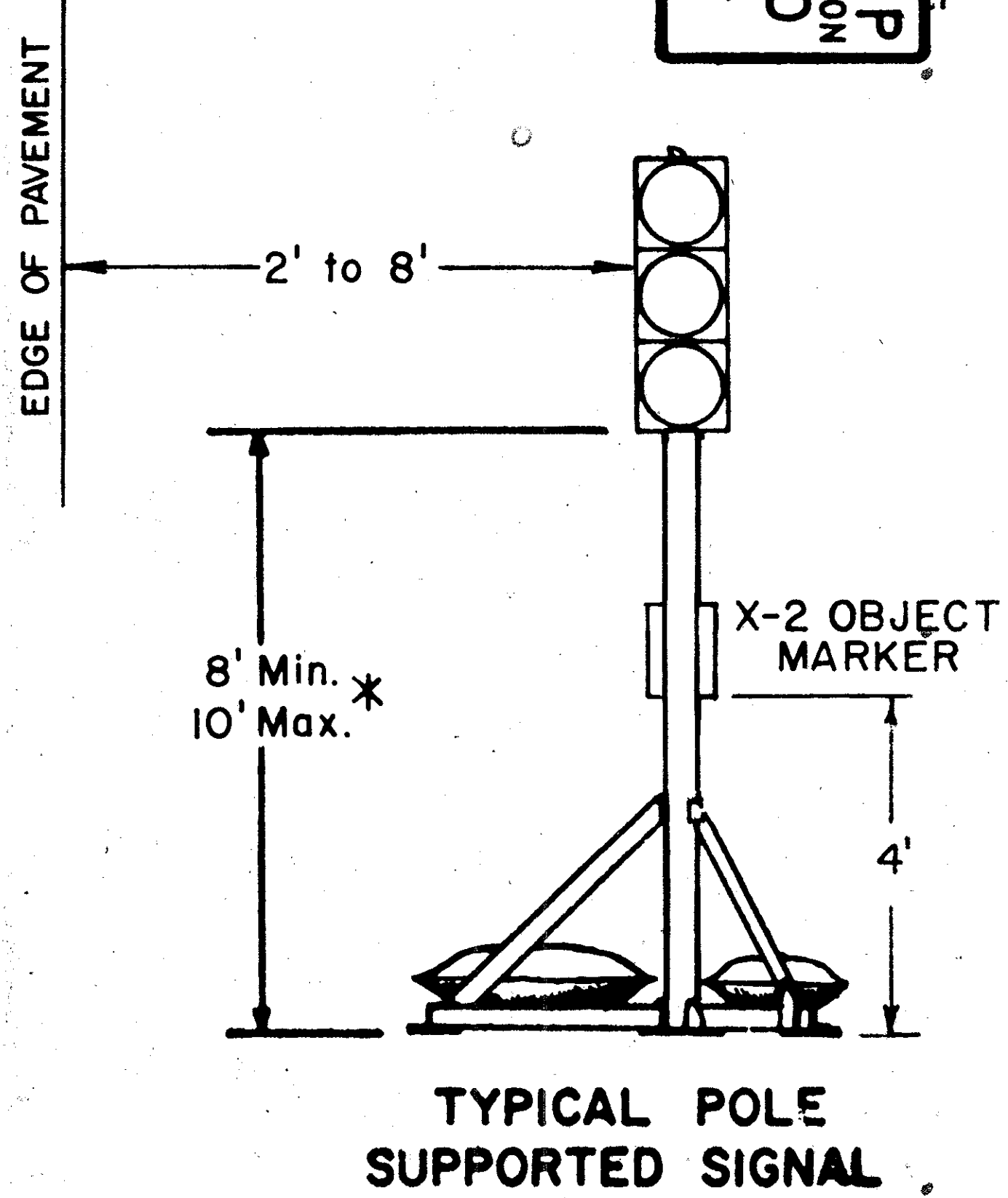
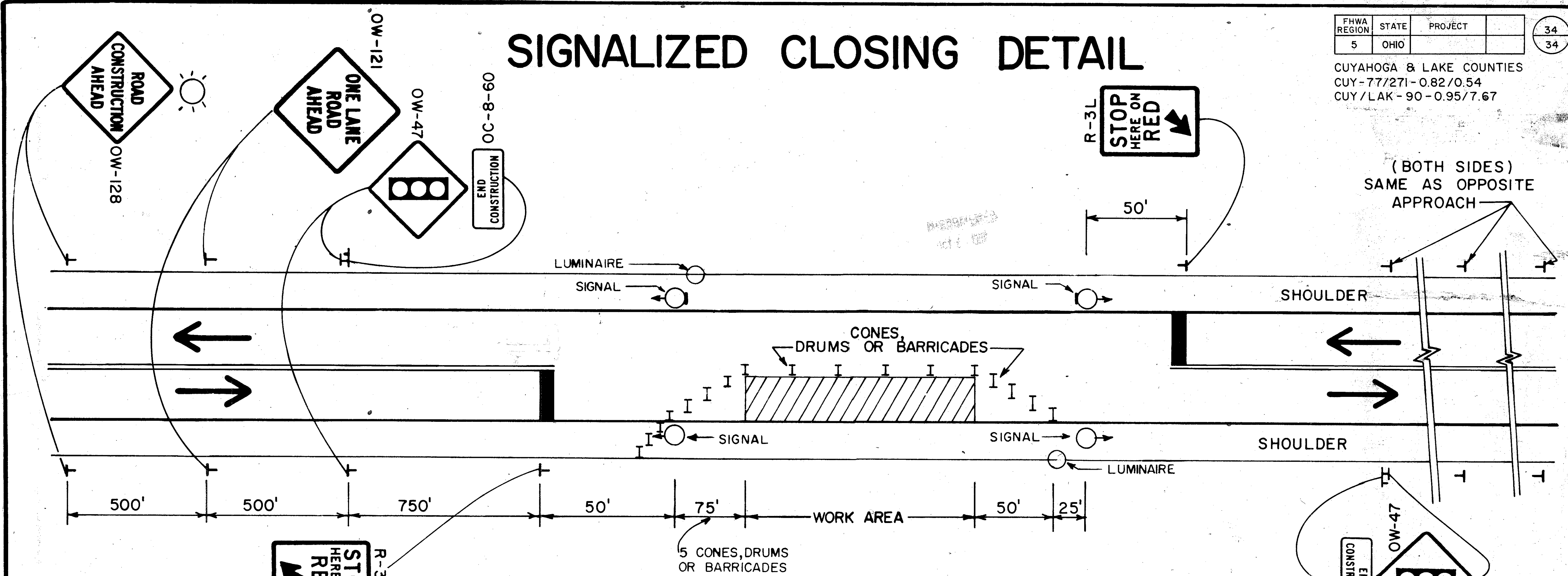
33
34

CUYAHOGA & LAKE COUNTIES
 CUY-77/271-0.82/0.54
 CUY/LAK-90-0.95/7.67



LAK-90-0767
 SR-306

SIGNALIZED CLOSING DETAIL



GENERAL NOTES

1. THE MAXIMUM LENGTH OF WORK AREA FOR ONE WAY TRAFFIC SIGNAL CONTROL IS DETERMINED BY THE CAPACITY REQUIRED TO HANDLE THE PEAK HOUR DEMAND. PRACTICAL MAXIMUM LENGTH IS 400 FEET. SIGNAL TIMING SHALL BE APPROVED BY THE ENGINEER.
2. SIGNALS SHALL BE INSTALLED AND OPERATED IN ACCORDANCE WITH THE REQUIREMENTS OF PART 6 OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
3. CONES, DRUMS, OR BARRICADES SHALL BE SPACED AT 50 FOOT CENTERS WITHIN THE WORK AREA. CONES MAY BE SUBSTITUTED FOR BARRICADES OR STEEL DRUMS FOR THE LANE CLOSURES DURING DAYLIGHT HOURS ONLY.
4. ADEQUATE AREA ILLUMINATION TO CLEARLY IDENTIFY THE BEGINNING OF THE TRANSITION AT NIGHT SHALL BE PROVIDED BY USE OF A 175 WATT MINIMUM LUMINAIRE LOCATED ADJACENT TO ONE SIGNAL FOR EACH DIRECTION OF TRAFFIC AS SHOWN ABOVE.
5. TEMPORARY STOP LINES SHALL BE INSTALLED. EXISTING PAVEMENT MARKING BETWEEN THE WORK AREA AND THE STOP LINES SHALL BE REMOVED OR COVERED.
6. THE TYPE B HIGH INTENSITY BARRICADE WARNING LIGHT SHOWN ON THE "ROAD CONSTRUCTION AHEAD" SIGN IS REQUIRED WHENEVER NIGHT LANE CLOSURE IS NECESSARY.
7. TYPE C STEADY BURNING BARRICADE WARNING LIGHTS SHALL BE ERECTED ON DRUMS OR BARRICADES FOR NIGHT LANE CLOSURES. MAXIMUM SPACING SHALL BE 25' CENTER TO CENTER IN ADVANCE OF THE WORK AREA AND 25' CENTER TO CENTER WITHIN THE WORK AREA.

* Above grade of roadway centerline.