

3711(90) Ross

ROS-23-1257 L & R	OHIO	1
RUS-35-2036 L & R	HWA REGION 5	11
	FEDERAL PROJECT	

BR-57-89

STATE OF OHIO

DEPARTMENT OF TRANSPORTATION

ROS-23-1257 L & R ROS-35-2036 L & R

SCIOTO TOWNSHIP ROSS COUNTY BRIDGE REPAIR

1989 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 and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

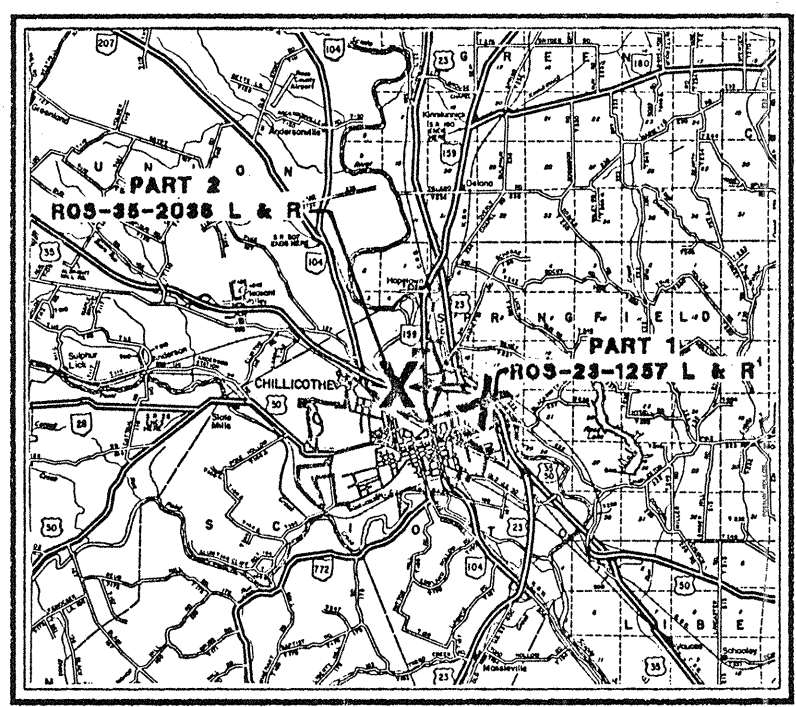
391

CONVENTIONAL SIGNS

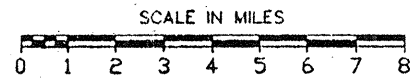
County Line	-----	Limited Access (only)	-----LA-----
Township Line	-----	Right of Way (only)	-----RW-----
Section Line	-----	Limited Access & Right of Way	-----LA & RW-----
Corporation Line	----- or -----	Existing Right of Way	-----
Fence Line(exist.)	---x---(prop.)---x---	Property Line	---(in exist. fence)---x---
Center Line	----- ₃₅₂ ----- ₃₅₃ -----	Railroad	----- or -----
Trees	○, Stumps	⋈ (to be removed)	⊗
Utility Poles:	Telephone ⌀, Power ⌀, Light ⌀	Guardrail(exist.)	o-o-o-o (prop.)

INDEX OF SHEETS

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LOCATION MAP



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

LINE DATA RT. 23

Begin Project	Sta. 663+69.60
End Project	Sta. 676+80.06
Net Length of Project	1310.46 Lin. Ft. or 0.249 Miles
Net Length of Work	1310.46 Lin. Ft. or 0.249 Miles

LINE DATA RT 35

Begin Project	Sta. 1074+83.50
End Project	Sta. 1086+66.50
Net Length of Project	1183.00 Lin. Ft. or 0.224 Miles
Net Length of Work	1183.00 Lin. Ft. or 0.224 Miles

UNDERGROUND UTILITIES

TWO WORKING DAYS BEFORE YOU DIG
 CALL: 800-362-2764 (TOLL FREE)
 OHIO UTILITIES PROTECTION SERVICE
 NON-MEMBERS MUST BE CALLED DIRECTLY

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS

BP-5	10-1-87				
TC-41.20	3-26-79				
TC-42.20	3-26-79				
TC-52.20	4-3-79				
MT-95.30	10-10-88				
MT-99.10	11-14-86				

SUPPLEMENTAL SPECIFICATIONS	

Approved Will C. Swearingin
 Date 12-6-87 District Deputy Director of Transportation

Approved B. D. Hanfilanni P.E.
 Date 12-14-89 Engineer, Bureau of Bridges and Structural Design

Approved James B. Longenecker
 Date 2-9-90 Deputy Director, Operations

Approved Bruce B. Hurst
 Date 2-9-90 Director, Department of Transportation

DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED:	DATE
DIVISION ADMINISTRATOR	

Plan Prepared By:
 DISTRICT NO. 9
 OHIO DEPARTMENT OF
 TRANSPORTATION

Project: _____
 Date of Letting _____ 19____, Contract No. _____

04-24-90

391(90) Ross

GENERAL SUMMARY AND CALCULATIONS

CALC: LAW	DATE: 11/6/89	FHWA REGION	STATE	PROJECT
CHKD: DAB	DATE: 11/7/89	5	OHIO	

BR-57-89
ROSS COUNTY
ROS-23-1257 L & R
ROS-35-2036 L & R

ITEM	BRIDGE NUMBER				PARTICIPATION			ITEM	ITEM EXT.	GRAND TOTAL	UNIT	DESCRIPTION
	ROS-23-1257L	ROS-23-1257R	ROS-35-2036L	ROS-35-2036R								
404			109.5	109.5				404		219	CU. YD	ASPHALT CONCRETE, AC-20, WITH VERGLIMIT ADDITIVE & BONIFIBERS (See Proposal Notes)
407			295.7	295.7				407		789	GAL.	TACK COAT
516	98.64							516		99	LIN. FT	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS, TYPE A, AS PER PLAN
516	98.64							516		99	LIN. FT	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS, TYPE B, AS PER PLAN
516			146.20					516		146	LIN. FT	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS, TYPE C, AS PER PLAN
516				146.20				516		146	LIN. FT	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS, TYPE D, AS PER PLAN
SPECIAL		89.39						SPECIAL		90	LIN. FT	SAWING AND SEALING OF EXPANSION JOINTS USING POLYMER-MODIFIED ASPHALT BINDER, TYPE A, AS PER PLAN
SPECIAL		89.39						SPECIAL		90	LIN. FT	SAWING AND SEALING OF EXPANSION JOINTS USING POLYMER-MODIFIED ASPHALT BINDER, TYPE B, AS PER PLAN
SPECIAL			3,943	3,943				SPECIAL		7,886	SQ. YD	PLANING BITUMINOUS PAVEMENT WITHOUT HEAT, 1" AVG.
SPECIAL	2,657	2,657	2,438	2,438				SPECIAL		12,407	SQ. YD	SEALING OF CONCRETE SURFACES (EPOXY), AS PER PLAN (See Proposal Note)
614								614		LUMP	LUMP	MAINTAINING TRAFFIC
614								614		4	EACH	WORK ZONE MARKING SIGNS
614								614		0.44	MILE	TEMPORARY LANE LINES, CLASS 2, 947.03 TYPE C
621			.22	.22				621		0.44	MILE	LANE LINE
621			.45	.45				621		.90	MILE	EDGE LINES
623								623		LUMP	LUMP	CONSTRUCTION LAYOUT STAKES
624								624		LUMP	LUMP	MOBILIZATION

ROS-23-1257 L & R

LENGTH = 1310.46 FEET
WIDTH (f/f curb) = 42.0 FEET
WIDTH (out to out Deck) = 48.5 FEET

ITEM 516 - STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN
TOTAL LENGTH OF EACH TYPE FOR ROS-23-1257L = $[(42.0' \times (1/\cos 20')) + (2 \times 1'2'')] + [48.5' \times (1/\cos 20')]$
= [47.03'] + [51.61'] = 98.64 FEET

ITEM SPECIAL - SAWING AND SEALING OF EXPANSION JOINTS USING POLYMER-MODIFIED ASPHALT BINDER, AS PER PLAN
TOTAL LENGTH OF EACH TYPE FOR ROS-23-1257R = $2 \times [42.5' \times (1/\cos 20')] = 2 \times [44.695'] = 89.39$ FEET

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY), AS PER PLAN
TOTAL FOR EACH BRIDGE = $2 \times [1310.46' \times 7.75' \times 1/9] = 2 \times [1128.45] = 2256.9$ SQ. YDS. (USE 2257 SQ. YDS.)
PLUS AN ESTIMATED QUANTITY OF 200 SQ. YDS. FOR EACH ABUTMENTS = TOTAL OF 2,657 SQ. YDS.

ITEM 516 STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS, AS PER PLAN

- TYPE A - SYSTEM AS MANUFACTURED BY E-POXY INDUSTRIES, INC.
- TYPE B - SYSTEM AS MANUFACTURED BY STRUCTURAL ACCESSORIES, INCORPORATED
- TYPE C - SYSTEM AS MANUFACTURED BY D. S. BROWN COMPANY
- TYPE D - SYSTEM AS MANUFACTURED BY WATSON-BOWMAN & ACME CORPORATION

ROS-35-2036 L & R

LENGTH = 1183.00 FEET
WIDTH (f/f curb) = 30.0 FEET
WIDTH (out to out Deck) = 36.5 FEET
DECK AREA = $[1183.00 \text{ FT.} \times 30.0 \text{ FT.}] \times 1/9 = 3,943$ SQ. YDS.

ITEM 404 - ASPHALT CONCRETE, AC-20, WITH VERGLIMIT ADDITIVE & BONIFIBERS
TOTAL FOR EACH BRIDGE = $3,943 \text{ SQ. YDS.} \times 1" \times 1/36 = 109.5$ CU. YDS.

ITEM 407 - TACK COAT
TOTAL FOR EACH BRIDGE = $3,943 \text{ SQ. YDS.} \times 0.075 \text{ GAL./SQ. YD.} = 295.7$ GALS.

ITEM 516 - STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEAL, AS PER PLAN
TOTAL LENGTH OF EACH TYPE OF JOINT = $2 \times \{[(30.0' \times (1/\cos 20')) + (2 \times 1'2'')] + [36.5' \times (1/\cos 20')]\}$
= $2 \times \{[34.26] + [38.84]\} = 146.20$ FEET

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY), AS PER PLAN
TOTAL FOR EACH BRIDGE = $2 \times [1183.00' \times 7.75' \times 1/9] = 2 \times [1018.69] = 2037.4$ SQ. YDS. (USE 2038 SQ. YDS.)
PLUS AN ESTIMATED QUANTITY OF 200 SQ. YDS. FOR EACH ABUTMENT = TOTAL OF 2,438 SQ. YDS.

ITEM 621 - LANE LINES
TOTAL FOR EACH BRIDGE = $1,183 \text{ FEET} / 5,280 \text{ FEET/MILE} = 0.22$ MILE

ITEM 621 - EDGE LINES
TOTAL FOR EACH BRIDGE = $2 \times [1,183 \text{ FEET} / 5280 \text{ FEET/MILE}] = 0.45$ MILE

GENERAL NOTES

FHWA REGION	STATE	PROJECT	
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ROSS COUNTY
 ROS-23-1257 L & R
 ROS-35-2036 L & R

BR-57-89

MAINTENANCE OF TRAFFIC:

Traffic shall be maintained at all times. The length of restricted traffic zones shall be kept to a minimum consistent with the specification requirements for protection of completed courses. During any period when necessary work interferes with the free flow of traffic as determined by the Engineer, the contractor shall furnish a flagman and "Flagman Ahead" signs.

All vehicles, equipment, materials, men and their activities are restricted at all times to the lane which is closed unless otherwise authorized by the Engineer.

All traffic control signs, devices, pavement markings, and operations used for the temporary maintenance and control of traffic shall be subject to the direction and control of the Engineer in respect to their conditions, locations, and times of application. Visible signs, devices, and pavement markings shall, at all times, reflect the conditions actually existing. Inappropriate signs or devices shall be removed or covered; inappropriate pavement marking shall be removed.

The following sequence of work is suggested:

1. Set up traffic control to maintain a minimum of one 12 ft. traffic lane in each direction and place 1" from the pavement on Bridge No. ROS-35-2036 L & R.
2. Place temporary lane lines before opening both lanes to traffic.
3. Set up traffic control to maintain a minimum of one 12 ft. traffic lane in each direction and place 1" of asphalt concrete with Verglimit additive & Bonifibers on Bridge No. ROS-35-2036 L & R.
4. Place permanent lane lines before opening both lanes to traffic.
5. Set up traffic control to maintain a minimum of one 12 ft. traffic lane in each direction and cut out and place joints as per plan on both Bridge No. ROS-23-1257 L & R and ROS-35-2036 L & R.
6. Set up and move traffic control as necessary to place the elastomeric strip seals in one piece while maintaining a minimum 12 ft. traffic lane in each direction on ROS-23-1257 L and ROS-35-2036 L & R.
7. Place permanent edge lines.

A quantity of 4 each work zone marking signs (4 each "NO EDGE LINES", OW-167, are carried to the general summary for use as Directed by the Engineer).

Except as may be specified elsewhere in the plans, payment for all labor, materials, and incidentals necessary to accomplish the temporary maintenance and control of traffic shall be made under the appropriate Lump Sum or Unit Bid Price for the estimated quantities enumerated below and carried to the General Summary.

614 MAINTAINING TRAFFIC	LUMP	LUMP
614 WORK ZONE MARKING SIGNS	4	EACH
614 TEMPORARY LANE LINES, CLASS 2, 947.03 TYPE C	0.44	MILE

EXISTING STRUCTURE VERIFICATION:

Details and dimensions shown on these plans pertaining to the existing structure have been obtained from field observations and measurements. Consequently, they are indicative of the existing structure and proposed work, but they shall be considered tentative and approximate. The contractor is referred to CMS Sections 102.05, 105.02, and 513.02.

Contract bid prices shall be based upon recognition of the uncertainties described above and upon a prebid examination of the existing structure by the contractor. However, all project work shall be based upon actual details and dimensions which have been verified by the contractor in the field.

ESTIMATED QUANTITIES:

Specific locations and usage of some of the estimated quantities set up on these plans to be used as directed by the Engineer and shall be incorporated 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.

EXISTING BRIDGE PLANS:

Detail drawings of the existing bridges may be inspected in the District Bridge Office in Chillicothe, or in the Bureau of Bridges at 25 South Front Street in Columbus, Ohio.

ITEM SPECIAL - SEALING OF CONCRETE SURFACES (EPOXY), AS PER PLAN:

This item shall include all labor and material required to seal the concrete surfaces with epoxy sealer which shall be lighted white. The estimated quantities that are set up in the plan are to seal the bridge as follows:

BRIDGE PARAPETS: Seal all exposed concrete surfaces on the parapet from 2' inside the curb line on the inside to 6" under the deck on the outside.

ABUTMENTS: Seal all exposed surfaces of the abutments including the backwalls, breastwalls, seats, and wingwalls.

ITEM 407 - TACK COAT

The rate of 407 Tack Coat shall be subject to adjustment, as Directed by the Engineer. Plan quantities indicate average application rates of 0.075 gallons per square yard for Tack Coat for estimating purposes only.

ITEM 404 - ASPHALT CONCRETE, AC-20, WITH VERGLIMIT ADDITIVE & BONIFIBERS

In addition to the requirements of 404 the Contractor shall develop a JMF with VERGLIMIT Additive and "Bonifiber B Polyester Fibers" as per the proposal notes for Heavy Traffic Volume.

ITEM SPECIAL - SAWING AND SEALING OF EXPANSION JOINTS USING POLYMER-MODIFIED ASPHALT BINDER, AS PER PLAN

TYPE A - SYSTEM AS MANUFACTURED BY LINEAR DYNAMICS INC.

TYPE B - SYSTEM AS MANUFACTURED BY PAVETECH ENGINEERING SYSTEMS, INC

R23GNOTE

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 BRIDGE OFFICE						
GENERAL NOTES						
BRIDGE NO. ROS-23-1237 L & R BRIDGE NO. ROS-35-2036 L & R OVER SCIOTO RIVER						
DESIGNED	DRAWN	TRACED	CHECKED	REVISION	DATE	REVISED
LAW	LAW	LAW	DAB	A. W. [Signature]	11/3/89	

GENERAL NOTES

FED. RE. DIVISION	STATE	PROJECT	4 11
2	OHIO		

ROSS COUNTY
 ROS-23-1257 L
 ROS-35-2036 L & R
 BR-57-89

ITEM 516 STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC STRIP SEALS, AS PER PLAN

Contractor is to retrofit existing sliding plate expansion joints with an elastomeric strip seal system as manufactured by each of the suppliers listed in table below after all paving has been completed. All work shall be in accordance with the details show in the plans with modifications specified by the manufacturer.

STRUCTURAL EXPANSION JOINT SYSTEM MANUFACTURES	
E-POXY INDUSTRIES, INC. 14 WEST SHORE STREET RAVENA, NEW YORK 12143-1698	(516) 756-6193
D.S. BROWN COMPANY P.O. BOX 158 NORTH BALTIMORE, OHIO 45872	(419) 257-2200
WATSON-BOWMAN & ACME CORPORATION 95 PINEVIEW DRIVE AMHERST, NEW YORK 14120	(716) 691-7566
STRUCTURAL ACCESSORIES, INCORPORATED SOUTH MAIN STREET P.O. BOX 10 TERRYVILLE, CT 06786	(203) 589-8826

MATERIALS:

STEEL

A-36 structural steel shall be used for fabrication of retainer. No shop coat or field painting is required.

GLAND

The preformed strip seal gland shall be extruded polychloroprene material meeting the requirements of ASTM D2628. Due to the configurations of the Strip Seal the recovery tests are not applicable. Physical Properties shall meet the requirements specified in Table "E" this sheet.

Each lot of strip seal gland design, shall be tested by the manufacturer or an accredited laboratory to assure compliance with these provisions.

Two certified copies of the qualification test data indicating that the tested materials comply with these provisions shall be submitted to the testing laboratory.

The strip seal gland design, shape, width, depth and thickness shall be approved by the Director. Material acceptance will be based upon laboratory evaluation of certified test data and TE-30 field inspection report.

LUBRICANT-ADHESIVE

Lubricant-adhesive used to install the preformed strip seals shall be a polyurethane and hydrocarbon solvent mixture as specified by the seal manufacturer (unless otherwise approved by the Director). It shall have suitable consistency at the temperature at which the seals are installed and shall be compatible with the seals and the steel retainers.

ELASTOMERIC CONCRETE

A rapid setting elastomeric mortar/concrete system as specified by the seal manufacturer.

TABLE "E" (PHYSICAL PROPERTIES OF SEAL ELEMENT)		
PROPERTY	REQUIREMENT	ASTM METHOD
TENSILE STRENGTH, MIN. P.S.I.	2000	D412
ELONGATION AT BREAK, MIN. PERCENT	250	D412
HARDNESS, TYPE A DUROMETER	50 MIN 65 MAX.	D2240 (MODIFIED)
OVEN AGING, 70 HR. AT 212° F TENSILE STRENGTH, LOSS, MAX. ELONGATION, LOSS, MAX. HARDNESS, TYPE A DUROMETER (POINTS CHANGE)	20 PERCENT 20 PERCENT 0 TO + 10	D573
OZONE RESISTANCE 20 PERCENT STRAIN, 300 PPHM, IN AIR AT 104° F (WIPE WITH TOLUENE TO REMOVE SURFACE CONTAMINATION).	NO CRACKS	D1149

SPLICE OR JOINT IN GLAND:

Seal glands for bridge deck joints shall be furnished in one continuous piece unless a shop fabricated splice, field splice or a field butt joint is indicated on the the plans or approved by the Engineer.

Completed splices shall have no offsets on exterior surfaces, and after installation, there shall be no evidence of bond failure at the splices.

INSTALLATION PROCEDURES:

SAWING AND SURFACE PREPARATION

After all paving operations are completed the overlay is to be saw cut full depth as show in plan details and overlay and existing riser bars are to be removed. The exposed concrete and steel surfaces shall then be cleaned by sand blasting and/or other methods approved by the Engineer to remove all surface contamination that would interfere with adhesion of the elastomeric concrete. All unsound concrete shall be removed and replaced with elastomeric concrete.

RETAINER PLACEMENT

The retainer shall be installed as shown in the plan and as recommended by the seal manufacturer by a certified welder and then armored with elastomeric concrete which will be mixed and placed in accordance with the manufactures recommendations.

GLAND PLACEMENT

After the retrainner has been installed and the elastomeric concrete has been installed for the entire width of the bridge the gland can be placed.

To avoid the subsequent contamination of the prepared surfaces, all surfaces of the elastomeric strip seal glands shall be cleaned with methyl ethyl ketone (MEK), toluene (T) or other approved solvent using clean disposable cloths.

The bonding surfaces of the steel retainers (the interior of the anchor grooves) shall be prepared to Grade Sa 3, ASTM D2200. Preparation shall be accomplished not more than 24 hours prior to adhesive bonding.

Immediately prior to application of lubricant-adhesive, bonding surfaces shall be clean, dry, and warmer than 45 degrees F, and they shall be maintained at or above this temperature until the adhesive has cured.

Lubricant-adhesive shall be applied liberally to both steel and elastomeric bonding surfaces using a stiff brush if necessary to achieve a complete and relatively uniform coating. Then the bulbed edges of the elastomeric seal shall be inserted into the anchor grooves. After installation, excess lubricant-adhesive shall be removed from the exposed seal surfaces.

Seal glands shall be installed with equipment designed or specifically adapted for the installation of elastomeric joint seal glands. This equipment shall not elongate the seal gland or cause structural damage to the completed installation.

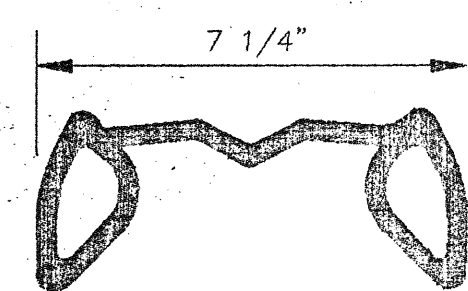
MEASUREMENT:

Measurement for pay purposes shall be based on th linear feet of sealed joint system measured horizontally along the joint centerline and between the outer limits of the fabricated joint, furnished and placed, including all labor, materials and equipment necessary to complete the joints in place. This shall include saw cutting and removal of the overlay and curbing as shown, steel retainers, elastomeric concrete, anchoring devices, temporary supports, strip seal glands and all other materials and incidentals required to place the sealed joint system according to the plans and manufacturer's specifications and as directed by the Engineer.

PAYMENT SHALL BE MADE PER LINEAR FOOT FOR:

ITEM 516 - Structural Expansion Joints Including Elastomeric Strip Seals, As Per Plan.

STRIP SEAL GLAND TYPE



(SHOWN) S-500E, WATSON BOWMAN
 MOVEMENT RATING FIVE (5) INCHES

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 BRIDGE OFFICE					
GENERAL NOTES					
BRIDGE NO. ROS-23-1257 L BRIDGE NO. ROS-35-2036 L & R OVER SCIOTO RIVER					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
MSC	MSC	MSC	GLB	A. J. [Signature]	11/3/89

R23EXJ11

GENERAL NOTES

BR-57-89

FED. RE. DIVISION	STATE	PROJECT	5
2	OHIO		11

ROSS COUNTY
ROS-23-1257 R

ITEM SPECIAL - SAWING AND SEALING OF EXPANSION JOINTS USING POLYMER-MODIFIED ASPHALT BINDER, AS PER PLAN:

Contractor is to seal existing structural expansion joint using a polymer-modified asphalt binder system manufactured by each of the suppliers listed below after all paving has been completed. All work shall be in accordance with the plan details and with the the manufacturer's recommendations.

SUPPLIERS OF POLYMER-MODIFIED ASPHALT BINDER SYSTEM:

LINEAR DYNAMICS INC.
400 LAWIDEX PLAZA
PARSIPPANY NJ 07054
PHONE (201) 884-0300

PAVETECH ENGINEERING SYSTEMS, INC.
8044 MONTGOMERY ROAD, SUITE 700
CINCINNATI, OHIO 45236
PHONE (513) 792-2272

MATERIALS:

BOND BREAKER

Mild steel or aluminum 1/8" or 1/4" thick plate 8" wide.

BINDER

Type	THORMA-JOINT BJ200 Binder or PAVETECH BJS Binder
Softening Point	180° F
Flow	3 mm. max. @ 140° F
Penetration	9 mm. max. @ 77° F
Extension	50% @ -20° F (3 cycles)
Resilience	60% min. @ 77° F
Tensile Adhesion	700% min.
Specific Gravity	1.10 ± 0.05
Pouring Temperature	320° F - 350° F
Max. Safe Heating Temp.	365° F

AGGREGATE

Type	Processed, dried granite from the Basalt, Gabbro or Granite Groups.
Gradation	A clean single size aggregate approx. 3/4" in size which can vary no finer than the following gradation: 95 - 100% passing 7/8" sieve 30 - 50% passing 5/8" sieve 10 - 25% passing 1/2" sieve 0 - 10% passing 3/8" sieve
Specific Gravity	2.65
CaO Content	Less than 5%

INSTALLATION PROCEDURES:

SAWING AND SURFACE PREPARATION

After all paving operations are completed the overlay is to be saw cut full depth as shown in the plan detail and the overlay material, riser bars, and joint material between the saw cuts are to be removed. The exposed concrete and steel surfaces and cut asphalt surface shall be thoroughly cleaned and dried using a hot compressed air (HCA) Lance. Lance shall produce a flame-retarded air stream temperature of 3000° F, at a velocity of 3000 feet per second at 15 psig chamber pressure. If there is an interruption due to weather or other causes, the operation will be repeated with the HCA Lance immediately before the tanking operation. Also the road surface on either side of joint will be dried for 6" so that a suitable surface for bitumen adhesion is obtained. All unsound concrete shall be removed and replaced with polymer-modified asphalt binder system.

BOND BREAKER

The existing surface on each side on the existing sliding plate expansion joint shall be coated with hot binder. Contractor shall exercise care to keep the hot binder from getting into the existing joint opening. The bond breaker plate shall then be centered over the length of the existing joint and bedded on the hot binder. Plates shall be butt jointed as necessary to accommodate the overall joint length and cut to match the skew of bridge at ends. Lap joints will not be permitted. Butt joints shall be sealed with hot binder and allowed to cool before the joint is tanked.

TANKING

All prepared, exposed surfaces of the joint shall be sealed with Binder. The hot Binder shall be poured over the floor area of the joint and spread to coat all exposed surfaces both vertical and horizontal. The tanking shall be continuous and adhere to the vertical surfaces. On the bottom of the joint cavity the binder shall be 1/32" thick with pools of greater thickness if there are surface irregularities. The Binder shall have an application temperature of between 320° F and 350° F. When heating Binder it shall not be heated above 365° F nor allowed to exceed 360° F for more than 1 hour.

BUILD-UP OF JOINT LAYERS

Aggregate Preparation: Aggregate shall be heated to a temperature of 200° F to 250° F in a suitable rotating drum blending with heat source attached or using HCA Lance to remove all dust and moisture.

Aggregate Proportion and Layer Thickness: The minimum aggregate content by weight shall be 68%. The heated aggregate and Binder shall be combined in layers not less than 3/4" and not exceeding 2". The thickness of each layer can be varied to achieve the joint thickness set up in the plan within these limits. The objective is to coat each stone and to fill the voids between while avoiding an excess of Binder. The aim is to achieve the maximum content of stone consistent with all stone being coated with Binder and a maximum void content of 2%. To achieve this the aggregate and binder shall be raked to mix and level it. Each layer shall be allowed to cool before placement of subsequent layers.

Top Layer: The top layer shall not be less than 1/2" and not exceed 1". In preparing the top layer the ratio of aggregate to Binder shall be approximately 6:1 by weight. This ratio is not vital since additional Binder will infiltrate the top layer from both below and above. The top layer shall be overfilled and compacted to the level of the adjacent surfaces using a roller

or vibratory plate compactor. Sufficient Binder shall, immediately after completion of the compaction, be spread over the joint to fill the surface voids and just coat the surface stone. The finished joint shall then be dusted with a fine, dry aggregate to prevent tackiness. The completed joint shall be allowed to cool to the surface temperature of the deck before it is exposed to traffic.

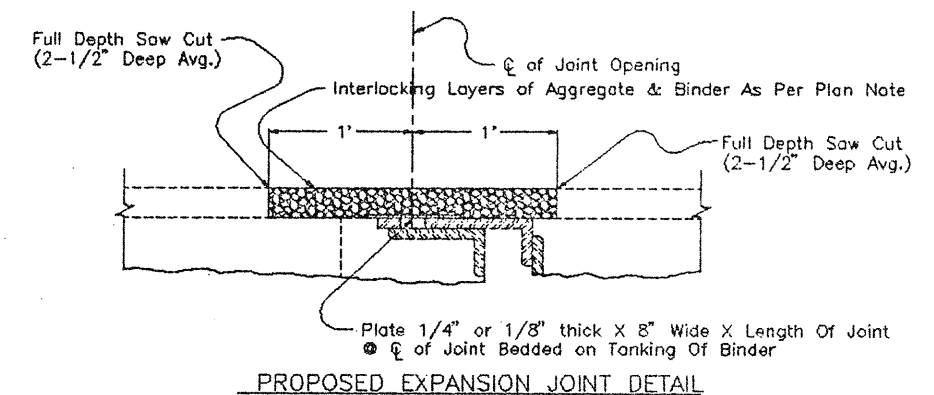
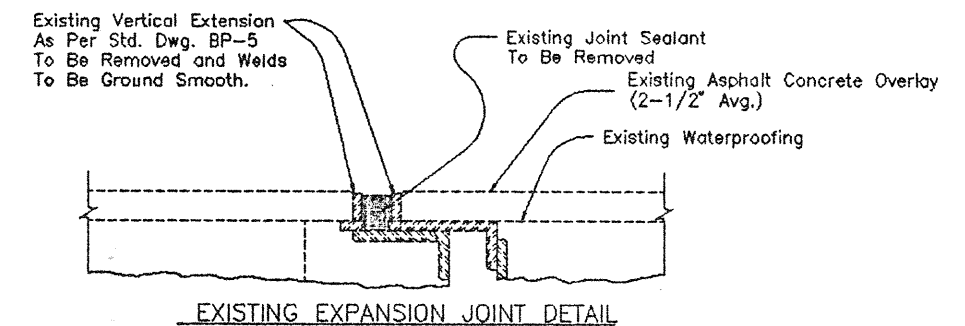
MEASUREMENT:

Measurement for pay purposes shall be based on the linear feet of sealed joint system measured horizontally along the centerline and between the outer limits of the completed joint, furnished and placed, including all labor, materials, and equipment necessary to complete the joints in place. This shall include saw cutting and removal of the overlay material, riser bars, and joint material between the the saw cuts as shown, bond breaker, Binder, aggregate, and all other materials and incidentals required to place the sealed joint system according to the plans and manufacturer's specifications and as directed by the Engineer.

PAYMENT SHALL BE MADE PER LINEAR FOOT FOR:

ITEM Special - Sawing and Sealing of Expansion Joints Using Polymer-Modified Asphalt Binder, As Per Plan

TYPE A -
TYPE B -



STATE OF OHIO DEPARTMENT OF TRANSPORTATION
DISTRICT 9 BRIDGE OFFICE

GENERAL NOTES

BRIDGE NO. ROS-23-1257 R
OVER THE SCIOTO RIVER

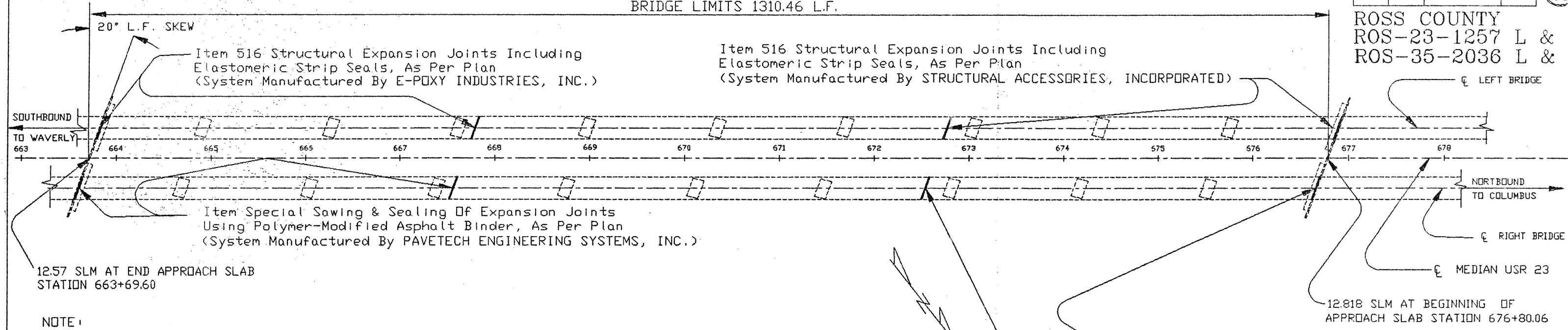
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
LAW	LAW	LAW	DAB	ALAN W. JONES	11/3/89	

R23EMBUT 1=6

BR-57-89

FED. RD. DIST. NO.	STATE	PROJECT	6
2	OHIO		11

BRIDGE LIMITS 1310.46 L.F.



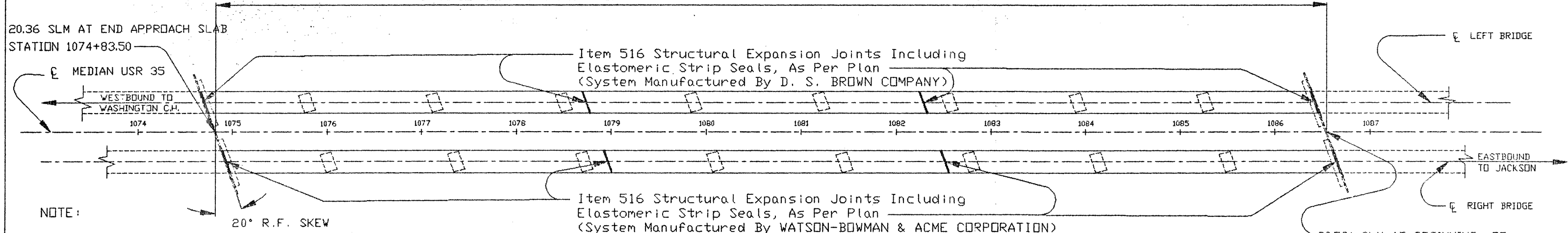
ROSS COUNTY
 ROS-23-1257 L & R
 ROS-35-2036 L & R

NOTE:

1. EACH JOINT SYSTEMS ON ROS-23-1257 R&L SHALL EACH BE OF THE TYPE AND BY THE MANUFACTURER AS SHOWN ON THE PLAN ABOVE.
2. ALL COMPONENTS OF THE JOINT SYSTEM SHALL BE AS PER THE SPECIFIC MANUFACTURE'S SPECIFICATIONS

PART 1
 ROS-23-1257 R & L

BRIDGE LIMITS 1183.00 LIN. FT. AND WEARING SURFACE REMOVAL AND REPLACEMENT



NOTE:

1. EACH JOINT SYSTEMS ON ROS-35-2036 R&L SHALL EACH BE OF THE TYPE AND BY THE MANUFACTURER AS SHOWN ON THE PLAN ABOVE.
2. ALL COMPONENTS OF THE JOINT SYSTEM SHALL BE AS PER THE SPECIFIC MANUFACTURER'S SPECIFICATIONS.
3. THE EXISTING WEARING SURFACE SHALL BE REMOVED AND REPLACED PRIOR TO STARTING THE JOINT INSTALLATION WORK.

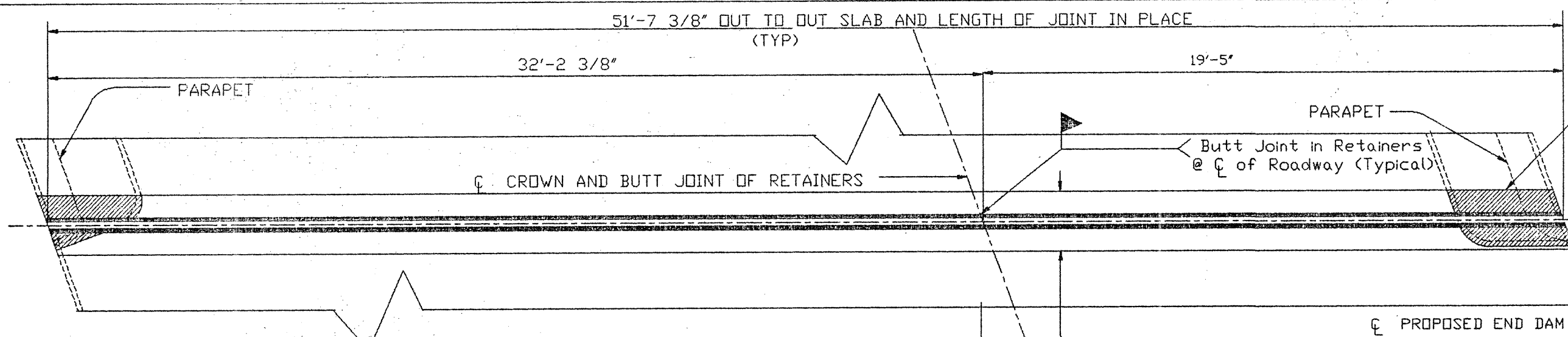
PART 2
 ROS-35-2036 R & L

STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 BRIDGE OFFICE						
GENERAL PLANS OF STRUCTURES						
BRIDGE NO. ROS-23-1257 L & R BRIDGE NO. ROS-35-2036 L & R OVER SCIOTO RIVER						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MSC	MSC	MSC	GLB	CLARENCE A. WISSE	11/2/89	

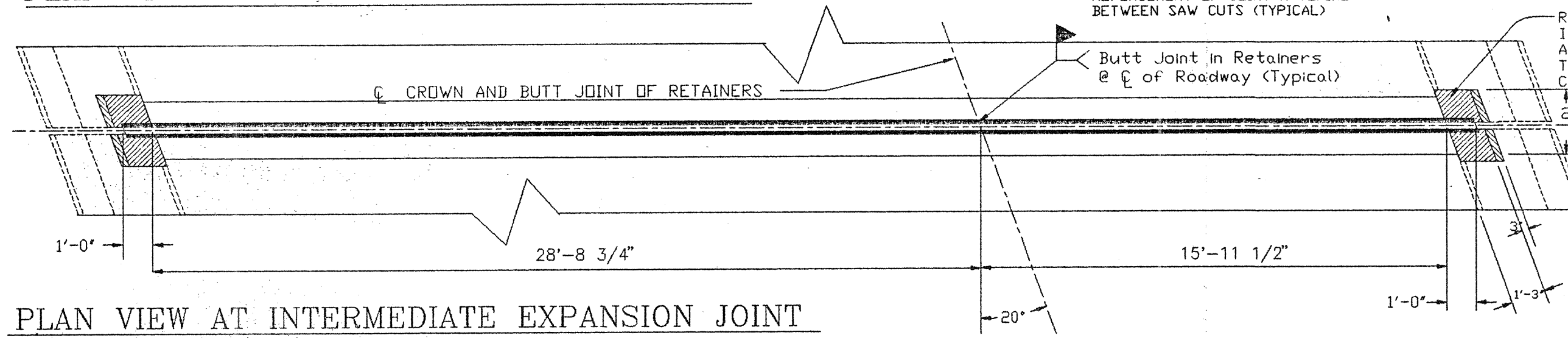
R23PLPRO 1=1204.3

ROSS COUNTY
 ROS-23-1257 L & R
 BR-57-89

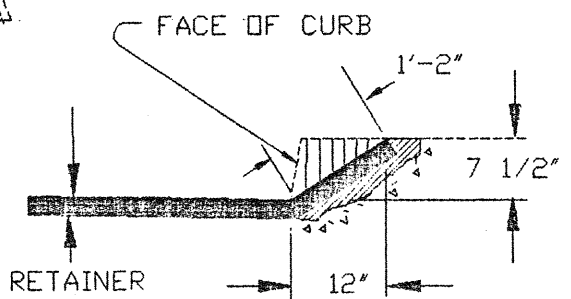
REMOVE CURB, PARAPET, & STEEL SUFFICIENT TO INSTALL PROPOSED JOINT AS SHOWN AND BLEND THE EXISTING CONCRETE TO RETAINER WITH THE SAME ELASTOMERIC CONCRETE AS USED ON THE JOINT (TYPICAL FOR ROS-23-1257 L)



PLAN VIEW AT END DAM EXPANSION JOINT

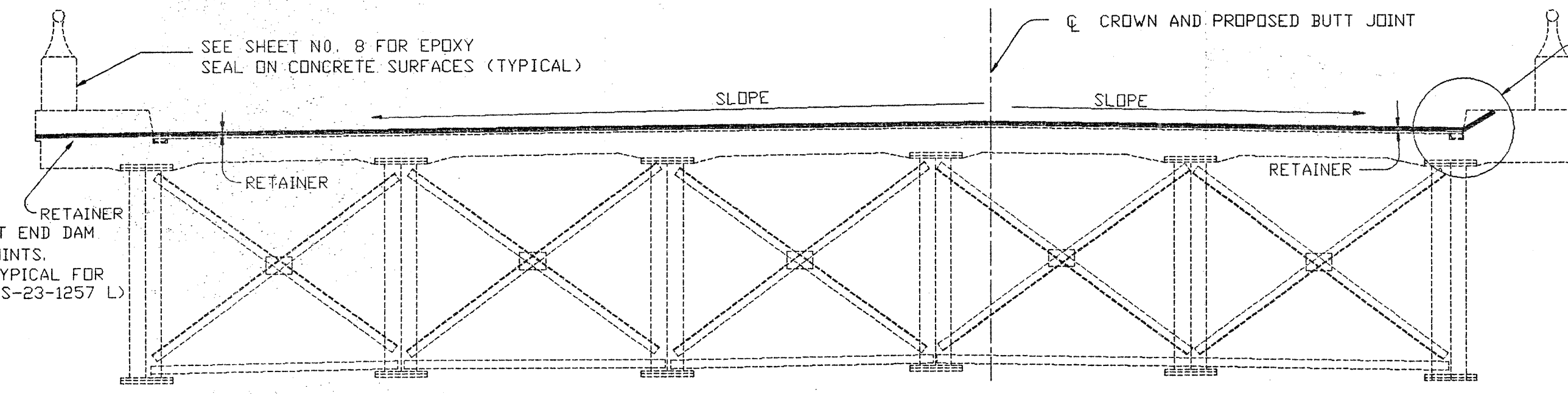


PLAN VIEW AT INTERMEDIATE EXPANSION JOINT



MITER JOINT DETAIL AT INTERMEDIATE JOINTS

NOTE:
 CURB, PARAPET, & STEEL ARE NOT TO BE REMOVED ON ROS-23-1257 R WHERE POLYMER-MODIFIED ASPHALT BINDER IS USED, BUT BINDER IS TO BE APPLIED TO VERTICAL LEG OF THE EXISTING STRUCTURAL EXPANSION JOINTS.



TRANSVERSE SECTION NORMAL TO THE SKEW ANGLE

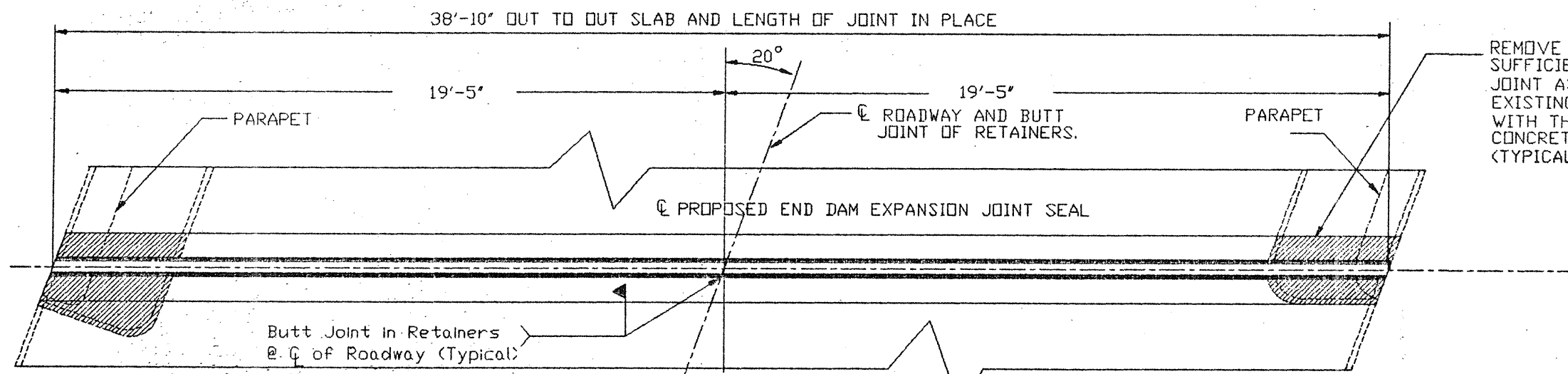
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 9 BRIDGE OFFICE				
TRANSVERSE DECK SECTION & JOINT ASSEMBLY				
BRIDGE NO. ROS-23-1257 L & R OVER SCIOTO RIVER				
DESIGNED MSC	DRAWN MSC	TRACED MSC	CHECKED DAB	REVIEWED DATE 3/11/89

R23MIRDS 1=24

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

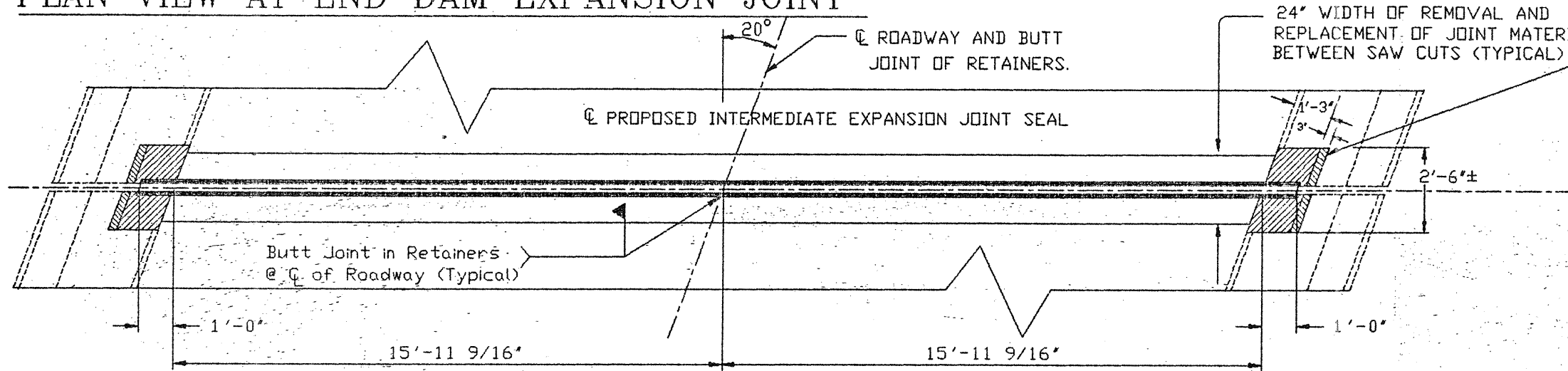
8
11

ROSS COUNTY
ROS-35-2036 L & R
BR-57-89



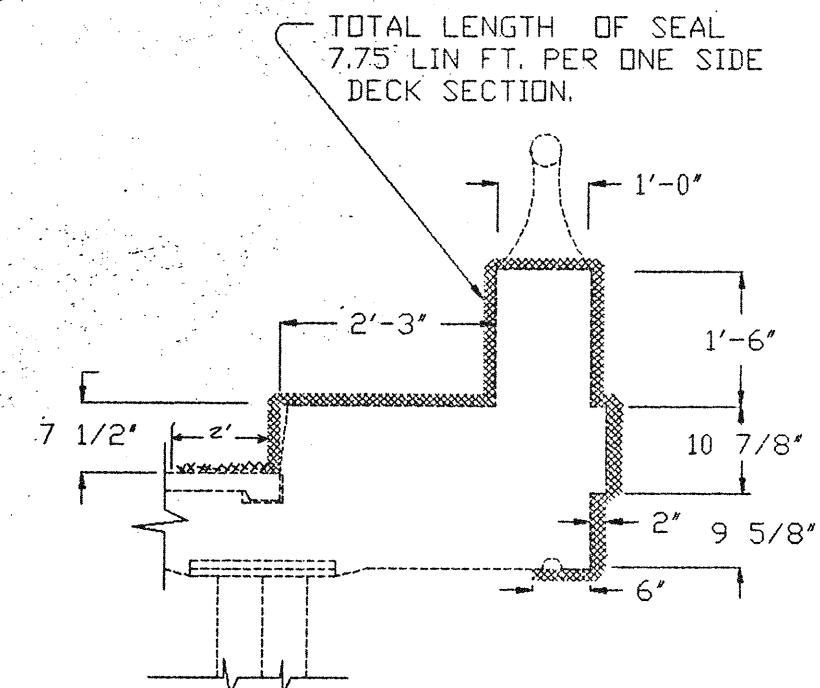
REMOVE CURB, PARAPET, & STEEL SUFFICIENT TO INSTALL PROPOSED JOINT AS SHOWN AND BLEND THE EXISTING CONCRETE TO RETAINER WITH THE SAME ELASTOMERIC CONCRETE AS USED ON THE JOINT. (TYPICAL)

PLAN VIEW AT END DAM EXPANSION JOINT



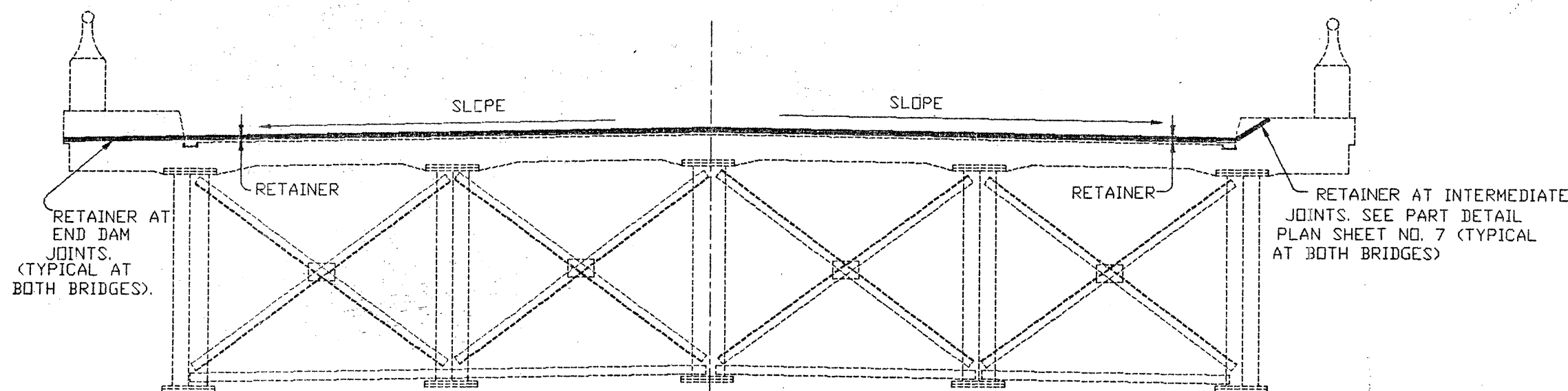
REMOVE CURB & STEEL SUFFICIENT TO INSTALL MITERED PORTION OF RETAINER AS SHOWN AND BLEND EXISTING CURB TO RETAINER WITH SAME ELASTOMERIC CONCRETE AS USED ON JOINT. (TYPICAL)

PLAN VIEW AT INTERMEDIATE EXPANSION JOINT



SEALING DETAIL

— SURFACES TO BE SEALED (EPOXY) TYPICAL EPOXY SHALL BE TINTED WHITE

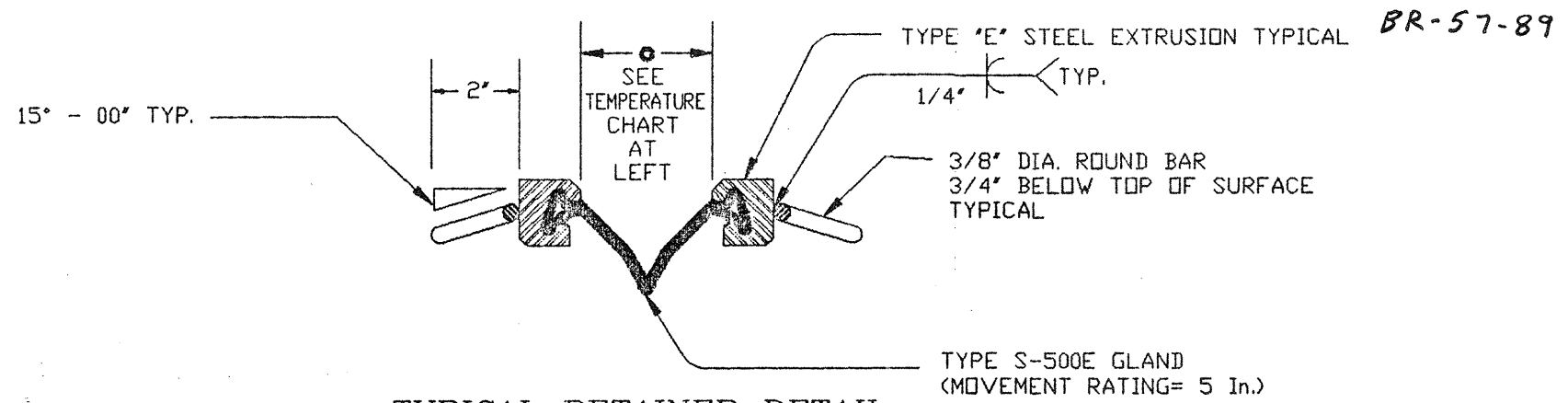


TRANSVERSE SECTION NORMAL TO THE SKEW ANGLE

R35EDJNT 1=24

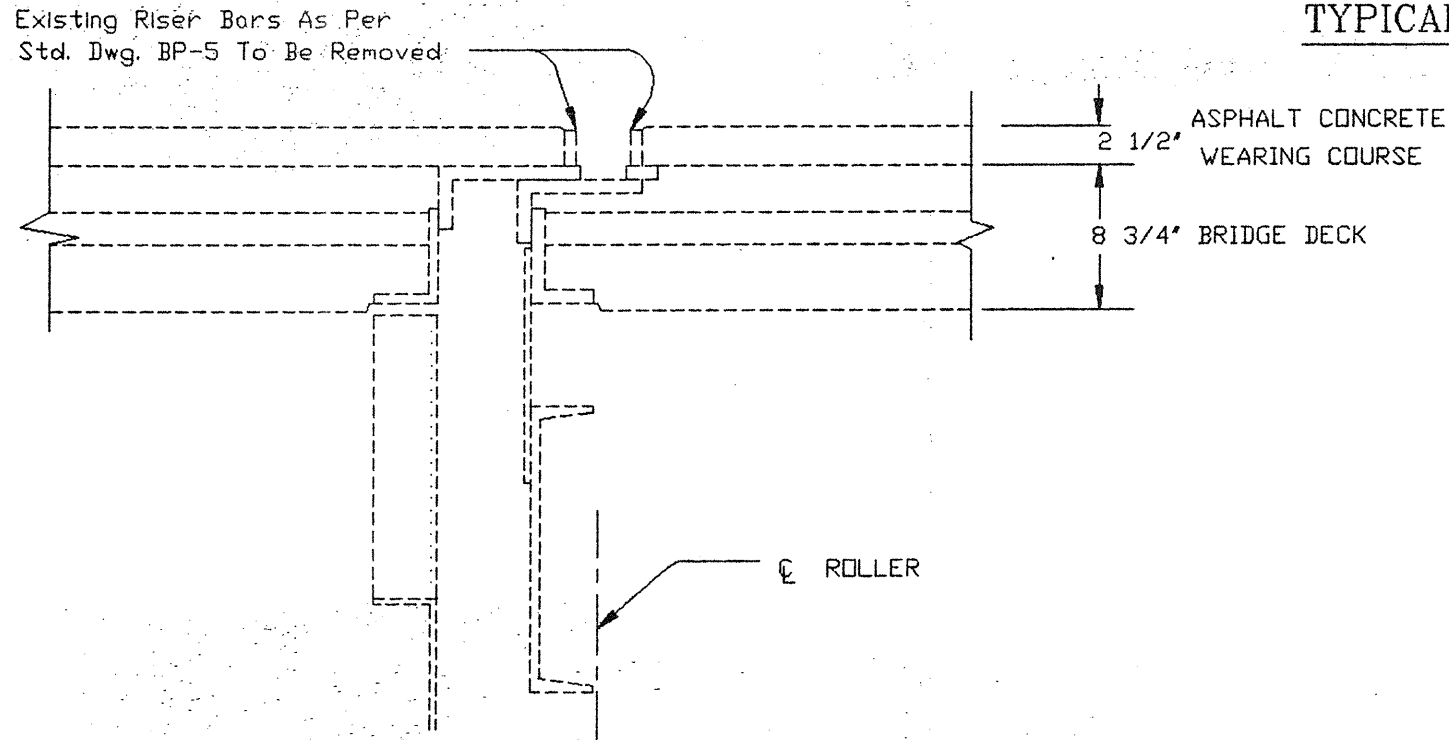
STATE OF OHIO DEPARTMENT OF TRANSPORTATION DISTRICT 5 BRIDGE OFFICE						
TRANSVERSE DECK SECTION AND JOINT ASSEMBLY						
BRIDGE NO. ROS-35-2036 L & R OVER SCIOTO RIVER						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
MSC	MSC	MSC	GLB	A. Willis	11/3/89	

OPENING		TEMPERATURE ADJUSTMENT					
MIN.	MAX.	40° F	50° F	60° F	70° F	80° F	90° F
0.250"	5.000"	3.833"	3.417"	3.000"	2.583"	2.167"	1.750"

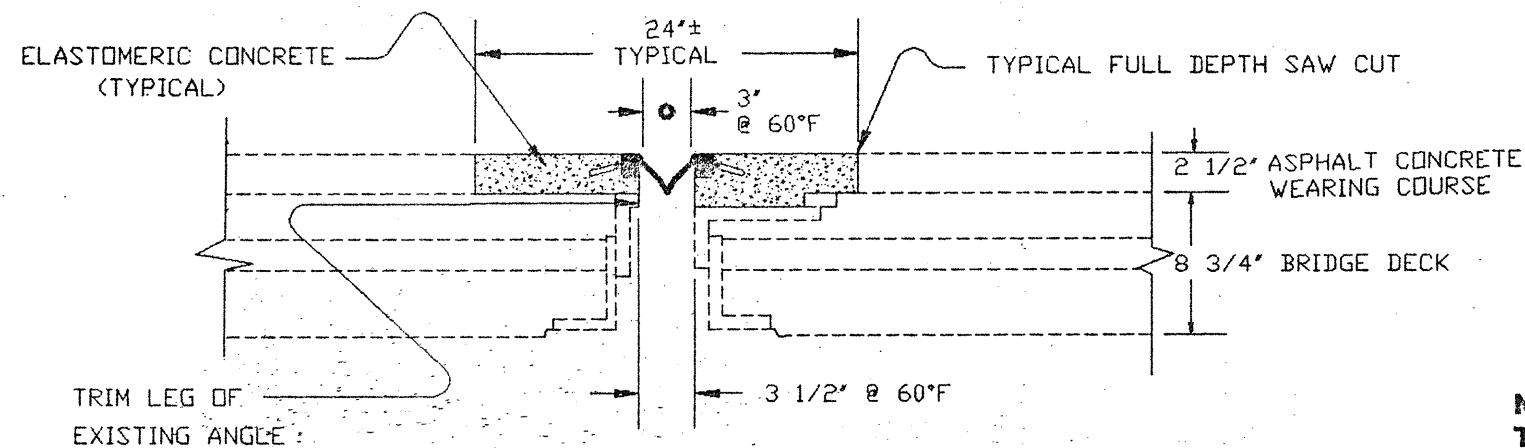


FED. OR DIVISION	STATE	PROJECT	9
2	OHIO		11

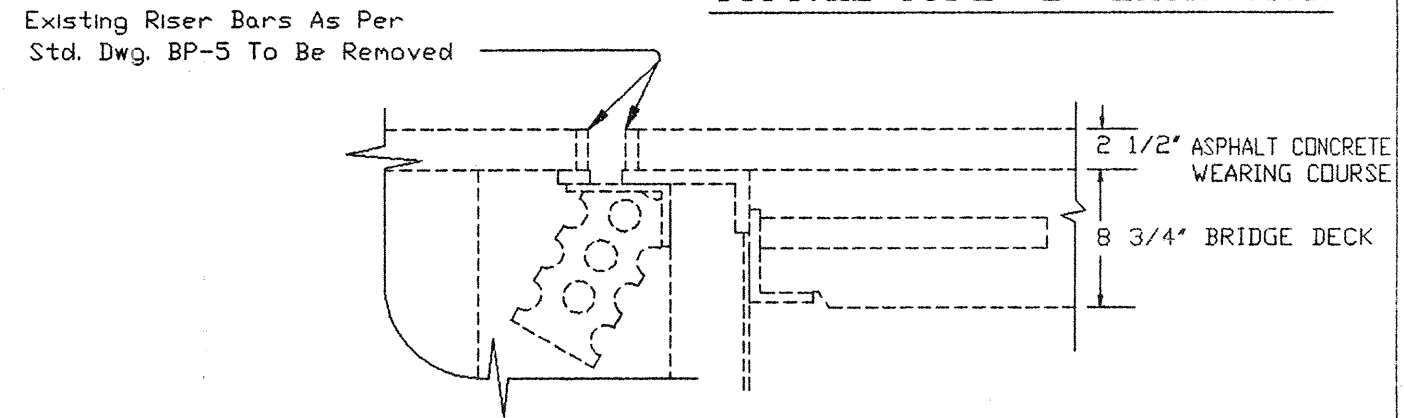
ROSS COUNTY
 ROS-23-1257 R & L
 ROS-35-2036 R & L



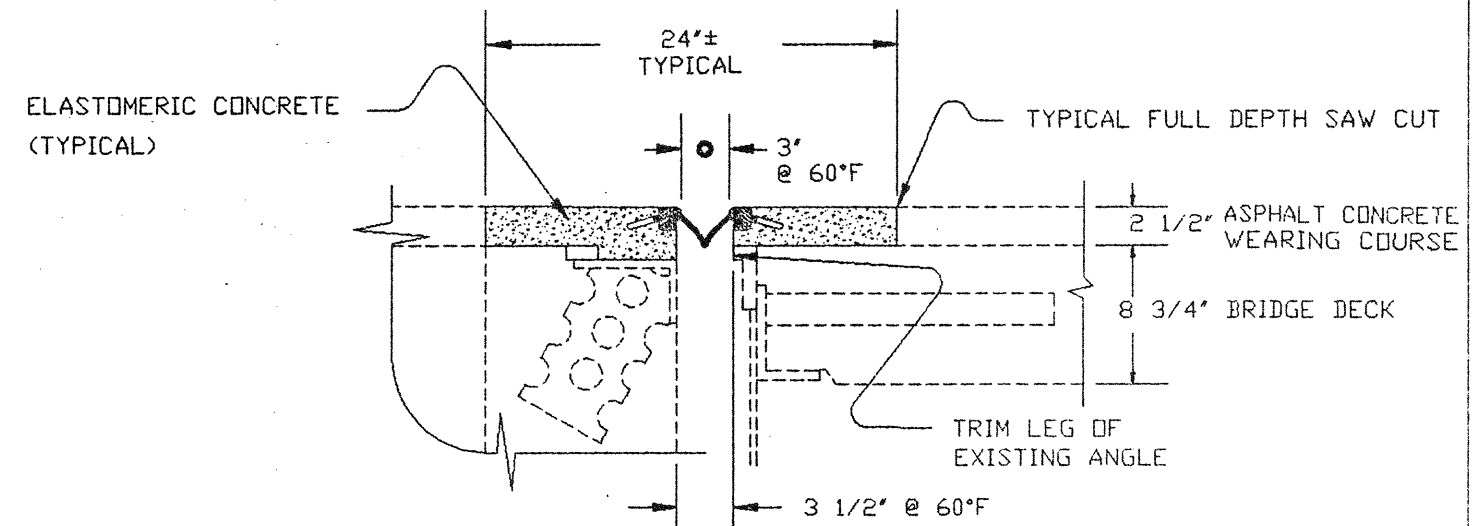
TYPICAL EXISTING END FINISH DETAIL AT HINGE ROLLERS



TYPICAL PROPOSED END FINISH DETAIL AT HINGE ROLLERS



TYPICAL EXISTING END FINISH DETAIL AT ABUTMENTS



TYPICAL PROPOSED END DAM FINISH DETAIL AT ABUTMENTS

NOTE:
 THE JOINT SYSTEM DETAILED ABOVE IS AS MANUFACTURED BY WATSON-BOWMAN & ACME CORPORATION AND THE DETAILS OF THE SYSTEM WILL VARY BY MANUFACTURER TO MEET THE SPECIFICATIONS OF THE VARIOUS COMPONENTS OF EACH MANUFACTURER AS SPECIFIED IN THE PLANS

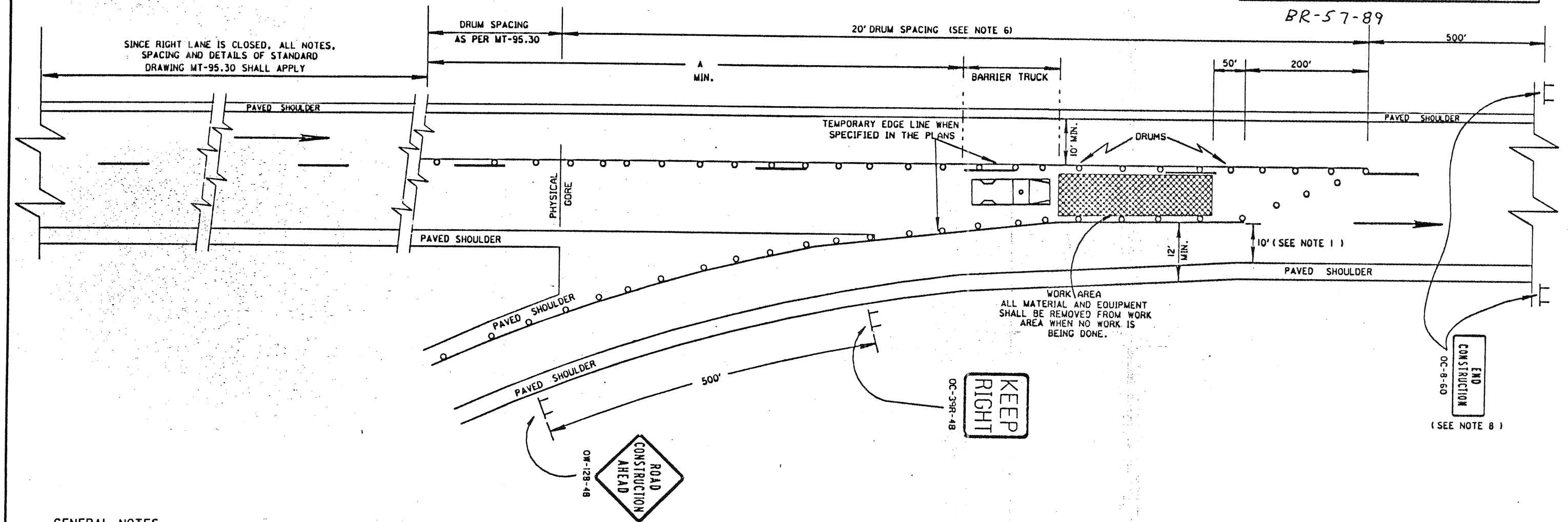
STATE OF OHIO DEPARTMENT OF TRANSPORTATION
 DISTRICT 9 BRIDGE OFFICE

END FINISH DETAILS

BRIDGE NO. ROS-23-1257 L & R
 BRIDGE NO. ROS-35-2036 L & R
 OVER THE SCIOTO RIVER

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISION
MSC	MSC	MSC	DAB	Lawrence A. Williams	11/3/89	

R23SEC 1=6



GENERAL NOTES

1. THIS WORK AREA TRAFFIC CONTROL APPLICATION SHALL BE EMPLOYED ONLY WHEN THE LATERAL CLEARANCE BETWEEN THE CHANNELIZING DEVICES AT THE RIGHT EDGE OF THE WORK AREA AND THE EDGE OF THE RAMP PAVEMENT IS 10 FEET OR MORE. WHEN THE CLEARANCE IS LESS THAN 10 FEET: (1) THE TRAFFIC CONTROL ON "LANE CLOSURE AT ENTRANCE RAMP: PLAN 'B'", MT-98.16 SHOULD BE USED, OR (2) THE RAMP MAY BE CLOSED ONLY IF PERMITTED BY THE PLANS, OR (3) ALLOWING RAMP TRAFFIC TO USE THE PAVED SHOULDER SHOULD BE CONSIDERED ONLY IF TRAFFIC WILL BE ON THE SHOULDER LESS THAN ONE DAY AND THE SHOULDER IS IN GOOD CONDITION, OR IF THE SHOULDER PAVEMENT IS STRENGTHENED TO HOLD THE ANTICIPATED LOAD. WHEN THE RAMP IS CLOSED APPROPRIATE DETOUR SIGNS SHALL BE PROVIDED.
2. RAMP SIGNS SHALL BE DUAL MOUNTED ON MULTILANE RAMPS. WHEN THE RAMP IS NOT LONG ENOUGH TO ALLOW PLACEMENT AS SPECIFIED ABOVE, THE SIGNS MAY BE SPACED PROPORTIONATELY WITHIN THE SPACE AVAILABLE AS DETERMINED BY THE ENGINEER (A 200 FOOT MINIMUM SPACING MUST BE MAINTAINED).
3. THE BARRIER TRUCK SHOWN AT THE BEGINNING OF THE WORK AREA SHALL BE IN PLACE AND UNOCCUPIED WHENEVER WORKERS ARE IN THE WORK AREA. THIS VEHICLE SHALL BE REMOVED FROM THE PAVEMENT WHENEVER WORKERS ARE NOT IN THE WORK AREA. OTHER PROTECTIVE DEVICES MAY BE USED IN LIEU OF THE BARRIER TRUCK SHOWN WHEN APPROVED BY THE ENGINEER. THE VEHICLE SHALL BE EQUIPPED WITH A 360 DEGREE ROTATING OR FLASHING AMBER BEACON CLEARLY VISIBLE A MINIMUM OF 1/4 MILE.
4. TYPE C STEADY BURNING WARNING LIGHTS SHALL BE ERECTED ON EACH DRUM FOR NIGHT LANE CLOSURES.
5. THE APPROPRIATE COLOR TEMPORARY EDGE LINE SHALL BE APPLIED WHEN SPECIFIED IN THE PLANS. TEMPORARY EDGE LINES WHICH WOULD CONFLICT WITH FINAL TRAFFIC LANES SHALL BE REMOVABLE (947.03 TYPE-C) TAPE OR TEMPORARY RPM'S UNLESS THE AREA WILL BE RESURFACED IN THE NEXT WORK PHASE AFTER COMPLETION OF THE WORK. TEMPORARY MARKINGS SHALL BE REMOVED IN ACCORDANCE WITH 621.134 AND THE ORIGINAL MARKINGS AND PAVEMENT MARKER REFLECTORS SHALL BE RESTORED.
6. DRUMS SHALL BE SPACED AT 20' INTERVALS ON BOTH SIDES OF THE WORK AREA WITHIN THE LIMITS SHOWN. CONES HAVING A MINIMUM HEIGHT OF 28 INCHES MAY BE SUBSTITUTED FOR DRUMS FOR DAYTIME LANE CLOSURES. PROVISIONS SHALL BE MADE TO SAFELY STABILIZE THE CONES TO PREVENT THEM FROM BLOWING OVER, IF THIS CANNOT BE ACHIEVED, DRUMS SHALL BE USED.
7. 36" CONSTRUCTION SIGN SIZES MAY BE USED ON DIVIDED ROADWAYS THAT ARE NOT CLASSIFIED AS FREEWAYS OR EXPRESSWAYS.
8. THE OC-8 SIGNS ARE ONLY REQUIRED FOR LANE CLOSURES OF MORE THAN ONE DAY AND MAY BE OMITTED IF THEY FALL WITHIN THE LIMITS OF A CONSTRUCTION PROJECT.

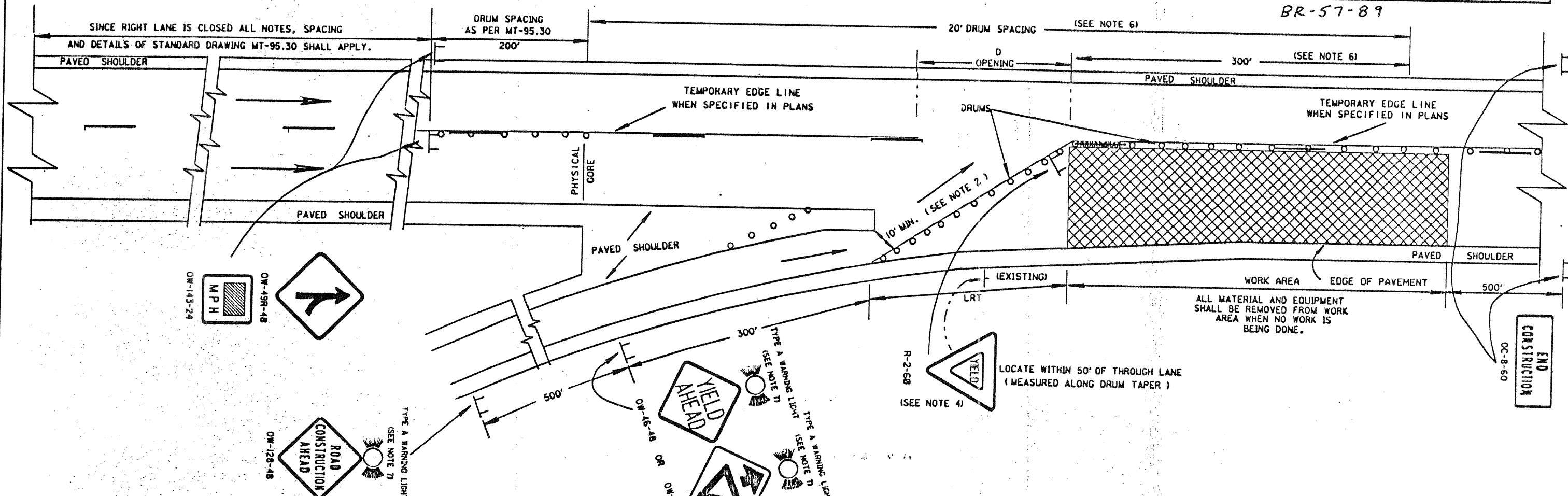
TABLE I

SPEED	A
20 - 25	60
30 - 40	160
45 - 55	330
60 - 65	390

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF OMTCD. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

29815	DATE 05/15/89
LANE CLOSURE AT ENTRANCE RAMP: PLAN A	
PLAN INSERT SHEET	

BR-57-89



GENERAL NOTES

1. THIS WORK AREA TRAFFIC CONTROL APPLICATION SHALL BE EMPLOYED WHEN: (1) THE LATERAL CLEARANCE BETWEEN CHANNELIZING DEVICES AT THE RIGHT EDGE OF THE WORK AREA AND THE EDGE OF PAVEMENT IS LESS THAN 10 FT. (12 FT. IF THE SHOULDER PAVEMENT IS USED) AS SHOWN ON DRAWING MT-98.15, AND (2) THE REQUIRED RAMP TAPER (LRT) AND OPENING (D) CAN BE PROVIDED AS SHOWN. IN THE EVENT WORK ZONE CONDITION WOULD PERMIT THE USE OF EITHER PLAN A OR B, PLAN A SHALL BE USED. THIS TRAFFIC CONTROL MEASURE SHALL NOT BE PLACED IN EFFECT UNTIL IMMEDIATELY BEFORE THE CONTRACTOR IS FULLY PREPARED TO PERFORM THE WORK IN THE RAMP OR LANE ADJACENT TO IT. ONCE THIS MEASURE IS PLACED INTO EFFECT THE CONTRACTOR SHALL EXPEDITIOUSLY PURSUE THE WORK (WORKING CONTINUOUSLY WITH FULL CREW IN THE RAMP AREA ON ALL NORMAL WORKING DAYS) UNTIL IT IS COMPLETED AND IMMEDIATELY OPEN THE AREA TO NORMAL TRAFFIC OR, AS A MINIMUM, REVERT TO THE METHODS SHOWN ON MT-98.15.

2. THE RAMP TAPER SHALL NORMALLY BE LOCATED TO PROVIDE A 10' MINIMUM PATH BETWEEN DRUMS AND THE PAVED BERM IN THE GORE. HOWEVER THE RAMP TAPER MAY BE MOVED UPSTREAM TO PLACE THE RAMP TRAFFIC ON THE PAVED GORE ONLY IF: (1) THE TRAFFIC WILL USE THE BERM PAVEMENT LESS THAN ONE DAY AND THE BERM PAVEMENT IS IN GOOD CONDITION AND IS LEVEL AND SMOOTH OR (2) IF THE BERM PAVEMENT IS ADEQUATELY STRENGTHENED TO HOLD THE ANTICIPATED LOAD. THE WIDTH OF THE TEMPORARY RAMP PATH ACROSS THE BERM SHALL NOT BE LESS THAN 12 FT. FROM FACE OF DRUMS TO EDGE OF PAVED BERM.

3. RAMP SIGNS SHALL BE DUAL MOUNTED ON MULTI-LANE RAMPS. WHEN THE RAMP IS NOT LONG ENOUGH TO ALLOW PLACEMENT AS SPECIFIED ABOVE, THE SIGNS MAY BE SPACED PROPORTIONATELY WITHIN THE SPACE AVAILABLE AS DETERMINED BY THE ENGINEER (A 200 FOOT MINIMUM SPACING MUST BE MAINTAINED).

4. IT MAY BE NECESSARY TO MOVE THE LOCATION OF AN EXISTING YIELD CONDITION. IN THESE CASES, THE PERMANENT R-2 SIGN INSTALLATION SHALL BE COVERED AND THE TEMPORARY INSTALLATION SHALL BE MOUNTED APPROPRIATELY.

5. THE APPROPRIATE COLOR TEMPORARY EDGE LINE SHALL BE APPLIED WHEN SPECIFIED IN THE PLANS. TEMPORARY EDGE LINES WHICH WOULD CONFLICT WITH FINAL TRAFFIC LANES SHALL BE REMOVABLE (947.03 TYPE-C) TAPE OR TEMPORARY RPM'S UNLESS THE AREA WILL BE RESURFACED IN THE NEXT WORK PHASE AFTER COMPLETION OF THE WORK. TEMPORARY MARKINGS SHALL BE REMOVED IN ACCORDANCE WITH 621.134 AND THE ORIGINAL MARKINGS AND PAVEMENT MARKER REFLECTORS SHALL BE RESTORED.

6. DRUMS SHALL BE SPACED AT 20' INTERVALS FROM THE PHYSICAL GORE TO 300' BEYOND THE OPENING.

TABLE I

SPEED	A
20 - 25	60
30 - 40	160
45 - 55	330
60 - 65	390

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE C & M SPECIFICATIONS AS WELL AS IN ACCORDANCE WITH PART 7 OF OMTCO. PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS TO PROVIDE THIS METHOD OF TRAFFIC CONTROL SHALL BE INCLUDED IN THE LUMP SUM BID FOR 614 MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

29816	DATE
LANE CLOSURE AT ENTRANCE RAMP PLAN B	08/03/79 03/09/88 04/13/89 09/29/89
PLAN INSERT SHEET	