

JAN 19 1982

STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
BRO-52-(14.11)(16.74)
HUNTINGTON TOWNSHIP
BROWN COUNTY
BRIDGE MAJOR REPAIR

PLAN NO. BR-13-75

BROWN COUNTY
BRO-52-(14.11)(16.74)

STATE

OHIO
FHWA REGION 5
FEDERAL PROJECT

A circular logo with a thick black border. Inside the circle, the number '1' is positioned above the number '18', separated by a horizontal line.

1975 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.

The right of way for this improvement will be provided by the State of Ohio.

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 the traffic will be as set forth on the plans and estimates.

CONVENTIONAL SIGNS

County Line _____
 Township Line _____
 Section Line _____
 Corporation Line _____ or _____
 Fence Line (existing) —x—x— (proposed) —x—x—
 Center Line _____ 352 _____ 353 _____
 Trees ☁, Stumps ♀, (to be removed) ✂ ✂
 Utility Poles: Telephone ⌀, Power ⌀, Light ⌀

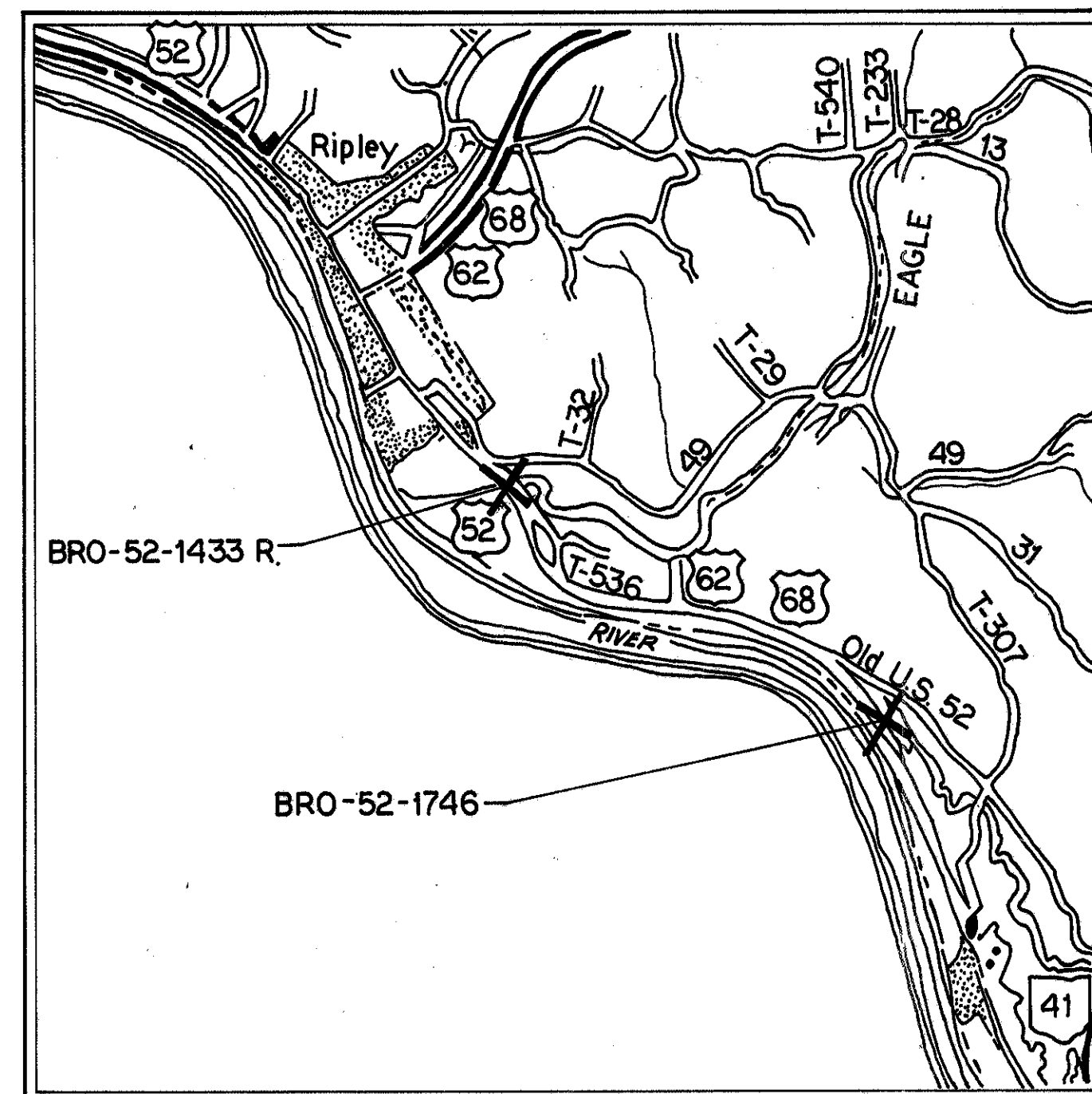
Limited Access (only) _____ LA _____
 Right of Way (only) _____ RW _____
 Limited Access & Right of Way _____ LA & RW _____
 Existing Right of Way _____
 Property Line —|— (in existing fence) —x—|—x—
 Railroad —————
 Guardrail (existing) —a—a—a— (proposed) —•—•—•—

INDEX OF SHEETS

Title Sheet	1
BR. NO. BRO-52-1433 R.	
Site Plan	2
Latex Concrete Notes & Superstructure Details	3-4
General Notes, Work Procedure & Estimated Quantities Part 1	5
Abutment Details	6-7
Elastomeric Joint Seal	8
Superstructure Details & General Summary Parts 1 & 2	9
Traffic Control Plan	10
BR. NO. BRO-52-1746	
Site Plan	11
General Plan & End Finish Details	12
Estimated Quantities Part 2 & Notes	13
Elastomeric Joint Seal Specifications & Procedures	14-16
Elastomeric Compression Seals In Structural Steel Joints	17
Traffic Control Plan	18
LINE DATA	

LINE DATA

BR. NO. BRO-52-1433 R.	
Begin Work	Sta. 735+50
End Work	Sta. 781+50
Net Length of Work	4,600 Lin. Ft. or 0.871 Miles
BR. NO. BRO-52-1746	
Begin Work	Sta. 901+50
End Work	Sta. 946+50
Net Length of Work	4,500 Lin. Ft. or 0.852 Miles



LOCATION MAP

SCALE OF MILES



Portion to be improved _____ 
 State Roads _____ 
 Other Roads _____ 

SCALES

Plan _____ 50 0 50

Profile Horizontal _____ 50 0 50

Profile Vertical _____ 10 0 10

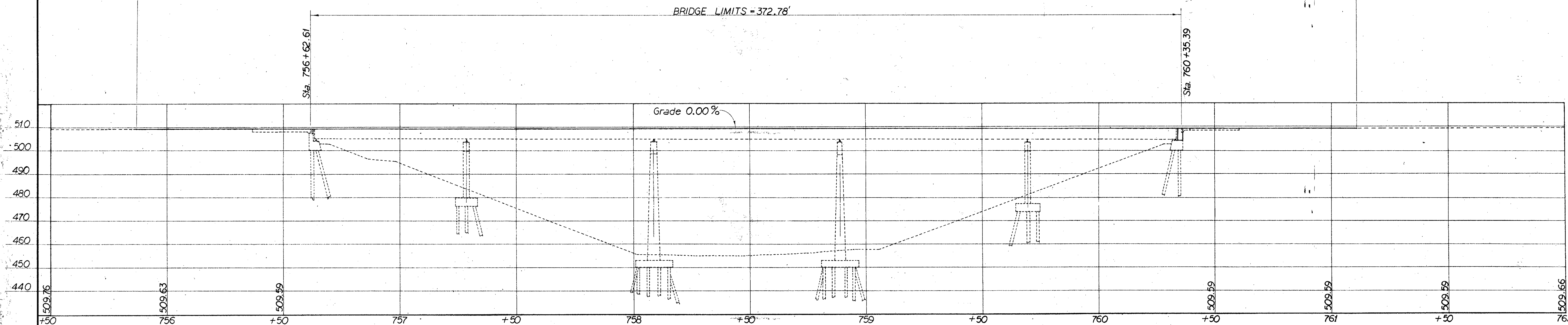
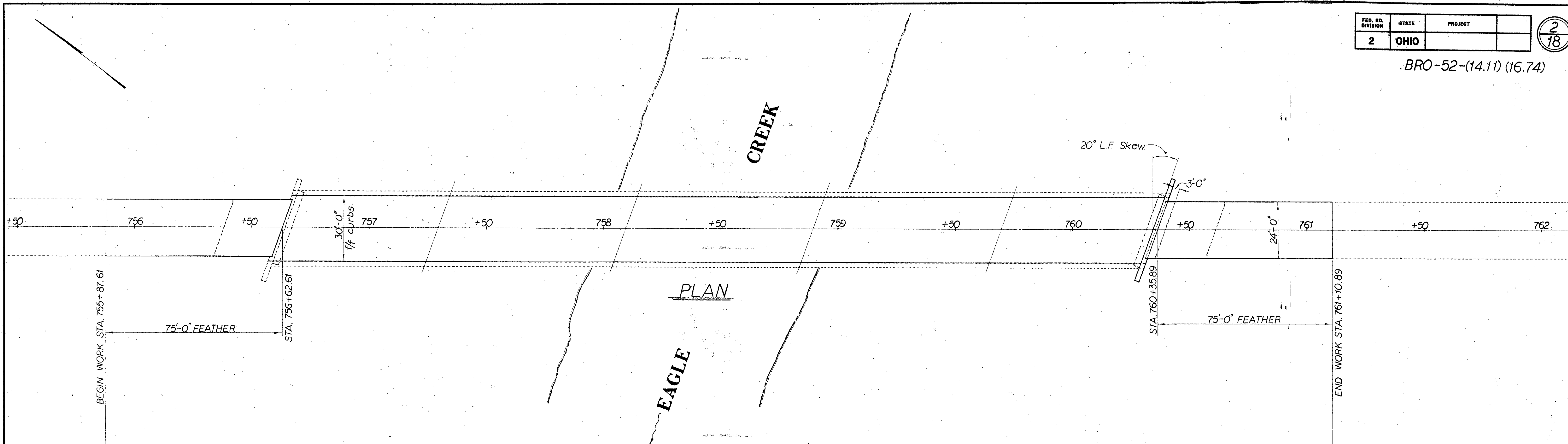
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Project: Brown County BRO-52-(14.11) (16.74)
Date of Letting _____ 19____, Contract No. _____

FED. RD. DIVISION	STATE	PROJECT	
2	OHIO		

2
18

BRO-52-(14.11) (16.74)



STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION DISTRICT 3 BRIDGES						
SITE PLAN BRIDGE NO. BRO-52-14.33 R.						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
SLH	SLH	SLH	MSC	MPD	6-75	

LATEX MODIFIED CONCRETE REPAIRS

1. Description. This work shall consist of repairing concrete bridge decks by resurfacing with latex modified concrete and removal and cleaning of the existing surface to the extent it is completely free of unsound concrete, bituminous or epoxy patches, and other materials detrimental to achieving bond at the time of resurfacing.

This work shall be done in accordance with these specifications and in reasonably close conformity with grades, thickness, and cross-section shown on the plan or established by the Engineer.

2. Surface Preparation. Prior to applying the latex modified concrete wearing course, the concrete surface to be covered shall be machine-scarified to the depth shown on the plans. In areas which scarifying cannot reach, the areas of deep spalling, and where steel reinforcement is exposed, deteriorated concrete will be removed to sound material by chipping and by use of hand tools. If the spalled areas exceed 60%, the contractor may remove the remaining concrete surface with jackhammers in lieu of scarifying.

Forty-eight hours of good curing shall have elapsed prior to scarifying or chipping on adjacent concrete within six feet of latex modified concrete.

Areas from which unsound concrete has been removed shall be kept free of slurry produced by wet sawing or wet scarifying by planning the work so that this slurry will drain away from the complete areas of preparation. All such slurry shall be removed from prepared areas before resurfacing. Before placement begins, and within 24 hours, the entire surface shall be thoroughly cleaned by sand blasting. The edge of previously placed lanes of overlayment shall be sand blasted to remove the trowel cut surfacing and promote bond. If necessary to remove rust, oil, or other foreign materials detrimental to achieving bond, detergent cleaning followed by sand blasting and air blast cleaning will be required. Immediately prior to placement of latex modified concrete, the clean surface shall be thoroughly wetted with clean water for a period of not less than one hour. Any standing water in depressions, holes or areas of concrete removal shall be blown out with compressed air.

In areas of full depth removal, forms shall be provided to enable placement of latex modified concrete. These forms may be suspended from existing reinforcing bars by wire ties, and in the case of large area openings, be supported by blocking from the beam flanges.

All corroded reinforcing bars shall be thoroughly cleaned by sand blasting. Those bars that have lost 1/4 or more of their original diameter shall be supplemented by new bars spliced in place. In splicing new bars, they shall be lapped sufficiently to develop the full strength of the bar and, if necessary additional chipping will be required to provide for this lap. Dual bars of equivalent or greater section may be used. Where the bond between existing concrete and reinforcing steel has been destroyed, or where more than half the diameter of the steel is exposed, the concrete adjacent to the bar shall be removed to a depth that will permit modified concrete to bond to the entire periphery of the bar so exposed. A minimum of 3/4 inch clearance shall be required, except where lower bar mats make this impractical. Care shall be exercised to prevent cutting, stretching or damaging any exposed reinforcing steel. Grade shall be adjusted to provide cover of at least 1 1/2 inches over reinforcing steel.

3. Materials. The materials used in producing latex modified concrete shall meet the requirements of Ohio Department of Transportation Construction and Material Specifications.

A. Portland cement shall be Type I, 701.04 or, if required by weather conditions, Type III, 701.05, at the direction of the latex manufacturer.

3. Materials Continued.

- B. Sand shall be natural sand conforming to 703.02 of the C.M.S.
C. Coarse aggregate shall be size No. 8 limestone meeting the requirements of section 703.02 of the C.M.S.
D. The latex modifier shall conform to the requirements of Dow Chemical Company, Modifier A, or approved equal.
E. Water shall conform to the requirements of section 499.02 of the C.M.S. and the storage and handling of all materials shall be in accordance with the C.M.S. and the latex manufacturer's requirements. The latex modified concrete shall be designed by the Engineer using the following as a guide.

Material or Property	Latex Modified Concrete
Average thickness	1" and greater
Cement content, sacks/cu. yd.	7.0
Latex emulsion admixture, gal./sack	3.5
* Water, gal. per sack	2.5
Air content, % of plastic mix	5 ± 2
* Slump, inches	4-6
Percent fine aggregate as percent of total agg., by weight	50-55
*** Weight ratio of cement: sand: coarse aggregate dry basis	1:2.5:2.0
Aggregate, specific gravity	2.65

* The slump shall be measured 4 to 5 minutes after discharge from the mixer. During this waiting period, it shall be deposited on the deck and not be disturbed.

** The net water added shall be adjusted to control the slump within the prescribed limits and should produce net water cement ratio of 0.35-0.40 by weight.

*** The dry weight ratios are approximate and should produce good workability but due to gradation changes may be adjusted within the limits by the Engineer. The sand ratio may be increased by as much as 0.2 if the coarse aggregate is reduced by an equivalent volume.

4. Equipment. All equipment for the deck preparation, mixing, placing, and finishing of latex modified concrete shall be approved by the Engineer prior to start of any work.

Surface preparation equipment shall be of the following types:

- A. Sawing equipment capable of sawing concrete to the specified depth.
B. Power-operated mechanical scarifier capable of removing not less than 1/4 inch from the old surface.
C. Sand blasting equipment capable of removing rust scale from reinforcing bars and of removing small chips of concrete partially loosened by the scarifying or chipping operation.
D. Power driven hand tools for removal of unsound concrete subject to the following restrictions:
1. Pneumatic hammers heavier than nominal 30 pound class shall not be used, unless approved by the engineer. No hammers heavier than 60 pounds shall be used, in any case.
2. Triple-headed tampers fitted with star drills shall be not less than 2 inches dia in the tamper sockets.

Proportioning and mixing equipment shall be self-contained, mobile, continuous mixing subject to the following:

- A. The mixer shall be self-propelled and be capable of carrying sufficient unmixed dry, bulk cement, sand, coarse aggregate, latex modifier, and water to produce on the site not less than six cubic yards of concrete.
B. The mixer shall be capable of positive measurement of cement being introduced into the mix. A recording meter visible at

4. Equipment Continued.

all times and equipped with a ticket printout shall indicate this quantity.

C. Mixers shall be calibrated to accurately proportion the specified mix. Certification of the calibration by approved testing authority will be accepted as evidence of this accuracy if the yield is shown to be true within a tolerance of 1.0% according to the following test:

With the cement meter set on zero and all controls set for the desired mix activate the mixer discharging mixed material into a one quarter cubic yard container - 36" x 36" x 9". When the container is level-struck full, making provision for settling the material into all corners, the cement meter must show a discharge of 1 3/4 bags of cement for latex modified concrete, (7 bags/cu. yd.).

D. The mixer shall provide positive control of the flow of water and latex emulsion into the mixing chamber. Water flow shall be indicated by flow meter and be readily adjustable to provide for minor variations in aggregate moisture.

E. The mixer shall be capable of being calibrated to automatically proportion and blend all components of the indicated composition on continuous or intermittent basis as required by the finishing operation, and shall discharge mixed material through a conventional chute directly in front of the finishing machine.

F. The mixer shall be capable of spraying water over the entire placement width as it moves ahead to insure that the surface to be overlaid is wetted to receive the modified material.

Placing and Finishing Equipment shall include hand tools for placement and brushing-in freshly mixed modified concrete and for distributing it to approximately the correct level for striking-off with the screed. Approved hand operated vibrators and screeds shall be used to place and finish small areas of work;

An approved finishing machine complying with the following requirements shall be used for finishing all large areas of work.

The finishing machine shall be self-propelled and capable of forward and reverse movement under positive control. Provision shall be made for raising all screeds to clear the screeded surface for traveling reverse.

A Gomaco C 450 or equivalent self-propelled finishing machine with one or more rotating rollers, augers, and 1500 to 2500 vpm. vibratory pans may be used.

Any modification shall be subject to approval by the Engineer.

The machine may be of the vibrating screed type designed to consolidate the modified composition by vibration. Vibration frequency shall be variable with positive control between 3000 and 11000 vpm. The bottom face of the screeds shall be not less than four inches wide and be metal covered. The screed shall be provided with positive control of the vertical position.

Screed rails shall be of 1/2 inch steel bar stock not less than two inches wide, drilled and counter-sunk for attachment to the prepared surface. Travel rails for the Gomaco C 450 or equivalent shall be 2"x2" perforated steel bar stock, two inch pipe rail or approved equal. A suitable portable lightweight or wheeled work bridge shall be required and used behind the finishing operation.

5. Proportioning and Mixing of Modified Compositions. The operations of proportioning and mixing modified materials shall comply with the following requirements:

Mixers shall be clean and the ingredients accurately proportioned.

Modified concrete materials shall be mixed at the site in accordance with the specified requirements for the equipment used. The modified concrete as discharged from the mixer shall be uniform in composition and consistency. Mixing capability shall be such that finishing operations can proceed at a steady pace with final finishing completed before the formation of the plastic surface film.

Note continued on next sheet

Screed rails shall be placed and fastened in position to insure finishing the new surface to the required profile. Anchorage for supporting rails shall provide horizontal and vertical stability.

All surfaces shall be completely cleaned as approved by the Engineer prior to placing mixtures.

The modified mixture shall be brushed onto the wetted, prepared surface. Care shall be exercised to insure that all vertical as well as horizontal surfaces receive a thorough, even coating and that the rate of progress is limited so that the brushed material does not become dry before it is covered with additional material as required for the final grade. Material used for brushing which has had the mortar used up, shall be disposed of.

The mixture shall be placed and struck-off to approximately $\frac{1}{4}$ inch above final grade. It shall then be consolidated and finished at final grade with the vibrating devices. Spud vibration will be required in deep pockets, edges and adjacent to joint bulkheads. Hand finishing with a float may be required along the edge of the pour or on small areas of repair. Edge tooling is required at joints, except next to metal expansion dams, curbs, and previously placed lanes.

When a tight, uniform surface has been achieved it shall be texturized by a burlap or broom drag before the plastic film forms on the surface.

Screed rails and/or construction bulkheads shall be separated from the newly placed material by passing a pointing trowel along their inside face. Metal expansion dams shall not be separated from the overlayment. Care shall be exercised to insure that this trowel cut is made for the entire depth and length of rails after the mixture has stiffened sufficiently.

The surface shall be promptly covered with a single layer of clean, wet burlap as soon as the surface will support it without deformation.

Within one hour of covering with wet burlap, a layer of four mil, polyethylene film shall be placed on the wet burlap and the surface cured for 24 hours. The curing material shall then be removed for an additional 72 hours air cure. Wet burlap-polyethylene sheets may be substituted for the polyethylene film with the approval of the Engineer, but shall not replace the initial wet burlap.

A representative of the manufacturer shall be present during the proportioning, mixing, placing and finishing of the concrete. Operations and procedures which are considered by this representative as being detrimental to the integrity and durability of the concrete will not be permitted. Surface smoothness shall conform to the requirements of 451.12. No vehicular traffic shall be permitted on the latex concrete surface until 96 hours after placement.

6. Limitations of Operations. The construction of the latex modified concrete mixture overlay shall be performed during good weather conditions. The mixture shall be placed when the atmospheric temperature is between 55° and 75° F when the wind velocity is low, when the relative humidity is normal or high, and when hot conditions or rain are not expected. In all instances the mixture shall be placed when the temperature is above 45° F and is predicted to be above 45° F for at least eight hours after the mixture is placed. The mixture shall not be placed when the temperature is 85° F or higher, when the wind velocity is high, when the relative humidity is extremely low, when rain is expected within the working period, nor when any other atmospheric conditions cause difficulty in the satisfactory finishing and curing of the overlay. This may require nighttime work or other limited work periods.

The number of mixers, finishers required and other pertinent details shall be determined in a pre-pour meeting on the project at least three days prior to any deck pour. The superintendent in charge of the pour and Project Engineer, shall attend.

The construction dam or bulkhead shall be installed in case of major delay in the placement operation exceeding one hour in duration. During minor delays of one hour or less the end of the placement shall be protected from drying with several layers of wet burlap.

6. Limitations of Operations Continued. Adequate precautions shall be taken to protect freshly placed modified material from sudden or unexpected rain. All placing operations shall stop when it starts to rain. The engineer may order removal of any material damaged by rainfall.

The contractor shall provide sufficient mixer capacity to sustain a continuous pouring operation. A minimum of two mixers will be required for any pour over six cubic yards. For larger pours additional mixers may be necessary.

A. Item Special, Surface Preparation will be computed in square yards from measurements of areas so prepared and accepted.

B. Item Special, Latex Modified Portland Cement Concrete, shall be computed in cubic yards of materials mixed and placed. Meter ticket printout of continuous mixers so equipped and properly calibrated will be accepted for this calculation. No deduction will be made for coarse aggregate thrown out due to brushing operations.

C. Item Special, Finishing and Curing will be computed in square yards from measurements of the areas so finished and cured.

The quantities of various other pay items which contribute to the completed and accepted work will be measured for payment according to the plans and specifications for the several items.

B. Basis of Payment. The quantities measured as provided above will be paid for at the contract unit price for the pay items, which price shall be full compensation for furnishing, hauling and placing of all materials and for all labor, equipment, tools and incidentals.



BRIDGE NO. BRO-52 1433 R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NSP	NSP	NSP	TM:SG	TM:BB 4-75		

GENERAL NOTES

DESIGN SPECIFICATIONS: This structure conforms to Standard Specifications for Highway Bridges adopted by the American Association of State Highway Officials 1969, including the Ohio Supplement to these specifications.

DISPOSITION OF MATERIALS: Suitable waste masonry shall be placed as bank protection as directed by the Engineer. All other material removed shall become the property of the Contractor and be removed from the site by him. Payment to be included in item 202, Portions of Structure Removed.

MAINTAINING TRAFFIC: See Work Procedure

407 TACK COAT: A tack coat shall be applied to the approach feather areas to the structure. The tack coat shall be applied, at the rate determined at the pre-construction conference, on the day prior to the start of work, but in no case shall the rate of application exceed 0.10 Gal. per Sq. Yd.

Note
The adjacent traffic lane to the to be closed for repair shall be kept as smooth as possible (to reduce vibration) by placing bituminous material in the potholes. No tack should be used so that the holes can be cleaned out easily prior to permanent patching. This operation shall be included for payment under item 614, Maintaining Traffic.

WORK PROCEDURE

1-Place traffic control devices as per traffic plan sheet No. 9 for one lane traffic.

2-Install necessary bracing to support excavation adjacent to traffic lane as per item 503, cofferdams, cribs and sheeting.

3-Construct right side of proposed bridge backwall and place latex modified portland cement concrete.

4-Open completed right side of structure to traffic.

5-Construct remainder of proposed bridge backwall and latex modified portland cement concrete.

6-Place 404 wearing surface and open to two lane traffic.

Latex Modified Portland Cement Concrete Calculations

Length = 370.0 Lin. Ft. Width (out to out) = 30.0 Lin. Ft.

Surface Area = 11,100.0 Sq. Ft. = 1233 Sq. Yds.

Latex Modified Portland Cement Concrete = $\left[\left(1\frac{1}{2} \text{ In.} \right) (11,100 \text{ Sq. Ft.}) + (2 \text{ In.})^* (8,393 \text{ Sq. Ft.}) \right] \left[\frac{1}{1/12} (27) \right]$
= 103.2 Cu. Yds.

* Additional Depth Required For Spalled Areas.

Note: Seventy five percent of the total deck area was taken as requiring $3\frac{1}{4}$ " of total depth of latex concrete, to estimate quantities for pay item. Actual quantities as determined in the field may vary from this amount.

PART I

ESTIMATED QUANTITIES FOR BR. NO. BRO-52-1433 R

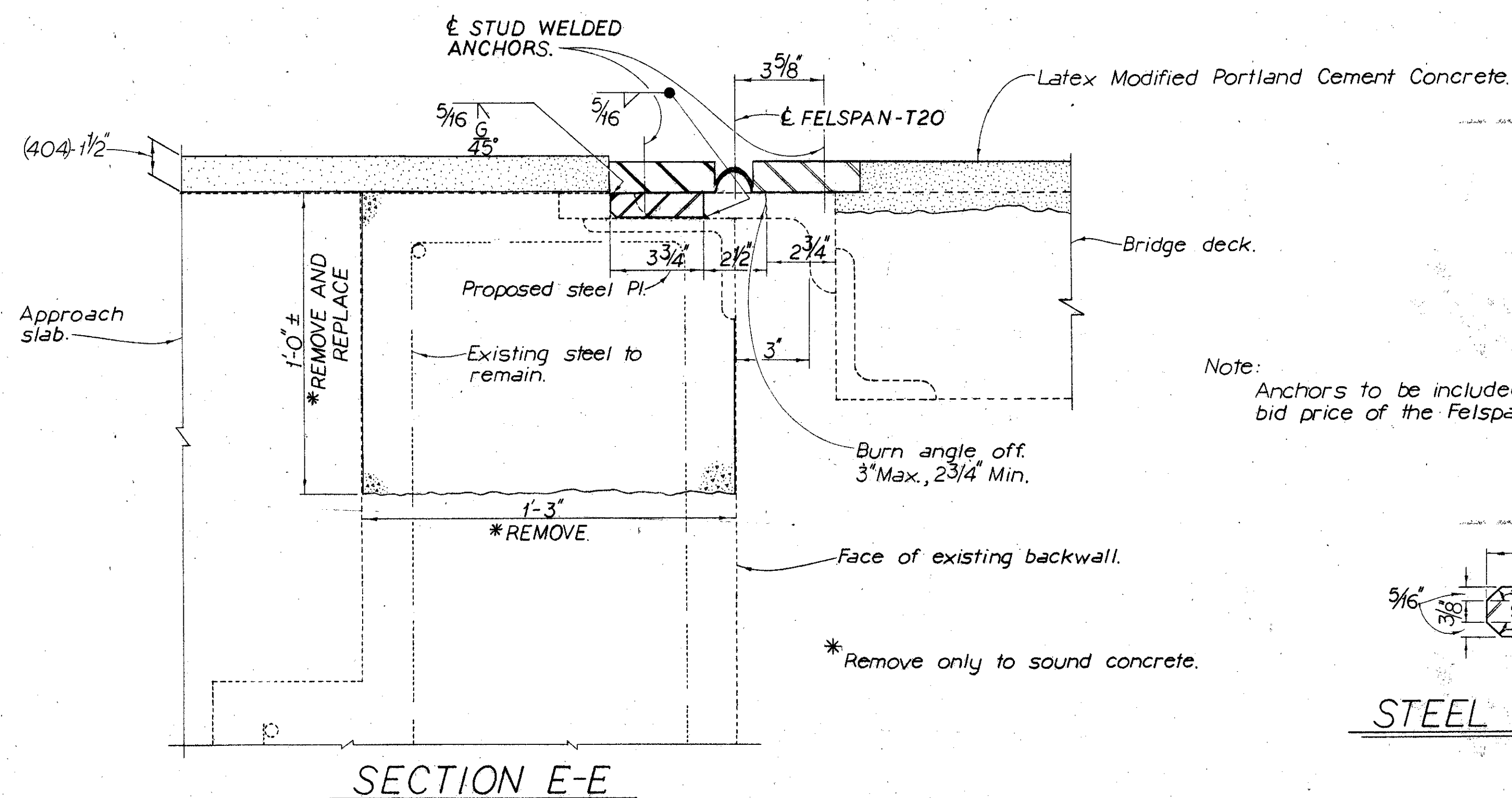
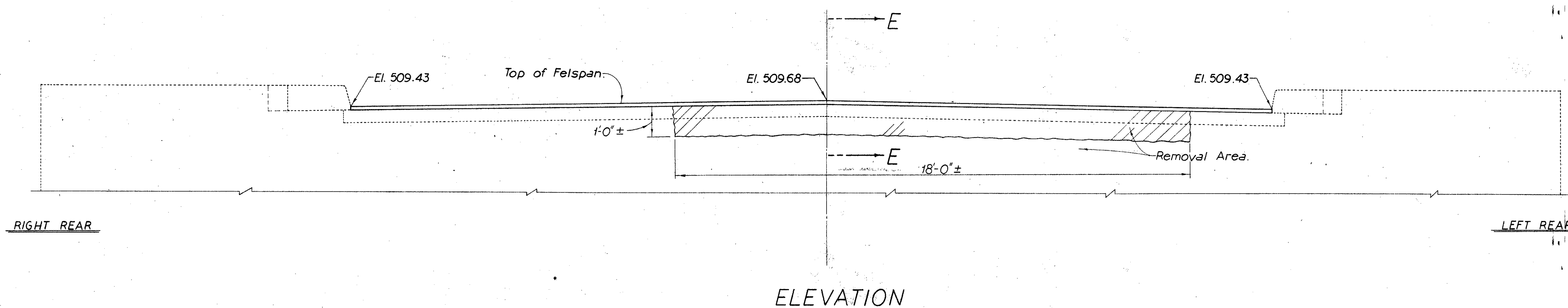
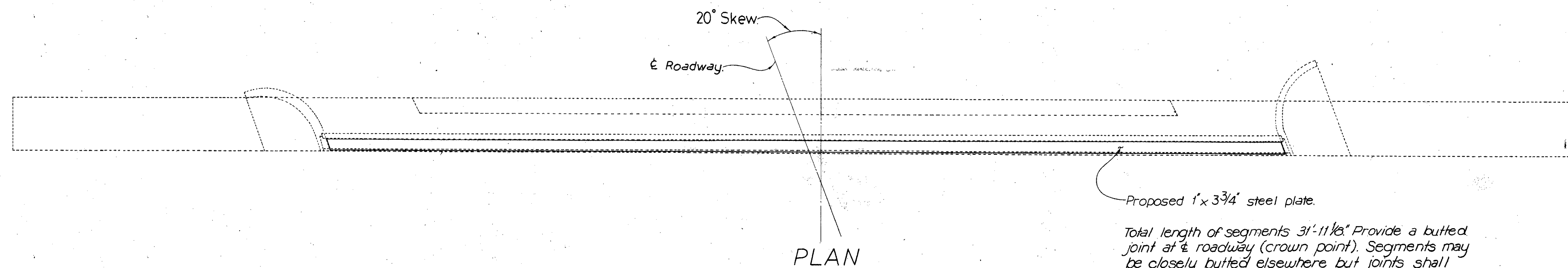
ITEM	TOTAL	UNIT	DESCRIPTION
202	Lump Sum		Portions of structure removed.
310	2.5	C.Y.	Subbase.
403	2	C.Y.	Asphalt concrete, AC-20.
404	8.5	C.Y.	Asphalt concrete, AC-20.
407	40	Gal.	Tack coat, MS-2, RS-1, RC-250, SS-1 or SS-1H.
407	1.5	Ton.	Cover aggregate.
503	27	C.Y.	Unclassified excavation.
503	Lump Sum		Cofferdams, cribs and sheeting.
509	618	Lbs.	Reinforcing steel.
510	36	Ea.	Dowel holes.
511	16	C.Y.	Class C concrete, abutment.
512	1.5	S.Y.	Type B waterproofing.
513	1,227	Lbs.	Structural steel.
516	4	L.F.	Elastomeric compression seals in structural steel joints, including specials.
518	27	C.Y.	Porous backfill.
518	62.5	L.F.	6" Perforated, helical corr. metal pipe, 707.01.
518	8	L.F.	6" Non-perforated helical corr. metal pipe, including specials, 707.01.
614	Lump Sum		Maintaining traffic.
619	Lump Sum		Field office.
Special	1,233	S.Y.	Surface preparation.
Special	104	C.Y.	Latex modified portland cement concrete.
Special	1,233	S.Y.	Finishing and curing.
Special	68	L.F.	Steel reinforced elastomeric joint seal, including specials.

FED. RD. DIVISION	STATE	PROJECT
2	OHIO	

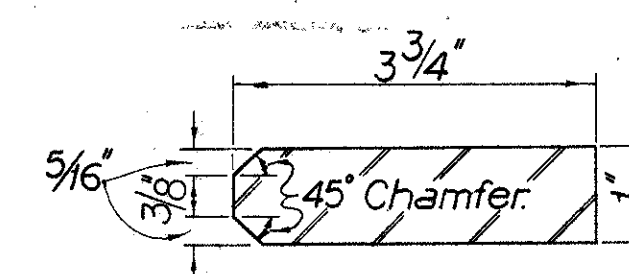
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BRO-52-(14.11) (16.74)

STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION DISTRICT 5 BRIDGES						
ESTIMATED QUANTS. PART I GENERAL NOTES AND WORK PROCEDURE BRIDGE NO. BRO-52-1433 R.						
DESIGNED	DRAWN	TRADED	CHECKED	REVIEWED	DATE	REVISED
J.L.R.	J.L.R.	J.L.R.	MSC	JMB	4-75	

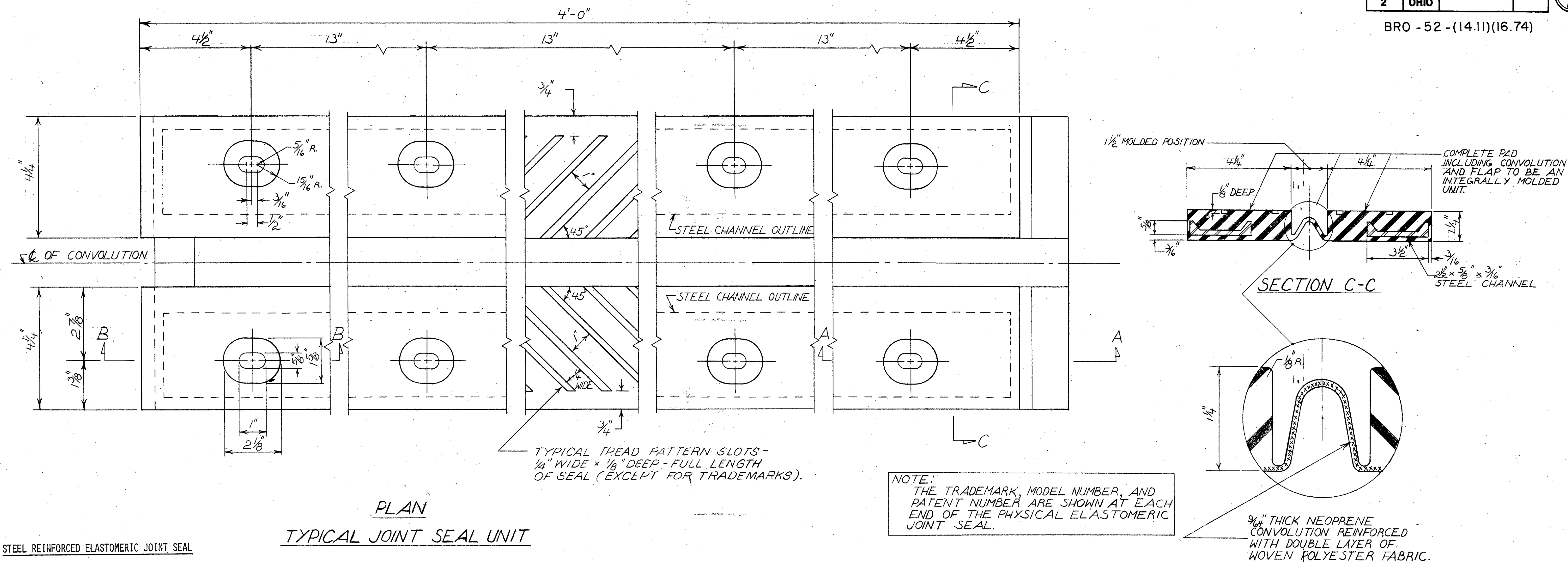


Note: Anchors to be included in the bid price of the Ferspan-T20.



STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION DISTRICT 5 BRIDGES						
REAR ABUTMENT						
BRIDGE NO. BRO-52-1433 R.						
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.R.H.	J.R.H.	J.R.H.	M.S.C.	M.P.B.	4-75	

BRO - 52 - (14.11)(16.74)



STEEL REINFORCED ELASTOMERIC JOINT SEAL

DESCRIPTION

THE ELASTOMERIC JOINT SEAL AS SHOWN HEREON SHALL BE COMPOSED OF INTEGRALLY MOLDED PADS OF STEEL REINFORCED ELASTOMER WITH A FLEXIBLE FABRIC REINFORCED ELASTOMERIC CONVOLUTION CONNECTING THE PADS BY MEANS OF INTEGRAL MOLDING.

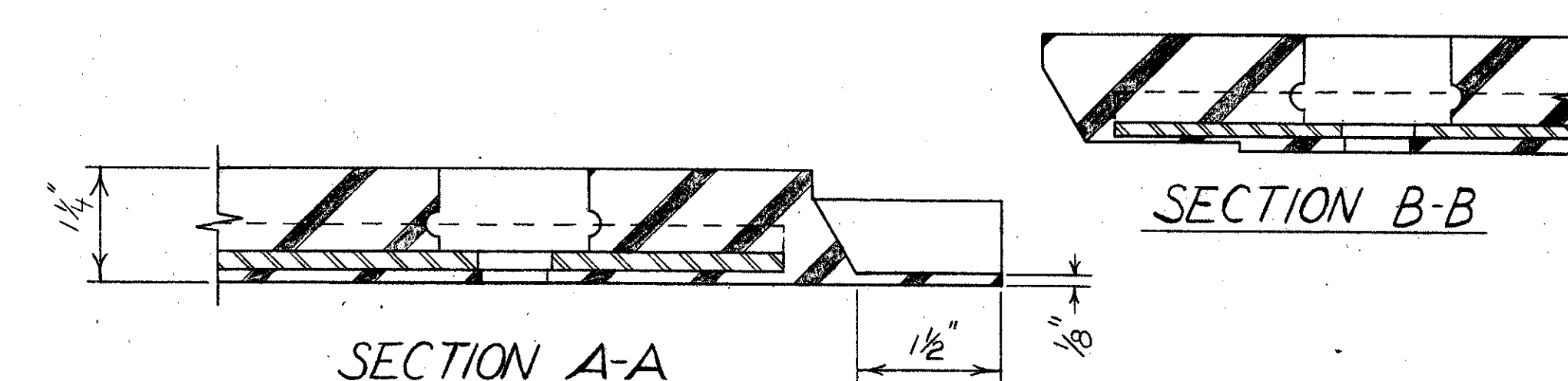
THE NEOPRENE COMPOUND IN THE CONVOLUTION AND AT THE MATED SURFACES SHALL BE IN ACCORDANCE WITH ASTM D2000 "LINE CALL OUT" 2BC620 A14B14C12F17K21. THE REMAINING PORTION OF THE UNIT SHALL BE IN ACCORDANCE WITH ASTM D2000 "LINE CALL-OUT" 2BC615A14B14C12F17K21, AND THE FOLLOWING SPECIFIC REQUIREMENTS:

PHYSICAL PROPERTIES	ASTM TEST	REQUIREMENT
HARDNESS DURO SHORE A	D-2240	60 ± 5
TENSILE STRENGTH	D-412	1500 PSI MINIMUM
ULTIMATE ELONGATION	D-412	350% MINIMUM
COMPRESSION SET 22 Hrs. @ 212°F	D-395(METHOD B)	35% MAXIMUM
LOW TEMPERATURE FLEXIBILITY	D-746	NOT BRITTLE @ 40°F
OZONE RESISTANCE: EXPOSURE TO 100 PPHM	D-1149	NO CRACKS
OZONE FOR 70 Hrs. @ 100°F SAMPLE UNDER 20% STRAIN		
OIL DETERIORATION: VOLUME INCREASE AFTER	D-471	120% MAXIMUM
IMMERSION IN ASTM OIL #3 FOR 70 Hrs. @ 212°F		
BOND DURING VULCANIZATION	D-429-68B	80% R.

WHEN TEST SPECIMENS ARE CUT FROM THE FINISHED PRODUCT, A 10% VARIATION IN "PHYSICAL PROPERTIES" WILL BE ALLOWED.

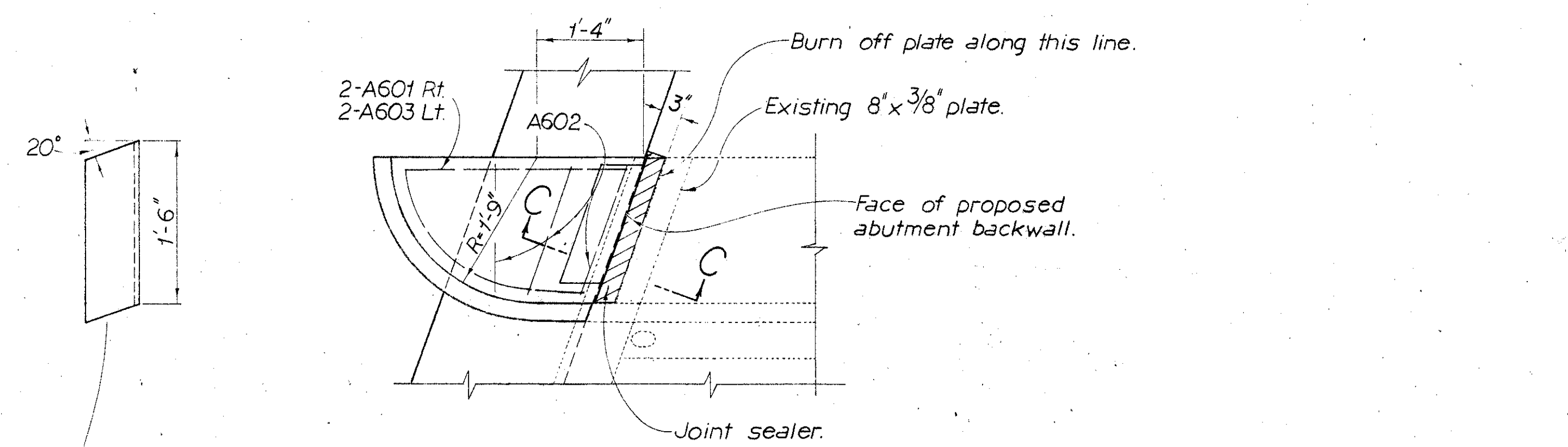
STEEL REINFORCEMENT

STEEL REINFORCEMENT SHALL MEET THE REQUIREMENTS OF ASTM A570 D, ASTM A36, OR AISI M1020. REINFORCEMENT SHALL BE BONDED TO THE ELASTOMER DURING THE VULCANIZATION PROCESS.

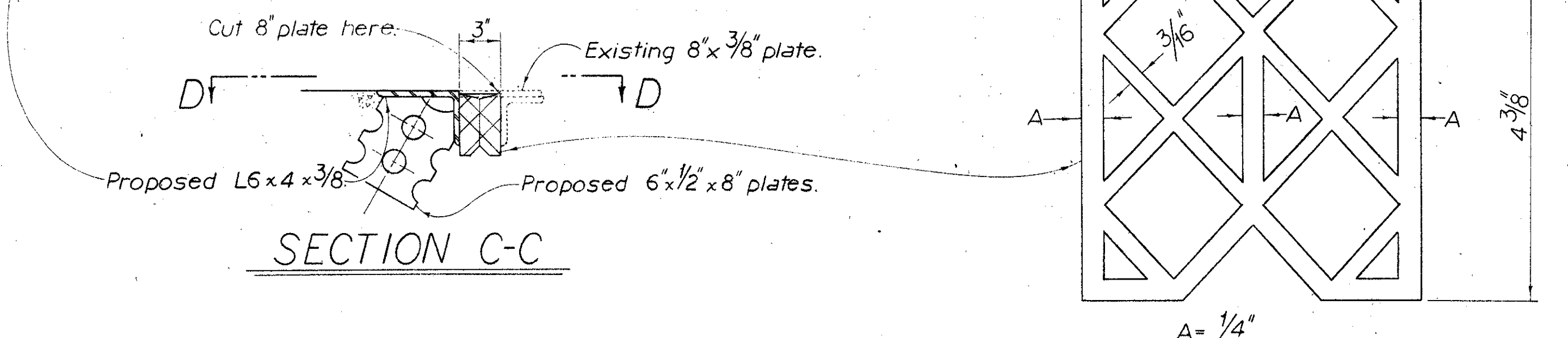


TYPICAL INTERCONNECT SEAL OVERLAP DETAIL

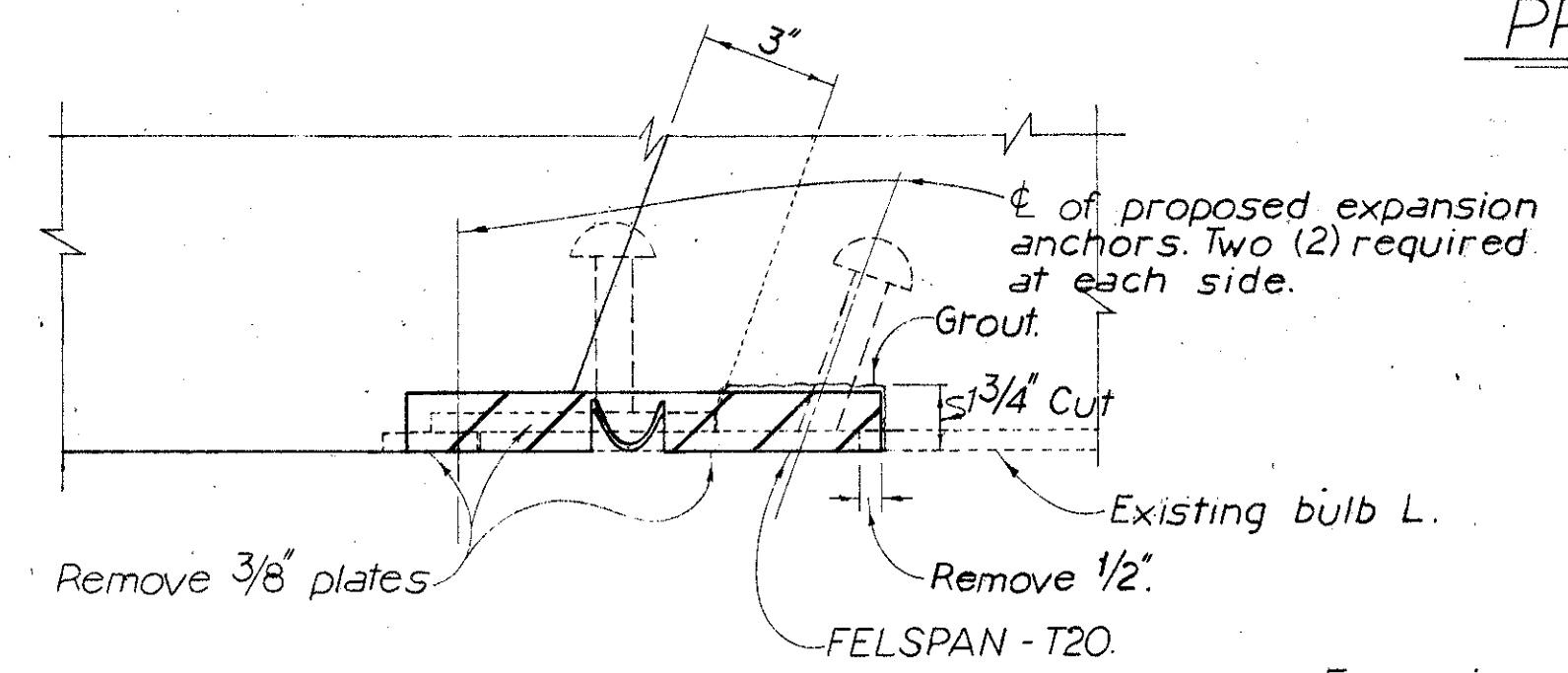
FELT PRODUCTS MFG. CO. 7450 MCCORMICK BLVD. SKOKIE, ILLINOIS					
STATE OF OHIO DEPARTMENT OF HIGHWAYS DIVISION OF DESIGN AND CONSTRUCTION BUREAU OF BRIDGES					
STEEL REINFORCED ELASTOMERIC JOINT SEAL 10" WIDE - 1/4" THICK (T-20)					
DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE
	S.S. 11-26-74		M.P.B.	M.P.B.	4-7-75



DETAIL OF CURB ENDS

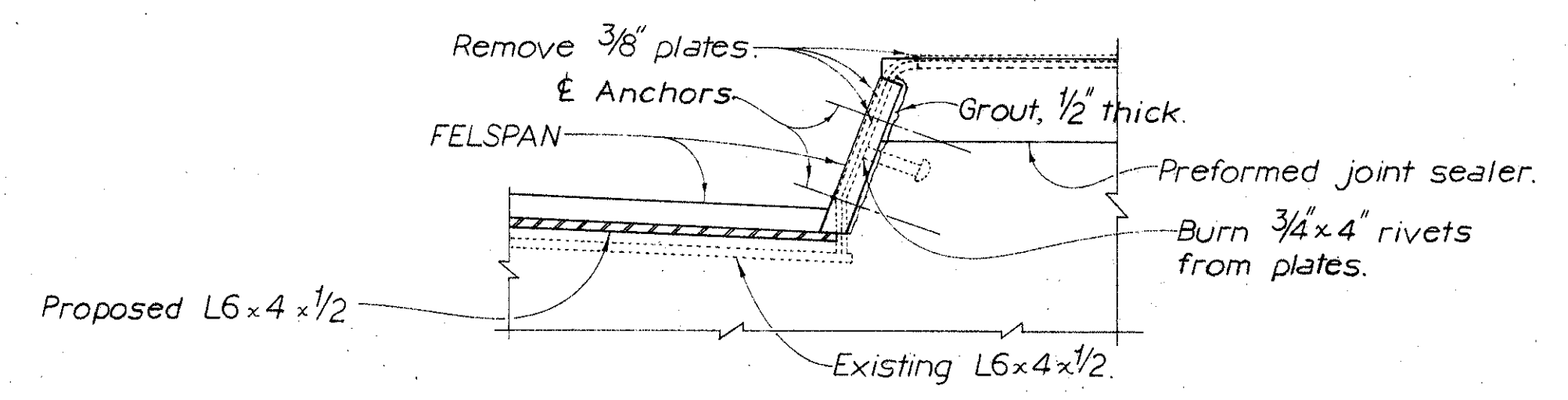


PREFORMED JOINT SEALER



SECTION D-D
(Taken thru face of curb.)

Expansion anchors shall be externally threaded tapered bolt with internally threaded tapered expander. Taper-bolt manufactured by the U.S. Expansion Bolt Company or approved equal. Minimum imbedment in concrete 2 3/8".



TYPICAL CURB SECTION

		Part 1	Part 2	Grand Total, Parts 1 & 2	GENERAL SUMMARY
ITEM	UNIT	1433 R.	1746	TOTAL	DESCRIPTION
202	Lump	Lump	-	Lump	Portions of structure removed.
202	Sq. Yds.	-	27	27	Wearing course removed.
310	Cu. Yds.	2.5	-	2.5	Subbase.
403	Cu. Yds.	2.0	39.0	41.0	Asphalt concrete, AC-20.
404	Cu. Yds.	8.5	34.0	42.5	Asphalt concrete, AC-20.
407	Gal.	40	124	164	Tack coat. SS-1, SS-1H, MS-2, RS-1 or RC-250
407	Ton.	1.5	1.5	3.0	Cover aggregate.
503	Cu. Yds.	27	-	27	Unclassified excavation.
503	Lump	Lump	-	Lump	Cofferdams, cribs and sheeting.
509	Lbs.	618	-	618	Reinforcing steel.
510	Each	36	-	36	Dowel holes.
511	Cu. Yds.	16	-	16	Class C concrete, abutments.
512	Sq. Yds.	1.5	-	1.5	Type B waterproofing.
Special	Sq. Yds.	-	864	864	Membrane waterproofing, (liquid type).
513	Lbs.	1,227	-	1,227	Structural steel.
516	Lin. Ft.	4	56	60	Elastomeric compression seals in structural steel joints, including specials.
516	Lin. Ft.	-	56	56	Vertical extension of structural expansion joints, as per plan.
518	Cu. Yds.	27	-	27	Porous backfill.
518	Lin. Ft.	62.5	-	62.5	6" Perforated, helical corr. metal pipe, 707.01.
518	Lin. Ft.	8.0	-	8.0	6" Non-perforated helical corr. metal pipe, including specials, 707.01.
519	Sq. Ft.	-	20	20	Patching concrete structures.
614	Lump	Lump	Lump	Lump	Maintaining traffic.
619	Lump	Lump	Lump	Lump	Field office.
Special	Sq. Yds.	1,233	-	1,233	Surface preparation.
Special	Cu. Yds.	104	-	104	Latex modified portland cement concrete.
Special	Sq. Yds.	1,233	-	1,233	Finishing and curing.
Special	Lin. Ft.	68	-	68	Steel reinforced elastomeric joint seal, including specials.
Special	Sq. Yds.	-	688	688	Patching concrete bridge decks - Type B.
Special	Cu. Yds.	-	12.5	12.5	Asphaltic protective course.

STEEL LIST					
MARK	NO.	LENGTH	WEIGHT	SHR.	BENDING DIAGRAMS
A501	25	9'-2"	238	B	
A502	11	8'-5"	96	B	
A503	3	26'-10"	84	S	
A504	2	7'-7"	16	S	
A505	2	8'-0"	17	S	
A506	3	26'-5"	83	S	
A601	2	5'-8"	17	B	
A602	6	6'-2"	56	B	
A603	2	4'-0"	12	B	

Refer to CMS Sections 106.03, 700, 709.01 through 709.05 and 709.08. Sufficient additional reinforcing steel shall be provided for sampling. Random samples shall be replaced in the structures by the additional steel, spliced in accordance with 509.08.

STATE OF OHIO
DEPARTMENT OF HIGHWAYS
DIVISION OF DESIGN AND CONSTRUCTION
DISTRICT 9 BRIDGES

SUPERSTRUCTURE DETAILS
AND
GENERAL SUMMARY
PARTS 1 & 2
BRIDGE NO. BRO-52-14 33 R.

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
J.L.H.	J.L.H.	J.L.H.	M.S.C.	M.P.B.	4-75	