

613

Bridge

OHIO DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS

613-81
Sci Co.

SCIOTO COUNTY
SCI-52-36.28

1
7

PLAN BR-62-81

PART	COUNTY	ROUTE	SECTIONS	PROJECT TERMINI		NET LENGTH MILES	TOWNSHIP	CITY	VILLAGE
				BEGIN	END				
1	Scioto	52	36.28	36.28	36.28	0.00			

BEAM REPAIR
DISTRICT 9

The Standard 1979 Specifications of Ohio, Department of Transportation, including changes and Supplemental Specifications listed in the plans and proposal shall govern these improvements.

I hereby approve these plans and declare that the making of these improvements will require the closing of the highways to traffic on Parts No. _____ and that detours will be required for State forces. The closing to traffic of the highways will not be required on Parts No. _____ and provisions for the maintenance and safety of traffic will be as indicated in the proposal.

Approved
Date 4-20-81

William W. Branchaw
District Deputy Director of Transportation

Approved
Date 4-22-81

Robert B Pfeifer
Engineer of Bridges

Approved
Date _____

Engineer of Maintenance

Approved
Date 5-11-81

Krystal E. Hanson
Chief Engineer, Operations

Approved
Date _____

Assistant Deputy Director, Program Development

Approved
Date _____

Chief Engineer, Construction

Approved
Date _____

Chief Engineer, Design

Approved
Date _____

Assistant Director, Department of Transportation

Approved
Date 5-11-81

David S. Meier
Director, Department of Transportation

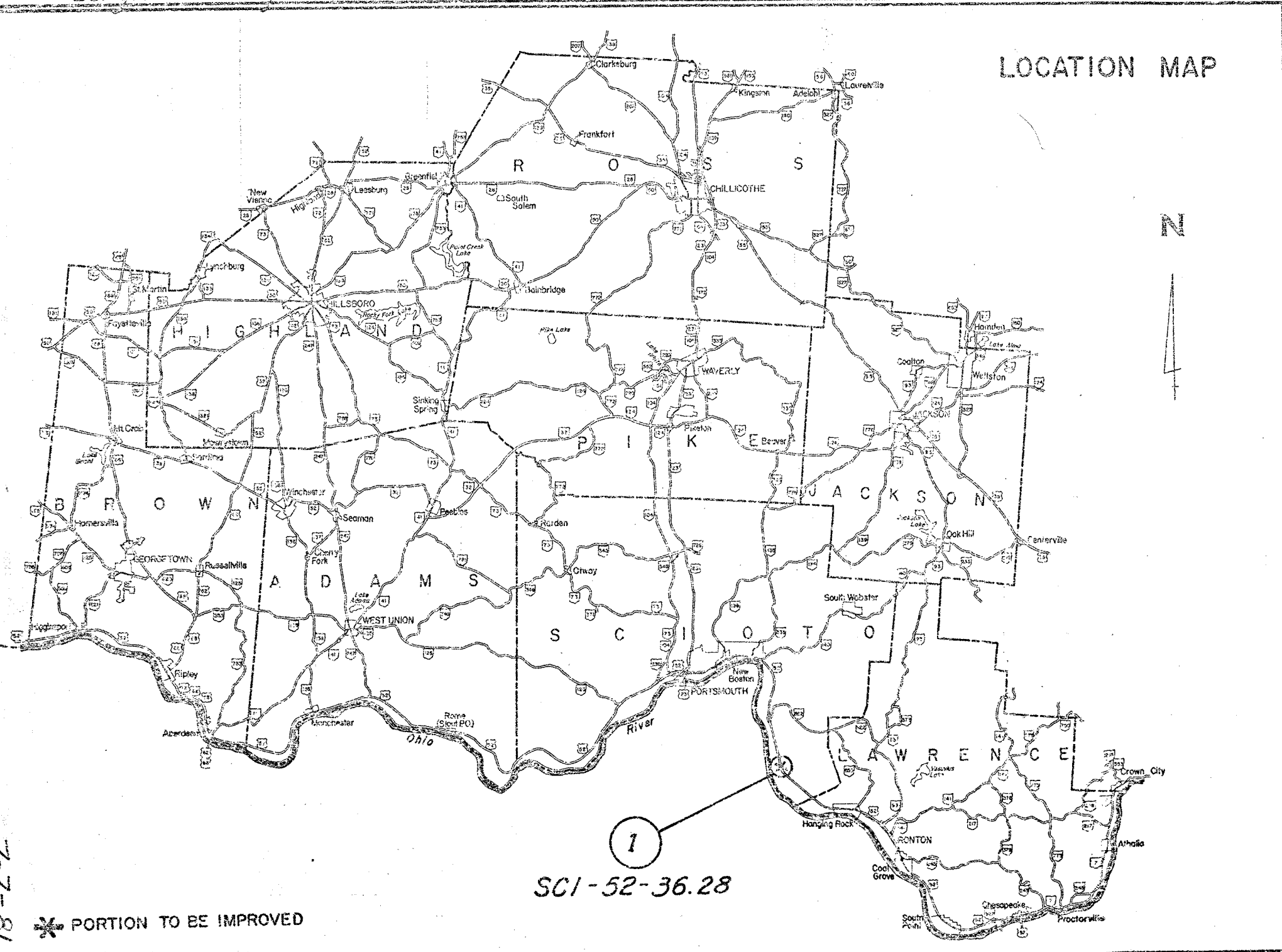
INDEX OF SHEETS

Title Sheet.....	1
General Notes.....	2-3
Superstructure Details.....	4-5
General Summary.....	6
Traffic Control.....	7

STANDARD DRAWINGS		SUPPLEMENTAL SPECIFICATIONS	
SD-1-69	6-12-69	SS 956	6-26-78

Length of Project = 0.00 Lin. Ft. or 0.00 Mi.

LOCATION MAP



BIN 2

7-7-81

Remember to include on 1982 C.B.R. PAINTING
IF HAR unable to do by 11-81

REFERENCE shall be made to Standard Drawing SD-1-69, Sheet 4 dated 6-12-69.

SPECIFICATIONS All material and items of work shall conform to the Construction and Material Specifications of the State of Ohio, Department of Transportation dated January 1, 1979.

DESIGN LOADING These repairs restore this structure to its original design load capacity and to HS 20-44 Highway Loading.

ITEM 202 - PORTIONS OF EXISTING STRUCTURAL STEEL REMOVED.
For Designs "A" and "B" the two (2) damaged crossframes as noted on Sheet No. 4 shall be removed under this item. For Design "B" the 25 Ft. long damaged section of the North fascia beam as shown on Sheet No. 5 shall also be removed.

ITEM SPECIAL - HEAT STRAIGHTENING OF EXISTING STRUCTURAL STEEL.
For Design "A" this item shall consist of heat straightening damaged portions of the web and bottom flange of fascia beam "A", which is to remain in place, as shown on the plans. It shall be accomplished in accordance with 513.06 of the Construction and Material Specifications. Final straightness tolerances for the bottom flange shall be 1/4 in. of tilt rotation at the edges and 1 in. of sweep. The final web shall be less than 1 in. out of vertical alignment.

The repairs shall be performed under the direct supervision of a nationally known heat straightening expert or a welder qualified by the State of Ohio having a minimum of five (5) years of actual heat straightening experience with bridge beams and girders. He shall possess the knowledge and experience to apply the heat in such a manner, sequence and amount that the final straightened beam retains as little residual stress as possible.

ITEM 513 - STRUCTURAL STEEL

New structural steel shall conform to ASTM A36, unit stress 20,000 p.s.i. Two (2) new sets of intermediate crossframe members shall be installed between Beam "A" and Beam "B" as shown on Sheet No. 4. Each crossframe shall consist of three (3) pieces of 3x3x5/16" angles. For Design "A" structural steel shall consist of the two (2) crossframes as noted on Sheet No. 4 which shall be replaced. For Design "B" the repair section for the north fascia beam as shown on Sheet No. 5 shall be included with the two (2) crossframes.

For Design "B" this item shall consist of heat straightening damaged areas of the web and bottom flange which are adjacent to the repair section. This heat straightening shall be accomplished according to 513.06 of the Construction and Material Specifications by persons having a record of successful accomplishment in heat straightening. Straightness tolerances for the beam areas shall be such that the final straightness reasonably conforms to the original alignment of the beam.

PROPOSED WELDING PROCEDURE FOR DESIGN "B"

1. Tack weld repair section for Beam A at top.
2. Complete flange and web root passes at one end; then complete flange and web welds.
3. Repeat procedure at the other end.
4. Perform fillet welding at the top of the repair section for Beam A.

WELDING shall be done according to 513. Proper joint preparation and grinding of welds shall be included with Item 513 for payment. Fabricator Certification as specified in 501.04 is not required for the new crossframes.

METHOD OF REPAIR. Heat shall be applied at or below 1,200 degrees F. and monitored with contact temperature probes or other heat indicating devices to ensure maximum temperatures reached during straightening. Completed straightening shall be followed by magnetic particle inspection for cracks at the edges of the flange. If cracks are present, they shall be repaired as directed by the Engineer at no additional cost to the State.

Bob Purdy ← Purdy

Apr. welds in welds

PAINTING OF STRUCTURAL STEEL. Shop painting of new structural steel and field painting of existing and new structural steel shall be in accordance with 514 and shall be applied as stated under Proposed Sequence of Operations.

For Design "A" the Contractor shall be responsible for the surface preparation and spot prime coat for the straightened section and all areas damaged during the straightening and repair operations.

For Design "B" the Contractor shall be responsible for the surface preparation and spot prime coat for areas adjoining the repair section and all areas damaged during the straightening and repair operations.

This work shall be done in accordance with 514 of the Construction and Material Specifications.

ITEM 519-PATCHING CONCRETE STRUCTURES AS PER PLAN. The underside of the deck shall be patched according to 519 except the patching material shall be epoxy mortar which meets the material specifications of Supplementary Specification 956.

WORK BY STATE FORCES. State M & R Forces shall be responsible for the following items of work:

A. Placing a strip of asphalt pavement adjacent to the outside edge of the existing paved berm for the eastbound lanes of such a width as to subsequently provide for a 12'-0" minimum width temporary traffic lane during the beam repair.

B. Field painting of existing steel, complete coat prime and complete coat finish for the damaged and repaired areas.

C. Field painting of new structural steel, System "B."

EXAMINATION OF SITE. The bidder shall visit the site to ascertain the conditions under which the work will be done, before submitting his bid.

PROPOSED SEQUENCE OF OPERATIONS

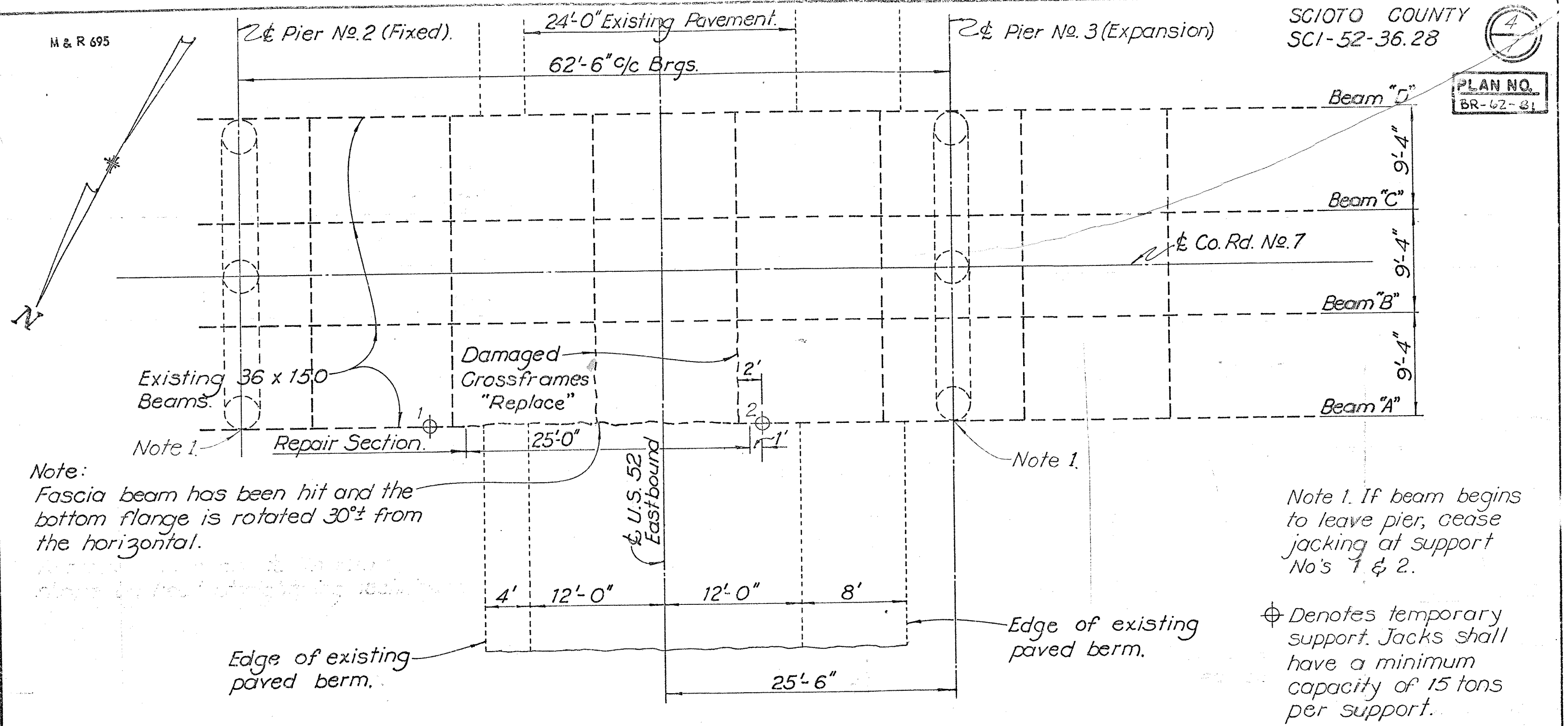
1. Install traffic control and close one (1) lane of U.S. 52 Eastbound and overhead bridge which carries County Road No. 7.
2. Place beam supports and jack structure. For Design "B", raise deck 3/16 in. at center of repair length by jacking shoring.
3. Cut crossframes loose.
4. Heat straighten or replace that portion of the damaged beam.
5. Lower the structure and remove the shoring and jacks.
6. Install new crossframe members at existing locations using 1/4 in. fillet welds.
7. Seal the top flange along its edge and patch underside of deck with epoxy mortar.
8. Open the overhead bridge to traffic on County Road No. 7.
9. Prepare and apply one (1) spot coat of 708.15 prime paint according to 514 to all exposed new steel and to areas of existing steel which have been damaged by the collision, welding or repair work.
10. Open U.S. 52 Eastbound traffic to two (2) lanes.

M & R 695

SCIOTO COUNTY
SCI-52-36.28



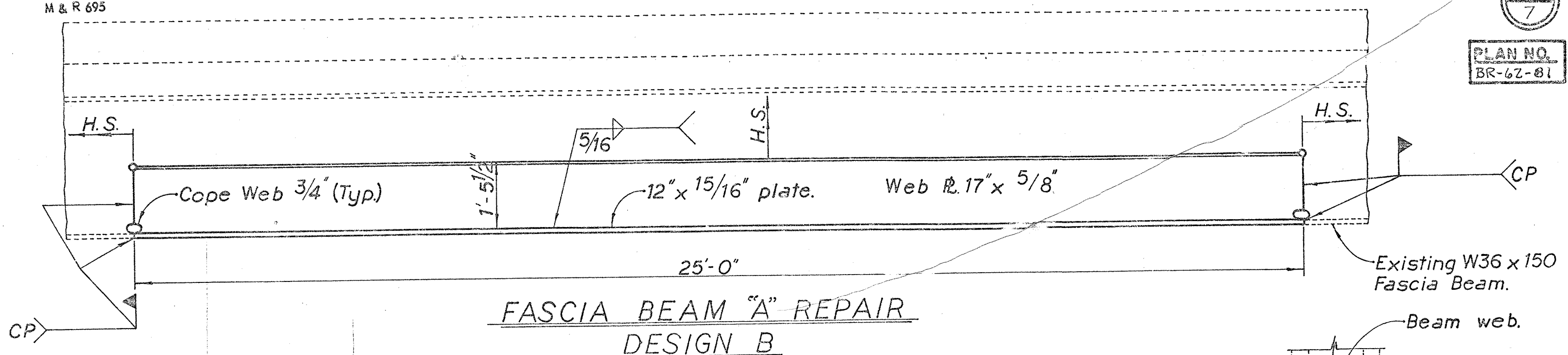
PLAN NO.
BR-62-81



PARTIAL STEEL FRAMING PLAN FASCIA BEAM "A" REPAIR, DESIGN A

**RESTORE THE BEAM TO ITS FORMER SHAPE BY HEAT
STRAIGHTENING TECHNIQUES.**

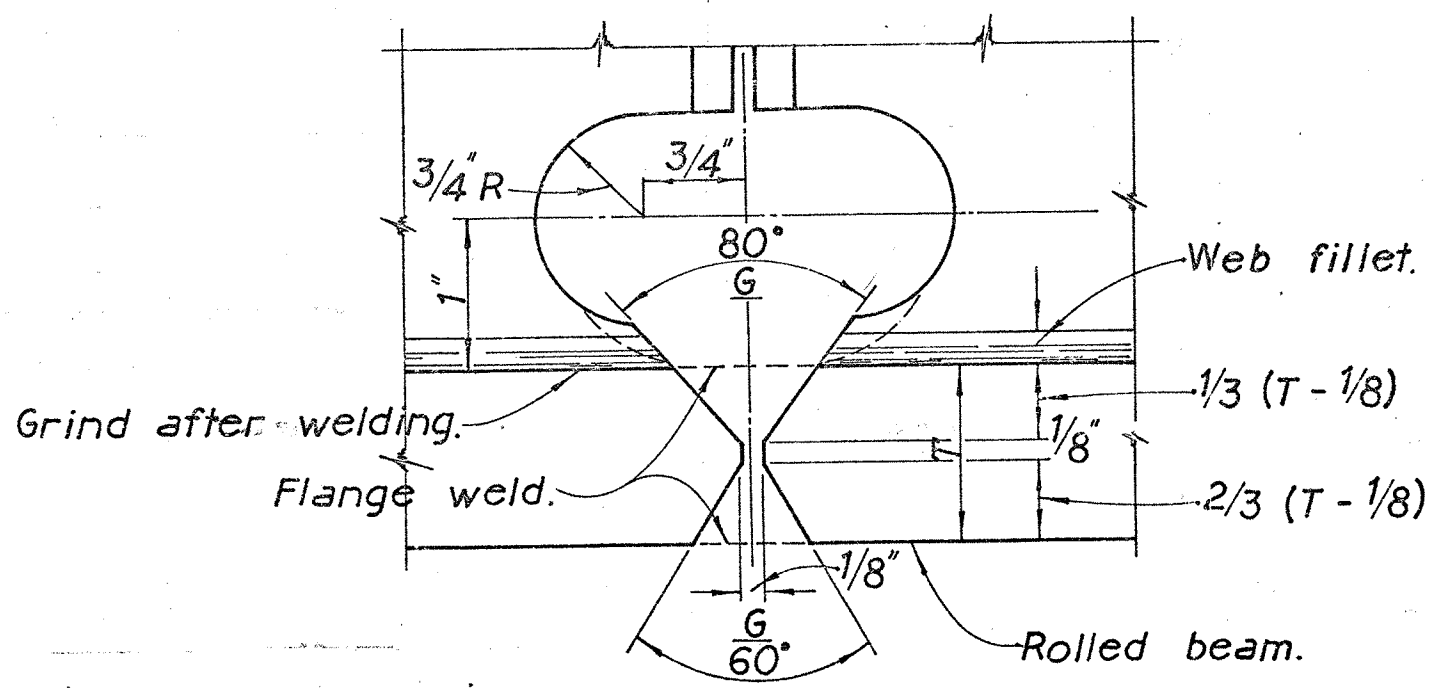
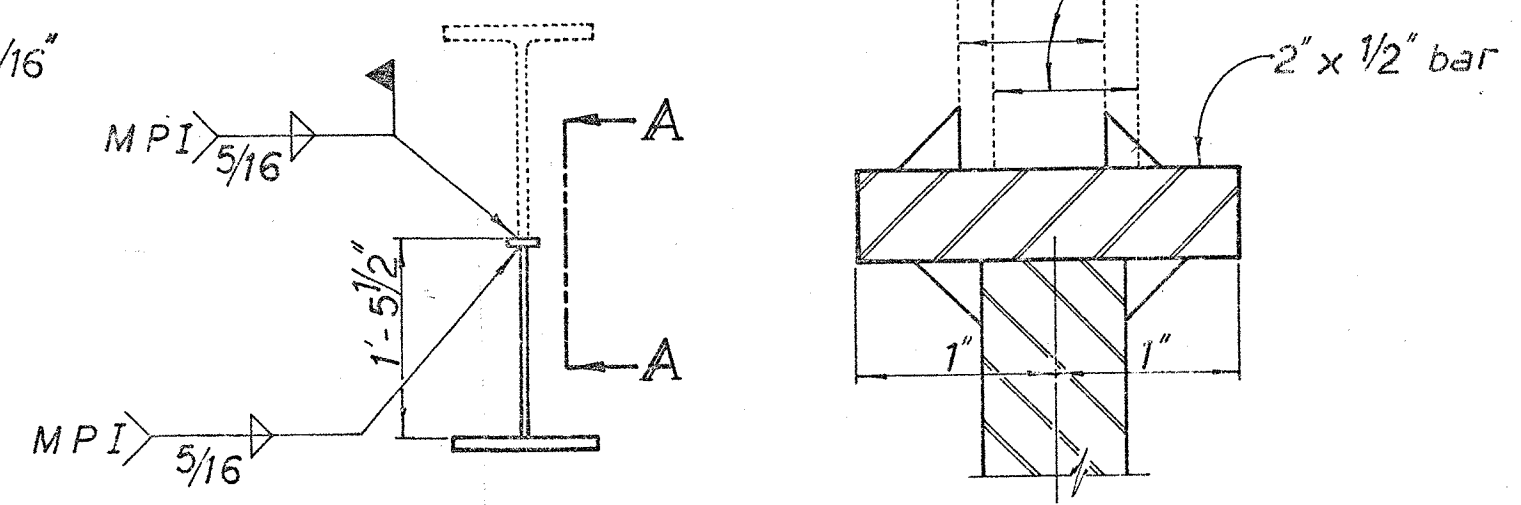
Design A



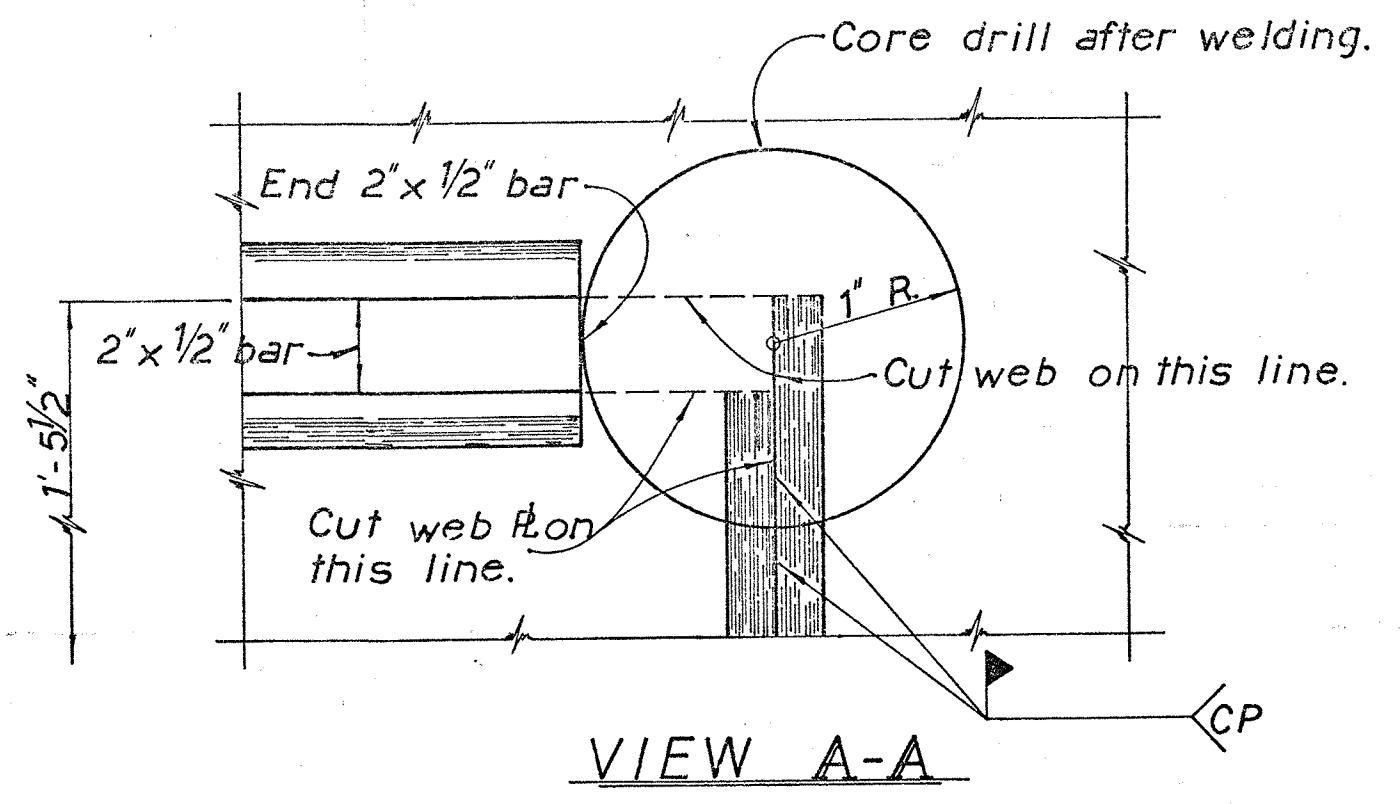
FASCIA BEAM "A" REPAIR DESIGN B

CP - Complete penetration butt weld.
 MPI - Magnetic Particle Inspection of welds. Shop Camber = 3/16"
 HS - Heat straighten as required.

Radiograph full length of web and flange butt welds.
 All butt welds shall be ground flush in the direction of stress.



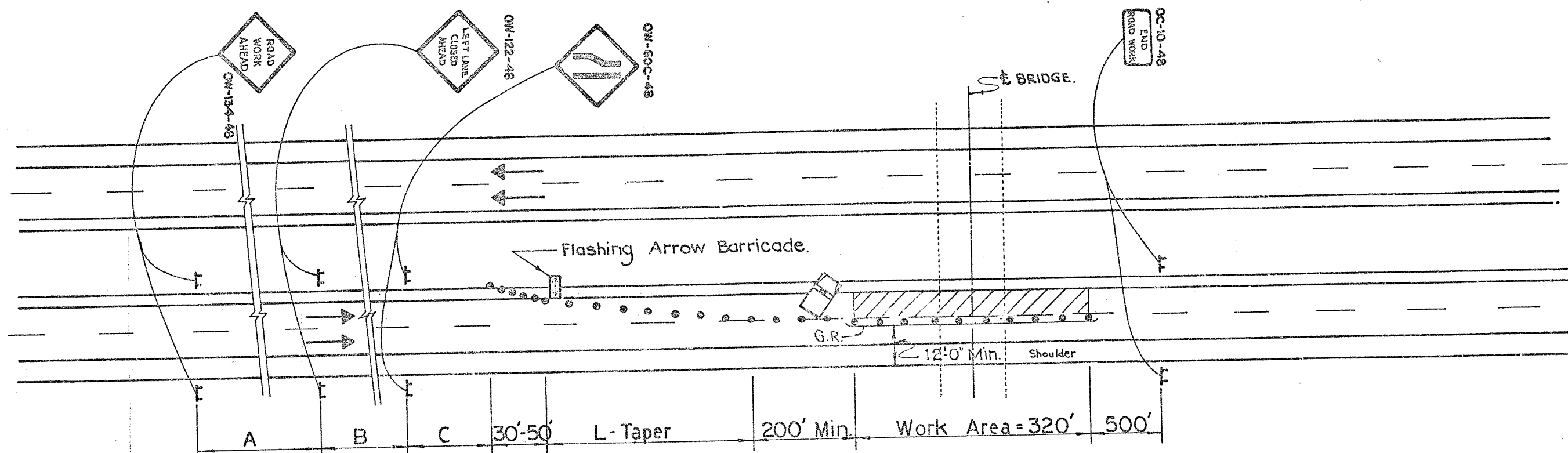
WEB COPE FOR FIELD WELDING



VIEW A-A

ESTIMATED QUANTITIES

ITEM	TOTAL	UNIT	DESCRIPTION	Superstr.	General
DESIGN A					
(1) 202	352	Lbs.	Portions of existing structural steel removed.	352	
(2) Spec.	Lump	Lump	Heat straightening existing superstructure.	Lump	
(3) 513	352	Lbs.	Structural steel.	352	
(4) 514	Lump	Lump	Field painting of existing steel - surface preparation.	Lump	
(5) 514	Lump	Lump	Field painting of existing steel - spot prime.	Lump	
DESIGN B					
The following items (1A) thru (5A) incl. are alternates to items (1) thru (5) incl. The Contractor shall bid on one set of items only.					
(1A) 202	2,227	Lbs.	Portions of existing structural steel removed.	2,227	
(2A) Spec.	Lump	Lump	Heat straightening existing superstructure.	Lump	
(3A) 513	2,297	Lbs.	Structural steel.	2,297	
(4A) 514	Lump	Lump	Field painting of existing steel - surface preparation.	Lump	
(5A) 514	Lump	Lump	Field painting of existing steel - spot prime.	Lump	
Special	Lump	Lump	Jacking and temporary support for structure.		Lump
519	8	Sq. Ft.	Patching concrete structures, as per plan.	8	
624	Lump	Lump	Mobilization.		Lump
614	Lump	Lump	Maintaining traffic.		Lump



GENERAL NOTES

1. Thirteen (13) drums shall be used to form the lane transition taper in advance of the work area. Five (5) channelizing devices shall be used to form the taper on the shoulder. Drums shall be spaced at 50 foot centers through the work area and at a maximum of 100 feet for the balance of the work area.
2. When work is being performed in the lane adjacent to the median on a divided highway, "OW-123-48" signs shall be substituted for "OW-122-48" signs and the OW-60 D signs shall be substituted for the OW-60 C signs.
3. The work truck shown at the beginning of the work area shall be in place and unoccupied whenever men are working within the work area. This truck shall be moved from the pavement whenever workmen are not in the work area. Other protective devices may be used in lieu of the work truck shown when approved by the Engineer.
4. The flashing arrow barricade shall be in accordance with application Standard Drawing 7D-1
5. Type C steady burning barricade warning lights shall be erected on drums or barricades for night lane closures. Maximum spacing shall be 50' center to center in advance of the work area and 200' center to center within the limits of the work area.

Distance	A	B	C	L
Urban	200	200	200	425
Major Standard	500	500	500	600
Freeway and Expressway	2600	1600	1000	720

CLOSING ONE LANE OF A FOUR LANE DIVIDED HIGHWAY
APPROVED: *[Signature]*
ENGINEER CC-TWASER
DRGBD (ex RL B) AS 71-1
DATE 4/77