

FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	87 BH-000S (003)	19	1	7

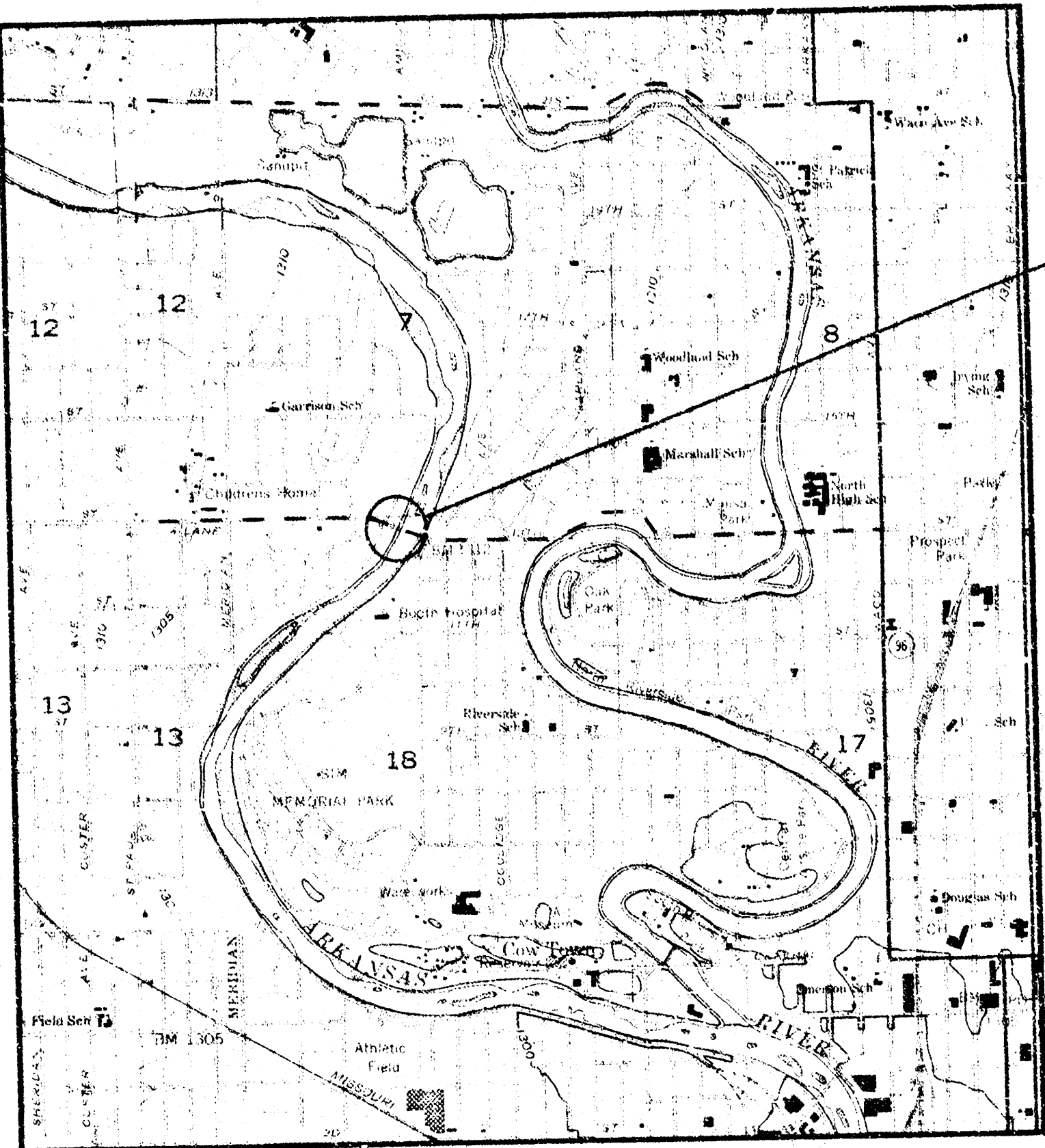
BRIDGE REPAIR

BRIDGE DECK RECONSTRUCTION
13TH STREET OVER THE ARKANSAS RIVER

WICHITA, KANSAS

SEDGWICK COUNTY

NOTE: All sheets carrying Project No. 87 BH-000S (003)
shall be constructed under K.D.O.T. Project No.
87-U-0635-01.



NOTE: TRAFFIC TO BE CARRIED THRU CONSTRUCTION.
CONTRACTOR WILL BE RESPONSIBLE FOR TRAFFIC CONTROL.

DESIGN	DESIGNATION
AADT (1978)	20,304
AADT (2000)	25,000

LOCATION MAP
SCALE: 1" = 2000'

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	CONSTRUCTION LAYOUT
3	DETAILS
4	EXPANSION DEVICE DETAILS
5	EAST ABUTMENT REPAIR
6	APPROACH PAVING & TRAFFIC
7	CONCRETE MEDIAN BARRIER
7A	TRAFFIC CONTROL
7B	CONSTRUCTION SIGNING

CITY OF WICHITA
PROJECT NUMBER 472-76-245-80548-000-000-001

GROSS LENGTH OF PROJECT	465.62	FT.	
EXCEPTIONS	0		
ADDITIONS	0		
NET LENGTH OF PROJECT	465.62	FT.	.088 MILES
NET LENGTH OF BRIDGES	425.0	FT.	.080 MILES
NET LENGTH OF ROAD	40.62	FT.	.008 MILES

RECOM. FOR APPROVAL - DATE	RECOM. FOR APPROVAL - DATE
ENGINEER OF URBAN HIGHWAYS KANSAS DEPARTMENT OF TRANSPORTATION	ENGINEER FEDERAL HIGHWAY ADMINISTRATION DEPARTMENT OF TRANSPORTATION
APPROVED - DATE	APPROVED - DATE
STATE TRANSPORTATION ENGINEER KANSAS DEPARTMENT OF TRANSPORTATION	DIVISION ADMINISTRATOR FEDERAL HIGHWAY ADMINISTRATION DEPARTMENT OF TRANSPORTATION

GENERAL NOTES

UNIT STRESSES: Reinforcing steel $f_s = 20,000$ psi.
 class AAA (AE) concrete $f_c = 4000$ psi $f_c = 1600$ psi.
CONCRETE: Areas shown for removal are shown as a guide. More or less concrete may be removed at the direction of the Engineer. All unsound concrete shall be removed. Class AAA (AE) concrete shall be used to repair Areas Prepared for Patching (Full Depth).
REINFORCING STEEL: Care shall be exercised to prevent cutting, stretching or damaging any exposed reinforcing steel. Extreme care shall be exercised to avoid breaking the bond between the reinforcing steel and concrete where bars are partially exposed yet remain anchored in sound concrete near the ends or where more than half the bar is beneath the concrete removal line. Replace any reinforcing steel that is removed with the old concrete (Fig. 5).

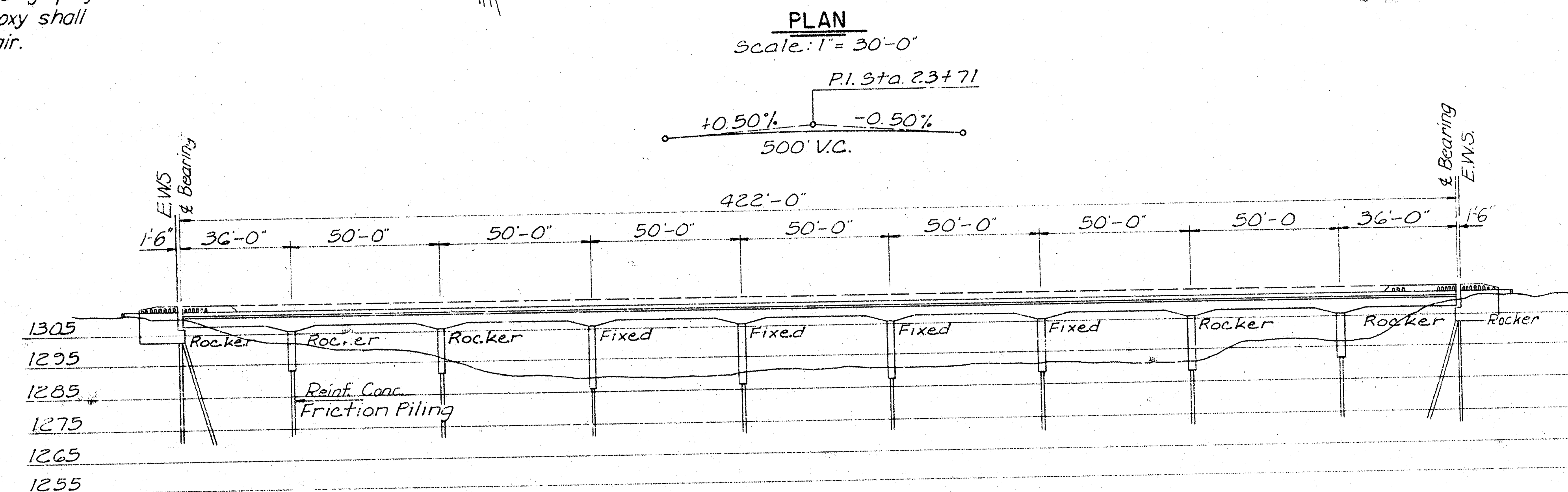
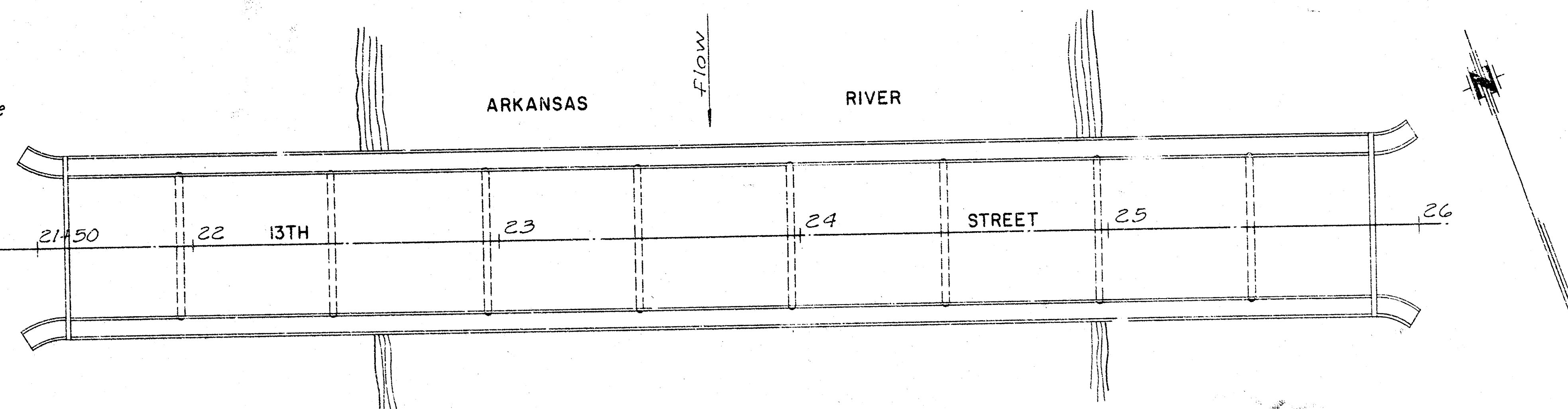
MACHINE PREPARATION (1/4): All roadway surfaces, between E.W.S. & E.W.S. shall have the existing top 1/4" of concrete surface removed by a surface grinding machine.
AREA PREPARED FOR PATCHING: Where the bond between existing concrete and reinforcing steel has been destroyed (Fig. 1 Sheet No. 3) or where 1/2 or more of the dia. of the steel is exposed (Fig. 2, Sheet No. 3) the concrete adjacent to the bar shall be removed to a depth that will permit concrete to bond to the entire periphery of the exposed bar.

AREA PREPARED FOR PATCHING (FULL DEPTH): (Fig. 4, Sh. No. 3)
 Forms shall be provided. Forms may be suspended from beams or by a suitable method approved by the Engineer. Forms shall not be suspended from existing reinforcing bars.

SIDEWALK REPAIR: Repair to the sidewalk shall be done in the same manner as repair to the roadway except that: No machine preparation is required and overlay will not be placed on the sidewalks. All areas prepared for patching, full and partial depth, shall be finished flush with existing surfaces. Sidewalk repair shall be paid for as square yards of area prepared for patching.

TRAFFIC: Traffic control shall be in accordance with plan sheet #6 or as directed by the Engineer. All signing and traffic control devices shall conform to the Manual On Uniform Traffic Control Devices (1978 Edition). The Contractor shall provide all signing and traffic control devices.

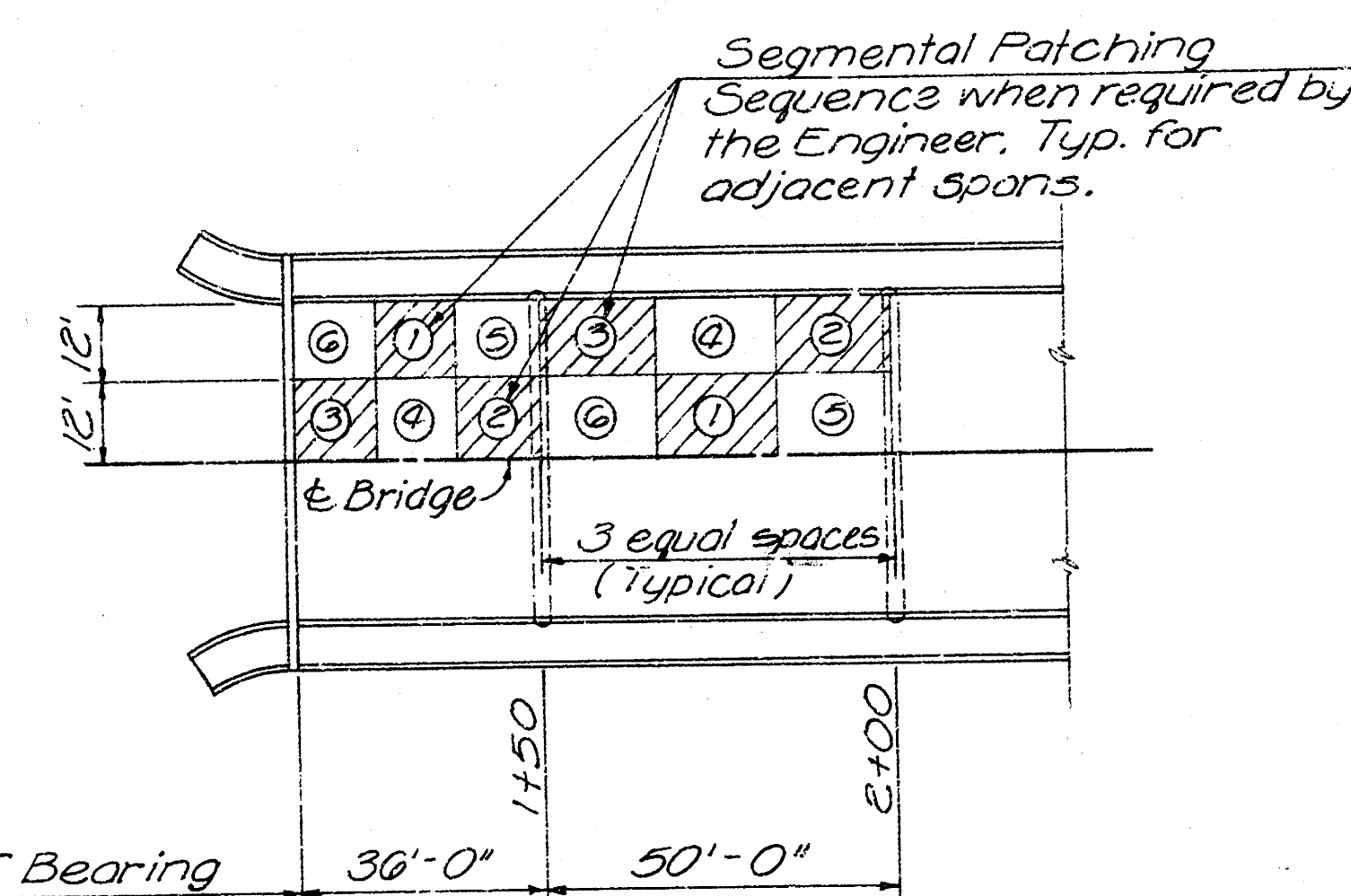
GIRDER REPAIR: This item shall consist of removing and replacing unsound concrete in the damaged areas below the scuppers along the south side of the bridge only.
PIER REPAIR: This item shall consist of repairing the spalled area on Pier #2 pier shaft.
ROCKER REPAIR: This item shall consist of cleaning and painting the rockers and bearing plate at the East abutment.
CONCRETE: Class AAA or class AAA(AE) concrete shall be used for the girder repair, pier repair and the abutment repair. Surfaces of pier repair shall be coated with concrete bonding epoxy prior to placing concrete. Epoxy shall be subsidiary to Pier repair.



SUMMARY OF QUANTITIES

Machine Preparation (1/4")	2,666.7 Sq. Yds.
* Area Prepared For Patching	8750 Sq. Yds.
Area Prepared For Patching (Full Depth)	232.0 Sq. Yds.
Barrier (Type 1) Precast	70 Lin. Ft.
Bridge Drainage Extensions	1,960 Lbs.
Girder Repair (Concrete)	1 Each
Pier Repair	1 Each
Strip Seal Assembly	98.9 Lin. Ft.
Abutment Keel	1 Each
Rocker Repair	13 Each
Concrete Pavement (3")	222 Sq. Yds.
Traffic Control	Lump Sum
Mobilization	Lump Sum
Field Office & Laboratory (Type B)	1 Each
Alternate #1	
Bridge Deck Surfacing (2")	2,666.7 Sq. Yds.
Linseed Oil Surface Treatment (Bridge)	2,666.7 Sq. Yds.
Alternate #2	
Latex Surface Course (1/4")	2,666.7 Sq. Yds.

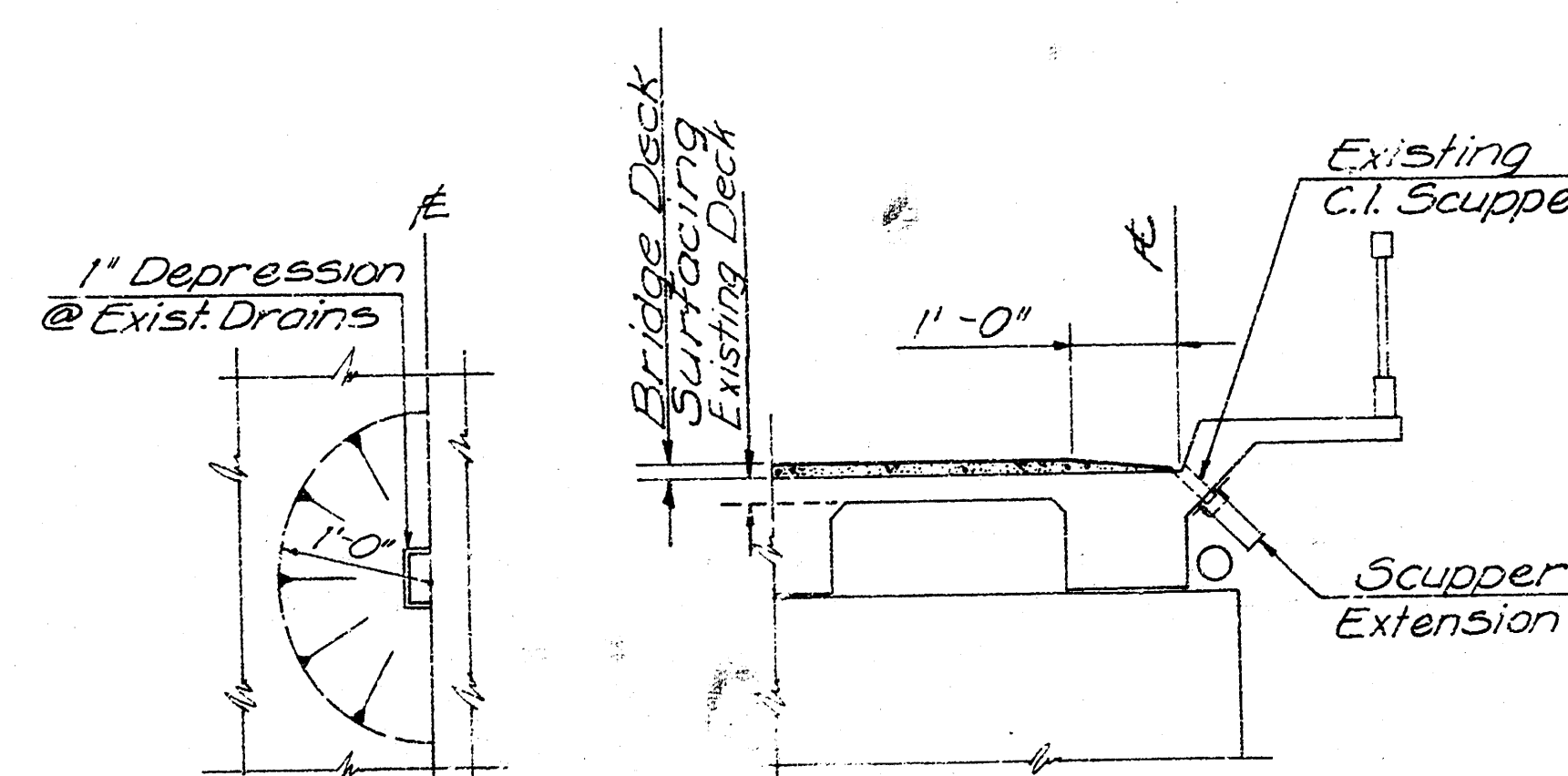
* Includes 160 sq yds. of sidewalk repair



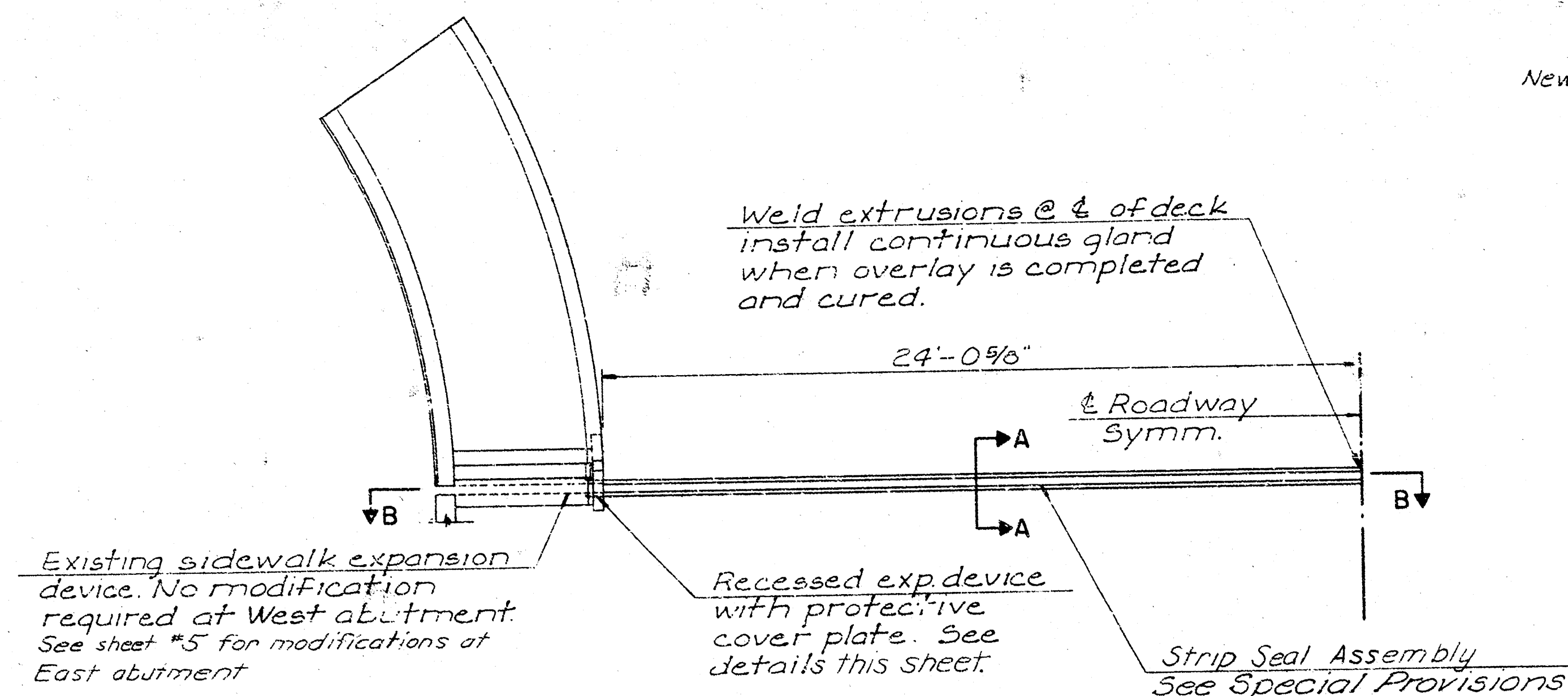
SEGMENTAL PATCHING SEQUENCE

SEGMENTAL CONSTRUCTION:
 Segmental construction may be required by the Engineer when large areas of full depth patching are encountered, or when the unbonded length of the bars becomes excessive. The areas of concrete removed shall be replaced to elevation 'A' and allowed to cure a min. of 48 hours when the air temperature in that area is above 60°F; 72 hours when the air temperature is between 40°F and 60°F; and 160 hrs. when the air temperature is below 40°F. before removing an adjacent area.

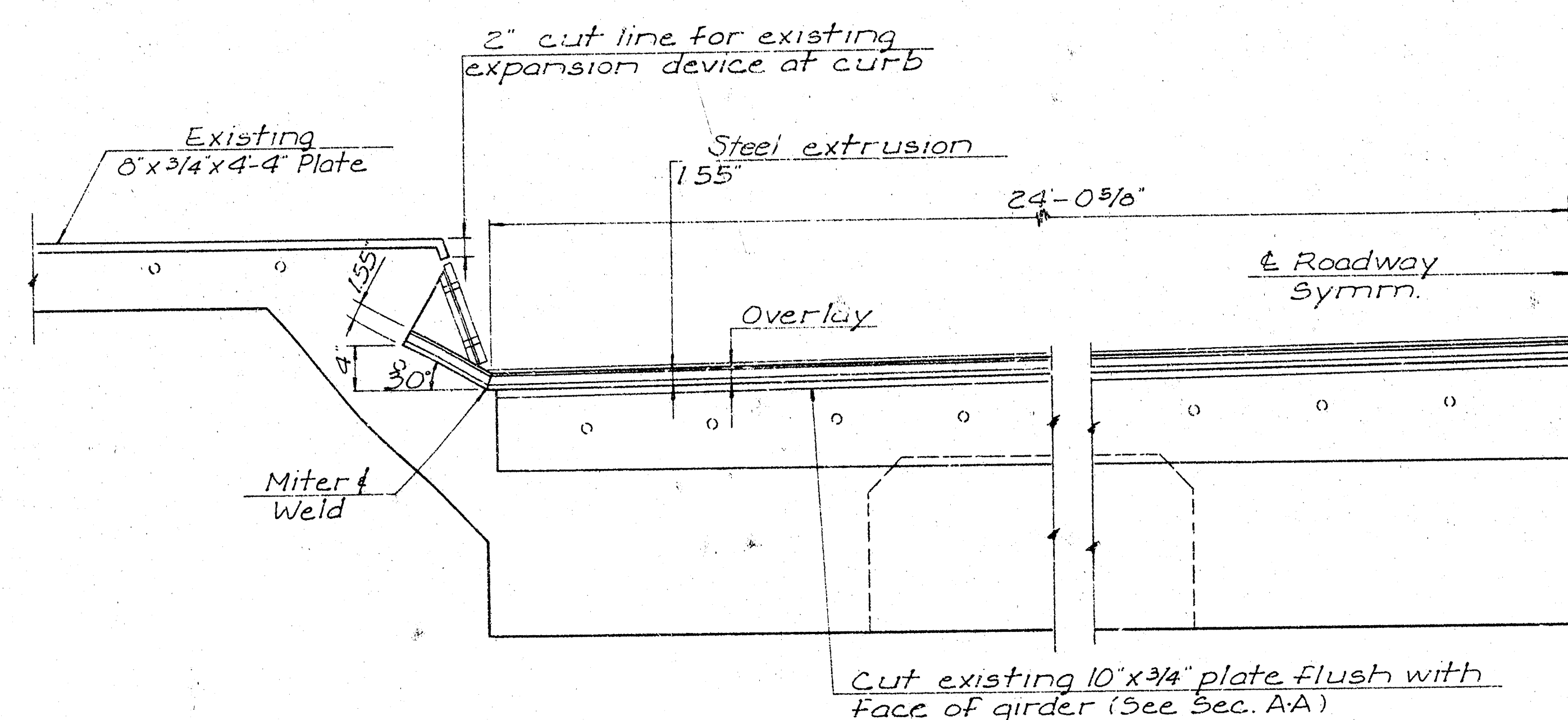
* See Sheet #3



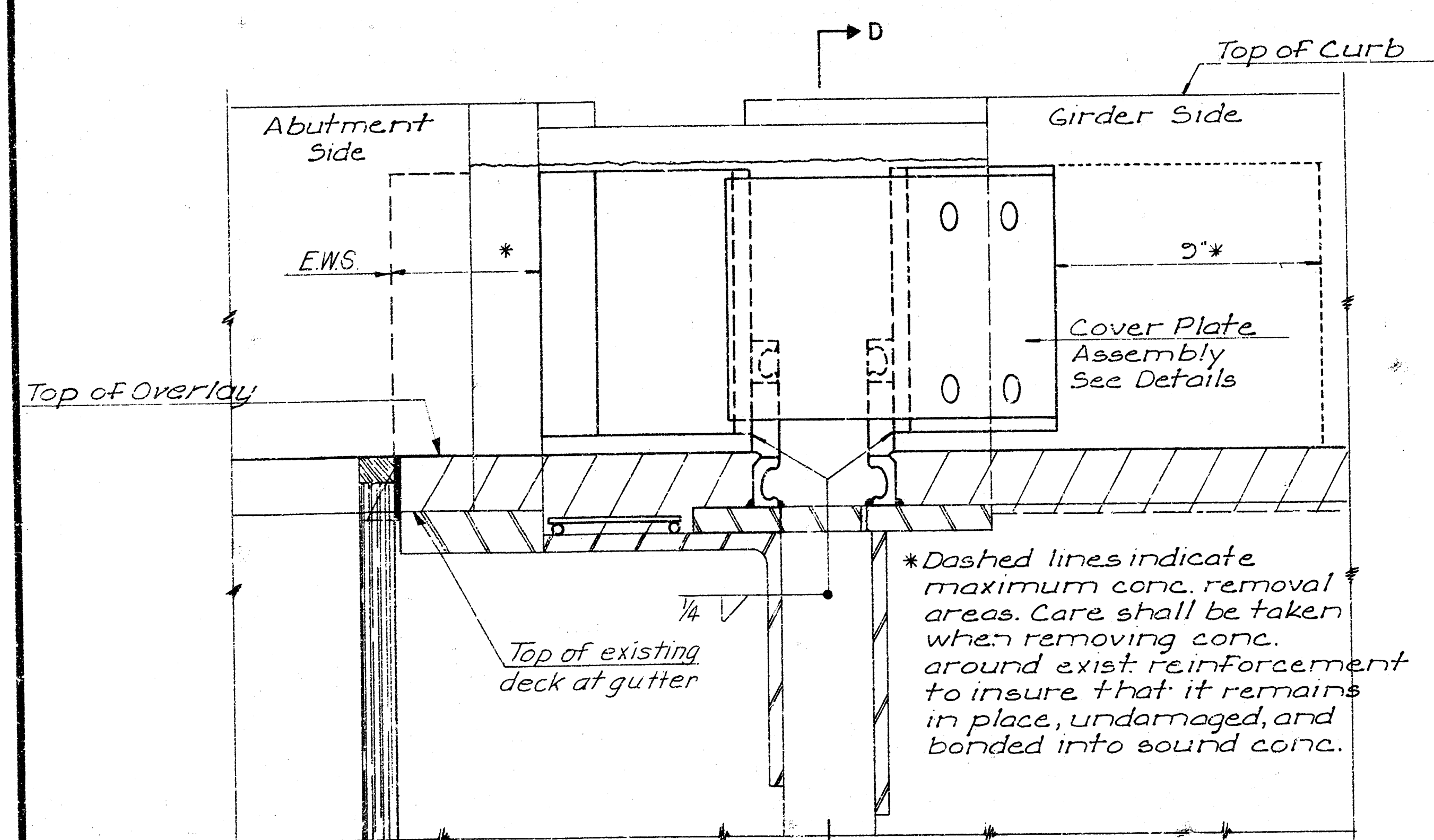
DESIGN N.D.	BRIDGE DECK RECONSTRUCTION	
DR. BY BES	13TH ST. OVER THE ARKANSAS RIVER	
CK. BY RAW		
DATE Mar. 78		
JOB NO. 77-218		
VAN DOREN - HAZARD - STALLINGS		SHEET
ARCHITECTS - ENGINEERS - PLANNERS		22
WICHITA, KANSAS		OF 9



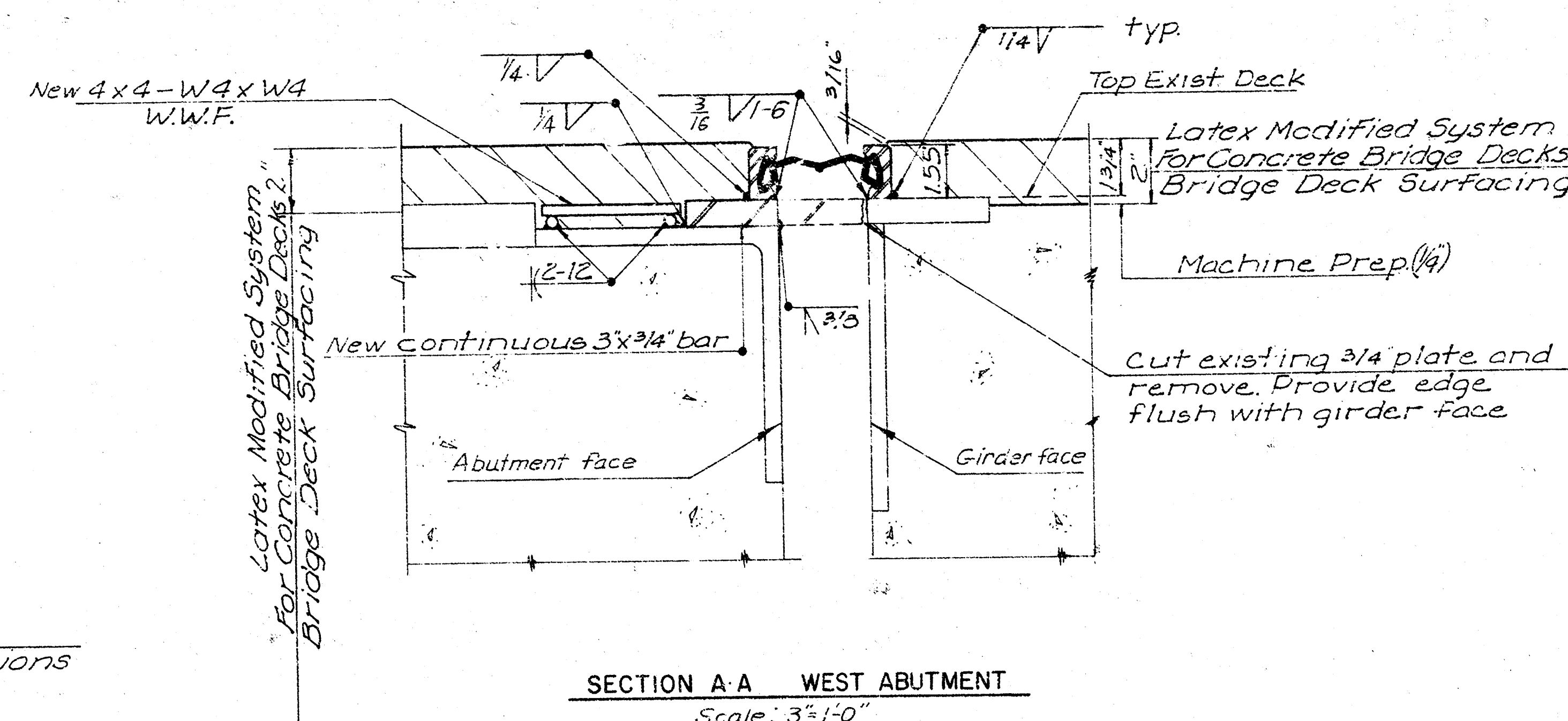
HALF PLAN, DECK AT EXPANSION DEVICE
Scale: 1/4"=1'-0"



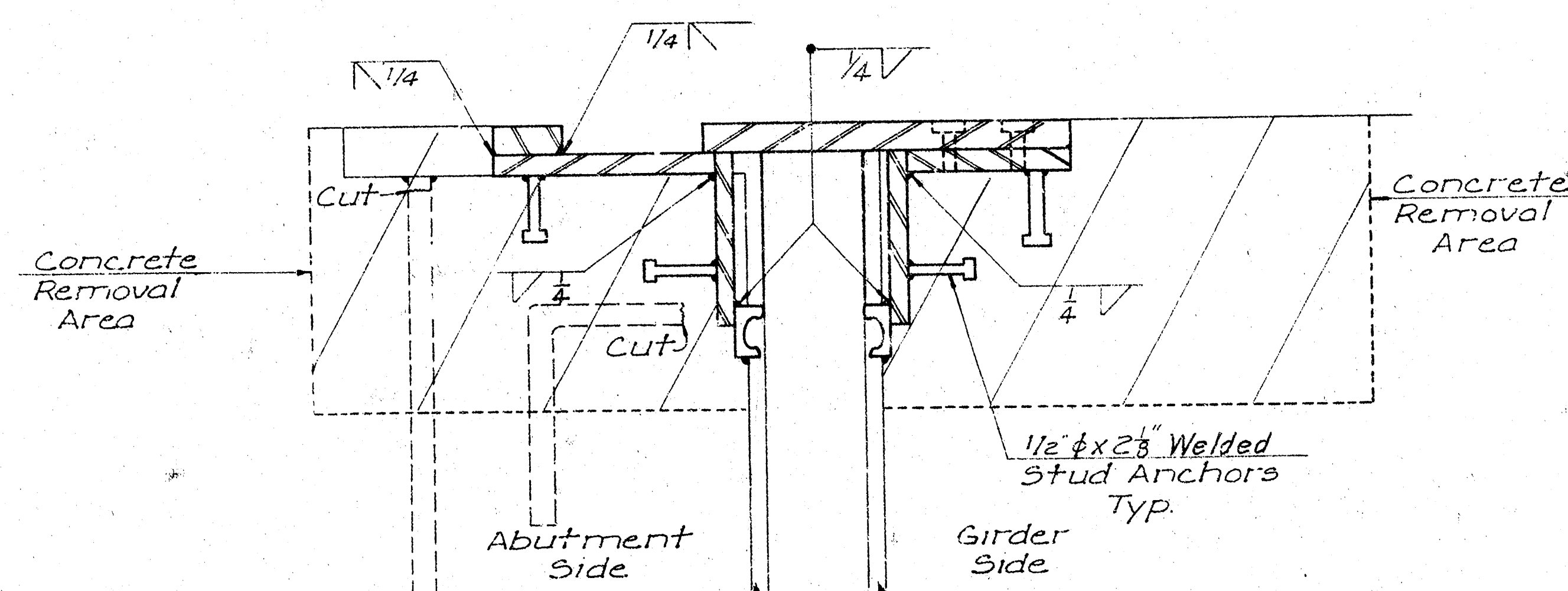
SECTION B-B



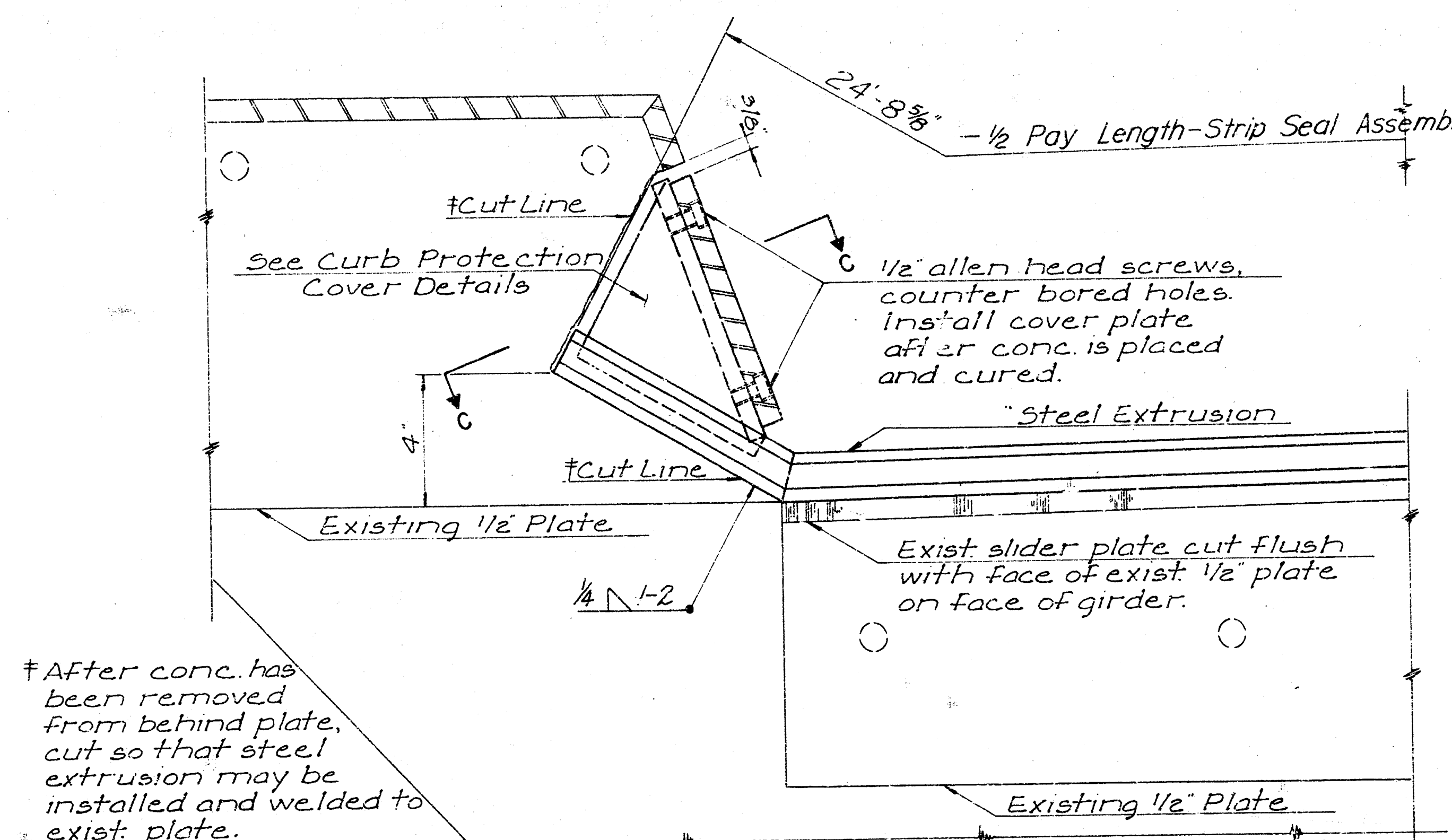
ELEVATION, EXPANSION DEVICE AT CURB
Scale: 3/8"=1'-0"



SECTION A-A WEST ABUTMENT
Scale: 3/8"=1'-0"
(See sheet #5 for modifications at East Abutment)

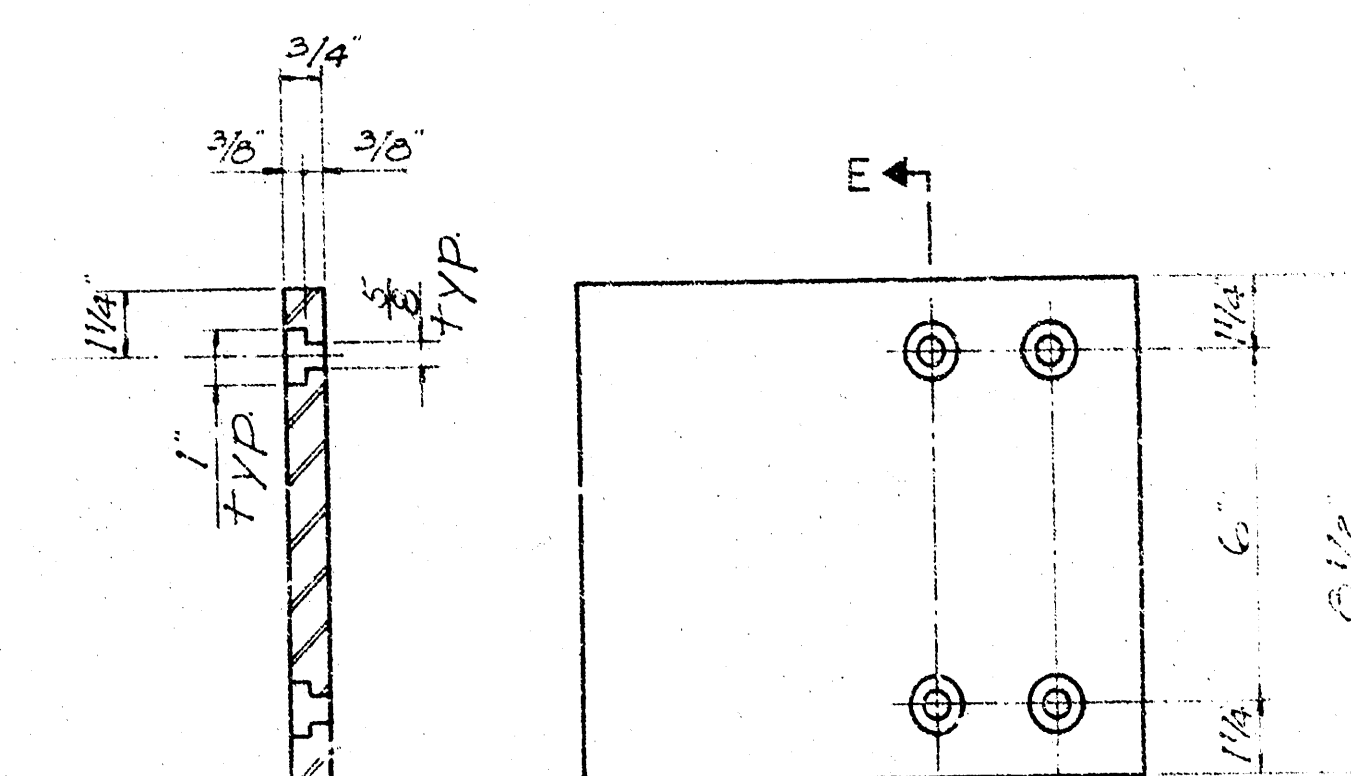


SECTION C-C
Scale: 3/8"=1'-0"



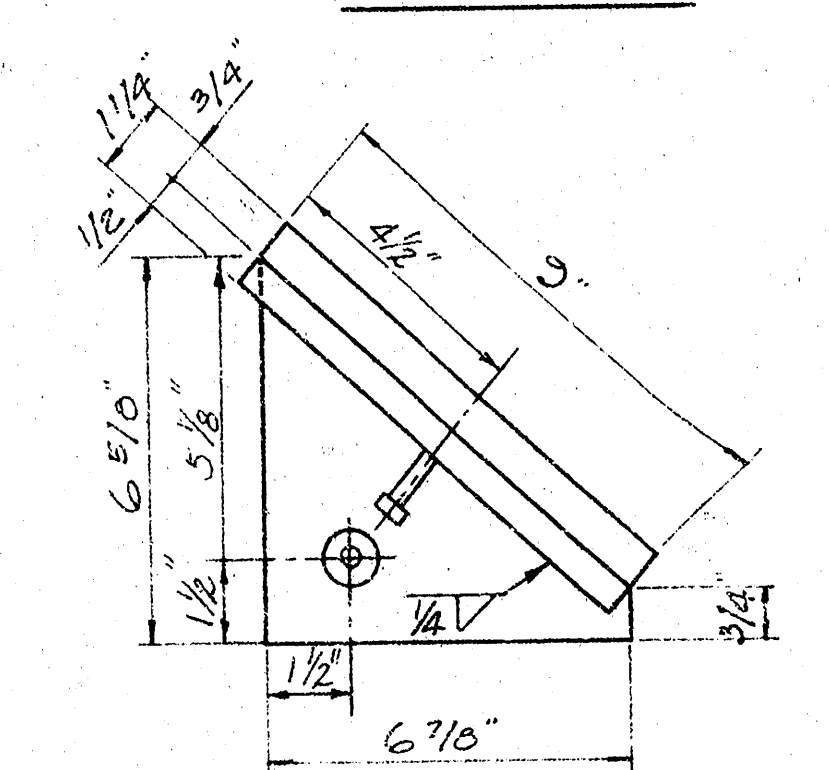
SECTION D-D

*For both Latex Modified System & Bridge Deck Surfacing use 2" overlay thickness at the expansion devices. For Latex Modified System on the girder side, taper overlay from 2" to 1 1/2" thickness in approximately 21' so that the transition ends at a scupper.

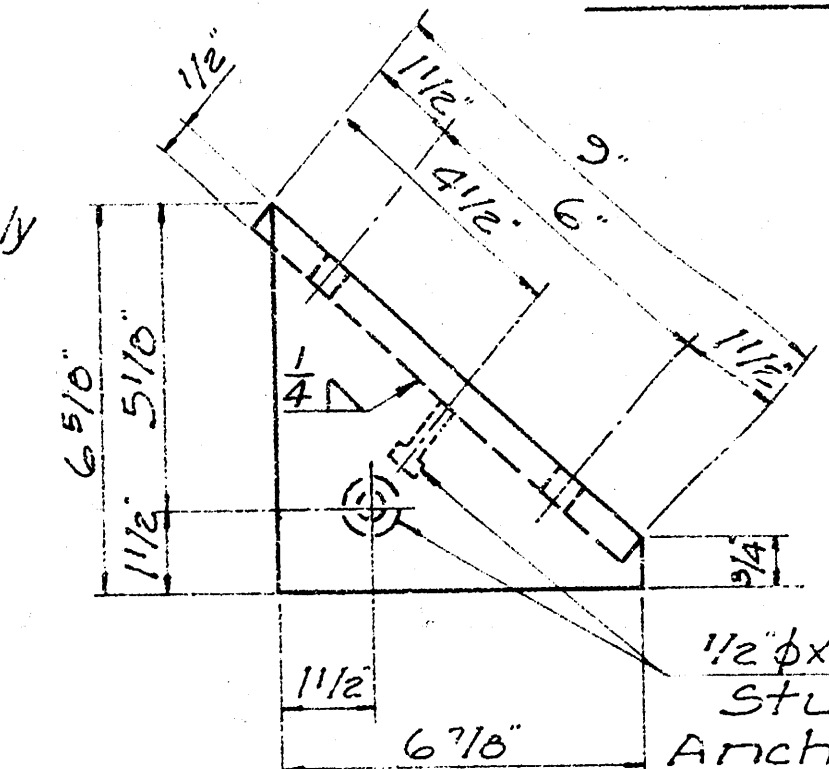


SECTION E-E

COVER PLATE



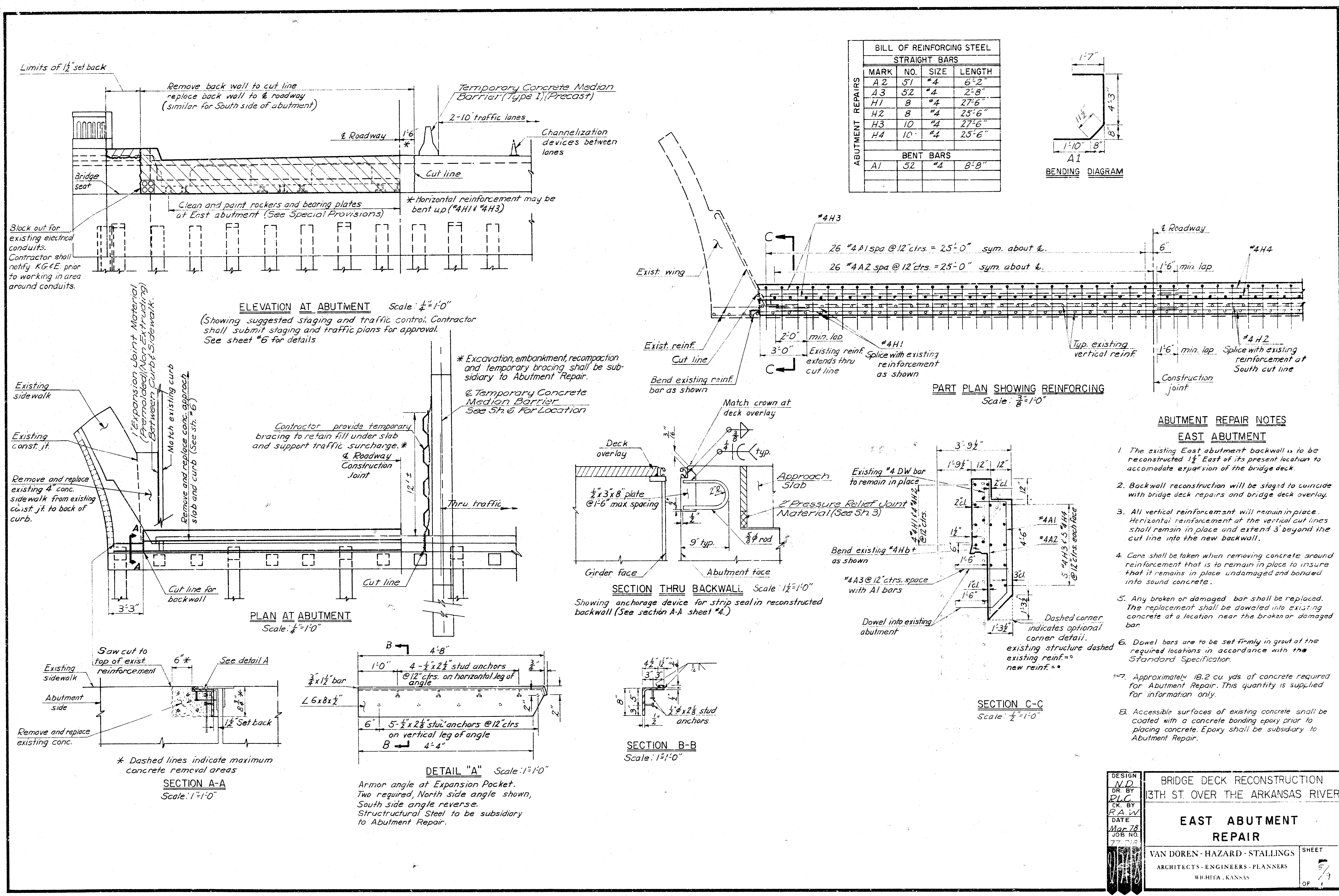
ABUTMENT SIDE

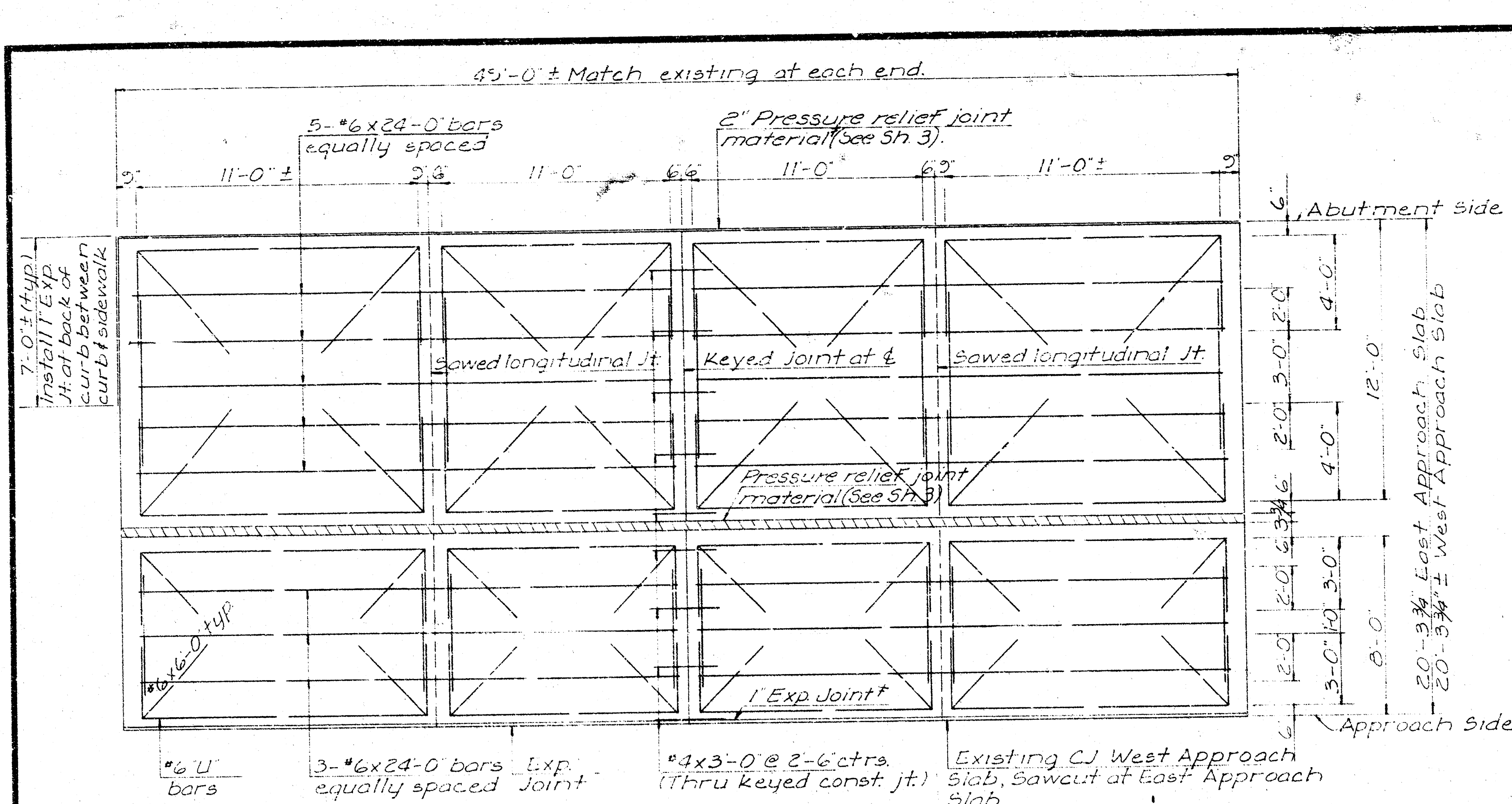


GIRDER SIDE

CURB PROTECTION COVER DETAILS
Scale: 3/8"=1'-0"

DESIGN 1/10	BRIDGE DECK RECONSTRUCTION
DR. BY BES	13TH ST. OVER THE ARKANSAS RIVER
CK. BY RAW	
DATE Mar 78	
JOB NO. 772212	
EXPANSION DEVICE DETAILS	
VAN DOREN-HAZARD-STALLINGS	
ARCHITECTS-ENGINEERS-PLANNERS	
WICHITA, KANSAS	
SHEET 1/9	

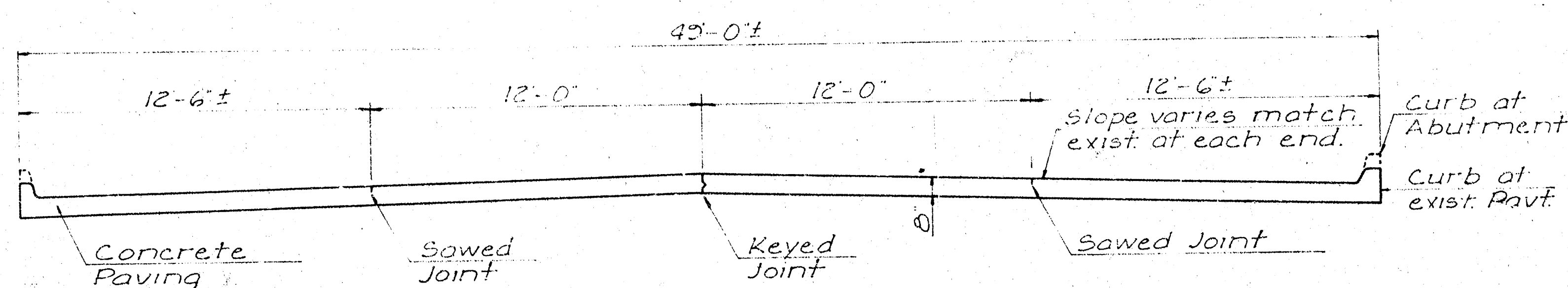




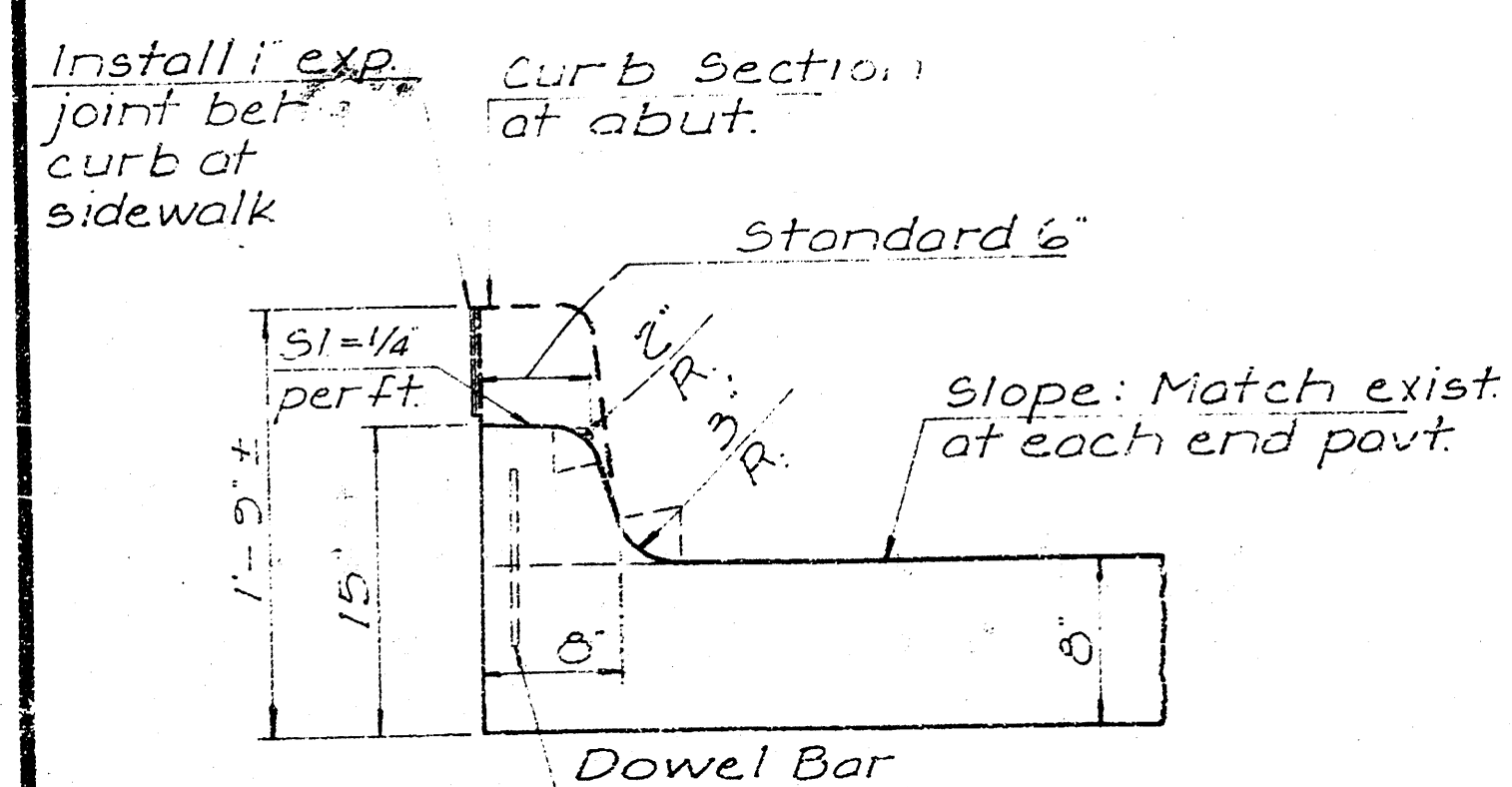
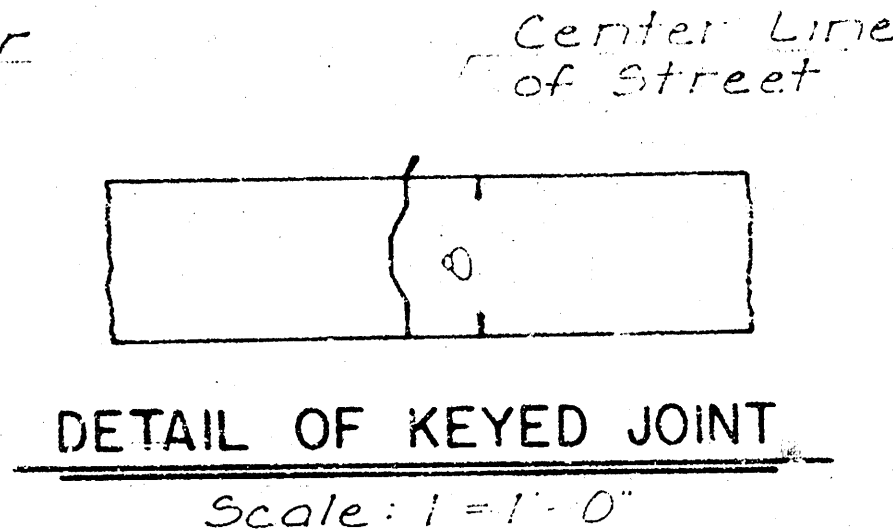
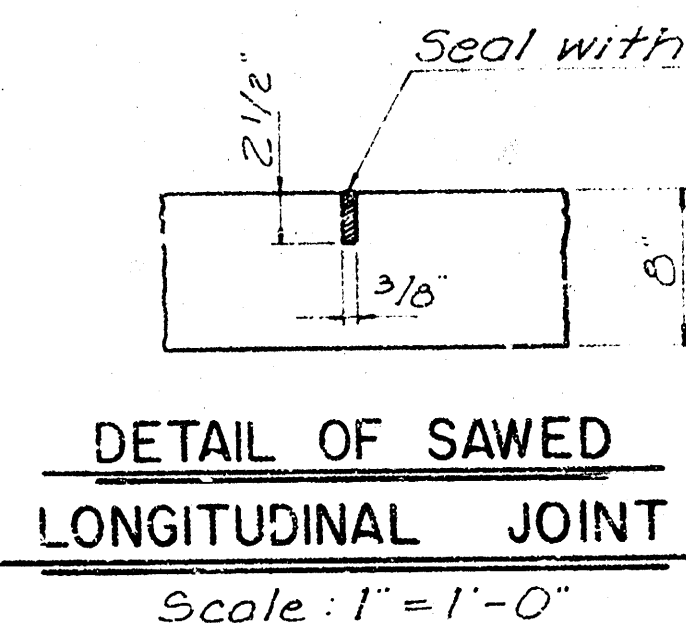
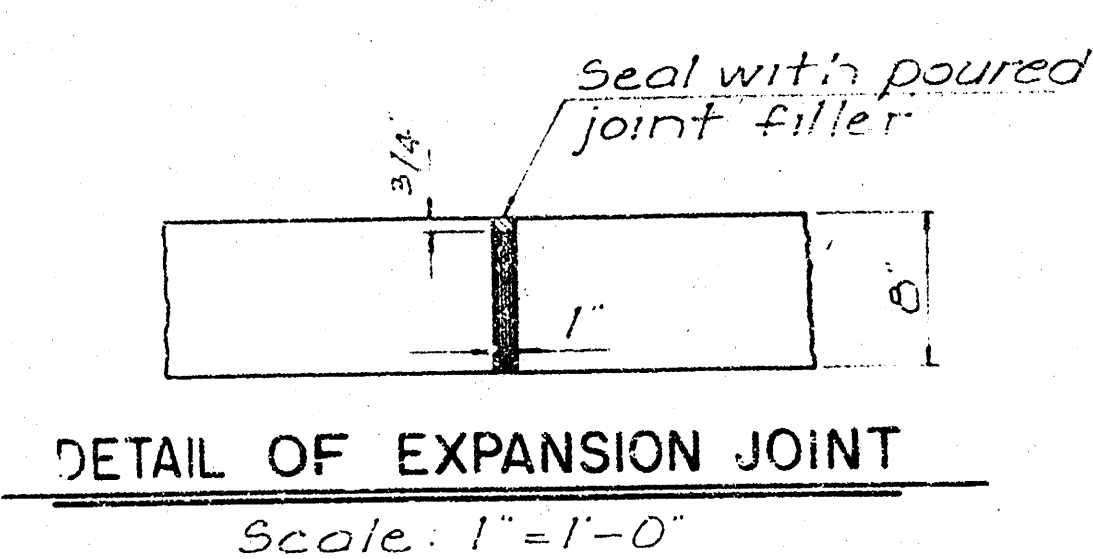
STEEL PATTERN AT APPROACH SLABS

Scale: 1/4" = 1'-0"

*Pressure relief joint material & exp joints shall be subsidiary to the bid item "Concrete Pavement (B)".



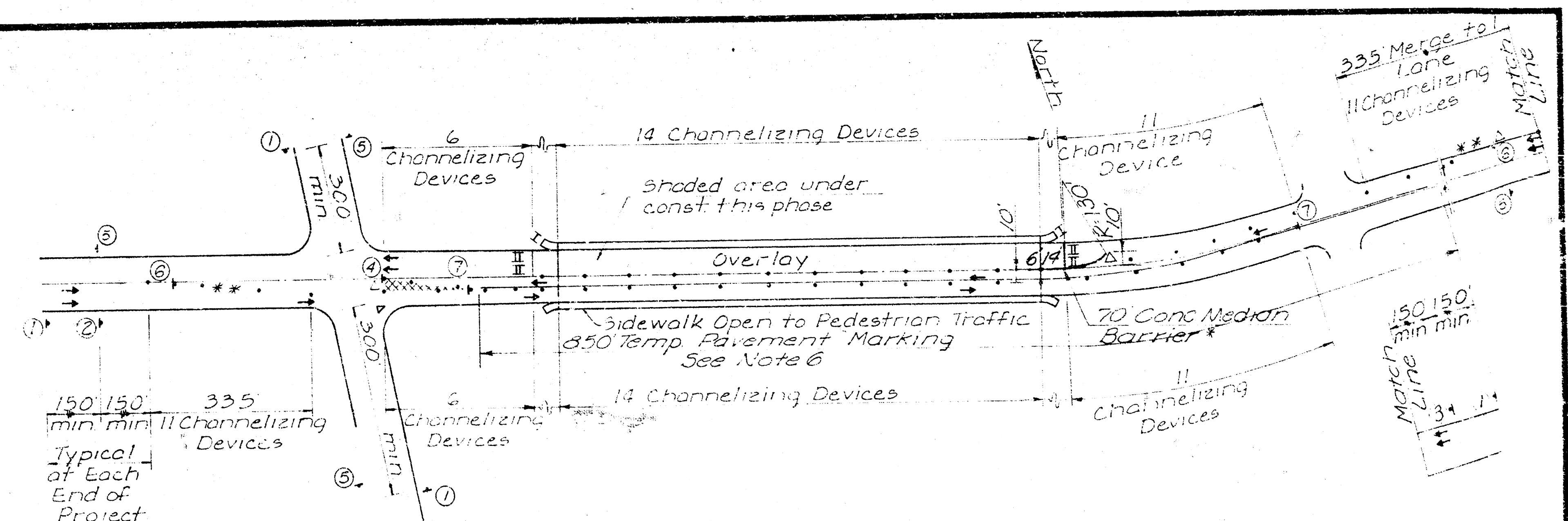
TYPICAL SECTION THRU PAVEMENT



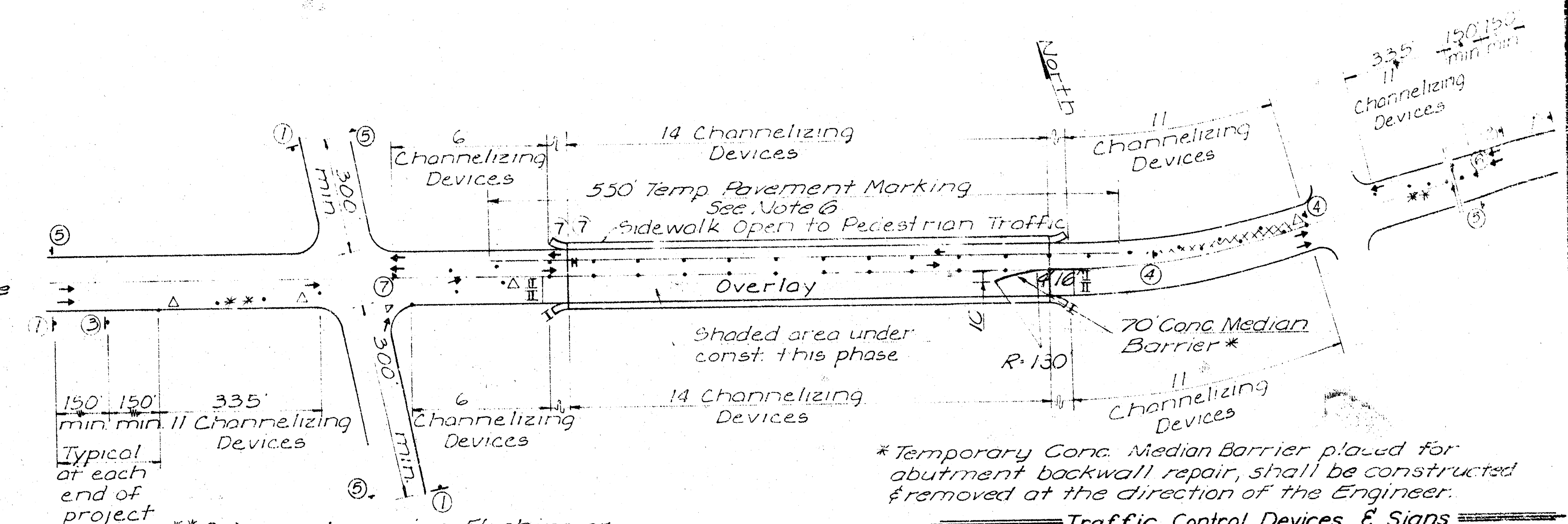
DETAIL OF INTEGRAL CURB

Scale: 1" = 1'-0"
(Match existing curb at each end)

Integral curb shall be cut through to the pavement in uniform lengths of not more than ten foot intervals between expansion joints. Expansion joints having the same thickness as the expansion joints in the pavement shall be constructed in the integral curb at the specified locations. Number 4 dowels shall be installed in curb as shown on approximately 2'-6" centers.



PHASE I



PHASE II

*Temporary Conc. Median Barrier placed for abutment backwall repair, shall be constructed & removed at the direction of the Engineer.

SUMMARY OF TRAFFIC CONTROL DEVICES

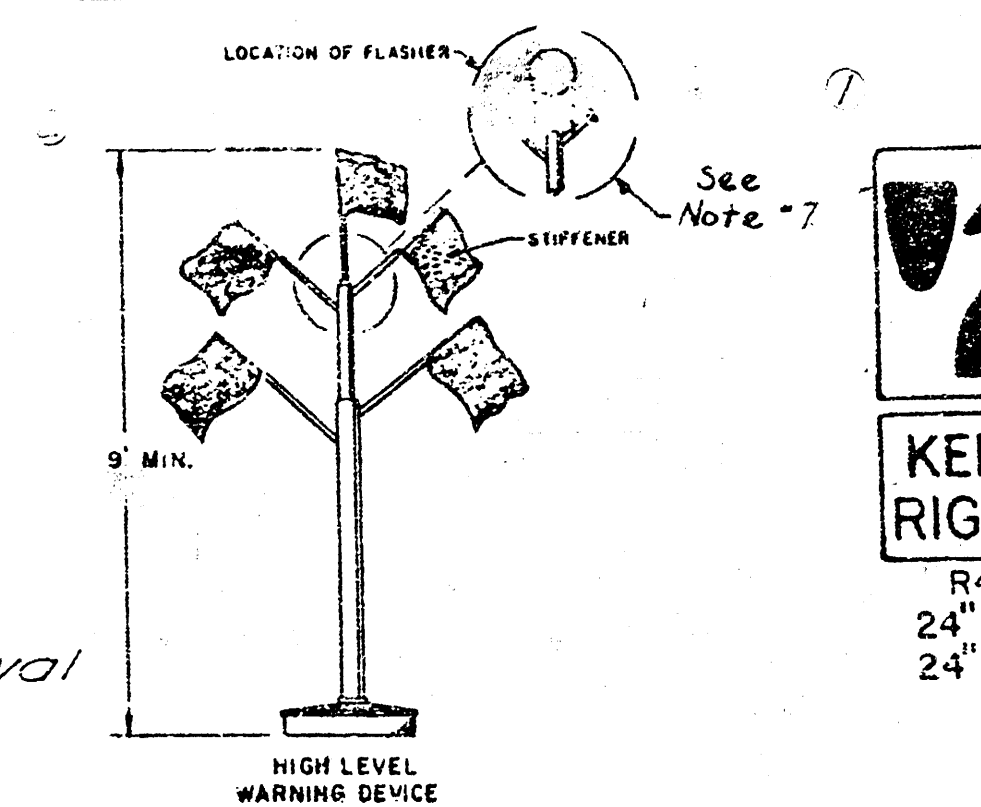
SIZE (SQ. FT.)	0-9.25	9.26-16.25	16.26 & OVER
R2-1			
R2-5c			
R4-1			
R4-7	4		
R4-7a			
R11-2			
R11-4			
W1-3			
W1-4			
W1-6			
W3-3			
W4-2			
W6-3			
W6-5p			
W20-1			
W20-4			
W20-5		2	
W21-4	4		
G20-1			
G20-2			

DELINEATORS & CHANNELIZING DEVICES (EACH)

CONSTRUCTION BARRICADES	REFLECTORIZED	OBJECT MARKERS
TYPE III	TYPE II	TYPE II
TYPE I or II	TYPE I	TYPE I
4" TO 8" TO 14"	2"	2"
2	64	3

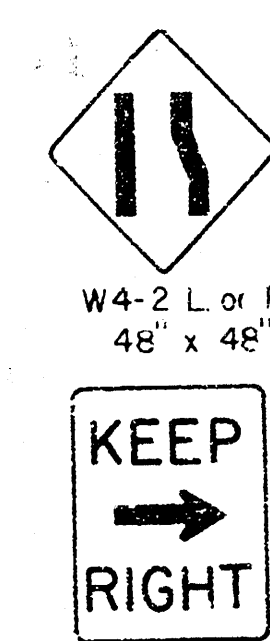
PAVEMENT LANE MARKING

4" BROKEN (STATIONS)	4" SOLID (STATIONS)	TEMPORARY STRIPING (MILES) DBL. STRIPE
		0.27



Traffic Control Devices & Signs			
	Concrete Median Barrier (Type I)(Precast)		
	Channelizing Device		
	Type I or II Barricades		
	Type III Barricades		
①	High Level Warning Device		
②	Road Construction Ahead	W21-4	36" x 36"
③	Left Lane Closed Ahead	W20-5	48" x 48"
④	Right Lane Closed Ahead	W20-5	48" x 48"
⑤	Keep Right	R4-7	
⑥	End Construction	G20-2	60" x 24"
⑦	Pavement Width Transition Sign	W4-2	48" x 48"
⑧	Keep Right	R4-7a	24" x 30"

- TRAFFIC NOTES
- For standards on control devices and signs refer to "Manual on Uniform Traffic Control Devices," 1978 Ed.
 - All traffic control signs and devices to be subsidiary to the bid item "Traffic Control."
 - Due to existing conditions, Advance Warning Flashing or Sequencing Arrow Panel may be deemed necessary by the Engineer. When used they shall be paid for as extra work.
 - Channelizing devices shall be reflectORIZED or equipped with lighting devices for night time use.
 - Existing inappropriate pavement markings leaving the roadway in a confusing condition to motorists, which creates the potential for misdirection, shall be removed as soon as practicable. Approved removal procedures include sandblasting using air or water, high pressure water, steam or superheated water, mechanical grinding or solvents and chemicals. Other methods of removal may be used upon approval of the Engineer.
 - Two solid yellow reflectORIZED lines, 4" to 6" wide, spaced approximately 2" apart. The lines shall be either a pressure sensitive marking tape or other approved application capable of removal without damage to the final surface.
 - Lights shall be Type B High Intensity with a 7" minimum diameter lens, regulated to flash 55 to 75 times per minute. The flash duration shall not be less than 8% of time.



BRIDGE DECK RECONSTRUCTION
13TH ST. OVER THE ARKANSAS RIVER

APPROACH PAVING AND TRAFFIC

VAN DOREN - HAZARD - STALLINGS
ARCHITECTS - ENGINEERS - PLANNERS
WICHITA, KANSAS

SHEET 6/9

FHWA REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	87 BH0-000S (003)	19	7	7

GENERAL NOTES

MATERIAL: Use Class AAA Conc. throughout. All Structural Steel shall be ASTM A-36. Reinforcing Steel may be grade 40 or grade 60.

SECTION: The section furnished must generally comply with dimensions shown. Requests for minor variations in section geometry & attachments may be submitted for approval.

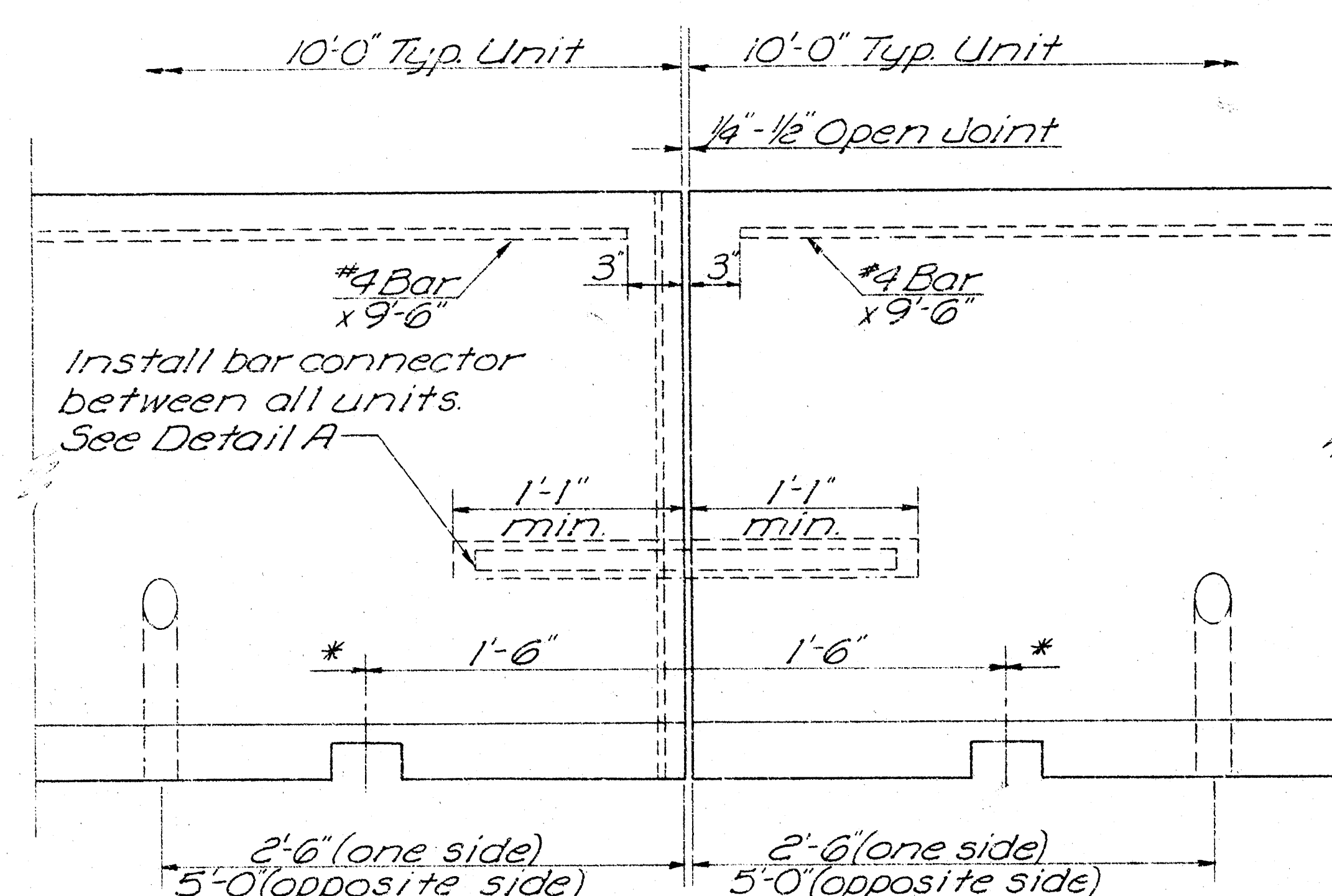
KEYWAY: The female end of the keyway shall be enlarged near the 2" ϕ hole to accept the 2 1/2" washer.

DRAINAGE: Drainage slots shall be constructed where specified in the plans, at inlet locations, or as directed by the engineer.

SURFACE PREPARATION: All loose dirt & sand shall be removed from the roadway surface just prior to placement of the median barriers.

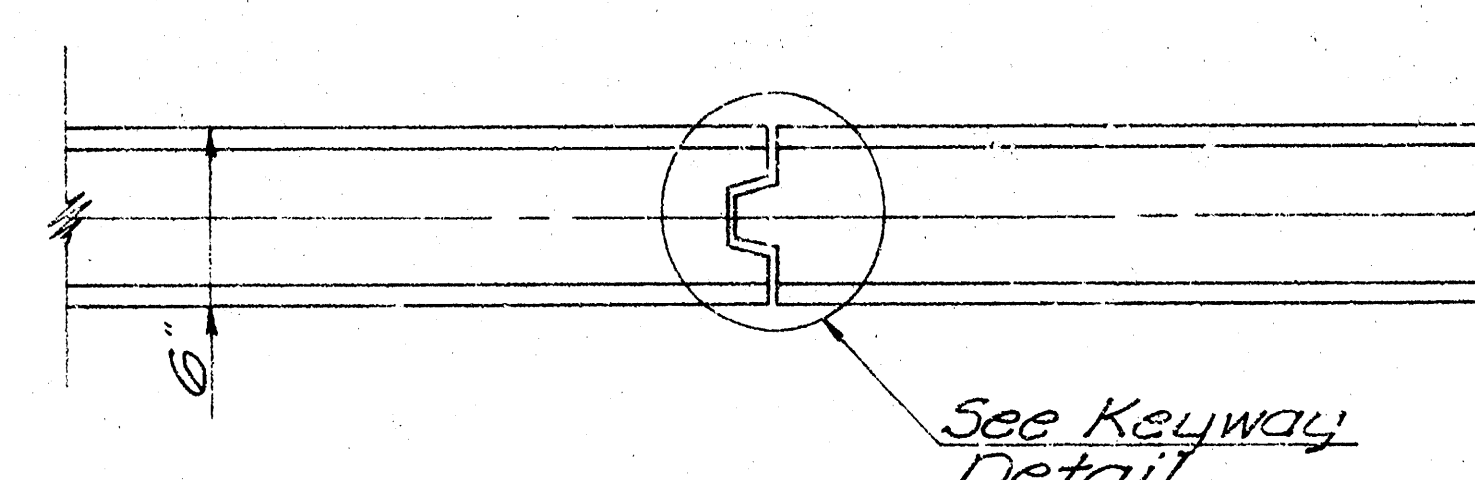
REFLECTOR: Delineators shall be spaced on 100' centers, except through curves greater than 3" curvature, where the spacing shall be on 50' centers. All materials for supporting delineators shall be aluminum except anchor devices. If anchor device is other than aluminum, insulation shall be provided between metals to prevent passage of electrical current. Anchor devices shall be of an approved type.

When reflectors are placed on parallel runs of barrier, only one reflector facing approaching traffic shall be installed.

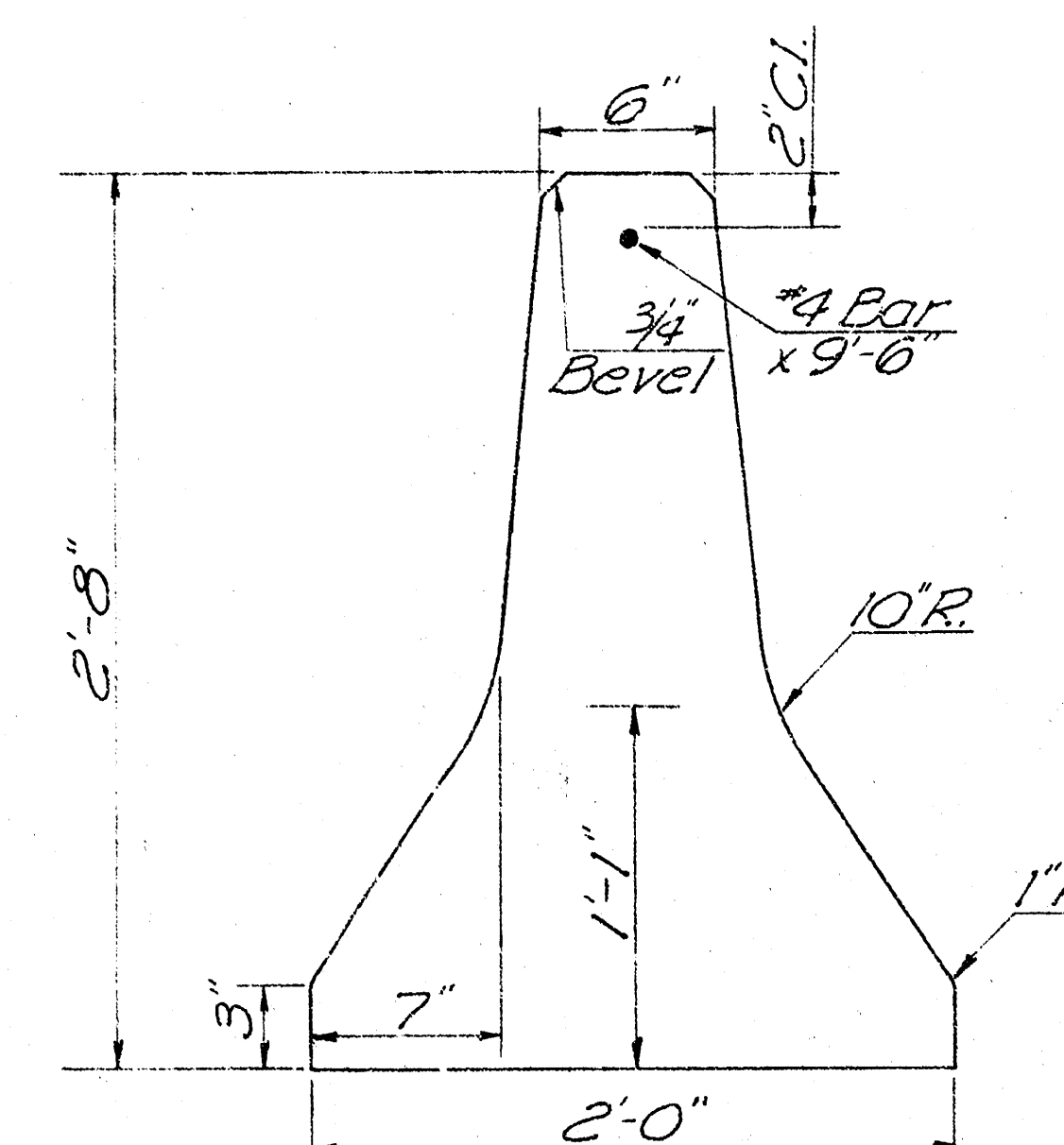


*2" x 4" (Nominal) Lifting Slots at each end of section. Location may be changed at the option of the contractor.

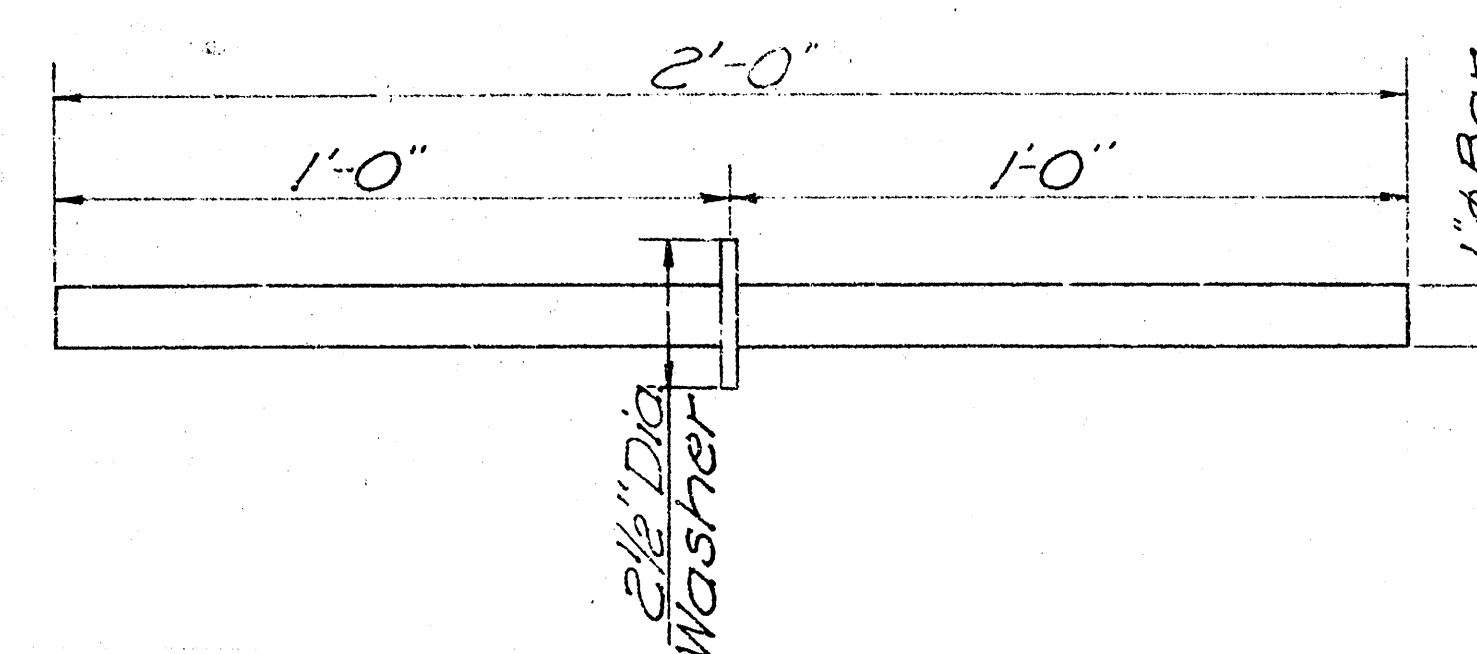
PART ELEVATION



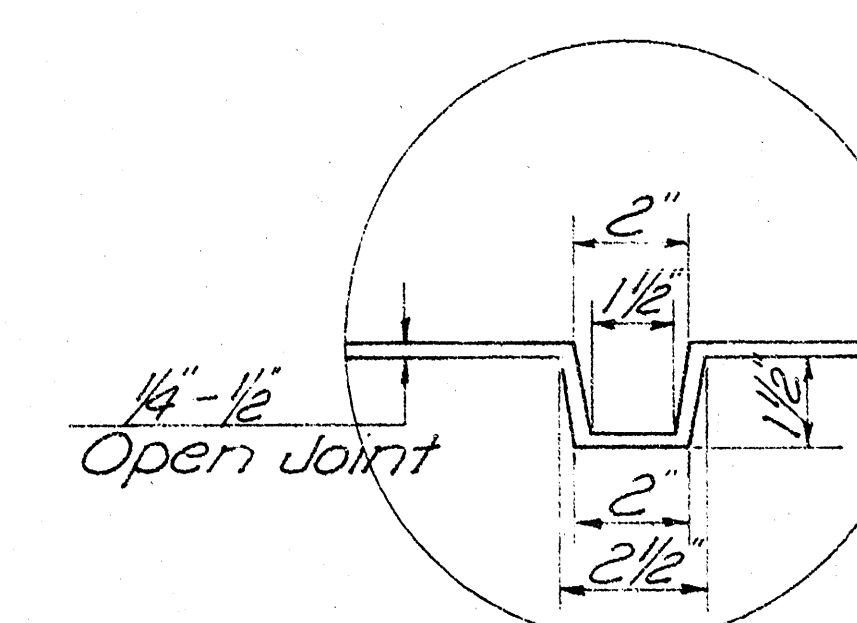
VIEW A-A



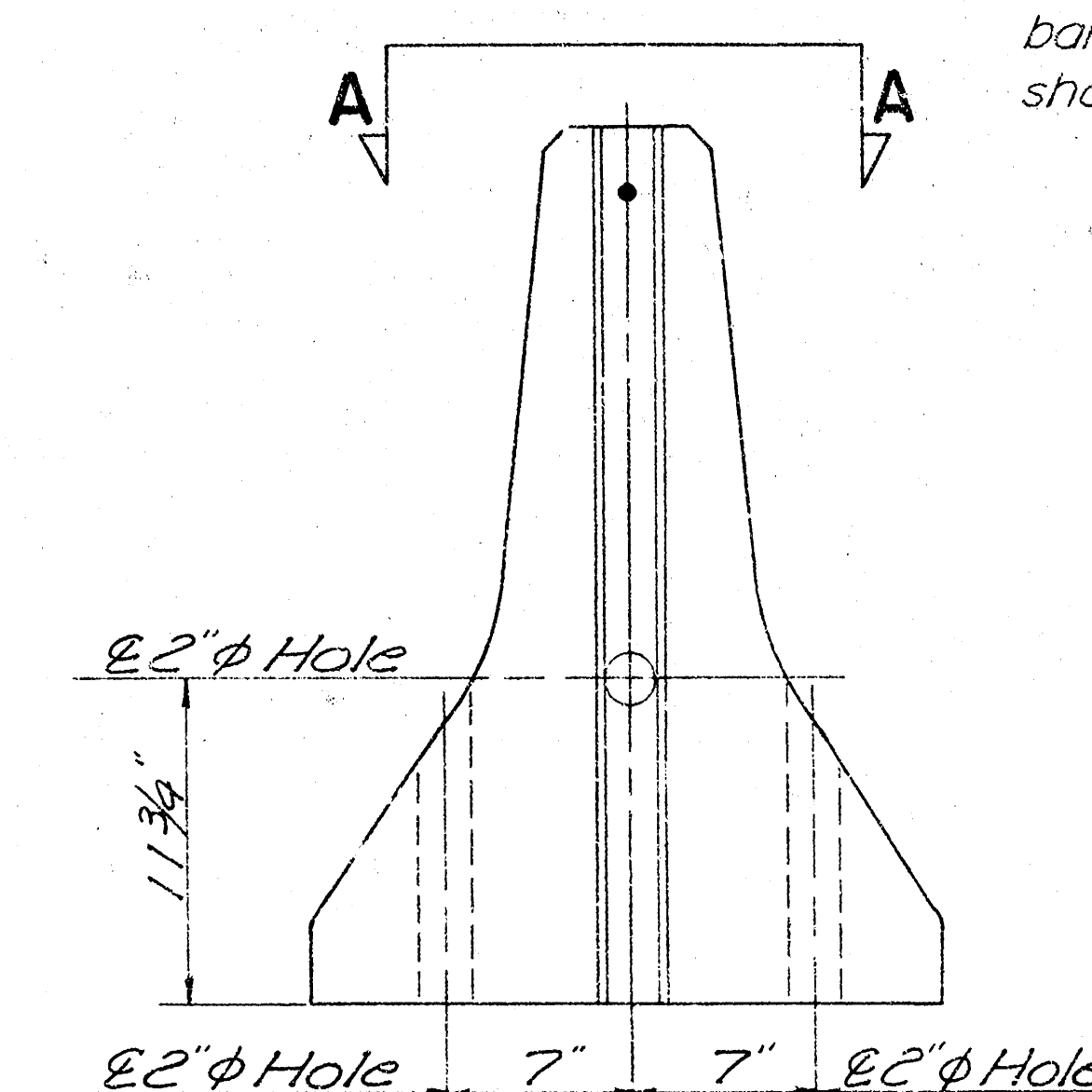
TYPICAL SECTION



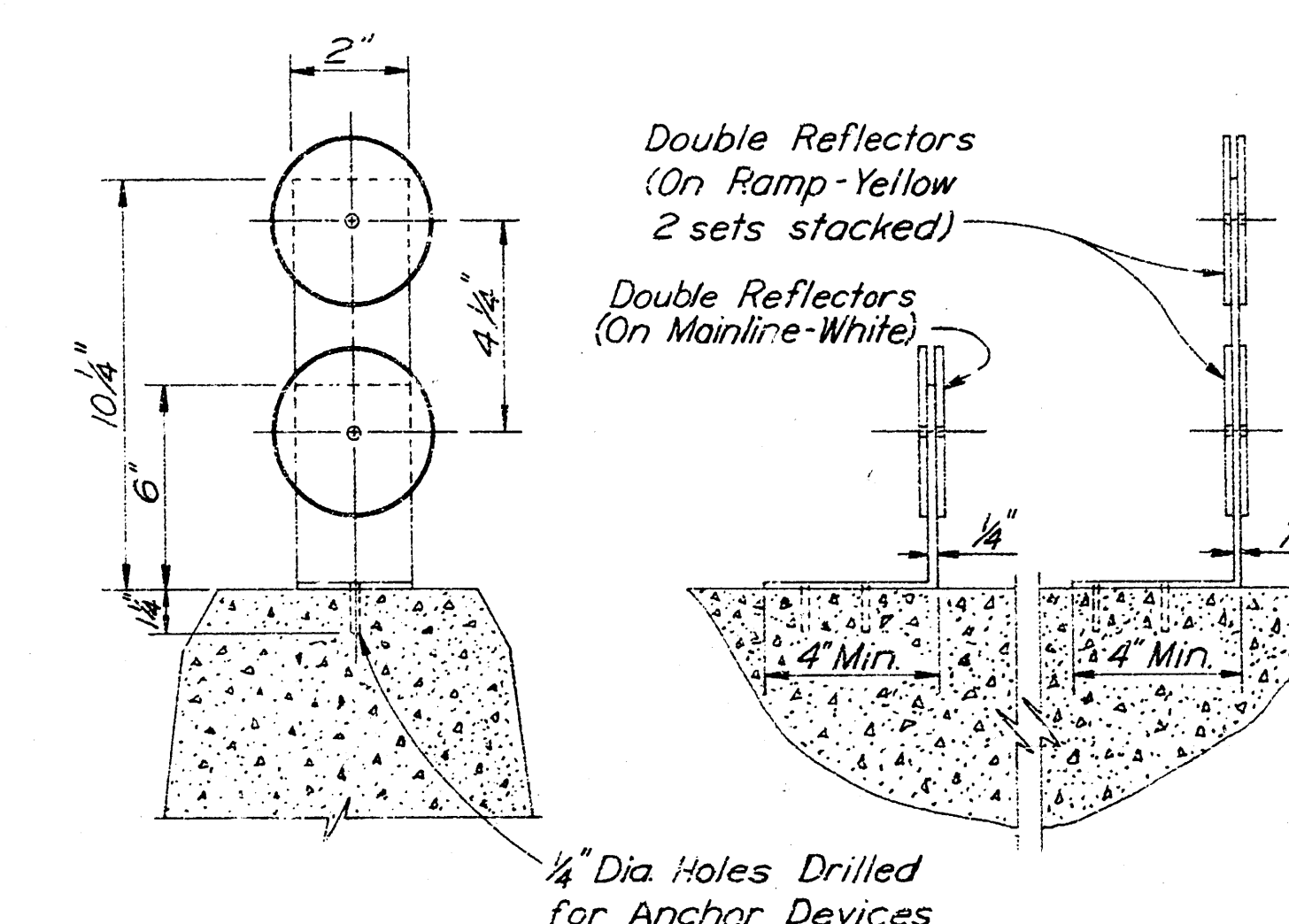
DETAIL "A"



KEYWAY DETAIL



END ELEVATION

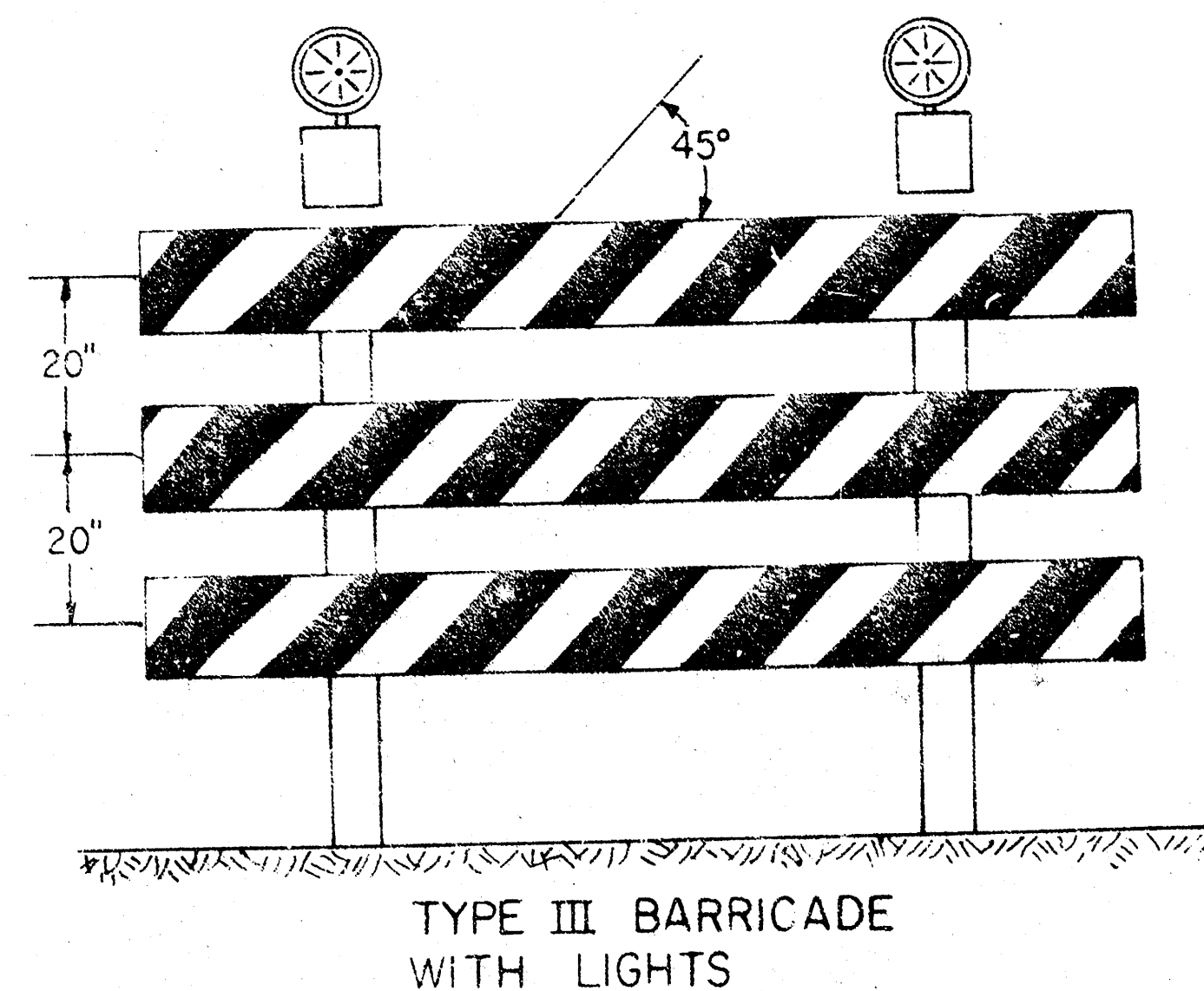


DOUBLE REFLECTOR DETAIL

NO.	DATE	REVISIONS	BY	APP'D.
3				
2				
1				
KANSAS DEPARTMENT OF TRANSPORTATION				
CONCRETE MEDIAN BARRIER				
TYPE I - PRECAST				
SHEET NO. 7 OF 7	SCALE	APP'D.	QUANTITIES	TRACED
DESIGNED	DETAILED	DESIGNED	QUANTITIES	TRACED
DESIGN CK.	DETAIL CK.	DESIGNED	QUANTITIES	TRACED

TRAFFIC CONTROL DEVICES

F-H-W-A REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	87 BHO-0005(003)	10	7A	7



NOTE:

A MINIMUM OF TWO TYPE A LIGHTS SHALL BE USED AT EACH LOCATION WHERE A TYPE III BARRICADE OR BARRICADES ARE USED. A LIGHT SHALL BE MOUNTED ON THE OUTSIDE CORNER AT THE END BARRICADES WHEN MORE THAN ONE IS USED. THE LENS SHALL BE A MINIMUM OF 7" IN DIAMETER.

BARRICADE CHARACTERISTICS

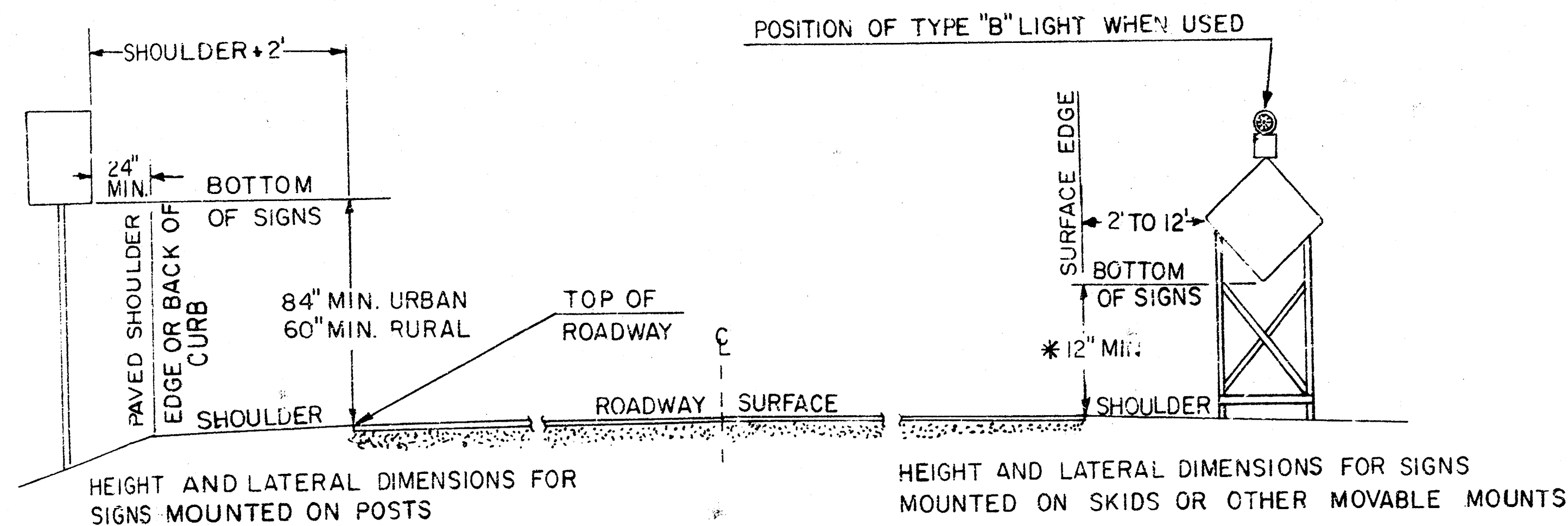
TYPE*	I	II	III
WIDTH OF RAIL	8" MIN-12" MAX	8" MIN-12" MAX	8" MIN-12" MAX
LENGTH OF RAIL	2 FT. MIN	2 FT. MIN	4 FT. MIN
WIDTH OF STRIPES**	6 IN.	6 IN.	6 IN.
HEIGHT	3 FT. MIN	3 FT. MIN	5 FT. MIN
NUMBER OF REFLECTORIZED RAIL FACES	2 (ONE EACH DIRECTION)	4 (TWO EACH DIRECTION)	3 IF FACING TRAFFIC IN ONE DIRECTION 6 IF FACING TRAFFIC IN TWO DIRECTIONS

- * FOR WOODEN BARRICADES NOMINAL LUMBER DIMENSIONS WILL BE SATISFACTORY
- ** FOR RAILS LESS THAN 3 FEET LONG, 4 INCH WIDE STRIPES SHALL BE USED

WARNING LIGHTS

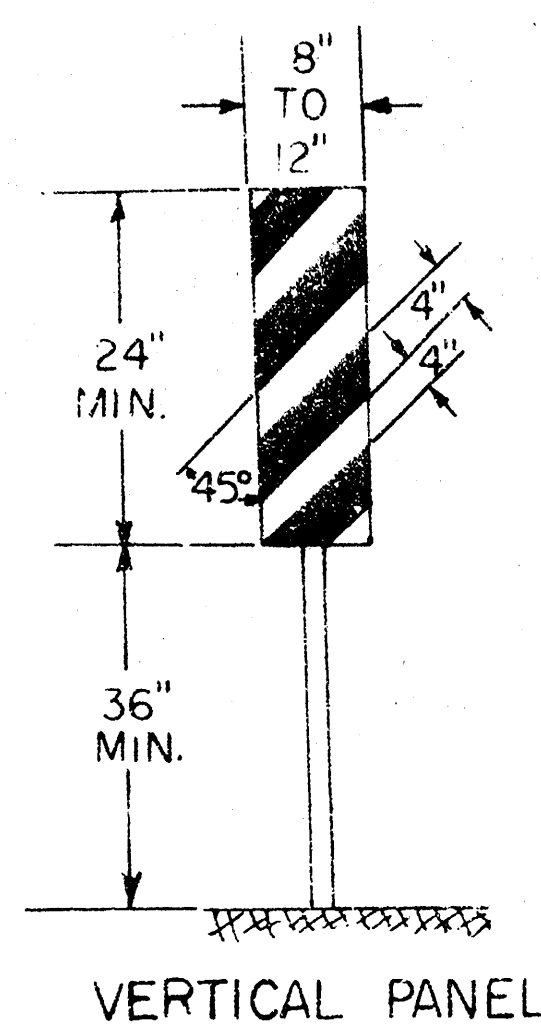
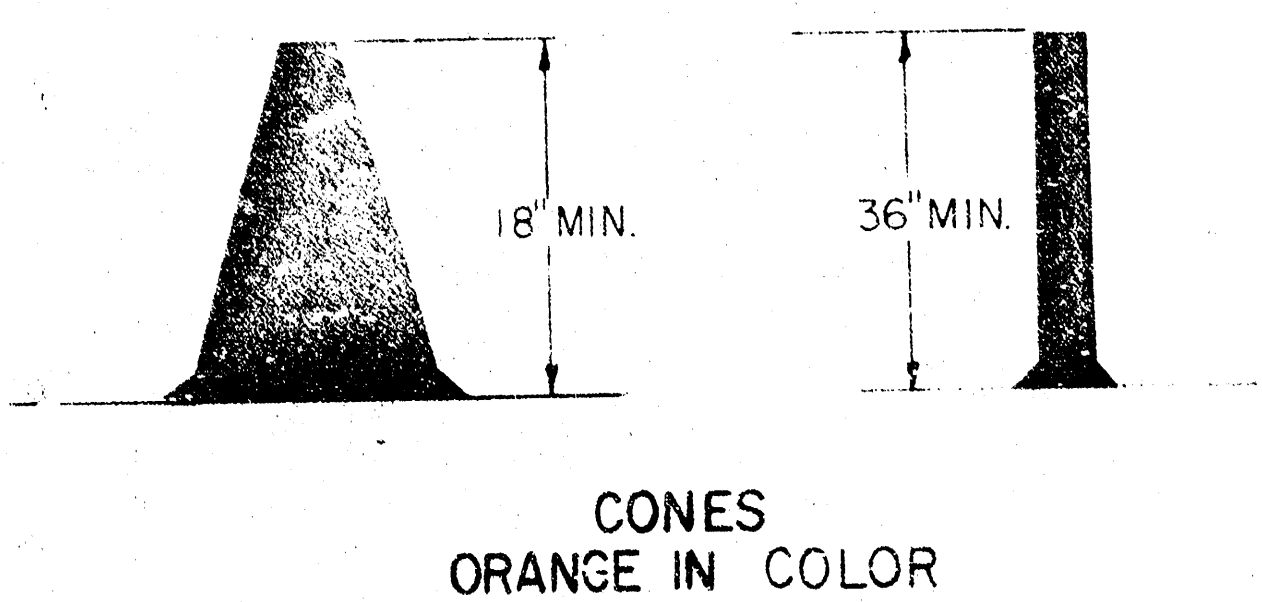
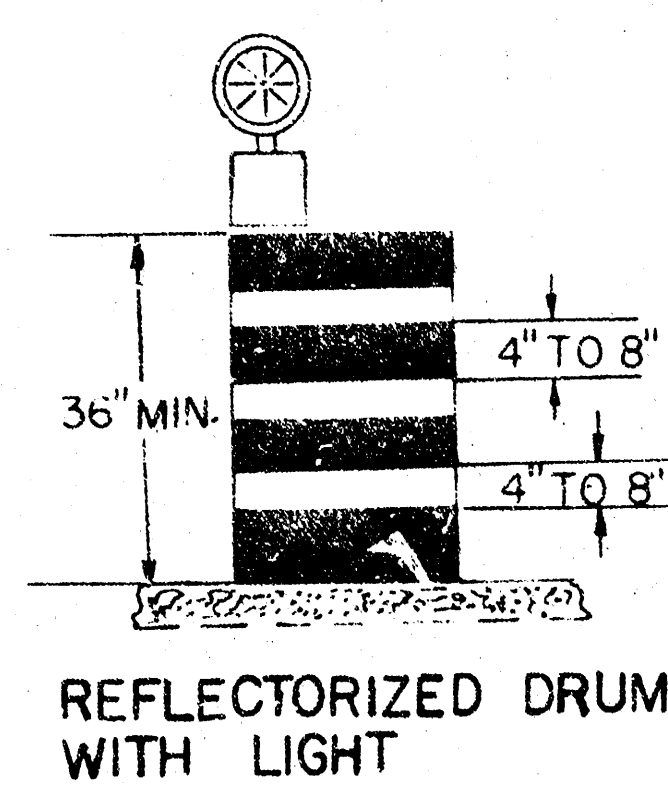
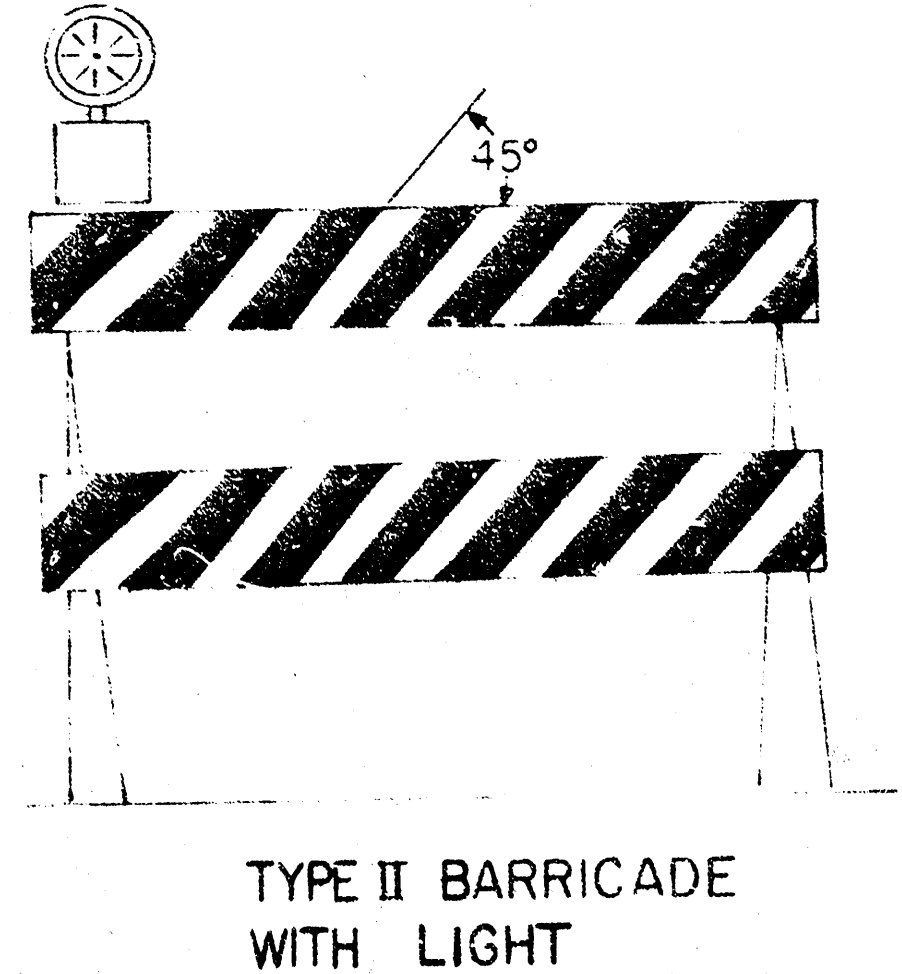
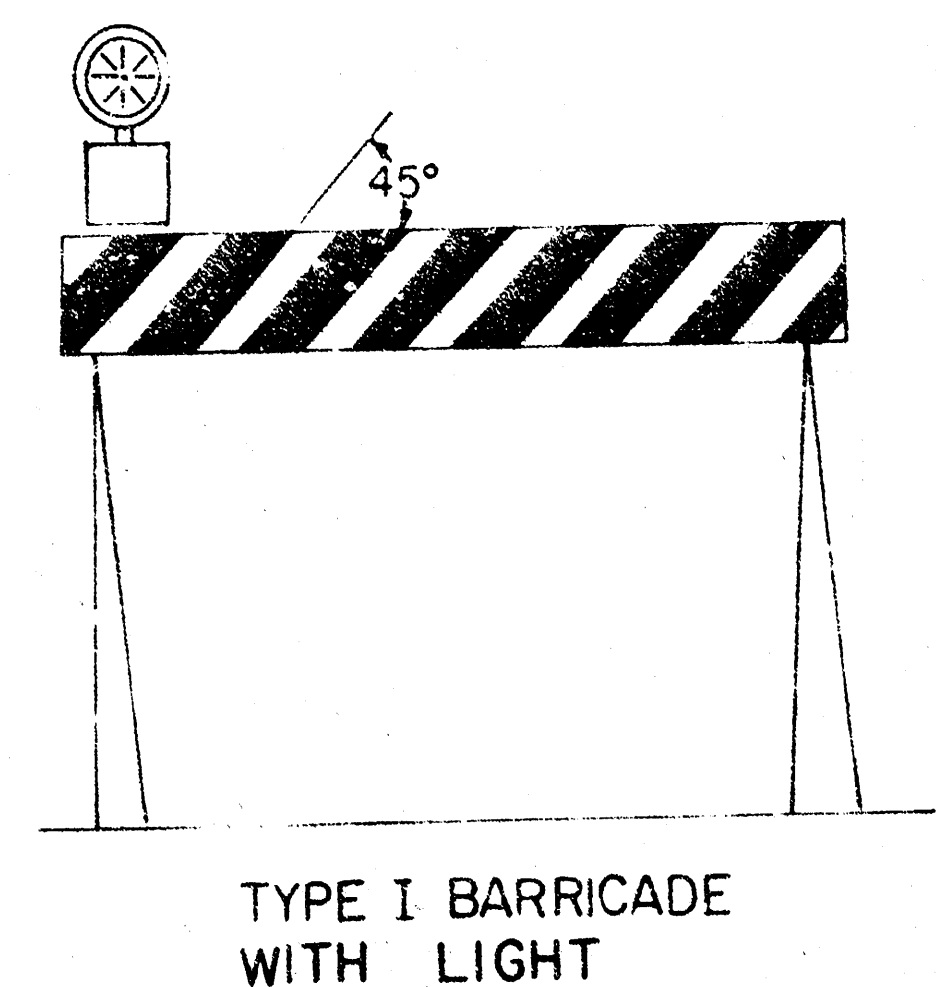
	TYPE A LOW INTENSITY	TYPE B HIGH INTENSITY	TYPE C STEADY BURN
LENS DIRECTIONAL FACES	1 OR 2	1	1 OR 2
FLASHING RATE PER MINUTE	55 TO 75	55 TO 75	CONSTANT
FLASH DURATION ¹	10%	8%	CONSTANT
MINIMUM EFFECTIVE INTENSITY ²	4 CANDELAS	35 CANDELAS	
MINIMUM BEAM CANDLE POWER			2 CANDELAS
HOURS OF OPERATION	DUSK TO DAWN	24 HRS./DAY	DUSK TO DAWN

- 1 LENGTH OF TIME THAT INSTANTANEOUS INTENSITY IS EQUAL TO OR GREATER THAN EFFECTIVE INTENSITY
- 2 THESE VALUES MUST BE MAINTAINED WITHIN A SOLID ANGLE 90° ON EACH SIDE OF THE VERTICAL AXIS, AND 5° ABOVE AND 5° BELOW THE HORIZONTAL AXIS.

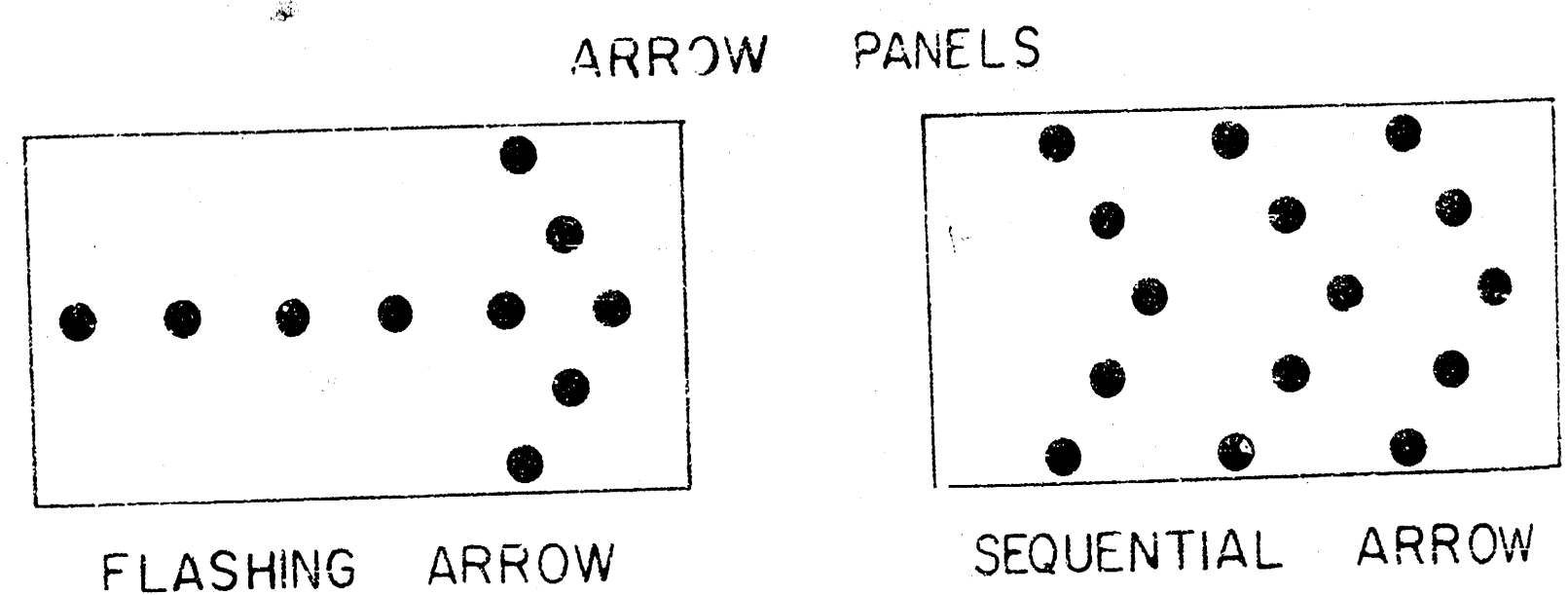


* A MINIMUM OF 30" IS PREFERRED

CHANNELIZING DEVICES



LIGHTS USED ON CHANNELIZING DEVICES
WHEN USED SINGLY TYPE "A" FLASHING
WHEN USED IN SERIES TYPE "C" STEADY BURN
THE LENS SHALL BE A MINIMUM OF 7" IN DIAMETER.



NOTE:

The colors of barricade rails, drums, and vertical panels shall be orange and white. The entire area of orange and white shall be reflectORIZED with reflective sheeting or other reflective processes as approved by the Engineer.

Channelizing Devices placed along shoulder edges or in dropoffs shall be a minimum of 24" from the top of the channelizing device to the top of the pavement.

NO.	DATE	REVISIONS	BY	APP'D
1				
2				
3				

KANSAS DEPARTMENT OF TRANSPORTATION
DESIGN DETAILS FOR
BARRICADES, CHANNELIZING DEVICES
AND SIGN MOUNTING LOCATIONS

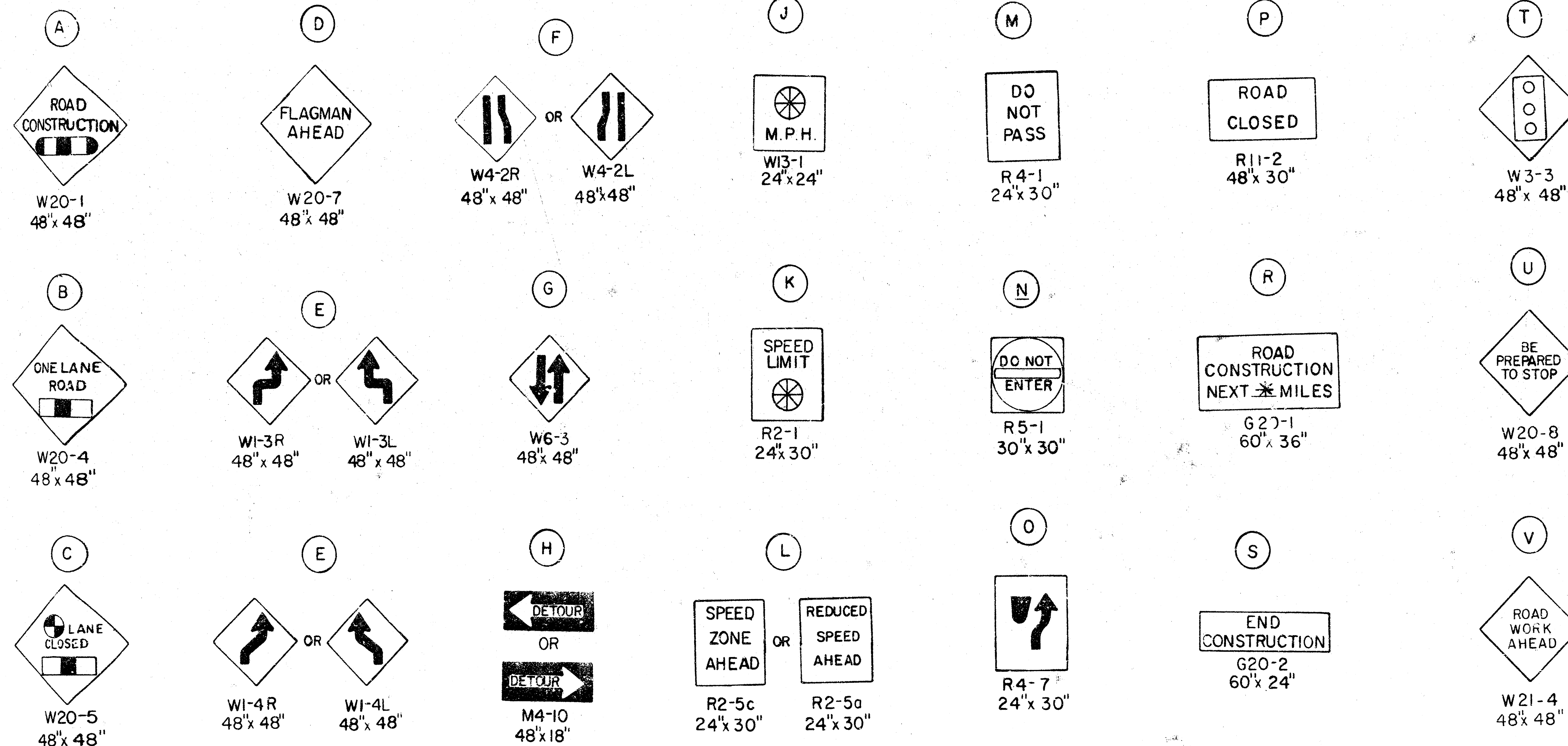
STD. 752-1

SHEET NO. OF SCALE
DESIGNED PR OF
DESIGN CK AFT DETAIL CK AFT QUANTITIES
INACED
TRACE CK

APPROVED
DATE 7-6-80

TRAFFIC CONTROL DEVICES FOR HANDLING TRAFFIC THROUGH CONSTRUCTION

FEDERAL REGION NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	87 BHO-005 (003)	19	7B	7



- AHEAD, 1500 FT. or 1 MILE. Whichever is applicable.
- AHEAD, 1000 FT., 1500 FT., or 1/2 MILE. Whichever is applicable.
- RIGHT or LEFT.
- Speed to be determined by the Engineer.
- To be erected if project exceeds 2 miles in length * mileage to be shown to nearest whole mile.
- Use W1-3 for speeds of 30 MPH or less.
- Use W1-4 for speeds over 30 MPH.

NOTE:

All signs shall be fully reflectorized with reflective sheeting or other reflective processes as approved by the Engineer.

NO.	DATE	REVISIONS	BY	APPD.
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STD. 755
SHEET NO. OF
DESIGNED BY PR
CHECKED BY AFT
SCALE
DATE
APPROVED BY
DATE
SHEET NO. OF
DESIGNED BY PR
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