

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

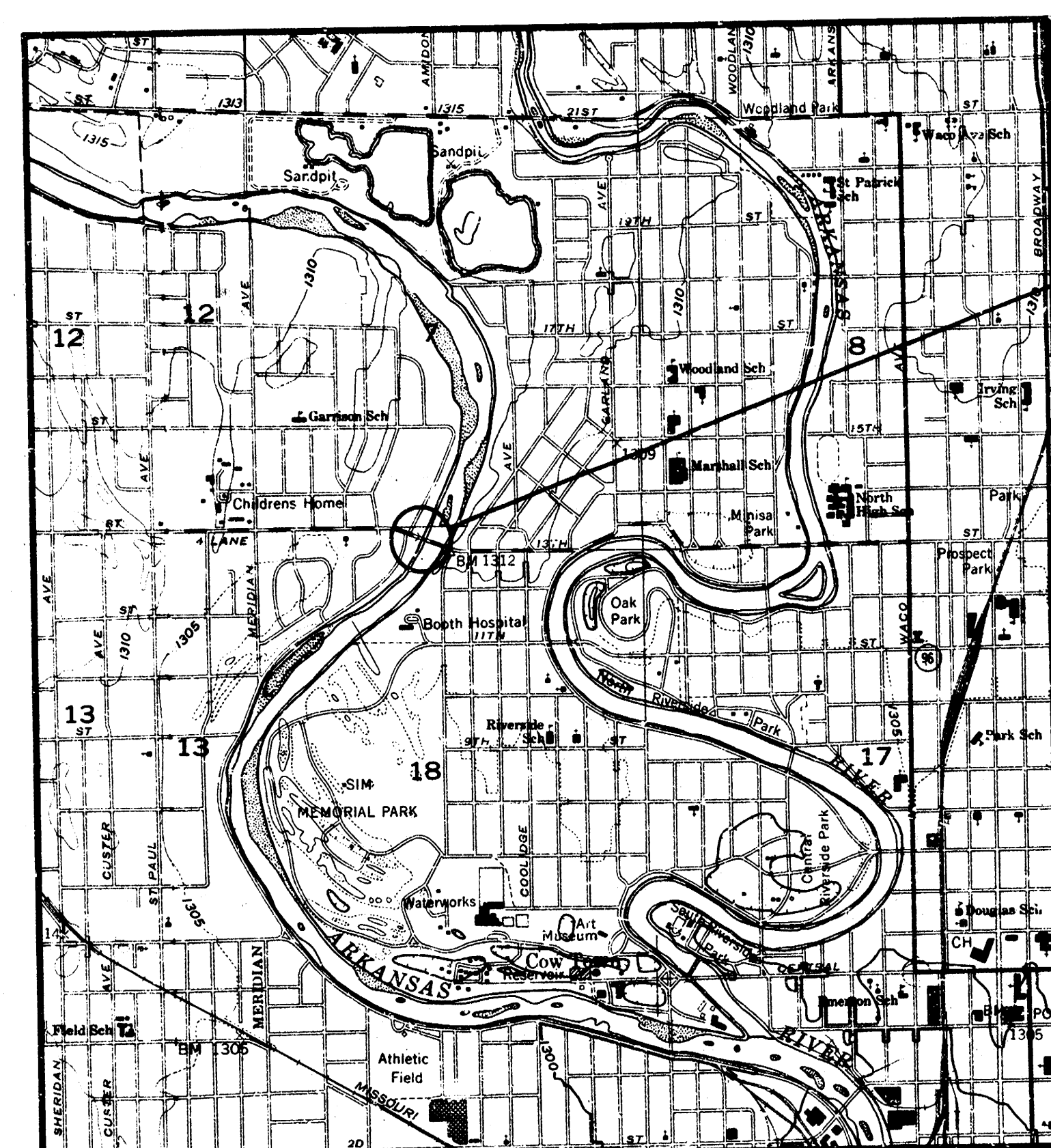
BRIDGE REPAIR

BRIDGE DECK RECONSTRUCTION 13TH STREET OVER THE ARKANSAS RIVER

WICHITA, KANSAS

SEDGWICK COUNTY

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



REPAIR EXISTING BRIDGE DECK,
36'-7" at 50' - 36' CONC. GIRDER SPAN

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.	INDEX
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 exist. 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 over lay 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.

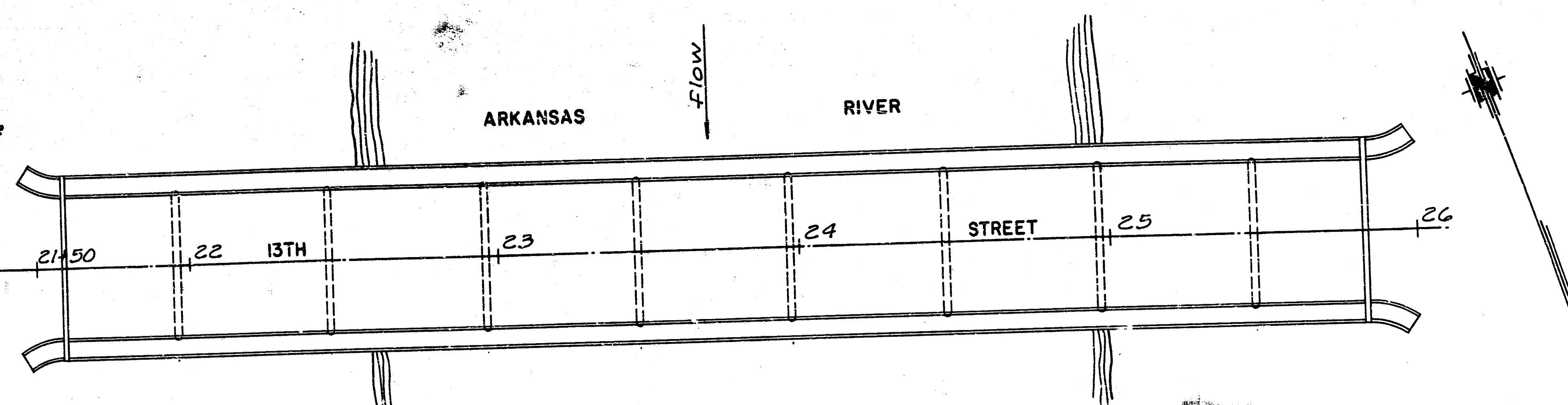
TRAFFIC: Traffic control shall be in accordance with plan sheet #6 or as directed by the Engineer. All signing and traffic control devices shall conform to the Manual On Uniform Traffic Control Devices (1978 Edition). The Contractor shall provide all signing and traffic control devices.

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 filled 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.

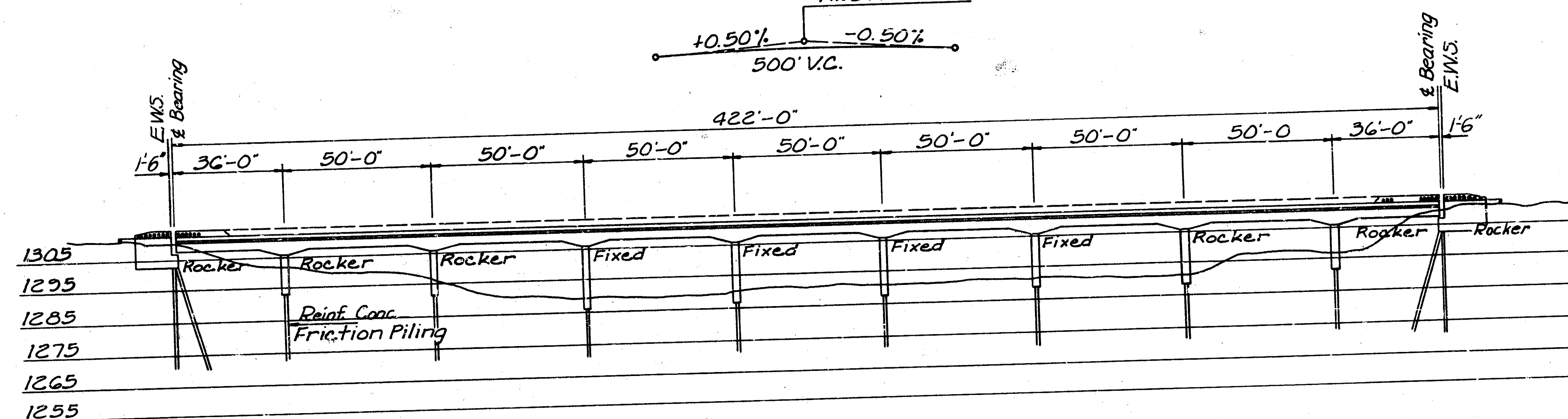


PLAN

Scale: 1" = 30'-0"

P.I. Sta. 23+71

+0.50% -0.50%
500' V.C.



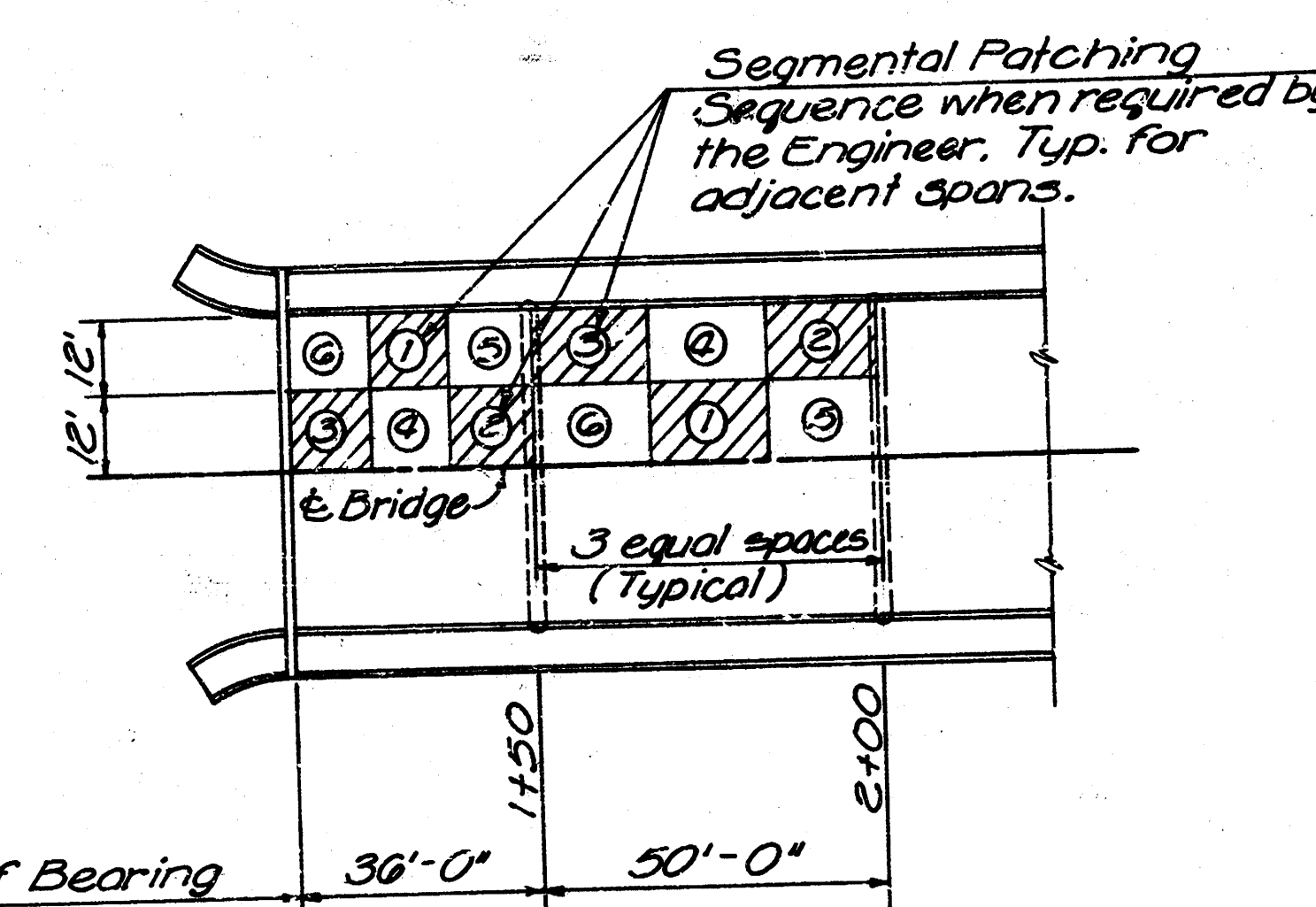
ELEVATION

Scale: 1" = 30'-0"

SUMMARY OF QUANTITIES

Machine Preparation (1/4")	2,666.7 Sq. Yds.
* Area Prepared for Patching	87.50 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 Repair	1 Each
Rocker Repair	13 Each
Concrete Pavement (8")	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.

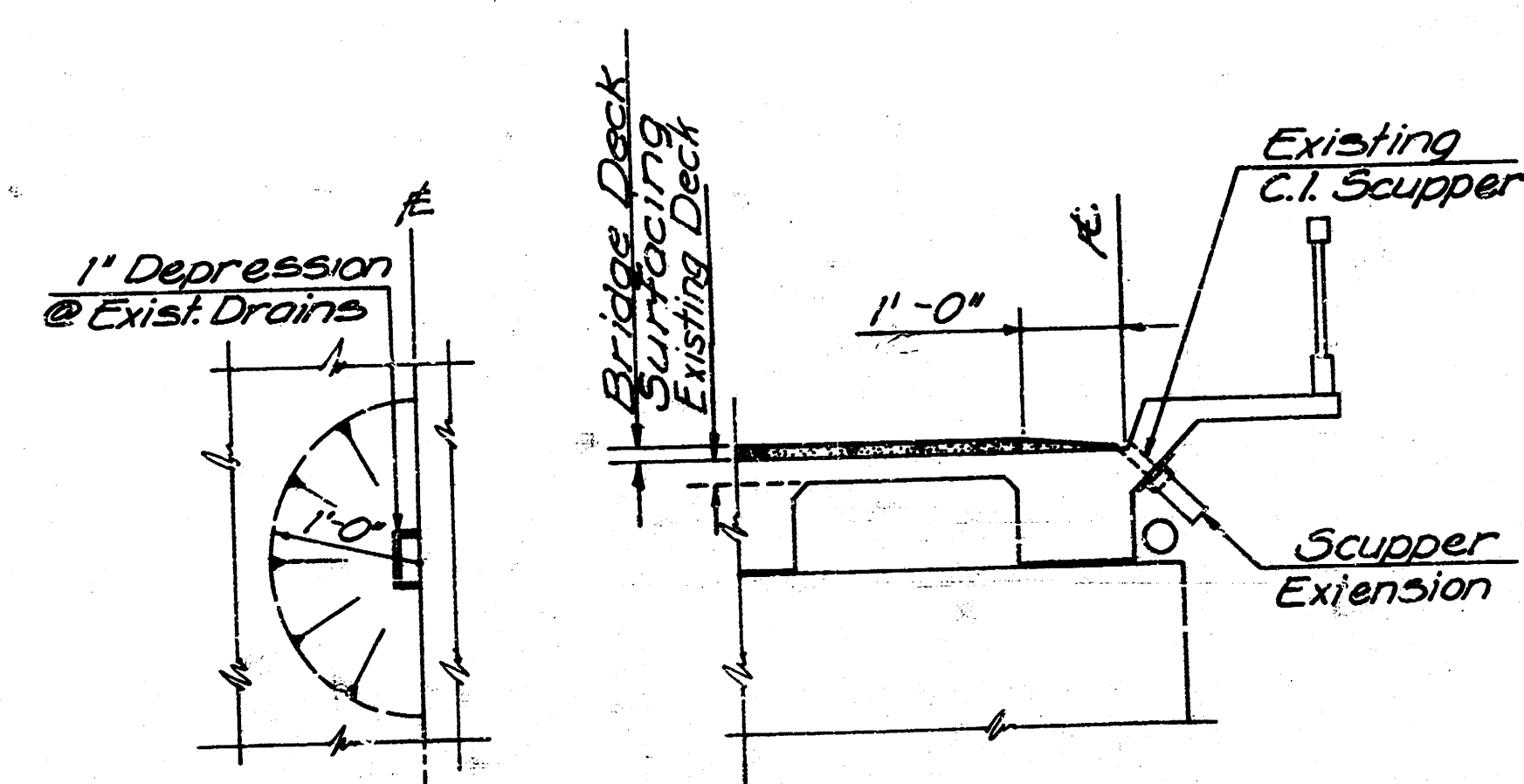
* Includes 180 sq. yds. of sidewalk repair



SEGMENTAL PATCHING SEQUENCE

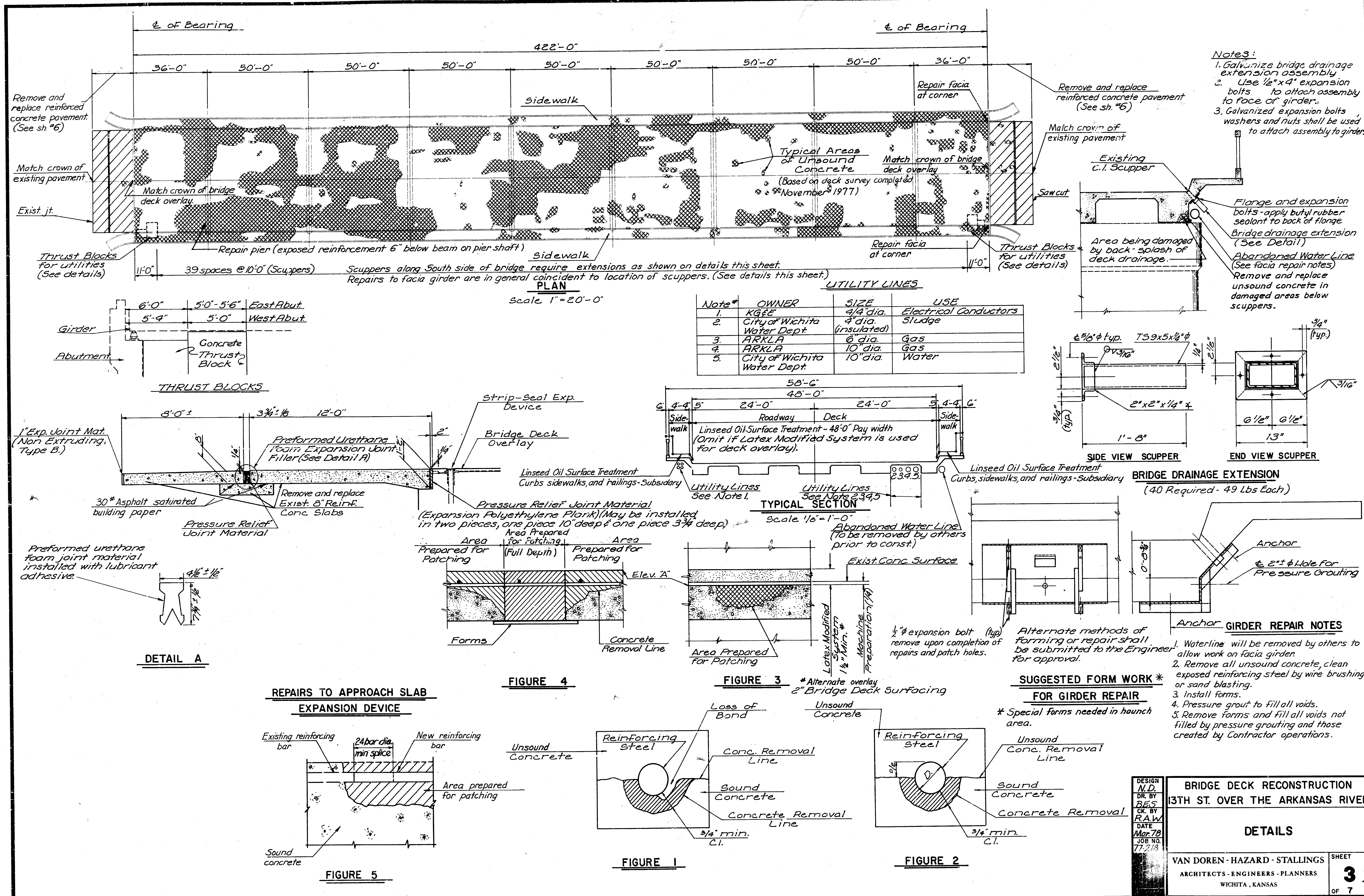
SEGMENTAL CONSTRUCTION:
 Segmental construction may be required by the Engineer when large areas of full depth patching are encountered, or when the unbonded length of the bars becomes excessive. The areas of concrete removed shall be replaced to elevation 'A' and allowed to cure a min. of 48 hours when the air temperature in that area is above 60°F; 72 hours when the air temperature is between 40°F and 60°F; and 120 hrs. when the air temperature is below 40°F. before removing an adjacent area.

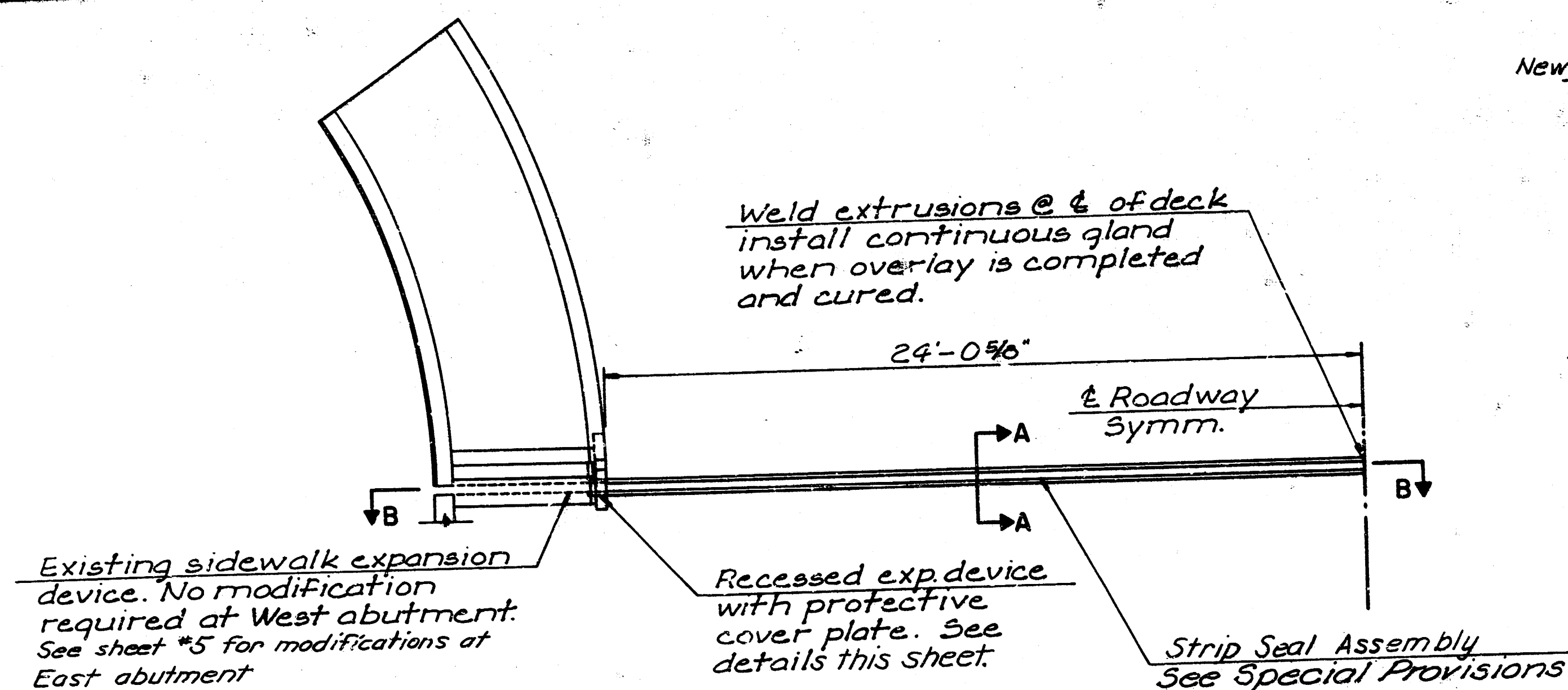
* See Sheet #3



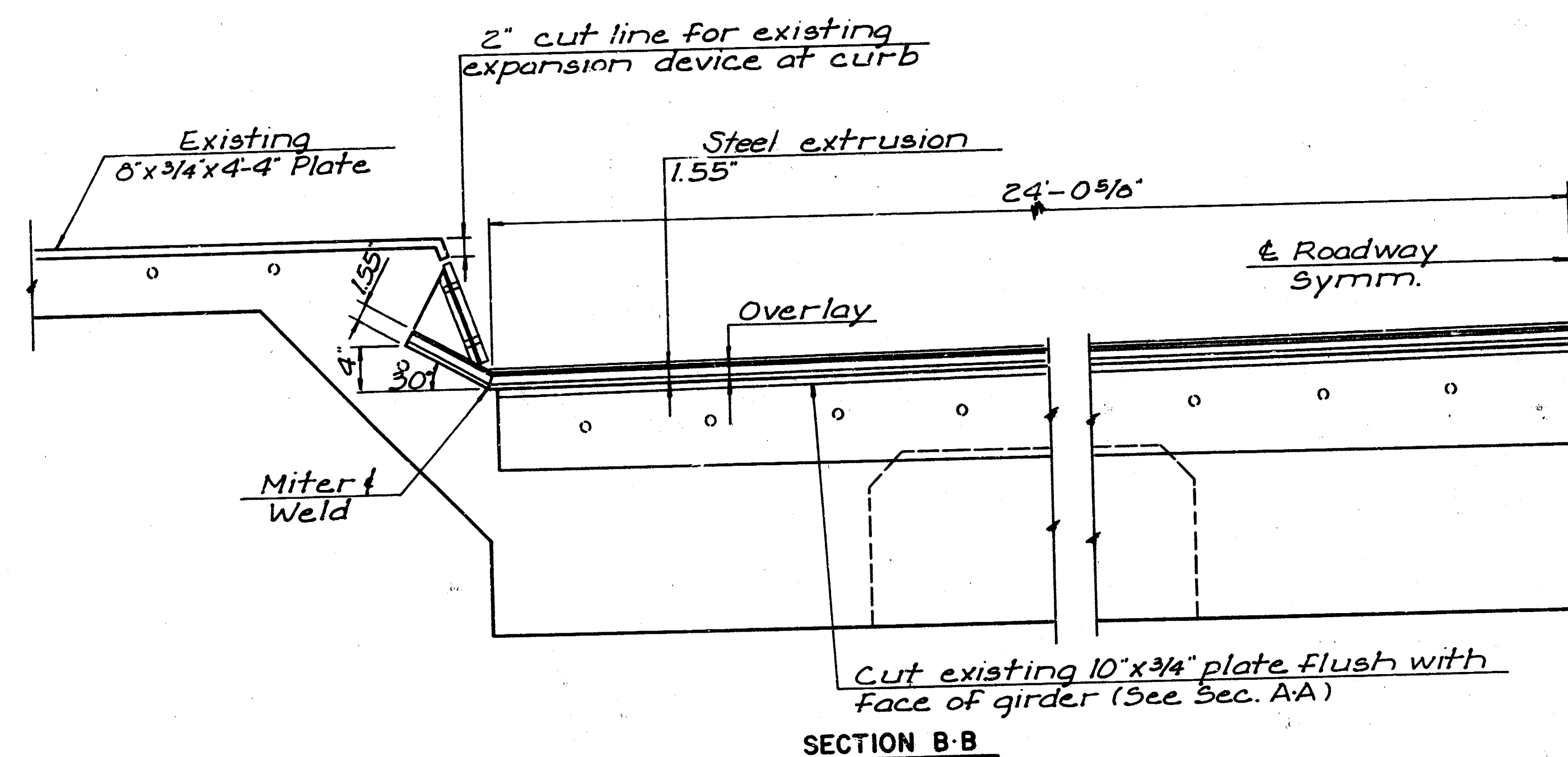
SEMI-CIRCULAR DEPRESSION
AT EXISTING DRAINS

DESIGN N.D.	BRIDGE DECK RECONSTRUCTION 13TH ST. OVER THE ARKANSAS RIVER CONSTRUCTION LAYOUT	VAN DOREN - HAZARD - STALLINGS ARCHITECTS - ENGINEERS - PLANNERS WICHITA, KANSAS	SHEET 2 OF 7
DR. BY B.F.S.			
CK. BY R.A.W.			
DATE Mar. 78			

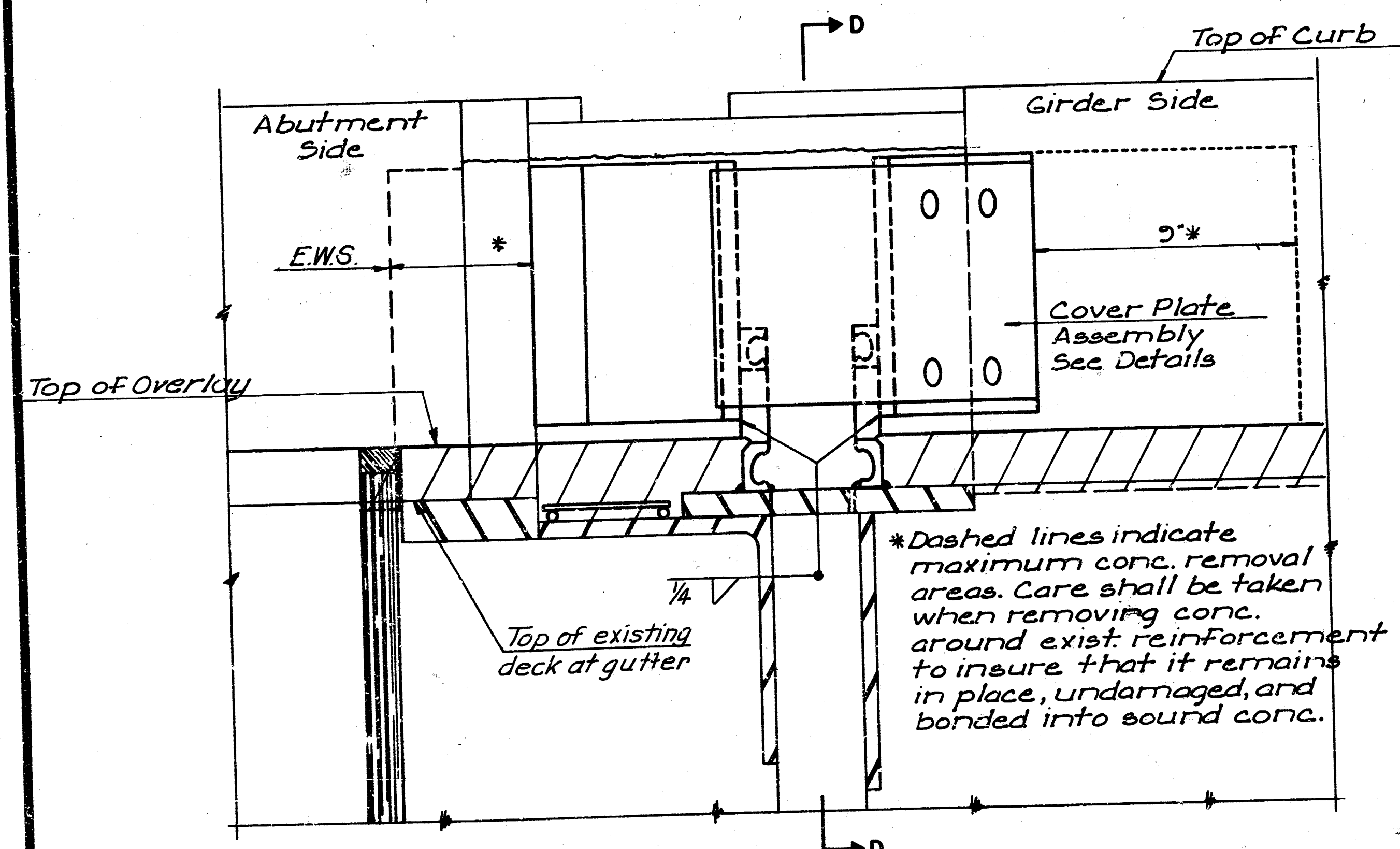




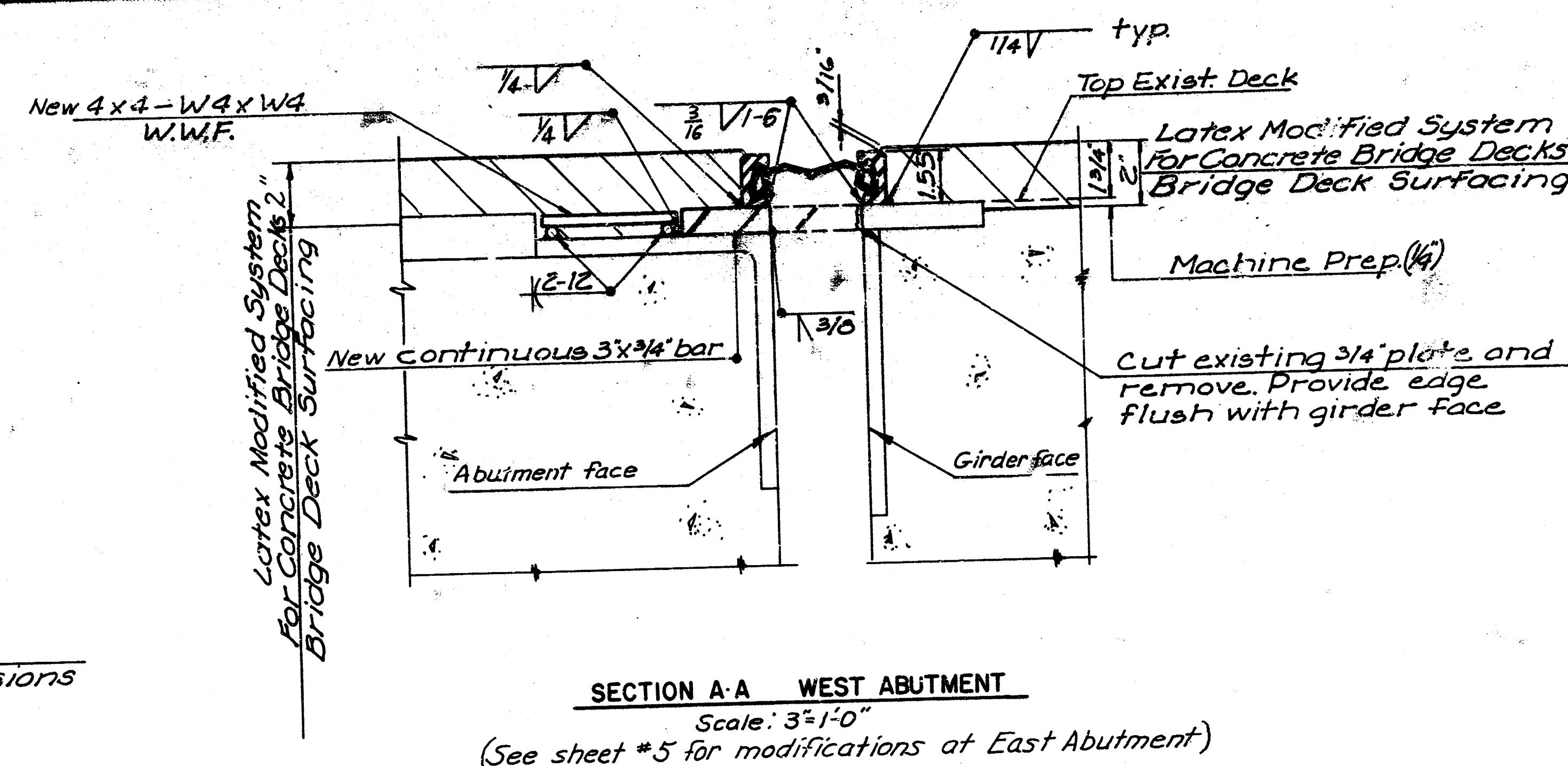
HALF PLAN, DECK AT EXPANSION DEVICE
Scale: 1/4"=1'-0"



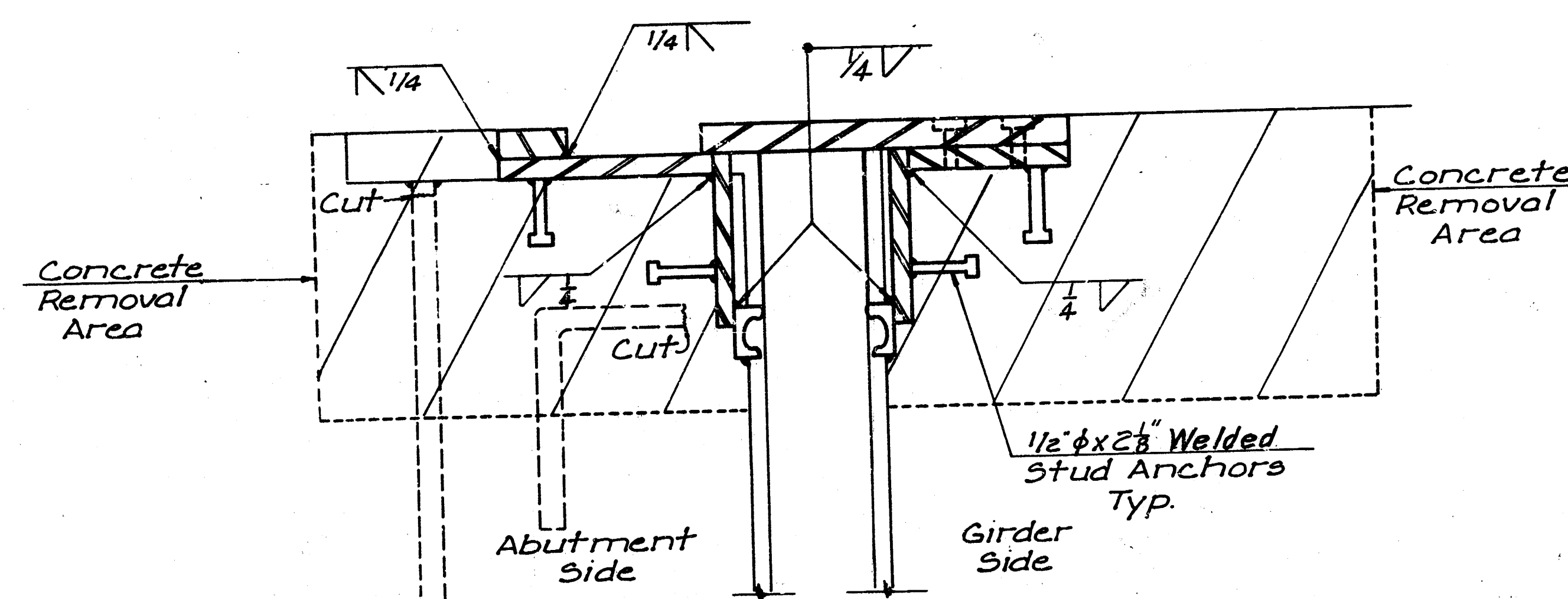
SECTION B-B



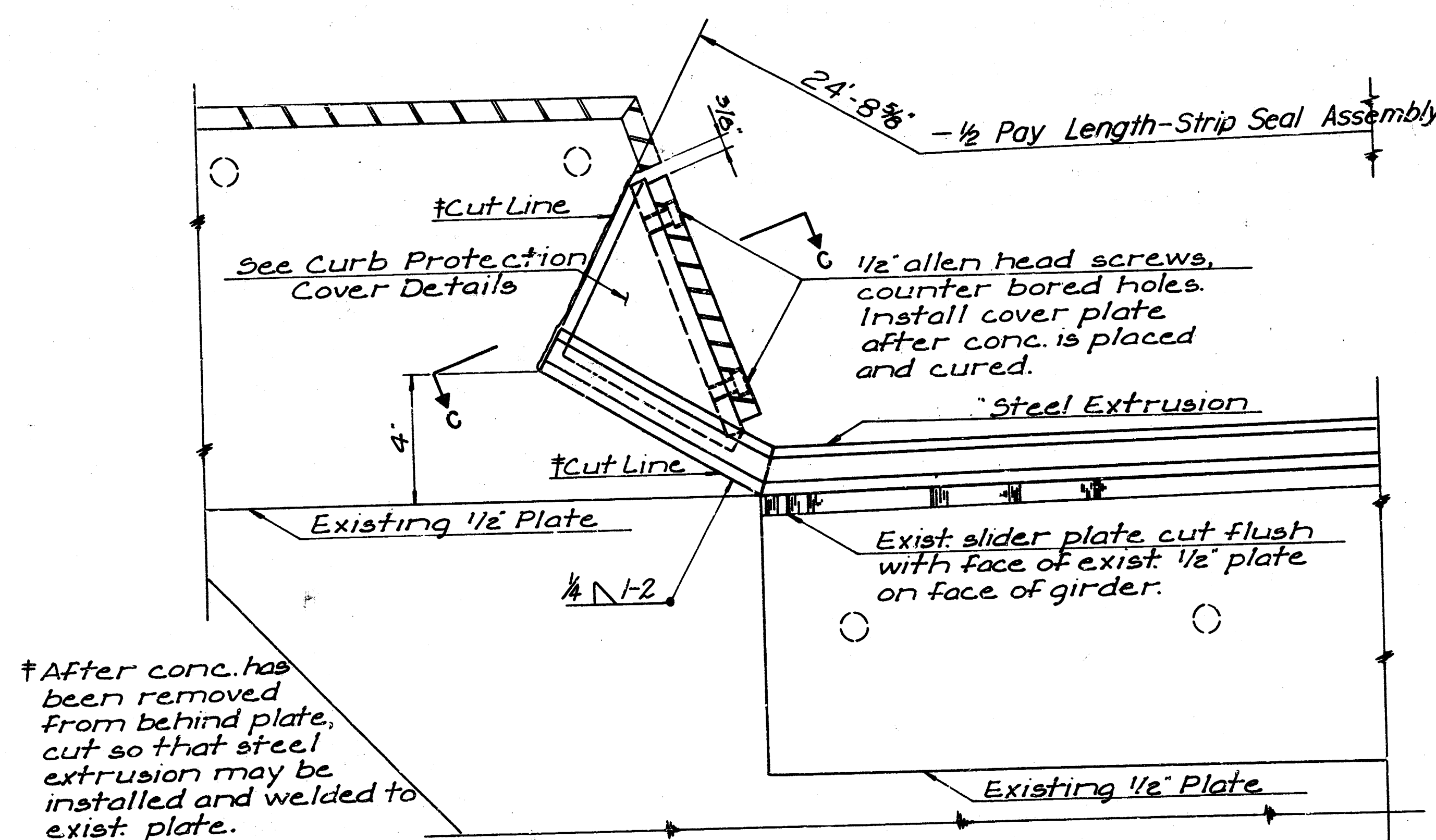
ELEVATION, EXPANSION DEVICE AT CURB
Scale: 3"=1'-0"



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

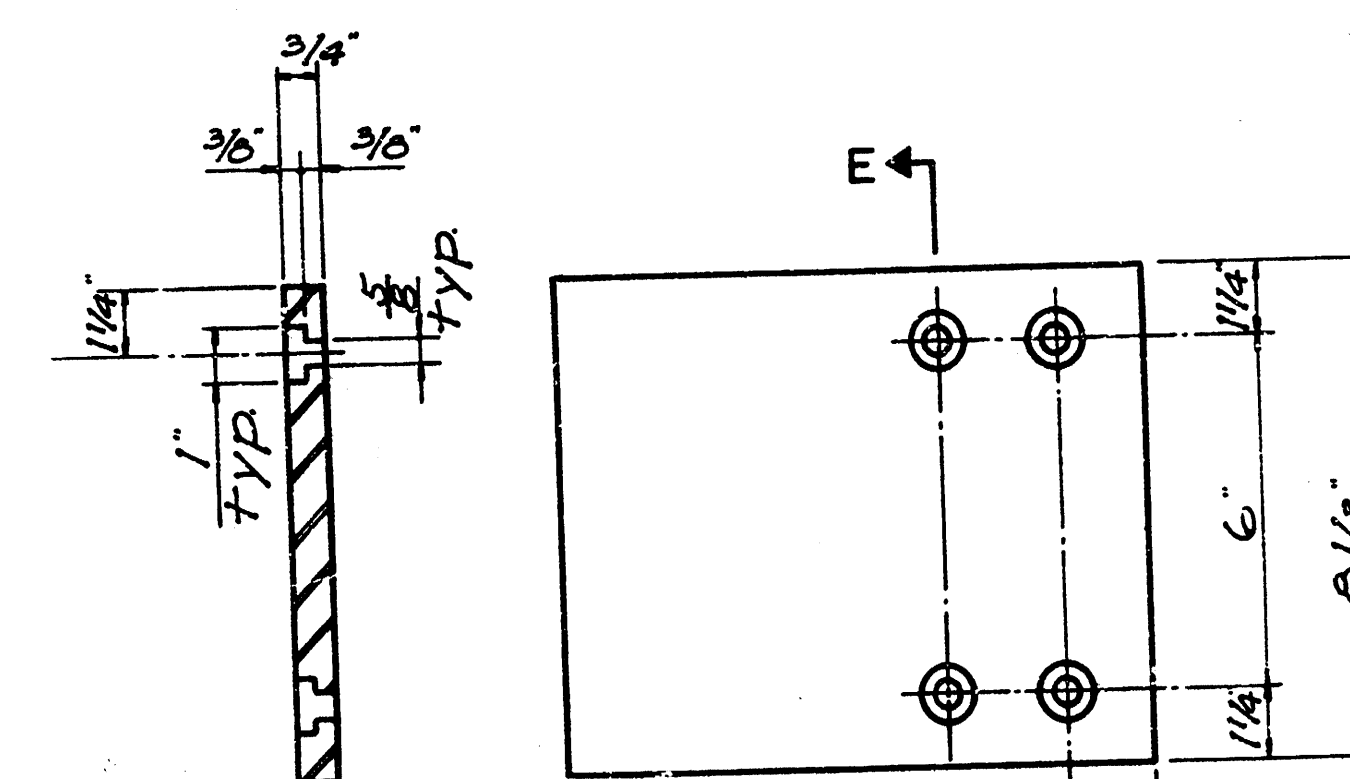


SECTION C-C
Scale: 3"=1'-0"



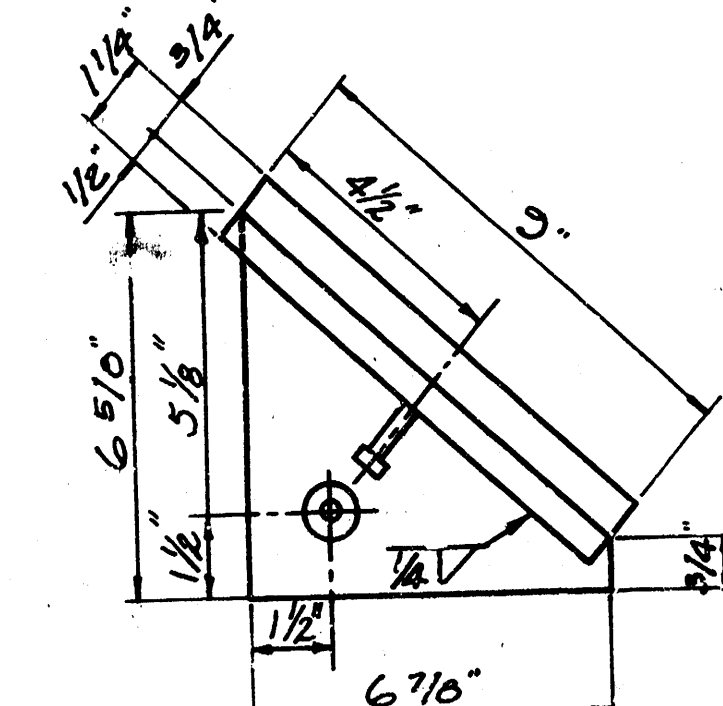
SECTION D-D

*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.

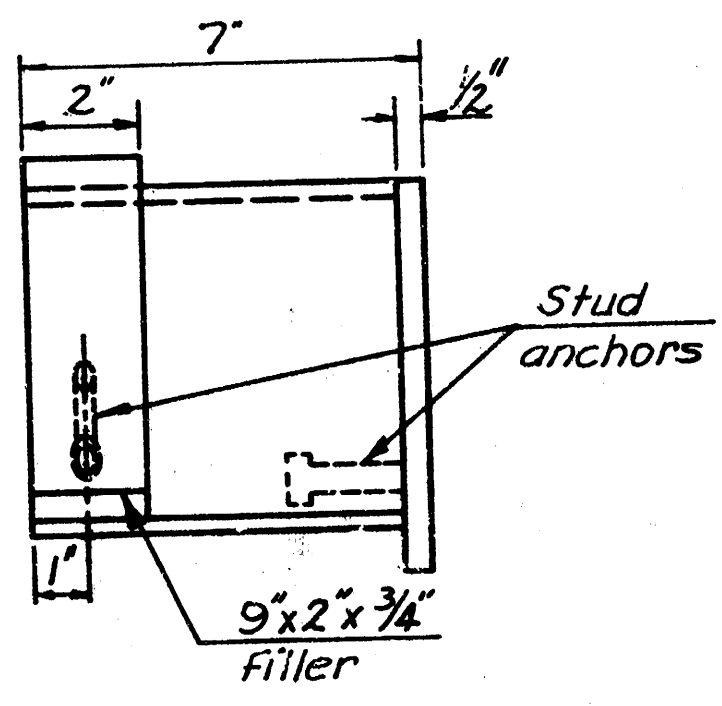


SECTION E-E

COVER PLATE



ABUTMENT SIDE



GIRDER SIDE

CURB PROTECTION COVER DETAILS

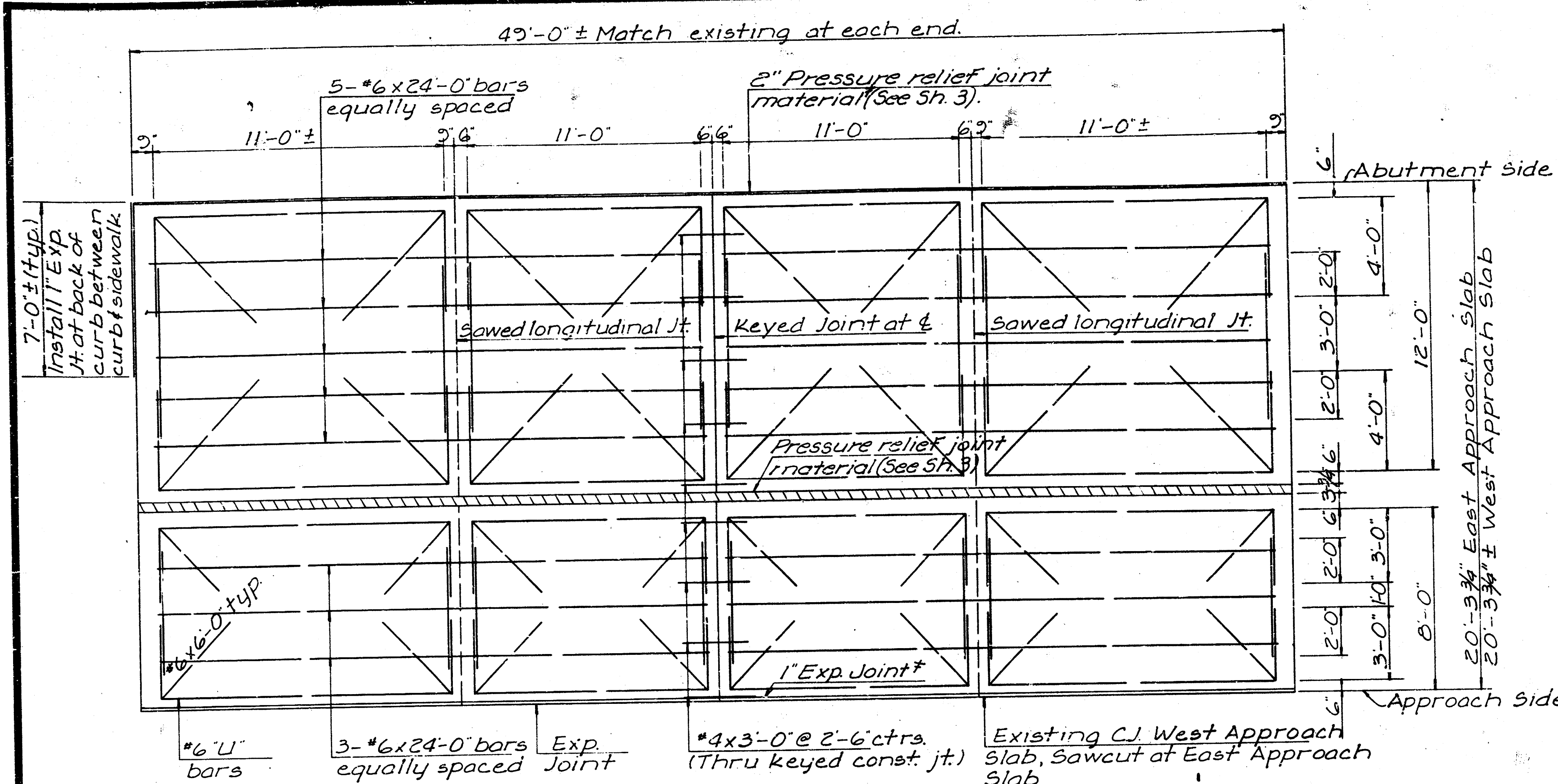
DESIGN M.D. OR BY B.E.S. CK BY R.A.W. DATE Mar 78 JOB NO. 77-212	BRIDGE DECK RECONSTRUCTION 13TH ST. OVER THE ARKANSAS RIVER EXPANSION DEVICE DETAILS VAN DOREN - HAZARD - STALLINGS ARCHITECTS - ENGINEERS - PLANNERS WICHITA, KANSAS	SHEET 4 OF 7
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SECTION C-C
Scale: $\frac{1}{2}'' = 1'-0''$

1. The existing East Abutment backwall is to be reconstructed $1\frac{1}{2}'$ East of its present location to accommodate expansion of the bridge deck.
2. Backwall reconstruction will be staged to coincide with bridge deck repairs and bridge deck overlay.
3. All vertical reinforcement will remain in place. Horizontal reinforcement at the vertical cut lines shall remain in place and extend 3' beyond the cut line into the new backwall.
4. Care shall be taken when removing concrete around reinforcement that is to remain in place to insure that it remains in place undamaged and bonded into sound concrete.
5. Any broken or damaged bar shall be replaced. The replacement shall be doweled into existing concrete at a location near the broken or damaged bar.
6. Dowel bars are to be set firmly in grout at the required locations in accordance with the Standard Specification.
7. Approximately 18.2 cu. yds of concrete required for Abutment Repair. This quantity is supplied for information only.
8. Accessible surfaces of existing concrete shall be coated with a concrete bonding epoxy prior to placing concrete. Epoxy shall be subsidiary to Abutment Repair.

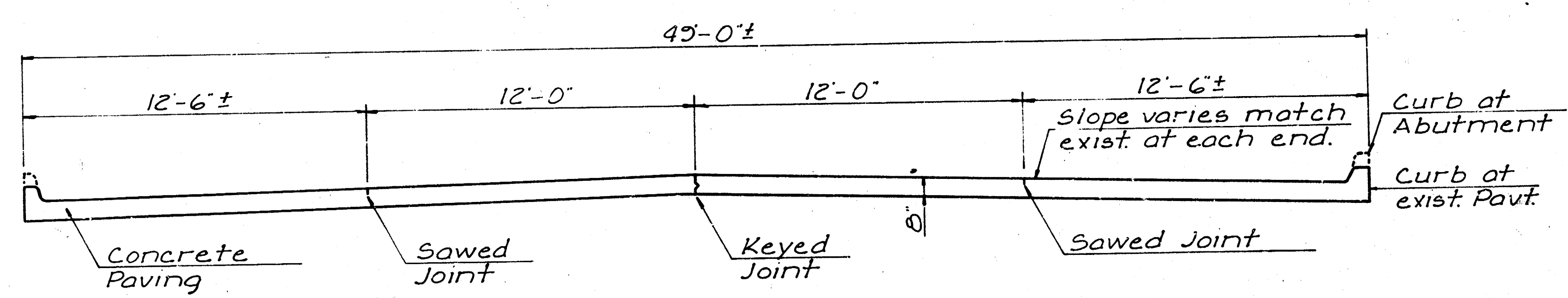
DESIGN BY RLC CK BY R.A.W. DATE May 78 JOB NO. 77-2-2	BRIDGE DECK RECONSTRUCTION 13TH ST. OVER THE ARKANSAS RIVER EAST ABUTMENT REPAIR VON DOREN - HAZARD - STALLINGS ARCHITECTS - ENGINEERS - PLANNERS WICHITA, KANSAS	SHEET 5 OF 7
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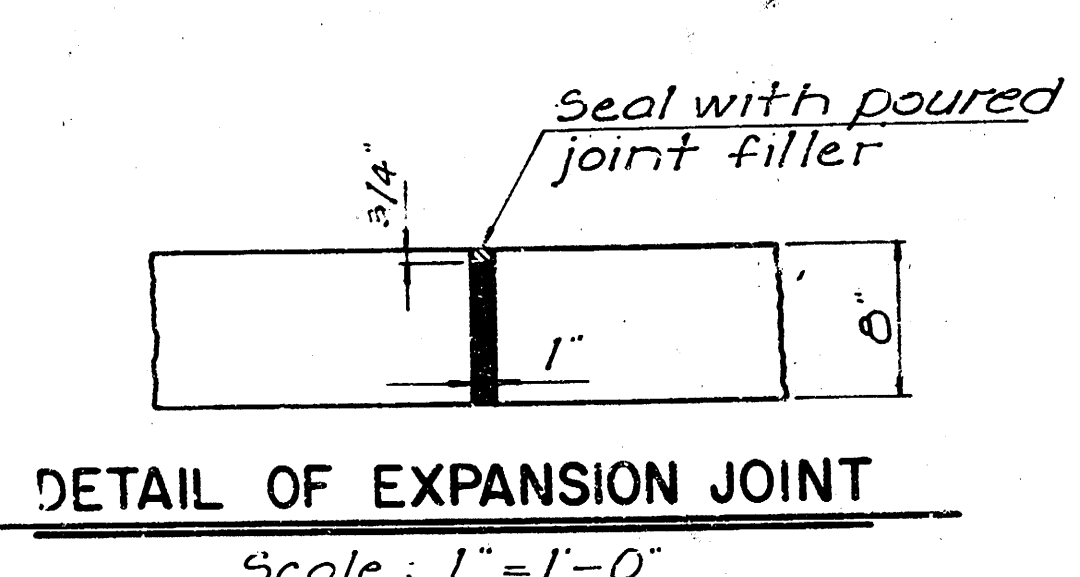
STEEL PATTERN AT APPROACH SLABS

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

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

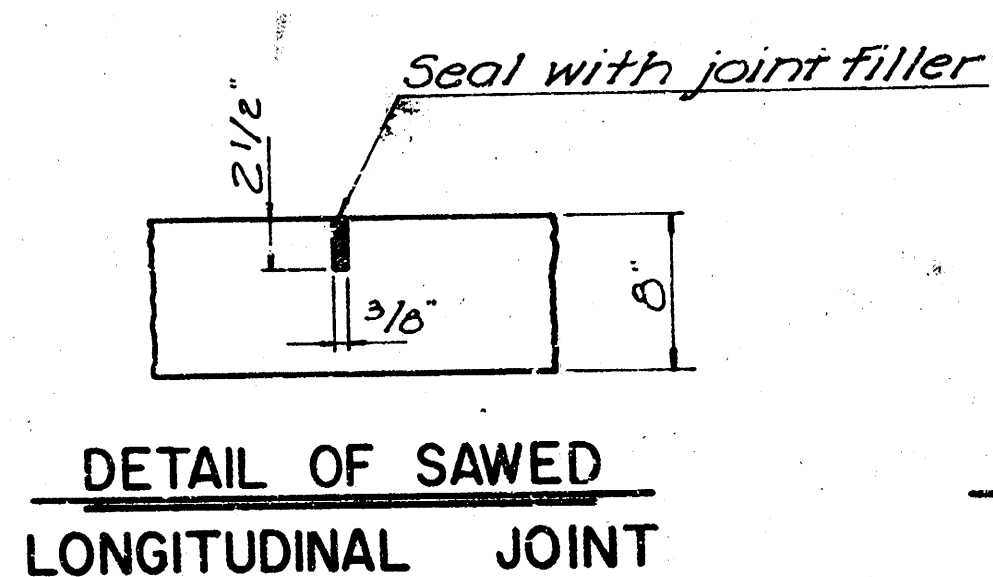


TYPICAL SECTION THRU PAVEMENT



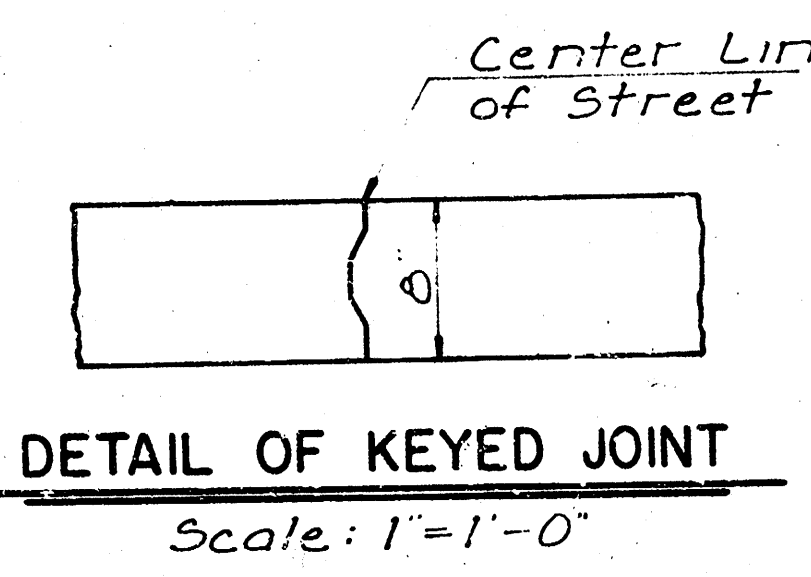
DETAIL OF EXPANSION JOINT

Scale: 1"=1'-0"



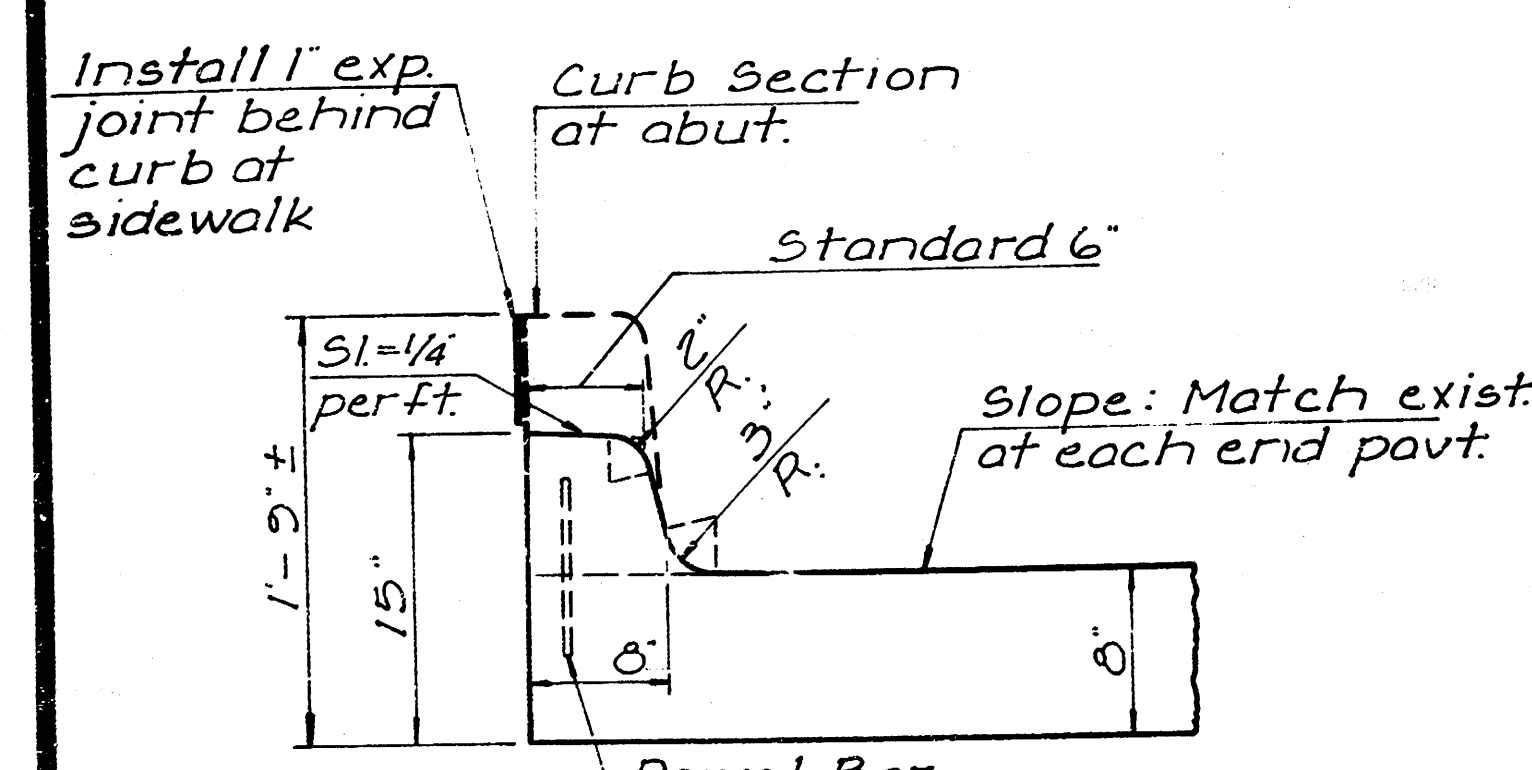
DETAIL OF SAWED LONGITUDINAL JOINT

Scale: 1"=1'-0"



DETAIL OF KEYED JOINT

Scale: 1"=1'-0"

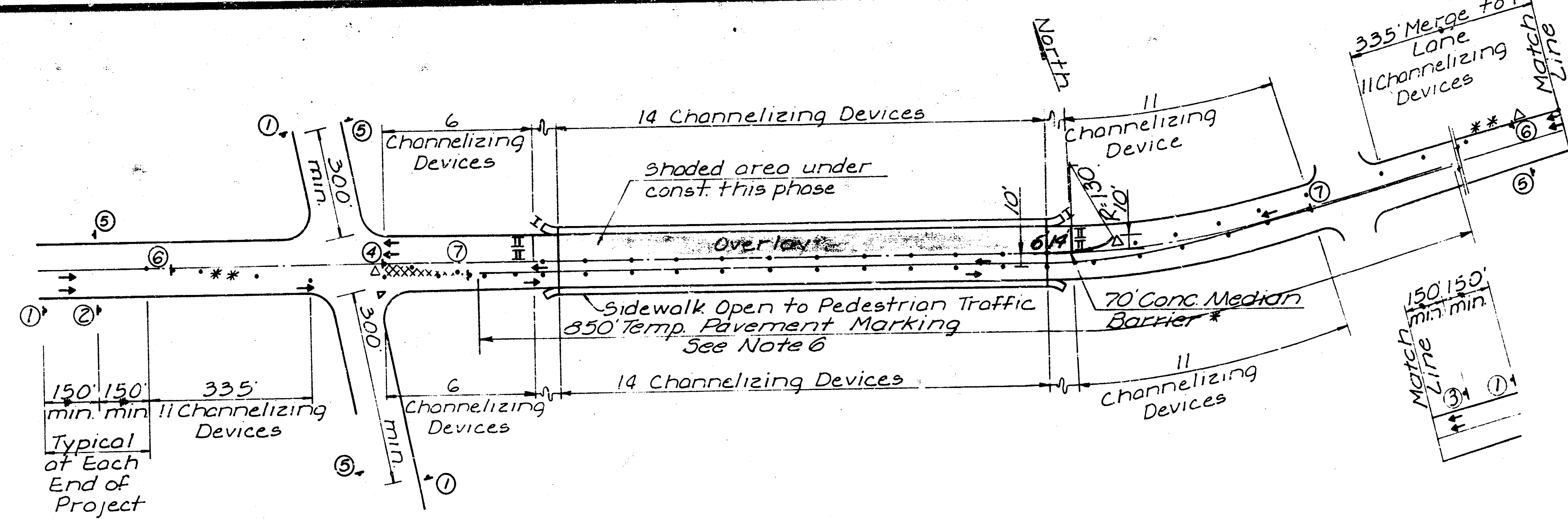


DETAIL OF INTEGRAL CURB

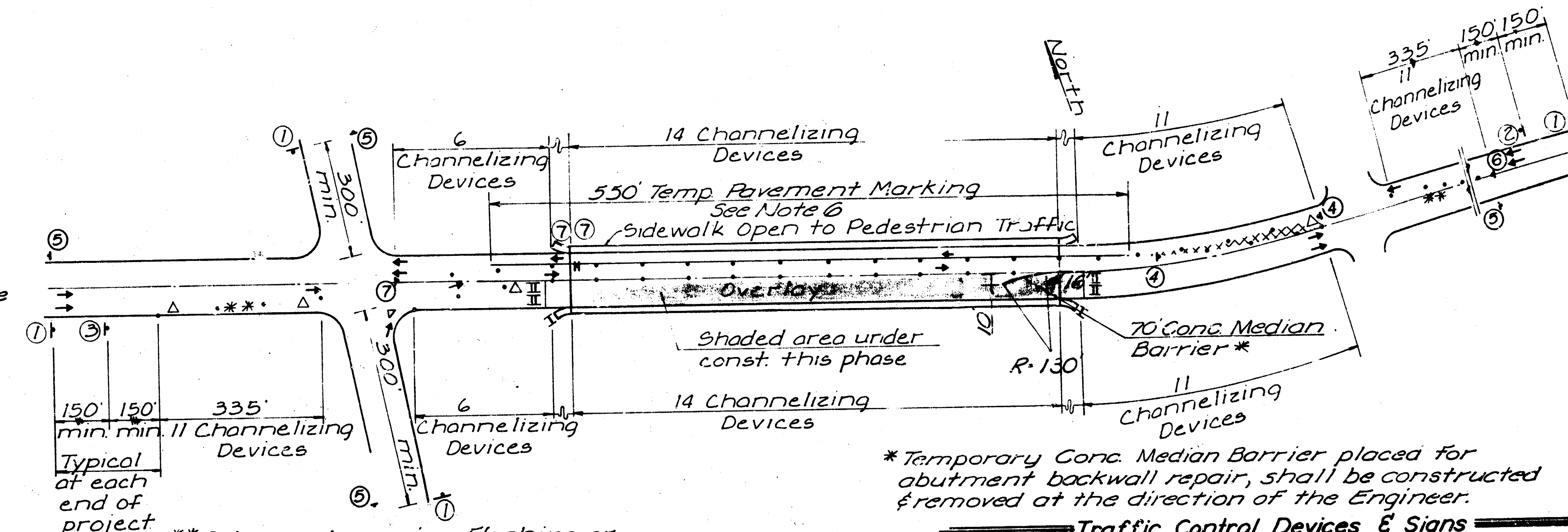
Scale: 1"=1'-0"

(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

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			

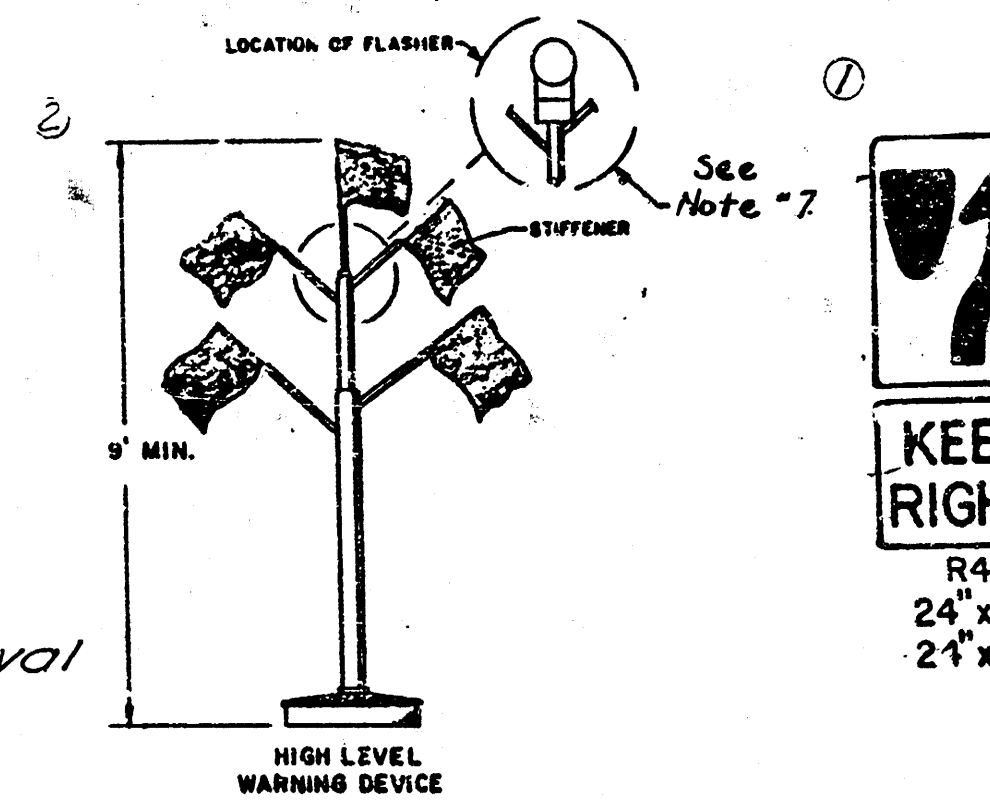
DELINATORS & CHANNELIZING DEVICES (EACH)

CONSTRUCTION BARRICADES	REFLECTORIZED	OBJECT MARKERS
TYPE III	DRUMS	CONES
TYPE I or II	TYPE II	SINGLE
2	6	84

Conc. Median Barrier (Type I) Precast 70 L.F.

PAVEMENT LANE MARKING

CONSTRUCTION WARNING LIGHT (TYPE B-HIGH INTENSITY)	SEQUENTIAL FLASHING LIGHT	HIGH LEVEL WARNING DEVICE
4" BROKEN (STATIONS)		
4" SOLID (STATIONS)		
TEMPORARY STRIPING (MILES) DBL. STRIPE		027



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

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

Cones may be used in areas of restricted width with the approval of the Engineer.

PROJECT NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
87 BHO-0005 (003)	KANSAS		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.

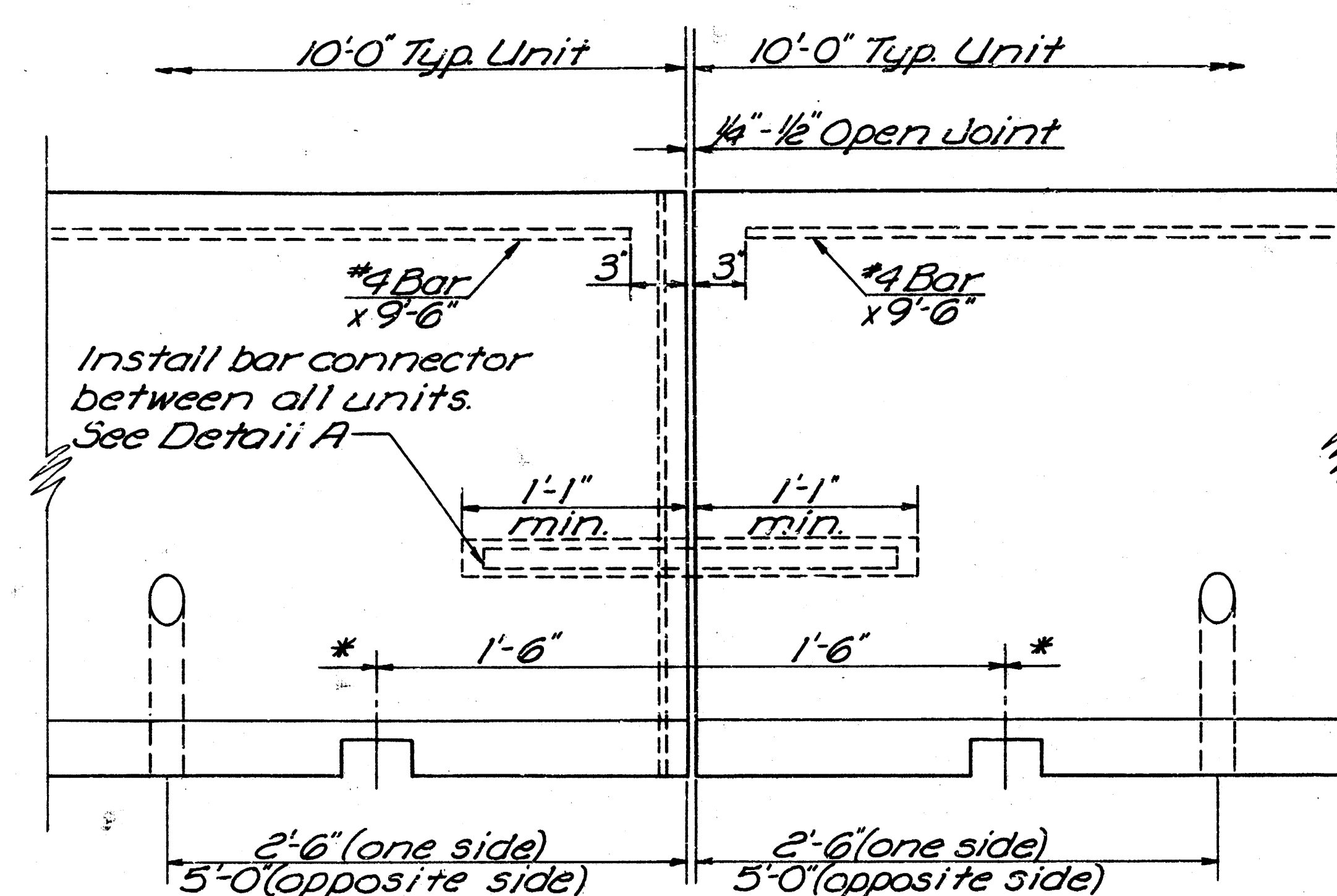
KEYWAY: The female end of the keyway shall be enlarged near the 2" hole to accept the 2" washer.

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.

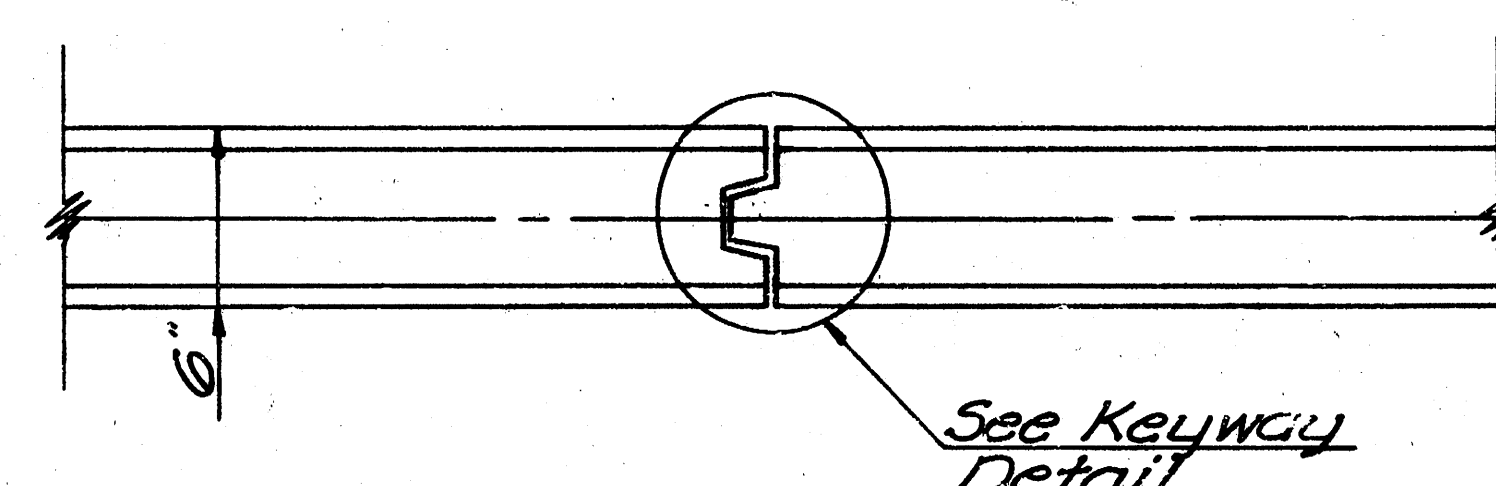
REFLECTOR: Reflectors shall be spaced on 100' centers, except through curves greater than 3° curvature, where the spacing shall be on 50' centers. All materials for supporting delineators shall be aluminum except anchor devices. If anchor device is other than aluminum, insulation shall be provided between 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.

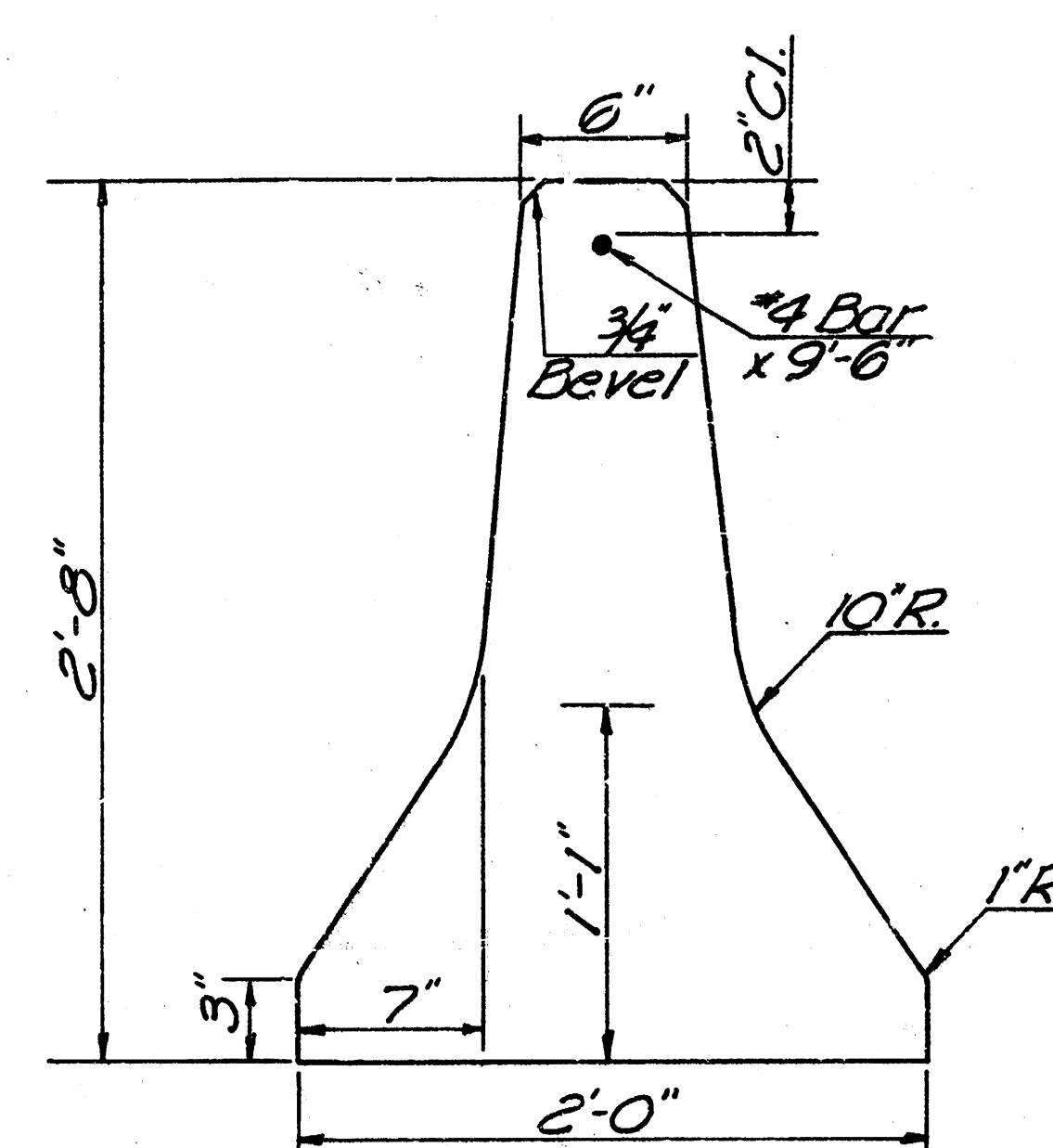


*2"x4" (Nominal) Lifting Slots at each end of section. Location may be changed at the option of the contractor.

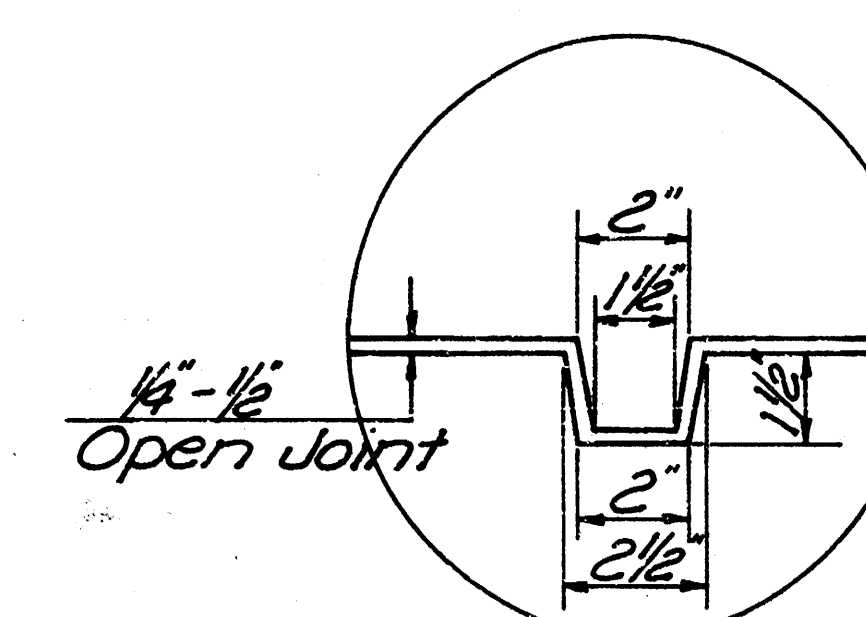
PART ELEVATION



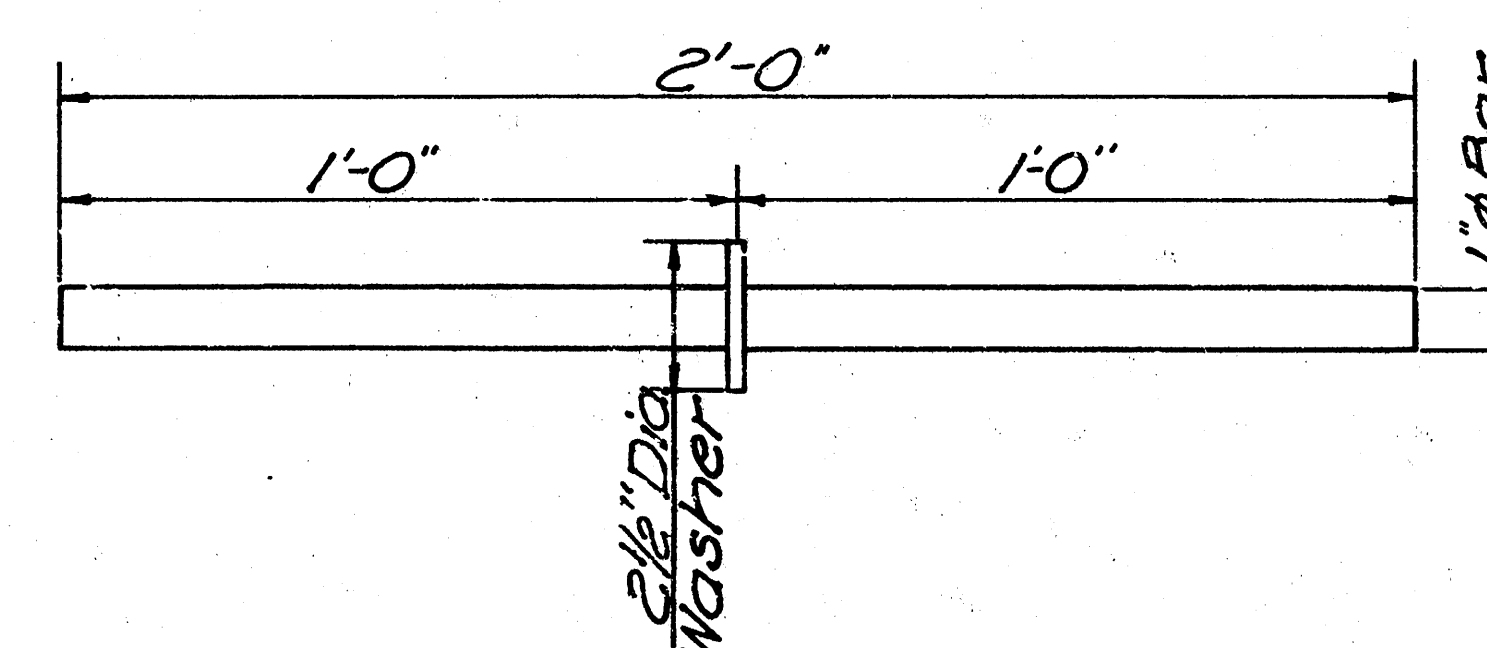
VIEW A-A



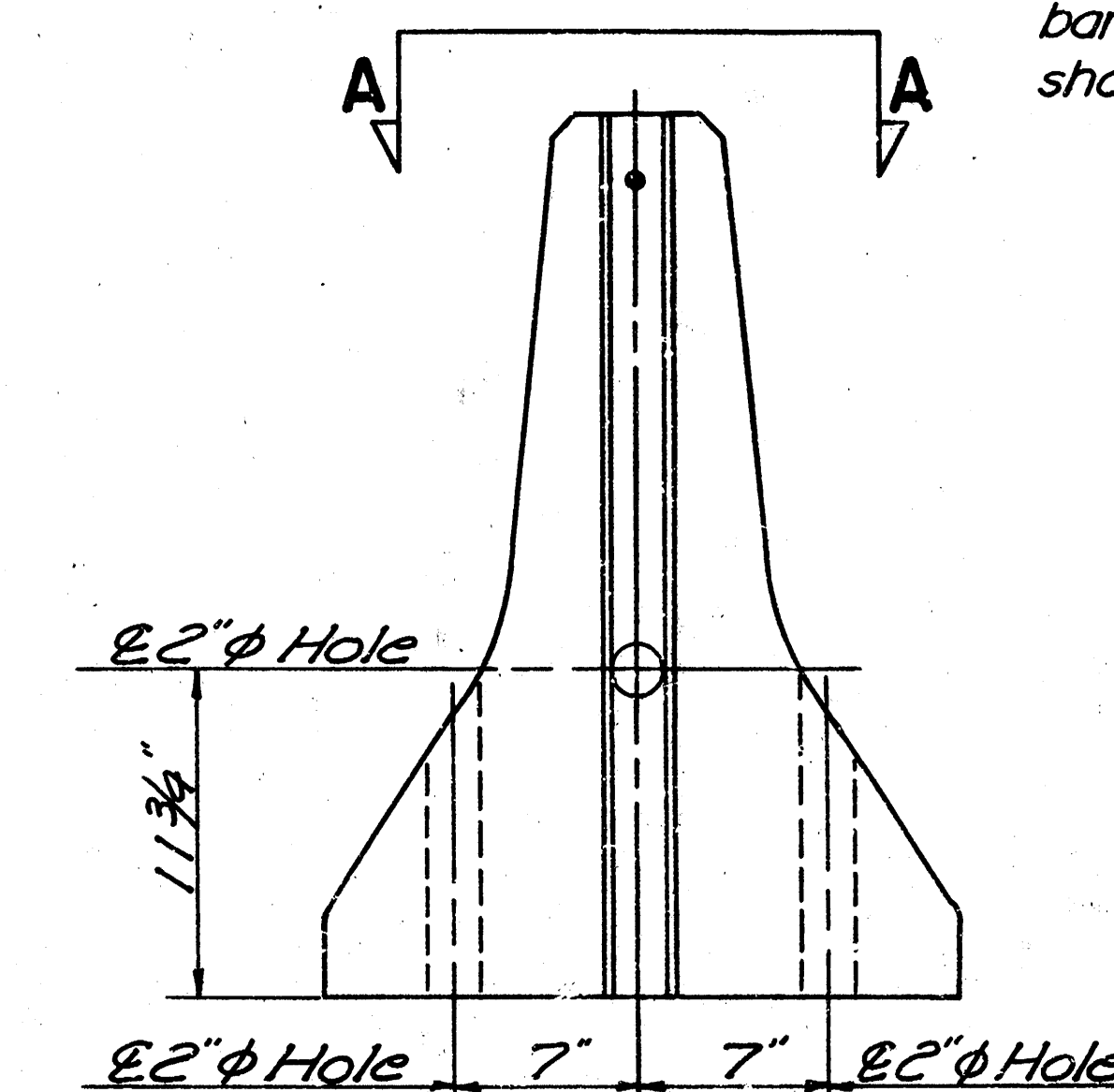
TYPICAL SECTION



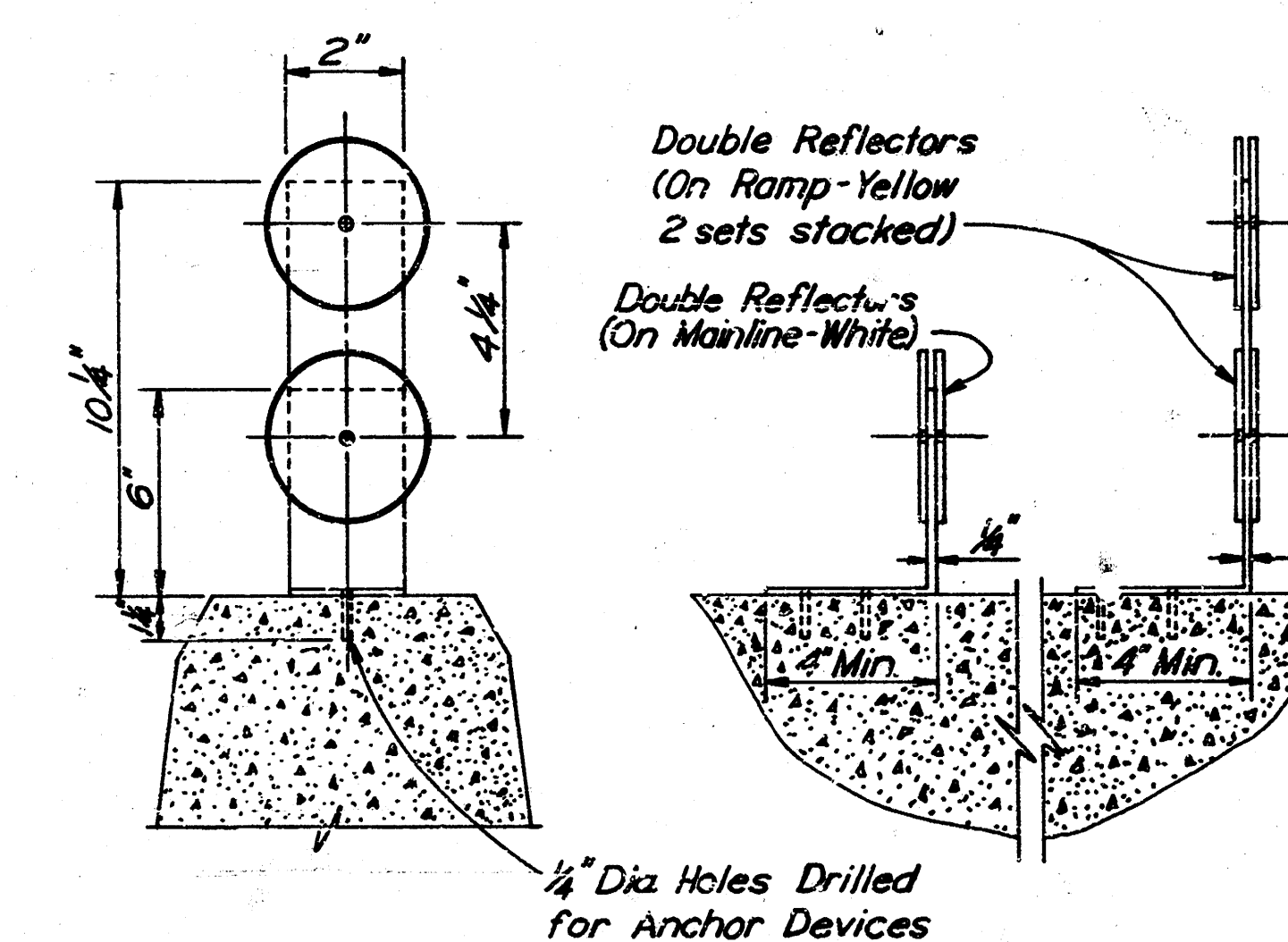
KEYWAY DETAIL



DETAIL "A"



END ELEVATION



DOUBLE REFLECTOR DETAIL

NO.	DATE	REVISIONS	BY	APP'D
1				
2				
3				

KANSAS DEPARTMENT OF TRANSPORTATION			
CONCRETE MEDIAN BARRIER			
TYPE I - PRECAST			
SHEET NO. 7 OF 7	SCALE	APP'D	TRACED
DESIGNED	DETAILED	QUANTITIES	TRACED
DESIGNER	DETAILER	QUANT. CK.	TRACER

FHWA REGION NO.	STATE	PROJECT NO	YEAR	SHEET NO	TOTAL SHEETS
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A diagram of a three-tiered concrete curb. The curb is composed of three horizontal tiers, each 20 inches high, as indicated by dimension lines on the left. The top surface of the curb is sloped at a 45-degree angle, marked with a 45° symbol. Two wheel symbols are positioned on the top surface, one on each side of the slope. The curb is supported by vertical posts or pillars. The base of the curb is shown with a hatched pattern, representing the ground or a base layer.

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.

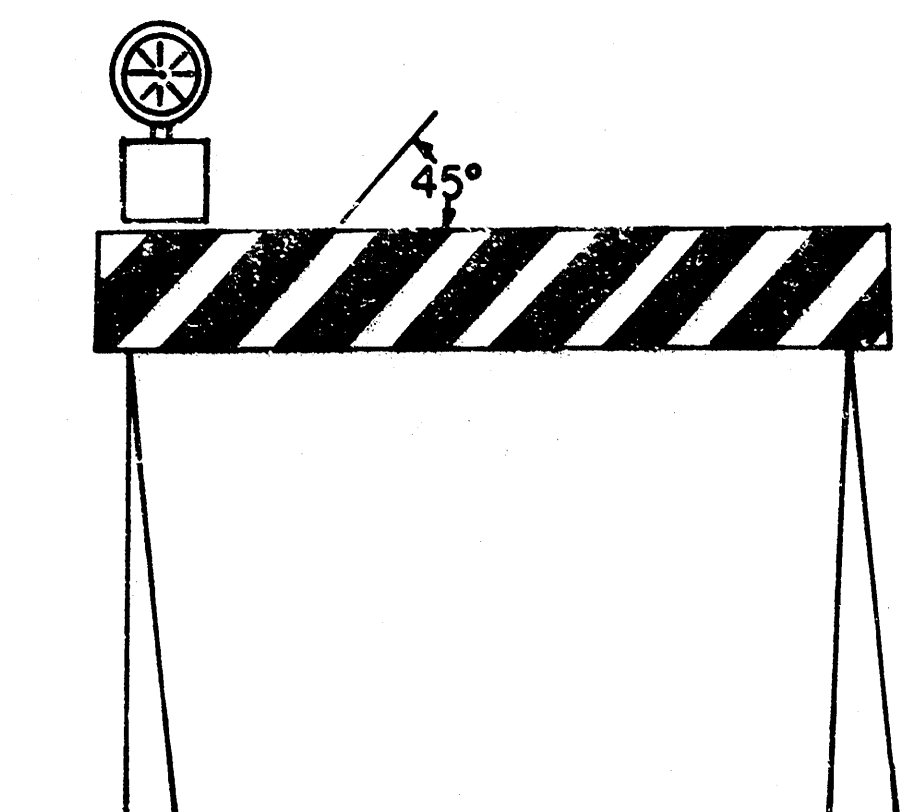
	I	II	III
WIDTH OF RAIL	8" MIN-12" MAX	8" MIN-12" MAX	8" MIN-12" MAX
LENGTH OF RAIL	2 FT. MIN	2 FT. MIN	4 FT. MIN
WIDTH OF STRIPES**	6 IN.	6 IN.	6 IN.
HEIGHT	3 FT. MIN	3 FT. MIN	5 FT. MIN
NUMBER OF REFLECTORIZED RAIL FACES	2 (ONE EACH DIRECTION)	4 (TWO EACH DIRECTION)	3 IF FACING TRAFFIC IN ONE DIRECTION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

* FOR WOODEN BARRICADES NOMINAL LUMBER DIMENSIONS WILL BE SATISFACTORY

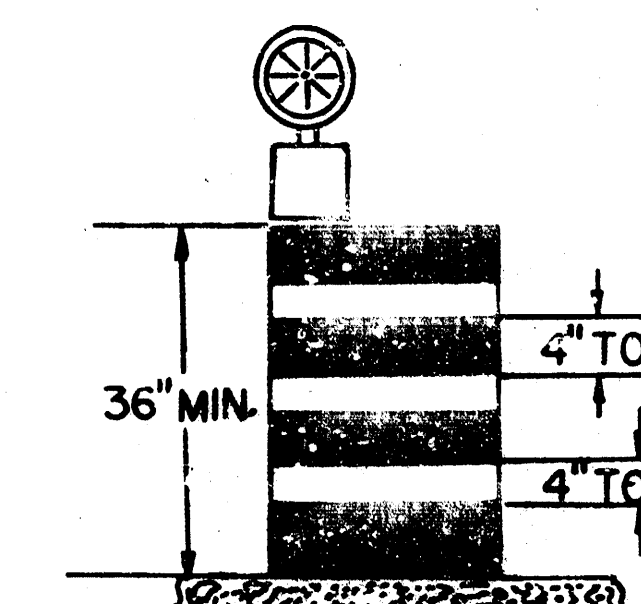
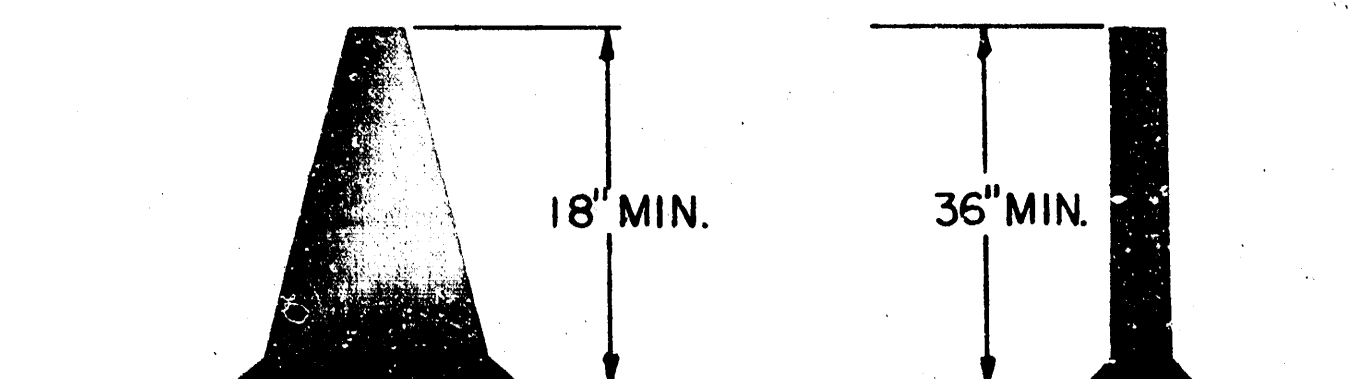
** FOR RAILS LESS THAN 3 FEET LONG, 4 INCH WIDE STRIPES SHALL BE USED

	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 9° ON EACH SIDE OF THE VERTICAL AXIS, AND 5° ABOVE AND 5° BELOW THE HORIZONTAL AXIS.



TYPE II BARRICADE WITH LIGHT

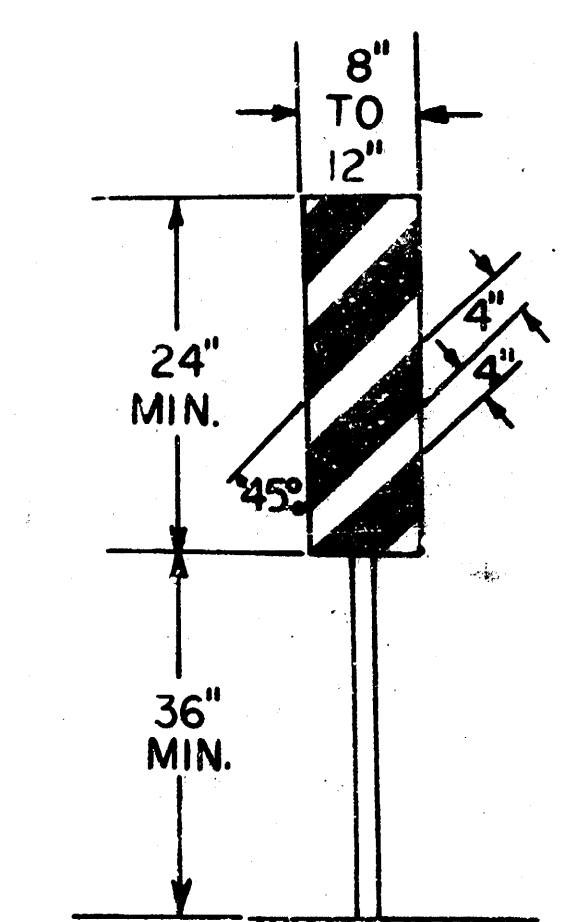
REFLECTORIZED DRUM
WITH LIGHT

CONES
ORANGE IN COLOR

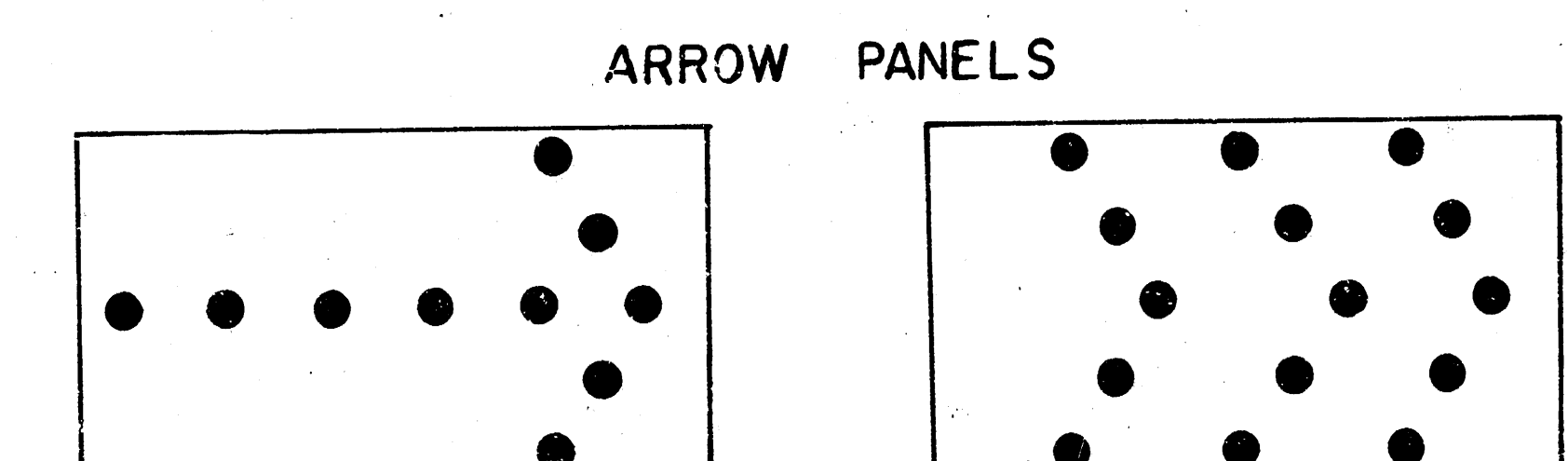
LIGHTS USED ON CHANNELIZING DEVICES

WHEN USED SINGLY	TYPE "A" FLASHING
WHEN USED IN SERIES	TYPE "C" STEADY BURN

THE LENS SHALL BE A MINIMUM OF 7" IN DIAMETER.

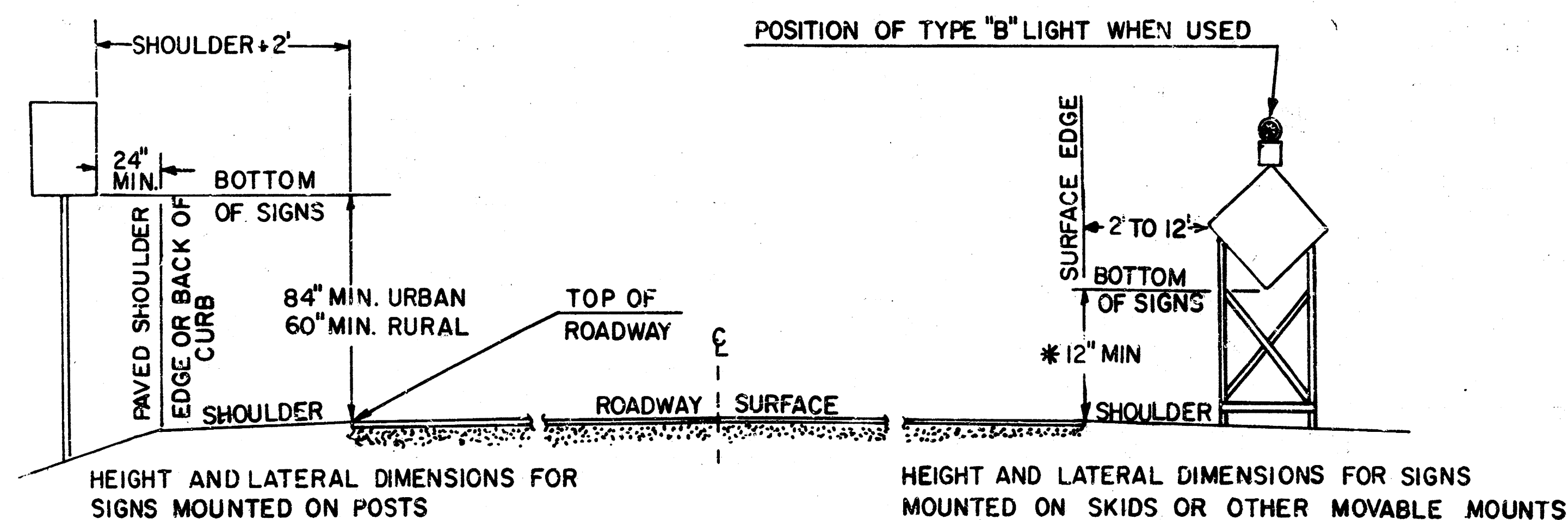


VERTICAL PANEL



FLASHING ARROW

SEQUENTIAL ARROW



* A MINIMUM OF 30" IS PREFERRED

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.

3							
2							
1							
NO	DATE	REVISIONS				BY	APP'D

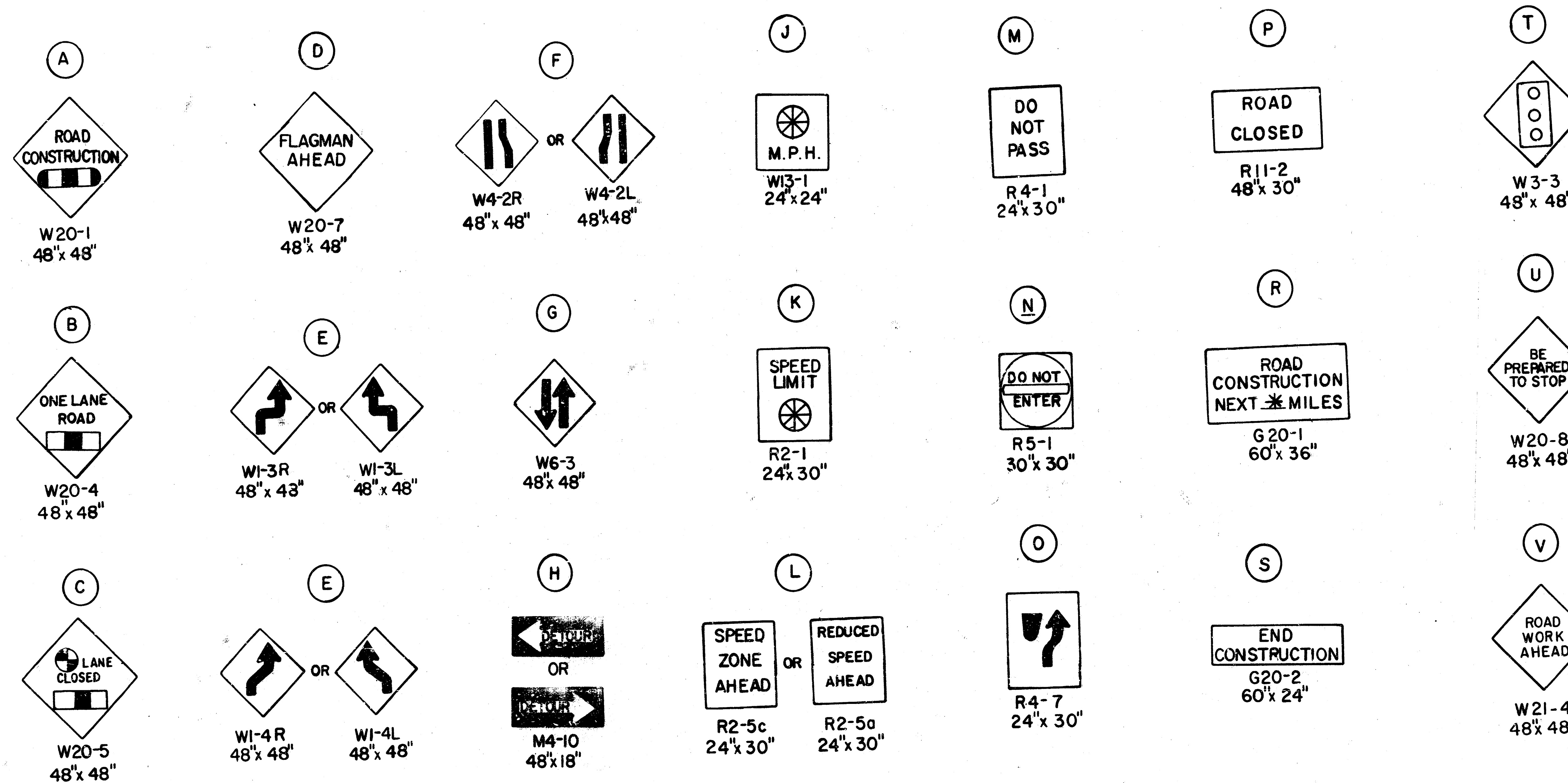
KANSAS DEPARTMENT OF TRANSPORTATION
DESIGN DETAILS FOR
BARRICADES, CHANNELIZING DEVICES
AND SIGN MOUNTING LOCATIONS

STD. 752.i

SHEET NO.	OF	SCALE	APP'D	DATE
DESIGNED	PR	DRAWN	<i>Cullen</i>	7-6-60
DESIGN CK	PR	DETAIL CK	QUANTITIES	TRACER
		APT	QUAN CK	TRACER CK

TRAFFIC CONTROL DEVICES FOR HANDLING TRAFFIC THROUGH CONSTRUCTION

FEDERAL ROAD NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	TOTAL SHEETS
7	KANSAS	87 BHO-005 (003)	19	78	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.

KANSAS DEPARTMENT OF TRANSPORTATION	
SIGNS FOR HANDLING TRAFFIC THROUGH CONSTRUCTION 9/9	
STD. 755	SCALE: 1" = 10'
SHEET NO. 1	DESIGNED BY: PR
DESIGNED BY: PR	DETAILS BY: AFT
QUANTITIES: 1	QUANTITIES: 1
APP'D: [Signature]	APP'D: [Signature]
DATE: 6-4-88	DATE: 6-4-88