

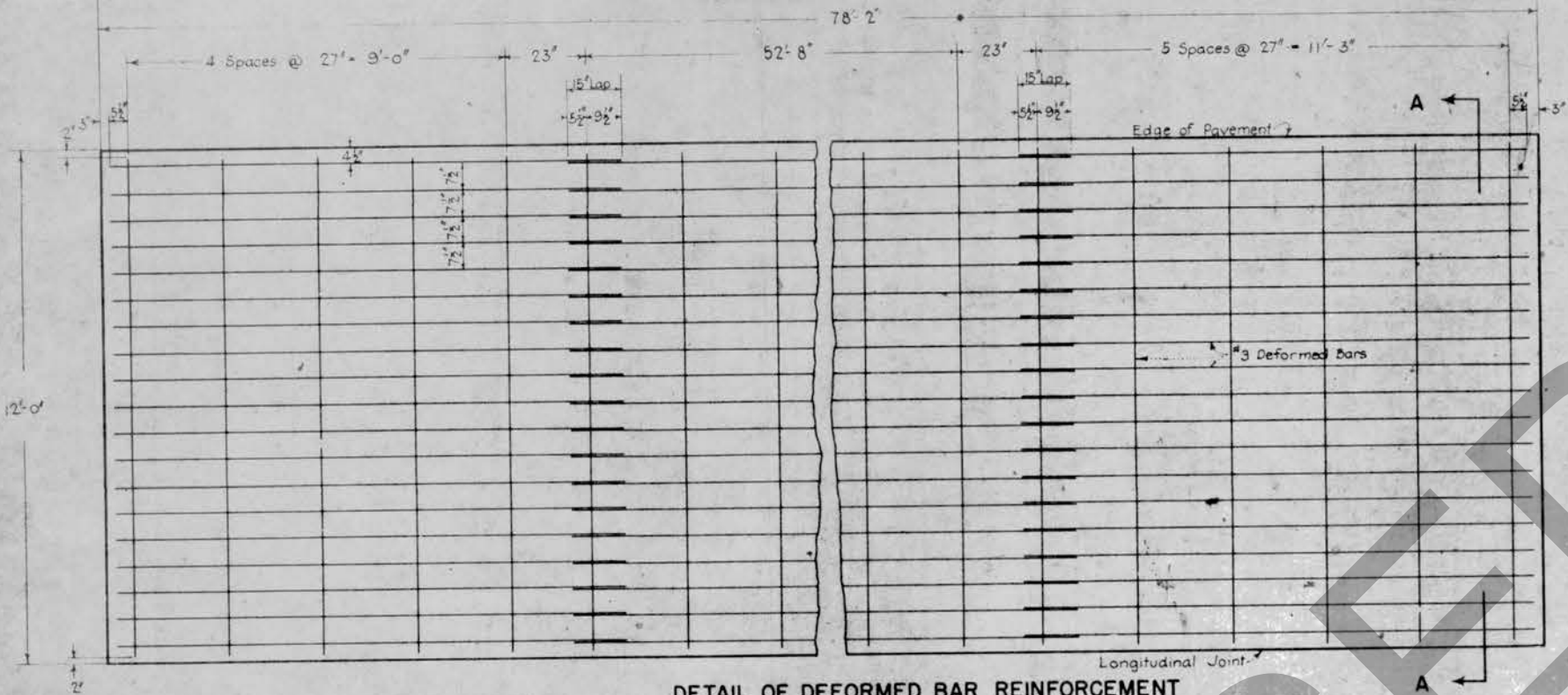
STANDARD DETAILS



SUPPLEMENTED

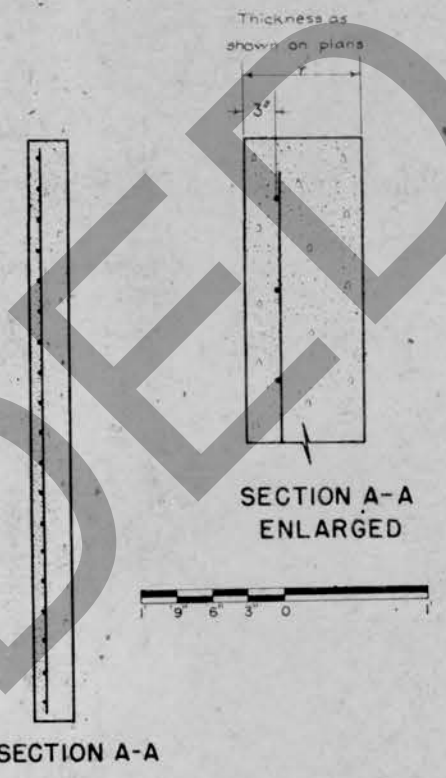
ORIGINAL

Mar 4, 1959	Rev. Hinged J.
Jul 15, 1957	Revised
Jan 3, 1957	Revised
Oct 7, 1956	Revised
May 8, 1955	NS Change
Jul 15, 1952	Revised
Aug 4, 1949	Revised
Sep 2, 1947	Revised
10-4-73	Revised
12-4-62	Revised



DETAIL OF DEFORMED BAR REINFORCEMENT FOR 12'-0" WIDTH OF PAVEMENT SLAB

All deformed bar mats shall be fabricated alike with five (5) transverse bars except the last mat in each slab which has an additional transverse bar placed 8 1/2" from the transverse joint.



WELDED WIRE FABRIC REINFORCEMENT (STANDARD TYPE)

Welded steel wire fabric shall conform to requirements of Article 8.4.18 of the Specifications:
 Longitudinal wires shall be Size No. W 8 6, spaced 6" on centers.
 Transverse wires shall be Size No. W 4 7, spaced 12" on centers.
 Edge clearance of outside longitudinal wire = 0-3".
 End clearance of last transverse wire not more than 0-11".
 End clearance of longitudinal wire not less than 0-1" nor more than 0-3".
 All laps of longitudinal wires to be 12".
 Length of slab: 78'-2".

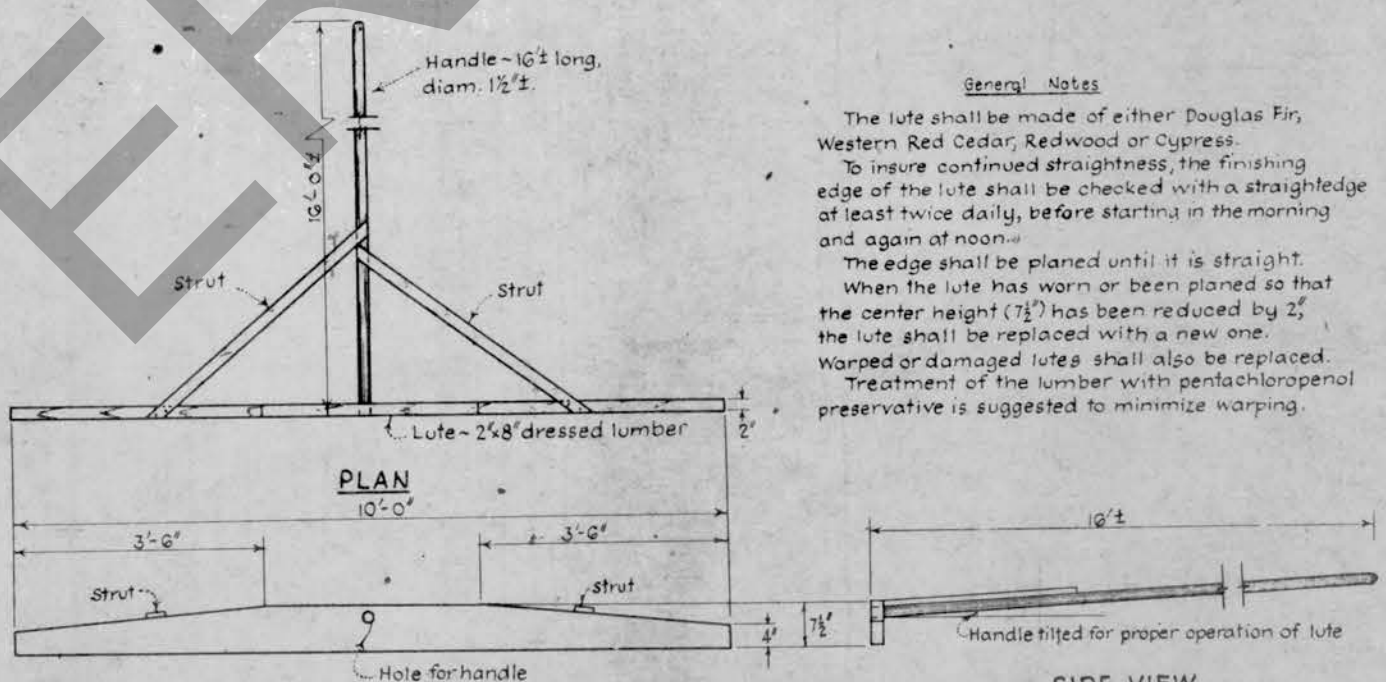
Welded Wire Fabric Reinforcement (Hinged Type)

The strength and properties of the steel, and the sizes of the longitudinal and transverse members, shall be as designated for Welded Wire Fabric Reinforcement (Standard Type) above.
 The mats may be furnished in the form of sheets connected together by a hinged joint parallel with the longitudinal axis of the slab. Each hinge shall be formed by bending a transverse wire around a longitudinal wire, and back upon itself, such as to form a connection that will permit folding of the sheets, one upon the other, and also prevent the sheets from being displaced both longitudinally and transversely with respect to one another. When embedded in concrete, the hinge shall be capable of developing the full tensile strength of an unhinged transverse wire. If desired, the longitudinal wires immediately adjacent to the hinged joint may be spaced 5-1/2" apart (+1/4", -0").
 The longitudinal wires shall be spaced not more than 6 inches center to center, and the transverse wires shall be spaced not more than 12 inches center to center.
 When the mats are placed in the concrete, the longitudinal wires shall be lapped a minimum of 12 inches, and shall terminate not more than three inches from the transverse joints. Also, the distance from the center of any outside wire to the edge of the pavement shall not exceed 3-1/2 inches.
 The transverse wires shall extend a minimum of 1 inch beyond the centers of the outside longitudinal wires.
 At a transverse joint, the last transverse wire shall not be more than 11 inches from the joint.

Note

Deformed bar mats differing with respect to their length spacing of transverse bars and type of fabrication from the mat shown in these drawings may be used, provided that (a) the mats have the same size and spacing of longitudinal bars, and provide at least the same number of transverse bars per slab, as called for in these drawings, and (b) approval for use has been obtained from the Engineer.

Width of Slab	3'	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'
Number of Longitudinal Bars	5	6	8	9	11	13	14	16	17	19	21	22	24	25
Edge clearance at outside Longitudinal Bars	3'	5 1/2"	3 1/2"	6"	4 1/2"	3"	5 1/2"	3 1/2"	6"	4 1/2"	3"	5 1/2"	3 1/2"	6"

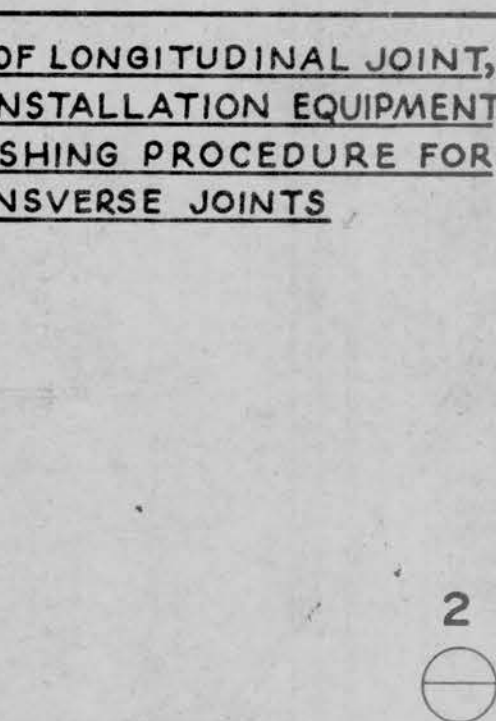
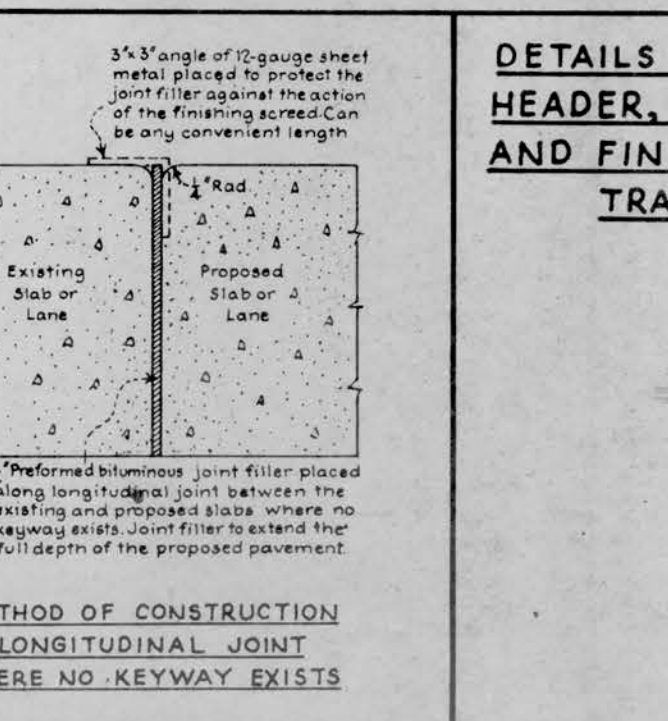
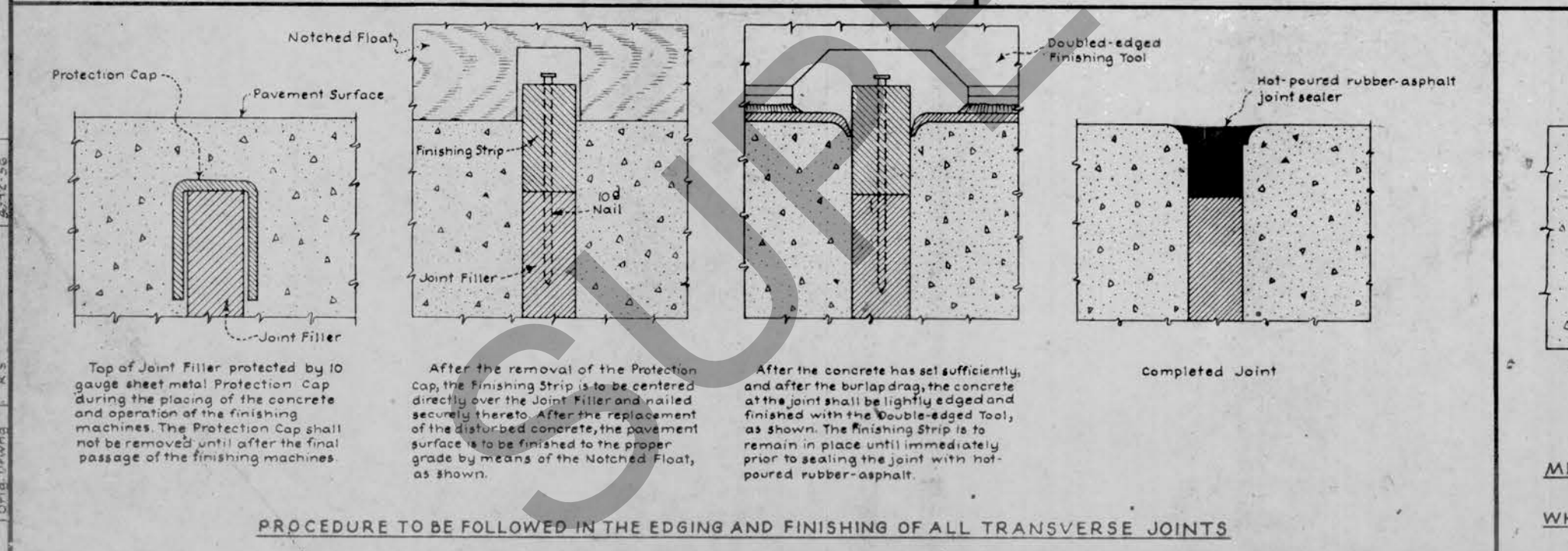
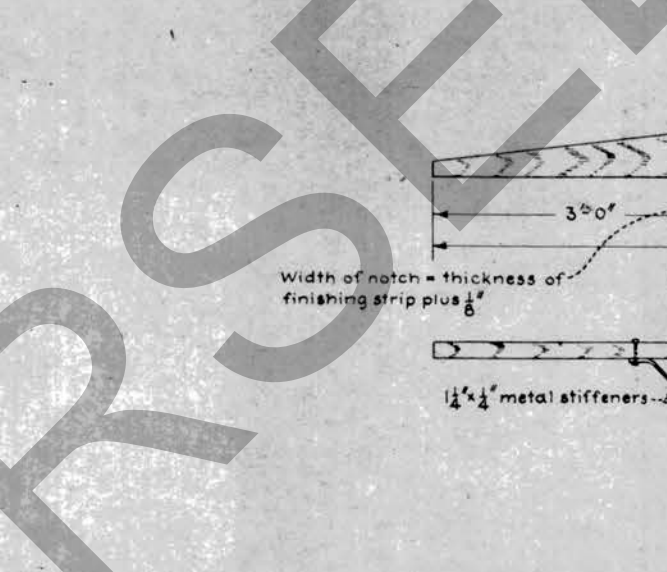
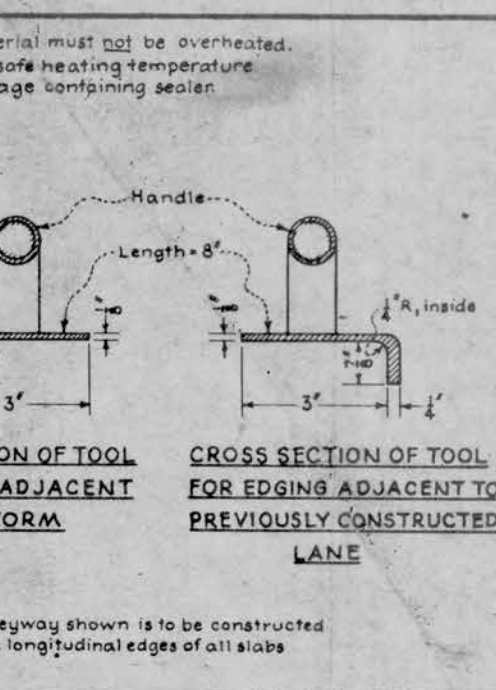
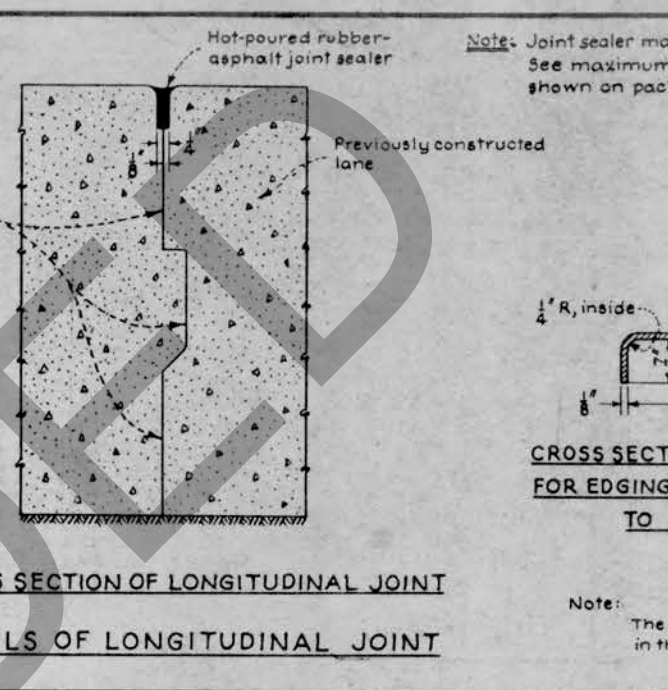
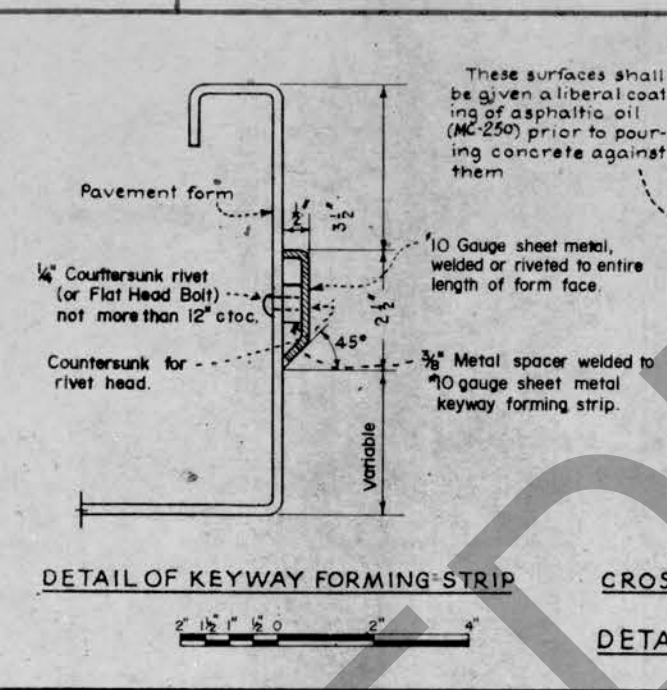
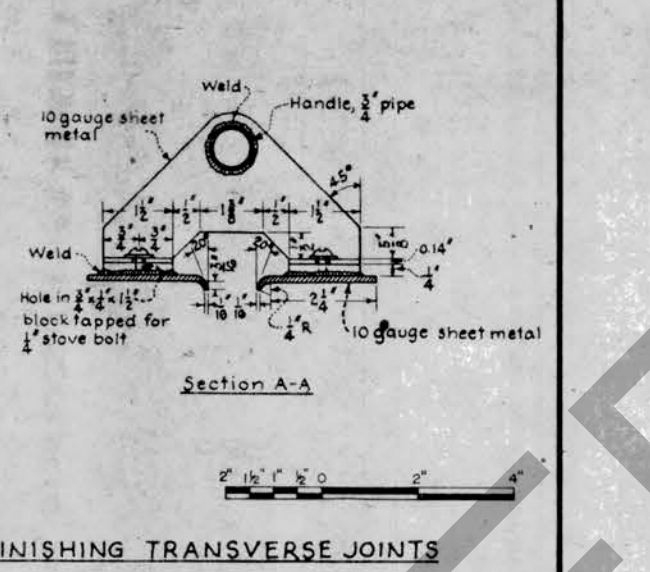
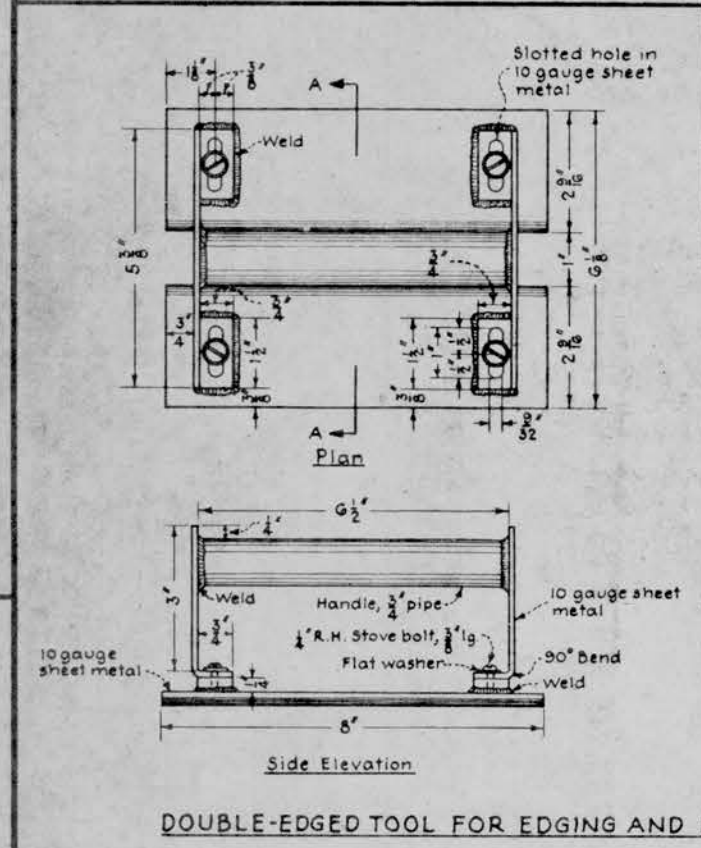
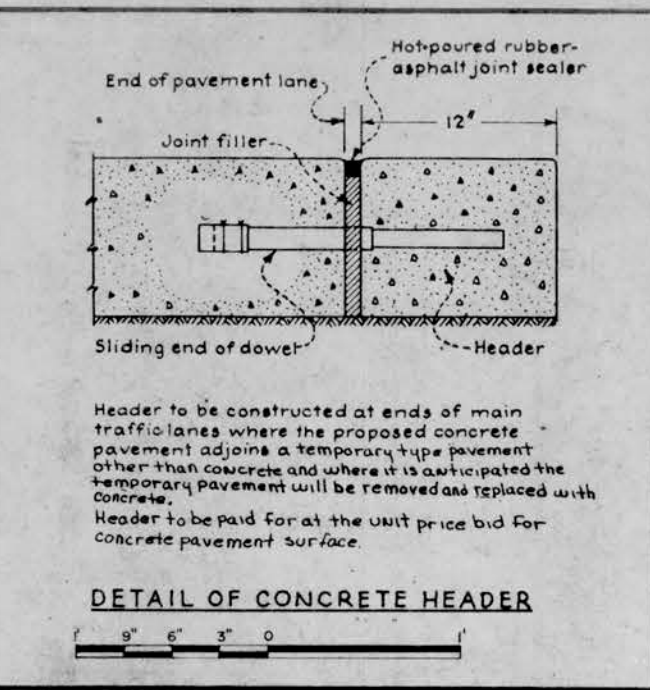
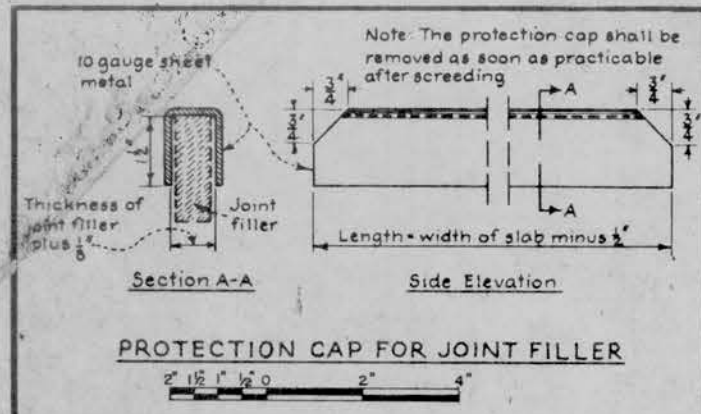


General Notes

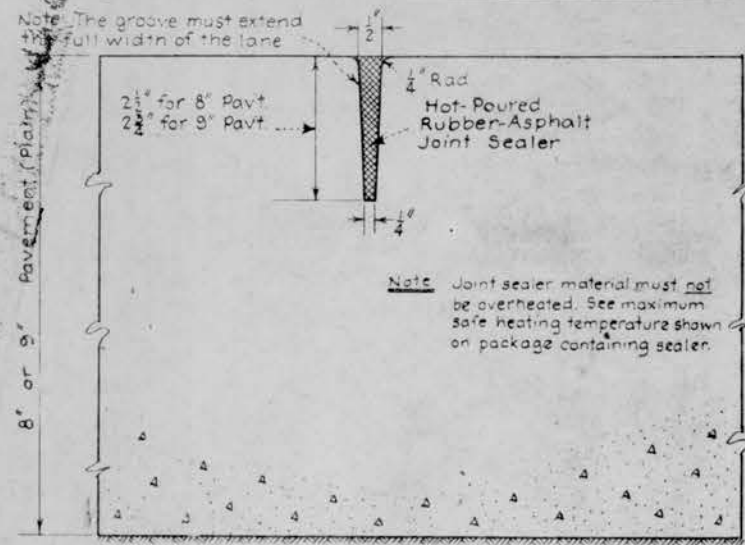
The lute shall be made of either Douglas Fir, Western Red Cedar, Redwood or Cypress.
 To insure continued straightness, the finishing edge of the lute shall be checked with a straightedge at least twice daily, before starting in the morning and again at noon.
 The edge shall be planed until it is straight.
 When the lute has worn or been planed so that the center height (7 1/2") has been reduced by 2", the lute shall be replaced with a new one.
 Warped or damaged lutes shall also be replaced.
 Treatment of the lumber with pentachlorophenol preservative is suggested to minimize warping.

DETAIL OF WOOD LUTE FOR FINISHING CONCRETE PAVEMENT

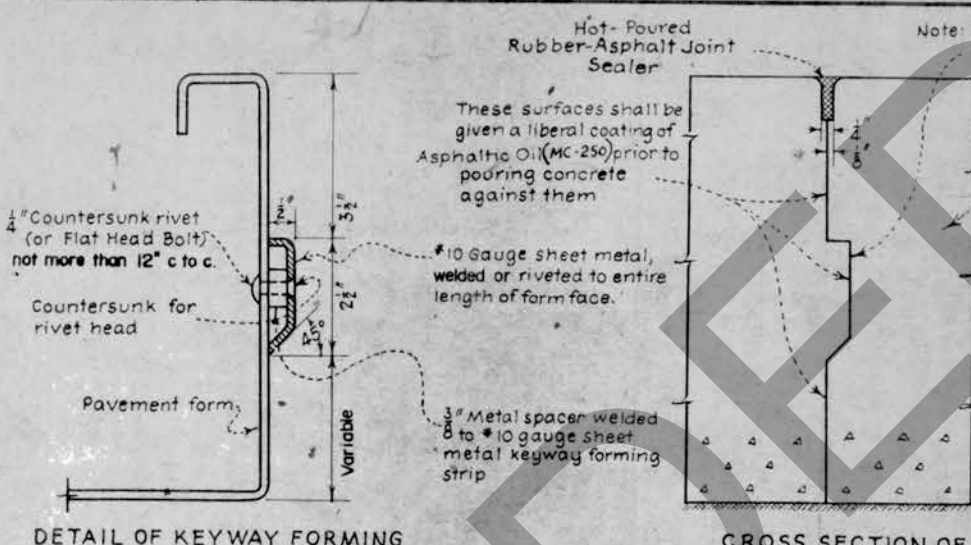
ORIGINAL



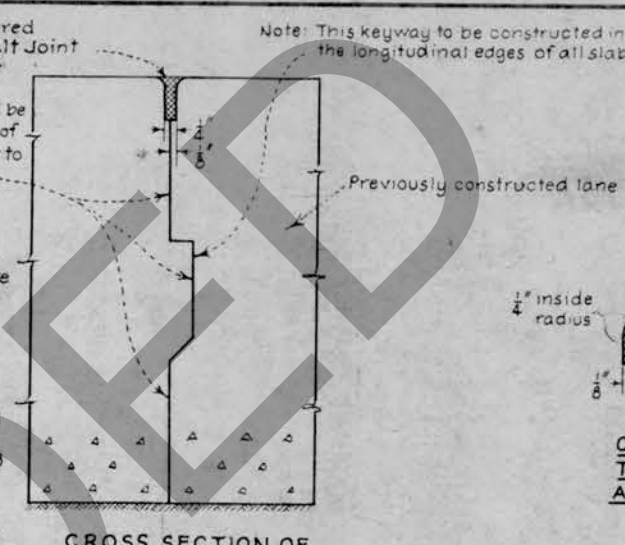
REVISED	DATE	BY	REASON
7-9-52			
8-10-52			
6-10-65			
12-16-67			
7-19-75			
4-12-56			



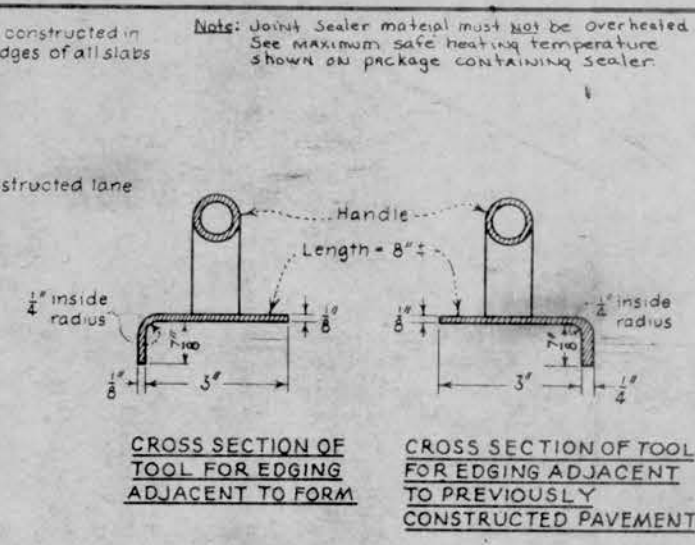
DETAIL OF CONTRACTION JOINT
Contraction joints to be installed in Plain Concrete Pavement at intervals of 15 feet.



DETAIL OF KEYWAY FORMING STRIP



CROSS SECTION OF LONGITUDINAL JOINT
DETAILS OF LONGITUDINAL JOINT

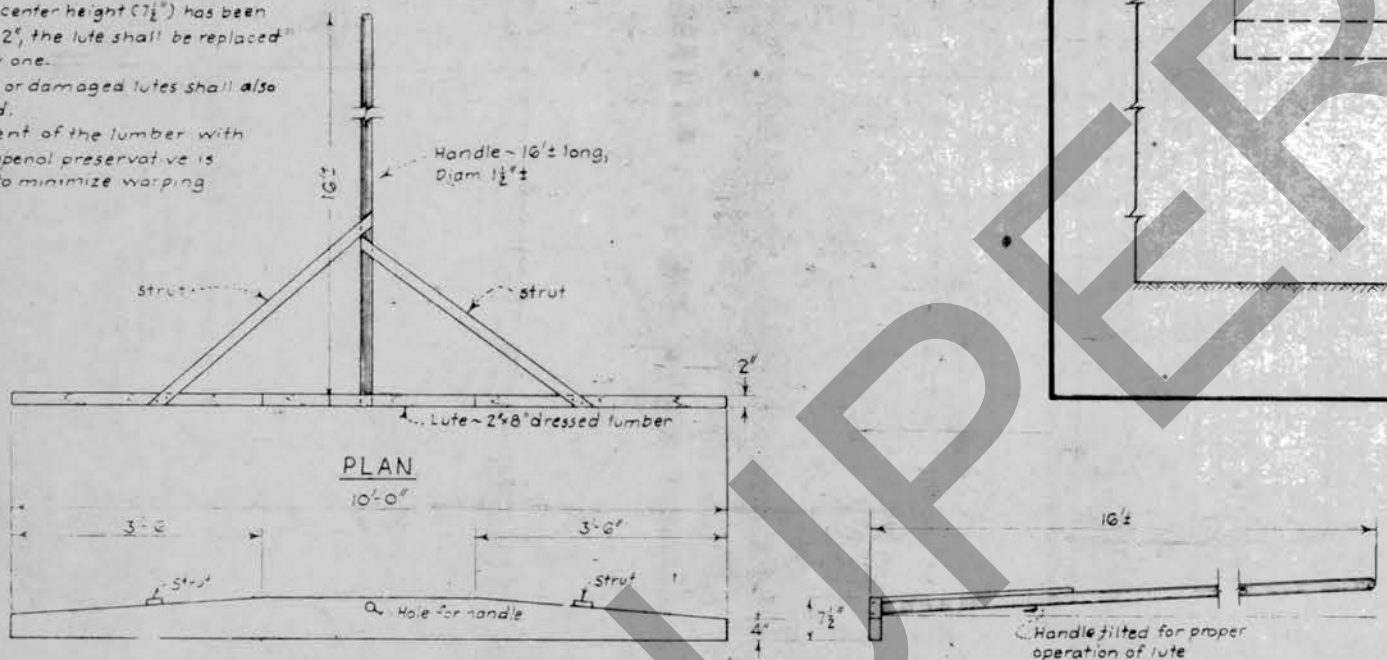


CROSS SECTION OF TOOL FOR EDGING ADJACENT TO FORM
CROSS SECTION OF TOOL FOR EDGING ADJACENT TO PREVIOUSLY CONSTRUCTED PAVEMENT

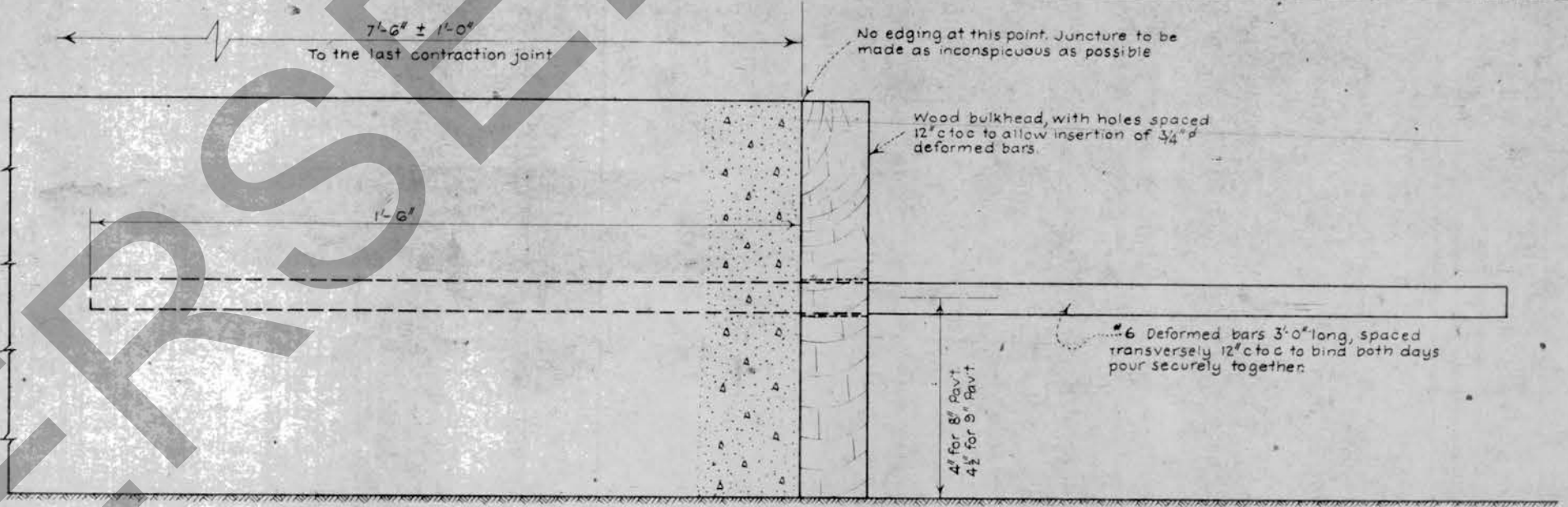
Note: Joint sealer material must not be overheated. See maximum safe heating temperature shown on package containing sealer.

ORIGINAL

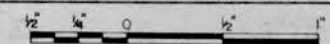
General Notes
The lute shall be made of either Douglas Fir, Western Red Cedar, Redwood or Cypress.
To insure continued straightness, the finishing edge of the lute shall be checked with a straight edge at least twice daily, before starting in the morning and again at noon.
The edge shall be planed until it is straight.
When the lute has worn or been planed so that the center height (7 1/2") has been reduced by 2", the lute shall be replaced with a new one.
Warped or damaged lutes shall also be replaced.
Treatment of the lumber with pentachlorophenol preservative is suggested to minimize warping.



DETAIL OF WOOD LUTE FOR FINISHING CONCRETE PAVEMENT



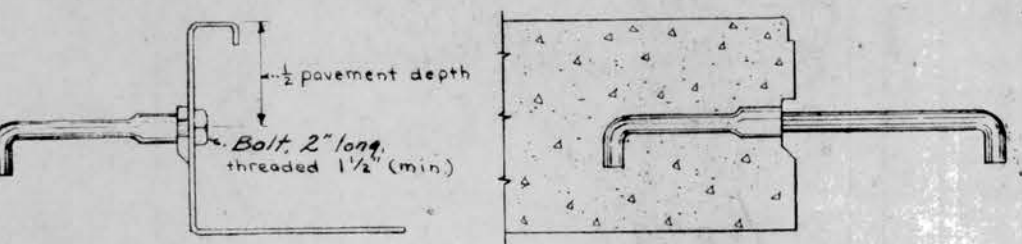
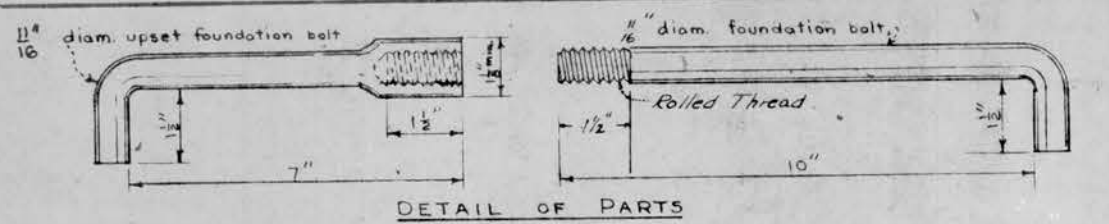
DETAIL OF CONSTRUCTION JOINT AT END OF DAY'S POUR



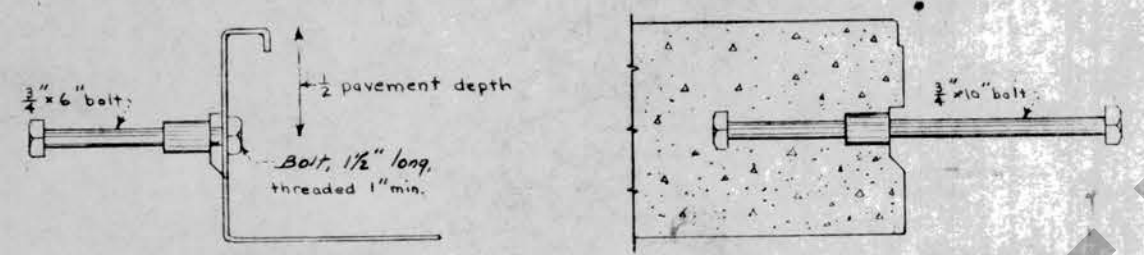
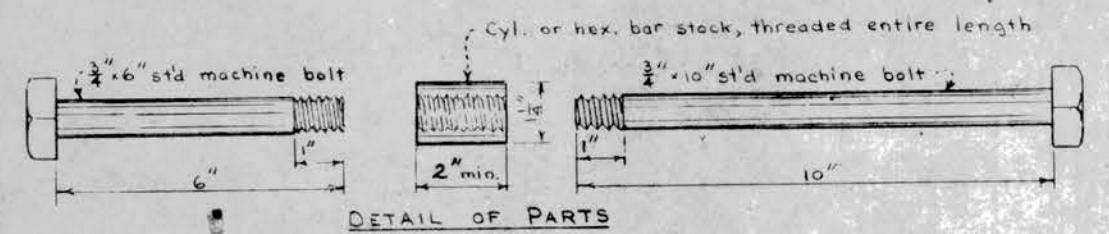
DETAILS OF CONTRACTION JOINT, LONGITUDINAL JOINT, CONSTRUCTION JOINT AND WOOD LUTE FOR PLAIN CONCRETE PAVEMENT CONSTRUCTION

9-10-75	JOINT
6	MC-250
7	16-57
4	3-5-54
3	3-5-54

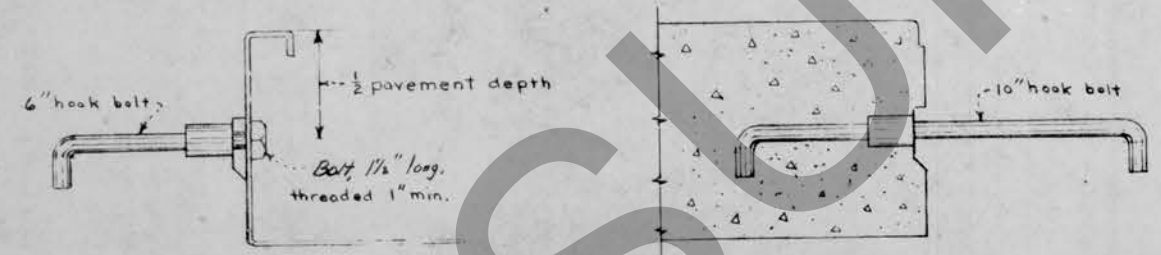
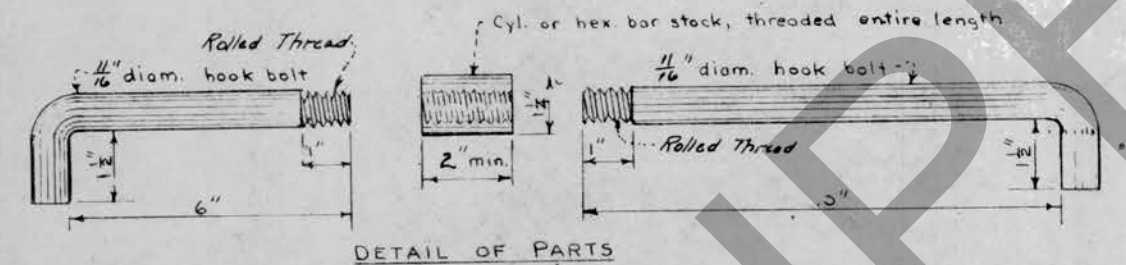
ORIGINAL



DETAIL OF PARTS
 Sketch Showing Attachment to Form
 Sketch Showing Complete Installation
 Alternate "A" - FOUNDATION BOLT ASSEMBLY

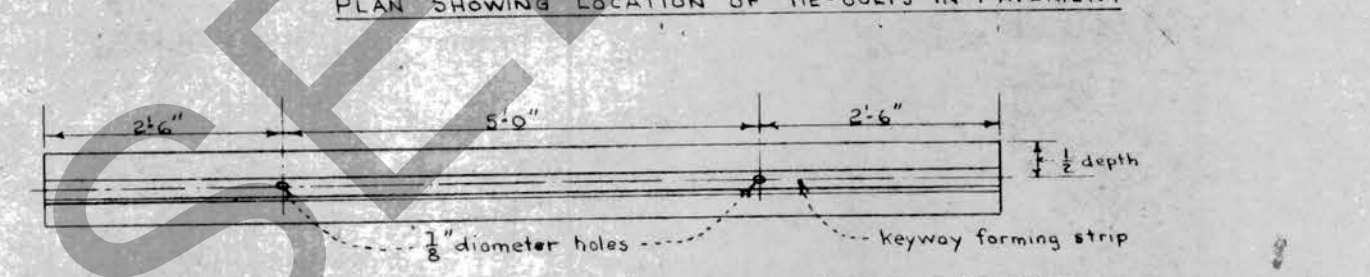
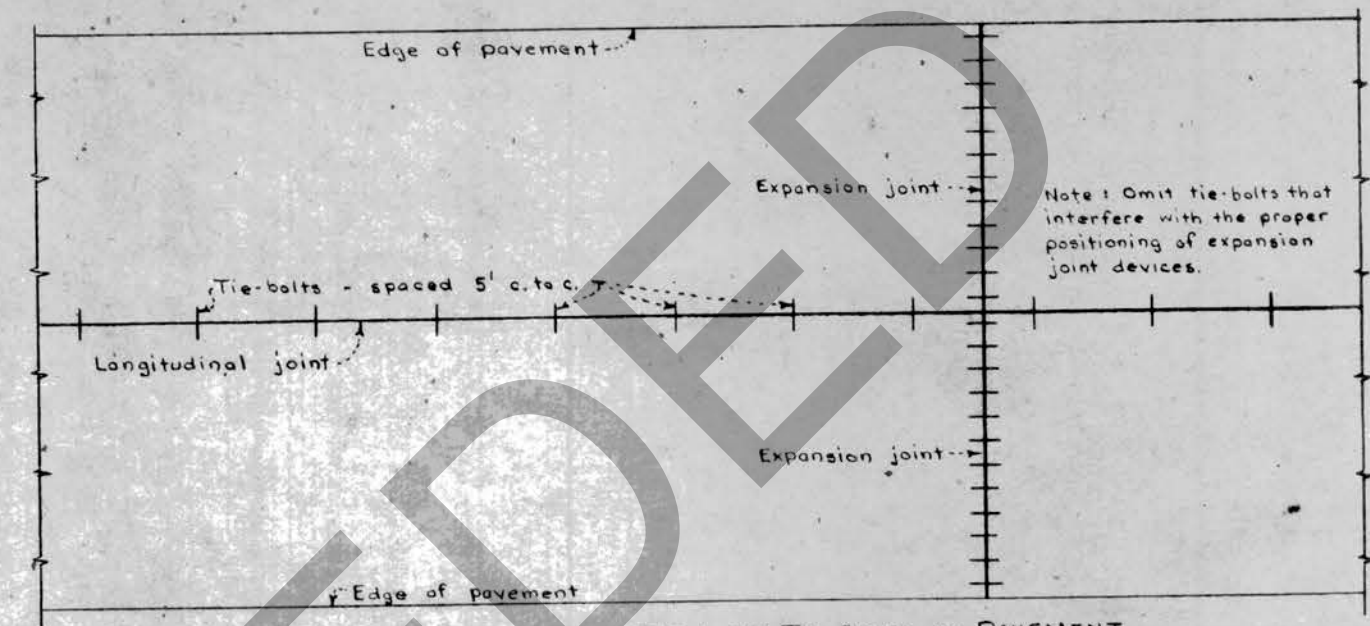


DETAIL OF PARTS
 Sketch Showing Attachment to Form
 Sketch Showing Complete Installation
 Alternate "B" - MACHINE BOLT ASSEMBLY



DETAIL OF PARTS
 Sketch Showing Attachment to Form
 Sketch Showing Complete Installation
 Alternate "C" - HOOK BOLT ASSEMBLY

DETAILS - TIE BOLTS



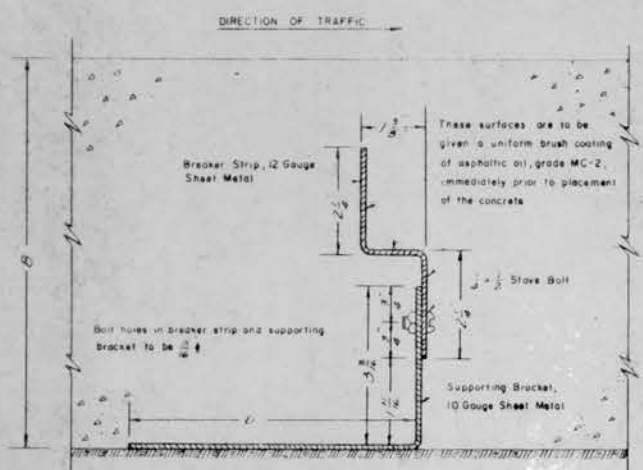
ELEVATION OF ROAD FORM SHOWING LOCATION OF HOLES FOR TIE-BOLTS

NOTE
 IN THE CASE OF FOUR ADJACENT LANES, TIE BOLTS ARE TO BE OMITTED ALONG THE LONGITUDINAL JOINT BETWEEN THE INNER LANES. UNDER ANY OTHER CONDITIONS, NO MORE THAN THREE ADJACENT LANES ARE TO BE CONNECTED BY TIE BOLTS.

TIE-BOLTS SHALL BE OMITTED IN TRANSITION PAVEMENT AND BRIDGE APPROACH SLABS.

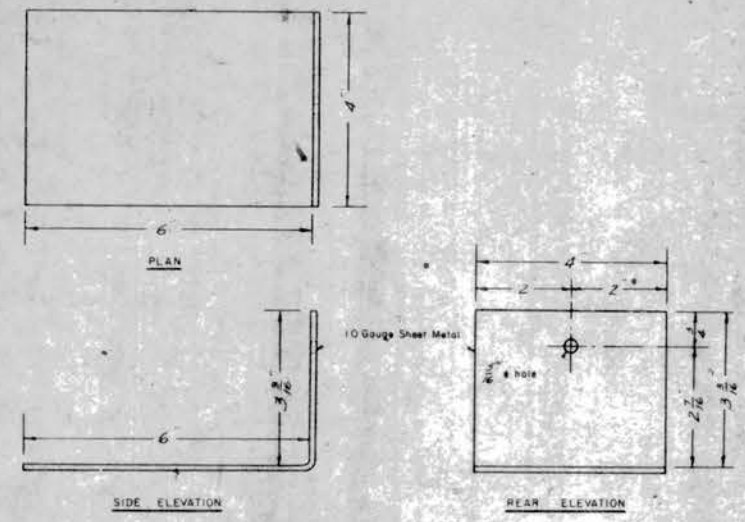
Revised	Approved	Date
1	Wm. Van Breenman	7-27-59
2		
3		
4		
5		
6		
7		
8		
9		
10		

Joints To Match Existing Transverse Joints. Spacing Between Joints To Be No Less Than 13' Nor Greater Than 20'.



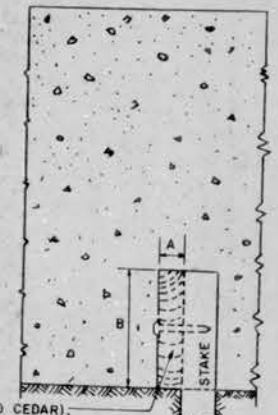
DETAILS OF GENERAL ASSEMBLY

NOTE: A SUFFICIENT NUMBER OF FORM PINS ARE TO BE DRIVEN ALONG BOTH SIDES OF THE BREAKER STRIP TO HOLD IT SECURELY IN POSITION. THE CONCRETE ADJACENT TO THE BREAKER STRIP IS TO BE THOROUGHLY CONSOLIDATED BY MEANS OF VIBRATION. AFTER THE CONCRETE HAS BEEN CONSOLIDATED AND FINISHED TO THE PROPER GRADE, THE PINS ARE TO BE REMOVED.



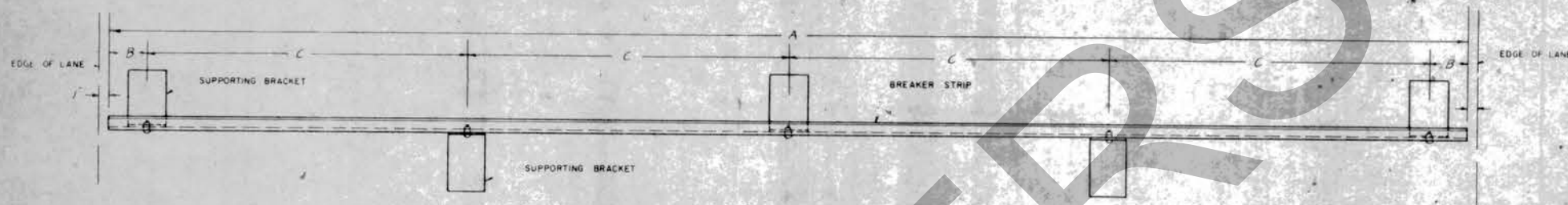
DETAILS OF SUPPORTING BRACKETS

Concrete Base	Dimension A	Dimension B
6"	1/2"	2"
8"	1/2"	2 1/2"
9"	1/2"	2 3/4"
10"	1/2"	3"



WOOD STRIP (REDWOOD OR WESTERN RED CEDAR), FULL LENGTH OF JOINT, SECURELY ATTACHED TO SUBGRADE BY ATTACHMENT TO STAKES, OR BY OTHER APPROVED MEANS.

CONTRACTION JOINTS IN CONCRETE BASE COURSE



PLAN

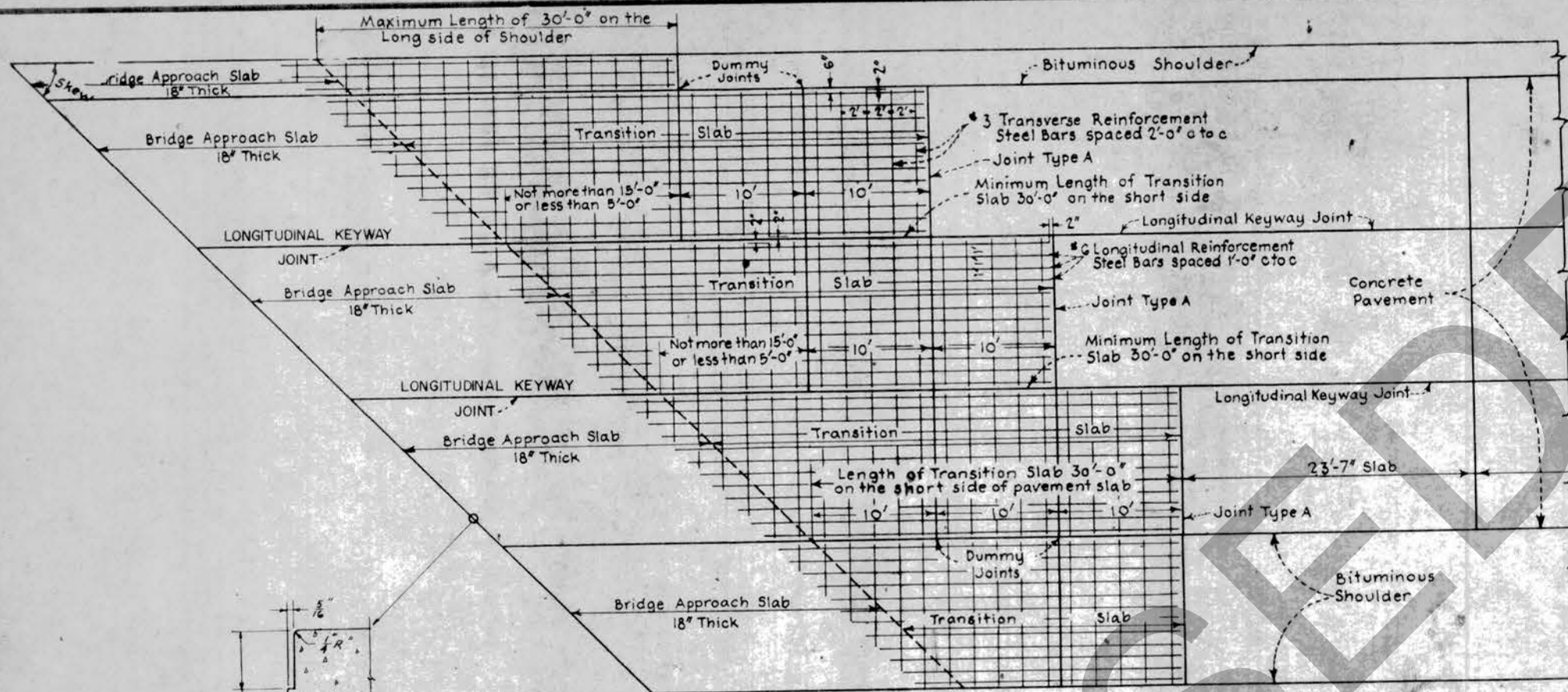
LANE WIDTH	A	B	C
9'	8'-10"	4"	24 1/2"
10'	9'-10"	4"	27 1/2"
11'	10'-10"	4"	30 1/2"
12'	11'-10"	4"	33 1/2"
13'	12'-10"	4"	36 1/2"

NOTE:
 FOR LANE WIDTHS OF LESS THAN 9 FEET:
 (a) THE LENGTH OF THE BREAKER STRIP IS TO BE 2' LESS THAN THE WIDTH OF THE LANE.
 (b) THREE SUPPORTING BRACKETS ARE TO BE USED, ONE AT EACH END, POSITIONED AS SHOWN ABOVE, AND ONE MIDWAY BETWEEN THE ENDS.

DETAILS OF BREAKER STRIPS AND SUPPORTING BRACKETS FOR CONTRACTION JOINTS IN PLAIN CONCRETE BASE COURSE

APRIL 30, 1970
 Add Construction Form in Conc. Base Course
 JAN 2, 1963

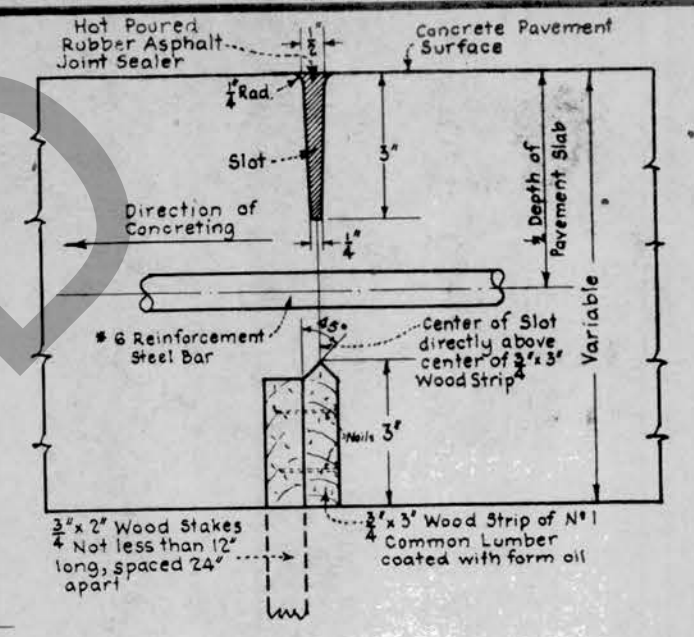
ORIGINAL



See Bridge Plans for Depth of Notch

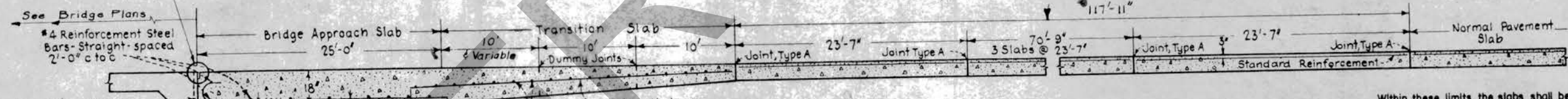
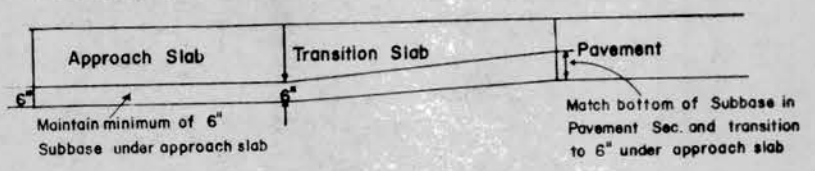
DETAIL OF END NOTCH OF APPROACH SLAB

PLAN OF TRANSITION SLABS BETWEEN NORMAL CONCRETE PAVEMENT AND BRIDGE APPROACH SLABS



DETAIL OF DUMMY JOINT

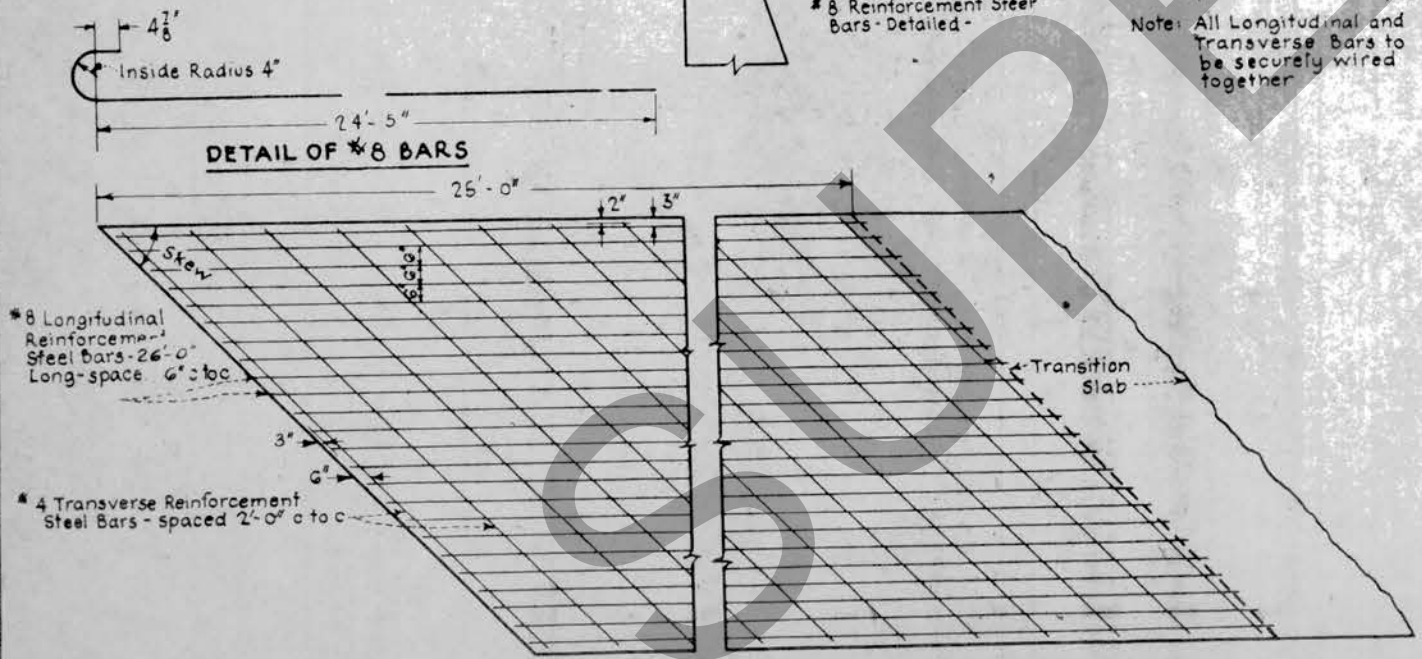
Typical Section for Subbase Under Approach and Transition Slabs



SECTION OF TRANSITION SLABS BETWEEN NORMAL PAVEMENT AND BRIDGE APPROACH SLABS

Within these limits, the slabs shall be 23'-7" long, with standard reinforcement. The joints between the slabs shall be of the dowel type installed elsewhere on the project. The joint filler shall be preformed bituminized fiber, 1" thick. For modifications of these limits see table below.

DETAILS OF BRIDGE APPROACH SLABS AND TRANSITION SLABS ADJOINING CONCRETE PAVEMENT



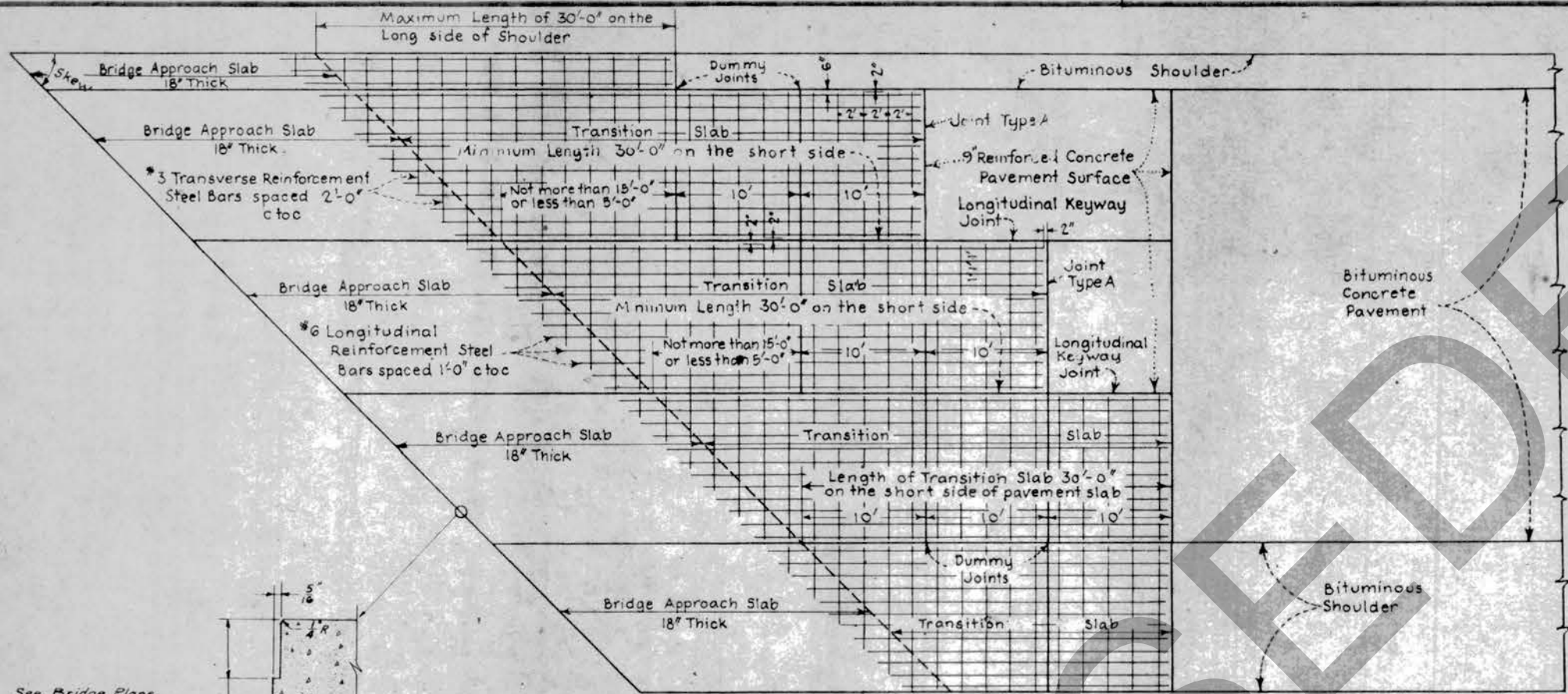
DETAIL OF BRIDGE APPROACH SLABS

SLABS BETWEEN BRIDGES					
Distance between Bridges *	55' Approach Slabs	23'-7" Slabs	Standard Slabs	23'-7" Slabs	55' Approach Slabs
To 500'	1	0	0-5	0	1
500'-704'	1	1	0-7	1	1
704'-908'	1	2	8-9	2	1
908'-1111'	1	3	10-11	3	1
1111'-1315'	1	4	12-13	4	1
Over 1315'	1	5	As Required	5	1

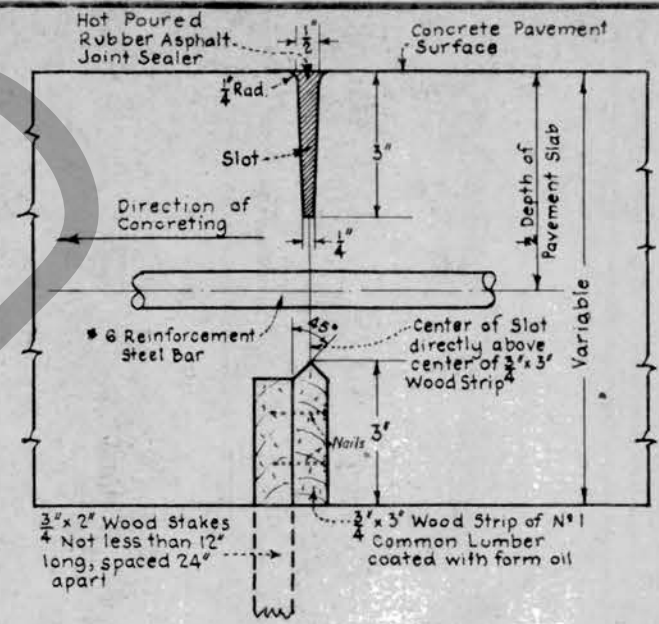
* Length of Pavement between Bridges

Revised	Date
	6-10-51
	5-5-53
	2-2-58
	8-30-45
	8-16-70

Revised	Date
	4-21-67
	8-20-62
	12-6-61
	10-31-63
	5-18-61
	11-1-56
	3-22-56

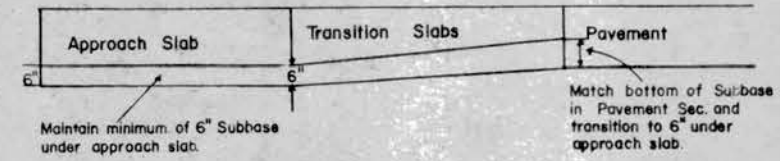


PLAN OF TRANSITION SLABS BETWEEN BITUMINOUS CONCRETE PAVEMENT AND BRIDGE APPROACH SLABS



DETAIL OF DUMMY JOINT

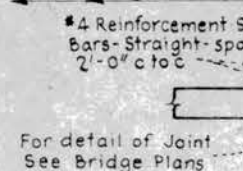
Typical Section for Subbase Under Approach and Transition Slabs



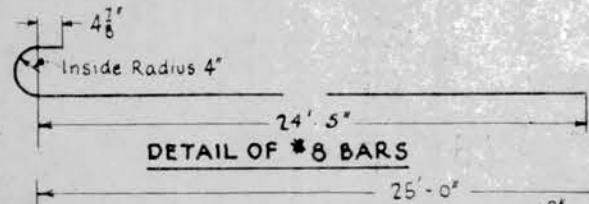
Note: If water is pocketed - install outlet trench at low point.

DETAIL OF END NOTCH OF APPROACH SLAB

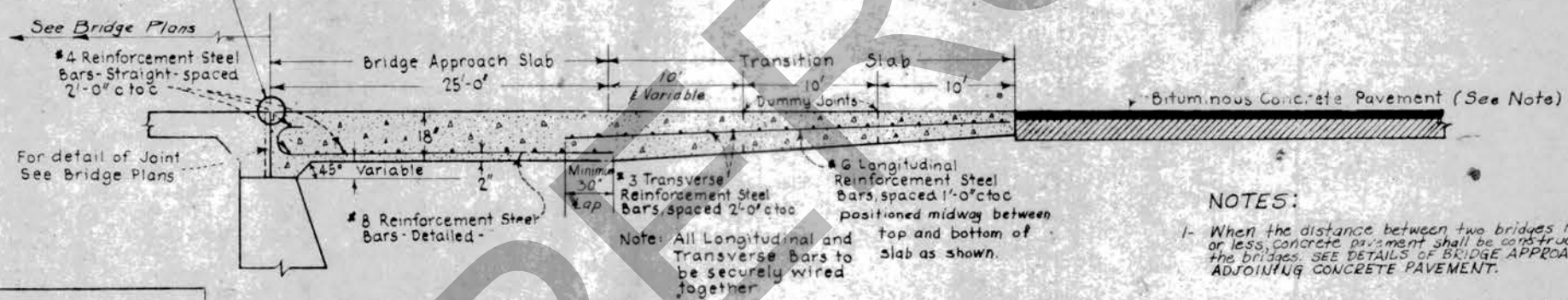
See Bridge Plans



DETAIL OF #8 BARS



SECTION OF TRANSITION SLABS BETWEEN BITUMINOUS CONCRETE PAVEMENT AND BRIDGE APPROACH SLABS



Note: All Longitudinal and Transverse Bars to be securely wired together.

NOTES:

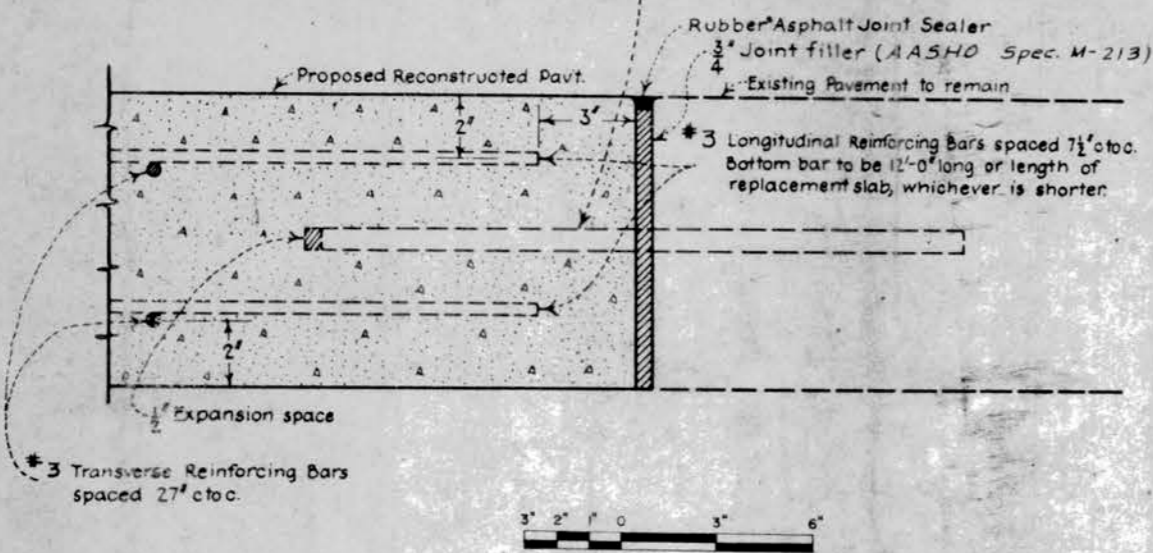
- 1- When the distance between two bridges is 500 feet or less, concrete pavement shall be constructed between the bridges. SEE DETAILS OF BRIDGE APPROACH SLABS ADJOINING CONCRETE PAVEMENT.
- 2- When the bridge carries a local road, the Design Unit preparing the project plans shall determine whether the density of the local traffic warrants bridge approach slabs. This decision shall be confirmed with the Bureau of Geotechnical Engineering.

DETAILS OF BRIDGE APPROACH SLABS AND TRANSITION SLABS ADJOINING BITUMINOUS CONCRETE PAVEMENT

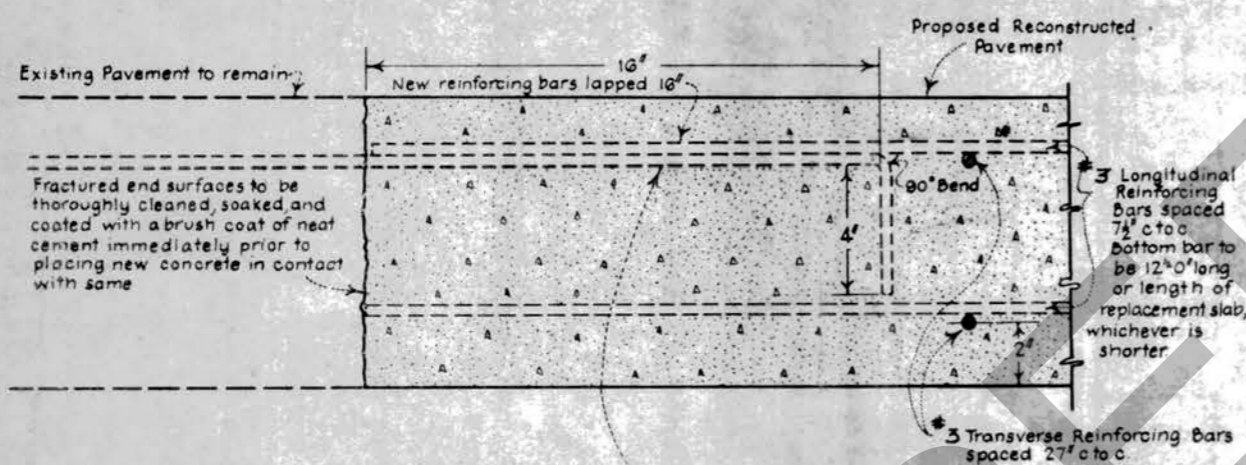
Revised	Date	Approved
Transition Slab	4-27-67	Original Drawing
	8-18-70	

DETAIL OF BRIDGE APPROACH SLABS

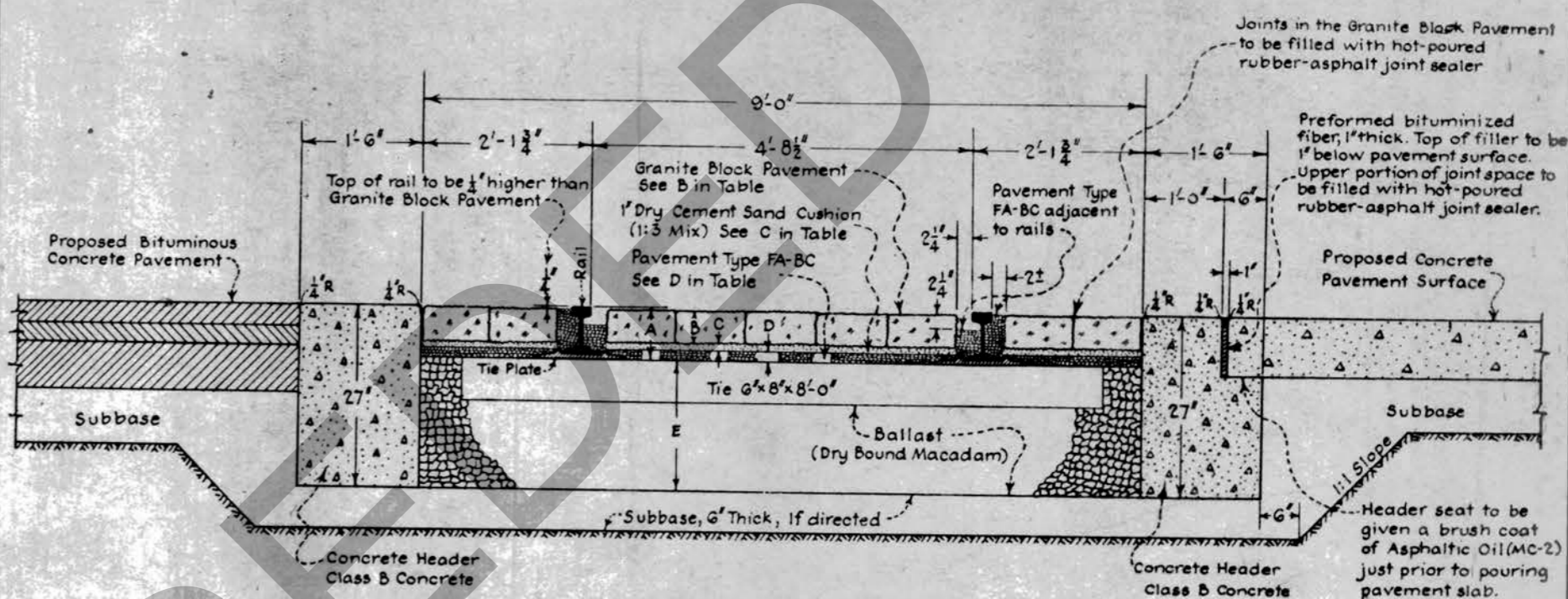
Existing dowels to be straightened and made parallel to the longitudinal axis of the pavement. Coated with tar paint and covered with a wrapping of tar paper.
 $\frac{1}{2}$ " Expansion space to be provided at dowel end.



DETAILS OF JOINT BETWEEN EXISTING PAVEMENT TO REMAIN AND PROPOSED RECONSTRUCTED PAVEMENT



DETAILS OF JUNCTURE OF EXISTING PAVEMENT WITH PROPOSED RECONSTRUCTED PAVEMENT



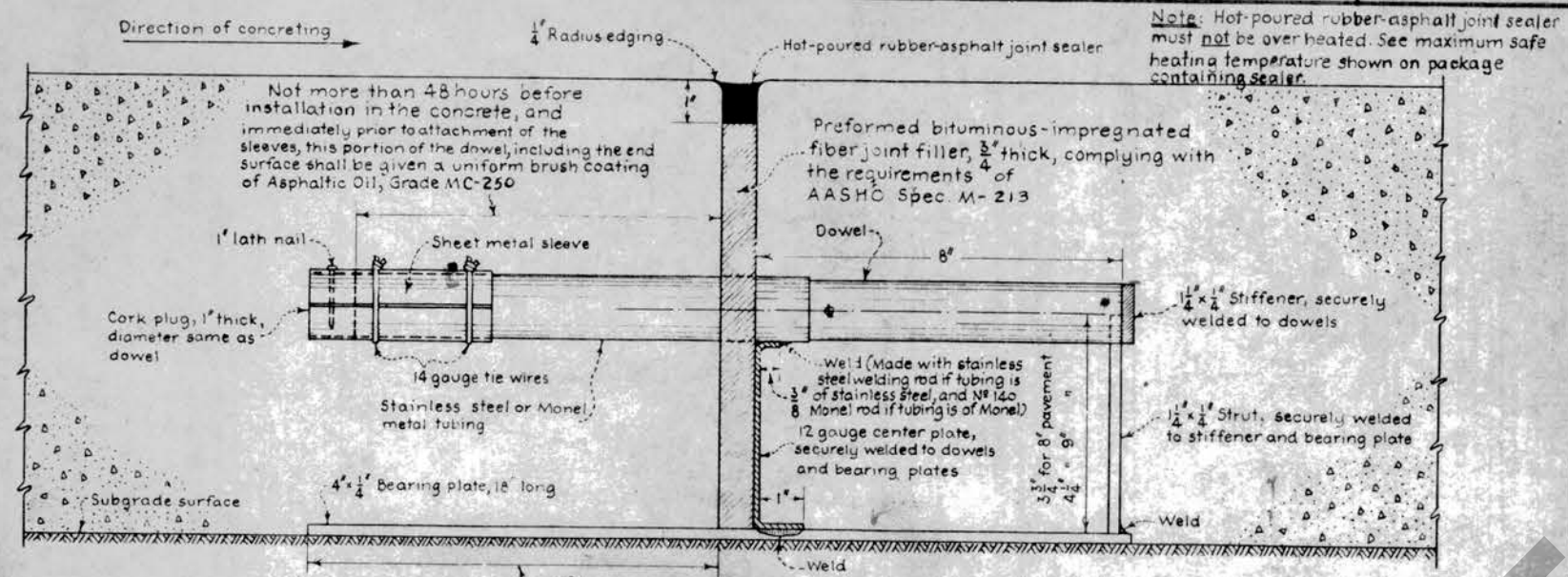
DIMENSION TABLE

Rail #	Rail Height including Tie Plate	Depth of Granite Block	Thickness of Cement-Sand Cushion	Thickness of Pavement Type FA-BC	Thickness of Ballast
	A	B	C	D	E
130*	7 $\frac{3}{8}$ " ±	4 $\frac{3}{4}$ " to 5 $\frac{1}{4}$ "	1" ± to 1 $\frac{1}{2}$ " ±	1 $\frac{1}{4}$ "	20"
133*	7 $\frac{7}{8}$ " ±	"	1" ±	1 $\frac{3}{4}$ " to 1 $\frac{1}{4}$ "	19 $\frac{1}{2}$ "
140*	8 $\frac{1}{8}$ " ±	"	1" ±	2 $\frac{1}{4}$ " to 1 $\frac{1}{2}$ "	19"
155*	8 $\frac{3}{4}$ " ±	"	1" ±	2 $\frac{3}{4}$ " to 2 $\frac{1}{4}$ "	18 $\frac{1}{2}$ "
174*	9 $\frac{1}{4}$ " ±	"	1" ±	3 $\frac{3}{4}$ " to 3 $\frac{1}{4}$ "	17 $\frac{1}{2}$ "

RAILROAD CROSSING PAVEMENT

Revised 9-5-58
 Revised 1-6-61 1961 54'd. Spec.
 Revised 9-4-59
 Revised 5-5-55
 Original Drawing 12-5-51

ORIGINAL



Note: Hot-poured rubber-asphalt joint sealer must **not** be over heated. See maximum safe heating temperature shown on package containing sealer.

Note: Not more than 48 hours before installation in the concrete, and immediately prior to attachment of the sleeves, this portion of the dowel, including the end surface shall be given a uniform brush coating of Asphaltic Oil, Grade MC-250.

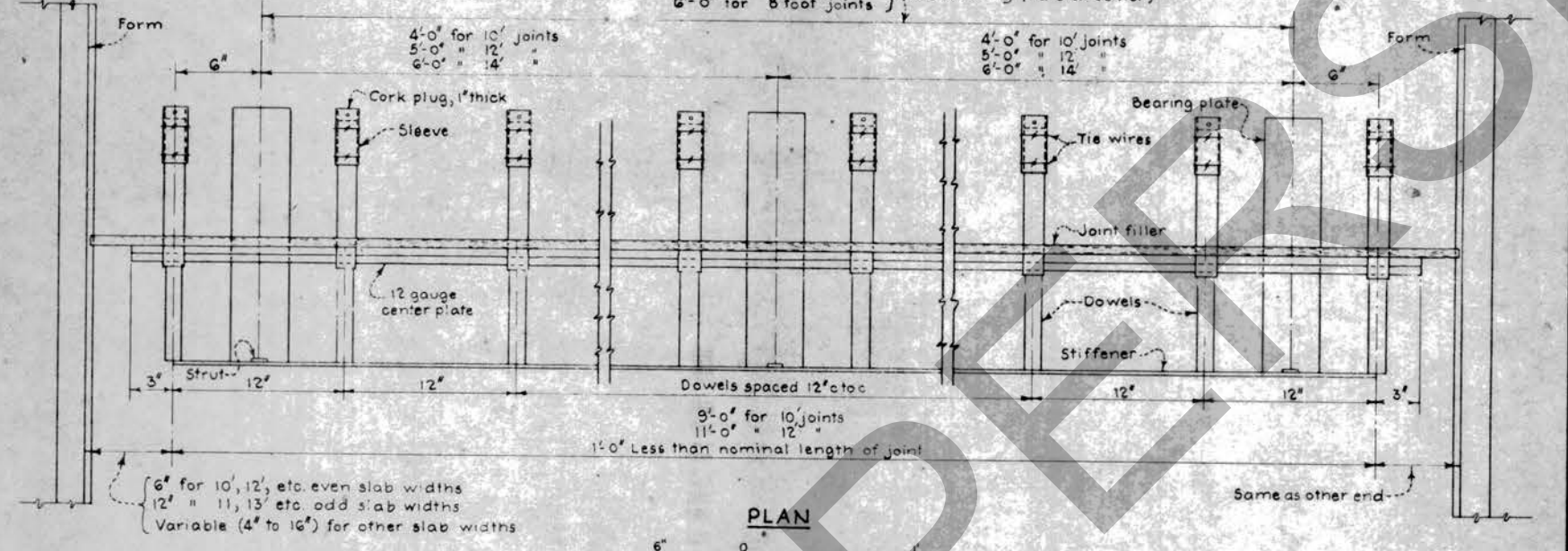
The top surface and edges of this portion of the bearing plate shall be given a liberal brush coating of heavy oil or grease immediately prior to concreting.

Note: The height of the center plate equals the distance from the bearing plate to the $\frac{1}{2}$ of the dowel minus $\frac{1}{2}$ the dowel diameter.

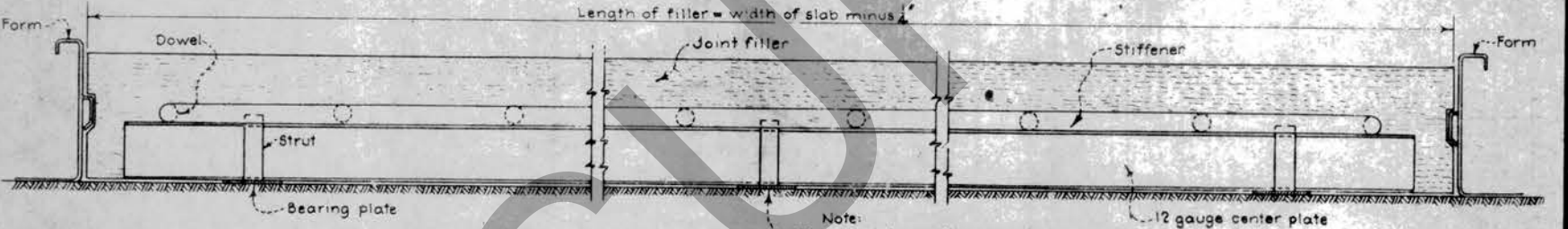
TYPICAL CROSS SECTION

Note: The dowels shall be parallel with each other, parallel with the bearing plates, and perpendicular to the center plate.

2'-0" for 4 foot joints
4'-0" for 8 foot joints
6'-0" for 12 foot joints (No bearing plate at center)



PLAN



ELEVATION

Note: An intermediate bearing plate shall be installed in all joints longer than 8'.

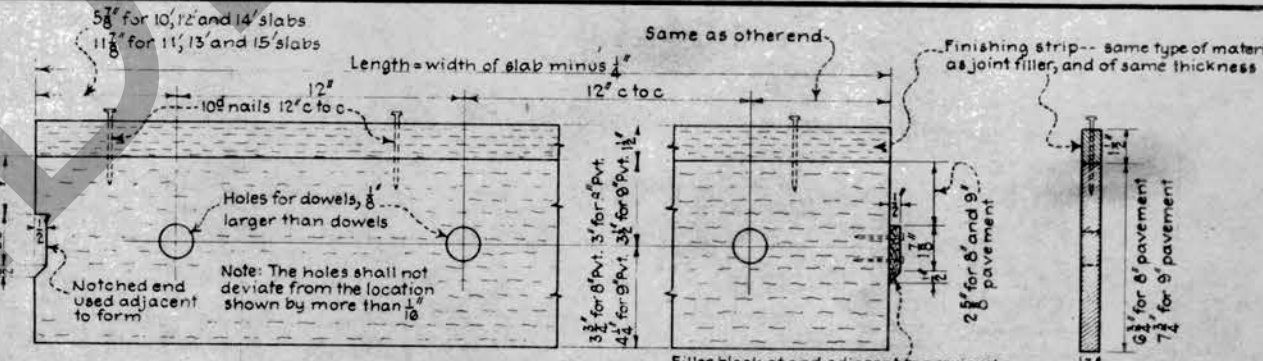
Use 4' joints for slab widths between	3'-8" and 5'-8"
6'	5'-8" and 7'-8"
8'	7'-8" and 9'-8"
10'	9'-8" and 11'-8"
12'	11'-8" and 13'-8"
14'	13'-8" and 15'-8"

DOWEL SPECIFICATIONS



The dowels shall consist of either (a) $\frac{1}{2}$ " diameter solid stainless steel bars, (b) $\frac{1}{2}$ " diameter carbon steel bars encased in stainless steel or Monel metal, or (c) $\frac{1}{2}$ " diameter carbon steel bars that have been impregnated with chromium throughout their exposed surface. The stainless steel shall contain not less than 12 per cent chromium. If encased in stainless steel or Monel metal, the thickness of the stainless steel or Monel shall be not less than .01 inches, and the tightness of fit shall be such as to preclude the occurrence of corrosion between the stainless steel or Monel and the underlying carbon steel. If rendered corrosion-resistant by impregnation with chromium, the layer of metal which has been so impregnated shall have (a) an average thickness of not less than .009 inch, (b) at no point a thickness of less than .008 inch, and (c) an average chromium content of not less than 20 per cent, by weight. The Contractor shall furnish the Engineer with a certification showing that the means employed for rendering the dowels corrosion-resistant complies with the foregoing specification.

The dowels shall not vary in straightness throughout their length in excess of $\frac{1}{16}$ ". The sliding portion of the dowel shall be of uniform cross section, free from burrs, projections, and any other irregularities that would interfere with free movement in the concrete.



Side Elevation

Cross Section

Note: The Finishing Strip shall be attached after the removal of the Protection Cap, and shall be centered directly over the filler and nailed securely thereto, as shown. If desired, the strip may consist of two pieces, of equal length, installed end to end. The Finishing Strip shall not be removed until immediately prior to sealing the joint with hot-poured rubber-asphalt.

Note: The filler shall be supported by means of steel pins, 1" in diameter, driven on both sides of the filler. The pins shall be of adequate length and sufficient number to insure that the filler will be held securely in its proper position, and they shall not be removed until after the final passage of the finishing machines.

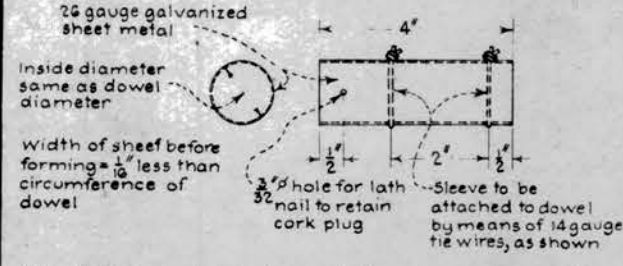
DETAILS OF JOINT FILLER

ALTERNATIVE JOINT DEVICES

Alternative transverse joint devices shall comply with the requirements of the specifications for transverse expansion joints and with the following:

- The load-transferring capacity of the device shall be such that, when tested in accordance with the procedure currently in use by the Department, the device shall be capable of transferring a load of 10,000 pounds per linear foot of joint across a space $\frac{1}{2}$ inches in width with a deflection of not more than .05 inch.
- The total range of relative vertical movement of adjacent slabs ends which the device will permit prior to positive engagement of the load-transferring elements shall not exceed .01 inch.
- The design of the device shall be such that the joint space may become at least $\frac{1}{8}$ inch wider or narrower than its constructed width. The resistance to opening of the joint, per linear foot, shall not exceed (a) 500 pounds throughout the total range of movement and (b) 200 pounds for an initial opening of .10 inch.
- The device shall be capable of resisting all normal forces imposed during shipment, handling, installation, and all concreting operations. The rigidity and strength of the device shall be such that, after assembly, a 200-pound man may apply his full weight to any part or parts thereof without causing permanent deformation or displacement. The design of the device shall be such that after the pavement has been constructed, and regardless of whether the subgrade is firm or subject to displacement, all sliding surfaces will be parallel with the longitudinal axis of the pavement within a tolerance of one degree, and parallel with respect to each other within a tolerance of zero degrees, forty-five minutes.
- All parts of the joint device, the corrosion of which would result in restraint or a reduction in load-transferring capacity, shall be (a) composed of solid stainless steel, (b) encased in stainless steel or Monel metal or (c) impregnated with chromium throughout their exposed surfaces. The composition of the stainless steel, thickness of encasement, and requirements for impregnation with chromium shall all be as specified above under "Dowel Specifications".

DETAILS OF TRANSVERSE EXPANSION JOINT TYPE A

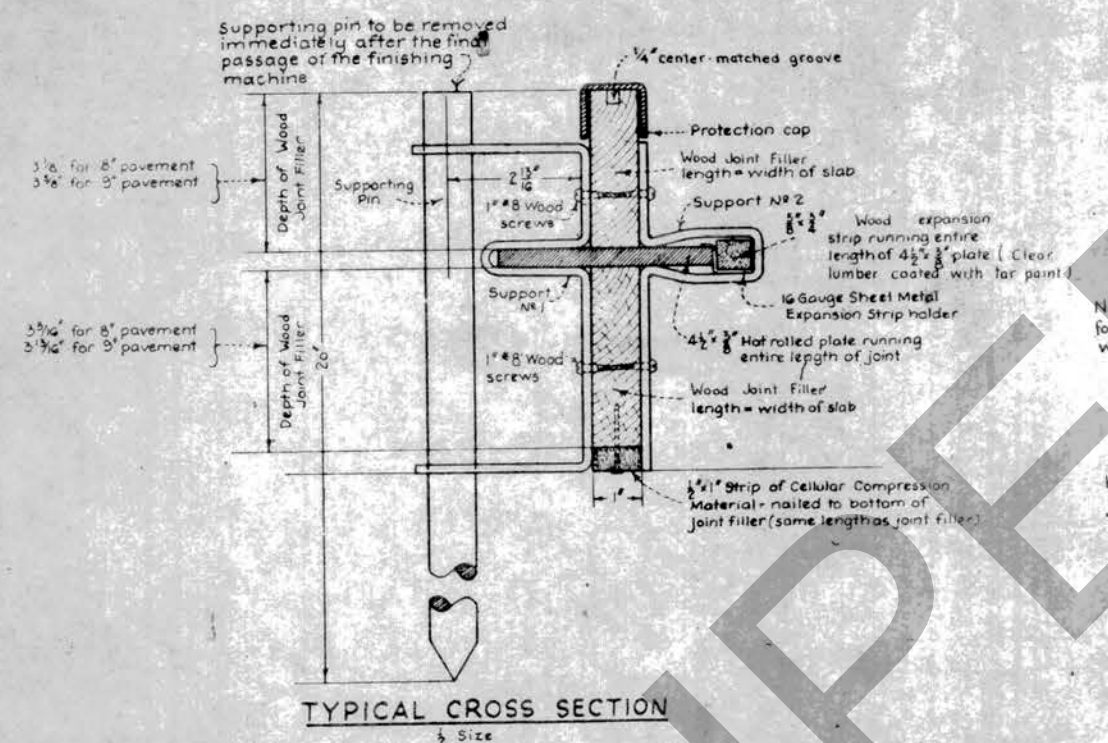
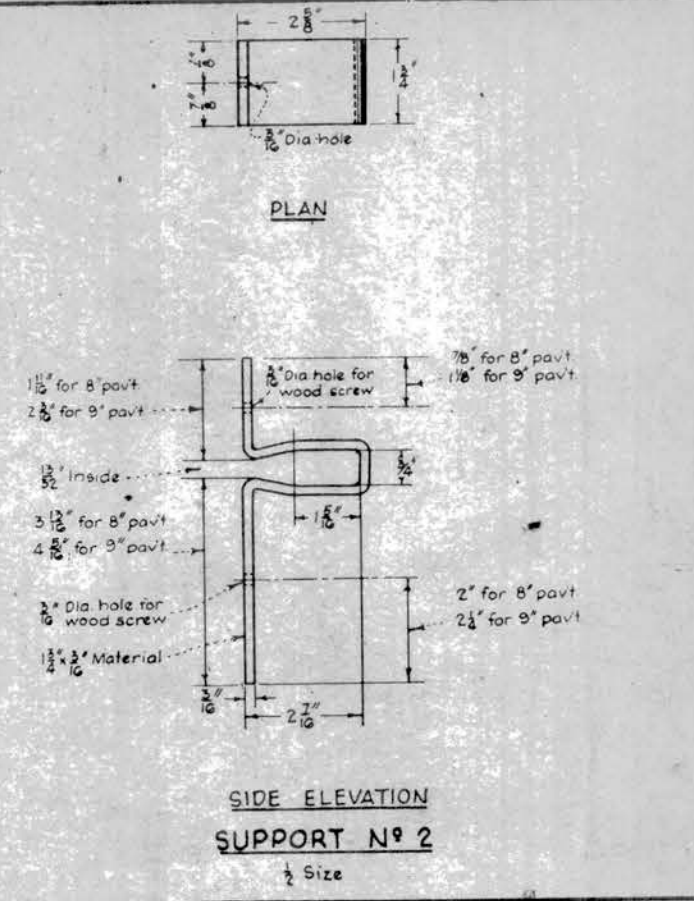
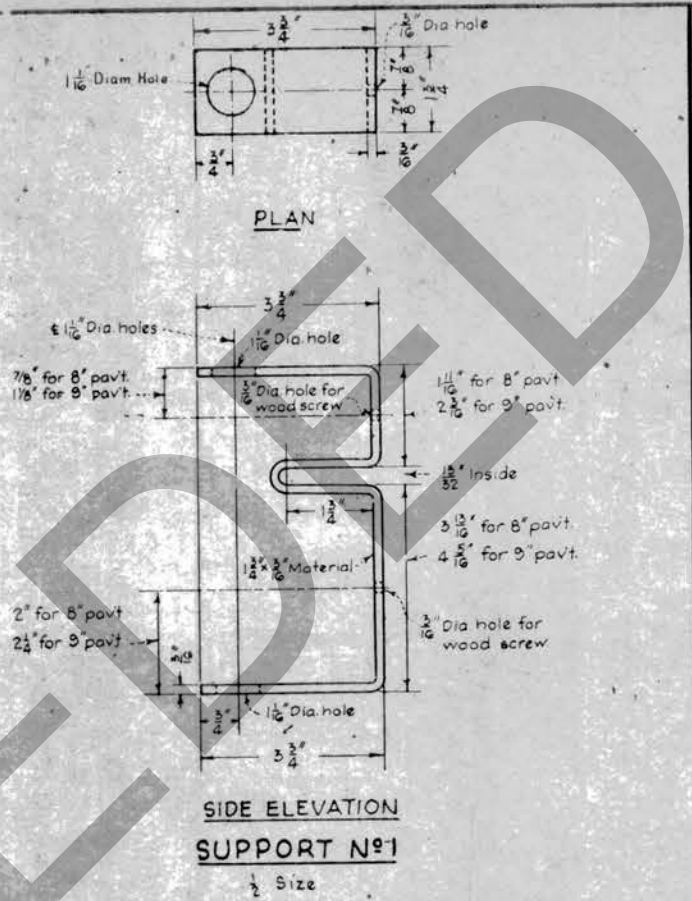
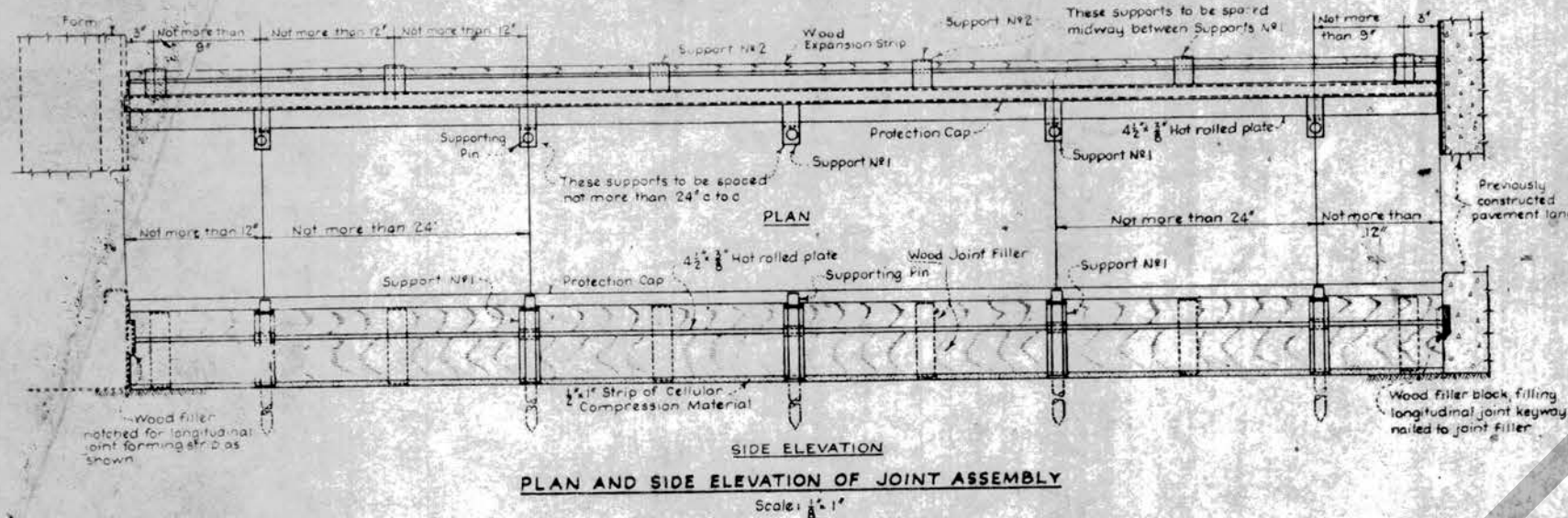


Note: Sleeves or end caps of other design may be submitted for approval. They shall fit closely around the dowel and shall be designed so as to positively prevent the entrance of mortar into the $\frac{1}{8}$ " space to be provided at the end of the dowel.

DETAILS OF SHEET METAL SLEEVES

Revised	Date
Approved	8-2-68
MC-2 to MC-250	6-10-65
19-6-1 STD. Spec	12-6-64
W.V.B. Joint Material	8-10-60
W.V.B.	9-1-55
W.V.B.	11-13-56
W.V.B.	1-18-57
Orig. Dr. W.A. R.S.	4-12-56

See sheet entitled "Details of Longitudinal Joint, Header, Installation Equipment and Finishing Procedure for Transverse Joints" for details of Protection Caps, Edging Tools and Notched Float to be used in conjunction with the installation of this joint.



Finishing strip, must be in one piece 1/4" center-matched tongue on finishing strips

Finishing strips shall be removed immediately after the pavement at the joint has received the final edging and the concrete will stand without slumping.

The contractor shall furnish and use a suitable tool to remove the concrete or mortar from the groove and the top of the wood filler before applying the finishing strip.

NOTE - See Supplementary Specifications for permissible kinds of wood and wood treatments.

The top of the joint space is to be filled with hot-poured rubber-asphalt joint sealer.

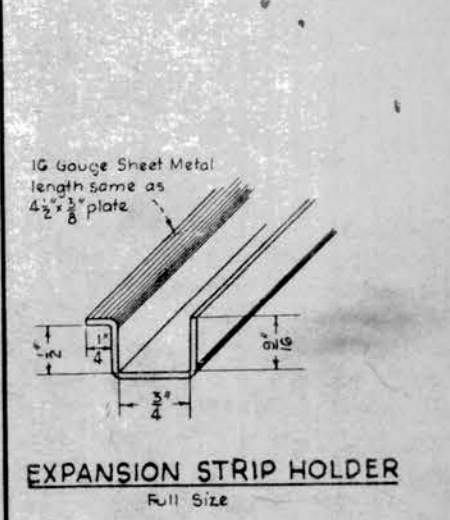
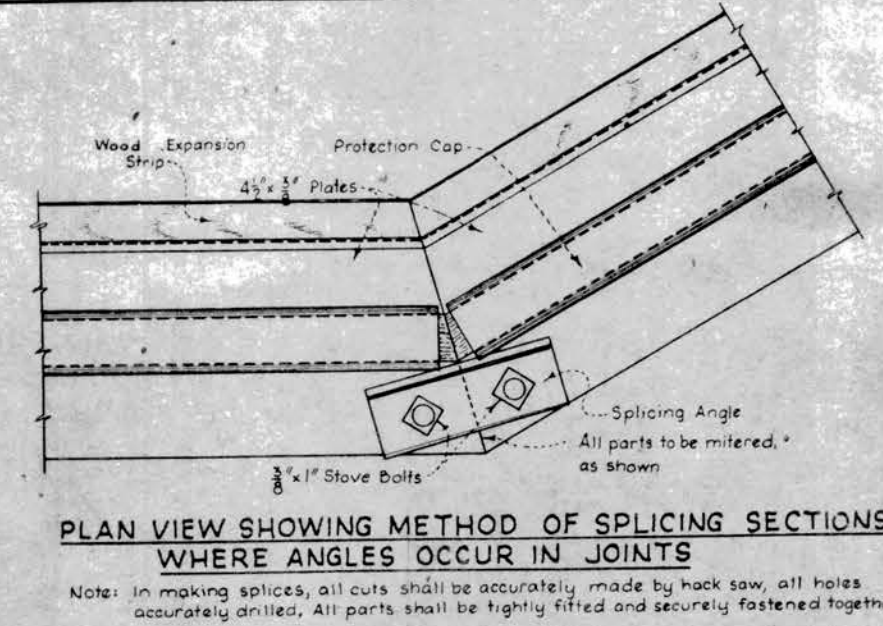
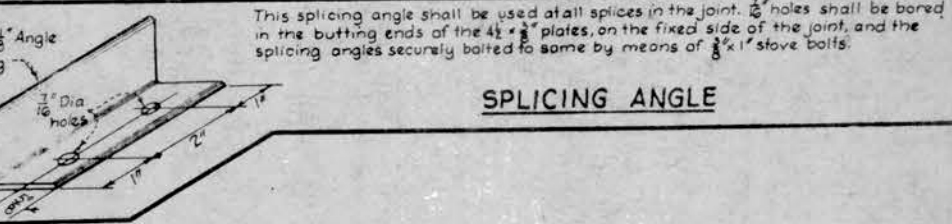
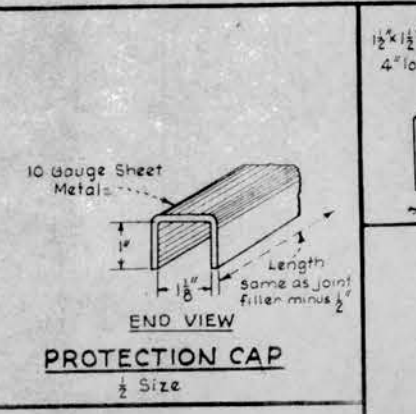


Plate Coatings

Within not more than 30 days prior to installation, all surfaces of the 4 1/2" x 3/8" plates shall be given TWO liberal, uniform thickness, brush coats of Asphaltic Oil Grade CC, or Tar Paint, as directed by the Engineer, of the composition specified for same in the Standard Specifications, 1941. At the time the coatings are applied the surfaces of the plates shall be free from rust and foreign material.

Within not more than 2 hours prior to placement of concrete in contact with the joint, all exposed surfaces of the 4 1/2" x 3/8" plates shall be given a liberal brush coating of Lubricating Oil S.A.E. 50.

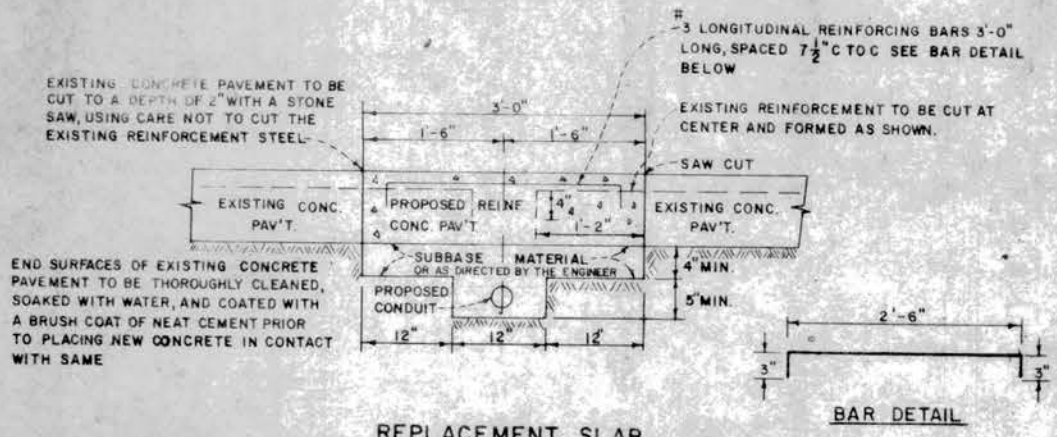


See sheet entitled "Details of Longitudinal Joint, Header, Installation Equipment and Finishing Procedure for Transverse Joints."

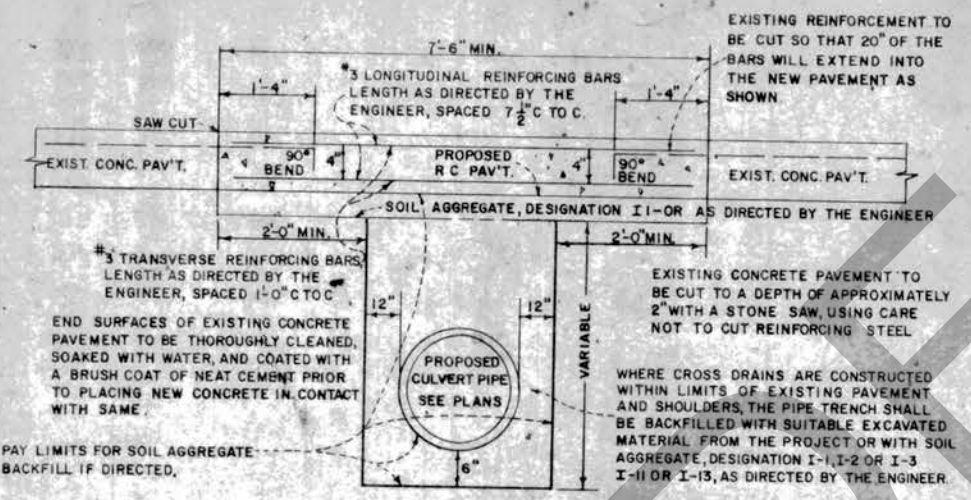
TRANSVERSE EXPANSION JOINT TYPE B

REVISION	APPROVED	DATE	BY
6-5-61	Original		
12-6-61	1961 Std Spec.		

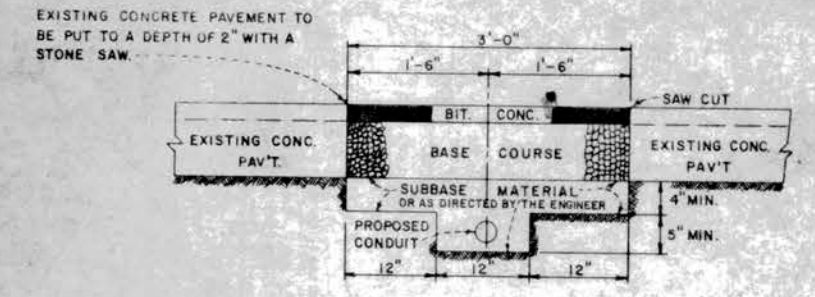
8-19-64	Rev. Wood Bar, Type A	Revised 6-80 Clarified Lettering
4-10-64	Rev. X Drain	6-29-72 Removed Wood Barricades
12-6-61	1967-516 Spec	8-17-71 Revised Point Note
9-1-61	Wood Barricade	6-26-68 Wood Bar, Type C Added
6-6-61	Paint Wood Barricade	5-18-68 Revised Wood Barricades
12-18-1960	Rev. Form of Colo Ext For M.H.	6-18-68 1/2" Dia. Wood
Aug. 18-1960	Revised	2-14-65 Revised
July 9-1955		3-25-65 Revised - 2" Dia. Cut



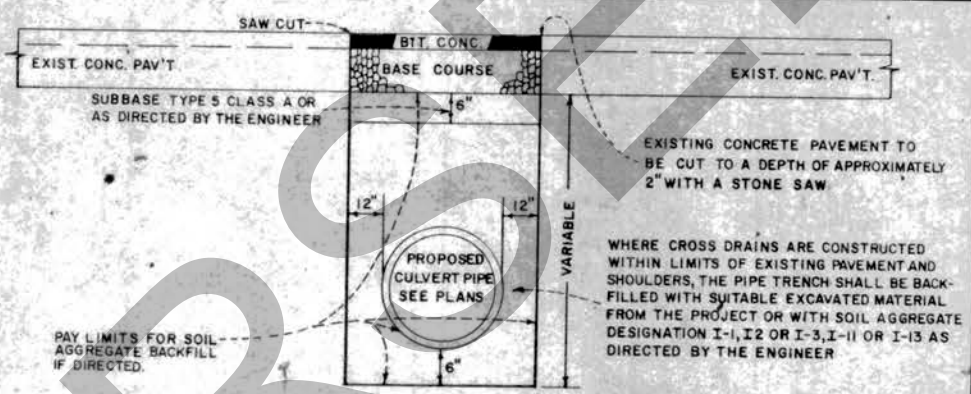
REPLACEMENT SLAB
WHERE CONCRETE PAVEMENT IS TO BE REPLACED AT CONDUIT TRENCHES UNDER EXISTING PAVEMENT



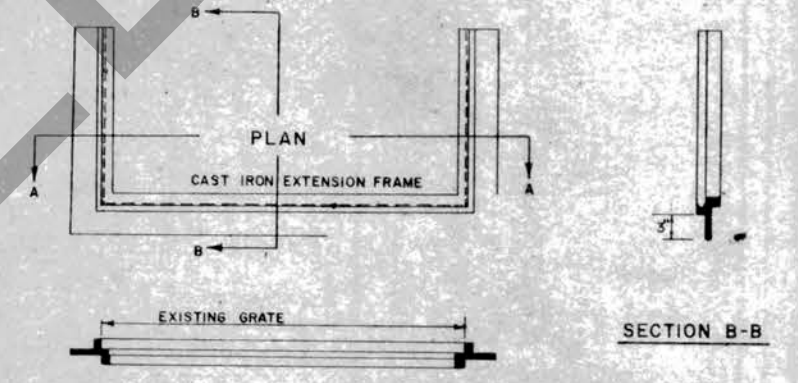
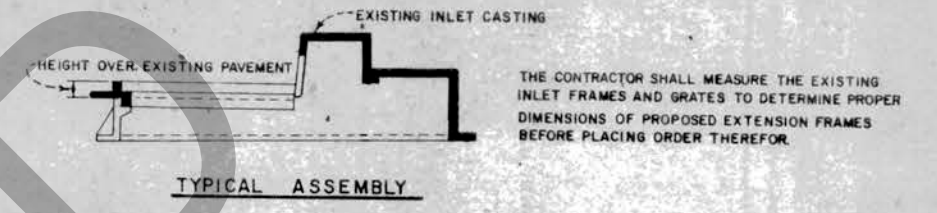
REPLACEMENT SLAB
WHERE CONCRETE PAVEMENT IS TO BE REPLACED AT CROSS DRAIN TRENCH UNDER EXISTING PAVEMENT



BITUMINOUS CONCRETE REPLACEMENT
WHERE CONCRETE PAVEMENT IS REMOVED AT CONDUIT TRENCHES



BITUMINOUS CONCRETE REPLACEMENT
WHERE CONCRETE PAVEMENT IS REMOVED AT CROSS DRAIN TRENCH



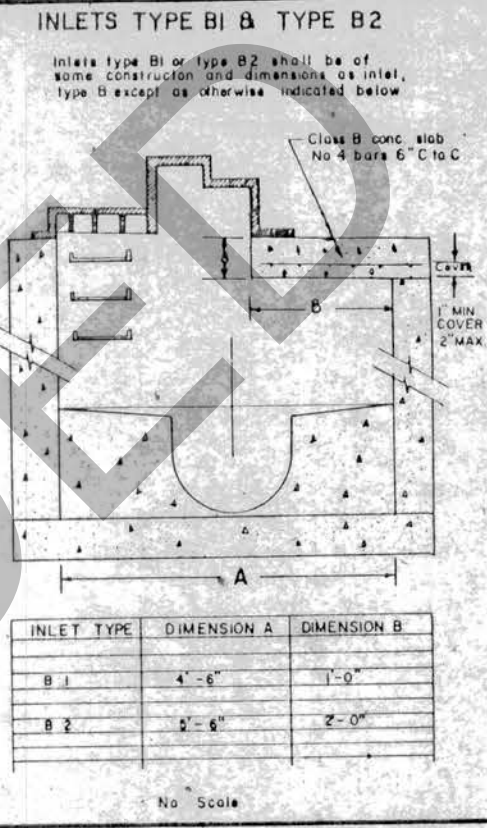
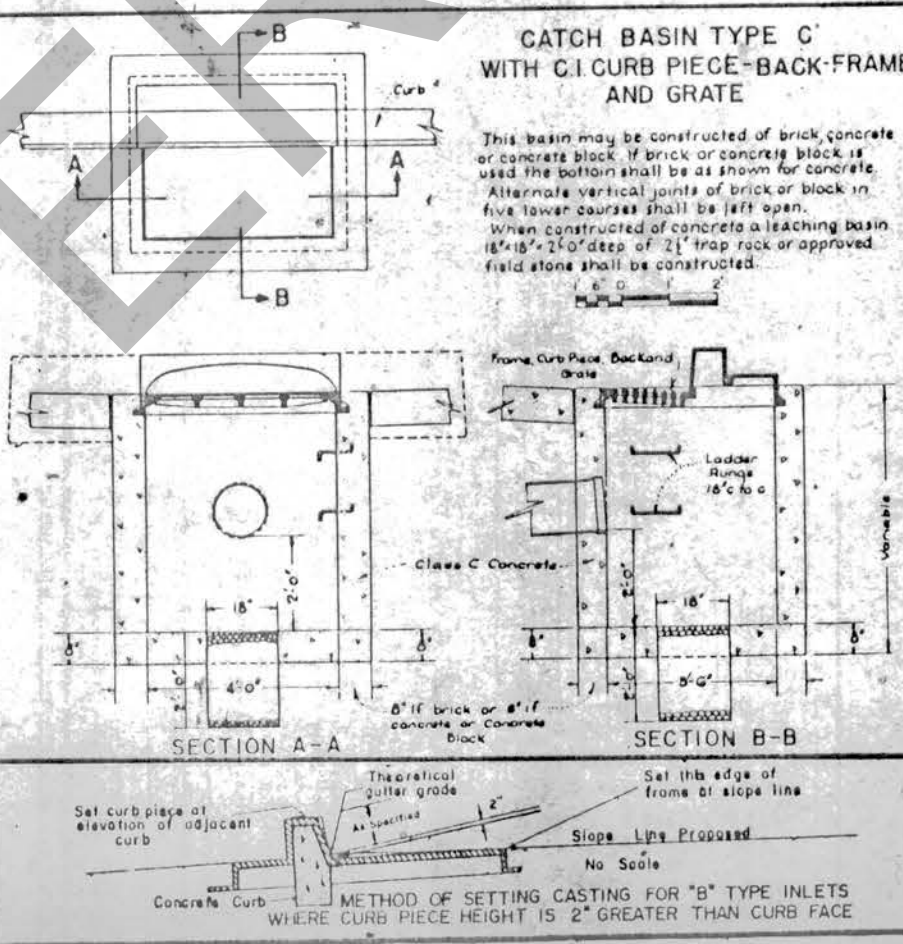
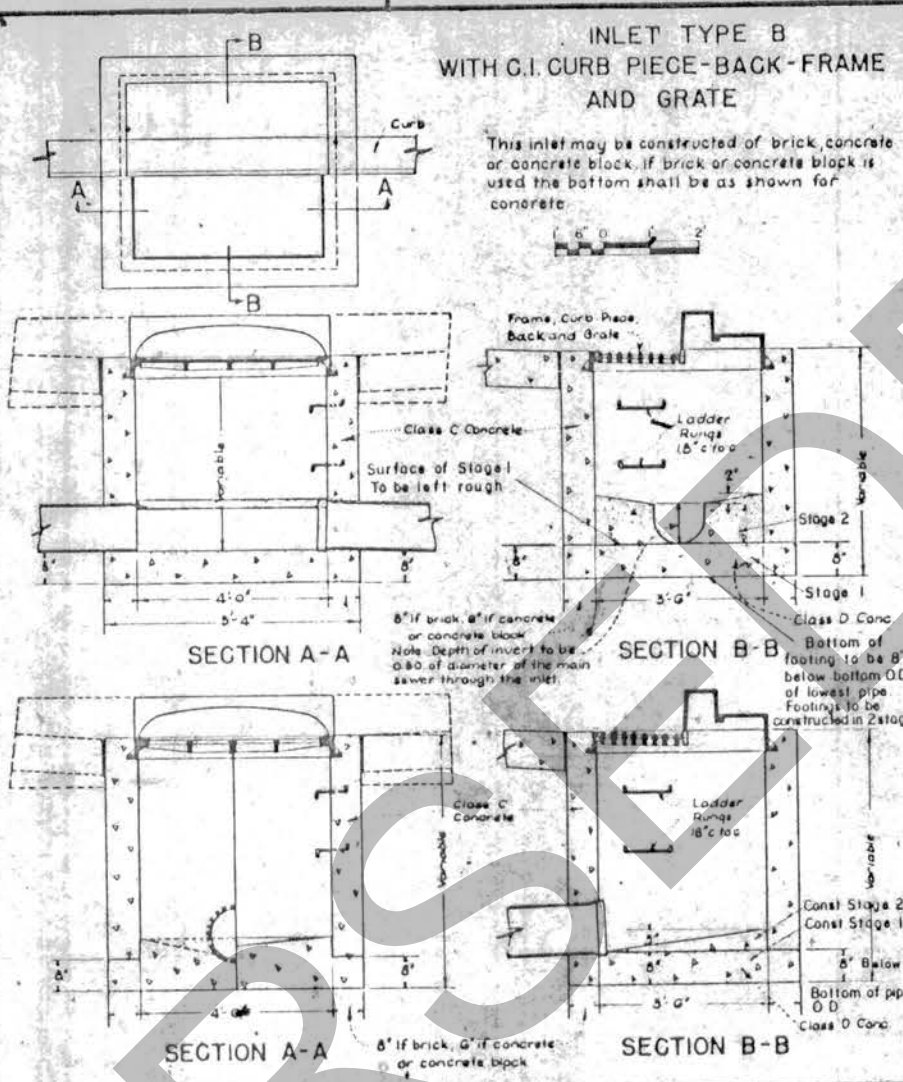
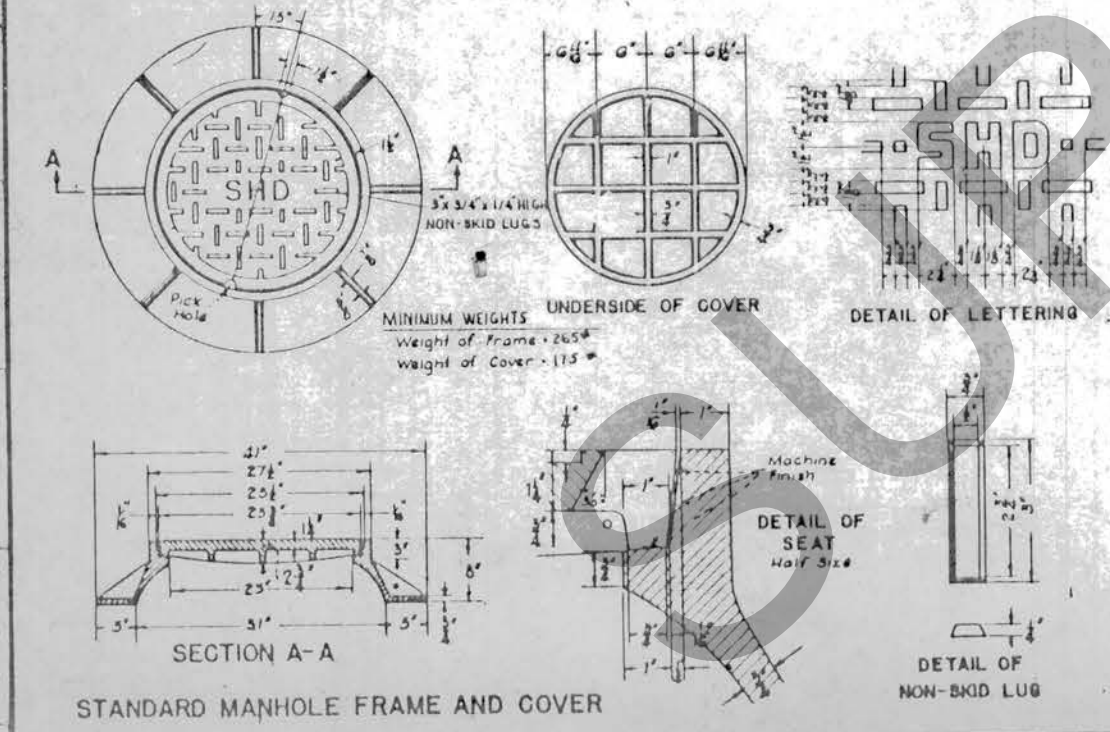
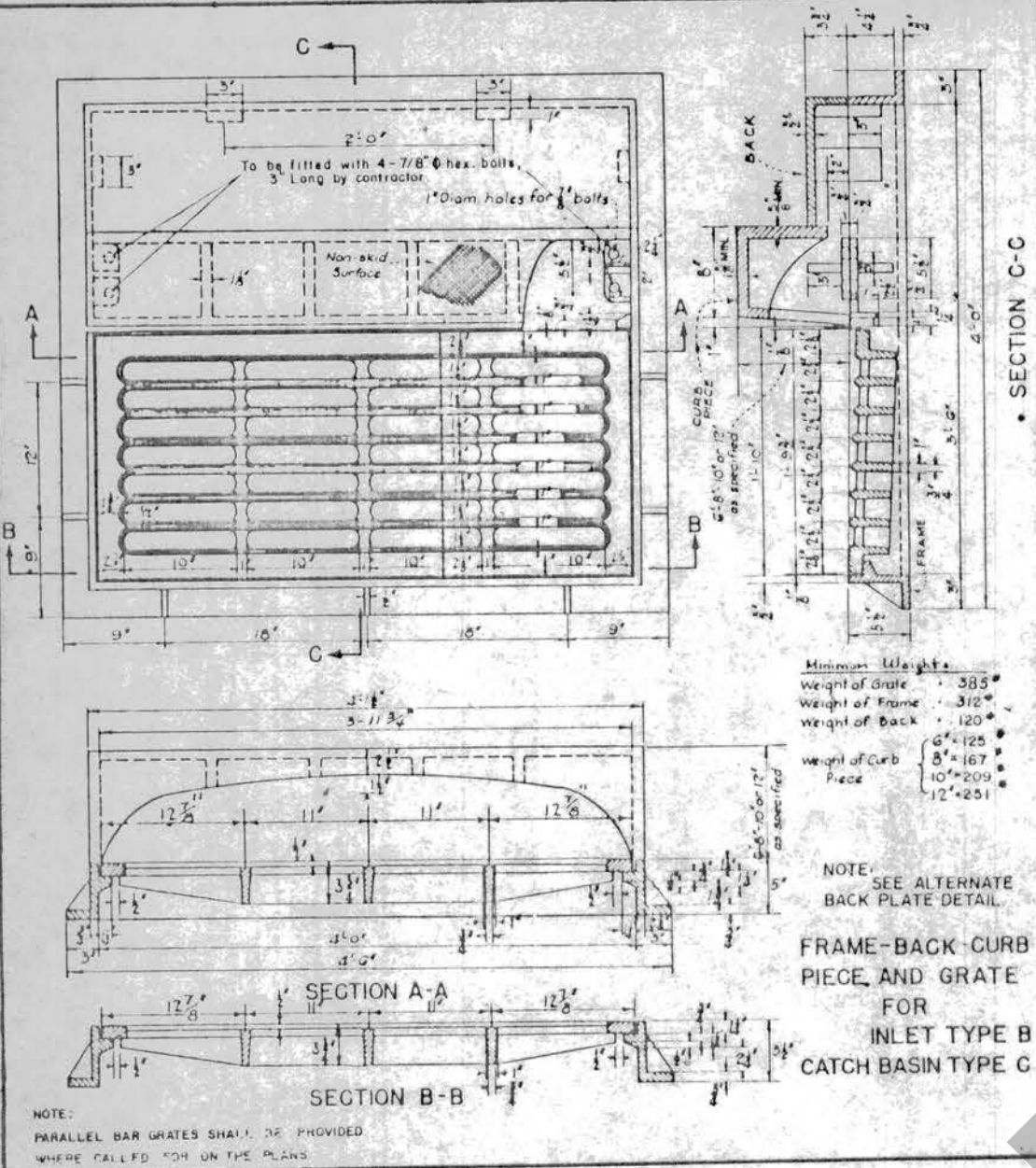
SECTION A-A
CAST IRON EXTENSION FRAME FOR EXISTING INLET



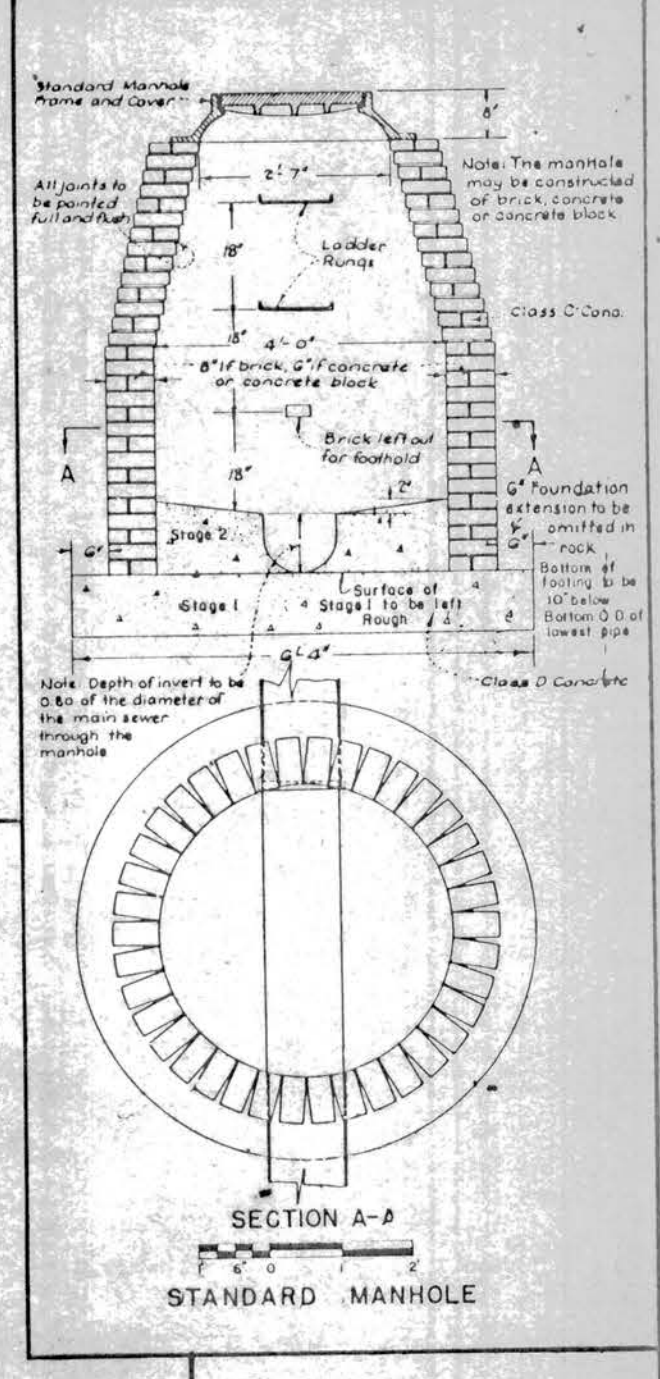
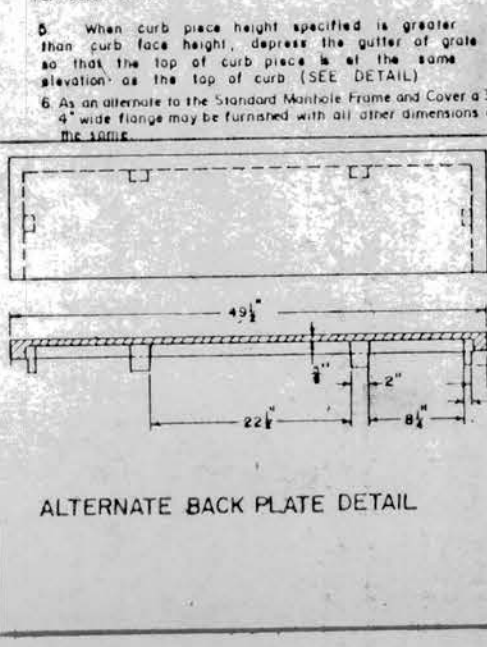
SUPER

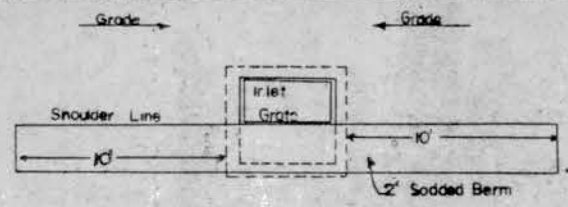
DATE: 20.1966
 BY: [unclear]
 REVISIONS:
 1. 20.1966 ADD 8 INLETS, NOTES
 2. 1964 REV. [unclear]
 3. 1963 NO CHANGE
 4. 1962 GUTTER WEIGHTS
 5. 1961 REVISED
 6. 1960 REVISED
 7. 1959 REVISED
 8. 1948 REVISED
 9. 1946 REVISED
 10. 1945 REVISED

INLET GATES
 MAY 13 1982 REVISED AS PER MEAT

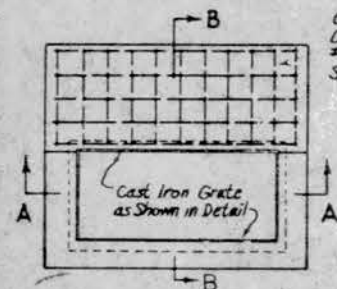


GENERAL NOTES
 1. Corbelling of inlet walls will be permitted at the rate of 1/2" per 8" of height of wall; maximum corbel 6" per wall.
 2. When the item of manholes, inlets and catch basins, additional depth, is scheduled in the proposal and the depth of a structure exceeds 10' as measured from top of cover or grate to invert of drainage structure, the walls of the structure below a depth of 8' shall be 12" thick and the overall horizontal dimensions of foundations shall be increased 12" and except in rock the depth increased to 12".
 3. Except for catch basins and Type A inlets footings and inverts shall be constructed in two stages, and the bottom of the footings shall be 8" below the outer wall of the lowest pipe in inlets and 10" in manholes.
 4. The item of reset heads shall include raising or lowering the head castings of inlets and catch basins, or the raising of manhole head castings, for a maximum of 12". All other changes in position of head casting shall be considered as reconstructed manholes or reconstructed inlets or catch basins.
 5. When curb piece height specified is greater than curb face height, depress the gutter of grate so that the top of curb piece is at the same elevation as the top of curb (SEE DETAIL).
 6. As an alternate to the Standard Manhole Frame and Cover a 39" diameter frame with 4" wide flange may be furnished with all other dimensions and weights remaining the same.





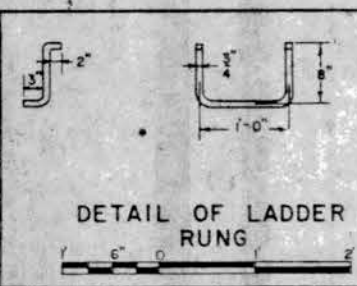
Note:
Inlet Set 4" Below Normal Shoulder Grade (2" Per Foot)



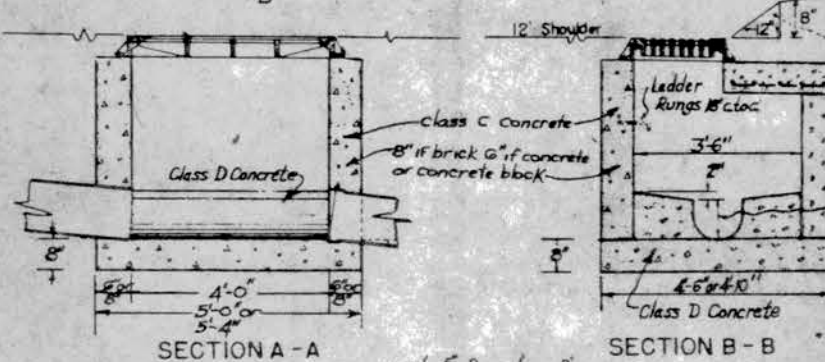
Class B Concrete Slab 8" Thick #4 Bars Spaced 6" c/c

TYPE B MODIFIED

This inlet may be constructed of brick concrete or concrete block if brick is used the bottom shall be as shown for concrete, and the two upper courses of brick shall be left out and the wall brought to the height shown with Concrete Class C.



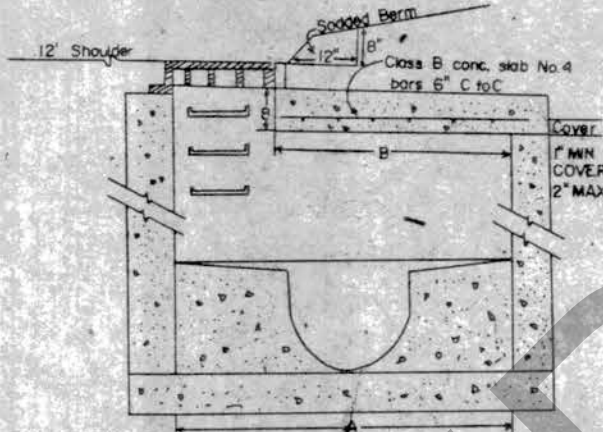
DETAIL OF LADDER RUNG



Notes:
Cover - 1" Minimum 2" Maximum
Notes See Note #2 for Inlets, Type B.
Note: Depth of Invert to be 0.8 the Diameter Main Sewer through the Inlet.
Note: Inverts to be Eliminated in Bottoms of Terminal Inlets. Bottoms shall be Dished and Sloped toward the Outlet Pipe at a Rate of Grade of 2" per foot.

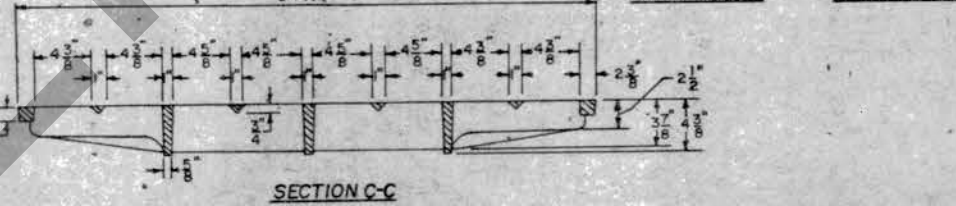
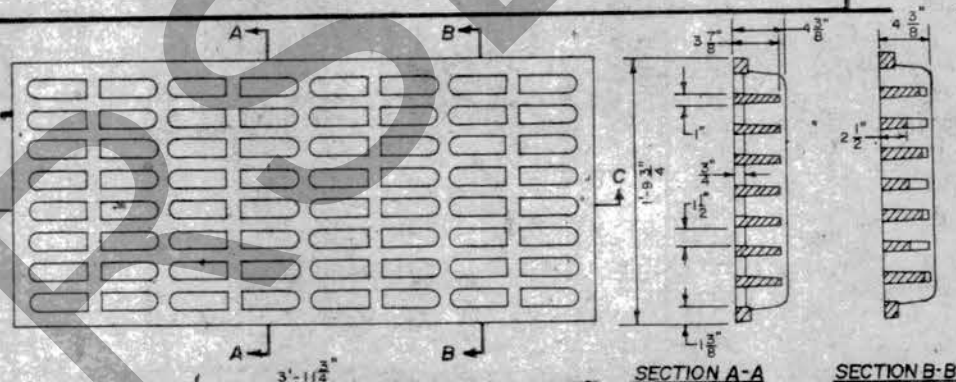
INLETS TYPE B1 MODIFIED & TYPE B2 MODIFIED

Inlets type B1 Modified or type B2 Modified shall be of same construction and dimensions as inlet, type B MODIFIED except as otherwise indicated below.



INLET TYPE	DIMENSION A	DIMENSION B
B1 MODIFIED	4'-6"	2'-6 1/2"
B2 MODIFIED	5'-6"	3'-6 1/2"

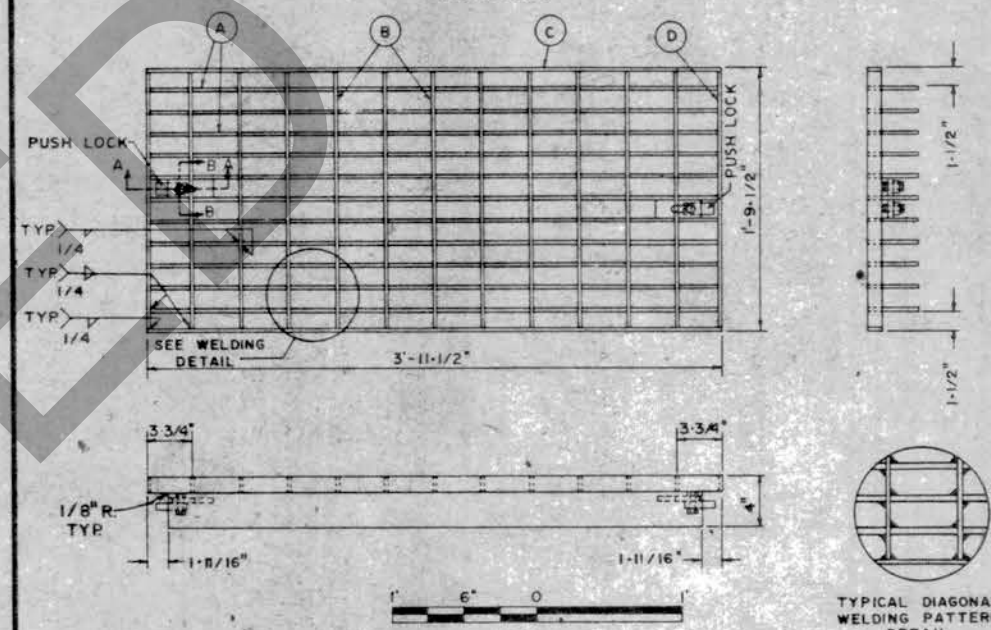
No Scale



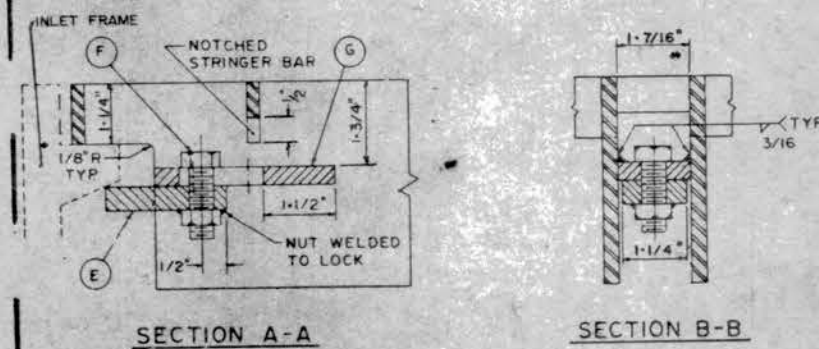
MIN. WEIGHT 325 LBS.

PARALLEL BAR GRATE (CAST IRON)

PARALLEL BAR GRATE (STEEL)

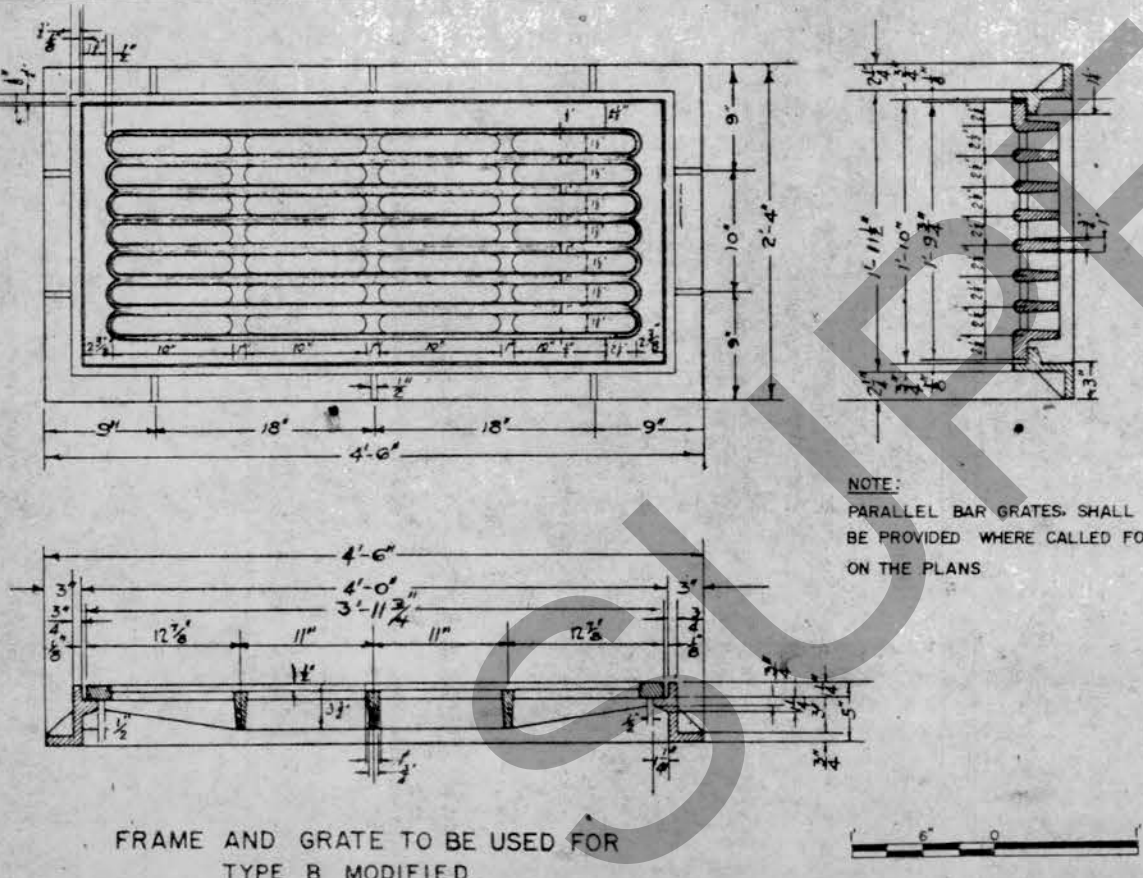


STEEL BAR CHART		
Bar	Description	Quan. Spacing
A	3/8" x 4" x 3'-11" BEARING BAR	11 1-13/16" C-C
B	1/4" x 1-1/4" x 1'-9" STRINGER BAR	11 4" C-C
C	1/4" x 1-1/4" x 3'-11-1/2" BANDING BAR	2
D	1/4" x 1-1/4" x 1'-9" BANDING BAR	2



STEEL PUSH LOCK ASSEMBLY CHART		
Part	Description	Quan.
E	1/2" x 2-1/2" x 1-1/4" BAR W/ HOLE FOR 1/2" HEX BOLT	2
F	1/2" HEX BOLT (LENGTH 1-1/2") W/ NUT	2
G	3/8" x 1-7/16" x 3-3/4" BAR W/ 9/16" x 1-3/4" SLOTTED HOLE	2

Revised Fence Details 11-6-76
 Revised 5-73-83
 Revised 12-6-61 1961 5+10 Spec.
 Fence Post spacing 11-6-41
 Fence Detail Added 8-22-60
 No Change 5-5-63
 Original Drawing 12-13-61
 ADDED CAST PARA. MEMO 6-19-84
 PARA. BERT. DIM. BEARING STRINGER BAR BEM
 PARALLEL BAR GRATE DIM. BEARING BAR 12-27-82
 PARALLEL BAR GRATE MEMO 3-23-82

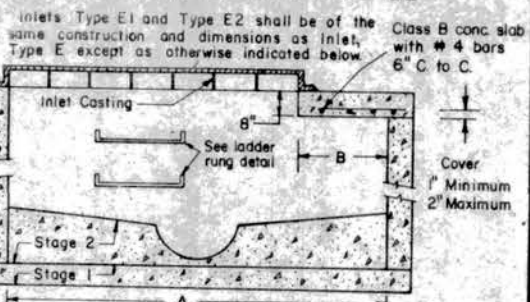


FRAME AND GRATE TO BE USED FOR TYPE B MODIFIED

GENERAL NOTES

1. Corbelling of inlet walls will be permitted at the rate of 1/2" per 8" of height of wall; maximum corbel 6" per wall.
2. When the item of manholes, inlets and catch basins; additional depth, is scheduled in the proposal and the depth of a structure exceeds 10' as measured from top of cover or grate to invert at drainage structure the walls of the structure below a depth of 8' shall be 12" thick, and, except in rock, the overall horizontal dimensions of foundations shall be increased 12" and the depth increased to 12'.
3. Except for catch basins and Type A inlets, footings and inverts shall be constructed in two stages, and the bottom of footings shall be 8" below the outer wall of the lowest pipe for inlets and 10" below for manholes.
4. The item of reset heads shall include the raising or lowering the head castings of inlets and catch basins, or the raising of manhole head castings, for a maximum of 12". All other changes in position of head castings shall be considered as reconstructed manholes or reconstructed inlets or catch basins.

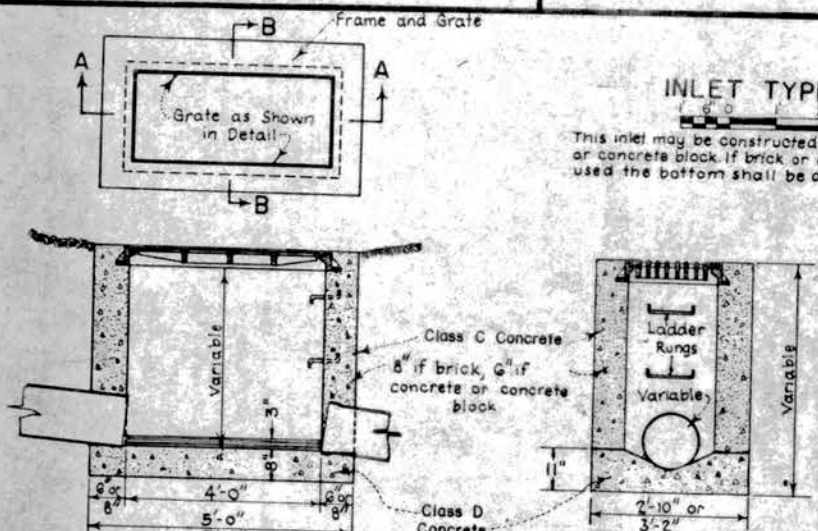
INLET TYPE E1 AND TYPE E2



INLET TYPE	DIMENSION A	DIMENSION B
E1	4' - 6"	1' - 0"
E2	5' - 6"	2' - 0"

INLET TYPE A

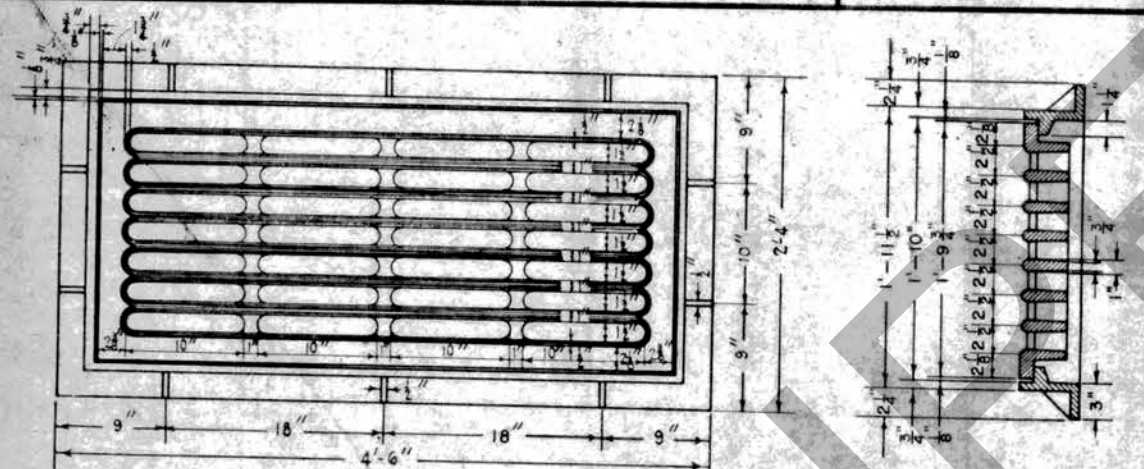
This inlet may be constructed of brick, concrete or concrete block. If brick or concrete block is used the bottom shall be as shown for concrete.



SECTION A-A

SECTION B-B

DETAIL OF LADDER RUNG



NOTE: PARALLEL BAR GRATES SHALL BE PROVIDED WHERE CALLED FOR ON THE PLANS.

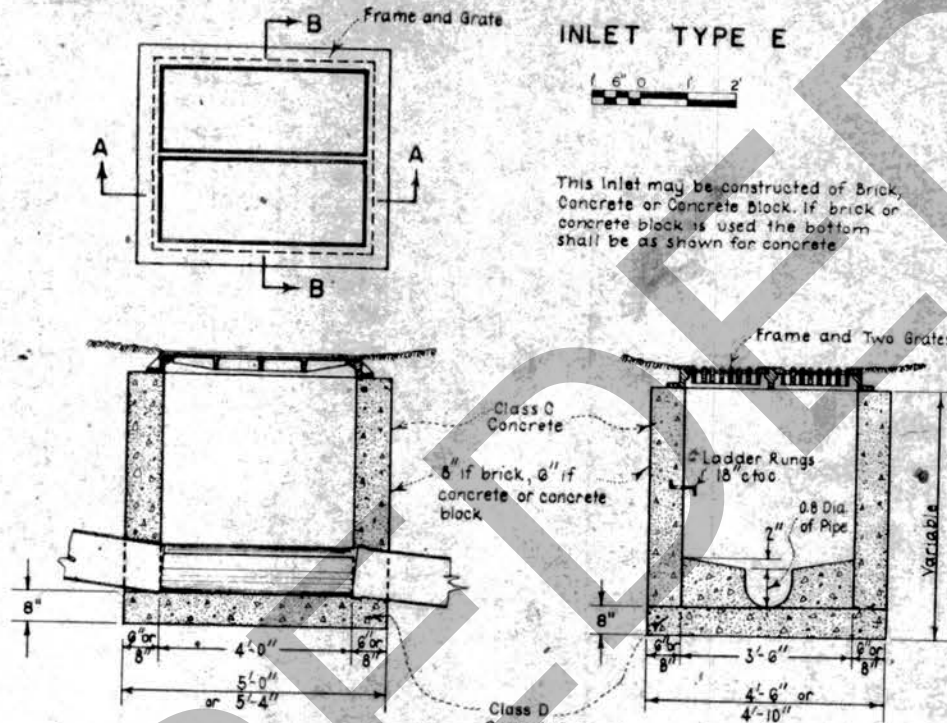
NOTE: MINIMUM WEIGHTS
Weight of Frame = 240 #
Weight of Grate = 385 #

FRAME AND GRATE TO BE USED FOR INLET TYPE A

INLET TYPE E



This inlet may be constructed of brick, concrete or concrete block. If brick or concrete block is used the bottom shall be as shown for concrete.

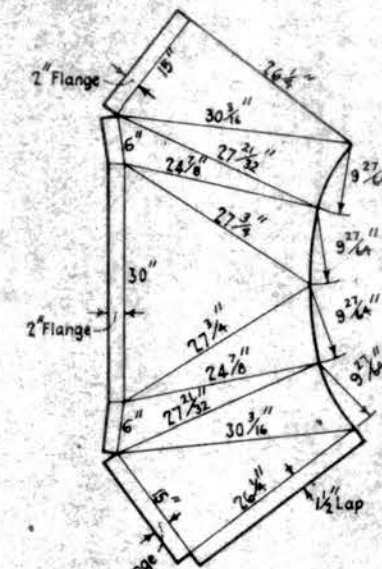


SECTION A-A

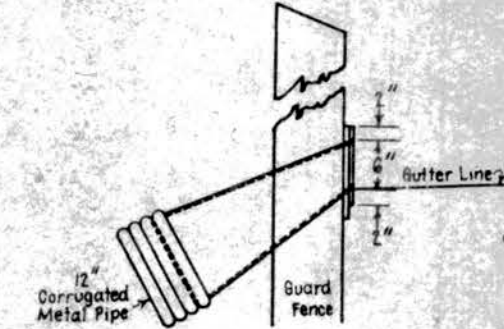
SECTION B-B

Note: Depth of invert to be 0.80 the Diameter Main Sewer through the inlet.

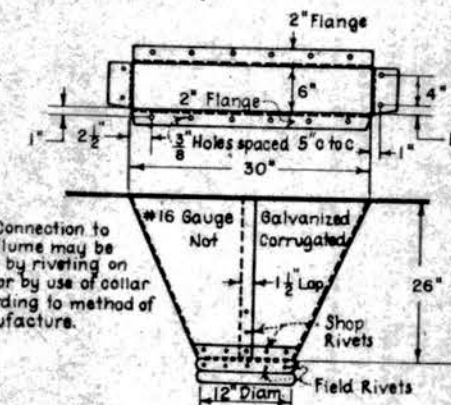
Inverts to be eliminated in bottom of Terminal Inlets. Bottoms shall be dish and sloped towards the Outlet Pipe at a rate of grade of 2\"/>



DEVELOPED SURFACE

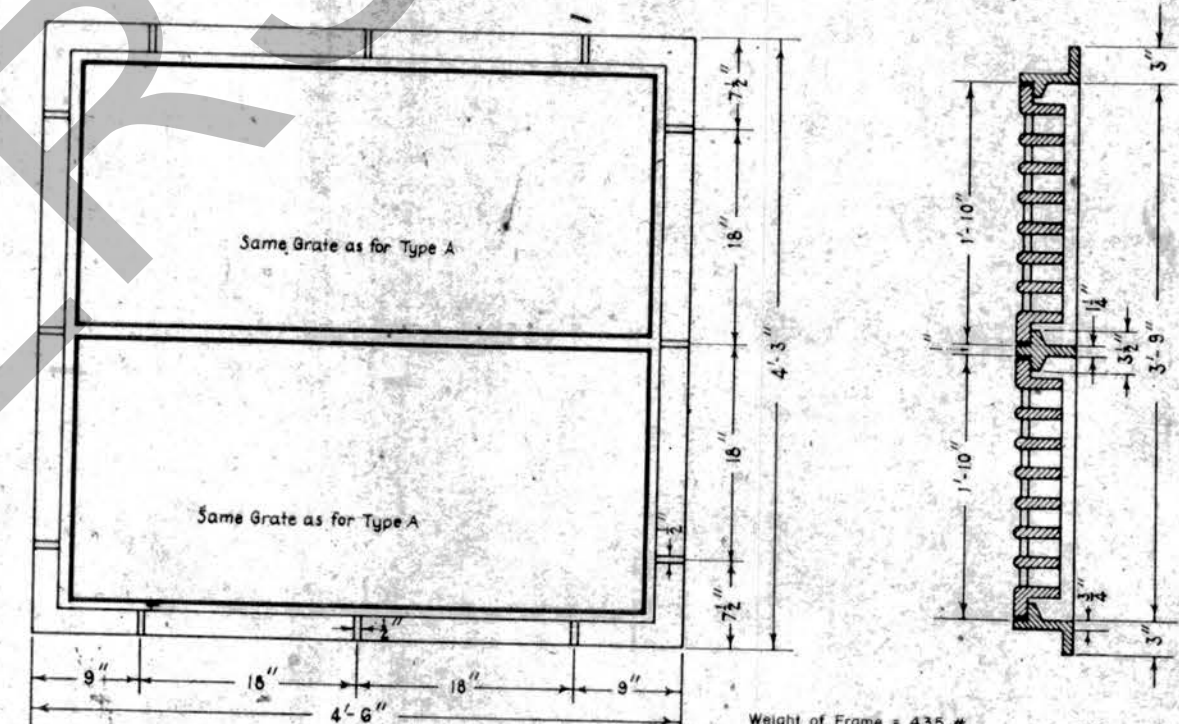


ELEVATION



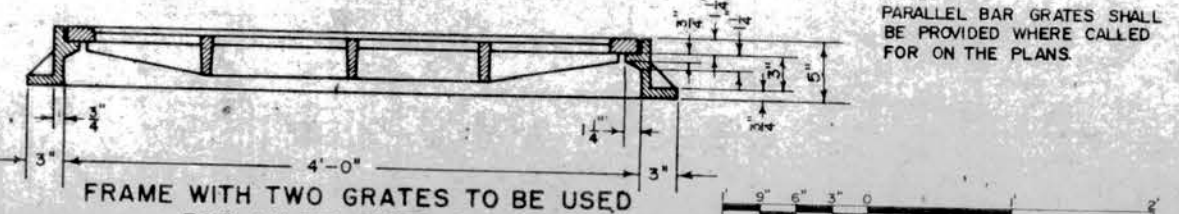
Note: Connection to pipe flume may be made by riveting on pipe or by use of collar according to method of manufacture.

GALVANIZED IRON FLUME INLET



Weight of Frame = 435 #
Weight of Each Grate = 385 #

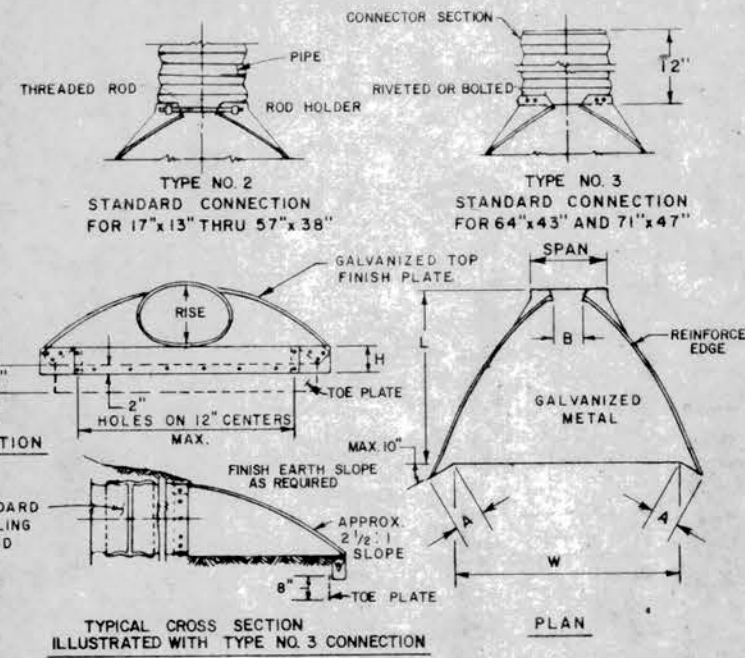
NOTE: PARALLEL BAR GRATES SHALL BE PROVIDED WHERE CALLED FOR ON THE PLANS.



FRAME WITH TWO GRATES TO BE USED FOR INLET TYPE-E

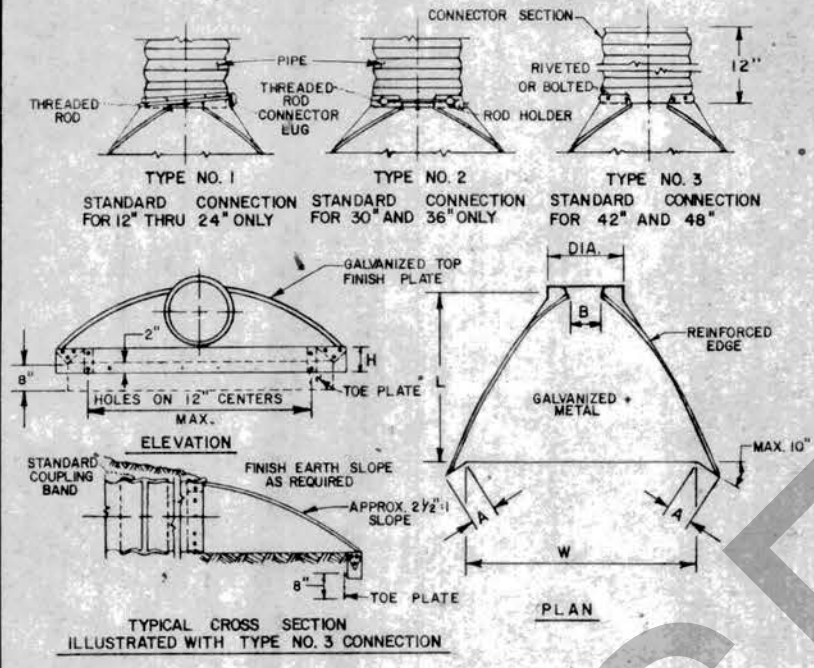
MARCH 20, 1968 E1 & E2 INLETS
AUG 22, 1967 LADDER RUNGS
DEC 6, 1961 1961 51d Spec
MAY 15, 1953 No Change
MARCH 17, 1950 REVISION 6/27/79
5-13-82 INLET GRATE REVISED AS PER MEMO
6-80 Clarified Lettering

ORIGINAL



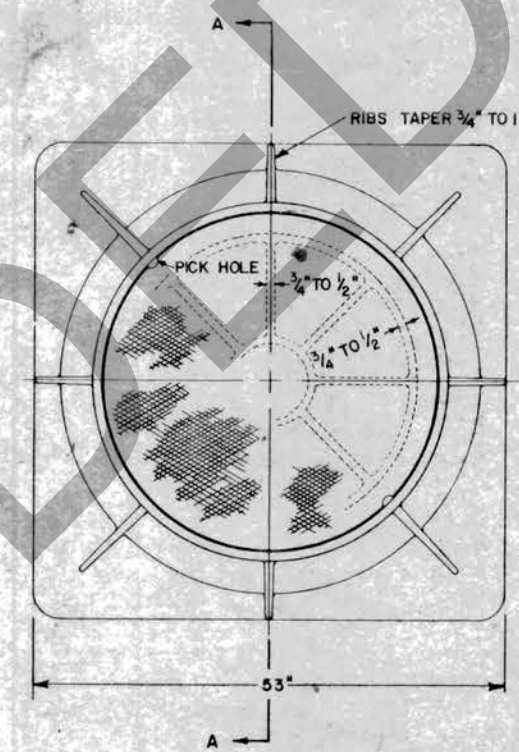
ARCH PIPE DIMENSION		GA.	DIMENSIONS					
SPAN	RISE		A 1" TOL.	B MAX.	H 1" TOL.	L 1/2" TOL.	W 2" TOL.	
17	13	16	4 1/2	9	6	19	30	
21	15	16	5 1/4	10	6	23	36	
24	18	16	6 1/4	11 1/2	6	28	42	
28	20	14	7	14	6	31 1/2	48	
35	24	14	8 3/4	16	6	38 1/2	60	
42	29	12	10 3/4	17 1/2	7 5/8	47	75	
49	33	12	12 1/4	20	9 1/8	54	85	
57	38	12	14	26	10 3/8	63	96	
64	43	12	15 3/4	27	10 3/8	70	112	
71	47	10	17 1/4	28	12 1/8	77	128	

CORRUGATED METAL HEADWALL
(ARCH PIPE)
NOT TO SCALE



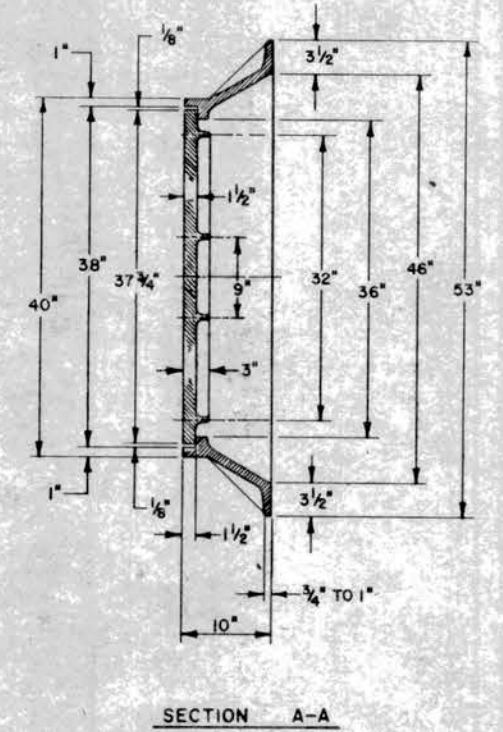
PIPE DIAMETER		GA.	DIMENSIONS					
			A 1" TOL.	B MAX.	H 1" TOL.	L 1/2" TOL.	W 2" TOL.	
12	16	16	4 3/4	6	6	21	24	
15	16	16	6	8	6	26	30	
18	16	16	7	9	6	31	36	
21	16	16	8 1/4	11	6	36	42	
24	16	16	9 1/2	12	6	42	48	
30	14	12	15	15	7 1/2	52 1/2	60	
36	12	14	18	18	9	63	72	
42	12	16	21	21	10 1/2	73 1/2	84	
48	12	18	27	27	12	84	90	

CORRUGATED METAL HEADWALL
(ROUND PIPE)
NOT TO SCALE



NOTE:
MINIMUM WEIGHTS
WEIGHT OF FRAME 630**
WEIGHT OF COVER 400**

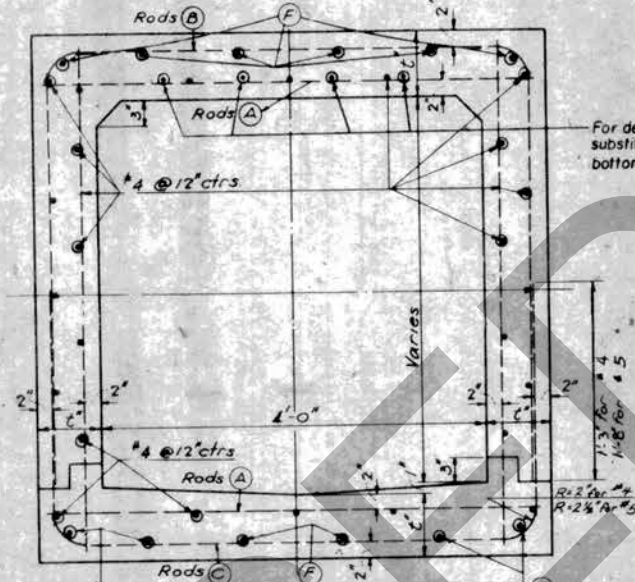
NEW MANHOLE HEAD, SQUARE FRAME, CIRCULAR COVER
NOT TO SCALE



RELETTERED SHEET RE-
VISED DIMENSIONS FOR METAL
HEADWALL (ARCH PIPE) TO AGREE
WITH CHART
6-80
8-15-79 Revised as per Memo
2-11-76 Revised as per Memo
1-28-72 Revised C.M. Headwall



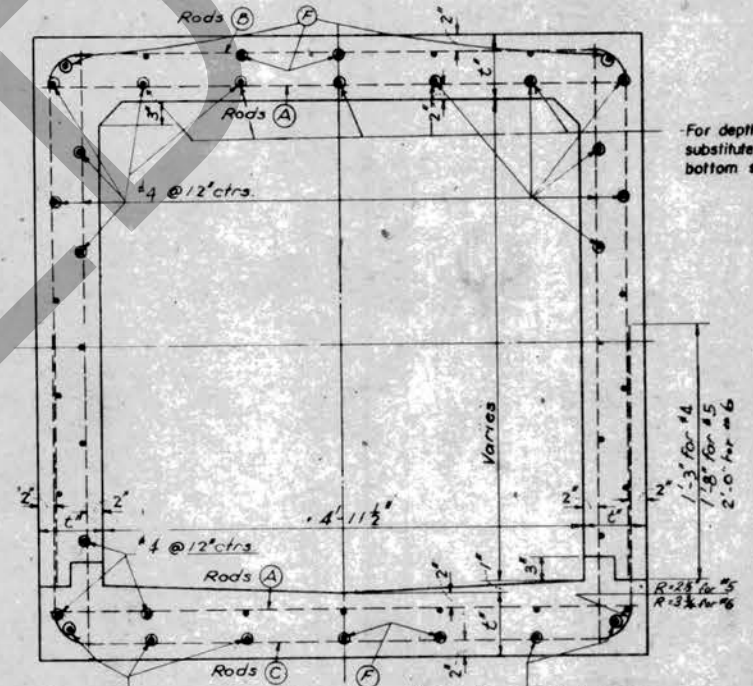
STANDARD 4'-0" CONCRETE CULVERT



NOTE: Top and bottom layer of longitudinal rods (F) to be same size as Rods A, B & C and spaced 12" ctrs.

Depth of Fill	Rods	SPAN		Thickness
		4 Ft.	Thickness	
0	A #4	4"	8"	
0	B&C #4	10"	8"	
3'-1"	A #4	9"	8"	
3'-1"	B&C #4	12"	8"	
10'-1"	A #4	6"	8"	
10'-1"	B&C #4	9"	8"	
15'-1"	A #5	7"	8"	
15'-1"	B&C #5	10"	9"	
20'-1"	A #5	6"	9"	
20'-1"	B&C #5	10"	9"	

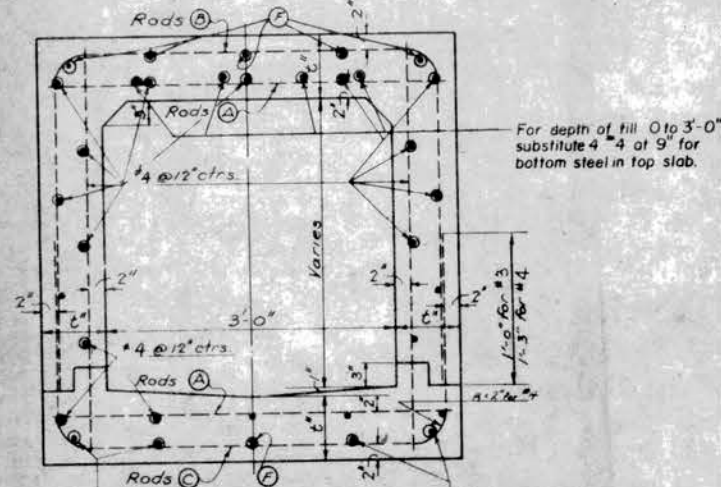
STANDARD 4'-11 1/2" CONCRETE CULVERT



NOTE: Top and bottom layer of longitudinal rods (F) to be same size as Rods A, B & C and spaced 12" ctrs.

Depth of Fill	Rods	SPAN		Thickness
		4'-11 1/2"	Thickness	
0	A #5	5"	8"	
0	B&C #5	12"	8"	
3'-1"	A #4	6"	9"	
3'-1"	B&C #4	9"	9"	
10'-1"	A #5	7"	10"	
10'-1"	B&C #5	12"	10"	
15'-1"	A #5	7"	10"	
15'-1"	B&C #5	10"	10"	
20'-1"	A #5	6"	11"	
20'-1"	B&C #5	10"	11"	

STANDARD 3'-0" CONCRETE CULVERT



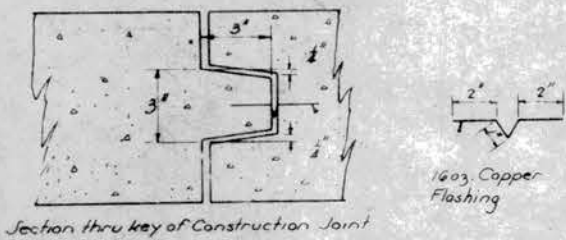
NOTE: Top and bottom layer of longitudinal rods (F) to be same size as Rods A, B & C and spaced 12" ctrs.

Depth of Fill	Rods	SPAN		Thickness
		3 Ft.	Thickness	
0	A #4	5"	8"	
0	B&C #4	12"	8"	
3'-1"	A #4	12"	8"	
3'-1"	B&C #4	12"	8"	
10'-1"	A #4	9"	8"	
10'-1"	B&C #4	10"	8"	
15'-1"	A #4	7"	8"	
15'-1"	B&C #4	9"	8"	
20'-1"	A #4	6"	8"	
20'-1"	B&C #4	7"	8"	

VOLUME OF CONCRETE AND WEIGHT OF REINFORCEMENT PER LINEAR FOOT OF CULVERT

Size of Culvert Opening FT.	3'-0" x 3'-0"				4'-0" x 3'-0"				4'-0" x 4'-0"				4'-11 1/2" x 3'-0"				4'-11 1/2" x 4'-0"				4'-11 1/2" x 5'-0"										
	3	10	15	20	25	3	10	15	20	25	3	10	15	20	25	3	10	15	20	25	3	10	15	20	25	3	10	15	20	25	40
MAX Depth of Fill FT.	3	10	15	20	25	3	10	15	20	25	3	10	15	20	25	3	10	15	20	25	3	10	15	20	25	3	10	15	20	25	40
Volume of Concrete Cu Yd. Per Ft.	0.37	0.37	0.37	0.37	0.37	0.42	0.42	0.42	0.42	0.48	0.47	0.47	0.47	0.47	0.54	0.47	0.47	0.54	0.61	0.61	0.52	0.52	0.60	0.67	0.67	0.57	0.57	0.65	0.73	0.73	0.82
Reinforcement Lb. Per Ft.	53	43	48	53	59	66	50	60	75	79	70	54	63	84	89	88	74	84	89	105	94	81	90	96	114	99	85	95	102	122	150

NOTE: First dimension of Culvert Size indicates the span. Culverts to be constructed of Class B concrete.



CONSTRUCTION JOINT OF CULVERT

To be constructed in top, walls and base of Culvert not more than 35'-0" apart

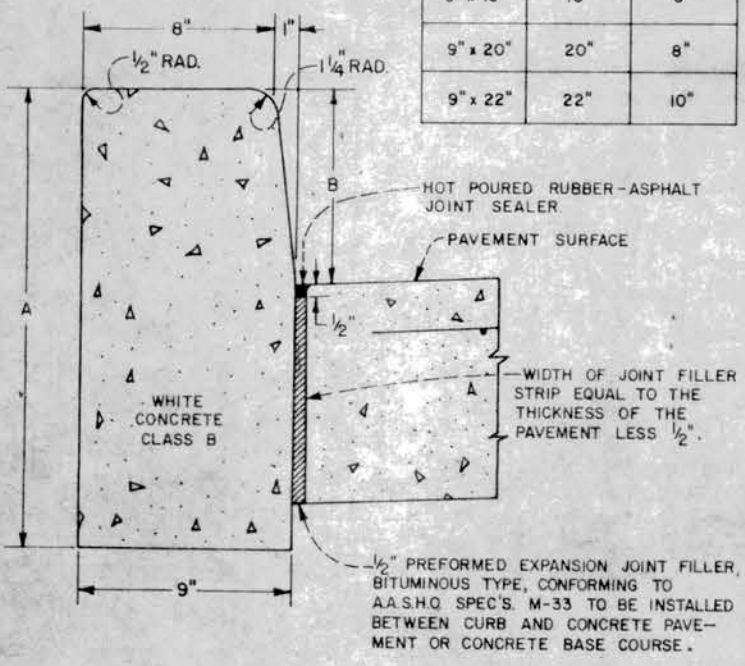
Revised 5-1-72
 Revised 1-15-74
 No Change / Jan 15 1983
 Revised Jan 27 1985
 Revised Sept 13 1986

REVISIONS:

5-25-75	REVISED WHITE & GREY CONCRETE CURB TO COMPLETELY WHITE
6-19-72	ADDED CURB TREATMENT
6-29-72	REMOVED WOOD TRAFFIC GUIDE
8-17-71	REVISED PAINT NOTE
6-18-68	REV. WOOD TRAFFIC GUIDE NOTES
3-5-68	REV. JOINT FILLER SPEC. NO.
7-18-63	REV. DEPRESSED CURB
8-28-61	2" MINIMUM WHITE CONCRETE DRIVEWAY CURB
4-2-61	ADDED DRIVEWAY CURB
1-8-61	REV. WOOD TRAFFIC GUIDE
6-10-60	REV. W.V.B. JOINT MATERIAL
9-4-59	REV. W.V.B. JOINT MATERIAL
3-11-59	REV. JOINT MATERIAL
10-25-56	ORIGINAL DRAWING

REDRAWN AS PER MEMO 1-11-79

CURB SIZE	DIM. A	DIM. B
9" x 18"	18"	6"
9" x 20"	20"	8"
9" x 22"	22"	10"



9" x 18" WHITE CONCRETE VERTICAL CURB

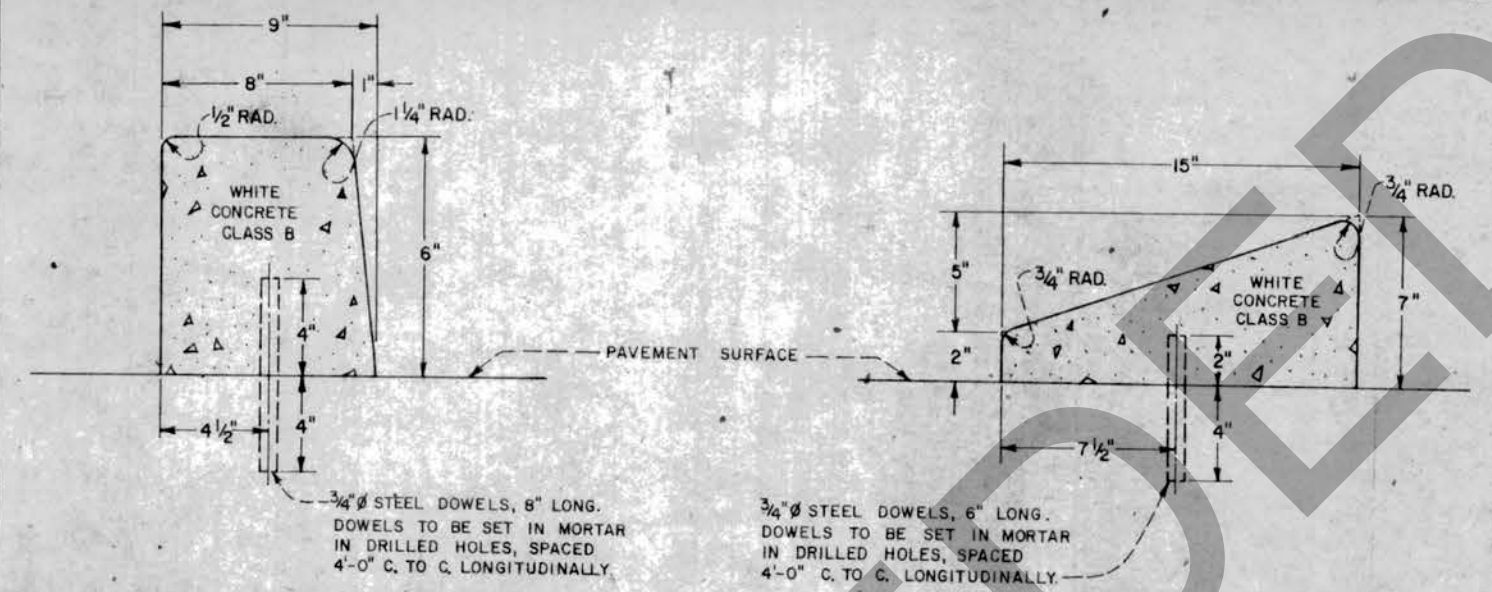
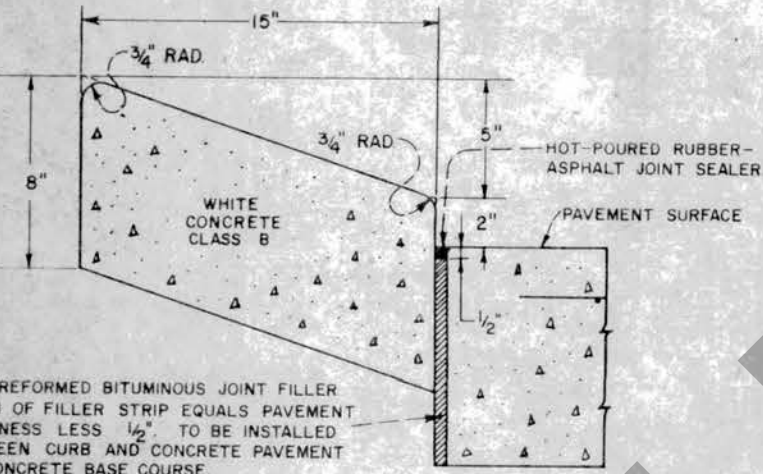
TRANSVERSE JOINTS 1/2" WIDE SHALL BE INSTALLED IN THE CURB 20'-0" APART AND SHALL BE FILLED WITH PREFORMED BITUMINOUS-IMPREGNATED FIBER JOINT FILLER, COMPLYING WITH THE REQUIREMENTS OF A.A.S.H.T.O. SPEC. M-213, RECESSED 1/4" IN FROM FRONT FACE AND TOP OF CURB. EXPANSION JOINTS THRU AND ADJACENT TO THE CURB SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CURB.

1/2" PREFORMED BITUMINOUS JOINT FILLER WIDTH OF FILLER STRIP EQUALS PAVEMENT THICKNESS LESS 1/2" TO BE INSTALLED BETWEEN CURB AND CONCRETE PAVEMENT OR CONCRETE BASE COURSE.

1/2" PREFORMED EXPANSION JOINT FILLER, BITUMINOUS TYPE, CONFORMING TO A.A.S.H.O. SPEC'S M-33 TO BE INSTALLED BETWEEN THE CURB AND CONCRETE PAVEMENT OR CONCRETE BASE COURSE.

TRANSVERSE JOINTS 1/2" WIDE SHALL BE INSTALLED IN THE CURB 20'-0" APART AND SHALL BE FILLED WITH PREFORMED BITUMINOUS-IMPREGNATED FIBER JOINT FILLER, COMPLYING WITH THE REQUIREMENTS OF A.A.S.H.T.O. SPEC. M-213, RECESSED 1/4" IN FROM FRONT FACE AND TOP OF CURB. EXPANSION JOINTS THRU AND ADJACENT TO THE CURB SHALL BE INCLUDED IN THE UNIT PRICE BID FOR CURB.

15" x 8" WHITE CONCRETE SLOPING CURB



9" x 6" WHITE CONCRETE VERTICAL CURB, DOWELLED 15" x 4 1/2" WHITE CONCRETE SLOPING CURB, DOWELLED

GENERAL NOTES APPLYING TO ALL TYPES OF DOWELED CURBS

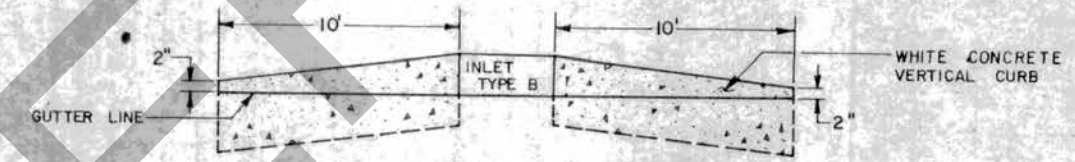
TRANSVERSE JOINTS SHALL BE INSTALLED IN THE CURBS AT AND DIRECTLY OVER TRANSVERSE JOINTS IN THE PAVEMENT. DEFINITE CRACKS THRU THE PAVEMENT SHALL ALSO BE TREATED AS JOINTS. ADDITIONAL JOINTS SHALL ALSO BE CONSTRUCTED IN THE CURB SO SPACED AS TO MAKE EQUAL SECTIONS NOT OVER 15'-0" IN LENGTH. THE TRANSVERSE JOINTS SHALL BE CONSTRUCTED AS SPECIFIED FOR (WHITE CONCRETE VERTICAL CURB), EXCEPT THE THICKNESS OF THE JOINT FILLER IN THE CURB SHALL BE AS FOLLOWS:

- 1/2" FOR INTERMEDIATE JOINTS AND JOINTS OVER DEFINITE CRACKS.
- 1/2" OVER PAVEMENT JOINTS WHERE SLAB LENGTH IS 50' OR LESS.
- 1" OVER PAVEMENT JOINTS WHERE SLAB LENGTH IS MORE THAN 50'. VARIABLE IN MULTIPLES OF 1/2" BUT NOT LESS THEN THE EXISTING WIDTH OF THE TRANSVERSE JOINTS IN BRIDGES AND THE JOINTS BETWEEN THE APPROACH SLABS AND BRIDGES.

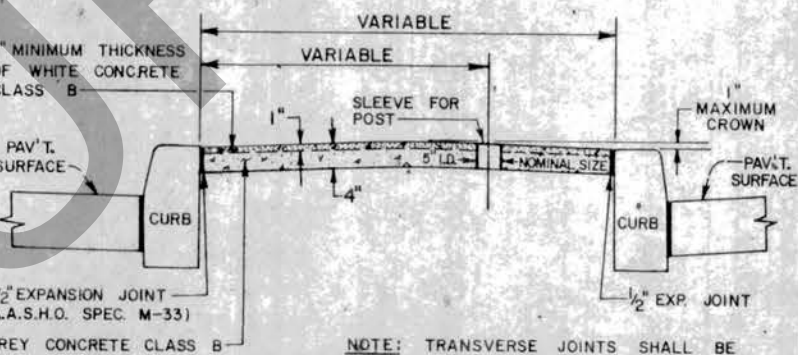
FOR THICKNESS OF 1" OR MORE, LAYERS OF 1/2" MATERIAL MAY BE GLUED OR OTHERWISE FASTENED TOGETHER BY A MEANS SATISFACTORY TO THE ENGINEER. WHERE THE REQUIRED JOINT OPENING EXCEEDS 1", THE CONTRACTOR MAY CONSTRUCT OPEN JOINTS, IF DESIRED.

WHERE THE CURB IS TO BE CONSTRUCTED ON EXISTING CONCRETE PAVEMENT SURFACE OR CONCRETE BASE COURSE, THE SURFACE OF THE CONCRETE PAVEMENT OR CONCRETE BASE SHALL BE CLEANED IN ACCORDANCE WITH ART. 5.5.3 OF THE 1961 STANDARD SPECIFICATIONS PRIOR TO CONSTRUCTION OF THE CURB THEREON.

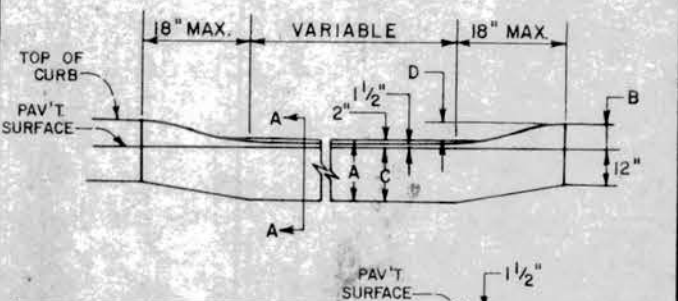
WHERE DOWELED CURB IS TO BE CONSTRUCTED ACROSS A LONGITUDINAL JOINT IN THE EXISTING PAVEMENT, THE DOWELS IN THE SHORTER PORTION OF THE CURB PANEL SHALL BE OMITTED AND THE CURB IN THIS PORTION OF THE PANEL SHALL BE CONSTRUCTED WITH 45# SMOOTH ROLL ROOFING BETWEEN IT AND THE EXISTING PAVEMENT.



CURB TREATMENT AT LOW POINTS (BERM SECTION) AND ALL CURB ENDS

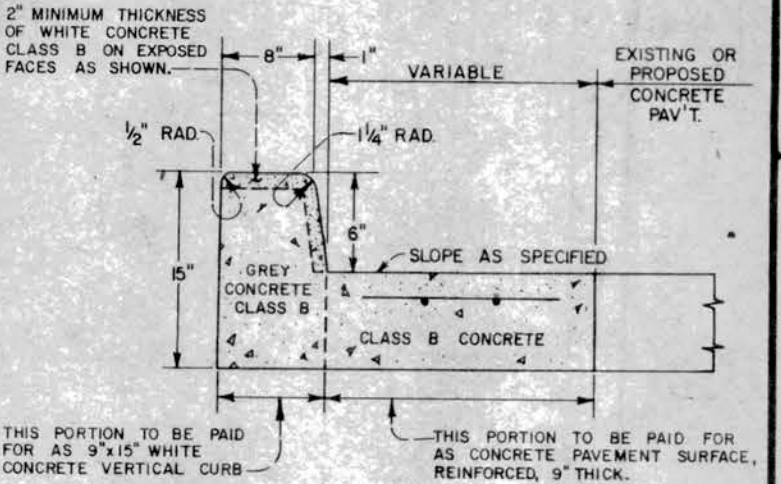
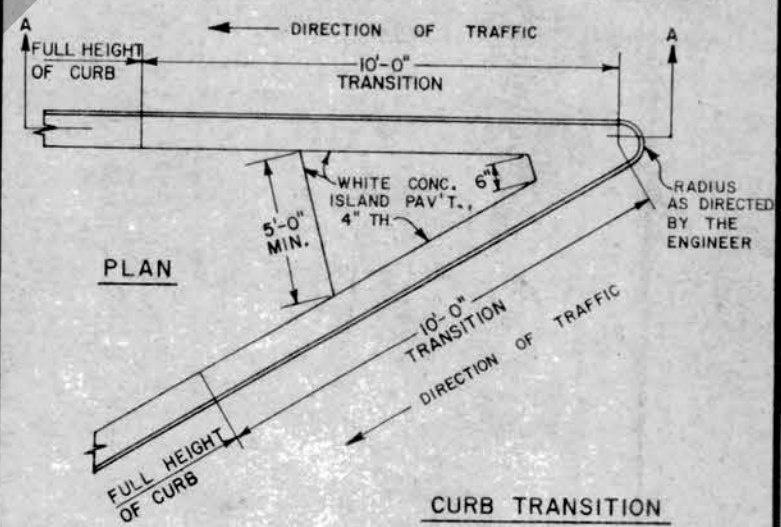
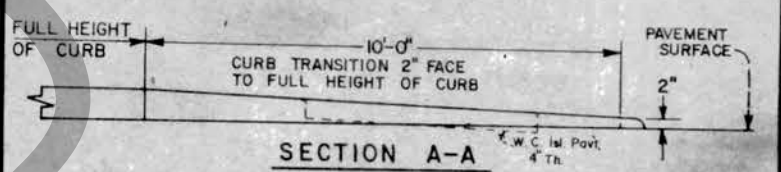


WHITE CONCRETE ISLAND PAVEMENT, 4" THICK



CURB SIZE	DIM. A	DIM. B	DIM. C	DIM. D
9" x 18"	18"	6"	16"	4 1/2"
9" x 20"	20"	8"	18"	6 1/2"
9" x 22"	22"	10"	20"	8 1/2"

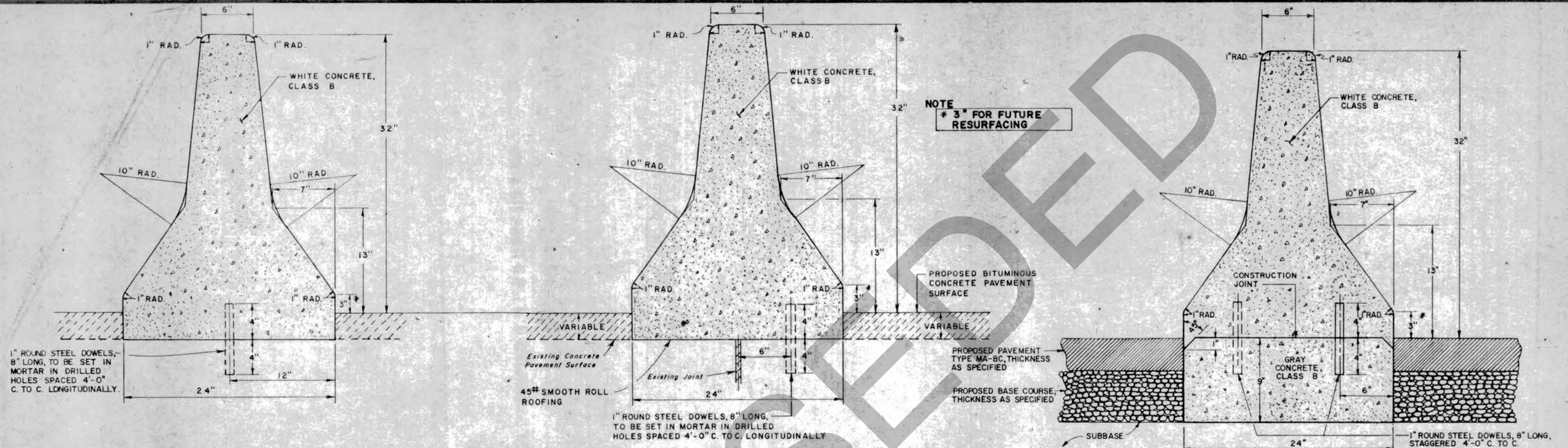
METHOD OF DEPRESSING CURB AT DRIVEWAYS



9" x 15" WHITE CONCRETE VERTICAL CURB, (MONOLITHIC WITH PAVEMENT)

EXPANSION JOINTS 1/2" WIDE IN THE CURB, AND EXPANSION JOINTS TYPE A IN THE MONOLITHIC PAVEMENT STRIP SHALL BE DIRECTLY OPPOSITE EVERY TRANSVERSE JOINT IN THE CENTRAL PAVEMENT STRIPS.

JOINT MATERIAL IN THE CURB SHALL BE AS SPECIFIED FOR WHITE CONCRETE VERTICAL CURB. THE TRANSVERSE EXPANSION JOINT MATERIAL SHALL NOT EXTEND THRU THE CURB.



24" x 41" WHITE CONCRETE BARRIER CURB, DOWELLED

NOTES APPLYING TO ALL TYPES OF BARRIER CURB

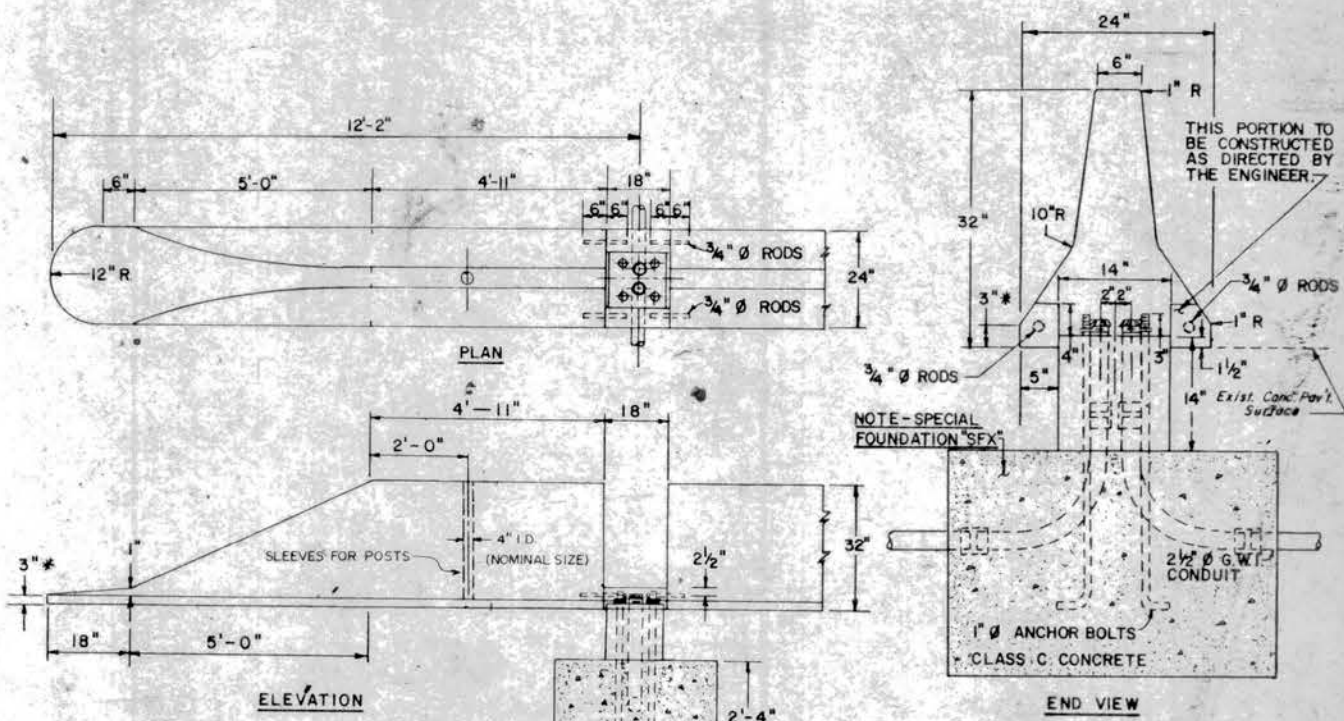
(a) Where barrier curb, dowelled, is to be constructed on existing concrete pavement or existing concrete base course. Transverse joints shall be installed in the curbs at and directly over transverse joints in the pavement. Definite cracks thru the pavement shall also be treated as joints. Additional joints shall also be constructed in the curb so spaced as to make equal sections not over 15'-0" in length. The transverse joints shall be filled with preformed bituminous-impregnated fiber joint filler, complying with the requirements of AASHO Specification M-213, recessed 1/4" in from faces and top of curb. The cost of the transverse expansion joints in the curb shall be included in the unit price bid for the barrier curb. The thickness of the transverse expansion joint filler shall be as follows:
 1/2" for intermediate joints and joints over definite cracks.
 1/2" over pavement joints where slab length is 50' or less.
 1" over pavement joints where slab length is more than 50'.
 Variable in multiples of 1/2" but not less than the existing width of the transverse joints in bridges and joints between the approach slabs and bridges.
 For thicknesses of 1" or more, layers of 1/2" material may be glued or otherwise fastened together by a means satisfactory to the Engineer. Where the required joint opening exceeds 1", the Contractor may construct open joints, if desired.

The surface of the existing concrete pavement or concrete base course shall be cleaned in accordance with Art. 5.5.3 of the 1961 Standard Specifications prior to the construction of the curb thereon.

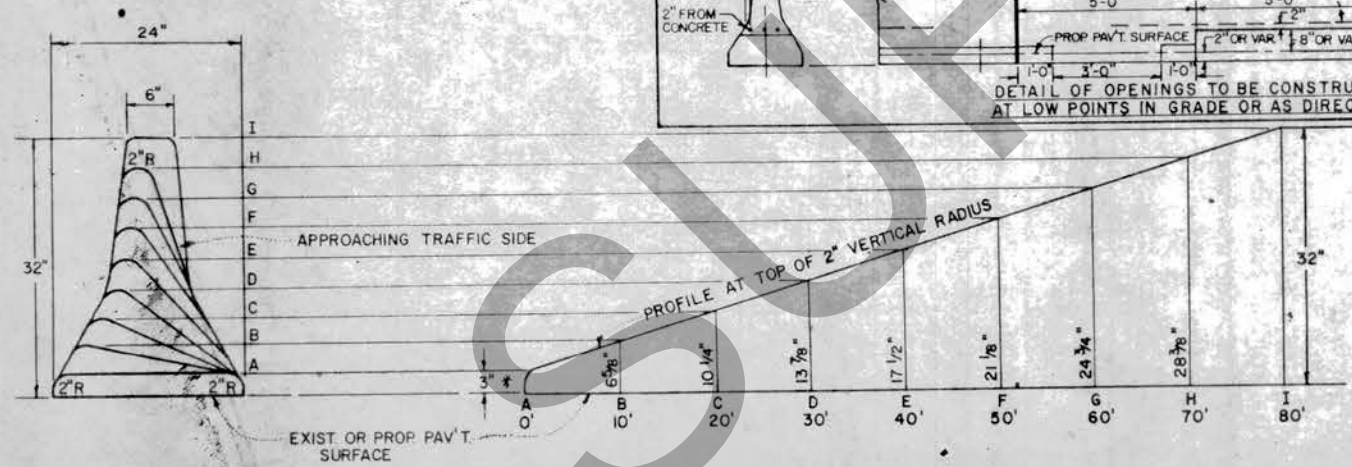
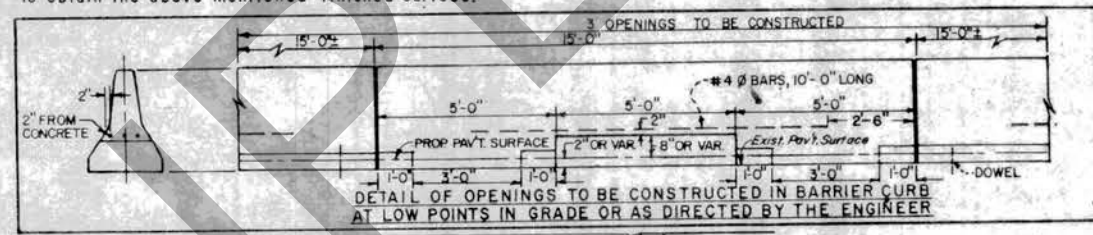
Where dowelled curb is to be constructed across a longitudinal joint in the existing pavement or base course, the dowels in the shorter portion of the curb panel shall be omitted and the curb in this portion of the panel shall be constructed with 45# smooth roll roofing between it and the existing pavement.

(b) Where barrier curb is to be constructed on proposed concrete base. Transverse joints 1/2" wide shall be installed in the base 20'-0" apart and in the barrier curb directly over joints in the base. The joints shall be filled with preformed bituminous-impregnated fiber joint filler, complying with the requirements of AASHO Specification M-213, recessed 1/4" in from faces and top of curb, the cost of the transverse expansion joints in the base and in the curb shall be included in the unit price bid for the barrier curb.

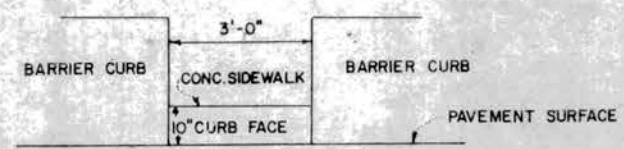
(c) General
 The finished surface of the barrier curb shall be smooth, dense, unsplit and free from air bubble pockets, depressions and honey comb. If the Engineer deems it necessary, the curb shall be given a wood float finish in order to obtain the above mentioned finished surface.



BARRIER CURB AT LIGHTING POLE BASE INSTALLATION



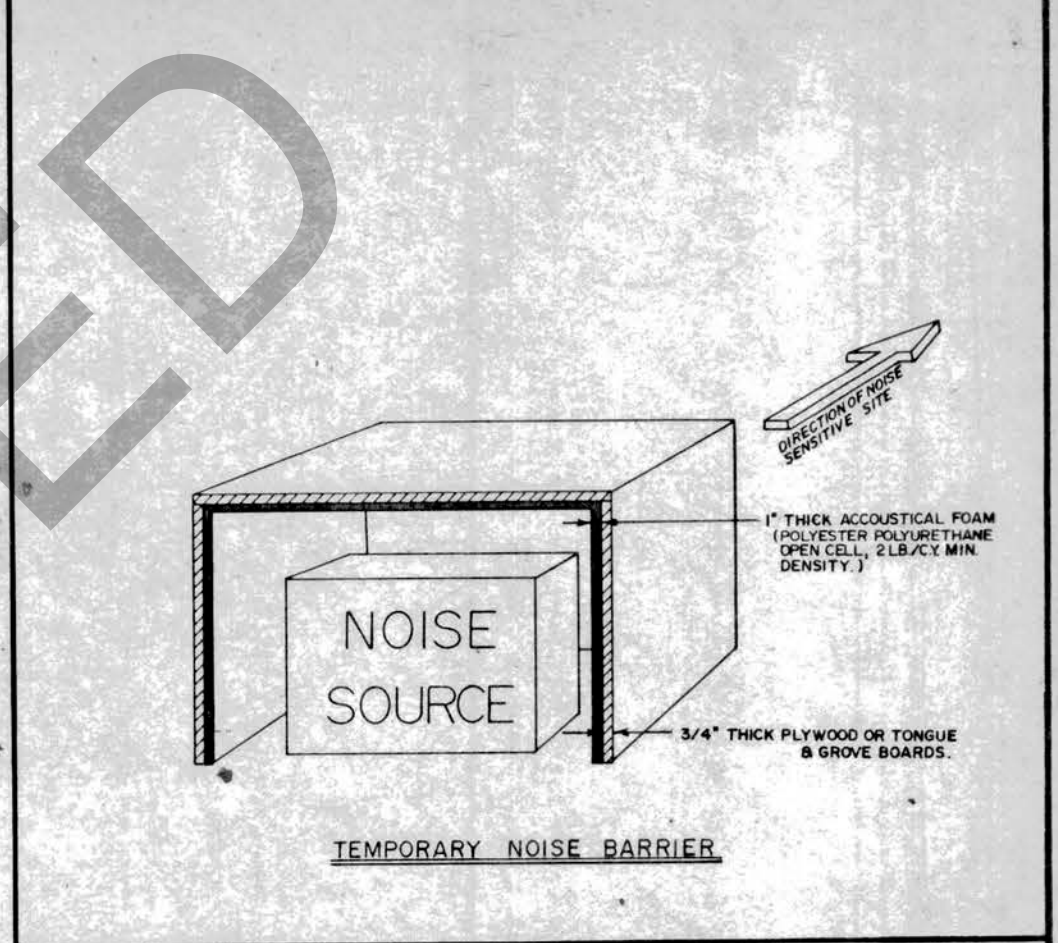
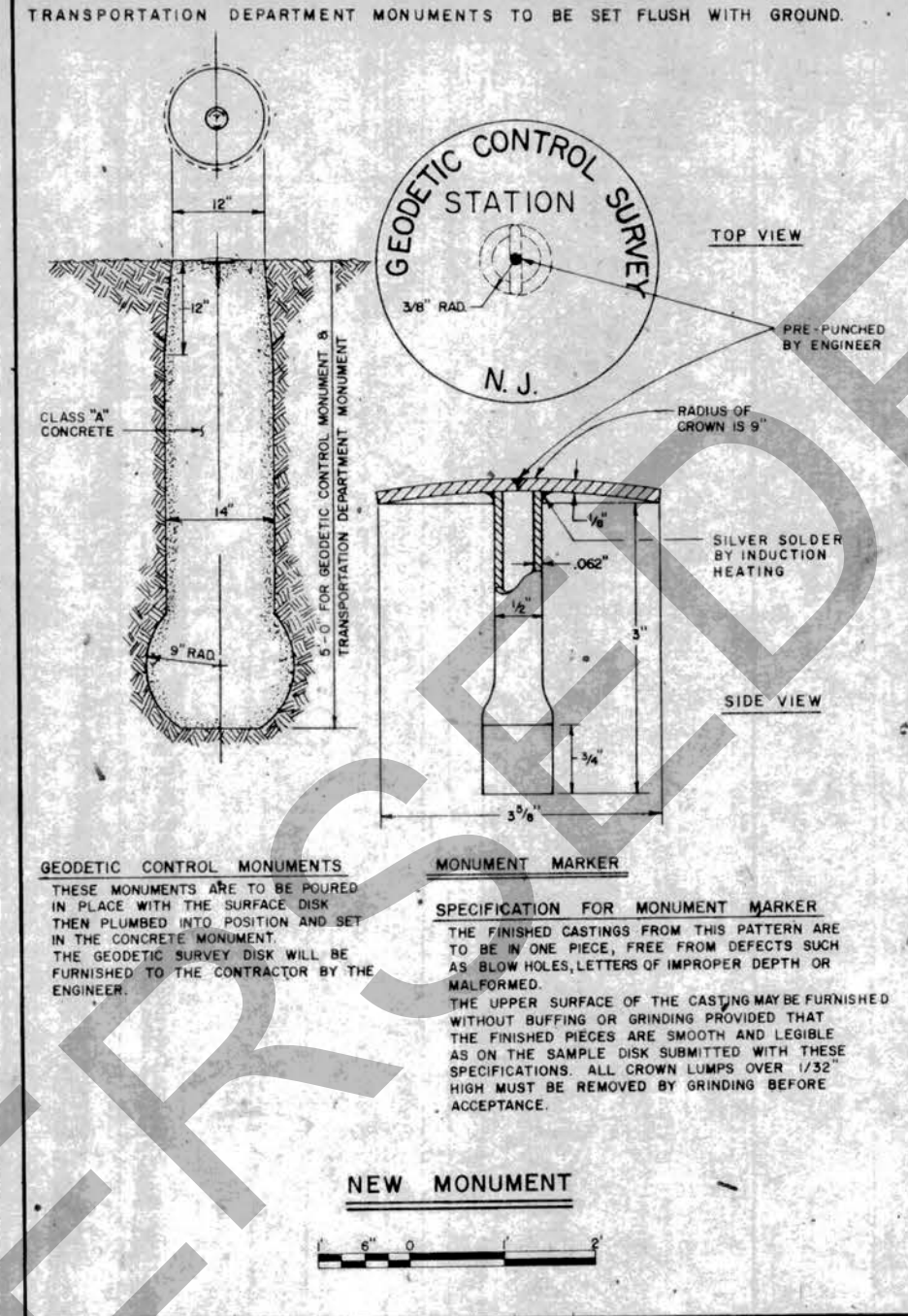
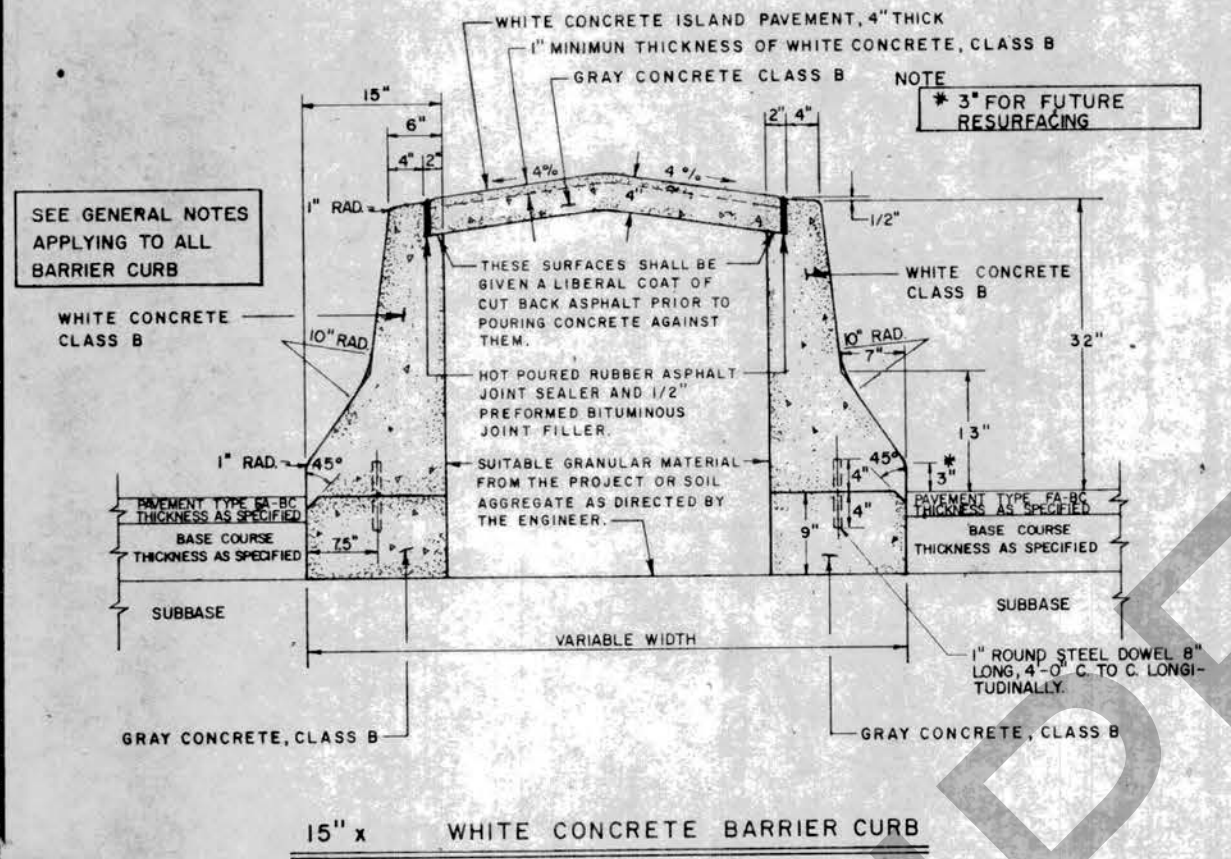
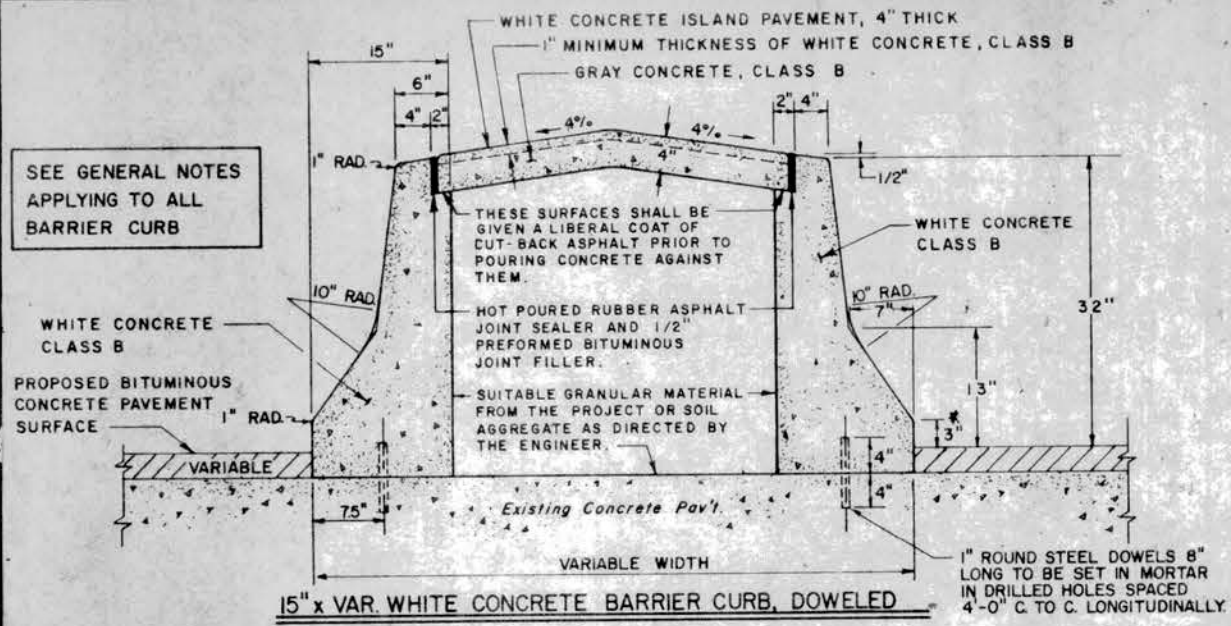
DETAIL OF TRANSITION AT EACH END OF PROJECT

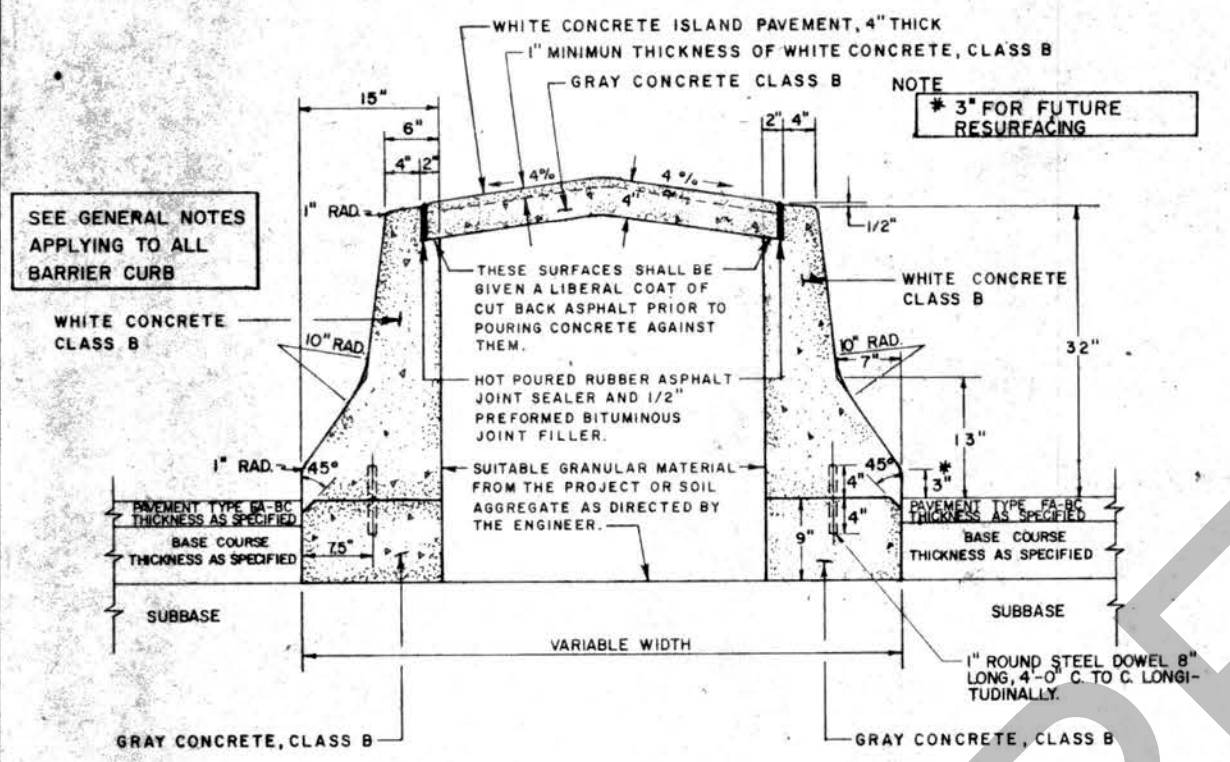
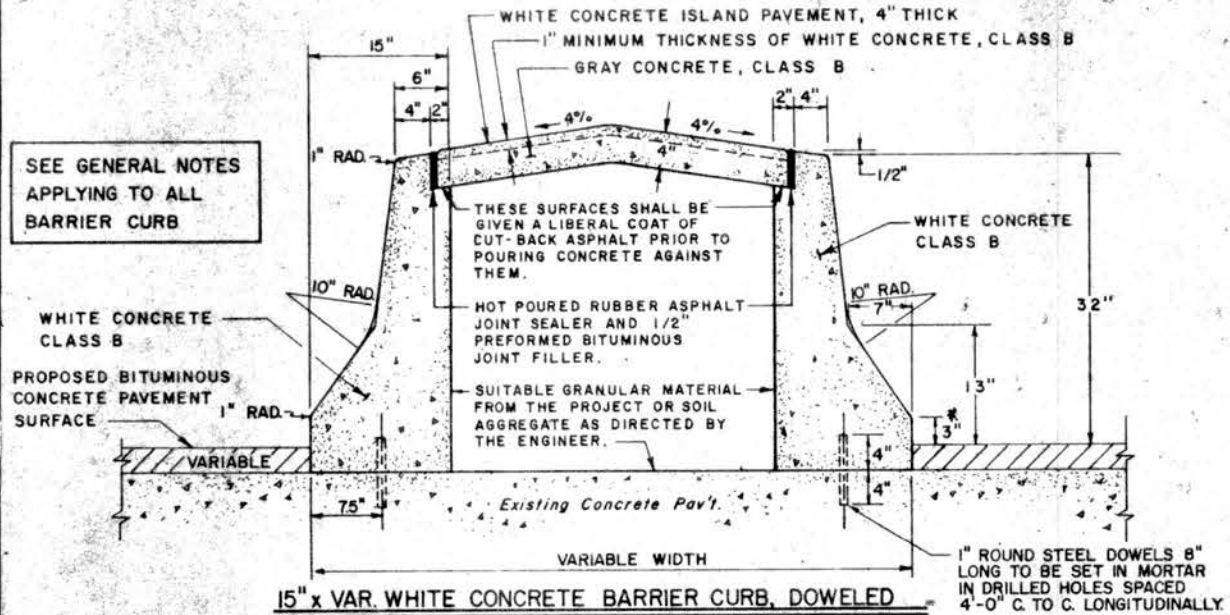


PEDESTRIAN CROSSING

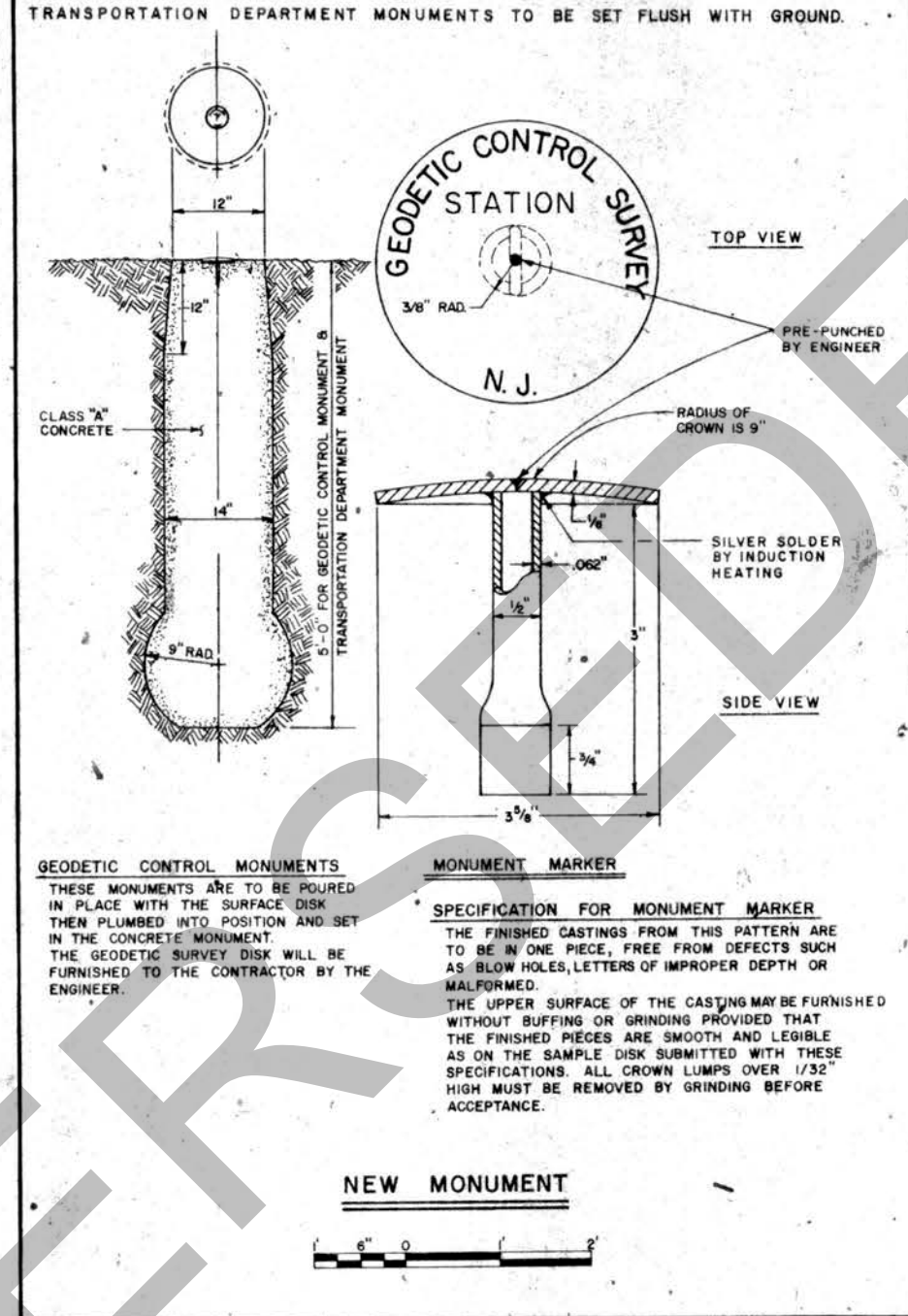
Revised 2-18-76 24.35 CONC BAR CURB DOWEL
 Revised 5-5-76 LIGHT STAND SPACING
 Revised 9-5-68
 Revised 8-21-62 As per Mr. Pfister
 Revised 12-6-61 1961 SLD Spec
 Orig. Drawing Approved 2-10-61
 REVISED 5-80 CLARIFIED LETTERING
 REVISED PER MEMO DATED 7-6-78

Revised Bar. Curb (M.A.M.C.) 1/16
 Revised Noise Bar 4-24-87
 Revised Lettering 6-2-90
 Revised 8-25-75
 Revised 12-12-73
 7-13-72
 Original Drawing 12-18-69



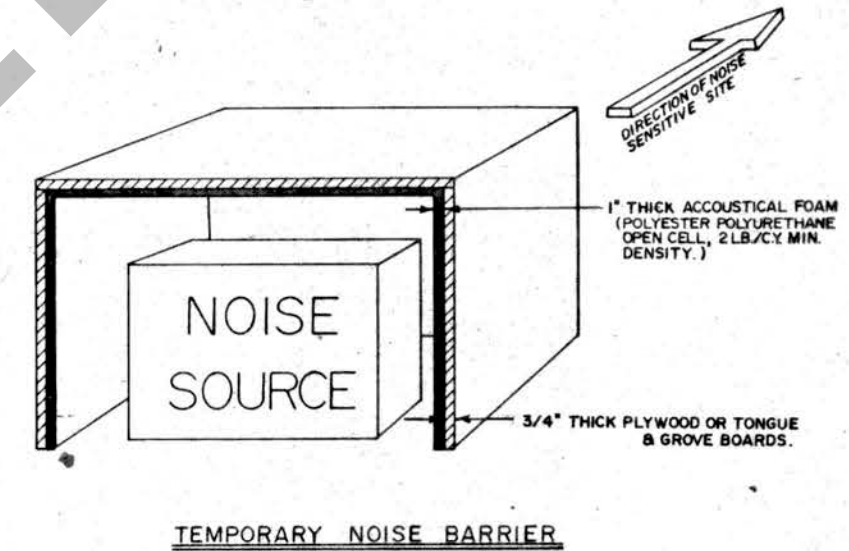


15' x WHITE CONCRETE BARRIER CURB



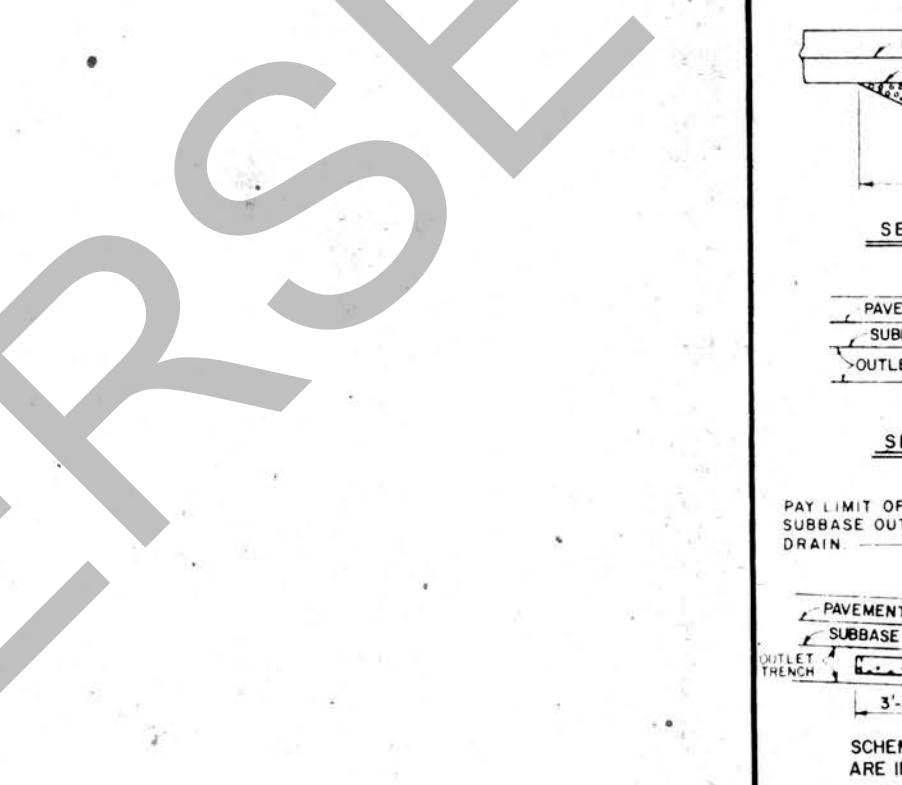
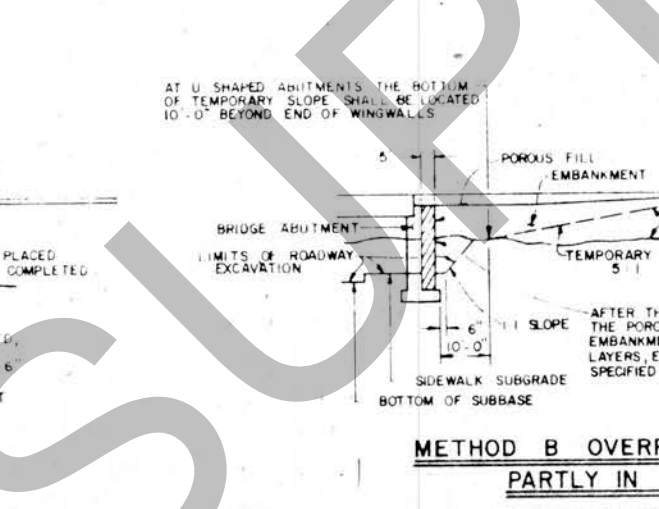
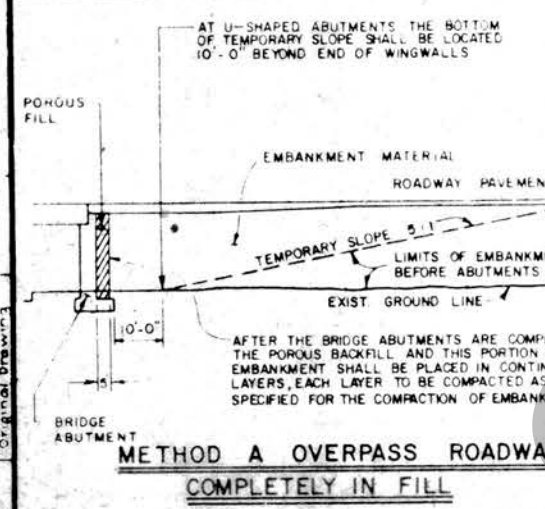
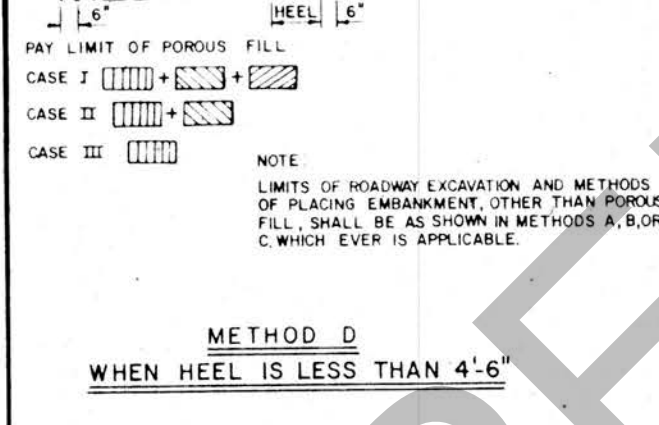
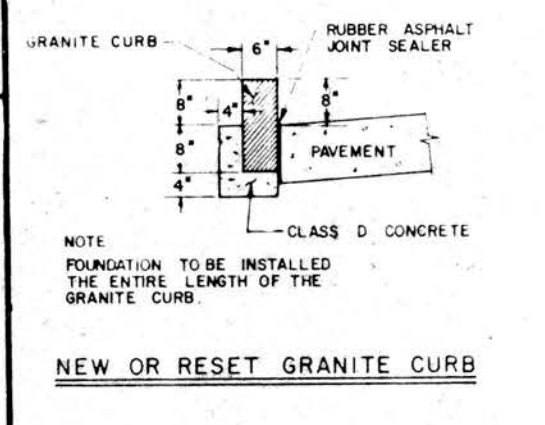
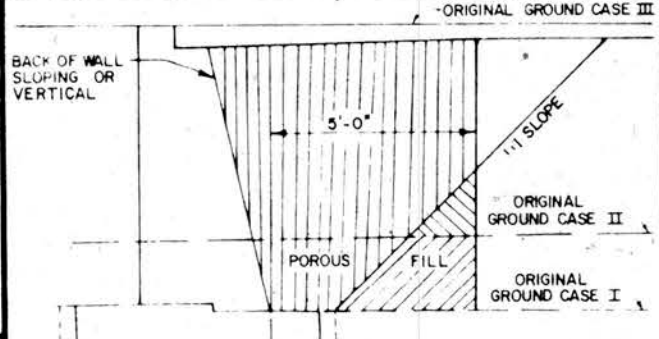
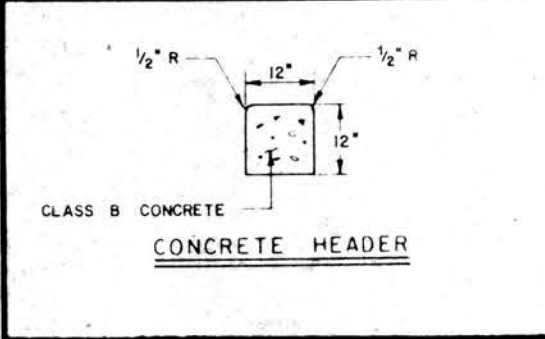
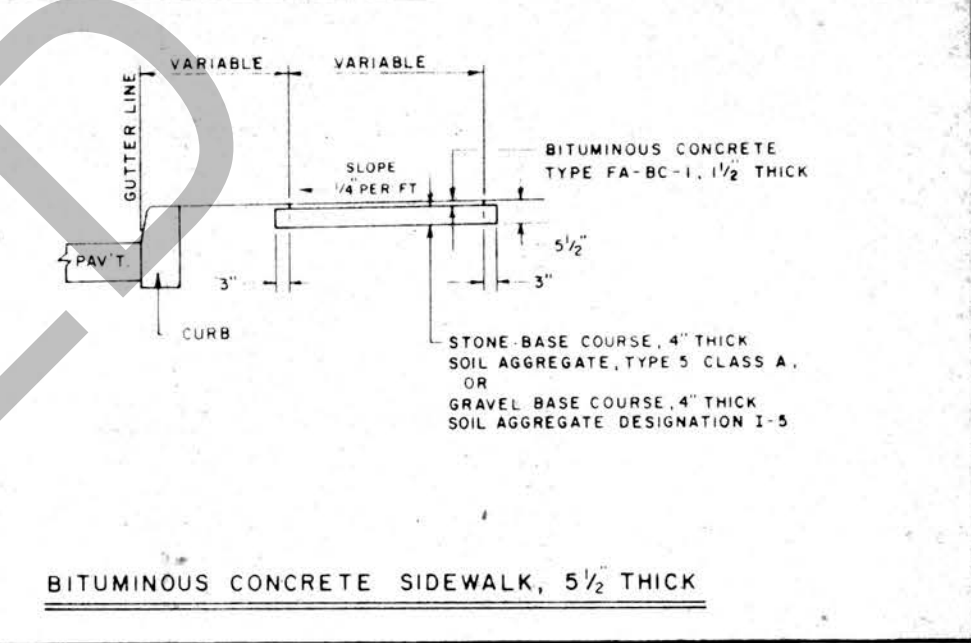
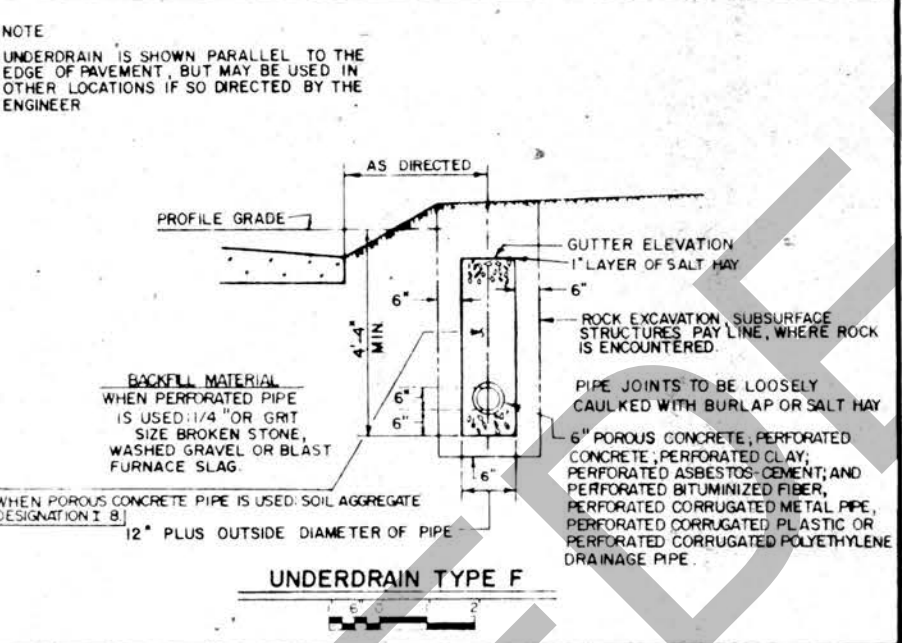
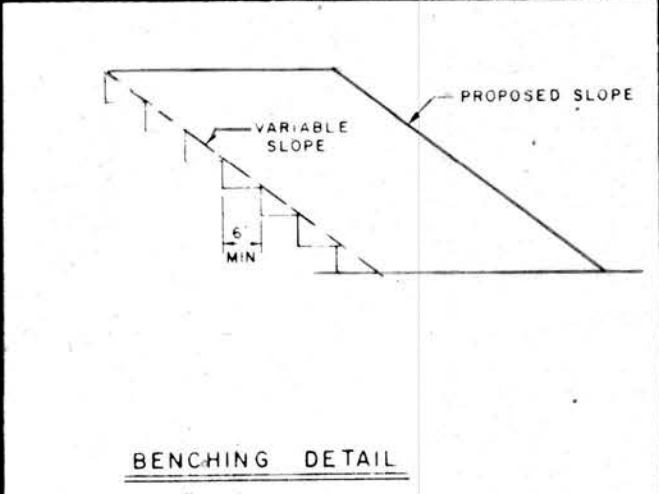
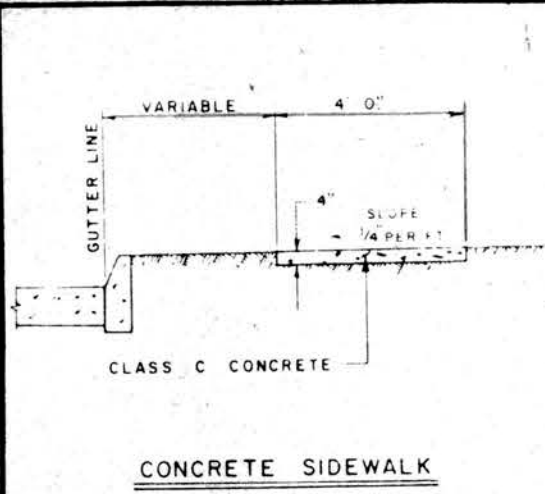
GEODETIC CONTROL MONUMENTS
 THESE MONUMENTS ARE TO BE POURED IN PLACE WITH THE SURFACE DISK THEN PLUMBED INTO POSITION AND SET IN THE CONCRETE MONUMENT. THE GEODETIC SURVEY DISK WILL BE FURNISHED TO THE CONTRACTOR BY THE ENGINEER.

MONUMENT MARKER
SPECIFICATION FOR MONUMENT MARKER
 THE FINISHED CASTINGS FROM THIS PATTERN ARE TO BE IN ONE PIECE, FREE FROM DEFECTS SUCH AS BLOW HOLES, LETTERS OF IMPROPER DEPTH OR MALFORMED. THE UPPER SURFACE OF THE CASTING MAY BE FURNISHED WITHOUT BUFFING OR GRINDING PROVIDED THAT THE FINISHED PIECES ARE SMOOTH AND LEGIBLE AS ON THE SAMPLE DISK SUBMITTED WITH THESE SPECIFICATIONS. ALL CROWN LUMPS OVER 1/32" HIGH MUST BE REMOVED BY GRINDING BEFORE ACCEPTANCE.



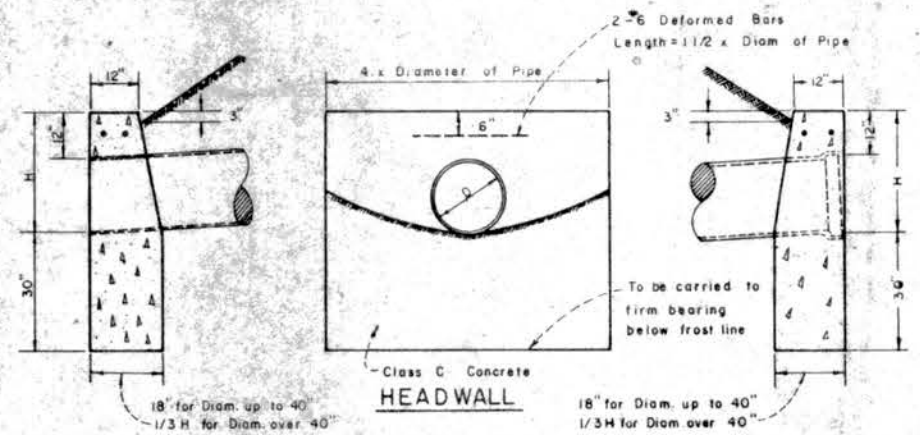
TEMPORARY NOISE BARRIER

Revised	Bar. Curb (Annotated)	1/16/82
Revised	Noise Bar	9/29/81
Revised	LeVerning	6-2-80
Revised	Revised	6-2-75
Revised	Revised	12-12-73
7-13-72	Original Drawing	12-18-69



10/15/88	Rev. 1.0	Original Drawing
11/15/88	Rev. 2.0	Added 1/2" R to Concrete Header
12/15/88	Rev. 3.0	Added 1/2" R to Concrete Header
1/15/89	Rev. 4.0	Added 1/2" R to Concrete Header
2/15/89	Rev. 5.0	Added 1/2" R to Concrete Header
3/15/89	Rev. 6.0	Added 1/2" R to Concrete Header
4/15/89	Rev. 7.0	Added 1/2" R to Concrete Header
5/15/89	Rev. 8.0	Added 1/2" R to Concrete Header
6/15/89	Rev. 9.0	Added 1/2" R to Concrete Header
7/15/89	Rev. 10.0	Added 1/2" R to Concrete Header
8/15/89	Rev. 11.0	Added 1/2" R to Concrete Header
9/15/89	Rev. 12.0	Added 1/2" R to Concrete Header
10/15/89	Rev. 13.0	Added 1/2" R to Concrete Header
11/15/89	Rev. 14.0	Added 1/2" R to Concrete Header
12/15/89	Rev. 15.0	Added 1/2" R to Concrete Header
1/15/90	Rev. 16.0	Added 1/2" R to Concrete Header
2/15/90	Rev. 17.0	Added 1/2" R to Concrete Header
3/15/90	Rev. 18.0	Added 1/2" R to Concrete Header
4/15/90	Rev. 19.0	Added 1/2" R to Concrete Header
5/15/90	Rev. 20.0	Added 1/2" R to Concrete Header
6/15/90	Rev. 21.0	Added 1/2" R to Concrete Header
7/15/90	Rev. 22.0	Added 1/2" R to Concrete Header
8/15/90	Rev. 23.0	Added 1/2" R to Concrete Header
9/15/90	Rev. 24.0	Added 1/2" R to Concrete Header
10/15/90	Rev. 25.0	Added 1/2" R to Concrete Header
11/15/90	Rev. 26.0	Added 1/2" R to Concrete Header
12/15/90	Rev. 27.0	Added 1/2" R to Concrete Header
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3/15/91	Rev. 30.0	Added 1/2" R to Concrete Header
4/15/91	Rev. 31.0	Added 1/2" R to Concrete Header
5/15/91	Rev. 32.0	Added 1/2" R to Concrete Header
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7/15/91	Rev. 34.0	Added 1/2" R to Concrete Header
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6/15/93	Rev. 57.0	Added 1/2" R to Concrete Header
7/15/93	Rev. 58.0	Added 1/2" R to Concrete Header
8/15/93	Rev. 59.0	Added 1/2" R to Concrete Header
9/15/93	Rev. 60.0	Added 1/2" R to Concrete Header
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6/15/94	Rev. 69.0	Added 1/2" R to Concrete Header
7/15/94	Rev. 70.0	Added 1/2" R to Concrete Header
8/15/94	Rev. 71.0	Added 1/2" R to Concrete Header
9/15/94	Rev. 72.0	Added 1/2" R to Concrete Header
10/15/94	Rev. 73.0	Added 1/2" R to Concrete Header
11/15/94	Rev. 74.0	Added 1/2" R to Concrete Header
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3/15/95	Rev. 78.0	Added 1/2" R to Concrete Header
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8/15/95	Rev. 83.0	Added 1/2" R to Concrete Header
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12/15/96	Rev. 99.0	Added 1/2" R to Concrete Header
1/15/97	Rev. 100.0	Added 1/2" R to Concrete Header

LIMITS AND METHODS OF PLACING EMBANKMENT AND POROUS BACKFILL AND LIMITS OF ROADWAY EXCAVATION ADJACENT TO BRIDGE ABUTMENTS

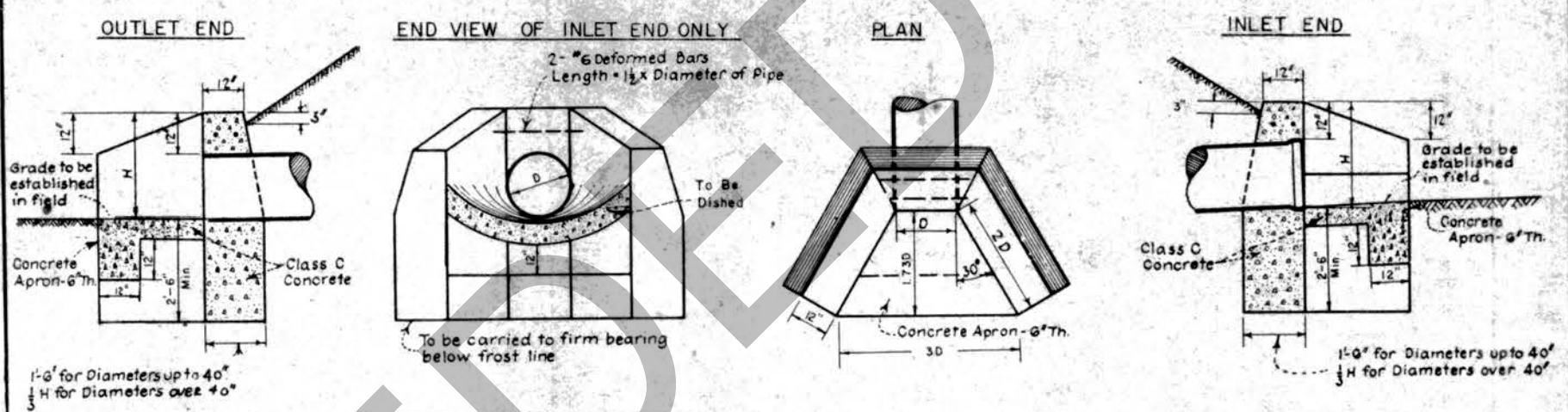


- GENERAL NOTES**
- The Rubbing of Headwalls to Remove Form Marks as Required Article 4.13 for Concrete Structures will not be required for Headwalls at the Bottom of Embankments in Rural Areas.
 - All Edges to be chamfered 1"
 - For Arch Pipe use length of Headwall as 3H + Span.
 - For more than one Pipe, set the Pipe a minimum of one Foot apart (outside Barrel to outside Barrel). The Ends of the Headwall shall be set 2D off the \bar{C} of the Controlling Pipe

HEADWALL QUANTITY IN CUBIC YARDS

PIPE SIZE	CORR METAL PIPE	REIN CONC PIPE
12"	0.9 C.Y.	0.9 C.Y.
15"	1.2	1.2
18"	1.4	1.4
21"	1.7	1.7
24"	2.1	2.1
27"	2.4	2.4
30"	2.8	2.8
36"	3.6	3.6
42"	4.4	4.7
48"	5.8	6.2
54"	7.4	7.9
60"	9.2	9.9
66"	11.3	12.1
72"	13.7	14.7

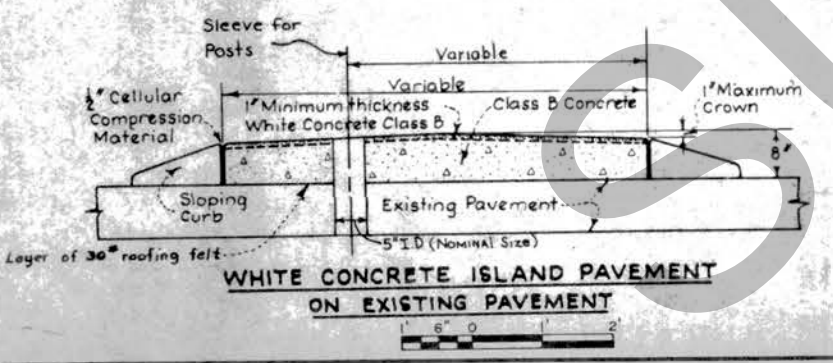
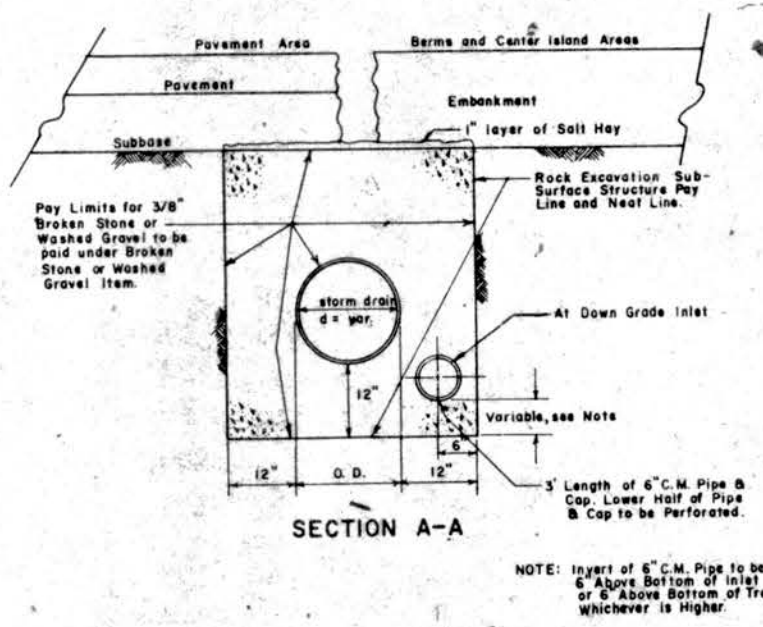
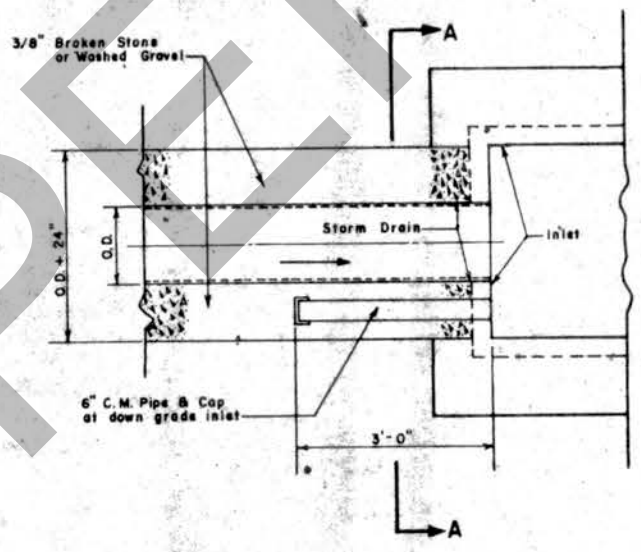
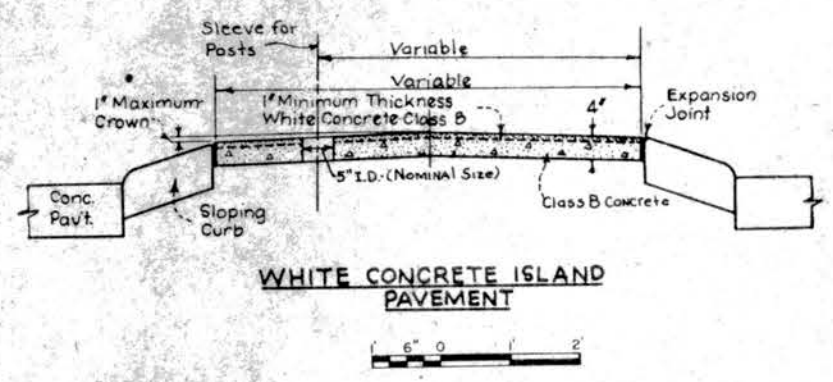
CONCRETE HEADWALL AND APRON



HEADWALLS IN CUBIC YARDS

PIPE SIZE	HEADWALLS IN CUBIC YARDS		APRONS IN CUBIC YARDS
	CORR METAL PIPE	REIN CONC PIPE	
12"	1.4 C.Y.	1.4 C.Y.	0.2 C.Y.
15"	1.7	1.7	0.2
18"	2.1	2.1	0.3
21"	2.5	2.5	0.4
24"	2.9	2.9	0.5
27"	3.3	3.4	0.6
30"	3.7	3.8	0.7
36"	4.7	4.8	0.9
42"	5.8	6.3	1.2
48"	7.6	8.4	1.5
54"	9.7	10.7	1.8
60"	12.2	13.4	2.1
66"	15.0	16.4	2.5
72"	18.1	19.9	3.0

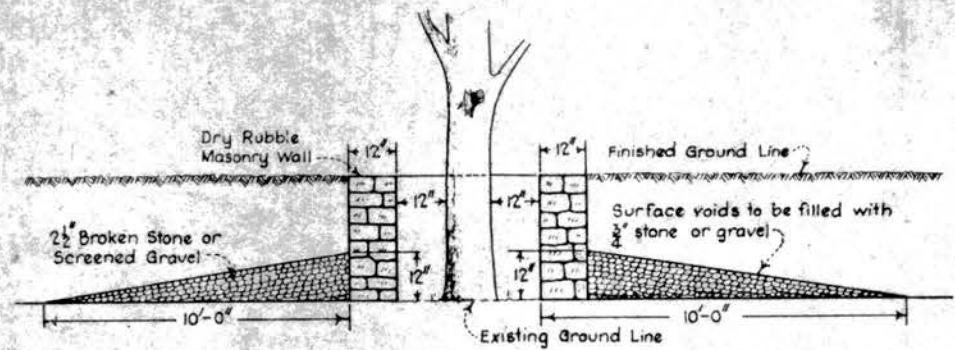
- GENERAL NOTES**
- All edges to be chamfered 1"
 - The Rubbing of Headwalls to Remove Form Marks as Required 4.13 (1961 STD SPEC.) for Concrete Structures will not be Required for Headwalls at the Bottom of Embankments in Rural Areas.
 - For Slope Drain Headwalls, Dimensions and Apron Grades shall be set by the Engineer.
 - For more than one Pipe, set the Pipes a Minimum of one Foot apart (outside Barrel to outside Barrel); There shall be 12" above the top of a Pipe in a Wing-wall; The terminus of the Wingwall shall be 2D from the \bar{C} of the Pipe in a Wingwall.
 - The terminus for outlet and inlet Aprons shall be set by extending the Pipe grade ahead and back, respectively.
 - For Arch pipe, the span shall be substituted for D.



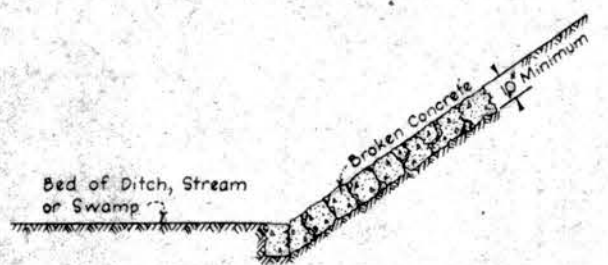
COMBINED STORM DRAIN AND OUTLET TRENCH IN ROCK CUTS
NOT TO SCALE

Revised As Per Memo Dated 7-6-78
 Combined Storm Drain
 Revised 12-6-61
 Revised 5-5-53
 4-6-51 HAWI added
 AUG 30 1945 (orig)
 1961 SFD Spec.
 10-11-68 HAWI, Max, Anno

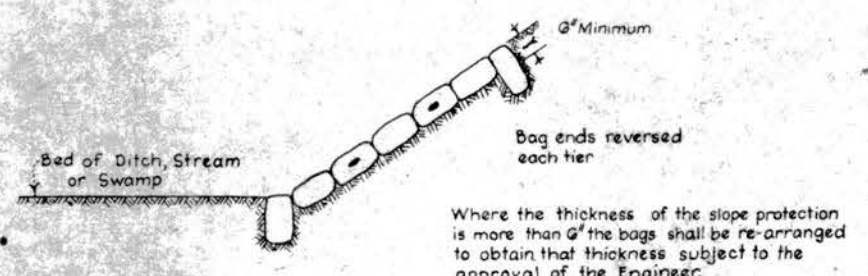
ORIGINAL



DRY RUBBLE TREE WELL



BROKEN CONCRETE SLOPE PROTECTION

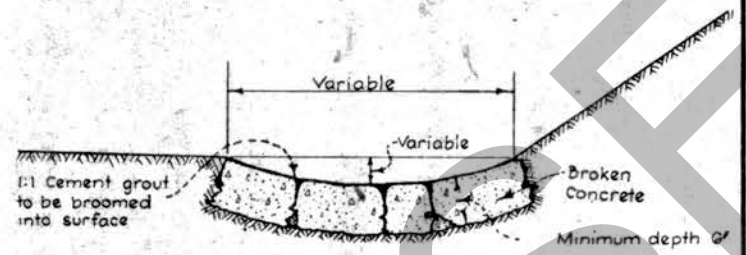


Where the thickness of the slope protection is more than 6" the bags shall be re-arranged to obtain that thickness subject to the approval of the Engineer.

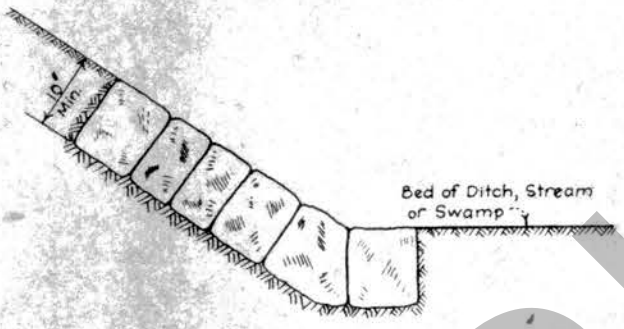
Cloth bags filled with Class D concrete to be flattened and sprinkled in place

Bags to be tied and tucked under

CONCRETE BAG SLOPE PROTECTION

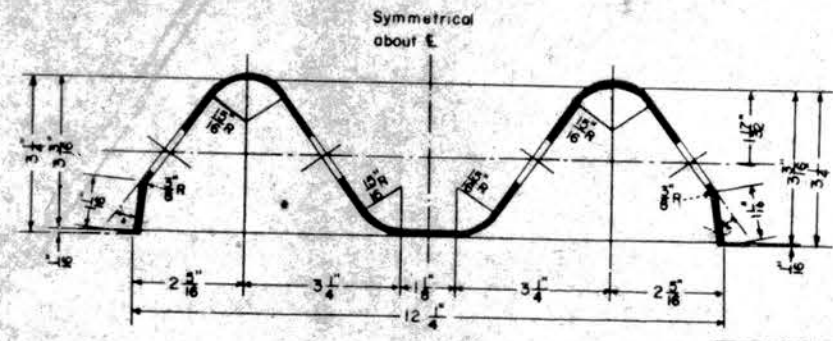


GROUTED BROKEN CONCRETE GUTTER



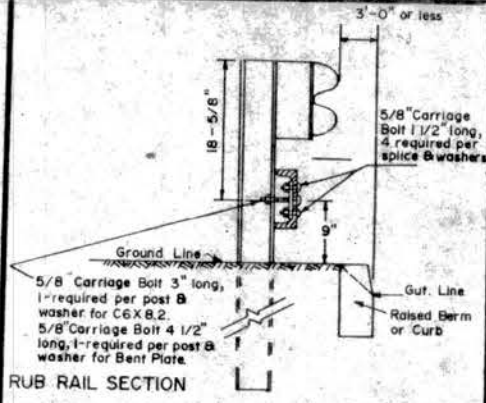
RIP-RAP SLOPE PROTECTION

No Revision and Spec. Incl. - 12-6-41
MAY 5, 1955 No Change
AUG. 30 1945

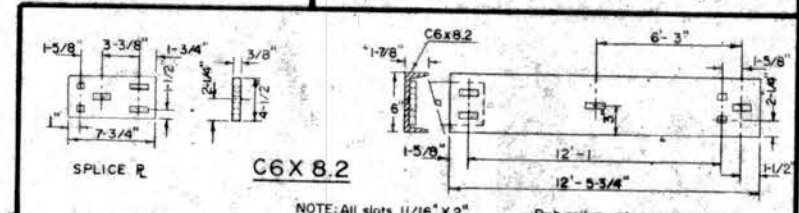


SECTION THRU RAIL ELEMENT

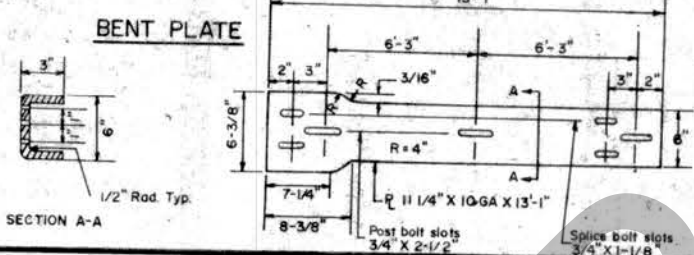
Effective Length of Beam Sections 12'-6" or 25'-0"



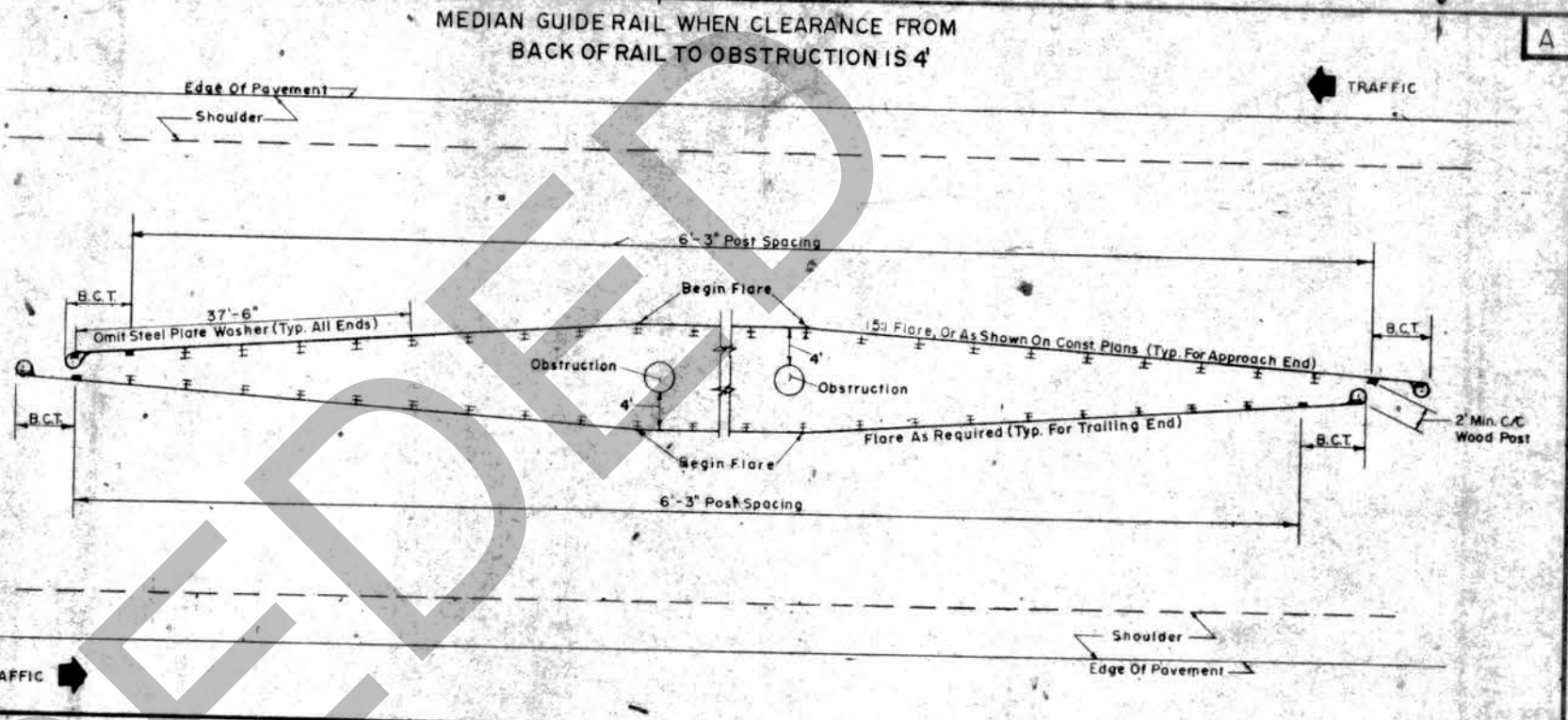
RUB RAIL SECTION



RUB RAIL

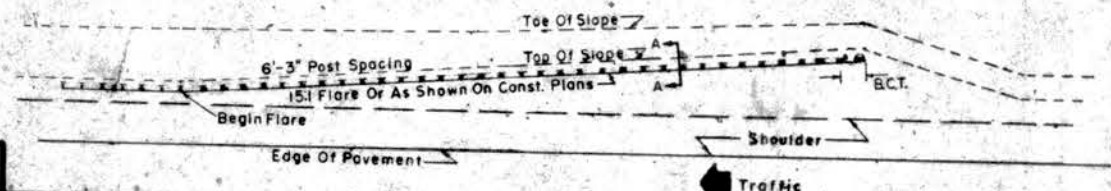


BENT PLATE

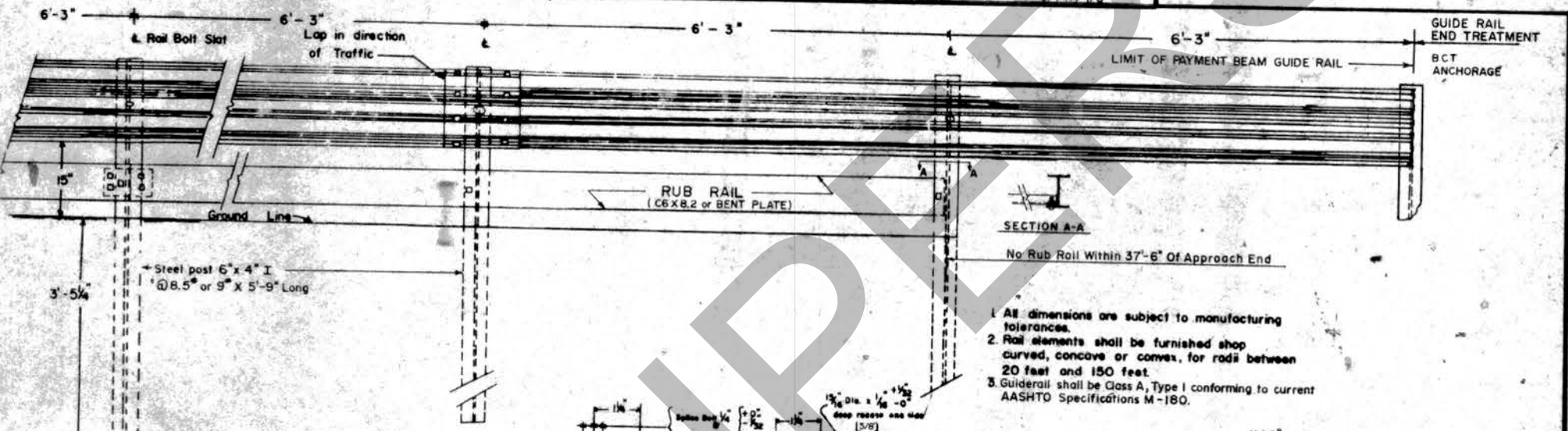
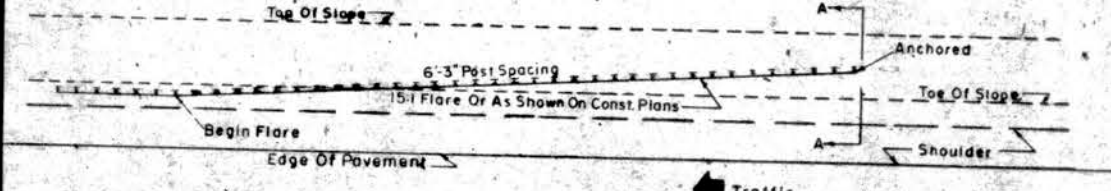


MEDIAN GUIDE RAIL WHEN CLEARANCE FROM BACK OF RAIL TO OBSTRUCTION IS 4'

GUIDE RAIL FOR EMBANKMENT



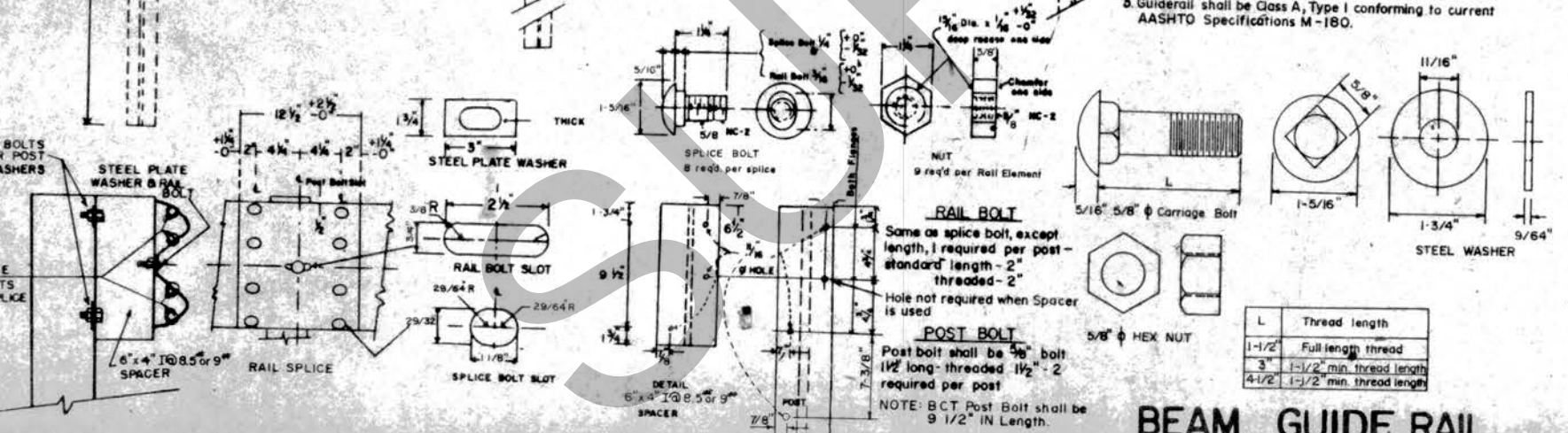
GUIDE RAIL FOR CUTS (END BURIED IN SLOPE)



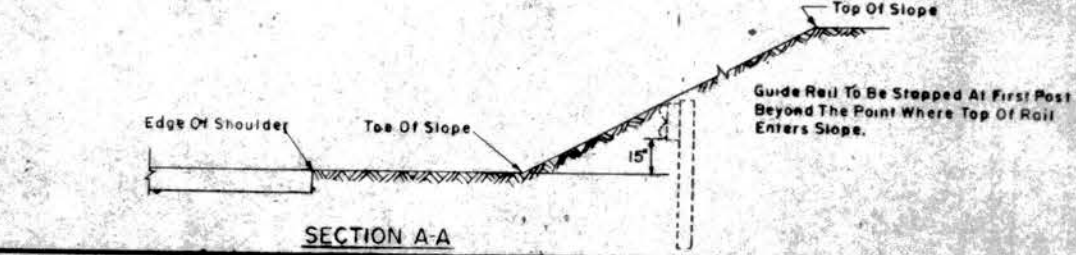
BEAM GUIDE RAIL

- All dimensions are subject to manufacturing tolerances.
- Rail elements shall be furnished shop curved, concave or convex, for radii between 20 feet and 150 feet.
- Guides shall be Class A, Type I conforming to current AASHTO Specifications M-180.

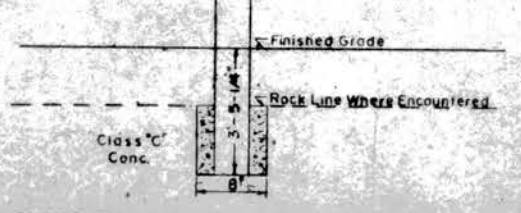
REVISED AS PER MEMO 1/19/81
REVISOR 6-22-76
ORIGINAL 9/26/73



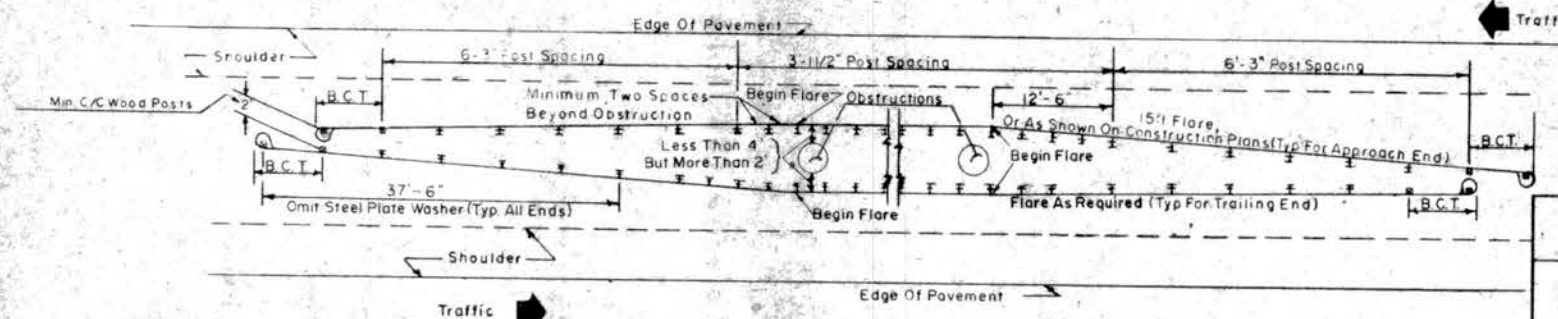
L	Thread length
1-1/2"	Full length thread
3"	1-1/2" min. thread length
4-1/2"	1-1/2" min. thread length



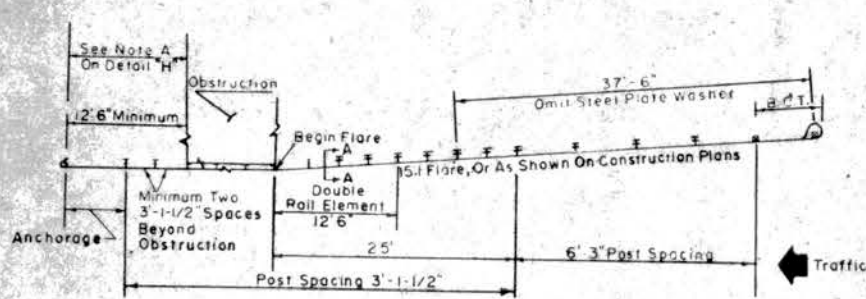
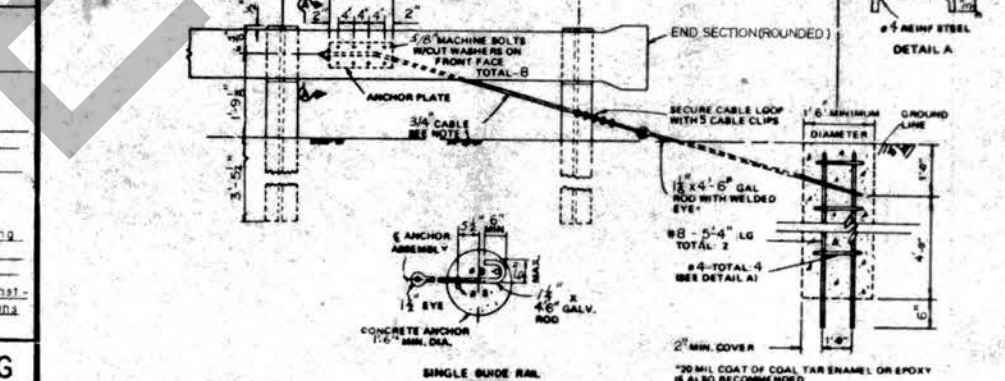
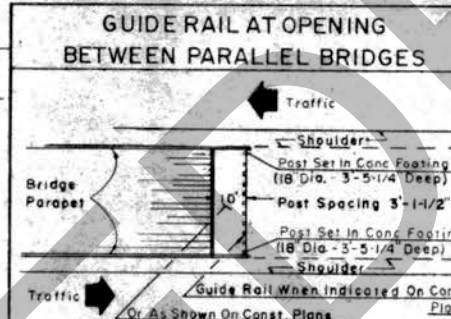
SECTION A-A



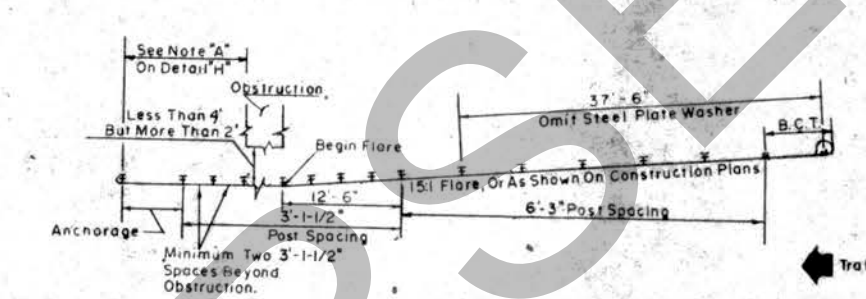
GUIDE RAIL INSTALLATION IN ROCK



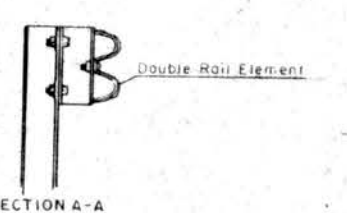
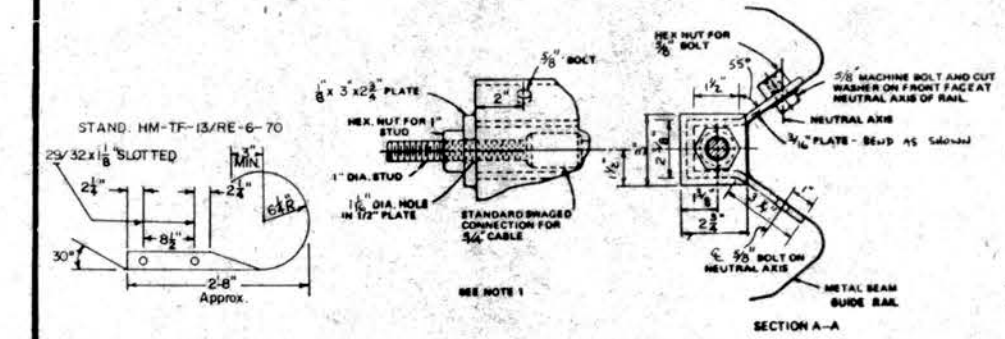
**MEDIAN GUIDE RAIL
WHEN CLEARANCE FROM BACK OF RAIL TO OBSTRUCTION
IS MORE THAN 2' BUT LESS THAN 4'**



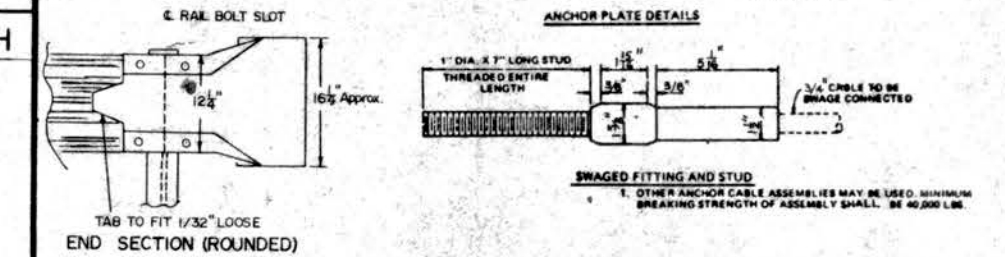
WHEN RAIL ELEMENT IS ATTACHED TO OBSTRUCTION



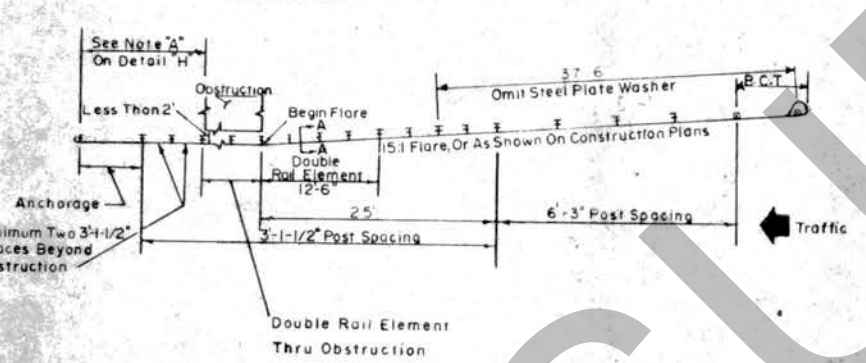
**WHEN CLEARANCE FROM BACK OF RAIL TO OBSTRUCTION
IS MORE THAN 2' BUT LESS THAN 4''**



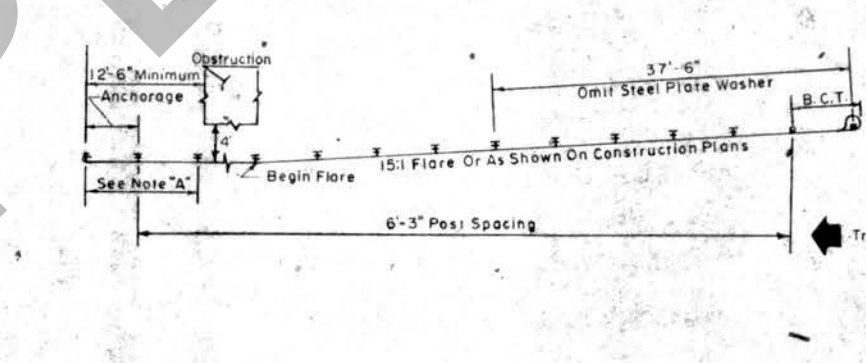
NOTE "A"
On A Two Way Undivided Roadway
The Layout For The Guide Rail
Shall Be Similar To That Shown
For The Approach End.



GUIDE RAIL ATTACHMENT TO FOOTING
BEAM GUIDE RAIL ANCHORAGE



**WHEN CLEARANCE FROM BACK OF RAIL
TO OBSTRUCTION IS LESS THAN 2'**

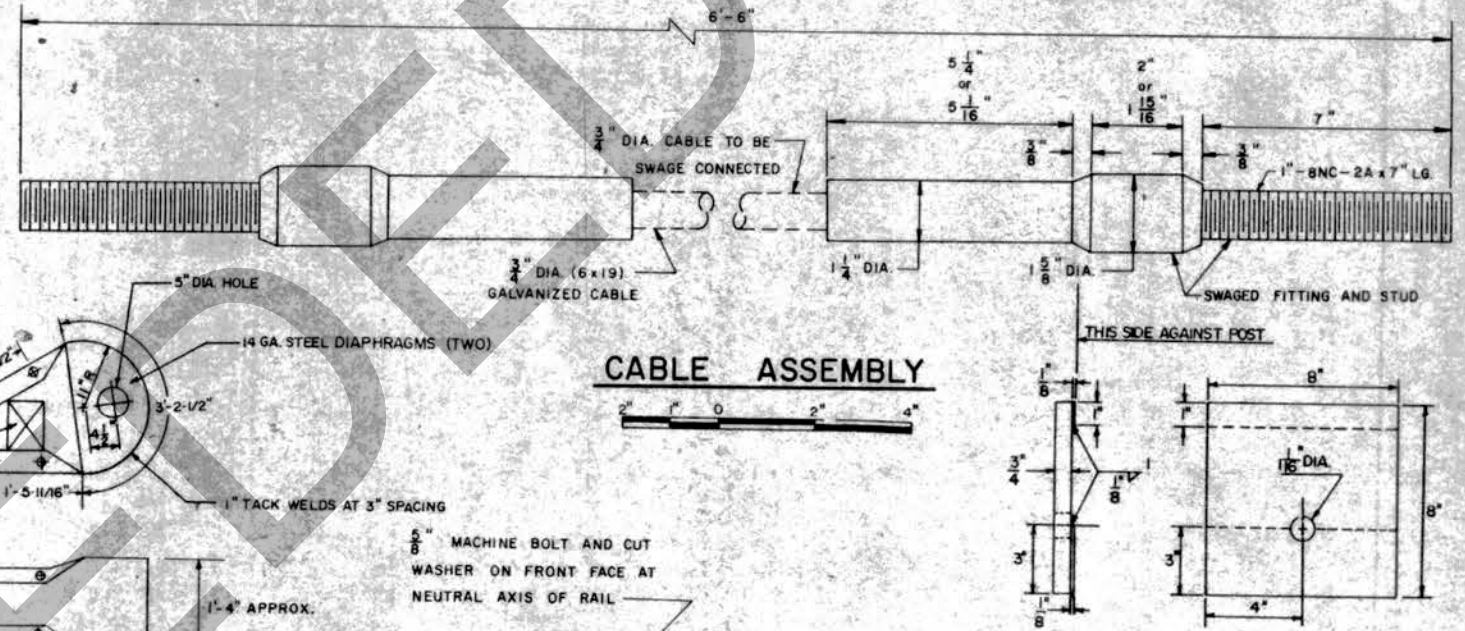
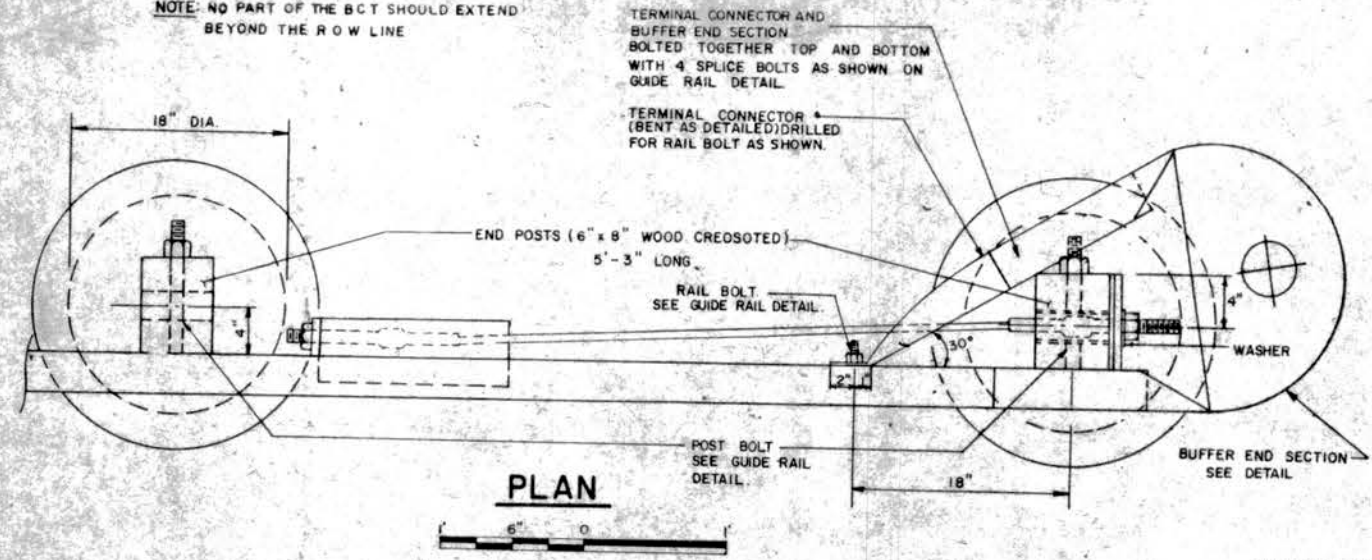


**WHEN CLEARANCE FROM BACK OF RAIL
TO OBSTRUCTION IS 4'**

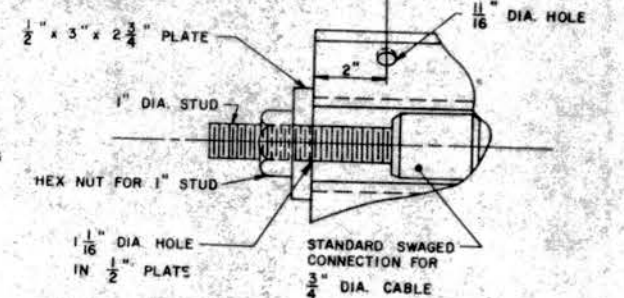
GUIDE RAIL - CRITICAL CLEARANCE INSTALLATIONS

DATE 3-17-76
REVISED 6-22-76

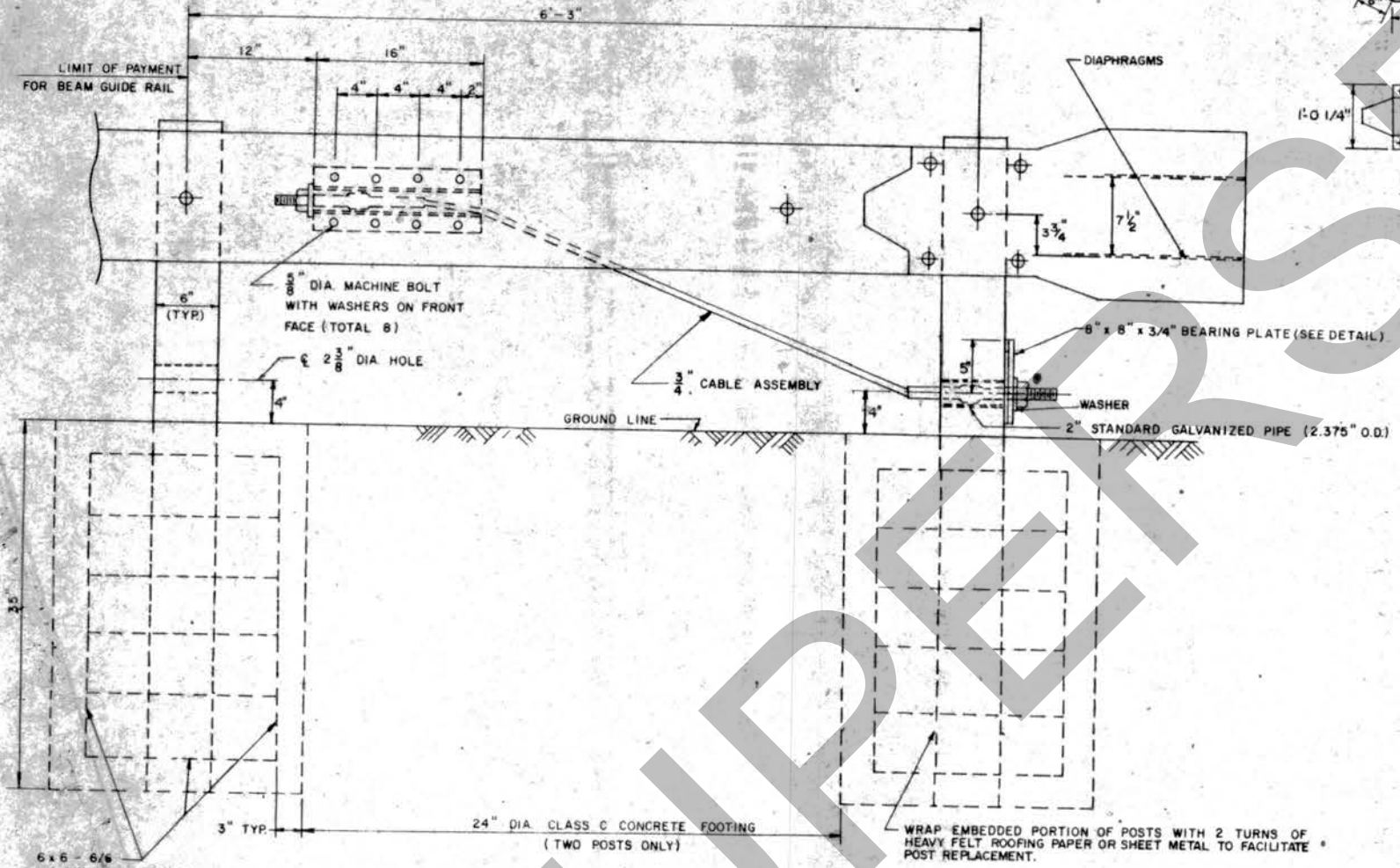
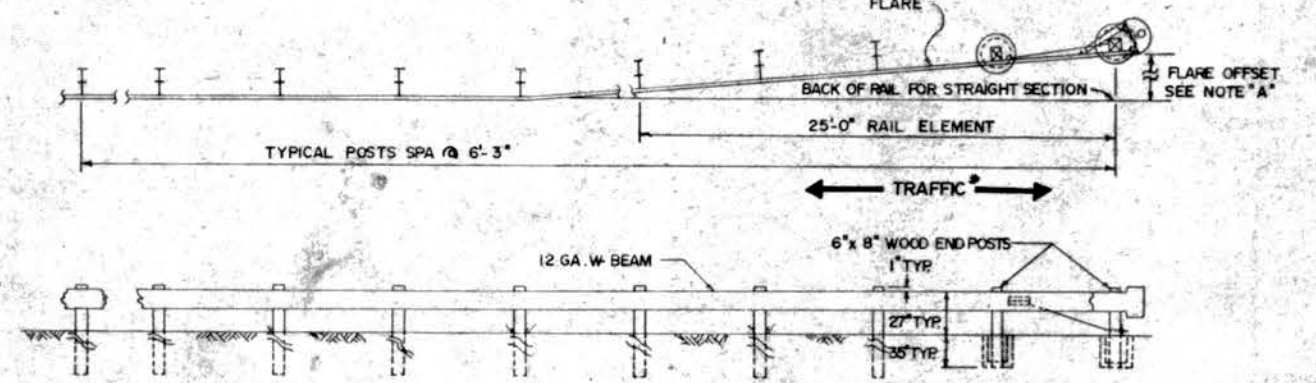
NOTE: NO PART OF THE BCT SHOULD EXTEND BEYOND THE ROW LINE



BEARING PLATE DETAILS



ANCHOR PLATE DETAILS



NOTE: "A" WHEN FLARE OFFSET IS 4 FT. OR GREATER, 25 FT. RAIL ELEMENT IS NOT REQUIRED. IF A MINIMUM FLARE OFFSET OF 4 FT. CAN NOT BE PROVIDED, USE 25 FT. RAIL ELEMENT AND FLARE GUIDE RAIL AS MUCH AS FIELD CONDITIONS PERMIT.

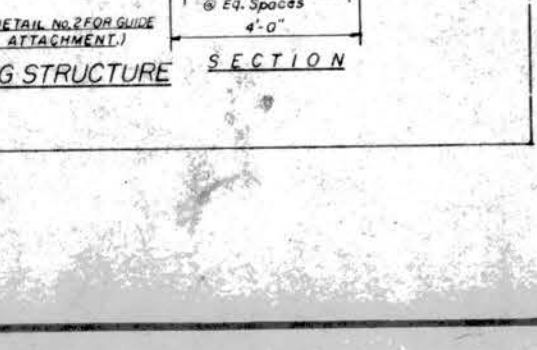
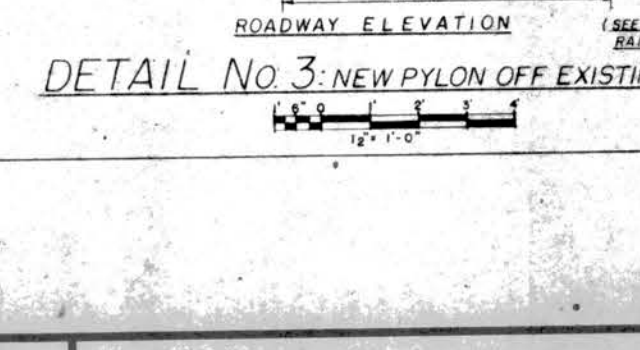
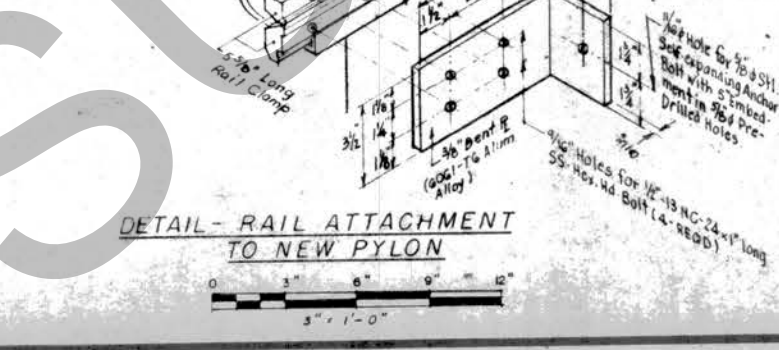
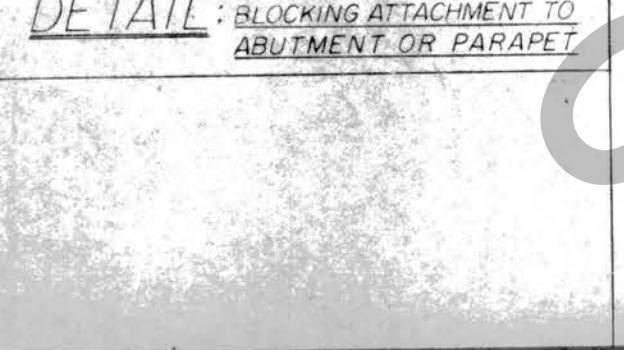
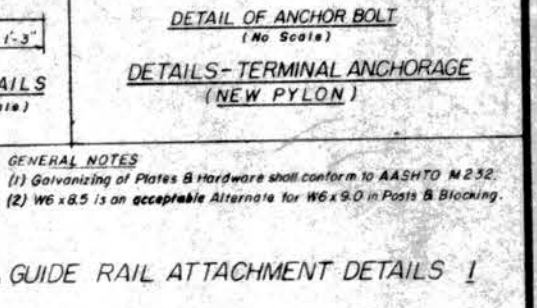
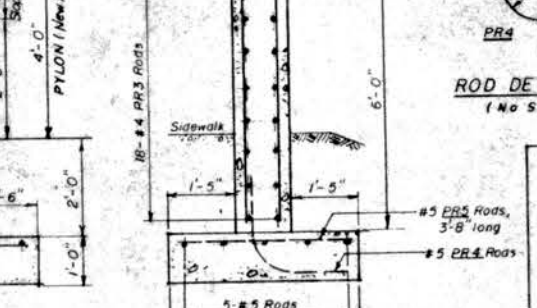
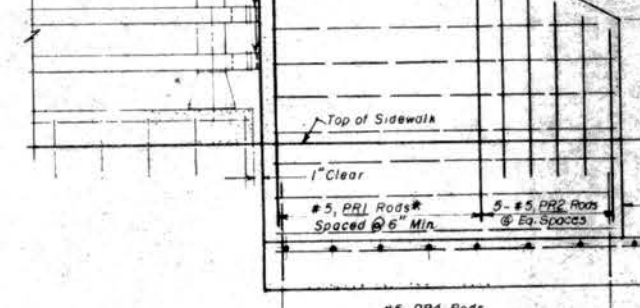
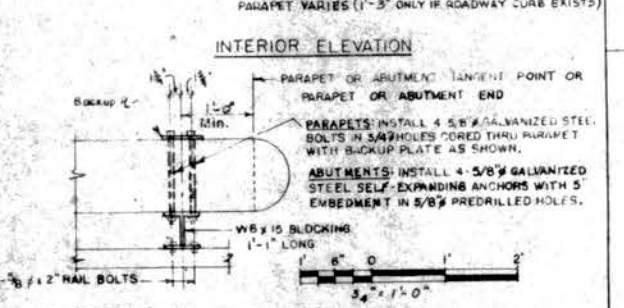
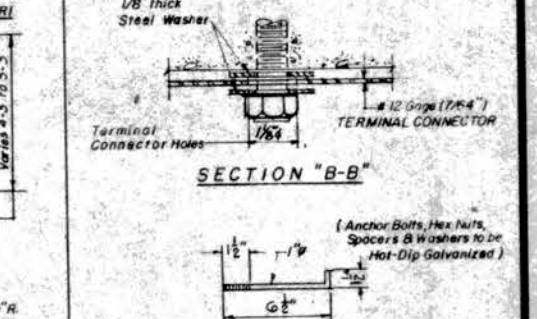
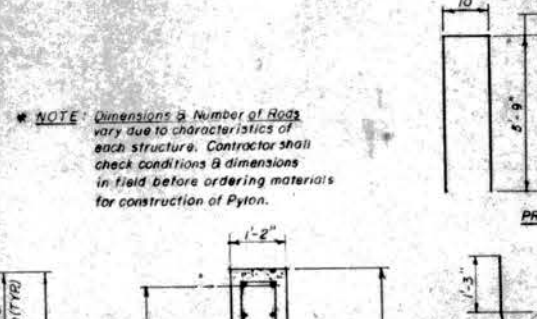
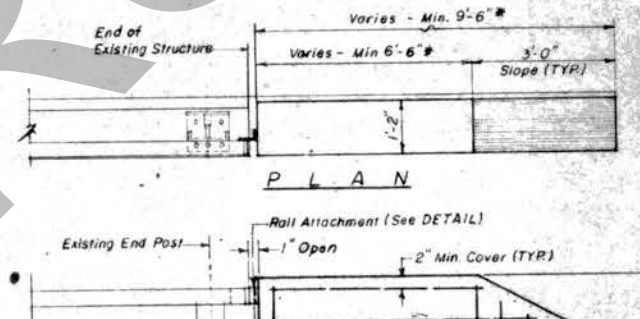
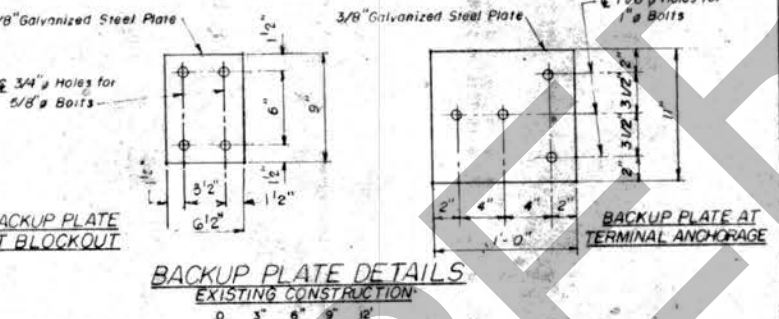
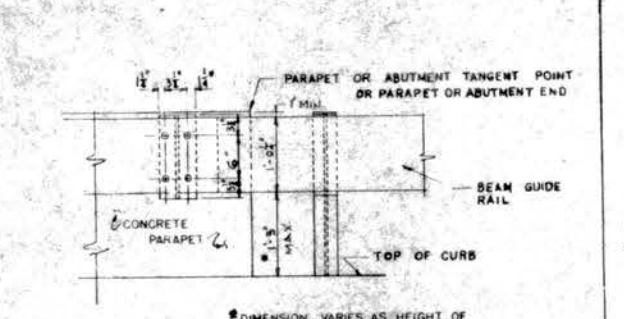
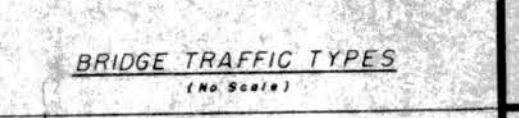
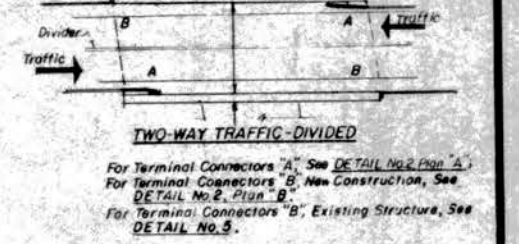
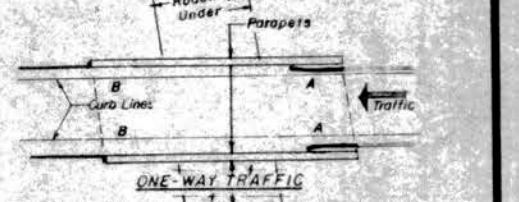
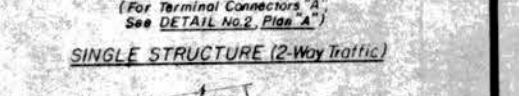
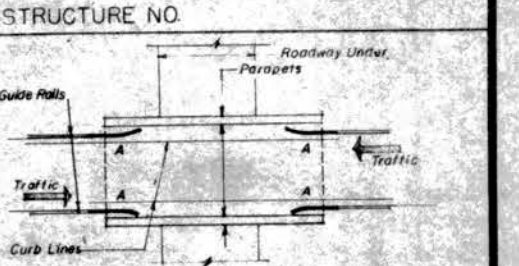
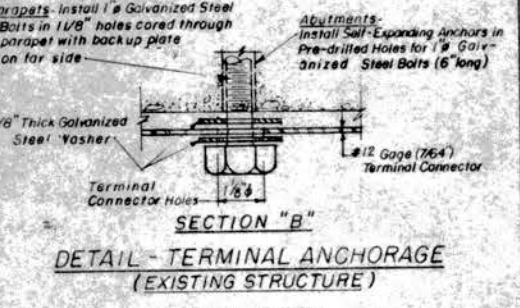
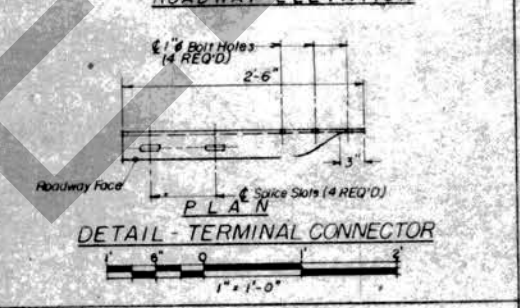
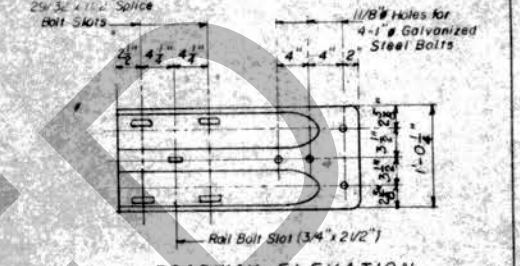
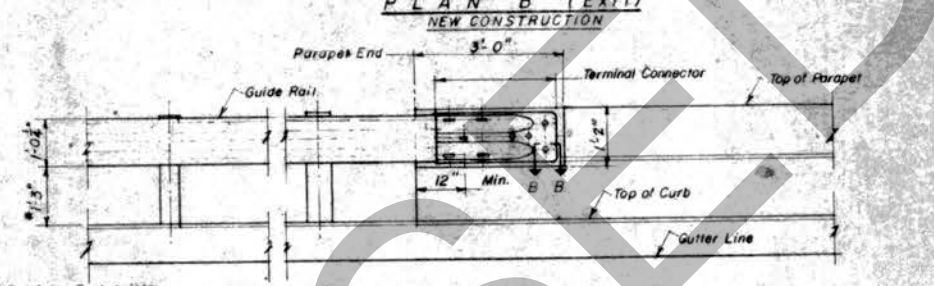
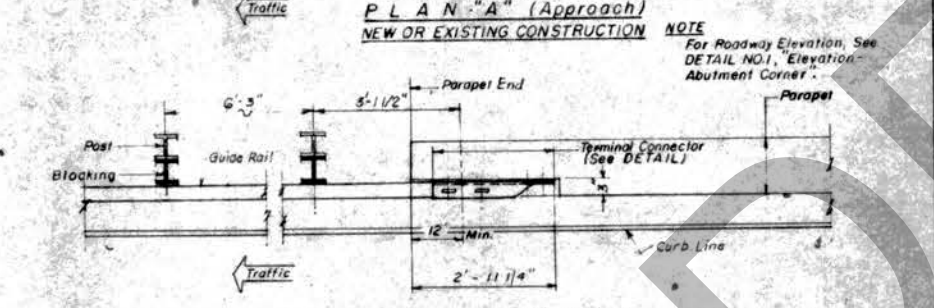
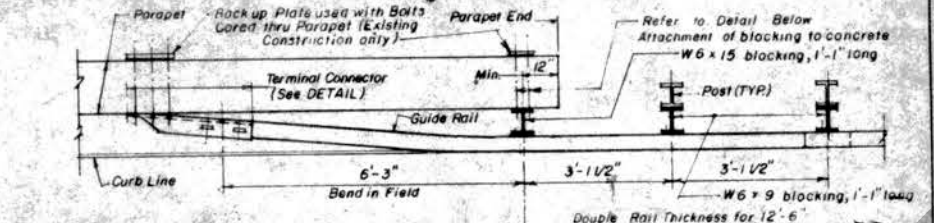
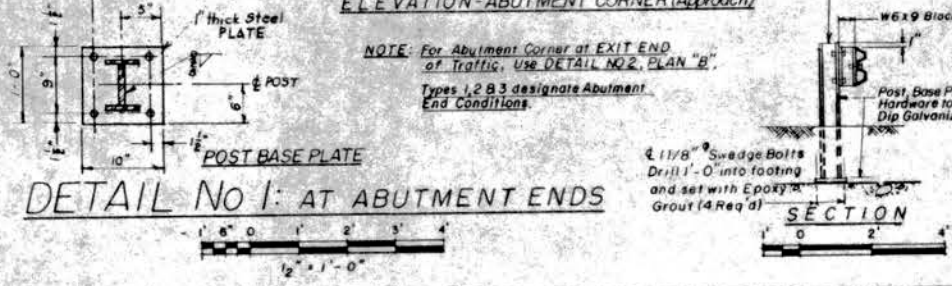
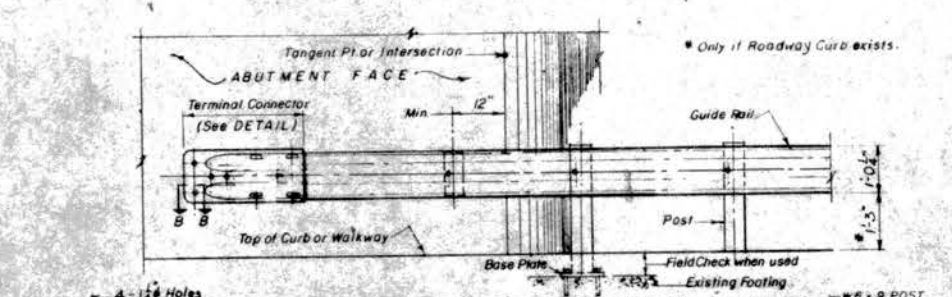
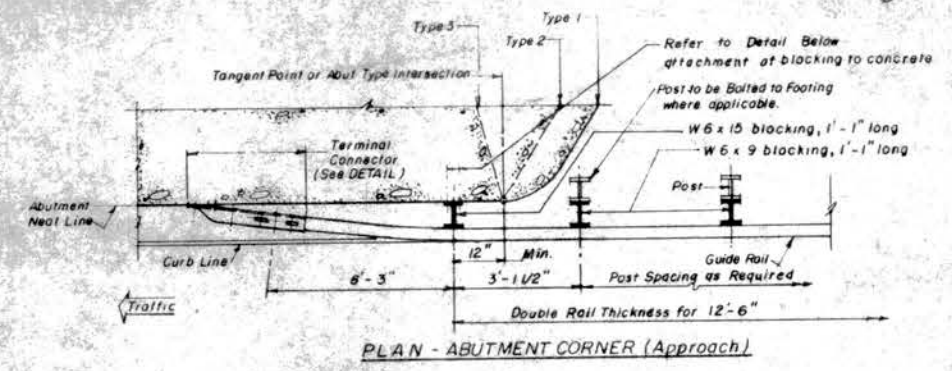
* ON TWO WAY, UNDIVIDED ROADWAYS NOTE "A" SHALL ALSO APPLY WHERE BCT'S ARE PROVIDED ON TRAILING ENDS OF GUIDE RAIL INSTALLATIONS.

10-16-80	REVISED PER MEMO.
4-25-80	REVISED PER MEMO.
5-01-79	REVISED GEO. DESIGN
1-03-77	REVISED GEO. DESIGN
6-10-76	REVISED
1-23-76	ORIGINAL

BREAKAWAY CABLE TERMINAL

ORIGINAL

FED. ROAD DIST. NO.	FED. AID PROJECT NO.	STATE	FISCAL YEAR	SHEET NO.	TOTAL SHEETS



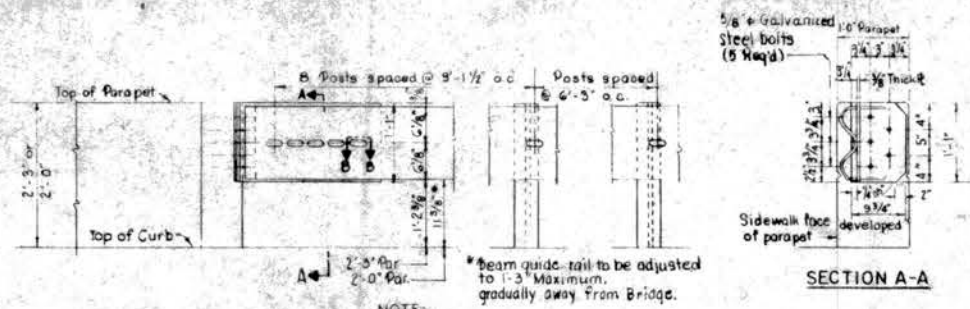
DESIGNED BY	CHECKED BY	DATE
R.G. Fox	A. Stanley	4/20/79
DRAWN BY	IN CHARGE OF	REVISION
M. J. COOVERSA	R.G. Fox	4/20/79
		4/20/79
		4/20/79
		4/20/79

GENERAL NOTES

(1) Galvanizing of Plates & Hardware shall conform to AASHTO M 252.

(2) W6 x 8.5 is an acceptable Alternate for W6 x 9.0 in Posts & Blocking.

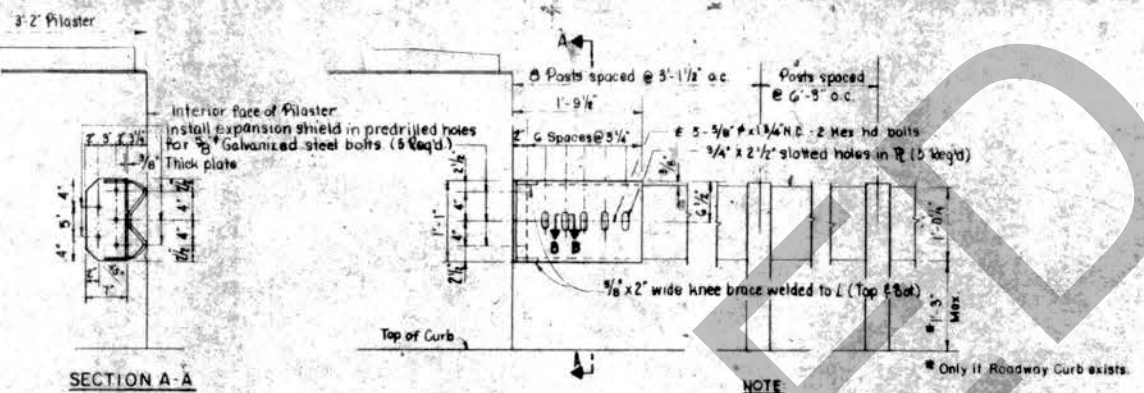
ORIGINAL



SECTION A-A
 INTERIOR ELEVATION - BEAM GUIDE RAIL ATTACHMENT TO PARAPET



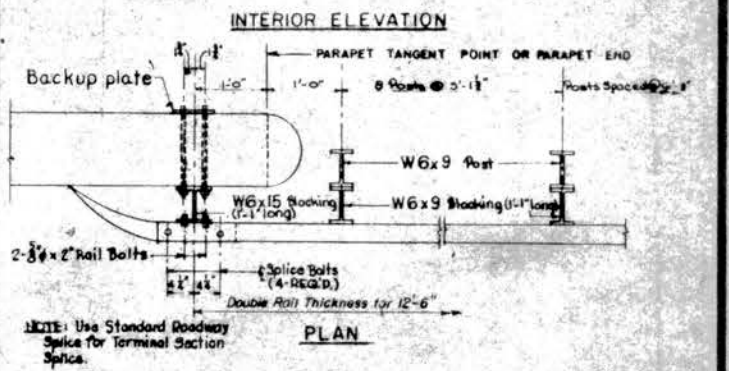
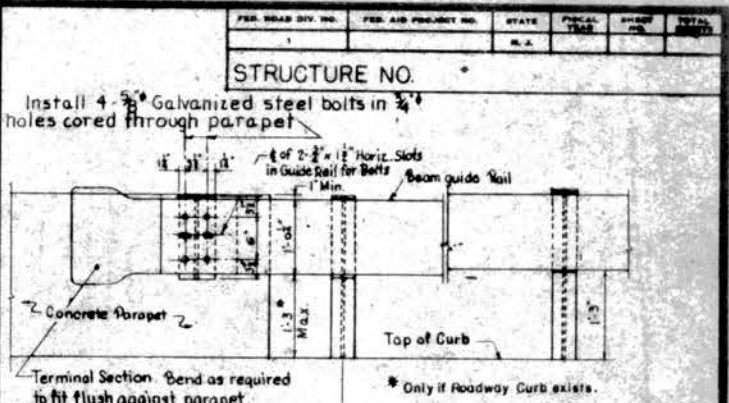
DETAIL NO. 4
 USE AT EXIT END OF STRUCTURE



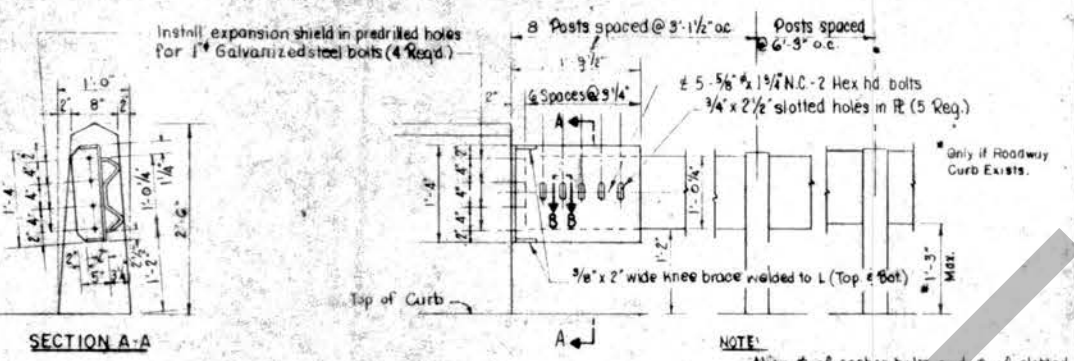
SECTION A-A
 EXTERIOR ELEVATION - BEAM GUIDE RAIL ATTACHMENT TO PILASTER



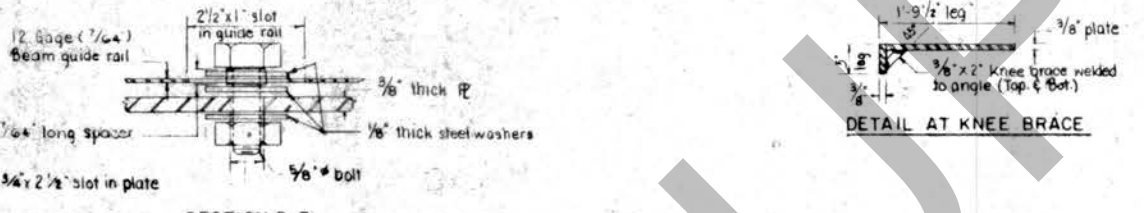
DETAIL NO. 5
 USE AT EXIT END OF STRUCTURE
 (TERMINAL CONNECTOR "B" EXISTING STRUCTURE)



DETAIL NO. 8
 BLOCKING OF GUIDE RAIL AT PARAPET

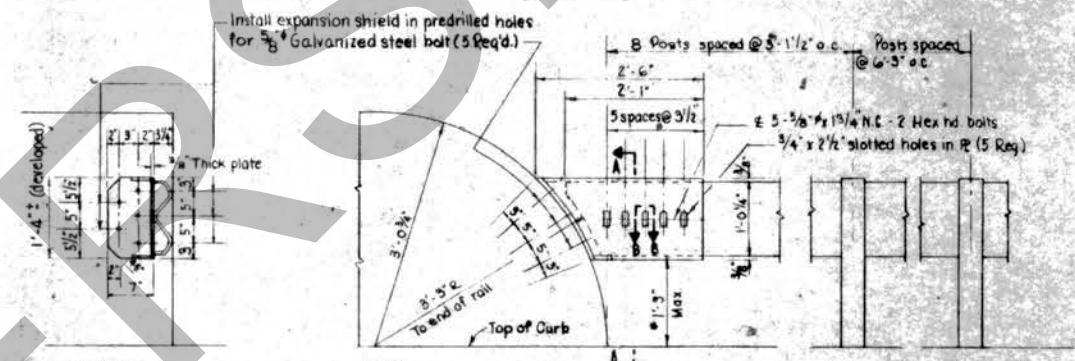


SECTION A-A
 EXTERIOR ELEVATION - BEAM GUIDE RAIL ATTACHMENT TO PARAPET

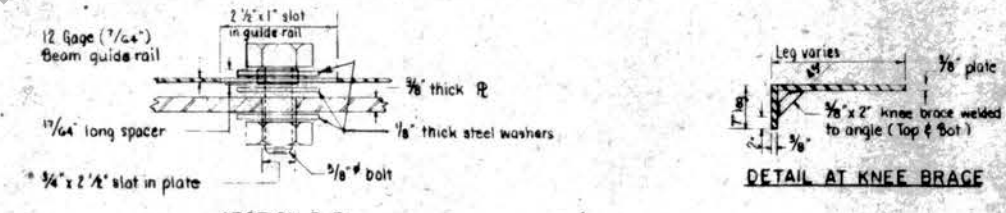


SECTION B-B
 SCALE: 1/2 Full Size

DETAIL NO. 6
 USE AT EXIT END OF STRUCTURE

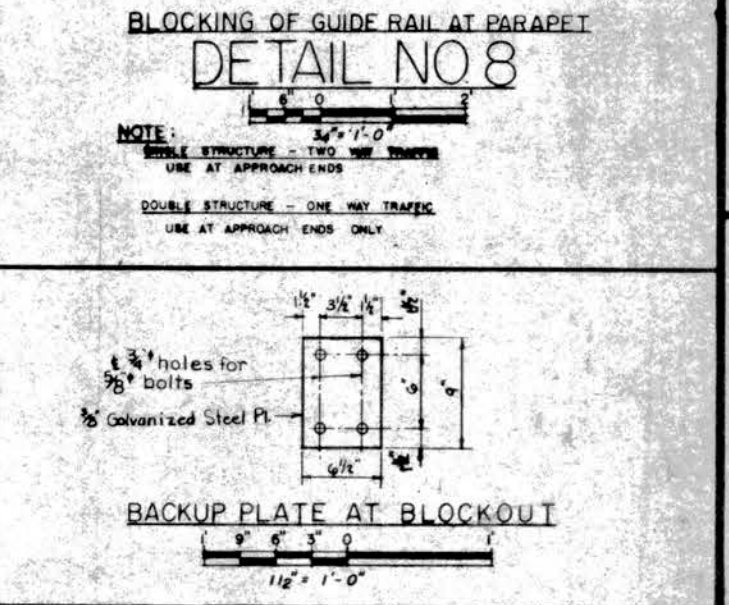


SECTION A-A
 EXTERIOR ELEVATION - BEAM GUIDE RAIL ATTACHMENT TO PARAPET



SECTION B-B
 SCALE: 1/2 Full Size

DETAIL NO. 7
 USE AT EXIT END OF STRUCTURE



BACKUP PLATE AT BLOCKOUT

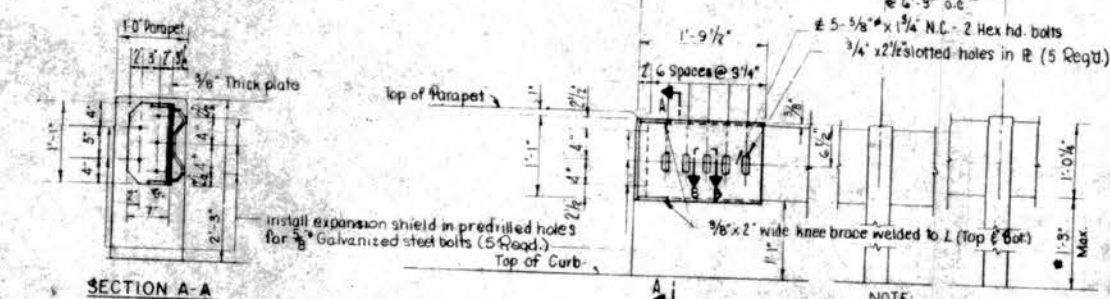
GENERAL NOTES
 (1) Galvanizing of Plates & Hardware shall conform to AASHTO M 252.
 (2) W6 x 8.5 is an acceptable Alternate for W6 x 9.0 in Posts & Blocking.

GUIDE RAIL ATTACHMENT DETAILS 2

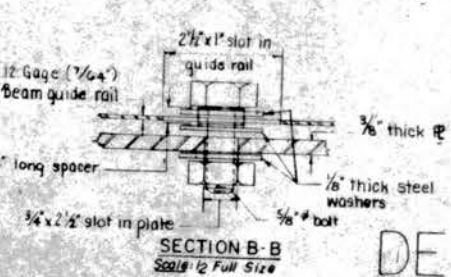
DESIGNED BY: R.G. Fox	CHECKED BY: R.G. Fox	DATE: 6/30/90
DRAWN BY: [Signature]	IN CHARGE OF: R.G. Fox	DATE: 4/20/79
BY: [Signature]	REVISION:	DATE: 4/20/79

STRUCTURE NO.

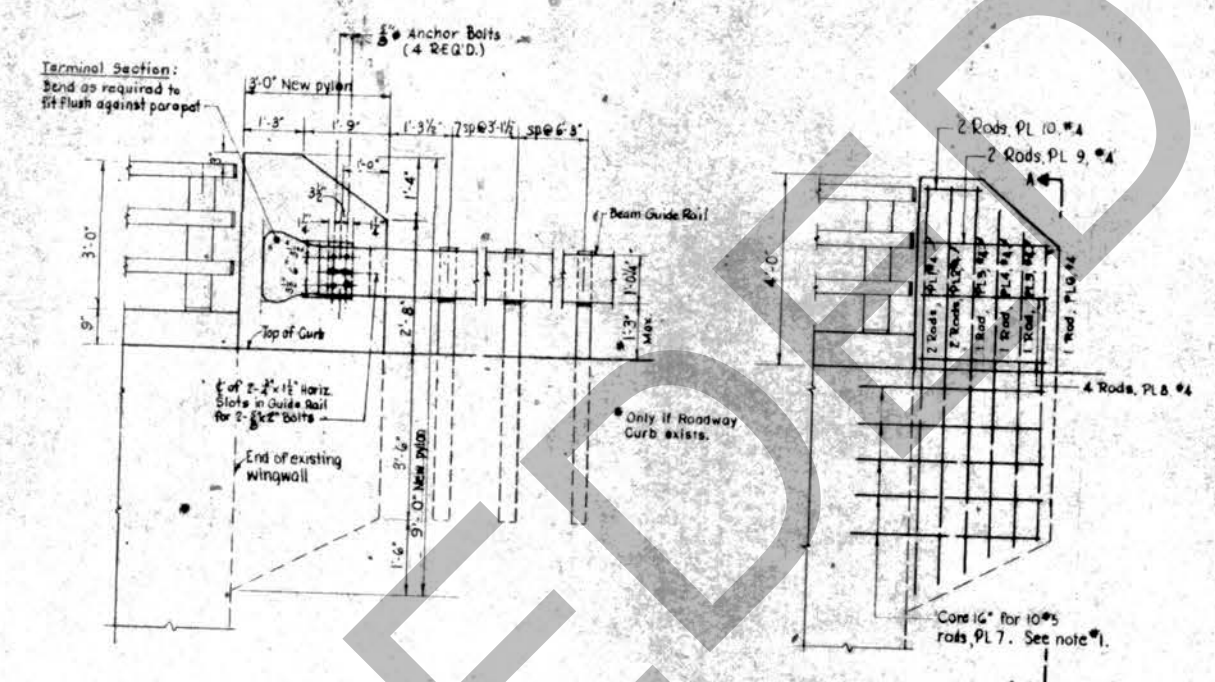
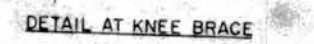
NOTE:
Align ϵ of anchor bolts and ϵ of slotted holes in guide rail at time of installation.
All existing dimensions to be field checked before fabrication.



EXTERIOR ELEVATION - BEAM GUIDE RAIL ATTACHMENT TO PARAPET

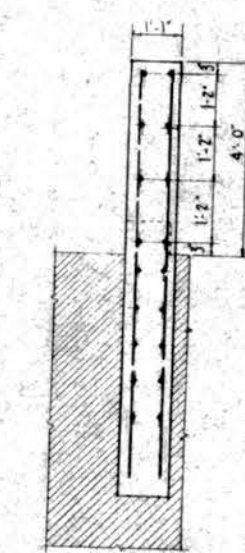


DETAIL No. 9
USE AT EXIT END OF STRUCTURE



INTERIOR ELEVATION OF NEW PYLON

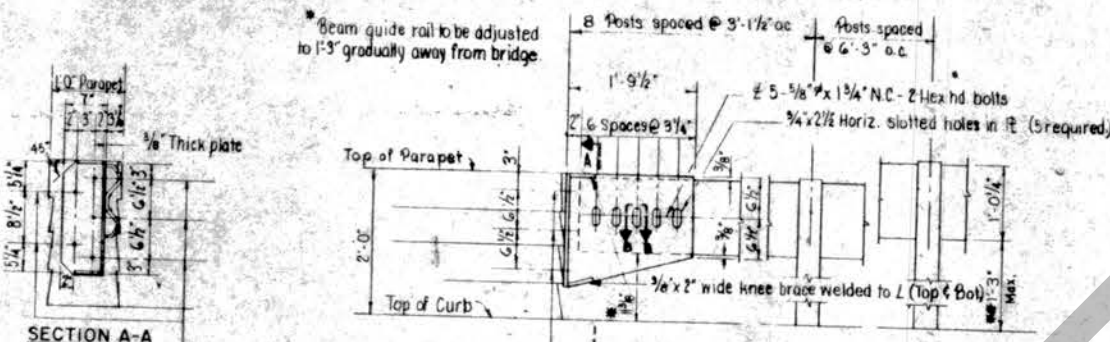
ELEVATION OF RODS



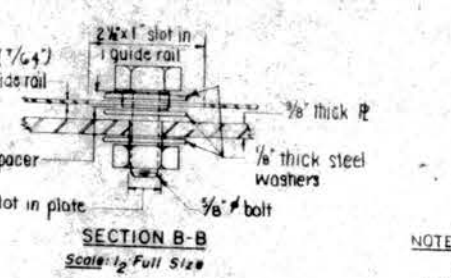
ELEVATION A-A

NOTE: Core conc. for new reinforcing rods. Fill holes with epoxy bonding compound before placing rods.

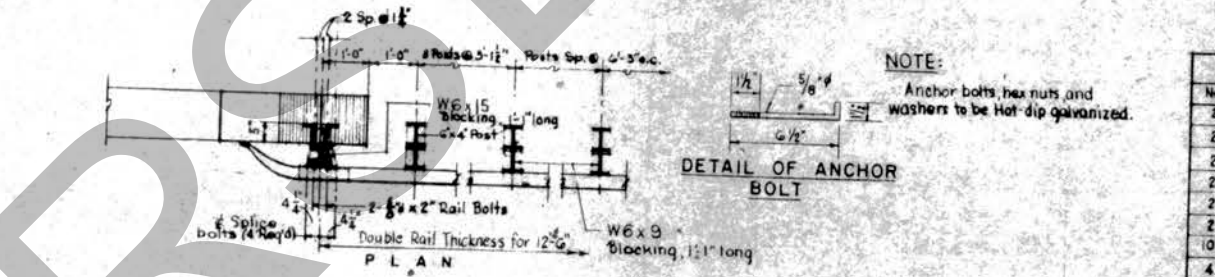
Beam guide rail to be adjusted to 1'-3" gradually away from bridge.



EXTERIOR ELEVATION - BEAM GUIDE RAIL ATTACHMENT TO PARAPET



DETAIL No. 10
USE AT EXIT END OF STRUCTURE



DETAIL OF ANCHOR BOLT

NOTE: Anchor bolts, hex nuts, and washers to be hot-dip galvanized.

BLOCKING OF GUIDE RAIL AT PARAPET-APPROACH END

ESTIMATED QUANTITIES	
ITEM	QUANTITY
Reinforcement Steel	118 Lbs.
Class "B" Concrete	0.923 Cu. Yd.

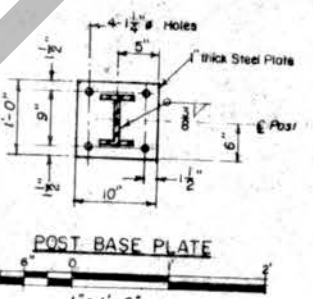
* Quantities for Pylon.

REINFORCEMENT STEEL						
No.	Mark	Size	Length	Total Length	Remarks	Location
2	PL1	#4	8'-0"	16'-00"	Straight	Pylon
2	PL2	#4	8'-0"	16'-00"	do.	do.
2	PL3	#4	8'-0"	16'-00"	do.	do.
2	PL4	#4	7'-3"	14'-50"	do.	do.
2	PL5	#4	6'-0"	12'-00"	do.	do.
2	PL6	#4	6'-0"	12'-00"	do.	do.
10	PL7	#5	4'-2"	41'-10"	Straight	do.
4	PL8	#4	2'-6"	10'-60"	do.	do.
2	PL9	#4	2'-6"	5'-00"	do.	do.
2	PL10	#4	1'-3"	2'-16"	do.	do.

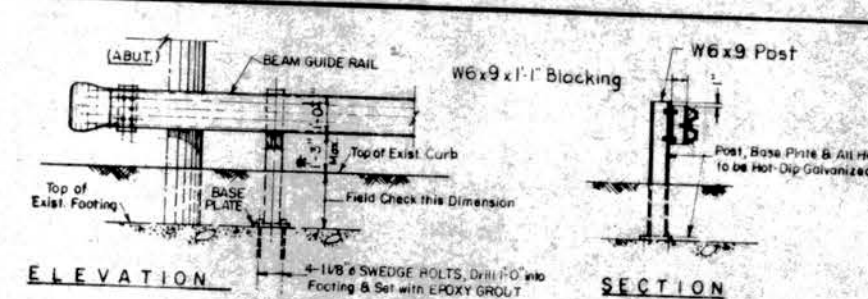
ORIGINAL
 CHECKED BY: R.G.F. DATE: 6/30/80
 DESIGNED BY: R.G.F. DATE: 4/20/79
 REVISION: BY: CRD DATE: 4/20/79

NOTES:
Align ϵ of anchor bolts and ϵ of slotted holes in guide rail at time of installation.
All existing dimensions to be field checked before fabrication.
Plate assembly to be hot-dip galvanized.

DETAIL No. 11
USE AT EXIT END OF STRUCTURE

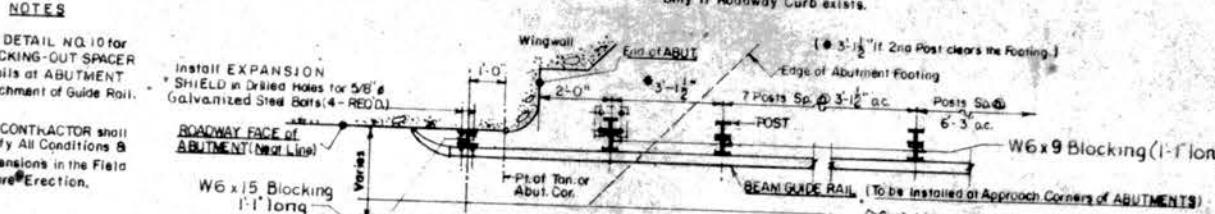


POST BASE PLATE



ELEVATION

SECTION



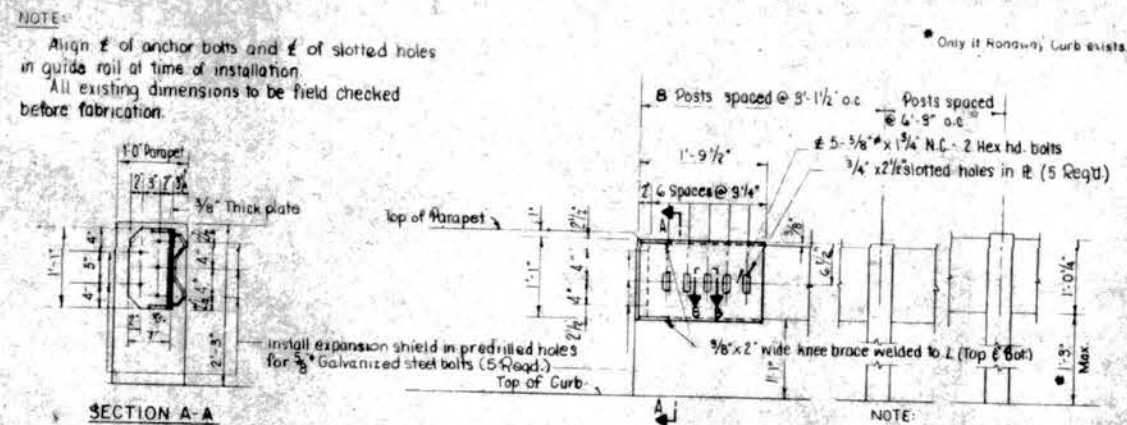
DETAIL No. 12
USE AT ENTRANCE END OF STRUCTURE

- NOTES
- See DETAIL NO. 10 for BLOCKING-OUT SPACER Details at ABUTMENT Attachment of Guide Rail.
 - The CONTRACTOR shall verify All Conditions & Dimensions in the Field before Erection.

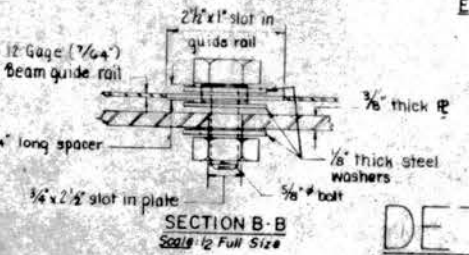
GENERAL NOTES
(1) Galvanizing of Plates & Hardware shall conform to AASHTO M 232.
(2) W6 x 8.5 is an acceptable Alternate for W6 x 9 in Posts & Blocking.

GUIDE RAIL ATTACHMENT DETAILS 3

STRUCTURE NO. _____

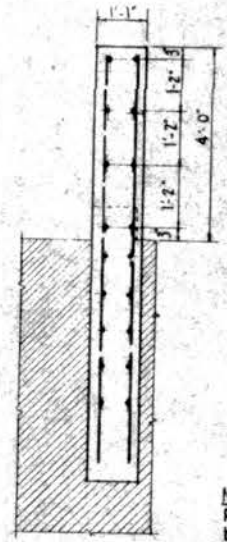
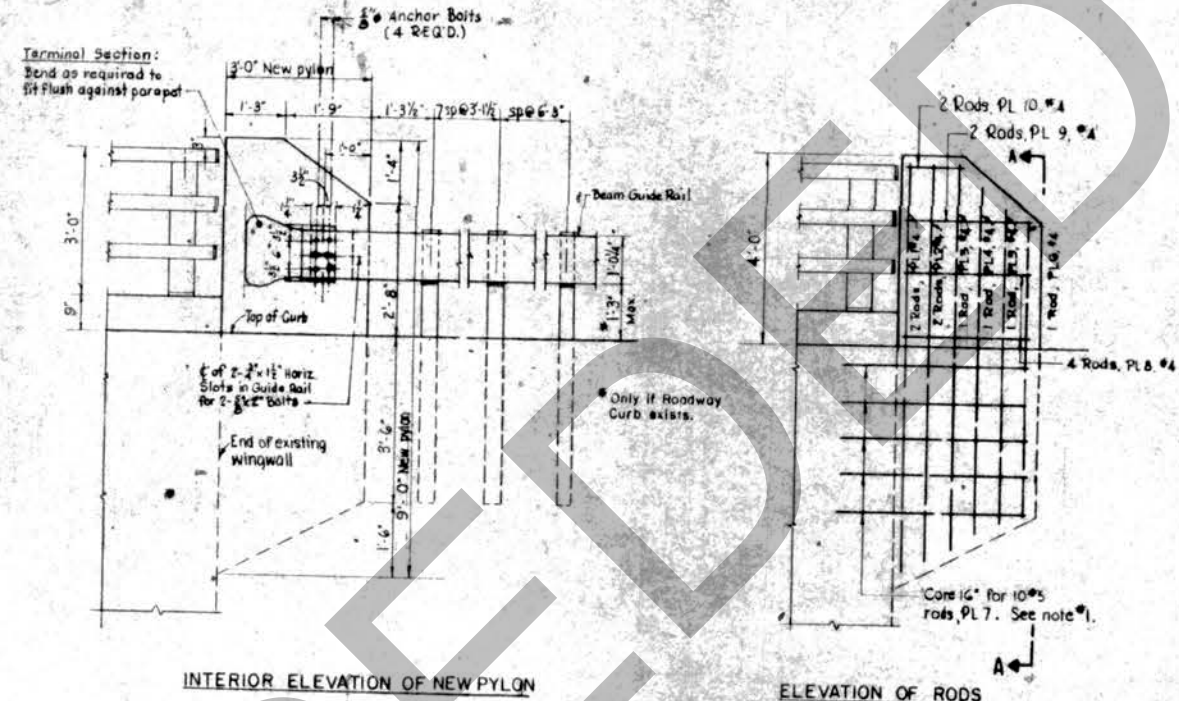


EXTERIOR ELEVATION - BEAM GUIDE RAIL ATTACHMENT TO PARAPET

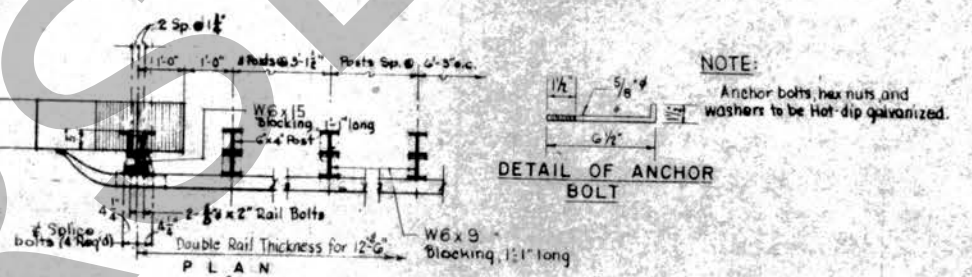


DETAIL AT KNEE BRACE

DETAIL No. 9
USE AT EXIT END OF STRUCTURE



NOTE: Core conc. for new reinforcing rods. Fill holes with epoxy bonding compound before placing rods.

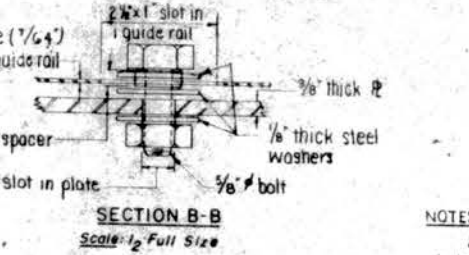
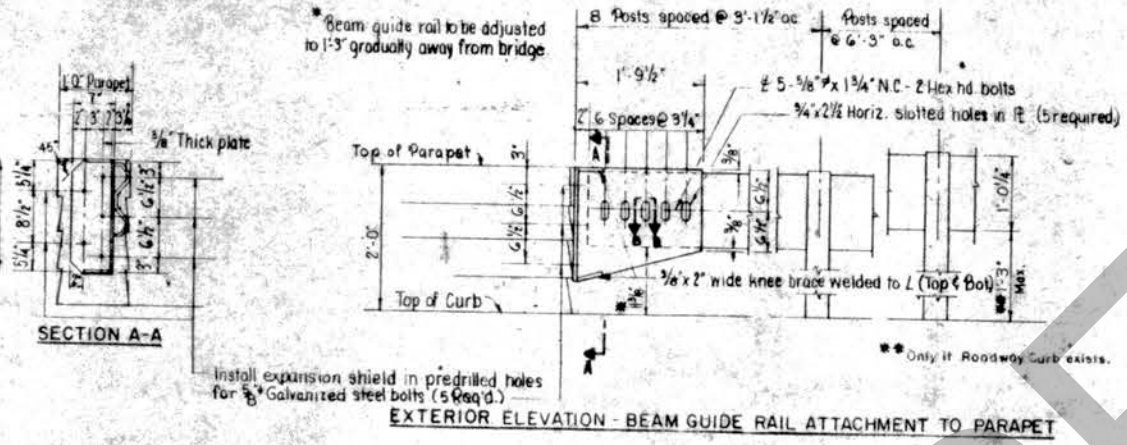


REINFORCEMENT STEEL						
No.	Mark	Size	Length	Remarks	Location	
2	PL1	#4	8'-0"	17.00'	Straight Pylon	
2	PL2	#4	8'-0"	16.50'	do.	
2	PL3	#4	8'-0"	16.00'	do.	
2	PL4	#4	7'-3"	14.50'	do.	
2	PL5	#4	6'-0"	12.50'	do.	
2	PL6	#4	6'-0"	12.00'	do.	
10	PL7	#5	4'-2"	41.70'	Straight do.	
4	PL8	#4	2'-8"	10.68'	do.	
2	PL9	#4	2'-6"	5.00'	do.	
2	PL10	#4	1'-3"	2.16'	do.	

ESTIMATED QUANTITIES	
ITEM	Quantity
Reinforcement Steel	115 Lbs.
Class "B" Concrete	0.923 Cu. Yd.

* Quantities for Pylon.

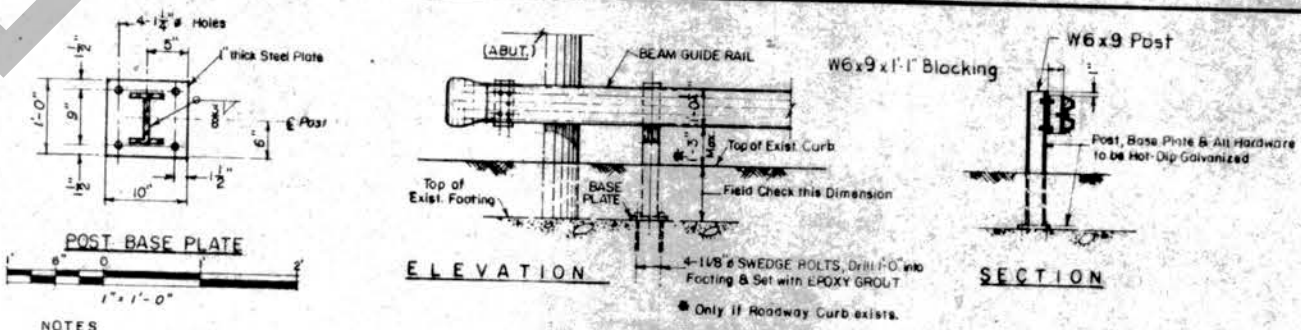
DETAIL NO. 10



DETAIL AT KNEE BRACE

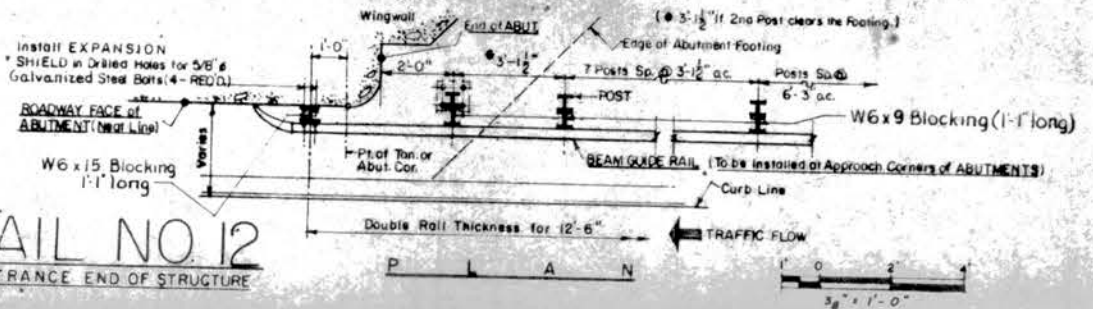
NOTES:
Align $\frac{1}{2}$ of anchor bolts and $\frac{1}{2}$ of slotted holes in guide rail at time of installation. All existing dimensions to be field checked before fabrication. Plate assembly to be hot-dip galvanized.

DETAIL NO. 11
USE AT EXIT END OF STRUCTURE



- NOTES:
- See DETAIL NO. 10 for BLOCKING-OUT SPACER Details at ABUTMENT Attachment of Guide Rail.
 - The CONTRACTOR shall verify All Conditions & Dimensions in the Field before Erection.

DETAIL NO. 12
USE AT ENTRANCE END OF STRUCTURE



GENERAL NOTES
(1) Galvanizing of Plates & Hardware shall conform to AASHTO M 232.
(2) W6 x 8.5 is an acceptable Alternate for W6 x 90 in Posts & Blocking.

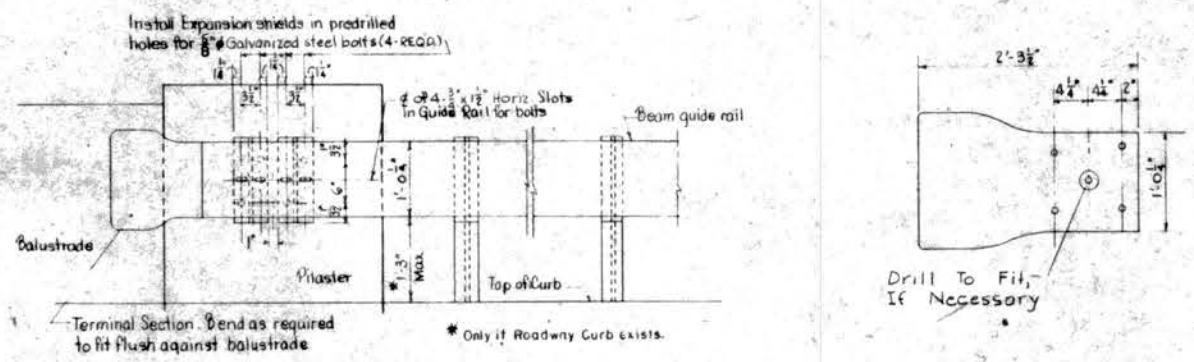
GUIDE RAIL ATTACHMENT DETAILS 3

ORIGINAL

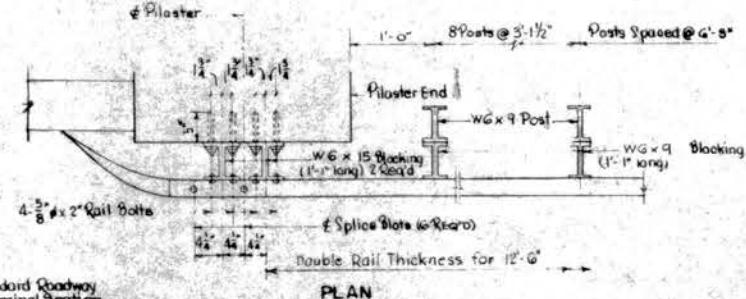
DESIGNED BY: R.G.F.	CHECKED BY: R.G.F.	DATE: 6/30/80
DRAWN BY: R.G.F.	APPROVED BY: R.G.F.	DATE: 4/20/79
		DATE: 4/20/79
		DATE: 4/20/79

STRUCTURE NO.

ORIGINAL



INTERIOR ELEVATION

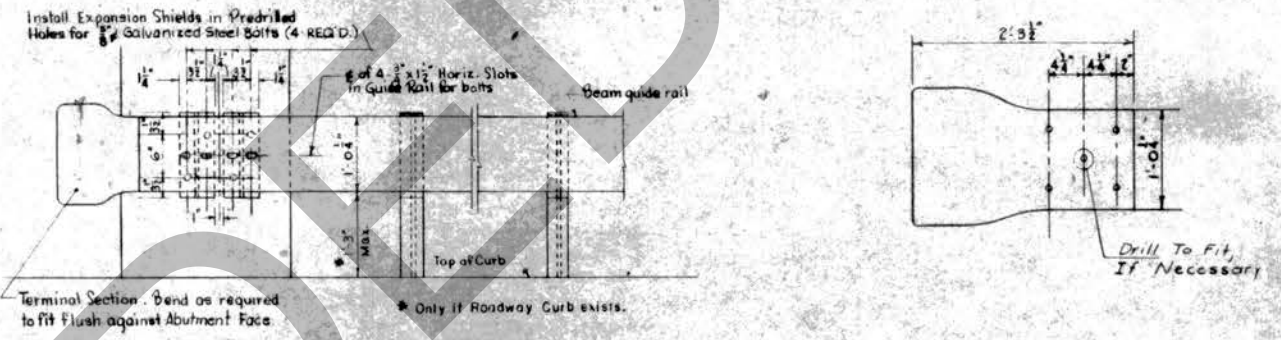


PLAN

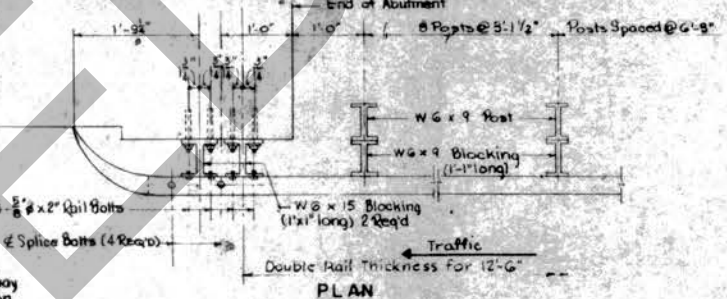
BLOCKING OF GUIDE RAIL AT PILASTER

DETAIL NO. 13

NOTE:
SINGLE STRUCTURE - TWO WAY TRAFFIC
USE AT APPROACH & EXIT ENDS
DOUBLE STRUCTURE - ONE WAY TRAFFIC
USE AT APPROACH END ONLY



ELEVATION



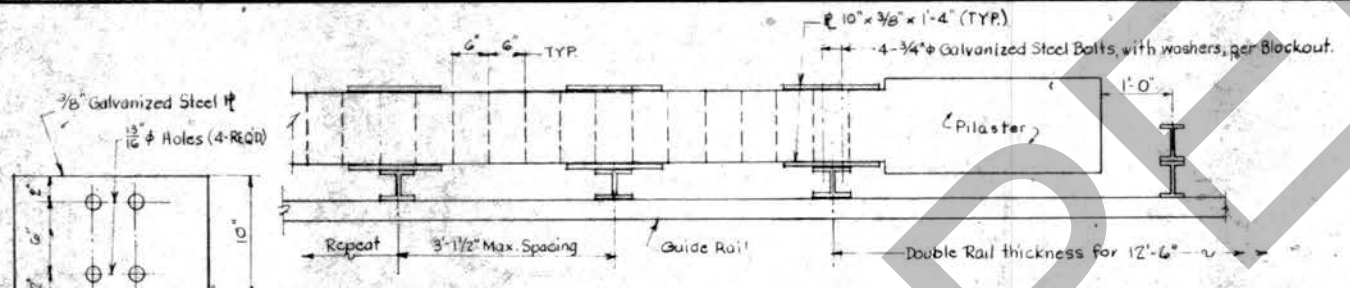
PLAN

BLOCKING OF GUIDE RAIL AT ABUTMENT-APPROACH END

DETAIL NO. 14

NOTE: Use Standard Roadway Splice for Terminal Section Splice
See DETAIL No. 1 for Post Attachment to Abutment Footing where required.

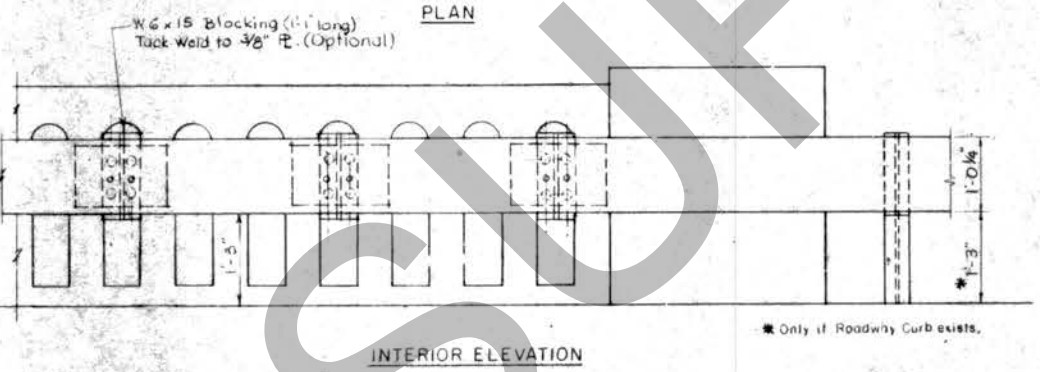
GENERAL NOTES
(1) Galvanizing of Plates & Hardware shall conform to AASHTO M232.
(2) W6 x 8.5 is an acceptable alternate for W6 x 9 in Posts & Blocking.



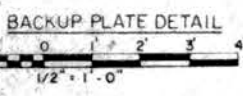
PLAN

BLOCKING OUT OF GUIDE RAIL ACROSS STRUCTURE

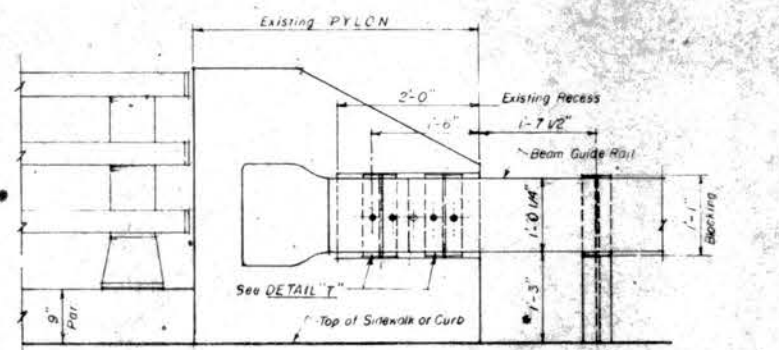
DETAIL NO. 15



INTERIOR ELEVATION



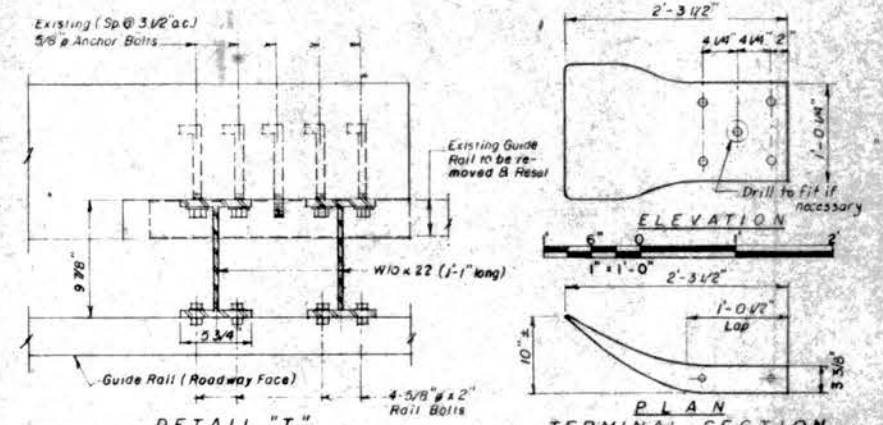
BACKUP PLATE DETAIL



INTERIOR ELEVATION

BLOCKING OUT OF GUIDE RAIL AT PYLON

PLAN



DETAIL "T"

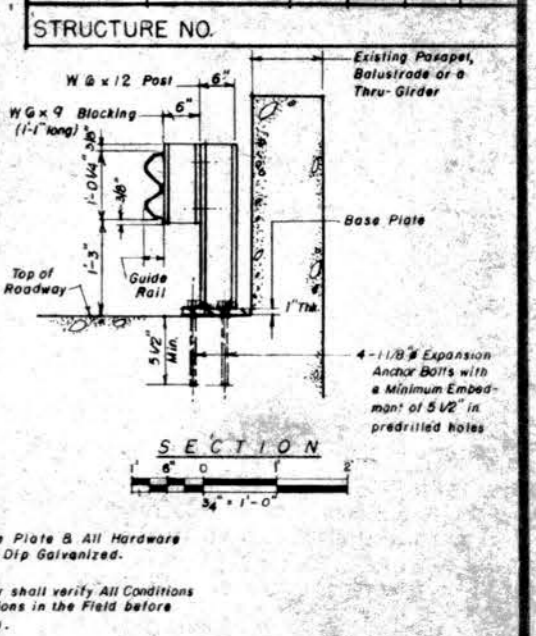
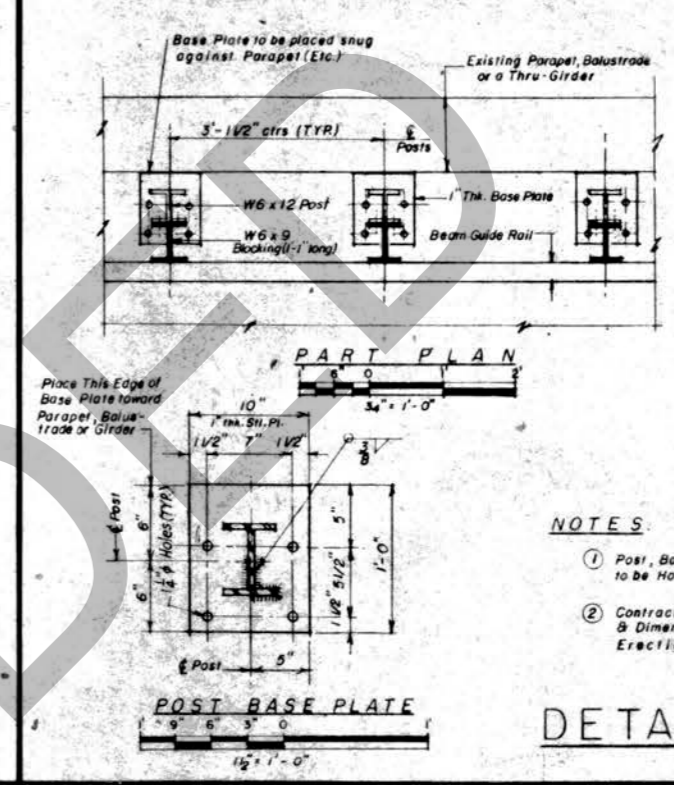
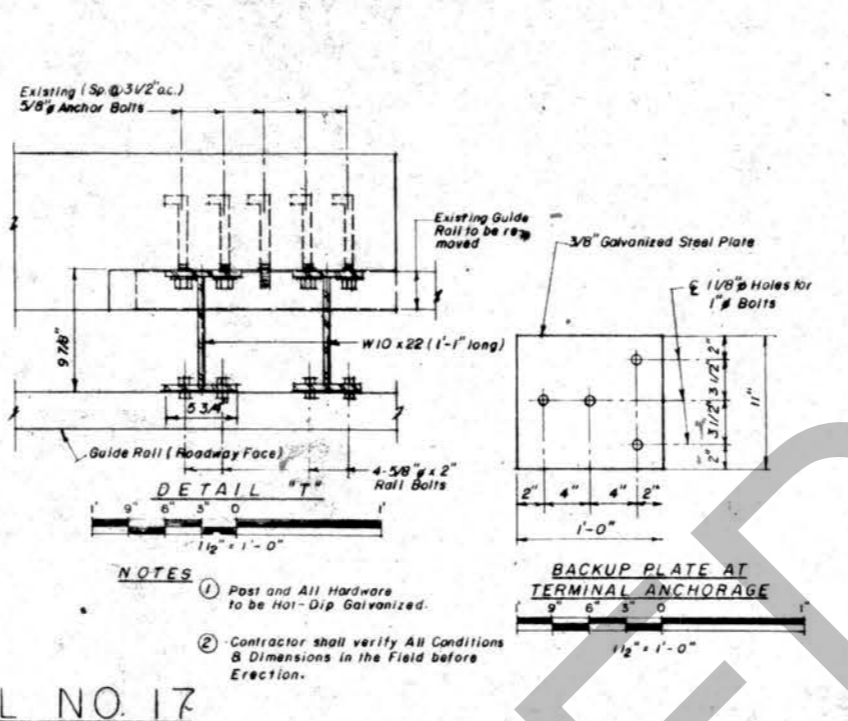
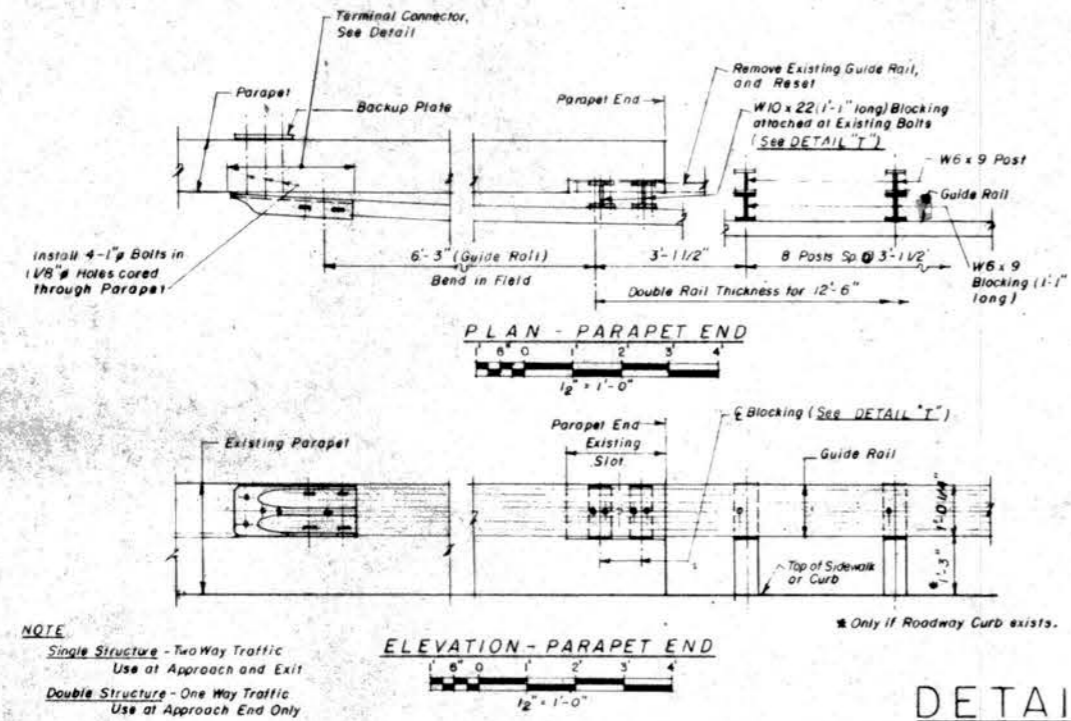
TERMINAL SECTION

DETAIL NO. 16

NOTE:
Single Structure - Two Way Traffic
Use at Approach End only.
Double Structure - One Way Traffic
Use at Approach End only.

GUIDE RAIL ATTACHMENT DETAILS 4

DESIGNED BY	DATE	BY	CRD	DATE
DRAWN BY				
CHECKED BY				
IN CHARGE OF				
SECTION	REVISION			
1				
2				
3				
4				
5				



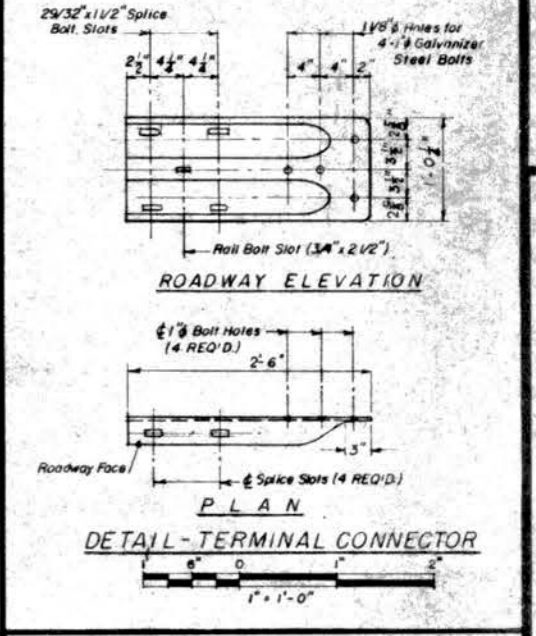
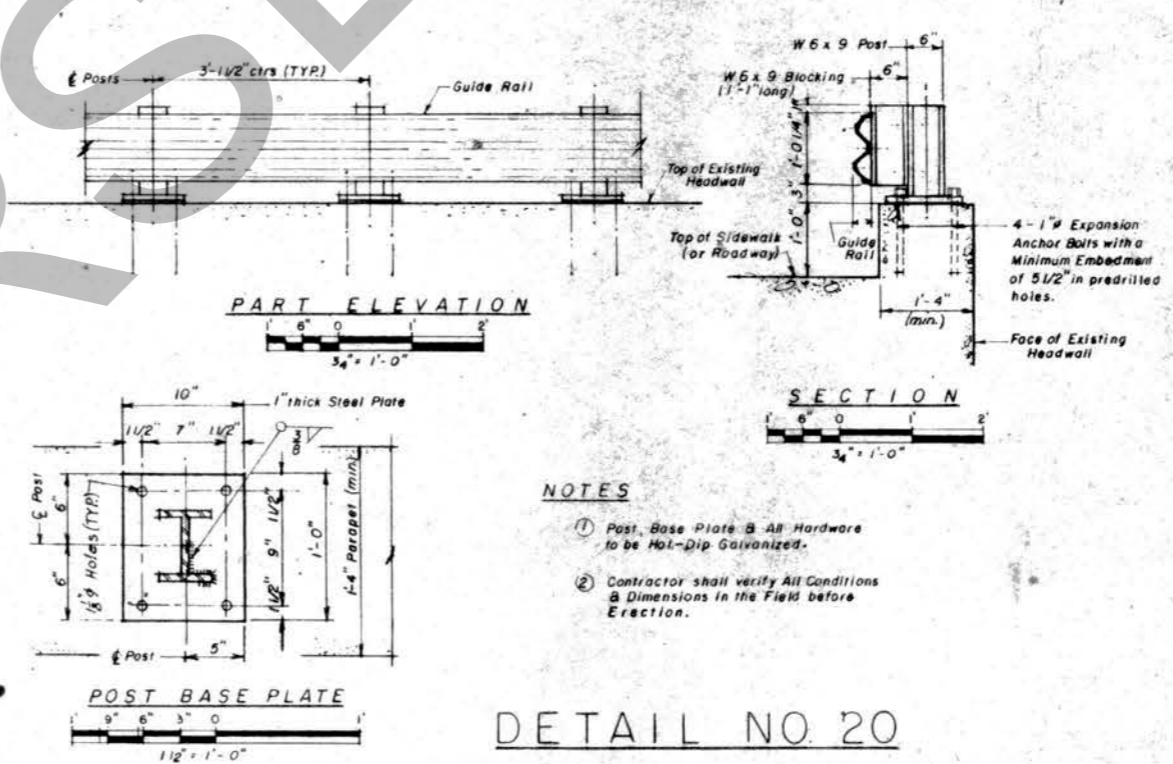
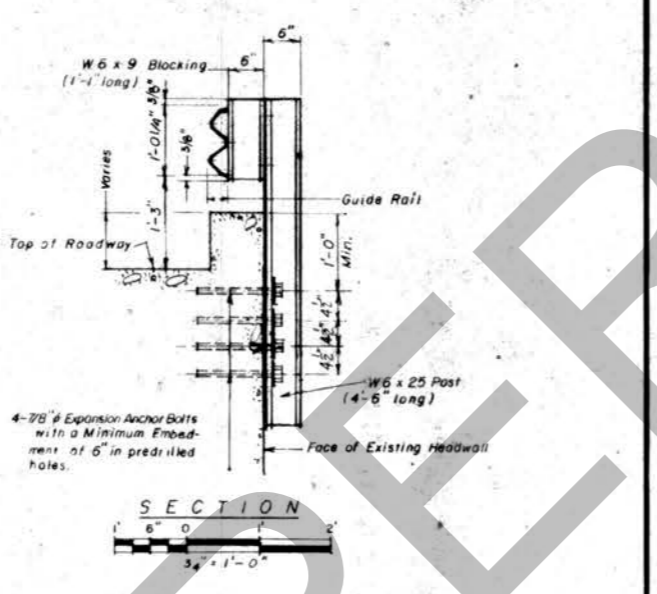
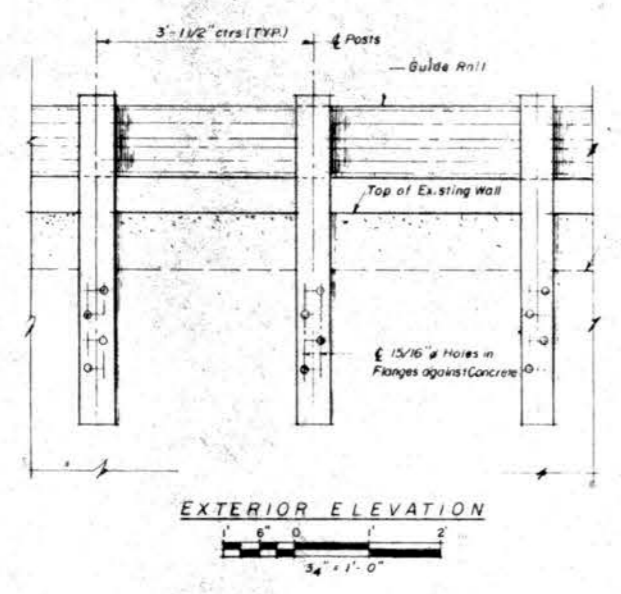
NOTE
Single Structure - Two Way Traffic
Use at Approach and Exit
Double Structure - One Way Traffic
Use at Approach End Only

NOTES
1 Post and All Hardware to be Hot-Dip Galvanized.
2 Contractor shall verify All Conditions & Dimensions in the Field before Erection.

NOTES
1 Post, Base Plate & All Hardware to be Hot-Dip Galvanized.
2 Contractor shall verify All Conditions & Dimensions in the Field before Erection.

DETAIL NO. 17

DETAIL NO. 18



NOTES
1 Post and All Hardware to be Hot-Dip Galvanized.
2 Contractor shall verify All Conditions & Dimensions in the Field before Erection.

NOTES
1 Post, Base Plate & All Hardware to be Hot-Dip Galvanized.
2 Contractor shall verify All Conditions & Dimensions in the Field before Erection.

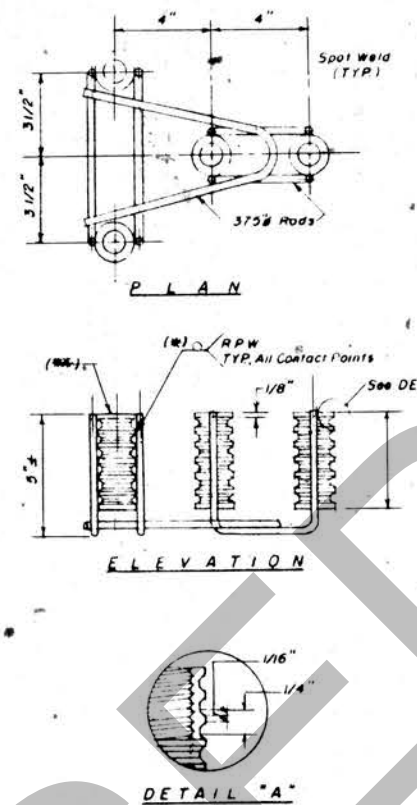
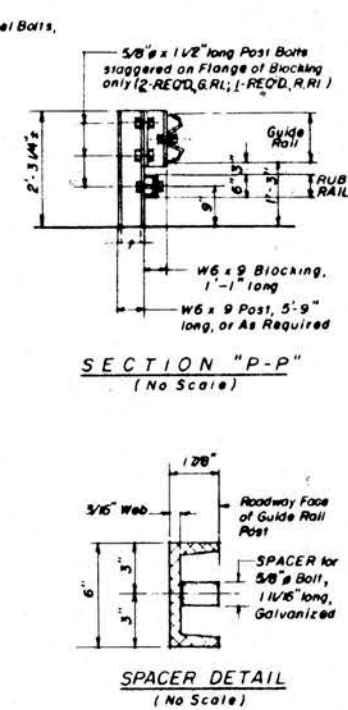
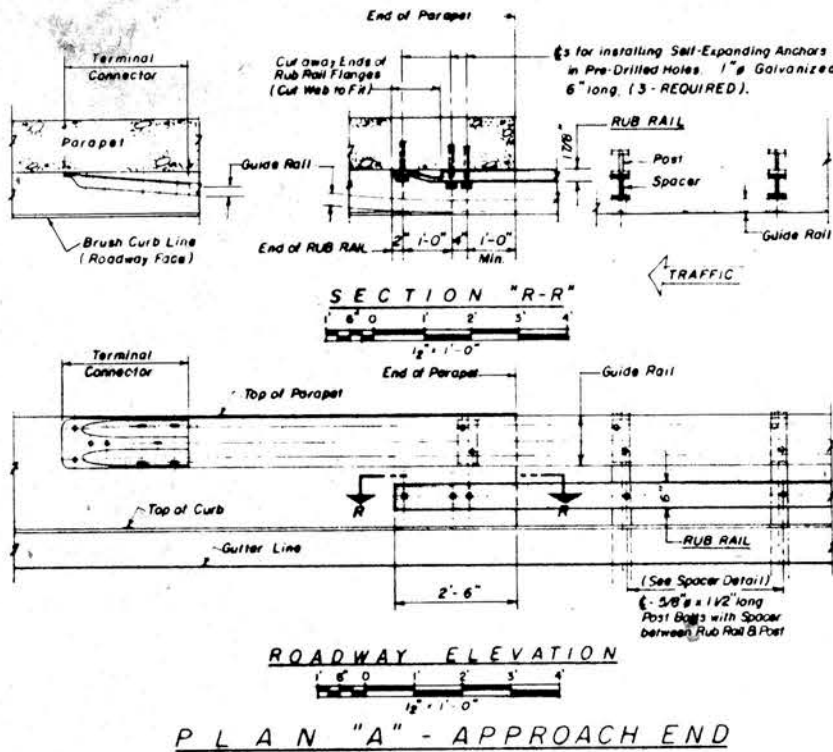
GENERAL NOTES
1) Galvanizing of Plates & Hardware shall conform to AASHTO M 252.
2) W6 x 8.5 is an acceptable Alternate for W6 x 9.0 in Posts & Blocking.

DETAIL NO. 19

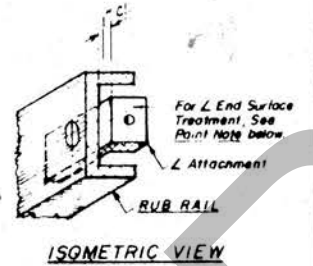
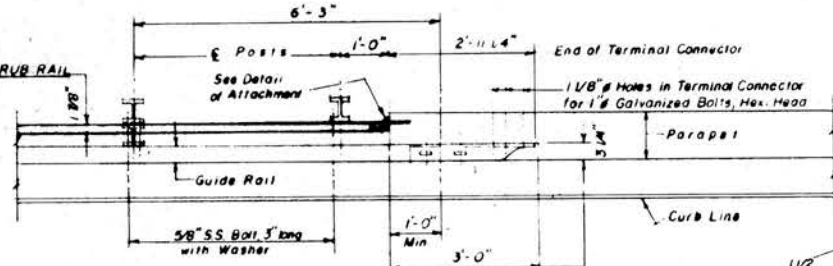
DETAIL NO. 20

GUIDE RAIL ATTACHMENT DETAILS 5

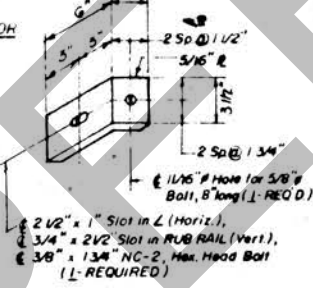
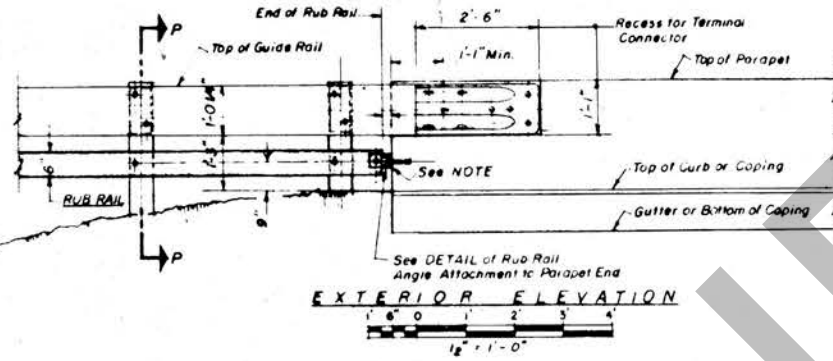
DESIGNED BY:	CHECKED BY:	DATE
R. G. Fox	R. G. Fox	6/30/80
DRAWN BY:	IN CHARGE OF:	
Blair Reslover, Sr.	R. G. Fox	
REVISION:	BY:	DATE
1. Back-up Plate Detail	J.P.S.	4/20/79
2. Back-up Plate Detail	J.P.S.	4/20/79
3. Back-up Plate Detail	J.P.S.	4/20/79



NOTES
 (*) Each welded attachment of wire to ferrule shall develop the tensile strength of the wire.
 (**) Threaded steel insert with solid bottom tapered to a minimum threaded depth of 2 1/2" for use with 7/8" - 9 x 2 1/2" galvanized HS Hex Bolt & a 15/16" I.D., 2 1/4" O.D., 5/32" thick, Type A, plain washer.
 Four (4) bolts & four (4) washers to be provided with each assembly.
 Wires shown are minimum allowable size and shall conform to the requirements of A.S.T.M. A 510, Grade 1030 and have a minimum tensile strength of 100,000 psi.
 Ferrules shall be made from steel meeting the requirements of A.S.T.M. A 108, Grade 12 L 14. Inserts shall be tapered to the dimensional requirements specified in A.S.T.M. A 563 for nuts receiving galvanized bolts.
 Bolts shall conform to the requirements of A.S.T.M. A 325 or A 449 and shall be threaded full length. Washers shall be made of steel and shall meet the dimensional requirements of A.N.S.I. B 27.2 Type A Plain Washers. Both shall be galvanized in accordance with A.S.T.M. A 153.
 Wire diameters and materials requirements and ferrule materials requirements and external diameters may be altered provided manufacturer demonstrates revised design is equivalent to the design shown in this standard.
 Dimensional tolerances not shown or implied are intended to be those consistent with the proper functioning of the part, including its appearance, and accepted manufacturing practices.



PAINT NOTE
 Paint Surface of Angle in Contact with Concrete with a Heavy Coat of Aluminum Pigmented Alkaline Resistant Bituminous Paint equal to Federal Specifications TT-C-001079a.



DETAIL OF RUB RAIL ANGLE ATTACHMENT
 NOTE: Anchor Bolts, Hex.Nuts, Spacers & Washers to be Hot Dip Galvan-1280.

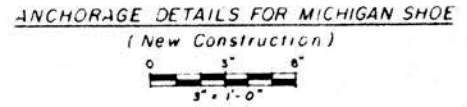
PLAN 'B' - EXIT END
DETAILS OF RUB RAIL ATTACHMENTS

DETAIL NO. 21

NOTE: Details shown are primarily to depict Rub Rail Attachments. Guide Rail Attachments shown are for New Conditions; however, Rub Rail Details will be identical for Guide Rail Attachments to Existing Structures.

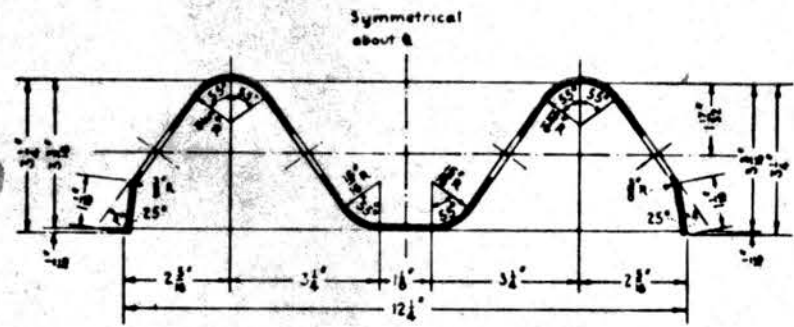
GENERAL NOTES
 (1) Galvanizing of Plates & Hardware shall conform to AASHTO M 232.
 (2) W6 x 8.5 is an acceptable Alternate for W6 x 9.0 in Posts & Blocking.

GUIDE RAIL ATTACHMENT DETAILS 6



DESIGNED BY	CHECKED BY	DATE	
R. G. F.	R. G. F.	4/20/79	
DATE	BY	CKD	DATE
4/20/79	JJS	JJS	4/20/79
4/20/79	JJS	JJS	4/20/79
4/20/79	JJS	JJS	4/20/79
4/20/79	JJS	JJS	4/20/79
4/20/79	JJS	JJS	4/20/79

DESIGNED BY: R. G. F.
 CHECKED BY: R. G. F.
 DATE: 4/20/79
 IN CHARGE OF: R. G. F.

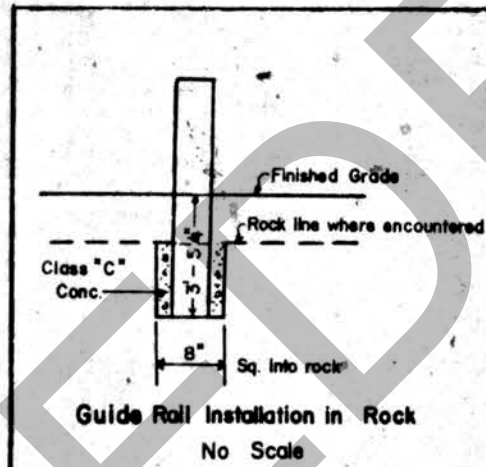
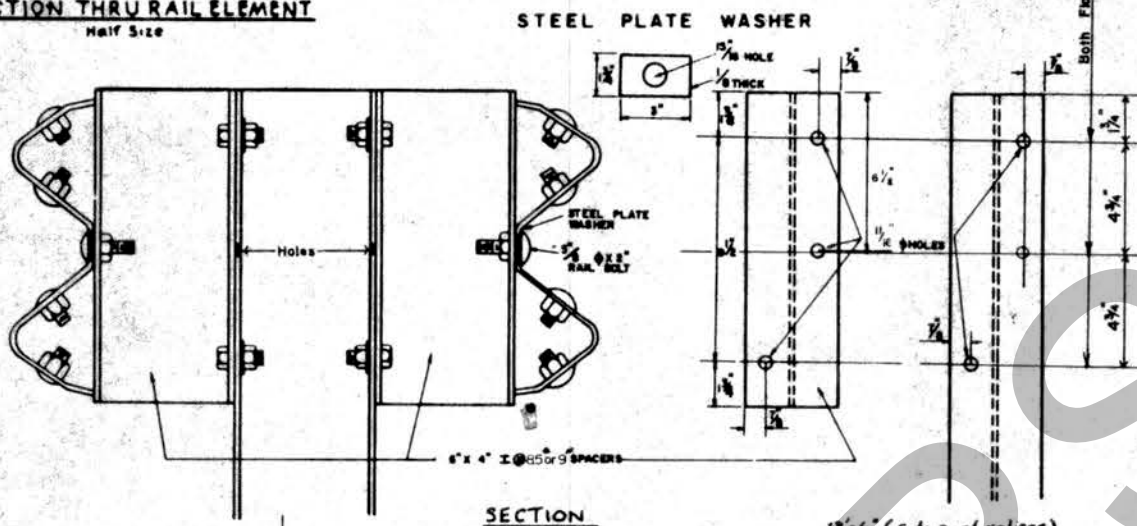


Blank Width = 19' 6"
 Gauge = 12 Ga.
 Material: Open Hearth or Elec. Pile Steel
 Effective Length of Beam Sections: 12' 6" or 25' 0"

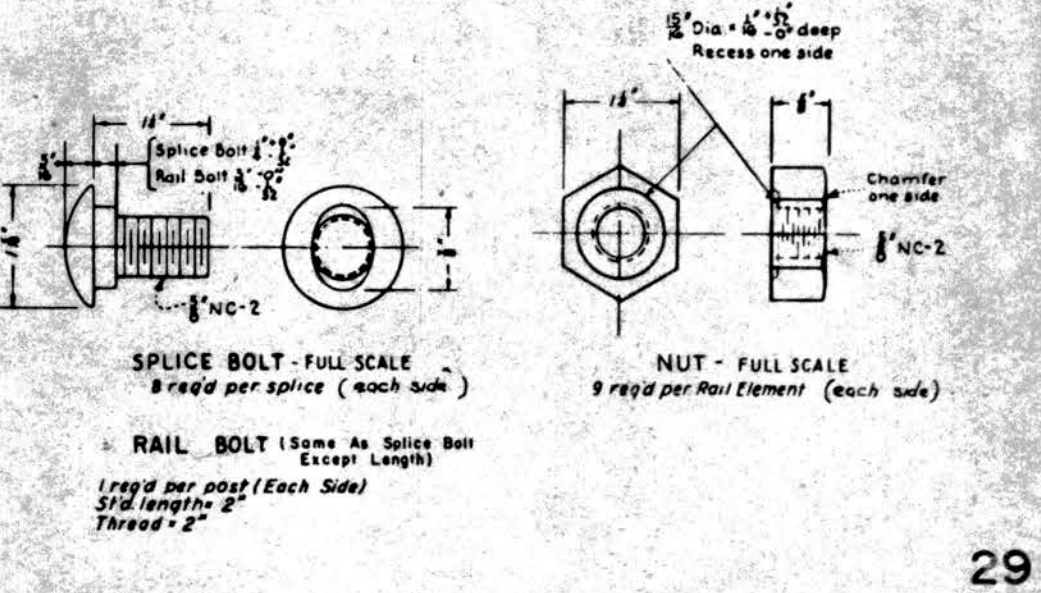
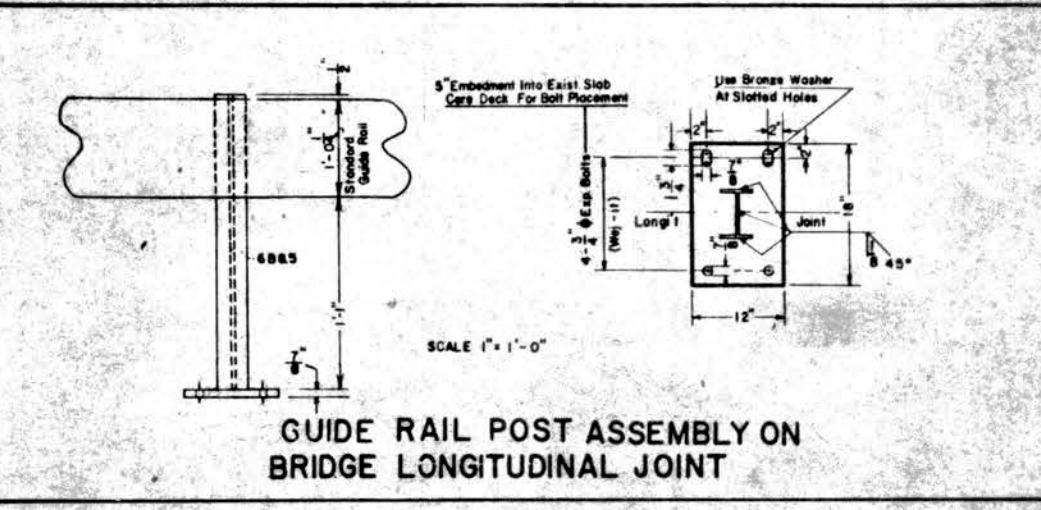
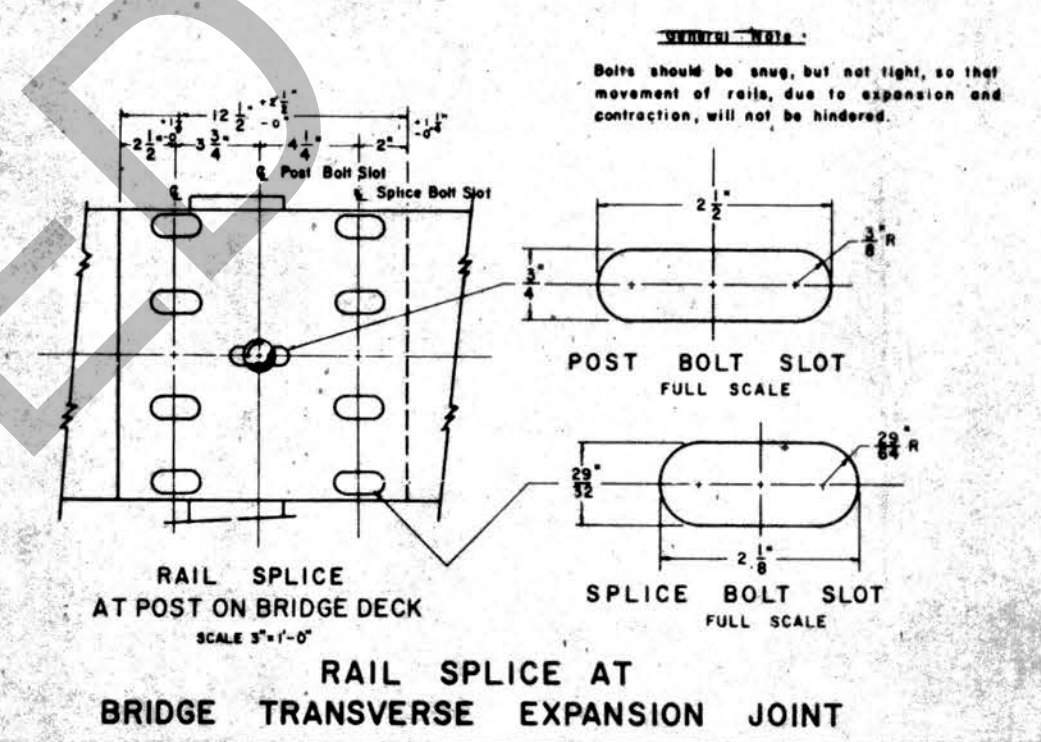
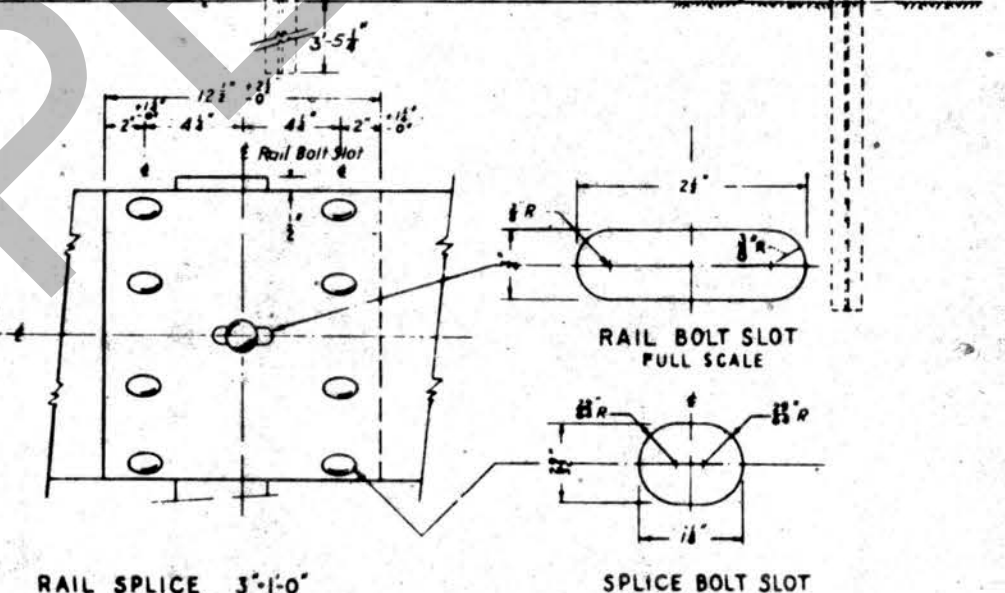
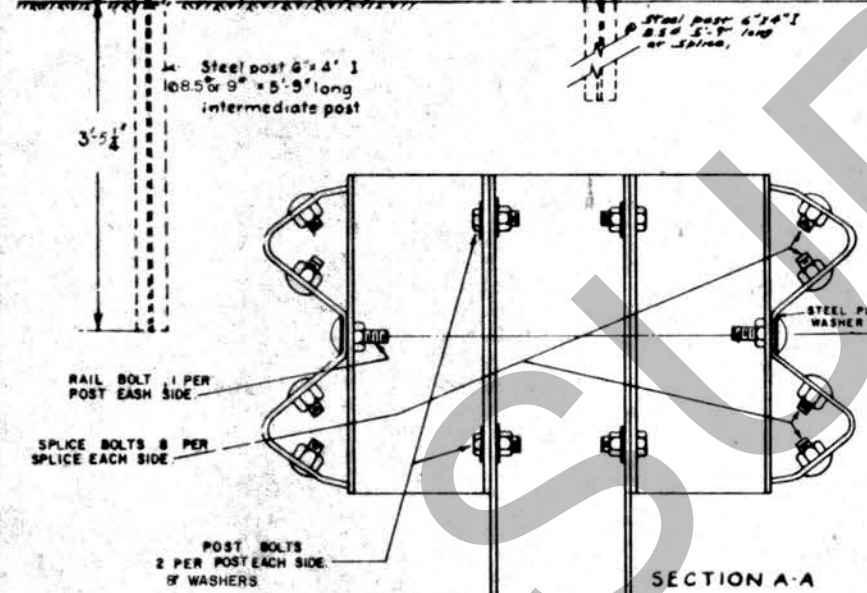
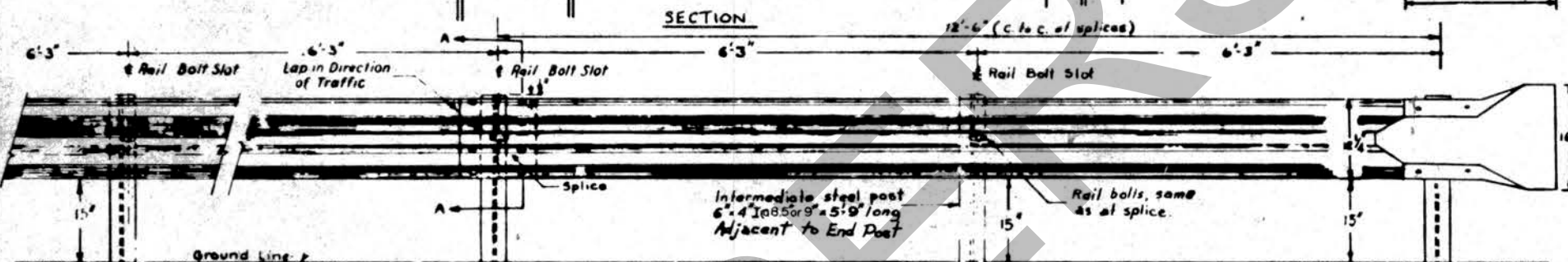
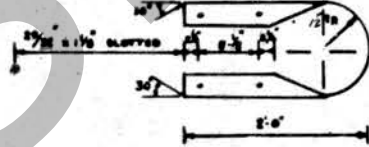
SECTION THRU RAIL ELEMENT
 Half Size

General Notes

- All dimensions are subject to manufacturing tolerances.
- Rail elements shall be furnished shop-curved, concave or convex, for radii between 20 feet and 150 feet.
- The steel for rail elements and bolts shall be of a quality that will develop specification values for beam and tensile strengths.
- Guide rail shall be class A type conforming to current AASHTO Specification M-180. Steel posts and spacers shall be hot dipped galvanized in accordance with AASHTO specification designation M-111.

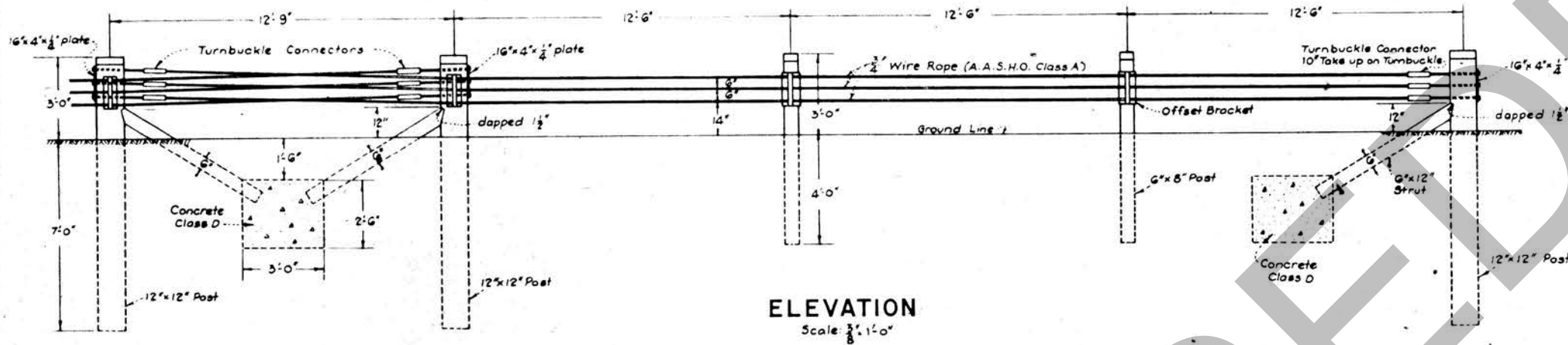
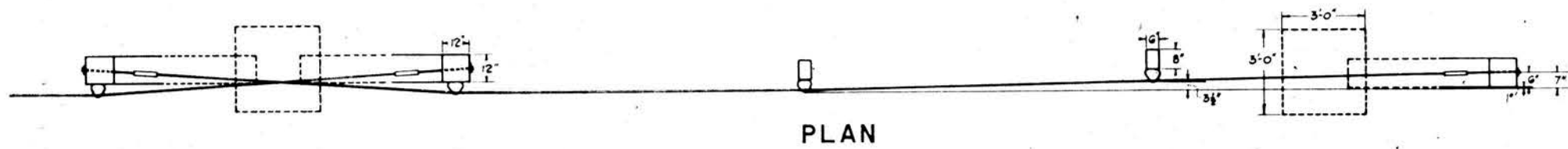


TERMINAL SECTION



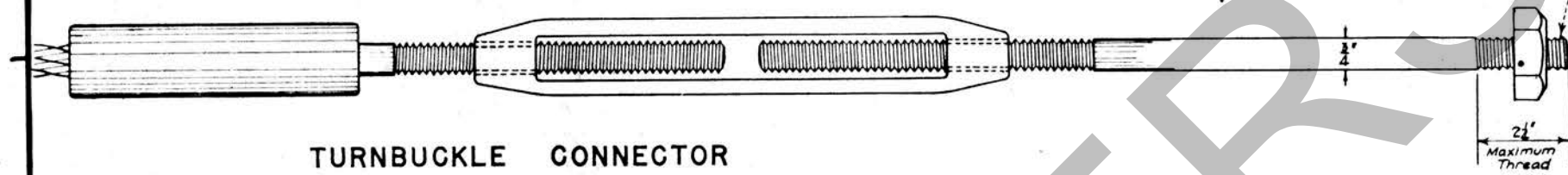
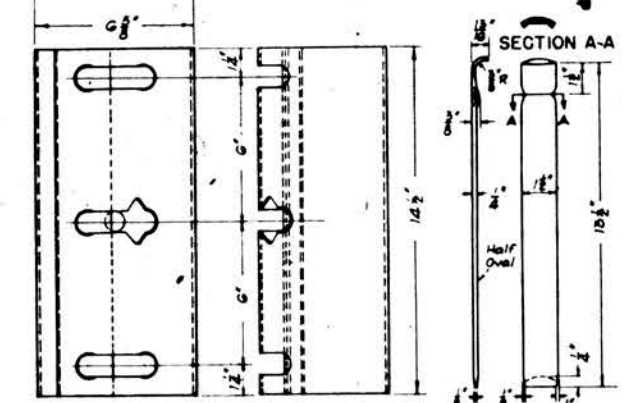
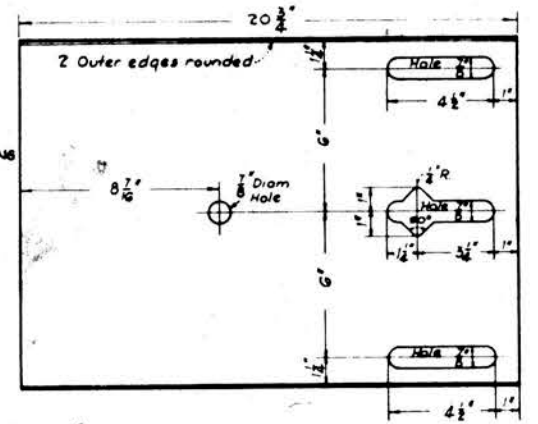
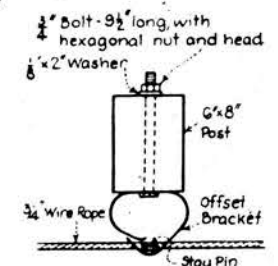
BEAM GUIDE RAIL, DUAL FACE
 Scales as Indicated

15-20-74 REVISED Original Drawing
 7-2-72

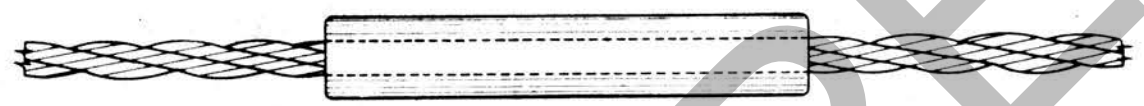


Note: All materials used in construction of the Wire Rope Fence, excepting the wood in the posts and struts shall be galvanized.

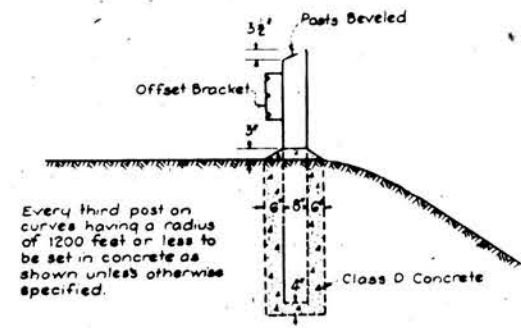
Thread not to extend more than $\frac{1}{2}$ " beyond nut



Turnbuckle Connector may be manufactured in two pieces as shown above or in one piece. Design to be approved by the Engineer.



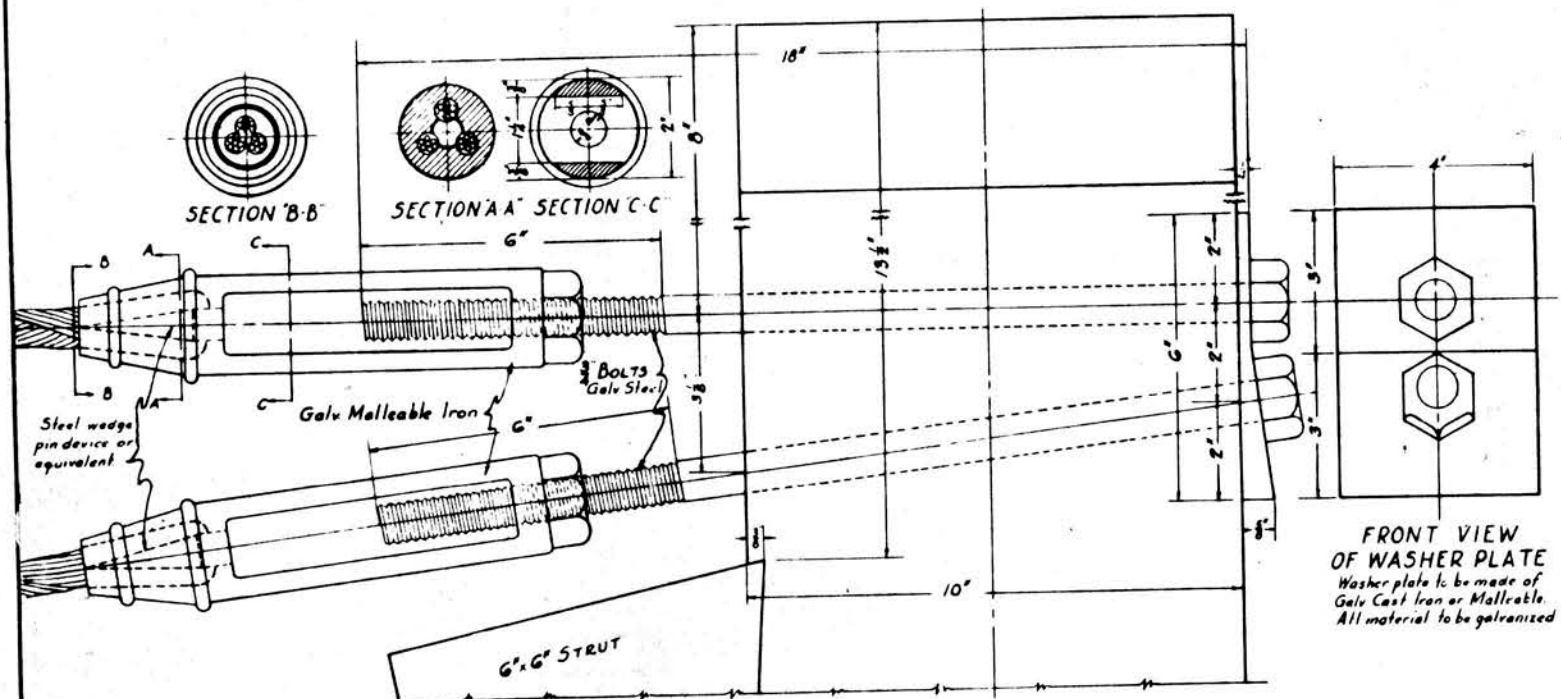
RESET WIRE ROPE FENCE
Scales as Indicated



Every third post on curves having a radius of 1200 feet or less to be set in concrete as shown unless otherwise specified.

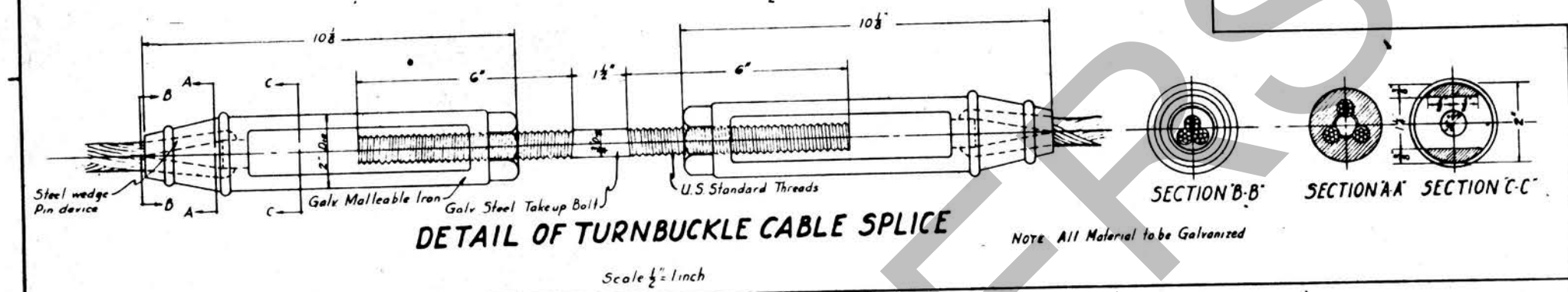
1-6-61	Rev	Paint Specs
11-20-57	Revised	
5-56	Revised	
June 3 1953	No Change	
Nov 5 1953	Revised	
Nov 20 1949	Revised	
Dec 6 1945	Revised	
Aug 30 1945		

No Revision 1961 STD Spec. 12-6-61
Sept. 1, 1961 Wood Barricade



**DETAIL OF END POST FASTENING
SHOWING TURNBUCKLE TAKE UP BOLTS**

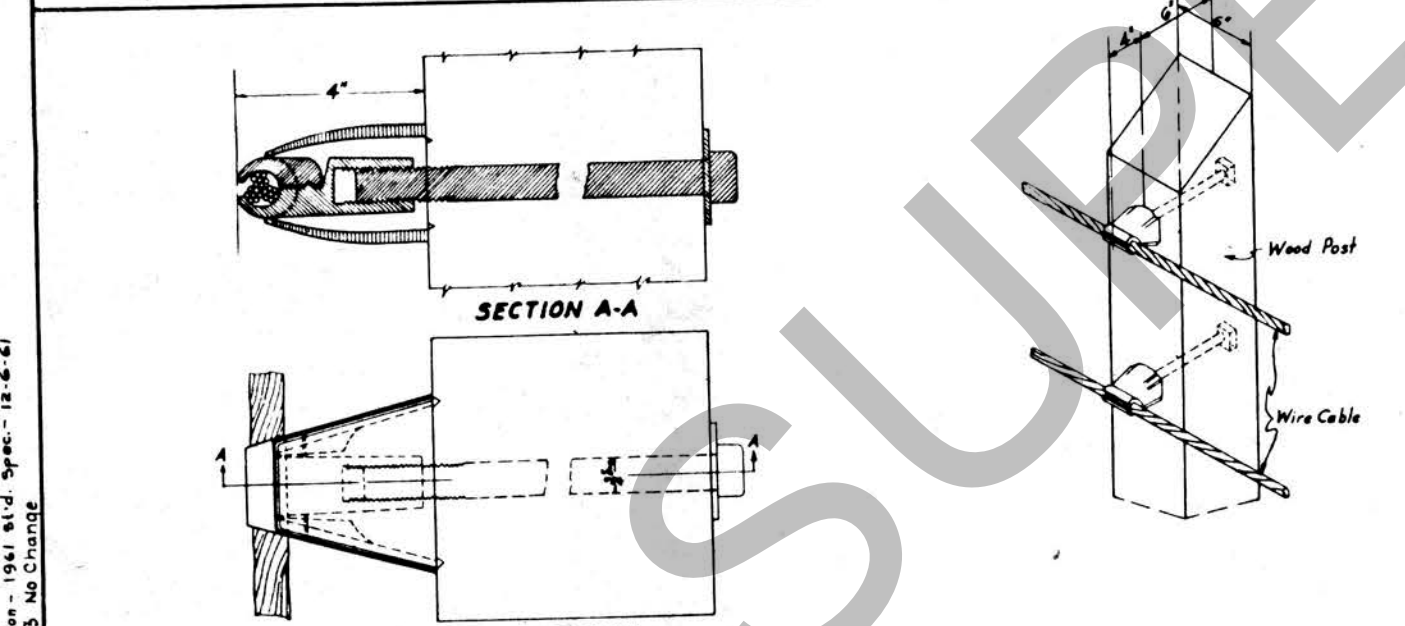
Scale 1/2" = 1 inch



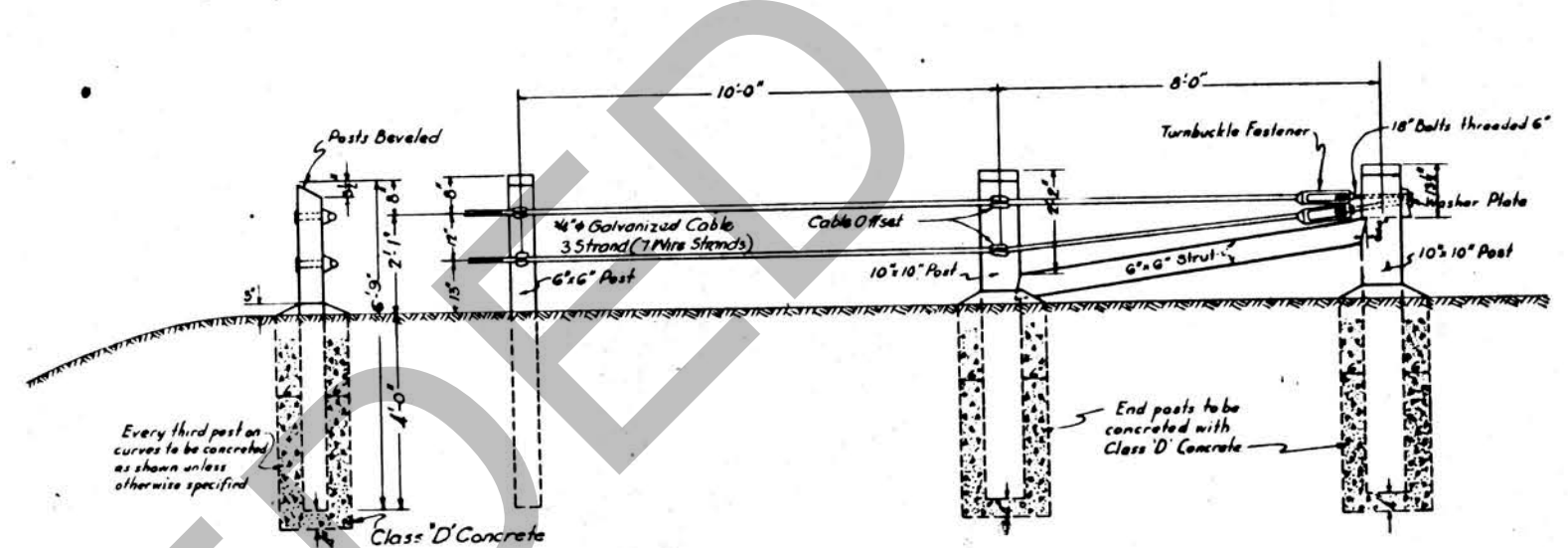
DETAIL OF TURNBUCKLE CABLE SPLICE

Scale 1/2" = 1 inch

NOTE: All Material to be Galvanized



ASSEMBLY OF OFFSET CABLE SUPPORT FOR WIRE ROPE RAILING



RESET WIRE ROPE FENCE

Scale 1/2" = 1 foot

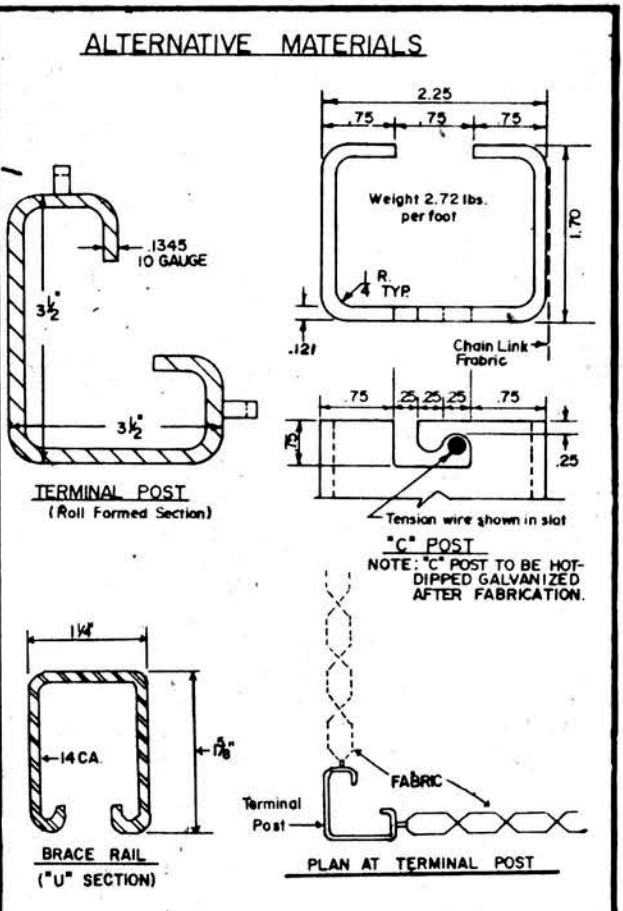
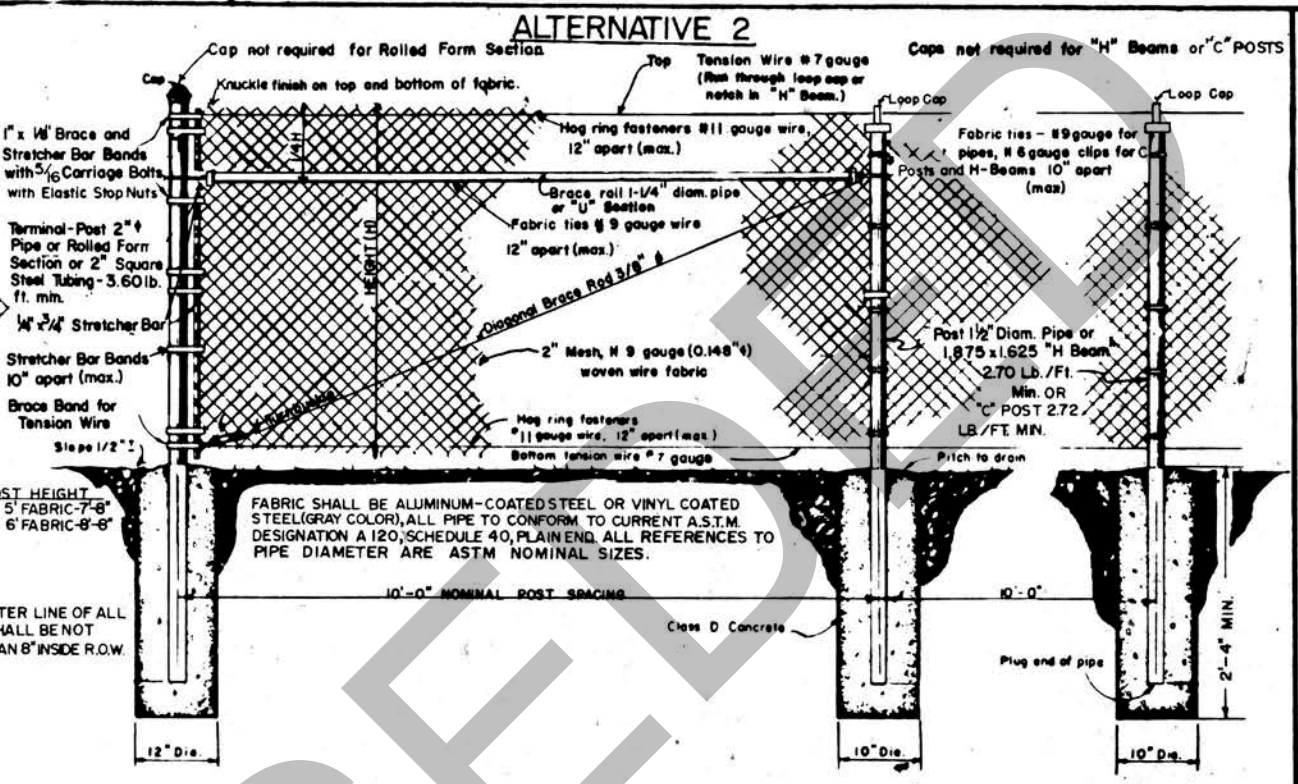
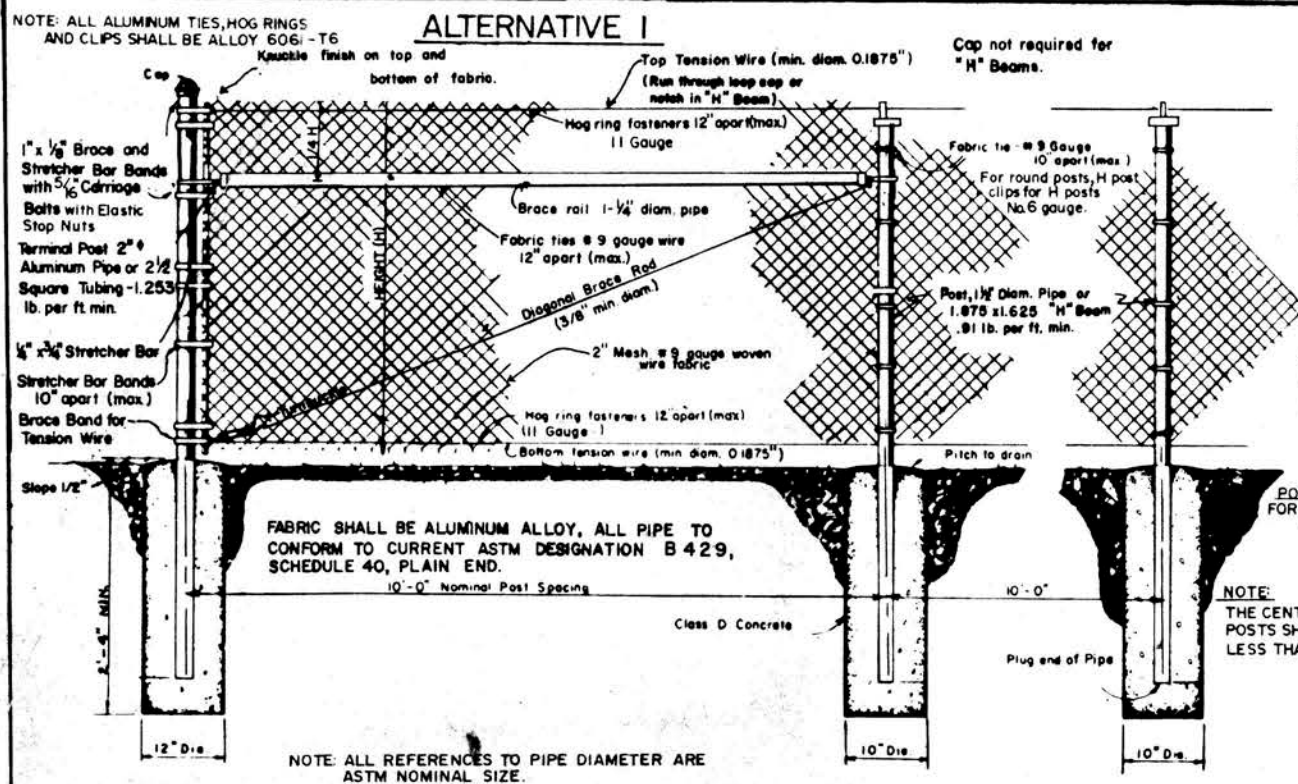
Every third post on curves to be concreted as shown unless otherwise specified

End posts to be concreted with Class D Concrete

No Revision - 1961 Std. Spec. - 12-6-61
5-5-53 No Change

Revised 7-19-38



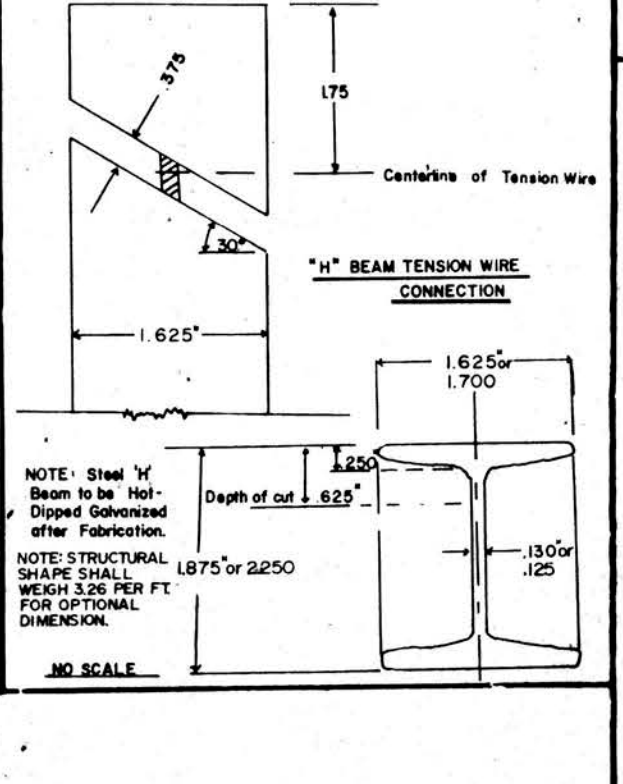
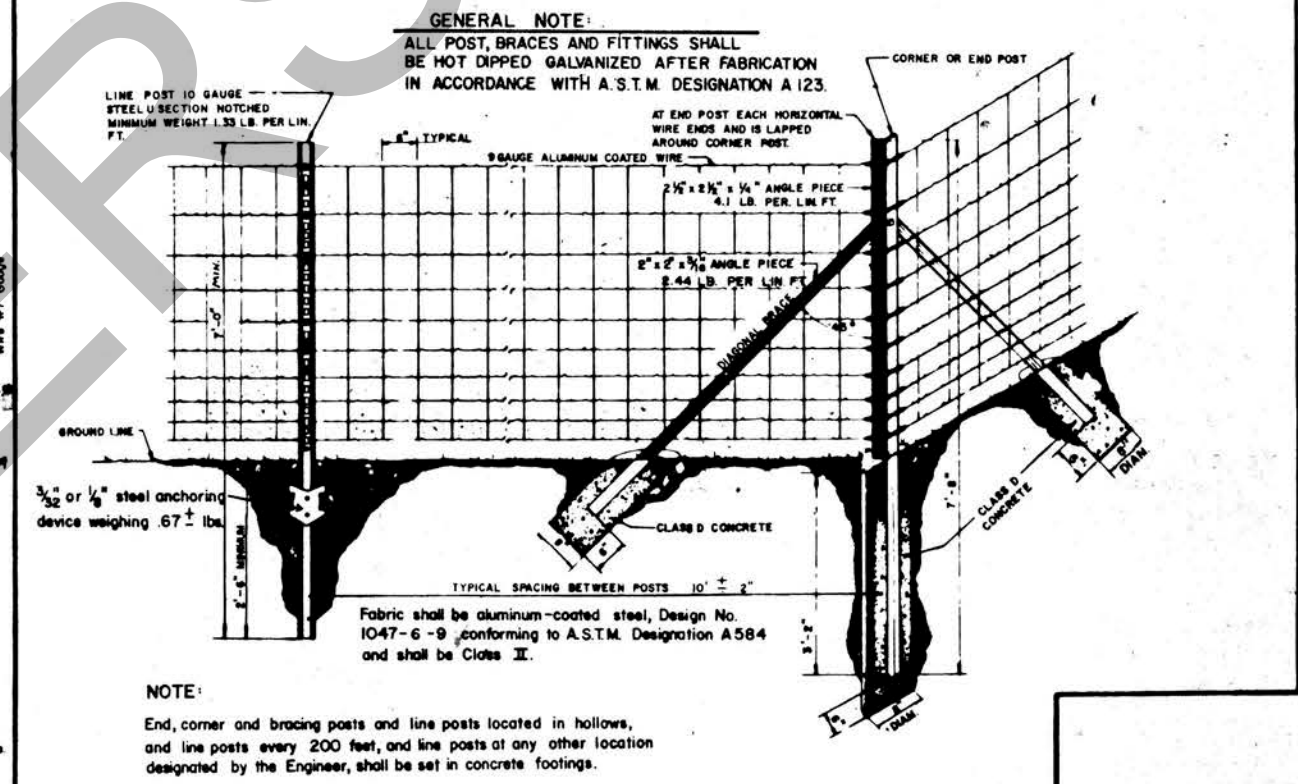
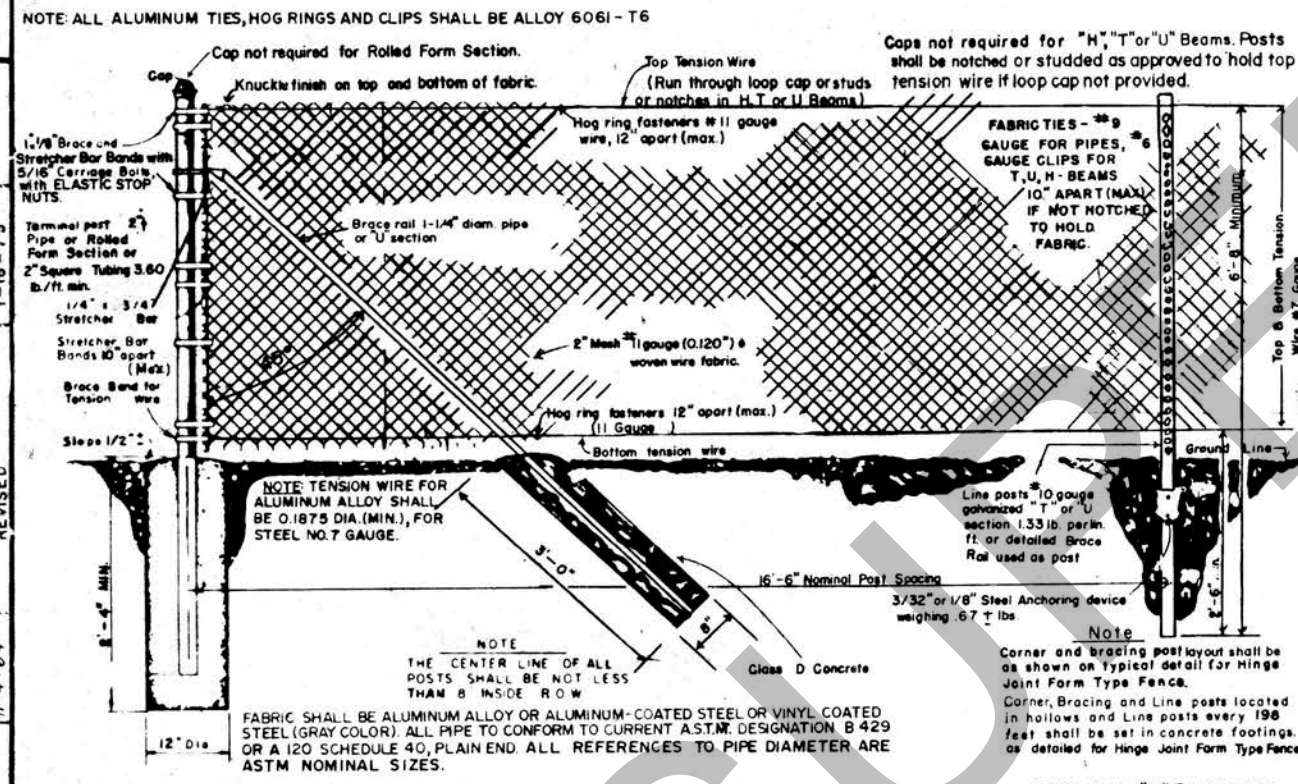


TYPICAL DETAILS CHAIN LINK FENCE

NOTE: WITH THE APPROVAL OF THE ENGINEER, IN SOFT MARSHY GROUND, POSTS MAY BE DRIVEN, THE CONCRETE FOOTING DELETED AND APPROVED DRIVE ANCHORS USED.

NOTE: WHEN CHAIN LINK FENCE, TYPE S IS SPECIFIED, ONLY ALTERNATIVE 2 WILL BE PERMITTED

NOTE: WHEN CHAIN LINK FENCE, TYPE A IS SPECIFIED, ALTERNATIVE 1 OR 2 WILL BE PERMITTED



TYPICAL DETAILS CHAIN LINK FARM TYPE FENCE

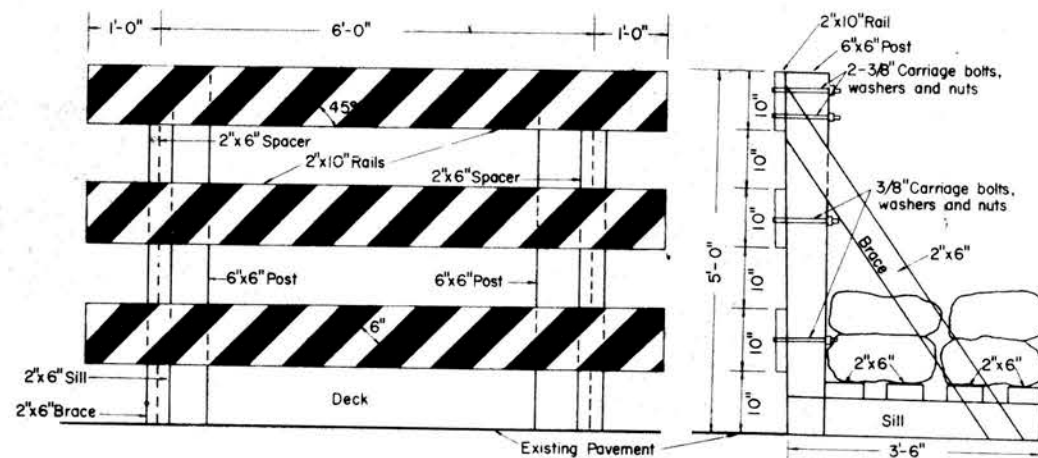
NOTE: THE STEEL ANCHORING DEVICE MAY BE DELETED ON POSTS SET IN HOLES DRILLED IN ROCK. THE LENGTH OF POST MAY BE REDUCED TO ONE FOOT BELOW THE TOP OF THE ROCK.

NOTE: All Steel "T", "U" or Brace Rail fittings shall be hot dipped galvanized after fabrication in accordance with ASTM Designation A123.

POST HEIGHT FOR 4' Fabric 6'-8"

TYPICAL DETAILS HINGE JOINT FARM TYPE FENCE

Revised H. Beam	5-23-80
Revised Memo Dated	5-31-76
Revised Memo Dated	2-28-76
Revised Memo Dated	2-25-76
Knuckle finish ADDED	8-19-74
Rev. ASTM Des. in Alternative 1	7-23-74
REVISED	4-28-73
REVISED	1-15-73
REVISED	11-4-69
Original	



BARRICADE, TYPE III A



Lumber used shall be yellow pine or fir No.1 common S4S, except 12"x12" timbers.
 Rails are to be painted alternate orange and white stripes 6" wide other parts to be painted white 3 coats. or reflectorized sheeting may be utilized meeting requirements specified for Construction Signs. Barricade, Type III A shall be fabricated of wood or metal except that rails may be constructed of wood, metal or plastic.

The orange and white stripes shall be reflectorized so as to be visible under normal atmospheric conditions from a minimum distance of 1,000 feet when illuminated by the low beams of standard automobile headlights.

Bags shall be filled with sand and shall be of cloth, burlap or coarse fiber and shall be of a quality approved by the Engineer, and shall have a minimum capacity of one (1) cubic foot.

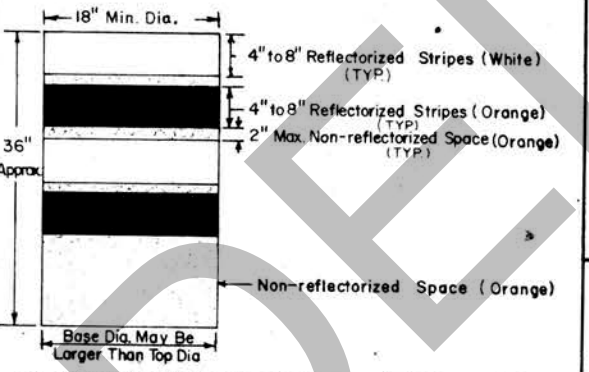
If wood is used, spacers, braces, sill and deck to be fastened with 40d spikes. Holes to be bored in planks for all spikes.

Where barricade is used in location where traffic is to pass on either side, stripes shall be slanted downward toward the side on which traffic is to pass. Where traffic is to pass on both sides, stripes shall slope downward in both directions from the center.

IMPORTANT

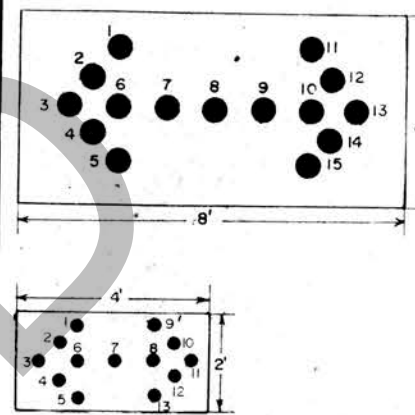
NOTE: Barricade Type III A shall not be used in any area where contact with public vehicular traffic is possible. Open excavation areas and other similar situations may require Barricades Type IIIa and their use shall be only upon direction of the engineer.

Drums shall be made of orange plastic with a minimum of four alternate orange and white reflectorized stripes. If there are non-reflectorized spaces between the stripes, they shall be no more than 2" wide. Stripes shall be reflective sheeting which meets the requirements as shown for construction signs. The top of the drum shall not be open.
 Drums shall be constructed so that they will not roll if knocked over.
 Drums shall be round, except that other shapes, which provide the same visibility as an 18" diameter round drum regardless of orientation, may be used if approved by the Bureau of Materials.



DRUMS

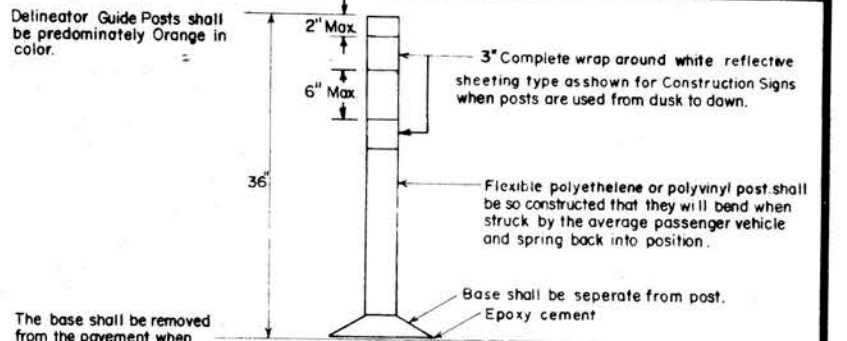
When ballast is required by the Engineer, sand shall be used. The maximum weight of the ballast shall be 50 lbs. and be located approximately at ground level.



4' X 8' BOARD
 Flashing Messages to Light as follows
 Right Arrow 3,6,7,8,9,11,12,13,14 & 15
 Left Arrow 1,2,3,4,5,7,8,9,10 & 13
 Double Arrow 1,2,3,4,5,7,8,9,11,12,13,14 & 15
 Warning Bar Minimum of 5 Horizontal Lights; Suggested as 6, 7, 8, 9 & 10

2' X 4' BOARD
 Right Arrow 3,6,7,9,10,11,12 & 13
 Left Arrow 1,2,3,4,5,7,8 & 11
 Double Arrow 1,2,3,4,5,7,9,10,11,12 & 13
 Warning Bar 3,6,7,8 & 11

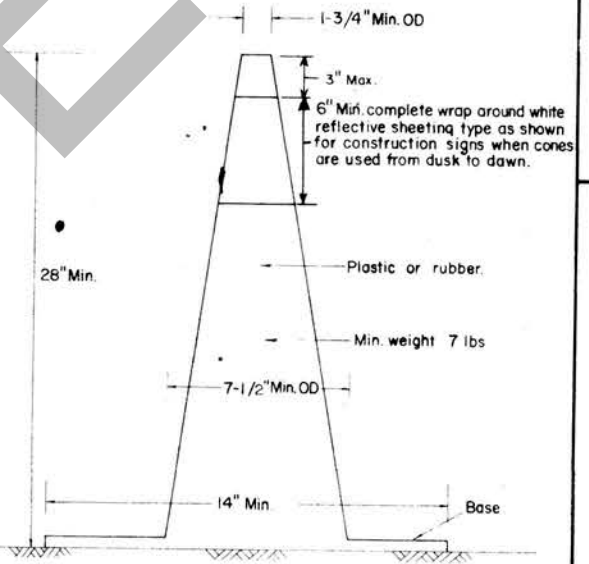
ILLUMINATED FLASHING ARROWS



DELINEATOR GUIDE POSTS

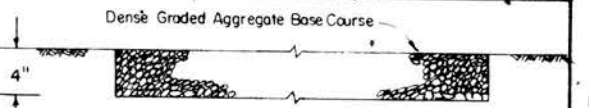
Minor manufacturers variations may be acceptable, upon approval of the Engineer.

Traffic Cones shall be predominately Orange in color.



TRAFFIC CONES

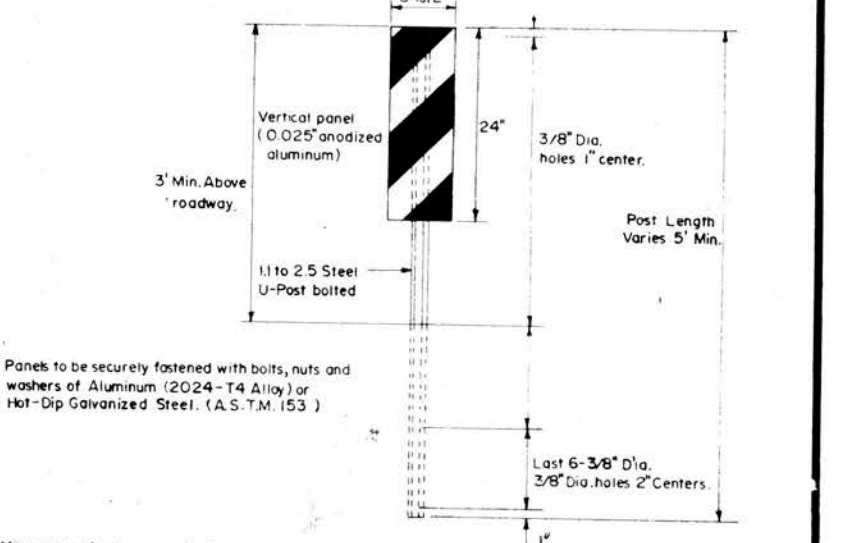
Bases may be of the breakaway ballasted type. Minor manufacturers variations may be acceptable upon approval of the Engineer.



TEMPORARY SIDEWALK

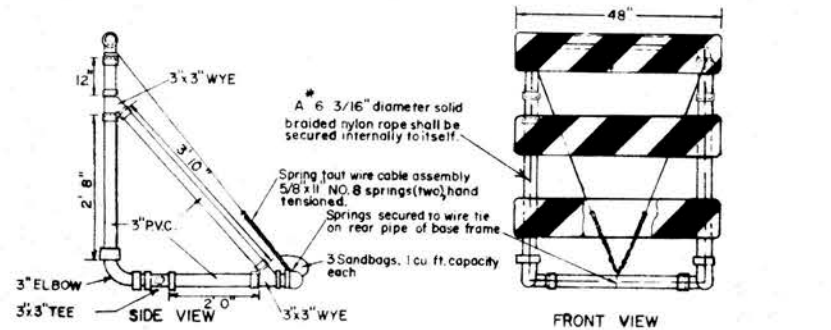
NOTE: All excavation or embankment required to construct Temporary Sidewalk shall be included in unit price bid for item, Temporary Sidewalk.

Alternate orange and white stripes shall be reflective sheeting as shown for Construction Signs, 6" wide sloping downward at an angle of 45° in the direction traffic is to pass.



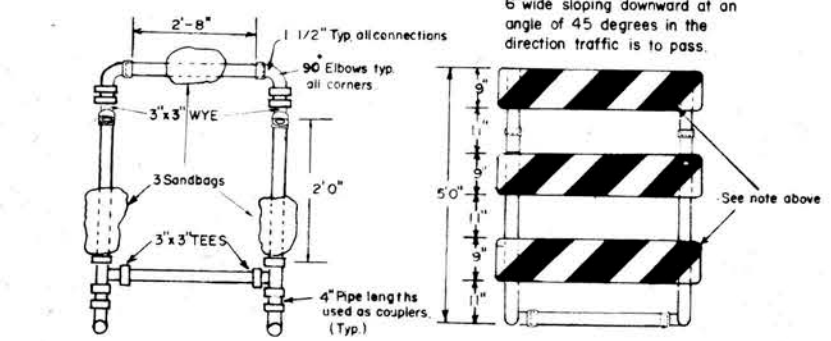
VERTICAL PANELS

Minor manufacturers variations may be acceptable upon approval of the Engineer.



TYPE I

NOTE: Sandbag placement may be adjusted at the direction of the Engineer. All dimensions on full pipe length.



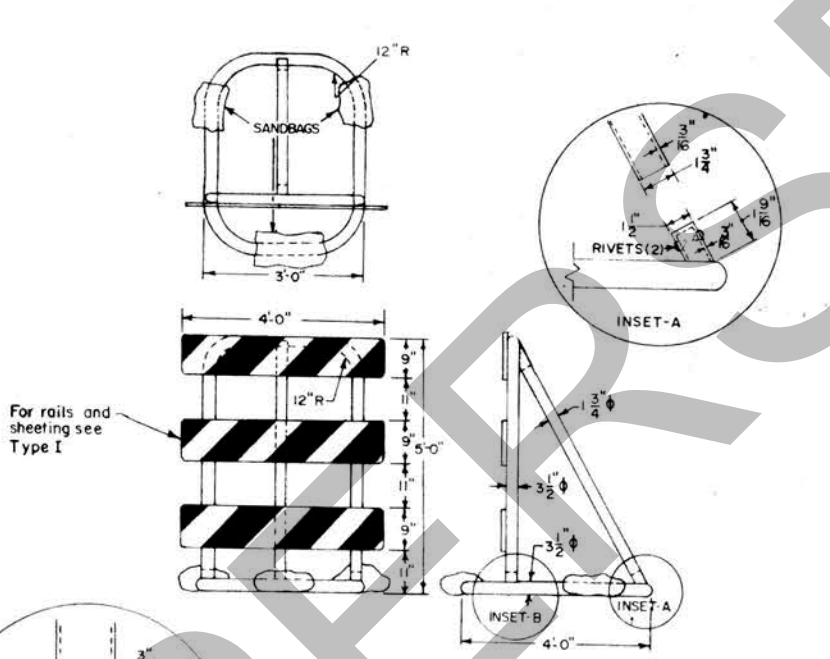
NOTE: Minor manufacturers variations may be acceptable upon approval of the Engineer.

Pipe shall be white PVC Schedule 40 ASTM 1785-74 or PVC, SDR-26, ASTM 2241-74. Fittings shall be white PVC or ABS of matching wall thickness and inside diameter and meeting the Materials, Requirements and Testing Sections of ASTM D-2466-74 for PVC and ASTM D-2468-73 for ABS. All joints shall be slip fit and not threaded or cemented PVC fittings meeting ASTM D-2665-74 will also be acceptable.

The 9"x48" barricade rails shall be fabricated from 0.025" anodized aluminum or 0.125" Max. plastic sheeting and shall be attached, 4 per rail, with 1 inch NO.14 pan head metal screws or plastic rivets. All corners shall be rounded.

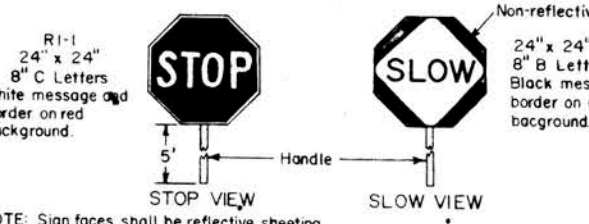
BREAKAWAY BARRICADES

NOTE: EITHER TYPE I OR TYPE II MAY BE USED AT THE OPTION OF THE CONTRACTOR.



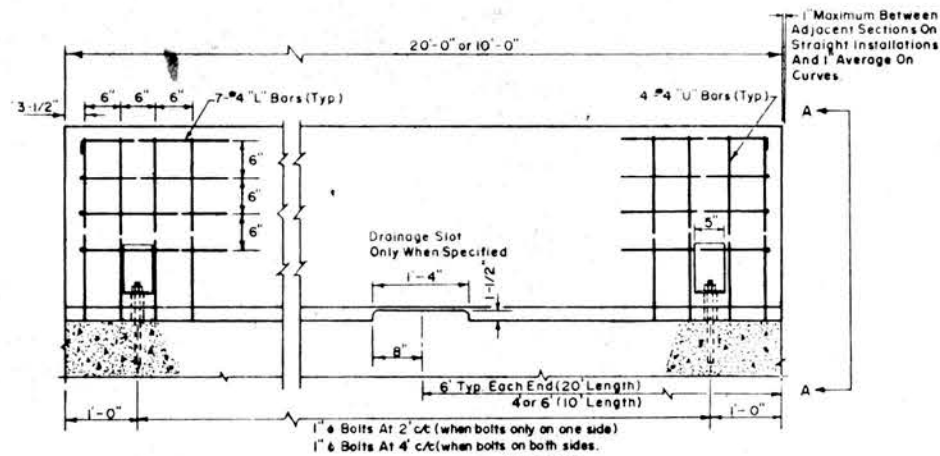
TYPE II

The base and upright shall be 3 1/2" diameter rotationally molded polyethylene plastic conforming to ASTM D1248-III A3-E4. The brace shall be 1 3/4" diameter extruded polyethylene plastic conforming to ASTM D1248-III A4. Polyethylene plastic shall be white and shall be ultraviolet light stabilized.



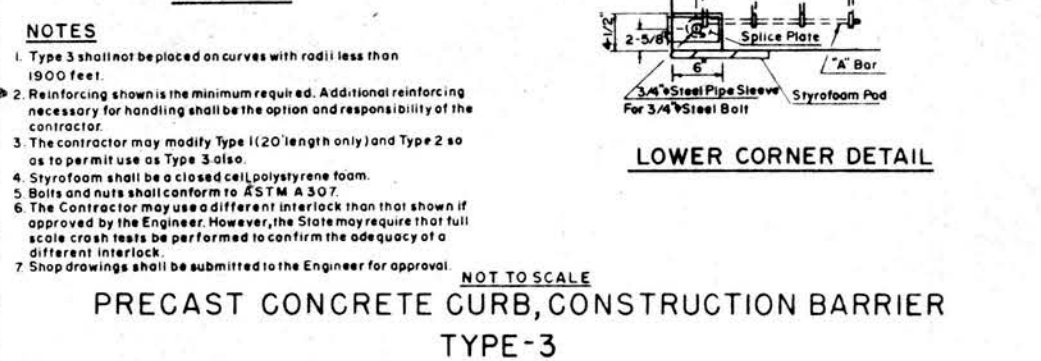
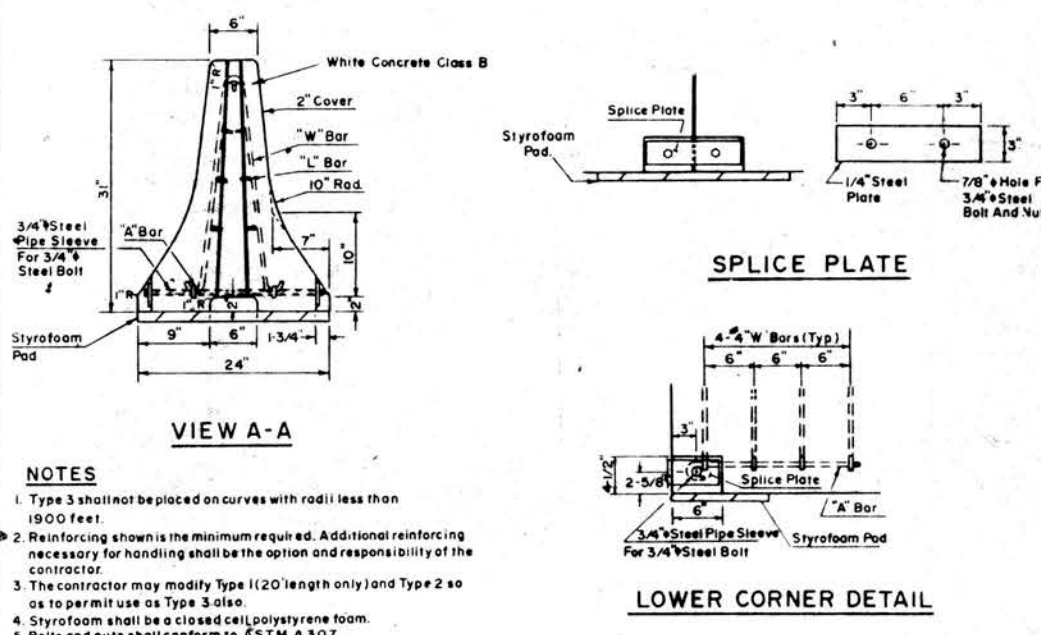
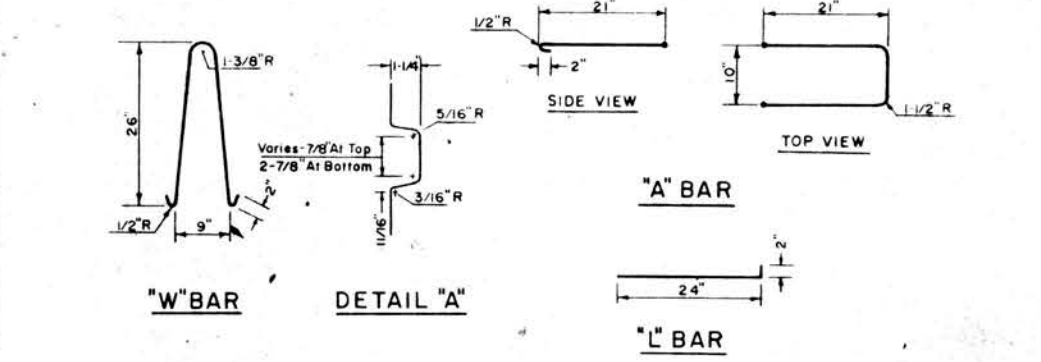
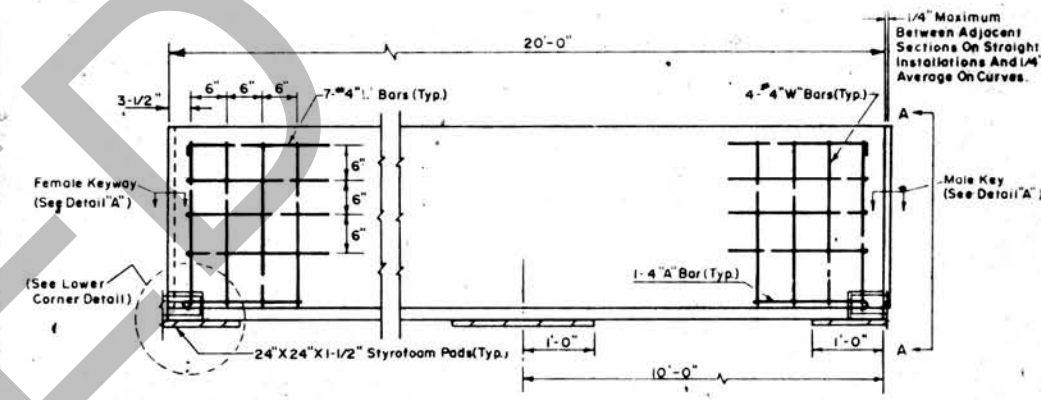
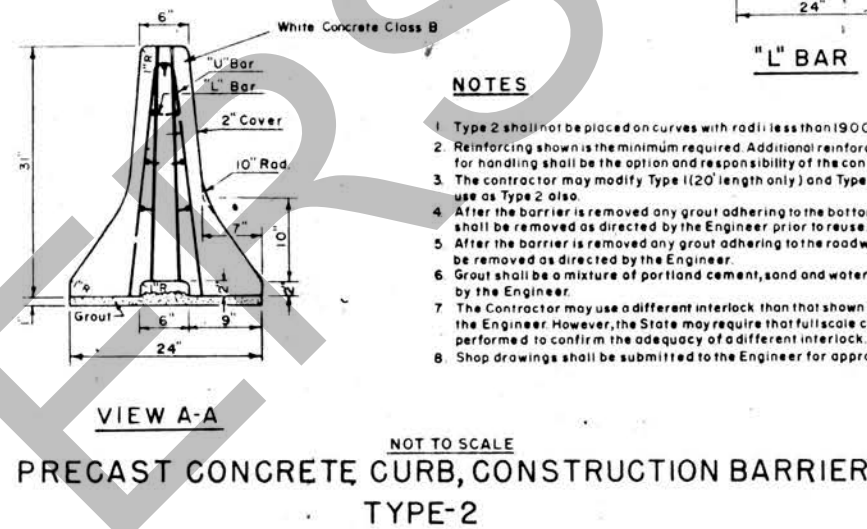
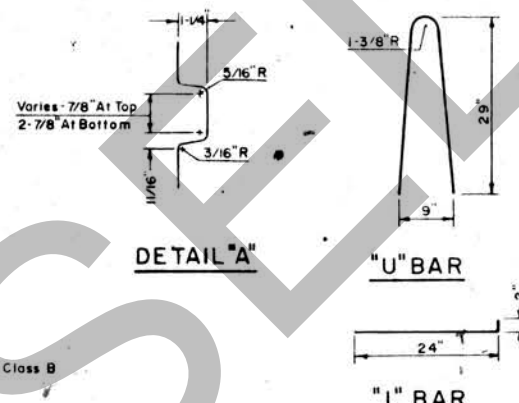
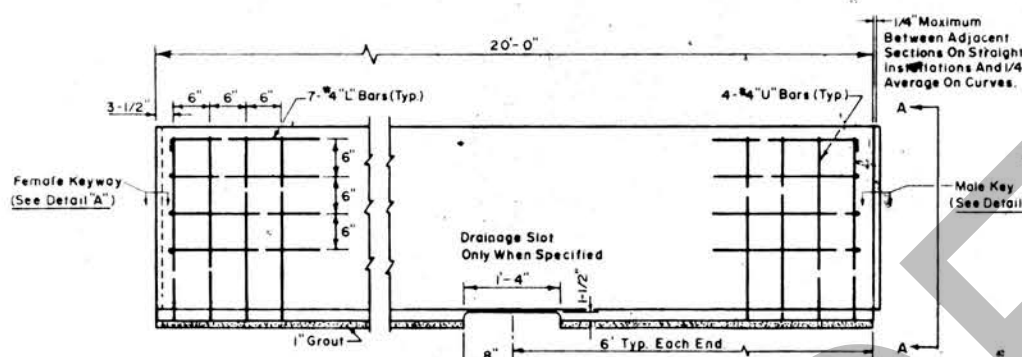
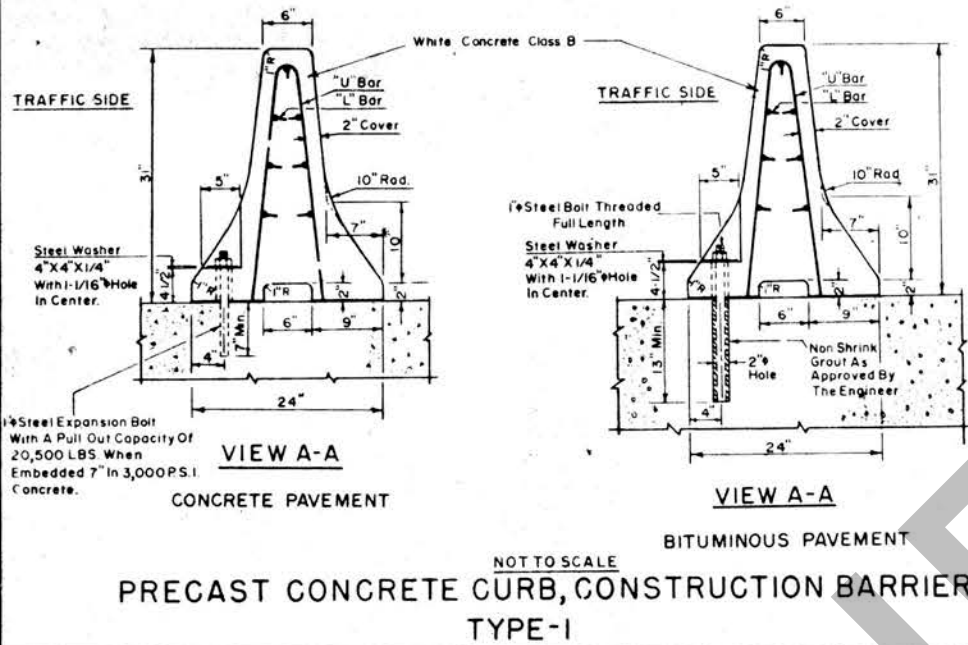
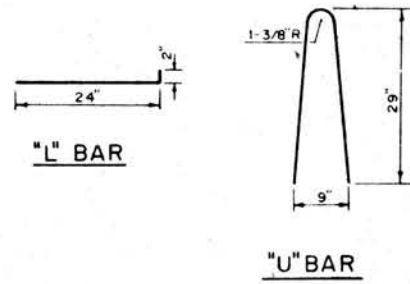
NOTE: Sign faces shall be reflective sheeting conforming to Article 8.5.45.

STOP/SLOW PADDLE



NOTES

1. Reinforcing shown is the minimum required. Additional reinforcing necessary for handling shall be the option and responsibility of the contractor.
2. The contractor may modify Type 2 and Type 3 so as to permit their use as Type 1 also.
3. If traffic will be on both sides of the barrier, the contractor shall provide bolt recesses so the bolts can be installed at 4' c/c spacing on each side. At the option of the contractor bolt recesses and bolts may be provided at 4' c/c on each side when traffic is only on one side of the barrier.
4. When the barrier has been removed, the bolts shall be removed or cut off to a level of 1/2" minimum below the pavement surface and the hole filled to the satisfaction of the Engineer.
5. Bolts and nuts shall conform to ASTM A 307.
6. Shop drawings shall be submitted to the Engineer for approval.



CONSTRUCTION BARRIERS

6-13-77	REVISED PER MEMO
3-11-77	ORIGINAL

NOTES

GENERAL NOTES

INSTALLATION, DIMENSIONS, COLOR AND DETAILS OF VARIOUS SIZE SIGNS, AND ACCESSORY PANELS TO FOLLOW STANDARDS IN THE CURRENT "STANDARD HIGHWAY SIGN PUBLICATION" AND THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".

(S) REPRESENTS A SPECIAL SIZE SIGN DEVIATING FROM THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".

LETTERS AND NUMERALS SHALL CONFORM TO THE CURRENT MANUAL, "STANDARD ALPHABETS FOR HIGHWAYS SIGNS", U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.

THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE ENGINEER FOR THE DISTANCE TO BE USED ON THE ADVANCE WARNING SIGNS, AND FOR THE SPEED LIMIT TO BE USED ON THE R2-1 SIGN

BACKING MATERIAL (ALTERNATIVES)

ALUMINUM SHALL BE FLAT SHEET OF 6061-T6 ALLOY, 100 GAGE. PLYWOOD SHALL BE 5/8" MINIMUM THICKNESS, EXTERIOR TYPE, HIGH OR MEDIUM DENSITY OVERLAIN ON BOTH SIDES, MANUFACTURED IN ACCORDANCE WITH "COMMERCIAL STANDARD CS 45-60 FOR DOUGLAS FIR PLYWOOD" OF THE U.S. DEPARTMENT OF COMMERCE.

SIGN FACES

SIGN FACES SHALL BE OF REFLECTIVE SHEETING CONFORMING TO THE REQUIREMENTS FOR ENCAPSULATED LENS TYPE AS PROVIDED IN ARTICLE 8.5.45 OF THE SUPPLEMENTARY SPECIFICATIONS.

SUPPORTS

SIGN SUPPORTS SHALL BE OF WELL SEASONED LUMBER, S4S, FREE OF SPLITS, KNOTS AND WARP, OR OF STEEL OR ALUMINUM COMPONENTS. NO STEEL POST SHALL BE CLOSER THAN 8' APART. WOOD POSTS SHALL HAVE A UNIFORM CROSS-SECTION AND SHALL NOT EXCEED THE FOLLOWING DIMENSIONS; SINGLE POST 4" X 6", TWO POSTS 3" X 6" OR 4" X 5", AND THREE POSTS 3" X 5" OR 4" X 4".

FASTENING

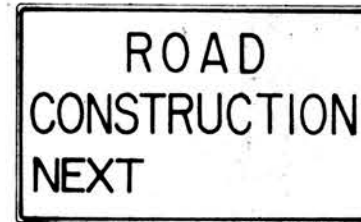
ALL SIGNS SHALL BE SECURELY FASTENED TO THEIR SUPPORTS WITH BOLTS, NUTS AND WASHERS OF ALUMINUM (2024-T4 ALLOY) OR HOT-DIP GALVANIZED STEEL (A.S.T.M.153).



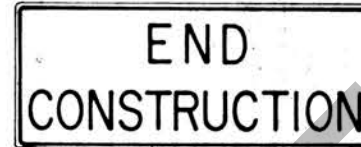
W20-1-48" X 48"



(L or R)
W1-4(S) 48" X 48"



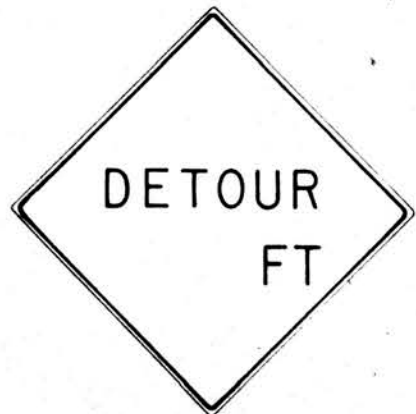
G20-1-60" X 36"



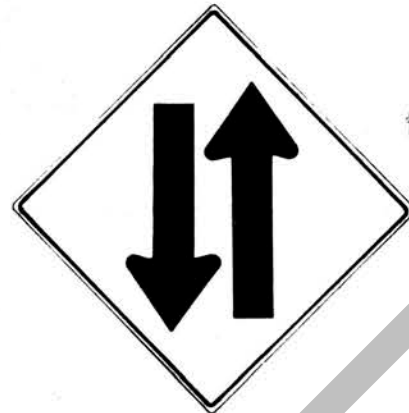
G20-2-60" X 24"



(L or R)
M4-10-48" X 18"



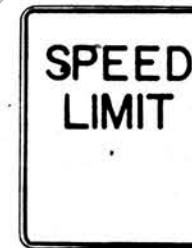
W20-2-48" X 48"



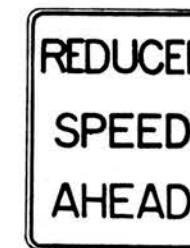
TWO WAY TRAFFIC
W6-3-48" X 48"
PLATE 24" X 18"



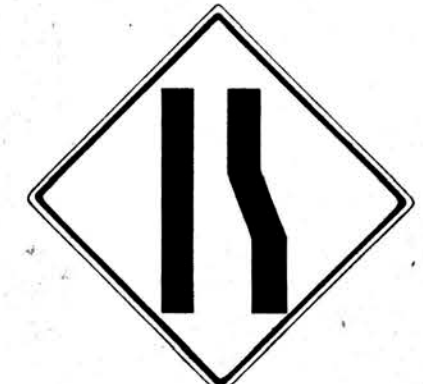
R11-2-48" X 30"



R2-1 36" X 48"



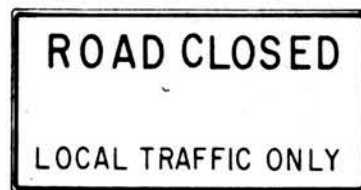
R2-5a 36" X 48"



W4-2-48" X 48"



W6-3-48" X 48"
PLATE 24" X 18"



R11-3-60" X 30"



W20-7 - 48" X 48"



(LEFT-RIGHT-CENTER)
W20-5-48" X 48"



(L or R)
W1-6-48" X 24"



R4-1-24" X 30"

DISTANCE LEGEND
SIGN NUMBER FOLLOWED BY

LETTER	DISTANCE
A	1500
B	1000
C	500
D	- MILE
E	-- MILES AHEAD
F	AHEAD

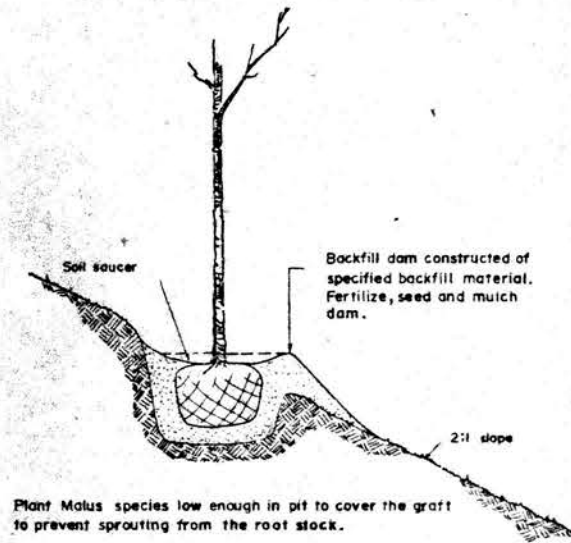
CONSTRUCTION SIGNS

1-24-80 Support Note as per Memo
3-7-77 Added Signs R2-1, R2-5a (Per memo 3-4-77)
6-22-76 Added Sign W-4
10-28-75 Rev note sign face

REFERENCE

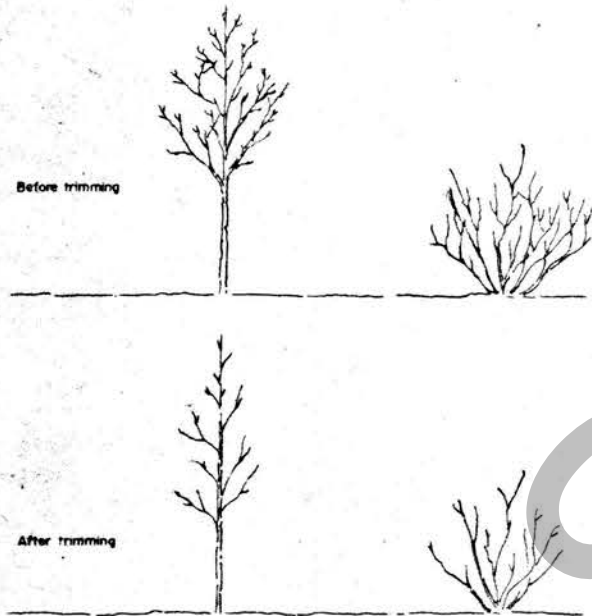


TREE PLANTING - 2:1 SLOPE

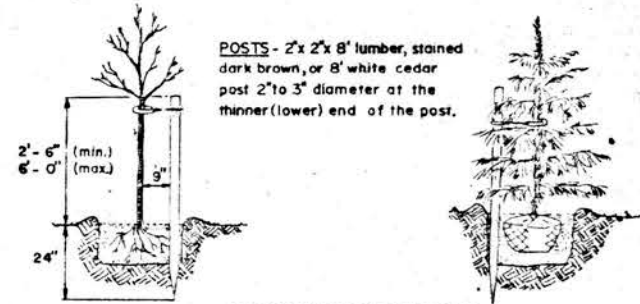


PRUNING TREES WHEN PLANTING

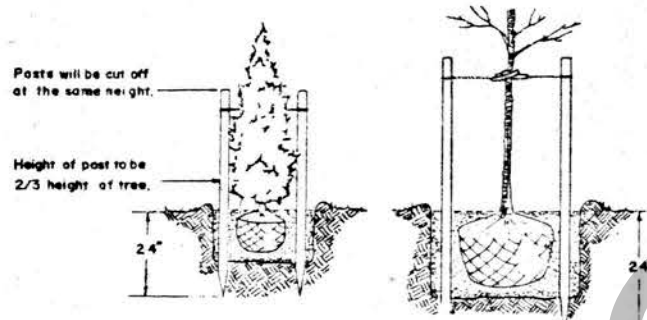
Damaged branches shall be trimmed off below the point of injury. The central trunk or "leader" should be left intact and the side branches should be shortened by approximately 1/3 their length. Broken roots shall be cut off above the break and bruised ends cut off cleanly. When planting a young shrub, thin top growth by 1/3 to balance the top with the roots. Prune just above a bud and retain the natural shape of the shrub.



STAKING DETAILS



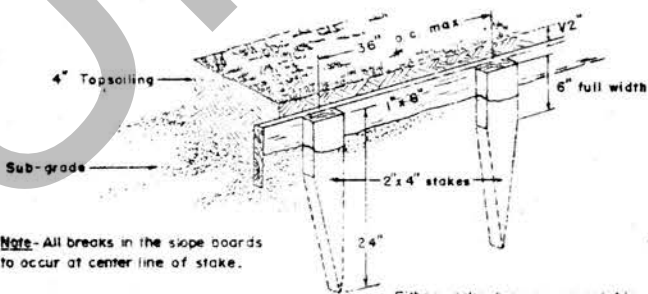
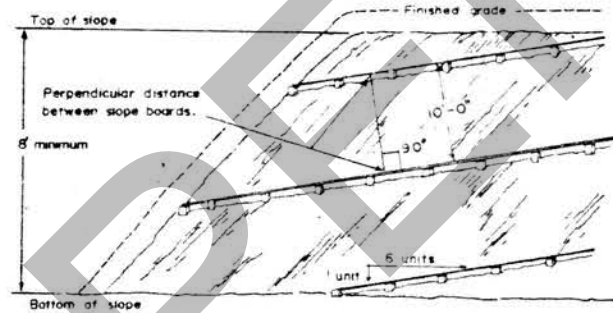
TREES REQUIRING ONE STAKE
Deciduous trees (except Salix) 1 1/2 to 2 1/2" caliper, inclusive. Cone type (pyramidal) trees 3' to 5' high. And columnar evergreen trees 4' to 7' high, inclusive.



TREES REQUIRING TWO STAKES
Deciduous trees over 1 1/2" to 2 1/2" caliper, inclusive. All Salix, regardless of height, caliper, bare root or balled and burlapped. Cone type (pyramidal) trees 5' to 7' high and columnar evergreen trees 7' to 9' high, inclusive.

SLOPE BOARD DETAIL

FOR SLOPES 2:1 OR STEEPER OVER 8' HIGH DECLINING 1' VERTICALLY TO 6' HORIZONTALLY.



Note - All breaks in the slope boards to occur at center line of stake.

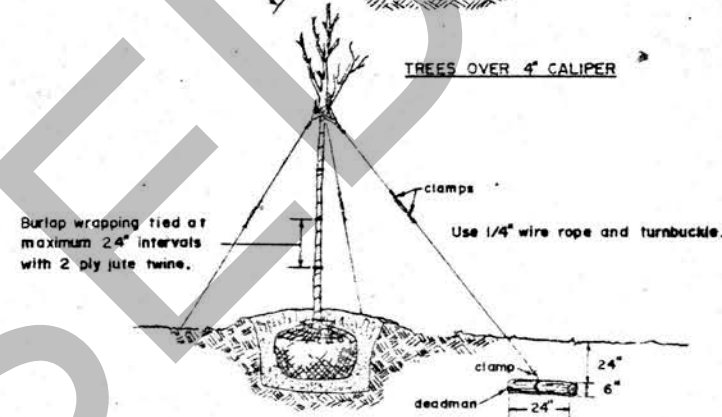
Direction of fall to be:
1. Away from structures
2. In direction of downgrade of adjacent roadway

Either stake type is acceptable.

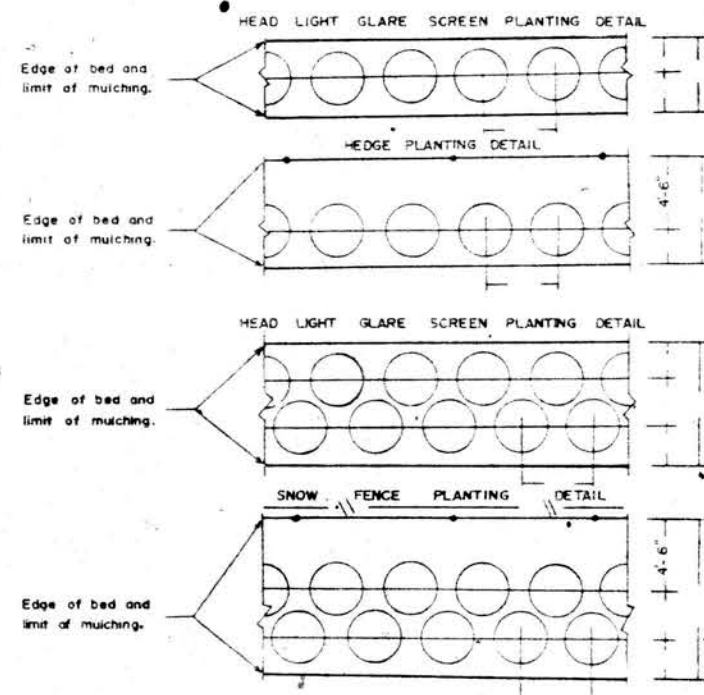
GUYING DETAILS

TREES REQUIRING THREE GUYS
Deciduous trees over 2 1/2" to 4" caliper. Cone type (pyramidal) trees 7' to 9' high. And columnar or evergreen trees 9' and higher.

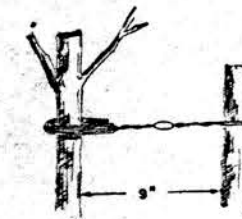
STAKES - 2" x 4" x 24" lumber or white cedar, 2 1/2" diameter at thinner (lower) end, notched 4" from the top.



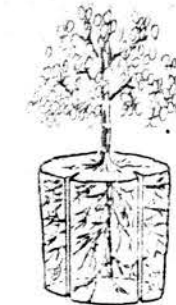
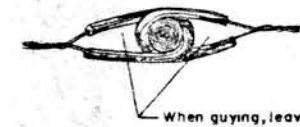
HEDGE PLANTING DETAIL



FASTENING DETAIL



DETAIL OF GUY WIRES AROUND TRUNK
Guy wires should be placed at least half way up the trunk.



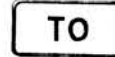
CONTAINERIZED PLANTS
Immediately prior to planting, make 3 vertical cuts equidistant and 1/2" deep into root mass.



MI-1
1, 2 DIGITS - 24" X 24"
3 DIGITS - 30" X 24"
MI-1(S)
1, 2 DIGITS - 36" X 36"
3 DIGITS - 45" X 36"



M2-1
21" X 15"
M2-1(S)
32" X 23"



M4-5
24" X 12"
M4-5(S)
30" X 15"



R3-5
30" X 36"



R3-6
30" X 36"



R1-1
30" X 30"



R1-2
36" X 36" X 36"

INSTALLATION, DIMENSIONS, COLORS, AND DETAILS OF VARIOUS SIZE SIGNS, SHIELDS AND ACCESSORY PANELS TO FOLLOW STANDARDS IN THE CURRENT "STANDARD HIGHWAY SIGNS PUBLICATION" AND THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS."

(S) DENOTES A SPECIAL SIZE SIGN.

ALL SIGNS SHALL BE OF THE ENCAPSULATED LENS TYPE.



MI-4
1, 2 DIGITS - 24" X 24"
3 DIGITS - 30" X 24"
MI-4(S)
1, 2 DIGITS - 36" X 36"
3 DIGITS - 45" X 36"



M3-1
24" X 12"
M3-1(S)
36" X 18"



M3-2
24" X 12"
M3-2(S)
36" X 18"



R3-8
30" X 30"



R3-9a
30" X 36"



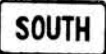
R3-1
24" X 24"
R3-1(S)
30" X 30"



R3-2
24" X 24"
R3-2(S)
30" X 30"



MI-5
1, 2, 3 DIGITS - 24" X 24"
MI-5(S)
1, 2, 3 DIGITS - 36" X 36"



M3-3
24" X 12"
M3-3(S)
36" X 18"



M3-4
24" X 12"
M3-4(S)
36" X 18"



R3-9b
24" X 36"



R3-8a
36" X 36"



R3-3
24" X 24"
R3-3(S)
30" X 30"



R3-4
24" X 24"
R3-4(S)
30" X 30"



MI-6
1, 2 DIGITS - 24" X 24"
3 DIGITS - 30" X 24"
MI-6(S)
1, 2 DIGITS - 36" X 36"
3 DIGITS - 45" X 36"



(L or R)
M5-1
21" X 15"
M5-1(S)
32" X 23"



(L or R)
M5-2
21" X 15"
M5-2(S)
32" X 23"



R3-8b
30" X 36"



R3-8c
48" X 36"



(L or R)
R3-7
30" X 30"



R5-1
30" X 30"
R5-1(S)
36" X 36"



NJTP-1
24" X 24"
NJTP-1(S)
36" X 36"



(L or R)
M6-1
21" X 15"
M6-1(S)
32" X 23"



(L or R)
M6-2
21" X 15"
M6-2(S)
32" X 23"



R3-8d
60" X 36"



R5-1a
36" X 24"
R5-1a(S)
30" X 18"



(L or R)
R6-1
36" X 12"



GSP-1
24" X 24"
GSP-1(S)
36" X 36"



M6-3
21" X 15"
M6-3(S)
32" X 23"



M6-4
21" X 15"
M6-4(S)
32" X 23"



R4-7
24" X 30"
R4-7(S)
36" X 48"



R4-8
24" X 30"
R4-8(S)
36" X 48"



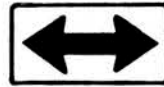
R10-11a
24" X 30"



R2-1
24" X 30"
R2-1(EXPWY)
36" X 48"
R2-1(S)
48" X 60"



(L or R)
W1-1
30" X 30"
W1-1(S)
36" X 36"



W1-7
48" X 24"
W1-7(S)
60" X 30"



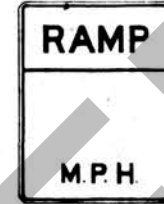
STOP
AHEAD
W3-1
30" X 30"
W3-1(S)
36" X 36"



NARROW
BRIDGE
W5-2
30" X 30"
W5-2(S)
36" X 36"



LANE
ENDS
(L or R)
W9-1
36" X 36"
W9-1(S)
48" X 48"



RAMP

M.P.H.

W13-3
48" X 60"
W13-3(EXP.WY)
36" X 48"
W13-3(S)
24" X 30"



(L or R)
W1-2
30" X 30"
W1-2(S)
36" X 36"



(L or R)
W1-8
18" X 24"
W1-8(S)
24" X 30"



YIELD
AHEAD
W3-2
30" X 30"
W3-2(S)
36" X 36"



W5-2a
30" X 30"
W5-2a(S)
36" X 36"



LANE ENDS
MERGE
(L or R)
W9-2
36" X 36"
W9-2(S)
48" X 48"



DEAD
END
W14-1
30" X 30"
W14-1(S)
36" X 36"



(L or R)
W1-3
30" X 30"
W1-3(S)
36" X 36"



W2-1
30" X 30"
W2-1(S)
36" X 36"



W3-3
36" X 36"
W3-3(S)
48" X 48"



W6-1
36" X 36"
W6-1(S)
48" X 48"



W12-1
24" X 24"
W12-1(S)
30" X 30"



NO
OUTLET
W14-2
30" X 30"
W14-2(S)
36" X 36"



(L or R)
W1-4
30" X 30"
W1-4(S)
36" X 36"



(L or R)
W2-2
30" X 30"
W2-2(S)
36" X 36"



(L or R)
W4-2
36" X 36"
W4-2(S)
48" X 48"



W6-2
36" X 36"
W6-2(S)
48" X 48"



W12-2
36" X 36"
W12-2(S)
48" X 48"



NO
PASSING
ZONE
W14-3
36" X 48" X 48"
W14-3(S)
48" X 64" X 64"



(L or R)
W1-5
30" X 30"
W1-5(S)
36" X 36"



(L or R)
W2-3
30" X 30"
W2-3(S)
36" X 36"



(L or R)
W4-3
30" X 30"
W4-3(S)
48" X 48"



W6-3
30" X 30"
W6-3(S)
36" X 36"



MPH
W13-1
18" X 18"
W13-1(S)
24" X 24"



W4-1
30" X 30"
W4-1(S)
48" X 48"



(L or R)
W1-6
48" X 24"
W1-6(S)
60" X 30"



W2-5
30" X 30"
W2-5(S)
36" X 36"



ROAD
NARROWS
W5-1
36" X 36"
W5-1(S)
48" X 48"



W8-5
30" X 30"
W8-5(S)
36" X 36"



EXIT

M.P.H.

W13-2
48" X 60"
W13-2(EXP.WY)
36" X 48"
W13-2(S)
24" X 30"

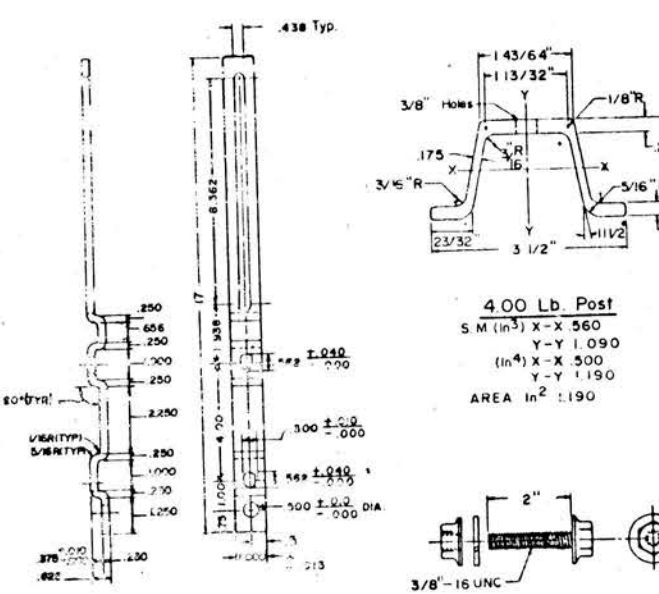
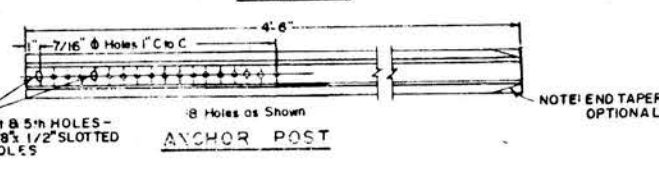
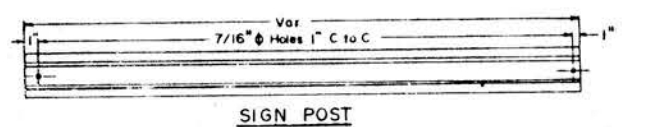
INSTALLATION, DIMENSIONS, COLORS, AND DETAILS OF VARIOUS SIZE SIGNS, SHIELDS AND ACCESSORY PANELS TO FOLLOW STANDARDS IN THE CURRENT "STANDARD HIGHWAY SIGNS PUBLICATION" AND THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS."

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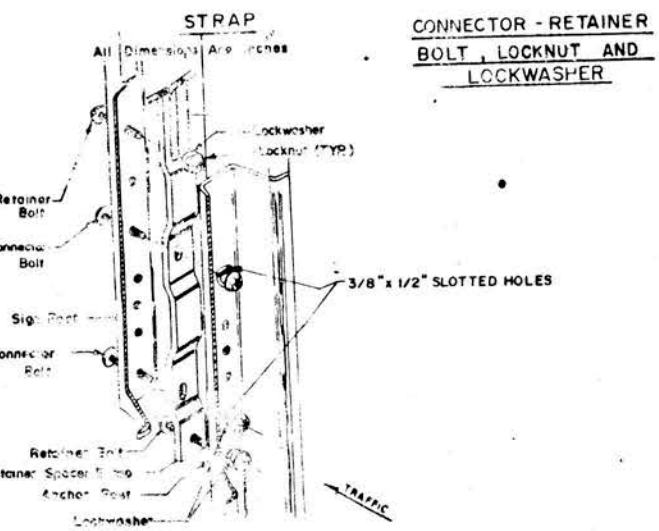
REVISION	DATE	DESCRIPTION
1	1-21-82	ADDED W4-1
2	1-6-81	ORIGINAL





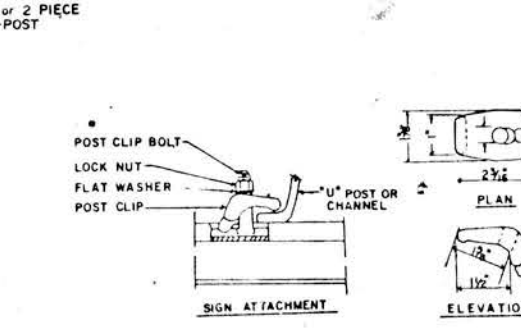
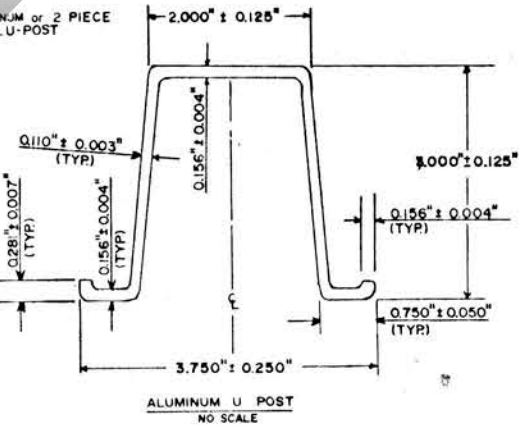
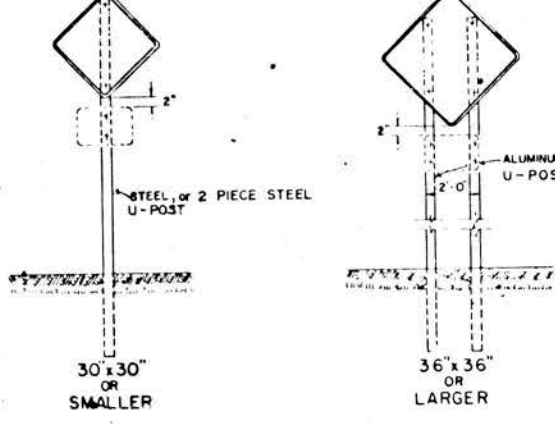
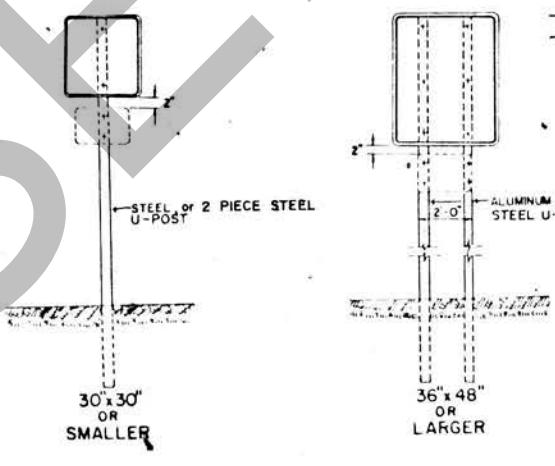
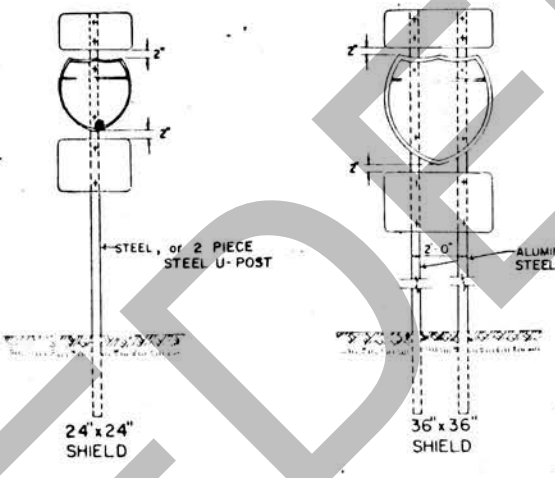
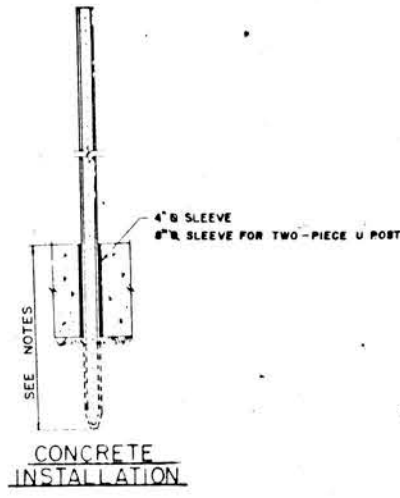
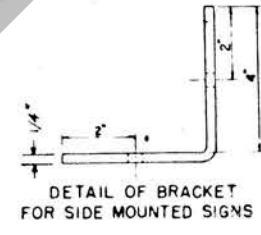
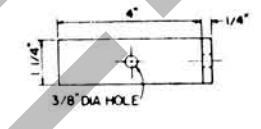
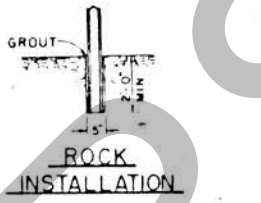
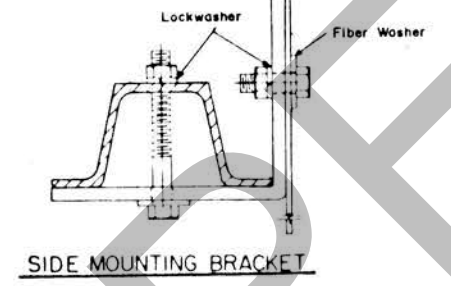
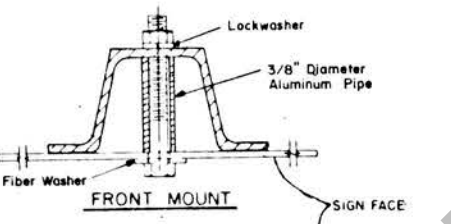
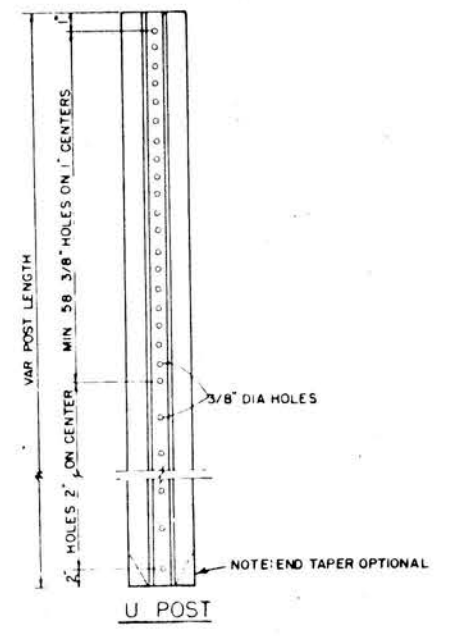
CONNECTOR - RETAINER BOLT, LOCKNUT AND LOCKWASHER

3/8"-16 UNC



- NOTES**
1. DRIVE THE ANCHOR POST INTO THE GROUND UTILIZING A DRIVE CAP UNTIL 10-12" OF ANCHOR POST IS REMAINING ABOVE GROUND LEVEL.
 2. ALIGN THE SHORT SLOT, CLOSEST TO THE LONG SLOT IN THE RETAINER SPACER STRAP WITH THE TOP HOLE IN THE ANCHOR POST. THE STRAP IS THEN ATTACHED BY MAKING A BOLTED CONNECTION THROUGH THE BOTTOM HOLE IN THE STRAP AND THE HOLE IN THE ANCHOR POST.
 3. ROTATE THE STRAP 90° TO THE LEFT AND DRIVE THE ANCHOR POST INTO THE GROUND UNTIL ONLY 4" REMAIN ABOVE GROUND LEVEL. THIS MUST BE ADHERED TO FOR ALL SEASONS TO ENHANCE THE BREAKAWAY FEATURES OF THE SIGN IN ACCORDANCE WITH CURRENT FEDERAL AND STATE SAFETY STANDARDS EXCAVATE AS REQUIRED TO TIGHTEN BOLTS.
 4. ROTATE THE STRAP BACK TO VERTICAL POSITION.
 5. PLACE THE SIGN POST AGAINST THE ANCHOR POST AND THE STRAP. ALIGN THE BOTTOM HOLE IN THE SIGN POST WITH THE SMALL SLOT IN THE LOWER END OF THE STRAP. INSERT TWO (2) CONNECTOR BOLTS THROUGH THE COMMON HOLES IN THE SIGN POST, STRAP AND ANCHOR POST.
 6. COMPLETE THE CONSTRUCTION BY ATTACHING THE STRAP TO THE SIGN POST WITH A BOLT AND NUT. THIS CONNECTION SHALL BE MADE AT THE BOTTOM OF THE LONG SLOT IN THE STRAP.
 7. TWO PIECE STEEL U-POST IS A PATENTED DEVICE. THE PATENT NO. IS 4126403.

REVISED DIM ALUMINUM U-POST
ORIGINAL DRAWING
2-7-84
10-20-83



POST CLIP - FOR USE ON DIRECTIONAL SIGNS UTILIZING BENDAWAY SUPPORTS

STEEL AND ALUMINUM POSTS, POST CLIPS, SPACING ETC
AND
TWO PIECE STEEL U-POSTS
U-POST SIGN SUPPORTS

NOTES
ALL POSTS SHALL BE OF ADEQUATE LENGTH TO MEET THE REQUIREMENTS FOR ERECTION AS STATED IN THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.

ALL POSTS SHALL BE EMBEDDED 4'-2" MINIMUM.

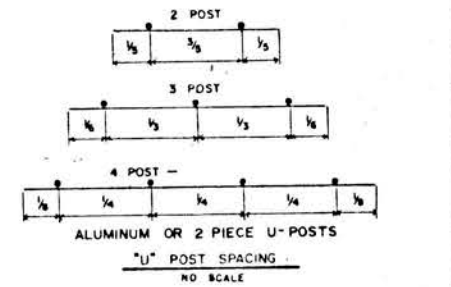
ALL STEEL POSTS AND BRACKETS SHALL BE CUT, BENT AND HOLES PUNCHED AND DRILLED BEFORE GALVANIZING. GALVANIZING SHALL BE IN CONFORMANCE WITH CURRENT A.S.T.M. SPECIFICATION A 123.

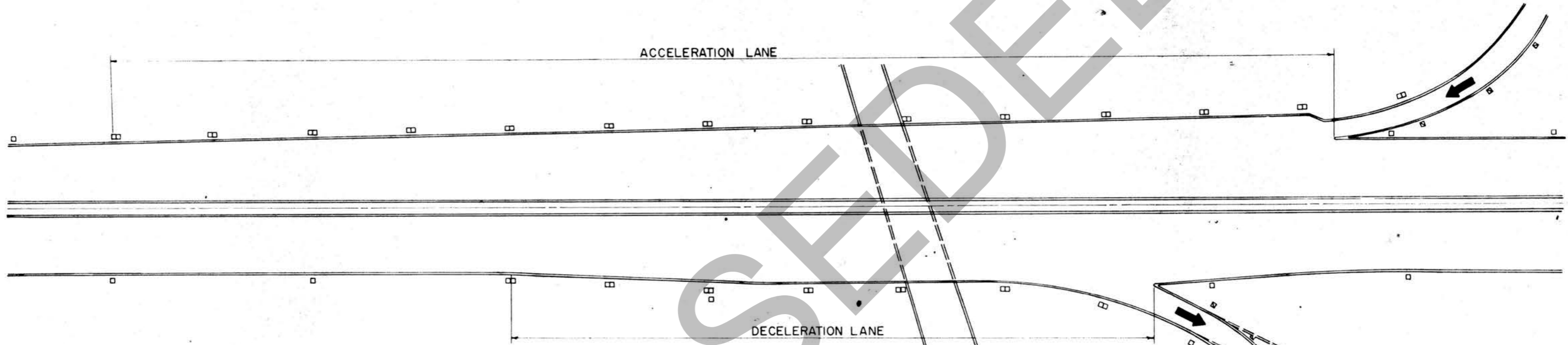
POSTS MAY BE STEEL, ALUMINUM OR 2 PIECE U-POST IN CONFORMANCE WITH THE NOTES BELOW.

SIGN PANEL SIZES SHALL DETERMINE POST TYPE AND NUMBER AS SHOWN ON THIS DETAIL AND DIRECTIONAL SIGN SHEET.

ADJACENT STEEL POSTS SHALL NOT BE CLOSER THAN 8 FT. APART. ADJACENT POSTS CLOSER THAN 8 FT. APART SHALL BE ALUMINUM OR 2 PIECE STEEL U-POSTS. NO MORE THAN 3 ALUMINUM OR 3 TWO PIECE STEEL U-POSTS WILL BE PERMITTED WITHIN 8 FT.

BOLTS SHALL NOT PROTRUDE MORE THAN 3/4" BEYOND THE NUT WHEN TIGHT, BUT SHALL ENGAGE ALL THREADS IN THE NUT.





SPACING FOR DELINEATORS ON HORIZONTAL CURVES
(DISTANCE IN FEET ROUNDED TO THE NEAREST 5 FEET)

RADIUS OF CURVE (IN FEET)	SPACING ON CURVE (IN FEET)	SPACING IN ADVANCE & BEYOND CURVE (IN FEET)		
		1st	2nd	3rd
50	20	40	65	125
150	30	60	90	180
200	35	70	110	215
250	40	85	125	250
300	50	95	145	290
400	55	110	170	300
500	65	125	190	300
600	70	140	210	300
700	75	150	230	300
800	80	165	245	300
900	85	175	260	300
1000	90	185	275	300

LEGEND

- TYPE 1 SINGLE WHITE DELINEATORS ON MAIN LINE AT 200' SPACING, ON RAMPS 100' MAXIMUM SPACING.
- ▣ TYPE 2 WHITE DOUBLE OR VERTICALLY ELONGATED DELINEATORS ON RIGHT OF ACCELERATION AND DECELERATION LANES AT 100' SPACING.
- ▣ TYPE 1A SINGLE YELLOW DELINEATORS ON RAMPS 100' MAXIMUM SPACING.

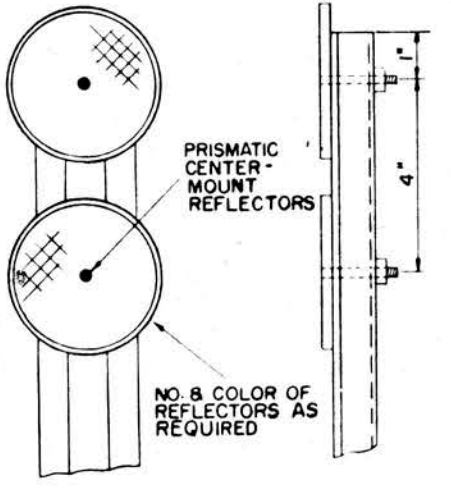
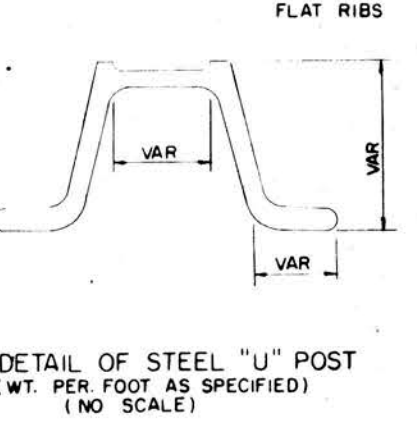
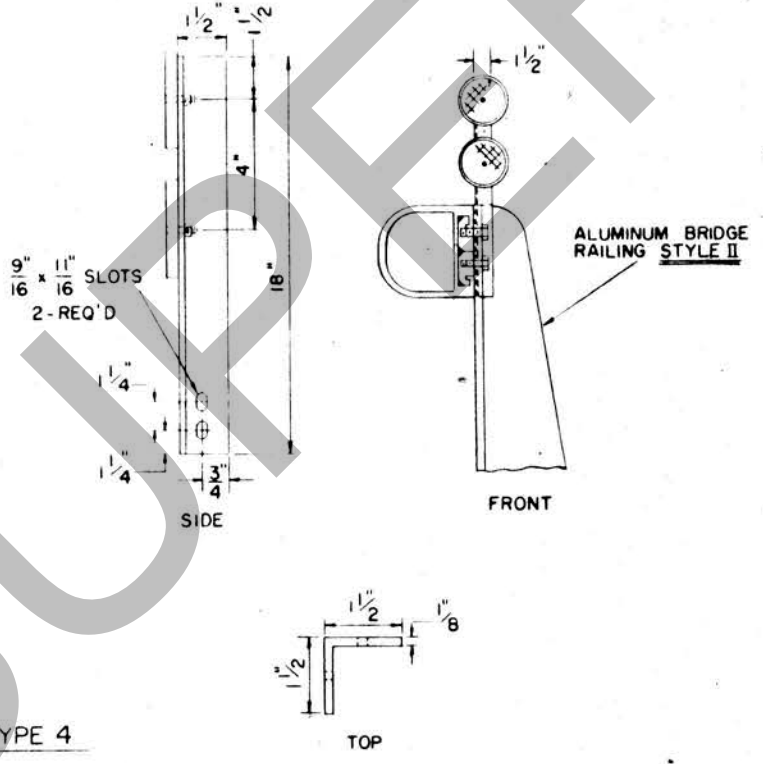
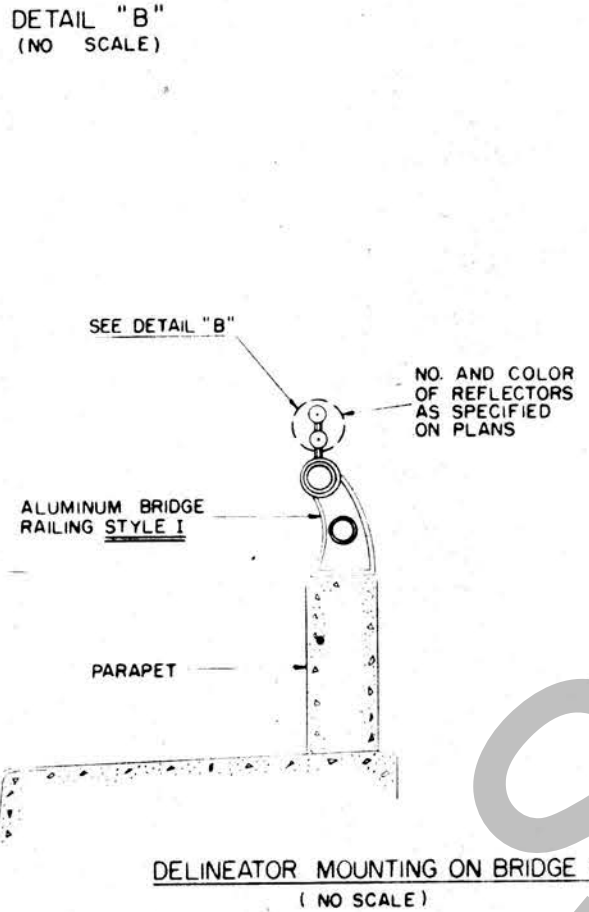
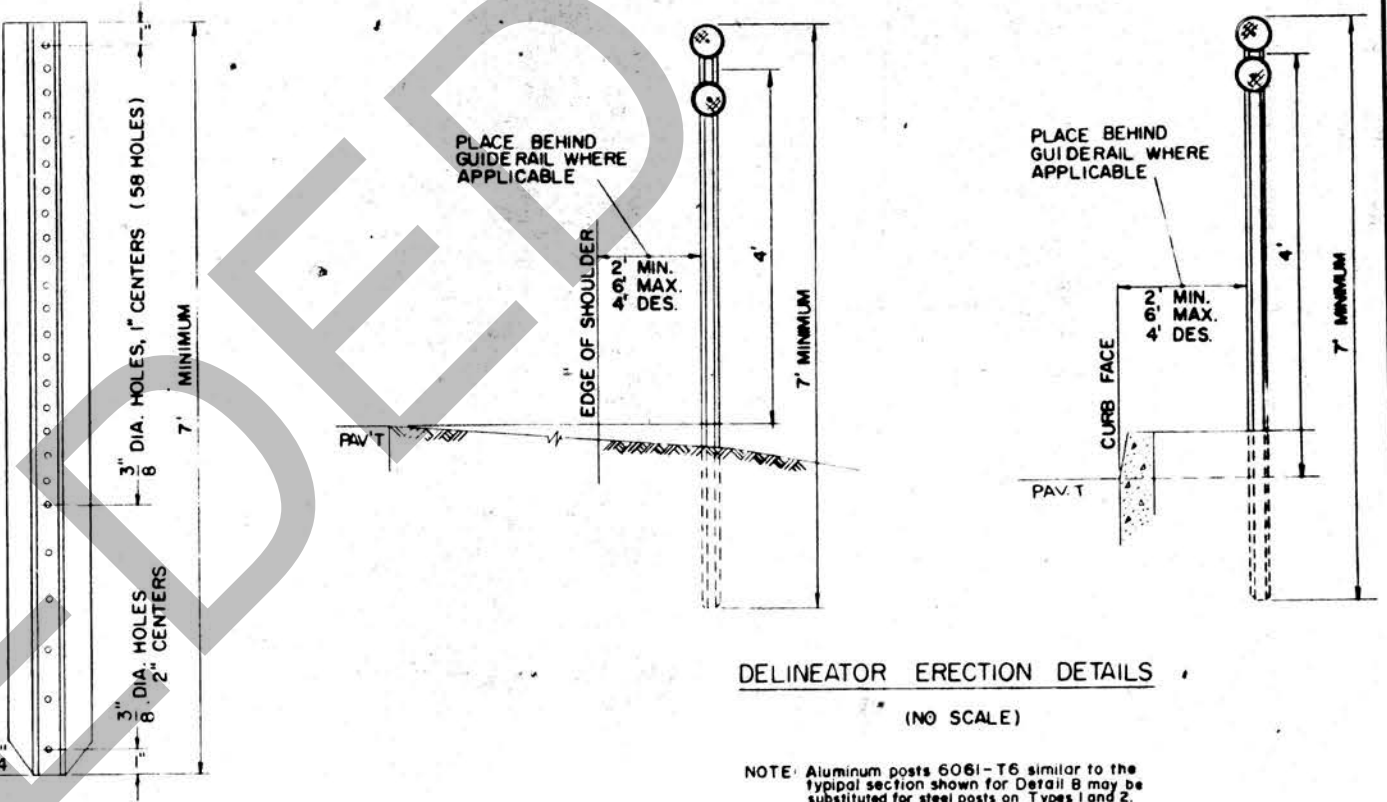
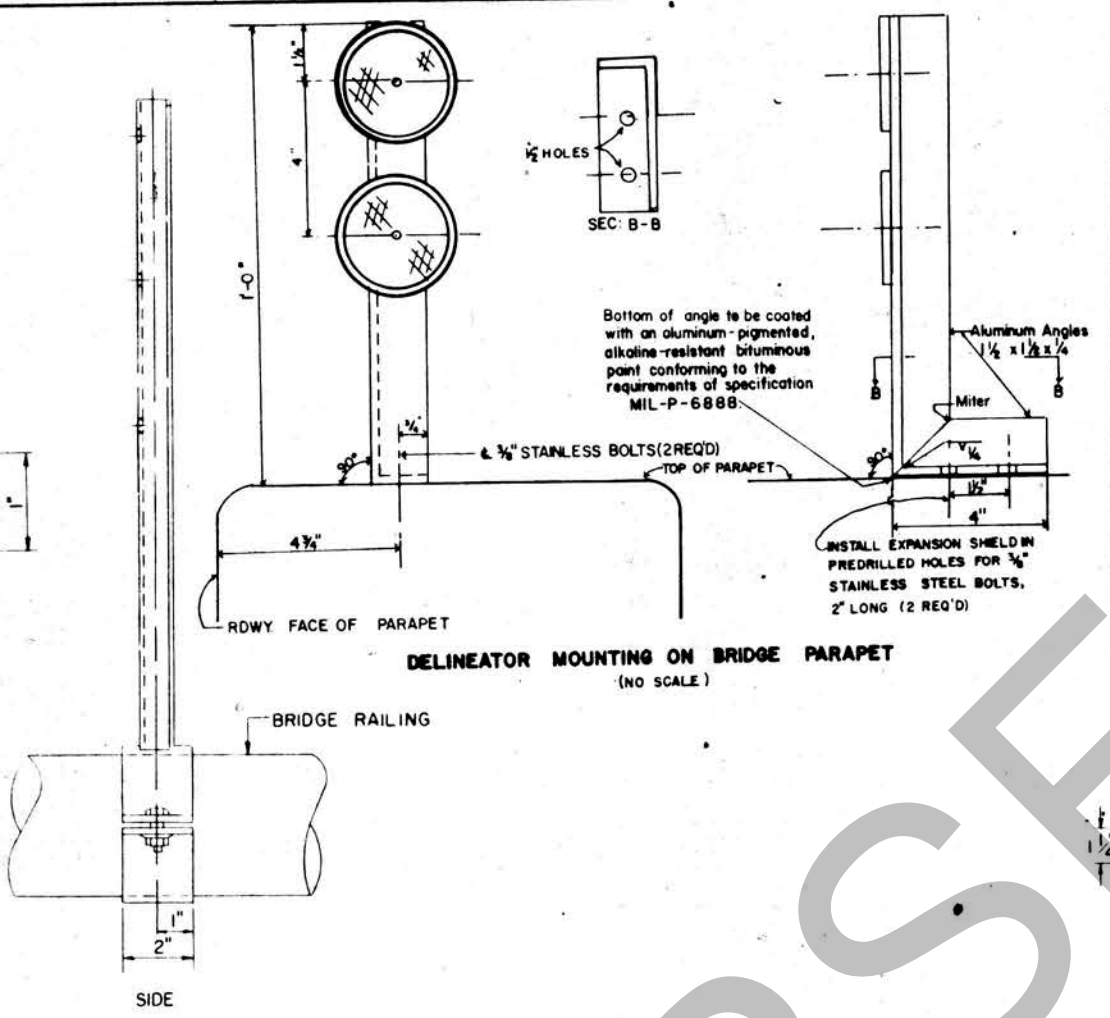
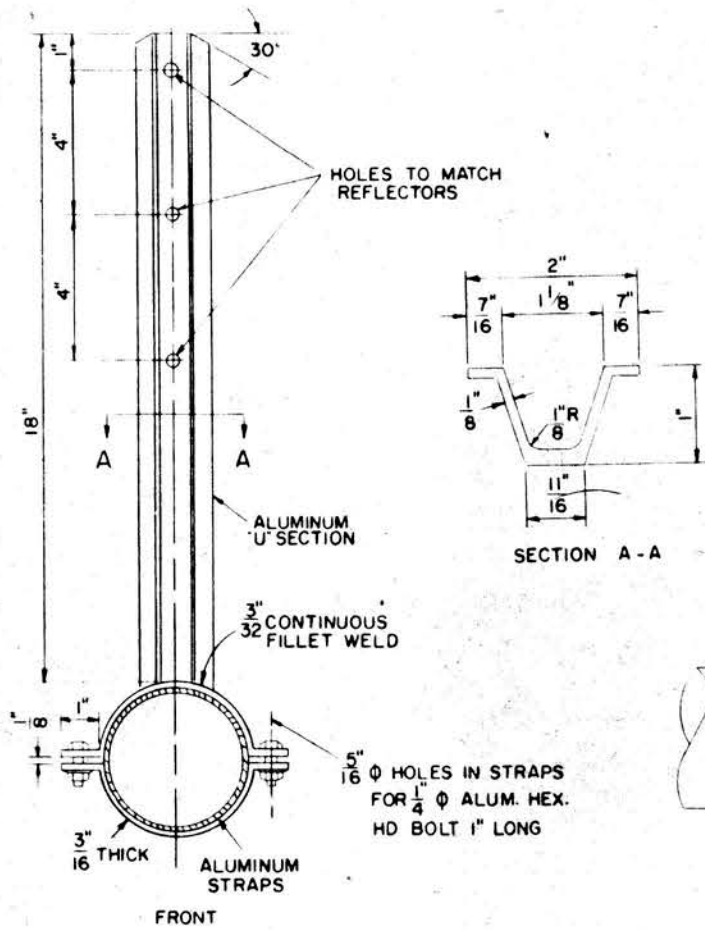
INSTALLATION, DIMENSIONS, COLOR AND DETAILS TO FOLLOW STANDARDS IN THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".

Spacing for specific radii not shown may be interpolated from table or computed from the formula $S=3\sqrt{R-50}$. The minimum spacing shall be 20 feet. The spacing on curves shall not exceed 300 feet. The spacing of the first delineator approaching a curve is 2S, the second 3S, and the third 6S, but not to exceed 300 feet. If a spacing less than 300 feet is used approaching the curve, the distance shown above shall be adjusted accordingly.

1	6/1/79	Rev. Per Memo
5	1/17/79	Rev. Legend
10	2/23/78	Rev. Legend
8	1/18/75	Rev. Spacing Table & Legend
5	1/16/61	Rev. Legend Note

REFERENCE

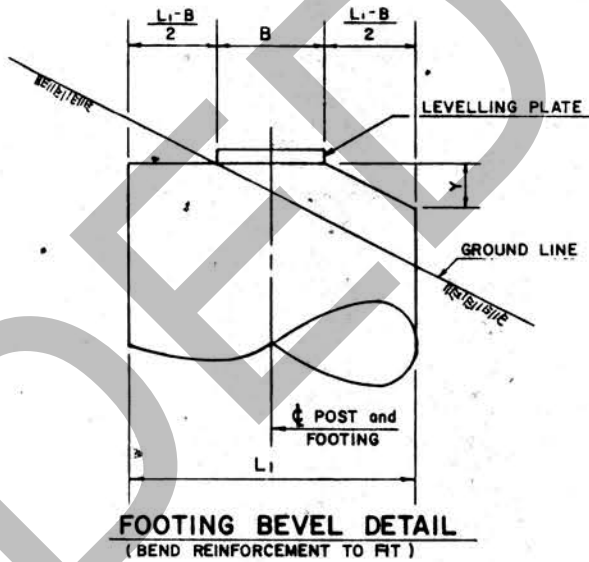
ORIGINAL



REVISOR	DATE	REVISION
6/11/79		
5/17/79		
10-2-74		
7-19-71		
REVISED		
REVISED		
REVISED		

SIGN SUPPORT DATA TABLE

IDENTIFICATION		OFFSET X ₁	SIGN SIZE				C. G. SIGN Y ₁	NO. OF POSTS	TUBE SIZE			POST HEIGHT			BASE TYPE	DIMENSIONS TO TOP OF FOOTING			FOOTING DIMENSIONS			REINF. STEEL M ₁	L. C. WASHER NUMBER		
NO.	STATION		A ₁	B ₁	A ₂	O. D.			THK.	C ₁	D ₁	E ₁	F ₁	G ₁		H ₁	K ₁	L ₁	Post #1	Post #2	Post #3				



IDENT. NO.	L ₁ -B / 2	Y		
		POST #1	POST #2	POST #3

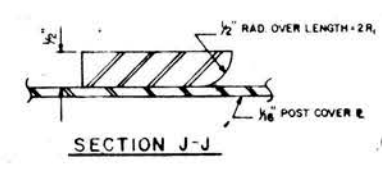
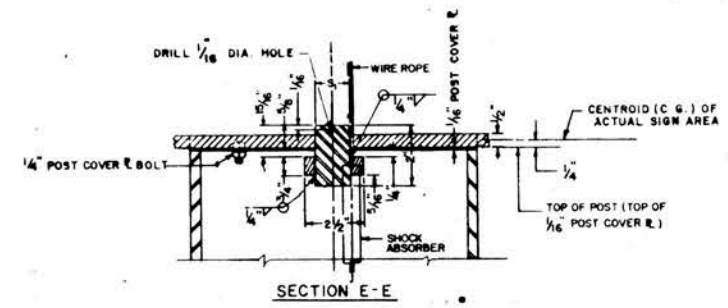
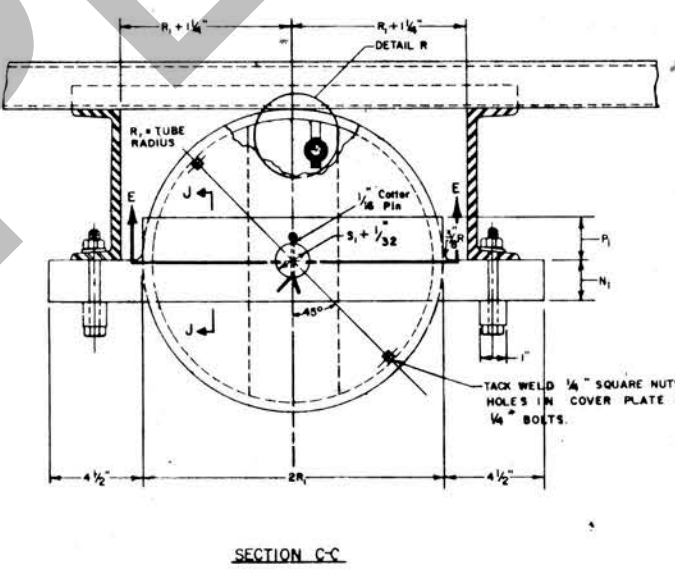
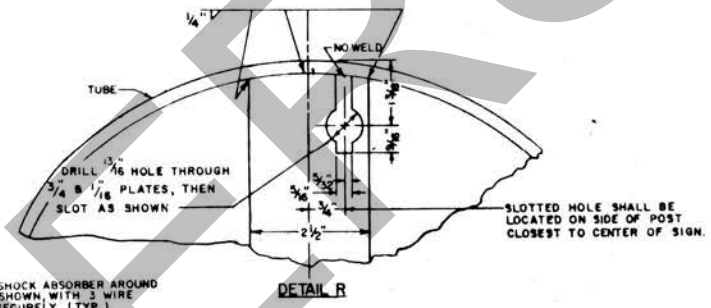
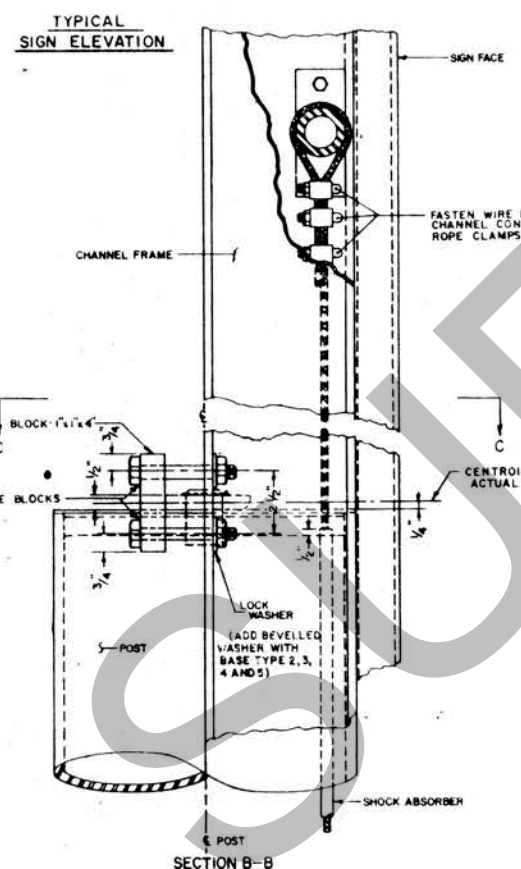
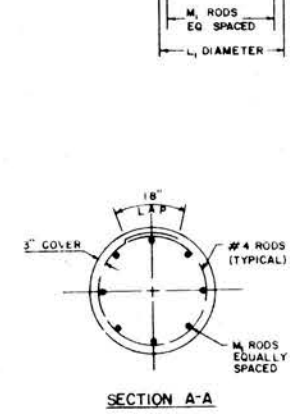
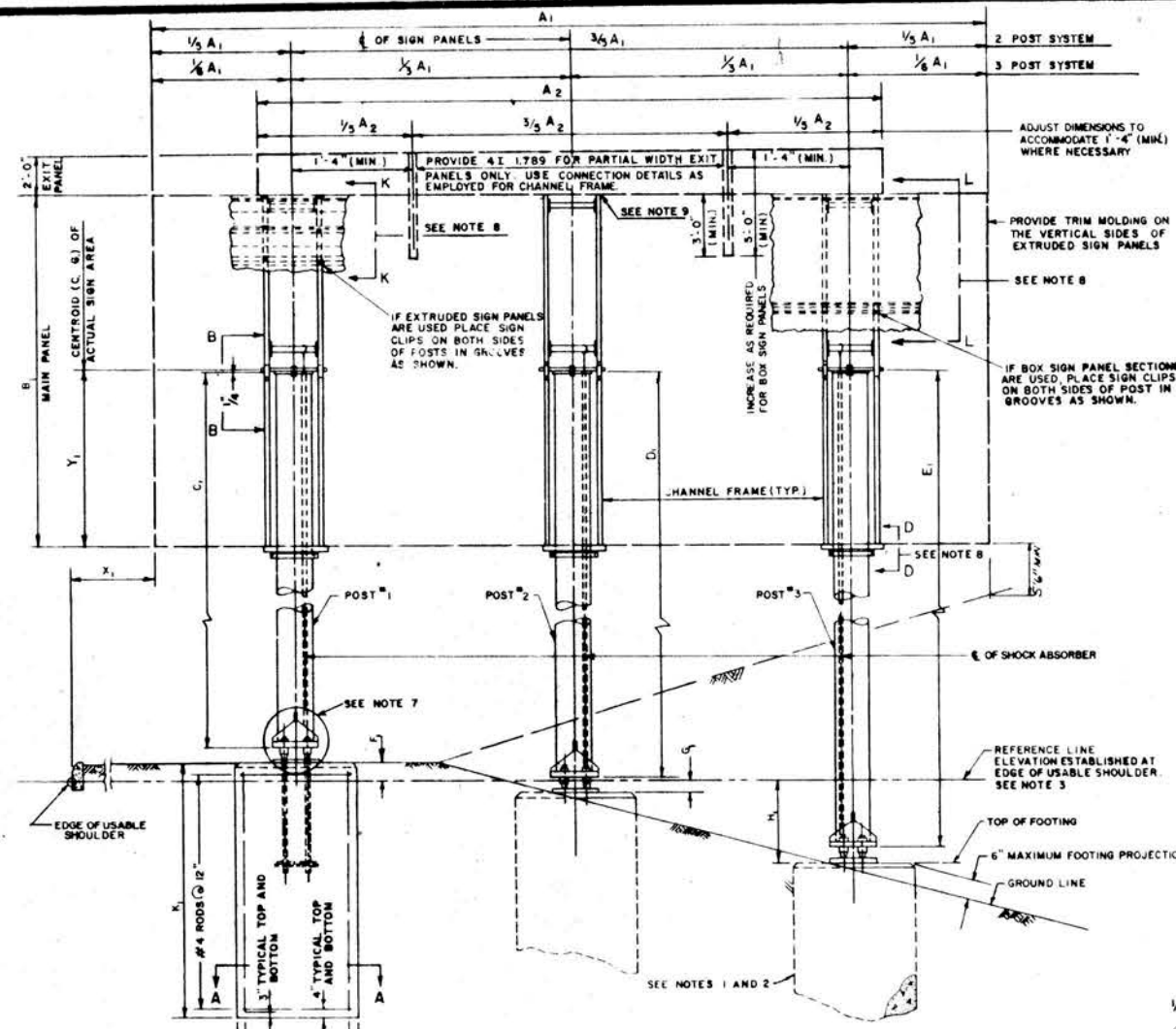
NOTE:
 1. AN ASTERISK (*) IN COLUMN L₁ INDICATES THAT THE EXPOSED EDGE OF FOOTING MUST BE BEVELLED TO MEET THE 6" MAXIMUM PROJECTION REQUIREMENT.
 2. LOAD CONCENTRATING WASHER FACE COLOR CODE SHALL BE AS FOLLOWS: L.C. WASHER #1 ORANGE, L.C. WASHER #2 YELLOW, L.C. WASHER #3 BLUE, L.C. WASHER #4 GREEN.
 3. FOR IDENTIFICATION OF TABULAR ITEMS, AND DETAILS RELATING THERETO, REFER TO BREAKAWAY SIGN SUPPORTS FOR GROUND MOUNTED SIGNS - SHEETS NO. 2, 3, 4, 5

REVISION CONTROL SECTION ROUTE SECTION FILE DES BY DWN BY CME BY IN CHARGE OF
 REVISED 11-21-74 (Col. A, B, X, Added, Per. Dept. Reference Added)

REVISION	BY	C/K/D	DATE

GENERAL NOTES:

- USE CLASS B CONCRETE IN ALL FOOTINGS, ULTIMATE COMPRESSIVE STRENGTH $f'_c = 3,000$ p.s.i.
- ALL FOOTINGS SHALL BE PLACED AGAINST UNDISTURBED EARTH EXCEPT FOR FOOTING TOPS WHICH SHALL BE FORMED TO A DEPTH OF 3" BELOW GROUND LINE.
- TOPS OF FOOTINGS ABOVE REFERENCE LINE ARE INDICATED BY PLUS (+) VALUE, IF BELOW BY MINUS (-) VALUE.
- ALL MATERIAL SHALL BE ALUMINUM ALLOY 6061-T6 UNLESS OTHERWISE NOTED.
- NUTS, BOLTS AND FLAT WASHERS SHALL BE MADE FROM ALUMINUM ALLOY ALCLAD 2024-T4. SPRING LOCK WASHERS SHALL BE MADE FROM ALUMINUM ALLOY 7075-T6.
- ALL WELDS SHALL CONFORM TO A.W.S. STANDARDS. FILLER ALLOYS SHALL BE ER 5556 OR ER 5356.
- FOR DETAIL OF POST BASE AND INSTALLATION REFER TO "BREAKAWAY SIGN SUPPORTS FOR GROUND MOUNTED SIGNS - SHEET NO. 3".
- FOR DETAILS OF SECTIONS "D-D", "K-K" AND "L-L" REFER TO "BREAKAWAY SIGN SUPPORTS FOR GROUND MOUNTED SIGNS - SHEET NO. 4".
- SIGNS WITHOUT EXIT PANELS OR SIGNS WITH PARTIAL WIDTH EXIT PANELS SHALL BE PROVIDED WITH CHANNEL FRAMES EXTENDING TO THE TOP OF THE MAIN PANEL AS SHOWN. CHANNEL FRAMES SHALL BE EXTENDED TO THE TOP OF THE EXIT PANEL WHEN FULL WIDTH EXIT PANELS ARE EMPLOYED.
- UNUSUAL FOUNDATION CONDITIONS MAY REQUIRE REDESIGN OF FOOTINGS AND SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

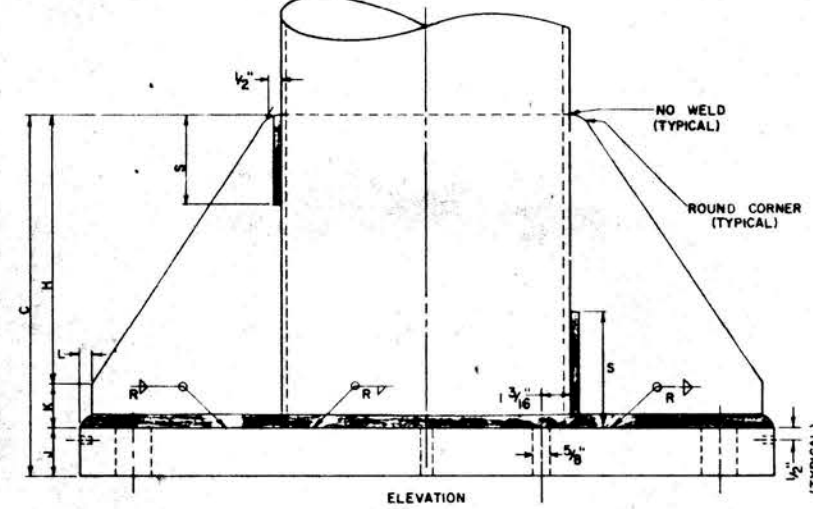
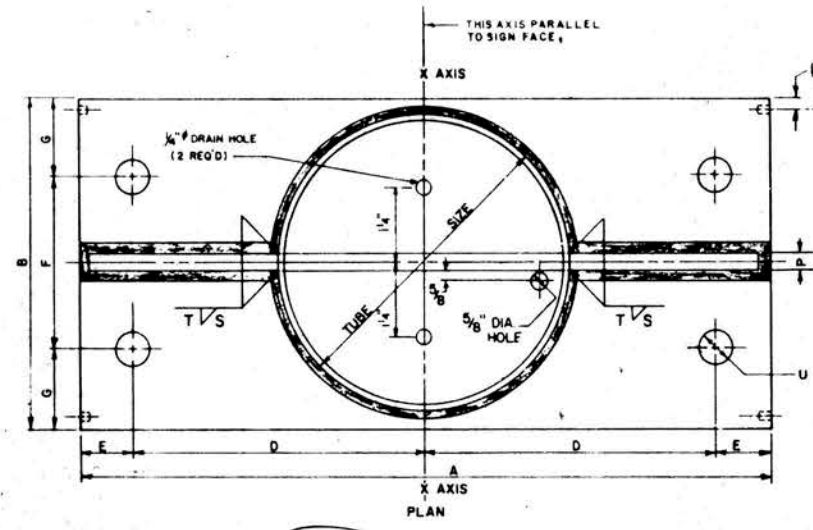


BASE TYPE	ALL DIMENSIONS IN INCHES		
	N_1	P_1	S_1
1	1-1/8	5/8	3/4
2	1-1/8	1-1/8	7/8
3	1-1/2	1-1/2	1-1/8
4	1-7/8	1-3/4	1-1/4
5	2	2-1/4	1-3/8

BREAKAWAY SIGN SUPPORTS FOR GROUND MOUNTED SIGNS-SHEET NO. 2

Checked by: *R. STRIZKI*
 Drawn by: *E. CROCKETT*
 In Charge: *Frank Szymanski*
 REVISION BY CKD DATE
 10-2-74
 11-21-74
 12-1-74

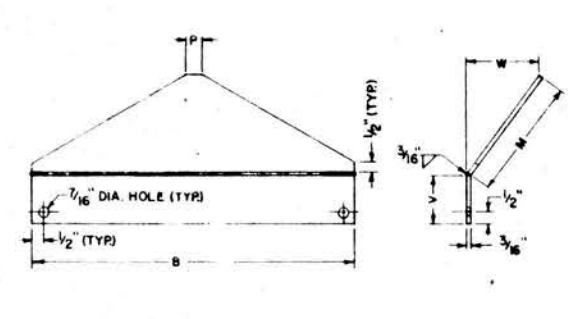
REVISION	BY	CKD	DATE



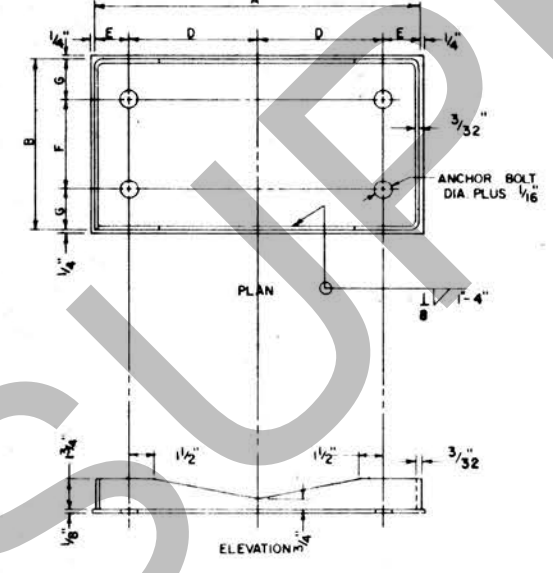
POST BASE

BASE TYPE	DIMENSIONS INCHES																		
	A	B	C	D	E	F	G	H	J	K	L	M	P	R	S	T	U	V	W
1	9 3/4	6	7 1/2	5 1/2	1 3/4	3	1 1/2	5 1/2	1	1	1/4	6	3/8	3/8	2 3/4	3/8	1 1/2	1	1 3/8
2	12 3/4	7 3/4	9 3/4	5	1 3/4	4	1 3/4	7	1 1/4	1 1/4	5 1/2	3/4	3/4	3 1/2	3/8	1 1/2	1	1 3/8	
3	18	9 1/2	12	7	2	5	2 1/4	9 1/4	1 1/2	1 1/2	1/2	6 1/2	3/4	3/4	4 3/4	1/2	1 1/2	2 3/8	
4	22	11 1/2	12 3/4	9	2	6	2 3/4	9 1/2	1 3/4	1 1/2	1/2	5	3/4	3/4	10 3/4	3/8	1 1/2	2 1/2	
5	28	13 1/2	15	12	2	7	3 3/4	11 3/4	2	1 3/4	1/2	8	3/4	3/4	12 3/4	3/8	1 1/2	3 1/8	

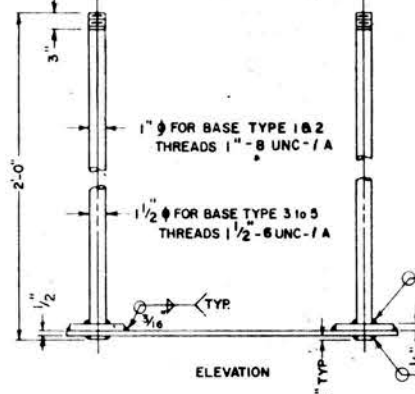
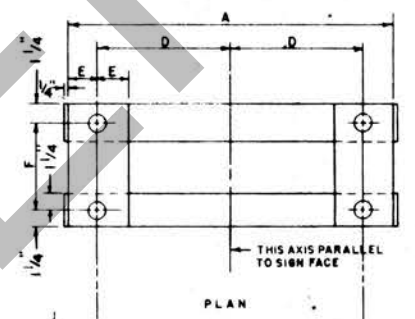
* THE BASE PLATE THICKNESS "T" MUST CORRESPOND EXACTLY WITH THE BASE TYPE AS SHOWN IN THE TABLE ABOVE. SUBSTITUTION OF ANY OTHER BASE PLATE THICKNESS IS NOT PERMITTED.



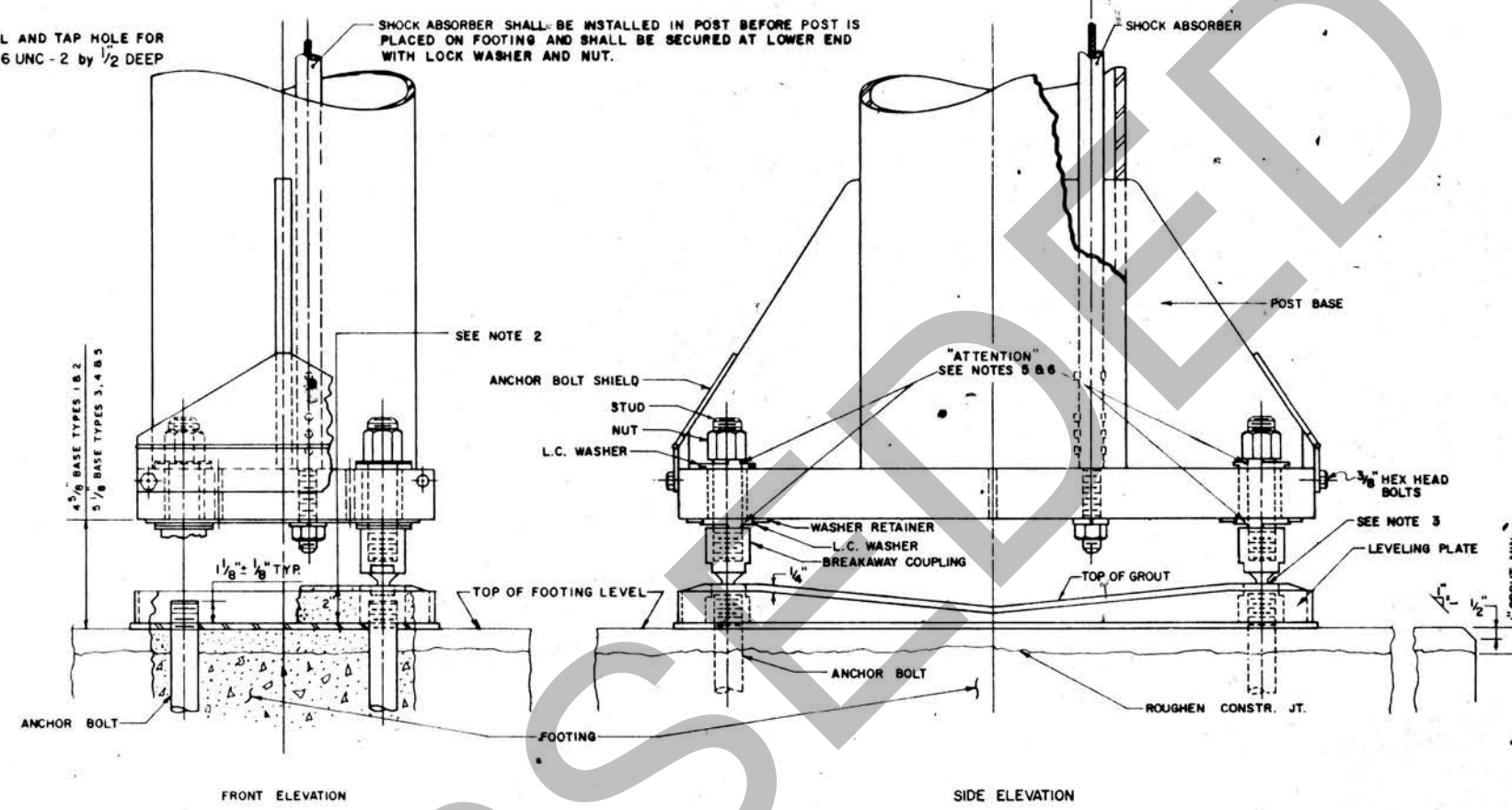
ANCHOR BOLT SHIELD
(GENT PLATE MAY BE USED)



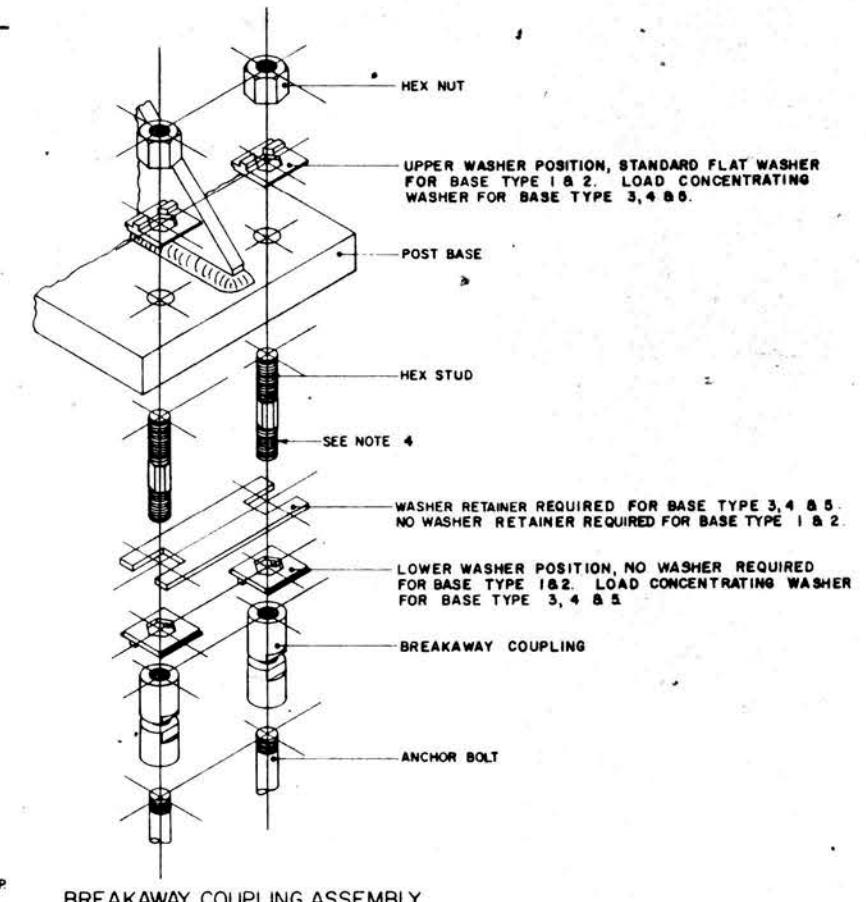
LEVELING PLATE DETAIL



ANCHOR BOLT DETAIL



BREAKAWAY COUPLING INSTALLATION



BREAKAWAY COUPLING ASSEMBLY
(TYPICAL)

GENERAL NOTES

1. ANCHOR BOLT ASSEMBLY & LEVELING PLATE SHALL BE STRUCTURAL STEEL TYPE A36 OR EQUIVALENT WITH MIN. YIELD STRENGTH OF 36,000 PSI. NUTS, WASHERS AND TOP 6\"/>
- 2. AFTER GROUT UNDER LEVELING PLATE HAS SET, SCREW BREAKAWAY COUPLINGS TO ANCHOR BOLTS AND FILL ENTIRE LEVELING PLATE WITH GROUT AS SHOWN.
- 3. SMALL END OF TAPER ON BREAKAWAY COUPLING SHALL POINT DOWNWARD.
- 4. THE HEX STUD END WITH THE SMALLER THREAD DEPTH (1 1/8\") SHALL BE SCREWED INTO TOP OF BREAKAWAY COUPLING.
- 5. THE PROPER WASHER NUMBER (Stamped on washer) MUST BE USED FOR EACH POST AS INDICATED IN THE TABLE ON GROUND MOUNTED SIGN SUPPORT SHEET No. 1.
- 6. RAISED PORTION OF L.C. WASHERS MUST BE POSITIONED AS INDICATED. CENTER OF RAISED PORTION MUST BE TOWARD E OF POST.

BREAKAWAY SIGN SUPPORTS
FOR GROUND MOUNTED SIGNS - SHEET NO. 3

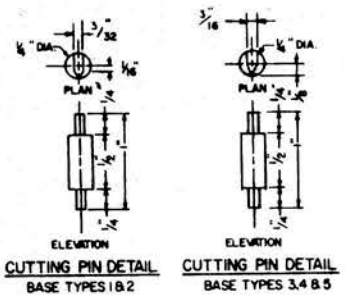
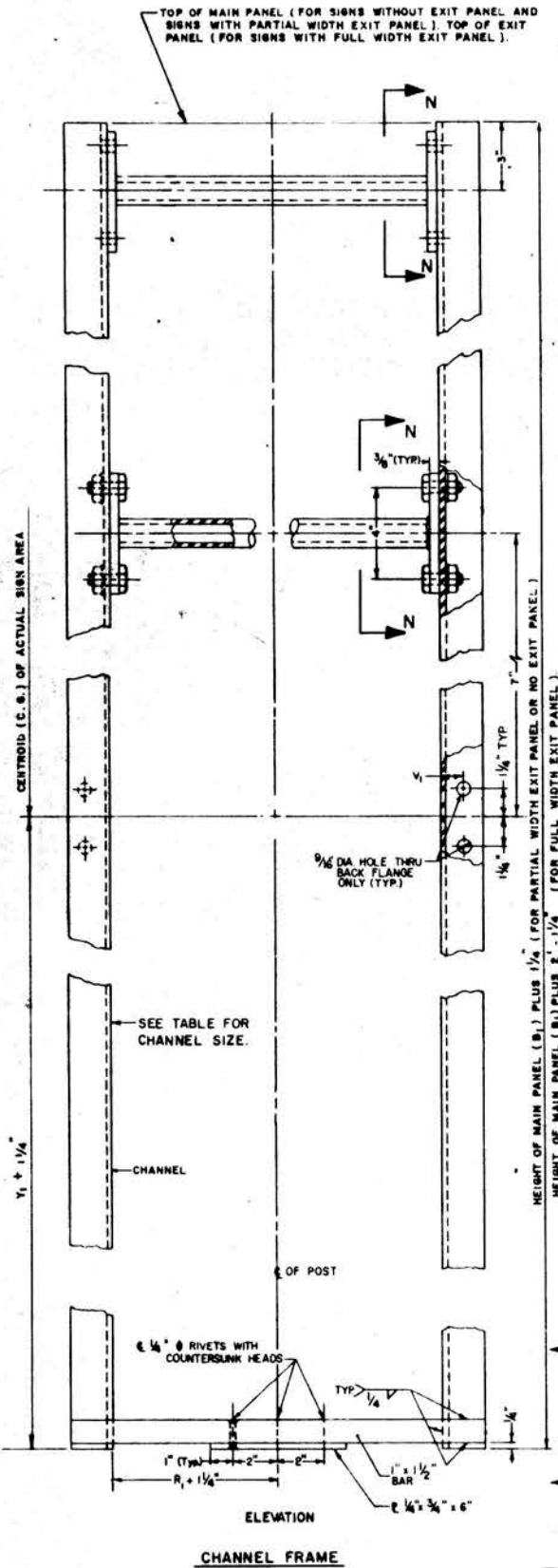
REVISION	BY	CKD	DATE
1	JRS	PJZ	4-11-73
2	RCG	PJZ	11-21-74

Checked by: *[Signature]*
In Charge of Fabrication: *[Signature]*

Design: *[Signature]*
Submitted: *[Signature]*
Drawn by: *[Signature]*

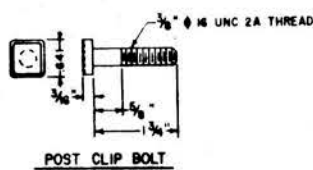
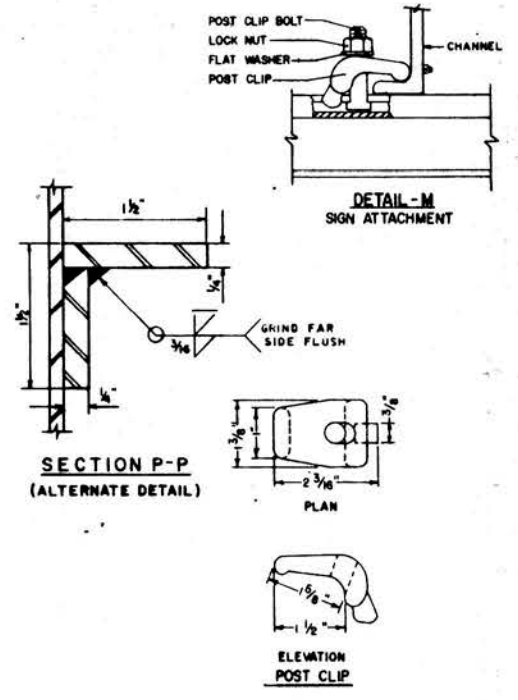
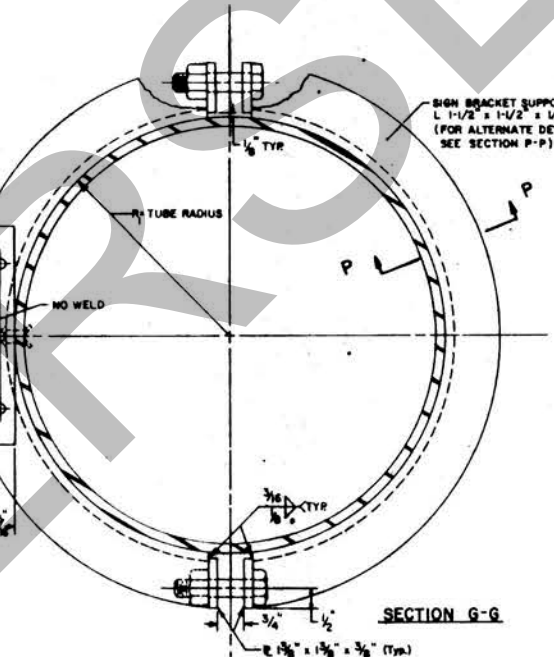
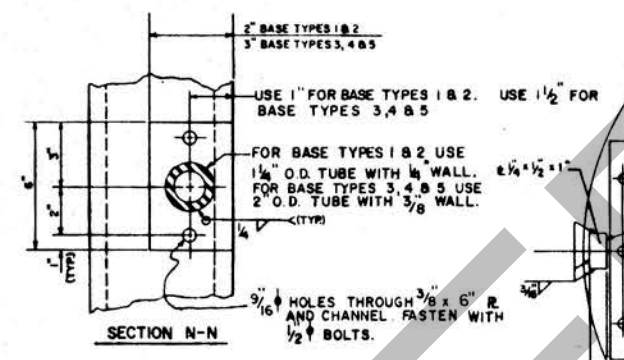
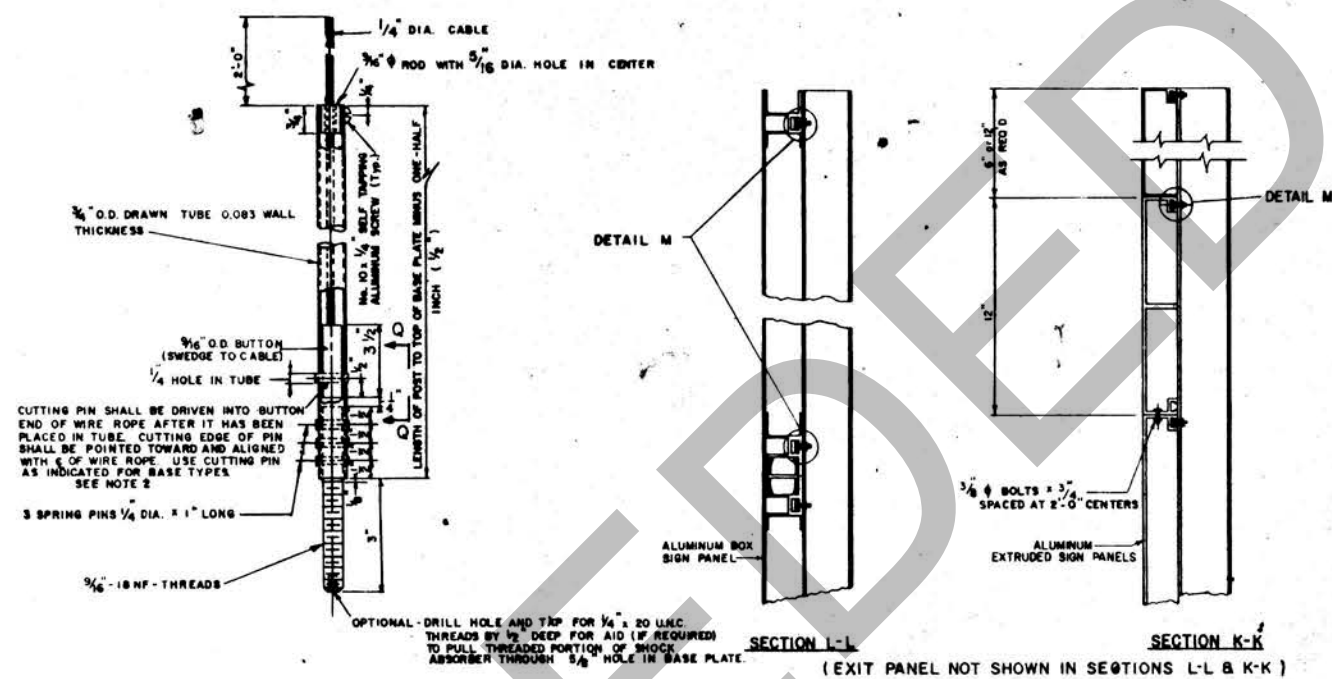
REVISION	BY	CKD	DATE

DESIGNED BY	R. STRIZKI
CHECKED BY	E. CROCKETT
DATE	4-11-73
BY	C.K.D.
DATE	11-21-74
REVISION	
BY	
DATE	



BASE TYPE	CHANNEL SIZE	V, INCHES
1	2C0.856	7/8
2	3C1.42	7/8
3	4C2.50	1
4	5C3.11	1 1/8
5	6C2.83	1 1/8

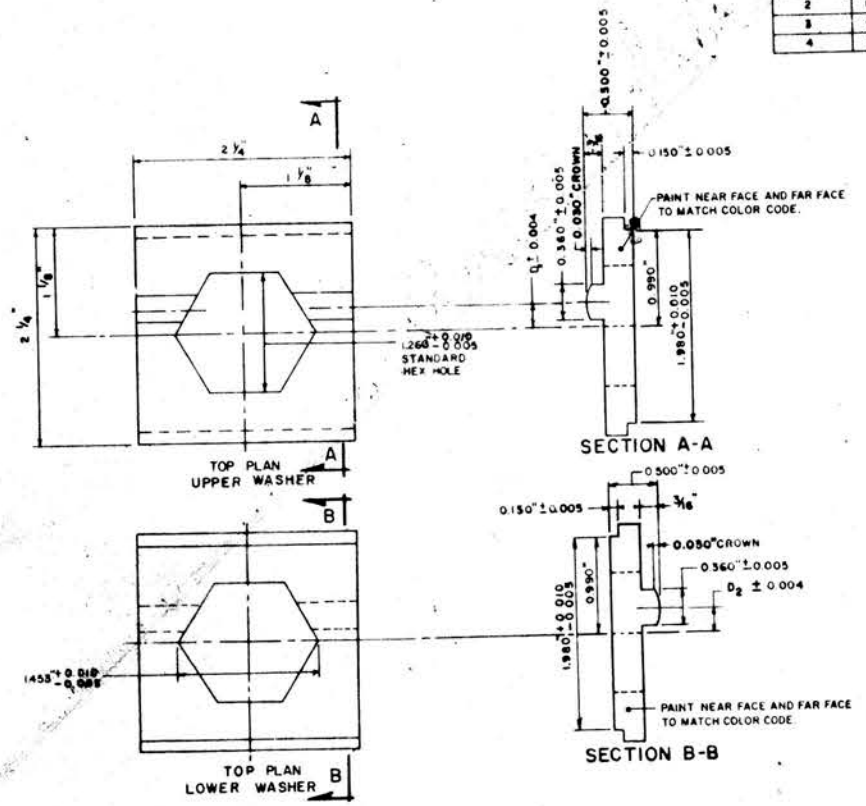
*NON STANDARD CHANNEL



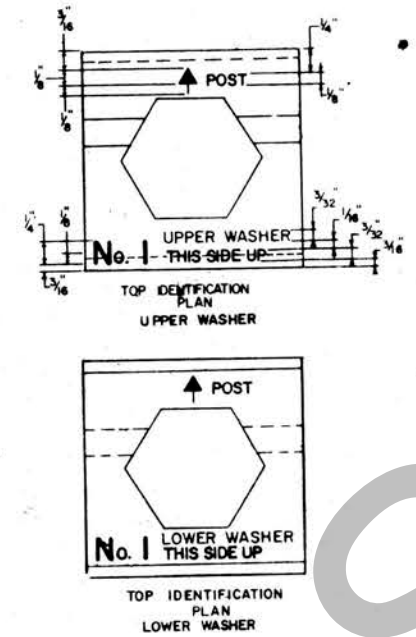
BREAKAWAY SIGN SUPPORTS FOR GROUND MOUNTED SIGNS - SHEET NO. 4

REVISION	BY	C.K.D.	DATE

WASHER NUMBER	"D" INCHES	FACE COLOR CODE
1	0.100	ORANGE
2	0.150	YELLOW
3	0.200	BLUE
4	0.250	GREEN

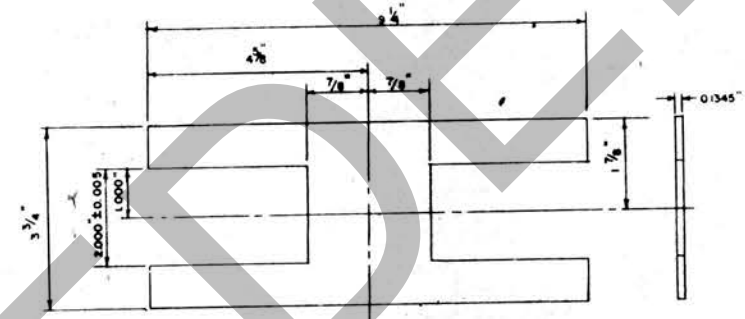


LOAD CONCENTRATING WASHER DETAILS

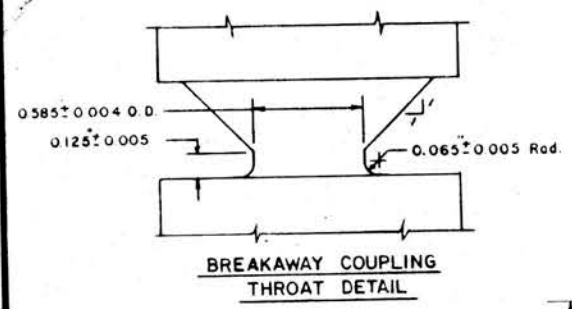


LOAD CONCENTRATING WASHER IDENTIFICATION DETAIL

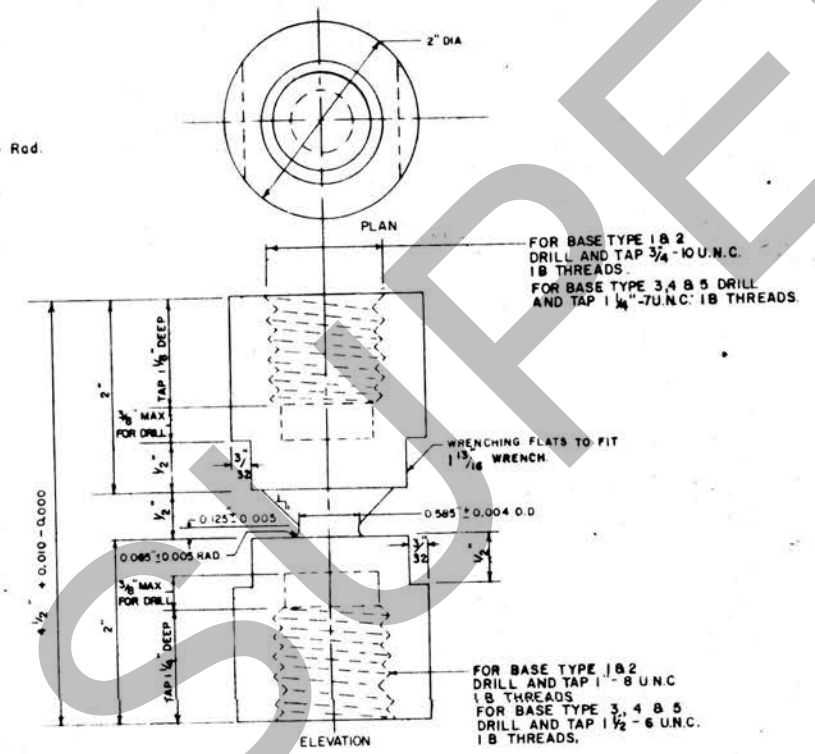
NOTE: ALL LOAD CONCENTRATING WASHERS SHALL BE PERMANENTLY LABELED WITH APPROPRIATE WASHER NUMBER AND IDENTIFICATION AS SHOWN.



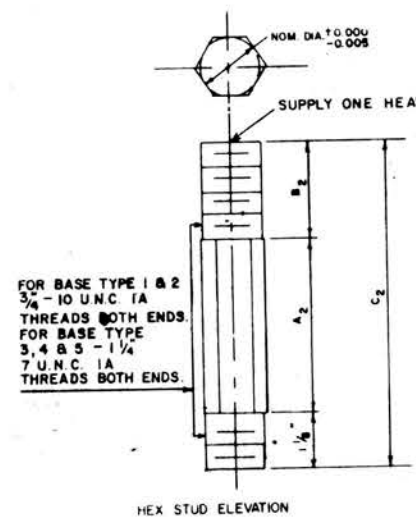
WASHER RETAINER FOR BASE TYPES 3 TO 5 (NO WASHER RETAINER REQUIRED FOR BASE TYPE 1 & 2)



BREAKAWAY COUPLING THROAT DETAIL



BREAKAWAY COUPLING



HEX STUD ELEVATION

BASE TYPE	A ₂ INCHES	B ₂ INCHES	C ₂ INCHES	HEX SIZE
1	1 5/8	1 5/8	3 3/8	3/4
2	1 5/8	1 5/8	3 3/8	3/4
3	2 1/4	2 1/8	5 1/2	1 1/4
4	2 1/2	2 1/8	5 3/8	1 1/4
5	2 3/4	2 1/8	6	1 1/4

HEX STUD LENGTHS & SIZES

BREAKAWAY SIGN SUPPORTS FOR GROUND MOUNTED SIGNS - SHEET NO 5

REVISION	BY	C/K'D	DATE
1	JRS	PJZ	4-11-73
2	RCG	PJZ	11-21-74

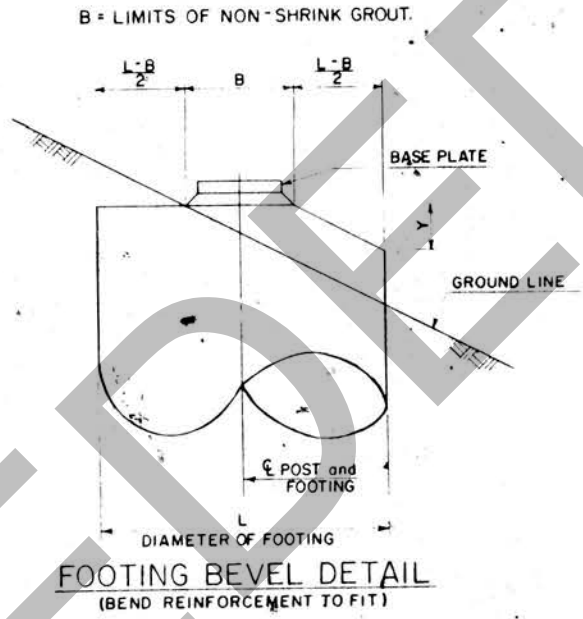
Checked by *Arona*
Submitted by *R. STRIZKI*
Designed by *E. CROCKETT*
Drawn by *D. SICHAK*

REVISION	BY	C/K'D	DATE

ORIGINAL

SIGN SUPPORT DATA TABLE

IDENTIFICATION		OFFSET	SIGN SIZE				NO. OF POSTS	TUBE SIZE		POST HEIGHT			BASE TYPE	DIMENSIONS TO TOP OF FOOTING		
NO.	STATION	X ₁	A ₁	B ₁	A ₂		O.D.	THK.	C ₁	D ₁	E ₁		F ₁	G ₁	H ₁	



FOOTING BEVEL TABLE

IDENT. NO.	L-B/2	Y		
		POST #1	POST #2	POST #3

NON-BREAKAWAY SIGN SUPPORTS FOR GROUND MOUNTED SIGNS-SHEET NO.1.

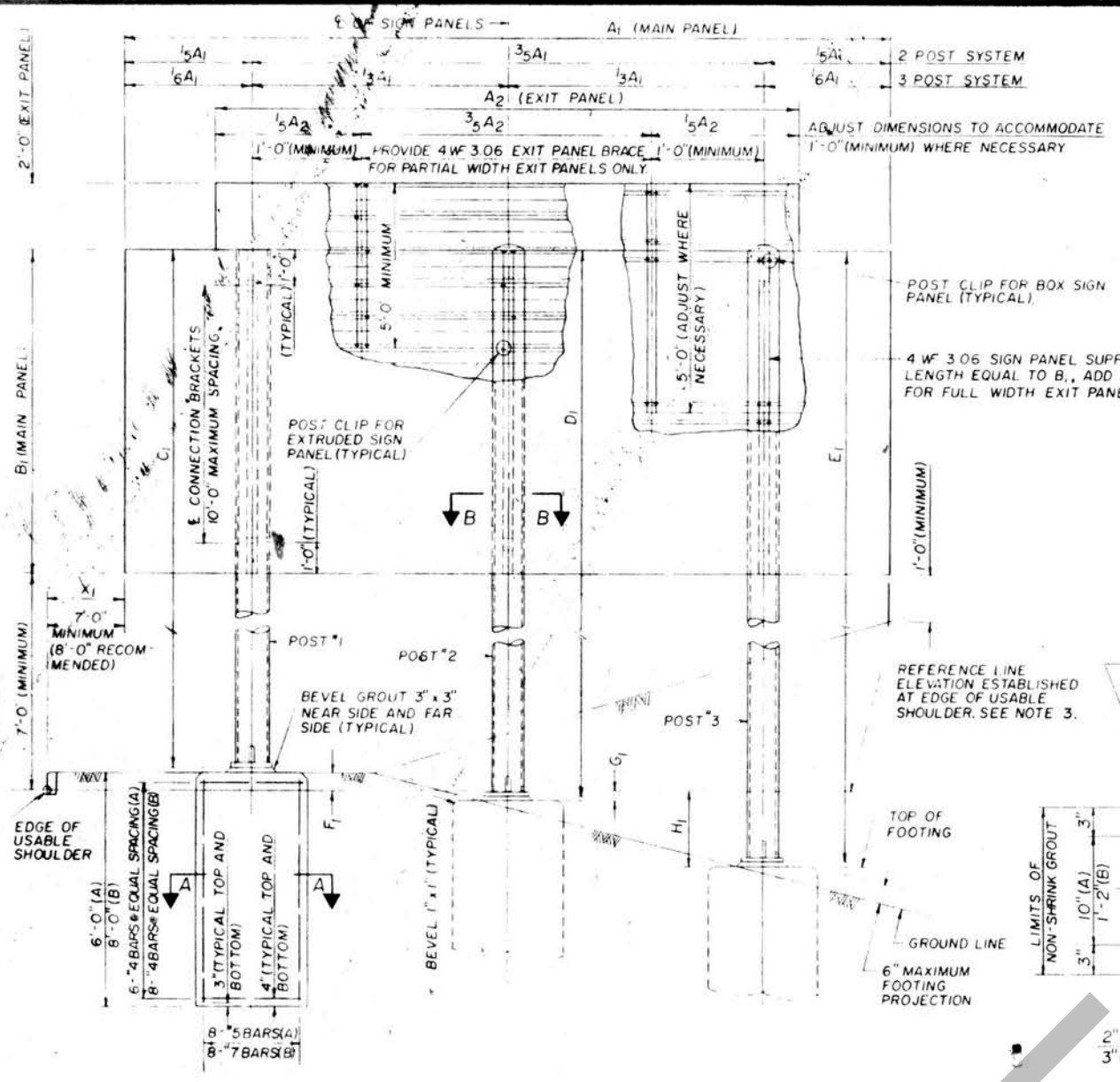
NOTE
 1 AN ASTERISK (*) IN COLUMN BASE TYPE INDICATES THAT THE EDGE OF FOOTING MUST BE BEVELLED TO MEET THE 6" MAXIMUM PROJECTION REQUIREMENT.
 2 FOR IDENTIFICATION OF TABULAR ITEMS, AND DETAILS RELATING THERETO, REFER TO NON-BREAKAWAY SIGN SUPPORTS FOR GROUND MOUNTED SIGNS-SHEET NO.2

REVISION	BY	C.K'D	DATE

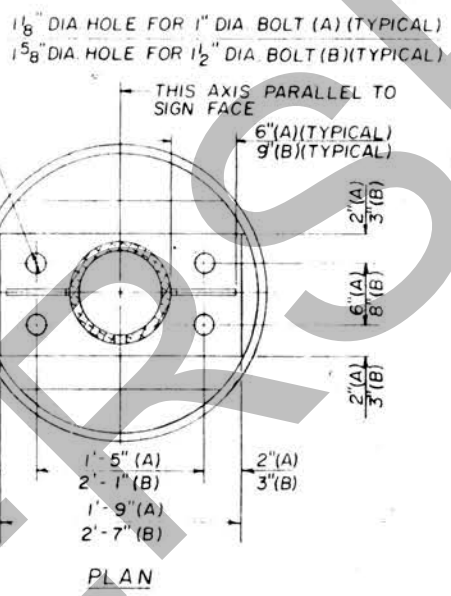
PLAN REFERENCE CONTROL SECTION	ROUTE/SECTION	FILE	JOB NO.
DES. BY	DWN. BY	DES. BY	DWN. BY
CHK BY	IN CHARGE OF		

ORIGINAL

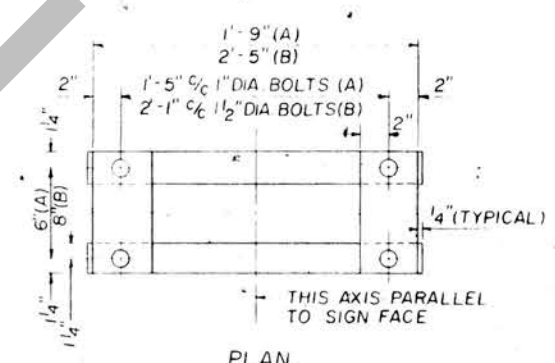
IN CHARGE OF	W. D. Cole
CHK BY	W. D. Cole
DES BY	W. D. Cole
DWN BY	W. D. Cole
ROUTE	
SECTION	
FILE	
JOB NO.	
PLAN REFERENCE SECTION	



TYPICAL SIGN ELEVATION



PLAN



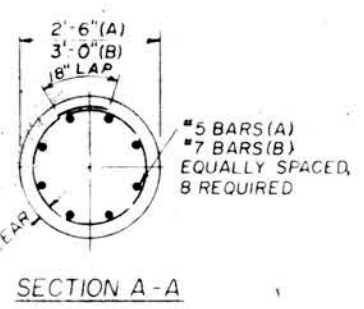
VIEW C-C

SIGN PANEL CONNECTION DETAILS

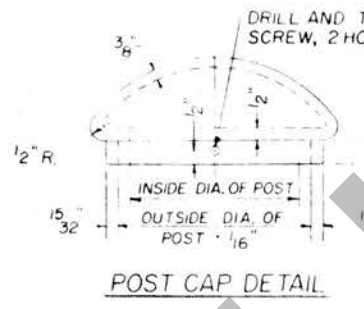
GENERAL NOTES:

1. USE CLASS 'B' CONCRETE IN ALL FOOTINGS. ULTIMATE COMPRESSIVE STRENGTH $f'_c = 3,000$ p.s.i.
2. ALL FOOTINGS SHALL BE PLACED AGAINST UNDISTURBED OR ADEQUATELY COMPACTED EARTH, EXCEPT FOR FOOTING TOPS WHICH SHALL BE FORMED TO A DEPTH OF 3" BELOW GROUND LINE.
3. TOPS OF FOOTINGS ABOVE REFERENCE LINE ARE INDICATED BY PLUS (+) VALUE; AND BELOW REFERENCE LINE BY MINUS (-) VALUE.
4. MATERIAL FOR STRUCTURAL SHAPES AND PLATES SHALL BE ALUMINUM ALLOY 6061-T6.
5. ANCHOR BOLT ASSEMBLY SHALL BE STRUCTURAL STEEL TYPE A-36 OR EQUIVALENT WITH MINIMUM YIELD STRENGTH OF 36,000 p.s.i. NUTS, WASHERS, AND TOP 8" OF BOLTS SHALL BE HOT-DIP GALVANIZED. THE TOP 6" OF ALL ANCHOR BOLTS SHALL BE THREADED.
6. ALL WELDS SHALL CONFORM TO A.W.S. STANDARDS. FILLER ALLOY SHALL BE ER5356 OR ER5556.
7. UNUSUAL FOUNDATION CONDITIONS MAY REQUIRE REDESIGN OF FOOTING AND SUCH CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
8. DIMENSIONS FOR BASE TYPE A ARE DESIGNATED (A). DIMENSIONS FOR BASE TYPE B ARE DESIGNATED (B).
9. THE UNDERSIDE OF POST BASES SHALL BE COATED AS SPECIFIED IN SUPPLEMENTARY SPECIFICATIONS.

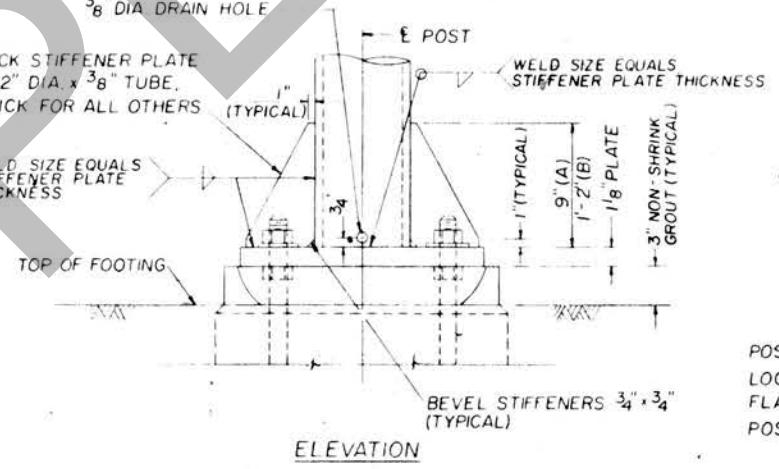
NON-BREAKAWAY SIGN SUPPORTS FOR GROUND MOUNTED SIGNS - SHEET NO. 2.



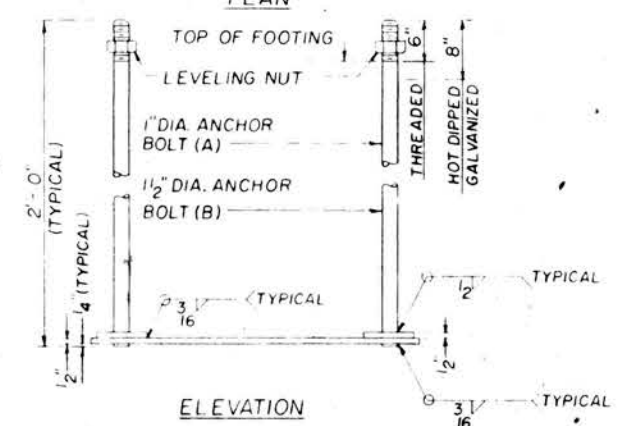
SECTION A-A



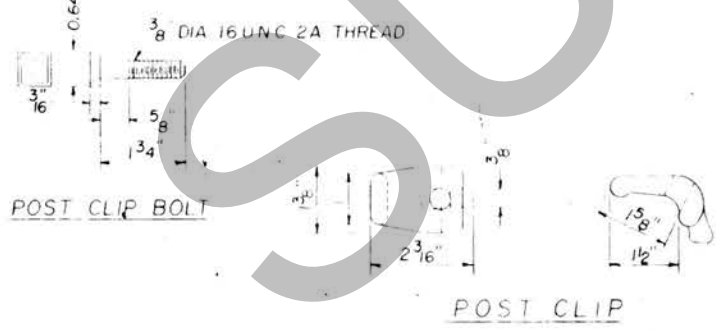
POST CAP DETAIL



POST BASE DETAIL

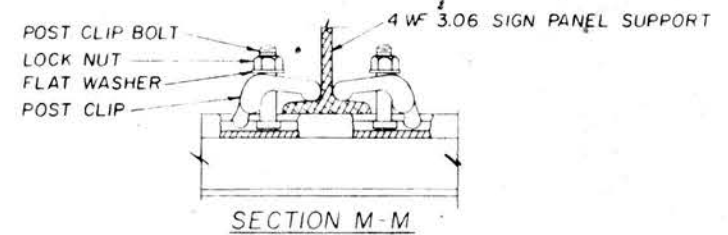


ANCHOR BOLT DETAIL



POST CLIP BOLT

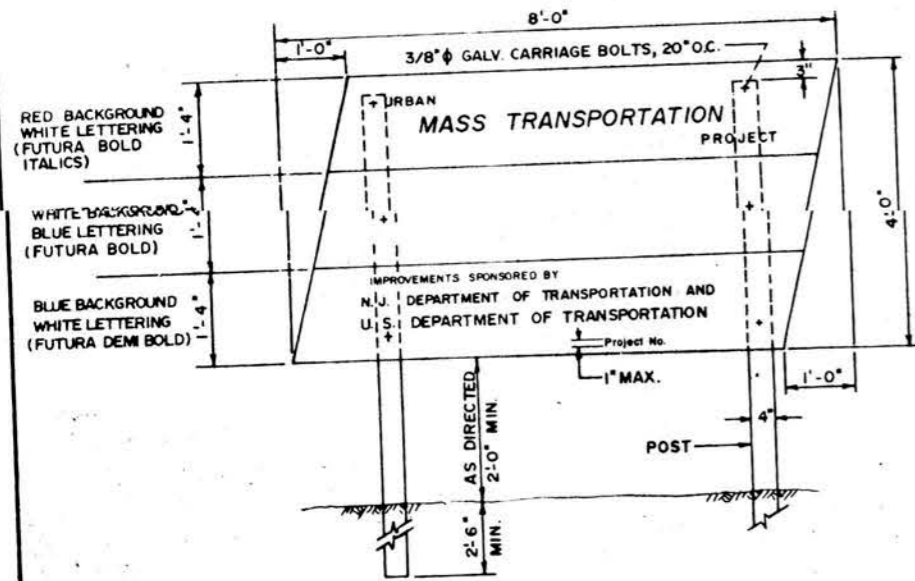
POST CLIP



SECTION M-M

REVISION	BY	CK'D	DATE

ORIGINAL



PROJECT SIGN

NOTES

- SIGN: 3/4" THICK SMOOTH SURFACE EXTERIOR GRADE PLYWOOD WITH EXTERIOR GLUE. FILL EDGES WITH PUTTY.
- POSTS: 4" x 6" CEDAR; COAT BELOW GRADE WITH BLACK ASPHALTUM.
- PAINTING: ALL SURFACES ABOVE GRADE:
 - 1 COAT MOBIL M & F ENAMEL PAINT
 - POSTS AND REAR OF SIGN WHITE
 - COLORS: RED - MOBIL 20-R-9, OR EQUAL
 - WHITE - MOBIL 20-W-9, OR EQUAL
 - BLUE - MOBIL 20-B-7, OR EQUAL

SUPERSEDED

UMTA STANDARD DETAIL

2-26-80

ORIGINAL