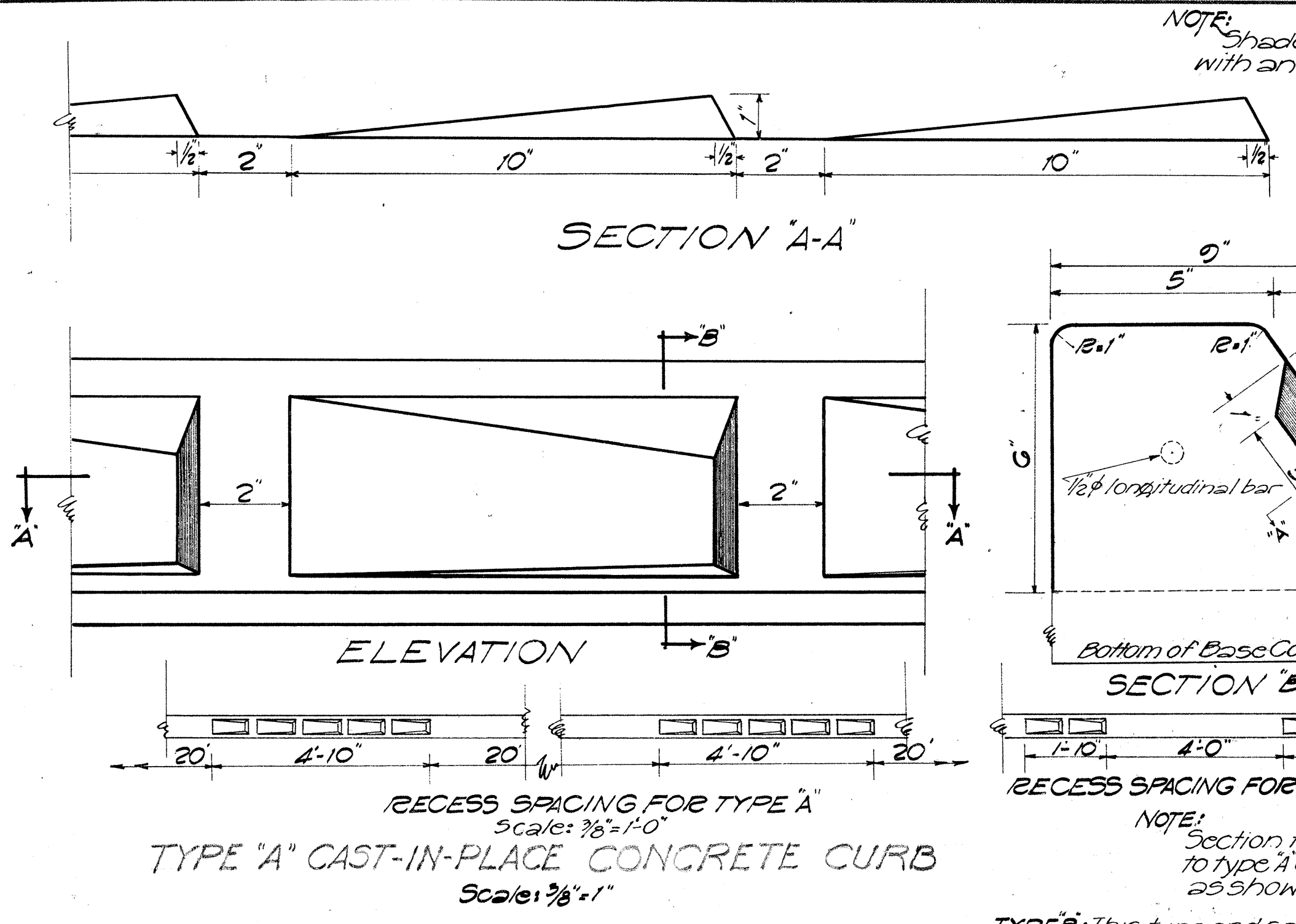
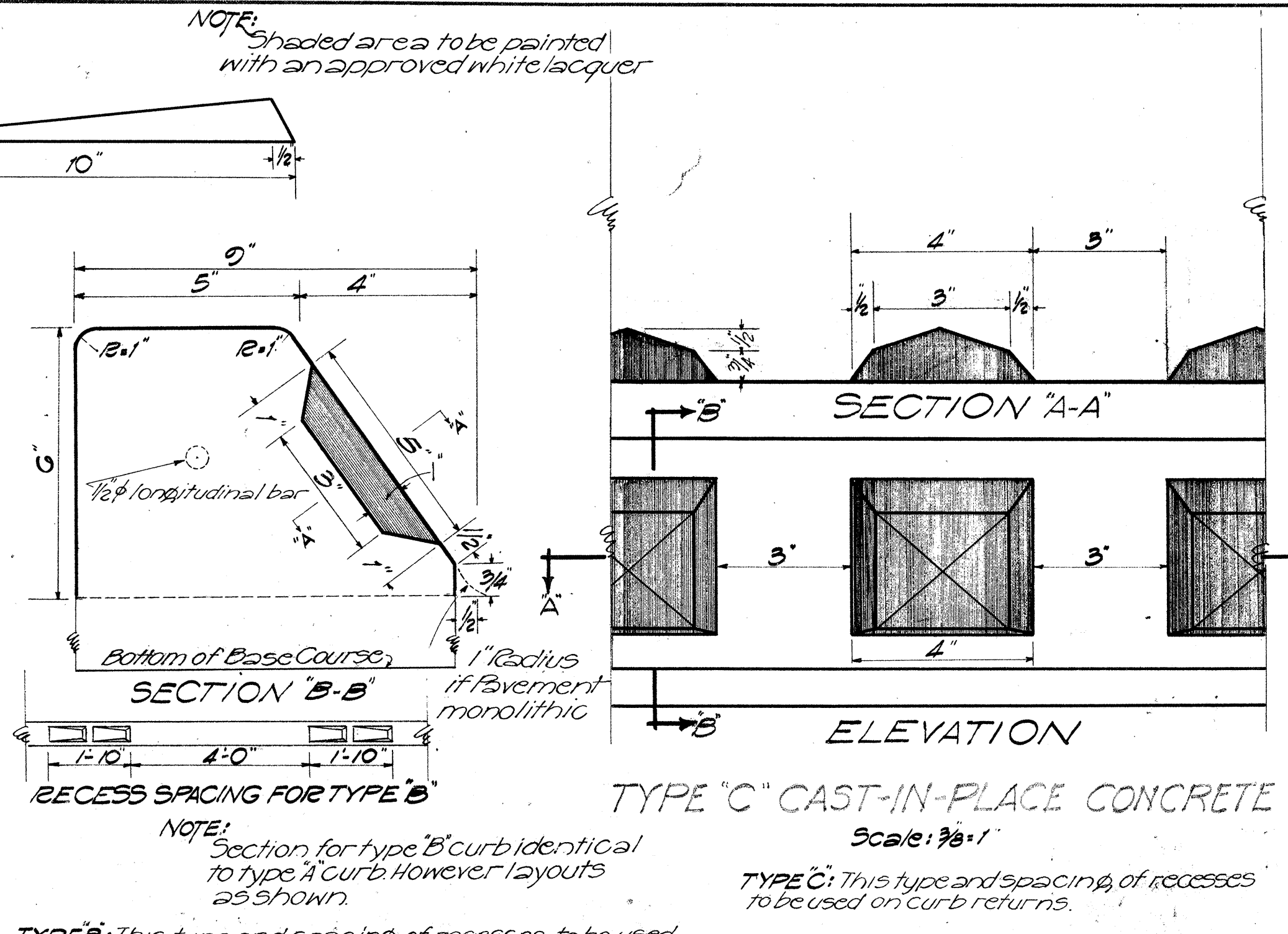
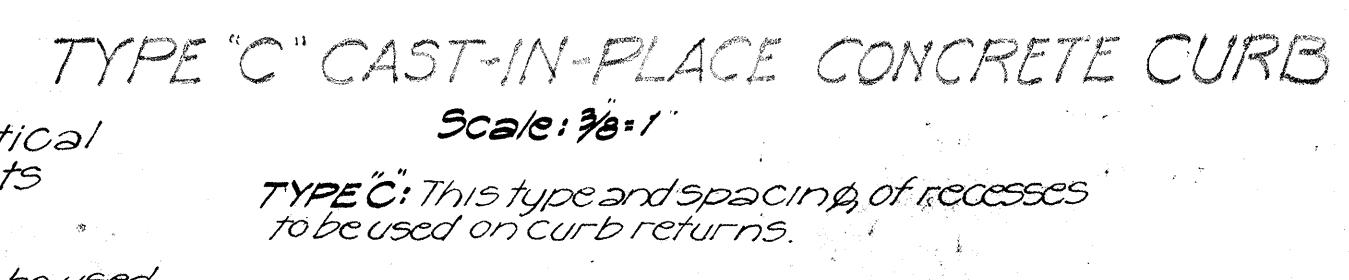




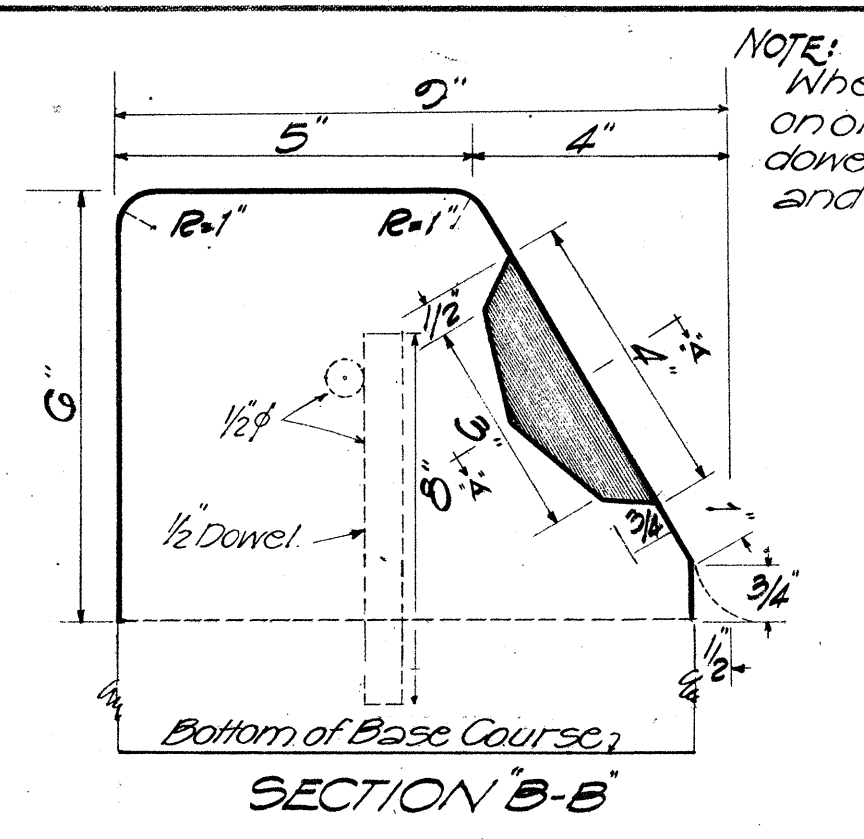
TYPE A: This type and spacing of recesses to be used where medians are curbed continuously.



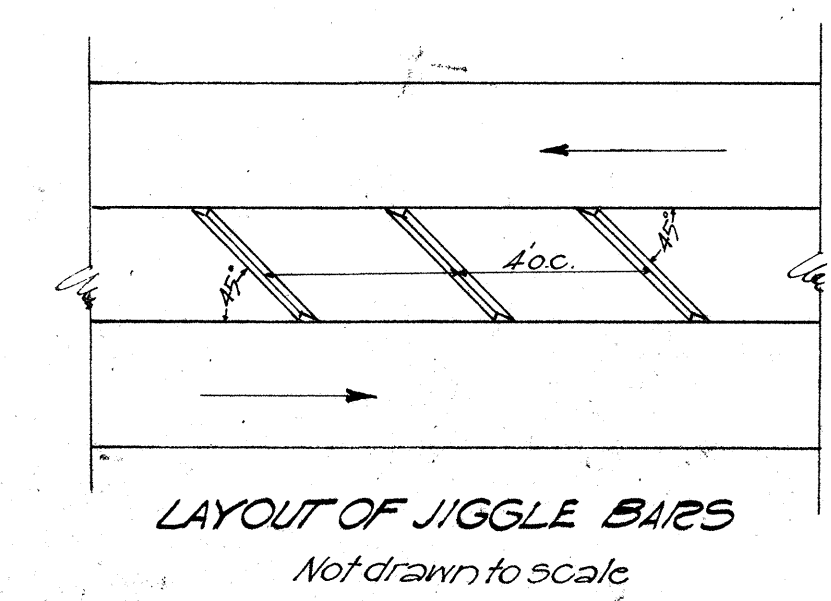
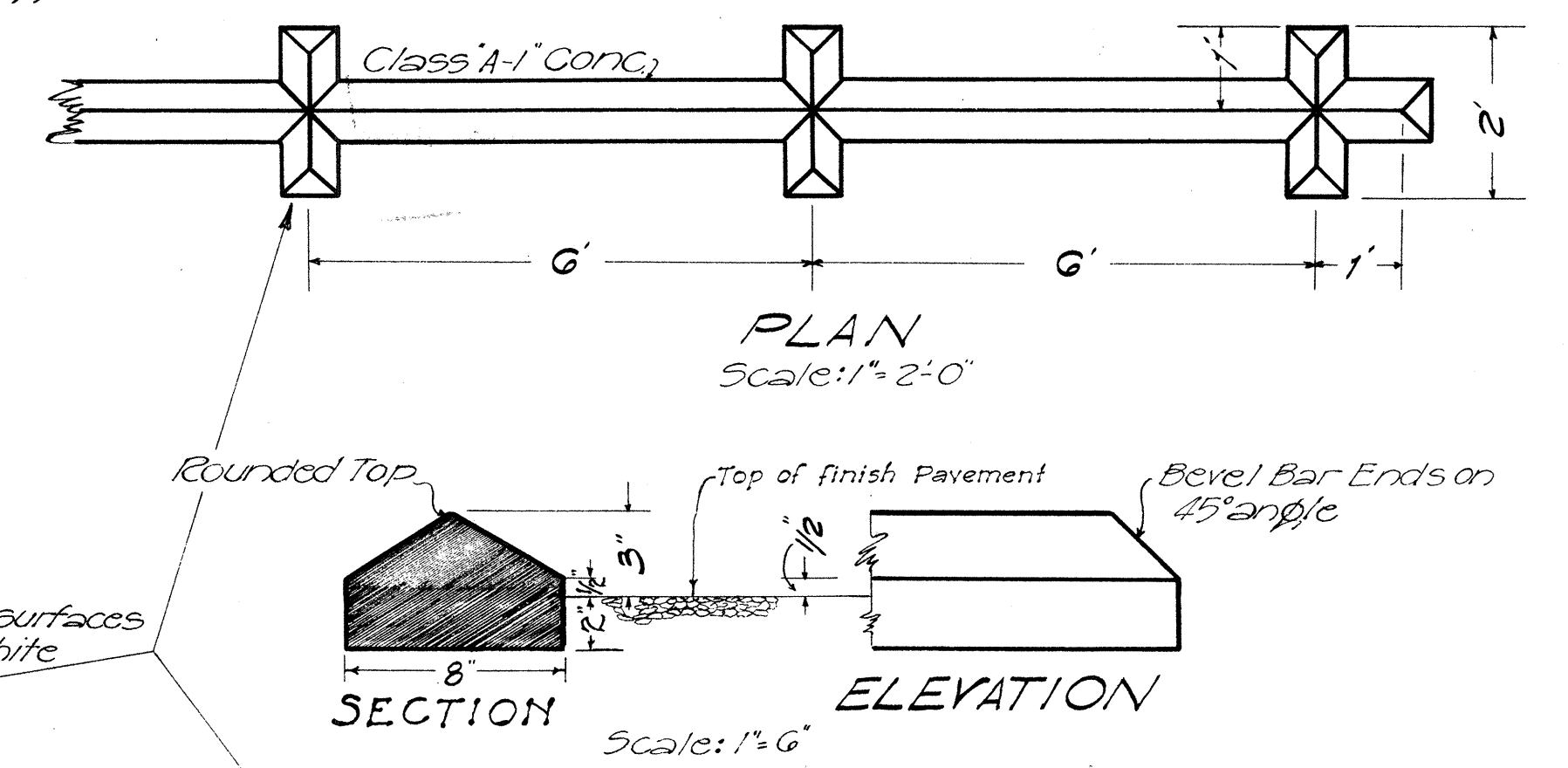
TYPE B: This type and spacing of recesses to be used on islands at intersections.



TYPE C: This type and spacing of recesses to be used on curb returns.



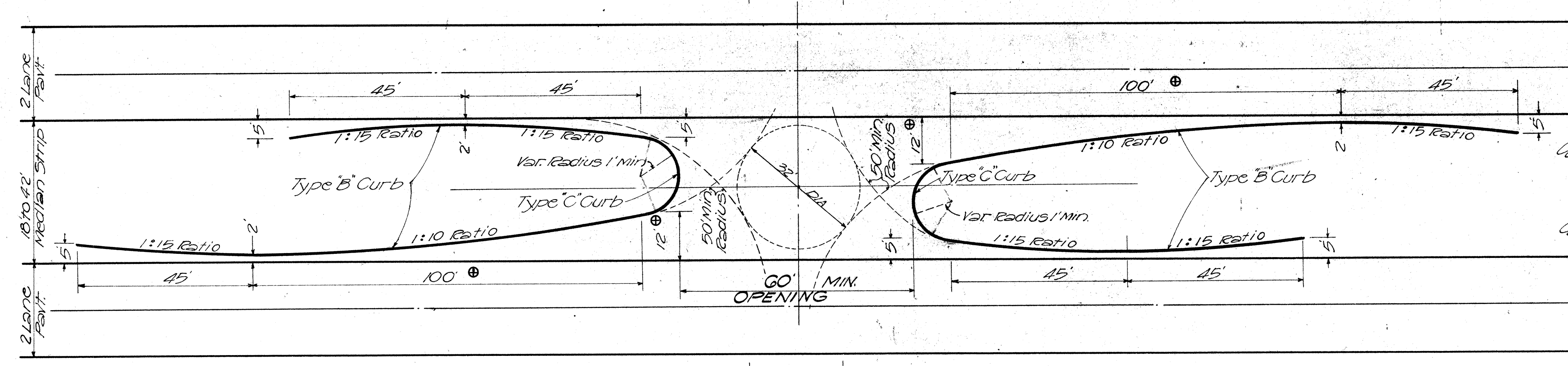
NOTE: Paint all exposed surfaces of bars with beaded white traffic lacquer.



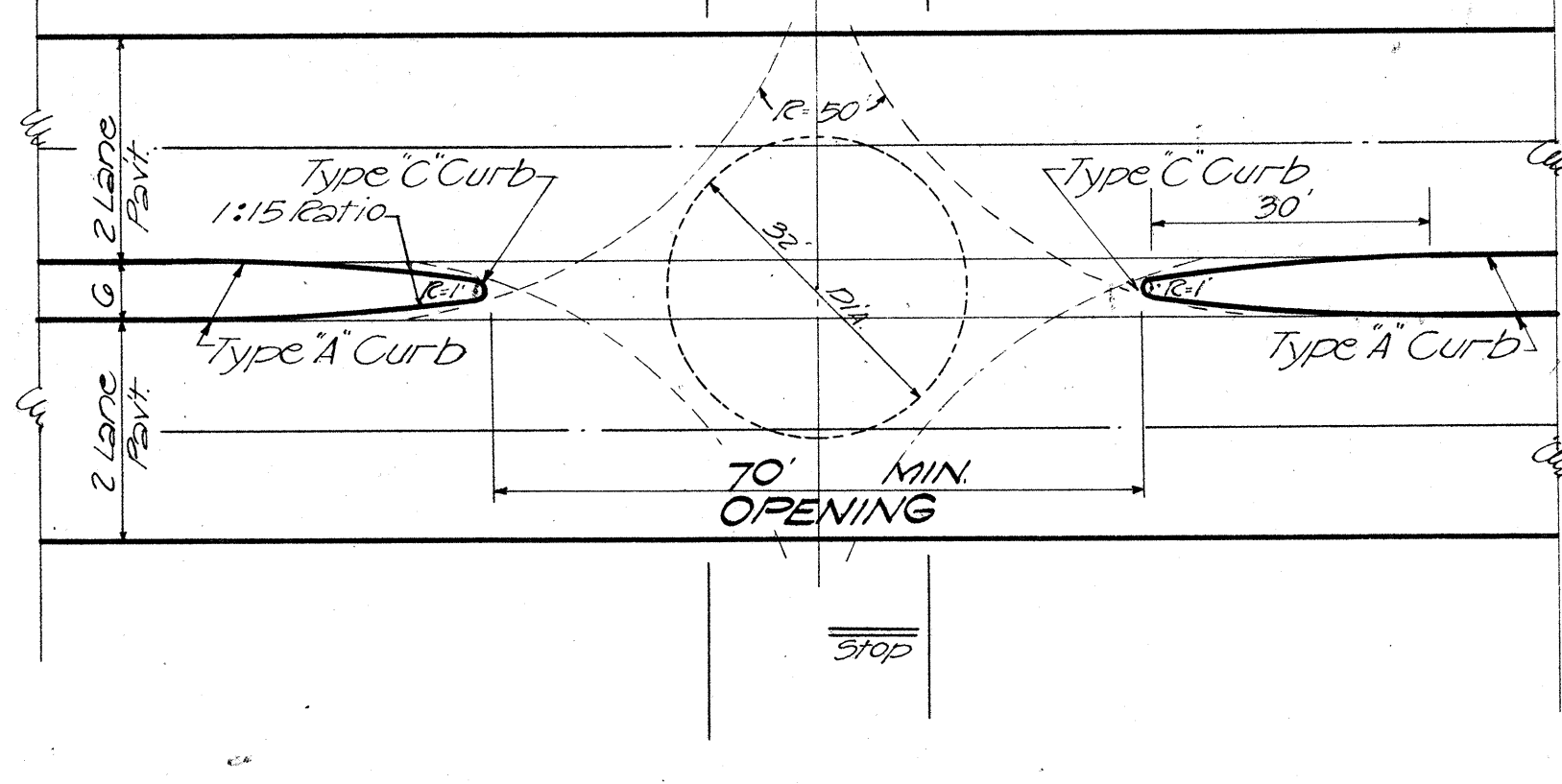
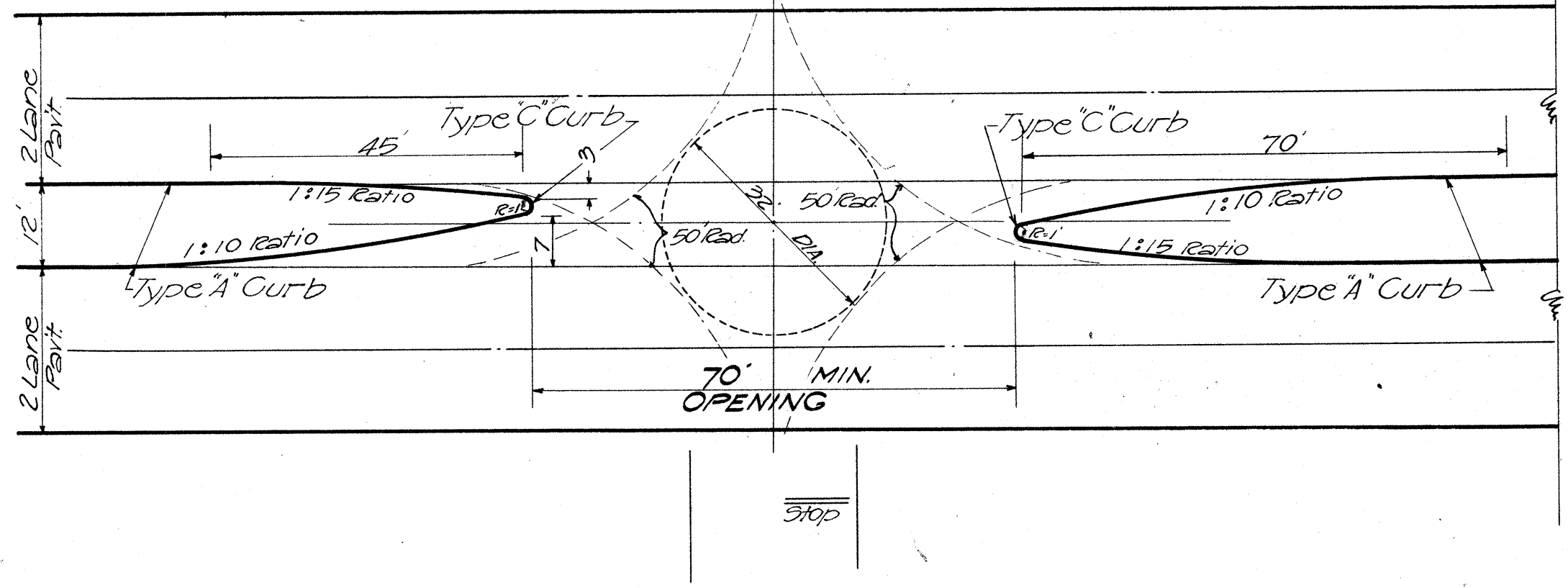
RAISED TRAFFIC BARS

NOTE: Section and Elevation for JIGGLE BARS same as the TRAFFIC BARS

RAISED JIGGLE BARS

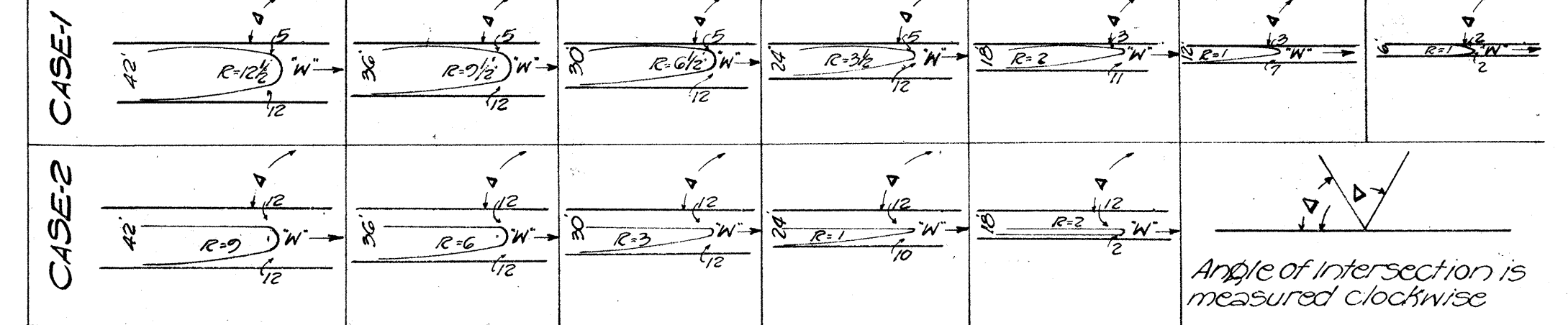


NOTE: With an 18' Median Strip, the 12' Offset must be reduced to 11', which in turn reduces the 1:10 flare to 20'.



Angle of Inters.	WIDTH OF MEDIAN STRIP											
	42'		36'		30'		24'		18'		12'	
	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2	CASE 1	CASE 2
60°	54	58	58	62	64	66	68	70	70	66	64	62
65°	48	52	52	56	56	60	60	62	62	58	58	56
70°	42	46	46	50	50	54	54	56	56	52	52	50
75°	36	40	40	44	44	48	48	50	50	46	46	44
80°	32	36	36	40	40	44	44	46	46	42	42	40
85°	30	32	32	34	34	36	36	38	38	36	36	34
90°	30	30	30	30	30	30	30	30	30	30	30	30
95°	30	32	30	34	30	36	30	38	32	38	36	34
100°	30	36	30	38	30	42	34	44	36	44	40	44
105°	30	40	32	44	34	48	38	50	40	50	46	50
110°	32	46	36	50	38	54	42	56	46	56	52	56
115°	38	52	42	56	44	60	48	62	52	62	58	62
120°	44	58	48	62	52	66	56	70	60	70	64	68

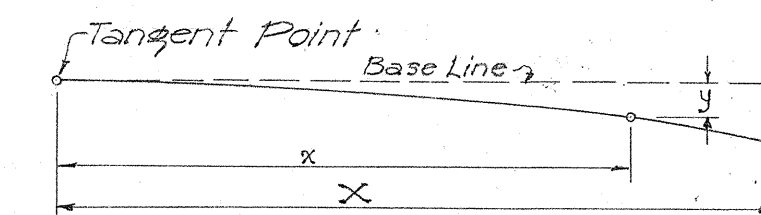
"W" = Distance in feet from Island Nose to Centerline of Intersection



NOTE: Sketches are not to scale

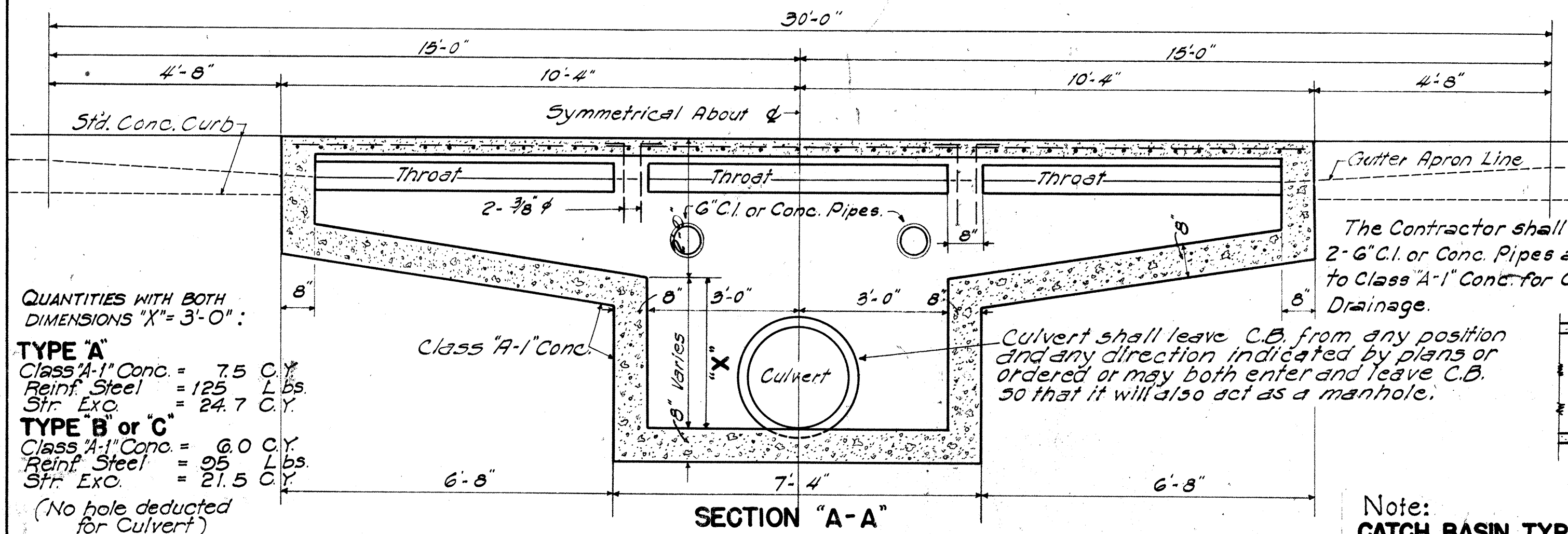
These Curves are based upon the following formula:
 $y = \frac{Ax^2}{X^2}$
 where: y = any offset
 x = its tangent distance
 A = maximum offset
 X = maximum tangent distance

RATIO CURVE DATA	
Dist. in ft. (x)	Offset in feet (y)
5:1	0.15
10:1	0.15
20:1	0.15
30:1	0.15
40:1	0.15
50:1	0.15
60:1	0.15
70:1	0.15
80:1	0.15
90:1	0.15
100:1	0.15

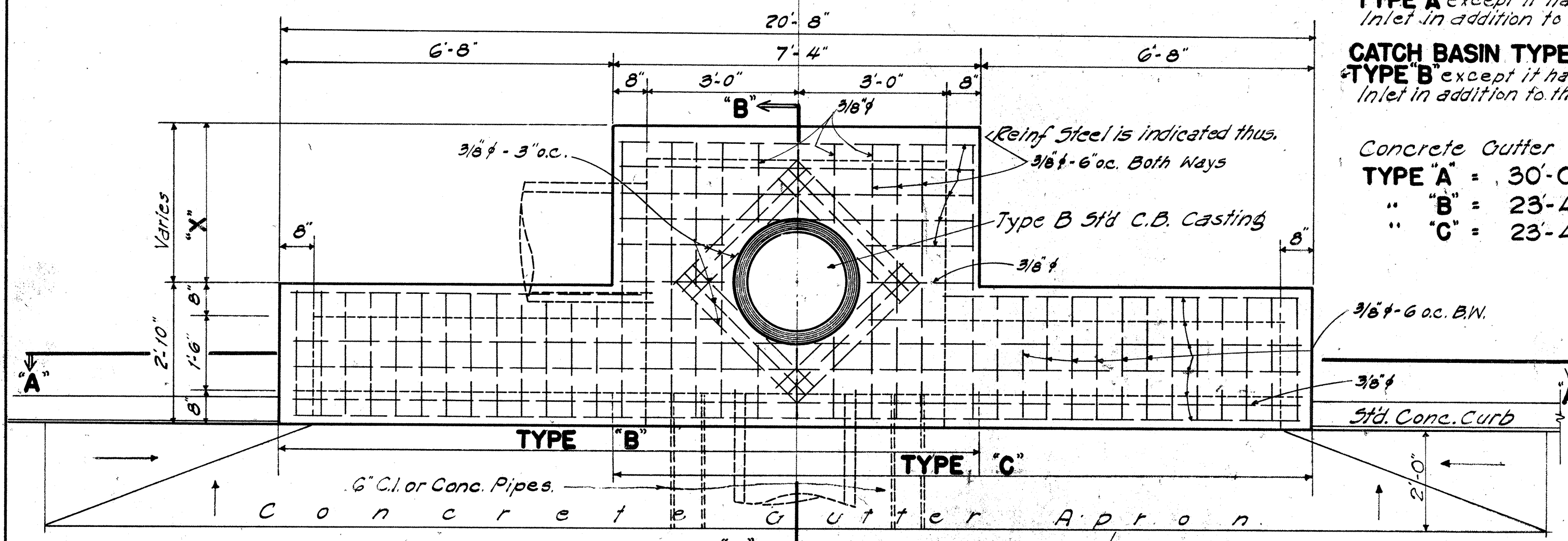


NOTE: Any ratio curve is here designated in this Tabulation by the maximum offset and its tangent distance.

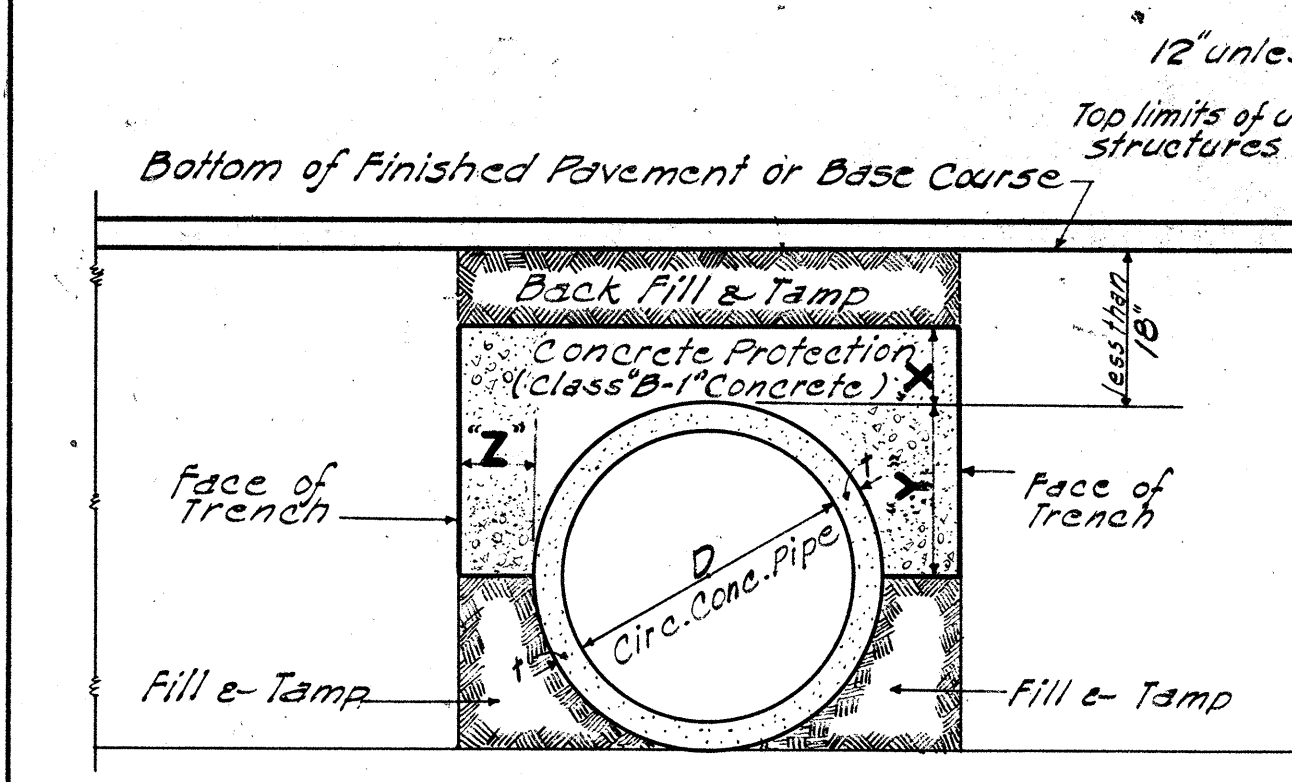
TERRITORIAL HIGHWAY DEPARTMENT
 TERRITORY OF HAWAII
STANDARD DETAILS
 Scale as shown
 APPROVED
 Date 9-2-49
 TERRITORIAL HIGHWAY ENGINEER



QUANTITIES WITH BOTH DIMENSIONS "X" = 3'-0" :
TYPE "A"
 Class A-1 Conc. = 7.5 CY
 Reinf. Steel = 125 Lbs
 Str. Exc. = 24.7 CY
TYPE "B" or "C"
 Class A-1 Conc. = 6.0 CY
 Reinf. Steel = 95 Lbs
 Str. Exc. = 21.5 CY
 (No hole deducted for Culvert)

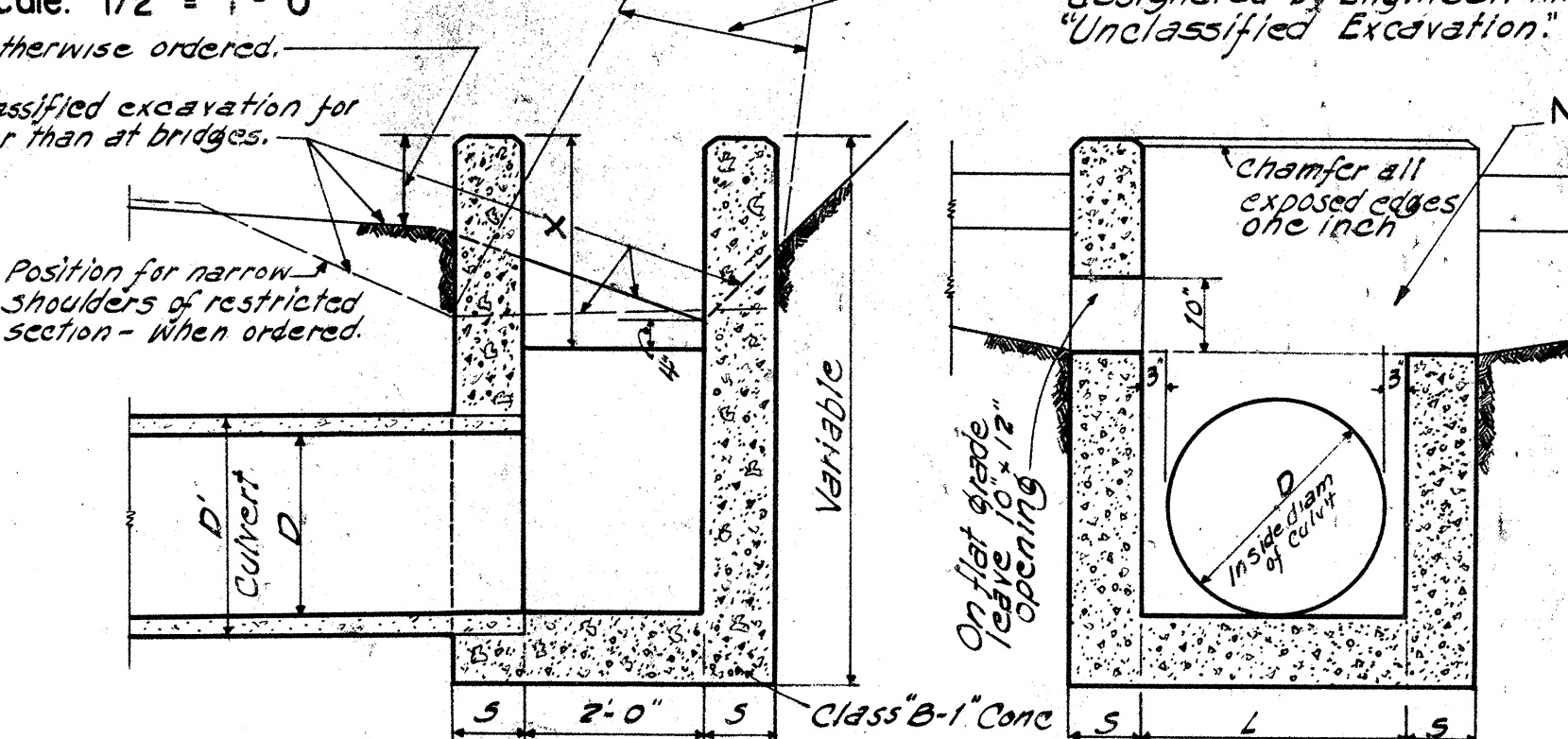


STANDARD CONCRETE CATCHBASIN TYPE "A"
 Scale: 1/2" = 1'-0"

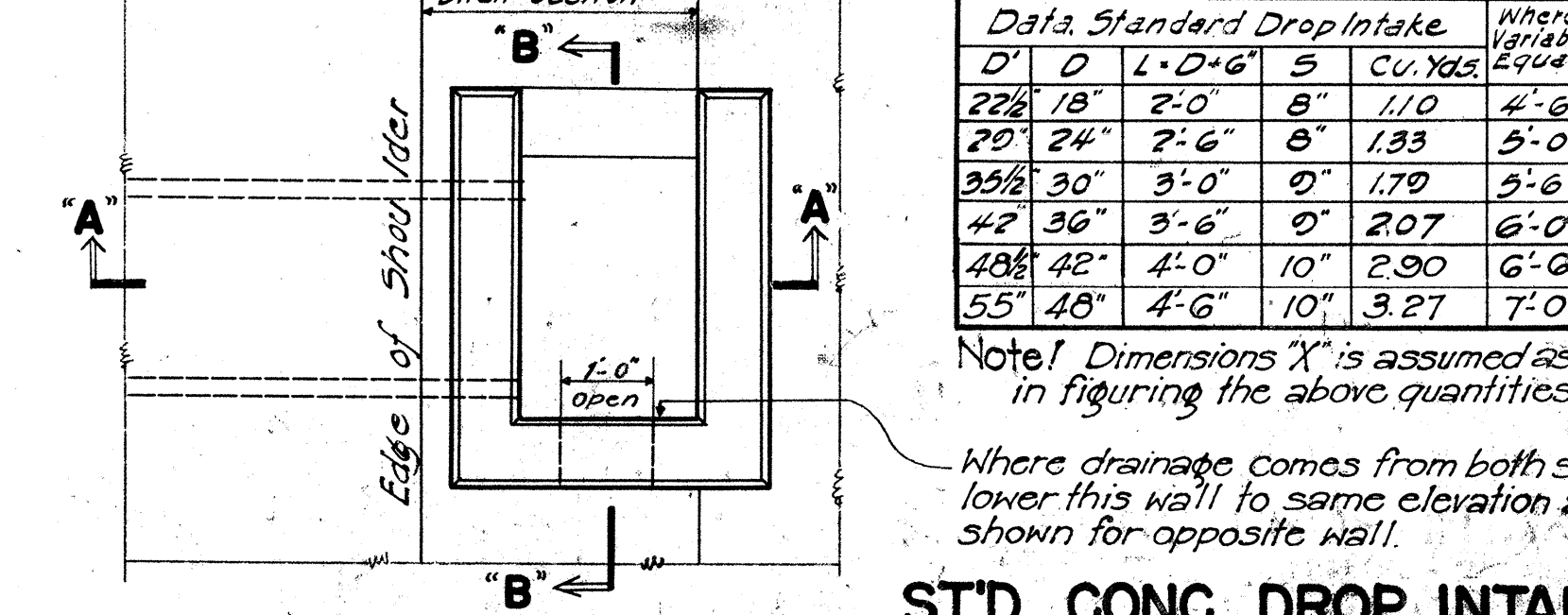


TYP. SECT. OF CULVERT WITH CONG. PROTECTION
 (To be used when cover is less than 18")

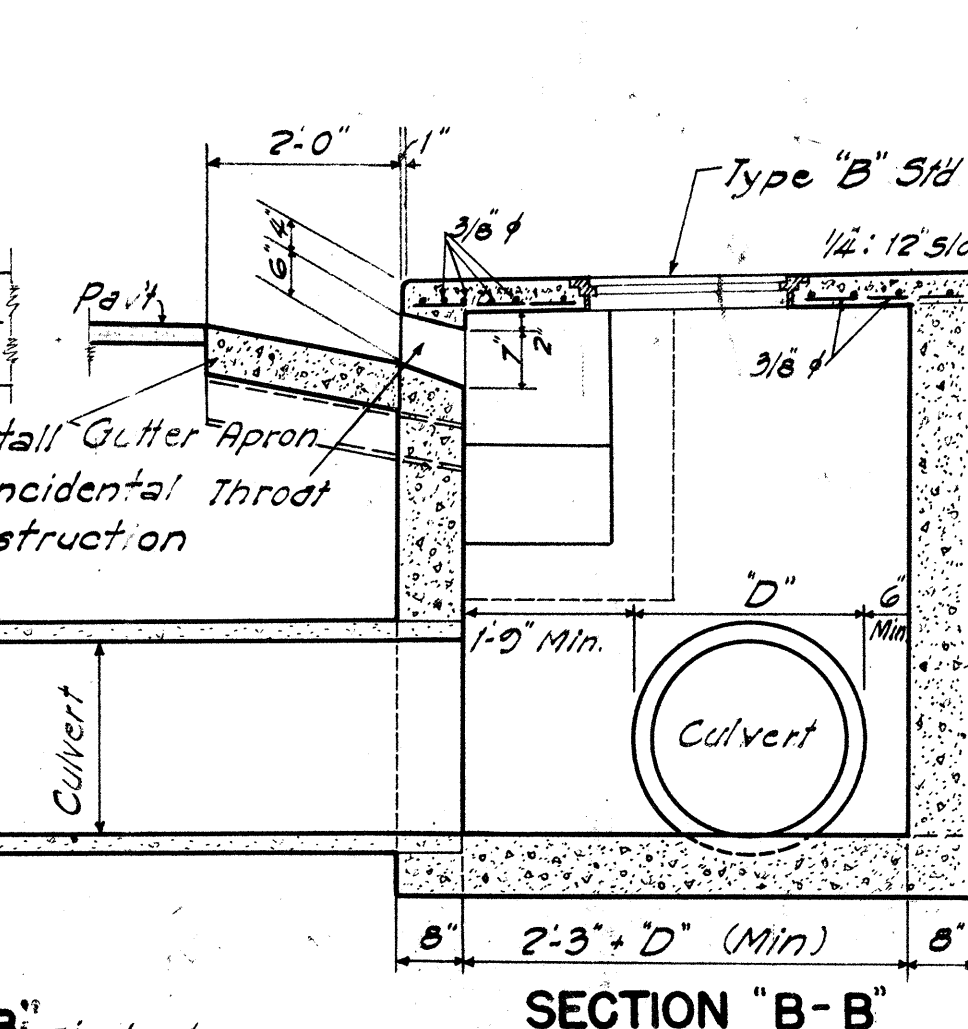
DATA: CONCRETE PROTECTION OVER CULVERTS		
X	Y	Z
6" for 18" D		
7" " 24" D		
8" " 30" D		
10" " 42" D		
11" " 48" D		
12" " 54" D		



ST'D. CONG. DROP INTAKE
 Scale: 1/2" = 1'-0"



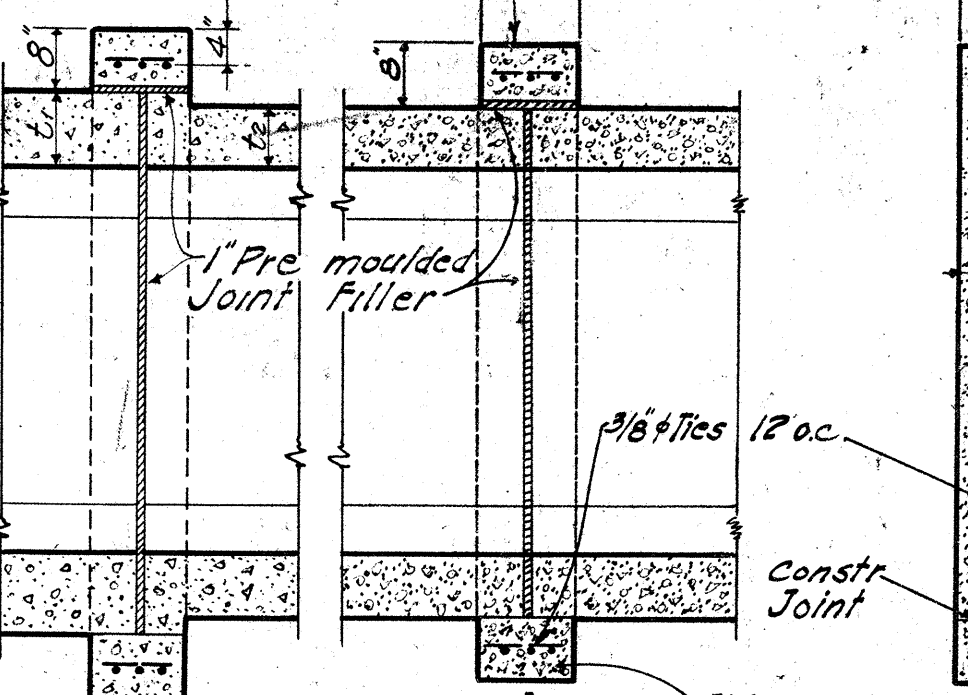
ST'D. CONG. DROP INTAKE
 Scale: 1/2" = 1'-0"



CATCH BASIN TYPE "B" similar to TYPE "A" except it has only Left Side Inlet in addition to the Main Box.

CATCH BASIN TYPE "C" similar to TYPE "B" except it has only Right Side Inlet in addition to the Main Box.

Concrete Gutter Apron Length:
 TYPE "A" = 30'-0"
 TYPE "B" = 23'-4"
 TYPE "C" = 23'-4"

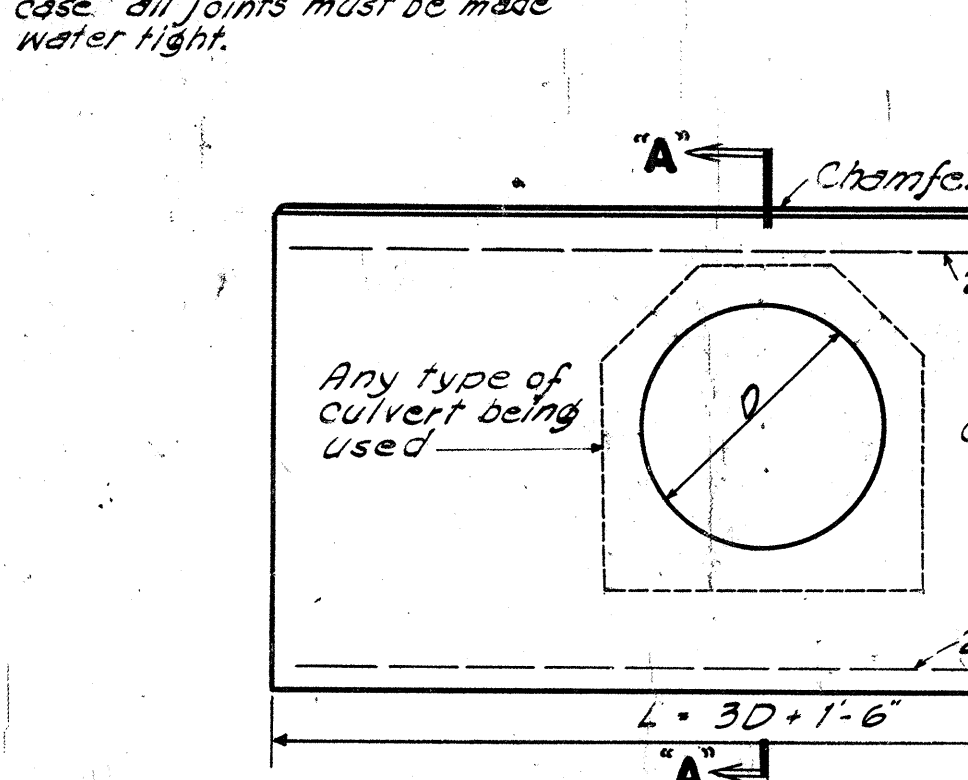


SECTION "A-A"

SECTION "B-B"

CONC. COLLAR FOR CONG. BOX CULVERT
 Scale: 1/2" = 1'-0"

Note: Collars of this type shall be used to divide culverts into approximately 30ft lengths.

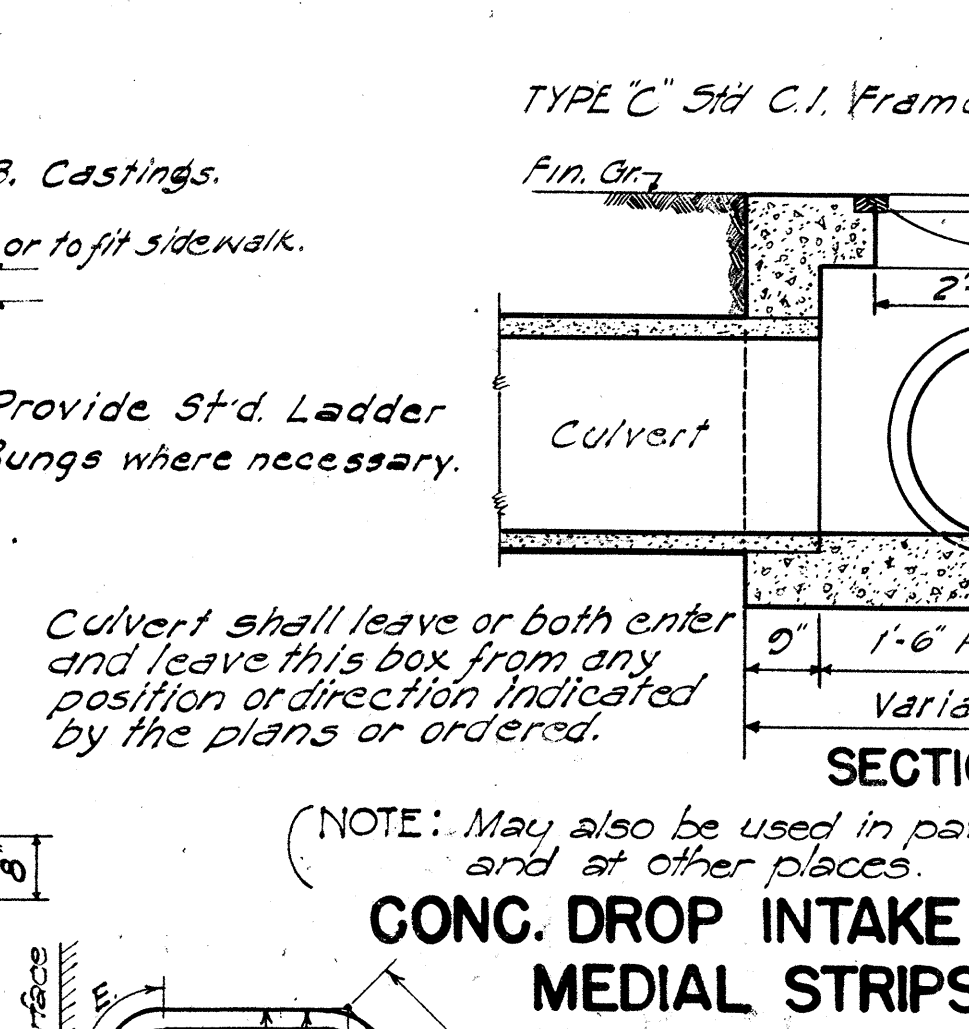


FRONT ELEVATION

SECTION "A-A"

Cast-in-Place	Class B-1 Conc.	Class A-1 Conc.
Cu. Yds.	D	B
0.02	18"	1'-6"
1.25	24"	1'-6"
1.25	30"	2'-0"
2.45	36"	2'-0"

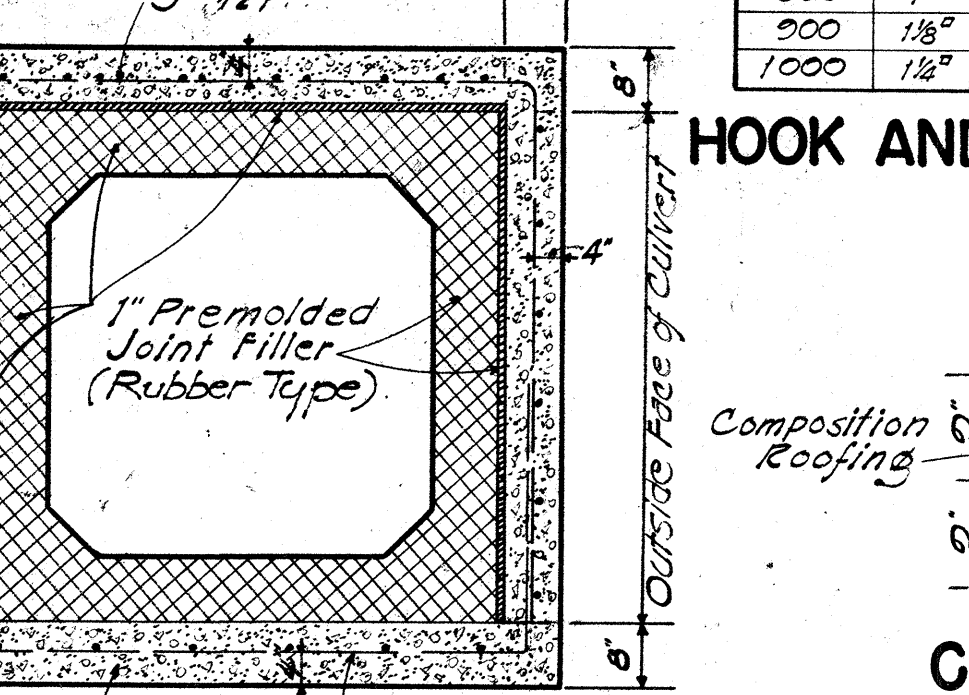
STANDARD CONCRETE HEADWALL
 Scale: 1/2" = 1'-0"



SECTION "Y-Y"

CONC. DROP INTAKE IN MEDIAL STRIPS
 Scale: 1/2" = 1'-0"

(NOTE: May also be used in pavement and at other places.)



HOOK AND BEND DETAIL

CONSTR. JOINT DETAILS

METHOD OF APPLYING CONSTR. JOINT WATERPROOFING
 (1) Map surface either side of joint as required with asphalt 50-100 penetration (A.S.T.M. Design D-5-25) applied at 200°F.
 (2) Apply one layer of 55-lb composition roofing to hot asphalt.
 (3) Map surface of composition roofing and 3" beyond all around with thick coat of asphalt as specified under (1).

CONSTR. JOINT DETAILS

CONC. PIPE CULVERT

Note: Thickness "d", reinforcing, and concrete used are to conform with the approved design as provided by the Specifications.

Class A-1 Conc.	Class B-1 Conc.
D	d
18"	4"
24"	4 1/2"
30"	5"
36"	5 1/2"

CONC. PIPE CULVERT

CAST-IN-PLACE CONG. CULVERT

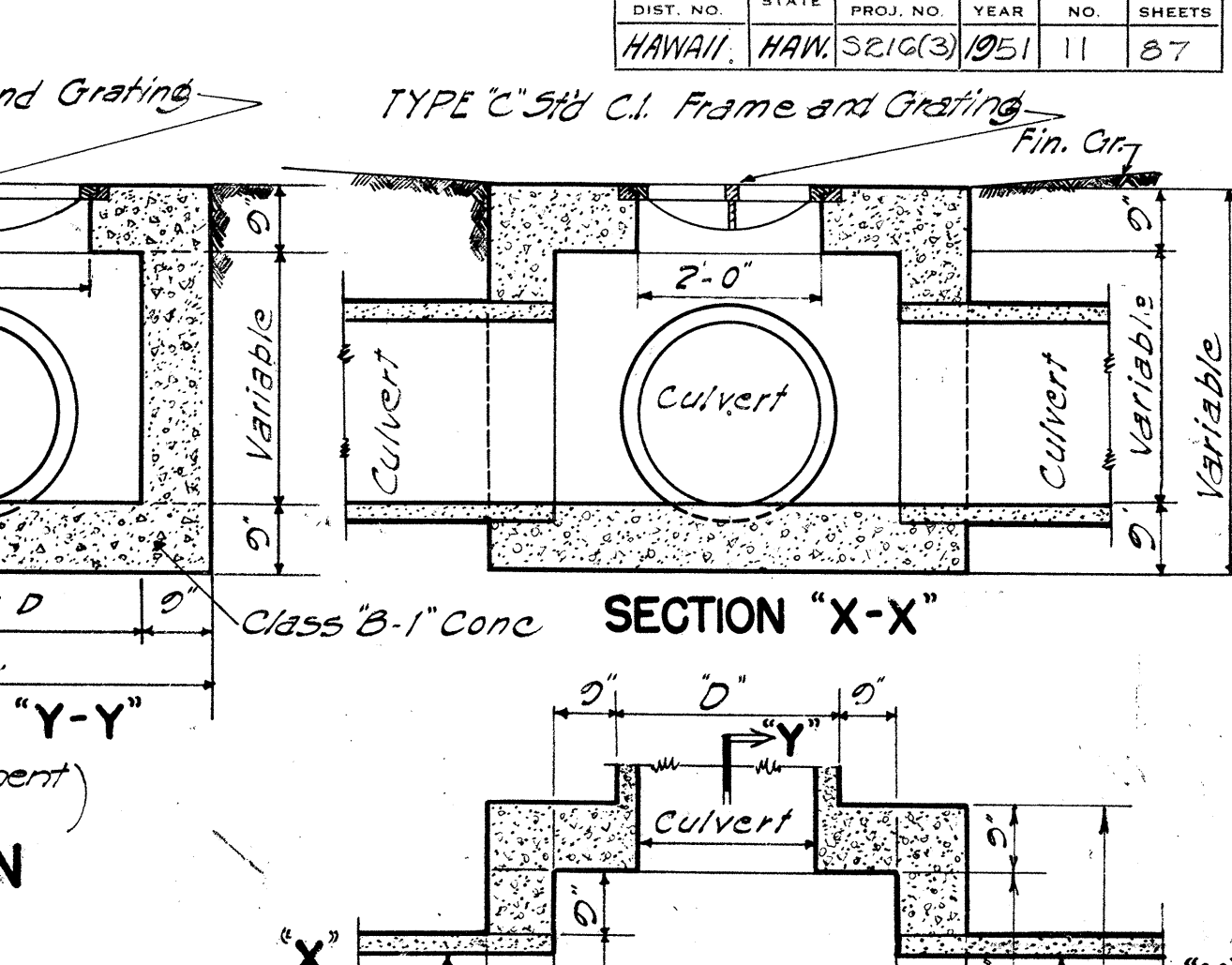
Class A-1 Conc.	Class B-1 Conc.
D	d
18"	4"
24"	4 1/2"
30"	5"
36"	5 1/2"

CAST-IN-PLACE CONG. CULVERT

STANDARD CONCRETE HEADWALL
 Scale: 1/2" = 1'-0"

Cast-in-Place	Class B-1 Conc.	Class A-1 Conc.
Cu. Yds.	D	B
0.02	18"	1'-6"
1.25	24"	1'-6"
1.25	30"	2'-0"
2.45	36"	2'-0"

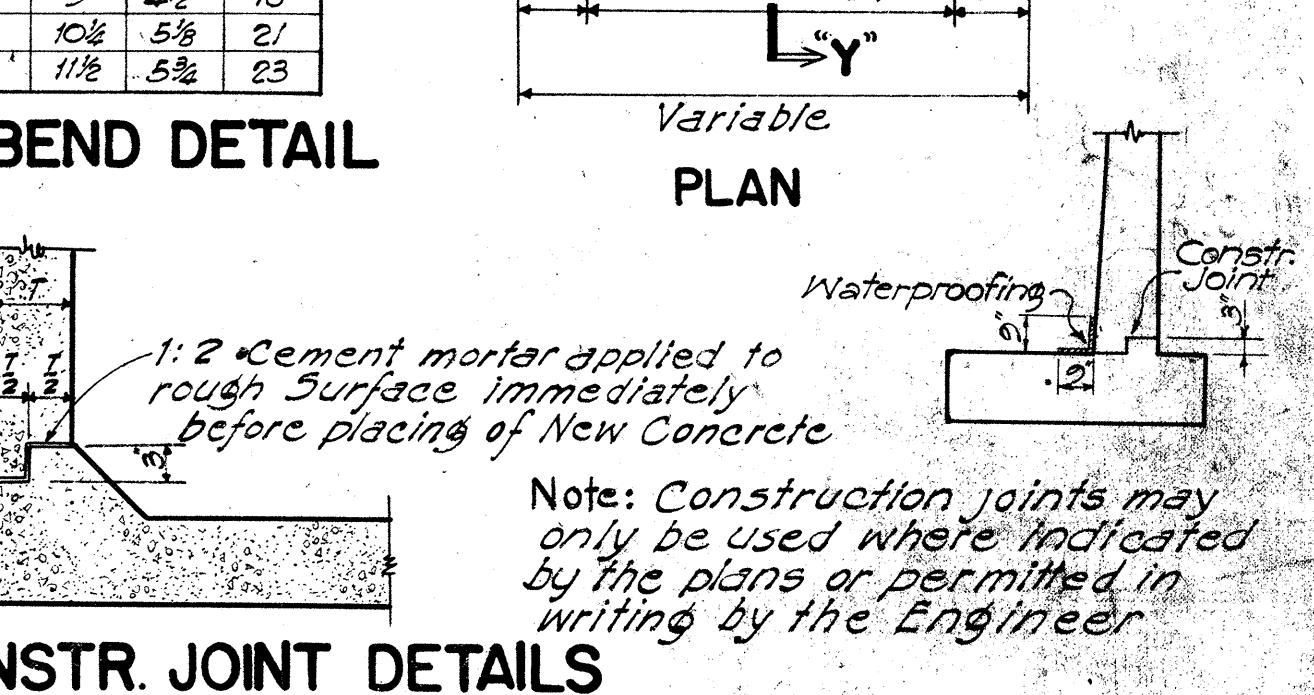
STANDARD CONCRETE HEADWALL
 Scale: 1/2" = 1'-0"



SECTION "X-X"

CONC. DROP INTAKE IN MEDIAL STRIPS
 Scale: 1/2" = 1'-0"

(NOTE: May also be used in pavement and at other places.)



HOOK AND BEND DETAIL

CONSTR. JOINT DETAILS

METHOD OF APPLYING CONSTR. JOINT WATERPROOFING
 (1) Map surface either side of joint as required with asphalt 50-100 penetration (A.S.T.M. Design D-5-25) applied at 200°F.
 (2) Apply one layer of 55-lb composition roofing to hot asphalt.
 (3) Map surface of composition roofing and 3" beyond all around with thick coat of asphalt as specified under (1).

CONSTR. JOINT DETAILS

CONC. PIPE CULVERT

Note: Thickness "d", reinforcing, and concrete used are to conform with the approved design as provided by the Specifications.

Class A-1 Conc.	Class B-1 Conc.
D	d
18"	4"
24"	4 1/2"
30"	5"
36"	5 1/2"

CONC. PIPE CULVERT

CAST-IN-PLACE CONG. CULVERT

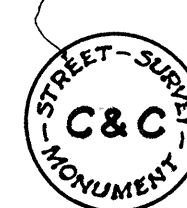
Class A-1 Conc.	Class B-1 Conc.
D	d
18"	4"
24"	4 1/2"
30"	5"
36"	5 1/2"

CAST-IN-PLACE CONG. CULVERT

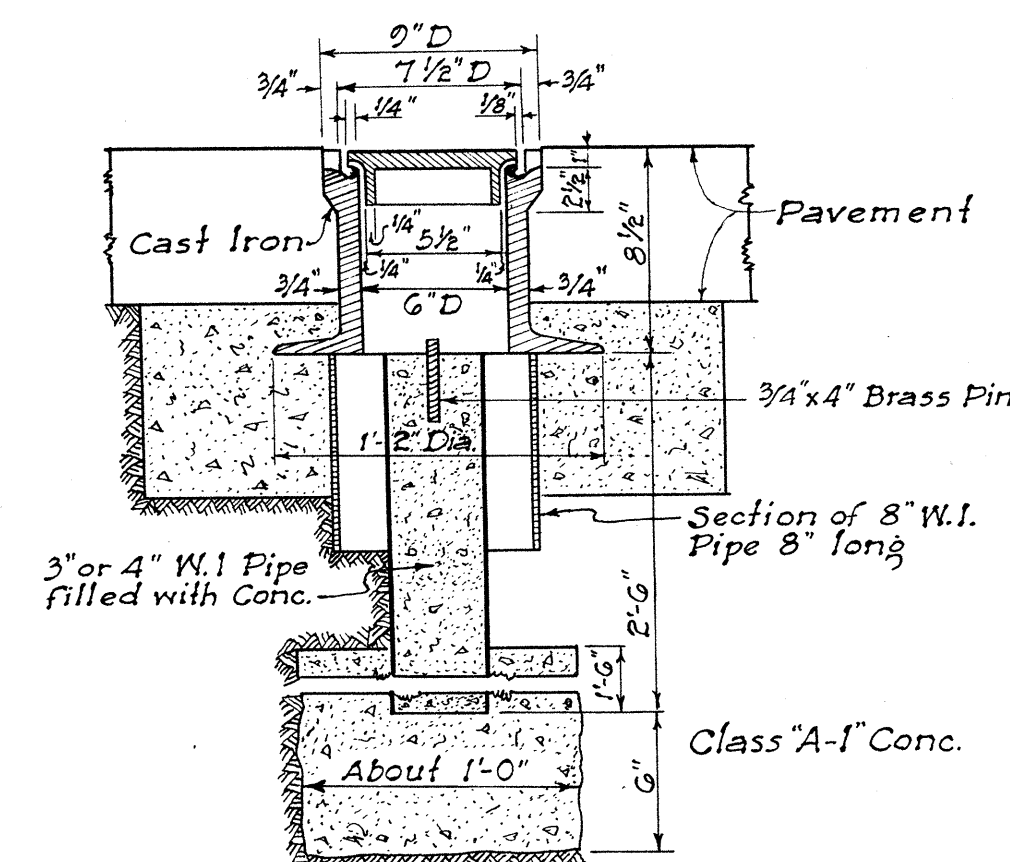
STANDARD CONCRETE HEADWALL
 Scale: 1/2" = 1'-0"

Cast-in-Place	Class B-1 Conc.	Class A-1 Conc.
Cu. Yds.	D	B
0.02	18"	1'-6"
1.25	24"	1'-6"
1.25	30"	2'-0"
2.45	36"	2'-0"

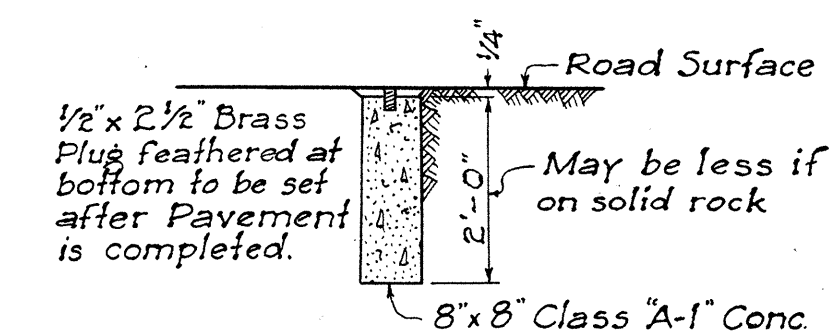
STANDARD CONCRETE HEADWALL
 Scale: 1/2" = 1'-0"



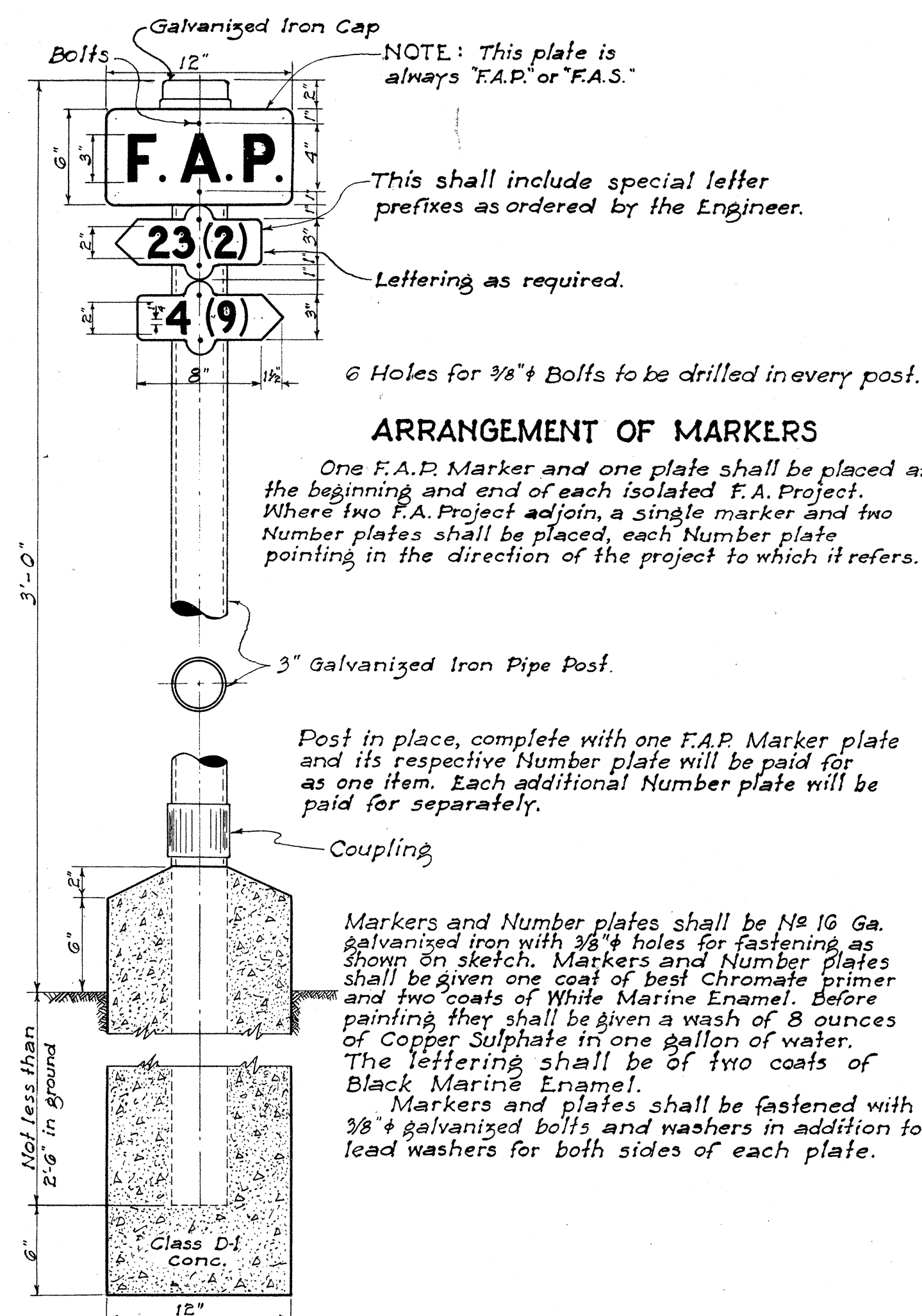
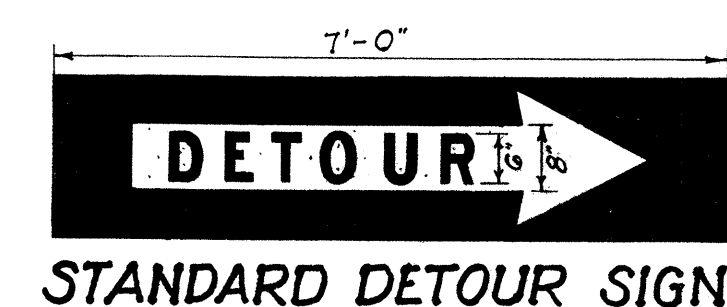
PLAN OF TOP



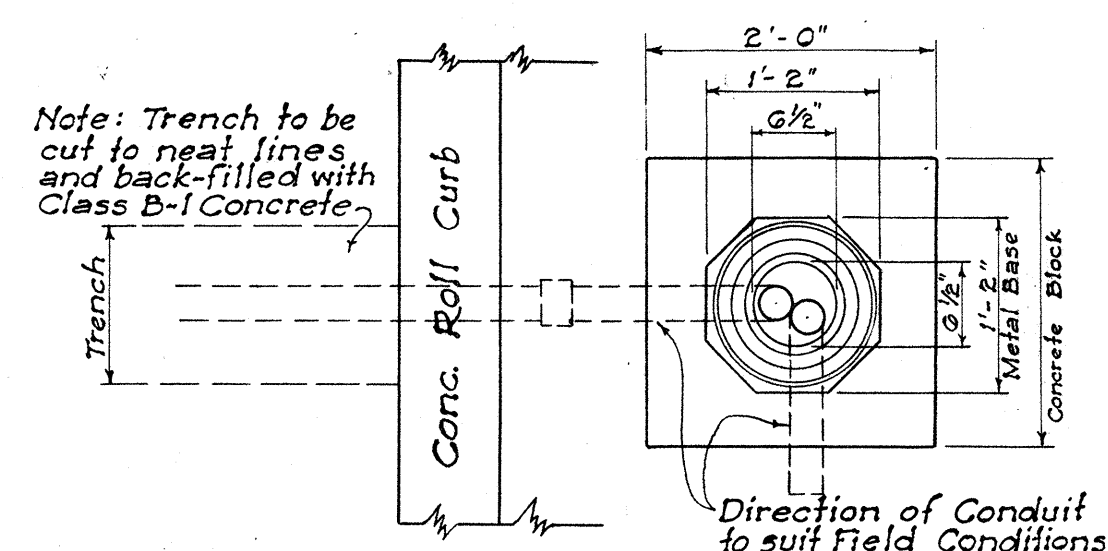
STANDARD C&C STREET SURVEY MONUMENT



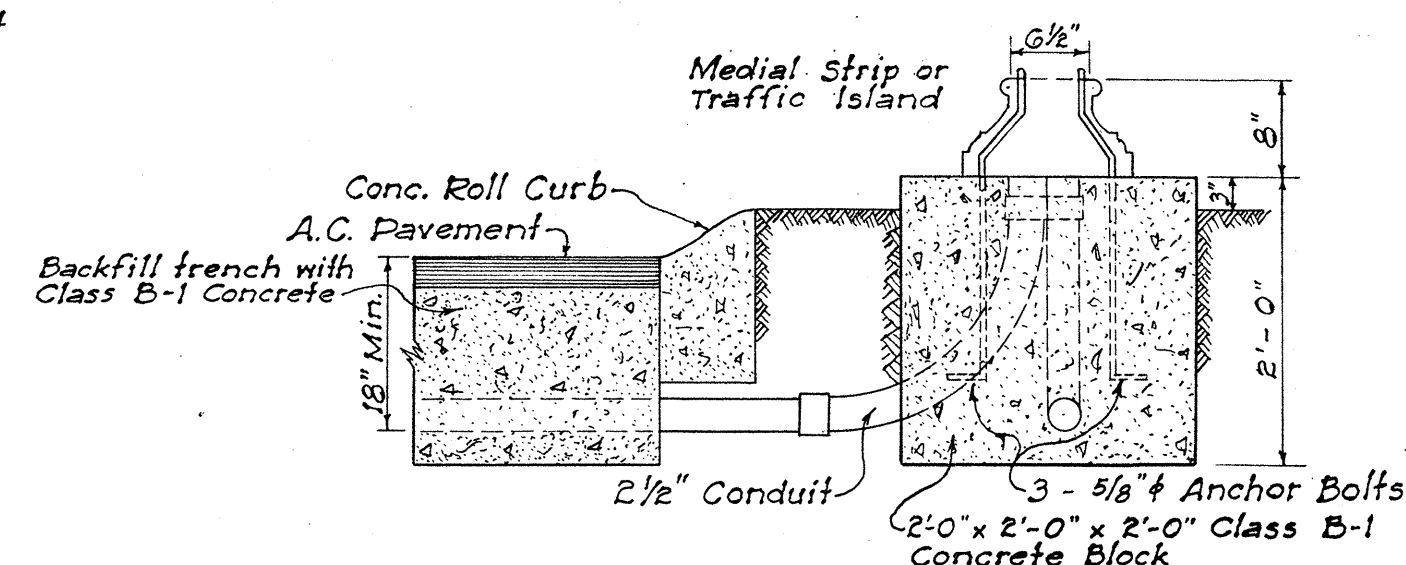
CENTER LINE MONUMENT
Scale: $\frac{1}{2}" = 1'-0"$



FEDERAL AID MARKER
Scale: $1\frac{1}{2}" = 1'-0"$



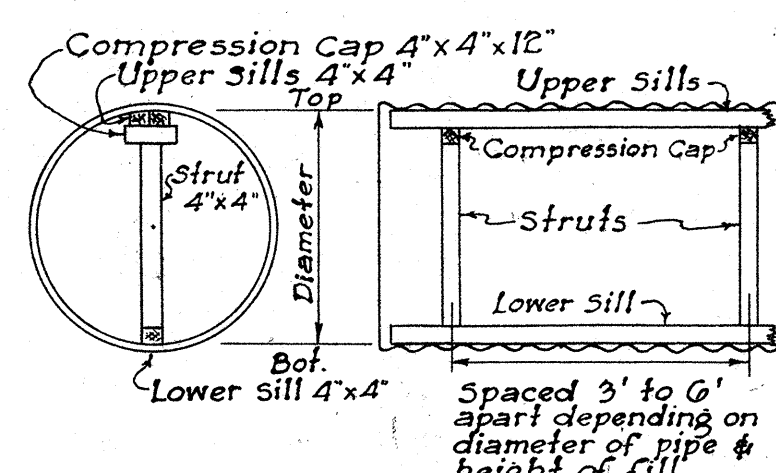
PLAN



SECTION

NOTE: Unless otherwise specified, all concrete for base for Traffic Standards, Pull Boxes, Concrete Jackets for Transite Ducts shall be Class B-1 Concrete.

DETAIL OF BASE FOR TRAFFIC STANDARD AND DISPATCHER PEDESTAL



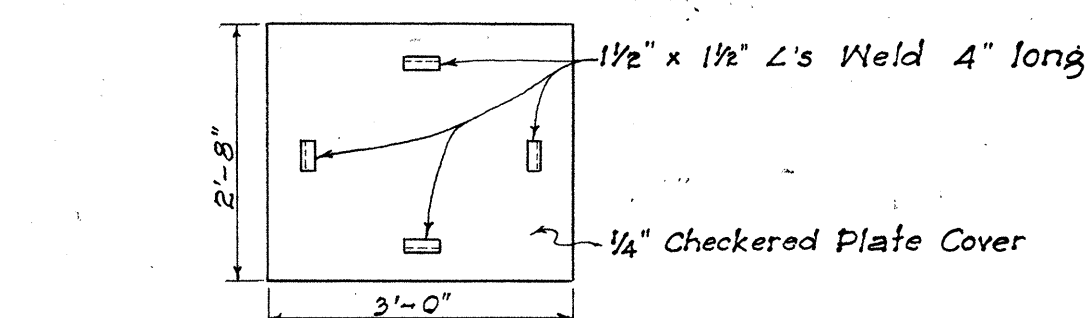
END VIEW

LONGITUDINAL SECTION

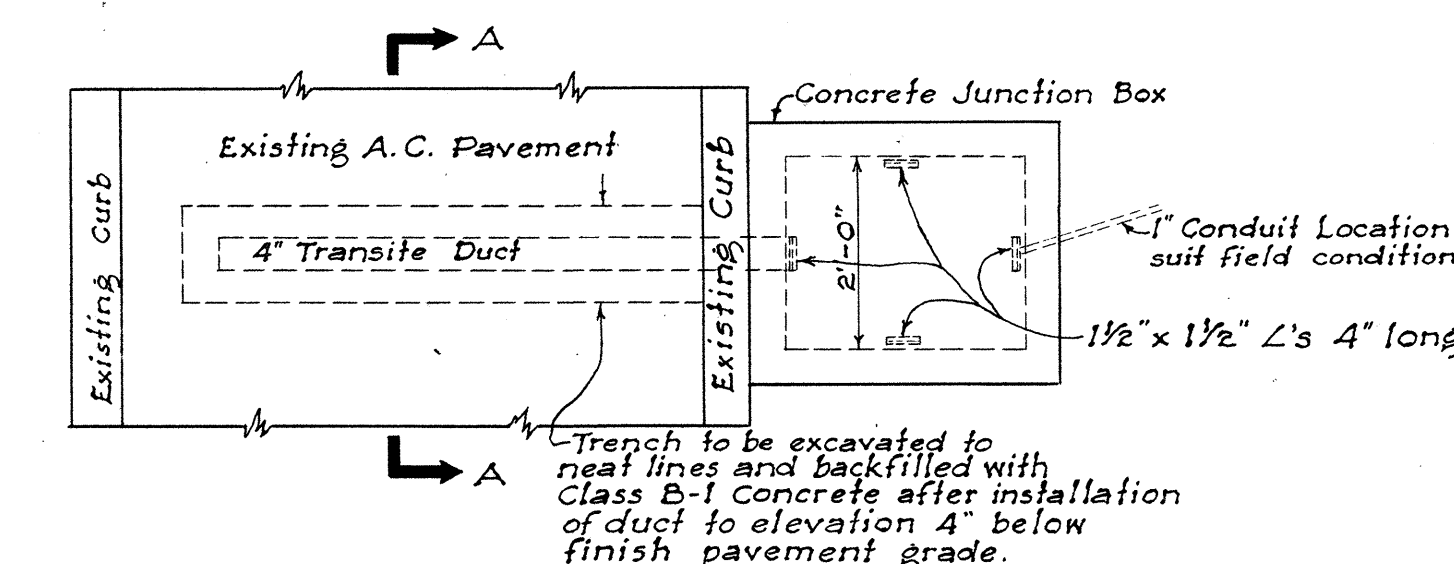
Diameter of Pipe in inches	Length of Struts in inches	Spacing of Struts in ft. for Various Heights				
		FILL 1' to 5'	FILL 5' to 10'	FILL 10' to 20'	FILL 20' to 30'	FILL Over 30'
42	2 8 3/8	—	—	—	6	4
54	4 1 3/4	G	G	G	6	4
60	5 1 3/4	G	G	G	6	4
66	5 7 1/4	G	G	G	6	4
72	6 3 3/8	G	G	G	5	3 5
78	6 9 1/8	G	G	G	4 5	3 5
84	7 0 1/8	G	G	G	4	3

NOTE: Length of Struts are based on 4"x4" timbers which is the minimum size recommended. If larger sills or compression caps are used, length of struts should be changed accordingly.

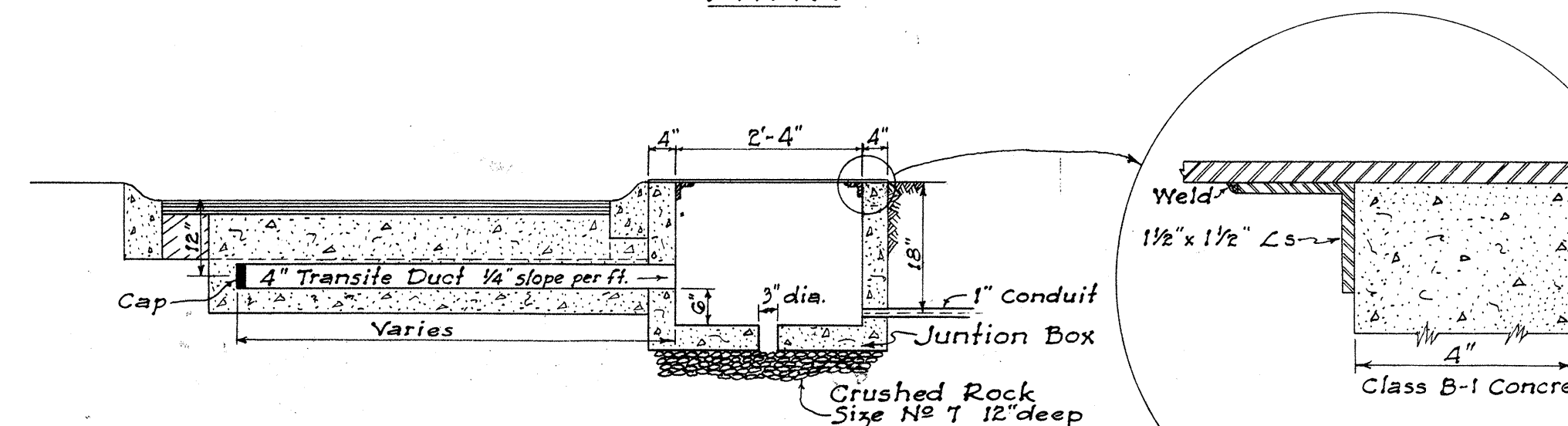
**STRUTTING DIAGRAM & TABLE
FOR
CORRUGATED METAL PIPE CULVERT**



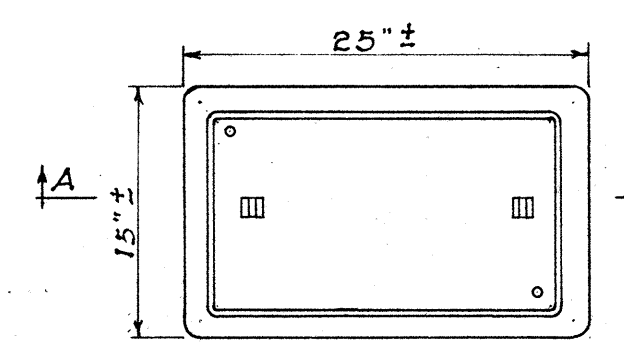
PLAN OF COVER PLATE



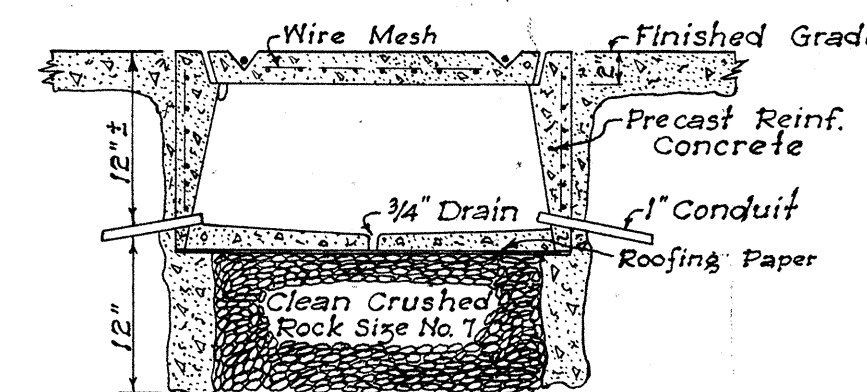
PLAN



TYPICAL ROAD SECTION
SHOWING
TRAFFIC DETECTOR JUNCTION BOX AND DUCT

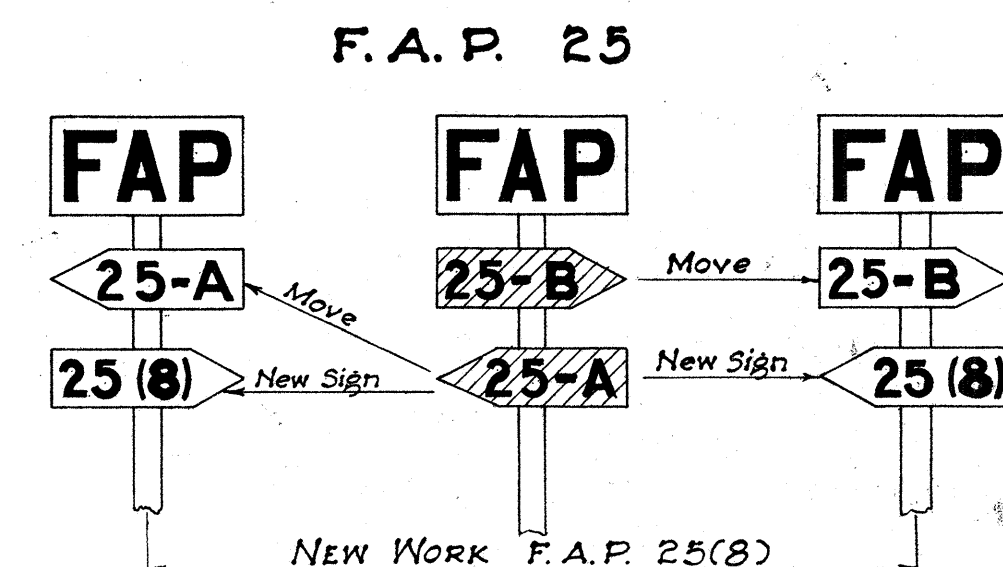
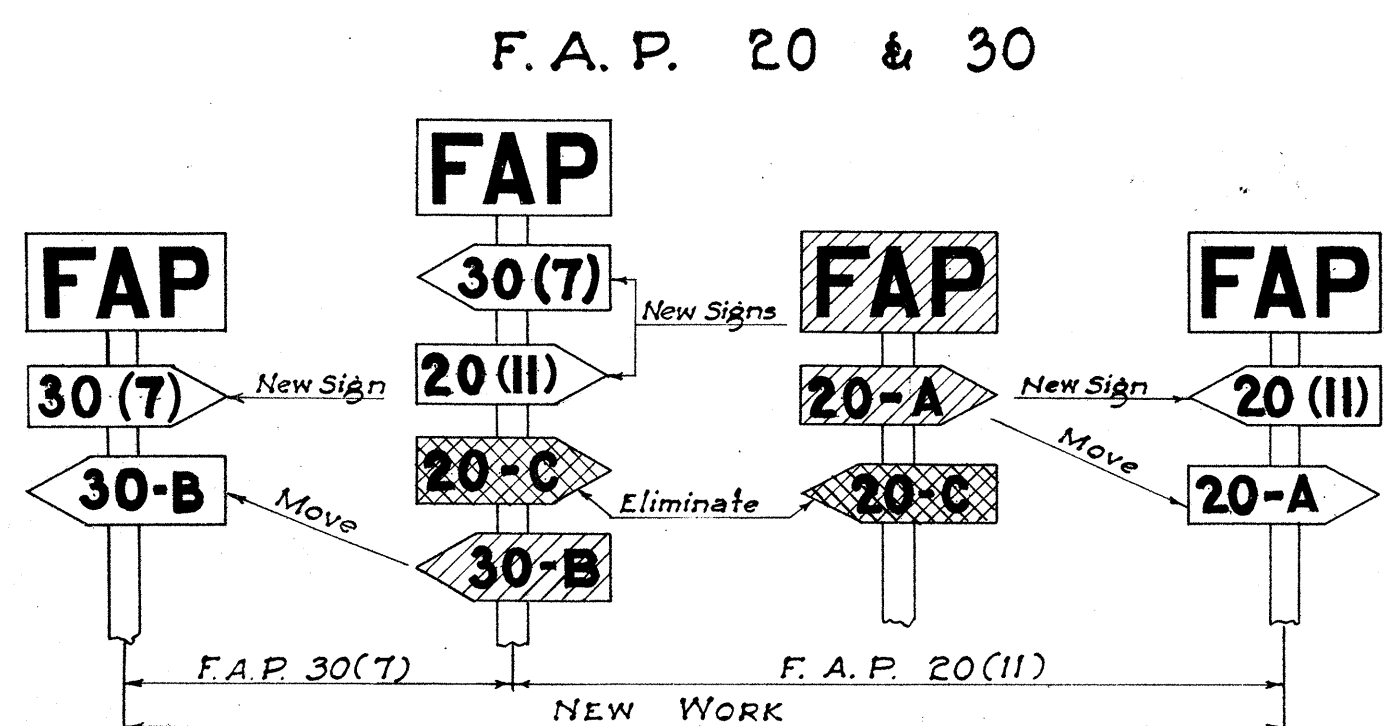
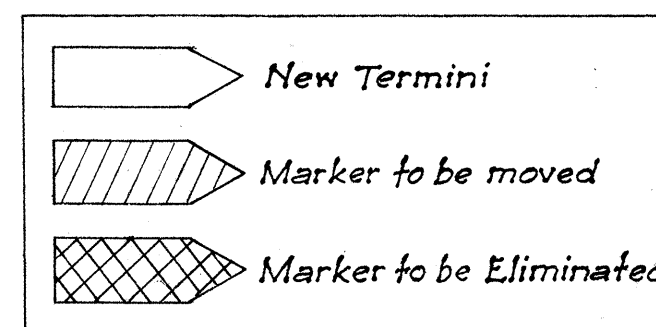


PLAN



SECTION A-A

DETAIL OF PULL BOX
Scale: 1" = 1'-0"



NOTE: Federal Aid Markers should be placed at the termini of suffix designated sections
Intermediate letter designated markers

of adjacent sections located within the limits of new improvements should be moved to the termini of the new work.

The same procedure would be followed on each successive improvement until all markers for letter designated sections are eventually eliminated.

METHOD OF MARKING F.A. PROJECTS AT OVERLAPS

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

STANDARD DETAILS

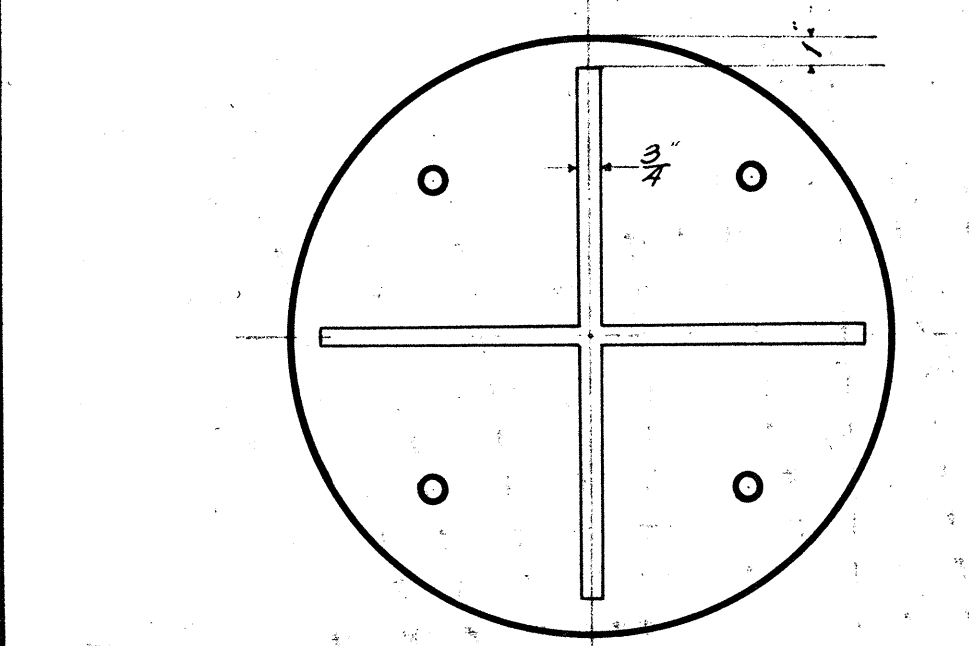
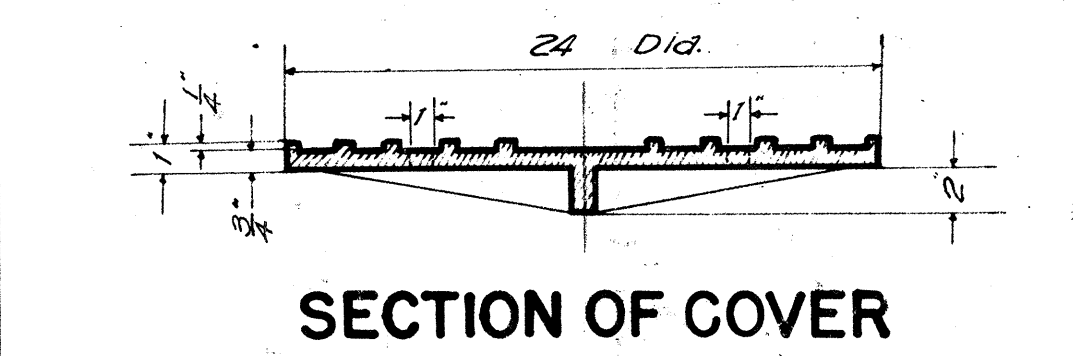
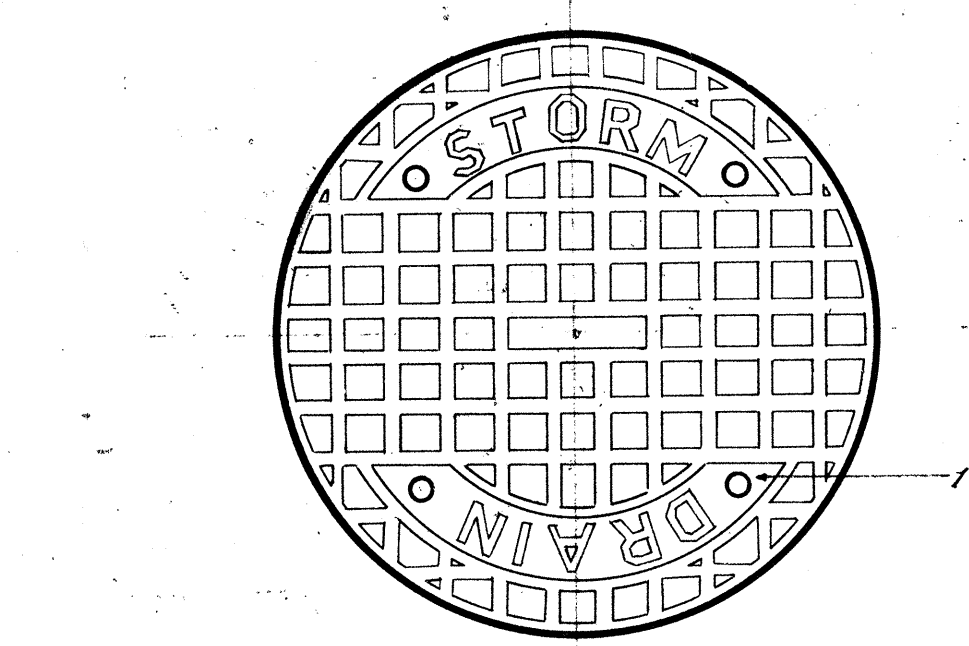
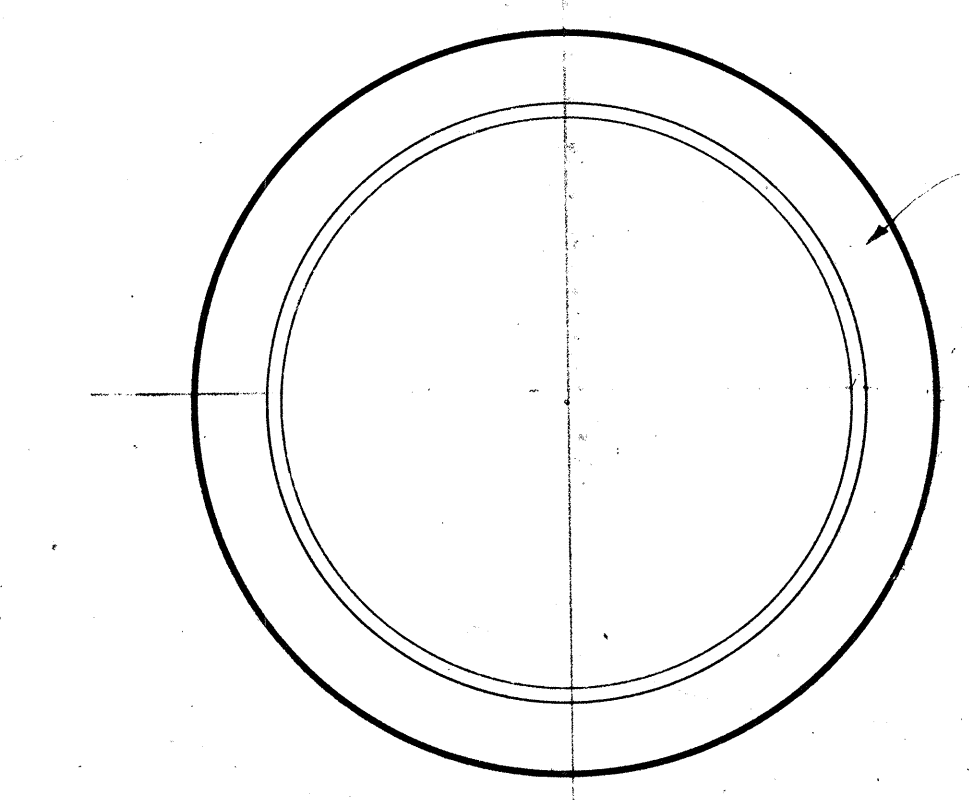
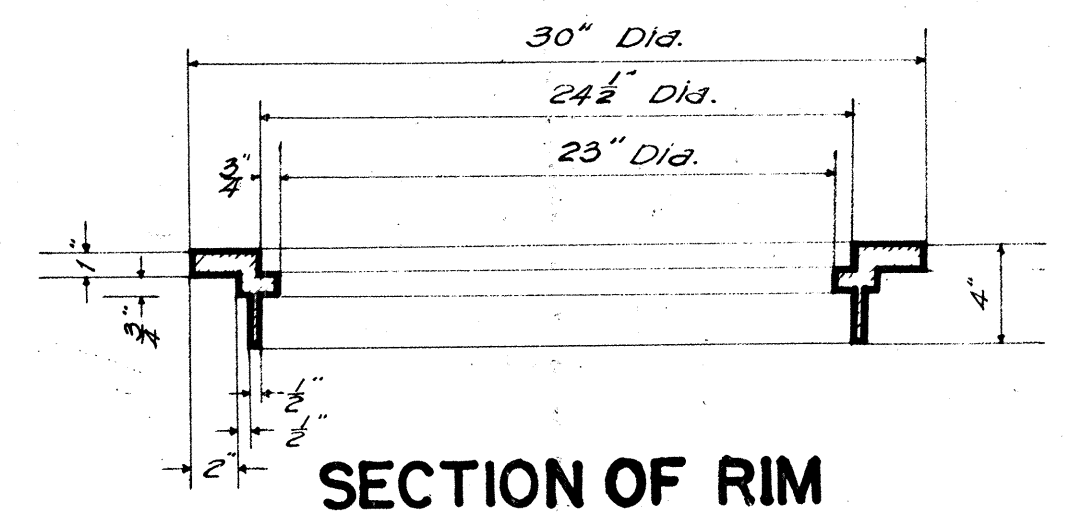
SCALES, AS NOTED May 31, 1949

APPROVED: W. H. Self
Territorial Highway Engineer

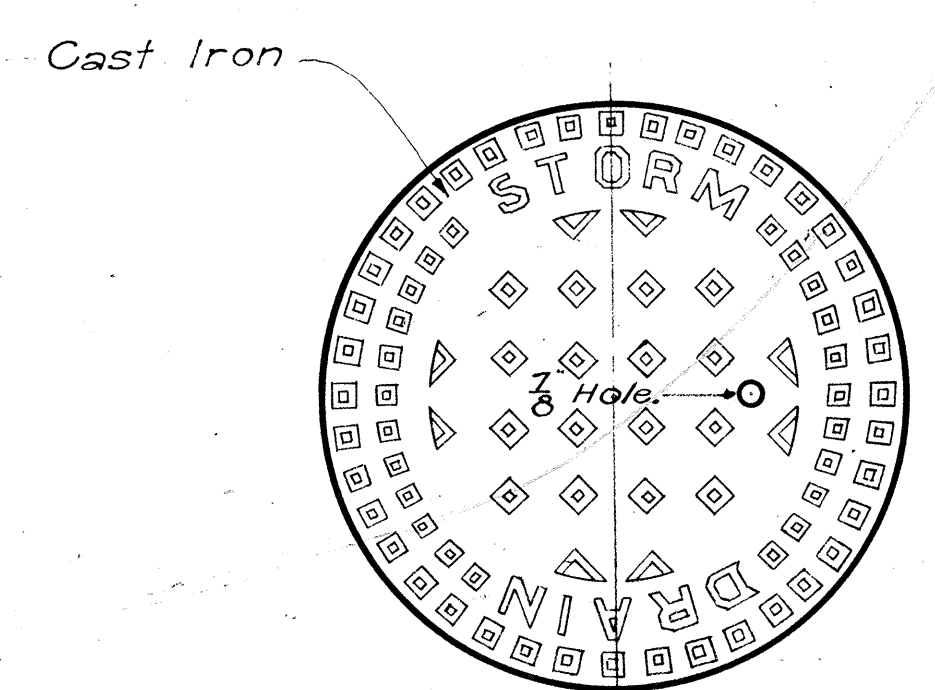
SHEET No 3 OF 6 SHEETS

5488.12

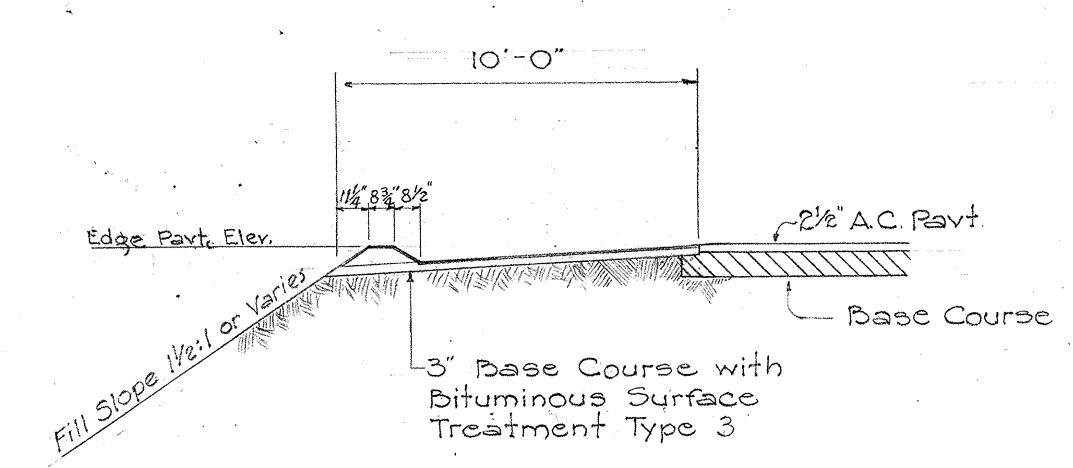
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	5216(3)	1951	13	87



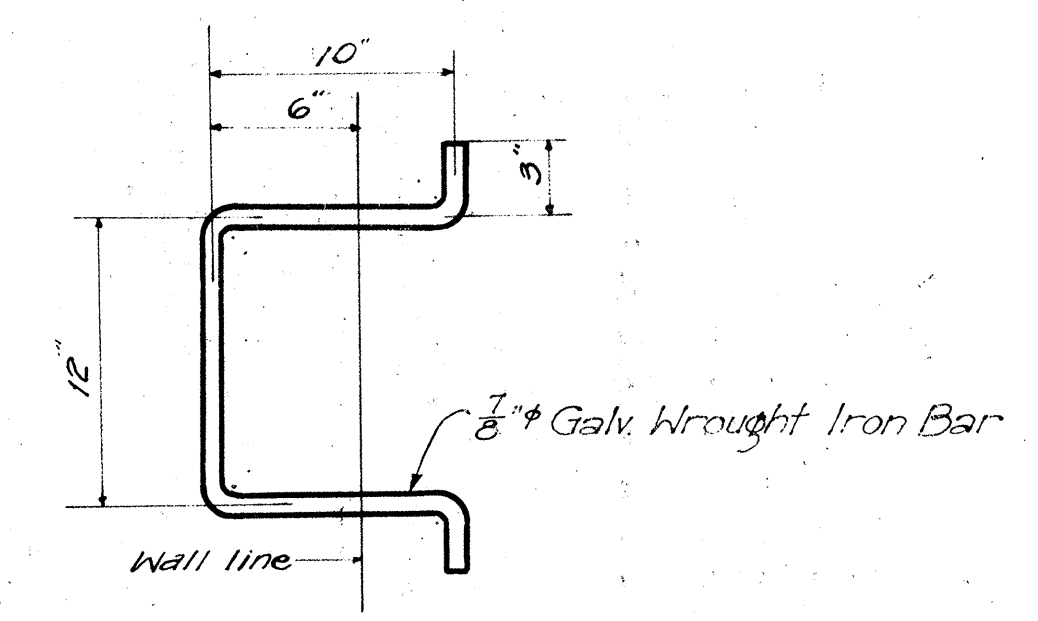
STANDARD CATCH BASIN CASTINGS
Scale: 1-1/2" = 1'-0"



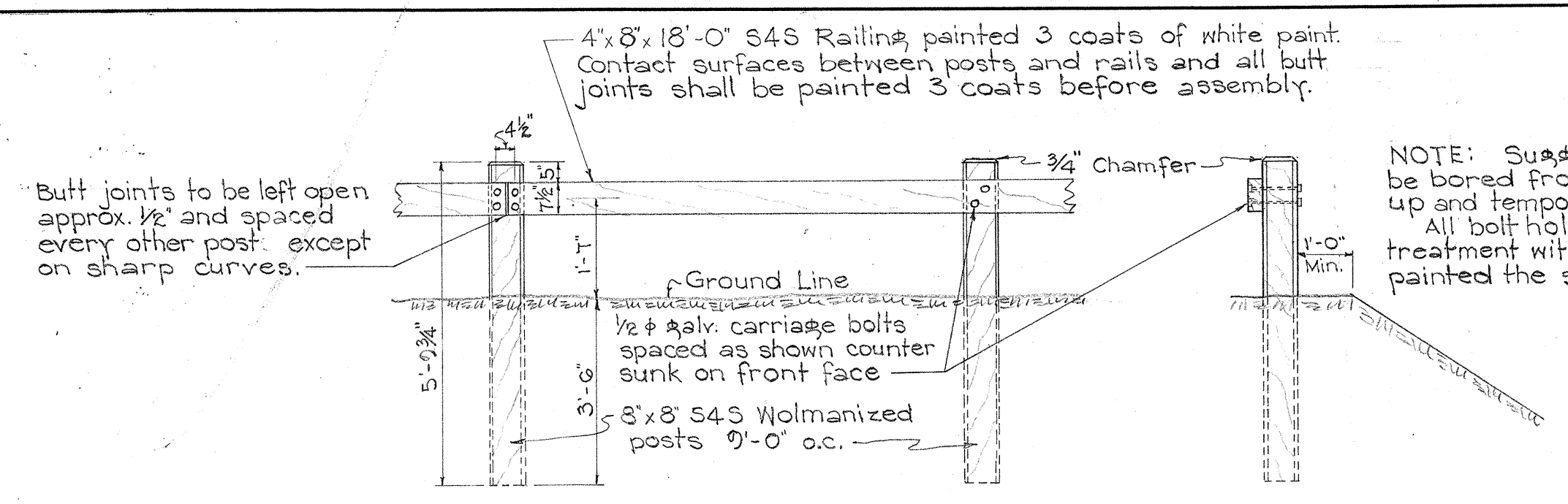
PATTERN FOR STORM DRAIN MANHOLE COVER



SECTION B-B
Scale: 3/16" = 1'-0"

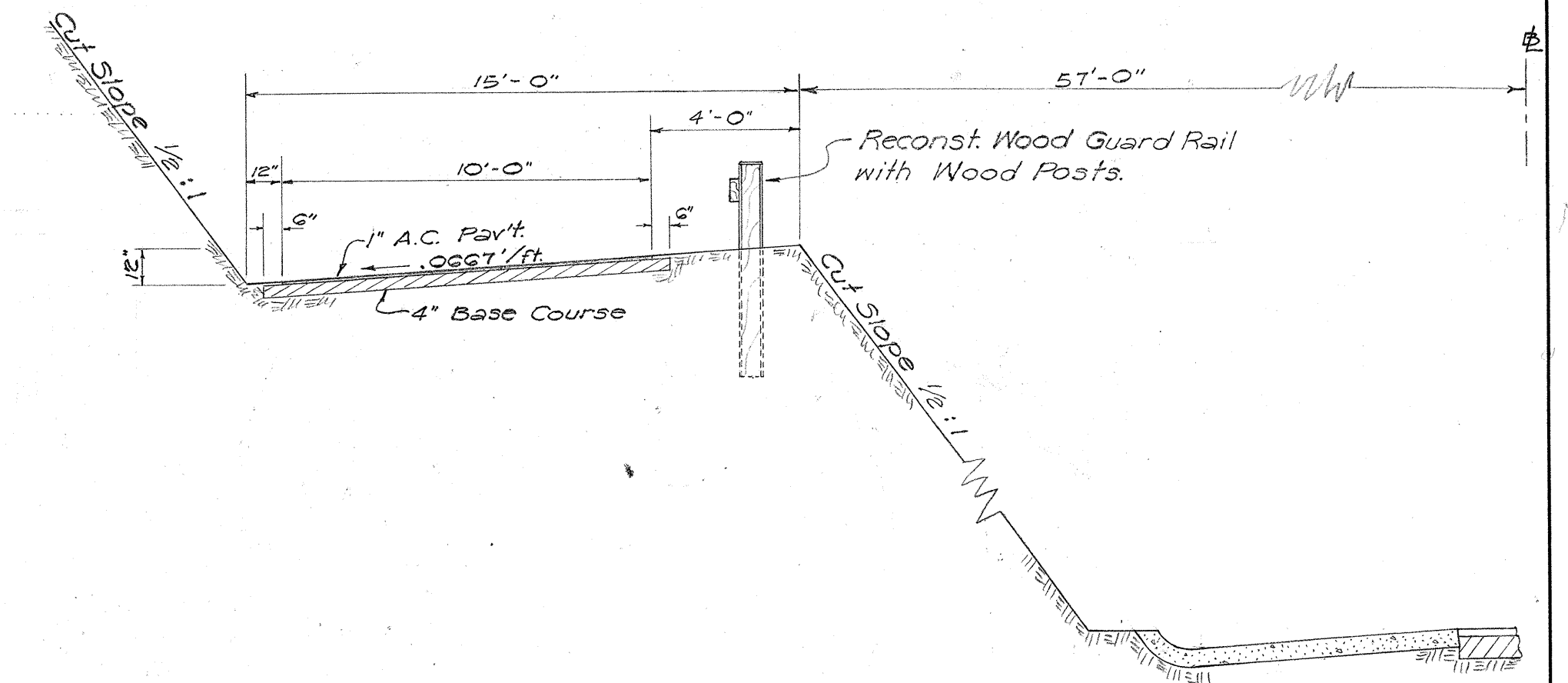


DETAIL OF MANHOLE RUNG
Scale: 1-1/2" = 1'-0"

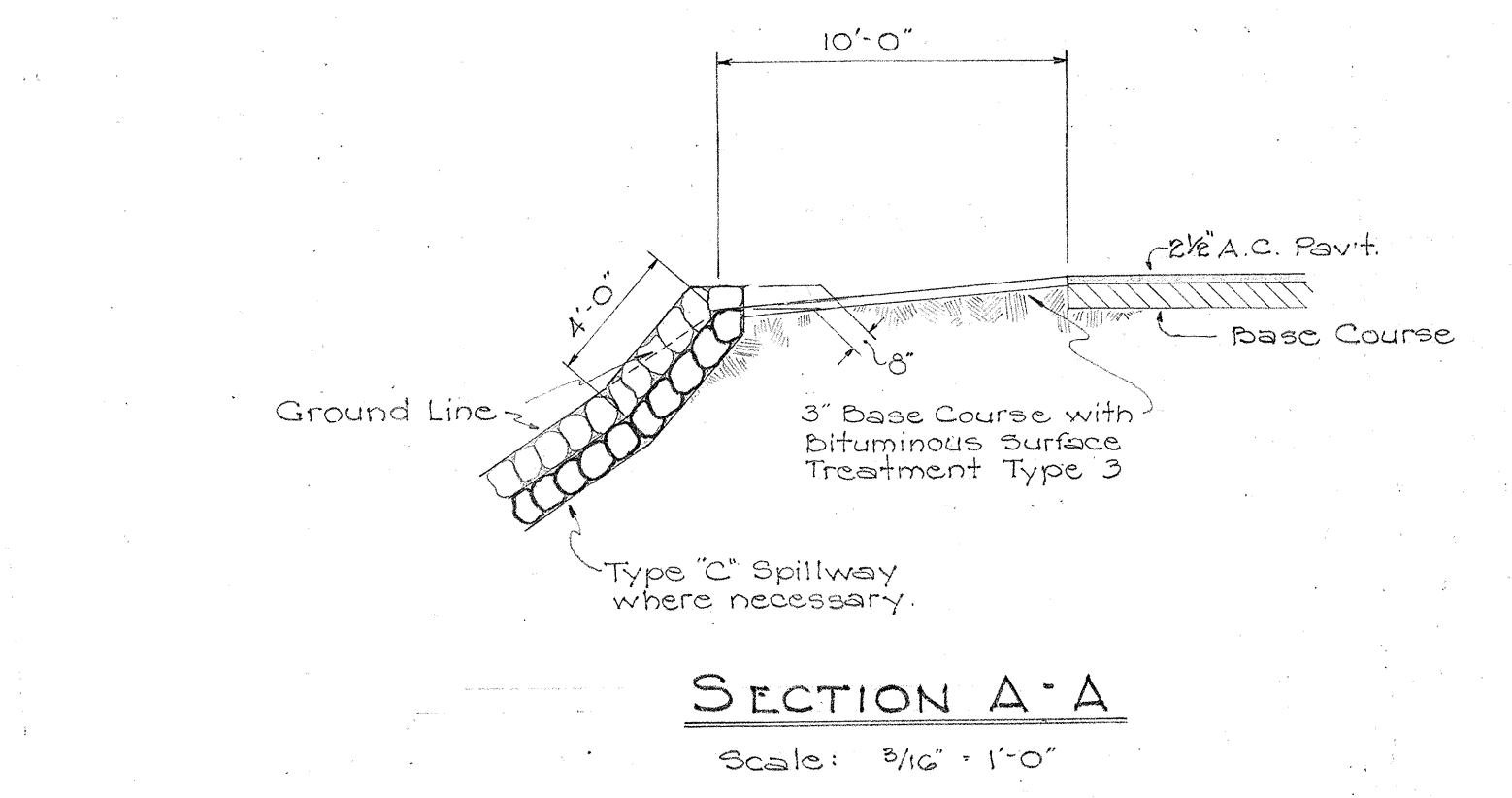
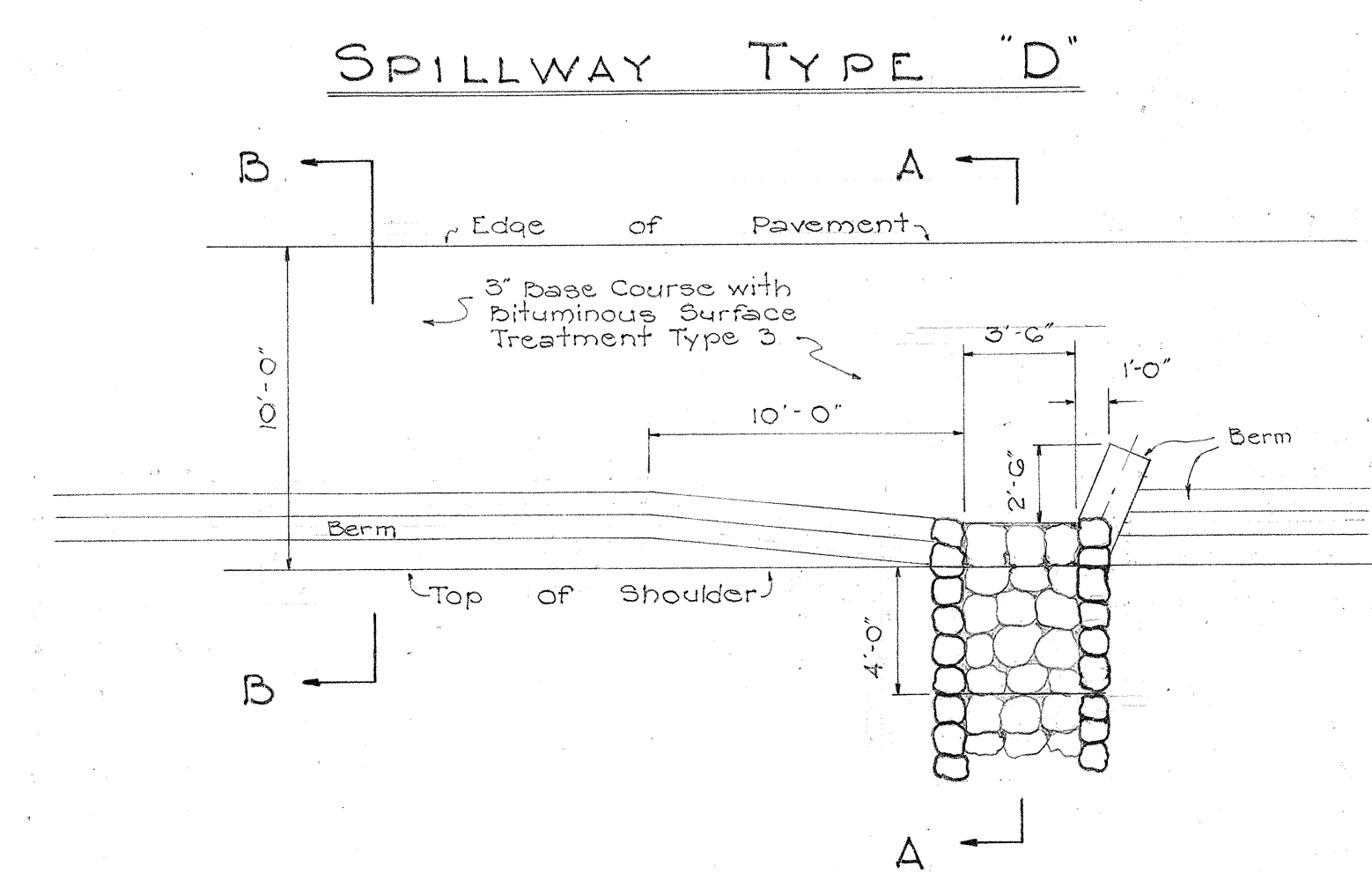


WOOD GUARD RAIL W/WOOD POSTS
Scale: 3/8" = 1'-0"

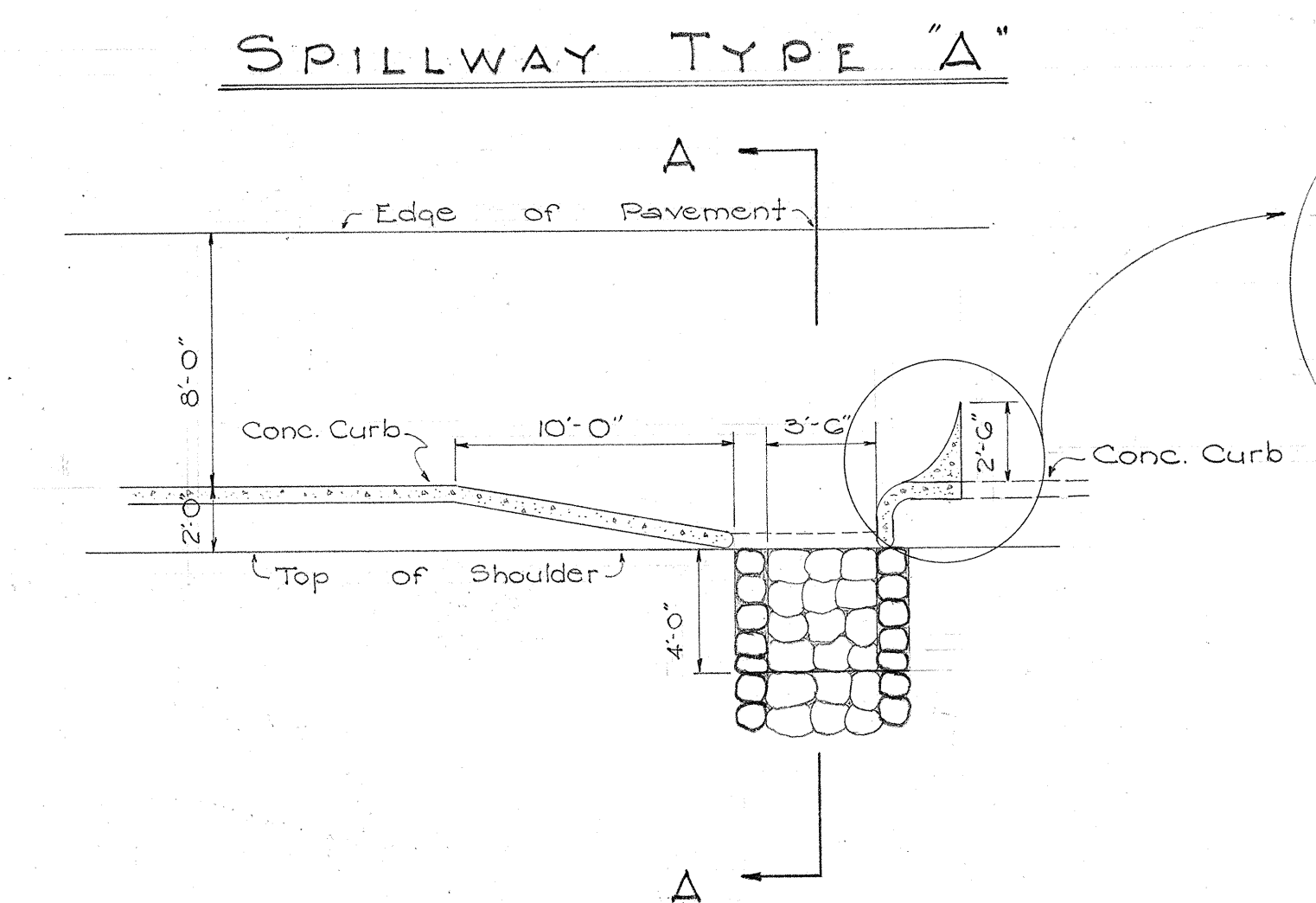
NOTE: Suggest holes in rail for bolts be bored from back of post after lining up and temporarily fastening rails. All bolt holes in posts shall be drilled before treatment with Wolman Salt. Posts shall be painted the same as called for in the railing.



DETOUR DETAIL ON BENCH
To ROMAN CATHOLIC BISHOP PROPERTY
190+00 to 194+50 Left
Scale: 1/4" = 1'-0"



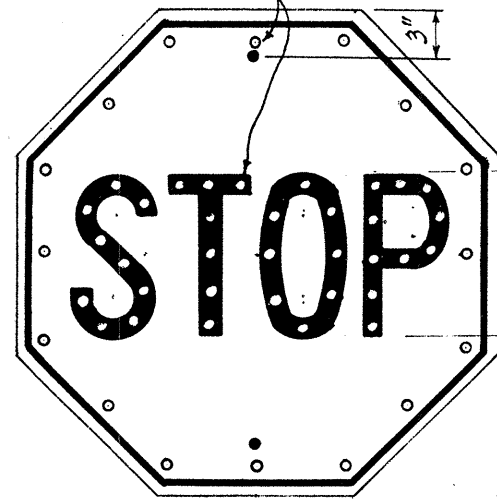
SECTION A-A
Scale: 3/16" = 1'-0"



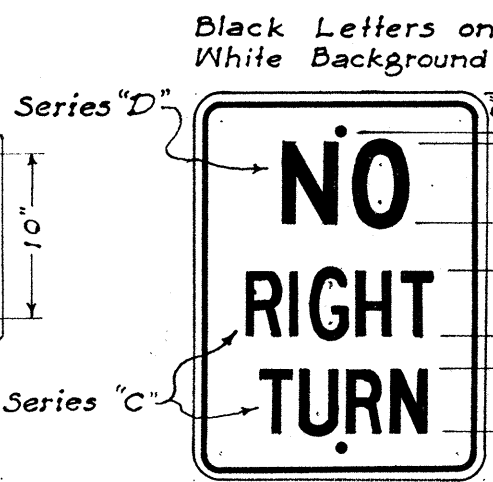
PLAN - TYPE 'A' SPILLWAY
Scale: 3/16" = 1'-0"

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
MISCELLANEOUS DETAILS
SCALES AS NOTED DATE Nov. 1951
APPROVED: _____
TERRITORIAL HIGHWAY ENGINEER

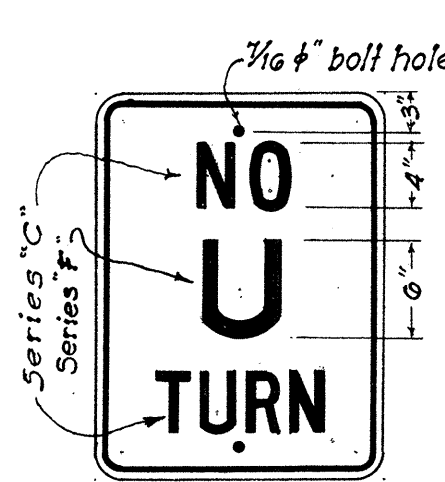
Black Letters on
"Highway Yellow" Background
White Reflectors



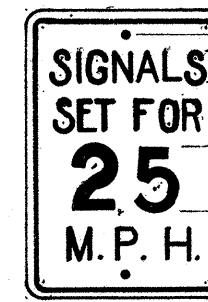
R-1
30" x 30"



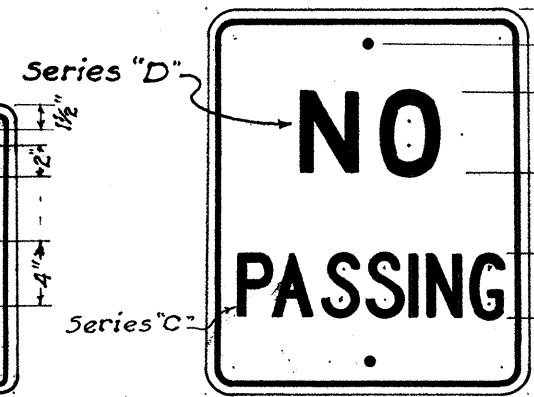
R-6
18" x 24"



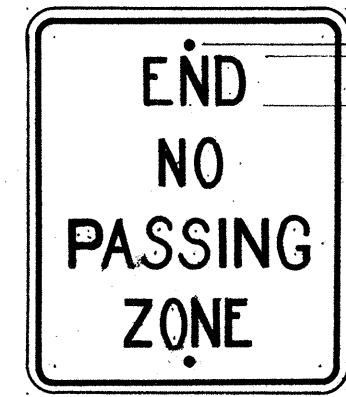
R-8
18" x 24"



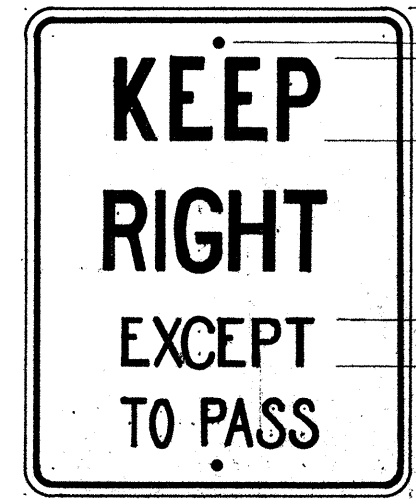
R-10
12" x 18"



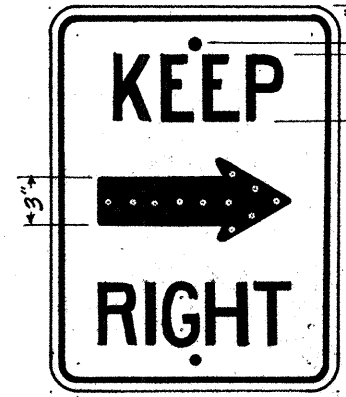
R-11
20" x 24"



R-12
20" x 24"



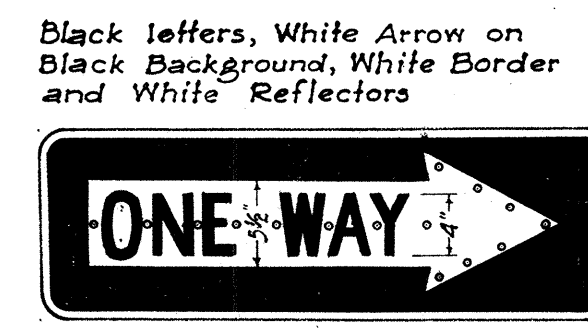
R-13
24" x 30"



R-14
18" x 24"



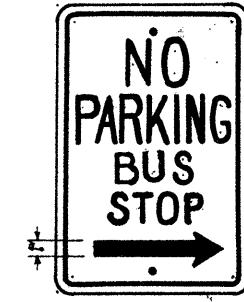
R-15
24" x 24"



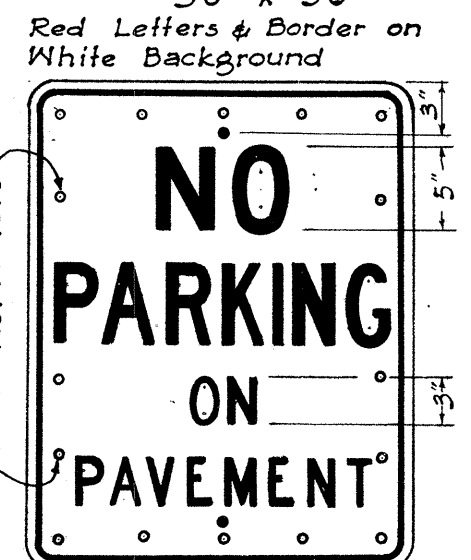
R-16-R
*R-16-L
36" x 12"



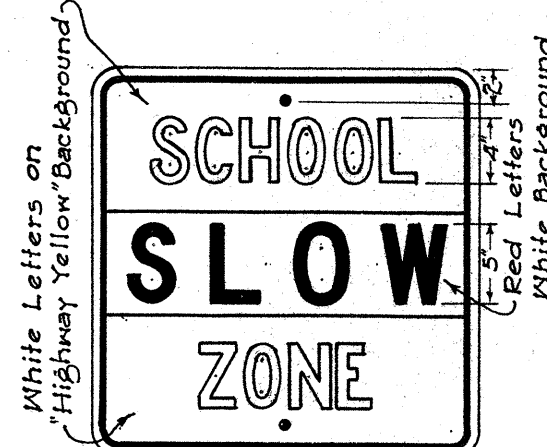
R-18
12" x 18"



R-26
12" x 18"



R-29
24" x 30"



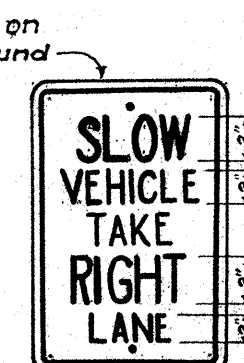
R-41-S
24" x 24"



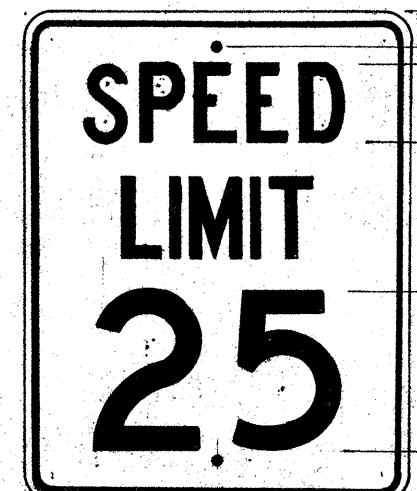
R-42-S
12" x 18"



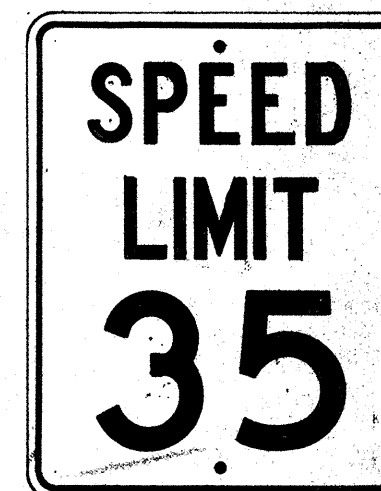
R-43-S
12" x 18"



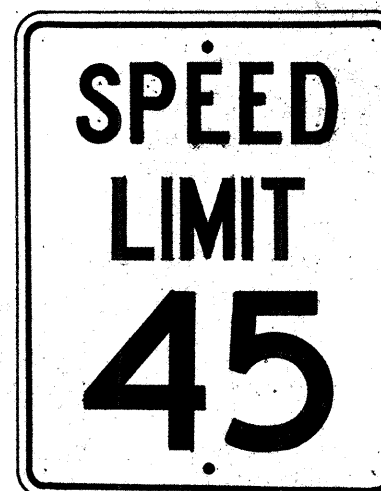
R-44-S
12" x 18"



R-102-A
24" x 30"



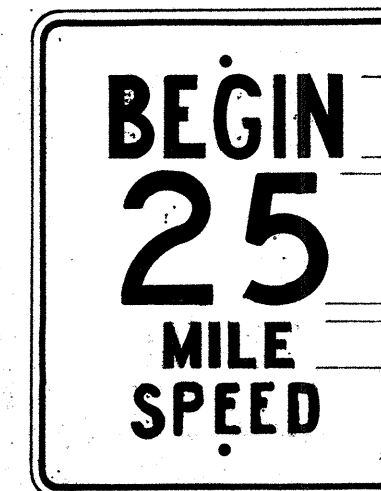
R-102-B
24" x 30"



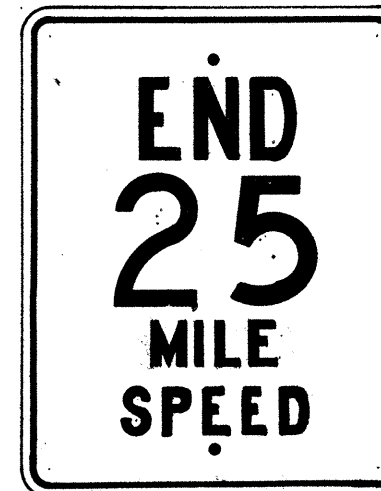
R-102-C
24" x 30"



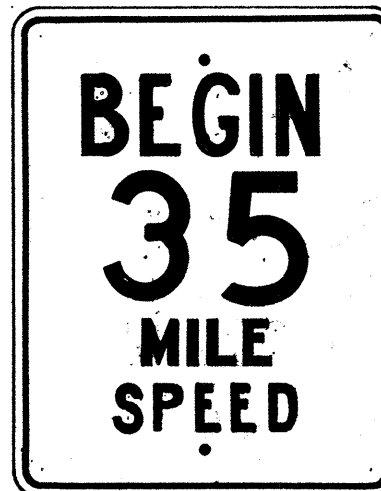
R-104
24" x 30"



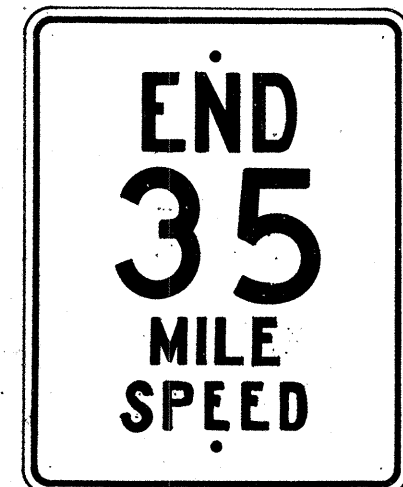
R-105-A
24" x 30"



R-105-B
24" x 30"



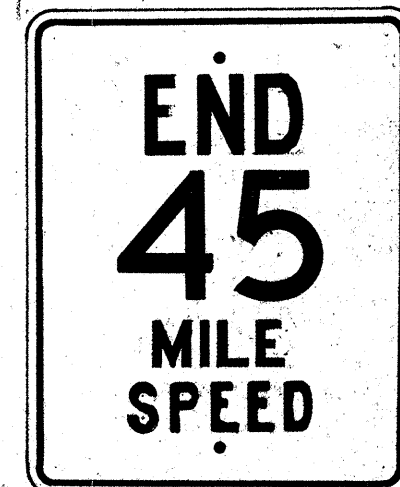
R-105-C
24" x 30"



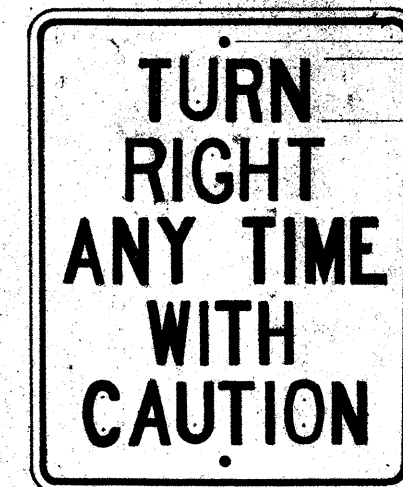
R-105-D
24" x 30"



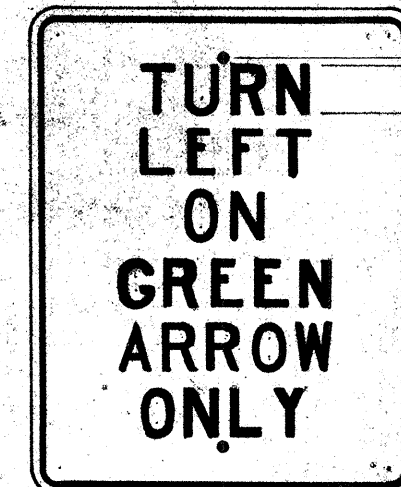
R-105-E
24" x 30"



R-105-F
24" x 30"



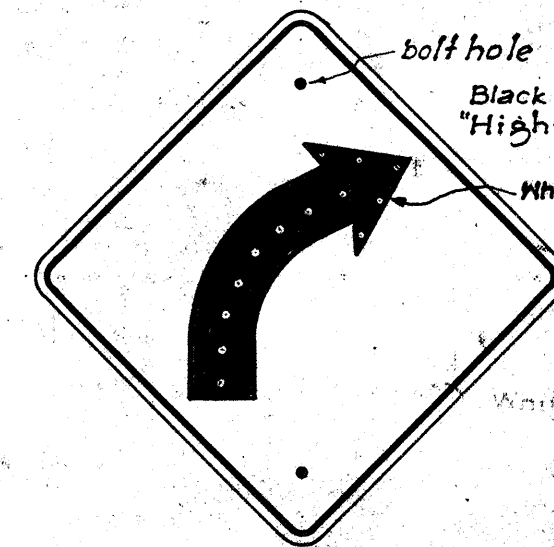
R-106
24" x 30"



R-107-A
24" x 30"



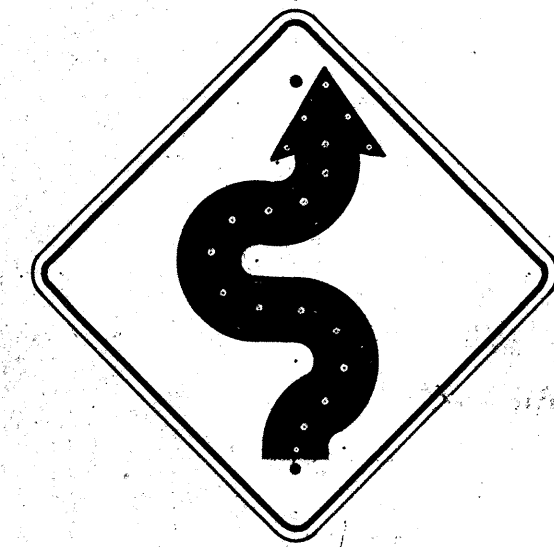
R-107
14" x 9"



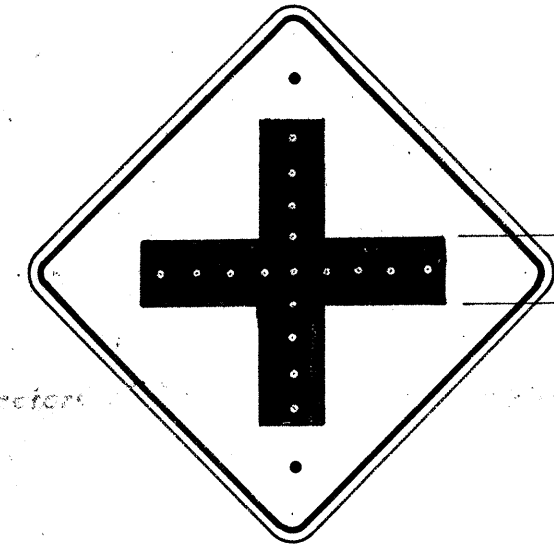
W-2-R
*W-2-L
24" x 24"



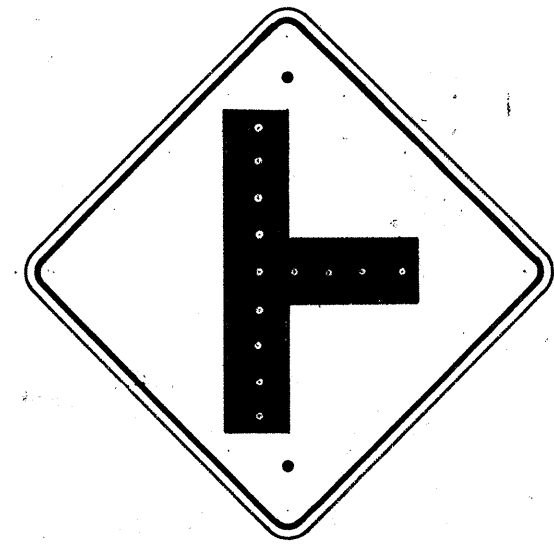
W-4-R
*W-4-L
24" x 24"



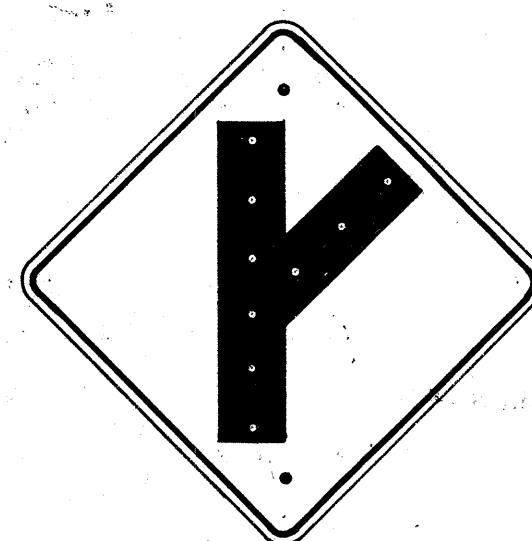
W-5-R
*W-5-L
24" x 24"



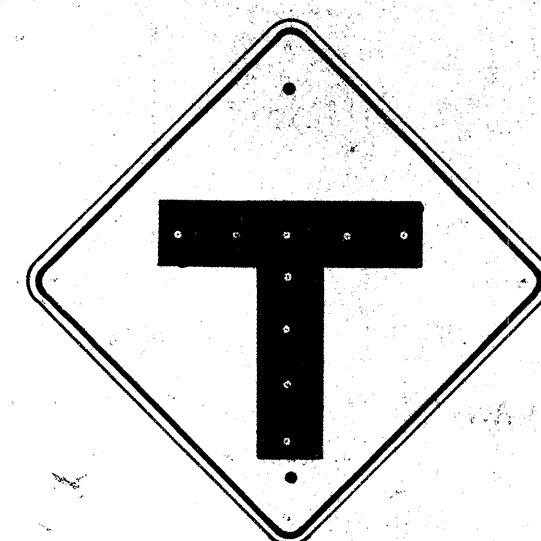
W-6
24" x 24"



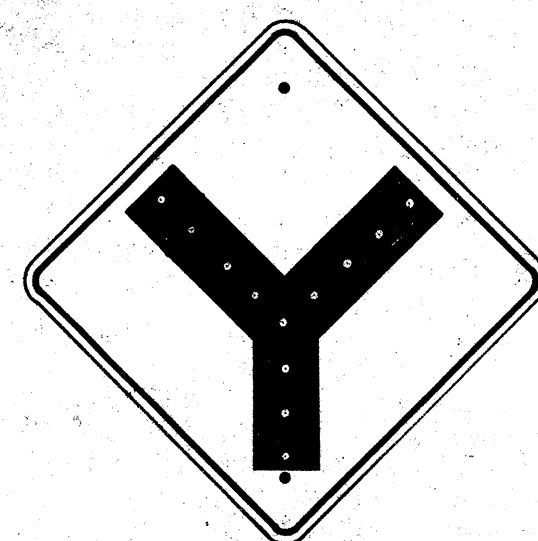
W-7
24" x 24"



W-8-R
*W-8-L
24" x 24"



W-9
24" x 24"



W-10
24" x 24"



W-13
24" x 24"



W-14
24" x 24"



W-14-A
24" x 24"



W-19
30" x 30"



W-20
30" x 30"



W-21
30" x 30"



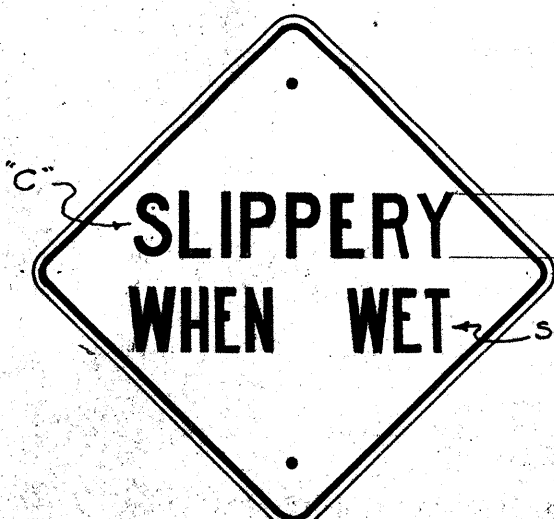
W-22
24" x 24"



W-24
30" x 30"



W-25
24" x 24"



W-29
24" x 24"



W-38
24" x 24"



W-39
24" x 24"

NOTE: All Warning Signs shall have two (2) 1/8" bolt holes drilled at 24" center unless otherwise noted.

All letters and figures shall be of size and design shown and shall conform with "Standard Alphabets for Highway Signs" as set forth by the Public Roads Administration, Federal Works Agency. Series "C" letters and Series "D" numerals shall be used except where noted.

Note: All Regulatory (R) signs shall have black letters on a white background except where noted. All Warning (W) signs shall have black letters or figures on a "Highway Yellow" background. *Signs shall be similar but opposite in direction.

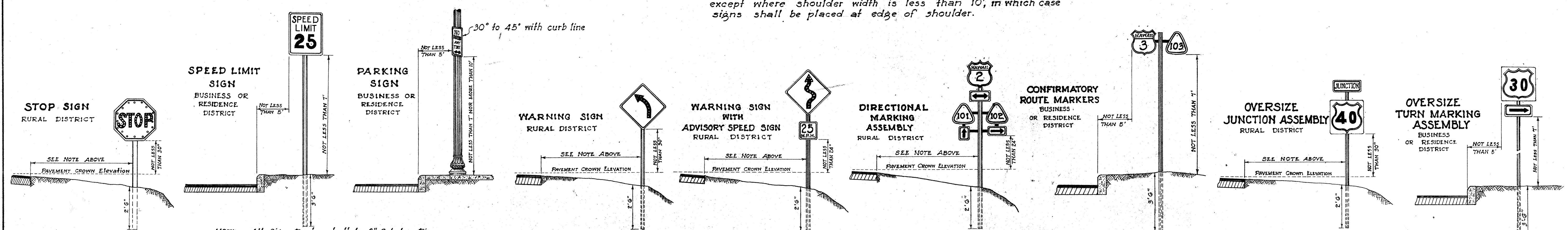
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
REGULATORY & WARNING SIGNS
Scale: 1" = 1'
APPROVED: *[Signature]* May 31, 1949
TERRITORIAL HIGHWAY ENGINEER

See Specifications for
Materials & Finish.

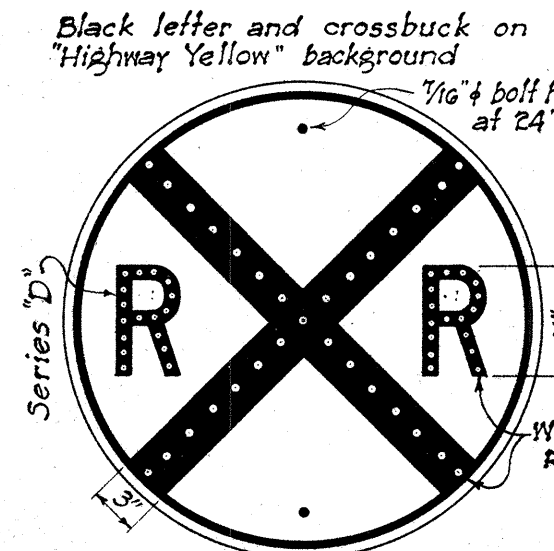
SHEET No 5 OF 6 SHEETS

5488.14

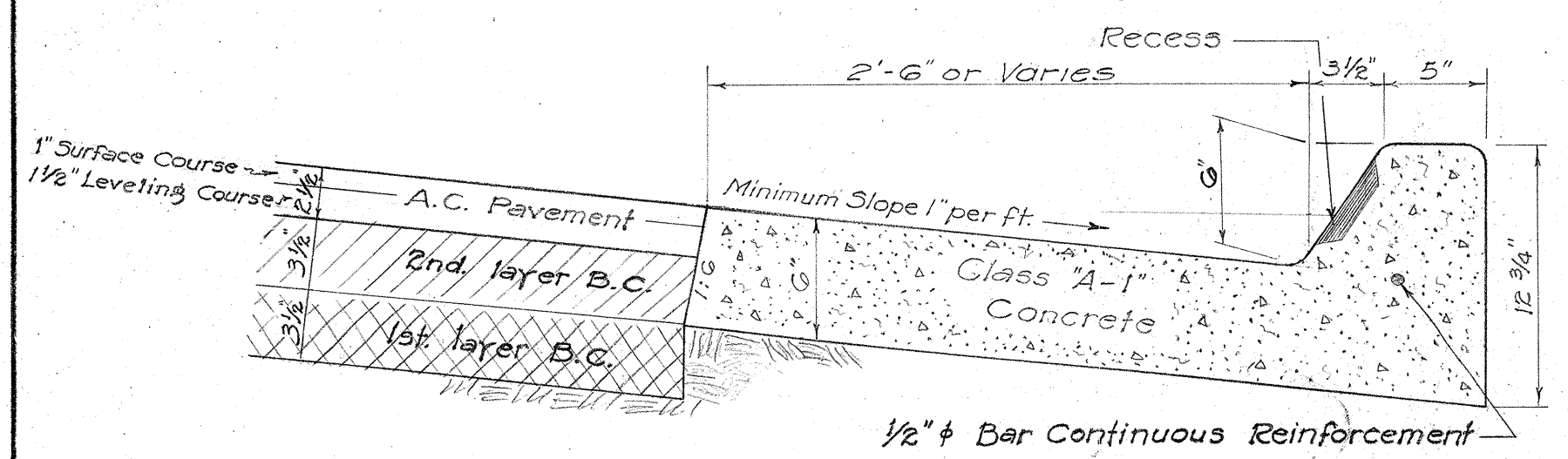
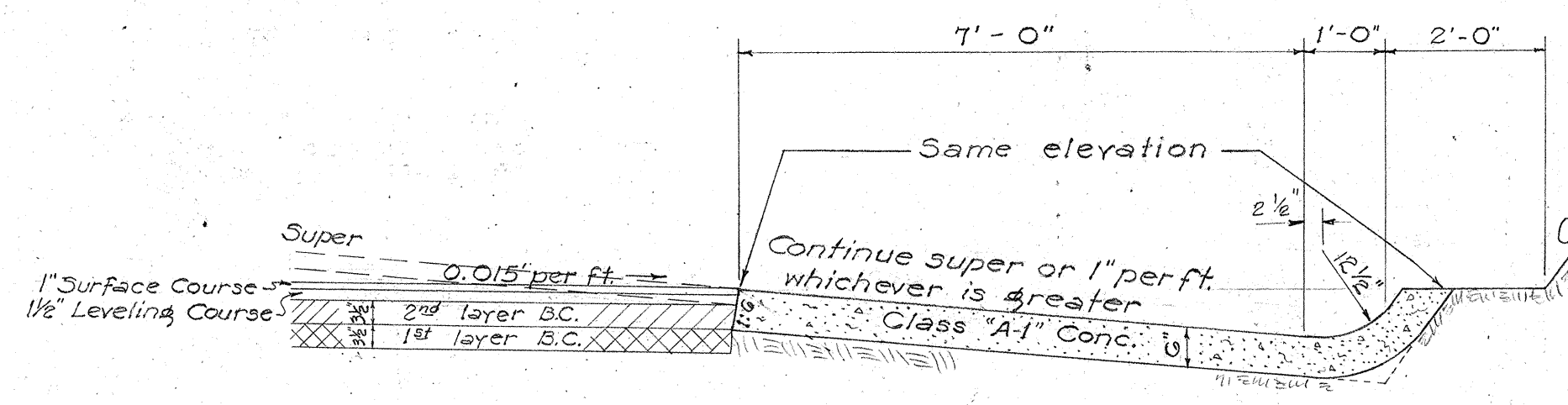
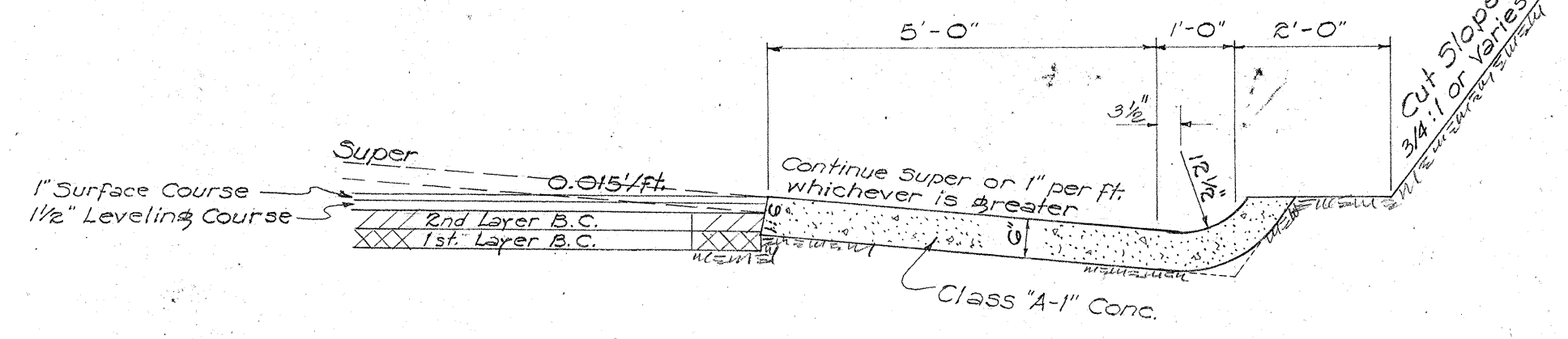
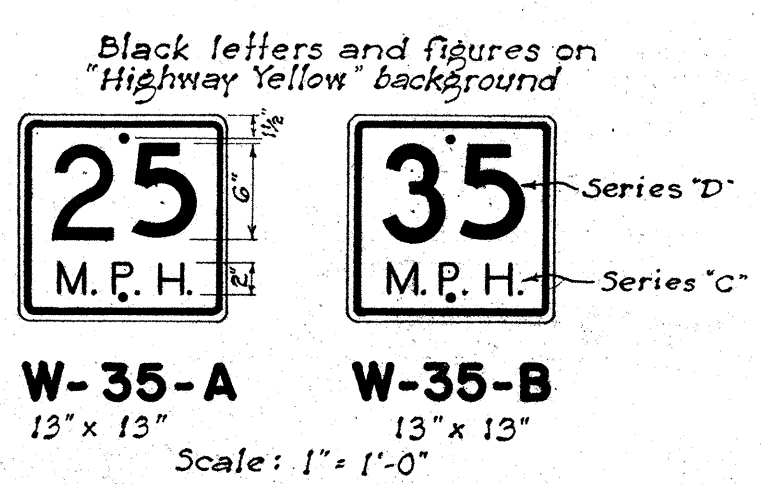
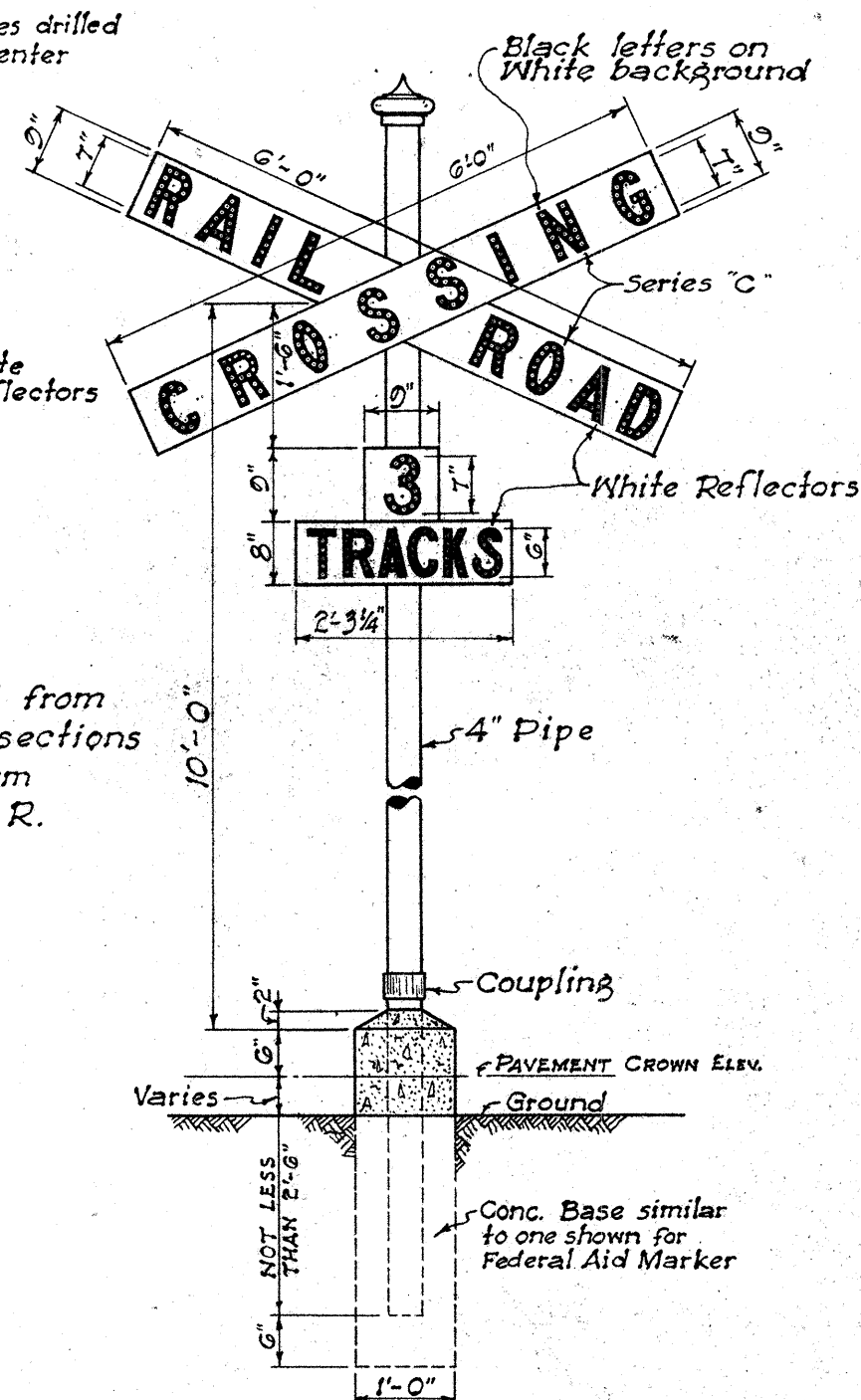
NOTE: All signs shall be placed 10' from edge of pavement except where shoulder width is less than 10', in which case signs shall be placed at edge of shoulder.



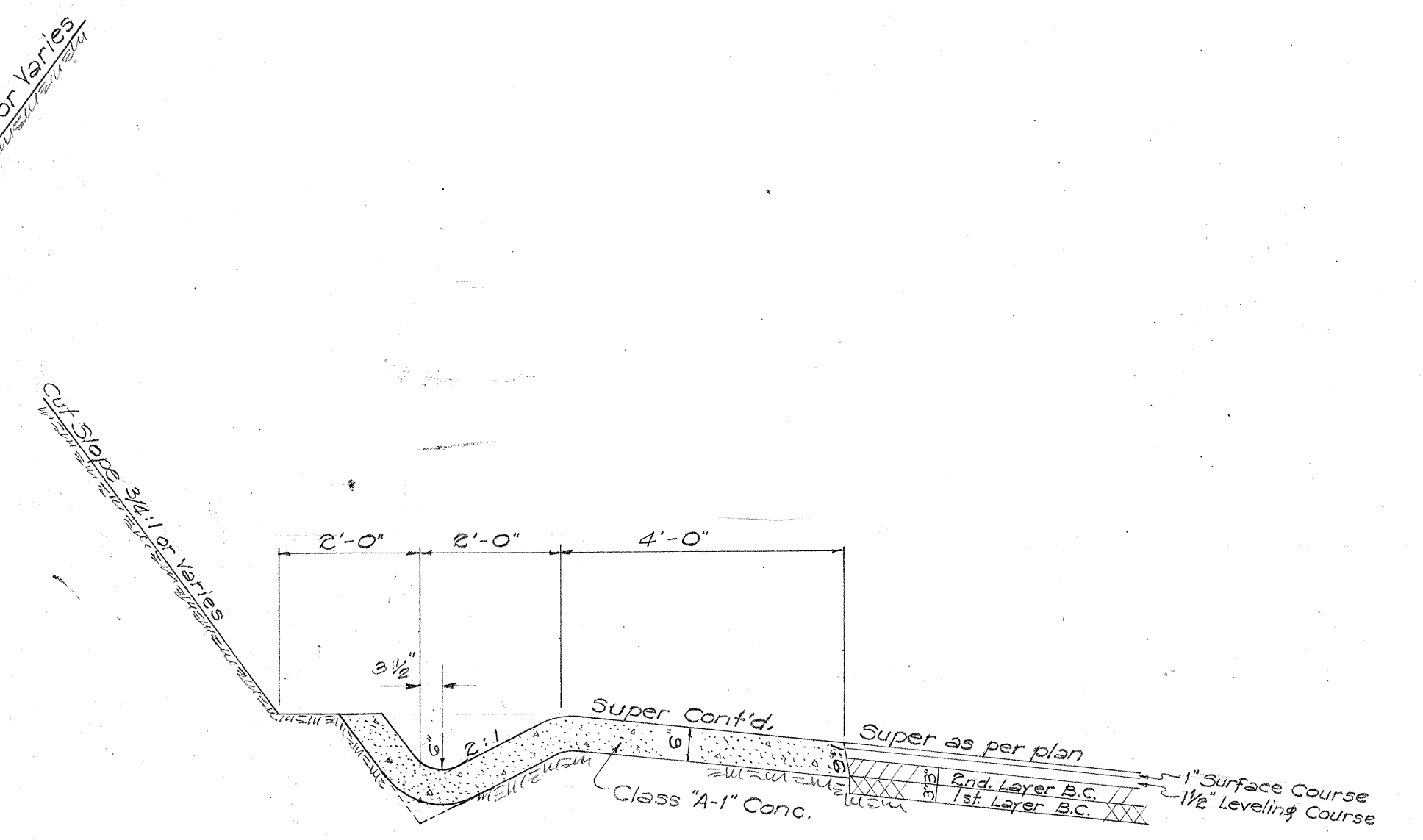
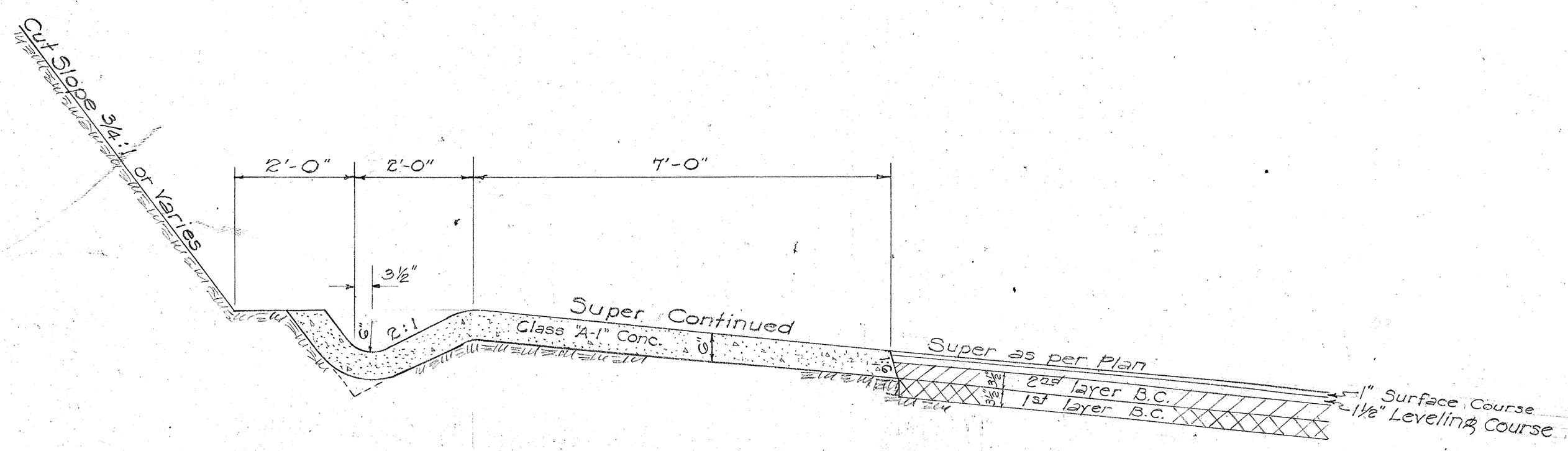
HEIGHT AND LATERAL LOCATION OF SIGNS - TYPICAL INSTALLATIONS
Scale: 1" = 3'-0"



NOTE: This sign shall be placed from 300 to 500 feet from R. R. intersections in rural areas and a minimum distance of 100 feet from R. R. intersections in Residence or Business districts.



NOTE: For details and spacing of Recess. See details of Type "A" Cast-in-place Concrete Curb. See sheet 5488.10



TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
REGULATORY & WARNING SIGNS
SCALE AS NOTED
APPROVED: *[Signature]*
Territorial Highway Engineer
May 31, 1949