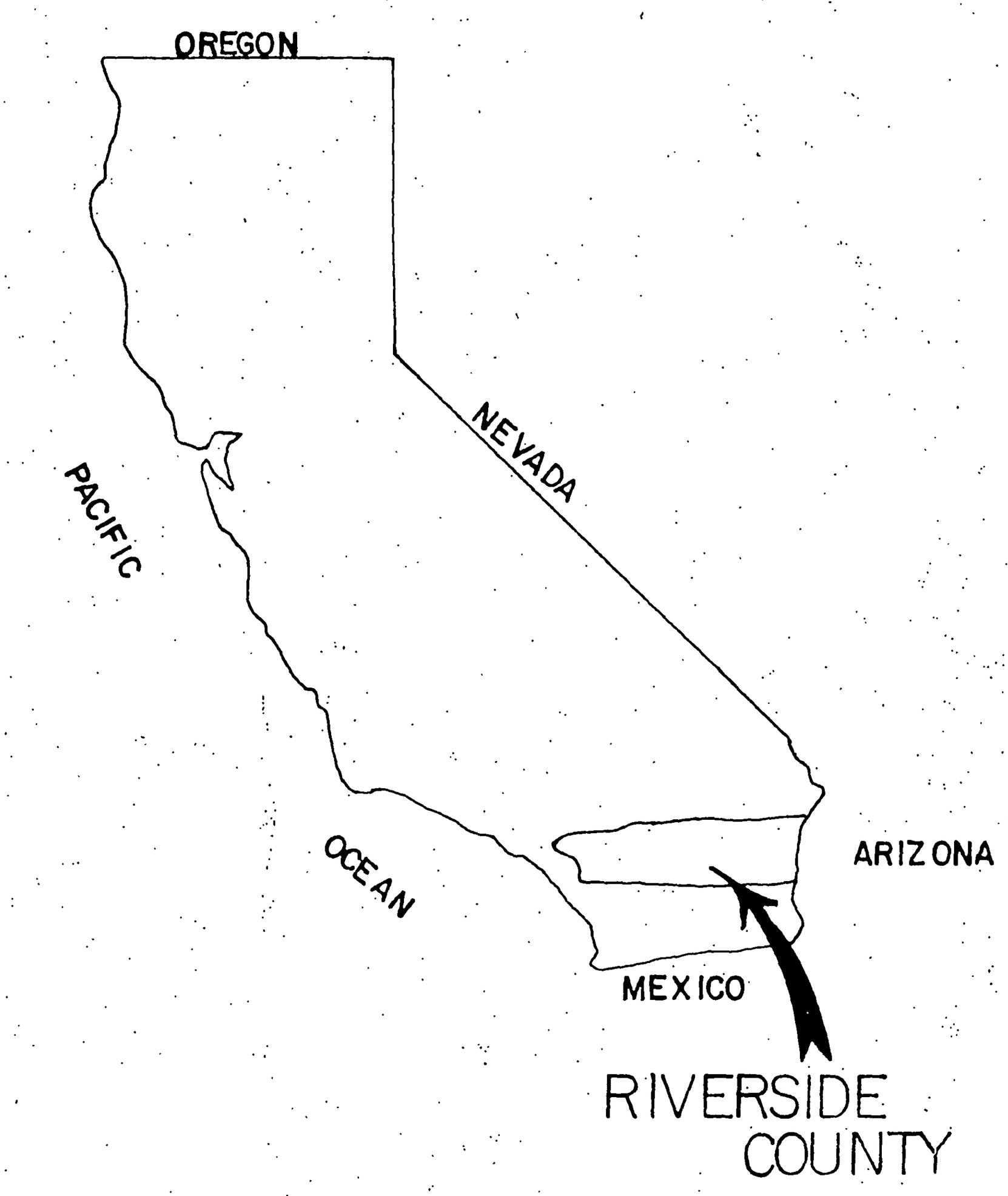
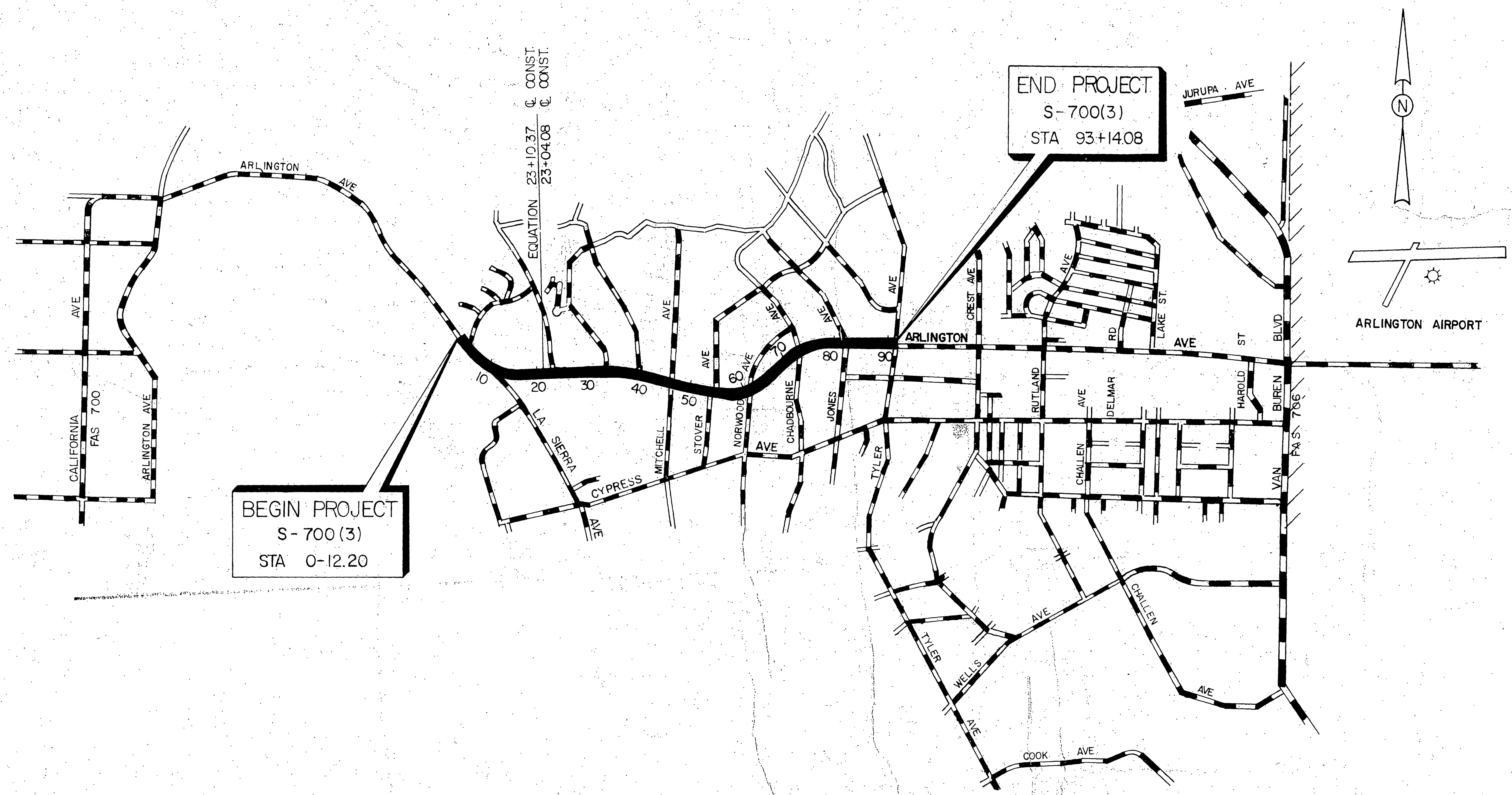
DIST	COUNTY	PROJECT		
VIII	RIV	S-700 (3)	1	25

INDEX OF SHEETS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS
PLANS FOR CONSTRUCTION ON
RIVERSIDE COUNTY HIGHWAY
FEDERAL AID SECONDARY PROJECT NO S-700 (3)

ARLINGTON AVENUE
BETWEEN 3.1 MILES AND 1.4 MILES WEST OF RIVERSIDE





AS BUILT
BY Dean R. Dawson
NO CORRECTIONS THIS SHEET

CONVENTIONAL SIGNS

COUNTY LINE	TRAVELED WAY
CITY OR TOWN LIMITS	RAILROAD
TOWNSHIP LINE	LEVEE
SECTION LINE	CULVERTS
GRANT LINE	DROP INLET
FENCE	POWER POLE
GUARD RAIL	POWER TOWER
UNFENCED PROPERTY	TELEGRAPH OR TELEPHONE POLE
RIGHT OF WAY LINE	
BASE OR SURVEY LINE 320	MARSH

SCALE IN MILES
0 1/2 1

NET LENGTH 1.768 MILES
9332.57 FEET

ENGINEER OF FEDERAL SECONDARY ROADS

COUNTY OF RIVERSIDE

A. C. Keith
ROAD COMMISSIONER

Norman J. Davis
CHAIRMAN BOARD OF SUPERVISORS

STATE OF CALIFORNIA

DISTRICT ENGINEER

APPROVED: AUGUST 28, 1961

J. C. Womack
STATE HIGHWAY ENGINEER
CIVIL ENGINEER LICENSE NO.
By:

DIST	COUNTY	ROUTE	SEC	SHEET NO	TOTAL SHEETS
VIII	RIV.	700	(3)	2	25

DESIGN DESIGNATION

A.D.T. (59) 4700 D = 60 %
A.D.T. (79) 14,000 T = 4.7 %
D.H.V. 2130 V = 50

DIST. ENG. DIST. VIII

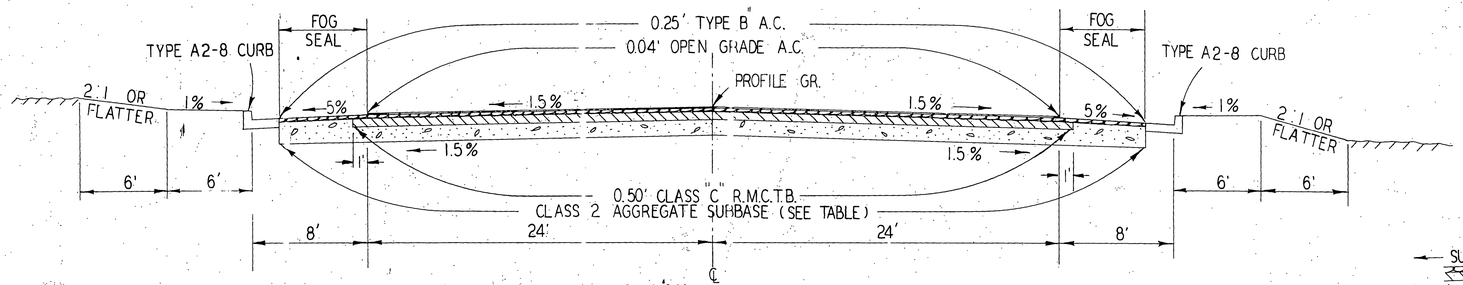
APPROVED August 28, 1961

ENGINEER OF FEDERAL SECONDARY ROADS

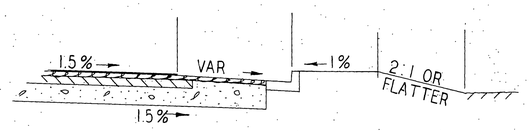
A. C. KEITH COUNTY ROAD COMMISSIONER

AS BUILT

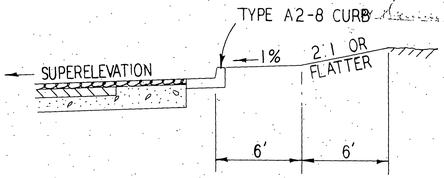
CORRECTIONS THIS SHEET



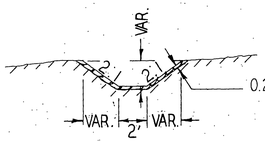
(STA 0-12.20)
BEGIN OF PROJECT TO STA 8+24.17
STA 23+04.08 TO END OF PROJECT
(STA 93+14.08)



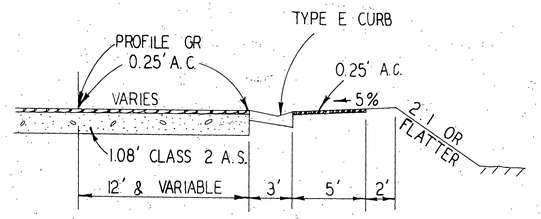
STA 91+40± TO END OF PROJECT



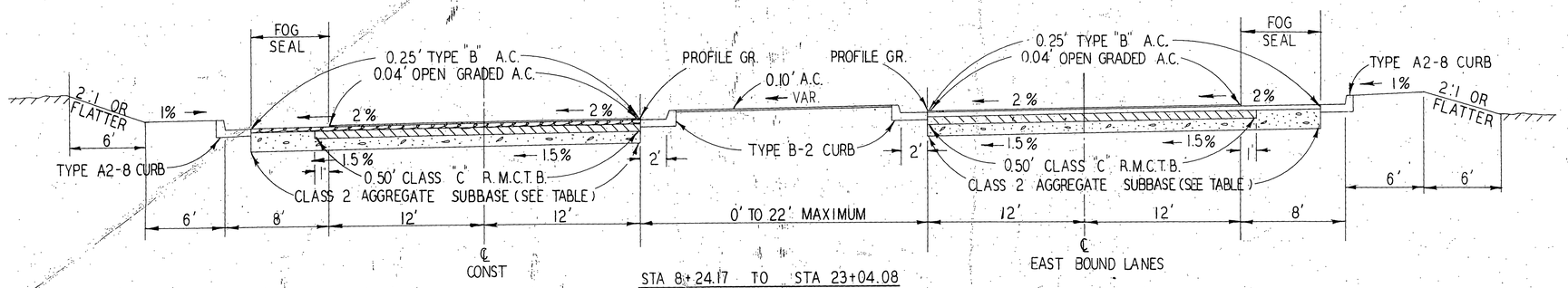
SUPERELEVATION



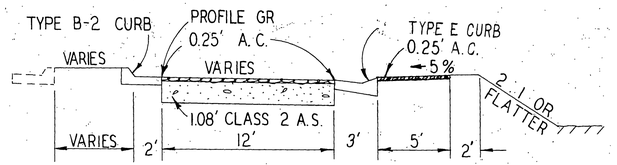
DITCH DETAIL
STA 52+06.47 RT ARL.



15+41.12 ACCEL TO 20+95.13 ACCEL



STA 8+24.17 TO STA 23+04.08

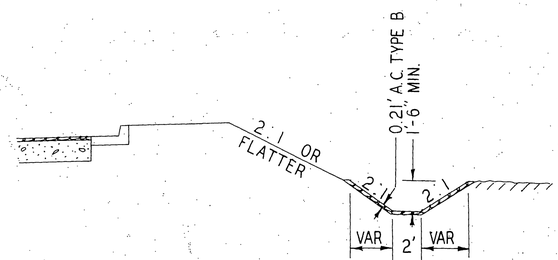


12+47.07 DECEL TO 17+35.07 DECEL

AGGREGATE SUBBASE
(INCLUDES R.M.C.T.B. PORTIONS)

STATION	TO STATION	THICKNESS
0-12.20	73+00	1.08'
73+00	93+14.08	1.50'
[illegible]	[illegible]	2.25'

DIMENSIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS



DITCH DETAIL

0-12.20 TO 12+47.07 ARLINGTON RT.
12+47.07 TO 16+35.44 DECEL LANE RT.
6+00 TO 7+10 LA SIERRA LT.
7+26 TO 7+99.02 LA SIERRA LT.

LEGEND

- ASPHALT CONC. (A.C.)
- OPEN GRADED ASPHALT OVER TYPE A, B, OR C ASPHALT CONC (OP. GR. A.C.)
- AGGREGATE SUBBASE
- ROAD-MIXED CEMENT TREATED BASE
- ORIGINAL GRD.

VIII-RIV-700(3)

TYPICAL ROAD SECTIONS
ARLINGTON AVENUE

SCALE 1"=5'

R-897 SH. 2

DIST	COUNTY	ROUTE	SEC	SHEET NO.	TOTAL SHEETS
VIII	RIV	700	(3)	3	25

DIST ENG DIST VIII

APPROVED August 28, 1961

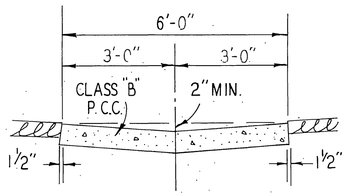
ENGINEER OF FEDERAL SECONDARY ROADS

A.C. KEITH COUNTY ROAD COMMISSIONER

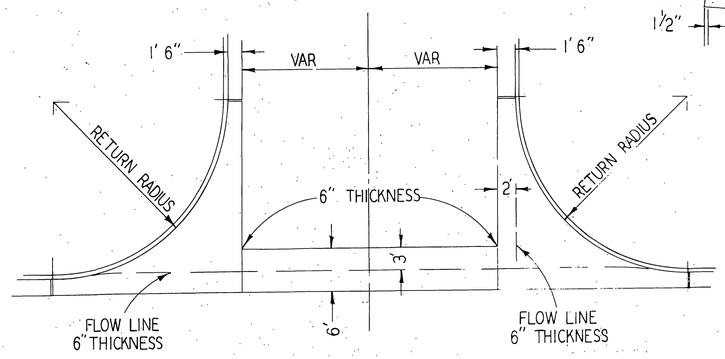
AS BUILT

BY

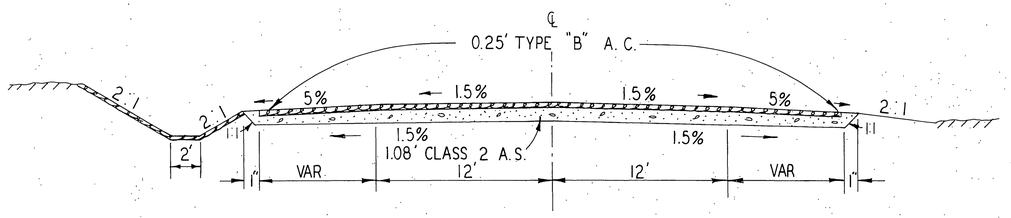
NO CORRECTIONS THIS SHEET



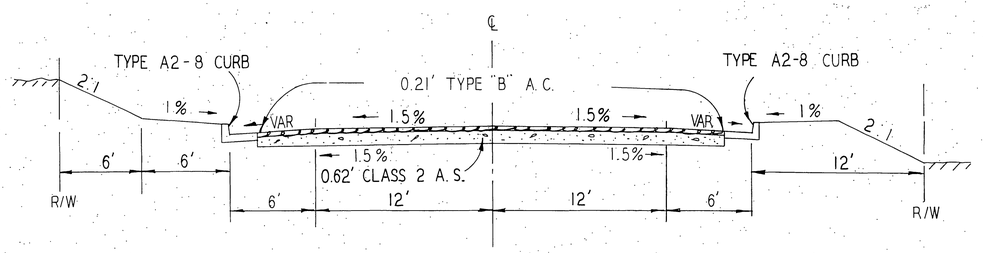
SECTION
SCALE 1" = 2'



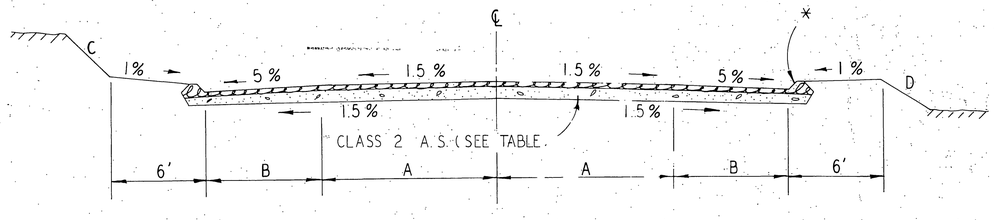
PLAN
SCALE 1"=10'



LA SIERRA AVENUE
SCALE 1" = 5'



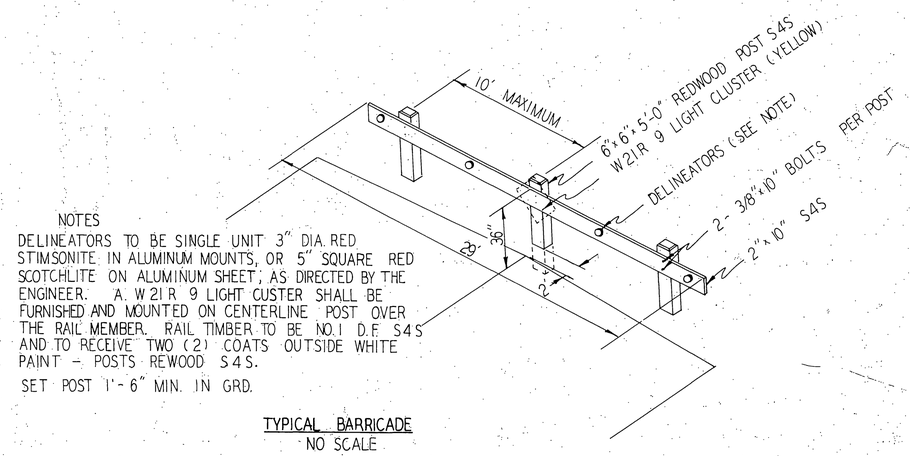
WESTERN HILLS DRIVE
SCALE 1"=5'



STREET	A	B	PVT	A.S.	C	D
WESTERN AVE	12'	6'	0.21'	0.83'	2:1	2:1
VALLEY DRIVE	12'	6'	0.21'	0.87'	2:1	2:1
SANDY LANE	12'	10'	0.25'	1.08'	2:1	2:1
MITCHELL AVE NLY	12'	8'	0.21'	0.71'	2:1	2:1
MITCHELL AVE SLY	12'	10'	0.21'	0.71'	2:1	2:1
STOVER AVE NLY	12'	6'	0.21'	0.62'	1:1	2:1
STOVER AVE SLY	12'	6'	0.21'	0.62'	1:1	2:1
NORWOOD AVE NLY	12'	6'	0.21'	0.54'	1:1	2:1
NORWOOD AVE SLY	12'	6'	0.21'	0.54'	1:1	2:1
CHADBOURNE AVE NLY	12'	6'	0.21'	1.12'	1:1	2:1
CHADBOURNE AVE SLY	12'	6'	0.21'	1.12'	1:1	2:1
JONES AVE NLY	12'	6'	0.21'	1.04'	1:1	2:1
JONES AVE SLY	12'	10'	0.21'	1.04'	1:1	2:1

* NO DIKES ON WESTERN AVE
SANDY LANE

NOTE: DIMENSIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS



NOTES
DELINEATORS TO BE SINGLE UNIT 3" DIA. RED STIMSONITE IN ALUMINUM MOUNTS, OR 5" SQUARE RED SCOTCHLITE ON ALUMINUM SHEET; AS DIRECTED BY THE ENGINEER. A. W21R 9 LIGHT CUSTER SHALL BE FURNISHED AND MOUNTED ON CENTERLINE POST OVER THE RAIL MEMBER. RAIL TIMBER TO BE NO.1 D.F. S4S AND TO RECEIVE TWO (2) COATS OUTSIDE WHITE PAINT - POSTS REWOOD S4S.
SET POST 1'-6" MIN. IN GRD.

TYPICAL BARRICADE
NO SCALE

VIII-RIV-700

TYPICAL ROAD SECTIONS
ARLINGTON AVENUE

SCALE 1"=5'

(B)

SH. 3

7/43

R-897


7 CALIF S-700 (3) 4 25
DIST VIII COUNTY RIV. ROUTE 700 SEC (3) SHEET NO 4 TOTAL SHEETS 25
AS BUILT
CORRECTIONS THIS SHEET
BY Duane R. Brown
DIST ENG DIST VIII
APPROVED August 28, 1961
ENGINEER OF FEDERAL SECONDARY ROADS
A. C. KEITH COUNTY ROAD COMMISSIONER
CURVE DATA
W.B. STATIONING E.P.
Δ= 55°20'30"
R= 1200'
T= 629.24'
L= 1159.07'
CURVE DATA
E.B. STATIONING E.P.
Δ= 34°56'53"
R= 1100'
T= 346.28'
L= 670.95'
SCALE 1"=50'
WESTGATE TRACT
M.B. 34/11 RIV. CO.
WESTERN HILLS DR
JOIN EXIST CURB & GUTTER AND PAV'T STA 2+30
℄ CURVE DATA WESTERN HILLS DR
Δ = 33°43'30"
R = 200'
T = 60.64'
L = 117.72'
CONST A2-8 CURB
CURB DATA
Δ = 90°
R = 35'
T = 35'
L = 54.98'
CURB DATA
Δ=90°
R=35'
T=35'
L=54.98'
BEGIN PROJECT 0-12.20
N 5° 42' 50" E
CONST X-GUTTER & SPANDREL
0+40.80 ℄ CONST
0-12.00 W.H. DR.
S 38° 17' 10" E
℄ CONST
CONST A2-8 CURB
CONST B-2 CURB
CONST TYPE A2-8 CURB
CONST TYPE E CURB
℄ CONST
℄ EASTBOUND
18" CMP
IRRIG LINE & 12" STDS
A. C. LINED DITCH (SEE DETAIL)
4" C.P. (CCC #8) 12+50 - 13+50
PP NO NUMBER
ELECTRIC IRRIG PUMP
TP 496052 H
CONC STD PIPE
R. S. 20/78
RIV. CO.
SCALE
VERT 1" = 5'
HORIZ 1" = 50'
B.M. RR SPIKE IN PP 405982 E N SIDE
INTERSECTION LA SIERRA & ARLINGTON AVENUES
ELEVATION 863.85
BEG PROJ TO STA 13+00 LT.
CONST 8 DRIVEWAYS AS DIRECTED BY THE ENGINEER.
WESTERN HILLS DRIVE CONST.
1 DRIVEWAY RT AS DIRECTED BY THE ENGINEER
PROFILE GR.
EXIST GRD
2.434 %
100' V.C.
2.000 %
1.600 %
P.I. ELEV. 893.00
STA 7+50 D.I. & 18" CMP
STA 8+24.17 BEGIN CHANNELIZATION
B.C. ℄ CONST P.O.T. EASTBOUND
200' V.C.
3.471 %
3.571 %
PROFILE GR EB
100' V.C. E.B.
100' V.C. ℄ CONST
PROFILE GR ℄ CONST
PROFILE ℄ WESTERN HILLS DRIVE
+0.300 %
WARP
EXIST GRD
CU. YDS. EXC. EMB.
717 768
499 2653
SHEET 1565
TOTAL 5394
SH. 4
R-897

B. P. R. DIV. NO	STATE	FEDERAL PROJECT NO		SHEET NO	TOTAL SHEETS
7	CALIF	S-700(3)		5	25

DIST	COUNTY	ROUTE	SEC	SHEET NO	TOTAL SHEETS
VIII	RIV.	700	(3)	5	25

[illegible]
DIST ENG DIST VIII
APPROVED August 28, 1
[illegible]
ENGINEER OF FEDERAL SECONDARY RO
A. C. Keith
A. C. KEITH COUNTY ROAD COMMISSIONER

AS BUIL
CORRECTIONS THIS SHEET
BY Duane R. Brown

SH·5
SHEET 2703
TOTAL 3342
R-897

B.P.R. DIV. NO	STATE	FEDERAL PROJECT NO	SHEET NO	TOTAL SHEETS
7	CALIF	S-700(3)	6	25

DIST	COUNTY	ROUTE	SEC	SHEET NO	TOTAL SHEETS
VIII	RIV.	700	(3)	6	25

DIST ENGDIST VIII

APPROVED August 28, 1961

ENGINEER OF FEDERAL SECONDARY ROADS

A. C. Keith

A.C. KEITH COUNTY ROAD COMMISSIONER

AS BUILT

CORRECTIONS THIS SHEET

BY Duane R. Brown

ALAHAMBRA ADDITION
M. B. 11/78-79 RIV. CO.
SCALE 1" = 50
CONST BARRICADE SEE DETAIL SHEET NO
PAV'T TO BE REMOVED
ROW 12" IRRIG STD ABANDONED ALONG TREE TRUNKS
ROW OF 8" IRRIG STDS
24" CMP
36"x22' CMPA
2-36"x 22' CMPA
OIL LINE
MEET EXIST PAV'MT STA 1+50
END CURB 0+70.45
CURB DATA Δ=86°24'45" R=35' T=32.87' L=52.79'
CURB DATA Δ=93°35'15" R=35' T=37.26' L=57.17'
VALLEY DR. N 00°02'25" W
IRRIG. LINE
UTILITY PIPE STD
34+36.49 830.04 TC
35+45.70 826.62 TC
0+00 V.D. 34+88.39 ARL.
N 86°22'20" E
CONST TYPE A2-8 CURB
℄ CONST
36+40.53 B.C.
UNLOADING VALVE
OIL TANK
6'x8' WELL COVERED
TWIN BUTTES BLOCK M. B. 10/39 RIV. CO.
CURVE DATA ℄ ARL. Δ= 14°47'25" R= 2000' T= 259.60' L= 516.28'
B.M. CHISELED X N.E. CORNER CONCRETE PORCH 60'± LT STA 36+30 HOUSE 10894 ELEV 827.49
SCALE VERT 1" = 5' HORT 1" = 50'
STA 27+00 TO STA 41+00 CONST. 6 DRIVEWAYS LT. AND 4 DRIVEWAYS RT. AS DIRECTED BY THE ENGINEER.
VALLEY DRIVE CONST 1 DRIVEWAY RT. AS DIRECTED BY THE ENGINEER
℄ PROFILE GR. & CONST.
EXIST GRD
300' V.C.
500' V.C.
100' VC
+ 1.125 %
- 4.667 %
- 2.353 %
827.71 VALLEY DRIVE 34+88.39
℄ PROFILE VALLEY DRIVE
+ 0.500 %
1+50 MEET EXIST 828.00
STA 27+32.80 D.I.'s & 36"x22' CMPA SEE DETAIL SHEET NO
STA 27+50 2-36"x22' CMPA
CU. YDS EXC. EMB.
253 2598
5506 145
2314 373
SH. 6
SHEET 8061
TOTAL 2554
R-897

B.P.R. DIV. NO	STATE	FEDERAL PROJECT NO.	SHEET NO	TOTAL SHEETS
7	CALIF	S-700(3)	7	25

DIST.	COUNTY	ROUTE	SEC	SHEET NO	TOTAL SHEETS
VIII	RIV.	700	(3)	7	25

DIST VIII | COUNTY RIV | ROUTE 700 | SEC (3) | SHEET NO. 8 | TOTAL SHEETS 25
DIST. ENG. DIST. VIII
APPROVED August 28, 1961
ENGINEER OF FEDERAL SECONDARY ROADS
A. C. KEITH COUNTY ROAD COMMISSIONER
AS BUILT
CORRECTIONS THIS SHEET BY Duane R Brown
LA GRANADA M. B. 12/49 RIV. CO.
SCALE 1" = 50
CHADBOURNE HTS. M. B. 12/11 RIV. CO.
℄ CURVE DATA Δ= 54° 49' 40" R = 954.80' T = 495.21' L = 913.67'
℄ CURVE DATA STOVER NLY Δ= 24° 48' 45" R= 250' T= 54.99' L= 108.26'
℄ CURVE DATA STOVER SLY Δ= 20° 05' 30" R= 250' T= 44.28' L= 87.67'
CURB DATA Δ= 78° 23' 35" R= 35' T= 28.54' L= 47.89'
CURB DATA Δ= 100° 38' 25" R= 35' L= 61.48'
CURB DATA Δ= 54° 31' 32" R= 35' T= 18.04' L= 33.31'
CURB DATA Δ= 134° 24' 23" R= 35' T= 83.28' L= 82.10'
CURB DATA Δ= 101° 36' 25" R= 35' T= 42.92' L= 62.07'
CURB DATA Δ= 78° 23' 35" R= 35' T= 28.54' L= 47.89'
CURB DATA Δ= 117° 30' 37" R= 35' T= 57.69' L= 71.78'
CURB DATA Δ= 55° 33' 10" R= 35' T= 18.43' L= 33.94'
MEET EXIST PAV'T STA 3+00
MEET EXIST. PAV'T STA 2+00
MEET EXIST PAV'T STA 2+50
MEET EXIST. PAV'T STA 3+00
S 76° 39' 30" E
N 48° 30' 50" E
N 04° 50' 20" E
29" X 18" CMPA
0+00 STOVER 56+03.67 ARL.
0+00 NORWOOD SO 63+54.24 ARL.
0+00 NORWOOD NO 63+53.82 ARL.
CONST TYPE A2-8 CURB
℄ CONST
STOVER AVE
NORWOOD AVE
ABANDONED IRRIG LINE
18" CMP
4 X 4 X 3' CATCH BASIN 10" C.M.P.
AREA TO BE GRADED AS DIRECTED BY THE ENGINEER
STATION PUMPS SIGN
SEE INTERSECTION DETAIL SHEET NO
SCALE VERT 1" = 5' HORT 1" = 50'
B.M. CHISELED CROSS S.E. COR. SLAB PORCH LT STA 60+64 ELEV 810.62
℄ PROFILE STOVER AVE SLY
℄ PROFILE STOVER AVE NLY
℄ PROFILE NORWOOD NLY
NORWOOD AVE SLY
℄ PROFILE
EXIST GRD
+1.077 %
+2.667 %
-0.250 %
+2.500 %
-1.134%
-3.520 %
-1.96 %
+8.782 %
+1.336 %
-4.00%
+2.00%
+6.688 %
-1.00%
-4.689 %
STA 55+00 TO STA 68+00 CONST 5 DRIVEWAYS LT. CONST 6 DRIVEWAYS RT. AS DIRECTED BY THE ENGINEER
NORWOOD AVE SLY CONST 1 DRIVEWAY RT. AND 2 DRIVEWAYS LT. AS DIRECTED BY ENGINEER.
NOTE: EMBANKMENT FIGURES STA 60+00 TO 65+00 CONTAINS 4000 CU YDS TO BE PLACED AS DIRECTED BY THE ENGINEER IN GRADED AREA RT OF STA 64+00.
CU YDS EXC. EMB.
5051 688
2502 5058
1904 456
55 56 57 58 59 60 61 62 63 64 65 66 67 68
SH. 8
SHEET 8528 TOTAL 6069
R-897

DIST. COUNTY ROUTE SEC. SHEET NO. TOTAL SHEETS
VIII RIV. 700 (3) 9 23
APPROVED August 23, 1961
ENGINEER OF FEDERAL SECONDARY ROADS
A. C. KEITH COUNTY ROAD COMMISSIONER
AS BUILT
CORRECTIONS THIS SHEET
BY Duane R. Brown
LA GRANADA M.B. 12/49 RIV. CO.
LA GRANADA M.B. 12/49 RIV. CO.
CHADBOURNE HTS. M.B. 12/11 RIV. CO.
CHADBOURNE HTS. M.B. 12/11 RIV. CO.
SCALE 1" = 50'
S 23° 37' 05" E
MEET EXIST PAV'T STA 1+50
CURB DATA Δ=87° 47' 29" R=35' T=33.68' L=53.63'
CURB DATA Δ=88° 09' 40" R=35' T=33.99' L=53.85'
CURB DATA Δ=126° 53' 15" R=35' T=70.03' L=77.51'
CURB DATA Δ=58° 29' 12" R=35' T=19.60' L=35.73'
CURVE DATA ℄ ARL. Δ=43° 40' 20" R=1433.86' T=574.55 L=1092.92
0+66.24 815.69 T.C.
(C.C.O. # 7)
75+84.71 812.41 T.C.
0+00 CHAD 75+33.42 ARL
CONST TYPE A2-8 CURB
CONST TYPE A2-8 CURB
℄ CONST
N 48° 30' 50" E
S 67° 48' 50" E
CHADBOURNE
S 08° 32' 55" W
74+20.13 817.36 T.C.
1+17.94 816.93 T.C.
0+45.90 813.13 T.C.
70+91.64 B.C.
81+84.56 E.C.
MEET EXIST PAV'T STA 2+50
PP 66375 E
PP 669994 E
PP 947560 E
PP 947559 E
PP 692025 E
PP 692026 E
PP 692027 E
PP 692028 E
PP 947556 E
PP 947557 E
PP 748939 E
GP 547687 H
GP 547688 H
GP 694877 H
GP 1274074 E
BM RR SPIKE IN WLY SIDE OF PP NO 692026 E
N.E. CORNER CHADBOURNE & ARLINGTON AVE
ELEV 815.73
SCALE VERT 1" = 5' HORT 1" = 50"
STA 67+00 TO STA 81+50 CONST. 14 DRIVEWAYS LT. AND CONST 10 DRIVEWAYS RT. AS DIRECTED BY THE ENGINEER.
CHADBOURNE AVE SLY CONST 1 DRIVEWAY LT.
EXIST GRD
℄ CONST & PROFILE
200' VC
+0.500 %
100' VC
+1.571 %
500' VC
-4.500 %
100' VC
-2.667 %
100' VC
-1.750 %
818.50
810.13
819.50
819.75
820.13
820.79
821.57
822.21
822.53
822.56
822.28
821.71
820.82
819.63
818.14
816.35
814.25
814.25
812.23
810.67
801.33
800.11
799.12
796.50
CHADBOURNE AVE 75+33.42 ELEV. 812.86
℄ PROFILE CHADBOURNE AVE NORTH
℄ CONST 812.86
MEET EXIST. 815.86
+2.000 %
℄ PROFILE
℄ PROFILE CHADBOURNE SLY
℄ CONST EL 812.86
+0.184 %
50' VC
+8.720 %
100' VC
MEET EXIST 2+50
0+38 812.93
812.95
813.00
815.18
819.54
823.90
826.50
CU. YDS. EXC. EMB.
1904 456
477 30
6654 15
SH. 9
R-897

B.P.R. DIV. NO	STATE	FEDERAL PROJECT NO.		SHEET NO	TOTAL SHEETS
7	CALIF	S-700 (3)		10	25

DIST	COUNTY	ROUTE	SEC	SHEET NO	TOTAL SHEETS
VIII	RIV	700	(3)	10	25

DIST. ENG. DIST. VIII

APPROVED August 28, 1961

ENGINEER OF FEDERAL SECONDARY ROADS

A. C. Keith

A. C. KEITH COUNTY ROAD COMMISSIONER

AS BUILT

BY Duane R. Brown

NO CORRECTIONS THIS SHEET

DIV NO	STATE			NO	SHEETS
7	CALIF	S-700(3)		11	25

DIST	COUNTY	ROUTE	SEC	SHEET NO	TOTAL SHEETS
VIII	RIV.	700	(3)	11	25

APPROVED August 28 1960

DIST. ENG. DIST. VIII

ENGINEER OF FEDERAL SECONDARY ROADS

A. C. KEITH COUNTY ROAD COMM.

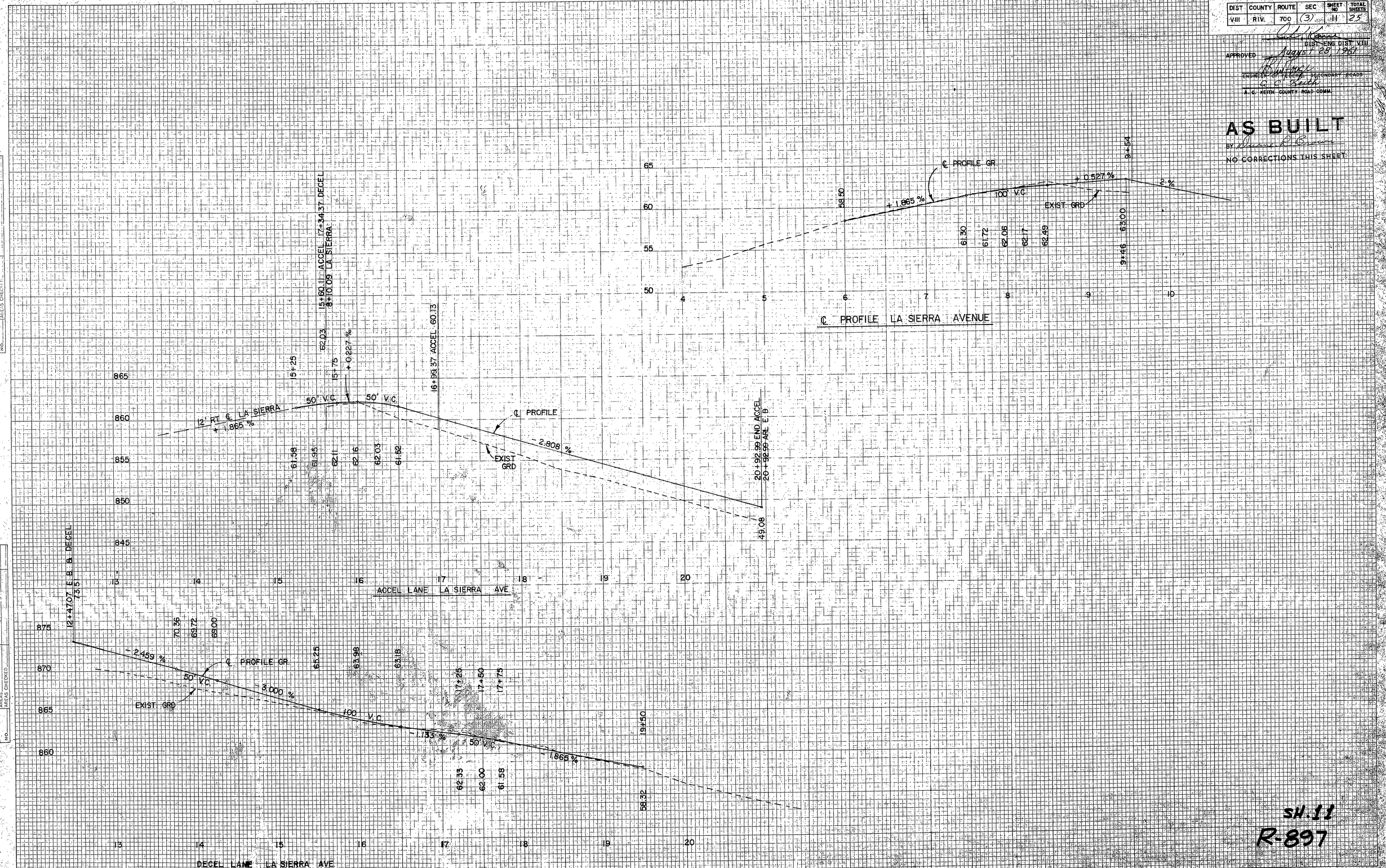
AS BUILT

BY Maurice P. Brown

NO CORRECTIONS THIS SHEET.

FINAL SURVEY — NOTE BOOK NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, BY, DATE

ORIGINAL SURVEY — NOTE BOOK NO. — SURVEYED, PLOTTED, TEMPLATE, AREAS, AREAS CHECKED, BY, DATE



sh.11

R-897

DIV. NO	STATE	FEDERAL PROJECT NO		NO	SHEETS
7	CALIF	S-700(3)		12	25

DIST	COUNTY	ROUTE	SEC.	SHEET NO	TOTAL SHEETS
VIII	RIV.	700	(3)	12	25

DIST ENG DIST PH.

APPROVED August 28, 1961

ENGINEER OF FEDERAL SECONDARY ROADS

A.C. KEITH COUNTY ROAD COMMISSIONER

AS BUILT

BY Duane R. Brown

NO CORRECTIONS THIS SHEET

SCALE 1"=30'

℄ CURVE DATA
Δ= 34° 56' 53"
R= 1100
T= 346.28
L= 670.55

℄ CURVE DATA E.B.
Δ= 14° 05' 40"
R= 1222
T= 151.07
L= 300.61

℄ CURVE DATA E.B.
Δ= 13° 01' 39"
R= 1000'
T= 114.18'
L= 227.37'

DETAILS
INTERSECTION AT LA SIERRA AVE
STA 16+20.37 CONST.
STA 16+30.18 E.B.

SH. 12
R-897

12

DIV. NO.	STATE	FEDERAL PROJECT NO.	NO.	SHEETS
7	CALIF	S-700 (3)	13	25

DIST	COUNTY	ROUTE	SEC.	SHEET NO.	TOTAL SHEETS
VIII	RIV.	700	(3)	13	25

DIST ENG-DIST. 7TH.

APPROVED August 28, 1961

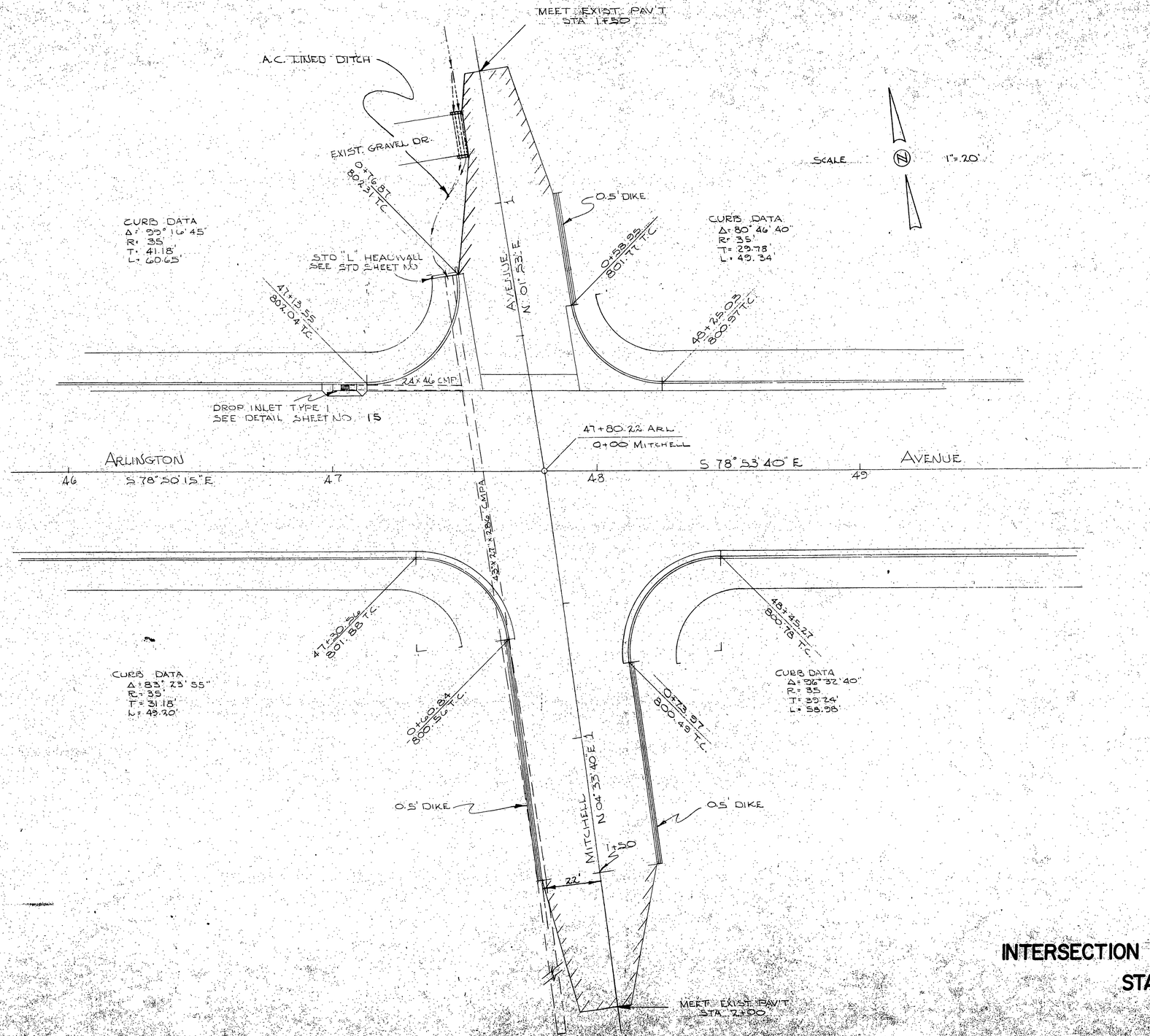
ENGINEER OF FEDERAL SECONDARY ROADS

A.C. KEITH, COUNTY ROAD COMMISSIONER

AS BUILT

BY Duane R Brown

NO CORRECTIONS THIS SHEET



DETAILS
INTERSECTION AT MITCHELL AVENUE
STA. 47+80.22

SH. 13

R-897

13

DIST	COUNTY	ROUTE	SEC	SHEET NO	TOTAL SHEETS
VIII	RIV	700	(3)	14	25

DIST ENG DIST VIII

APPROVED August 28, 1961

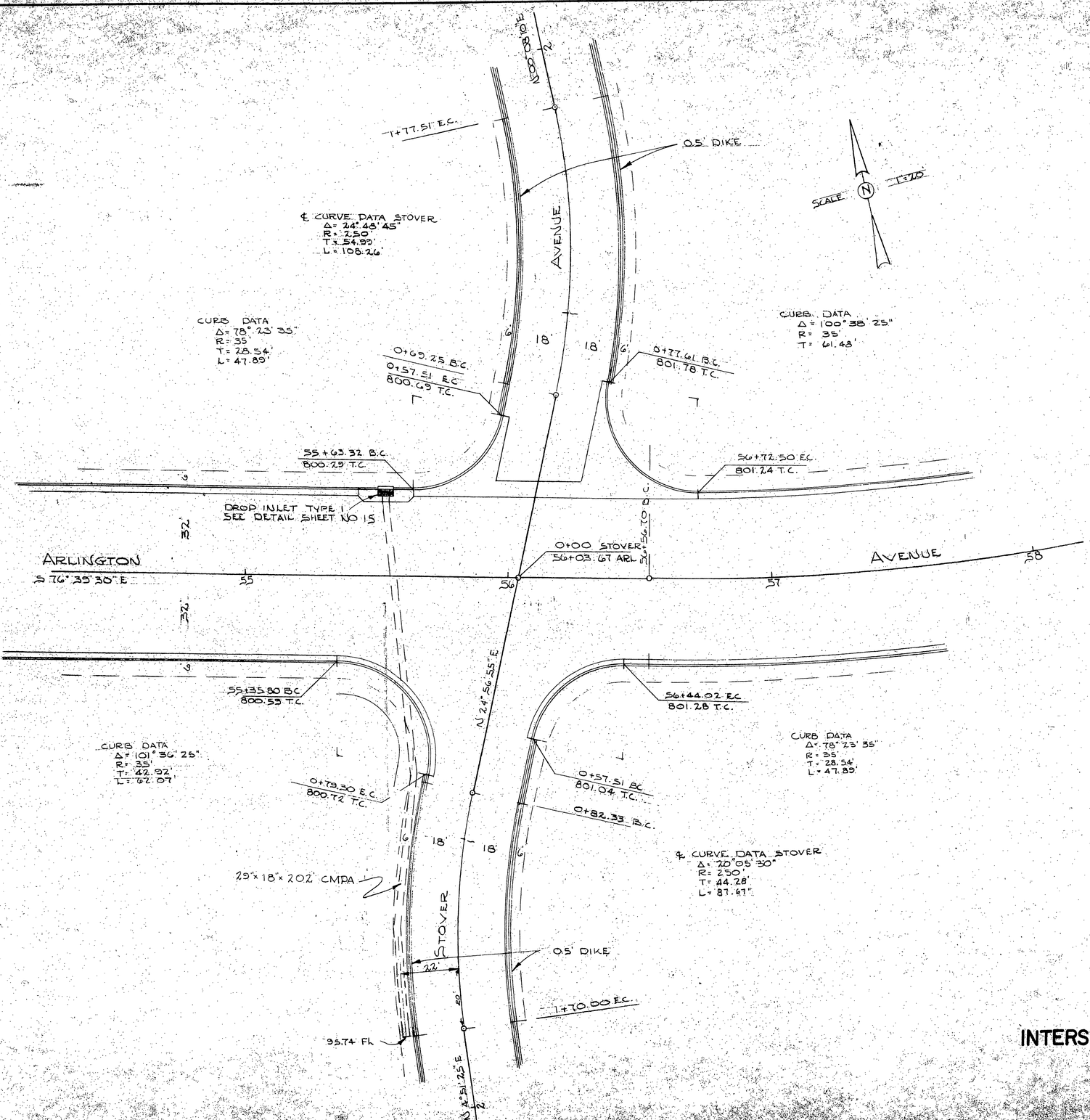
ENGINEER OF FEDERAL SECONDARY ROADS

A.C. KEITH, COUNTY ROAD COMMISSIONER

AS BUILT

BY Duane R. Brinson

NO CORRECTIONS THIS SHEET



DETAILS
INTERSECTION AT STOVER AVENUE
STA 56+03.67

SH. 14
R-897

FED. RD. DIV. NO.	STATE	FEDERAL PROJECT NO.	SHEET NO.	TOTAL SHEETS
7	CALIF.	S-700(3)	15	25

DIST	COUNTY	ROUTE	SEC	SHEET NO.	TOTAL SHEETS
VIII	RIV.	700	(3)	15	25

BRIDGE ENGINEER · CIVIL ENGINEER—LICENSE 8883

APPROVED

DIST. ENG. DIST. VIII

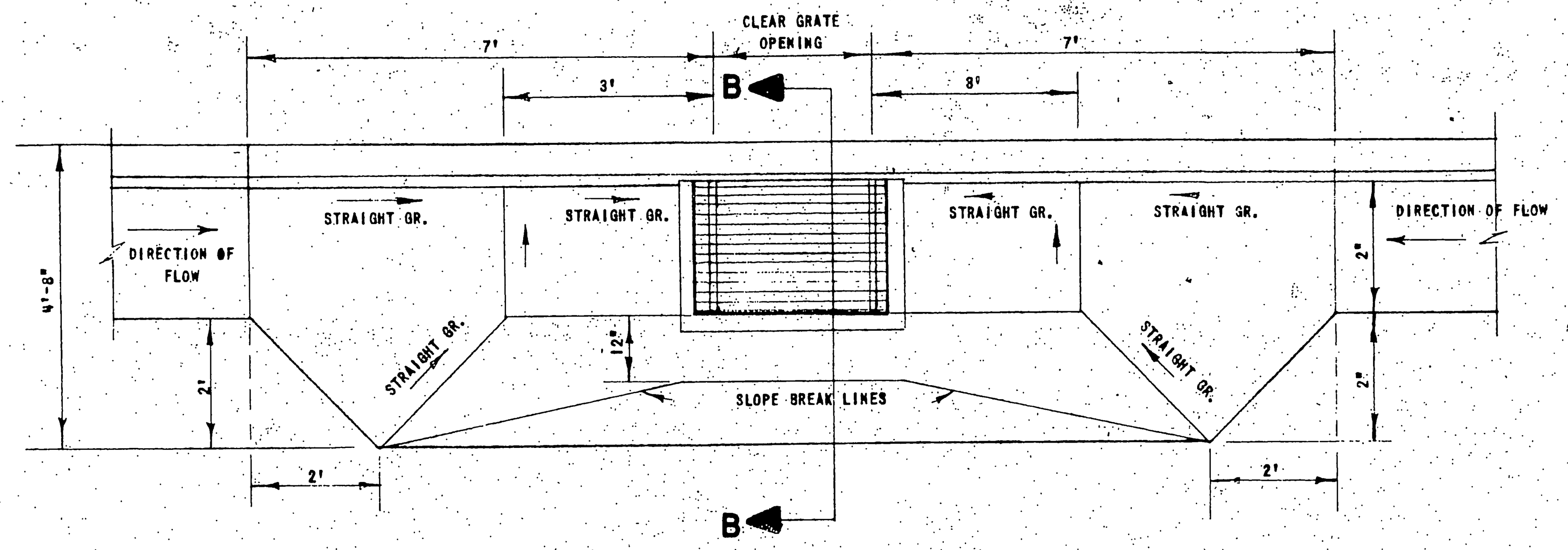
APPROVED August 28, 1961

A. C. Keith
A. C. KEITH, COUNTY ROAD COMMISSIONER

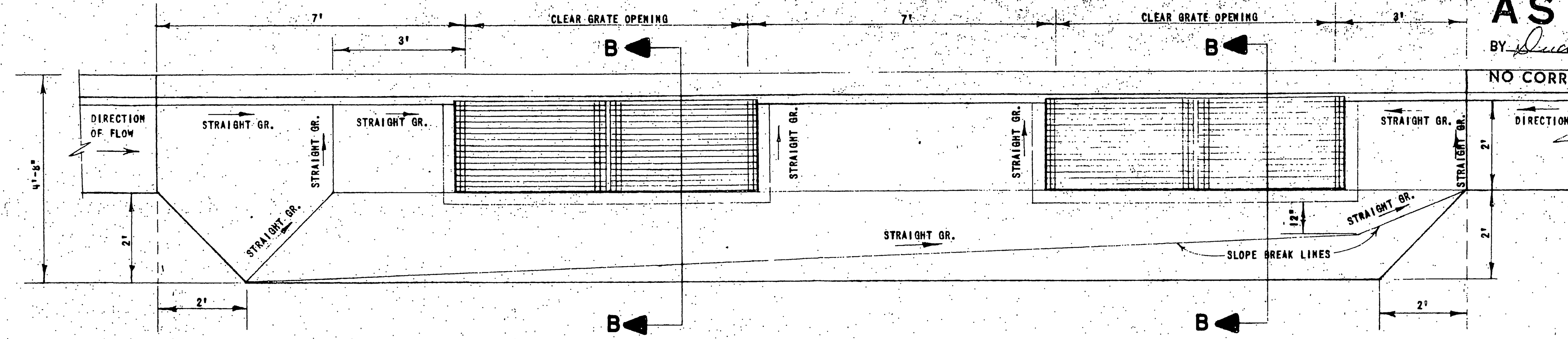
AS BUILT

BY Duane R. Brown

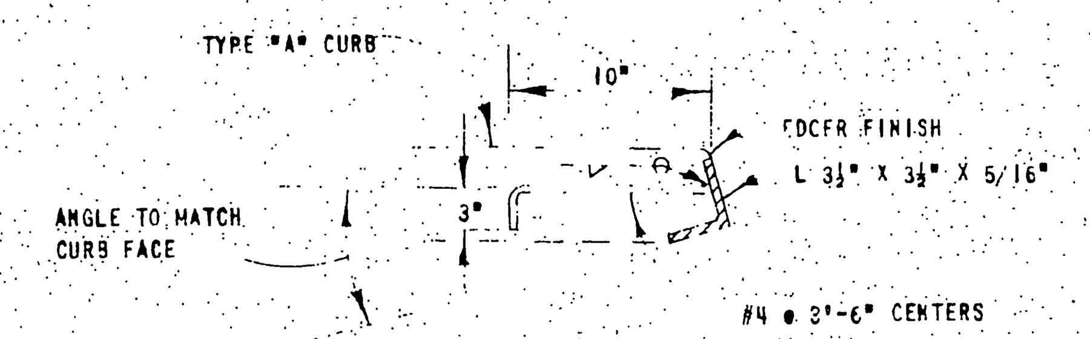
NO CORRECTIONS THIS SHEET



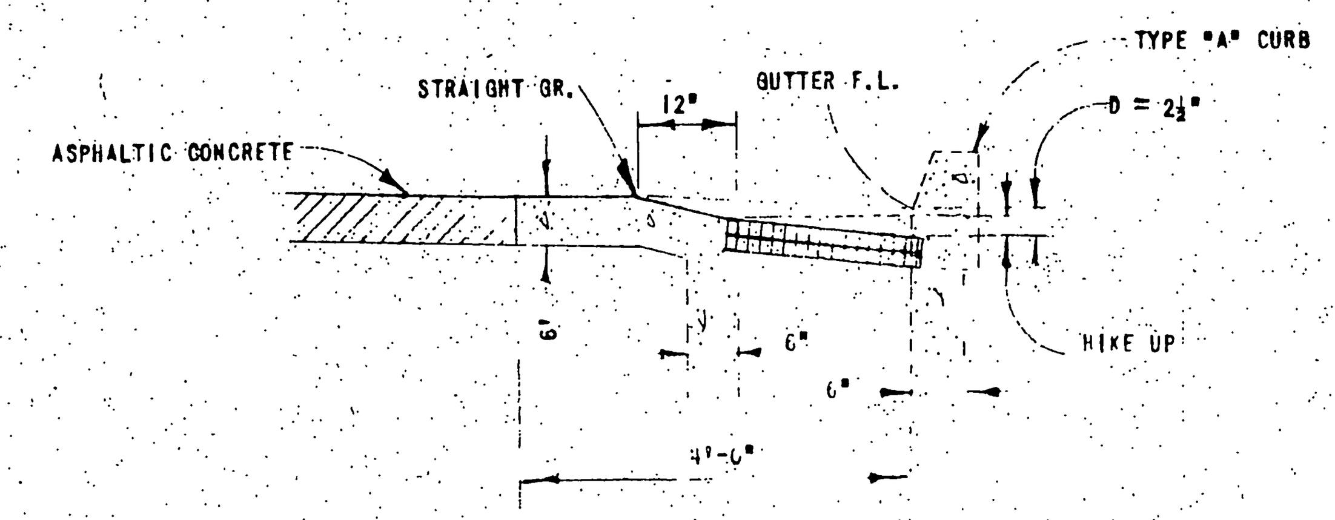
GUTTER DEPRESSION - SINGLE DROP INLET



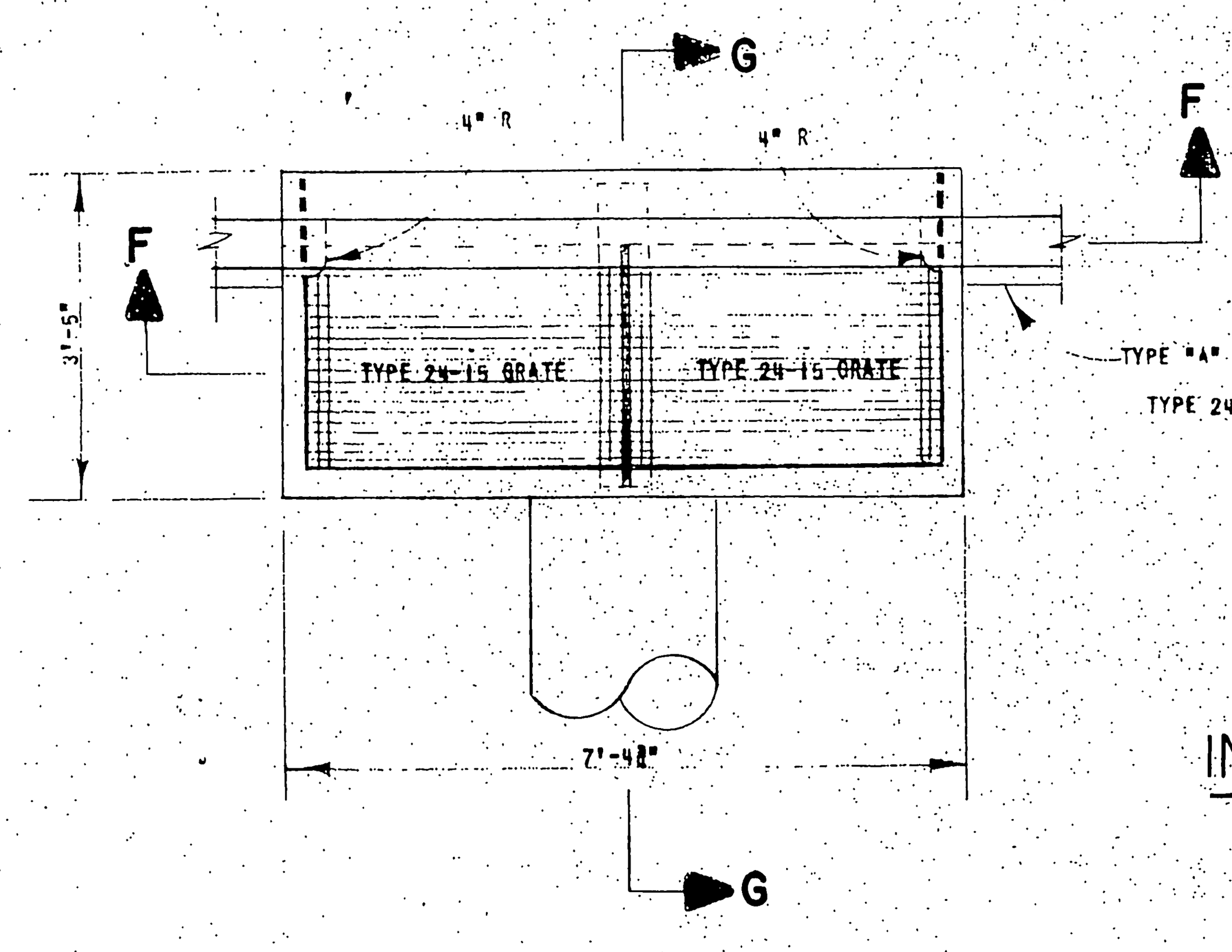
GUTTER DEPRESSION - TWO OR MORE DROP INLETS

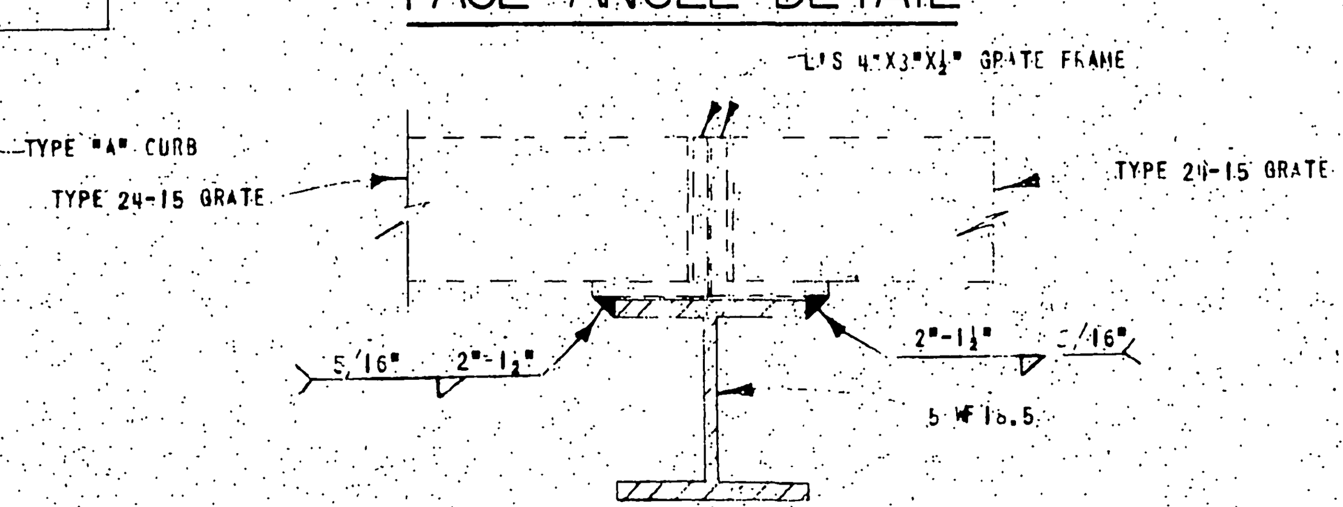


FACE ANGLE DETAIL



SECTION B-B





INTERIOR GRATE SUPPORT DETAIL

GENERAL NOTES

REINFORCING SHALL BE #4 BARS @ 18" ± CENTERS PLACED 1½" CLEAR TO INSIDE OF BOX UNLESS OTHERWISE SHOWN.

STEPS - NONE REQUIRED WHERE H IS 3'-6" OR LESS. INSTALL ONE STEP 16" ABOVE FLOOR WHEN H IS MORE THAN 3'-6" AND LESS THAN 6'-0". WHERE H IS MORE THAN 5'-0" STEPS SHALL BE EVENLY SPACED AT 16" INTERVALS FROM 16" ABOVE FLOOR TO WITHIN 12" OF TOP OF BOX.

PIPE OR PIPES CAN BE PLACED IN ANY WALL.

EXCEPT FOR INLETS USED AS JUNCTION BOXES, BASIN FLOORS SHALL HAVE A MINIMUM SLOPE OF 12:3 FROM ALL DIRECTIONS TOWARD OUTLET PIPE AND SHALL HAVE A WOOD TROWEL FINISH.

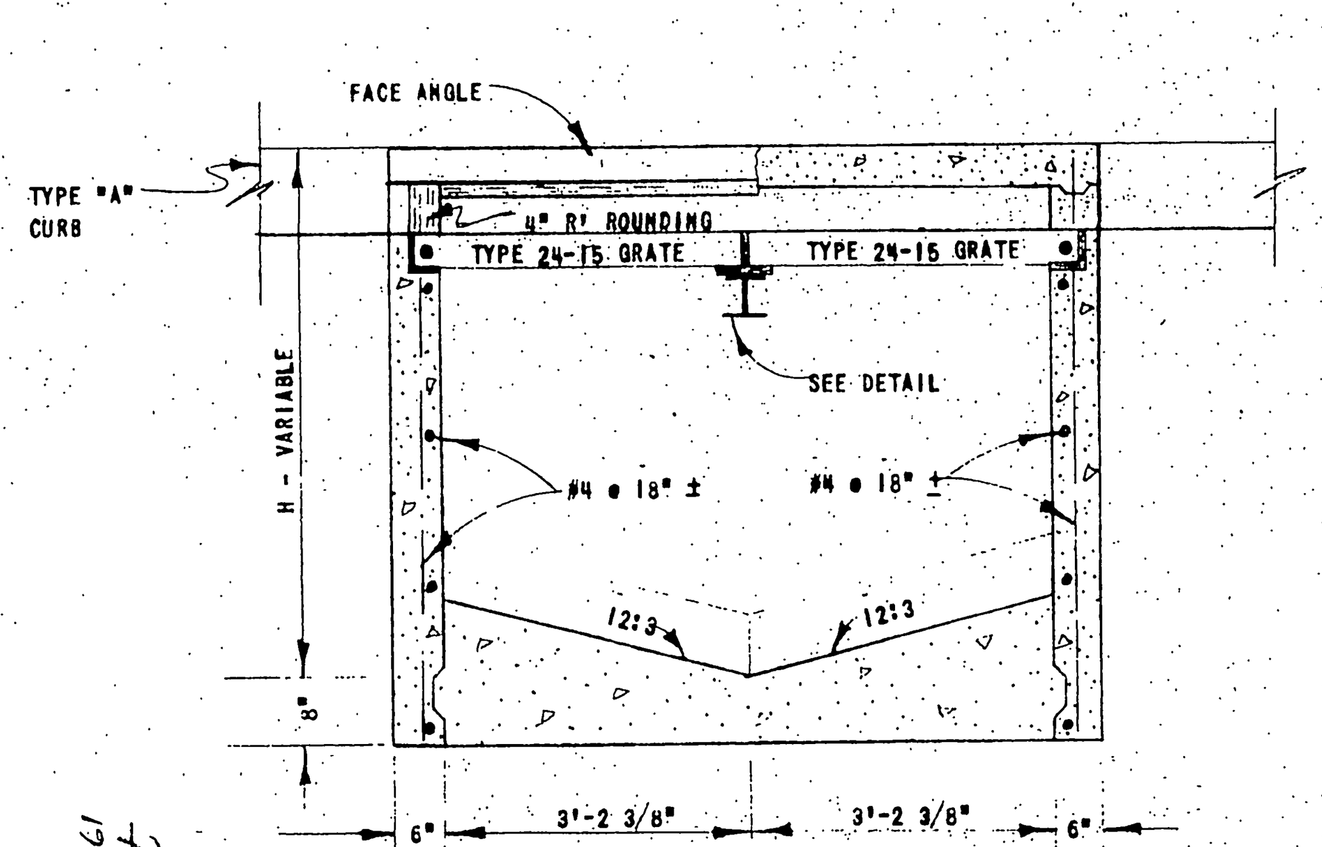
CURB SECTION SHALL MATCH ADJACENT CURB.

ALTERNATIVE REINFORCED FLOOR WHEN DIRECTED BY THE ENGINEER.

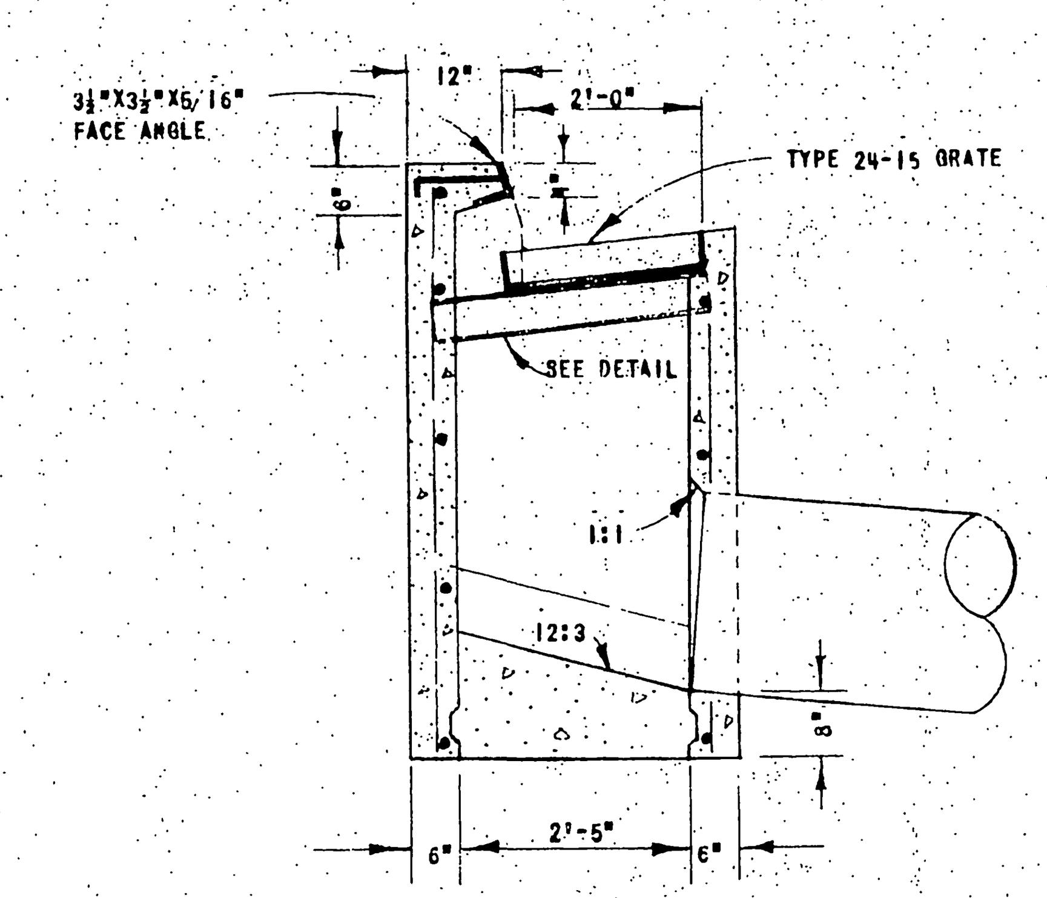
GALVANIZING: SEE STANDARD SPECIFICATIONS OR SPECIAL PROVISIONS.

NO DEDUCTION IN STRUCTURE CONCRETE QUANTITIES WILL BE MADE FOR PIPE WALL THICKNESS.

SEE "STANDARD GRATE DETAILS" D77 FOR GRATE AND FRAME DETAILS.

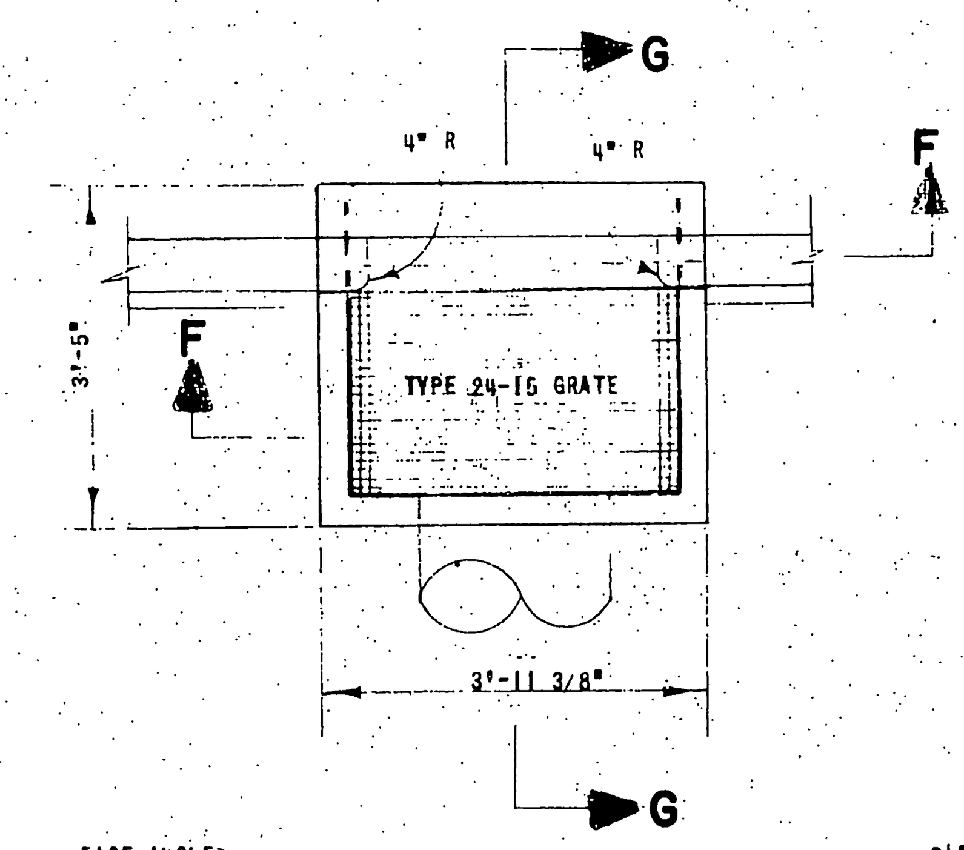


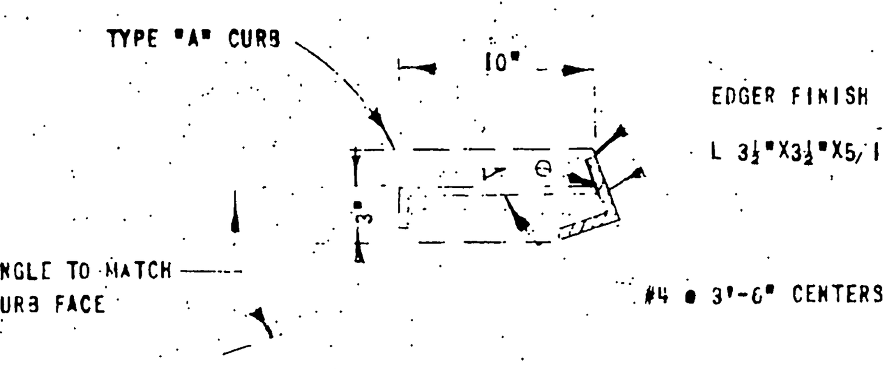
SECTION F-F



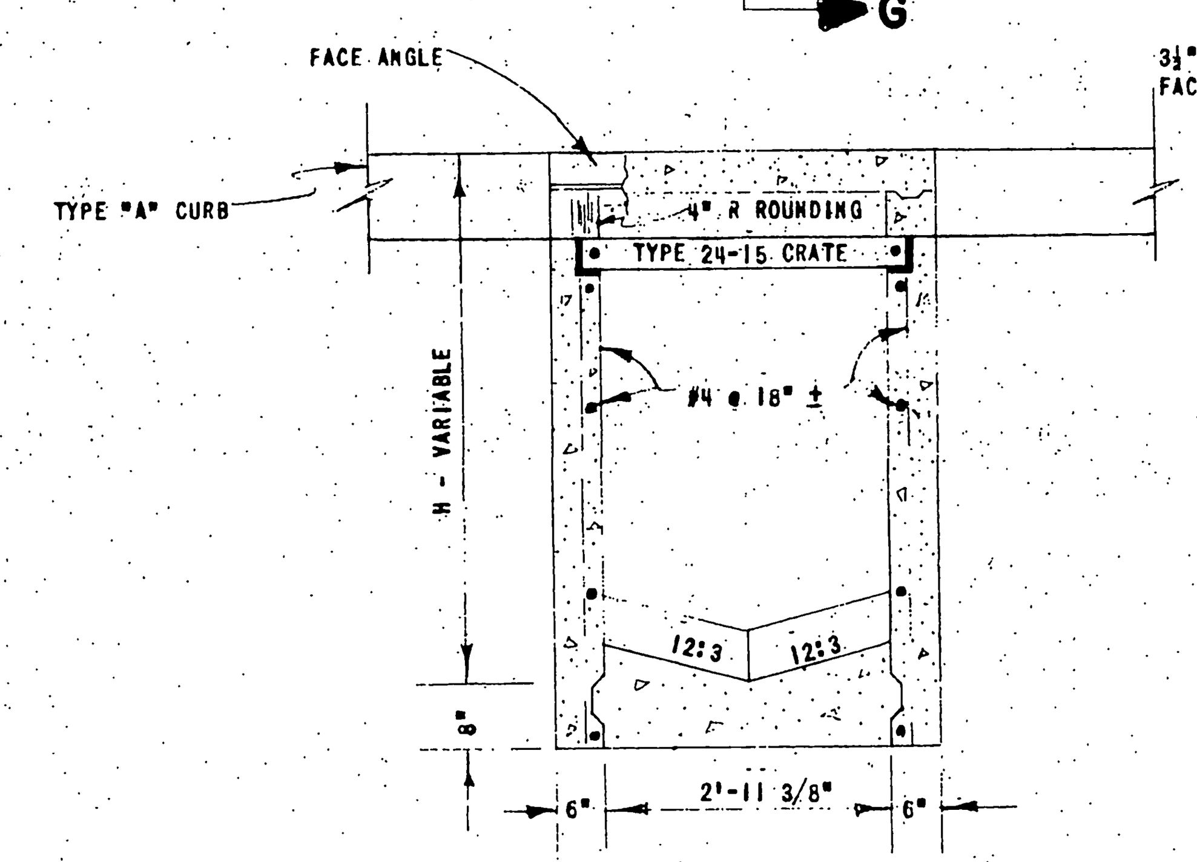
SECTION G-G

DROP INLET TYPE I

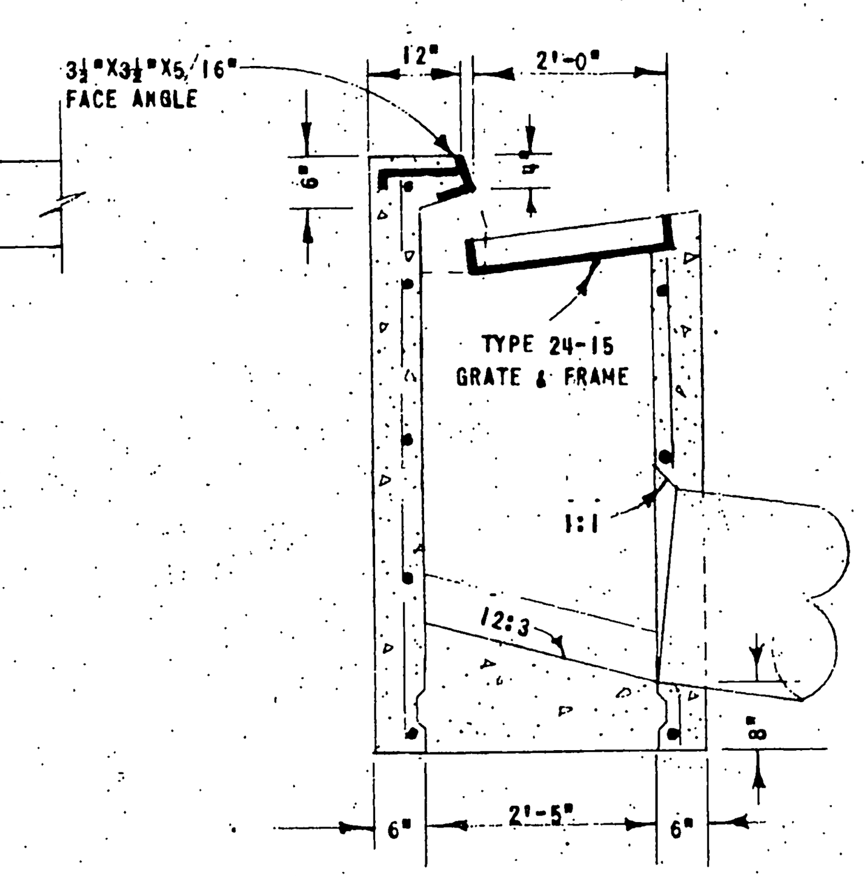




FACE ANGLE DETAIL



SECTION F-F



SECTION G-G

DROP INLET TYPE 2

MINOR DRAINAGE STRUCTURE DETAILS

VIII - RIV - 700

Structural Details
Checked By Gillespie 6-61
Reviewed
Approval Recommended

15

SH. 15
R-897

B.P.R. DIV. NO.	STATE	FEDERAL PROJECT NO.	SHEET NO.	TOTAL SHEETS
7	CALIF	S-700(3)	16	25

DIST	COUNTY	ROUTE	SEC	SHEET NO.	TOTAL SHEETS
VIII	RIV.	700	(3)	16	25

DIST ENG DIST VIII

APPROVED August 28, 1961

ENGINEER OF FEDERAL SECONDARY ROADS

A. C. KEITH COUNTY ROAD COMMISSIONER

AS BUILT

BY Duane R. Brown

NO CORRECTIONS THIS SHEET

STATION	DESCRIPTION	CULVERT DATA: LENGTH	SKEW	MAXIMUM COVER	GAGE OF CMP	APPROX F.L. ELEV. INLET	APPROX F.L. ELEV. OUTLET	APPROX LENGTH OF WING WALLS: IN-LET	OUT-LET	DITCH EXCAVATION C.Y.	PIPE LENGTHS: CORR. METAL PIPE 18"	24"	C.M. PIPE ARCH 29"X18"	36"X22"	43"X27"	50"X31"	R.C.P.	CULVERT MKR'S	STRUCTURE DEPTH "H"	ELBOWS, TEE	STRUCTURE EXC. C.Y.	STRUCTURE BACKFILL C.Y.	CLASS "A" PCC.CY. MINOR STRUC.	BAR REINF STEEL LBS	MISC. IRON AND STEEL LBS	ENTRANCE TAPER	DETAIL SHEET NO.
7+50	32' RIGHT CONST. DI TYPE OS - SEE STD. DETAIL SHEET D72-I																		3'-0"				1.34				
7+50	PLACE 18" CMP OUTLET PIPE FROM DI RIGHT				16	84.77	83.20				12'																
0-12.20 - 16+35.44 DECEL	CONST. DITCH RIGHT, SEE DETAIL									535											1.8	1.3					
16+35.44 DECEL - 7+99.02 LA SIERRA	PLACE 50"x31" CMPA RIGHT				12	61.75	59.37									110'					93.8	58.3					2
7+26 TO 7+99.02 LASIERRA	CONSTR. DITCH LEFT - SEE DETAIL									97																	2
7+18 LA SIERRA	PLACE 50"x31" CMPA DRIVEWAY CULVERT LEFT				12	58.58	58.38									16'					12.8	7.6					
6+00 TO 7+10 LA SIERRA	CONSTR. DITCH LEET - SEE DETAIL									54																	2
27+32.80	32' LEFT CONST. TWO DI TYPE 1 - SEE DETAIL																		3'-6"				4.08		1624		15
27+32.80	32' RIGHT CONST. DI TYPE 2 SEE DETAIL																		4'-0"				1.14		406		15
27+32.80	PLACE 24" CMP LEFT CONN TWO TYPE 1 DIs LEFT				14	33.58	33.48					8'									1.8	1.3					
27+32.00	PLACE 36"x22" CMPA CONN DIs RIGHT AND LEFT				14	33.38	32.98							60'							24.6	15.3					
27+32.80	PLACE 36"x22" CMPA OUTLET PIPE FROM DI RIGHT				14	32.88	32.45							12'							3.9	2.4					
27+32.80	CONST DITCH RIGHT FROM OUTLET PIPE AT 0.50% F/L GRADE									10																	2
27+50	PLACE TWO 36"x22" CMPA CONN F/Ls RIGHT AND LEFT				14	33.04	32.45							176'				2			73.4	45.6					
47+03.35	32' LEFT CONST. DI TYPE 1 - SEE DETAIL																		3'-9"				2.42		812		15
47+06.55 TO 47+52.55	PLACE 24" CMP OUTLET PIPE FROM DI TO 43"x27" CMPA				14	98.29	97.23					46'									15.0	10.3					
47+61	REMOVE & DISPOSE OF EXIST. CULVERT																										
47+80	REMOVE & DISPOSE OF EXIST. CULVERT																										
0+76.87 MITCHELL NLY	23.5' LEFT CONST TYPE L HDWALL - STD DETAIL SHEET A-69							3'0"															1.82				
0+76.87 MITCHELL NLY TO 2+10.00 MITCHELL SLY	PLACE 43"x27" CMPA				12	97.75	94.50								286'						248.5	181.0					
1+50 TO 0+76.87 MITCHELL NLY	CONST LEAD DITCH FROM EXIST DRAINAGE F/L TO "L" HDWALL									58																	
2+09 TO 3+00 MITCH. SLY	CONST LEAD DITCH FROM END 43"x27" CMPA TO EXIST DRAIN F/L									35																	
48+15	REMOVE & DISPOSE OF EXIST CULVERT																										
52+06.47	32' LEFT CONST DI TYPE 1 - SEE DETAIL																		3'-0"				1.92		812		15
52+06.47	32' RIGHT CONST DI TYPE 2 - SEE DETAIL																		4'-0"				1.20		406		15
52+06.47	PLACE 29"x18" CMPA CONN DIs RIGHT AND LEFT				14	94.60	93.70							60'							23.3	17.4					
52+06.47	PLACE 29"x18" CMPA OUTLET PIPE FROM DI RIGHT			16°	14	93.60	92.89							46'							29.2	24.5					
52+06.47	CONST. LEAD DITCH 325' SLY FROM END OF OUTLET PIPE									187																	
55+53.12	32' LEFT - CONST D.I. TYPE 1 - SEE DETAIL																		4'-0"				1.56		812		15
55+53.12	PLACE 29" X 18" CMPA OUTLET PIPE FROM D.I. LEFT			SEE DETAIL	14	96.75	95.75							202'							98.9	78.1					
55+53.12	CONST LEAD DITCH 80' SLY FROM END OF OUTLET PIPE									10																	
0+46.27 NORWOOD NLY	18' LEFT - CONST D.I. TYPE 2 - SEE DETAIL																		3'-6"				1.15		406		15
0+44.80 NORWOOD NLY TO 2+00 NORWOOD SLY	PLACE 18" CMP OUTLET PIPE FROM D.I. LEFT				16	07.12	05.50					246'									72.4	56.4					
2+00 TO 2+50 NORWOOD SLY	CONST LEAD DITCH 50' SLY FROM END OF OUTLET PIPE									3																	
TOTALS										989	258	54		308	248	286	126	2			699.4	499.5	16.63		5278		

VIII - RIV - 700

SUMMARY OF DRAINAGE STRUCTURES

SH. 16
R-897

16

D.P.R. DIV. No.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
7	CALIF.	S-700(3)		17	25

To accompany plans dated August 28, 1961

DISTRICT	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
VIII	Riv	700	(3)	17	25

Approval Recommended

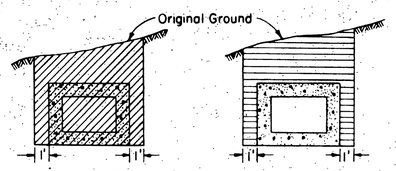
Assistant State Highway Engineer – Bridges

Assistant State Highway Engineer – Operations

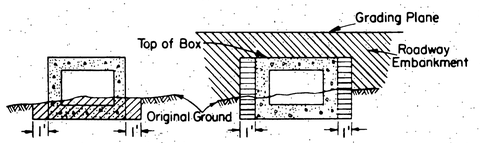
Approved June 30, 1960

State Highway Engineer
Civil Engineer License No. 5945

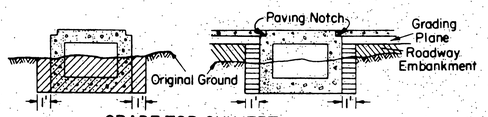
EXCAVATION BACKFILL



CULVERT IN TRENCH

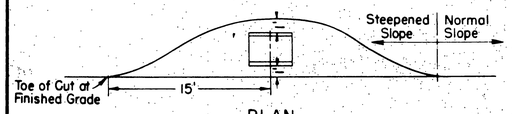


CULVERT IN EMBANKMENT



GRADE TOP CULVERT

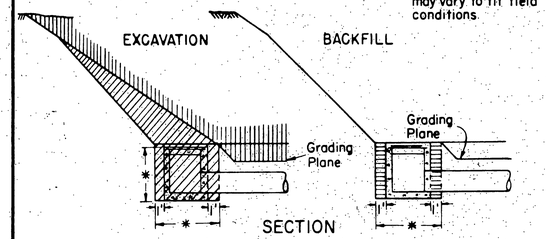
BOX CULVERTS



PLAN

NOTE: Slopes and dimensions may vary to fit field conditions.

EXCAVATION BACKFILL

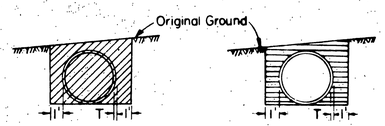


SECTION

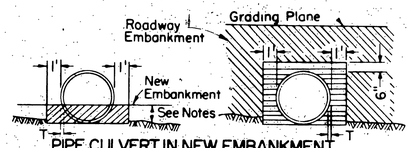
RECESSES AT CULVERT INLETS

* When concrete is being paid for as Class A Concrete (Minor Structure) the cost of Excavation and Backfill is included in the price paid for Class A Concrete (Minor Structure.)

EXCAVATION BACKFILL



PIPE CULVERT IN TRENCH



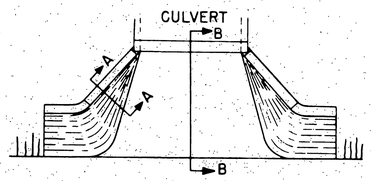
PIPE CULVERT IN NEW EMBANKMENT

Height of Top of Embankment Before Excavating for Pipe Shall Be As Follows

For pipe 24" dia. or less: 6" above top of pipe, or 30" max.
For C.M.P. over 24" to 90" dia.: 30" above bottom of pipe.
For C.M.P. over 90" dia.: 1/3 point of dia. above bottom of pipe.
For R.C.P. over 24" dia.: 30" above bottom of pipe.
For field assembled plate culvert: 1/3 point of dia. above bottom of pipe. Structure Backfill 6" above top of pipe.
For payment quantities excavation and backfill concrete pipe T = min. wall thickness as shown in A.A.S.H.O. M170 for Class III Pipe, Wall A
For C.M.P. T = 0.00

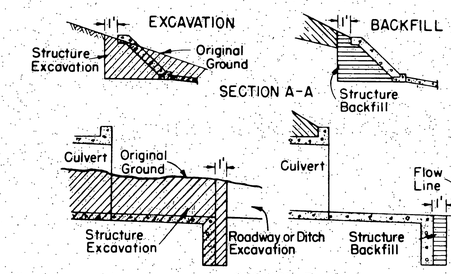
PIPE CULVERTS, RODS & DEADMEN

Except Underdrains & Overside Drains



PLAN OF WARPED WINGWALL

EXCAVATION BACKFILL

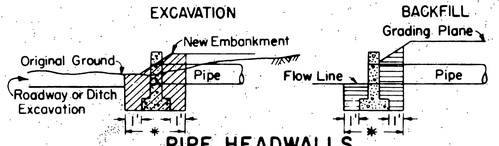


SECTION A-A

SECTION B-B

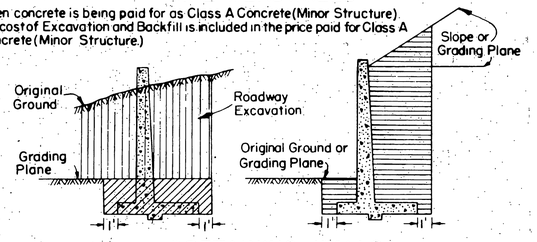
WARPED WING WALLS

EXCAVATION BACKFILL



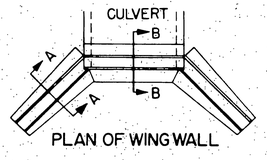
PIPE HEADWALLS

* When concrete is being paid for as Class A Concrete (Minor Structure) the cost of Excavation and Backfill is included in the price paid for Class A Concrete (Minor Structure.)



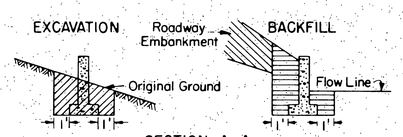
RETAINING WALLS

Note: If no roadway excavation is involved at the wall Structure excavation will be measured from the original ground.

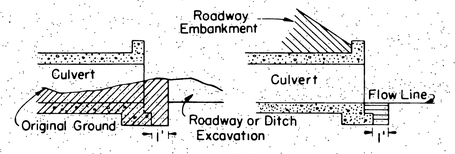


PLAN OF WING WALL

EXCAVATION BACKFILL

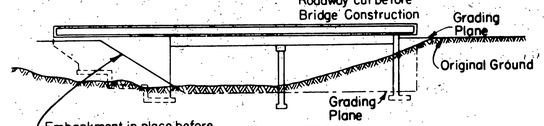


SECTION A-A

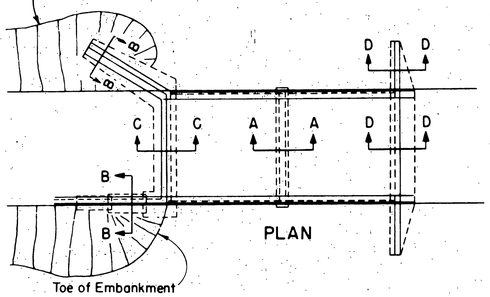


SECTION B-B

WING WALLS

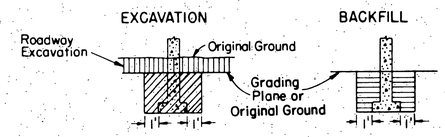


ELEVATION



PLAN

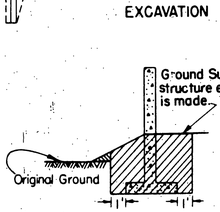
EXCAVATION BACKFILL

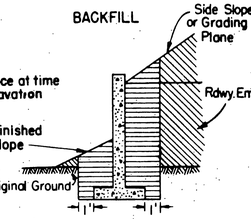


SECTION A-A

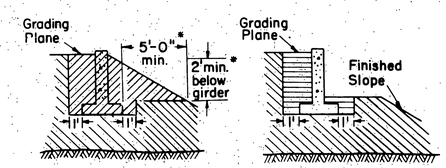
When bridge piers are in water course, quality and compaction requirements for backfill will be waived and full compensation for backfilling the excavation will be considered as included in the price paid for structure excavation.

EXCAVATION BACKFILL





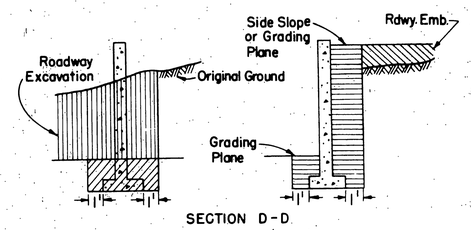
SECTION B-B



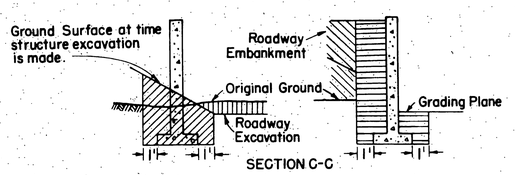
* or as shown on details

SECTION C-C

ABUTMENT IN EMBANKMENT



SECTION D-D

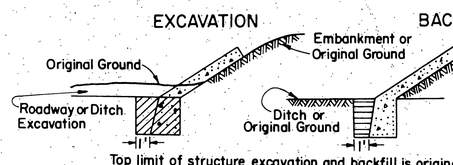


SECTION C-C

ABUTMENT IN ORIGINAL GROUND

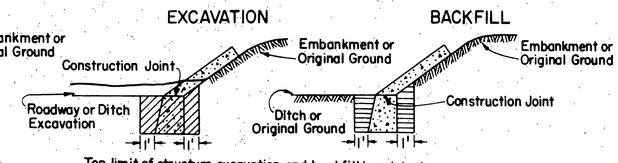
NOTE: If no roadway excavation is involved at bridge Structure excavation will be measured from the original ground.

BRIDGE PIERS, ABUTMENTS & ADJOINING WING WALLS



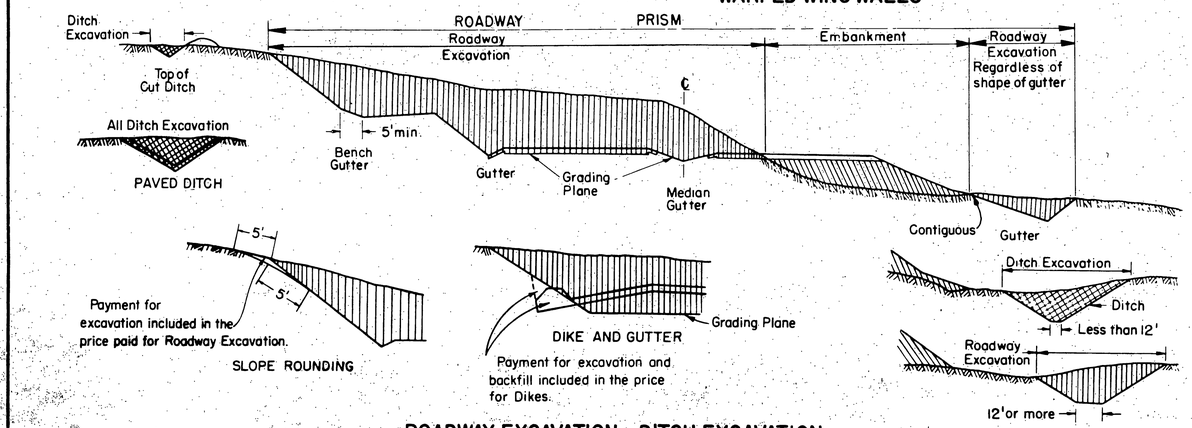
Top limit of structure excavation and backfill is original ground if ditch is not excavated.

MONOLITHIC CONCRETE SLOPE PROTECTION



Top limit of structure excavation and backfill is original ground if ditch is not excavated.

CONCRETE SLOPE PROTECTION



ROADWAY EXCAVATION – DITCH EXCAVATION

LEGEND

- Structure Excavation
- Structure Backfill
- Ditch Excavation
- Roadway Excavation
- Roadway Embankment
- Original Ground

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

SH. 17

EXCAVATION AND BACKFILL A62-3

R-897

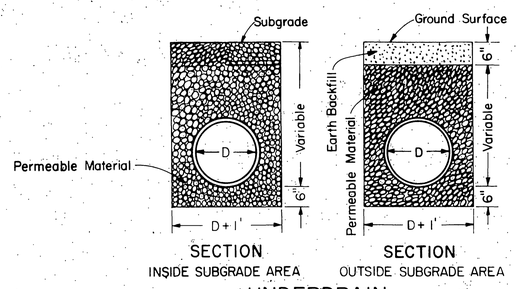
17

PRA DIV. NO.	STATE	FEDERAL PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	CALIF.	S-700(3)		18	25

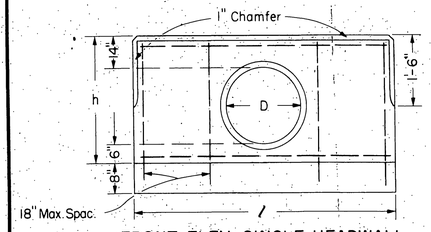
To Accompany Plans Dated August 28, 1961

DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
VIII	Riv.	100	(3)	18	25

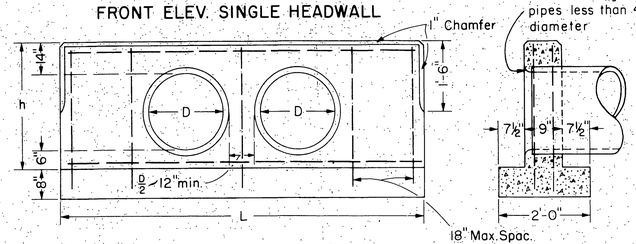
APPROVAL RECOMMENDED
ENGINEER OF DESIGN
APPROVED July 10, 1957
STATE HIGHWAY ENGINEER
CIVIL ENGINEER LICENSE NO. 2084



UNDERDRAIN

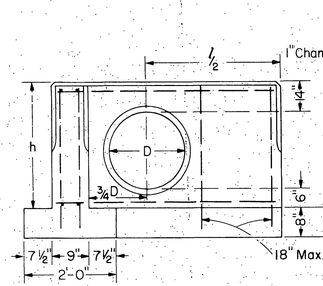


FRONT ELEV. SINGLE HEADWALL

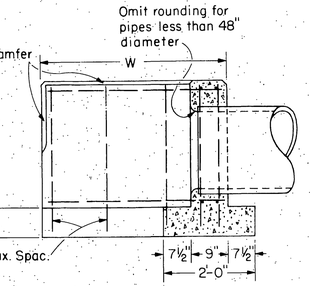


FRONT ELEV. DOUBLE HEADWALL

SECTION, SINGLE & DOUBLE HEADWALLS



FRONT ELEV. "L" HEADWALL



SECTION "L" HEADWALL

D in.	h ft.-in.	Single l ft.-in.	Single Vert. bars	Single Steel lbs.	Single Conc. C.Y.	Double L ft.-in.	Double Vert. bars	Double Steel lbs.	Double Conc. C.Y.
12	2-8	5-0	8	28	0.60	7-0	10	38	0.82
15	2-11	6-0	12	41	0.75	8-6	14	52	1.04
18	3-2	7-0	12	46	0.91	9-6	14	57	1.21
21	3-5	7-6	12	49	1.02	10-6	14	62	1.38
24	3-8	8-6	12	54	1.20	11-6	14	67	1.57
27	3-11	9-6	16	70	1.39	13-0	18	85	1.84
30	4-2	10-0	16	74	1.52	14-0	18	91	2.04
33	4-5	11-0	16	79	1.73	15-0	18	96	2.25
36	4-8	12-0	16	85	1.95	16-6	18	103	2.56
39	4-11	12-6	16	89	2.09	17-6	20	116	2.79
42	5-2	13-6	16	94	2.34	18-6	20	122	3.03
45	5-5	14-6	20	115	2.60	20-0	26	153	3.38
48	5-8	15-0	20	119	2.75	21-0	26	160	3.64
51	5-11	16-0	20	125	3.03	22-6	26	168	4.02
54	6-2	17-0	20	131	3.31	23-6	26	175	4.30

Use headwall tables for concrete pipe and for C.M.P.
No deduction made in quantities for variations in thickness of pipe walls.
All reinforcing steel #4 bars.

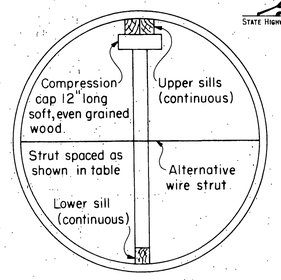
STRAIGHT HEADWALLS

D in.	h ft.-in.	l/2 ft.-in.	Length of W 2'-0" to 3'-4"	3'-5" to 4'-10"	4'-11" to 6'-4"	6'-5" to 7'-10"	7'-11" to 9'-4"	Conc. C.Y.
			Number of Vertical Bars 6	8	10	12	14	
			Steel lbs.					
12	2-8	2-6	28+3W	32+3W				0.38+0.12W
15	2-11	3-0	36+3W	41+3W				0.48+0.13W
18	3-2	3-6	40+3W	45+3W				0.59+0.14W
21	3-5	3-9	43+3W	48+3W				0.66+0.14W
24	3-8	4-3	47+3W	52+3W	58+3W			0.78+0.15W
27	3-11	4-9	57+3W	62+3W	68+3W			0.91+0.16W
30	4-2	5-0	60+3W	66+3W	73+3W	78+3W		1.00+0.17W
33	4-5	5-6	64+3W	71+3W	77+3W	83+3W		1.13+0.17W
36	4-8	6-0	68+3W	75+3W	82+3W	88+3W	95+3W	1.28+0.18W
39	4-11	6-3		79+3W	86+3W	93+3W	100+3W	1.39+0.19W
42	5-2	6-9		83+3W	91+3W	98+3W	106+3W	1.54+0.19W
45	5-5	7-3			103+3W	111+3W	119+3W	1.71+0.20W
48	5-8	7-6			108+3W	116+3W	124+3W	1.82+0.21W
51	5-11	8-0				121+3W	130+3W	2.00+0.21W
54	6-2	8-6				127+3W	136+3W	2.18+0.22W

"L" HEADWALLS

PIPE CULVERT HEADWALLS

Note: Compression caps and sills to be same dimension timber as struts. Timber for struts and sills shall be Douglas Fir common.



STRUT DETAILS

SPACING IN FEET OF TIMBER STRUTS FOR CORR. METAL AND FIELD ASSEMBLED PLATE PIPE

PIPE DIA.	STRUT SIZE	HEIGHT OF FILL IN FEET 0-20	30	40	50	60	70	80	100
48"	4"x4"		5.0	3.5					
	4 x 6		6.0	5.0	4.0	3.5	3.0		
	6 x 6				6.0	5.0	4.5	4.0	3.5
	6 x 8							6.0	5.0
60	4 x 4	6.0	4.0	3.0					
	4 x 6		6.0	4.5	3.5	3.0			
	6 x 6				5.5	4.5	4.0	3.5	3.0
	6 x 8						5.5	4.5	4.0
72	4 x 4	5.0	3.0						
	4 x 6	6.0	5.0	3.5	3.0				
	6 x 6			6.0	4.5	4.0	3.5	3.0	3.0
	6 x 8					5.0	4.5	4.0	3.5
84	6 x 6	6.0	6.0	5.0	4.0	3.5	3.0		
	6 x 8				5.0	4.5	4.0	3.5	3.0
	8 x 8							4.5	3.5
96	6 x 6	6.0	5.5	4.5	3.5	3.0			
	6 x 8			5.5	4.5	4.0	3.5	3.0	
	8 x 8						4.5	4.0	3.0
108	6 x 6	6.0	5.0	3.5	3.0				
	6 x 8		6.0	5.0	4.0	3.5	3.0		
	8 x 8					4.5	4.0	3.5	
120	6 x 6	6.0	4.0	3.0					
	6 x 8	6.0	5.5	4.0	3.5	3.0			
	8 x 8				5.0	4.0	3.5	3.0	
132	6 x 6	5.0	3.5						
	6 x 8	6.0	4.5	3.5	3.0				
	8 x 8			5.5	4.5	4.0	3.5	3.0	
144	6 x 6	4.5	3.0						
	6 x 8	5.5	4.0	3.0					
	8 x 8			5.0	4.0	3.5	3.0		
156	6 x 8	4.5	3.0						
	8 x 8		6.0	4.5	3.5	3.0			
168	6 x 8	3.5							
	8 x 8	6.0	5.0	4.0	3.0				
180	6 x 8	3.0							
	8 x 8	6.0	4.5	3.5					

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

PIPE CULVERTS AND HEADWALLS

Revised 4-26-61 Permeable Material was Filter Material
Rev. 1-17-61 Underdrain Dia
Rev. 11-22-57 Round to inside of pipe

A-69

SN-18
R-897

18

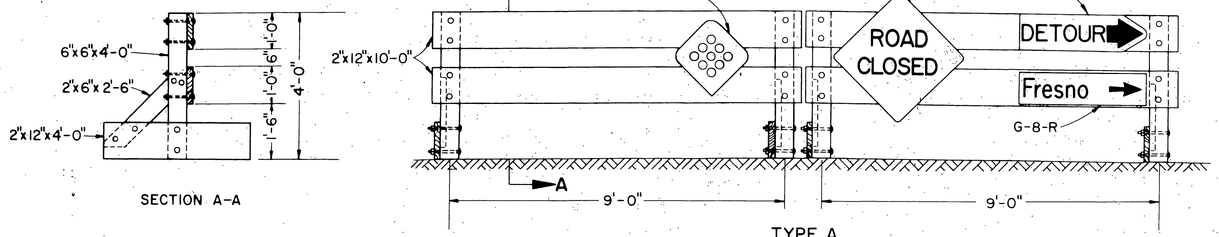
DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
VIII	RIV	100	(3)	19	25

To accompany plans dated August 28, 1961

Approval Recommended
Engineer of Design

Approved January 26, 1959

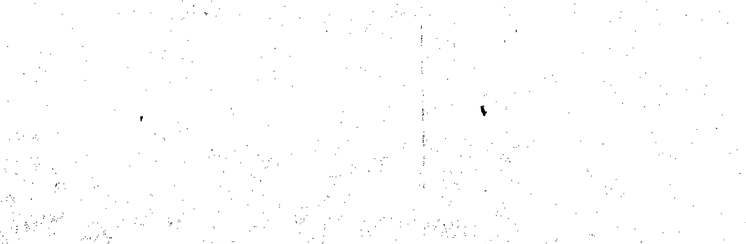
State Highway Engineer Civil Engr. License No. 2084



SECTION A-A

TYPE A
TIMBER BARRICADES
10' SECTIONS
SCALE 1" = 2'

NOTE: Signs to be furnished by State.
All timber to be S4S.
Use 1/2" Carriage Bolts with cut washers and nuts.

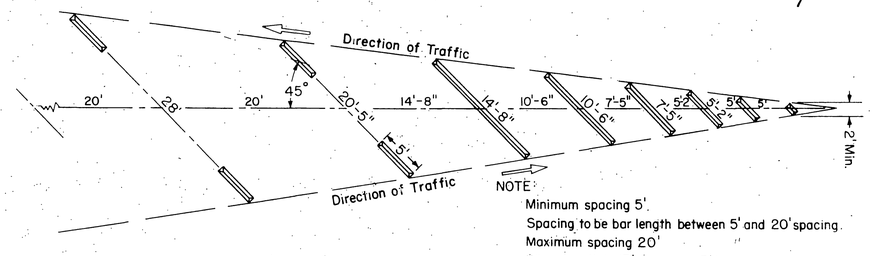


SECTION A-A

TYPE B
TIMBER BARRICADE
8' SECTION
SCALE 1" = 2'

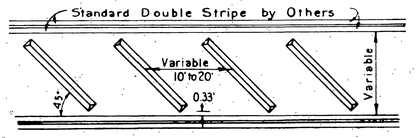
PUBLIC ROAD INTERSECTION

PRIVATE ROAD INTERSECTION

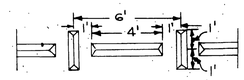


NOTE:
Minimum spacing 5'.
Spacing to be bar length between 5' and 20' spacing.
Maximum spacing 20'
When length is 15' or more a 5' bar shall be used at each end

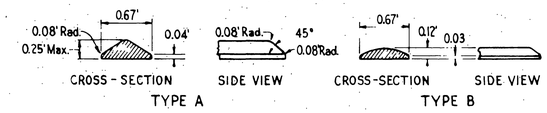
TRANSITION 2 TO 4 LANE



DIAGONAL RAISED BARS



T-TRAFFIC BARS



RAISED TRAFFIC BARS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

SH. 19
R-897

TIMBER BARRICADES
AND RAISED TRAFFIC BARS
A73 REV.

DIST.	STATE	FEDERAL PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	CALIF	S-700(3)		20	25

To accompany plans dated August 28, 1961

DISTRICT	COUNTY	ROUTE	SECTION	POST MILE	TOTAL SHEETS
VIII	Riv.	700	(3)	20	25

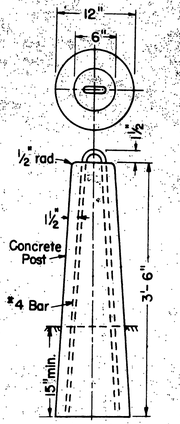
APPROVAL RECOMMENDED

H. I. Hahn
ENGINEER OF DESIGN
CIVIL ENGINEER LICENSE NO. 7603

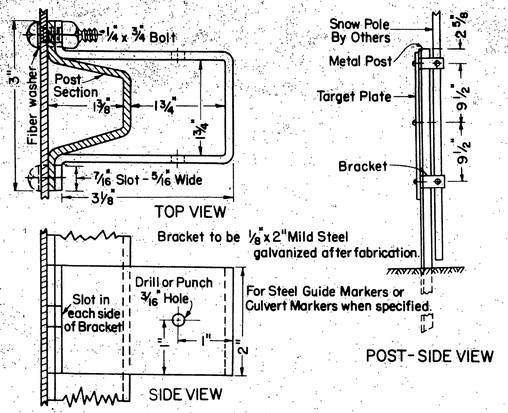
TRAFFIC ENGINEER — CIVIL ENGINEER LICENSE NO. 5429

APPROVED October 21, 1960

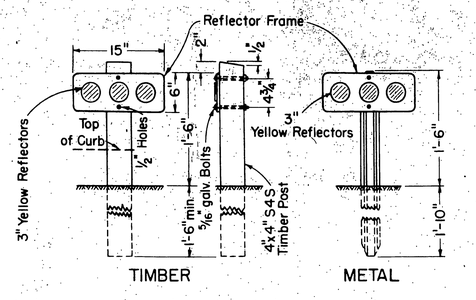
STATE HIGHWAY ENGINEER
CIVIL ENGINEER LICENSE NO. 5945



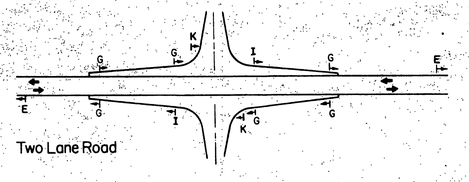
BARRIER POST



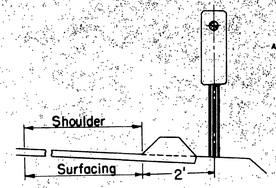
SNOW POLE BRACKET



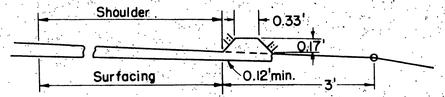
HORIZONTAL REFLECTOR MARKERS W6IR



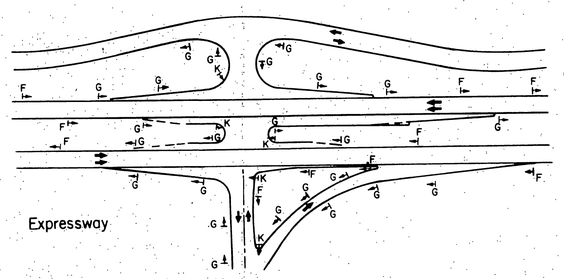
DELINEATION OF ROAD INTERSECTIONS



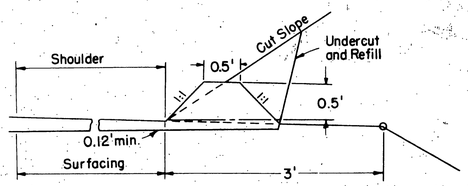
GUIDE MARKER AT DIKE



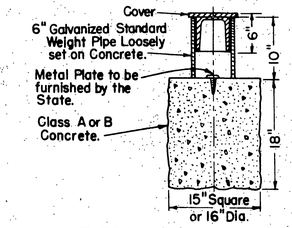
0.17' DIKE



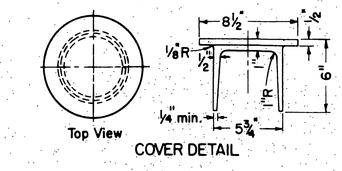
DELINEATION OF TRAFFIC ISLANDS



0.5' DIKE

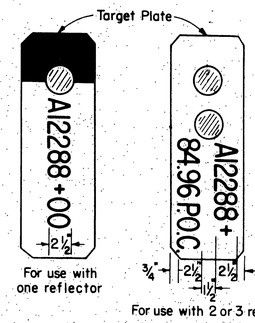


TYPE B

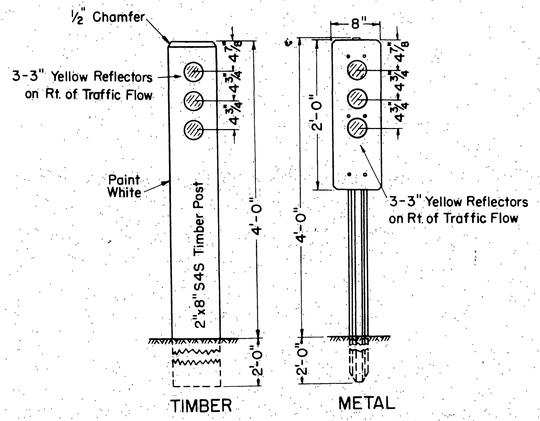


Top View

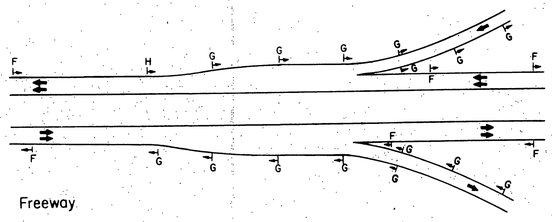
COVER DETAIL



STANDARD STENCILING FOR REFLECTORIZED CULVERT MARKERS



CLEARANCE MARKERS

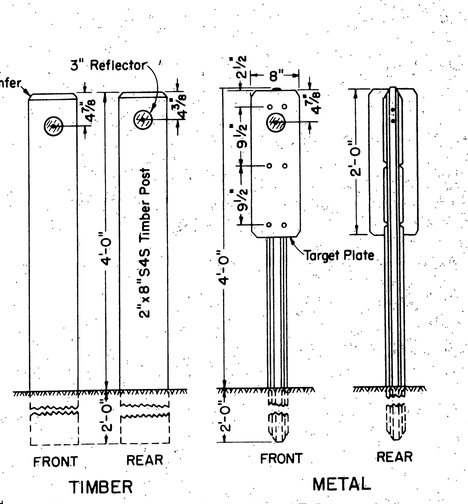


Single 3" Clear Reflectors continuously on right of through roadways and on outside of curves. 200' spacings on tangent sections and standard spacing on curves as directed by the Engineer. – Type F

Double 3" Yellow Reflectors on right of acceleration and deceleration lanes and tangent ramp sections at 100' spacings and on outside of ramp curves at standard spacing as directed by the Engineer. – Type G

Triple 3" Yellow Reflectors at end of acceleration lane – Type H

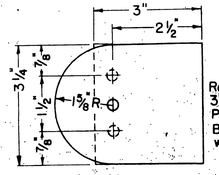
DELINEATION OF RAMPS



GUIDE MARKERS

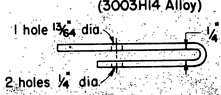
Use type specified or as shown on plan summary

GUIDE MARKERS			
Type	REFLECTORS Color	Front	Back
A		None	None
E	Clear	1-3"	1-3"
F	Clear	1-3"	None
G	Yellow	2-3"	None
H	Yellow	3-3"	None
I	Yellow	2-3"	1-3"
Horizontal Reflector Markers W6IR			
K	Yellow	3-3"	None
Clearance Markers			
L	Yellow	3-3"	None

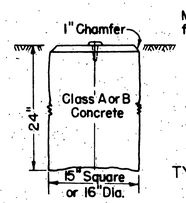


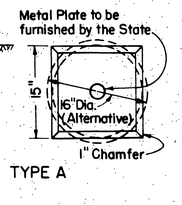
Reflector bracket used to mount 3" reflector to back of Guide Marker Post on curves.
Brackets and reflectors to be attached with 3/16" blind aluminum rivets.

Material – Aluminum 0.125" thick (3003H14 Alloy)



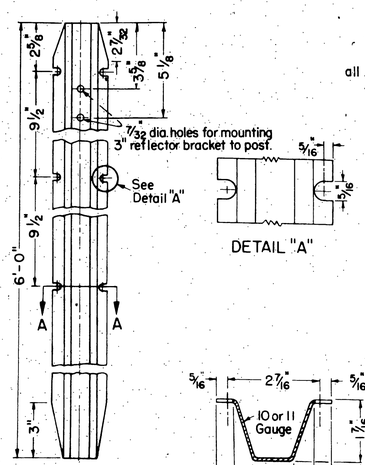
REFLECTOR BRACKET

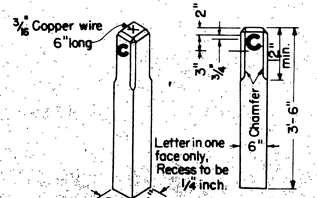




TYPE A

SURVEY MONUMENTS

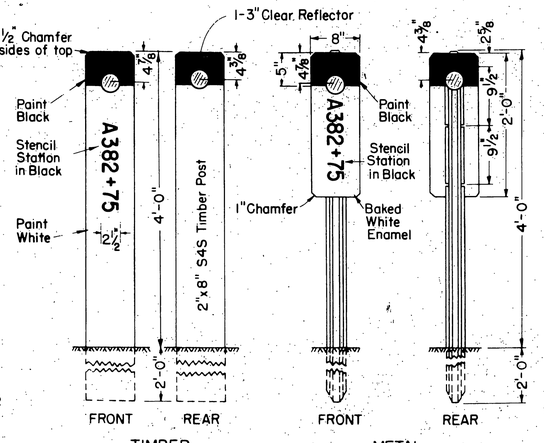




R/W AND ACCESS OPENING MONUMENTS

SECTION A-A

METAL MARKER POST



CULVERT MARKERS

To be reflectorized when specified or as shown on culvert list.

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

DIKES AND MARKERS

SH. 20
R. 897
A74-3

20

DIV. NO.	STATE	PROJECT NO.	YEAR	SHEET NO.	SHEETS
7	CALIF.	S-700(3)		21	25

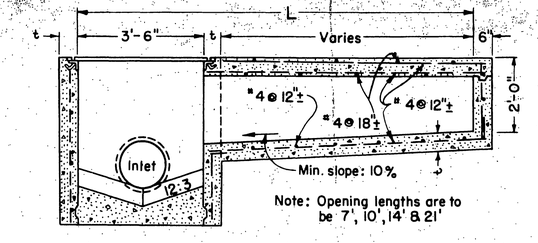
To accompany plans dated August 28, 1961

DISTRICT	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
VIII	Riv	700	(3)	21	25

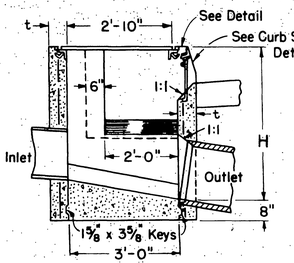
G. Langner
ENGINEER OF DESIGN
CIVIL ENGINEER LICENSE NO. 5630

APPROVED July 1, 1960

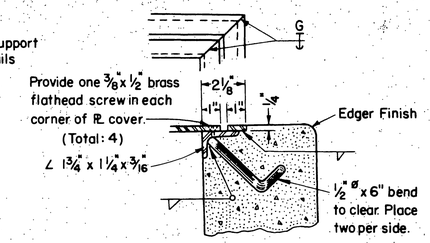
STATE HIGHWAY ENGINEER
CIVIL ENGINEER LICENSE NO. 5945



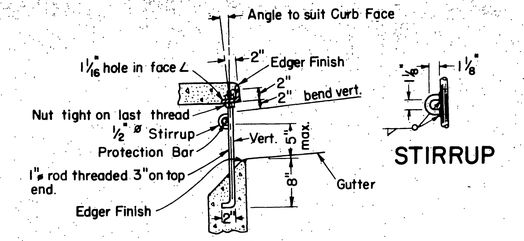
SECTION A-A



SECTION B-B

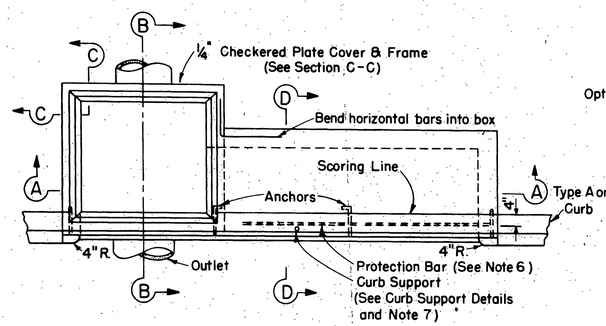


SECTION C-C

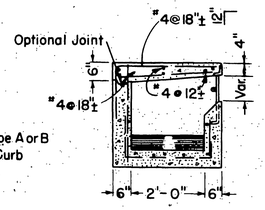


CURB SUPPORT DETAILS

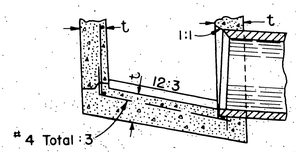
STIRRUP



PLAN



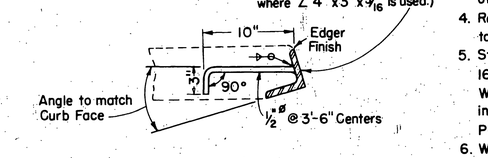
SECTION D-D



ALTERNATIVE REINFORCED BOTTOM
(See Note 11)

INLET TYPE OL

H	t
8'-0" or Less	6"
8'-1" to 20'-0"	8"

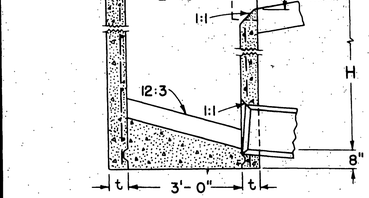


FACE ANGLE ANCHOR DETAIL

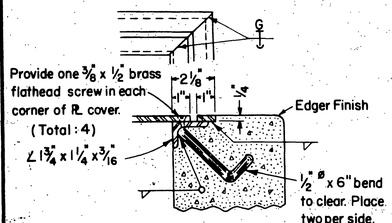
Length of Curb Opening	No. of Anchors
3'-6" or less	2
7'-0"	3
10'-0"	4
14'-0"	5
21'-0"	7

GENERAL NOTES

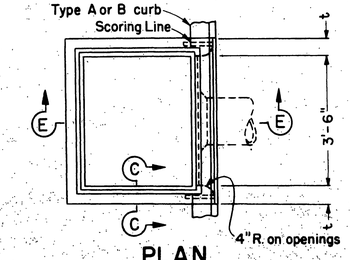
1. "H" Depth for all boxes is 3'-6" unless otherwise specified.
2. For "t" wall thickness see Table.
3. Height of curb opening will vary with the type of curb and the depth of the local depression.
4. Reinforcing steel shall be #4 bars @ 18"± centers placed 1½" clear to inside of box unless otherwise shown.
5. Steps - None required where "H" is 3'-6" or less. Install one step 16" above floor when "H" is more than 3'-6" and less than 5'-0". Where "H" is more than 5'-0", steps shall be evenly spaced @ 16" intervals from 16" above floor to within 12" of the top of the box. Place steps in wall without pipe openings.
6. When curb openings are 7" high or more. Place a ¾" protection bar horizontally across the entire length of the opening and bend back 4" into the inlet wall on each side.
7. Curb openings longer than 7' shall have one curb support for each 7' increment or fraction thereof, evenly spaced.
8. Pipe(s) can be placed in any wall.
9. Curb section shall match adjacent curb.
10. Except for inlets used as junction boxes, basin floors shall have a minimum slope of 12:3 from all directions toward outlet pipe and shall have a wood trowel finish.
11. Galvanizing: See Standard Specifications or Special Provisions.
12. No deduction in structure concrete quantities will be made for pipe wall thickness.
13. See "Standard Grate Details" D77 for Grate and Frame details.
14. See for Depression Details.



SECTION E-E

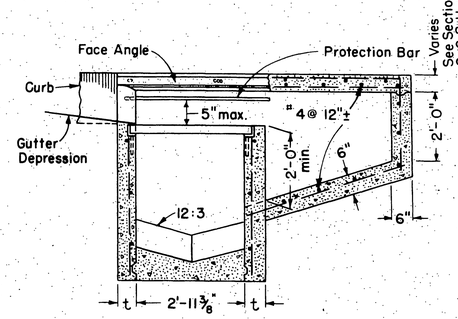


SECTION C-C

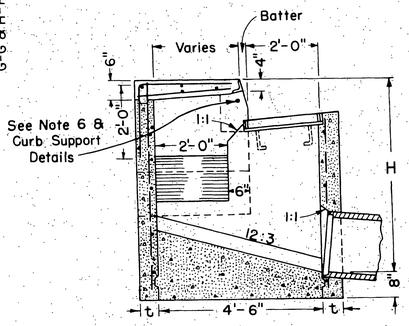


PLAN

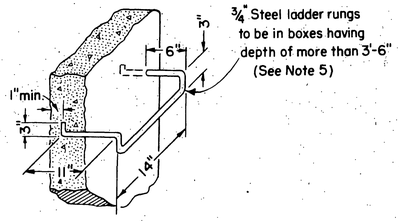
INLET TYPE OS



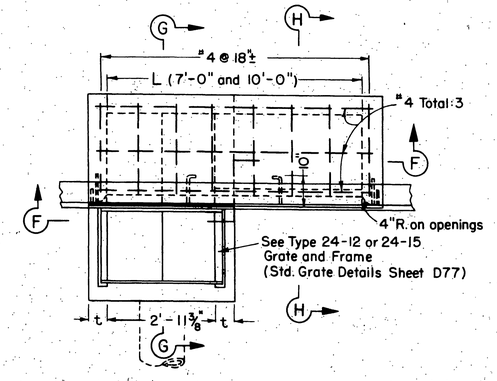
SECTION F-F



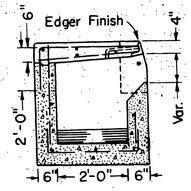
SECTION G-G



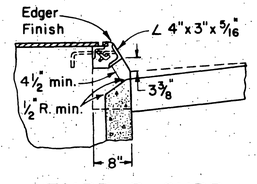
STEP DETAIL



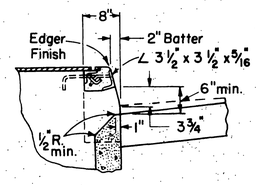
PLAN



SECTION H-H



TYPE B CURB



TYPE A CURB

CURB OPENING DETAILS

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

SH. 21
R-897

STANDARD STORM DRAIN INLETS D72-1

INLET TYPE GOL

REVISED 4-27-61

21

B.P.R. DIV No.	STATE	FEDERAL PROJECT No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
7	CALIF.	700 (3)		22	25

To accompany plans dated August 28, 1961

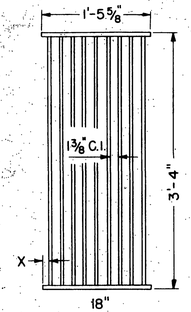
DISTRICT	COUNTY	ROUTE	SECTION	SHEET No.	TOTAL SHEETS
VIII	R,V	700	(3)	22	25

APPROVAL RECOMMENDED

W. L. Warren
Engineer of Design
Civil Engineer License No. 7603

Approved February 9, 1961

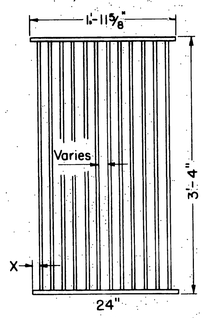
State Highway Engineer
Civil Engineer License No. 5945



TYPE 18-9

1⅜" Clear Spacing

Use within the roadbed on highways where bicycles and pedestrians are excluded. – or for rural conditions.



TYPE 24-15

1" Clear Spacing

Use within the roadbed under urban conditions where bicycles and pedestrians are permitted.

TYPE 24-12

1⅜" Clear Spacing

Use within the roadbed on highways where bicycles and pedestrians are excluded. – or for rural conditions.

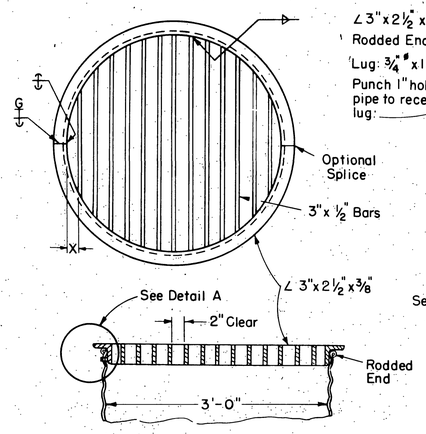
TYPE 24-9

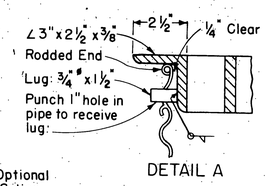
2" Clear Spacing

Use in locations off the roadbed on all types of highways.

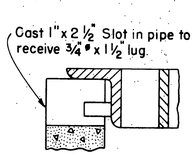
RECTANGULAR STEEL GRATE DETAILS

(SEE TABLE BELOW)

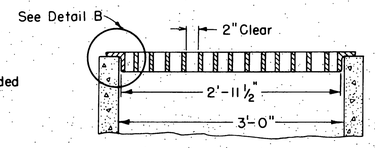




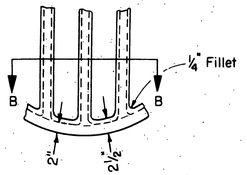
DETAIL A

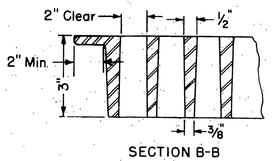


DETAIL B



TYPE 36R GRATE DETAILS





SECTION B-B

ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE TYPE 36R

GENERAL NOTES

1. Grate type numbers refer to width of grate in inches and number of bars, respectively.
2. Contractor has the option of using cast nodular iron, cast steel, welded, bolted or cast end block grate.
3. Grates and frames may be galvanized or asphalt dipped. See Standard Specifications or Special Provisions.
4. Rounded top of bars optional on all grates.
5. Pipe drop inlets with a grate shall be placed so that bars parallel direction of principle surface flow.

TYPICAL FRAME

CROSS SECTION
(Thru Frame and Grate)

LONGITUDINAL SECTION
(Thru Frame and Grate)

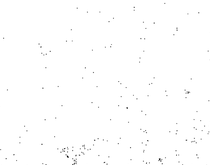
RECTANGULAR FRAME DETAILS

(For all Rectangular Grates)

SECTION A-A

ALTERNATIVE CAST NODULAR IRON GRATE OR CAST STEEL GRATE

ALTERNATIVE WELDED GRATE



CAST END BLOCK

END OF BAR

ALTERNATIVE CAST NODULAR IRON OR CAST STEEL END BLOCK GRATE

BOLTED END BLOCK

BAR SPACER

BOLTING DETAIL

ALTERNATIVE SPACER
W = 1", 1⅜" or 2"

ALTERNATIVE BOLTED GRATE

GRATE BAR SPACING TABLE

TYPE	NO. BARS	CLEAR BAR SPACING	X
18-9	9	1⅜"	1 1/16"
24-9	9	2"	1 9/16"
24-12	12	1⅜"	1¼"
24-15	15	1"	1 1/16"
36R	13	2"	2⅛"

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

SH. 22
R-897

STANDARD GRATE DETAILS D77-3

REVISED 8-18-61 ADDED TABLE
REVISED 4-5-61

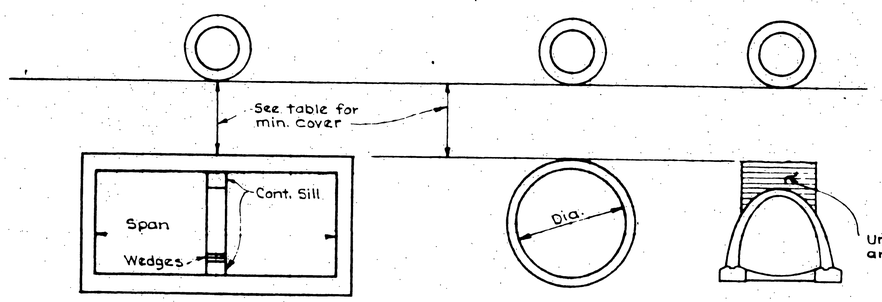
DIST.	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
VIII	Riv	700	(3)	23	25

DATE APPROVED 6-8-61

State Highway Engineer
Civil Engineer License No. 9945

To accompany plans dated August 28, 1961

	CLASSIFICATION	18 – 50ᴷ AXLE SPAN	TYPE	MIN. COVER	STRUTS REQ'D	STRUT SIZE & SPACING	50 – 75ᴷ AXLE SPAN	TYPE	MIN. COVER	STRUTS REQ'D	STRUT SIZE & SPACING	75 – 110ᴷ AXLE SPAN	TYPE	MIN. COVER	STRUTS REQ'D	STRUT SIZE & SPACING	110 – 150ᴷ AXLE SPAN	TYPE	MIN. COVER	STRUTS REQ'D	STRUT SIZE & SPACING
BOX CULVERTS	A	2' to 5'	Single	4'	—	—	2' to 5'	Single	5'	—	—	2' to 4'	Single	3'	—	—	2' to 4'	Single	4'	—	—
	A	6'	Single	5'	—	—	6'	Single	5'	½ Pt.	Posts 4x6@3' Sills 4x6, Cont.	5', 6'	Single	5'	⅓ Pts.	Posts 4x6@3' Sills 4x6, Cont.	5' to 6'	Single	5'	⅓ Pts.	Posts 4x6@3' Sills 4x6, Cont.
	A	7', 8'	Single	5'	—	—	7', 8'	Single	5'	—	—	7', 8'	Single	5'	—	—	7', 8'	Single	5'	¼ Pts.	Posts 4x6@3' Sills 4x6, Cont.
	A	10', 12'	Single	5'	—	—	10', 12'	Single	5'	—	—	10', 12'	Single	5'	⅓ Pts.	Posts 6x6@3'-6" Sills 6x6, Cont.	10', 12'	Single	5'	⅓ Pts.	Posts 6x6@3' Sills 6x6, Cont.
	A	14'	Single	5'	—	—	14'	Single	3'	⅓ Pts.	Posts 6x6@3'-6" Sills 6x8, Cont.	14'	Single	3'	⅓ Pts.	Posts 6x8@3'-6" Sills 6x8, Cont.	14'	Single	4'	⅓ Pts.	Posts 6x8@3'-6" Sills 6x8, Cont.
	A	4' to 12'	Multiple	5'	—	—	4' to 12'	Multiple	5'	—	—	4' to 12'	Multiple	5'	—	—	4' to 12'	Multiple	5'	—	—
	B, C, D, E	All	All	Span / 1.75 or 5' Min.	—	—	All	All	Span / 1.75 or 5' Min.	—	—	All	All	Span / 1.75 or 5' Min.	—	—	All	All	Span / 1.75 or 5' Min.	—	—
R.C. PIPES	12" to 30"	Min. Cover = 2'					Min. Cover = 3'					Min. Cover = 4'					Min. Cover = 4'				
	42" to 108"	Dia. / 1.75 or 4' Min.					Dia. / 1.75 or 4' Min.					Dia. / 1.75 or 4' Min.					Dia. / 1.75 or 4' Min.				
METAL CULVERTS	Pipes	To 120"	Min. Cover = 2'				Min. Cover = 2'					Dia. / 3 or 2' Min.					Dia. / 3 or 3' Min.				
		Over 120"	Dia. / 5 or 2' Min.				Dia. / 5 or 2' Min.					Dia. / 3 or 4' Min.					Dia. / 3 or 4' Min.				
	Arches, Pipe-Arches	All Spans	Span / 7 or 2' Min.				Span / 7 or 2' Min.					Span / 3 or 2' Min.					Span / 3 or 3' Min.				
R.C. ARCH CULVERTS	Spans to 14'	Span / 2.5 or 4' Min.					Span / 2.5 or 4' Min.					Span / 2.5 or 4' Min.					Span / 2.5 or 4' Min.				
	Spans to 22'	Span / 3.5 or 5' Min.					Span / 3.5 or 5' Min.					Span / 3.5 or 5' Min.					Span / 3.5 or 5' Min.				



BOX CULVERTS

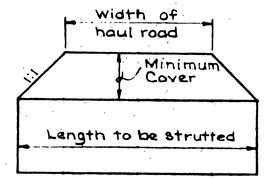
R.C. PIPES & METAL CULVERTS

R.C. ARCH CULVERTS

Notes: Limits of strutting to be determined by Engineer, but shall not be less than as shown in sketch at right.
Reference - Std. Box Culverts dated Oct. 4, 1960.
Assumed tire patterns:
50ᴷ Axle 2.0' x 1.5'
75ᴷ Axle 3.0' x 2.0'
110ᴷ Axle 3.0' x 2.5'
150ᴷ Axle 3.0' x 3.0'

Impact = 50%
Timber sills & posts to be D.F., 1450f. Sills to be glued-laminated or solid timbers.

Strutting of metal culverts, if req'd by Special Provisions, to remain in place until construction loads are taken off.



MINIMUM LENGTH OF STRUTTING

BRIDGE DEPARTMENT
DESIGN SECTION
Section Supervisor

DESIGN	By
	Checked
DETAILS	By
	Checked
QUANTITIES	By
	Checked

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

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CONSTRUCTION LOADS ON CULVERTS

SCALE	BRIDGE	FILE	DRAWING
			D88

D.P.O. DIV. NO.	STATE	FEDERAL PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
7	CALIF.	S-700(3)		24	25

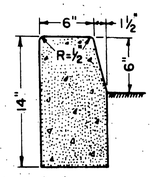
To accompany Plans dated August 28, 1961

DISTRICT	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
VIII	Riv	700	(3)	24	25

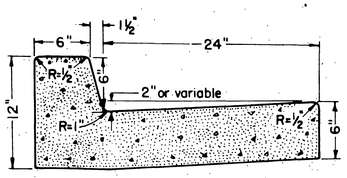
Note: Types B3, C3 D3 Superimposed on existing pavement

Approval Recommended: W. L. Warren
Engineer of Design
Civil Engineer License No 7603

Approved January 5, 1961
State Highway Engineer
Civil Engineer License No 5945

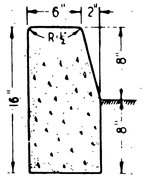


A1-6

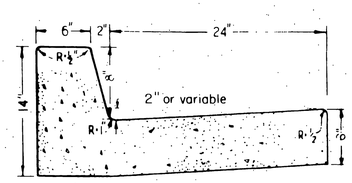


A2-6

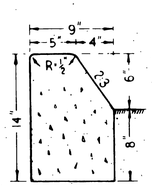
TYPE A



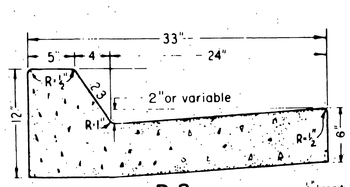
A1-8

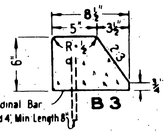


A2-8



B1



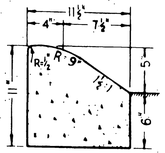


B3

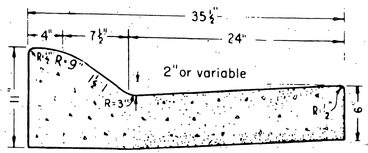
B2

½" Longitudinal Bar ½" Dowel Spaced 4' Min Length 8'

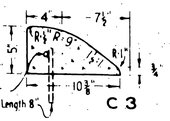
TYPE B



C1



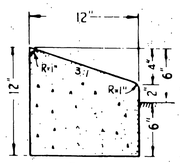
C2



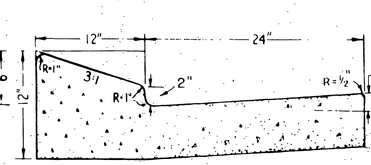
C3

TYPE C

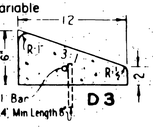
½" Longitudinal Bar ½" Dowel Spaced 4' Min Length 8'



D1



D2

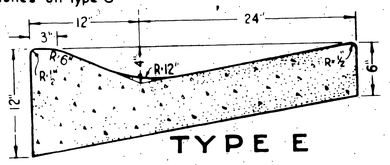


D3

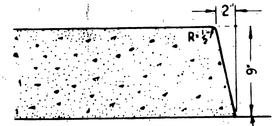
TYPE D

½" Longitudinal Bar ½" Dowel Spaced 4' Min Length 8'

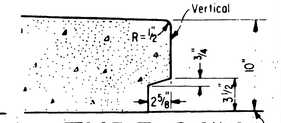
Note: Curb faces to be scored transversely with steel brushes on Type C and Type D



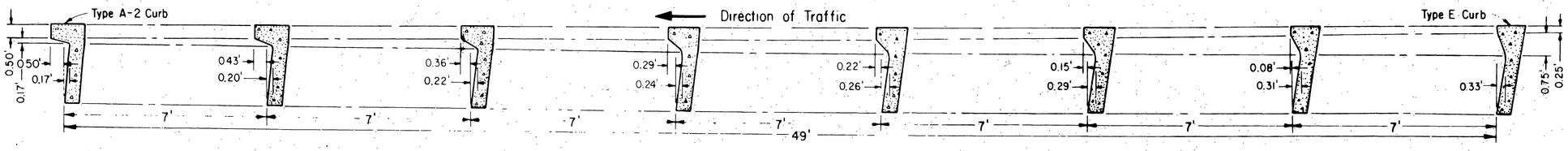
TYPE E



TYPE F (ON BRIDGES) Bridge Deck



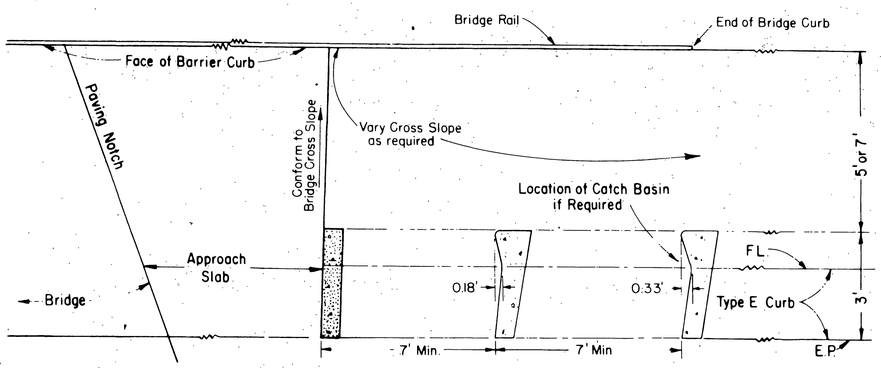
TYPE G (ON BRIDGES) Bridge Deck



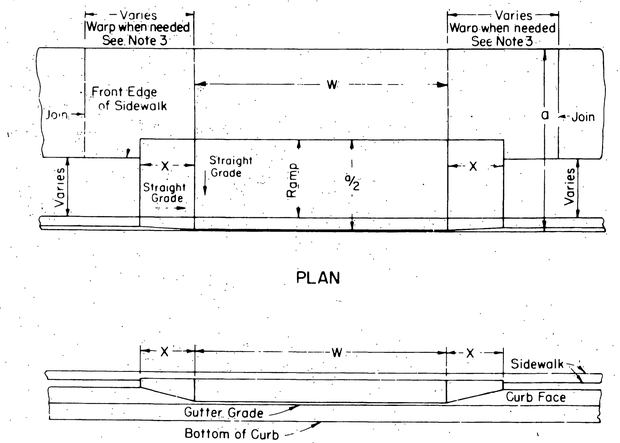
CURB QUANTITIES			
Type	C.Y. Per Lin. Ft.	Type	C.Y. Per Lin. Ft.
A1-6	0.02585	C1	0.02752
A2-6	0.05903	C2	0.06457
A1-8	0.03084	C3	0.00965
A2-8	0.06379	D1	0.03073
B1	0.02930	D2	0.06782
B2	0.06171	D3	0.01223
B3	0.01074	E	0.06661

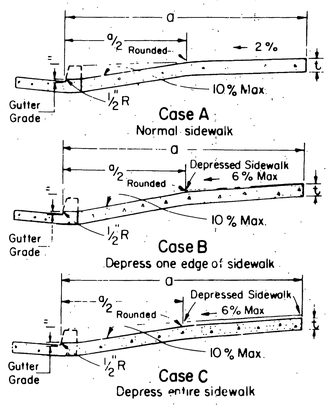
STANDARD CURB TRANSITION - TYPE E TO TYPE A-2

Note: Straight Line Transition in Flow Line and Top of Curb unless otherwise ordered by Engineer



FLOW LINE TRANSITION - TYPE E AT STRUCTURE

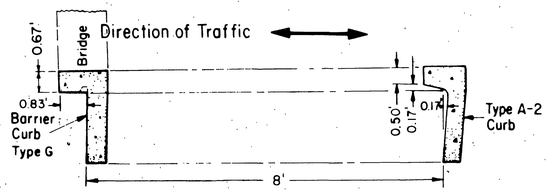




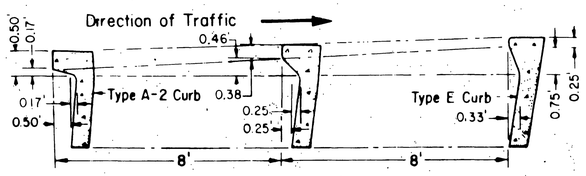
NOTES:

1. Case A normally applies
2. Use Case B when ramp slopes would exceed 10% in Case A.
3. Use Case C when sidewalk slope would exceed 6% in Case B. Longitudinal slope of warped area adjacent to driveway shall not vary more than 6% from the longitudinal grade line of the sidewalk
4. X = 3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope
5. Sidewalk and ramp thickness "t" at driveway shall be 4" for residential and 6" for commercial.
6. Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5 feet from the gutter line shall not exceed 15%. Reduce driveway ramp slope, not gutter slope, where required.

DRIVEWAYS



CURB TRANSITION - TYPE A-2 TO TYPE G



CURB TRANSITION - TYPE A-2 TO TYPE E
(See Note)

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STANDARD CURBS AND DRIVEWAYS

24

R 207 N 81

DIV. NO.	STATE	FEDERAL PROJECT NO.	SHEET NO.	TOTAL SHEETS
7	CALIF.	S-700(3)	25	25

To accompany plans dated August 28, 1961

DISTRICT	COUNTY	ROUTE	SECTION	SHEET NO.	TOTAL SHEETS
VIII	Riv.	700	(3)	25	25

APPROVAL RECOMMENDED

Traffic Engineer Civil Engineer License No. 5429

Approved October 31, 1960

State Highway Engineer
Civil Engineer License No. 5945

AS BUILT

By Duane R. Brown

NO CORRECTIONS THIS SHEET

6'-6±

STATE-FEDERAL
HIGHWAY CONSTRUCTION

MILES COST $

STATE FUNDS % FEDERAL-AID FUNDS %

CALIFORNIA U.S. DEPT. OF COMMERCE

DEPT. OF PUBLIC WORKS BUREAU OF

DIVISION OF HIGHWAYS PUBLIC ROADS

PROJECT S-

5 in, 5 in, 3 in, 3 in, 3 in, 3 in, 2 in; 2½ in, 2½ in; 4'-6±

TYPE IA

8'±

COUNTY-STATE-FEDERAL
HIGHWAY CONSTRUCTION

MILES COST $

COUNTY-STATE FUNDS % FEDERAL-AID FUNDS %

CALIFORNIA U.S. DEPT. OF COMMERCE

DEPT. OF PUBLIC WORKS BUREAU OF

DIVISION OF HIGHWAYS PUBLIC ROADS

PROJECT S-

5 in, 5 in, 3 in, 3 in, 3 in, 3 in, 2 in; 2½ in, 2½ in; 4'-6±

TYPE I

8'±

STATE-FEDERAL
HIGHWAY CONSTRUCTION

MILES COST $

STATE FUNDS % FEDERAL-AID FUNDS %

CALIFORNIA U.S. DEPT. OF COMMERCE

DEPT. OF PUBLIC WORKS BUREAU OF

DIVISION OF HIGHWAYS PUBLIC ROADS

PROJECT F-

6 in, 6 in, 4 in, 4 in, 4 in, 4 in, 4 in, 2 in; 3 in, 3 in; 6'-3±

TYPE II

8 in, 8 in, 4 in, 4 in, 4 in, 4 in, 4 in, 2 in; 24 in; 4 in, 4 in, 4 in, 3 in; 6'-3±

INTERSTATE HIGHWAY
SYSTEM

INTERSTATE CALIFORNIA

MILES COST $

STATE FUNDS % FEDERAL-AID FUNDS %

CALIFORNIA U.S. DEPT. OF COMMERCE

DEPT. OF PUBLIC WORKS

DIVISION OF HIGHWAYS BUREAU OF PUBLIC ROADS

PROJECT I-

TYPE III

12'±

Notes: Name of Structure may be shown in lieu of mileage.
U.S. Standard capital "C" Letters.
Stroke width 0.16" per inch of letter height.
Miles, Cost, State Funds %, Federal-Aid Funds %, and Federal Aid Project Number to be furnished by the Engineer and painted on the sign by the Contractor.

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STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF HIGHWAYS

FEDERAL CONSTRUCTION IDENTIFICATION SIGNS