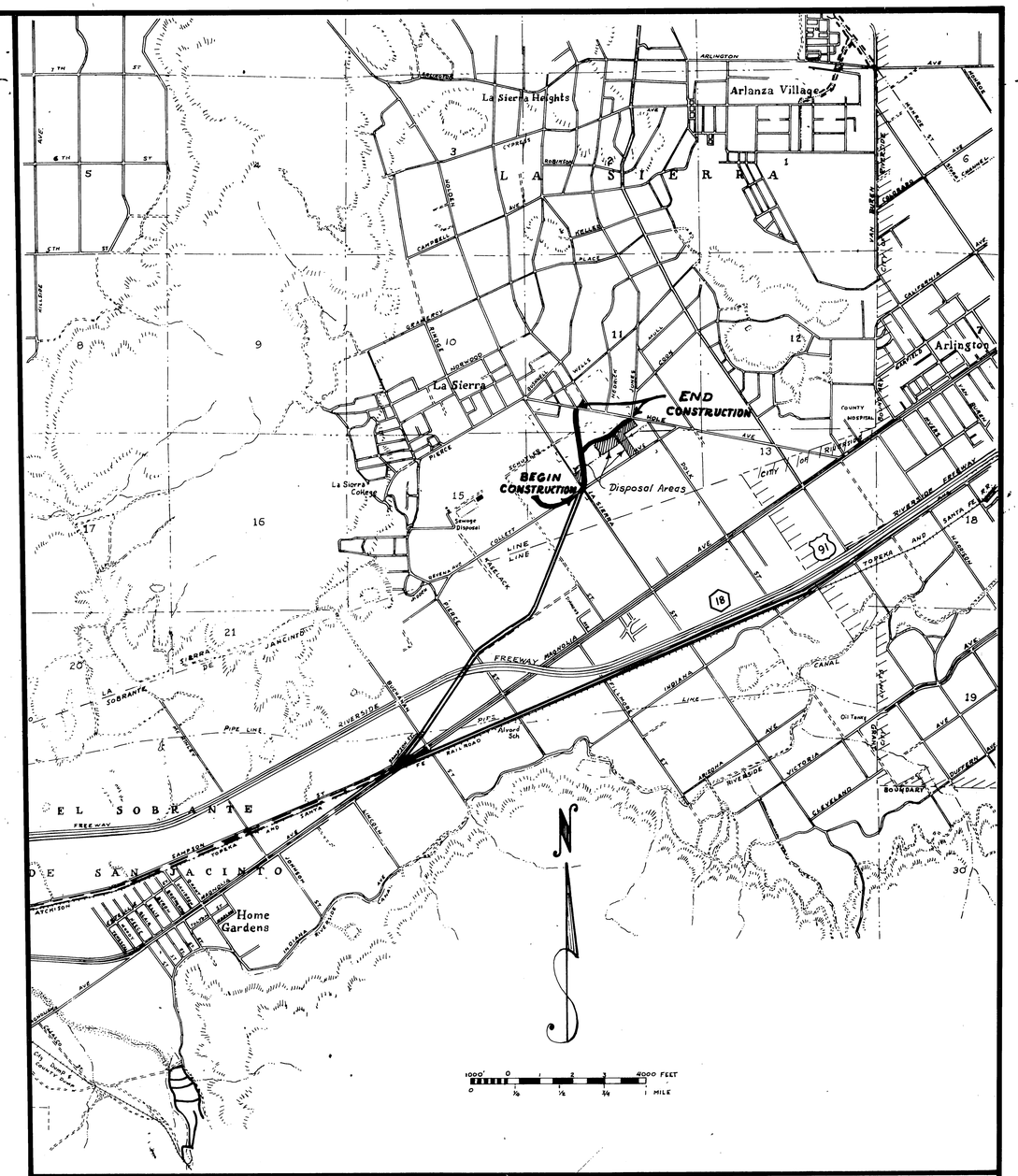
LA SIERRA STORM CHANNEL

STAGE "C"

CONSTRUCTION DRAWINGS

BY

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT



GENERAL NOTES

1. Reinforced concrete shall be Class A (6 sack) and shall have a minimum of 3,000 p.s.i. 28 day compressive strength.
2. Reinforcing steel shall be deformed, intermediate grade, billet-steel bars conforming to the specifications of A.S.T.M. Designation A-15, latest revised, with deformations conforming to A.S.T.M. Designation A-305.
3. All reinforcing bar bends and hooks shall conform to the American Concrete Institute "MANUAL of STANDARD PRACTICE."
4. Lap all reinforcing steel a minimum of 30 bar diameters at splices. The location of all splices shall be subject to approval of the Engineer.
5. All reinforcing steel shall have a minimum cover of 1½" unless otherwise noted.
6. All exposed edges of concrete structures shall be chamfered ¾" or rounded as directed.
7. Unreinforced concrete channel lining shall be Class B (5 sack), unless otherwise specified.
8. All concrete thickness dimensions are the minimum allowable.
9. Transverse grooves 1" deep at 10' spacing shall be provided in all unreinforced concrete channel lining. Grooves may be tooled or formed using 3/16" x 1" masonite strips.
10. All transverse construction joints in unreinforced concrete channel lining required at the end of a day's placing operation shall be located between the transverse grooves and No. 4 x 30" dowels at 24" spacing embedded 15" shall be provided.
11. Place 1½" dia. weep holes 6" above invert on 10' c/c. Gravel pockets of approximatly one cu. ft. shall be placed behind each weep hole.
12. Approved pit run gravel (1" maximum) shall be used for subdrain and weephole filter material where required on the plans.
13. The surface finish required for unreinforced concrete channel lining shall be a tight wood float finish.
14. All embankments shall be compacted to not less than 90 % maximum density as determined by tests made conforming to the requirements of A.A.S.H.O. Designation T99-57, "The Compaction and Density of Soils."

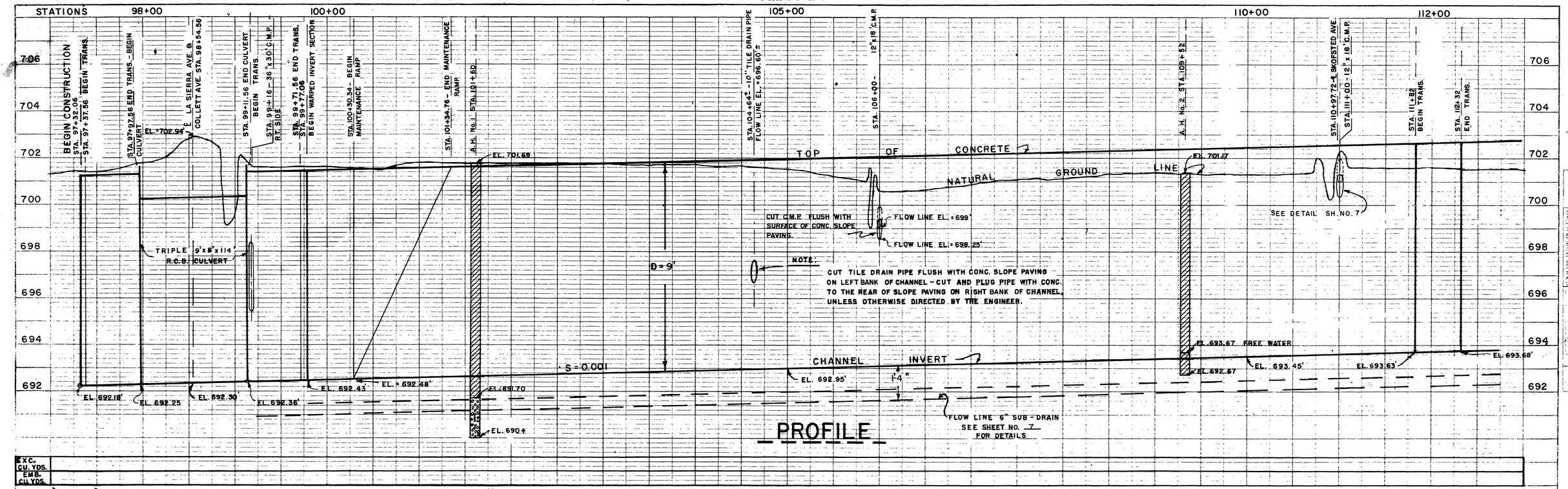
AS CONSTRUCTED

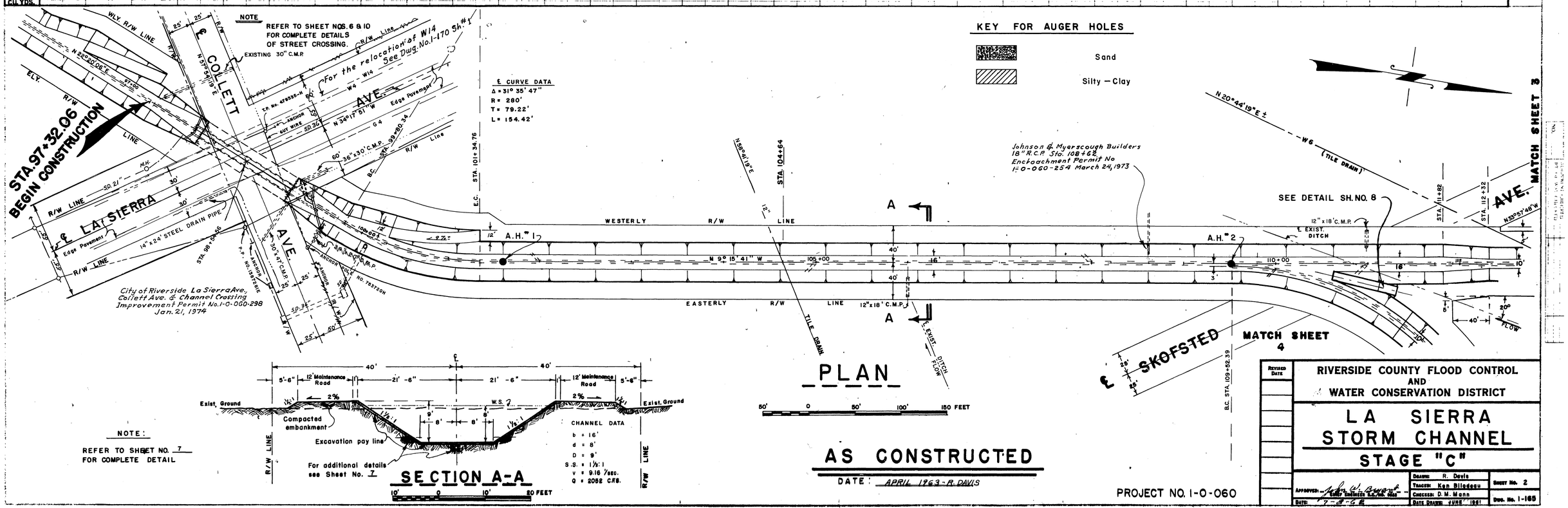
DATE: APRIL, 1963 - R. DAVIS

PROJECT NO. 1-4-060

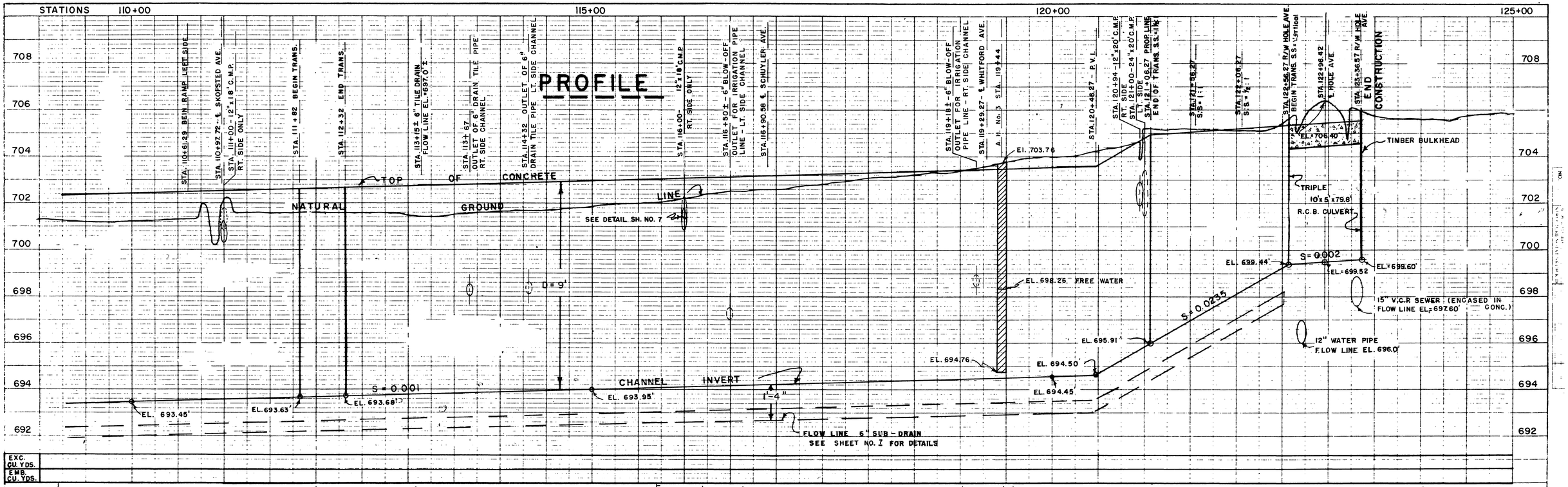
REVISED DATE	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
	LA SIERRA STORM CHANNEL STAGE "C"
	COVER SHEET
	APPROVED: [signature] CHIEF ENGINEER R.C. NO. 8833 — DATE: 7-8-62 — DRAWN: Ken Bilodeau — TRACED: " " — CHECKED: D. M. Mann — DATE DRAWN: July 1961 — SHEET No. 1 — DWG. No. 1-165

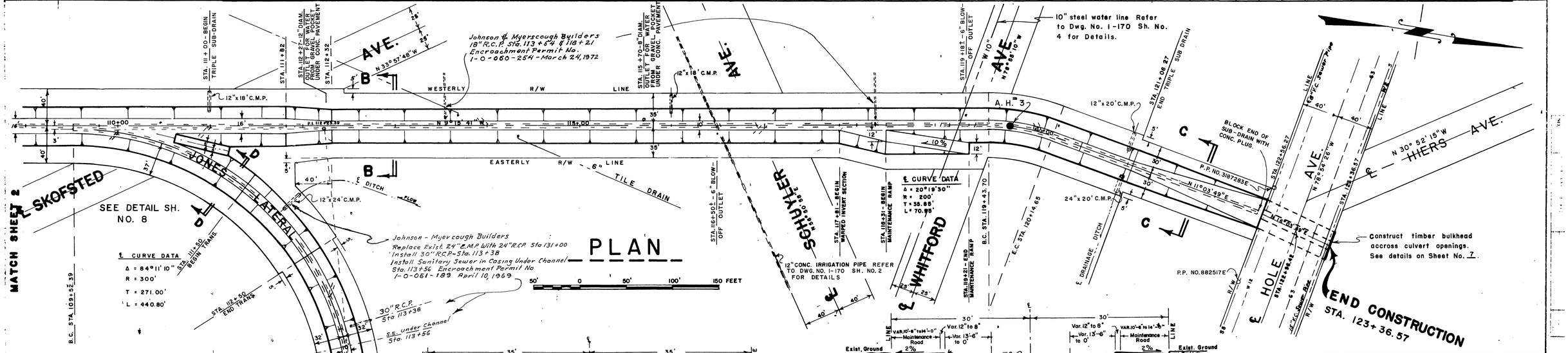
D-173-C

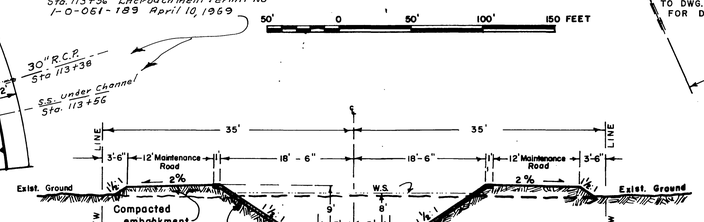

STATIONS
98+00
100+00
105+00
110+00
112+00
706
704
702
700
698
696
694
692
BEGIN CONSTRUCTION
STA. 97+32.06
STA. 97+37.56 BEGIN TRANS.
STA. 97+97.56 END TRANS. - BEGIN CULVERT
EL. = 702.94'
℄ LA SIERRA AVE. & COLLETT AVE. STA. 98+54.56
STA. 99+11.56 END CULVERT BEGIN TRANS.
STA. 99+16 - 36" x 30' C.M.P. RT. SIDE
STA. 99+71.56 END TRANS.
STA. 99+77.06 BEGIN WARPED INVERT SECTION
STA. 100+30.34 - BEGIN MAINTENANCE RAMP
STA. 101+34.76 - END MAINTENANCE RAMP
A.H. No. 1 STA. 101+60
EL. 701.69
STA. 104+62± - 10" TILE DRAIN PIPE FLOW LINE EL. = 696.60±
STA. 106+00 - 12" x 18" C.M.P.
A.H. No. 2 STA. 108+52
STA. 110+97.72 - ℄ SKOFSTED AVE.
STA. 111+00 - 12" x 18" C.M.P.
STA. 111+82 BEGIN TRANS.
STA. 112+32 END TRANS.
TOP OF CONCRETE
NATURAL GROUND LINE
EL. 701.87
SEE DETAIL SH. NO. 7
TRIPLE 9' x 8' x 114' R.C.B. CULVERT
D = 9'
CUT C.M.P. FLUSH WITH SURFACE OF CONC. SLOPE PAVING.
FLOW LINE EL. = 699'
FLOW LINE EL. = 698.25'
NOTE:
CUT TILE DRAIN PIPE FLUSH WITH CONC. SLOPE PAVING ON LEFT BANK OF CHANNEL - CUT AND PLUG PIPE WITH CONC. TO THE REAR OF SLOPE PAVING ON RIGHT BANK OF CHANNEL, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
EL. 693.67 FREE WATER
CHANNEL INVERT
S = 0.001
EL. 692.18'
EL. 692.25
EL. 692.30'
EL. 692.36'
EL. 692.43'
EL. = 692.48'
EL. 691.70
EL. 690±
EL. 692.95'
1'-4"
EL. 692.67
EL. 693.45'
EL. 693.63'
EL. 693.68'
FLOW LINE 6" SUB-DRAIN SEE SHEET NO. 7 FOR DETAILS
PROFILE
EXC. CU. YDS.
EMB. CU. YDS.


NOTE
REFER TO SHEET NOS. 6 & 10 FOR COMPLETE DETAILS OF STREET CROSSING.
EXISTING 30" C.M.P.
WLY. R/W LINE
ELY. R/W LINE
℄ COLLETT AVE.
N 57°48'19" E
N 22°20'08" E
For the relocation of W14 See Dwg. No. I-170 Sh. #1
W4 - W14
Edge Pavement
N 34°17'51" W
T.P. No. 478256-H
ANCHOR
GUY WIRE
36" x 30' C.M.P.
B.C. STA. 99+80.34
R/W Line
STA. 98+54.56
STA. 97+32.06 BEGIN CONSTRUCTION
℄ LA SIERRA AVE.
R/W LINE
14" x 24' STEEL DRAIN PIPE
30" x 27" C.M.P.
P.P. NO. 1872818
ANCHOR
NO. 783720H
City of Riverside La Sierra Ave., Collett Ave. & Channel Crossing Improvement Permit No. I-0-060-298 Jan. 21, 1974
℄ CURVE DATA
Δ = 31° 35' 47"
R = 280'
T = 79.22'
L = 154.42'
E.C. STA. 101+34.76
N 55°41'19" E
STA. 104+64
KEY FOR AUGER HOLES
Sand
Silty - Clay
Johnson & Myerscough Builders 18" R.C.P. Sta. 108+62 Encroachment Permit No I-0-060-254 March 24, 1973
N 20°44'19" E ±
W6 (TILE DRAIN)
SEE DETAIL SH. NO. 8
STA. 111+82
STA. 112+32
℄ AVE.
N 35°57'48" W
MATCH SHEET 3
WESTERLY R/W LINE
A.H. # 1
A.H. # 2
N 9° 15' 41" W
105+00
110+00
12" x 18" C.M.P.
℄ EXIST. DITCH
EASTERLY R/W LINE
TILE DRAIN
℄ EXIST. DITCH FLOW
℄ SKOFSTED
B.C. STA. 109+62.39
MATCH SHEET 4
PLAN
50' 0 50' 100' 150 FEET
40'
5'-6"
12' Maintenance Road
21'-6"
2%
W.S.
Exist. Ground
Compacted embankment
Excavation pay line
For additional details see Sheet No. 7
R/W LINE
CHANNEL DATA
b = 16'
d = 8'
D = 9'
S.S. = 1½:1
v = 9.16 ′/sec.
Q = 2052 C.F.S.
SECTION A-A
10' 0 10' 20 FEET
NOTE:
REFER TO SHEET NO. 7 FOR COMPLETE DETAIL
AS CONSTRUCTED
DATE: APRIL 1963 - R. DAVIS
PROJECT NO. I-0-060
REVISED DATE
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
LA SIERRA STORM CHANNEL
STAGE "C"
APPROVED: John G. Bunch
DATE: 7-3-62
DRAWN: R. Davis
TRACED: Ken Bilodeau
CHECKED: D. M. Mann
DATE DRAWN: JUNE 1961
SHEET No. 2
DWG. No. I-165

D-173-C







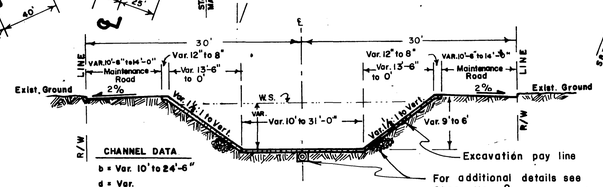
SECTION B-B

NOTE

REFER TO SHEET NO. 7 FOR COMPLETE DETAILS.

SCALE

10' 0 10' 20 FEET



SECTION C-C

SEE TRANSITION DETAILS SHEET 8

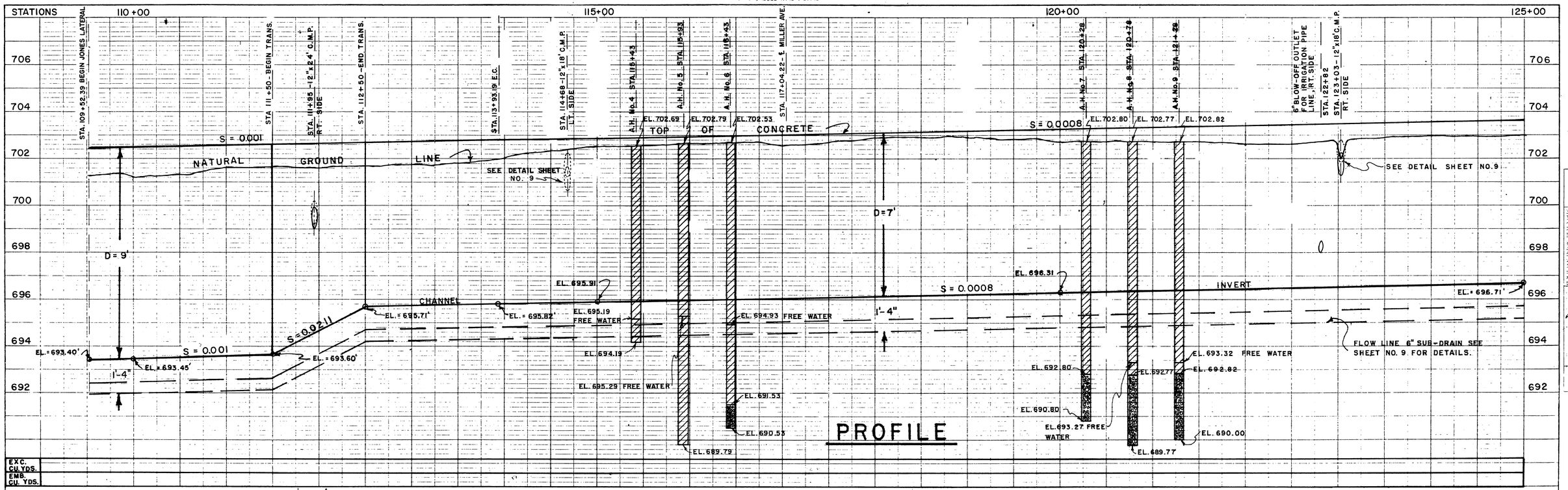
AS CONSTRUCTED

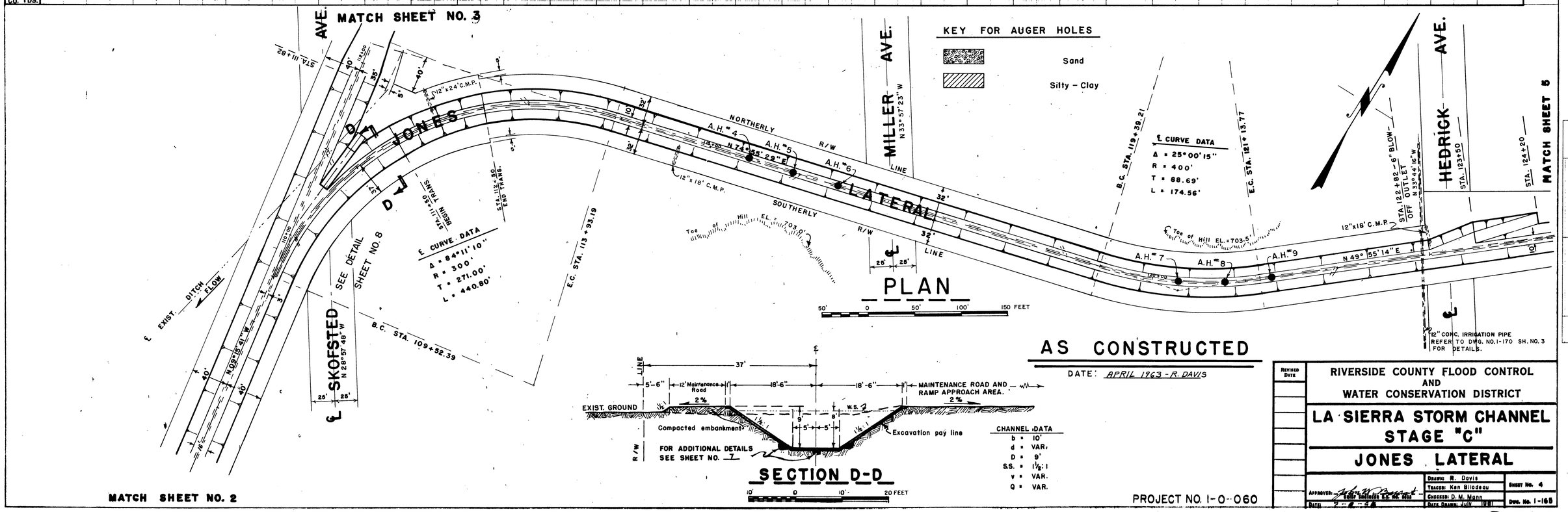
DATE: APRIL 1963 - R. DAVIS

PROJECT NO. 1-0-060

REVISED DATE	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
	LA SIERRA STORM CHANNEL
	STAGE "C"
	APPROVED: John W. Bonard, CHIEF ENGINEER R.E. NO. 8022 — DRAWN: R. Davis; TRACED: Ken Biladeau; CHECKED: D.M. Mann; DATE: 7-8-68; DATE DRAWN: Feb. 1961; SHEET No. 3; DWG. No. 1-165

D-173-C





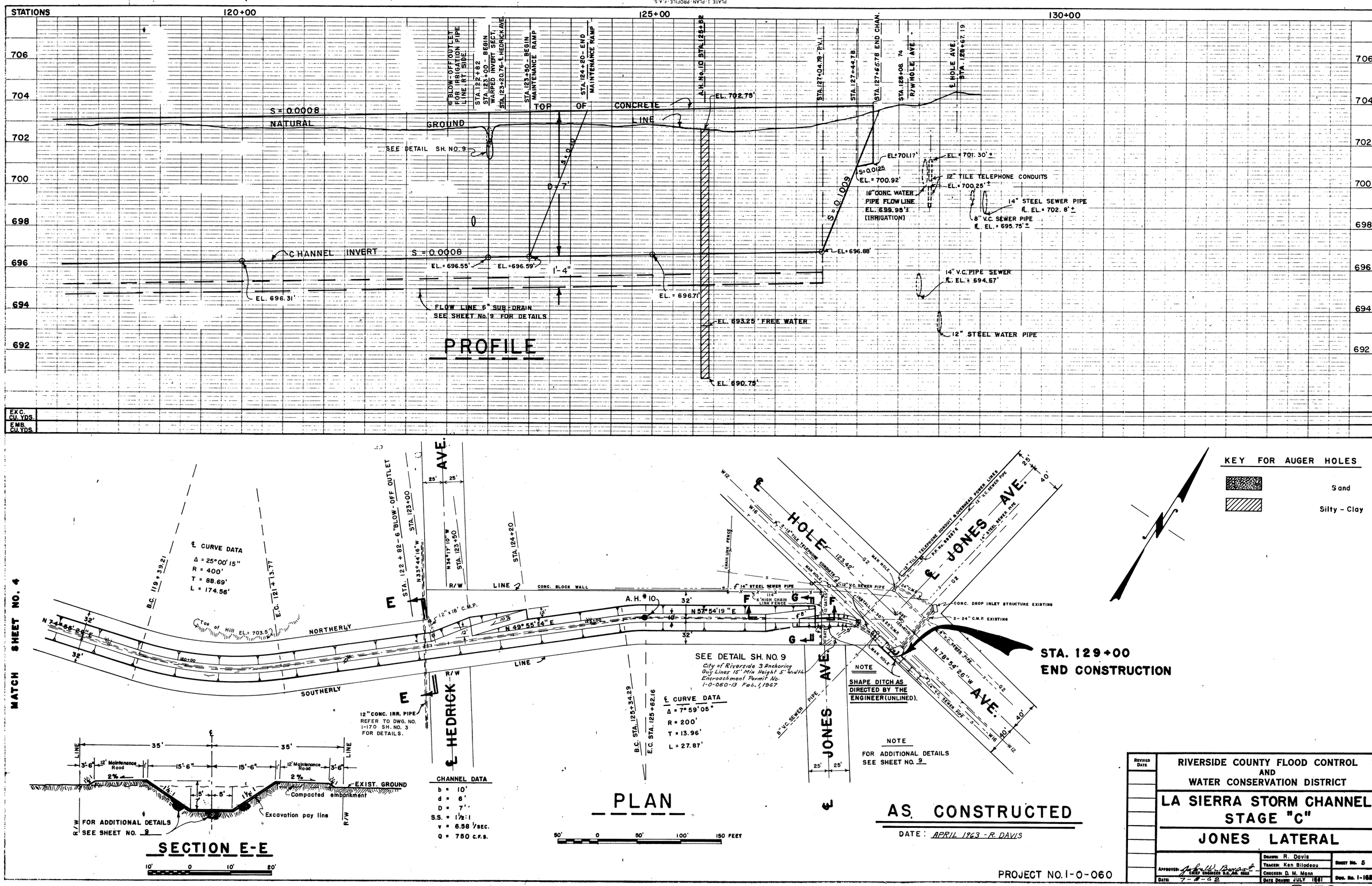
AS CONSTRUCTED

DATE: APRIL 1963 - R. DAVIS

PROJECT NO. I-0-060

Revised Date	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
	LA SIERRA STORM CHANNEL STAGE "C"
	JONES LATERAL
	Approved: John Bennett, County Engineer R.C.E. No. 20256 — Date: 2-8-64
	Drawn: R. Davis — Tracced: Ken Biladeau — Checked: D. M. Mann — Date Drawn: July 1961
	Sheet No. 4 — Dwg. No. I-169

D-173-C



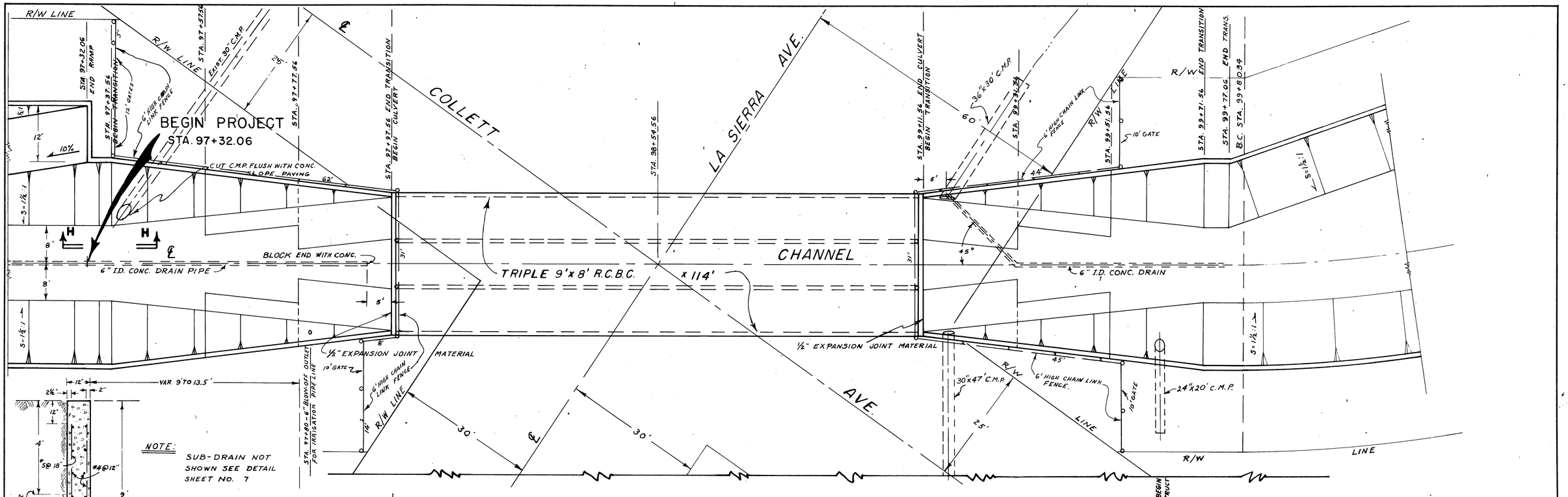
RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

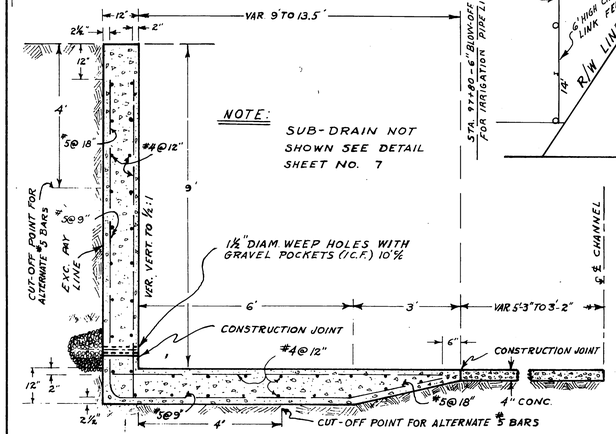
LA SIERRA STORM CHANNEL STAGE "C"

JONES LATERAL

Approved: [signature] Chief Engineer R.C. No. 0062	Drawn: R. Davis	Sheet No. 5
	Traced: Ken Bilodeau	
	Checked: D. M. Mann	Dwg. No. 1-165
Date: 7-8-62	Date Drawn: JULY 1961	

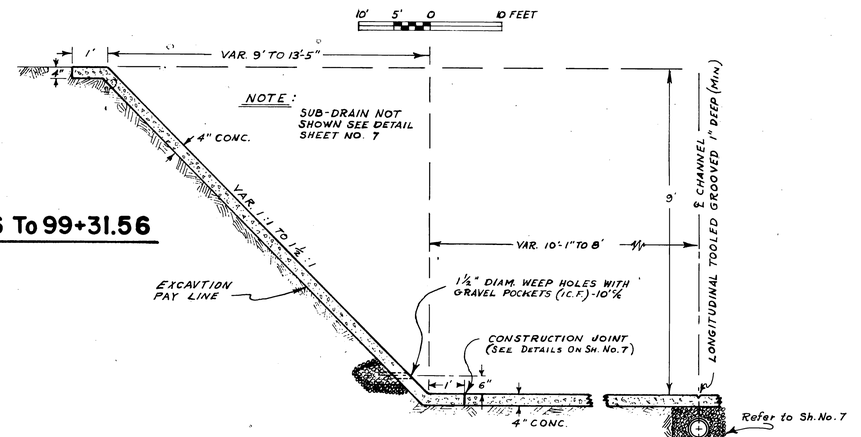
D-173 C





STA. 97+77.56 To 97+97.56 & STA. 99+11.56 To 99+31.56

SYMMETRICAL ABOUT ℄

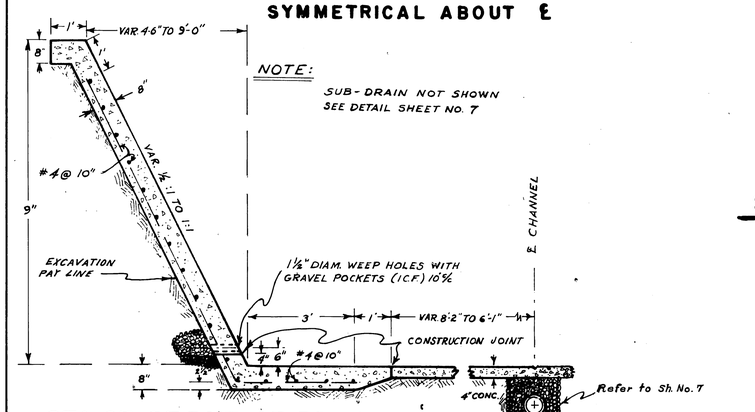


STA. 97+37.56 TO 97+57.56 & STA. 99+51.56 To 99+71.56

SYMMETRICAL ABOUT ℄

NOTE:

PLACE TRANSVERSE TOOLED GROOVES 1" DEEP (MIN.) AT 10%

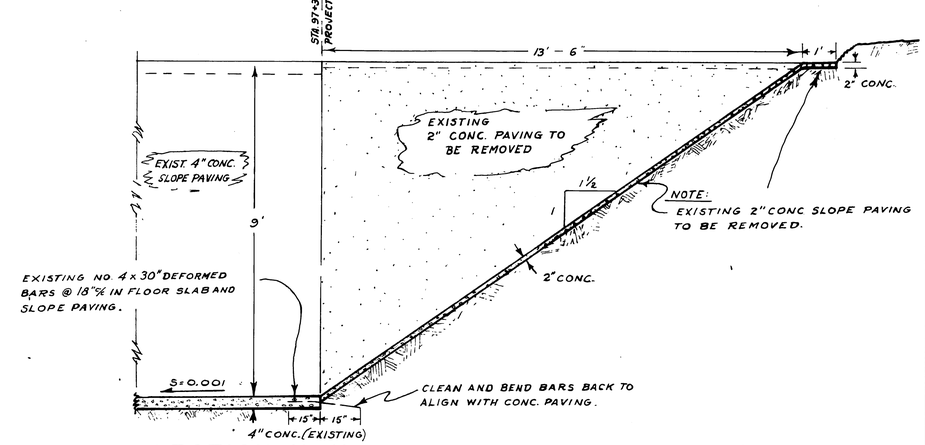


STA. 97+57.56 To 97+77.56 & STA. 99+31.56 To 99+51.56

SYMMETRICAL ABOUT ℄

SECTION DETAILS

2' 1' 0 2 FEET



SECTION H-H

EXISTING STRUCTURE

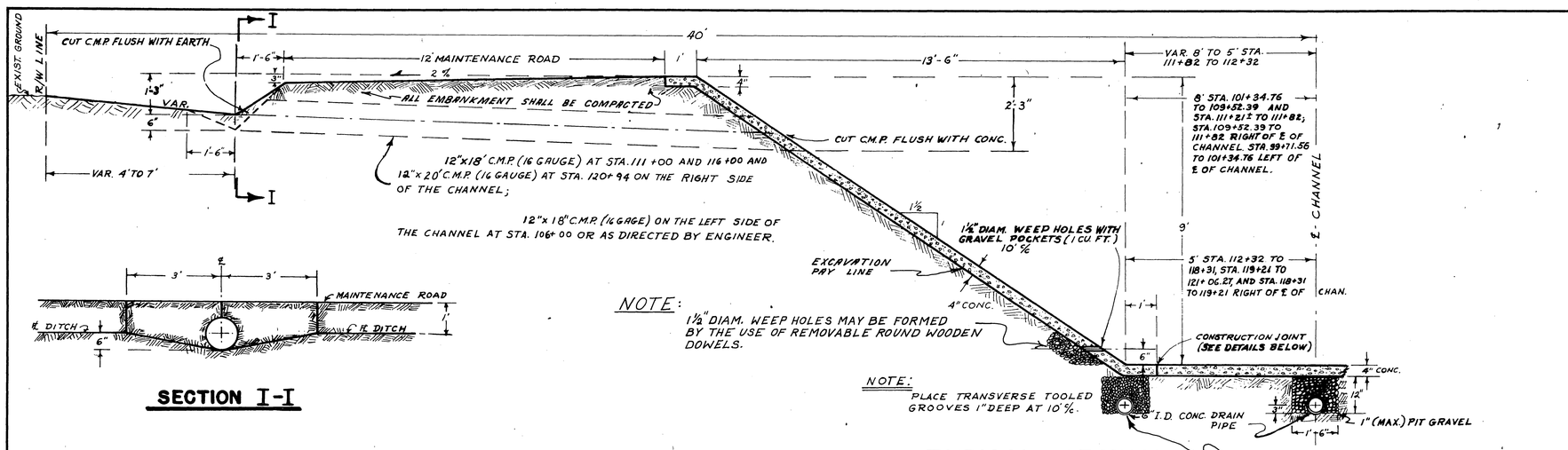
AS CONSTRUCTED

DATE: APRIL 1963-R. DAVIS

PROJECT NO. 1-0-060

Revised Date	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT		
	LA SIERRA STORM CHANNEL		
	DETAILS AT LA SIERRA AVE. CULVERT		
Approved: John W. Bayard, Chief Engineer R.E. No. 8888	Drawn: R. Davis	Sheet No. 6	
	Traced: Ken Bilodeau		
	Checked: D. M. Mann		
Date: 7-8-62	Date Drawn: April 21 1961	Dwg. No. 1-165	

D-173 C



NOTE: 1½" DIAM. WEEP HOLES MAY BE FORMED BY THE USE OF REMOVABLE ROUND WOODEN DOWELS.

NOTE: PLACE TRANSVERSE TOOLED GROOVES 1" DEEP AT 10 %.

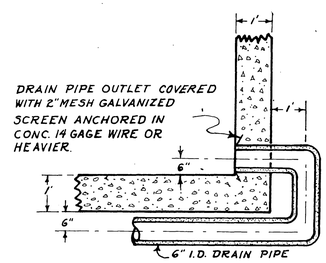
NOTE: THIS ADDITIONAL DRAIN TYPICAL ONLY FROM STA. 111+00 TO 121+06

TYPICAL SECTION

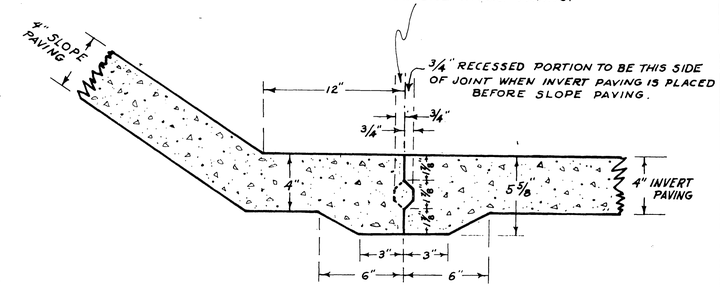
SYMMETRICAL ABOUT ℄

STA 99+71.56 TO 121+06.27

SECTION I-I

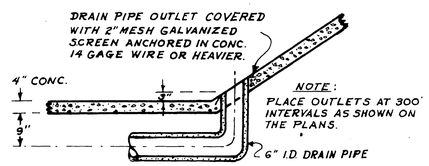


TYPICAL OUTLET
IN VERTICAL CHANNEL WALL



ALTERNATE LONGITUDINAL CONSTRUCTION JOINT

NO SCALE



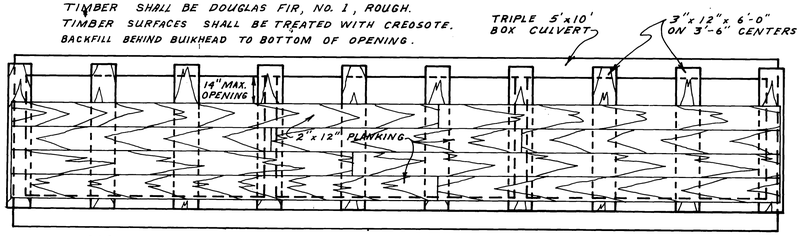
NOTE: PLACE OUTLETS AT 300' INTERVALS AS SHOWN ON THE PLANS.

TYPICAL OUTLET
IN SLOPED CHANNEL WALL

SCALE UNLESS OTHERWISE NOTED

2' 1' 0 2 FEET

NOTE:
TIMBER SHALL BE DOUGLAS FIR, NO. 1, ROUGH.
TIMBER SURFACES SHALL BE TREATED WITH CREOSOTE.
BACKFILL BEHIND BULKHEAD TO BOTTOM OF OPENING.



TIMBER BULKHEAD AT STA. 123+36.56

SCALE

3' 2' 1' 0 3 FEET

AS CONSTRUCTED

DATE: APRIL 1963 - R. DAVIS

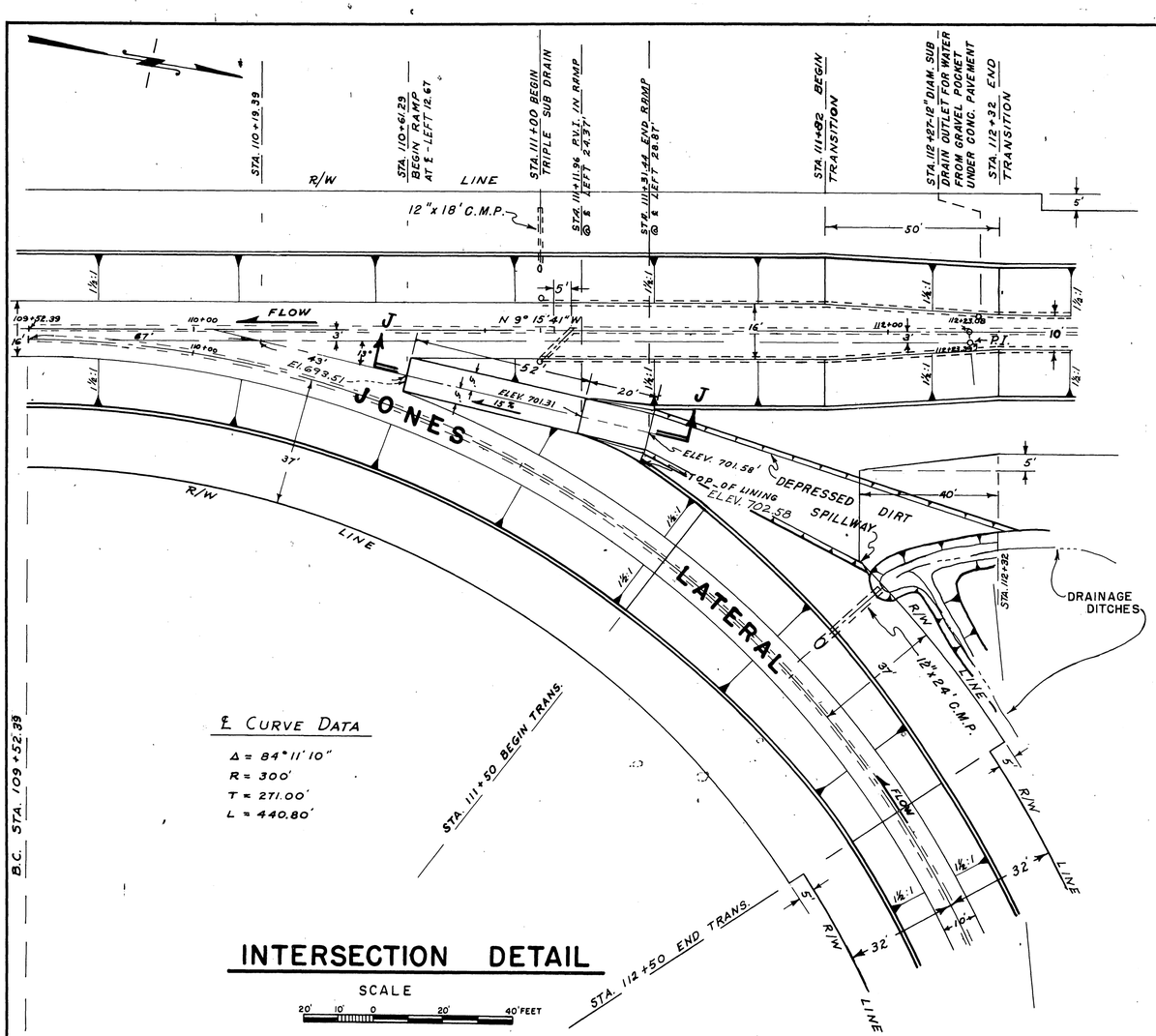
SUB DRAIN - OUTLET DETAILS

NOTE: PIT GRAVEL AT PIPE TO BE PLACED TO CHANNEL WALL OUTLETS; GRAVEL NOT SHOWN FOR CLARITY.

PROJECT NO. 1-0-060

Revised Date	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
R. DAVIS JULY 25, 1962	LA SIERRA STORM CHANNEL STAGE "C"	
	DETAILS	
Approved: John W. Bryant, Chief Engineer R.E. No. 6882	Drawn: R. DAVIS; Traced: KEN BILODEAU; Checked: D. M. MANN	Sheet No. 7
Date: 7-3-62	Date Drawn: July 20, 1961	Dwg. No. 1-165

D-173C

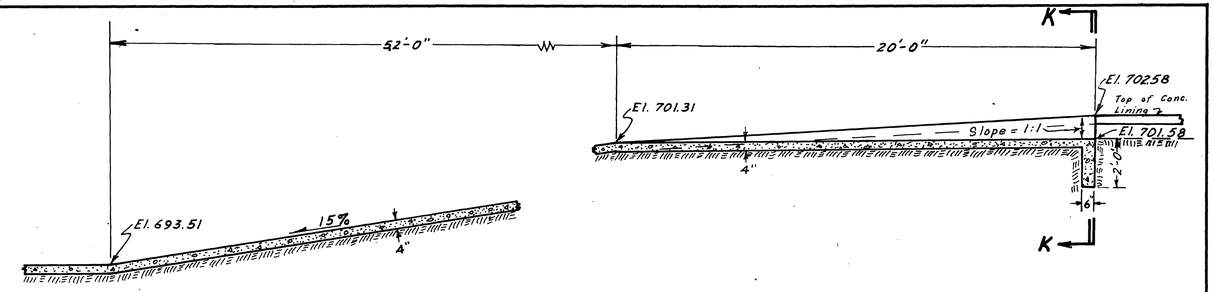


℄ CURVE DATA

Δ = 84° 11' 10"
R = 300'
T = 271.00'
L = 440.80'

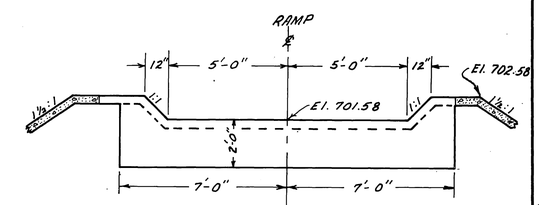
INTERSECTION DETAIL

SCALE 20' 10' 0 20' 40' FEET



SECTION J - J

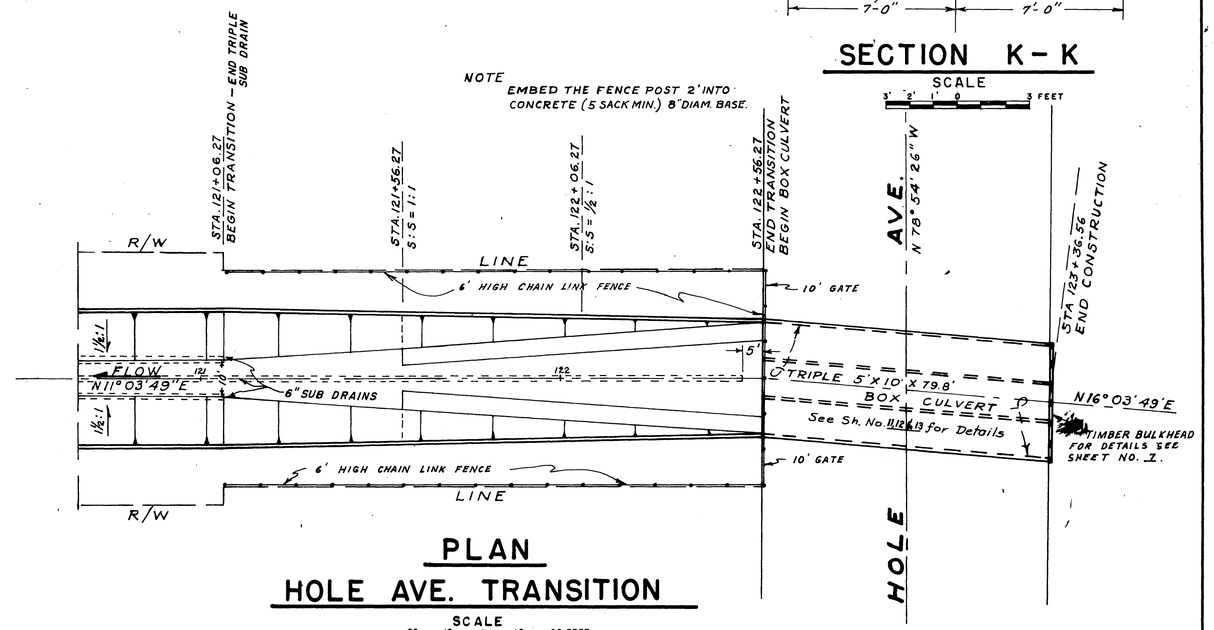
SCALE 3' 2' 1' 0 3 FEET



SECTION K - K

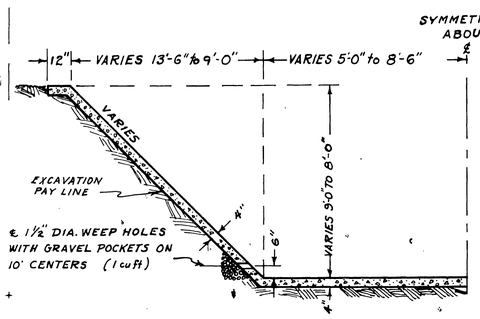
SCALE 3' 2' 1' 0 3 FEET

NOTE
EMBED THE FENCE POST 2' INTO CONCRETE (5 SACK MIN.) 8" DIAM. BASE.

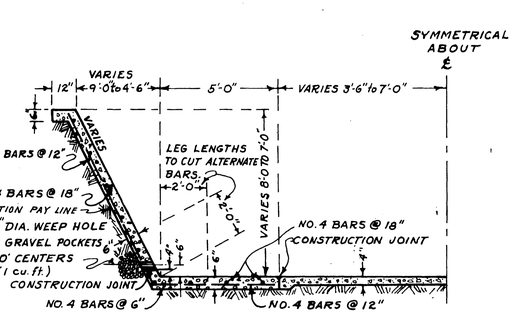


PLAN
HOLE AVE. TRANSITION

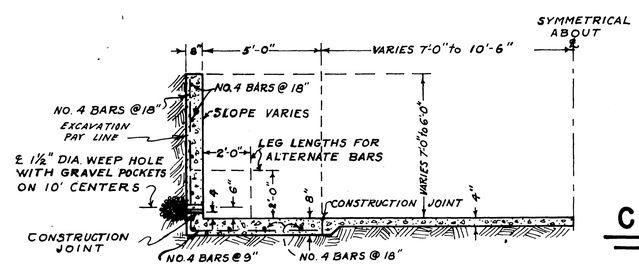
SCALE 20 10 0 10 20 FEET



STA. 121+06.27 TO STA. 121+56.27



STA. 121+56.27 TO STA. 122+06.27



STA. 122+06.27 TO STA. 122+56.27

SCALE 3 2 1 0 1 2 3 FEET

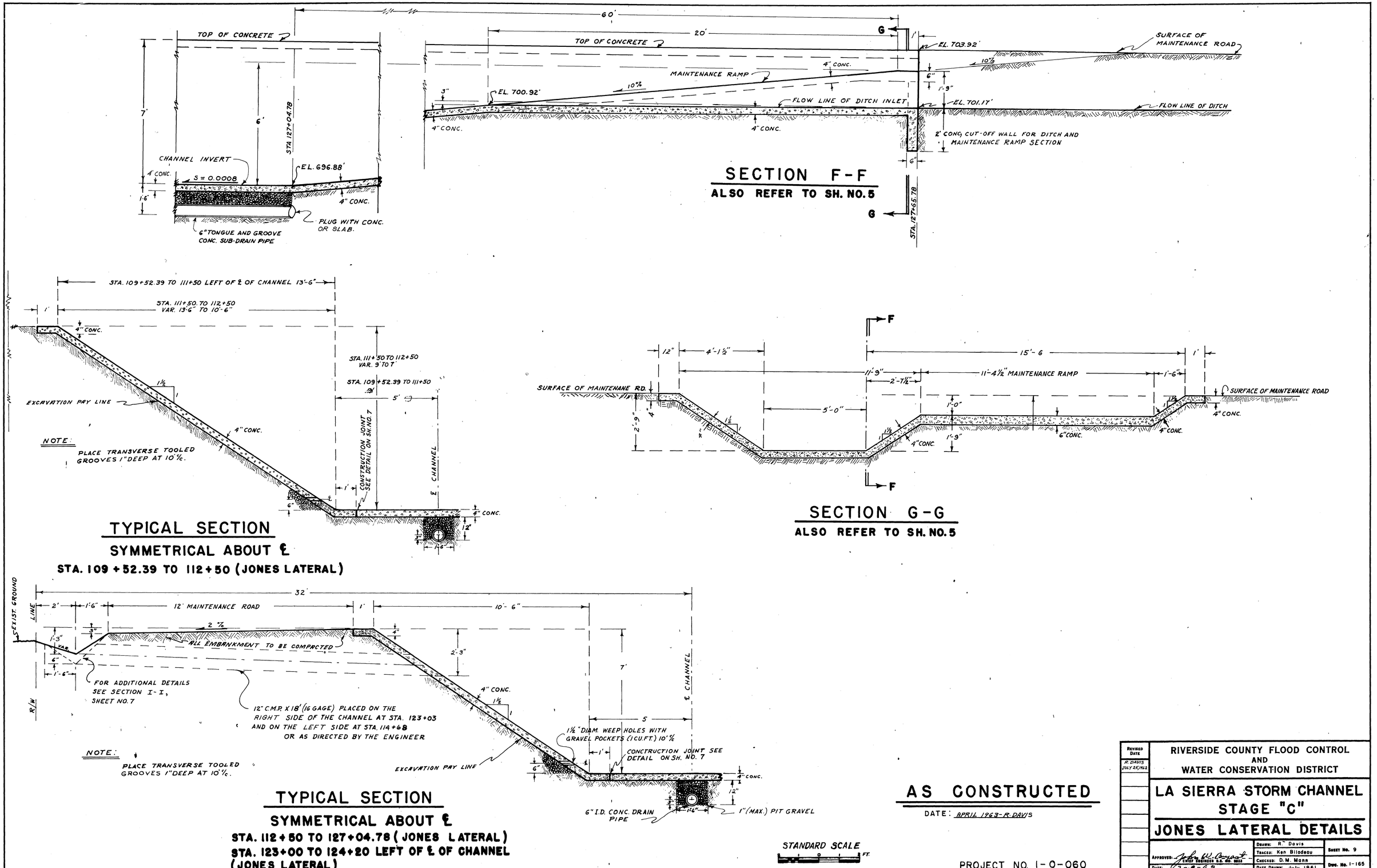
AS CONSTRUCTED

DATE: APRIL 1963 - R. DAVIS

PROJECT NO. 1-0-060

Revised Date	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT	
	LA SIERRA STORM CHANNEL STAGE "C"	
	DETAILS	
Approved: John G. Bonner, Chief Engineer R.E. No. 0883	Drawn: R. Davis; Traced: Ken Bilodeau; Checked: D. M. Mann	Sheet No. 8
Date: 4-8-62	Date Drawn: July 1961	Dwg. No. 1-165

D-173 C



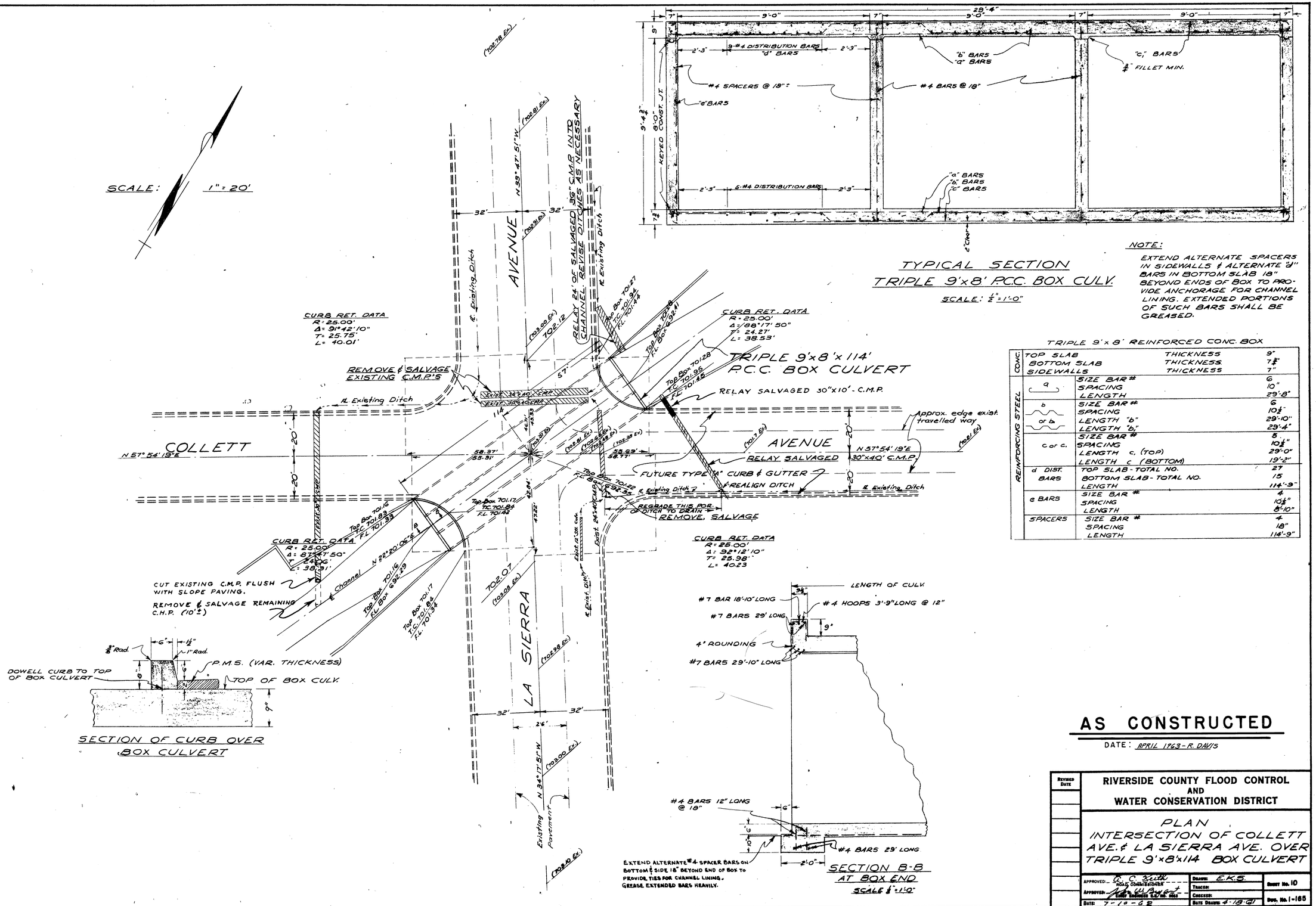
AS CONSTRUCTED

DATE: APRIL 1963-R. DAVIS

PROJECT NO. 1-0-060

REVISED DATE	
R. DAVIS JULY 25, 1962	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
	LA SIERRA STORM CHANNEL STAGE "C"
	JONES LATERAL DETAILS
APPROVED: John W. Bryant, CHIEF ENGINEER R.E. NO. 8033	DRAWN: R. Davis; TRACED: Ken Bilodeau; CHECKED: D. M. Mann; DATE DRAWN: July 1961
DATE: 7-8-62	SHEET NO. 9; DWG. NO. 1-165

D-173 C



TYPICAL SECTION
TRIPLE 9'x8' P.C.C. BOX CULV.
SCALE: 1/2" = 1'-0"

NOTE:
EXTEND ALTERNATE SPACERS IN SIDEWALLS & ALTERNATE "d" BARS IN BOTTOM SLAB 18" BEYOND ENDS OF BOX TO PROVIDE ANCHORAGE FOR CHANNEL LINING. EXTENDED PORTIONS OF SUCH BARS SHALL BE GREASED.

SECTION B-B
AT BOX END
SCALE 1/2" = 1'-0"

SECTION OF CURB OVER BOX CULVERT

TRIPLE 9'x8' REINFORCED CONC. BOX

CONC.	TOP SLAB	THICKNESS	9"
	BOTTOM SLAB	THICKNESS	7 3/4"
	SIDEWALLS	THICKNESS	7"
REINFORCING STEEL	a	SIZE BAR #	6
		SPACING	10"
		LENGTH	29'-8"
	b or b₁	SIZE BAR #	6
		SPACING	10 1/2"
		LENGTH "b"	29'-10"
		LENGTH "b₁"	29'-4"
	c or c₁	SIZE BAR #	5
		SPACING	10 1/2"
		LENGTH c₁ (TOP)	29'-0"
		LENGTH c (BOTTOM)	19'-2"
	d DIST. BARS	TOP SLAB - TOTAL NO.	27
		BOTTOM SLAB - TOTAL NO.	15
		LENGTH	114'-9"
	e BARS	SIZE BAR #	4
		SPACING	10 1/2"
		LENGTH	8'-10"
	SPACERS	SIZE BAR #	4
		SPACING	18"
		LENGTH	114'-9"

AS CONSTRUCTED
DATE: APRIL 1963 - R. DAVIS

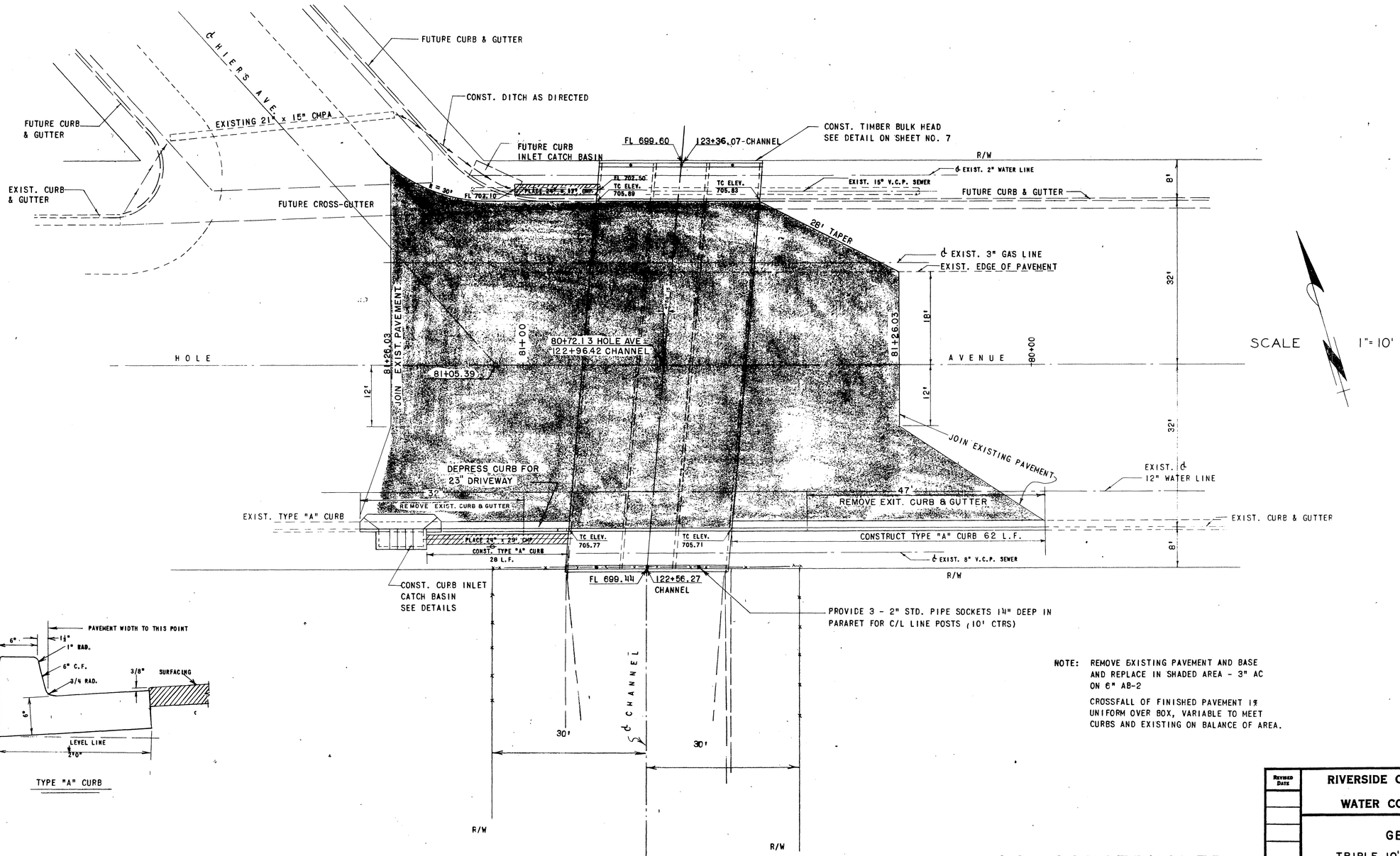
REVISED DATE

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

PLAN
INTERSECTION OF COLLETT AVE. & LA SIERRA AVE. OVER TRIPLE 9'x8'x114 BOX CULVERT

APPROVED: E. C. Keith, ROAD COMMISSIONER
APPROVED: [signature], CHIEF ENGINEER R.E. NO. 6063
DATE: 7-10-62
DRAWN: E.K.S.
TRACED:
CHECKED:
DATE DRAWN: 4-18-61
SHEET No. 10
DWG. No. 1-165

PROJECT NO 1-0-060 D-173 C 140-E



NOTE: REMOVE EXISTING PAVEMENT AND BASE AND REPLACE IN SHADED AREA - 3" AC ON 6" AB-2

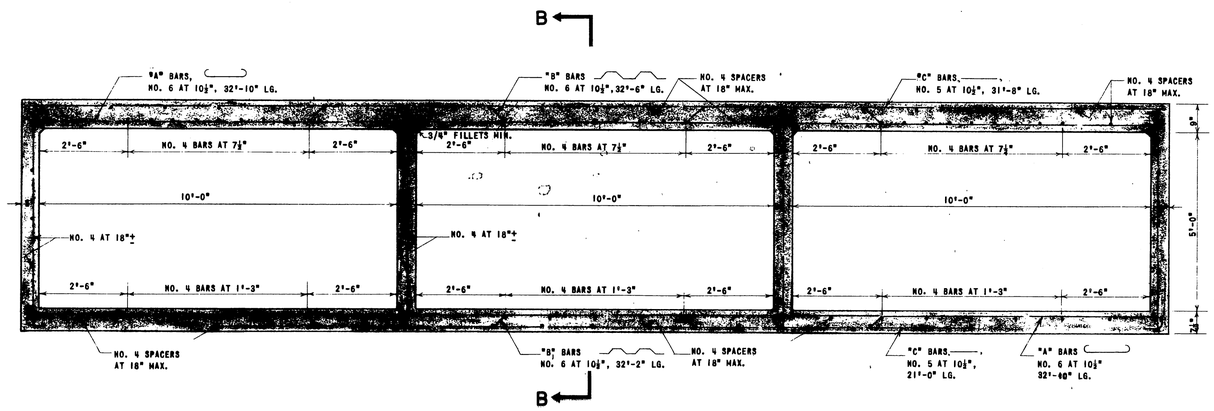
CROSSFALL OF FINISHED PAVEMENT 1% UNIFORM OVER BOX, VARIABLE TO MEET CURBS AND EXISTING ON BALANCE OF AREA.

AS CONSTRUCTED

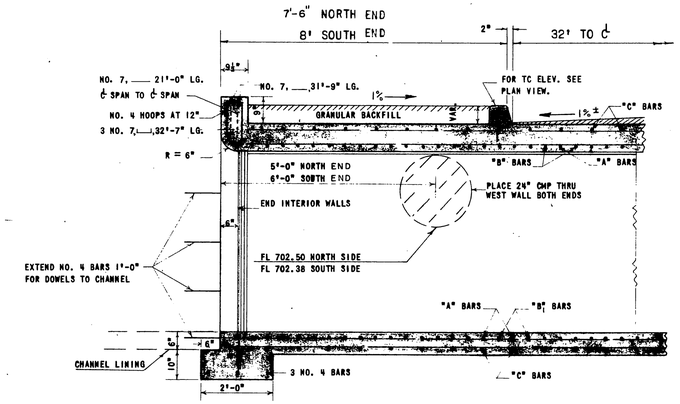
DATE: APRIL 1963-R. DAVIS

REVISED DATE	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
	GENERAL PLAN TRIPLE 10'x5' R.C. BOX CULVERT ACROSS HOLE AVENUE – STATION 122+96.42
	APPROVED: A. C. Keith, ROAD COMMISSIONER APPROVED: John W. Bryant, CHIEF ENGINEER D.E. NO. 6063 DATE: 7-10-62
	DRAWN: TRACED: CHECKED: DATE DRAWN:
	SHEET No. 11 DWG. No. 1-165

PROJECT NO. 1-0-060 D-173 C140-E



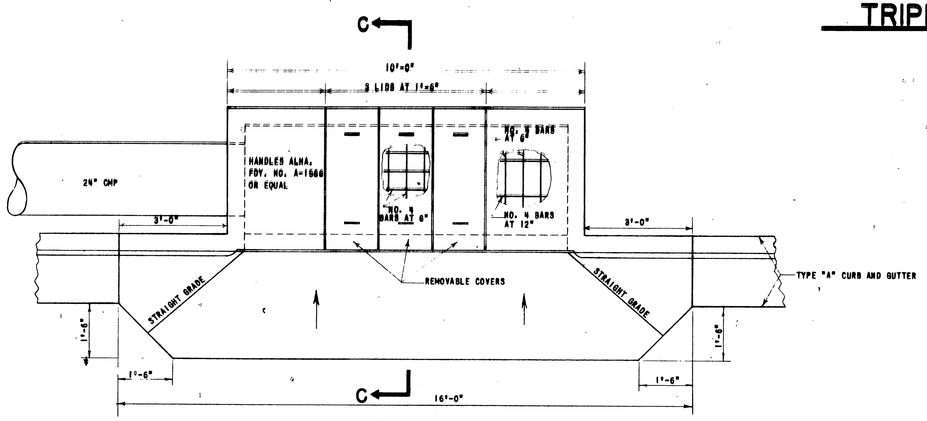
SECTION A-A



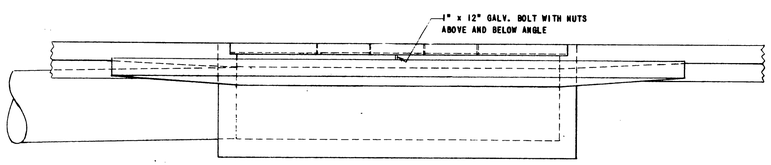
SECTION B-B AT ENDS

TRIPLE 10' x 5'-A x 79.80' BOX CULVERT

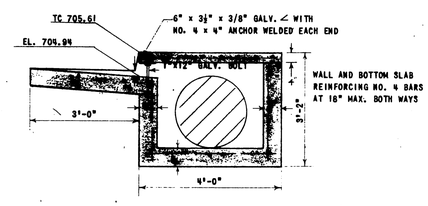
SCALE: 1/2" = 1'-0"



PLAN



ELEVATION



SECTION C-C

CURB INLET CATCH BASIN

SCALE: 1/2" = 1'-0"

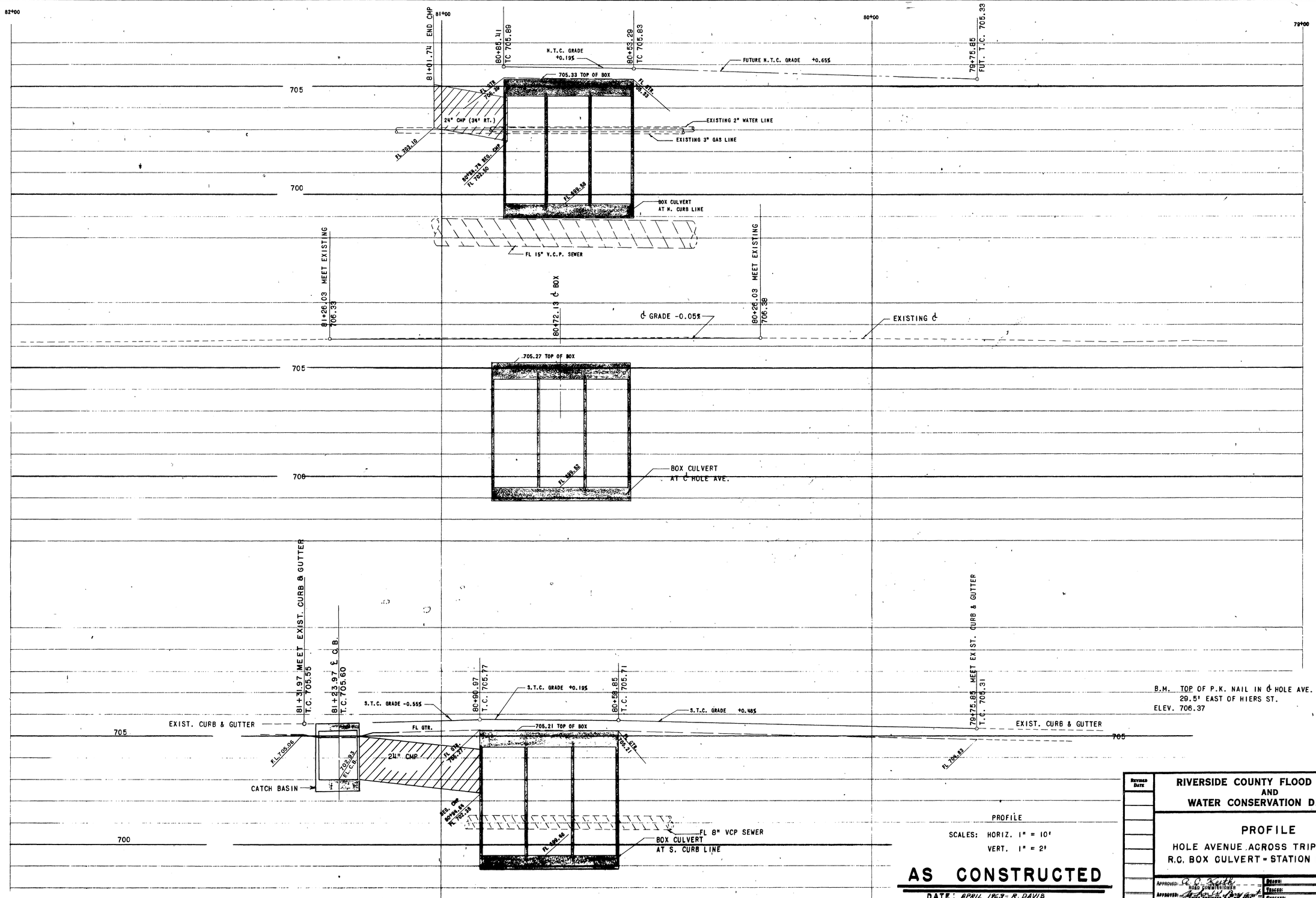
AS CONSTRUCTED

DATE: APRIL 1963 - R. DAVIS

PROJECT NO. 1-0-060

REVISED DATE	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
	DETAILS - TRIPLE 10' x 5' R.C. BOX CULVERT ACROSS HOLE AVENUE - STATION 122+96.42
	APPROVED: A. C. Keith, ROAD COMMISSIONER; APPROVED: [illegible]; DATE: 7-18-63; DRAWN: TRACED: CHECKED: DATE DRAWN: SHEET No. 12; DWG. No. 1-165

D-173 C



B.M. TOP OF P.K. NAIL IN ℄ HOLE AVE.
29.5' EAST OF HIERS ST.
ELEV. 706.37

PROFILE

SCALES: HORIZ. 1" = 10'
VERT. 1" = 2'

AS CONSTRUCTED

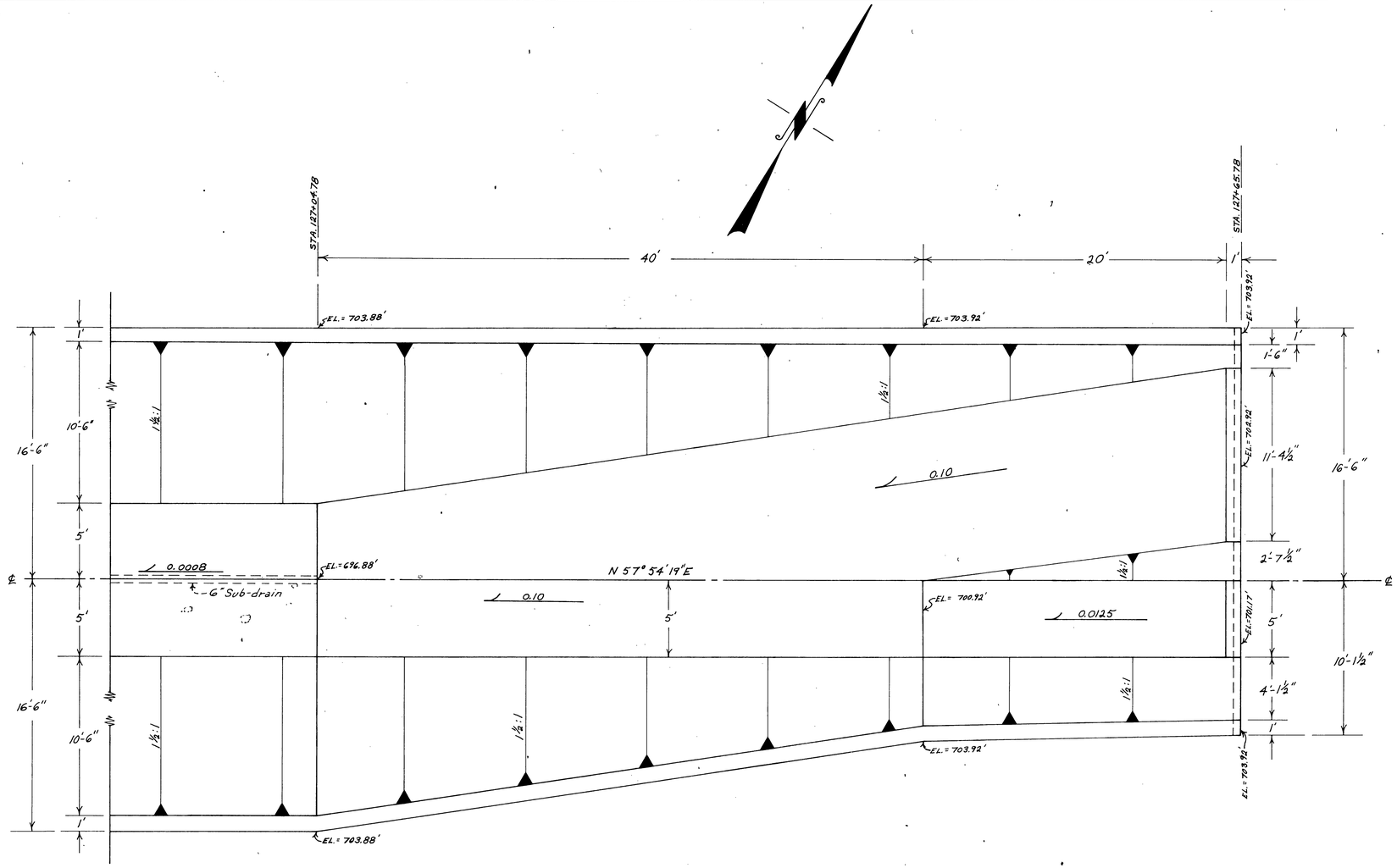
DATE: APRIL 1963 - R. DAVIS

REVISED DATE	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
	PROFILE HOLE AVENUE ACROSS TRIPLE 10'x5' R.C. BOX CULVERT - STATION 122+96.42

APPROVED: R. C. Keith, ROAD COMMISSIONER	DRAWN:	SHEET No. 13
APPROVED: [signature], CHIEF ENGINEER R.C. NO. 1655	TRACED:	
DATE: 7-10-63	CHECKED:	DWG. No. 1-165
	DATE DRAWN:	

PROJECT NO. 1-0-060

D-173 C 140-E



PLAN

SCALE: 1" = 4'

REVISED DATE	RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT
	LA SIERRA STORM CHANNEL STAGE "C"
	JONES LATERAL END RAMP AND INLET STRUCTURE
	DRAWN: R. DAVIS — SHEET No. 14
	TRACED:
	APPROVED: [signature] CHIEF ENGINEER R.C. NO. 6833 — CHECKED: [signature]
	DATE: Oct. 8, 1962 — DATE DRAWN: JULY 1962 — DWG. No. 1-165

PROJECT NO. 1-0-060 D-173 C