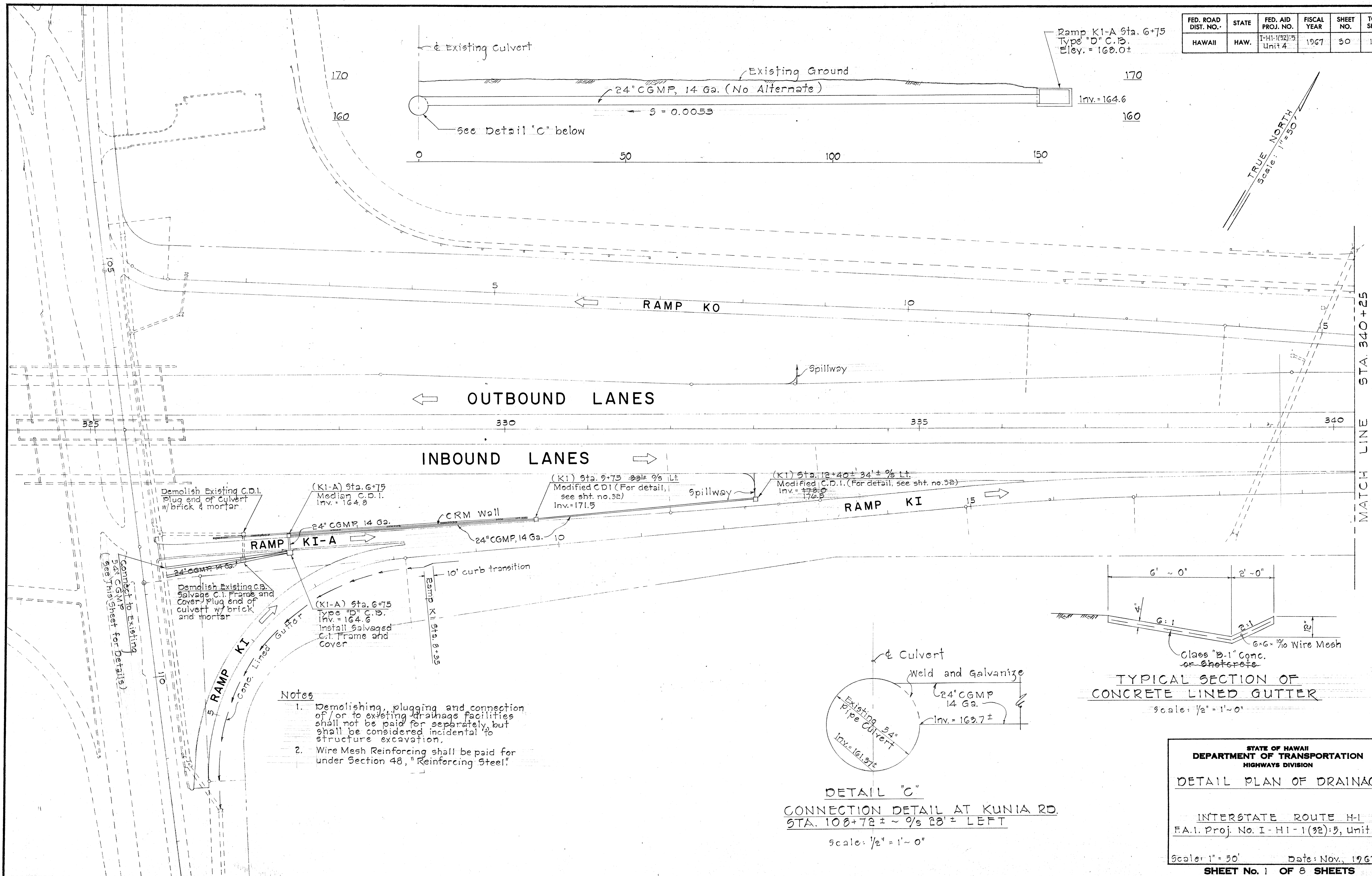


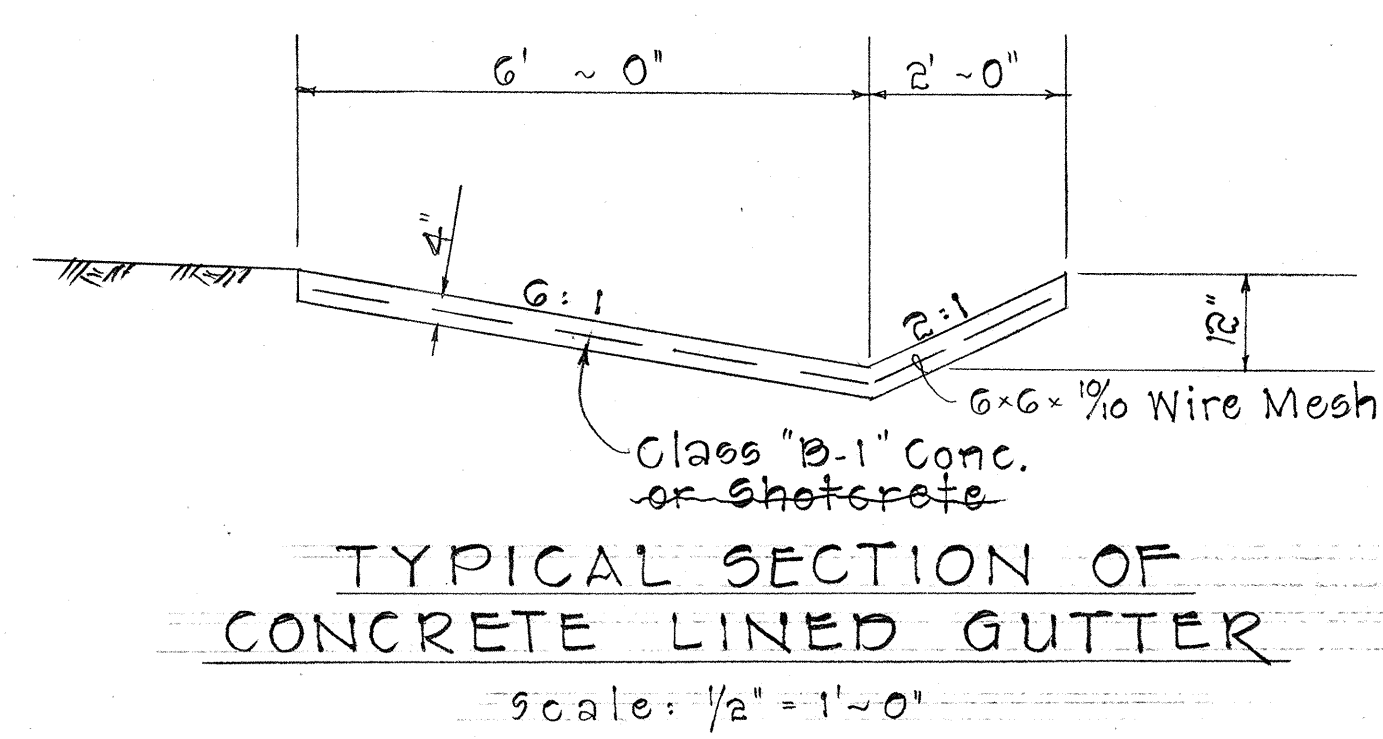
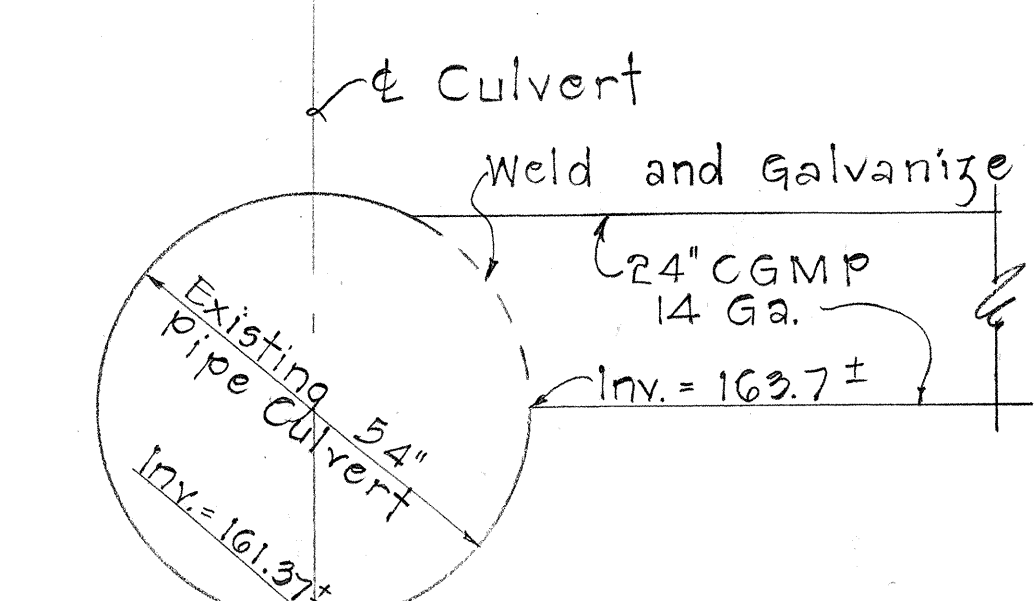
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-41-1(32):5 Unit 4	1967	30	101



TRUE NORTH
Scale: 1" = 50'

MATCH LINE STA. 340+25

- Notes**
1. Demolishing, plugging and connection of/or to existing drainage facilities shall not be paid for separately, but shall be considered incidental to structure excavation.
 2. Wire Mesh Reinforcing shall be paid for under Section 48, "Reinforcing Steel".



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DETAIL PLAN OF DRAINAGE

INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-H1-1(32):5, Unit 4

Scale: 1" = 50' Date: Nov. 1967
SHEET No. 1 OF 8 SHEETS

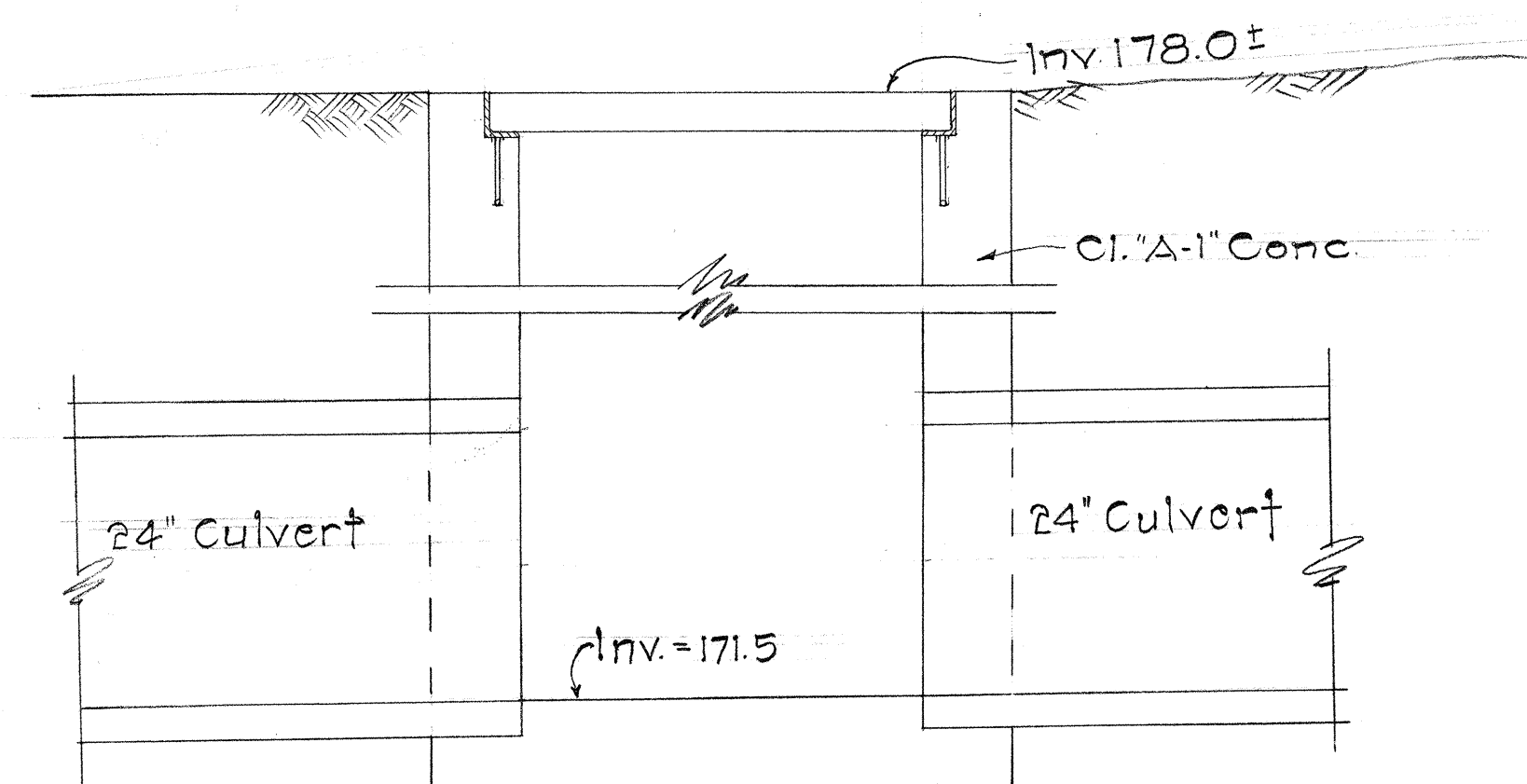
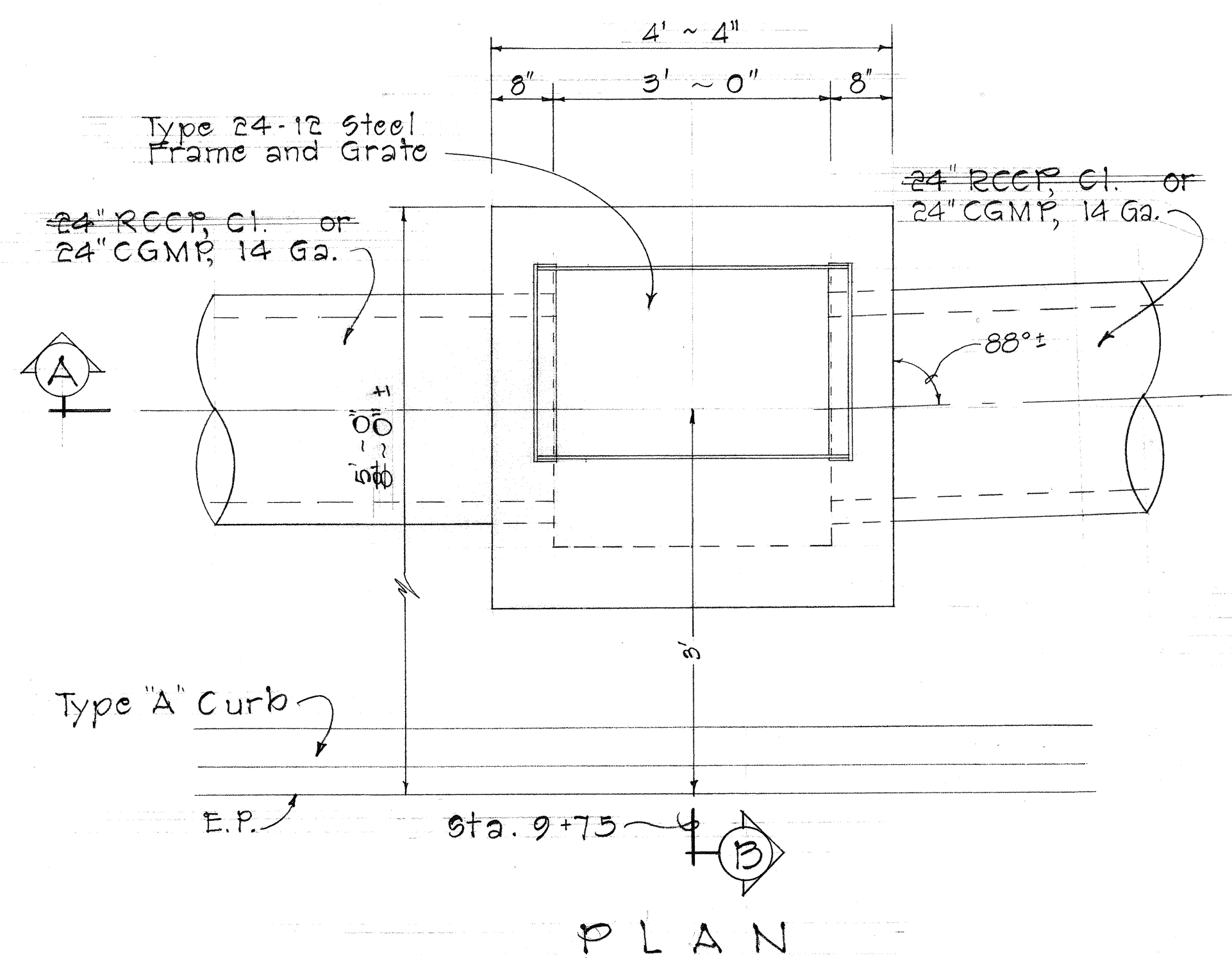
DESIGNED BY	DATE
TRACED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

S U M M A R Y

[illegible]

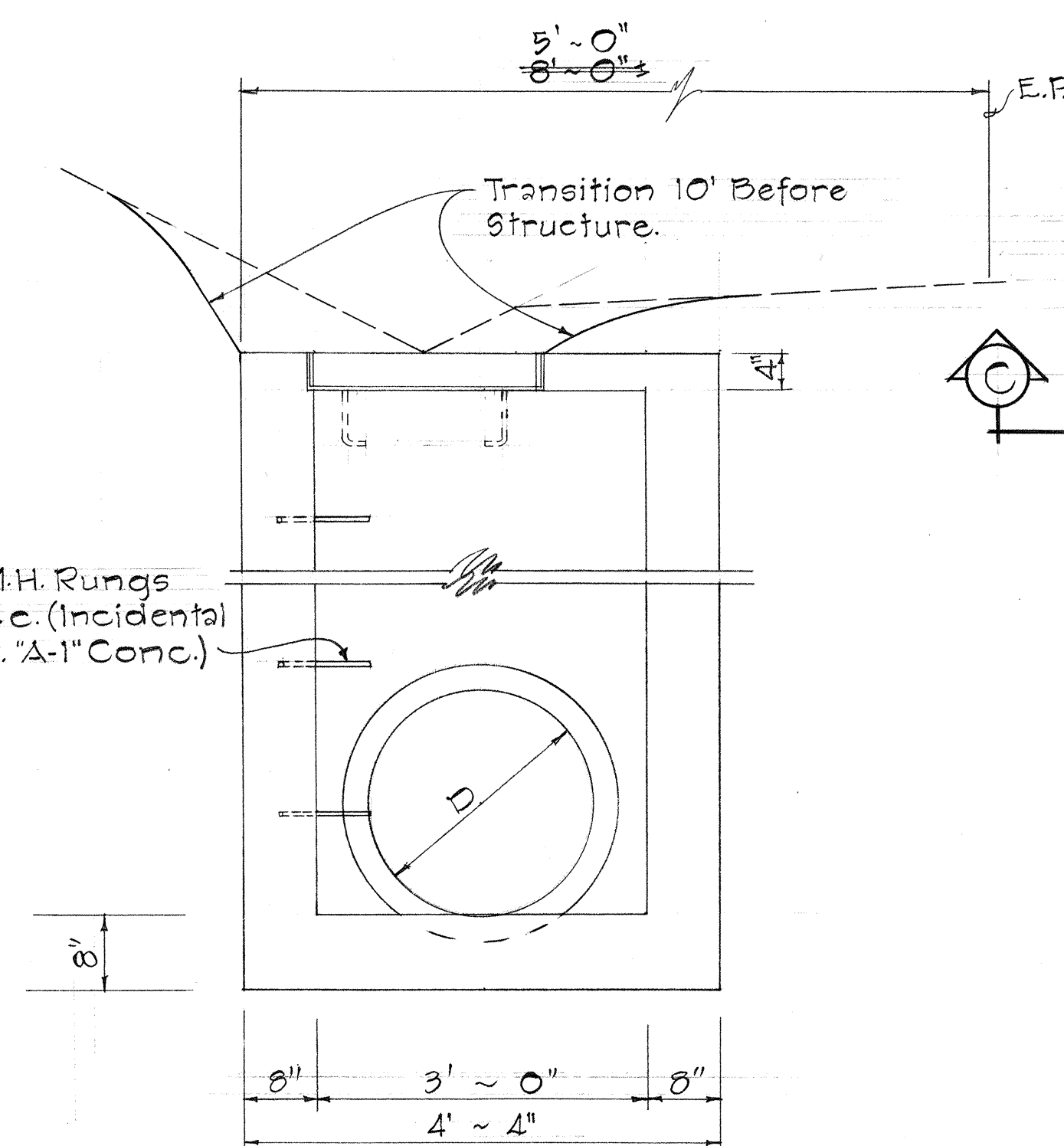
SHEET NO. 2 OF 8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(32):5 Unit 4	1967	32	101

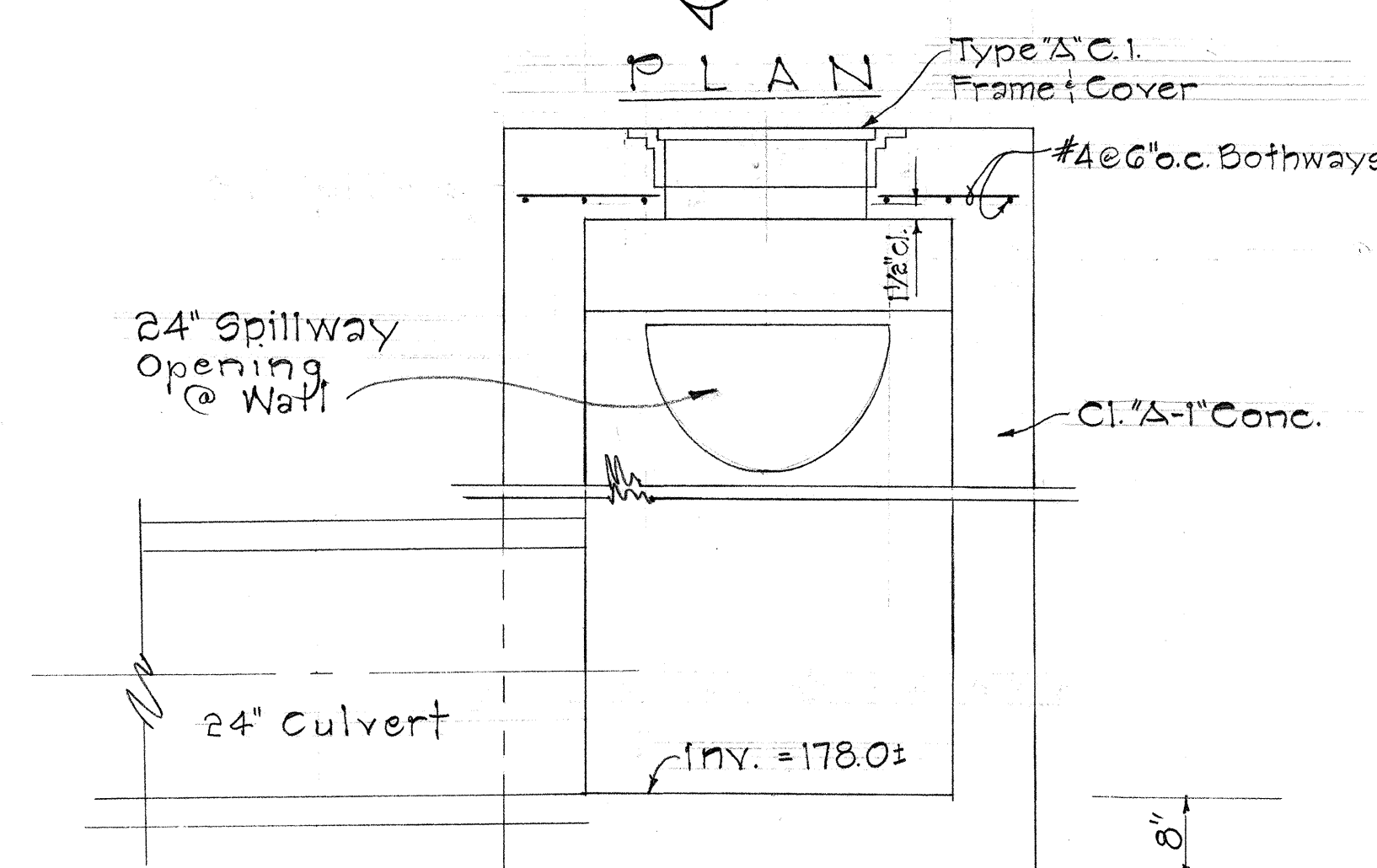
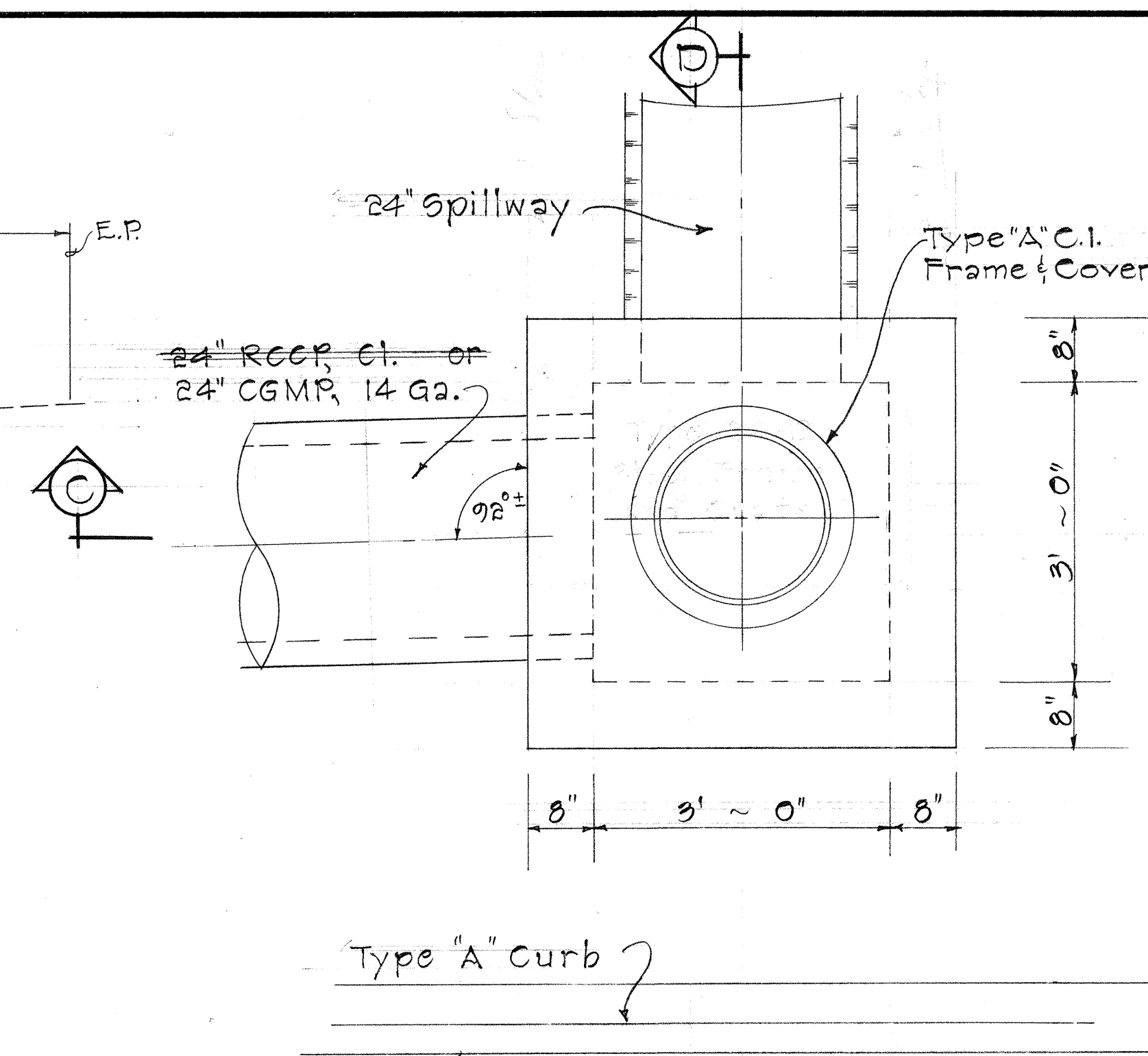


SECTION "A-A"

DETAIL OF C.D.I. AT
RAMP K-1 STA. 9+75
Scale: 3/4" = 1'-0"

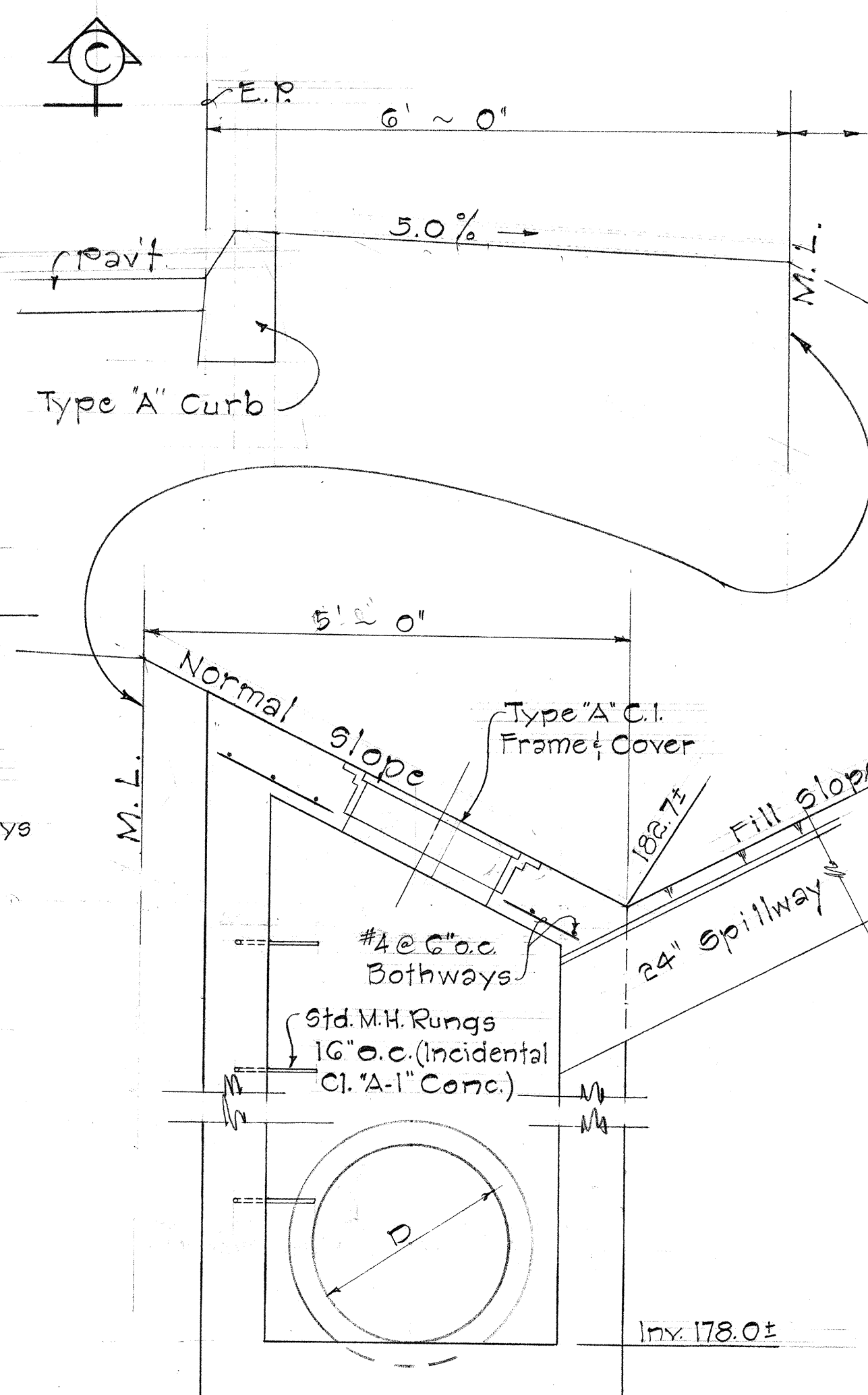


SECTION "B-B"



SECTION "C-C"

DETAIL OF C.D.I. AT
RAMP K-1 STA. 12+40
Scale: 3/4" = 1'-0"



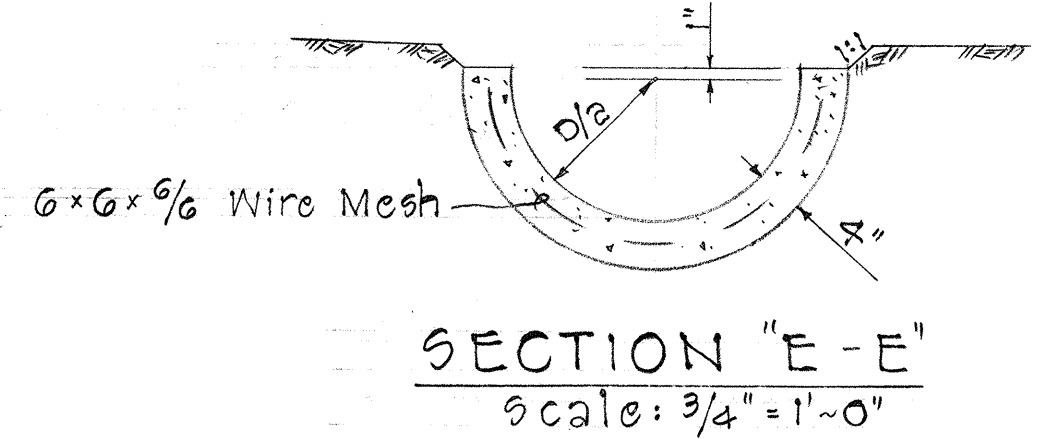
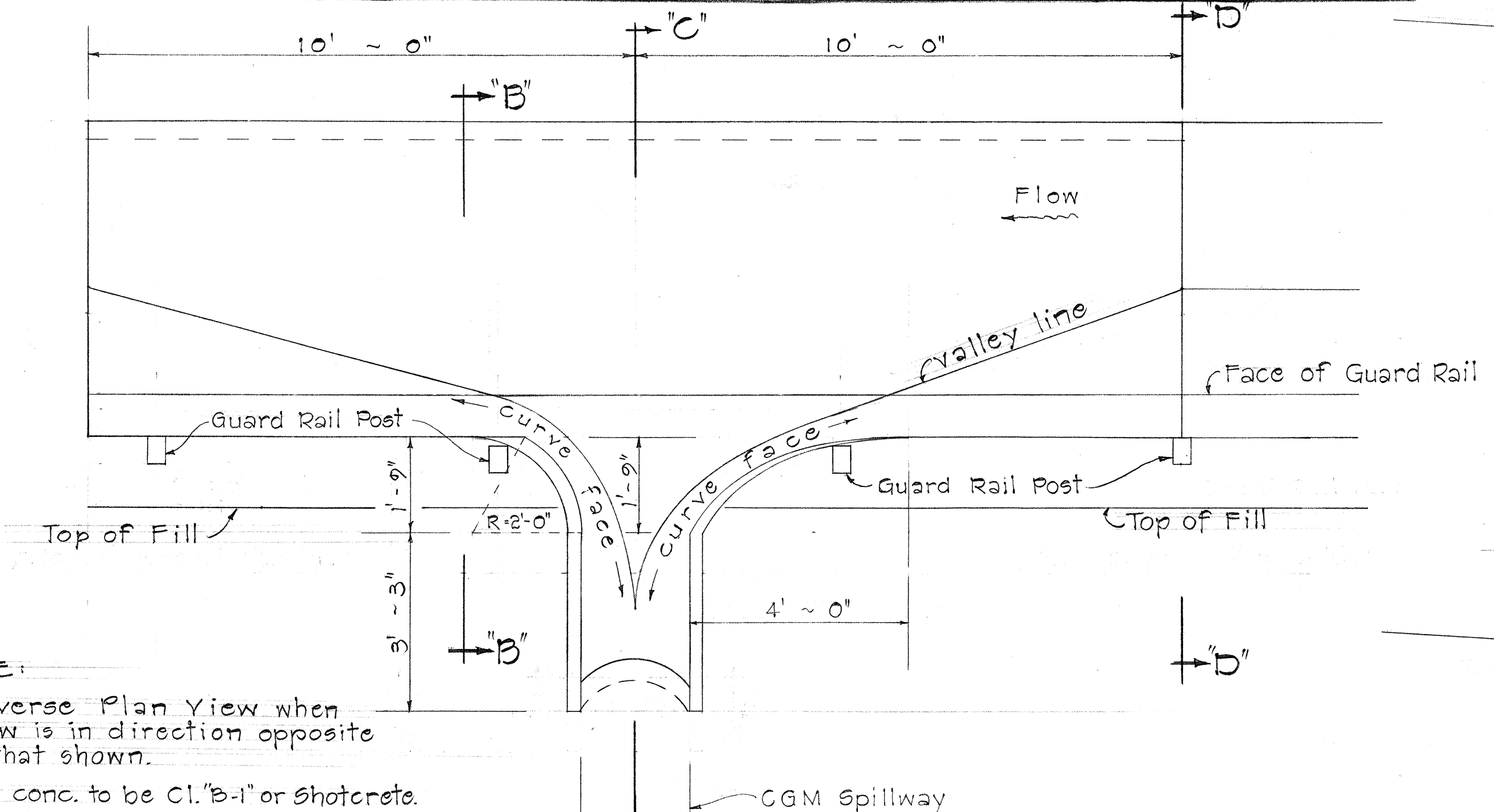
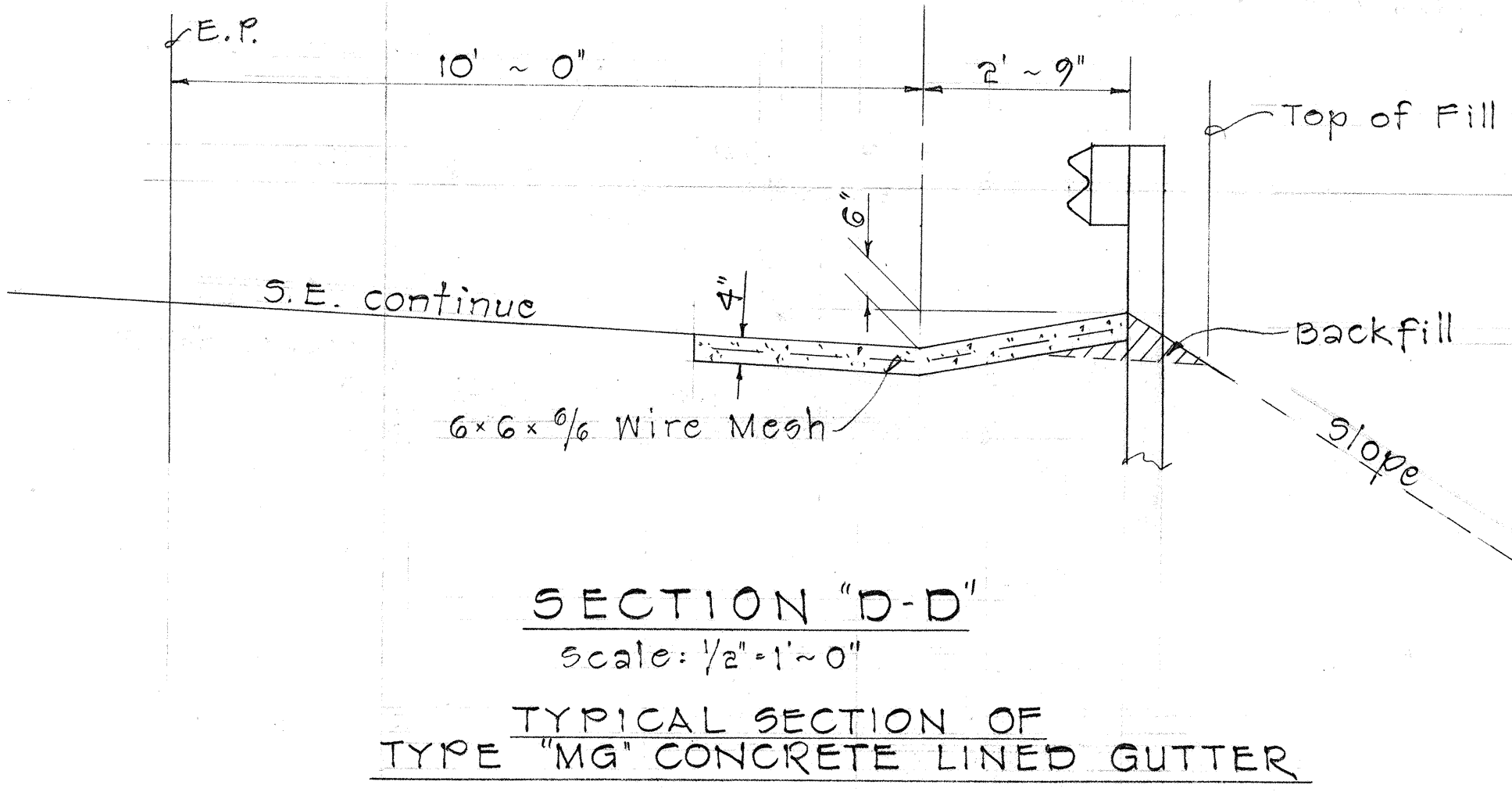
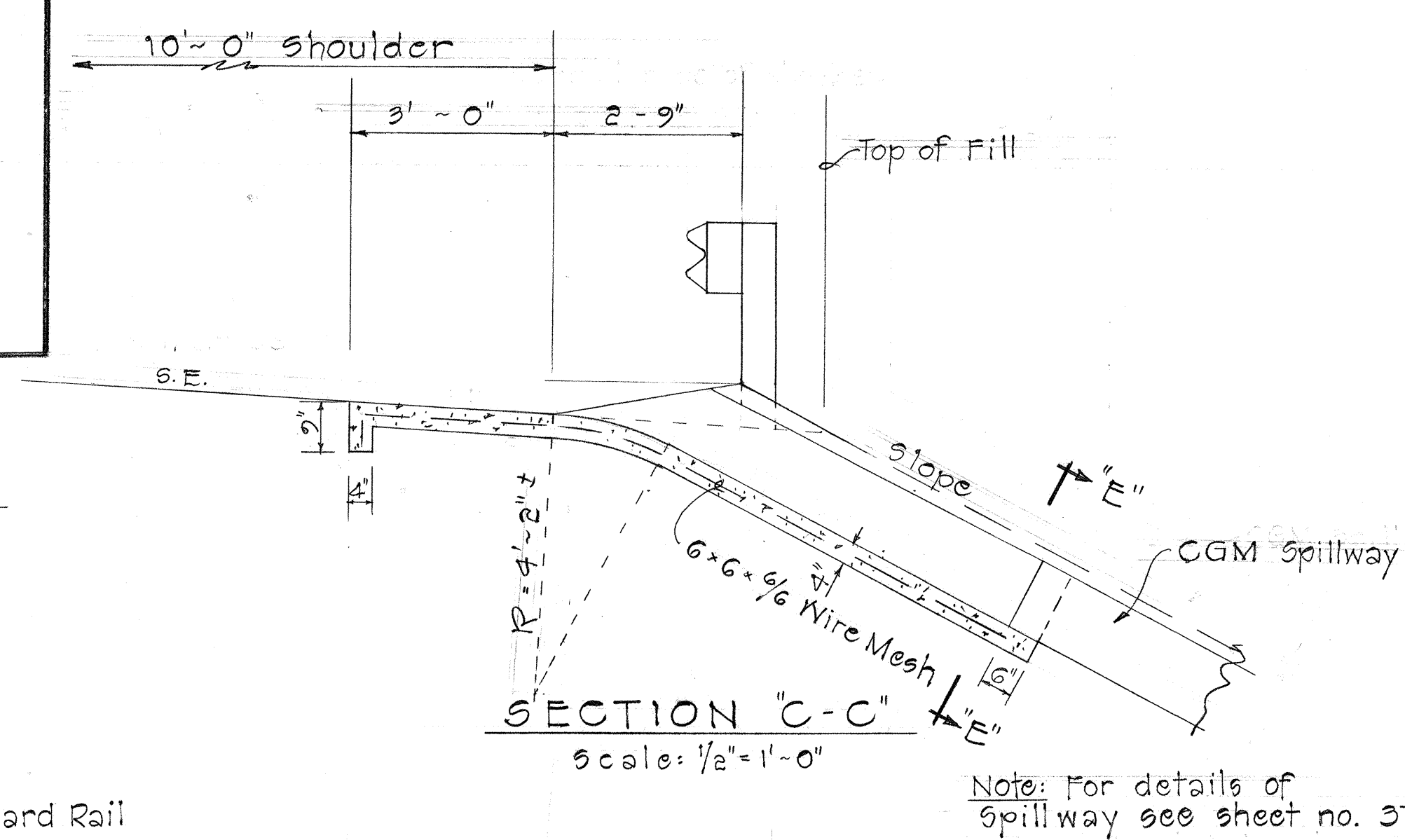
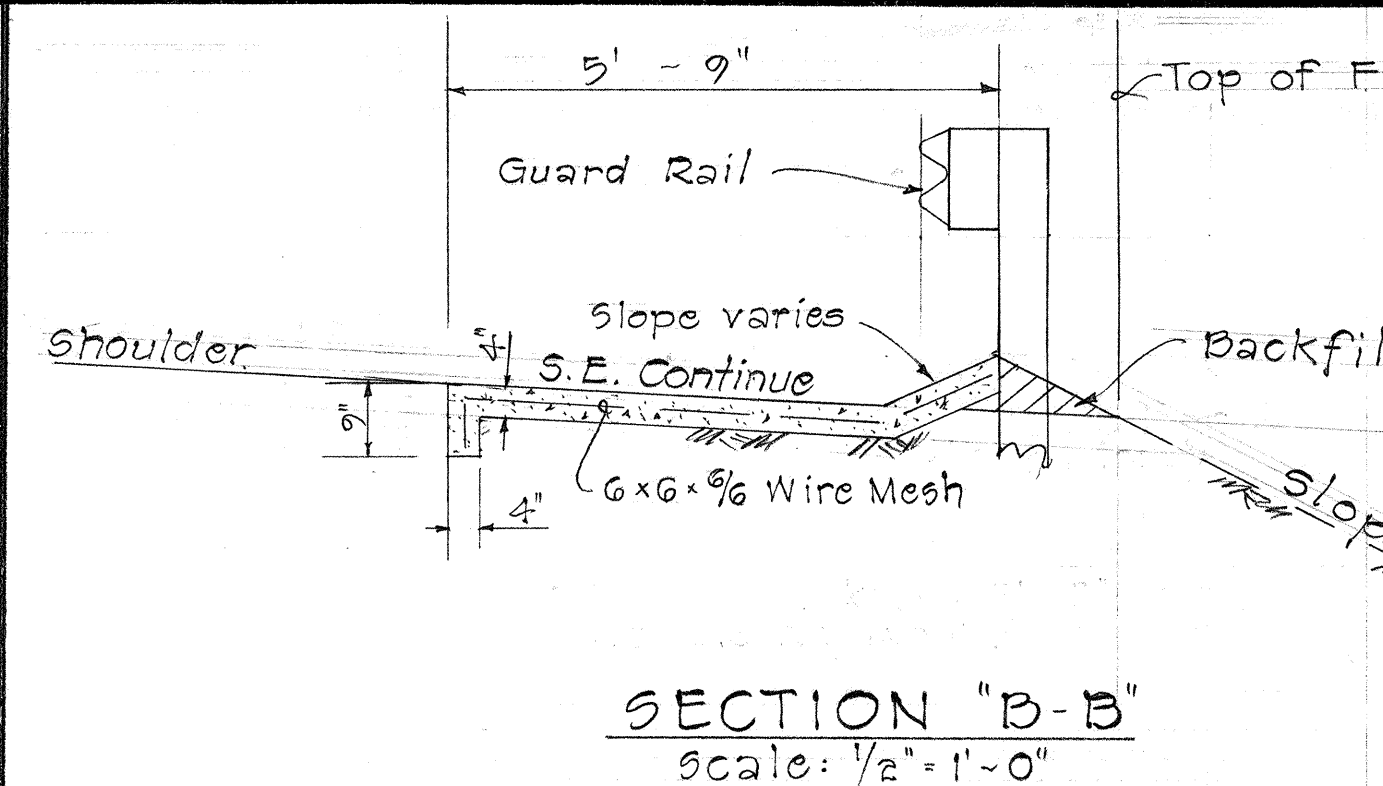
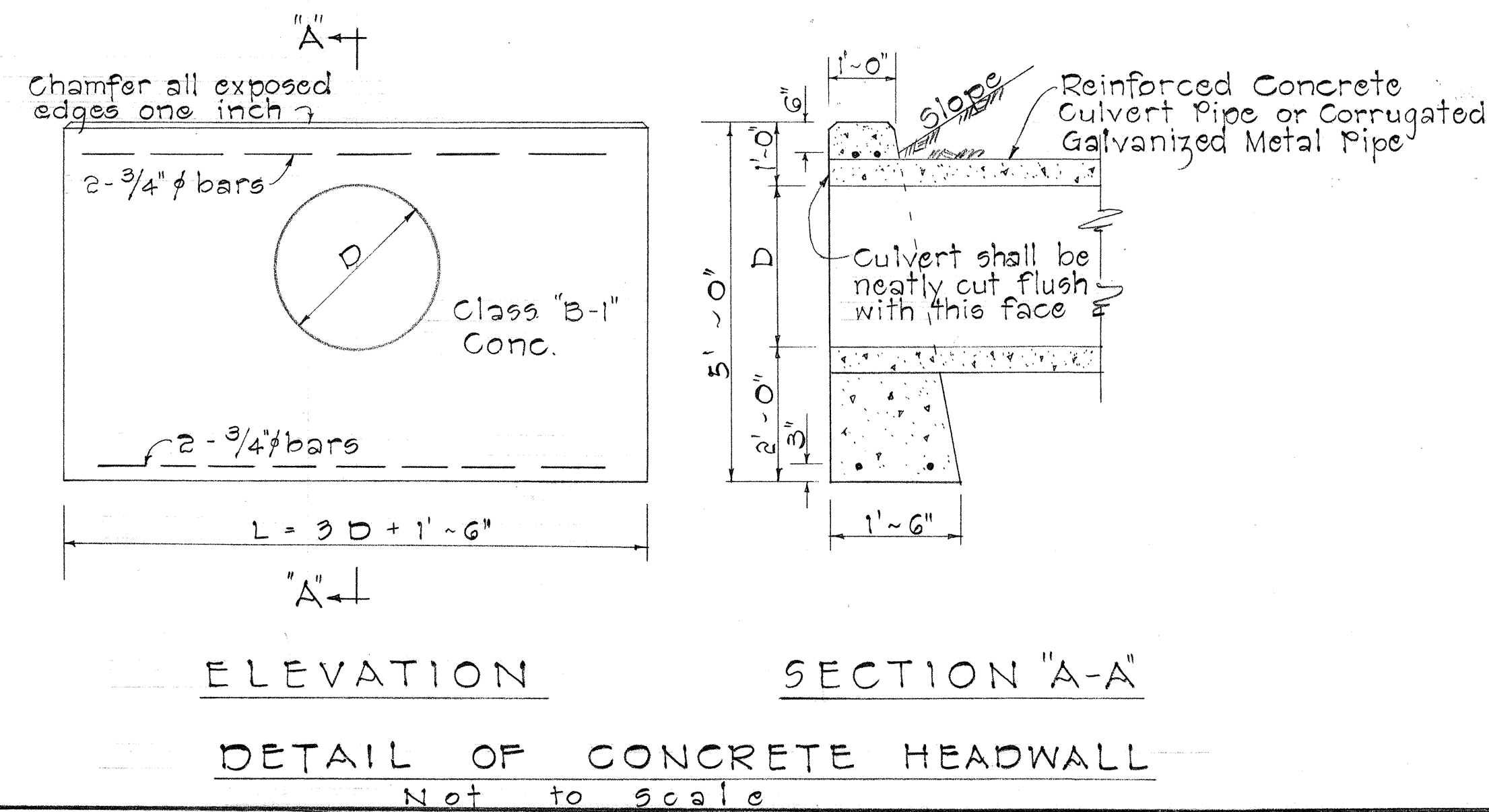
SECTION "D-D"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
DETAILS OF C.D.I.
@ STA. 9+75 & STA. 12+40
INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-HI-1(32):5 Unit 4
Scale: 3/4" = 1'-0" Date: Nov. 1967
SHEET No. 3 OF 8 SHEETS

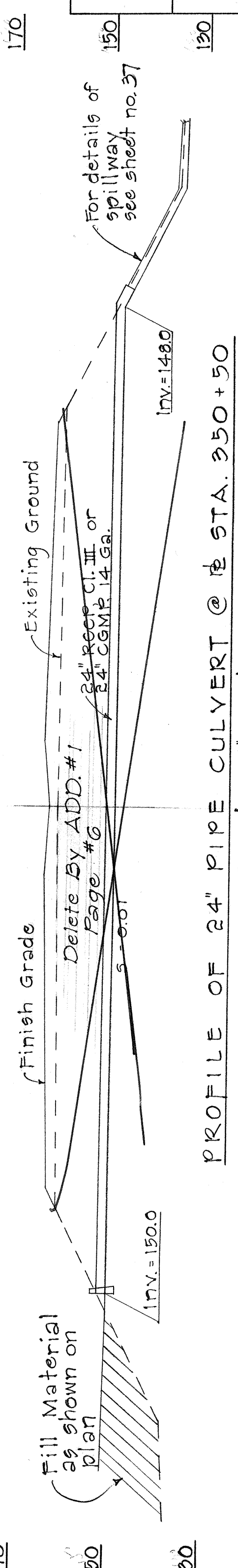
33 22

ORIGINAL	DATE
PLAN	
DESIGNED BY	
NOTED BY	
CHECKED BY	
IN CHARGE	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H1-1(32)5 Unit 4	1967	33	101



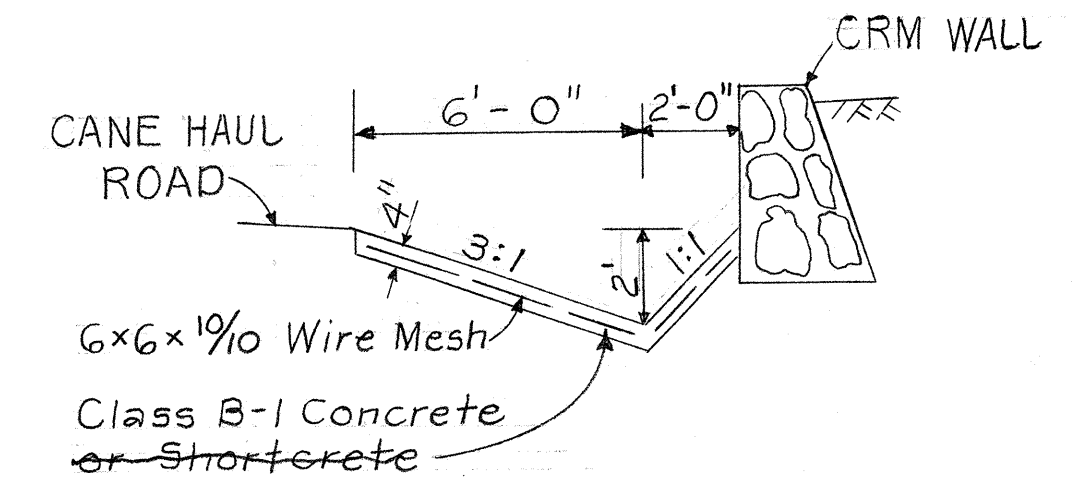
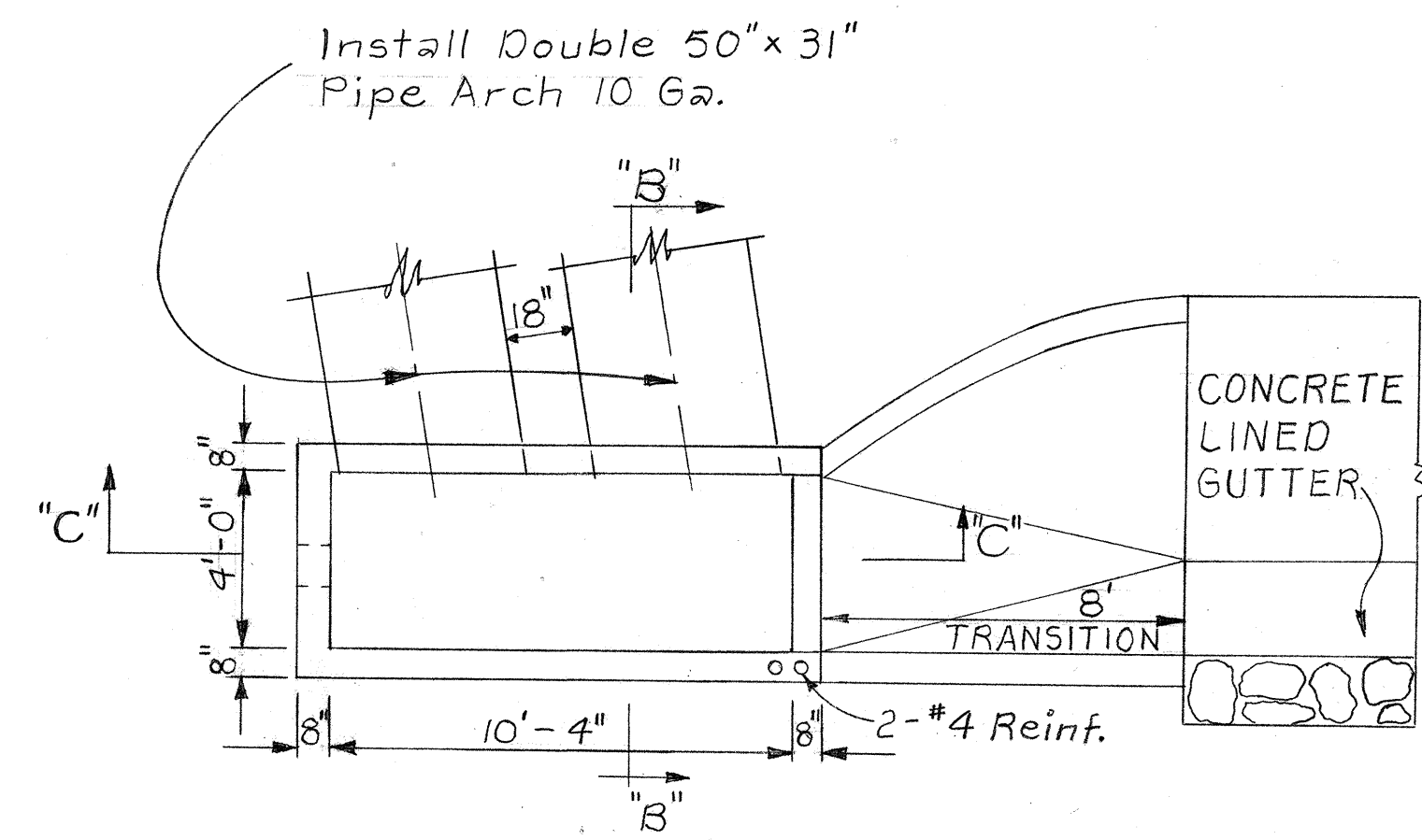
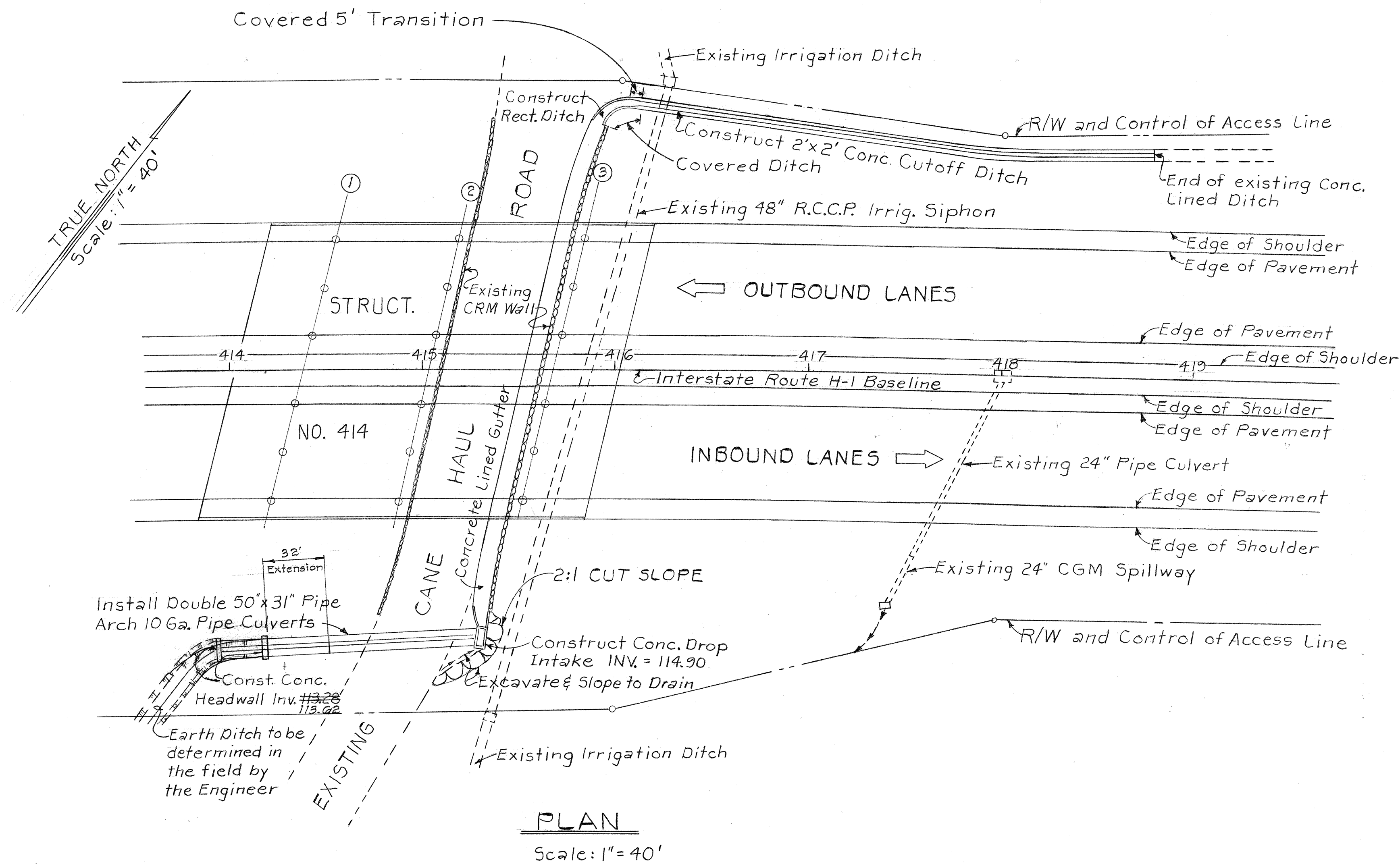
DETAILS OF SPILLWAY INLET



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS FOR
CONC. HEADWALL, SPILLWAY
INLET AND PROFILE FOR
24" PIPE CULVT. @ STA. 350+50
INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-H1-1(32)5 Unit 4
Scale: As Shown Date: Dec. 1967
SHEET No. 4 OF 8 SHEETS

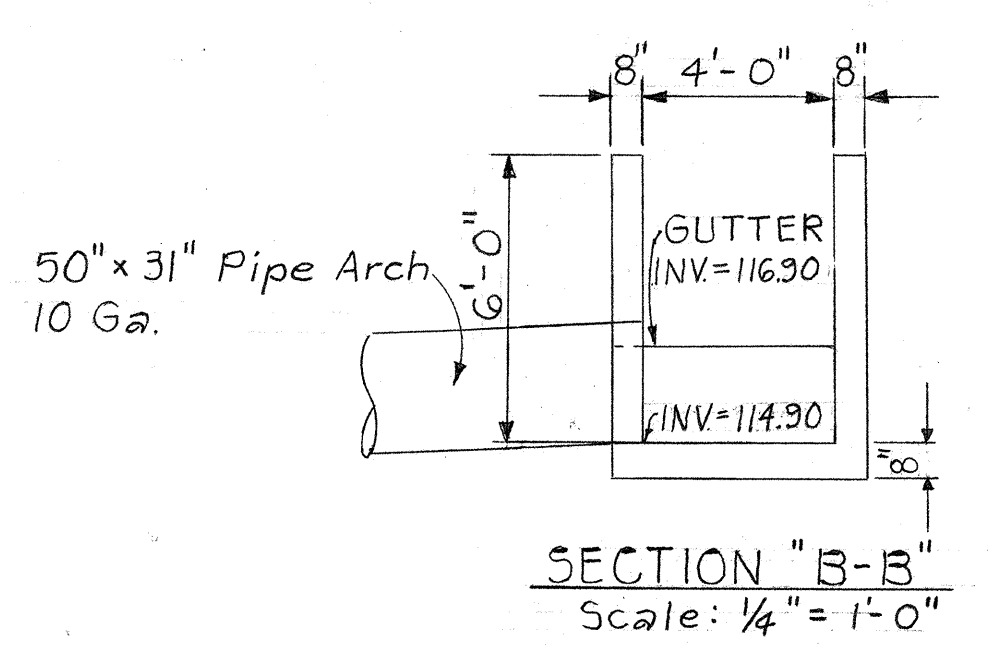
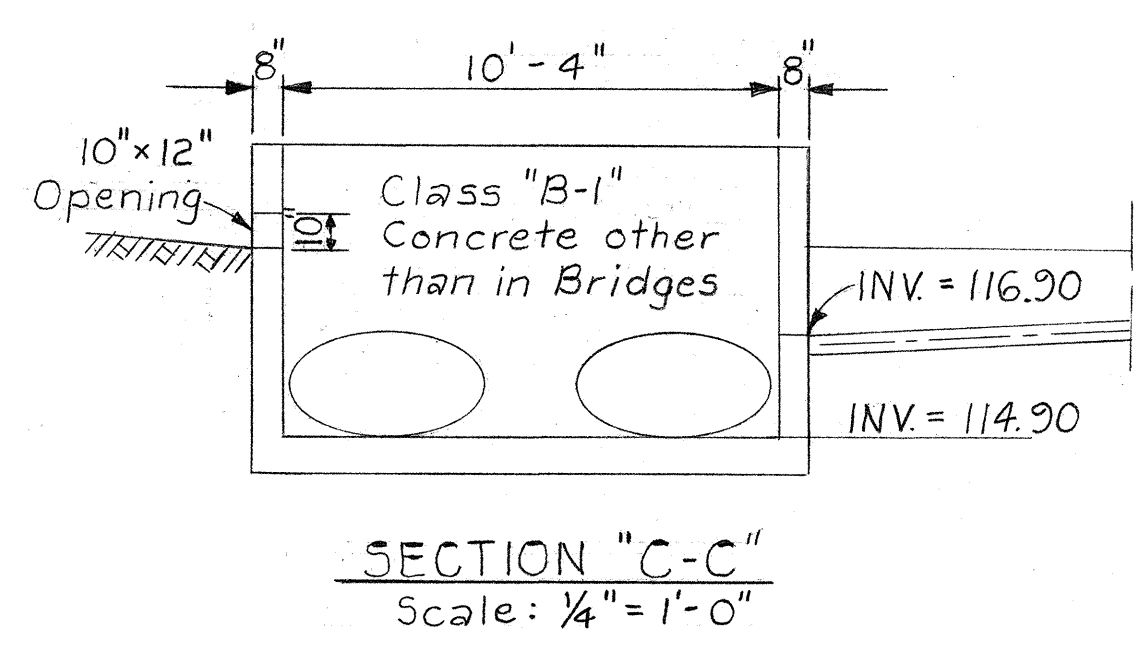
- NOTE:
- Reverse Plan View when flow is in direction opposite to that shown.
 - All conc. to be Cl. "B-1" or Shotcrete.
 - Wire Mesh Reinforcing shall be paid for under Section 48, "REINFORCING STEEL."
 - Guard rail posts shall be set back at spillway transition. Spacer block dimension shall be increased so that the guard rail element is in line with the adjacent guard rail elements.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(32)5 Unit 4	1967	C0335	101



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

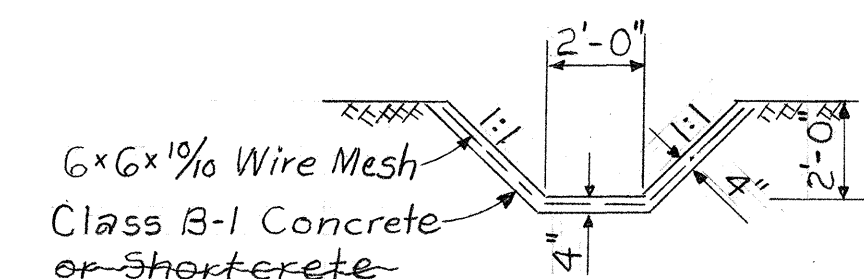
TYPICAL CONCRETE LINED GUTTER
Scale: 1/4" = 1'-0"



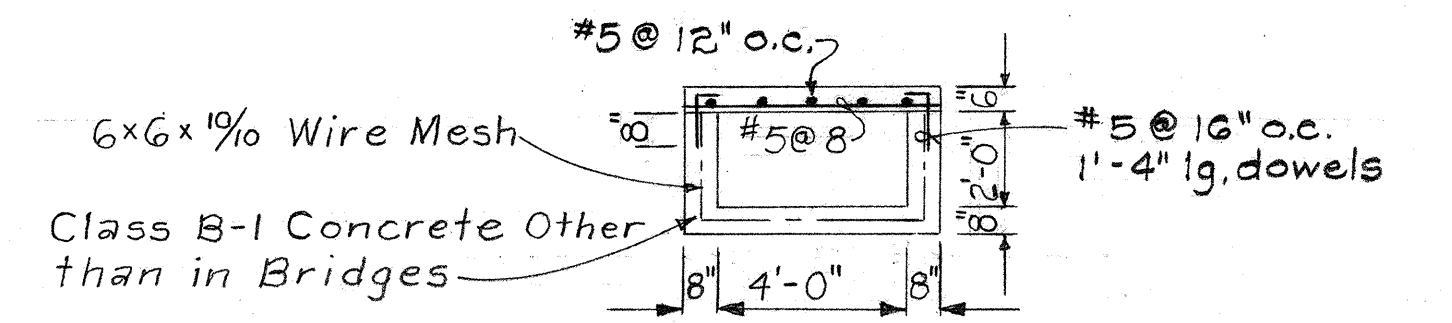
SECTION "C-C"
Scale: 1/4" = 1'-0"

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

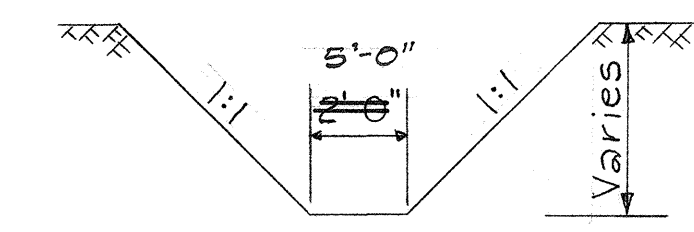
C.D.I. # STA. 415+30 RT.
Scale: As Shown



TYPICAL SECTION-CONCRETE CUTOFF DITCH
Scale: 1/4" = 1'-0"



TYPICAL SECTION-RECTANGULAR COVERED DITCH # STA. 416+00 LEFT
Scale: 1/4" = 1'-0"



TYPICAL EARTH DITCH
Scale: 1/4" = 1'-0"

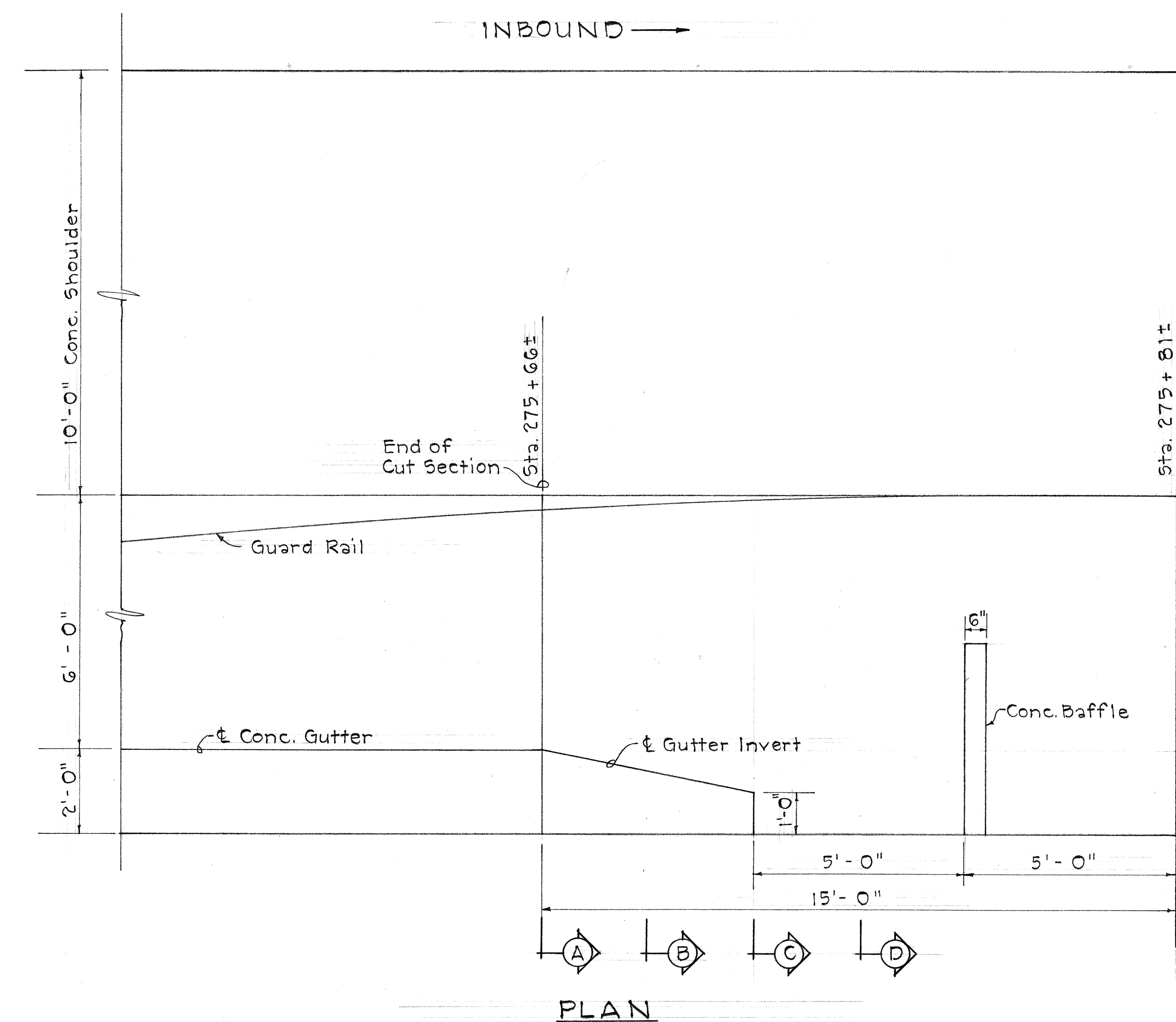
THIS SHEET IS A SUPPLEMENT TO
THE CONTRACT DRAWINGS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
PLAN AND DETAILS FOR
DRAINAGE IMPROVEMENTS
NEAR STRUCT. No. 414
INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-HI-1(32)5 Unit 4
Scale: As Shown Date: Jan. 27, 1969
SHEET No. OF SHEETS

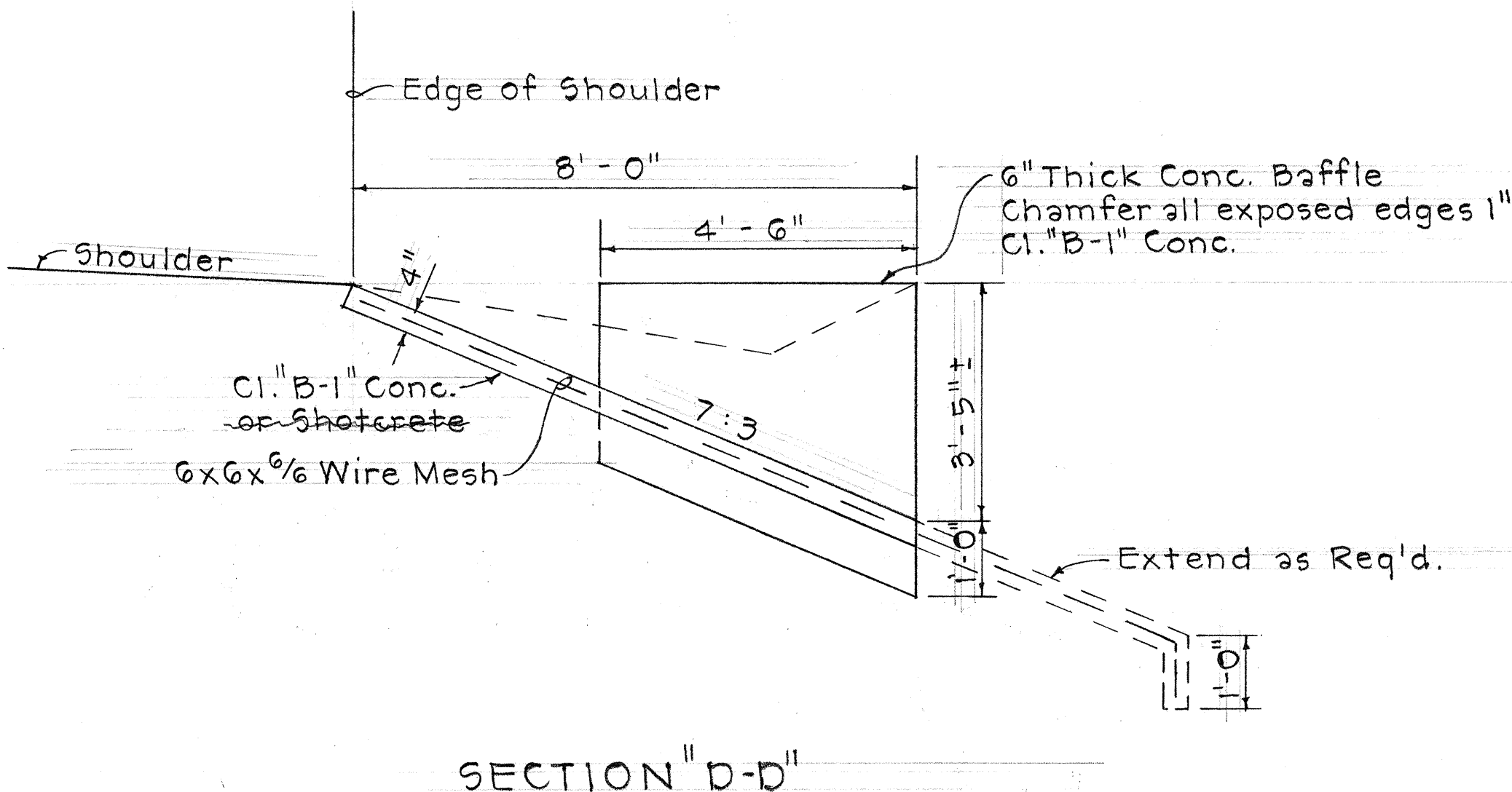
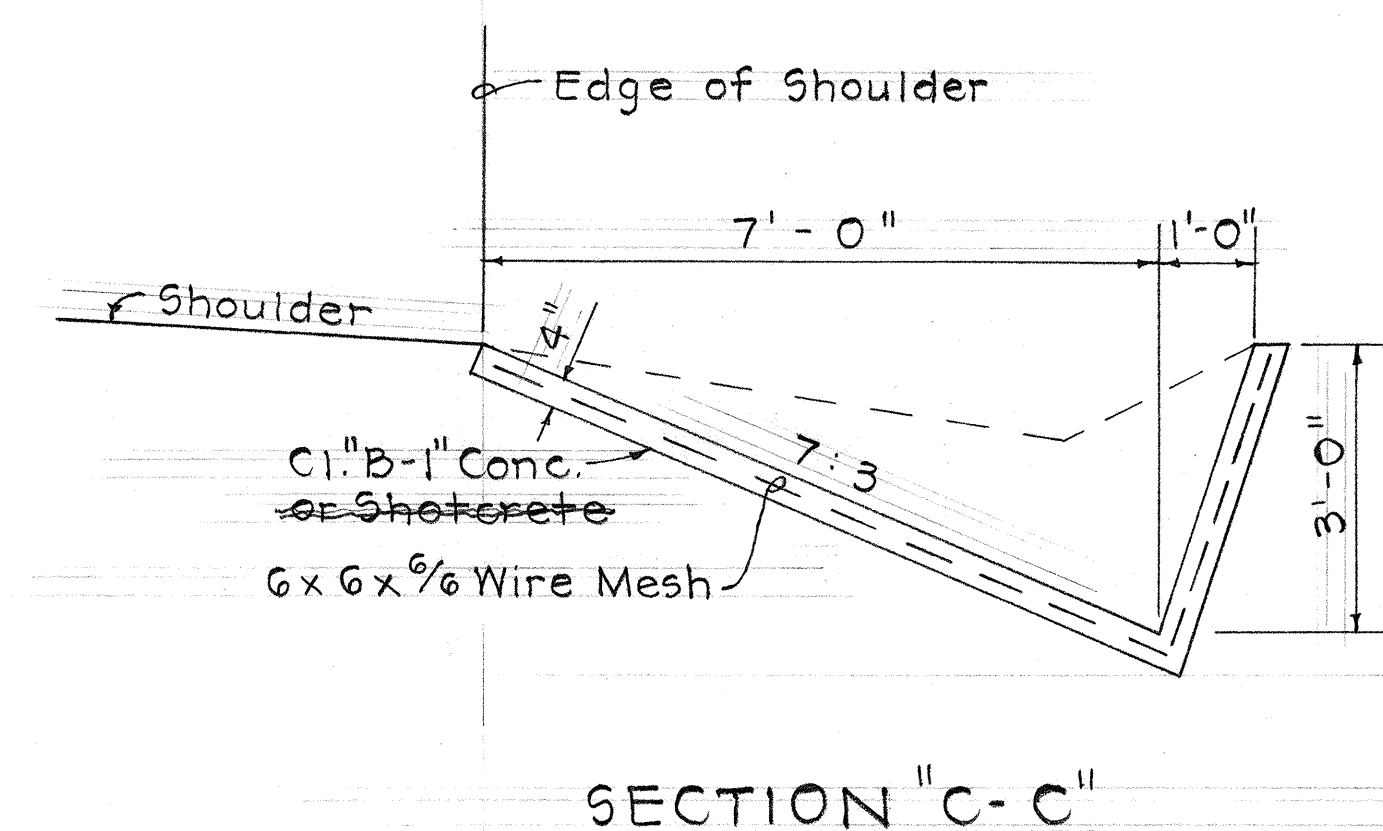
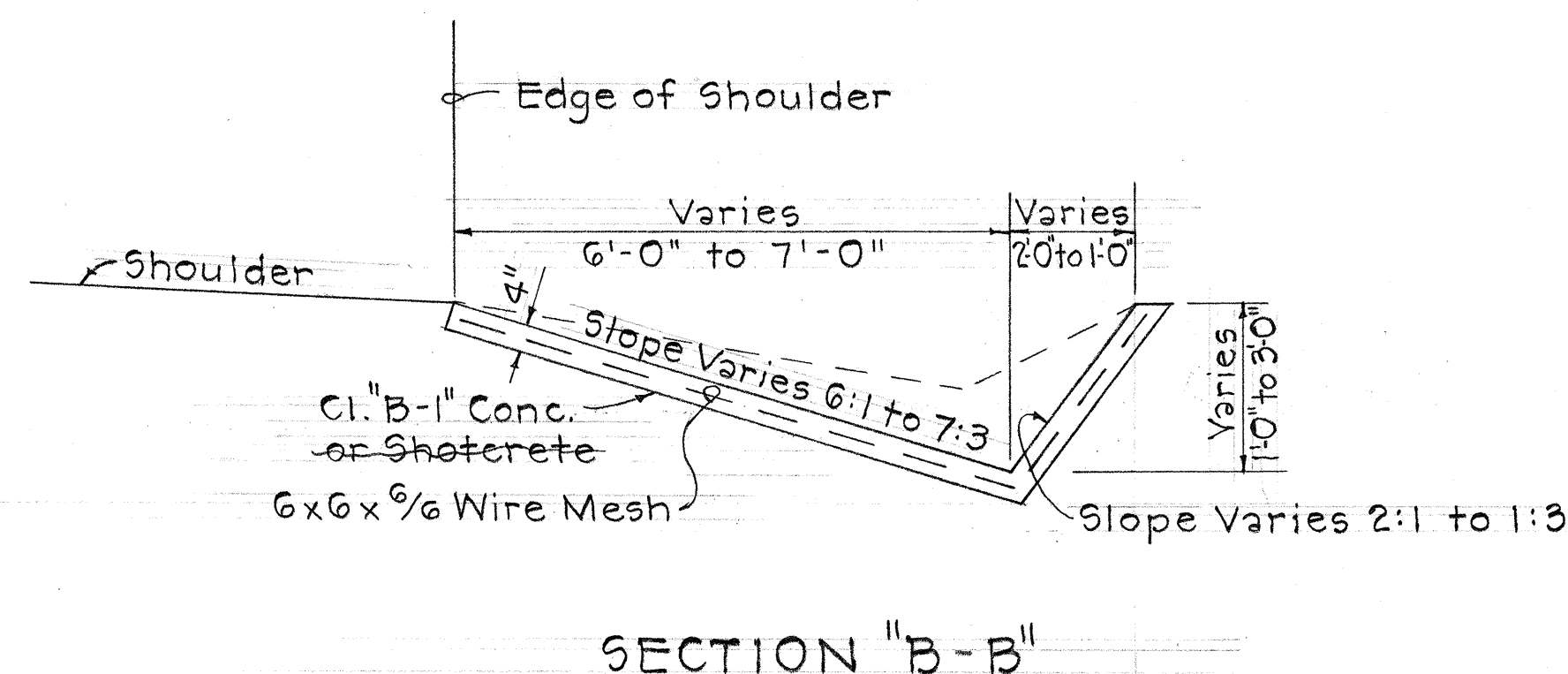
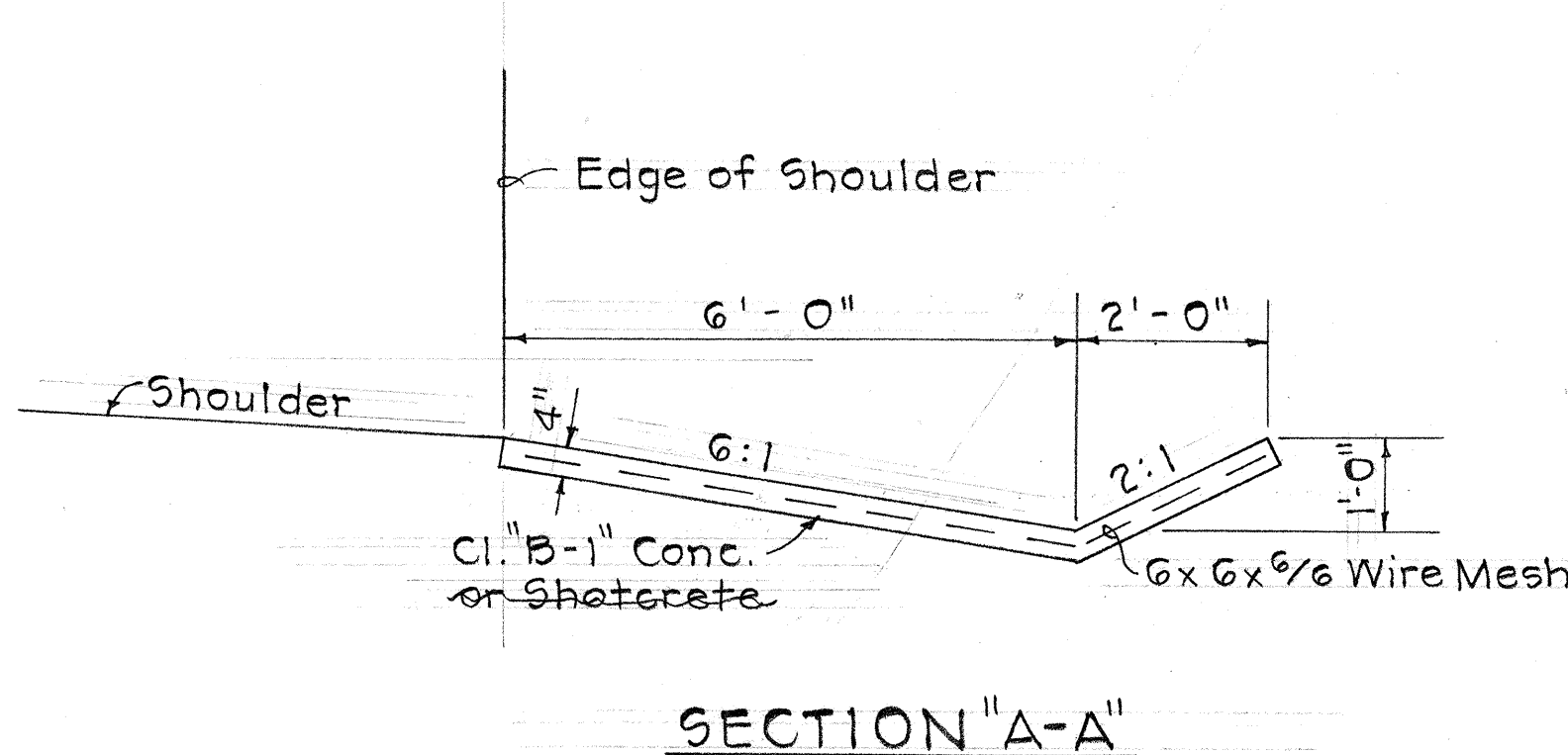
C.O.335-1

DESIGNED BY	DATE
CHECKED BY	
NOTED BY	
ORIGINAL	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(32):5 Unit 4	1967	C.O. 33S-2	101



Waikale Bridge Abutment

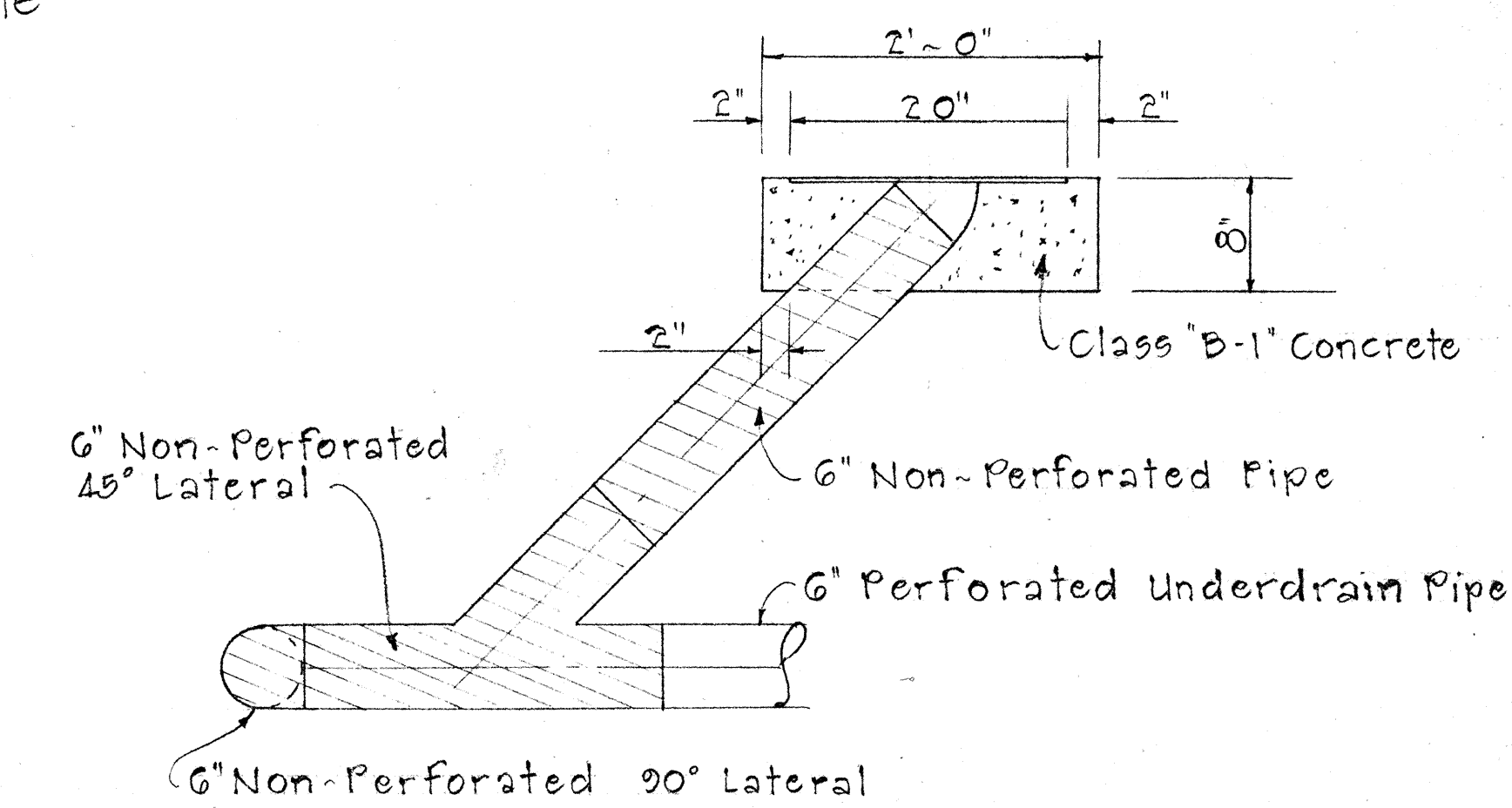
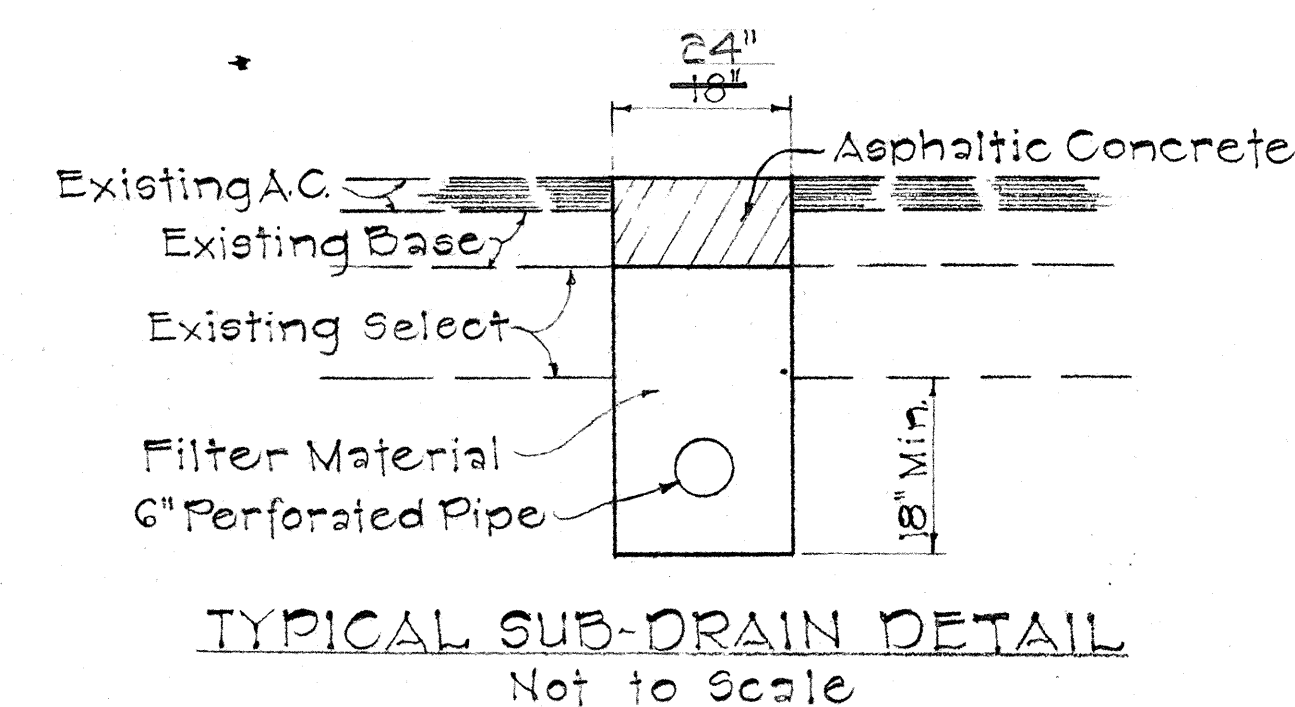
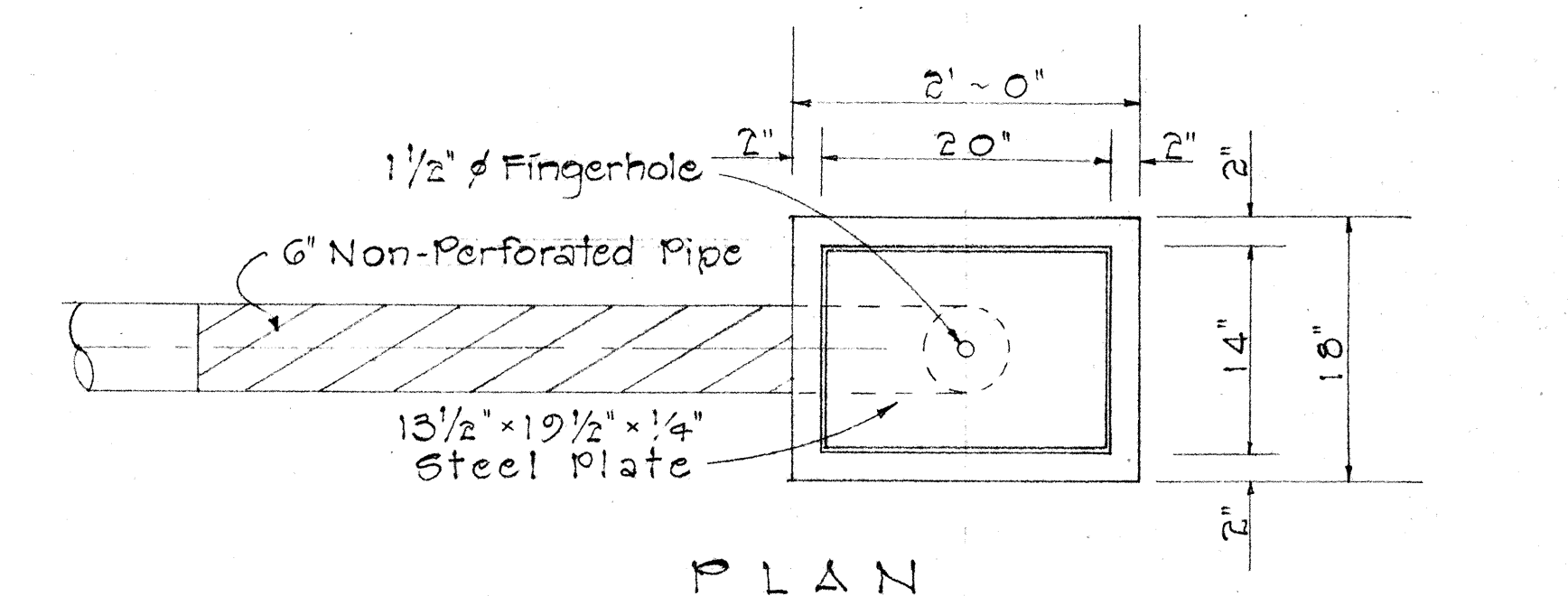
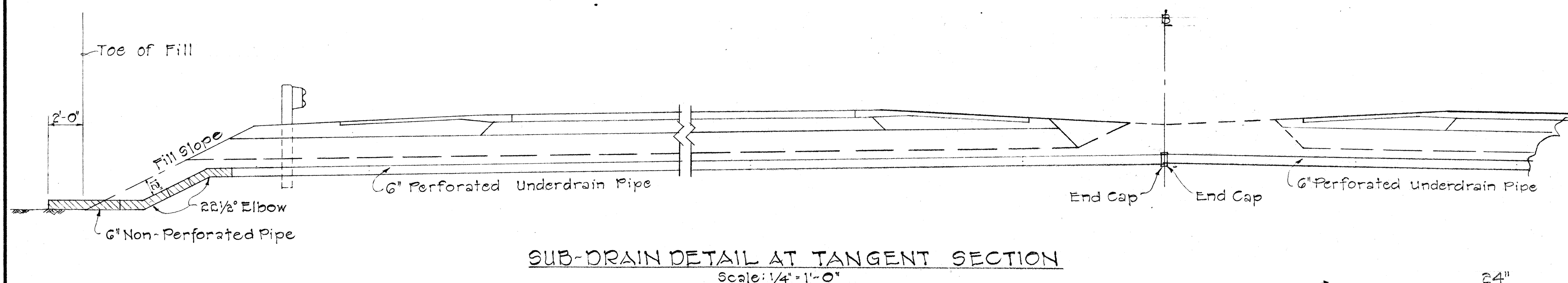
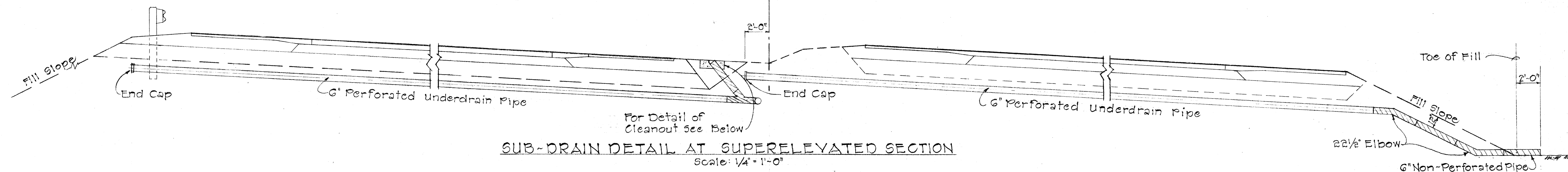


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
GUTTER MODIFICATION AT
WAIKALE STRUCTURE
INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-HI-1(32):5, Unit 4
Scale: 1/2" = 1'-0" Date: Oct. 1968
SHEET No. OF SHEETS

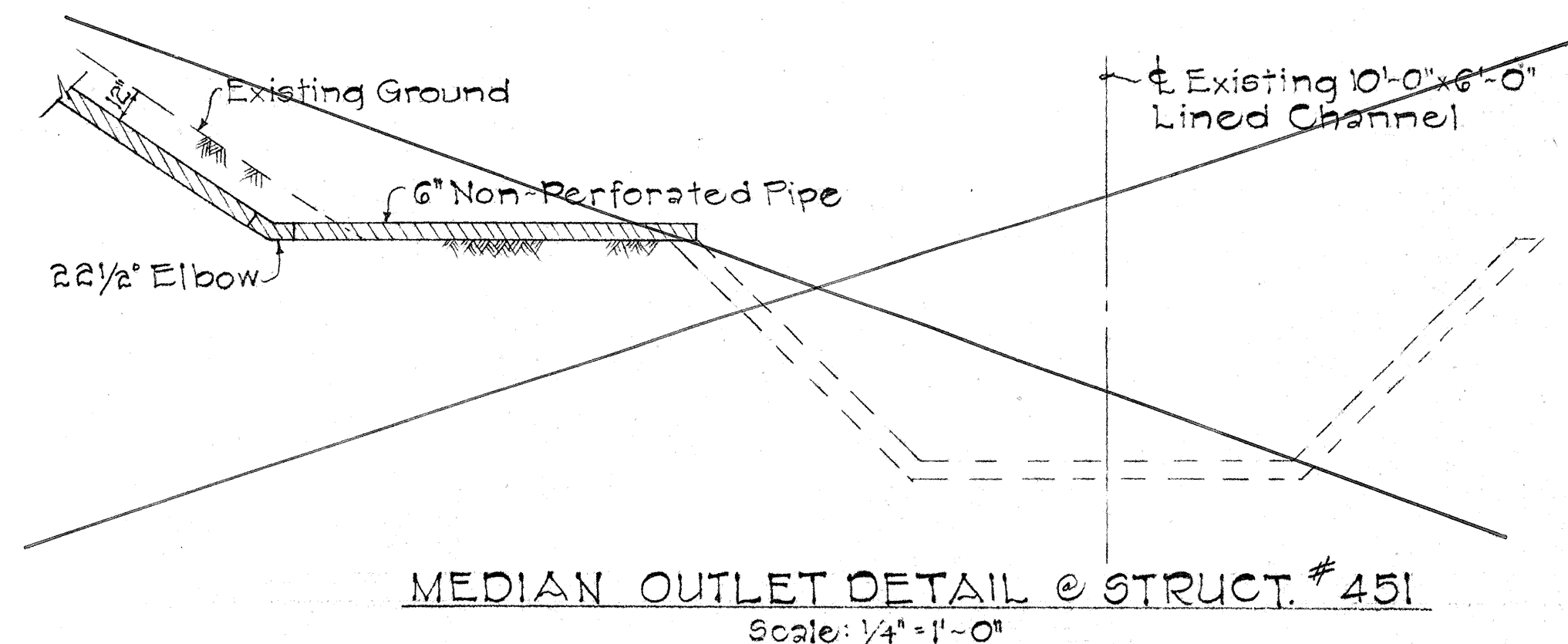
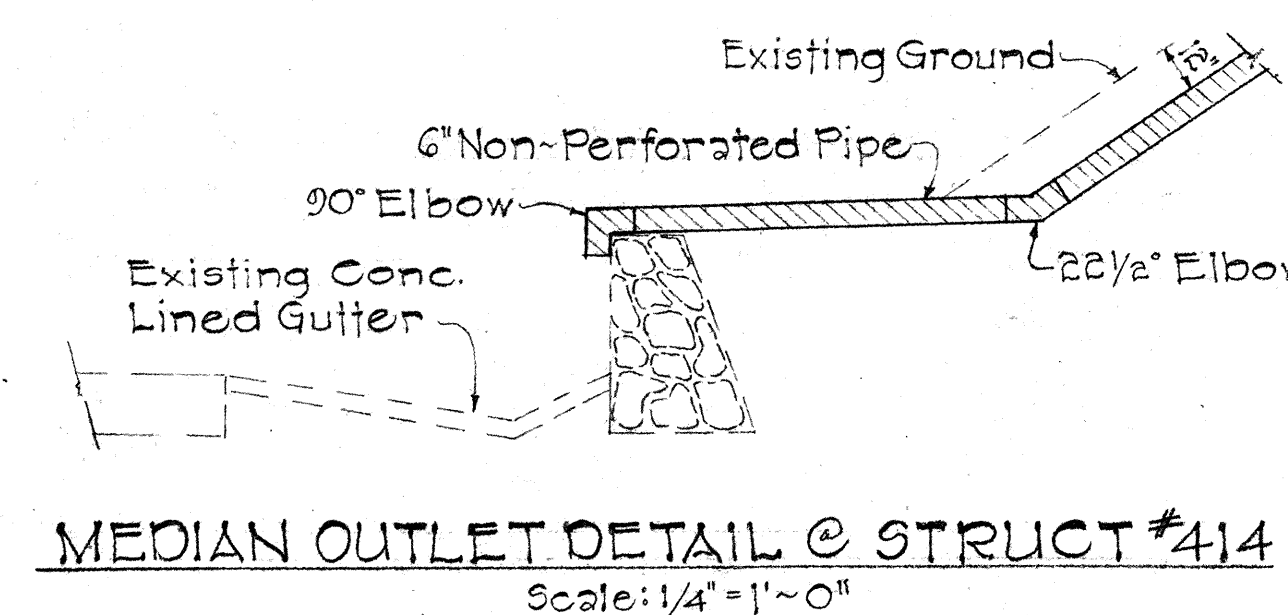
C.O. 33S-2

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
NO.	_____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(32):5 Unit 4	1967	60,335-3	101



DETAIL OF CLEANOUT AND CONCRETE BLOCK FOR UNDERDRAINS
Scale: 1" = 1'-0"



NOTE:
Material for underdrain pipe shall be either corrugated metal pipe or transite pipe.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SUB-DRAIN DETAILS

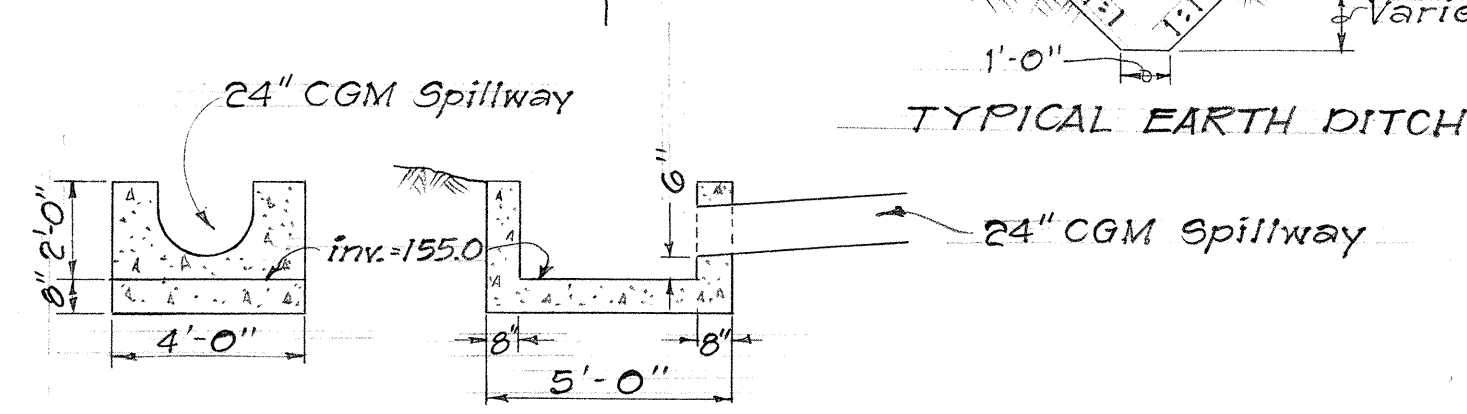
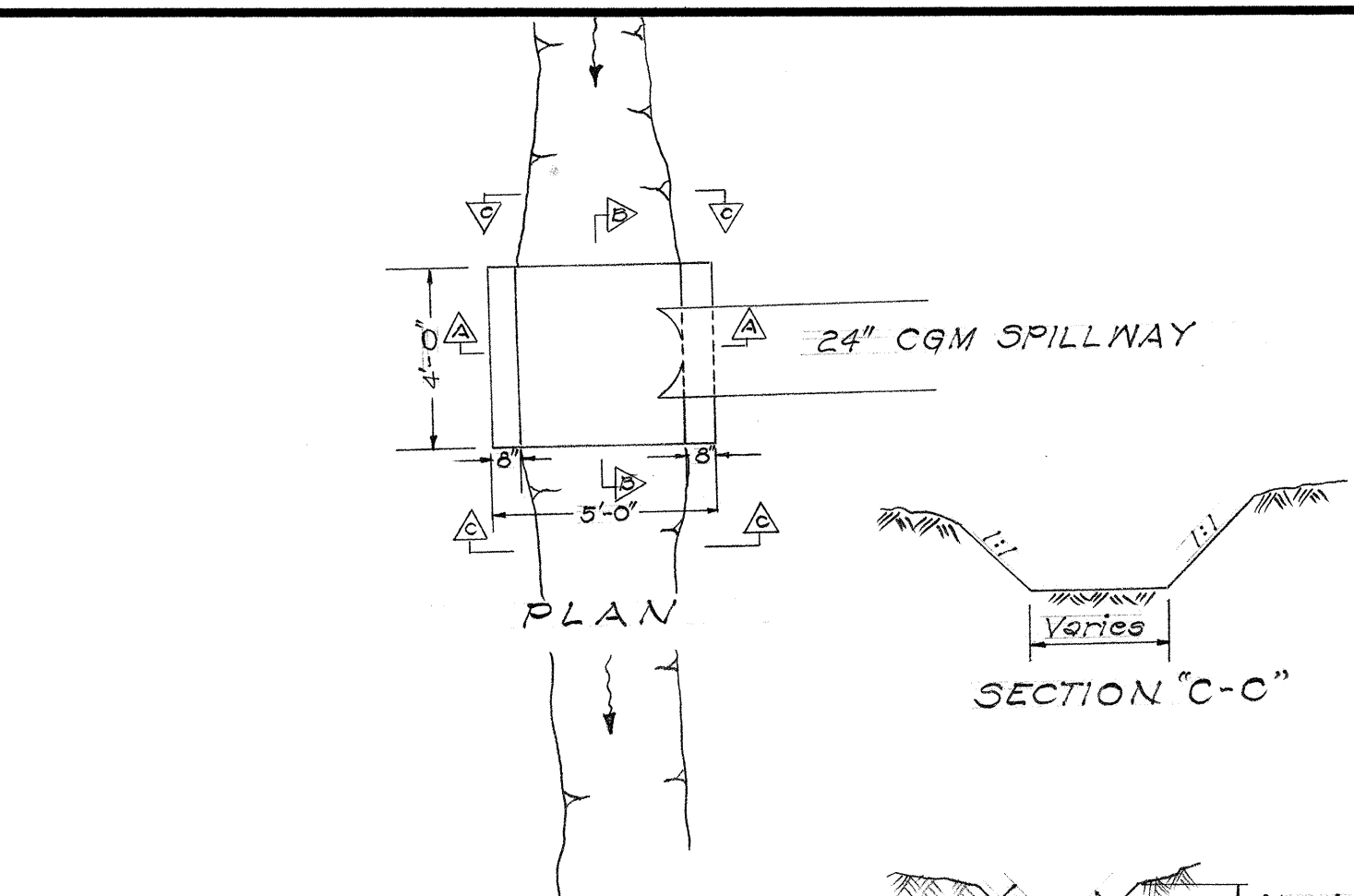
INTERSTATE ROUTE H-1
F.A.I. PROJ. NO. I-HI-1(32):5

Scale: As Noted Jan. 1969

SHEET NO. OF SHEETS

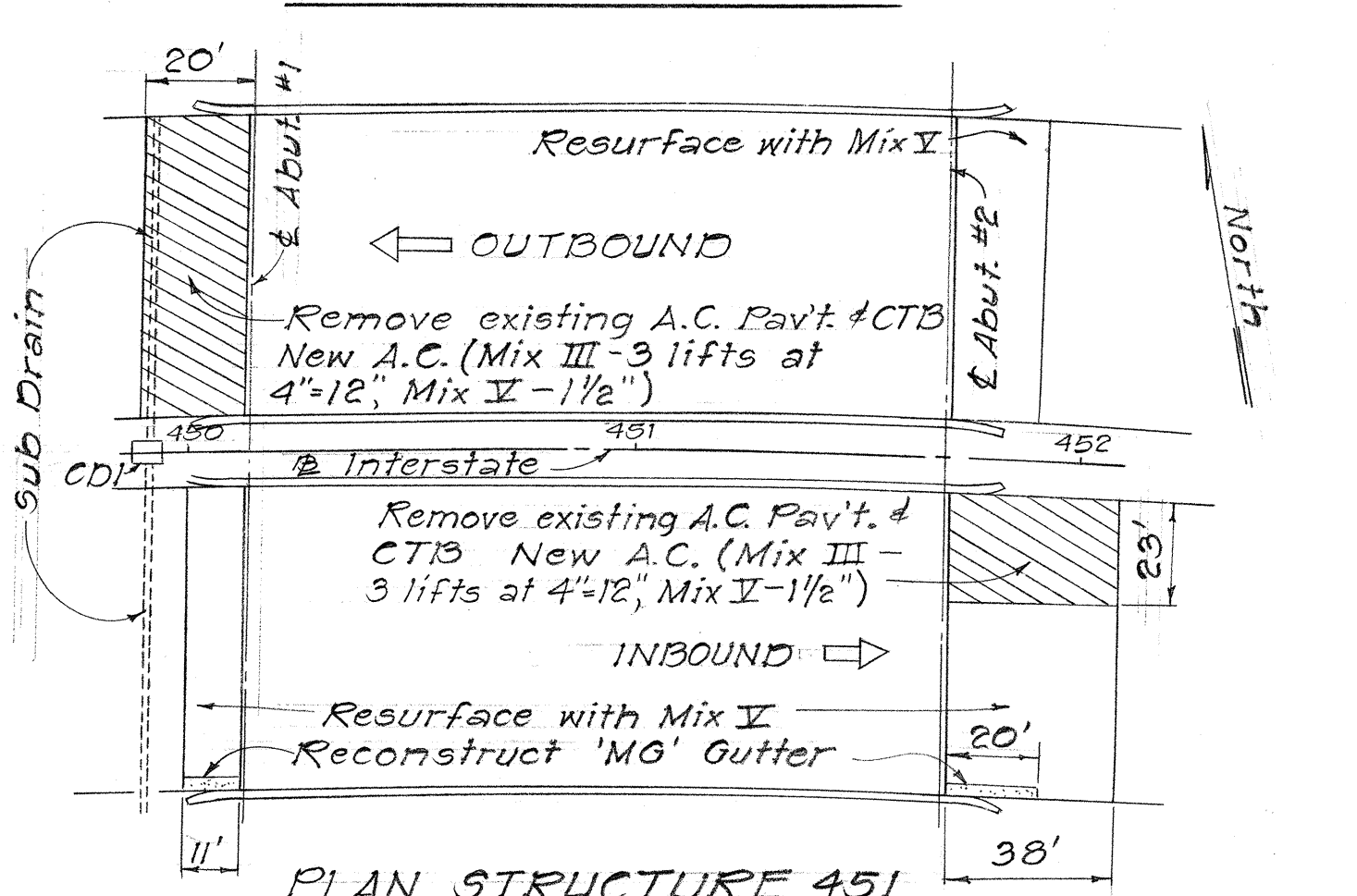
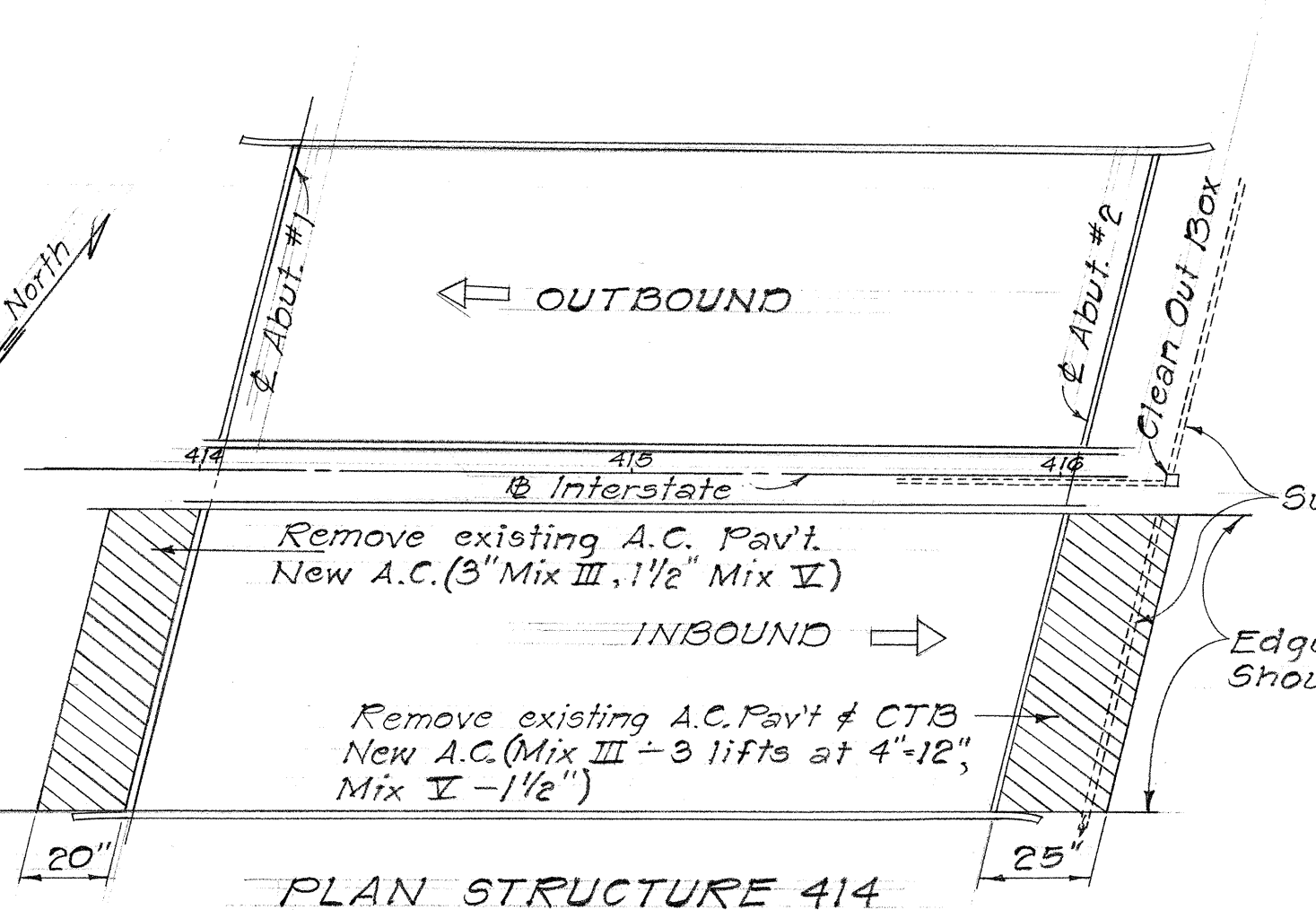
C.O. 335-3

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H-1(32)-5, UNIT 4	1967	C.O. 33S-4	101



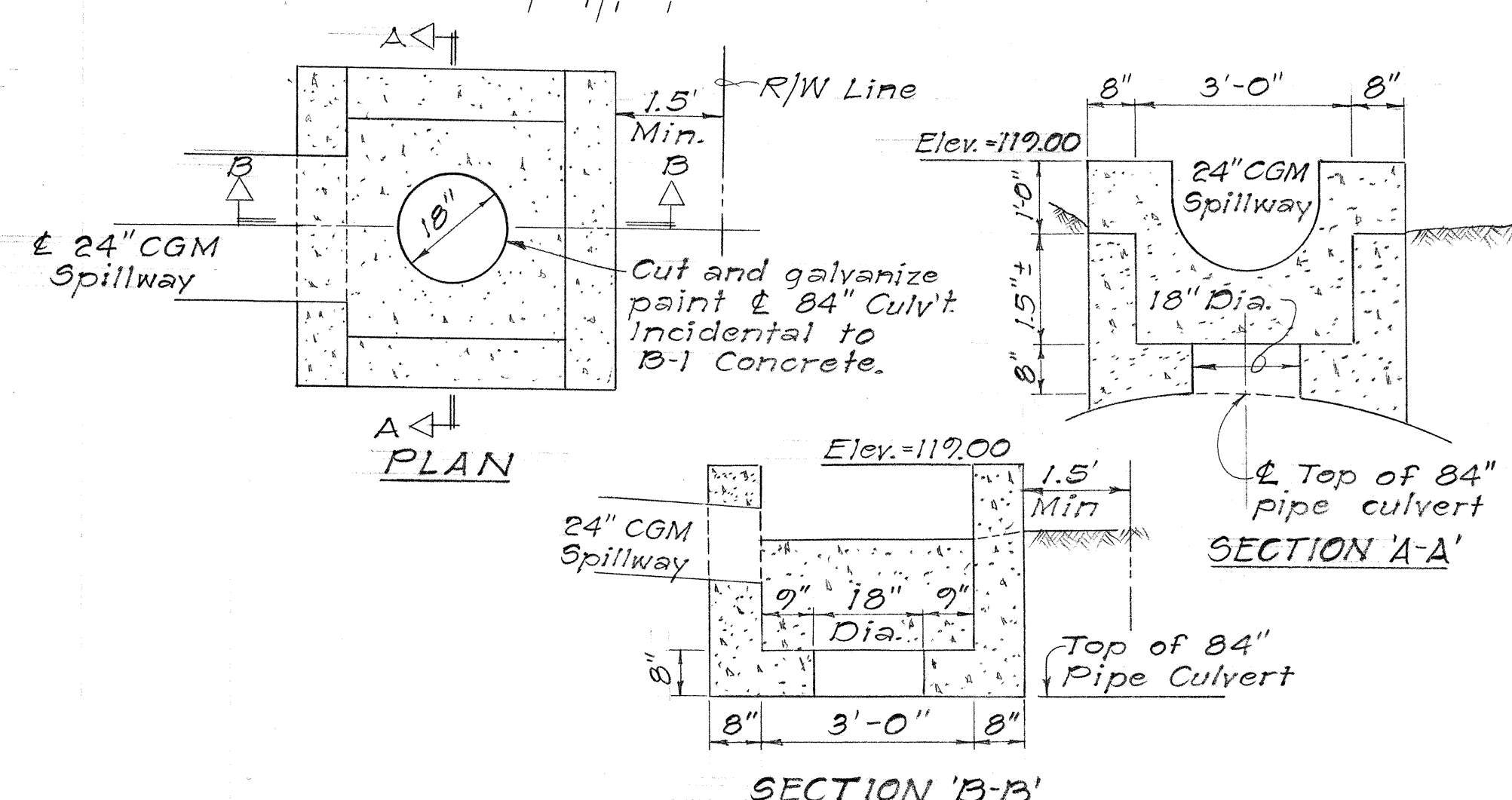
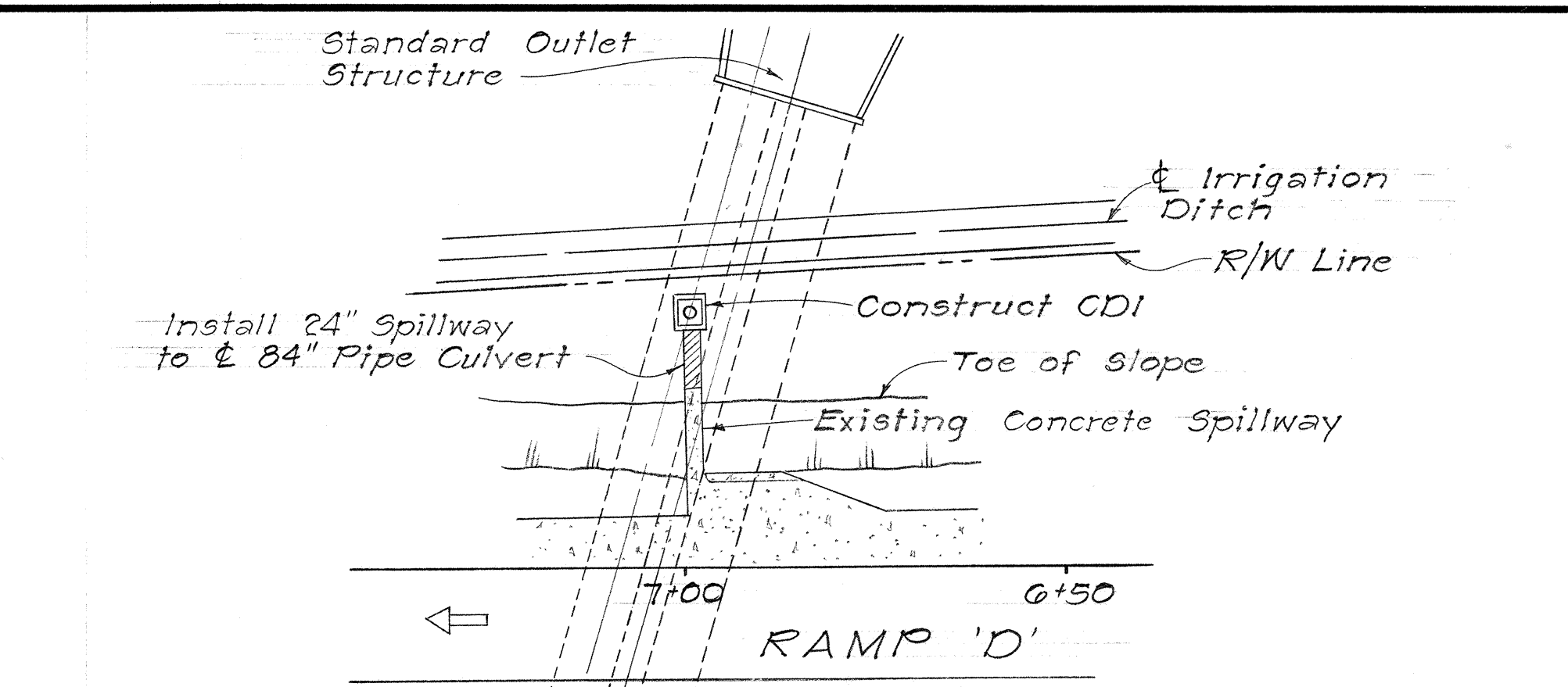
NOTE: All concrete to be class B-1

PROPOSED CONCRETE DROP BOX AT OUTLET OF CGM SPILLWAY 354+00 LEFT

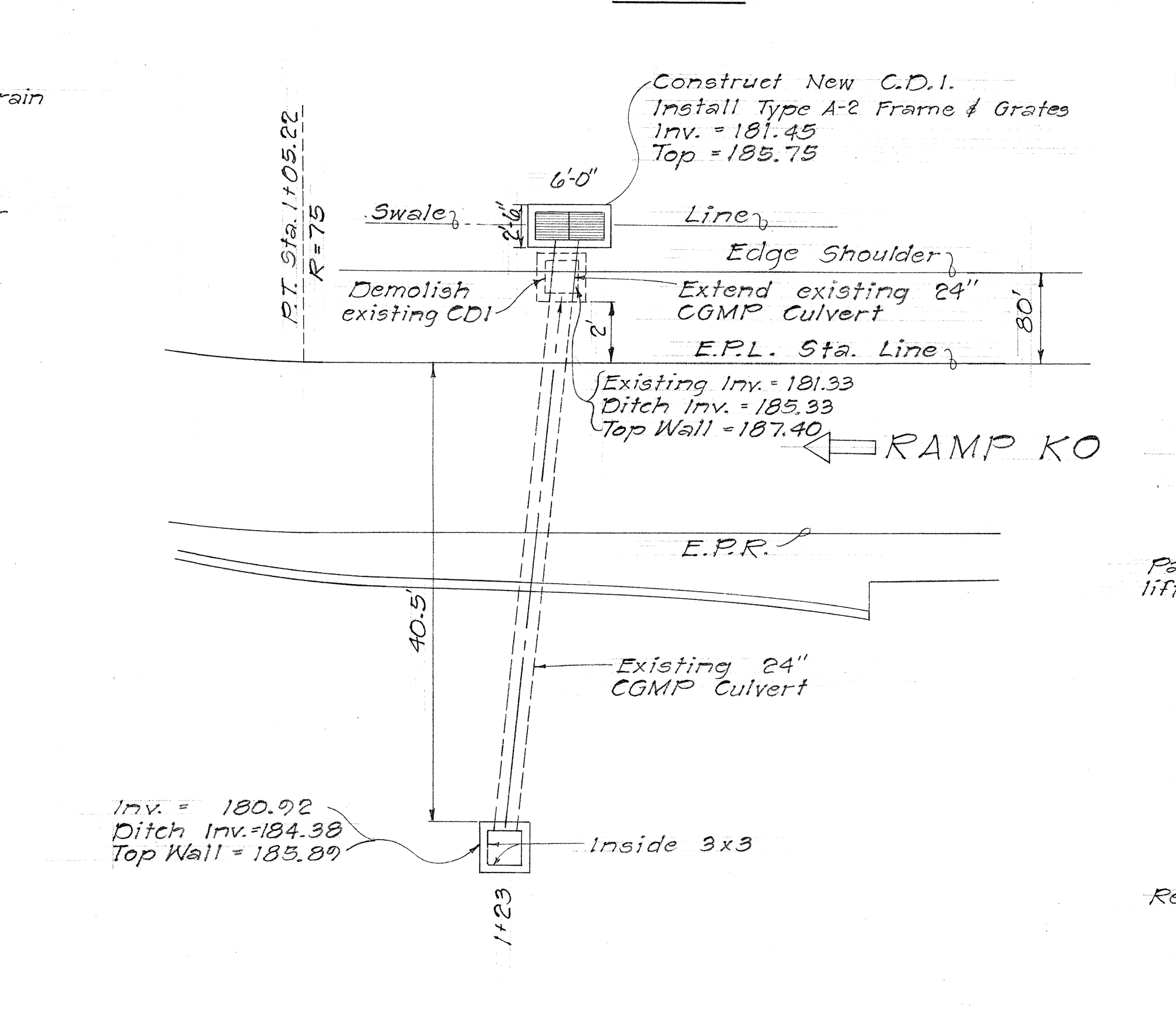


NOTE: Cut existing A.C. Pav't. with mechanical saw. Recompact existing select borrow prior to paving A.C. Invert of sub-drain to be below coarse select borrow.

RESTORING DAMAGED PAVEMENT

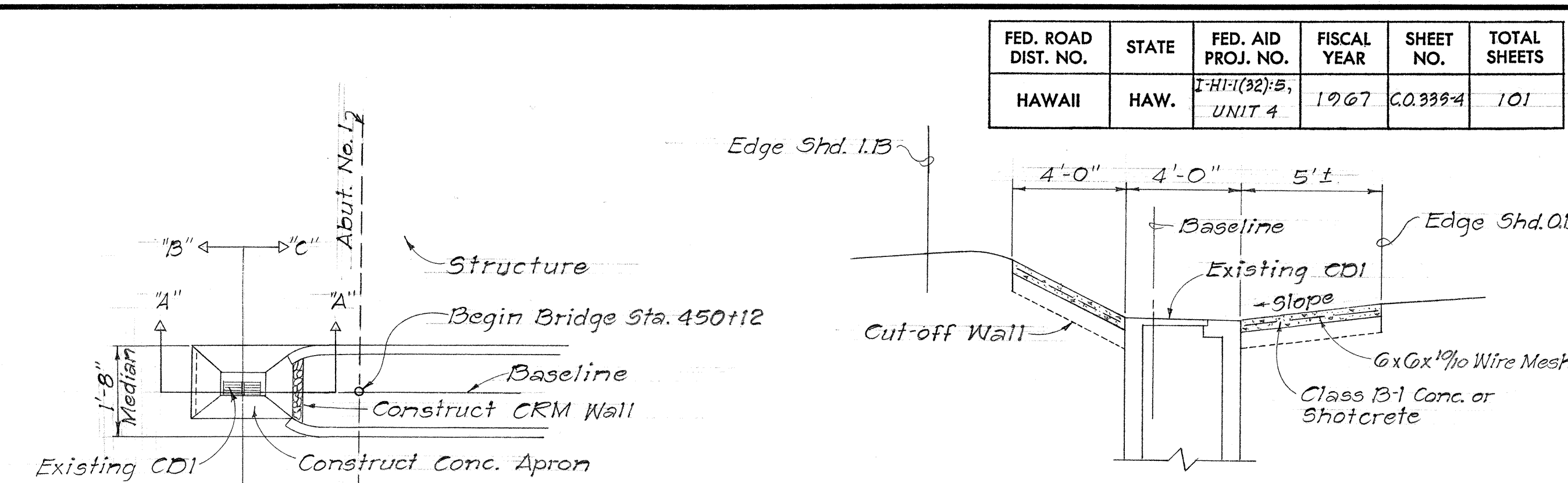


PROPOSED CONCRETE DROP INTAKE AT RAMP 'D' 7+00±

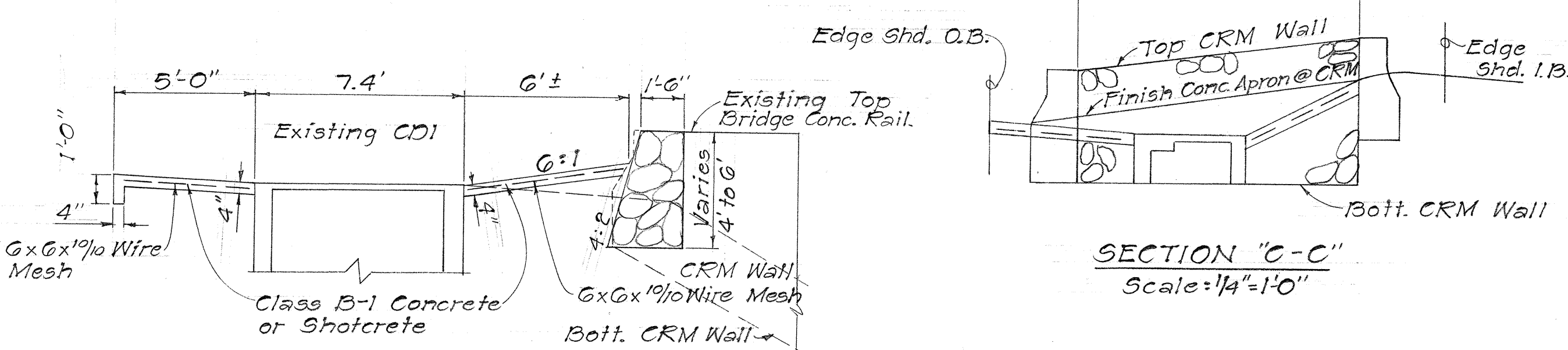


NEW C.D.I. RAMP K.O. STATION 1+28±

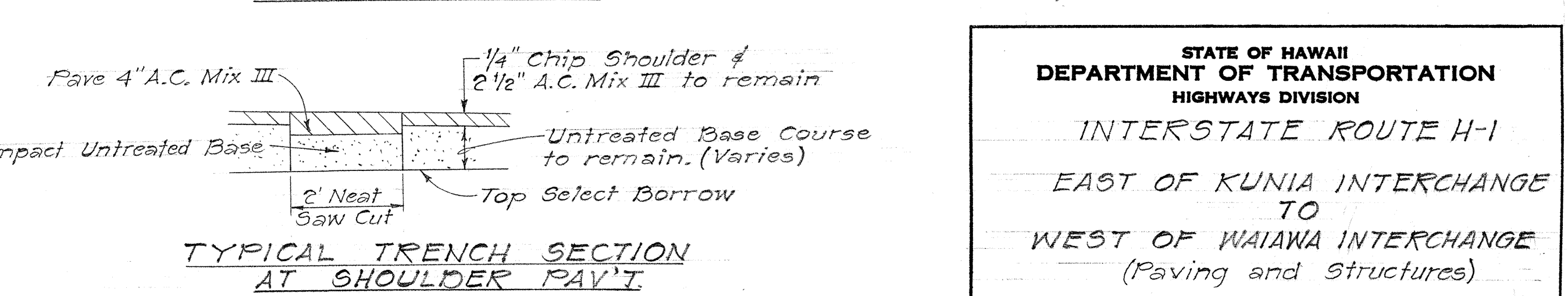
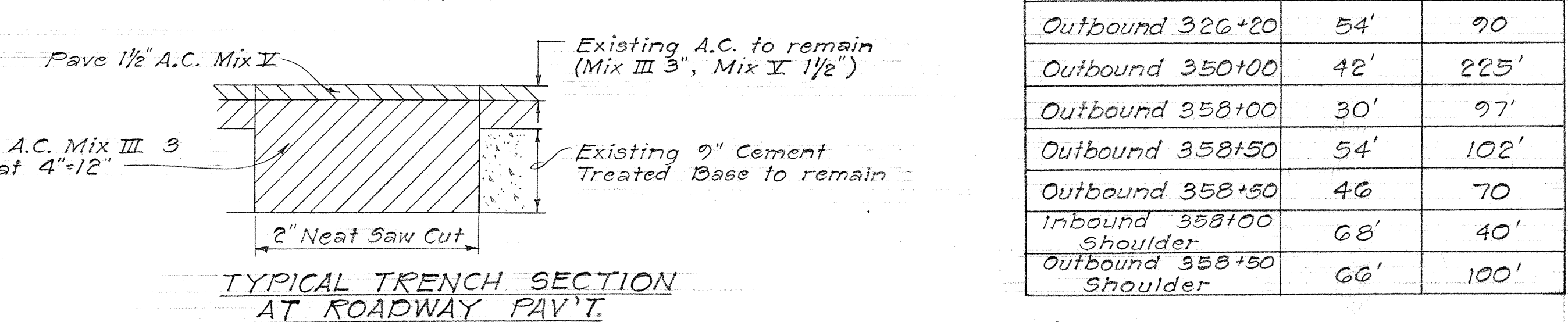
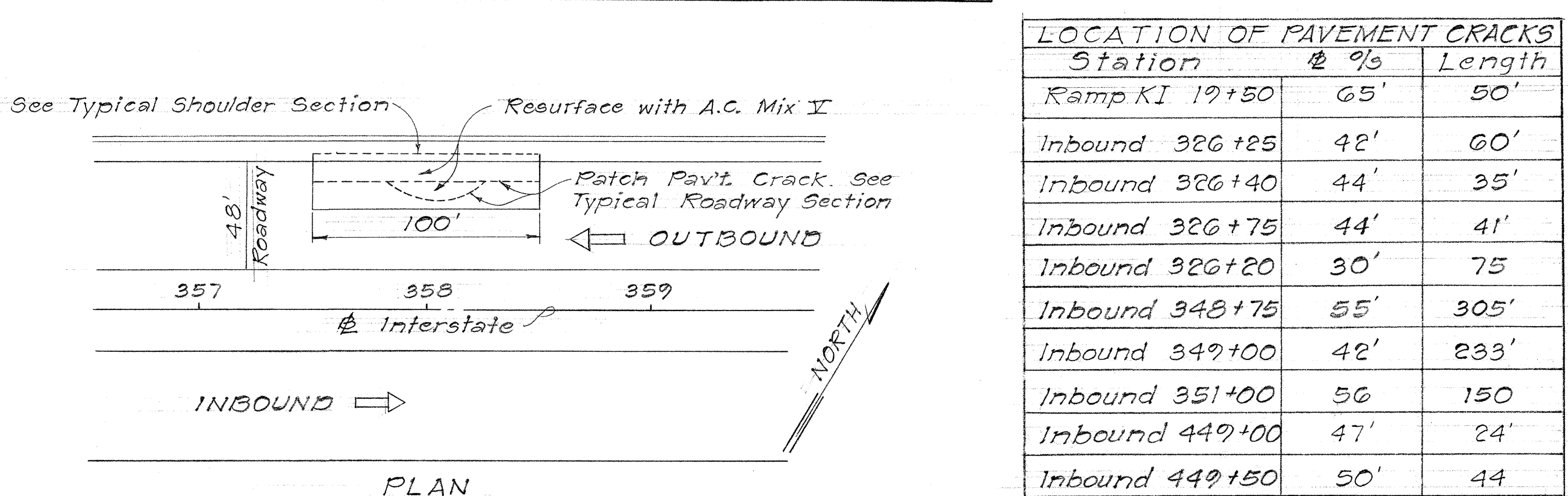
Scale: 1"=10'



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



STA. 449+87 CRM WALL AND CONCRETE APRON FOR CDI NEAR STRUCTURE NO. 451



RESTORING DAMAGED PAVEMENT

Station	Length	Width
Ramp KI 19+50	50'	65'
Inbound 326+25	60'	42'
Inbound 326+40	35'	44'
Inbound 326+75	41'	44'
Inbound 326+20	75'	30'
Inbound 348+75	305'	55'
Inbound 349+00	233'	42'
Inbound 351+00	150'	56'
Inbound 449+00	24'	47'
Inbound 449+50	44'	50'
Outbound 326+20	90'	54'
Outbound 350+00	225'	42'
Outbound 358+00	97'	30'
Outbound 358+50	102'	54'
Outbound 358+50	70'	46'
Inbound 358+00	40'	68'
Outbound 358+50	100'	66'

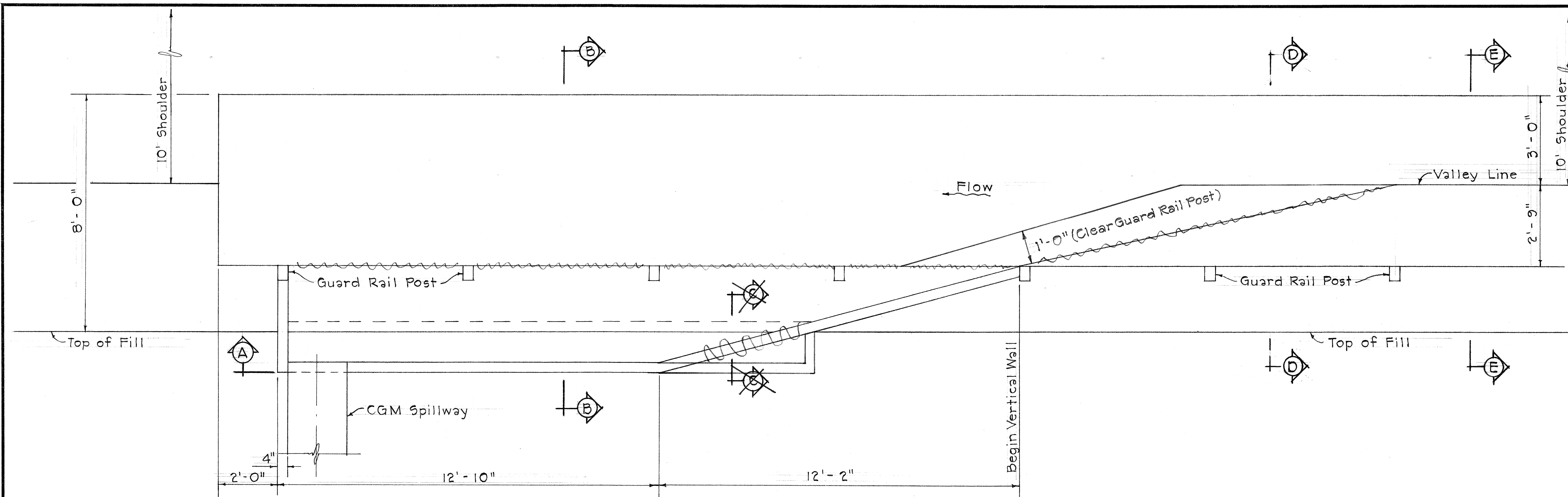
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
INTERSTATE ROUTE H-1
EAST OF KUNIA INTERCHANGE
TO
WEST OF WAIANA INTERCHANGE
(Paving and Structures)
F.A.I.P. No. I-H-1(32)-5, Unit 4

SHEET No. OF SHEETS

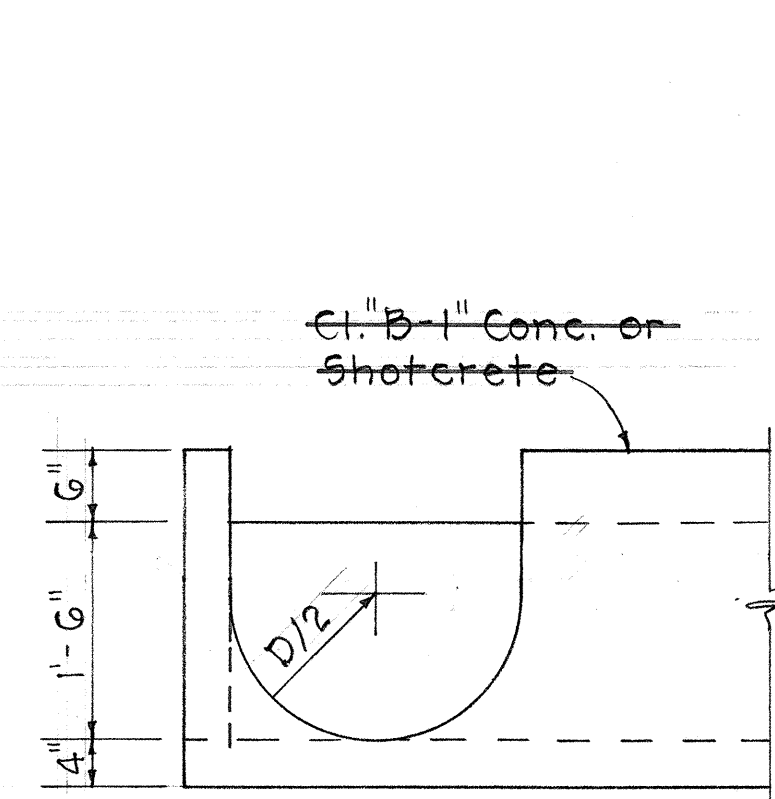
C.O. 33S-4

DATE	
DESIGNED BY	
CHECKED BY	
IN CHARGE	
NOTED BY	
NO.	

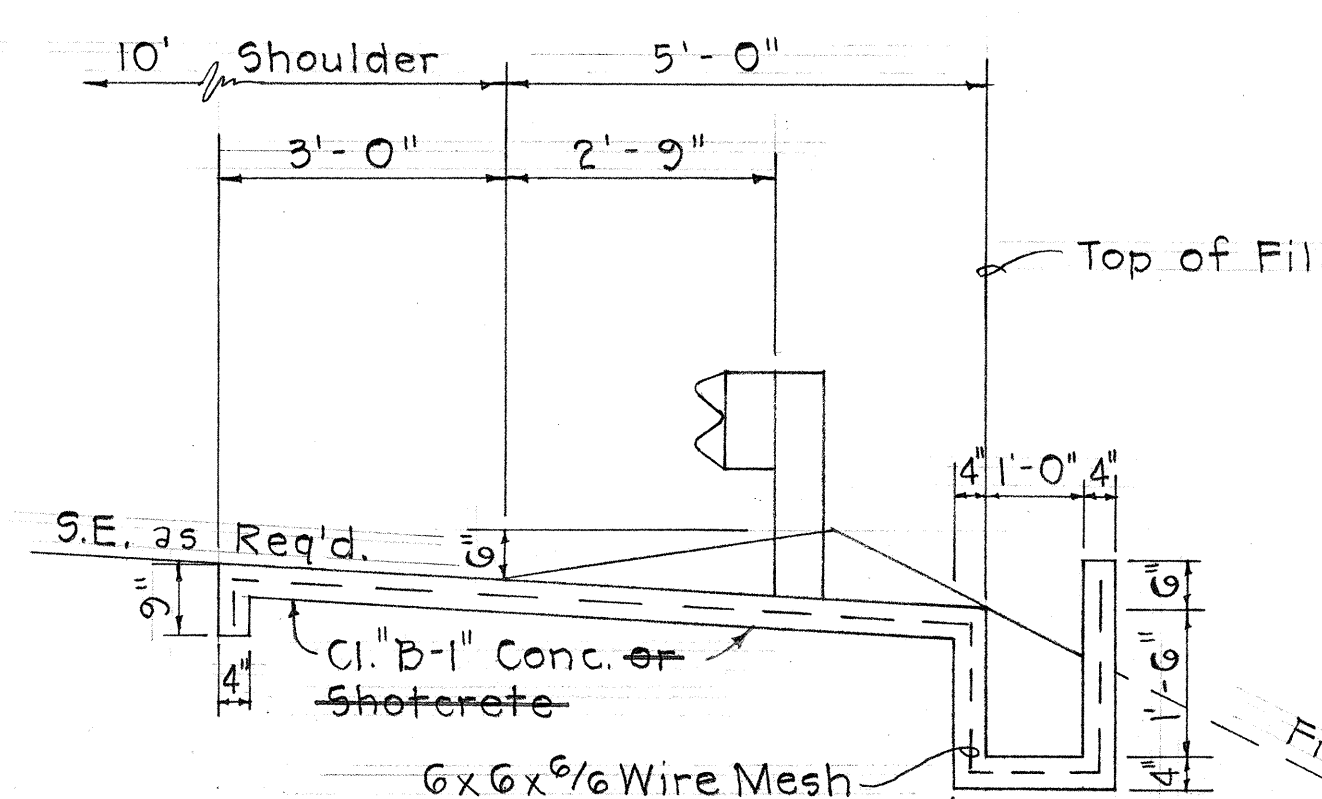
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(32):5 Unit 4	1967	C.O. 33S-5	101



PLAN
Scale: 1/2" = 1'-0"

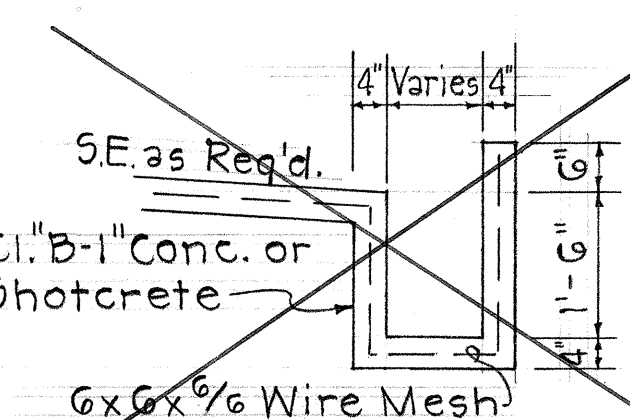


SECTION "A-A"
Scale: 3/4" = 1'-0"

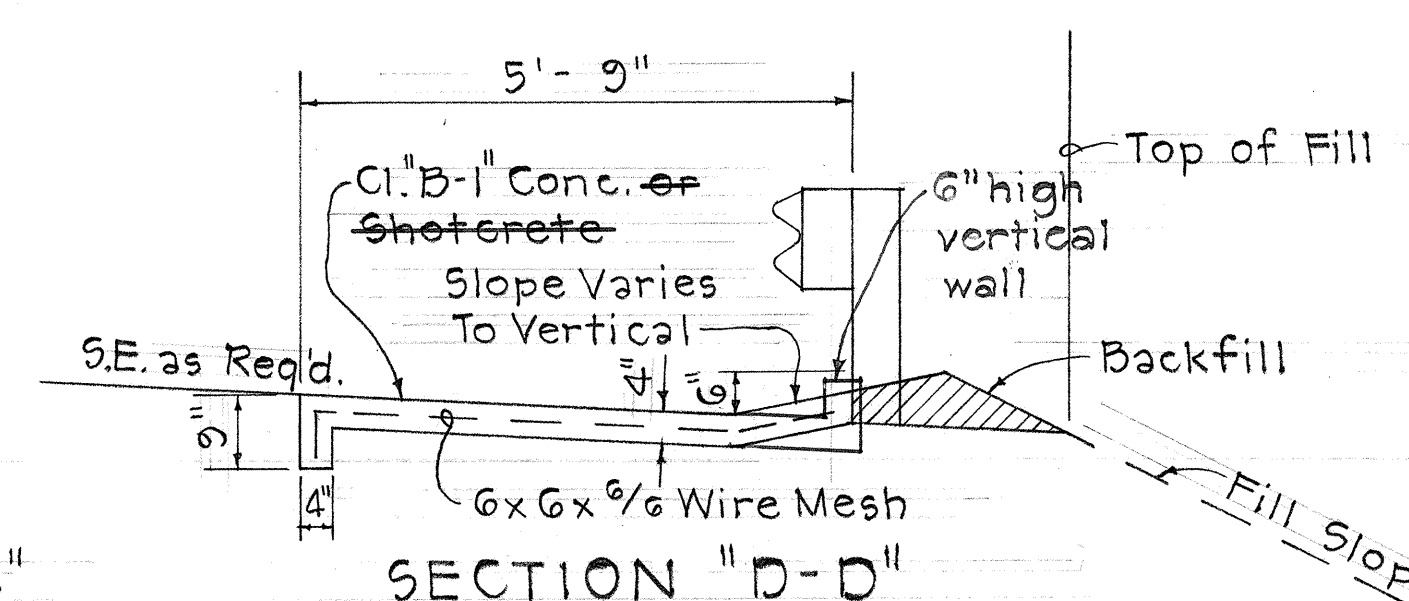


SECTION "B-B"
Scale: 1/2" = 1'-0"

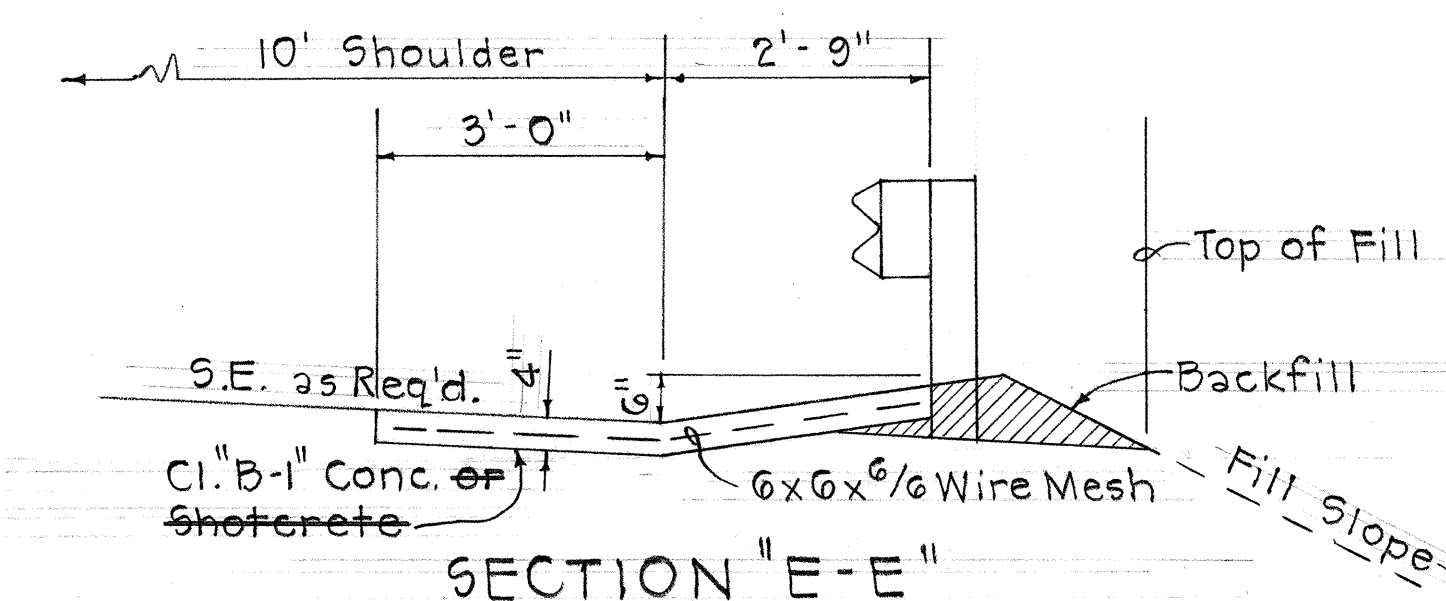
Class "B-1" Conc. for Conc. Lined Gutter
Class "B-1" Conc. other than in Bridges



SECTION "C-C"
Scale: 1/2" = 1'-0"



SECTION "D-D"
Scale: 1/2" = 1'-0"



SECTION "E-E"
Scale: 1/2" = 1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

SPILLWAY INLET

INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-HI-1(32):5, Unit 4

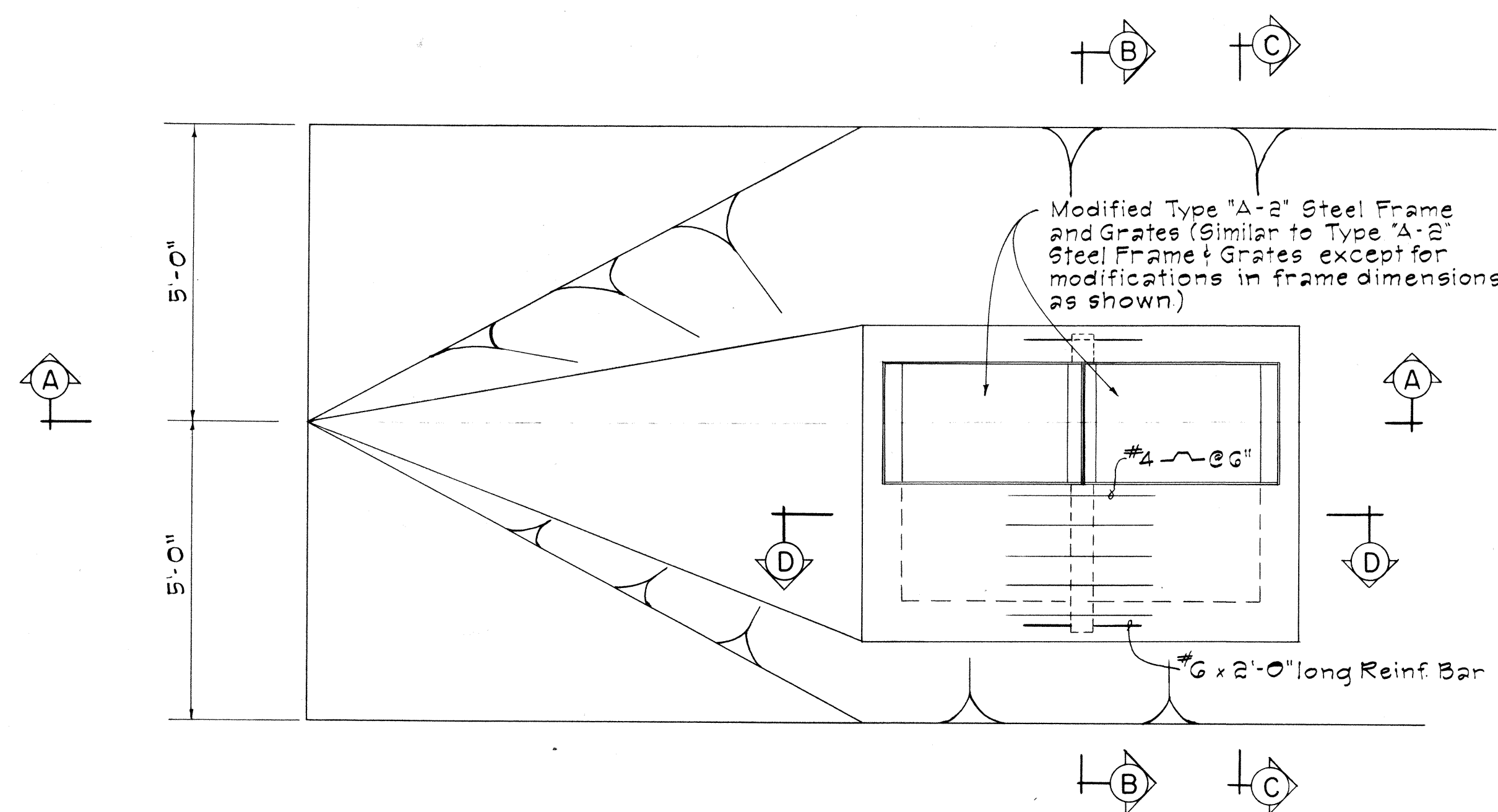
Scale: As Shown Date: Oct. 1968

SHEET No. OF SHEETS

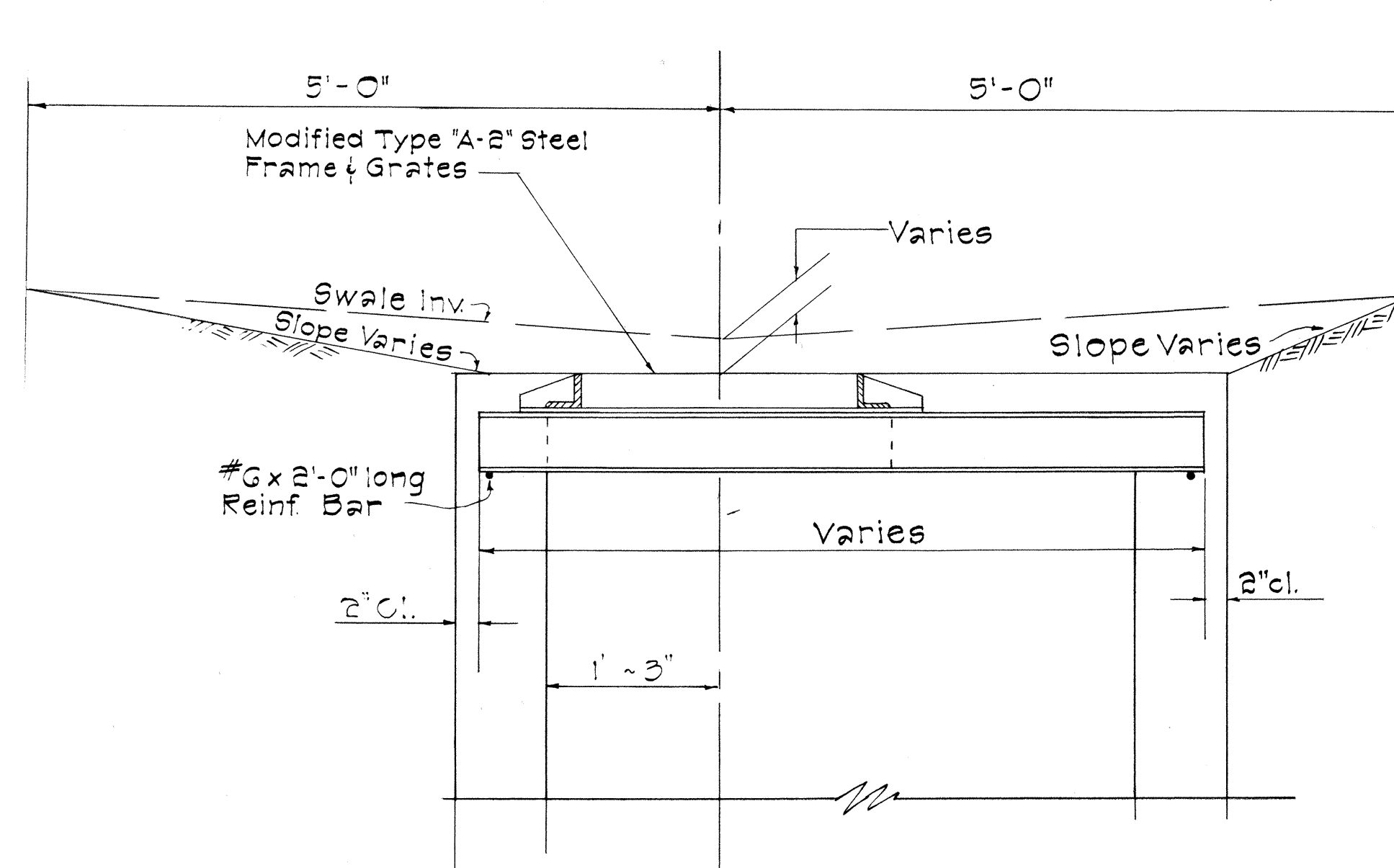
C.O. 33S-5

DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
NOTED BY	_____
NO.	_____

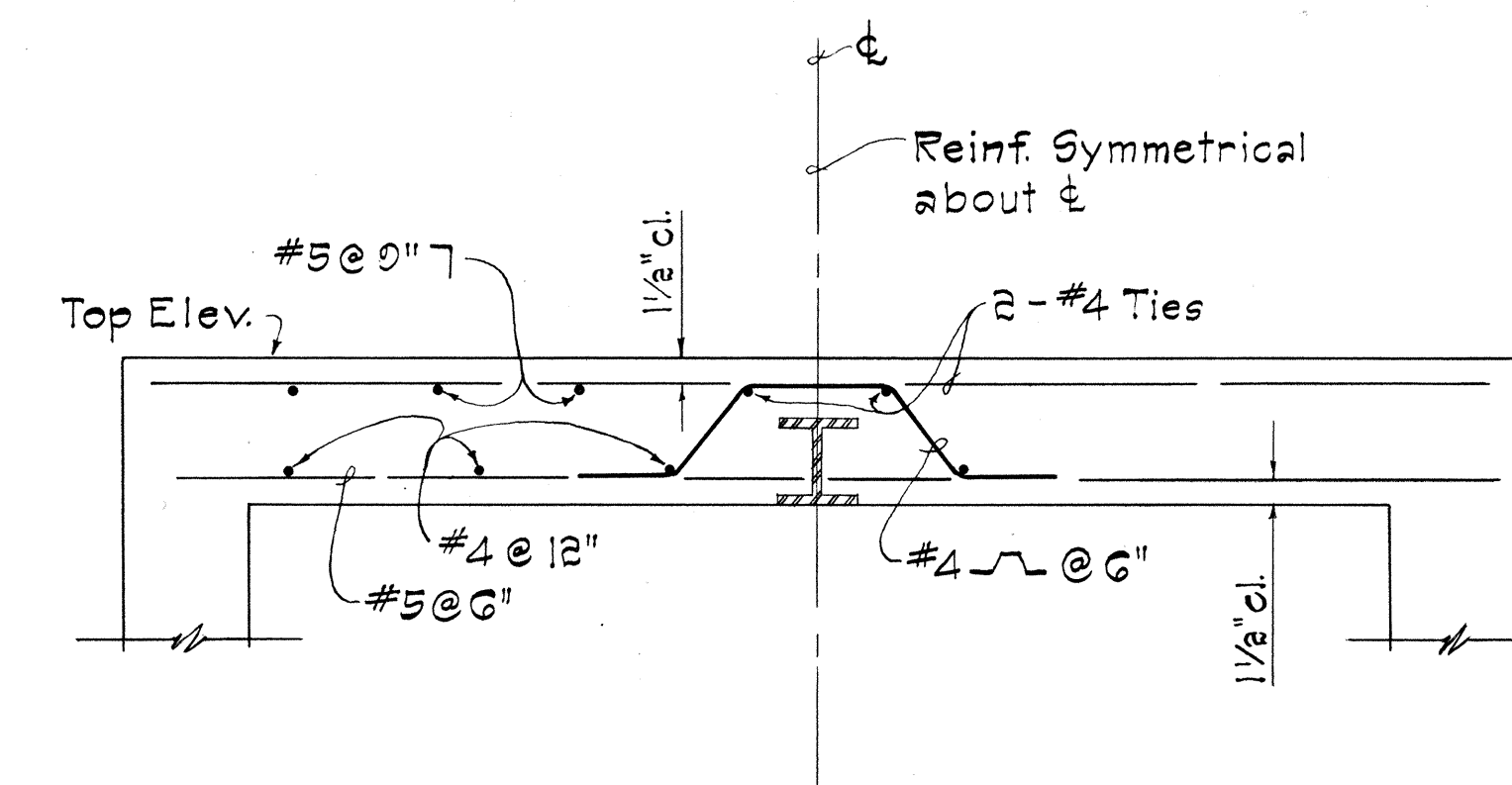
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H1-1(32)5 Unit 4	1967	34	101



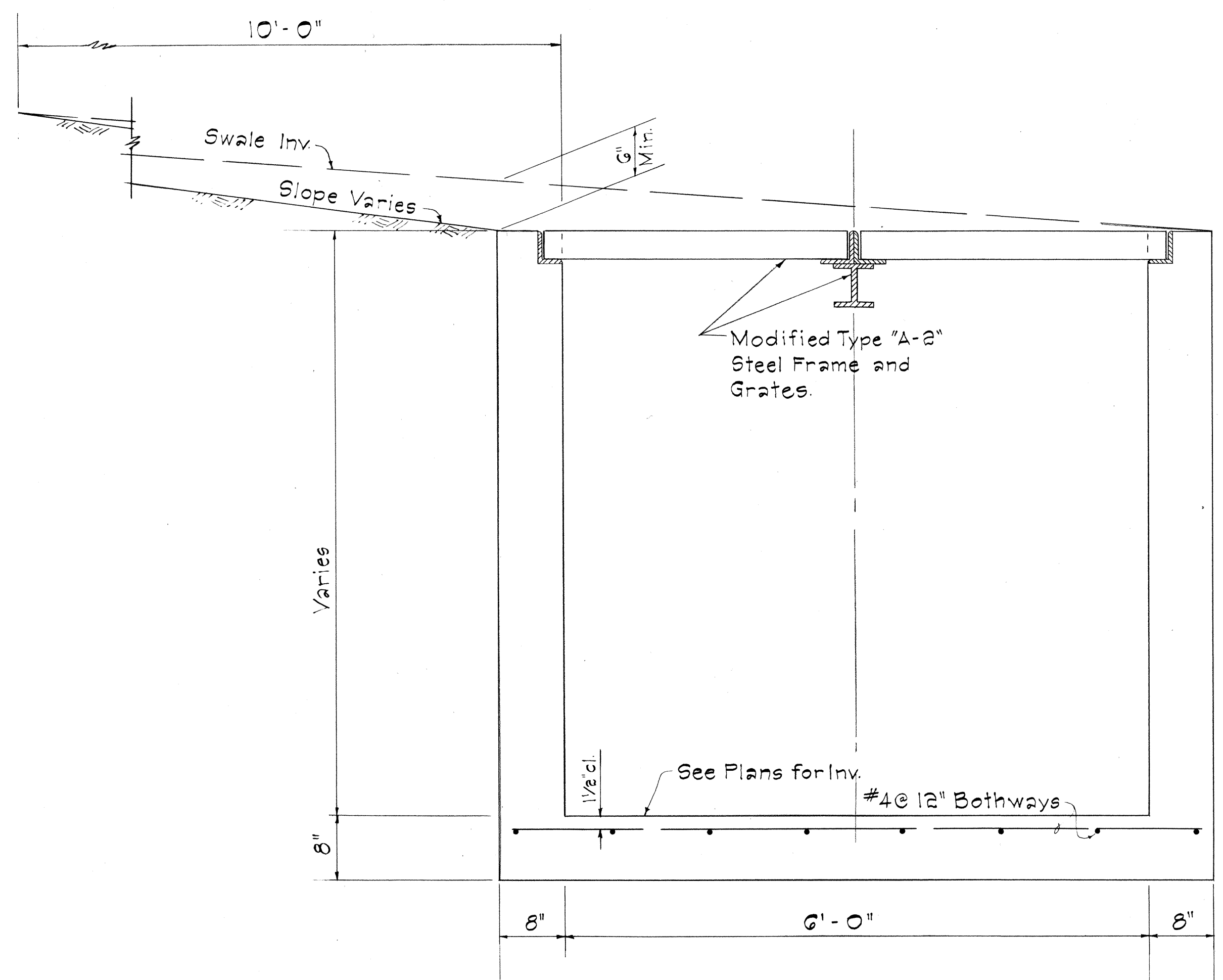
PLAN
Scale: 1/2" = 1'-0"



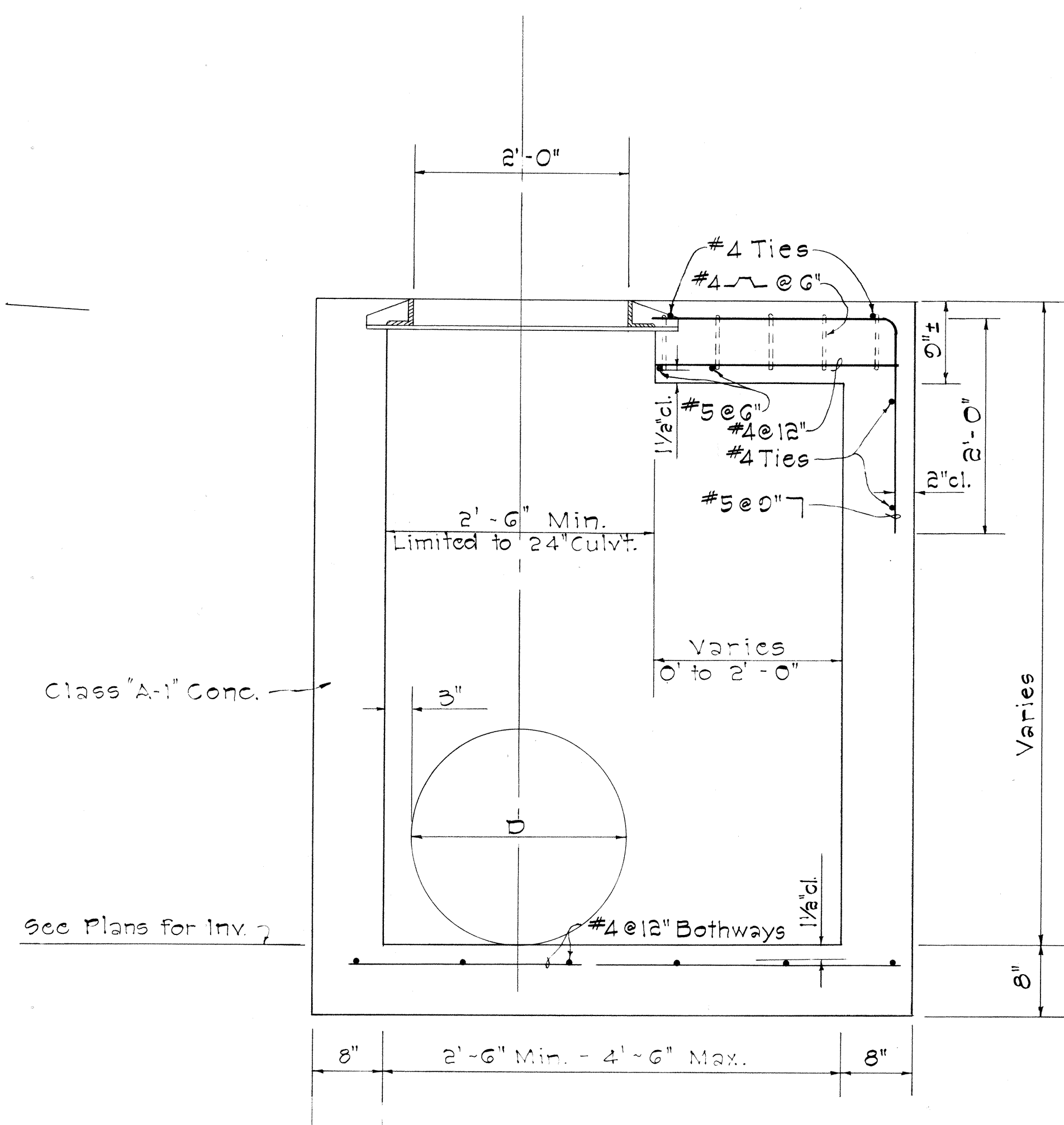
SECTION B-B
Scale: 1" = 1'-0"



SECTION D-D
Scale: 1" = 1'-0"



SECTION A-A
Scale: 1" = 1'-0"



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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
MEDIAN DROP INTAKE

INTERSTATE ROUTE H-1
F.A.I. Proj. No. I-H1-1(32)5, Unit 4

Scale: As Shown Date: Nov. 1967

SHEET No. 5 OF 8 SHEETS

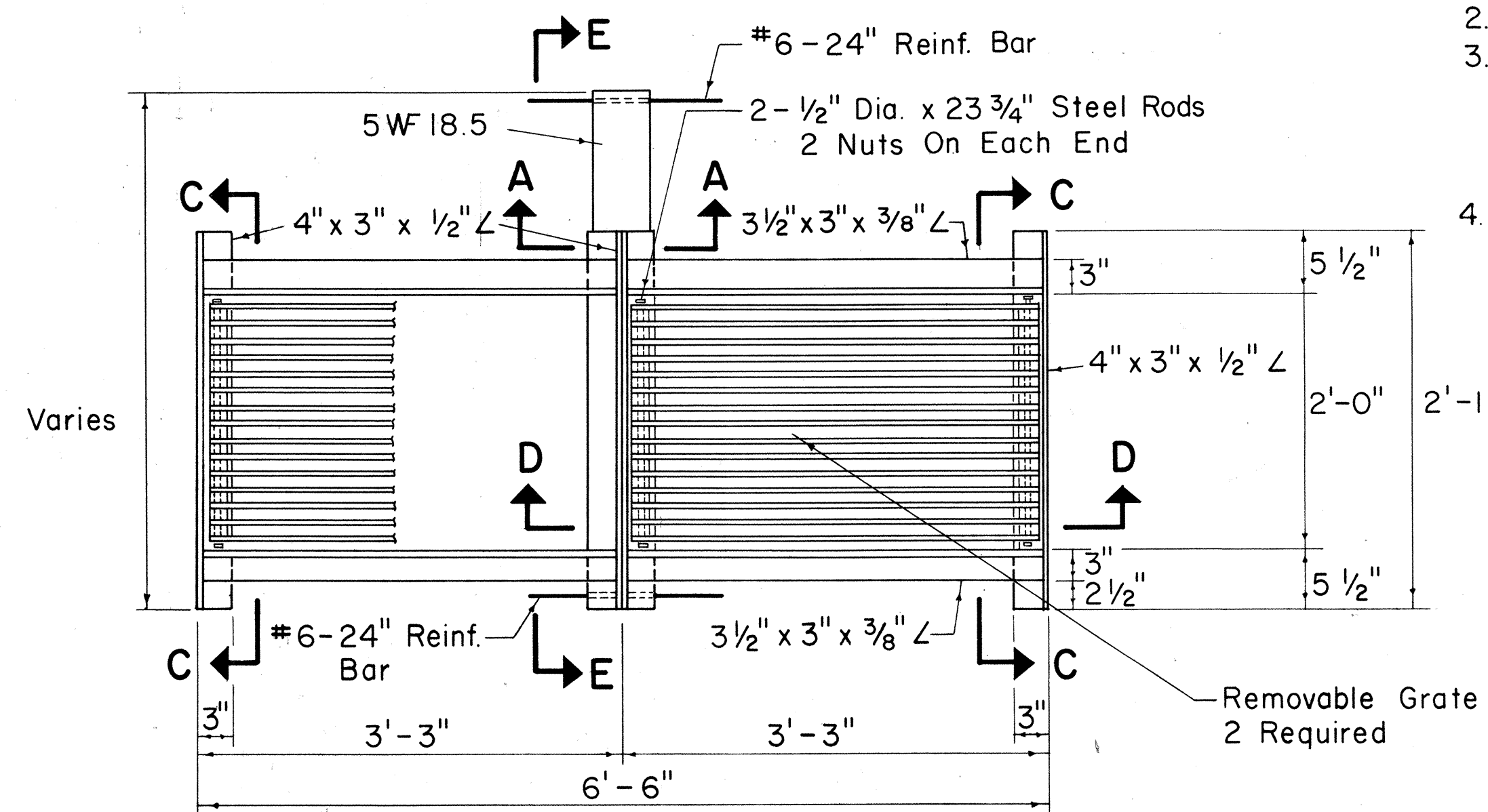
34

4

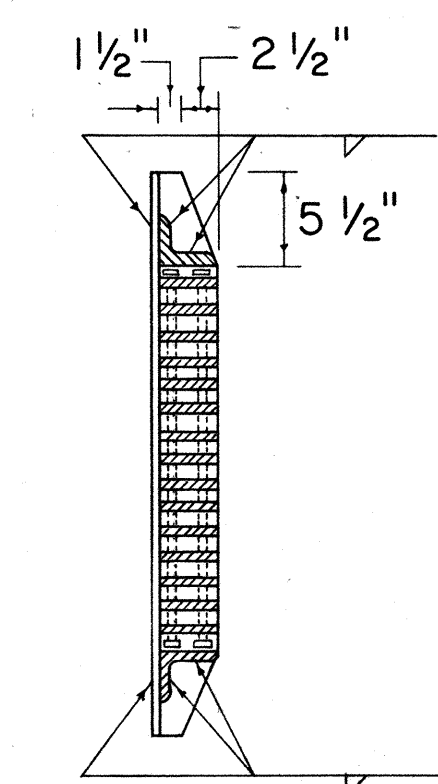
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H1-1(32):5 Unit 4	1967	35	101

NOTE:

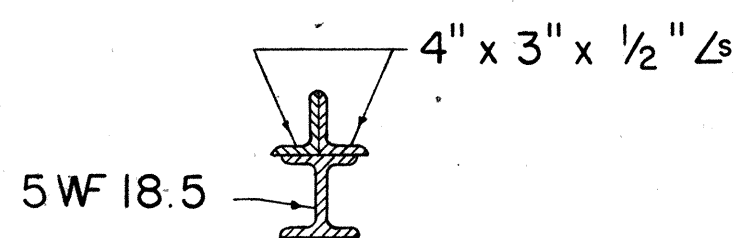
1. All welds $\frac{3}{8}$ " unless otherwise noted.
2. All steel shall be structural grade.
3. Grates and Frame shall be hot dip galvanized after fabrication in accordance with Section 44 (H) of the Standard Specifications.
4. Detail of Types "A-1" and "A-2" Steel Frame and Grates are identical except for the thickness of end spacers and number of grate bars. See Table of End Spacer Thickness.



PLAN



SECTION C-C

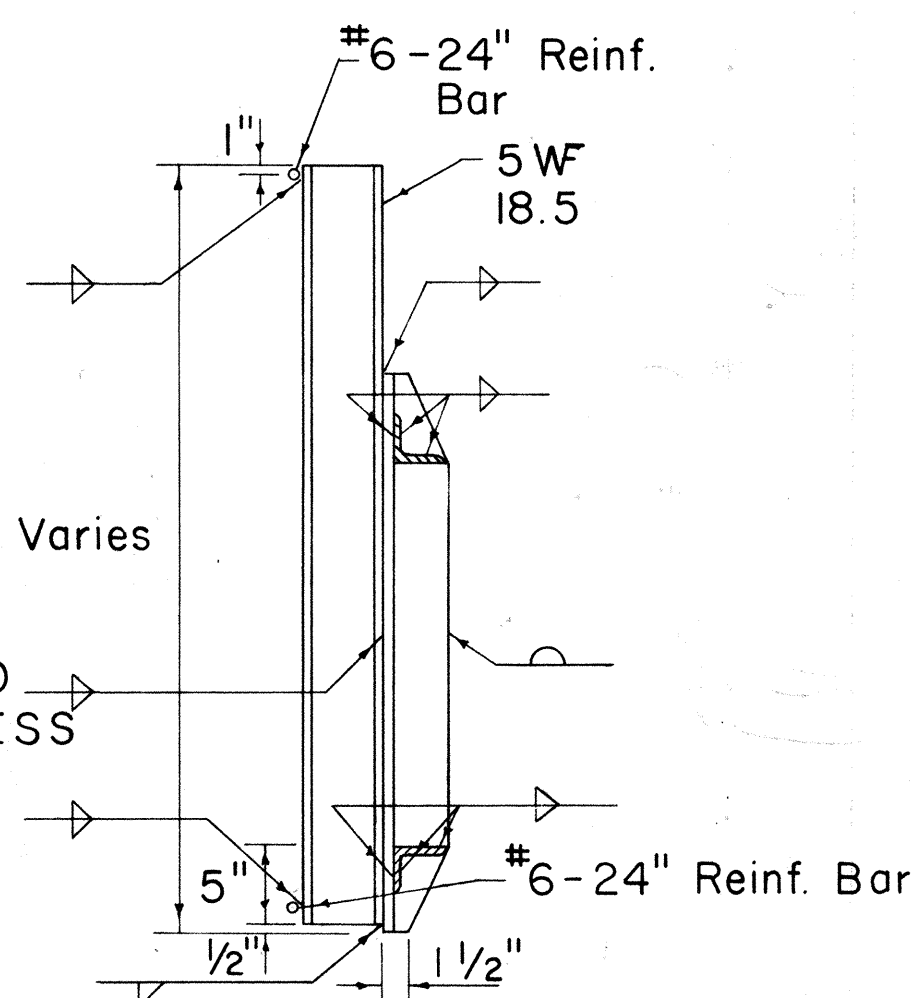


SECTION A-A

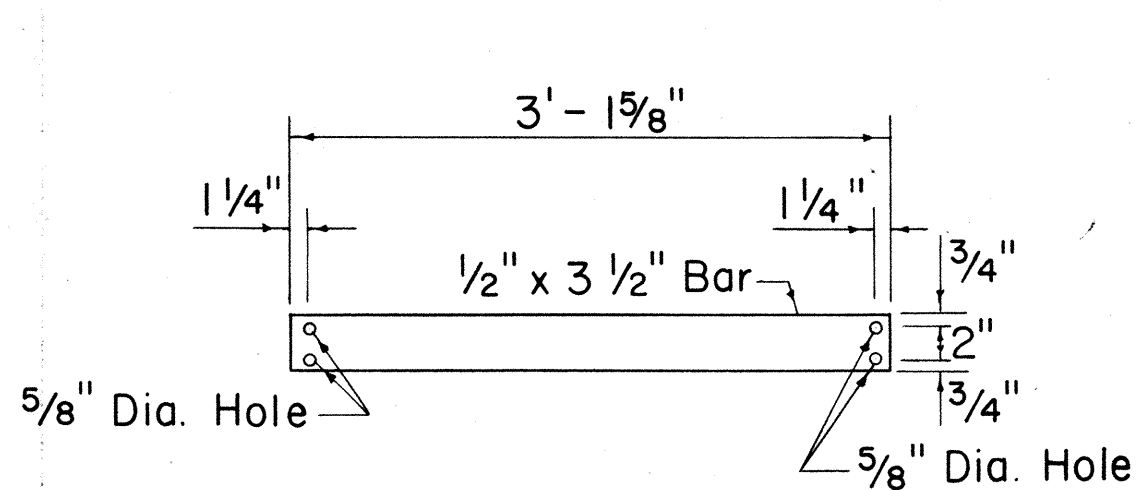
TABLE OF END SPACER THICKNESS

TYPE FRAME & GRATES	"T" (in.)
A-1	1
A-2	1 3/8

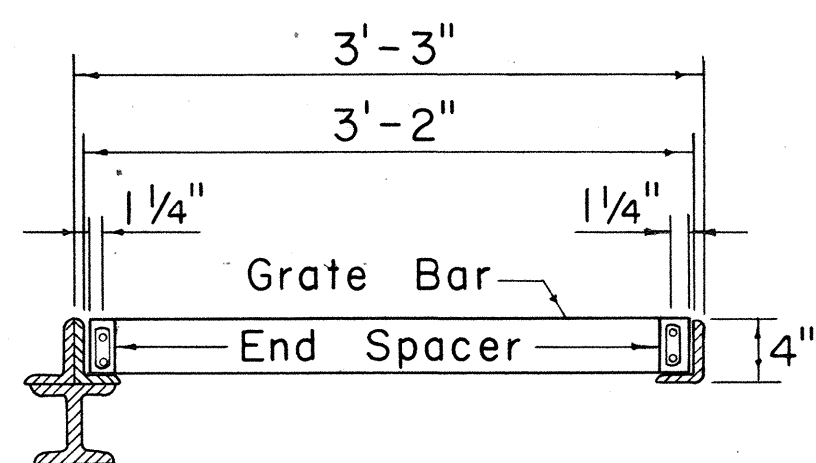
END SPACER



SECTION E-E



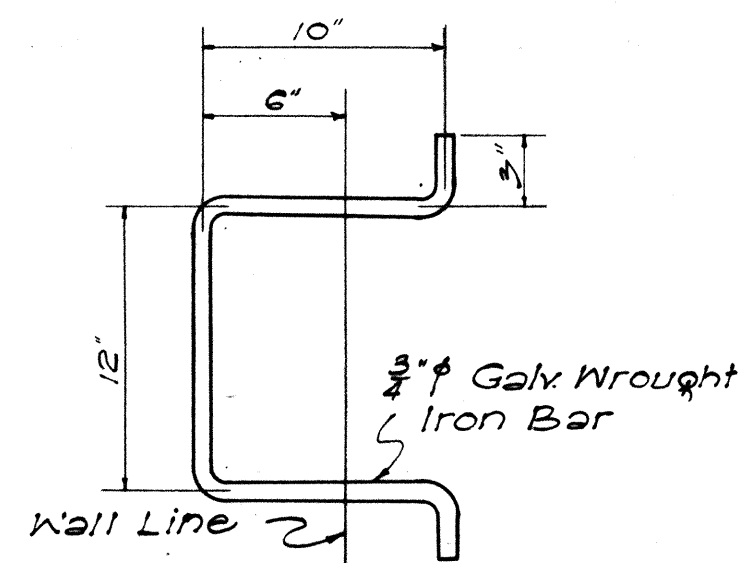
GRATE BARS



SECTION D-D

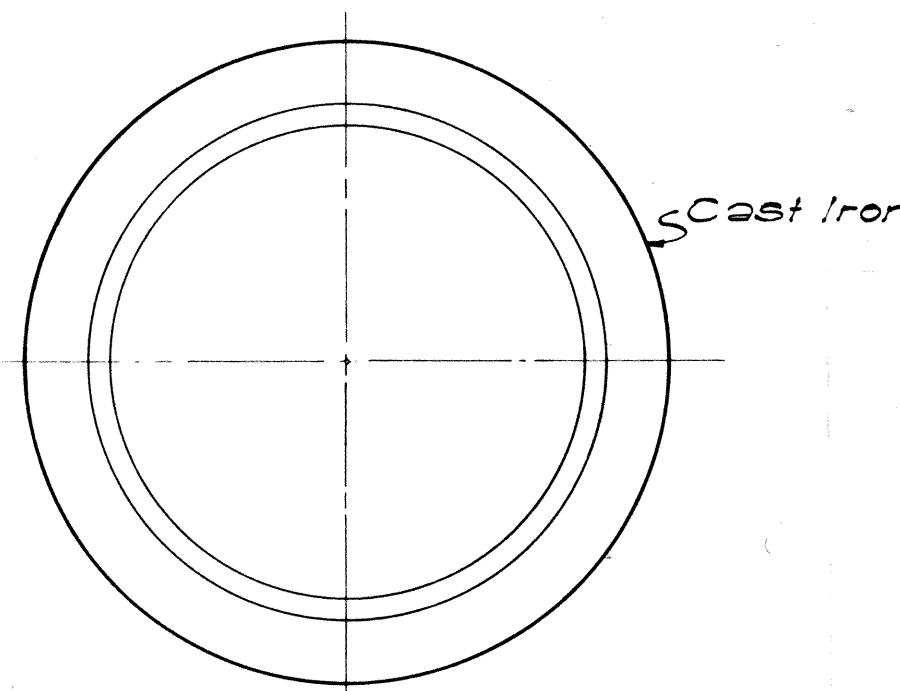
DETAIL OF TYPE "A-1" & "A-2" STEEL FRAME AND GRATES

Scale: 1" = 1'-0"

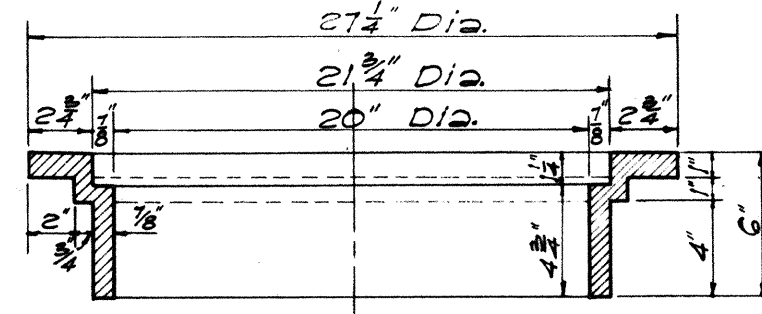


MANHOLE RUNG

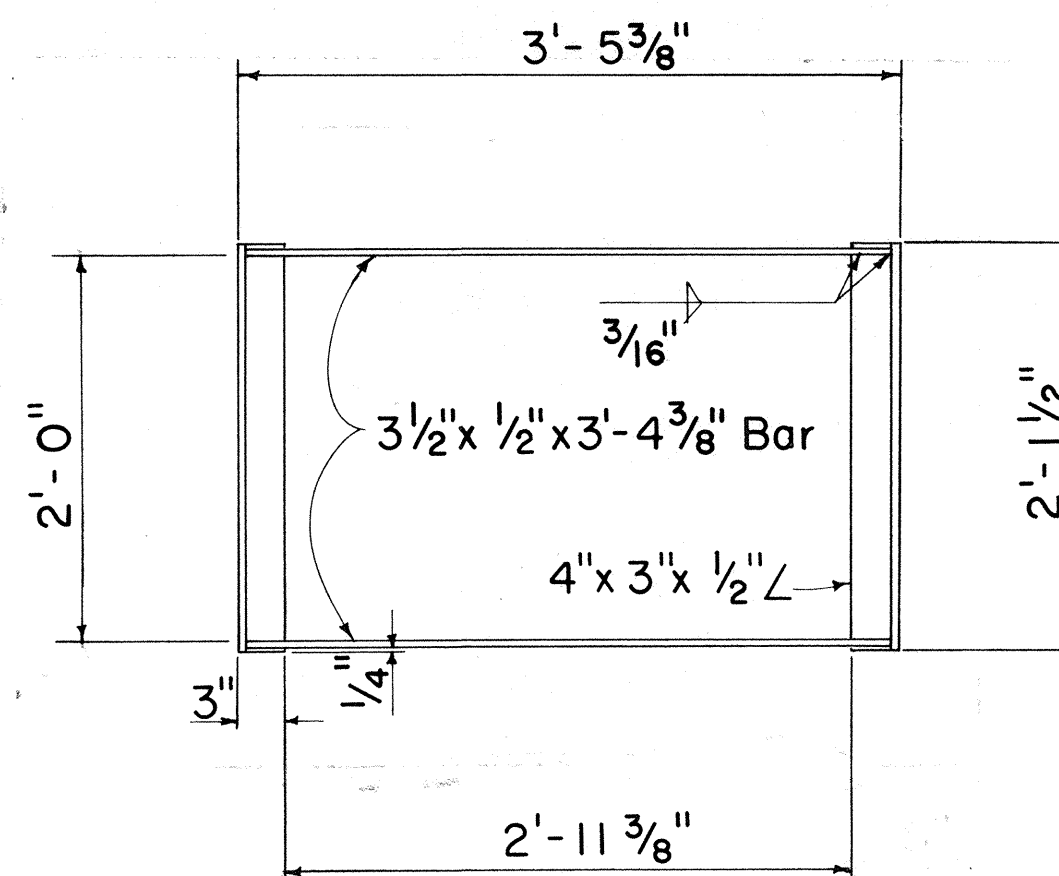
SCALE: 1-1/2" = 1'-0"



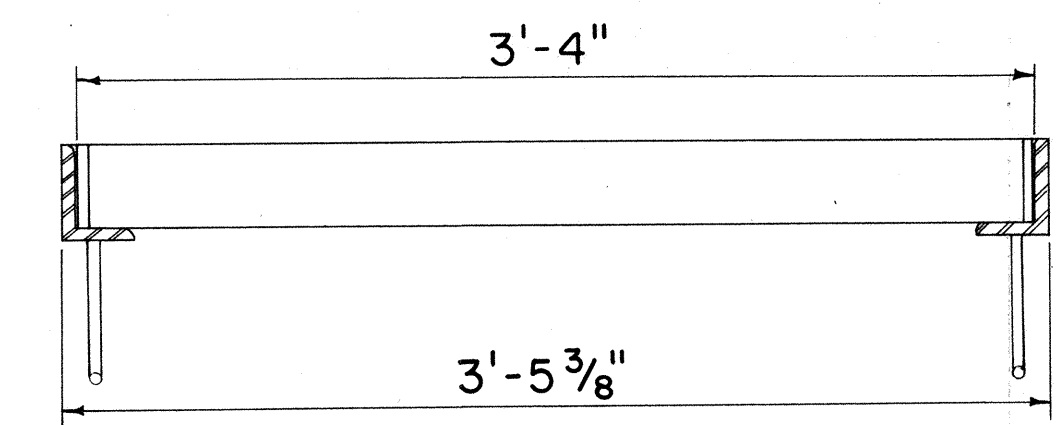
PLAN OF RIM



SECTION OF RIM

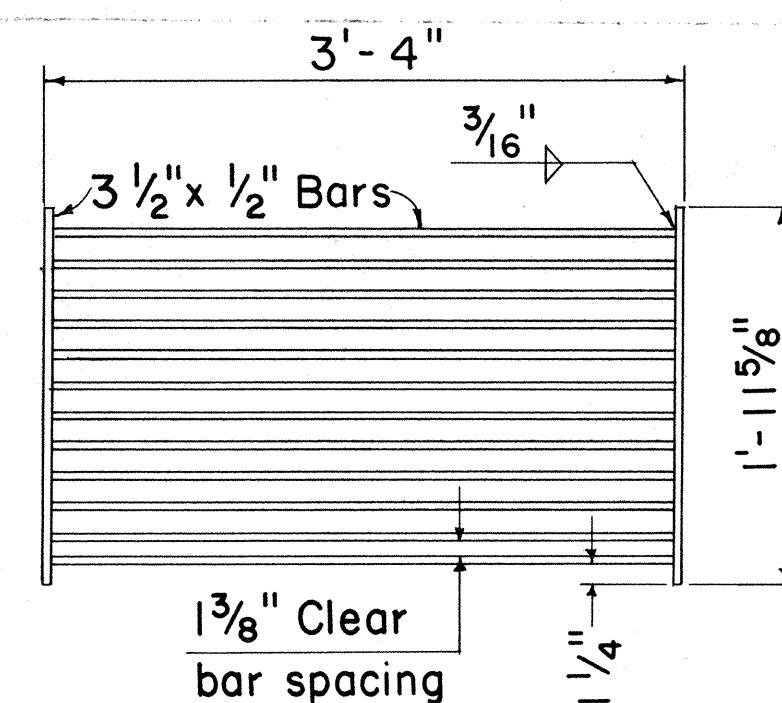


FRAME

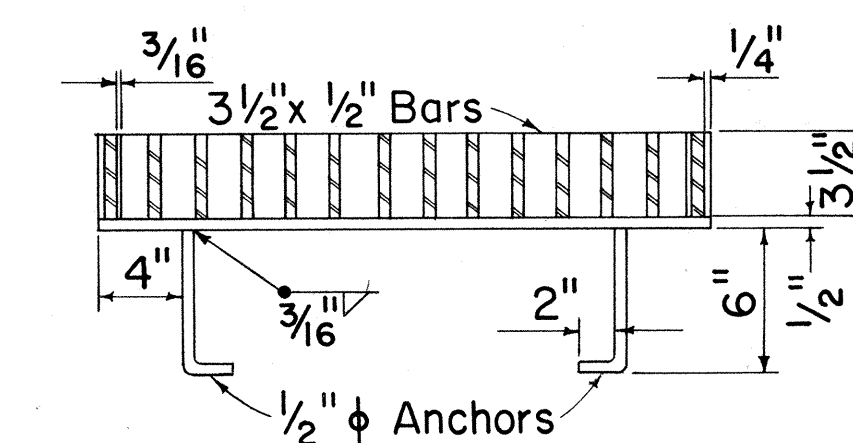


LONGITUDINAL SECTION

(Thru Frame and Grate)



GRATE

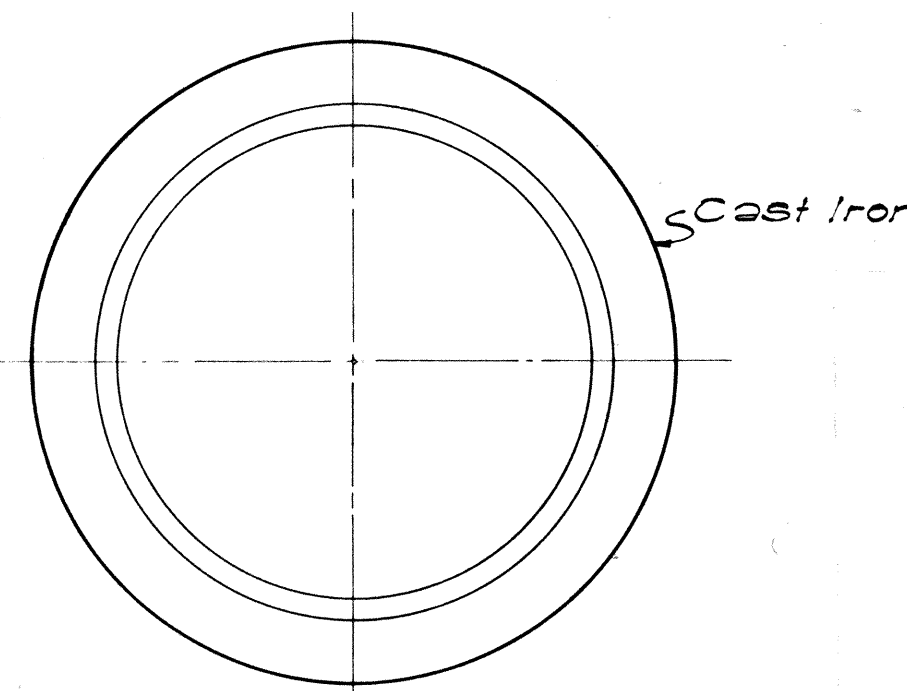


CROSS SECTION

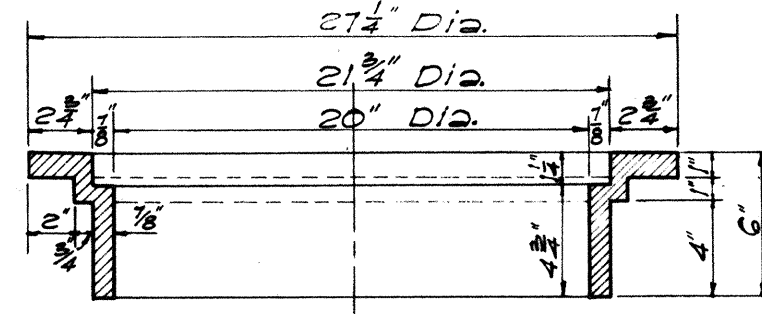
(Thru Frame and Grate)

TYPE 24-12 FRAME AND GRATE

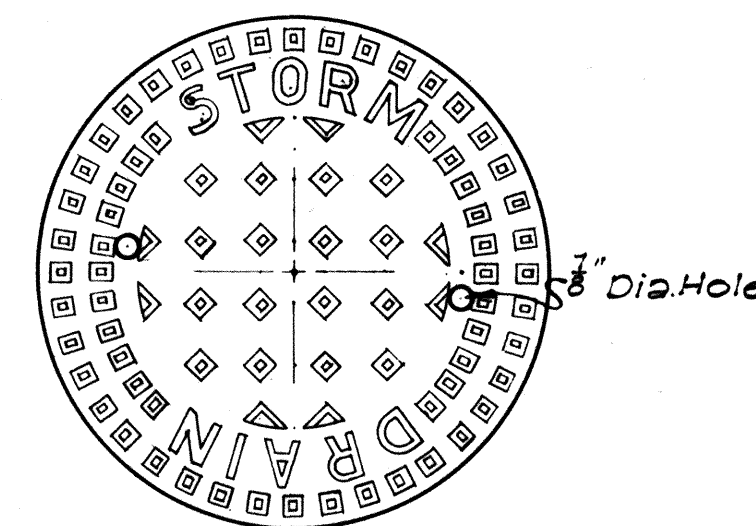
NOT TO SCALE



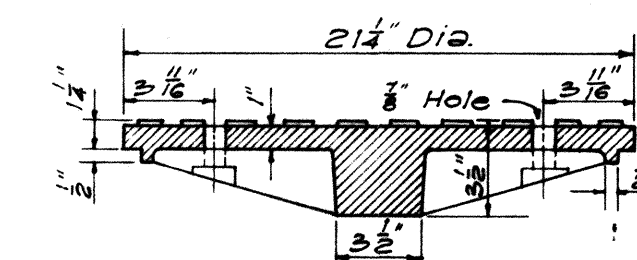
PLAN OF RIM



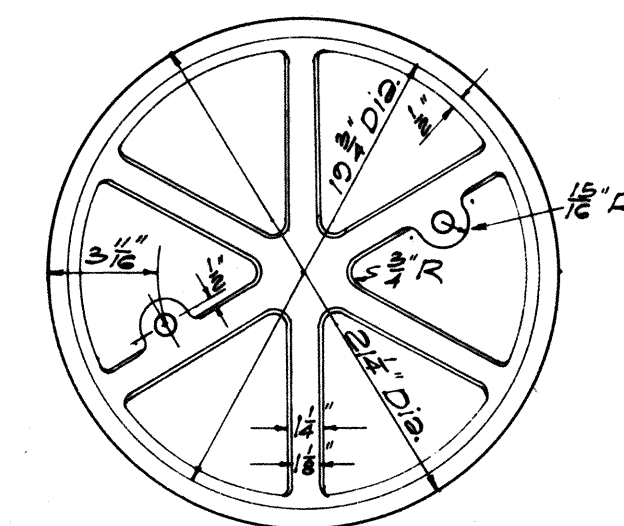
SECTION OF RIM



TOP VIEW OF COVER



SECTION



BOTTOM VIEW OF COVER

DETAIL OF TYPE "A" CAST IRON FRAME AND COVER

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

TYPE "A-1" & "A-2" AND 24-12

STEEL FRAME AND GRATES

TYPE "A" C.I. FRAME & COVER

INTERSTATE ROUTE H-1

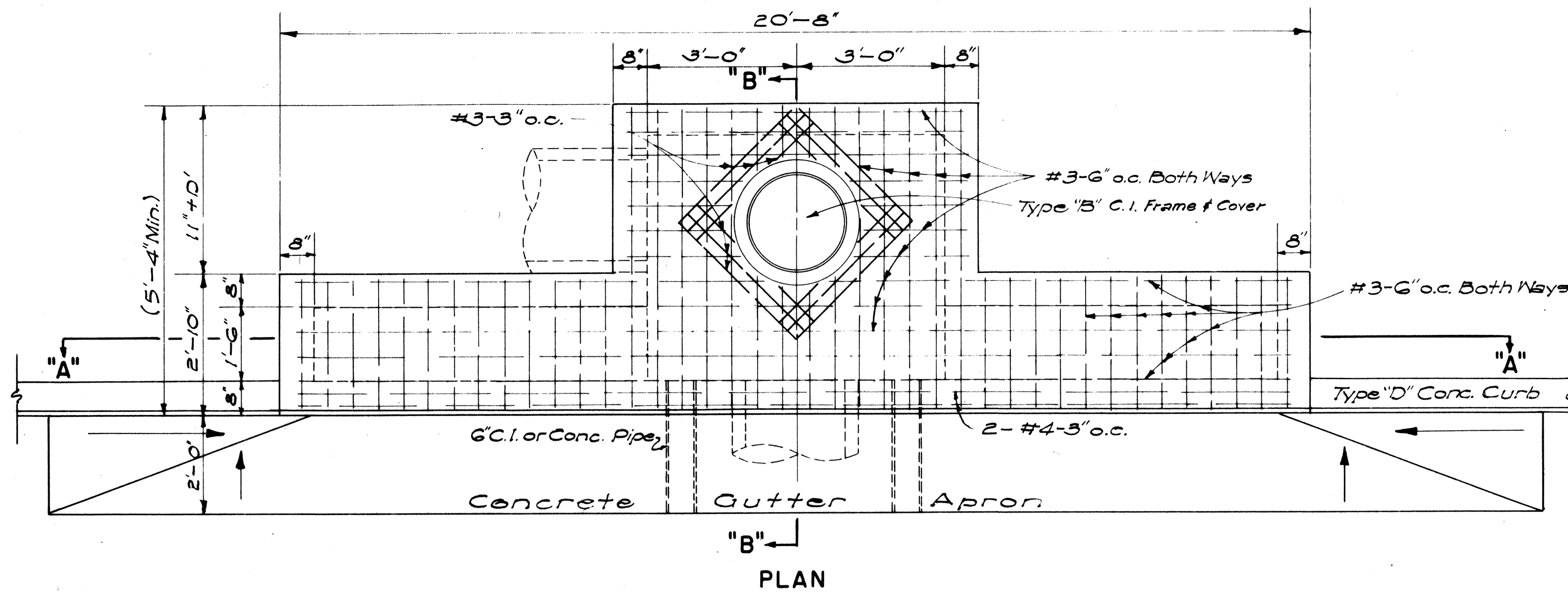
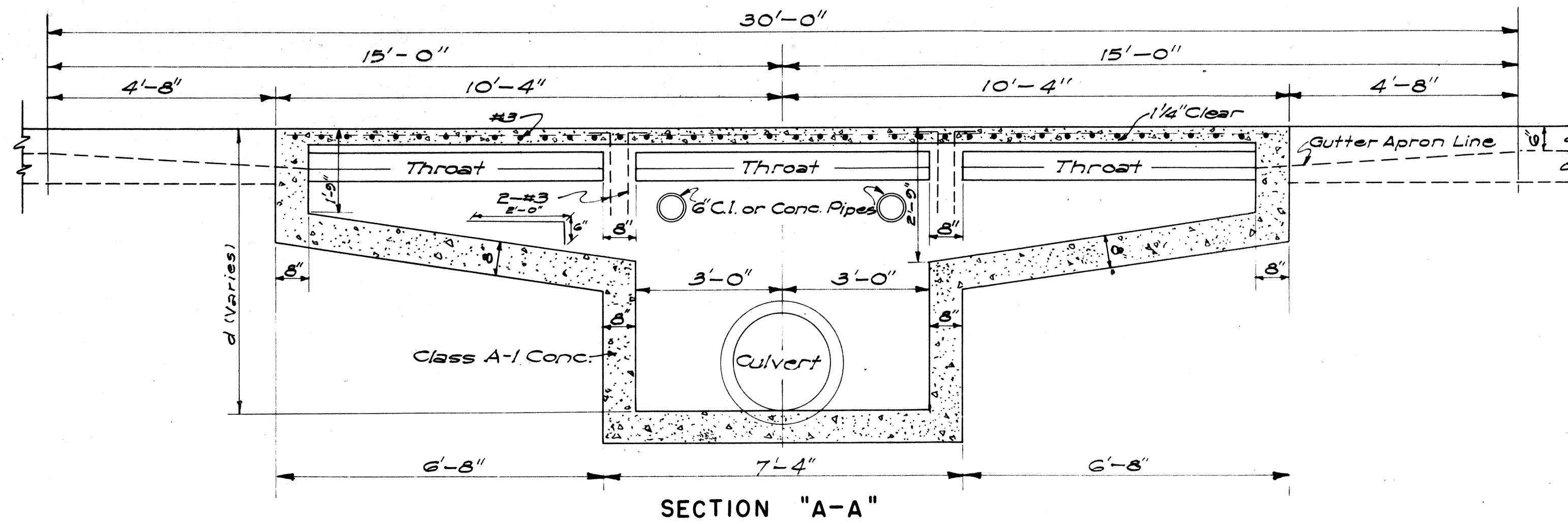
F.A.J. Proj. No I-H1-1(32):5, Unit 4

Scale: As Shown Date: Nov. 1967

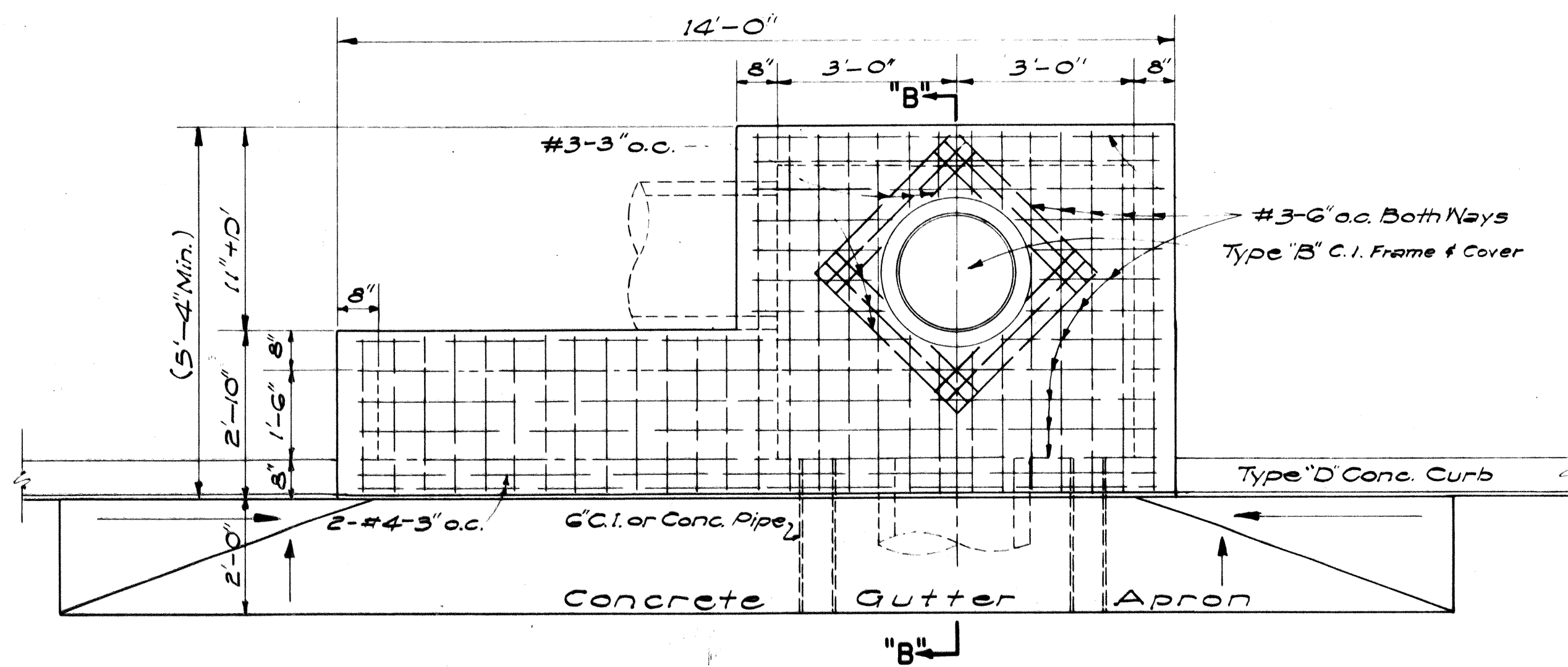
SHEET No. 6 OF 8 SHEETS

33 5

2/17/99

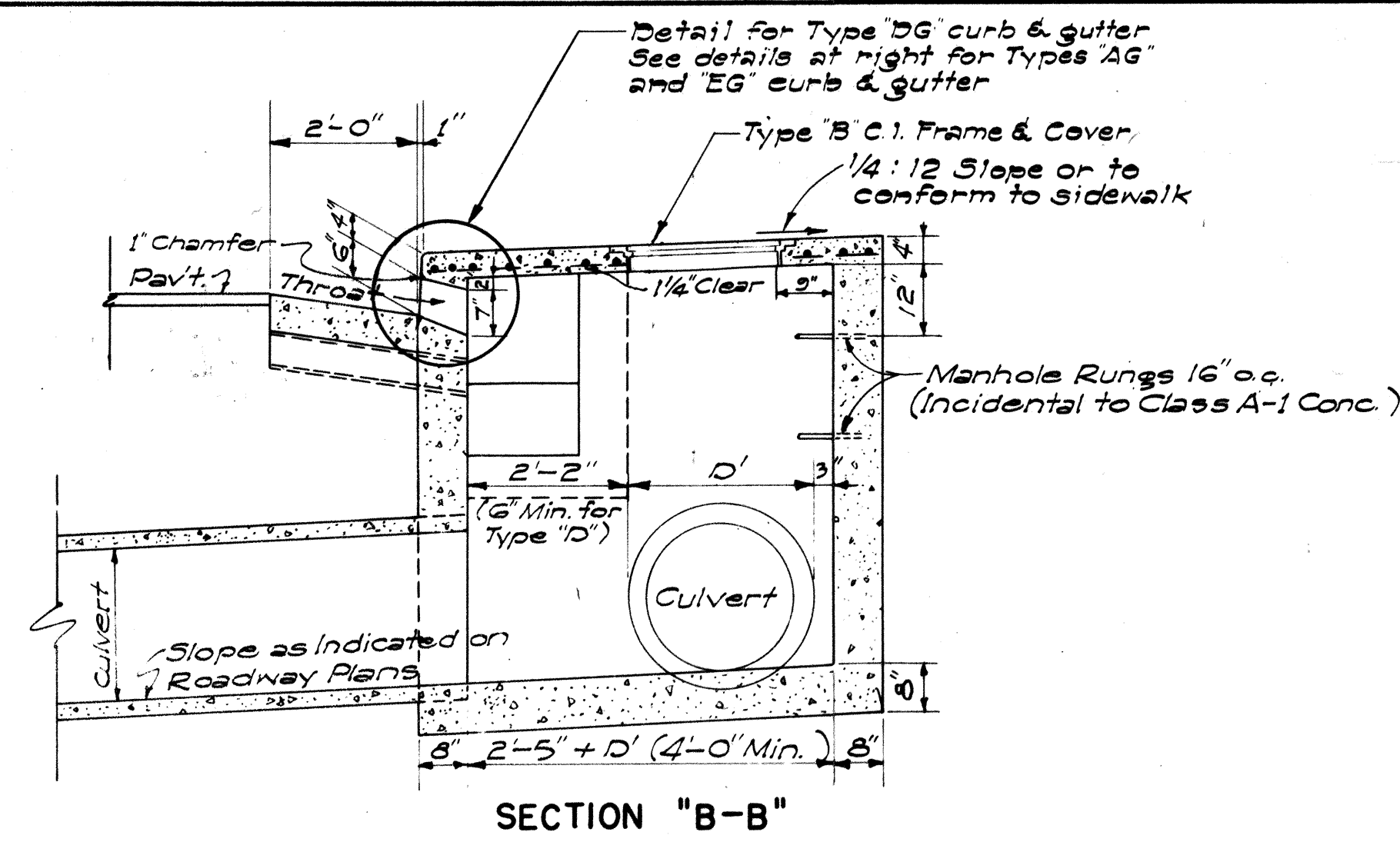


DETAIL OF TYPE "A" CATCH BASIN
SCALE: 1/2" = 1'-0"

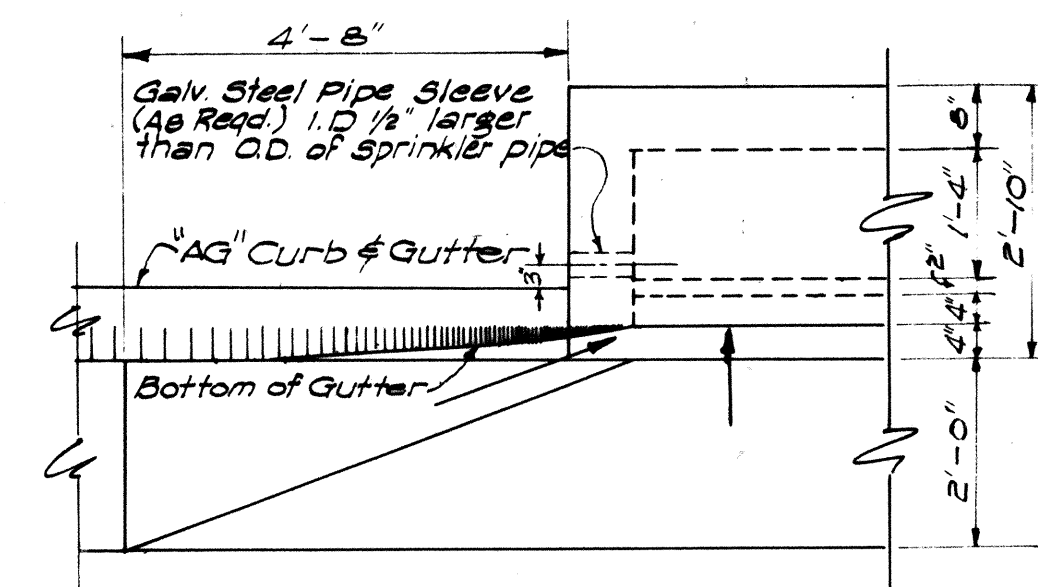


DETAIL OF TYPE "B" CATCH BASIN
SCALE: 1/2" = 1'-0"

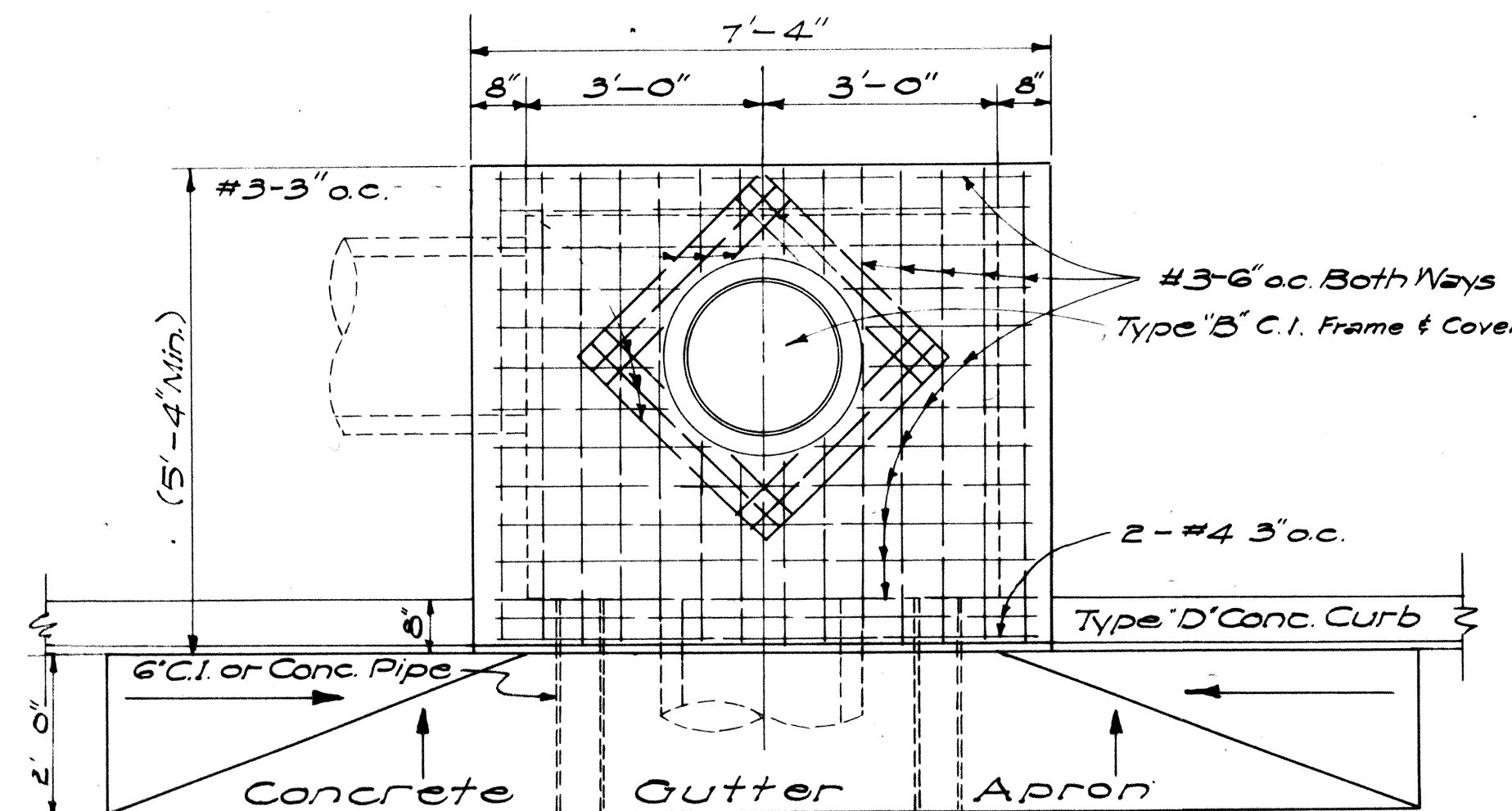
NOTE: TYPE "C" C.B. SIMILAR BUT OPPOSITE HAND



DETAIL OF CATCH BASIN
WITH TYPE "EG" CURB & GUTTER



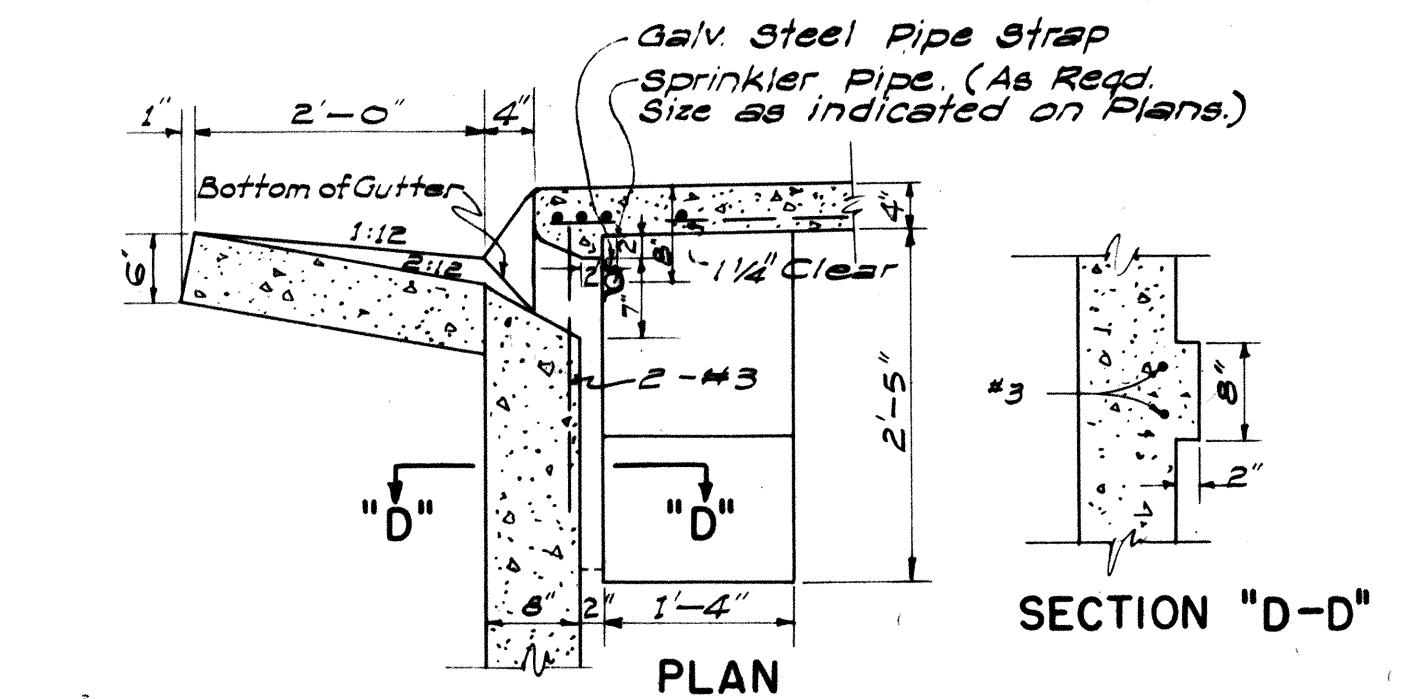
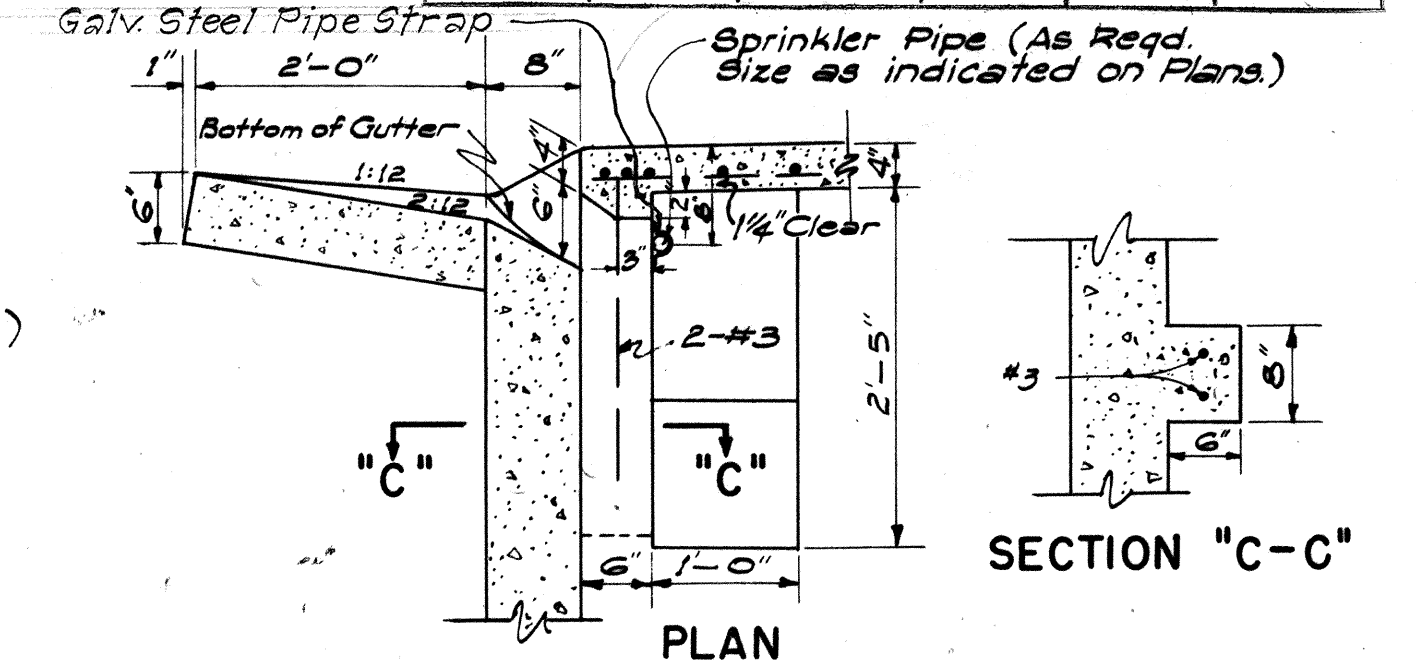
DETAIL OF CATCH BASIN
WITH TYPE "AG" CURB & GUTTER
SCALE: 1/2" = 1'-0"



DETAIL OF TYPE "D" CATCH BASIN
SCALE: 1/2" = 1'-0"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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HAWAII	HAW.	I-HI-1(32)-5	1967	36	101
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ESTIMATED QUANTITIES

Type	Class A-1 Conc.	Struct. Exc.	Reinf. Steel	Gutter Length
"A"	7.5 cy	24.7 cy	145 lb.	30'-0"
"B"	6.0 cy	21.5 cy	108 lb.	23'-4"
"C"	6.0 cy	21.5 cy	108 lb.	23'-4"
"D"	4.9 cy	16.5 cy	77 lb.	16'-8"

NOTES:

- Quantities based on d = 5.75' and D = 30"
- Quantities do not include concrete for Gutter Apron.
- The Contractor shall install two 6" Cast Iron or Concrete Pipes as incidental to Class A-1 Concrete for Construction Drainage.
- Culvert shall leave C.B. from any position and any direction indicated by plans or ordered by the Engineer. Culvert may both enter and leave C.B. so that C.B. will also act as Manhole.
- The Contractor shall install Galvanized Steel Pipe Sleeves and Straps as incidental to Sprinkler System.

APPROVED: DATE: 8/25/99
STATE HIGHWAY ENGINEER

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
STANDARD DETAILS
CATCH BASINS

SCALES AS NOTED
SHEET NO. 7 OF 8 SHEETS

