

DRAINAGE SUMMARY

PROJECT: Farrington Highway Widening, Ala Hema Street towards Jade Street
PROJECT NO.: 93B-02-9I

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-9I	1994	42	122

DATE	REVISION

ITEM NO.		202 0500	206 2020	206 4200	206 4300	206 4400	206 7000	503 1025	503 1026	503 1027	503 6010	503 6020	503 7020	503 7030	503 7040	602 0035	602 0036	602 0037	603 0011	603 0020	603 1010	603 1012	603 1014	603 1016	603 9020	603 9030	603 9035	603 9120	603 9130	603 9135									
UNIT USED		(CY)	CY	CY	CY	CY	CY	CY	CY	CY	LF	LF	Each	Each	Each	(LB)	(LB)	(LB)	CY	CY	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF									
STATION (From)	STATION (to)	Demolish, remove, and dispose of Inlets, outlets, headwalls and culverts	Structure Excavation for Drainage System	Structure Excavation for Concrete Box Culvert at Baseline Station 57+44	Structure Excavation for Concrete Box Culvert at Baseline Station 68+78	Structure Excavation for 6'x3' Concrete Box Culvert	Structure Backfill	Class A Concrete for Concrete Box Culvert at Baseline Station 57+44	Class A Concrete for Concrete Box Culvert at Baseline Station 68+78	Class A Concrete for 6' x3' Concrete Box Culvert	Reinforced Concrete Jacket for 29" x18" Arch Culvert	Reinforced Concrete Jacket for 43" x27" Arch Culvert	Reinforced Concrete Collar for 30" RCP, Cl. III	Reinforced Concrete Collar for 36" RCP, Cl. III	Reinforced Concrete Collar for 42" RCP, Cl. III	Reinforcing Steel for Concrete Box Culvert at Baseline Station 57+44	Reinforcing Steel for Concrete Box Culvert at Baseline Station 68+78	Reinforcing Steel for 6' x3' Concrete Box Culvert	Bed Course Material, Aggregate Size No. 67	Bed Course Material for Drainage System	24-Inch Reinforced Concrete Pipe, Class III	30-Inch Reinforced Concrete Pipe, Class III	36-Inch Reinforced Concrete Pipe, Class III	42-Inch Reinforced Concrete Pipe, Class III	24" ASRP, "t"=0.105" or 24" RCP, Cl. III	30" ASRP, "t"=0.105" or 30" RCP, Cl. III	36" ASRP, "t"=0.105" or 36" RCP, Cl. III	29" x18" CAP-Arch, "t"=0.105"	36" x22" CAP-Arch, "t"=0.105"	43" x27" CAP-Arch, "t"=0.105"									
33+79± o/s 25± Rt.	34+45 o/s 18' Rt.		167												1					17				65															
34+45 o/s 18' Rt.	36+80 o/s 18' Rt.		533																	60				229															
36+86 Lt.	36+80 o/s 18' Rt.		41																	9								47											
36+80 o/s 18' Rt.	36+86 Rt.		13																	2	12																		
36+80 o/s 18' Rt.	38+65 o/s 18' Rt.		400																	47				182															
38+65 o/s 18' Rt.	40+25 o/s 18' Rt.		325																	41				158															
40+25 o/s 18' Rt.	40+29 Rt.		10																	1	8																		
40+25 o/s 18' Rt.	41+44 o/s 18' Rt.		215																	29																			
41+54 Lt.	41+44 o/s 18' Rt.		41																	9								46											
41+44 o/s 18' Rt.	41+44 Rt.		9																	1	8																		
41+44 o/s 18' Rt.	43+50 o/s 18' Rt.		318																	44		202																	
43+62 Lt.	43+50 o/s 18' Rt.		33										30							9								46											
43+50 o/s 18' Rt.	43+52 Rt.		8																	2	8																		
43+50 o/s 18' Rt.	44+98 o/s 18' Rt.		224																	32		144																	
44+98 o/s 18' Rt.	45+00 Rt.		14																	2	12																		
44+98 o/s 18' Rt.	46+48 o/s 18' Rt.		226																	32		146																	
46+60 Lt.	46+48 o/s 18' Rt.		35									20								9								47											
46+48 o/s 18' Rt.	46+50 Rt.		10																	2	11																		
46+48 o/s 18' Rt.	48+20 o/s 35' Rt.		225																	34	168																		
48+20 o/s 35' Rt.	50+49 Rt.		200																	32					160														
50+73 Lt.	50+49 Rt.		59																	13								66											
Subtotal		0	3106	0	0	0	0	0	0	0	50	0	0	0	1	0	0	0	0	427	227	492	0	634	160	0	0	252	0	0									

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	

DRAINAGE SUMMARY

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	44	122

5/8/95	Revised quantities
DATE	REVISION

PROJECT: Farrington Highway Widening, Ala Hema Street towards Jade Street
PROJECT NO.: 93B-02-91

ITEM NO.		202 0500	206 2020	206 4200	206 4300	206 4400	206 7000	503 1025	503 1026	503 1027	503 6010	503 6020	503 7020	503 7030	503 7040	503 0035	503 0036	503 0037	603 0011	603 0020	603 1010	603 1012	603 1014	603 1016	603 9020	603 9030	603 9035	603 9120	603 9130	603 9135										
UNIT USED		(CY)	CY	CY	CY	CY	CY	CY	CY	CY	LF	LF	Each	Each	Each	(LB)	(LB)	(LB)	CY	CY	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF										
± STATION (From)	± STATION (to)	Demolish, remove, and dispose of Inlets, outlets, headwalls and culverts	Structure Excavation for Drainage System	Structure Excavation for Concrete Box Culvert at Baseline Station 57+44	Structure Excavation for Concrete Box Culvert at Baseline Station 68+78	Structure Excavation for 6'x3' Concrete Box Culvert	Structure Backfill	Class A Concrete for Concrete Box Culvert at Baseline Station 57+44	Class A Concrete for Concrete Box Culvert at Baseline Station 68+78	Class A Concrete for 6'x3' Concrete Box Culvert	Reinforced Concrete Jacket for 29"x18" Arch Culvert	Reinforced Concrete Jacket for 43"x27" Arch Culvert	Reinforced Concrete Collar for 30" RCP, Cl. III	Reinforced Concrete Collar for 36" RCP, Cl. III	Reinforced Concrete Collar for 42" RCP, Cl. III	Reinforcing Steel for Concrete Box Culvert at Baseline Station 57+44	Reinforcing Steel for Concrete Box Culvert at Baseline Station 68+78	Reinforcing Steel for 6'x3' Concrete Box Culvert	Bed Course Material, Aggregate Size No. 67	Bed Course Material for Drainage System	24-Inch Reinforced Concrete Pipe, Class III	30-Inch Reinforced Concrete Pipe, Class III	36-Inch Reinforced Concrete Pipe, Class III	42-Inch Reinforced Concrete Pipe, Class III	24" ASRP, "I"=0.105" or 24" RCP, Cl. III	30" ASRP, "I"=0.105" or 30" RCP, Cl. III	36" ASRP, "I"=0.105" or 36" RCP, Cl. III	29"x18" CAP-Arch, "I"=0.105"	36"x22" CAP-Arch, "I"=0.105"	43"x27" CAP-Arch, "I"=0.105"										
54+50 Lt.	54+55 o/s 12.5' Lt.		11																	4								18												
54+55 o/s 12.5' Lt.	54+50 Rt.		45																	8								41												
54+55 o/s 12.5' Lt.	56+41 o/s 12.5' Lt.		190																	37					181															
56+41 o/s 12.5' Lt.	57+40± o/s 14' Lt.		96																	20					98															
57+44± o/s 40' Lt.	57+44± o/s 41' Rt.			439			63	90								(16766)			26																					
57+50± o/s 14' Lt.	59+28 o/s 12.5' Lt.		172																	39						177														
59+28 o/s 12.5' Lt.	60+85 o/s 14' Lt.		122																	33									153											
61+00 Lt.	60+85 o/s 14' Lt.		14								23									5								24												
60+85 o/s 14' Lt.	61+00 Rt.		44																	8								42												
65+02 Rt.	66+10 o/s 18' Rt.		112																	20								105												
66+10 o/s 18' Rt.	67+82 o/s 18' Rt.		206									50								37									169											
65+85 Lt.	66+10 o/s 18' Rt.		44								53									10								54												
66+10 o/s 18' Rt.	66+10 Rt.		8																	2								11												
67+82 o/s 18' Rt.	68+73± o/s 13' Lt.		122																	20									95											
68+79 o/s 40' Lt.					286		52		67								(11243)		21																					
68+85± o/s 13' Lt.	71+40 o/s 16' Lt.		308																	56									255											
69+02± Lt.	69+52± Lt.	(13)																																						
71+50 Lt.	71+40 o/s 16' Lt.		11																	3								16												
71+40 o/s 16' Lt.	71+50 Rt.		36																	8								41												
71+40 o/s 16' Lt.	73+40 o/s 16' Lt.		193																	39								196												
73+40 o/s 16' Lt.	75+90 o/s 16' Lt.		244																	49								247												
76+00 Lt.	75+90 o/s 16' Lt.		11																	3								16												
75+90 o/s 16' Lt.	76+00 Rt.		41																	8								44												
79+75± Rt		(8)																																						
Subtotal		(21)	2030	439	286	0	115	90	67	0	76	50	0	0	0	(16766)	(11243)	0	47	409	0	0	0	0	279	177	0	855	672	0										

ORIGINAL PLAN	DATE
NOTED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

SUMMARY

DATE	REVISION
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PROJECT: Farrington Highway Widening, Ala Hema Street towards Jade Street
PROJECT NO.: 93B-02-9I

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	45	122

[illegible]

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____
NOTE BOOK	DRAWN BY _____ *
	TRACED BY _____ *
	DESIGNED BY _____ *
	QUANTITIES BY _____ *
No. _____	CHECKED BY _____ *

DRAINAGE SUMMARY

PROJECT: Farrington Highway Widening, Ala Hema Street towards Jade Street
PROJECT NO.: 93B-02-9I

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-9I	1994	46	122

DATE	REVISION

ITEM NO.		202 0500	206 2020	206 4200	206 4300	206 4400	206 7000	503 1025	503 1026	503 1027	503 6010	503 6020	503 7020	503 7030	503 7040	602 0035	602 0036	602 0037	603 0011	603 0020	603 1010	603 1012	603 1014	603 1016	603 9020	603 9030	603 9035	603 9120	603 9130	603 9135									
UNIT USED		(CY)	CY	CY	CY	CY	CY	CY	CY	CY	LF	LF	Each	Each	Each	(LB)	(LB)	(LB)	CY	CY	LF	LF	LF	LF	LF	LF	LF	LF	LF	LF									
± STATION (From)	± STATION (to)	Demolish, remove, and dispose of Inlets, outlets, headwalls and culverts	Structure Excavation for Drainage System	Structure Excavation for Concrete Box Culvert at Baseline Station 57+44	Structure Excavation for Concrete Box Culvert at Baseline Station 68+78	Structure Excavation for 6'x3' Concrete Box Culvert	Structure Backf III	Class A Concrete for Concrete Box Culvert at Baseline Station 57+44	Class A Concrete for Concrete Box Culvert at Baseline Station 68+78	Class A Concrete for 6' x3' Concrete Box Culvert	ReInforced Concrete Jacket for 29"x18" Arch Culvert	ReInforced Concrete Jacket for 43"x27" Arch Culvert	ReInforced Concrete Collar for 30" RCP, Cl. III	ReInforced Concrete Collar for 36" RCP, Cl. III	ReInforced Concrete Collar for 42" RCP, Cl. III	Reinforcing Steel for Concrete Box Culvert at Baseline Station 57+44	Reinforcing Steel for Concrete Box Culvert at Baseline Station 68+78	Reinforcing Steel for 6' x3' Concrete Box Culvert	Bed Course Material, Aggregate Size No. 67	Bed Course Material for Drainage System	24-Inch Reinforced Concrete Pipe, Class III	30-Inch Reinforced Concrete Pipe, Class III	36-Inch Reinforced Concrete Pipe, Class III	42-Inch Reinforced Concrete Pipe, Class III	24" ASRP, "t"=0.105" or 24" RCP, Cl. III	30" ASRP, "t"=0.105" or 30" RCP, Cl. III	36" ASRP, "t"=0.105" or 36" RCP, Cl. III	29"x18" CAP-Arch, "t"=0.105"	36"x22" CAP-Arch, "t"=0.105"	43"x27" CAP-Arch, "t"=0.105"									
80+13 Rt.	80+40 o/s 9' Lt.		42																	8								44											
80+40 o/s 9' Lt.	82+15 o/s 9' Lt.		173																	34					172														
82+00 Lt.	82+15 o/s 9' Lt.		14							22										5								24											
82+15 o/s 9' Lt.	82+00 Rt.		42																	7								37											
82+15 o/s 9' Lt.	83+90 o/s 9' Lt.		198																	34					172														
83+90 o/s 9' Lt.	85+70 o/s 8' Lt.		232																	35					176														
85+50 Lt.	85+70 o/s 8' Lt.		15							15										5								25											
85+70 o/s 8' Lt.	86+30 o/s 9' Lt.		76																	12					56														
86+30 o/s 9' Lt.	86+30 Rt.		48																	8					39														
86+30 o/s 9' Lt.	87+35 o/s 9' Lt.		144																	20					100														
87+35 o/s 9' Lt.	87+20 Rt.		57																	8					42														
87+35 o/s 9' Lt.	89+85 o/s 9' Lt.		441																	54						247													
89+85 o/s 9' Lt.	92+15 o/s 2' Lt.		421																	50						227													
92+00 Lt.	92+15 o/s 2' Lt.		26																	6								31											
92+15 o/s 2' Lt.	92+00 Rt.		48																	6					30														
92+15 o/s 2' Lt.	93+98± o/s 1' Lt.		353										1							40		180																	
94+95± o/s 1' Lt.	96+32 o/s 2' Lt.		272											1						32			135																
96+32 o/s 2' Lt.	96+32 Rt.		32																	6								30											
96+32 o/s 2' Lt.	98+82 o/s 2' Lt.		456																	60							247												
99+00 Lt.	98+82 o/s 2' Lt.		26							6										6								32											
98+82 o/s 2' Lt.	99+32 o/s 2' Lt.		77																	11							46												
99+32 o/s 2' Lt.	99+40 Rt.		36																	6					32														
99+32 o/s 2' Lt.	101+30 o/s 2' Lt.		276																	43									194										
101+50 Lt.	101+30 o/s 2' Lt.		40																	6								33											
101+30 o/s 2' Lt.	101+50 Rt.		36																	7								36											
Subtotal		0	3581	0	0	0	0	0	0	0	43	0	1	1	0	0	0	0	0	509	0	180	135	0	819	474	293	292	194	0									

ORIGINAL PLAN	DATE
NOTED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

PROJECT: Farrington Highway Widening, Ala Hema Street towards Jade Street
PROJECT NO.: 93B-02-9I

DATE	REVISION

SHEET No. *H6* OF 32 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____
NOTE BOOK	DRAWN BY _____
	TRACED BY _____
	DESIGNED BY _____
	QUANTITIES BY _____
No. _____	CHECKED BY _____

DRAINAGE SUMMARY

PROJECT: Farrington Highway Widening, Ala Hema Street towards Jade Street
PROJECT NO.: 93B-02-9I

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	48	122

<i>DATE</i>	<i>REVISION</i>

[illegible]

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
NOTE BOOK	DRAWN BY _____	_____
	TRACED BY _____	_____
	DESIGNED BY _____	_____
	QUANTITIES BY _____	_____
No. _____	CHECKED BY _____	_____

PROJECT: Farrington Highway Widening, Ala Hema Street towards Jade Street
PROJECT NO.: 93B-02-9I

DATE	REVISION

SHEET No. *H8* OF 32 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____
NOTE BOOK	DRAWN BY _____
	TRACED BY _____
	DESIGNED BY _____
	QUANTITIES BY _____
No. _____	CHECKED BY _____

1. Existing drainage systems will be functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and Incidentals necessary to accomplish maintenance of flow. The cost shall be Incidental to the various Contract Items.
2. The Contractor shall verify the locations of all existing culverts and utilities in the field. Any existing culverts and utilities damaged during construction shall be repaired or replaced by the Contractor at his own expense.
3. For typical culvert trench detail, see sht. no. H31.
4. For typical structural excavation and backfill pay limits for concrete box culverts and concrete wingwalls, see sht. no. H31.
5. Only non-pneumatic type of drill as approved by the Engineer will be permitted for drilling holes in concrete. The approximate diameter of drilled holes for installation of dowels are indicated on plans, and voids after installing dowels shall be filled with epoxy grout as directed by the Engineer. The work mentioned above shall be considered Incidental to the various Contract Items.
6. Concrete shall be class A unless otherwise noted.
7. Chamfer all exposed concrete edges 1".
8. All reinforcing steel shall conform to the requirements of ASTM 615-Grade 60.
9. Box culvert at Baseline Sta. 57+44± and box culvert extensions at Baseline Sta. 68+78± shall follow the same horizontal alignment as the existing box culverts.
10. The cost of the following items shall not be paid for separately but shall be considered Incidental to the various Contract Items:

ALA HEMA ST.

30+00

Sta. 33+79± o/s 25'± Rt.
Reinforced Concrete Collar
Inv. = (-) 1.26±
(For Def., See Sht. No. H31)

34+00

Sta. 34+45 o/s 18' Rt.
Type "C" SDMH
Inv. = (-) 1.15
Install 24" RCP, 8' long
Plug with bricks and mortar

35+00

Sta. 36+80 o/s 18' Rt.
Type "C" SDMH
Inv. = (-) 0.76

36+00

Sta. 36+86 Rt.
Type "D" CB
Inv. = 0.80

37+00

29" x 18" Arch Culvert

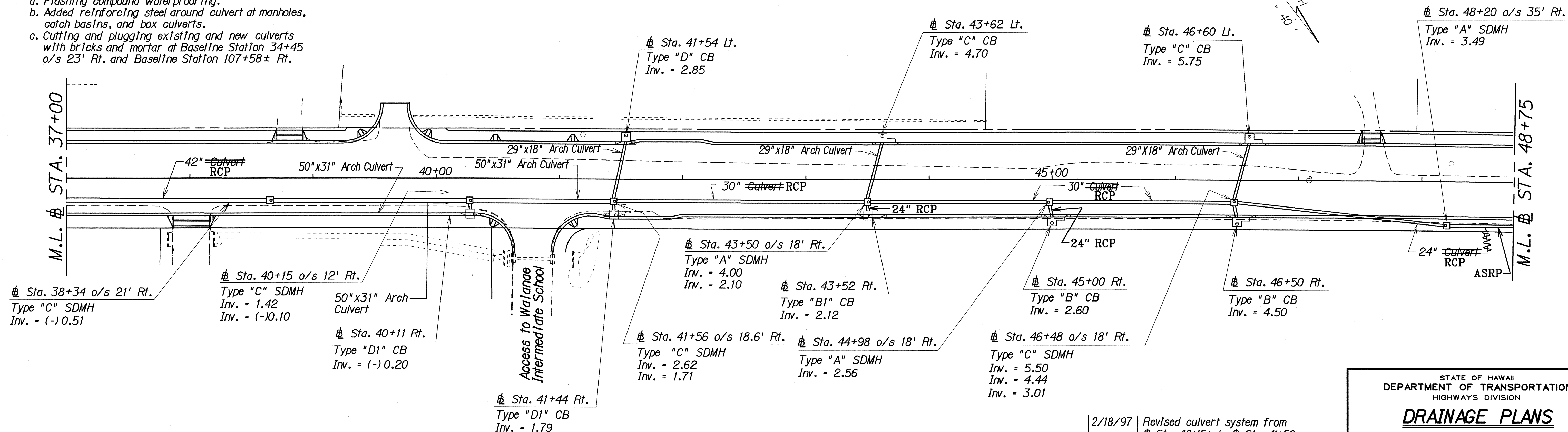
42" RCP

42" Culvert RCP

12' 24" Culvert

NORTH
E: 1° = 40'

- a. Flashing compound waterproofing.
- b. Added reinforcing steel around culvert at manholes, catch basins, and box culverts.
- c. Cutting and plugging existing and new culverts with bricks and mortar at Baseline Station 34+45 o/s 23' Rt. and Baseline Station 107+58 ± Rt.



2/18/97	Revised culvert system from to Sta. 40+15± to Sta. 41+56
12/26/96	Revised culvert alignment from to Sta. 40+11± to Sta. 40+14
12/3/96	Revised culvert alignment from to Sta. 33+79± to Sta. 43+50
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLANS

FARRINGTON HIGHWAY WIDENING
Ala Hema St. towards Jade St.
Project No. 93B-02-91

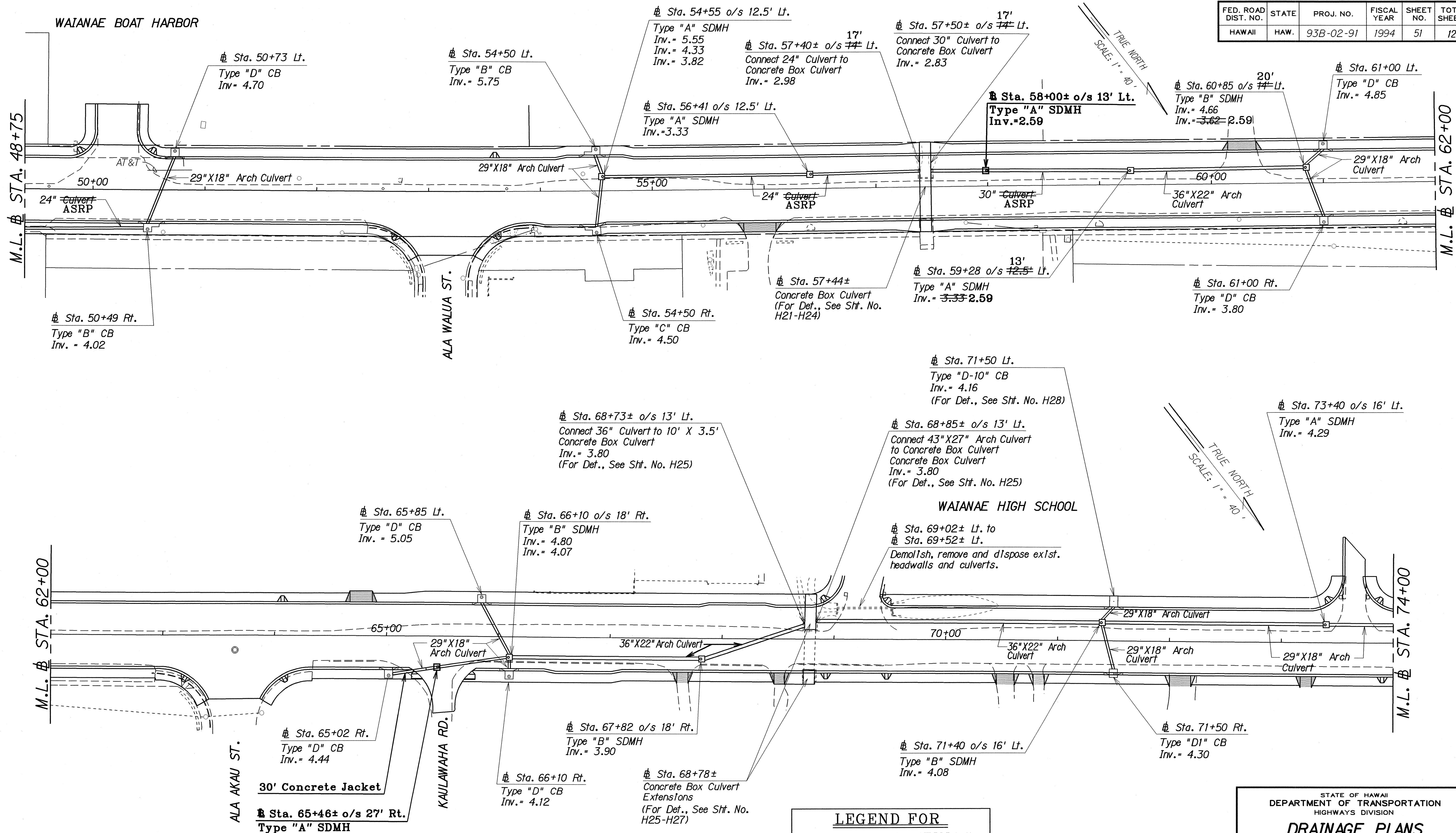
Scale: 1" = 40' Date: Mar. 1993

SHEET No. H9 OF 32 SHEETS

"AS-BUILT"

C.O. 50

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	51	122



LEGEND FOR AS-BUILT POSTINGS	
~~~~~	Squiggly line for as-built deletion
==	Double line for as-built deletion
Roadway	Text for as-built posting

5/8/95	Revised drainage system inverts
DATE	REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

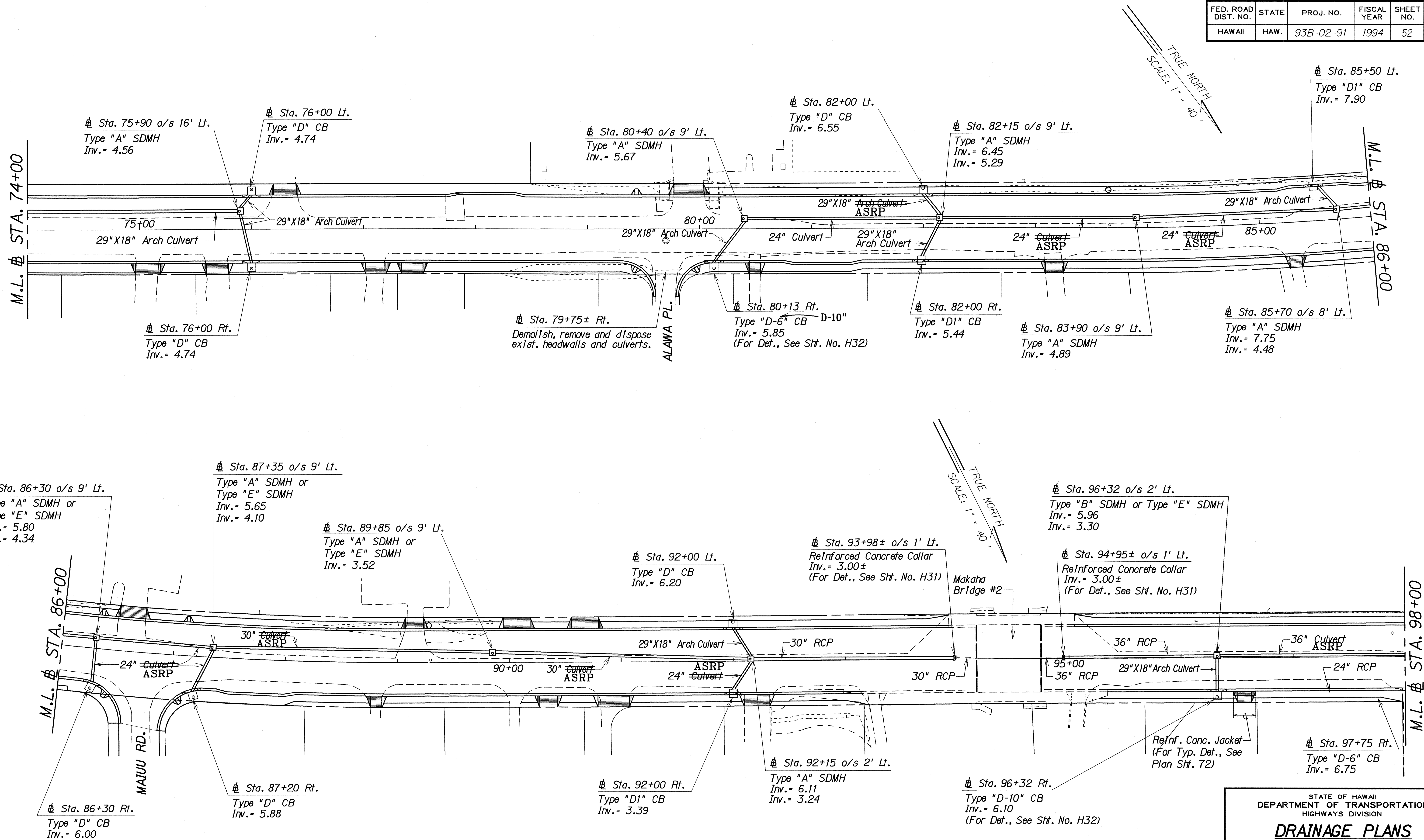
**DRAINAGE PLANS**

**FARRINGTON HIGHWAY WIDENING**  
Ala Hema St. towards Jade St.  
Project No. 93B-02-91

Scale: 1" = 40' Date: Mar. 1993

SHEET No. H10 OF 32 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	52	122



#### LEGEND FOR AS-BUILT POSTINGS

	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

12/18/96	Revised Drainage Plans
11/8/96	Revised Drainage Plans
9/23/96	Added drainage system at Sta. 97+75 Rt
5/8/95	Revised drainage system inverts
DATE	REVISION

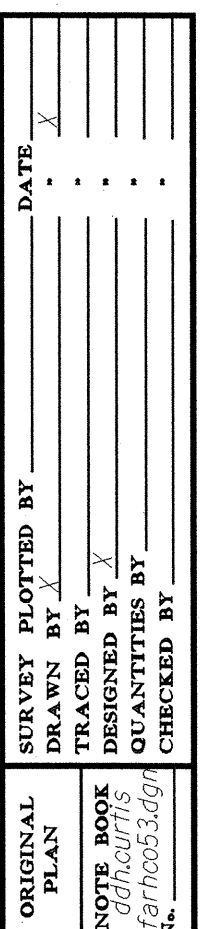
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
<b>DRAINAGE PLANS</b>
<b>FARRINGTON HIGHWAY WIDENING</b>
<b>Ala Hema St. towards Jade St.</b>
<b>Project No. 93B-02-91</b>
Scale: 1" = 40' Date: Mar. 1993
SHEET No. H11 OF 32 SHEETS

"AS-BUILT"

C.O. 52

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

TRUE NORTH  
SCALE: 1" = 40'



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**DRAINAGE PLANS**

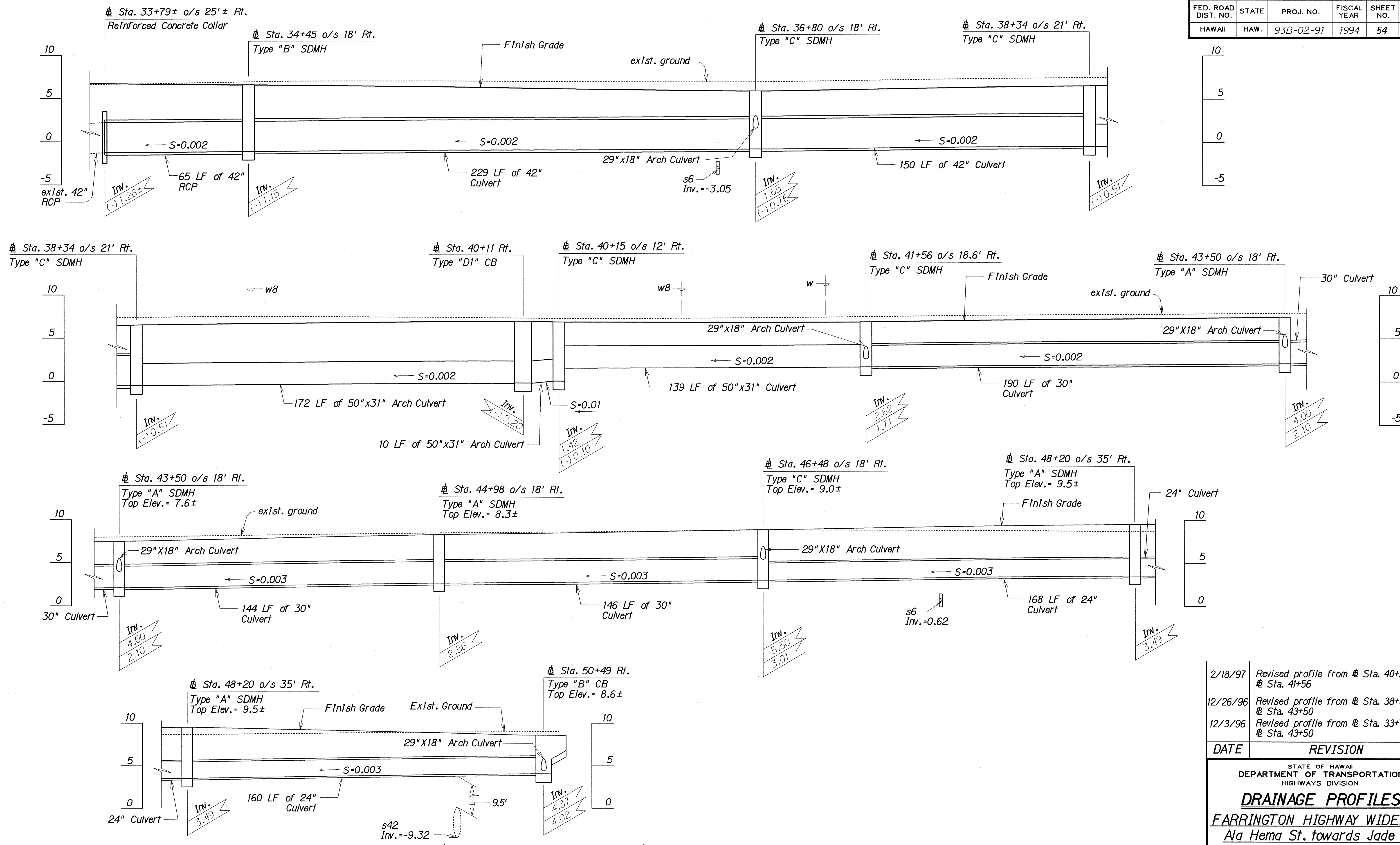
**FARRINGTON HIGHWAY WIDENING**  
**Ala Hema St. towards Jade St.**  
**Project No. 93B-02-91**

Scale: 1" = 40'      Date: Mar. 1993

SHEET NO. H12 OF 32 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	54	122



SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
CHECKED BY	

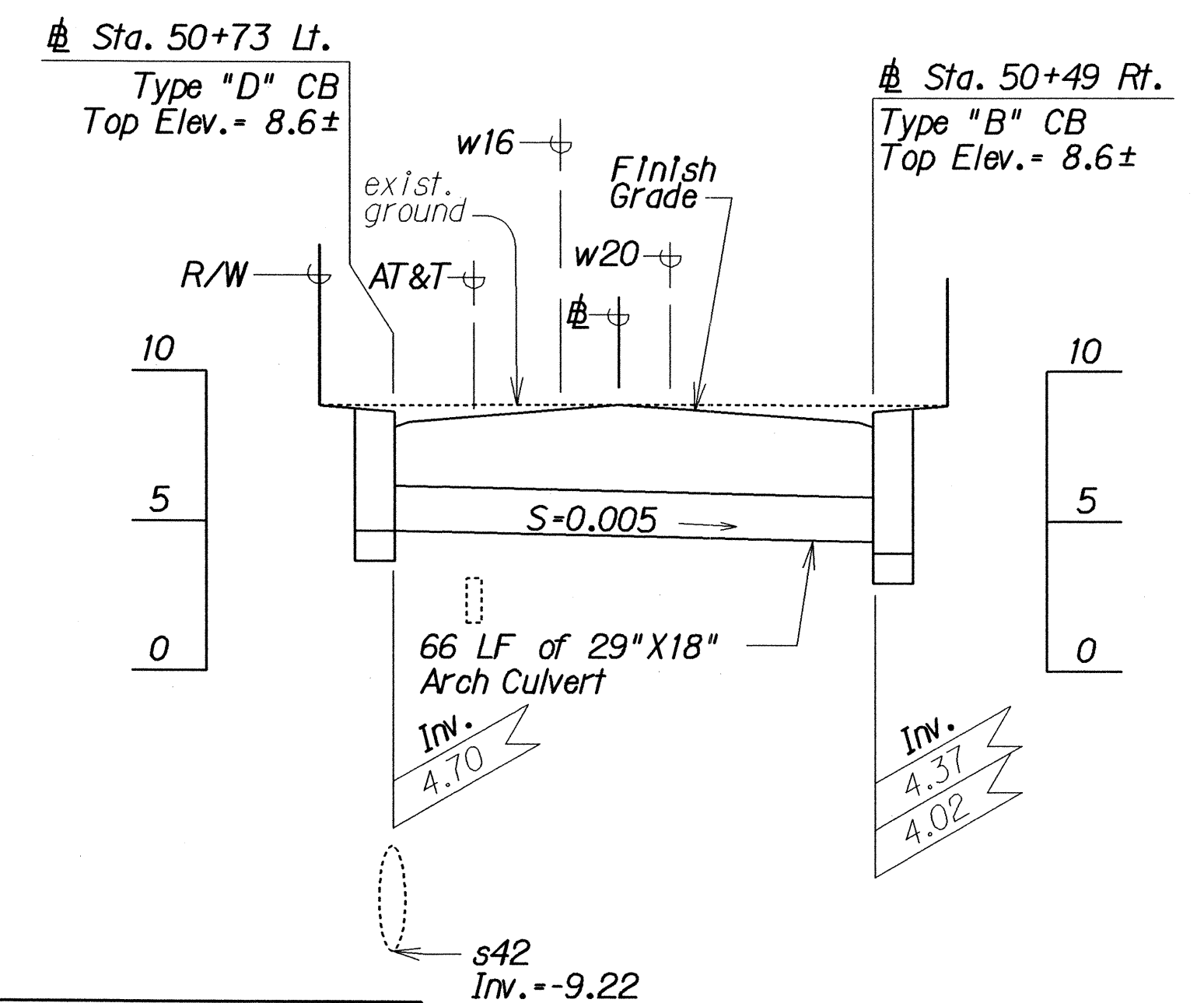
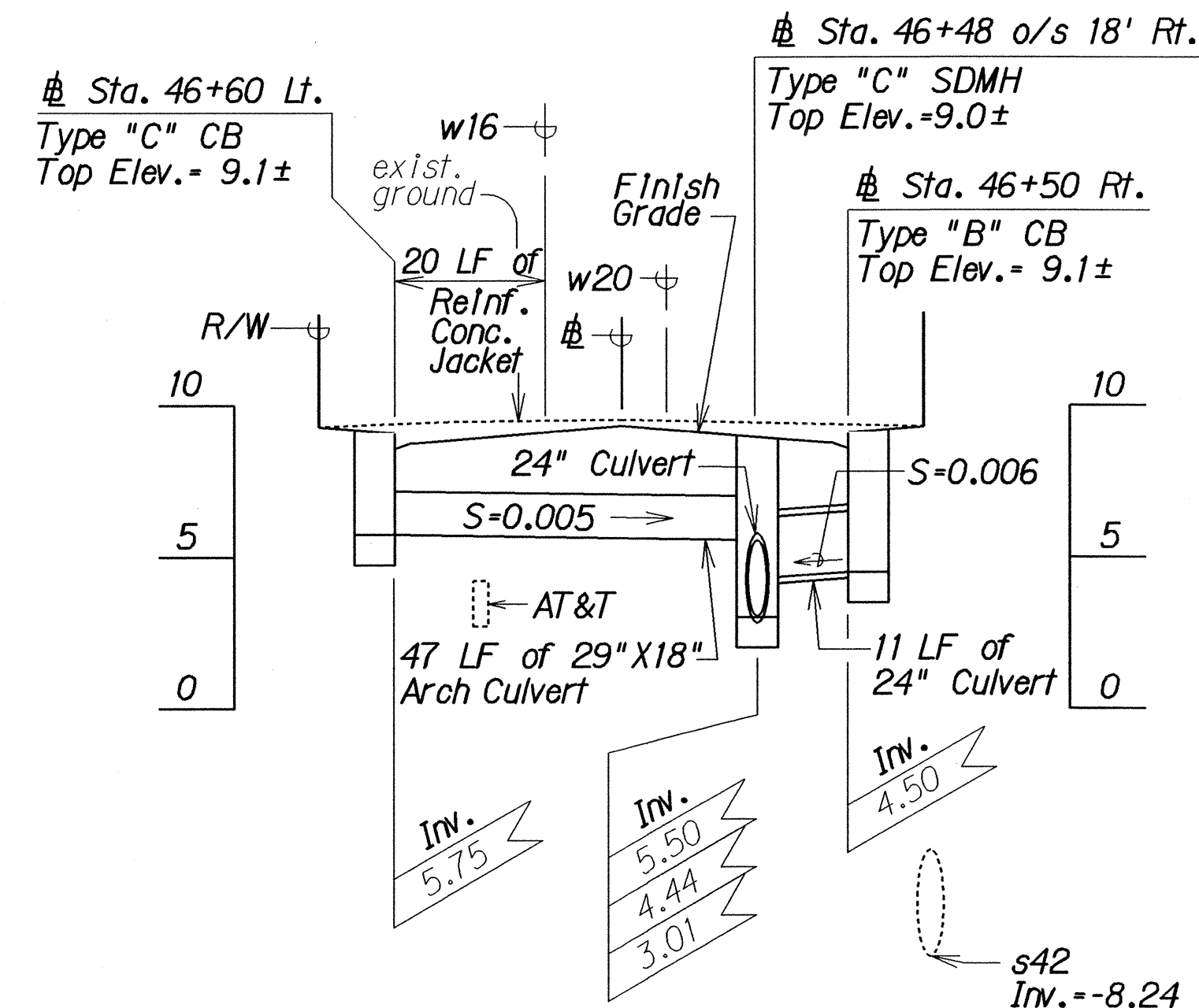
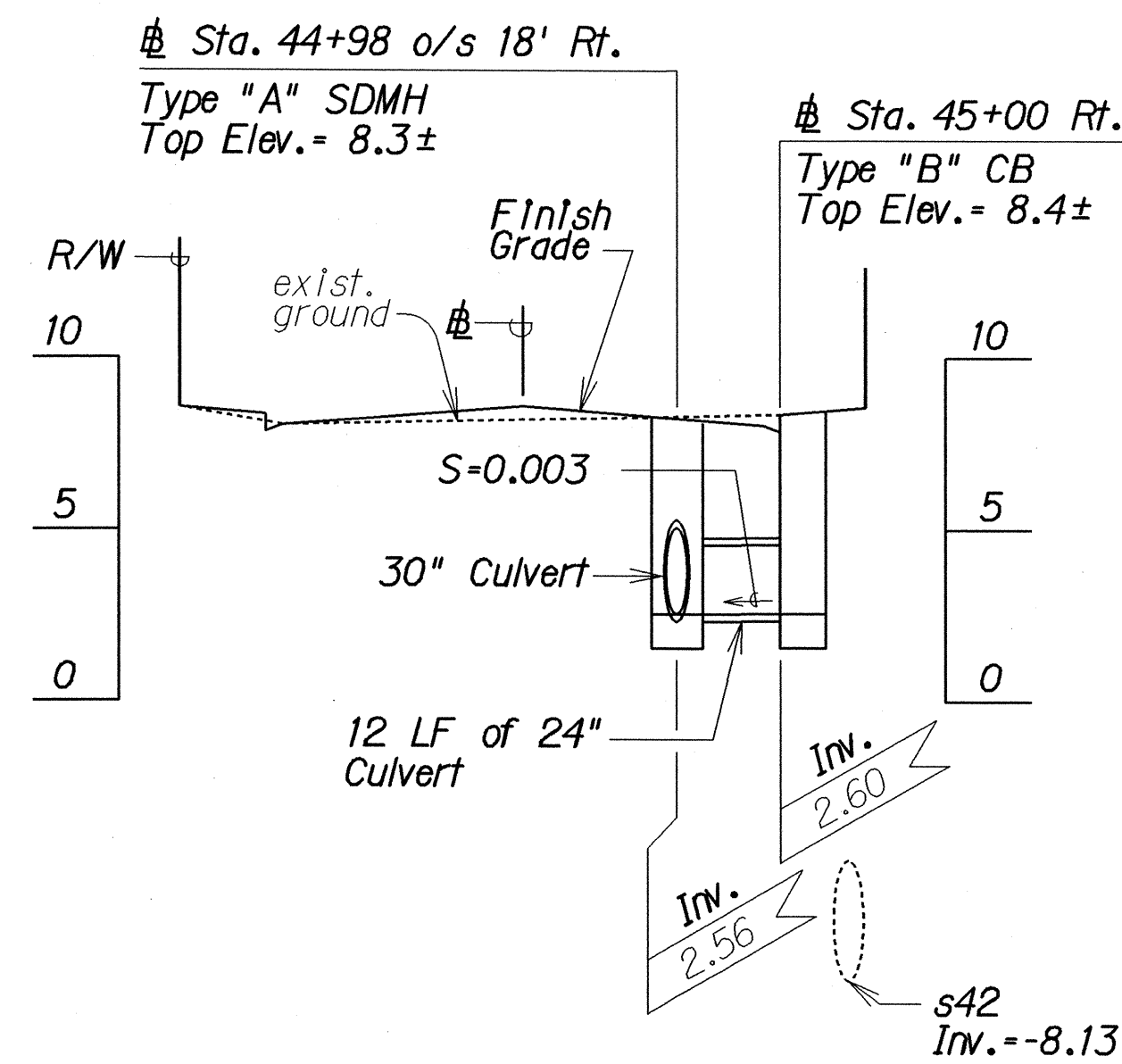
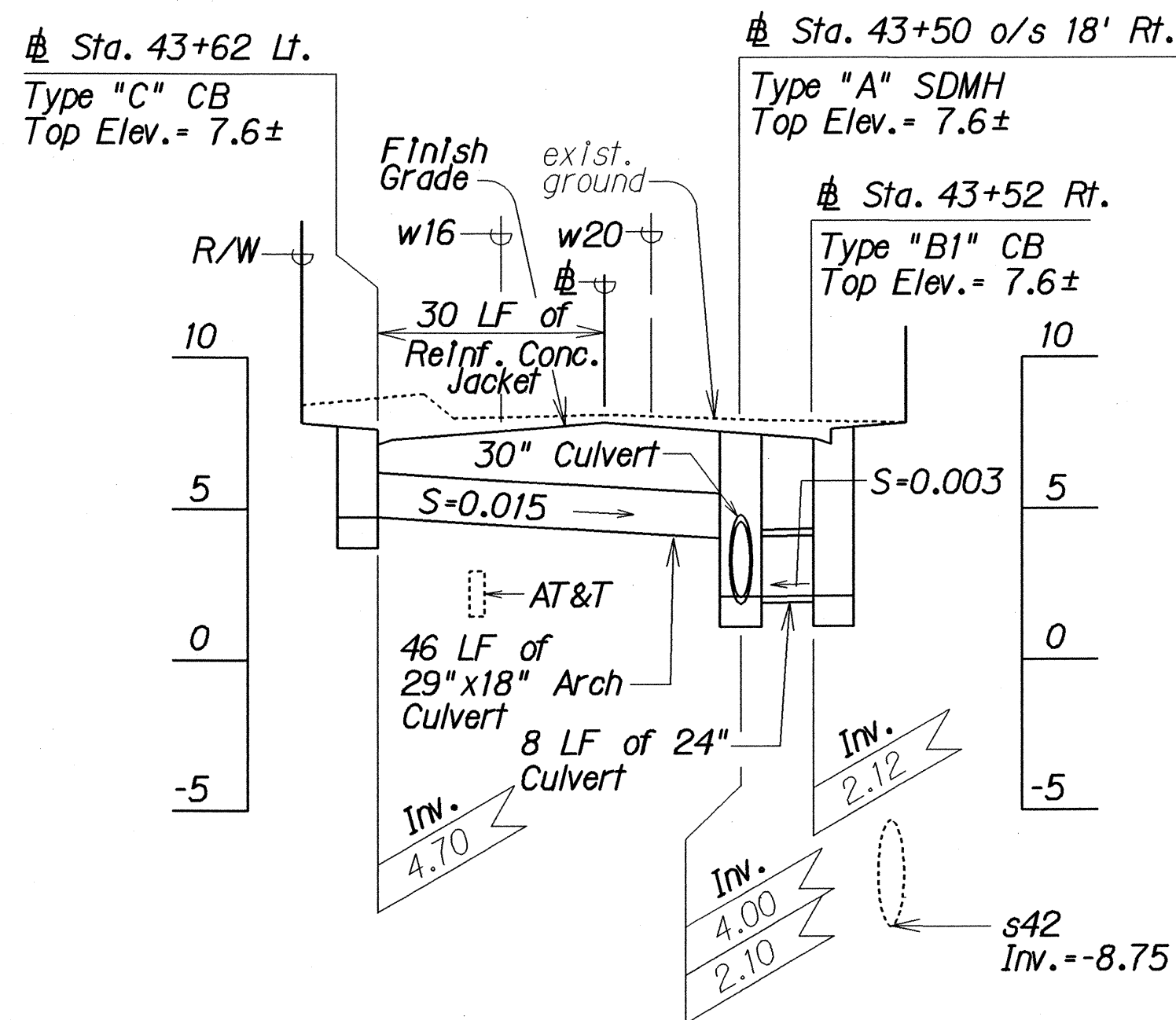
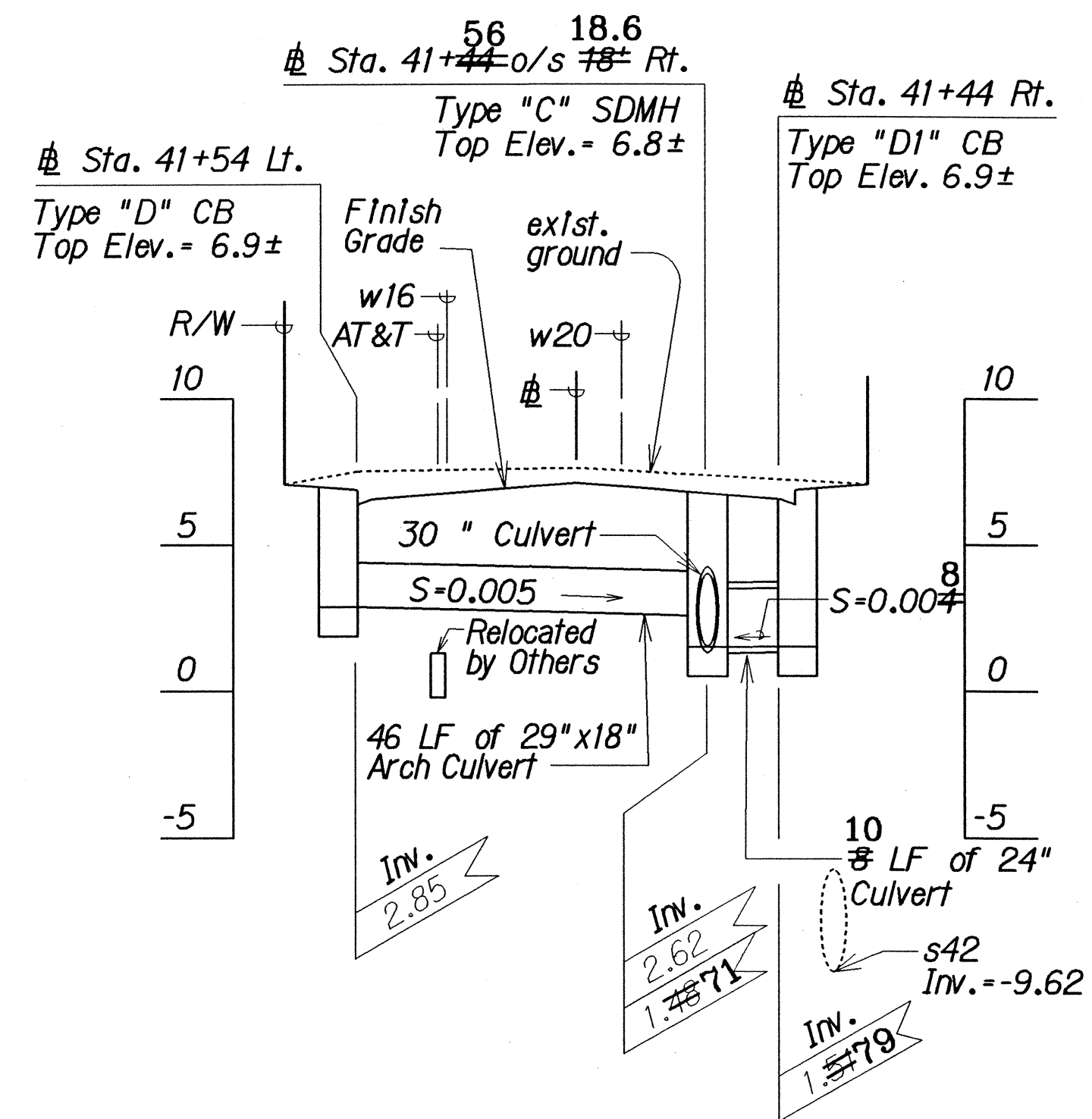
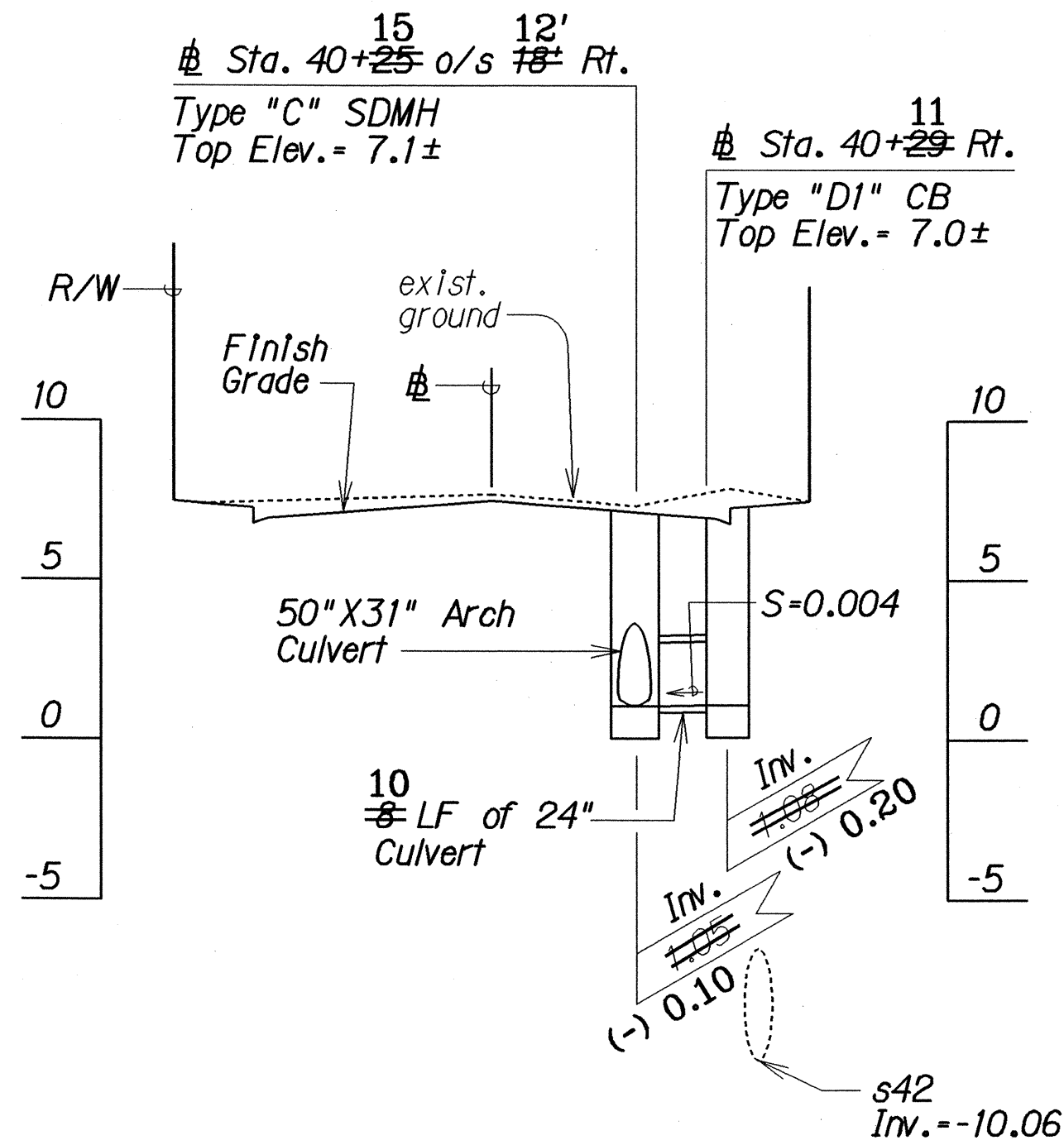
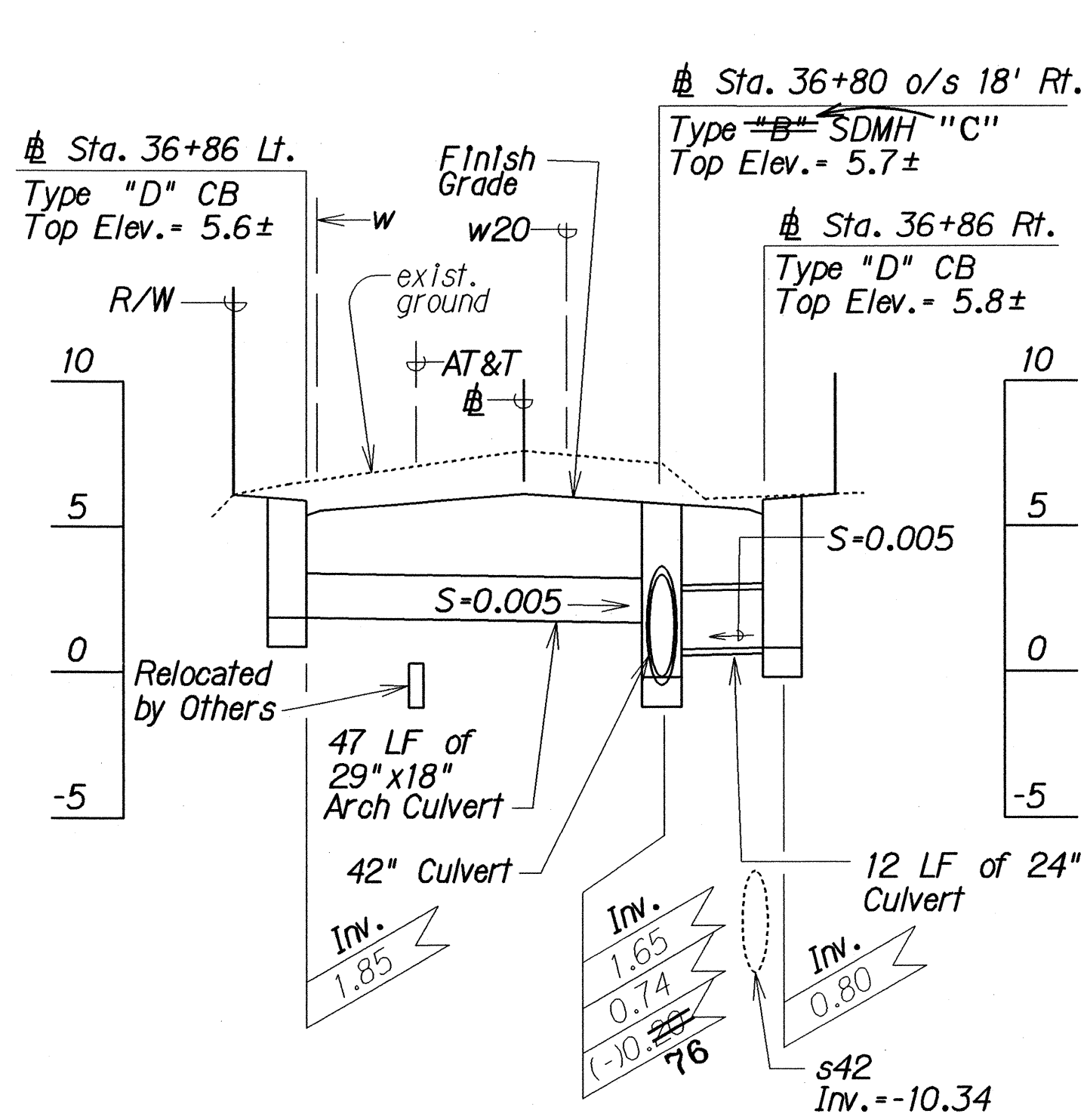
PROFILES - STA. 33+79± TO STA. 50+49

Scale: Horiz. 1"=20'  
Vert. 1"=5'

APPROVED: *[Signature]*  
DIRECTOR, DEPT. OF WASTEWATER MANAGEMENT  
1/26/94

2/18/97	Revised profile from Sta. 40+15 to Sta. 41+56
12/26/96	Revised profile from Sta. 38+34 to Sta. 43+50
12/3/96	Revised profile from Sta. 33+79± to Sta. 43+50
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<b>DRAINAGE PROFILES</b>	
<b>FARRINGTON HIGHWAY WIDENING</b>	
<b>Ala Hema St. towards Jade St.</b>	
<b>Project No. 93B-02-91</b>	
Scale: As Shown	Date: Mar. 1993
SHEET No. H13 OF 32 SHEETS	

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	93B-02-91	1994	55	122



**LEGEND FOR AS-BUILT POSTINGS**

~~~~~ Squiggly line for as-built deletion

==== Double line for as-built deletion

Roadway Text for as-built posting

PROFILES - STA. 36+86 TO STA. 50+73

Scale: Horiz. 1"=20'
 Vert. 1"=5'

APPROVED: *[Signature]* 1/24/94
 DIRECTOR, DEPT. OF WASTEWATER MANAGEMENT DATE

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

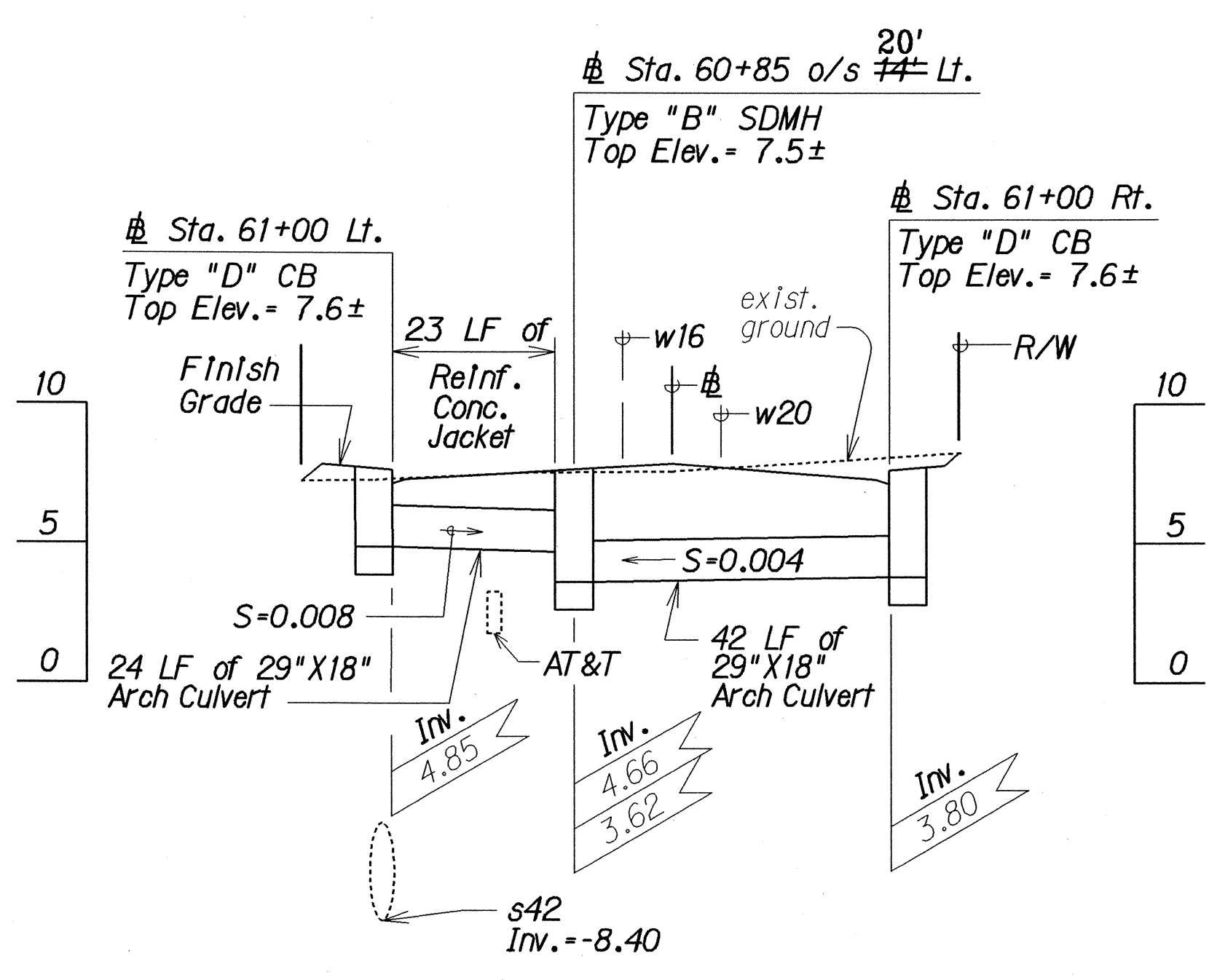
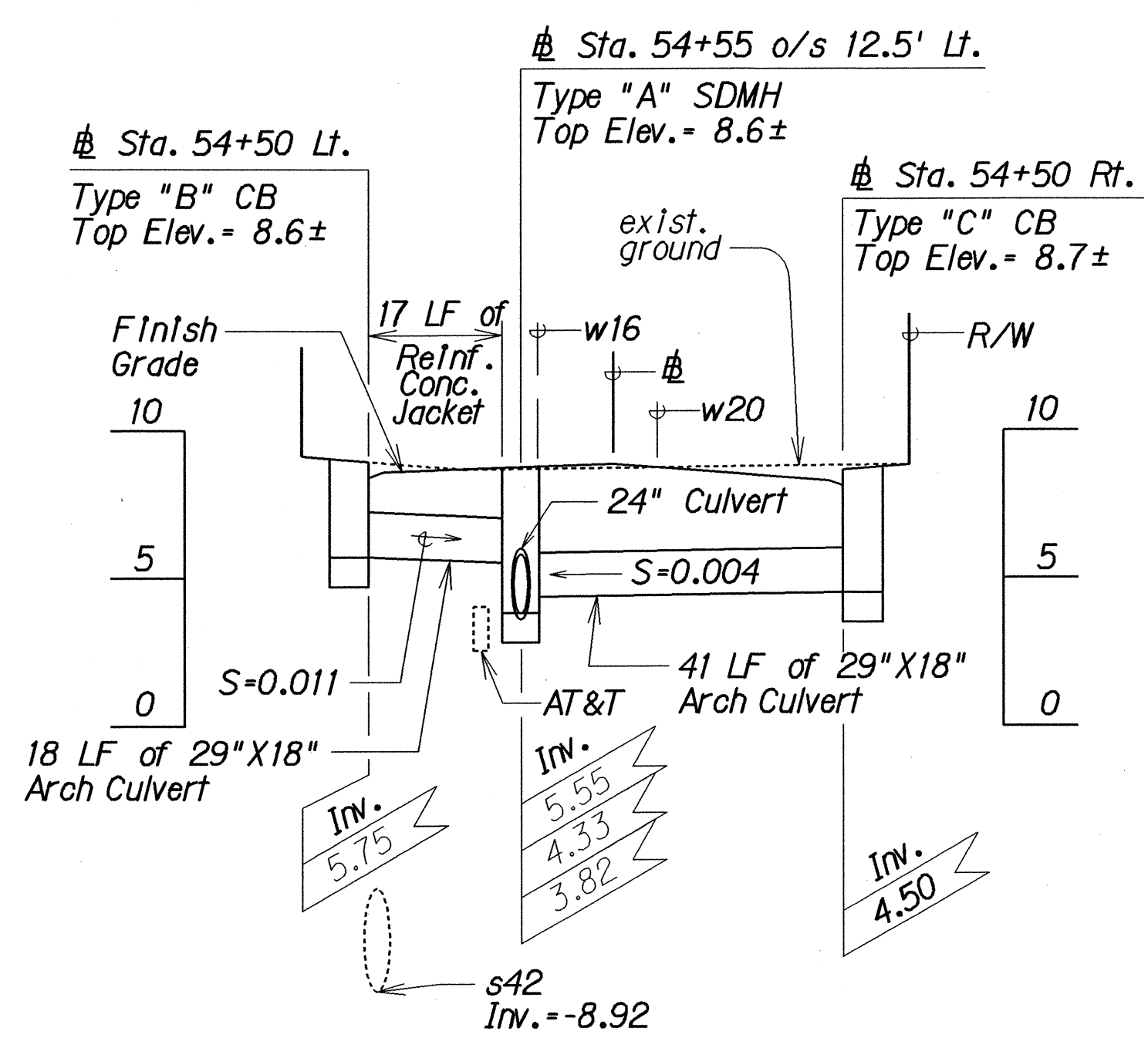
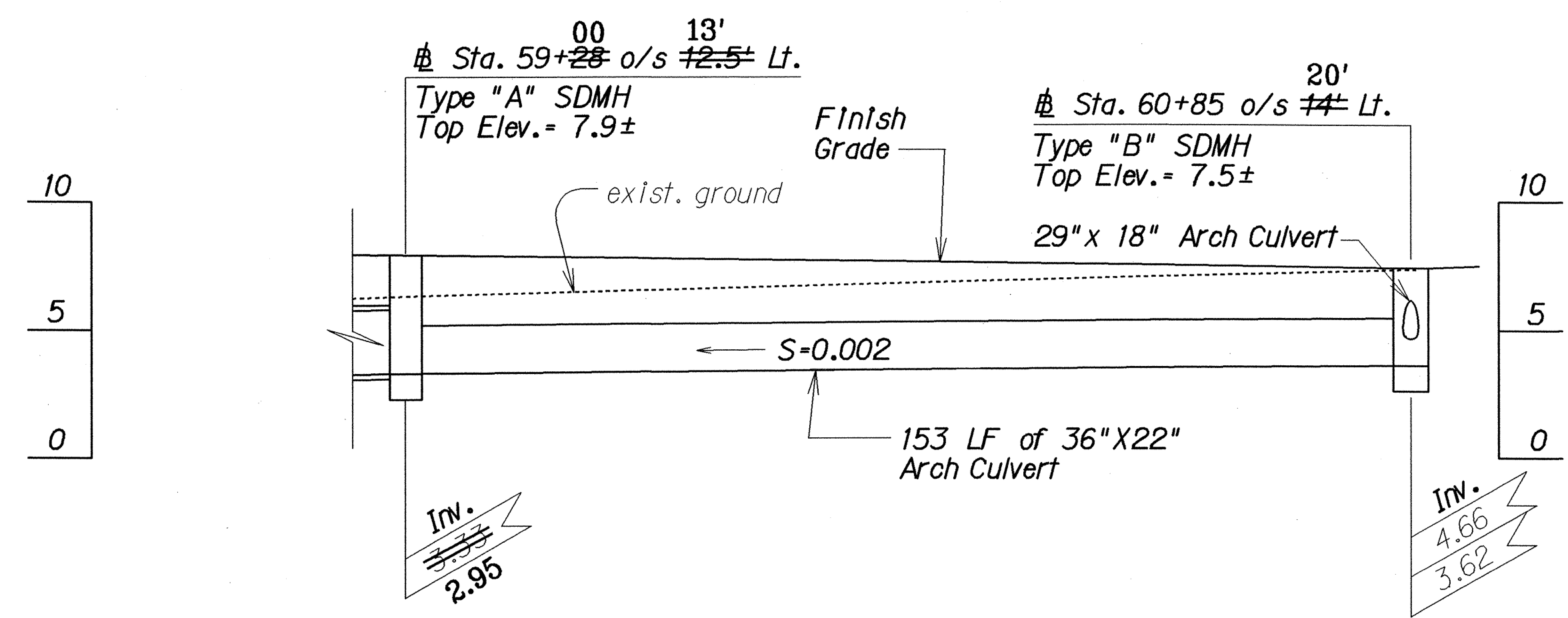
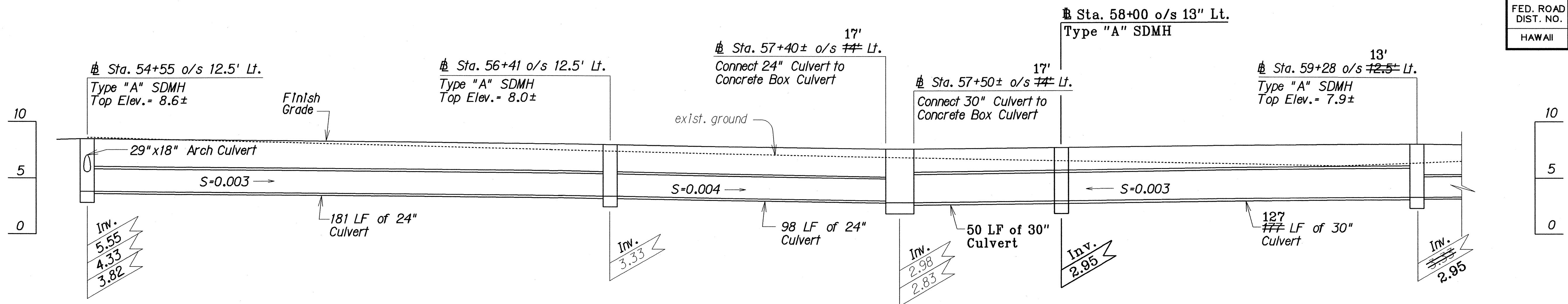
DRAINAGE PROFILES

FARRINGTON HIGHWAY WIDENING
 Ala Hema St. towards Jade St.
 Project No. 93B-02-91

Scale: As Shown Date: Mar. 1993
 SHEET No. H14 OF 32 SHEETS

"AS-BUILT"

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII | HAW. | 93B-02-91 | 1994 | 56 | 122 |



PROFILES - STA. 54+50 TO STA. 61+00

Scale: Horiz. 1" = 20'
Vert. 1" = 5'

| LEGEND FOR AS-BUILT POSTINGS | |
|------------------------------|-------------------------------------|
| | Squiggly line for as-built deletion |
| | Double line for as-built deletion |
| | Text for as-built posting |

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

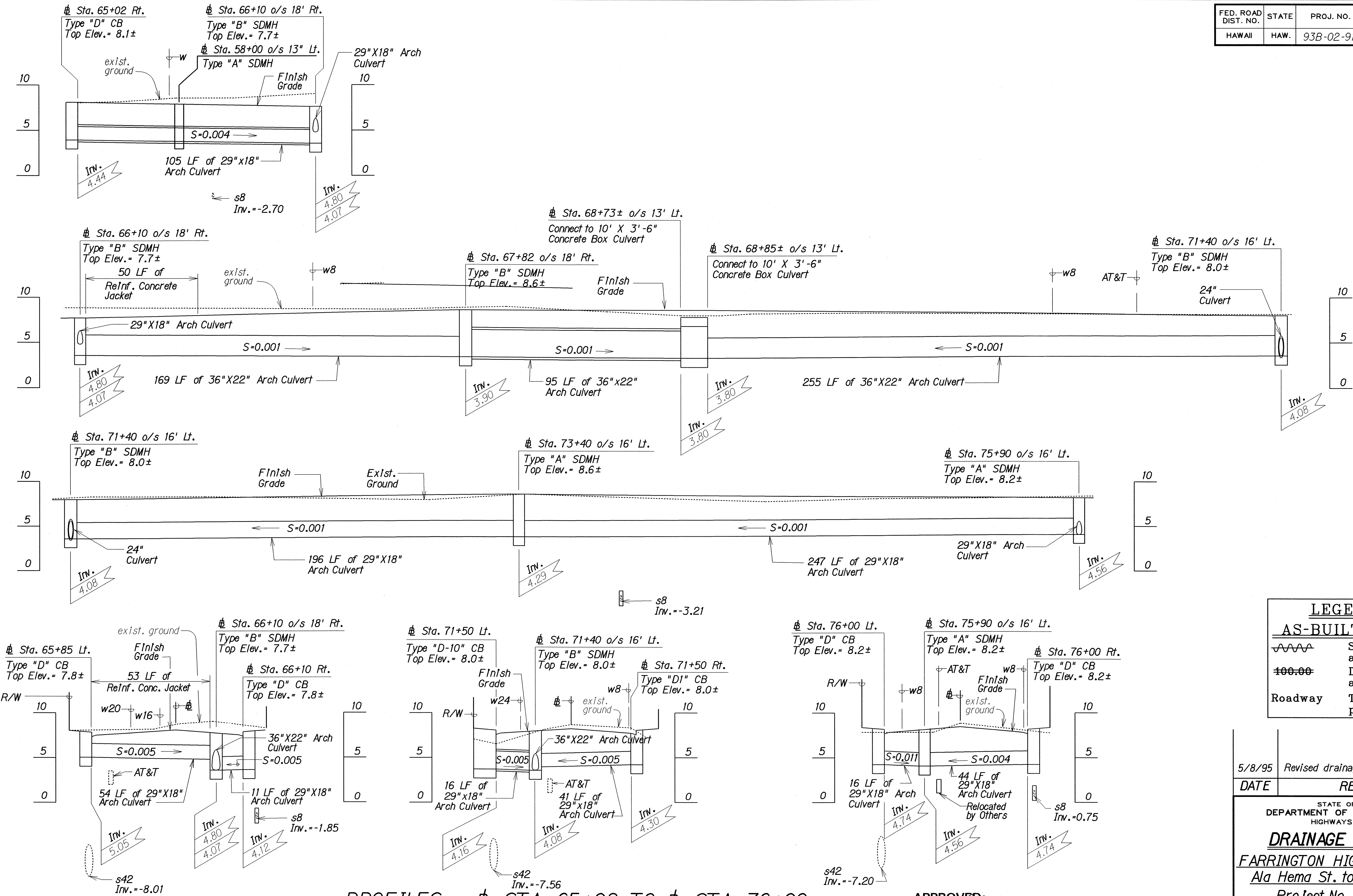
DRAINAGE PROFILES
FARRINGTON HIGHWAY WIDENING
Ala Hema St. towards Jade St.
Project No. 93B-02-91

Scale: As Shown Date: Mar. 1993
SHEET No. H15 OF 32 SHEETS

APPROVED:
[Signature]
DIRECTOR, DEPT. OF WASTEWATER MANAGEMENT
DATE 1/26/94

"AS-BUILT"

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII | HAW. | 93B-02-91 | 1994 | 57 | 122 |



| LEGEND FOR AS-BUILT POSTINGS | |
|------------------------------|-------------------------------------|
| | Squiggly line for as-built deletion |
| | Double line for as-built deletion |
| | Text for as-built posting |

5/8/95 Revised drainage system inverts

DATE REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILES

FARRINGTON HIGHWAY WIDENING
Ala Hema St. towards Jade St.
Project No. 93B-02-91

Scale: As Shown Date: Mar. 1993

SHEET No. H16 OF 32 SHEETS

PROFILES - STA. 65+02 TO STA. 76+00

Scale: Horiz. 1"=20'
Vert. 1"=5'

APPROVED:

DIRECTOR, DEPT. OF WASTEWATER MANAGEMENT

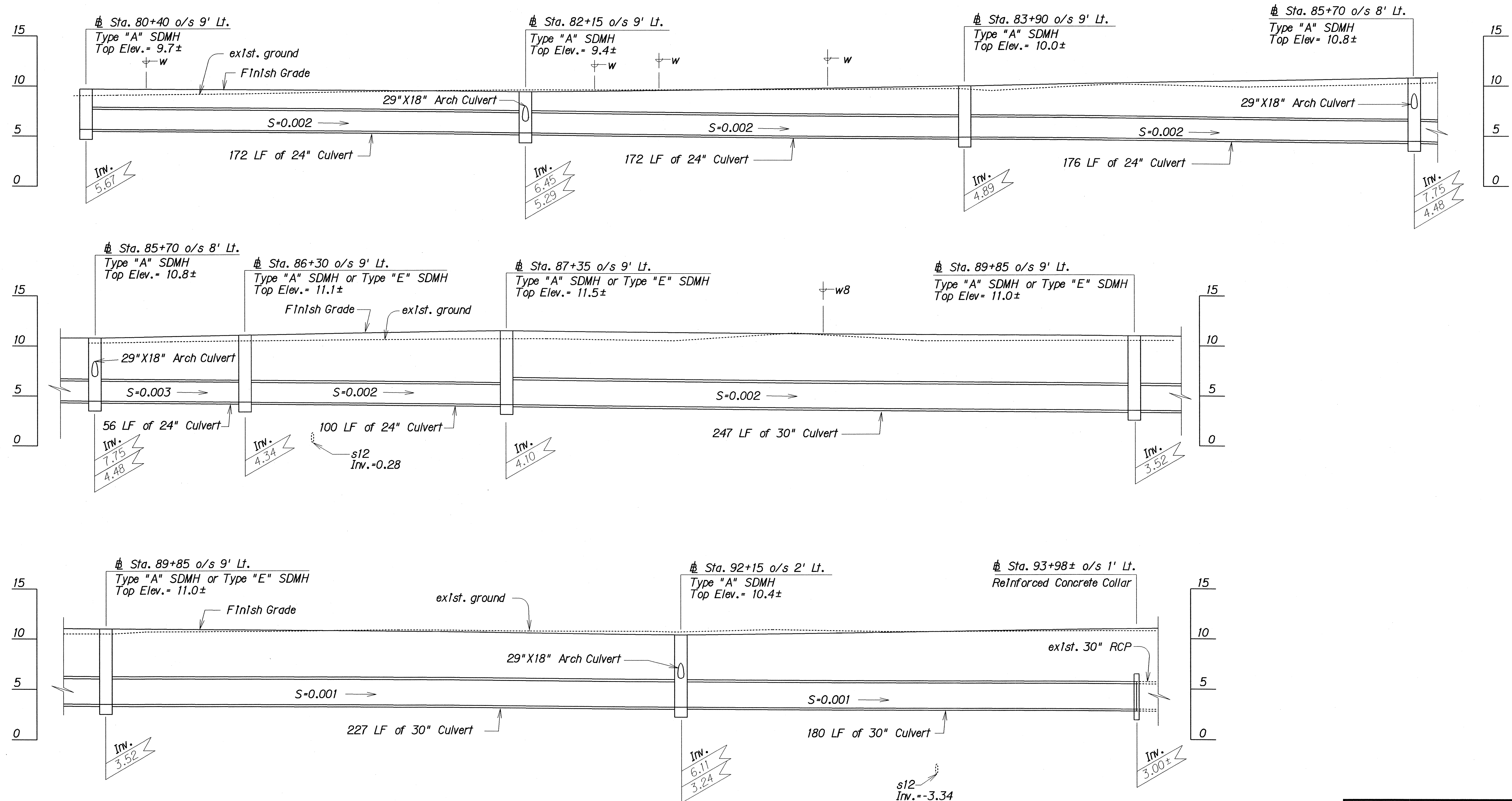
1/26/94
DATE

"AS-BUILT"

C.O. 57

| | |
|-------------------|--|
| DATE | |
| SURVEY PLOTTED BY | |
| DRAWN BY | |
| CHECKED BY | |
| ORIGINAL PLAN | |
| NOTE BOOK | |
| QUANTITIES BY | |
| CHECKED BY | |

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII | HAW. | 93B-02-91 | 1994 | 58 | 122 |



PROFILES - STA. 80+40 TO STA. 93+98

Scale: Horiz. 1"=20'
Vert. 1"=5'

APPROVED:

[Signature]
DIRECTOR, DEPT. OF WASTEWATER MANAGEMENT

1/26/94
DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

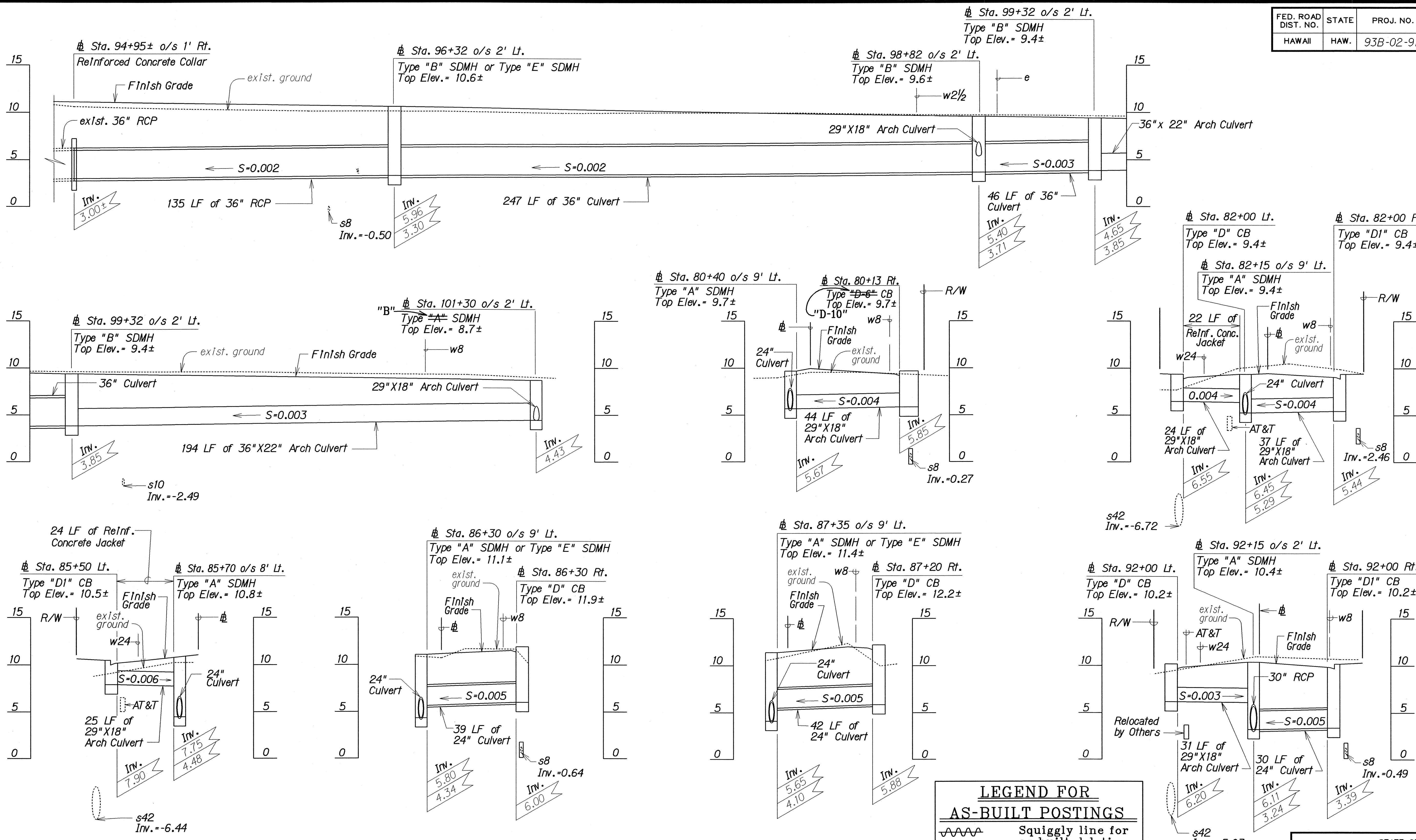
DRAINAGE PROFILES

FARRINGTON HIGHWAY WIDENING
Ala Hema St. towards Jade St.
Project No. 93B-02-91

Scale: As Shown Date: Mar., 1993

SHEET No. 117 OF 32 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII | HAW. | 93B-02-91 | 1994 | 59 | 122 |



PROFILES - STA. 80+13 TO STA. 101+30

Scale: Horiz. 1" = 20'
Vert. 1" = 5'

LEGEND FOR AS-BUILT POSTINGS

~~~~~ Squiggly line for as-built deletion

==== Double line for as-built deletion

Roadway Text for as-built posting

APPROVED: *[Signature]* 1/26/94  
DIRECTOR, DEPT. OF WASTEWATER MANAGEMENT DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**DRAINAGE PROFILES**

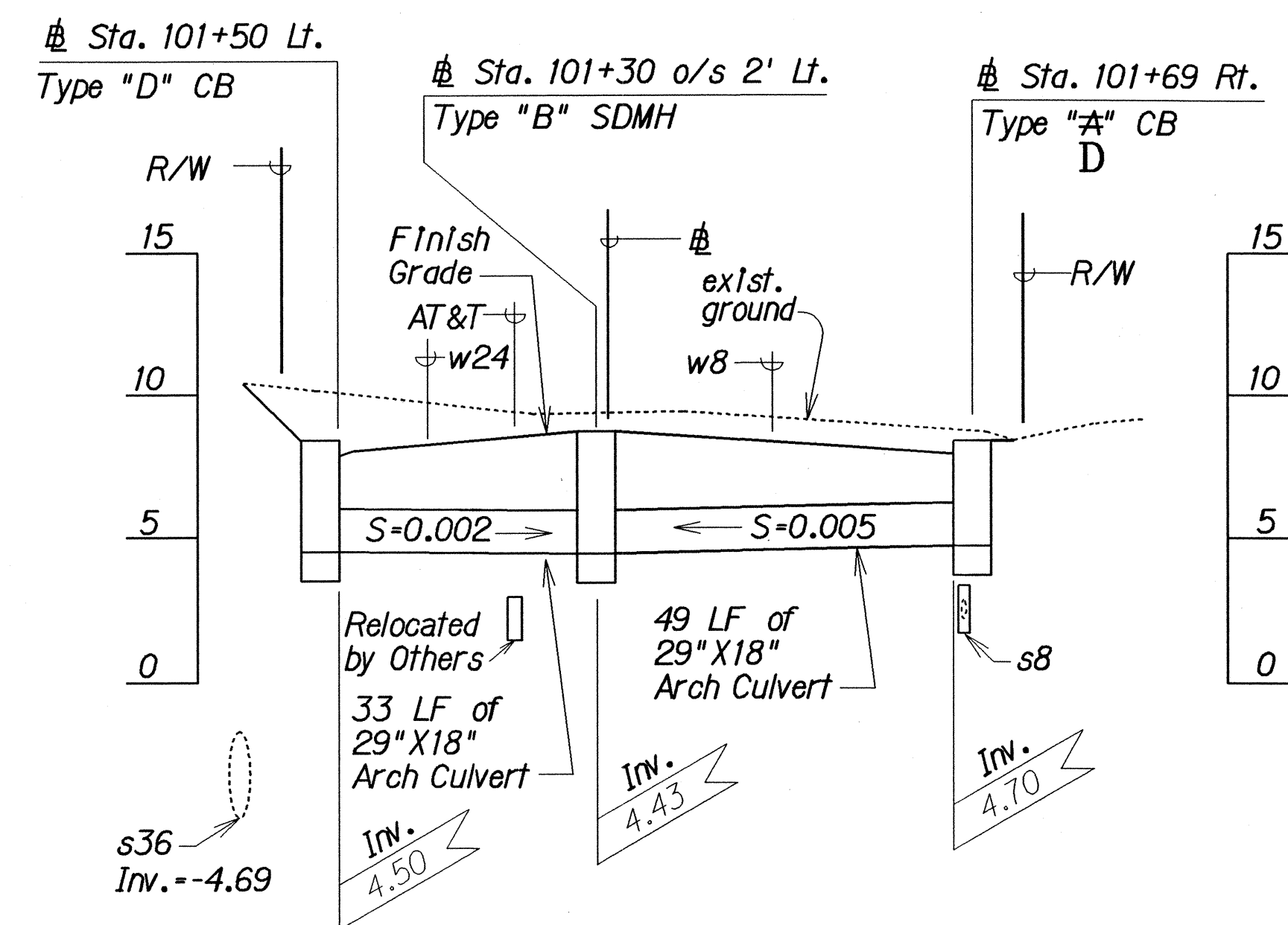
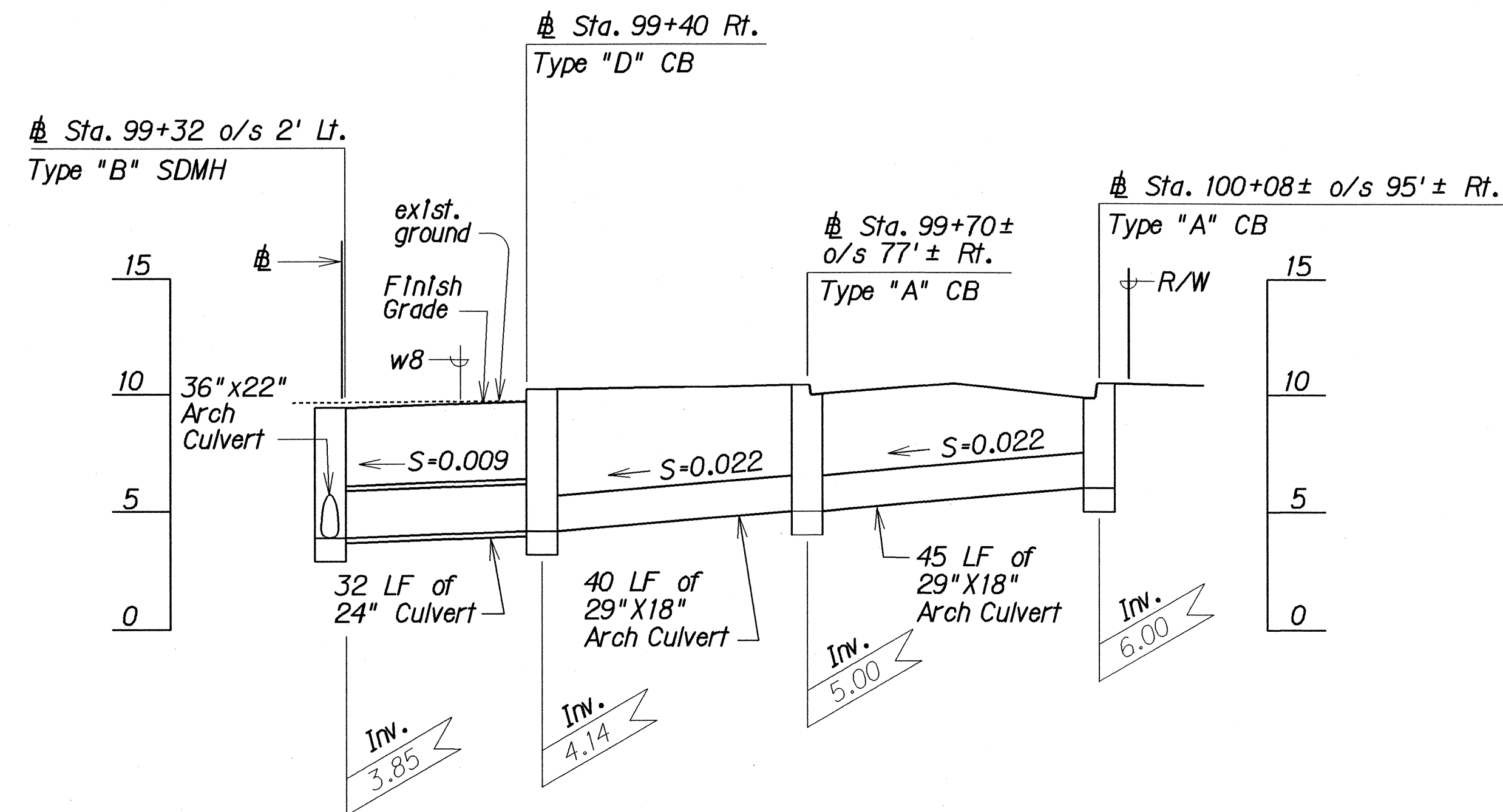
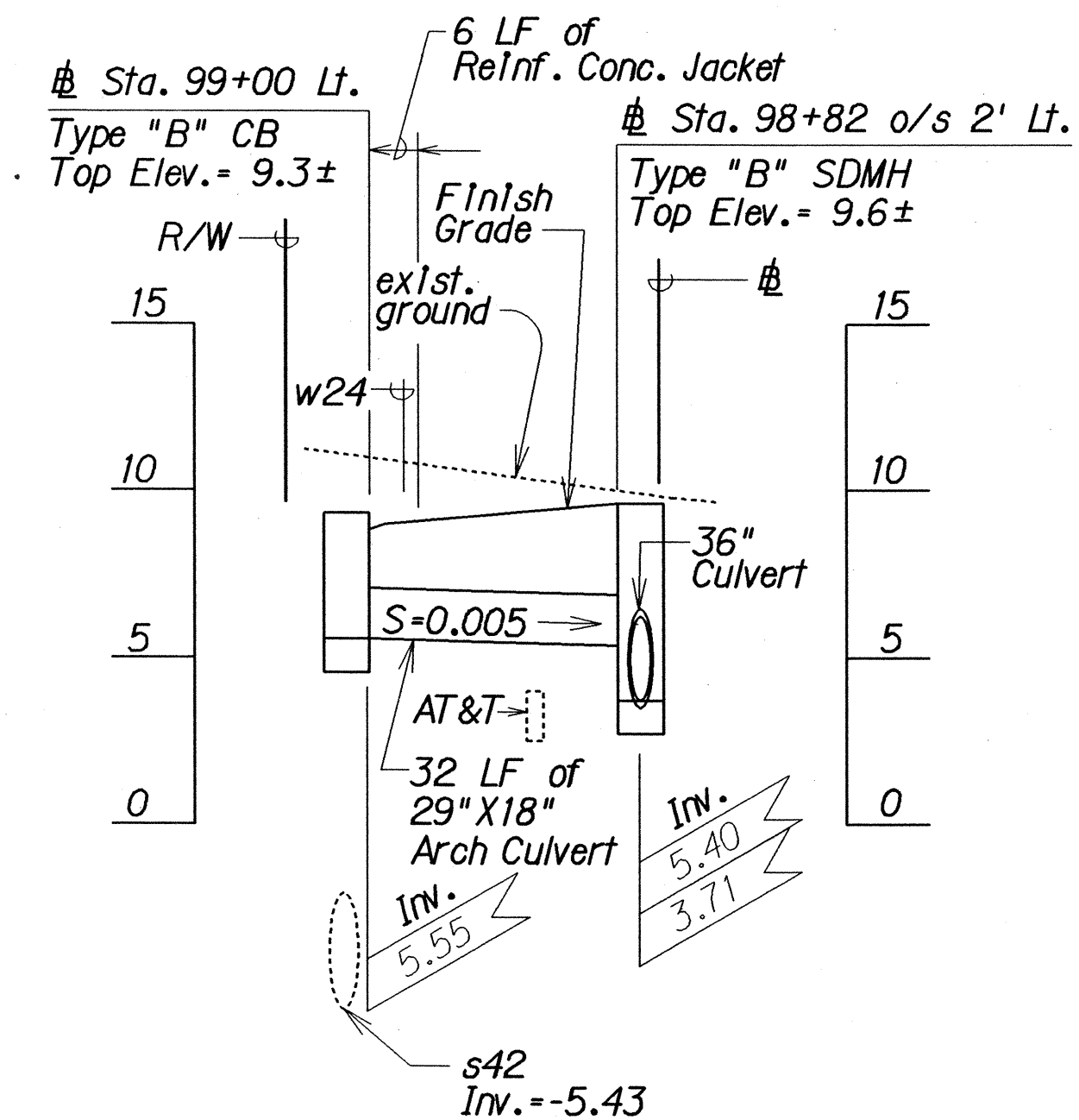
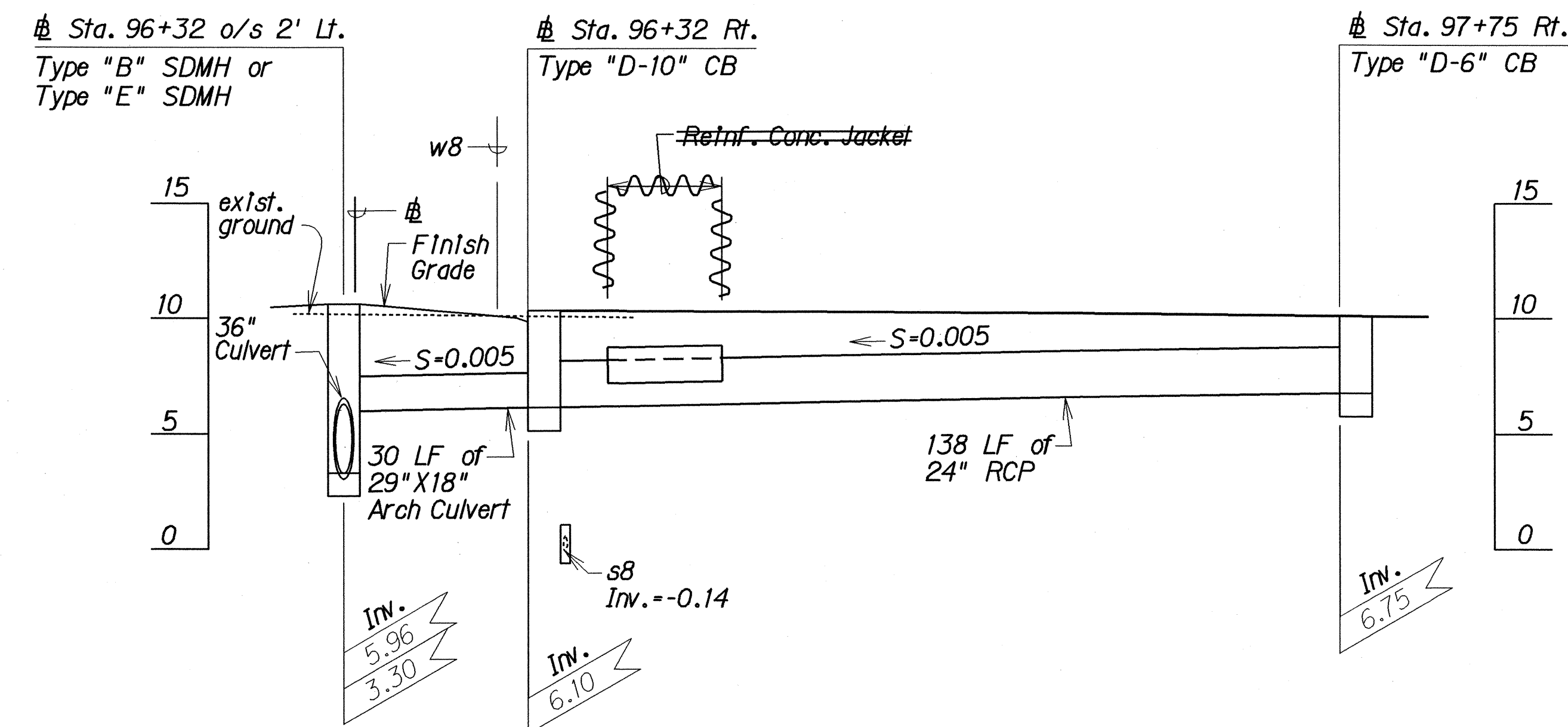
FARRINGTON HIGHWAY WIDENING  
Ala Hema St. towards Jade St.  
Project No. 93B-02-91

Scale: As Shown Date: Mar. 1993  
SHEET No. H18 OF 32 SHEETS

ORIGINAL PLAN  
DATE  
DRAWN BY  
CHECKED BY  
NOTED BY  
QUANTITIES BY

"AS-BUILT"

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 93B-02-91 | 1994        | 60        | 122          |



| LEGEND FOR AS-BUILT POSTINGS |                                     |
|------------------------------|-------------------------------------|
|                              | Squiggly line for as-built deletion |
|                              | Double line for as-built deletion   |
|                              | Text for as-built posting           |

| 12/18/96                                                             | Revised Drainage Profiles |
|----------------------------------------------------------------------|---------------------------|
| 11/8/96                                                              | Revised Drainage Profiles |
| 9/23/96                                                              | Revised Drainage Profiles |
| DATE                                                                 | REVISION                  |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION |                           |
| <b>DRAINAGE PROFILES</b>                                             |                           |
| FARRINGTON HIGHWAY WIDENING                                          |                           |
| Ala Hema St. towards Jade St                                         |                           |
| Project No. 93B-02-91                                                |                           |
| Scale: As Shown                                                      | Date: Mar. 1993           |
| SHEET No. H19 OF 32 SHEETS                                           |                           |

PROFILES - STA. 96+32 TO STA. 101+69

Scale: Horiz. 1" = 20'  
Vert. 1" = 5'

APPROVED:

*[Signature]*  
DIRECTOR, DEPT. OF WASTEWATER MANAGEMENT

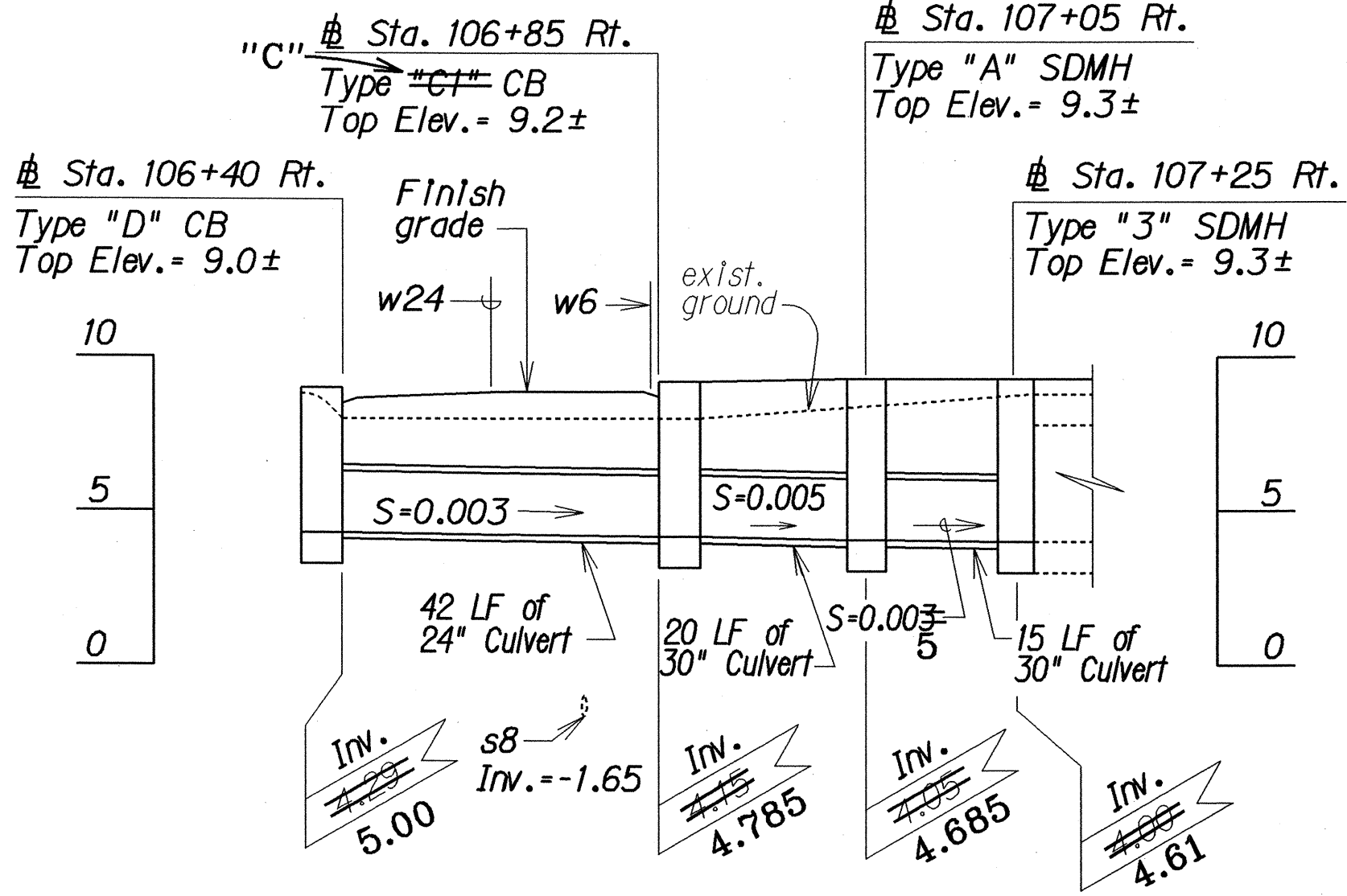
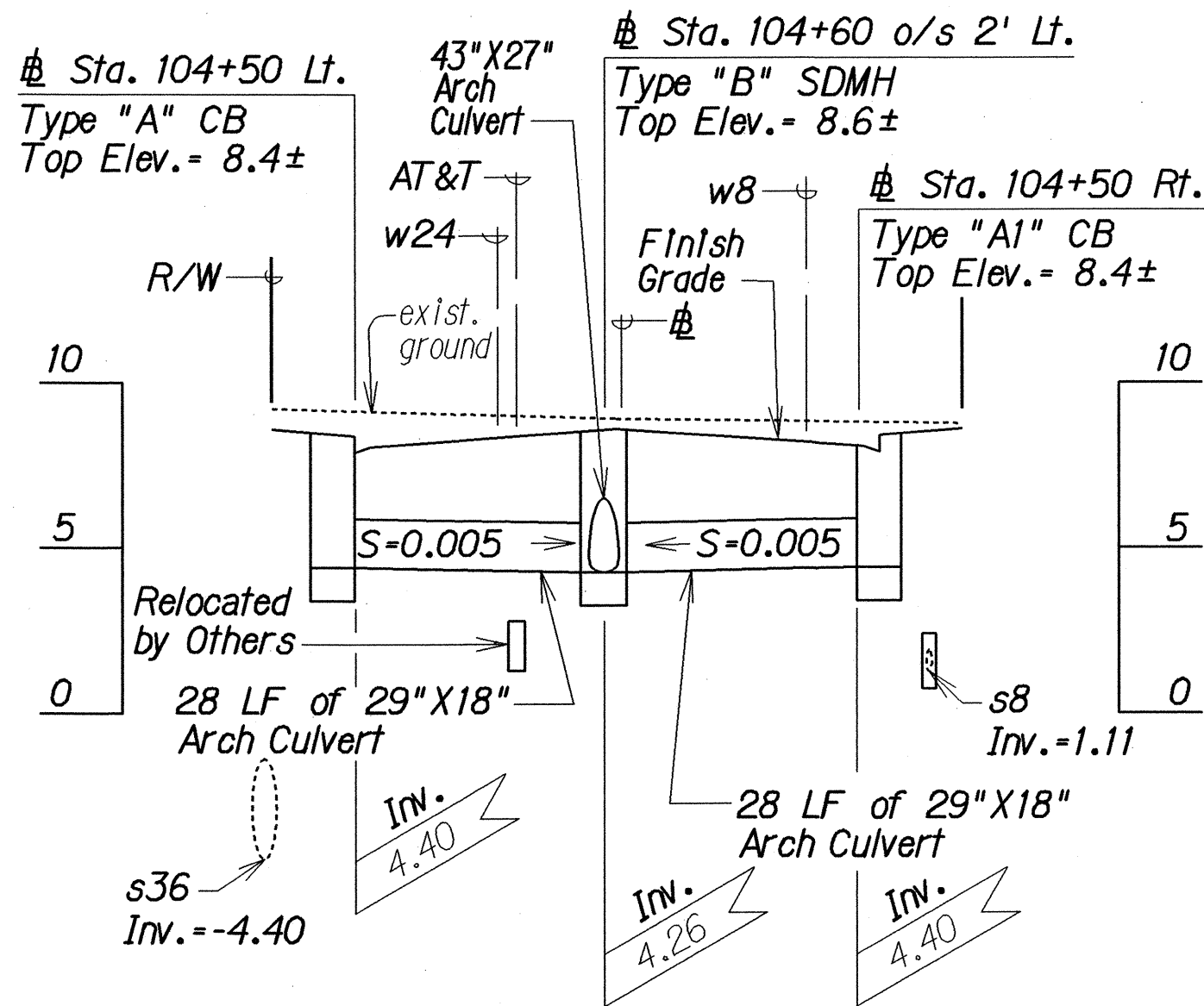
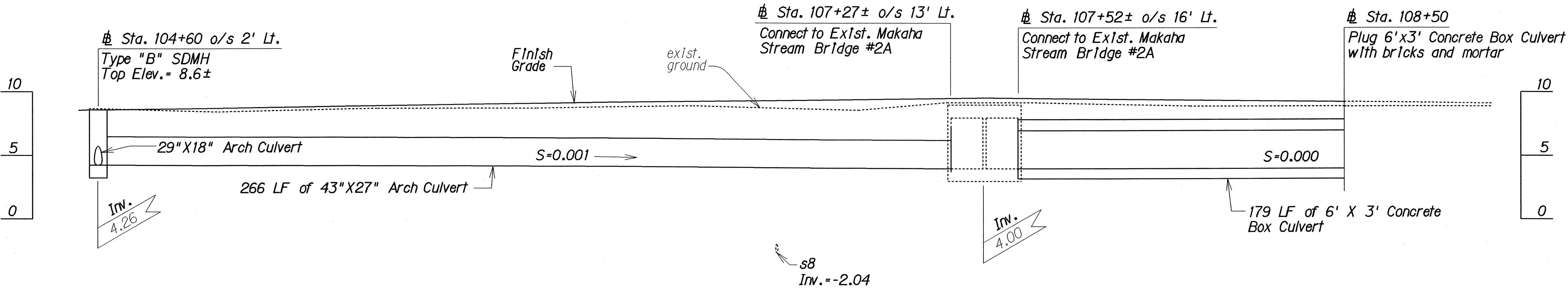
1/26/94  
DATE

"AS-BUILT"

C.O. 60

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| TRACED BY         |      |
| CHECKED BY        |      |
| QUANTITIES BY     |      |
| NOTES BY          |      |
| CHECKED BY        |      |

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 93B-02-91 | 1994        | 61        | 122          |



| LEGEND FOR AS-BUILT POSTINGS |                                     |
|------------------------------|-------------------------------------|
|                              | Squiggly line for as-built deletion |
|                              | Double line for as-built deletion   |
| Roadway                      | Text for as-built posting           |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**DRAINAGE PROFILES**  
FARRINGTON HIGHWAY WIDENING  
Ala Hema St. towards Jade St.  
Project No. 93B-02-91

Scale: As Shown      Date: Mar. 1993  
SHEET No. H20 OF 32 SHEETS

# PROFILES - STA. 104+60 TO STA. 108+50

Scale: Horiz. 1"=20'  
Vert. 1"=5'

APPROVED:

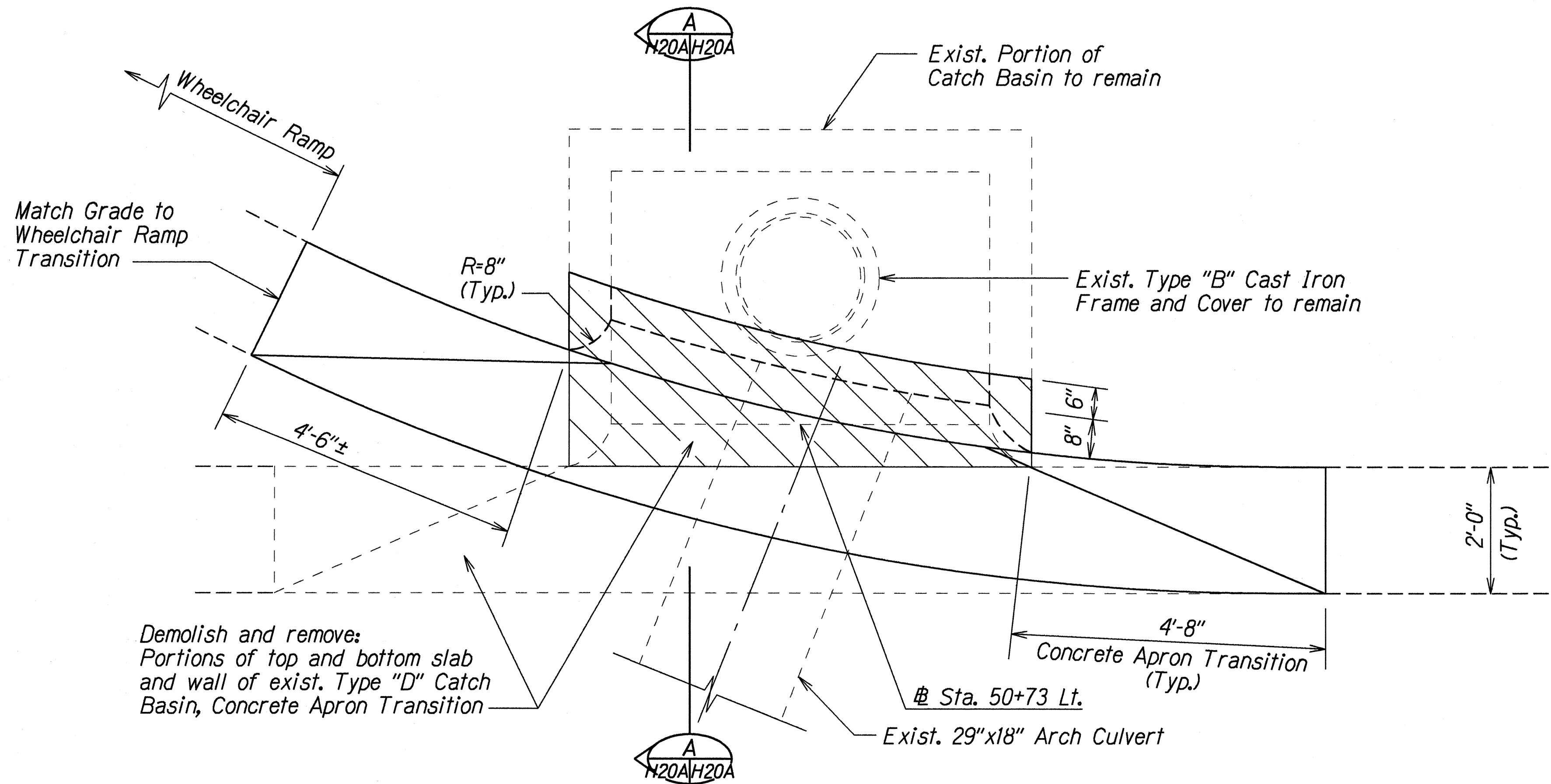
*[Signature]*  
DIRECTOR, DEPT. OF WASTEWATER MANAGEMENT

1/26/94  
DATE

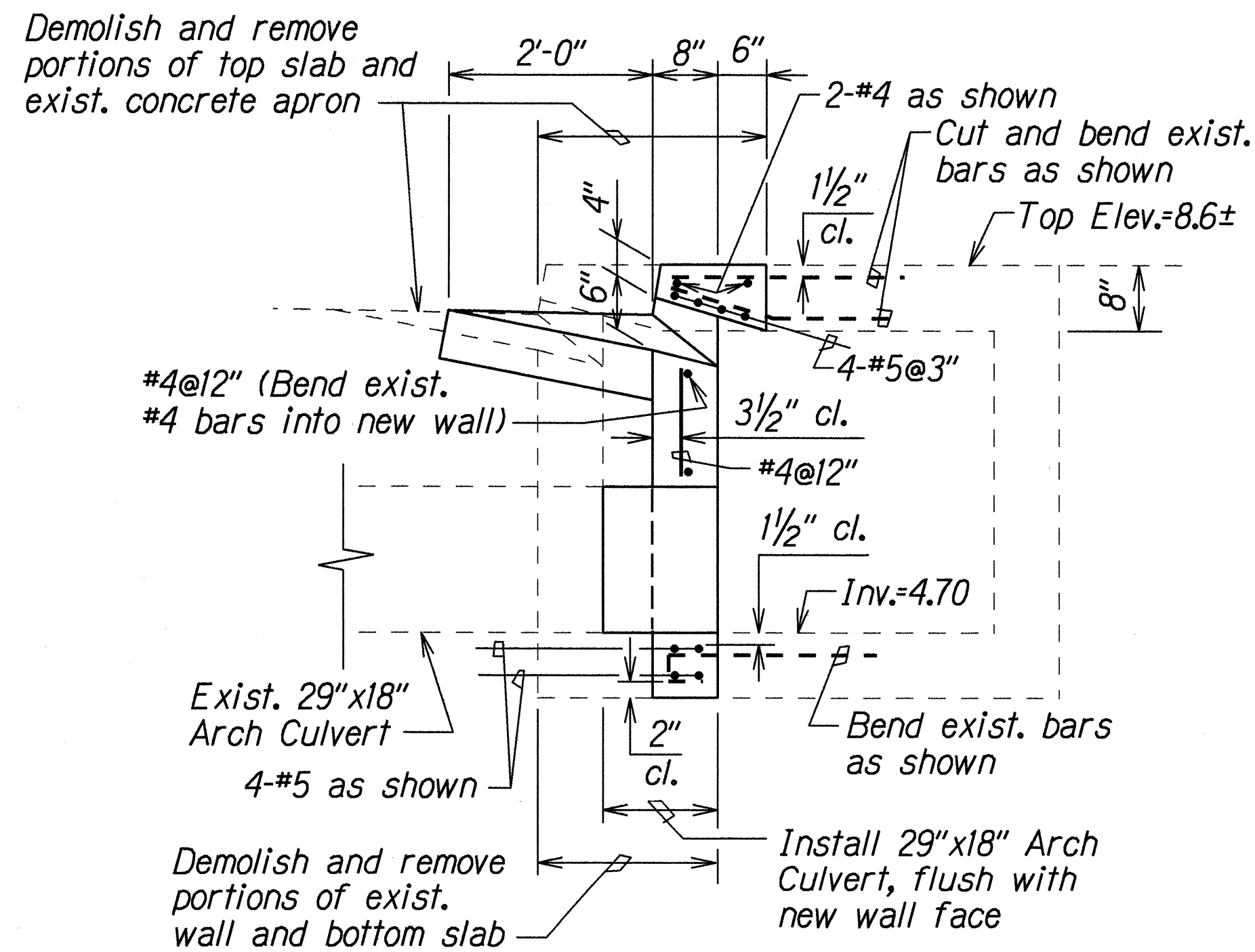
"AS-BUILT"

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| TRACED BY         |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |
| ORIGINAL PLAN     |      |
| NOTE BOOK         |      |
| DATE              |      |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 93B-02-91          | 1996        | C.O.61S-1 | 122          |



PLAN



SECTION

**MODIFIED STANDARD TYPE "D" CATCH BASIN AT STA. 50+73 LT.**

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

**NOTES**

1. All existing reinforcing steel shall be incorporated into new concrete.
2. Apply epoxy bonding agent at exposed existing concrete face prior to pouring new concrete.

|                      |        |
|----------------------|--------|
| SURVEY PLOTTED BY    | DATE   |
| DRAWN BY A. Noma     | 2/1/96 |
| TRACED BY C. Matsuda |        |
| NOTES BOOK           |        |
| QUANTITIES BY        |        |
| CHECKED BY           |        |

2/2/96 Added Drainage Detail Sheet

DATE REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**DRAINAGE DETAILS**

FARRINGTON HIGHWAY WIDENING

Ala Hema St. towards Jade St.

Project No. 93B-02-91

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

Date: Feb. 1996

SHEET No. H20A OF 32 SHEETS

C.O. 61 S-1

Sta. 57+44±0/s 40' Lt.  
 Concrete Headwall  
 Inv.=2.50  
 (For Detail, See Sht. No. H23-H24)

Sta. 57+44±  
 10' x 3.5' Concrete Box Culvert

Sta. 57+44±0/s 41' ± Rt.  
 Connect Concrete Box to existing SDMH  
 Inv.=3.35±  
 (For Detail, See Sht. No. H22)

Existing 36" culverts  
 Existing SDMH

R/W Line  
 S42"  
 Curb & Gutter Type 2DG  
 AT&T  
 24" Culvert  
 30" Culvert  
 W16"  
 W20"  
 Curb & Gutter Type 2DG  
 R/W Line  
 TRUE NORTH

PLAN

11'-4"

8"

10'-0"

8"

3'-0"

2'-6"

2" cl.

Finish Grade

#5@12"

#4@18"

1 1/2" cl.

#7@8"

#5@12"

1 1/2" cl.

2" cl.

1'-0"

3'-6"

#4@8"

#5@8"

#4@18"

6" fillet

#5@12"

#7@8"

1 1/2" cl.

4"

Flashing compound waterproofing. For Details, See Standard Plan B-01 (Typ.)

3" cl.

#4@18"

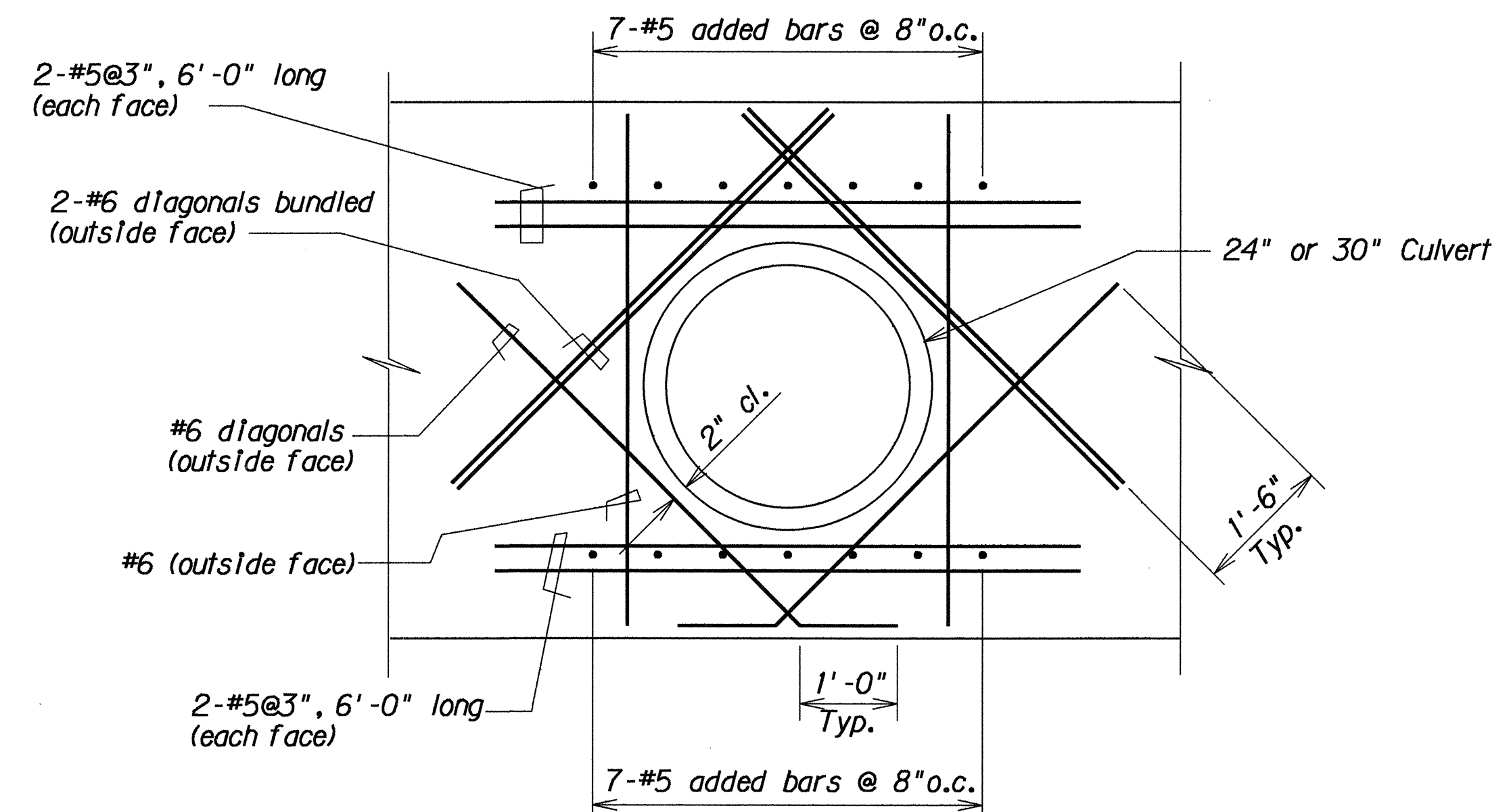
5'-6"

1'-0"

3'-6"

1'-0"

Scale:  $\frac{3}{4}" = 1' - 0"$



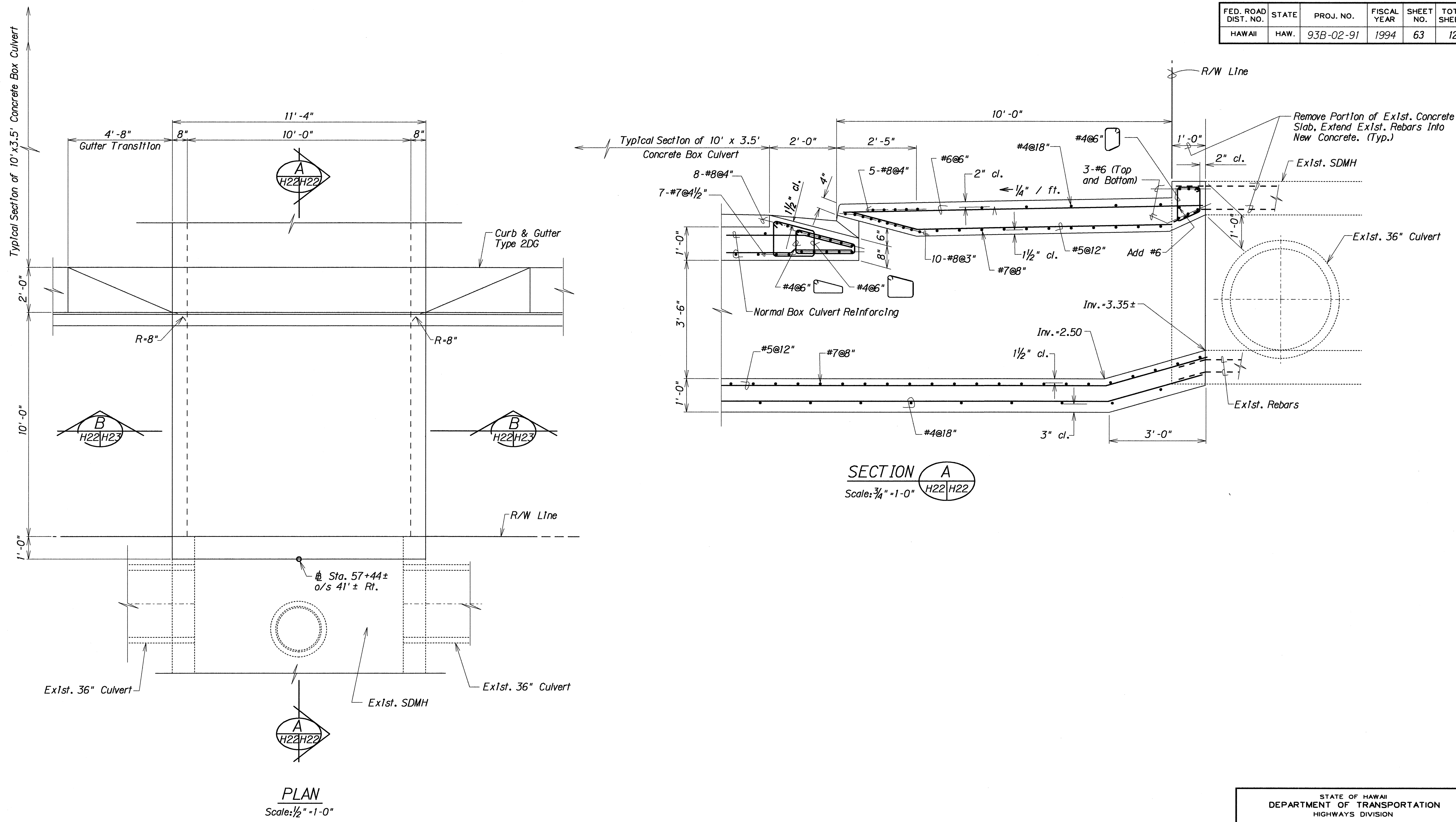
Scale:  $\frac{3}{4}" = 1' - 0"$

DETAILS OF CONCRETE BOX CULVERT @ B STA. 57+44±

APPROVED: *G. Legner* 1/26/94  
DIRECTOR, DEPT. OF WASTEWATER MANAGEMENT / DATE

62

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 93B-02-91 | 1994        | 63        | 122          |

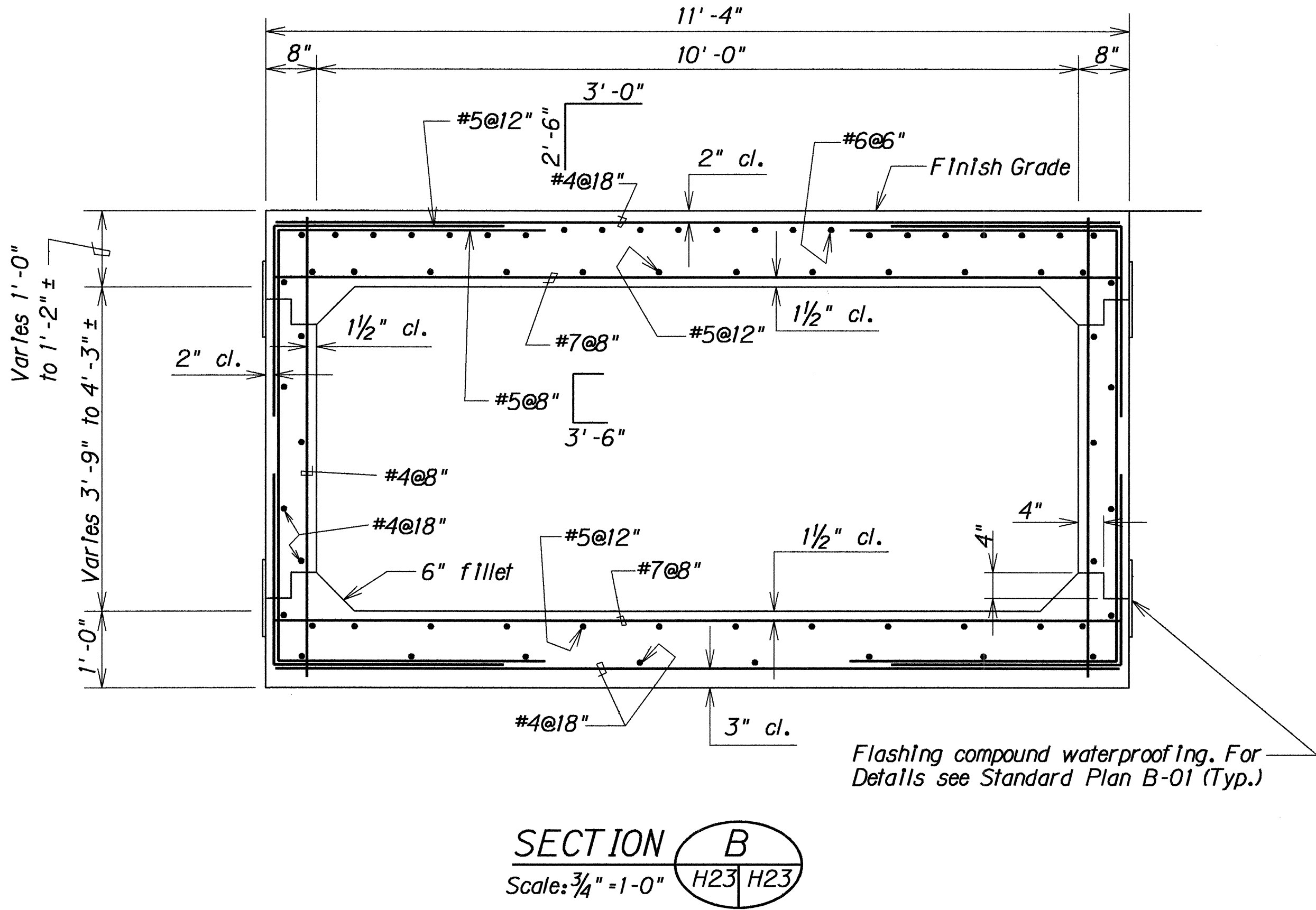
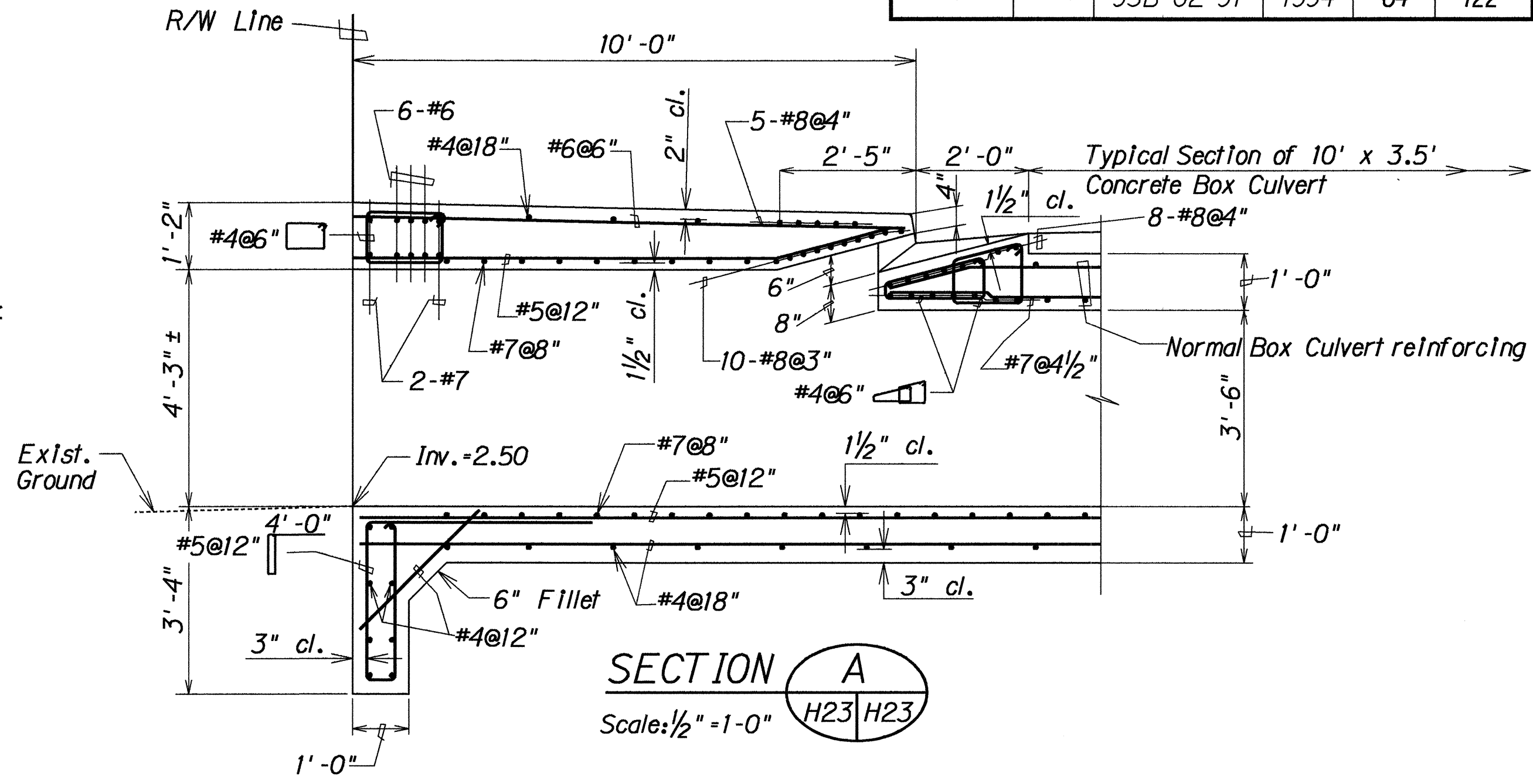
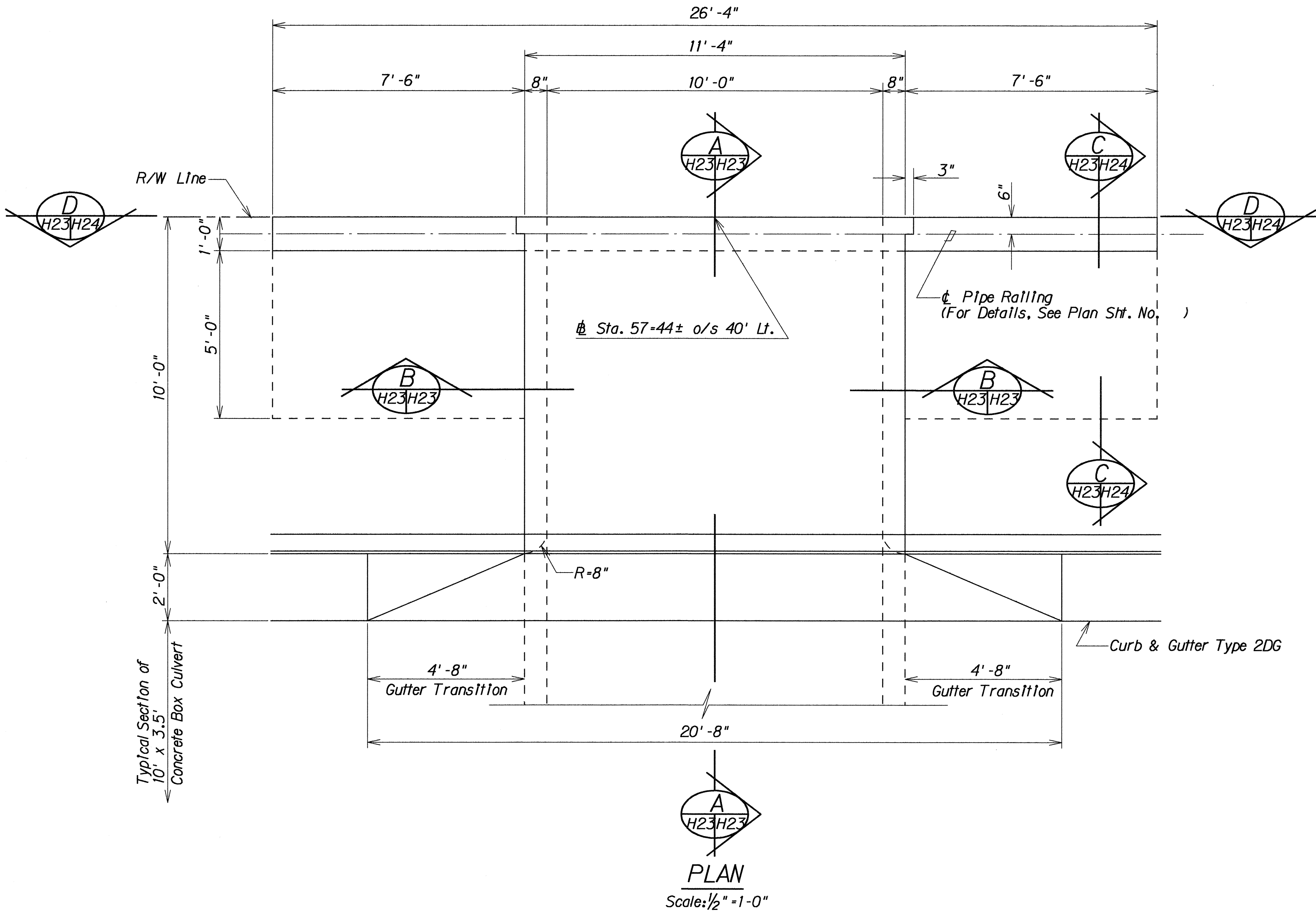


STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**DRAINAGE DETAILS**  
FARRINGTON HIGHWAY WIDENING  
Ala Hema St. towards Jade St.  
Project No. 93B-02-91

Scale: As Shown      Date: Mar. 1993  
SHEET No. H22 OF 32 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 93B-02-91 | 1994        | 64        | 122          |



# DETAILS OF CONCRETE BOX CULVERT @ Sta. 57+44±

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

DRAINAGE DETAILS

FARRINGTON HIGHWAY WIDENING

Ala Hema St. towards Jade St.

Project No. 93B-02-91

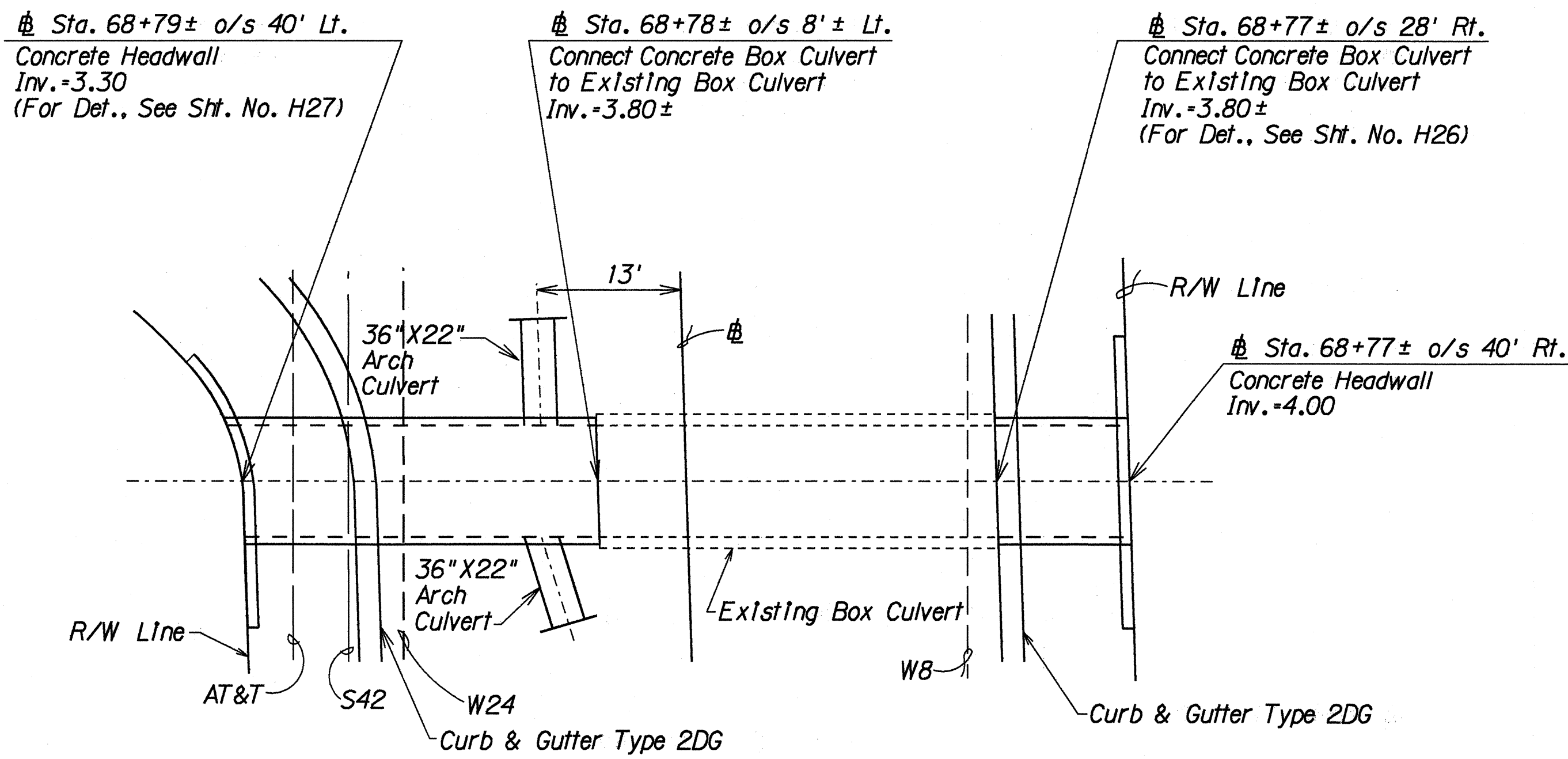
Scale: As Shown

Date: Mar. 1993

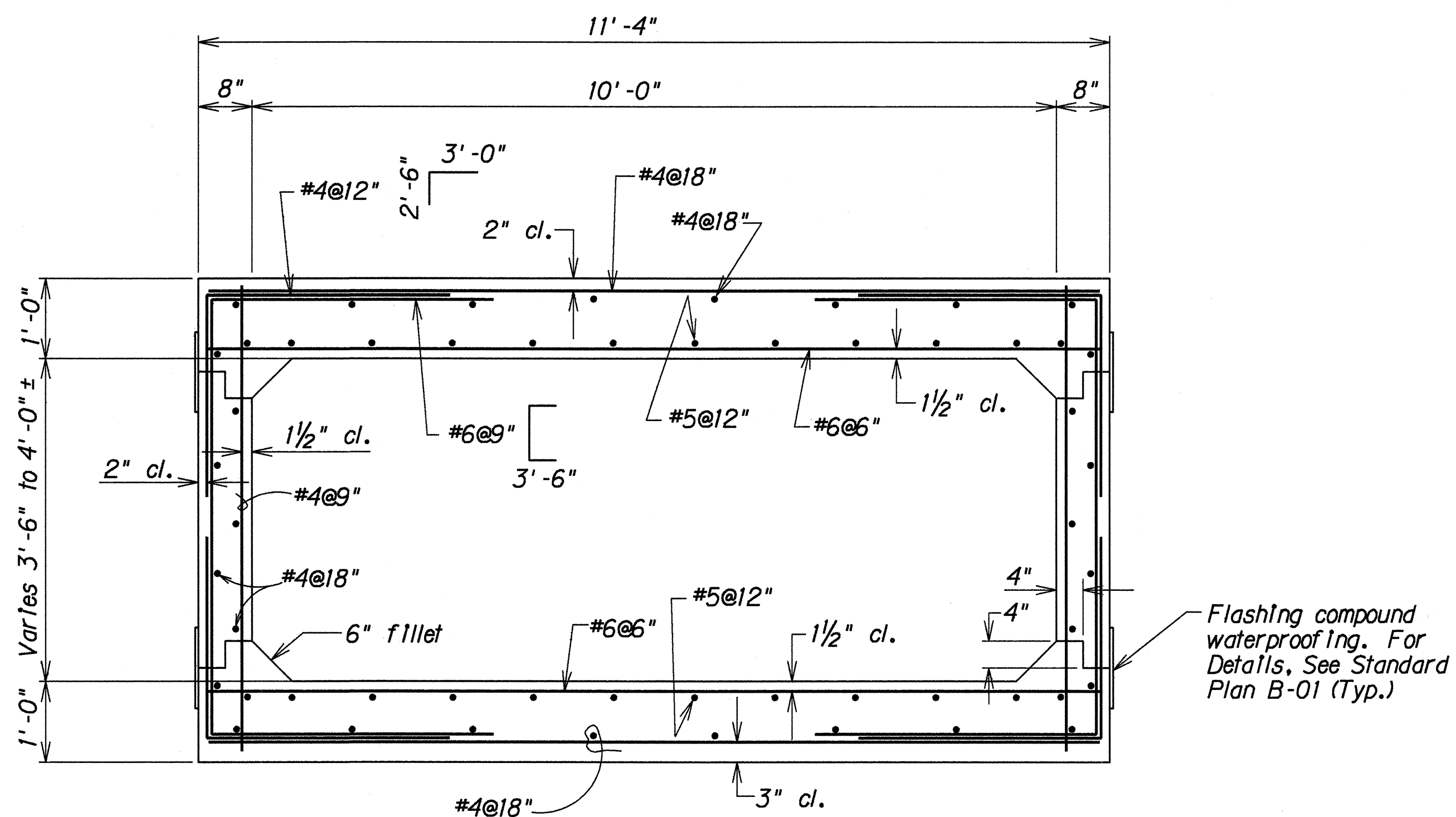
SHEET No. H23 OF 32 SHEETS



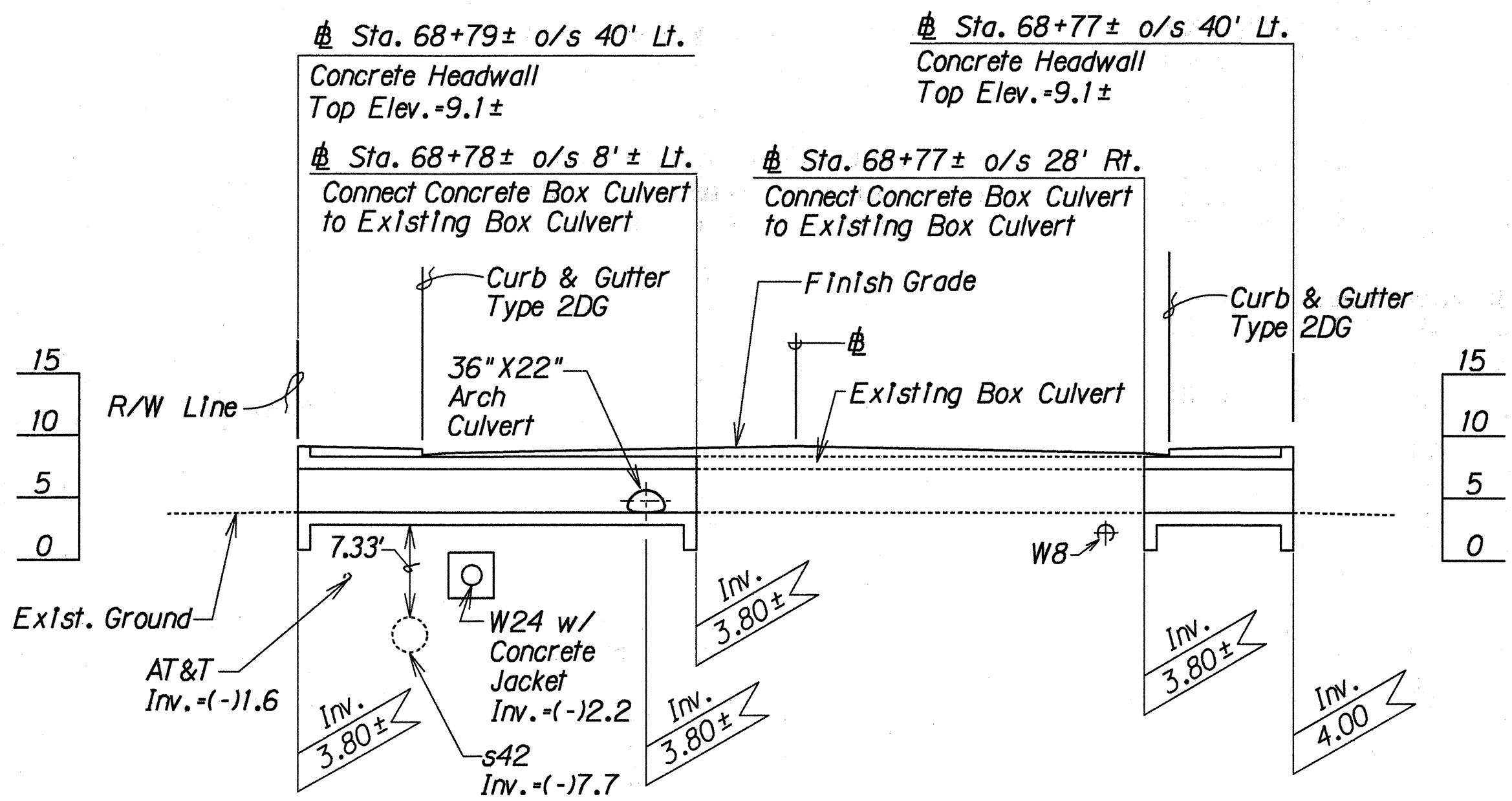
| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 93B-02-91 | 1994        | C.O.66    | 122          |



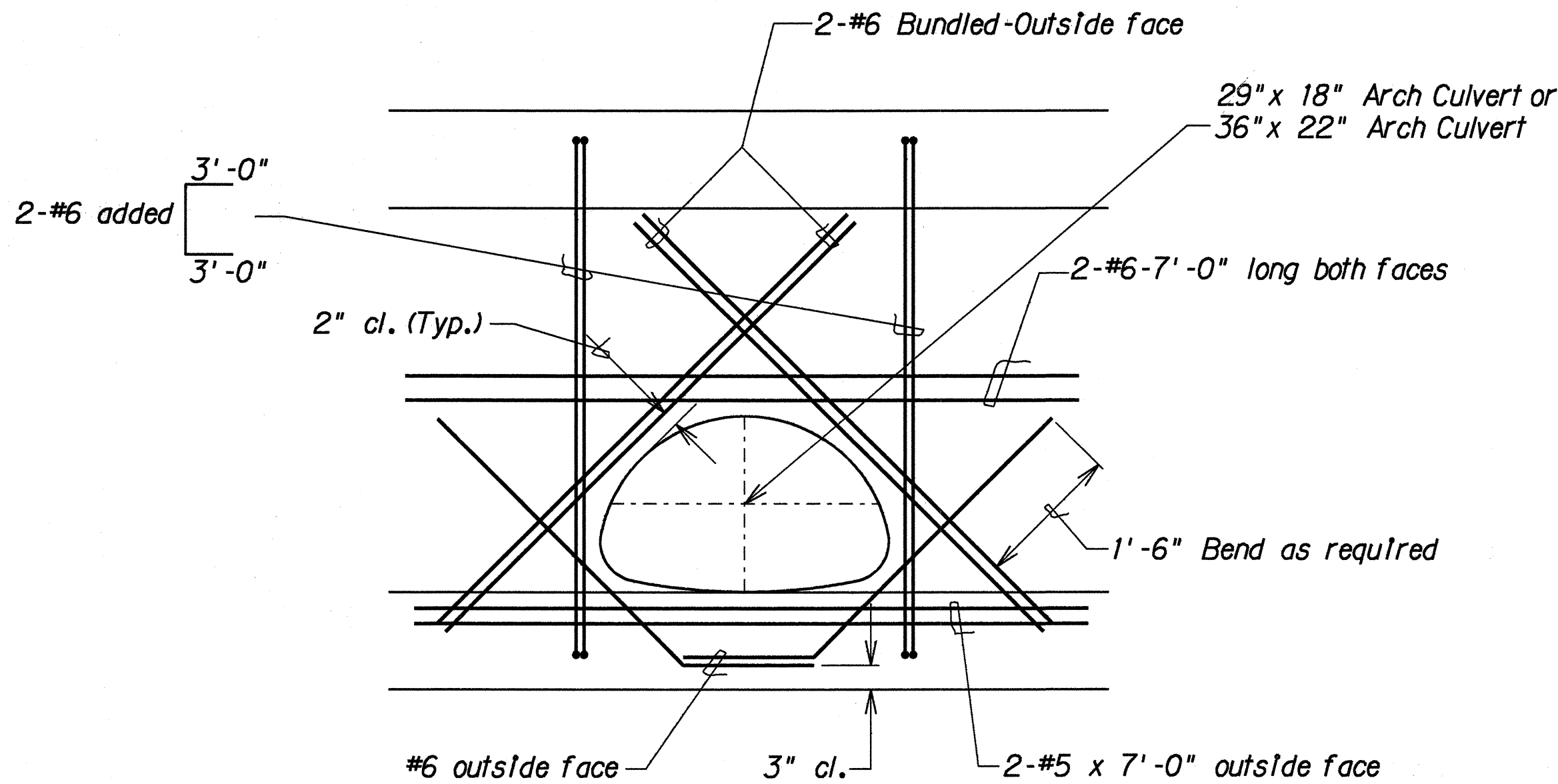
PLAN  
 Scale: 1"=10'



SECTION E  
 Scale: 3/4"=1'-0" H26, H27, H25



PROFILE  
 Scale: 1"=10'

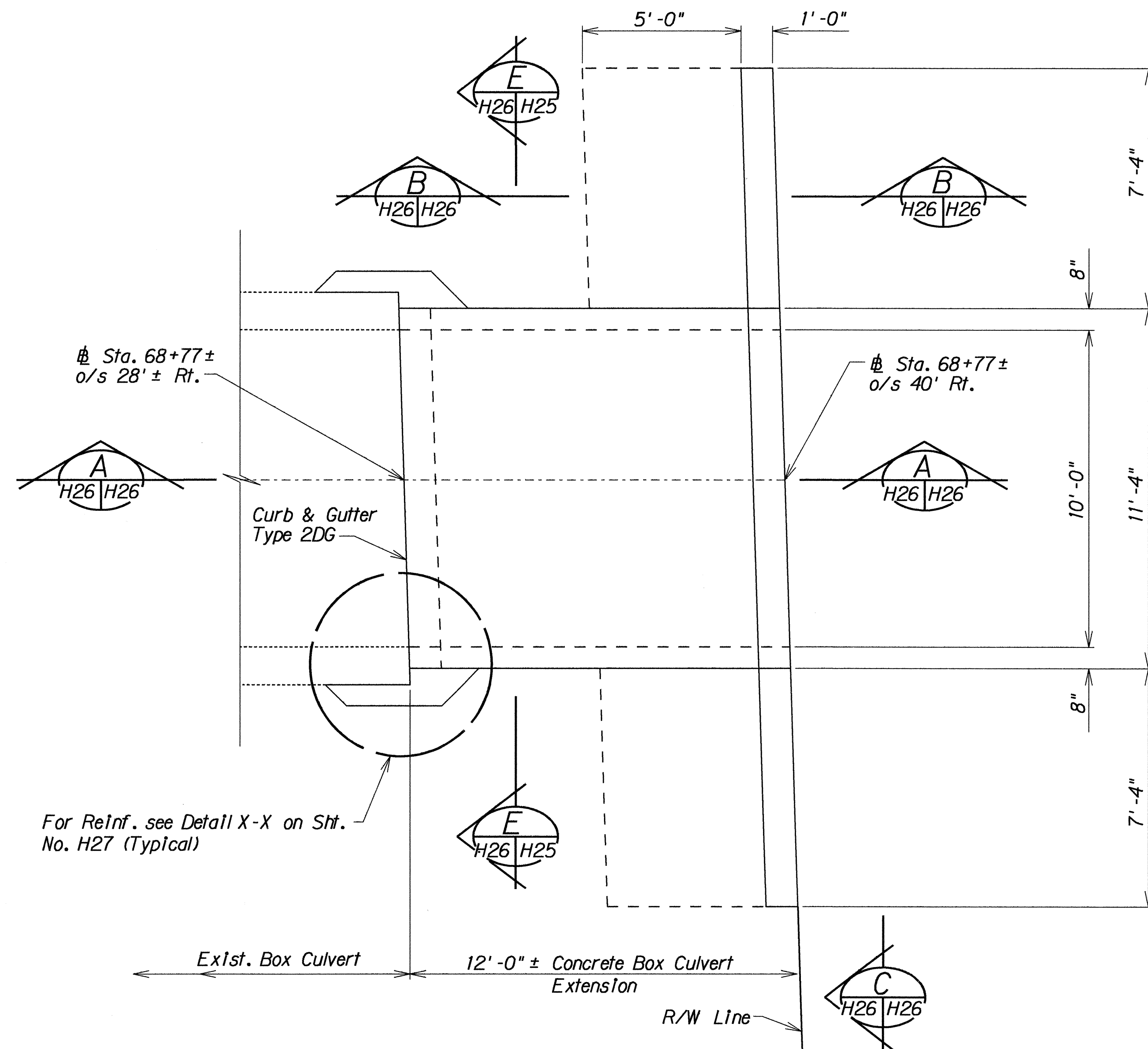


ADDED REINFORCING AT ARCH PIPE OPENING  
 Scale: 3/4"=1'-0"

| 5/11/95                                                                                                                                                                                                       | Revised drainage details |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| DATE                                                                                                                                                                                                          | REVISION                 |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION<br><b>DRAINAGE DETAILS</b><br><b>FARRINGTON HIGHWAY WIDENING</b><br><b>Ala Hema St. towards Jade St.</b><br><b>Project No. 93B-02-91</b> |                          |
| Scale: As Shown                                                                                                                                                                                               | Date: Mar. 1993          |
| SHEET No. H25 OF 32 SHEETS                                                                                                                                                                                    |                          |

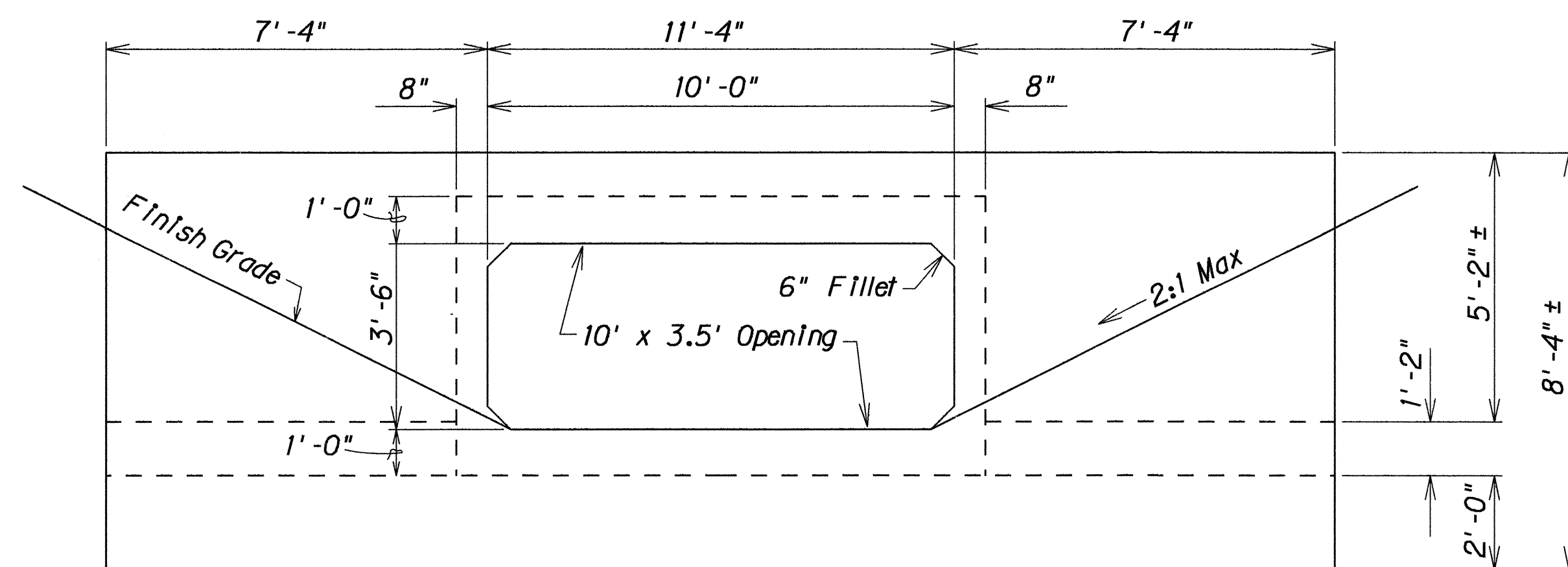
APPROVED: _____  
 DIRECTOR, DEPT. OF WASTEWATER MANAGEMENT      DATE

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 93B-02-91 | 1994        | 67        | 122          |



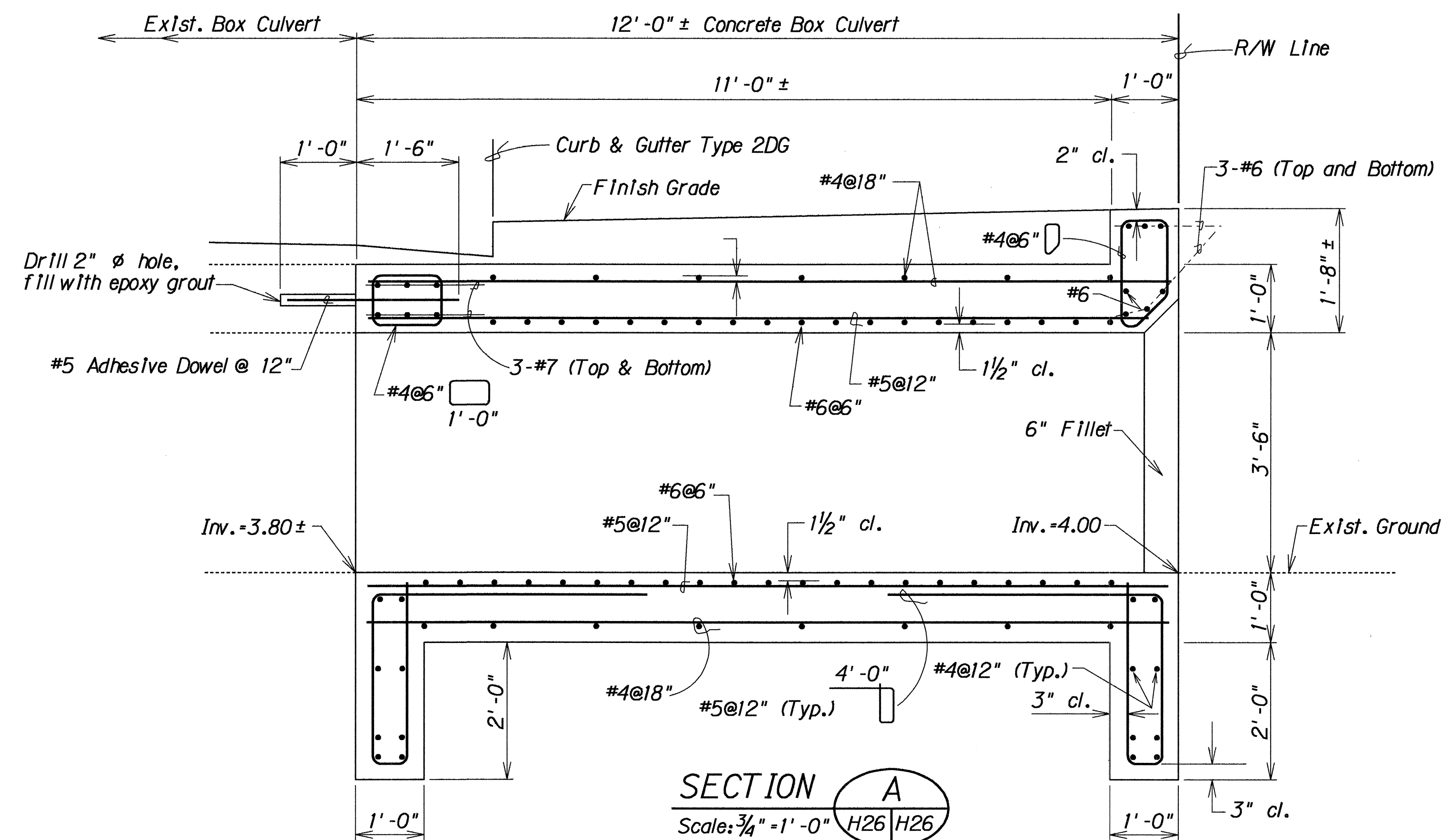
For Reinf. see Detail X-X on Sht. No. H27 (Typical)

PLAN  
Scale: 3/8" = 1'-0"

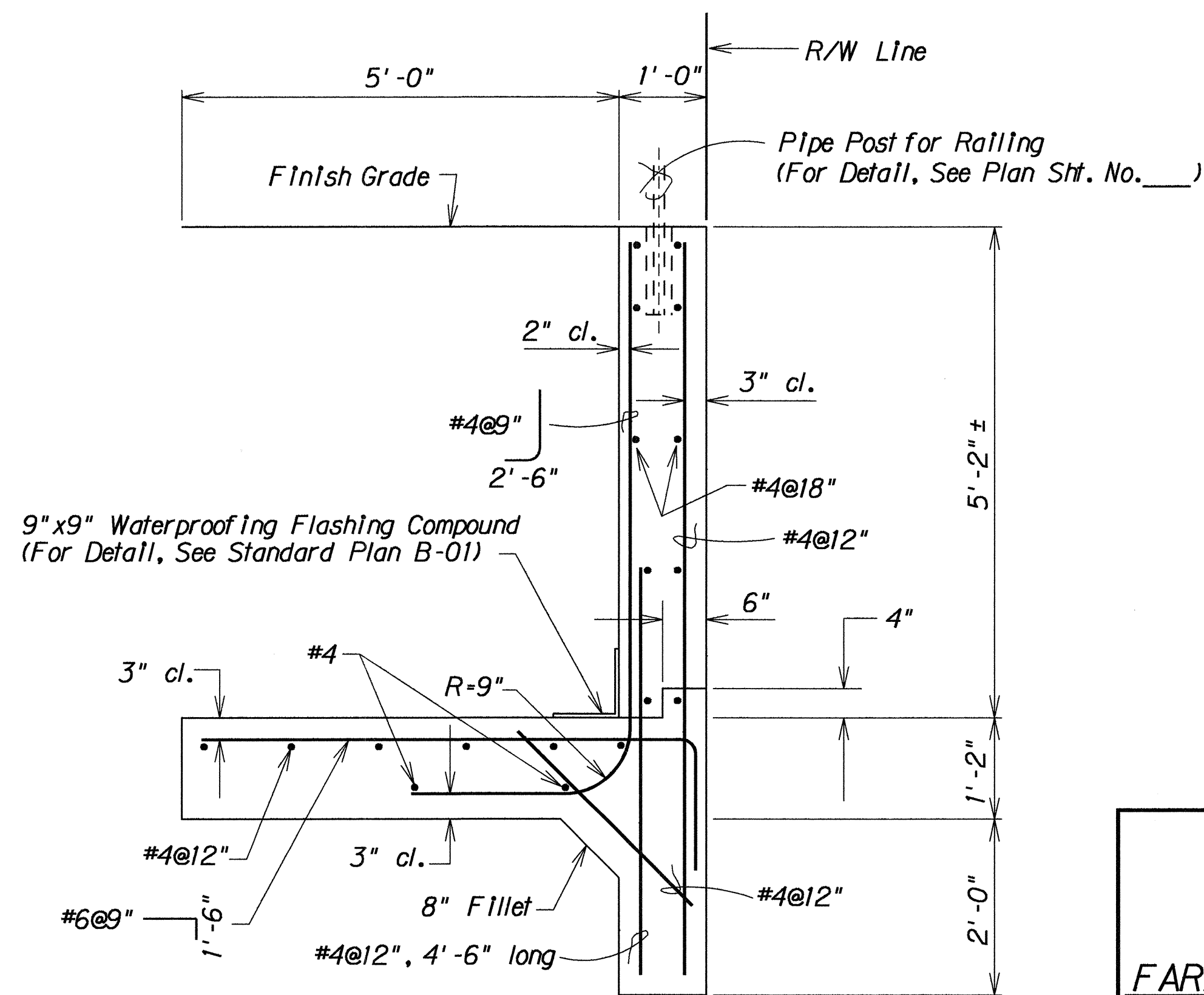


SECTION C  
Scale: 3/8" = 1'-0" H26, H27, H26

# CONCRETE BOX CULVERT EXTENSIONS @ STA. 68+78±



SECTION A  
Scale: 3/4" = 1'-0" H26, H26



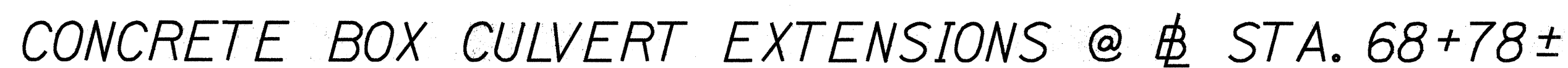
SECTION B  
Scale: 3/4" = 1'-0" H26, H27, H26

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

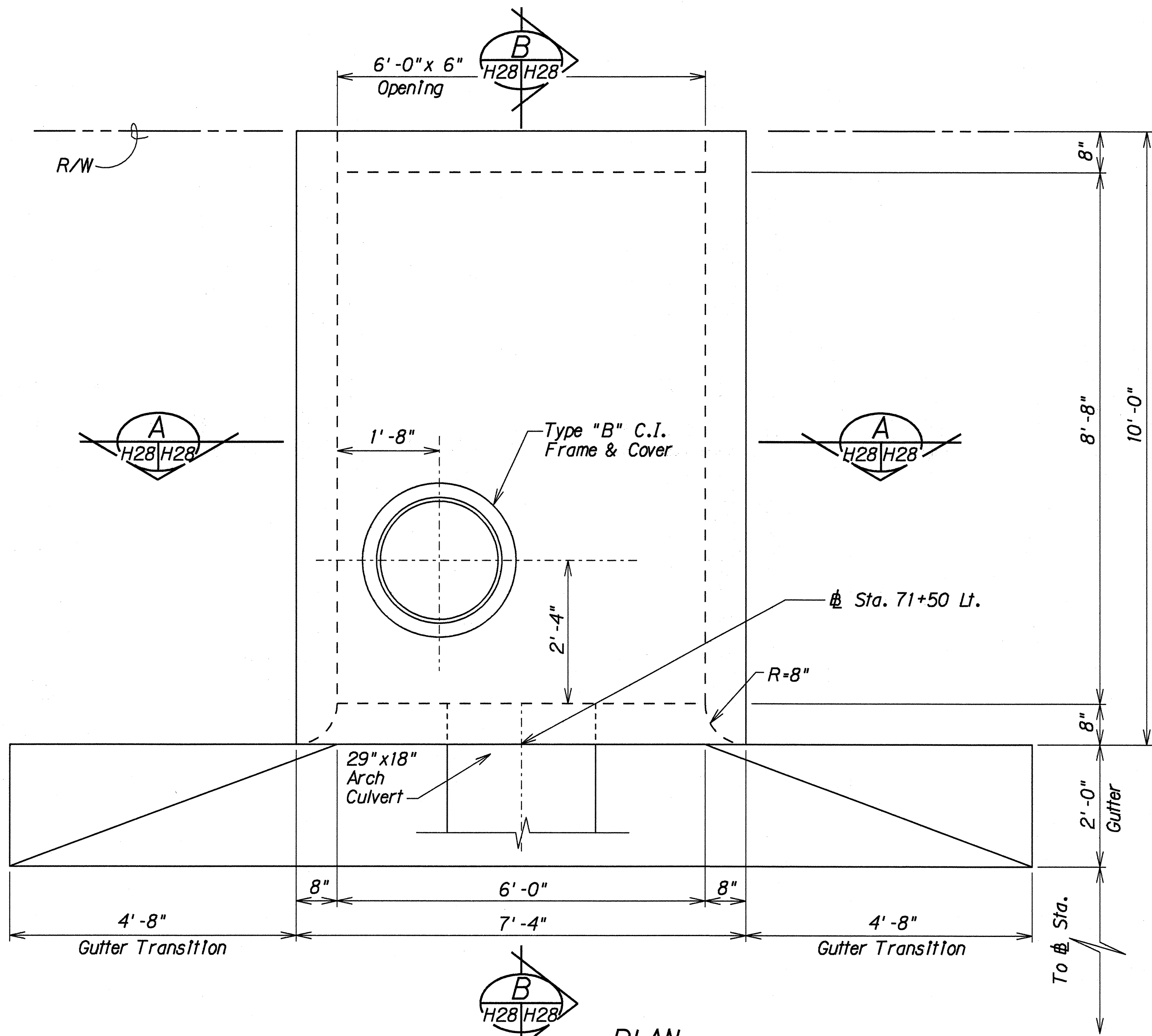
**DRAINAGE DETAILS**  
FARRINGTON HIGHWAY WIDENING  
Ala Hema St. towards Jade St.  
Project No. 93B-02-91

Scale: As Shown Date: Mar. 1993  
SHEET No. H26 OF 32 SHEETS

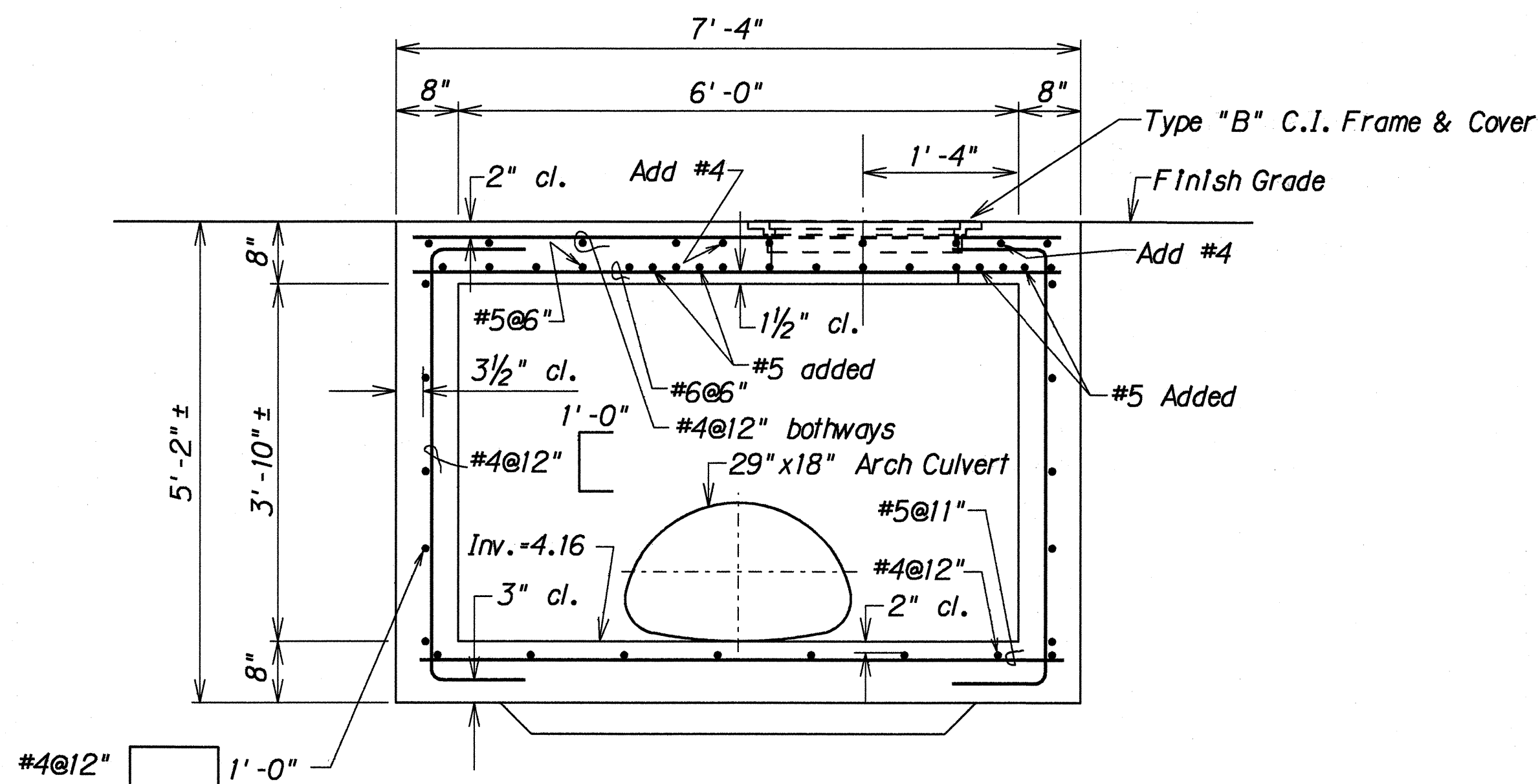
**C.O. 68**



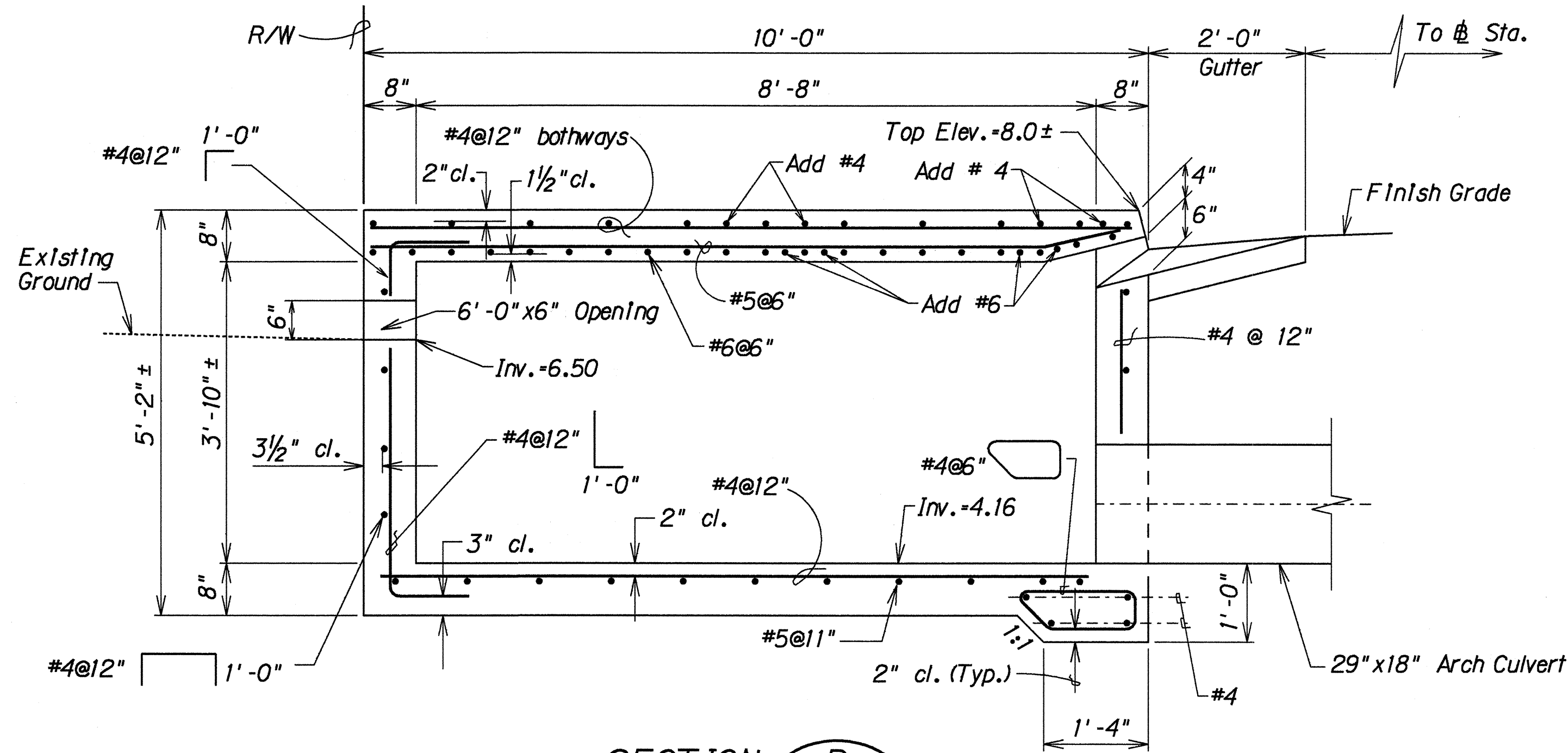
| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 93B-02-91 | 1994        | C.O.69    | 122          |



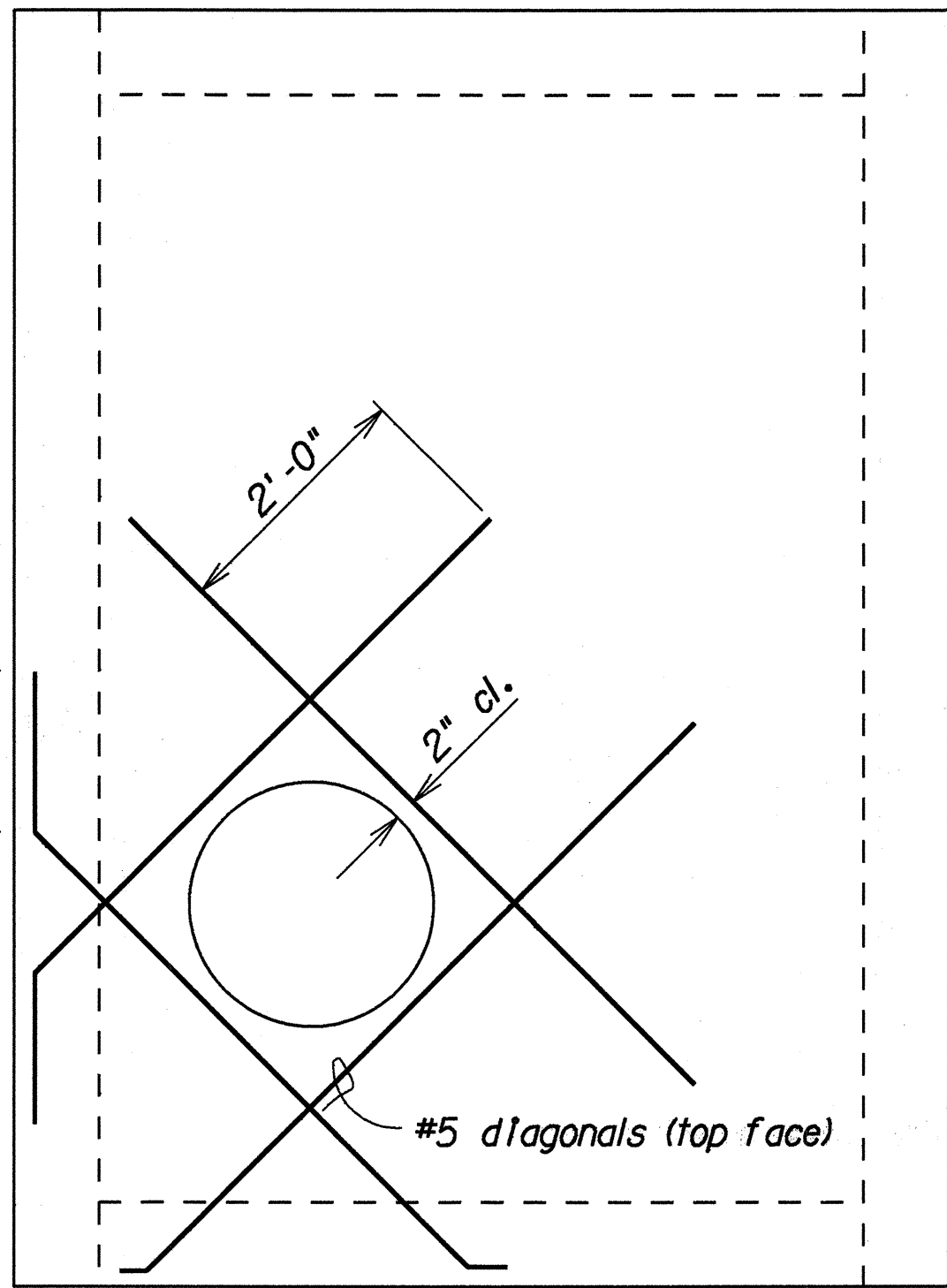
PLAN



SECTION A  
H28/H28



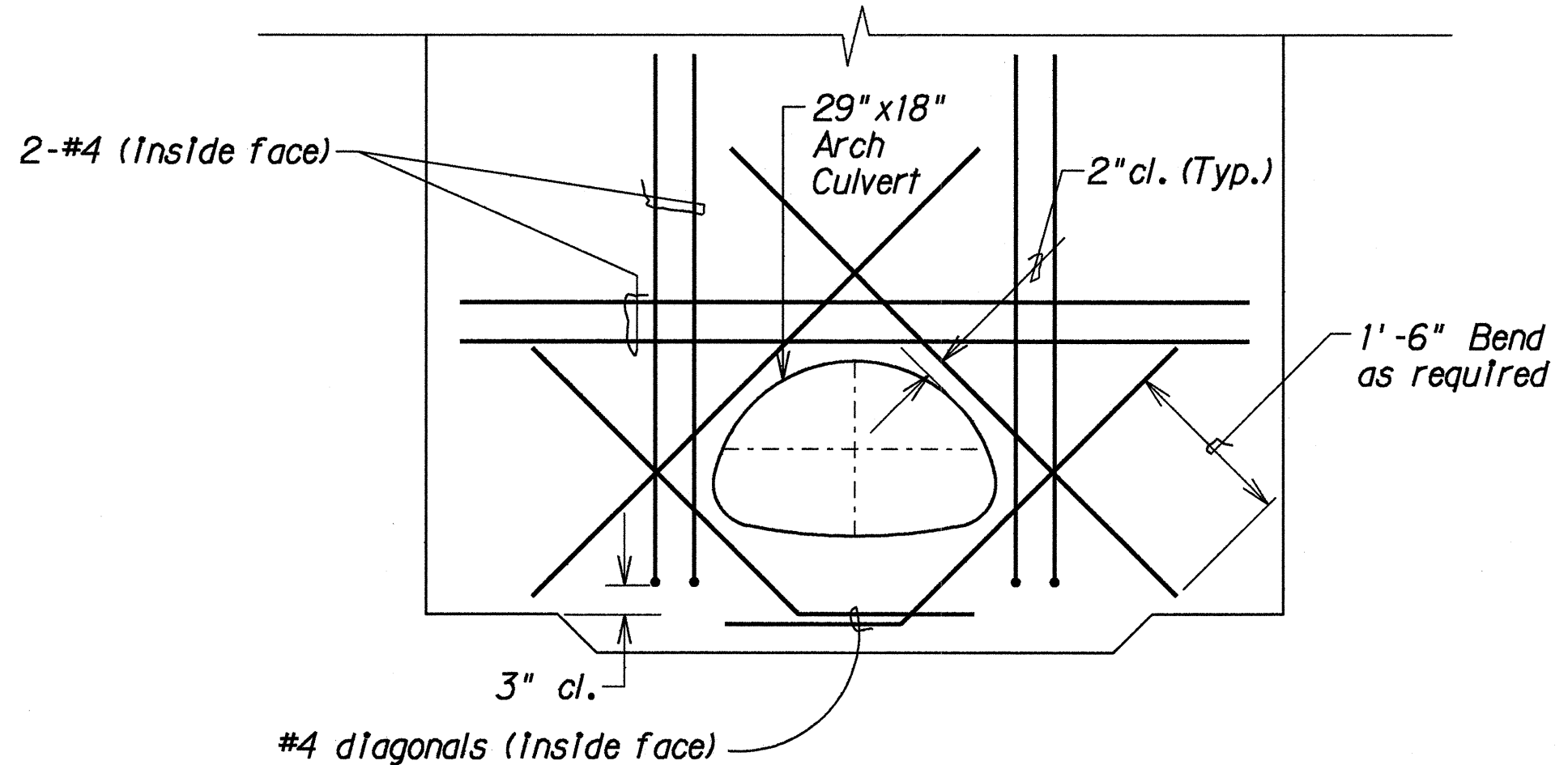
SECTION B  
H28/H28



ADDED REINFORCING AT MANHOLE OPENING

DETAILS OF TYPE "D-10" CATCH BASIN

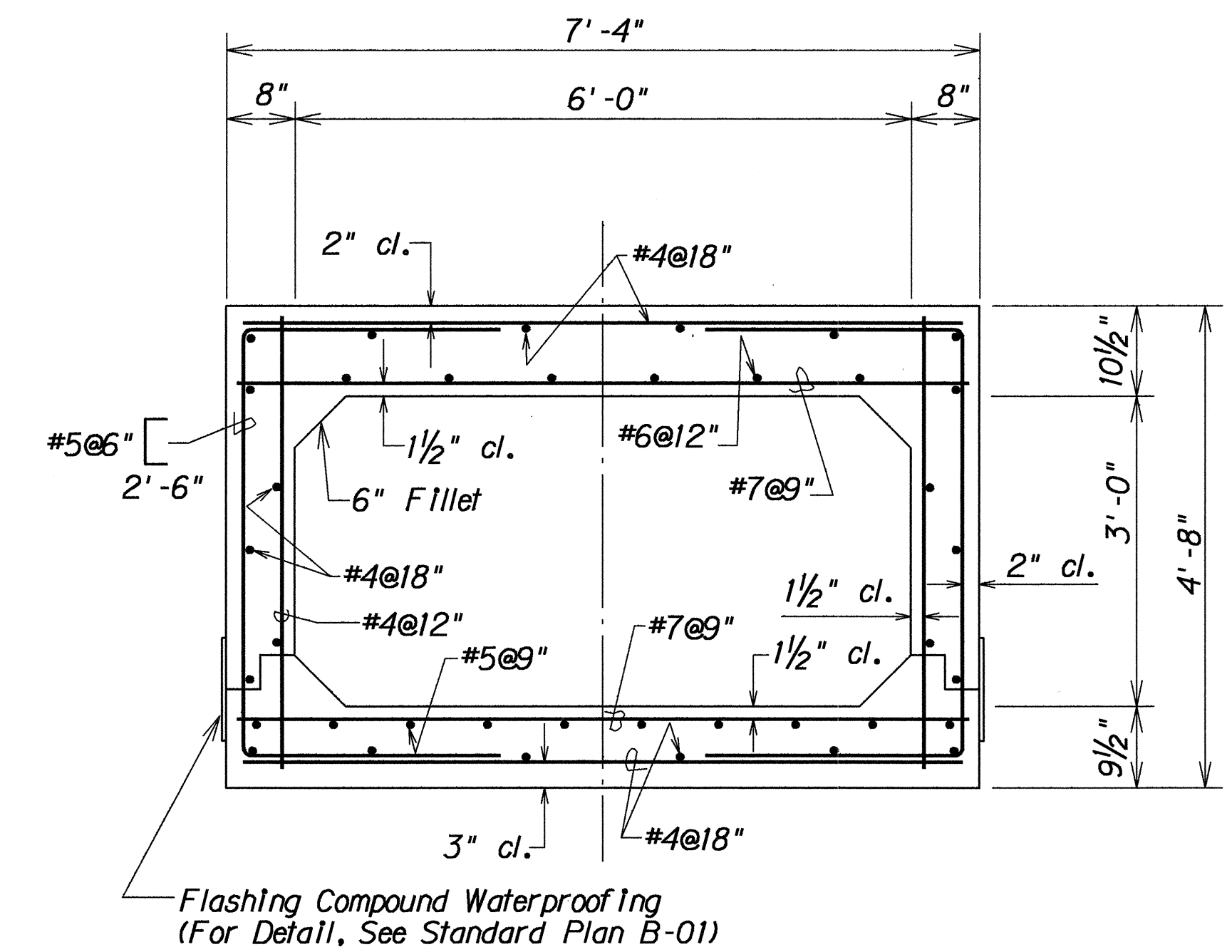
Scale: 3/4" = 1'-0"



ADDED REINFORCING AT CULVERT OPENING

|                                                                      |                          |
|----------------------------------------------------------------------|--------------------------|
| 5/11/95                                                              | Revised drainage details |
| DATE                                                                 | REVISION                 |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION |                          |
| <b>DRAINAGE DETAILS</b>                                              |                          |
| FARRINGTON HIGHWAY WIDENING                                          |                          |
| Ala Hema St. towards Jade St.                                        |                          |
| Project No. 93B-02-91                                                |                          |
| Scale: As Shown                                                      | Date: Mar. 1993          |
| SHEET No. H28 OF 32 SHEETS                                           |                          |

|                      |                         |            |
|----------------------|-------------------------|------------|
| ORIGINAL PLAN        | SURVEY PLOTTED BY _____ | DATE _____ |
| NOTE BOOK            | DRAWN BY _____          | _____      |
|                      | TRACED BY _____         | _____      |
|                      | DESIGNED BY _____       | _____      |
|                      | QUANTITIES BY _____     | _____      |
| N _o _____ | CHECKED BY _____        | _____      |



Scale:  $\frac{3}{4}" = 1' - 0"$

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

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**DRAINAGE DETAILS**

**FARRINGTON HIGHWAY WIDENING**

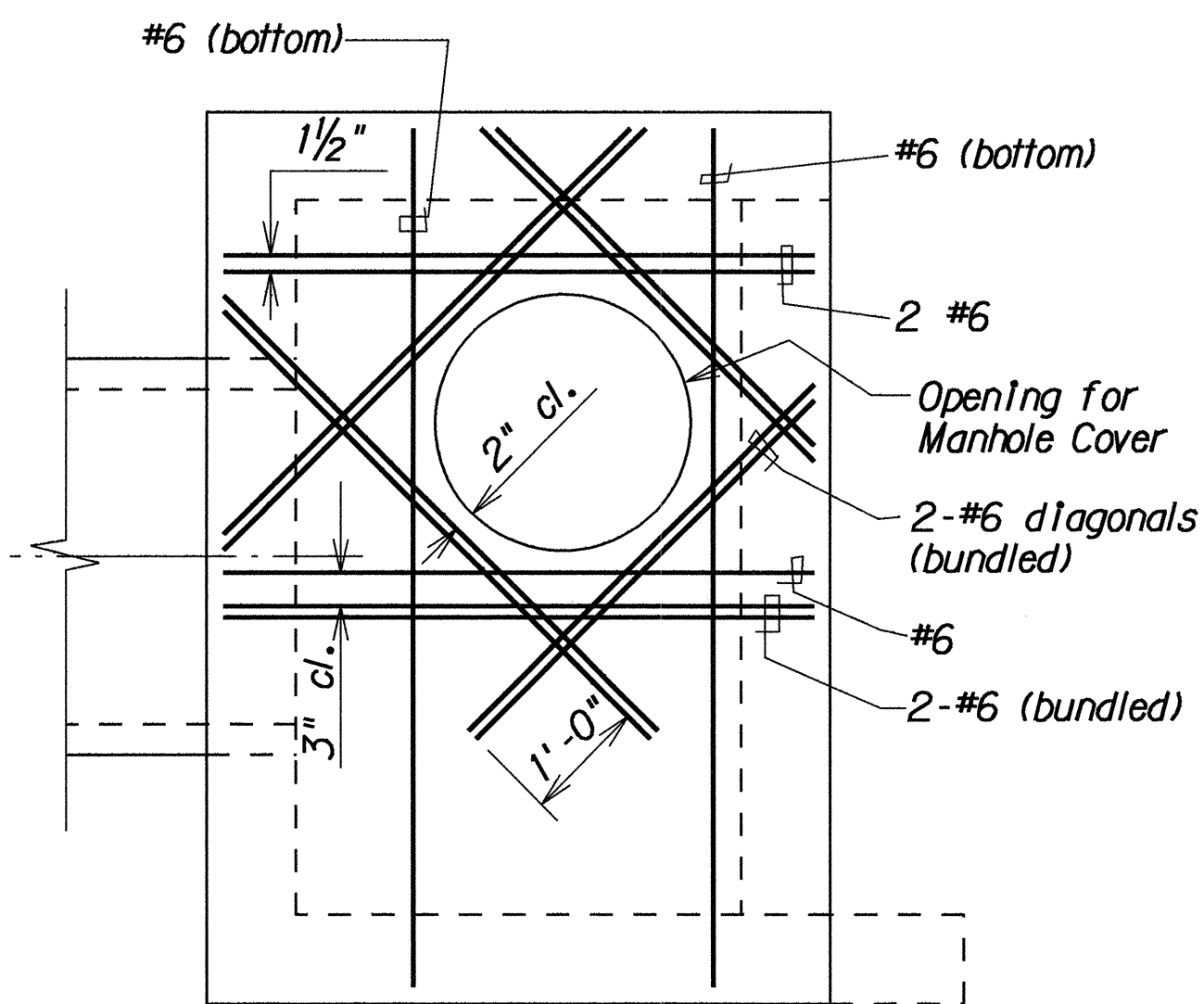
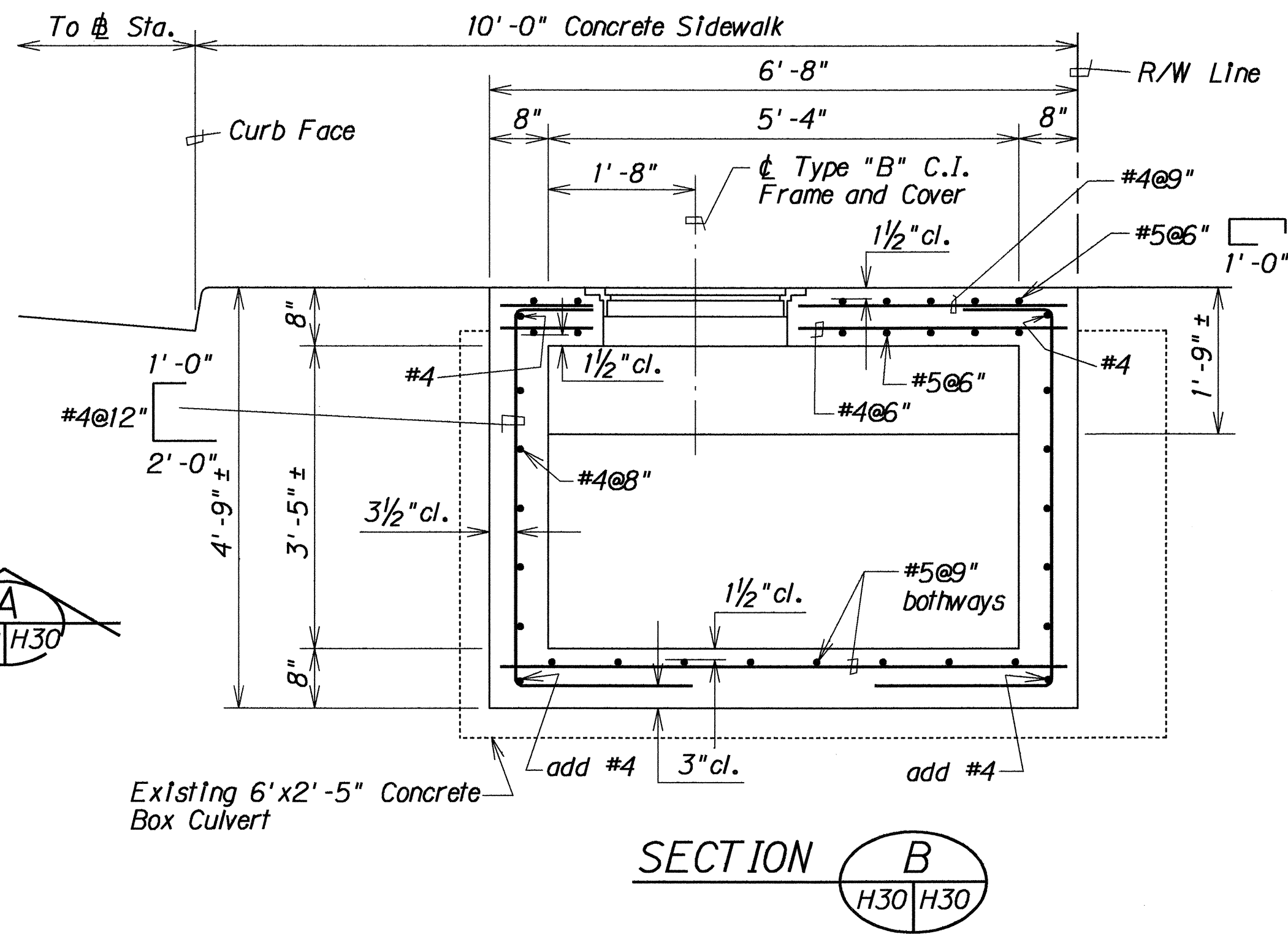
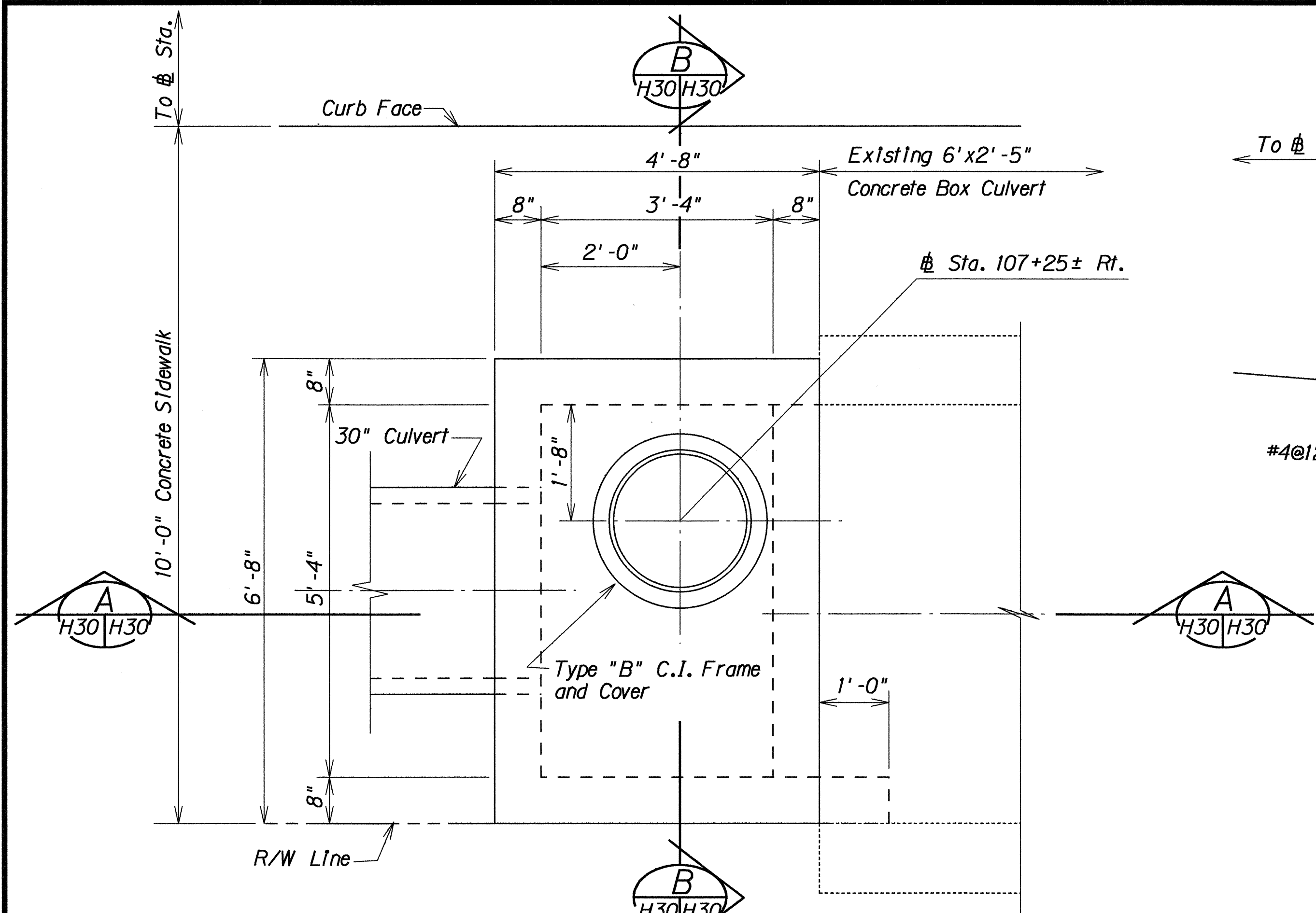
**Ala Hema St. towards Jade St.**

**Project No. 93B-02-91**

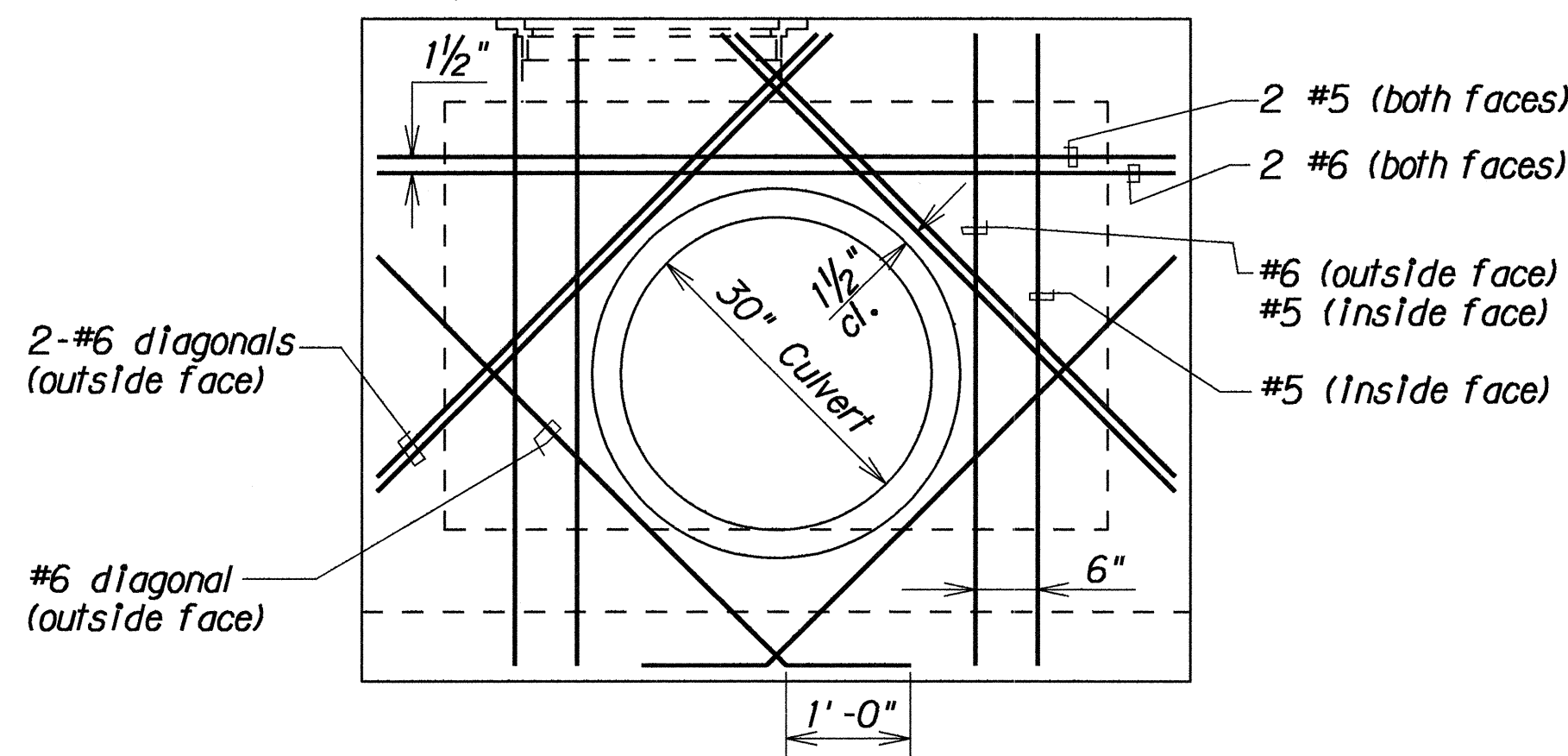
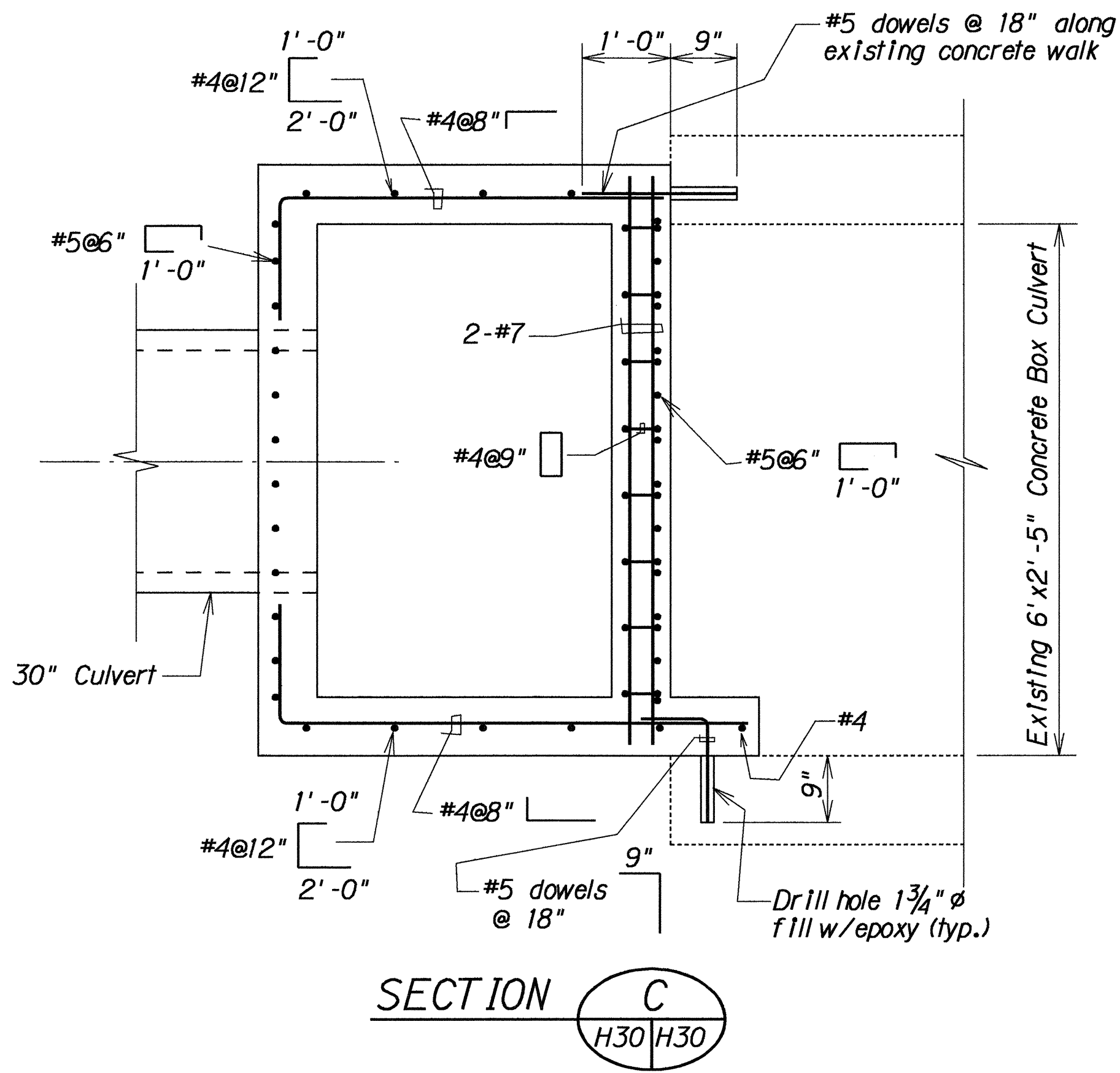
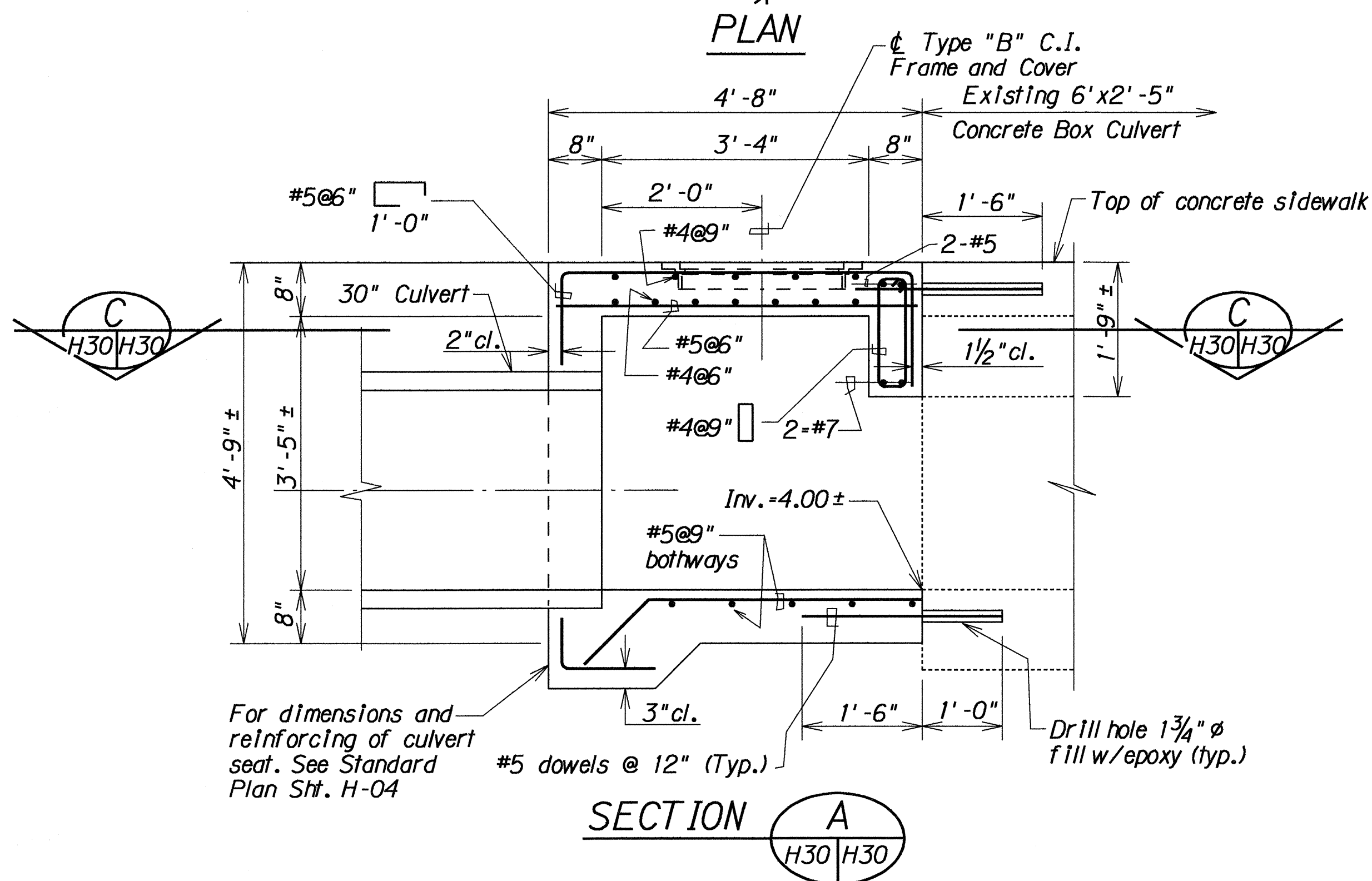
Scale: As Shown      Date: Mar. 1993

SHEET No. H29 OF 32 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 93B-02-91 | 1994        | 71        | 122          |



ADDED REINFORCING AT MANHOLE OPENING



ADDED REINFORCING AT 30" CULVERT OPENING

# DETAILS OF TYPE "3" STORM DRAIN MANHOLE

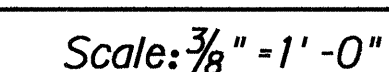
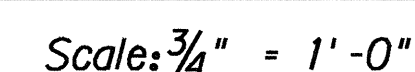
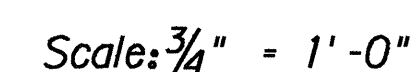
Scale: 3/4" = 1'-0"

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

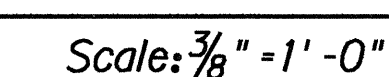
DRAINAGE DETAILS  
FARRINGTON HIGHWAY WIDENING  
Ala Hema St. towards Jade St.  
Project No. 93B-02-91

Scale: As Shown  
Date: Mar. 1993  
SHEET No. H30 OF 32 SHEETS

|                      |                                    |       |
|----------------------|------------------------------------|-------|
| ORIGINAL<br>PLAN     | SURVEY PLOTTED BY _____ DATE _____ |       |
|                      | DRAWN BY _____                     | _____ |
| NOTE BOOK            | TRACED BY _____                    | _____ |
|                      | DESIGNED BY _____                  | _____ |
|                      | QUANTITIES BY _____                | _____ |
|                      | CHECKED BY _____                   | _____ |
| N _o _____ |                                    |       |

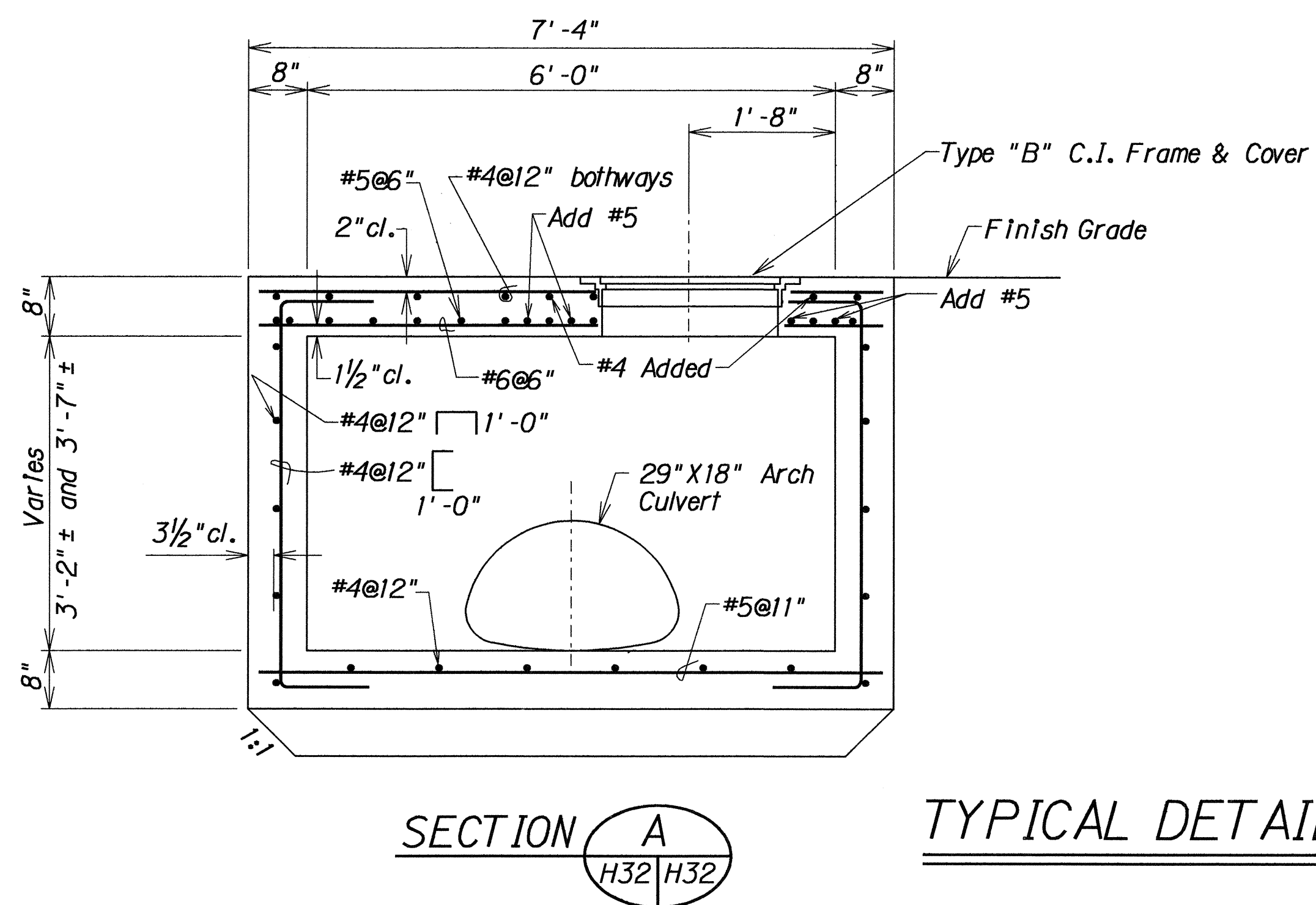
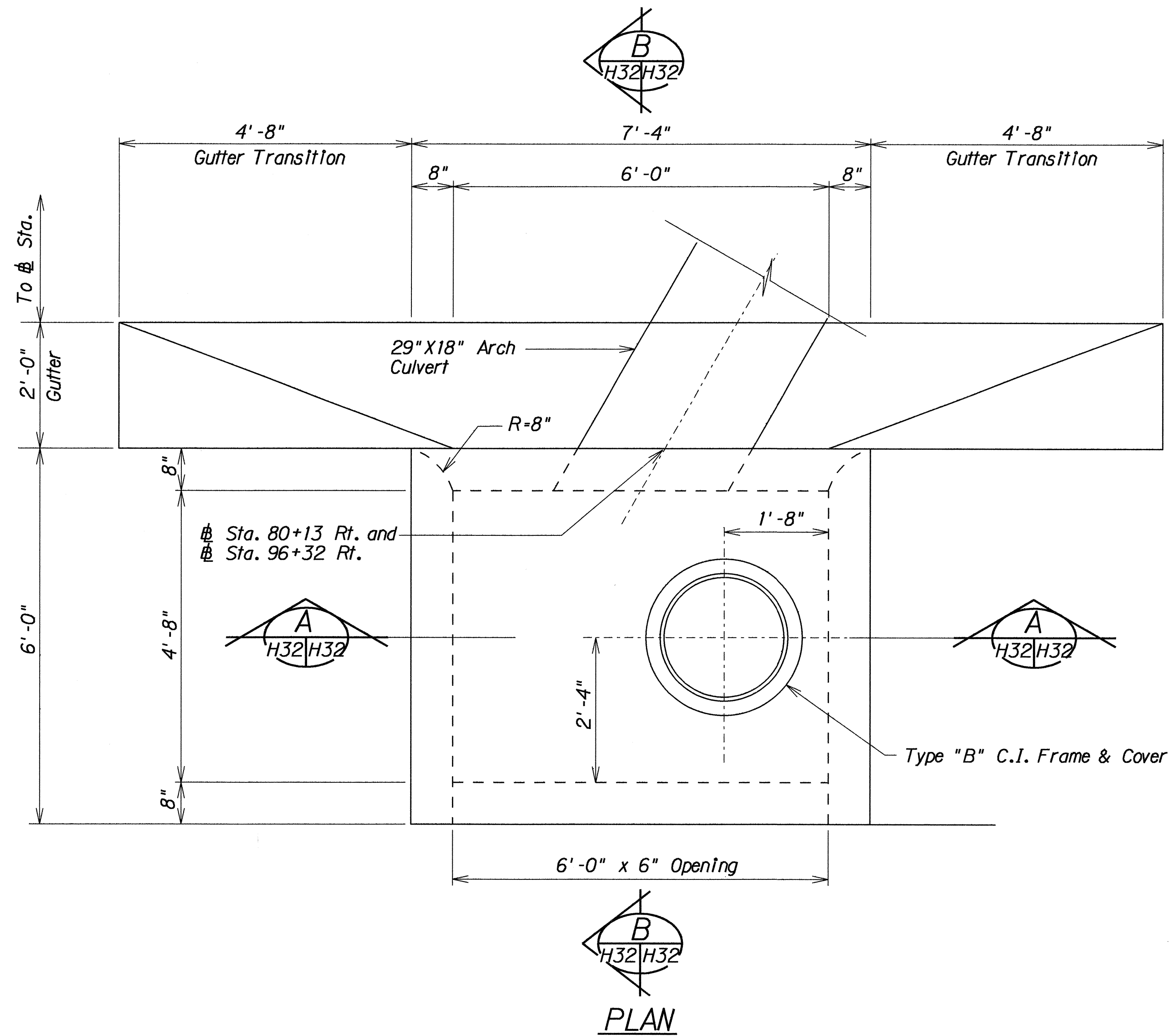


Scale:  $\frac{3}{4}" = 1' - 0"$



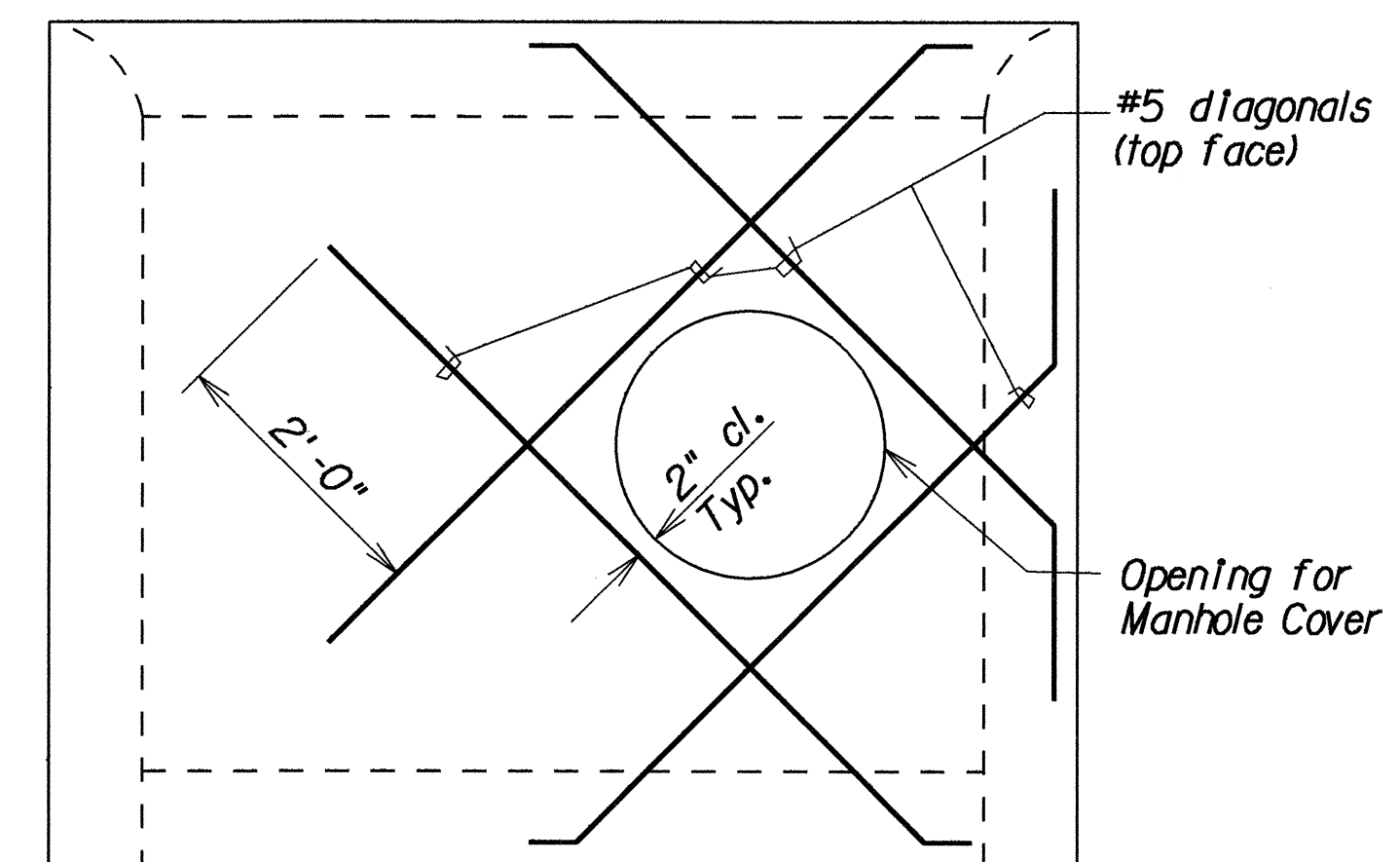
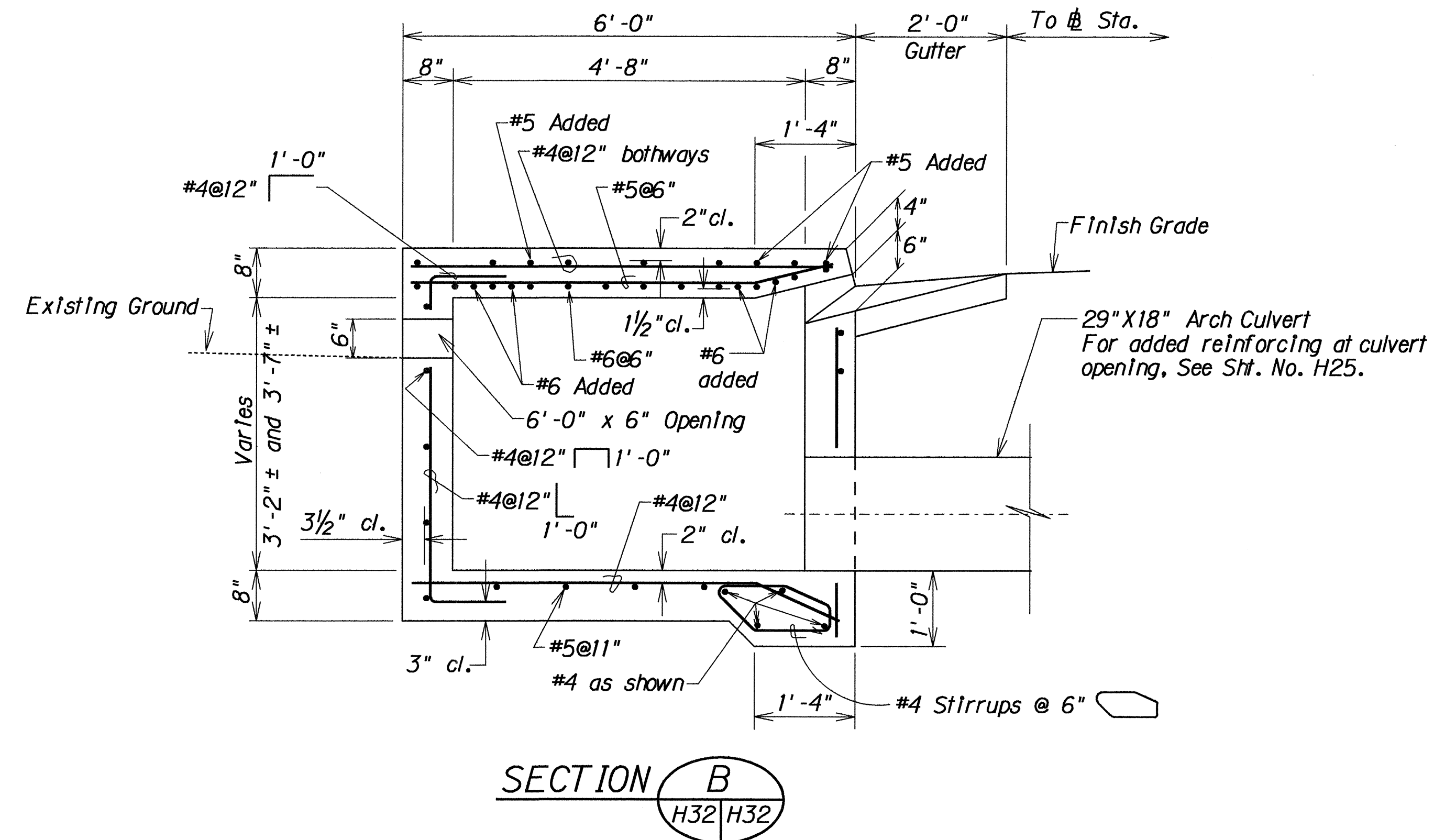
72

| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 93B-02-91 | 1994        | 73        | 122          |



TYPICAL DETAILS OF TYPE 'D-6' CATCH BASIN

Scale:  $\frac{3}{4}$ " = 1'-0"



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**DRAINAGE DETAILS**  
FARRINGTON HIGHWAY WIDENING  
Ala Hema St. towards Jade St.  
Project No. 93B-02-91

Scale: As Shown
Date: Mar. 1993

SHEET No. H32 OF 32 SHEETS