

DRAINAGE SUMMARY

FED. ROAD DIS. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-05-91	1992	15	49

STRUCTURES			PIPE CULVERTS		ESTIMATED QUANTITIES																				REMARKS		
NUMBER	TYPE	STATION	ITEM NO.		206.	206.	508.	603.	603.	603.	603.	603.	604.	604.	604.	604.	604.	604.	604.	604.	604.	604.	604.	604.			
					2020	7000	0100	0010	1006	1010	1012	1014	5000	5010	5030	5040	5050	5055	5060	5065	5070	5075	5080	5085	5087		
			FROM	TO	STRUCTURE EXCAVATION FOR DRAINAGE SYSTEM	STRUCTURAL BACKFILL	CRM FOR DRAINAGE STRUCTURES	BED COURSE MATERIAL FOR CULVERT	18-INCH REINFORCED CONCRETE PIPE, CLASS III	24-INCH REINFORCED CONCRETE PIPE, CLASS III	30-INCH REINFORCED CONCRETE PIPE, CLASS III	36-INCH REINFORCED CONCRETE PIPE, CLASS III	D.M.H. (SHAL. PAV'T. TYPE) 5.00 FT. TO 5.99 FT.	D.M.H. (SHAL. PAV'T. TYPE) 8.00 FT. TO 8.99 FT.	TYPE "E" CATCH BASIN 9.00 FT. TO 9.99 FT.	TYPE "F" CATCH BASIN 9.00 FT. TO 9.99 FT.	TYPE "A" CATCH BASIN 5.00 FT. TO 5.99 FT.	TYPE "A" CATCH BASIN 11.00 FT. TO 11.99 FT.	TYPE "B" CATCH BASIN 5.00 FT. TO 5.99 FT.	TYPE "B" CATCH BASIN 11.00 FT. TO 11.99 FT.	TYPE "A" CATCH BASIN 5.00 FT. TO 5.99 FT.	TYPE "A" CATCH BASIN 10.00 FT. TO 10.99 FT.	TYPE "B" CATCH BASIN 5.00 FT. TO 5.99 FT.	TYPE "B" CATCH BASIN 6.00 FT. TO 6.99 FT.	TYPE "B" CATCH BASIN 11.00 FT. TO 11.99 FT.		
UNITS USED			C.Y.	C.Y.	C.Y.	C.Y.	L.F.	L.F.	L.F.	L.F.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.			
A2	D.M.H.	⌀ 8+30 (O/S 15' RT.)	⌀ 8+30 (O/S 15' RT.)	⌀ 6+00 (O/S 18.13' RT.)	243.2			59.9		231			1														
A3	C.B. TYPE "B"	⌀ 6+00 (O/S 18.13' RT.)	⌀ 6+00 (O/S 18.13' RT.)	⌀ 3+50 (O/S 15' RT.)	274			64.8		250								1									
A1	D.M.H.	⌀ 3+50 (O/S 15' RT.)	⌀ 3+50 (O/S 15' RT.)	⌀ 1+65 (O/S 18.13' RT.)	202			48		185			1														
A1	C.B. TYPE "B"	⌀ 1+65 (O/S 18.13' RT.)	⌀ 1+65 (O/S 18.13' RT.)	⌀ 1+60 (O/S 18.13' RT.)	10.7			1.3		5									1								
A4	C.B. TYPE "A"	⌀ 6+00 (O/S 22.67' LT.)	⌀ 6+00 (O/S 18.13' LT.)	⌀ 6+00 (O/S 18.13' RT.)	37.6			9.4		36											1						
A2	C.B. TYPE "A"	⌀ 1+65 (O/S 22.67' LT.)	⌀ 1+65 (O/S 22.67' LT.)	⌀ 1+65 (O/S 18.13' RT.)	59.7			16		36												1					
B2	C.B. TYPE "A"	⌀ 11+50 (O/S 22.67' LT.)	⌀ 11+50 (O/S 22.67' LT.)	⌀ 11+50 (O/S 18.13' RT.)	34.1			9.3		36							1										
B1	C.B. TYPE "B"	⌀ 11+50 (O/S 18.13' RT.)	⌀ 11+50 (O/S 18.13' RT.)	⌀ 14+00 (O/S 18.13' RT.)	211.1			64.8		250													1				
B3	C.B. TYPE "B"	⌀ 14+00 (O/S 18.13' RT.)	⌀ 14+00 (O/S 18.13' RT.)	⌀ 16+50 (O/S 18.13' RT.)	203.7			64.8		250													1				
B4	C.B. TYPE "B"	⌀ 16+50 (O/S 18.13' RT.)	⌀ 16+50 (O/S 18.13' RT.)	⌀ 18+25 (O/S 15' RT.)	382.9			85				179												1			
B1	D.M.H.	⌀ 18+25 (O/S 15' RT.)	⌀ 18+25 (O/S 15' RT.)	⌀ 20+05 (O/S 15' RT.)	388			87.8				185		1													
1	HEADWALL	L 16+50 (O/S 45' LT.)	L 16+50 (O/S 45' LT.)	L 16+50 (O/S 22.67' LT.)	62.7	7.3	3	6.8			19																
B5	C.B. TYPE "A"	⌀ 16+50 (O/S 22.67' LT.)	⌀ 16+50 (O/S 22.67' LT.)	⌀ 16+50 (O/S 18.13' RT.)	121			12.2		34								1									
C1	C.B. TYPE "F"	⌀ 21+33 (O/S 18.3' RT.)	⌀ 21+33 (O/S 18.3' RT.)	⌀ 20+05 (O/S 15' RT.)	227.6			33.2		128							1										
C2	C.B. TYPE "E"	⌀ 21+33 (O/S 22.67' LT.)	⌀ 21+33 (O/S 22.67' LT.)	⌀ 21+33 (O/S 18.13' RT.)	39.2			6	36							1											
SUBTOTAL SHEET 1					2497.5	7.3	3	569.3	36	1407	53	364	2	1	1	1	1	1	1	1	1	1	1	1			
TOTAL					2497.5	7.3	3	569.3	36	1407	53	364	2	1	1	1	1	1	1	1	1	1	1	1			
ROUNDED TOTAL					2498	7	3	569	36	1407	53	364	2	1	1	1	1	1	1	1	1	1	1	1			

DATE

9/13/91

SURVEY PLOTTED BY

DESIGNED BY

QUANTITIES BY

CHECKED BY

ORIGINAL PLAN

NOTED

NO.

APPROVED:

M. Fukuyama
CHIEF, DIVISION OF ENGINEERING, D.P.W.

11/8/91
DATE



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
dbo PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE SUMMARY

CASTLE HILLS ACCESS ROAD
PROJ. NO. HWY-0-05-91

SCALE: NONE DATE: MARCH, 1991

SHEET No. 1 OF 2 SHEETS

D:\CAST151\DE002 9/13/91

ORIGINAL PLAN	DATE
NOTED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

DRAINAGE SUMMARY

FED. ROAD DIS. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-05-91	1992	16	49

STRUCTURES			PIPE CULVERTS		ESTIMATED QUANTITIES																				REMARKS		
NUMBER	TYPE	STATION	ITEM NO.		206.	206.	206.	206.	207.	503.	503.	508.	602.	602.	603.	603.	603.	603.	603.	604.	604.	605.	612.	640.		604.	
					2020	4100	7000	8000	0100	1021	1022	0100	0022	0024	0010	1010	1014	1016	1018	5020	5090	0004	0100	7500		5095	
			FROM	TO	STRUCTURE EXCAVATION FOR DRAINAGE SYSTEM	STRUCTURE EXCAVATION FOR 20'x10' BOX CULVERT INLET & OUTLET STRUCT.	STRUCTURAL BACKFILL	FILTER MATERIAL	DITCH AND CHANNEL EXCAVATION	CONC. IN 20' X 10' BOX CULV., INLET & OUTLET STRUCT. AND WING WALLS	CONC. IN HEADWALL NO. 3, OUTLET STRUCTURE AND WING WALLS	CRM FOR DRAINAGE STRUCTURES	REINF. STEEL FOR 20' X 10' BOX CULVERT, INLET & OUTLET STRUCTURE AND WING WALLS	REINF. STEEL FOR HEADWALL NO. 3, OUTLET STRUCTURE AND WING WALLS	BED COURSE MATERIAL FOR CULVERT	24-INCH REINFORCED CONCRETE PIPE, CLASS III	36-INCH REINFORCED CONCRETE PIPE, CLASS III	42-INCH REINFORCED CONCRETE PIPE, CLASS III	48-INCH REINFORCED CONCRETE PIPE, CLASS III	SPECIAL D.M.H. 15.00 FT. TO 15.99 FT.	TYPE "C" CATCH BASIN 4.00 FT. TO 4.99 FT.	4-INCH PERFORATED UNDERDRAIN PIPE	GROUTED RUBBLE PAVING	CONC. LINED DITCH		SPECIAL CATCH BASIN NO. G-1	
			UNITS USED		C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	LBS.	LBS.	C.Y.	L.F.	L.F.	L.F.	L.F.	EA.	EA.	L.F.	C.Y.	L.F.				
2	HEADWALL	☺ 20+05 (O/S 37' LT.)	☺ 20+05 (O/S 37' LT.)	☺ 20+05 (O/S 15' RT.)	55.1		22.7				7			33.5			52										
D1	SPECIAL D.M.H.	☺ 20+05 (O/S 15' RT.)	☺ 20+05 (O/S 15' RT.)	☺ 20 + 11.60 (O/S 38' RT.)	43									20.1			20		1								
3	HEADWALL	☺ 20+11.60 (O/S 38' RT.)			89		47.5	24			26.4			2,858	4.4							13					
E1	C.B. TYPE "C"	☺ 0+42.58 "A" (O/S 14' LT.)	☺ 0+42.58 "A" (O/S 14' LT.)	☺ 8+30 PO'OKELA (O/S 15' RT.)	67.5									15	58					1							
E2	C.B. TYPE "C"	☺ 0+42.58 "A" (O/S 14' RT.)	☺ 0+42.58 "A" (O/S 14' RT.)	☺ 0+42.58 "A" (O/S 14' LT.)	35.4									6.5	25					1							
	OUTLET	☺ 1+64 (O/S 33' LT.)	☺ 1+64 (O/S 33' LT.)	☺ 4+00 (O/S 55' LT.)	580									57		237											
F2	C.R.M. INLET	☺ 4+00 (O/S 55' LT.)			48		22.9				19			4.5													
																						4.5					
G1	SPECIAL C.B.	☺ 3+30 PO'OKELA ST.			42.8									1.6				11							1		
	20' x 10' BOX CULVERT	☺ 1+50	☺ 1+50 (O/S 41' LT.)	☺ 1+50 (O/S 49' RT.)		1790	624.6	141		266		334.8	51,200		106.2								251.3				
1	CONC. LINED DITCH		☺ 0+58	☺ 1+36			18		73					8.6										78			
2	CONC. LINED DITCH		☺ 1+64	☺ 3+72			37		173.3					23.1										208			
	4-INCH SUBDRAIN																										
																					880						
SUBTOTAL SHEET 2					980.6	1790	772.7	165	2463	266	26.4	3608	51,200	2,858	280.5	83	237	72	11	1	2	880	268.8	286		1	
TOTAL					3458.8	1790	780	165	246.3	266	26.4	3638	51,200	2,858	849.8	1490	601	72	11	1	2	880	268.8	286		1	
ROUNDED TOTAL					3459	1790	780	165	247	266	27	364	51,200	2,858	850	1490	601	72	11	1	2	880	269	286		1	

APPROVED:

M. Fukagawa
CHIEF, DIVISION OF ENGINEERING, D.P.W.

11/8/91
DATE



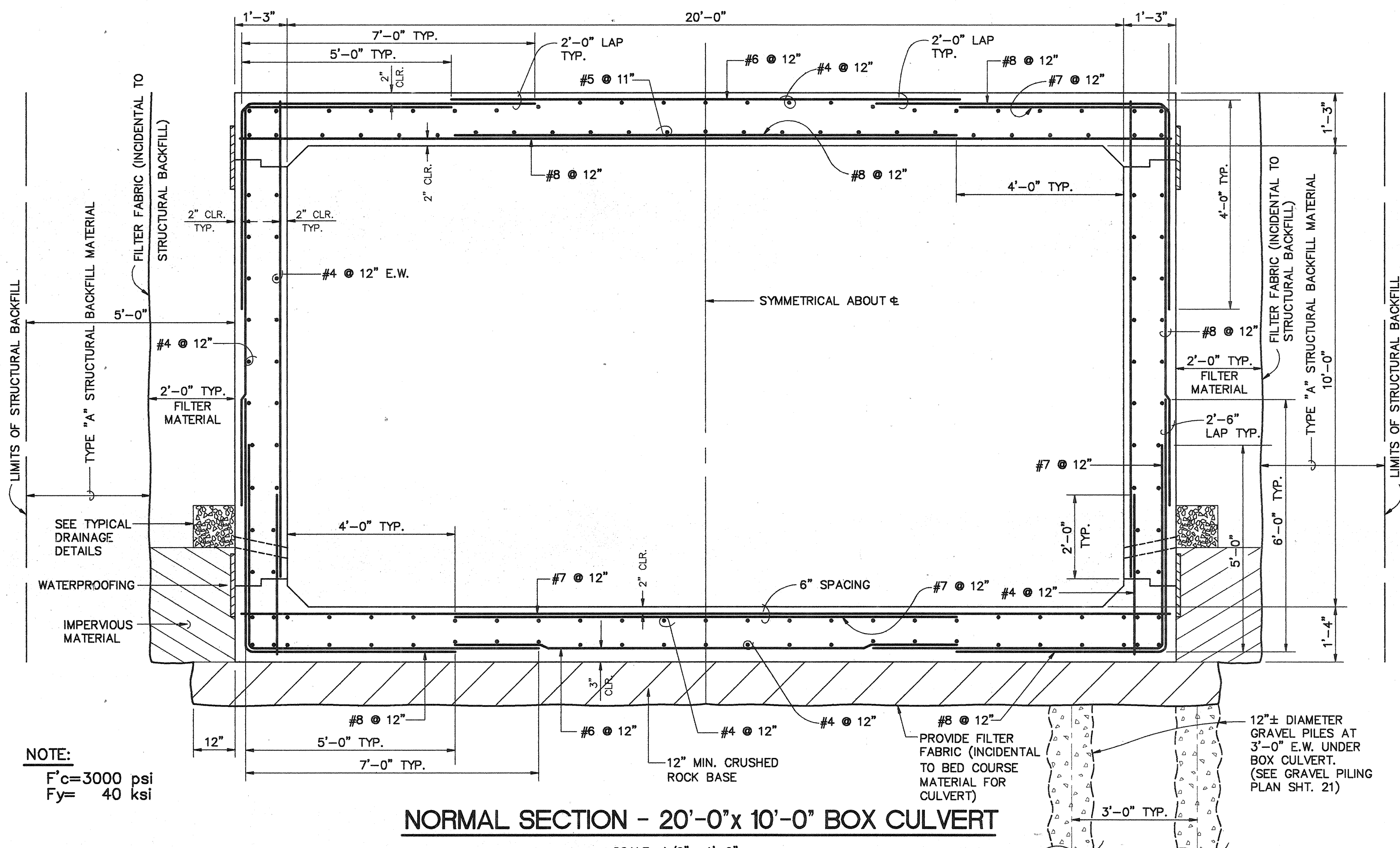
THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
Clarence K. Tanomaka
P.E. No. 1464-C
dba PARK ENGINEERING

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
DRAINAGE SUMMARY
CASTLE HILLS ACCESS ROAD PROJ. NO. HWY-0-05-91
SCALE: NONE DATE: MARCH, 1991
SHEET No. 2 OF 2 SHEETS

FED. ROAD DIS. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-05-91	1992	17	49

STRUCTURAL NOTES FOR BOX CULVERT CONSTRUCTION:

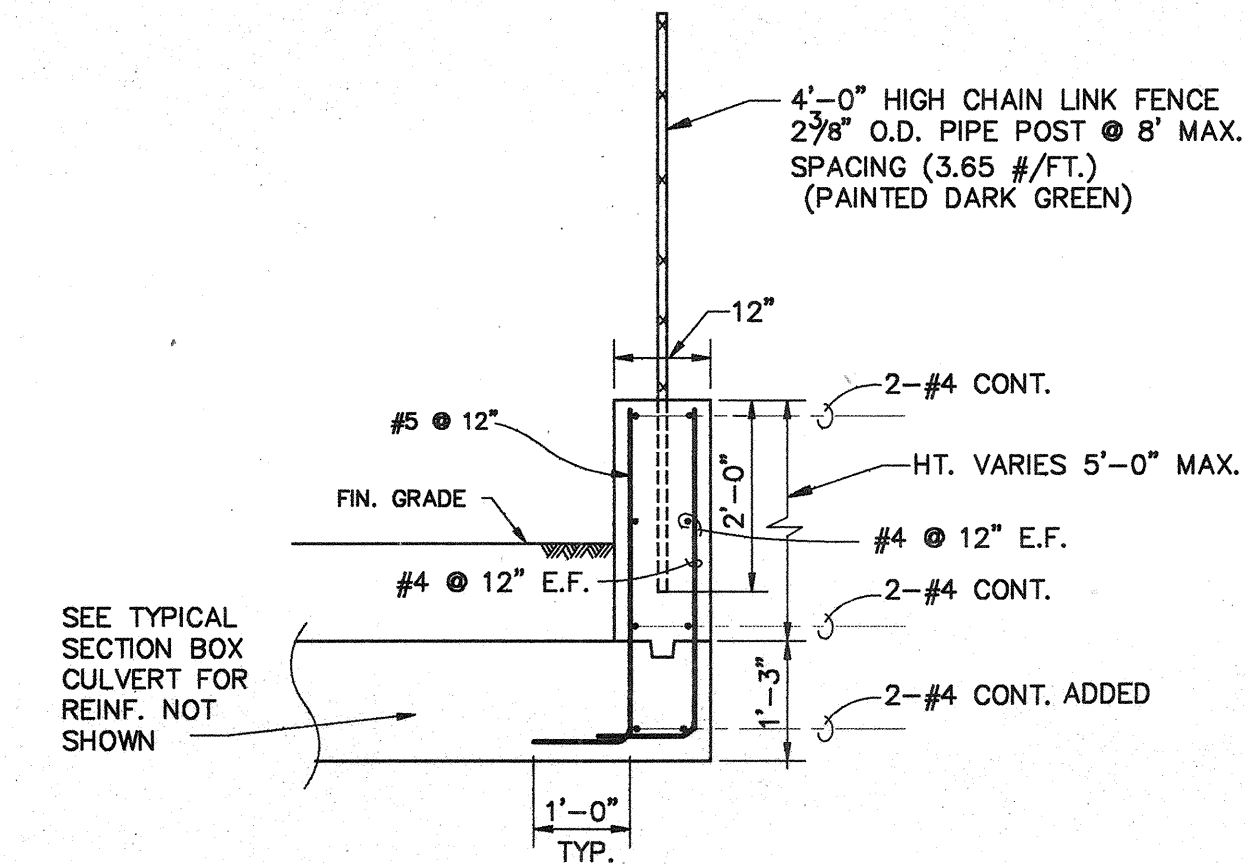
- 1 - ALL CONCRETE SHALL BE CLASS "A" AND HAVE A MINIMUM 28 DAYS STRENGTH OF 3000 PSI.
- 2 - UNLESS SHOWN OTHERWISE, ALL REINFORCING BARS #3 AND LARGER SHALL BE DEFORMED BARS CONFORMING TO A-615 GRADE 40.
- 3 - ALL REINFORCING BARS SHALL HAVE A MINIMUM LAP OF 36 BAR DIAMETERS UNLESS OTHERWISE NOTED.
- 4 - ALL WORK AND MATERIAL SHALL CONFORM TO THE STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, 1985 EXCEPT AS NOTED OTHERWISE.
- 5 - WATERPROOFING OF CONSTRUCTION JOINTS SHALL CONSIST OF FIRMLY BONDED MEMBRANE COMPOSED OF 2 LAYERS OF SATURATED FABRIC AND 3 MOPPINGS OF WATERPROOFING ASPHALT. A COATING OF PRIMER SHALL BE APPLIED TO THE SURFACE BEFORE THE FIRST APPLICATION OF ASPHALT. PRIMER SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M116. FABRIC FOR WATERPROOFING SHALL CONFORM TO FEDERAL SPECIFICATIONS ASTM-D-1668. ASPHALT SHALL CONFORM TO REQUIREMENTS OF AASHTO M115.
- 6 - GRAVEL COMPACTION PILES SHALL BE INSTALLED WITH CARE TO MINIMIZE DISTURBANCES TO NEARBY STRUCTURES. ANY DAMAGE TO EXISTING STRUCTURES SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE.
- 7 - REFER TO SECTION 13.2 B & C OF STANDARD SPECIFICATIONS FOR PUBLIC WORK CONSTRUCTION, SEPT. 1986 OF CITY & COUNTY OF HONOLULU FOR SHORING AND DEWATERING.



NORMAL SECTION - 20'-0" x 10'-0" BOX CULVERT

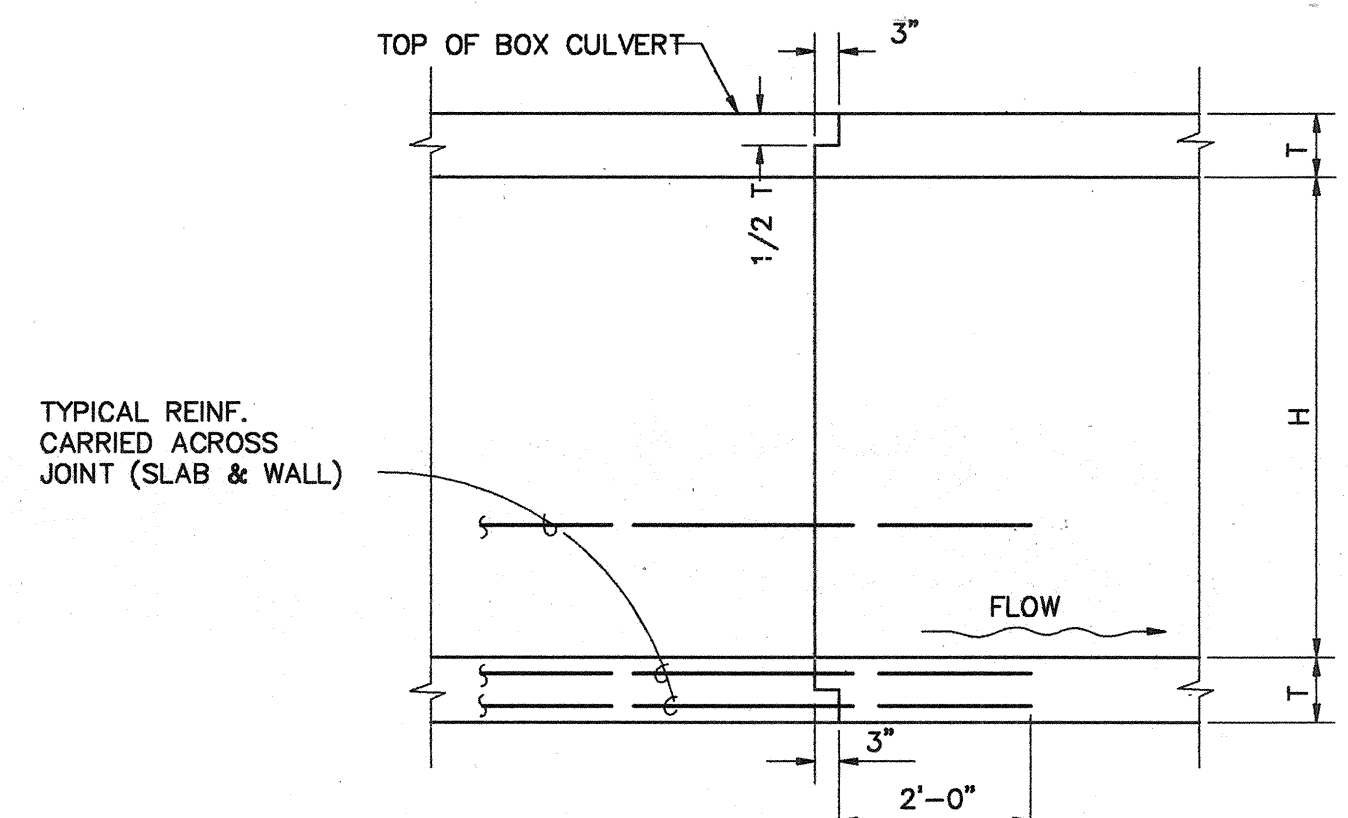
SCALE: 1/2" = 1'-0"

NOTE:
NO EXPANSION JOINT
FOR THIS CULVERT



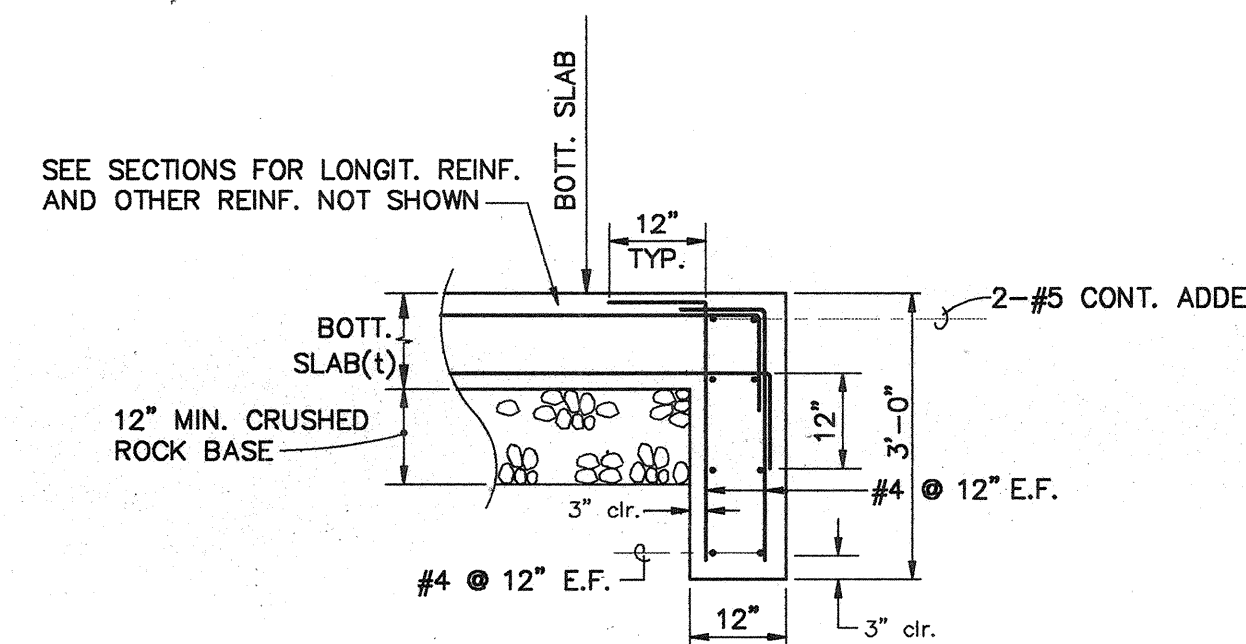
CUT-OFF WALL AT TOP OF
20'-0" x 10'-0" BOX CULVERT

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



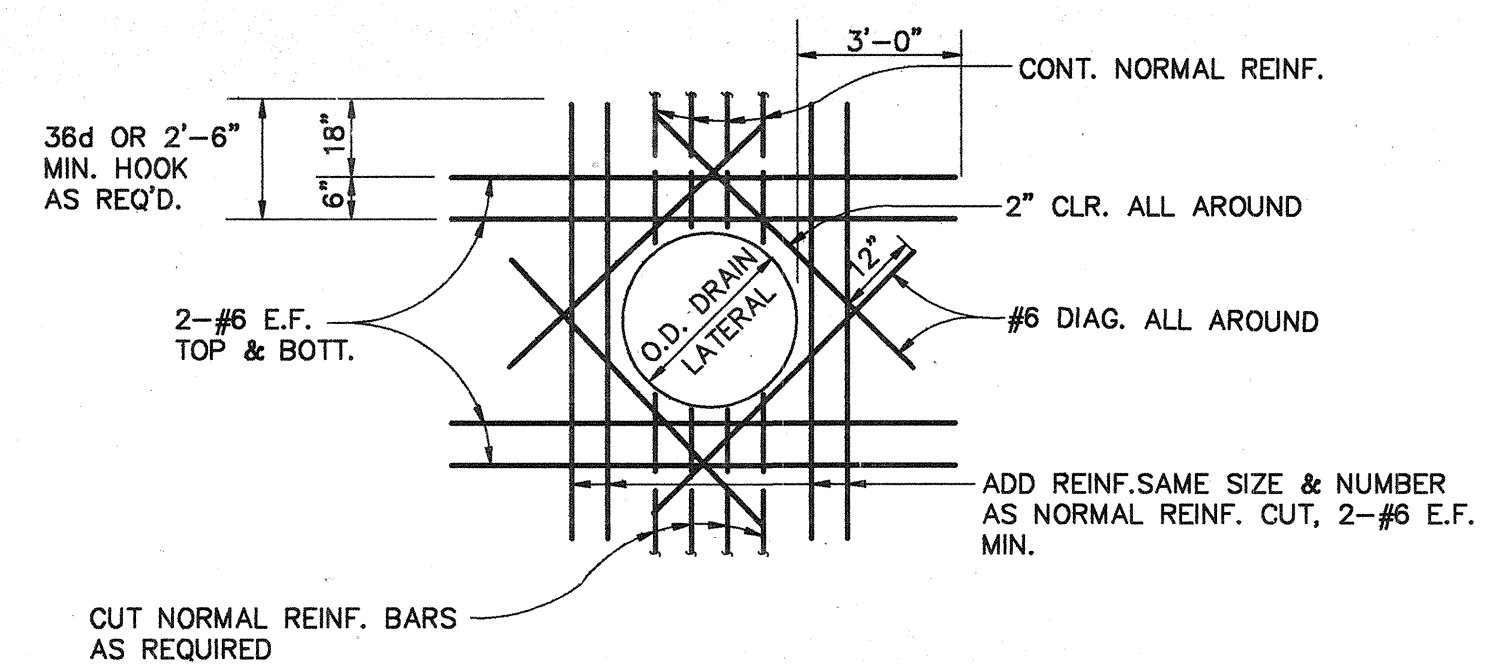
TYPICAL ELEVATION VIEW
CONSTRUCTION JOINT DETAIL

(MAX. SPACING 45')
NOT TO SCALE



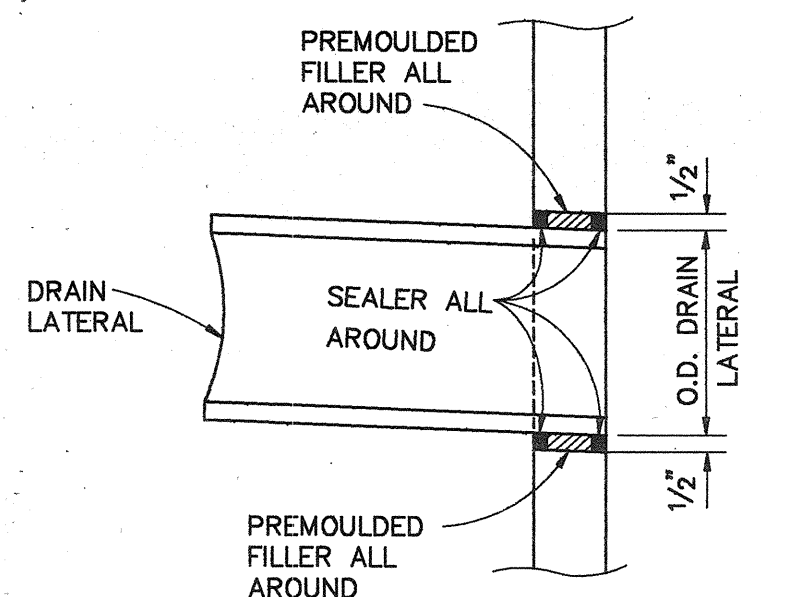
CUT-OFF WALL DETAIL

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



TYPICAL ADDITIONAL REINFORCING
FOR 24" AND 36" DRAIN LATERALS
AT 20'-0" x 10'-0" BOX CULVERT

N.T.S.



TYP. DRAIN LATERAL
CONN. TO BOX DRAIN

N.T.S.

APPROVED:

M. Fukagawa 11/8/91
CHIEF, DIVISION OF ENGINEERING, D.P.W. 6/DATE



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
FOR THE
HAWAIIAN ENGINEERING
AND ARCHITECTURE
FIRM, INC.
dpc PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

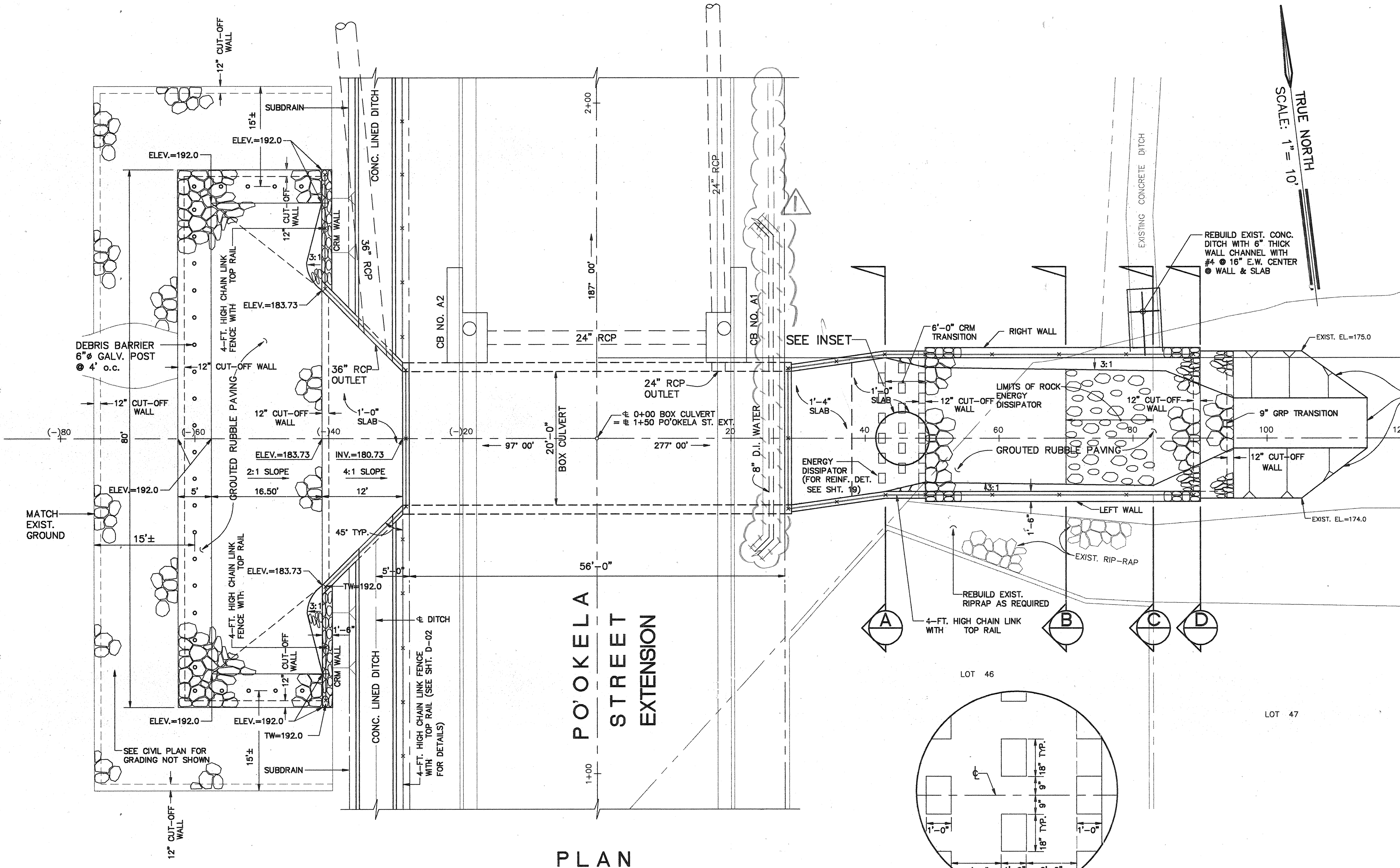
**20'-0" x 10'-0" BOX CULVERT
SECTIONS, DETAILS AND NOTES**

CASTLE HILLS ACCESS ROAD
PROJ. NO. HWY-0-05-91

SCALE: AS SHOWN DATE: JAN, 1991

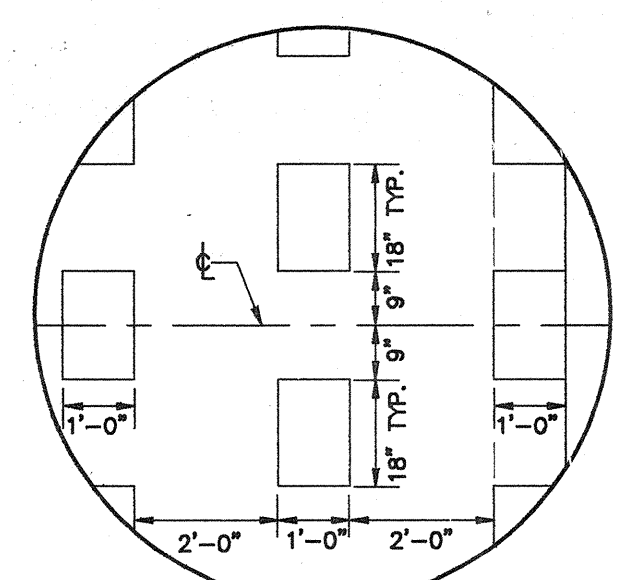
SHEET No. 1 OF 4 SHEETS

FED. ROAD DIS. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-05-91	1992	18	49



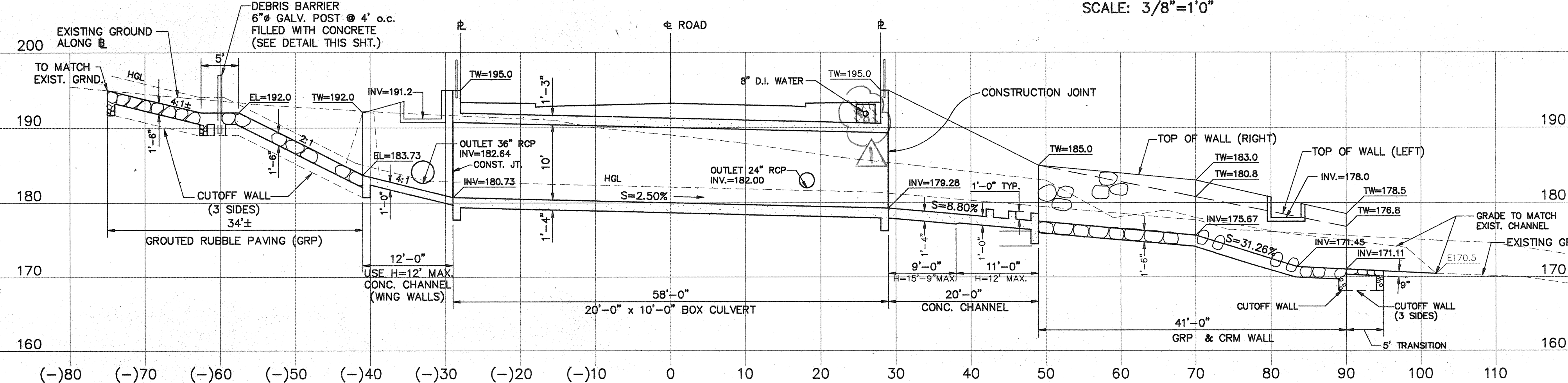
PLAN

SCALE: 1"= 10'



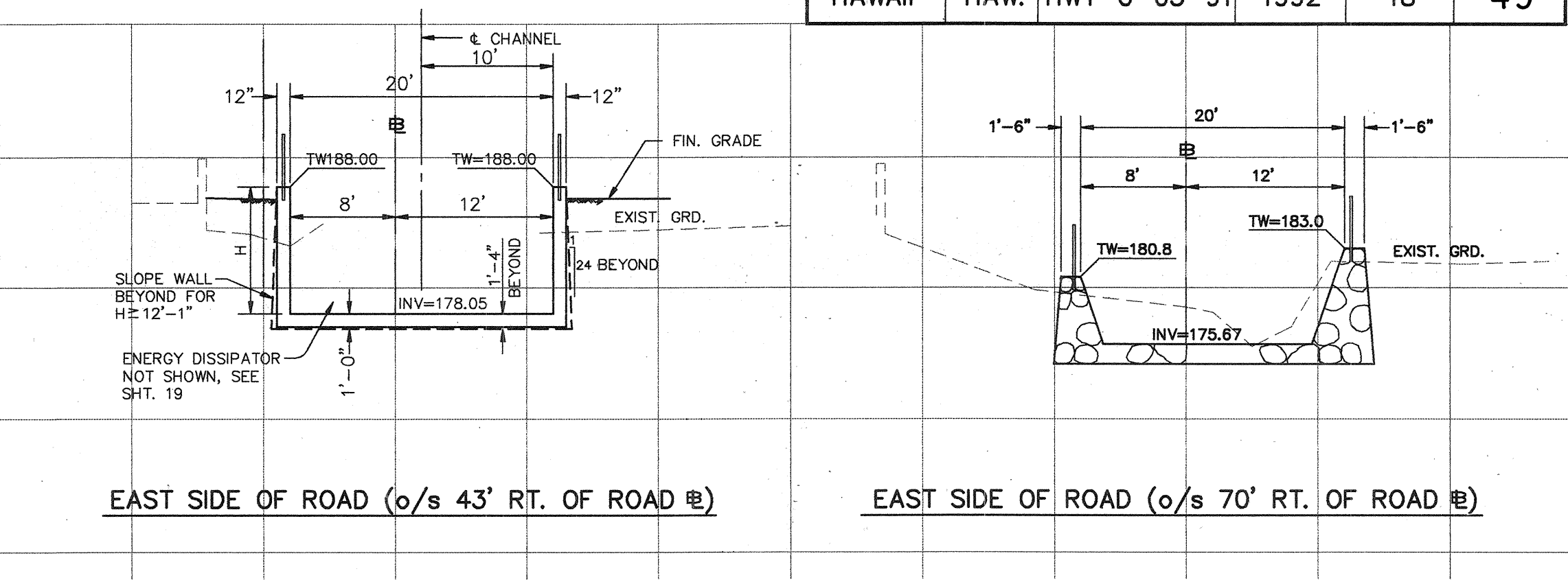
INSET

SCALE: 3/8"=1'0"



PROFILE

SCALE: 1"= 10'

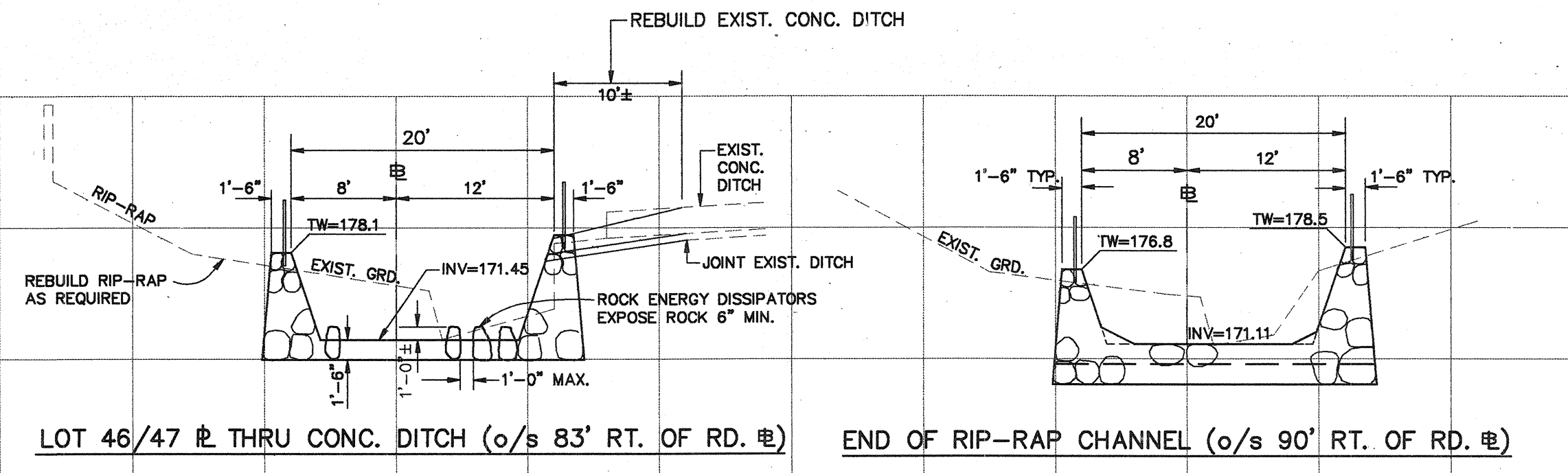


SECTION A

SCALE: 1"= 10'

SECTION B

SCALE: 1"= 10'

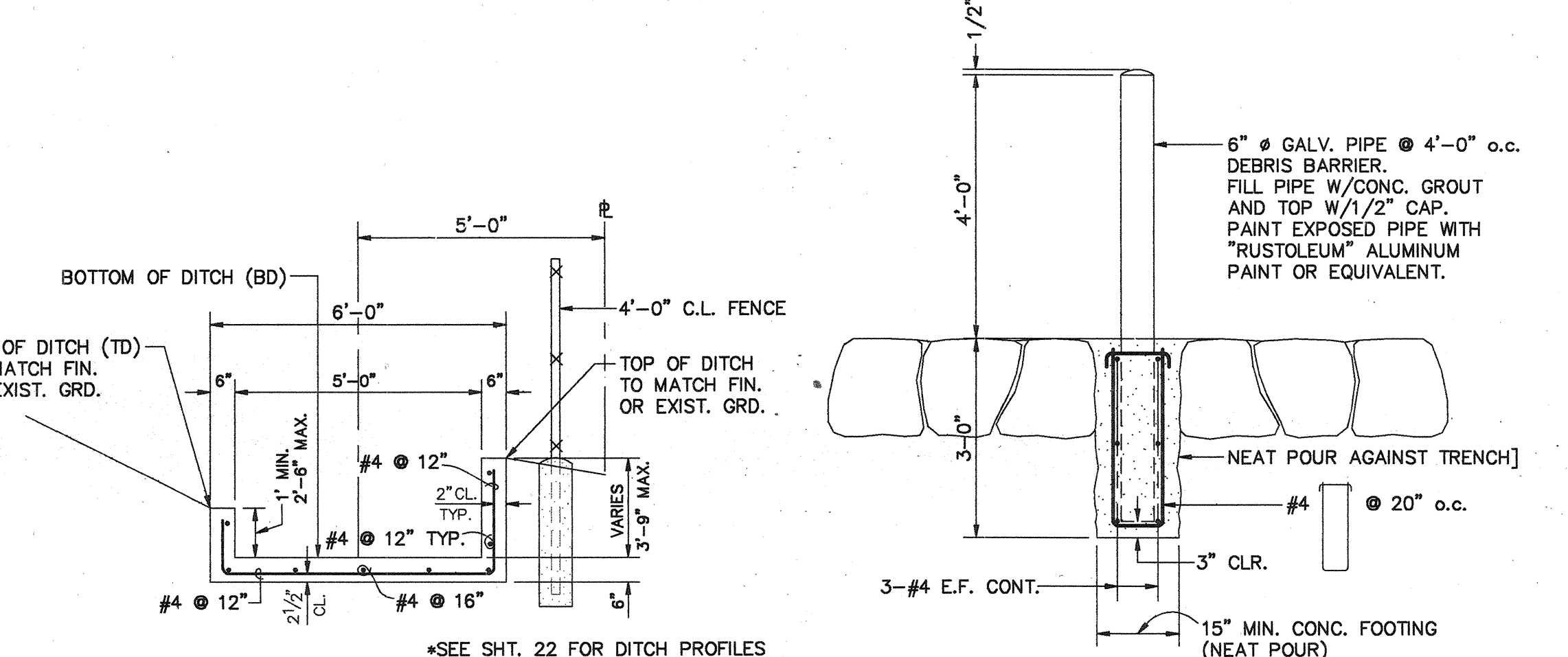


SECTION C

SCALE: 1"= 10'

SECTION D

SCALE: 1"= 10'



DETAIL-CONC. LINED DITCH

SCALE: 3/8"= 1'-0"

DETAIL- DEBRIS BARRIER

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

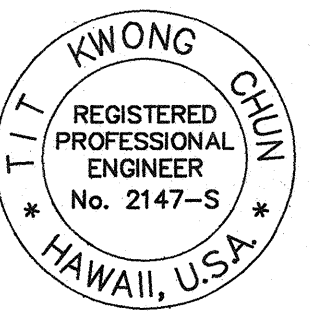
REVISION	DATE	REVISION	BY	APPROVED
1	12/16/91	REVISED 8" W.L.		

BOX CULVERT AND CHANNEL PLAN AND SECTIONS

CASTLE HILLS ACCESS ROAD
PROJ. NO. HWY-0-05-91

SCALE: AS SHOWN DATE: JAN, 1991

SHEET No. 2 OF 4 SHEETS

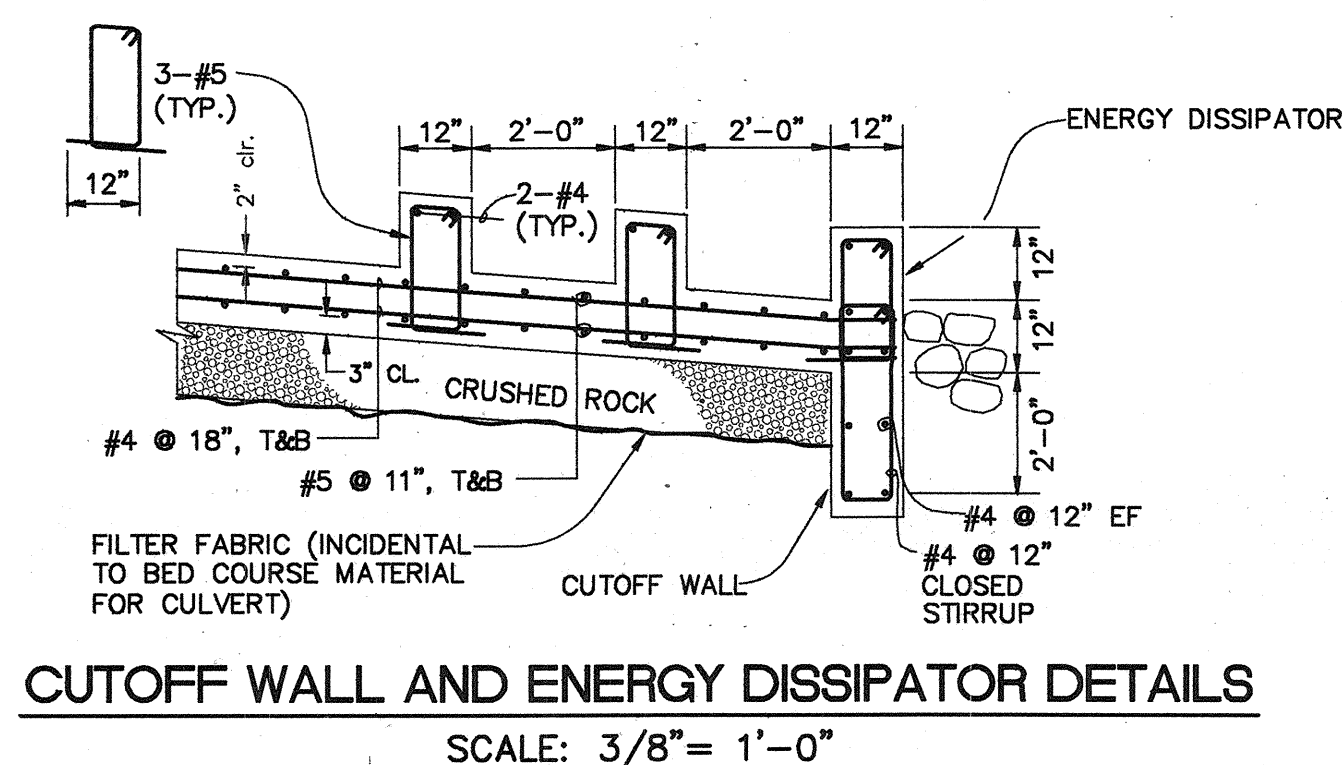
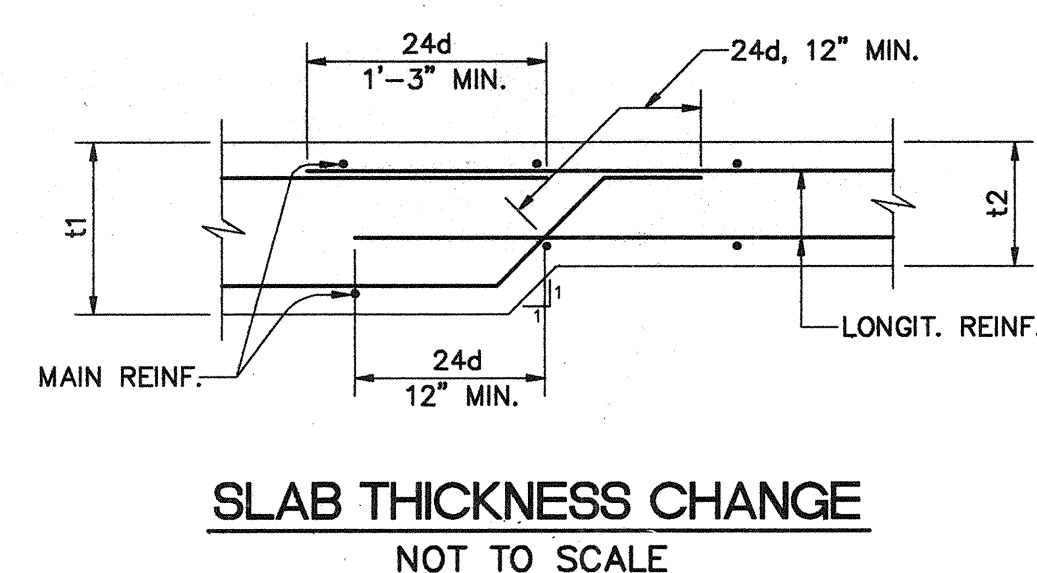
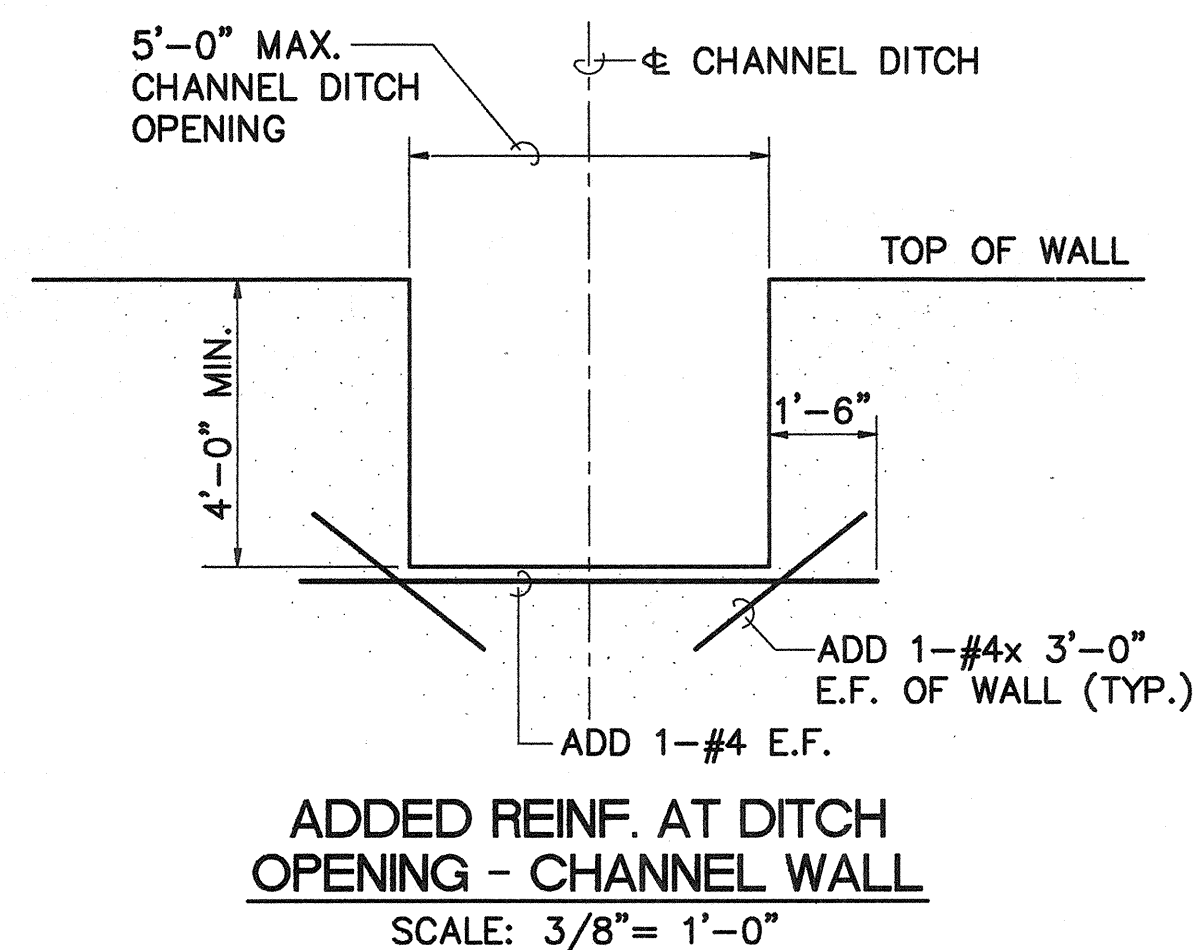
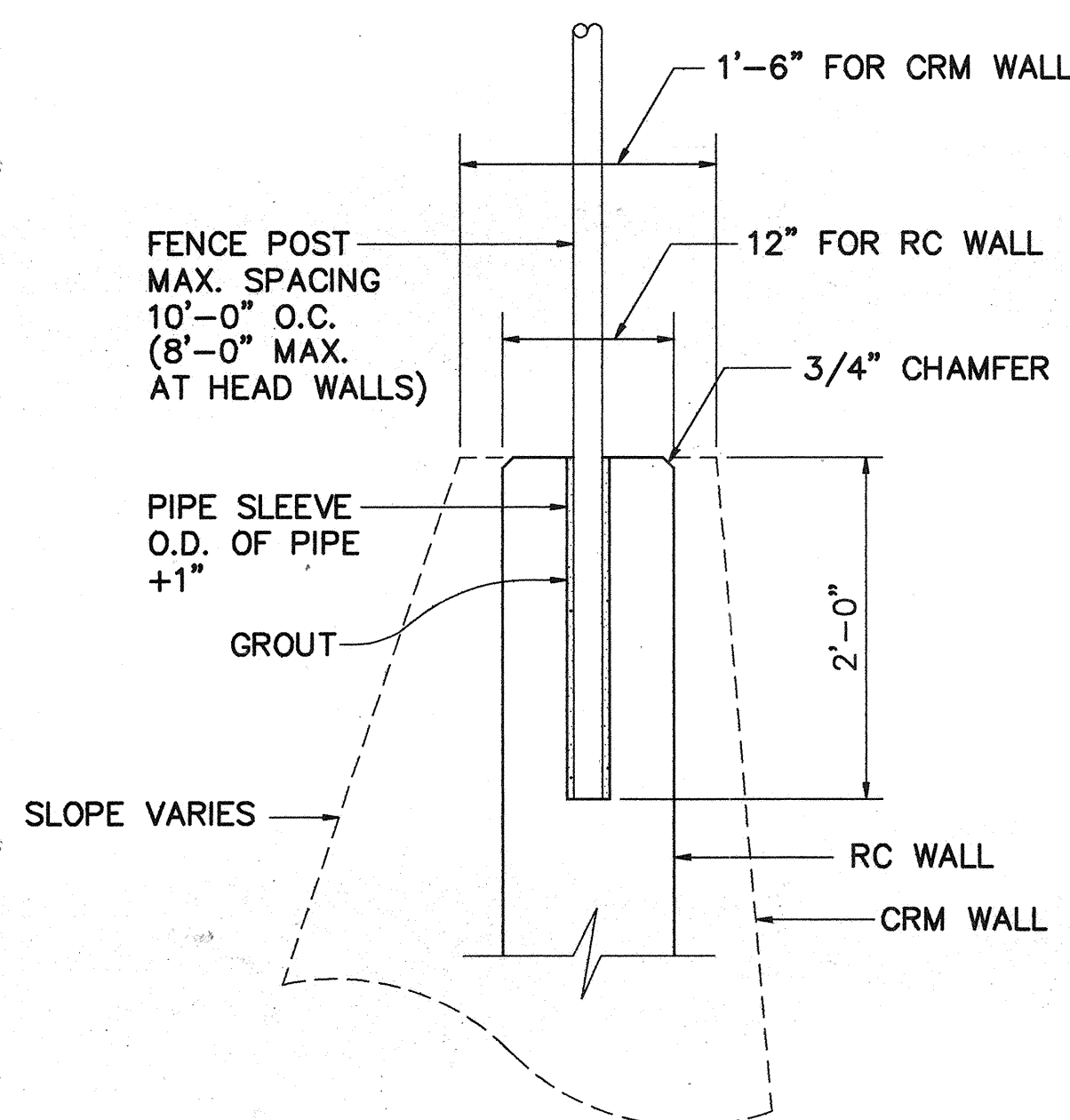
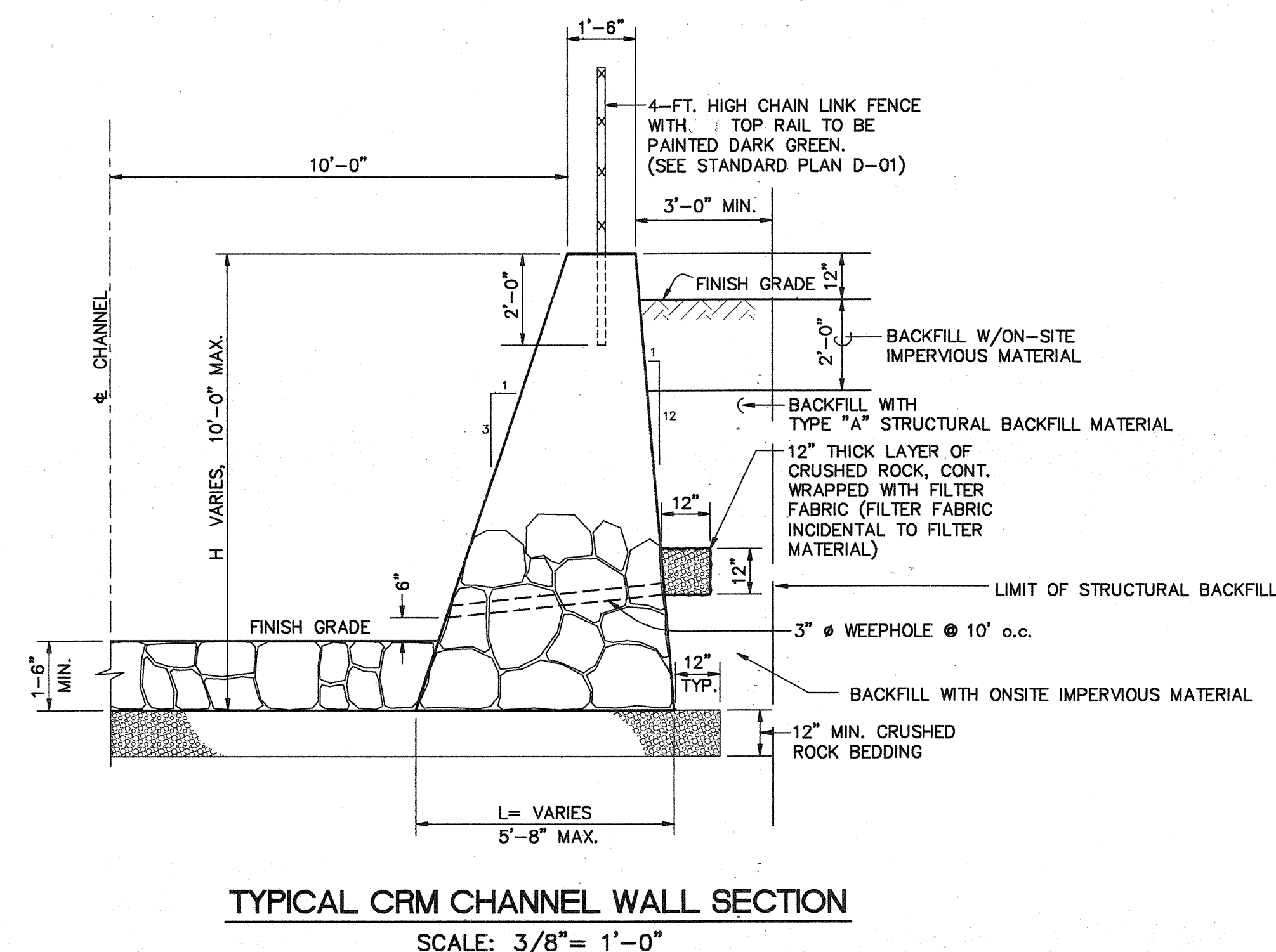
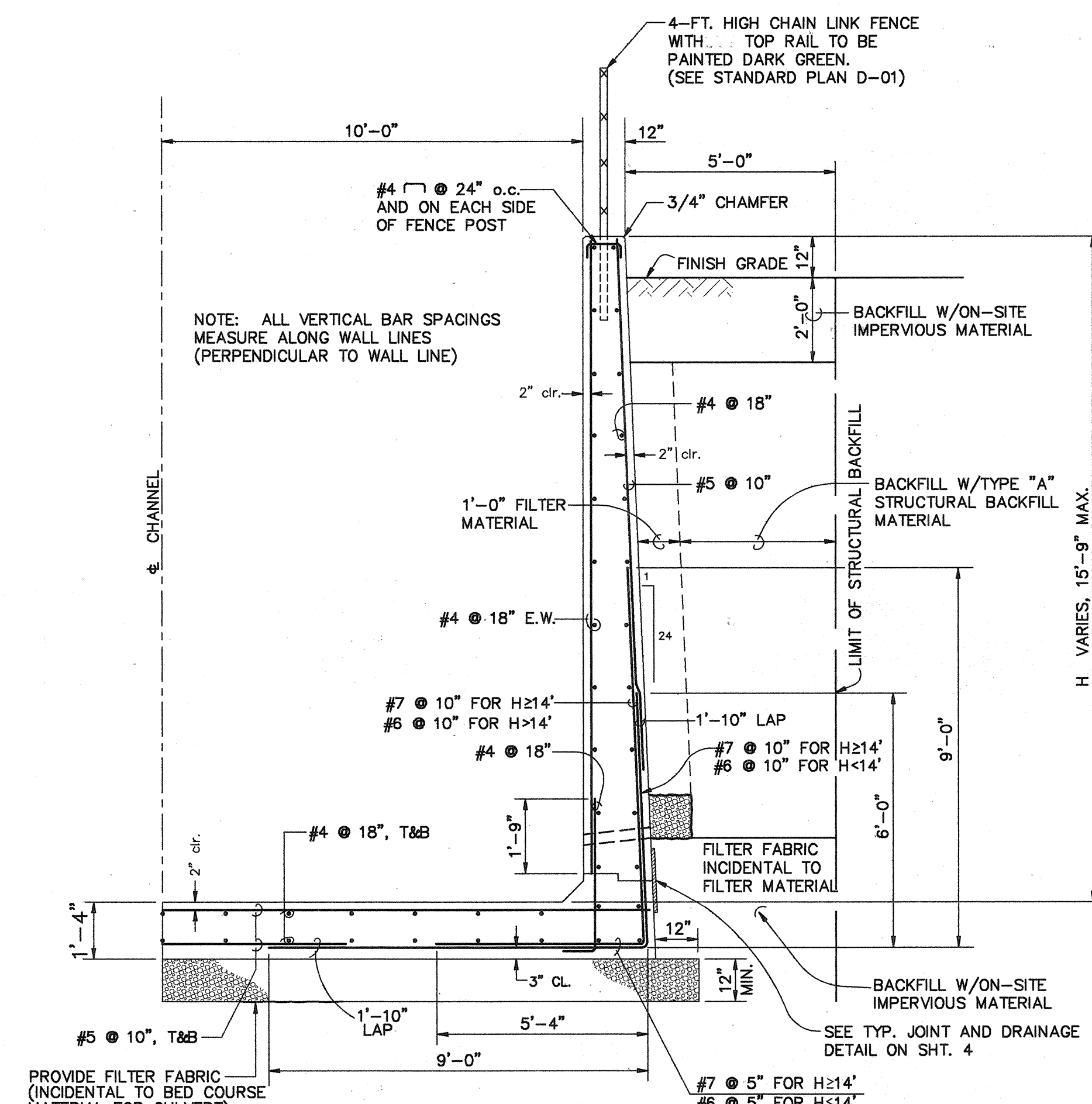
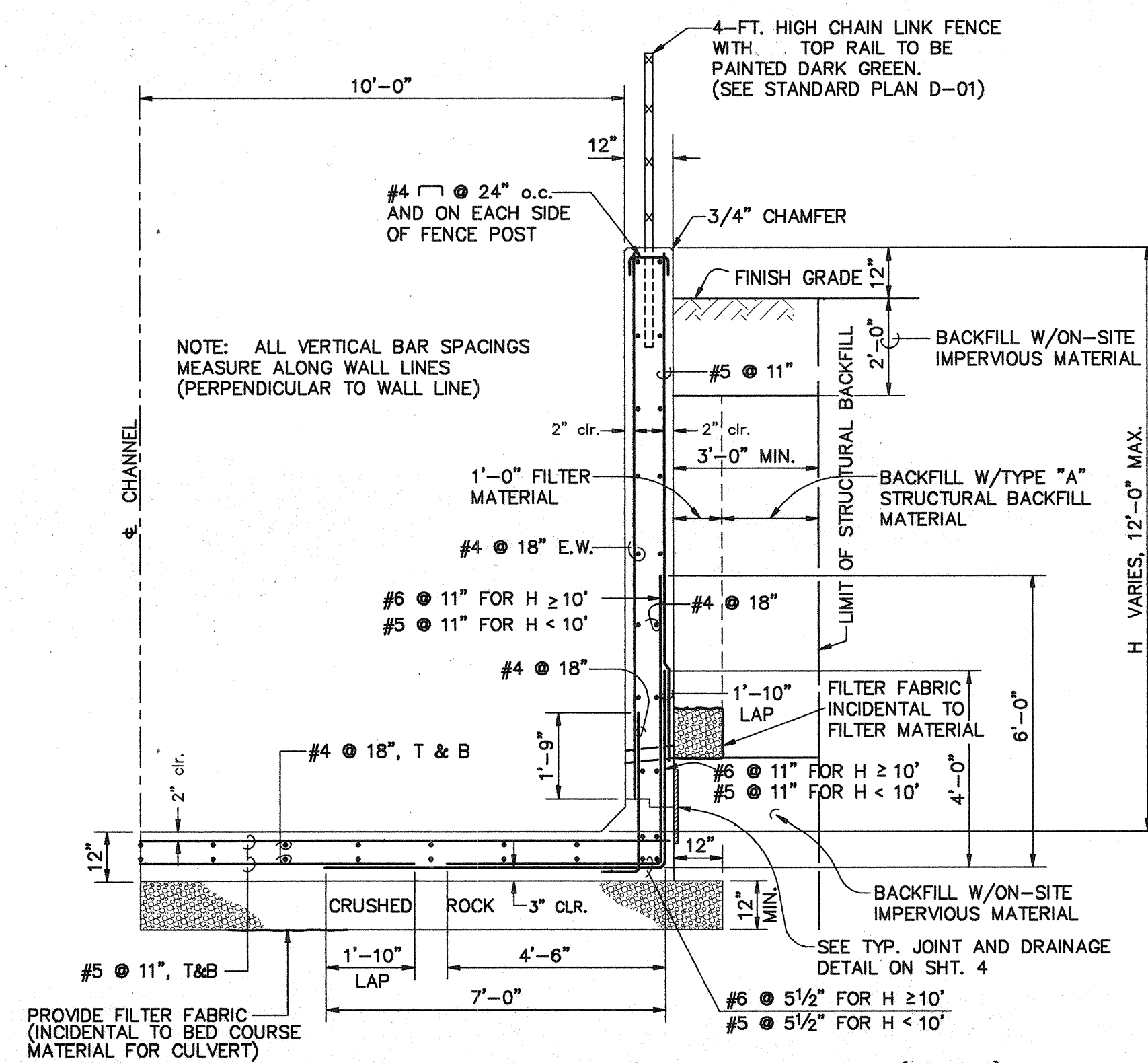


APPROVED:

M. Fukunaga 11/8/91
CHIEF, DIVISION OF ENGINEERING, D.P.W.

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
DATE 11/8/91
G.S. PARK ENGINEERING

FED. ROAD DIS. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-05-91	1992	19	49



APPROVED:

M. Zukerman 11/8/91
CHIEF, DIVISION OF ENGINEERING, D.P.W. , GS DATE

THIS WORK WAS PREPARED BY M
OR UNDER MY SUPERVISION

P. J. Long
PARK ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RC AND CRM CHANNEL
WALL SECTIONS
AND OTHER DETAILS

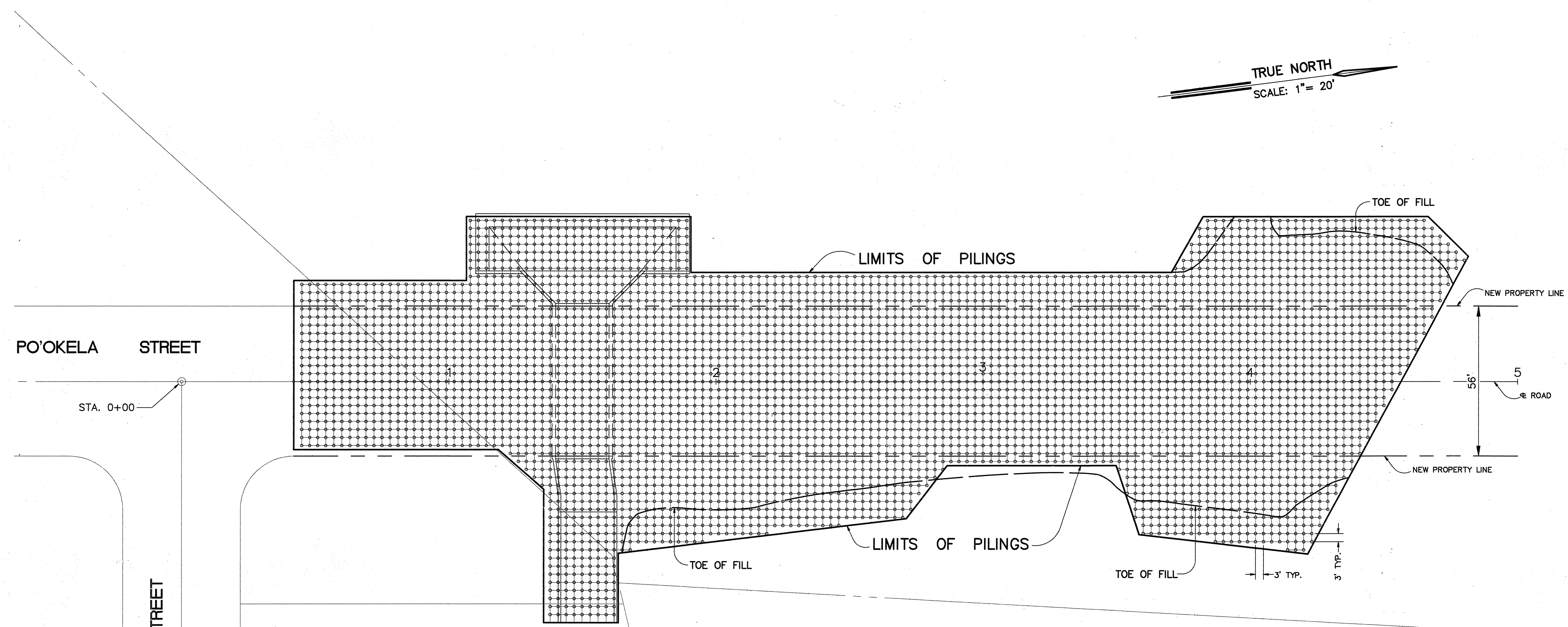
CASTLE HILLS ACCESS ROAD
PROJ. NO. HWY-0-05-91

SCALE: AS SHOWN DATE: JAN, 1991

SHEET No. 3 OF 4 SHEETS

ORIGINAL	SURVEY PLOTTED BY _____	DATE _____
PLAN	DRAWN BY _____	" _____
	TRACED BY _____	" _____
NOTEBOOK	DESIGNED BY _____	" _____
	QUANTITIES BY _____	" _____
No. _____	CHECKED BY _____	" _____

FED. ROAD DIS. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-05-91	1992	21	49



LEGEND:

- 12" DIA. GRAVEL COMPACTION PILING

NOTES:

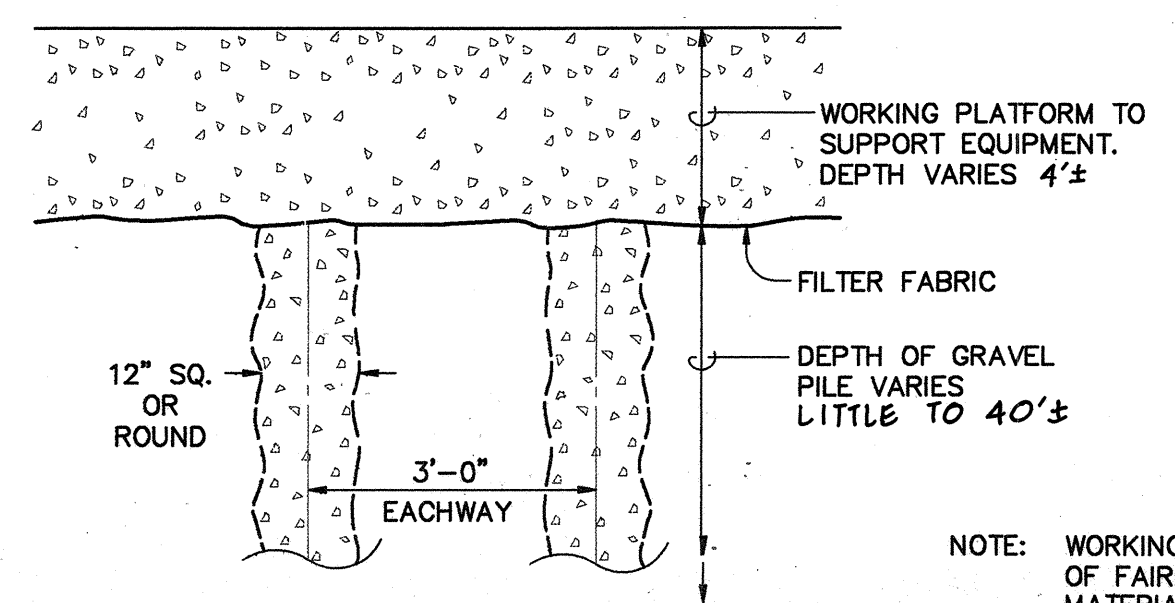
GRAVEL COMPACTION PILES SHALL BE INSTALLED BY DRIVING A 12-IN. SQUARE OR ROUND END MANDREL INTO THE SOFT SOILS TO FORM A HOLE DOWN TO STIFF (STANDARD PENETRATION TEST OF ABOUT 8 TO 15 BLOWS PER FOOT) UNDERLYING LAYERS.

ABOUT 50 CF OF AGGREGATE BASE COURSE ROCK (1 1/2-IN. TO 0-IN. SIZES) SHALL BE POURED INTO THE HOLE.

THE AGGREGATE BASE COURSE ROCK SHALL BE RAMMED INTO THE SOFT SOILS BY DRIVING THE MANDREL INTO THE AGGREGATE BASE COURSE ROCK WITH A 10,000 LB. FT-LB HAMMER UNTIL A RESISTANCE OF ABOUT 60 BLOW/FT OF PENETRATION IS DEVELOPED.

PLACING AND RAMMING AGGREGATE BASE COURSE ROCK INTO A HOLE SHALL BE REPEATED UNTIL THE HOLE IS FILLED UP TO ABOUT THE WORKING PLATFORM.

TO LESSEN DISTURBANCE TO ADJOINING PROPERTIES, THE PLACEMENT OF COMPACTION PILES SHALL GENERALLY BE SCHEDULED FROM THE OUTER ROW TOWARD THE CENTER.



NOTE: WORKING PLATFORM SHALL CONSIST OF FAIRLY WELL-GRADED GRANULAR MATERIAL, 1 1/2-INCH TO 0-INCH WITH LESS THAN 10% PASSING THE NO. 200 SIEVE.

GRAVEL COMPACTION PILING DETAIL
N.T.S.



APPROVED: (FOR GRADING ONLY)

M. Fujisawa 11/2/91
CHIEF, DIVISION OF ENGINEERING, D.P.W. GS DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Clarence K. Taniguchi
PAREN, INC.
CIVIL ENGINEERING

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GRAVEL COMPACTION PILING PLAN

CASTLE HILLS ACCESS ROAD
PROJ. NO. HWY-0-05-91

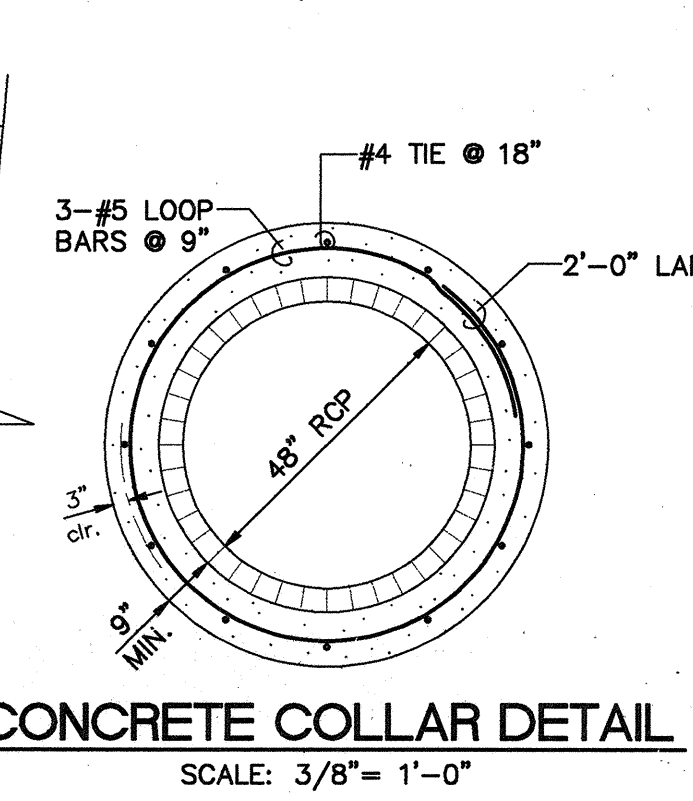
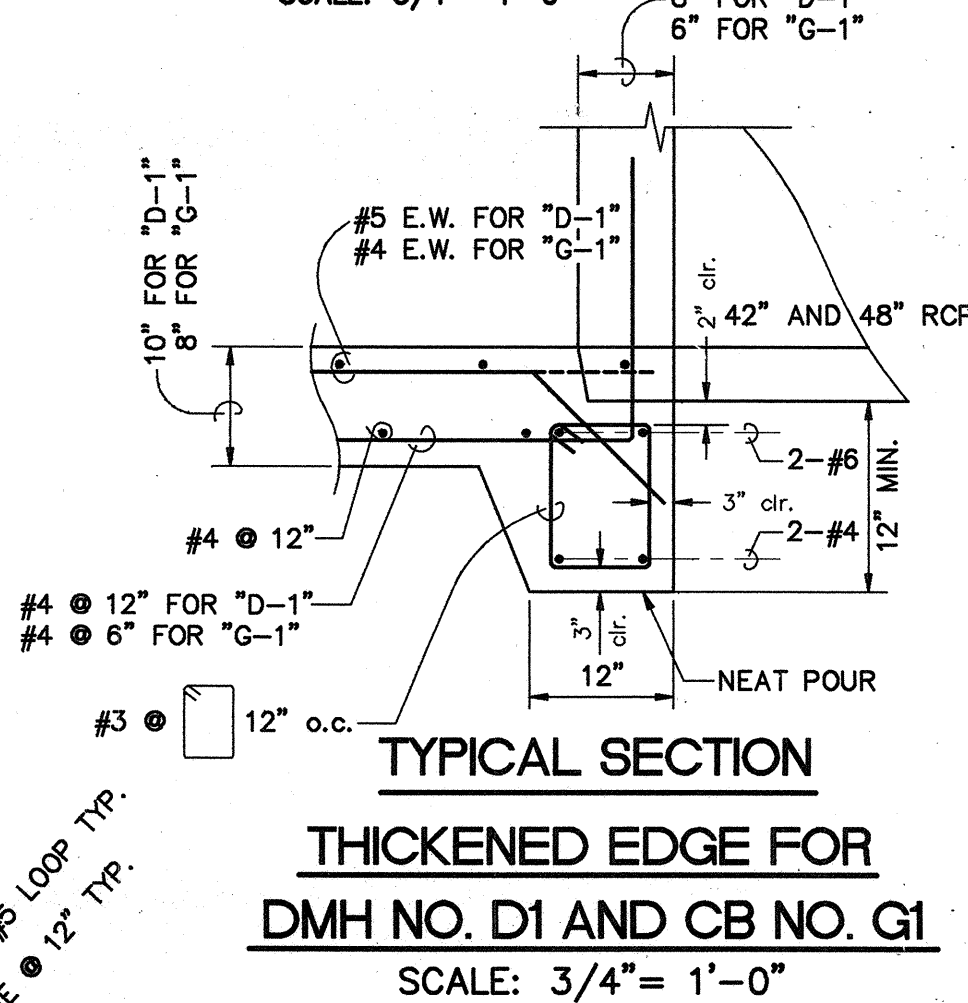
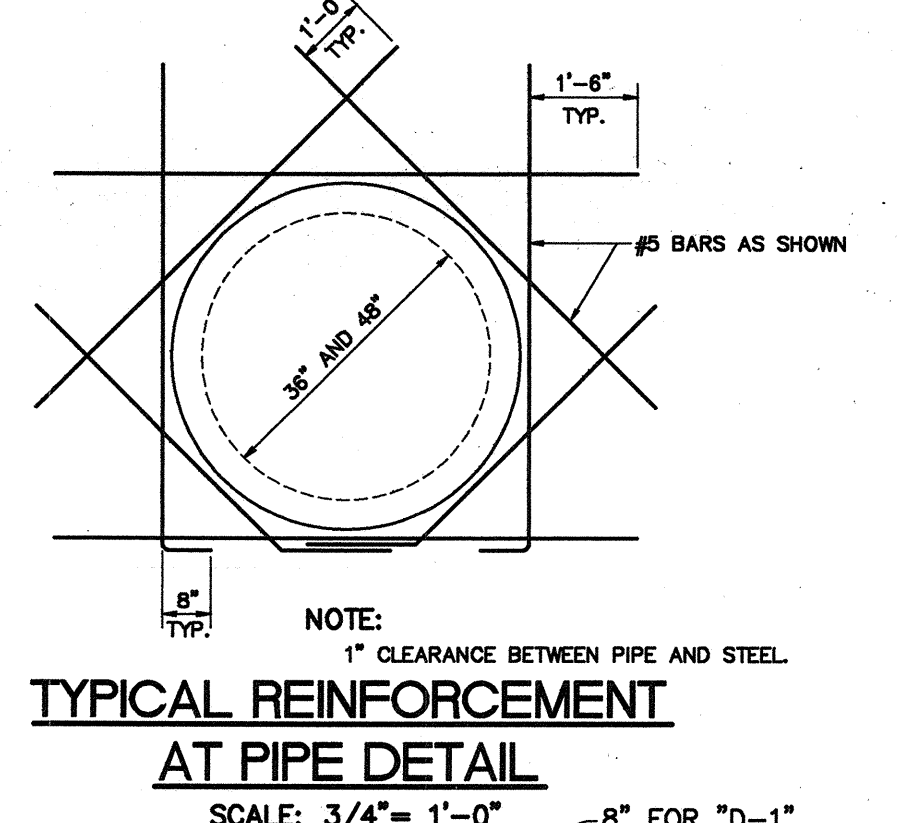
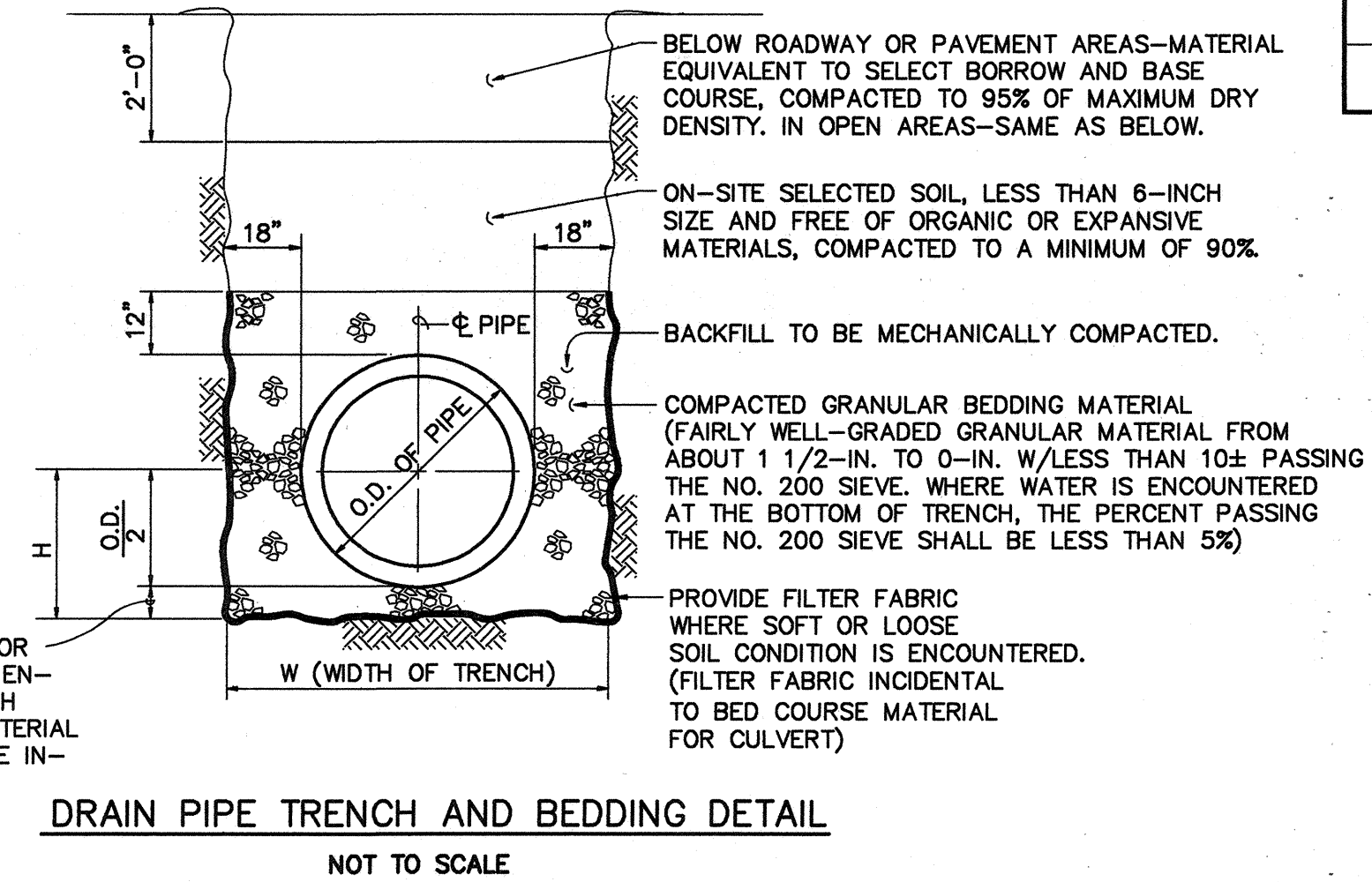
SCALE: AS SHOWN DATE: MARCH, 1991

SHEET No. 1 OF 1 SHEETS

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
REVISIONS	
1.	
2.	
3.	
4.	
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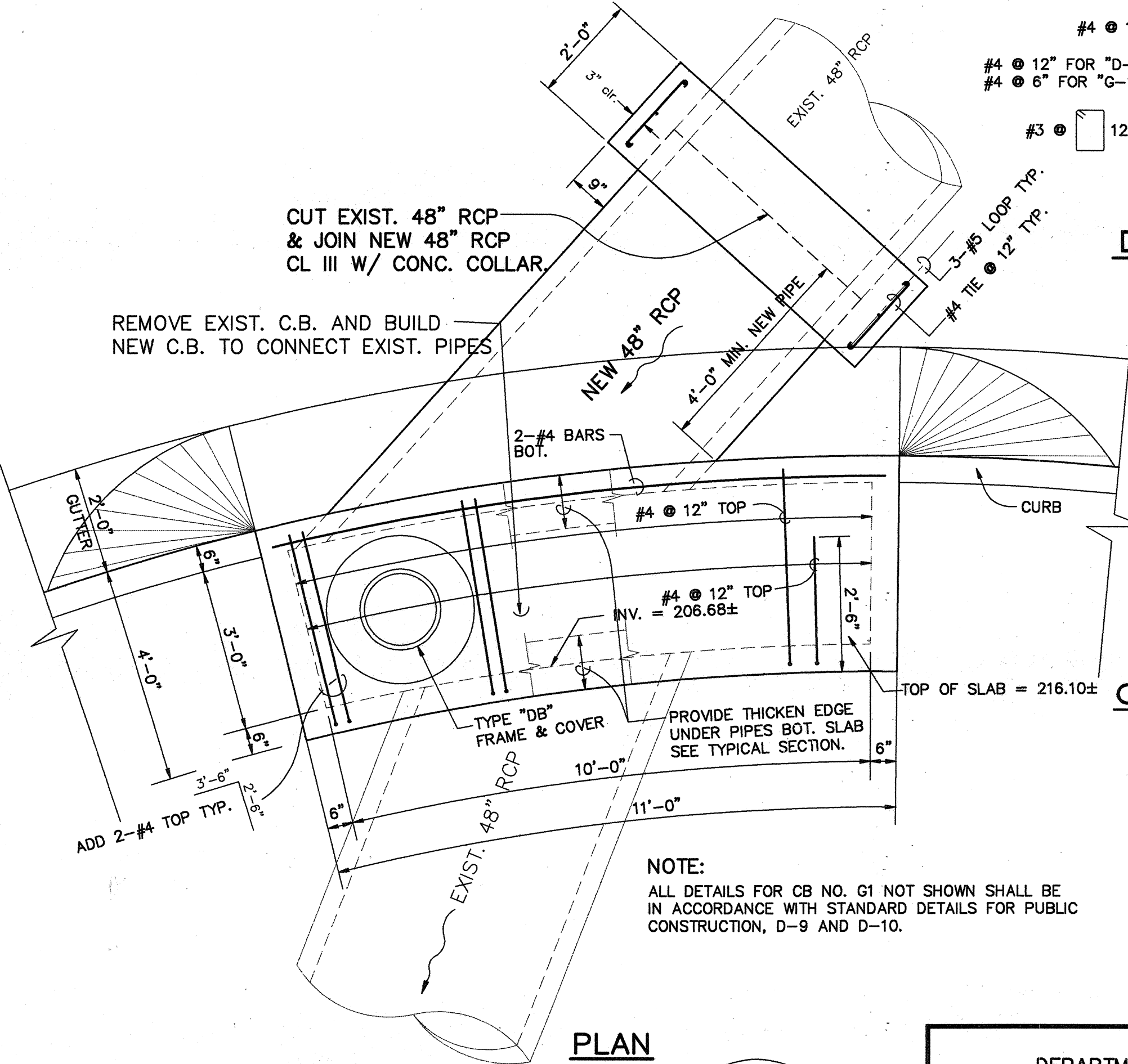
E:\CASI51\GRAVPILE 9/28/91

FED. ROAD DIS. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-05-91	1992	23	49



PIPE SIZE	W(in.)	H(in.)
18"	54	18
24"	60	21
30"	66	25
36"	72	28
42"	78	32

6" MINIMUM, WHERE SOFT OR LOOSE SOIL CONDITION IS ENCOUNTERED IN THE TRENCH BOTTOM, THE BEDDING MATERIAL BELOW THE PIPE SHALL BE INCREASED TO 18".

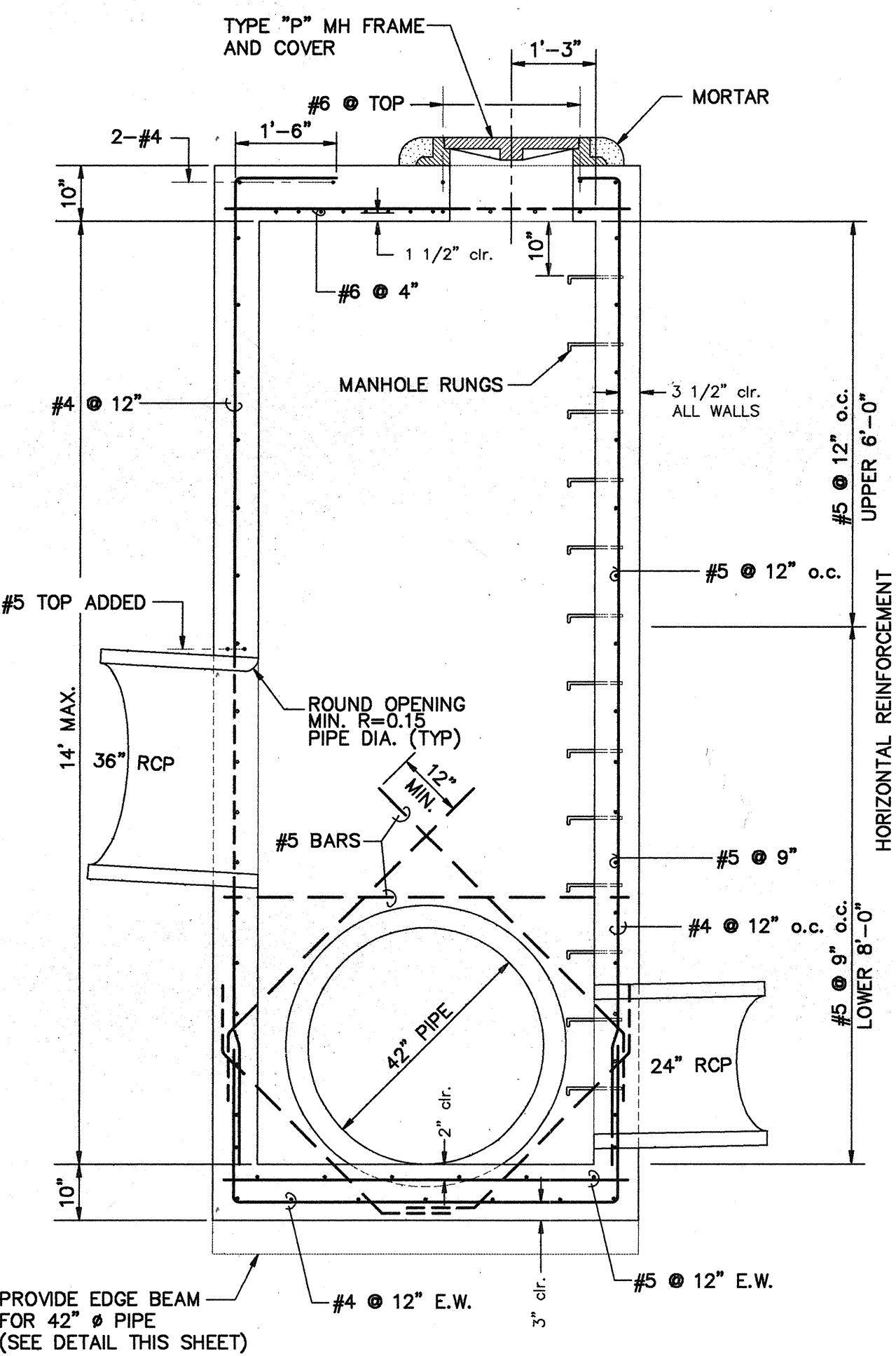
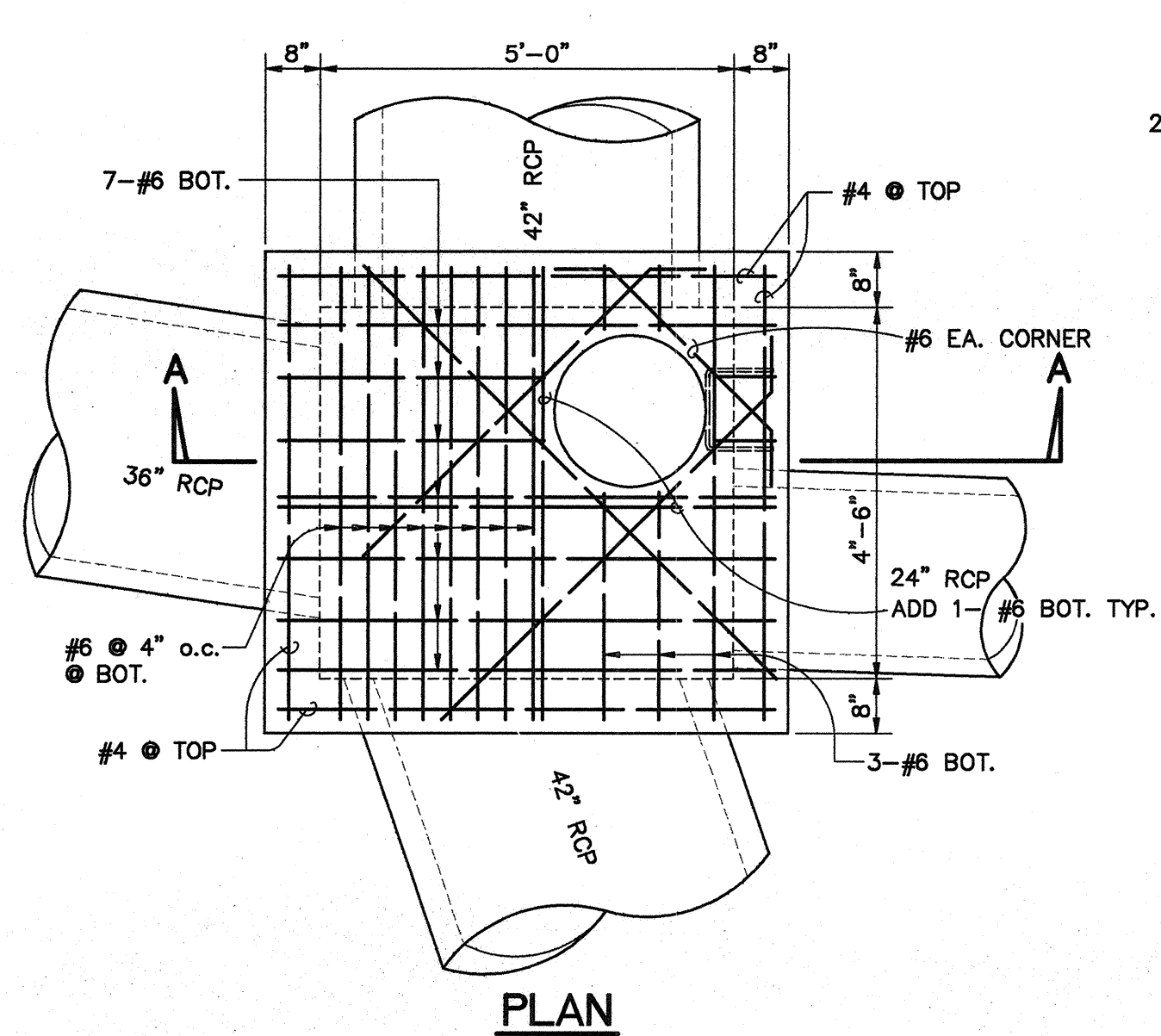


CATCH BASIN NO. G1
AT STA. 3+30 PO'OKELA ST.
SCALE: 1/2" = 1'-0"

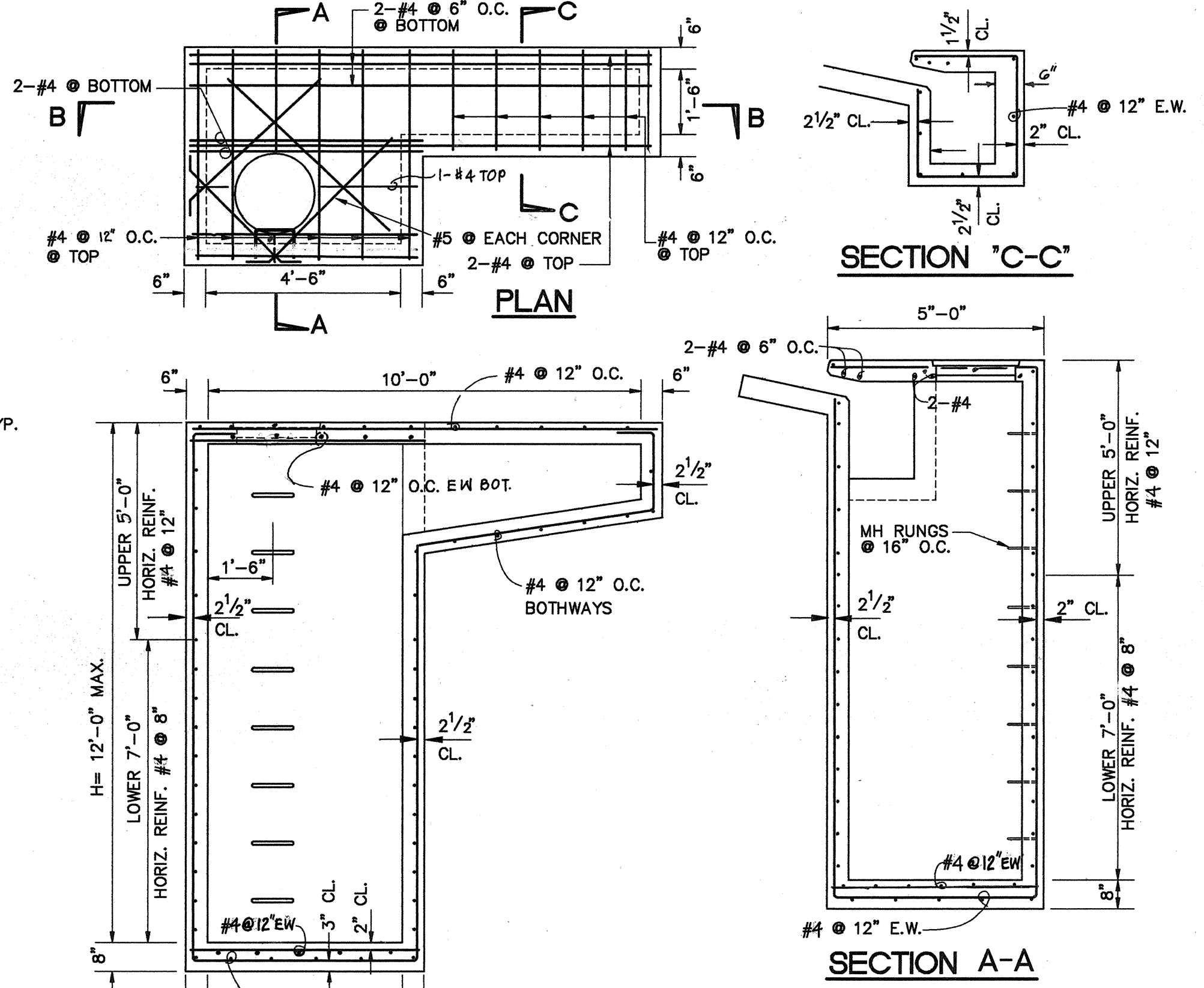
APPROVED:
M. Fubogawa 11/8/91
CHIEF, DIVISION OF ENGINEERING, D.P.W.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
REGISTERED ENGINEER
No. 2147-S
HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
DATE: 11/8/91

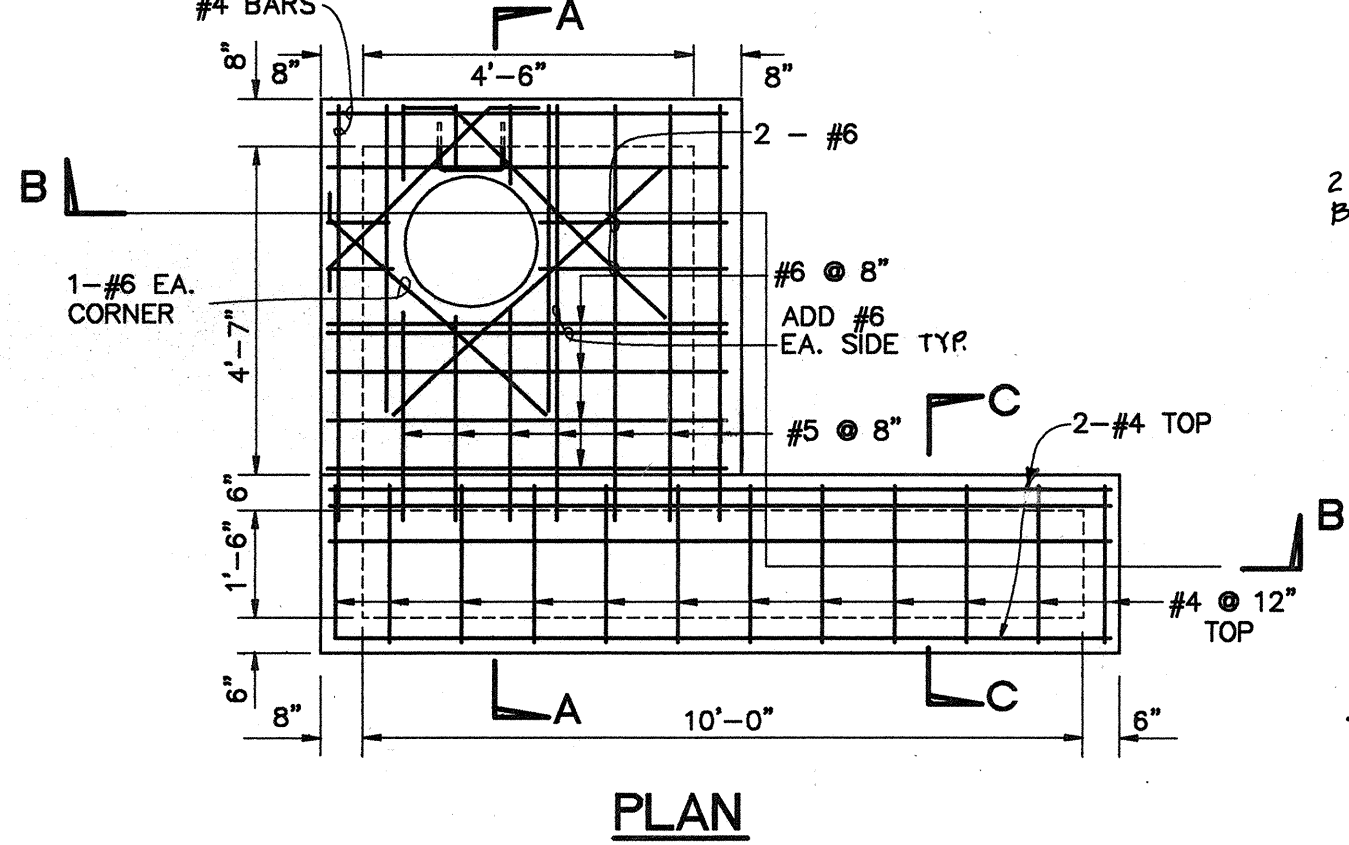
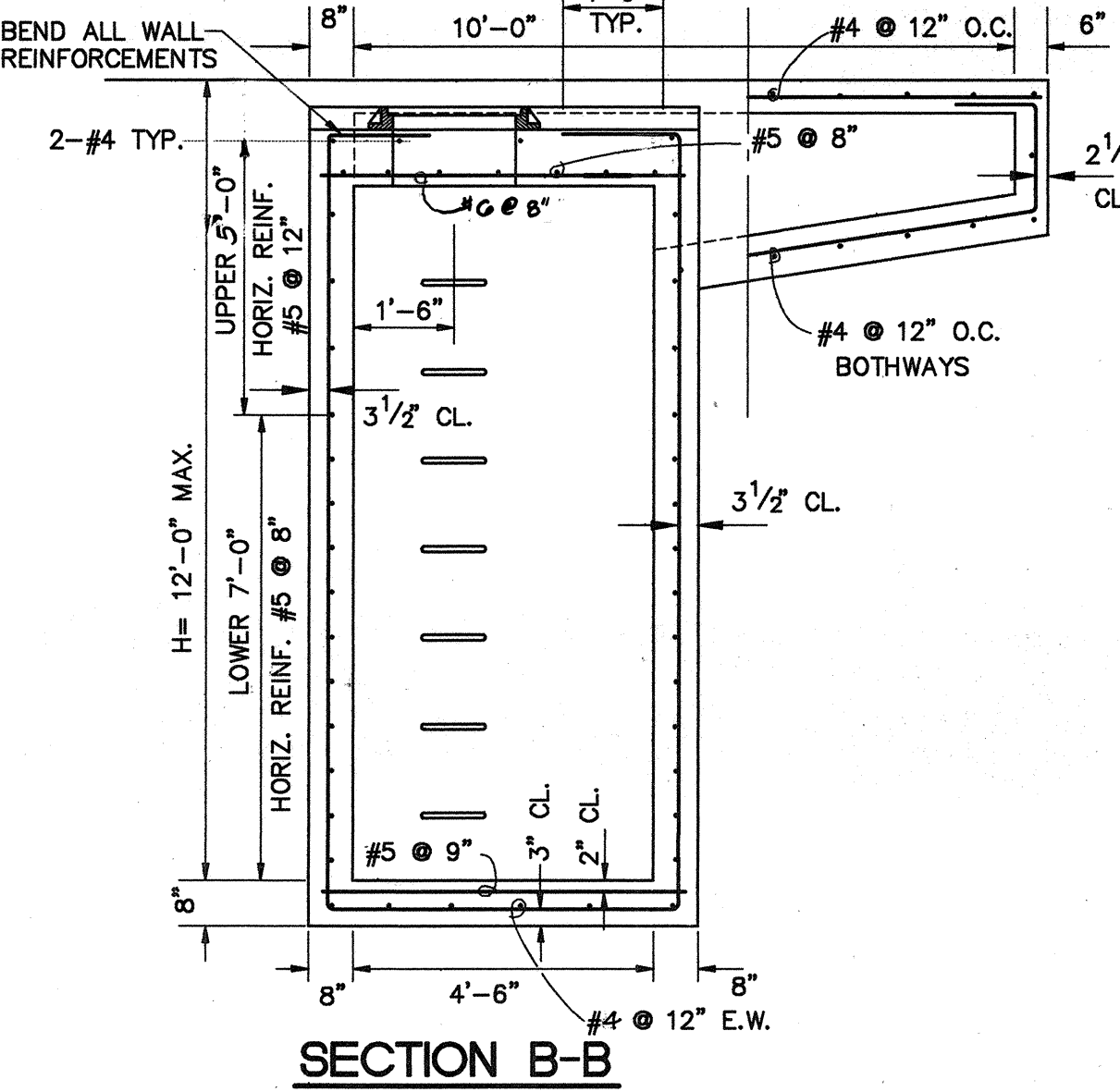
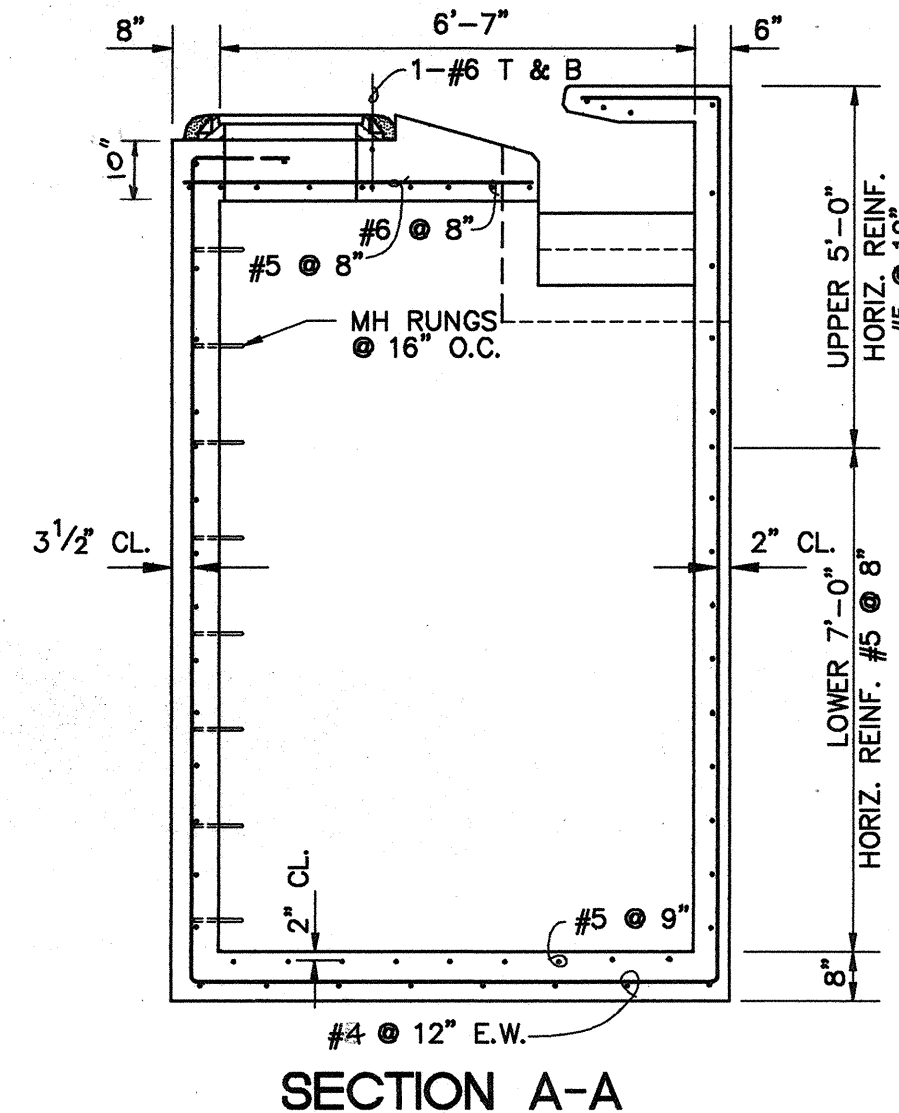
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE DETAILS
CASTLE HILLS ACCESS ROAD
PROJ. NO. HWY-0-05-91
SCALE: AS SHOWN DATE: MARCH, 1991
SHEET No. 1 OF 2 SHEETS



SECTION A-A
DRAIN MANHOLE NO. D1
AT STA. 20+05 (15' o/s RT.)
SCALE: 1/2" = 1'-0"



TYPE "A" CATCH BASIN
CB NOS. "A2" AND "B5"
SCALE: 3/8" = 1'-0"



TYPE "B" CATCH BASIN
CB NOS. "A1" AND "B4"
SCALE: 3/8" = 1'-0"

DATE: 10/16/91
SURVEY PLOTTED BY: AMM
DESIGNED BY: AMM
CHECKED BY: AMM
ORIGINAL PLAN: AMM
NOTEBOOK: AMM

1	7/20/92	REVISED WALL HEIGHT, FOOTING & REINF, HEADWALL #2, & DELETE INLET F2.	TKC	8-10-92 DOE
REVISION	DATE	DESCRIPTION	ENGR.	APPROVED

C.O. 24