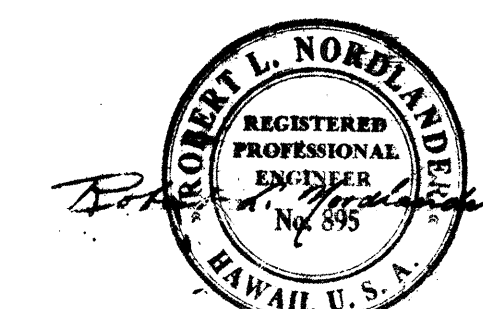


NOTE:
FOR CATCH BASIN DETAILS
SEE STANDARD DETAILS

SUMMARY OF DRAINAGE PIPE ALTERNATES											
FROM	TO	LENGTH	ALTERNATE A REINF. CONC. PIPE	ALTERNATE B METAL PIPE	FROM	TO	LENGTH	ALTERNATE A REINF. CONC. PIPE	ALTERNATE B METAL PIPE	FROM	TO
CB 42	CB 41	48'	24" E.F.	24" -14 ga.	MH 30	MH 31	81.5'	24" E.F.	24" -14 ga.		
GREEN	CB 41	80'	36" S.S.	42" -12 ga.	MH 31	CB 64	131.7'	24" E.F.	24" -14 ga.		
CB 41	MH 21	174'	36" S.S.	42" -12 ga.	CB 63	CB 64	62.5'	24" E.F.	24" -14 ga.		
MH 21	CB 44	103'	36" E.F.	42" -12 ga.	CB 64	CB 65	44.2'	24" E.F.	24" -14 ga.		
CB 43	CB 44	42.7'	24" E.F.	24" -14 ga.	CB 65	MH 20	222.8'	24" E.F.	24" -14 ga.		
CB 44	CB 45	200'	36" E.F.	36" -12 ga.	MH 20	CDI 7	13'	24" E.F.	24" -14 ga.		
CB 46	CB 45	43.5'	24" E.F.	24" -14 ga.	MH 20	CB 90	41'	24" E.F.	24" -14 ga.		
CB 45	CB 47	279.3'	30" S.S.	36" -12 ga.	CB 64	CB 58	222.5'	24" E.F.	30" -14 ga.		
CB 48	CB 47	43'	24" E.F.	24" -14 ga.	CB 57	CB 58	44.2'	24" E.F.	24" -14 ga.		
CB 47	MH 22	148.57'	30" E.F.	36" -12 ga.	CB 58	MH 27	19.6'	24" E.F.	24" -14 ga.		
CB 40	MH 22	29.5'	24" S.S.	24" -14 ga.	MH 27	CB 56	44.3'	24" S.S.	24" -14 ga.		
MH 22	CB 90	21'	30" S.S.	36" -12 ga.	CB 56	MH 28	20'	24" E.F.	24" -14 ga.		
CDI 5	CB 50	22'	18" S.S.	18" -16 ga.	MH 28	CB 55	60'	24" S.S.	24" -14 ga.		
CB 50	MH 23	234.5'	24" E.F.	30" -14 ga.	MH 27	CB 54	98'	24" S.S.	24" -14 ga.		
CB 51	MH 23	19'	24" E.F.	24" -14 ga.	CB 54	MH 26	181'	24" S.S.	24" -14 ga.		
MH 23	MH 24	115'	24" E.F.	30" -14 ga.	MH 26	CB 52	108.2'	24" E.F.	24" -14 ga.		
MH 24	CB 83	260'	24" S.S.	30" -14 ga.	CB 54	CB 53	45.2'	24" E.F.	24" -14 ga.		
CB 83	MH 40	40'	24" S.S.	30" -14 ga.	CB 53	MH 25	50.2'	24" E.F.	24" -14 ga.		
MH 40	MH 41	7.5'	24" S.S.	30" -14 ga.	MH 25	CDI 6	52.1'	24" S.S.	24" -14 ga.		
UH 41	CB 86	68'	24" S.S.	30" -14 ga.	CB 64	CB 67	180'	36" S.S.	36" -12 ga.		
CB 86	UH 42	72'	24" S.S.	24" -14 ga.	CB 67	CB 68	48'	24" E.F.	24" -14 ga.		
MH 42	CB 88	143'	24" S.S.	24" -14 ga.	CB 68	CB 69	54'	24" E.F.	24" -14 ga.		
CB 88	MH 43	100'	24" S.S.	24" -14 ga.	CB 68	CB 66	75'	24" E.F.	24" -14 ga.		
CB 80	MH 43	60'	24" E.F.	24" -14 ga.	CB 67	MH 34	195.4'	36" S.S.	36" -12 ga.		
UH 43	CB 90	45'	24" S.S.	24" -14 ga.	MH 34	CB 70	43'	24" E.F.	24" -14 ga.		
CB 90	CB 91	24'	24" E.F.	24" -14 ga.	CB 71	CB 71	46.1'	36" S.S.	36" -12 ga.		
CB 92	CB 91	37'	24" E.F.	24" -14 ga.	CB 71	CB 72	75'	24" E.F.	24" -14 ga.		
CB 91	MH 44	90'	24" S.S.	24" -14 ga.	CB 71	CB 73	202.5'	36" S.S.	42" -12 ga.		
UH 44	CB 93	160'	24" S.S.	24" -14 ga.	CB 73	CB 74	90'	24" E.F.	24" -14 ga.		
CB 93	CB 94	145'	24" S.S.	24" -14 ga.	CB 73	DITCH	226'	36" S.S.	42" -12 ga.		
CB 94	CB 95	102'	24" E.F.	24" -14 ga.	CDI 1 (TEMP. CONC.)	MH 35 (TEMP. CONC.)	254'	24" E.F.	24" -14 ga.		
CB 87	CB 85	200'	24" S.S.	24" -14 ga.	CDI 1 (TEMP. CONC.)	MH 35 (TEMP. CONC.)	100'	18" E.F.	18" -16 ga.		
CB 85	MH 33	150'	24" S.S.	24" -14 ga.	CB 61	Ext. MH	166'	24" E.F.	24" -14 ga.		
CB 84	MH 30	70.2'	24" S.S.	24" -14 ga.	CB 82	MH 38	32.2'	24" E.F.	24" -14 ga.		
MH 30	CB 60	74'	24" E.F.	24" -14 ga.	CB 61	MH 31	15.5'	24" S.S.	24" -14 ga.		
CB 60	MH 30	107.4'	24" S.S.	24" -14 ga.							
MH 30	MH 32	74.5'	24" S.S.	24" -14 ga.							
MH 32	MH 33	32'	24" S.S.	24" -14 ga.							
CB 62	MH 33	22'	24" S.S.	24" -14 ga.							

NOTE:
See Sheets No.
5983.2E & 5984.2I

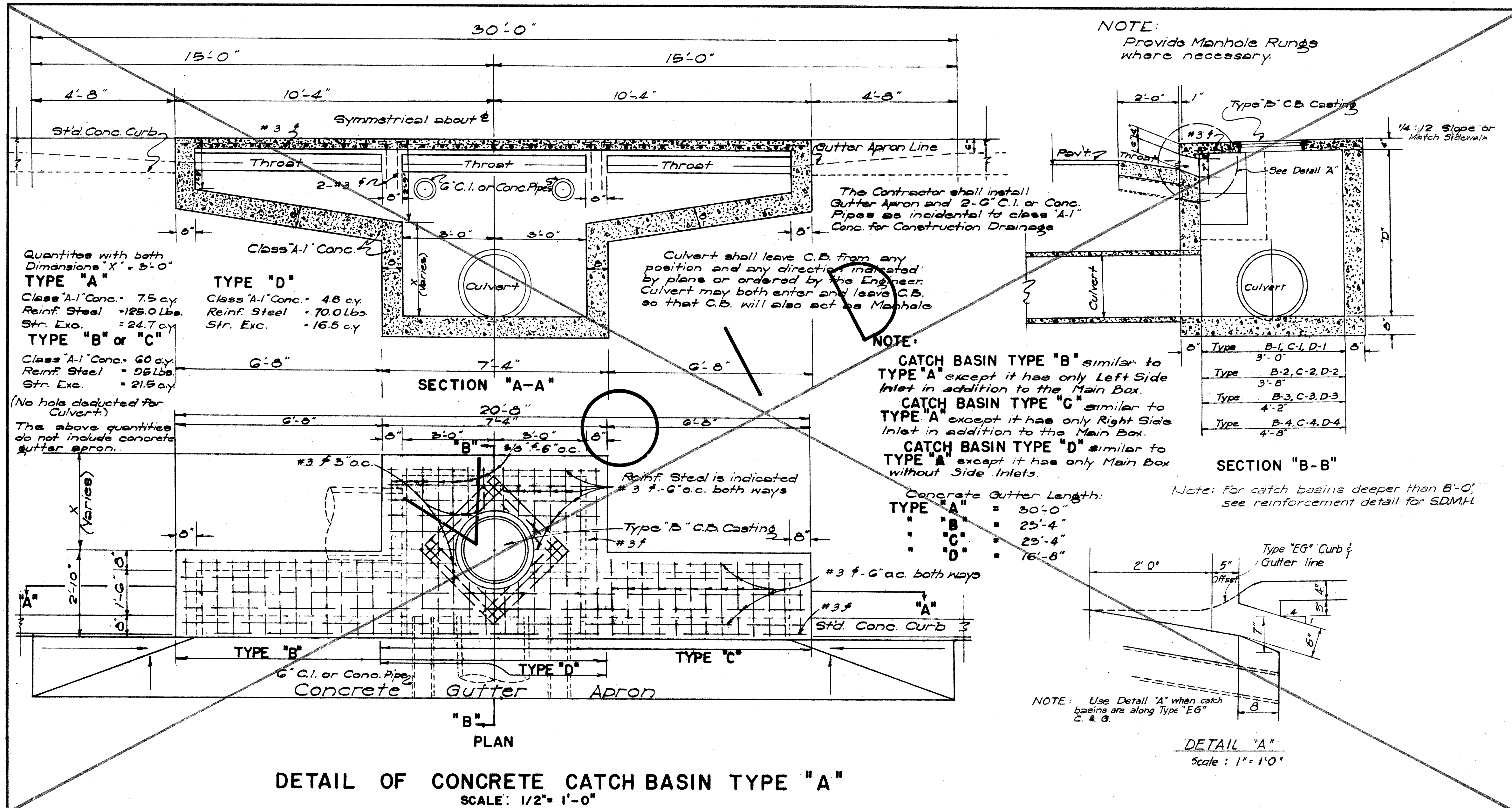


BELT, COLLINS & ASSOC., LTD.
Civil and Structural Engineers

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

STORM DRAIN DETAILS
CATCH BASINS

LUNALILO FREEWAY U-072-1(7) UNIT 3
KALIHI STREET US0630(2)

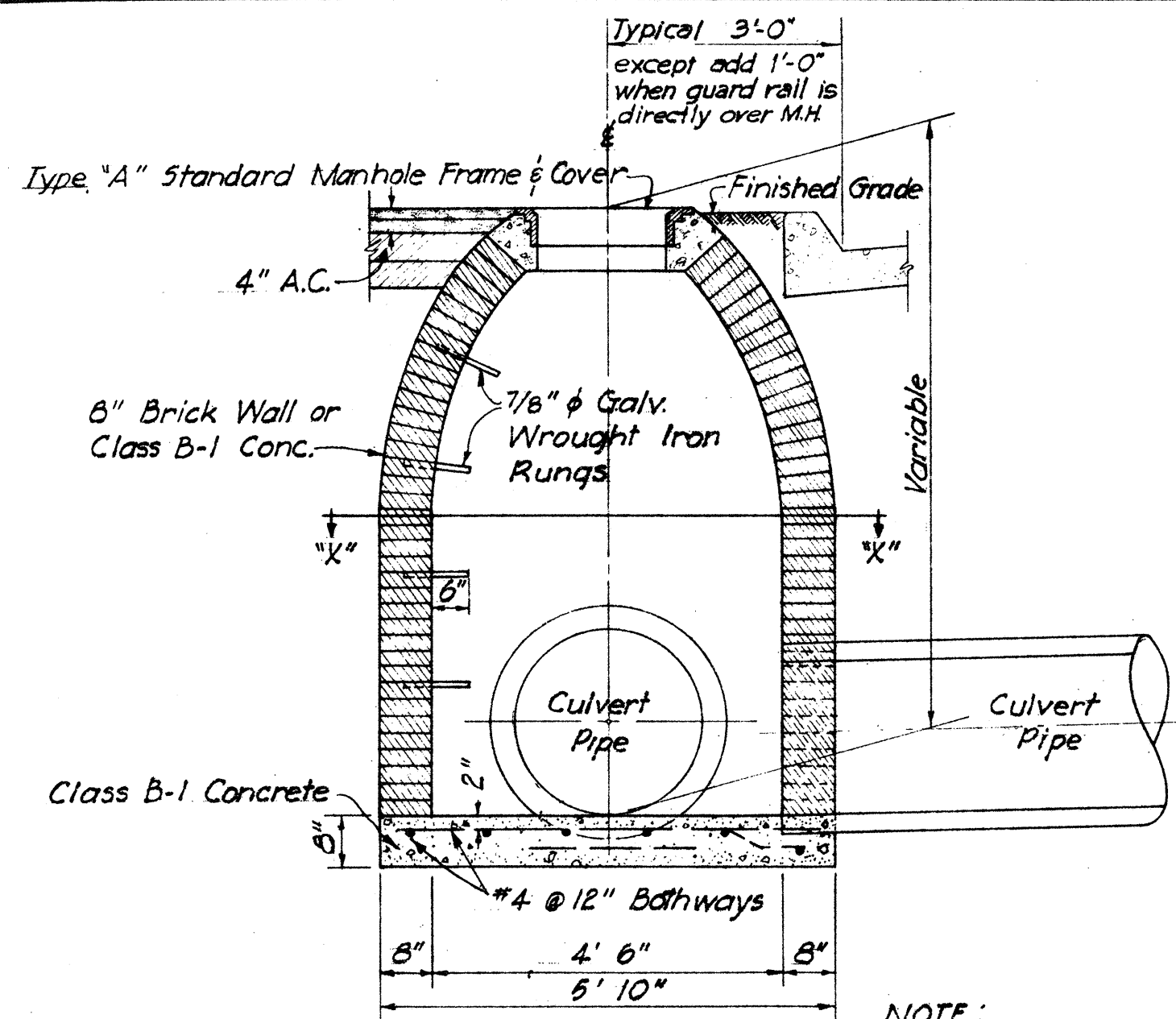


ESTIMATED QUANTITIES					ESTIMATED QUANTITIES					ESTIMATED QUANTITIES				
C.B. No.	TYPE	D. ft.	CL. A-1 CONC. C.Y.	REINF. STEEL lbs.	STR. EXC. C.Y.	C.B. No.	TYPE	D. ft.	CL. A-1 CONC. C.Y.	REINF. STEEL lbs.	STR. EXC. C.Y.	C.B. No.	TYPE	D. ft.
41	B-4	13.16	10.5		42.0	49	B-1	4.40	4.4	85	15.9	73	C-3	7.42
42	B-1	5.33	4.8	85	17.9	50	C-2	8.66	6.8	205	27.1	74	C-1	5.33
43	B-1	4.97	4.7	85	17.1	51	C-1	4.83	4.6	85	16.8			
44	B-4	6.00	5.7	96	22.5	52	C-2	5.00	5.0	88	18.2			
45	B-3	6.53	5.8	91	22.9	53	C-1	5.33	4.7	85	17.9			
46	B-1	5.33	4.8	85	17.9	54	C-2	6.21	5.5	88	21.1			
47	B-3	6.53	5.8	91	22.9	55	D-1	4.50	3.3	60	11.1			
48	B-1	5.33	4.8	85	17.9	56	D-1	5.44	3.6	60	13.2			
						57	C-1	5.33	4.8	85	17.9			
						58	C-2	6.41	5.6	88	21.6			
						59	D-1	5.44	3.7	60	13.2			
						60	D-2	5.34	3.9	63	14.0			
						61	D-2	5.00	3.8	63	13.2			
						62	D-2	4.99	3.9	63	13.2			
						63	D-1	4.07	3.0	60	11.3			
						64	B-4	7.46	6.4	96	26.5			
						65	C-2	5.37	5.1	88	19.1			
						66	D-2	6.17	4.5	63	16.0			
						67	C-3	7.43	5.9	96	25.3			
						68	C-2	6.61	5.6	88	21.6			
						69	D-1	5.33	3.7	60	12.9			
						70	D-1	5.33	3.7	60	12.9			
						71	C-3	7.43	6.2	96	25.2			
						72	C-1	5.33	4.9	85	17.9			
												82	D-1	4.92
												83	C-2	5.16
												84	D-2	5.00
												85	D-2	5.33
												86	C-2	5.29
												87	D-2	5.33
												88	C-2	5.26
												89	D-1	5.45
												90	C-2	5.99
												91	C-2	7.63
												92	D-1	9.61
												93	C-2	5.02
												94	C-2	7.29
												95	D-1	5.29
												G-1	*D-2	4.00
														5.3
														71
														12.5

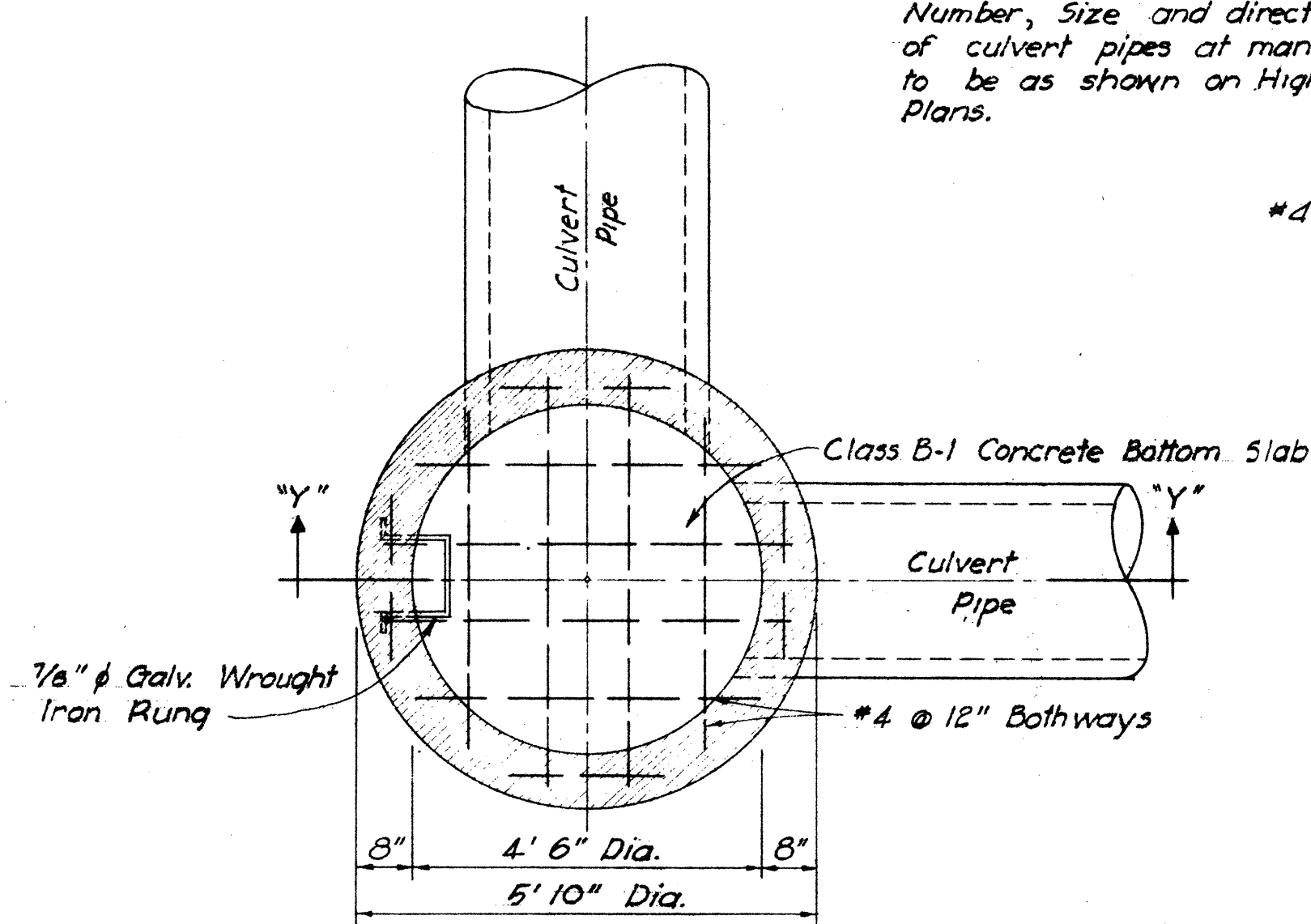
NOTE: Provide Type "B" Catch Basin Castings for all C.B.'s except Sp. Type C.B. #15 for which Type "A" Manhole Casting is used.

* CB Type D-2 except that overall length shall be 10'-0" with intermediate support at throat.

DESIGNED BY: [Signature]
CHECKED BY: [Signature]
DATE: [Date]
ORIGINAL PLAN NO. [Number]
NOTE BOOK NO. [Number]



SECTION "Y-Y"



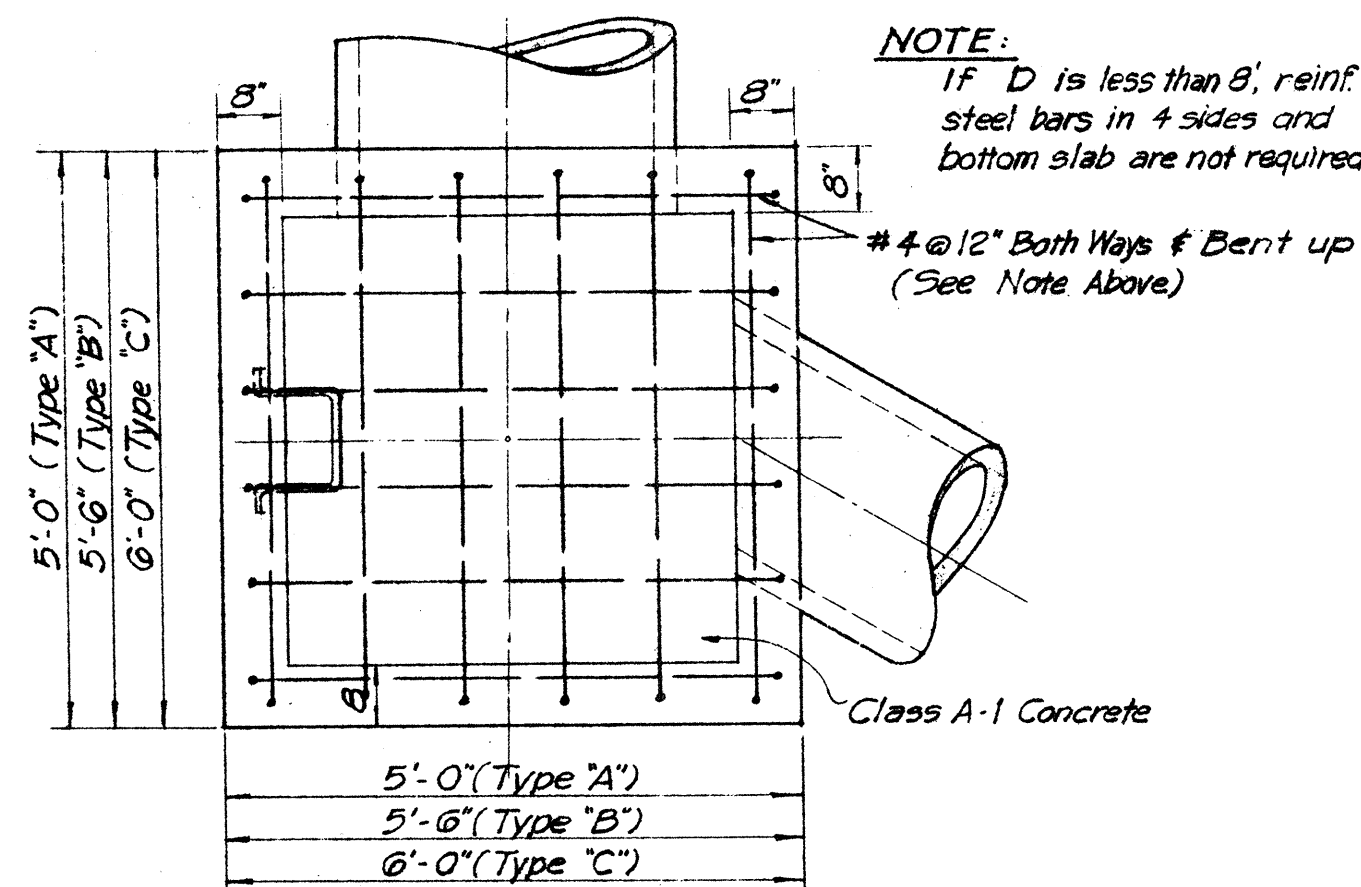
SECTION "X-X"

TYPE "D" STORM DRAIN MANHOLE

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

#4 @ 12" (4 Sides)

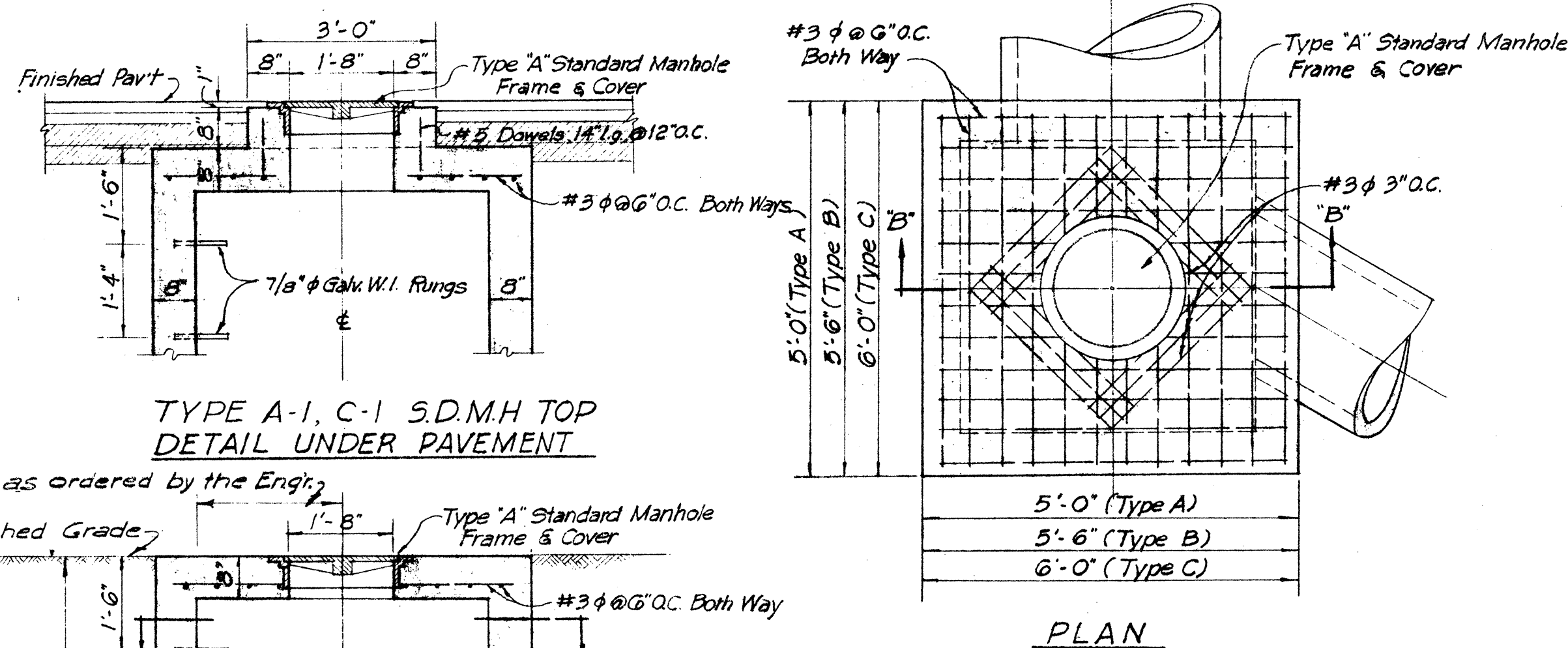
SECTION "B-B"
TYPE "A", "B" & "C" S.D.M.H.
UNDER UNPAVED AREAS



SECTION "A-A"

TYPE "A", "B" & "C" S.D. MANHOLE

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

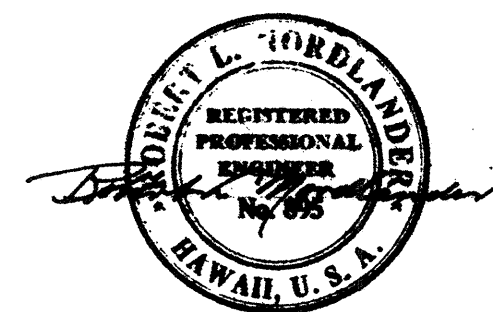


PLAN

TABULATION OF SDMH

SDMH No.	TYPE	D ft.	ESTIMATED QUANTITIES			
			CL A-1 CONC. C.Y.	CL B-1 CONC. C.Y.	REINF. STEEL lbs.	STR. EXC. C.Y.
21	C	9.66	6.0		158	24.6
22	B	8.64	4.6		160	17.1
23	D	6.52		0.7	32	13.4
24	D	5.08		0.7	32	10.3
25	D	5.33		0.7	32	10.7
26	D	7.97		0.7	32	15.8
27	D	6.19		0.7	32	12.2
28	D	5.33		0.7	32	10.7
29	D	6.44		0.7	32	12.6
30	D	5.00		0.7	32	10.1
31	D	5.38		0.7	32	10.8
32	A	8.60	4.4		150	16.7
33	A	7.89	3.9		45	15.7
34	B	7.43	4.1		95	16.8
38	D	5.00		0.7	32	10.1
39	D	5.24		0.7	32	10.5
40	D	4.79		0.7	32	9.7
41	D	4.87		0.7	32	9.9
42	D	5.33		0.7	32	10.7
43	A	8.67	4.3		152	16.7
44	A	5.27	3.5		45	13.7
G-1	D	4.0±		0.7	32	8.1

NOTE: 1- Provide Type "A" Standard Manhole Frames & Covers for all Manholes in above Tabulation.
2- For Quantities of Temporary Drainage System at Houghtailing St. See Sht. No. 24



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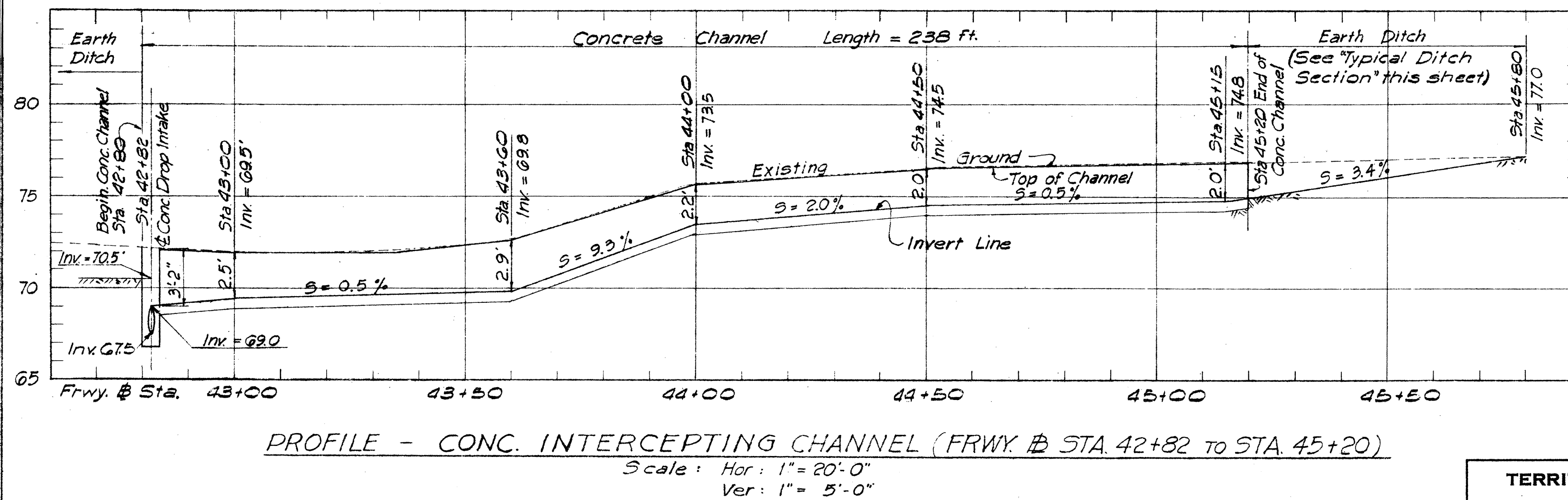
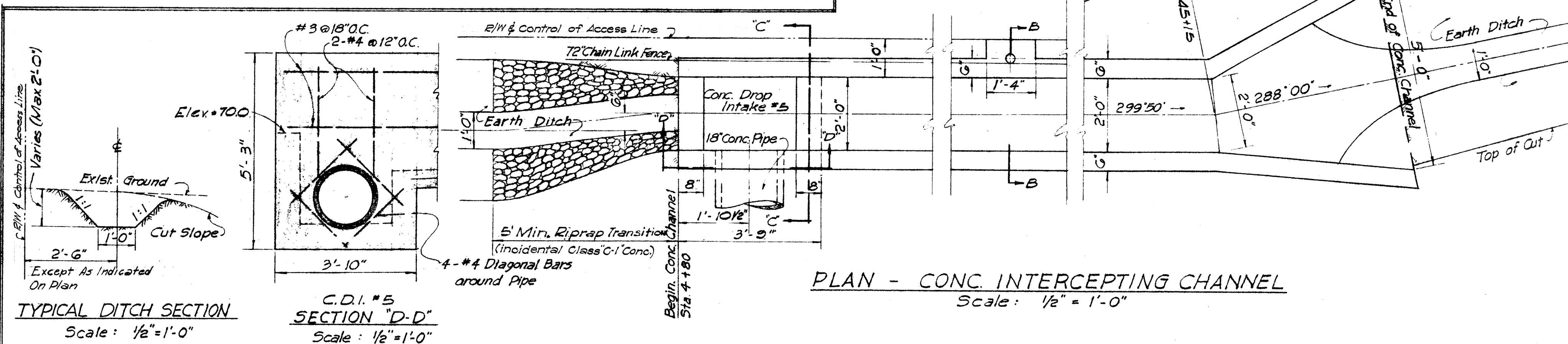
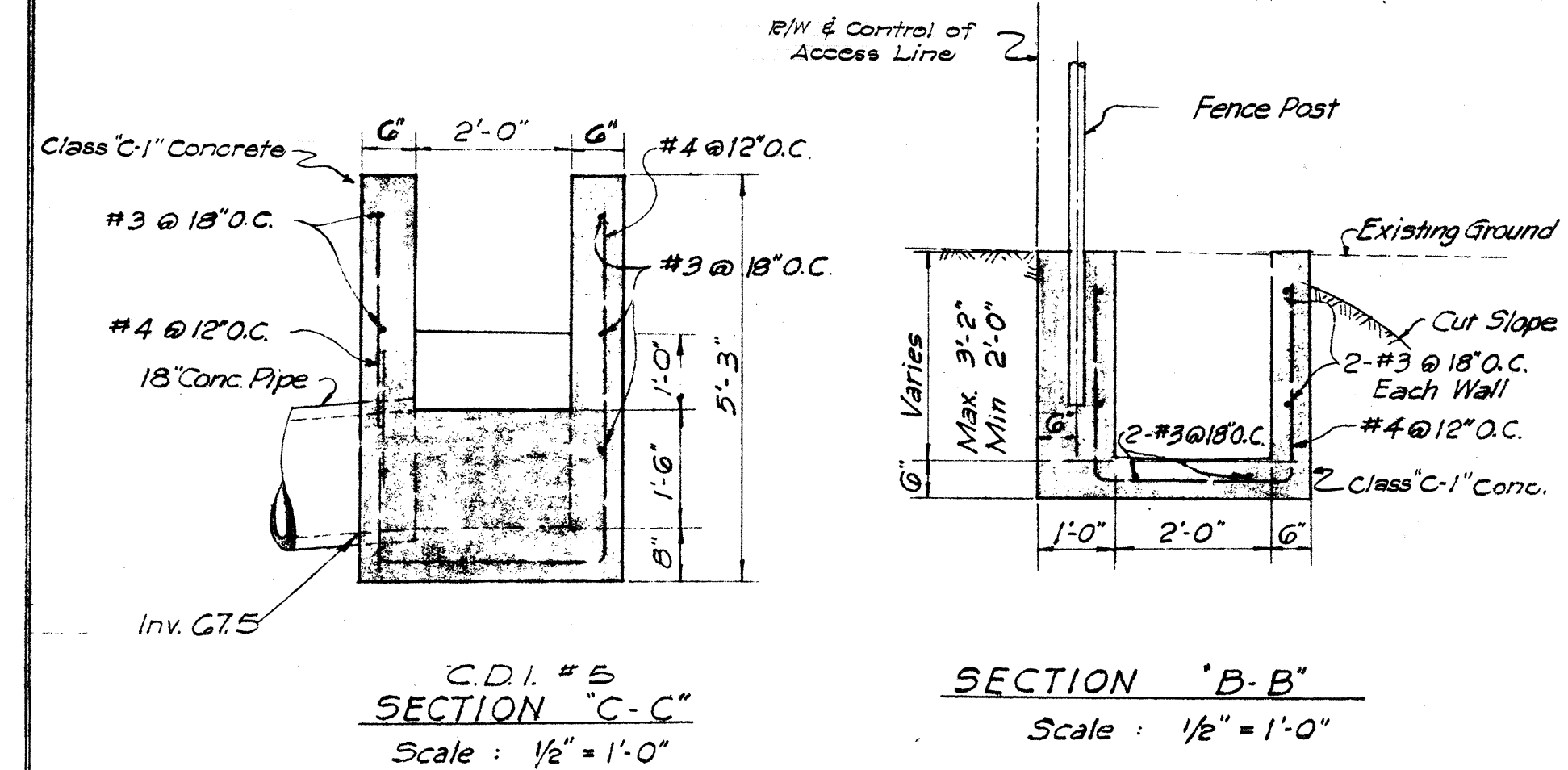
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

STORM DRAIN MANHOLE DETAILS

LUNALILO FREEWAY U-072-1(7) UNIT 3
KALIHI STREET US0630(2)

SHEET NO. 2 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	U-072-1(7) UNIT 3	1958	28	80
		USO630(2)	1958	35	103



DESIGNED BY	DATE
DRAWN BY	12-32
CHECKED BY	12-32
QUANTITIES CHECKED BY	
NO. BOOK	
NO.	



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TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

DRAINAGE CHANNEL DETAILS

LUNALILO FREEWAY U-072-1(7) UNIT 3
KALIHI STREET USO630 (2)

SHEET No. 3 OF 3 SHEETS

5983.28 5984.35