DRAINAGE SUMMARY

PROJECT: INTERSTATE ROUTE H-3

F.A.I. PROJECT NO.: I-H3-1(53)

FED.ROAD DIST.NO.	STATE	FED.AID PROJ.NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	17	124

| TYPE OF STRUCTURE | BASELINE STATION | 206. 1000 STRUCTURE EXCAVATION OTHER THAN AT BRIDGES C.Y. | 206. 8400 FILTER MATERIAL FOR UNDERDRAINS C.Y. | 207. 0100 DITCH AND CHANNEL EXCAVATION C.Y. | 503. 0000 CLASS A CONCRETE OTHER THAN IN BRIDGES C.Y. | 508. 0100 CEMENT RUBBLE MASONRY FOR DRAINAGE SYSTEM C.Y. | 602. 1001 REINFORCING STEEL OTHER THAN IN BRIDGES L.S. | 603. 0010 BED COURSE MATERIAL FOR CULVERT C.Y. | 603. 5041 24-INCH SRSP, SHT. "+" = 0.109 INCH OR 24-INCH RCP, CL. III L.F. | 603. 5051 30-INCH SRSP, SHT. "+" = 0.109 INCH OR 30-INCH RCP, CL. III L.F. | 603. 5061 36-INCH SRSP, SHT. "+" = 0.109 INCH OR 36-INCH RCP, CL. III L.F. | 603. 6001 42-INCH SRSP, SHT. "+" = 0.109 INCH OR 42-INCH RCP, CL. III L.F. | 603. 6003 42-INCH SRSP, SHT. "+" = 0.109 INCH OR 42-INCH RCP, CL. IV L.F. | 603. 6121 48-INCH SRSP, SHT. "+" = 0.109 INCH OR 48-INCH RCP, CL. III L.F. | 603. 6241 54-INCH SRSP, SHT. "+" = 0.109 INCH OR 54-INCH RCP, CL. III L.F. | 603. 6341 60-INCH SRSP, SHT. "+" = 0.109 INCH OR 60-INCH RCP, CL. III L.F. | 603. 6501 72-INCH SRSP, SHT. "+" = 0.109 INCH OR 72-INCH RCP, CL. III L.F. | 604. 0371 TYPE F STORM DRAIN MANHOLE 6.0 FT. TO 6.9 FT. Ea. | 604. 5000 TYPE 2 GRATED DROP INTAKE 10.0 FT. TO 10.9 FT. Ea. | 604. 5001 TYPE 3 GRATED DROP INTAKE 15.0 FT. TO 15.9 FT. Ea. | 604. 5002 TYPE 4 GRATED DROP INTAKE 5.0 FT. TO 5.9 FT. Ea. | 604. 5003 TYPE 4 GRATED DROP INTAKE 6.0 FT. TO 6.9 FT. Ea. | 604. 5004 TYPE 4 GRATED DROP INTAKE 7.0 FT. TO 7.9 FT. Ea. | 604. 5005 TYPE 4 GRATED DROP INTAKE 10.0 FT. TO 10.9 FT. Ea. | 604. 5006 TYPE 4 GRATED DROP INTAKE 15.0 FT. TO 15.9 FT. Ea. | 604. 5007 TYPE 5 GRATED DROP INTAKE 6.0 FT. TO 6.9 FT. Ea. | 604. 5008 TYPE 5 GRATED DROP INTAKE 8.0 FT. TO 8.9 FT. Ea. | 604. 5009 TYPE 6 GRATED DROP INTAKE 9.0 FT. TO 9.9 FT. Ea. | 604. 5010 TYPE 7 GRATED DROP INTAKE 6.0 FT. TO 6.9 FT. Ea. | 604. 5011 TYPE 7 GRATED DROP INTAKE 9.0 FT. TO 9.9 FT. Ea. | 605. 0006 6-INCH PERFORATED UNDERDRAIN PIPE L.F. | 605. 0106 6-INCH NONPERFORATED UNDERDRAIN PIPE L.F. | 605. 2000 CLEANOUT Ea. | 640. 1000 1.5 FT. x 1.5 FT. (SS 1/1) LINED TRAPEZOIDAL DRAINAGE DITCH L.F. | 640. 2200 2.0 FT. x 2.0 FT. (SS 1/1) LINED TRAPEZOIDAL DRAINAGE DITCH L.F. | 640. 2800 2.0 FT. x 2.5 FT. (SS 1/1) LINED TRAPEZOIDAL DRAINAGE DITCH L.F. | 640. 6000 1.5 FT. x 1.5 FT. LINED RECTANGULAR DRAINAGE DITCH L.F. | 640. 6400 2.0 FT. x 2.0 FT. LINED RECTANGULAR DRAINAGE DITCH L.F. |
|---|---|---|---|---|---

DRAINAGE SUMMARY

PROJECT: INTERSTATE ROUTE H-3

F.A.I. PROJECT NO.: I-H3-1(53)

FED.ROAD DIST.NO.	STATE	FED.AID PROJ.NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	18	124

TYPE OF STRUCTURE	BASELINE STATION	206. 1000 STRUCTURE EXCAVATION OTHER THAN AT BRIDGES C.Y.	206. 8400 FILTER MATERIAL FOR UNDERDRAINS C.Y.	207. 0100 DITCH AND CHANNEL EXCAVATION C.Y.	503. 0000 CLASS A CONCRETE OTHER THAN IN BRIDGES C.Y.	508. 0100 CEMENT RUBBLE MASONRY FOR DRAINAGE SYSTEM C.Y.	602. 1001 REINFORCING STEEL OTHER THAN IN BRIDGES L.S.	603. 0010 BED COURSE MATERIAL FOR CULVERT C.Y.	603. 5041 24-INCH SRSP, SHT. "+" = 0.109 INCH OR 24-INCH RCP, CL. III L.F.	603. 5051 30-INCH SRSP, SHT. "+" = 0.109 INCH OR 30-INCH RCP, CL. III L.F.	603. 5061 36-INCH SRSP, SHT. "+" = 0.109 INCH OR 36-INCH RCP, CL. III L.F.	603. 6001 42-INCH SRSP, SHT. "+" = 0.109 INCH OR 42-INCH RCP, CL. III L.F.	603. 6003 42-INCH SRSP, SHT. "+" = 0.109 INCH OR 42-INCH RCP, CL. IV L.F.	603. 6121 48-INCH SRSP, SHT. "+" = 0.109 INCH OR 48-INCH RCP, CL. III L.F.	603. 6241 54-INCH SRSP, SHT. "+" = 0.109 INCH OR 54-INCH RCP, CL. III L.F.	603. 6341 60-INCH SRSP, SHT. "+" = 0.109 INCH OR 60-INCH RCP, CL. III L.F.	603. 6501 72-INCH SRSP, SHT. "+" = 0.109 INCH OR 72-INCH RCP, CL. III L.F.	604. 0371 TYPE F STORM DRAIN MANHOLE 6.0 FT. TO 6.9 FT. Ea.	604. 5000 TYPE 2 GRATED DROP INTAKE 10.0 FT. TO 10.9 FT. Ea.	604. 5001 TYPE 3 GRATED DROP INTAKE 15.0 FT. TO 15.9 FT. Ea.	604. 5002 TYPE 4 GRATED DROP INTAKE 5.0 FT. TO 5.9 FT. Ea.	604. 5003 TYPE 4 GRATED DROP INTAKE 6.0 FT. TO 6.9 FT. Ea.	604. 5004 TYPE 4 GRATED DROP INTAKE 7.0 FT. TO 7.9 FT. Ea.	604. 5005 TYPE 4 GRATED DROP INTAKE 10.0 FT. TO 10.9 FT. Ea.	604. 5006 TYPE 4 GRATED DROP INTAKE 15.0 FT. TO 15.9 FT. Ea.	604. 5007 TYPE 5 GRATED DROP INTAKE 6.0 FT. TO 6.9 FT. Ea.	604. 5008 TYPE 5 GRATED DROP INTAKE 8.0 FT. TO 8.9 FT. Ea.	604. 5009 TYPE 6 GRATED DROP INTAKE 9.0 FT. TO 9.9 FT. Ea.	604. 5010 TYPE 7 GRATED DROP INTAKE 6.0 FT. TO 6.9 FT. Ea.	604. 5011 TYPE 7 GRATED DROP INTAKE 9.0 FT. TO 9.9 FT. Ea.	605. 0006 6-INCH PERFORATED UNDERDRAIN PIPE L.F.	605. 0106 6-INCH NONPERFORATED UNDERDRAIN PIPE L.F.	605. 2000 CLEANOUT Ea.	640. 1000 1.5 FT. x 1.5 FT. (SS 1:1) LINED TRAPEZOIDAL DRAINAGE DITCH L.F.	640. 2200 2.0 FT. x 2.0 FT. (SS 1:1) LINED TRAPEZOIDAL DRAINAGE DITCH L.F.	640. 2800 2.0 FT. x 2.5 FT. (SS 1:1) LINED TRAPEZOIDAL DRAINAGE DITCH L.F.	640. 6000 1.5 FT. x 1.5 FT. LINED RECTANGULAR DRAINAGE DITCH L.F.	640. 6400 2.0 FT. x 2.0 FT. LINED RECTANGULAR DRAINAGE DITCH L.F.
TYPE 7 GDI	332 + 50 Rt.	186						34			112																	1									
TYPE 7 GDI	333 + 07 Lt.	91						16	70																			1									
TYPE 7 GDI	333 + 62 Rt.	294						42			130																	1									
TYPE 7 GDI	333 + 62 Lt.	326						47				135																	1								
TYPE 7 GDI	334 + 97.33 Lt.	62						10				20																	1								
CLEANOUT	307 + 52 Lt.																														8	1						
CLEANOUT	307 + 52 Lt.																														6	1						
CLEANOUT	307 + 75 Rt.																														8	1						
CLEANOUT	307 + 75 Rt.																														7	1						
CLEANOUT	310 + 85 Lt.																														4	1						
CLEANOUT	311 + 04.50 Lt.																														10	1						
CLEANOUT	311 + 04.50 Lt.																														30	1						
CLEANOUT	311 + 14 Rt.																														14	1						
CLEANOUT	311 + 24 Rt.																														20	1						
CLEANOUT	311 + 24 Rt.																														17	1						
CLEANOUT	311 + 25 Lt.																														4	1						
CLEANOUT	311 + 50 Rt.																														4	1						
CLEANOUT	313 + 30 Rt.																														5	1						
CLEANOUT	313 + 30 Lt.																														5	1						
CLEANOUT	315 + 00 Rt.																														5	1						
CLEANOUT	315 + 36 Lt.																														5	1						
CLEANOUT	317 + 80 Lt.																														5	1						
CLEANOUT	317 + 80 Rt.																														5	1						
CLEANOUT	320 + 09 Lt.																														5	1						
CLEANOUT	320 + 20 Rt.																														5	1						
CLEANOUT	322 + 80 Lt.																														5	1						
CLEANOUT	322 + 80 Rt.																														5	1						

SHEET NO. D-8 OF SHEETS

ADD. 18

DRAINAGE SUMMARY

PROJECT: INTERSTATE ROUTE H-3

F.A.I. PROJECT NO.: I-H3-1(53)

FED.ROAD DIST.NO.	STATE	FED.AID PROJ.NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	19	124

ITEM NO.		206. 1000	206. 8400	207. 0100	503. 0000	508. 0100	602. 1001	603. 0010	603. 5041	603. 5051	603. 5061	603. 6001	603. 6003	603. 6121	603. 6241	603. 6341	603. 6501	604. 0371	604. 5000	604. 5001	604. 5002	604. 5003	604. 5004	604. 5005	604. 5006	604. 5007	604. 5008	604. 5009	604. 5010	604. 5011	605. 0006	605. 0106	605. 2000	640. 1000	640. 2200	640. 2800	640. 6000	640. 6400	
UNIT USED		C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	L.S.	C.Y.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	L.F.	L.F.	Ea.	L.F.	L.F.	L.F.	L.F.	L.F.	
TYPE OF STRUCTURE	BASELINE STATION	STRUCTURE EXCAVATION OTHER THAN AT BRIDGES	FILTER MATERIAL FOR UNDERDRAINS	DITCH AND CHANNEL EXCAVATION	CLASS A CONCRETE OTHER THAN IN BRIDGES	CEMENT RUBBLE MASONRY FOR DRAINAGE SYSTEM	REINFORCING STEEL OTHER THAN IN BRIDGES	BED COURSE MATERIAL FOR CULVERT	24-INCH SRSP, SHT. "+" = 0.109 INCH OR 24-INCH RCP, CL. III	30-INCH SRSP, SHT. "+" = 0.109 INCH OR 30-INCH RCP, CL. III	36-INCH SRSP, SHT. "+" = 0.109 INCH OR 36-INCH RCP, CL. III	42-INCH SRSP, SHT. "+" = 0.109 INCH OR 42-INCH RCP, CL. III	42-INCH SRSP, SHT. "+" = 0.109 INCH OR 42-INCH RCP, CL. IV	48-INCH SRSP, SHT. "+" = 0.109 INCH OR 48-INCH RCP, CL. III	54-INCH SRSP, SHT. "+" = 0.109 INCH OR 54-INCH RCP, CL. III	60-INCH SRSP, SHT. "+" = 0.109 INCH OR 60-INCH RCP, CL. III	72-INCH SRSP, SHT. "+" = 0.109 INCH OR 72-INCH RCP, CL. III	TYPE F STORM DRAIN MANHOLE 6.0 FT. TO 6.9 FT.	TYPE 2 GRATED DROP INTAKE 10.0 FT. TO 10.9 FT.	TYPE 3 GRATED DROP INTAKE 15.0 FT. TO 15.9 FT.	TYPE 4 GRATED DROP INTAKE 5.0 FT. TO 5.9 FT.	TYPE 4 GRATED DROP INTAKE 6.0 FT. TO 6.9 FT.	TYPE 4 GRATED DROP INTAKE 7.0 FT. TO 7.9 FT.	TYPE 4 GRATED DROP INTAKE 10.0 FT. TO 10.9 FT.	TYPE 4 GRATED DROP INTAKE 15.0 FT. TO 15.9 FT.	TYPE 5 GRATED DROP INTAKE 6.0 FT. TO 6.9 FT.	TYPE 5 GRATED DROP INTAKE 8.0 FT. TO 8.9 FT.	TYPE 6 GRATED DROP INTAKE 9.0 FT. TO 9.9 FT.	TYPE 7 GRATED DROP INTAKE 6.0 FT. TO 6.9 FT.	TYPE 7 GRATED DROP INTAKE 9.0 FT. TO 9.9 FT.	6-INCH PERFORATED UNDERDRAIN PIPE	6-INCH NONPERFORATED UNDERDRAIN PIPE	CLEANOUT	1.5 FT. x 1.5 FT. (SS 1/1) LINED TRAPEZOIDAL DRAINAGE DITCH	2.0 FT. x 2.0 FT. (SS 1/1) LINED TRAPEZOIDAL DRAINAGE DITCH	2.0 FT. x 2.5 FT. (SS 1/1) LINED TRAPEZOIDAL DRAINAGE DITCH	1.5 FT. x 1.5 FT. LINED RECTANGULAR DRAINAGE DITCH	2.0 FT. x 2.0 FT. LINED RECTANGULAR DRAINAGE DITCH	
TYPE 7 GDI	325 + 05 Lt.																														5	1						
TYPE 7 GDI	325 + 05 Rt.																														5	1						
TYPE 7 GDI	327 + 50 Rt.																														5	1						
TYPE 7 GDI	327 + 50 Lt.																														5	1						
TYPE 7 GDI	329 + 95 Lt.																														5	1						
CLEANOUT	330 + 00 Rt.																														4	1						
CLEANOUT	331 + 32 Lt.																														20	1						
CLEANOUT	331 + 70 Lt.																														5	1						
CLEANOUT	332 + 32 Rt.																														20	1						
CLEANOUT	332 + 55 Rt.																														4	1						
CLEANOUT	333 + 44 Rt.																														20	1						
CLEANOUT	333 + 66 Lt.																														4	1						
CLEANOUT	333 + 67 Rt.																														4	1						
CLEANOUT	335 + 00 Rt.																														16	1						
UNDERDRAIN BASELINE STATION																																						
From	To																																					
307 + 52 Lt.	310 + 85 Lt.																													333								
307 + 52 Lt.	311 + 14 Lt.																													372								
307 + 75 Rt.	311 + 14 Rt.																													339								
307 + 75 Rt.	311 + 35 Rt.		1																											360								
311 + 04.50 Lt.	311 + 04.50 Lt.		5																											98								
311 + 24 Rt.	311 + 24 Rt.																													76								
311 + 25 Lt.	313 + 25 Lt.		25																											200								
311 + 50 Rt.	313 + 25 Rt.		22																											175								
313 + +30 Rt.	317 + 75 Rt.		55																											445								
313 + 30 Lt.	315 + 28.66 Lt.		25																											199								
315 + 36 Lt.	317 + 75 Lt.		29																											239								

DRAINAGE SUMMARY

PROJECT: INTERSTATE ROUTE H-3

F.A.I. PROJECT NO.: I-H3-1(53)

FED.ROAD DIST.NO.	STATE	FED.AID PROJ.NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	20	124

ITEM NO.		206. 1000	206. 8400	207. 0100	503. 0000	508. 0100	602. 1001	603. 0010	603. 5041	603. 5051	603. 5061	603. 6001	603. 6003	603. 6121	603. 6241	603. 6341	603. 6501	604. 0371	604. 5000	604. 5001	604. 5002	604. 5003	604. 5004	604. 5005	604. 5006	604. 5007	604. 5008	604. 5009	604. 5010	604. 5011	605. 0006	605. 0106	605. 2000	640. 1000	640. 2200	640. 2800	640. 6000	640. 6400	
UNIT USED		C.Y.	C.Y.	C.Y.	C.Y.	C.Y.	L.S.	C.Y.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	L.F.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	Ea.	L.F.	L.F.	Ea.	L.F.	L.F.	L.F.	L.F.	L.F.	
UNDERDRAINS BASELINE STATION		STRUCTURE EXCAVATION OTHER THAN AT BRIDGES	FILTER MATERIAL FOR UNDERDRAINS	DITCH AND CHANNEL EXCAVATION	CLASS A CONCRETE OTHER THAN IN BRIDGES	CEMENT RUBBLE MASONRY FOR DRAINAGE SYSTEM	REINFORCING STEEL OTHER THAN IN BRIDGES	BED COURSE MATERIAL FOR CULVERT	24-INCH SR5P, SHT. "+" = 0.109 INCH OR 24-INCH RCP, CL. III	30-INCH SR5P, SHT. "+" = 0.109 INCH OR 30-INCH RCP, CL. III	36-INCH SR5P, SHT. "+" = 0.109 INCH OR 36-INCH RCP, CL. III	42-INCH SR5P, SHT. "+" = 0.109 INCH OR 42-INCH RCP, CL. III	42-INCH SR5P, SHT. "+" = 0.109 INCH OR 42-INCH RCP, CL. IV	48-INCH SR5P, SHT. "+" = 0.109 INCH OR 48-INCH RCP, CL. III	54-INCH SR5P, SHT. "+" = 0.109 INCH OR 54-INCH RCP, CL. III	60-INCH SR5P, SHT. "+" = 0.109 INCH OR 60-INCH RCP, CL. III	72-INCH SR5P, SHT. "+" = 0.109 INCH OR 72-INCH RCP, CL. III	TYPE F STORM DRAIN MANHOLE 6.0 FT. TO 6.9 FT.	TYPE 2 GRATED DROP INTAKE 10.0 FT. TO 10.9 FT.	TYPE 3 GRATED DROP INTAKE 15.0 FT. TO 15.9 FT.	TYPE 4 GRATED DROP INTAKE 5.0 FT. TO 5.9 FT.	TYPE 4 GRATED DROP INTAKE 6.0 FT. TO 6.9 FT.	TYPE 4 GRATED DROP INTAKE 7.0 FT. TO 7.9 FT.	TYPE 4 GRATED DROP INTAKE 10.0 FT. TO 10.9 FT.	TYPE 4 GRATED DROP INTAKE 15.0 FT. TO 15.9 FT.	TYPE 5 GRATED DROP INTAKE 6.0 FT. TO 6.9 FT.	TYPE 5 GRATED DROP INTAKE 8.0 FT. TO 8.9 FT.	TYPE 6 GRATED DROP INTAKE 9.0 FT. TO 9.9 FT.	TYPE 7 GRATED DROP INTAKE 6.0 FT. TO 6.9 FT.	TYPE 7 GRATED DROP INTAKE 9.0 FT. TO 9.9 FT.	6-INCH PERFORATED UNDERDRAIN PIPE	6-INCH NONPERFORATED UNDERDRAIN PIPE	CLEANOUT	1.5 FT. x 1.5 FT. (SS 1/1) LINED TRAPEZOIDAL DRAINAGE DITCH	2.0 FT. x 2.0 FT. (SS 1/1) LINED TRAPEZOIDAL DRAINAGE DITCH	2.0 FT. x 2.5 FT. (SS 1/1) LINED TRAPEZOIDAL DRAINAGE DITCH	1.5 FT. x 1.5 FT. LINED RECTANGULAR DRAINAGE DITCH	2.0 FT. x 2.0 FT. LINED RECTANGULAR DRAINAGE DITCH	
317 + 80 Lt.	320 + 04.18 Lt.		28																											224								
317 + 80 Rt.	322 + 75 Rt.		61																											495								
320 + 09 Lt.	322 + 75 Lt.		33																											266								
322 + 80 Lt.	325 + 00 Lt.		27																											220								
322 + 80 Rt.	325 + 00 Rt.		27																											220								
325 + 05 Rt.	327 +45 Rt.		29																											240								
325 + 05 Lt.	327 + 45 Lt.		29																											240								
327 + 50 Lt.	329 + 90 Lt.		29																											240								
327 + 50 Rt.	332 + 32 Rt.		61																											500								
329 + 95 Lt.	331 + 50 Lt.		19																											155								
331 + 70 Lt.	332 + 62 Lt.		24																											192								
332 + 55 Rt.	333 + 44 Rt.		13																											107								
333 + 66 Lt.	334 + 97.33 Lt.		16																											131								
333 + 67 Rt.	335 + 00		16																											133								
335 + 00 Rt.	Outlet		2																											20								
DRAINAGE DITCH BASELINE STATION																																						
From	To																																					
311 + 38 Rt.	314 + 00 Rt.			76																												178				95		
314 + 00 Rt.	321 + 00 Rt.			475																													700					
321 + 00 Rt.	325 + 15 Rt.			377																														421				
325 + 75 Rt.	328 + 60 rt.			65																												238			30			
326 + 22 Rt.	328 + 14 Rt.			42																												134			40			
326 + 50 Rt.	327 + 50 Rt.			~~20~~																												~~54~~			~~30~~			
327 + 50 Rt.	329 + 83 Rt.			187		48																														376 ~~562~~		
		9723	570	1242	189	143		1145	1181	248	610	263	289	283	277	228	126	1	1	1	4	1	1	1	1	1	2	1	4	2	6219	304	36	602	700	421	100	657	

SHEET NO. D-4 OF SHEETS

ADD. 20

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	21	104

GENERAL NOTES

1. OFF-SET DISTANCES TO INLET AND OUTLET HEADWALL STRUCTURES ARE APPROXIMATE. CONTRACTOR TO VERIFY HEADWALL LOCATIONS IN THE FIELD OR AS DIRECTED BY THE ENGINEER BEFORE CONSTRUCTION OF HEADWALLS.
2. FOR DETAILS OF TYPE 2 AND TYPE 3 GDI, SEE SHEET NO. 37.
3. FOR DETAILS OF TYPE 4 AND TYPE 5 GDI, SEE SHEET NO. 38.
4. FOR DETAILS OF TYPE 6 GDI, SEE SHEET NO. 39.
5. LINED DRAINAGE DITCHES SHALL BE SLOPED TO DRAIN AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER. FOR DETAILS OF THE LINED DRAINAGE DITCHES SEE SHEET NOS. 42 & 43.
6. OFF-SET DISTANCES TO LINED DRAINAGE DITCHES ARE APPROXIMATE. CONTRACTOR TO VERIFY LOCATIONS IN THE FIELD OR AS DIRECTED BY THE ENGINEER BEFORE CONSTRUCTION OF LINED DITCHES.
7. FOR DETAILS OF UNDERDRAIN CLEANOUT AND CONNECTIONS SEE SHEET NO. 44.
8. FOR DRAIN PIPES, TYPE, CLASS AND THICKNESS OF PIPES SHALL BE AS SPECIFIED IN PROPOSAL.
9. FOR DETAILS OF TYPE 7 GDI, SEE SHEET NO. 40.

DRAINAGE PLAN ABBREVIATIONS

℄	BASELINE
CRM	CEMENT RUBBLE MASONRY
GDI	GRATED DROP INTAKE
INV.	INVERT
LT.	LEFT
NO.	NUMBER
RECT.	RECTANGULAR
RT.	RIGHT
SHT.	SHEET
STA.	STATION
TRAP.	TRAPEZOIDAL

LEGEND

- Drain Manhole
- Drain Structure, Type as noted
- Drain Line, Direction of flow
- Ditch, Type as noted, Direction of flow
- ℄ Ditch (Type 2), Direction of flow
- Underdrain Pipe
- Underdrain Cleanout
- Headwall & Apron
- Existing Stream (Intermittent-Natural Drainage flow line)

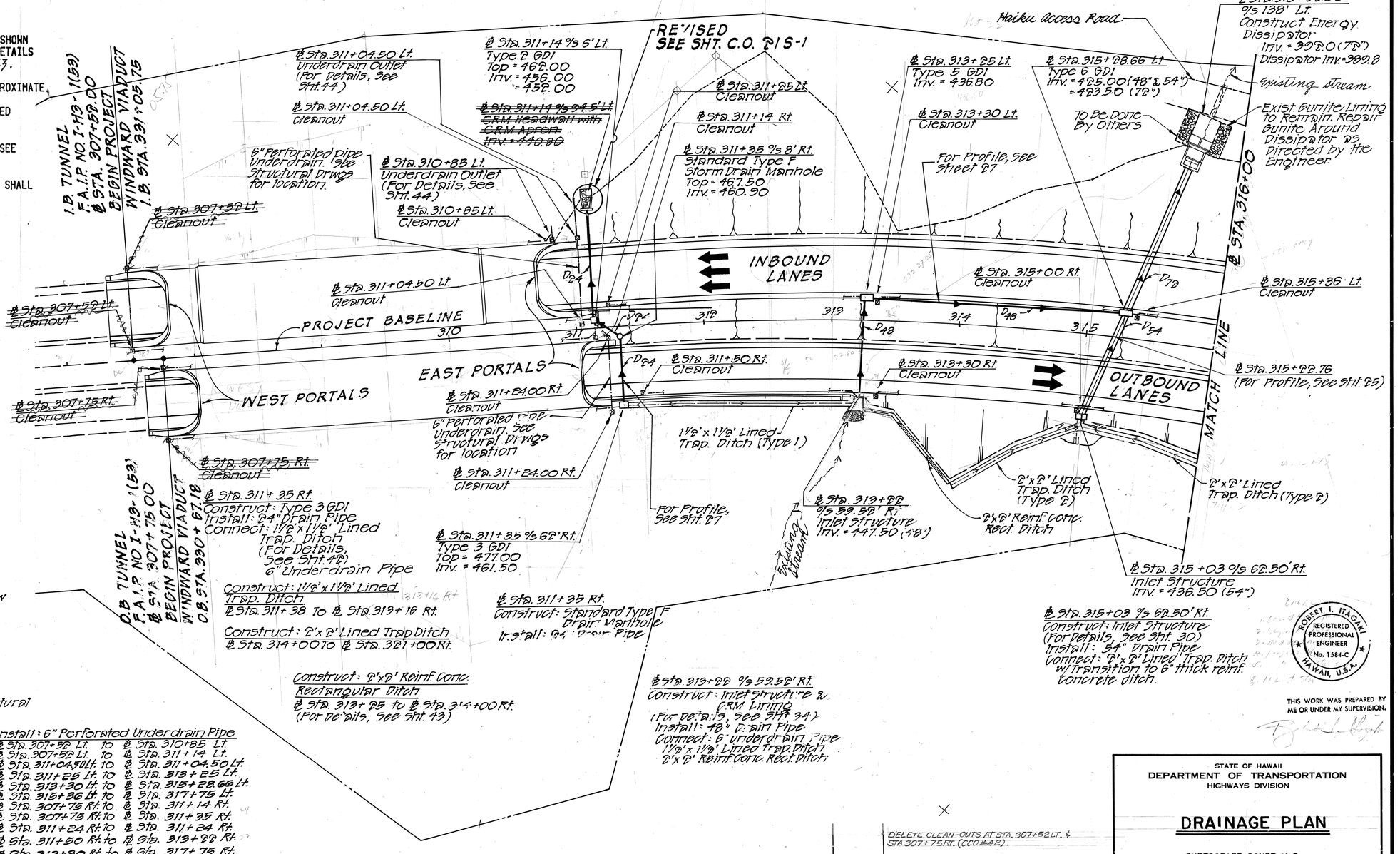
~~℄ Sta. 311+14 Lt. Construct: CRM Headwall & CRM Apron (For Details, See Sht. 41)~~

℄ Sta. 311+14 Lt.
Construct: Type 2 GDI
Install: 24" Drain Pipe
Connect: 6" Underdrain Pipe

℄ Sta. 313+25 Lt.
Construct: Type 5 GDI
Install: 48" Drain Pipe
Connect: 6" Underdrain Pipe

℄ Sta. 315+28.66 Lt.
Construct: Type 6 GDI
Install: 78" Drain Pipe
Connect: 6" Underdrain Pipe

~~℄ Sta. 315+62.50 9'S 138' Lt. Construct: Outlet Structure & CRM Lining (For Details, See Sht. 38)~~



Underdrain Schedule

Construct: Cleanout

℄ Sta. 307+52 Lt.	℄ Sta. 307+75 Rt.
℄ Sta. 307+52 Lt.	℄ Sta. 307+75 Rt.
℄ Sta. 310+85 Lt.	℄ Sta. 311+14 Rt.
℄ Sta. 311+04.50 Lt.	℄ Sta. 311+24 Rt.
℄ Sta. 311+04.50 Lt.	℄ Sta. 311+24 Rt.
℄ Sta. 311+25 Lt.	℄ Sta. 311+50 Rt.
℄ Sta. 313+30 Lt.	℄ Sta. 313+30 Rt.
℄ Sta. 315+36 Lt.	℄ Sta. 315+00 Rt.

Install: 6" Perforated Underdrain Pipe

℄ Sta. 307+52 Lt.	to	℄ Sta. 310+85 Lt.
℄ Sta. 307+52 Lt.	to	℄ Sta. 311+14 Lt.
℄ Sta. 311+04.50 Lt.	to	℄ Sta. 311+04.50 Lt.
℄ Sta. 311+25 Lt.	to	℄ Sta. 313+25 Lt.
℄ Sta. 313+30 Lt.	to	℄ Sta. 315+28.66 Lt.
℄ Sta. 315+36 Lt.	to	℄ Sta. 317+75 Lt.
℄ Sta. 307+75 Rt.	to	℄ Sta. 311+14 Rt.
℄ Sta. 307+75 Rt.	to	℄ Sta. 311+35 Rt.
℄ Sta. 311+24 Rt.	to	℄ Sta. 311+24 Rt.
℄ Sta. 311+50 Rt.	to	℄ Sta. 313+88 Rt.
℄ Sta. 313+30 Rt.	to	℄ Sta. 317+75 Rt.

40 20 0 40 80 120
GRAPHIC SCALE IN FEET

DATE	REVISION
7/20/91	DELETE CLEAN-OUTS AT STA. 307+52 LT. & STA 307+75 RT. (CCO #42). REVISION TO OUTLET STRUCTURE AT ℄ STA. 315+62.50
5/17/91	REVISION OF 24" DRAIN LINE AND CRM HEADWALL AT ℄ STA. 311+14 9's 54.5' LT.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

SHEET NO. D-5 OF 28 SHEETS

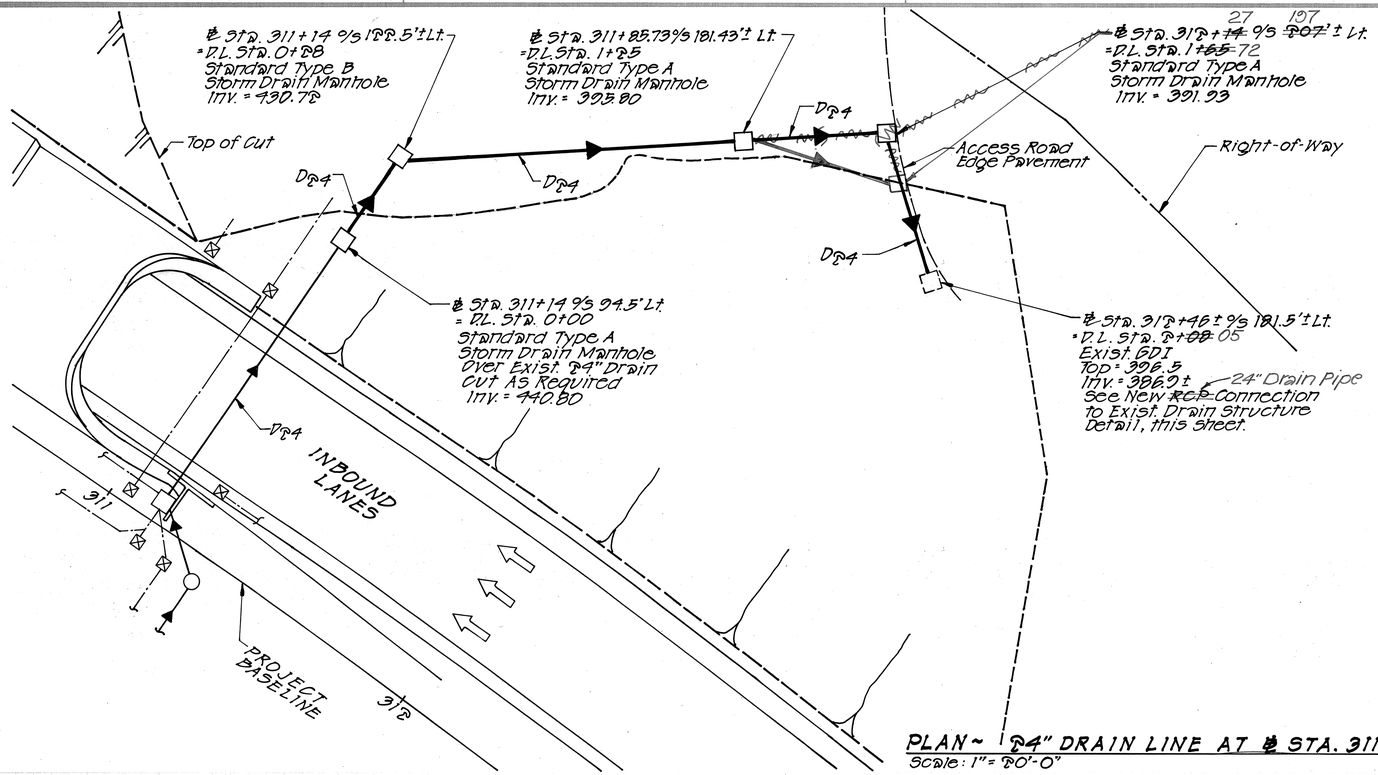
ROBERT I. ITAGAKI REGISTERED PROFESSIONAL ENGINEER No. 1584-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

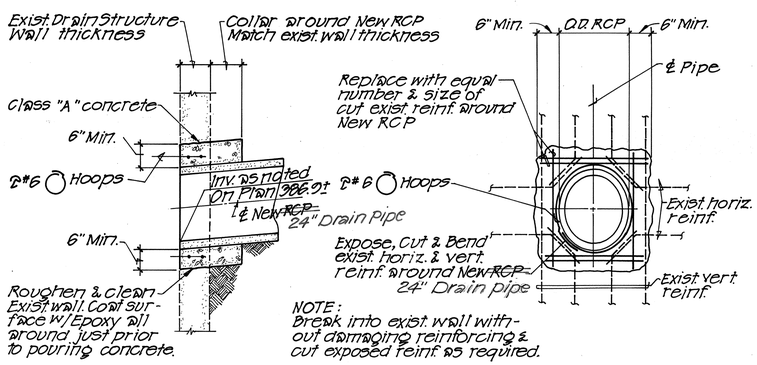
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | NOTE BOOK | No.

C.O. 21

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O. 21 S-1	184

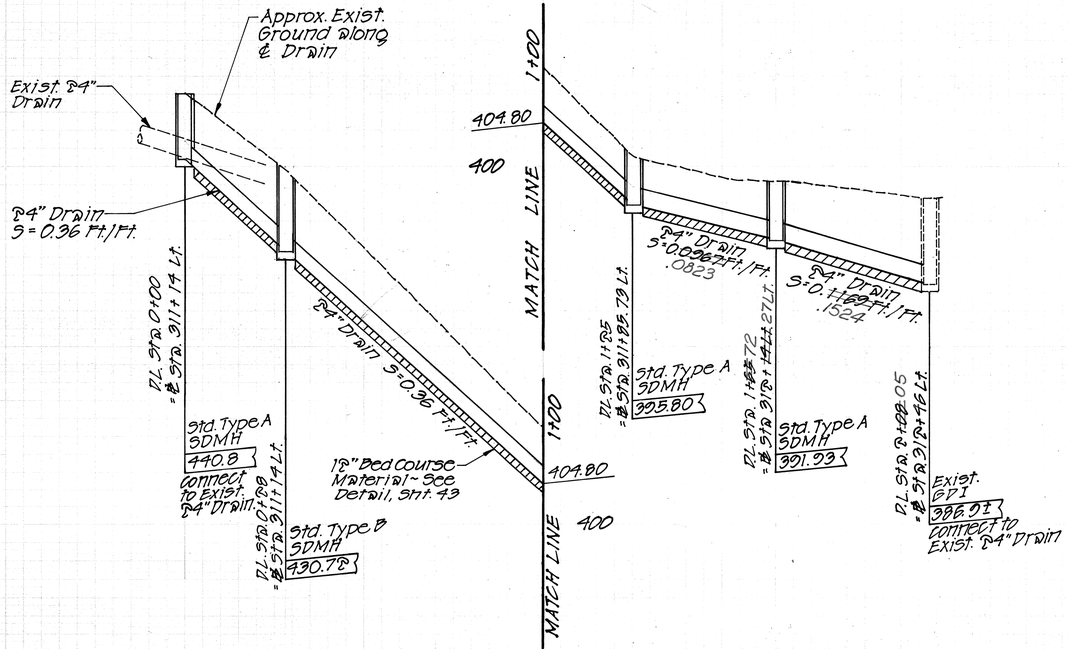


PLAN - 24" DRAIN LINE AT ℄ STA. 311+14 LT. TO ℄ STA. 317+46 LT.
Scale: 1" = 80'-0"



SECTION — 24" Drain Pipe — ELEVATION

NEW ~~RCP~~ CONNECTION TO EXIST. DRAIN STRUCTURE
Not to Scale



PROFILE - 24" DRAIN LINE AT ℄ STA. 311+14 LT.
Scale: Horiz. 1" = 80'
Vert. 1" = 8'

DATE	REVISION
5/24/91	REVISED DRAIN AND TYPE A STORM DRAIN MANHOLE ALIGNMENT AND LOCATION.
3/17/91	SHEET ADDED TO CONTRACT PLAN SET FOR REVISION OF 24" DRAINLINE AND CRM HEADWALL AT ℄ STA. 311+14 9'S 94.5' LT.

ROBERT I. ITAGAKI
REGISTERED PROFESSIONAL ENGINEER
No. 1584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN & PROFILE

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE:

SHEET No. OF SHEETS

C.O. 21 S-1

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O. 22	124

℄ Sta. 317+75 Lt.
Construct: Type 4 GDI
Install: 24" Drain Pipe
Connect: 6" Underdrain Pipe

℄ Sta. 320+04.18 Lt.
Construct: Type 4 GDI
Install: 42" Drain Pipe
Connect: 6" Underdrain Pipe

~~℄ Sta. 320+56.50 9's 281' Lt.~~
~~Construct: Outlet Structure & CRM Lining~~
~~(For Details, See Sht. 34)~~

℄ Sta. 320+33.50 9's 264' Lt.
Construct Std. Type C Storm Drain Manhole over Exist. 42" Drain. Cut as Required
Inv. = 303.35 (Exist. 42")
= 299.7 (New 42")

NOTE:
Contractor to Repair any Damages to Existing Improvements as directed by the Engineer.

Exist. 6' High Chain Link Fence

Existing Stream

D42

Haiku Access Road

℄ Sta. 320+56.50 9's 281' Lt.
Construct Energy Dissipator
Inv. = 298.00 (42")
Dissipator Inv. = 296.7

℄ Sta 320+44 9's 204' Lt.
Construct Modified Type 7 GDI
Inv. = 327.80 (42")
For Details see Sht. C.O. 406-1

℄ Sta. 322+75 Lt.
Construct: Type 4 GDI
Install: 24" Drain Pipe
Connect: 6" Underdrain Pipe

℄ Sta. 325+00 Lt.
Construct: Type 4 GDI
Install: 30" Drain Pipe
Connect: 6" Underdrain Pipe

~~℄ Sta. 324+33.50 9's 118' Lt.~~
~~Construct: Outlet Structure & CRM Lining~~
~~(For Details, See Sht. 35)~~

N

Existing Stream

℄ Sta. 325+00 Lt.
Type 4 GDI
Inv. = ~~377.00~~ (24") 377.00
= ~~372.50 (24" &~~ 30") 376.50

~~℄ Sta. 324+33.50 9's 118' Lt.~~
~~Outlet Structure~~
~~Inv. = 369.00~~

℄ Sta. 322+75 Lt.
Cleanout (For Details see Sht. C.O. 408-1)

REVISED ~ SEE SHT. C.O. 225-1

RAMP "D"

℄ Sta. 320+04.18 Lt.
Type 4 GDI
Inv. = 399.40 (24")
= 398.30 (36" & 42")

℄ Sta. 317+75 Lt.
Cleanout

℄ Sta. 320+09 Lt.
Cleanout

℄ Sta. 322+75 Lt.
Type 4 GDI
Inv. = ~~386.40~~
= ~~376.30~~ 385.00

℄ Sta. 322+80 Lt.
Cleanout

℄ Sta. 325+05 Lt.
Cleanout

℄ Sta. 317+75 Lt.
Type 4 GDI
Inv. 412.70

℄ Sta. 317+80 Lt.
Cleanout

IB LANES

PROJECT BASELINE

OB LANES

318 For Profile, See Sht. 27

℄ Sta. 319+98.99
For Profile, See Sht. 25

℄ Sta. 322+75 Rt.
Type 4 GDI
Inv. = 395.70

℄ Sta. 322+80 Rt.
Cleanout

For Profile, See Sht. ~~28~~ C.O. 228

For Profile See Sht. ~~28~~ C.O. 228

℄ Sta. 317+80 Rt.
Cleanout

℄ Sta. 317+75 Rt.
Type 4 GDI
Inv. = 423.20

℄ Sta. 317+75 Rt.
Cleanout

℄ Sta. 320+20 Rt.
Cleanout

℄ Sta. 322+75 Rt.
Cleanout

℄ Sta. 323+91.75
For Profile see Sheet ~~28~~ C.O. 229-1

REVISED ~ SEE SHT. C.O. 225-1

℄ Sta. 325+05 Rt.
Cleanout

℄ Sta. 325+00 Rt.
Type 4 GDI
Inv. = 386.90

℄ Sta. 323+54.50 9's 95' Rt.
Inlet Structure
Inv. = 390.00

Modified "V" Ditch (See Inset on Sht. 24)

Existing Stream

2'x2' Lined Trap. Ditch (Type 2)

2'x2.5' Lined Trap. Ditch (Type 3)

2'x2' Lined Trap. Ditch (Type 2)

2'x2.5' Lined Trap. Ditch (Type 3)

End of 2'x2.5' Conc. Ditch

℄ Sta. 319+78 9's 87' Rt.
Inlet Structure
Inv. = 401.00 (36")

MATCH LINE ℄ STA. 316+00

MATCH LINE ℄ STA. 327+00

MATCH LINE SHEET 24

℄ Sta. 317+75 Rt.
Construct: Type 4 GDI
Install: 24" Drain Pipe
Connect: 6" Underdrain Pipe

℄ Sta. 319+78 9's 87' Rt.
Construct: Inlet Structure & CRM Lining (For Details, See Sht. 33)
Install: 36" Drain Pipe
Connect: 2'x2' Lined Trap. Ditch

℄ Sta. 322+75 Rt.
Construct: Type 4 GDI
Install: 24" Drain Pipe
Connect: 6" Underdrain Pipe

℄ Sta. 325+00 Rt.
Construct: Type 4 GDI
Install: 24" Drain Pipe
Connect: 6" Underdrain Pipe

℄ Sta. 323+54.50 9's 95' Rt.
Construct: Inlet Structure & CRM Lining (For Details, See Sht. 30)
Install: 60" Drain Pipe
Connect: 2'x2.5' Lined Trap. Ditch & Reinf. Conc. Ditch

Construct: 2'x2.5' Lined Trap. Drainage Ditch
℄ Sta. 321+00 Rt. to ℄ Sta. 325+15 Rt.

Underdrain Schedule
Construct: Cleanout

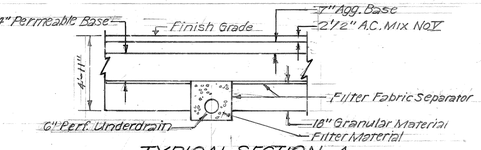
℄ Sta. 317+80 Lt.	℄ Sta. 317+80 Rt.
℄ Sta. 320+09 Lt.	℄ Sta. 320+20 Rt.
℄ Sta. 322+80 Lt.	℄ Sta. 322+80 Rt.
℄ Sta. 325+05 Lt.	℄ Sta. 325+05 Rt.

Install: 6" Perforated Underdrain Pipe

℄ Sta. 317+80 Lt.	to	℄ Sta. 320+04.18	Lt.
℄ Sta. 320+09 Lt.	to	℄ Sta. 322+75	Lt.
℄ Sta. 322+80 Lt.	to	℄ Sta. 325+00	Lt.
℄ Sta. 325+05 Lt.	to	℄ Sta. 327+45	Lt.
℄ Sta. 317+80 Rt.	to	℄ Sta. 322+75	Rt.
℄ Sta. 322+80 Rt.	to	℄ Sta. 325+00	Rt.
℄ Sta. 325+05 Rt.	to	℄ Sta. 327+45	Rt.

TRANSVERSE UNDERDRAINS

Construct Cleanout	Install 6" Perforated Underdrain Pipe
℄ Sta. 317+75 Lt.	℄ Sta. 317+75 Lt. to Sta. 317+75 Lt.
℄ Sta. 317+75 Rt.	℄ Sta. 317+75 Rt. to Sta. 317+75 Rt.
℄ Sta. 322+75 Lt.	℄ Sta. 322+75 Lt. to Sta. 322+75 Lt.
℄ Sta. 322+75 Rt.	℄ Sta. 322+75 Rt. to Sta. 322+75 Rt.



TYPICAL SECTION-A
TRANSVERSE UNDERDRAINS

40 20 0 40 80 120
GRAPHIC SCALE IN FEET

DATE	REVISION
7/30/91	REVISION TO OUTLET STRUCTURE AT ℄ STA. 320+56.50
2/11/91	REVISION TO 48" DRAIN PIPE DUE TO NEW GDI STRUCTURE @ ℄ STA. 319+98.99
7/21/89	REVISION TO 24" DRAIN PIPE DUE TO NEW GDI STRUCTURE AT INTERSECTION OF 60" DRAIN PIPE AND 24" DRAIN PIPE
7/14/89	S.E.I.T. ADDED TO CONTRACT PLAN SET FOR REVISION OF 60" DRAIN PIPE AT ℄ STA. 323+91.75 AND ADDITION OF ACCESS ROAD ON SHEET C.O. 225-1

ROBERT I. ITAGAKI
REGISTERED PROFESSIONAL ENGINEER
No. 7584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

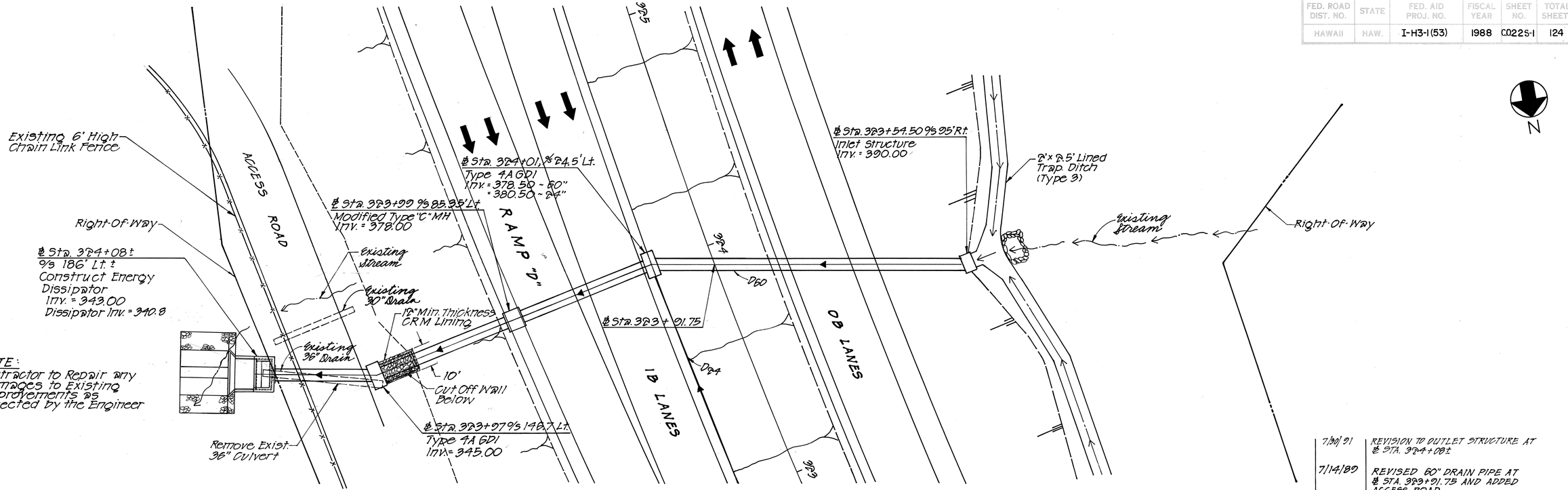
SCALE: AS NOTED
DATE: AUG., 1988

SHEET No. D-6 OF 28 SHEETS

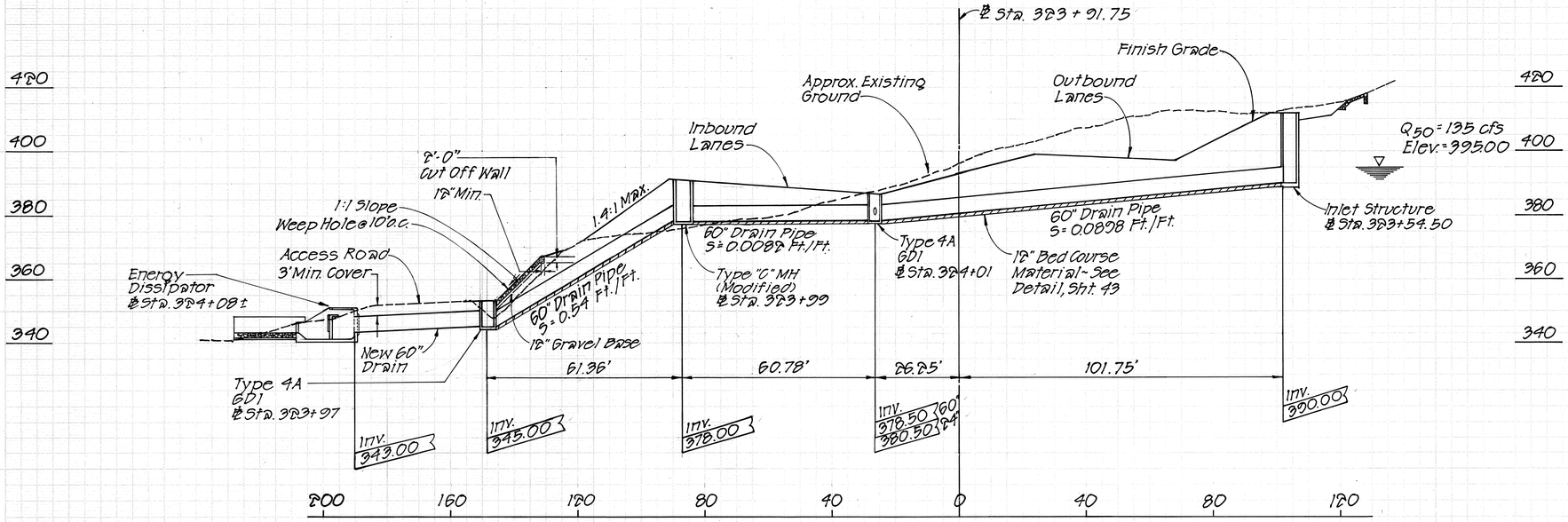
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	
NOTE BOOK	TRACED BY	
No.	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

C.O. 22

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C0225-1	124



DATE	REVISION
7/30/91	REVISION TO OUTLET STRUCTURE AT ℄ STA. 324+08±
7/14/89	REVISED 60" DRAIN PIPE AT ℄ STA. 323+91.75 AND ADDED ACCESS ROAD



PROFILE ~ 60" DRAIN PIPE AT ℄ STA. 323+91.75

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

ROBERT I. ITAGAKI REGISTERED PROFESSIONAL ENGINEER No. 1584-C HAWAII, U.S.A.

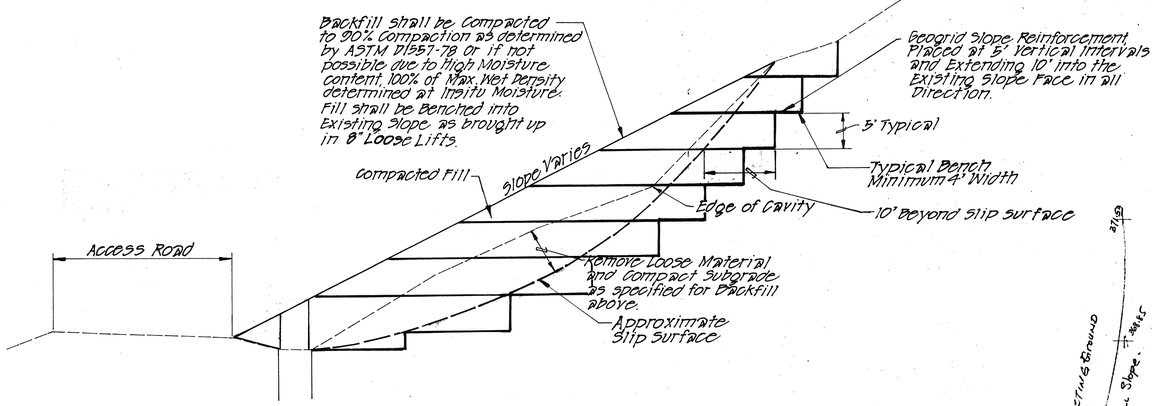
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

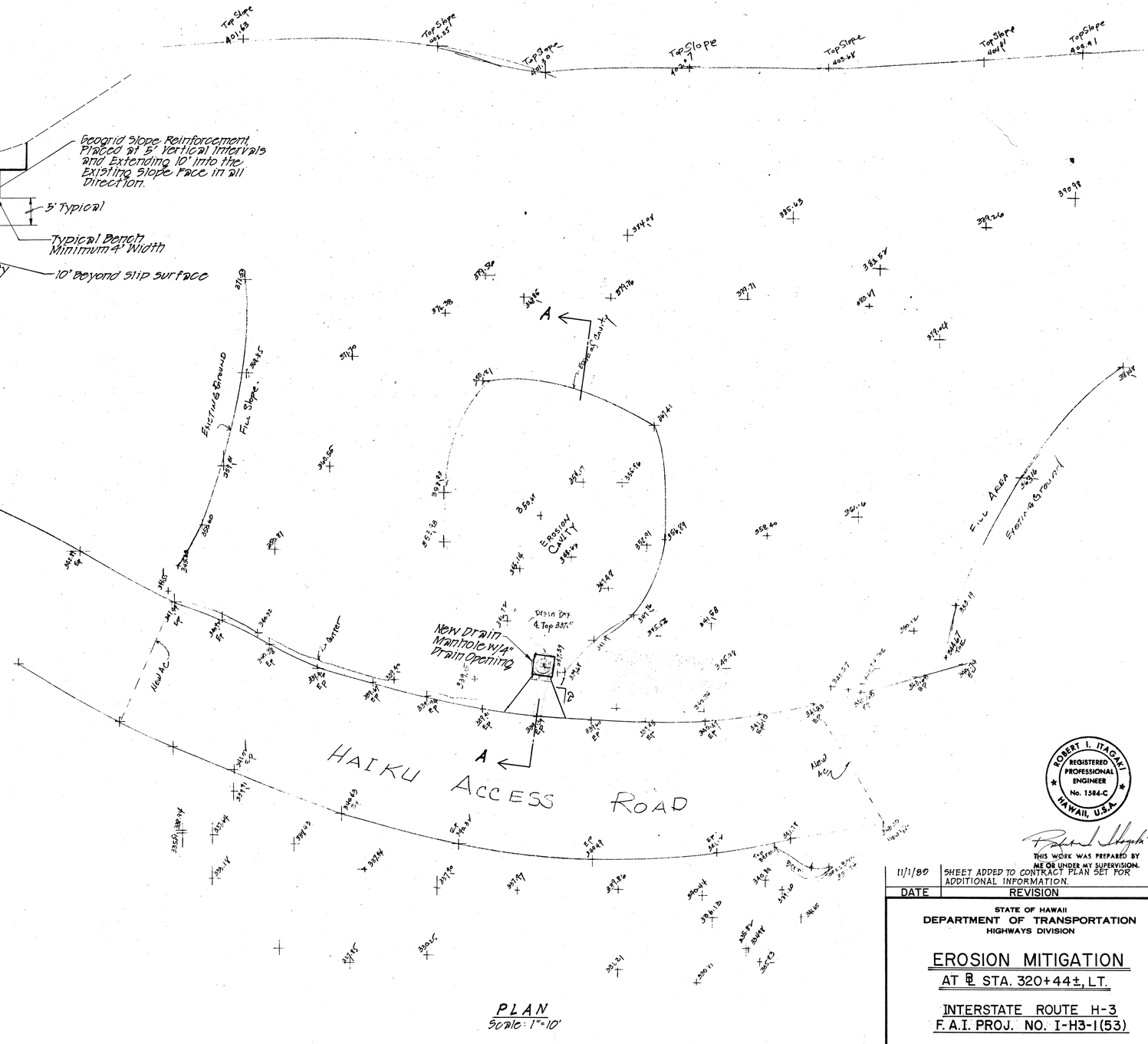
SHEET No. OF SHEETS

C.O. 22S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	60.225-2	124



SECTION A-A
Scale: Horiz. 1"=10'
Vert. 1"=10'



PLAN
Scale: 1"=10'

ROBERT I. ITAGAKI
REGISTERED PROFESSIONAL ENGINEER
No. 1584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

DATE	REVISION
11/1/89	SHEET ADDED TO CONTRACT PLAN SET FOR ADDITIONAL INFORMATION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EROSION MITIGATION
AT ℄ STA. 320+44±, LT.

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: NOV., 1989

SHEET No. OF SHEETS

C.O. 225-2

ORIGINAL PLAN

NOTE BOOK No.

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

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	10-23	104

℄ Sta. 327+45 Lt.
Construct: Type 5 GDI
Install: 36" Drain Pipe
Connect: 6" Underdrain Pipe

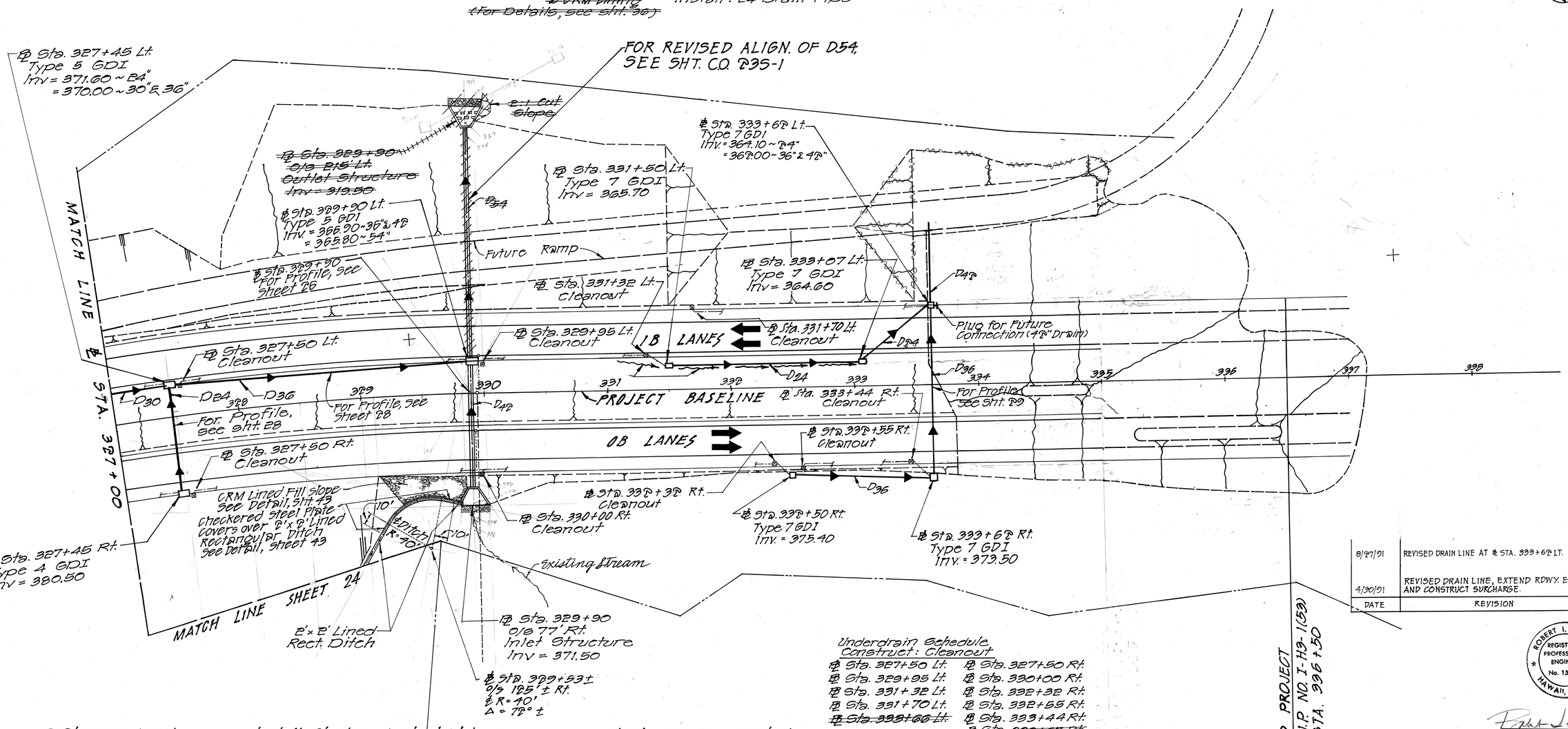
℄ Sta. 329+90 Lt.
Construct: Type 5 GDI
Install: 54" Drain Pipe
Connect: 6" Underdrain Pipe

℄ Sta. 331+50 Lt.
Construct: Type 7 GDI
Install: 24" Drain Pipe
Connect: 6" Underdrain Pipe

~~℄ Sta. 329+90 0/s 215' Lt.~~
~~Construct: Outlet Structure~~
~~& CRM Lining~~
~~(For Details, see sht. 36)~~

℄ Sta. 333+68 Lt.
Construct: Type 7 GDI
Install: 48" Drain Pipe
Connect: 6" Underdrain Pipe

℄ Sta. 333+07 Lt.
Construct: Type 7 GDI
Install: 24" Drain Pipe



Underdrain Schedule
Construct: Cleanout

℄ Sta. 327+50 Lt.	℄ Sta. 327+50 Rt.
℄ Sta. 329+95 Lt.	℄ Sta. 330+00 Rt.
℄ Sta. 331+32 Lt.	℄ Sta. 332+32 Rt.
℄ Sta. 331+70 Lt.	℄ Sta. 332+55 Rt.
~~℄ Sta. 333+66 Lt.~~	℄ Sta. 333+44 Rt.
	~~℄ Sta. 333+67 Rt.~~
	~~℄ Sta. 334+00 Rt.~~

Install: 6" Perforated Underdrain Pipe

℄ Sta.	327+50 Lt.	to	℄ Sta. 329+90 Lt.
℄ Sta.	329+95 Lt.	to	℄ Sta. 331+32 Lt.
℄ Sta.	331+70 Lt.	to	℄ Sta. 333+62 Lt.
~~℄ Sta.~~	~~333+66 Lt.~~	to	~~℄ Sta. 334+33 Lt.~~
℄ Sta.	327+50 Rt.	to	℄ Sta. 332+32 Rt.
℄ Sta.	330+00 Rt.	to	℄ Sta. 332+32 Rt.
℄ Sta.	332+55 Rt.	to	℄ Sta. 333+34 Rt.
~~℄ Sta.~~	~~333+67 Rt.~~	to	~~℄ Sta. 334+00 Rt.~~

℄ Sta. 327+45 Rt.
Construct: Type 4 GDI
Install: 24" Drain Pipe
Connect: 6" Underdrain Pipe

℄ Sta. 329+10± to
℄ Sta. 329+83± Rt.
Construct: CRM Lined Fill Slope
48 ± C.Y. CRM

Install: Checkered steel plate cover on 2'x2' Lined Rect. Ditch
7 sections (10'±) = 70± L.F.

℄ Sta. 332+50 Rt.
Construct: Type 7 GDI
Install: 36" Drain Pipe
Connect: 6" Underdrain Pipe

℄ Sta. 329+90 O/S 77' Rt.
Construct: Inlet Structure & CRM Lining
(For Det., see sht. 36.)
Install: 42" Drain Pipe
Connect: 2'x2' Lined Rect. Ditch

℄ Sta. 333+62 Rt.
Construct: Type 7 GDI
Install: 36" Drain Pipe
Connect: 6" Underdrain Pipe

DATE	REVISION
8/27/91	REVISED DRAIN LINE AT ℄ STA. 333+68 LT.
4/30/91	REVISED DRAIN LINE, EXTEND RDWY. EMB. AND CONSTRUCT SURCHARGE.
10/15/90	SHEET ADDED TO CONTRACT PLAN SET FOR REVISION OF 54" DRAIN PIPE AT ℄ STA. 329+90 ON SHEET C.O. P35-1
5/14/90	REVISED GRADING FOR RAMP "D"

ROBERT I. ITAGAKI
REGISTERED PROFESSIONAL ENGINEER
No. 1584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

INTERSTATE ROUTE H-3
F. A. I. PROJ. NO. I-H3-1(53)

SCALE = AS NOTED DATE = AUG., 1988

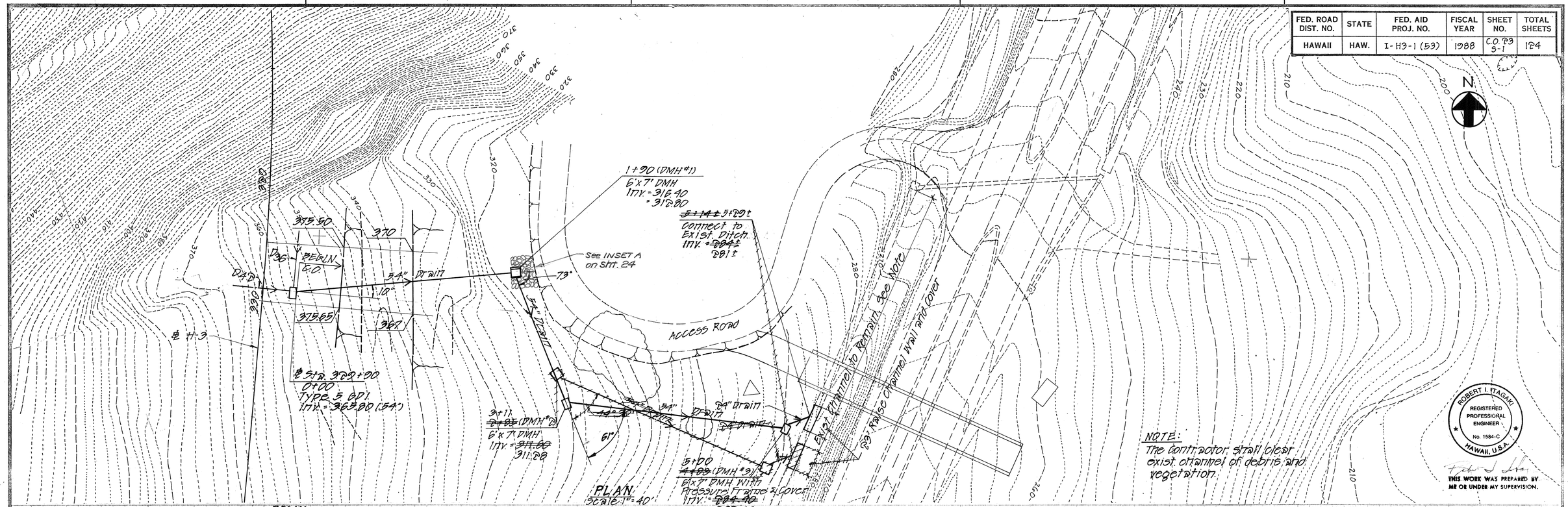
SHEET No. 10-7 OF 28 SHEETS

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

C.O. 23

4½ CY CLM

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1 (53)	1988	C.O. 23 S-1	124



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

ORIGINAL PLAN

NOTE BOOK

No.

DATE	REVISION
2/1/91	REVISION TO 54" DRAIN PIPE
10/15/90	SHEET ADDED TO CONTRACT PLAN SET FOR REVISION OF 54" DRAIN PIPE AT ℄ STA. 360+90 ON SHEET C.O. 23

SHEET No. D-7A OF 28 SHEETS

C.O. 23S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	24	124

MATCH LINE SHEET 22

MATCH LINE SHEET 23

Construct: 1½'x1½' Lined Trap. Drainage Ditch including transition
℄ Sta. 325+75 To ℄ Sta. 326+50 Rt.
℄ Sta. 326+20 To ℄ Sta. 328+00 Rt.
℄ Sta. 326+50 To ℄ Sta. 327+35 Rt.

Construct: 2'x2' Lined Rect. Drainage Ditch
℄ Sta. 327+52 To ℄ Sta. 329+83 Rt.

NOTE:

1. See Sheet 16 for Bench Grades.

Bench End (Low Point) 20' Ditch Transition

2'x2' Lined Rectangular Ditch

Bench Drainage Spillway (1½'x1½' Rect. Ditch) See Det. Sht. 4D

Bench

1'-6"x1'-6" Lined Trapezoidal Ditch

Bench End (Low Point)

20' Ditch Transition

2'x2' Lined Rectangular Ditch

Bench Drainage Spillway (1½'x1½' Rect. Ditch) See Det. Sht. 4D

Bench

1'-6"x1'-6" Lined Trapezoidal Ditch

Bench End (Low Point)

20' Ditch Transition

~~2'x2' Lined Rectangular Ditch~~

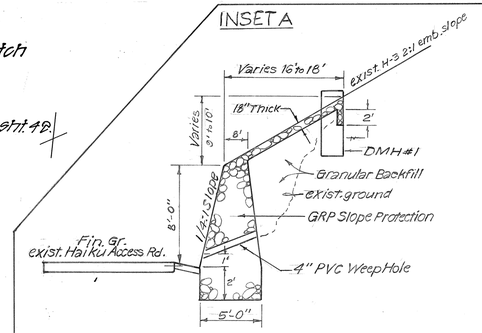
~~Bench Drainage Spillway (1½'x1½' Rect. Ditch) See Det. Sht. 4D~~

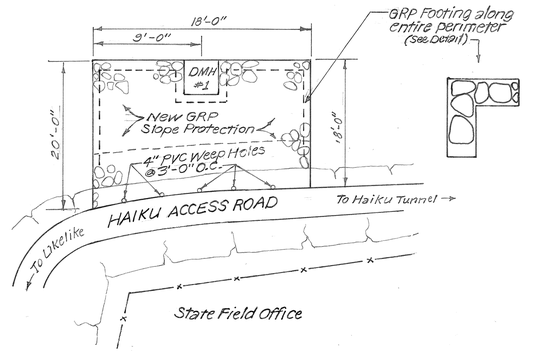
Bench

~~1'-6"x1'-6" Lined Trapezoidal Ditch~~

324+00 325+00 326+00 327+00 328+00 329+00

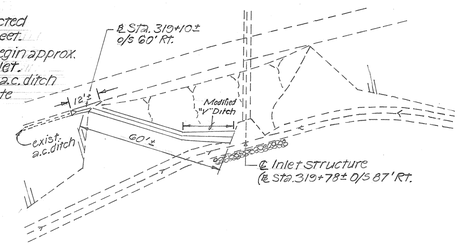
INSET A

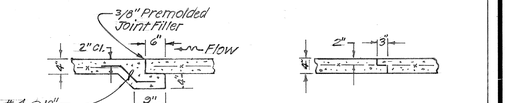




INSET B

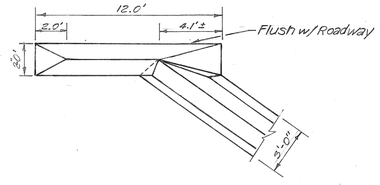
Notes:
1. ditch shall be constructed where the cut and fill meet.
2. Ditch transition shall begin approx. 19ft. from the drain inlet.
3. Connect to the existing a.c. ditch at beginning of concrete "V" ditch.

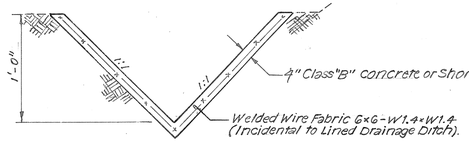




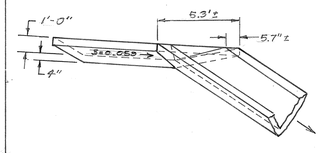
DETAILS OF LINED DRAINAGE DITCH

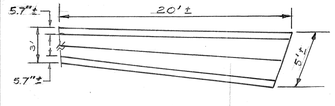
Note: Drainage ditch shall be installed with expansion joints at 90' max. intervals and construction joints at 30' max intervals.

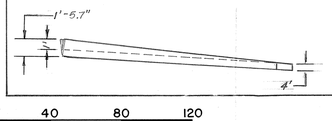




LINED DRAINAGE DITCH ON CUT SLOPE
N.T.S.







DITCH LEGEND

Diagonal hatching denotes rectangular ditches w/cover

40 20 0 40 80 120
GRAPHIC SCALE IN FEET

ROBERT I. ITAGAKI REGISTERED PROFESSIONAL ENGINEER No. 1584-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

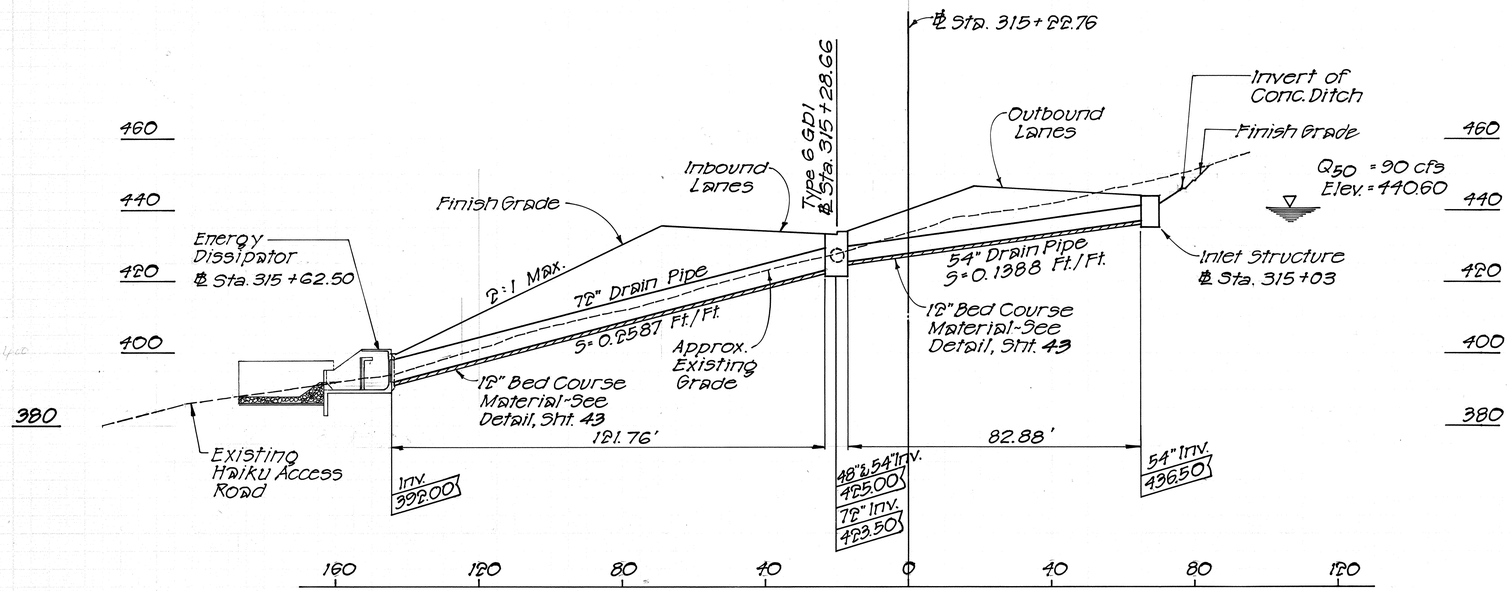
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

SHEET NO. D-8 OF 28 SHEETS

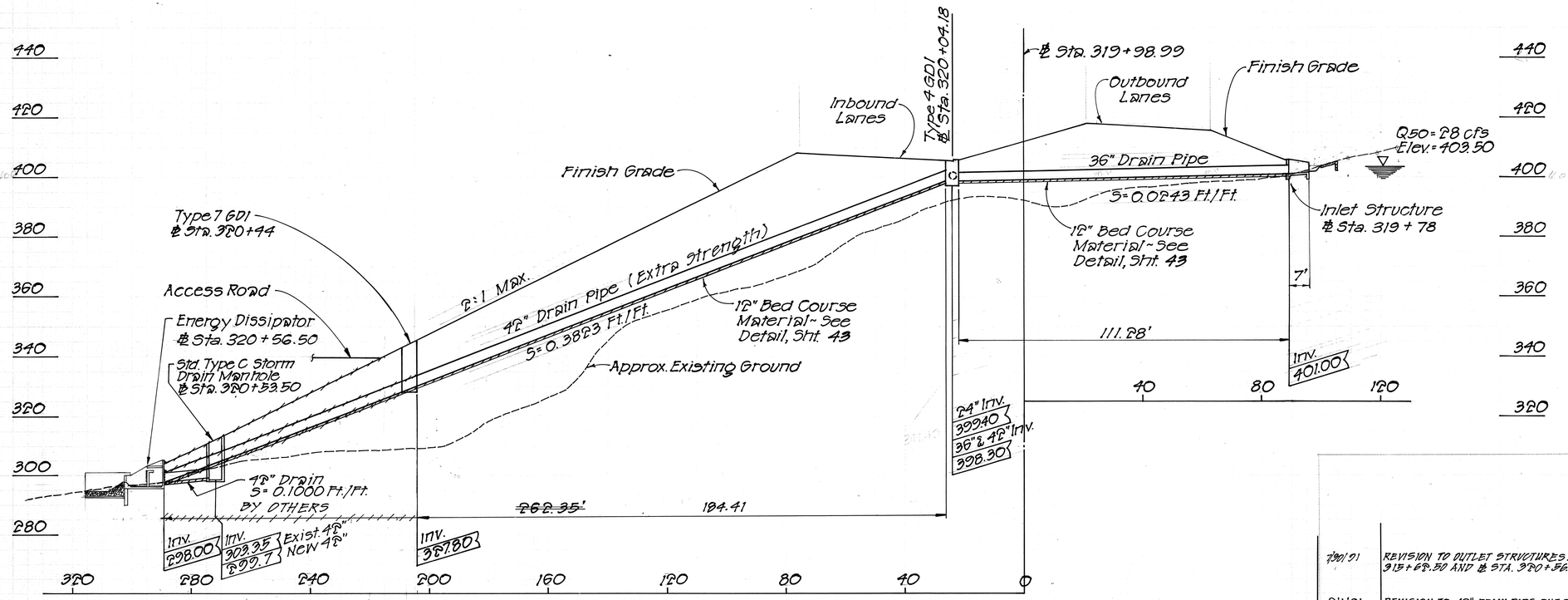
ORIGINAL PLAN
NOTE BOOK
No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	25	124



PROFILE ~ 54" & 72" DRAIN PIPE AT ℄ STA. 315+22.76

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



PROFILE ~ 36" & 42" DRAIN PIPE AT ℄ STA. 319+98.99

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

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

ROBERT I. ITAGAKI
REGISTERED PROFESSIONAL ENGINEER
No. 1584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

DATE	REVISION
7/30/91	REVISION TO OUTLET STRUCTURES AT ℄ STA. 313+68.50 AND ℄ STA. 320+56.50
8/1/91	REVISION TO 42" DRAIN PIPE DUE TO NEW GDI STRUCTURE @ ℄ STA. 319+98.99

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILES

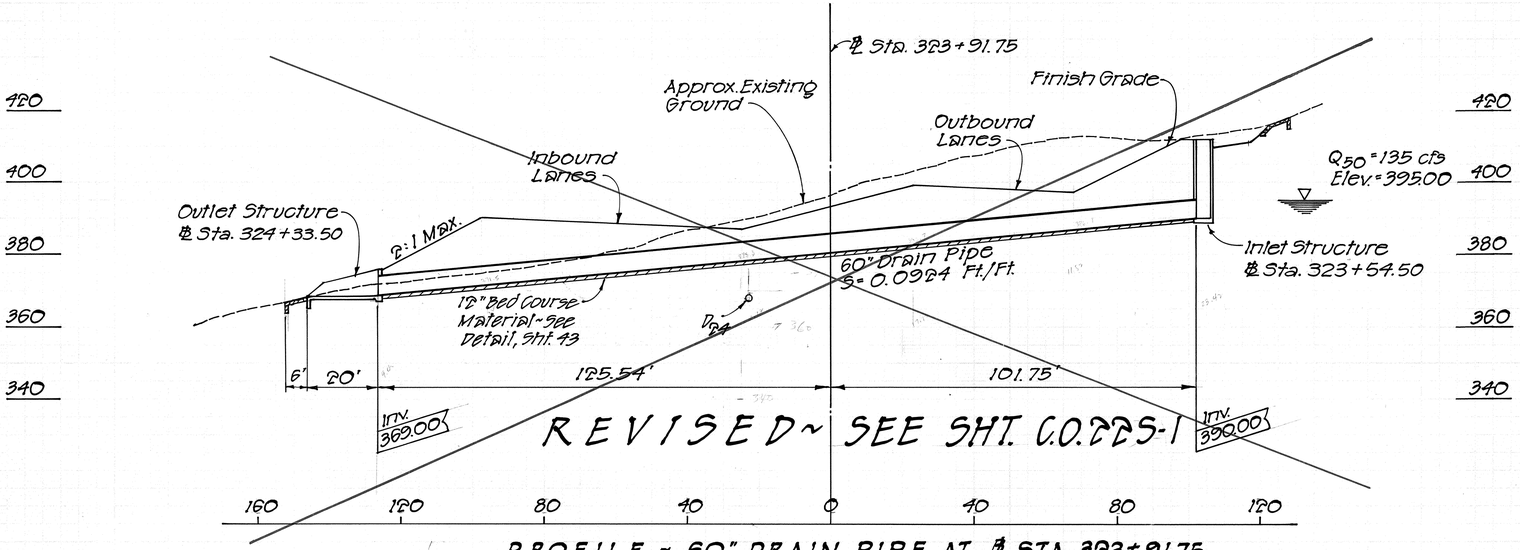
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

SHEET No. D-9 OF 28 SHEETS

C.O. 25

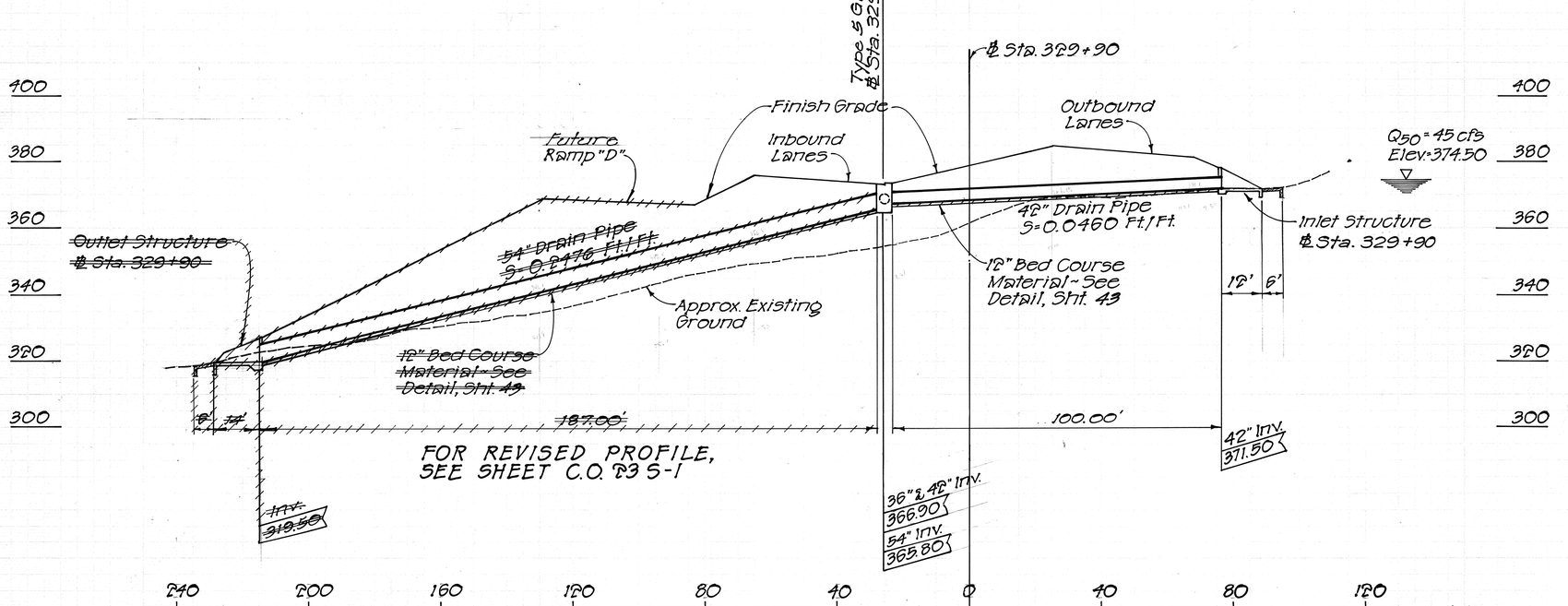
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	60 26	124



REVISED ~ SEE SHT. C.O. P3 5-1

PROFILE ~ 60" DRAIN PIPE AT ℄ STA. 323+91.75

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



FOR REVISED PROFILE, SEE SHEET C.O. P3 5-1

PROFILE ~ 42" & 54" DRAIN PIPE AT ℄ STA. 329+90

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

DATE	REVISION
10/19/90	SHEET ADDED TO CONTRACT PLAN SET FOR REVISION OF 54" DRAIN PIPE AT ℄ STA. 329+90 ON SHEET C.O. P3 5-1
7/14/89	SHEET ADDED TO CONTRACT PLAN SET FOR REVISION OF 60" DRAIN PIPE AT ℄ STA. 323+91.75 AND ADDITION OF ACCESS ON SHEET C.O. P3 5-1

ROBERT I. ITAGAKI REGISTERED PROFESSIONAL ENGINEER No. 1584-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILES

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

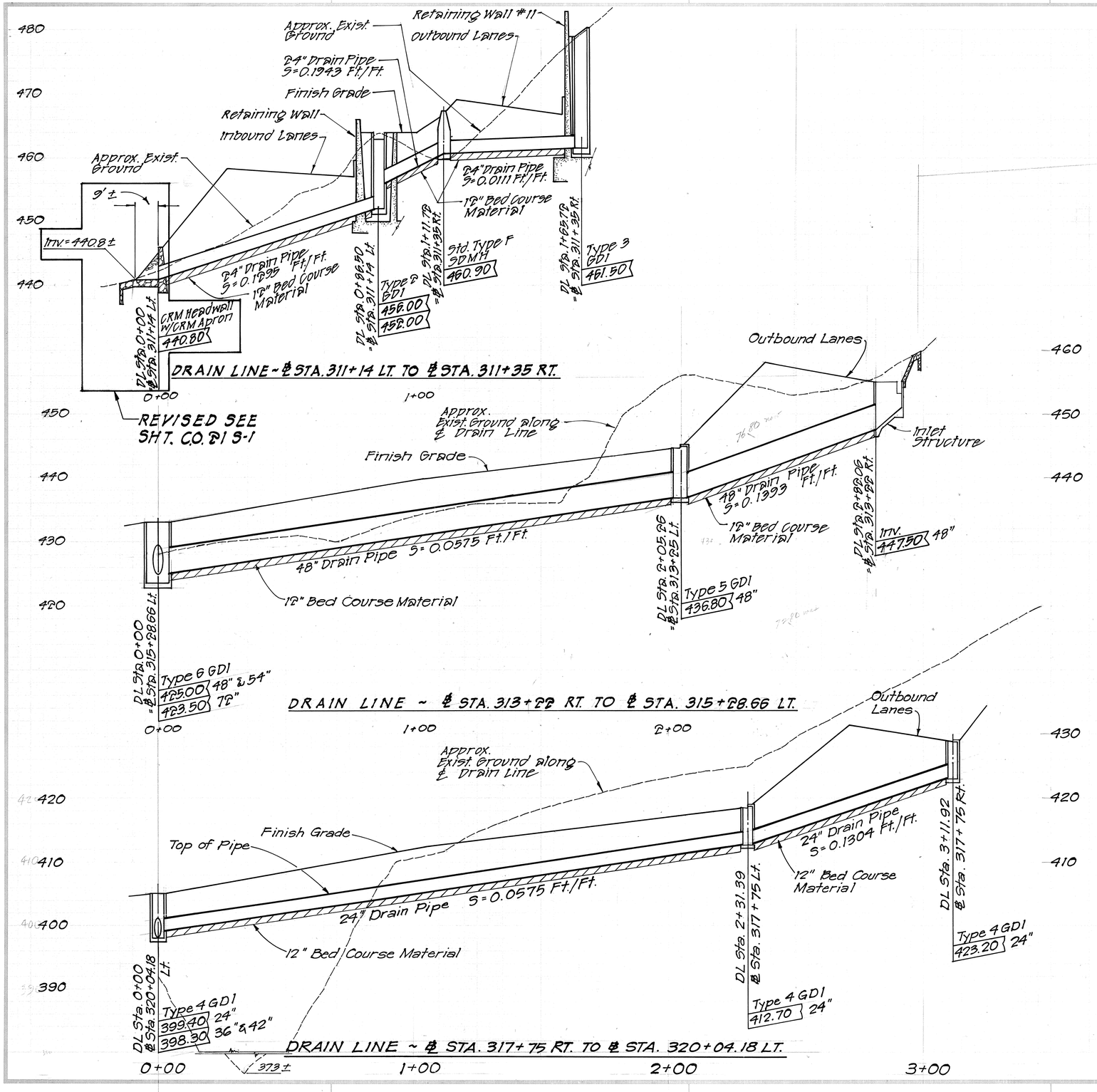
SCALE: AS NOTED DATE: AUG., 1988

SHEET No. D-10 OF 28 SHEETS

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

C.O. 26

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O. 27	124



NOTE:
Drain Line Profiles
Scales: Horiz. 1"=20'
Vert. 1"=8'

ROBERT I. ITAGAKI
REGISTERED PROFESSIONAL ENGINEER
No. 1584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILES

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

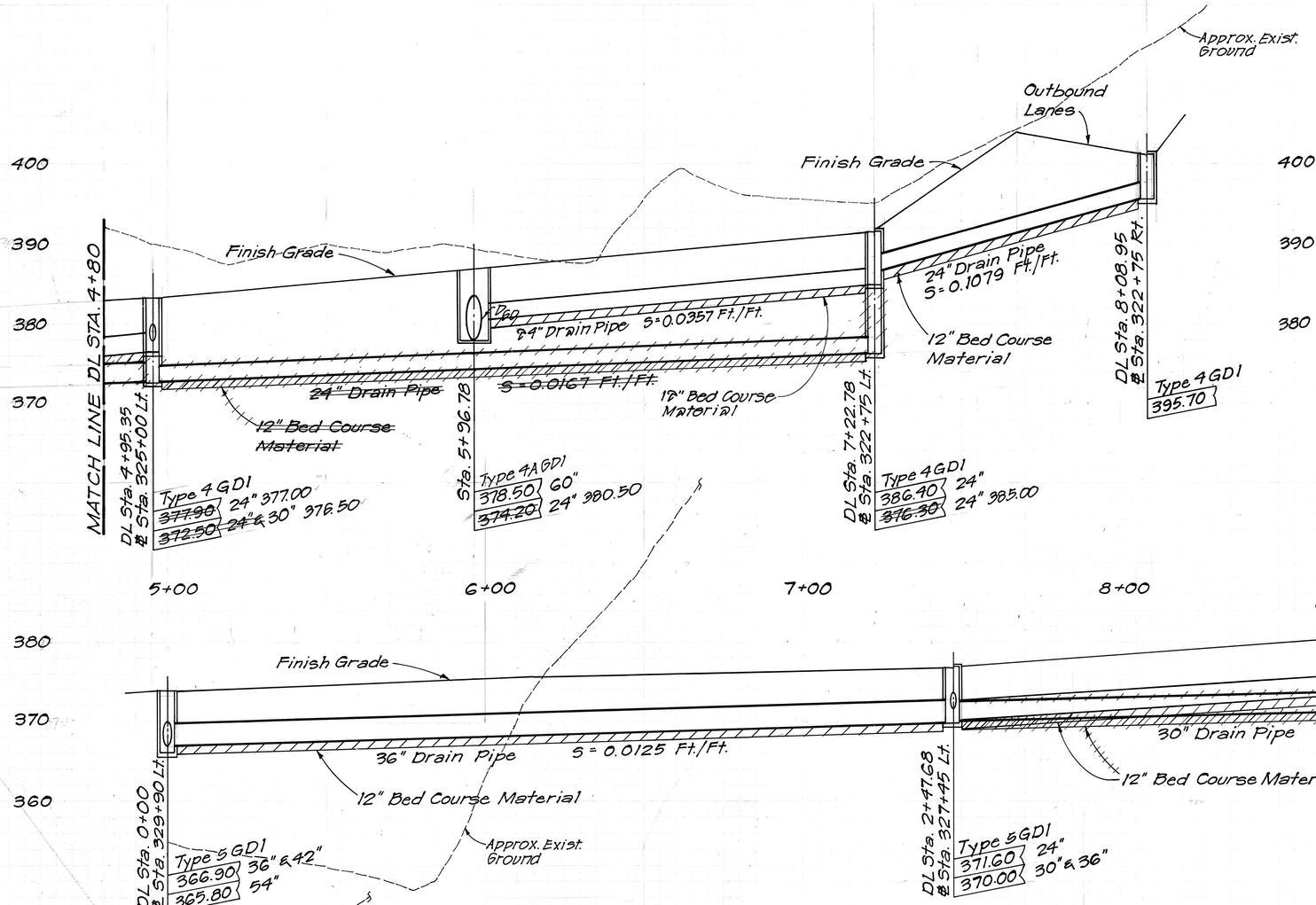
SCALE: AS NOTED DATE: AUG., 1988

SHEET NO. D-11 OF 28 SHEETS

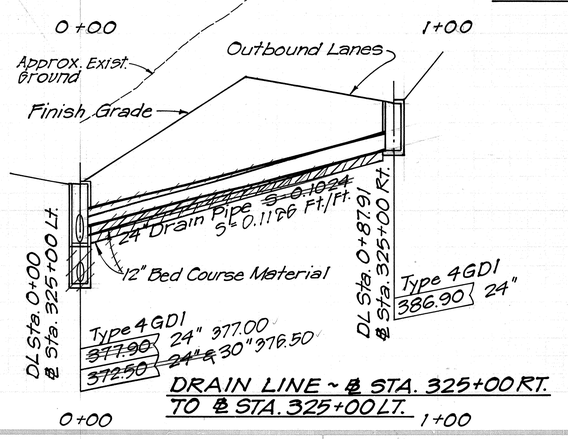
DATE	REVISION
5/17/91	REVISION OF 24" DRAINLINE AND CRM HEADWALL AT ℄ STA. 311+14 93.5' LT.

C.O. 27

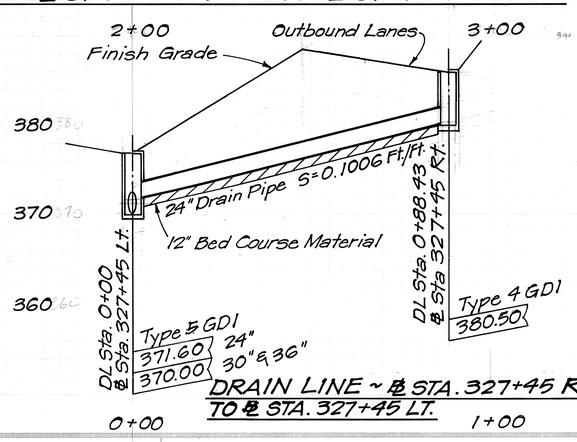
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O.28	104



DRAIN LINE ~ ℄ STA. 322+75 RT. TO ℄ STA. 329+90 LT.



DRAIN LINE ~ ℄ STA. 325+00 RT. TO ℄ STA. 325+00 LT.



DRAIN LINE ~ ℄ STA. 327+45 RT. TO ℄ STA. 327+45 LT.

NOTE:
Drain Line Profiles
Scales: Horiz. 1" = 20'
Vert. 1" = 8'

4+00 5+00

ROBERT I. ITAGAKI
REGISTERED PROFESSIONAL ENGINEER
No. 1584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

DATE	REVISION
7/21/89	REVISION TO 24" DRAIN PIPE DUE TO NEW GD1 STRUCTURE AT INTERSECTION OF 60" DRAIN PIPE AND 24" DRAIN PIPE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILES

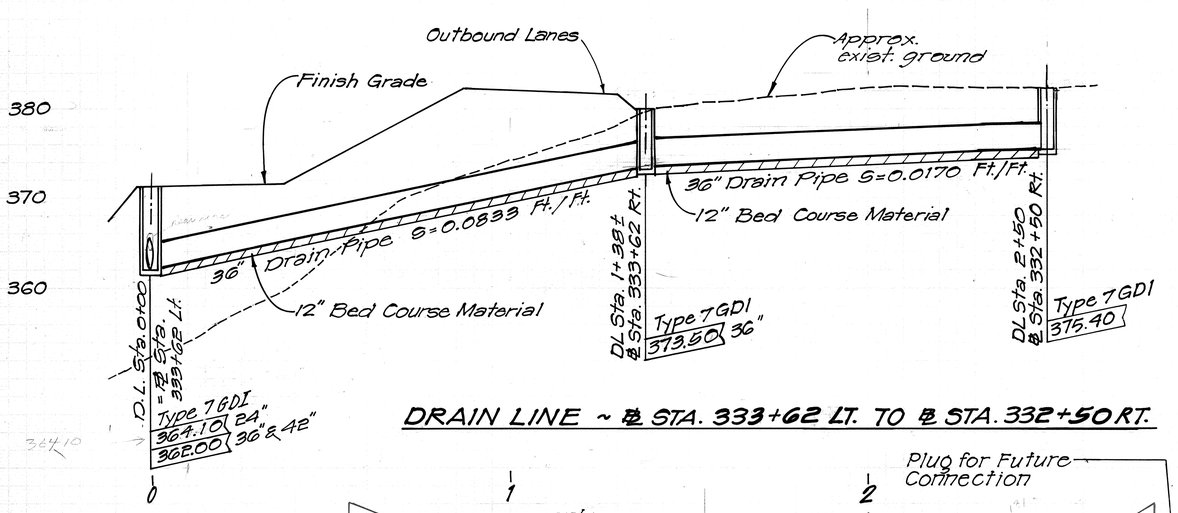
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

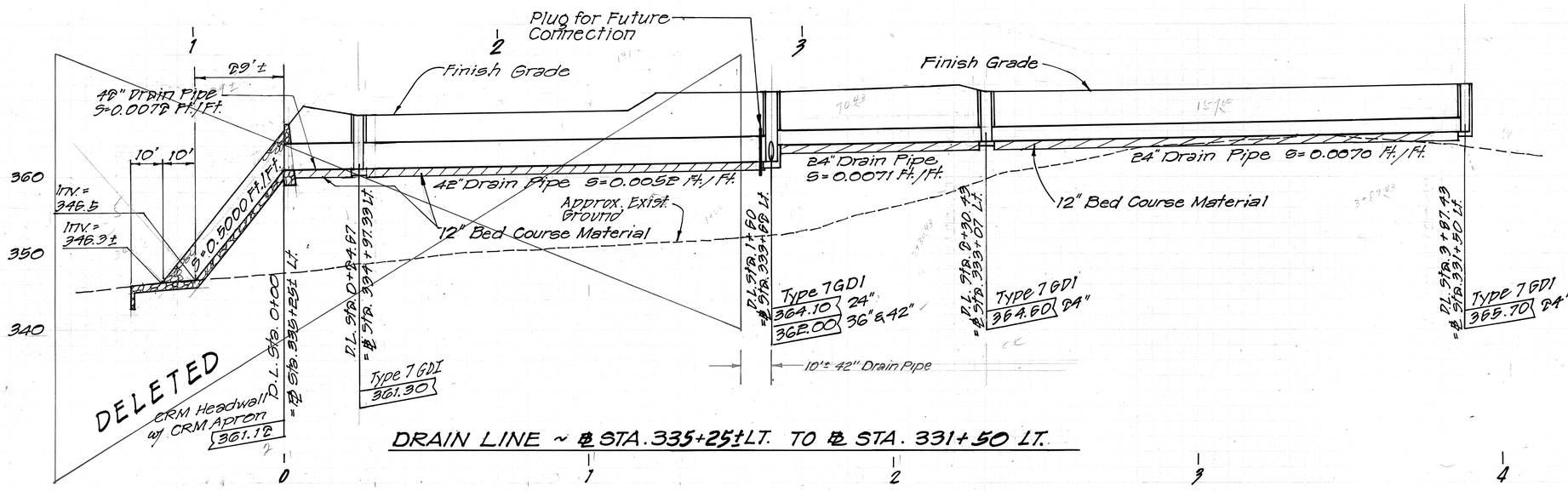
SHEET No. D-12 OF 28 SHEETS

C.O. 28

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C0.29	124



DRAIN LINE ~ ℄ STA. 333+62 LT. TO ℄ STA. 332+50 RT.



DRAIN LINE ~ ℄ STA. 335+25± LT. TO ℄ STA. 331+50 LT.

NOTE:
Drain Line Profiles
Scales: Horiz. 1"=20'
Vert. 1"=8'

DATE	REVISION
4/30/91	REVISED DRAINLINE @ ℄ STA. 333+68 Lt. to ℄ STA. 335+25± Lt.
5/14/90	REVISED GRADING FOR RAMP "D"

ROBERT L HAGAN
REGISTERED PROFESSIONAL ENGINEER
No. 1584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILES

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

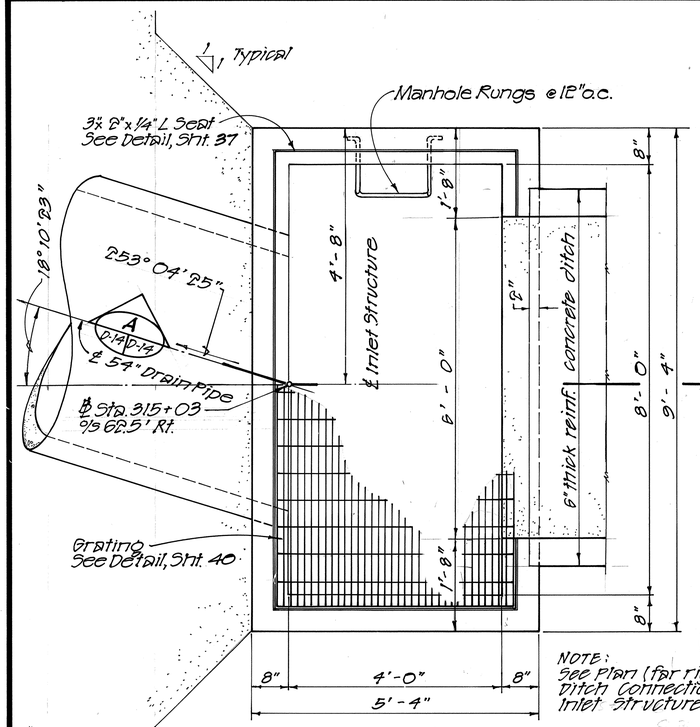
SCALE: AS NOTED DATE: AUG., 1988

SHEET No. D-13 OF 28 SHEETS

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

C.O. 29

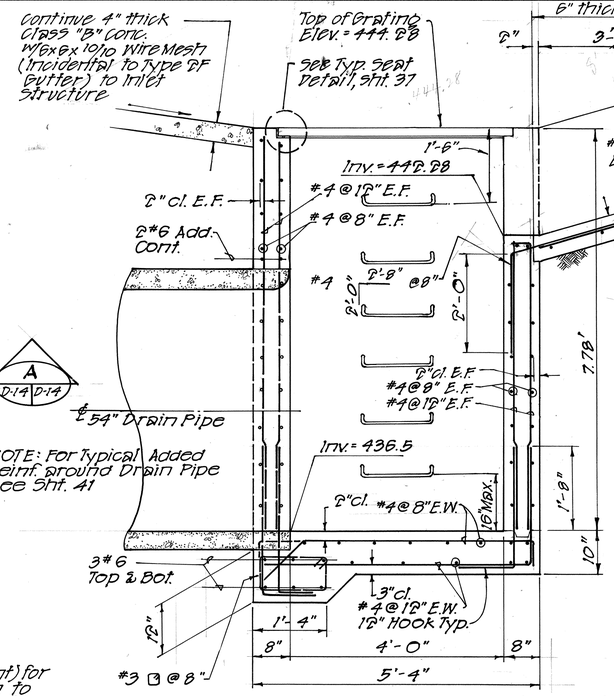
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	30	124



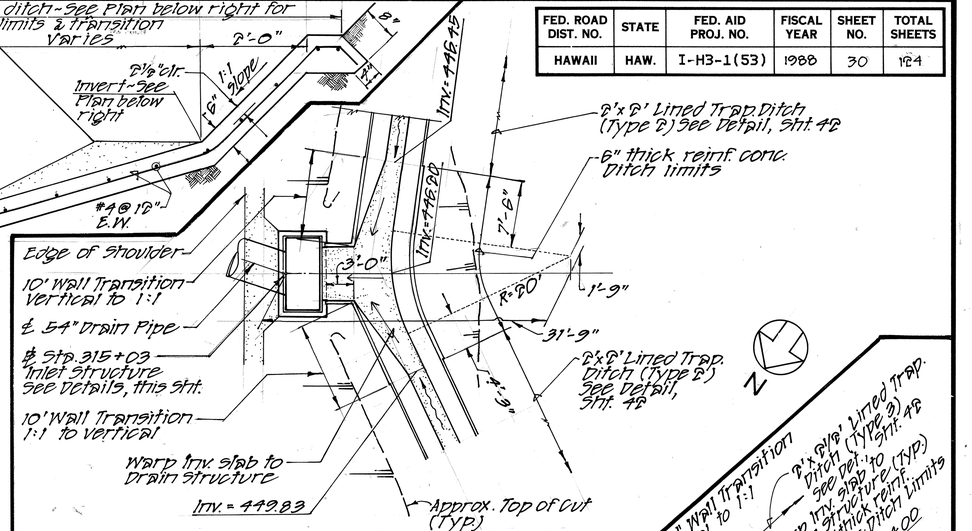
NOTE: See Plan (far right) for Ditch Connection to Inlet Structure

PLAN ~ INLET STRUCTURE AT STA. 315+03

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

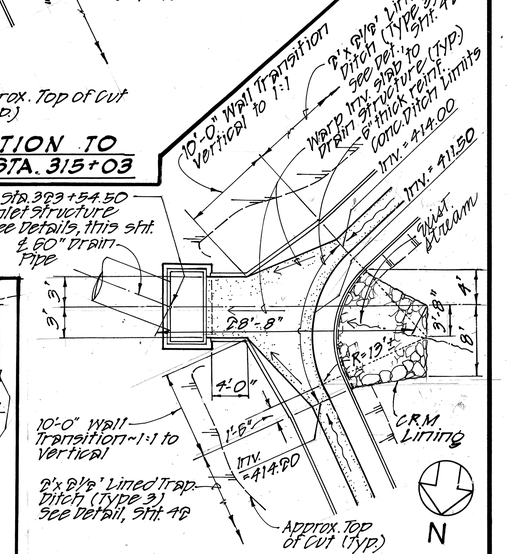


NOTE: For Typical Added Reinf. around Drain Pipe See Sht. 41



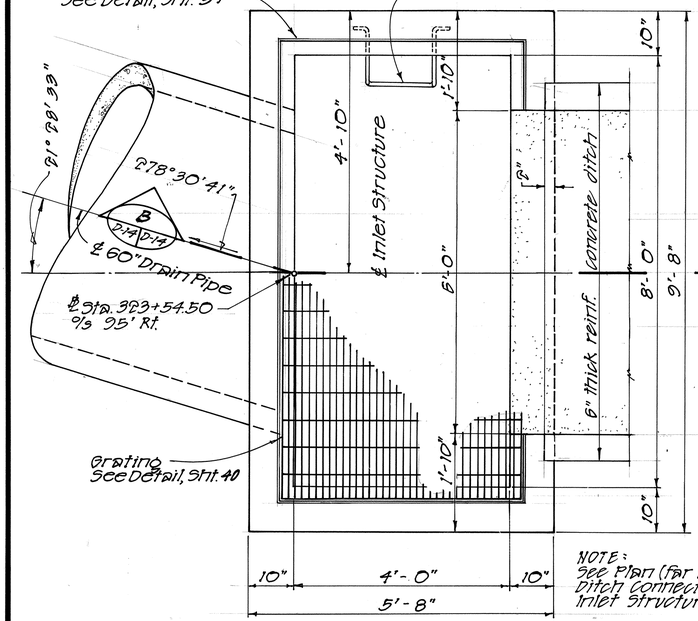
PLAN ~ DITCH CONNECTION TO INLET STRUCTURE @ ℄ STA. 315+03

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



PLAN ~ DITCH CONNECTION TO INLET STRUCTURE @ ℄ STA. 323+54.50

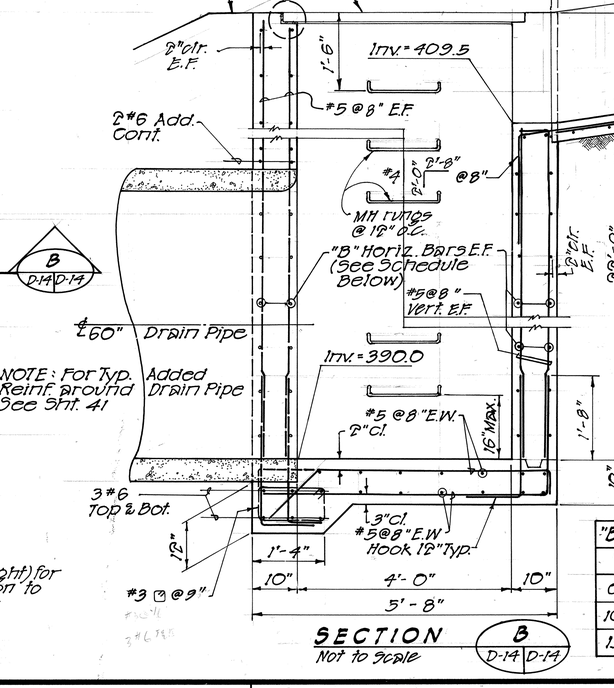
Scale: 1/8" = 1'-0"



NOTE: See Plan (far right) for Ditch Connection to Inlet Structure

PLAN ~ INLET STRUCTURE AT STA. 323+54.50

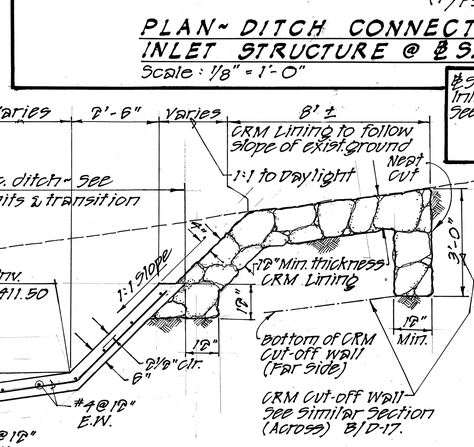
Scale: 3/4" = 1'-0"



NOTE: For Typ. Added Reinf. around Drain Pipe See Sht. 41

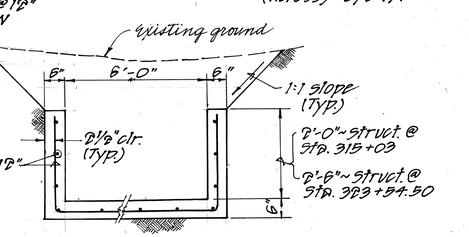
SECTION B

Not to scale



SECTION A

Scale: 3/4" = 1'-0" D-14 D-14



SECTION C

Scale: 1/8" = 1'-0" C D-14 D-14

"B" HORIZ. BAR SCHEDULE	
"H" (MAX.)	"B" HORIZ. BARS
0' TO 10'-0"	#5 @ 9" E.F.
10'-1" TO 15'-0"	#5 @ 6" E.F.
15'-1" TO 22'-0"	#6 @ 6" E.F.

ROBERT I. ITAGAKI — REGISTERED PROFESSIONAL ENGINEER — No. 1584-C — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

HAROLD TAKASHI MIYAMOTO — REGISTERED PROFESSIONAL ENGINEER — No. 1514-S — HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

ORIGINAL PLANS: SURVEY PLOTTED BY ____ DATE ____; DRAWN BY ____; TRACED BY ____; DESIGNED BY ____; QUANTITIES BY ____; CHECKED BY ____; NOTE BOOK ____; No. ____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

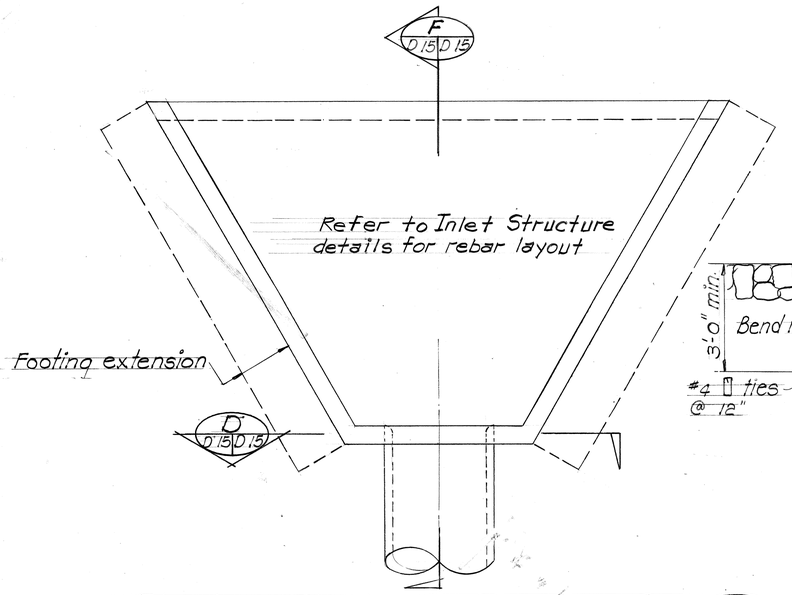
DRAINAGE DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

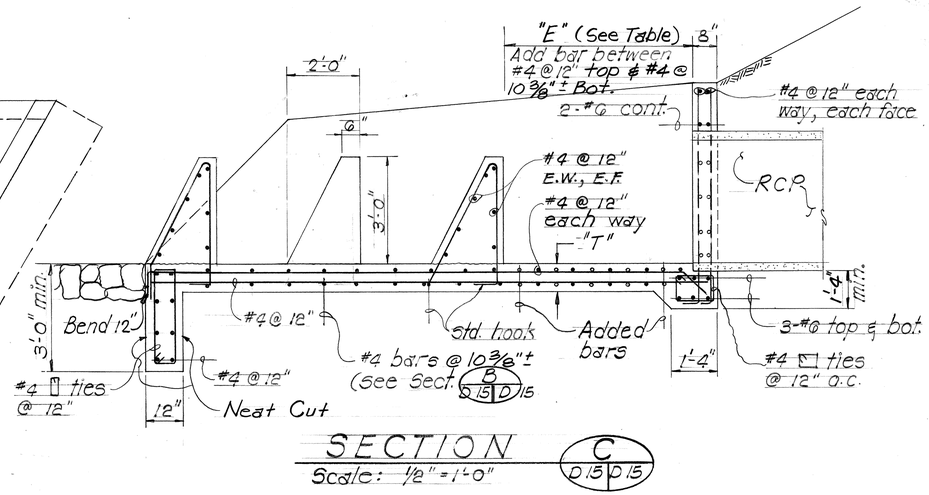
SHEET NO. D-14 OF 28 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	31	124



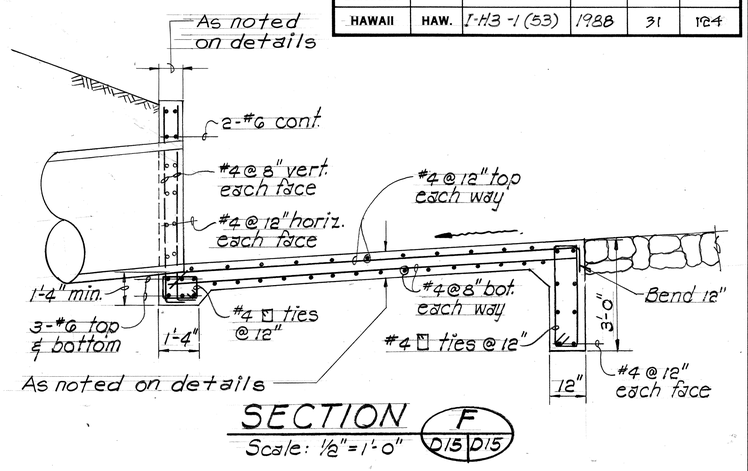
PLAN ~ TYPICAL INLET STRUCTURE A D15 D15

N.T.S.



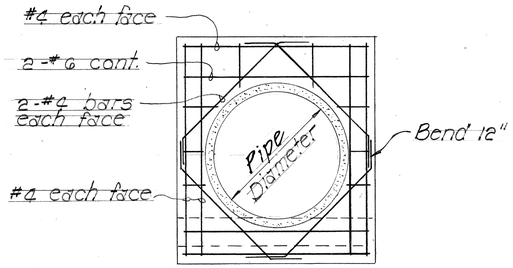
SECTION C D15 D15

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



SECTION F D15 D15

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

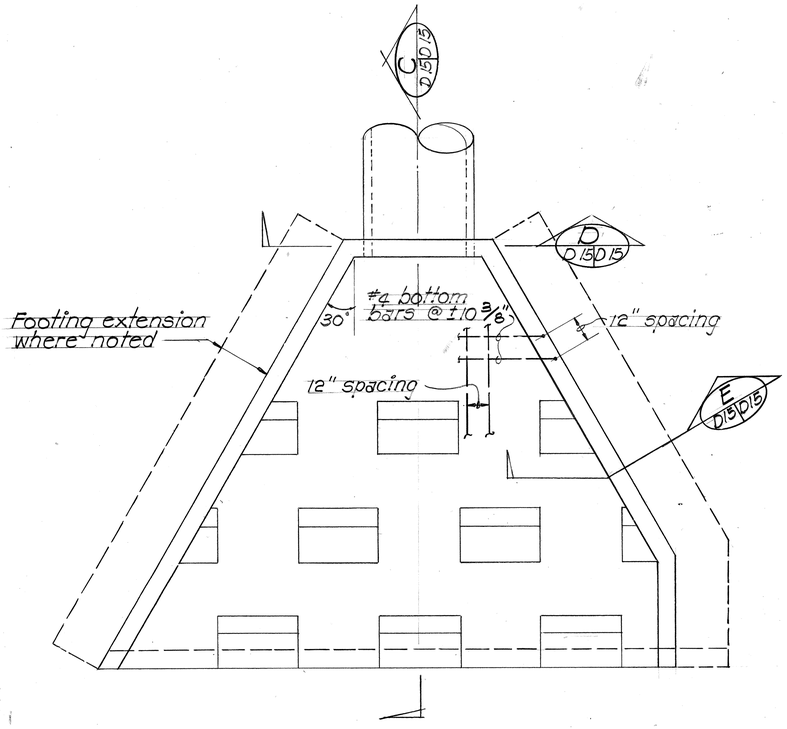


SECTION D D15 D15

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

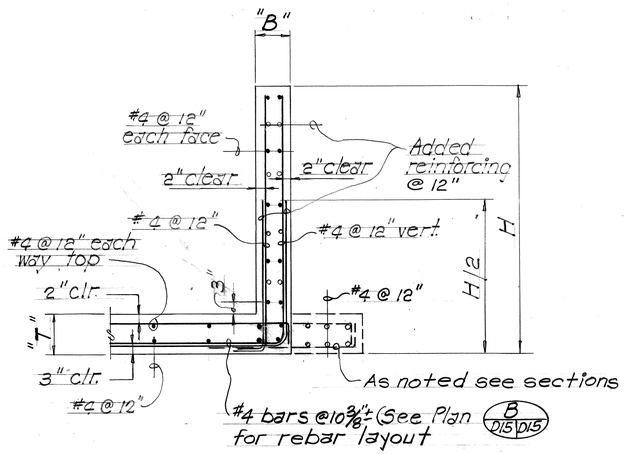
DIMENSIONS & ADDITIONAL REINFORCEMENT (Outlet Structure)

Station	Added Bar Size	"B"	"T"	"E"
315 + 62.5 O/S 138' Lt.	#5	12"	1'-6"	9'-0"
320 + 56.5 O/S 281' Lt.	#4	8"	1'-0"	6'-0"
~~324 + 33.5 O/S 118' Lt.~~	~~#4~~	~~12"~~	~~1'-0"~~	~~9'-0"~~
329 + 90 O/S 215' Lt.	#4	8"	1'-0"	7'-0"



PLAN ~ TYPICAL OUTLET STRUCTURE B D15 D15

N.T.S.



SECTION E D15 D15

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

DATE	REVISION
8/17/89	DELETED DIMENSIONS & ADDITIONAL REINFORCEMENT FOR OUTLET STRUCTURE AT ⊄ STA. 324+33.5 O/S 118 LT.

HARJID TAKASHI MIYAMOTO REGISTERED PROFESSIONAL ENGINEER No. 1514-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION,

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ NO. I-H3-1(53)

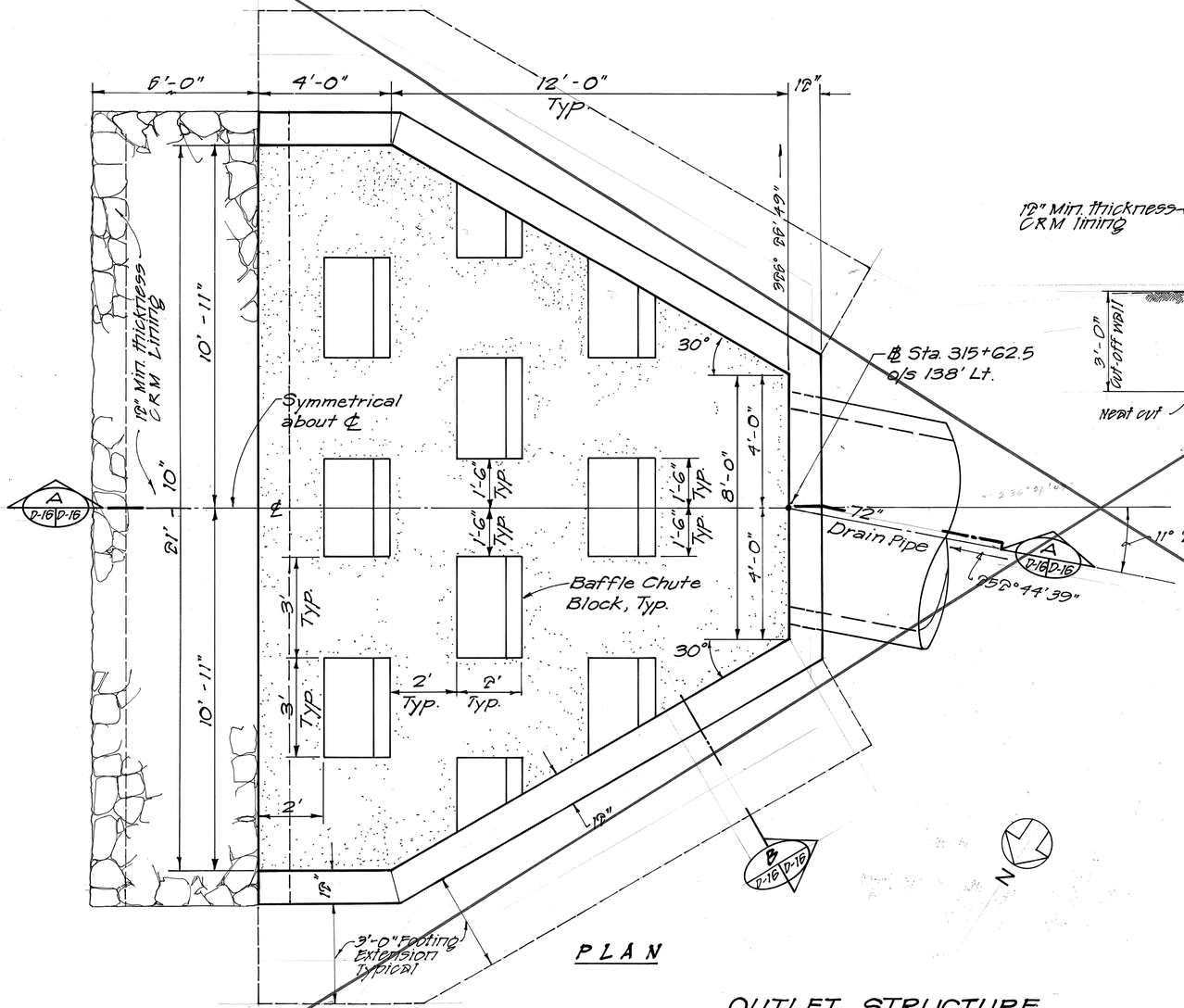
SCALE: AS NOTED DATE: AUG. 1988

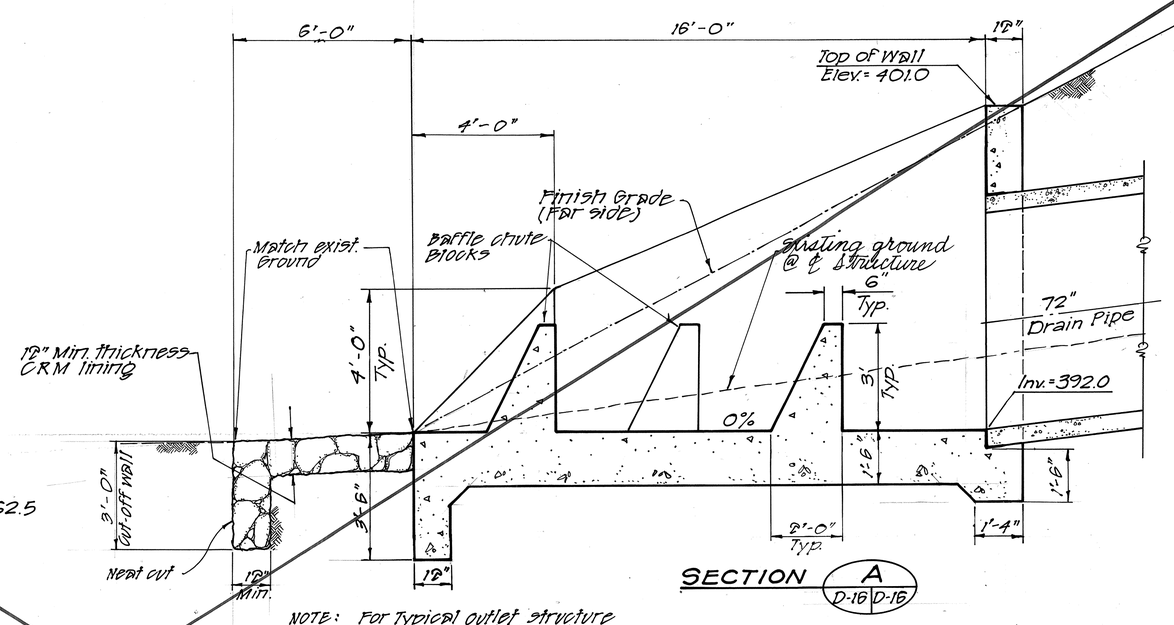
SHEET No. D-15 OF 28 SHEETS

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

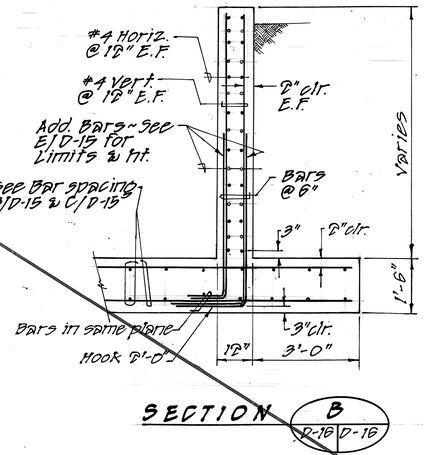
C.O. 31

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	20.32	124





NOTE: For Typical outlet structure Reinforcement, see Sht. 31



DELETED

OUTLET STRUCTURE AT ℄ STA. 315+62.50 o/s 138' LT.

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

DATE	REVISION
7/30/91	DELETED OUTLET STRUCTURE AT ℄ STA. 313+68.50

ROBERT I. ITAGAKI REGISTERED PROFESSIONAL ENGINEER No. 1584-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

HAROLD TAKASHI MIYAMOTO REGISTERED PROFESSIONAL ENGINEER No. 1514-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

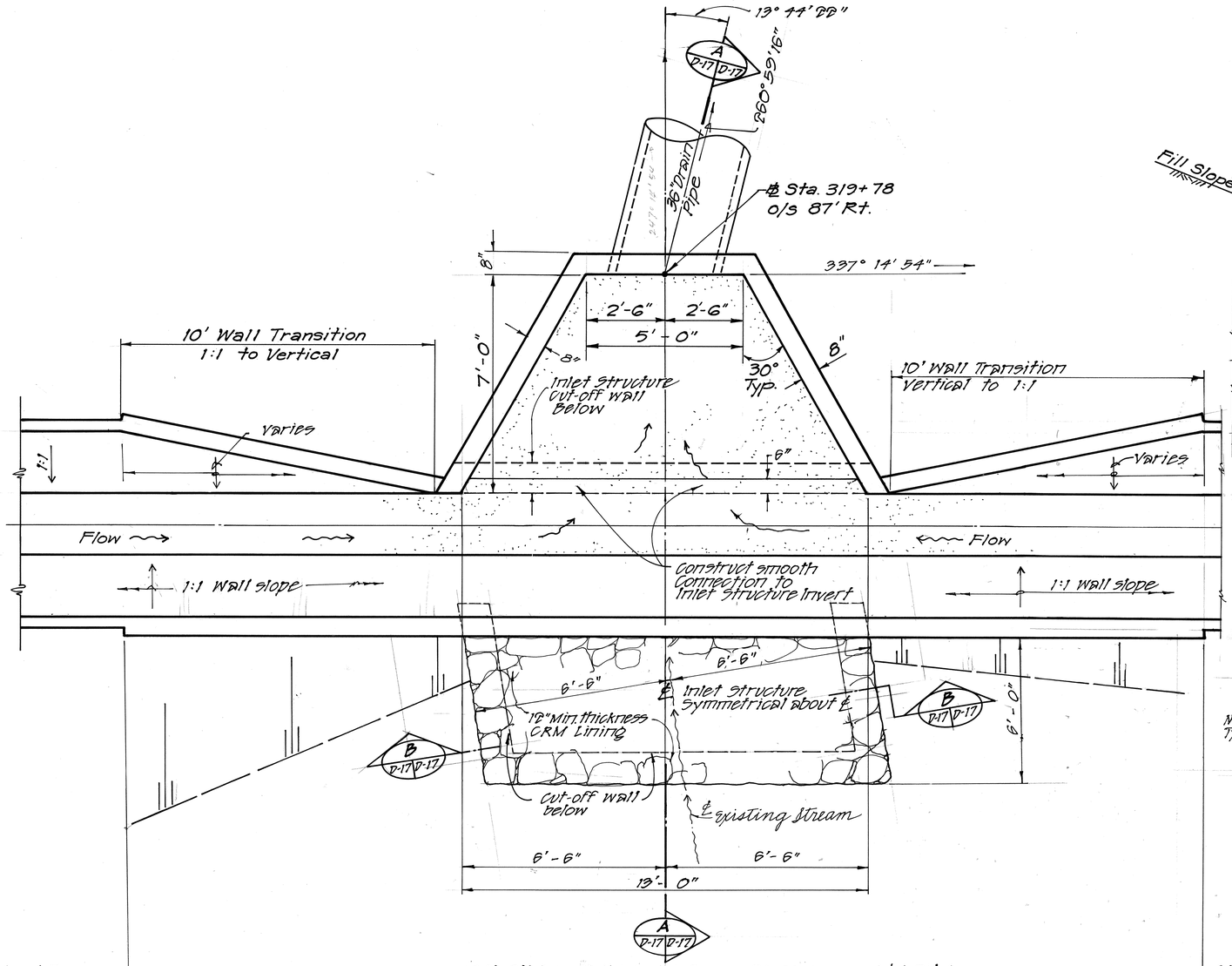
SHEET NO. D-16 OF 28 SHEETS

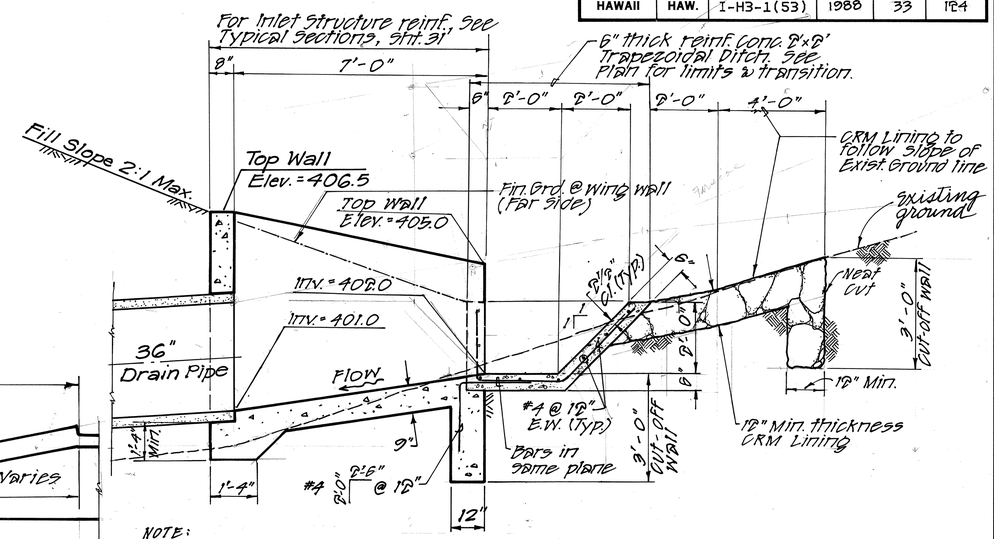
ORIGINAL PLAN
SURVEY PLOTTED BY ____ DATE
DRAWN BY ____ " "
TRACED BY ____ " "
DESIGNED BY ____ " "
NOTE BOOK QUANTITIES BY ____ " "
No. ____ CHECKED BY ____ " "

C.032

43

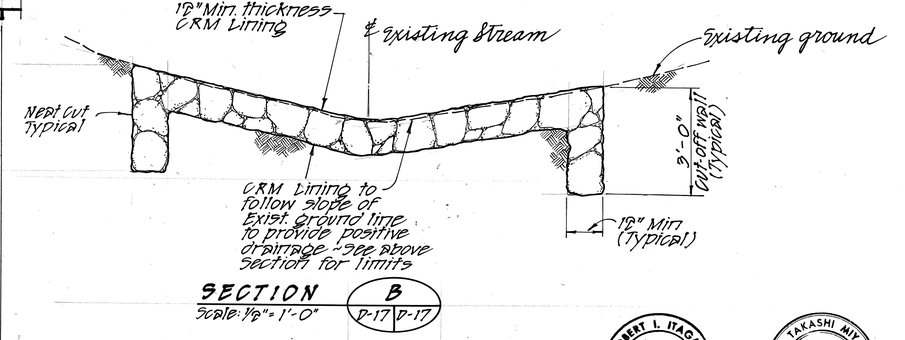
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	33	124





NOTE:
For Typical Inlet Structure reinforcing, see Sht. 31

SECTION A
Scale: 1/8" = 1'-0"
D-17 D-17



SECTION B
Scale: 1/8" = 1'-0"
D-17 D-17

PLAN ~ INLET STRUCTURE AT ℄ STA. 319+78 0/S 87' RIGHT
Scale : 1/8" = 1'-0"

N

ROBERT I. ITAGAKI
REGISTERED PROFESSIONAL ENGINEER
No. 1584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

HAROLD TAKASHI MIYAMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 1514-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

ORIGINAL PLAN
NOTE BOOK
No. ____
SURVEY PLOTTED BY ____ DATE
DRAWN BY ____
TRACED BY ____
DESIGN BY ____
QUANTITIES BY ____
CHECKED BY ____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

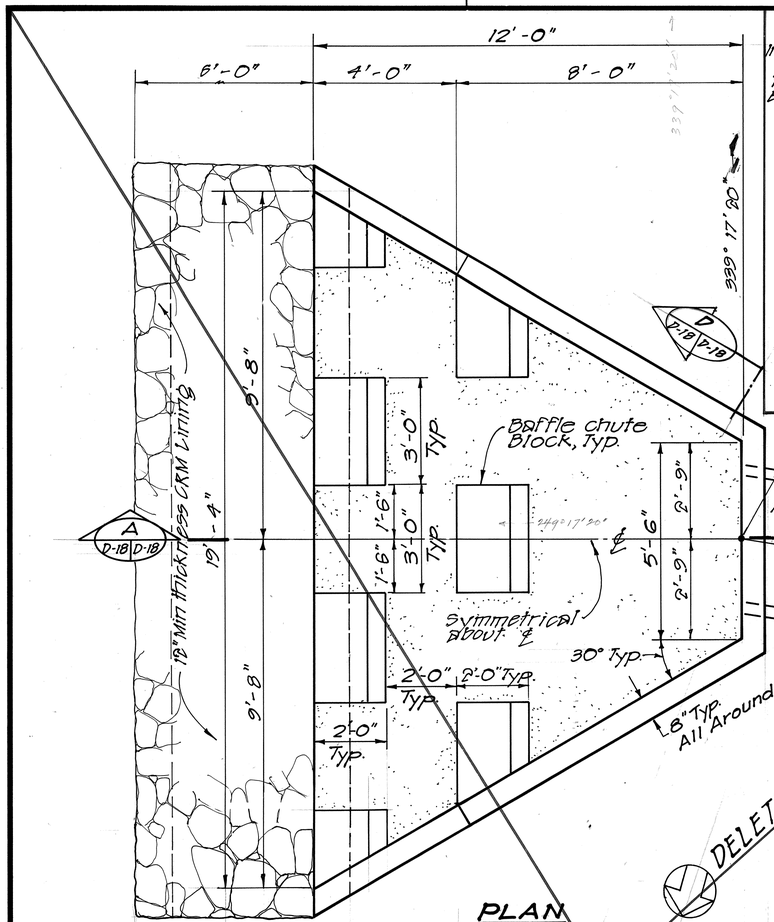
DRAINAGE DETAILS

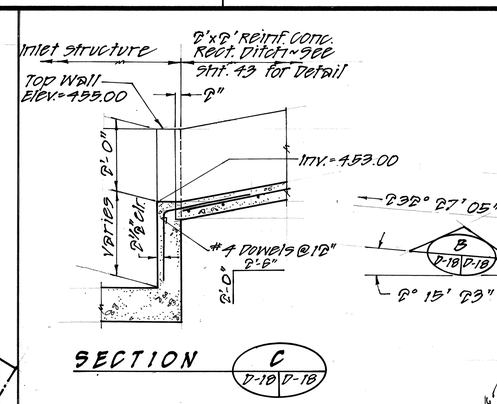
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

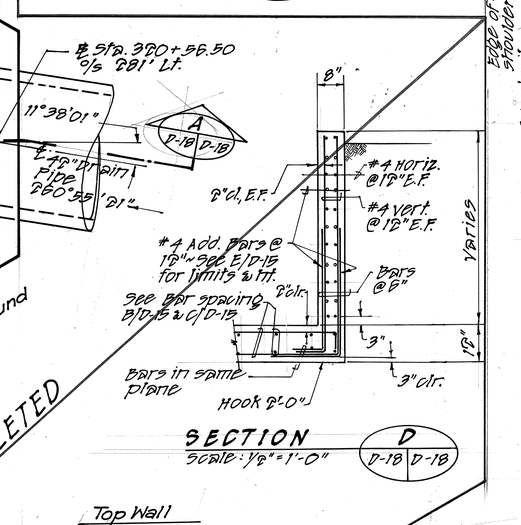
SCALE: AS NOTED DATE: AUG., 1988

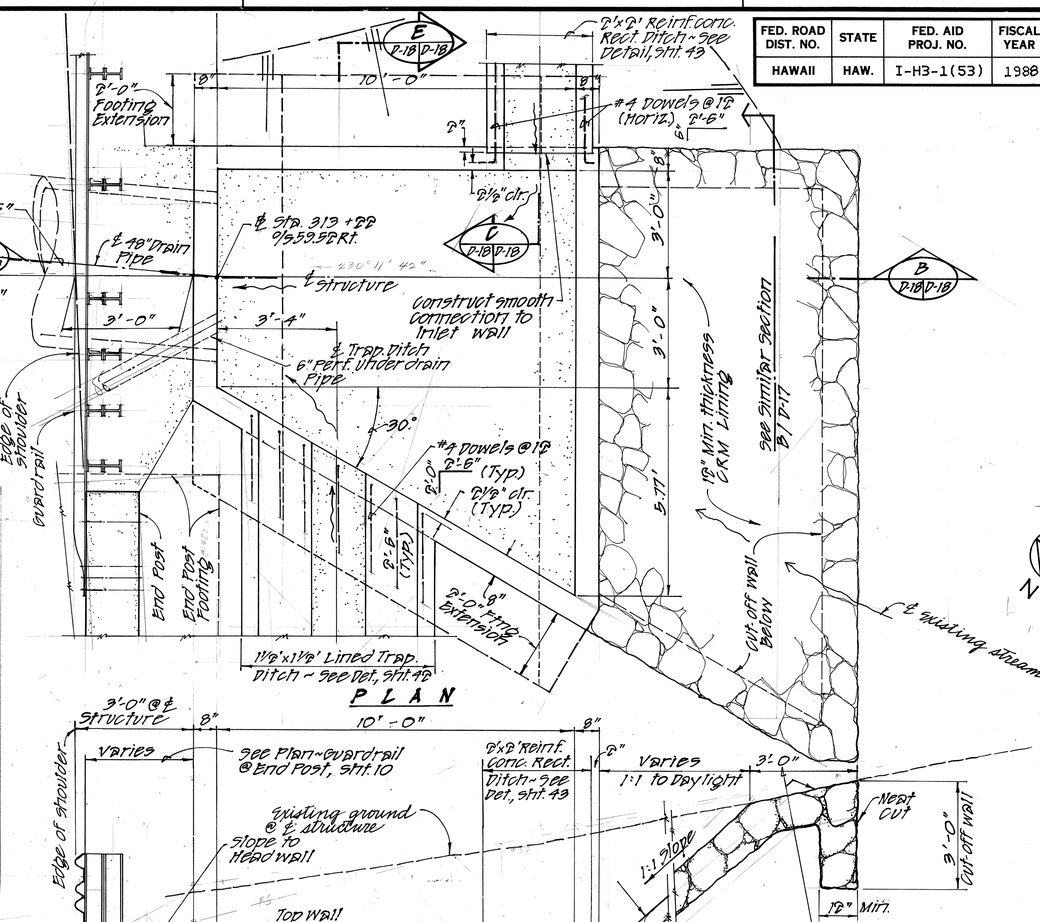
SHEET No. D-17 OF 28 SHEETS

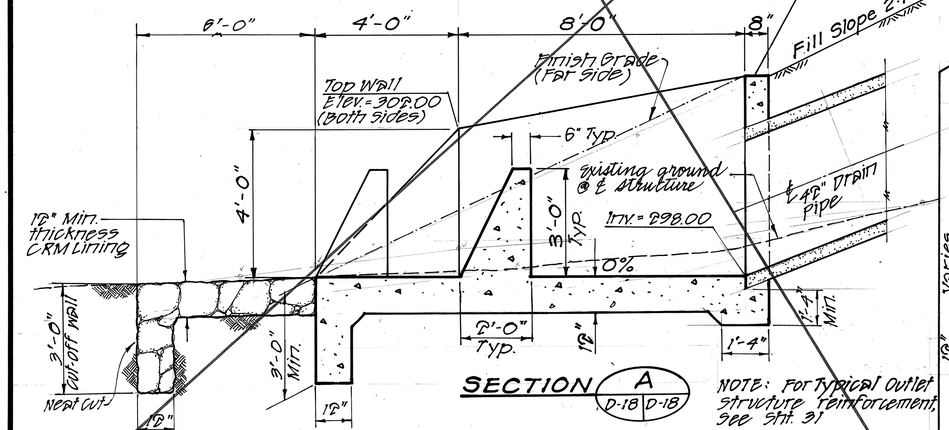
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	10/34	184

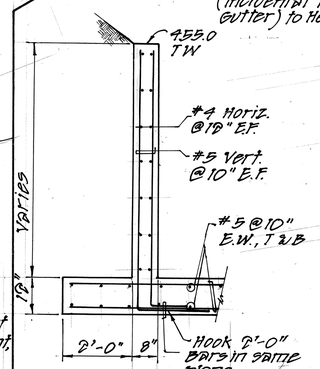


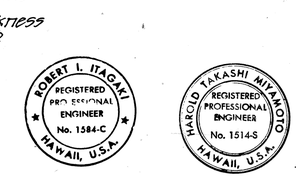












THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

DATE	REVISION
8/1/91	REVISION TO 42" DRAIN PIPE DUE TO NEW GDI STRUCTURE @ ℄ STA. 319+98.00

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

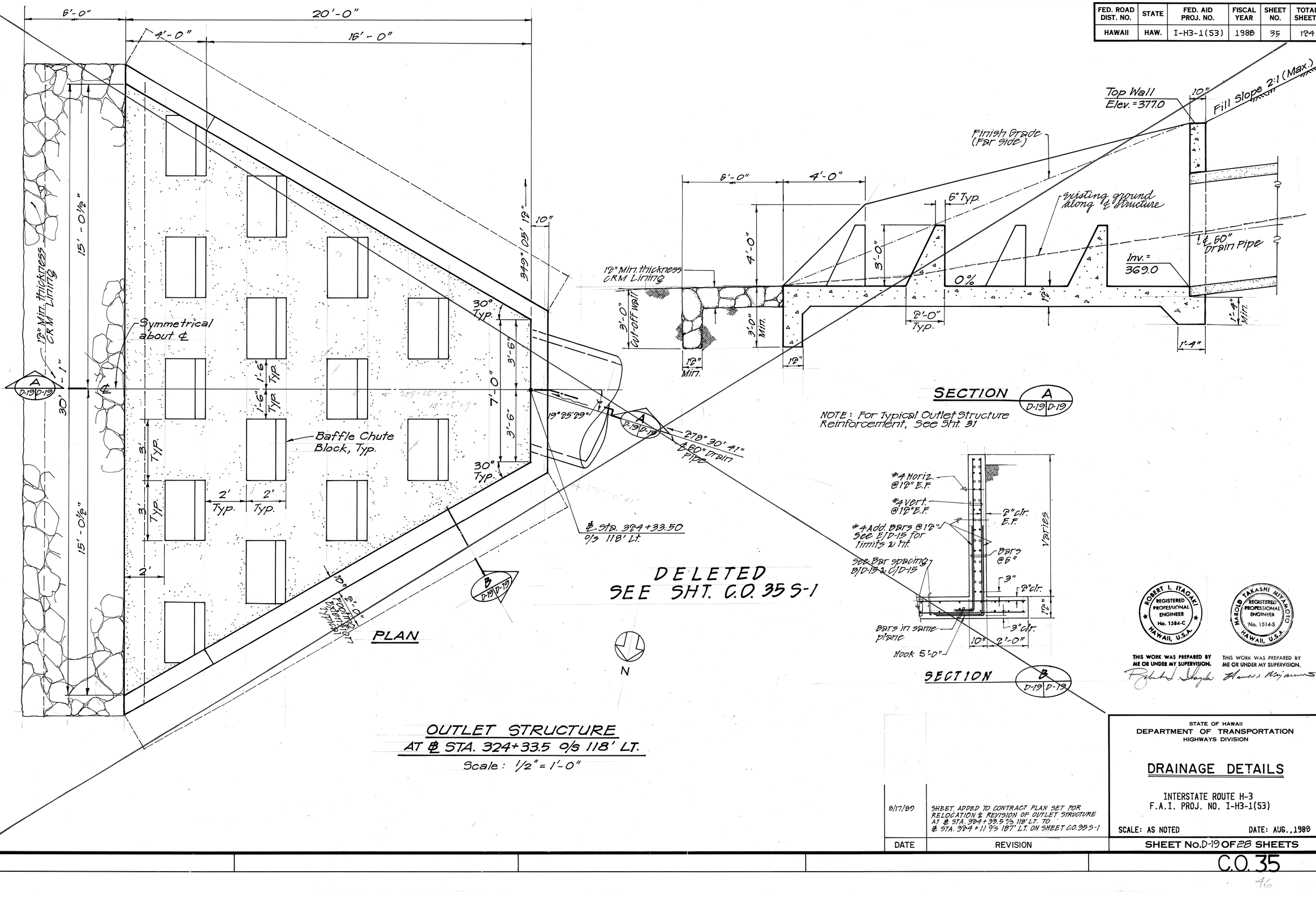
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

SHEET No. D-18 OF 28 SHEETS

C.O. 34

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	35	184



DELETED
SEE SHT. C.O. 35 S-1

OUTLET STRUCTURE
AT ℄ STA. 324+33.5 0/s 118' LT.

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

ROBERT I. ITAGAKI REGISTERED PROFESSIONAL ENGINEER No. 1584-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

HAROLD TAKASHI MIYAMOTO REGISTERED PROFESSIONAL ENGINEER No. 1514-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

ORIGINAL PLAN | NOTE BOOK | No. ____

SURVEY PLOTTED BY ____ DATE ____
DRAWN BY ____
TRACED BY ____
DESIGNED BY ____
QUANTITIES BY ____
CHECKED BY ____

DATE	REVISION
8/17/89	SHEET ADDED TO CONTRACT PLAN SET FOR RELOCATION & REVISION OF OUTLET STRUCTURE AT ℄ STA. 324+33.5 0/s 118' LT. TO ℄ STA. 324+11 0/s 187' LT. ON SHEET C.O. 35 S-1

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

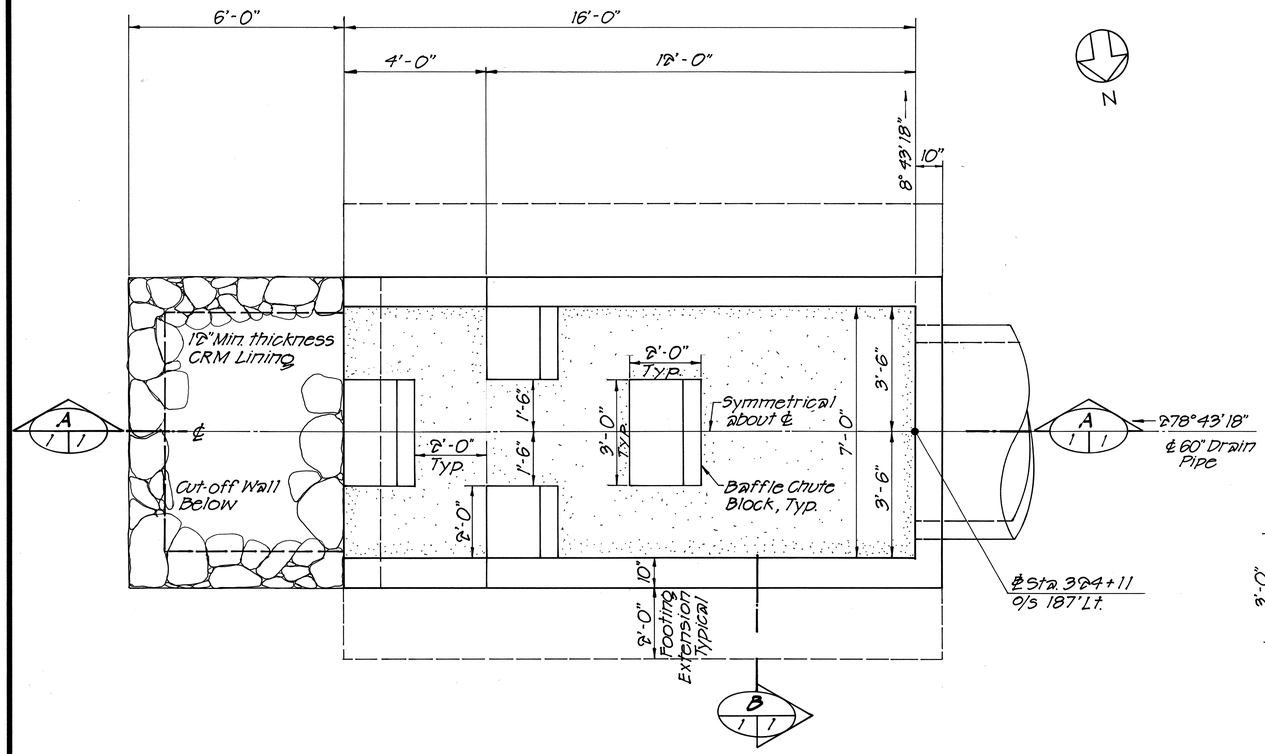
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

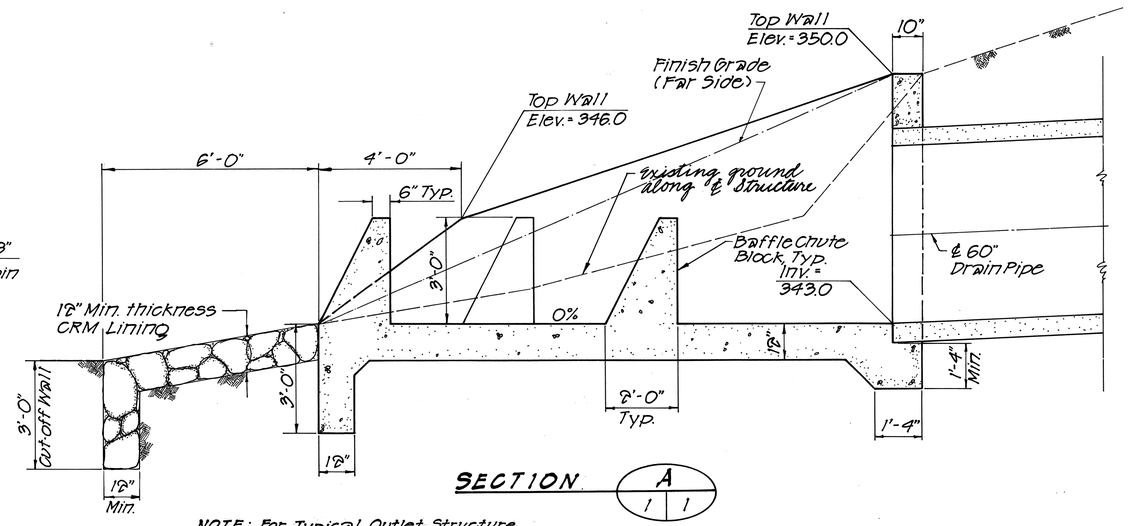
SHEET No. D-19 OF 28 SHEETS

C.O. 35

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O.35S-1	124

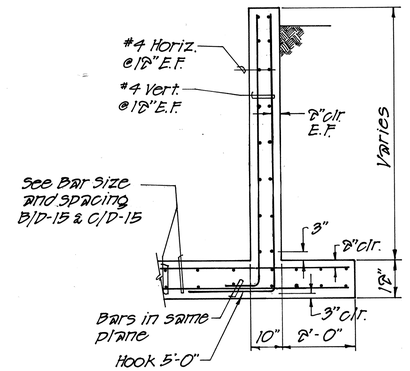


PLAN



SECTION A

NOTE: For Typical Outlet Structure Reinforcement See Sht. 31



SECTION B

OUTLET STRUCTURE
AT ℄ STA. 324+11 0/s 187' L.T.
Scale: 1/2" = 1'-0"

ROBERT I. ITAGAKI REGISTERED PROFESSIONAL ENGINEER No. 1584-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

HAROLD TAKASHI MIYAMOTO REGISTERED PROFESSIONAL ENGINEER No. 1514-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SURVEY PLOTTED BY ____ DATE
DRAWN BY ____
TRACED BY ____
DESIGNED BY ____
QUANTITIES BY ____
CHECKED BY ____

ORIGINAL PLAN

NOTE BOOK ____ No. ____

DATE	REVISION
9/17/89	RELOCATED & REVISED OULET STRUCTURE AT ℄ STA. 324+33.5 0/s 118' LT. TO ℄ STA. 324+11 0/s 187 LT.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

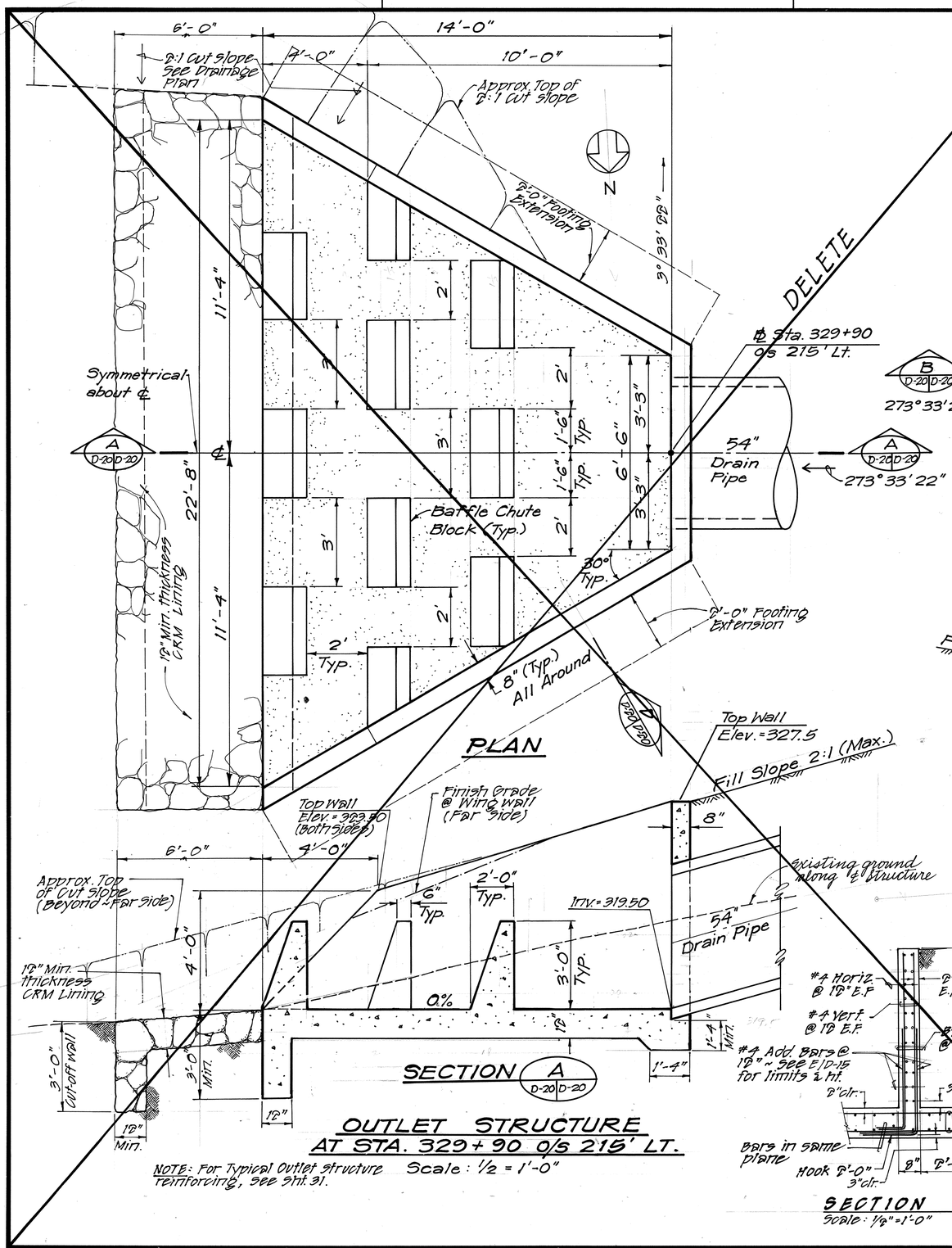
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1989

SHEET No. 1 OF 1 SHEETS

C.O.35S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O. 36	184



ROBERT L. ITAGAKI REGISTERED PROFESSIONAL ENGINEER No. 1584-C HAWAII, U.S.A.

HAROLD TAKASHI MIYAMOTO REGISTERED PROFESSIONAL ENGINEER No. 1514-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

DATE	REVISION
10/29/90	DELETED OUTLET STRUCTURE AT STA. 329+90 o/s 215' LT.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

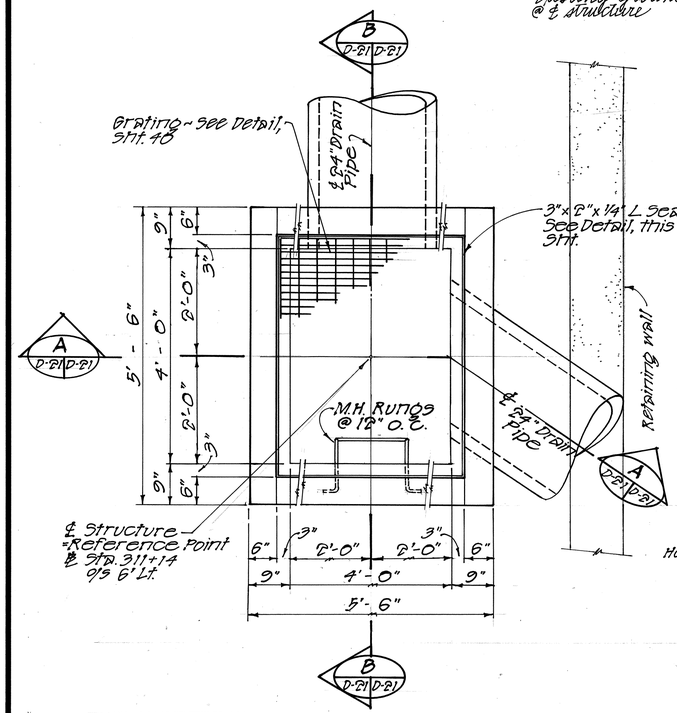
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

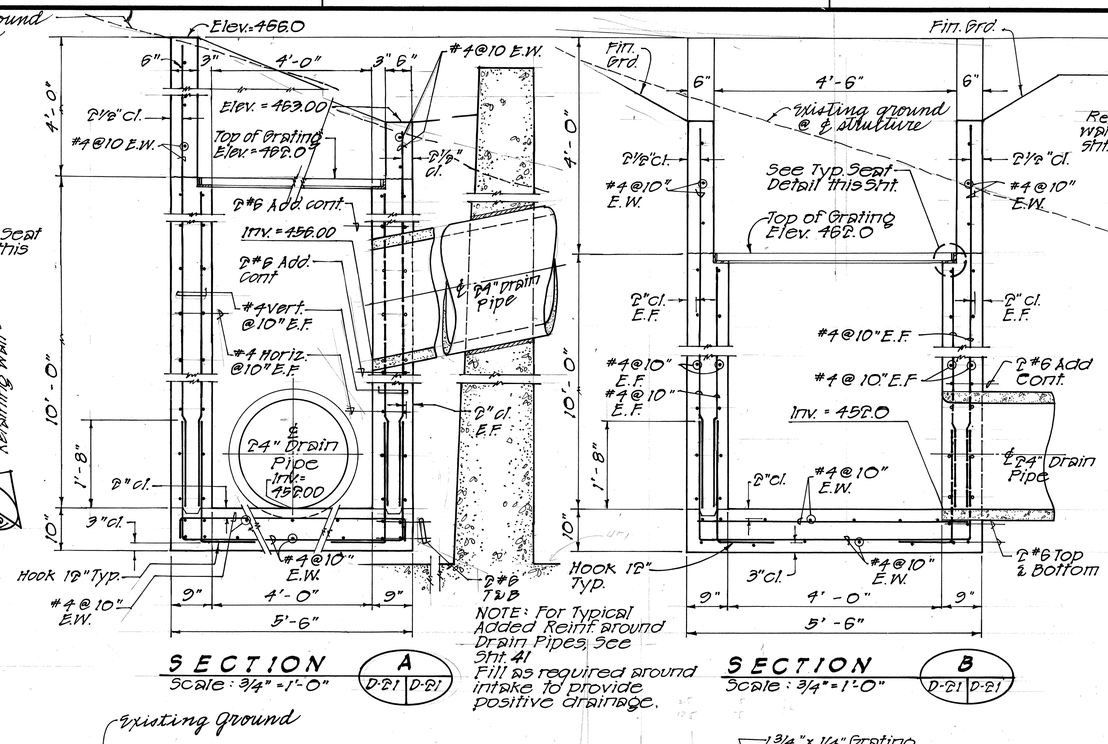
SHEET NO. D-20 OF 28 SHEETS

C.O. 36

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	37	124

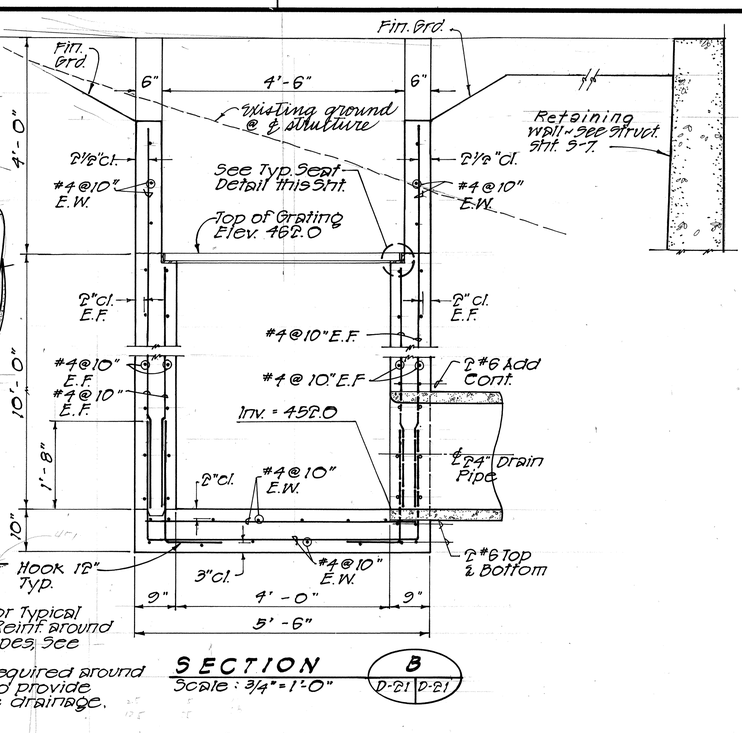


PLAN
TYPE 2 ~ GRATED DROP INTAKE
Scale: 3/4" = 1'-0"

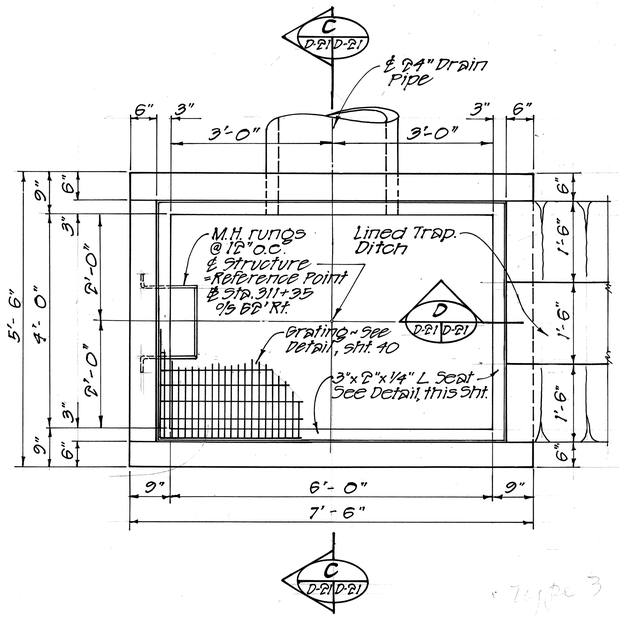


SECTION A D-21 D-21
Scale: 3/4" = 1'-0"

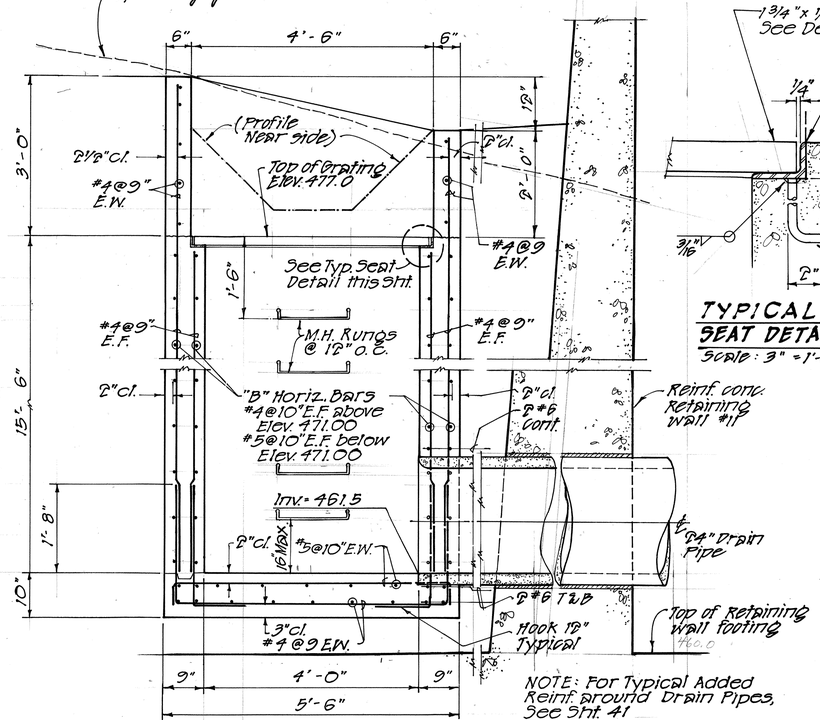
NOTE: For Typical Added Reinf. around Drain Pipes, See Sht. 41
Fill as required around intake to provide positive drainage.



SECTION B D-21 D-21
Scale: 3/4" = 1'-0"

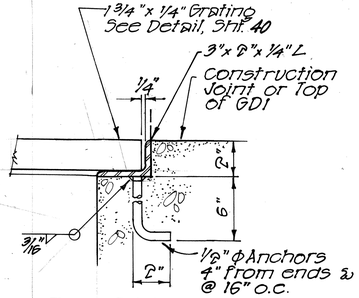


PLAN ~ TYPE 3 ~ GRATED DROP INTAKE
Scale: 3/4" = 1'-0"

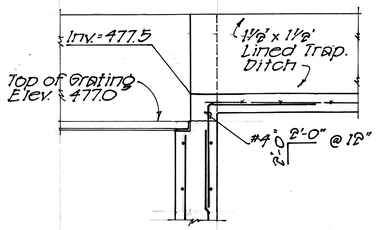


SECTION C D-21 D-21
Scale: 3/4" = 1'-0"

NOTE: For Typical Added Reinf. around Drain Pipes, See Sht. 41
Fill as required around intake to provide positive drainage.



TYPICAL SEAT DETAIL
Scale: 3" = 1'-0"
1 D-21 D-21



SECTION D D-21 D-21
Scale: 3/4" = 1'-0"

HAROLD TAKASHI MIYAMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 1514-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

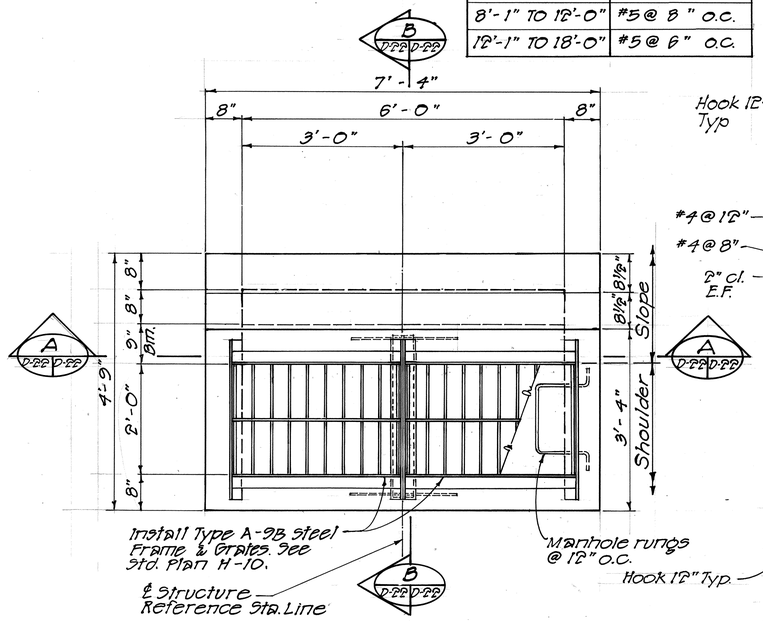
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

SHEET No. D-21 OF 28 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	38	124

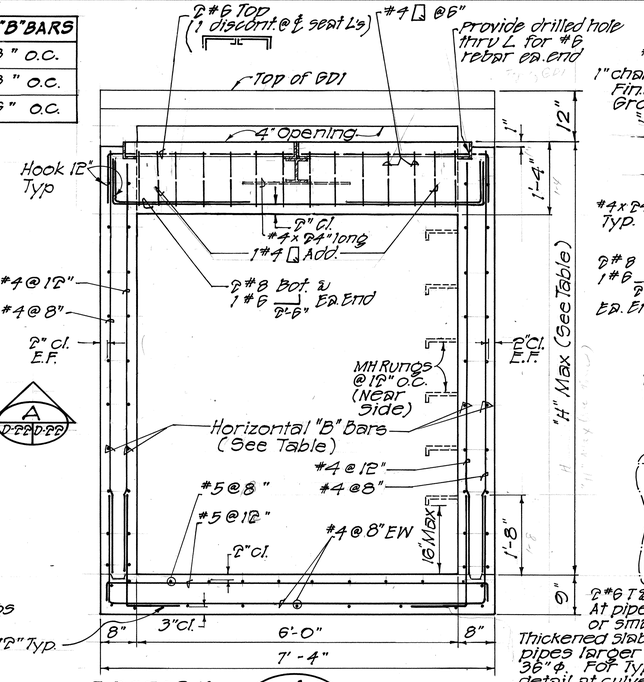
"H" MAX. (FT.)	HORIZ. "B" BARS
0'-0" TO 8'-0"	#4 @ 8" O.C.
8'-1" TO 12'-0"	#5 @ 8" O.C.
12'-1" TO 18'-0"	#5 @ 6" O.C.



PLAN

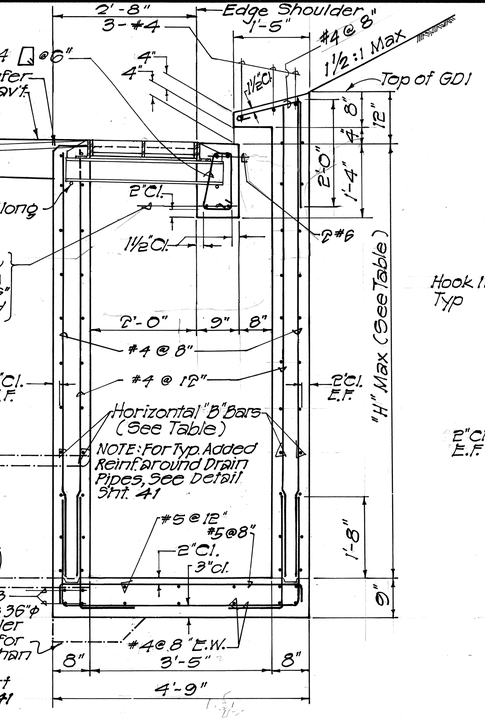
TYPE 4 ~ GRATED DROP INTAKE

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



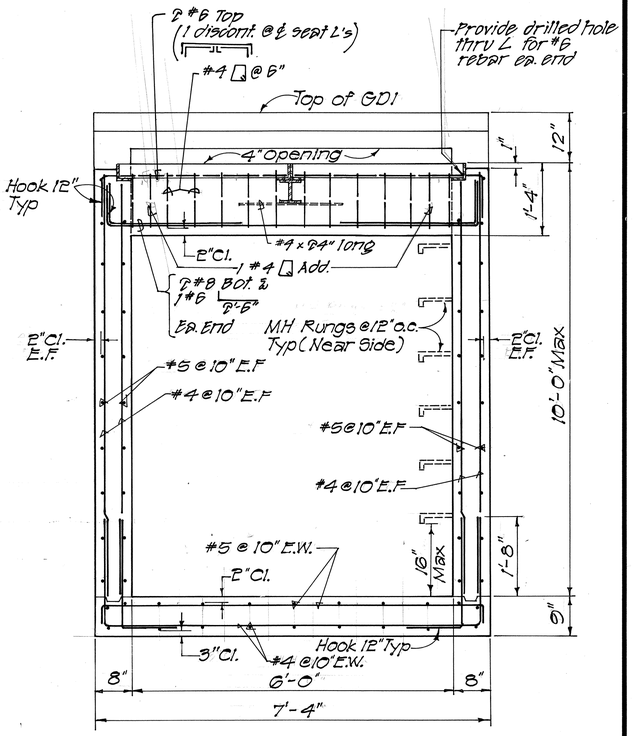
SECTION A (D-FF D-FF)

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



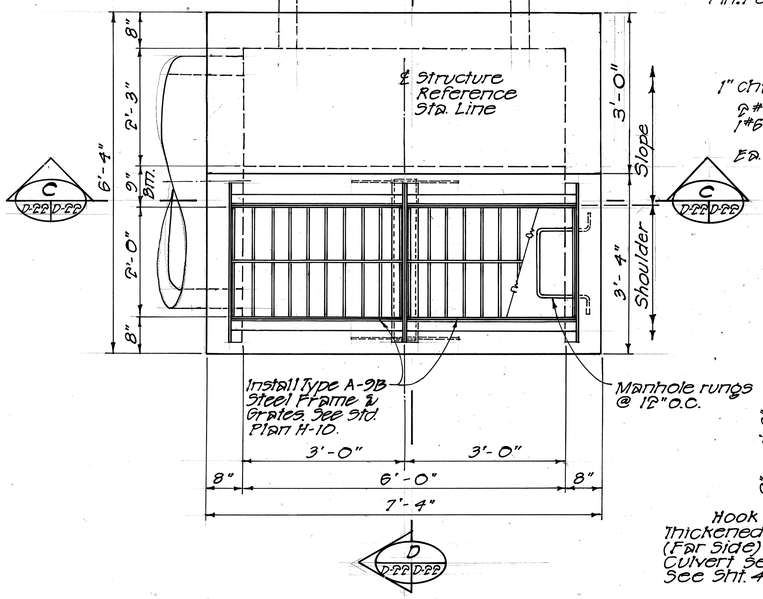
SECTION B (D-FF D-FF)

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



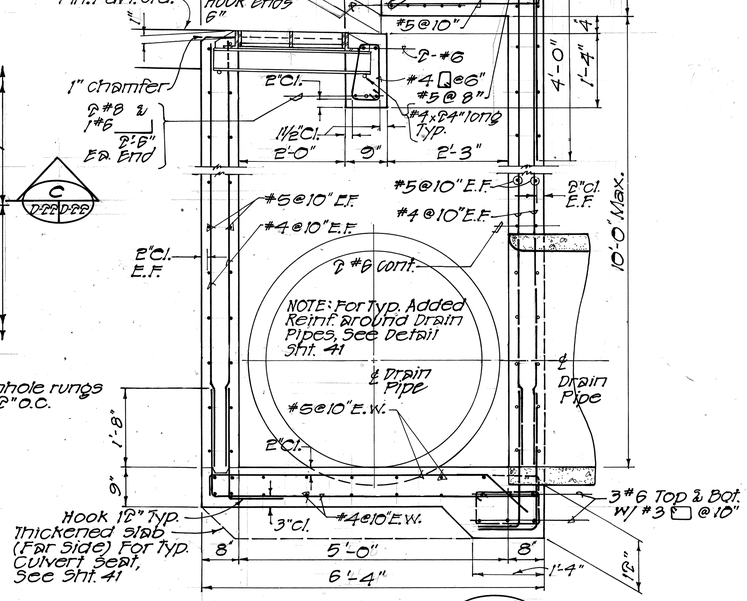
SECTION C (D-FF D-FF)

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



PLAN ~ TYPE 5 GRATED DROP INTAKE

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



SECTION D (D-FF D-FF)

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

SURVEY PLOTTED BY ____ DATE ____
DRAWN BY ____
TRACED BY ____
DESIGNED BY ____
QUANTITIES BY ____
CHECKED BY ____

ORIGINAL PLAN | NOTE BOOK ____ No. ____

HAROLD TAKASHI MIYAMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 1514-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

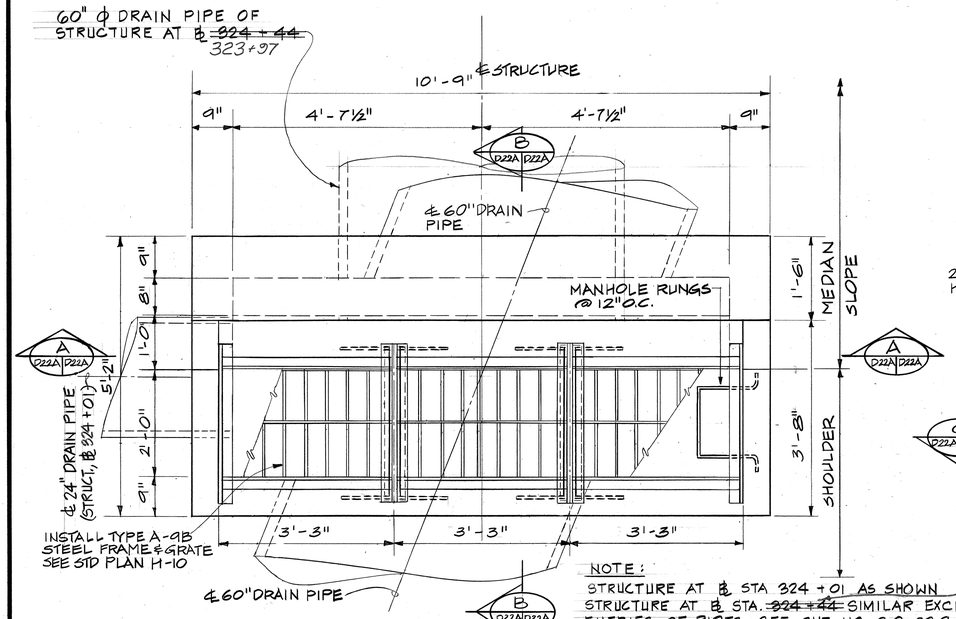
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

SHEET NO. D-22 OF E8 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O.385-1	124

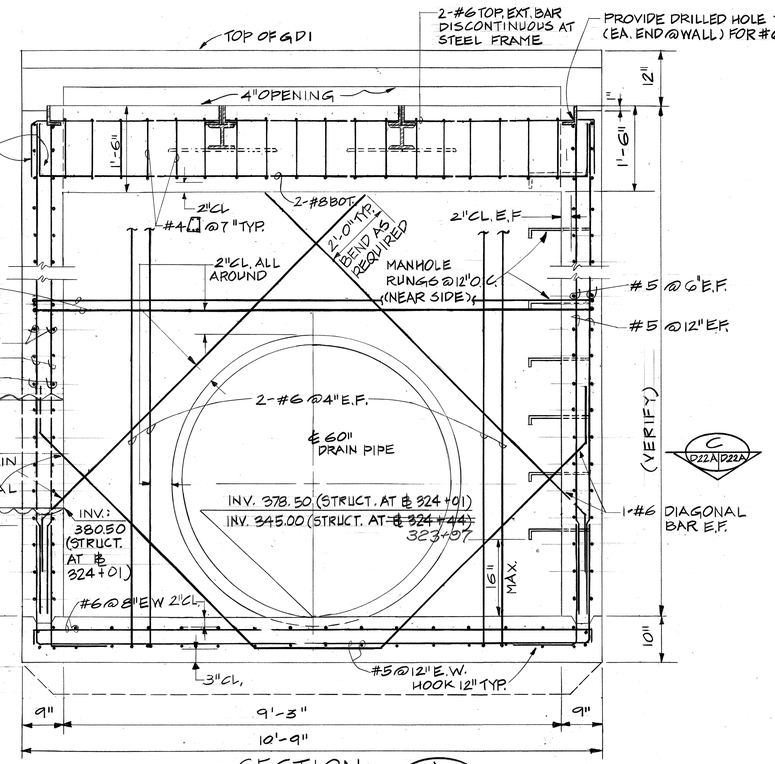
NOTE
1. SEE SHEET NO. S-2, "STRUCTURAL NOTES" FOR CONCRETE STRENGTH AND REINFORCING BAR GRADE.



PLAN

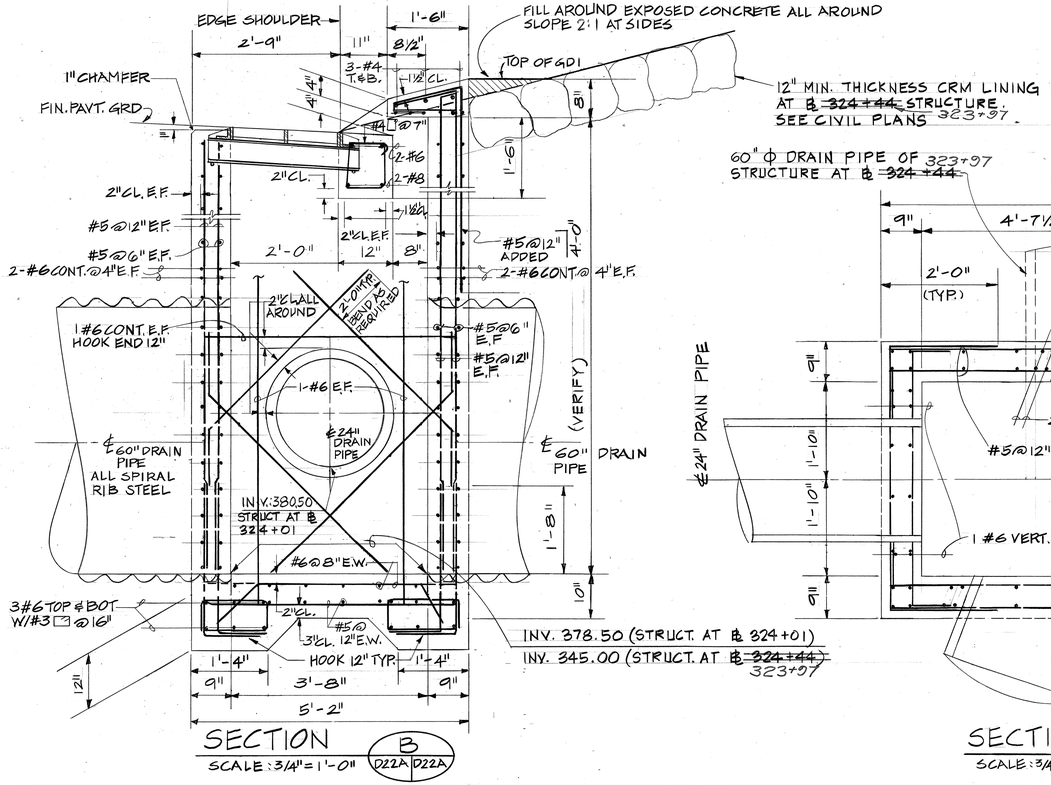
TYPE 4A-GRATE DROP INTAKE AT ℄ STA. 324+01 ~~℄ STA. 324+44~~ 323+97±

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



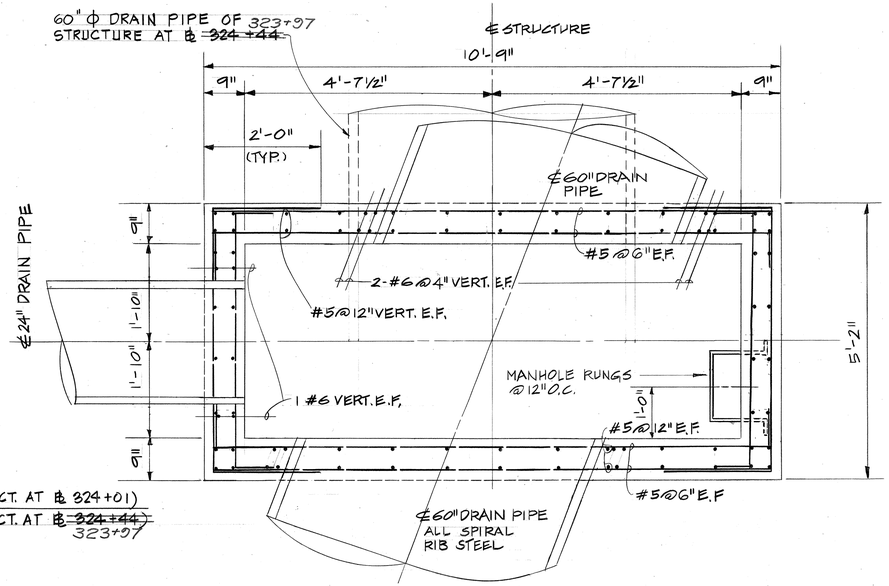
SECTION A (D22A D22A)

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



SECTION B (D22A D22A)

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



SECTION C (D22A D22A)

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

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

HAROLD TAKASHI MIYAMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 1514-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

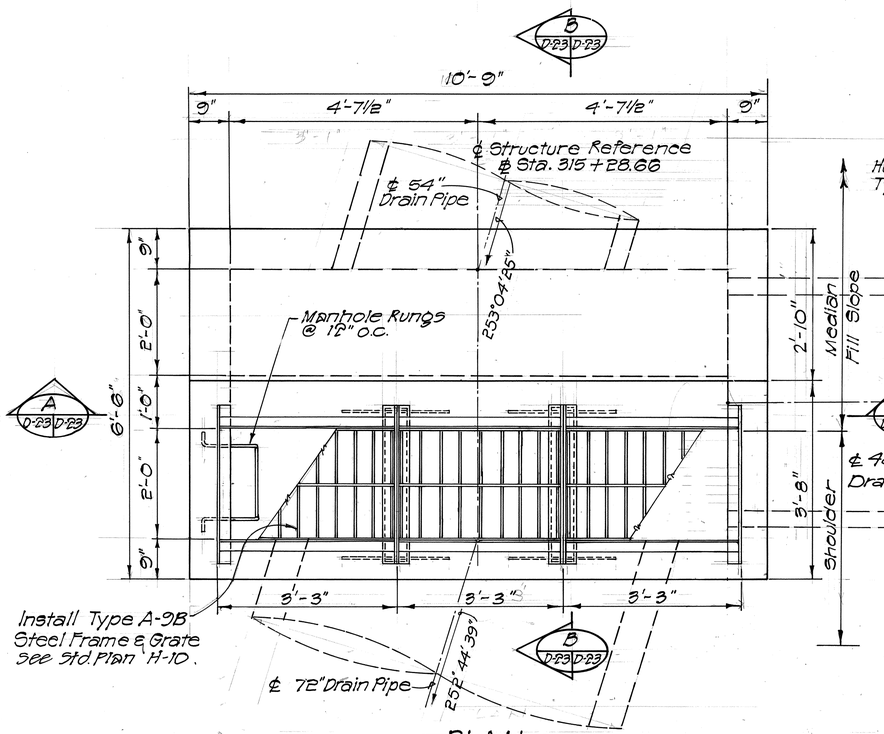
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

DATE	REVISION
7/5/89	SHEET ADDED TO CONTRACT PLAN SET FOR ADDITIONAL DETAIL

SHEET NO. D-22A OF 28 SHEETS

C.O. 38 S-1

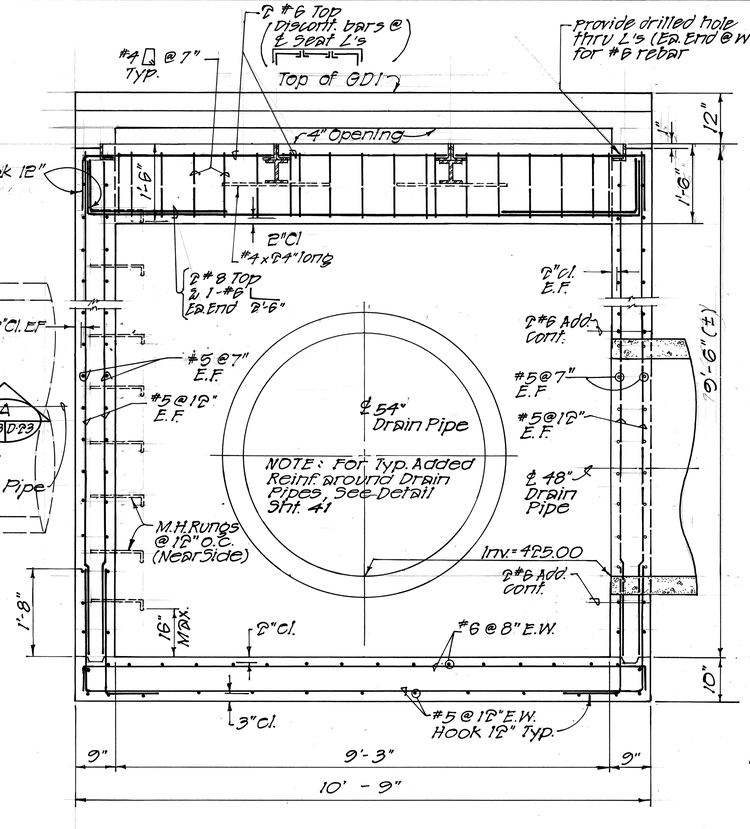
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	39	194



PLAN

TYPE 6 - GRATED DROP INTAKE

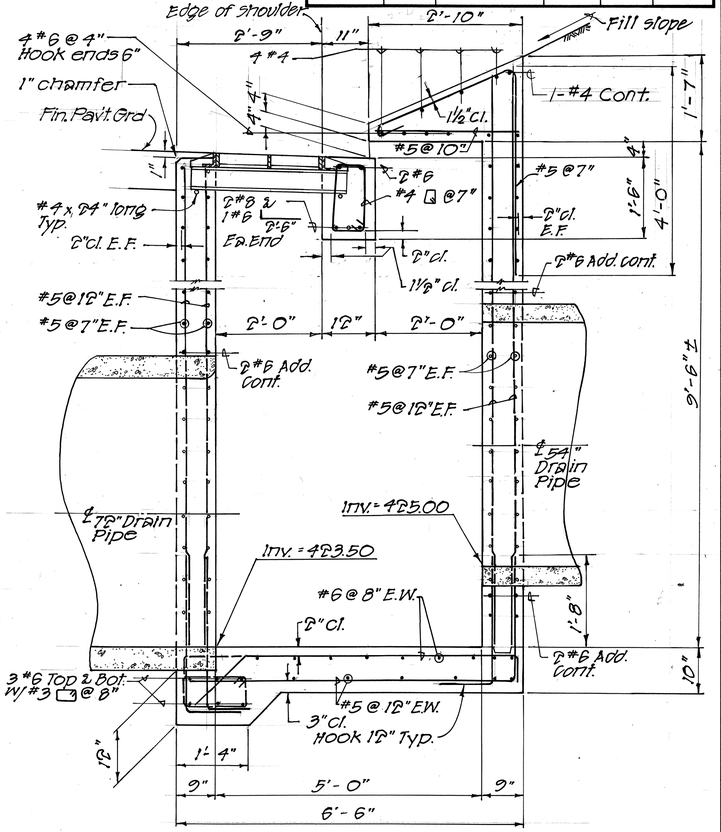
Scale : 3/4" = 1'-0"



SECTION A

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

D-23 D-23



SECTION B

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

D-23 D-23

HAROLD TAKASHI MIYAMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 1514-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Harold Miyamoto

ORIGINAL PLAN

SURVEY PLOTTED BY _____ DATE
DRAWN BY _____
TRACED BY _____
DESIGNED BY _____
QUANTITIES BY _____
CHECKED BY _____

NOTE BOOK
No. _____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

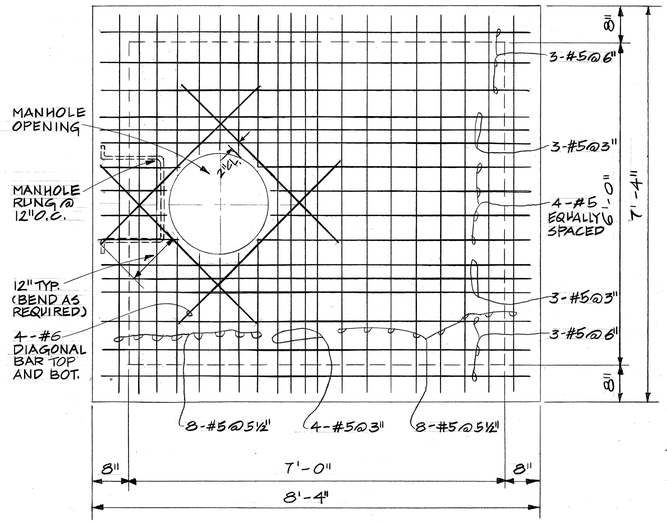
DRAINAGE DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

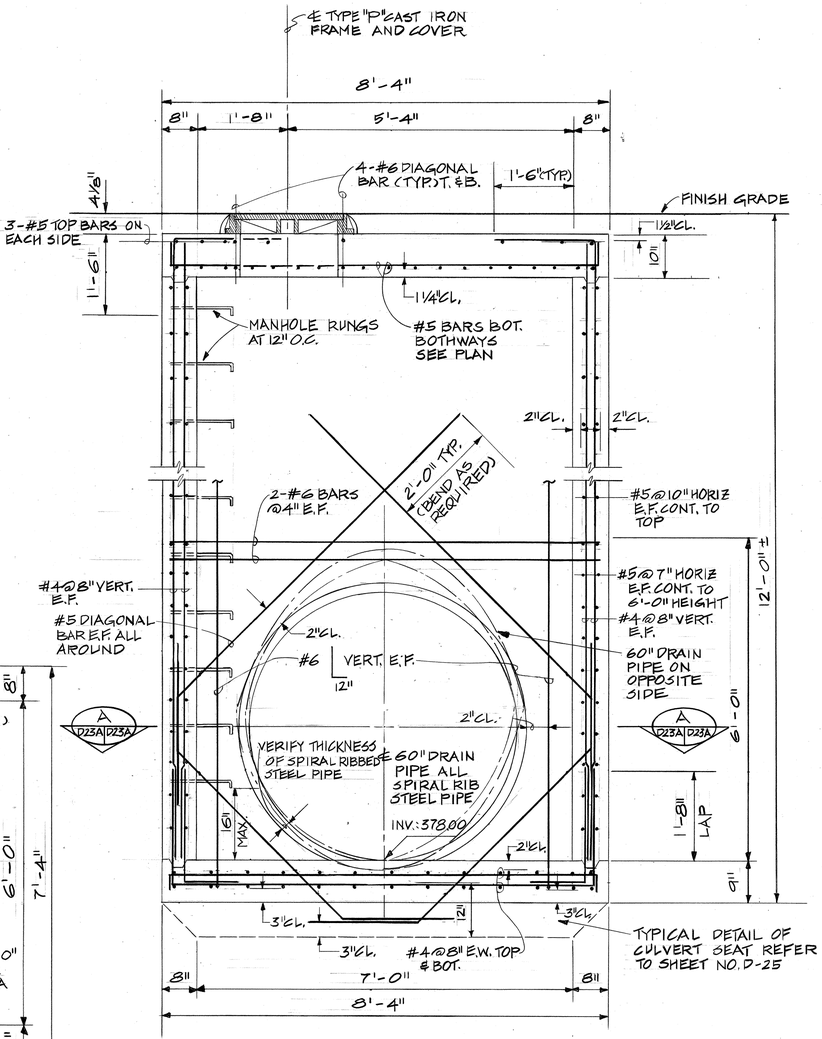
SCALE: AS NOTED DATE: AUG., 1988

SHEET No. D-23 OF 28 SHEETS

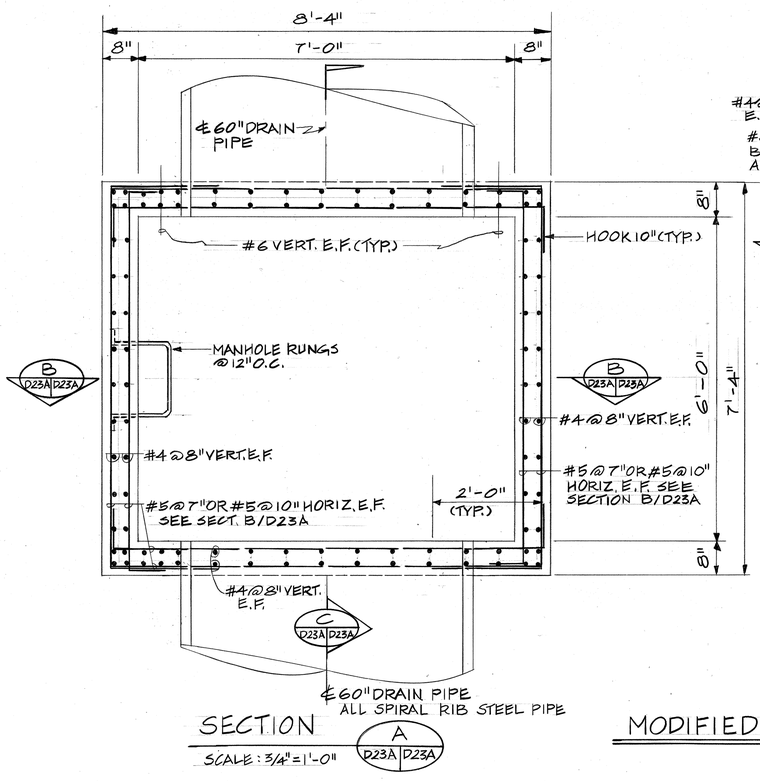
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.0.39S-1	124



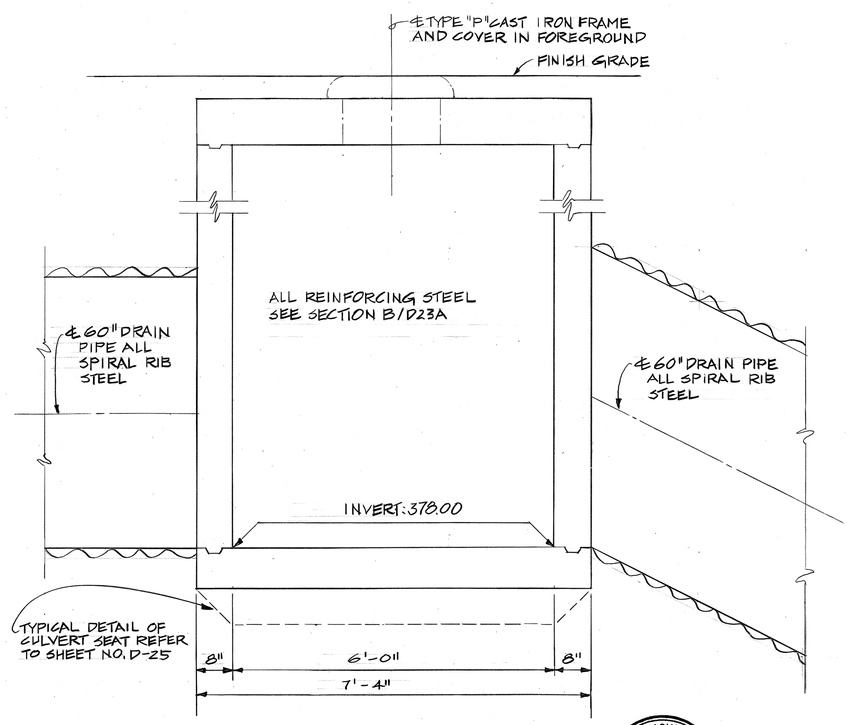
PLAN (TOP SLAB REINFORCING)
SCALE: 3/4" = 1'-0"



SECTION B D23A D23A
SCALE: 3/4" = 1'-0"



SECTION A D23A D23A
SCALE: 3/4" = 1'-0"



SECTION C D23A D23A
SCALE: 3/4" = 1'-0"

HAROLD TAKASHI MIYAMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 1514-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

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

MODIFIED TYPE C MANHOLE AT ℄ STA. 323+99 % 85.35'LT. ~~324+23, % 86.5'LT.~~

DATE	REVISION
7/5/89	SHEET ADDED TO CONTRACT PLAN SET FOR ADDITIONAL DETAIL

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

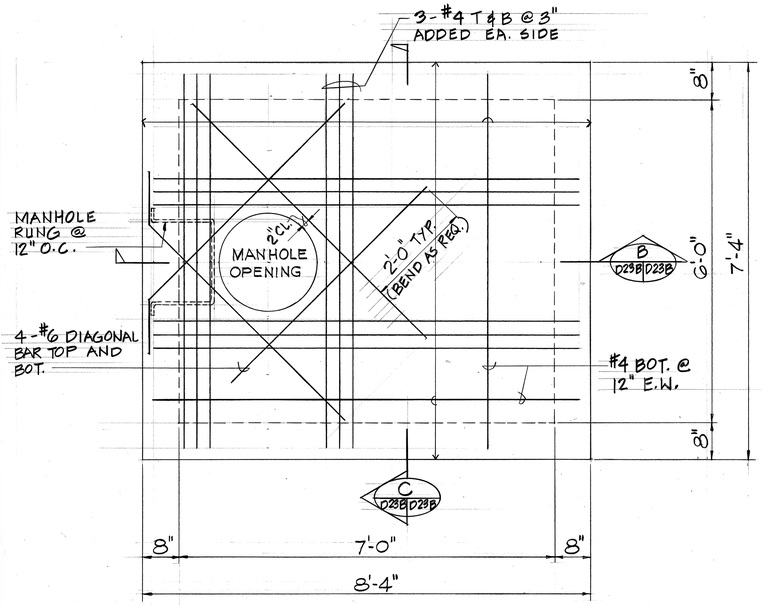
DRAINAGE DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

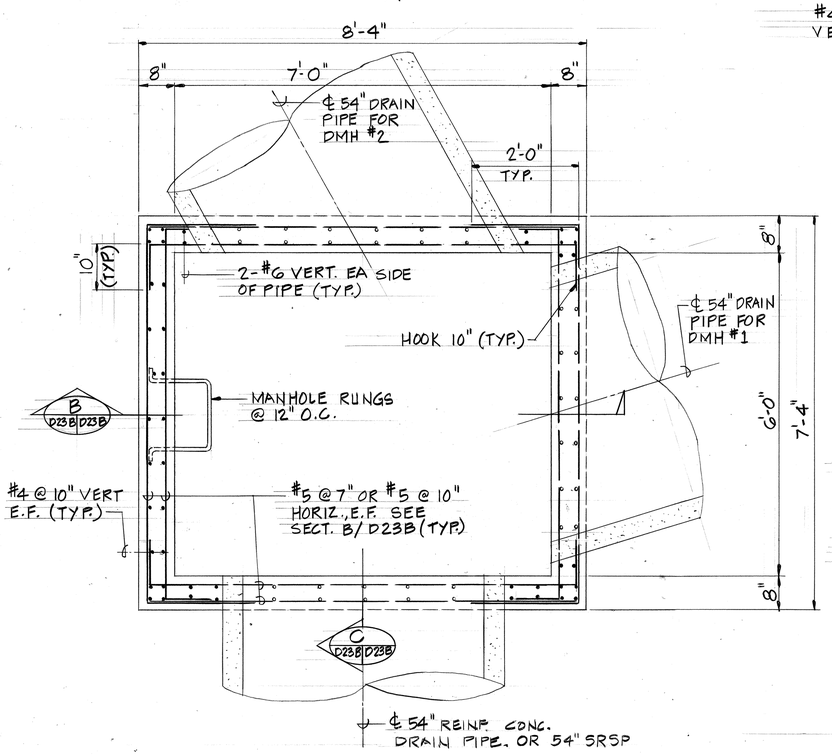
SHEET NO. D-23A OF 28 SHEETS

C.0.39S-1

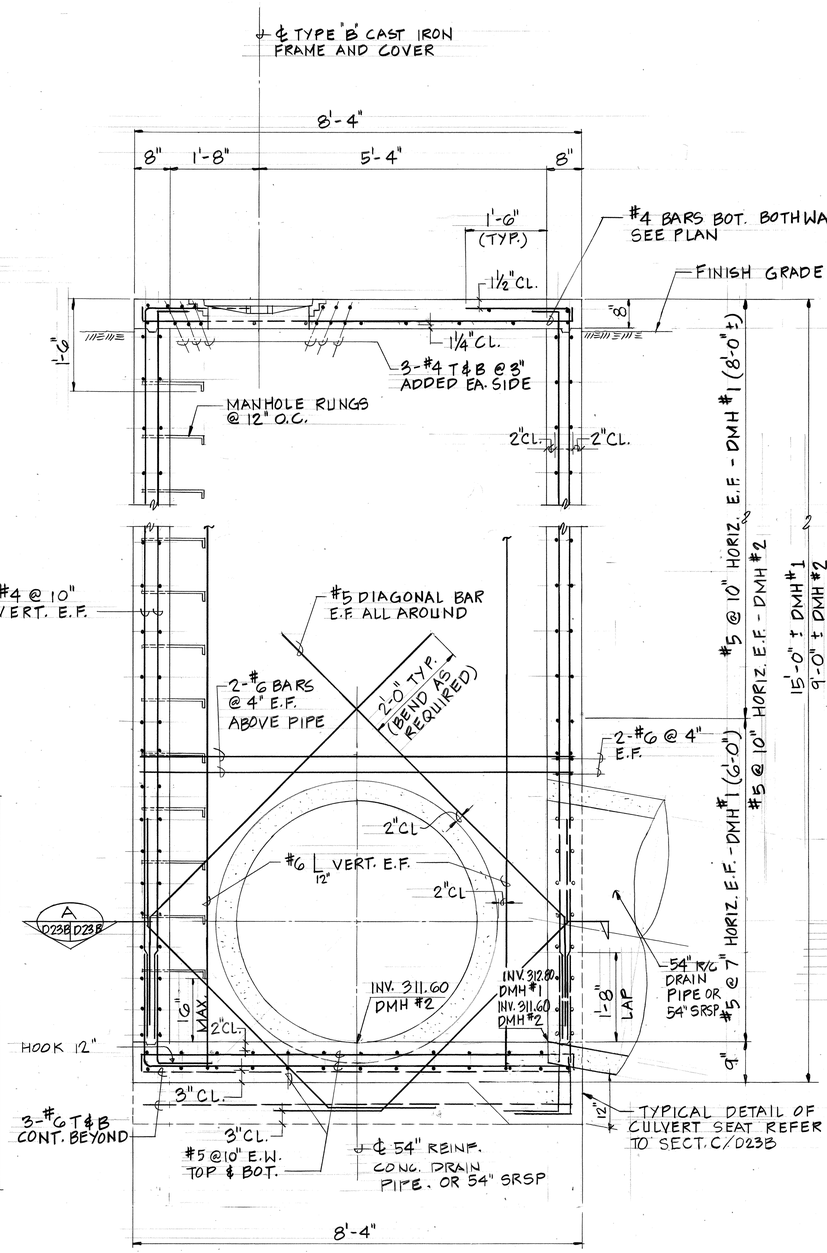
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1986	CO 39 S-2	124



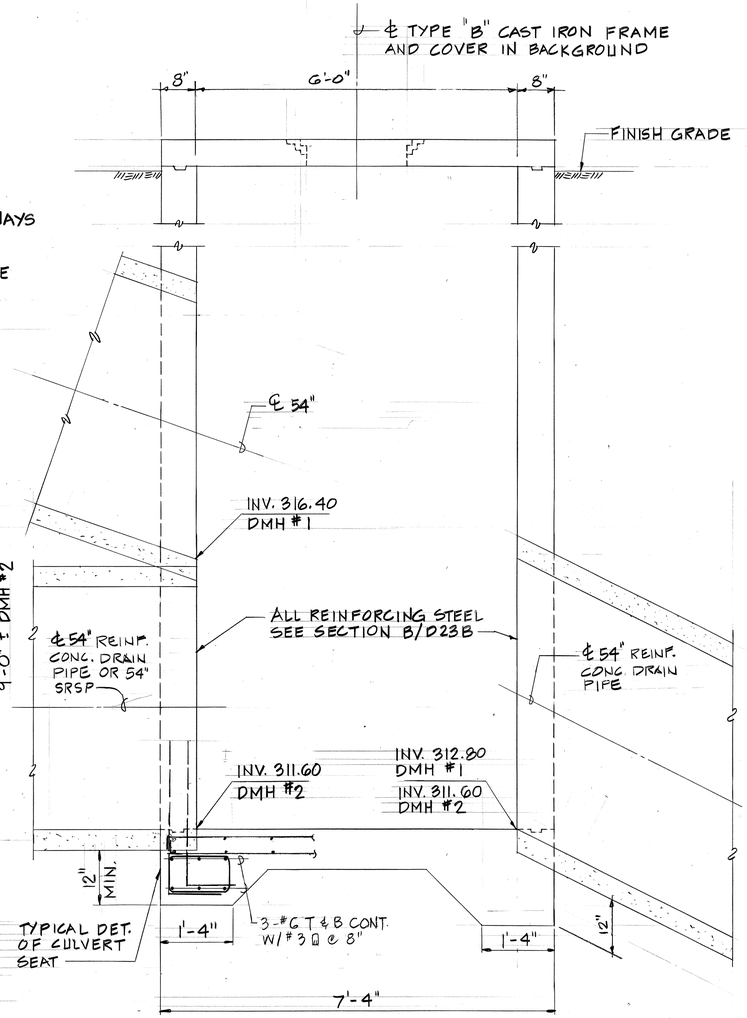
PLAN (TOP SLAB REINFORCING)
SCALE: 3/4" = 1'-0"



SECTION A
SCALE: 3/4" = 1'-0"
D23B D23B



SECTION B
SCALE: 3/4" = 1'-0"
D23B D23B



SECTION C
SCALE: 3/4" = 1'-0"
D23B D23B

DRAIN MANHOLES #1 & #2

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

HAROLD TAKASHI MIYAMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 1514-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

DATE	REVISION
10-15-90	SHEET ADDED TO CONTRACT PLANS SET FOR ADDITIONAL DETAIL

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAIL

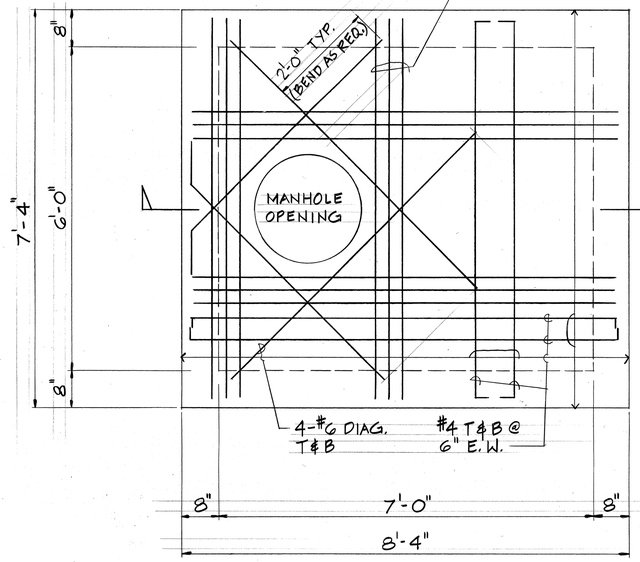
INTERSTATE ROUTE H-3
F.A.J. PROJ. NO. I-H3-1(53)

SCALE: AS SHOWN DATE: OCT 1990

SHEET NO. D-23B OF 28 SHEETS

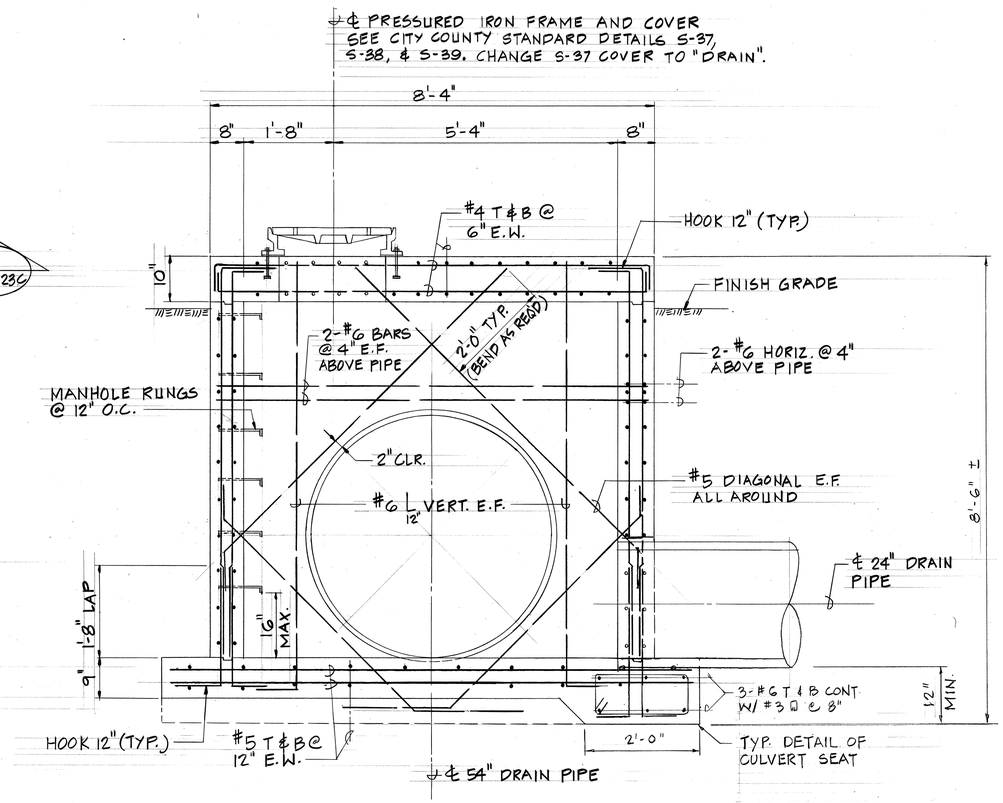
CO 39 S-2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1986	CO 39 S-3	124



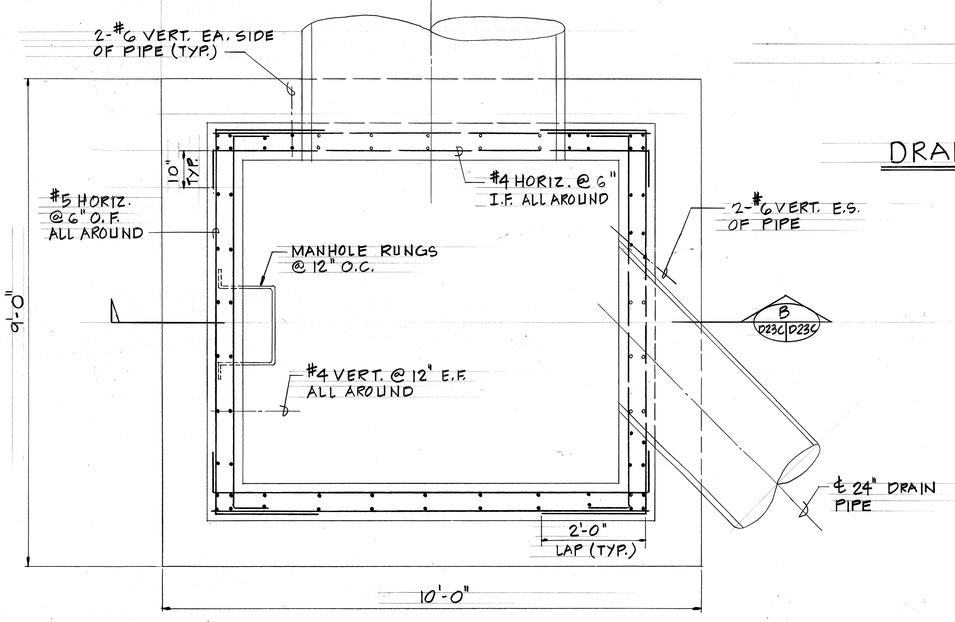
PLAN (TOP SLAB REINFORCING)

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



SECTION B

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



SECTION A

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

DRAIN & MANHOLE #3 (PRESSURIZED)

STRUCTURAL NOTES

1. CONCRETE STRENGTH @ 28 DAYS f'_c = 3,000 PSI
2. REINFORCING STEEL :
   - #4 & LARGER — GRADE 60 f_y = 60,000 PSI
   - #3 — GRADE 40 f_y = 40,000 PSI

Note :
For Details of Pressure manhole frame and cover see "Standard Details for Public Works Construction"

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

HAROLD TAKASHI MIYAMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 1514-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

DATE	REVISION
10-15-90	SHEET ADDED TO CONTRACT PLANS SET FOR ADDITIONAL DETAIL

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAIL

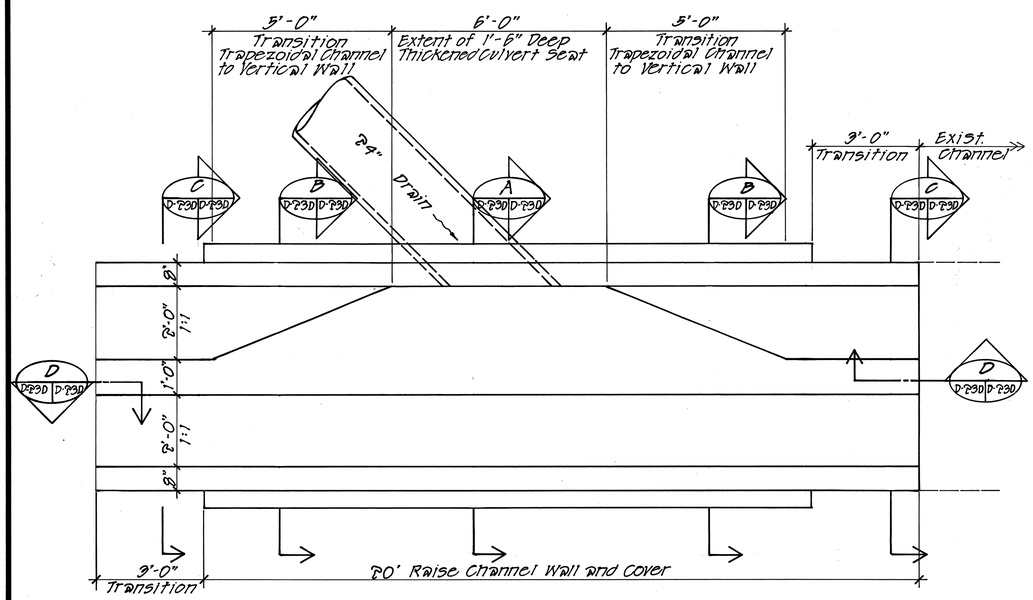
INTERSTATE ROUTE H-3
F.A.J. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: OCT 1990

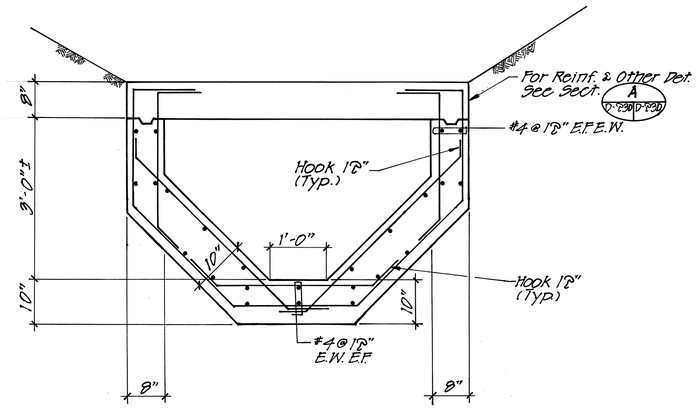
SHEET No. D-23C OF 28 SHEETS

CO 39 S-3

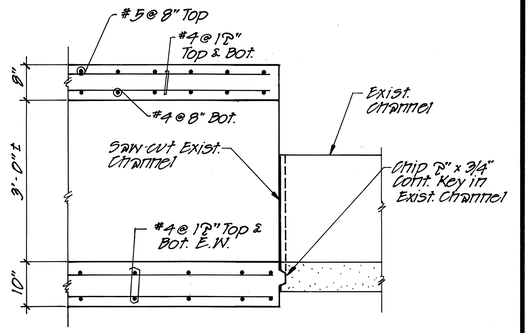
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O.39 S-4	124



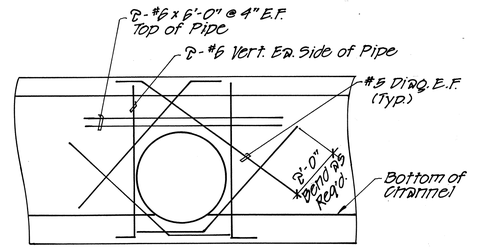
24" DRAIN TRAPEZOIDAL CHANNEL CONNECTION PLAN
Scale: 1/8" = 1'-0"



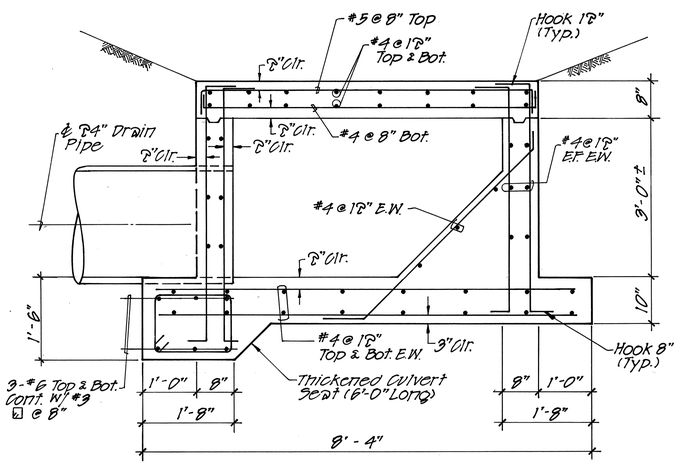
SECTION C
Scale: 3/4" = 1'-0"
D-P3D D-P3D



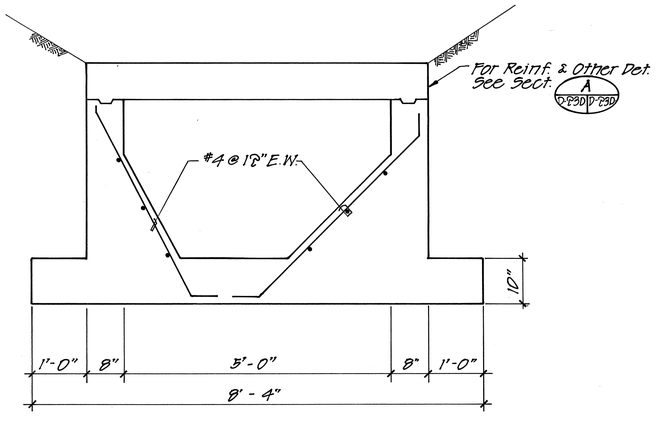
SECTION D
Scale: 3/4" = 1'-0"
D-P3D D-P3D



DRAIN PIPE OPENING REINF.
Not to Scale



SECTION A
Scale: 3/4" = 1'-0"
D-P3D D-P3D



SECTION B
Scale: 3/4" = 1'-0"
D-P3D D-P3D

DATE	REVISION
10/18/90	SHEET ADDED TO CONTRACT PLAN SET FOR REVISION OF 54" DRAIN PIPE AT ± STA. 388+90 ON SHEET CO. 39S-1

ROBERT I. ITAGAKI
REGISTERED PROFESSIONAL ENGINEER
No. 1584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: OCT., 1990

SHEET NO. D-P3D OF P8 SHEETS

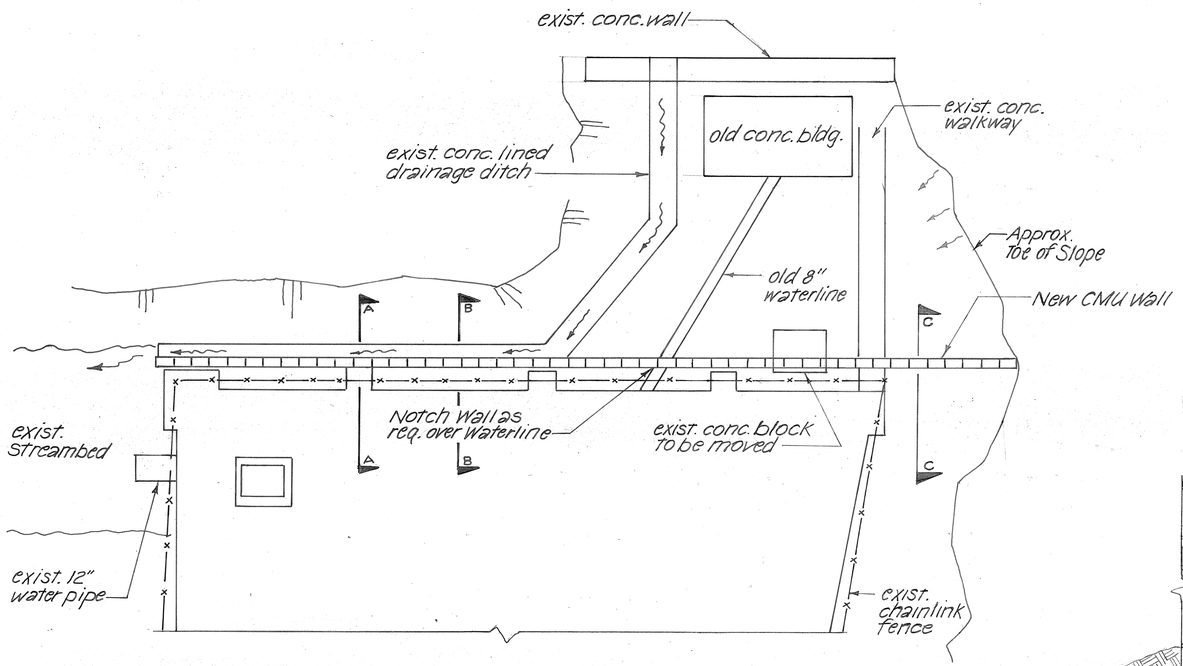
ORIGINAL PLAN

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

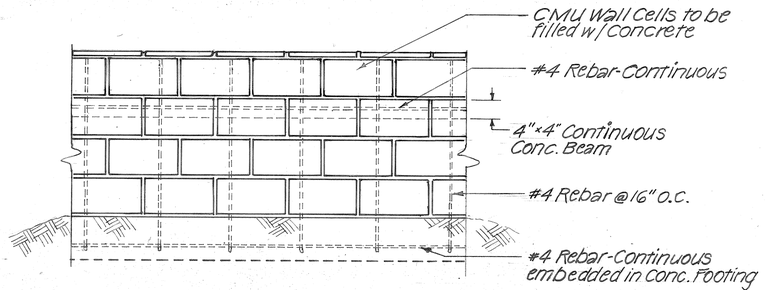
NOTE BOOK No.

C.O.39S-4

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O.395-5	124



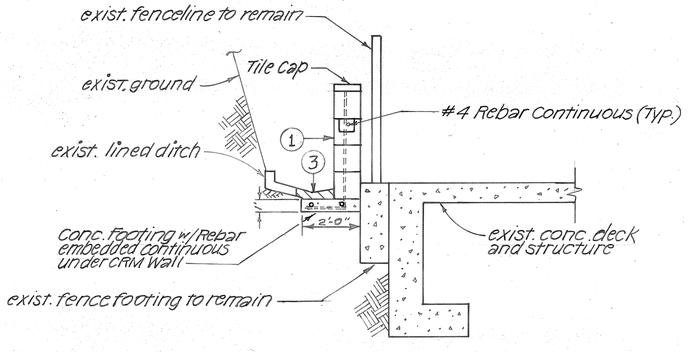
PLAN VIEW



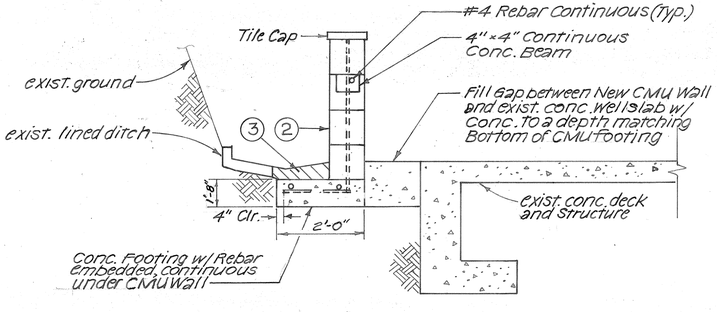
TYPICAL WALL SECTION

GENERAL NOTES

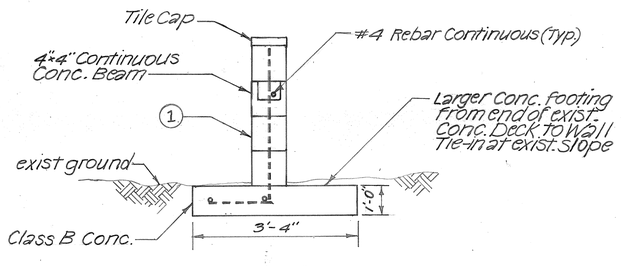
1. 8"x8"x16" CMU Wall, 4 units high, to be installed flush against existing chainlink fence footings.
2. 8"x8"x16" CMU Wall, 4 units high, all cells to be filled with Class B Concrete.
3. Existing concrete lined ditch to be removed and restored.



SECTION A-A



SECTION B-B



SECTION C-C

FLOW DEFLECTOR CMU WALL FOR HAWAII STATE HOSPITAL WATER SYSTEM

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1 (53)

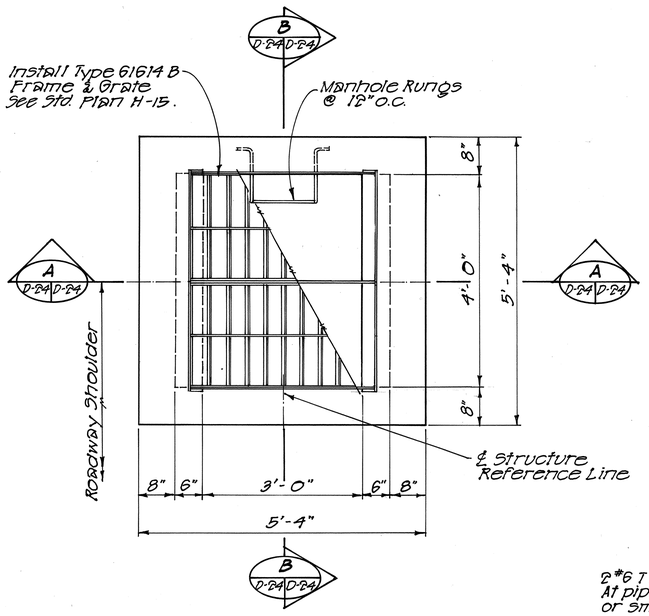
SCALE: N.T.S. DATE: AUG., 1988

SHEET No. OF SHEETS

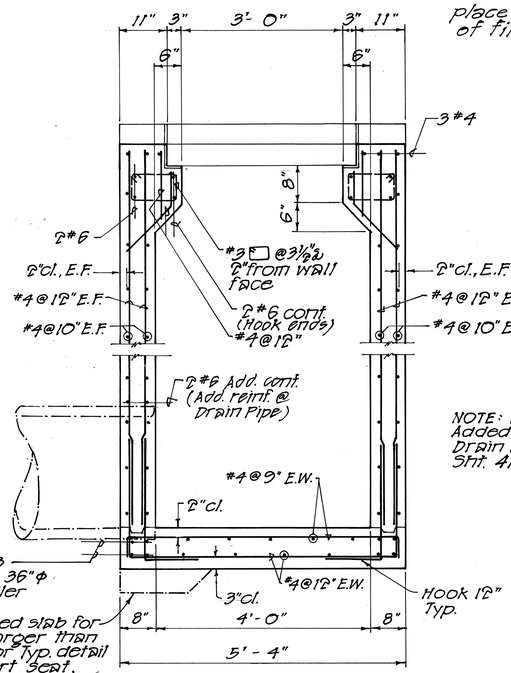
137216

C.O. 395-5

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	40	124



PLAN - TYPE 7 GRATED DROP INTAKE
Scale: 3/4" = 1'-0"

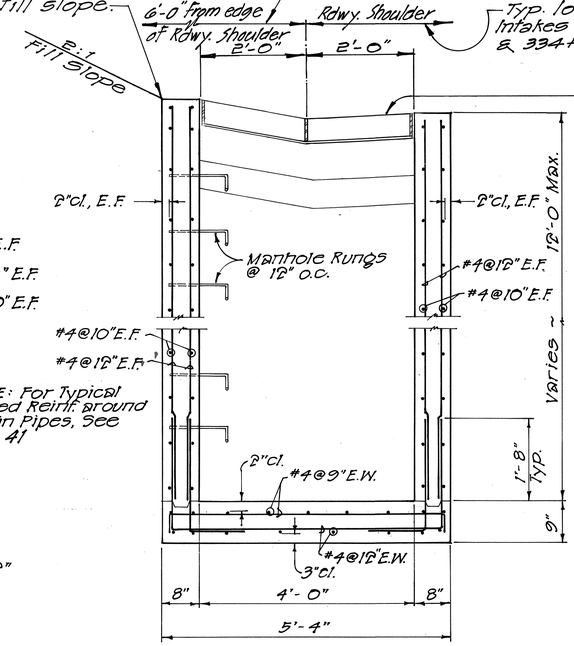


SECTION A
Scale: 3/4" = 1'-0"
D-24 D-24

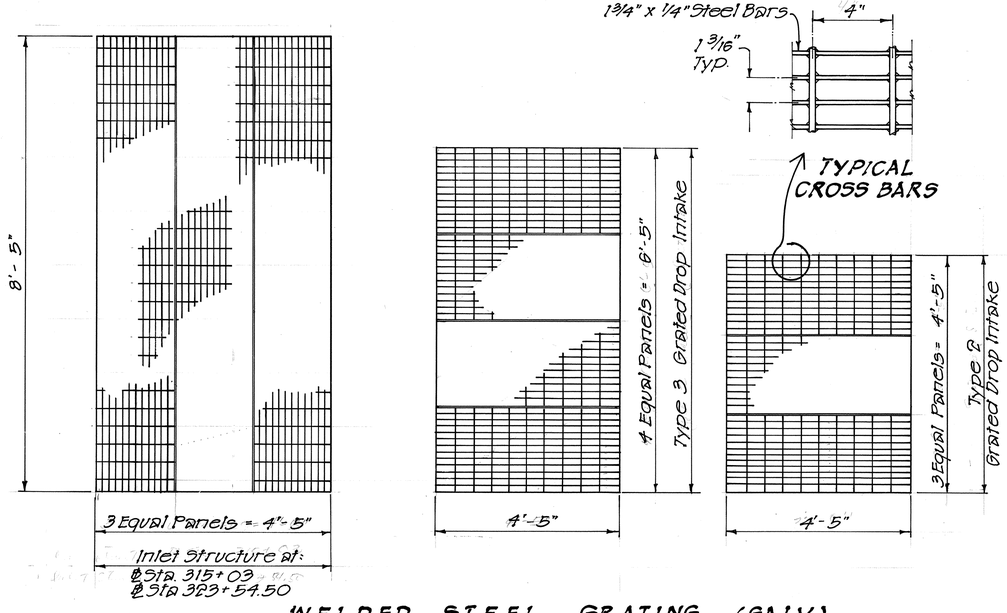
NOTE: For Intakes at ℄ Sta. 332+50 Rt. & 333+62 Rt., place intake at toe of fill slope.

Typical location for Intakes at ℄ Sta. 331+50 Lt. & 333+07 Lt.

Typ. location for Intakes at ℄ Sta. 333+62 Lt. & 334+97.33 Lt.



SECTION B
Scale: 3/4" = 1'-0"
D-24 D-24



WELDED STEEL GRATING (GALV.)
Scale 3/4" = 1'-0"

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

HAROLD TAKASHI MIYAMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 1514-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

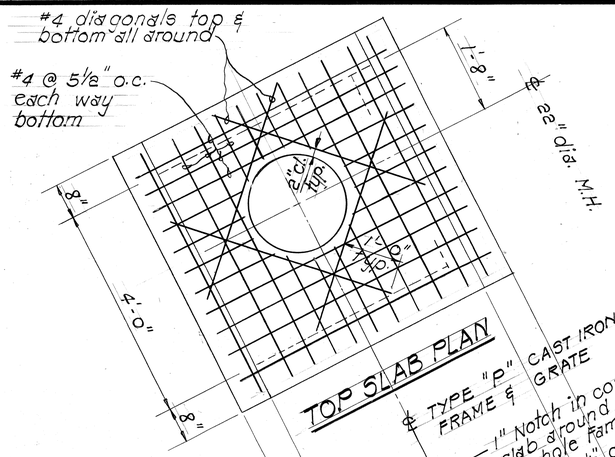
DRAINAGE DETAILS

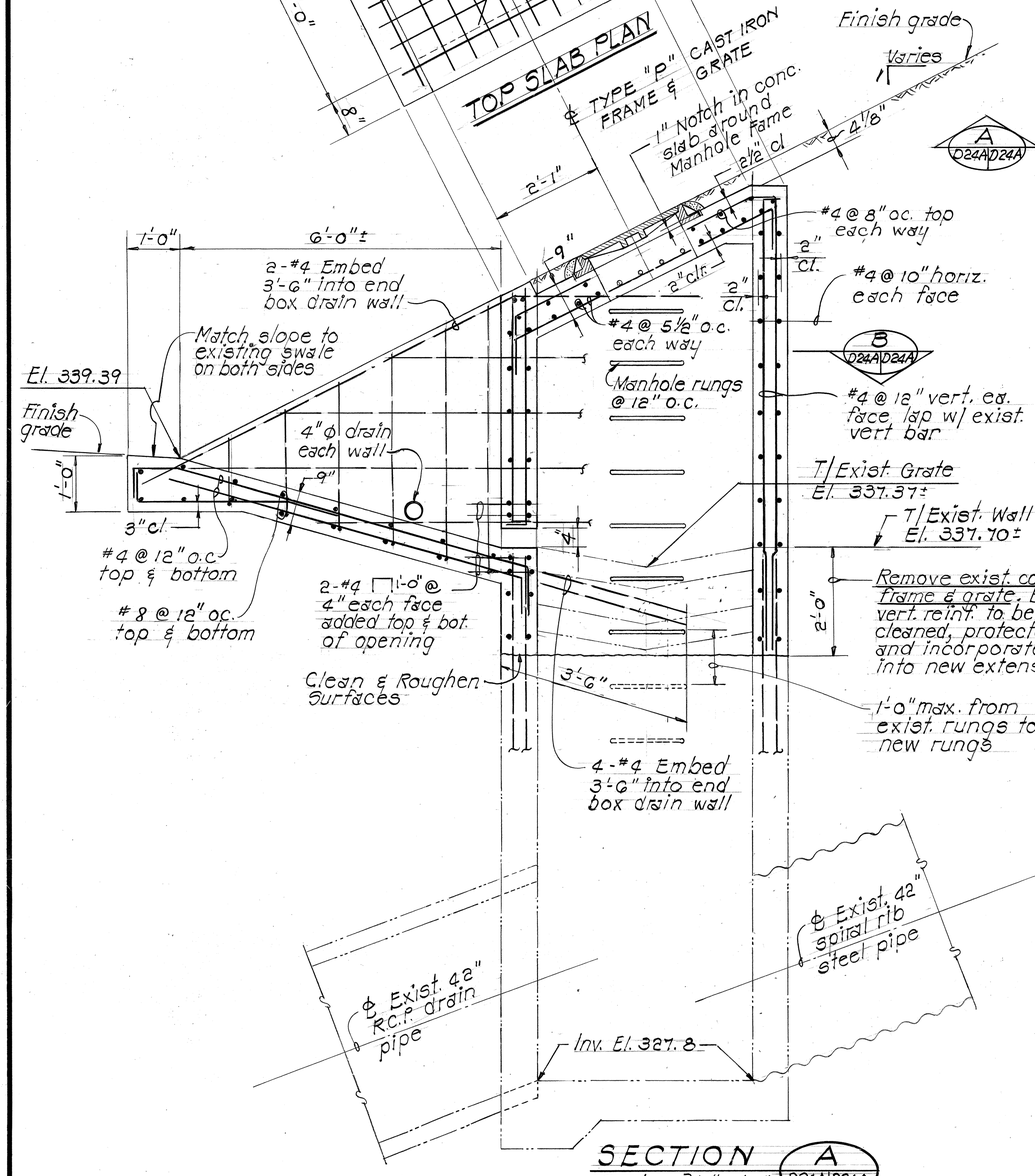
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

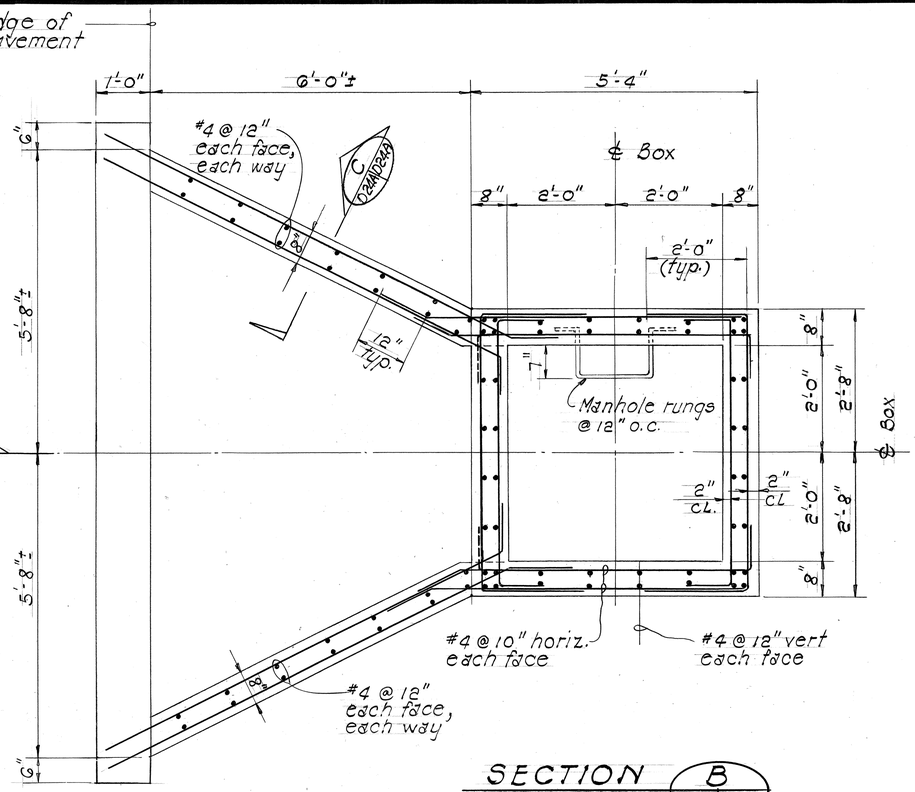
SHEET No. D-24 OF 28 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1 (53)	1988	C0405-1	124

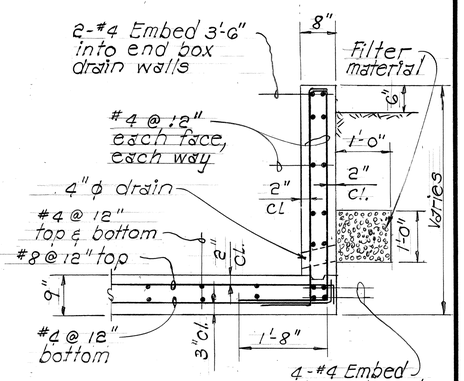




SECTION A
Scale: 3/4"=1'-0" D24A D24A



SECTION B
Scale: 3/4"=1'-0" D24A D24A



SECTION C
Scale: 3/4"=1'-0" D24A D24A

NOTE:

See sheet No. S-2 "Structural Notes" for concrete strength and reinforcing bar grade.

MODIFIED TYPE 7 GDI
℄ STA. 320+44 9/s 204' LT.

HAROLD TAKASHI MIYAMOTO REGISTERED PROFESSIONAL ENGINEER No. 1514-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

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

DATE	REVISION
11-1-89	Sheet added to contract plan set for additional details.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

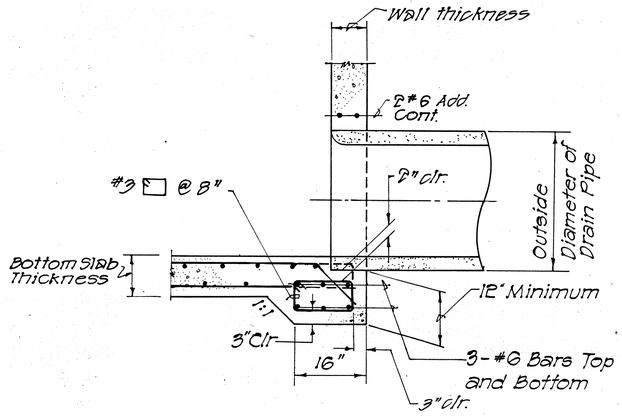
INTERSTATE ROUTE H-3
F.A.I. PROJ NO. I-H 3-1 (53)

SCALE: AS NOTED DATE: NOV. 1989

SHEET No. D24A OF SHEETS

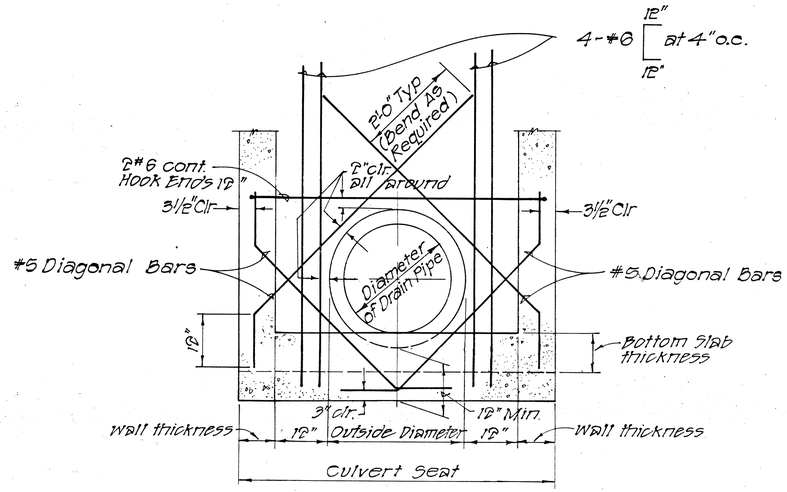
C.0.40 S-1

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	41	124

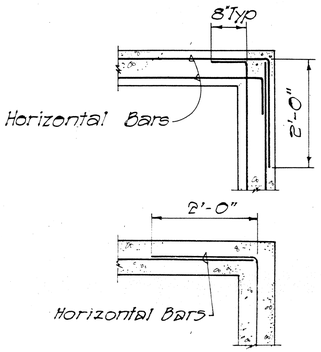


TYPICAL DETAIL OF CULVERT SEAT

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



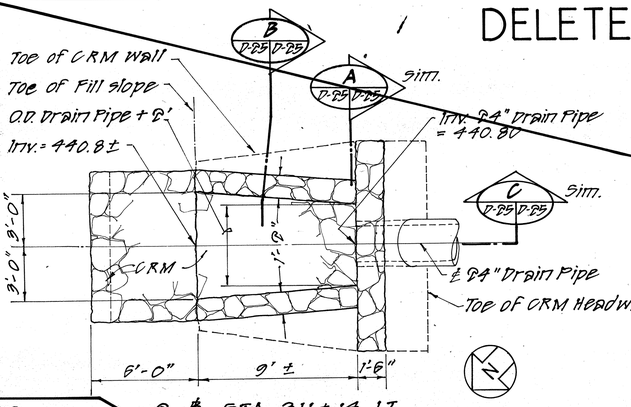
TYPICAL ADDED REINF. AROUND DRAIN PIPE AT WALL Scale : 3/4" = 1'-0"



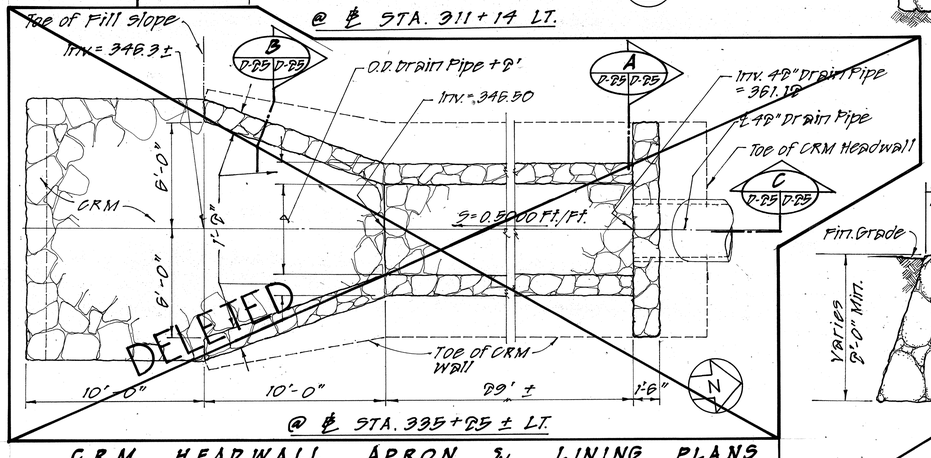
TYPICAL HORIZONTAL REINF. DETAIL

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

DELETED



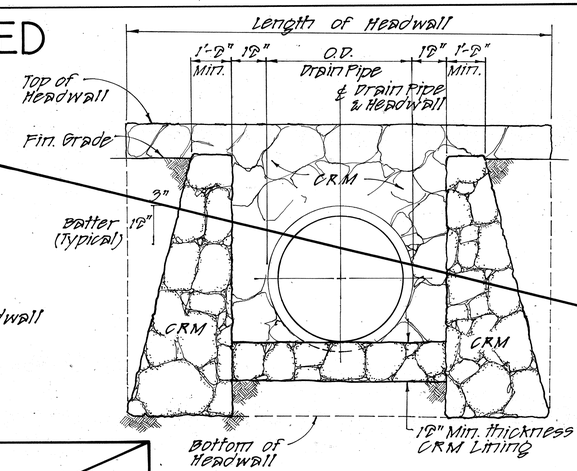
@ ℄ STA. 311+14 LT.



@ ℄ STA. 335+25 ± LT.

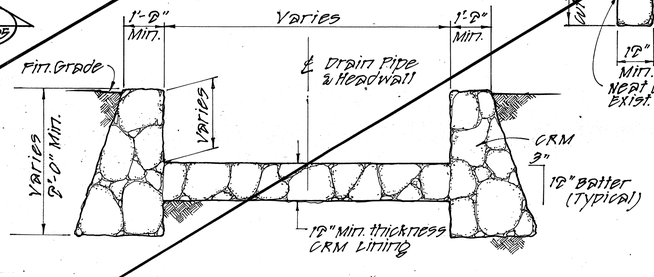
CRM HEADWALL, APRON & LINING PLANS

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



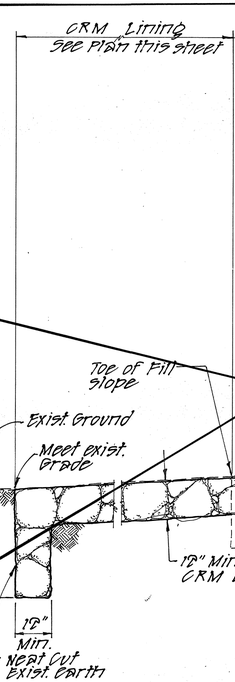
SECTION A D-25 D-25

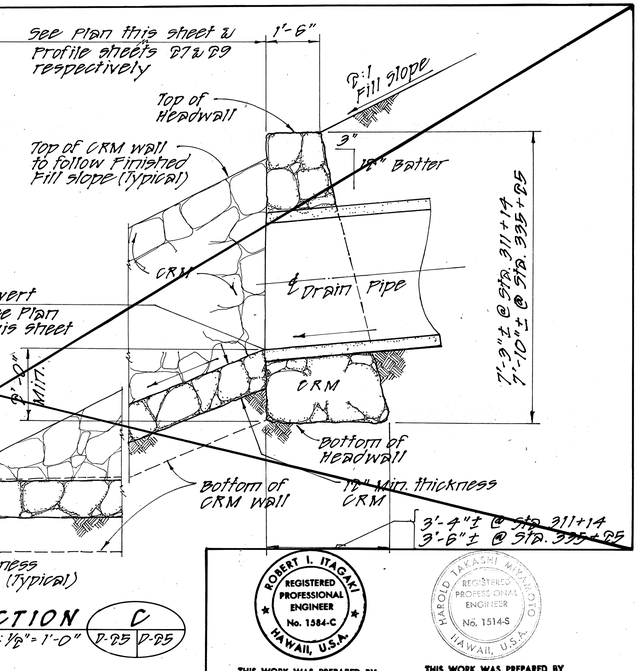
Scale: 1/2" = 1'-0"



SECTION B D-25 D-25

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





SECTION C D-25 D-25

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

ROBERT I. ITAGAKI REGISTERED PROFESSIONAL ENGINEER No. 1584-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

HAROLD TAKASHI MIZUNO REGISTERED PROFESSIONAL ENGINEER No. 1514-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

SHEET No. D-25 OF 28 SHEETS

DATE	REVISION
5/17/91	DELETE CRM HEADWALL AND APRON DETAILS AT ℄ STA. 311+14 & 34.5' LT.

C.041

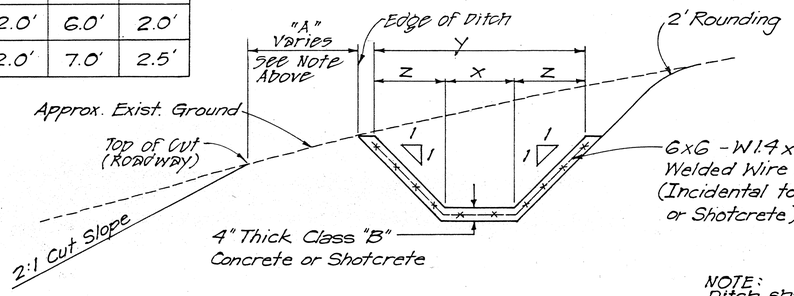
HDW SH 41

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	42	124

TRAPEZOIDAL DRAINAGE DITCH SCHEDULE

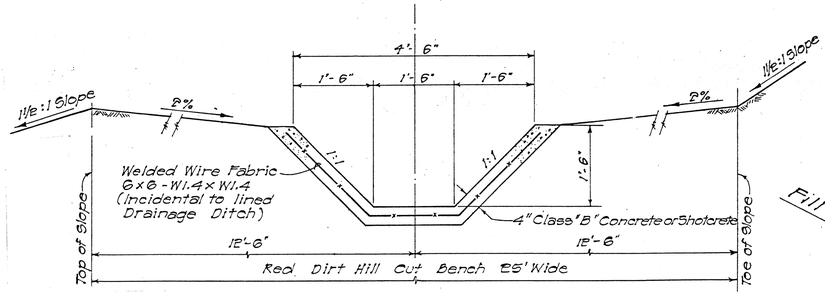
Type	x	y	z
1	1.5'	4.5'	1.5'
2	2.0'	6.0'	2.0'
3	2.0'	7.0'	2.5'

NOTE:
1. Distance between top of Roadway Cut to Edge of Ditch varies depending on the alignment derived from Cross Sections w/ rectilinear adjustments and ditch transitions. Normal Sections (Distance "A") shall be as noted below.
2. Distance "A":
   3'-0" Min. ~ Type 2 Trap. ditch & 2'x2' rect. ditch.
   3'-6" Min. ~ Type 3 Trap. ditch.
3. See Sheet 43 for "Red Dirt Hill Cut Bench" ditch location.

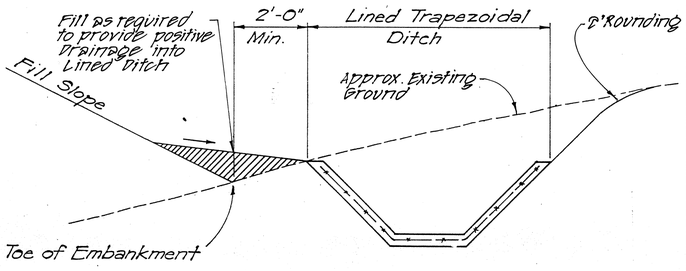


TYPICAL LINED TRAPEZOIDAL DITCH
Scale 1/2" = 1'-0"

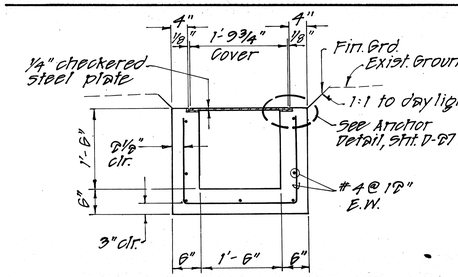
NOTE:
Ditch shall be installed with Expansion joints at 90' Max. intervals and Construction joints at 30' Max. intervals. For Expansion and Construction joint Detail, See Sht. 43



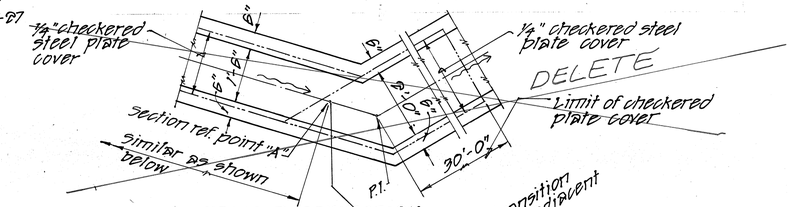
LINED DRAINAGE DITCH AT TOP OF CUT SLOPE & RED DIRT HILL CUT BENCH (TRAPEZOIDAL)



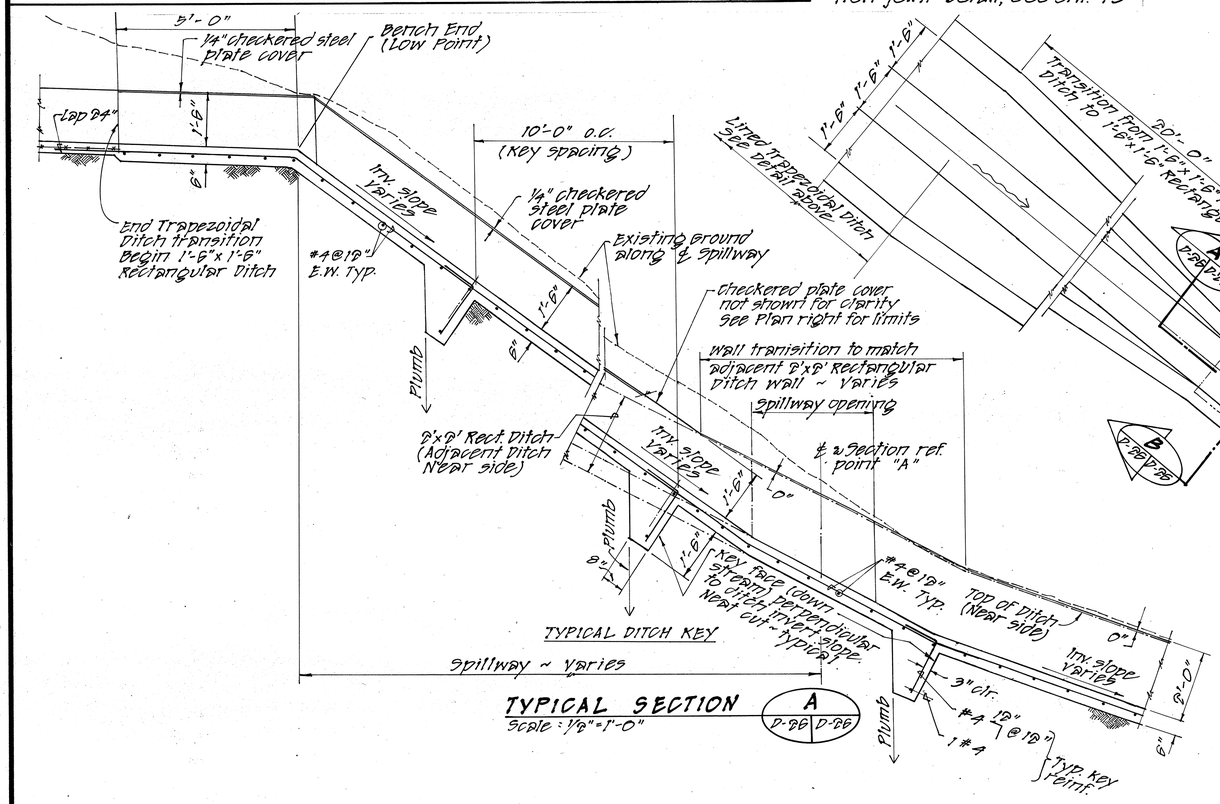
TYPICAL LINED DRAINAGE DITCH AT TOE OF EMBANKMENT
Scale: 1/8" = 1'-0"



SECTION B
Scale: 3/4" = 1'-0"
D-26 D-26



UPMOST CONNECTION



TYPICAL SECTION
Scale: 1/8" = 1'-0"
A D-26 D-26

TYPICAL DITCH KEY

TYPICAL PLAN ~ RED HILL BENCH DRAINAGE SPILLWAY
Scale: 1/8" = 1'-0"

NOTE:
See Sheet 16 for Bench elevations & Sheet 24 for Bench Drainage limits.

TYPICAL CONNECTION

ROBERT I. ITAGAKI REGISTERED PROFESSIONAL ENGINEER No. 1584-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

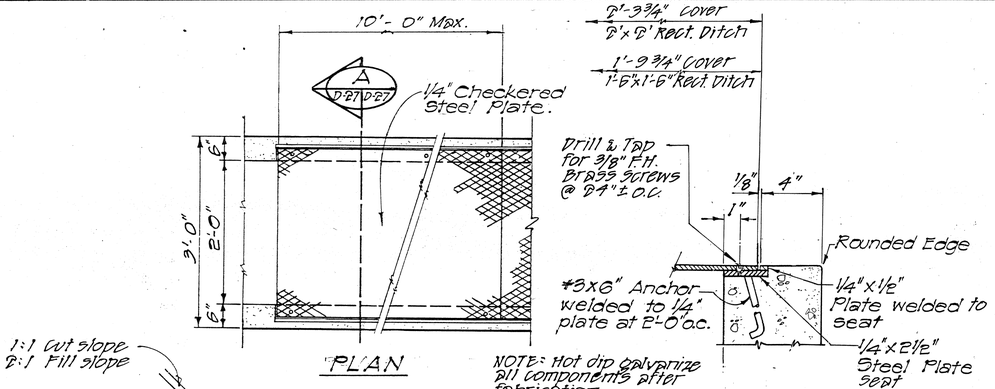
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

SHEET NO. D-26 OF 88 SHEETS

NEW SHT 42

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	43	124



PLAN

NOTE: Hot dip galvanize all components after fabrication.

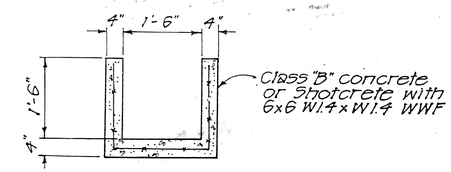
ANCHOR DETAIL
Not to Scale

2'x2' REINF. CONC. RECTANGULAR DITCH (SHOWN W/ COVER)

SECTION
Not to Scale

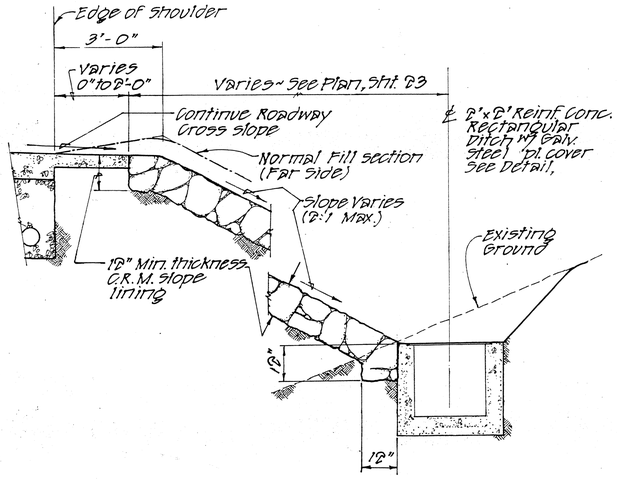
CURVED COVER PLAN
SCALE: ¼" = 1'-0" (5 sections req'd.)
Δ=14°24' Rt.

¼" CHECKERED STEEL PLATE COVER DETAILS



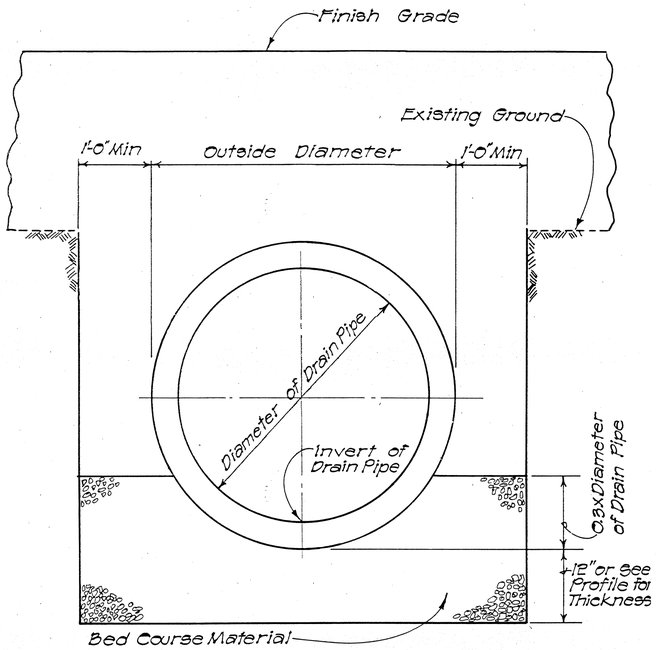
1½'x1½' RECTANGULAR DITCH
Scale: ¾"=1'-0"

NOTE:
Ditch shall be installed with expansion joints at 90' maximum intervals and construction joints at 30' maximum intervals. See Detail, this Sht.

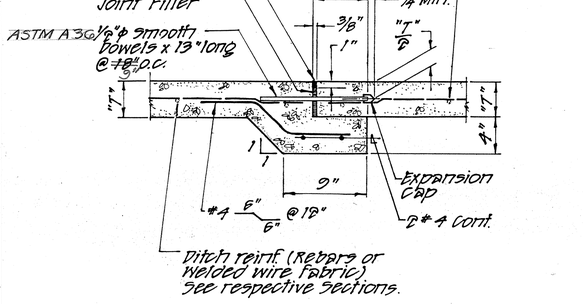


TYPICAL SECTION ~ C.R.M. SLOPE LINING @ ℄ STA. 322+10 ± TO ℄ STA. 322+83 ± RT.
Scale: ½" = 1'-0" NOTE: Stations noted are radially projected along Project baseline stations.

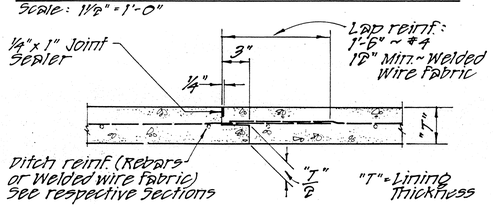
NOTE:
For Diameter and Invert of Drain Pipes See Drainage Plans.



CLASS "B" BEDDING TRENCH DETAIL FOR DRAIN PIPES
Scale: 1"=1'-0"



TYP. LINED DITCH EXPANSION JOINT DETAIL
Scale: 1½"=1'-0"



TYP. LINED DITCH CONSTRUCTION JOINT DETAIL
Scale: 1½"=1'-0"

ROBERT I. ITAGAKI
REGISTERED PROFESSIONAL ENGINEER
No. 1584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

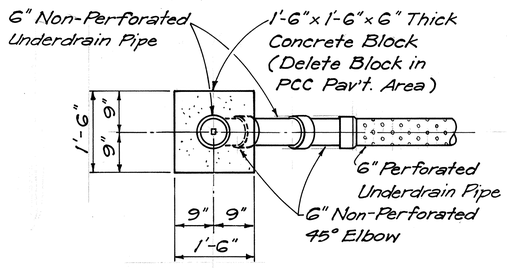
SCALE: AS NOTED DATE: AUG., 1988

SHEET No. D-27 OF 28 SHEETS

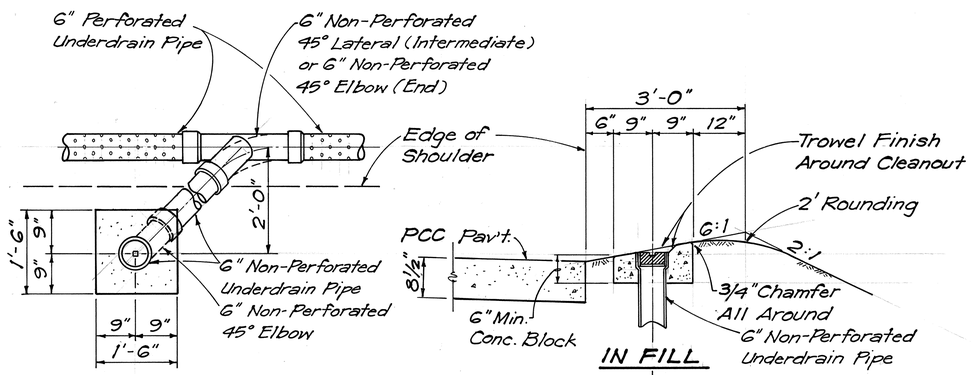
ORIGINAL PLAN
NOTE BOOK No.
SURVEY PLOTTED BY
DRAWN BY
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY
DATE

NEW SHT 43

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	44	124

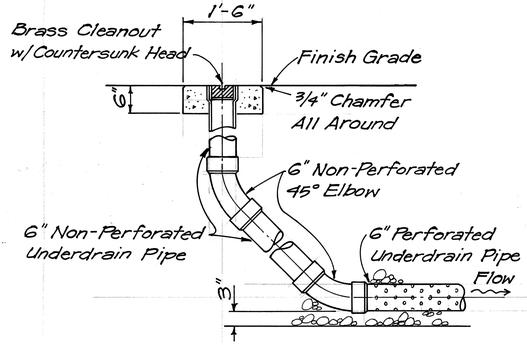


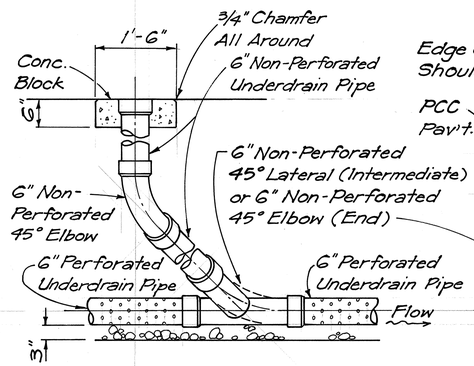
PLAN



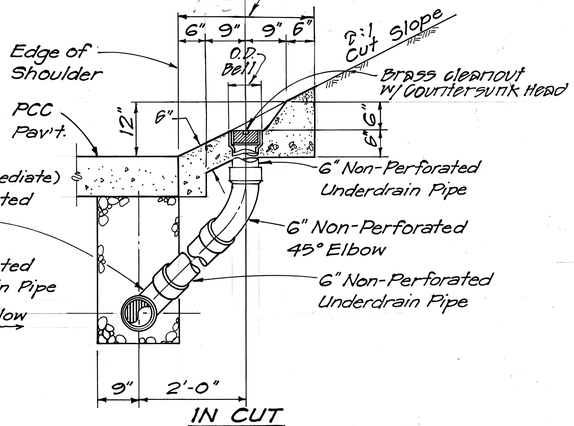
TYPICAL PLAN

IN FILL



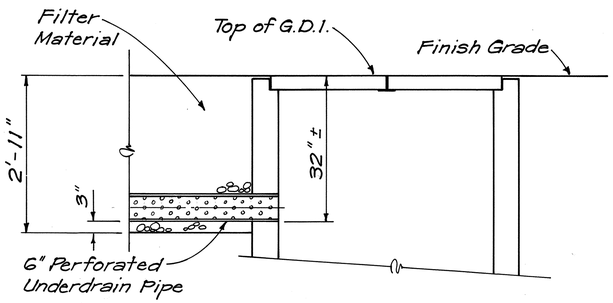


ELEVATION



IN CUT

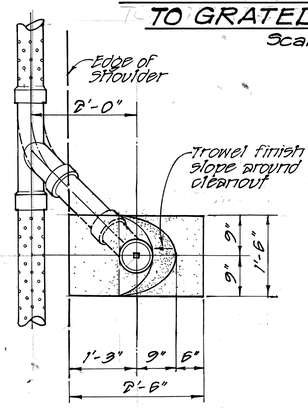
SECTION



CONNECTION OF UNDERDRAIN TO GRATED DROP INTAKE

4 (D-28 | D-28)

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



See Typical Plan above left for fittings.

PLAN ~ CONC. BLOCK IN CUT

TYPICAL CLEANOUT DETAIL

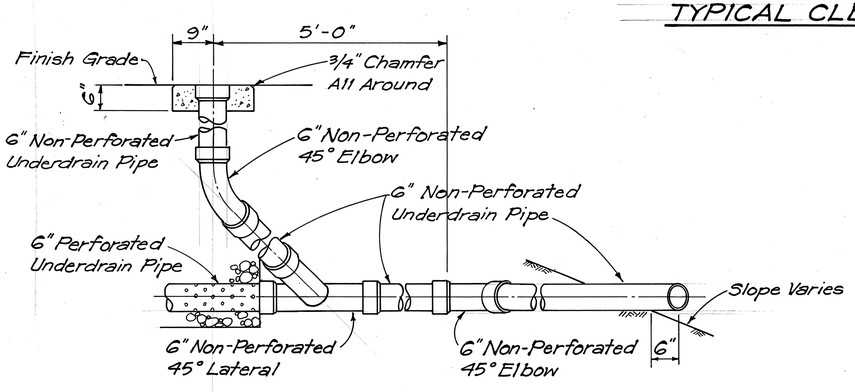
1 (D-28 | D-28)

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

TYPICAL CLEANOUT DETAILS WITH 2'-0" OFFSET

2 (D-28 | D-28)

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



TYPICAL UNDERDRAIN OUTLET DETAIL

3 (D-28 | D-28)

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

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

ROBERT L. HAGAN
REGISTERED PROFESSIONAL ENGINEER
No. 1584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

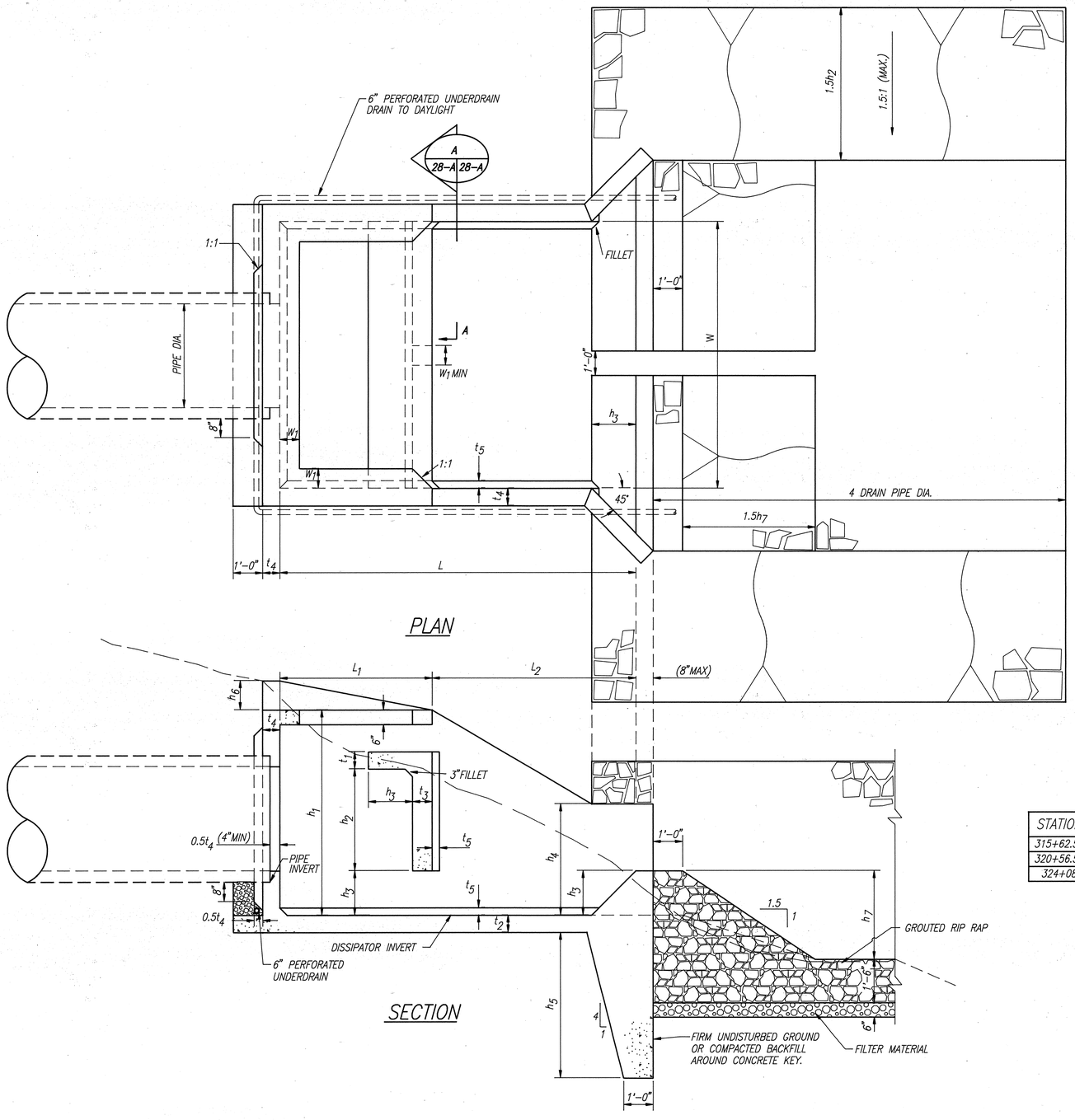
DRAINAGE DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: AUG., 1988

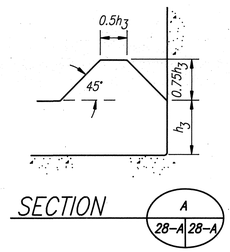
SHEET No. D-28 OF 28 SHEETS

FED.ROAD DIST.NO.	STATE	FED.AID PROJ.NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	44S-1	124



ENERGY DISSIPATOR

NOT TO SCALE



ENERGY DISSIPATOR TABLE

STATION	DRAIN PIPE DIA.	W	W1	W2	L	L1	L2	h1	h2	h3	h4	h5	h6	h7	t1	t2	t3	t4	t5
315+62.50	72"	13'-0"	1'-0"	3'-0"	17'-5"	7'-5"	10'-0"	11'-0"	5'-11"	2'-2"	5'-5"	5'-7"	0	4'-0"	0'-8"	0'-11"	0'-10"	0'-10"	0'-4"
320+56.50	42"	8'-0"	0'-7"	2'-2"	10'-9"	4'-7"	6'-2"	6'-8"	3'-6"	1'-4"	3'-4"	5'-0"	1'-8"	3'-0"	0'-8"	0'-9"	0'-8"	0'-8"	0'-3"
324+08	60"	13'-0"	1'-0"	3'-0"	17'-5"	7'-5"	10'-0"	10'-0"	4'-11"	2'-2"	5'-5"	1'-0"	0	0	0'-8"	0'-11"	0'-10"	0'-10"	0'-4"

NOTE: SEE STRUCTURAL DRAWINGS FOR REINFORCINGS DETAILS. SHTS. C.O. 44S-2 AND C.O. 44S-3

DATE	REVISION
7/30/91	SHEET ADDED TO CONTRACT PLANS SET DUE TO REVISION OF OUTLET STRUCTURES.

ROBERT I. ITAGAKI
REGISTERED PROFESSIONAL ENGINEER
No. 1584-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ENERGY DISSIPATOR DETAIL

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE:

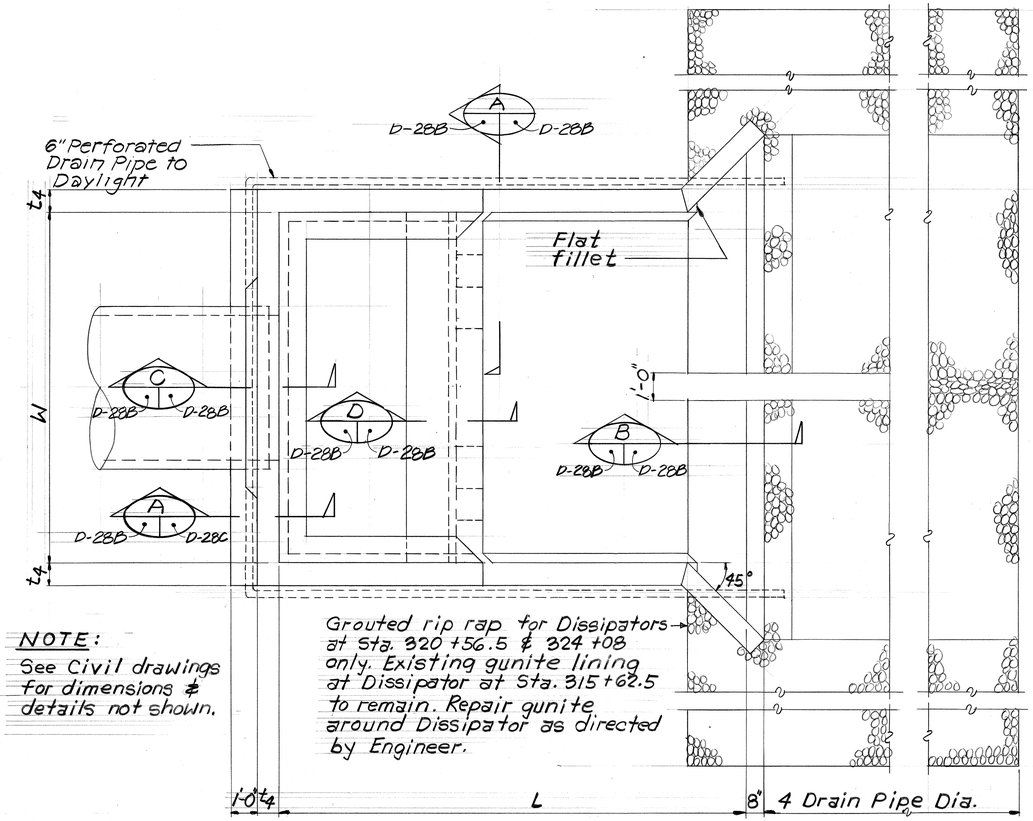
SHEET No. D-28A OF 28C SHEETS

C.O. 44S-1

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

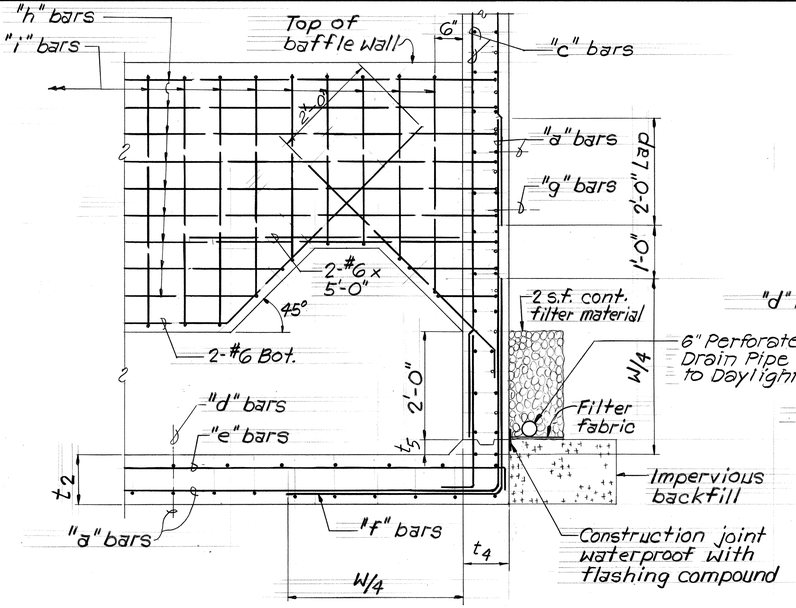
Job-No.83-45.2 File:ENERGY.DWG Disk:ENERGY DISSIPATORS Plot:1/2"=1' 7/18/91

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O. 445-2	184

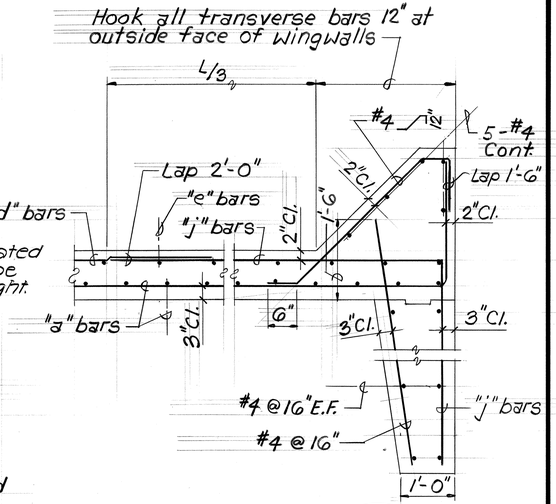


PLAN
Scale: 3/8" = 1'-0"

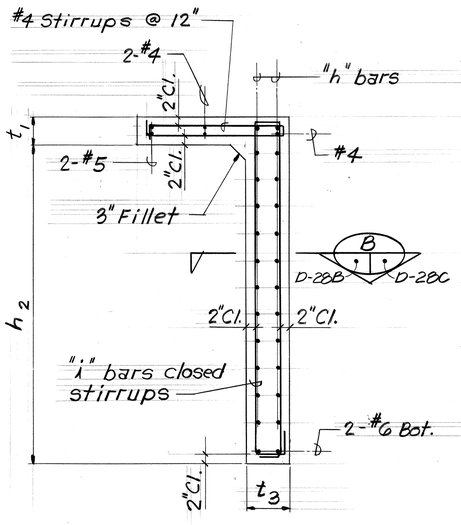
NOTE:
See Civil drawings for dimensions & details not shown.



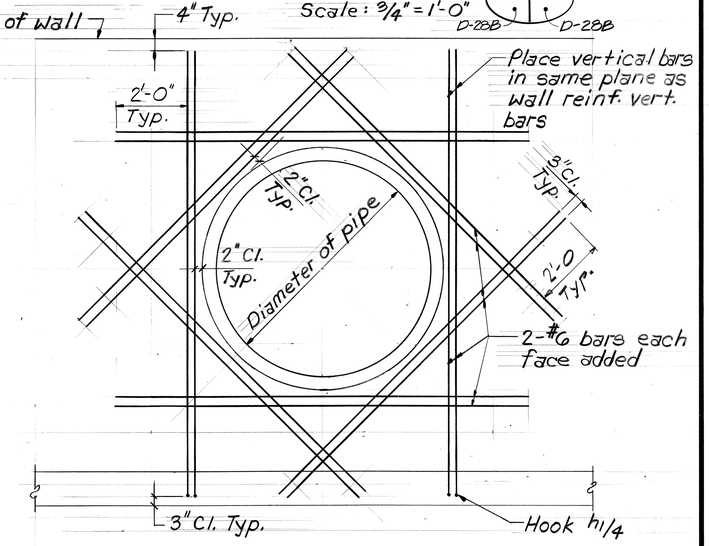
SECTION A
Scale: 3/4" = 1'-0"
D-28B D-28B



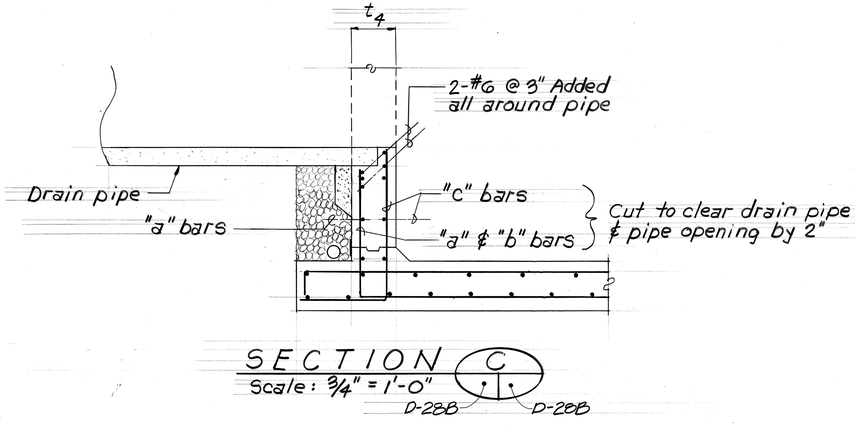
SECTION B
Scale: 3/4" = 1'-0"
D-28B D-28B



BAFFLE WALL ~ SECTION D
Scale: 3/4" = 1'-0"
D-28B D-28B



ADDED REINFORCING
FOR CULVERT OPENING
Scale: 1/2" = 1'-0"



SECTION C
Scale: 3/4" = 1'-0"
D-28B D-28B

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

ORIGINAL PLAN | NOTE BOOK | No.

DATE	REVISION
7/30/91	SHEET ADDED TO CONTRACT PLANS SET DUE TO REVISION OF OUTLET STRUCTURES

DETAILS OF IMPACT TYPE ENERGY DISSIPATOR

* Drawings shown for Sta. 315+62.50 dissipator. See dimension & reinforcing table for other dissipators.

HAROLD TAKASHI MIYAMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 1514-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DISSIPATOR DETAILS

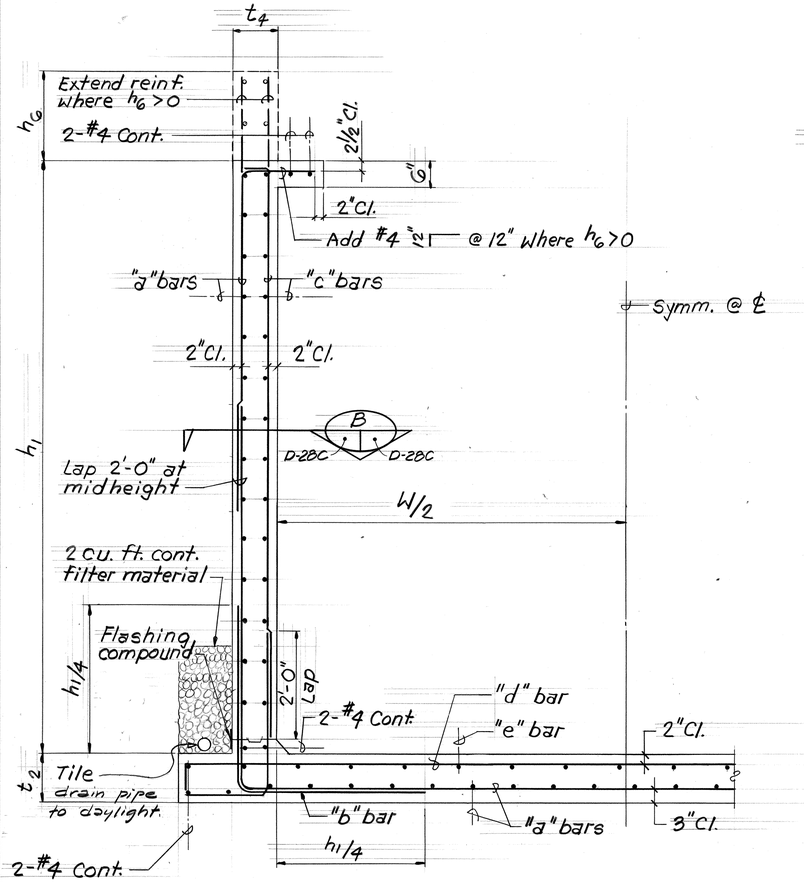
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: JUNE, 1991

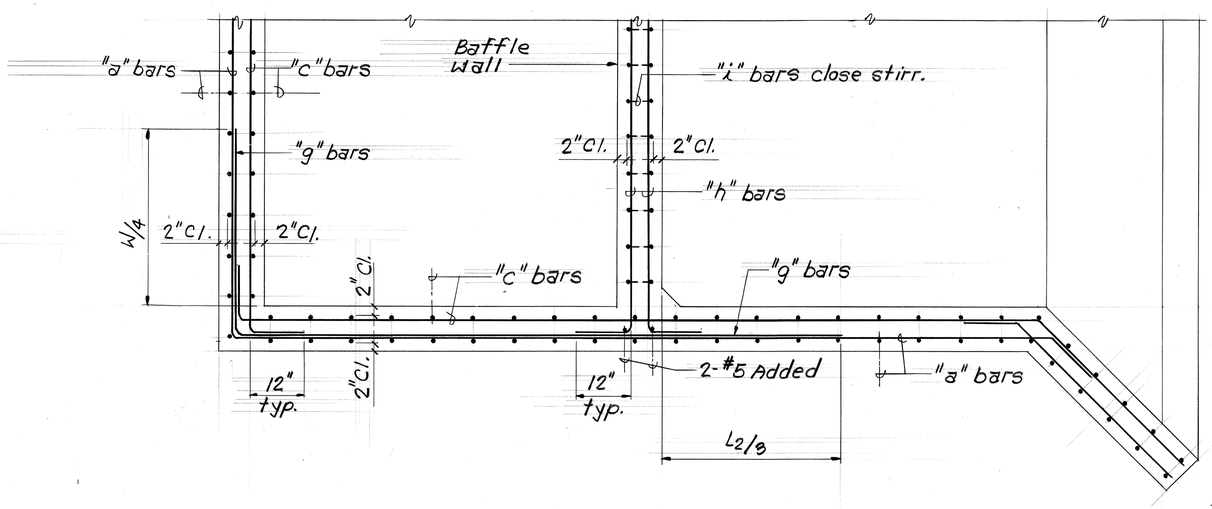
SHEET No. D-28B OF D-28C SHEETS

C.O. 445-2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(53)	1988	C.O. 445-3	184



SECTION A
Scale: 3/4" = 1'-0"
D-28B D-28C



SECTION B
Scale: 3/4" = 1'-0"
D-28B, D-28C D-28C

STRUCTURAL NOTES

A. Concrete 28 day compressive strength ..... 4,000 p.s.i.

B. Reinforcing steel shall conform to ASTM A615 Grade 60 except stirrups & ties shall be Grade 40.

C. Dissipator foundation shall bear on firm undisturbed ground or compacted backfill. All soft soil under the dissipator and in front of the concrete key at the toe shall be removed and replaced with structure backfill.

REINFORCING SCHEDULE

BARS	Sta. 315+62.50	Sta. 320+56.50	Sta. 324+08
a	#4 @ 9" E.W.	#4 @ 10" E.W.	#4 @ 9" E.W.
b	#5 @ 9" Added	#4 @ 10" Added	#5 @ 9" Added
c	#5 @ 9" E.W.	#4 @ 10" E.W.	#5 @ 9" E.W.
d	#4 @ 12" Top	#4 @ 12" Top	#5 @ 12" Top
e	#5 @ 12" Top	#6 @ 10" Top	#5 @ 9" Top
f	#6 @ 9" Added	#4 @ 10" Added	#5 @ 9" Added
g	#5 @ 9" Added	#4 @ 10" Added	#4 @ 9" Added
h	#6 @ 6" Horiz., E.F.	#4 @ 8" Horiz.	#5 @ 9" Horiz., E.F.
i	#4 Stirr. @ 8"	#4 Stirr. @ 12"	#4 Stirr. @ 12"
j	#6 @ 6"	#6 @ 6"	#5 @ 12"

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

HAROLD TAKASHI MIYAMOTO
REGISTERED PROFESSIONAL ENGINEER
No. 1514-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DISSIPATOR DETAILS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I-H3-1(53)

SCALE: AS NOTED DATE: JUNE, 1991

SHEET No. D-28C OF D-28C SHEETS

C.O. 445-3

DATE	REVISION
7/30/91	SHEET ADDED TO CONTRACT PLANS SET DUE TO REVISION OF OUTLET STRUCTURES.