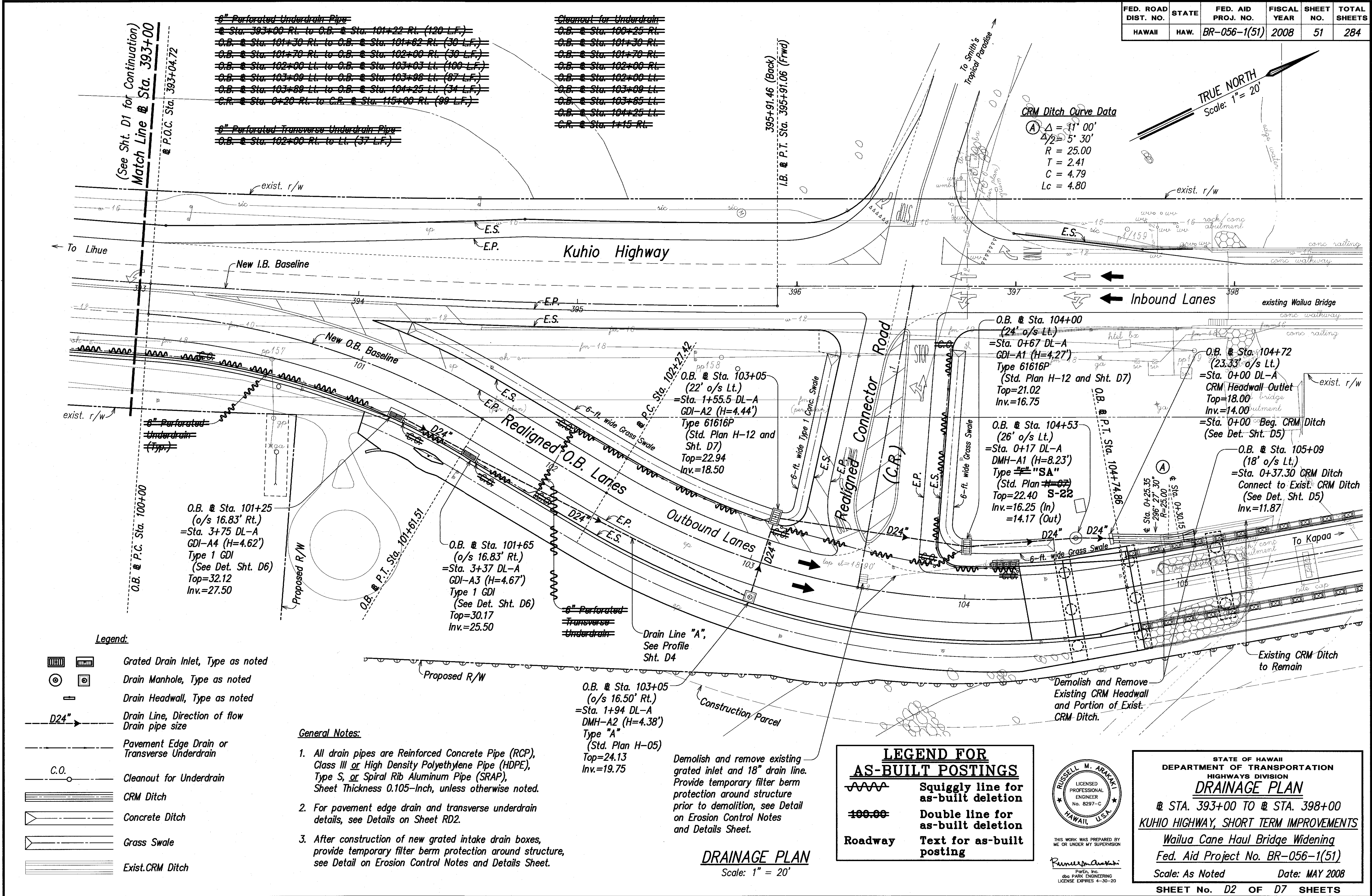


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	51	284



"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	52	284

6" Perforated Underdrain Pipe

O.B. Sta. 110+40 Lt. to O.B. Sta. 112+60 Lt. (222 L.F.)
O.B. Sta. 110+40 Rt. to Sta. 405+80 Rt. (273 L.F.)
Sta. 406+74 Rt. to Sta. 405+80 Rt. (97 L.F.)
I.B. Sta. 403+90 Lt. to I.B. Sta. 404+27 Lt. (37 L.F.)
I.B. Sta. 404+29 Lt. to I.B. Sta. 404+72 Lt. (43 L.F.)
I.B. Sta. 404+74 Lt. to I.B. Sta. 405+17 Lt. (43 L.F.)
I.B. Sta. 405+19 Lt. to Sta. 405+61 Lt. (42 L.F.)
Sta. 405+63 Lt. to Sta. 406+06 Lt. (43 L.F.)
Sta. 406+08 Lt. to Sta. 406+52 Lt. (44 L.F.)
Sta. 406+54 Lt. to Sta. 406+98 Lt. (44 L.F.)
Sta. 407+25 Lt. to Sta. 406+98 Lt. (27 L.F.)

Cleanout for Underdrain

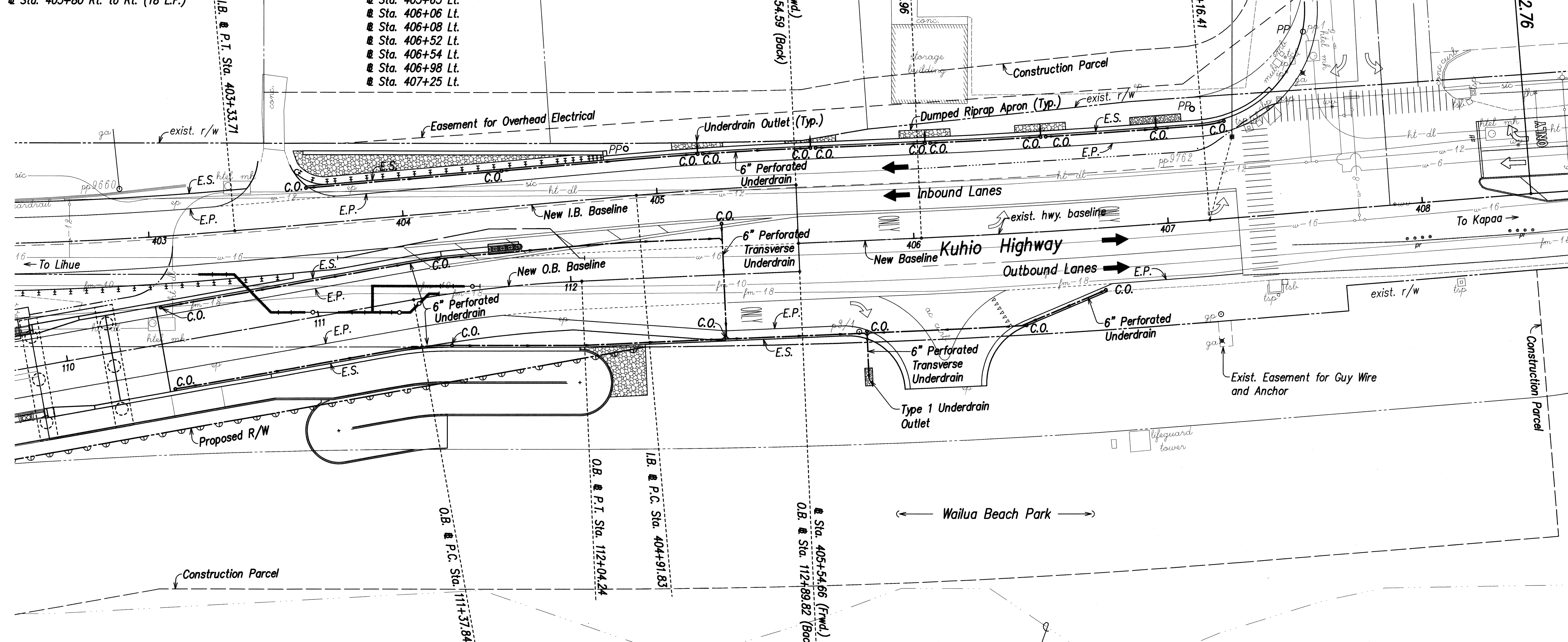
O.B. Sta. 110+40 Rt.
O.B. Sta. 110+40 Lt.
O.B. Sta. 111+50 Rt.
O.B. Sta. 111+50 Lt.
O.B. Sta. 112+59 Rt.
O.B. Sta. 112+60 Lt.
Sta. 405+80 Rt.
Sta. 406+42 Rt.
Sta. 406+74 Rt.
I.B. Sta. 403+63 Lt.
I.B. Sta. 404+40 Lt.
I.B. Sta. 405+17 Lt.
I.B. Sta. 405+19 Lt.
Sta. 405+61 Lt.
Sta. 405+63 Lt.
Sta. 406+06 Lt.
Sta. 406+08 Lt.
Sta. 406+52 Lt.
Sta. 406+54 Lt.
Sta. 406+98 Lt.
Sta. 407+25 Lt.

6" Perforated Underdrain Pipe Outlet

I.B. Sta. 405+17 Lt.
Sta. 405+61 Lt.
Sta. 406+06 Lt.
Sta. 406+52 Lt.
Sta. 406+98 Lt.

6" Perforated Transverse Underdrain Pipe

O.B. Sta. 112+60 Lt. to Rt. (45 L.F.)
Sta. 405+80 Rt. to Rt. (18 L.F.)



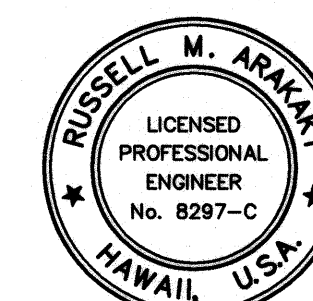
Legend:

- Pavement Edge Drain or Transverse Underdrain
- Cleanout for Underdrain
- Type 1 Underdrain Outlet
- Dumped Riprap Apron

DRAINAGE PLAN

Scale: 1" = 20'

Certified Shoreline
January 5, 2007

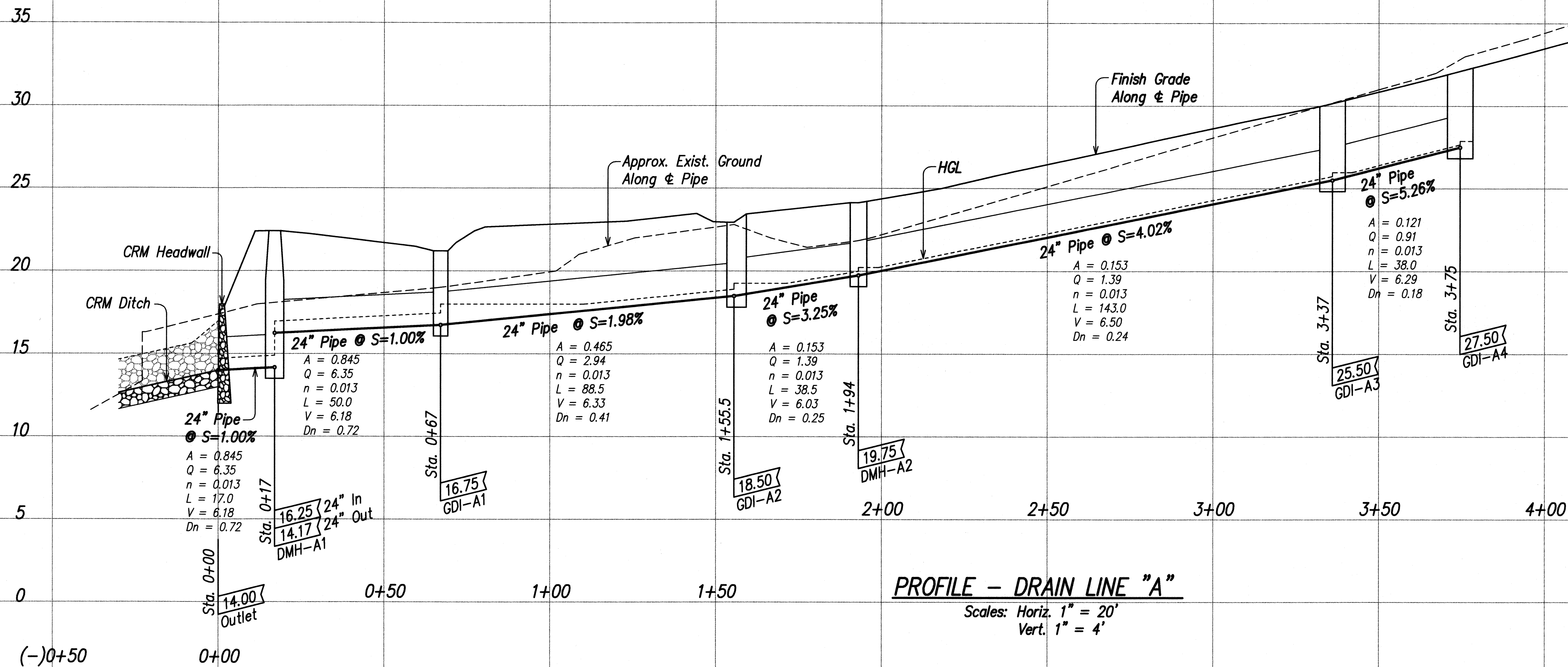


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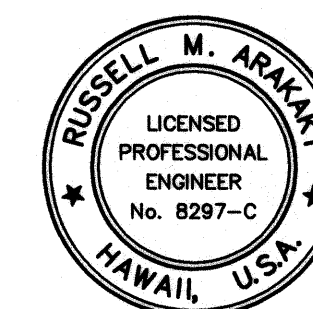
Russell M. Aramaki
P.E., Inc.
404 PARK ENGINEERING
LICENSE EXPIRES 4-30-10

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE PLAN
Sta. 403+00 TO END
KUHO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Fed. Aid Project No. BR-056-1(51)
Scale: As Noted Date: MAY 2008
SHEET No. D3 OF D7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	53	284



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



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

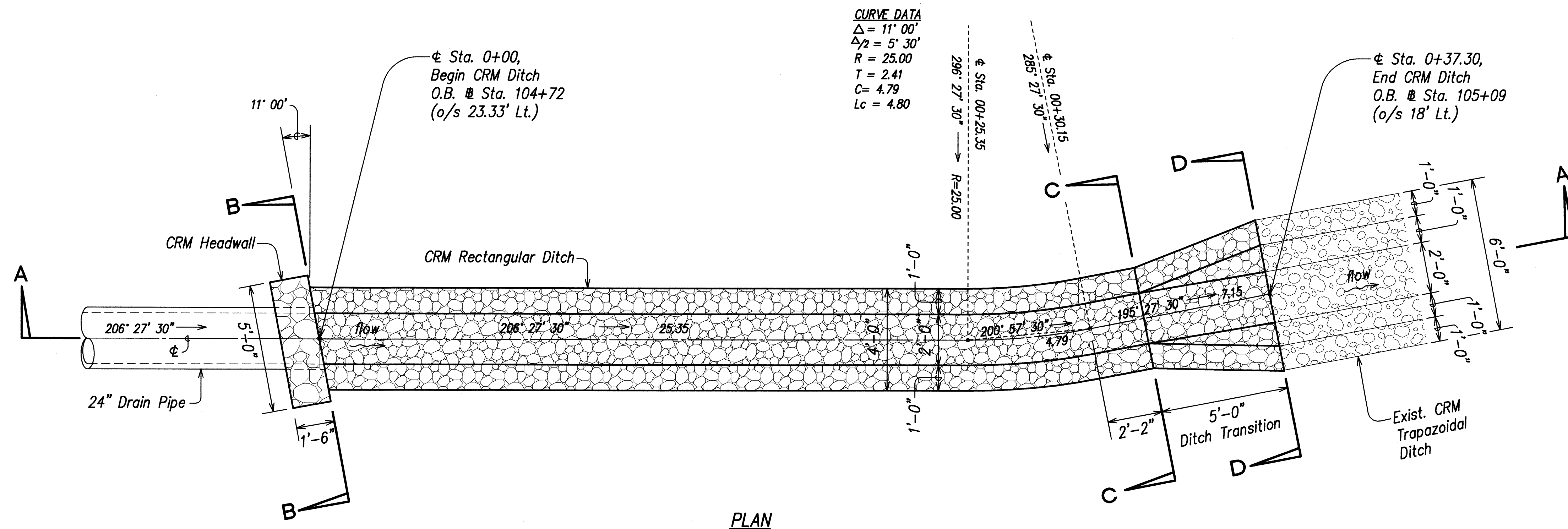
DRAINAGE PROFILE

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Fed. Aid Project No. BR-056-1(51)

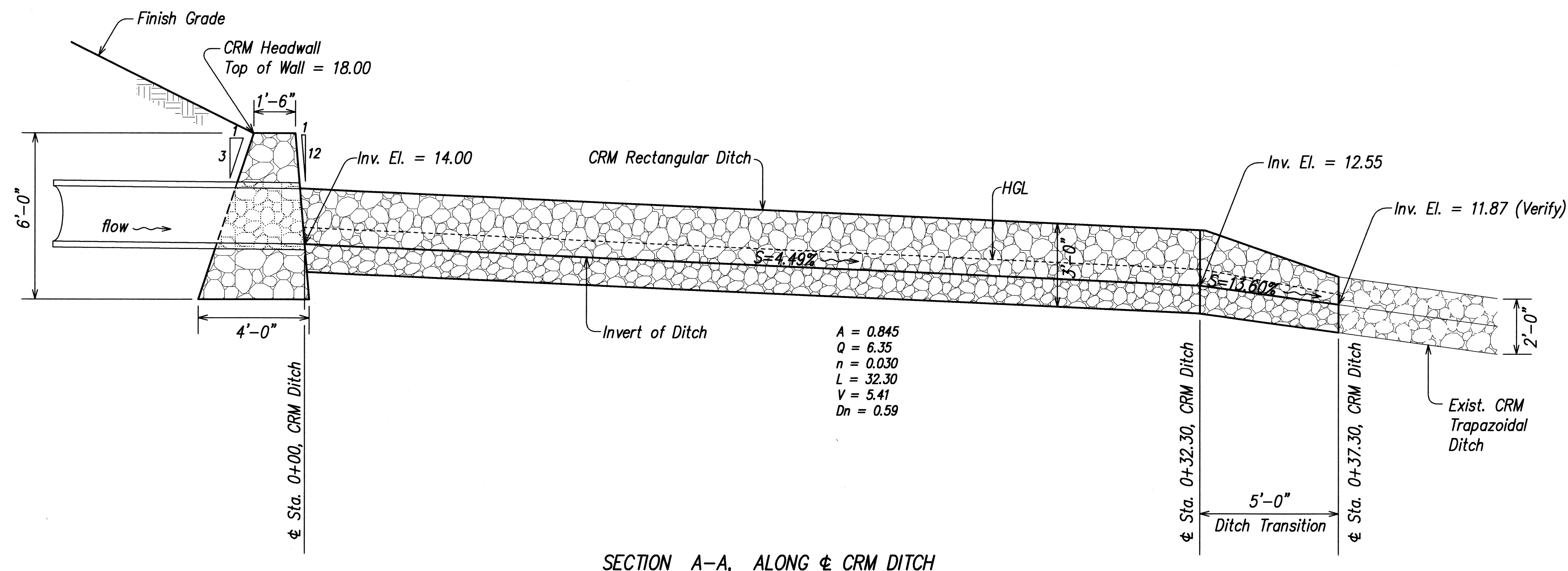
Scale: As Noted Date: MAY 2008

SHEET No. D4 OF D7 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	54	284

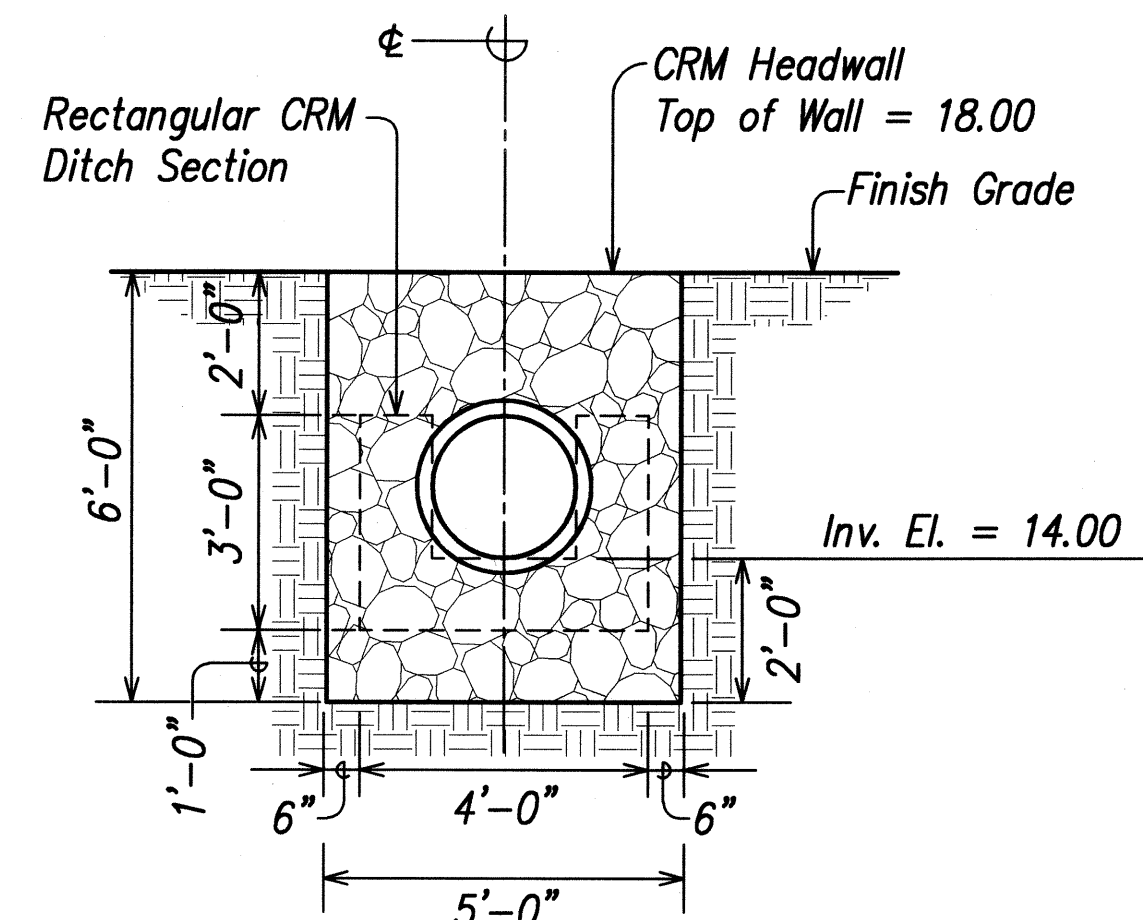


PLAN

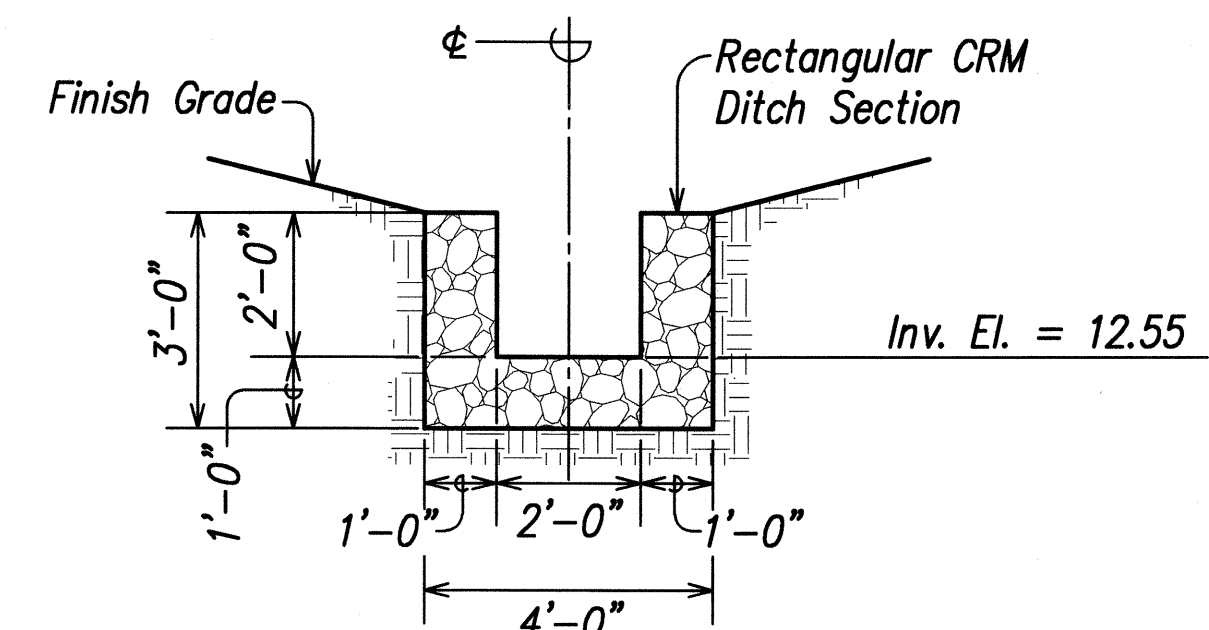


SECTION A-A, ALONG CRM DITCH

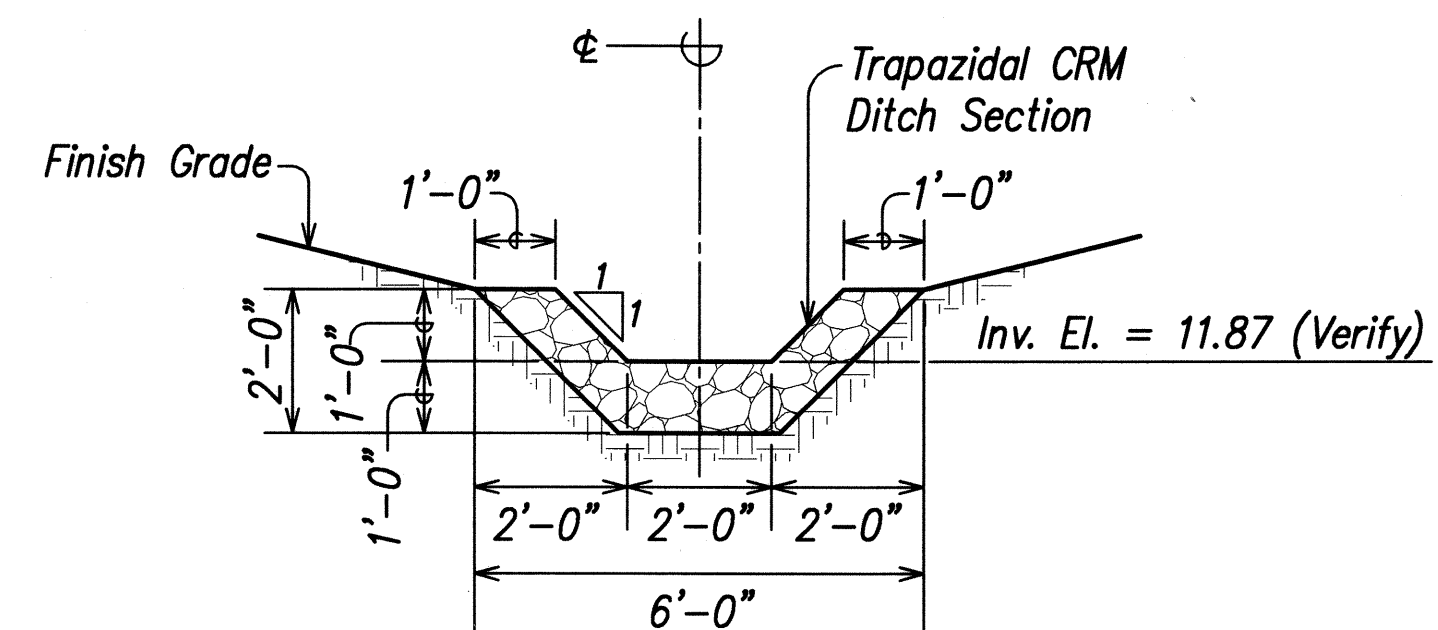
CRM DITCH A
SCALE: 3/8" = 1'-0"



SECTION B-B, CRM HEADWALL @
BEGIN CRM RECTANGULAR DITCH

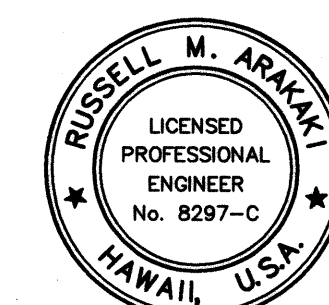


SECTION C-C, END CRM RECTANGULAR DITCH
@ BEGIN DITCH TRANSITION



SECTION D-D, END DITCH TRANSITION @
CONNECTION TO CRM TRAPEZOIDAL DITCH

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	



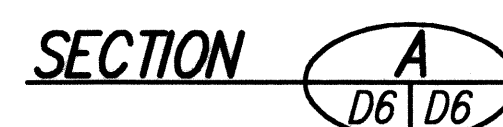
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ParEn, Inc.
dba PARK ENGINEERING
LICENSE EXPIRES 4-30-10

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KUHO HIGHWAY, SHORT TERM IMPROVEMENTS
Wailua Cane Haul Bridge Widening
Fed. Aid Project No. BR-056-1(51)
Scale: As Noted Date: MAY 2008

SHEET No. D5 OF D7 SHEETS



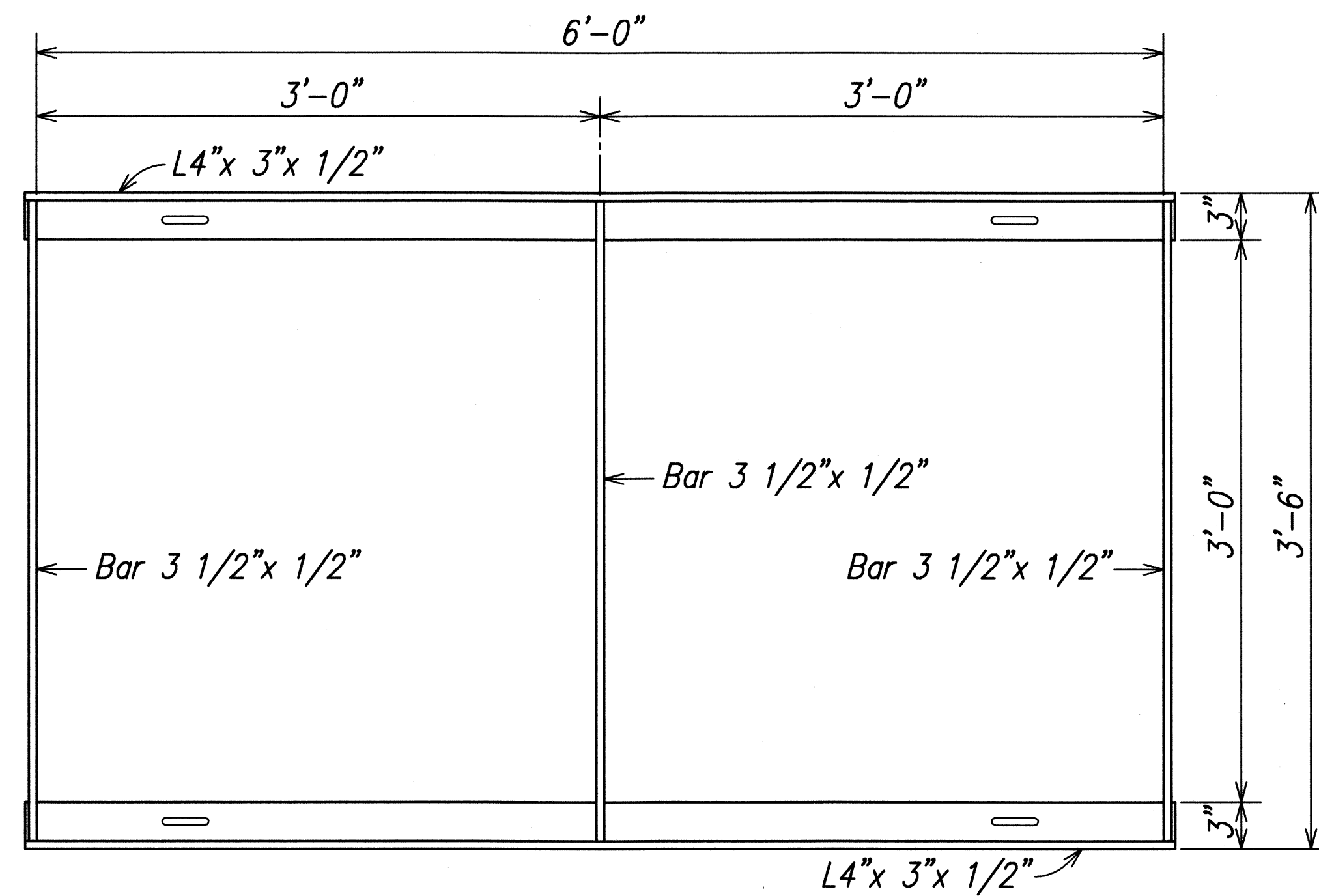
Scale: $3/4" = 1'-0"$



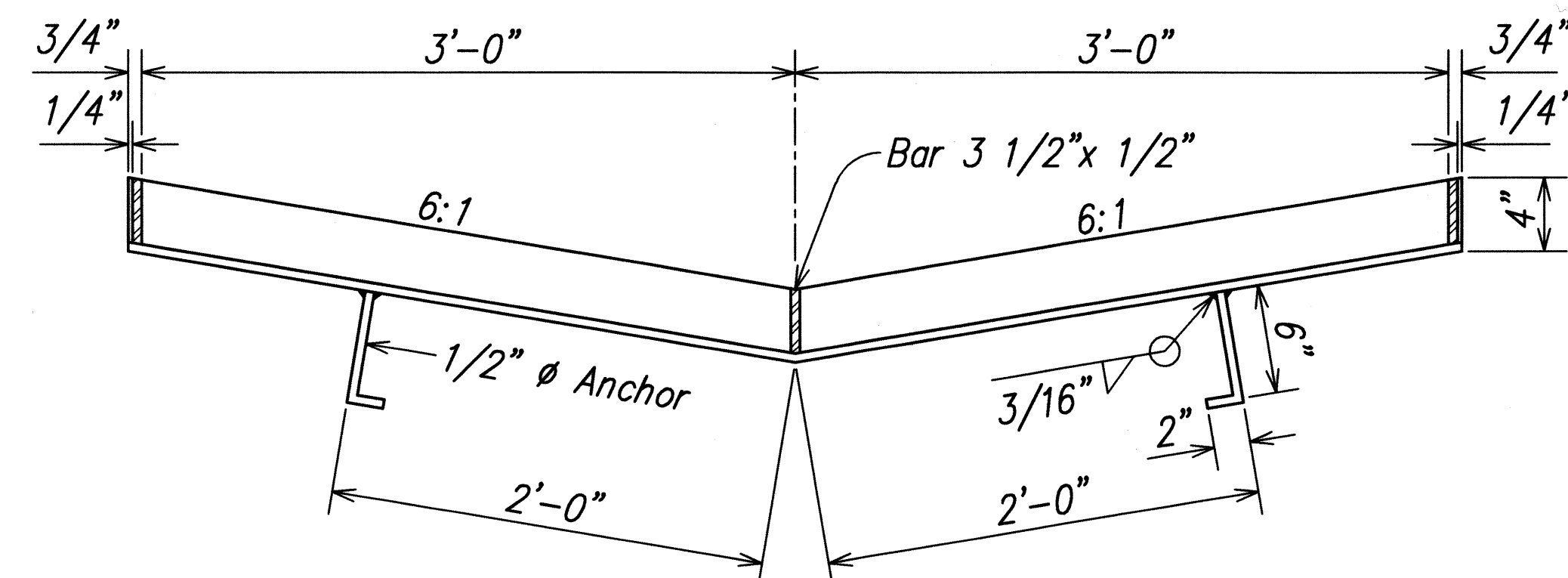
Rumelym A. Kahl
ParEn, Inc.
dba PARK ENGINEERING
LICENSE EXPIRES 4-30-10

SHEET No. *D6* OF *D7* SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-056-1(51)	2008	56	284



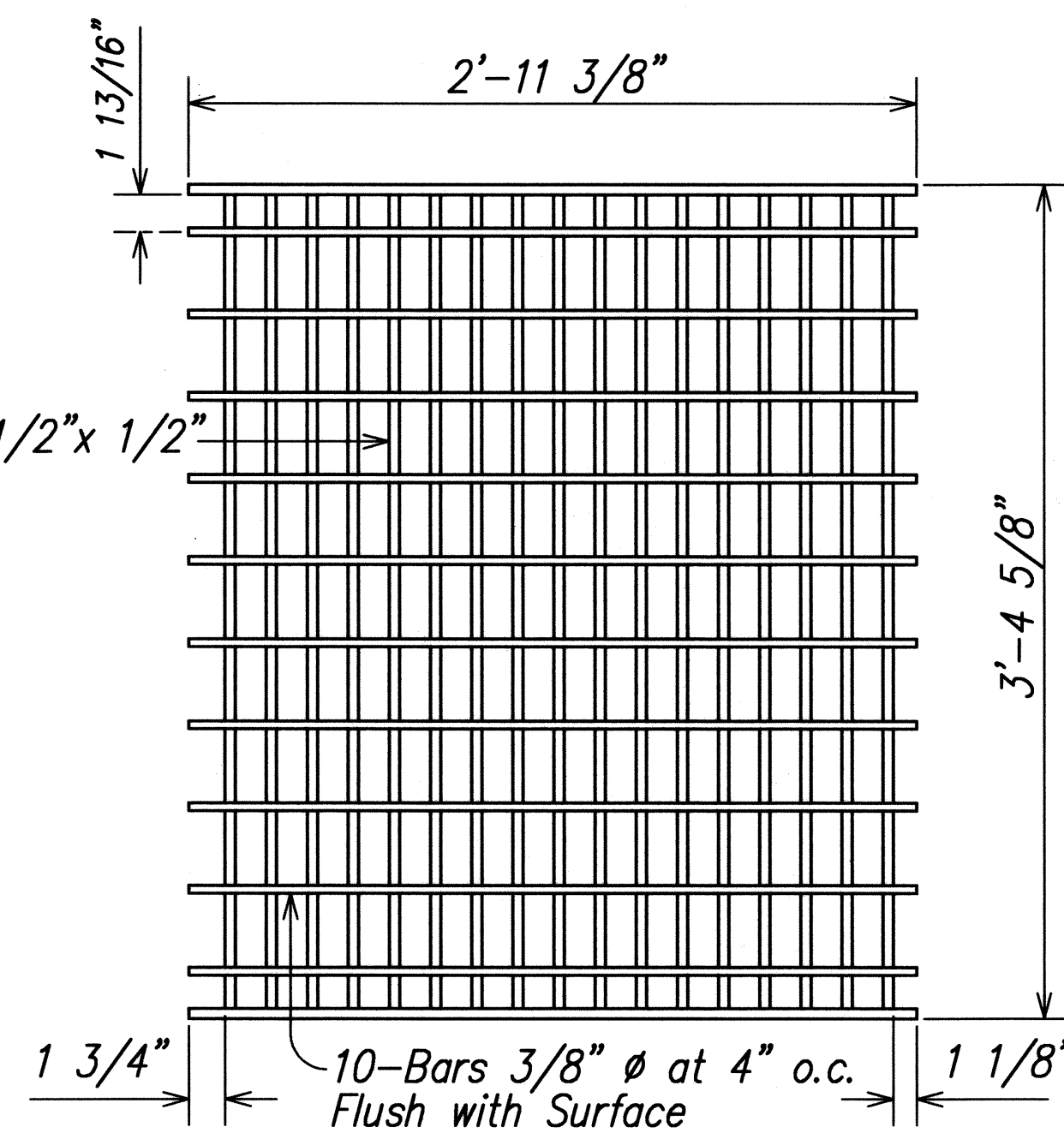
PLAN



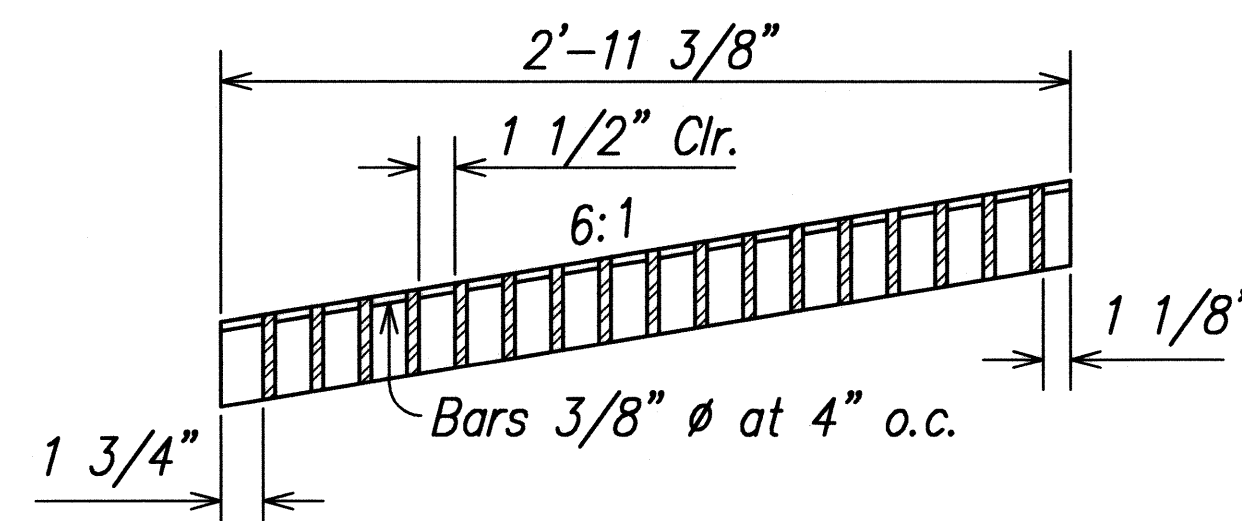
SECTION

61616P STEEL FRAME AND GRATE DETAIL

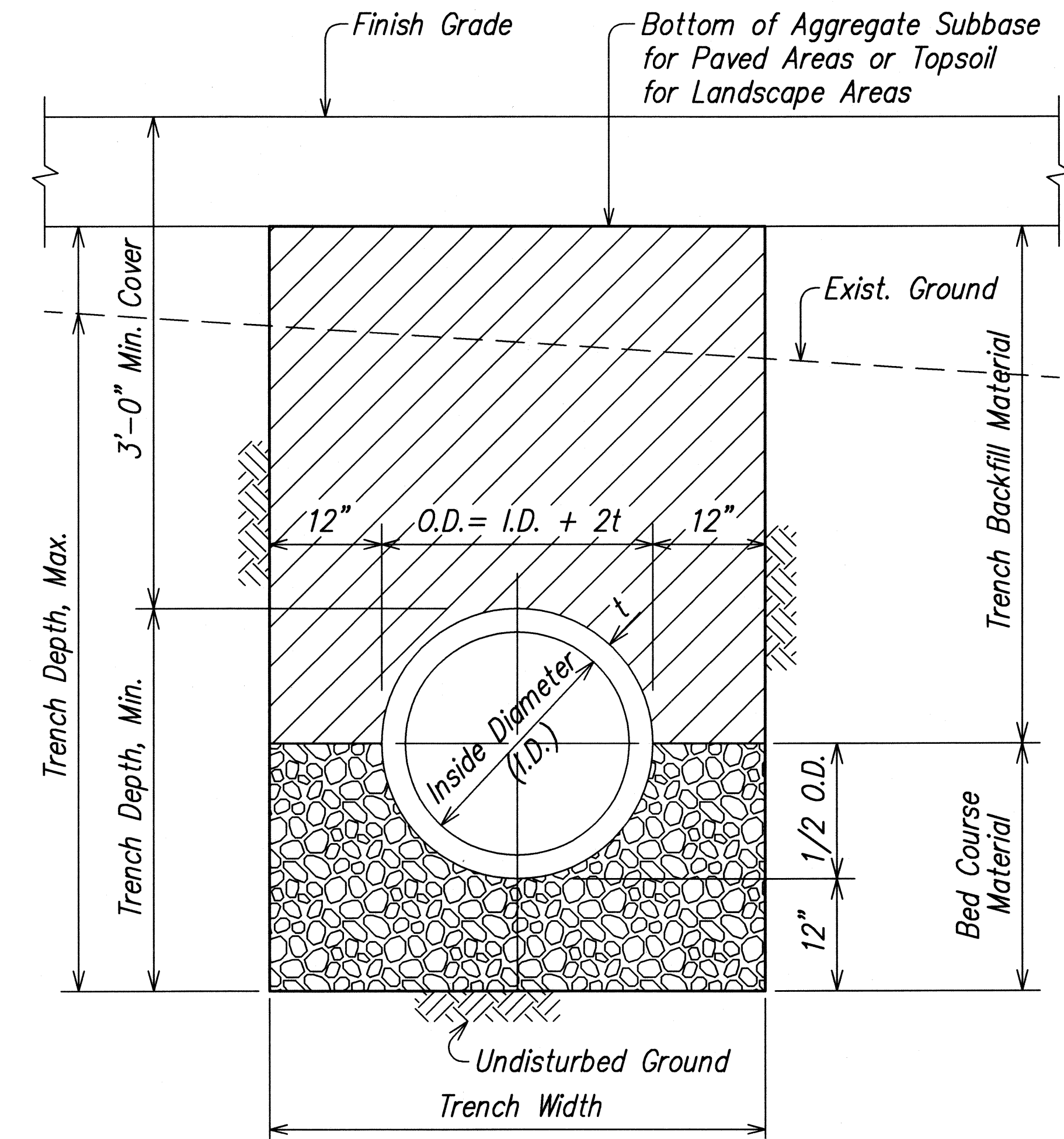
SCALE: 1 1/2" = 1'-0"



PLAN



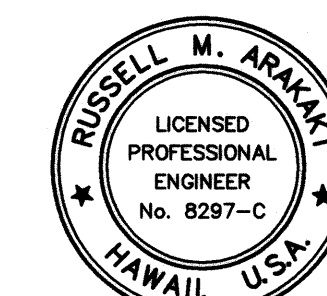
SECTION



TYPICAL TRENCH DETAIL FOR CULVERTS

SCALE: 1" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
No.	DESIGNED BY	
	QUANTITIES BY	
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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KUHIO HIGHWAY, SHORT TERM IMPROVEMENTS

Wailua Cane Haul Bridge Widening

Fed. Aid Project No. BR-056-1(51)

Scale: As Noted

Date: MAY 2008

SHEET No. D7 OF D7 SHEETS