FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	(HI-1)36B	1967	C023	124

Ramp "D" ℄ Sta 4+55 (Rt.)
Construct Inlet #1 (Type "B")
Install 39 L.F. 24" RCCP Cl. III or 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES
Structure Excavation	= 42 C.Y.
Cl. "A-1" Concrete	= 5 C.Y.
Reinf. Steel	= 200 lbs.
Modified Type "A-2" Steel Frame & Grates	= 1 ea.
24" RCCP, Cl. III or 24" CGMP, 14 Ga.	= 39 L.F.
Untreated Base	= 9 C.Y.

H-1 Inbound ℄ Sta 476+60 (Rt.)
Construct Inlet #2 (Type "B")
Install 81 L.F. 24" RCCP Cl. III or 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES
Structure Excavation	= 108 C.Y.
Cl. "A-1" Concrete	= 9 C.Y.
Reinf. Steel	= 200 lbs.
Modified Type "A-2" Steel Frame & Grates	= 1 ea.
24" RCCP, Cl. III or 24" CGMP, 14 Ga.	= 81 L.F.
Untreated Base	= 8 C.Y.

H-1 Inbound to H-2 Outbound
℄ Sta. 476+95 (Lt.)
Construct Inlet #3 (Type "B")
Install 65 L.F. 24" RCCP Cl. III or 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES
Structure Excavation	= 75 C.Y.
Cl. "A-1" Concrete	= 5 C.Y.
Reinf. Steel	= 200 lbs.
Modified Type "A-2" Steel Frame & Grates	= 1 ea.
24" RCCP Cl. III or 24" CGMP, 14 Ga.	= 65 L.F.
Untreated Base	= 6 C.Y.

H-2 Inbound to H-1 Outbound
℄ Sta. 477+30 (Lt.)
Construct Inlet #4 (Type "B")
Install 95 L.F. 24" RCCP Cl. III or 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES
Structure Excavation	= 144 C.Y.
Cl. "A-1" Concrete	= 6 C.Y.
Reinf. Steel	= 200 lbs.
Modified Type "A-2" Steel Frame & Grates	= 1 ea.
24" RCCP, Cl. III or 24" CGMP, 14 Ga.	= 95 L.F.
Untreated Base	= 9 C.Y.

H-2 Inbound to H-1 Outbound
℄ Sta. 480+60 (Lt.)
Construct Inlet #5 (Type "B")
Install 122 L.F. 24" RCCP Cl. III or 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES
Structure Excavation	= 218 C.Y.
Cl. "A-1" Concrete	= 6 C.Y.
Reinf. Steel	= 200 lbs.
Modified Type "A-2" Steel Frame & Grates	= 1 ea.
24" RCCP, Cl. III or 24" CGMP, 14 Ga.	= 122 L.F.
Untreated Base	= 13 C.Y.

Ramp "M" ℄ Sta. 3+70 (Lt.)
Construct Inlet "A"
Install 75 L.F. 24" RCCP Cl. III or 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES
Structure Excavation	= 59 C.Y.
Cl. "A-1" Concrete	= 2 C.Y.
Reinf. Steel	= 75 lbs.
24" RCCP, Cl. III or 24" CGMP, 14 Ga.	= 75 L.F.
Untreated Base	= 8 C.Y.

H-1 Inbound to H-2 Outbound
℄ Sta. 483+45 (Lt.)
Construct Inlet #9 (Type "B")
Install 64 L.F. 36" RCCP Cl. III or 36" CGMP, 12 Ga.

ESTIMATED QUANTITIES
Structure Excavation	= 100 C.Y.
Cl. "A-1" Concrete	= 6 C.Y.
Reinf. Steel	= 200 lbs.
Modified Type "A-2" Steel Frame & Grates	= 1 ea.
36" RCCP, Cl. III or 36" CGMP, 12 Ga.	= 64 L.F.
Untreated Base	= 8 C.Y.

Waipahu Street Realignment
℄ Sta. 1+70 (Rt.)
Construct Inlet "B"
Install 84 L.F. 24" RCCP Cl. III or 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES
Structure Excavation	= 54 C.Y.
Cl. "A-1" Concrete	= 2 C.Y.
Reinf. Steel	= 75 lbs.
24" RCCP, Cl. III or 24" CGMP, 14 Ga.	= 84 L.F.
Untreated Base	= 9 C.Y.

Waipahu Street Realignment
℄ Sta. 1+70 (Lt.)
Construct Outlet #4
ESTIMATED QUANTITIES
Structure Excavation	= 2 C.Y.
Cl. "A-1" Concrete	= 2 C.Y.
Reinf. Steel	= 99 lbs

H-1 Inbound to H-2 Outbound
℄ Sta. 478+20 (Lt.)
Construct SDMH #1 (Type "E")
Install 337 L.F. 30" RCCP, Cl. III or 30" CGMP, 14 Ga.

ESTIMATED QUANTITIES
Structure Excavation	= 306 C.Y.
Cl. "B-1" Concrete	= 2 C.Y.
Reinf. Steel	= 102 lbs.
Brick Wall for S.D.M.H.	= 4 L.F.
Type "A" Cl. Frame & Cover	= 1
30" RCCP, Cl. III or 30" CGMP, 14 Ga.	= 337 L.F.
Untreated Base	= 40 C.Y.

H-1 Inbound to H-2 Outbound
℄ Sta. 481+00 (Lt.)
Construct Inlet #6 (Type "B")
Install 242 L.F. 30" RCCP, Cl. III or 30" CGMP, 14 Ga.

ESTIMATED QUANTITIES
Structure Excavation	= 200 C.Y.
Cl. "A-1" Concrete	= 9 C.Y.
Reinf. Steel	= 200 lbs.
Modified Type "A-2" Steel Frame & Grates	= 1 ea.
30" RCCP, Cl. III or 30" CGMP, 14 Ga.	= 242 L.F.
Untreated Base	= 28 C.Y.

H-2 Inbound to H-1 Outbound
℄ Sta. 483+20 (Lt.)
Construct Inlet #7 (Type "A")
Install 36 L.F. 24" RCCP, Cl. III or 24" CGMP, 14 Ga.

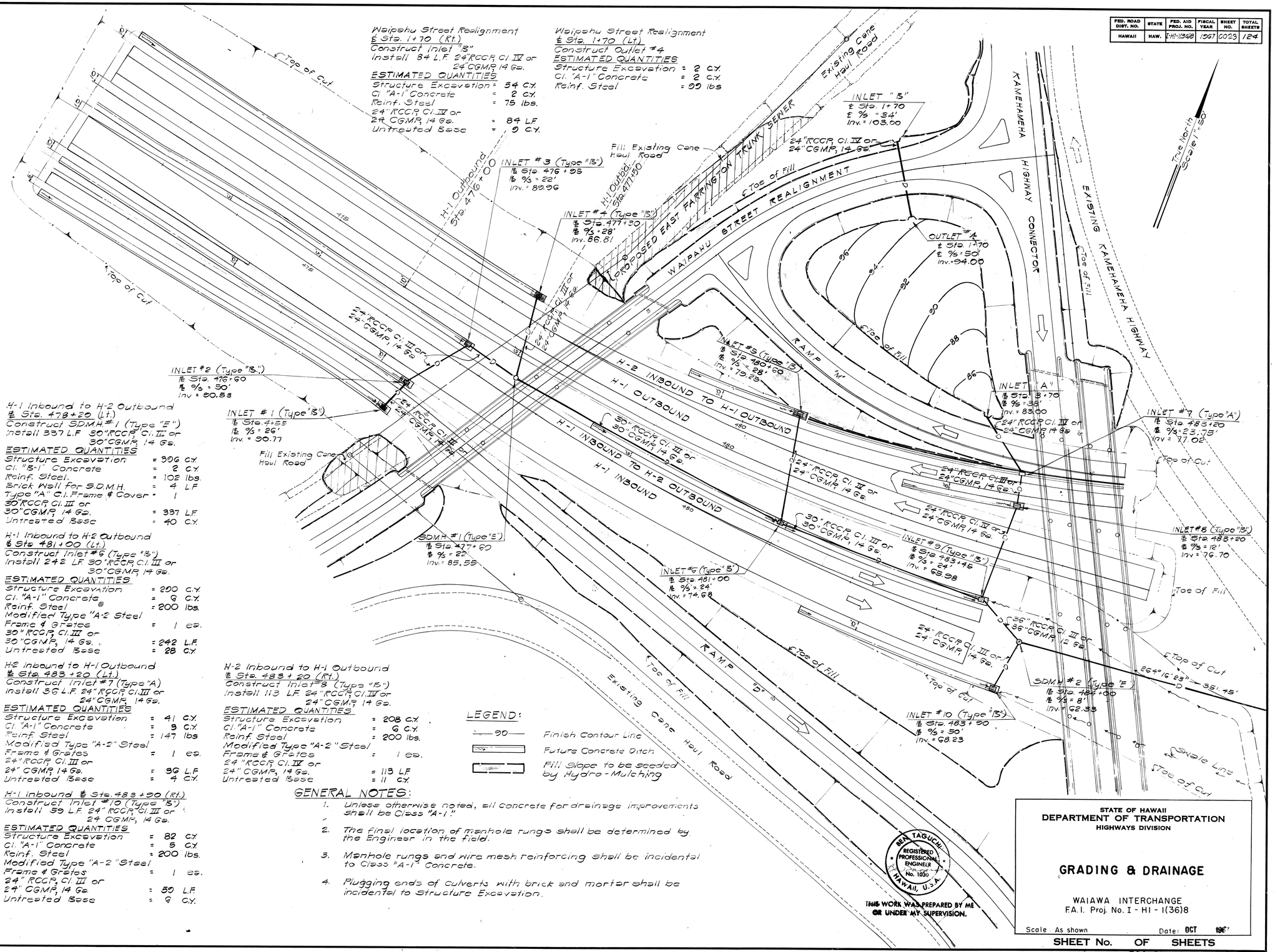
ESTIMATED QUANTITIES
Structure Excavation	= 41 C.Y.
Cl. "A-1" Concrete	= 9 C.Y.
Reinf. Steel	= 147 lbs
Modified Type "A-2" Steel Frame & Grates	= 1 ea.
24" RCCP Cl. III or 24" CGMP, 14 Ga.	= 36 L.F.
Untreated Base	= 4 C.Y.

H-1 Inbound ℄ Sta. 488+20 (Rt.)
Construct Inlet #10 (Type "B")
Install 59 L.F. 24" RCCP, Cl. III or 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES
Structure Excavation	= 82 C.Y.
Cl. "A-1" Concrete	= 5 C.Y.
Reinf. Steel	= 200 lbs.
Modified Type "A-2" Steel Frame & Grates	= 1 ea.
24" RCCP, Cl. III or 24" CGMP, 14 Ga.	= 59 L.F.
Untreated Base	= 9 C.Y.

H-2 Inbound to H-1 Outbound
℄ Sta. 483+20 (Rt.)
Construct Inlet #8 (Type "B")
Install 113 L.F. 24" RCCP, Cl. III or 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES
Structure Excavation	= 208 C.Y.
Cl. "A-1" Concrete	= 6 C.Y.
Reinf. Steel	= 200 lbs.
Modified Type "A-2" Steel Frame & Grates	= 1 ea.
24" RCCP, Cl. III or 24" CGMP, 14 Ga.	= 113 L.F.
Untreated Base	= 11 C.Y.



LEGEND:
- 90 — Finish Contour Line
- Future Concrete Ditch
- Fill Slope to be seeded by Hydro-Mulching

GENERAL NOTES:
1. Unless otherwise noted, all concrete for drainage improvements shall be Class "A-1."
2. The final location of manhole rungs shall be determined by the Engineer in the field.
3. Manhole rungs and wire mesh reinforcing shall be incidental to Class "A-1" Concrete.
4. Plugging ends of culverts with brick and mortar shall be incidental to Structure Excavation.

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

BEN TAGUCHI
REGISTERED PROFESSIONAL ENGINEER
No. 1030
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

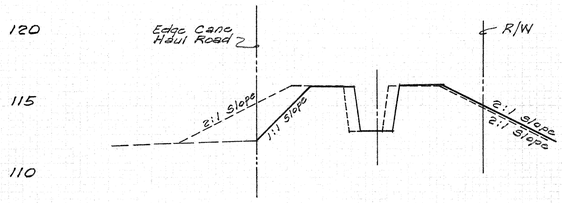
GRADING & DRAINAGE

WAIAWA INTERCHANGE
F.A.I. Proj. No. I - HI - 1(36)8

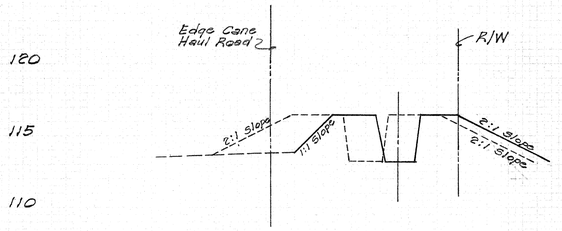
Scale As shown Date: OCT 196?

SHEET No. OF SHEETS

C023



5+75



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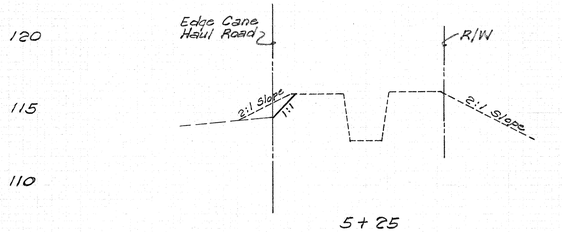

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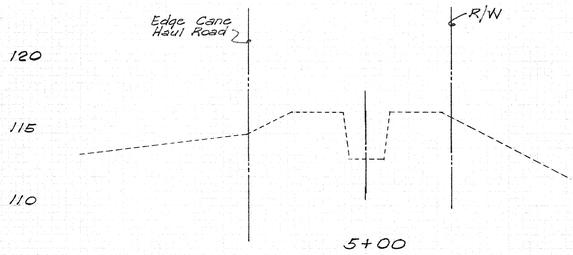
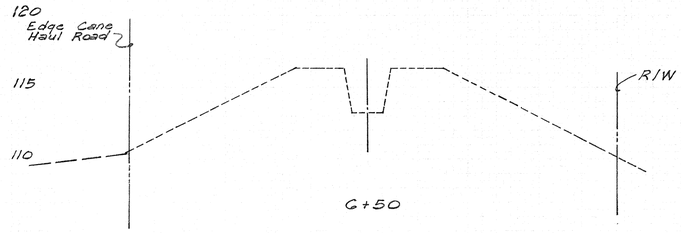


5+00

NOTE:

Sections shown with broken lines denote channel sections as per original plan.

Sections shown with solid lines denote proposed revision.



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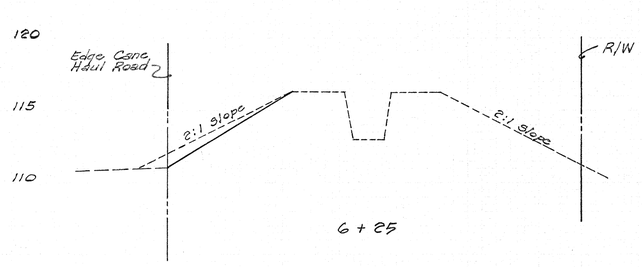

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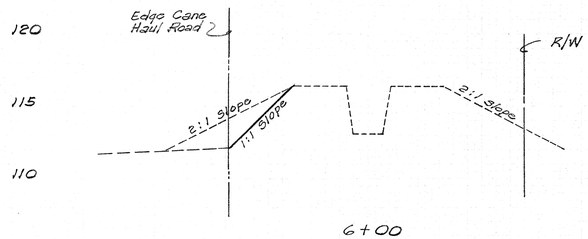


6+00

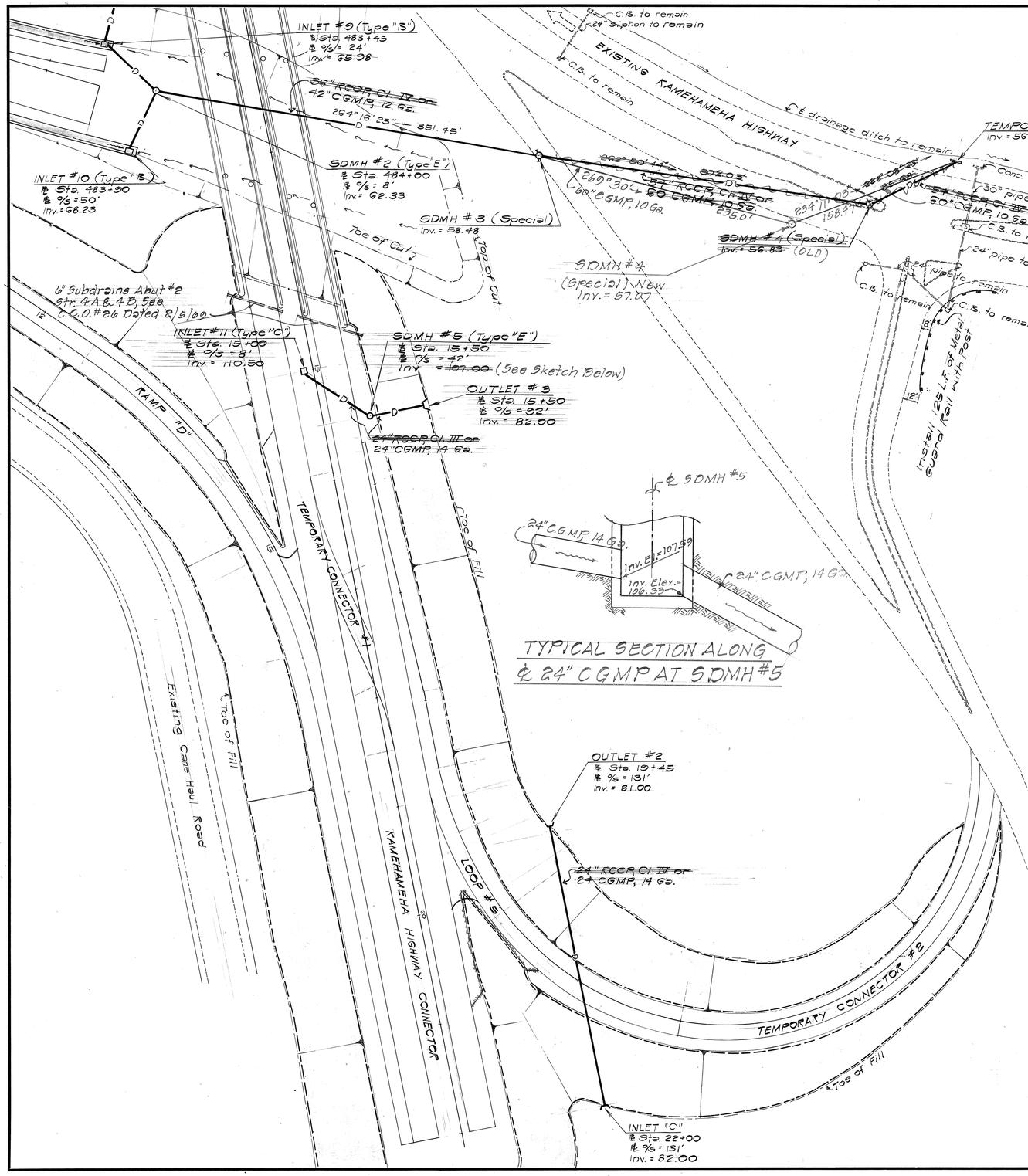
PROPOSED REVISION TO CONCRETE TRAPEZOIDAL CHANNEL

STA. 5+00 TO STA. 6+50

WAIAWA INTERCHANGE
PROJECT NO. I-HI-1(36):8

MARCH 5, 1968

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-HI-I(36)8	1967	24	124



H-1 Inbound ℄ Sta. 484+00 (Lt.)
Construct SDMH #2 (Type "E")
Install ~~35~~ L.F. ~~36" RCCP, Cl. III or~~ 347.20 42" CGMP, 12 Ga.

ESTIMATED QUANTITIES		
Structure Excavation	1,103.7	= ~~1,278~~ C.Y.
Cl. "B-1" Concrete	2.6	= ~~3~~ C.Y.
Reinf. Steel	138	= ~~190~~ lbs.
Brick Wall for S.D.M.H	3.3	= ~~4~~ L.F.
Type "A" C.I. Frame & Cover	= 1	ea.
~~36" RCCP, Cl. III or~~ 42 CGMP, 12 Ga	347.20	= ~~351~~ L.F.
Untreated Base	0	= ~~43~~ C.Y.

Construct SDMH #3 (Special)
Install ~~302~~ L.F. ~~54" RCCP, Cl. IV or~~ 296.75 60" CGMP, 10 Ga.

ESTIMATED QUANTITIES		
Structure Excavation	1,454.46	= ~~977~~ C.Y.
Cl. "A-1" Concrete	6.18	= ~~5~~ C.Y.
Reinf. Steel	1,047	= ~~698~~ lbs.
Type "A" Cl. Frame & Cover	= 1	ea.
~~54" RCCP, Cl. III or~~ 60" CGMP, 10 Ga.	296.75	= ~~302~~ LF
Untreated Base	0	= ~~54~~ C.Y.

Construct SDMH # 4 (Special)
Install ~~86~~ L.F. ~~54" RCCP, Cl. IV or~~ 86.34 60" CGMP, 10 Ga.

ESTIMATED QUANTITIES		
Structure Excavation	437.49	= ~~475~~ C.Y.
Cl. "A-1" Concrete	8.82	= ~~5~~ C.Y.
Reinf. Steel	1,465	= ~~920~~ lbs.
Type "A" C.I. Frame & Cover	= 1	ea.
~~54" RCCP, Cl. III or~~ 60" CGMP, 10 Ga.	86.34	= ~~80~~ LF
Untreated Base	0	= ~~15~~ C.Y.

Construct Temporary Outlet #1
ESTIMATED QUANTITIES

Structure Excavation	45.1	= ~~48~~ C.Y.
Cement Rubble Masonry	14	= ~~15~~ C.Y.

Kam. Hwy. Conn. ℄ Sta. 15+00 (Rt.)
Construct Inlet #11 (Type "C")
Install ~~71~~ L.F. ~~24" RCCP, Cl. III or~~ 62.5 24" CGMP, 10 Ga.

ESTIMATED QUANTITIES		
Structure Excavation	64.2	= ~~57~~ C.Y.
Cl. "A-1 Concrete	4.2	= ~~4~~ C.Y.
Reinf. Steel	160	= ~~146~~ C.Y.
Modified Type "A-2 Steel Frame & Grates	= 1	ea.
~~24" RCCP, Cl. III or~~ 24" CGMP, 14 Ga.	62.5	= ~~71~~ L.F.
Untreated Base	0	= ~~7 C.Y.~~

Kem. Hwy. Conn. ℄ Sta. 15+50 (Lt.)
Construct SDMH # 5 (Type "E")
Install ~~42~~ L.F. ~~24" RCCP, Cl. III or~~ 55.1 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES		
Structure Excavation	52.1	= ~~41~~ C.Y.
Cl. "B-1" Concrete	2.2	= ~~2~~ C.Y.
Reinf. Steel	185	= ~~99~~ lbs.
Brick Wall for S.D.M.H.	3.4	= ~~4~~ L.F.
Type "A" C.I. Frame & Cover	= 1	ea.
~~24" RCCP, Cl. III or~~ 24" CGMP, 14 Ga.	55.1	= ~~49~~ L.F.
Untreated Base	0	= ~~5~~ C.Y.

Kem. Hwy. Conn. ℄ Sta. 15+50 (Lt.)
Construct Outlet #3
ESTIMATED QUANTITIES

Structure Excavation	7.0	= ~~8~~ C.Y.
Cl. "A-1" Concrete	2.02	= ~~2~~ C.Y.
Reinf. Steel	96	= ~~99~~ lbs.

Kam. Hwy. Conn. ℄ Sta. 22+00 (Lt.)
Construct Inlet "C"
Install ~~258~~ L.F. ~~24" RCCP, Cl. IV or~~ 255.5 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES		
Structure Excavation	125.2	= ~~104 C.Y.~~
Cl. "A-1" Concrete		= 2 C.Y.
Reinf. Steel		= ~~75 lbs~~ 1141 lbs
~~24" RCCP, Cl. III or~~ 24" CGMP, 14 Ga.		= ~~255 LF~~ 255.5 L.F.
Untreated Base		= ~~27 C.Y.~~ 0

Kam. Hwy. Conn. ℄ Sta. 19+45 (Lt.)
Construct Outlet #2
ESTIMATED QUANTITIES

Structure Excavation	6.1	= ~~8~~ C.Y.
Cl. "A-1" Concrete	1.6	= ~~2~~ C.Y.
Reinf. Steel	96	= ~~99~~ lbs.

Waipahu Street Realignment
℄ Sta. 25+00 (Rt.)
Construct Inlet #13
Install ~~330~~ L.F. ~~24" RCCP, Cl. III or~~ 324.8 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES		
Structure Excavation	200.5	= ~~247~~ C.Y.
Cl. "A-1" Concrete	3.7	= ~~4~~ C.Y.
Reinf. Steel	104	= ~~197~~ lbs
Type "B" Steel Grate	= 1	ea.
~~24" RCCP, Cl. III or~~ 24" CGMP, 14 Ga.	324.8	= ~~330~~ L.F.
Untreated Base	32.8	= ~~32~~ C.Y.

Waipahu Street Realignment
℄ Sta. 28+30 (Rt.)
Construct SDMH #6 (Type "D")
Install ~~44~~ L.F. ~~24" RCCP, Cl. III or~~ 39.3 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES		
Structure Excavation		= ~~32~~ C.Y.
Cl. "B-1" Concrete	0.8	= ~~1~~ C.Y.
Reinf. Steel	32	= ~~28~~ lbs
Brick Wall for S.D.M.H.	3.9	= ~~5~~ L.F.
Type "A" C.I. Frame & Cover	= 1	ea.
~~24" RCCP, Cl. III or~~ 24" CGMP, 14 Ga.	39.3	= ~~44~~ L.F.
Untreated Base	3.9	= ~~4~~ C.Y.

Waipahu Street Realignment
℄ Sta. 24+75 (Lt.)
Construct Inlet #12
Install ~~54~~ L.F. ~~24" RCCP, Cl. III or~~ 48.8 24" CGMP, 14 Ga.

ESTIMATED QUANTITIES		
Structure Excavation	47.6	= ~~47~~ C.Y.
Cl. "A-1" Concrete	2.5	= ~~3~~ C.Y.
Reinf. Steel	119	= ~~161~~ lbs.
Type "B" Steel Grate	= 1	ea.
~~24" RCCP, Cl. III or~~ 24" CGMP, 14 Ga.	48.8	= ~~50~~ L.F.
Untreated Base	4.5	= ~~4~~ C.Y.

BEN TAGUCHI
REGISTERED PROFESSIONAL ENGINEER
No. 1030
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GRADING & DRAINAGE

WAIAWA INTERCHANGE
F.A.I. Proj. No. I - HI - I(36)8

Scale: As shown Date: OCT 1967

SHEET No. OF SHEETS

24

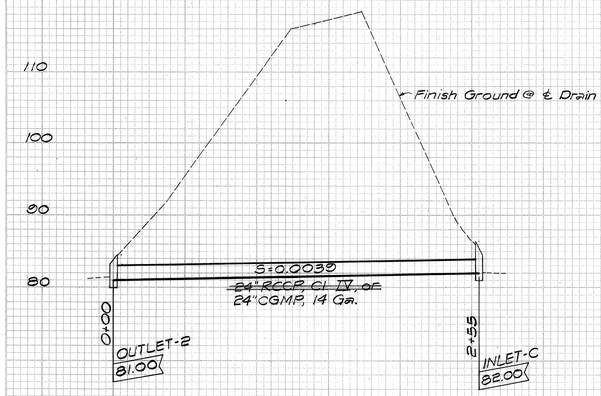
ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY | DATE | NOTE BOOK | No.

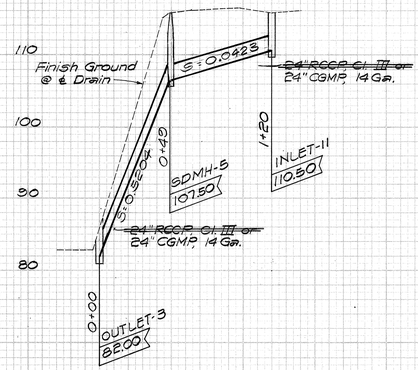
FED. ROAD DIST. NO.	STATE	FED. A/D PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HH-1(36)8	1967	25	124

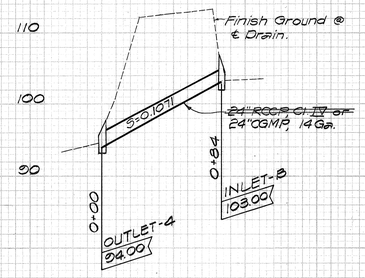
FINAL SURVEY — SURVEYED: DESIGNED: TRIPLATE: AREAS CHECKED: NOTE BOOK: NO.

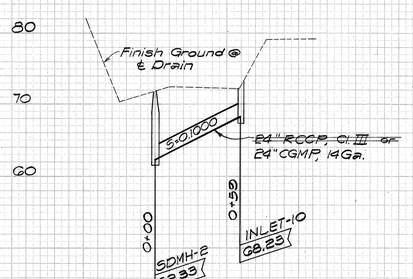
ORIGINAL SURVEY — SURVEYED: DESIGNED: TRIPLATE: AREAS CHECKED: NOTE BOOK: NO.

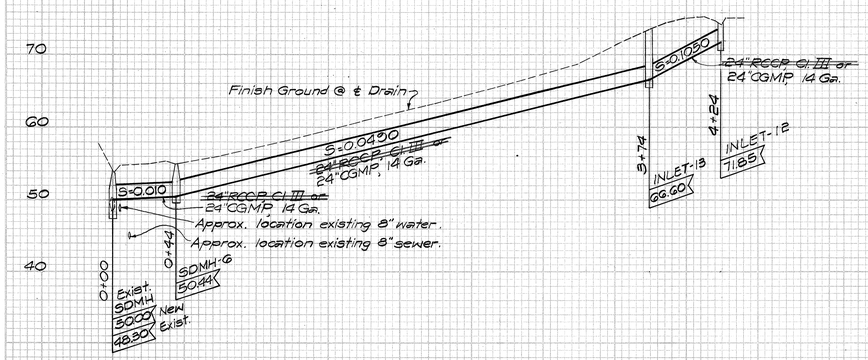
DATE | BY

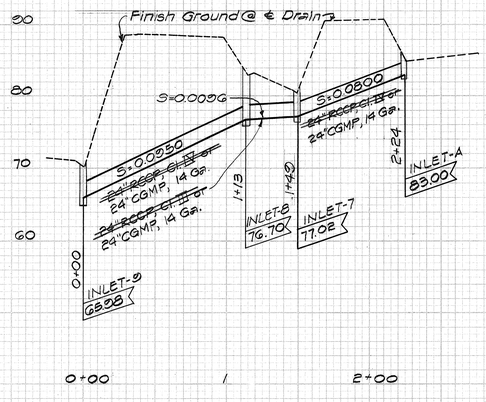


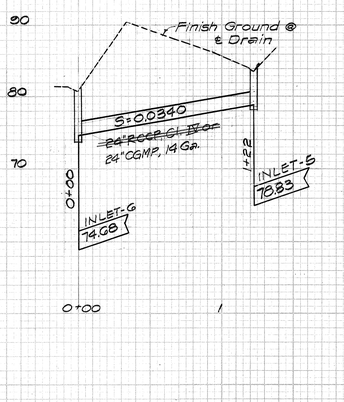


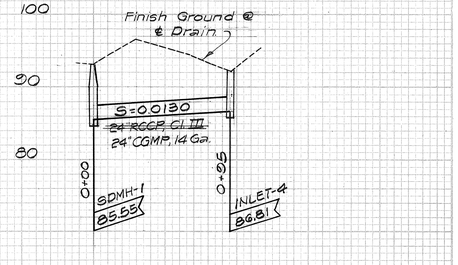


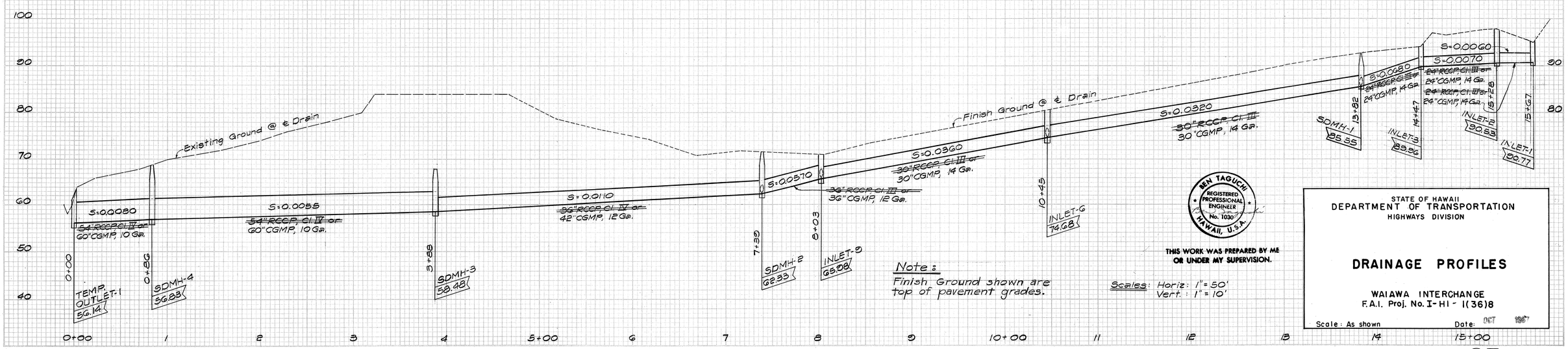












BEN TAGUCHI
REGISTERED PROFESSIONAL ENGINEER
No. 1030
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Note:
Finish Ground shown are top of pavement grades.

Scales: Horiz: 1" = 50'
Vert.: 1" = 10'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

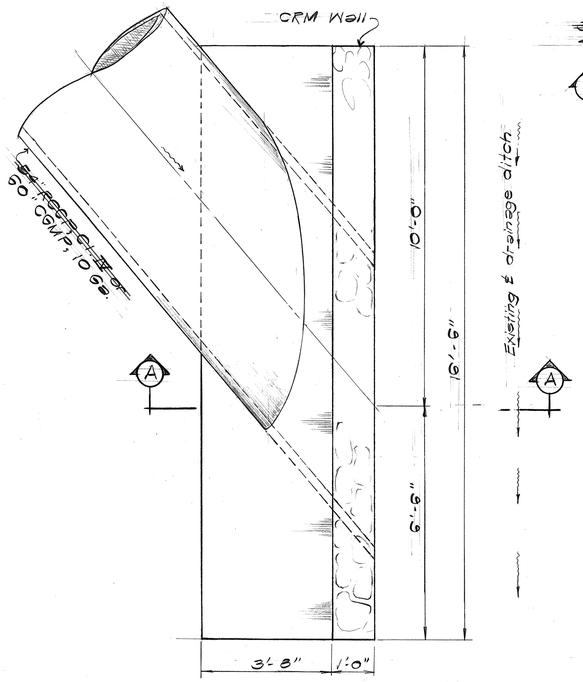
DRAINAGE PROFILES

WAIAWA INTERCHANGE
F.A.I. Proj. No. I-HI-1(36)8

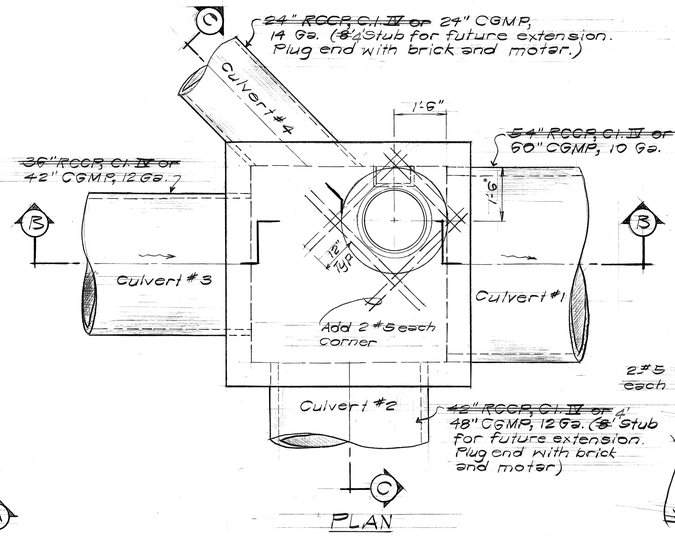
Scale: As shown Date: OCT 1967

PLATE 3 CROSS SECTION B. P. R. STANDARD
EUGENE DIETZGEN CO. CHICAGO - NEW YORK

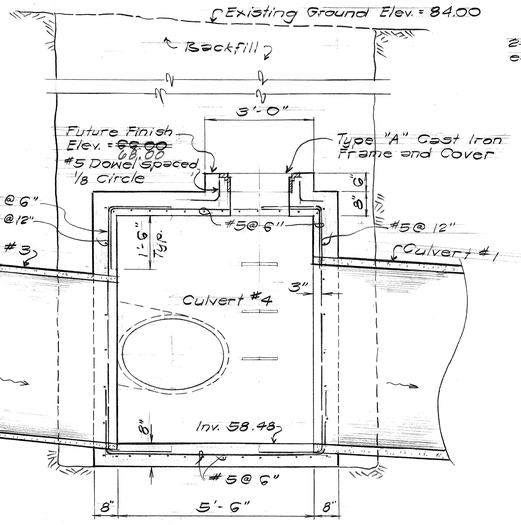
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(36)	1967	26	124



PLAN



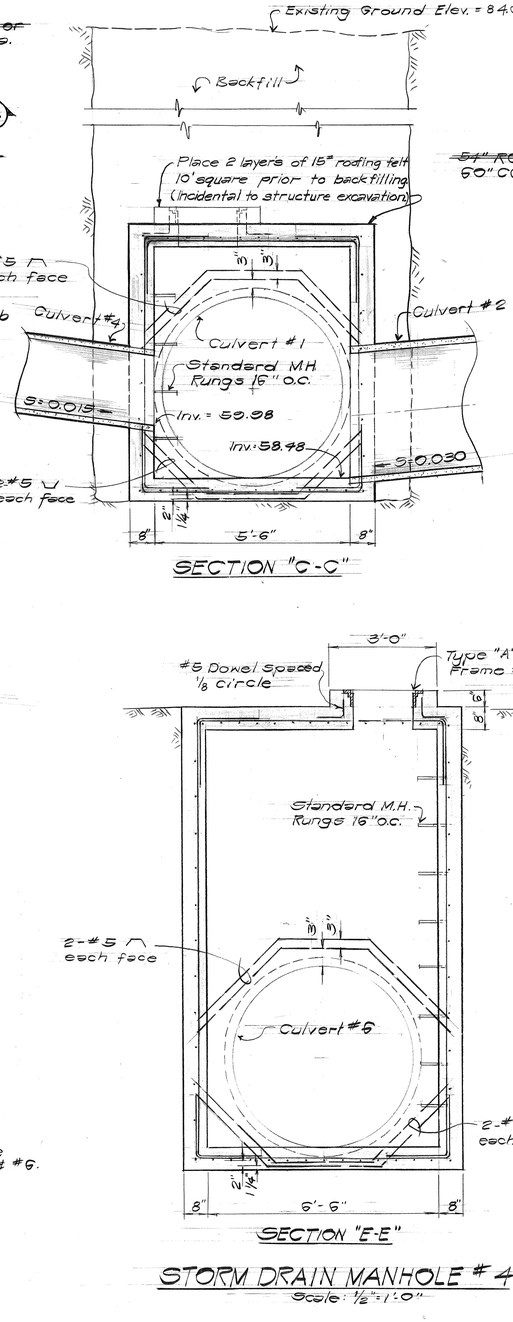
PLAN



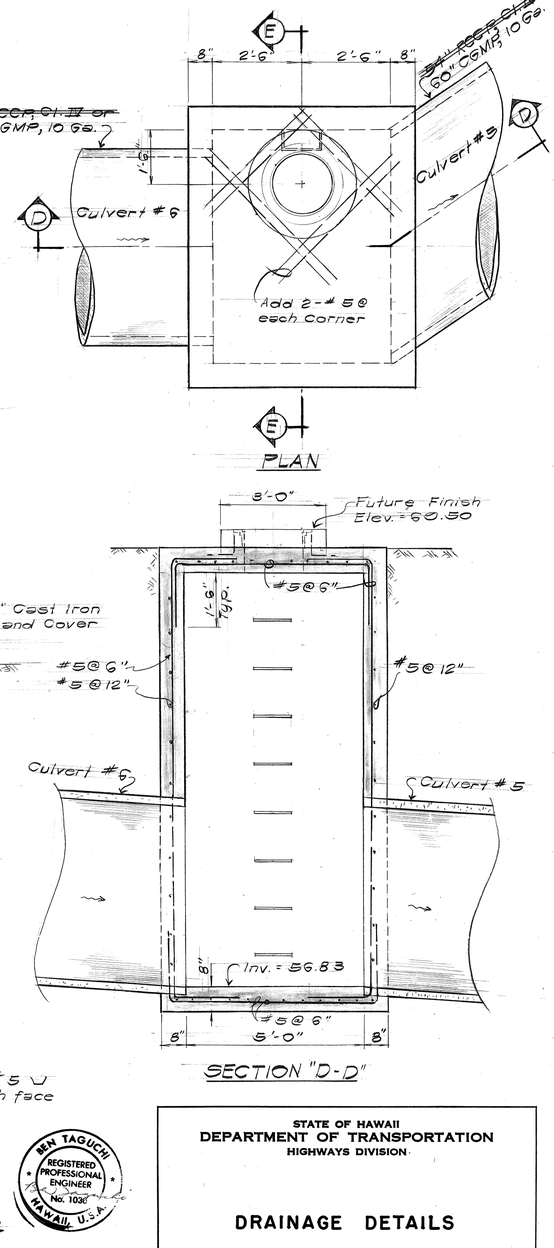
SECTION "B-B"

STORM DRAIN MANHOLE #3

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



SECTION "C-C"



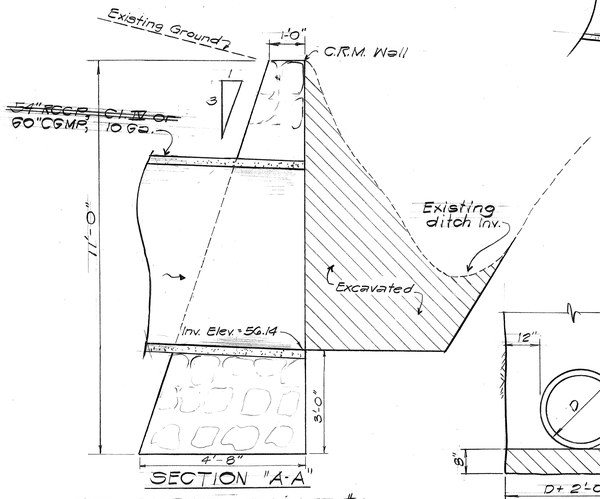
PLAN

SECTION "E-E"

STORM DRAIN MANHOLE #4

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

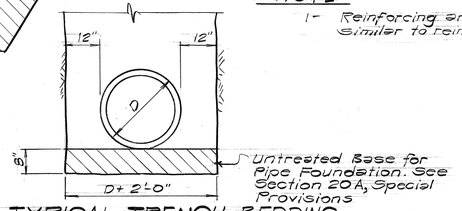
SECTION "D-D"



SECTION "A-A"

TEMPORARY OUTLET #1

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



TYPICAL TRENCH BEDDING

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

NOTE

1- Reinforcing around all culverts shall be similar to reinforcing around Culvert #1 & #6.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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BEN TAGUCHI REGISTERED PROFESSIONAL ENGINEER No. 1026 HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

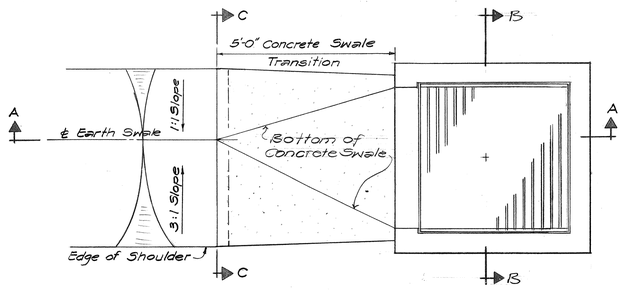
WAIAWA INTERCHANGE
F.A.I. Proj. No. I-HI-1(36)8

Scale As shown Date: OCT 1967

SHEET No. OF SHEETS

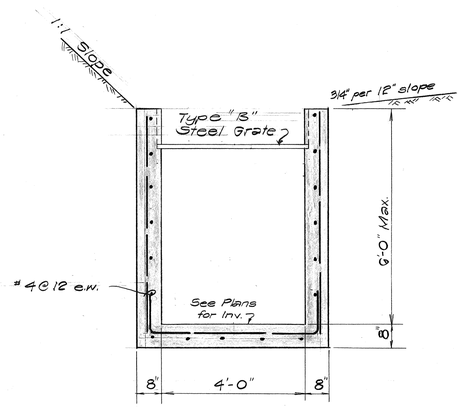
26

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IH-1(36)6	1967	27	124



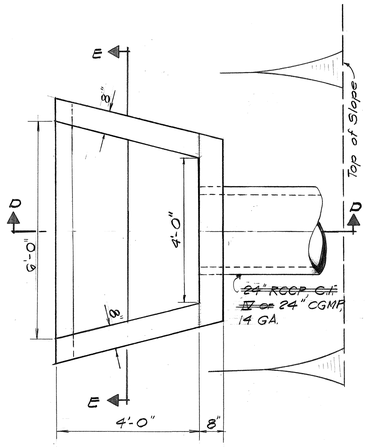
PLAN - INLETS #12 & #13

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



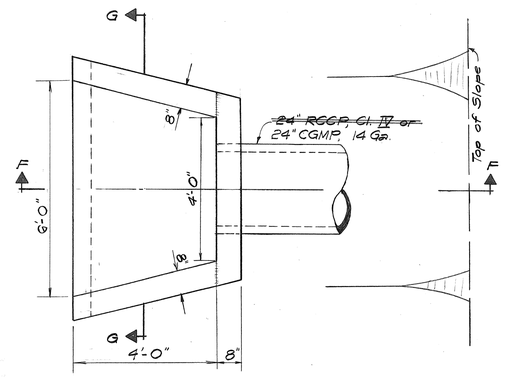
SECTION B-B

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



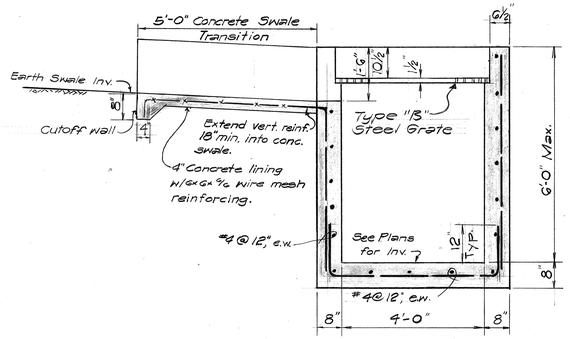
PLAN - INLETS A,B & C

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



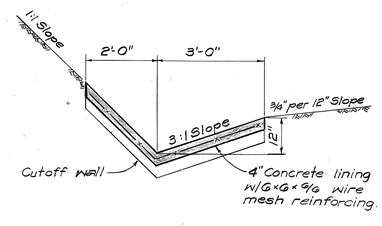
PLAN - OUTLETS #2, #3 & #4

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



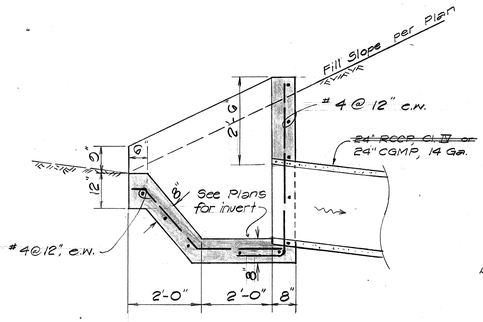
SECTION A-A

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



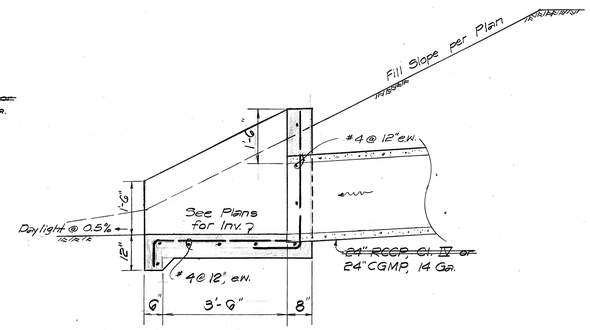
SECTION C-C

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



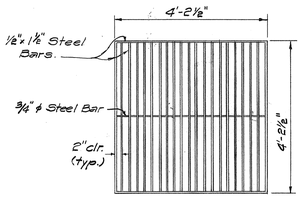
SECTION D-D

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



SECTION F-F

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

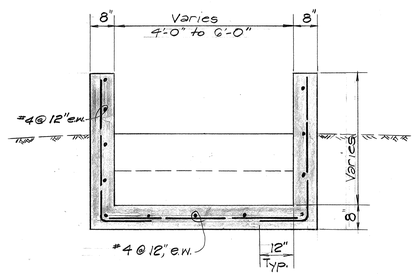


TYPE "B" STEEL GRATE DETAIL

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

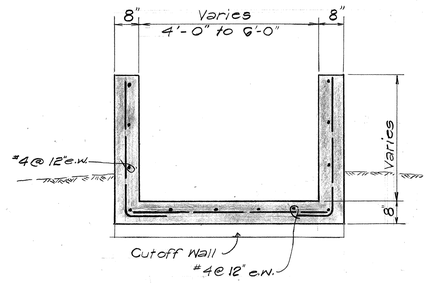
NOTES:

1. All bar connections shall be arc-welded.
2. Entire grate shall be galvanized.



SECTION E-E

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



SECTION G-G

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

DATE

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

ORIGINAL PLAN | NOTE BOOK No.

BLM TAG HAWAII REGISTERED PROFESSIONAL ENGINEER No. 1830 U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

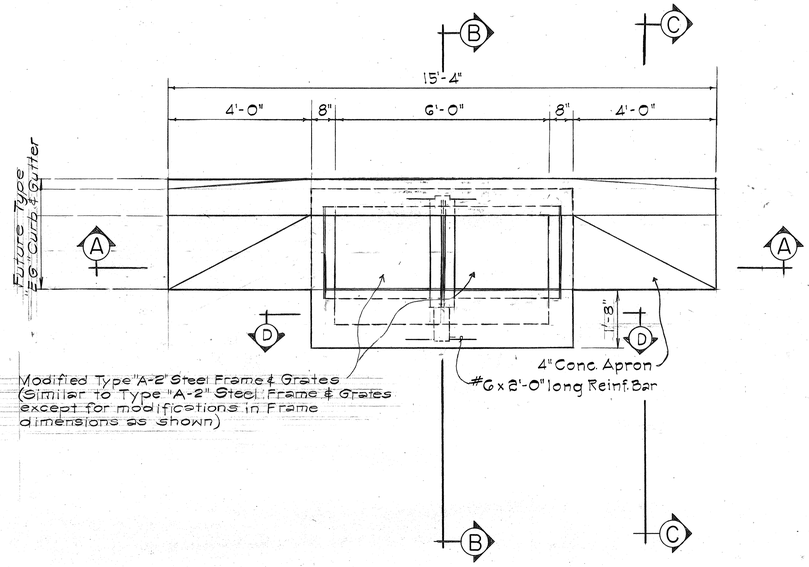
WAIAWA INTERCHANGE
F.A.I. Proj. No. I - HI - 1(36)8

Scale: As shown Date: OCT 1967

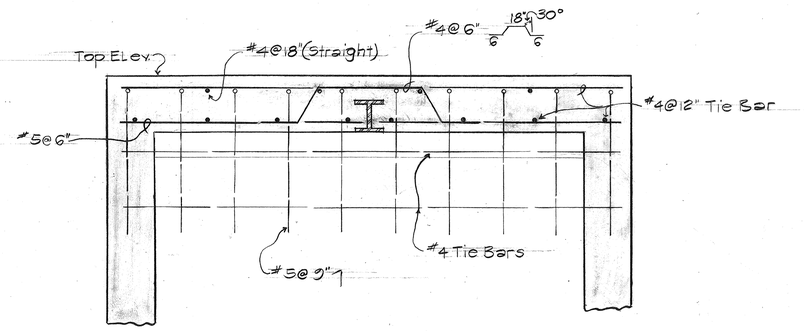
SHEET No. OF SHEETS

27

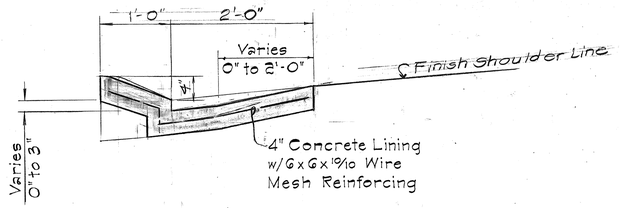
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(36)8	1967	28	124



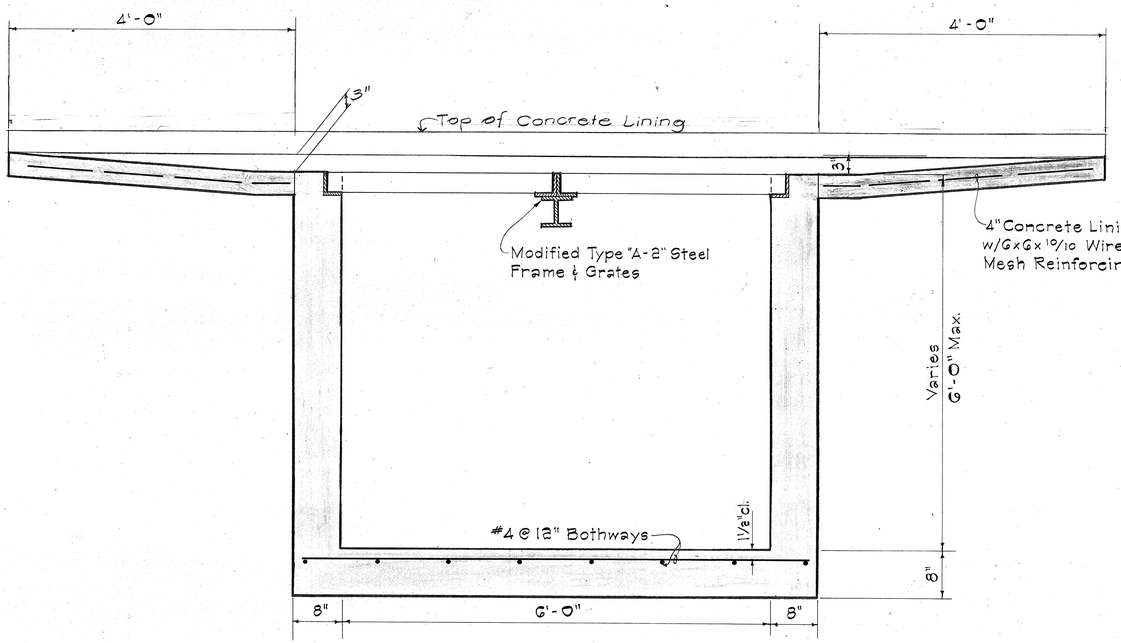
PLAN
Scale: 1/2" = 1'-0"



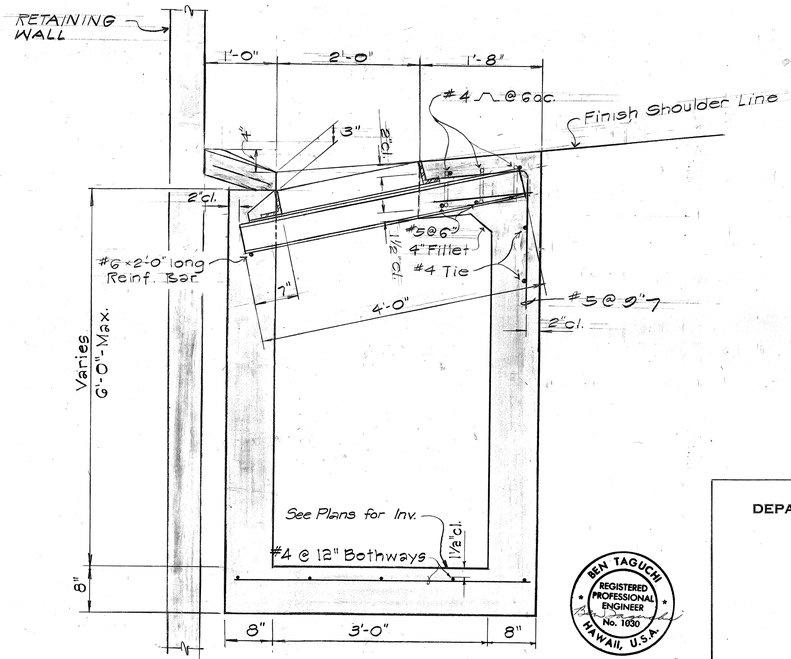
SECTION D-D
Scale: 1" = 1'-0"



SECTION C-C
Scale: 1" = 1'-0"



SECTION A-A
Scale: 1" = 1'-0"



SECTION B-B
Scale: 1" = 1'-0"

BEN TAGUCHI REGISTERED PROFESSIONAL ENGINEER No. 1030 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 DETAILS
(TYPE "A" INLET)

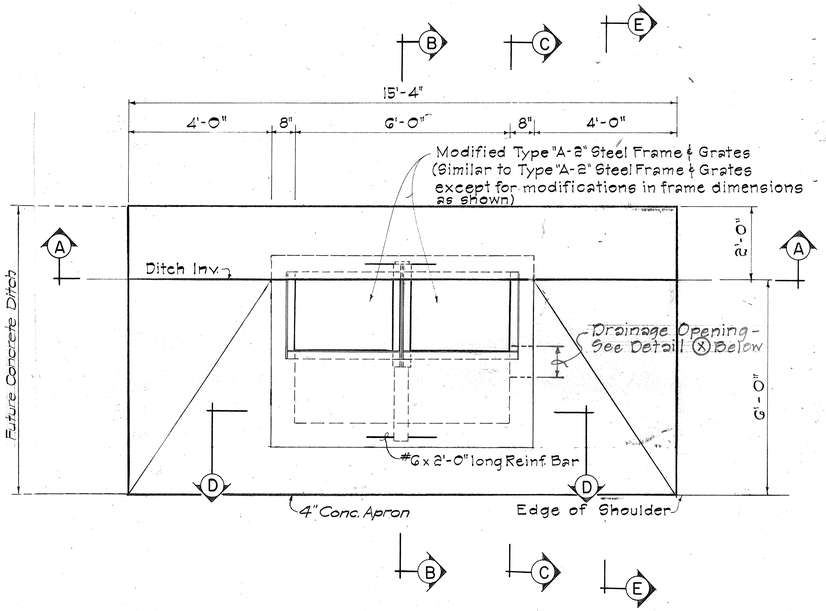
WAIAWA INTERCHANGE
F.A.I. Proj. No. I - HI - I(36)8

Scale: As shown Date: OCT 1967

SHEET No. OF SHEETS

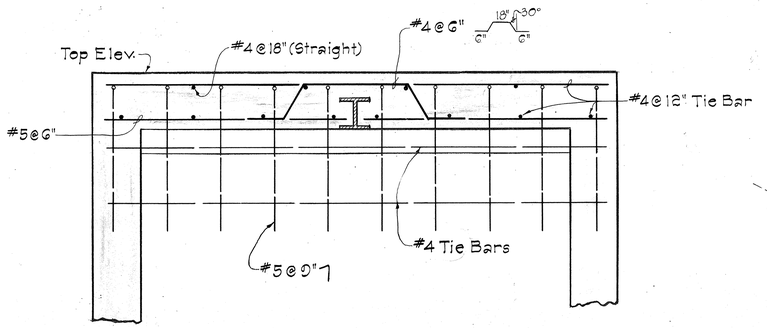
28

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(36)8	1967	29	124



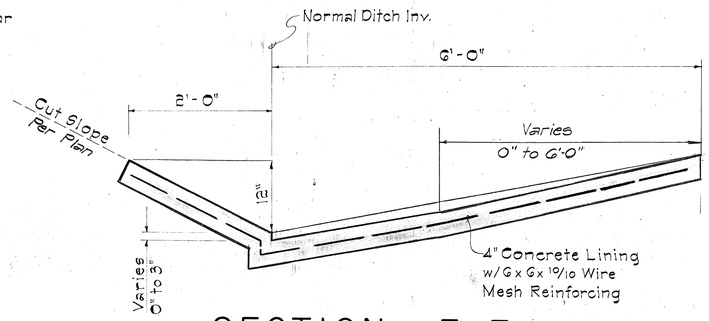
PLAN

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



SECTION D-D

Scale: 1" = 1'-0"



SECTION E-E

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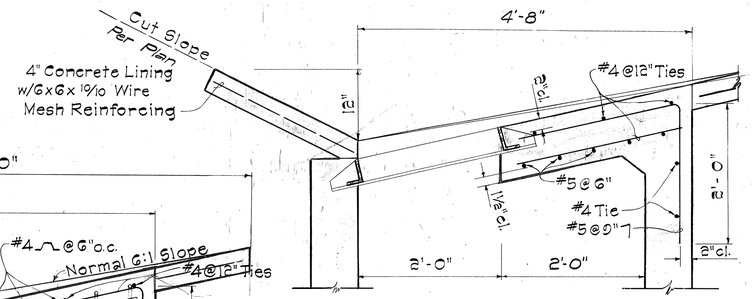
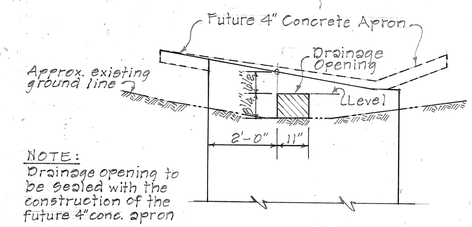


SECTION C-C

Scale: 1" = 1'-0"

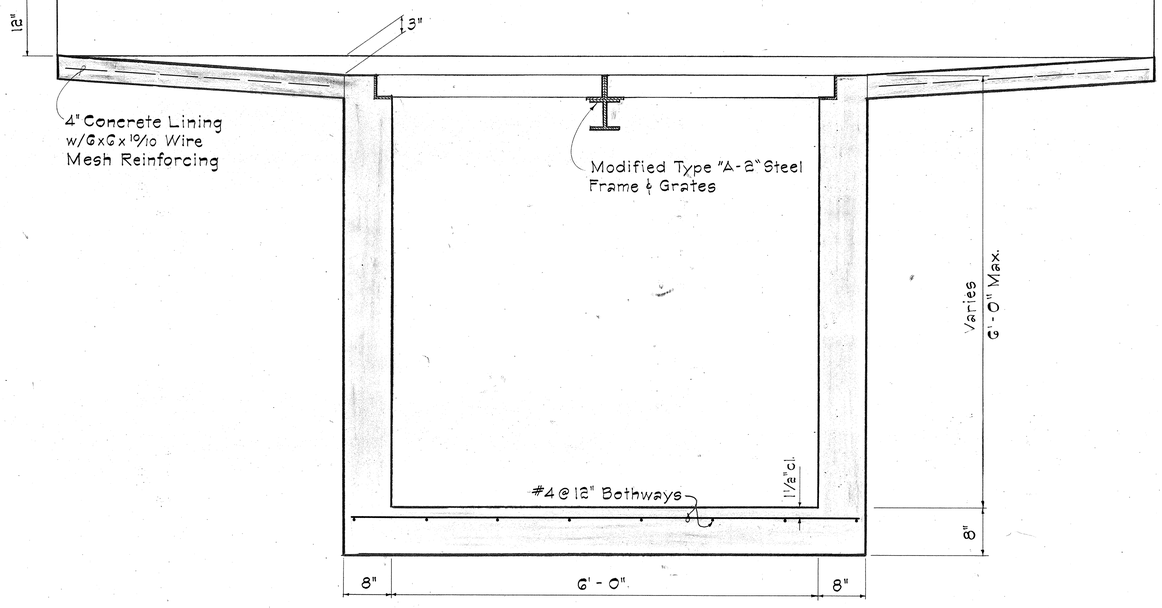


NOTE:
Drainage opening to be sealed with the construction of the future 4" conc. apron

DETAIL ⊗

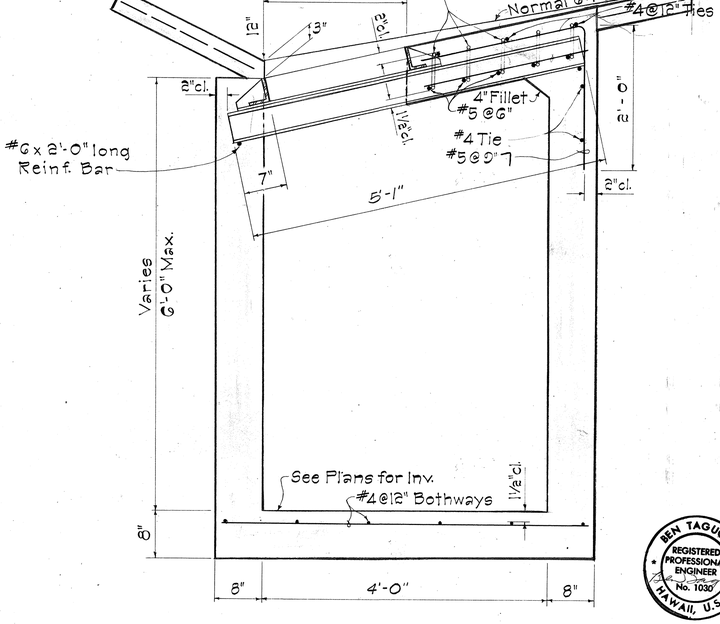
(AT INLET #1 ONLY)

Scale: 1½"=1'-0"



SECTION A-A

Scale: 1" = 1'-0"



SECTION B-B

Scale: 1" = 1'-0"

BEN TAGUCHI
REGISTERED PROFESSIONAL ENGINEER
No. 1030
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION

DRAINAGE DETAILS
(TYPE "B" INLET)

WAIAWA INTERCHANGE
F.A.I. Proj. No. I-HI-1(36)8

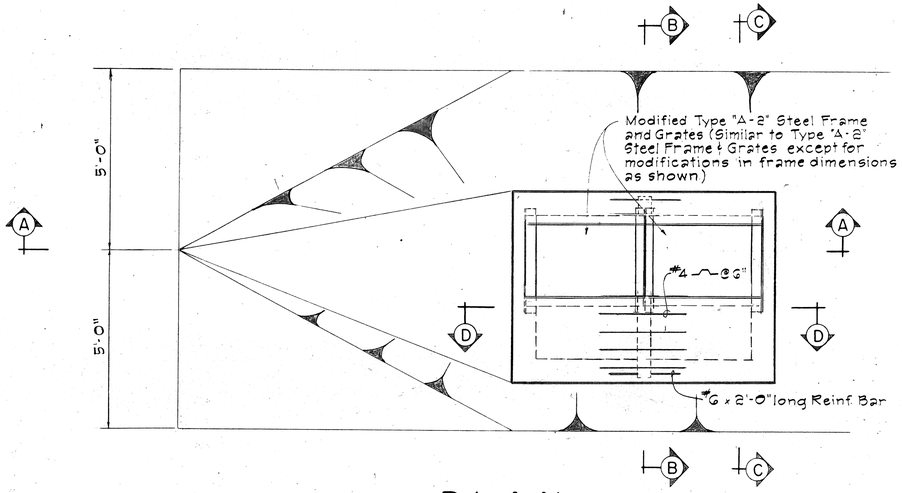
Scale: As shown Date: OCT 1967

SHEET No. OF SHEETS

29

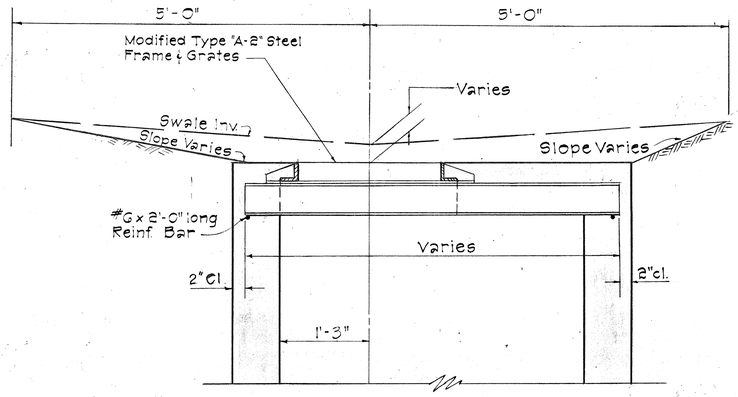
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	"
	TRACED BY	"
NOTE BOOK	DESIGNED BY	"
	QUANTITIES BY	"
No.	CHECKED BY	"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-HI-1(36)8	1967	30	124



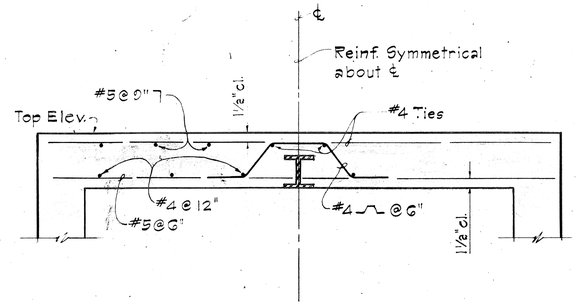
PLAN

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



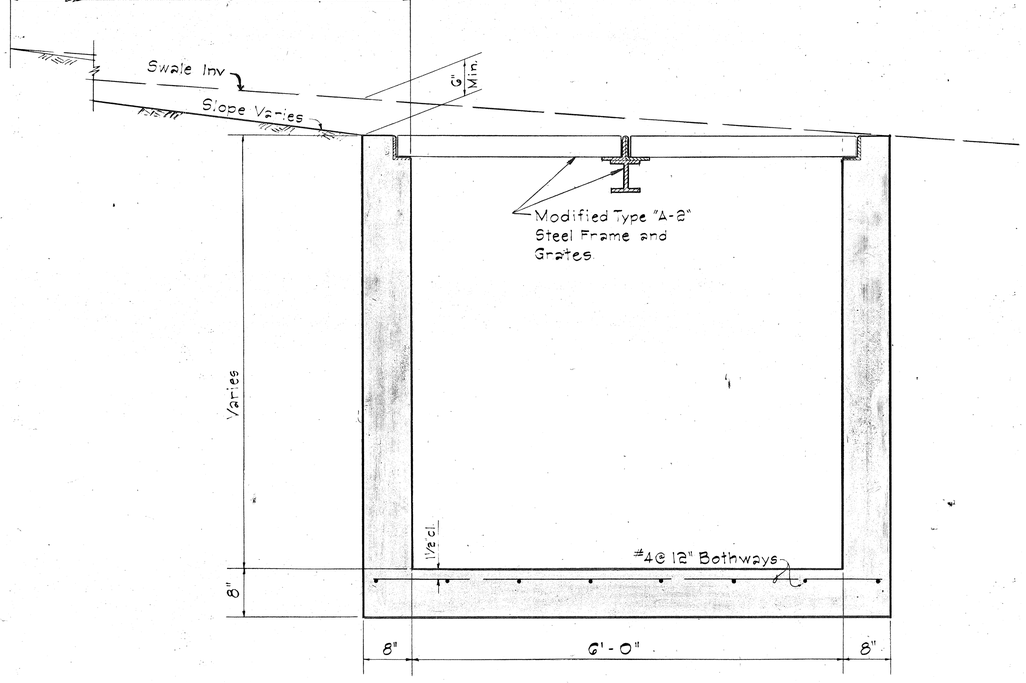
SECTION B-B

Scale: 1" = 1'-0"



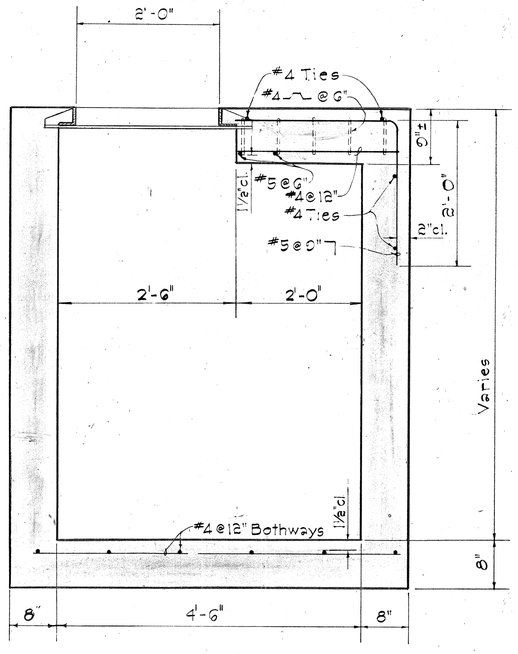
SECTION D-D

Scale: 1" = 1'-0"



SECTION A-A

Scale: 1" = 1'-0"



SECTION C-C

Scale: 1" = 1'-0"

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

BEN TAGUCHI
REGISTERED PROFESSIONAL ENGINEER
No. 1030
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
(TYPE "C" INLET)

WAIAWA INTERCHANGE
F.A.I. Proj. No. I-HI-1(36)8

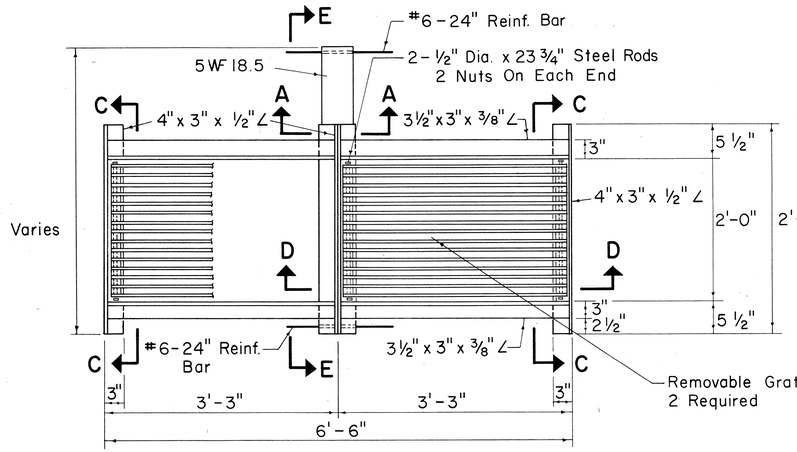
Scale: As shown Date: OCT 1967

SHEET No. 30 OF SHEETS

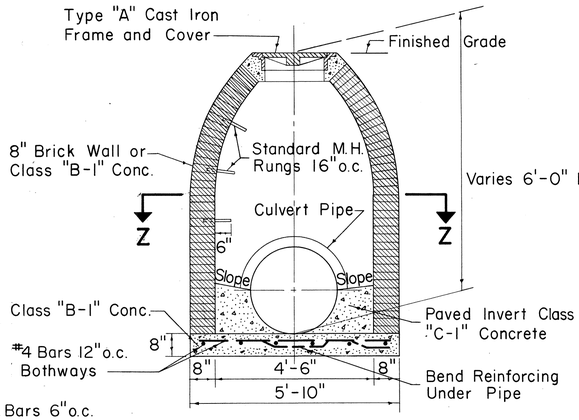
FED. ROAD DIST. NO.	STATE	FED. AID. PROJECT	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	I-HI-1(36)8	1967	31	124

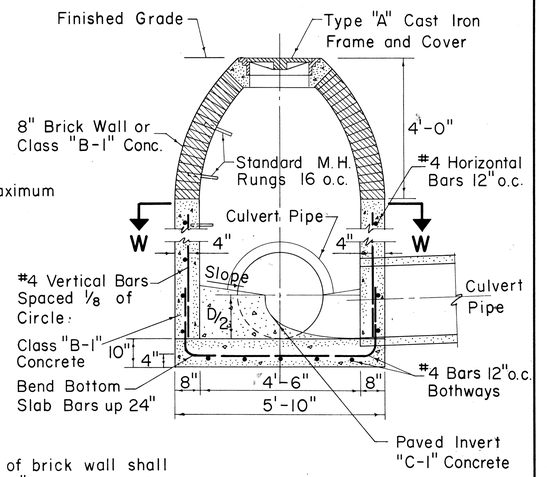
Revised: Jan. 25, 1967

NOTE:
1. All welds 3/8" unless otherwise noted.
2. All steel shall be structural grade.
3. Grates and Frame shall be hot dip galvanized after fabrication in accordance with Section 44(H) of the Standard Specifications.
4. Detail of Types "A-1" and "A-2" Steel Frame and Grates are identical except for the thickness of end spacers and number of grate bars. See Table of End Spacer Thickness.



PLAN

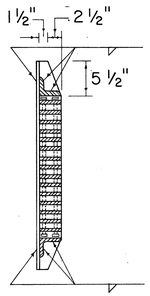




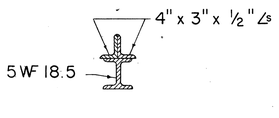
NOTE:
1. Exterior surface of brick wall shall be plastered with 1" thickness of 1:2 Cement Mortar.
2. Number size and direction of culvert pipes at manhole to be as shown on plans.
3. Paved invert not required at drop manholes.
4. All Class "C-1" Concrete to be incidental to Class "B-1" Concrete.

SECTION Y-Y

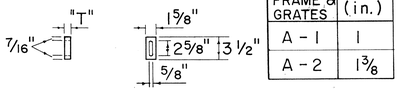
SECTION X-X



SECTION C-C



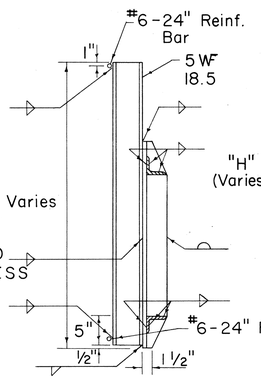
SECTION A-A



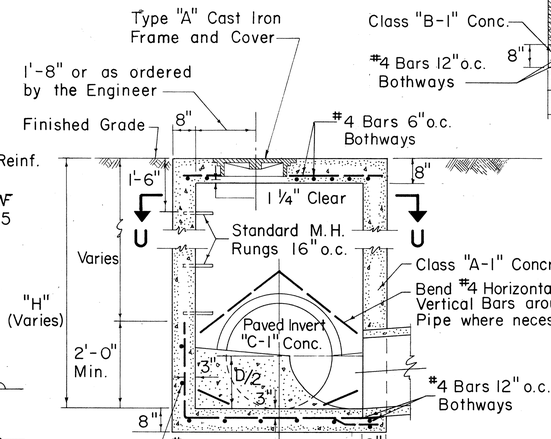
END SPACER

TABLE OF END SPACER THICKNESS

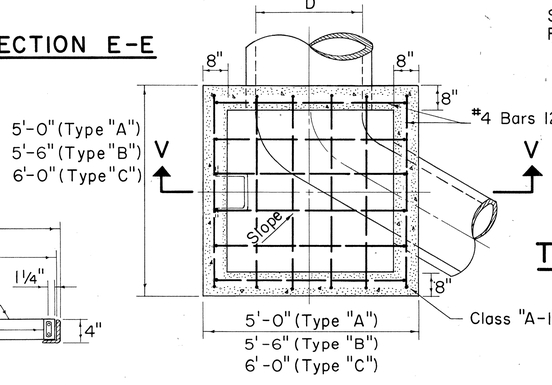
TYPE FRAME & GRATES	"T" (in.)
A-1	1
A-2	1⅜



SECTION E-E



SECTION V-V

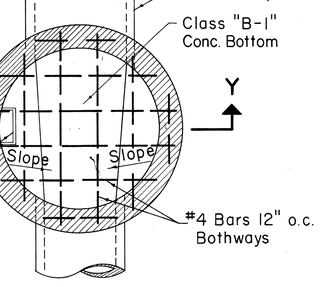


SECTION U-U

TYPE "A", "B", & "C"

S.D.M.H.

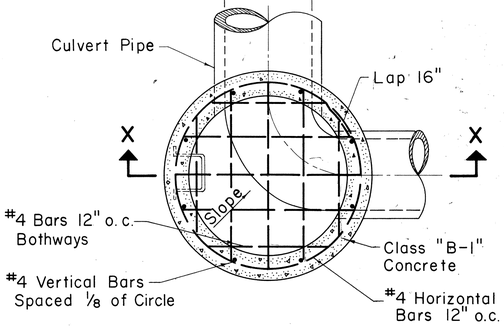
Scale: ½"= 1'-0"



SECTION Z-Z

TYPE "D" STORM DRAIN MANHOLE

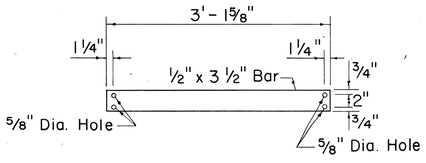
Scale: ½"= 1'-0"



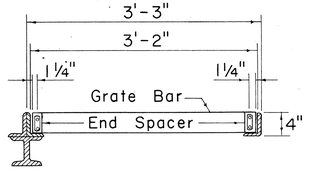
SECTION W-W

TYPE "E" STORM DRAIN MANHOLE

Scale: ½"= 1'-0"



GRATE BARS



SECTION D-D

APPROVED:

DIRECTOR OF TRANSPORTATION DATE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

STEEL FRAME AND GRATES AND STORM DRAIN MANHOLES

Scales: As Noted Date Oct, 1967

SHEET NO. OF SHEETS

DETAIL OF TYPE "A-1" & "A-2" STEEL FRAME AND GRATES

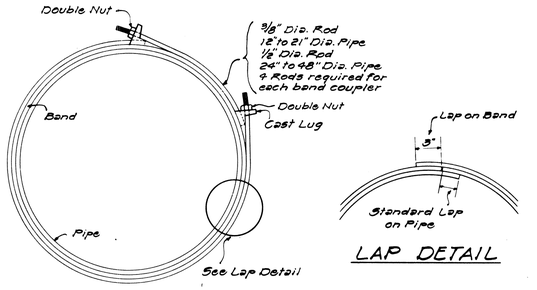
Scale: 1"= 1'-0"

31

D-1-2

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	I-HI-1(196)8	1967	32	124

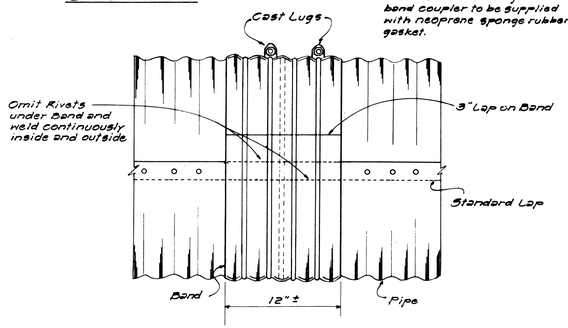
Revised : Oct. 1960



END VIEW

LAP DETAIL

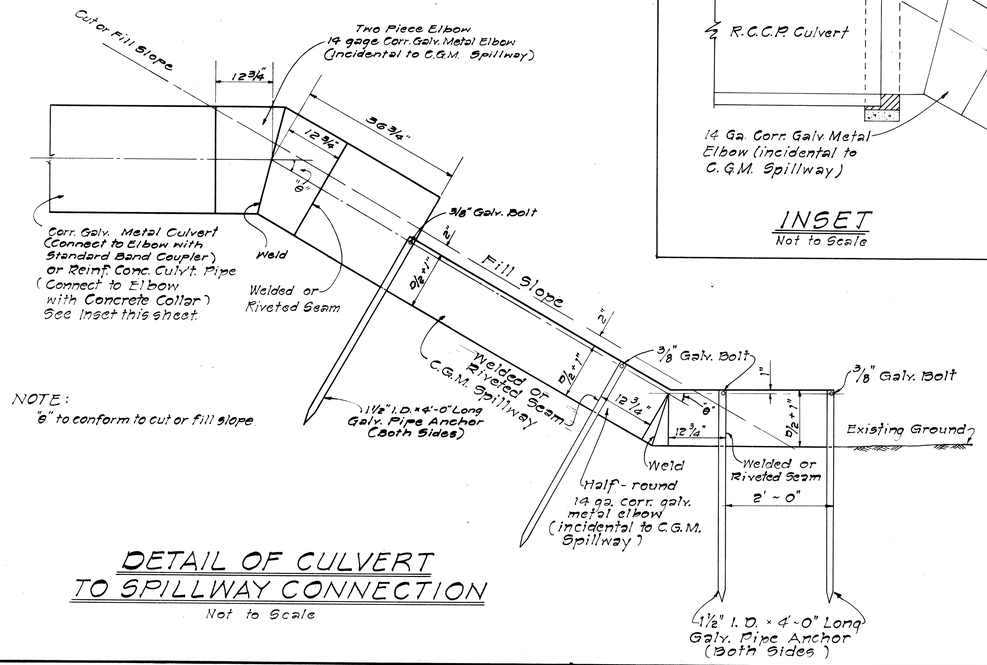
NOTE:
Each watertight band coupler to be supplied with neoprene sponge rubber gasket.



SIDE VIEW

DETAIL OF WATERTIGHT BAND COUPLER

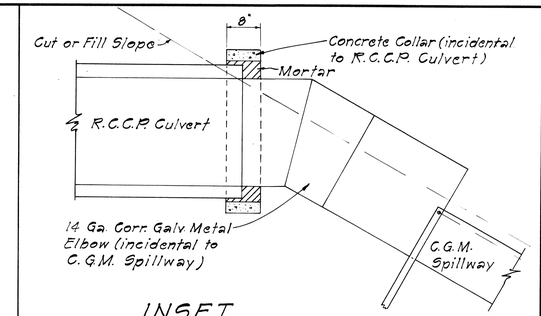
NOT TO SCALE



NOTE:
"6" to conform to cut or fill slope

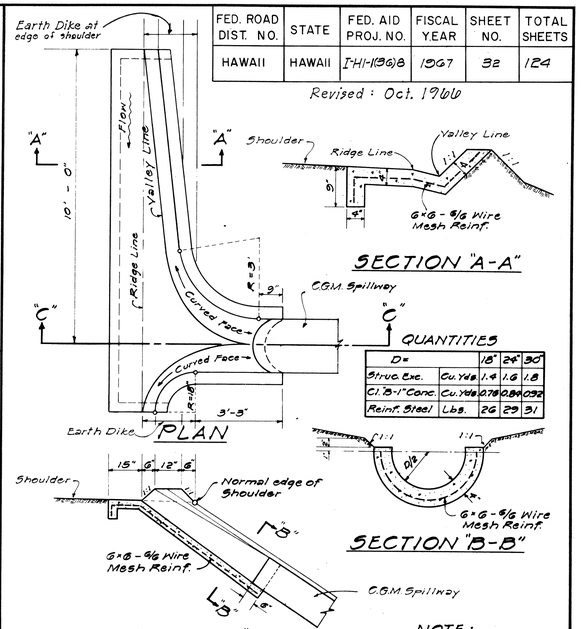
DETAIL OF CULVERT TO SPILLWAY CONNECTION

Not to Scale



INSET

Not to Scale



SECTION "A-A"

PLAN

SECTION "B-B"

SECTION "C-C"

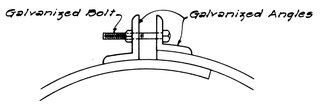
QUANTITIES

D=		18"	24"	30"
Struc. Exc.	Cu. Yds.	1.4	1.6	1.8
Cl. B-1" Conc.	Cu. Yds.	0.78	0.84	0.92
Reinf. Steel	Lbs.	26	29	31

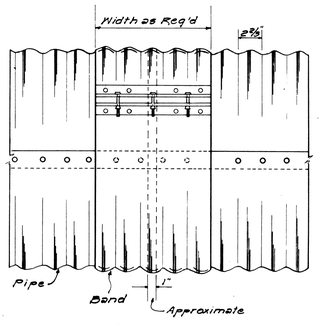
NOTE:
1. Reverse Plan View when flow is in direction opposite to that shown.
2. All Conc. to be cl. B-1"

DETAIL OF SPILLWAY INLET

NOT TO SCALE



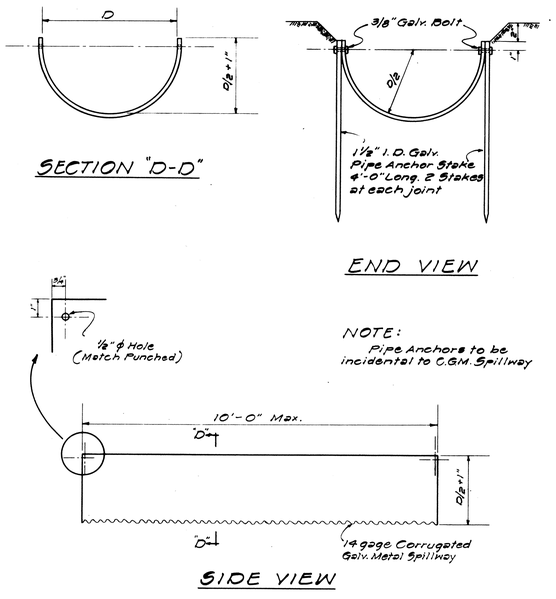
BAND DETAIL



SIDE VIEW

DETAIL OF STANDARD BAND COUPLER

NOT TO SCALE



SECTION "D-D"

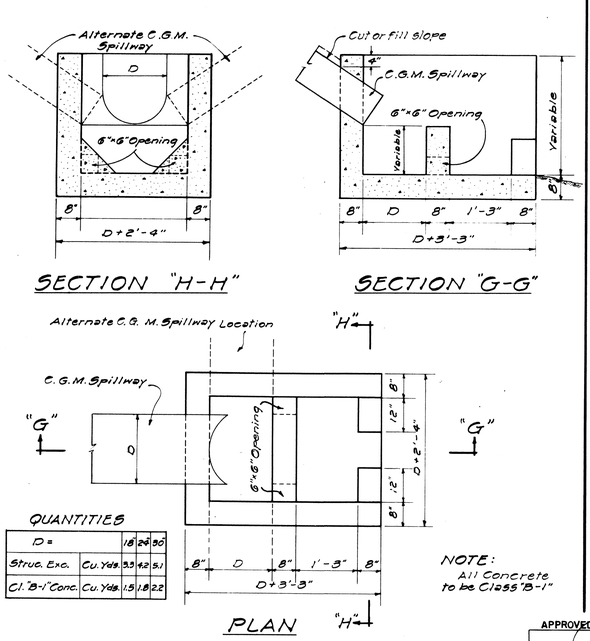
END VIEW

NOTE:
Pipe Anchors to be incidental to C.G.M. Spillway

SIDE VIEW

C.G.M. SPILLWAY

NOT TO SCALE



QUANTITIES

D=		18"	24"	30"
Struc. Exc.	Cu. Yds.	3.3	4.2	5.1
Cl. B-1" Conc.	Cu. Yds.	1.5	1.8	2.2

NOTE:
All Concrete to be Class "B-1"

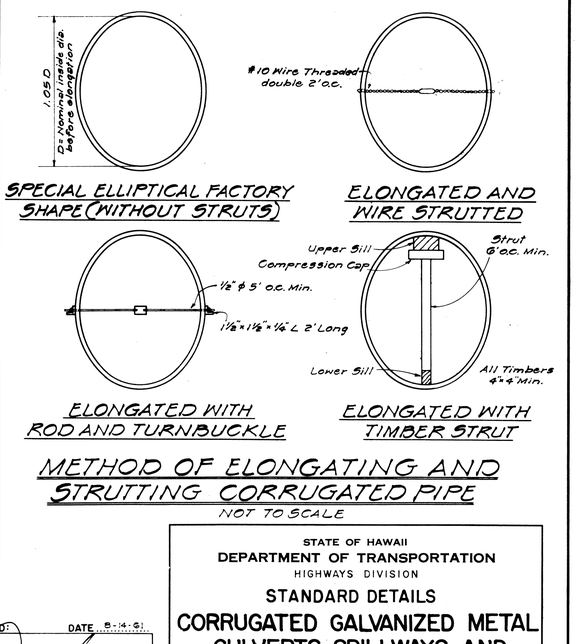
SECTION "H-H"

SECTION "G-G"

PLAN

DETAILS OF CONC. DROP BOX AT OUTLET OF C.G.M. SPILLWAY

NOT TO SCALE



SPECIAL ELLIPTICAL FACTORY SHAPE (WITHOUT STRUTS)

ELONGATED AND WIRE STRUTTED

ELONGATED WITH ROD AND TURNBUCKLE

ELONGATED WITH TIMBER STRUT

METHOD OF ELONGATING AND STRUTTING CORRUGATED PIPE

NOT TO SCALE

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE 4-24-61
	DRAWN BY R. Y.	
NOTE BOOK	TRACED BY	DATE 5-26-61
	DESIGNED BY O. M.	
No.	QUANTITIES BY	
	CHECKED BY	

APPROVED: DATE 8-14-61

DIRECTOR OF TRANSPORTATION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

CORRUGATED GALVANIZED METAL CULVERTS, SPILLWAYS, AND SPECIAL DETAILS

SCALES AS NOTED

SHEET Nº OF SHEETS

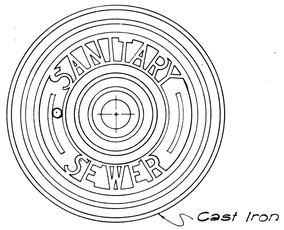
32

6

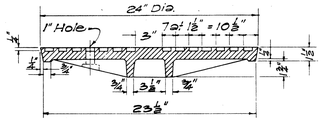
2/17/59
8:42:50

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	I-HH-1(36)8	1957	33	124

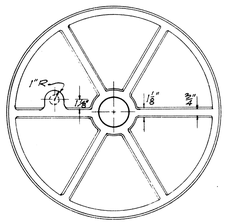
August 1957



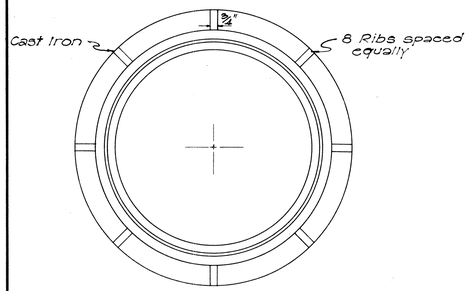
TOP VIEW OF COVER



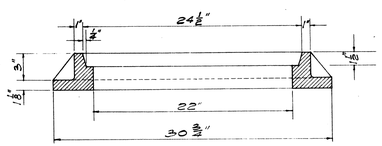
SECTION



BOTTOM VIEW OF COVER



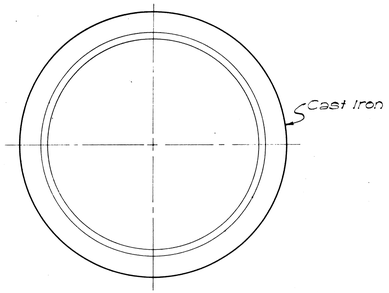
PLAN OF RIM



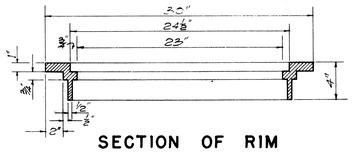
SECTION OF RIM

DETAILS OF TYPE "S" CAST IRON FRAME AND COVER

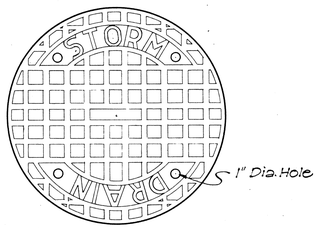
SCALE: 1-1/2" = 1'-0"



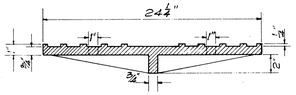
PLAN OF RIM



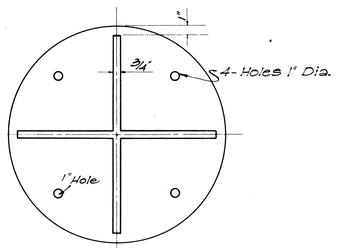
SECTION OF RIM



TOP VIEW OF COVER



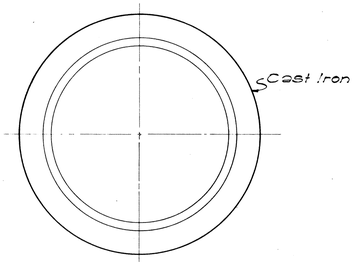
SECTION



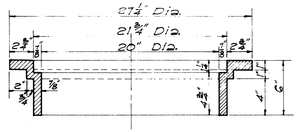
BOTTOM VIEW OF COVER

DETAILS OF TYPE "B" CAST IRON FRAME AND COVER

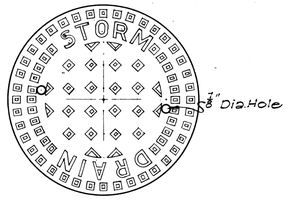
SCALE: 1-1/2" = 1'-0"



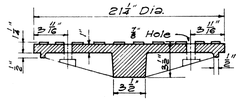
PLAN OF RIM



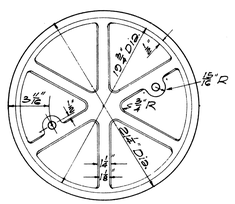
SECTION OF RIM



TOP VIEW OF COVER



SECTION

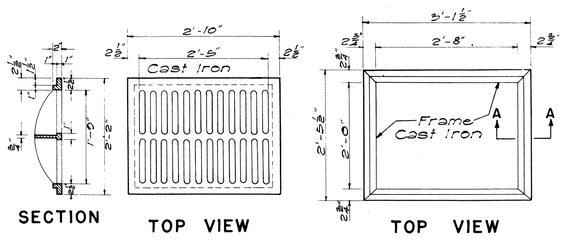


BOTTOM VIEW OF COVER

DETAILS OF TYPE "A" CAST IRON FRAME AND COVER

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

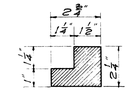
NOTE: Stock Pattern From Novelty Foundry ~ Honolulu



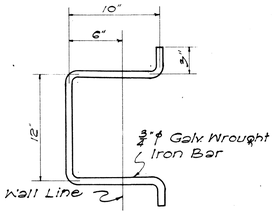
SECTION TOP VIEW TOP VIEW

TYPE C C.I. FRAME AND GRATING

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

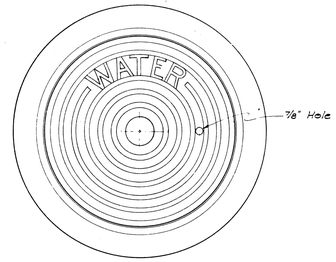


SECTION "A-A"
SCALE 3" = 1'-0"

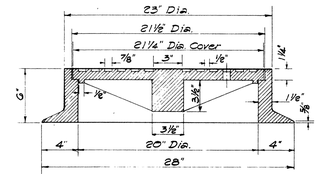


MANHOLE RUNG

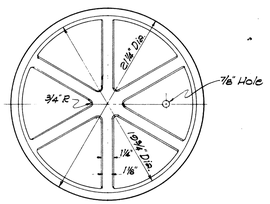
SCALE: 1-1/2" = 1'-0"



PLAN OF FRAME AND COVER



SECTION OF FRAME AND COVER



BOTTOM VIEW OF COVER

DETAILS OF TYPE "W" CAST IRON FRAME AND COVER

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

NOTE:

THE TYPE "S" CAST IRON FRAME AND COVER SHOWN ON THIS SHEET IS EQUIVALENT TO THE CITY AND COUNTY OF HONOLULU, DIVISION OF SEWERS' TYPE "A" CAST IRON MANHOLE FRAME AND COVER.

THE TYPE "W" CAST IRON FRAME AND COVER SHOWN ON THIS SHEET IS EQUIVALENT TO THE CITY AND COUNTY OF HONOLULU, BOARD OF WATER SUPPLY'S CAST IRON MANHOLE FRAME AND COVER, 20" SIZE.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STANDARD DETAILS

CATCH BASIN AND MANHOLE CASTINGS

SCALES AS NOTED

SHEET Nº OF SHEETS

33

ORIGINAL PLAN	SURVEY PLOTTED BY:	DATE:
	DRAWN BY:	
	CHECKED BY:	
NOTE BOOK	TRACED BY: A. CALISTRO	
No.	QUANTITIES BY:	
	CHECKED BY:	

TRACING CLOTH
C. L. N. Y.