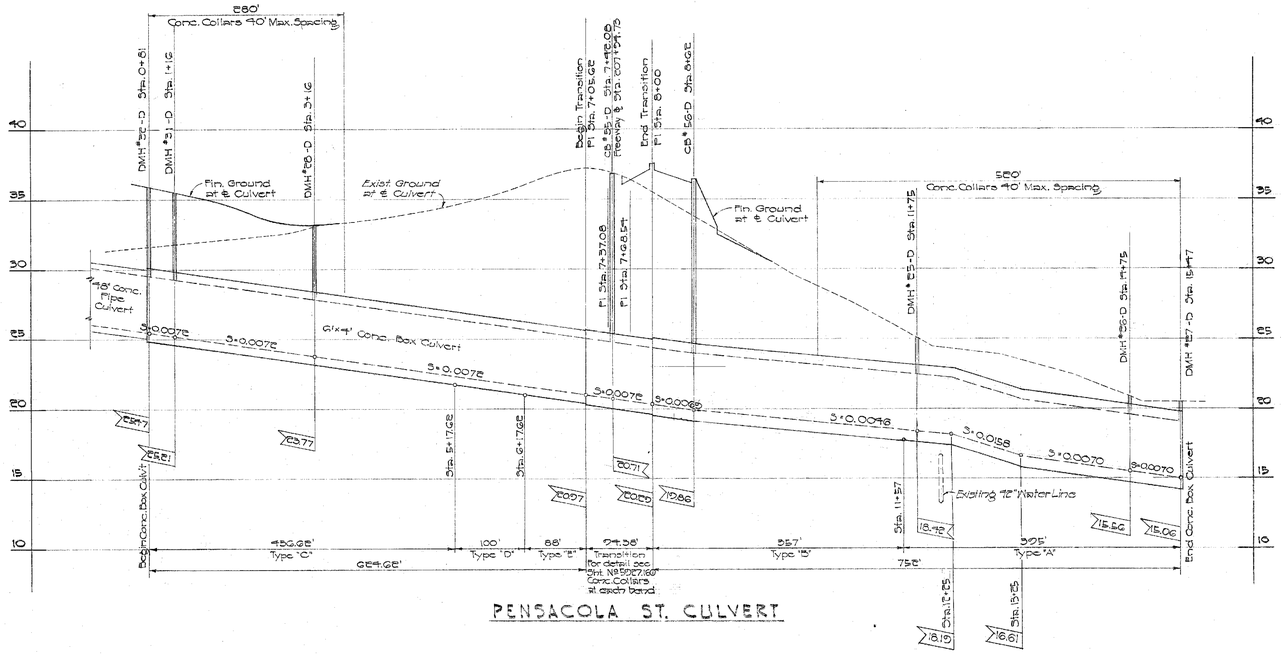
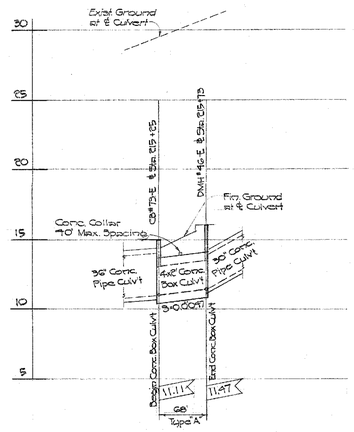
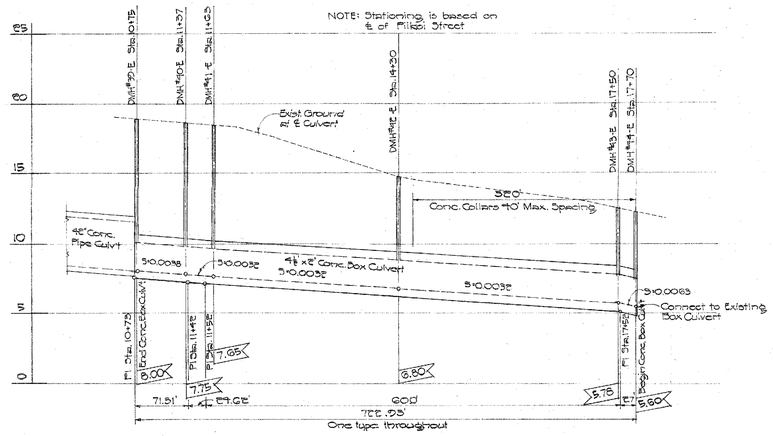
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-072-1(4)			

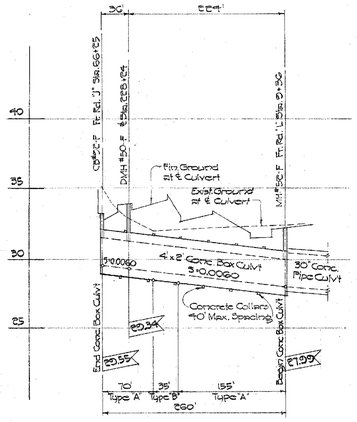




CULVERT AT PIIKOI ST.



CULVERT ALONG PIIKOI ST.



CULVERT AT KEEAUMOKU ST.

LONGITUDINAL SECTIONS AT ℄ CONCRETE BOX CULVERTS

SCALES { Horiz.: 1"=100'
Vert.: 1"= 5'

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

APPROVED:

S. Kashiwagi 12/24/58
STRUCTURAL ENGINEER DATE
Reg. Engr. Cert. No. 568

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
DRAINAGE DETAILS
LUNALILO FREEWAY
PELE ST. TO KEEAUMOKU ST.
PROJECT Nº BU-072-1(4)

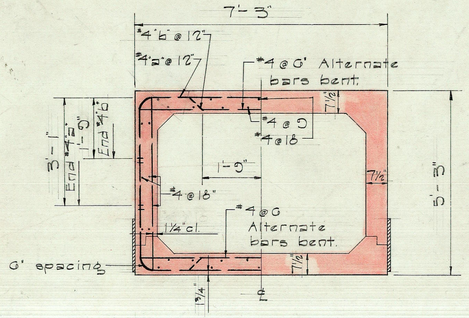
Scale: As Noted

SHEET No. 1 OF 10 SHEETS

5927. (156)

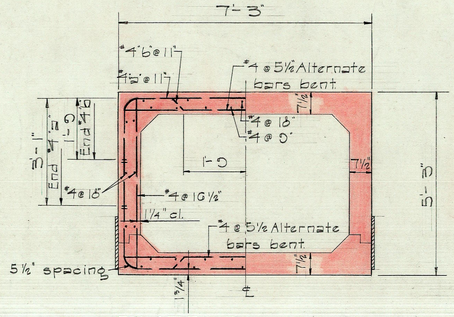
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-078-1(4)			



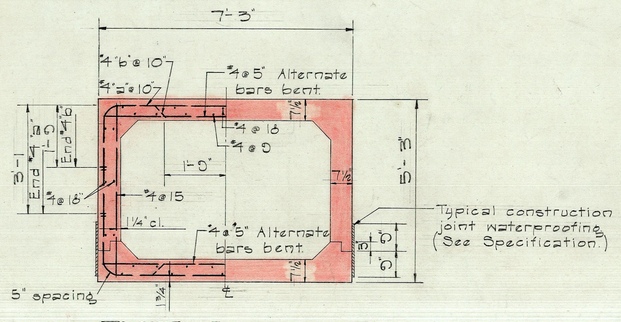
TYPE C — 5'-1 to 7'-6

Scale: ½" = 1'-0



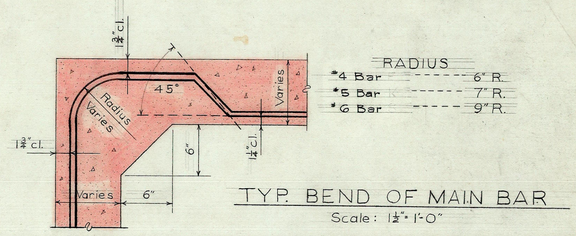
TYPE D — 7'-7 to 10'-0

Scale: ½" = 1'-0



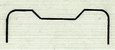
TYPE E — 10'-1 to 12'-6

Scale: ½" = 1'-0



TYP. BEND OF MAIN BAR

Scale: 1½" = 1'-0"



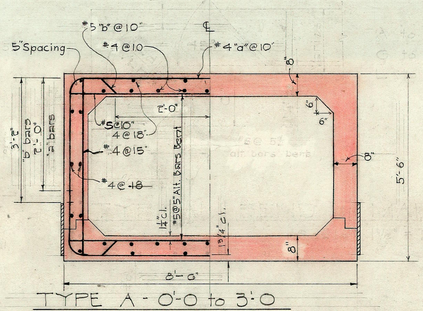
TYPE "a" BAR

Scale: ½" = 1'-0"

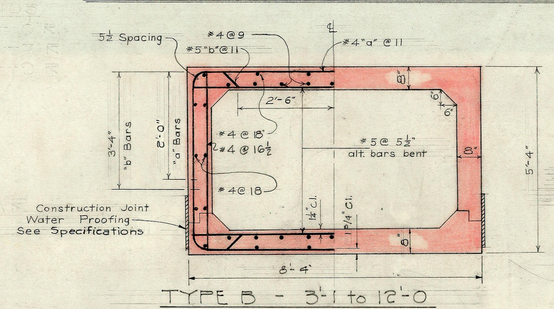
TYPE "b" BAR

Scale: ½" = 1'-0"

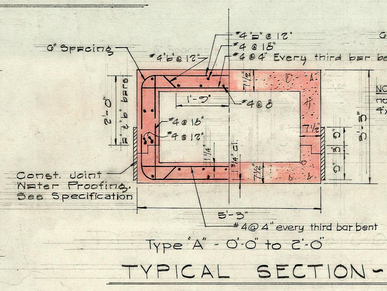
6'-0 X 4'-0 STANDARD BOX CULVERT



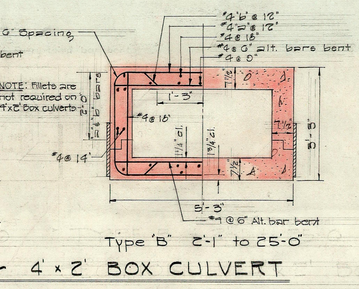
TYPE A - 0'-0 to 3'-0



TYPE B - 3'-1 to 12'-0



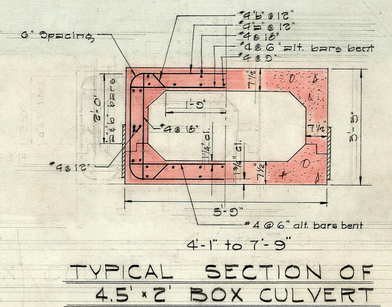
Type "A" - 0'-0 to 2'-0"



Type "B" 2'-1" to 25'-0"

TYPICAL SECTION - 4' x 2' BOX CULVERT

Scale: ½" = 1'-0"

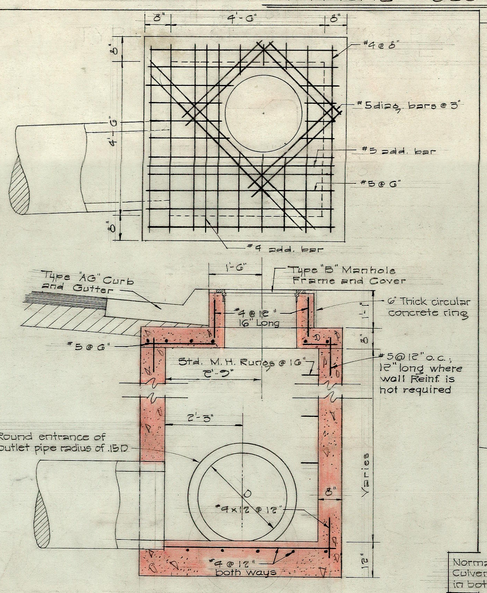


4'-1" to 7'-9"

TYPICAL SECTION OF 4.5' x 2' BOX CULVERT

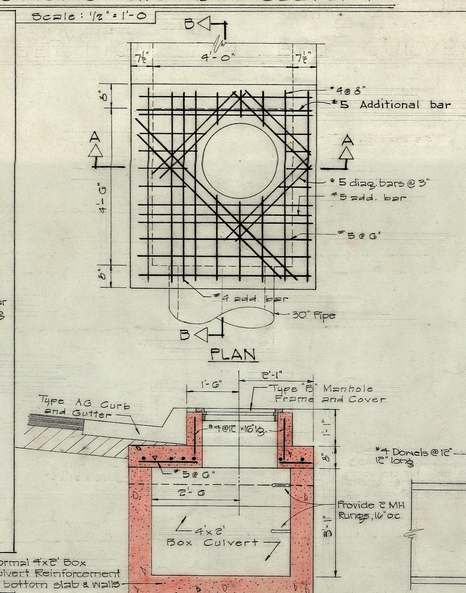
Scale: ½" = 1'-0"

TYPICAL SECTIONS 7'x4' BOX CULVERT



DETAIL OF TYPE "C" DRAIN MANHOLE

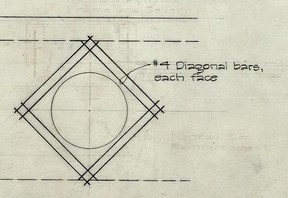
Scale: 1/2" = 1'-0"



DETAIL OF SPECIAL DRAIN MANHOLE #96-E

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

NOTE:
Concrete for Type B, C, & D Storm Drain Manholes, Special Drain Manholes, and all Box Culverts shall be Class A1 Concrete.



TYPICAL DETAIL OF REINFORCING AT PIPE OPENINGS IN BOX CULVERTS

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

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

DRAINAGE DETAILS
LUNALILO FREEWAY
PELE ST. TO KEEAUMOKU ST.
PROJECT Nº BU-078-1(4)

Scale : As Noted

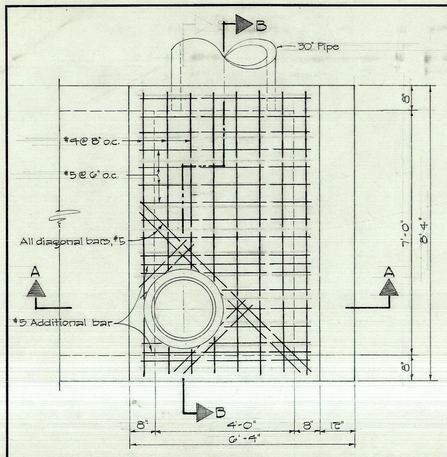
SHEET No. 3 OF 10 SHEETS

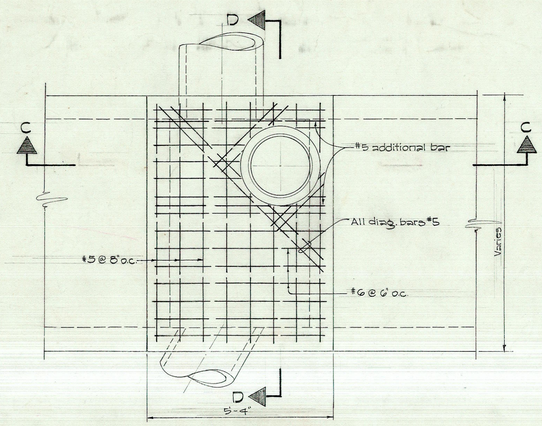
5927. (158)

BOX CULVT DET. DRAINAGE STRUCT

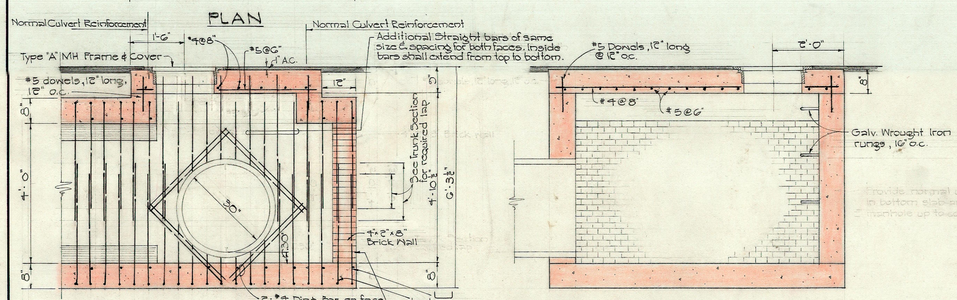
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-072-1(4)			





PLAN



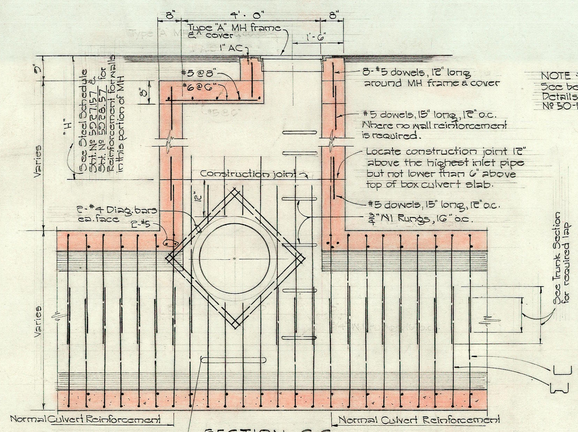
SECTION A-A

Brick Wall Shall Be Incidental To Class A-1 Concrete

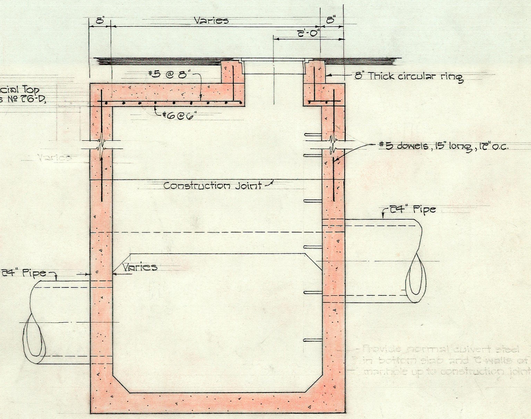
SECTION B-B

DETAIL OF SPECIAL DRAIN MANHOLE # 27-D

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



SECTION C-C

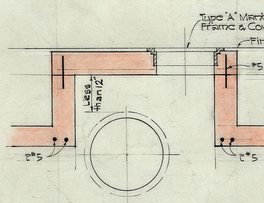


SECTION D-D

NOTE :
See below for Special Top Details for SDMH's № 26-D, № 50-F, & № 52-F.

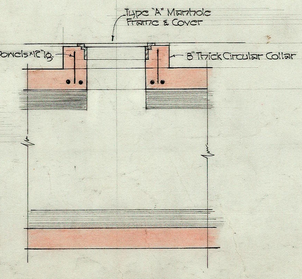
DETAIL OF TYPE "D" DRAIN MANHOLE

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



SPECIAL TOP DETAIL OF TYPE "D" SDMH № 50-F & № 52-F

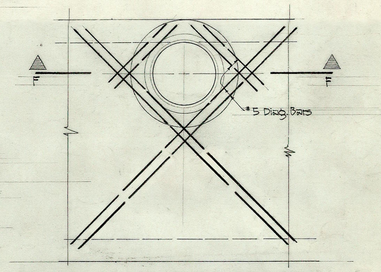
Scale 3/4" = 1'-0"



SECTION F-F

SPECIAL TOP DETAIL FOR TYPE "D" SDMH № 26-D

Scale 3/4" = 1'-0"



PLAN - SPECIAL TOP DET. FOR TYPE 'D' SDMH № 26-D

Scale 3/4" = 1'-0"

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

DRAINAGE DETAILS
LUNALILO FREEWAY
PELE ST. TO KEEAUMOKU ST.
PROJECT № BU-072-1(4)

Scale: As Noted

SHEET No. 4 OF 10 SHEETS

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

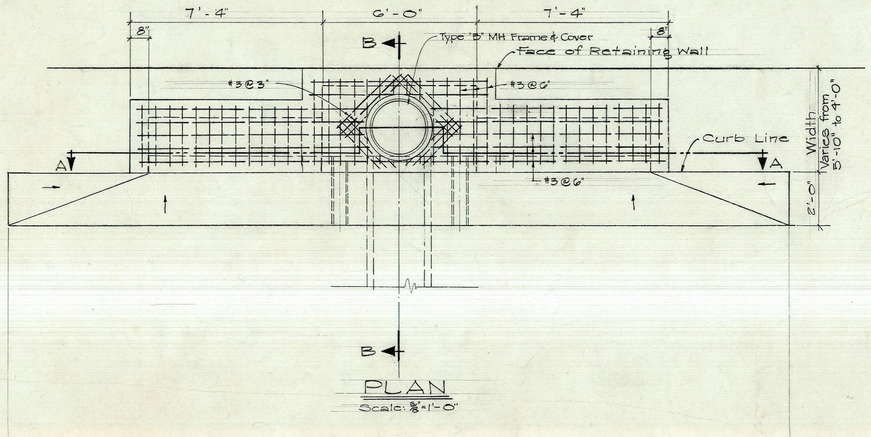
PRINTED ON DIEPO 1000H CLEARPRINT

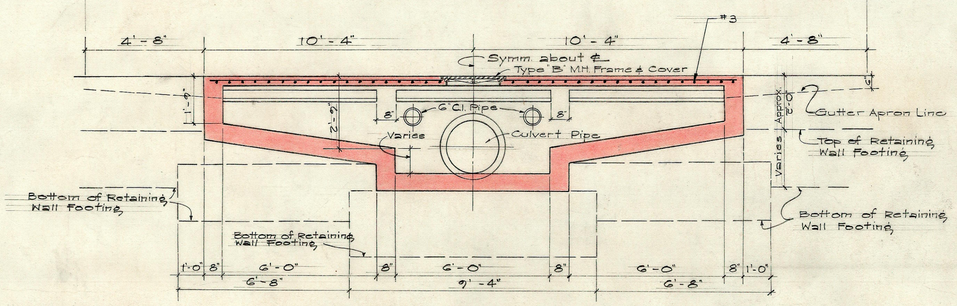
5927.

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DRAINAGE DETAILS

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-072-1(4)			





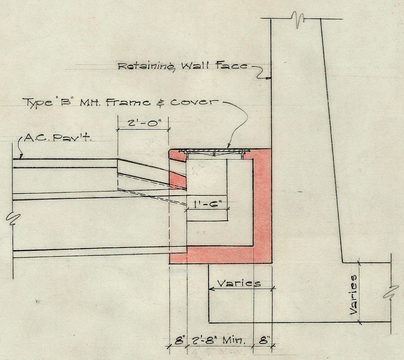
NOTE: Details of CB not noted or shown here are to be the same as required for standard CB.

SECTION A-A

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

TYPE A-1 CATCH BASIN

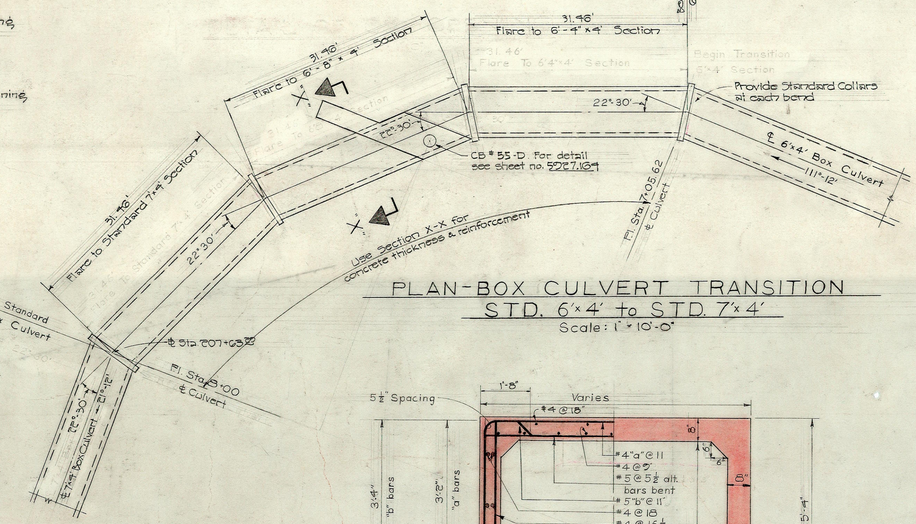
(TO BE USED WHERE WIDTH OF CATCH BASIN BOX IS LESS THAN 5'-10" WIDE BUT 4'-0" OR MORE.)



SECTION B-B

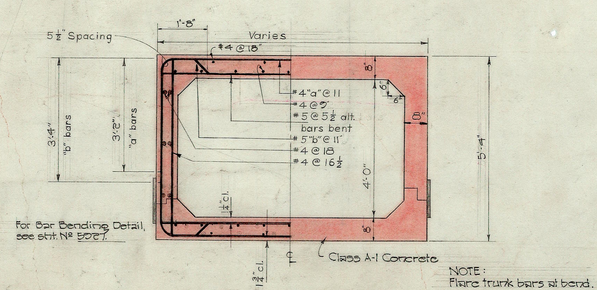
Scale: 3/8"=1'-0"

NOTE:
1. Catch Basin Type B-1 similar to Type A-1 except it has only left side inlet in addition to the main box.
2. Catch Basin Type C-1 similar to Type A-1 except it has only right side inlet in addition to the main box.
3. Catch Basin Type D-1 similar to Type A-1 except it has only main box without side inlets.
4. Reinforcing shall be exactly the same as required for Standard Catch Basin.
5. Concrete shall be Class A-1 conc.



PLAN-BOX CULVERT TRANSITION
STD. 6'x4' to STD. 7'x4'

Scale: 1"=10'-0"



SECTION "X-X"

TYPICAL SECTION OF TRANSITION

Scale: 1½"=1'-0"

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

DRAINAGE DETAILS
LUNALILO FREEWAY
PELE ST. TO KEEAUMOKU ST.
PROJECT No. BU-072-1(4)

Scale: As Noted

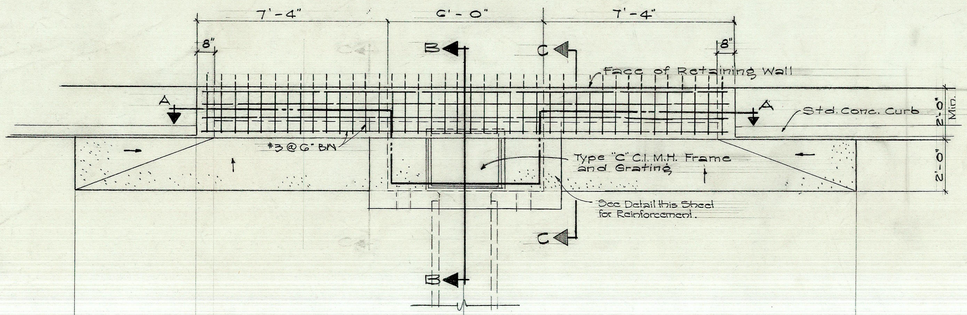
SHEET No. 5 OF 10 SHEETS

5927. (160)

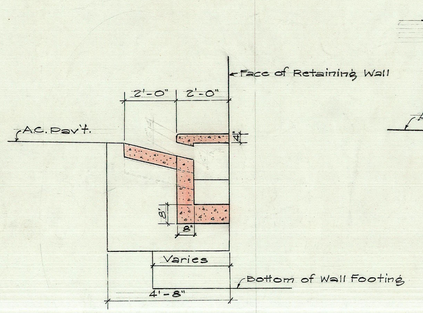
SEC. CE DRAINAGE STRUCT

PRINTED ON DIEPO 1000H CLEARPRINT

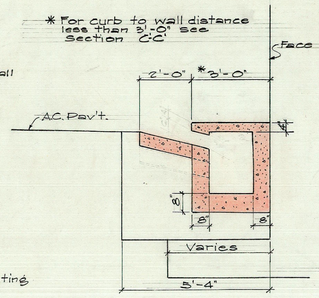
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-072-1(4)			



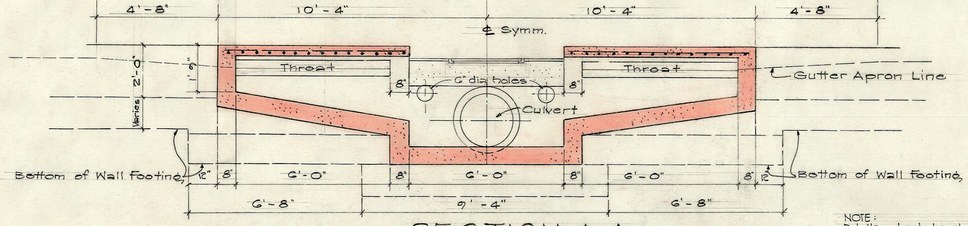
PLAN
Scale: 3/8"=1'-0"



SECTION C-C
Scale: 3/8"=1'-0"



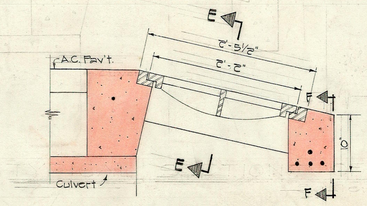
SECTION C'-C'
Scale: 3/8"=1'-0"



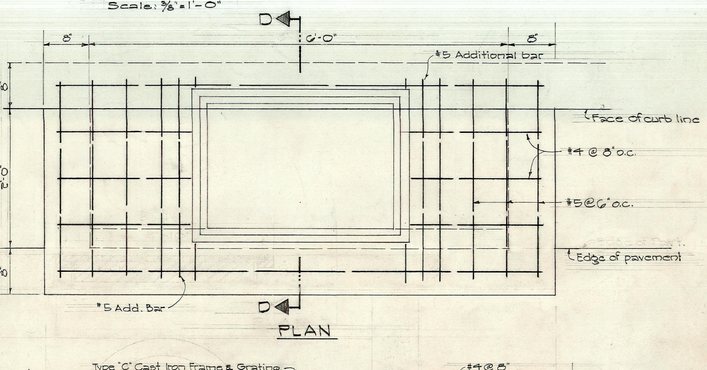
SECTION A-A
Scale: 3/8"=1'-0"

NOTE:
Details not noted or shown here are to be the same as required for Std. CD

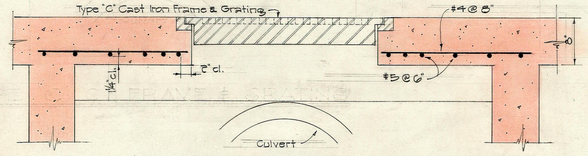
TYPE A-2 CATCH BASIN
(TO BE USED AT BOTTOMS OF RETAINING WALLS WHERE CURB TO WALL DISTANCE IS LESS THAN 4'-0")



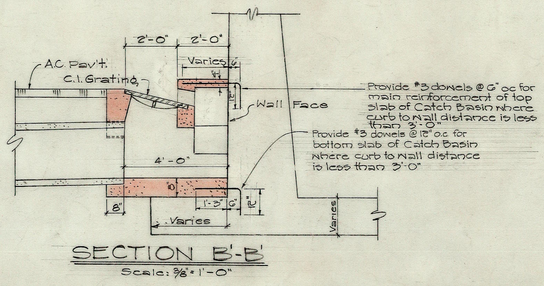
SECTION D-D



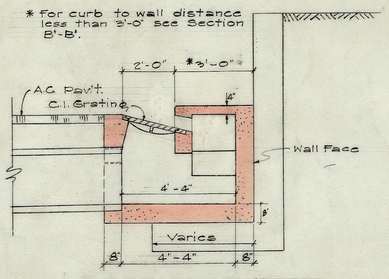
PLAN



SECTION E-E

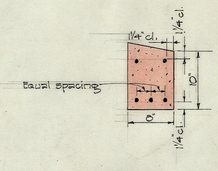


SECTION B'-B'
Scale: 3/8"=1'-0"

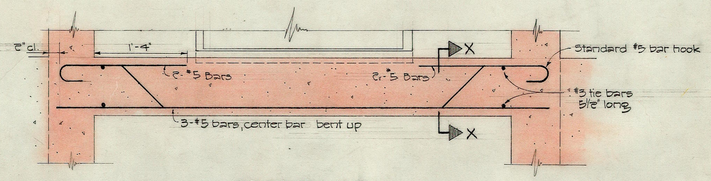


SECTION B-B
Scale: 3/8"=1'-0"

NOTE:
Catch Basin Type B-2 similar to Type A-2 except it has only left side inlet in addition to the main box.
Catch Basin Type C-2 similar to Type A-2 except it has only right side inlet in addition to the main box.
Catch Basin Type D-2 similar to Type A-2 except it has only main box without side inlets.



SECTION X-X



SECTION F-F

TYPICAL REINFORCING OF TYPE A-2 CATCH BASIN
Scale: 1"=1'-0"

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

DRAINAGE DETAILS
LUNALILO FREEWAY
PELE ST. TO KEEAUMOKU ST.
PROJECT No. BU-072-1(4)

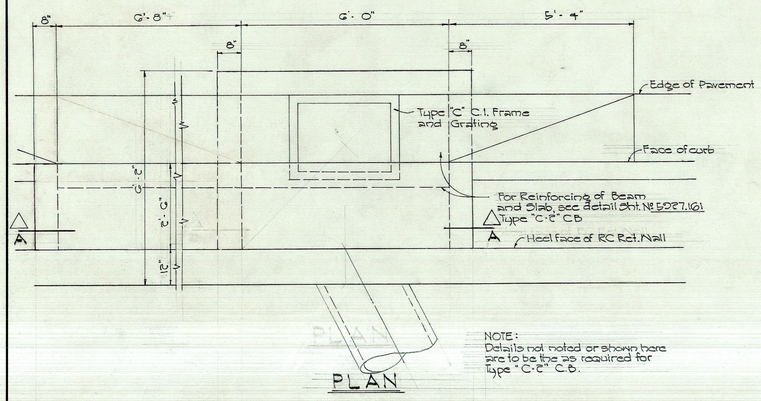
Scale: As Noted

SHEET No. 6 OF 10 SHEETS

5927. (161)

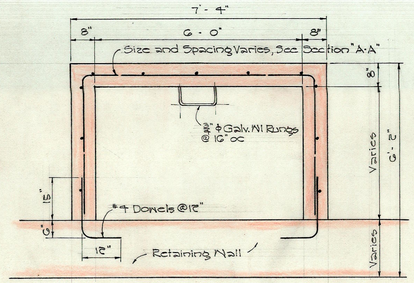
PRINTED ON DIEPO 1000H CLEARPRINT

FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BUS-072(4)			

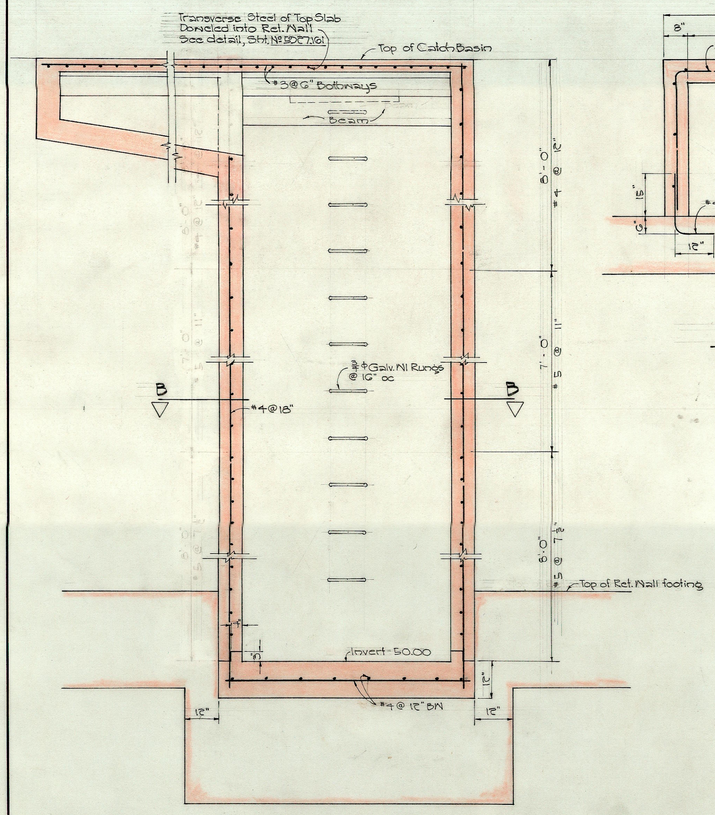


PLAN

NOTE:
Details not noted or shown here are to be like as required for Type "C-C" C.B.



SECTION B-B



SECTION A-A

DETAIL OF CATCH BASIN No. 20-B

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

ORIGINAL PLAN

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

DRAINAGE DETAILS
LUNALILO FREEWAY
PELE ST. TO KEEAUMOKU ST.
PROJECT No. BUS-072-1(4)

Scale: As Noted

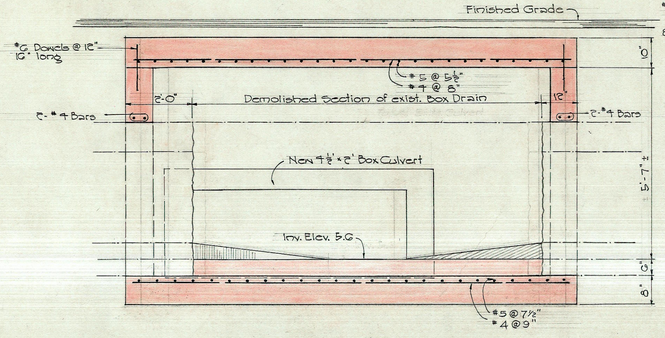
SHEET No. 7 OF 10 SHEETS

5927. (162)

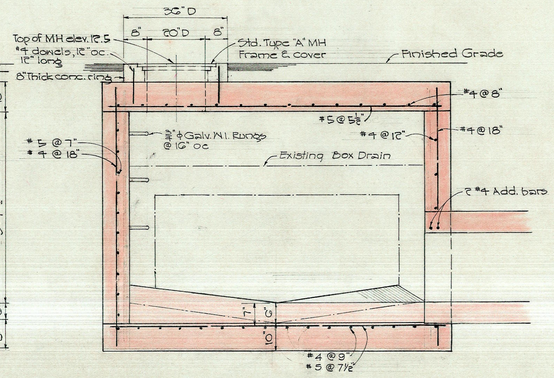
DRAINAGE DET.

PRINTED ON DIEPO 1000H CLEARPRINT

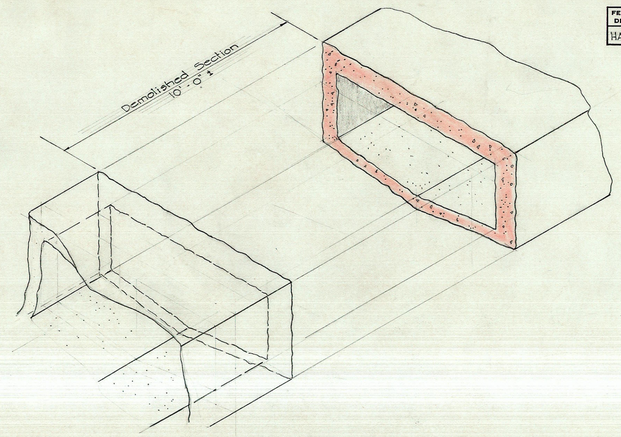
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-072(4)			



SECTION A-A

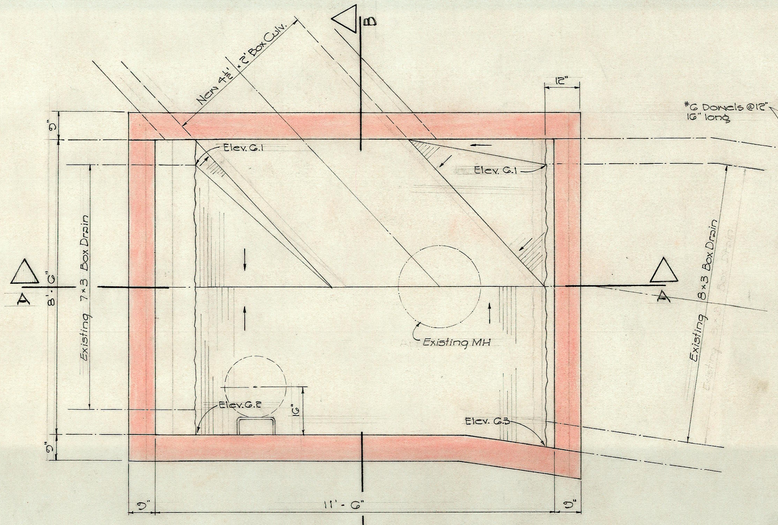


SECTION B-B

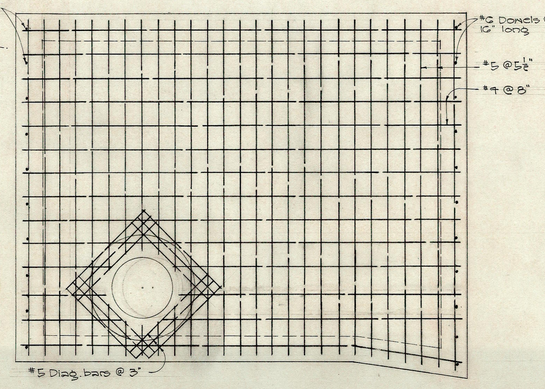


ISOMETRIC OF DEMOLISHED SECTION

Scale: ⅜" = 1'-0"



PLAN



TOP SLAB

DETAIL OF SPECIAL DRAIN MH № 44-E

Scale: ½" = 1'-0"

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

DRAINAGE DETAILS
LUNALILO FREEWAY
PELE ST. TO KEEAUMOKU ST.
PROJECT № BU-072-1(4)

Scale: As Noted

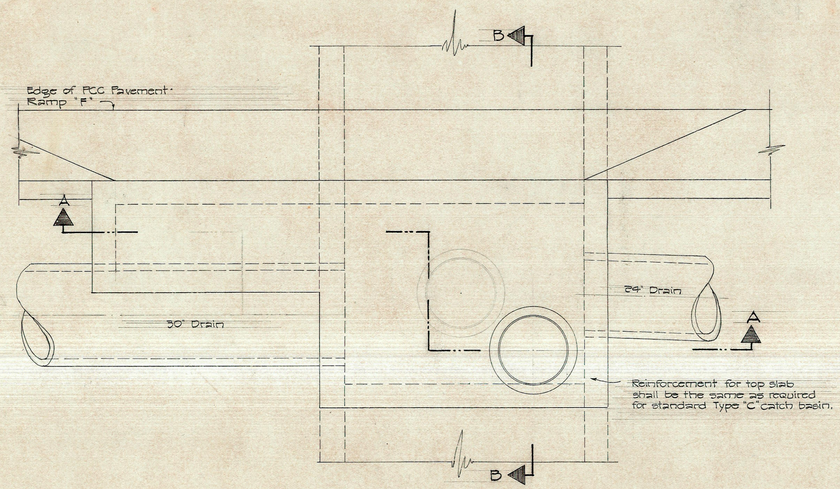
SHEET No. 8 OF 10 SHEETS

5927.

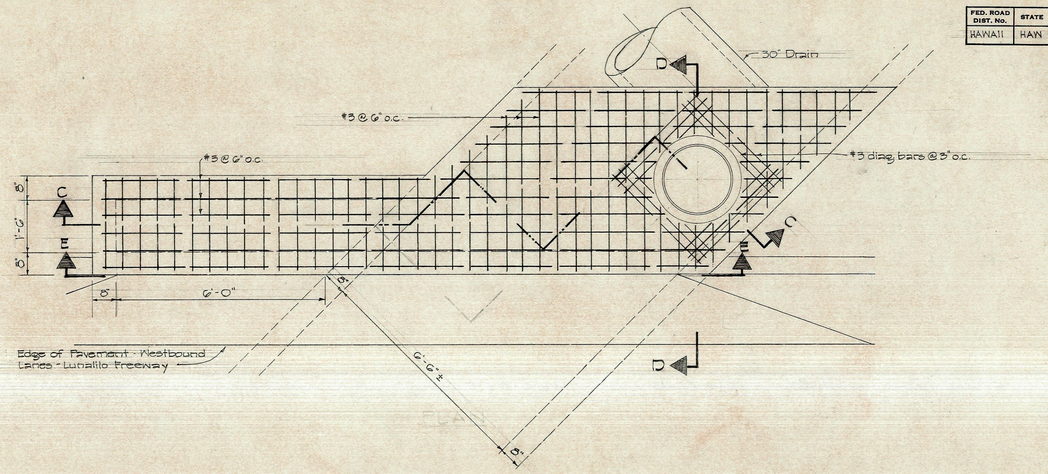
(163)

PRINTED ON DIEPO 1000H CLEARPRINT

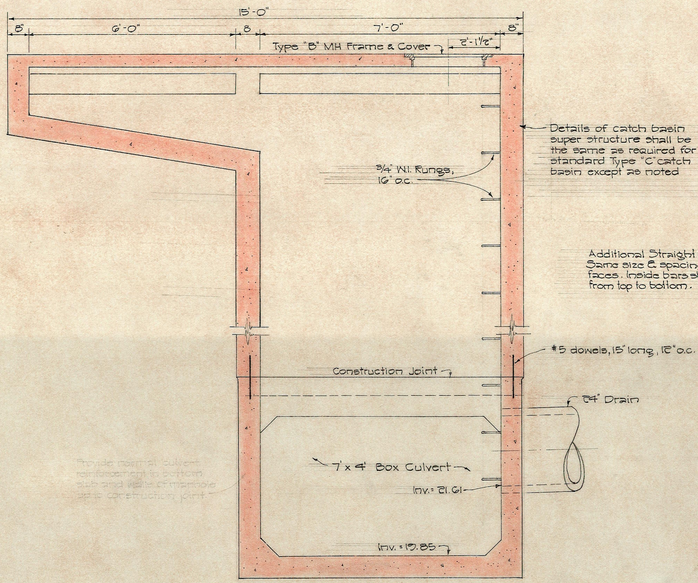
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW	BU-072-1(4)			



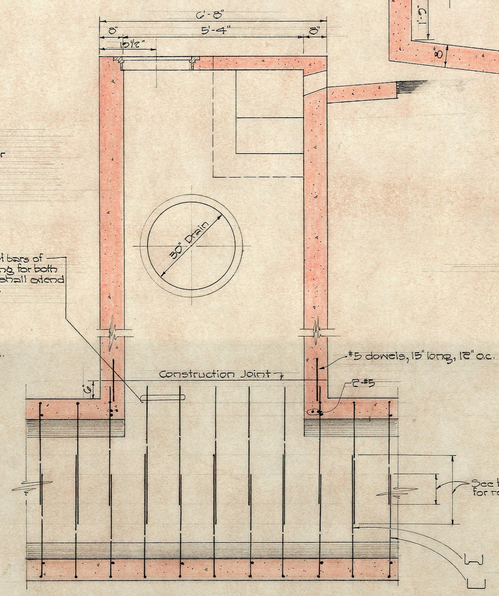
PLAN



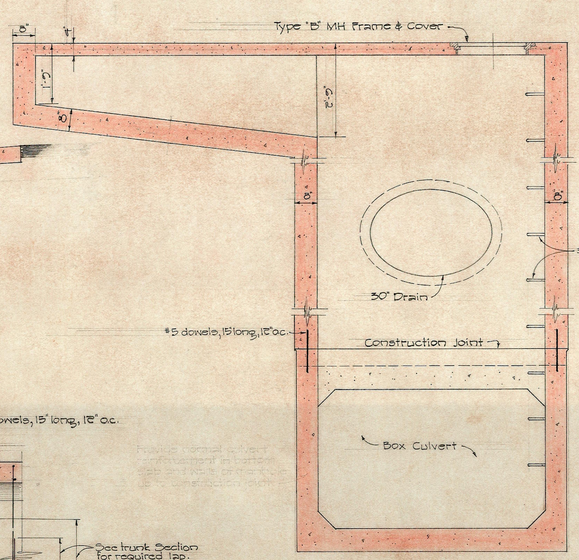
PLAN



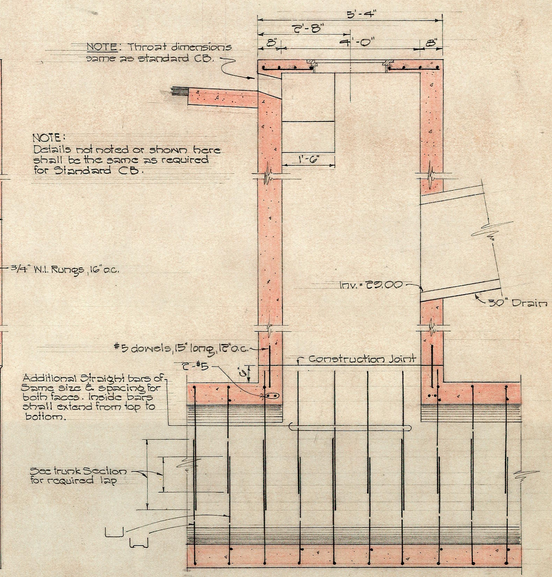
SECTION A-A



SECTION B-B



SECTION C-C



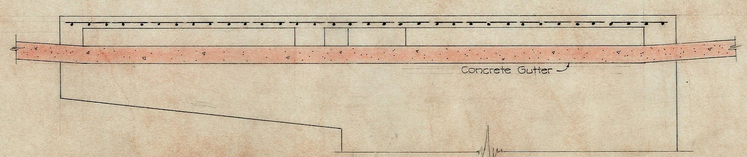
SECTION D-D

DETAIL OF SPECIAL CATCH BASIN #56-D

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

DETAIL OF SPECIAL CATCH BASIN #55-D

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



SECTION E-E

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

DRAINAGE DETAILS
LUNALILO FREEWAY
PELE ST. TO KEEAUMOKU ST.
PROJECT No. BU-072-1(4)

Scale: As Noted

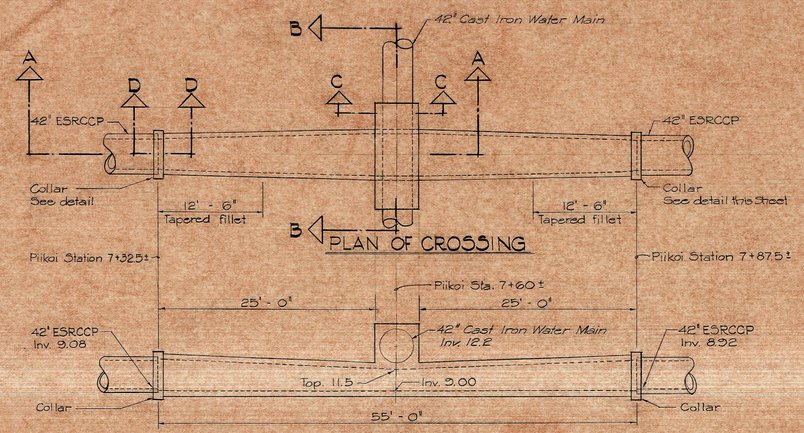
SHEET No. 9 OF 10 SHEETS

5927.

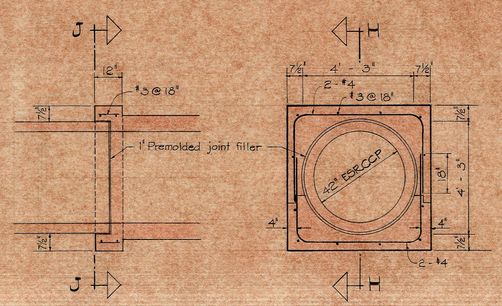
169

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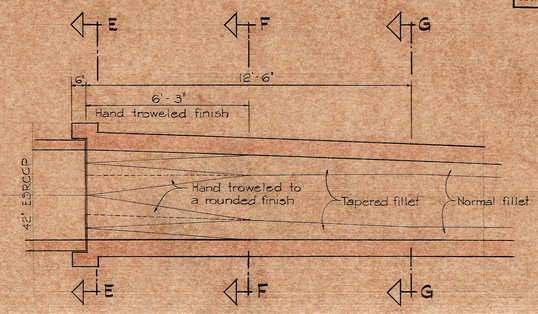
FED. ROAD DIST. No.	STATE	FED. AID PROJ. No.	FISCAL YEAR	SHEET No.	TOTAL SHEETS
HAWAII	HAW.	BU-072(4)			



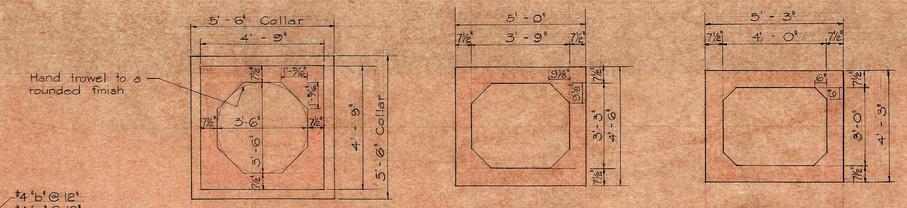
ELEVATION
Scale : 1/8" = 1'-0"



SECTION H-H SECTION J-J
CONCRETE COLLAR DETAIL
Scale: 3/8" = 1'-0"



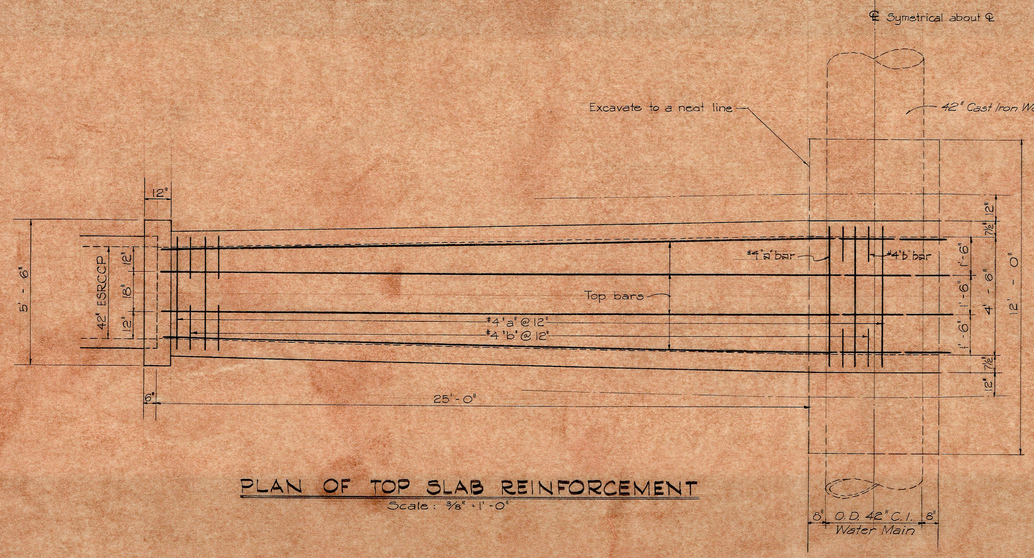
SECTION D-D
TAPERED FILLET DETAIL
Scale: 3/8" = 1'-0"



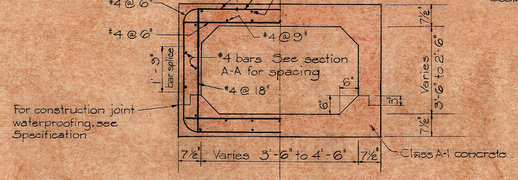
SECTION E-E
Scale: 3/8" = 1'-0"

SECTION F-F
Scale: 3/8" = 1'-0"

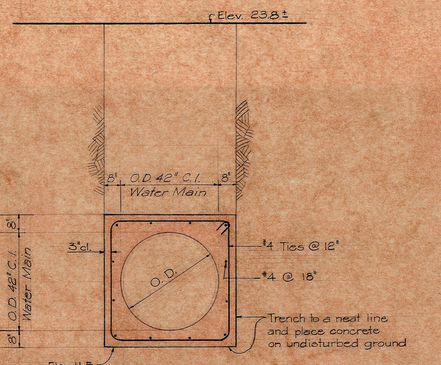
SECTION G-G
Scale: 3/8" = 1'-0"



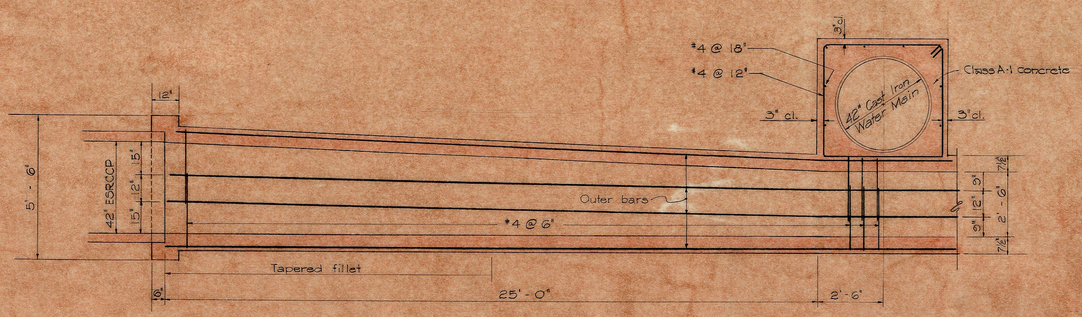
PLAN OF TOP SLAB REINFORCEMENT
Scale: 3/8" = 1'-0"



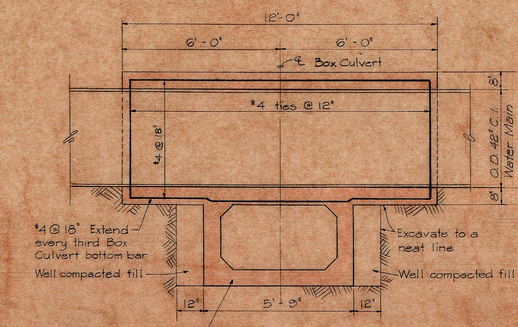
TYPICAL BOX CULVERT
REINFORCEMENT
Scale: 1/2" = 1'-0"



SECTION C-C
Scale: 3/8" = 1'-0"



SECTION A-A
Scale: 3/8" = 1'-0"



SECTION B-B
Scale: 3/8" = 1'-0"

DETAIL OF BOX CULVERT TRANSITION AT CROSSING WITH EXISTING WATER LINE (PIIKOI STREET)

SCALE AS SHOWN

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

DRAINAGE DETAILS
LUNALILO FREEWAY
PELE ST. TO KEEAUMOKU ST.
PROJECT Nº BU-072-1(4)

Scale: As Noted

SHEET No. 10 OF 10 SHEETS

5927.

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