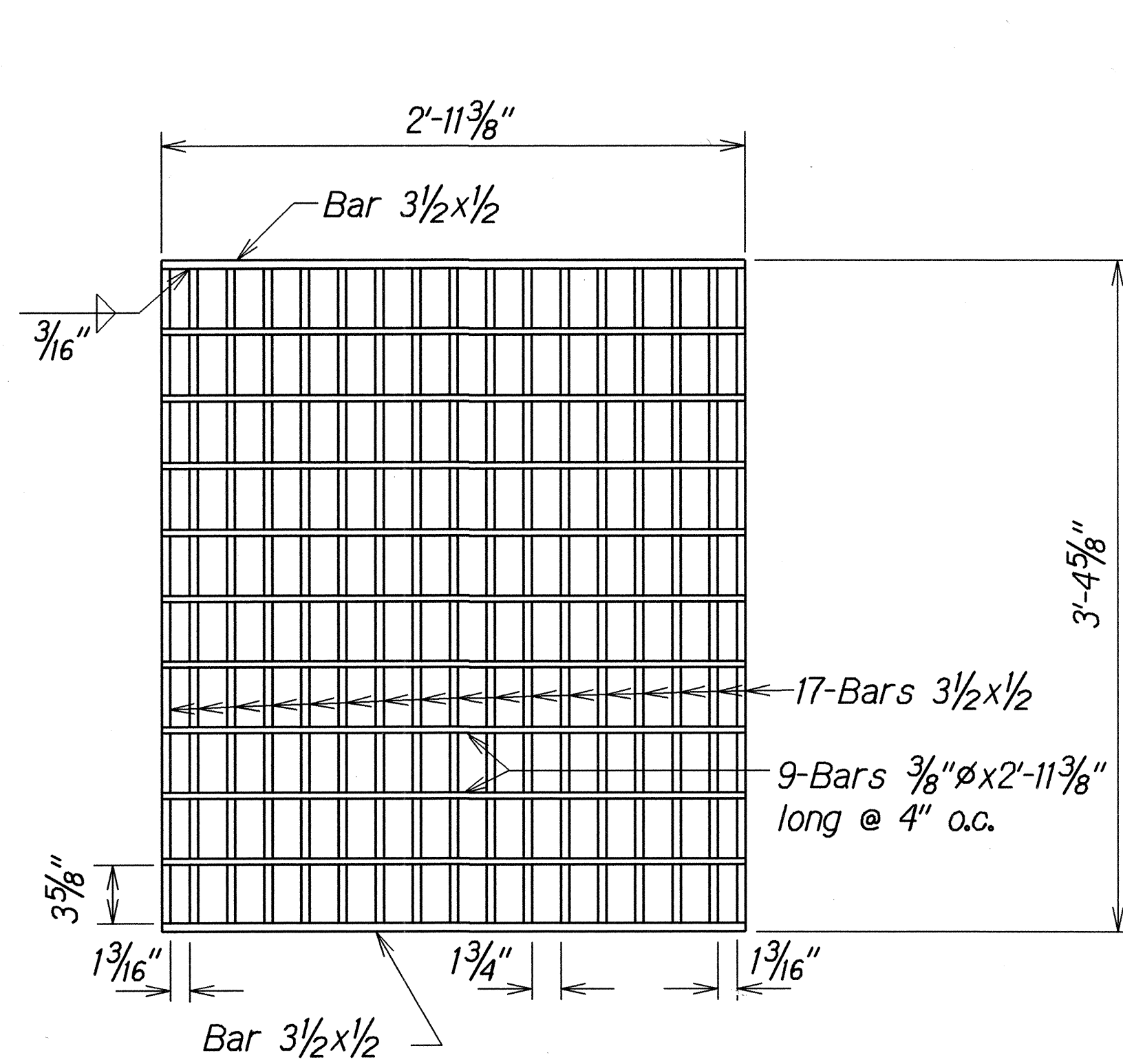
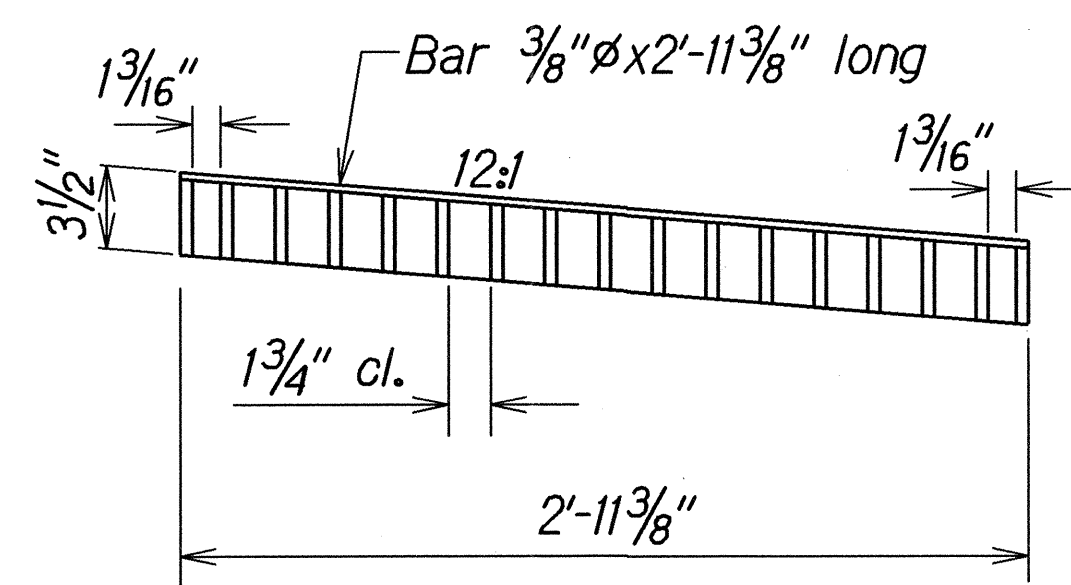


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(24)	2007	45	74



PLAN

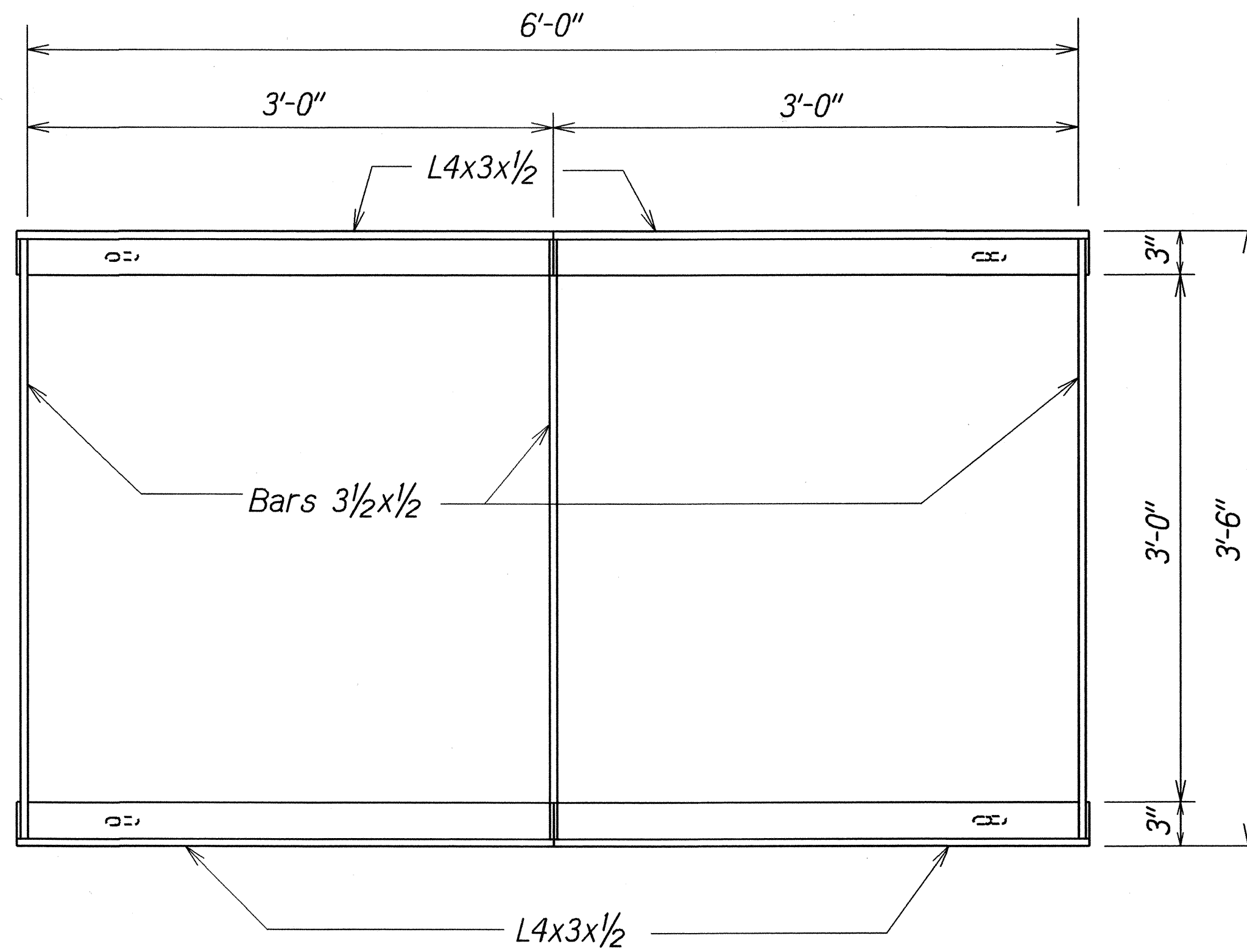


SECTION

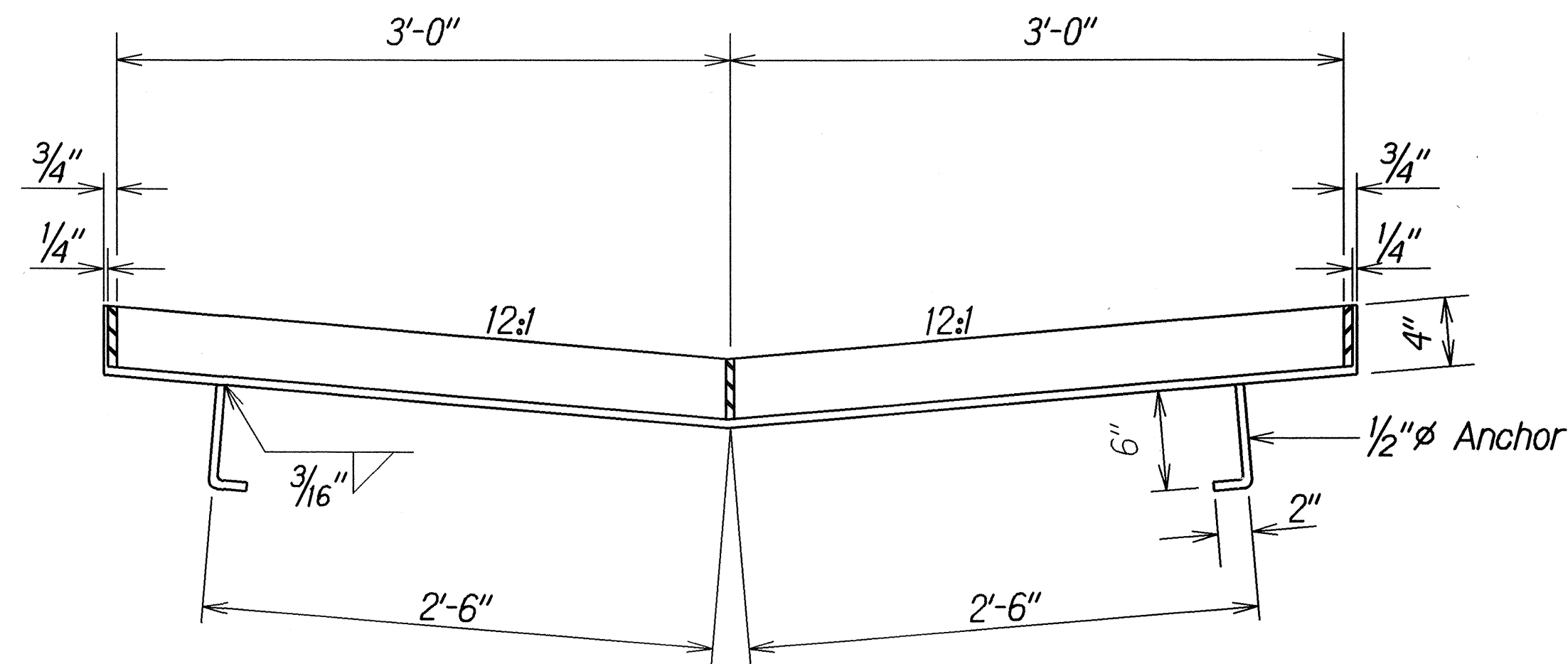
GRATE

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

NOTE:
All welds 3/8" unless otherwise noted.



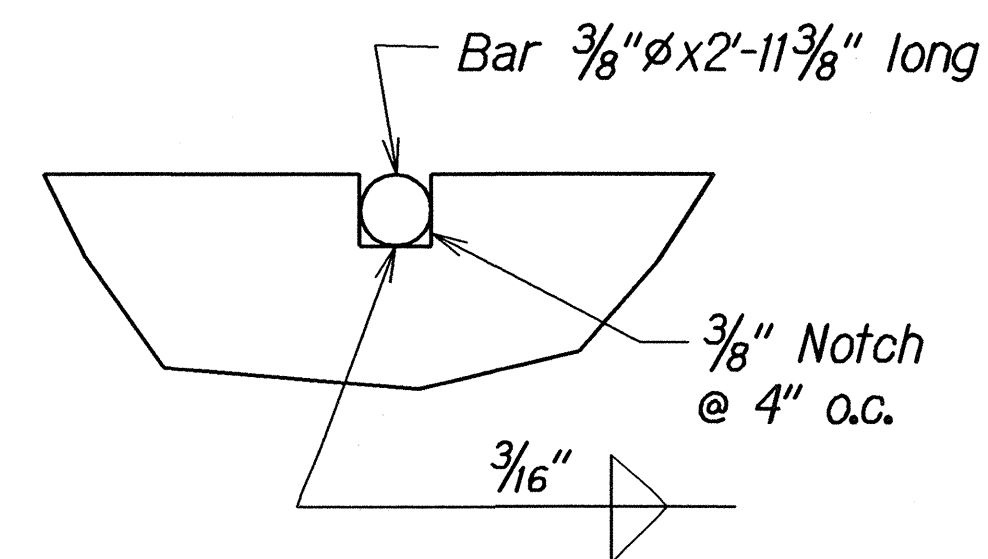
PLAN



SECTION

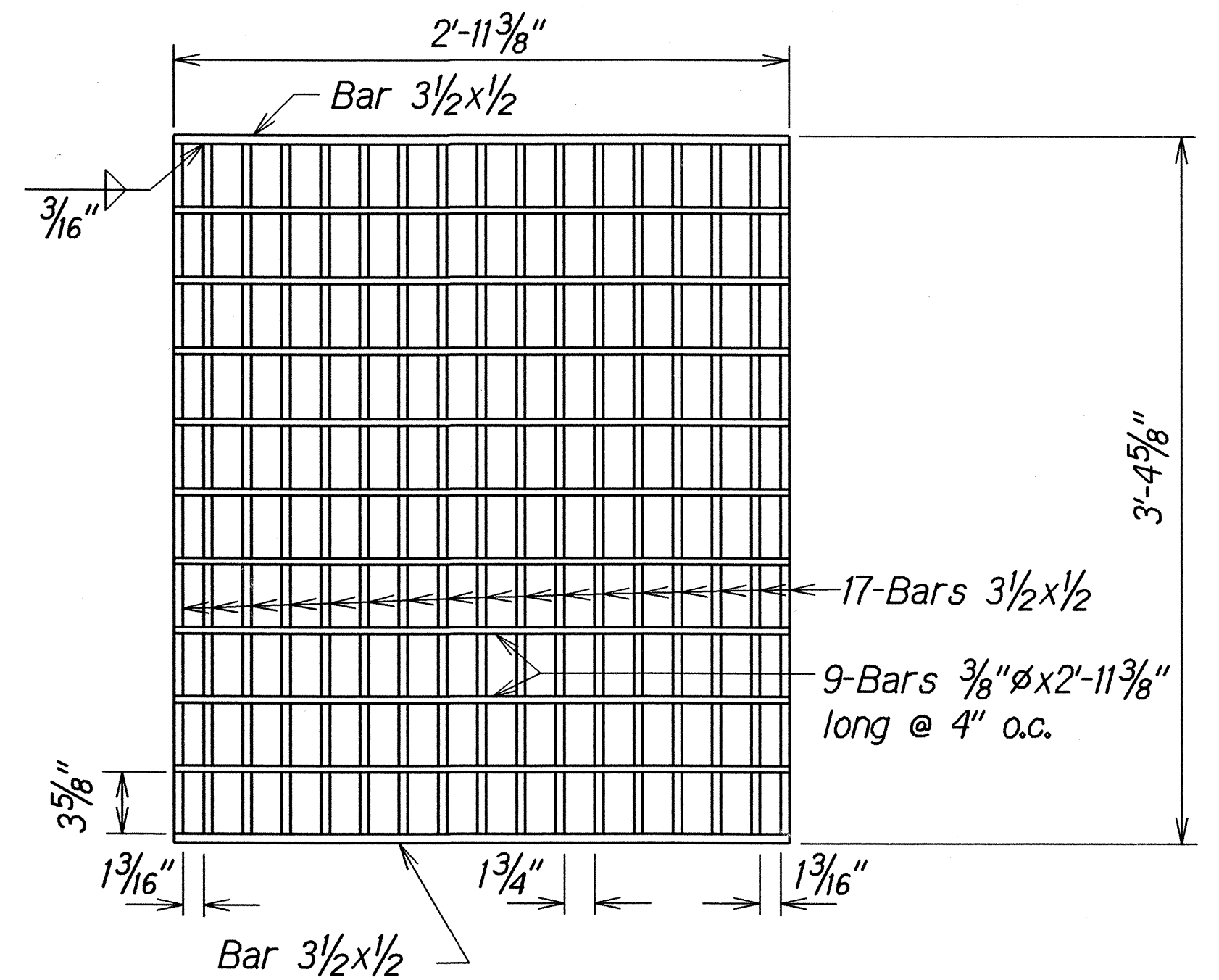
FRAME

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

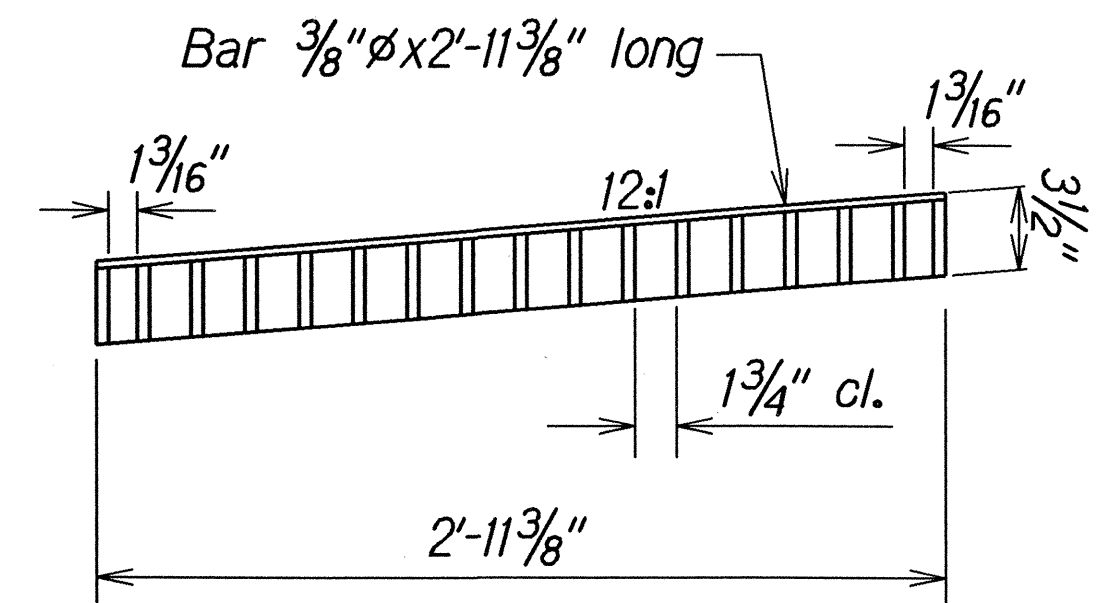


NOTCH DETAIL

Full Size



PLAN



SECTION

GRATE

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

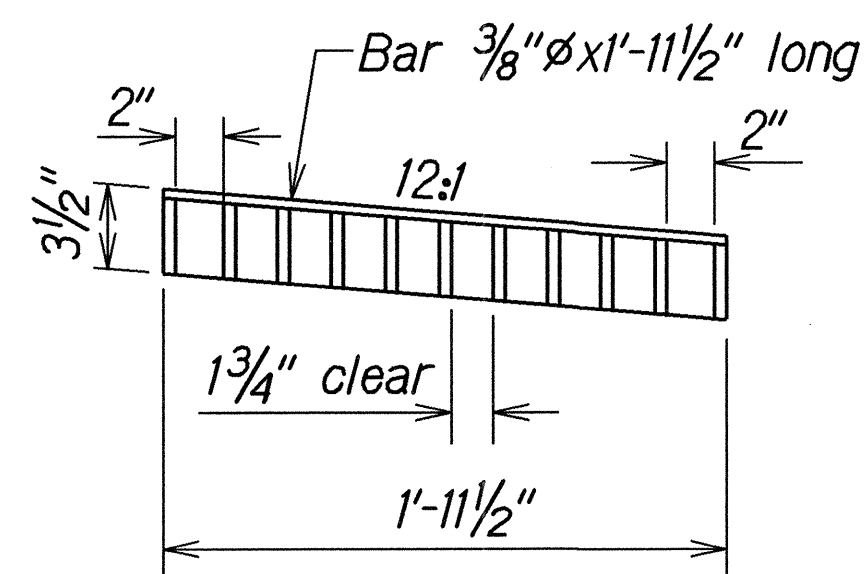
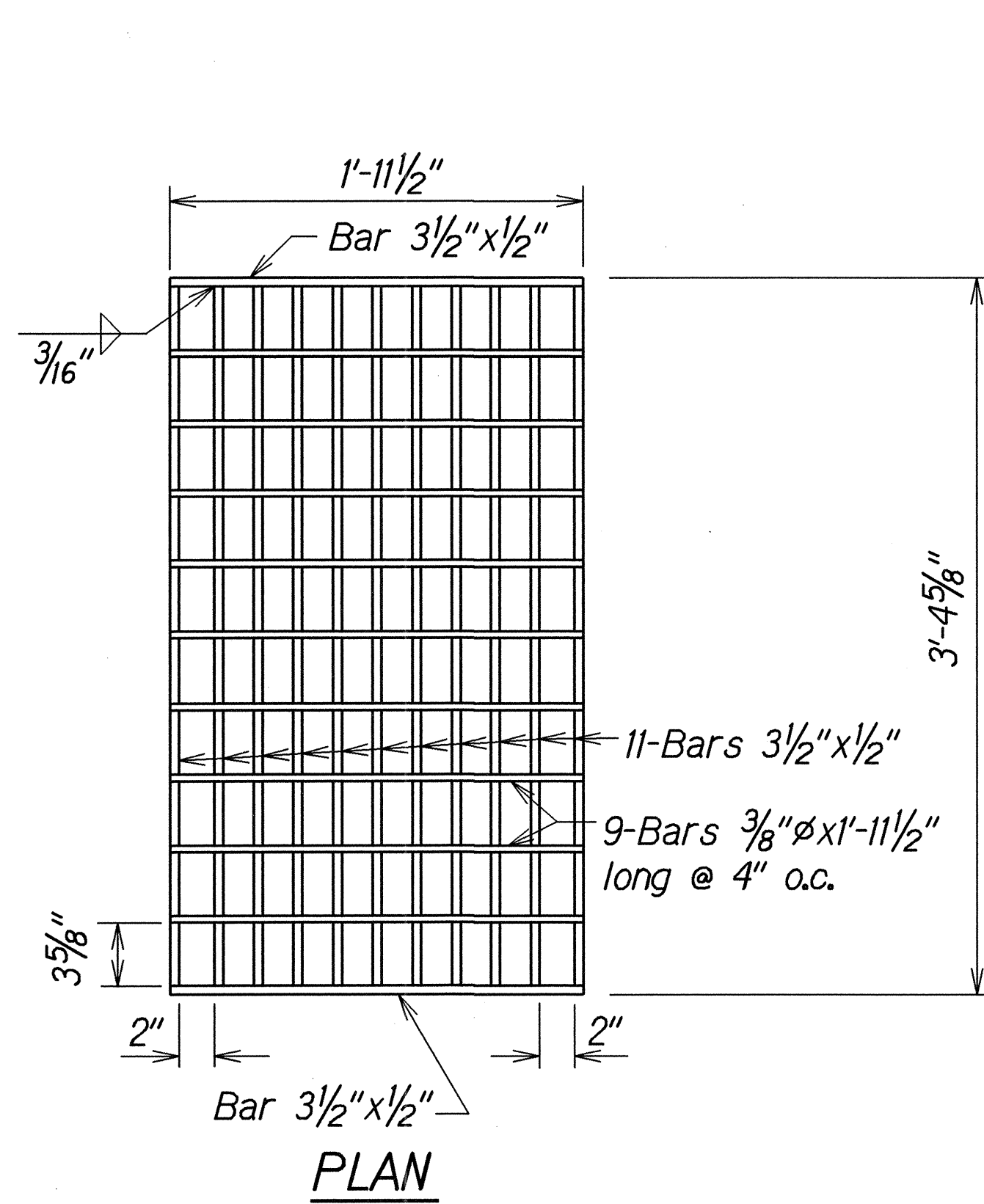
KAMEHAMEHA HIGHWAY REHABILITATION
WAIHAU STREET to H-2 INTERCHANGE
FEDERAL AID PROJECT NO. NH-099-1(24)

Scale: As Shown Date: August, 2006

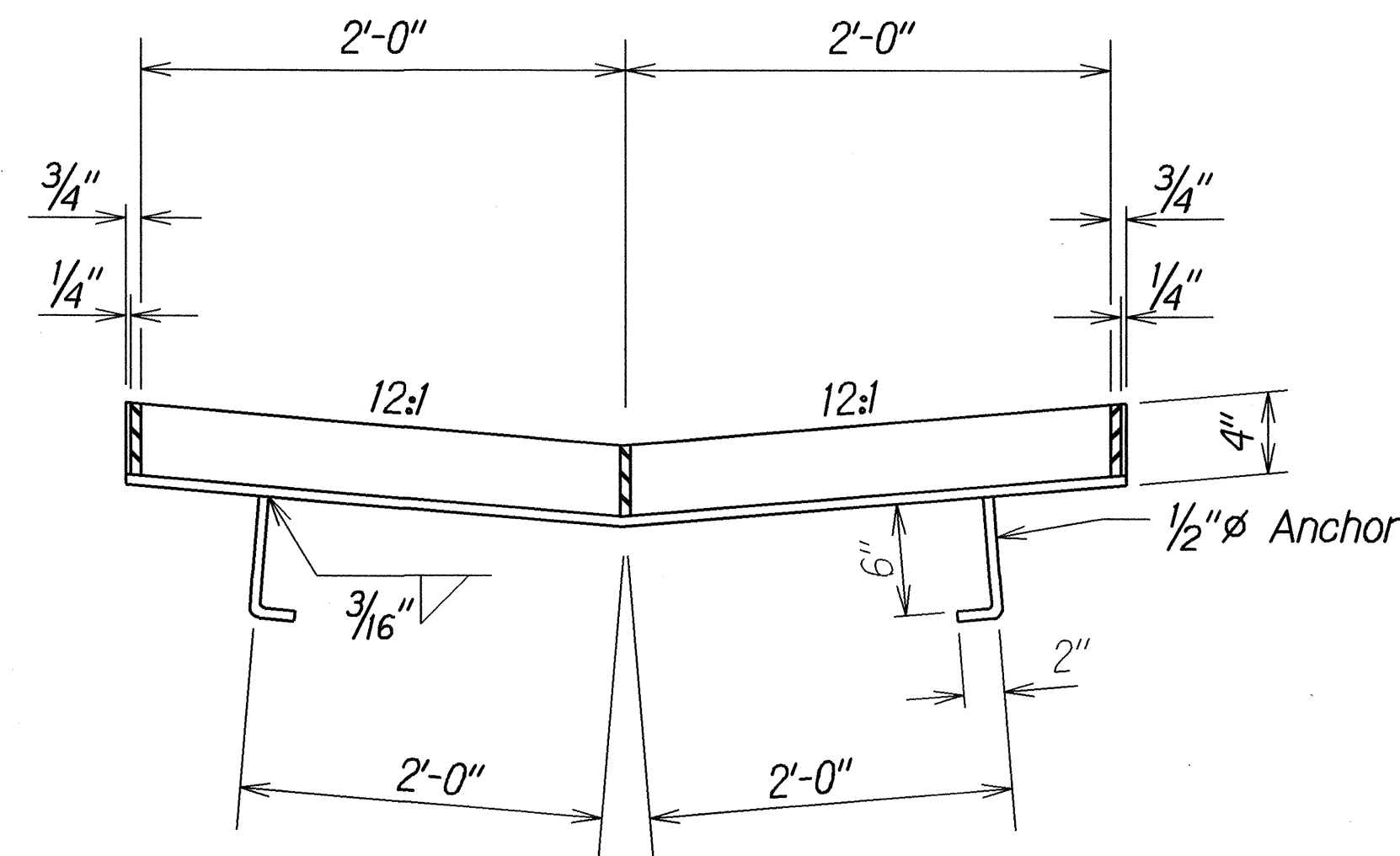
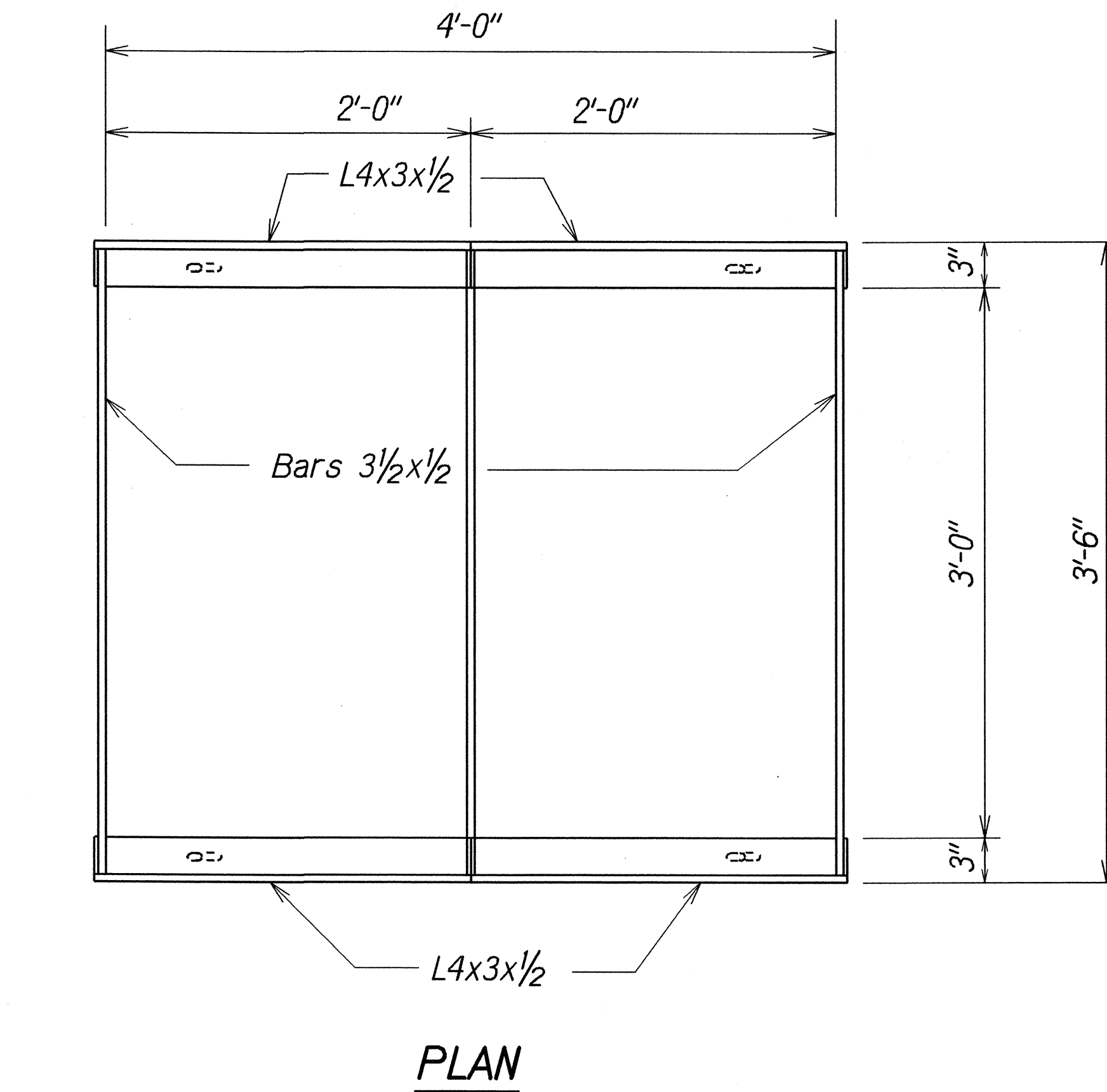
SHEET No. H7 OF 13 SHEETS

TYPE "1211216P" STEEL FRAME AND GRATES

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(24)	2007	46	74

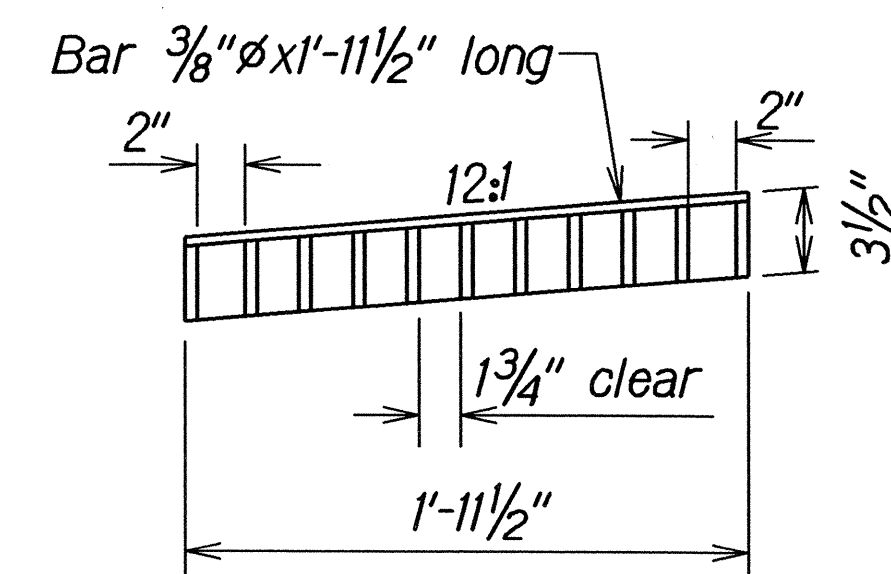
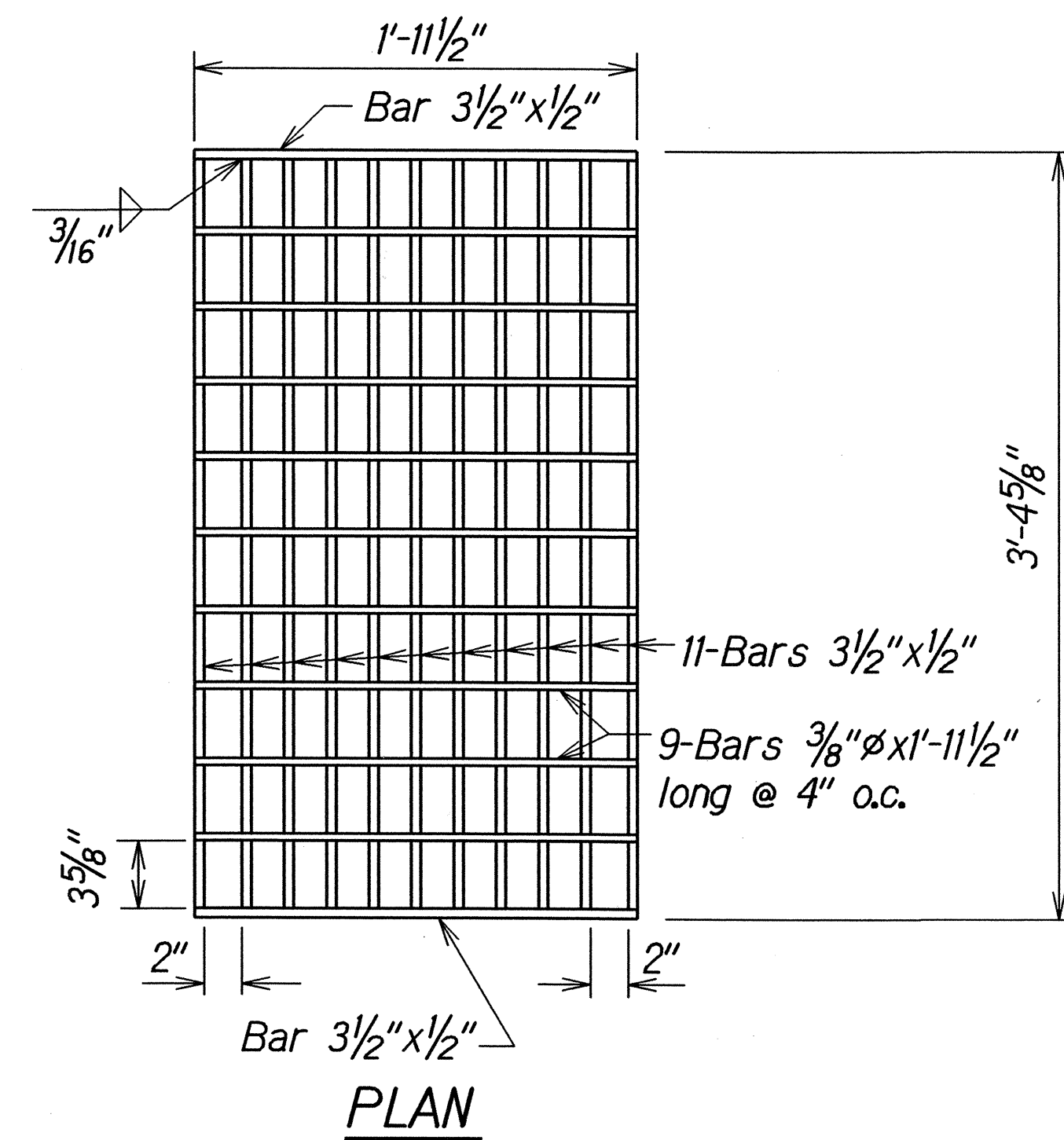


GRATE
Scale: 1 1/2"=1'-0"

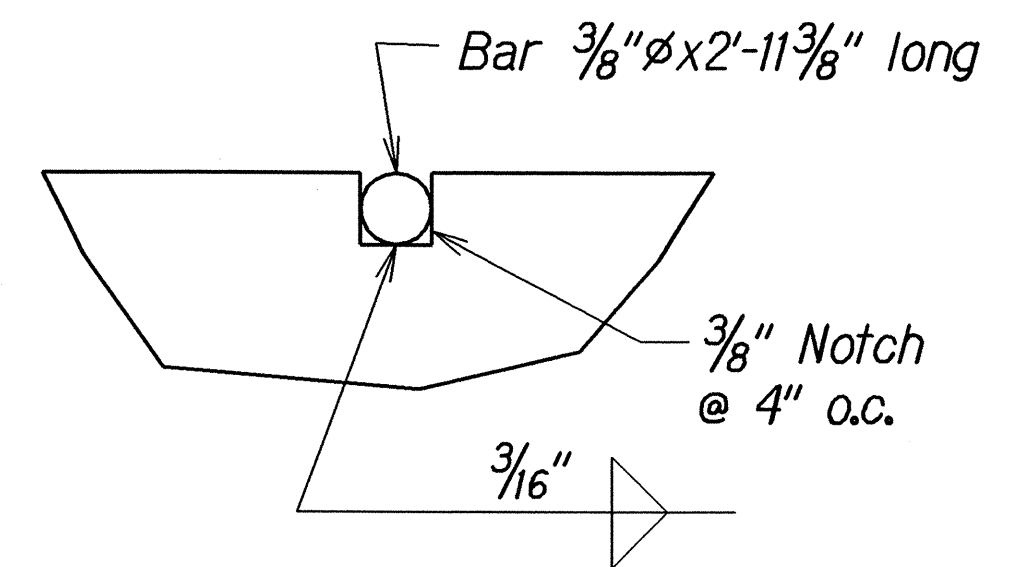


FRAME
Scale: 1 1/2"=1'-0"

NOTE:
All welds 3/8" unless otherwise noted.



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



Full Size

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

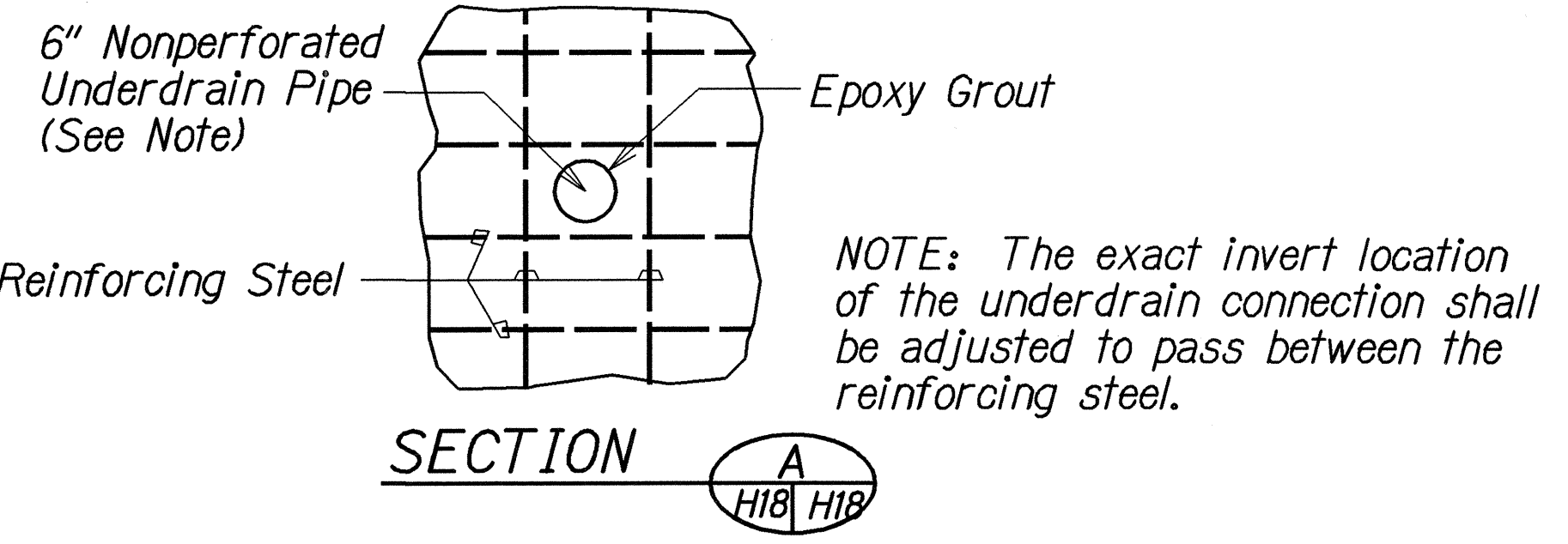
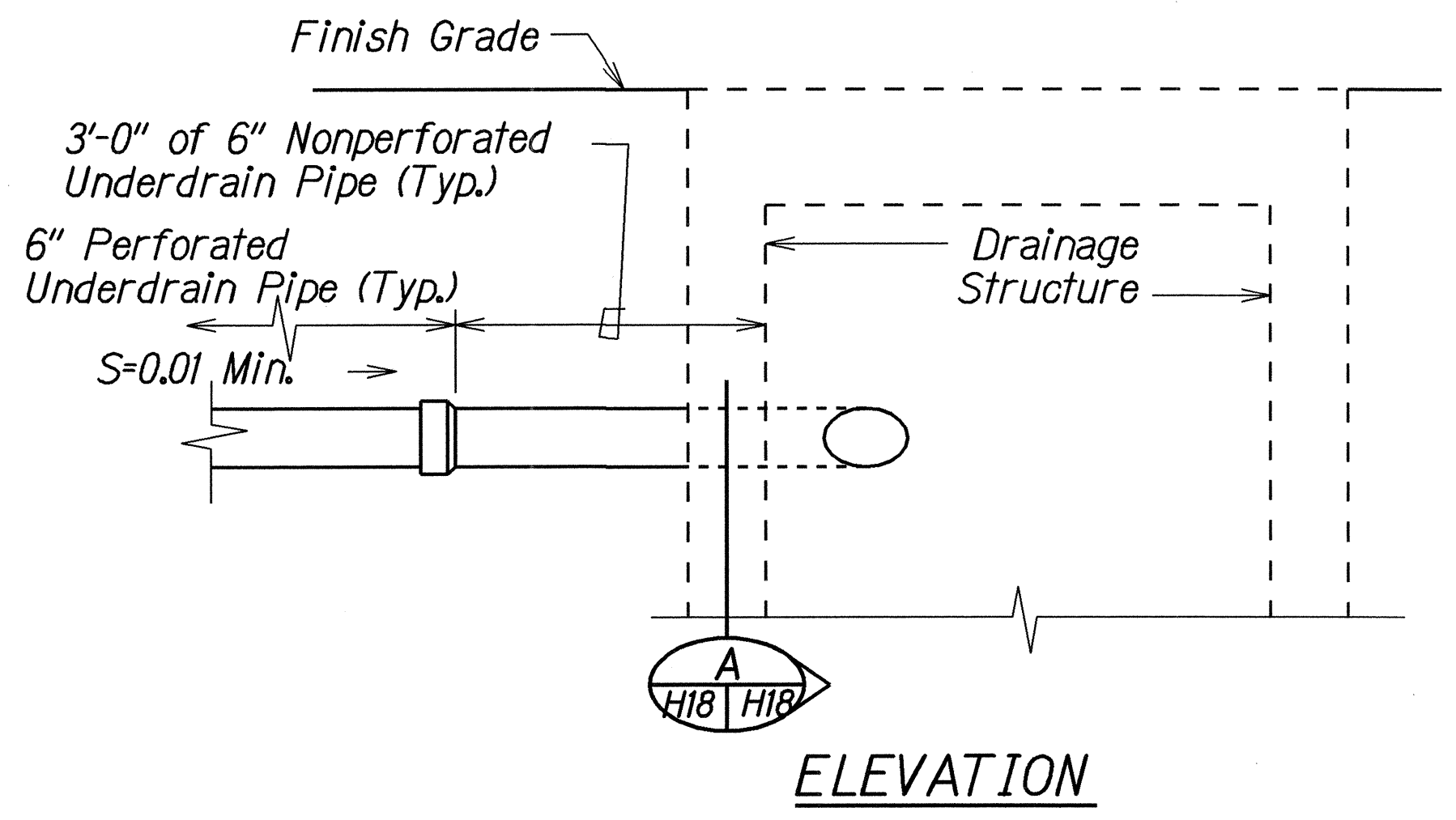
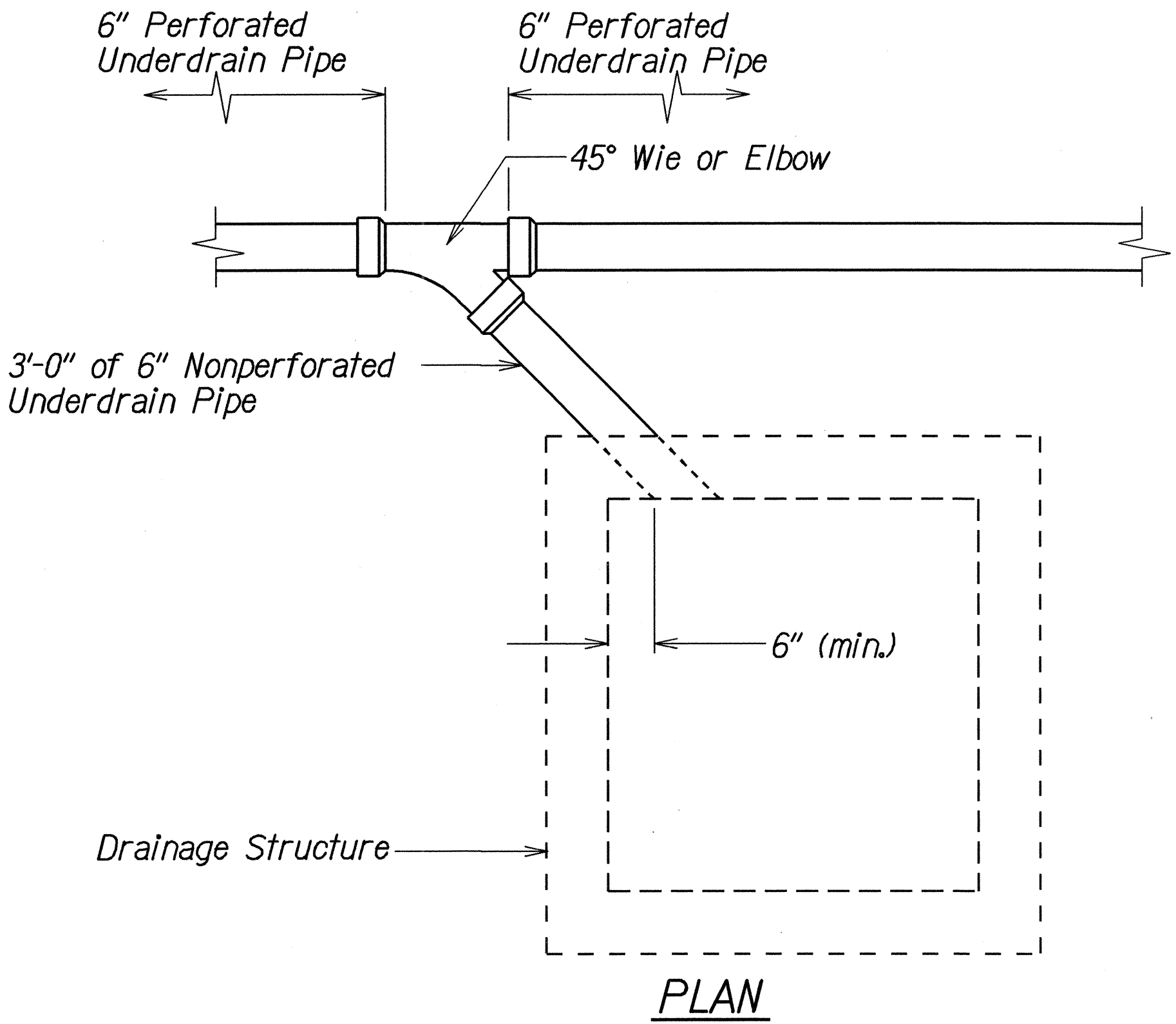
DRAINAGE DETAILS

KAMEHAMEHA HIGHWAY REHABILITATION
WAIHAU STREET to H-2 INTERCHANGE
FEDERAL AID PROJECT NO. NH-099-1(24)

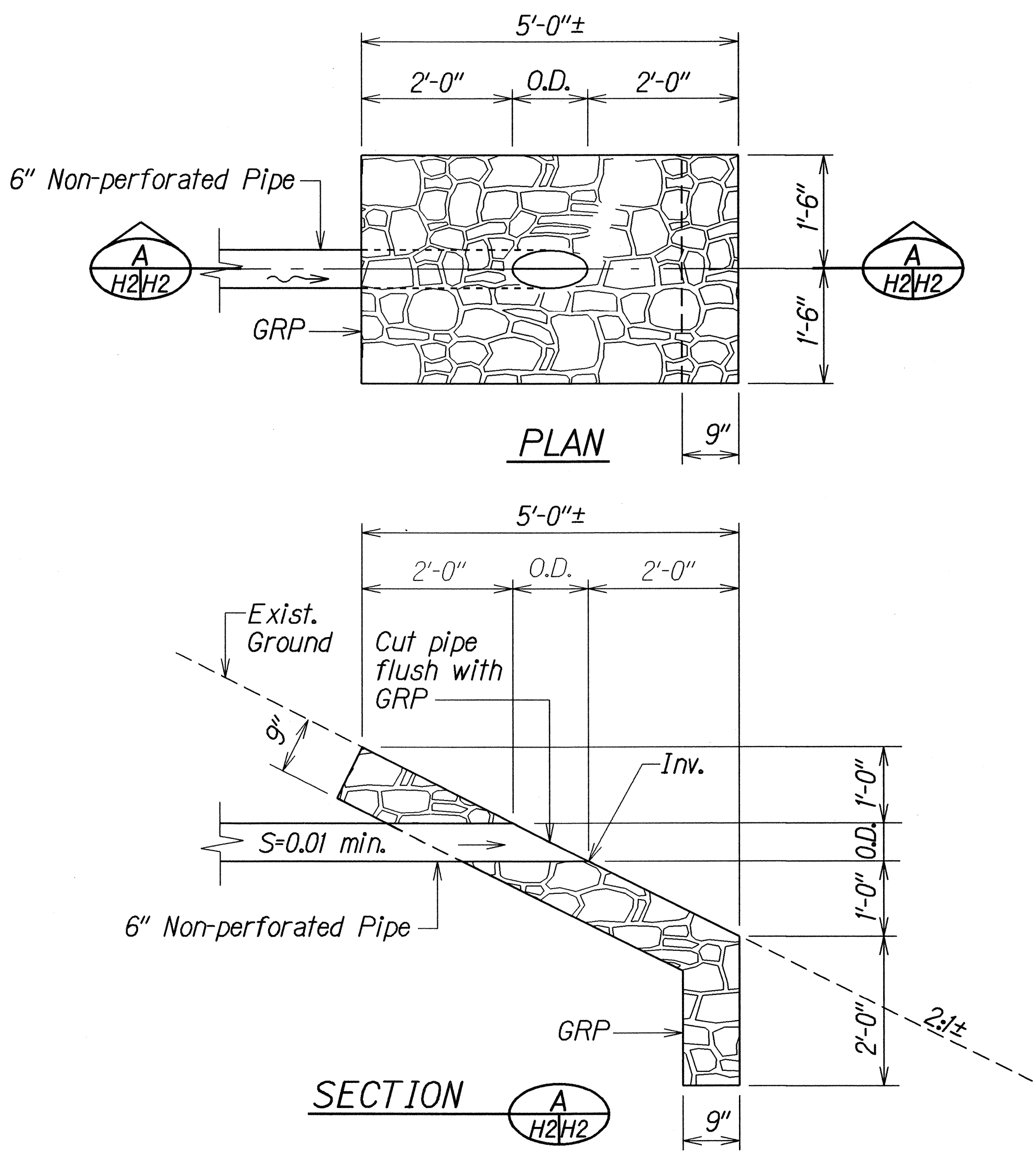
Scale: As Shown Date: August, 2006

SHEET No. H8 OF 13 SHEETS

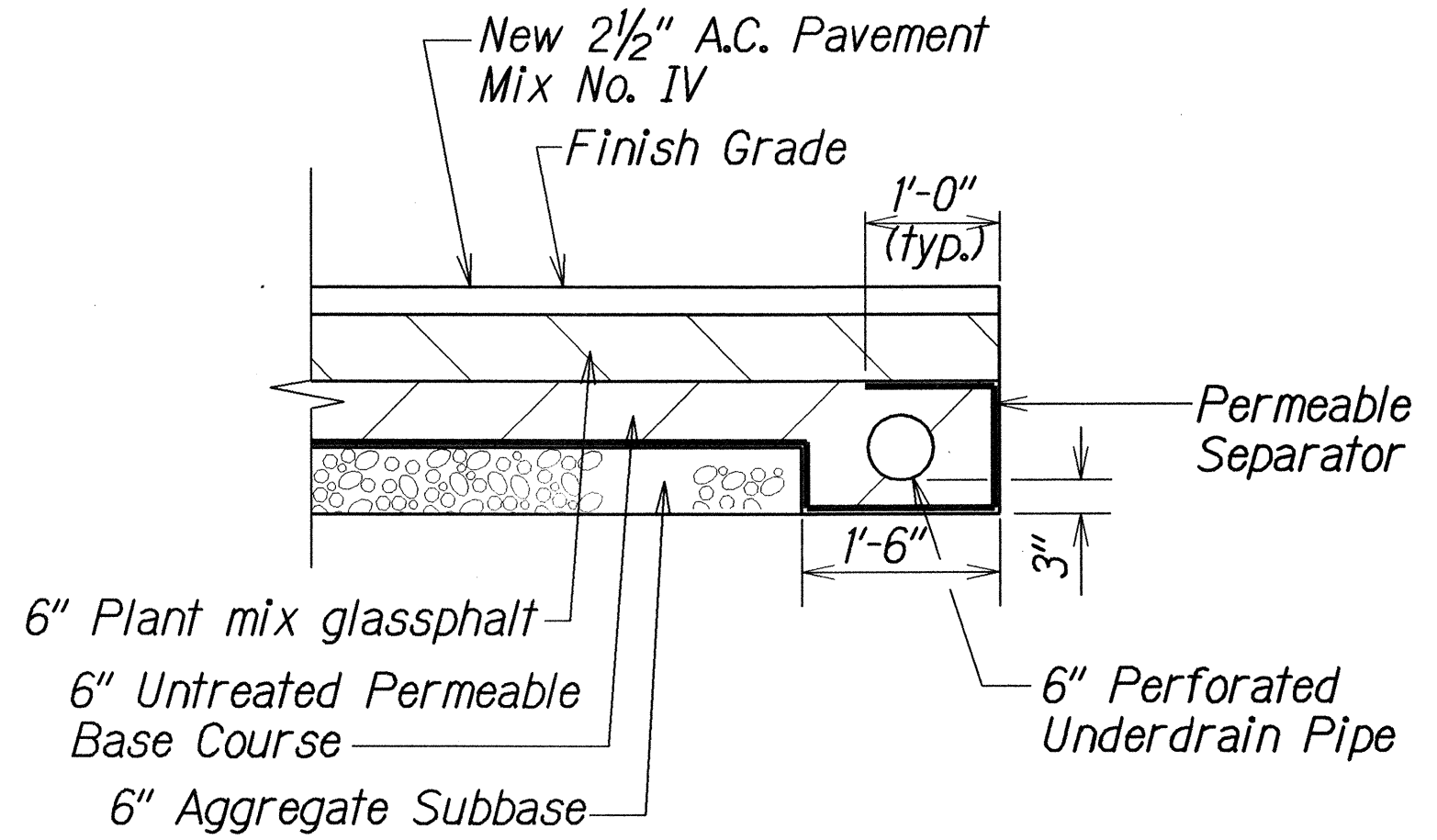
TYPICAL DETAILS OF TYPE "1211214P" STEEL FRAME AND GRATES



TYPICAL DETAILS OF TYPE 6" UNDERDRAIN CONNECTIONS TO DRAINAGE STRUCTURE
Scale: 3/4"=1'-0"



DETAILS OF 6" NON-PERFORATED PIPE OUTLET STRUCTURE



TYPICAL DETAILS OF 6" UNDERDRAIN
Scale: 3/4"=1'-0"

BASELINE STATION	INLET CONNECTION/ OUTLET STRUCTURE/ CLEANOUT
INBOUND	
I.B. Sta. 93+40± o/s 28' Rt.	Catch Basin
I.B. Sta. 92+66± o/s 52± Rt.	Catch Basin
I.B. Sta. 95+00 o/s Rt.	Cleanout
I.B. Sta. 99+00± o/s 20± Rt.	Drop Inlet Structure
I.B. Sta. 99+00± o/s 20± Lt.	Outlet Structure
I.B. Sta. 101+50 o/s Lt. & Rt.	2-Cleanouts
I.B. Sta. 103+50 o/s Lt. & Rt.	2-Cleanouts
I.B. Sta. 105+32± o/s 24± Rt.	Drop Inlet Structure
I.B. Sta. 110+60 o/s Lt. & Rt.	2-Cleanouts
I.B. Sta. 113+00 o/s Lt. & Rt.	2-Cleanouts
OUTBOUND	
O.B. Sta. 91+80± o/s 34' Rt.	Storm Drain Manhole
O.B. Sta. 94+00 o/s Rt.	Cleanout
O.B. Sta. 98+35± o/s 22± Rt.	Outlet Structure
O.B. Sta. 98+35± o/s 22± Lt.	Outlet Structure
O.B. Sta. 100+80 o/s Lt. & Rt.	2-Cleanouts
O.B. Sta. 102+80 o/s Lt. & Rt.	2-Cleanouts
O.B. Sta. 104+90± o/s 25± Rt.	Drop Inlet Structure
O.B. Sta. 107+40 o/s Lt. & Rt.	2-Cleanouts
O.B. Sta. 108+10 o/s Lt. & Rt.	2-Cleanouts
O.B. Sta. 109+90 o/s Lt. & Rt.	2-Cleanouts
O.B. Sta. 112+30 o/s Lt. & Rt.	2-Cleanouts
O.B. Sta. 114+80 o/s Rt.	Cleanout
O.B. Sta. 118+00 o/s 18± Rt.	Catch Basin
O.B. Sta. 119+00 o/s Rt.	Cleanout

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

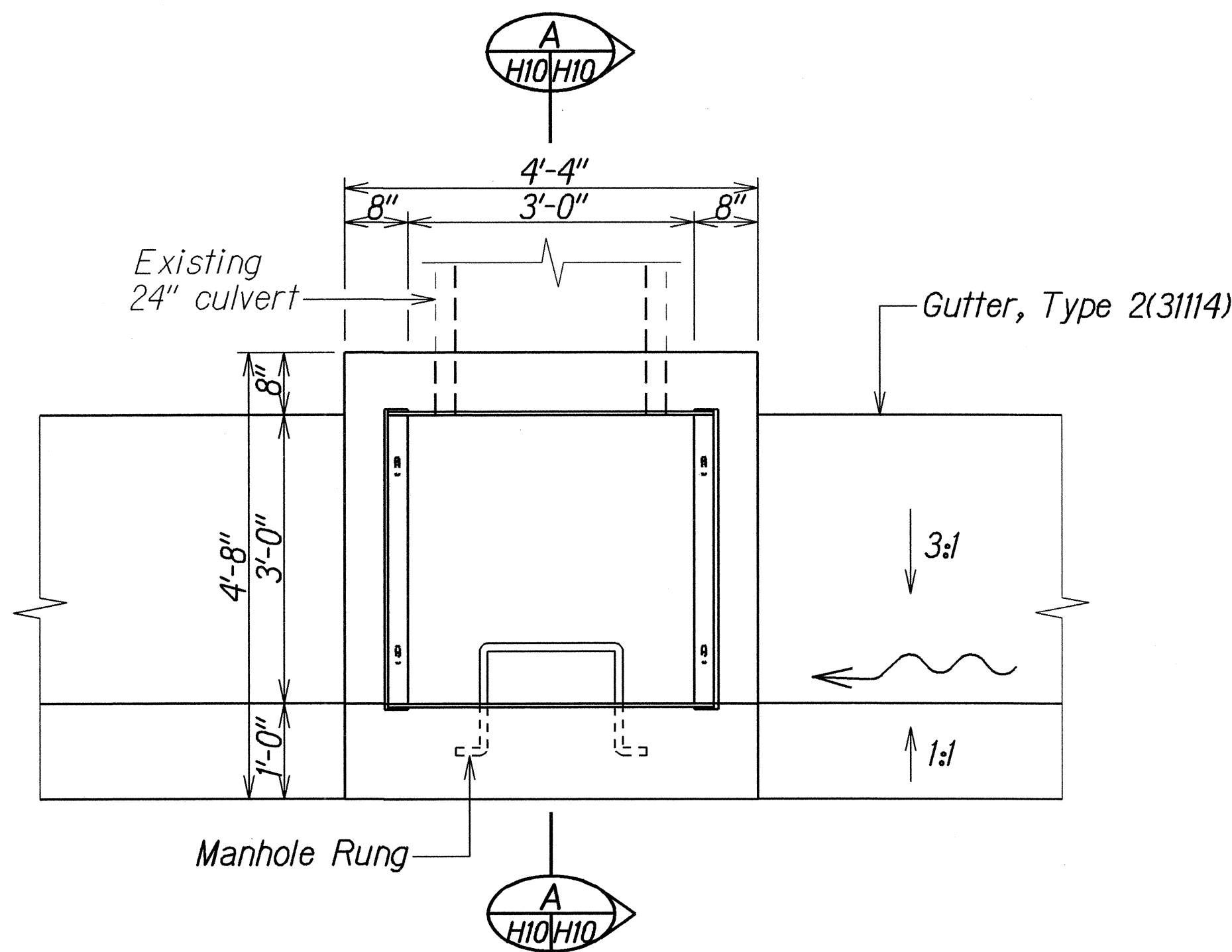
KAMEHAMEHA HIGHWAY REHABILITATION
Waihau Street to H-2 Interchange
Federal Aid Proj. No. NH-099-1(24)

Scale: As Shown Date: August, 2006

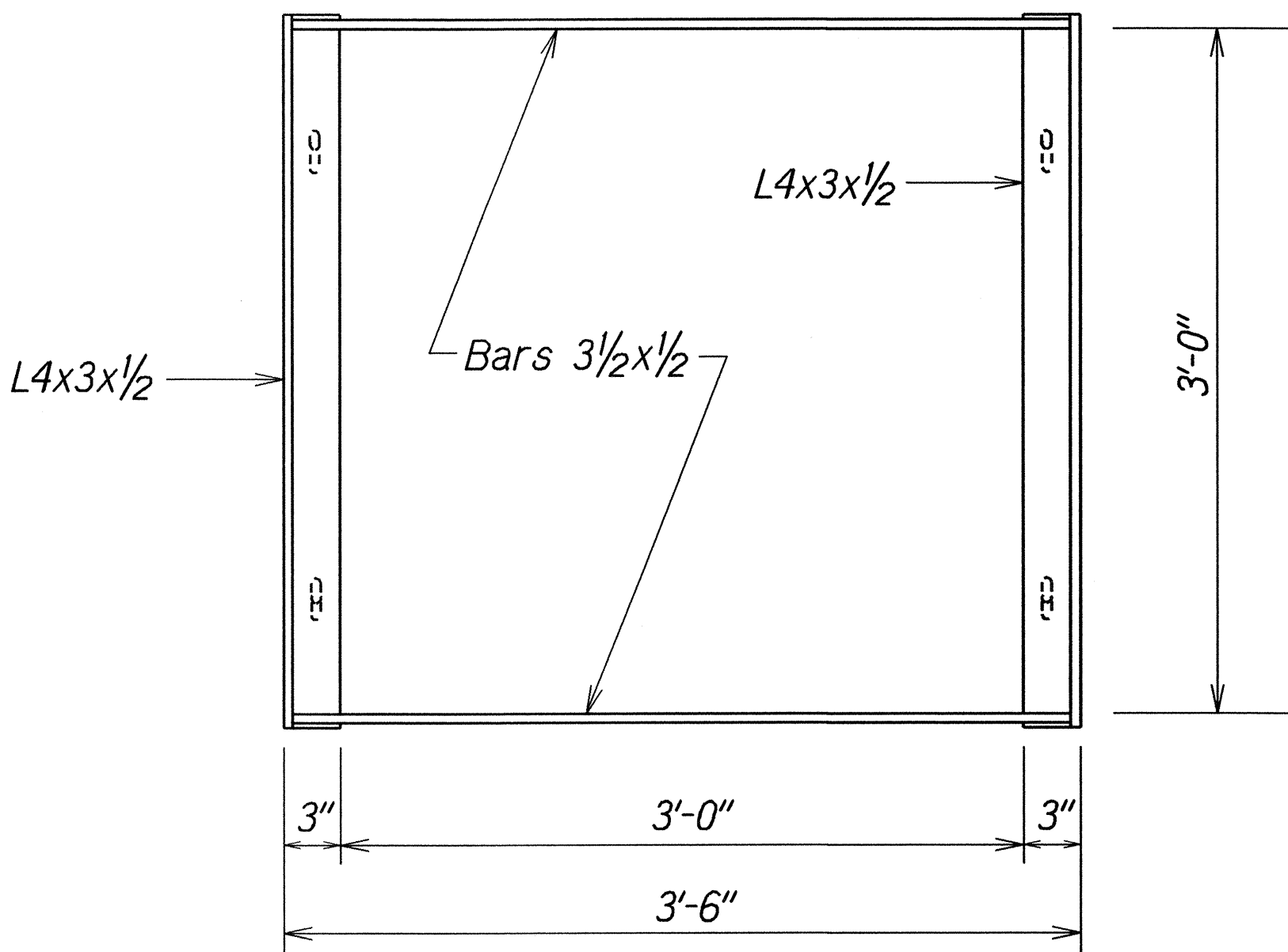
SHEET No. H9 OF 13 SHEETS

DATE: _____
SURVEY PLOTTED BY: _____
DESIGNED BY: _____
CHECKED BY: _____
NOTED BY: _____
DATE: 08/10/07

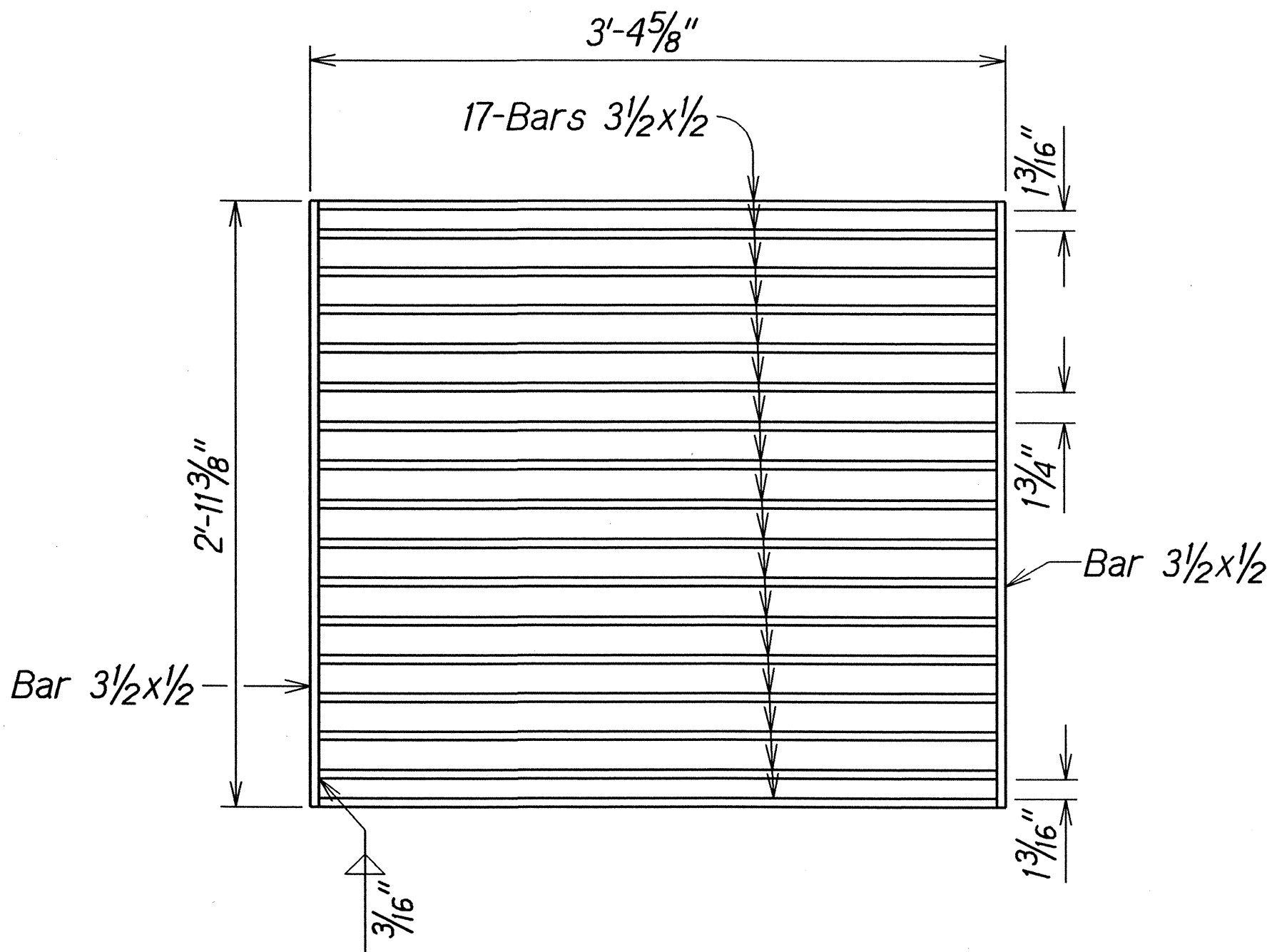
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(24)	2007	48	74



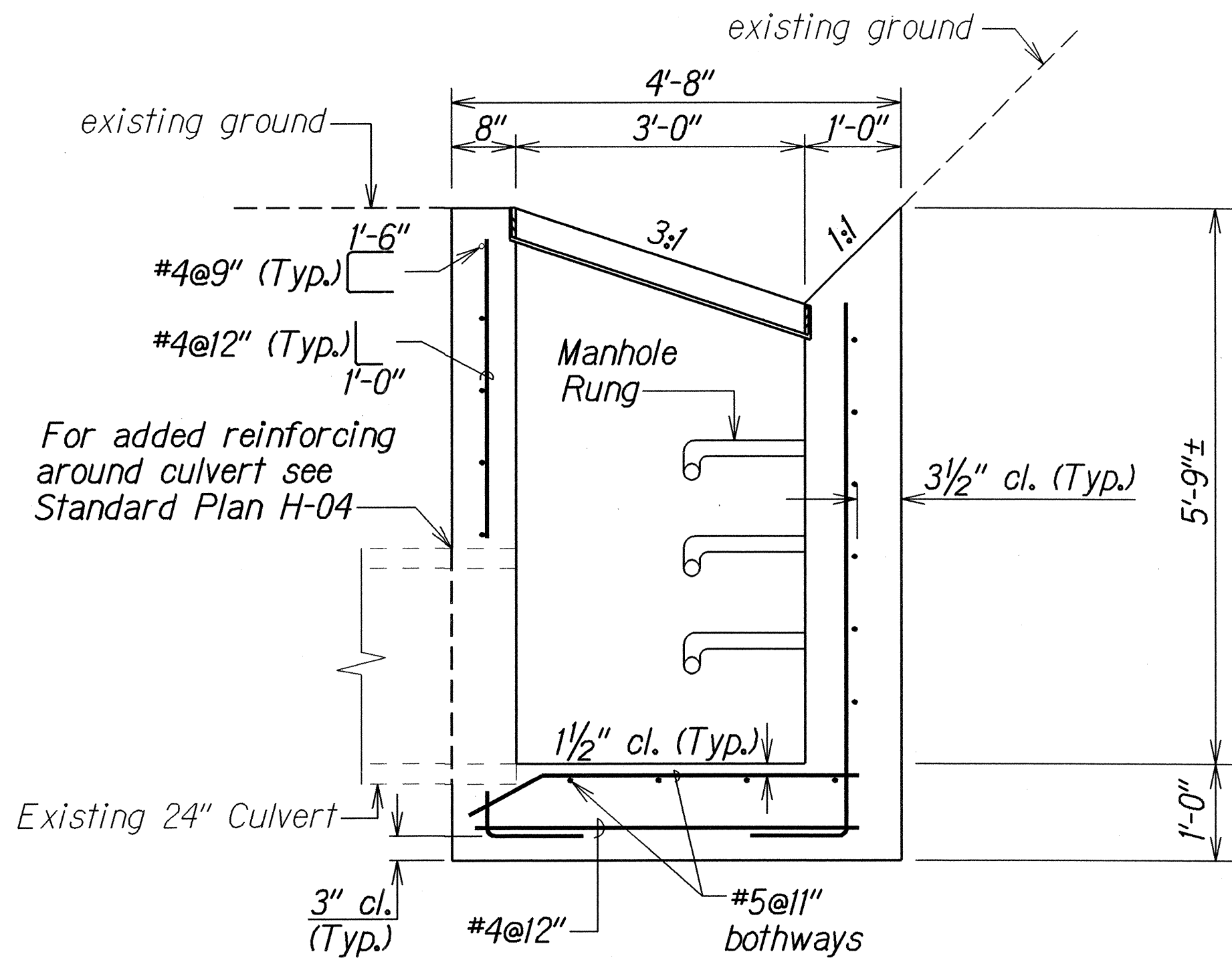
PLAN
Scale: 3/4"=1'-0"



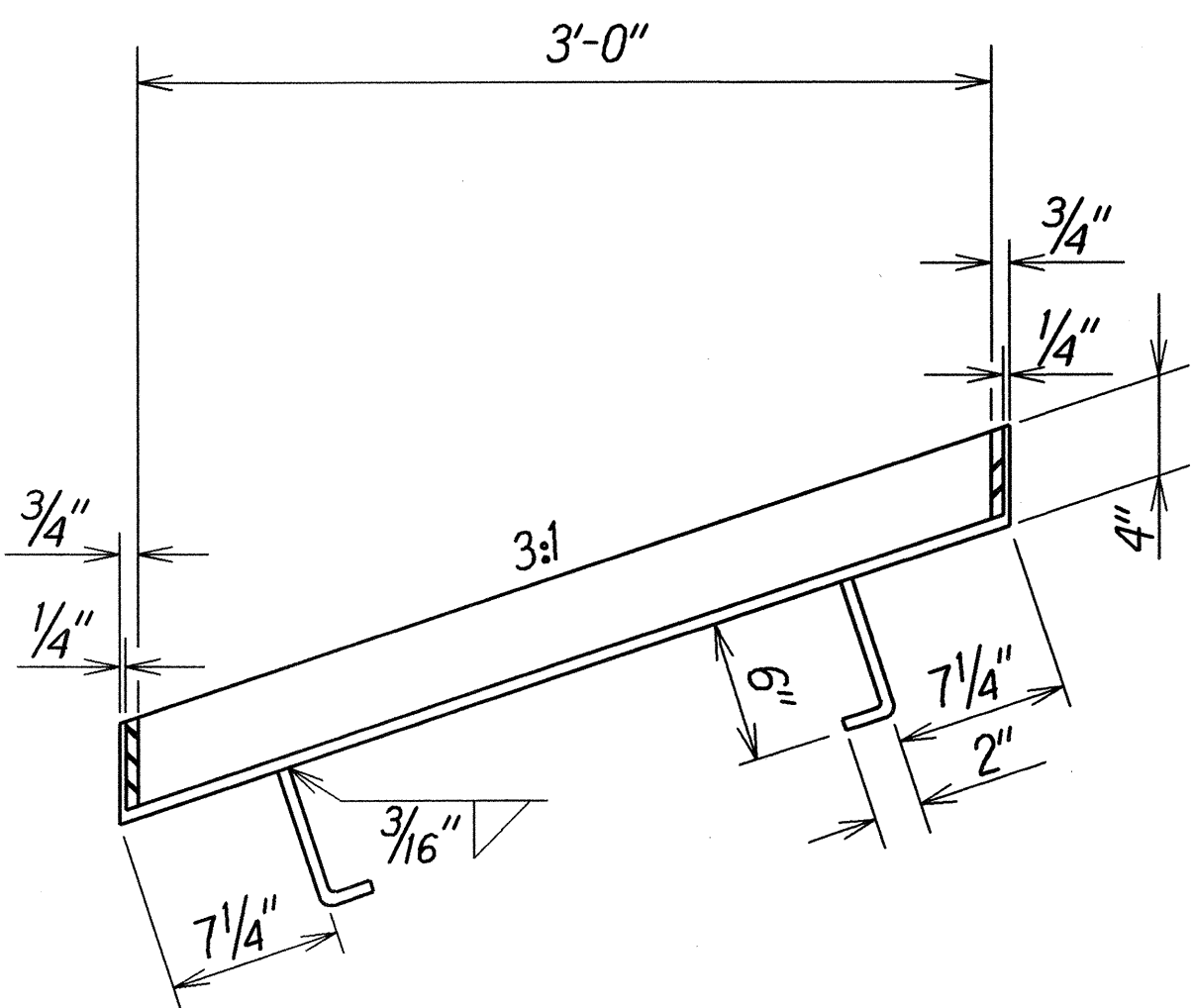
PLAN
Scale: 1 1/2"=1'-0"



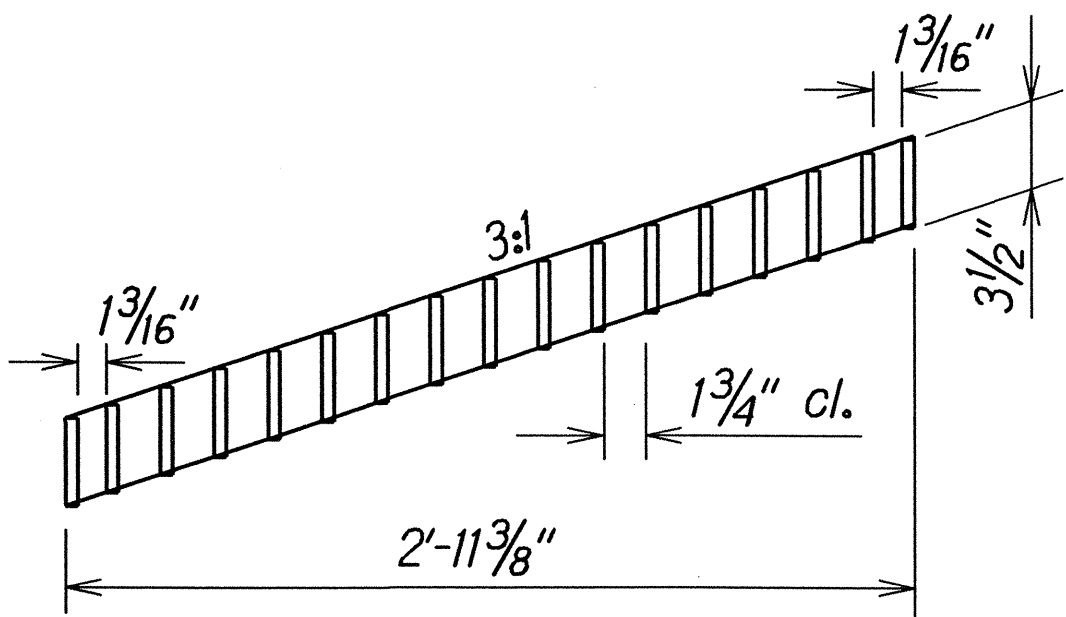
PLAN
Scale: 1 1/2"=1'-0"



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



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



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

NOTE:
1. All welds 3/8" unless otherwise noted.
2. Chamfer all exposed concrete edges 3/4".

DETAILS OF TYPE "I" INLET STRUCTURE

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

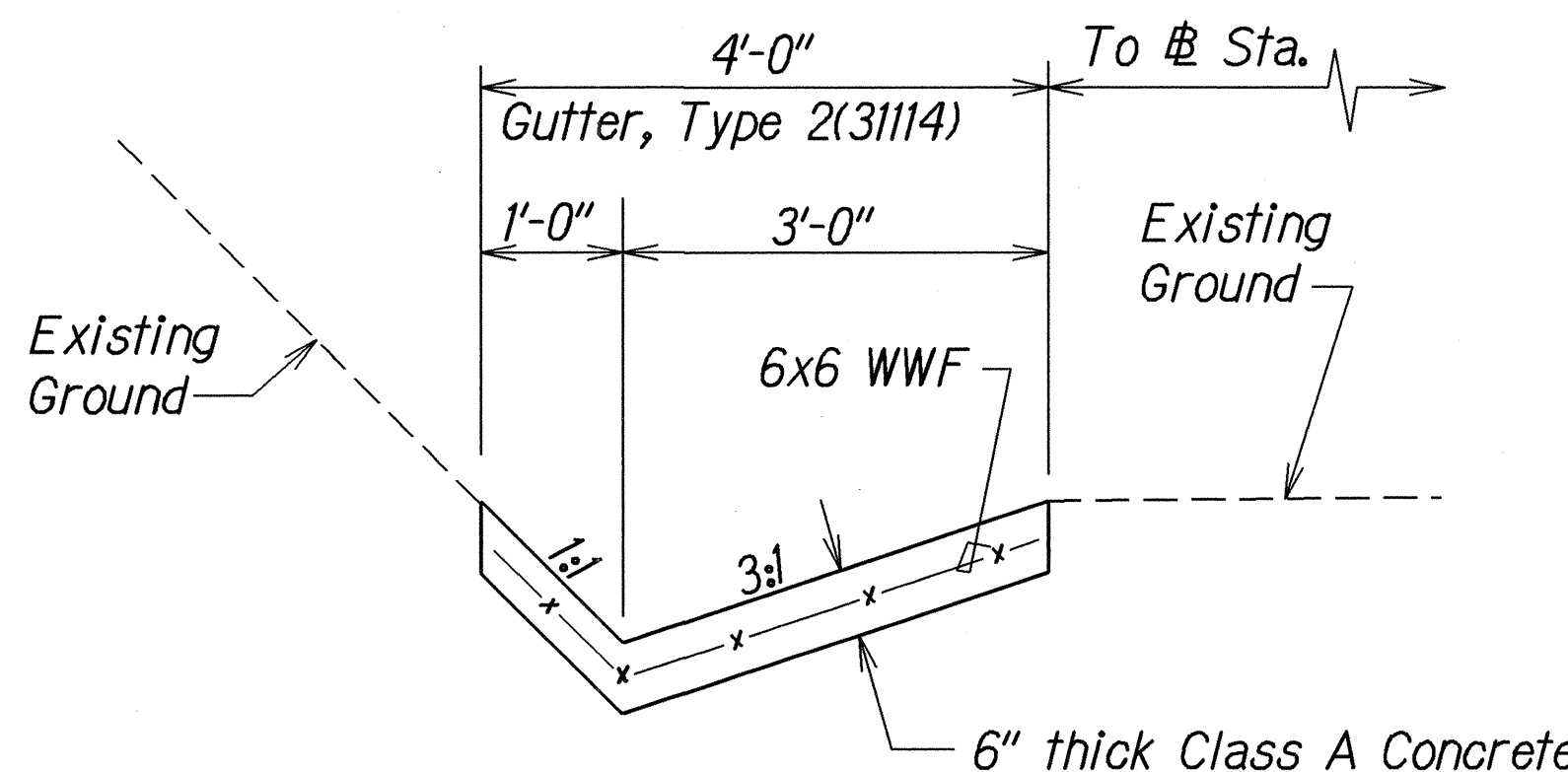
DRAINAGE DETAILS
KAMEHAMEHA HIGHWAY REHABILITATION
WAIHAU STREET to H-2 INTERCHANGE
FEDERAL AID PROJECT NO. NH-099-1(24)

Scale: As Shown
Date: August, 2006

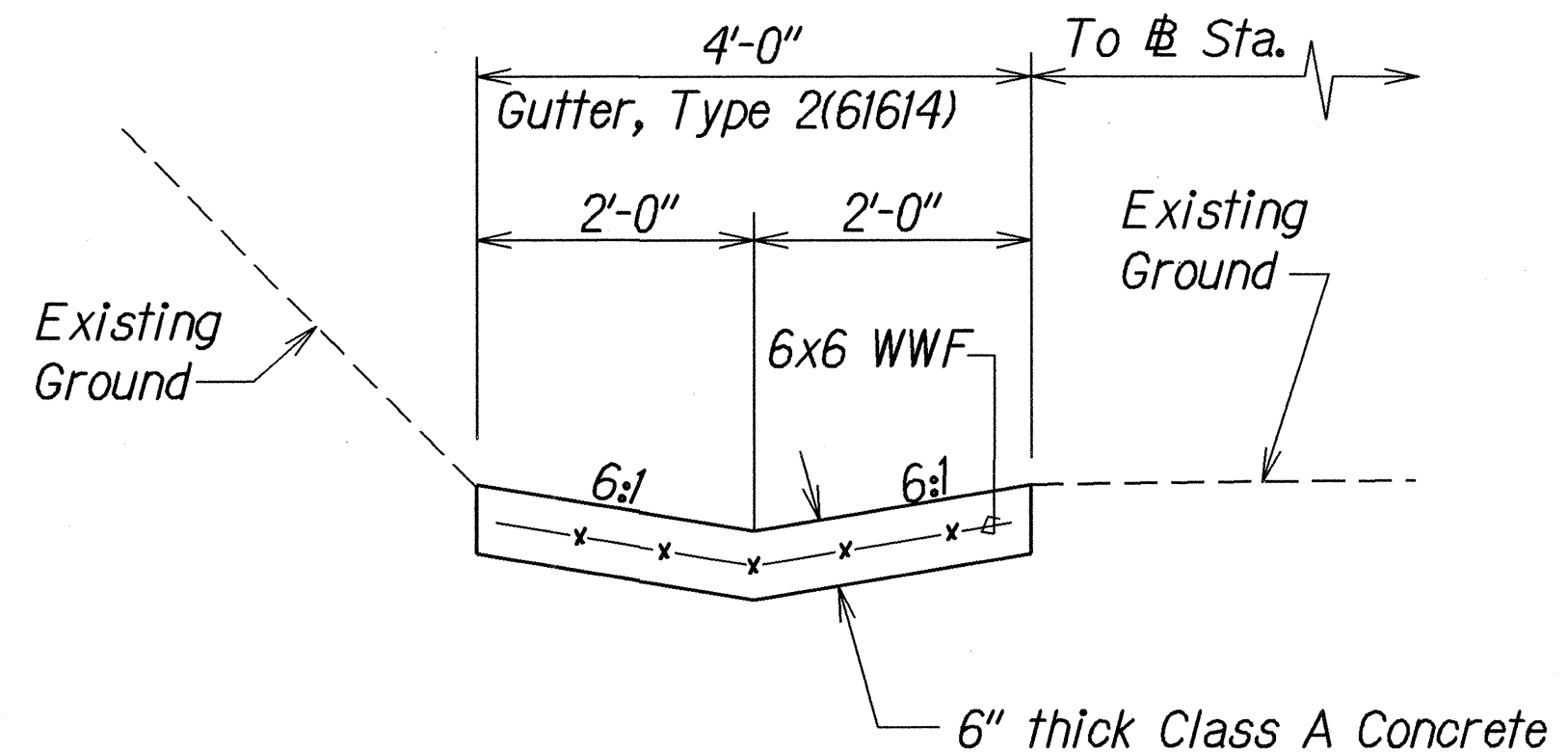
SHEET No. H10 OF 13 SHEETS

DESIGNED BY	DATE
DRIVEN BY	8/16/06
CHECKED BY	
NOTED BY	
QUANTITIES BY	
REVISIONS	

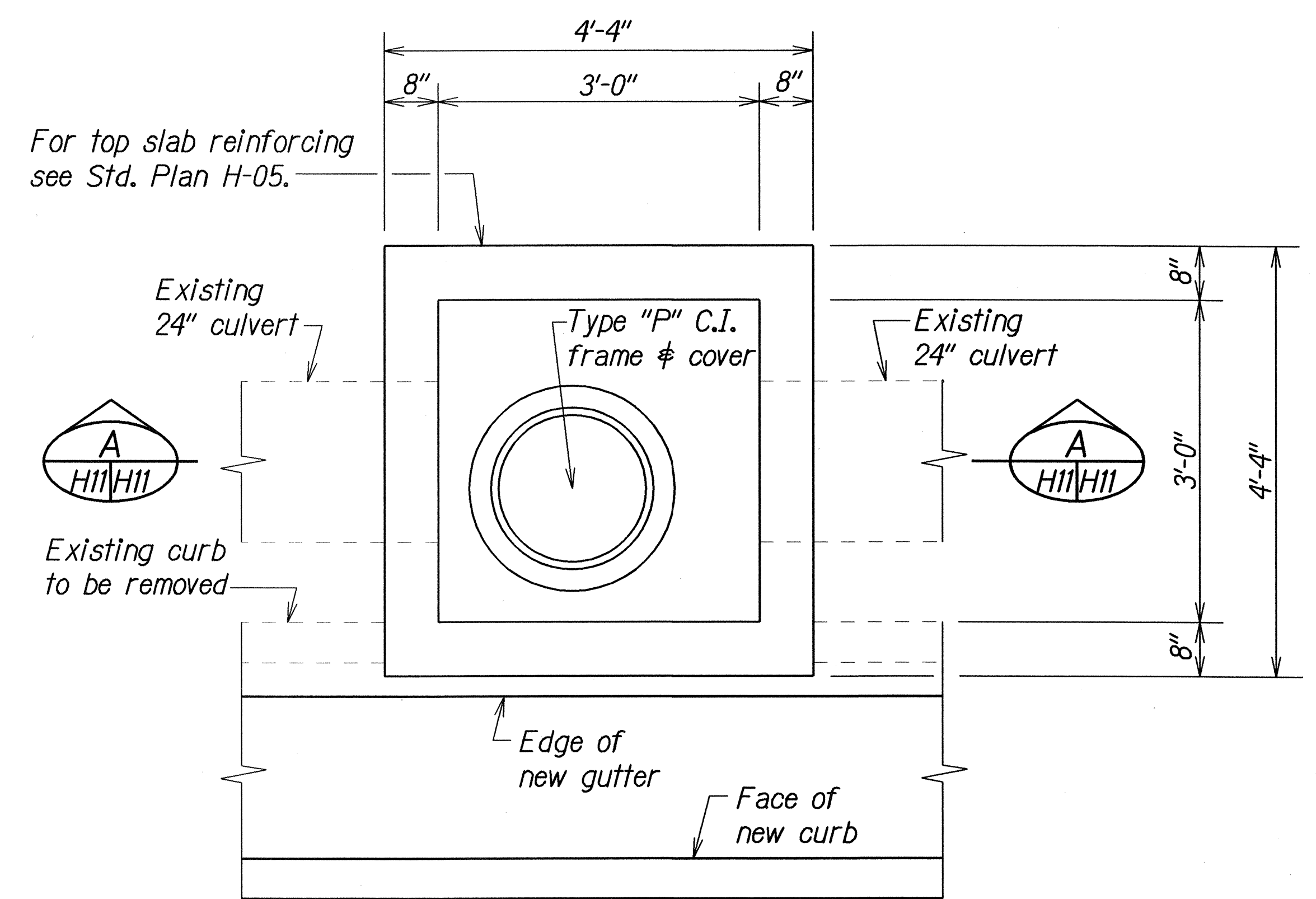
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(24)	2007	49	74



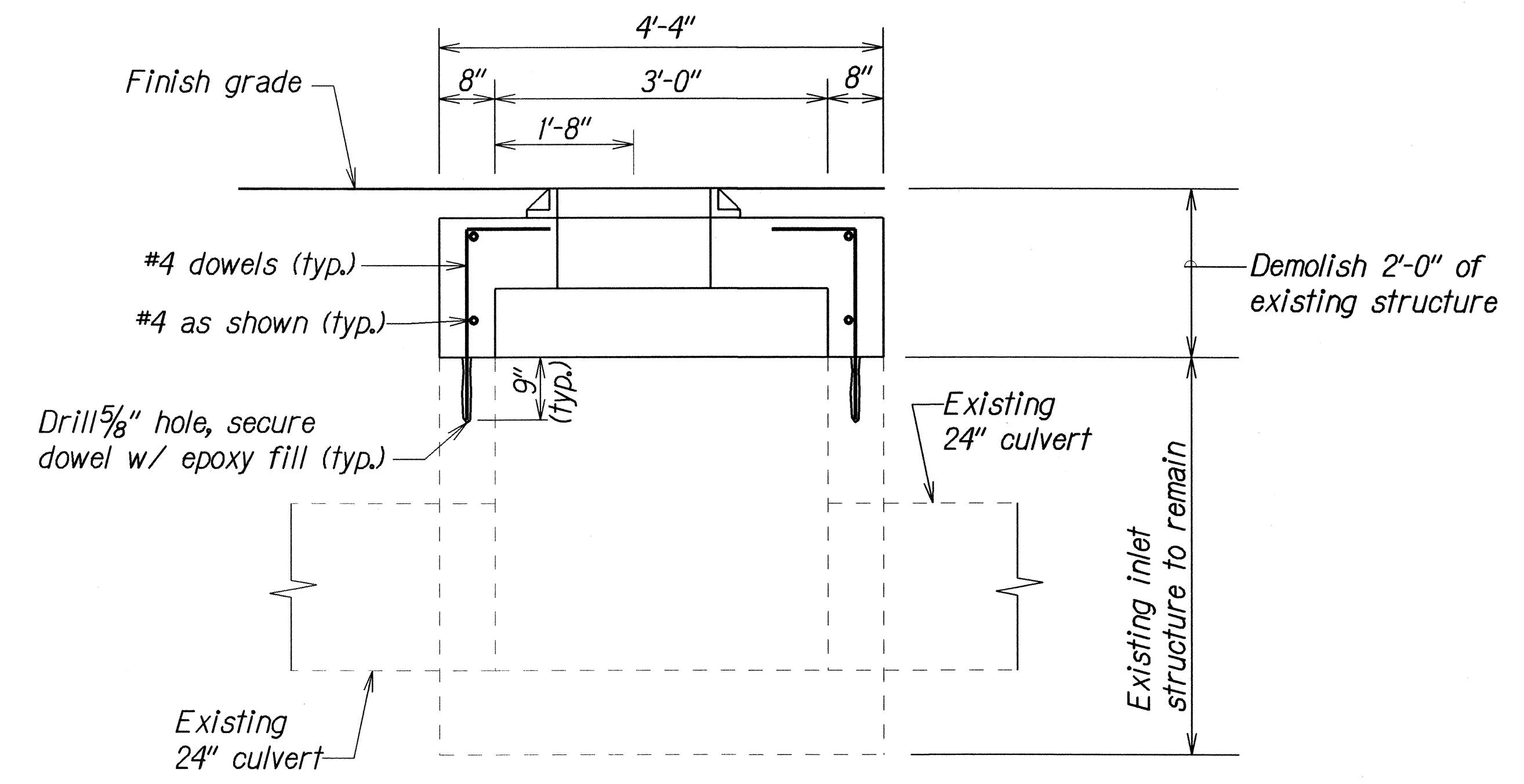
DETAIL OF GUTTER, TYPE 2(31114)



DETAIL OF GUTTER, TYPE 2(61614)



PLAN



SECTION A

DETAIL OF TYPE "2" INLET STRUCTURE

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

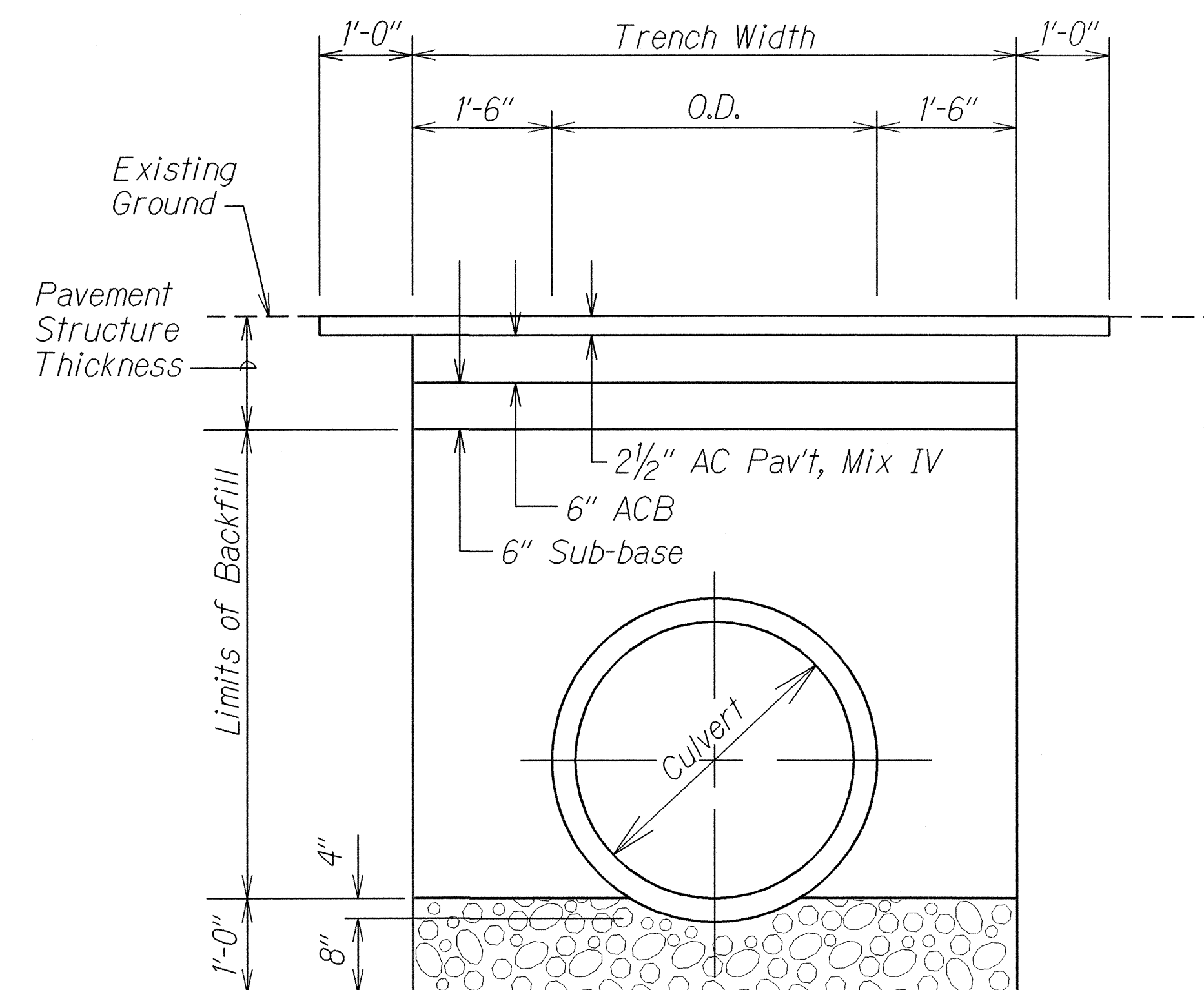
DRAINAGE DETAILS

KAMEHAMEHA HIGHWAY REHABILITATION
WAIHAU STREET TO H-2 INTERCHANGE
FEDERAL AID PROJECT NO. NH-099-1(24)

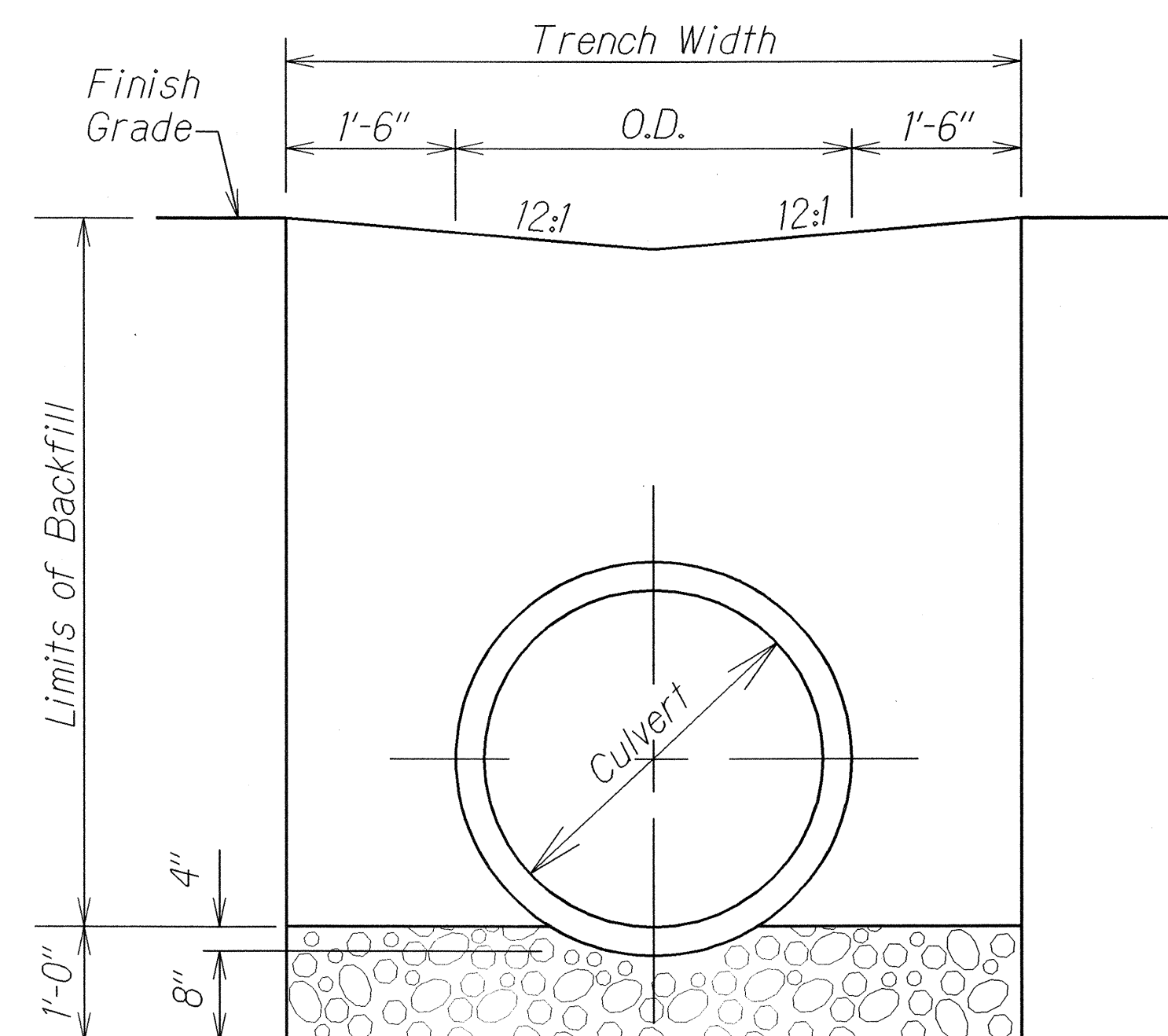
Scale: 3/4"=1'-0" Date: August, 2006

SHEET No. **HII** OF 13 SHEETS

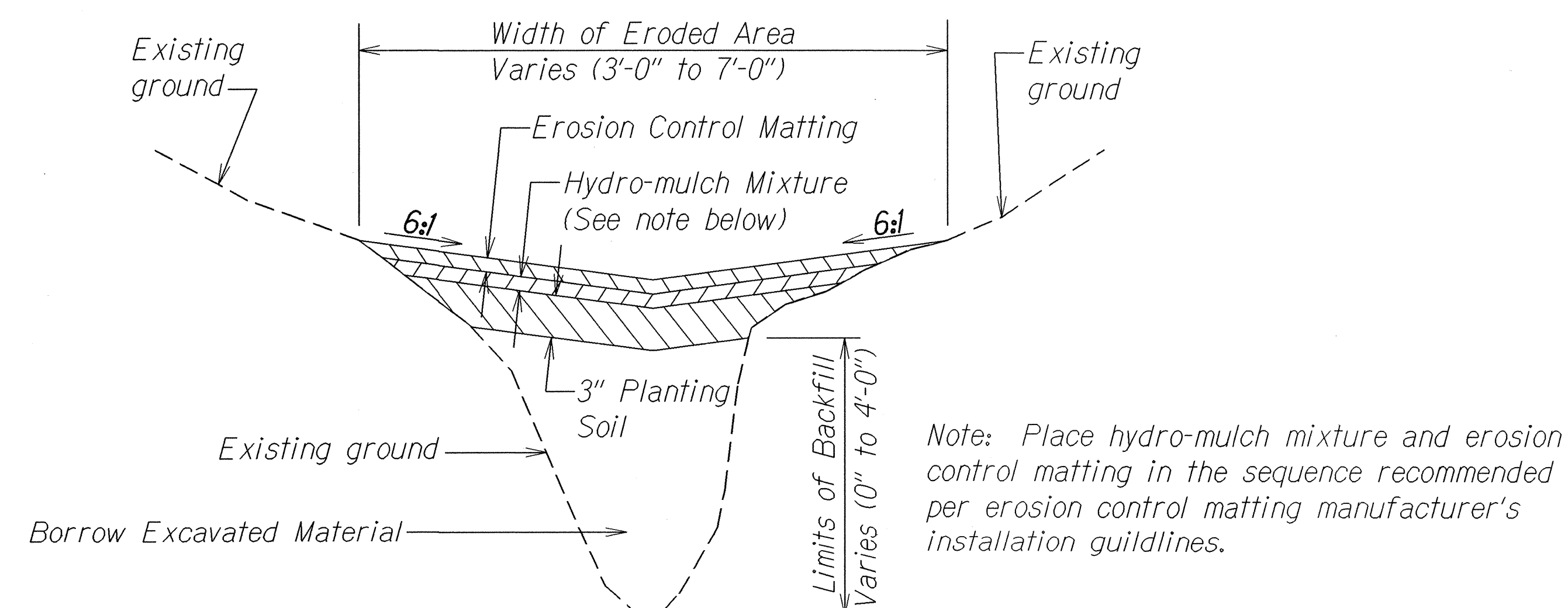
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(24)	2007	50	74



TYPICAL DETAIL OF CULVERT
TRENCH AND BACKFILL RESTORATION
AT LEHUA ROAD INTERSECTION



TYPICAL DETAIL OF CULVERT
TRENCH AND BACKFILL RESTORATION
AT EXISTING DRAINAGE DITCH

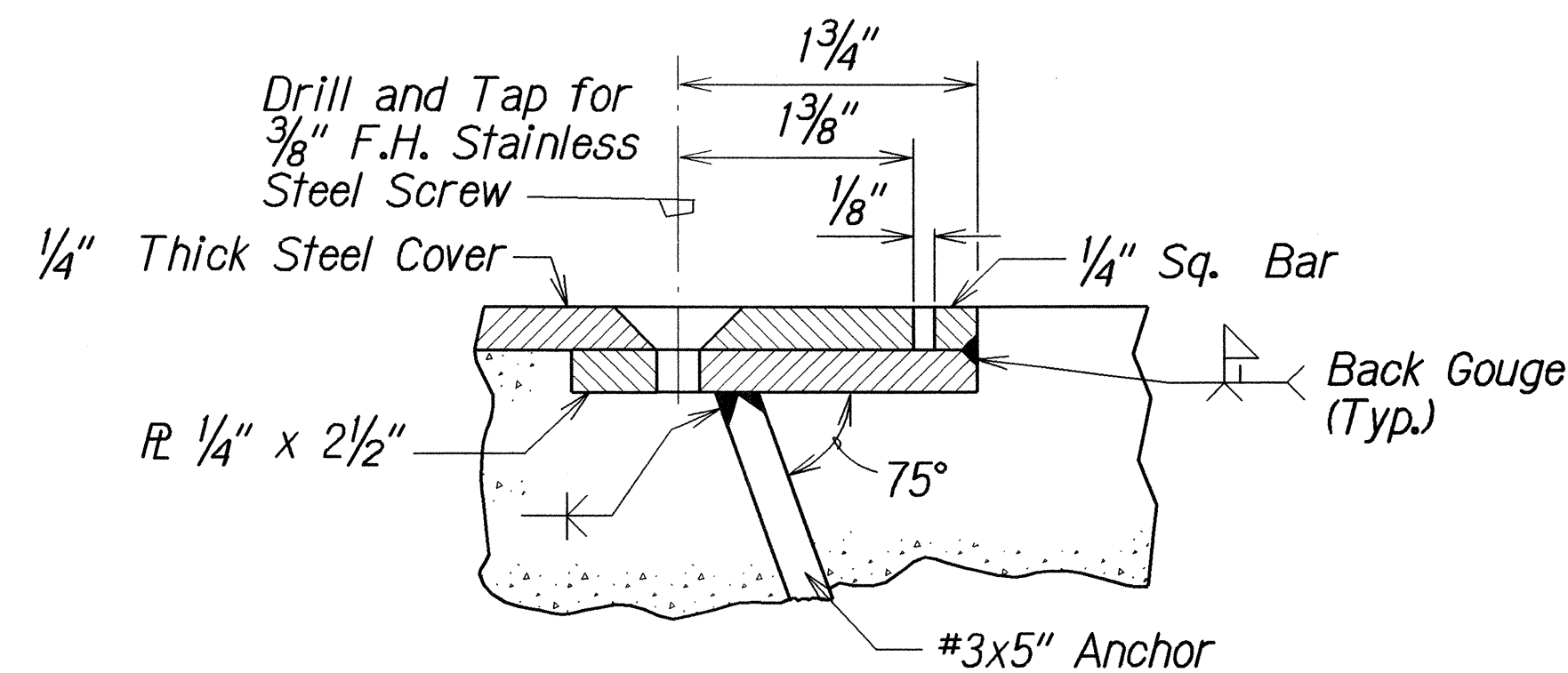
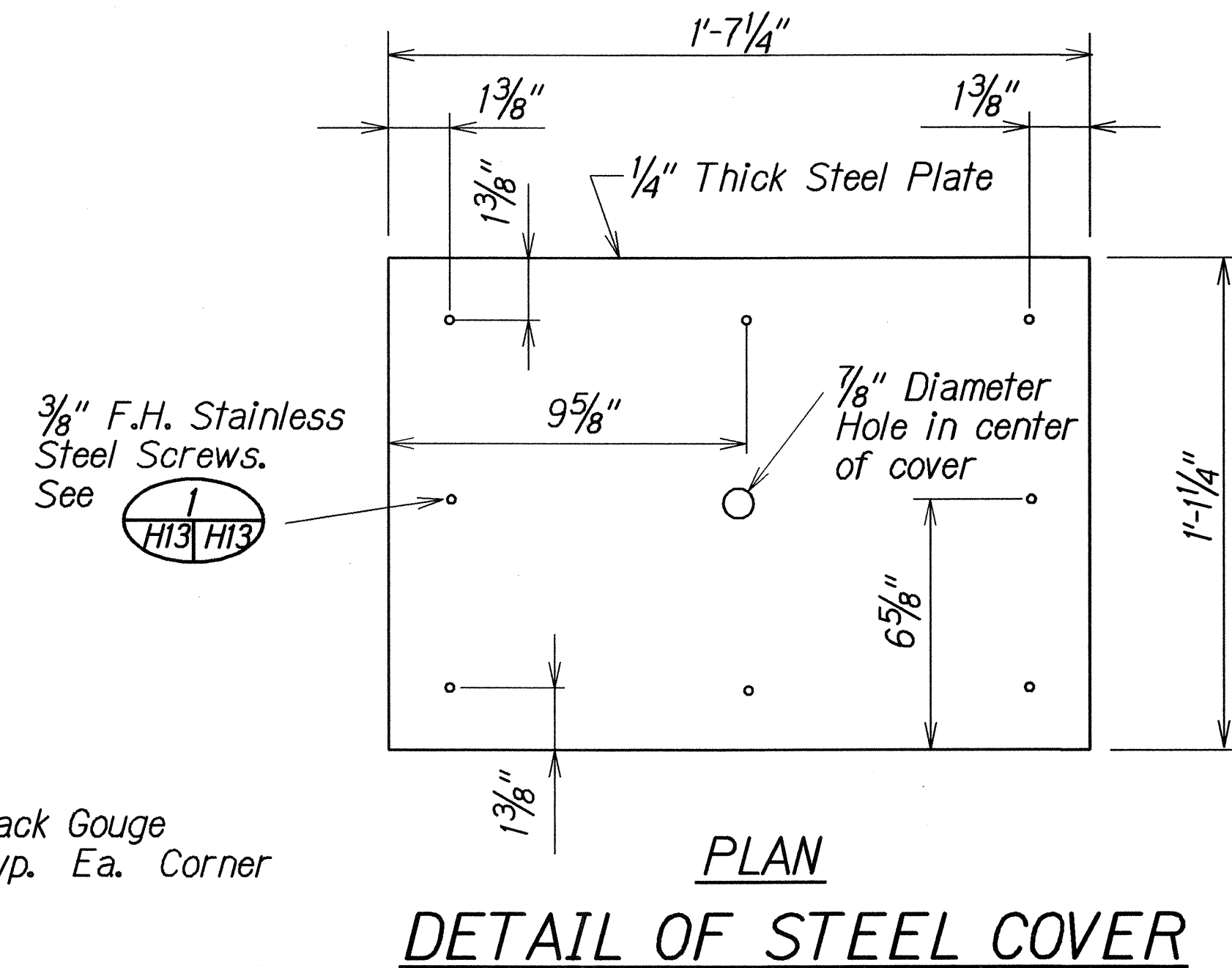
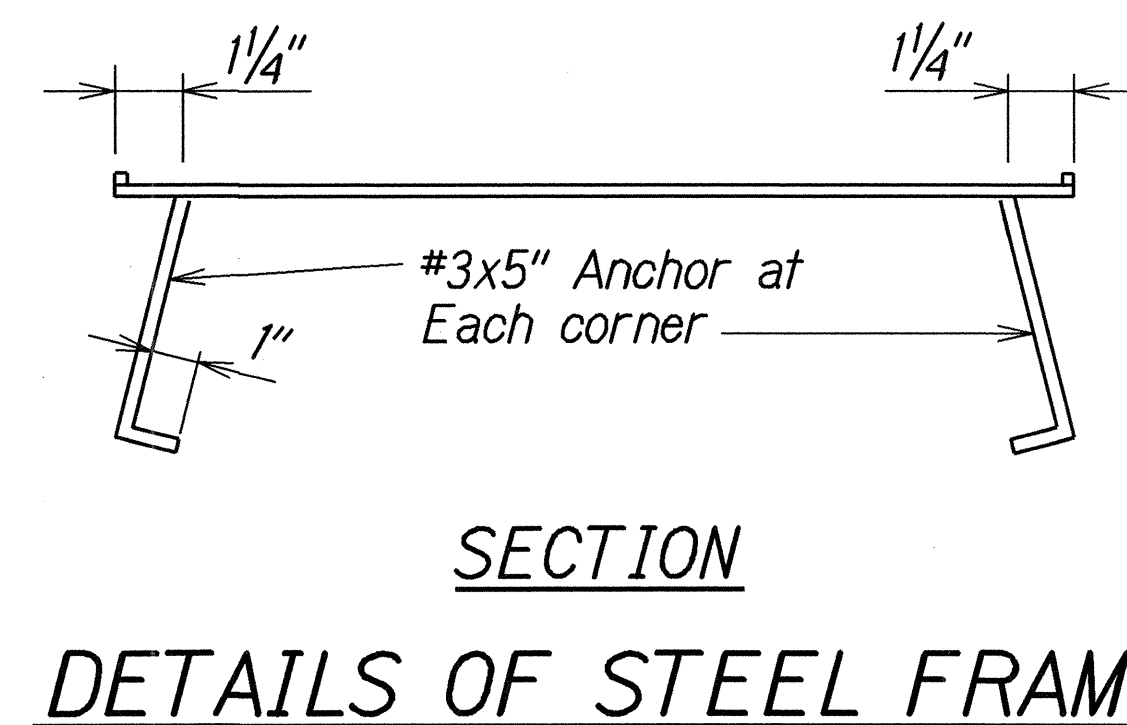
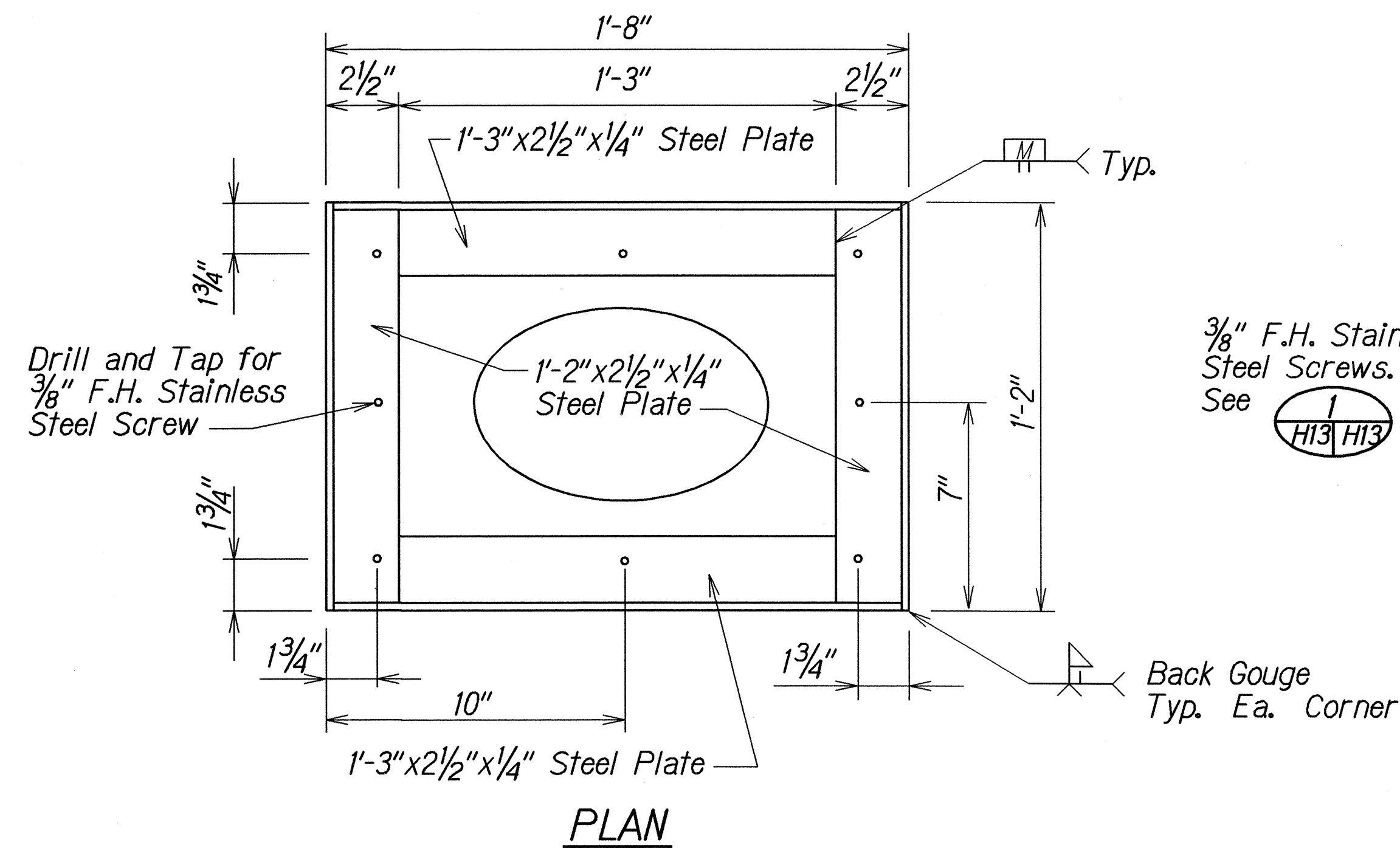


DETAIL OF BACKFILL RESTORATION
FOR EROSION CONTROL MATTING

DESIGNED BY	DATE
DRAWN BY	
CHECKED BY	
APPROVED BY	
ORIGINAL PLAN	

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
<u>DRAINAGE DETAILS</u>
KAMEHAMEHA HIGHWAY REHABILITATION WAIHAU STREET TO H-2 INTERCHANGE FEDERAL AID PROJECT NO. NH-099-1(24)
Scale: 3/4"=1'-0" Date: August, 2006
SHEET No. H12 OF 13 SHEETS

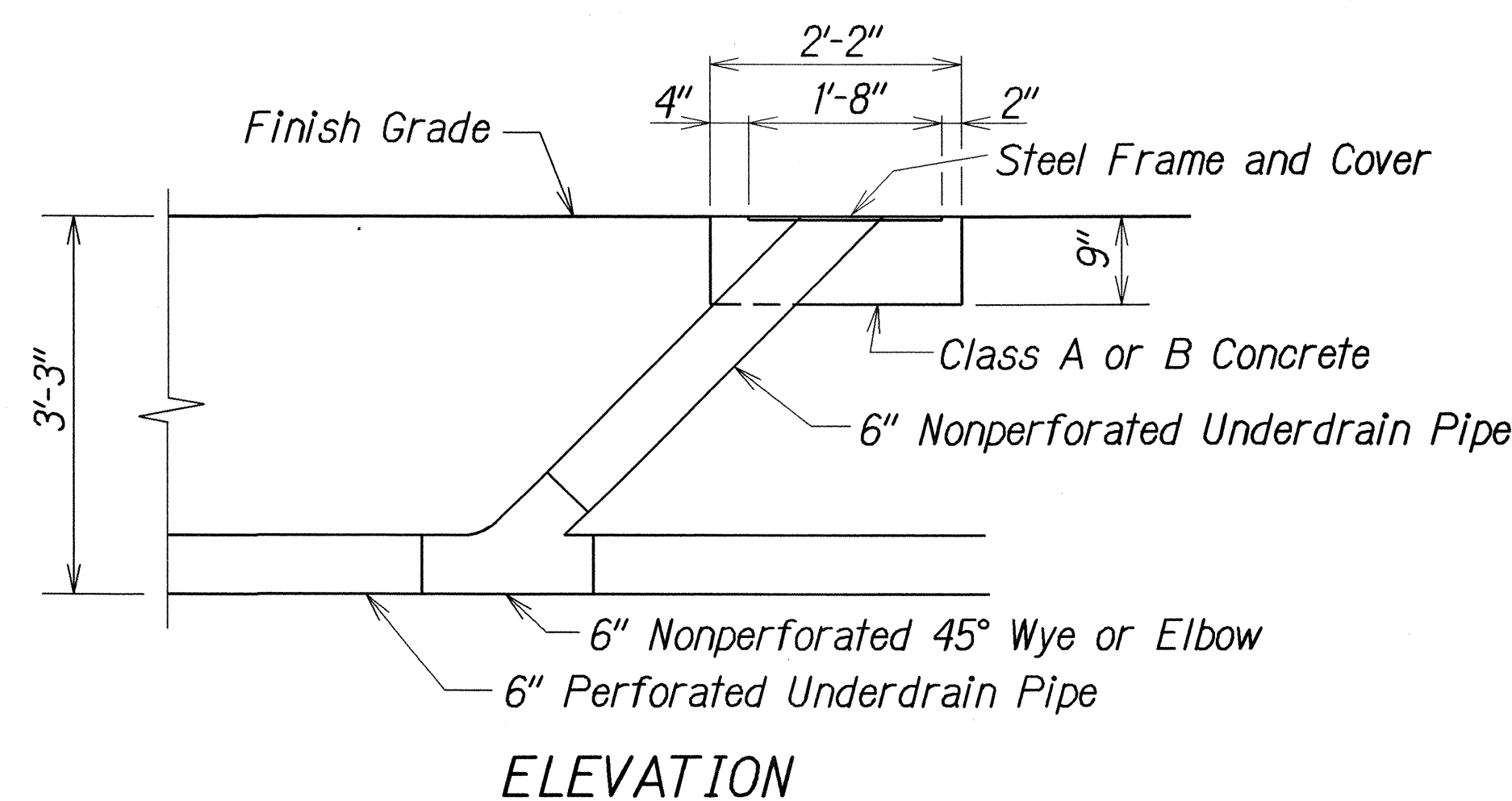
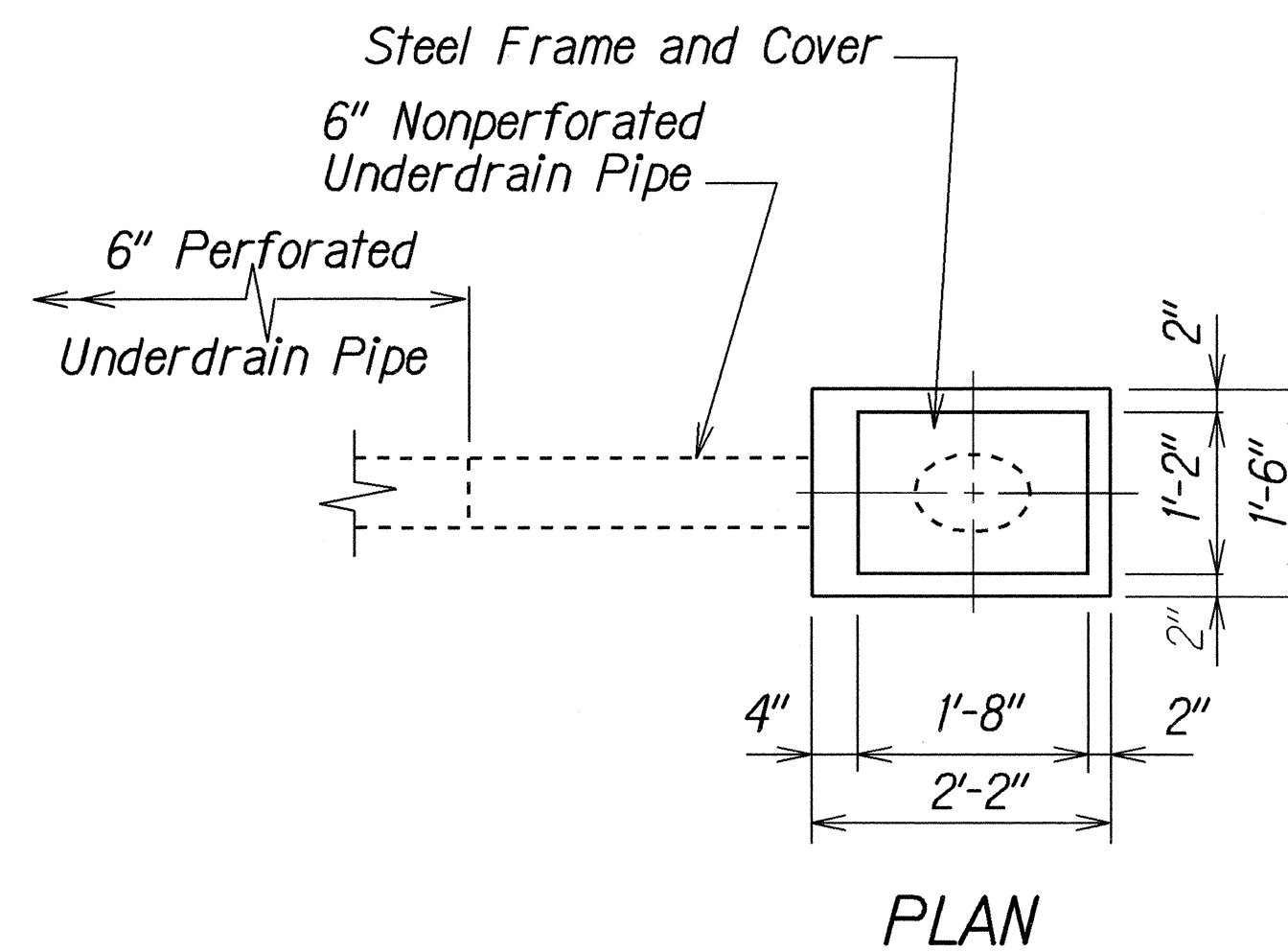
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-099-1(24)	2007	51	74



NOTE: All Steel Parts shall be galvanized in accordance with the requirements of ASTM A123.

DETAILS OF STEEL FRAME AND COVER FOR CLEANOUT

Scale: 3"=1'-0"



TYPICAL DETAILS OF CLEANOUT

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

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

KAMEHAMEHA HIGHWAY REHABILITATION
WAIHAU STREET TO H-2 INTERCHANGE
Federal-Aid Project No. NH-099-1(24)

Scale: As Shown Date: August, 2006

SHEET No. H13 OF 13 SHEETS