

DRAINAGE SUMMARY

PROJECT: KANEOHE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge

FEDERAL AID PROJECT NO. : STP-065-1(9)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	55	114

ITEM NO.		206. 2020	503. 1200	503. 1210	603. 0010	603. 1008	603. 1010	604. 5104	604. 5105	604. 5125	604. 5126	604. 5254	604. 5255	604. 5262	604. 5274	604. 5284	611. 1000	612. 6410	640. 1000
UNIT USED		C.Y.	L.F.	L.F.	C.Y.	L.F.	L.F.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	EA.	C.Y.	C.Y.	L.F.
STRUCTURE	STATION	Structure Excavation for Drainage Systems	Driveway Culverts	Reinforced Concrete Jacket	Bed Course Material for Culvert	18-Inch RCP Class III, or 18-Inch HDPP, Type S, or 18-Inch ASRP, "I"= 0.105 Inch	24-Inch RCP Class III, or 24-Inch HDPP, Type S, or 24-Inch ASRP, "I"= 0.105 Inch	Type "A" Storm Drain Manhole, 4.00 feet to 4.99 feet	Type "A" Storm Drain Manhole, 5.00 feet to 5.99 feet	Type "B-1" Catch Basin, 6.00 feet to 6.99 feet	Type "C" Catch Basin, 4.00 feet to 4.99 feet	Type "A-9p" Grated Drop Inlet, 4.00 feet to 4.99 feet	Type "A-9p" Grated Drop Inlet, 5.00 feet to 5.99 feet	Type "61614P" Grated Drop Inlet, 2.00 feet to 2.99 feet	Type "2A-9p" GDI, 4.00 feet to 4.99 feet	Special Type "A-9p" GDI, 4.00 feet to 4.99 feet	Hand-laid Riprap	Grouted Rubble Paving for Outlet Structures	Grass Swale
18+56 Rt.	20+07± o/s 38' Rt.	148		100	30		147								1				
20+07± o/s 38' Rt.	20+45 Rt.	32			7		33	1											
20+45 Rt.	22+00 Rt.	151			30		150									1			
22+00 Rt.	22+94 Rt.	96			18		88									1			
22+94 Rt.	22+94 o/s 28' Rt.	5			1		6									1			
22+94 o/s 28' Rt.	25+08 o/s 20' Rt.	251			42		208	1											
25+08 o/s 20' Rt.	25+09 Rt.	15			3		14		1										
25+09 Rt.	26+50 Rt.	146			27		132					1							
26+50 Rt.	27+40 Rt.	83			17		83				1								
27+40 Rt.	28+20 Rt.	72			15		73				1								
28+20 Rt.	29+75 Rt.	147			29		146				1								
29+75 Rt.	30+70 Rt.	88			18		88				1								
30+70 Rt.	31+48 Rt.	71			14		72				1								
31+48 Rt.	32+40 Rt.	84			17		84				1								
32+40 Rt.	33+75 Rt.	155			26		129				1								
33+75 Rt.	34+66 Rt.	103			17		86					1							
34+66 Rt.	34+66 o/s 38' Rt.	6			1		6			1								12	
30+20 o/s 51' Lt.	30+20 o/s 7' Lt.	30		39	7	39								1					
30+20 o/s 7' Lt.	31+10 o/s 7' Lt.	94			17		86		1										
31+10 o/s 7' Lt.	32+07 o/s 7' Lt.	101			19		92		1										
32+07 o/s 7' Lt.	33+15 o/s 4' Lt.	118			22		107	1											
33+15 o/s 4' Lt.	34+36 o/s 3' Lt.	127			25		126	1											
34+36 o/s 3' Lt.	34+36 Lt.	19			4		21	1											
34+36 Lt.	34+38 o/s 37' Lt.	4			1		6				1						12	15	

DRAINAGE NOTES:

1. Existing drainage systems will be functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to accomplish maintenance of flow. The cost shall be incidental to the various Contract Items.
2. The Contractor shall verify the locations of all existing culverts and utilities in the field. Any existing culverts and utilities damaged during construction shall be repaired or replaced by the Contractor at his own expense.
3. Underdrain transition shall not be paid for separately, but shall be considered incidental to Item No. 605.1000 Perforated Underdrain.
4. Underdrain connection to drainage structures shall not be paid for separately, but shall be considered incidental to Item 605.2000 Non-Perforated Underdrain.
5. For added reinforcing around culverts and manholes at new drainage structures, see Standard Plan H-04.
6. Chamfer all exposed concrete edges 1".
7. For detail of Type "C" Catch Basin at Sta. 34+36 Lt , see Std. Plan H-01. The dimension "L" shown in Section "B-B" shall be 3'-7".
8. Demolishing, removing, disposing, and backfilling of existing drainage structures shall not be paid for separately, but shall be considered incidental to the various contract items.
9. Plugging existing culverts shall not be paid for separately, but shall be considered incidental to the various contract items.
10. Gutter transition shall not be paid for separately, but shall be considered incidental to Item 609.2720 Curb and Gutter, Type 2DG.
11. GRP in Driveway Culvert Inlet and Outlet structures shall not be paid for separately, but shall be considered incidental to Item 503.1200 Concrete in Driveway Culverts (Class A).
12. Curb, Special Type 2D shall not be paid for separately, but shall be considered incidental to Item 503.1200 Concrete in Driveway Culverts (Class A).

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE SUMMARY

KANEOHE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)

Date: Jan, 2003

PROJECT: KANEOHE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge

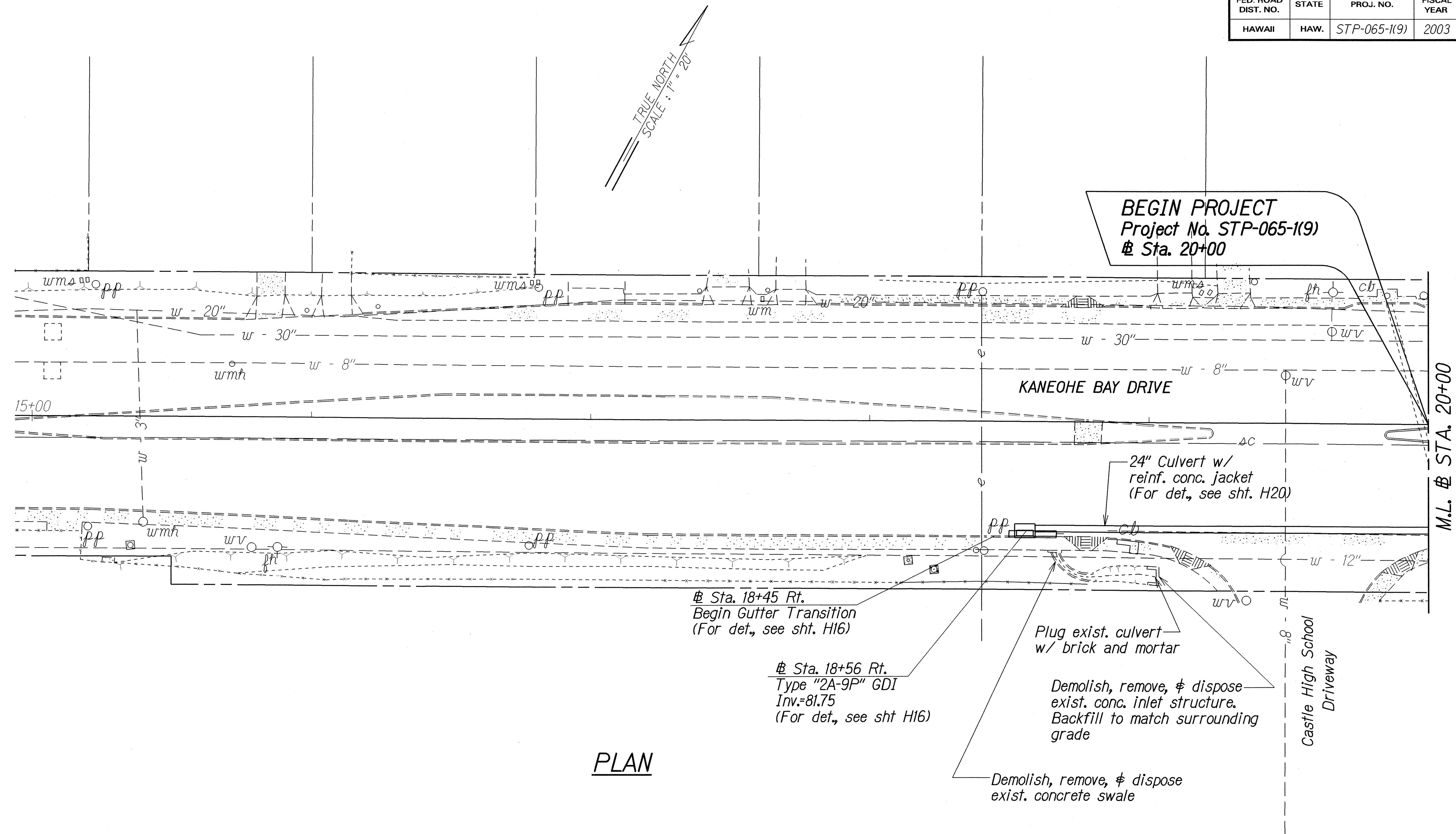
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	56	114

<i>UNDERDRAIN PIPE SCHEDULE</i>	
<i>6" LONGITUDINAL UNDERDRAIN PIPE</i>	<i>UNDERDRAIN INLET CONNECTION</i>
<i>23+60 Rt. to 25+09 Rt.</i>	<i>25+09 Rt.</i>
<i>25+09 Rt. to 26+50 Rt.</i>	<i>26+50 Rt.</i>
<i>26+50 Rt. to 27+25 Rt.</i>	<i>27+40 Rt.</i>
<i>27+40 Rt. to 28+20 Rt.</i>	<i>28+20 Rt.</i>
<i>28+20 Rt. to 29+75 Rt.</i>	<i>29+75 Rt.</i>
<i>29+75 Rt. to 30+70 Rt.</i>	<i>30+70 Rt.</i>
<i>30+70 Rt. to 31+48 Rt.</i>	<i>31+48 Rt.</i>
<i>31+48 Rt. to 32+40 Rt.</i>	<i>32+40 Rt.</i>
<i>32+40 Rt. to 33+75 Rt.</i>	<i>33+75 Rt.</i>
<i>33+75 Rt. to 34+66 Rt.</i>	<i>34+66 Rt.</i>
<i>34+25 o/s 11' Lt. to 34+36 o/s 3' Lt.</i>	<i>34+36 o/s 3' Lt</i>

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
NOTE BOOK <i>the court is 4 km from m01dgr Nc.</i>	DRAWN BY <i>X</i>	* <i>X</i>
	TRACED BY _____	*
	DESIGNED BY <i>X</i>	*
	QUANTITIES BY _____	*
	CHECKED BY _____	_____
	_____	_____

SHEET No. *H2* OF *20* SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	57	114



PLAN

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DESIGNED BY	
QUANTITIES BY	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

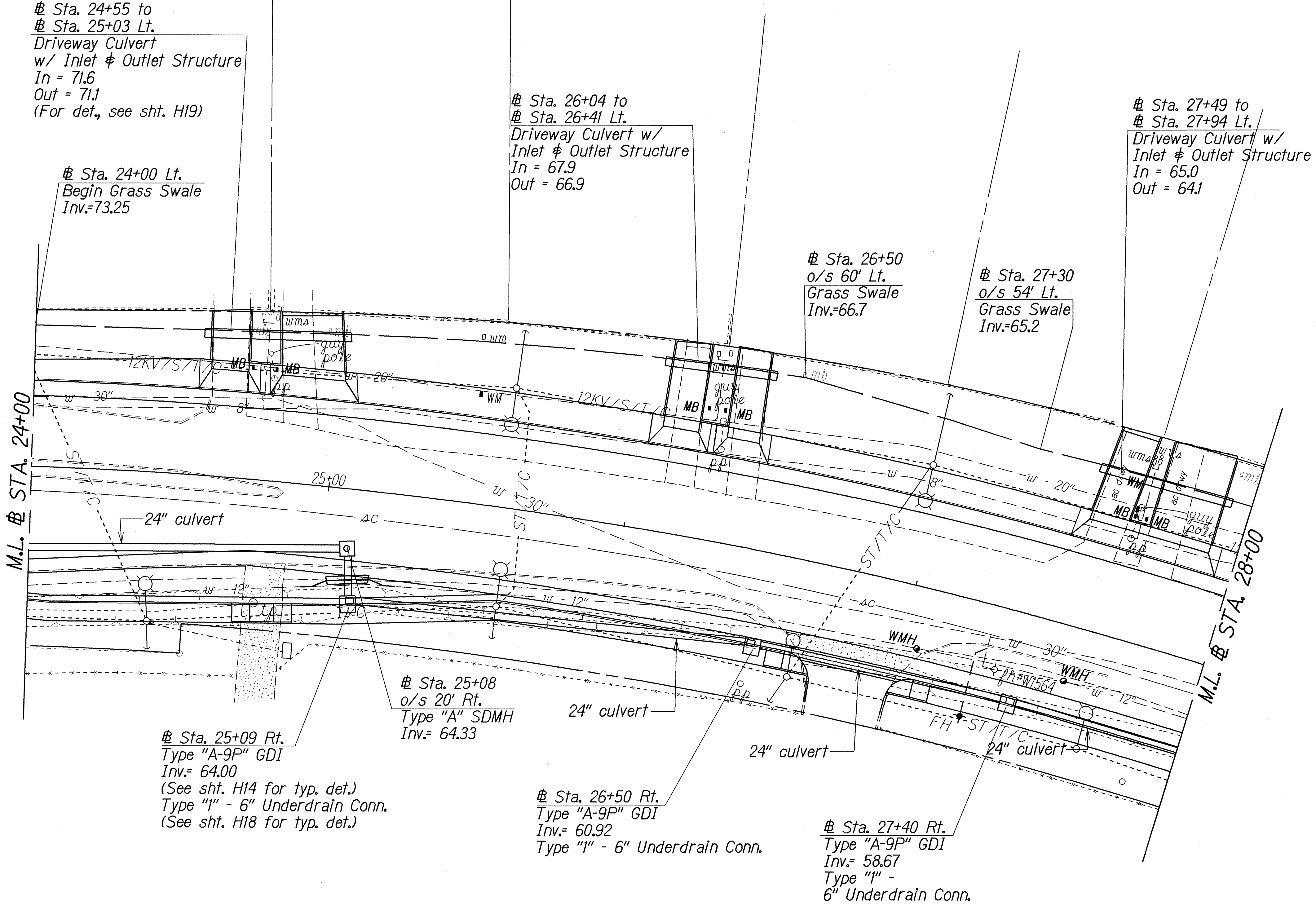
DRAINAGE PLAN

KANEOHE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)

Scale: 1"=20' Date: Jan, 2003

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	59	114

TRUE NORTH
SCALE: 1" = 20'



PLAN

ORIGINAL PLAN	DATE 4/15/00
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

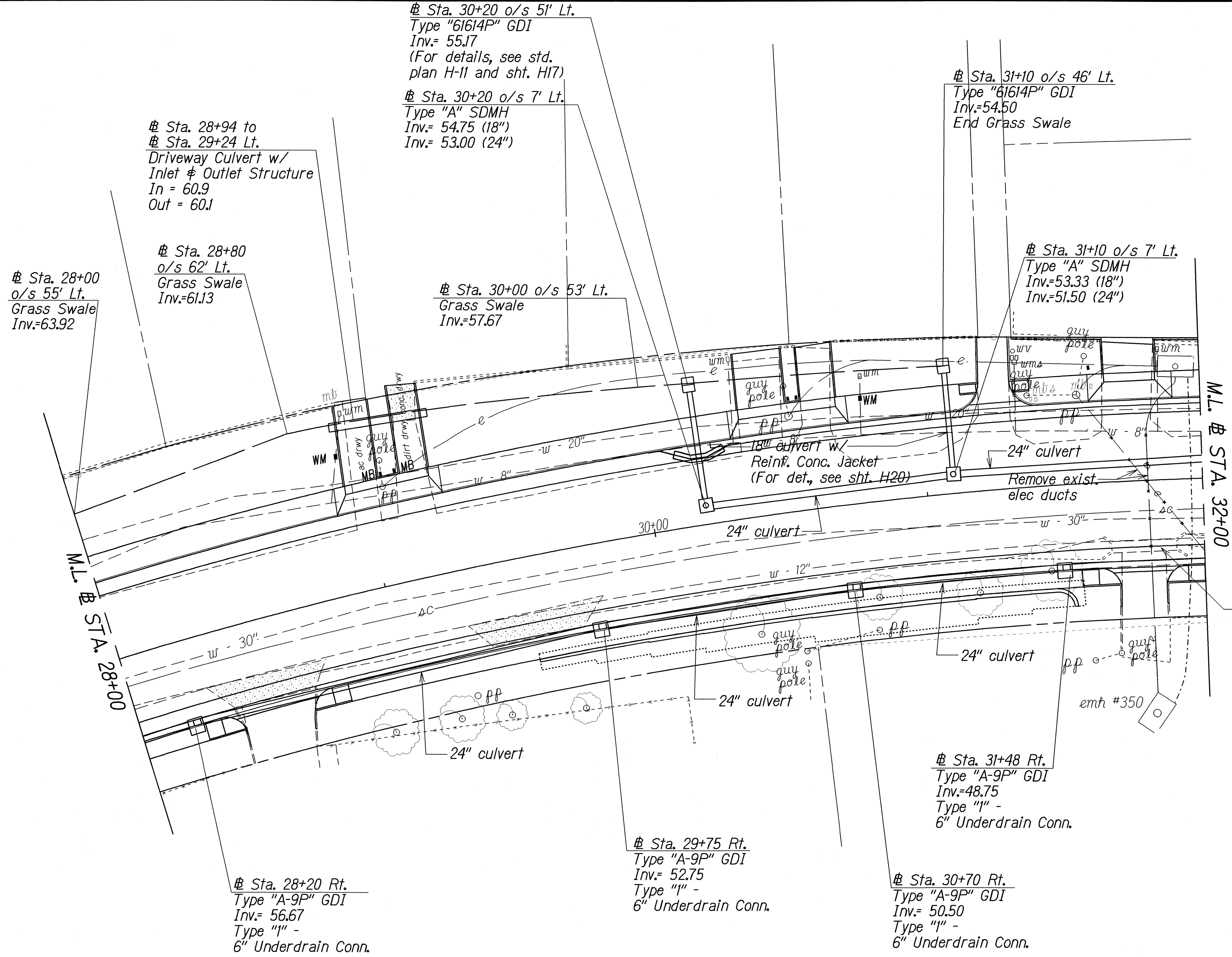
DRAINAGE PLAN

Kaneohe Bay Drive Improvements
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)

Scale: 1"=20'
Date: Jan, 2003

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	60	114

TRUE NORTH
SCALE: 1" = 20'



PLAN

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN

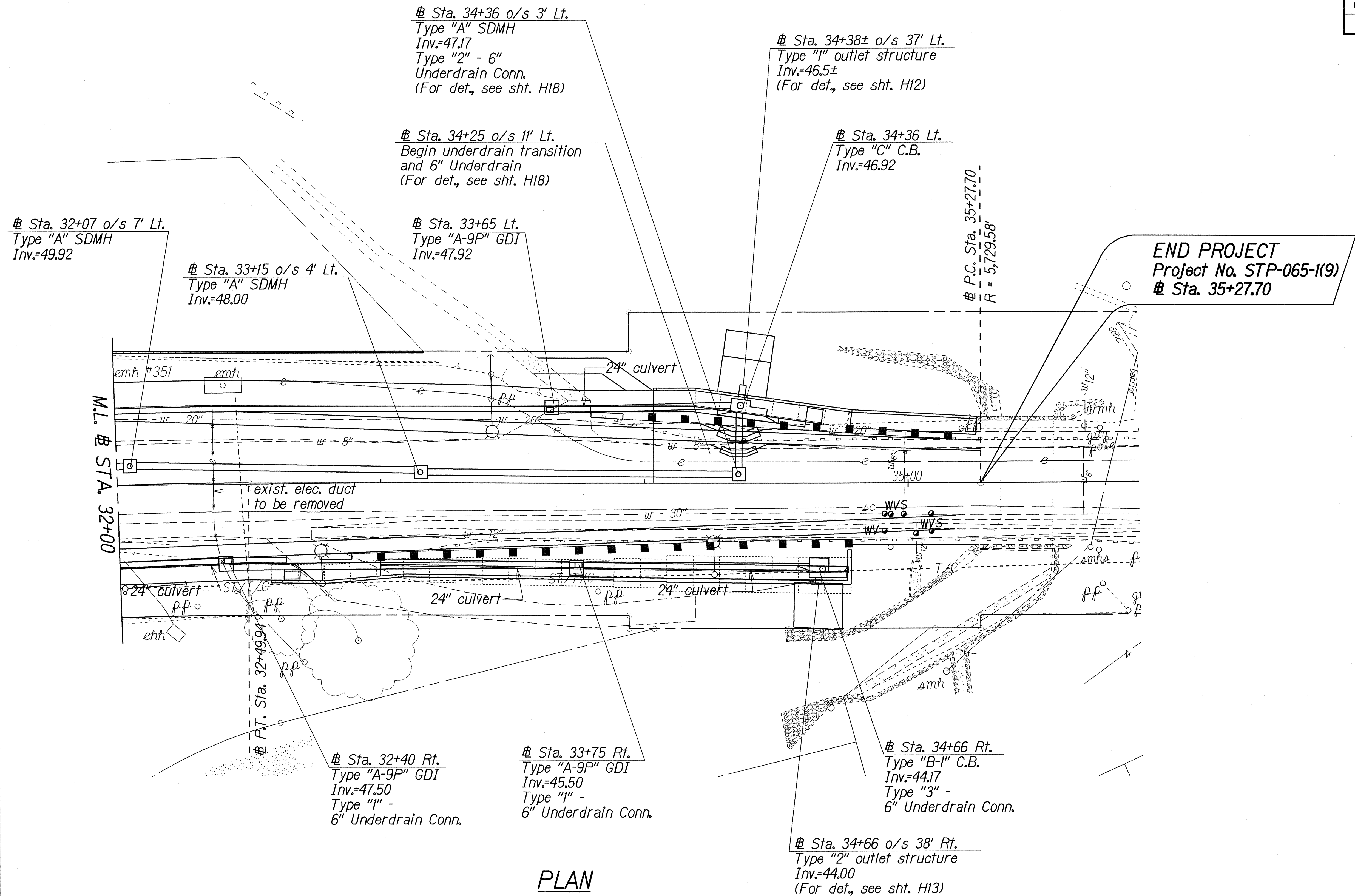
KANEIHE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)

Scale: 1"=20' Date: Jan, 2003

SHEET No. H6 OF 20 SHEETS

ORIGINAL PLAN	DATE
NOTE BOOK	7/15/00
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	61	114



PLAN

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	2/15/03
DESIGNED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

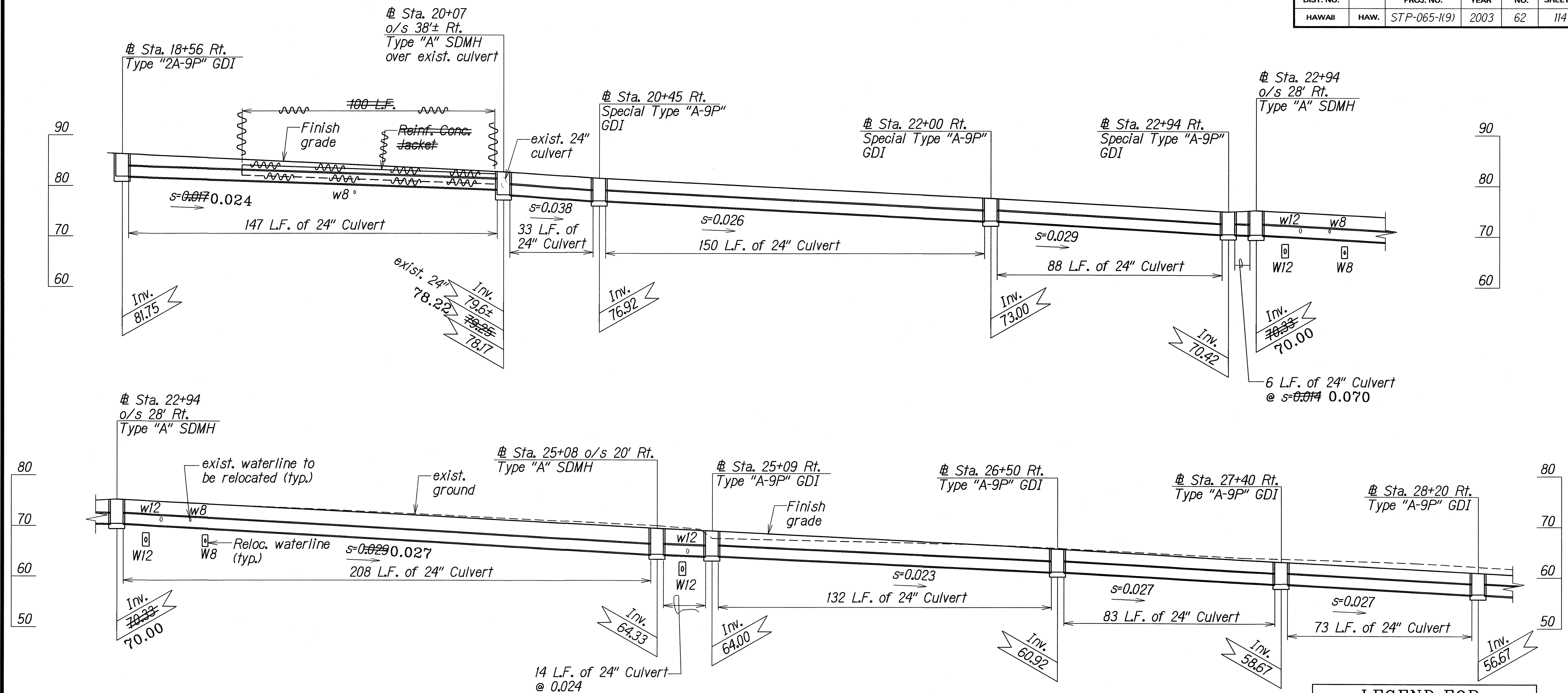
DRAINAGE PLAN

Kaneohe Bay Drive Improvements
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)

Scale: 1"=20' Date: Jan, 2003

SHEET No. **H7** OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	62	114



LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILE

KANE OHE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)

Scale: As shown Date: Jan, 2003

SHEET No. **H8** OF 20 SHEETS

PROFILE - # STA. 18+56 RT. TO # STA. 28+20 RT.

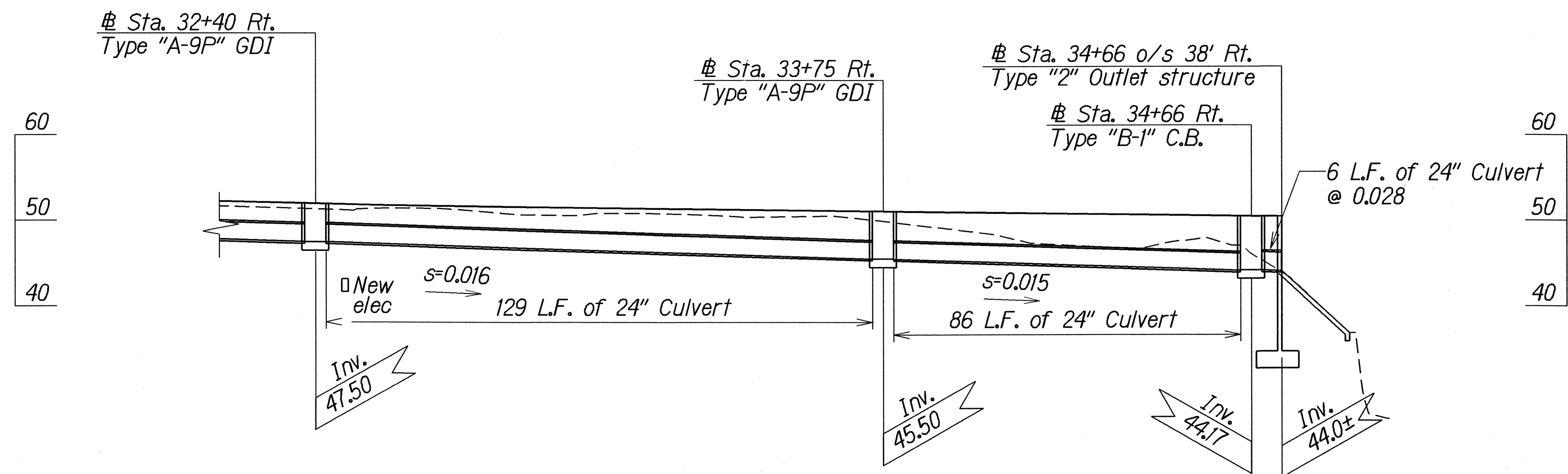
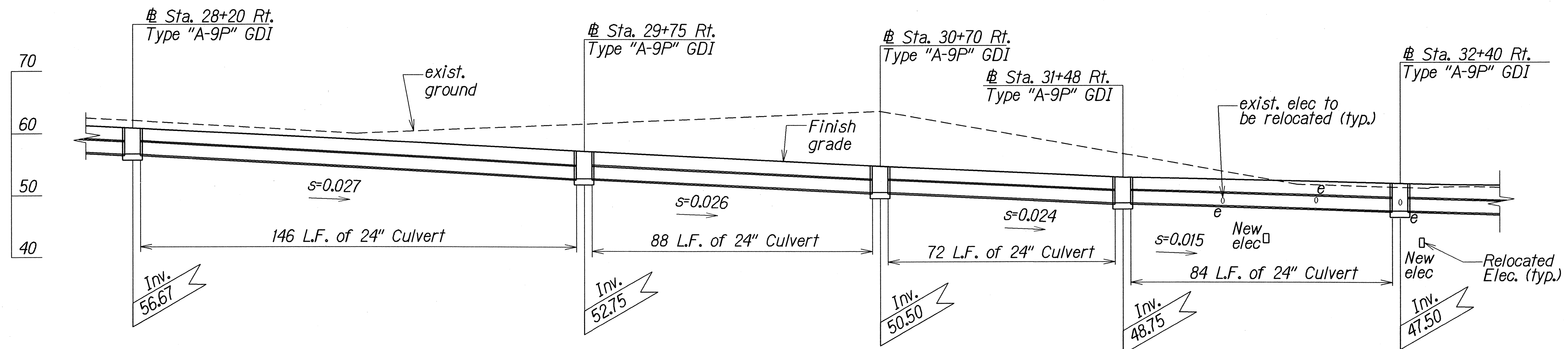
Scale: Horiz. 1"=20'
Vert: 1"=10'

"AS-BUILT"

ORIGINAL PLAN	DATE 5-09-00
DESIGNED BY	TRACED BY
NOTED BY	QUANTITIES BY
CHECKED BY	

asbuilt.kanohp02.dgn

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	63	114



PROFILE - # STA. 28+20 RT. TO # STA. 34+66 RT.

Scale: Horiz. 1"=20'
Vert. 1"=10'

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

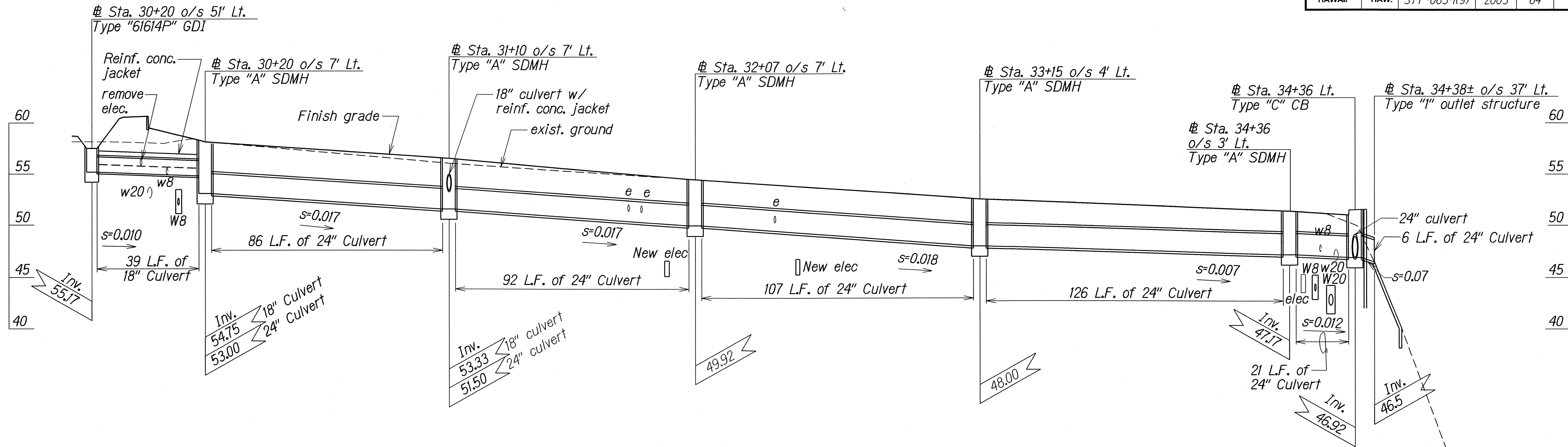
DRAINAGE PROFILE

KANE OHE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)

Scale: As shown Date: Jan, 2003

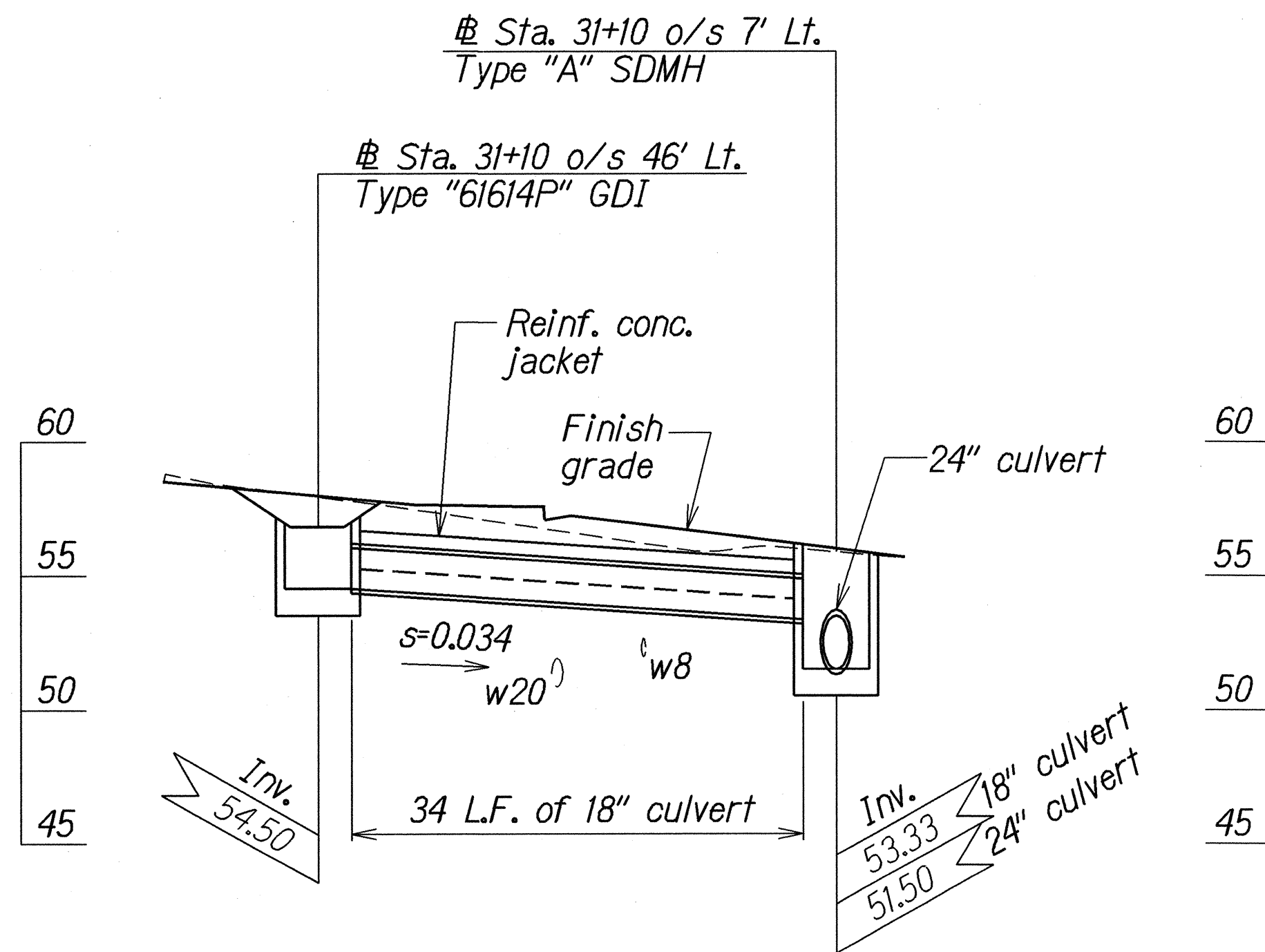
SHEET No. **H9** OF **20** SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	64	114



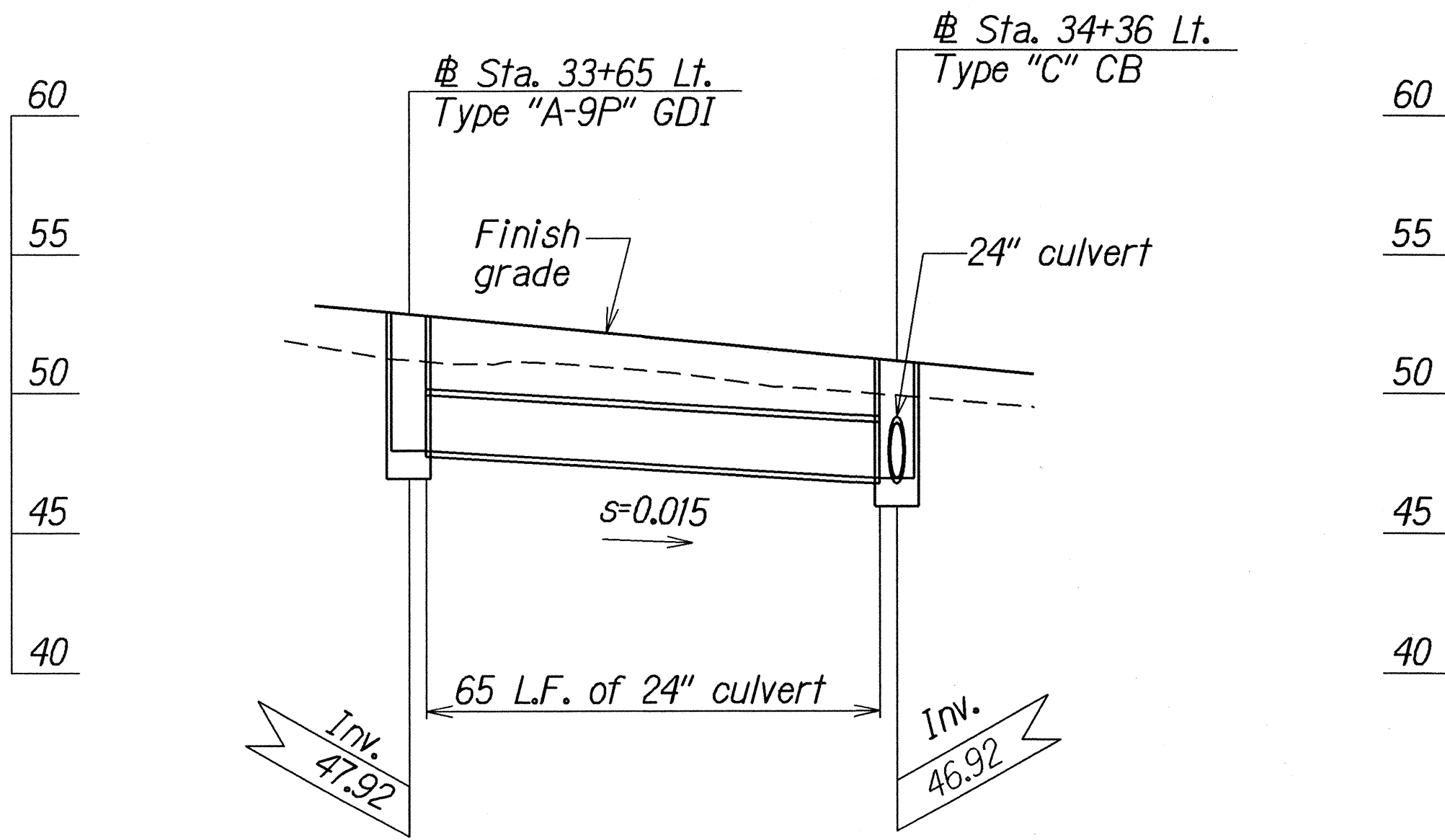
PROFILE - KANEOHE BAY DRIVE @ STA. 30+20 O/S 51'± LT. TO @ STA. 34+38 O/S 37' LT.

Scale: Horiz. 1"=20'
Vert: 1"=5'



PROFILE - @ STA. 31+10 LT.

Scale: Horiz. 1"=10'
Vert: 1"=5'



PROFILE - KANEOHE BAY DRIVE @ STA. 33+65 LT. TO @ STA. 34+36 LT.

Scale: Horiz. 1"=20'
Vert: 1"=5'

ORIGINAL PLAN	DATE	5-02-00
SURVEY PLOTTED BY	DESIGNED BY	
NOTE BOOK	QUANTITIES BY	
01/2/01/01/01	CHECKED BY	
01/2/01/01/01		

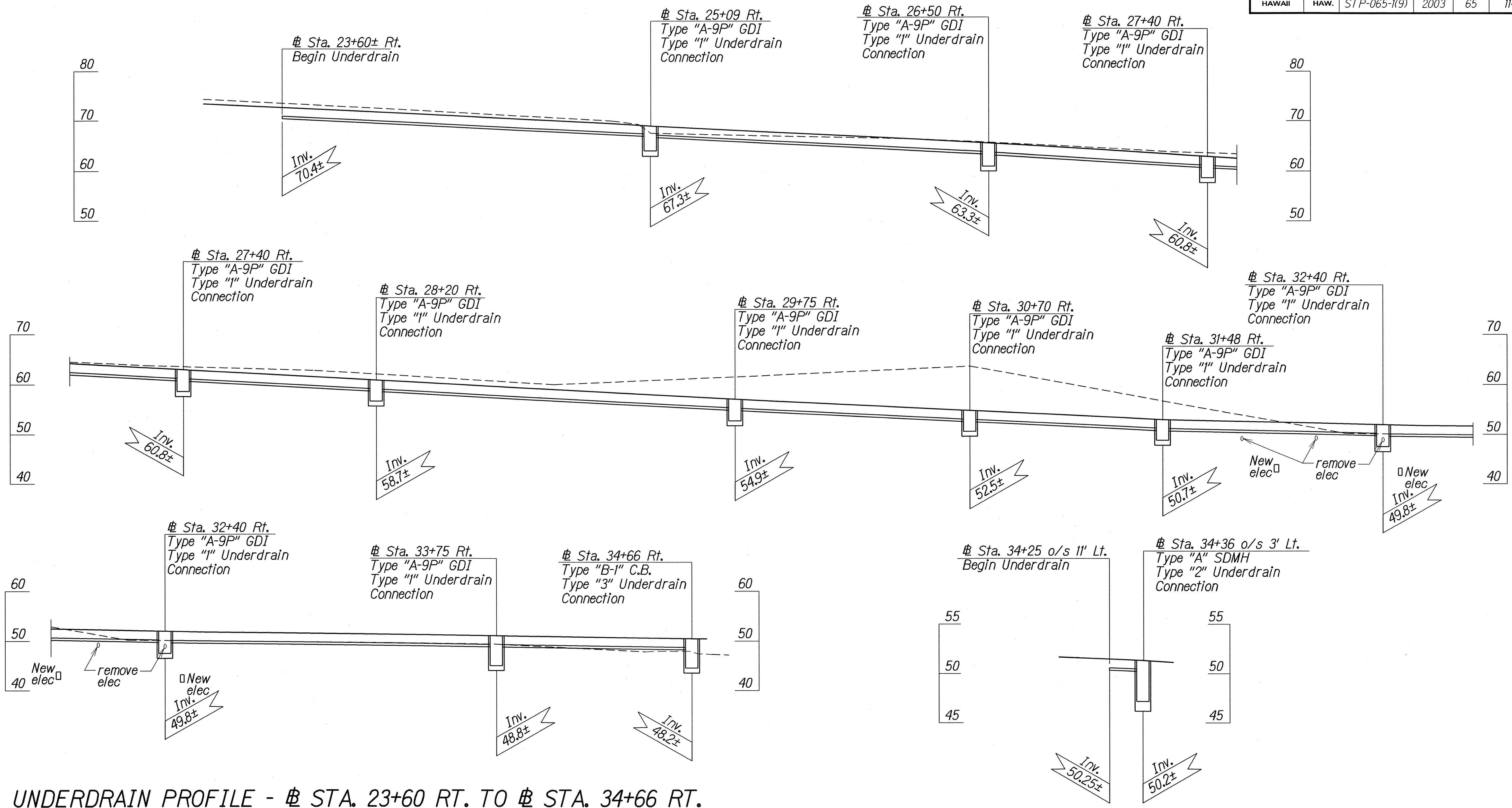
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILE

KANEOHE BAY DRIVE IMPROVEMENTS
Vicinity of Puuhala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)

Scale: As shown Date: Jan, 2003

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	65	114



UNDERDRAIN PROFILE - # STA. 23+60 RT. TO # STA. 34+66 RT.

Scale: Horiz. 1"=20'
Vert: 1"=10'

UNDERDRAIN PROFILE - # STA. 34+25 O/S 11' LT. TO # STA. 34+36 O/S 3' LT.

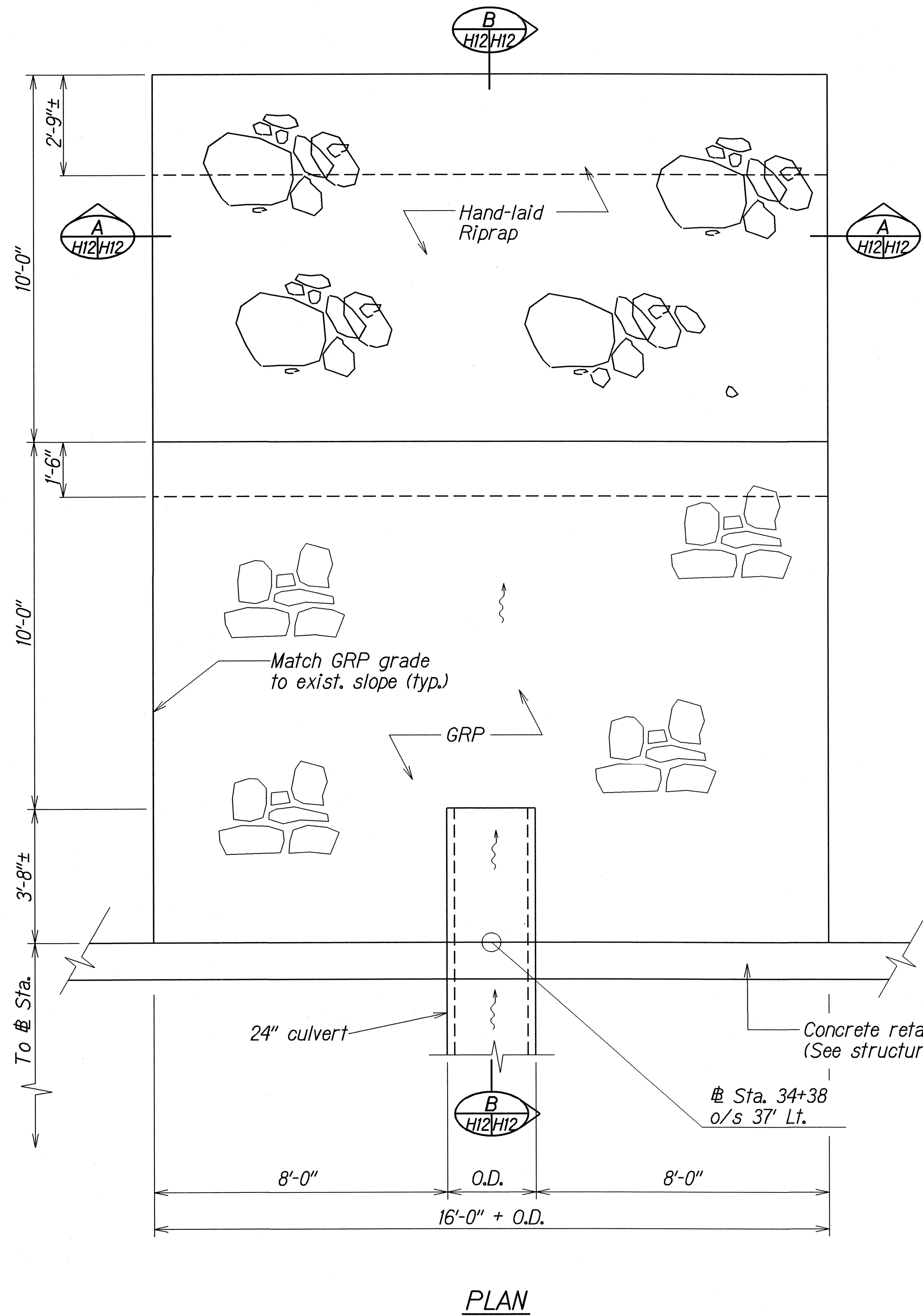
Scale: Horiz. 1"=20'
Vert: 1"=10'

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

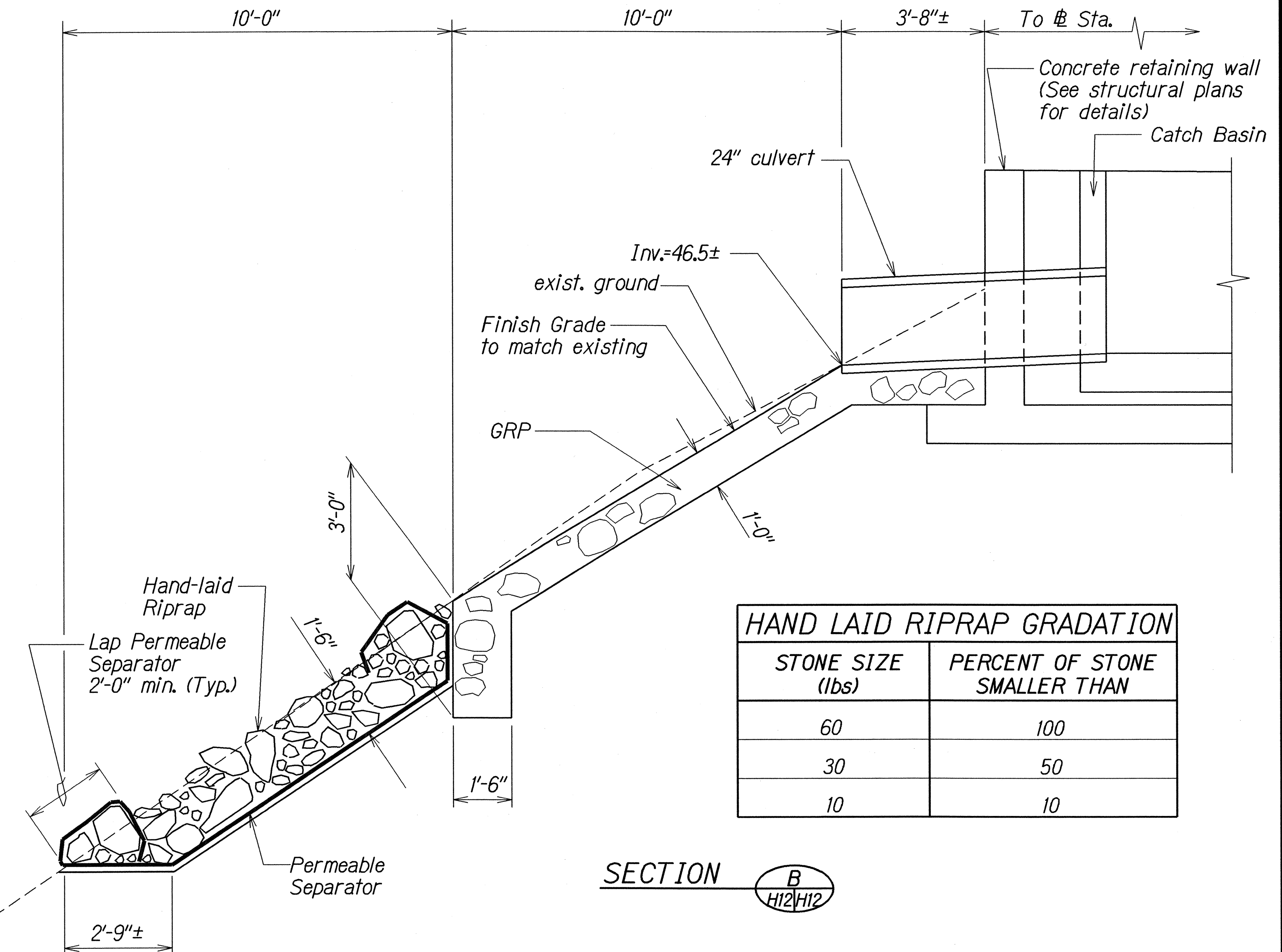
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PROFILE
KANEOHE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)
Scale: As shown
Date: Jan, 2003

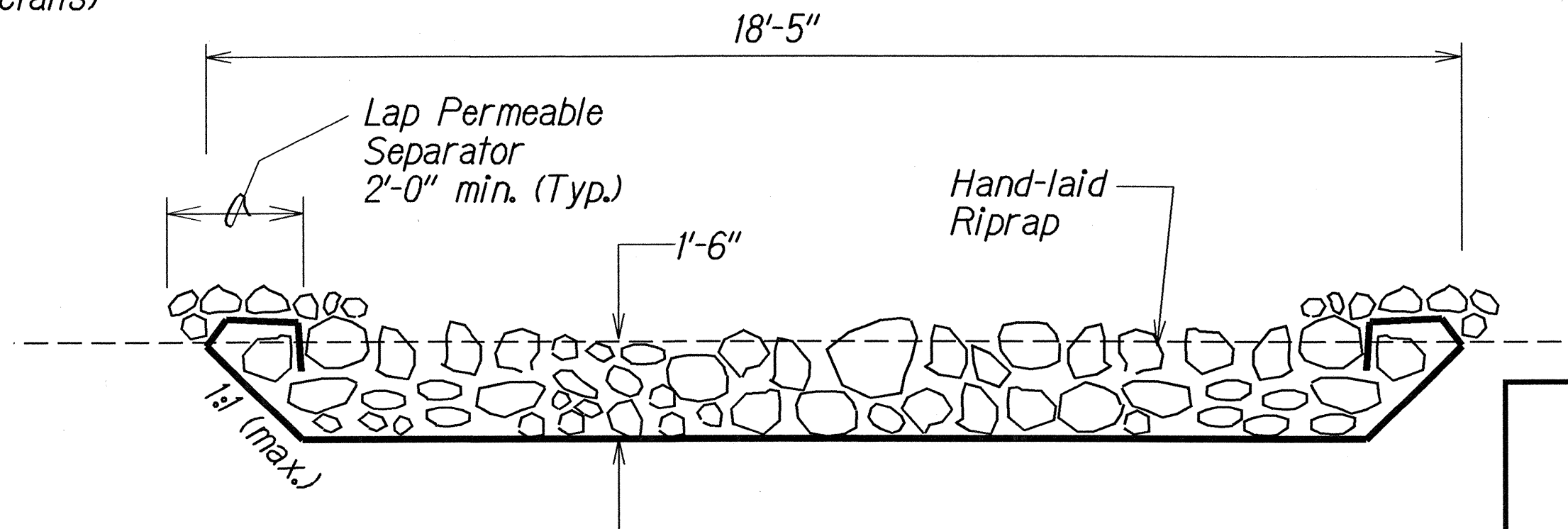
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	66	114



PLAN



SECTION B
H12/H12



SECTION A
H12/H12

HAND LAID RIPRAP GRADATION	
STONE SIZE (lbs)	PERCENT OF STONE SMALLER THAN
60	100
30	50
10	10

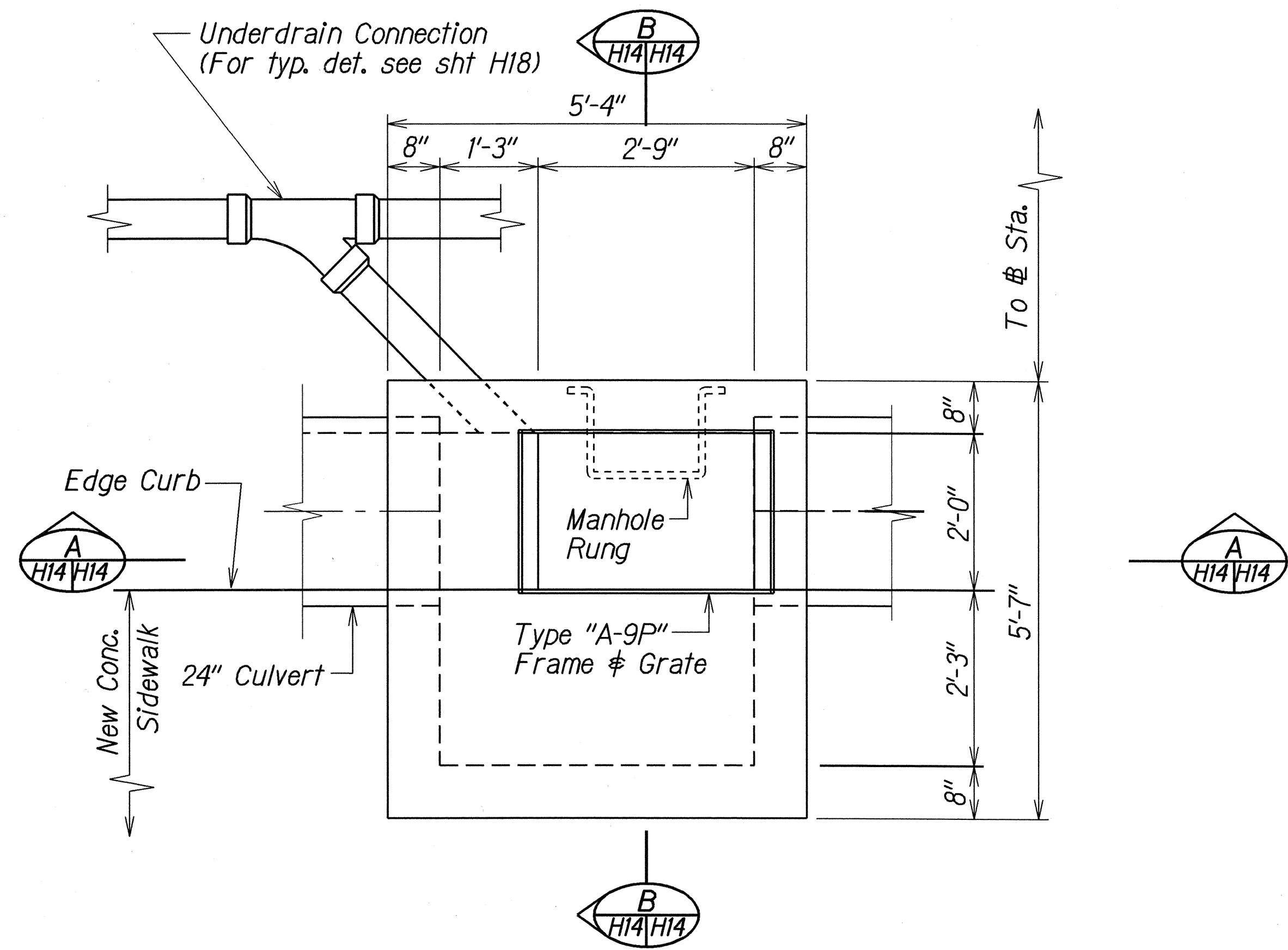
DETAILS OF TYPE "I" OUTLET STRUCTURE AT # STA. 34+38 O/S 37' LT.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

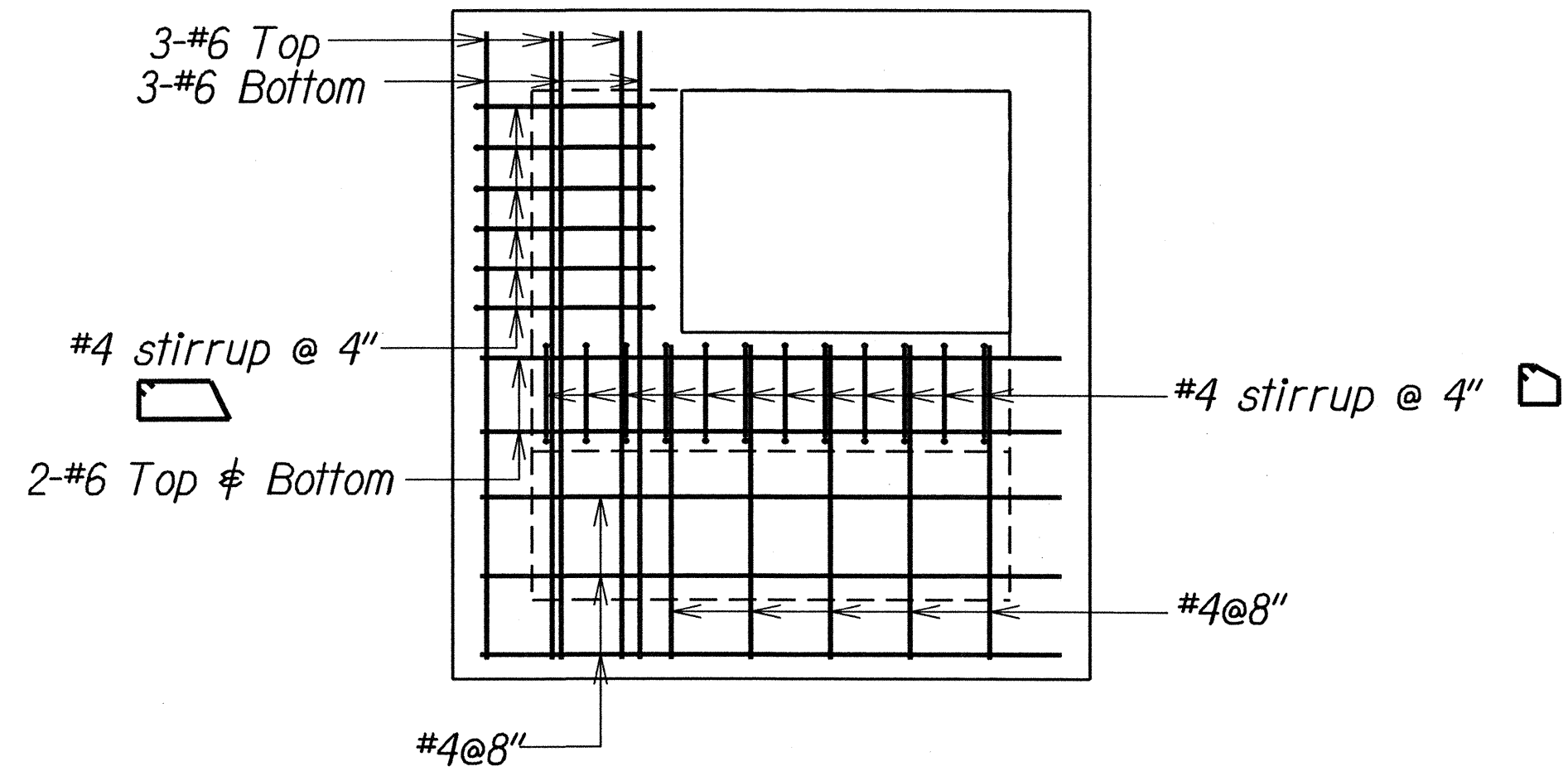
DRAINAGE DETAIL
Kaneohe Bay Drive Improvements
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)
Scale: 1/2"=1'-0" Date: Jan, 2003
SHEET No. H12 OF 20 SHEETS

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

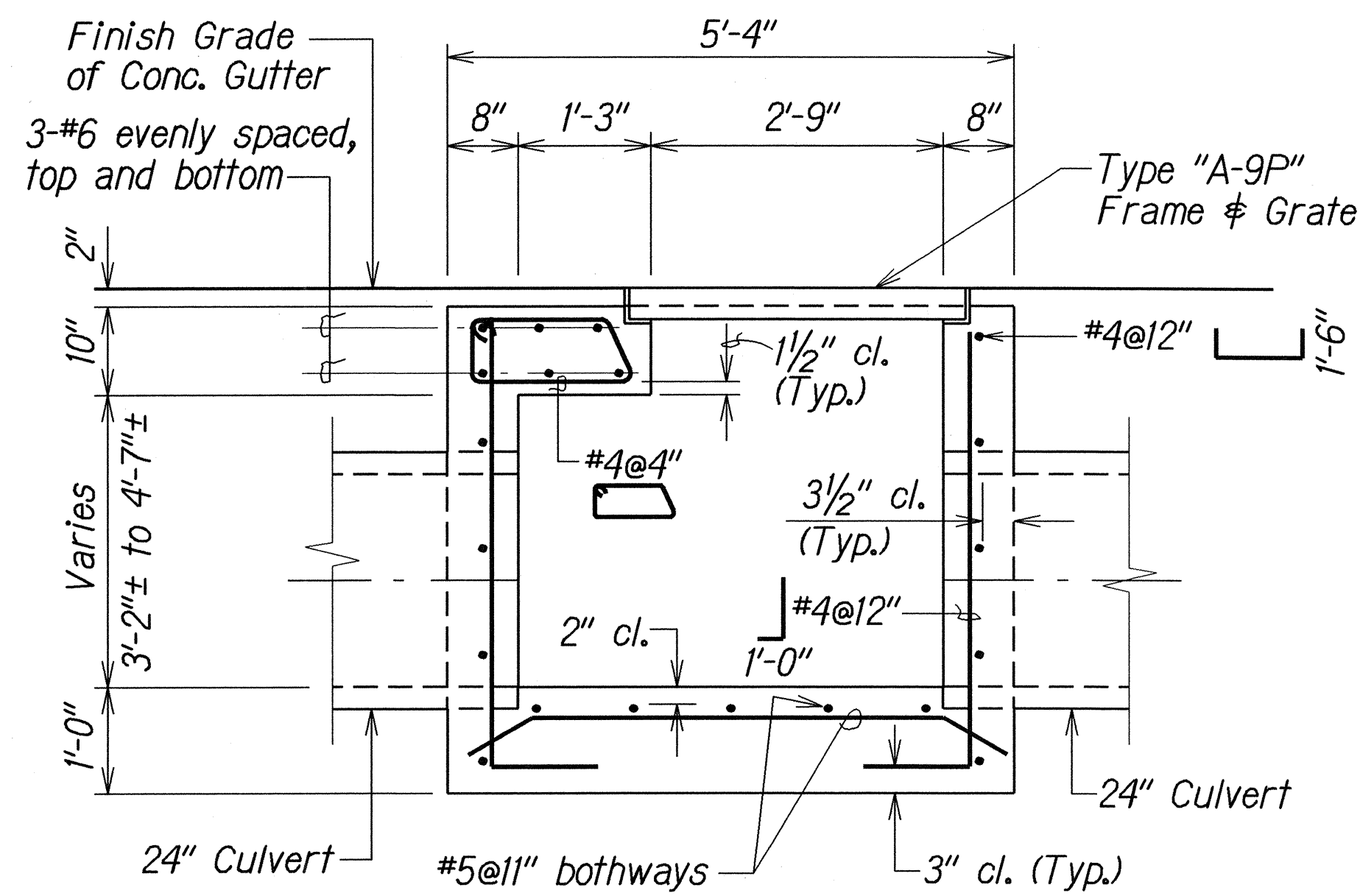
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	68	114



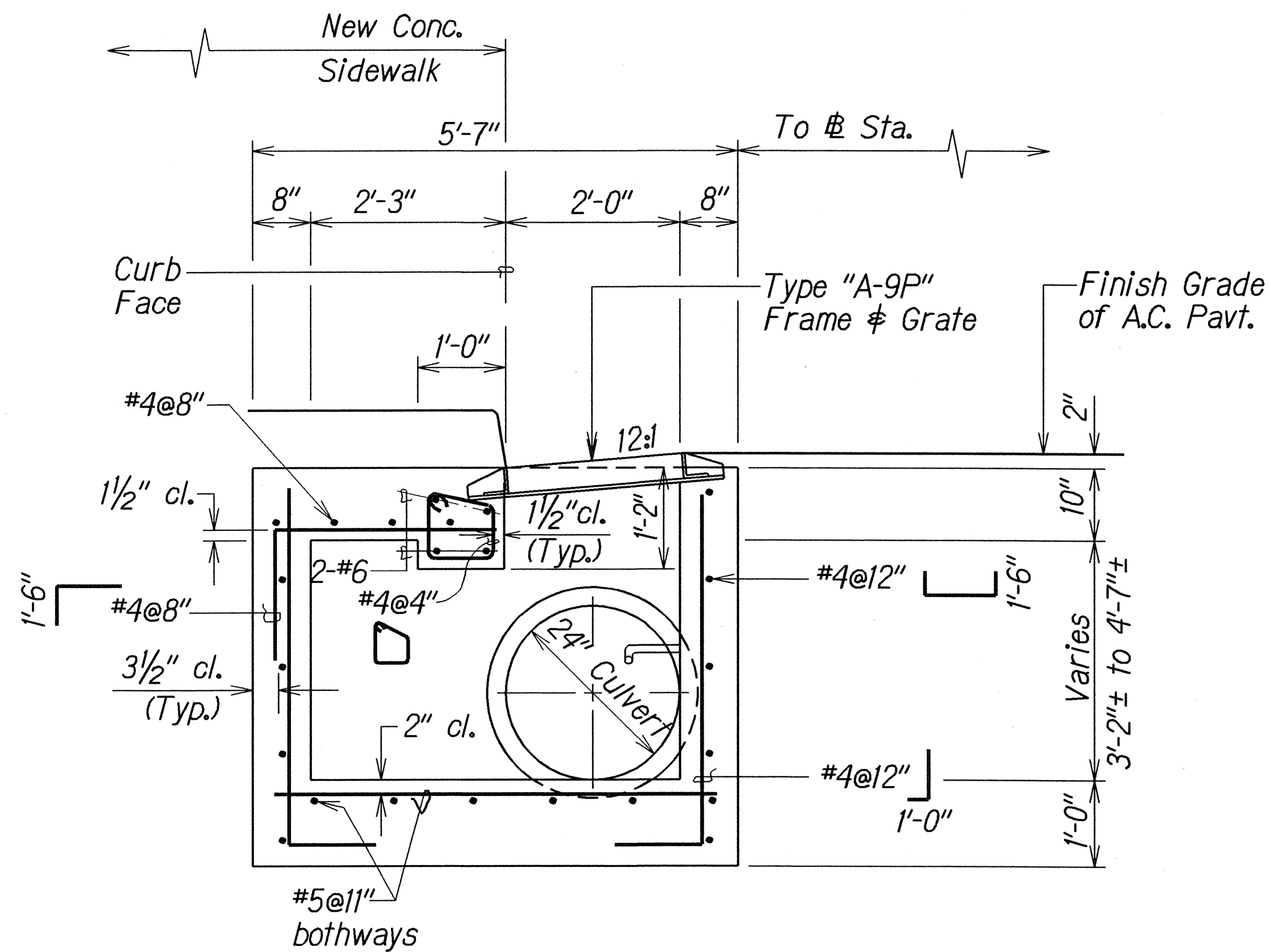
PLAN



PLAN VIEW OF TOP SLAB REINFORCING



SECTION A-A



SECTION B-B

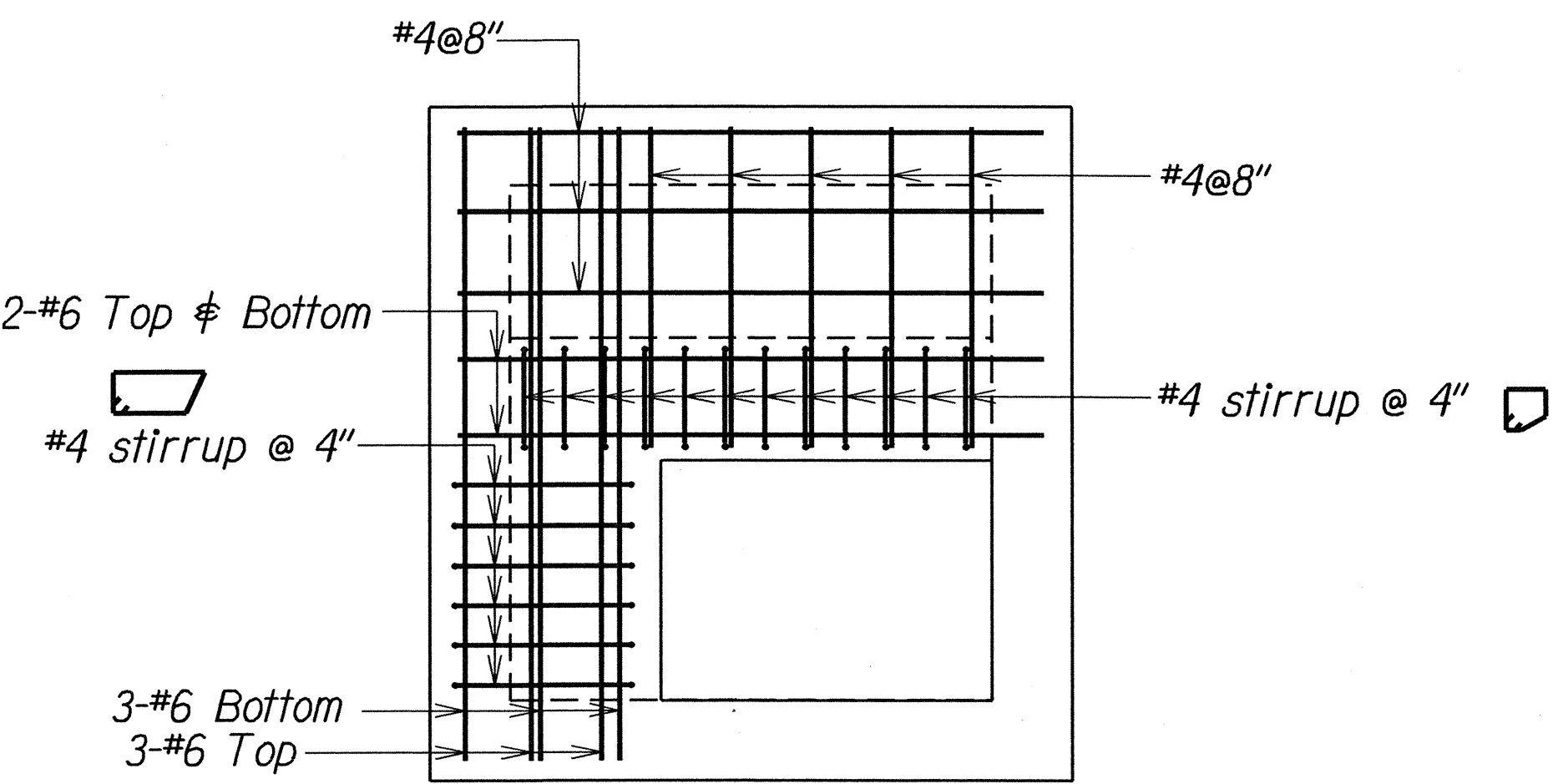
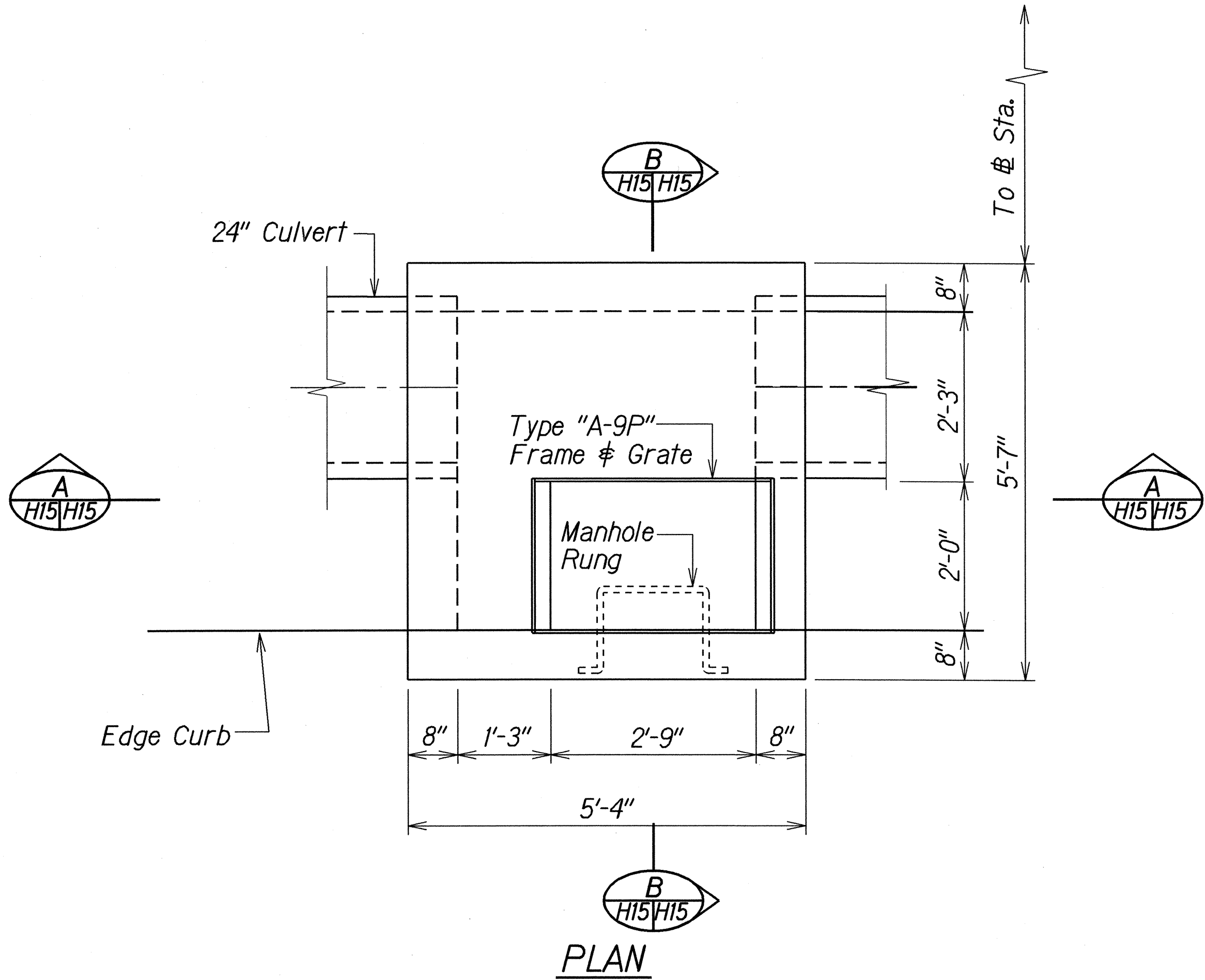
TYPICAL DETAILS OF TYPE "A-9P" GRATED DROP INLET

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

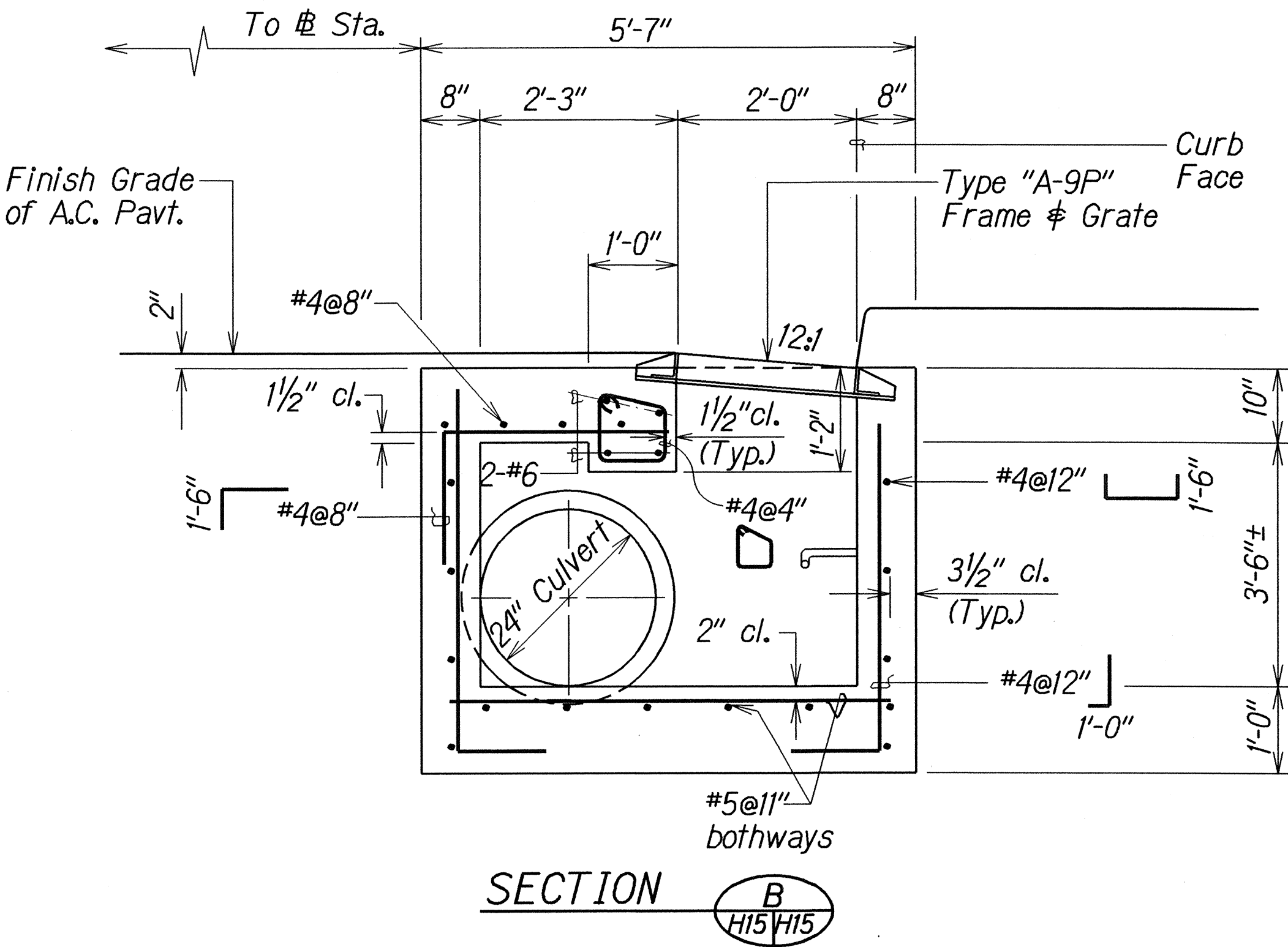
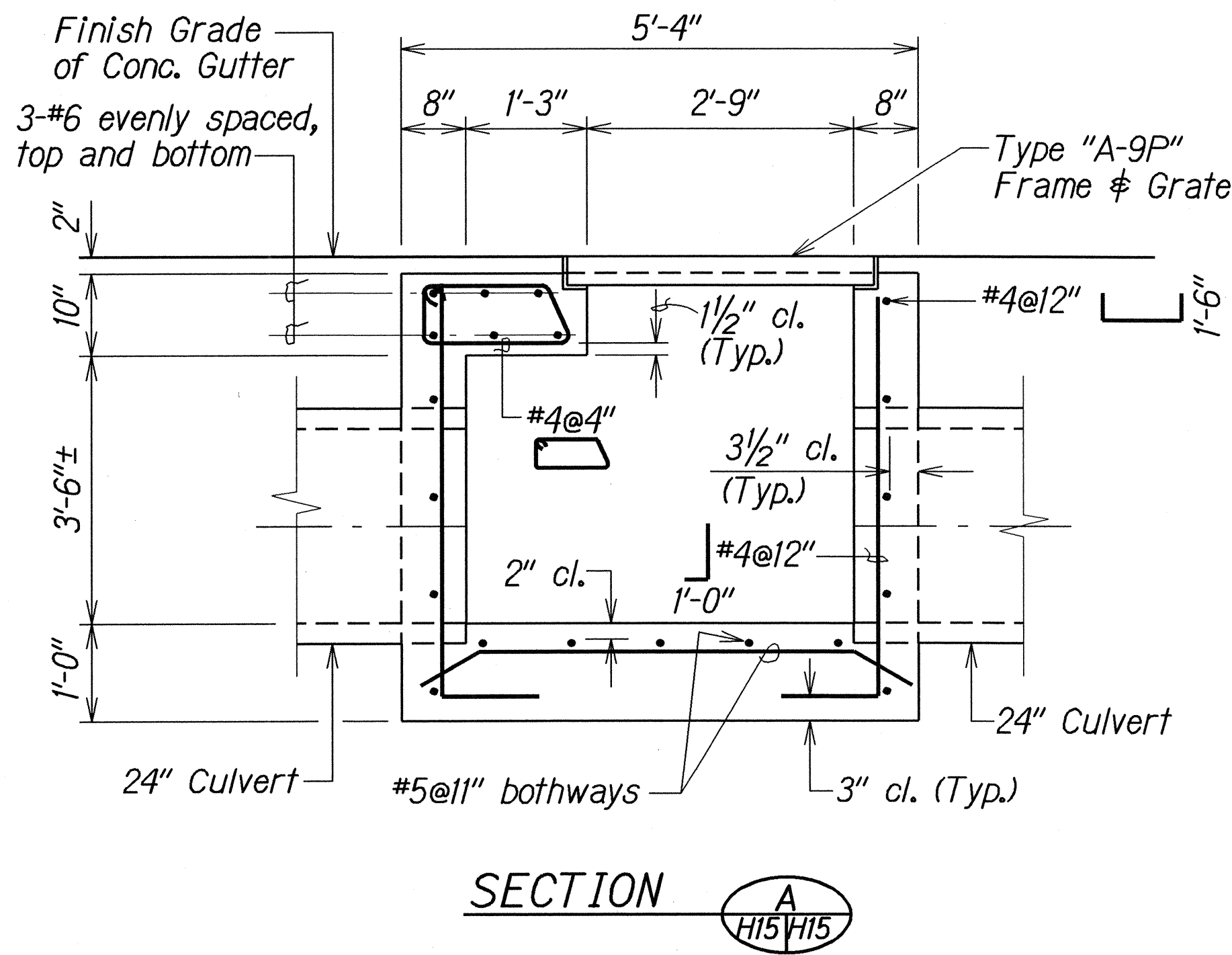
DRAINAGE DETAIL
KANE OHE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)
Scale: 3/4"=1'-0" Date: Jan, 2003
SHEET No. H14 OF 20 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
DESIGNED BY	CHECKED BY	
QUANTITIES BY		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	69	114



PLAN VIEW OF TOP SLAB REINFORCING



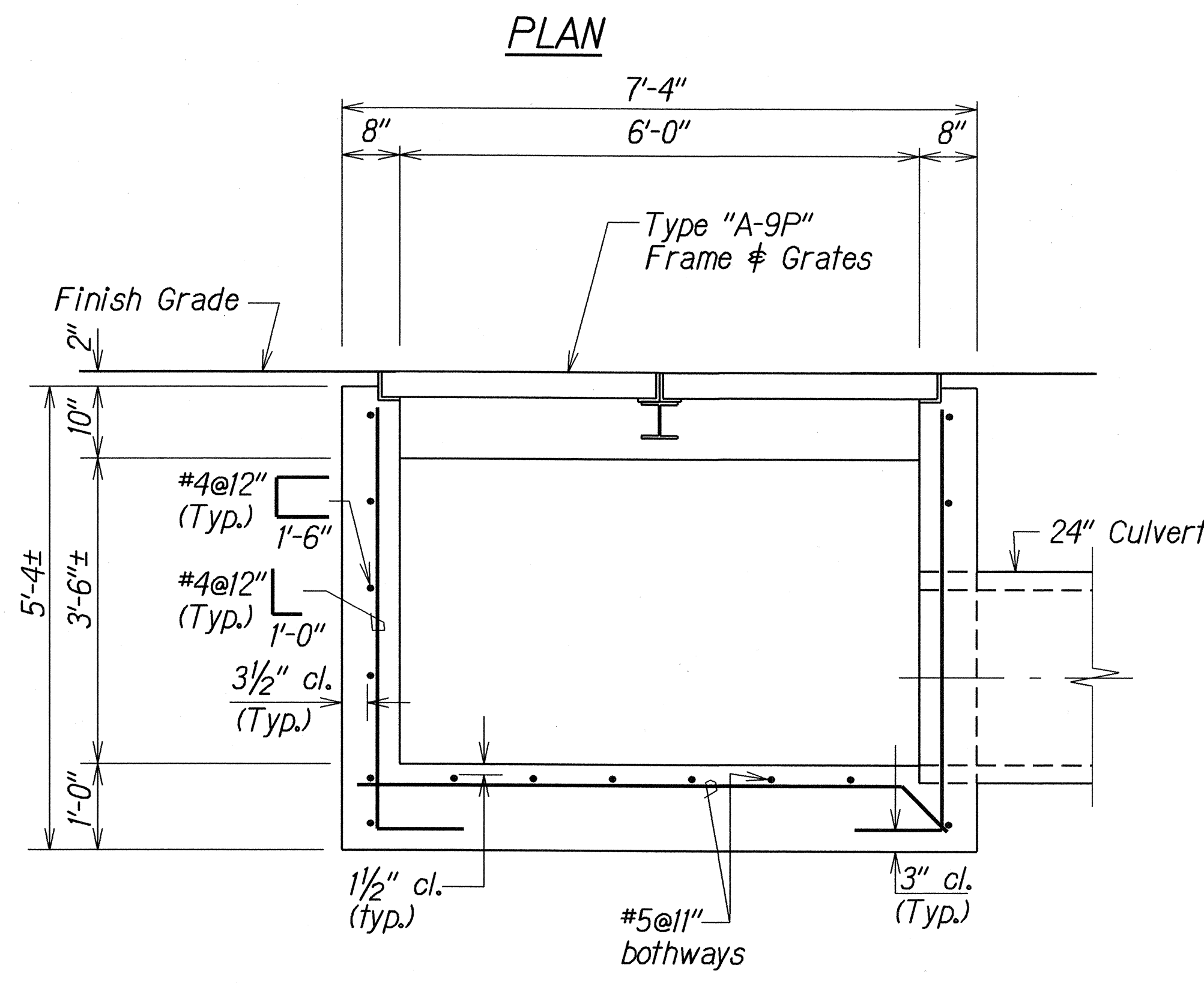
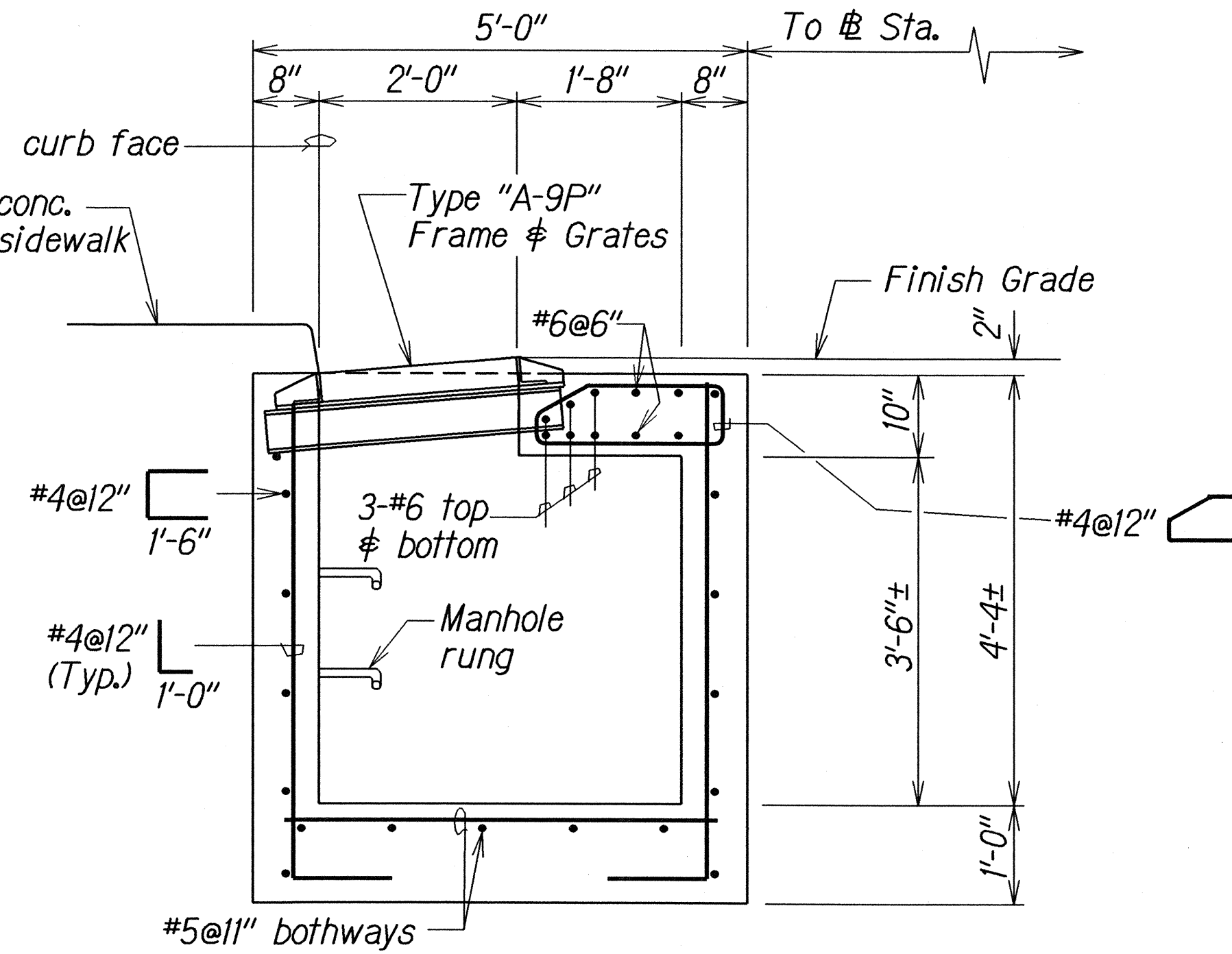
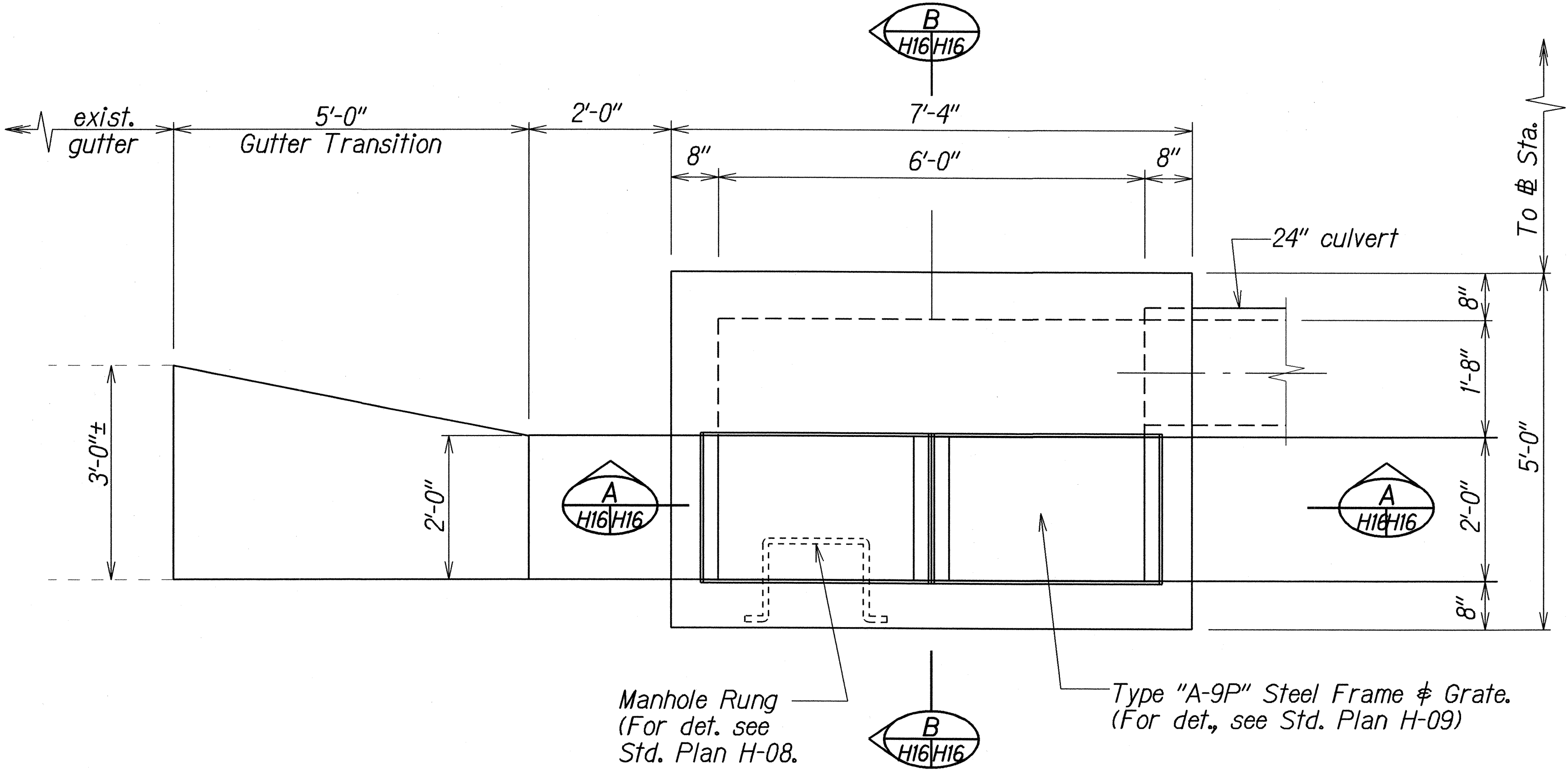
DETAILS OF SPECIAL TYPE "A-9P" GRATED DROP INLET

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAIL
KANEOHE BAY DRIVE IMPROVEMENTS
Vicinity of Puuhala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)
Scale: 3/4"=1'-0" Date: Jan, 2003
SHEET No. H15 OF 20 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	2
DESIGNED BY	CHECKED BY	
QUANTITIES BY		
CHECKED BY		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	70	114



SECTION B
H16/H16

SECTION A
H16/H16

DETAILS OF TYPE "A-9P" GRATED DROP INLET

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAIL

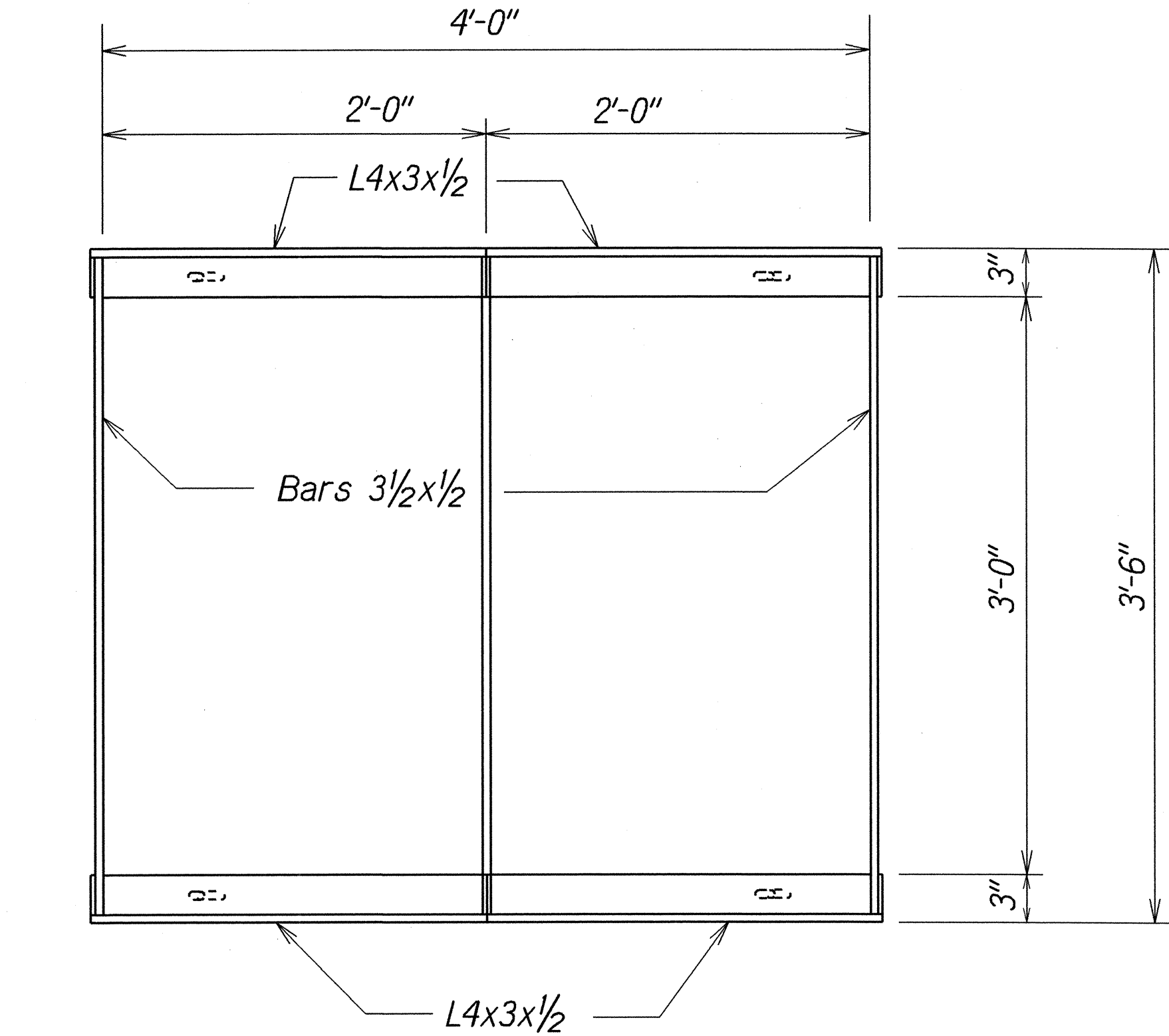
KANE OHE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)

Scale: 3/4"=1'-0" Date: Jan, 2003

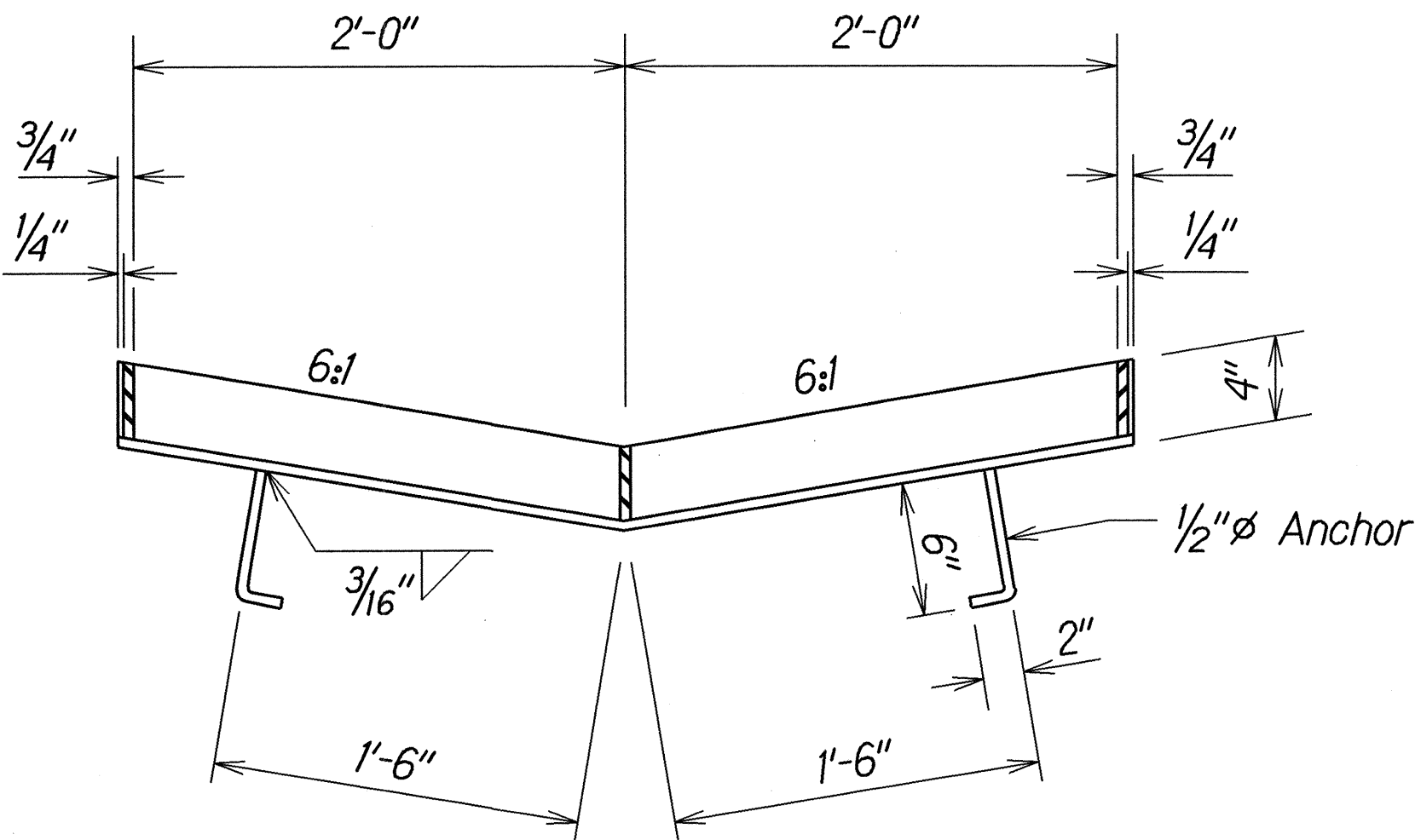
SHEET No. H16 OF 20 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
DESIGNED BY	CHECKED BY	
QUANTITIES BY		

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	71	114



PLAN

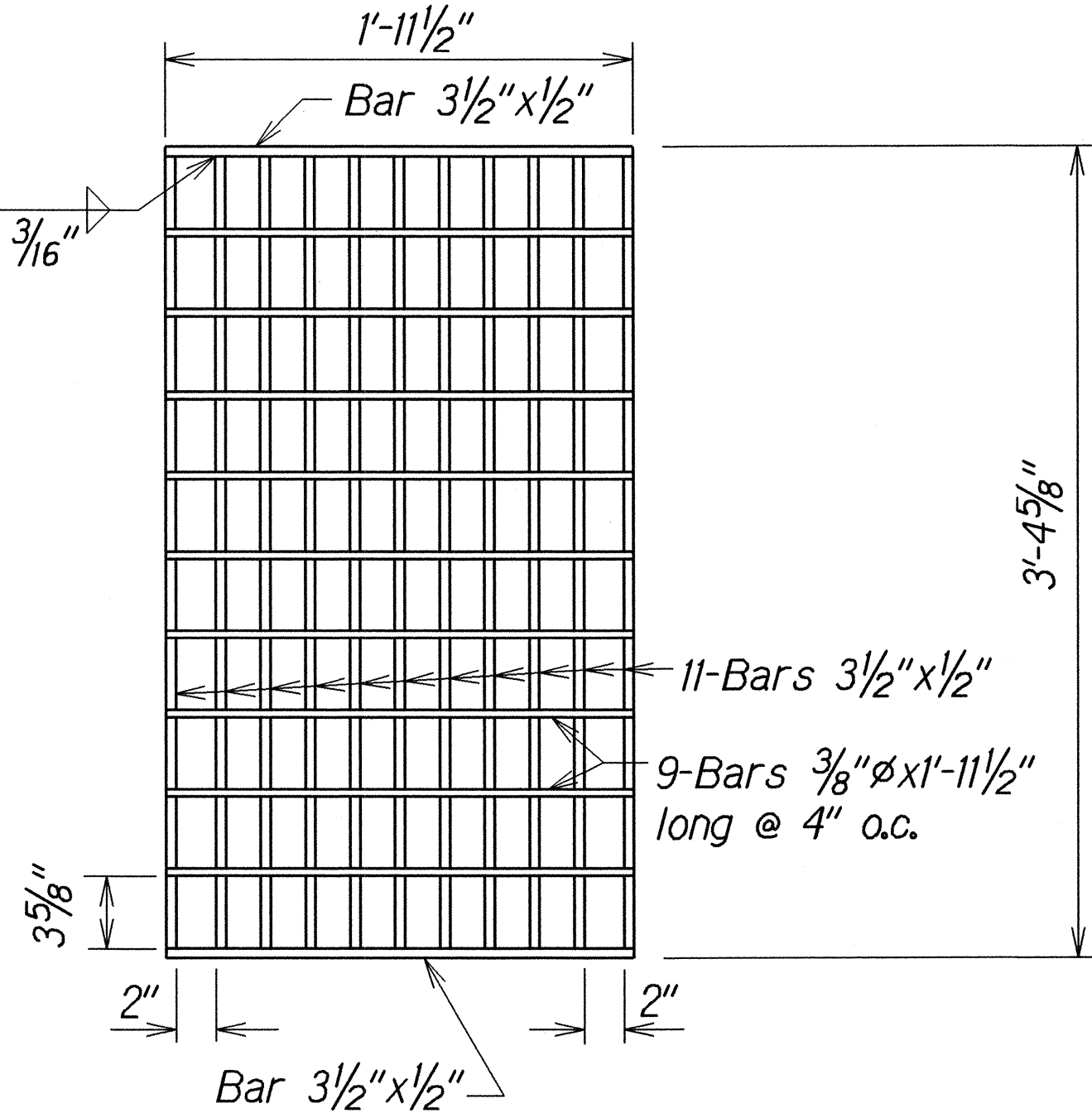


SECTION

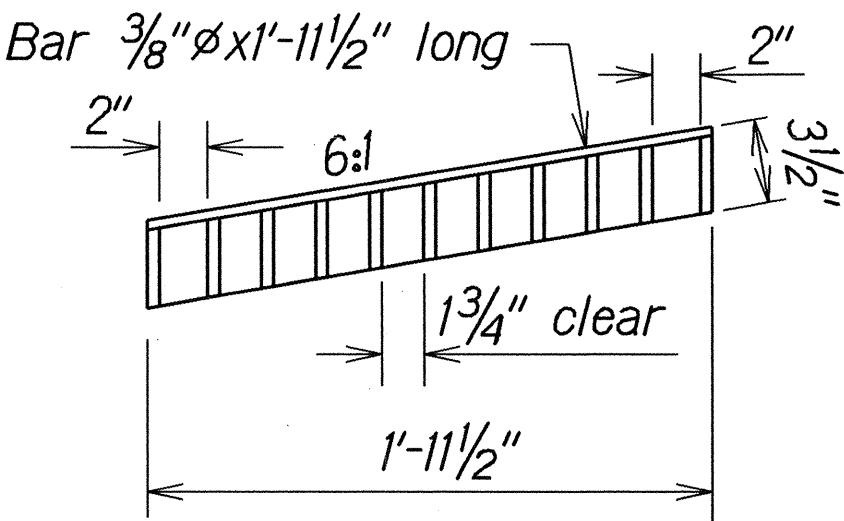
FRAME

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

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



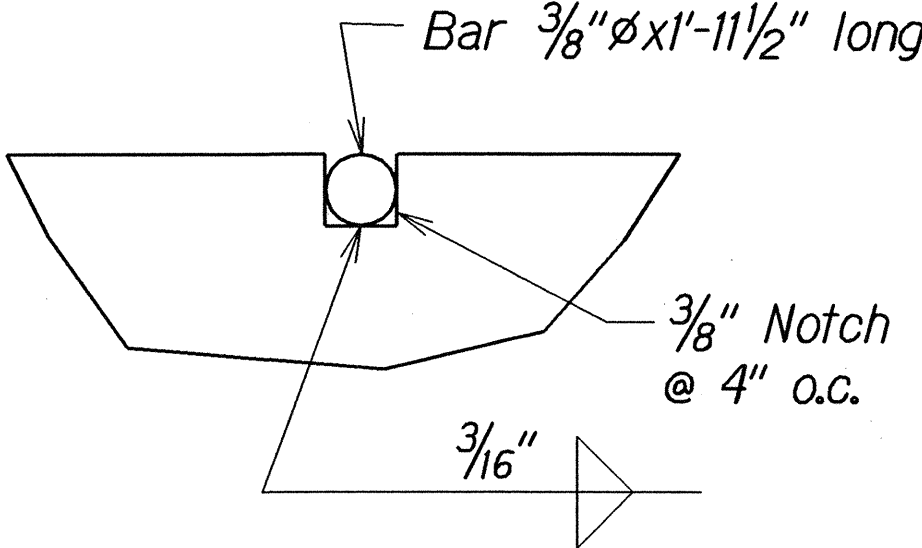
PLAN



SECTION

GRATE

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



NOTCH DETAIL

Full Size

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	1/27/03
DESIGNED BY	CHECKED BY	
QUANTITIES BY		

TYPICAL DETAILS OF TYPE "61614P" STEEL FRAME AND GRATES

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

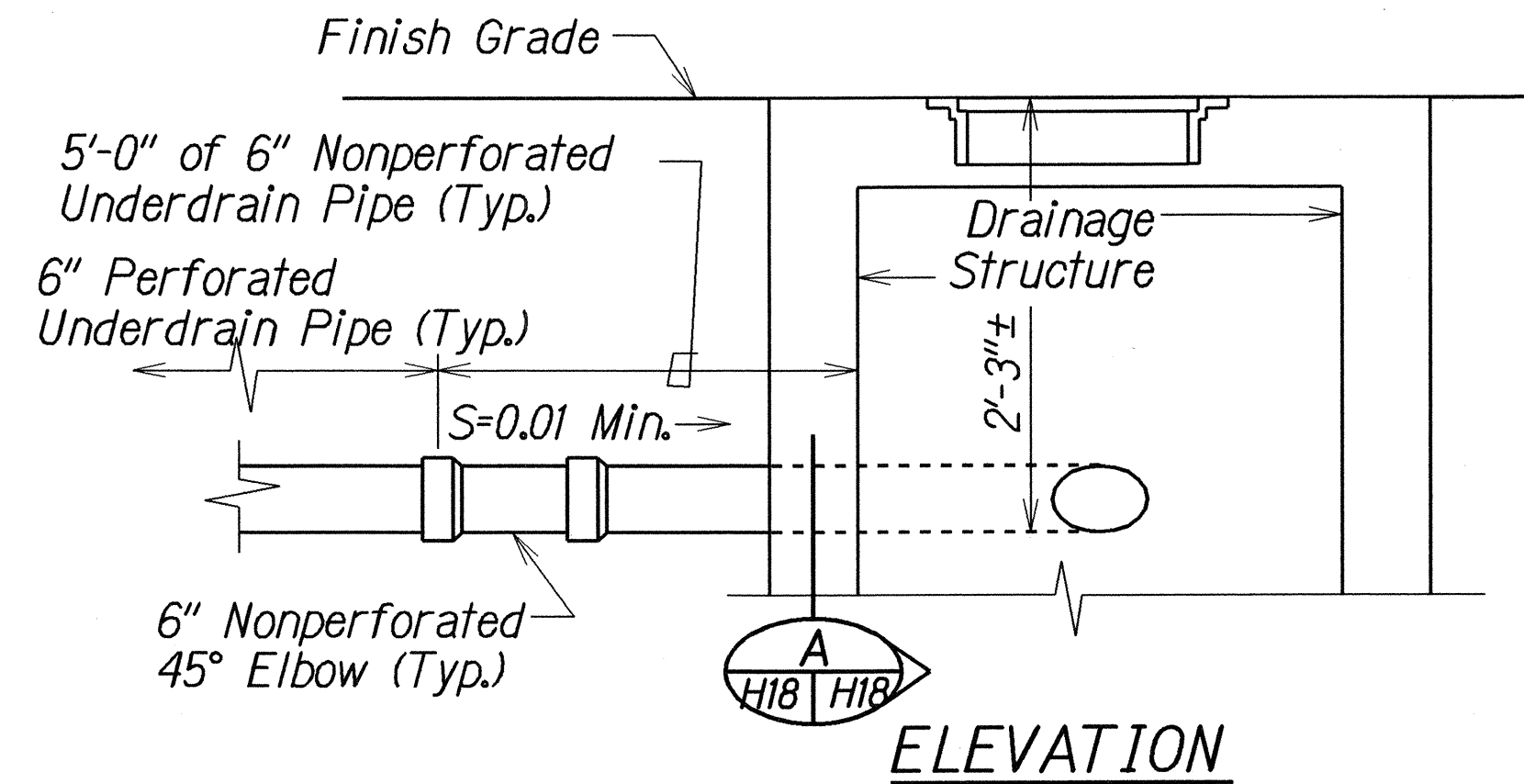
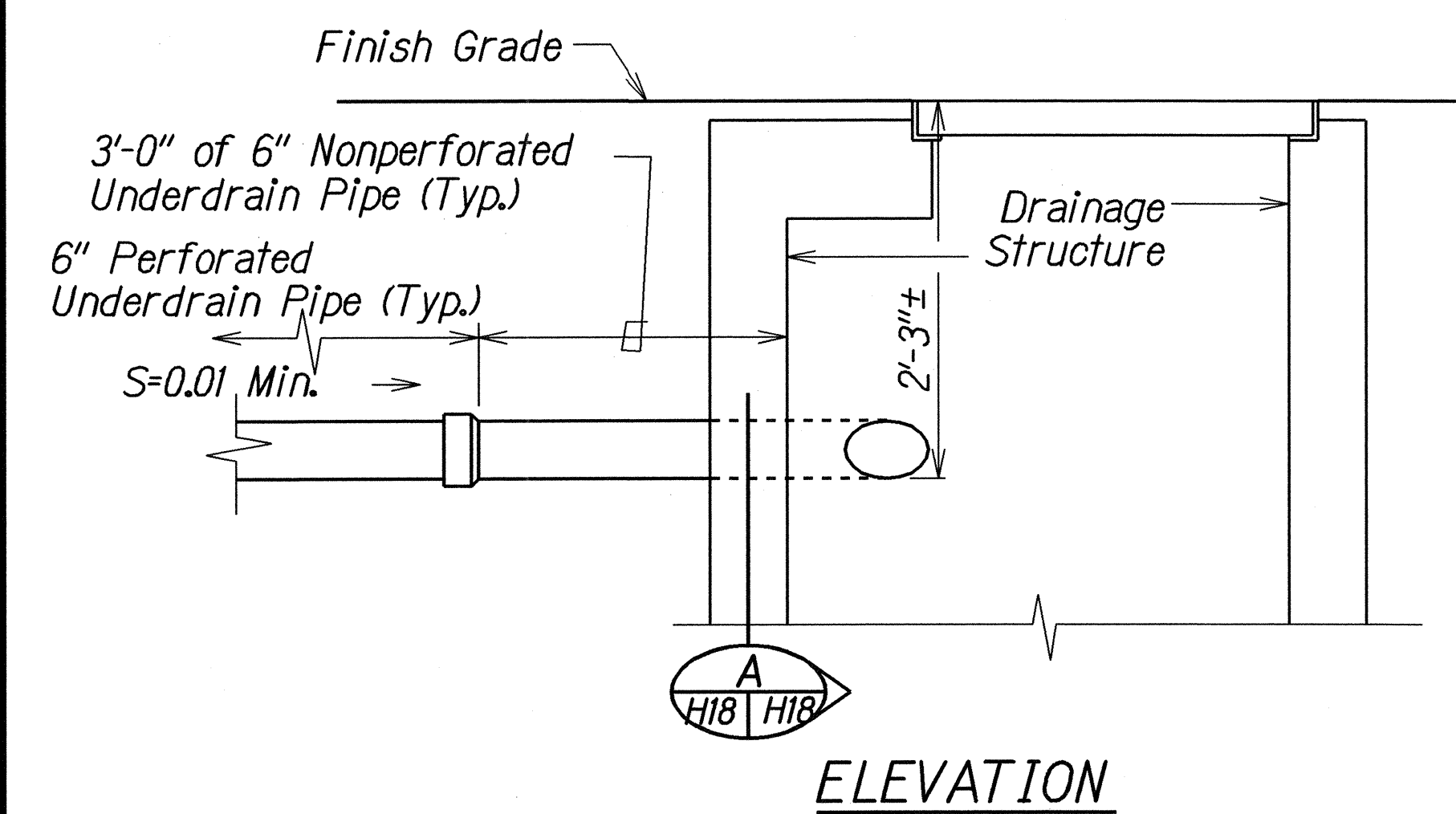
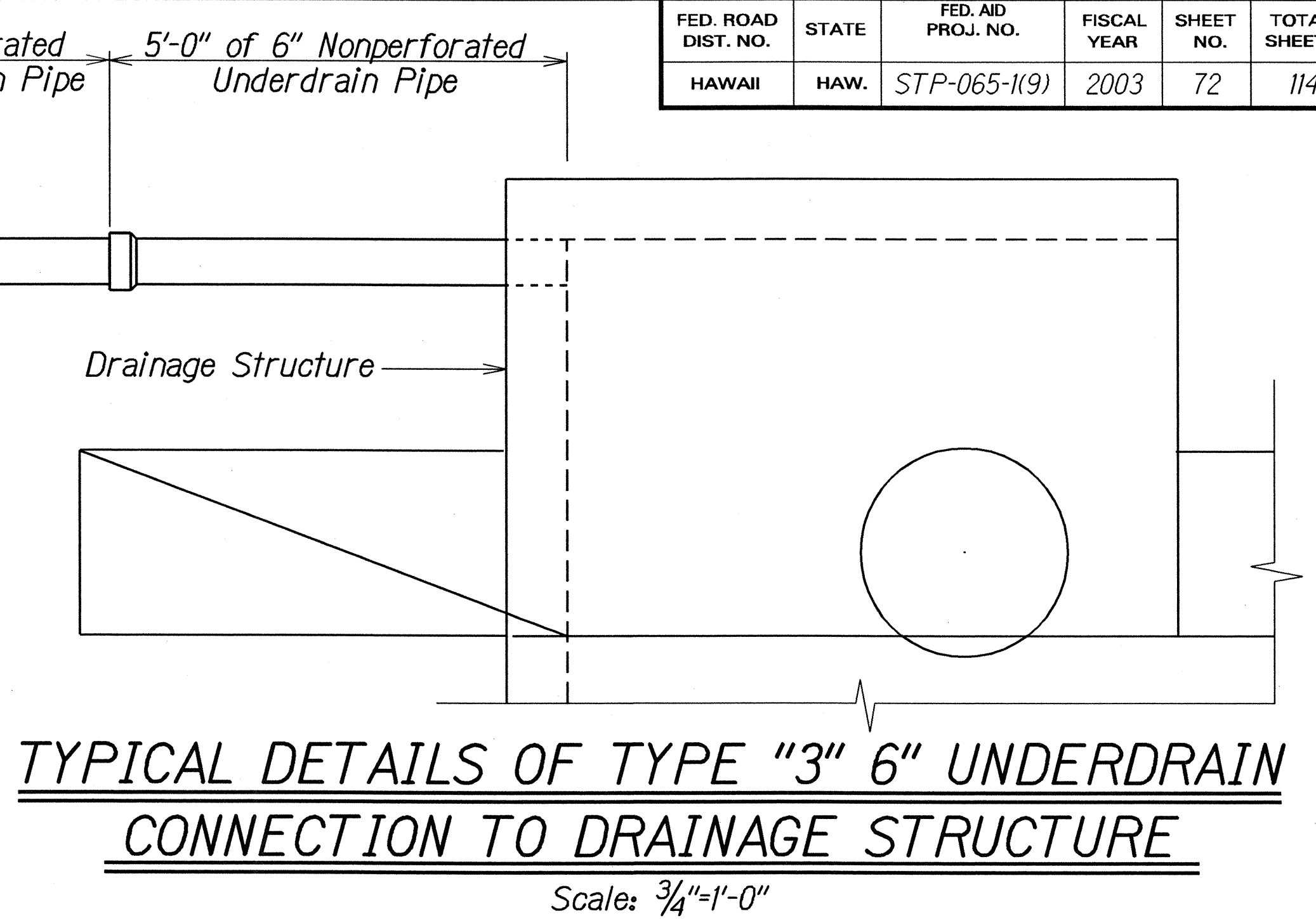
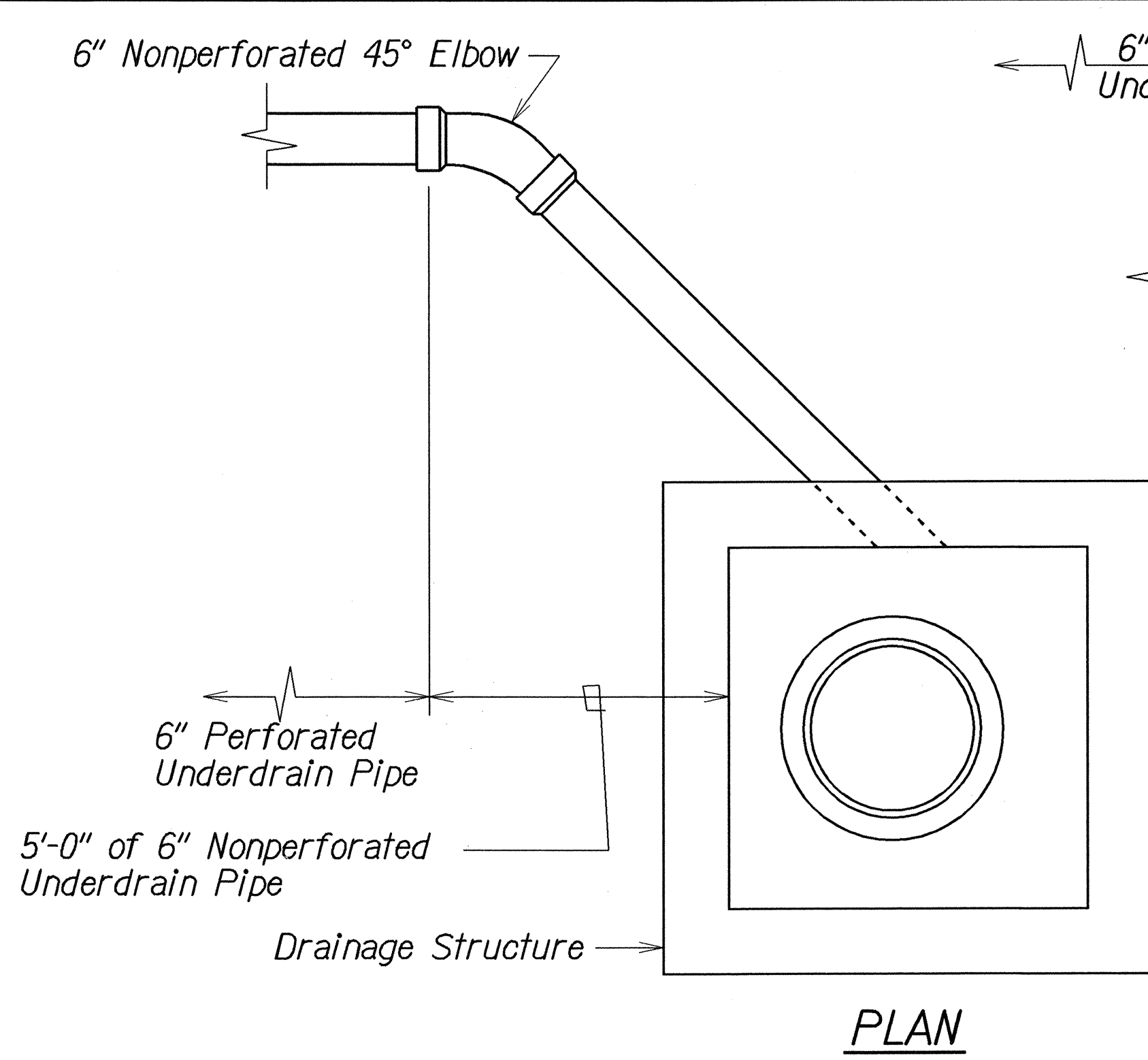
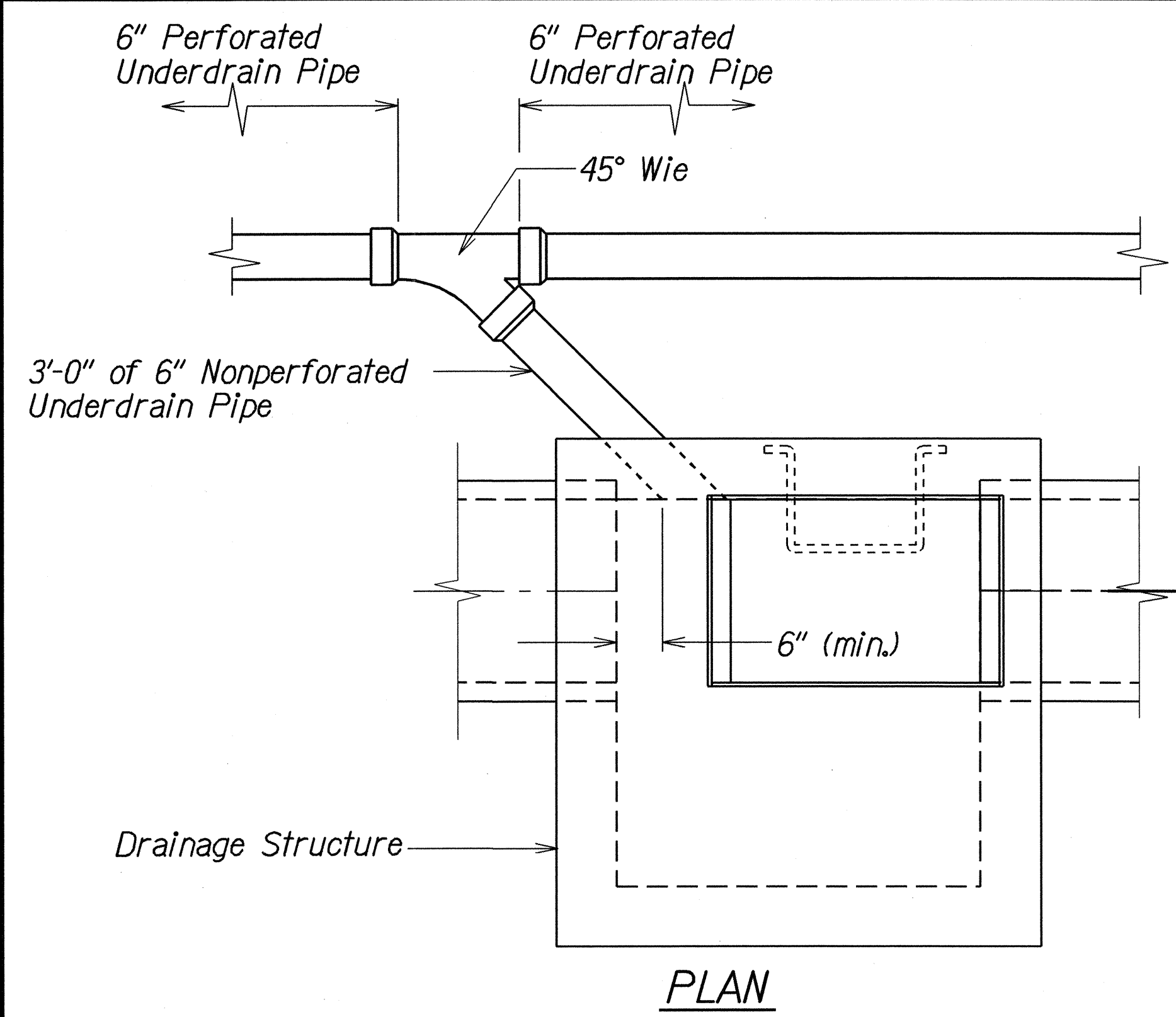
DRAINAGE DETAIL

Kaneohe Bay Drive Improvements
Vicinity of Puuhala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)

Scale: 1 1/2"=1'-0" Date: Jan, 2003

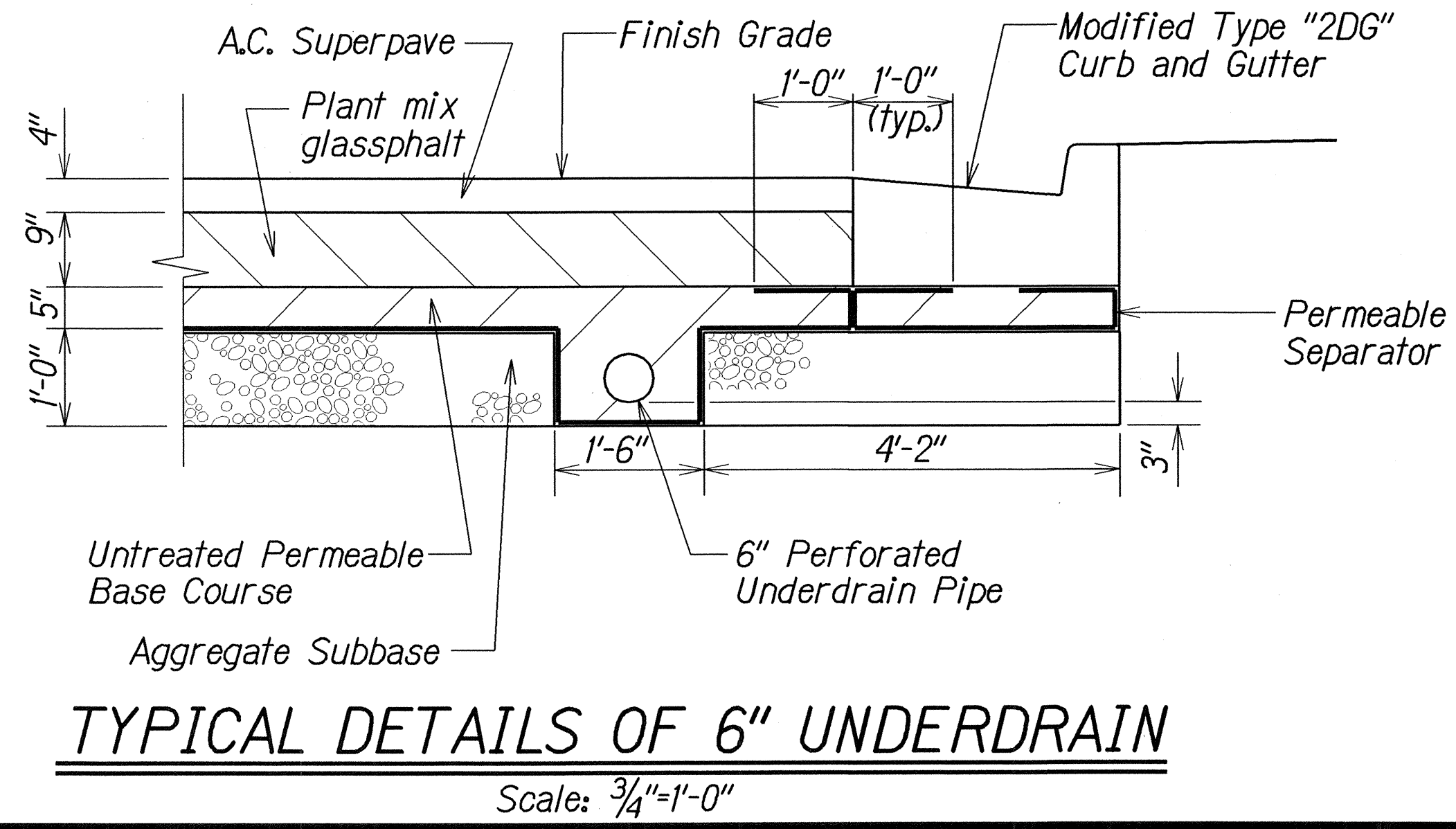
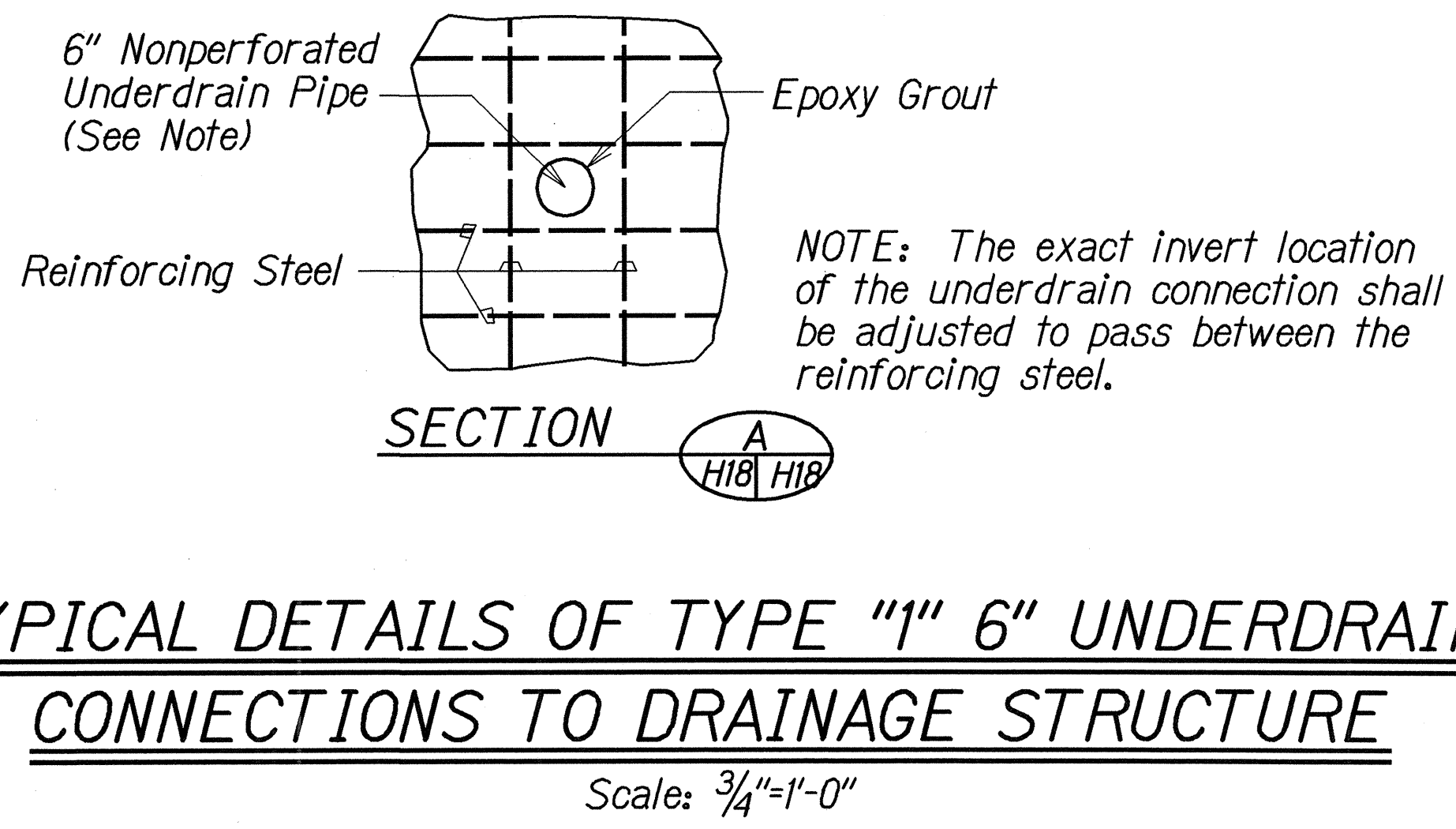
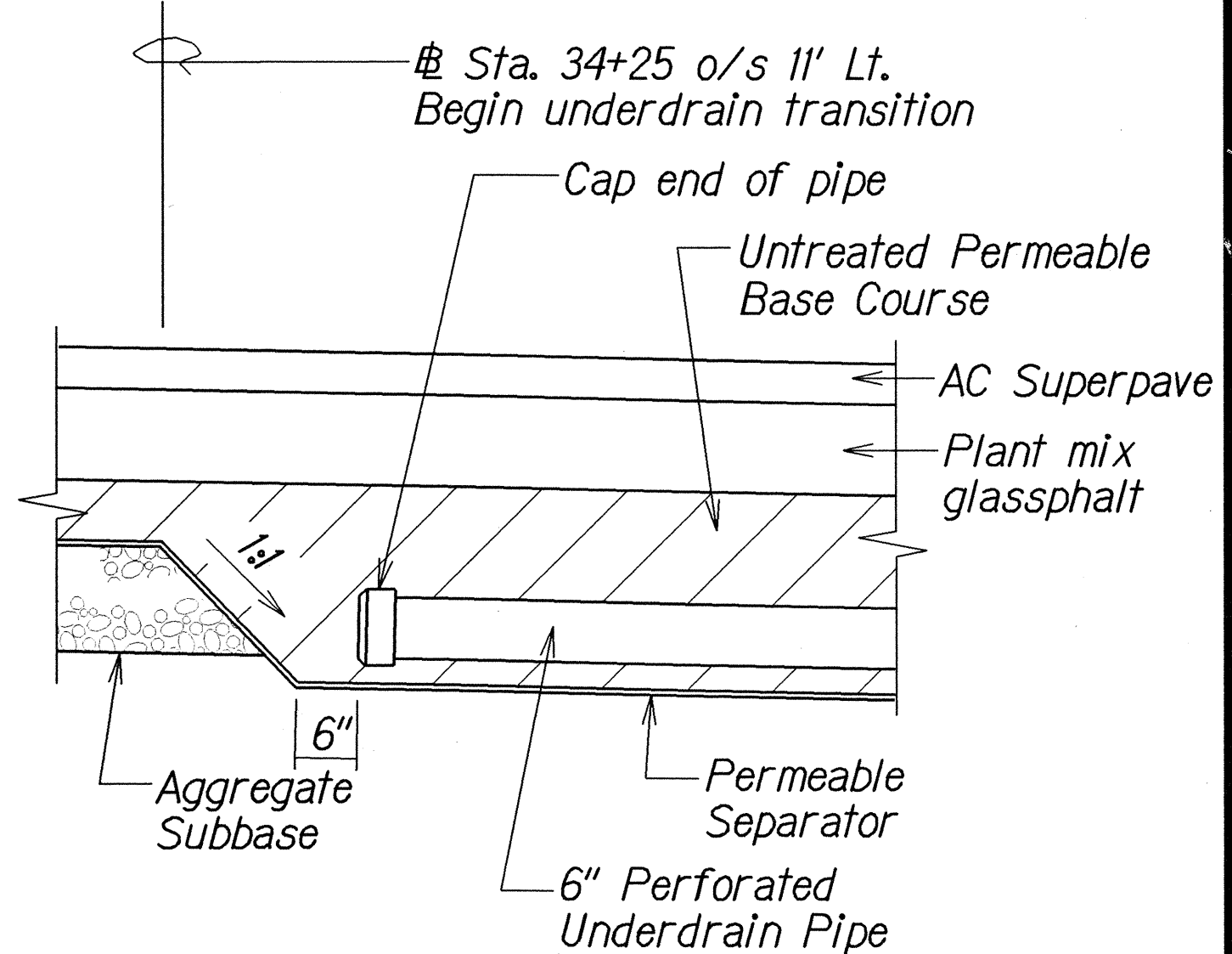
SHEET No. **117** OF **20** SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	72	114



TYPICAL DETAILS OF TYPE "2" 6" UNDERDRAIN CONNECTION TO DRAINAGE STRUCTURE

Scale: $\frac{3}{4}"=1'-0"$

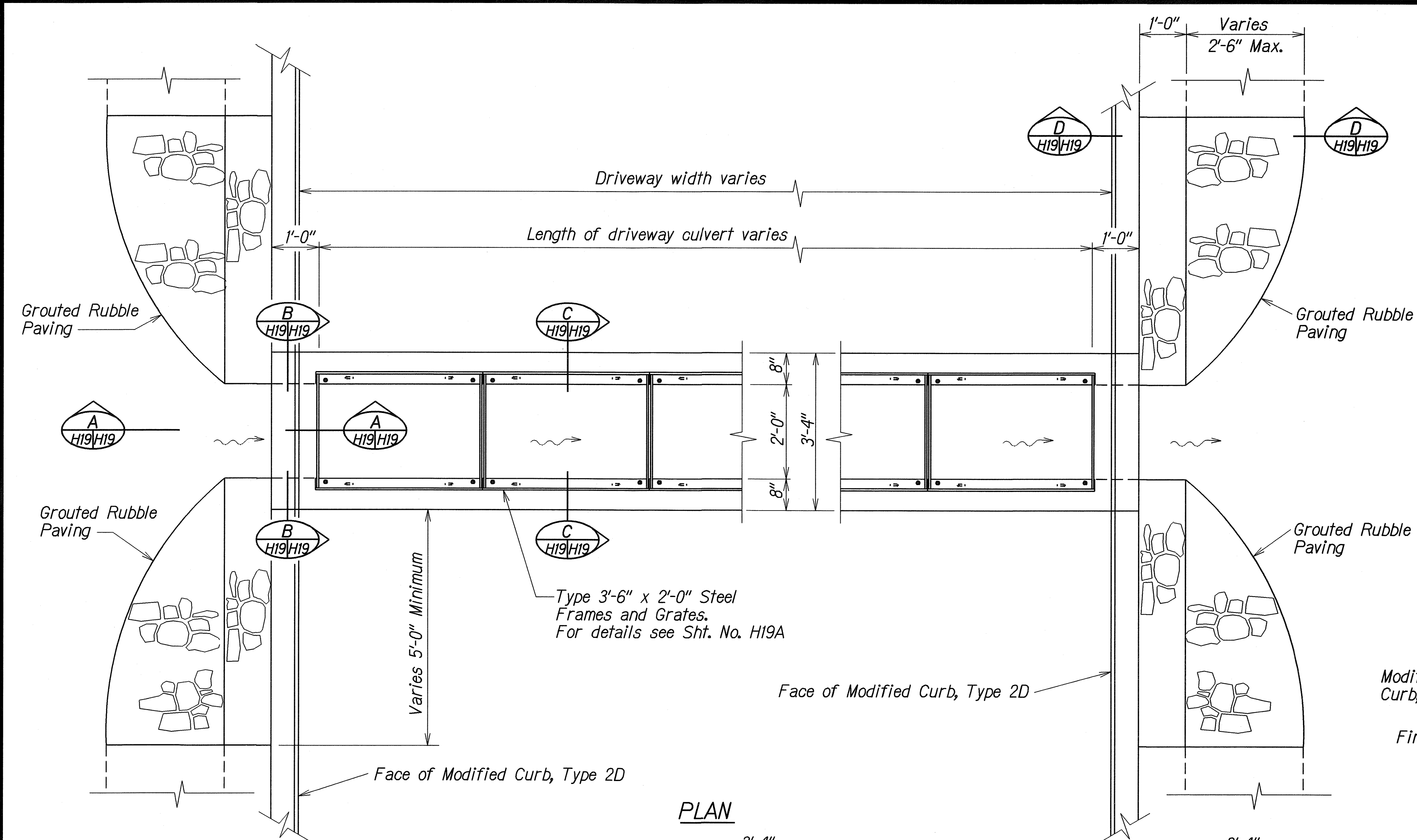


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
KANEHOE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)
Scale: As Shown Date: Jan, 2003
SHEET No. **H18** OF 20 SHEETS

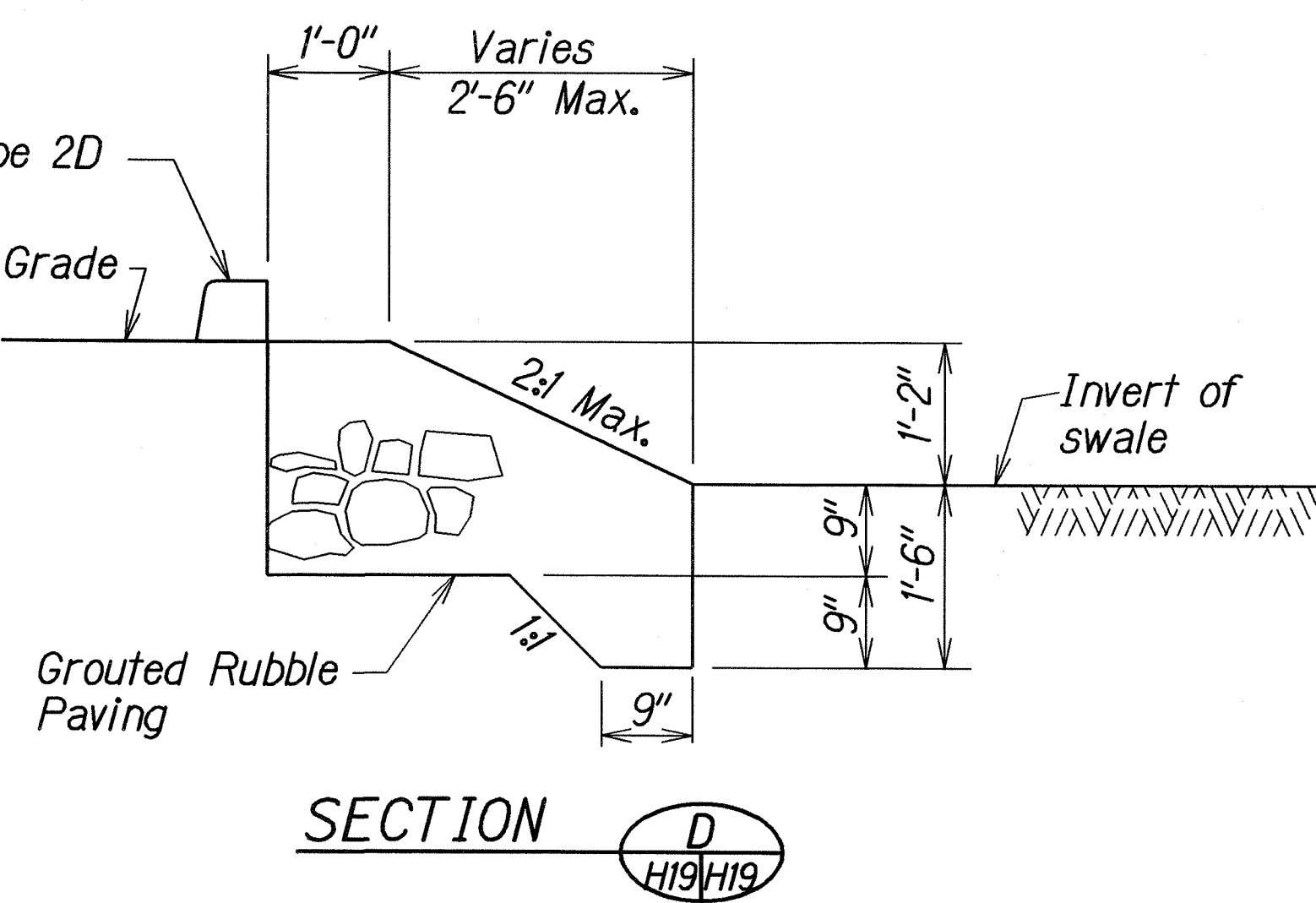
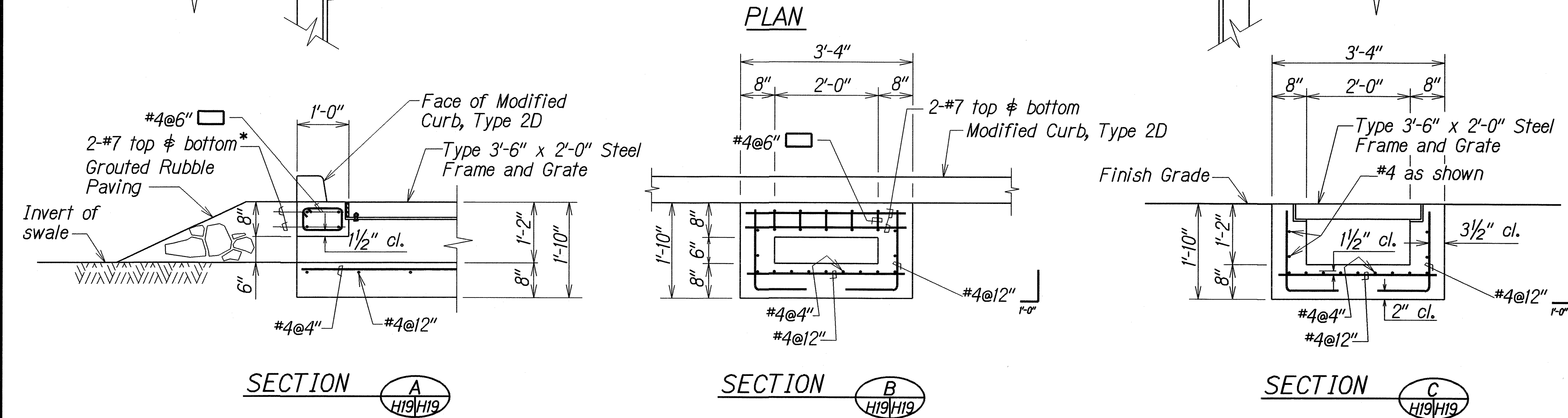
ORIGINAL PLAN	DATE: 5/25/01
DRAWN BY: J. J. J.	CHECKED BY: J. J. J.
DESIGNED BY: J. J. J.	QUANTITIES BY: J. J. J.
NOTES: See Note	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	73	114



LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	1/2/03
DRAWN BY	...
TRACED BY	...
DESIGNED BY	...
CHECKED BY	...



DRIVEWAY CULVERT DETAILS

* For Driveway Culvert at Sta. 24+70, Assuming Beam Widths of 2', use 4 #7 Top and Bottom

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAIL

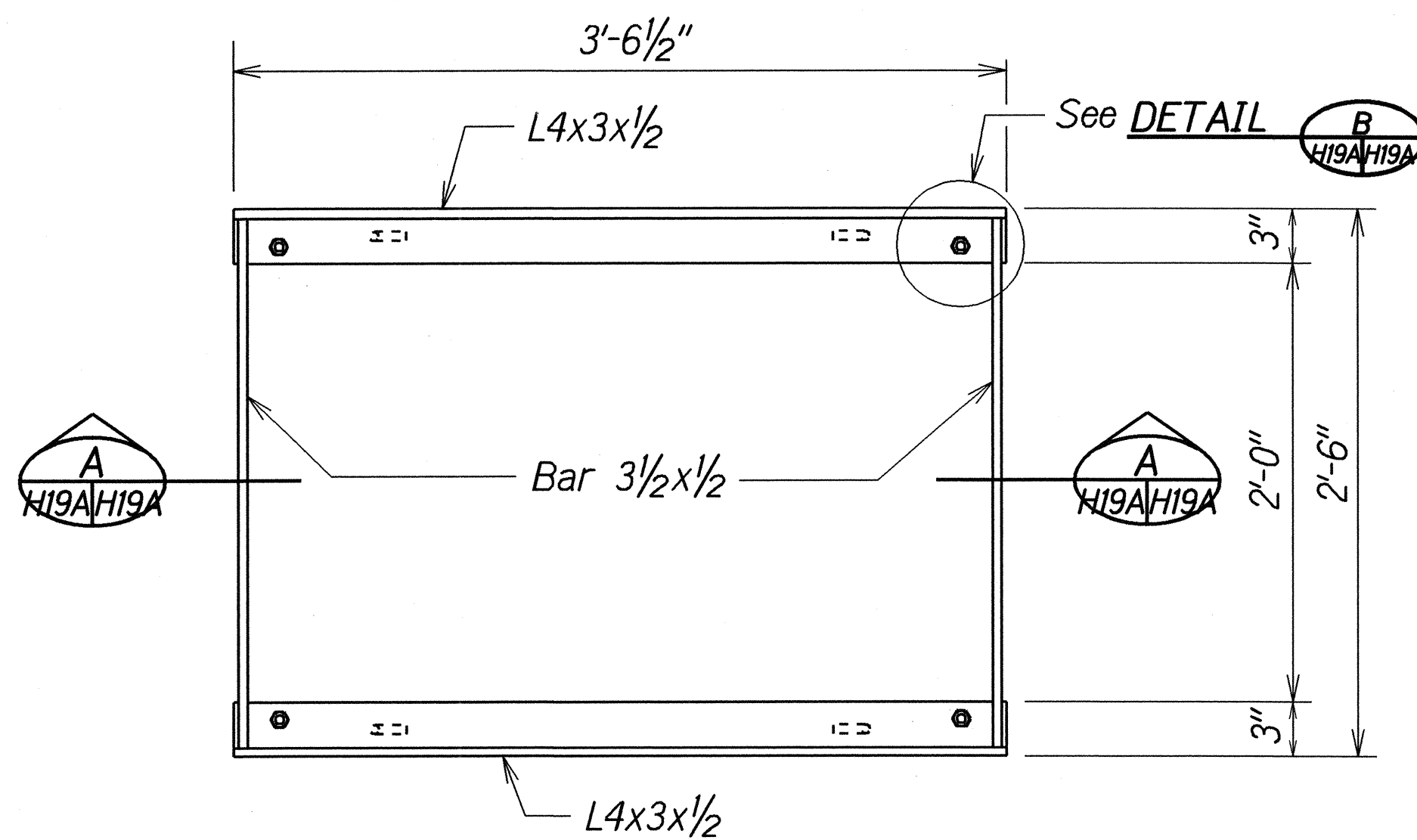
KANEHOE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)

Scale: As shown Date: Jan, 2003

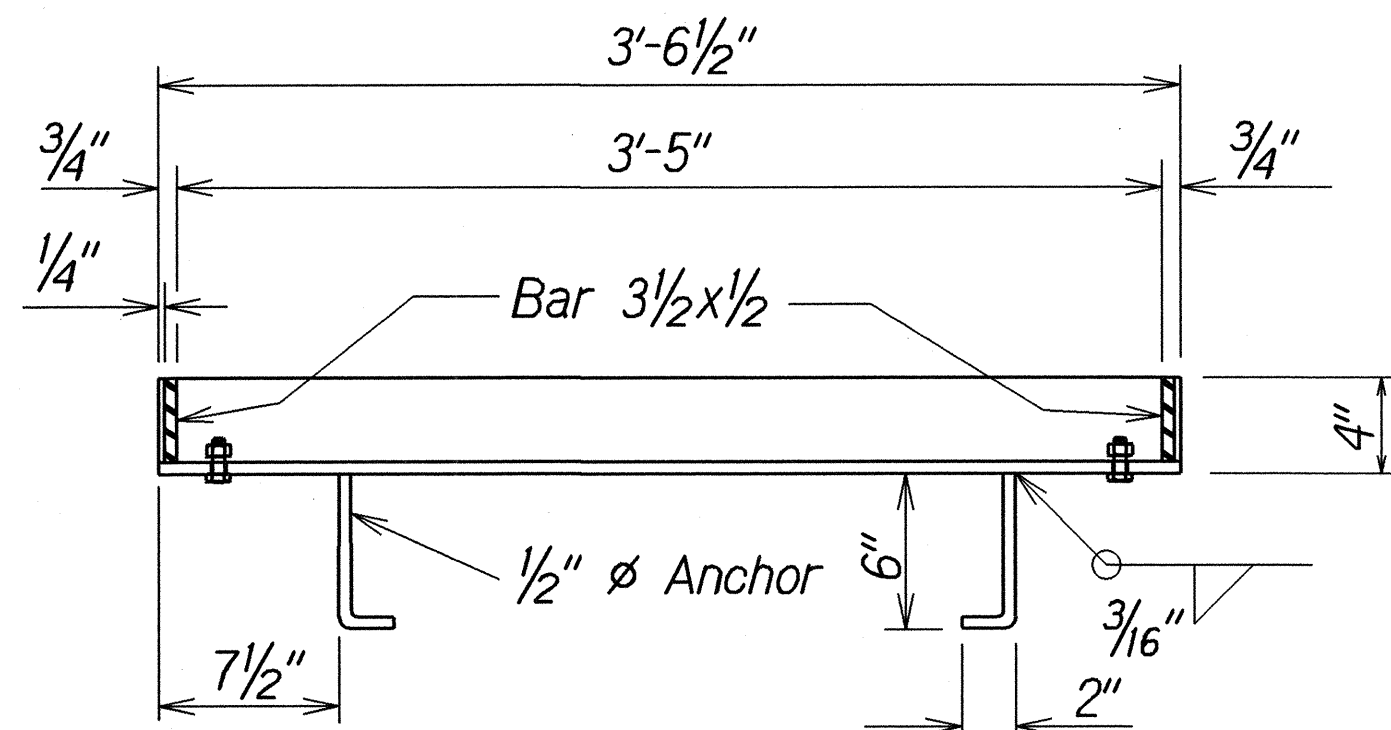
SHEET No. H19 OF 20 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	73 S-1	114



PLAN

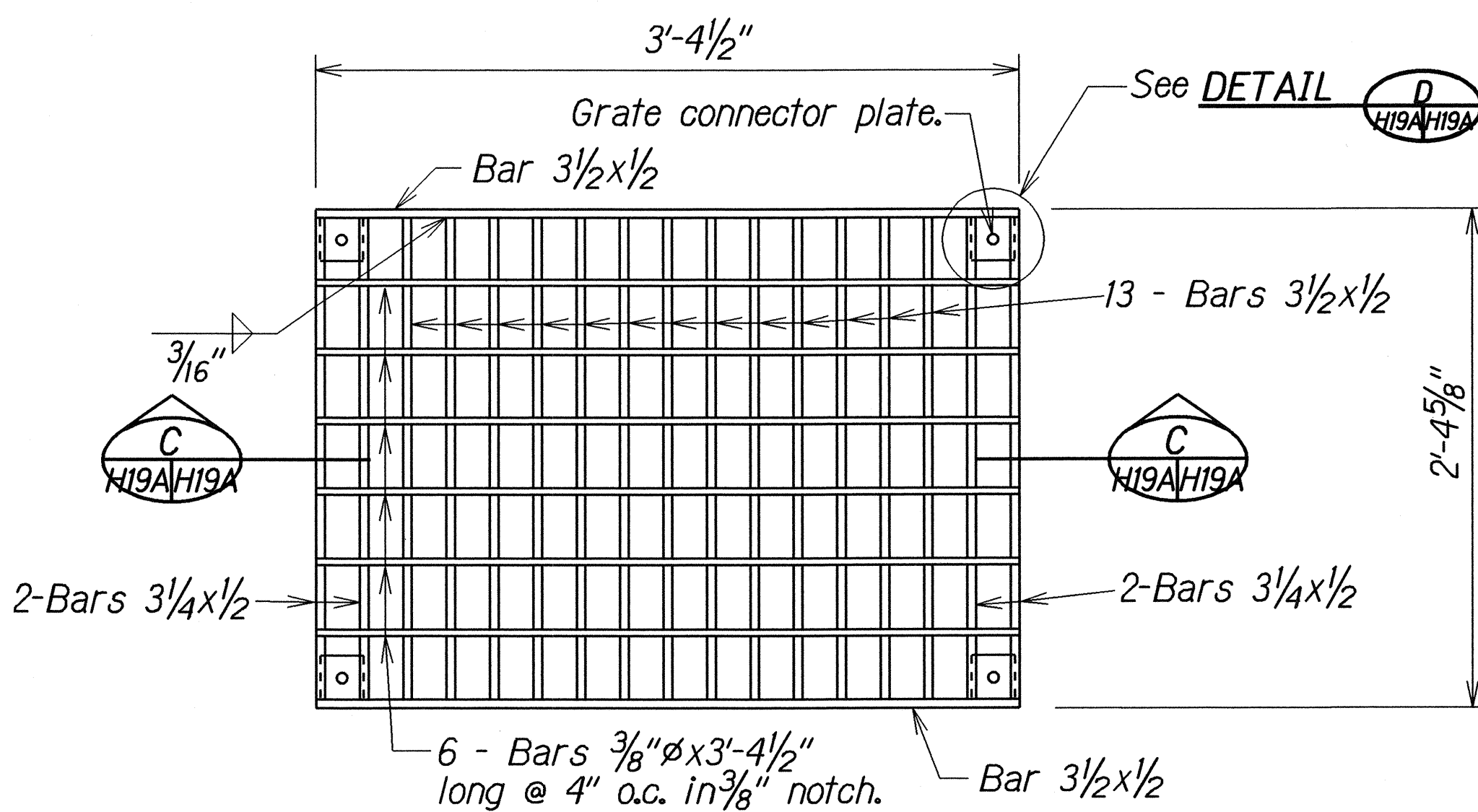


SECTION A
H19AH19A

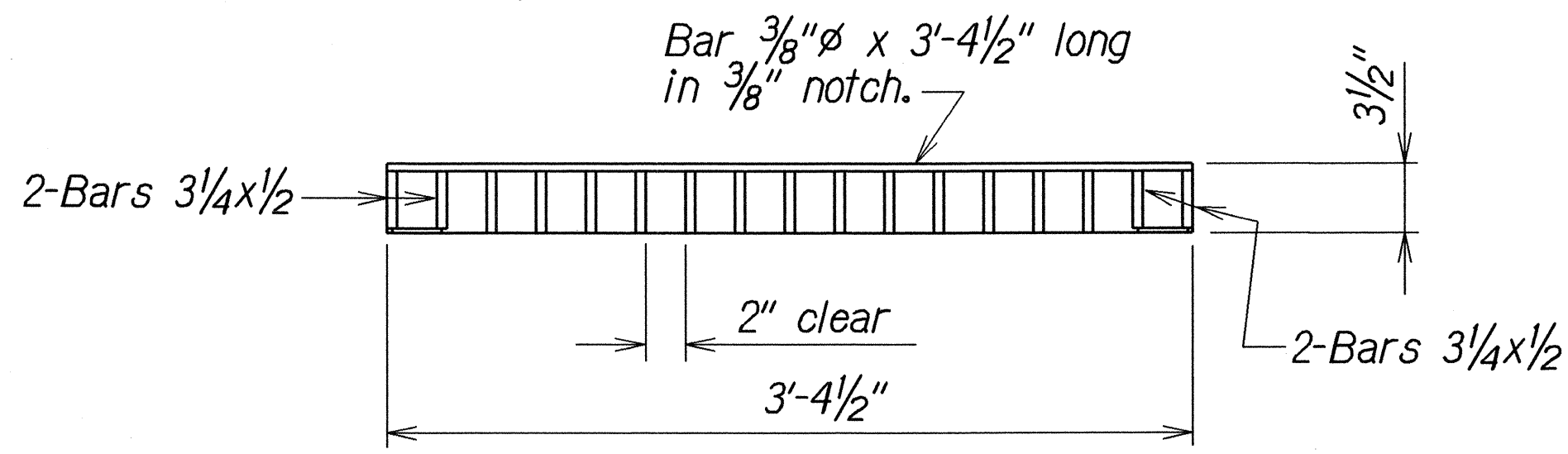
FRAME

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

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



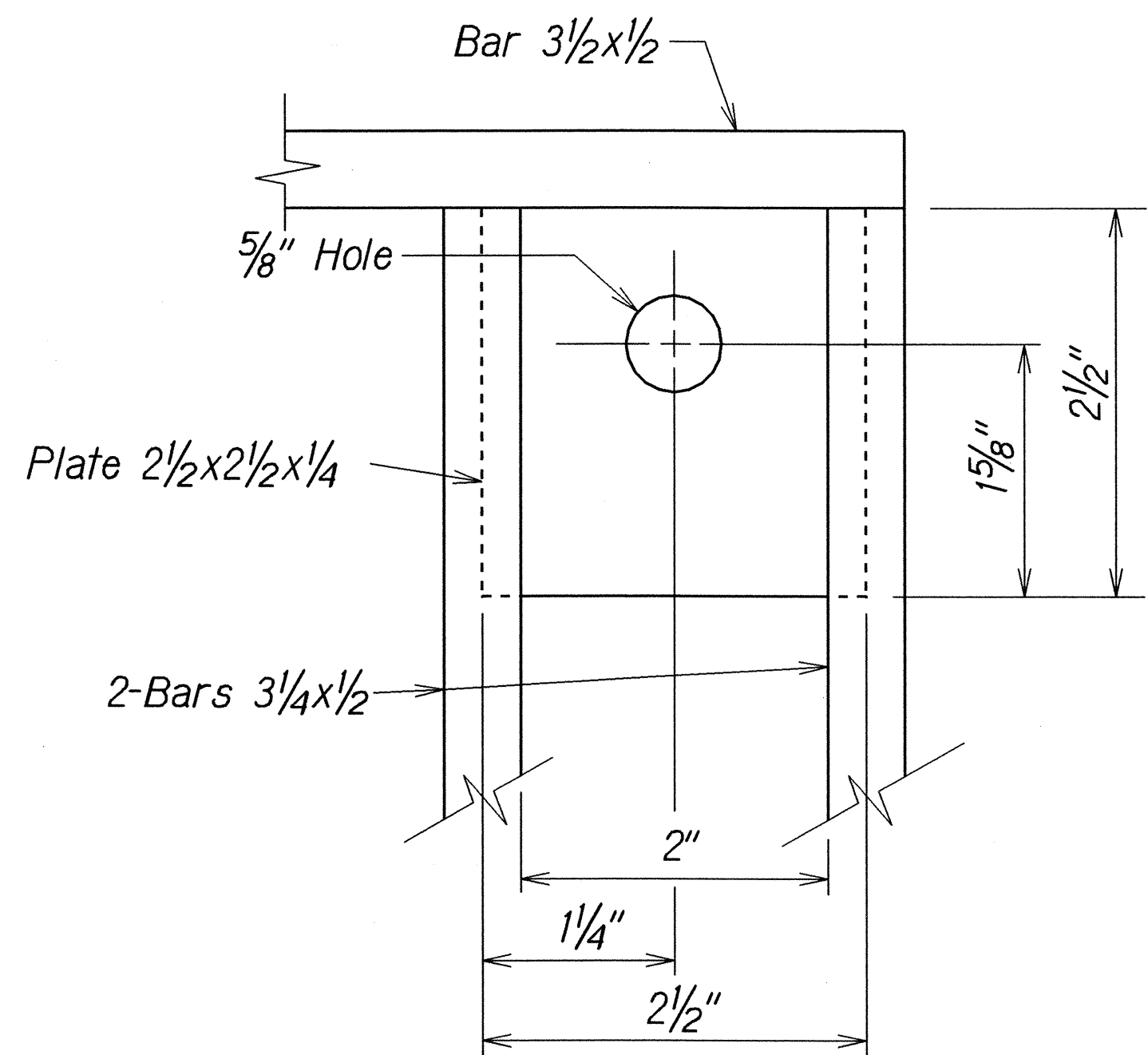
PLAN



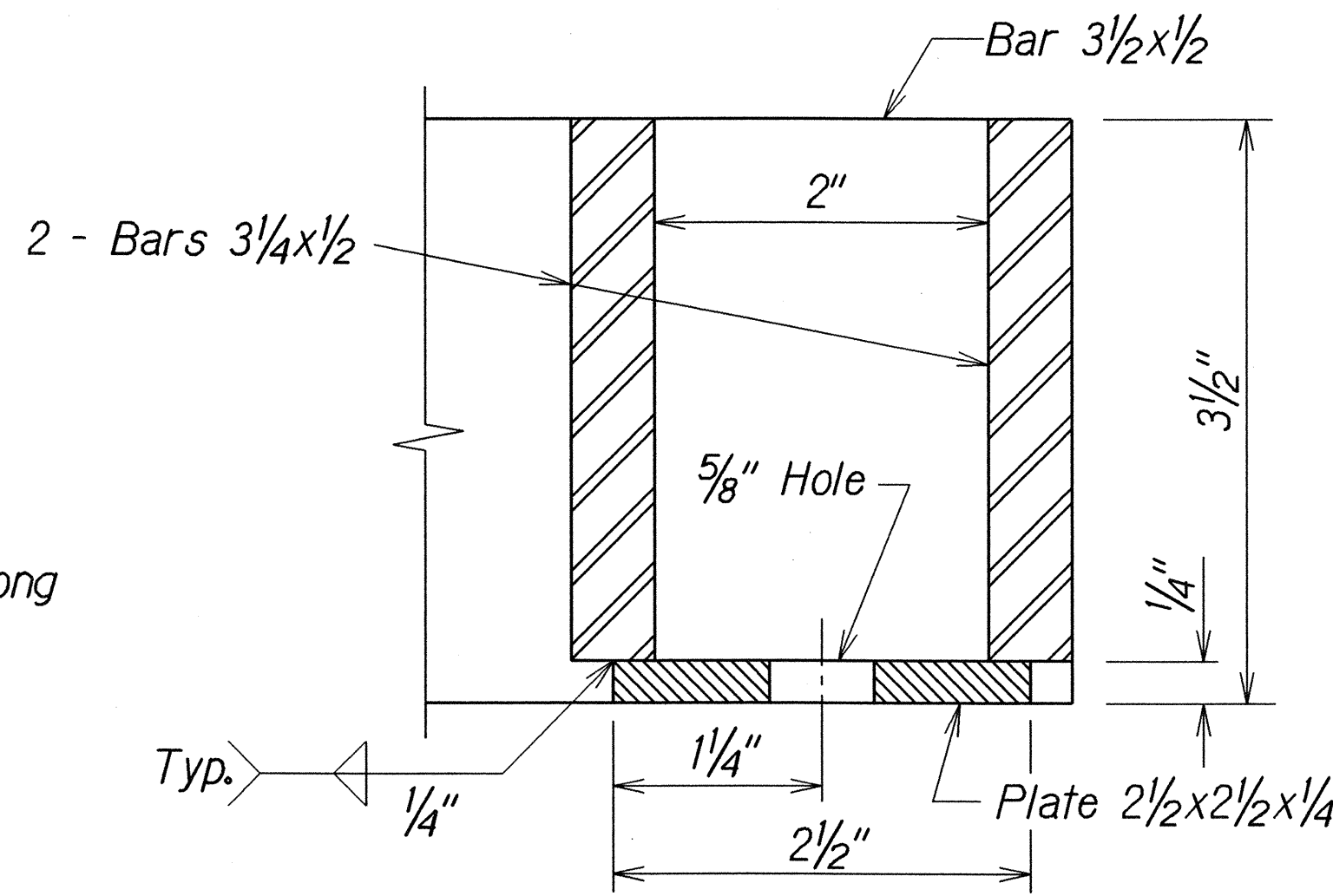
SECTION C
H19AH19A

GRATE

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

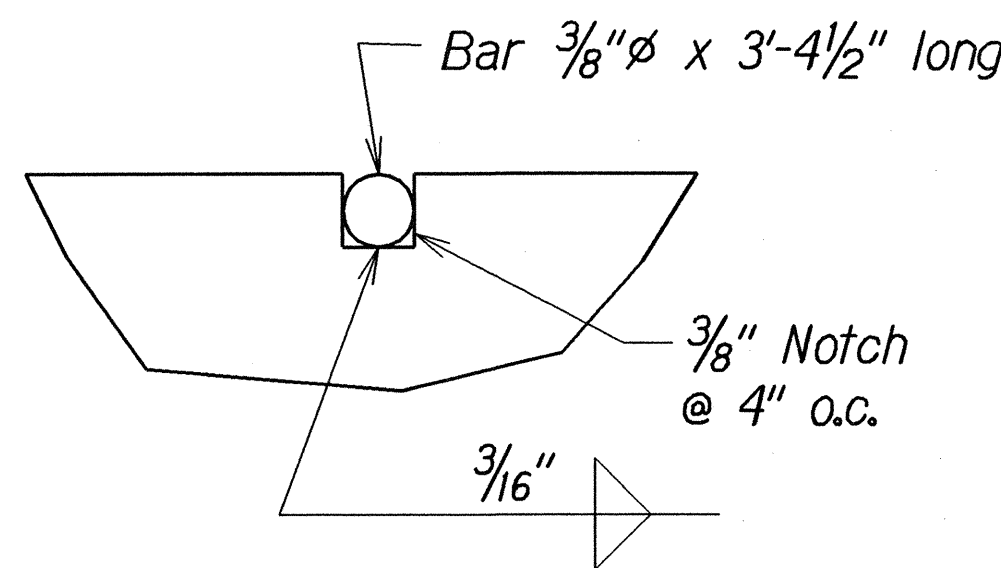


PLAN



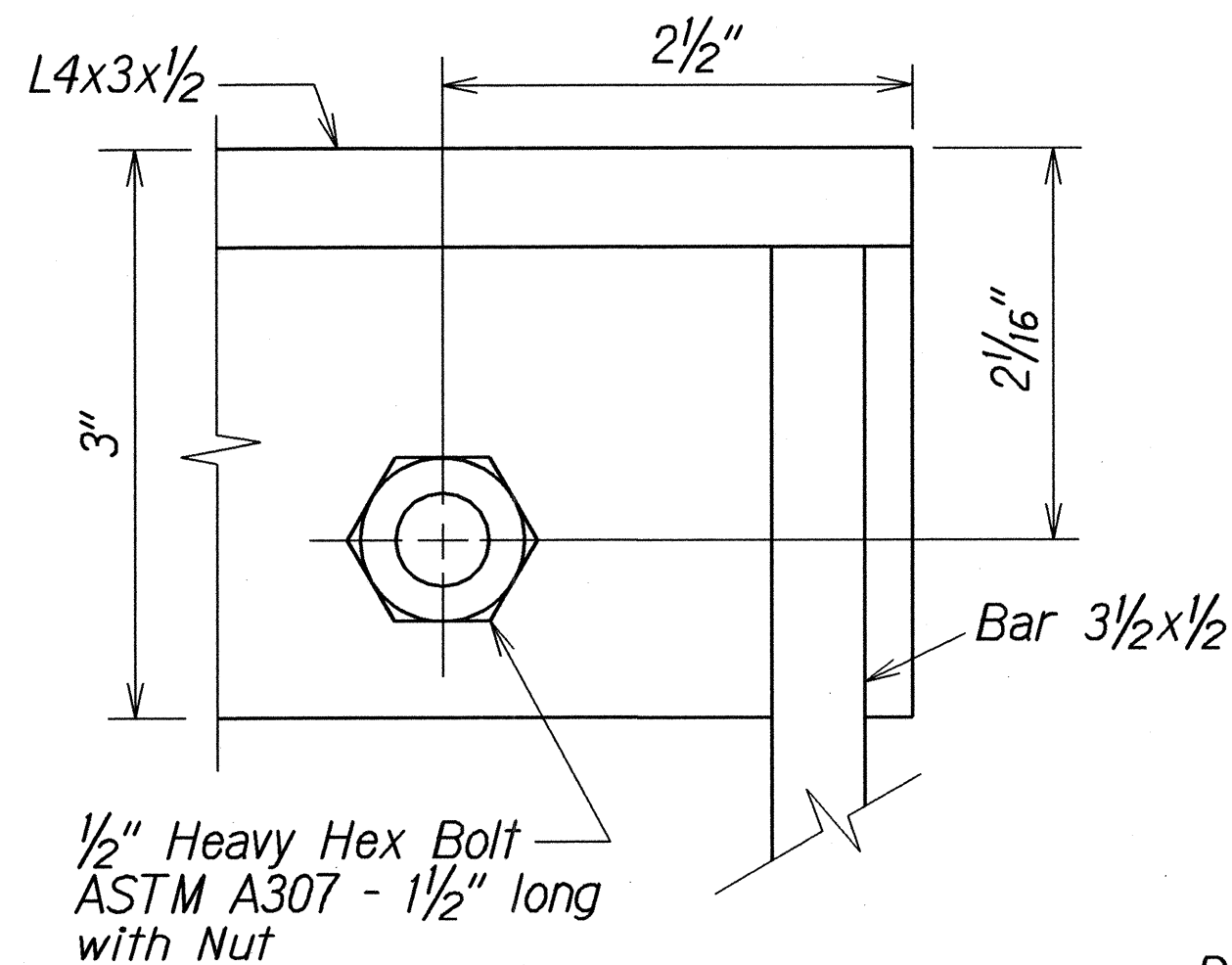
SECTION

DETAIL D
H19AH19A
Full Size

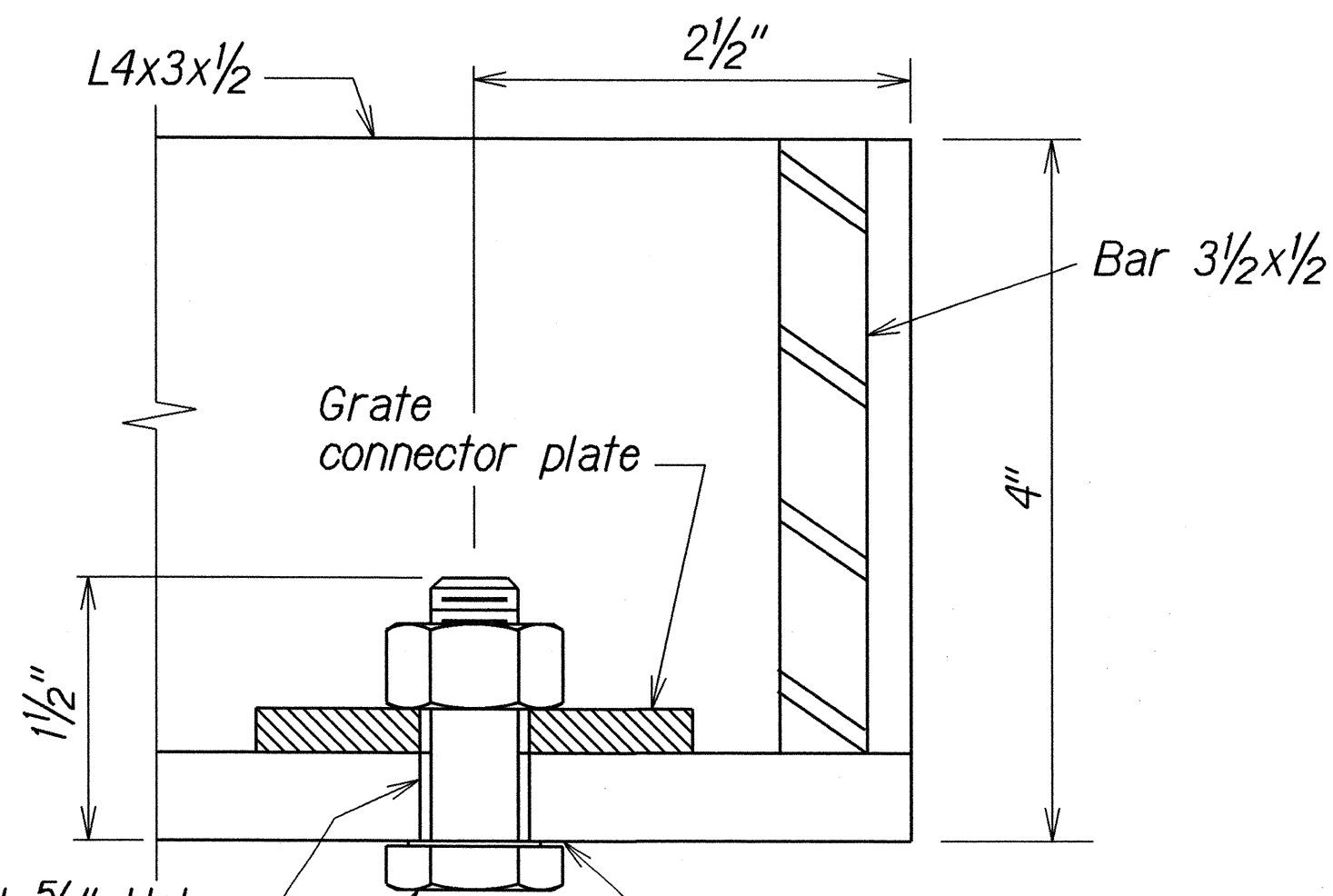


NOTCH DETAIL

Full Size



PLAN



SECTION

DETAIL B
H19AH19A
Full Size

DETAIL OF TYPE 3'-6" X 2'-0" STEEL FRAME AND GRATES

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

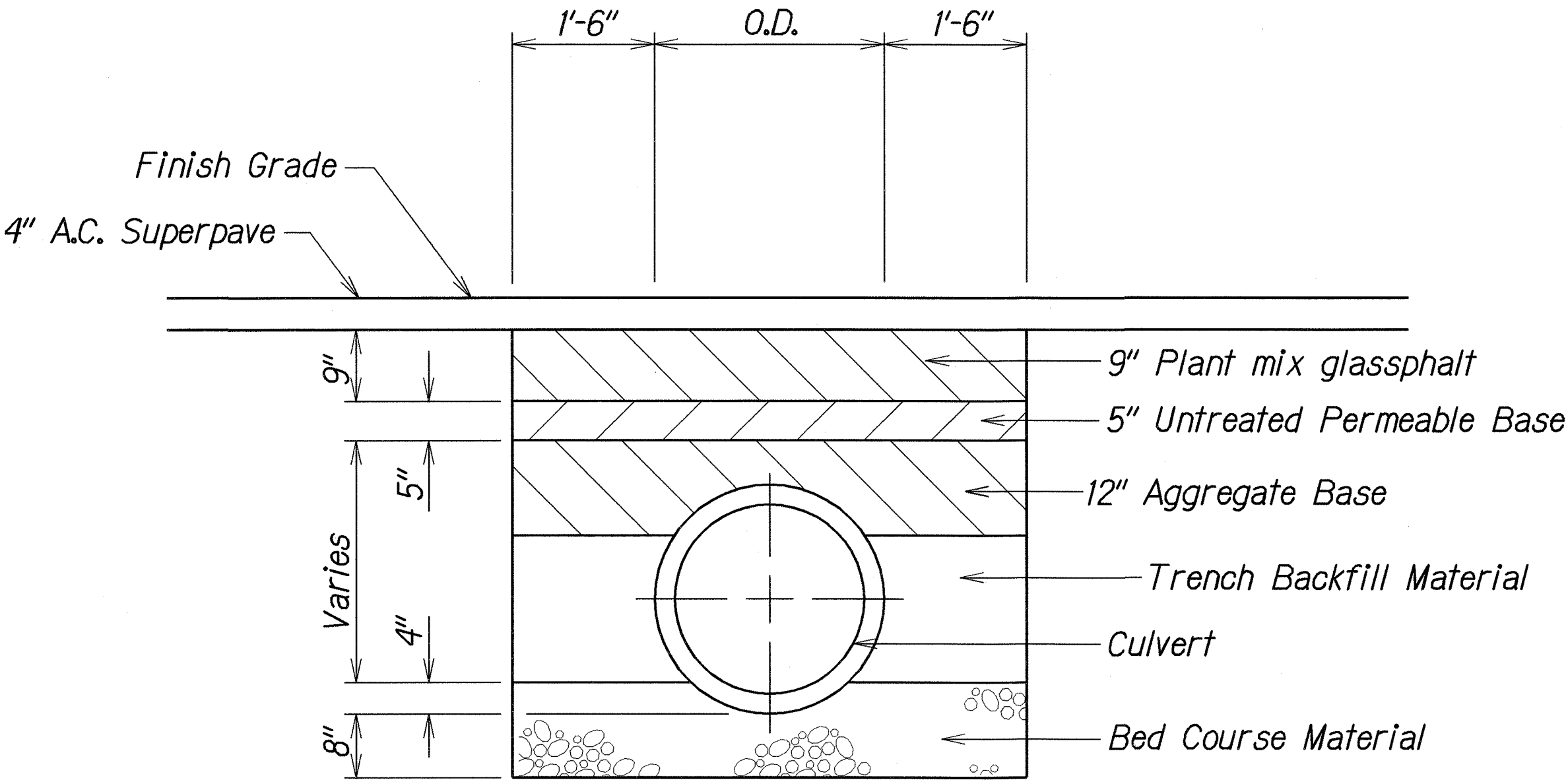
DRAINAGE DETAIL

KANEOHE BAY DRIVE IMPROVEMENTS
Vicinity of Puohala St. to Kawa Bridge
Federal Aid Proj. No. STP-065-1(9)

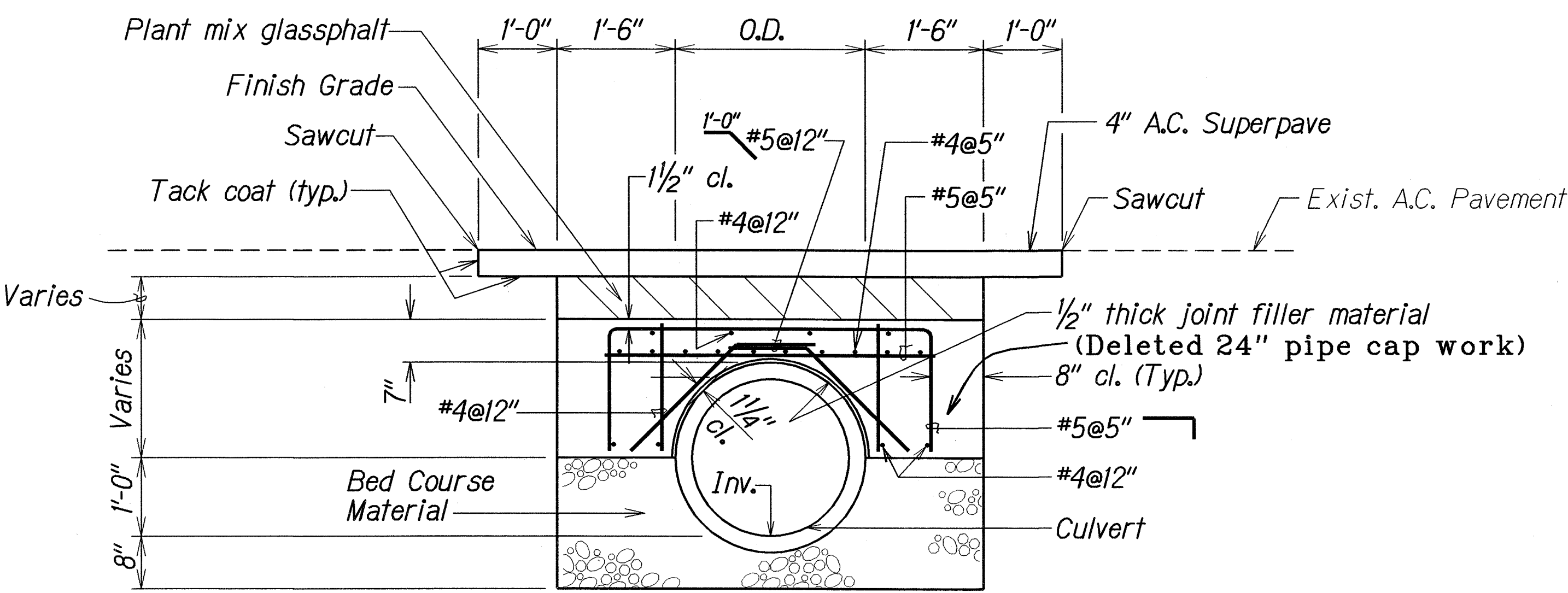
Scale: 1 1/2"=1'-0" Date: Jan, 2003

SHEET No. H19A OF 20 SHEETS

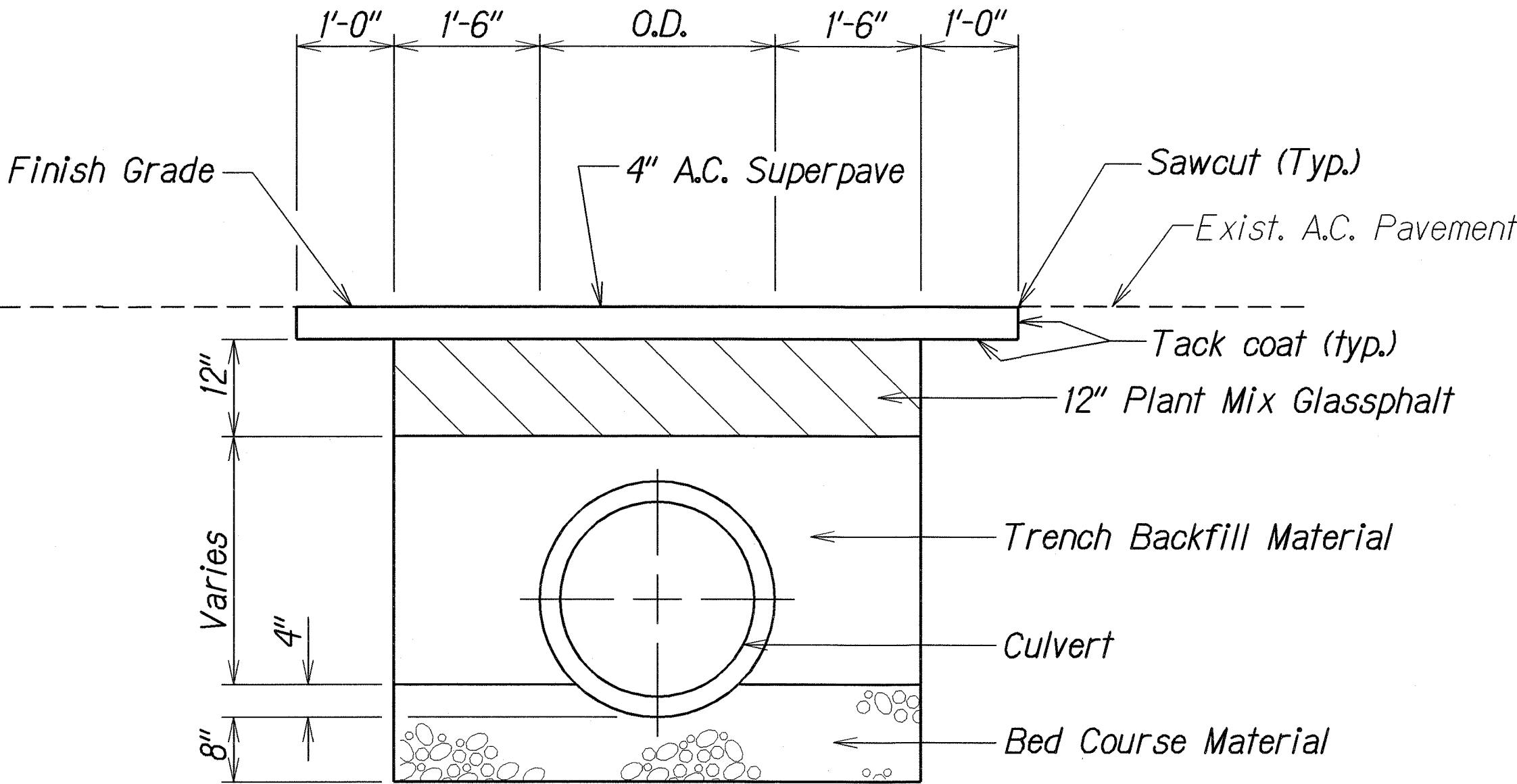
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-065-1(9)	2003	74	114



TYPICAL DETAILS OF CULVERT TRENCH RESTORATION
AT NEW PAVEMENT STRUCTURE



TYPICAL DETAILS OF CULVERT TRENCH RESTORATION
WITH REINFORCED CONCRETE JACKET



TYPICAL DETAILS OF CULVERT TRENCH RESTORATION
AT EXISTING PAVEMENT STRUCTURE

ORIGINAL PLAN	DATE
DESIGNED BY	DATE
CHECKED BY	DATE
APPROVED BY	DATE
NOTED BY	DATE
QUANTITIES BY	DATE
AS-BUILT BY	DATE

asbuilt.4kanhdt02.dgn

LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

2/03/03	Detail of reinforced concrete jacket revised to show reinforcing steel bars.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <u>DRAINAGE DETAIL</u> KANEHOE BAY DRIVE IMPROVEMENTS Vicinity of Puohala St. to Kawa Bridge Federal Aid Proj. No. STP-065-1(9) Scale: 3/4"=1'0" Date: Jan, 2003	
SHEET No. H20 OF 20 SHEETS	

"AS-BUILT"

ADD. 74