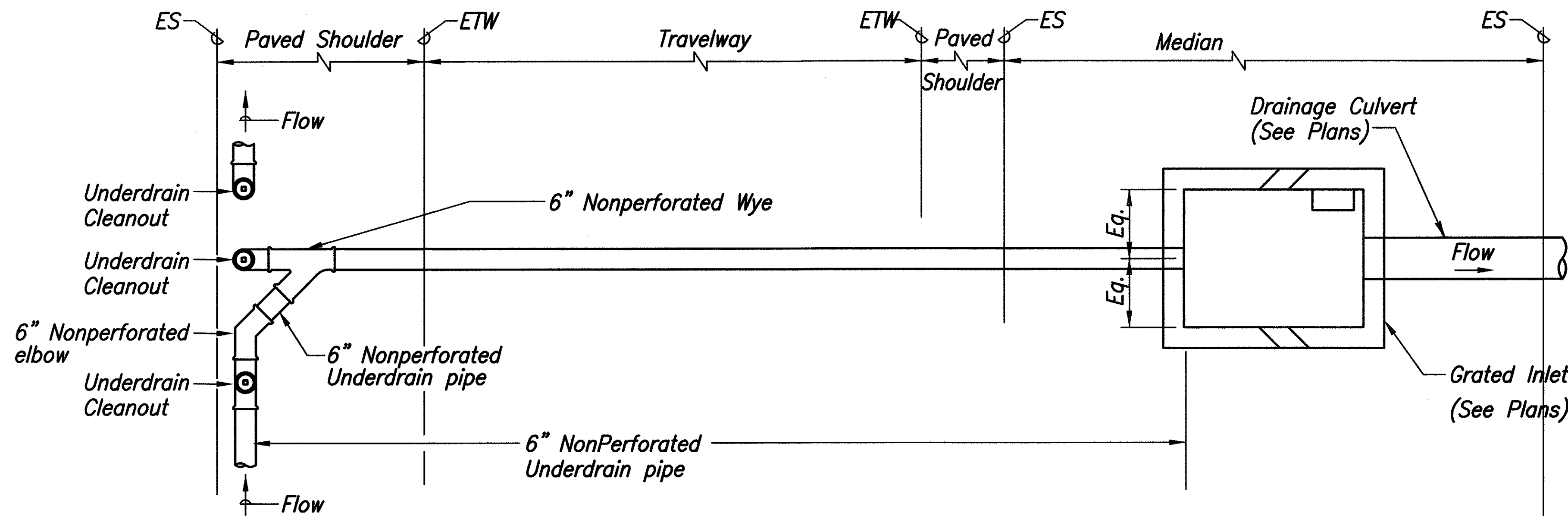
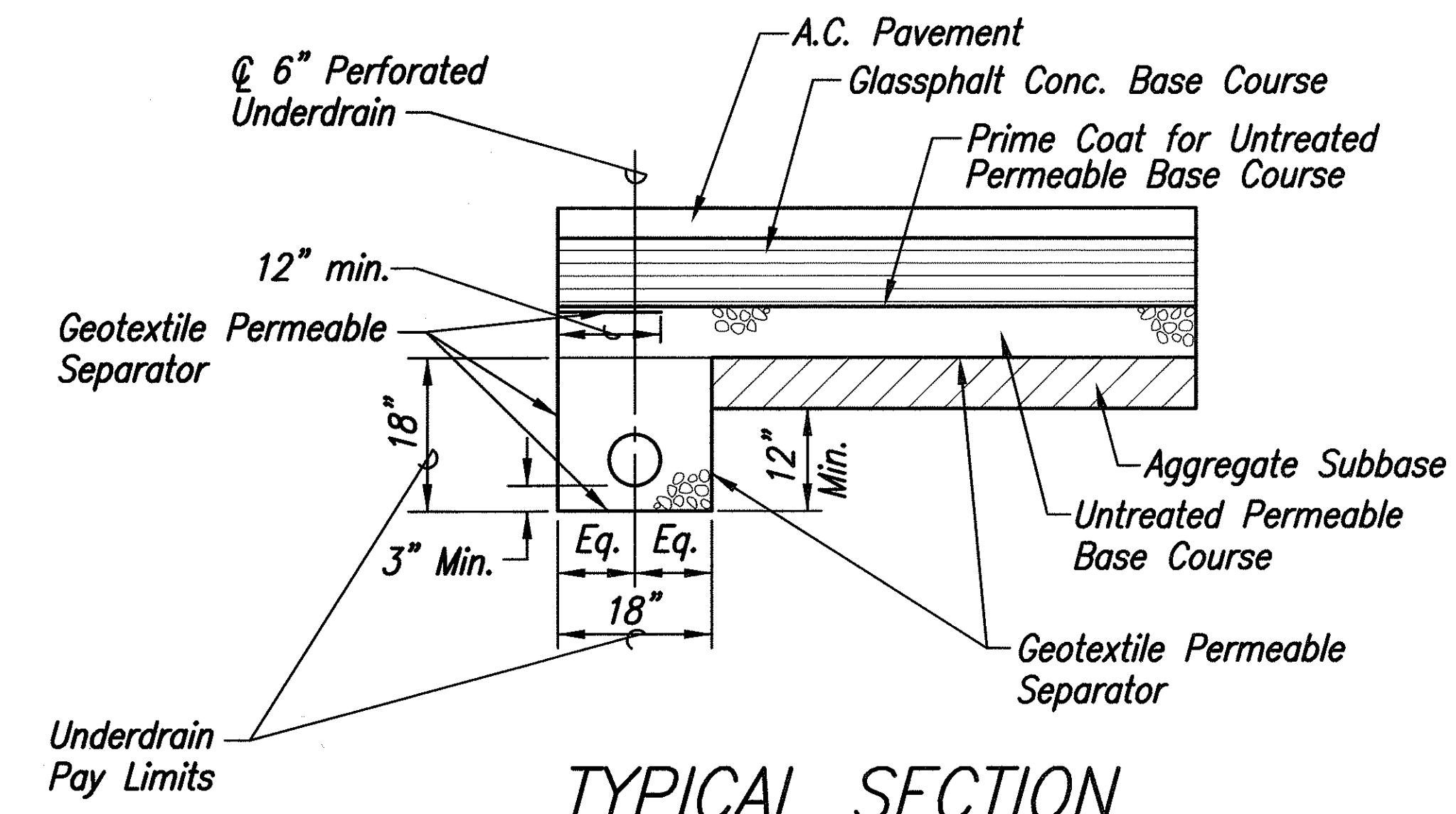
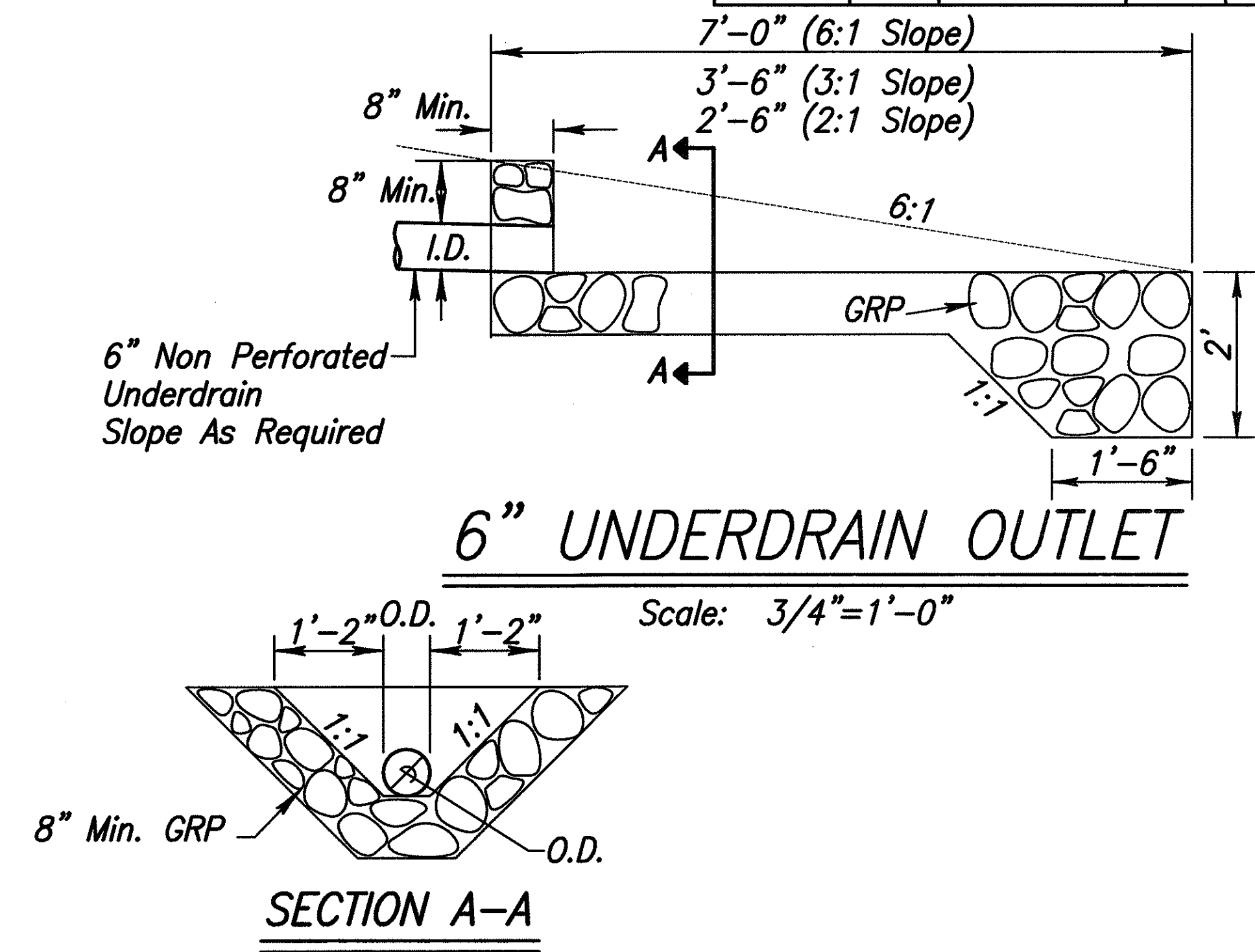


FED. ROAD DIST. NO.	STATE	FEDERAL - AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-A311(7)	2004	57	138



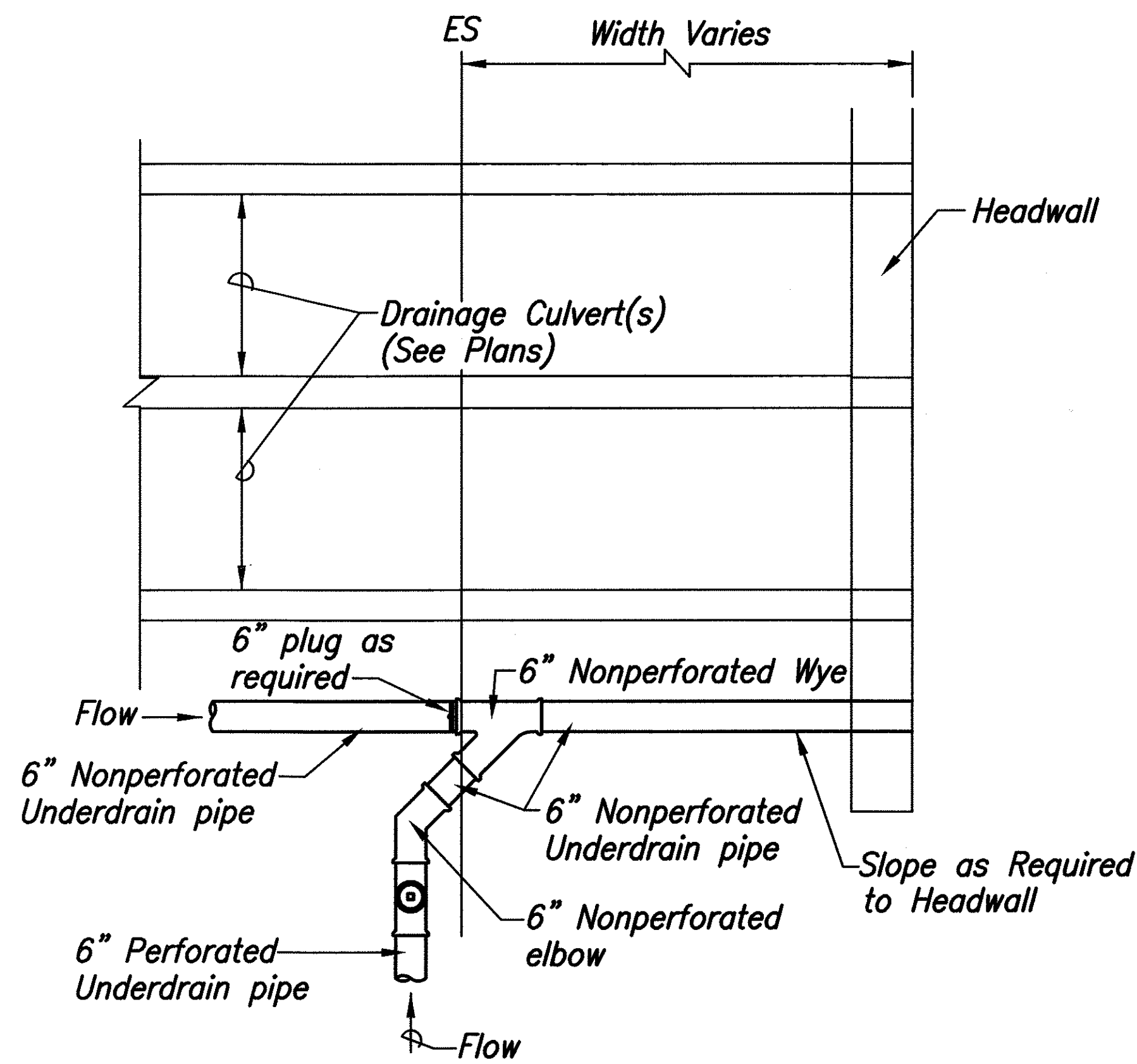
### CONNECTION TO GRATED DROP INLET

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



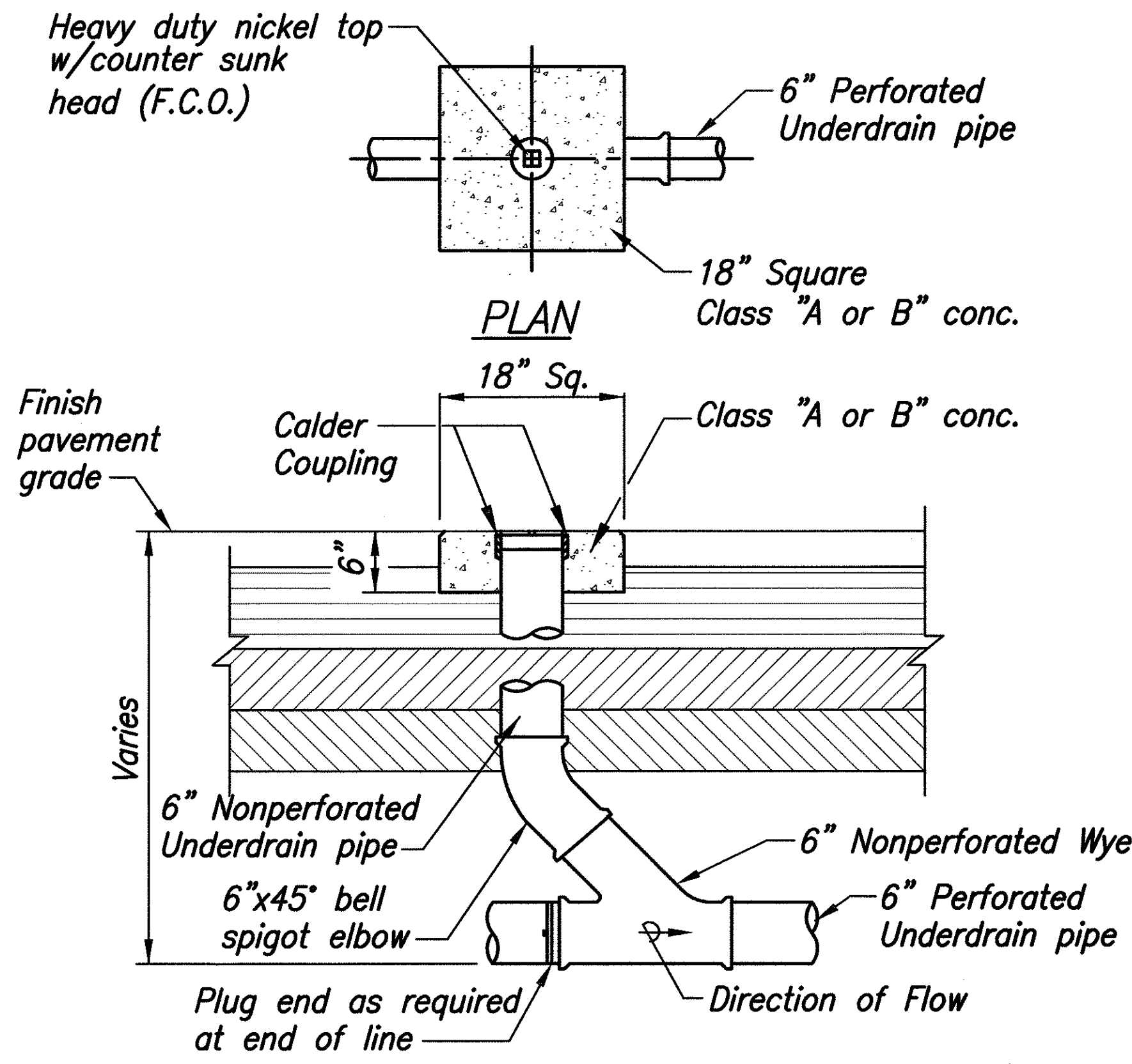
### TYPICAL SECTION 6" PERFORATED UNDERDRAIN

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



### CONNECTION TO HEADWALL

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



### SECTION UNDERDRAIN CLEANOUT

Scale: 1"=1'-0"

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

DANIEL S. MIYASATO  
LICENSED PROFESSIONAL ENGINEER  
No. 3443-C  
HAWAII U.S.A.

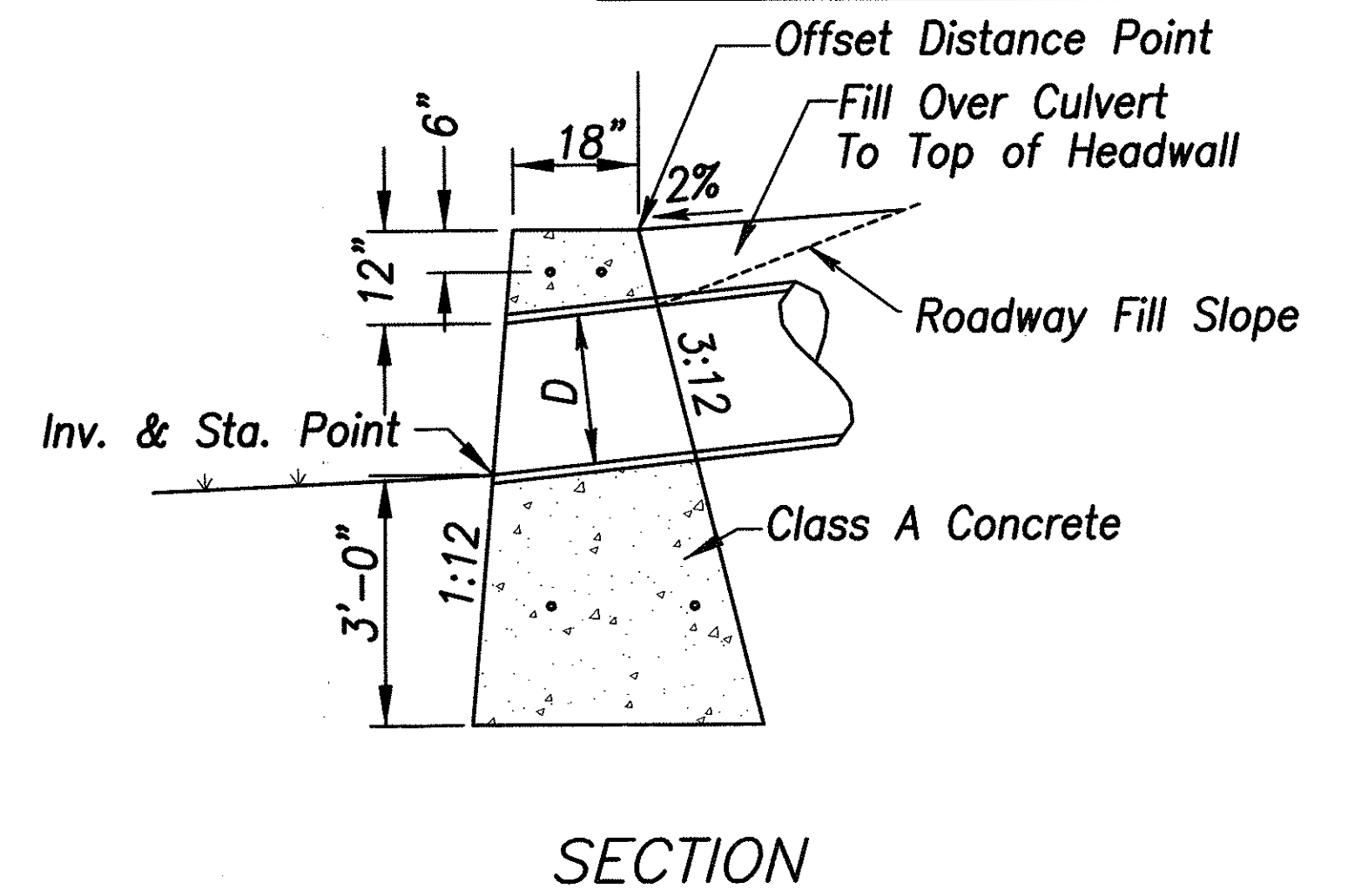
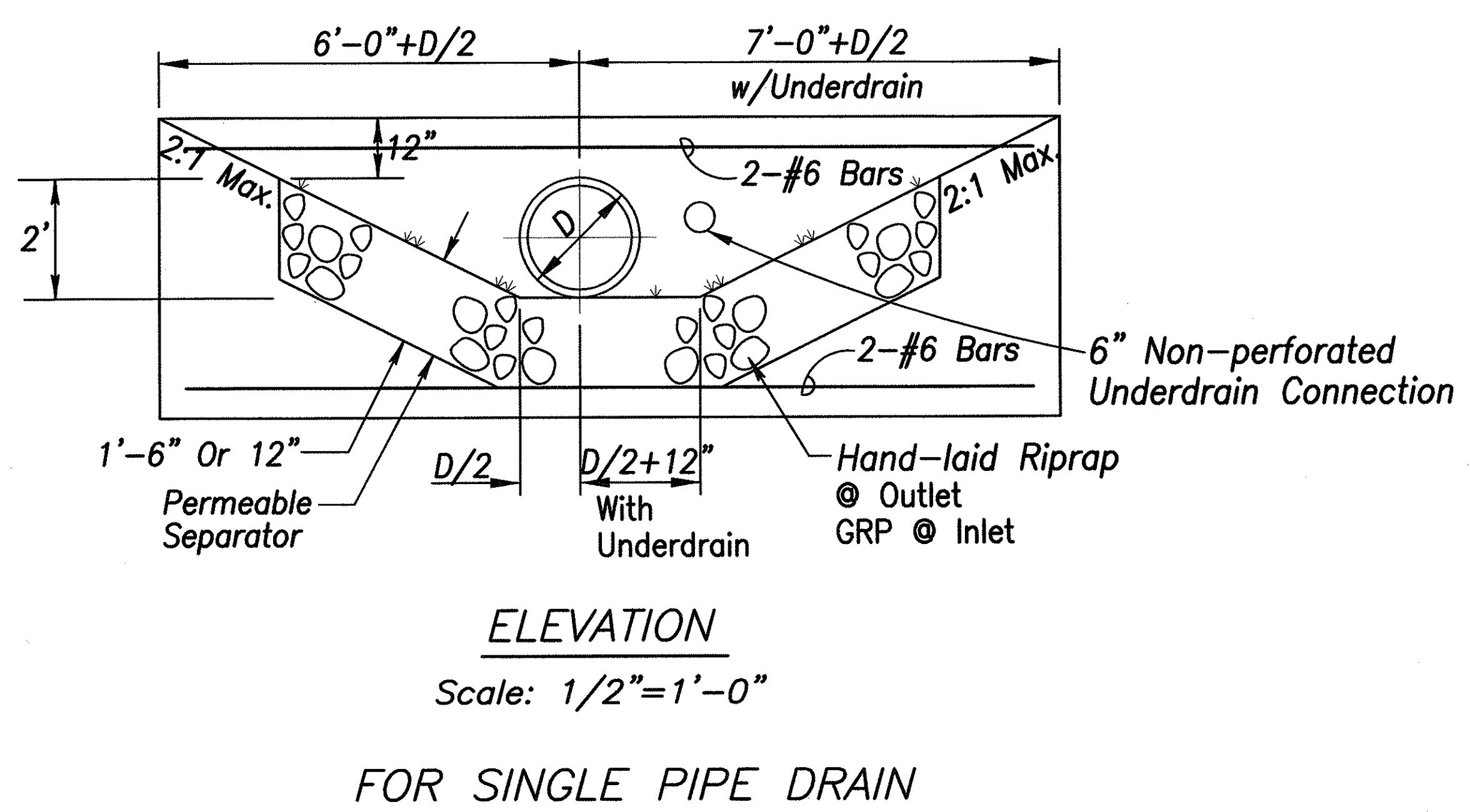
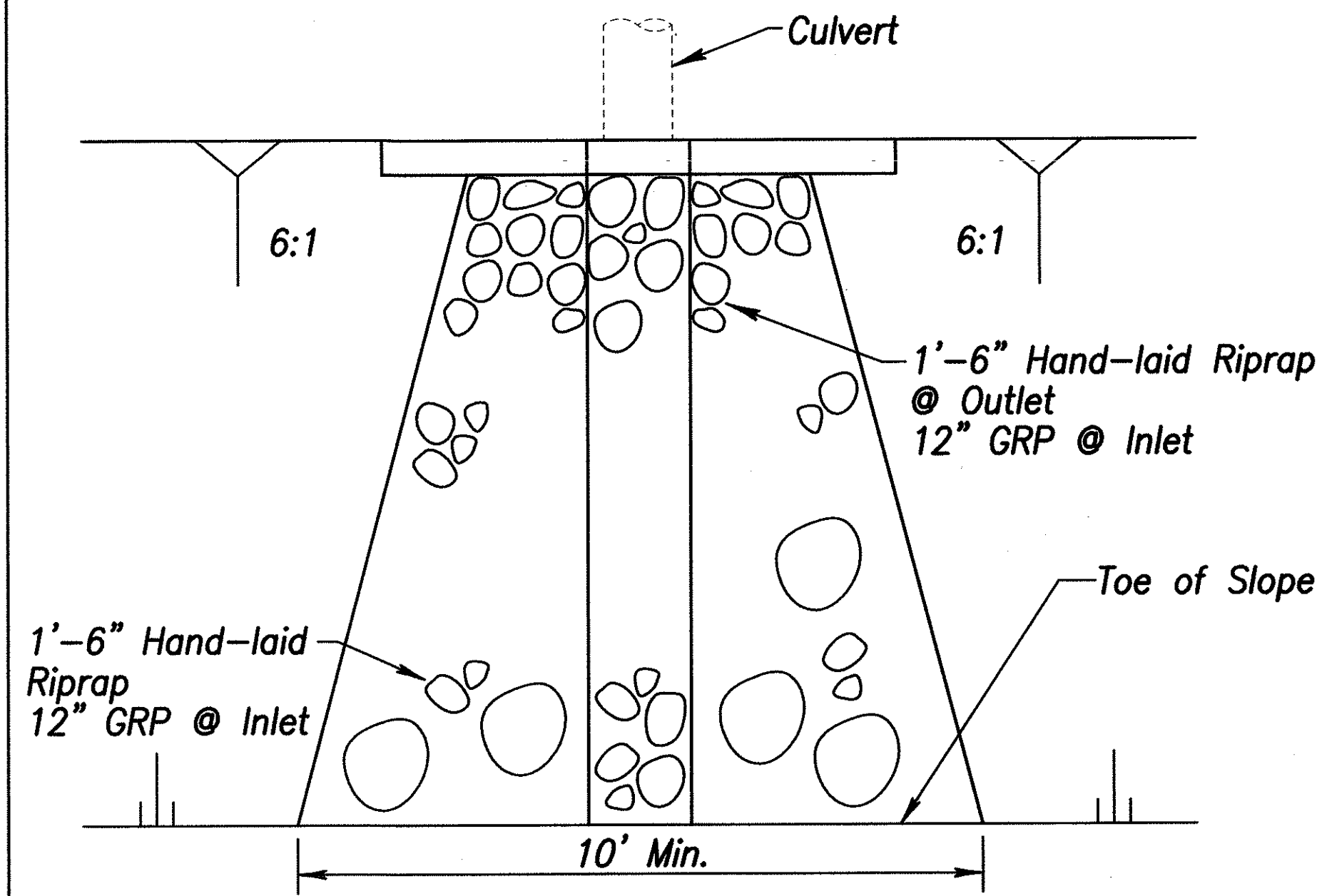
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**MISCELLANEOUS DETAILS**

MOKULELE HIGHWAY WIDENING  
Vicinity of Kolaloa Bridge  
To  
Vicinity of Kealia Pond Driveway  
Federal - Aid Project No. NH-A311(7)  
Scale: AS NOTED Date: August 2003

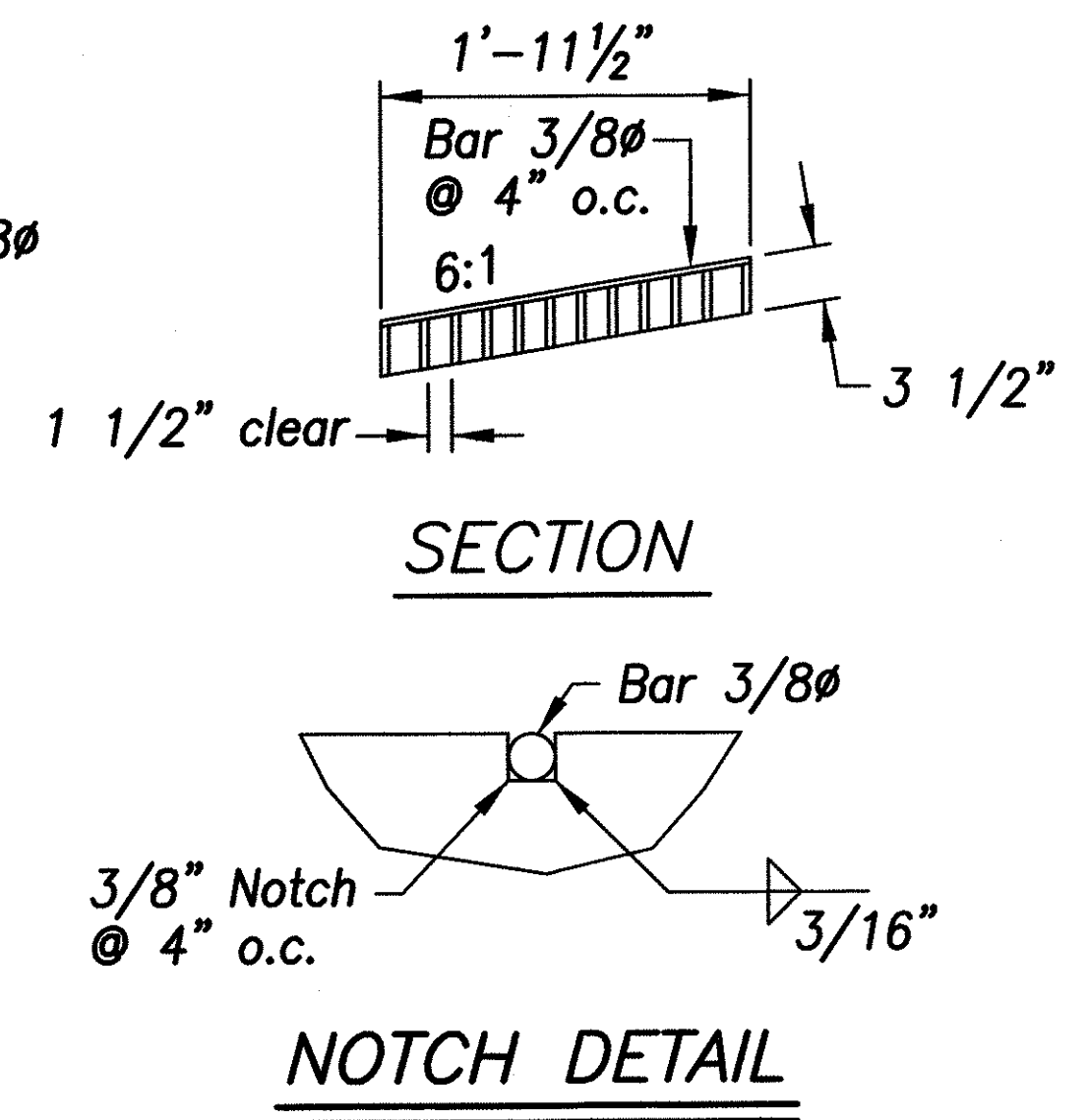
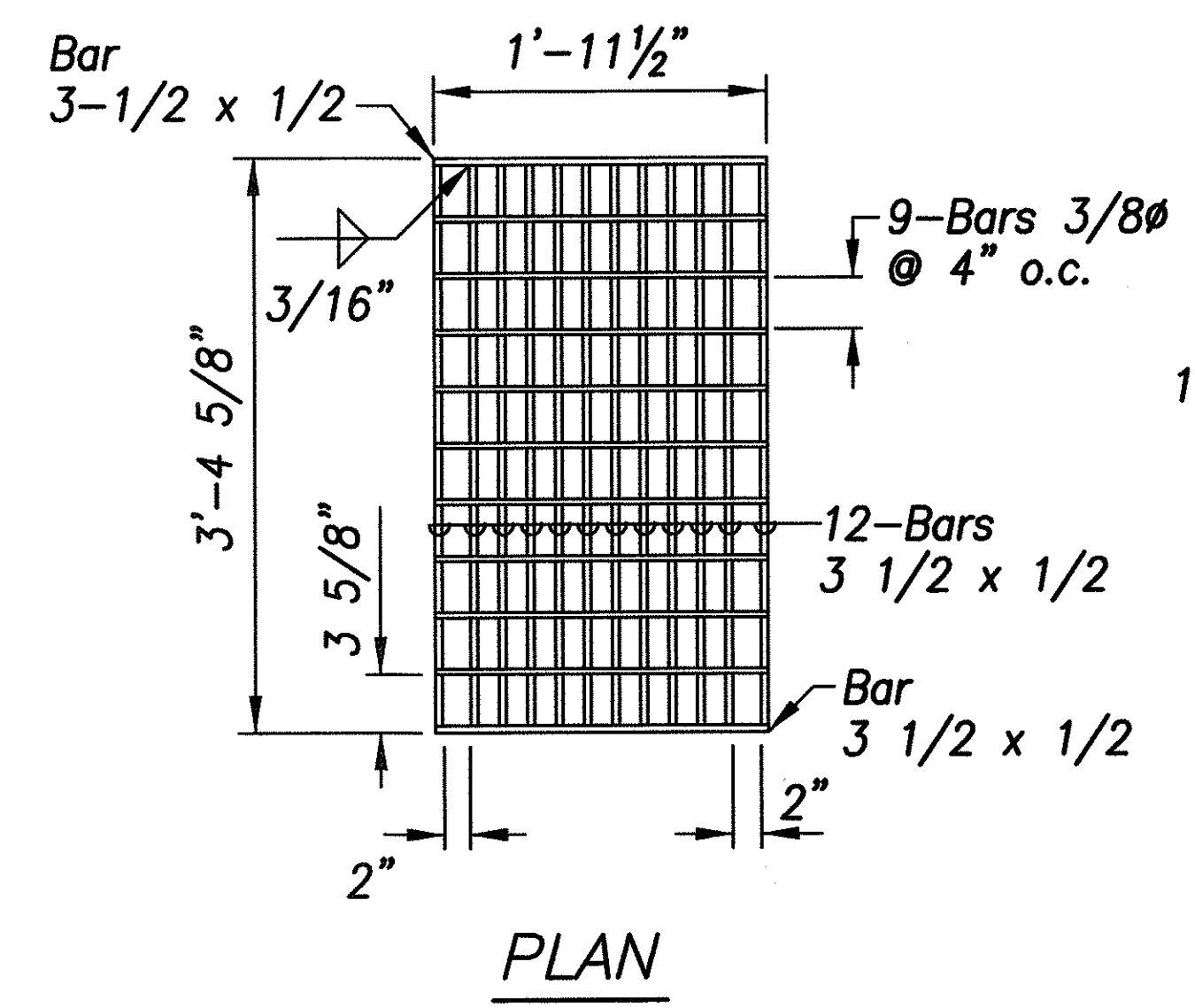
SHEET No. 1 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL - AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-A311(7)	2004	58	138

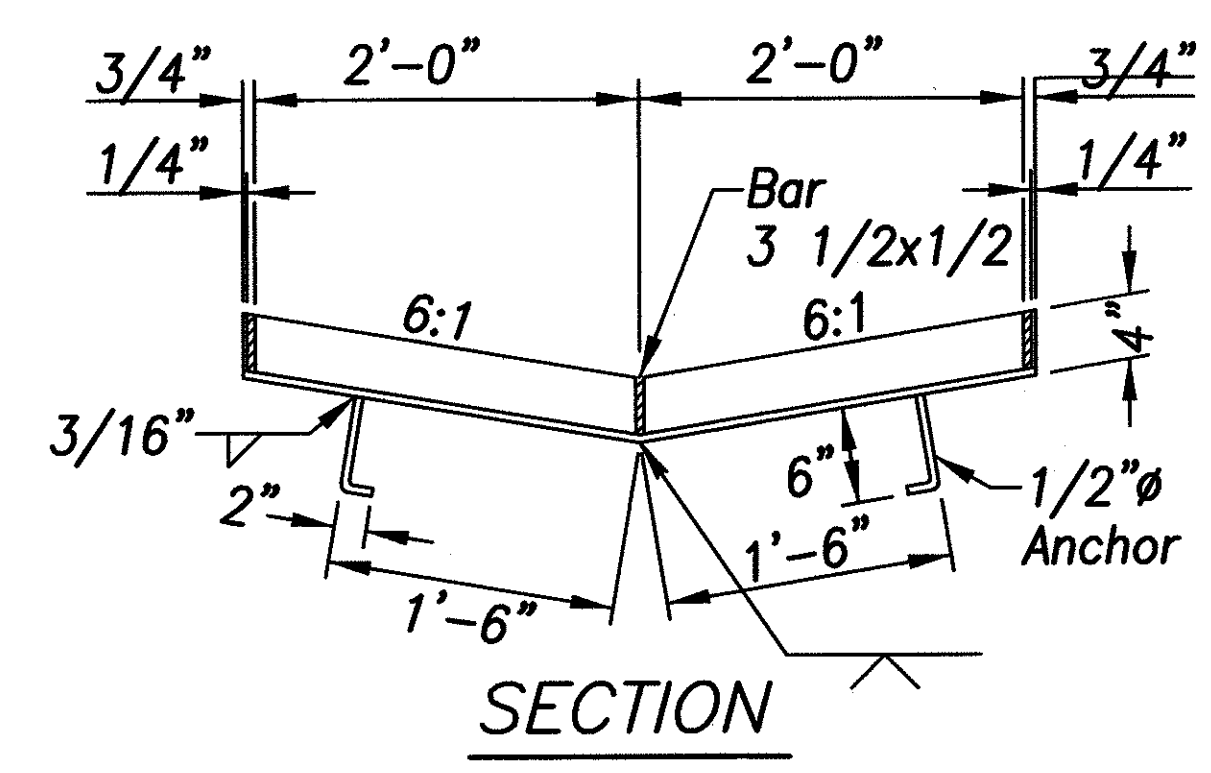
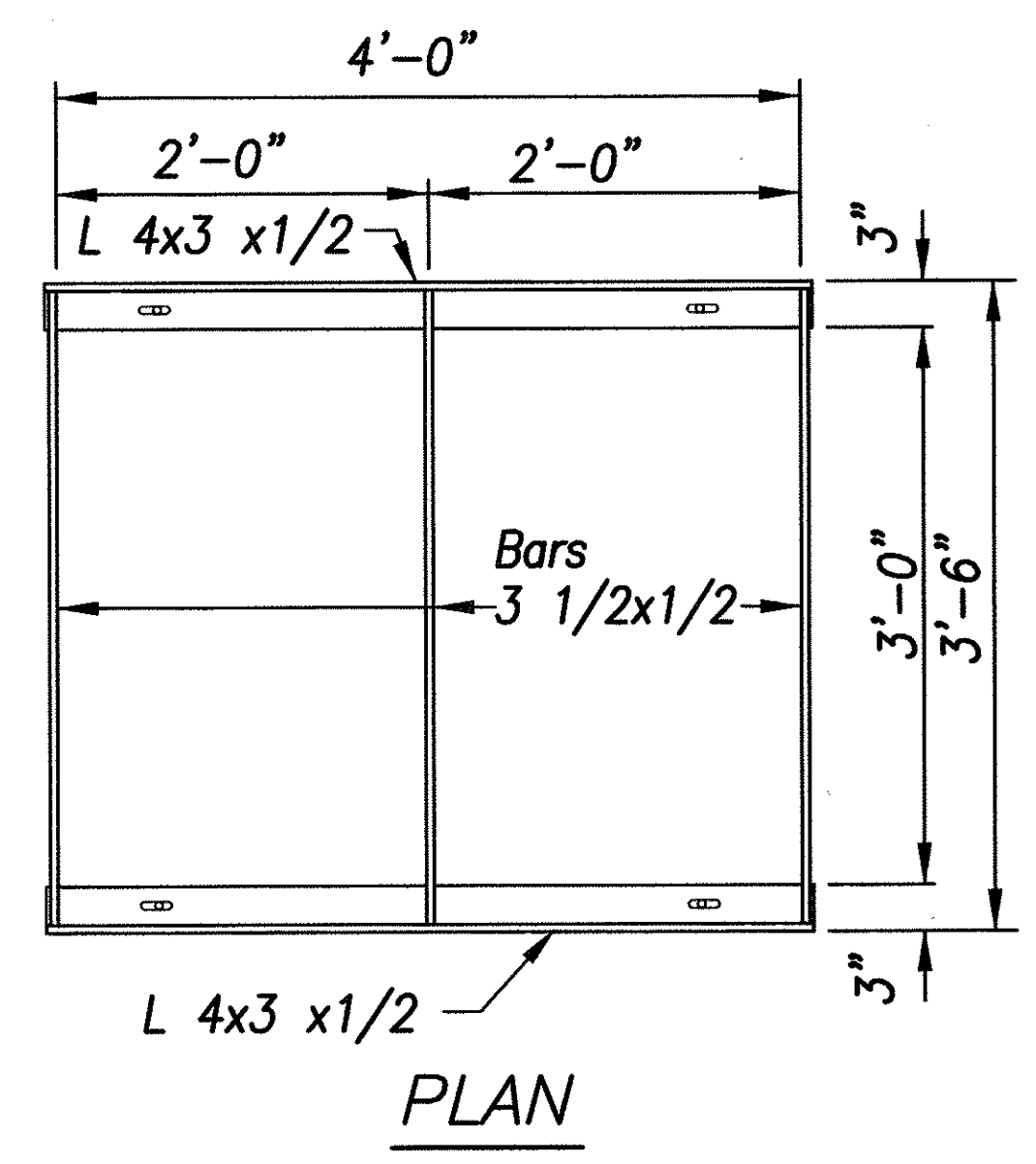


**DETAIL-GRP AT HEADWALL**  
WHERE SHOWN

**CONCRETE HEADWALL DETAILS**  
Scale: 1/2"=1'-0"



**GRATE**  
**TYPE 61614P STEEL FRAME AND GRATES**  
Scale: 1"=1'-0"



**GENERAL NOTES**

1. Frames and Grates shall be hot dip galvanized after fabrication
2. All welds 3/8" unless otherwise noted
3. Use in locations off the road bed on all types of highways. (Pedestrian safe)

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**MISCELLANEOUS DETAILS**

**MOKULELE HIGHWAY WIDENING**  
Vicinity of Kolaloa Bridge  
To  
Vicinity of Kealia Pond Driveway  
Federal - Aid Project No. NH-A311(7)  
Scale: AS NOTED Date: August 2003

SHEET No. 2 OF 3 SHEETS

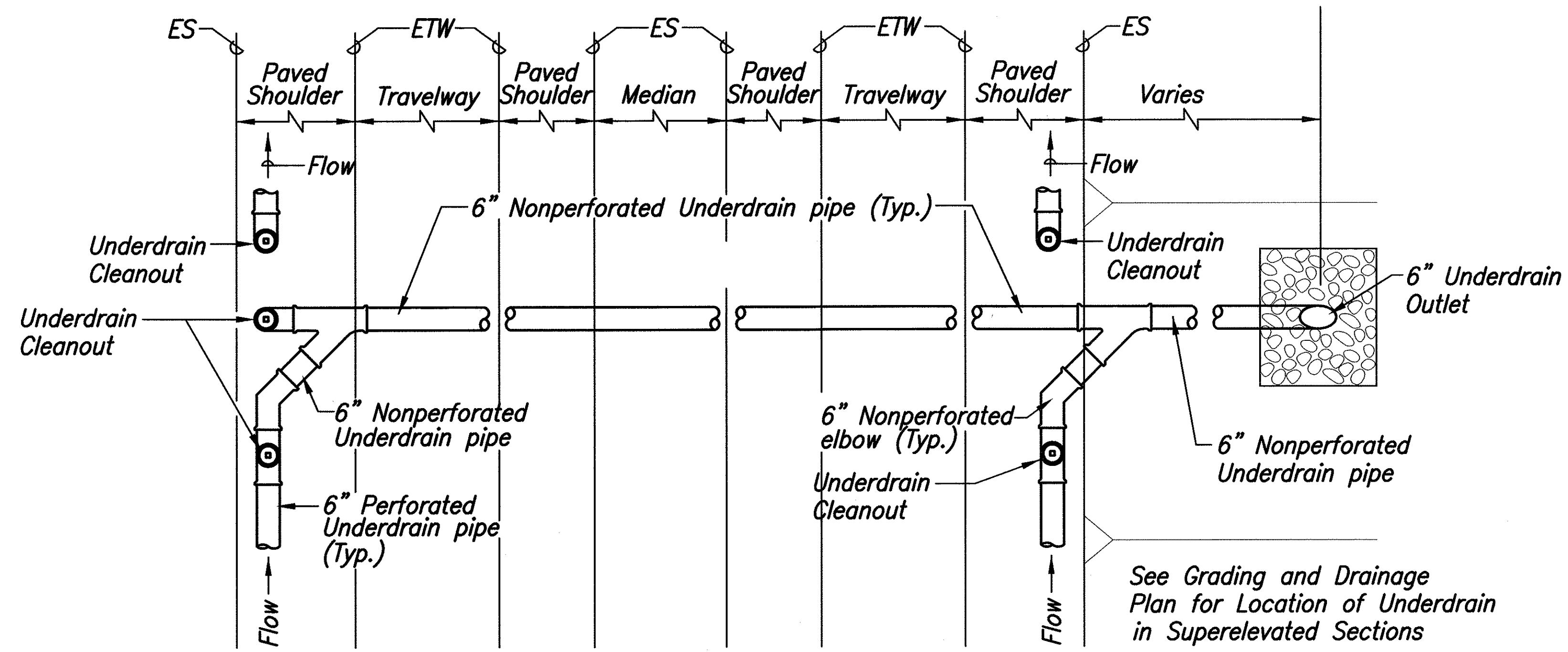
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**MISCELLANEOUS DETAILS**

**MOKULELE HIGHWAY WIDENING**  
Vicinity of Kolaloa Bridge  
To  
Vicinity of Kealia Pond Driveway  
Federal - Aid Project No. NH-A311(7)  
Scale: AS NOTED Date: August 2003

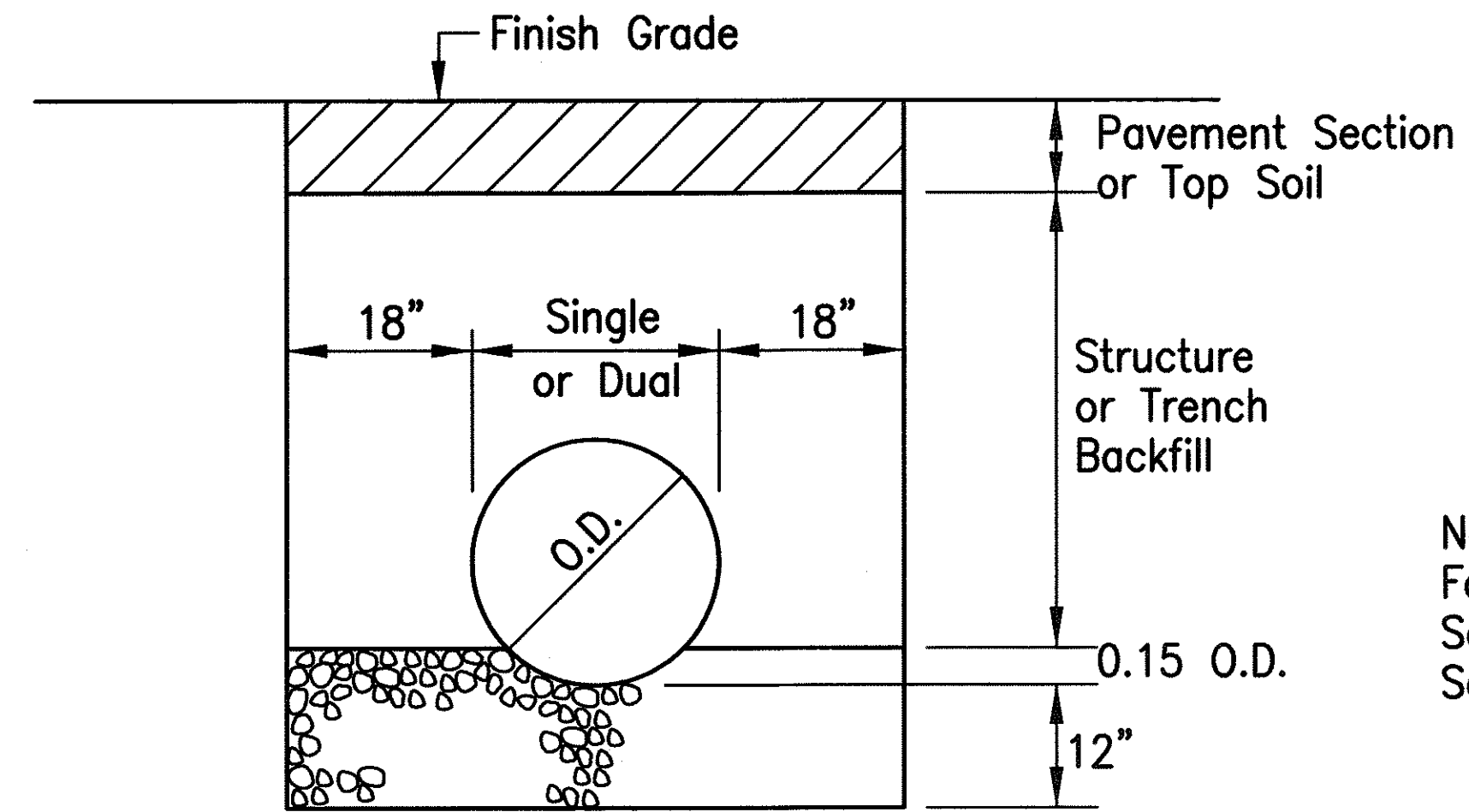
SHEET No. 2 OF 3 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL - AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-A311(7)	2004	59	138



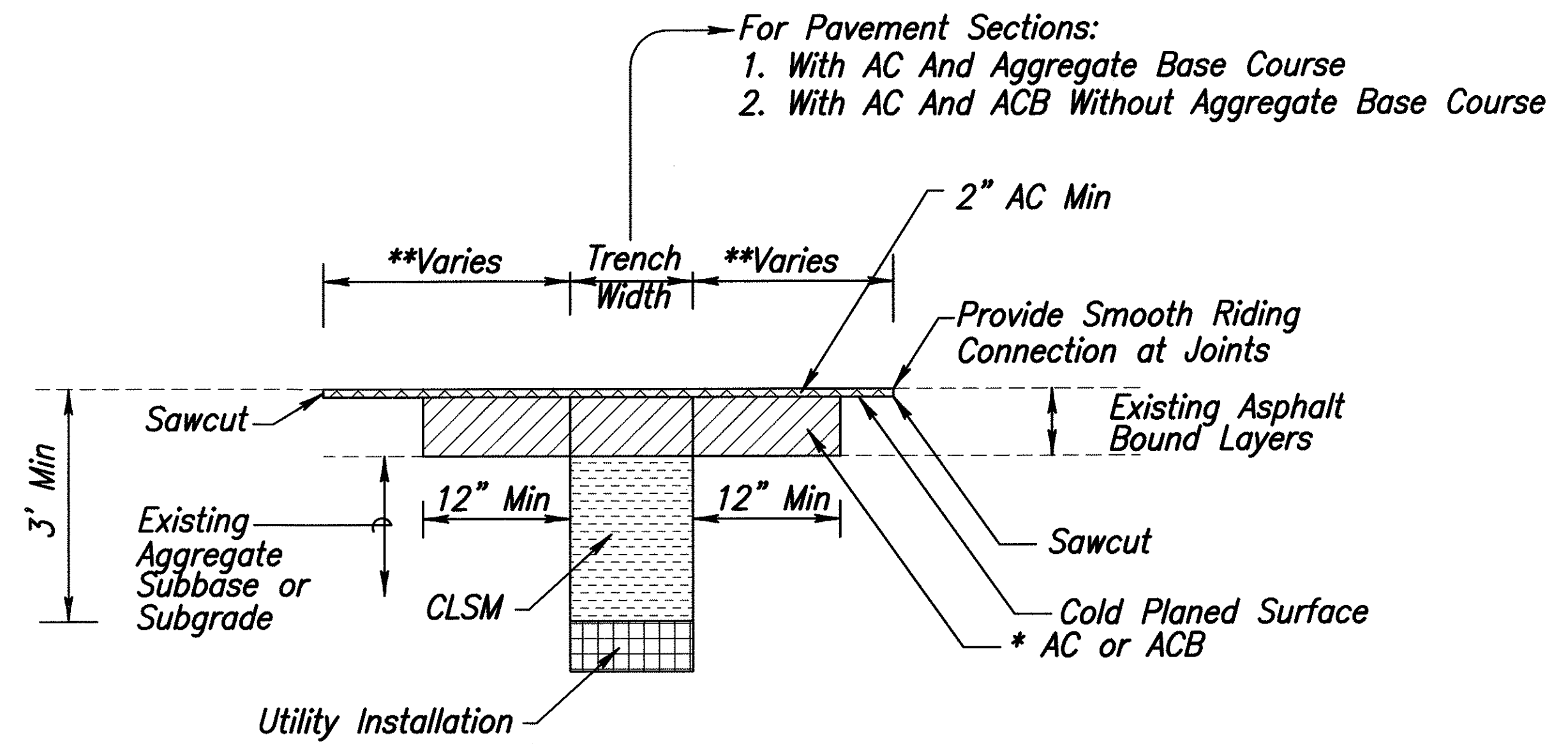
### CONNECTION TO UNDERDRAIN OUTLET

Scale: Not to Scale



### TYPICAL CULVERT TRENCH SECTION

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



- \* NOTES:**
- When Thickness Less Than 8", use AC
  - When Thickness 6" or Greater, use ACB or AC
- \*\* NOTES:**
- If Trench Aligned Transverse to Direction of Travel 1 Foot on Each Side of Trench.
  - If Trench Aligned Along Direction of Travel, to Edge of Lane in Which Edge of Trench Is Located.
  - Smoothness of Paved Surfaces: The Distance From The Paved Surface to the Testing Edge of a Ten-foot Straight Edge Between Two Points of Contact Shall Not Exceed 3/16".
- NOTES:**
- This Trench Restoration is to be Used Wherever the Pavement is an Asphalt Surface, Including Medians and Paved Areas Between Guardrails. For Trenches Located in Unpaved Areas, the Backfill Need Not be CLSM and can be Backfilled as Specified in the Standard Specifications.
  - Tack Coat Existing Asphalt Bound Material Faces Prior to Filling Excavation With Asphalt Bound Material.
  - When Groundwater is Encountered in Trenches, Backfill With

## ASPHALT PAVEMENT RESTORATION OVER TRENCH EXCAVATIONS FOR EXISITNG PAVEMENTS WITHOUT PERMEABLE BASE

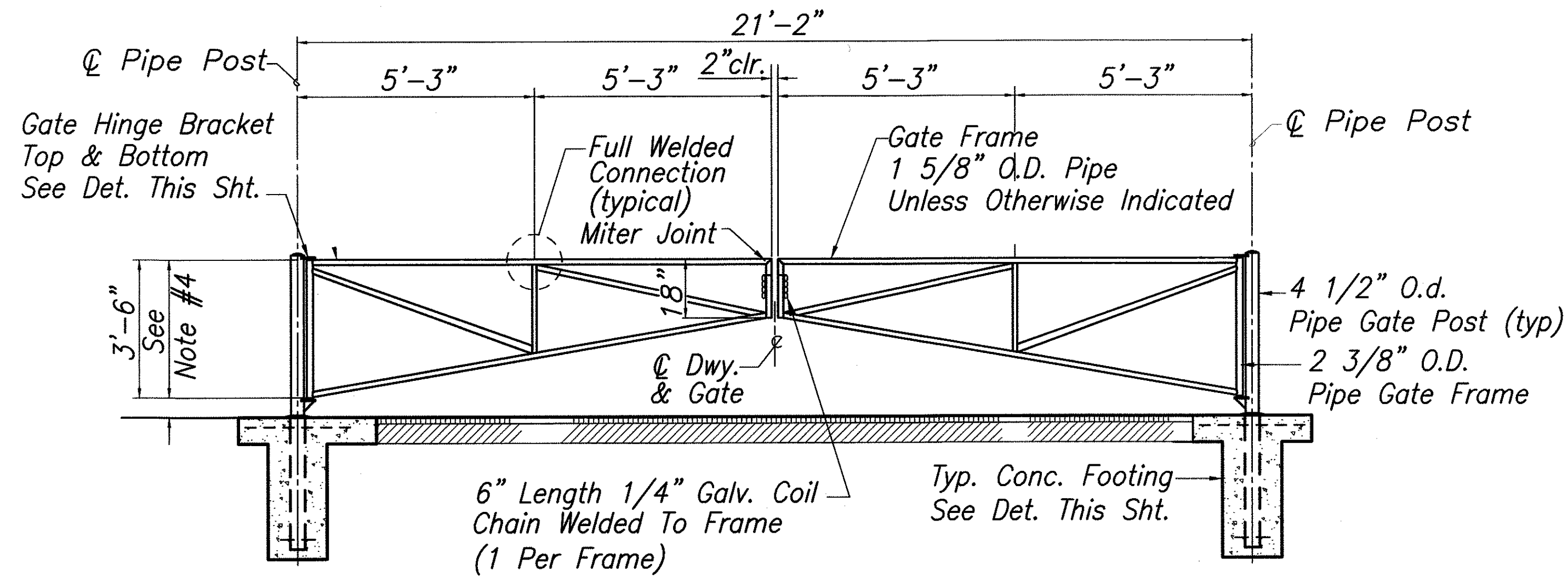
Not to Scale

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**MISCELLANEOUS DETAILS**  
**MOKULELE HIGHWAY WIDENING**  
 Vicinity of Kolaloa Bridge  
 To  
 Vicinity of Kealia Pond Driveway  
 Federal - Aid Project No. NH-A311(7)  
 Scale: AS NOTED Date: August 2003  
 SHEET No. 3 OF 3 SHEETS

SURVEY PLOTTED BY  
 DRAWN BY  
 DESIGNED BY  
 NOTE BOOK  
 CHECKED BY  
 No.



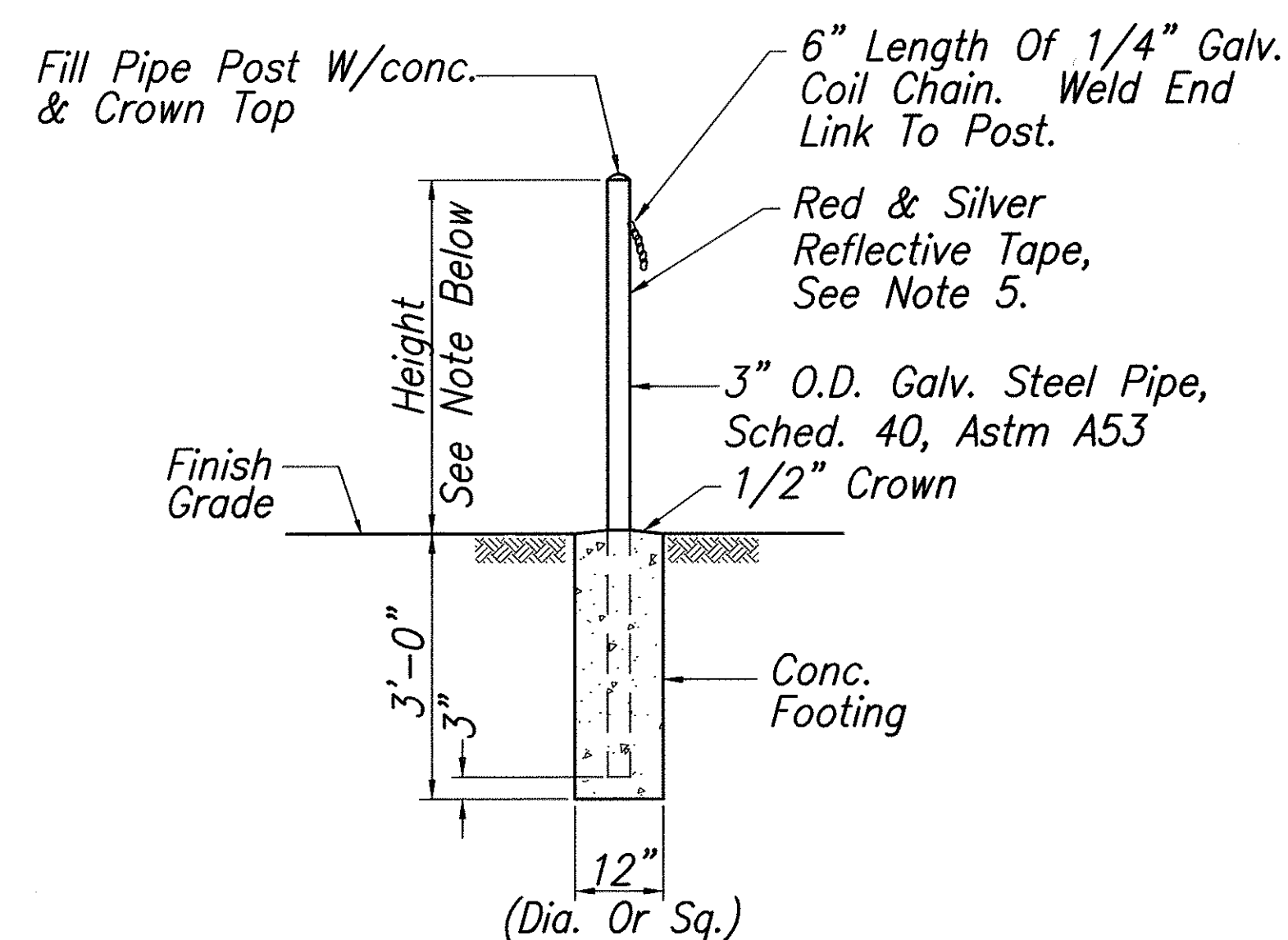
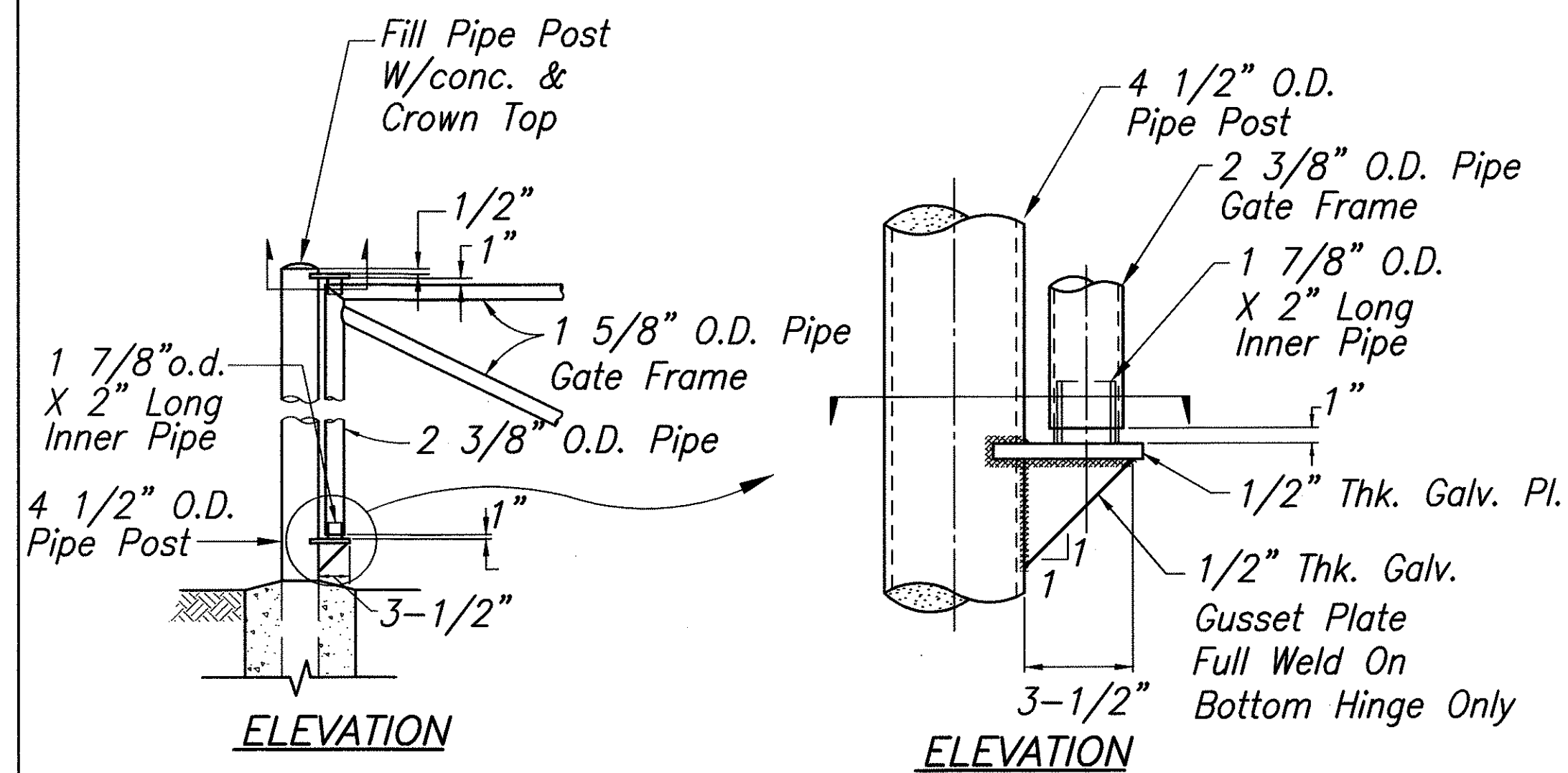
FED. ROAD DIST. NO.	STATE	FEDERAL - AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-A311(7)	2004	60	138



PIPE GATE DETAIL  
NOT TO SCALE

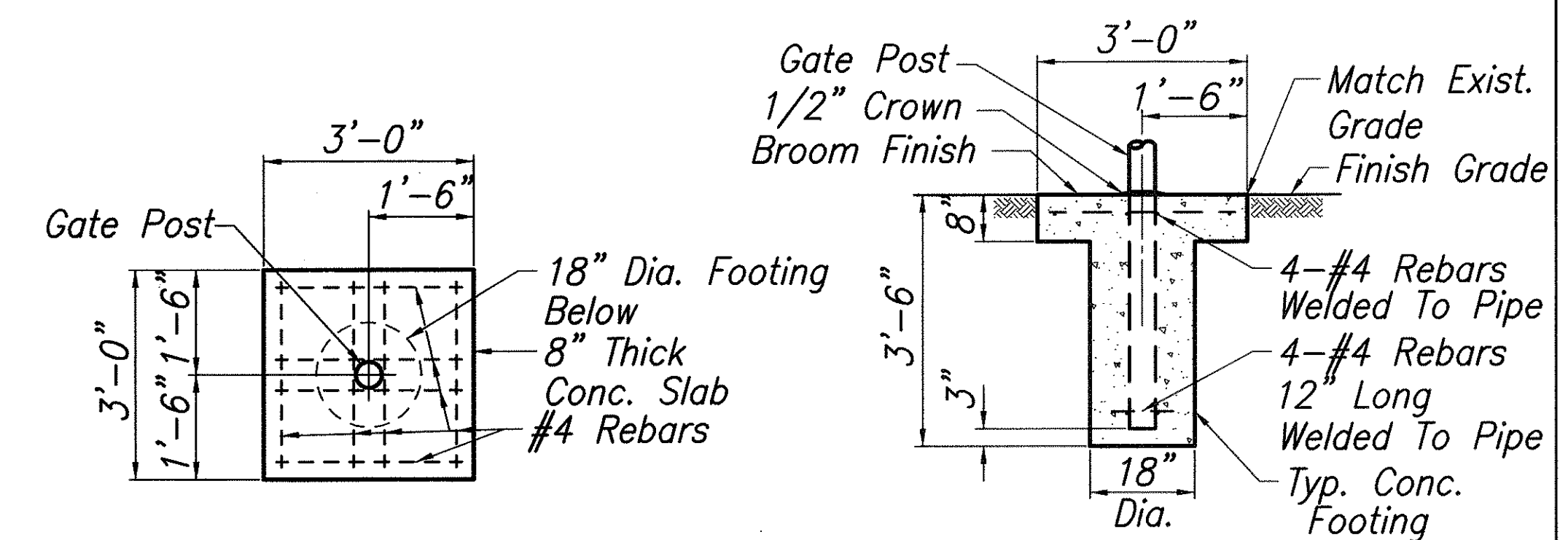
- GENERAL NOTES

1. All Miscellaneous Metal Items Shall Be Hot-dipped Galvanized. Galvanizing Shall Be Done After Fabrication. All Pre-coated Galvanized Items Damaged Or Burned During Fabrication Shall Be Coated With "galvaloy" Or Approved Equal Or Hot Bar Zinc Treatment.
2. Footing Shall Be 2500 P.s.i. Concrete.
3. Pipe Grout Shall Be 2500 P.s.i. Concrete.
4. All Pipes Shall Be Sched. 40, Astm A53 Galvanized Steel.
5. Wrap Reflective Tape Around Entire Pipe Gate Frames And Posts. (except At Welded Connections) Alternate 12" Bands Of Red & Silver.
6. Padlocks Will Be Provided By Lot Owner. Coordinate Size Of Chain With Lot Owner.
7. Adjust Clear Dimension To Make Both Frames Level With Each Other And To Allow Ground Clearances For Gate Swing.



Note:  
Height Of Post To Match Height Of Gate  
In The Open Position Unless Otherwise Indicated.  
Provide One Post on Each Side of Road.

GATE HOLD-BACK POST DETAIL  
NOT TO SCALE

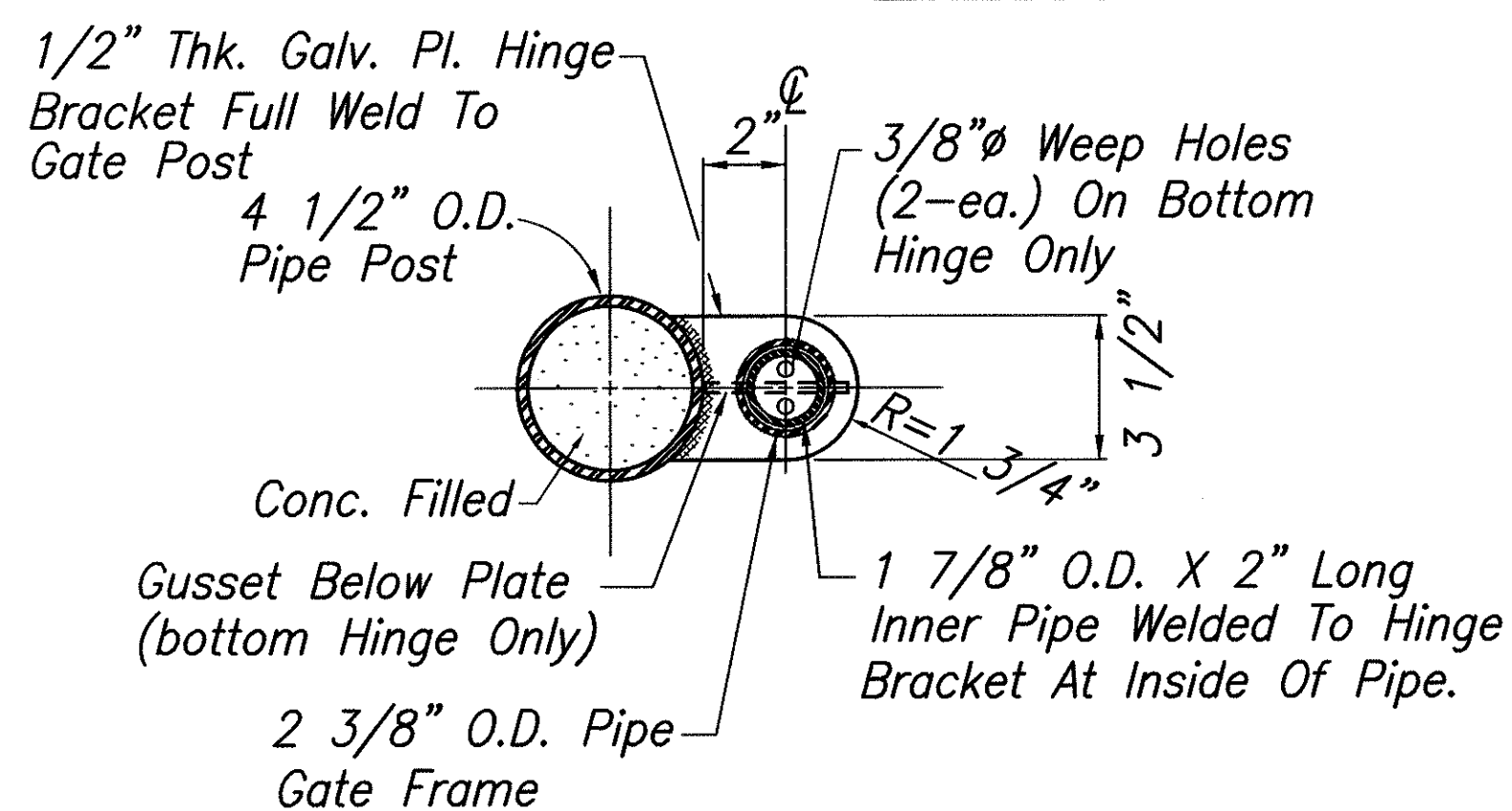


PLAN



SECTION

CONC. FOOTING DETAIL

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



PIPE GATE HINGE DETAILS  
NOT TO SCALE

   THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  04/30/04 EXPIRATION DATE OF THE LICENSE	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION  <u>MISCELLANEOUS DETAILS</u>  <u>MOKULELE HIGHWAY WIDENING</u> <u>Vicinity of Kolaloa Bridge</u> <u>To</u> <u>Vicinity of Kealia Pond Driveway</u> <u>Federal - Aid Project No. NH-A311(7)</u> Scale: AS NOTED Date: August 2003  SHEET NO. 4 OF 4 SHEETS
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