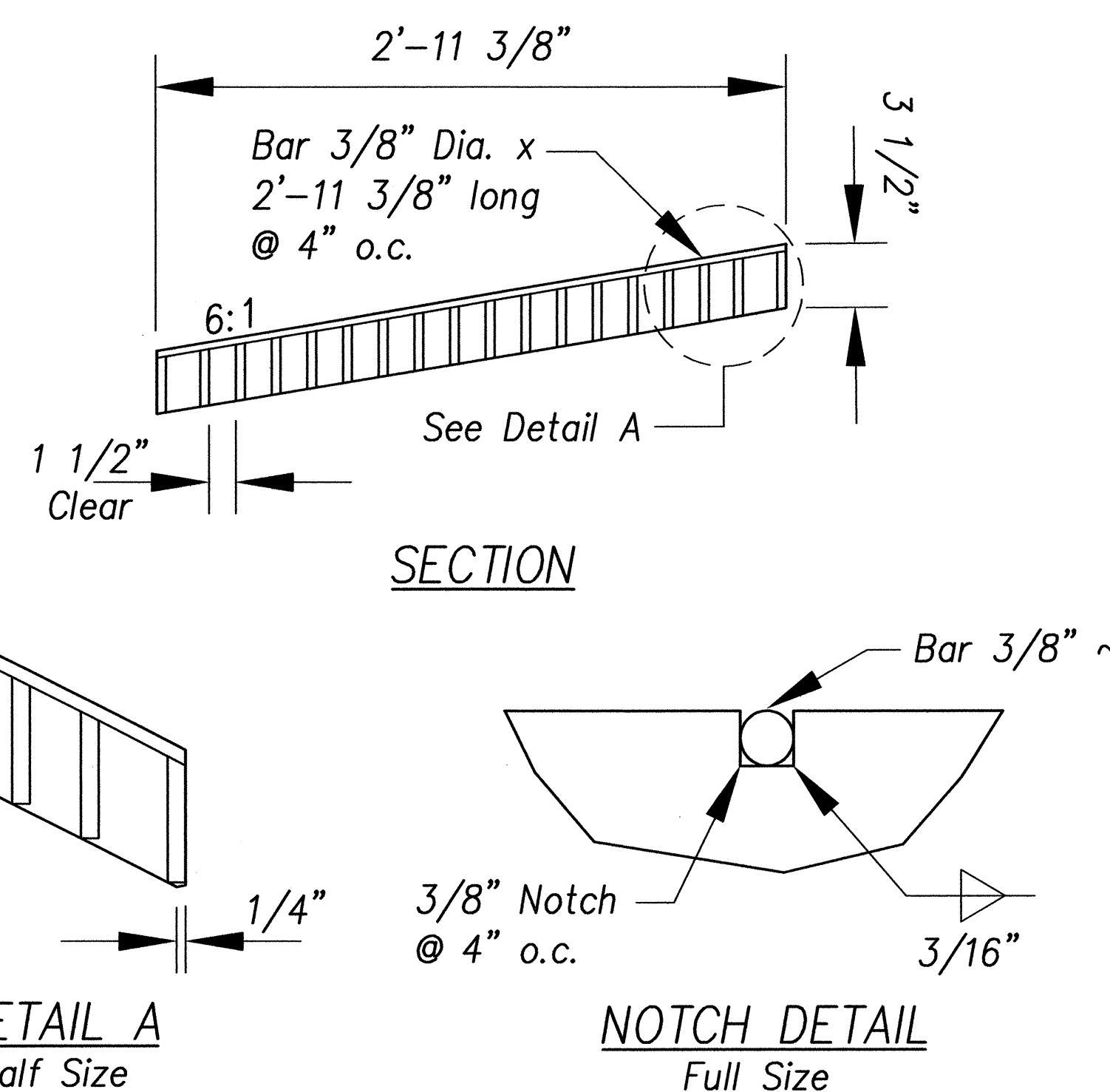
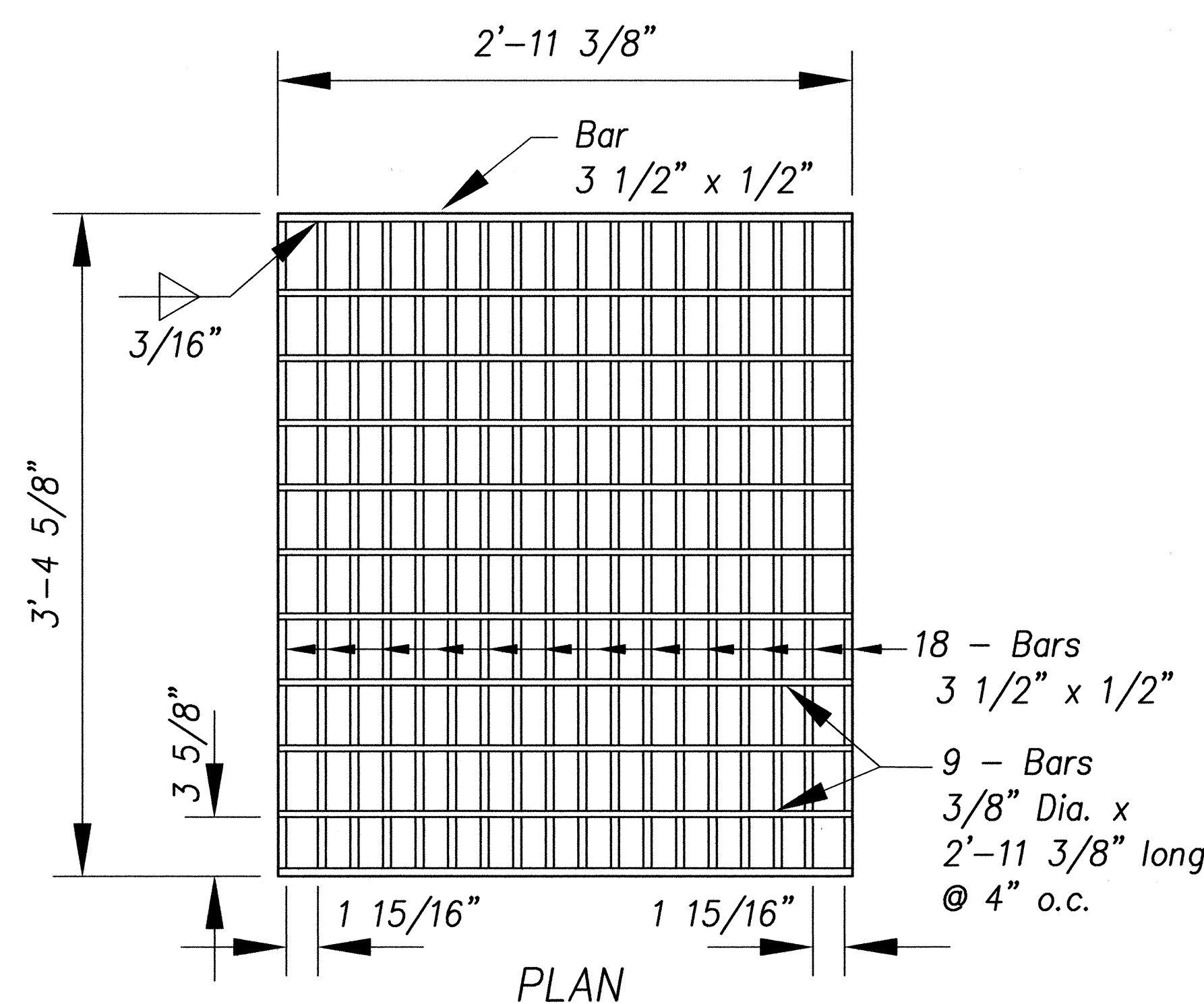
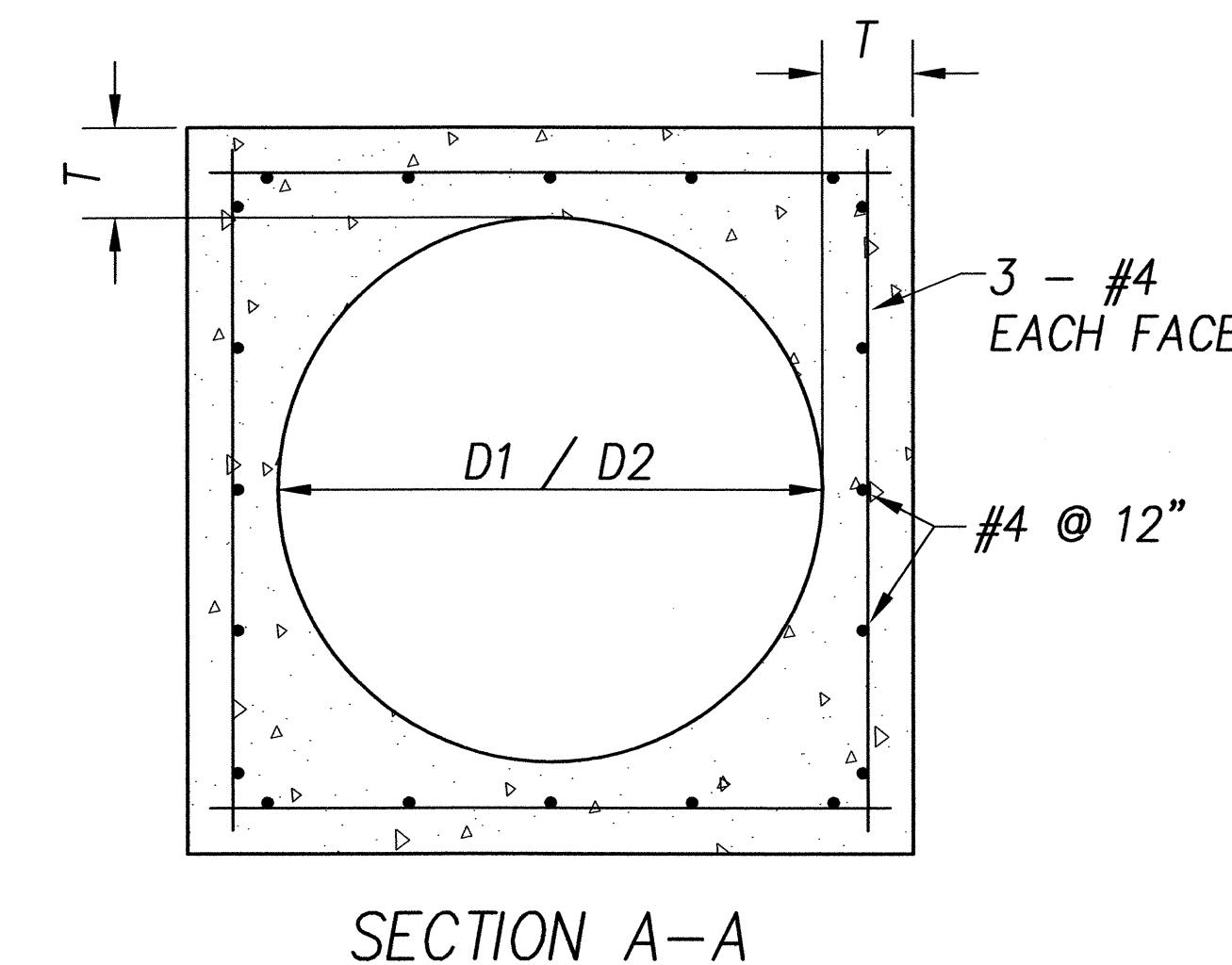
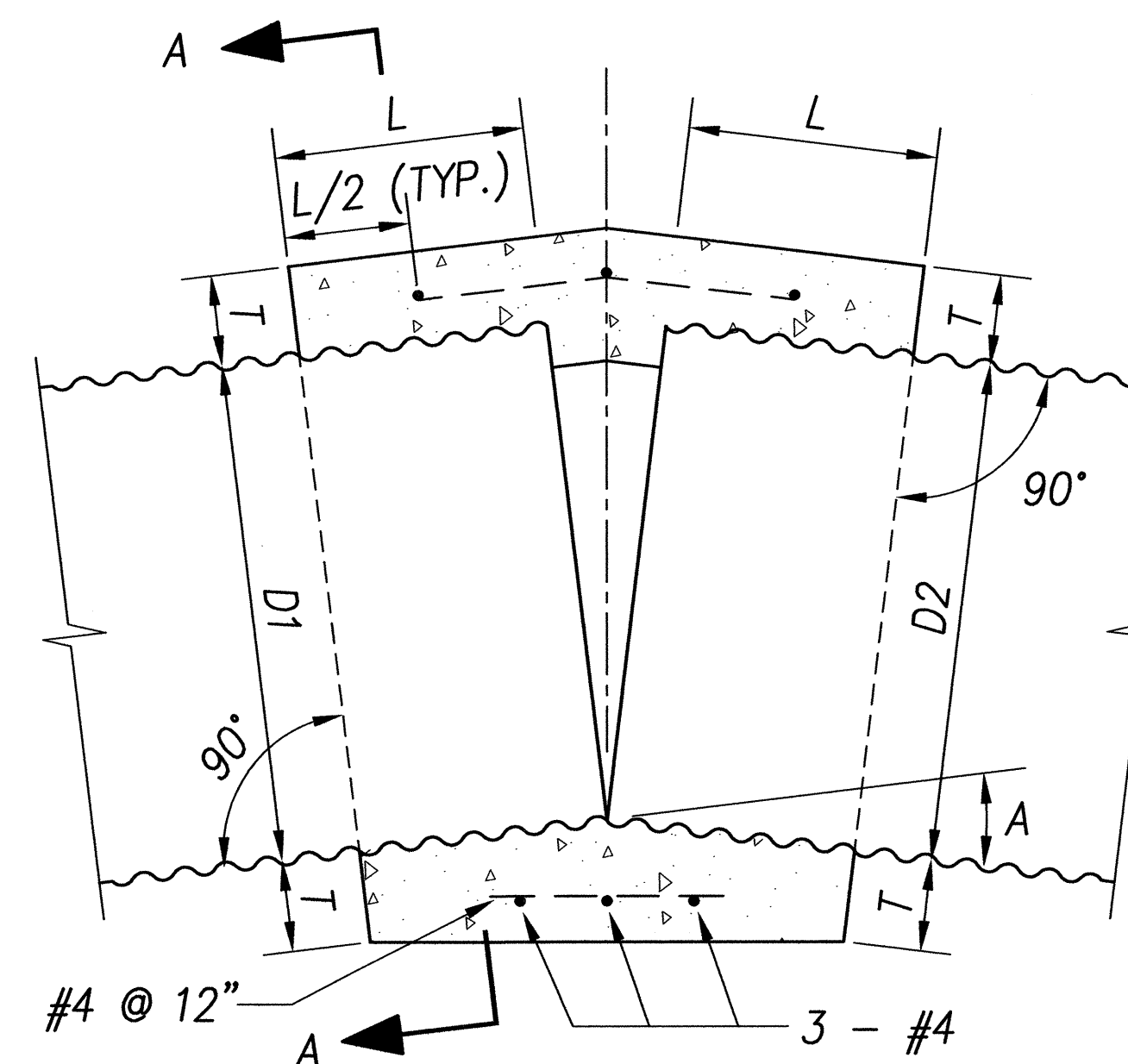


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(8)	2004	38	127

Notes:

- Where pipes of different diameters are joined with a concrete collar, L and T shall be those of the larger pipe $D=D1$ or $D2$ whichever is greater.
- Omit reinforcing on pipes 24" and less in diameter and on all pipes where angle A is less than 10°.
- Join pipes at inverts.
- Reinforcement shall be placed 1-1/2" clear from outside diameter of pipe.

D	L	T
24"	1.0'	5"
30"	1.5'	8"

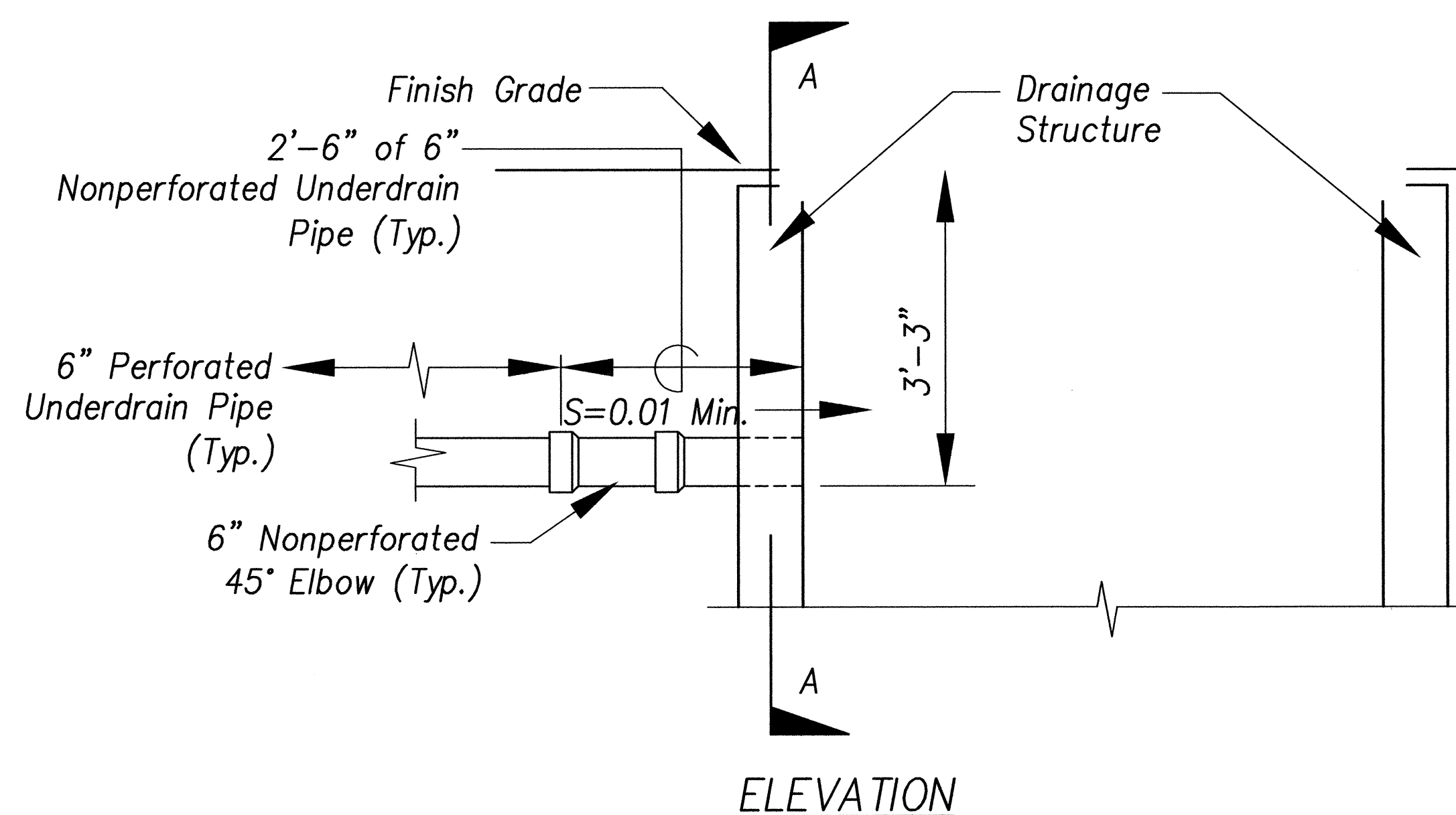
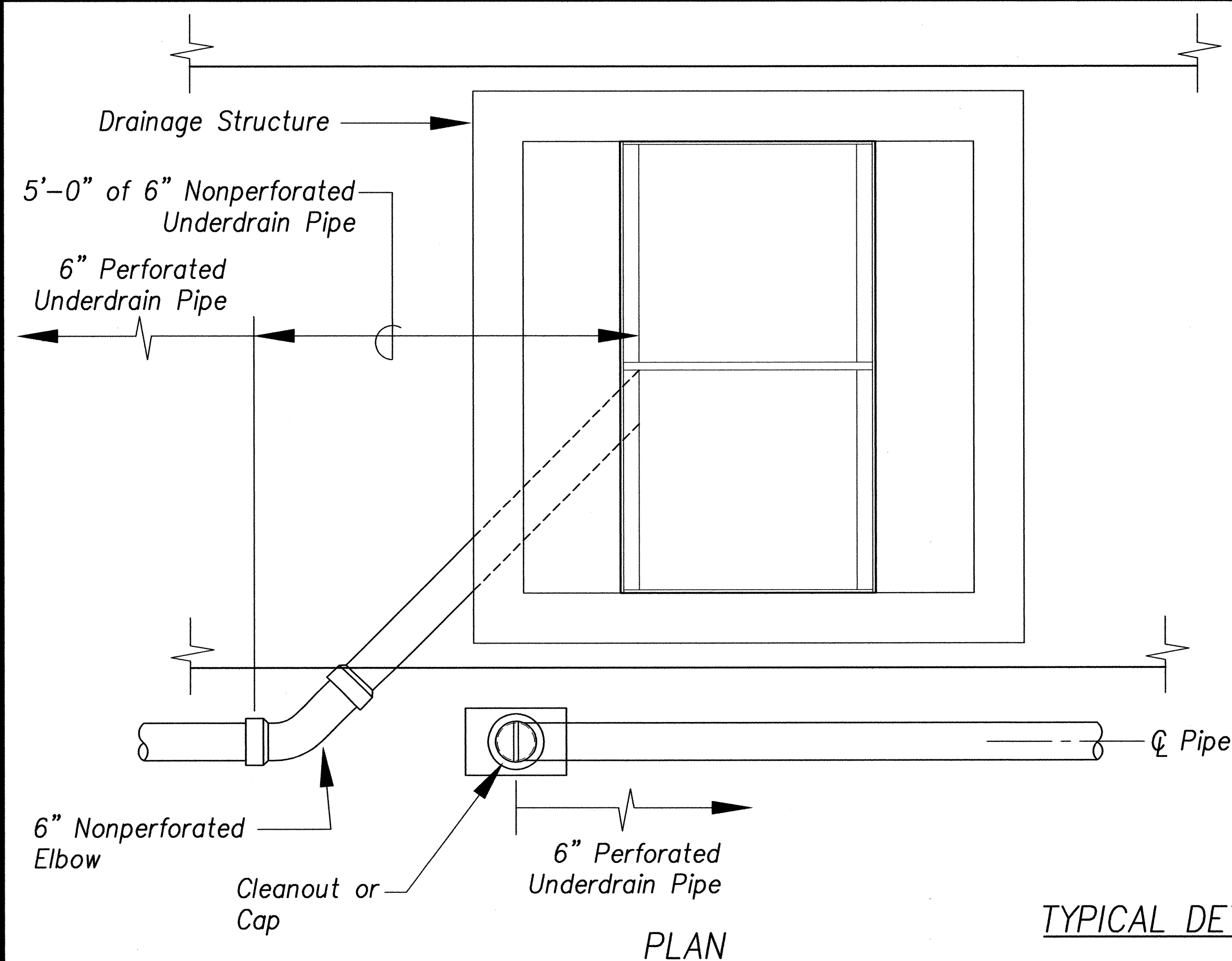


General Notes:

- Steel frame details for grates shall be the steel frames shown on Standard Plan H-13.
- Grates shall be hot dip galvanized after fabrication.
- Use in locations off the road bed on all types of highways. (Pedestrian safe)

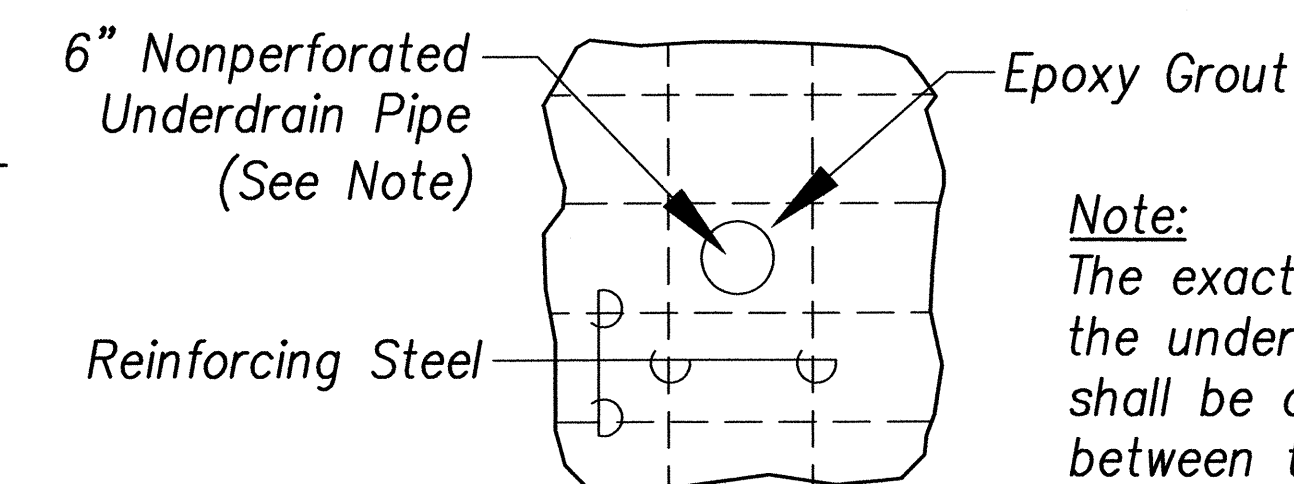
TYPE 61616P STEEL GRATE

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



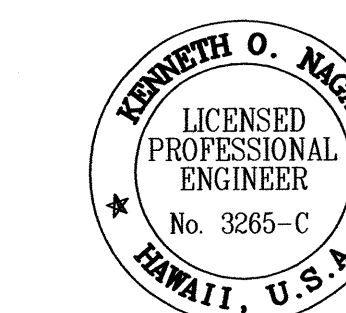
TYPICAL DETAILS OF 6" UNDERDRAIN CONNECTION TO DRAINAGE STRUCTURES

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



SECTION A

Note:
The exact Invert location of the underdrain connection shall be adjusted to pass between the reinforcing steel.



Signature
APRIL 30, 2004
EXPIRATION DATE OF LICENSE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

FORT WEAVER ROAD WIDENING
NEAR LAULAUNUI STREET

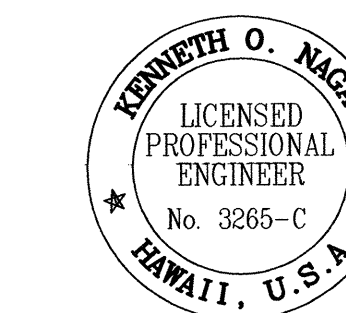
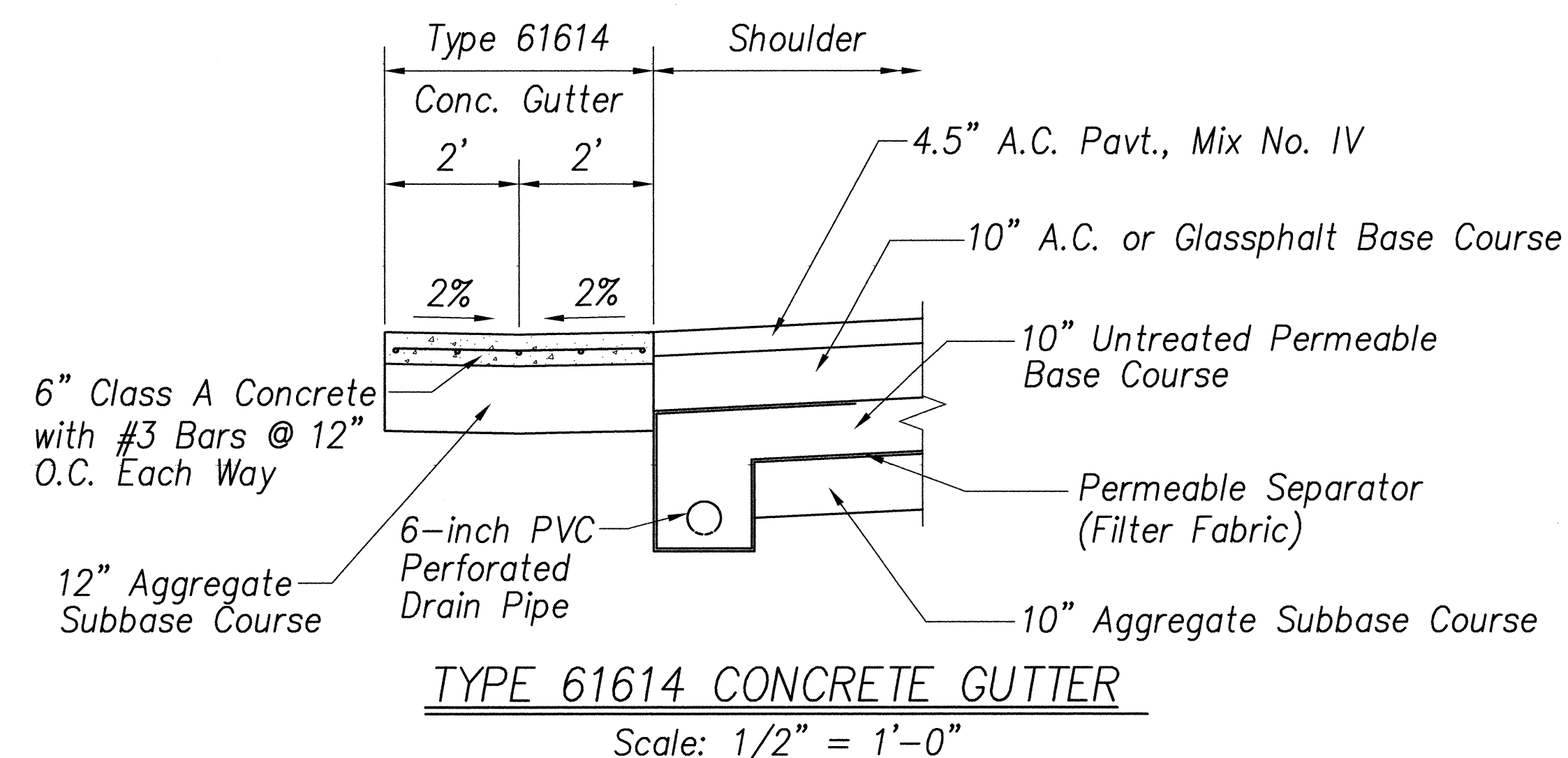
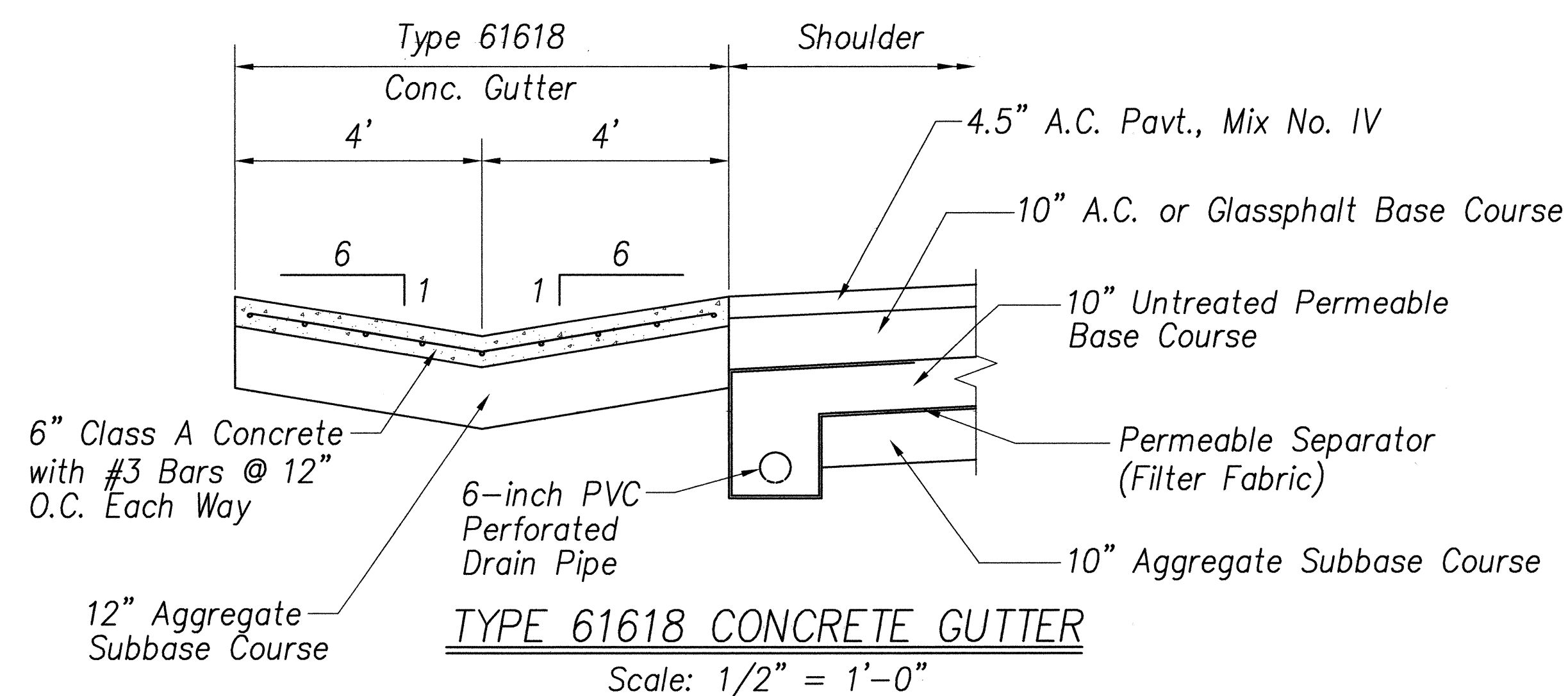
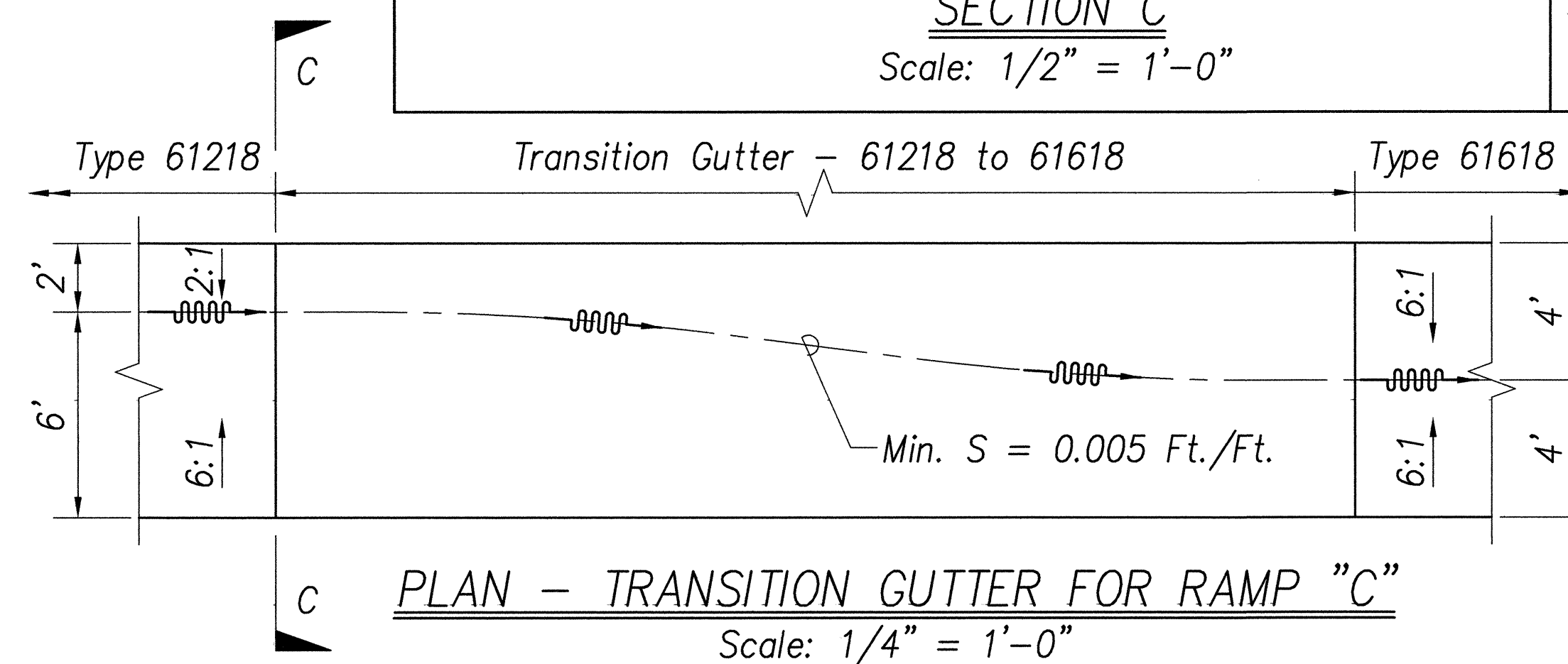
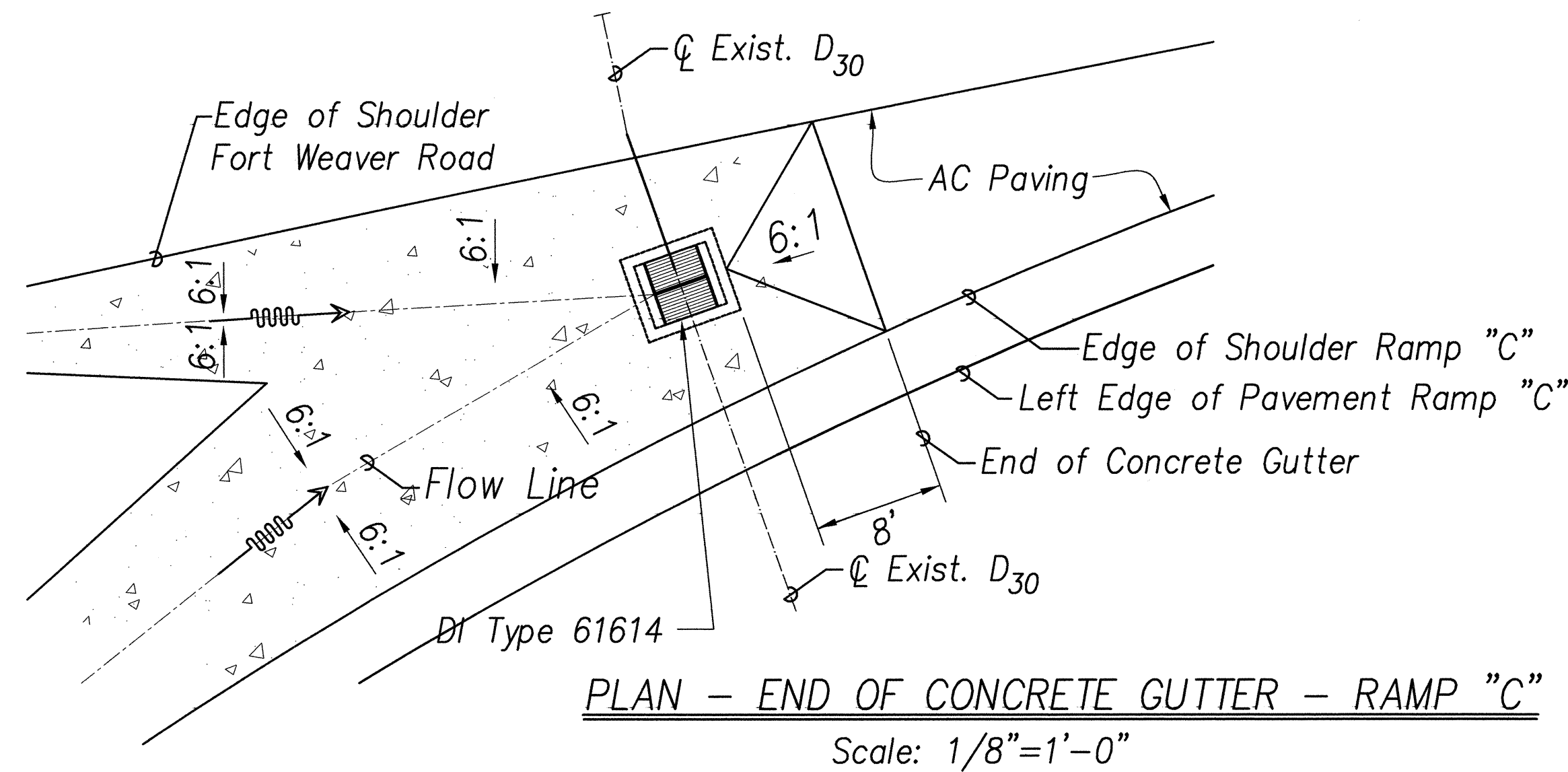
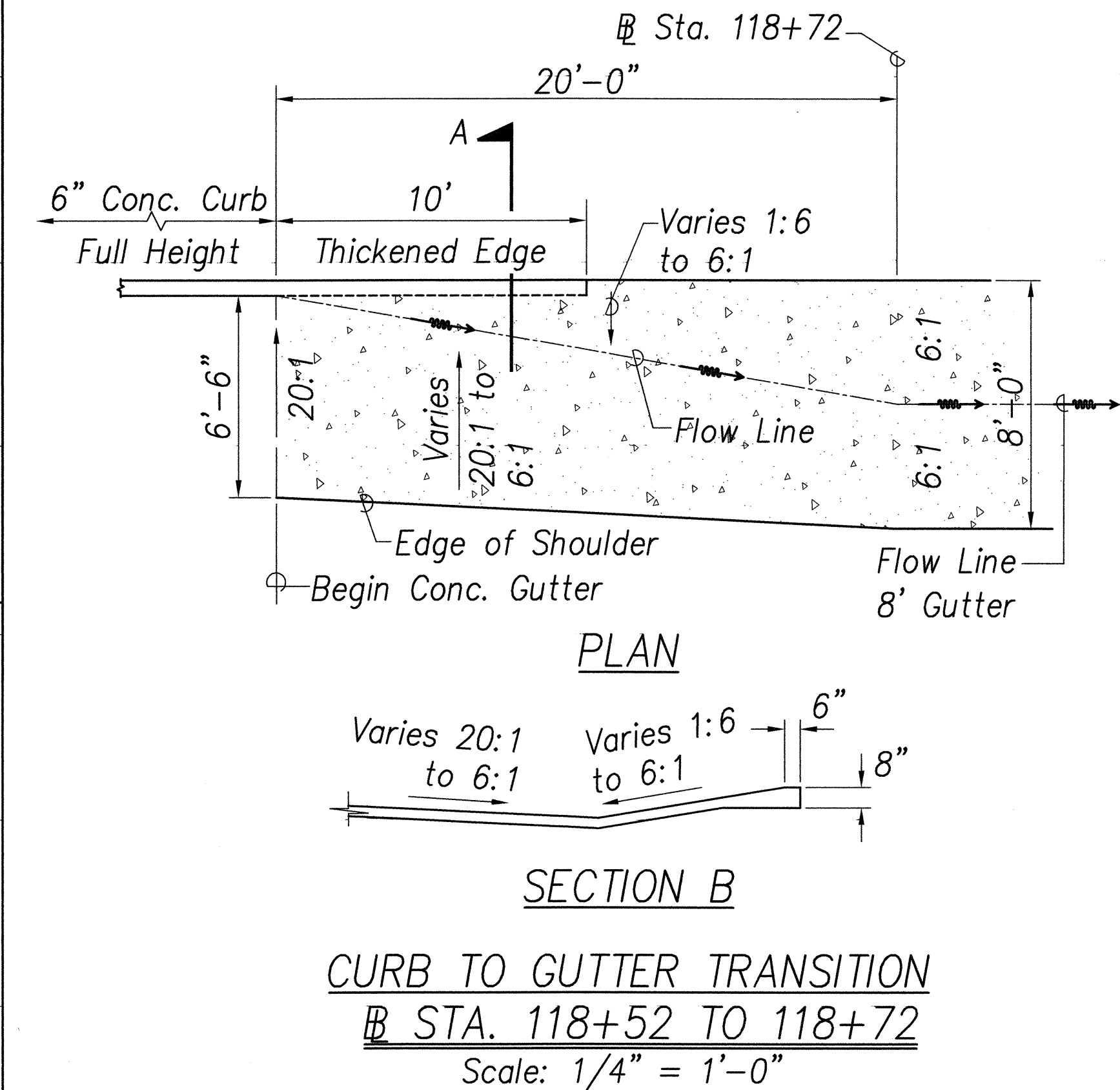
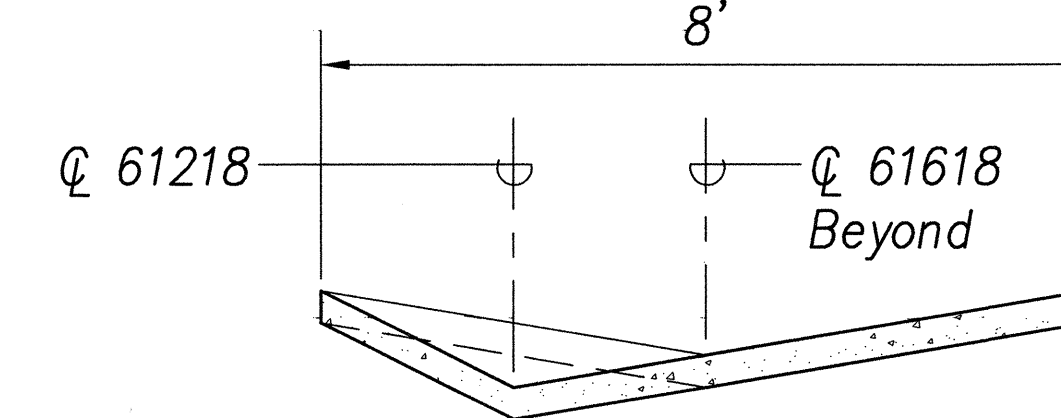
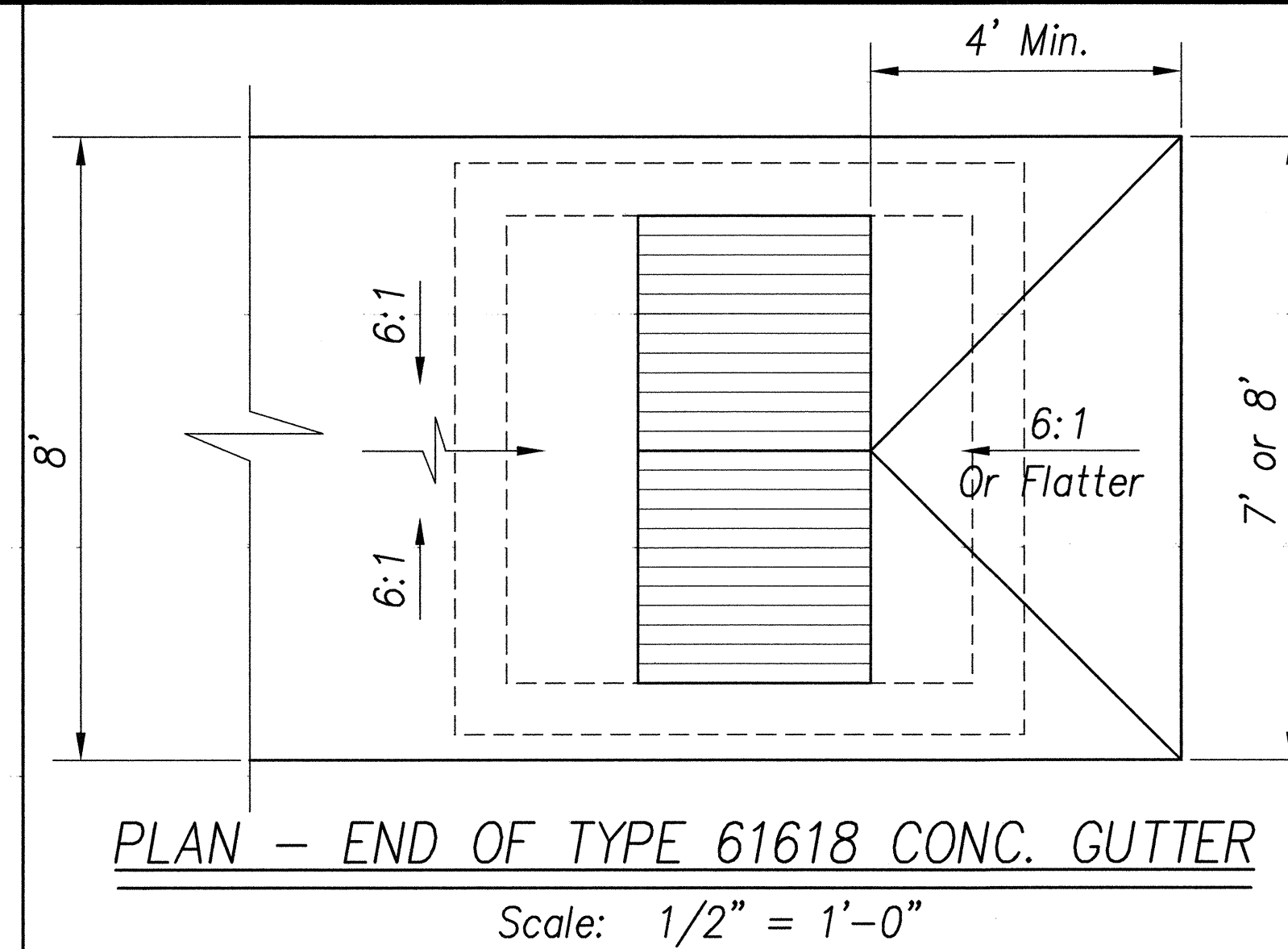
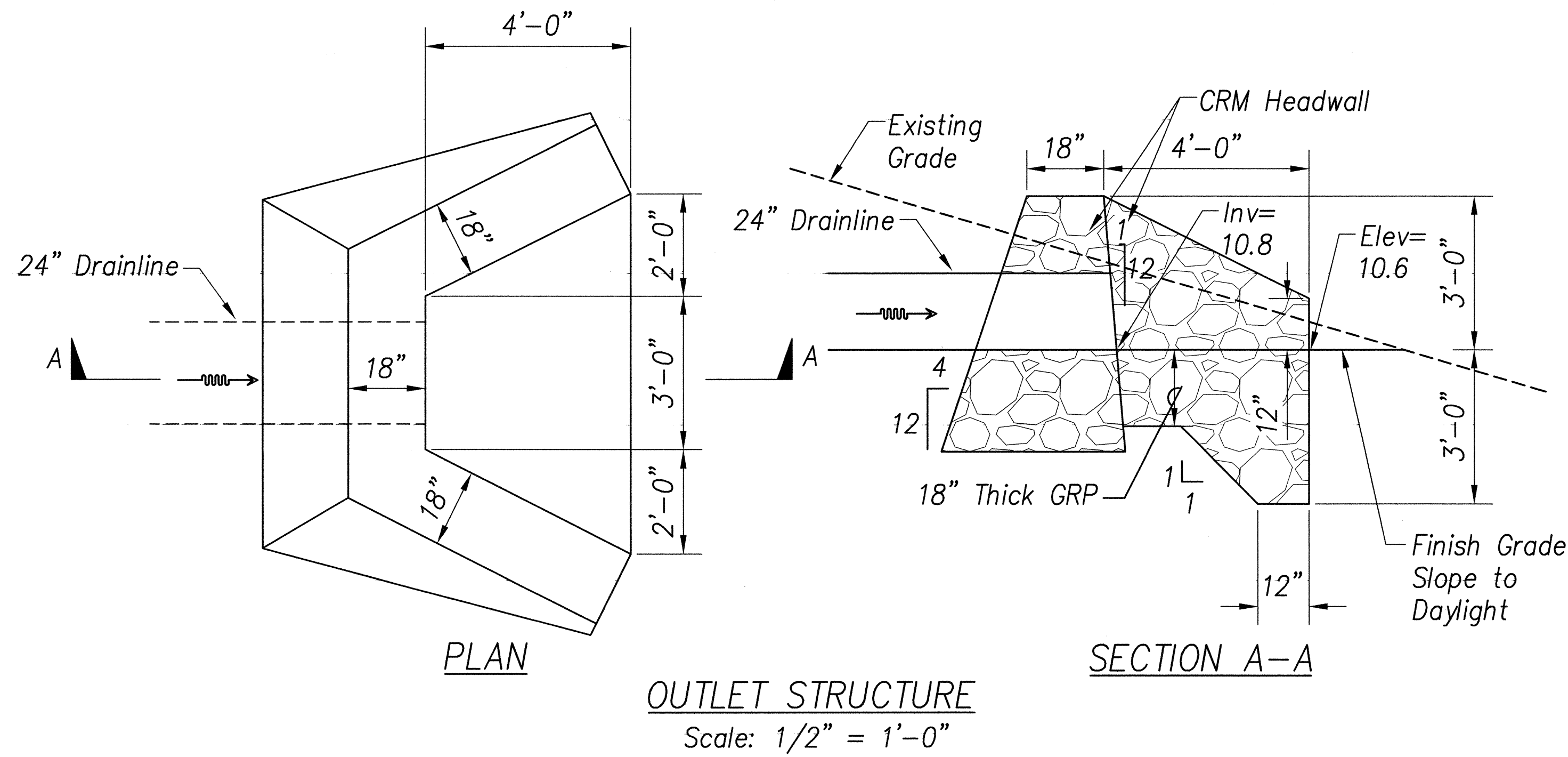
FEDERAL AID PROJECT NO. CMAQ-076-1(8)

SCALE: AS NOTED

DATE: October 2003

SHEET No. 7 OF 9 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(8)	2004	40	127



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE DETAILS	
FORT WEAVER ROAD WIDENING NEAR LAULAUNUI STREET	
FEDERAL AID PROJECT NO. CMAQ-076-1(8)	
SCALE: AS NOTED	DATE: October 2003
SHEET No. 9 OF 9 SHEETS	