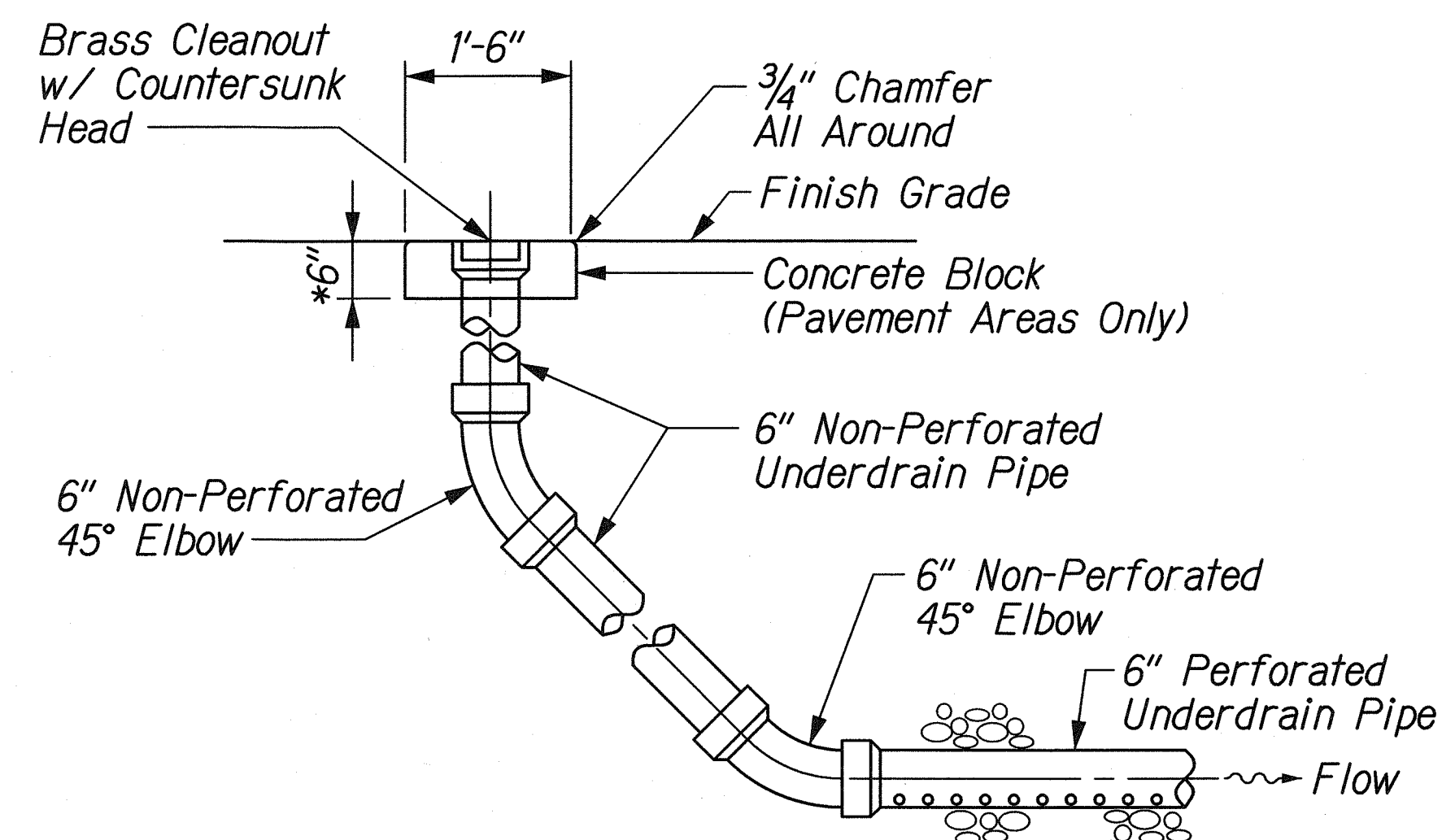
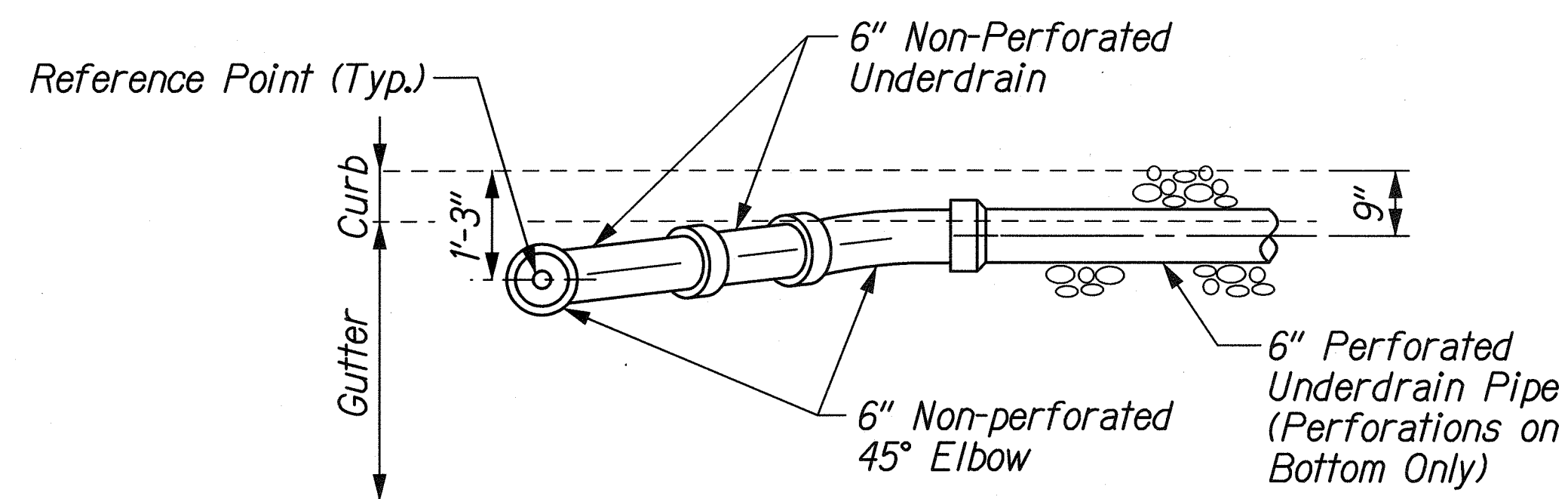


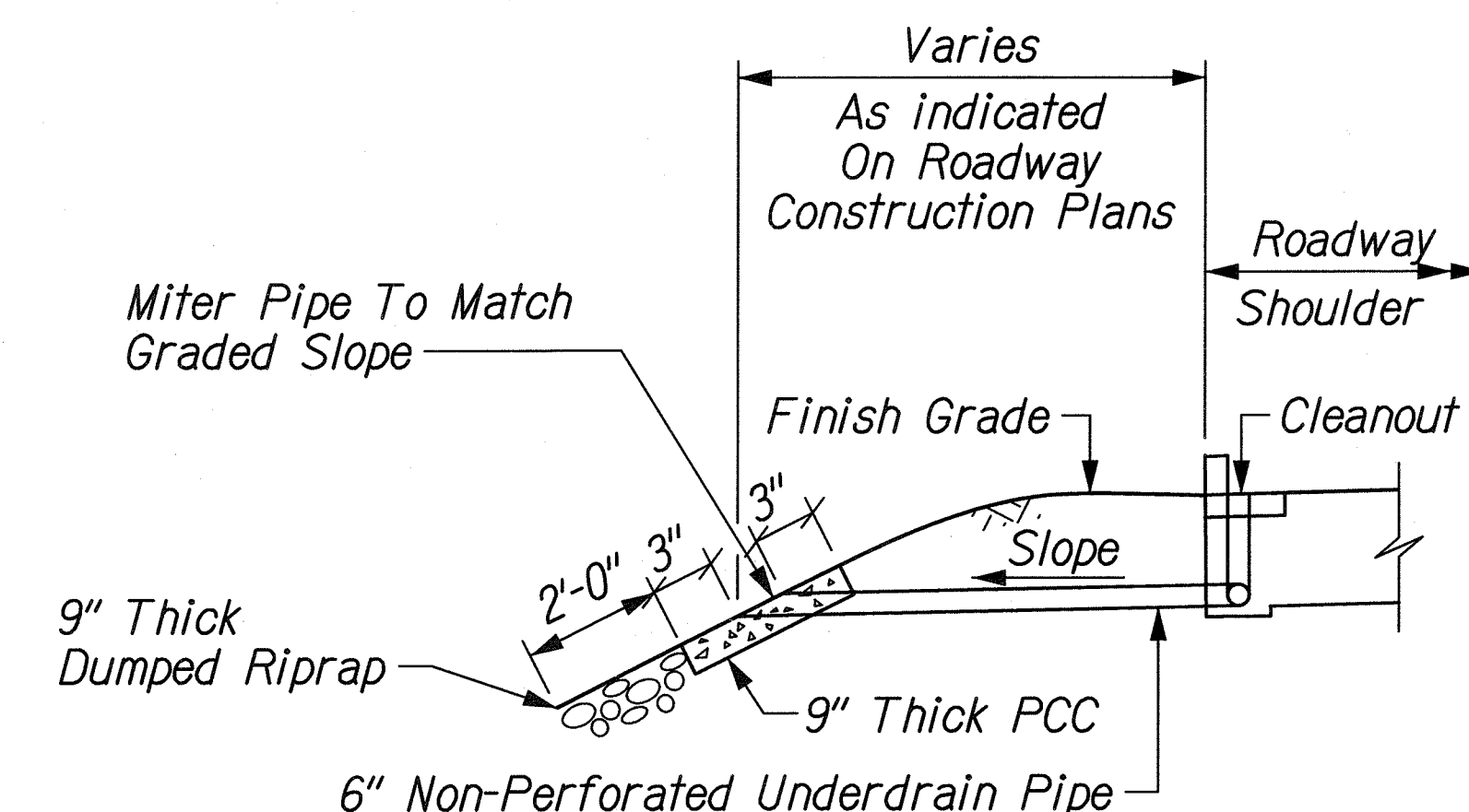
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(9)	2006	43	160



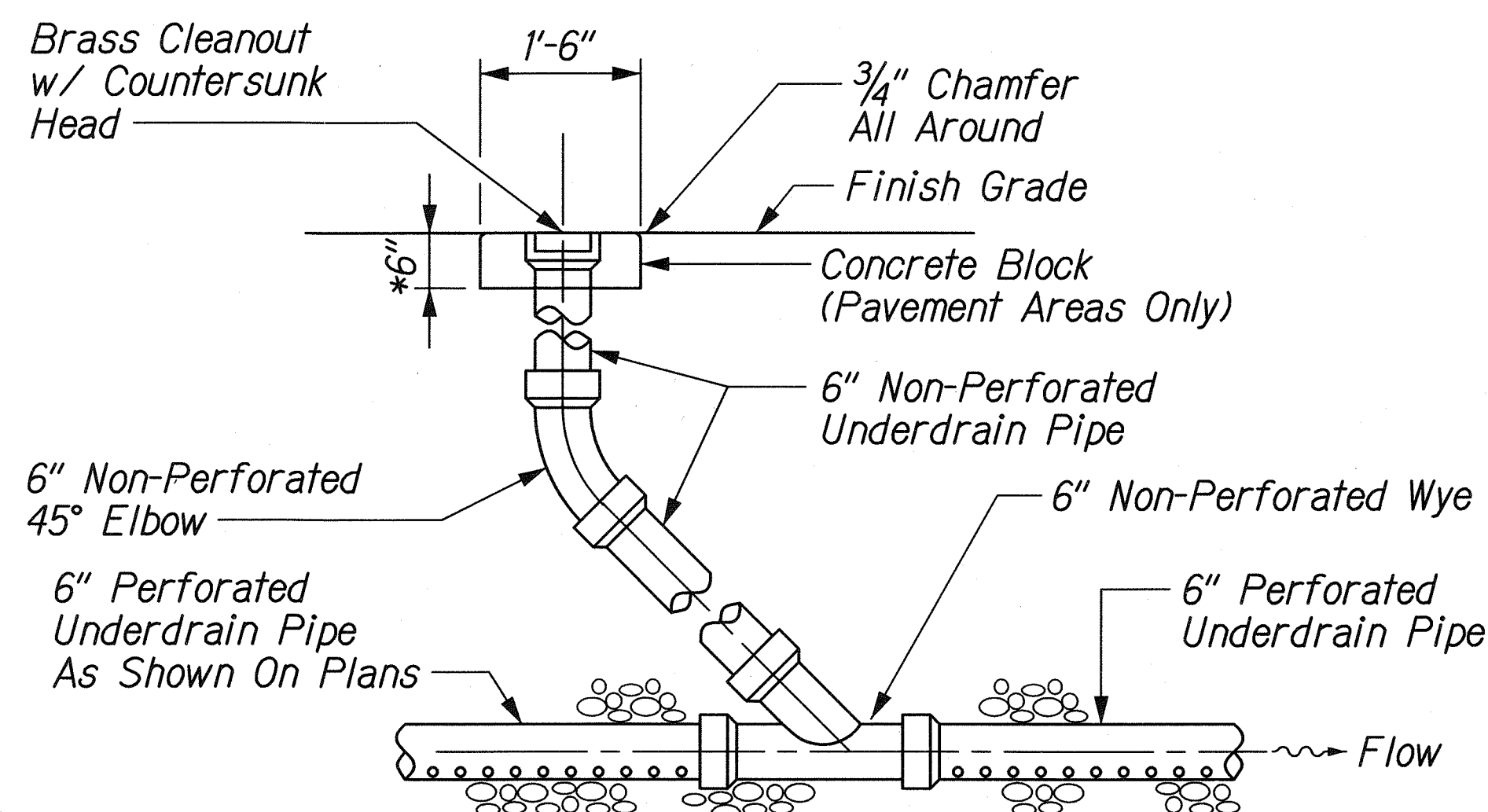
**CLEANOUT TYPE A**  
Not to Scale



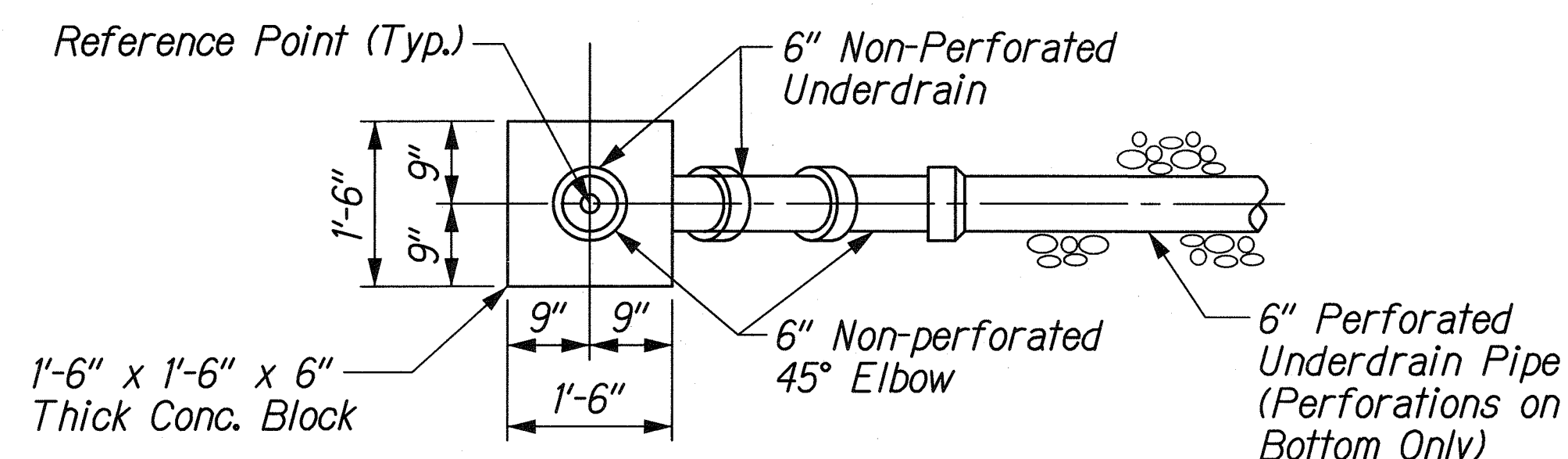
**TYPICAL CLEANOUT PLAN UNDER CURB AND GUTTER**  
Not to Scale



**DAYLIGHTING UNDERDRAIN IN GRADED AREAS**  
Not to Scale

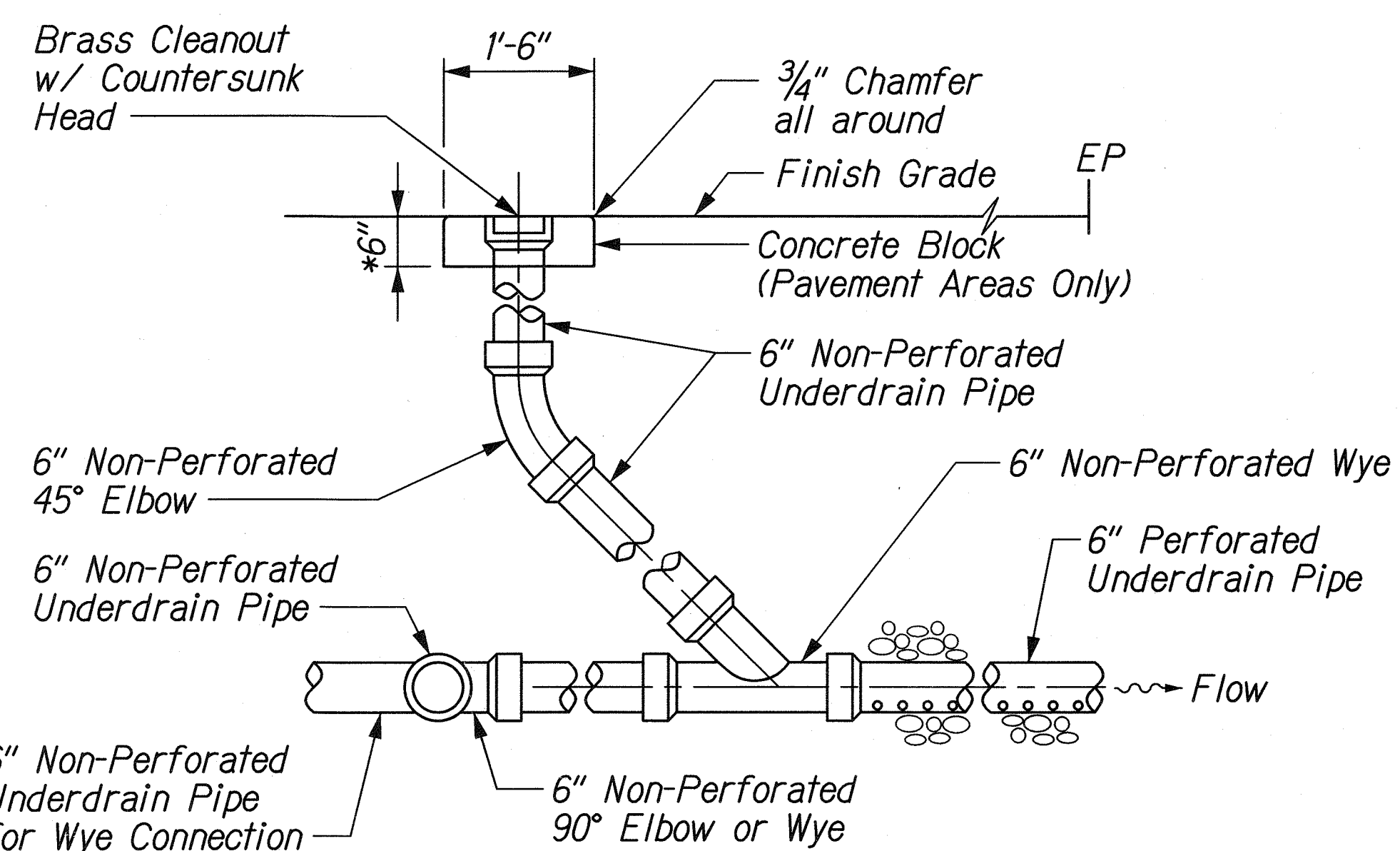


**CLEANOUT TYPE B**  
Not to Scale



**TYPICAL CLEANOUT PLAN IN ROADWAY**  
Not to Scale

\*For Cleanouts within AC or Glassphalt layers, Concrete thickness shall be greater than AC and Glassphalt depth.



**CLEANOUT TYPE C**  
Not to Scale

DATE	_____
DESIGNED BY	_____
TRACED BY	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____

J:\FORT WEAVER ROAD\ROAD\UDRAIN\01.dgn

THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION.

*R. M. Urasak*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

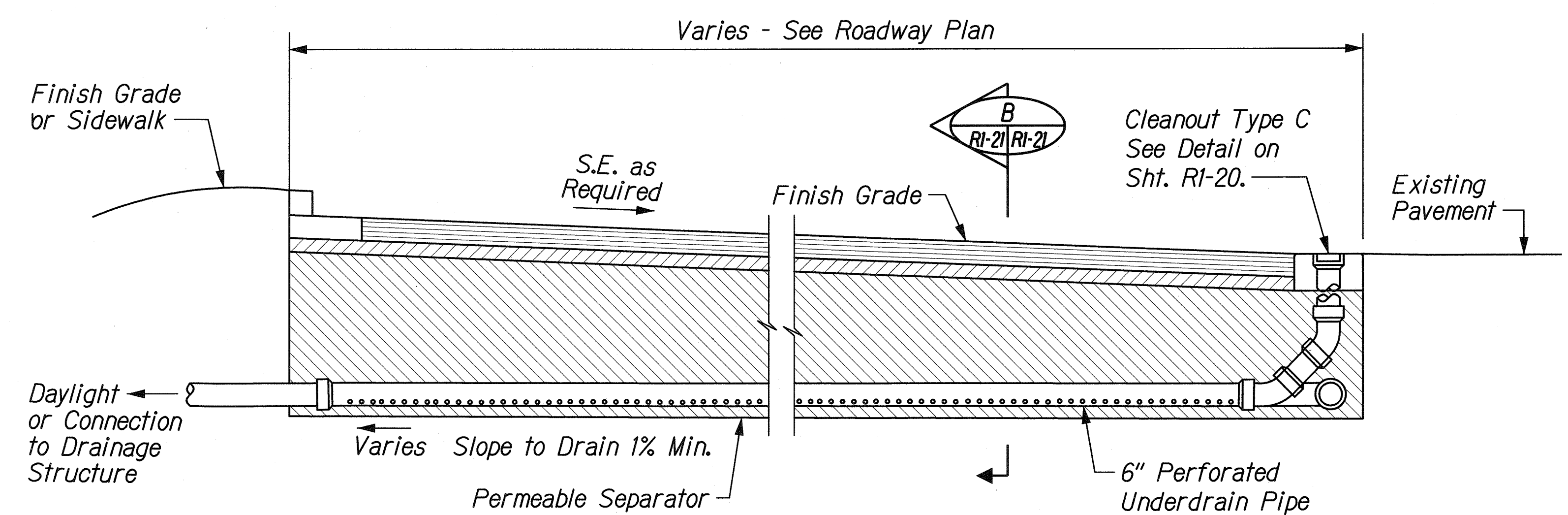
**ROADWAY CONSTRUCTION  
UNDERDRAIN DETAILS**

FORT WEAVER ROAD WIDENING  
VICINITY OF AAWA DRIVE TO GEIGER ROAD

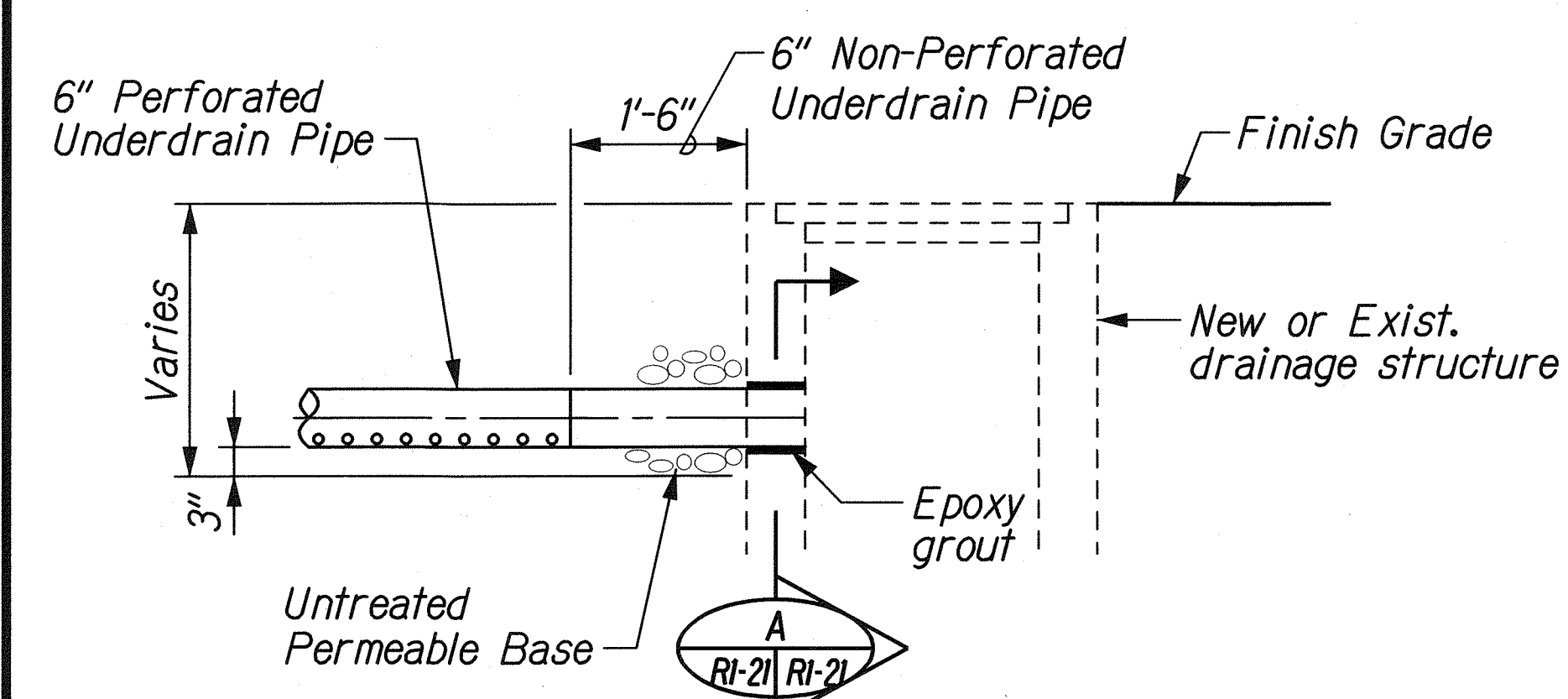
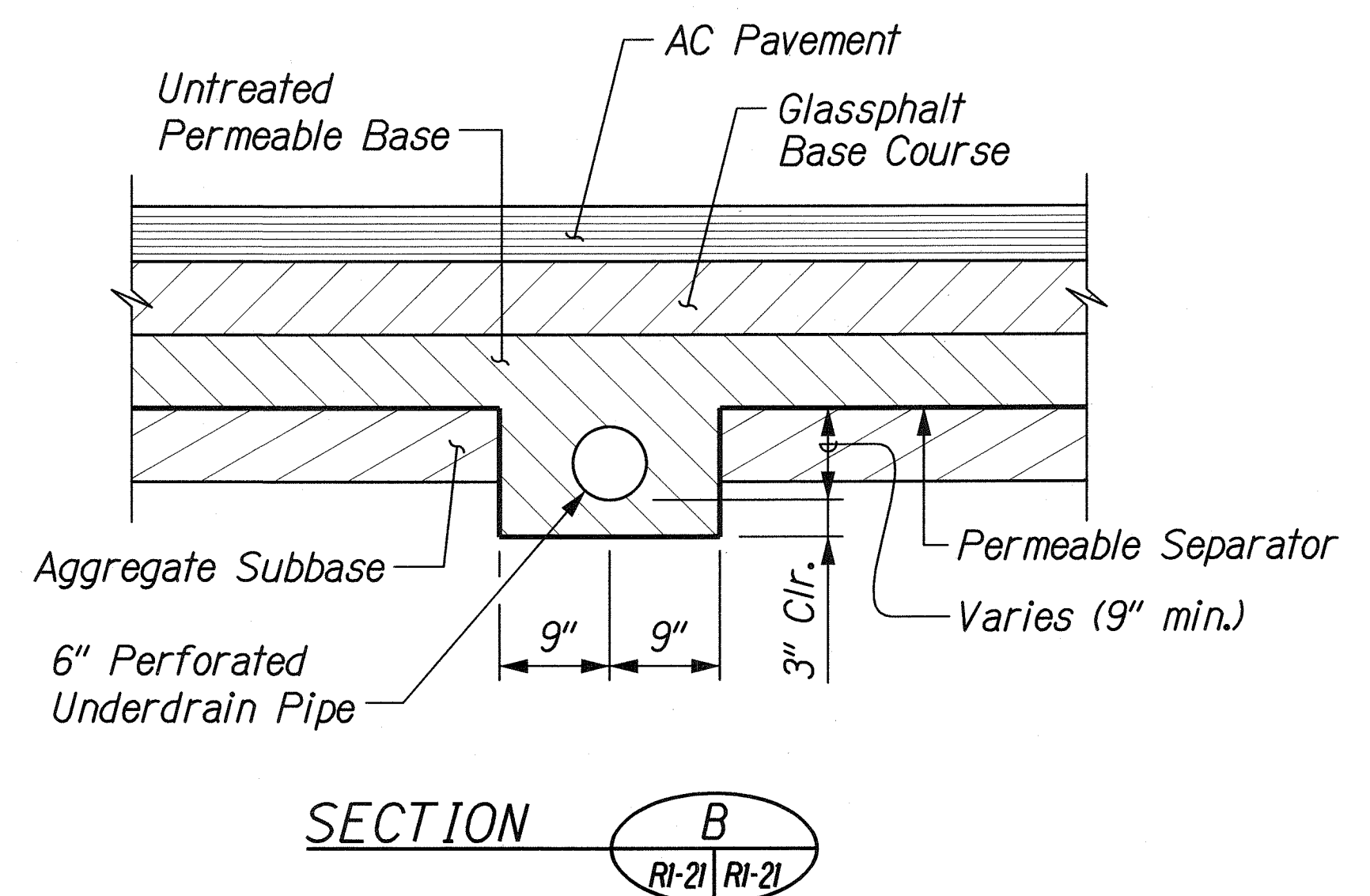
Scale: None      Date: Sept. 20, 2007

SHEET No. RI-20 OF 39 SHEETS

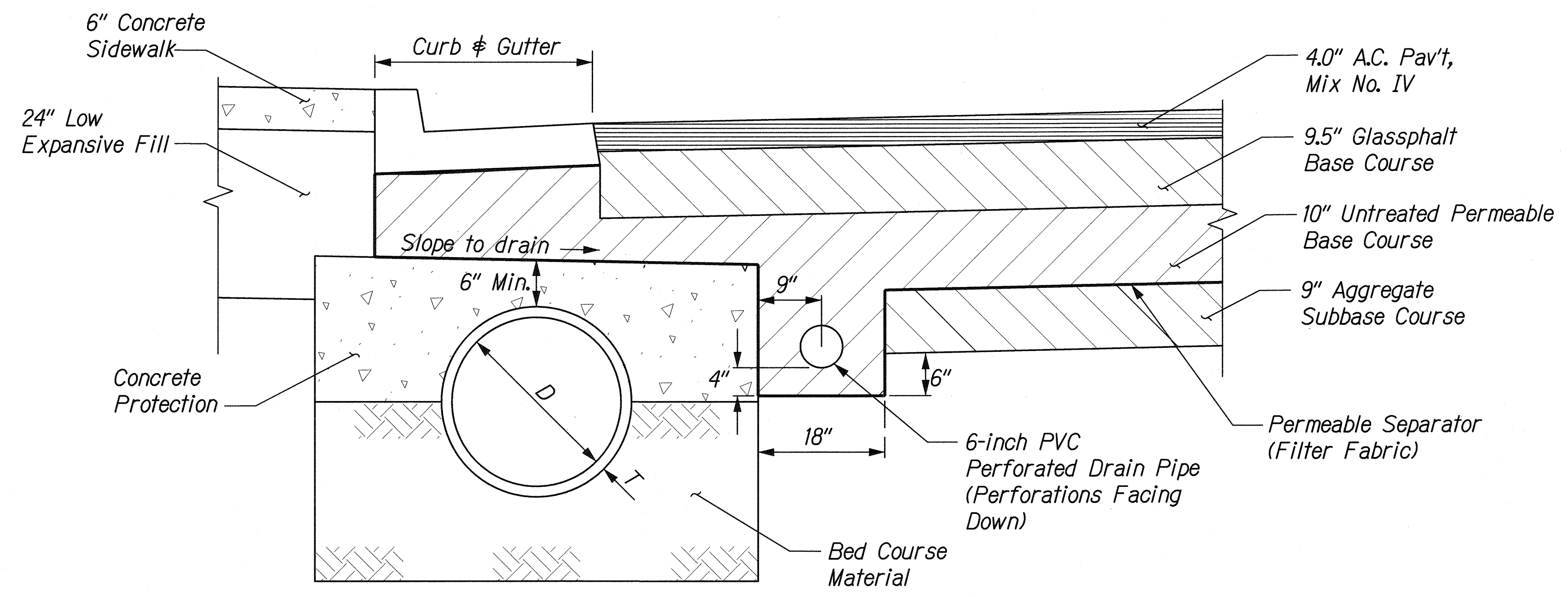
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-076-1(9)	2006	44	160



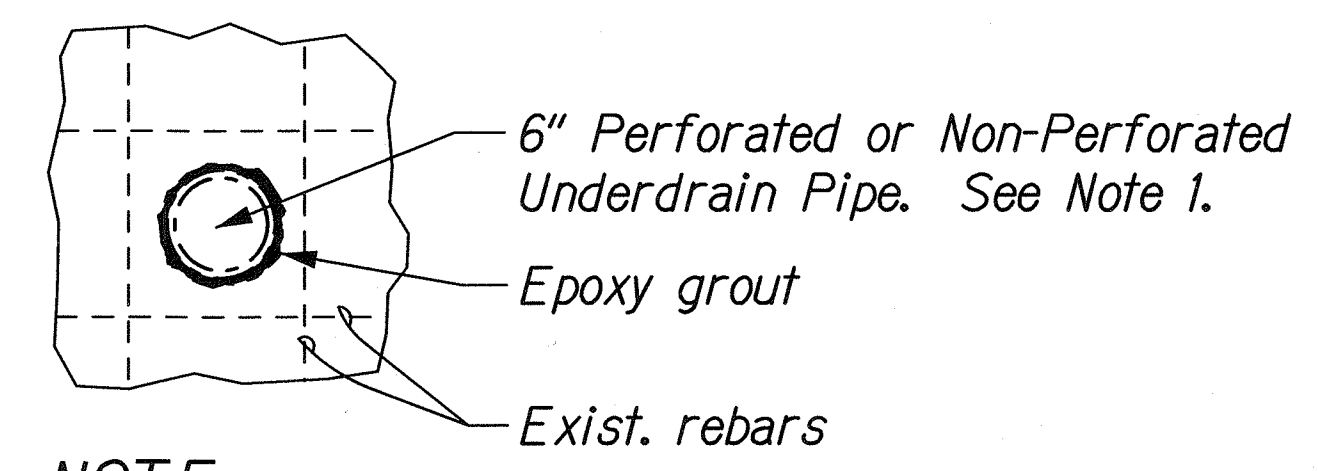
**TRANSVERSE UNDERDRAIN**  
Not to Scale



**CONNECTION DETAIL FOR DRAINAGE STRUCTURES**  
Not to Scale



**UNDERDRAIN LOCATION AT PIPE WITH CONCRETE PROTECTION**  
Scale: 1" = 1'



**NOTE:**  
1. The Contractor shall avoid cutting the existing rebars. In case the pipe opening interferes with the existing rebars, the opening shall be enlarged and the location of the pipe shall be adjusted to pass between the existing rebars as shown. The enlarged hole shall be patched with epoxy grout.

**SECTION A**  
RI-21 RI-21

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

J:\FORT WEAVER ROAD\ROAD\UDRAIN02.dgn

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

*R. Urashy*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**ROADWAY CONSTRUCTION  
UNDERDRAIN DETAILS**

FORT WEAVER ROAD WIDENING  
VICINITY OF AWA DRIVE TO GEIGER ROAD

Scale: AS SHOWN      Date: Sept. 20, 2007

SHEET No RI-21 OF 39 SHEETS