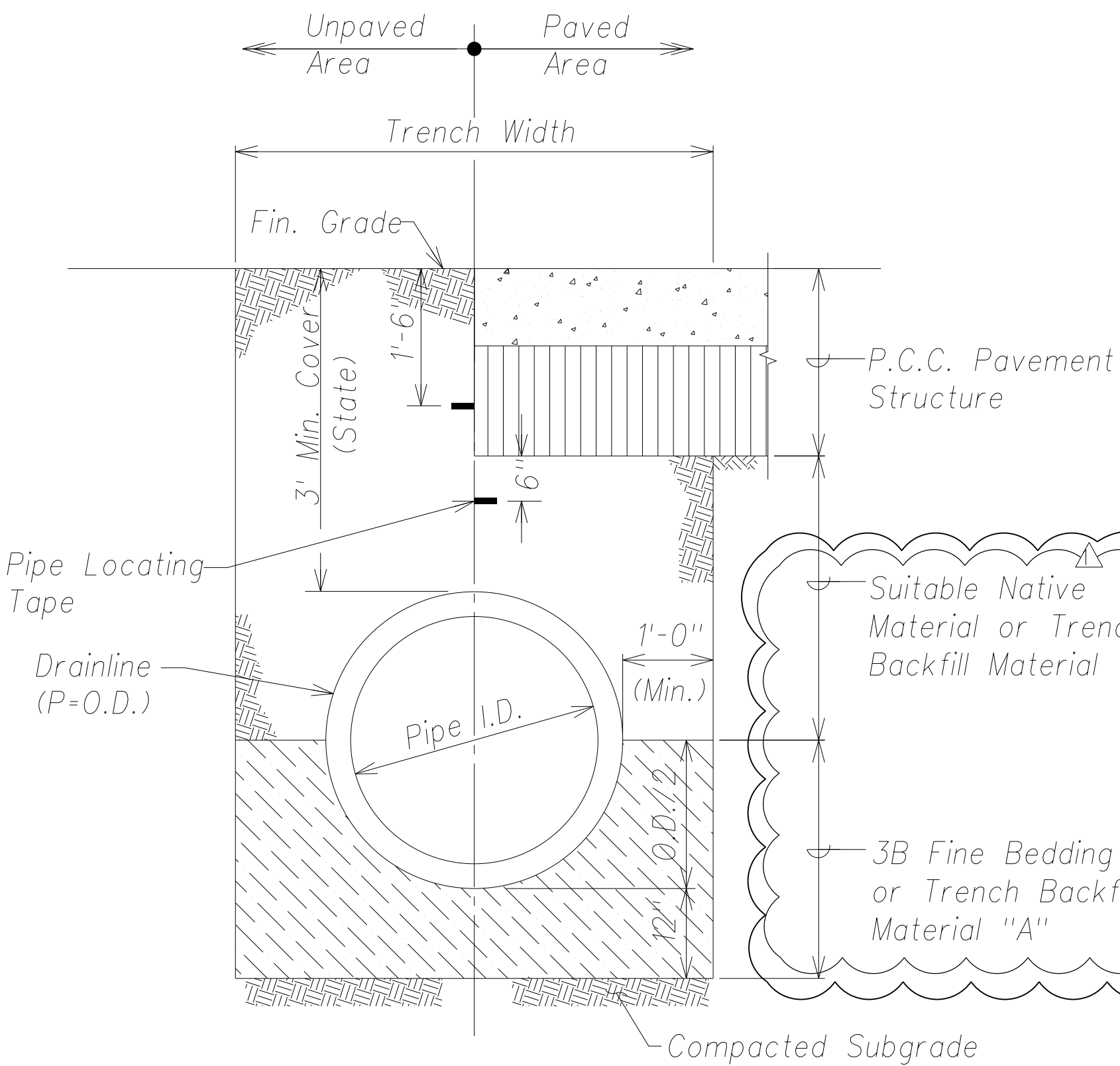
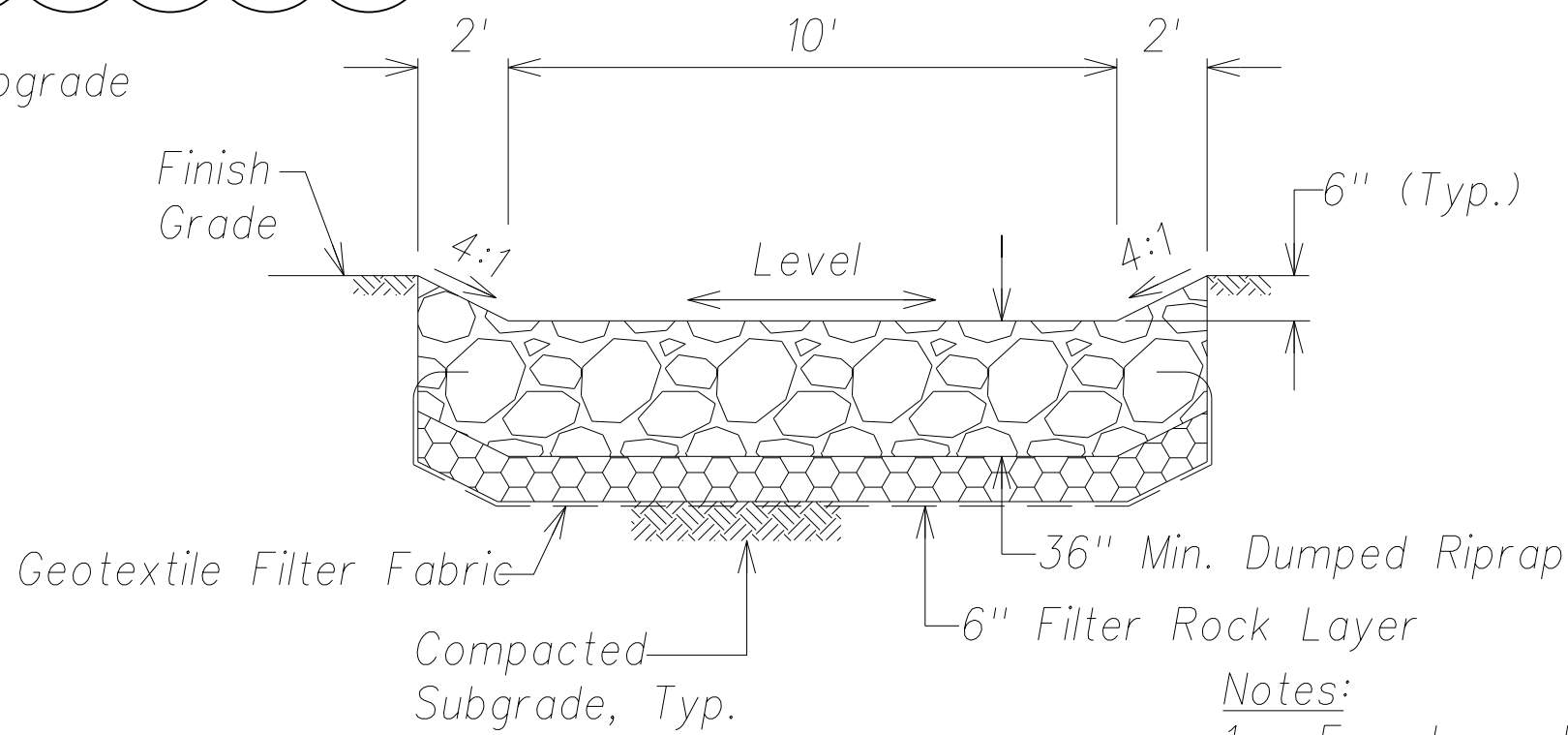


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ARR-050-1(036)	FY13/14	Model	131



Drain Pipe Size	Drain Pipe O.D.	Trench Width
24"	28"	4'-4"
30"	36"	5'-0"
36"	42"	5'-6"
54"	61"	7'-1"
60"	67"	7'-7"

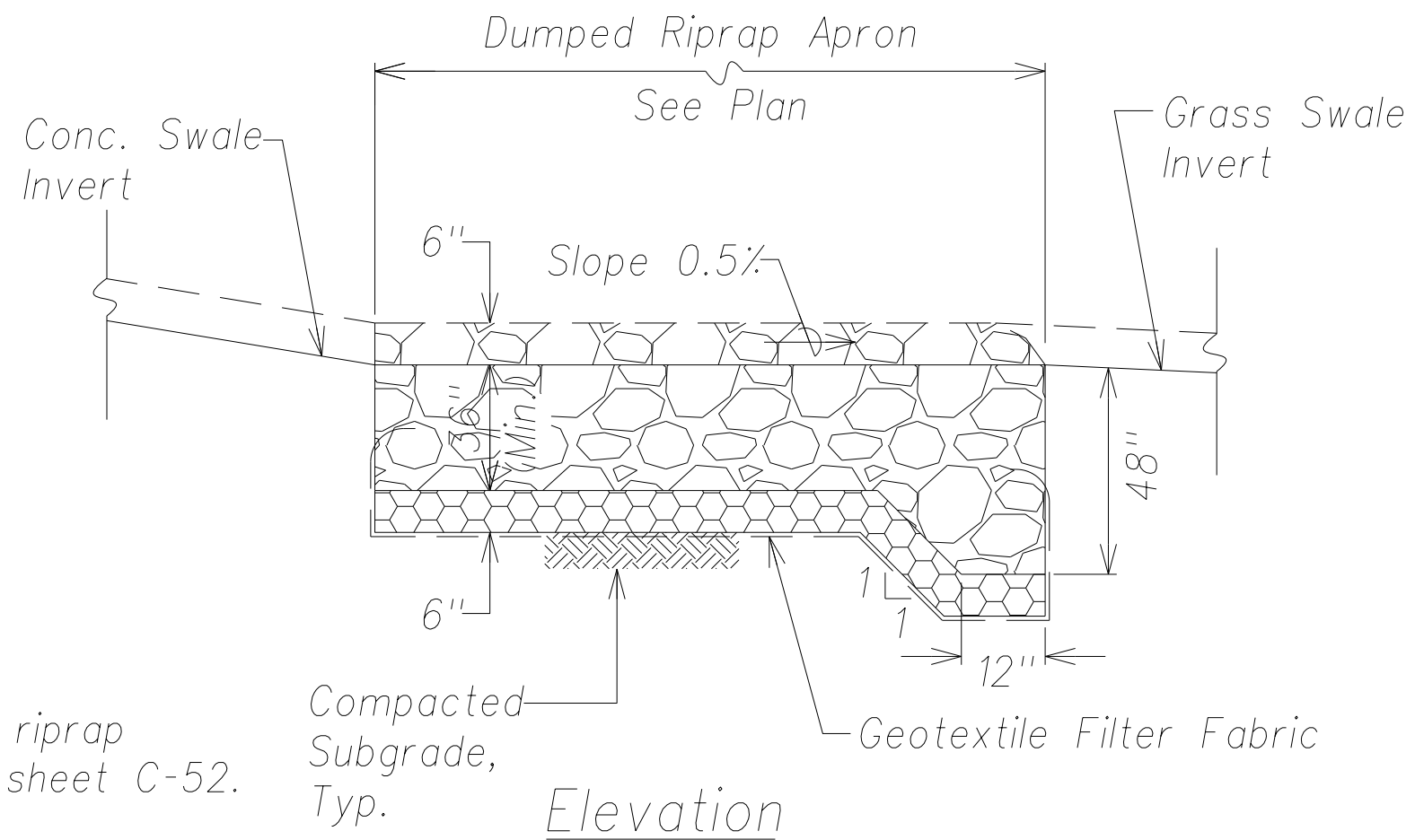
Drain Pipe Trenching Detail
Not to Scale



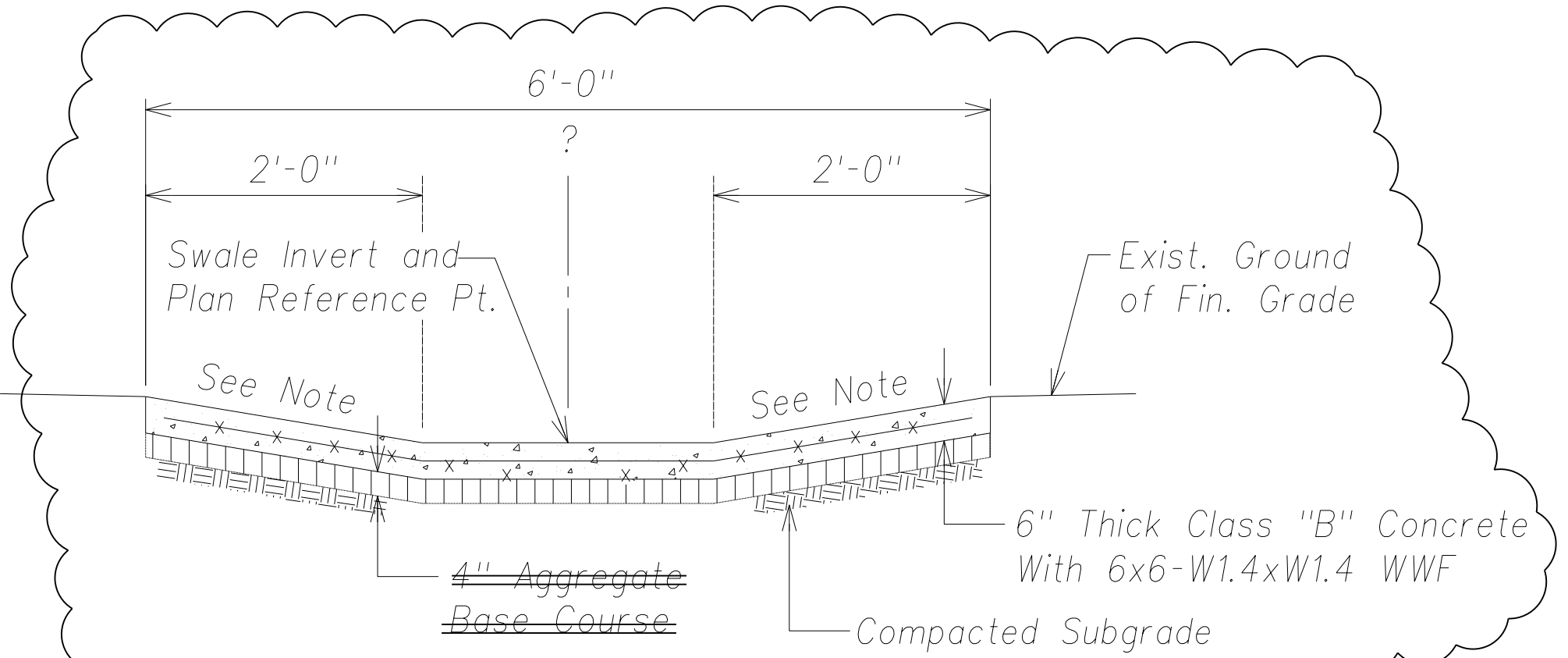
Section

Notes:
1. For dumped riprap details, see sheet C-52.

Dumped Riprap Apron
Not to Scale



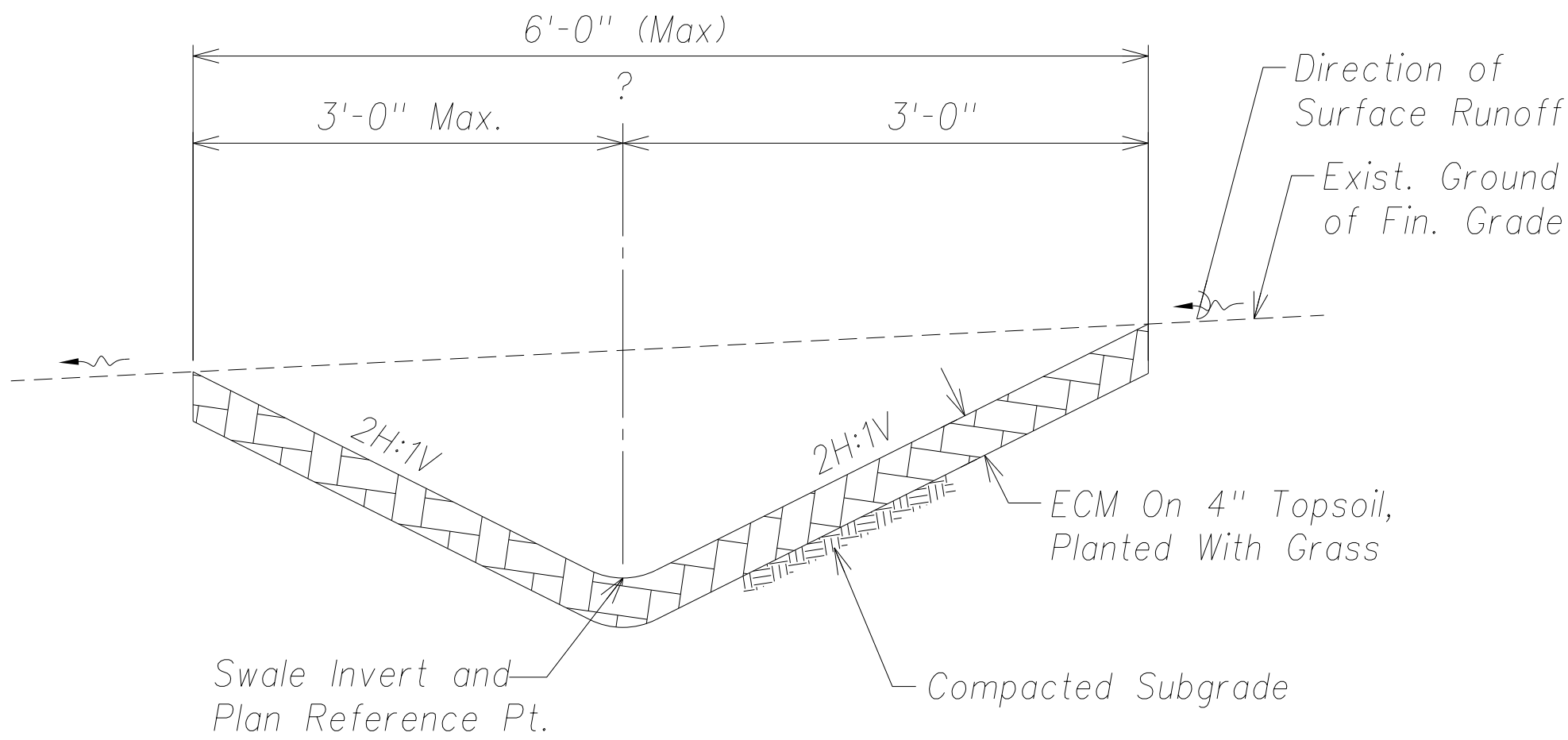
Elevation



Note:
Concrete swale side slopes shall be 3H:1V except where specified otherwise on sheet C-26.

Concrete Swale Detail
Not to Scale

RFI-D NO. 45
REMOVE AGGREGATE
SUBBASE



Grass Swale Detail
Not to Scale



Signature
April 30, 2016
Expiration Date of the License

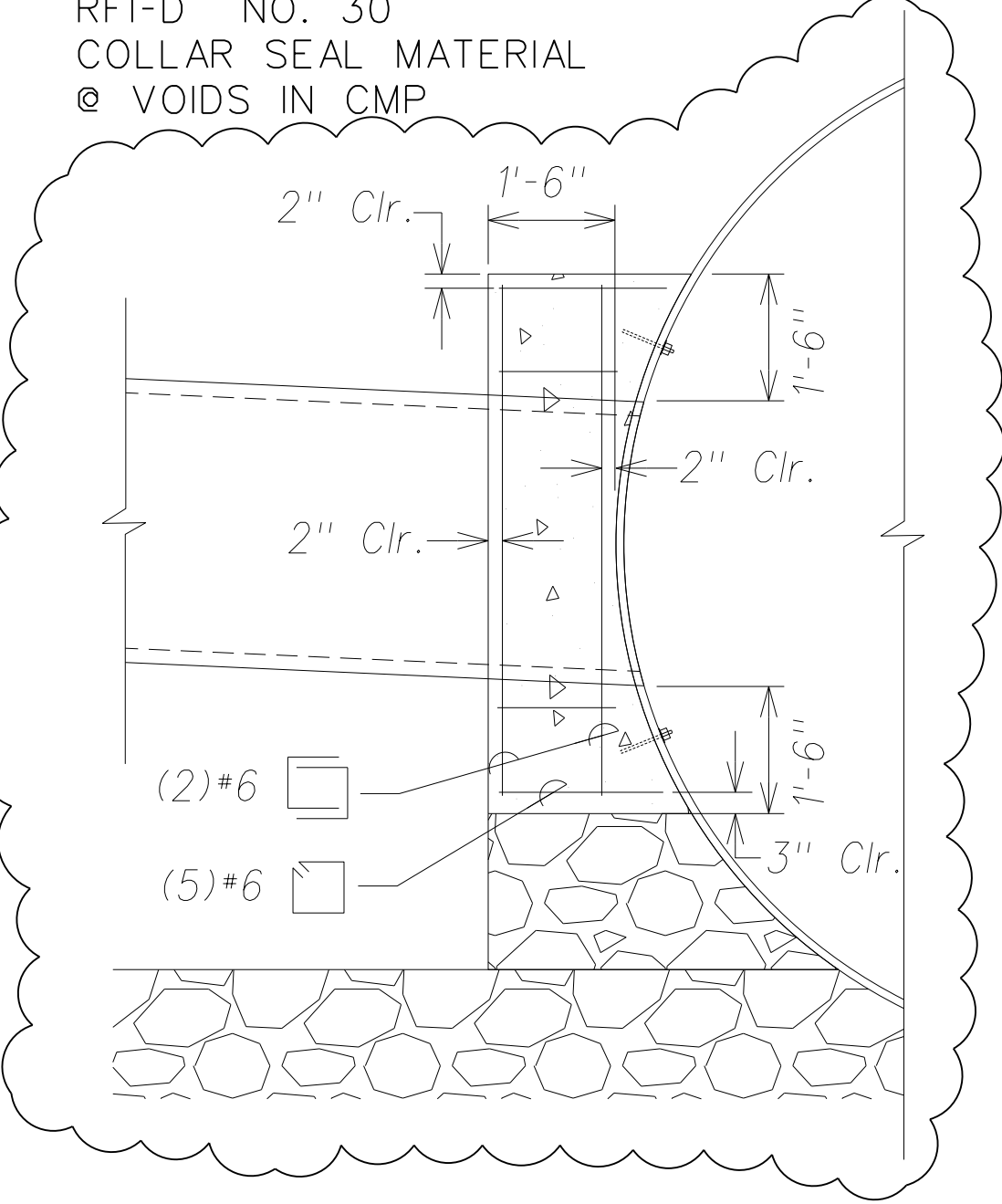
LEGEND FOR AS-BUILT POSTINGS	
~~~~~	Squiggly line for as-built deletion
==	Double line for as-built deletion
Roadway	Text for as-built posting

07/30/14	Revise detail
Date	Revision
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE DETAILS	
PHASE 1 - KAUMUALII HIGHWAY LIHUE MILL BRIDGE TO RICE STREET PHASE 2 - NAWILIWILI STREAM BRIDGE AND MAUKA WIDENING	
Scale: As Shown	Date: March 25, 2013
SHEET No. C-50 OF 84 SHEETS	

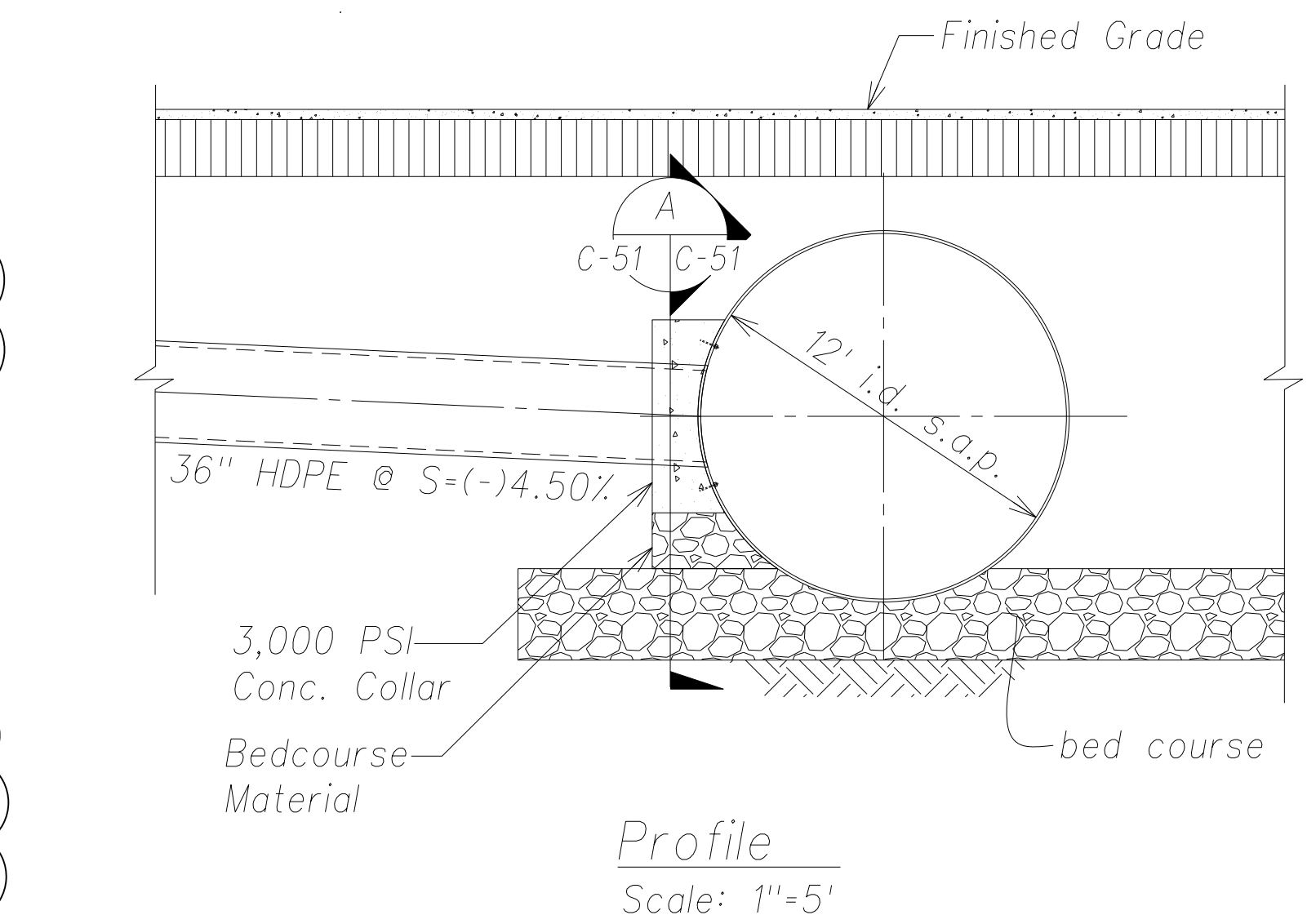
SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ARR-050-1(036)	FY13/14	Model	131

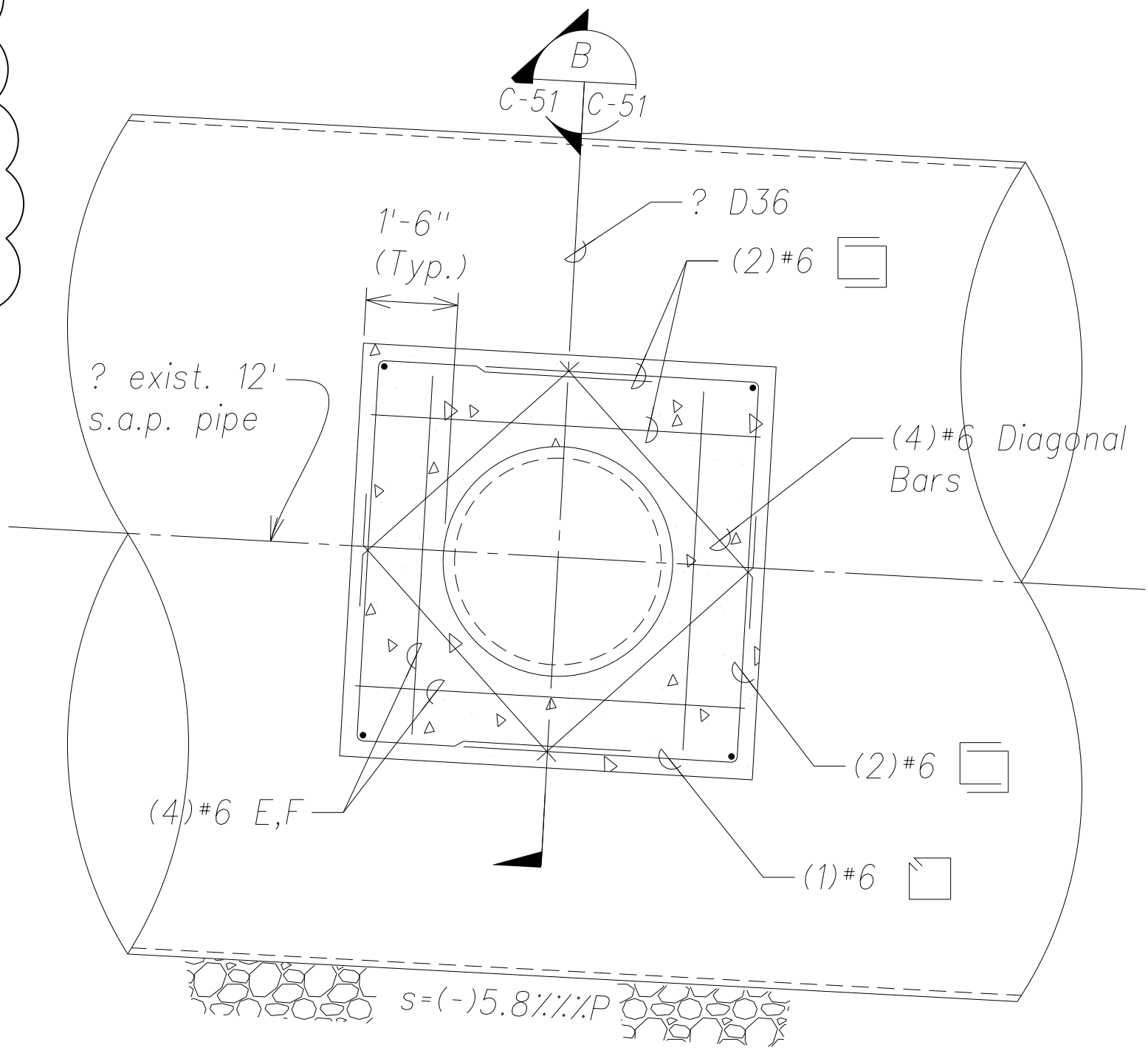
RFI-D NO. 30  
COLLAR SEAL MATERIAL  
@ VOIDS IN CMP



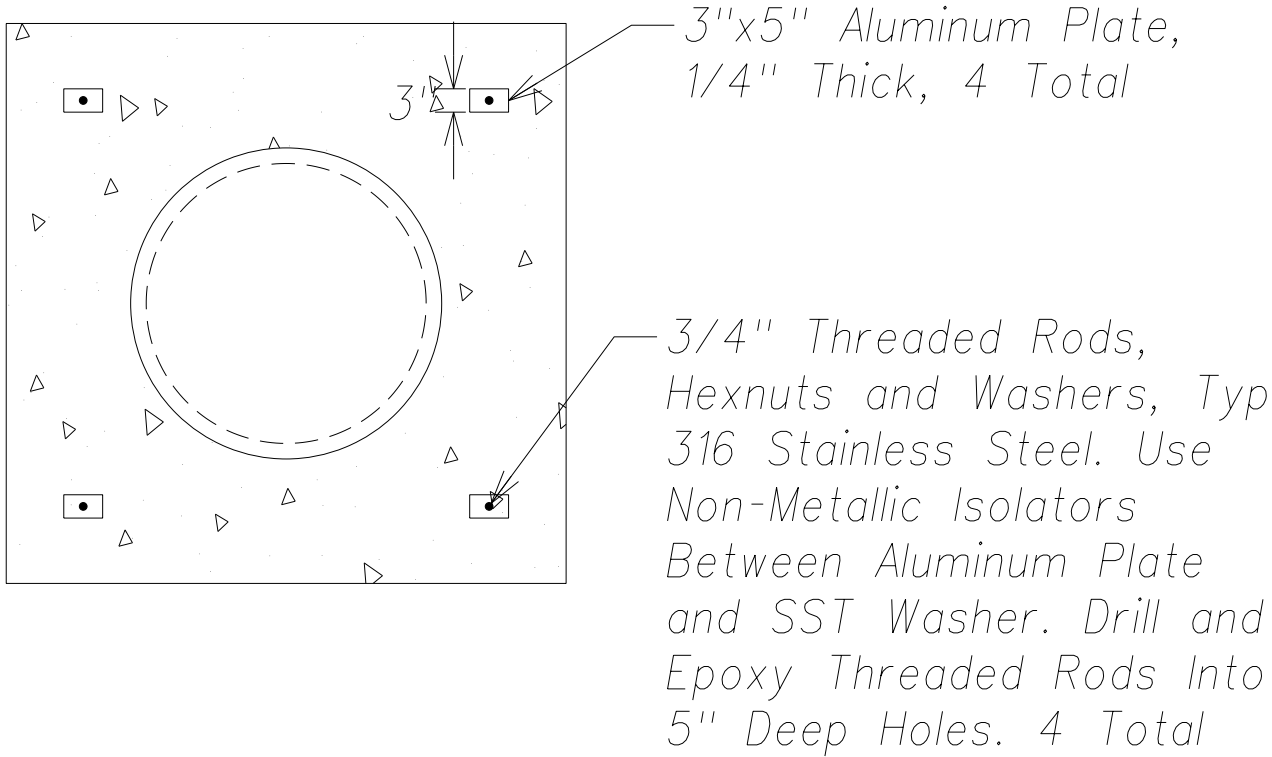
Section  
Scale: 1/2"=1'-0"



Profile  
Scale: 1"=5'



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



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

Detail - Connection to Exist. 12' S.A.P. Culvert  
Scale: 1"=5'

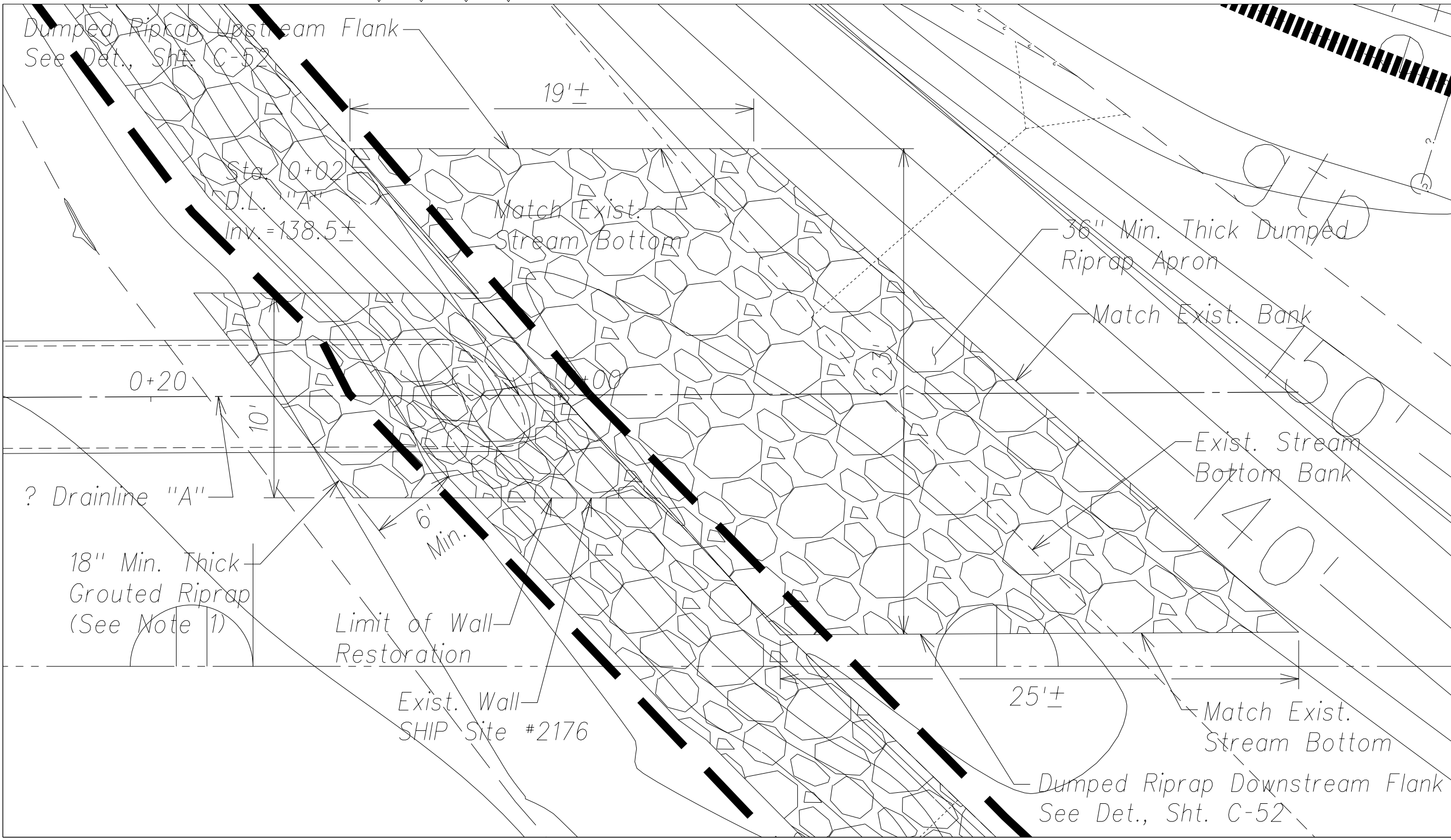
LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
	Text for as-built posting



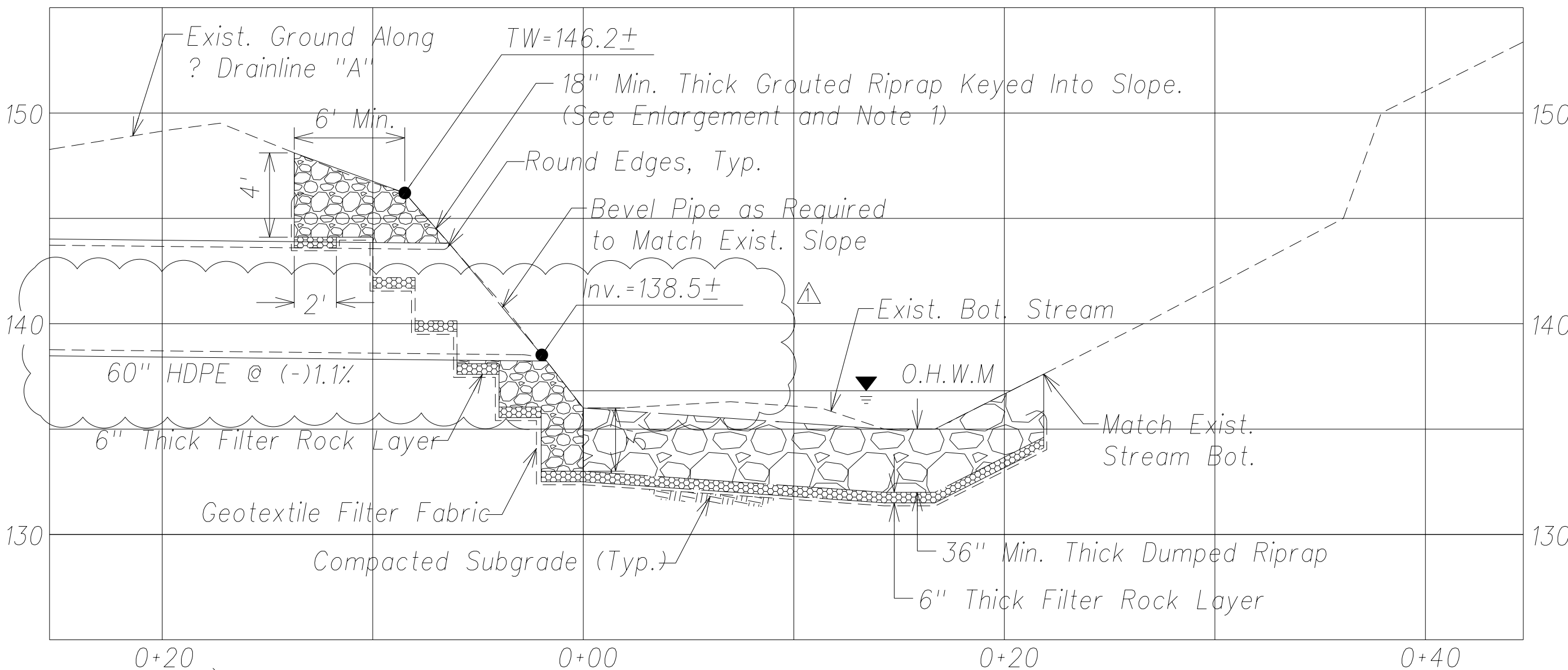
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

SIGNATURE  
EXPIRATION DATE OF THE LICENSE

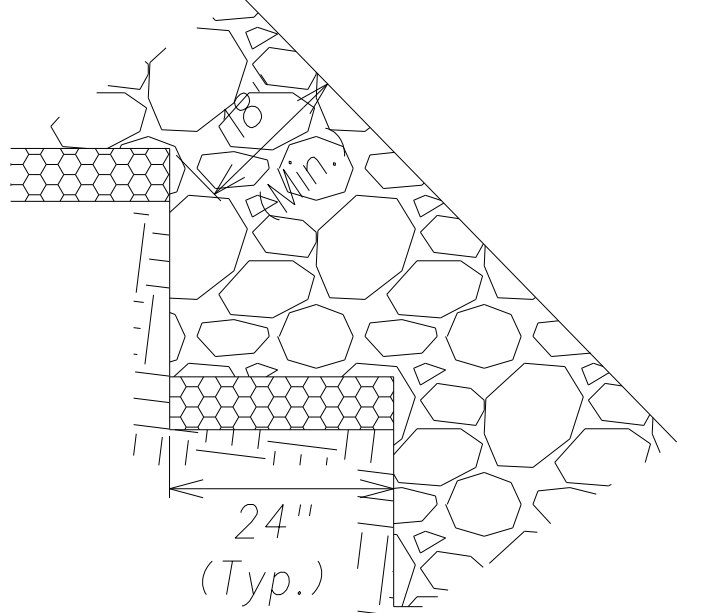
Date	Revision
07/30/14	Revise drain outlet plan and profile. Add note.
DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE DETAILS	
PHASE 1 - KAUMUALII HIGHWAY LIHUE MILL BRIDGE TO RICE STREET PHASE 2 - NAWILIWILI STREAM BRIDGE AND MAUKA WIDENING	
Scale: As Shown	Date: March 25, 2013
SHEET No. C-51 OF 84 SHEETS	



Plan: Outlet Structure-A1  
Scale: 1"=5'



Profile: Outlet Structure-A1  
Scale: 1"=5'

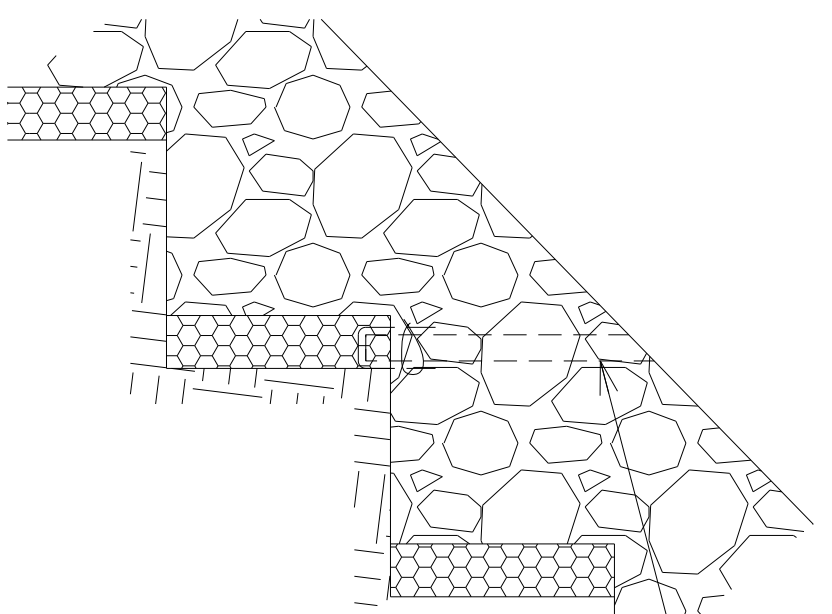
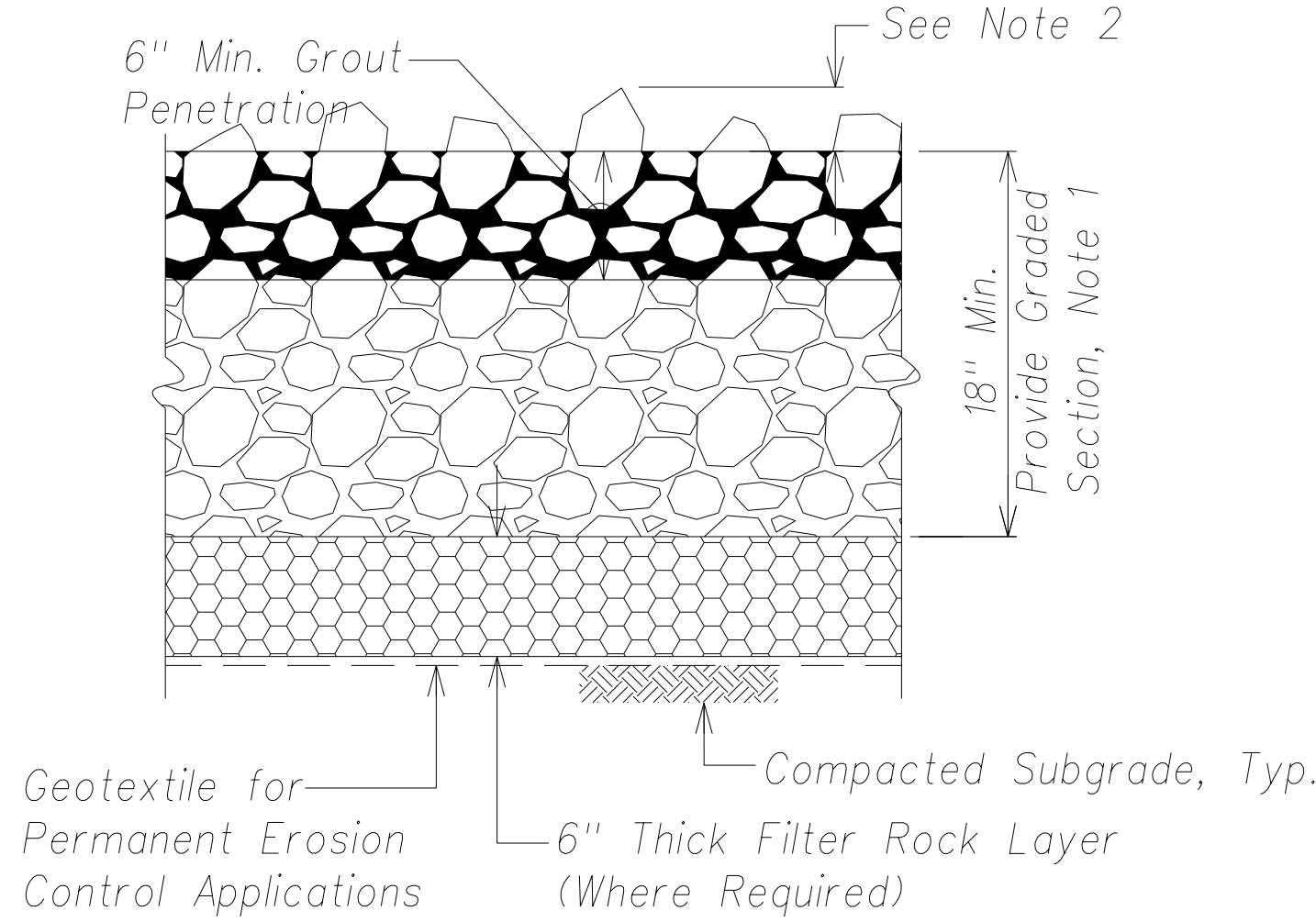
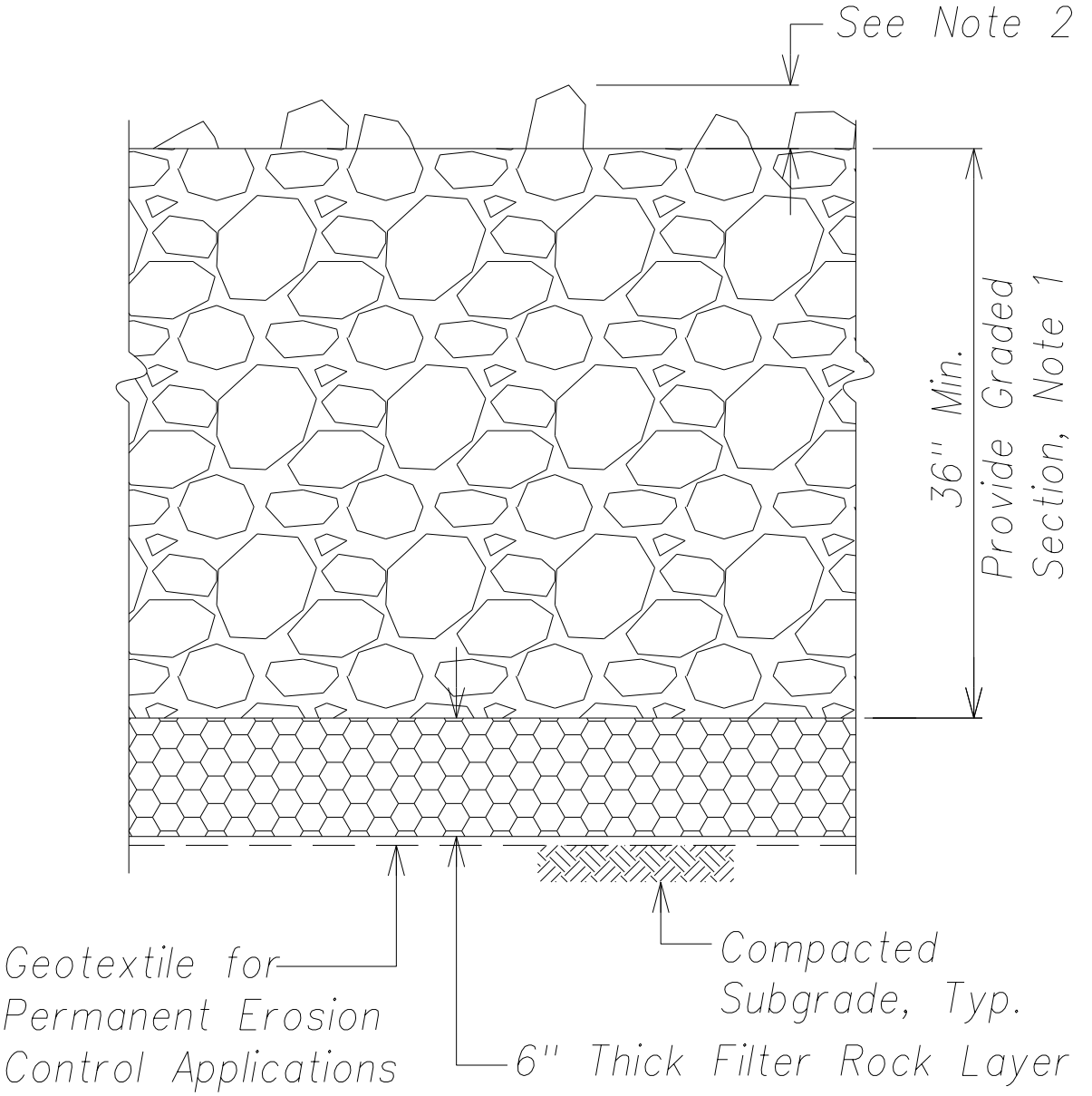
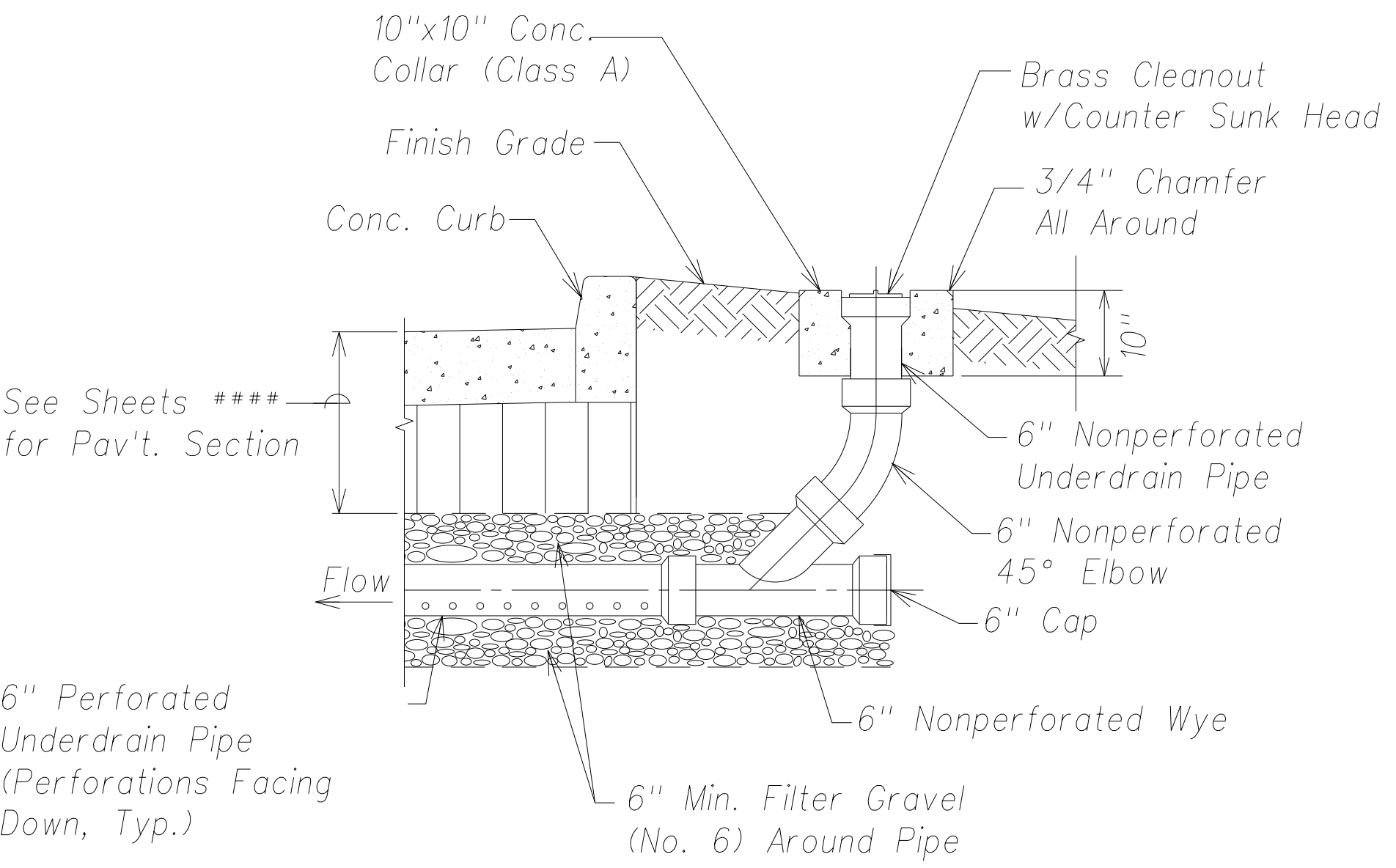
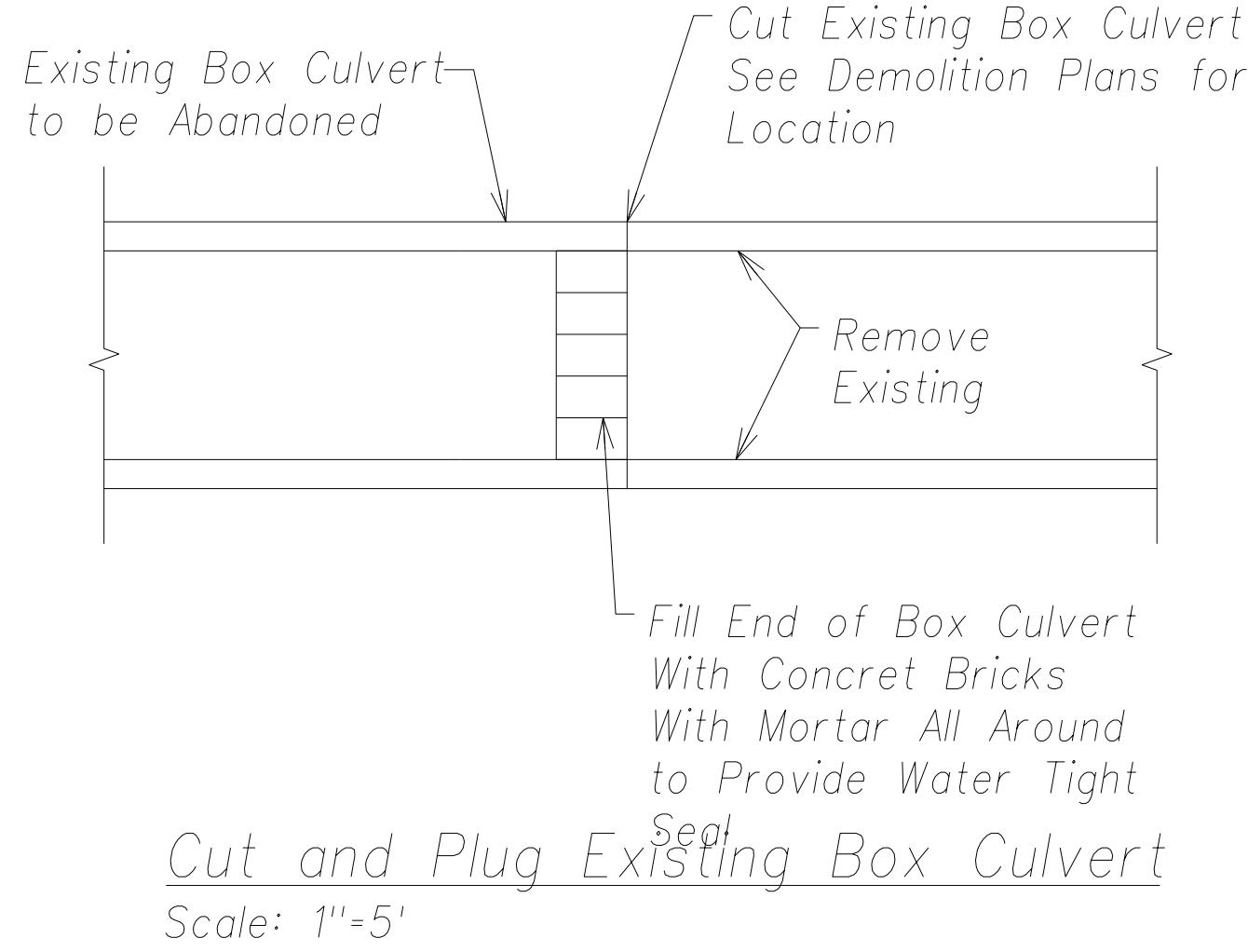
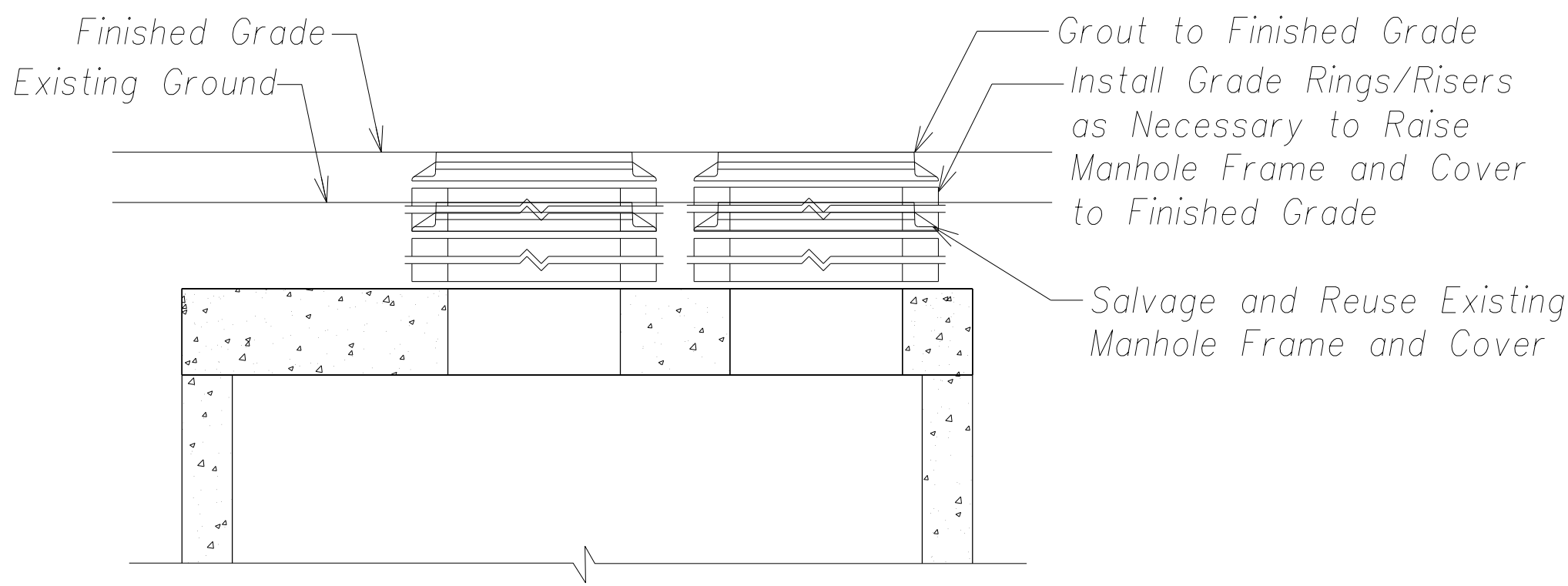
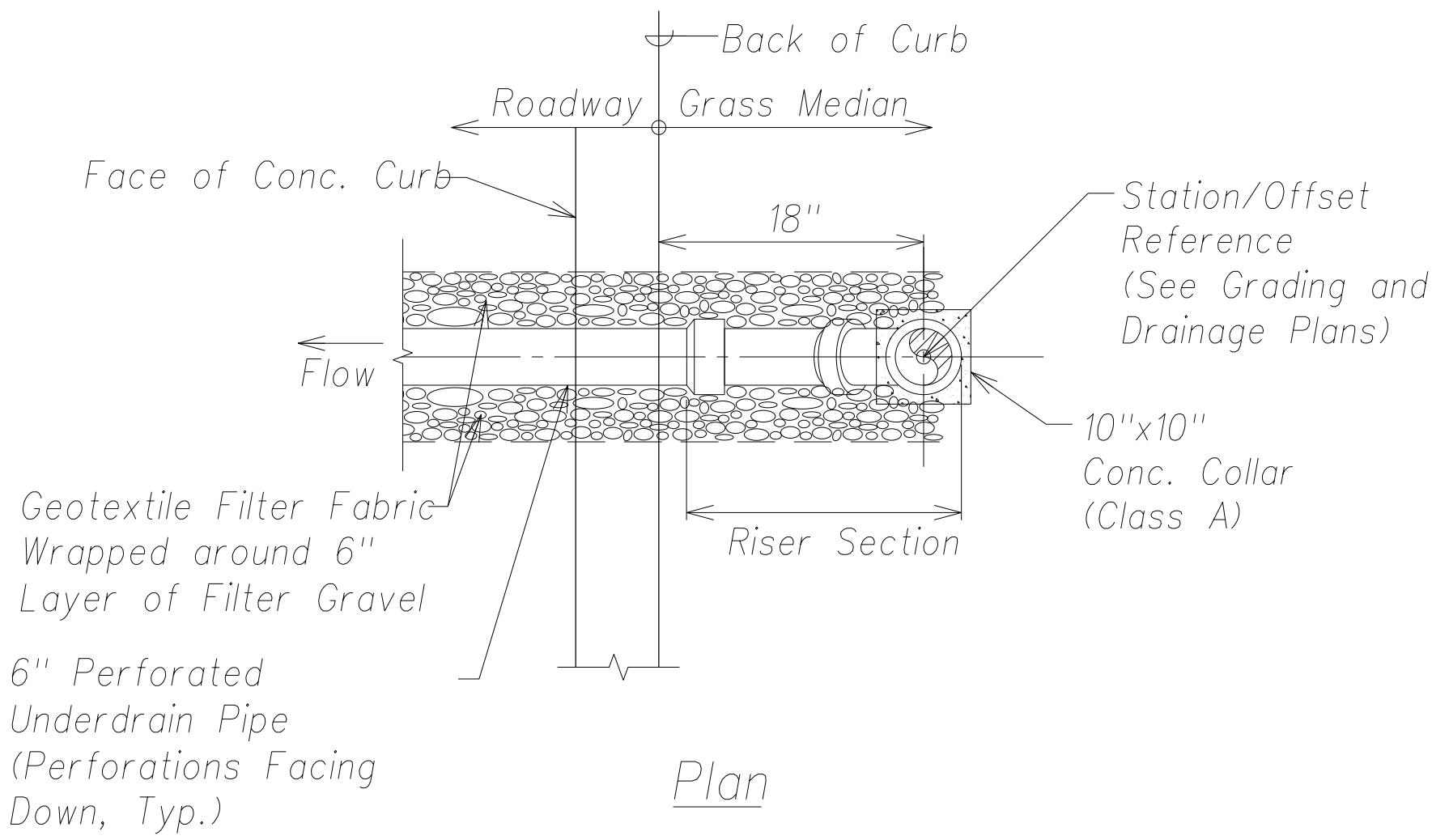


Enlargement  
Not to Scale

- Notes:
- The contractor shall retain rock material removed during installation of the drain. The rocks shall be reused for restoration of the existing stream bank rock wall.
  - Grouted riprap shall be keyed into slope at the dimensions shown on this plan. The contractor must submit a shop drawing for approval if proposing alternate dimensions.
  - For grouted riprap and dumped riprap details, see sheet C-52.
  - Install weep holes in grouted riprap per detail on sheet C-52.
  - SHIP site subject to monitoring, data recovery, preservation and/or demolition in accordance with an approved Archaeological Monitoring Plan and Archaeological Preservation Plan.

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QUANTITIES BY	
CHECKED BY	
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ARR-050-1(036)	FY13/14	Model	131



Note:  
The 6" Perforated Underdrain Pipe shall follow the cross slope of the roadway.  
The Filter Gravel (No. 6) around the pipe shall extend up to the bottom of the aggregate subbase layer and be a minimum of 6" in thickness.

Notes: Dumped Riprap Layering

Notes: Grouted Riprap Layering

1. Riprap shall consist of 6"ø Average Stone Size, 12"ø Maximum Stone Size.
2. 6" Max. From Highest Adjacent Rock Finish Top.

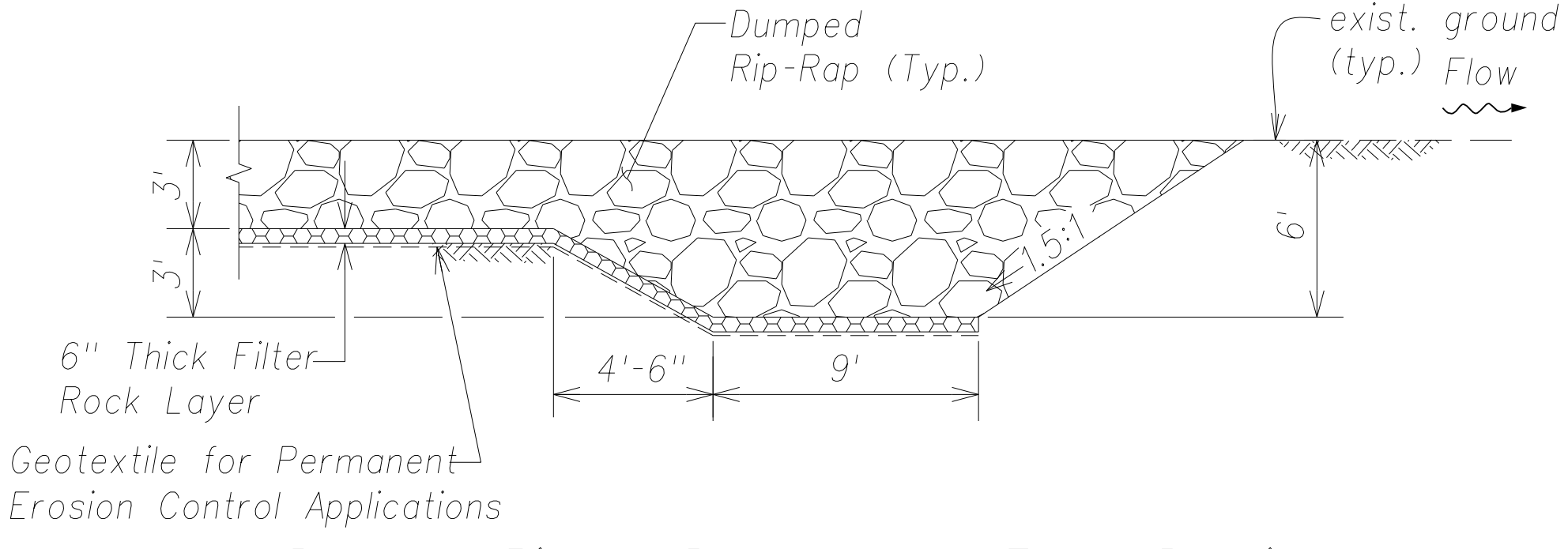
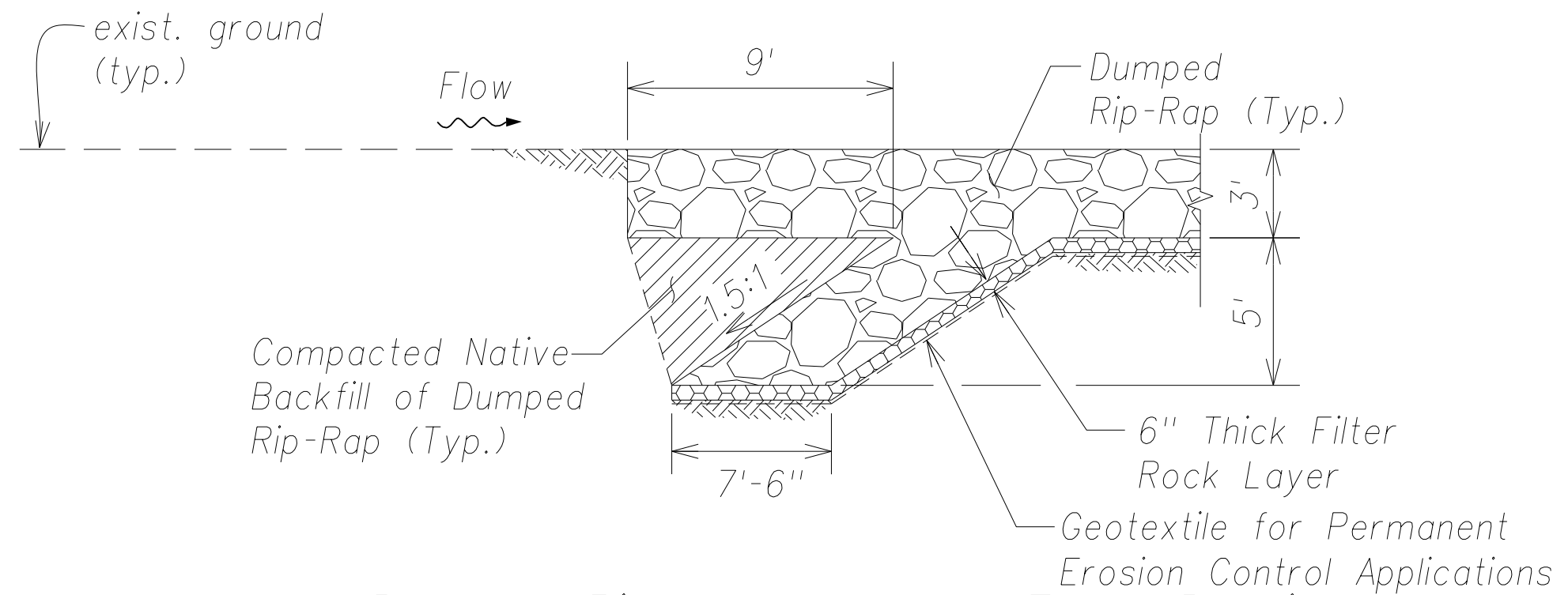
1. Riprap shall consist of 6"ø Average Stone Size, 12"ø Maximum Stone Size.
2. 6" Max. From Highest Adjacent Rock Finish Top.

6" Transverse Underdrain With COTG  
Not To Scale

Dumped Riprap Detail  
Not to Scale

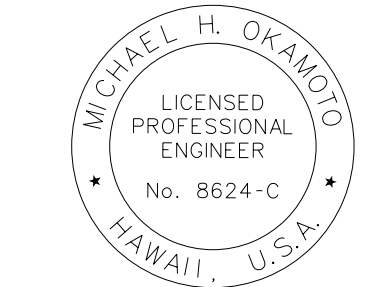
Grouted Riprap Detail  
Not to Scale

Weep Hole Detail  
Not to Scale



Dumped Riprap Upstream Flank Detail  
Not to Scale

Dumped Riprap Downstream Flank Detail  
Not to Scale



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Signature: _____  
Date: April 30, 2016  
Expiration Date of License: _____

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

DRAINAGE DETAILS

PHASE 1 - KAUMUALII HIGHWAY  
LIHUE MILL BRIDGE TO RICE STREET  
PHASE 2 - NAWILIWILI STREAM BRIDGE  
AND MAUKA WIDENING

Scale: As Shown Date: March 25, 2013

SHEET No. C-52 OF 84 SHEETS

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No.	

"AS-BUILT"

Model