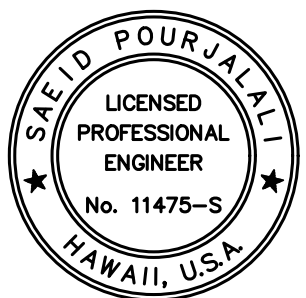
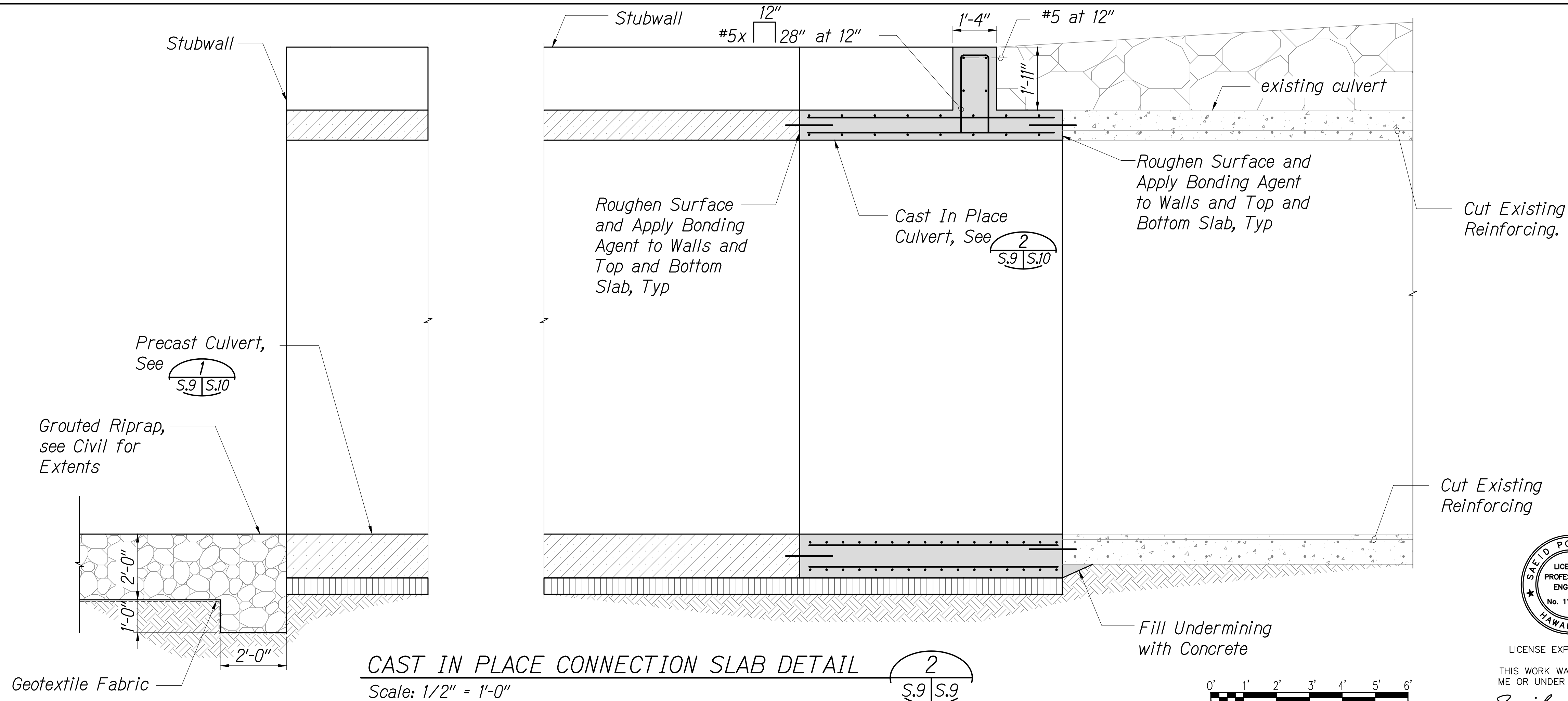
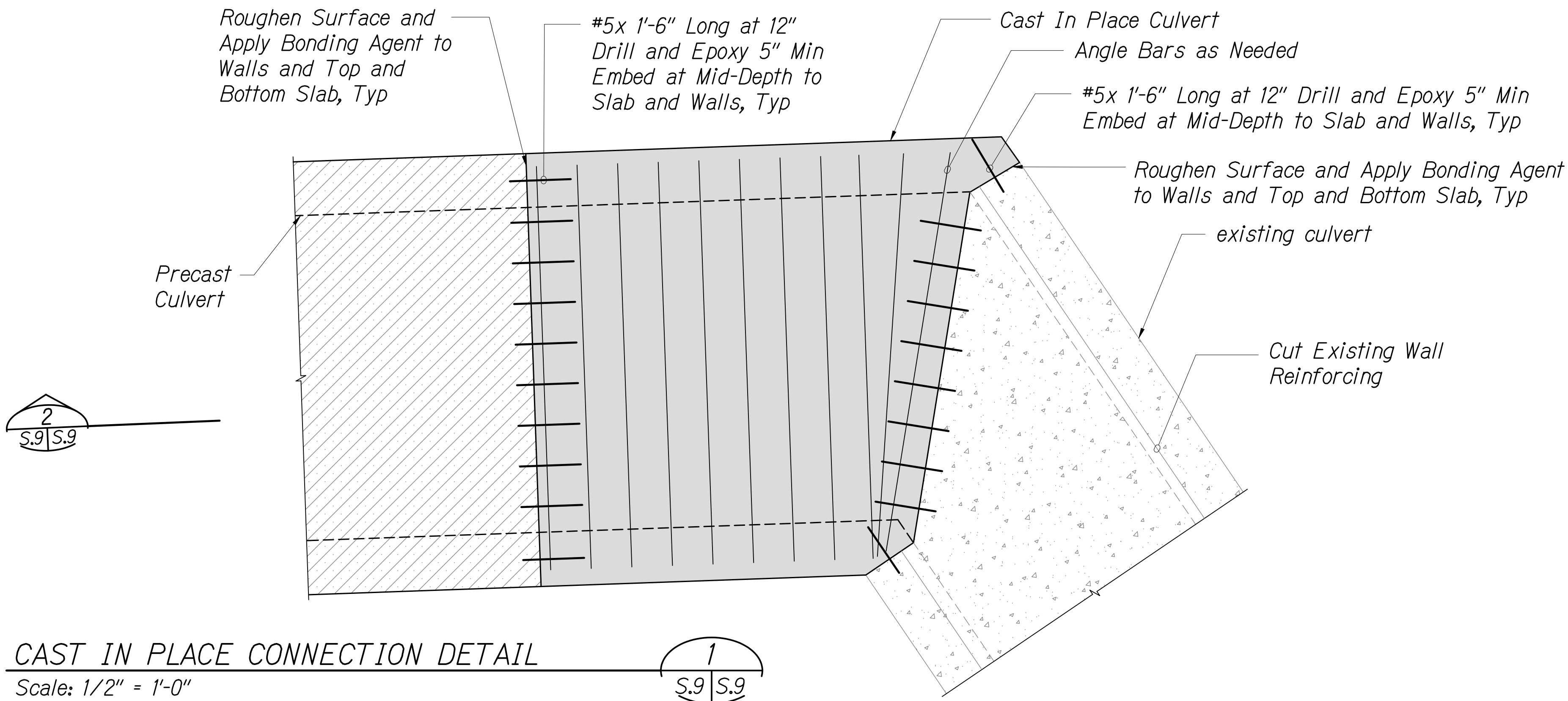


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MAUI	HAW.	ER-25(001)	2023	32	34



LICENSE EXPIRES 4/30/24

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Saeid Pourjafari

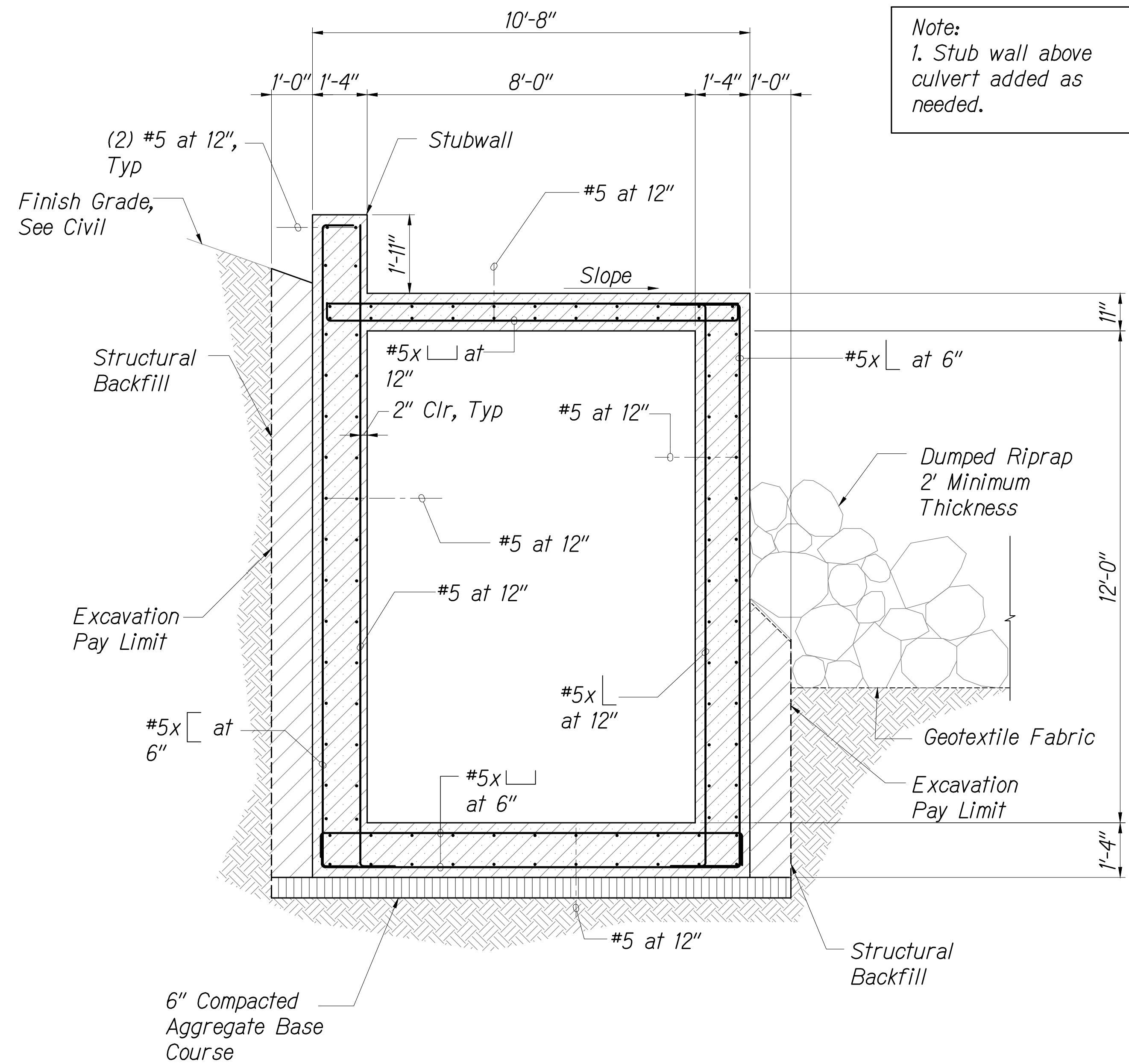
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**CULVERT CONNECTION
SECTION**

KEKAULIKE AVENUE, EMERGENCY REPAIRS
M.P. 8.2
FEDERAL-AID PROJECT NO. ER-25(001)
Scale: As Noted Date: March 2023

SHEET NO. 2 OF 2 SHEETS

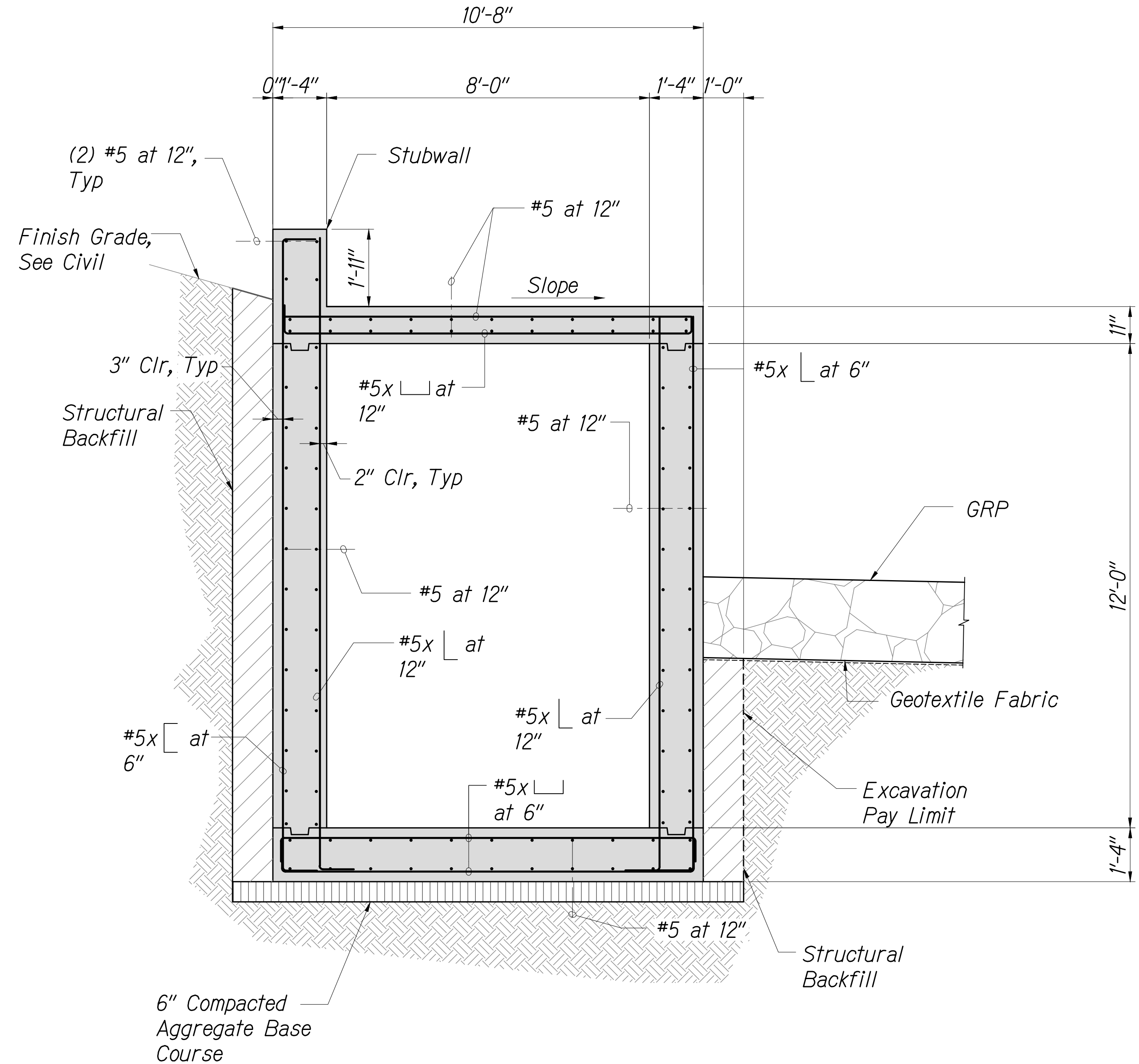
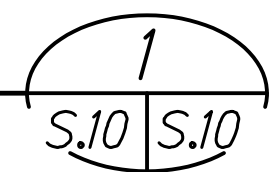
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MAUI	HAW.	ER-25(001)	2023	33	34



Note:
1. Stub wall above culvert added as needed.

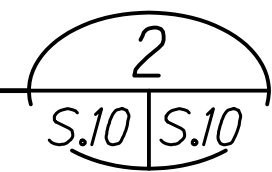
PRECAST CULVERT SECTION

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



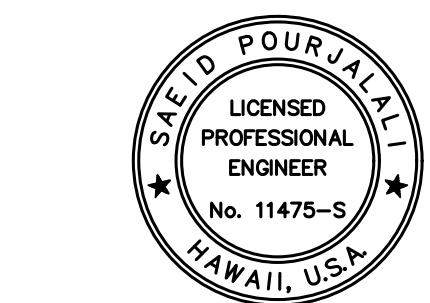
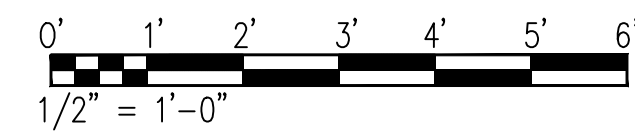
CAST IN PLACE CULVERT SECTION

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



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

Path: P:\E\HME - \Vegues\Current Projects\3801-3801\3801.0 DIT Highway - Keaolu Avenue Engineering Station\050 Drawings\Structural\050-0331.dwg PLOT DATE: 14-04-2023 04:14 pm



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Saad Pourjafari

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CULVERT DETAILS

KEKAULIKE AVENUE, EMERGENCY REPAIRS
M.P. 8.2
FEDERAL-AID PROJECT NO. ER-25(001)
Scale: As Noted Date: March 2023

SHEET NO. 1 OF 1 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
MAUI	HAW.	ER-25(001)	2023	34	34

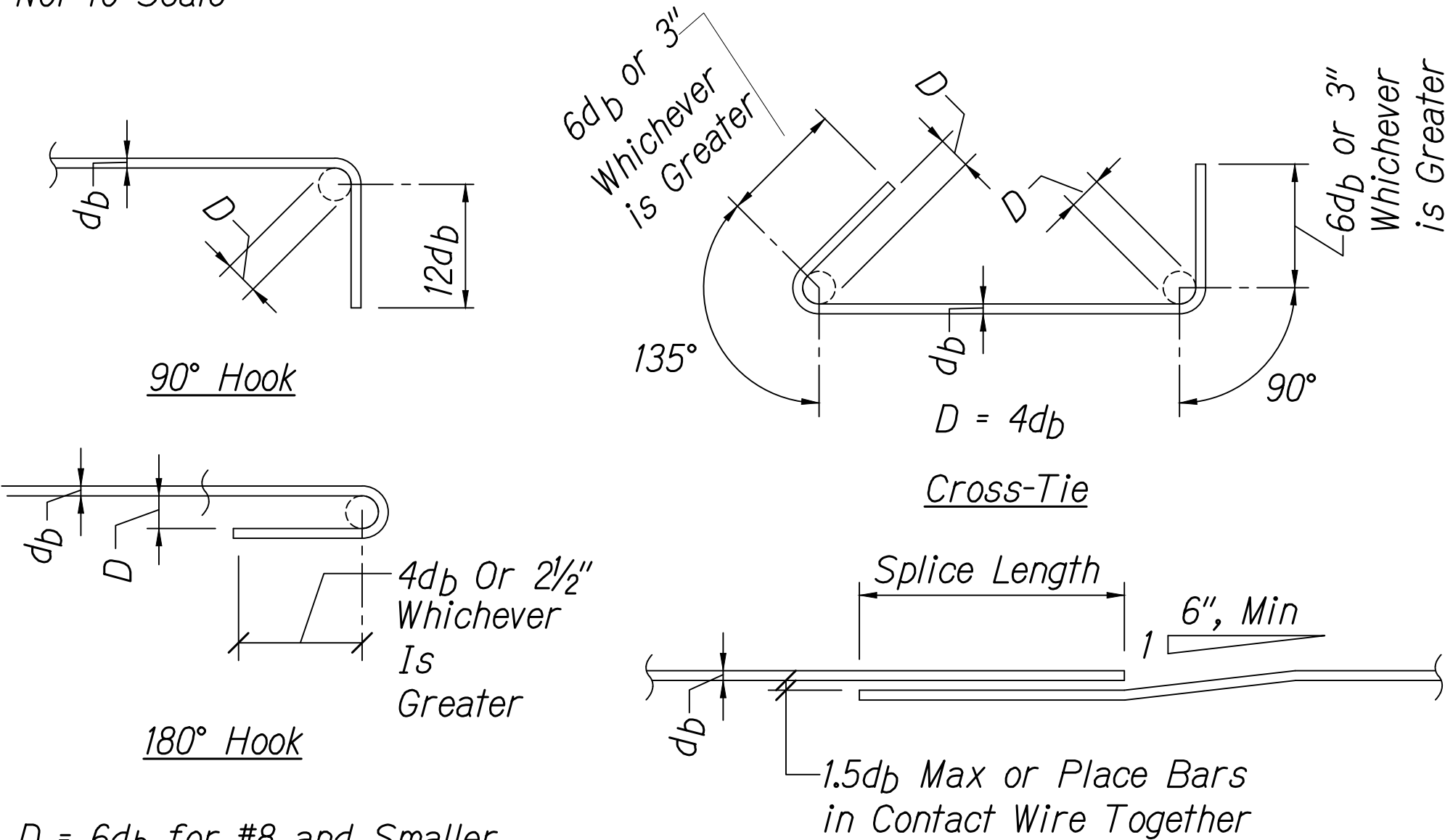
MINIMUM SPLICE & EMBEDMENT LENGTHS					
CONCRETE STRENGTH = 4,000 PSI					
BAR SIZE	LAP SPLICE		EMBEDMENT		
	OTHER BARS	TOP BAR	STRAIGHT		WITH STANDARD 90° HOOK
			OTHER BARS	TOP BAR	
#3, #4	21"	29"	12"	17"	7"
#5	26"	36"	15"	21"	9"
#6	31"	43"	18"	26"	10"
#7	39"	54"	23"	32"	12"
#8	51"	71"	30"	42"	14"
#9	64"	90"	38"	53"	15"
#10	81"	114"	48"	67"	17"
#11	100"	140"	59"	82"	19"

notes:

- "top Bars" Are Horizontal Bars With 12" Or More Of Concrete Cast Below.
- Splice Lengths May Be Reduced By Multiplying The Tabulated Values By 0.765 If The Centerline Of Splice Of Adjacent Bars Are Staggered 6'-0" O.c. For #9 Bar And Smaller And 9'-0" O.c. For #10 Bar And Larger.
- Embedment Lengths For Straight Bars May Be Reduced By Multiplying The Tabulated Values By 0.80 If The Bars Are Spaced Laterally Not Less Than 6" Center-to-center, With Not Less Than 3" Clear Cover Measured In The Direction Of The Spacing.
- Embedment Lengths For Bars With 90° Hook Are Bars With Side Cover, Normal To Plane Of Hook, Of Not Less Than 2½" And Cover On Bar Extension Beyond Hook Not Less Than 2". Increase Embedment Length By 43% For Bars Not Meeting These Requirements.

TYPICAL REBAR SPLICE AND EMBEDMENT LENGTH SCHEDULE

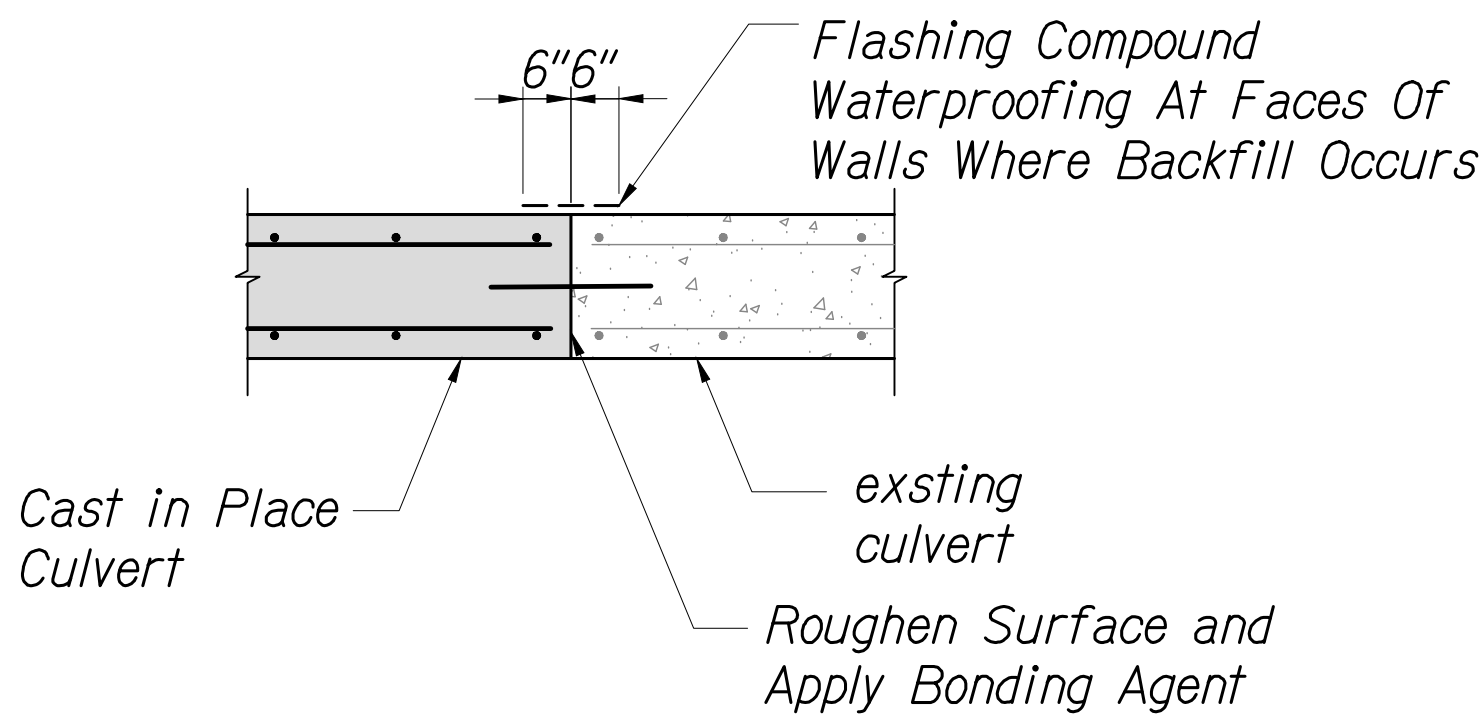
Not to Scale



D = 6db for #8 and Smaller
D = 8db for #9 to #11

STANDARD HOOKS AND CROSS-TIE DETAIL

Not to Scale



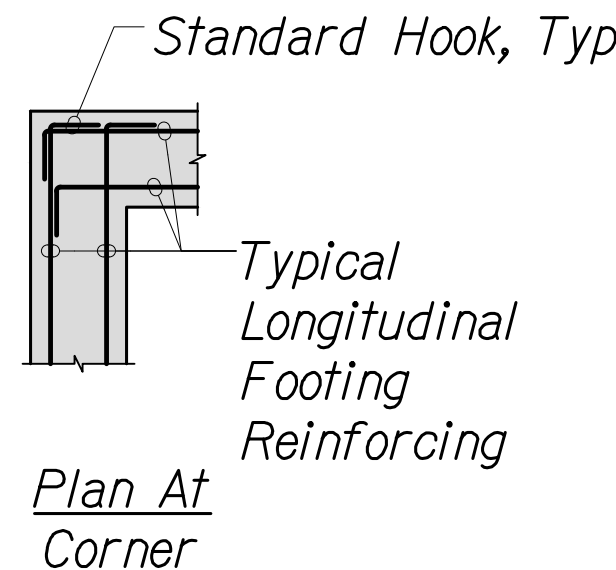
JOINT DETAIL

Not to Scale

3
S.11 S.11

Notes:

- Apply Flexible Plastic Gaskets on Upper Half of Spigot and Lower Half of Bell. Allow Sufficient Overlap of Flexible Plastic Gaskets to Form a Joined Watertight Seal.
- Apply to Top and Bottom Slabs and Side Walls.
- Install in Accordance with Manufacturer's Recommendations.
- In Waterproofing:
 - Primer Shall Conform to ASTM D 41.
 - Fabric Shall Conform to ASTM D 1668.
 - Asphalt Shall Conform to ASTM D 449.



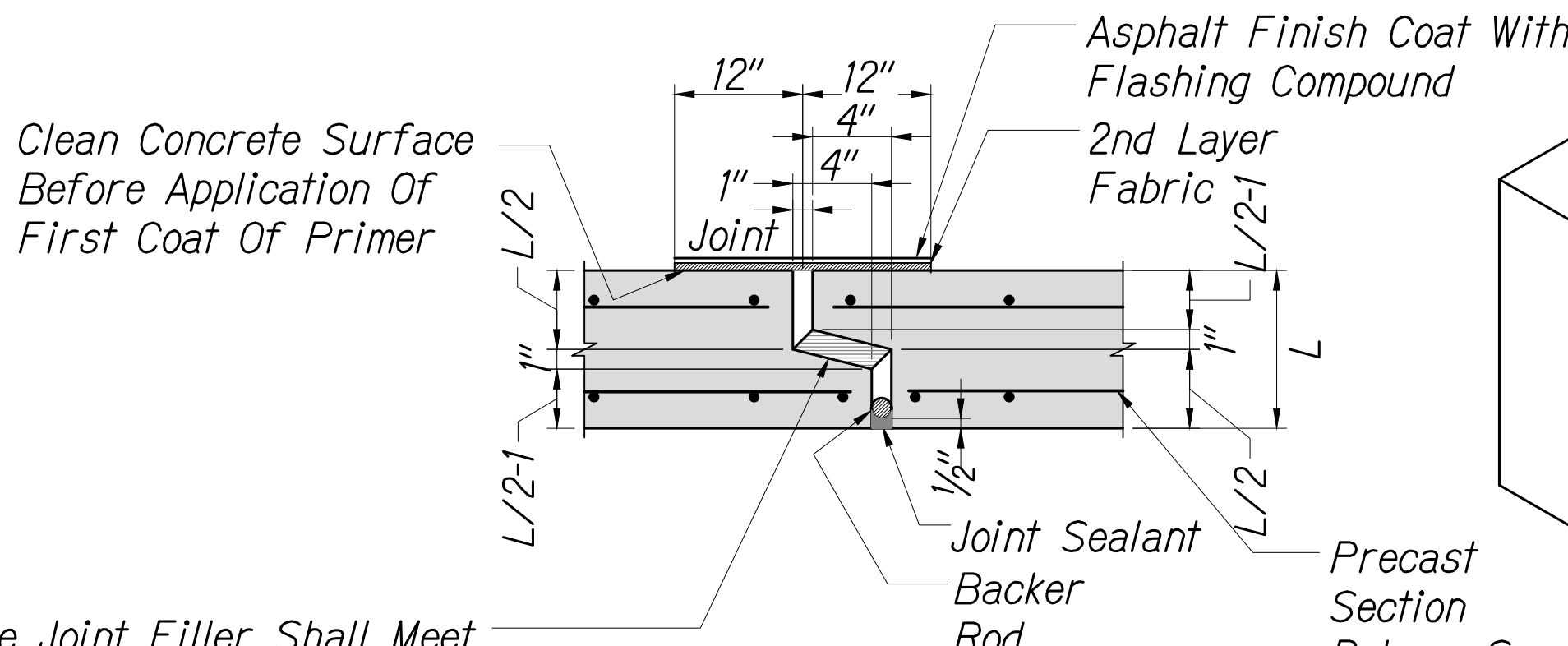
CORNER AND END REINFORCING DETAIL

Not to Scale

4
S.11 S.11



Plan At End

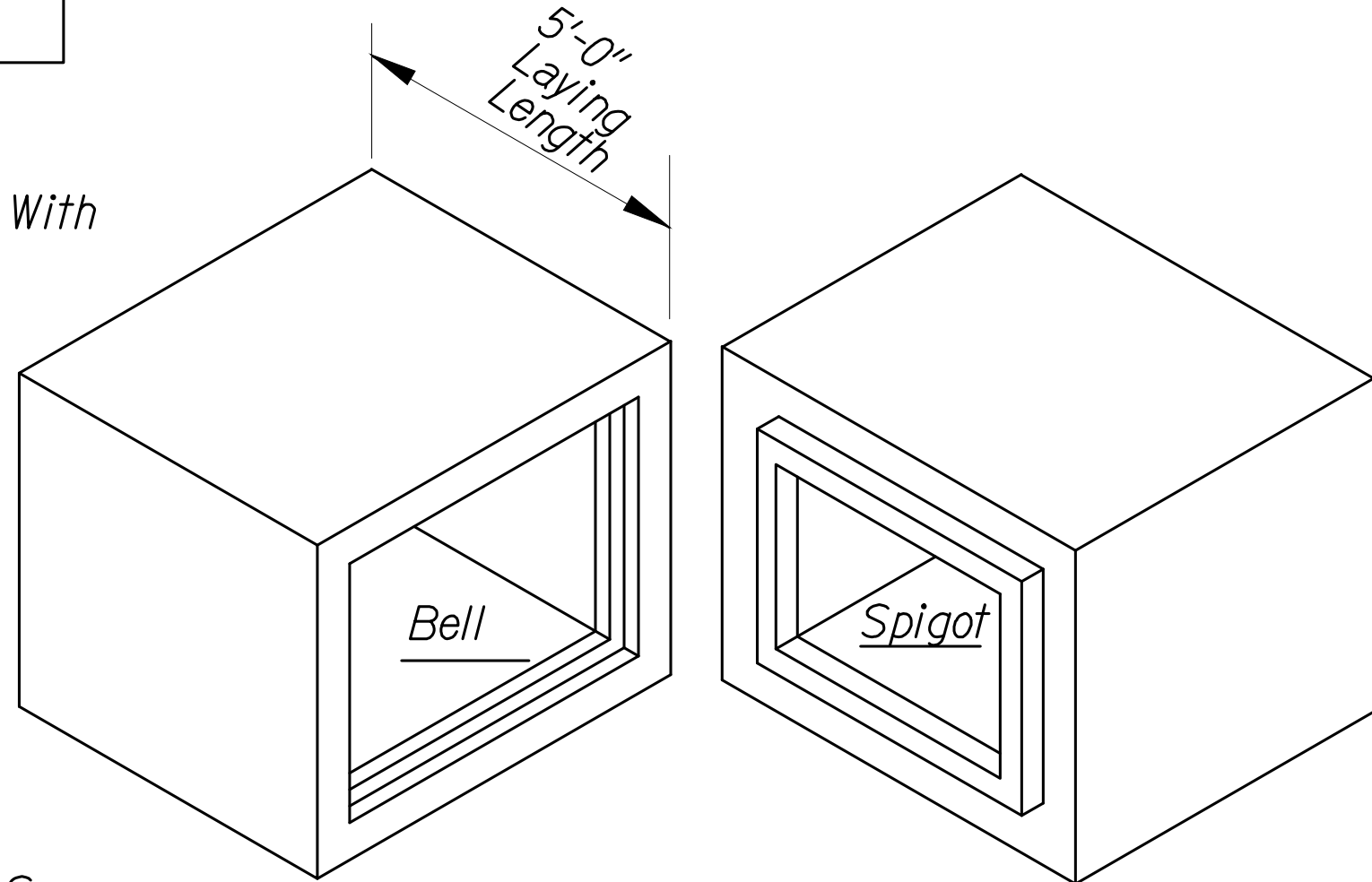


The Joint Filler Shall Meet Requirements of ASTM C990 And AASHTO M-198

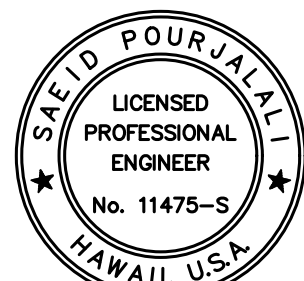
PRECAST JOINT DETAIL

Not to Scale

5
S.11 S.11



1
S.11 S.10



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Said Pourjafari

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

REINFORCING DETAILS

KEKAULIKE AVENUE, EMERGENCY REPAIRS

M.P. 8.2

FEDERAL-AID PROJECT NO. ER-25(001)

Scale: As Noted

Date: March 2023

SHEET No. 1 OF 1 SHEETS