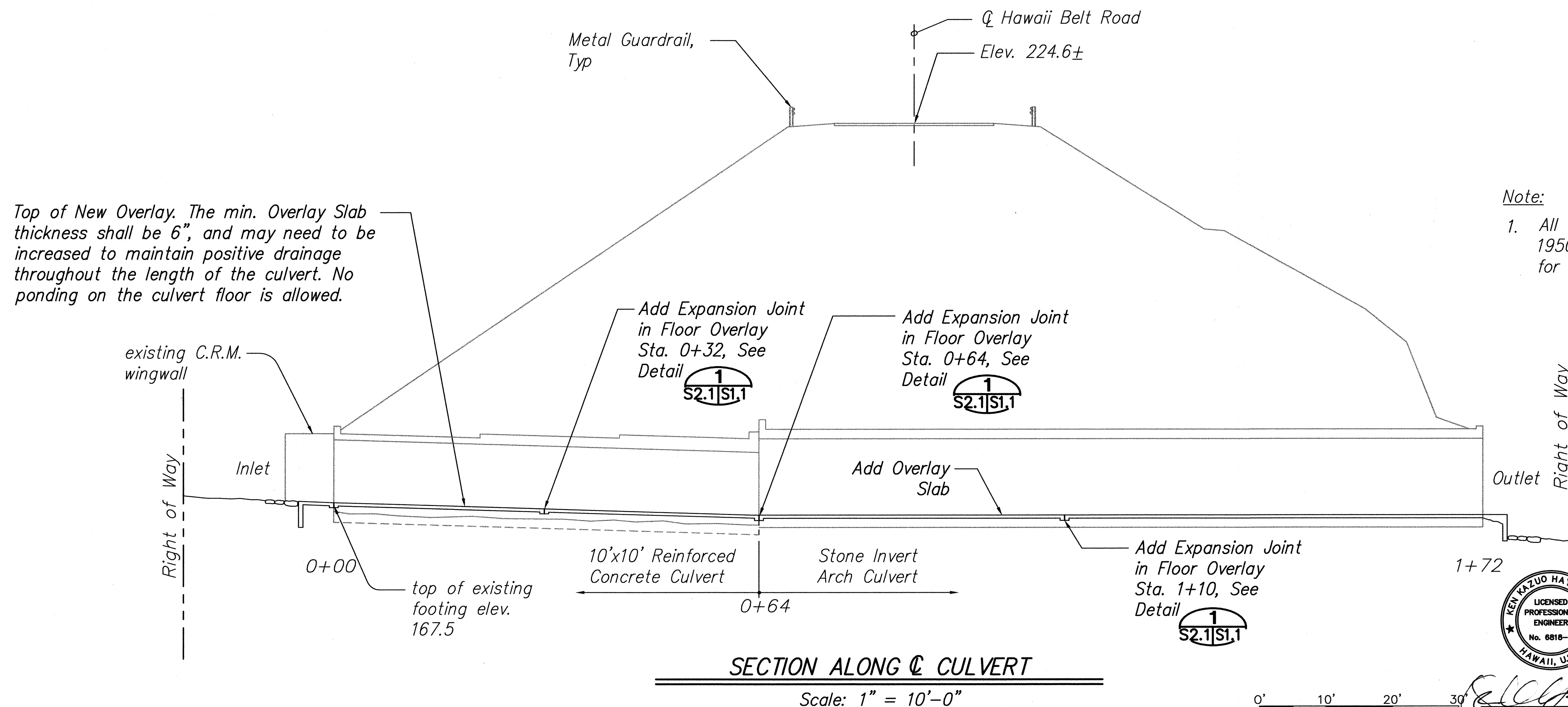
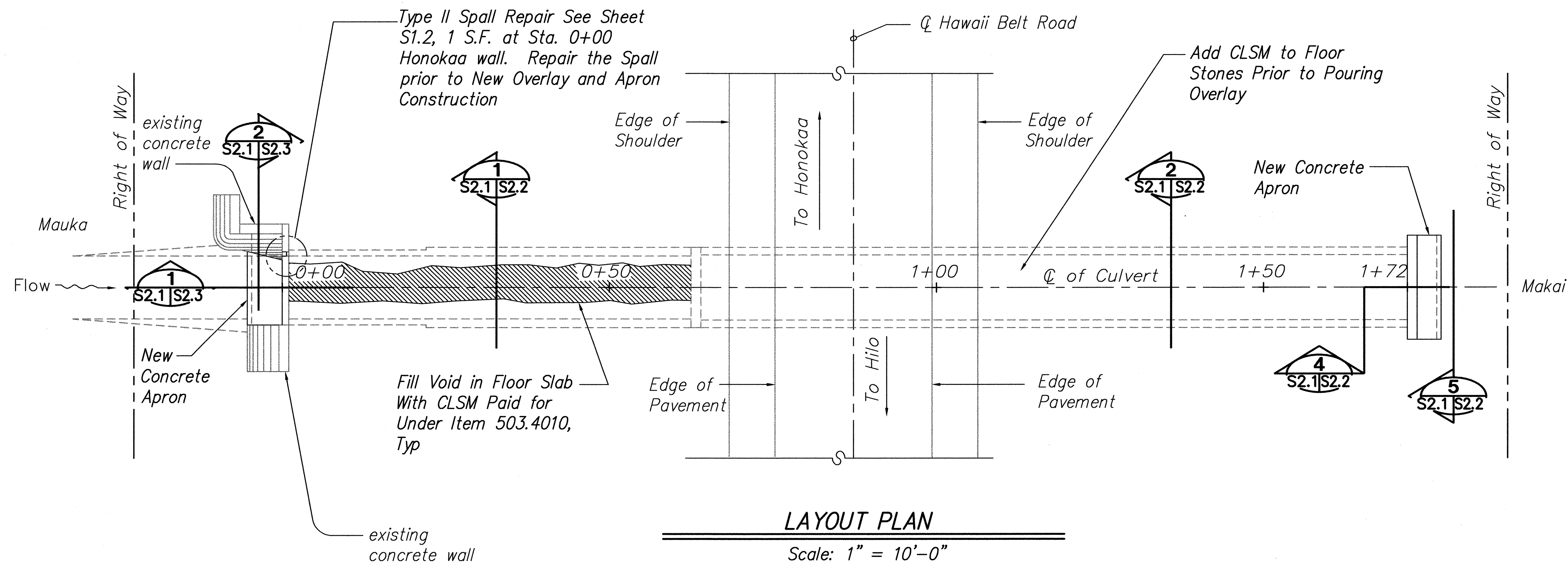


FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	<i>S2.1</i>	32



Note:

1. All elevations are taken from plans, dated July 1950, Project No. SDR-3(14), and are included for informational purposes only.

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

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
M.P. 18.61

PLAN AND PROFILE

***HAWAII BELT ROAD DRAINAGE
IMPROVEMENTS***

M.P. 18.61

PLAN AND PROFILE

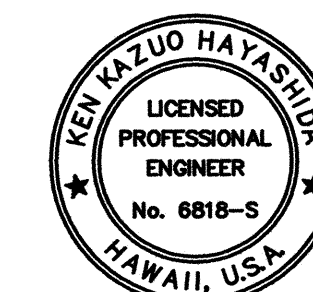
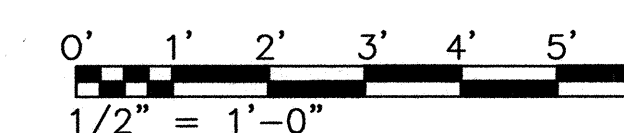
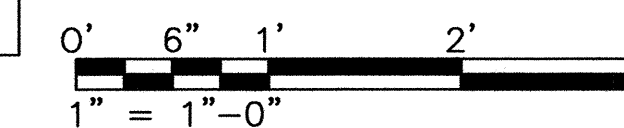
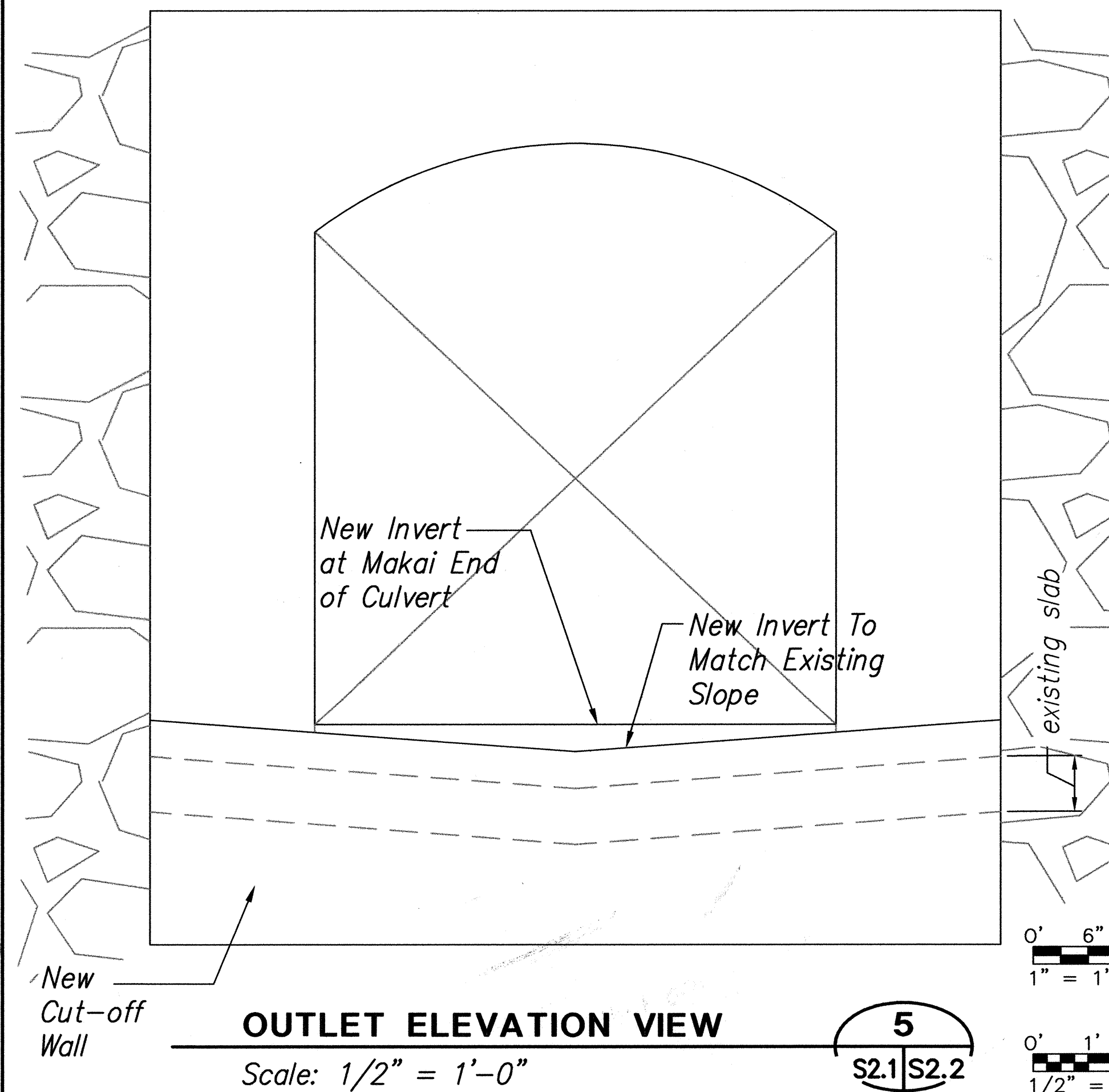
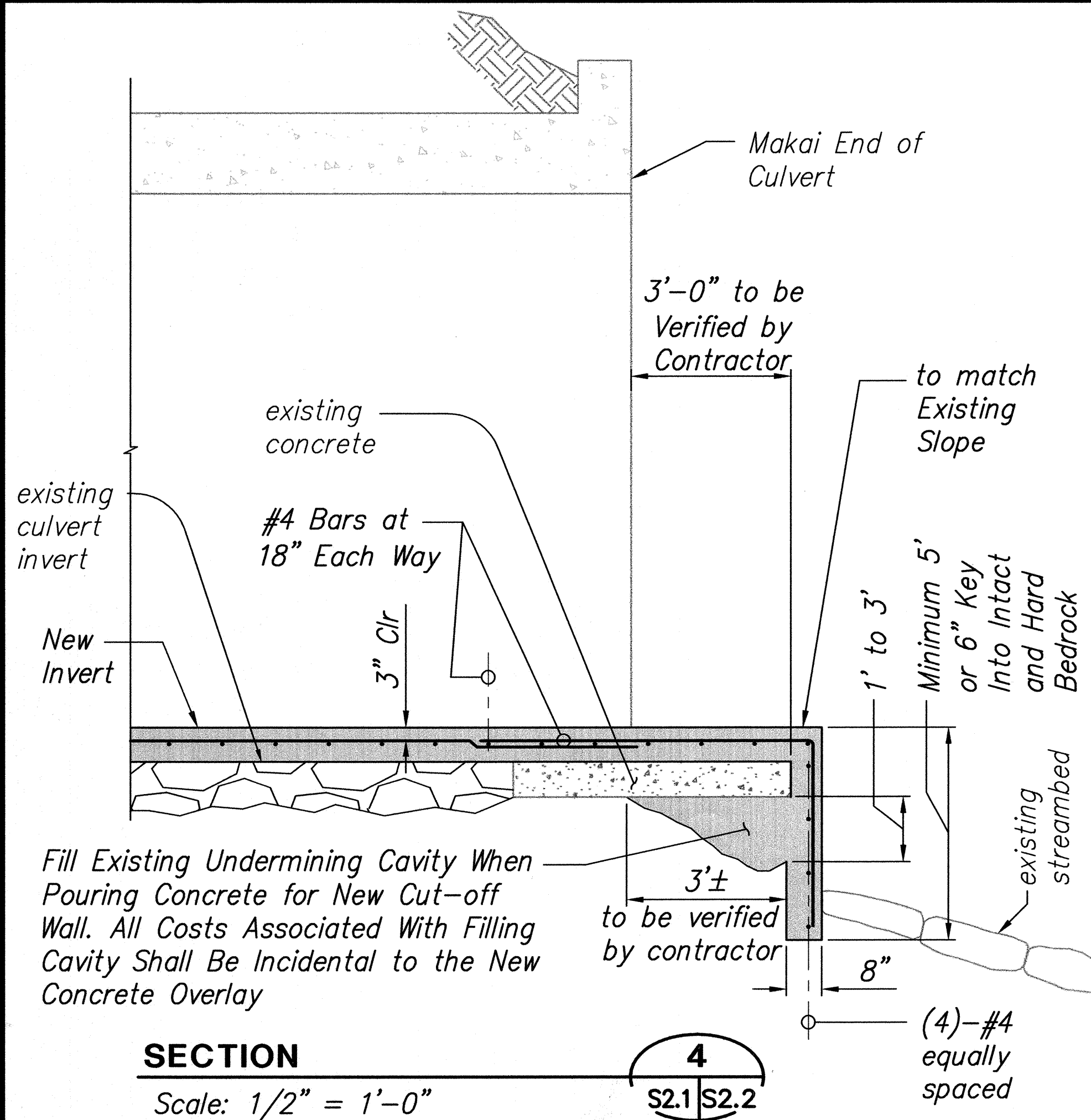
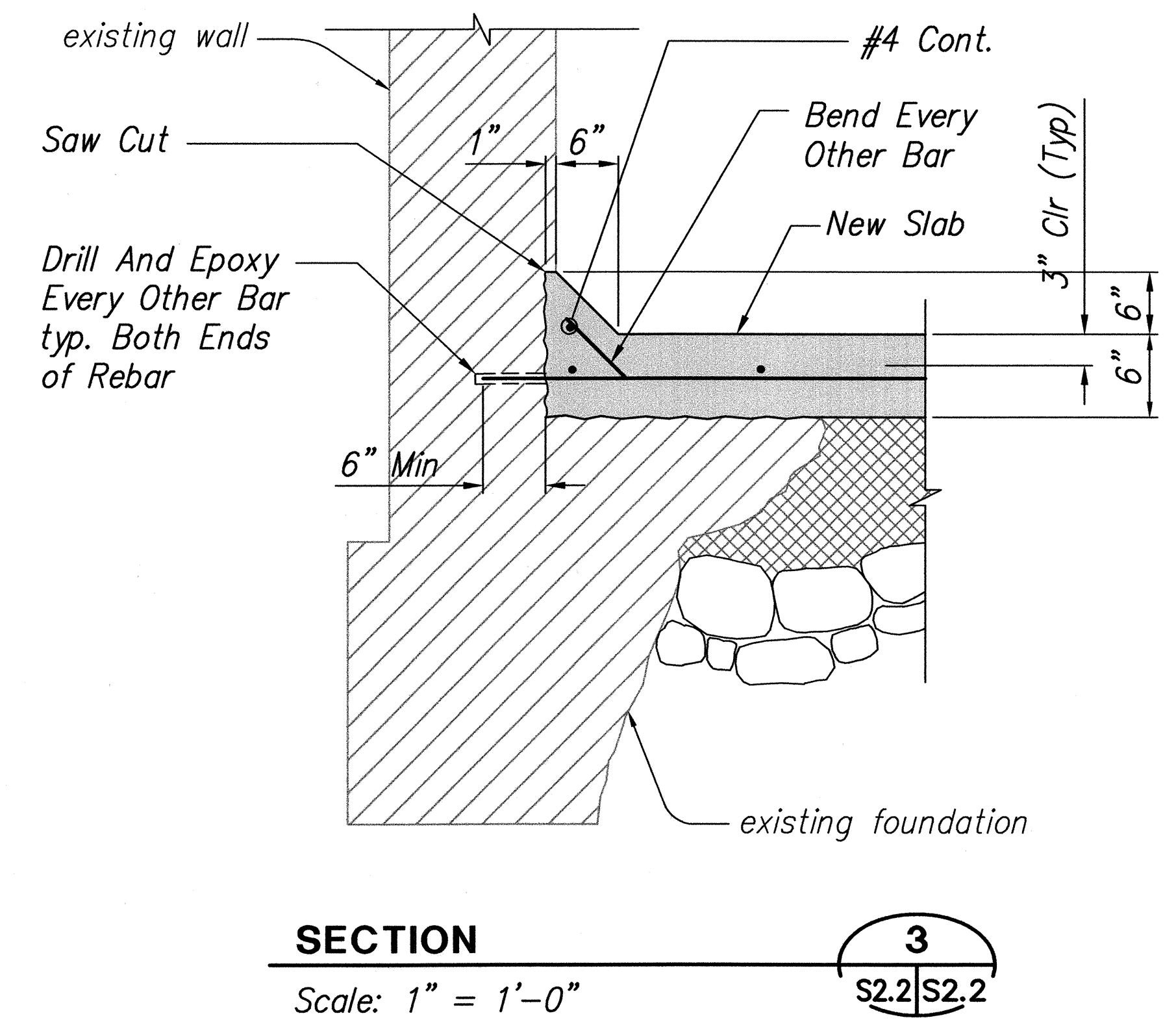
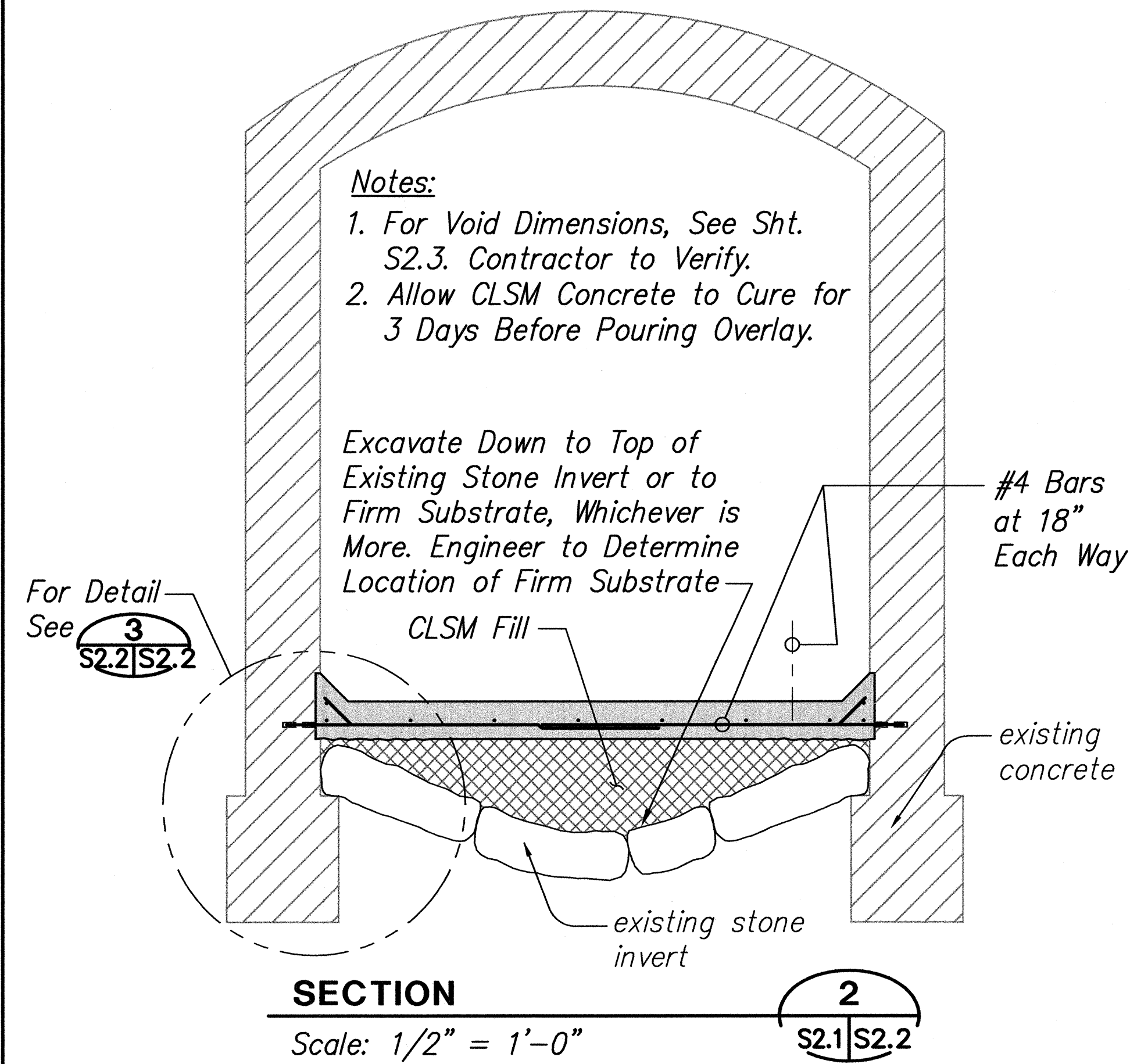
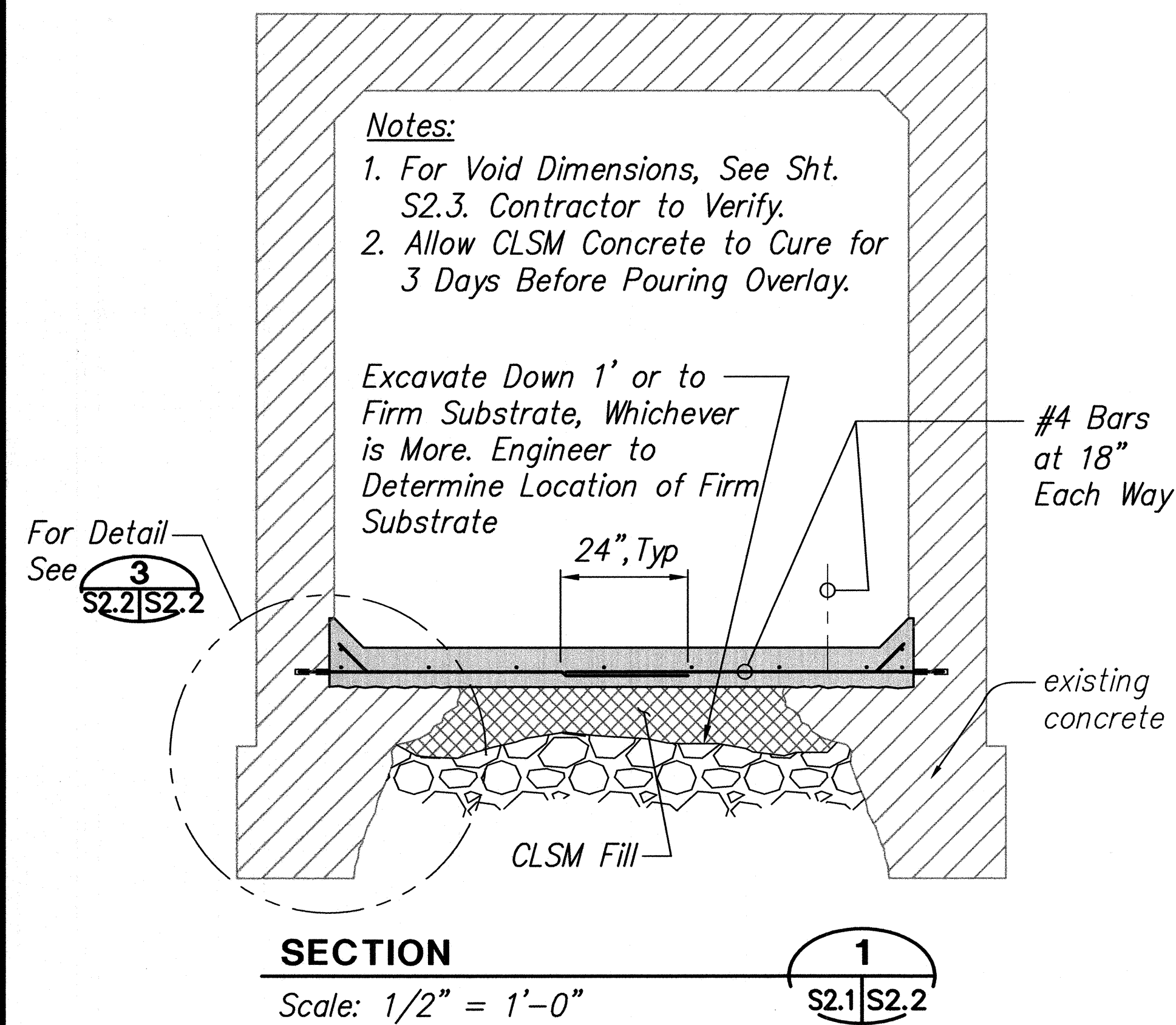
HAWAII BELT ROAD DRAINAGE IMPROVEMENTS

Project No. 19FGH-03-04M

Scale: As Noted Date: April 30, 2004

SHEET No. *S2.1* OF *32* SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S2.2	32



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

M.P. 18.61 CULVERT

SECTIONS AND DETAILS

HAWAII BELT ROAD DRAINAGE IMPROVEMENTS

Project No. 19FGH-03-04M

Scale: As Noted Date: April 30, 2004

SHEET No. S2.2 OF 32 SHEETS

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

New 8" Concrete Apron

6" Aggregate

existing rock

5'-0"

#4 at 18" Each Way

3" Clr

6"

#4 at 18"

8"

Minimum 4" or 6" Key Into Intact and Hard Bedrock

Add 1-#4

See Overlay Termination Detail 2 S2.3 | S1.1

New Concrete Overlay

CLSM Fill

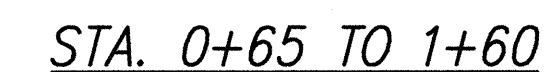
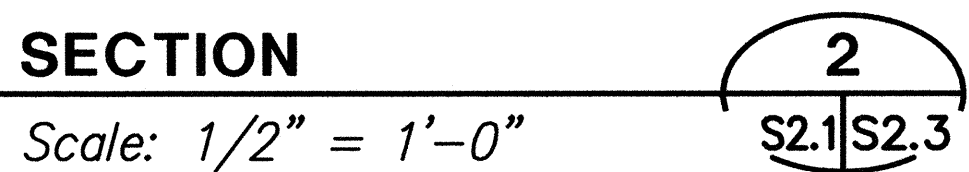
Dowel Min. 6" Into Existing Bedrock

9"

SECTION

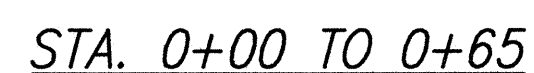
Scale: 1/2" = 1'-0"

1 S2.1 | S2.3



<i>STATION</i>	<i>H (AVG)</i> <i>in</i>	<i>W</i> <i>ft</i>
<i>0+65</i>	<i>16</i>	<i>9.83</i>
<i>0+70</i>	<i>12</i>	<i>9.83</i>
<i>0+75</i>	<i>12</i>	<i>9.83</i>
<i>0+80</i>	<i>10</i>	<i>9.83</i>
<i>0+85</i>	<i>10</i>	<i>9.83</i>
<i>0+90</i>	<i>10</i>	<i>9.83</i>
<i>0+95</i>	<i>24</i>	<i>8</i>
<i>1+00</i>	<i>30</i>	<i>5.5</i>
<i>1+05</i>	<i>24</i>	<i>6.5</i>
<i>1+10</i>	<i>24</i>	<i>5.5</i>
<i>1+15</i>	<i>30</i>	<i>6</i>
<i>1+20</i>	<i>24</i>	<i>7</i>
<i>1+25</i>	<i>36</i>	<i>8.5</i>
<i>1+30</i>	<i>36</i>	<i>8.5</i>
<i>1+35</i>	<i>24</i>	<i>7</i>
<i>1+40</i>	<i>24</i>	<i>6.5</i>
<i>1+45</i>	<i>20</i>	<i>7</i>
<i>1+50</i>	<i>20</i>	<i>7.5</i>
<i>1+55</i>	<i>24</i>	<i>7.67</i>
<i>1+60</i>	<i>24</i>	<i>7.67</i>

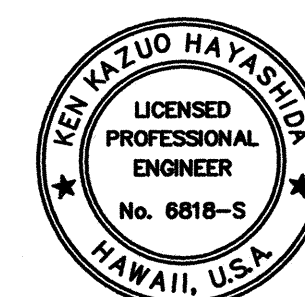
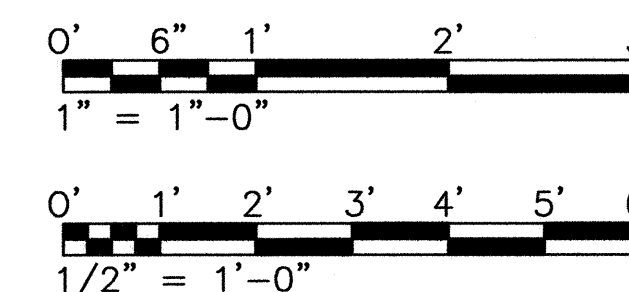
SLAB VOID DIMENSIONS



<i>STATION</i>	<i>H (AVG)</i> <i>in</i>	<i>W</i> <i>ft</i>	<i>LW</i> <i>in</i>	<i>RW</i> <i>in</i>
<i>0+00</i>	<i>24</i>	<i>5.5</i>	<i>27</i>	<i>22</i>
<i>0+05</i>	<i>24</i>	<i>6</i>	<i>27</i>	<i>17</i>
<i>0+10</i>	<i>17</i>	<i>6.5</i>	<i>23</i>	<i>13</i>
<i>0+15</i>	<i>18</i>	<i>6.5</i>	<i>30</i>	<i>12</i>
<i>0+20</i>	<i>12</i>	<i>6</i>	<i>27</i>	<i>18</i>
<i>0+25</i>	<i>20</i>	<i>7</i>	<i>19</i>	<i>13</i>
<i>0+30</i>	<i>16</i>	<i>6.67</i>	<i>24</i>	<i>13</i>
<i>0+35</i>	<i>14</i>	<i>6.67</i>	<i>25</i>	<i>13</i>
<i>0+40</i>	<i>17</i>	<i>7</i>	<i>18</i>	<i>16</i>
<i>0+45</i>	<i>24</i>	<i>6.5</i>	<i>24</i>	<i>20</i>
<i>0+50</i>	<i>24</i>	<i>6.5</i>	<i>20</i>	<i>19</i>
<i>0+55</i>	<i>16</i>	<i>8.5</i>	<i>3.5</i>	<i>16</i>
<i>0+60</i>	<i>14</i>	<i>8.5</i>	<i>3.5</i>	<i>14</i>

SLAB VOID DIMENSIONS

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



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

M.P. 18.61 CULVERT

INLET SECTIONS AND DETAILS

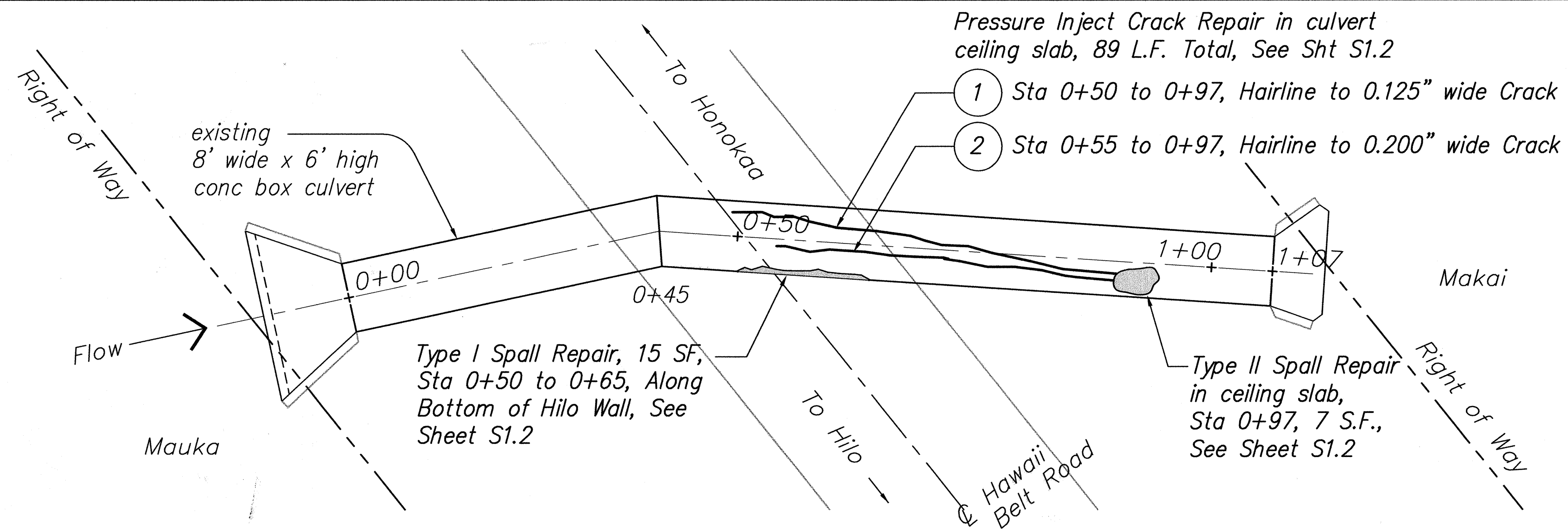
*HAWAII BELT ROAD DRAINAGE
IMPROVEMENTS*

Project No. 19FGH-03-04M

Scale: As Noted Date: April 30, 2004

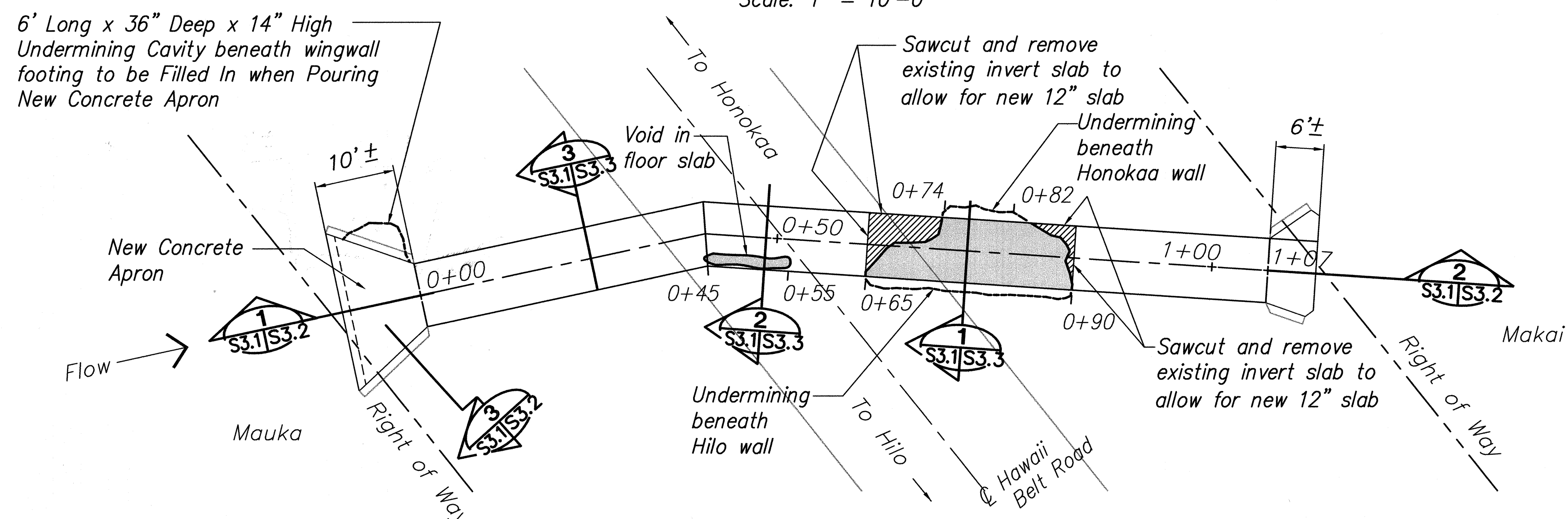
SHEET No. S2.3 OF **32** SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S3.1	32



CULVERT CEILING LAYOUT PLAN

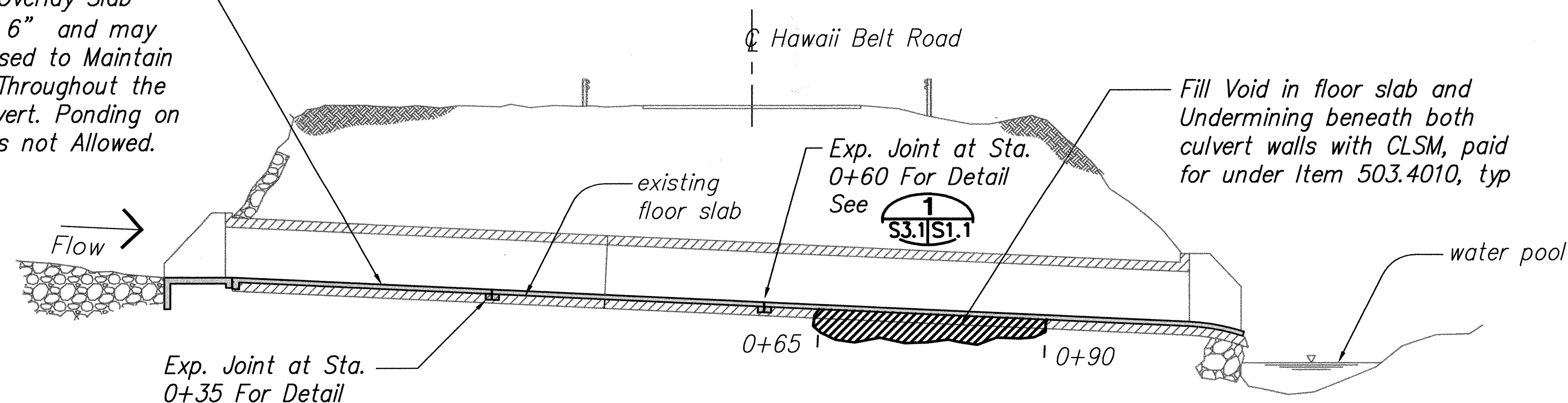
Scale: 1" = 10'-0"



CULVERT FLOOR LAYOUT PLAN

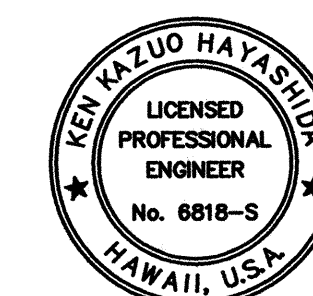
Scale: 1" = 10'-0"

Concrete Overlay. Overlay Slab Thickness Shall be 6" and may Need to be Increased to Maintain Positive Drainage Throughout the Length of the Culvert. Ponding on the Culvert Floor is not Allowed.



SECTION ALONG CULVERT

Scale: 1" = 10'-0"

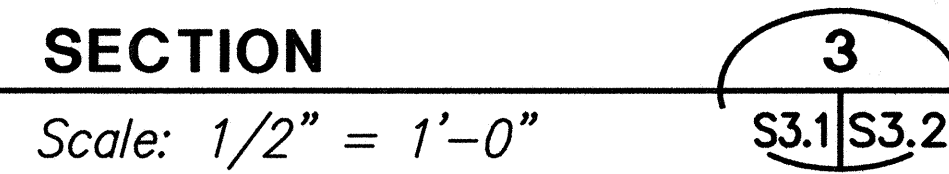
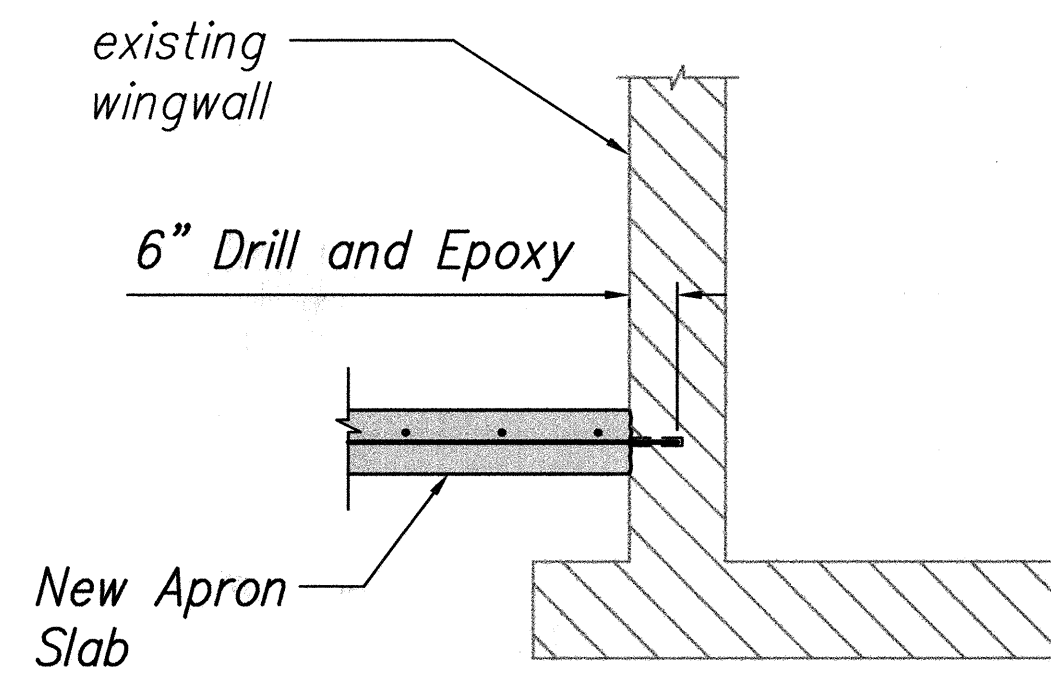
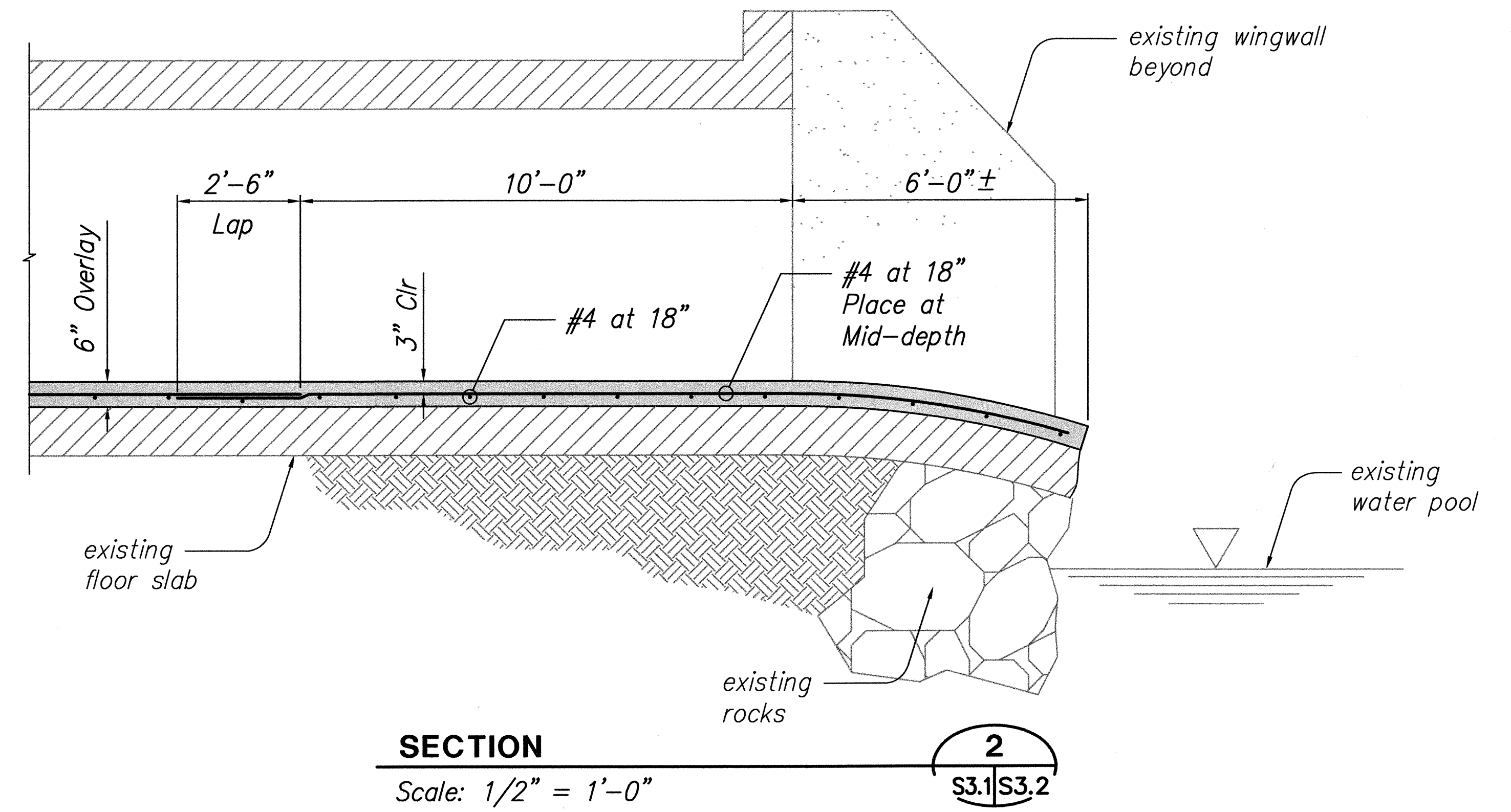
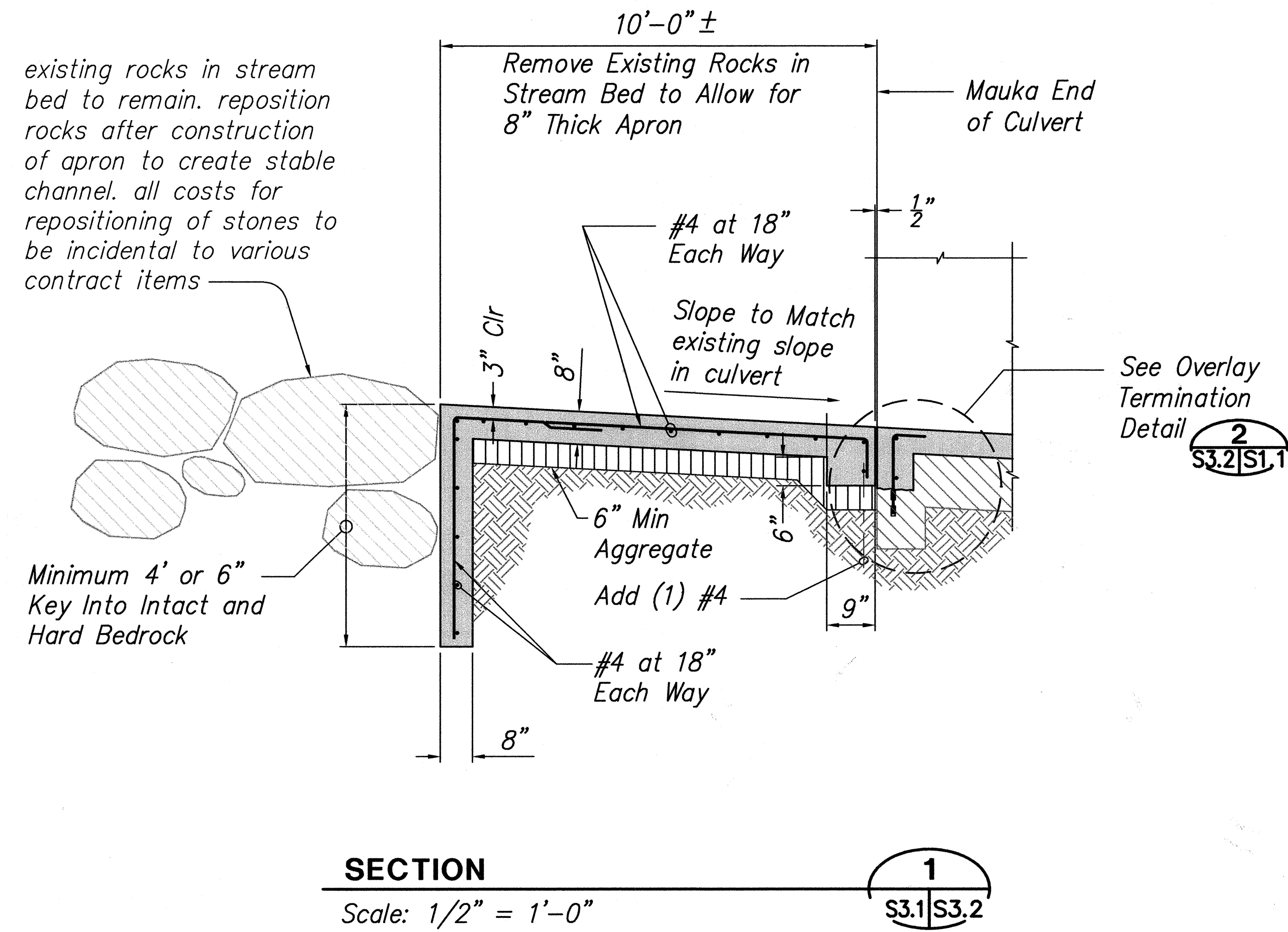


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
M.P. 20.52
PLAN AND PROFILE
HAWAII BELT ROAD DRAINAGE
IMPROVEMENTS
Project No. 19FGH-03-04M
Scale: As Noted Date: April 30, 2004
SHEET No. S3.1 OF 32 SHEETS

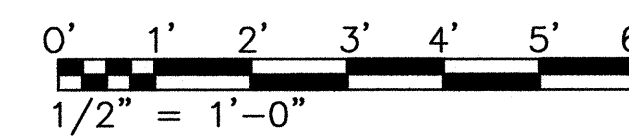
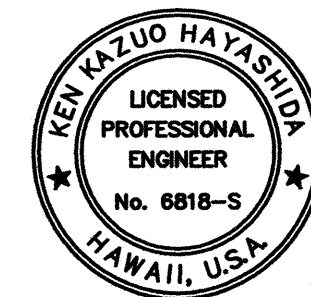
EXPIRATION DATE OF THE LICENSE 4/30/2006
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

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

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S3.2	32



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



EXPIRATION DATE OF THE LICENSE 4/30/2008
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

M.P. 20.52 CULVERT

SECTIONS AND DETAILS

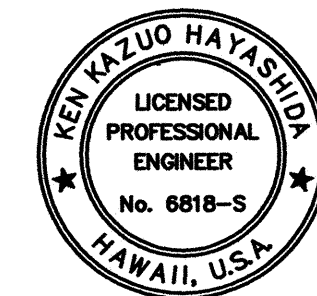
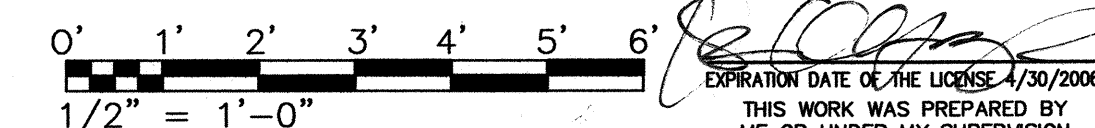
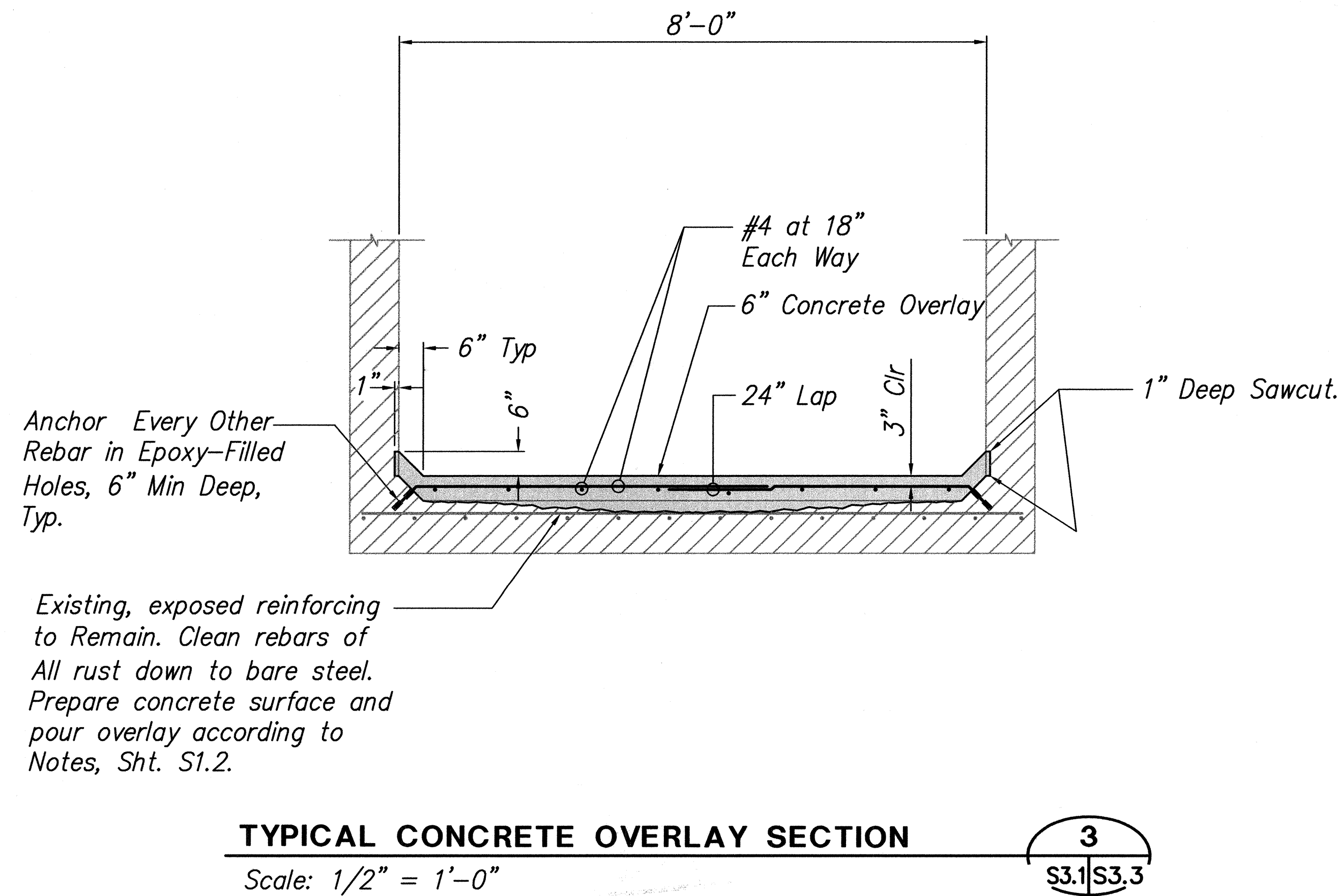
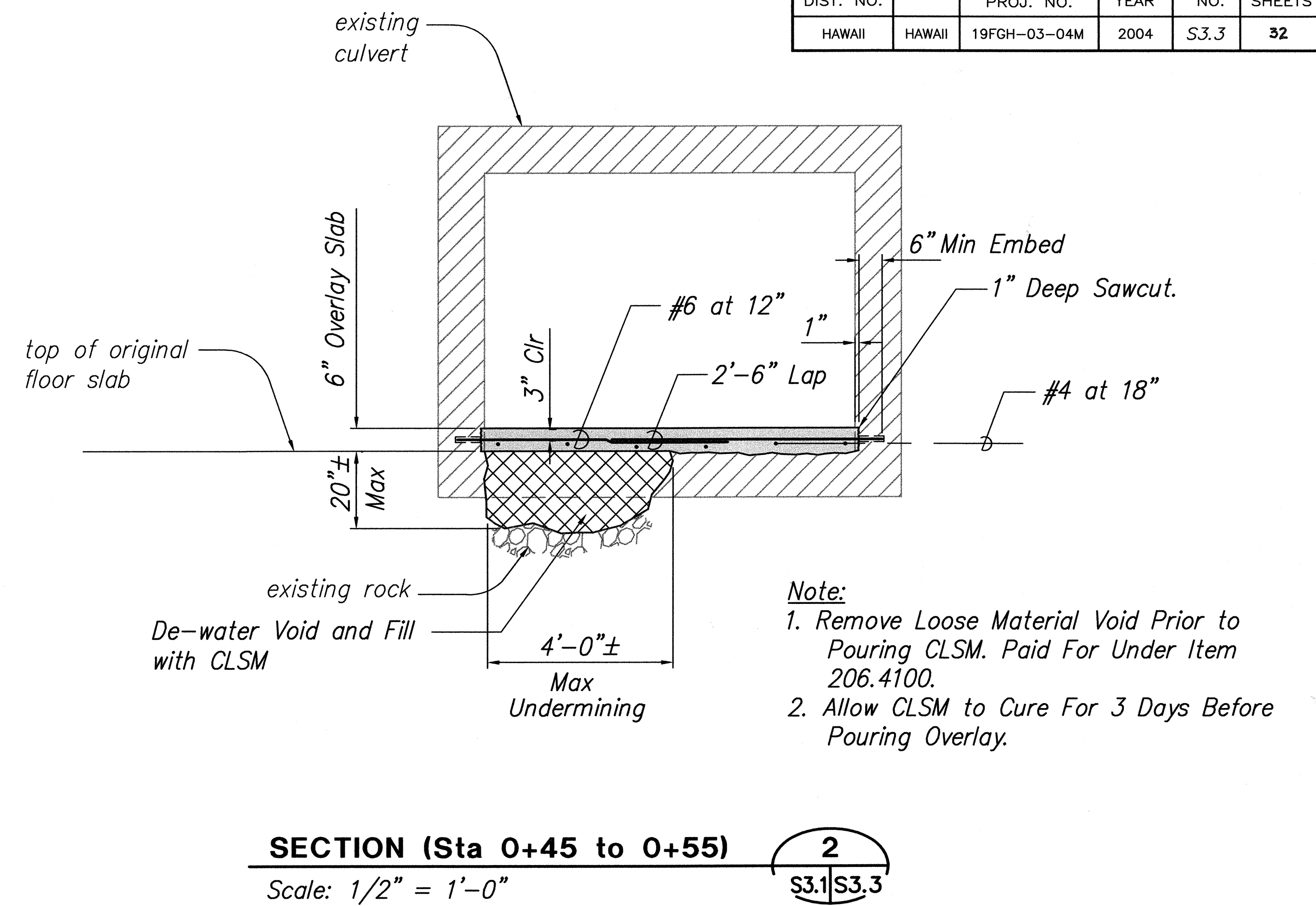
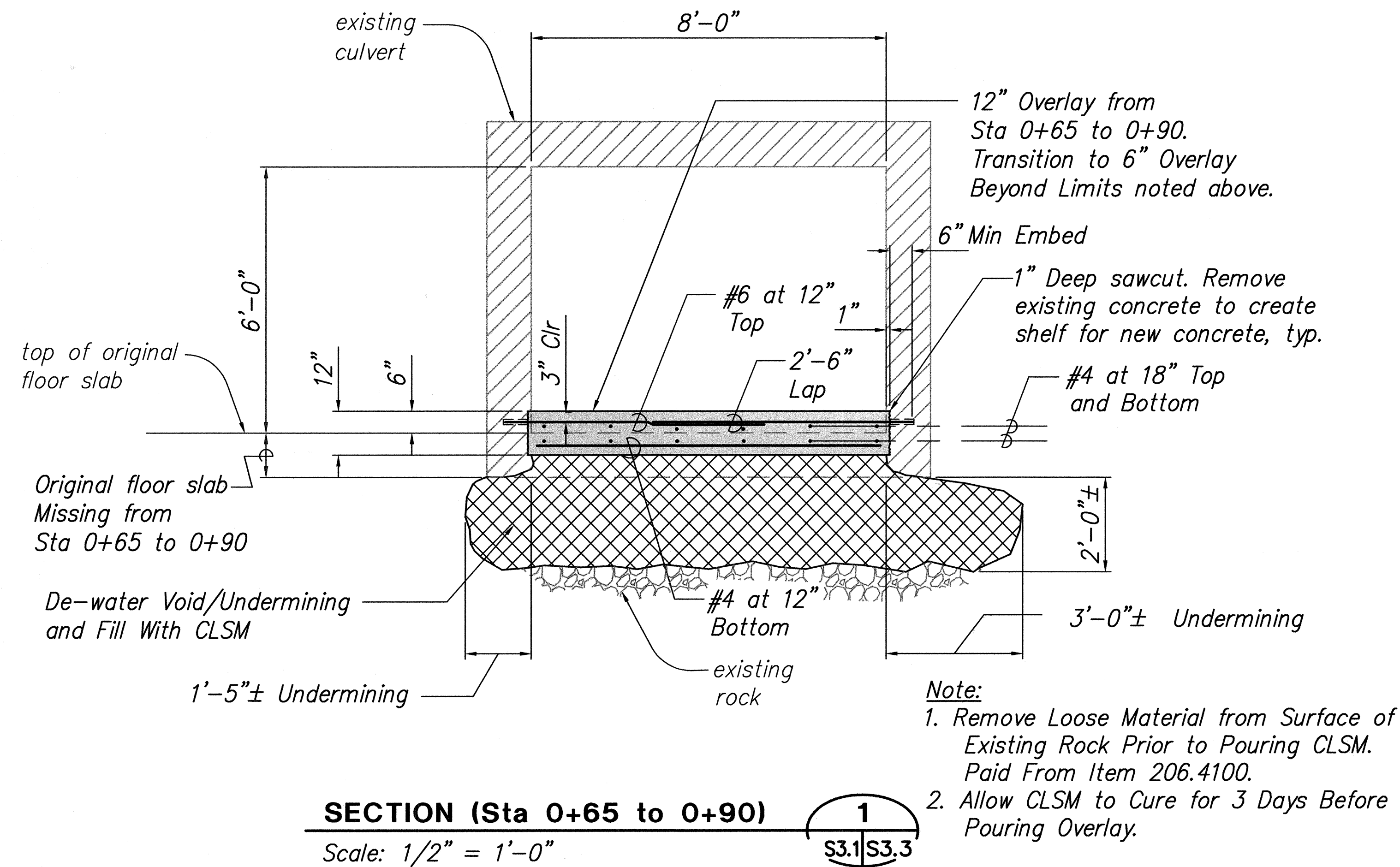
HAWAII BELT ROAD DRAINAGE IMPROVEMENTS

Project No. 19FGH-03-04M

Scale: As Noted Date: April 30, 2004

SHEET No. S3.2 OF 32 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S3.3	32



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

M.P. 20.52 CULVERT

SECTIONS AND DETAILS

HAWAII BELT ROAD DRAINAGE IMPROVEMENTS

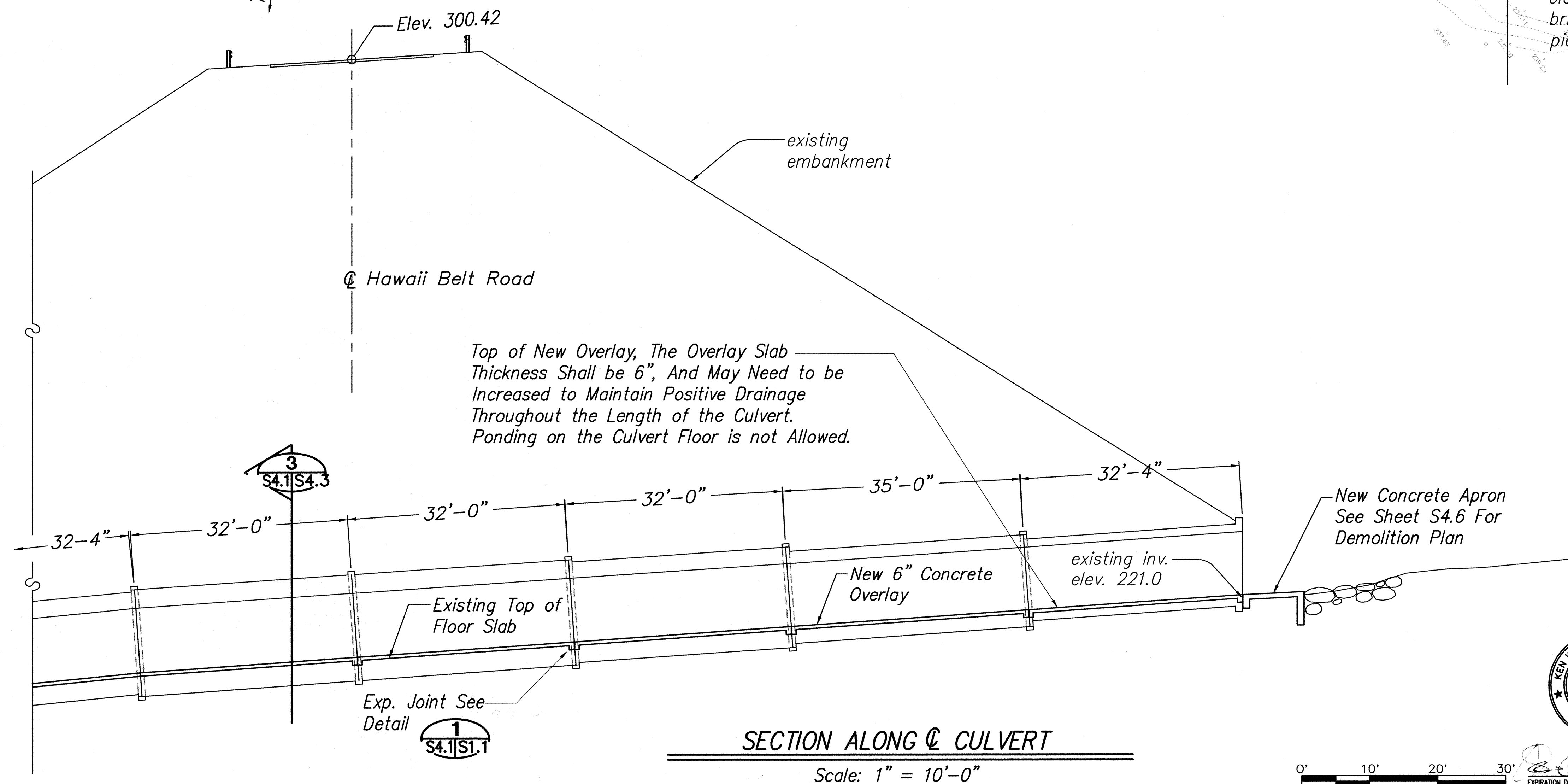
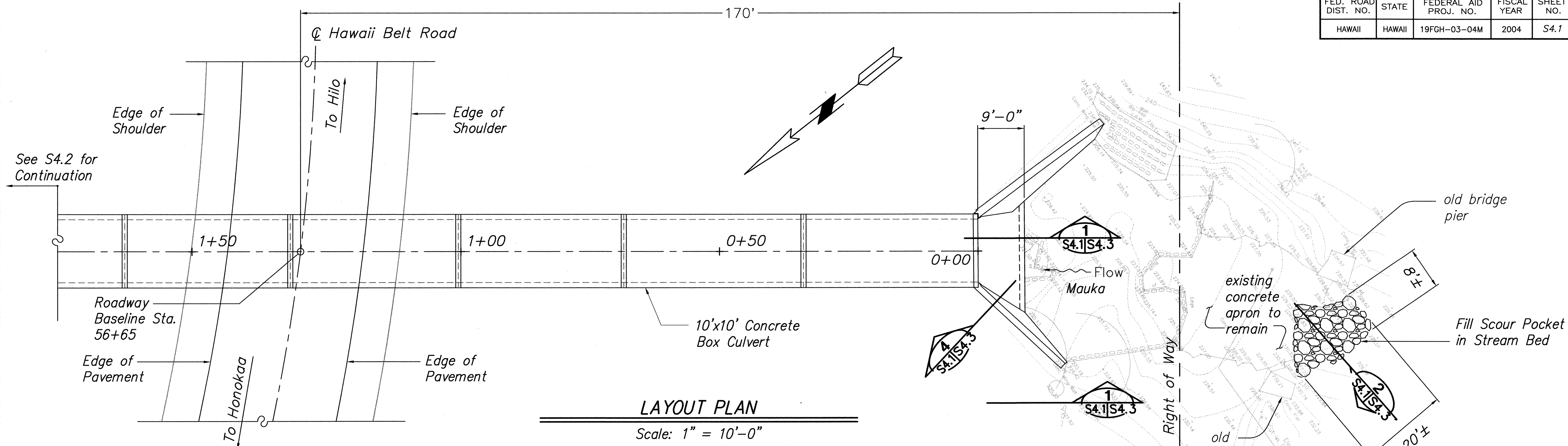
Project No. 19FGH-03-04M

Scale: As Noted Date: April 30, 2004

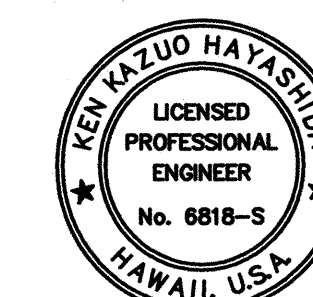
SHEET No. S3.3 OF 32 SHEETS

ORIGINAL PLAN	DATE
DESIGNED BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
NO.	

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S4.1	32



Notes:
1. Elevations show are taken from plans dated November, 1951, Project No. SDR-3(17).

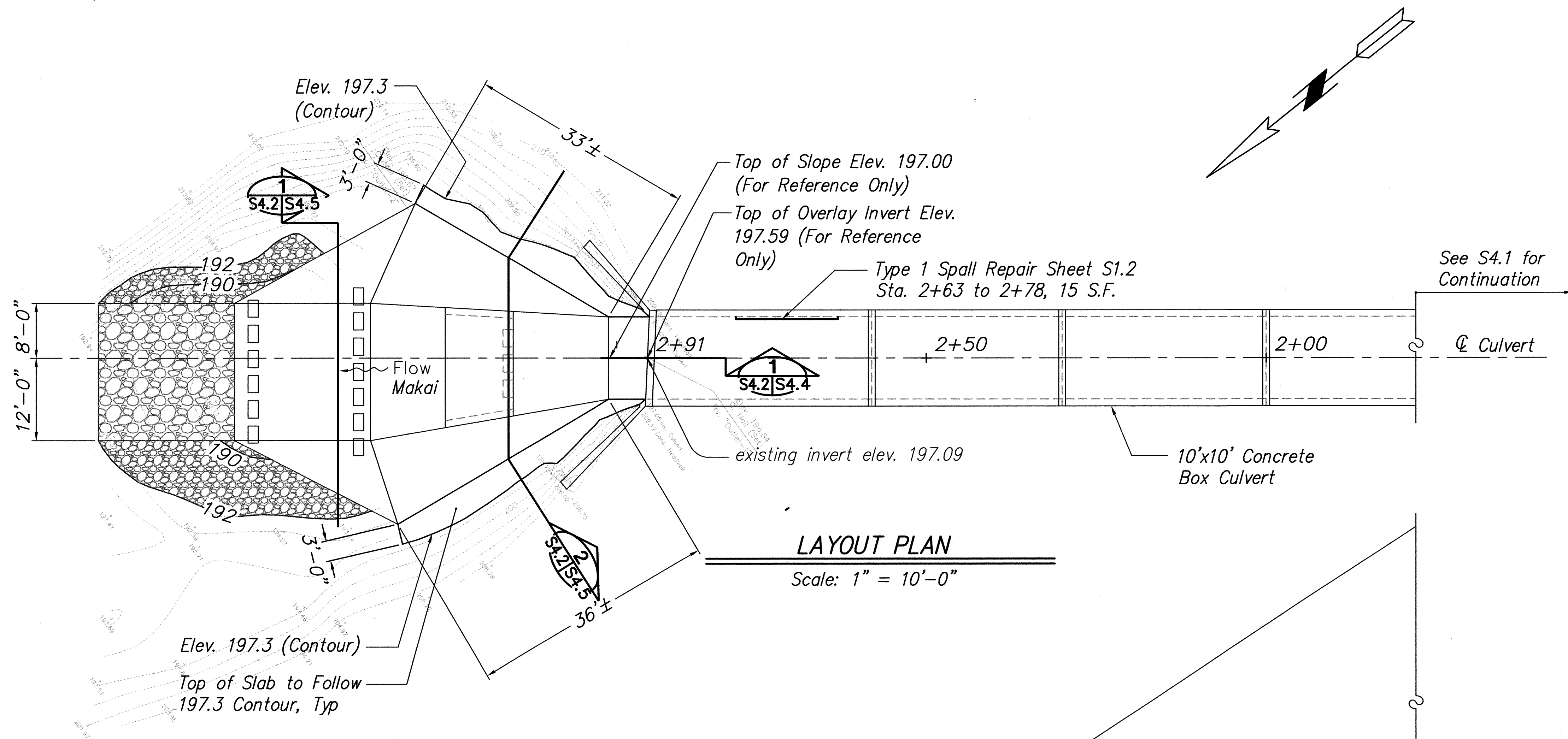


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
M.P. 26.49
PLAN AND PROFILE
HAWAII BELT ROAD DRAINAGE IMPROVEMENTS
Project No. 19FGH-03-04M
Scale: As Noted Date: April 30, 2004
SHEET No. S4.1 OF 32 SHEETS

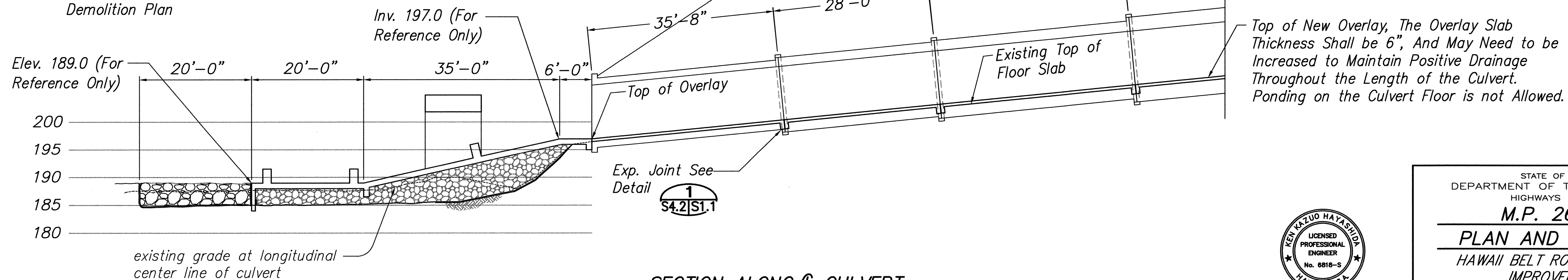
0' 10' 20' 30'
1" = 10'
EXPIRATION DATE OF THE LICENSE 4/30/2006
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

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

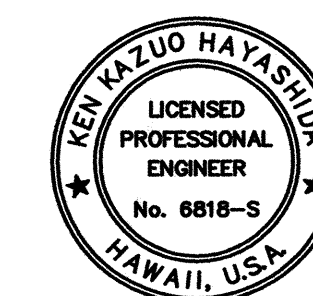
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S4.2	32



Note:
See Sheet S4.6 For Demolition Plan



SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
DESIGNED BY	
QUANTITIES BY	
NOTES BY	
NO.	

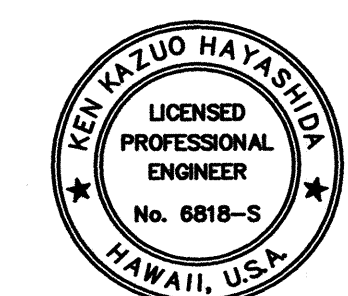
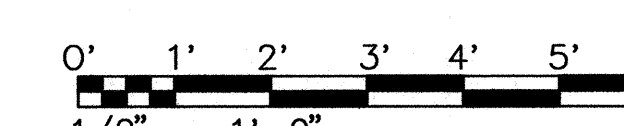
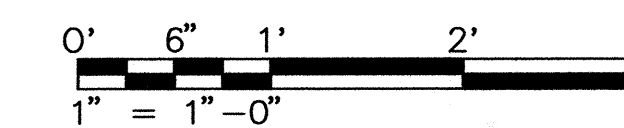
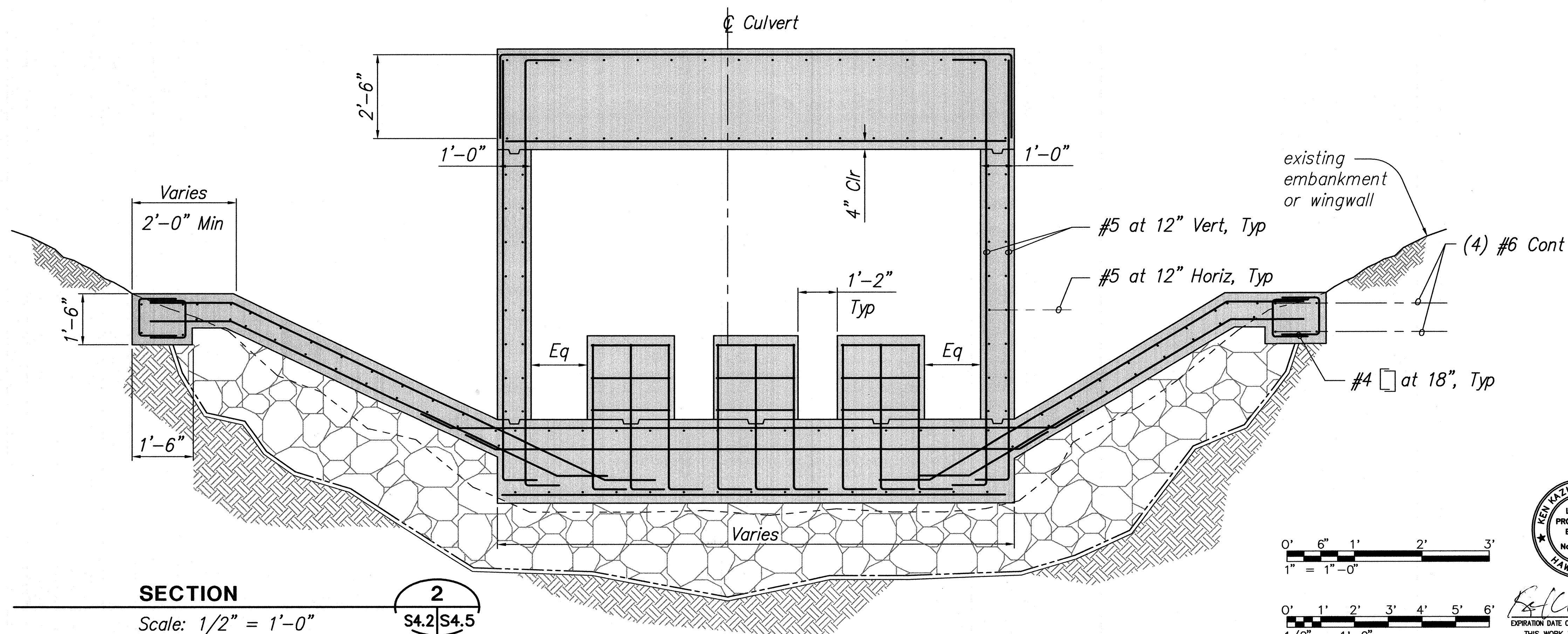
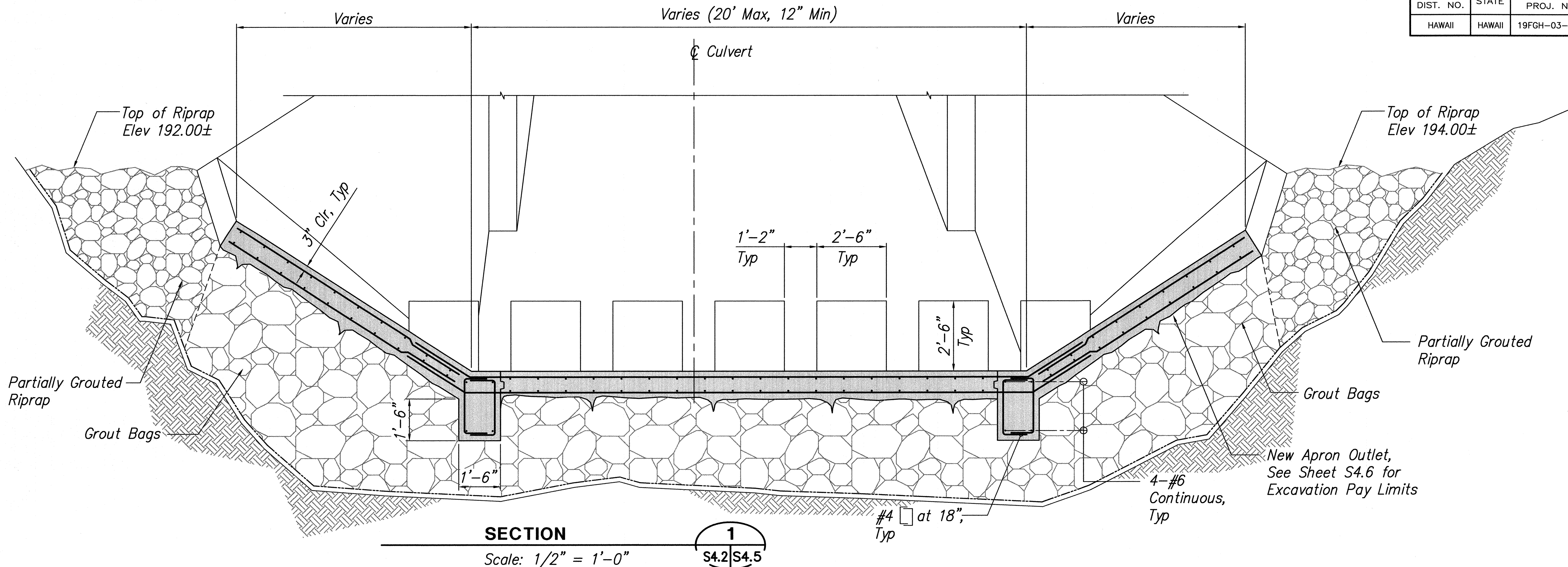


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
M.P. 26.49
PLAN AND PROFILE
HAWAII BELT ROAD DRAINAGE
IMPROVEMENTS
Project No. 19FGH-03-04M
Scale: As Noted Date: April 30, 2004
SHEET No. S4.2 OF 32 SHEETS

KEN HAYASHIDA
LICENSED
PROFESSIONAL
ENGINEER
No. 6818-S
HAWAII, U.S.A.

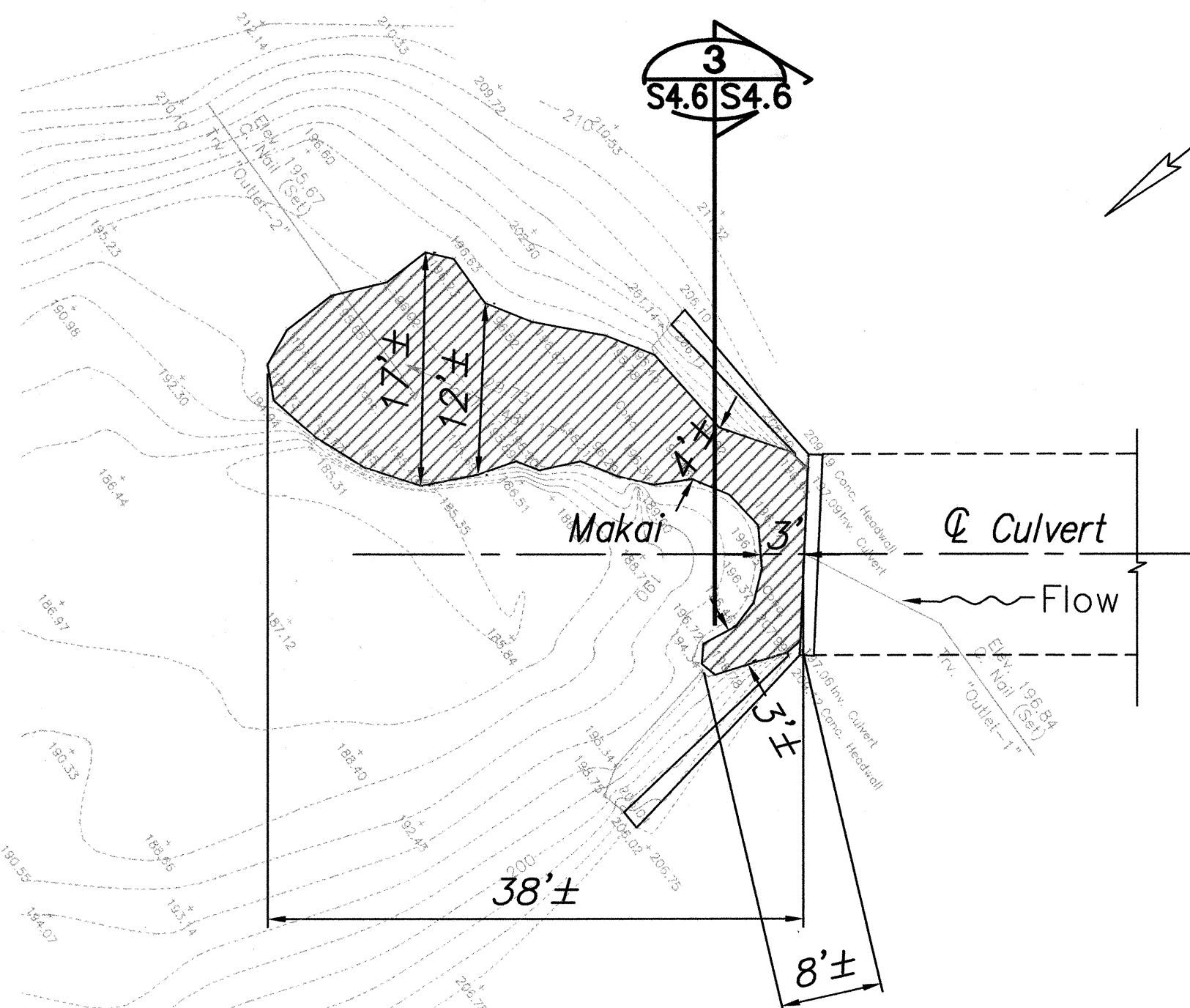
EXPIRATION DATE OF LICENSE 4/30/2006
THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S4.5	32

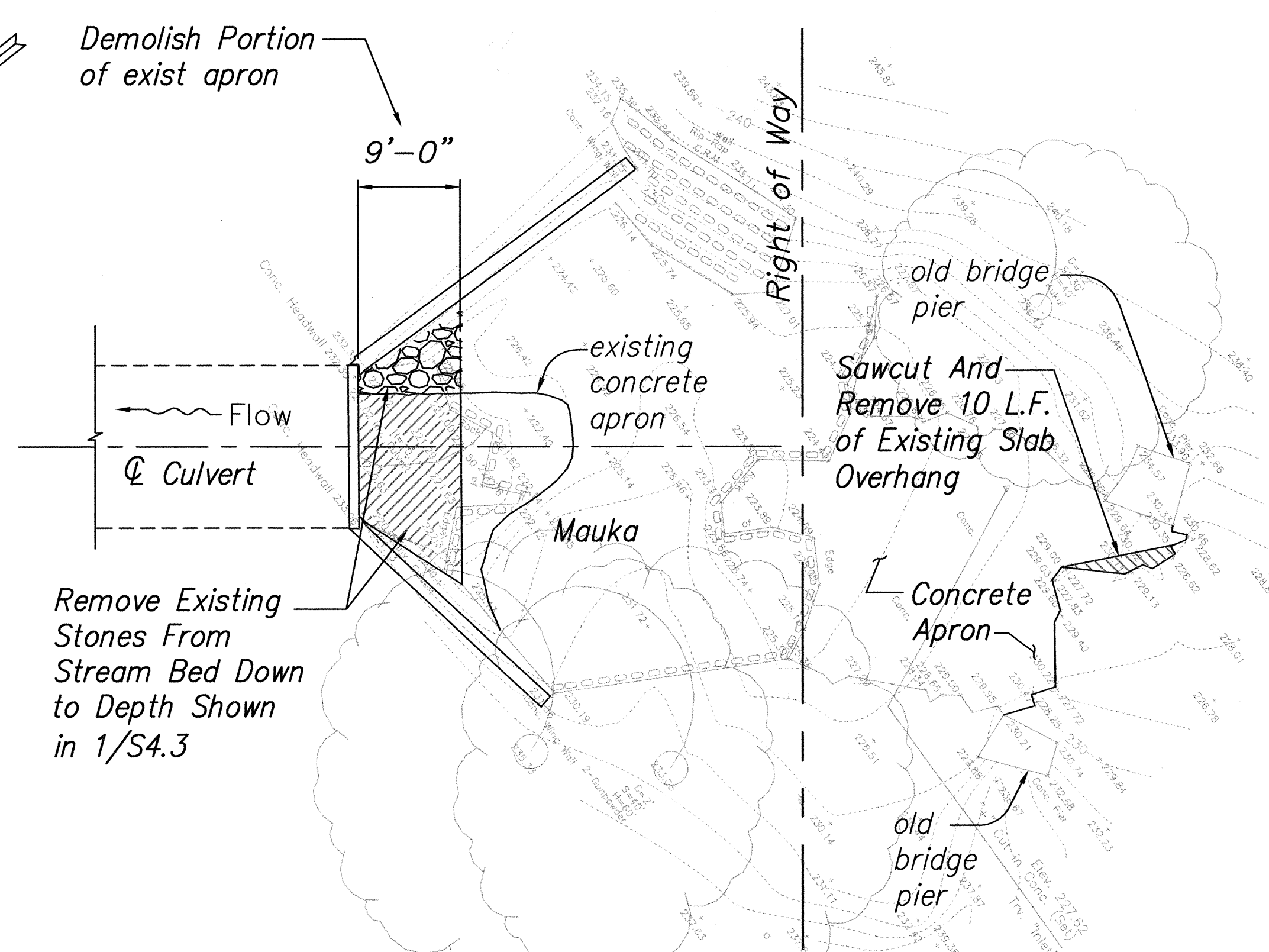


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
M.P. 26.49
CULVERT OUTLET SECTIONS
HAWAII BELT ROAD DRAINAGE IMPROVEMENTS
Project No. 19FGH-03-04M
Scale: As Noted Date: April 30, 2004
SHEET No. S4.5 OF 32 SHEETS

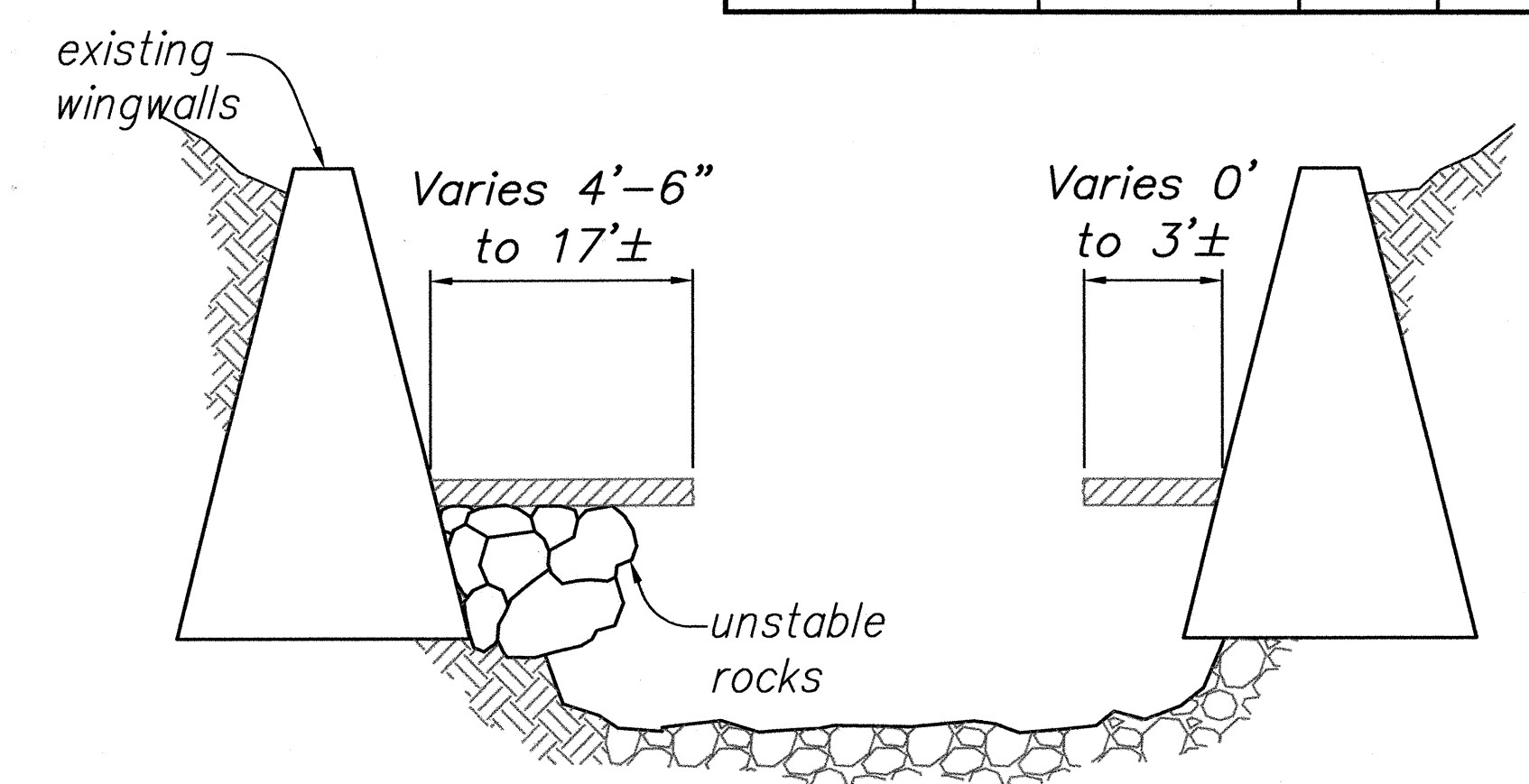
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S4.6	32



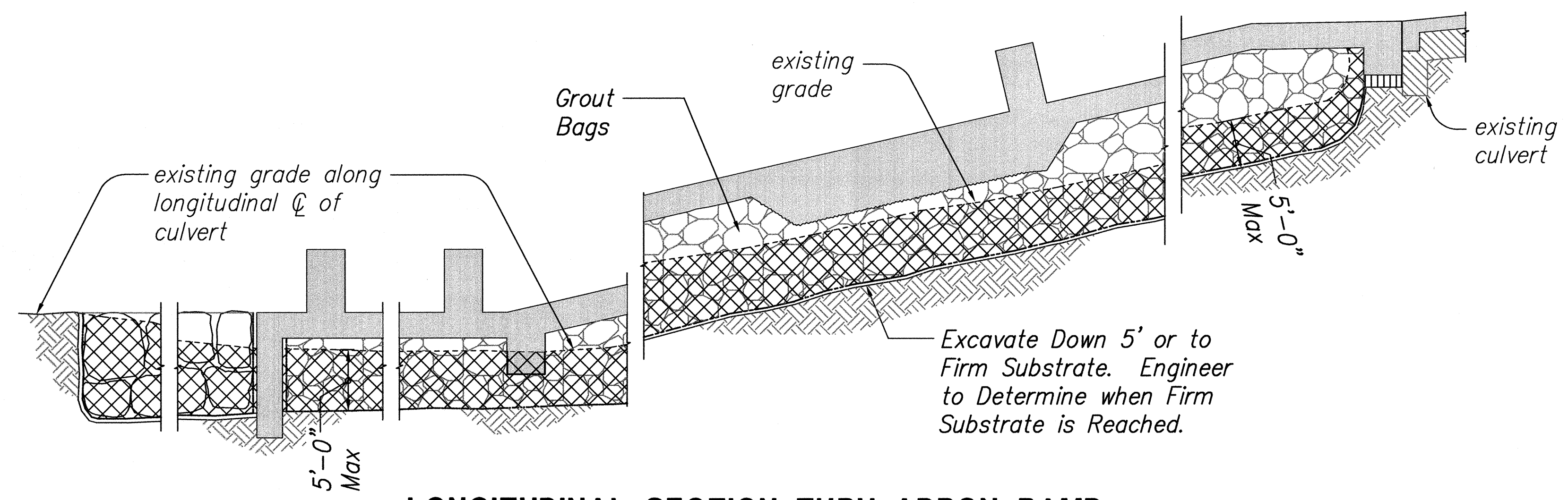
DEMOLITION PLAN (MAKAI END) 1
Scale: 1" = 10'-0"
S4.6/S4.6



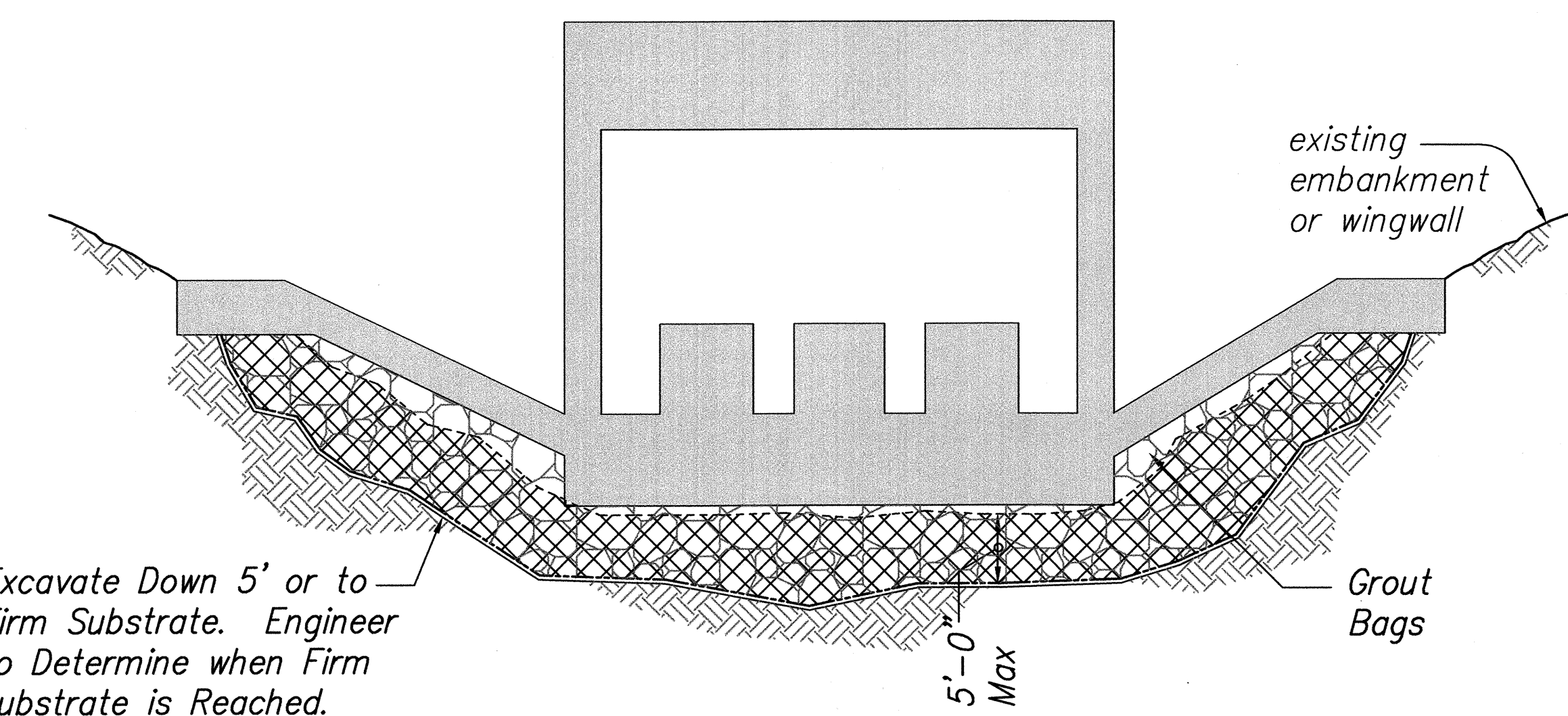
DEMOLITION PLAN (MAUKA END) 2
Scale: 1" = 10'-0"
S4.6/S4.6



SECTION 3
Not to Scale
S4.6/S4.6



LONGITUDINAL SECTION THRU APRON RAMP
Not to Scale



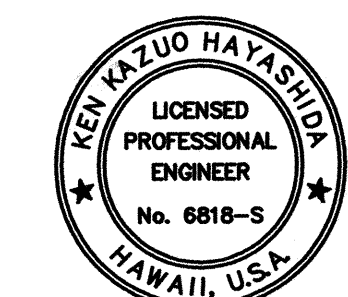
TRANSVERSE SECTION THRU APRON RAMP
Not to Scale

Notes:

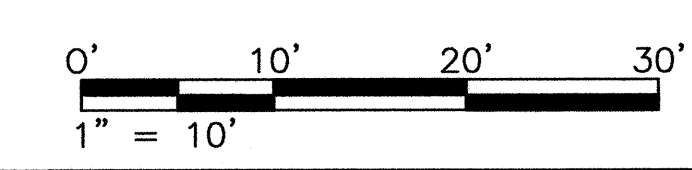
1. Break up Concrete Slab Into Pieces (5 S.F. Max) And Place Under/Between Grout Bags for Filler.
2. The Large Stones that Are Currently Beneath The Concrete Apron Slab May Fall During The Demolition of The Slab. The Contractor Shall Take All Precautions Necessary For The Safety of Personnel.
3. The Stones that are Currently Beneath the Concrete Apron Slab may be Used as Fill Material instead of Grout Bags.

Legend

- Denotes Item to be Demolished
- Denotes Excavation Pay Limits



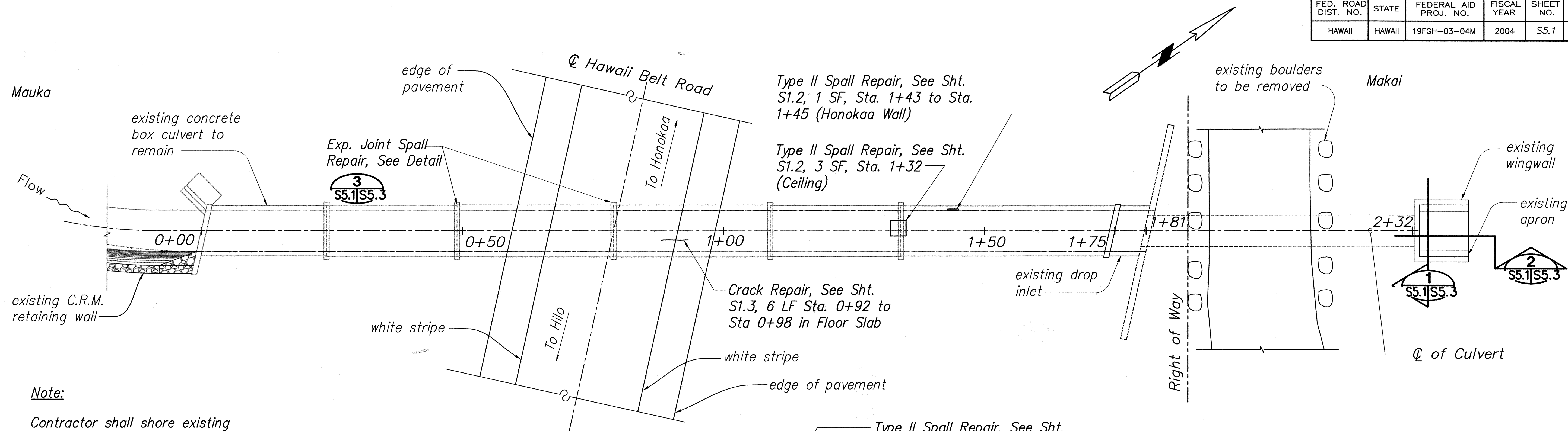
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
M.P. 26.49
DEMOLITION PLAN
HAWAII BELT ROAD DRAINAGE IMPROVEMENTS
Project No. 19FGH-03-04M
Scale: As Noted Date: April 30, 2004
SHEET No. S4.6 OF 32 SHEETS



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FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S5.1	32

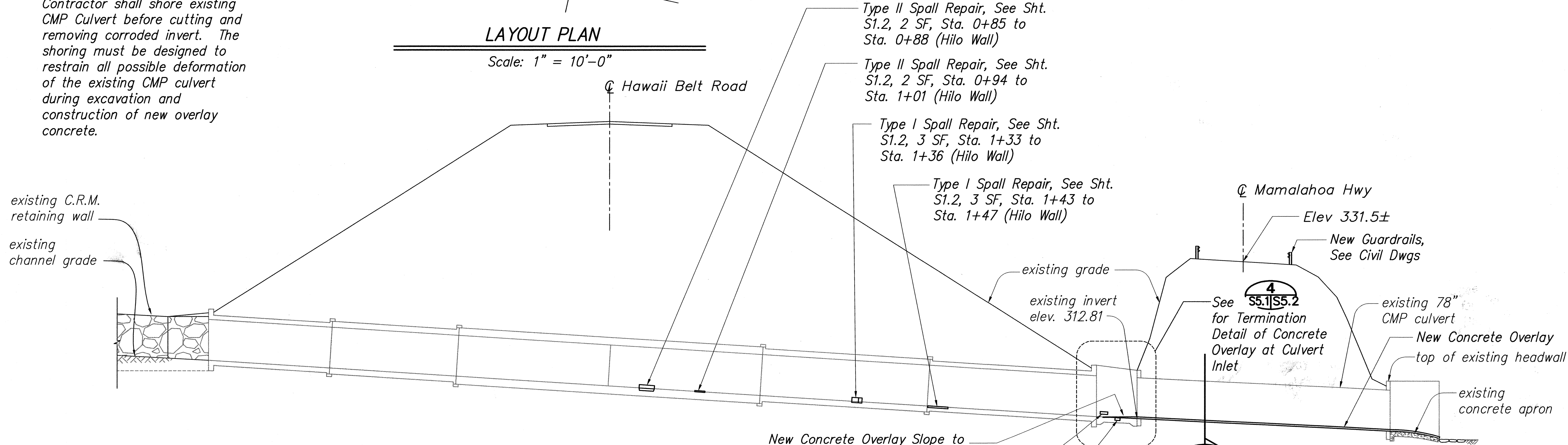


Note:

Contractor shall shore existing CMP Culvert before cutting and removing corroded invert. The shoring must be designed to restrain all possible deformation of the existing CMP culvert during excavation and construction of new overlay concrete.

LAYOUT PLAN

Scale: 1" = 10'-0"



SECTION ALONG CULVERT

Scale: 1" = 10'-0"

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

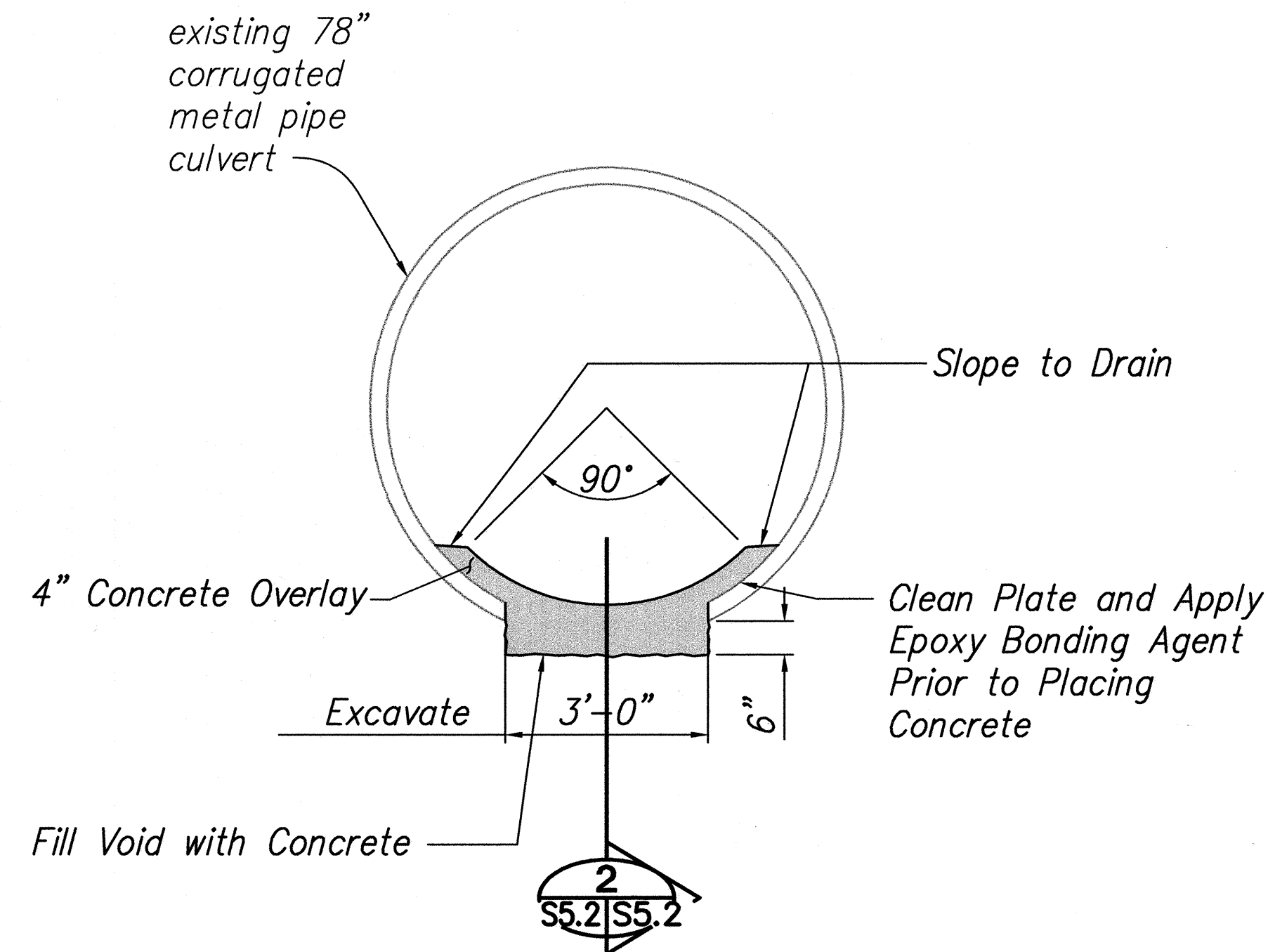


STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
M.P. 27.05
PLAN AND PROFILE
HAWAII BELT ROAD DRAINAGE
IMPROVEMENTS
Project No. 19FGH-03-04M
Scale: As Noted Date: April 30, 2004
SHEET No. S5.1 OF 32 SHEETS

0' 10' 20' 30'
1" = 10'

EXPIRATION DATE OF THE LICENSE 4/30/2008
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FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S5.2	32

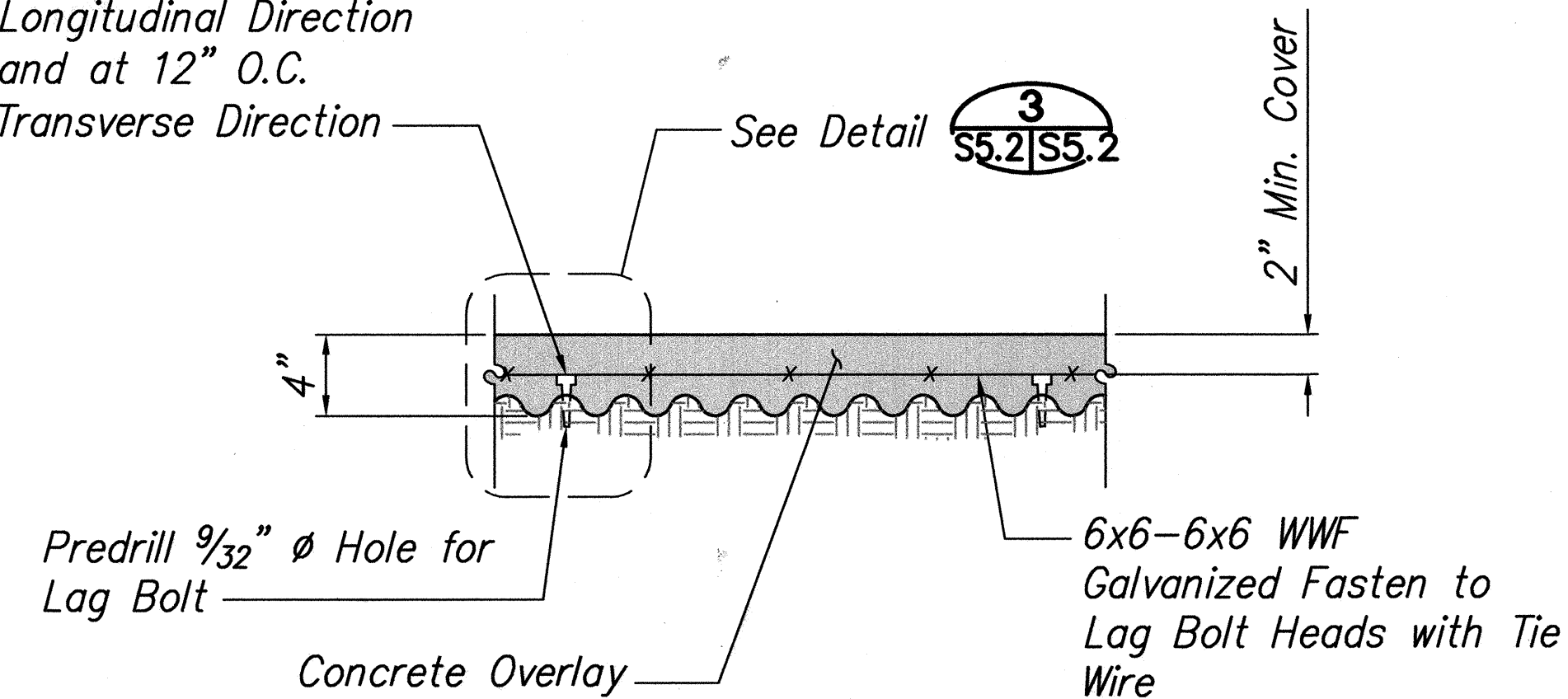


CONCRETE OVERLAY DETAIL

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

1
S5.1|S5.2

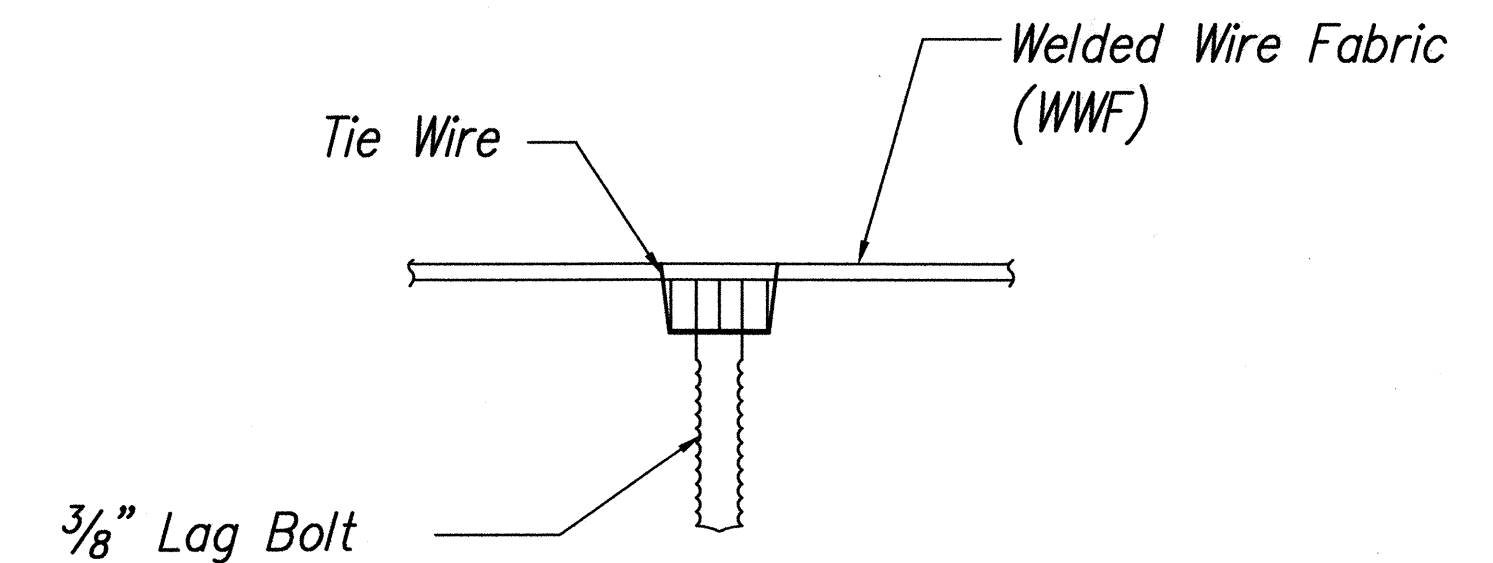
3/8" x 2" Type 316
Stainless Steel Lag Bolt
at 2'-0" O.C.
Longitudinal Direction
and at 12" O.C.
Transverse Direction



SECTION

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

2
S5.2|S5.2



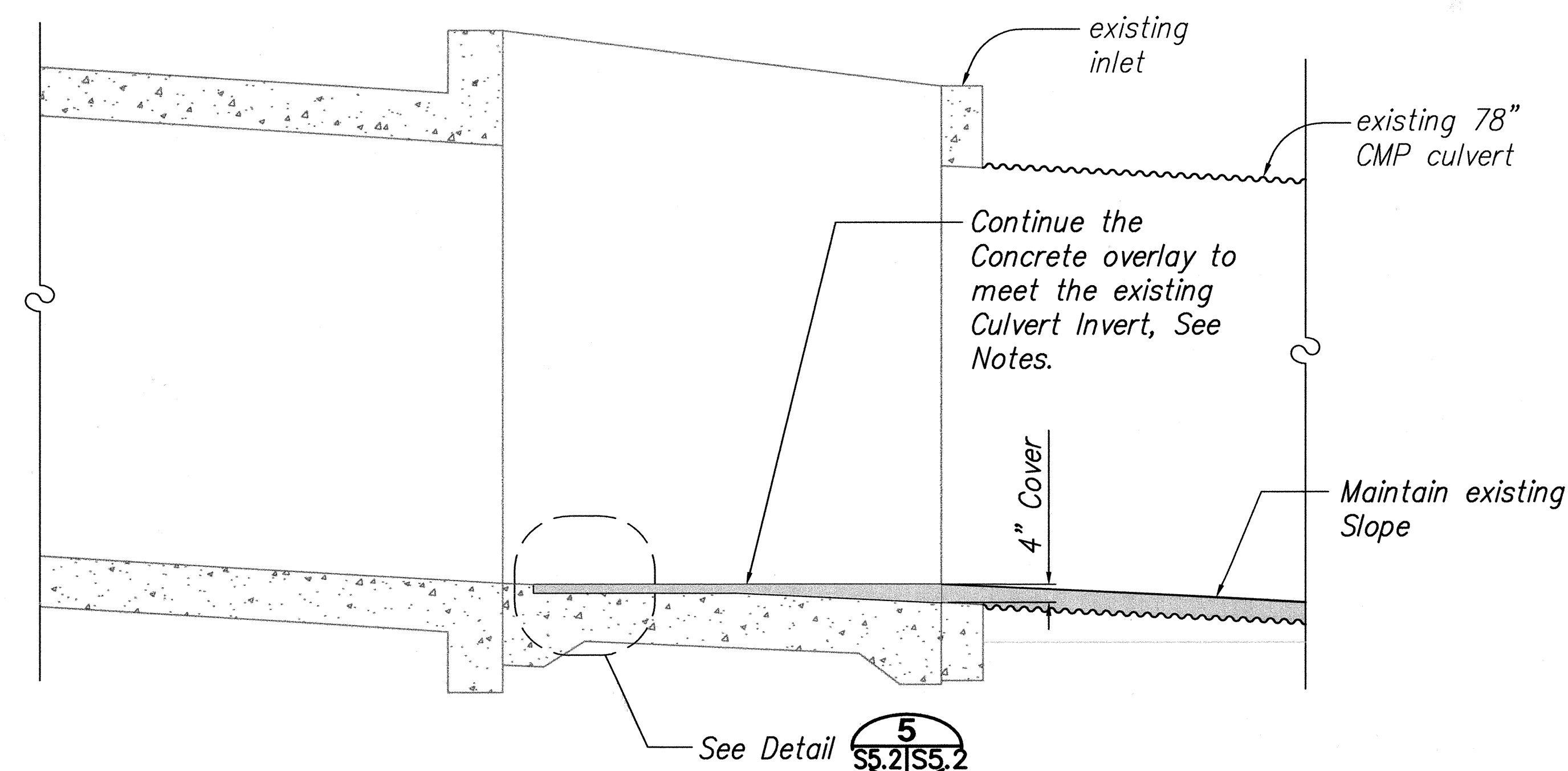
WIRE TIE DETAIL

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

3
S5.2|S5.2

Notes:

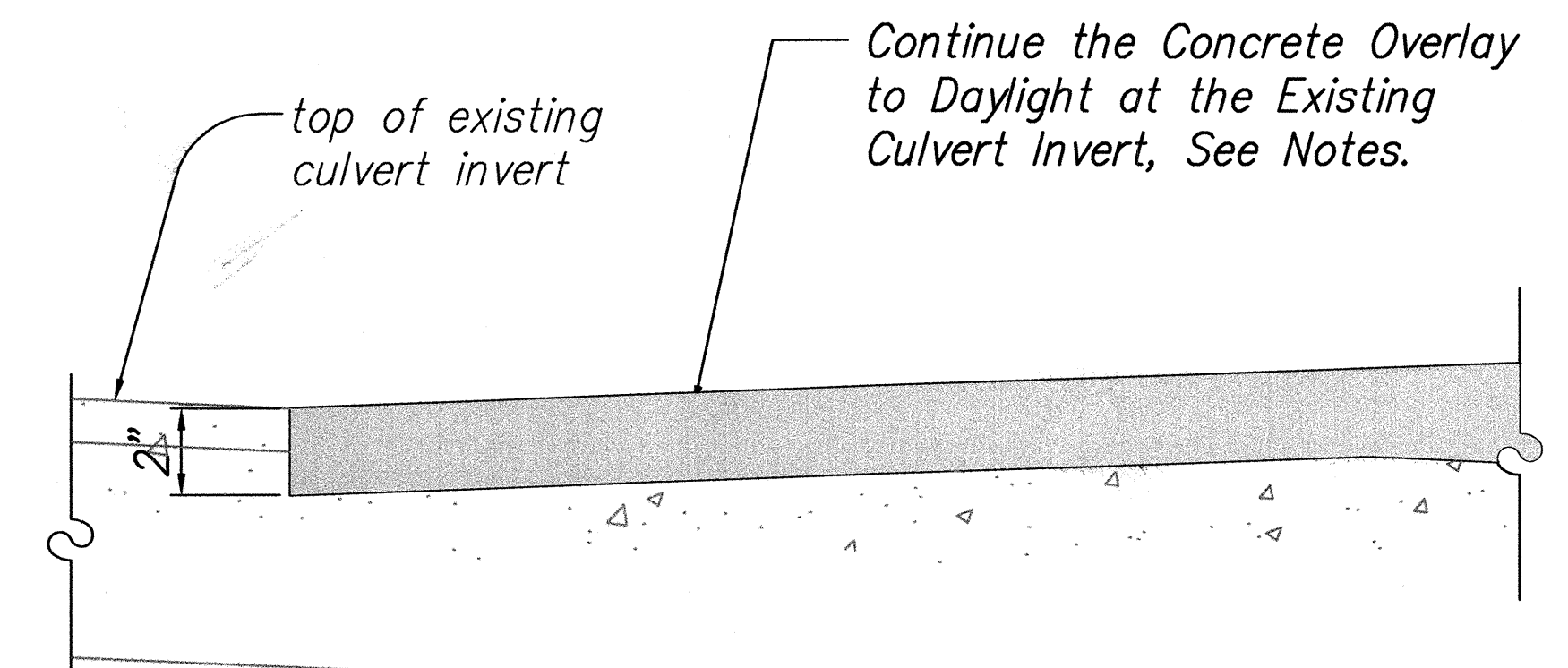
1. Prepare Surface of Existing Concrete Slab According to the Notes, Sheet S1.2
2. Apply Bonding Agent to All Concrete and CMP Surfaces to be Overlayed in Accordance with manufacturer's guidelines.
3. No Reinforcing is Required in Overlay Over Existing Concrete.



CULVERT SECTION

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

4
S5.1|S5.2

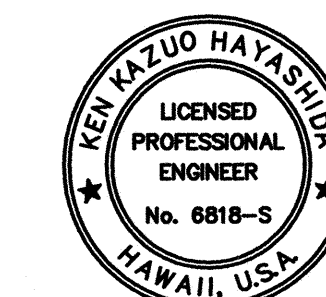
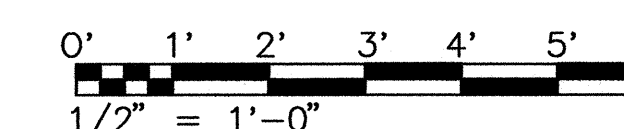
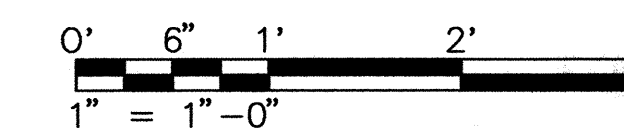


DETAIL

Scale: 3" = 1'-0"

5
S5.2|S5.2

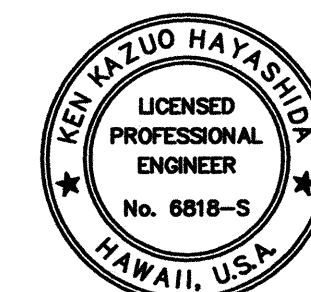
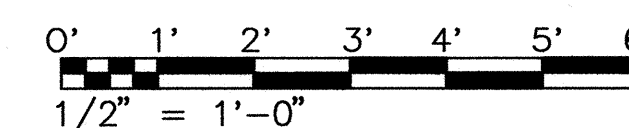
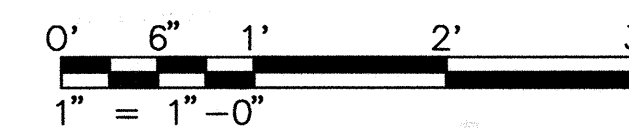
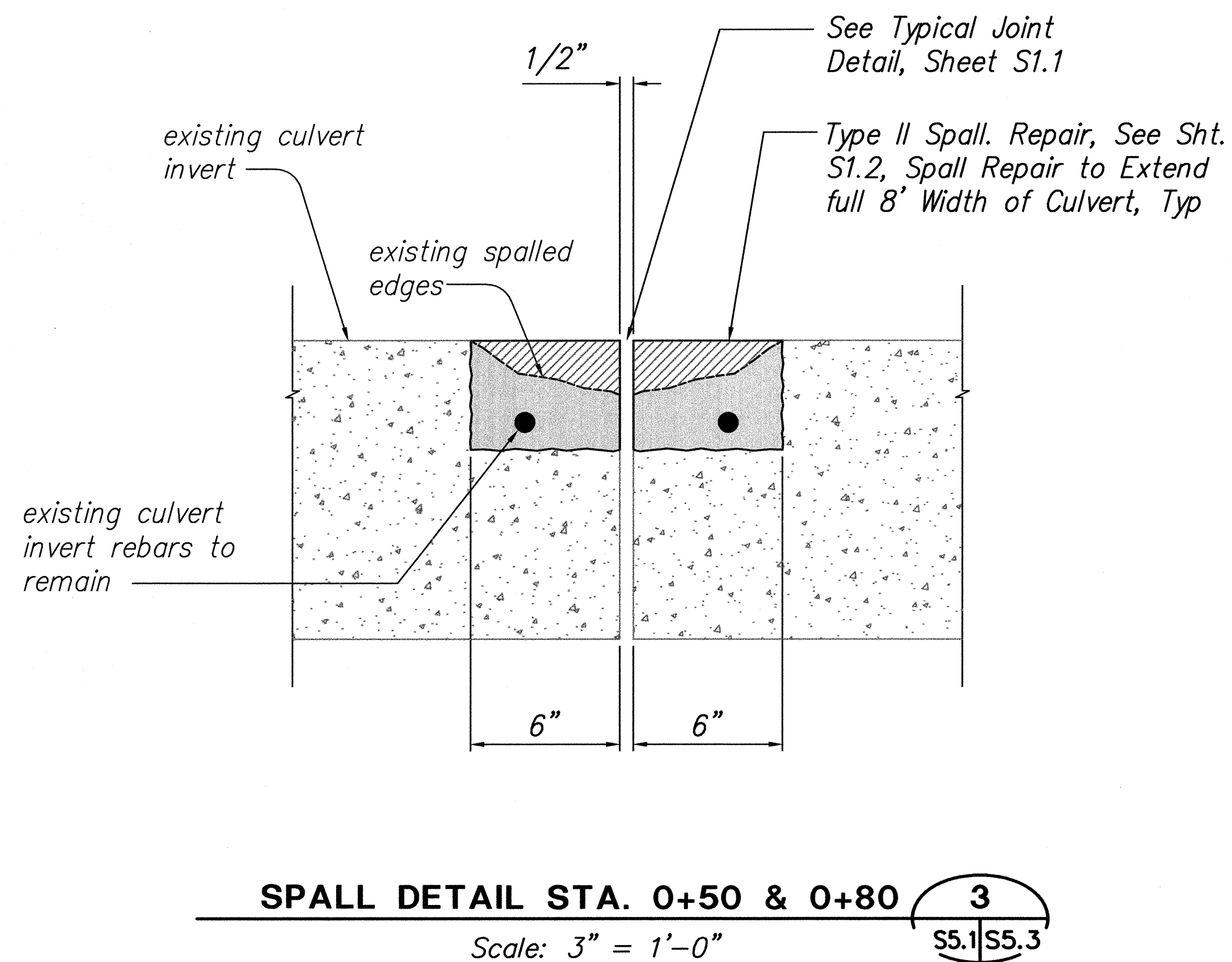
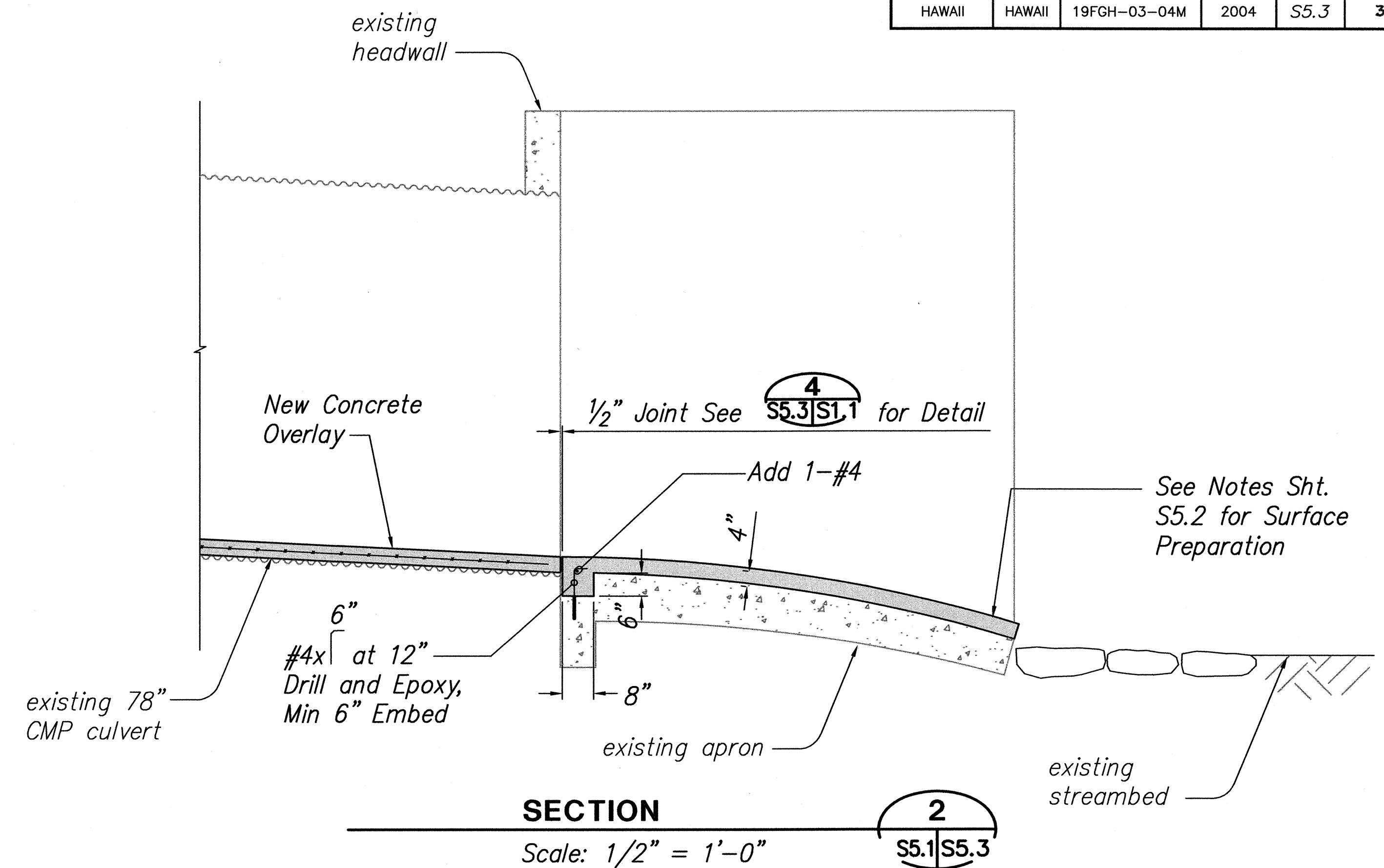
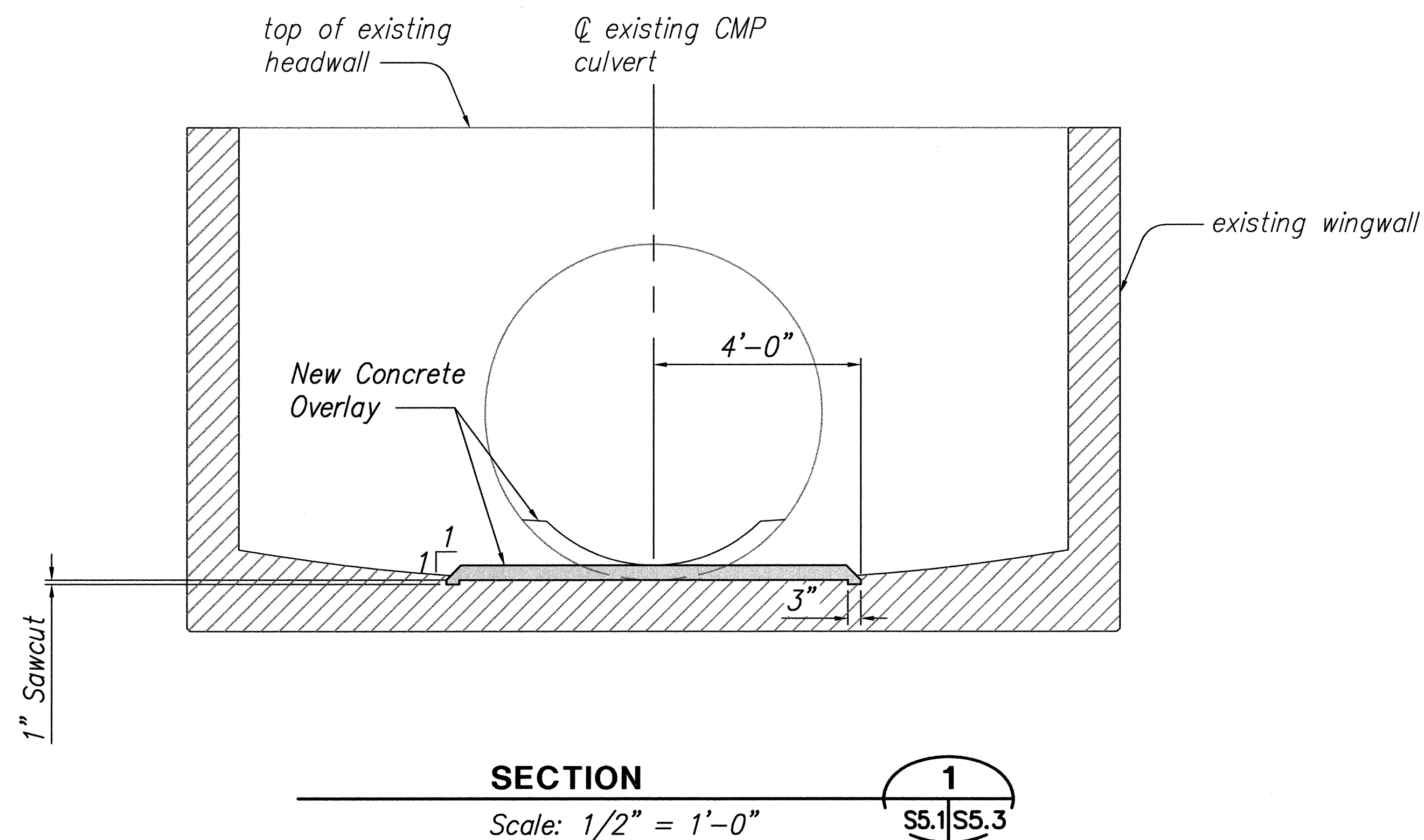
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NOTE BOOK	
No.	



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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
M.P. 27.05 CULVERT
SECTION AND DETAILS
HAWAII BELT ROAD DRAINAGE IMPROVEMENTS
Project No. 19FGH-03-04M
Scale: As Noted Date: April 30, 2004
SHEET No. S5.2 OF 32 SHEETS

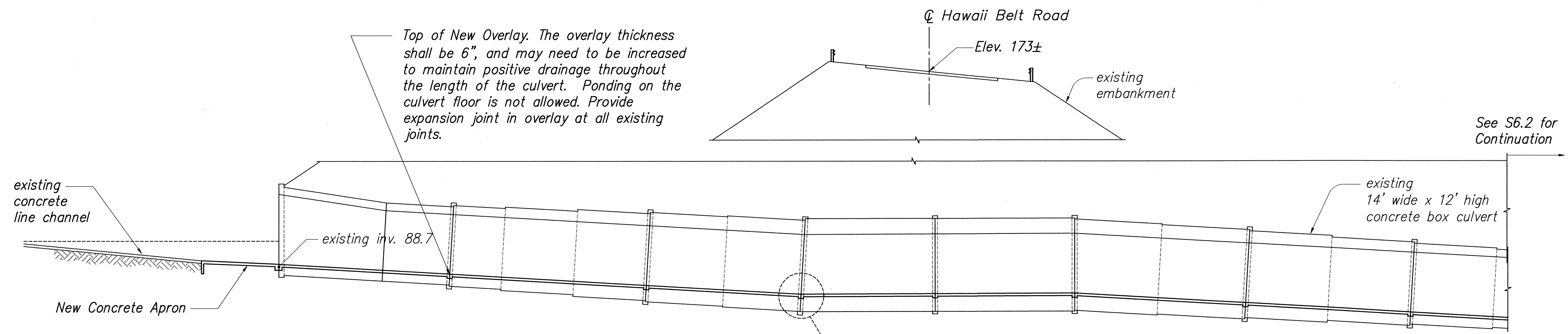
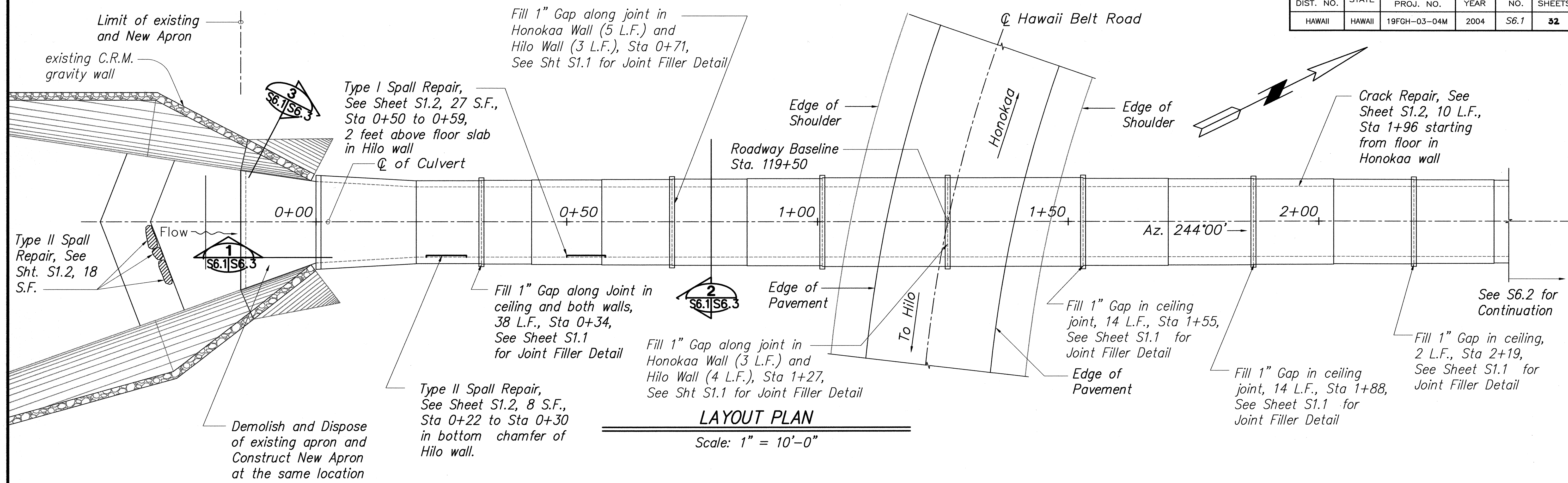
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S5.3	32



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
M.P. 27.05
CULVERT OUTLET SECTIONS
HAWAII BELT ROAD DRAINAGE
IMPROVEMENTS
Project No. 19FGH-03-04M
Scale: As Noted Date: April 30, 2004
SHEET No. S5.3 OF 32 SHEETS

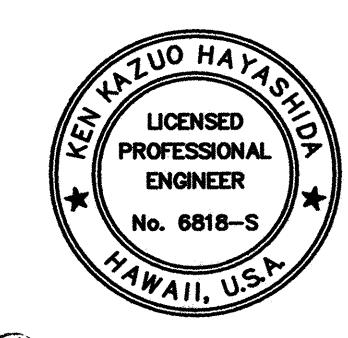
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S6.1	32



Notes:
Elevations taken from plans dated September 1953, Federal Aid Project No. SDR-3(18), and are included for informational purposes only.

See S6.1/S1.1 for Expansion Joint Detail

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QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

M.P. 28.46

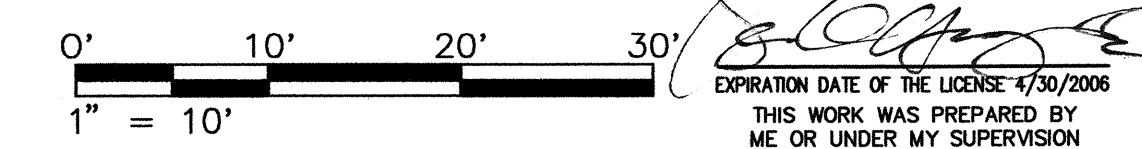
PLAN AND PROFILE

HAWAII BELT ROAD DRAINAGE IMPROVEMENTS

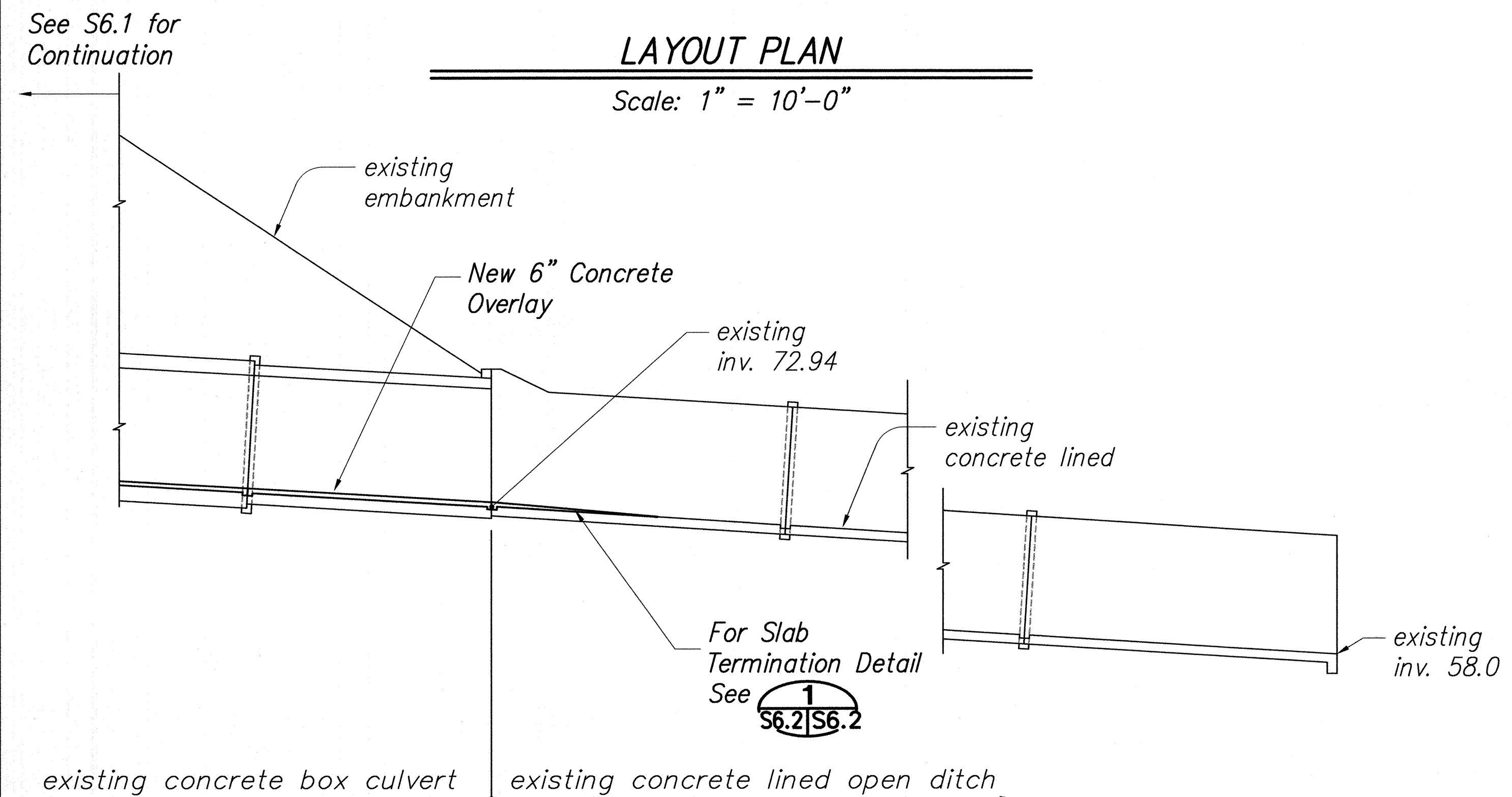
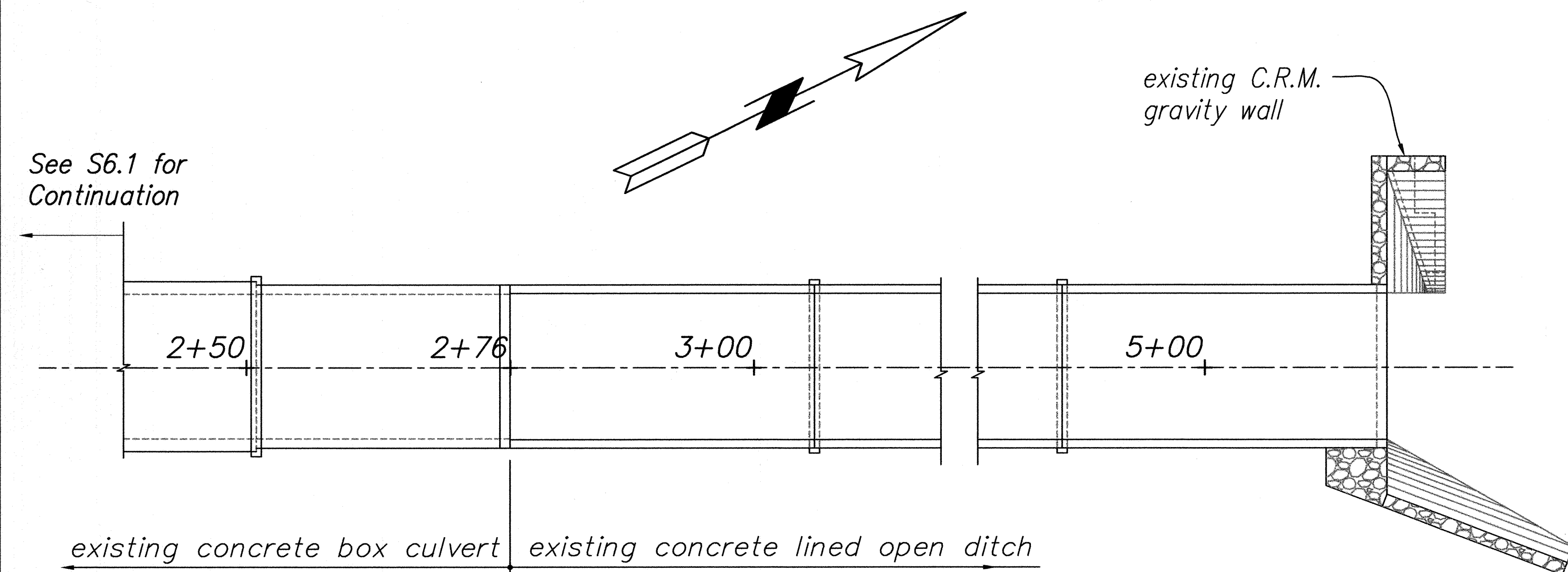
Project No. 19FGH-03-04M

Scale: As Noted Date: April 30, 2004

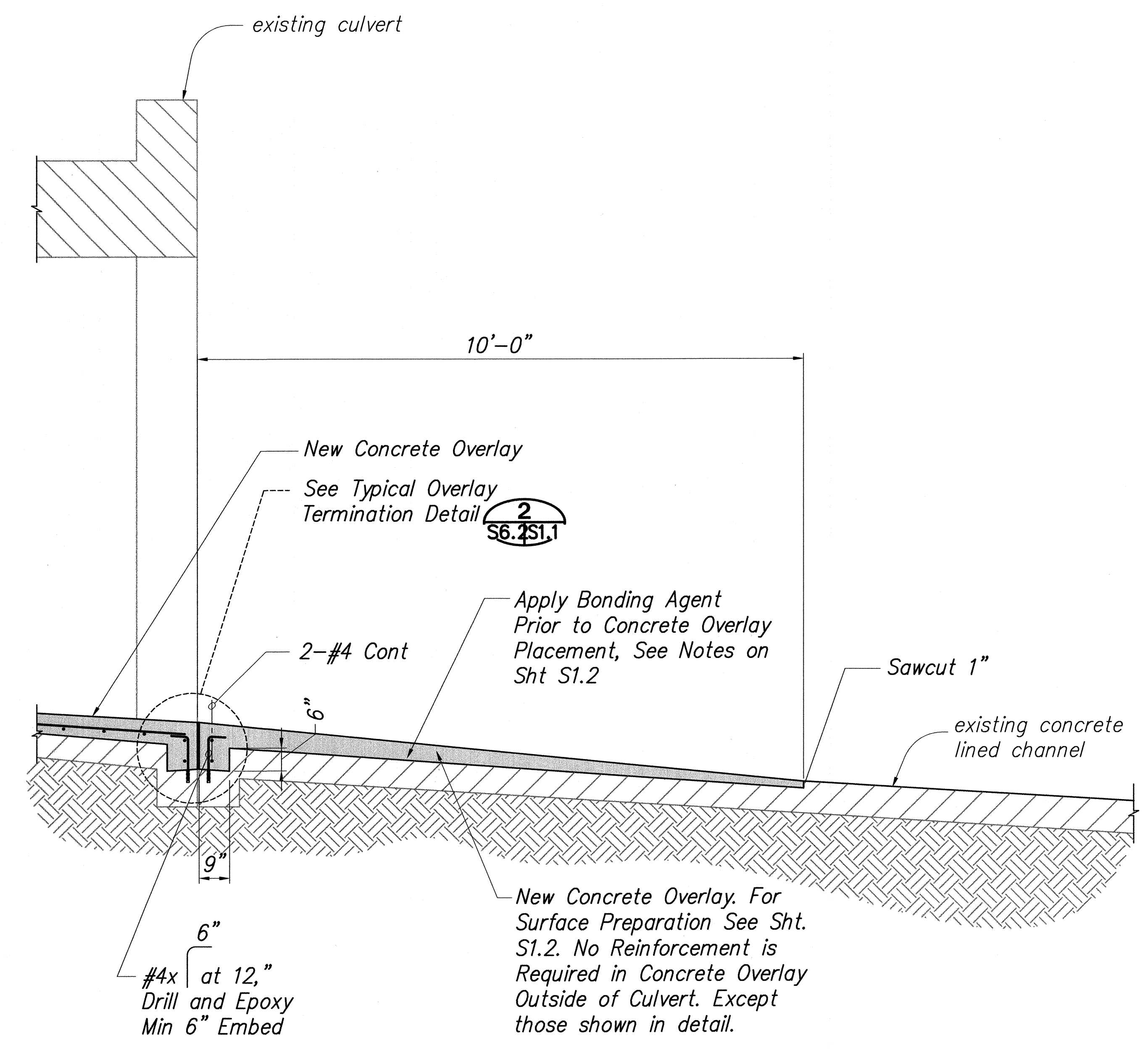
SHEET No. S6.1 OF 32 SHEETS



FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S6.2	32



SECTION ALONG CULVERT
Scale: 1" = 10'-0"

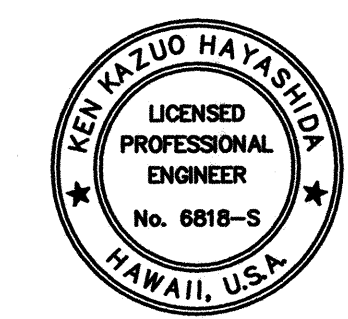


SLAB TERMINATION DETAIL
Scale: 1/2" = 1'-0"

1
S6.2/S6.2

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ORIGINAL PLAN	No.
NOTE BOOK	



0' 10' 20' 30'

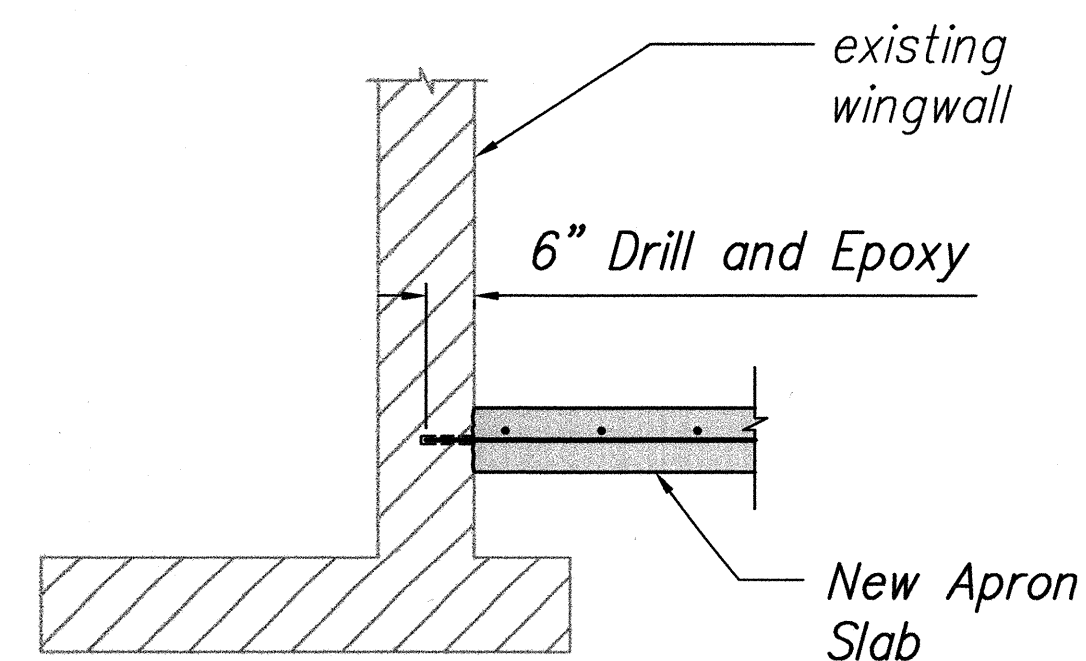
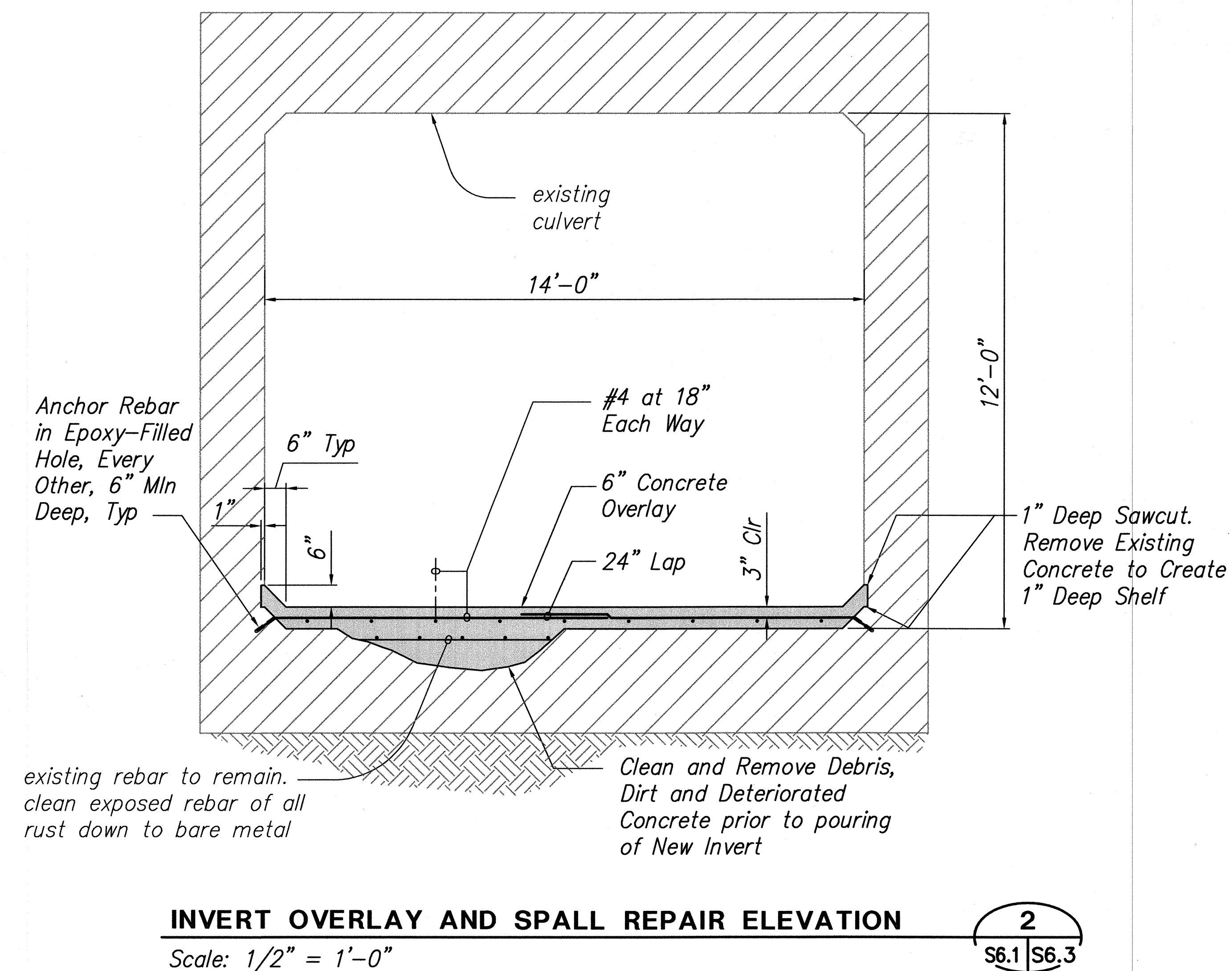
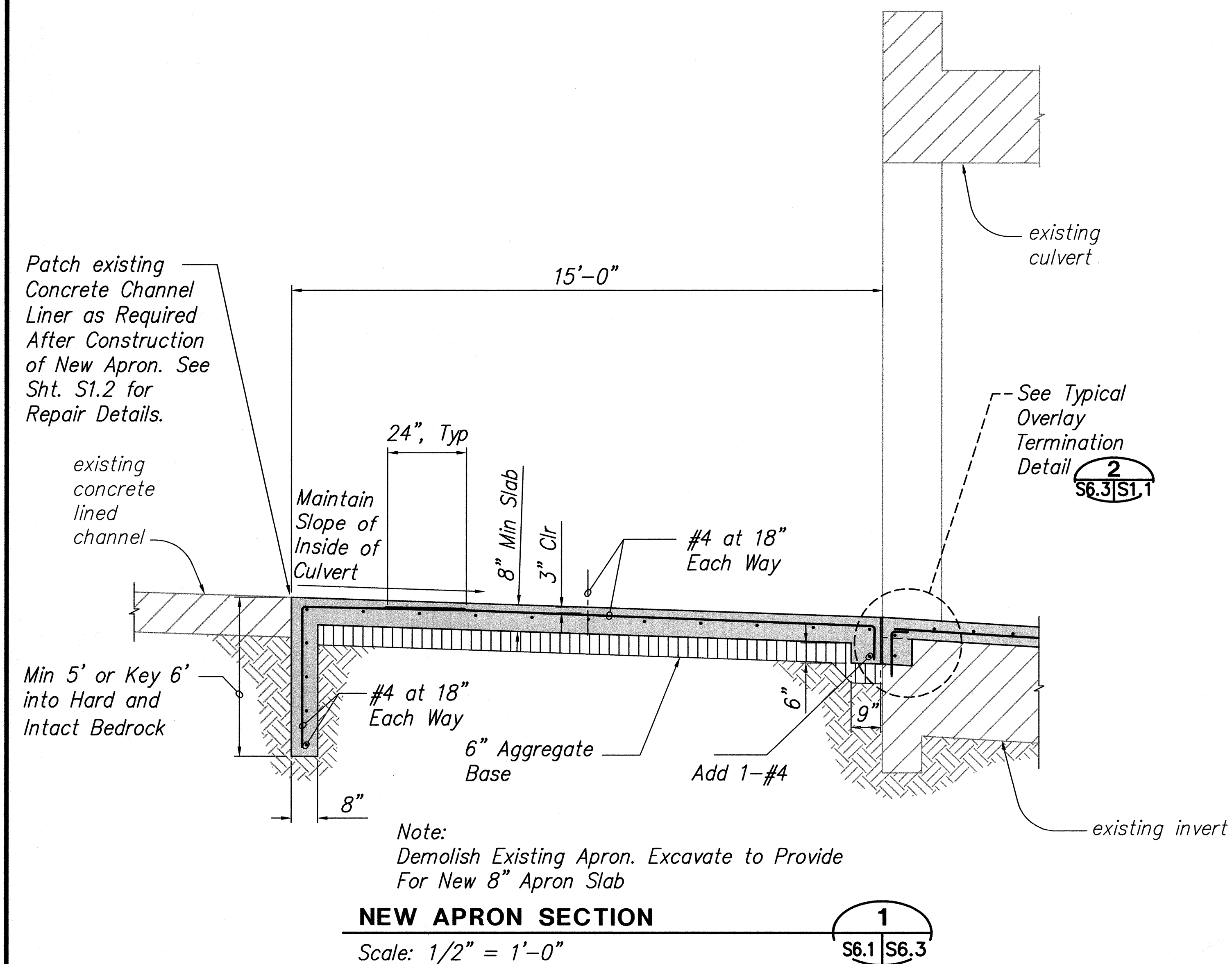
1" = 10'

EXPIRATION DATE OF THE LICENSE 4/30/2006

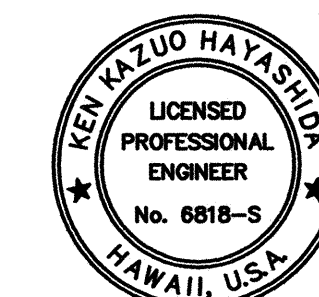
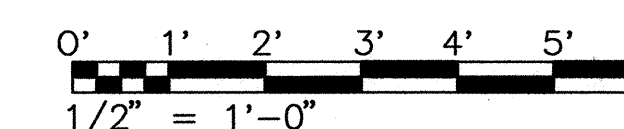
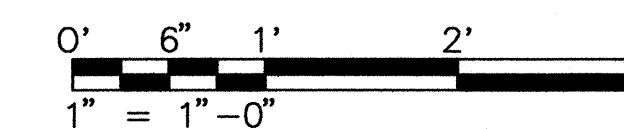
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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
M.P. 28.46
PLAN AND PROFILE
HAWAII BELT ROAD DRAINAGE IMPROVEMENTS
Project No. 19FGH-03-04M
Scale: As Noted Date: April 30, 2004
SHEET No. S6.2 OF 32 SHEETS

FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	19FGH-03-04M	2004	S6.3	32



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

M.P. 28.46 CULVERT

SECTIONS AND DETAILS

HAWAII BELT ROAD DRAINAGE IMPROVEMENTS

Project No. 19FGH-03-04M

Scale: As Noted Date: April 30, 2004

SHEET No. S6.3 OF 32 SHEETS