

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	580A-01-02	2005	C.O.ADD.21	25

GENERAL NOTES FOR TIEBACK WALL

- Shotcrete shall develop a minimum 28 day compressive strength of 4,000 psi.
- Concrete shall develop a minimum 28 day compressive strength of 4,000 psi.
- Tieback grout shall develop a minimum compressive strength of 3,000 psi prior to stressing. Testing for compressive shall conform to ASTM C-109.
- All reinforcing bars shall be grade 60 and comply with ASTM A615. Welded Wire Fabric (WWF) shall conform to ASTM A497. WWF shall be furnished in sheets and galvanized after fabrication.
- See Sheet S-5 for Tieback Details and requirements.
- Unless otherwise noted, all exterior corners and edges shall have 3/4" chamfers. All interior corners shall have 3/4" fillets.
- The Contractor is responsible for providing and maintaining stable slopes below the New and existing walls during the construction period.
- Design soil parameters for Tiebacks shall be based on the soils report prepared by Geolabs, Inc. dated August 17, 2004 and December 30, 2004 and modified in Geolab's memorandum dated February 8, 2005.

GEOTECHNICAL DESIGN PARAMETERS FOR THE TIEBACK RETAINING WALL	
GEOTECHNICAL DESIGN PARAMETERS	RECOMMENDED VALUES
SOIL UNIT WEIGHT	115 PCF
FRICTION ANGLE	30 DEGREES
SOIL COHESION	0 PSF
BOND STRESS (EXTREME LIMIT)	3,000 PSF
BOND STRESS (SERVICE LIMIT)	1,500 PSF

- ~~If weep holes cannot be cleaned or~~ if weep holes are non existent, core New 4" Dia. weep Holes. Weep holes shall be spaced at 6'-4" o.c. maximum. The Weep Hole at face of New Wall shall be located 6" to 9" above final grade. If existing weep holes exceed 6'-4" o.c. spacing, add New Weep Holes. Weep Holes shall be located no closer than 18" from bottom layer of Tiebacks.
- Where a single Tieback Wall is resting on underlying basalt rock foundations, #4x36" dowels shall be grouted 12" into the rock and embedded 24" into the shotcrete wall. Spacing of dowels shall be at 24" on centers unless otherwise determined by the Engineer.

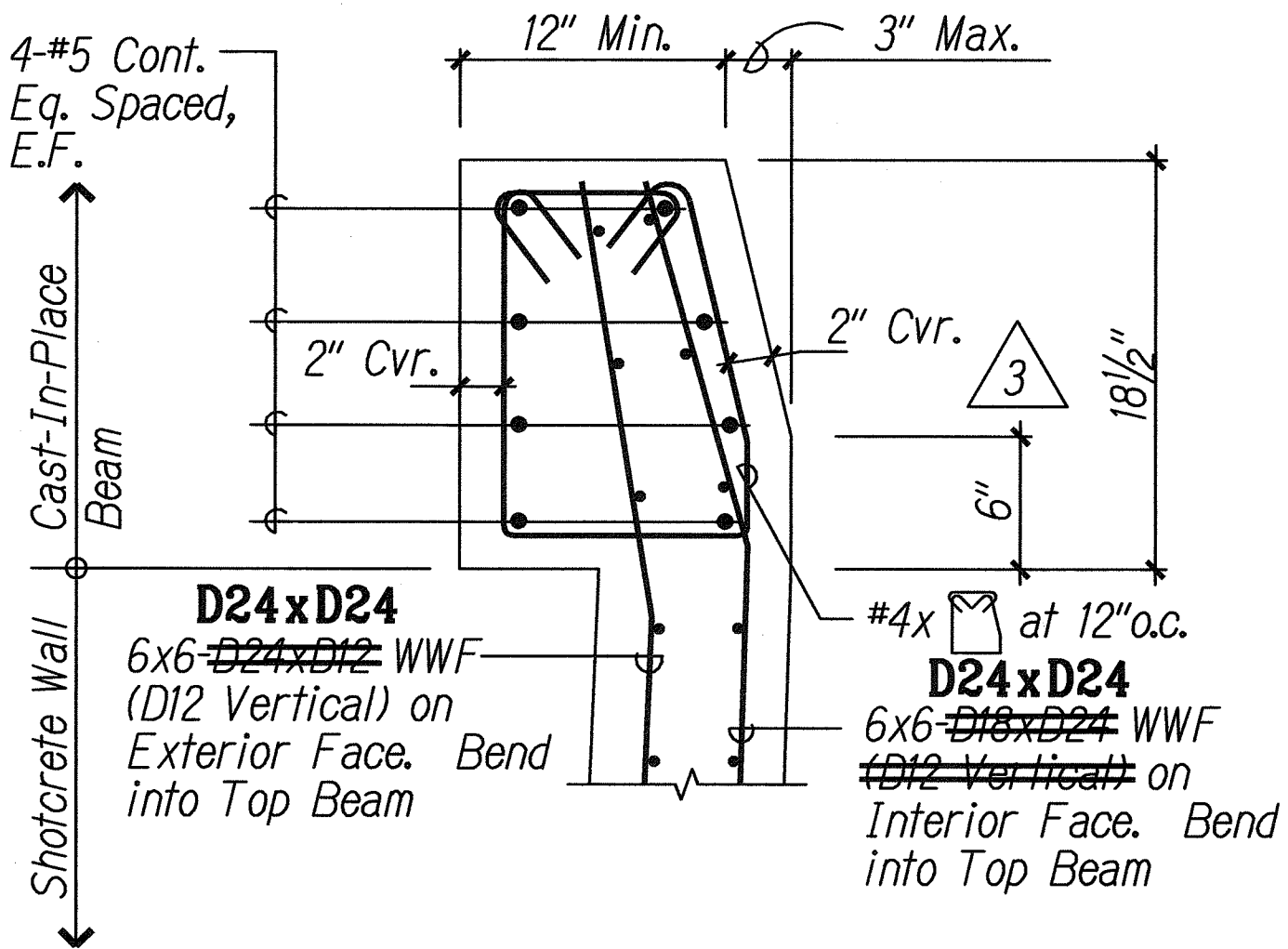
3/21/07	6	Added Note 10
	5	Revised Detail D/S-4
	4	Revised Detail A/S-4
2/02/06	3	Corr'd Rebar Configuration, B/S-4
	2	Revised Dimensions, C/S-4
	1	Revised Dimensions, A/S-4
DATE		REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

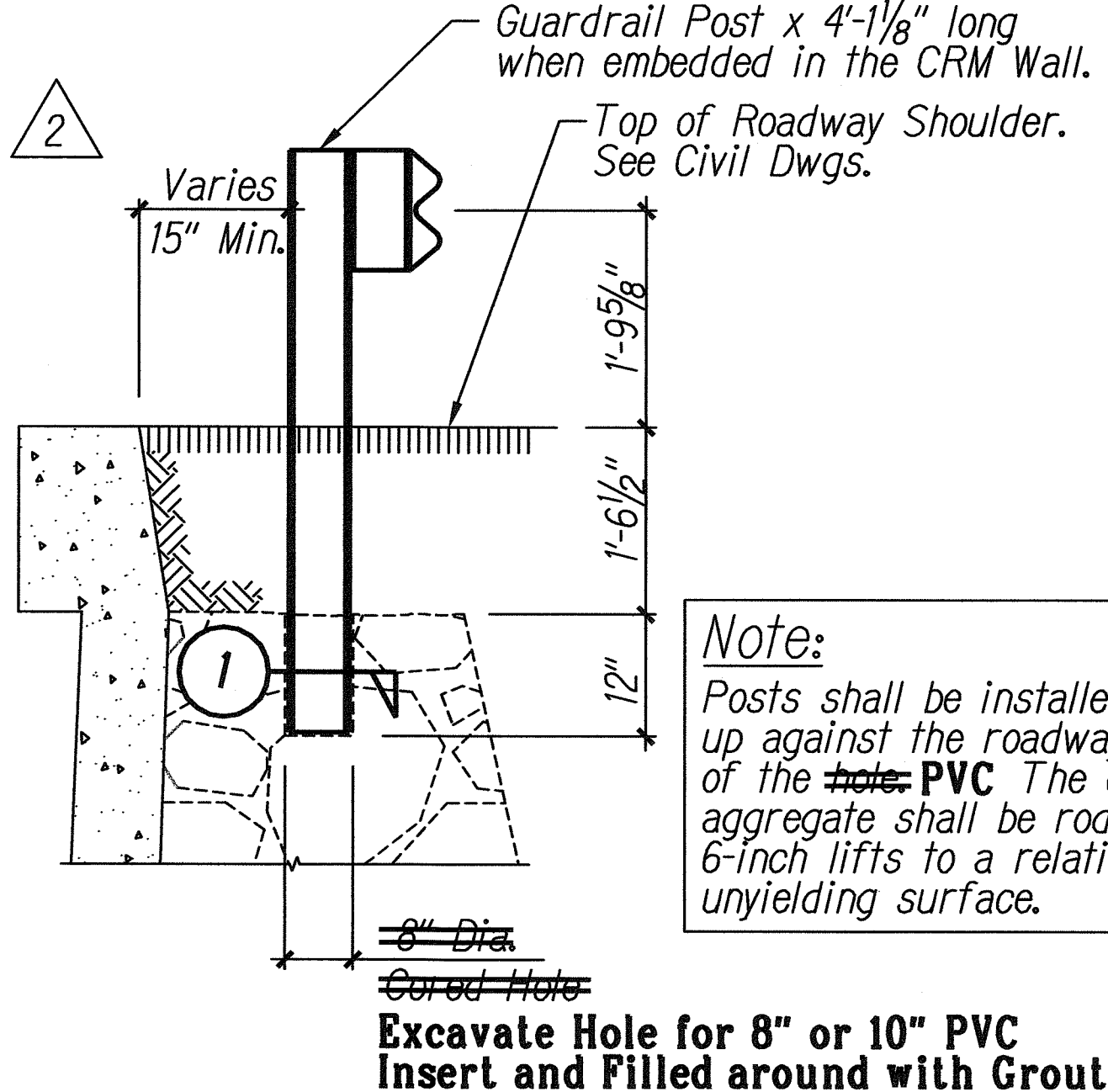
**TYP. DBL LAYER TIEBACK WALL
SECTION AND DETAILS**

**KUAMOO ROAD RETAINING WALL
IN THE VICINITY OF M.P. 1J
PROJECT NO. 580A-01-02**

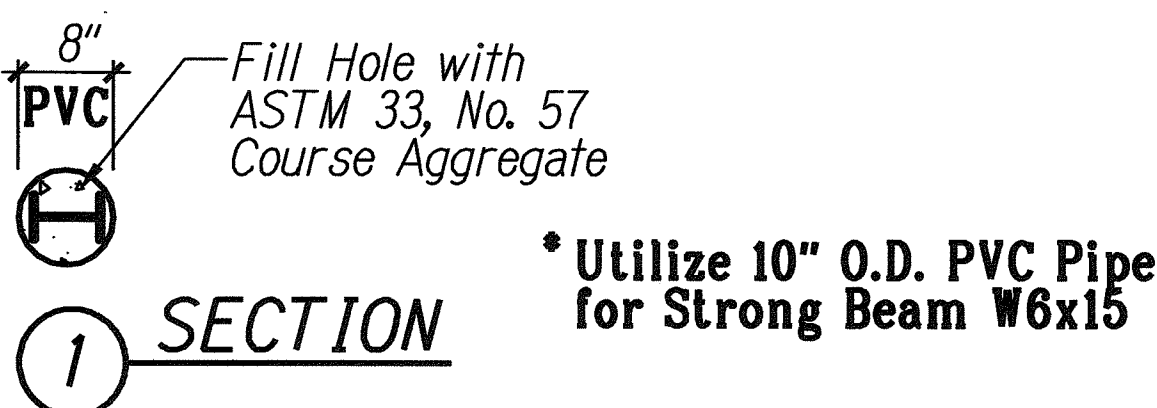
Scale: As Noted Date: September 2005
SHEET No. **S-4** OF **8** SHEETS



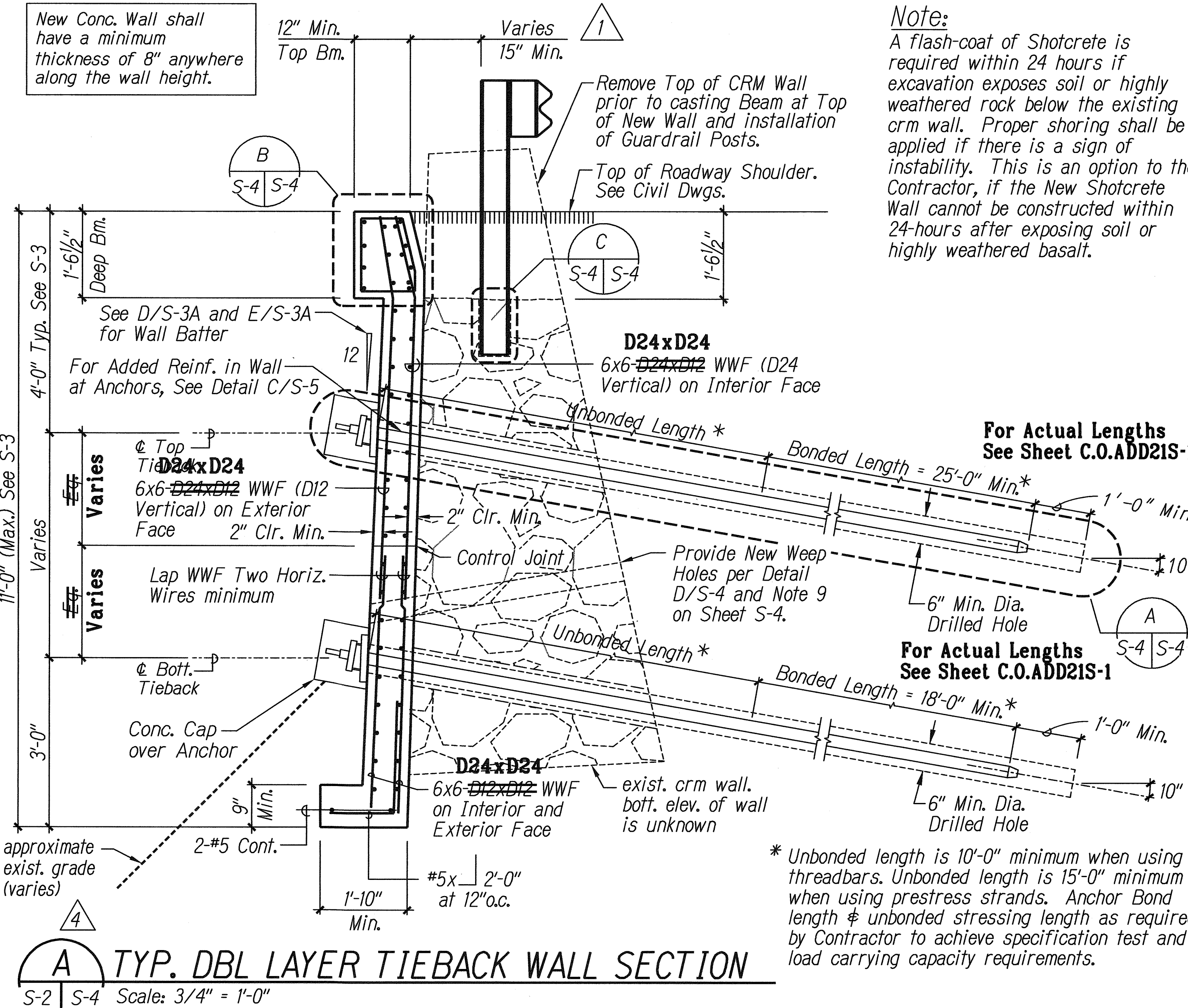
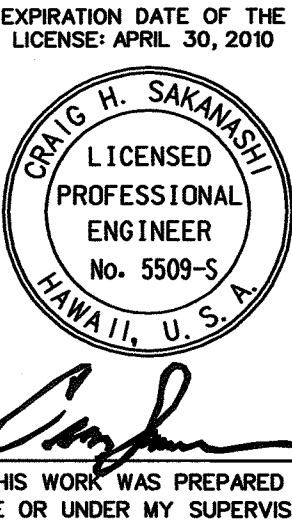
B TOP BEAM DETAIL
Scale: 1 1/2" = 1'-0"



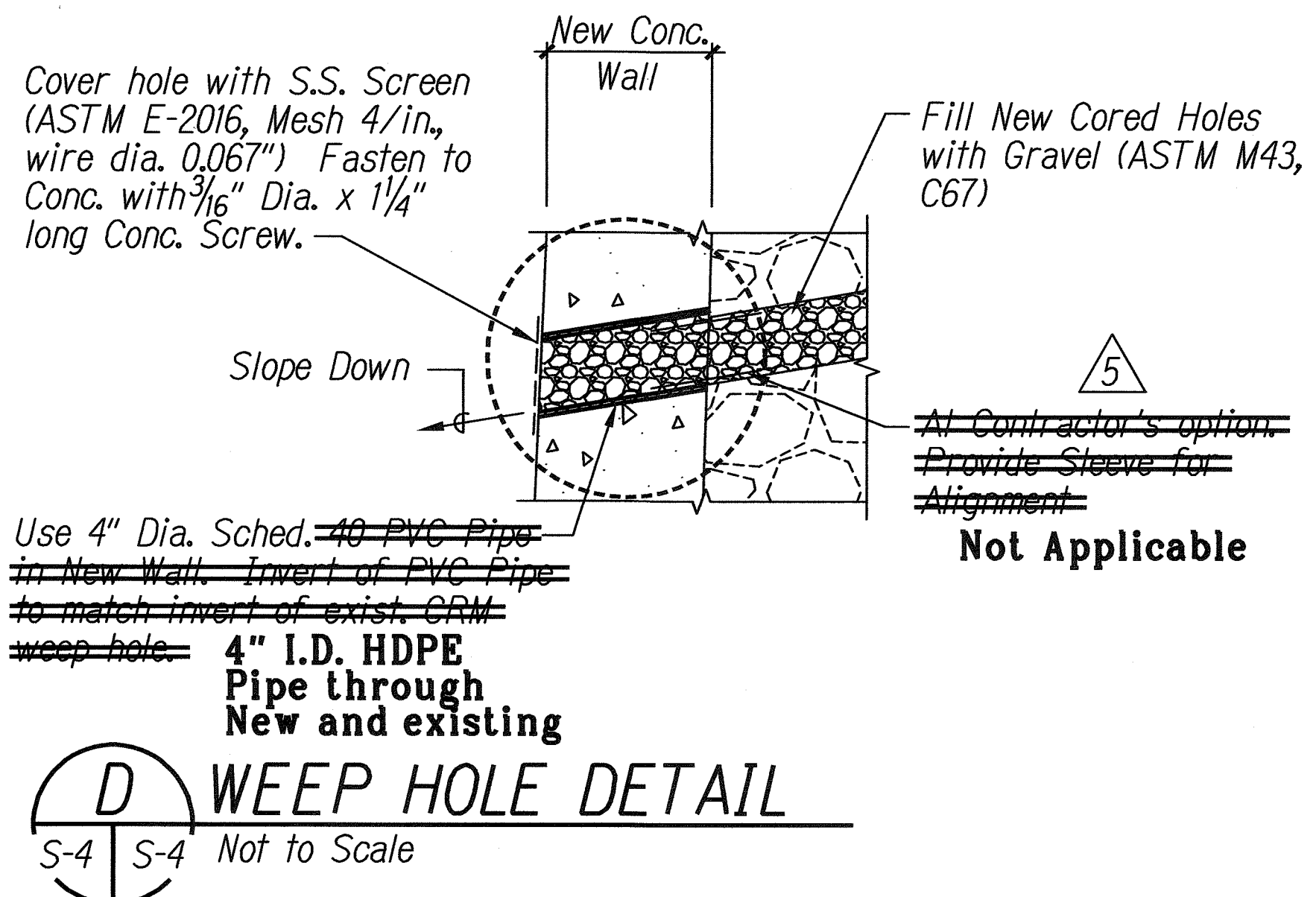
**GUARDRAIL POST
IN EXIST. CRM WALL**
Scale: 3/4" = 1'-0"



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



A TYP. DBL LAYER TIEBACK WALL SECTION
Scale: 3/4" = 1'-0"



D WEEP HOLE DETAIL
Scale: Not to Scale

- Note:**
- If CRM weep hole cannot be cleaned or weep holes cannot be found, Core New 4" Dia. Weep Holes. New Weep Holes to be approx. 6" to 9" above Finish Grade at Wall Face and 6'-4" Maximum Horiz.
 - Reinf. in Conc. not shown for clarity.
 - Slope New Holes 1/4" per foot.
 - No Weep Holes found in existing CRM wall.**

DATE	3/05
DESIGNED BY	2/05
TRACED BY	3/07
NOTED BY	
INVESTIGATED BY	
QUANTIFIED BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
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TIEBACK DEPTH

WALL #1

Designation Drill Depth (ft.)

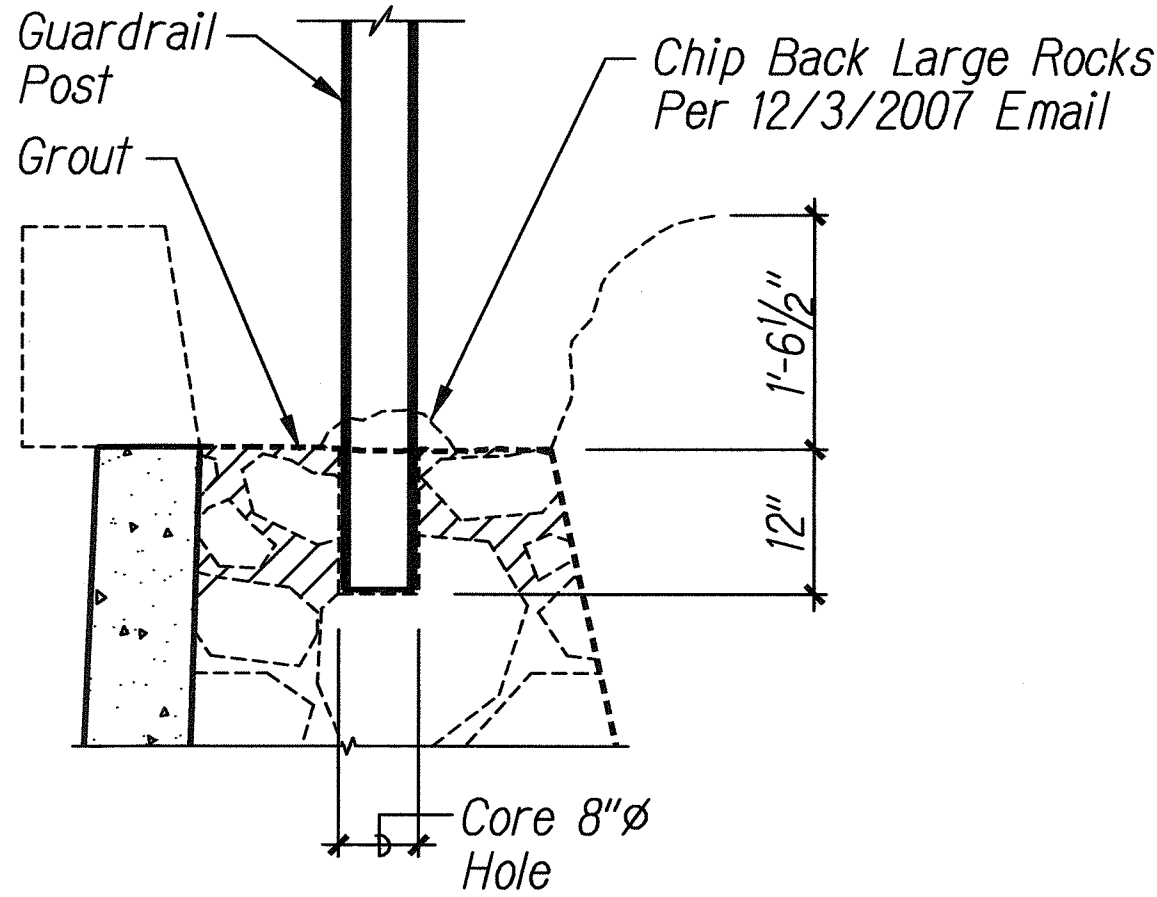
W1-1	37
W1-2	37
W1-3	37
W1-4	37
W1-5	37
W1-6	37
W1-7	37
W1-8	37
W1-9	37
W1-10	37
W1-11	37
W1-12	37
W1-13	37
W1-14	37
W1-15	37
W1-16	37
W1-17	37
W1-18	37
W1-19	37
W1-20	37
W1-21	37
W1-22	37
W1-23	37
W1-24	29
W1-25	29
W1-26	29
W1-27	29
W1-28	29
W1-29	29
W1-30	29
W1-31	29
W1-32	29
W1-33	29
W1-34	29
W1-35	29
W1-36	29
W1-37	29
W1-38	29
W1-39	29

TIEBACK DEPTH

WALL #2

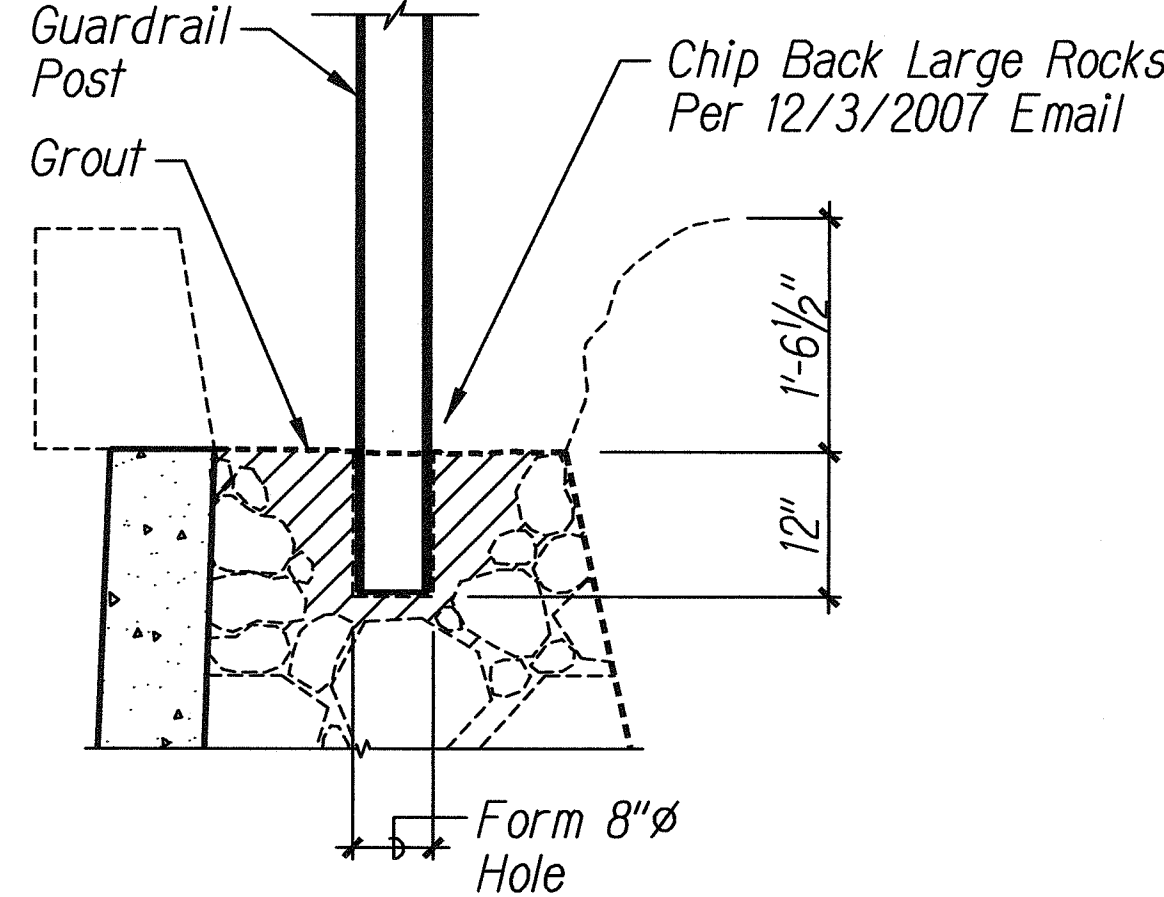
Designation Drill Depth (ft.)

W2-1	37
W2-2	37
W2-3	37
W2-4	37
W2-5	37
W2-6	37
W2-7	37
W2-8	37
W2-9	37
W2-10	37
W2-11	37
W2-12	29
W2-13	29
W2-14	29
W2-15	29
W2-16	29



If rocks are large and removal would result in large oversized holes:
First chip back rock to the proper depth (See Email of 12/3/2007). Install PVC insert and grout. Place guardrail post as shown in contract drawings.

A IN EXIST. CRM WALL
S-4A S-4A Scale: 3/4" = 1'-0"

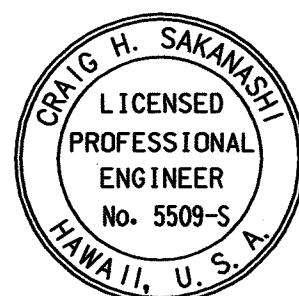


If rocks are small and loose:
Remove rocks in the vicinity of the post location to the proper depth. Place an 8" or 10" PVC pipe and grout area around post. Insure grout is properly consolidated around insert and loose rocks around area of the post.

B IN EXIST. CRM WALL
S-4A S-4A Scale: 3/4" = 1'-0"

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

EXPIRATION DATE OF THE LICENSE: APRIL 30, 2010



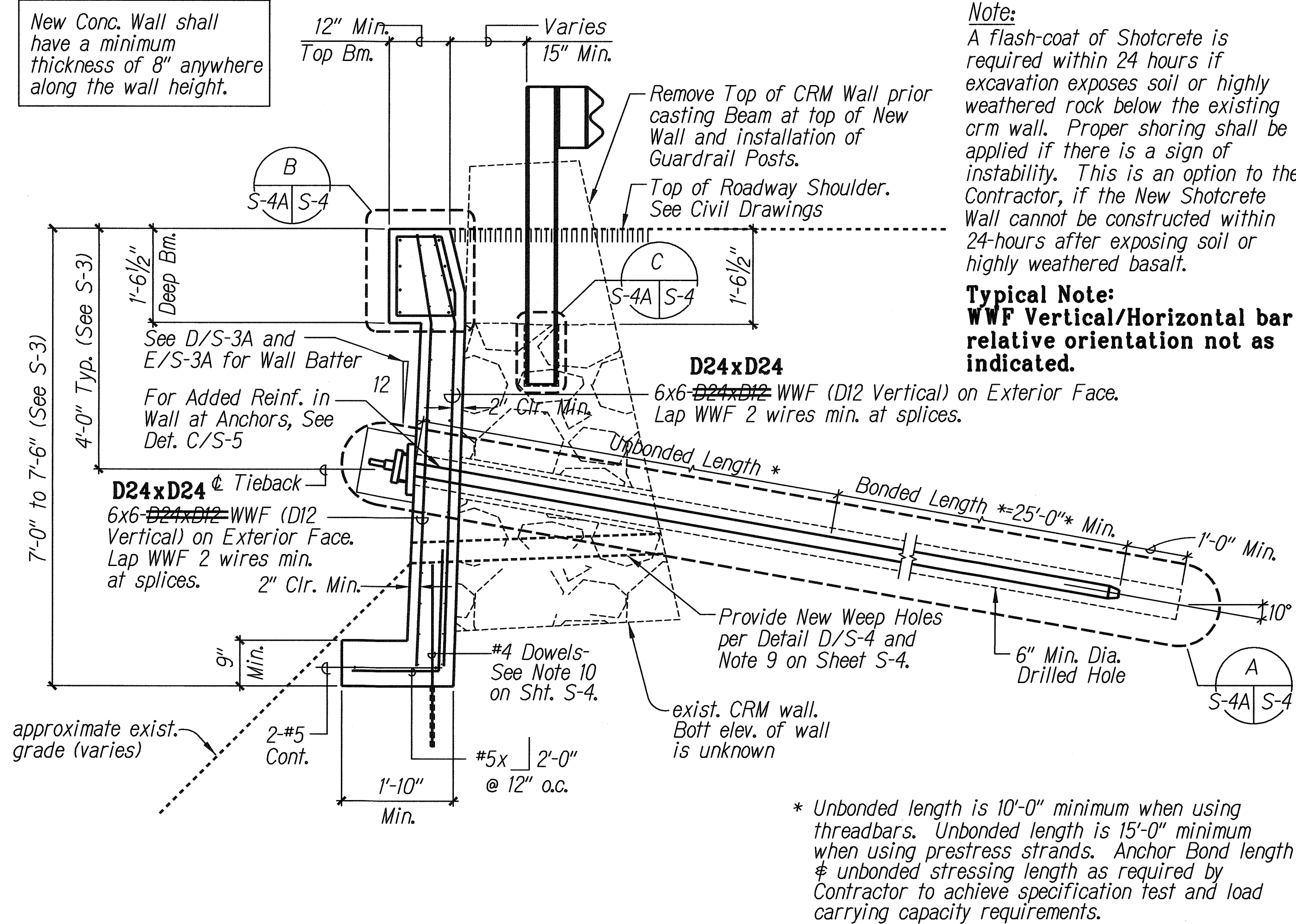
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TYP. DBL LAYER TIEBACK WALL SECTION AND DETAILS	
KUAMOO ROAD RETAINING WALL IN THE VICINITY OF M.P. 1J PROJECT NO. 580A-01-02	
Scale: As Noted	Date: September 2005
SHEET No. S-4A OF 8 SHEETS	

"AS-BUILT"

C.O.ADD.21S-1

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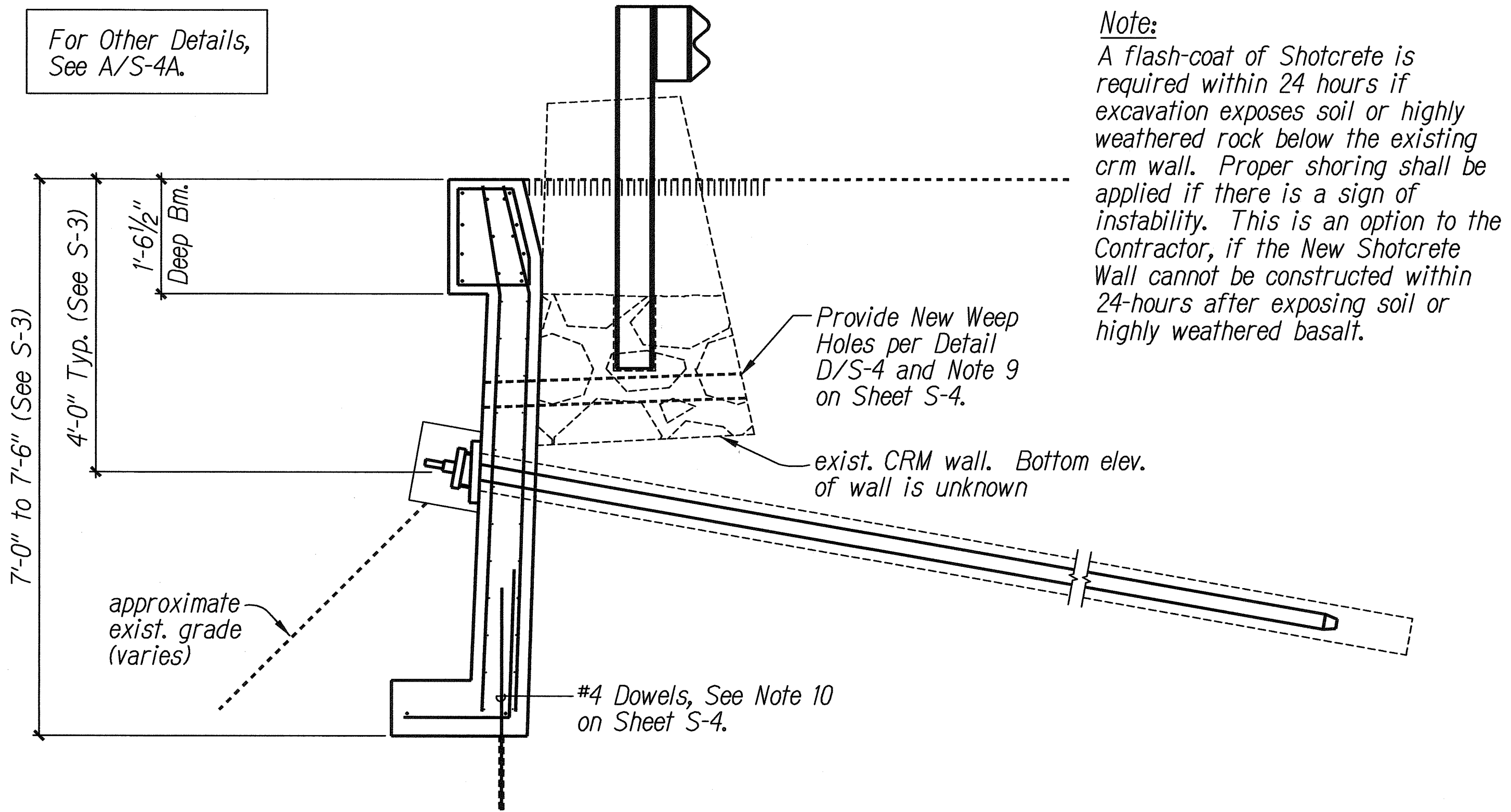


A

TYP. SINGLE LAYER TIEBACK WALL SECTION

S-2 S-4A

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



B

SINGLE LAYER TIEBACK WALL SECTION W/ SHORT CRM WALL

S-2 S-4A

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

ORIGINAL PLAN	DATE	3/07
DESIGNED BY	DATE	
CHECKED BY	DATE	
NOTED BY	DATE	
QUANTITIES BY	DATE	
CHECKED BY	DATE	

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

3/21/07

1

ADDED THIS SHEET

REVISION

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

SINGLE LAYER TIEBACK WALL

SECTIONS

KUAMOO ROAD RETAINING WALL

IN THE VICINITY OF M.P. 1J

PROJECT NO. 580A-01-02

Scale: As Noted

Date: September 2005

SHEET No. S-4A OF 8 SHEETS

C.O.2IS-1

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE	3/07
	DRAWN BY _____		
NOTE BOOK	TRACED BY _____		
	DESIGNED BY _____		
	QUANTITIES BY _____		
CADERS-Edwin S.	CHECKED BY _____		