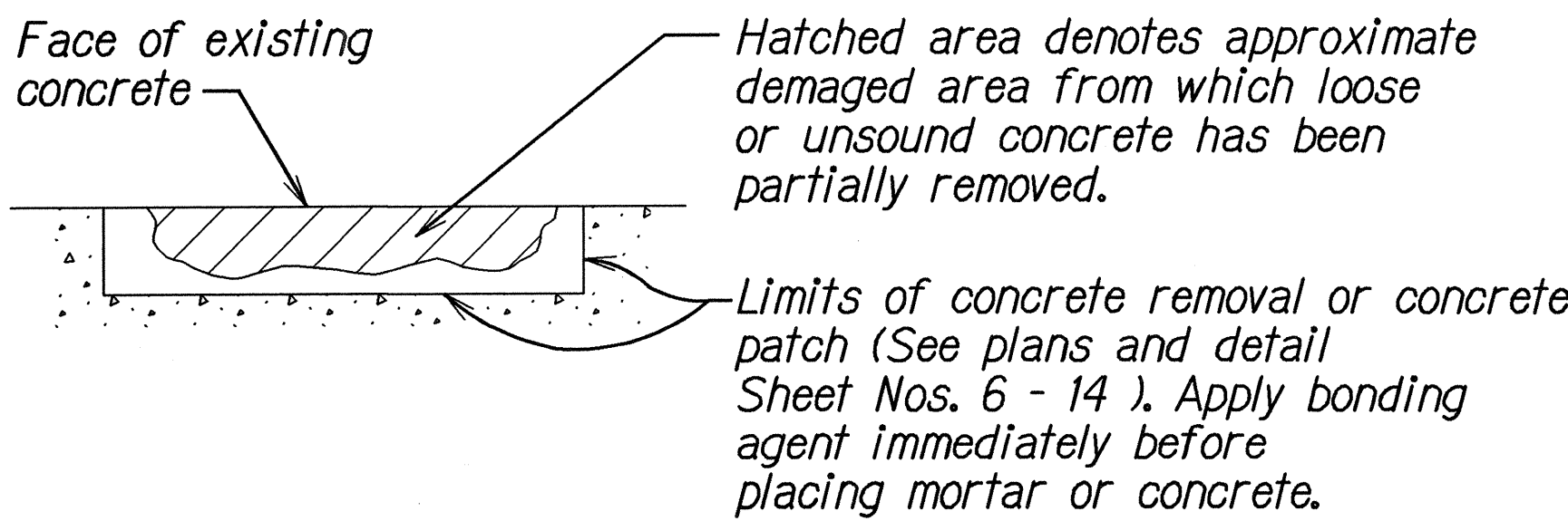


CRACK AND SPALL REPAIR NOTES

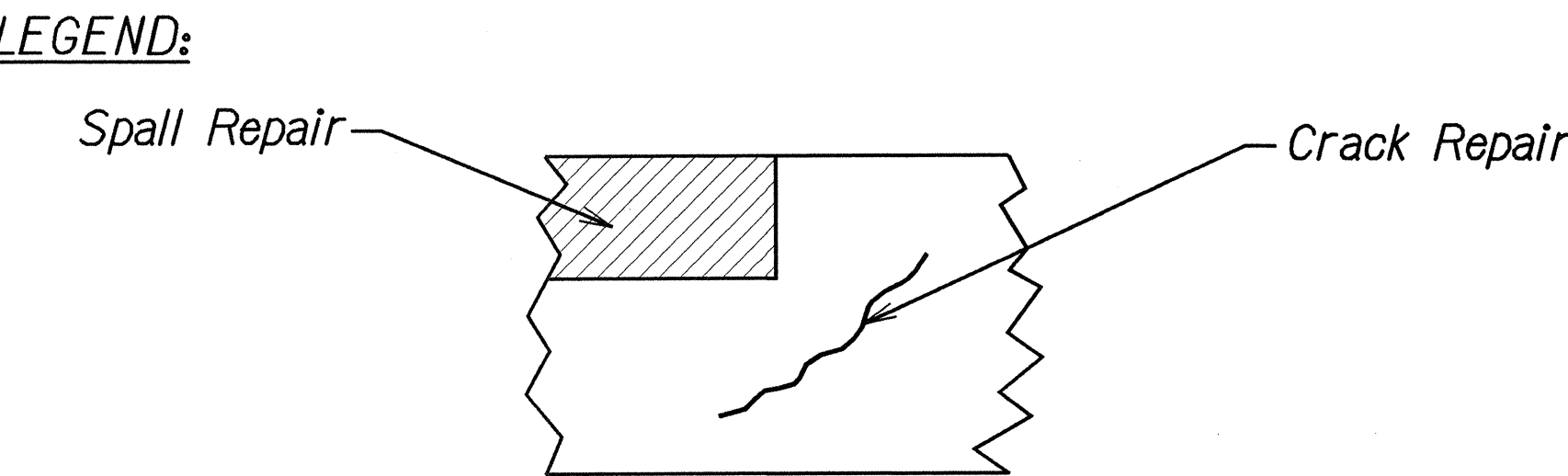
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-050-K(27)	2005	15	27

1. All deteriorated, damaged, cracked, spalled, honeycombed concrete or concrete over rusted reinforcing bars shall be removed as shown and repaired with hand-placed mortar or shotcrete.



2. Reinforcing bars that have rusted more than 25% of the original cross sectional area shall be strengthened as shown on the "Repair Splice Detail," See Sheet No. 16.
3. Efflorescence shall be inspected and repaired as directed by the Engineer.
4. The Engineer shall determine all areas to be repaired and the limits of repair at each area.
5. Apply Hydrozo Clear 16 Waterproofing or equivalent to repaired areas as approved by the Engineer. Application shall be according to the Manufacturer's recommendations.
6. Contractor shall exercise extreme care in saw cutting the existing concrete. All damages to the existing reinforcing shall be repaired by the contractor at no cost to the State.
7. All reinforcing steel to be ASTM A615 Grade 40.
8. All welding shall be done in accordance with the current edition of the Reinforcing Steel Welding Code AWS D1.4.

9. INCIDENTAL ITEMS: The following items shall be considered incidental to the various pay items of repair and will not be paid for separately.
- a. Bolts and other miscellaneous hardware including hot-dipped zinc-coating and welded wire fabric.
- b. Cleaning of all exposed, corrded reinforcing steel to sound metal.
- c. Reinforcing bars of repair splice for strengthening corroded bars.
- d. Furnishing and application of Hydrozo Clear 16 Waterproofing Material.

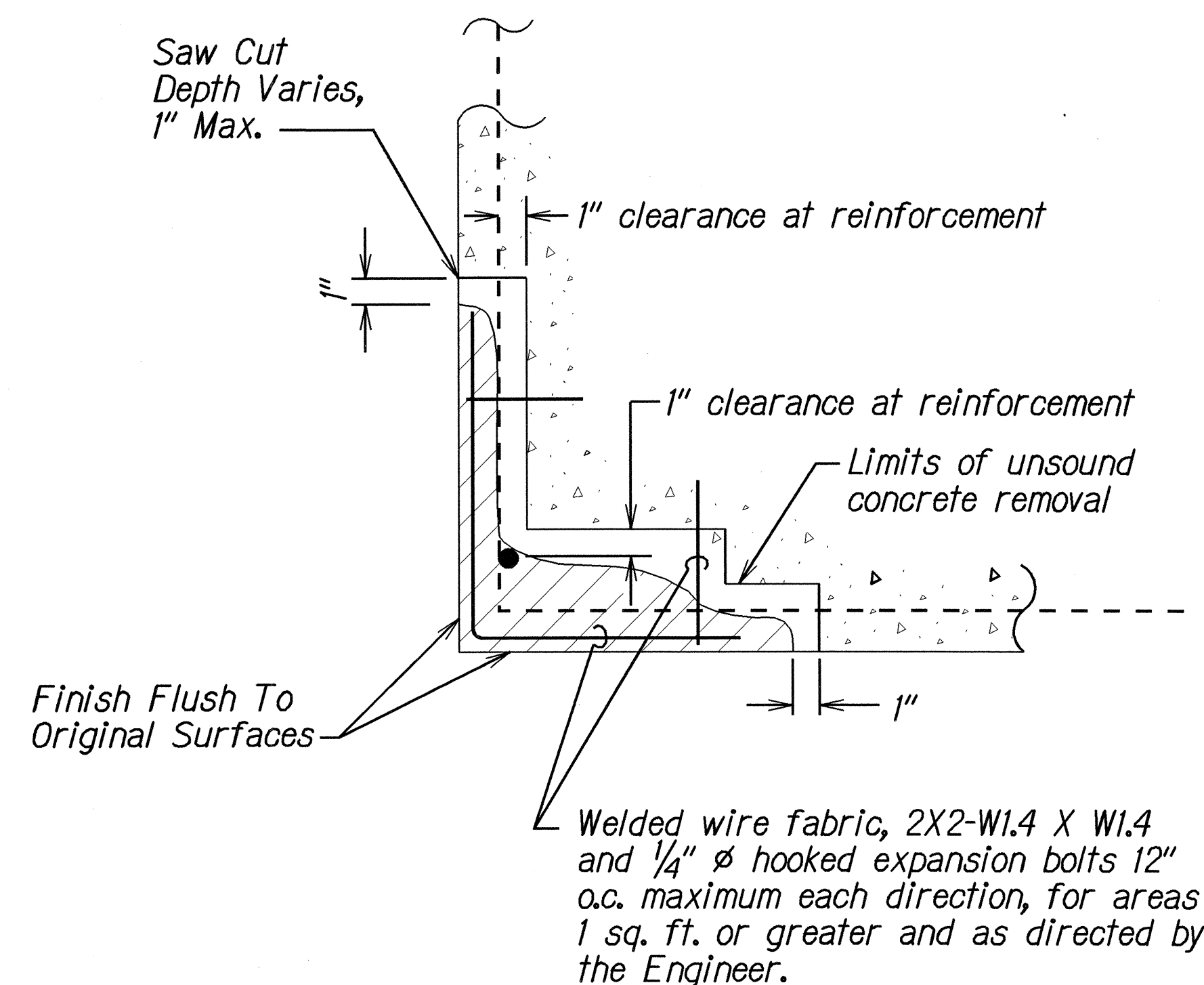


PLAN VIEW OR ELEVATION

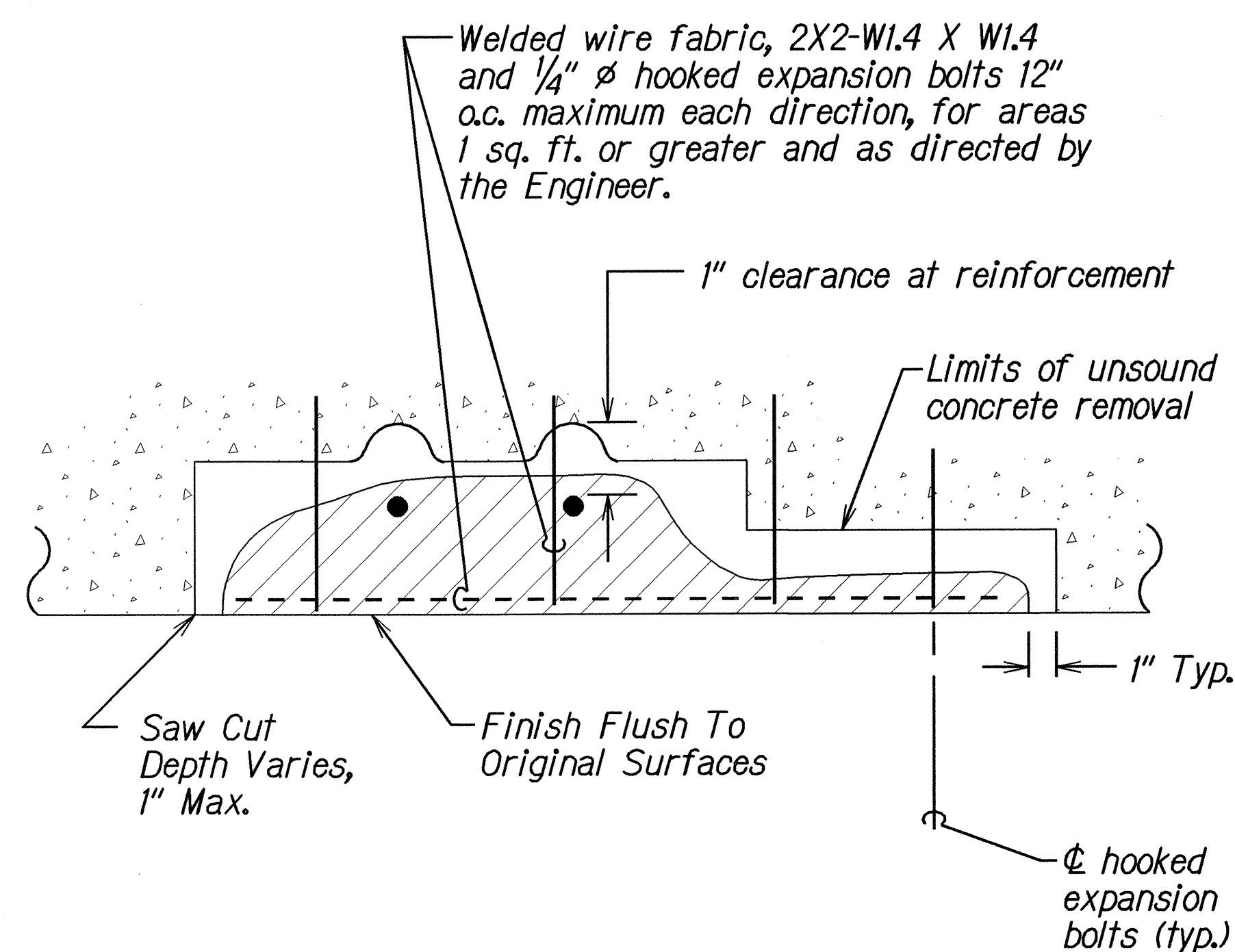
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	6/04
ke2/hell	TRANSMITTED BY	
ke2/hell	QUANTITIES BY	
ke2/hell	CHECKED BY	

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**CRACK & SPALL REPAIR DETAILS**  
KAUMUALII HIGHWAY  
Guardrail and Shoulder Improvements  
at Hanapepe Bridge and  
Mana Bridge Structure Nos. 1, 2, 3 & 4  
Federal Aid Project No. STP-050-K(27)  
Date: Nov. 2004  
SHEET No. 1 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-050-1(27)	2005	16	27

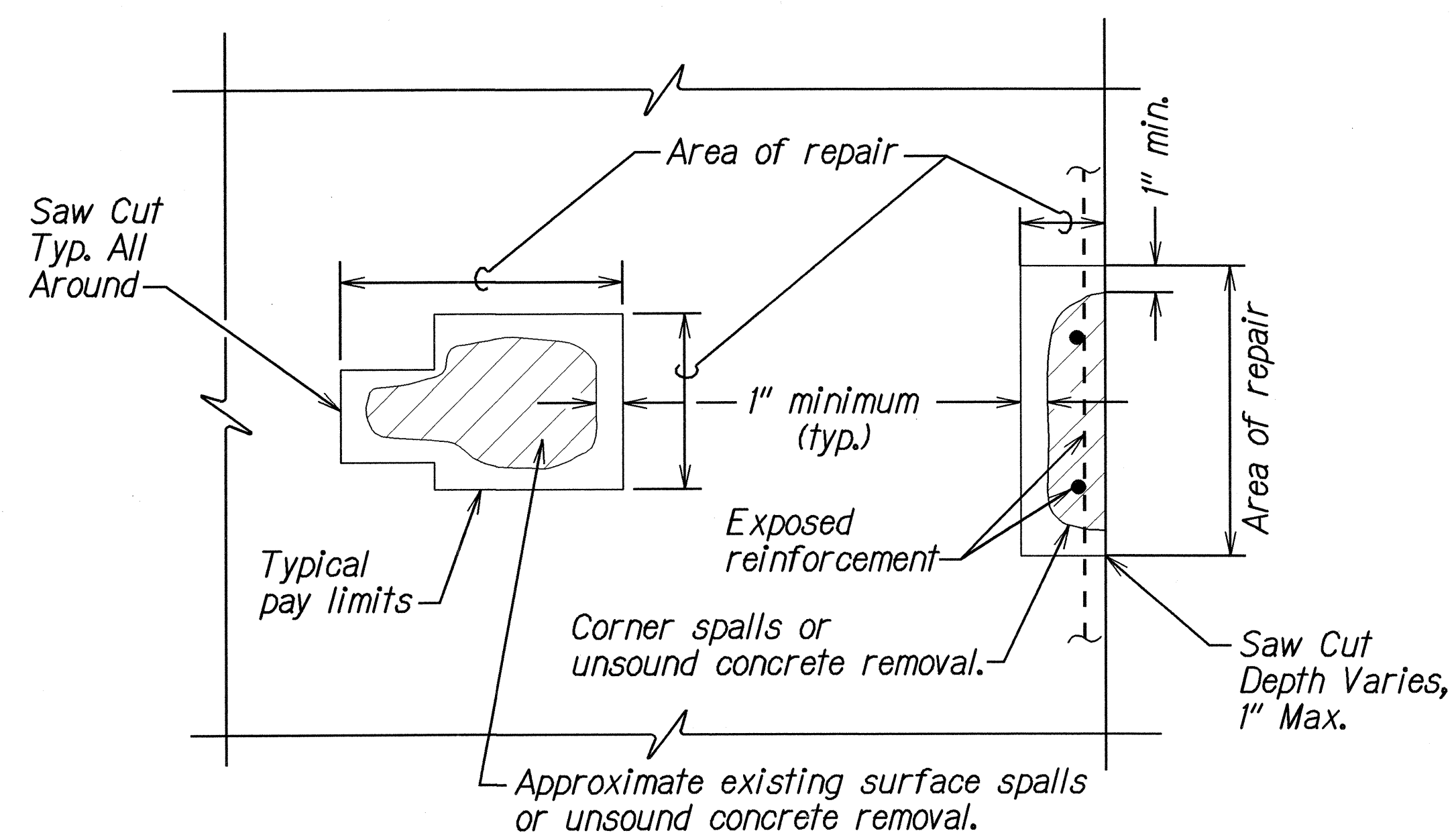


AT CORNER

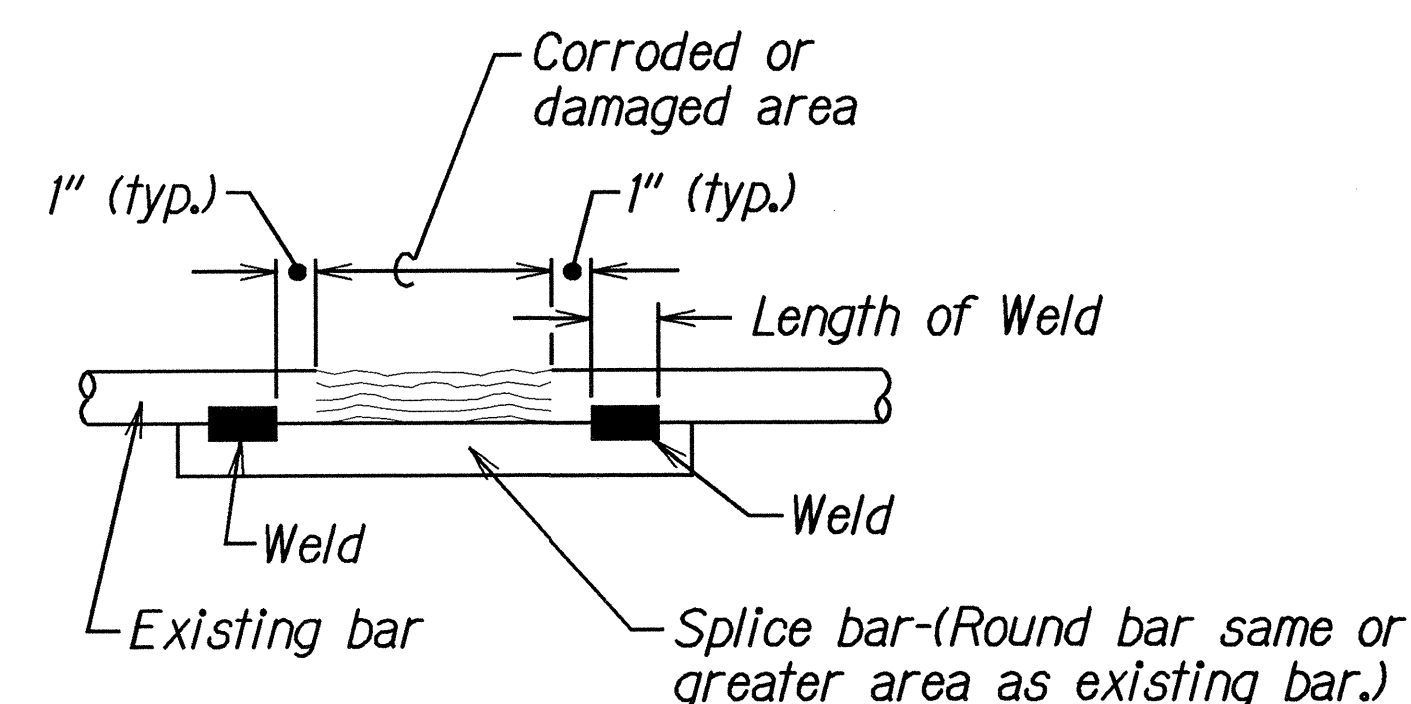


AT SURFACE

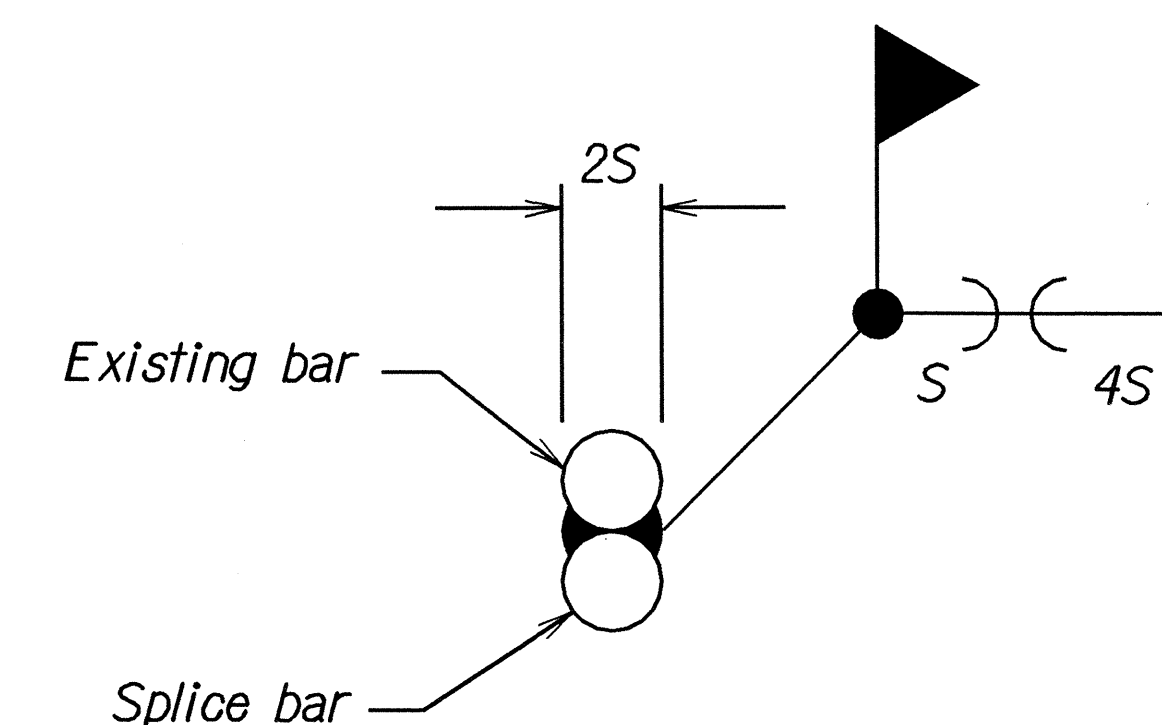
TYPICAL REPAIRS AT CONCRETE SPALLS  
Not To Scale



PLAN OR ELEVATION  
Not To Scale



TYPICAL REINFORCING BAR  
REPAIR SPLICE DETAIL  
Not To Scale



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CRACK & SPALL REPAIR DETAILS**

**KAUMUALII HIGHWAY**  
**Guardrail and Shoulder Improvements**  
**at Hanapepe Bridge and**  
**Mana Bridge Structure Nos. 1, 2, 3 & 4**  
**Federal Aid Project No. STP-050-1(27)**

Scale: As Shown Date: Nov. 2004

SHEET No. 2 OF 2 SHEETS