

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HWY-0-01-72	1972	2	43

## GENERAL NOTES

### Symbols & Abbreviations:

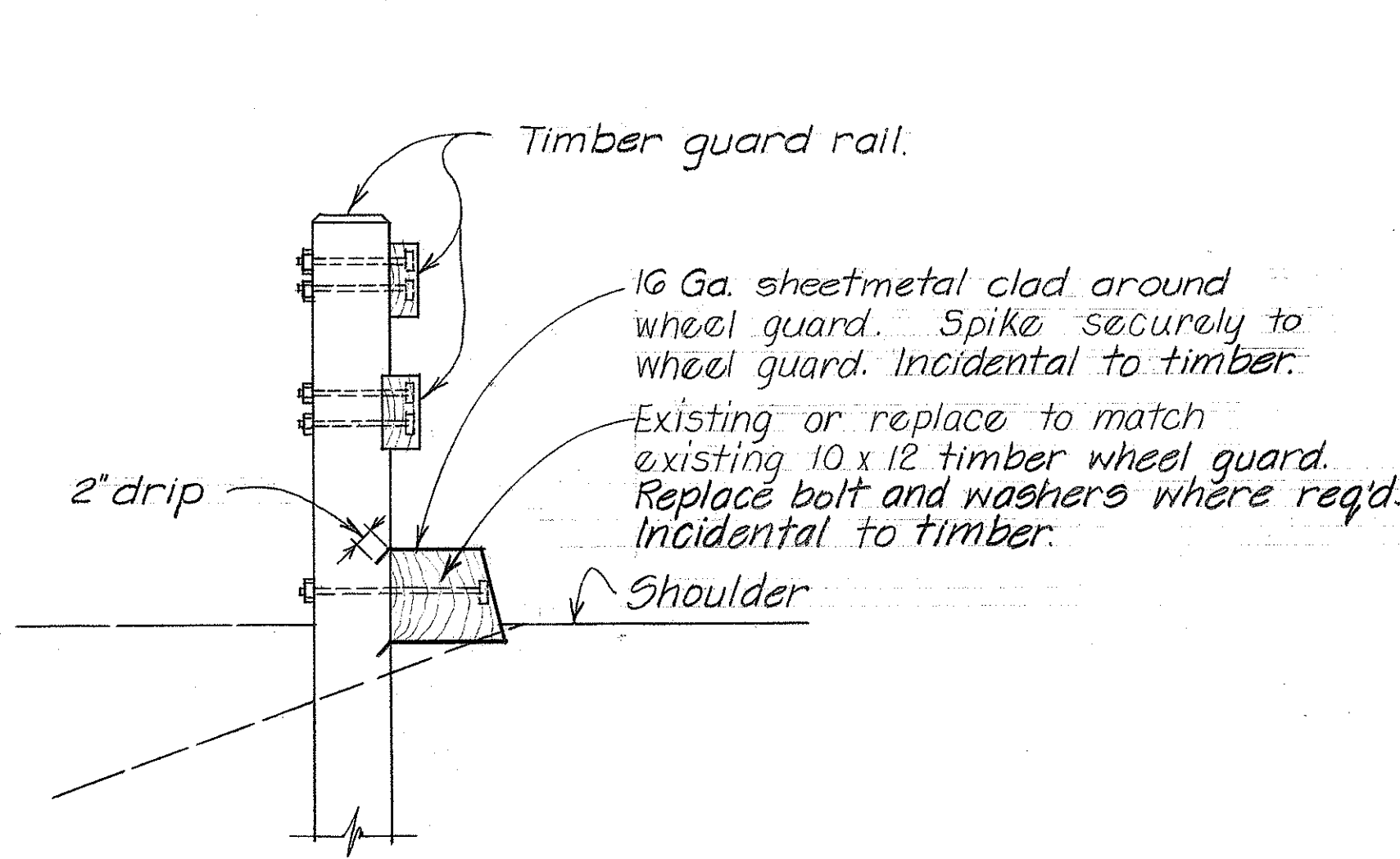
**Detail:** - Denotes specific details and location of repairs or rehabilitation to existing timber bridges.

Note: Timber Repair Work Deleted In Original Contract.

### General:

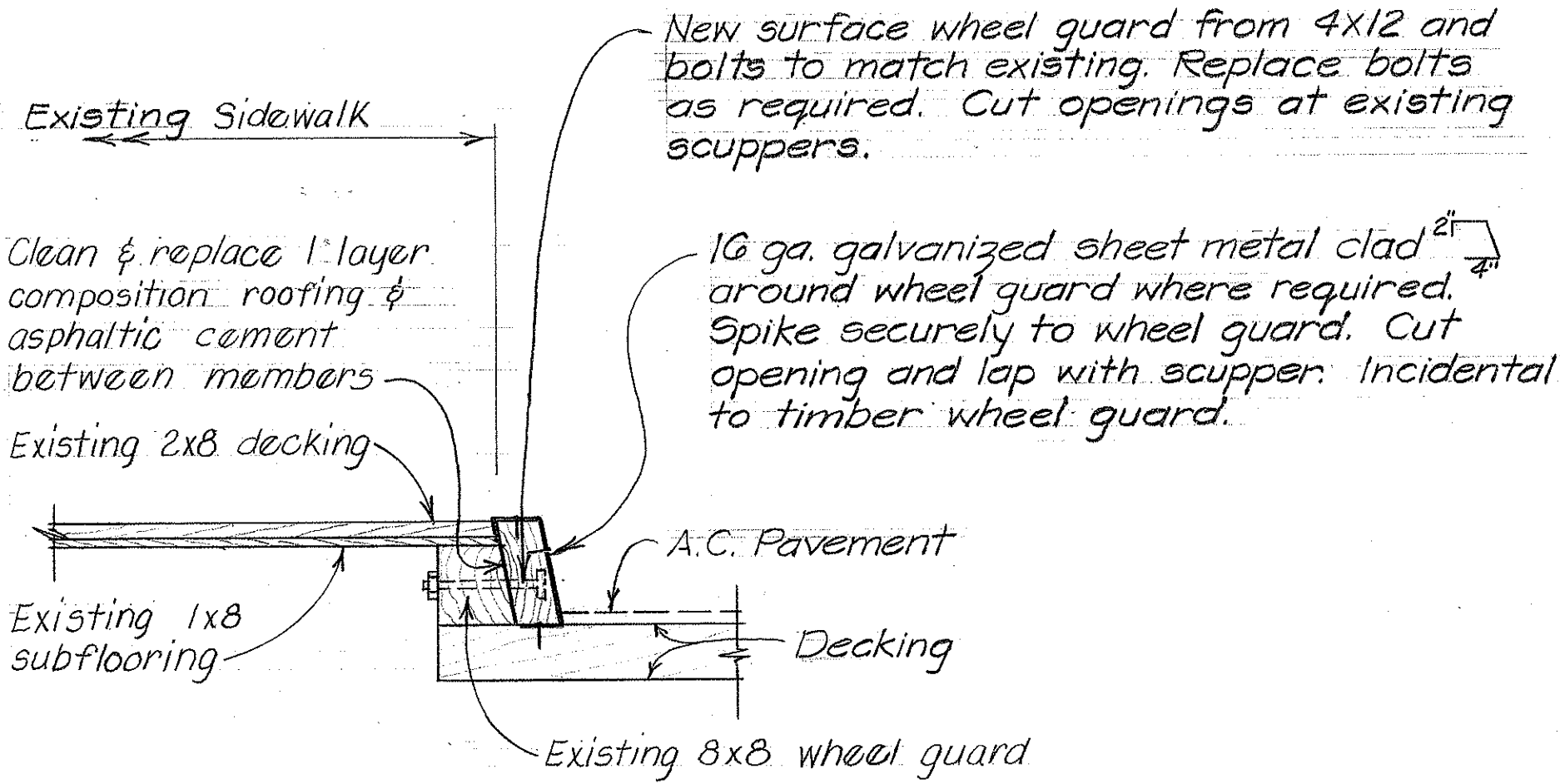
- Existing timber structures are similar in construction with corresponding detail and is generally applicable to each structure. Where the required details are not covered on one structure, refer to the other structures for related details.
- All items noted incidental will not be paid for separately.
- Connection bolts, nuts, washers to be galvanized.
- All repairs or rehabilitation shall match or be identical with existing construction.
- See specifications for painting and timber preservative treatment requirements.
- Removal of silt, sand, debris or earth min. 2'-0" laterally and 1'-0" vertically each side of timber portions sub-structure, ~~or from deck shall be incidental to timber repair and shall not be paid for separately. See Makaha Bridge #3 (Sht. 2 of 2) for typical detail.~~
- All miscellaneous materials and work such as cleaning and unplugging existing scuppers, excavation and backfill for G.R.P. sheet metal, composition roofing, asphalt cement, nails, spikes, nuts and bolts shall be incidental to the various pay items and shall not be paid for separately.
- Exact locations of bridges may be verified by calling the Bridge Design Section, Highways Division, phone number 548-7538.
- Print name of bridge (see specifications).

This work done under C.C.O. #2 - Makaha Bridges 3, 4 and 5.



TYPICAL WHEEL GUARD DETAIL (A)

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



TYPICAL SURFACE WHEEL GUARD DETAIL (B)

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

ORIGINAL PLAN	DATE
DESIGNED BY	
CHECKED BY	
NOTED BY	
NO.	

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
REHABILITATION AND REPAIRS TO EXISTING MAKAHA BRIDGE #2, #3, #3A, #3B, #4, #5, #5A TYPICAL DETAILS AND NOTES	
PROJ. NO HWY-0-01-72	NOV., 1971
SHEET No. TI OF 1 SHEETS	

# NOTES

**Detail.** - Denotes specific details & location of repairs or rehabilitation to existing concrete bridges.

Hatched area denotes approx. damaged or deteriorated area. Apply bonding agent immediately before placing mortar or concrete.

Face of existing concrete

Diagram illustrating the limits of concrete removal and concrete patch. It shows a cross-section of a concrete slab with a rectangular area of damaged concrete. The area to be removed is indicated by a dashed line, and the area to be patched is indicated by a solid line. Arrows point to the boundaries of the patch.

Symbol :

Remove sections of spalled, deteriorated or cracked areas to sound concrete. All dimensions are minimum dimensions. Exact locations & limits of concrete repairs to be determined in the field by the engineer.

Note A: Where reinforcing bars occur, provide minimum 2" concrete cover. See specification for wire mesh requirements.

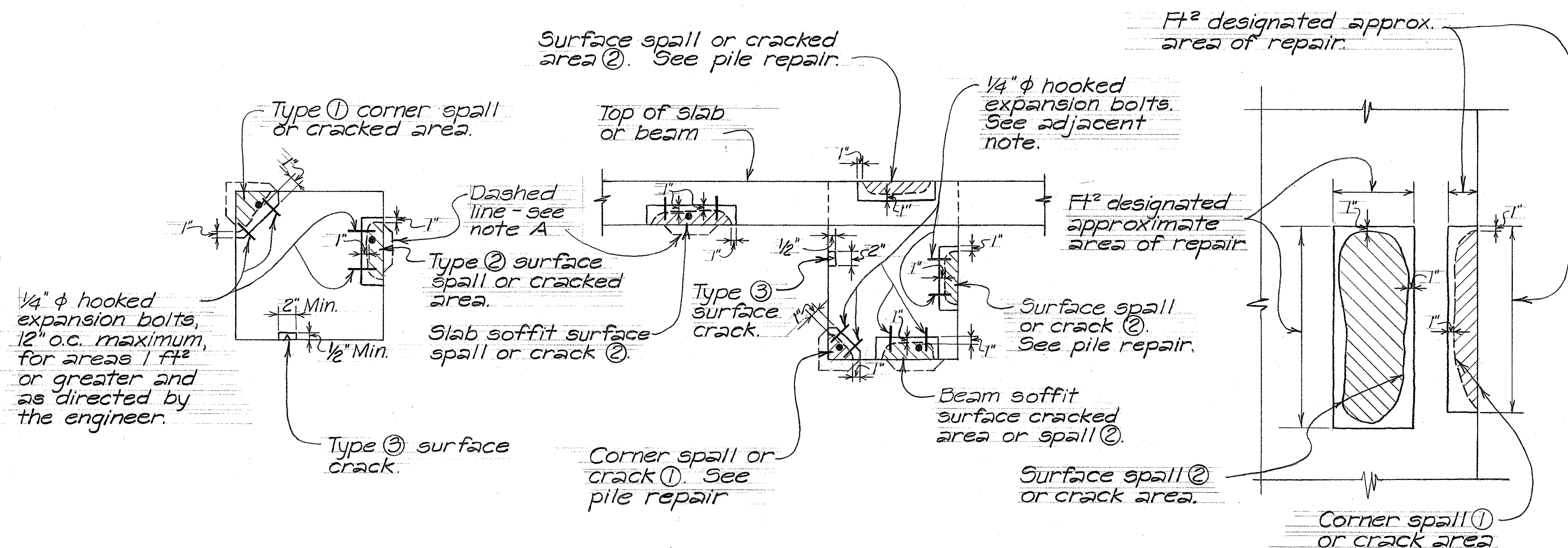
Incidental Items:

The following items of work shall be considered incidental to the various pay items listed under Section 640, "Repairs to Bridge with Shotcrete and/or Hand-Placed Mortar" and shall not be paid for separately.

1. Removal of trees or other vegetation growing on the bridge.
2. Realignment of metal nosing.
3. Expansion bolts or other miscellaneous hardware.

General:

1. All items noted incidental will not be paid for separately.
2. Exact locations of bridges may be verified by calling the Bridge Design Section, Highways Division, phone number 548-7538.
3. Contractor's attention is called to the possibility of the existence of utilities on and near some of the structures under repair. He shall verify the nature of the utilities involved from the utility companies. He shall take the necessary precautions to protect the utilities from damage as well as take safety measures to protect the public and his workmen.



PILE SECTION  
(BENTS, COLUMN, RAILING SECTION SIMILAR)

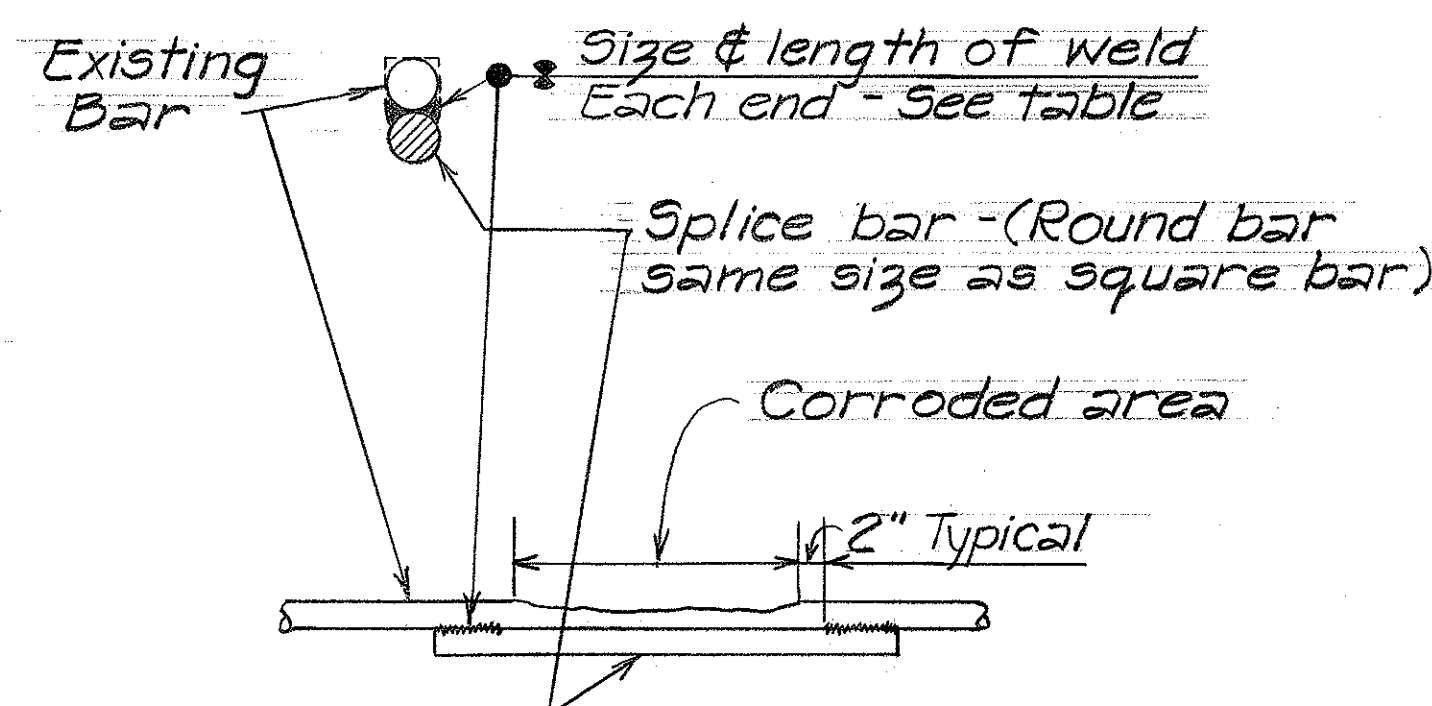
GIRDER, CONCRETE BEAM  
AND SLAB SECTION

PLAN OR ELEVATION

## TYPICAL SPALLED, DETERIORATED OR CRACKED CONCRETE REPAIRS FOR VARIOUS CONDITIONS

NO SCALE

SPlice BAR WELD SCHEDULE		
SIZE OF BAR	SIZE OF WELD	LENGTH OF WELD
$\frac{1}{4}" \phi$	$\frac{1}{8}"$	$1\frac{1}{2}"$
$\frac{1}{2}" \square$	$\frac{1}{4}"$	$1\frac{1}{2}"$
$\frac{3}{4}" \square$	$\frac{1}{4}"$	3"
$\frac{7}{8}" \square$	$\frac{5}{16}"$	$3\frac{1}{2}"$
$1\frac{1}{8}" \square$	$\frac{3}{8}"$	4"



TYPICAL REINFORCING BAR REPAIR SPLICE DETAIL

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

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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

*REHABILITATION AND REPAIRS  
TO CONCRETE STRUCTURES*

*TYPICAL DETAILS AND NOTES*

PROJ. NO HWY-0-01-72 NOV, 1971

**SHEET No. 12 OF 2 SHEETS**