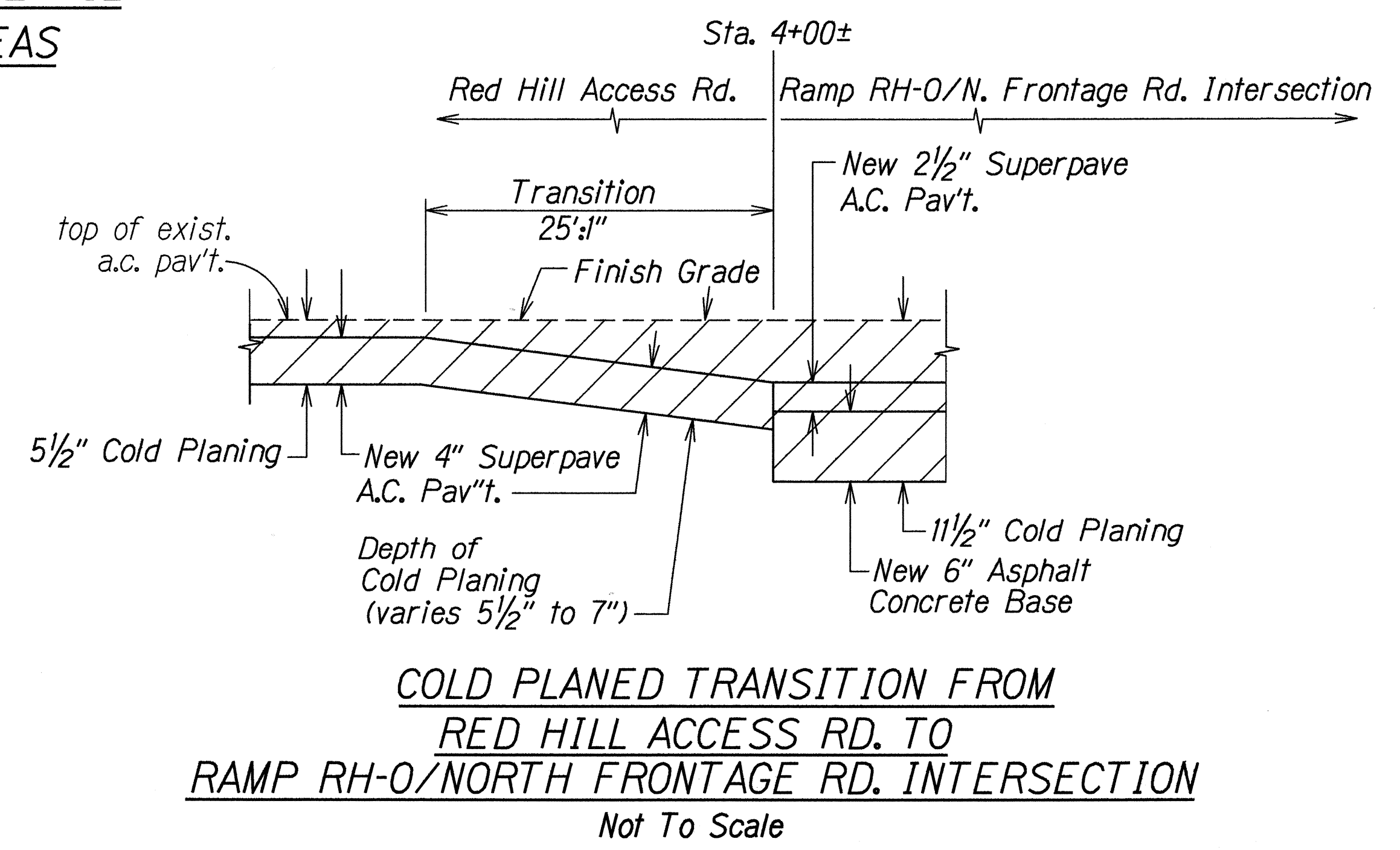
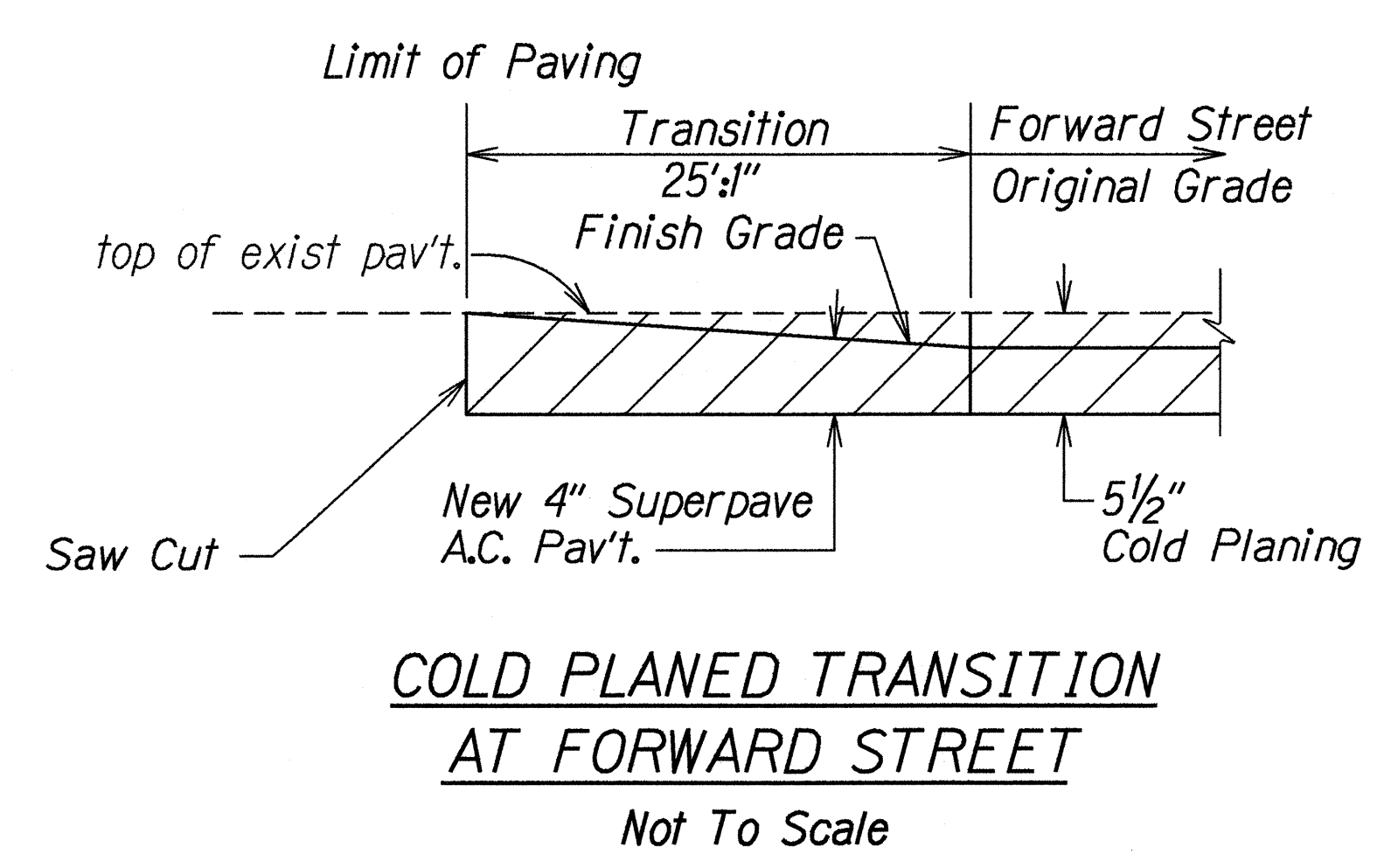
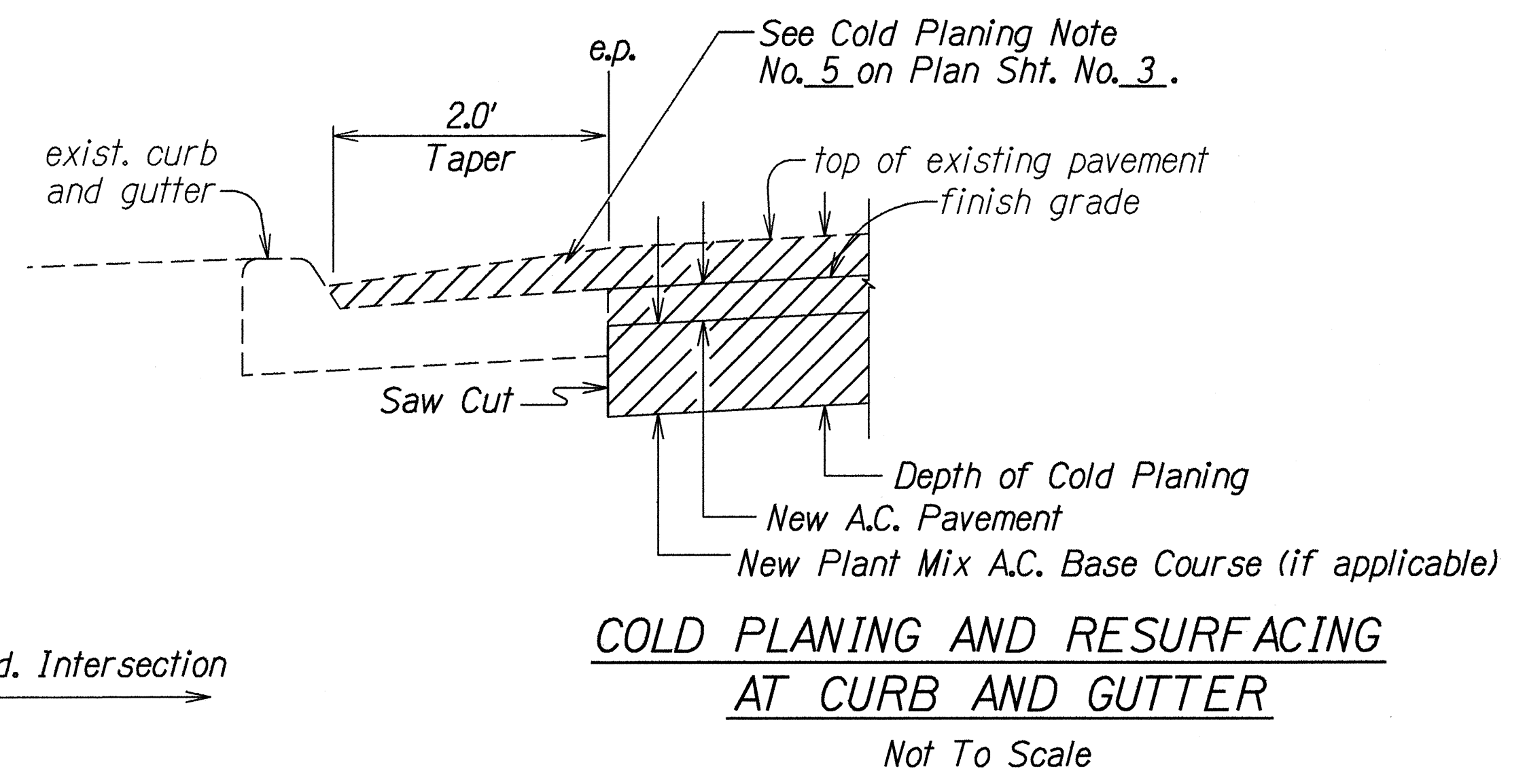
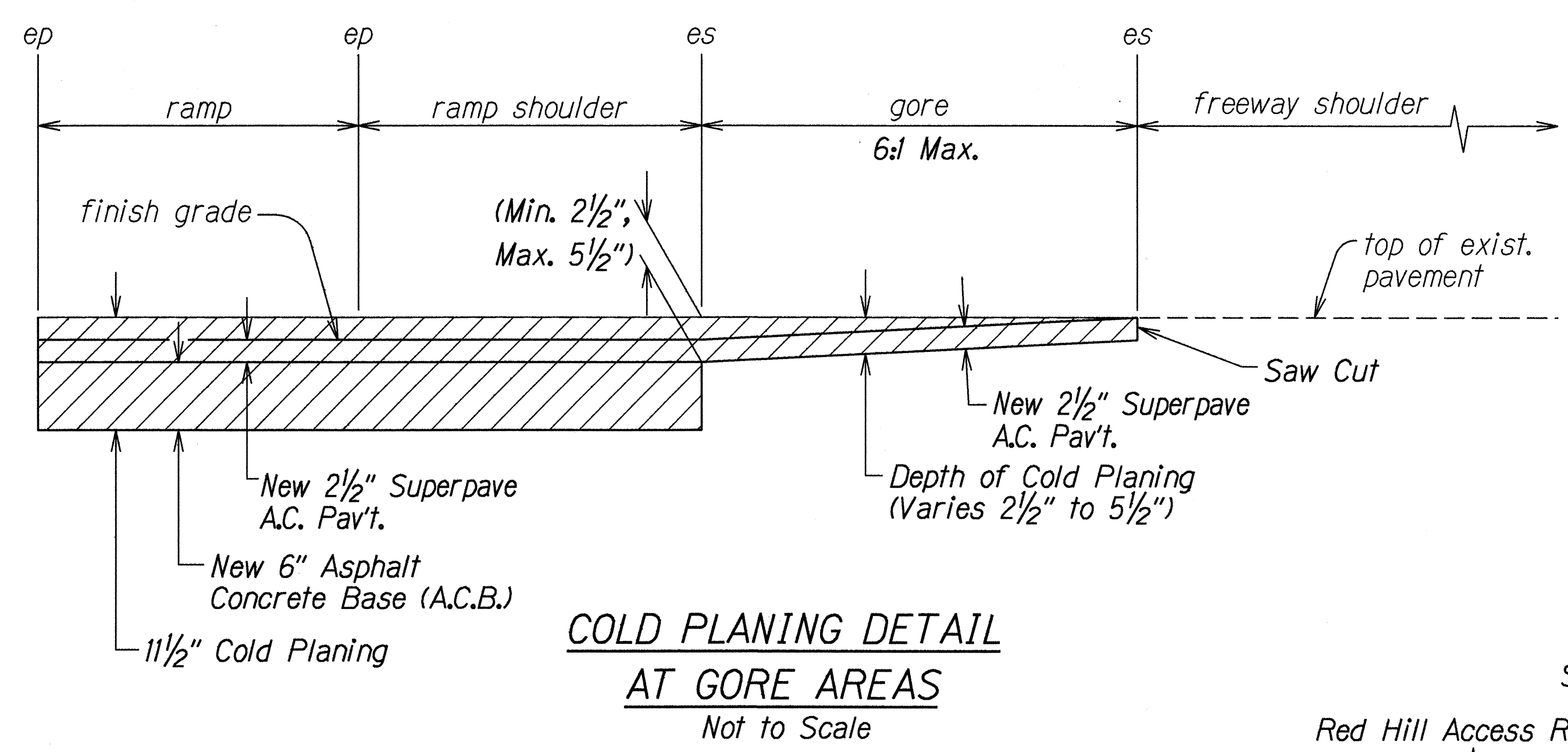
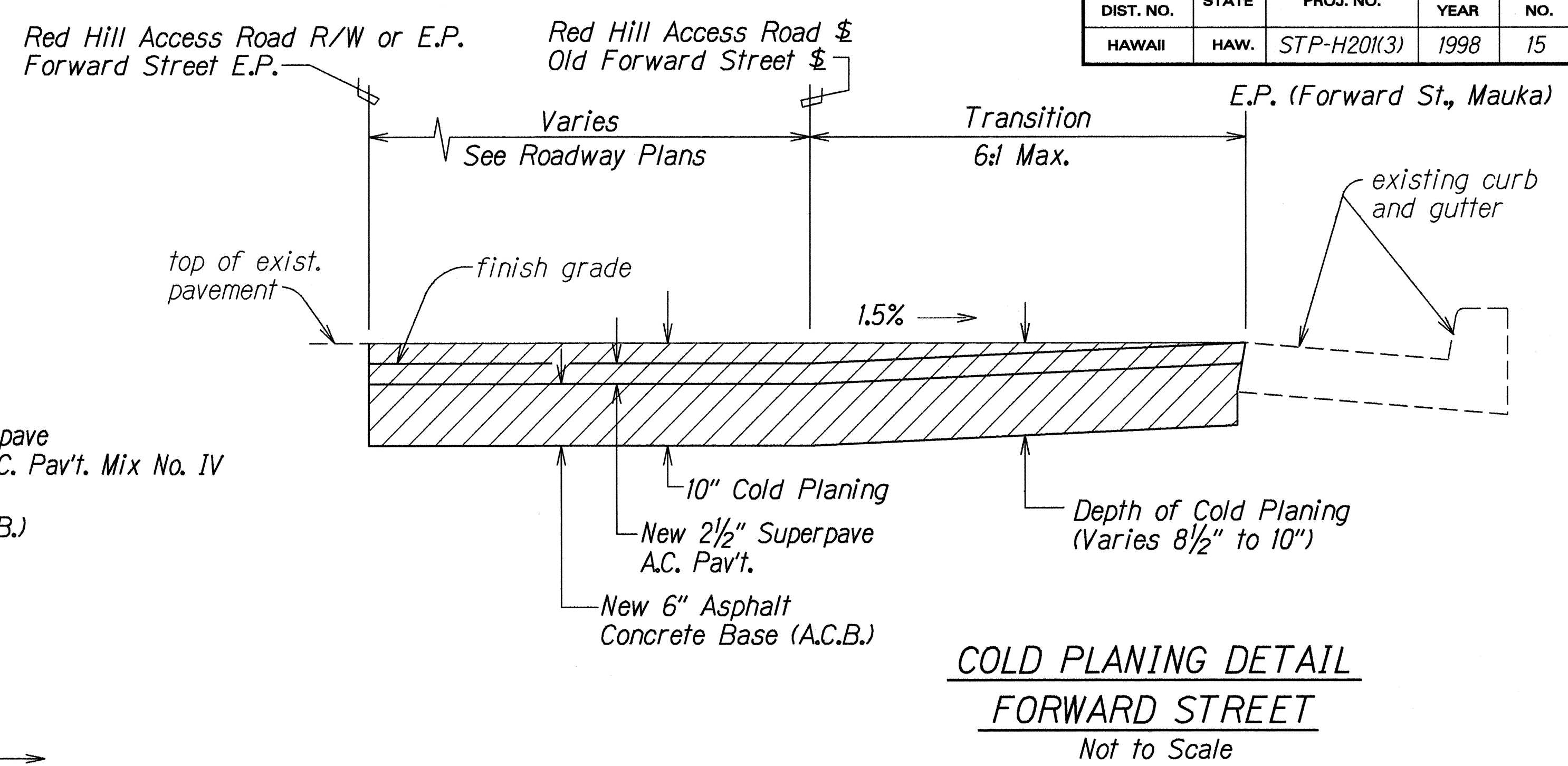
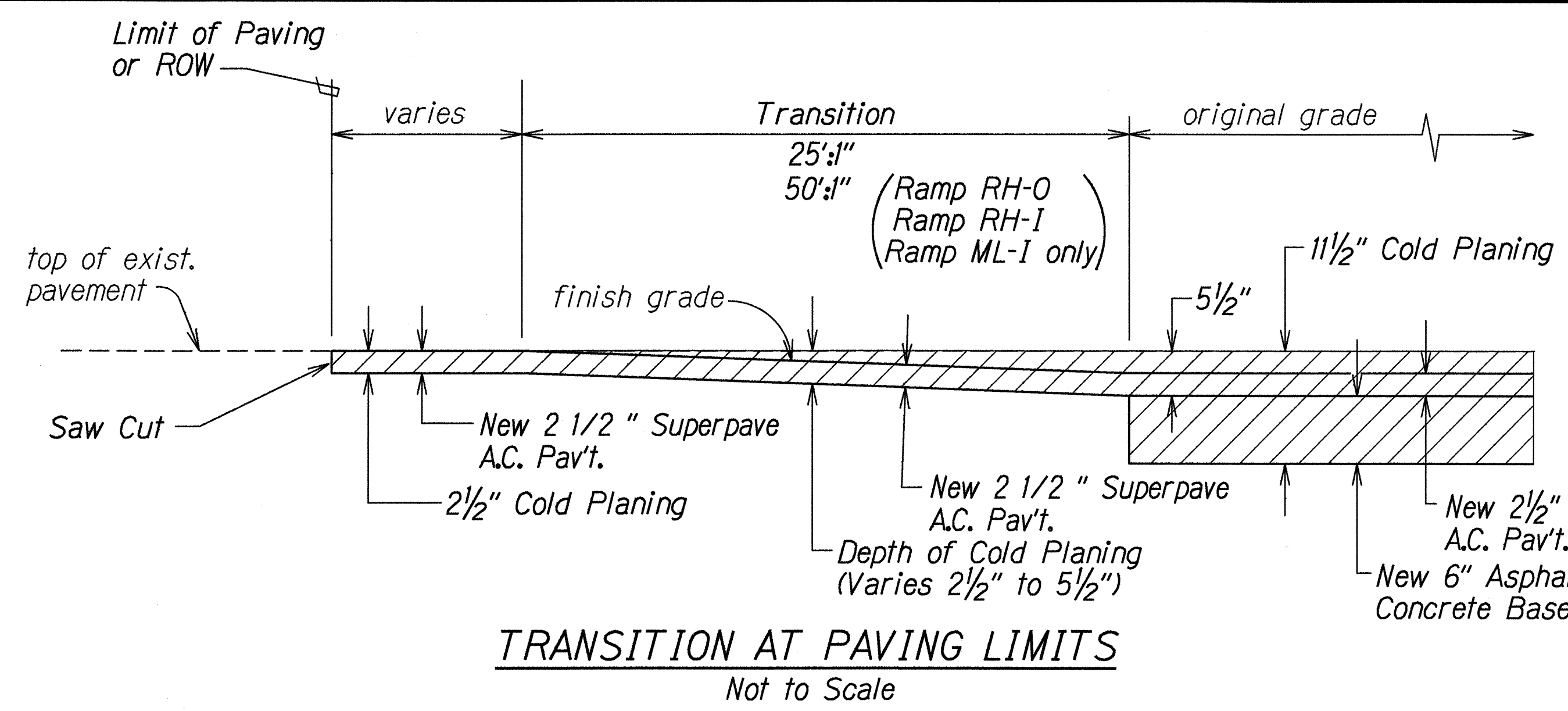


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-H20(3)	1998	15	51



- Notes: 1. The exact locations and limits of cold planing and resurfacing shall be determined in the field by the Engineer.  
2. Refer to Cold Planing Notes.

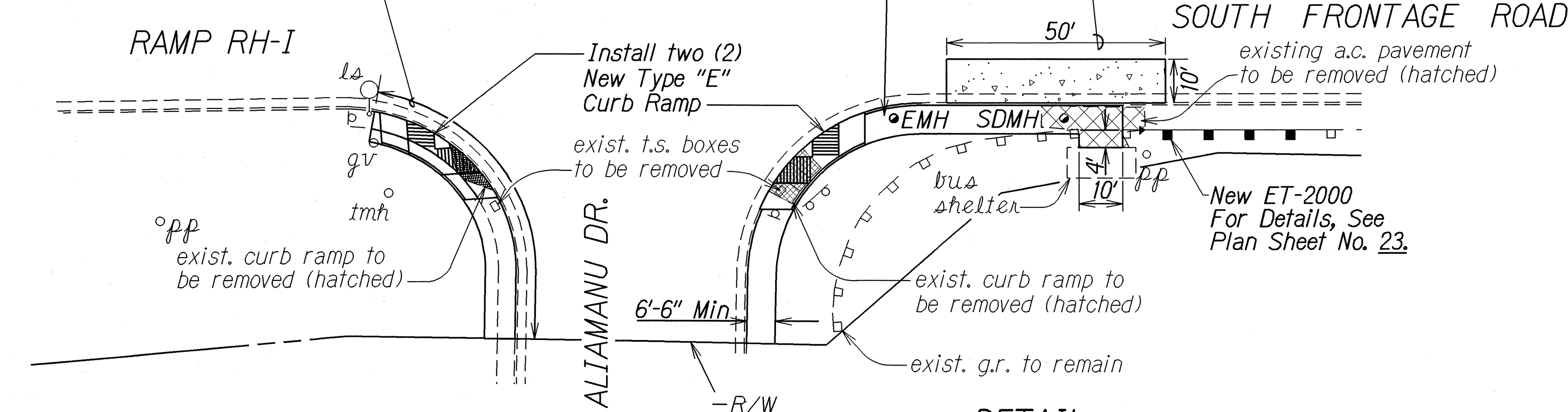
SURVEY REPORTED BY: [ ] DATE: 12/16/97  
 DRAWN BY: J.A. Kizilnaka  
 DESIGNED BY: J.A. Kizilnaka  
 CHECKED BY: [ ]

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**TYPICAL DETAILS**  
 MOANALUA FREEWAY RAMPS RESURFACING  
 Vicinity of Ala Kapuna to Vicinity of Ala Napunani  
 F.A. Project No. STP-H20(3)  
 Scale: As Shown Date: July, 1998

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
	HAWAII	STP-H20(3)	1998	16	51

Remove 60± L.F. of exist. sidewalk. Construct 60± L.F. of new 7' wide, 4" thick reinforced concrete sidewalk. See detail this sheet. Removal of exist. sidewalk shall be considered incidental to new 4" thick reinforced concrete sidewalk.

Remove 50± L.F. exist. curb & gutter. Construct New P.C.C. Bus Stop (50'x10') and New Curb and Gutter (50± L.F.), Type "2DG" & Connect to Match exist. curb & gutter. For Details, see this sheet. Removal of exist. curb & gutter shall be considered incidental to the New Curb and Gutter.



**NOTE:**

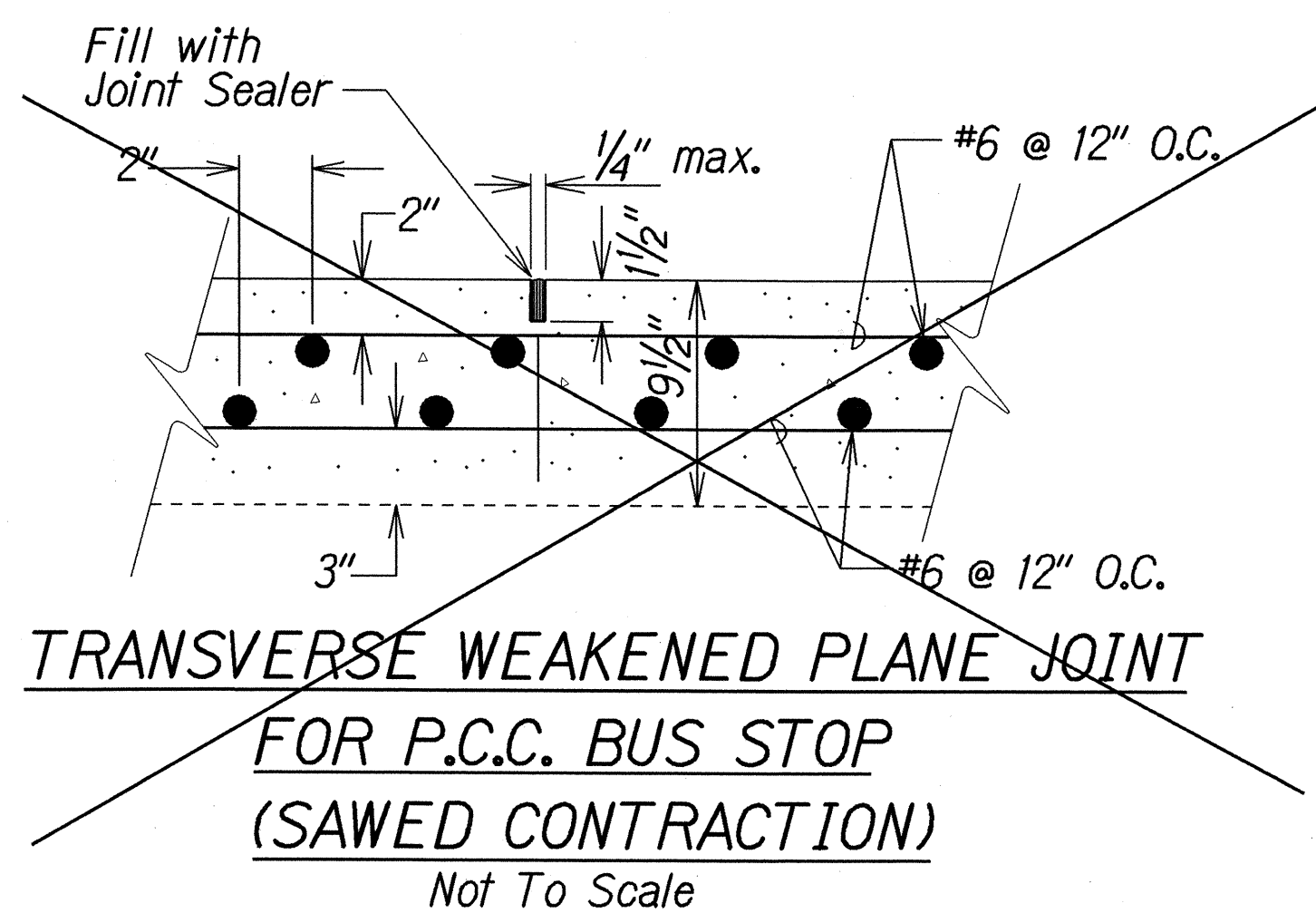
Removal and Disposal of Existing A.C. and Sidewalk Dressing shall be Considered Incidental to Item No. 608.1200 - 4" Reinforced Concrete Sidewalk.

Removal and Disposal of Existing Guardrail shall be Considered Incidental to Item No. 606.7200 Terminal Section Type ET-2000.

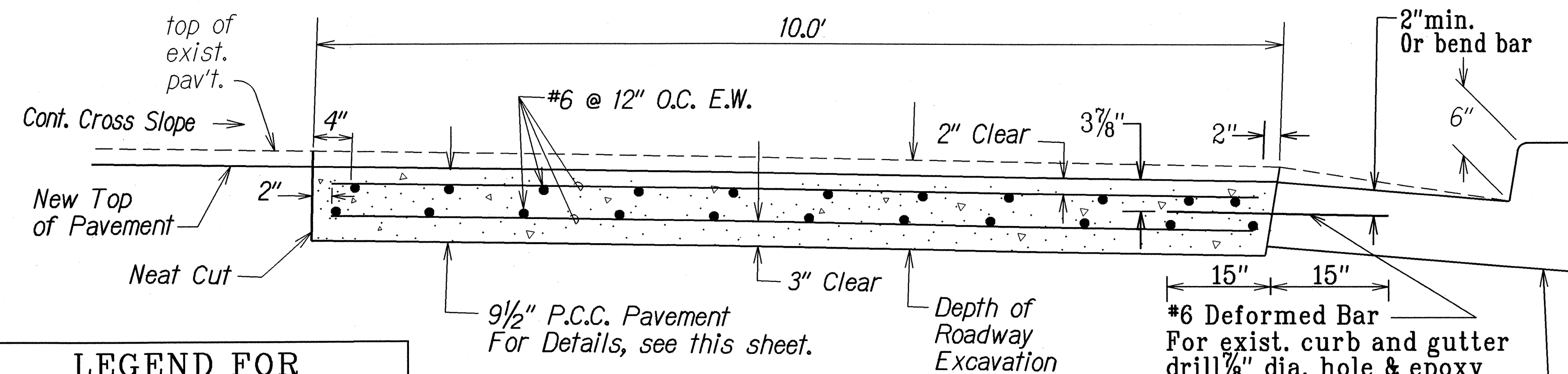
Manholes shall be Adjusted Flush to New Sidewalk. This work shall be considered incidental to 4" reinforced conc. sidewalk and will not be paid for separately.

Removal of exist. curb ramps shall be considered incidental to the New Type "E" Curb Ramps. Removal of exist. sidewalk, A.C. pav't. and traffic signal boxes will be considered incidental to 4" reinforced concrete sidewalk.

**DETAIL**  
**ALIAMANU DRIVE/RAMP RH-1/SOUTH FRONTAGE RD. INTERSECTION**  
Scale 1"=20'

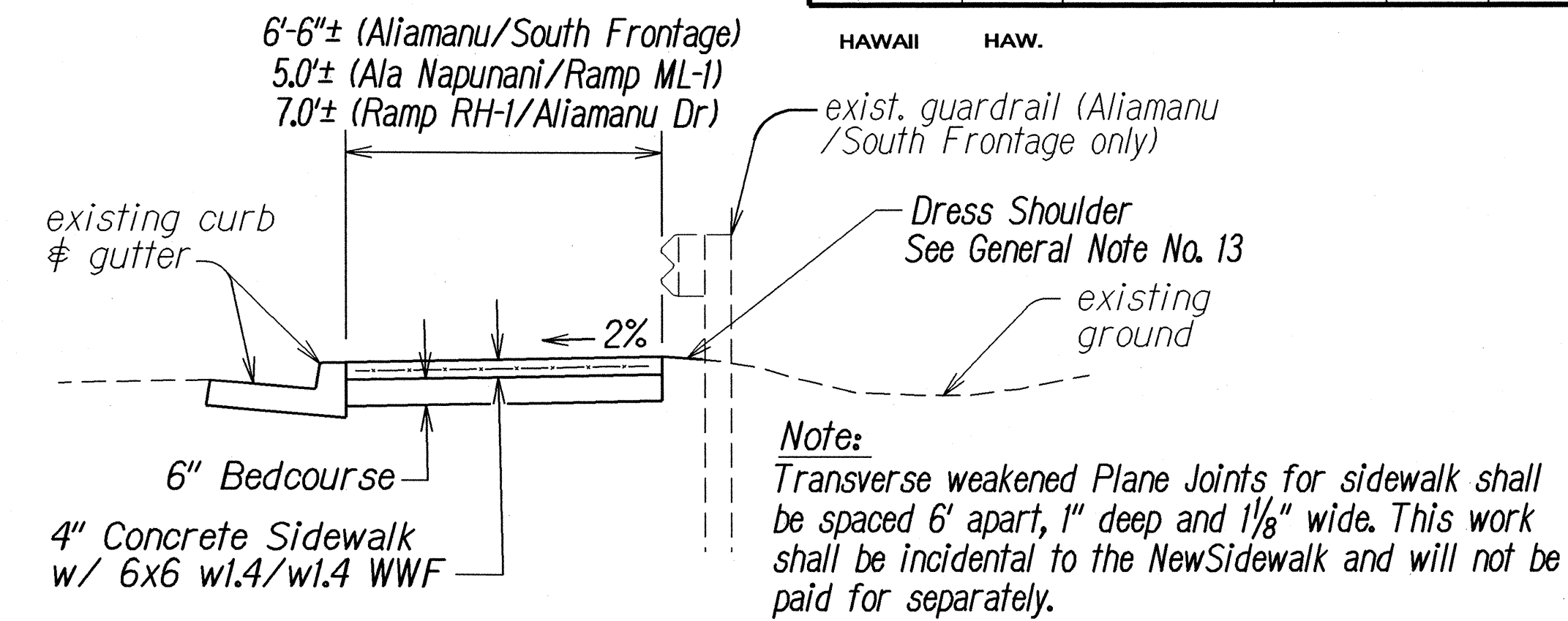


**TRANSVERSE WEAKENED PLANE JOINT FOR P.C.C. BUS STOP (SAWED CONTRACTION)**  
Not To Scale

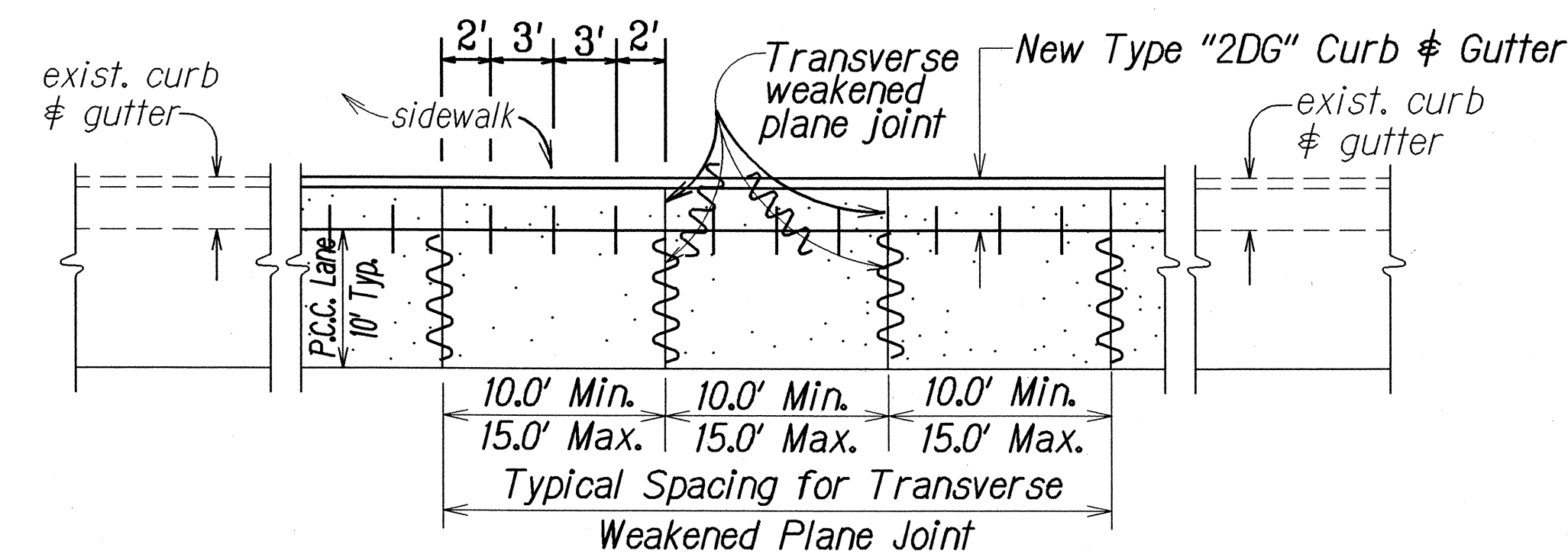


**P.C.C. BUS STOP PAVEMENT DETAIL**  
Not to Scale

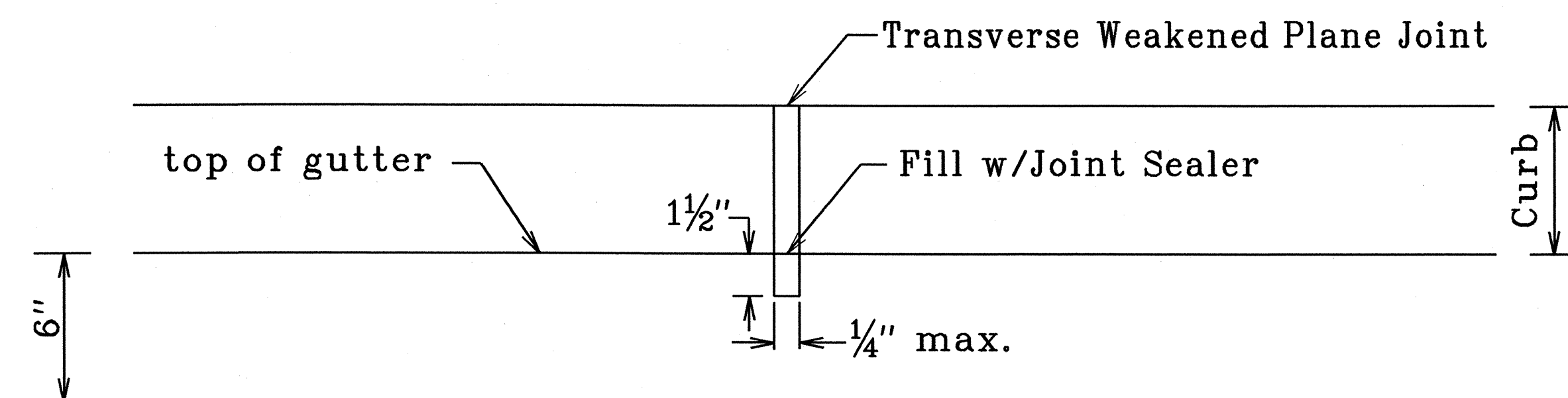
LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
	Text for as-built posting



**SIDEWALK DETAIL FOR SOUTH FRONTAGE ROAD AND ALA NAPUNANI**  
Scale: 3/8"=1'-0"



**TYPICAL JOINT LOCATION AND LAYOUT PLAN FOR P.C.C. BUS STOP**  
Not To Scale



**TRANSFERRED WEAKENED PLANE JOINT FOR CURB AND GUTTER**  
For locations see "Typical Joint Location & Layout Plan for P.C.C. Bus Pad".

**Notes:**

- Roadway Excavation Required for the installation of P.C.C. Bus Stops, and Disposal of Excavated Materials shall be considered incidental to Item No. 411.1212, 9-1/2 Inch Reinforced Concrete Pavement, and will not be paid for separately.
- Removal and disposal of existing curb & gutter shall be incidental to the New Type "2DG" Curb & Gutter.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**MISCELLANEOUS DETAIL**

**MOANALUA FREEWAY RAMPS RESURFACING**  
Vicinity of Ala Kapuna to Vicinity of Ala Napunani  
F.A. Project No. STP-H20(3)

Scale: As Shown Date: July, 1998

SHEET No. 1 OF 1 SHEETS



FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-H20(3)	1998	17	51

Ala Napunani  
 @ Sta. 6+50± to @ Sta. 6+75± Rt.  
 Remove 43 L.F.± exist. guardrail, including ramp down end & concrete block.  
 Install 25 L.F. New Guardrail, Type 3-Single with Steel Post with Modified Type "G" Flare (25' parabola for 4' offset from back of exist. sidewalk) with Rounded End, and tie into remaining guardrail. Removal of exist. guardrail and concrete block shall be considered incidental to the New Guardrail.

Ala Napunani  
 @ Sta. 7+15 ± Rt.  
 Remove exist. wheelchair ramps and Construct New Type "A" Curb Ramps. See Plan Shts. Nos. 18-22 for Details. Removal of exist. ramps shall be considered incidental to the New Type "A" Curb Ramps.

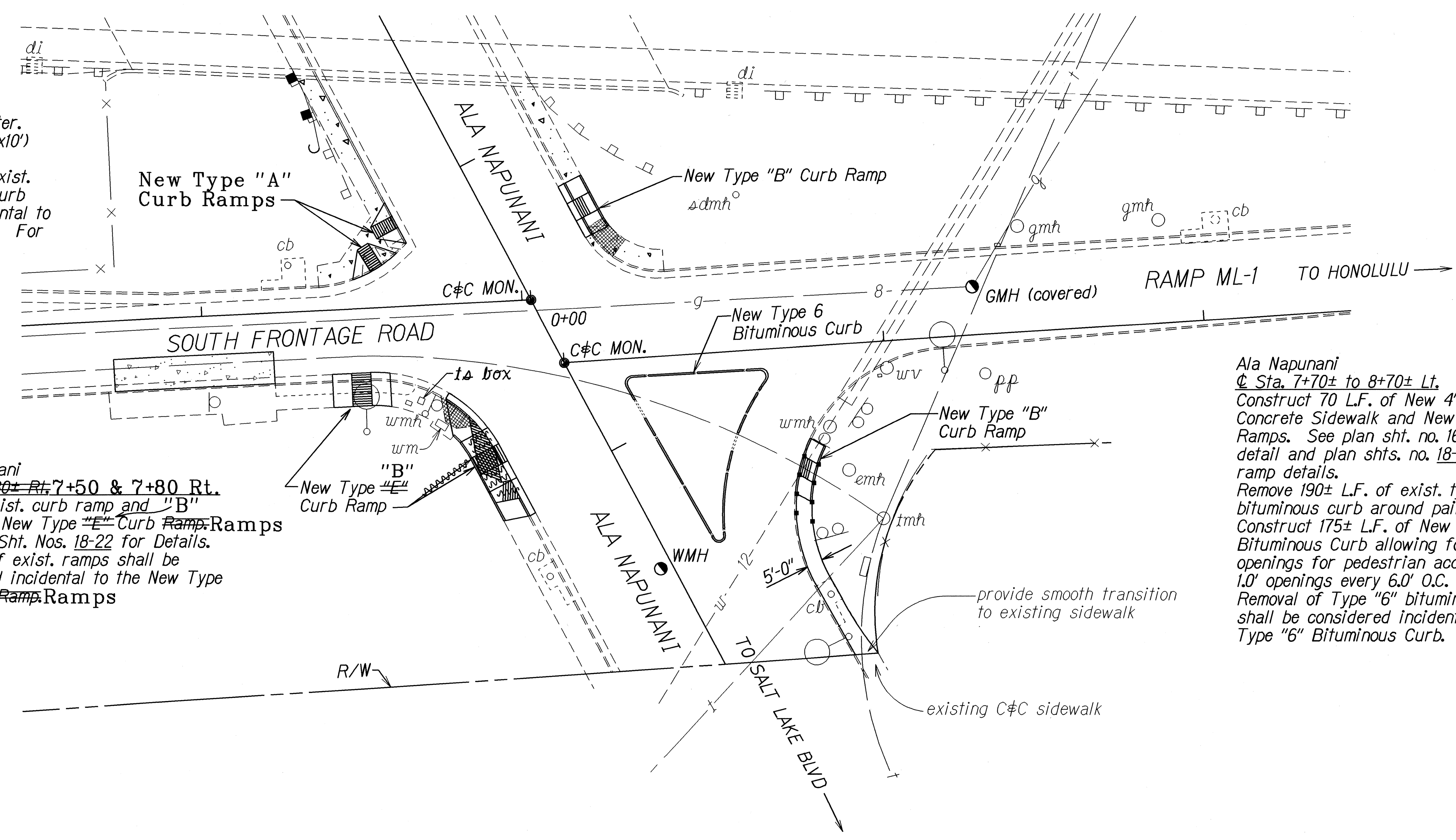
Ala Napunani  
 @ Sta. 7+40± Lt.  
 Remove exist. wheelchair ramp and Construct New Type "B" Curb Ramp. See Plan Shts. Nos. 18-22 for Details. Removal of exist. ramps shall be considered incidental to the New Type "B" Curb Ramps.

TRUE NORTH  
 SCALE: 1" = 20'

South Frontage Road  
 @ Sta. 27+72± to @ Sta. 28+22± Rt.  
 Remove 50 L.F. exist. curb and gutter. Construct New P.C.C. Bus Stop (50'x10') and New Curb & Gutter (50± L.F.), Type "2DG" and connect to Match exist. curb & gutter. Removal of exist. curb & gutter shall be considered incidental to the New Type "2DG" Curb & Gutter. For Details, See Plan Sht. No. 16.

Ala Napunani  
 @ Sta. 7+80± Rt. 7+50 & 7+80 Rt.  
 Remove exist. curb ramp and "B" Curb Ramps. Construct New Type "E" Curb Ramps. See Plan Sht. Nos. 18-22 for Details. Removal of exist. ramps shall be considered incidental to the New Type "E" Curb Ramps.

Ala Napunani  
 @ Sta. 7+70± to 8+70± Lt.  
 Construct 70 L.F. of New 4" Reinforced Concrete Sidewalk and New Type "B" Curb Ramps. See plan sht. no. 16 for sidewalk detail and plan shts. no. 18-22 for curb ramp details. Remove 190± L.F. of exist. type 6 bituminous curb around painted island. Construct 175± L.F. of New Type 6 Bituminous Curb allowing for 2-6.0' openings for pedestrian access and 1.0' openings every 6.0' O.C. for drainage. Removal of Type "6" bituminous curb shall be considered incidental to New Type "6" Bituminous Curb.



DETAIL  
 ALA NAPUNANI/SOUTH FRONTAGE RD/RAMP ML-1 INTERSECTION

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

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**MISCELLANEOUS DETAILS**

MOANALUA FREEWAY RAMPS RESURFACING  
 Vicinity of Ala Kapuna to Vicinity of Ala Napunani  
 F.A. Project No. STP-H20(3)

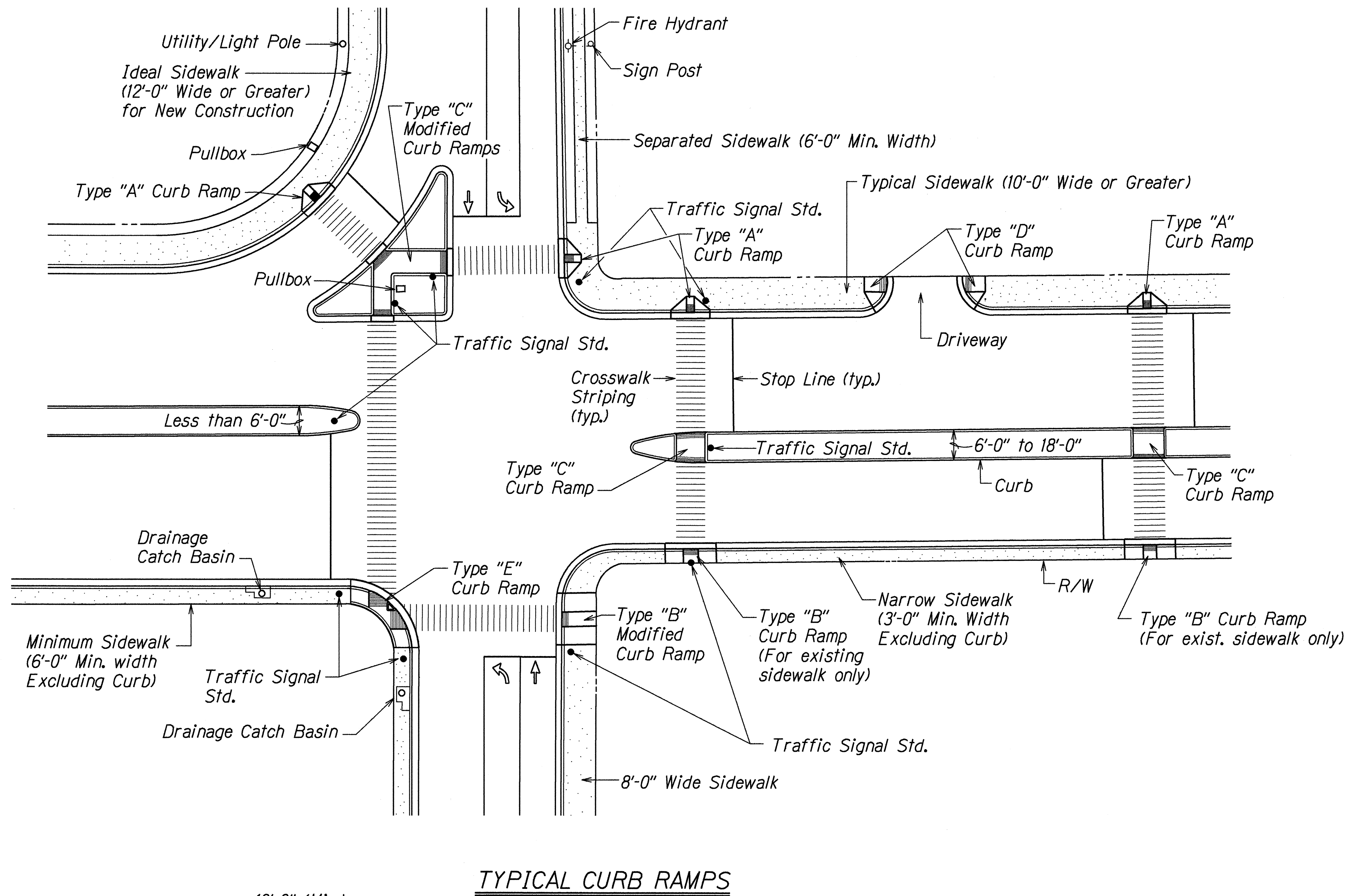
Scale: 1" = 20'      Date: July, 1998

SHEET No. 1 OF 3 SHEETS

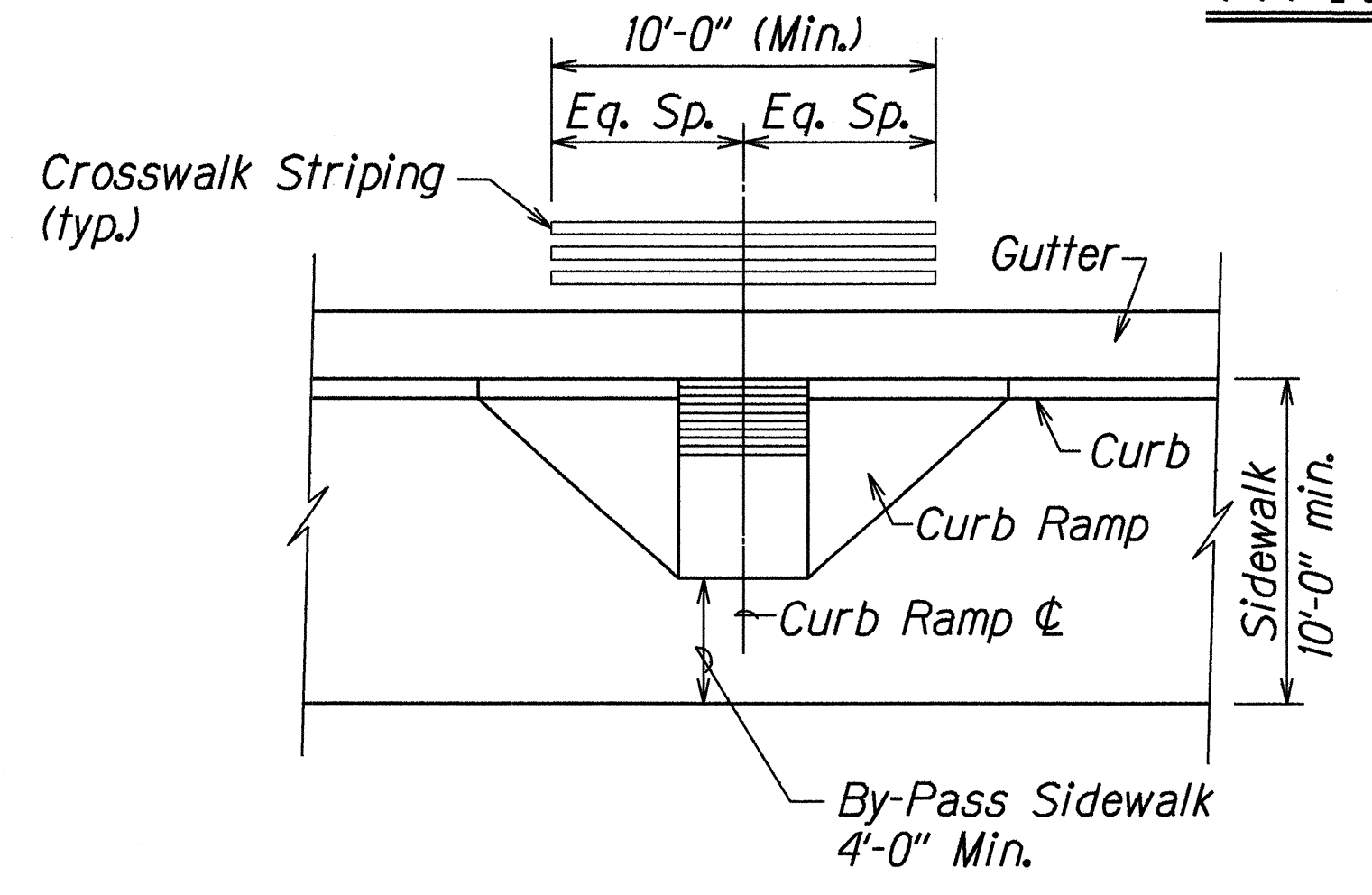
"AS-BUILT"

SURVEY PLOTTED BY	DATE
DESIGNED BY	
CHECKED BY	
APPROVED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-H20(3)	1998	18	51



**TYPICAL CURB RAMPS**



**TYPICAL CROSSWALK STRIPING AT CURB RAMP**

**GENERAL NOTES:**

- When necessitated by existing physical conditions, alternate Curb Ramps may be used subject to Engineer's approval.
- Subject to field conditions, the Engineer shall determine final location of Curb Ramp.
- Where necessary, existing pullboxes, handholes, manholes, etc. shall be adjusted to match Curb Ramp grade. Adjustments shall not be paid for separately but shall be considered incidental to the various curb ramp items.
- All sidewalks shall provide a minimum clear width of 3'-0" (excluding curb) for pedestrian circulation.
- Narrow Sidewalks (3'-0" min. width excluding curb) will prohibit the installation of any sign posts, utility poles, fire hydrants, traffic signals standards, light poles, etc. in the sidewalk, which will prevent a 3'-0" wide clear zone for pedestrian circulation. Also, Narrow Sidewalks shall require a minimum 6'-0" wide, excluding curbs, by 10'-0" long passing space at intervals not to exceed 200 feet.
- For New Construction, the minimum sidewalk width shall be 6'-6", excluding curbs at signalized intersections and the cross slope shall not exceed 50:1. Sidewalk width may be decreased to 6'-0" excluding curbs at non-signalized intersections. For high pedestrian traffic the width shall be a minimum of 12'-0" and/or determined by the Engineer.
- If possible, install utility poles, fire hydrants, light poles, sign posts, pullboxes, etc. off of sidewalk but within the right-of way.
- Single curb ramps serving two street crossing directions is prohibited in new construction.
- New Curb Ramps shall be installed at 90° to the sidewalk or to the maximum extent feasible.
- Objects protruding from utility poles and walls adjacent to the sidewalks (i.e. wall mounted fire hydrants, telephones, meters on poles etc.) shall be mounted to meet the current American with Disabilities Act (ADA) Accessibility Guidelines and will be subject to Engineer's approval.

DATE	1
DESIGNED BY	P. Kihimasa, C. Chang
CHECKED BY	
DATE	
DESIGNED BY	
CHECKED BY	

R 5-1-98 TE-68 sht. 1 of 5

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**CURB RAMP DETAIL**

MOANALUA FREEWAY RAMPS RESURFACING  
Vicinity of Ala Kapuna to Vicinity of Napunani  
F.A. Project No. STP-H20(3)

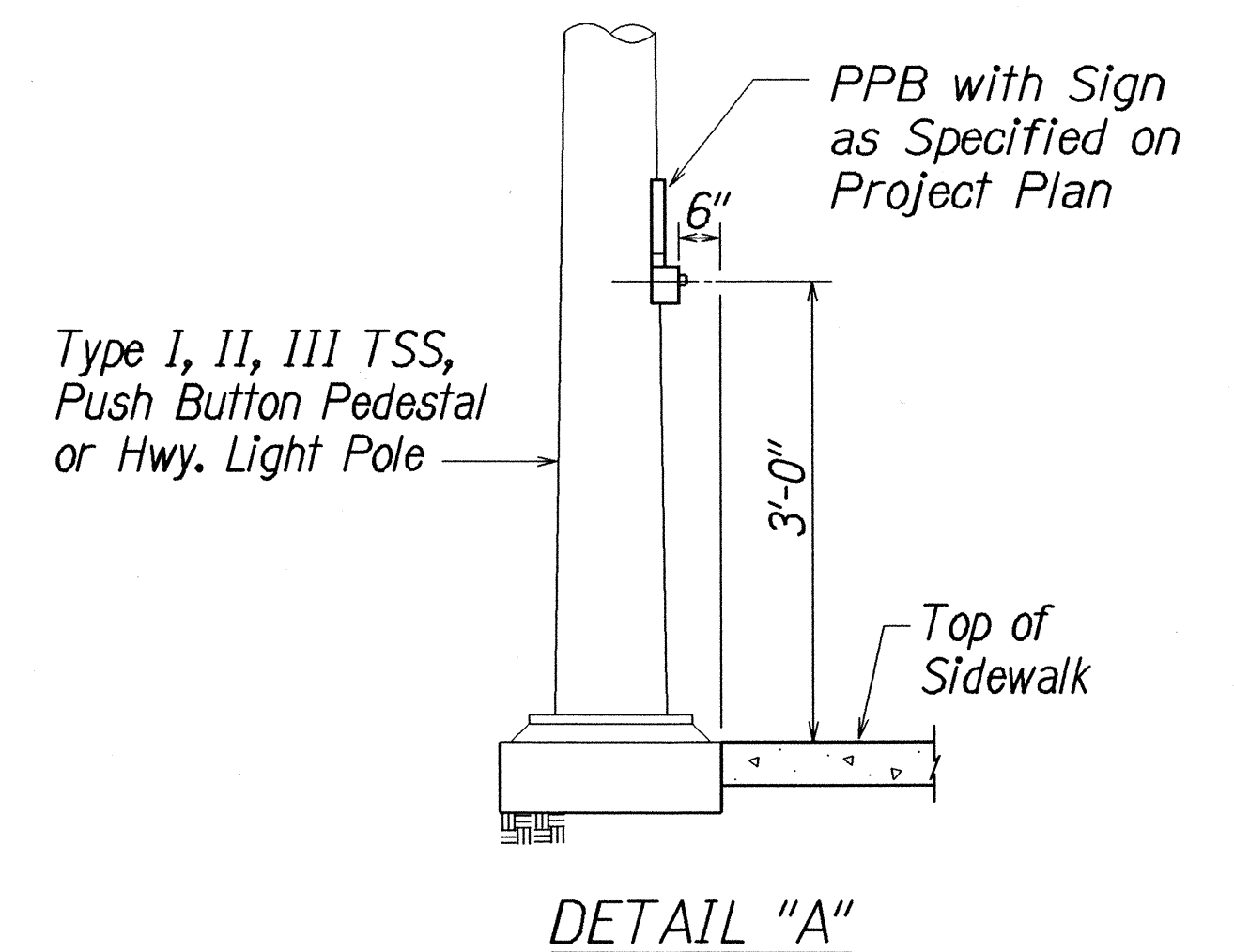
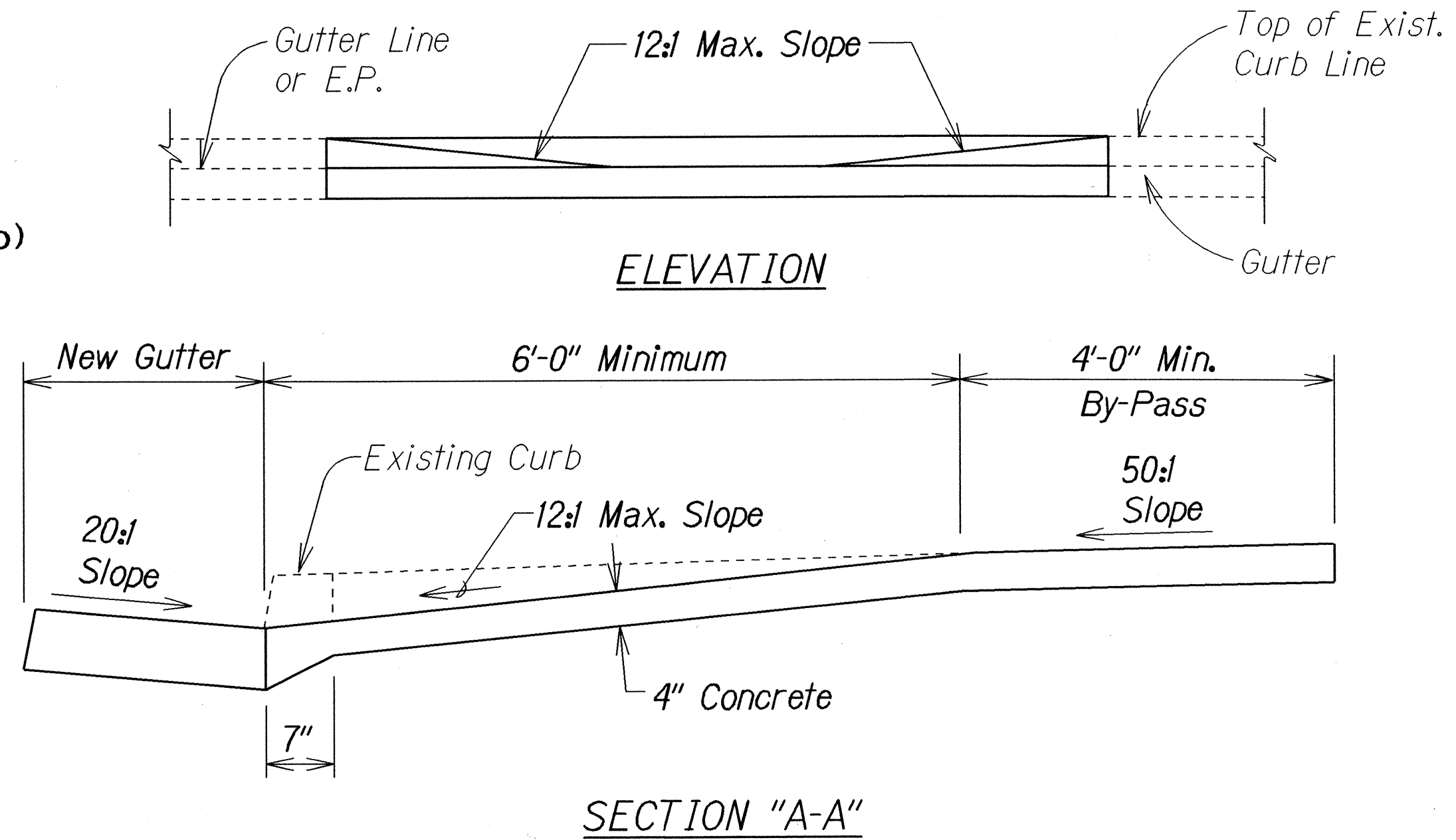
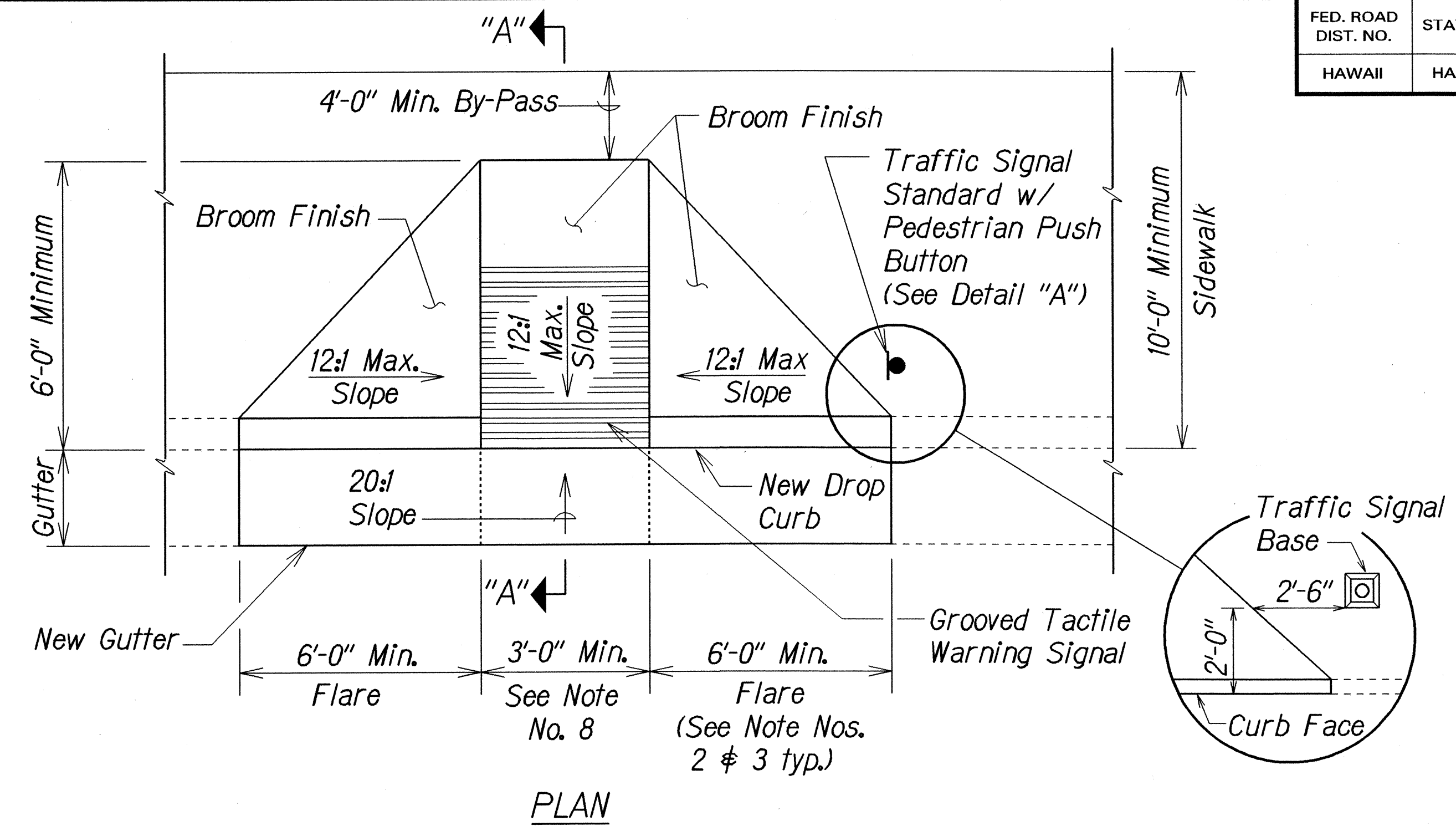
Not to Scale      Date: July, 1998



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-H20(3)	1998	19	51

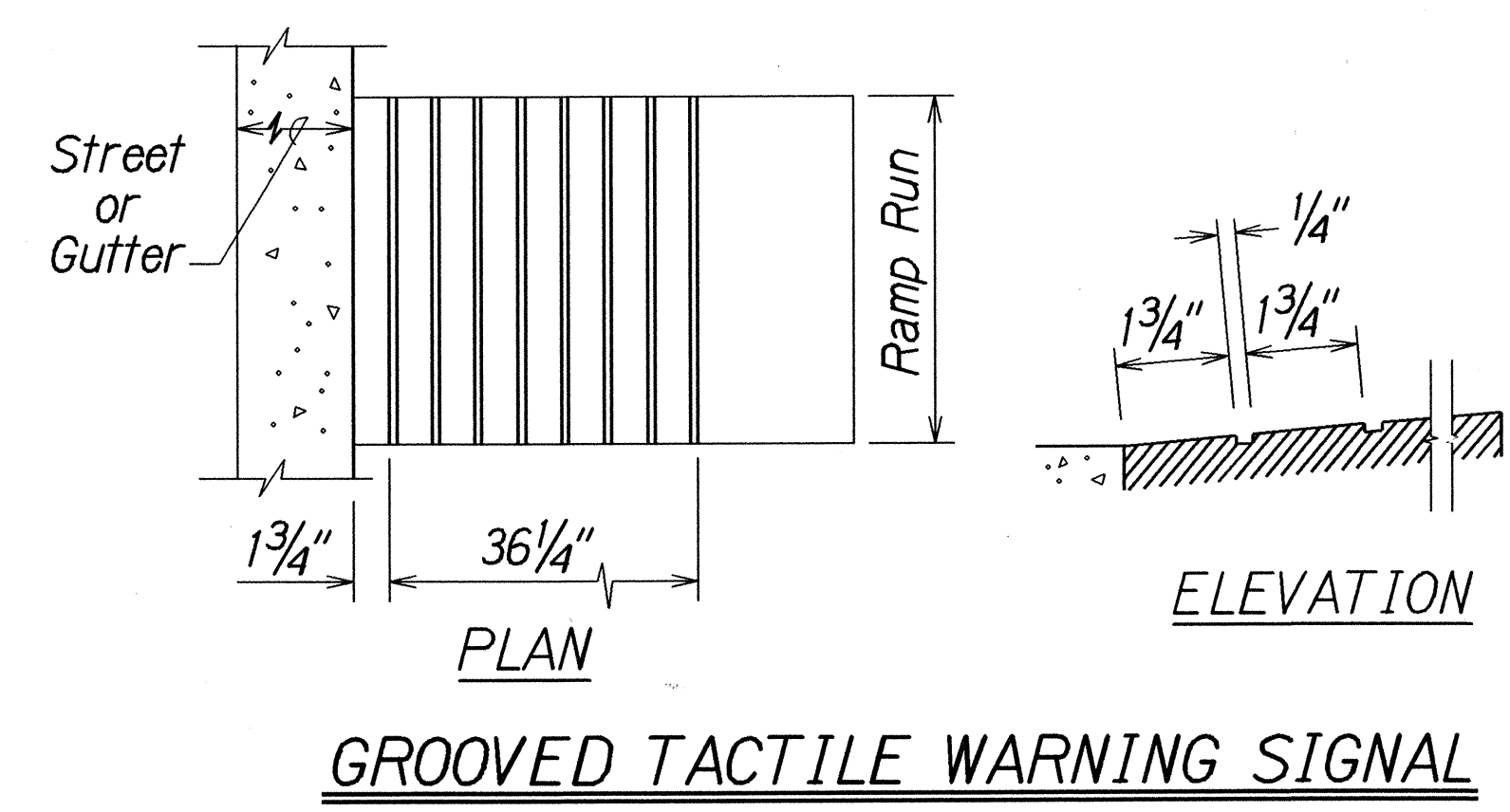
**CURB RAMP NOTES:**

- The New Gutter fronting the curb ramps shall not exceed a slope of 20:1. Area without a gutter shall be handled on a case by case basis in order to meet the 20:1 slope requirement.
- The New Gutter fronting the 6'-0" minimum flares on both sides of the New Curb Ramps shall have a transition slope from 20:1 to the existing gutter slope.
- When the curb exceeds the standard 6" height, the side flares and ramp may be greater than 6'-0" in order to meet the 12:1 maximum slope requirement.
- Curb Ramps shall be reinforced if adjacent sidewalks are reinforced.
- The Contractor shall use the Edge of Pavement (E.P.) fronting the new curb ramp or gutter as the control elevation when constructing the New Curb Ramp or Curb Ramp with gutter.
- For Type "B" & Type "E" Curb Ramps, New Standard Curb shall be 12" wide when installing Type I Traffic Signal Standard (TSS) or Pedestrian Push Button Pedestal (PPB). Where Type II or Type III TSS or Highway Light Pole is utilized, the width of the New Standard Curb shall be determined by the Engineer. For sidewalk less than 4'-0" (excluding curb), an Engineer approved 3'-0" wide minimum curb ramp shall be installed.
- ~~The width of the curb ramp including curbs shall match the width of the sidewalk. When the sidewalk width is less than 4'-0", an Engineer approved, modified sidewalk with a minimum 3'-0" wide curb ramp excluding curbs shall be installed. see below~~
- When sidewalk width is less than 4'-0" and is Engineer approved a modified curb ramp with a minimum width of 3'-0" (excluding curb) shall be installed.
- The width of the curb ramp run shall be increased to 10'-0" at areas with high pedestrian traffic and as directed by the Engineer or shown on the plans.
- A minimum 3'-0" wide by 5'-0" long (excluding curbs) flat, stable paved surface with a cross slope of 50:1 shall be provided for a parallel approach to the pedestrian push button.
- The pedestrian push button shall meet current American with Disabilities Act (ADA) Accessibility Guidelines and will be subject to Engineer's approval.
- All Pullboxes shall be installed within the sidewalk/unpaved area or as directed by the Engineer. Pullboxes shall not be installed within the curb ramp (including flares).



**LEGEND FOR AS-BUILT POSTINGS**

	Squiggly line for as-built deletion
	Double line for as-built deletion
	Text for as-built posting



STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**CURB RAMP DETAIL**

MOANALUA FREEWAY RAMPS RESURFACING  
 Vicinity of Ala Kapuna to Vicinity of Napunani  
 F.A. Project No. STP-H20(3)

Not to Scale Date: July, 1998

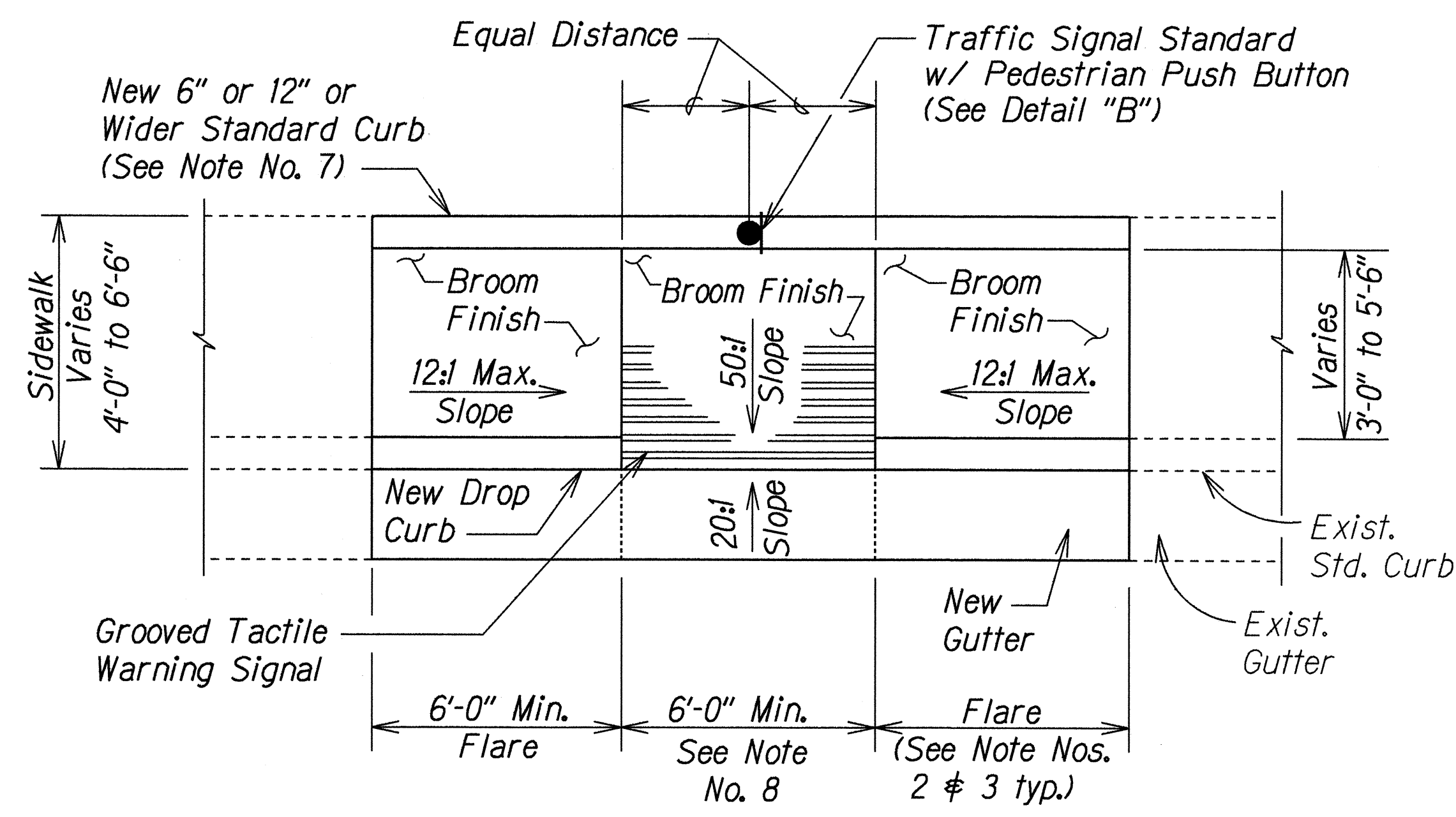
SHEET No. 2 OF 5 SHEETS

"AS-BUILT"

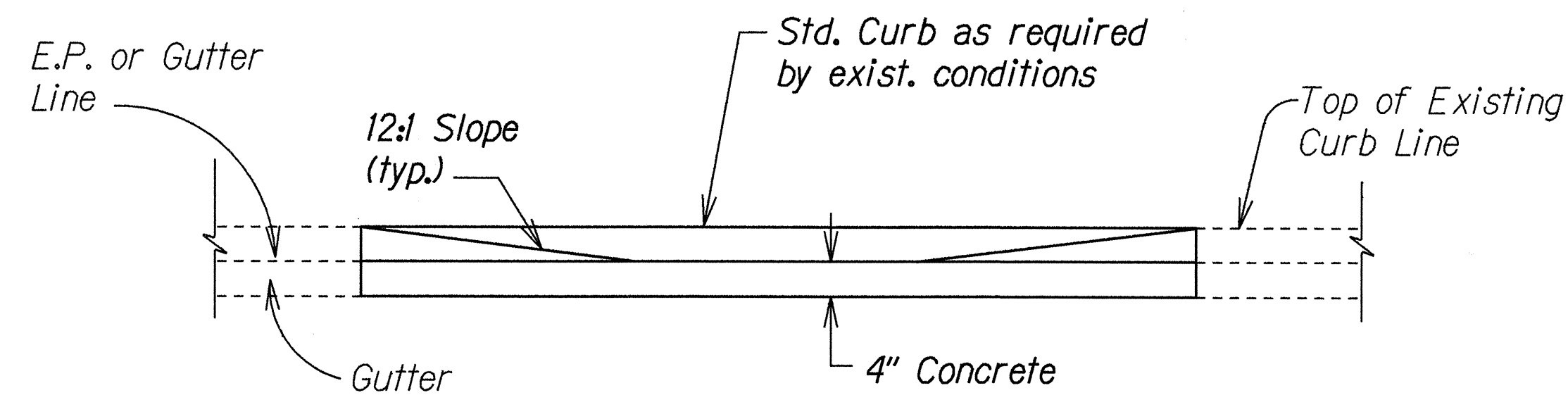
ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
NOTE BOOK	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

R 5-1-98 TE-69 sh. 2 of 5

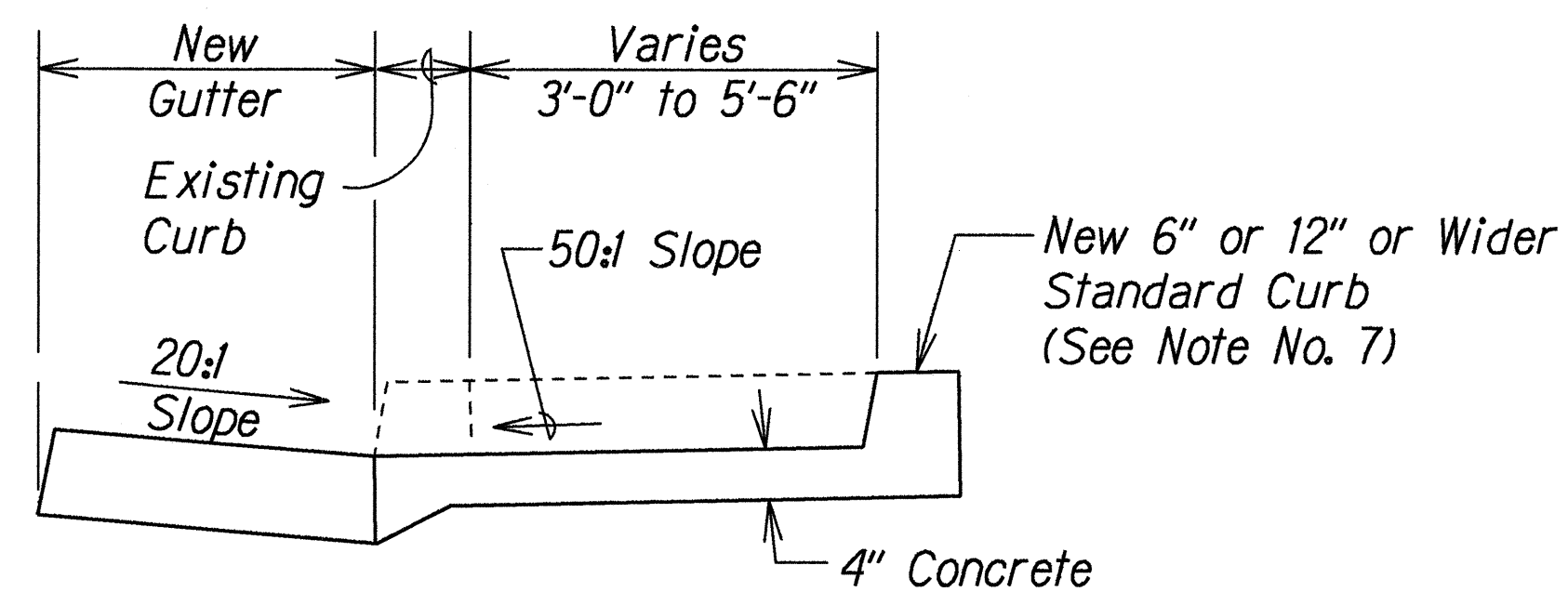
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-H20(13)	1998	20	51



PLAN

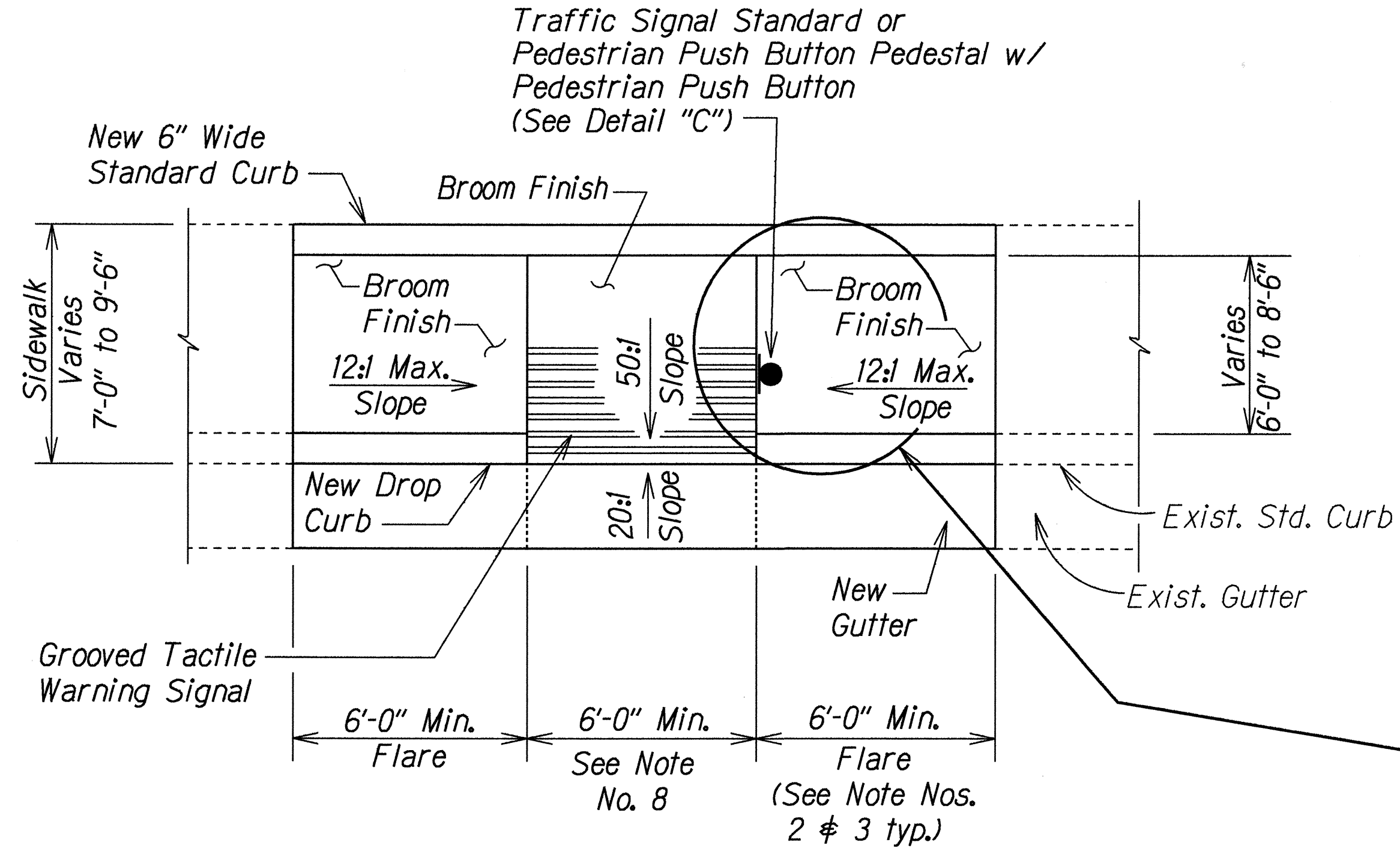


ELEVATION

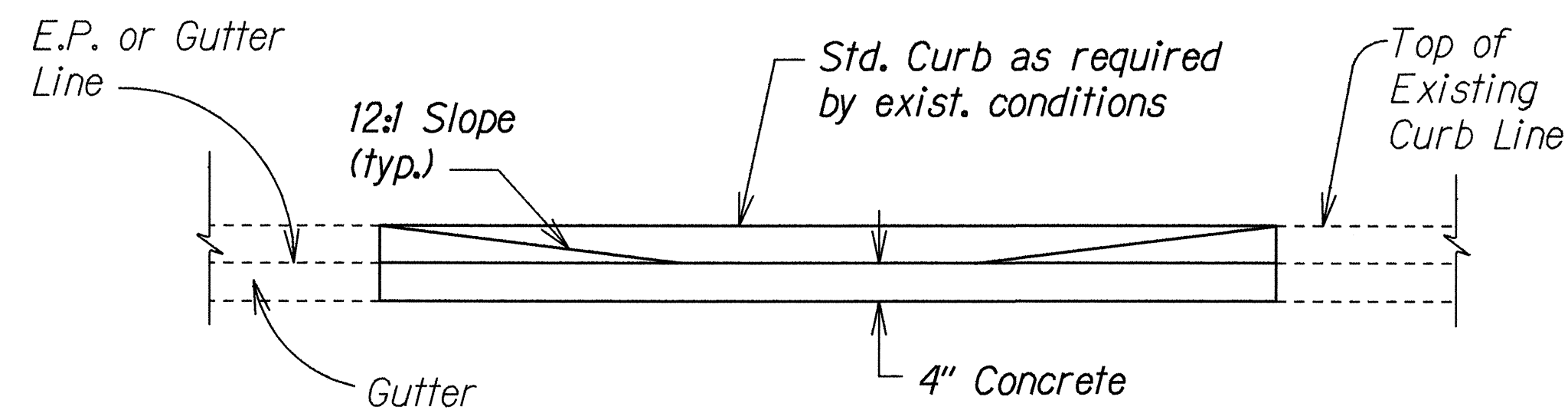


TYPICAL SECTION

**CURB RAMP - TYPE "B"**  
 SIDEWALK WIDTH 4'-0" OR GREATER  
 BUT LESS THAN 7'-0" WIDTH  
 (FOR EXISTING SIDEWALK ONLY)

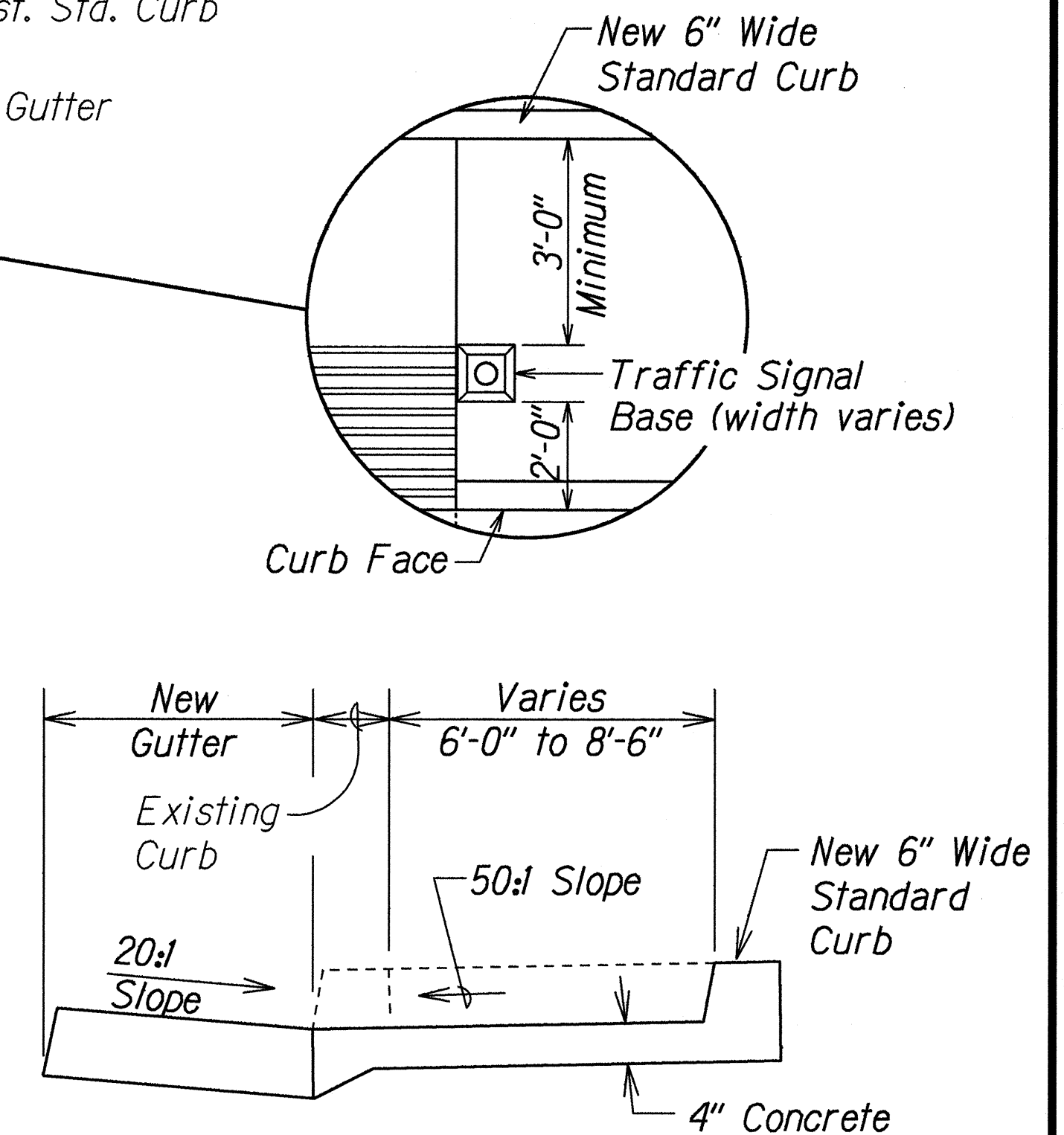


PLAN

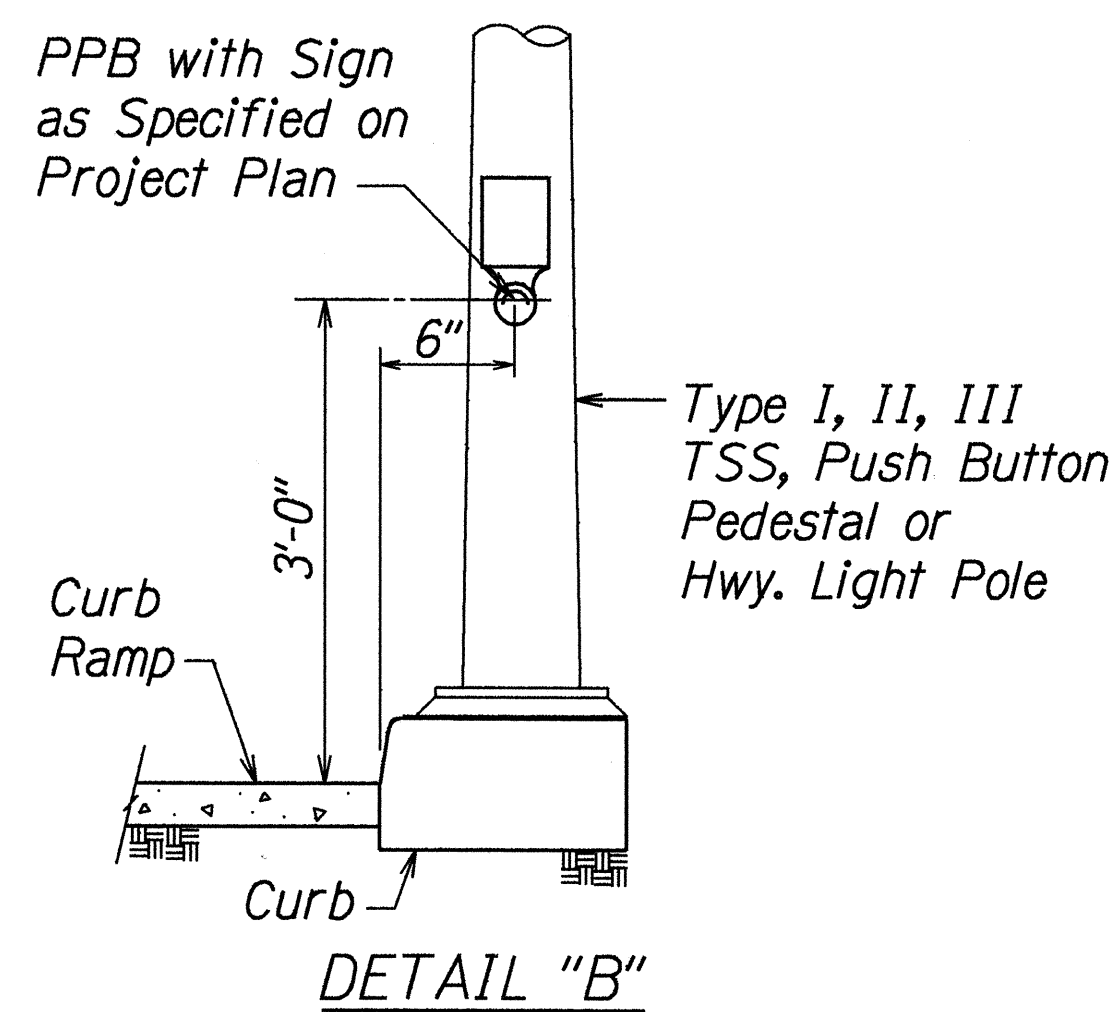


ELEVATION

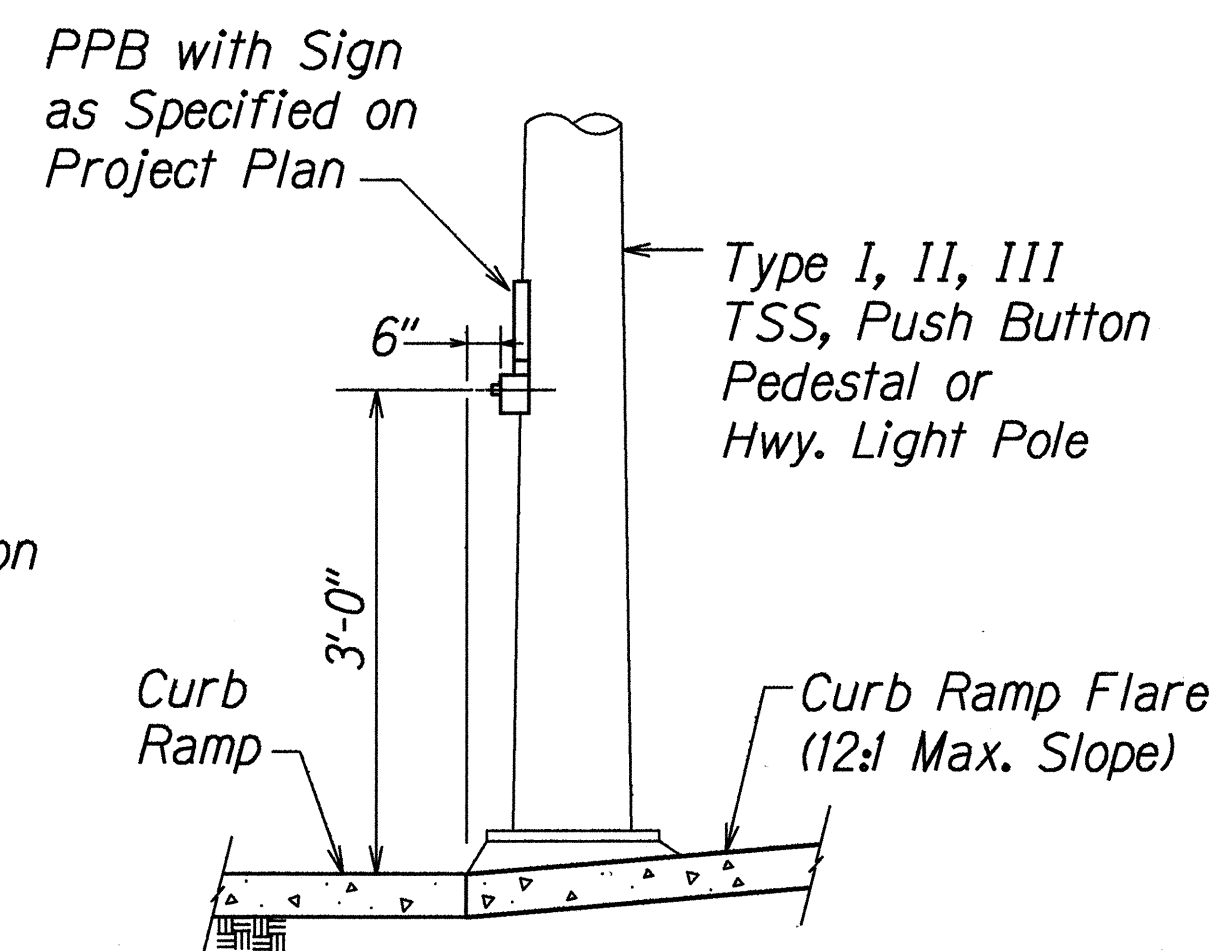
**CURB RAMP - TYPE "B" MODIFIED**  
 SIDEWALK WIDTH 7'-0" OR GREATER  
 BUT LESS THAN 10'-0" WIDTH



TYPICAL SECTION



DETAIL "B"



DETAIL "C"

DATE: / /  
 SURVEY PLOTTED BY: / /  
 DRAWN BY: / /  
 NOTE BOOK DESIGNED BY: / /  
 009, 010  
 CHECKED BY: / /

R 5-1-98 TE-69 SH. 3 OF 5

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**CURB RAMP DETAIL**

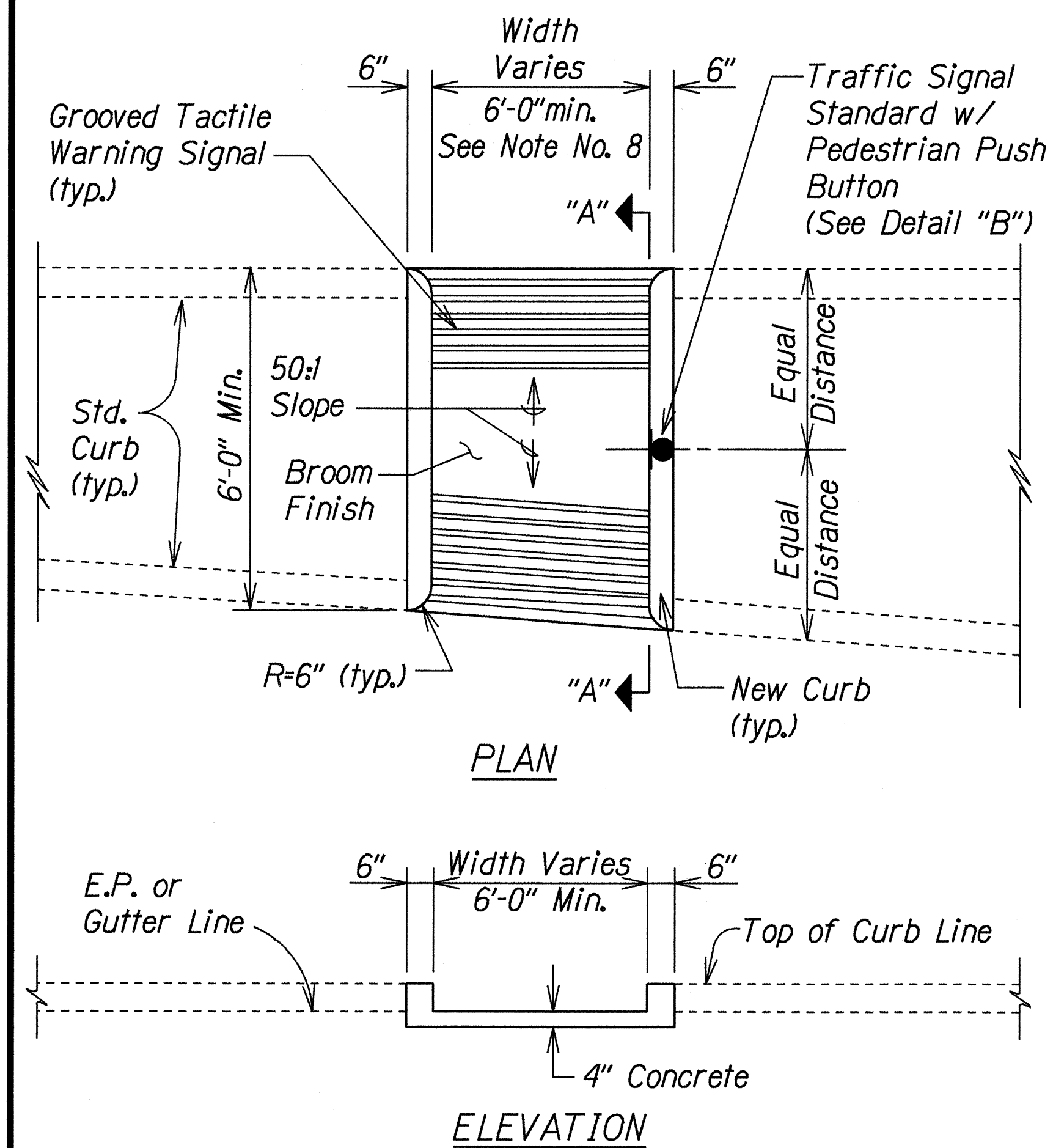
MOANALUA FREEWAY RAMPS RESURFACING  
 Vicinity of Ala Kapuna to Vicinity of Napunani  
 F.A. Project No. STP-H20(13)

Not to Scale Date: July, 1998

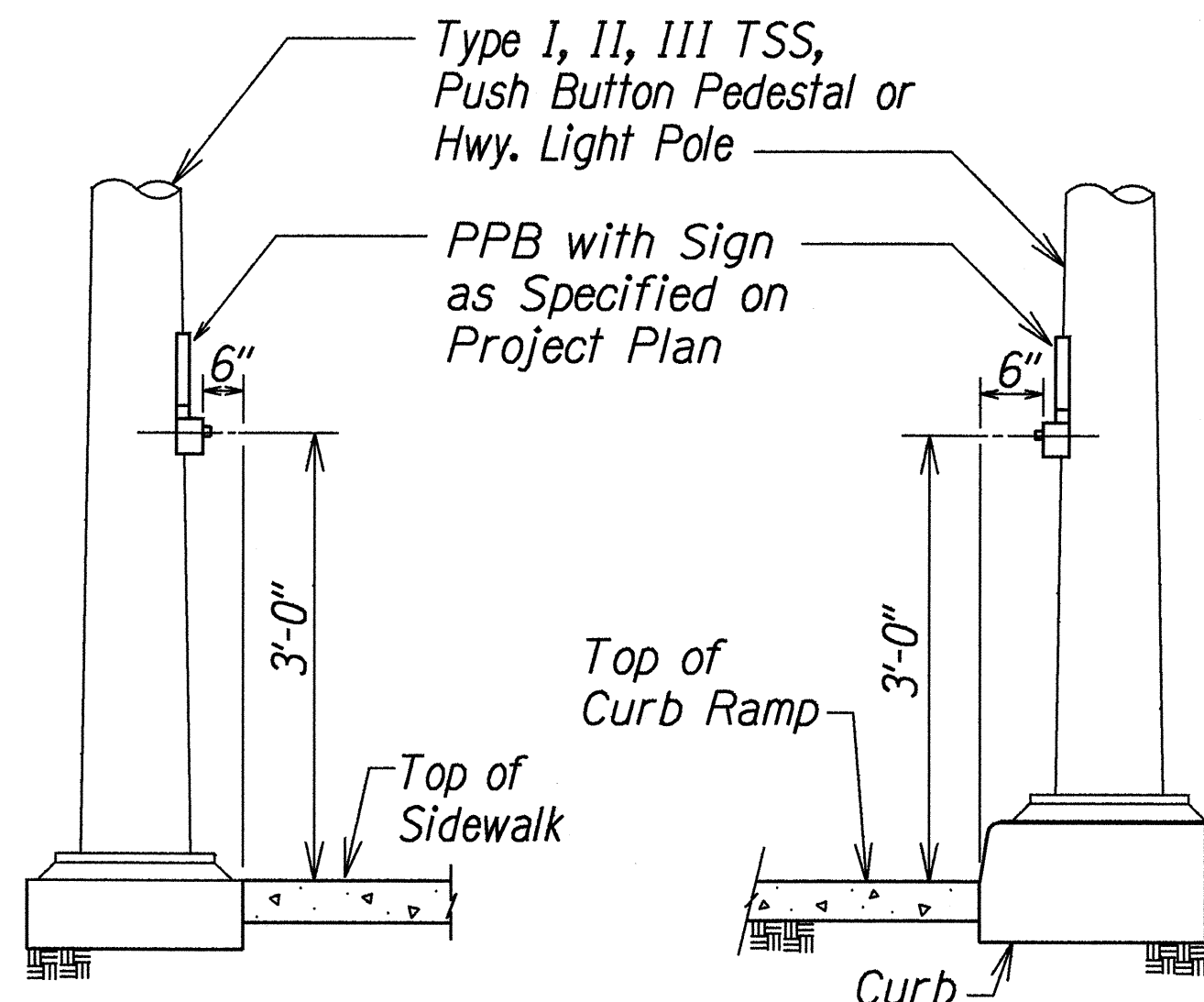
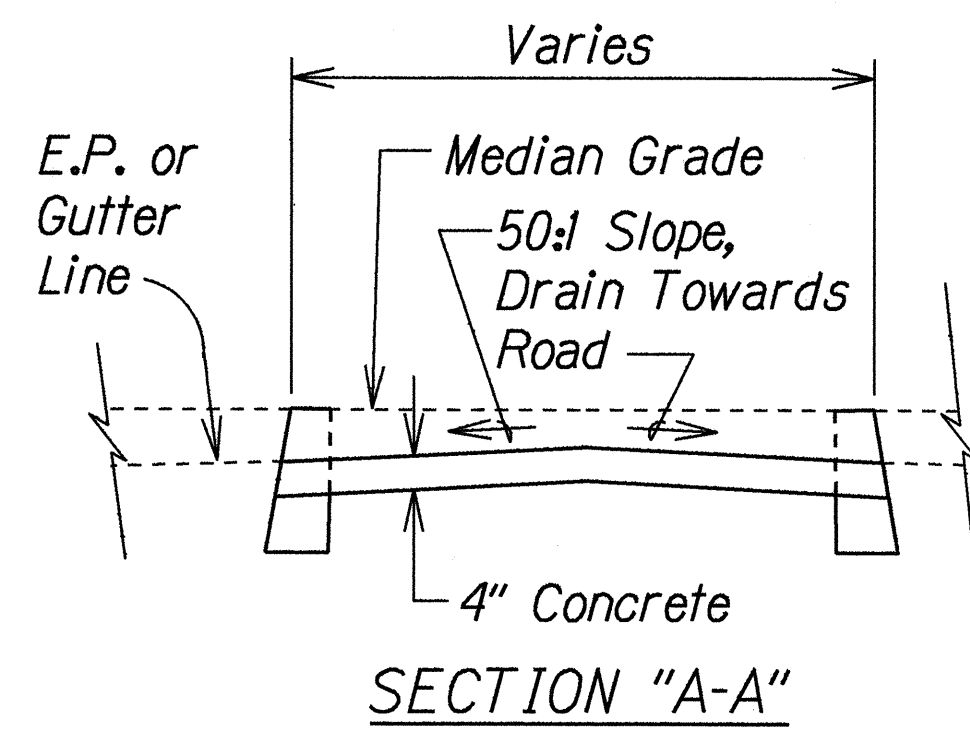
SHEET No. 3 OF 5 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-H201(3)	1998	21	51

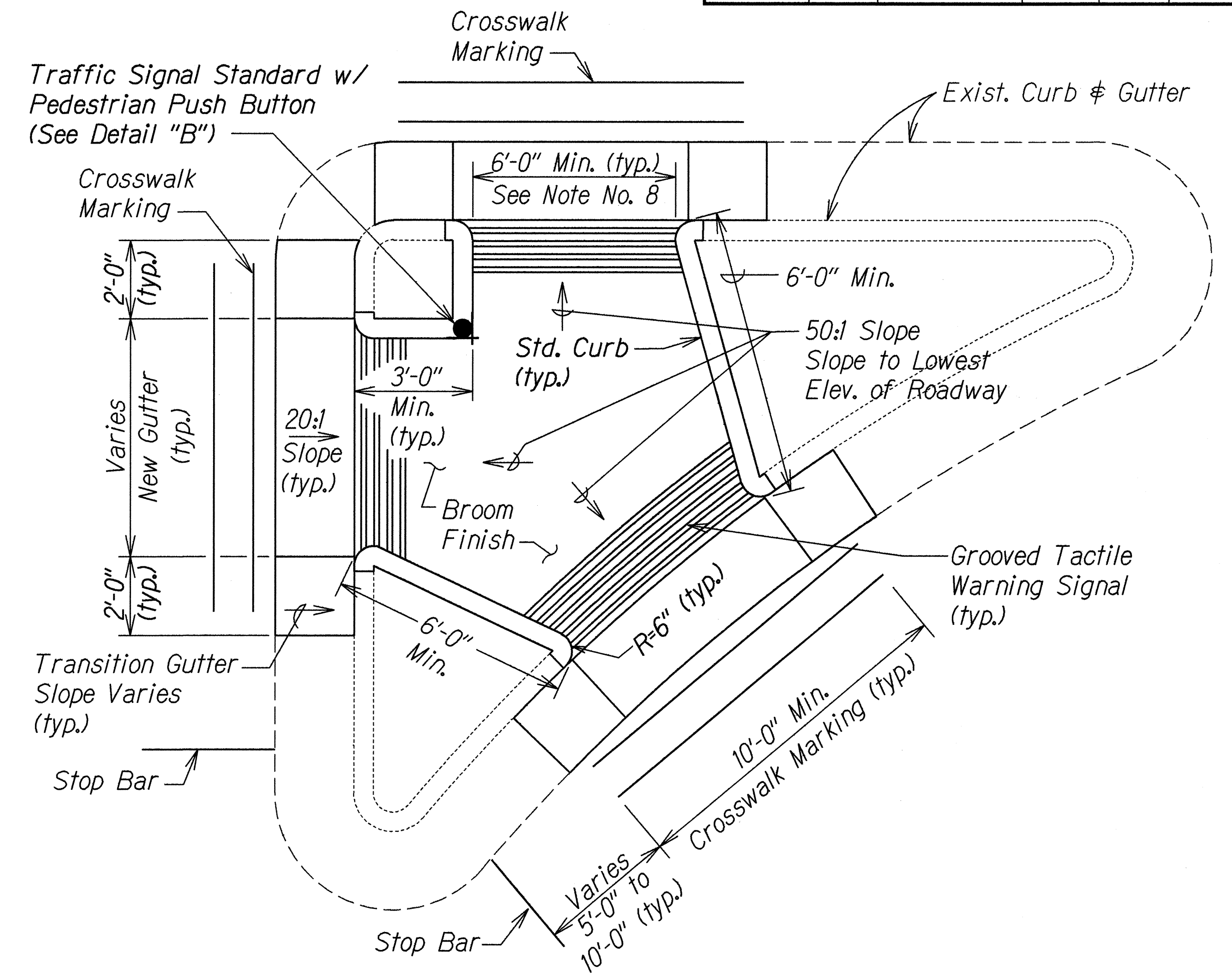


**CURB RAMP - TYPE "C"**  
USE AT MEDIAN CROSSINGS, ISLANDS

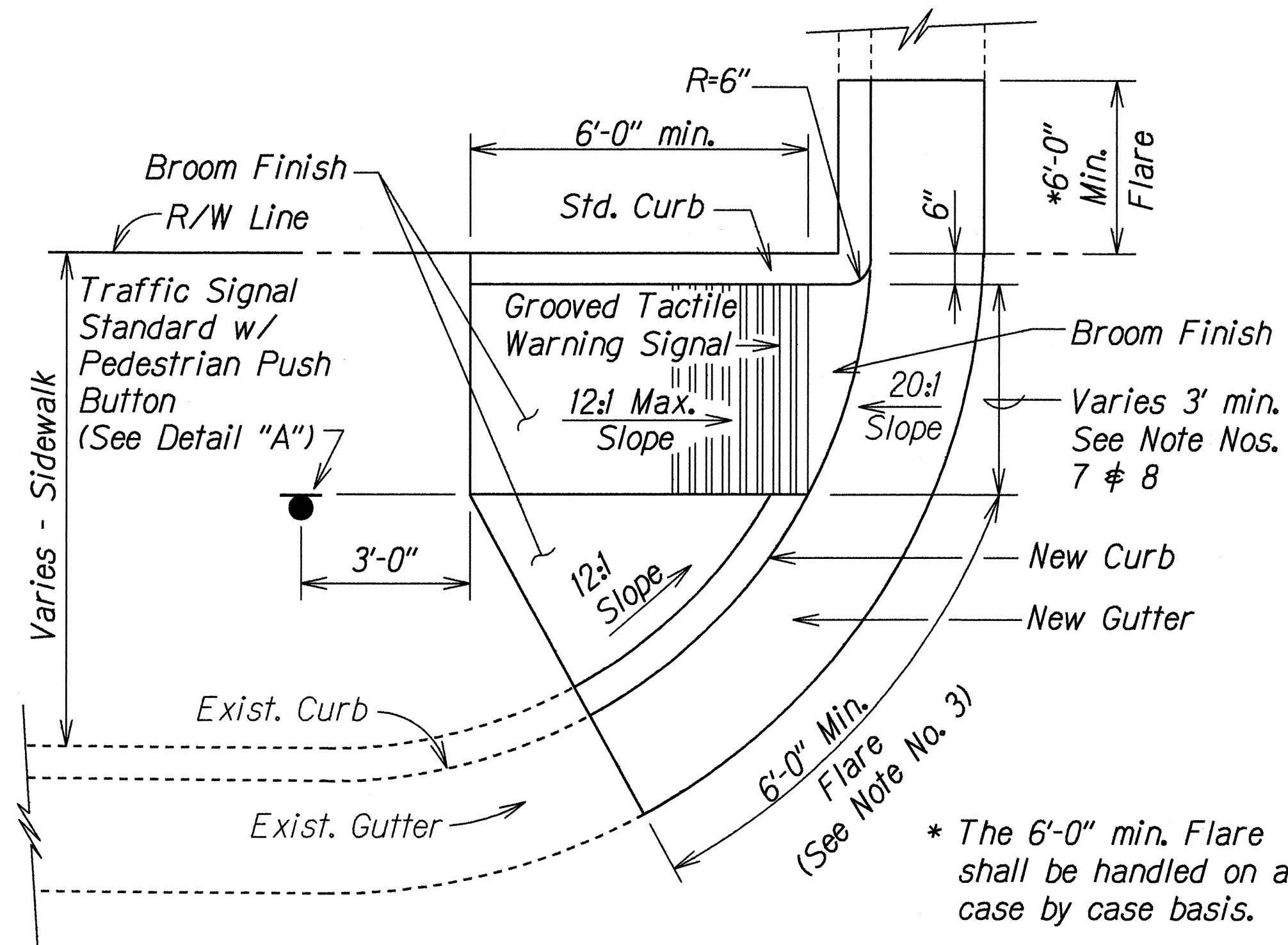


DETAIL "A"

DETAIL "B"

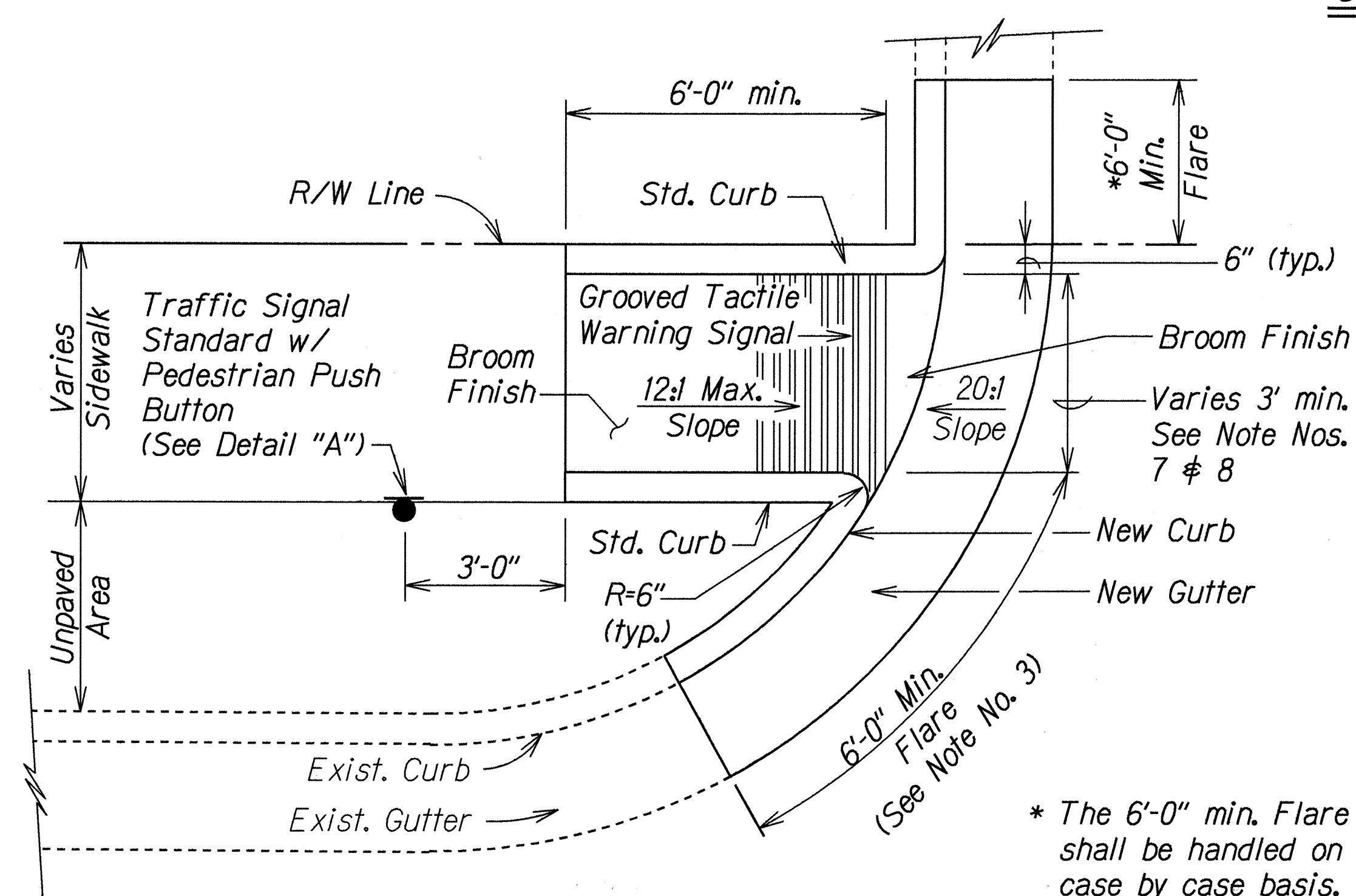


**CURB RAMP - TYPE "C" MODIFIED**



**CURB RAMP - TYPE "D"**

\* The 6'-0" min. Flare shall be handled on a case by case basis.



**CURB RAMP - TYPE "D" MODIFIED**

\* The 6'-0" min. Flare shall be handled on a case by case basis.

SURVEY PLOTTED BY: DATE: / /  
 DRAWN BY: J. J. /  
 NOTE BOOK DESIGNED BY: E. K. /  
 CHECKED BY: /  
 CURB RAMP

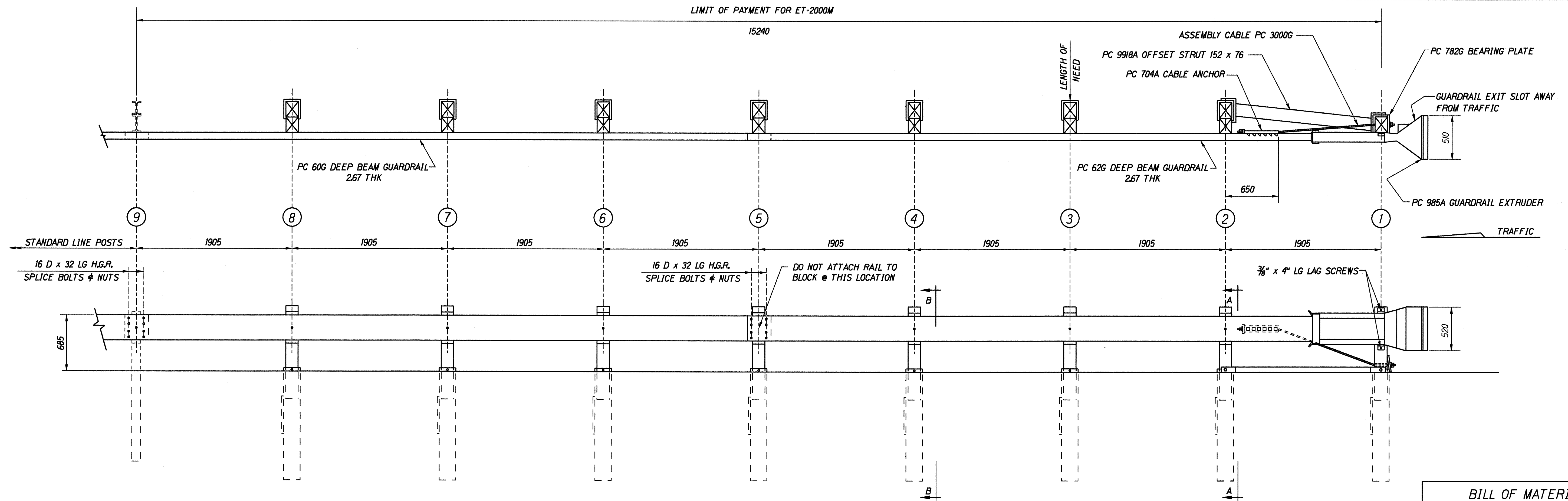
R 5-1-98 TE-69 SH. 4 OF 5

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**CURB RAMP DETAIL**  
 MOANALUA FREEWAY RAMPS RESURFACING  
 Vicinity of Ala Kapuna to Vicinity of Napunani  
 F.A. Project No. STP-H201(3)  
 Not to Scale Date: July, 1998  
 SHEET No. 4 OF 5 SHEETS

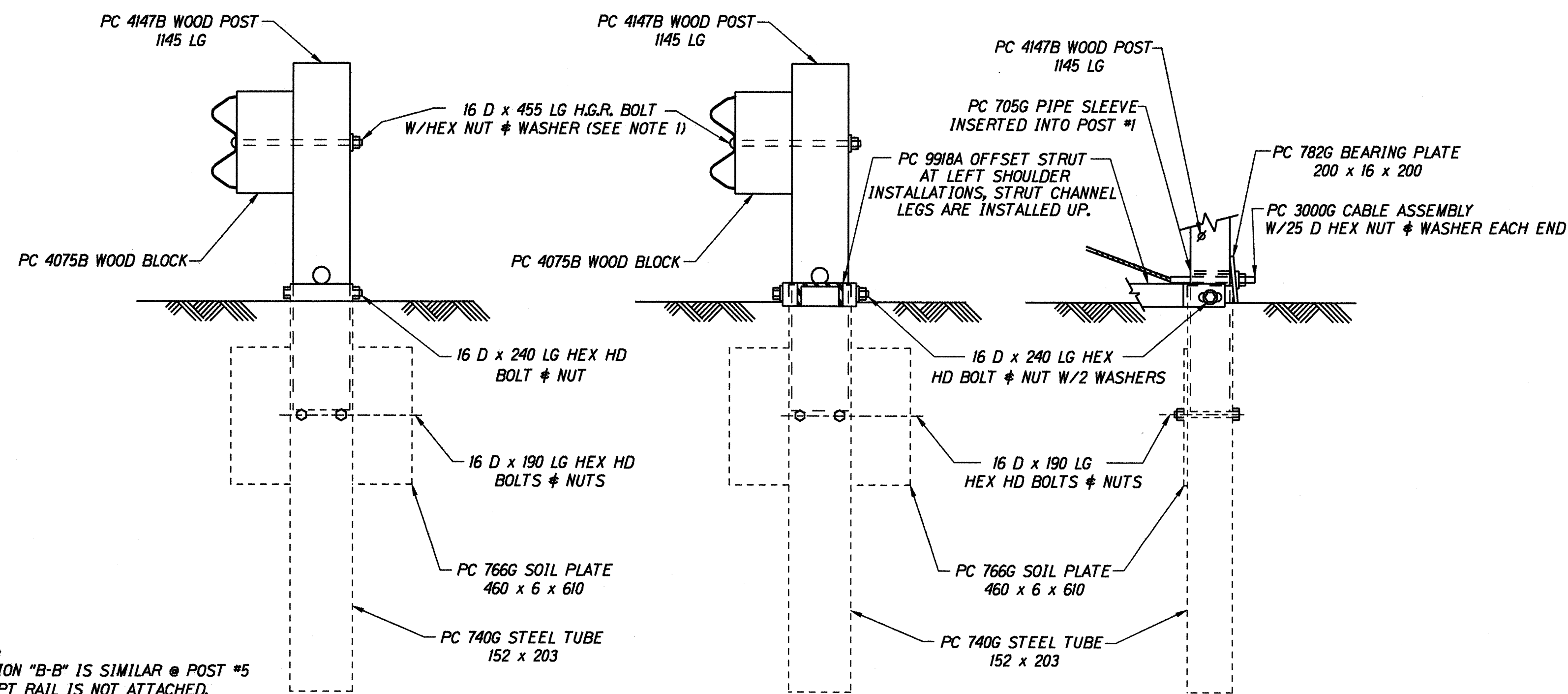




FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-H20(K3)	1998	23	51



BILL OF MATERIAL		
PC	QTY	DESCRIPTION
60G	1	12/25/6'3/S (GUARDRAIL)
62G	1	12/25/6'3/S ANC (GUARDRAIL)
704A	1	CABLE ANCHOR BRACKET
705G	1	2" x 5 1/2" PIPE
740G	8	46 TUBE SLEEVE
766G	8	1/4" x 18" x 24" SOIL PLATE
782G	1	3/8" x 8" x 8" BEARING PLATE
985A	1	ET-2000 EXTRUDER
3000G	1	CABLE 3/4" x 6'
3300G	11	3/8" WASHER
3340G	47	3/8" HEX NUT
3360G	16	3/8" x 1 1/4" SPLICE BOLT
3478G	16	3/8" x 7 1/2" HEX HD BOLT
3497G	8	3/8" x 9 1/2" HEX HD BOLT
3580G	7	3/8" x 18" POST BOLT
3900G	2	1" WASHER
3910G	2	1" HEX NUT
4075B	7	WD BLOCK 1'2" 6" x 8" DR
4147B	8	WD 3'9" POST 5 1/2" x 7 1/2"
4228G	2	3/8" x 4" LAG SCREW
9918A	1	6'3" STRUT



NOTE:  
SECTION "B-B" IS SIMILAR @ POST #5  
EXCEPT RAIL IS NOT ATTACHED.

NOTE:

1. THE 3/8" FLAT WASHER IS USED UNDER THE NUT, BEHIND THE POST ONLY. NO WASHER IS USED AT THE RAIL.
2. THE BREAKAWAY POSTS @ LOCATIONS #5, 6, 7 & 8 MAY BE AS SHOWN OR MAY UTILIZE POSTS AS SHOWN IN OPTION "B" WITHOUT FOUNDATION TUBES. (SEE DRAWING NO SS 241M.) POSTS @ LOCATIONS #1, 2, 3 & 4 MUST USE FOUNDATION TUBES.
3. THE ET-2000 WAS TESTED ON FLAT & LEVEL TERRAIN. IT IS NOT RECOMMENDED ON SLOPES.
4. MANUFACTURER SUGGESTS CUSTOMER TO PROVIDE REFLECTORIZATION OF TERMINAL.

SURVEY PLOTTED BY: \_\_\_\_\_ DATE: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 DESIGNED BY: \_\_\_\_\_  
 CHECKED BY: \_\_\_\_\_

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**ET-2000**  
**OPTION "A"**  
 MOANALUA FREEWAY RAMPS RESURFACING  
 Vicinity of Ala Kapuna to Vicinity of Ala Napunani  
 F.A. Project No. STP-H20(K3)  
 Date: July, 1998