

Varies

0.0' to 12.0'

19.5'

Baseline  
(Grade Control)

Exist. Sidewalk

Outer Edge of Pavement

Cont. Existing S.E.

Salvage Lava Rock Curb  
See General Note 12

Type 4GM  
Guard Rail

Restore Sidewalk

4" thick concrete sidewalk  
reinf. w/ 6" x 6" x #6/#6  
wire mesh 5-1/4" per ft.  
See note below.

Cold Plane 3/4" and  
Resurface with 3/4"  
Open-graded Mix

Saw cut

Compacted fill

Type 4GM  
Guard Rail

Salvage Lava Rock Curb  
See General Note 12.

7 3/4" A.C. Mix II

Same as Typical Section

Saw cut

Existing grade

13 1/2" aggregate  
base course

1'-0" 1'-6" 1'-0"

Hand-drawn cross-section diagram of a guardrail installation. The diagram shows a 'Type 4GM Guard rail' with a width of 3'-0" and a height of 1'-0". To the left of the guard rail is 'Compacted fill'. To the right is a 'Saw cut' in the 'Existing grade'. Below the grade is a '16 1/4" aggregate base course'. Above the grade, there are two layers of 'Open-graded Mix' and '2 1/2" A.C. Mix'. A '3/4" Open-graded Mix' layer is also indicated. A dashed line indicates the 'Existing grade'.

1. The Contractor shall submit a written intention to close a lane or any other channelization of traffic ten (10) calendar days prior to the action. The submittal to the Engineer shall contain a brief description of what will be done and time and days of closure.
2. The Contractor shall furnish and install informational signs of impending lane closures along the approaches to the affected areas for three (3) working days prior to closure.
3. The Contractor shall install State-furnished portable concrete guard rails Item No. 606.9040 when constructing Type 4GM Guardrails. The Contractor shall also submit a traffic control plan to the Engineer for approval showing placement of portable concrete barrier and all other pertinent data.
4. The Contractor shall keep all lanes open to public traffic and shall not perform any operations within the roadway during the following peak hours:

Technical drawing of a vertical barrier section showing reinforcement details. The drawing includes dimensions for width (1'-0" total, 1'-6" clear, 6" base) and height (1'-7" total, 1'-0" clear, 1'-6" base). Reinforcement includes #5 bars at 9" o.c. and #4 bars at 18" o.c. A 3/4" chamfer is shown at the top. A 2" clear space is indicated for the top reinforcement. A 3" clear space is indicated for the bottom reinforcement. A 6" base is shown. A 1'-0" total height is indicated. A 1'-6" clear height is indicated. A 1'-7" total height is indicated. A 2" clear space is indicated for the top reinforcement. A 3" clear space is indicated for the bottom reinforcement. A 6" base is shown.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

TYPICAL SECTIONS

NIMITZ HIGHWAY  
SAFETY IMPROVEMENTS  
Westbound Lanes at Wilei  
F.A. PROJ. No. HES-092-1(19)

Scale: As Noted Date: July, 1984

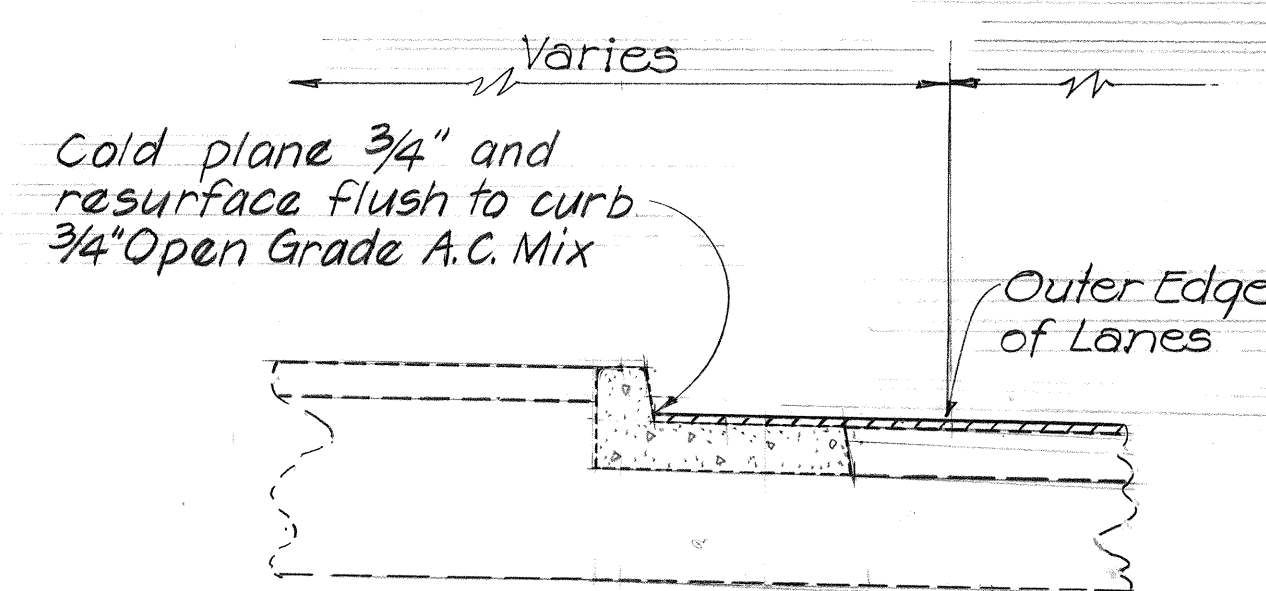
SHEET No. OF SHEETS



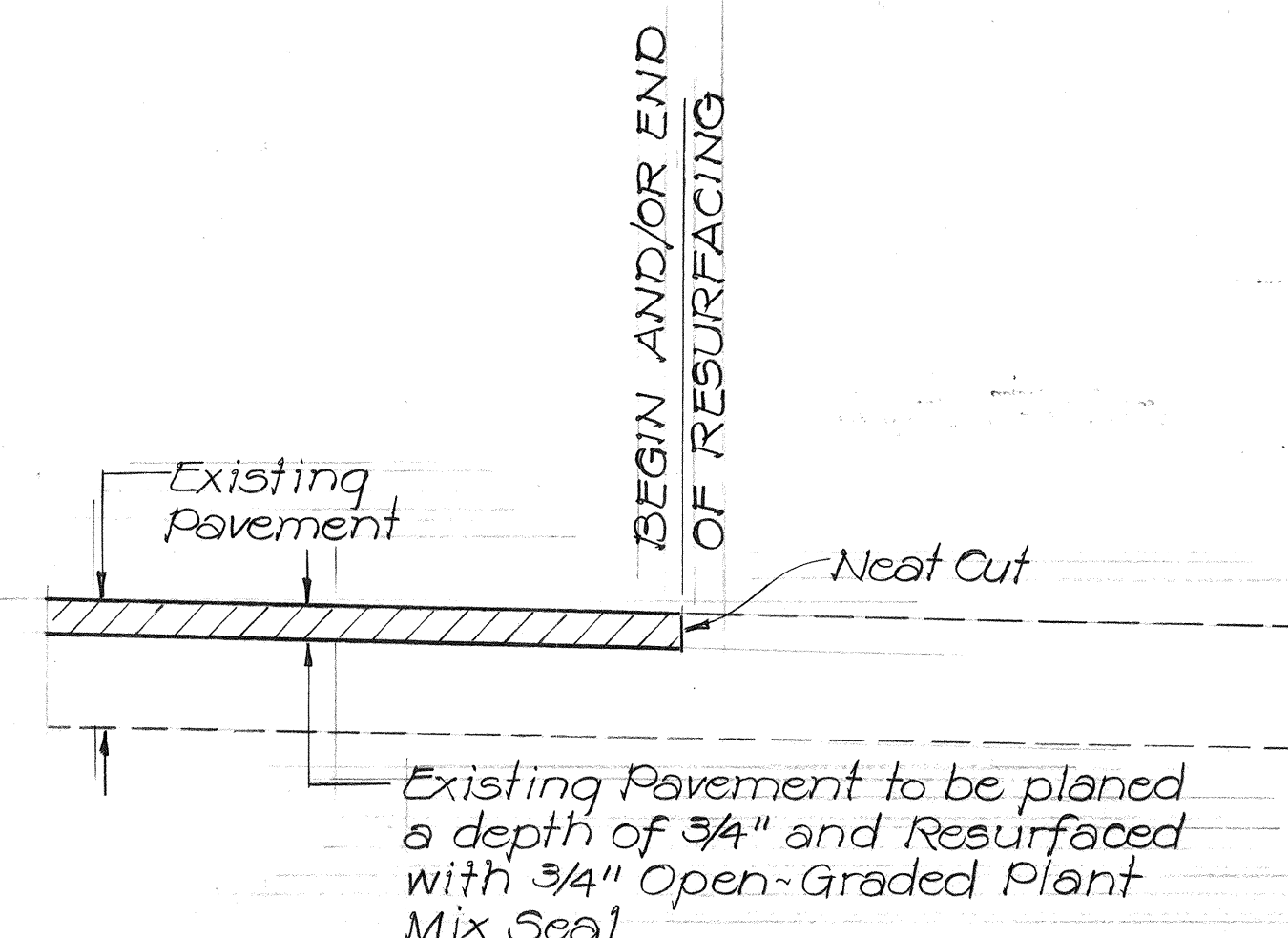
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HE5-092-1(19)	1985	3	22

## GENERAL NOTES

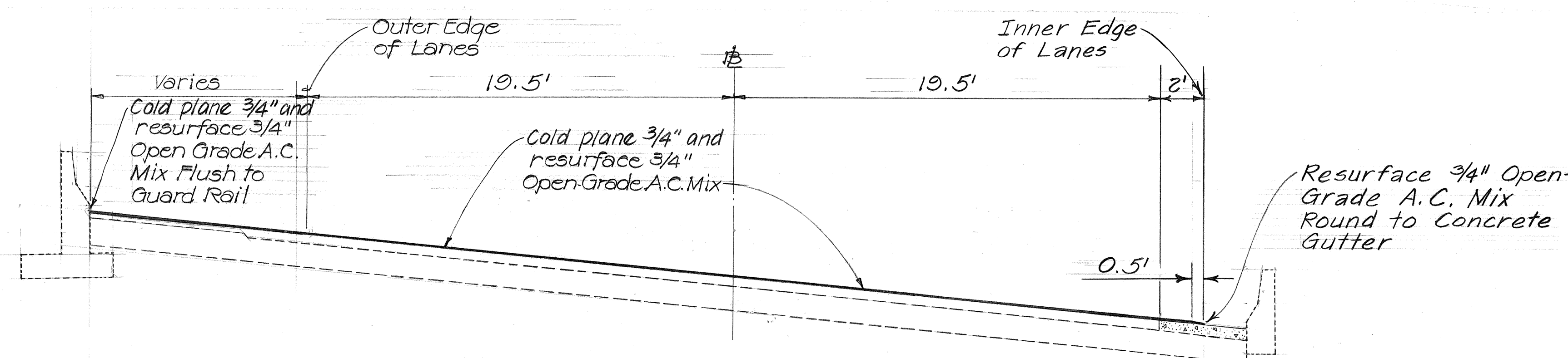
- The scope of work for this project consists of resurfacing with open grade A.C. mix, extending the Guard Rail, cold planing, adjusting manhole frames and covers, adjusting  $\pm$  monuments, and installing pavement markings and striping.
- The exact limits for extending guard rails and resurfacing roadway, shall be determined in the field by the Engineer. The new guard rail shall be constructed prior to resurfacing.
- The Contractor shall remove and dispose of all existing raised pavement markers in the resurfacing areas prior to overlaying open grade A.C. mix. This work shall be considered incidental to Item No. 652.1000 - Cold Plane Existing Pavement.
- The Contractor shall cold plane  $\frac{3}{4}$ " from the top of the existing A.C. pavement prior to resurfacing with open grade A.C. mix. Cold planing shall occur from edge of pavement to opposite edge of pavement to preserve the existing superelevation. This work shall be paid under Item No. 652.1000 - Cold Plane Existing Pavement.
- As shown on the plans or as directed by the Engineer, a smooth riding transition shall be provided at the beginning and end of the project, at side streets, between all pavement areas used by the public traffic during each construction phase, and between transitions of the construction phases.
- Locate and adjust existing  $\pm$  street survey. Monuments shall be raised to the grade as shown on the plan sheet.
- Locate and raise manholes if necessary to the grade as shown on the plan sheet.
- Reset curb flush to  $\pm$  Sta. 1+75 end of New Type 4GM Guard Rail. This work shall be considered incidental to Item No. 606.5000 - Guard Rail, Type 4GM - Concrete Rigid Barrier.
- The existence and location of underground utilities, manholes, monuments, and structures as shown on the plans are based on the latest available data. They are not guaranteed as to the locations shown or as to other obstacles not shown that may be encountered in the course of the work.
- The Contractor shall assume that existing obstacles not shown may exist and will be held liable for any damages incurred to such obstacles encountered as a result of his operations. All damaged portions shall be replaced/repared in accordance with the standards and specifications of the affected company.
- Brooming off all loose material and excess dust, according to the contract, shall be done before resurfacing with open grade A.C. mix. Brooming off will not be paid for separately but shall be considered incidental to Item 403.0100 - Open Graded Plant Mix Seal.
- Salvage Lava Rock Curb. The Contractor shall remove, clean and stockpile the existing lava rock curb at the designated site, shown on Sheet No. 4. The Contractor shall contact Mr. Leo Jones at 548-4027 of the Highways Maintenance Section to schedule pick up of the lava rock curbs. All of the above work shall be considered incidental to Item No. 606.5000 - Guard Rail, Type 4GM - Concrete Rigid Barrier.



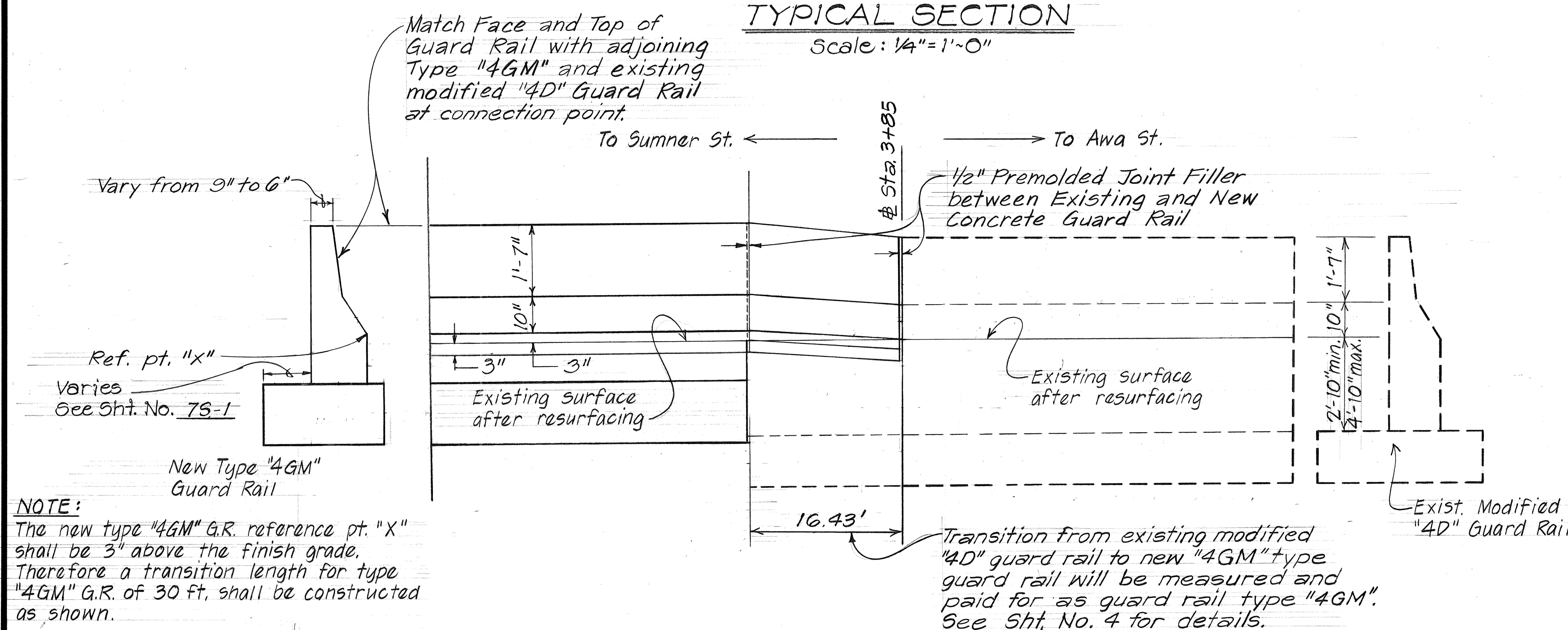
**CURB SECTION**  
STA. 1+50 TO STA. 1+75  
Scale:  $\frac{1}{2}$ " = 1'-0"



**TYPICAL LONGITUDINAL SECTION**  
AT BEGINNING AND END OF PROJECT  
Not To Scale



**TYPICAL SECTION**  
Scale:  $\frac{1}{4}$ " = 1'-0"



**TYPICAL TRANSITION DETAIL**  
N. T. S.

**TYPICAL SECTION**  
AT TRANSITION  
N. T. S.

**NOTE:**  
The new type "4GM" G.R. reference pt. "X" shall be 3" above the finish grade. Therefore a transition length for type "4GM" G.R. of 30 ft. shall be constructed as shown.

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
RESURFACING & MISC. TYP. SECTIONS	
NIMITZ HIGHWAY	
SAFETY IMPROVEMENTS	
WESTBOUND LANES AT IWILEI	
F.A. PROJECT NO. HE5-092-1(19)	
SCALE: As Noted	DATE: July, 1984
SHEET NO.	OF SHEETS