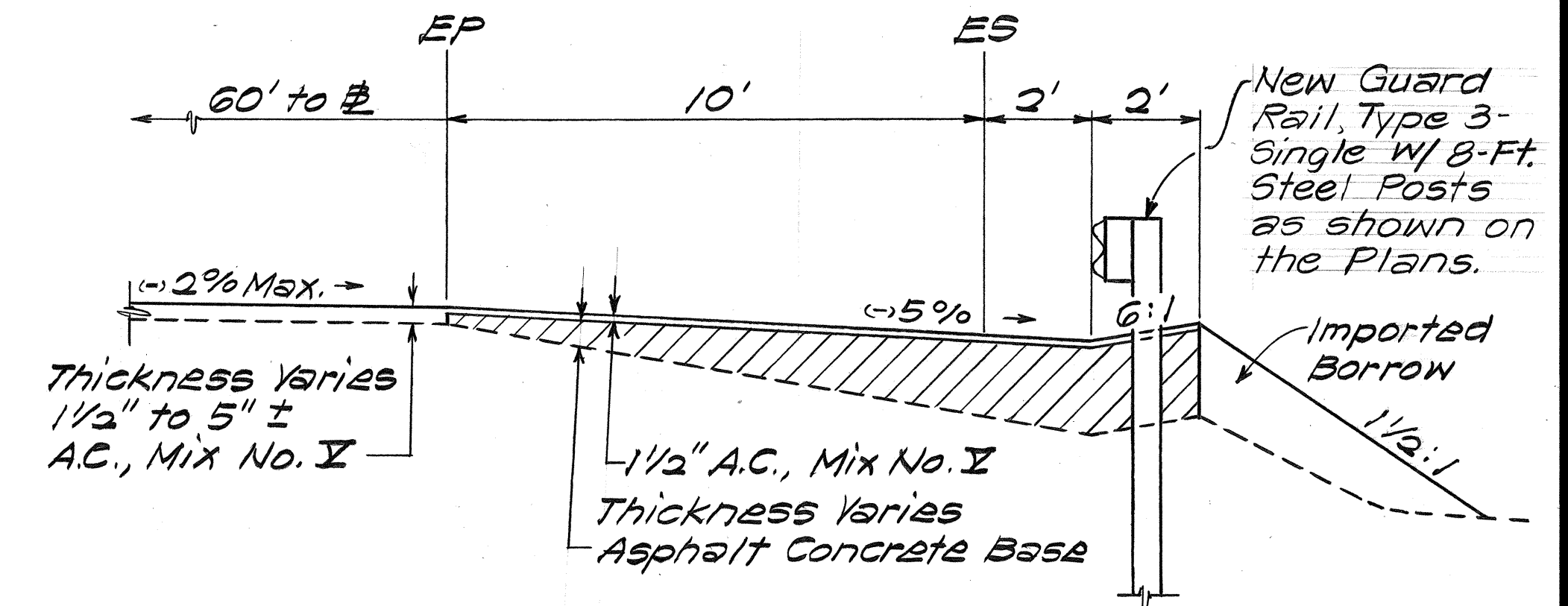


GENERAL NOTES

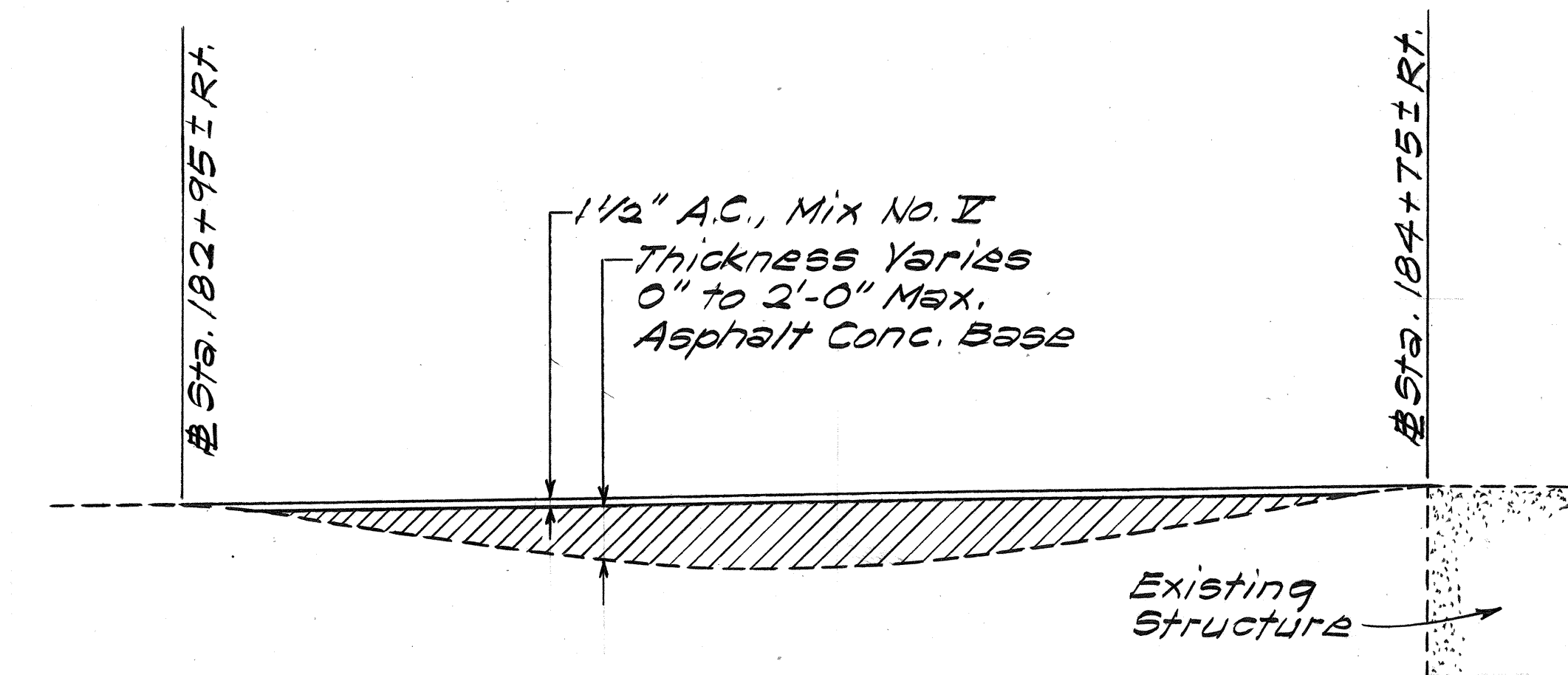
1. This project consists of reconstructing weakened pavement areas; resurfacing with A.C., Mix No. V and Open-Graded Plant Mix Seal; installing guard rails and impact attenuators; placing pavement markers, striping and signs; replacing existing luminaires with High Pressure Sodium luminaires; and modifying existing highway lighting system, existing sprinkler system and existing drainage system.
2. The existence and location of underground utilities, manholes, C&C street survey monuments, centerline monuments and structures as shown on the plans are from the latest available data but the accuracy is not guaranteed. Furthermore, the encountering of other obstacles during the course of work may be possible. The Contractor shall be responsible and shall pay for all damages to existing facilities resulting from his operations.
3. The location and limits of the areas to be reconstructed as shown on the plans are approximate. The exact limits will be determined in the field by the Engineer. The depth of reconstruction shall be as indicated on Plan Sheet No. 4. The excavated areas shall be reconstructed with Plant Mix Asphalt Concrete Base Course or Recycled Plant Mix Asphalt Concrete Base Course prior to resurfacing.
4. Pavement Reinforcing Fabric shall be placed where indicated on the plans. The exact limits will be determined in the field by the Engineer.
5. The Contractor's attention is directed to Section 107-Legal Relations and Responsibility to Public and Section 645-Traffic Control for traffic control requirements.
6. All holes and wheel ruts shall be filled and compacted with Asphalt Concrete Pavement, Mix No. V prior to resurfacing. This work will be paid for under Item No. 401.0600, Asphalt Concrete Pavement, Mix No. V.
7. Frames and covers of existing C&C street survey monuments and existing centerline and reference survey monuments shall be adjusted to the new pavement grade as shown in the plans.
8. The Contractor shall erect Type III Barricades in conjunction with his work for the Reconstruction of Grated Drop Intakes within the outbound right shoulder area at Red Hill. The Contractor shall place three (3) each of these barricades at 40' o.c. or as directed by the Engineer at each location.
9. The existing guard rail connections to the approach end at concrete bridges shall be upgraded to provide a 25' stiffened guard rail section. This work shall consist of installing four (4) each New Steel Post and Spacer Block between the existing steel post at 3'-1 1/2" o.c. or as directed by the Engineer. This work will be paid for under Item No. 606.3440,

Furnishing and Installing Steel Post and Spacer Block for Guard Rail. At locations where there is an existing drop intake, the Contractor shall install an additional section of guard rail element between the existing posts straddling the drop intake, as directed by the Engineer. This work will be considered incidental to Item No. 606.3440.

10. In cold planing areas, the Contractor shall extend the Open-Graded Plant Mix Seal across the entire width of the median and right shoulder to provide adequate drainage.
11. The Contractor shall re-vegetate the new fill slope area between Sta. 182+95± to Sta. 184+75± Rt, with comparable vegetation, as directed by the Engineer. This work shall be considered incidental to Imported Borrow.
12. Smooth riding connections shall be constructed at the beginning and end of project and at all connecting approaches as shown on the plans and as directed by the Engineer.
13. No resurfacing shall be done over the bridges. The existing Asphalt Concrete Pavement at the bridge approaches and trailing ends shall be removed by cold planing. For details, see Plan Sheet No. 4.
14. If required by the Engineer, the Contractor shall provide a level area at BCT installations and approaches by grading or paving. This work shall be done under the direction of the Engineer and shall be considered incidental to Guard Rail, Type 3-Single with Steel Posts.



TYPICAL SECTION AT SETTLEMENT AREA
± STA. 182+95± TO ± STA. 184+75± RT.
 Scale: 3/8" = 1'-0"



LONGITUDINAL SECTION AT EDGE OF SHOULDER
 Not to Scale

6/8/84 Revised Typical Section & Note No. 11. Added Note No. 14.

DATE REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

GENERAL NOTES & TYPICAL SECTIONS

MOANALUA ROAD RESURFACING
 Area I.C. to Puuloa I.C.
 F.A. Project No. F-FR-078-1(25)

Scale: As Shown Date: May, 1984

SHEET No. 1 OF 4 SHEETS

ADD. 2

UTILITY GENERAL NOTES

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-FR-078-1(25)	1984	ADD. 25-1	52

HAWAIIAN ELECTRIC CO., INC. (HECO) NOTES

- 1. The existence and location of HECO's overhead and underground facilities as shown on the plans are from existing records of varying degrees of accuracy and are not guaranteed as shown, therefore, the Contractor is to exercise extreme caution when the excavation and construction crosses or is in close proximity of underground electrical facilities and maintain adequate clearance for his equipment while working close to and/or under the overhead facilities.
- 2. The Contractor is to comply with the directions of the State of Hawaii Occupational Safety and Health Law (DOSH).
- 3. The Contractor is to obtain a clearance to excavate from HECO Mapping and Record Division, 4th floor, 820 Ward Avenue two weeks prior to start of construction.
- 4. The Contractor shall be liable for any damages to HECO's facilities.
- 5. The Contractor shall report any damages to HECO's facilities to the HECO Trouble Dispatcher at phone no. 548-7920
- 6. The Contractor shall contact Mr. Bill Atkinson, Jr. from HECO's Contract & Inspection Division at 548-7752, a minimum of 72 hours prior to adjusting HECO's manholes and all work required shall be done in presence of an HECO inspector.

GAS FACILITIES NOTES

- 1. The Gasco. Inc. gas pipelines in the project area are plastic coated and cathodically protected. The Contractor shall be extremely careful when working near these gas pipelines.
- 2. Prior written clearance must be obtained from Gasco. Inc. at least five working days before starting excavation near these gas lines.

Since gas line locations on field maps are approximate, the Contractor, after obtaining written clearance shall call Gasco. Inc., a minimum of 48 hours before starting excavation to arrange for field location of existing gas lines. The telephone number is 547-3575 during business hours, and 526-0066 after hours.
- 3. For relocation of any gas pipeline, the Contractor shall notify Gasco. Inc. five working days before starting work. The Contractor shall provide the necessary excavation and backfill, arrange for traffic permits, and restore sidewalk, pavement, or other facilities. Any relocation of gas facilities shall be done by Gasco. Inc. and paid for by the Contractor.
- 4. The Contractor shall notify Gasco. Inc. immediately after any damage has been caused to existing gas pipelines, their coatings or their cathodic protection devices. Repair work on this damage shall be done by Gasco, Inc. with payment for this work to be borne by the Contractor.
- 5. Minimum vertical or horizontal clearance between gas pipelines and other pipelines, conduits, or ductlines shall be 12 inches. Adequate support and protection for gas pipelines exposed in the trench shall be provided and approved by Gasco. Inc.
- 6. The Contractor shall work in an expeditious manner in order to keep uncovered gas pipelines exposed for as short a period of time as possible.

BOARD OF WATER SUPPLY (BWS) NOTES

- 1. Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, dated 1976, as amended, of the Hawaii Highways Division, Department of Transportation.
- 2. The BWS Standard Details, Figures 1-62 inclusive, bound in the "Water System Standards" of the BWS, dated March 1977, as amended, are applicable to this Project.
- 3. The Contractor shall notify the Board of Water Supply one week prior to commencing work. Please contact Mel Mikasa at 527-GIG9.

Discrepancies, if any, of alignments, grades, fittings, etc. shall not be the responsibility of the Board of Water Supply.
- 4. The existence and location of underground utilities and structures as shown on the plans are from the latest available data but is not guaranteed as to the accuracy or the encountering of other obstacles during the course of the work. The Contractor shall be responsible and shall pay for all damages to existing utilities.
- 5. Any adjustments to the existing water system required during construction to meet requirements of BWS Standards, whether shown on the plans or not, shall be done by the Contractor at no cost to the Board.
- 6. Reapproval shall be required if this project is not under construction within a period of one year.
- 7. The Contractor shall adjust all valve boxes and manhole frames and covers that are in the areas to be paved. Prior to paving operations, BWS will mark all water manholes and valve boxes involved with this project. The Contractor shall be responsible for referencing, and adjusting all BWS appurtenances. Referencing of BWS facilities shall be incidental to the various contract items. Any additional work required of BWS to locate and reference BWS facilities, subsequent to paving operations, will be at the Contractor's expense. BWS will bill Contractor for said additional work.

HAWAIIAN TELEPHONE CO. (HTCO) NOTES

- 1. The existence and location of HTCO's overhead and underground facilities as shown on the plans are from existing records of varying degrees of accuracy and are not guaranteed as shown, therefore the Contractor is to exercise extreme caution when the excavation and construction crosses or is in close proximity of underground electrical facilities and maintain adequate clearance for his equipment while working close to and/or under the overhead facilities.
- 2. HTCO will adjust their own manhole frame and covers. The Contractor shall coordinate his work with HTCO.

DATE	_____
DESIGNED BY	_____
TRACED BY	_____
NOTE BOOK	_____
QUANTITIES BY	_____
CHECKED BY	_____
ORIGINAL	_____

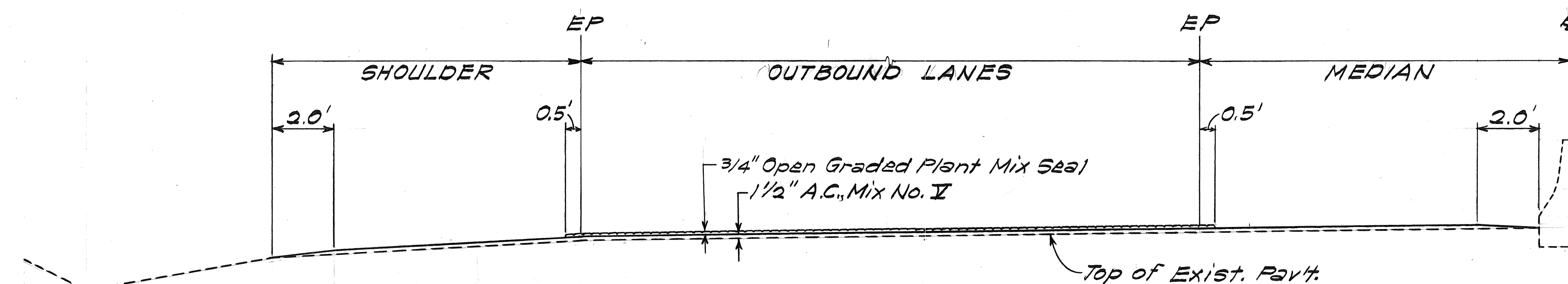
APPROVED: Date 6-7-84
R. Uagato
Chief, Planning & Engineering, BWS

6/8/84	Added Frontage Rd., Ala Kapuna St., Forward St. and Ala Aolani St. Resurfacing & M.H. Adjustments.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
UTILITY GENERAL NOTES	
MOANALUA ROAD RESURFACING AIEA I.C. TO PULLOA I.C. F.A. Project No. F-FR-078-1(25)	
Date: June, 1984	

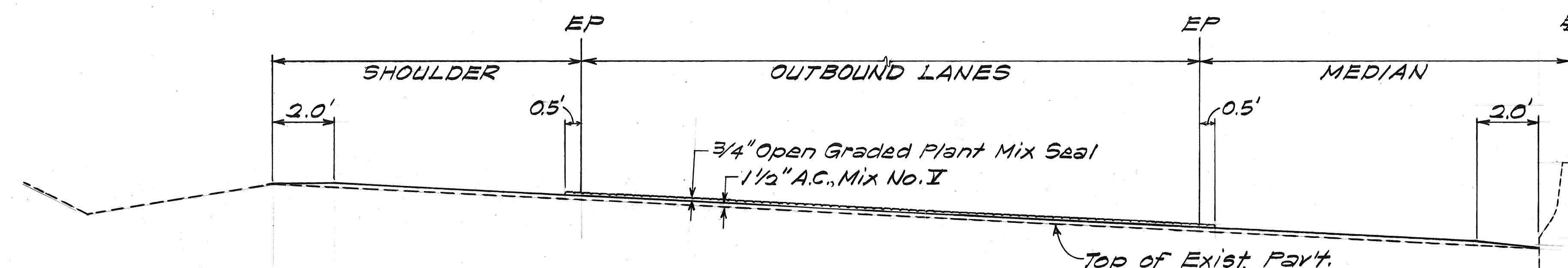
SHEET No. 1 OF 1 SHEETS

ADD. 2 S-1

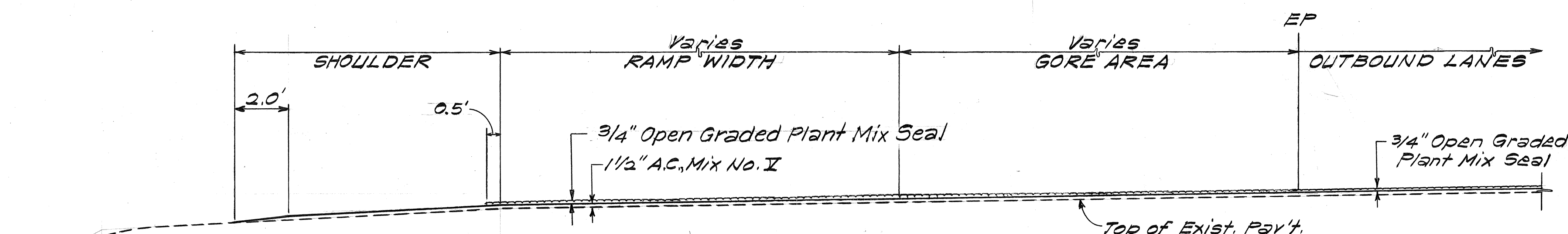
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-FR-078-1(25)	1984	3	52



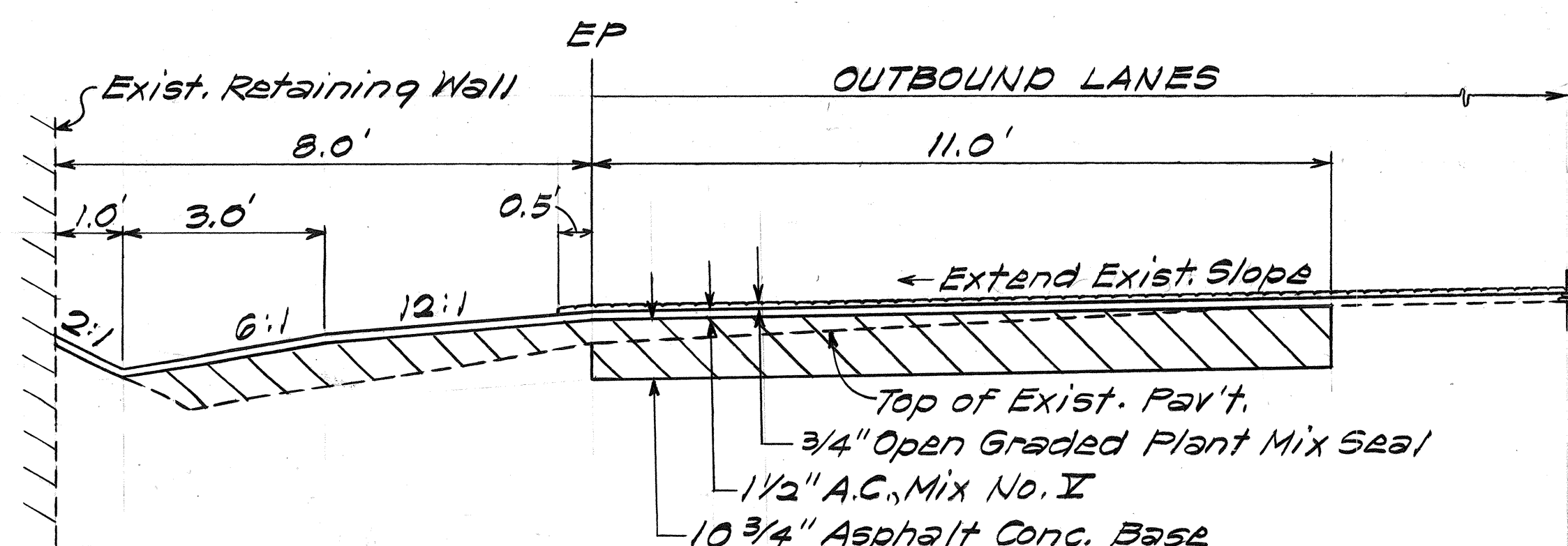
TYPICAL TANGENT HALF SECTION~MOANALUA ROAD
Scale: $\frac{3}{8}'' = 1'-0''$



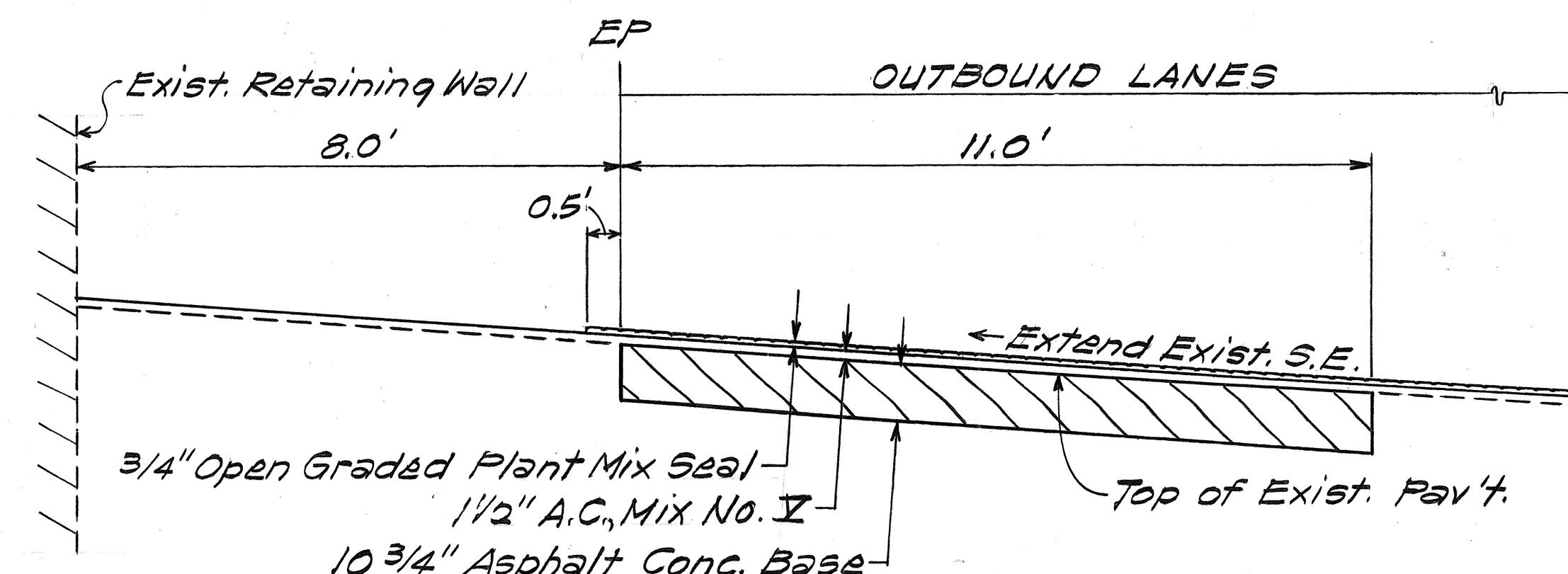
TYPICAL SUPERELEVATED HALF SECTION~MOANALUA ROAD
Scale: $\frac{3}{8}'' = 1'-0''$



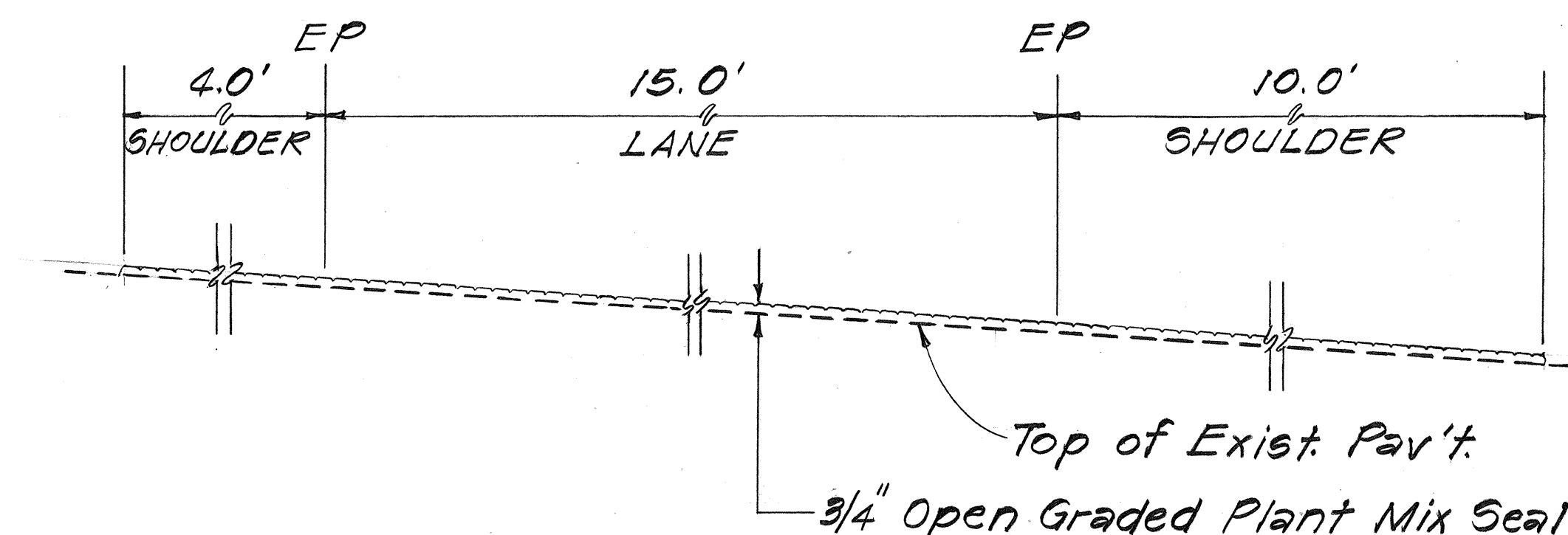
TYPICAL SECTION THROUGH RAMP GORE AREA
Scale: $\frac{3}{8}'' = 1'-0''$



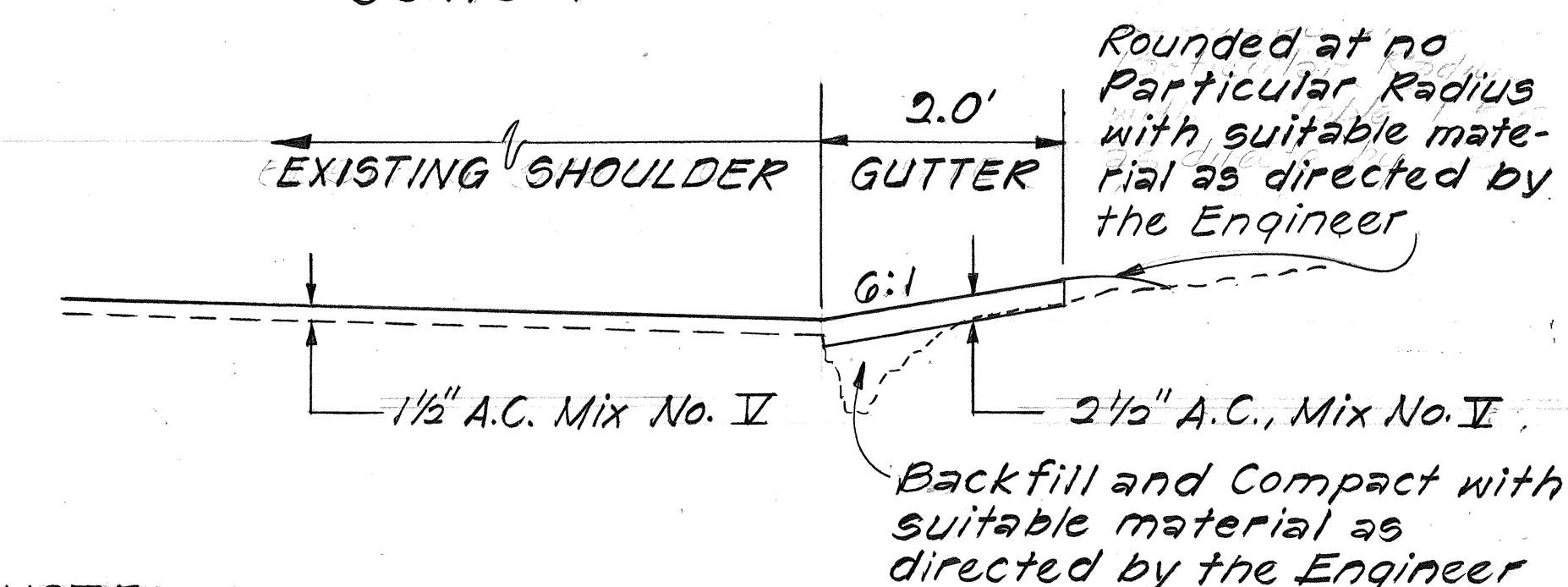
**TYPICAL DETAIL~TANGENT SECTION
OUTBOUND RIGHT LANE AT RED HILL**
Scale: $\frac{1}{2}'' = 1'-0''$



**TYPICAL DETAIL~SUPERELEVATED SECTION
OUTBOUND RIGHT LANE AT RED HILL**
Scale: $\frac{1}{2}'' = 1'-0''$



**DETAIL-RESURFACING RAMP "B"
WITH OPEN GRADED PLANT MIX SEAL**
Scale: $1'' = 1'-0''$



NOTE:

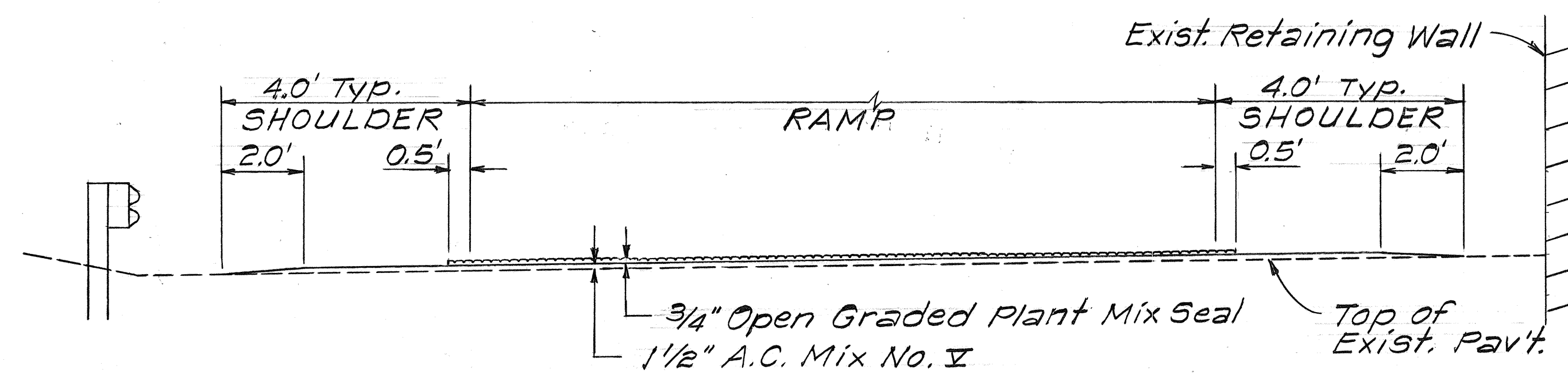
The Contractor shall match into existing swale at Ramp "N" & Sta. 17+10±. Excavation, backfilling and compacting and rounding with suitable material will not be paid for separately and will be considered incidental to the various contract items. A.C., Mix No. II used in the construction of the 2' Gutter will be paid for under Item No. 401.0600, Asphalt Concrete Pavement, Mix No. II.

**GUTTER DETAIL~RAMP "N" & STA. 12+00±
TO & STA. 17+10± RT.**
Scale: $\frac{3}{4}'' = 1'-0''$

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
TYPICAL SECTIONS & DETAILS	
MOANALUA ROAD RESURFACING Area I.C. to Puuloa I.C. F.A. Project No. F-FR-078-1(25) Scale: As Shown Date: Apr, 1984	
SHEET NO. 2 OF 4 SHEETS	

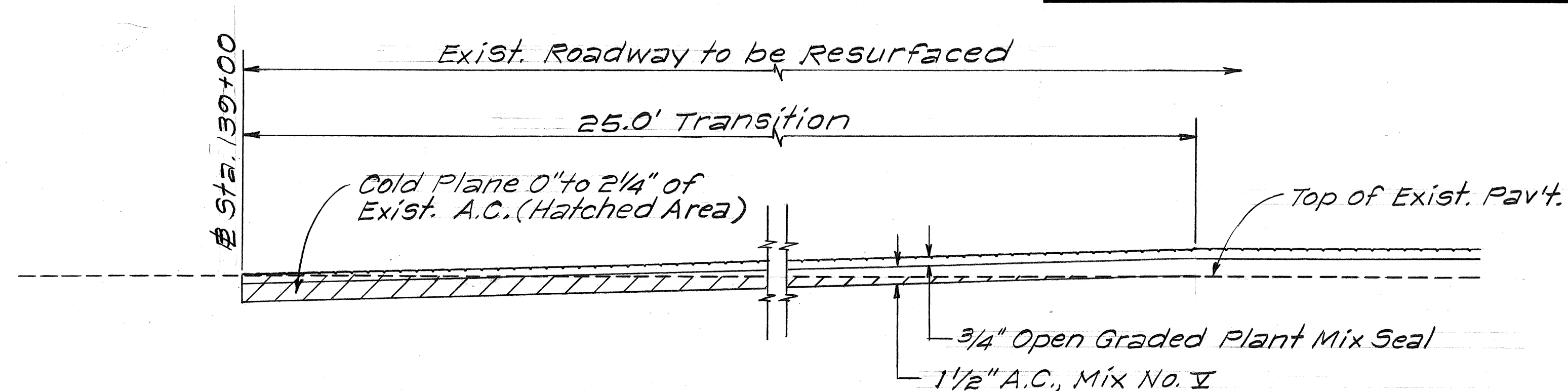
SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-FR-078-1(25)	1984	4	52



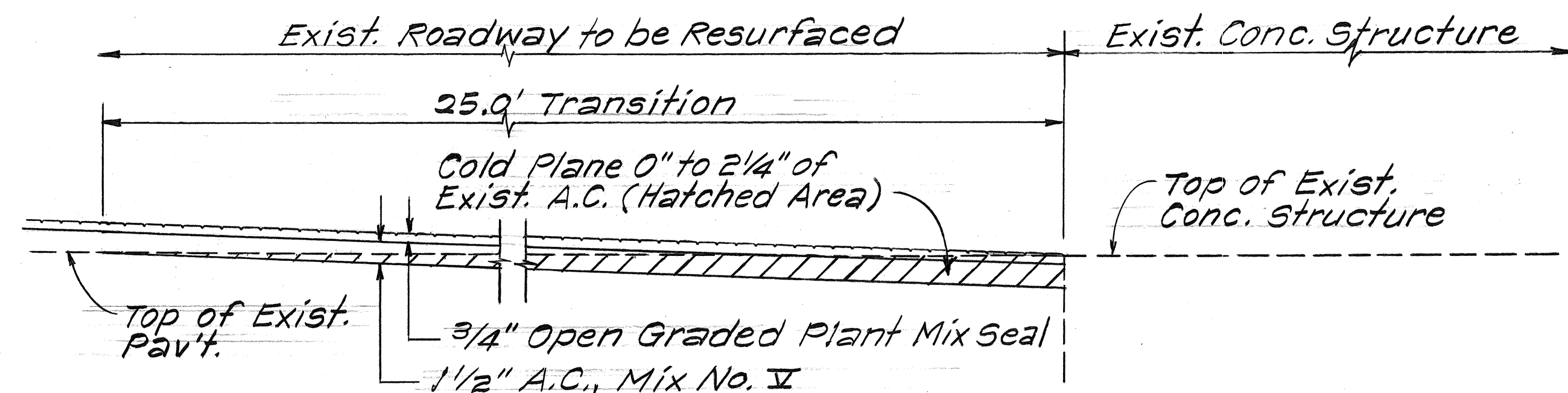
TYPICAL SECTION ~ RAMP RESURFACING

Scale: 3/8"=1'-0"



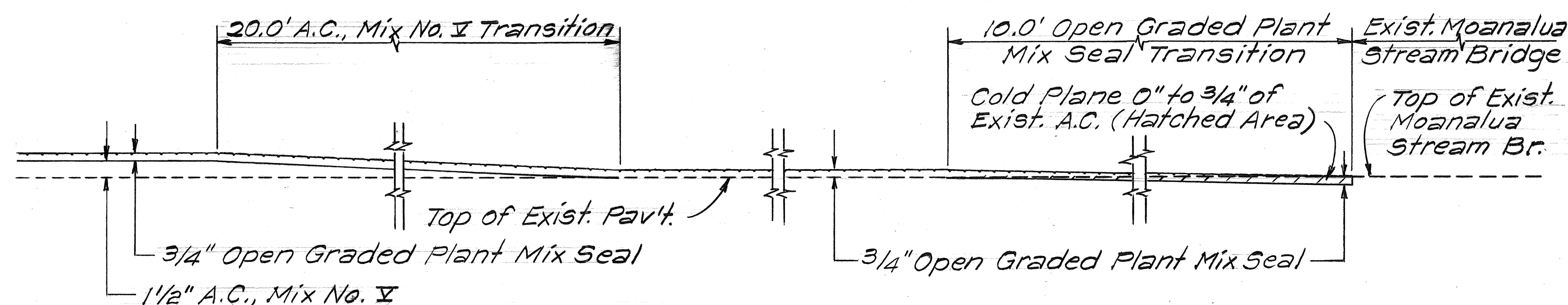
RESURFACING DETAIL AT BEGINNING OF PROJECT

Scale: 1/2"=1'-0"



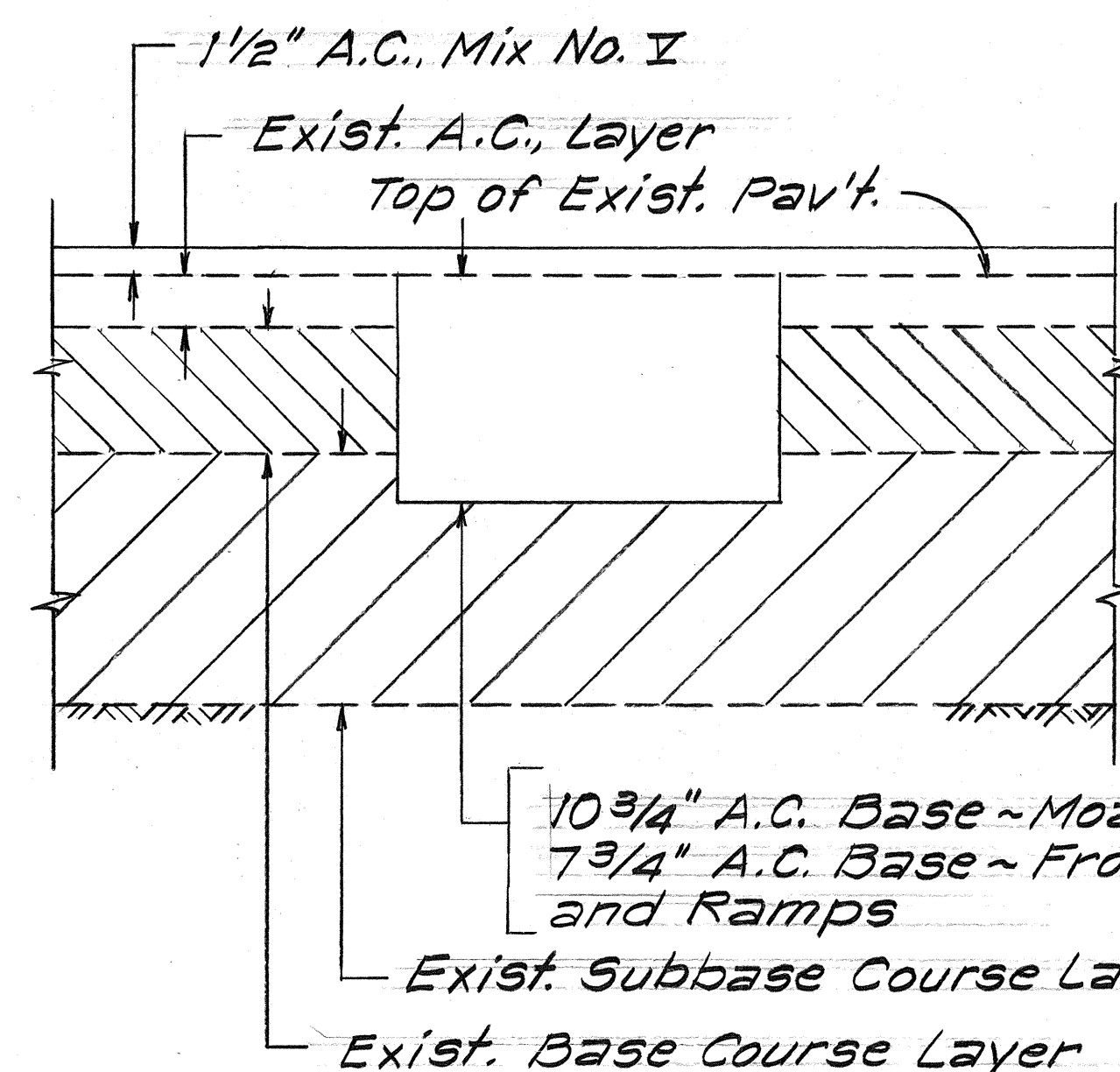
TYPICAL DETAIL ~ TRANSITION AT CONC. STRUCTURE

Scale: 1/2"=1'-0"



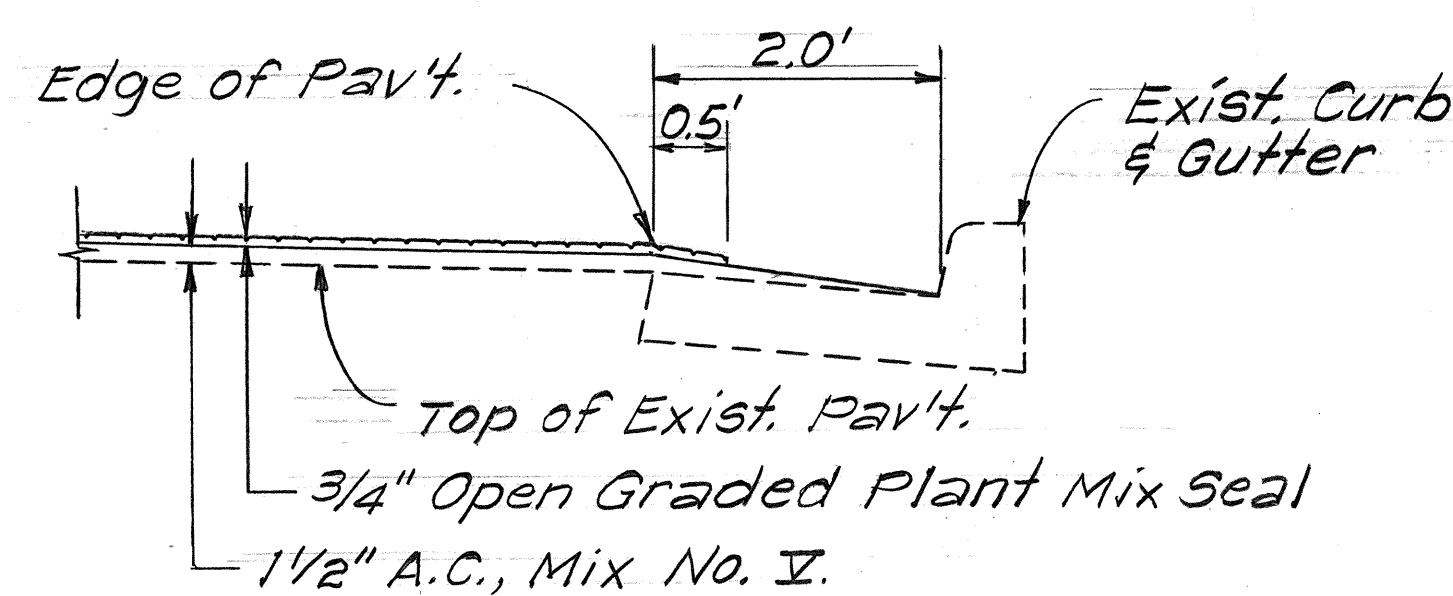
RESURFACING DETAIL AT END OF PROJECT

Scale: 1/2"=1'-0"



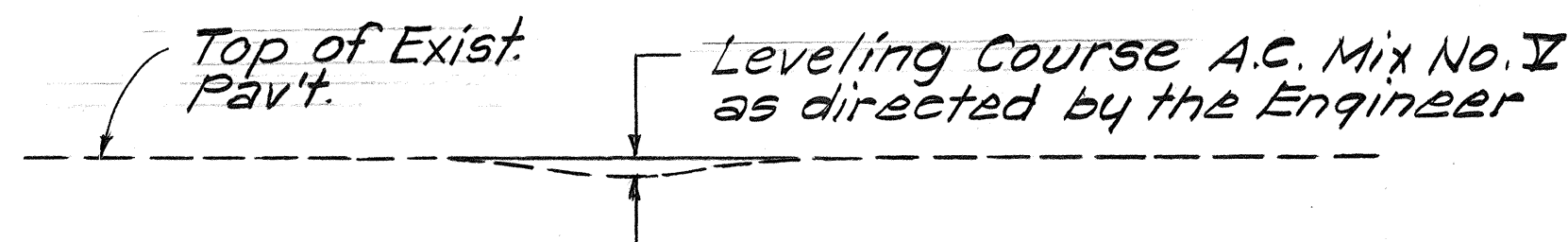
RECONSTRUCTION OF WEAKENED PAVEMENT AREA DETAIL

Scale: 1/2"=1'-0"



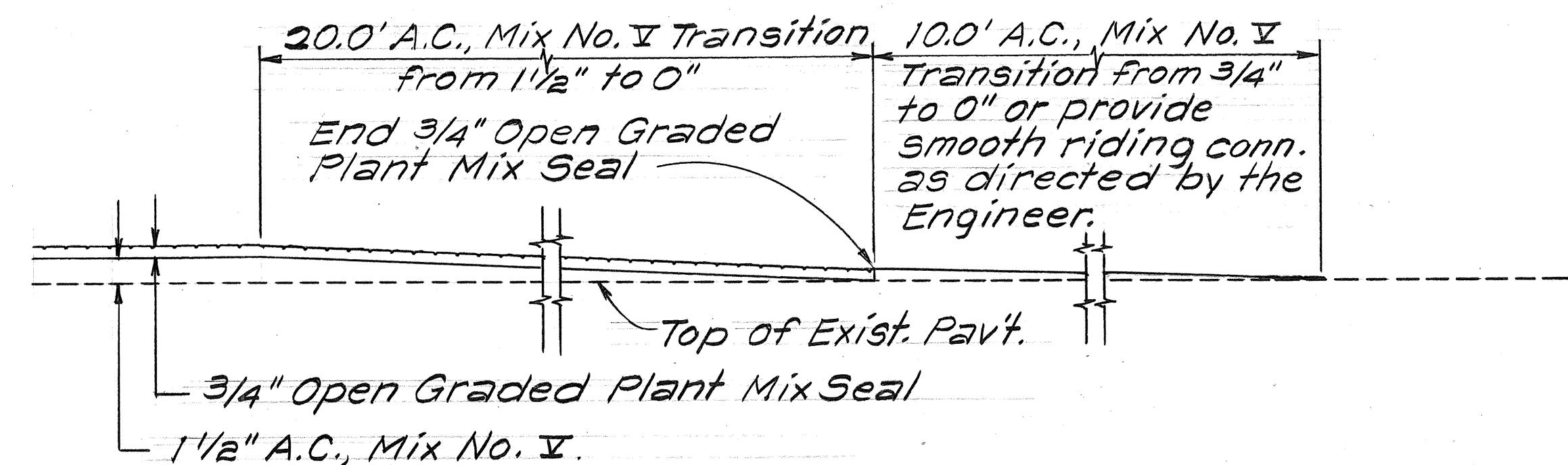
TYPICAL DETAIL ~ TAPER AT EXISTING CURB & GUTTER

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



LEVELING COURSE DETAIL

No Scale

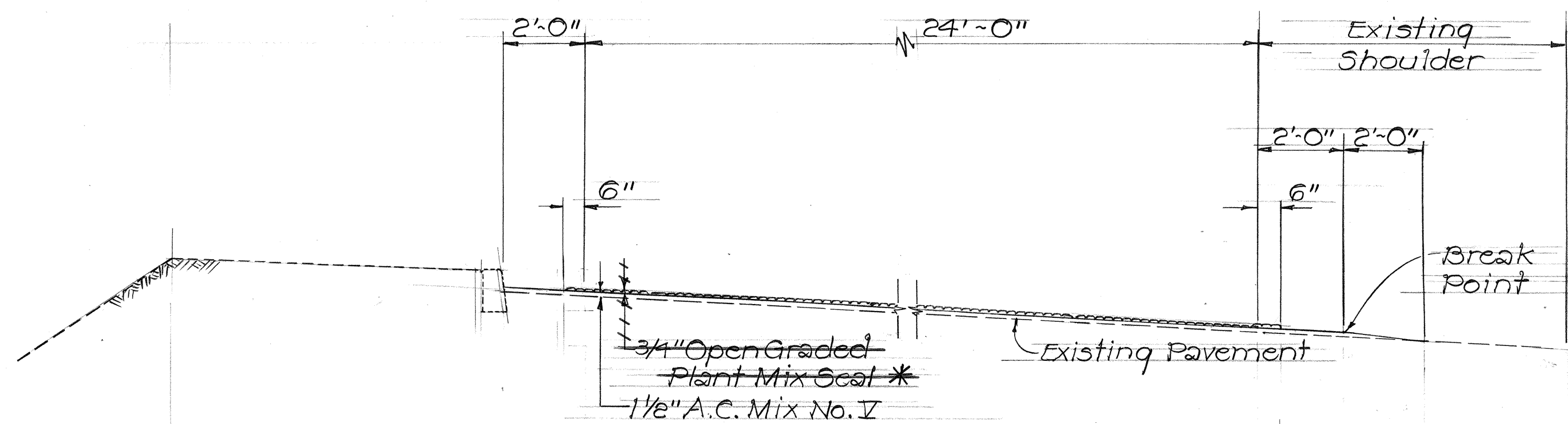


TYPICAL DETAIL ~ RESURFACING TRANSITION ON RAMPS

Scale: 1/2"=1'-0"

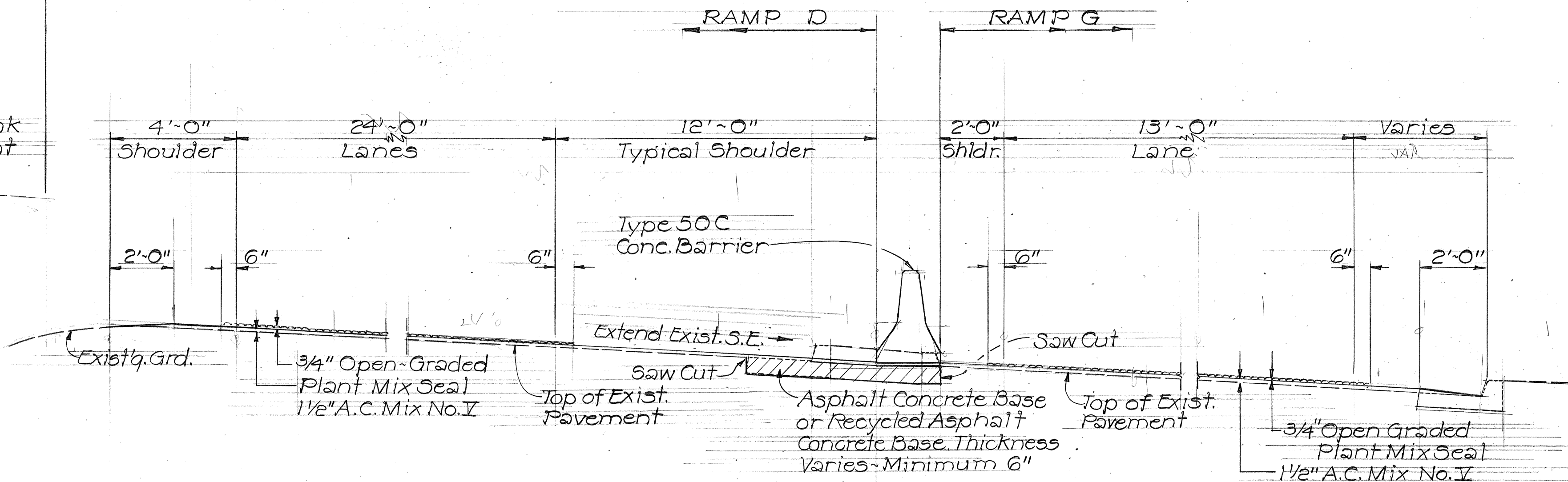
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
TYPICAL SECTIONS & DETAILS
MOANALUA ROAD RESURFACING Aiea I.C. to Puuloa I.C. F.A. Project No. F-FR-078-1(25) Scale: As Shown Date: Apr, 1984
SHEET No. 3 OF 4 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-FR-078-1(25)	1984	ADD 4 S-1	52



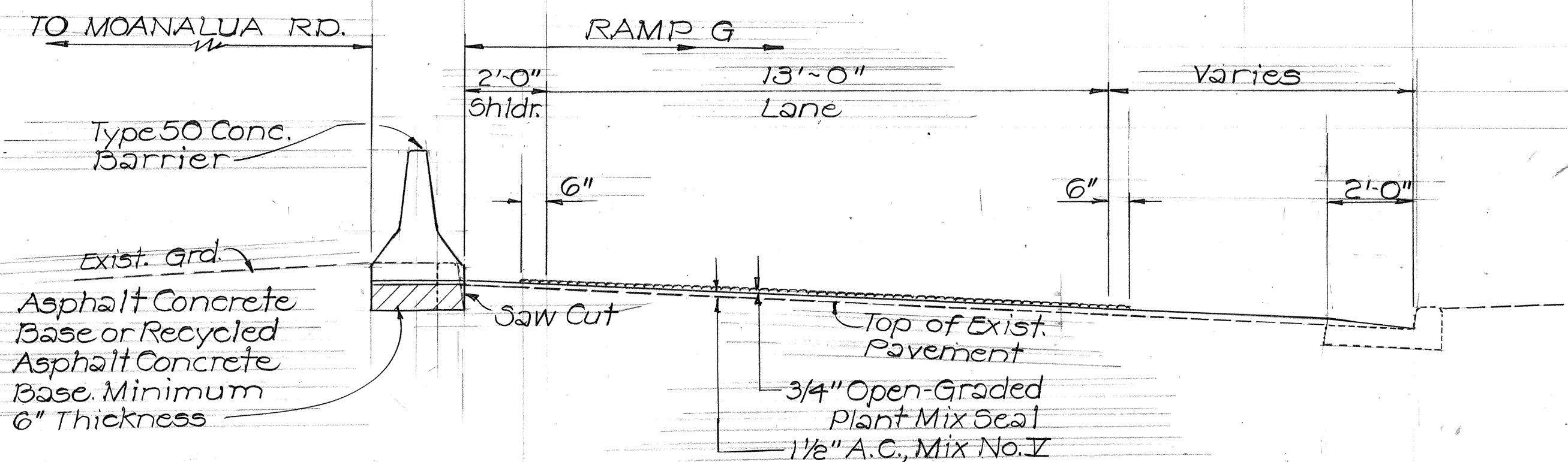
TYPICAL SECTION FRONTAGE ROAD

Scale: 3/8" = 1'-0"



TYPICAL SECTION INSTALLATION TYPE 50C CONCRETE BARRIER BETWEEN RAMP "D" & RAMP "G"

Scale: 3/8" = 1'-0"



TYPICAL SECTION INSTALLATION TYPE 50 CONCRETE BARRIER AT RAMP "G" & STA. 14+85± TO STA. 17+00± LT.

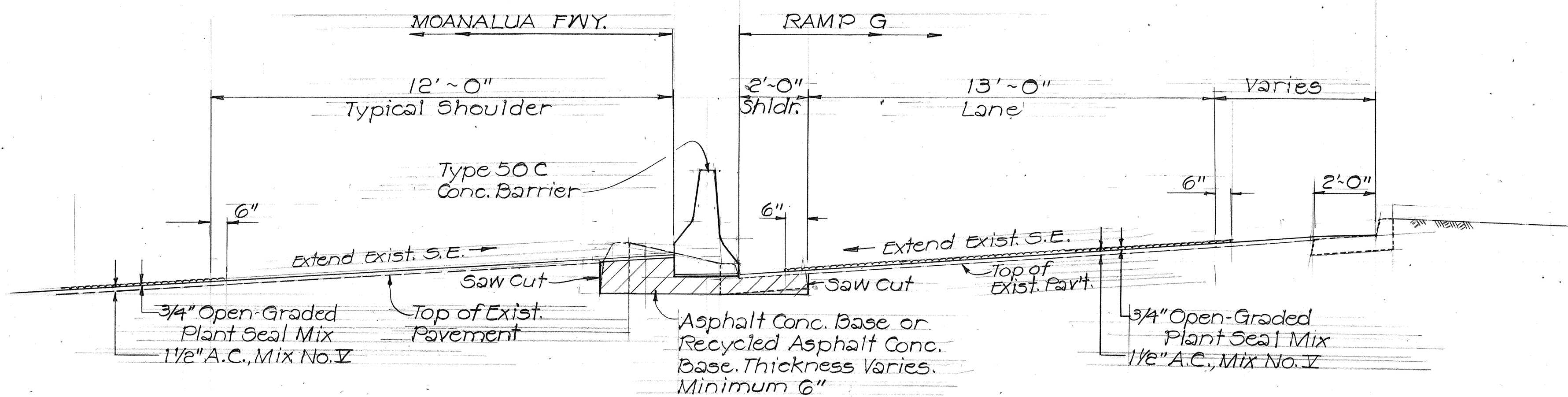
Scale: 3/8" = 1'-0"

* NOTE:

The Open-Graded Plant Mix Seal shall end 6" beyond the projected Edge of Pavement line for the North and South Frontage Roads projected through Side Roads and Driveways. The 3/4" drop-off at these Side Roads and Driveways, created by the Open-Graded Plant Mix Seal Paving, shall be corrected by tapering this drop-off with A.C. Mix No. V, as directed by the Engineer, to provide a smooth riding connection.

The areas where these limits occur are as follows:

1. Ala Kapuna St.
2. Aliamanu Dr.
3. Driveway at North Frontage Road & Sta. 9+30± Lt.
4. Kaiser Medical Center Driveway at North Frontage Road & Sta. 15+25± Lt.
5. Side Road at South Frontage Road & Sta. 14+00± Rt.
6. Ala Napunani St. at South Frontage Road & Sta. 29+00± Lt. & Rt.
7. Ala Aolani St.



TYPICAL SECTION INSTALLATION TYPE 50C CONCRETE BARRIER BETWEEN MOANALUA ROAD AND RAMP "G"

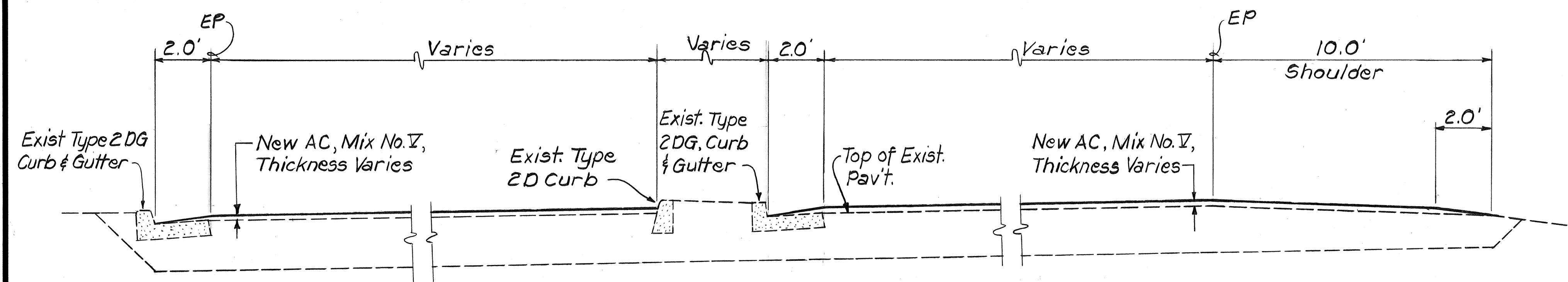
Scale: 3/8" = 1'-0"

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

6/8/84		Added Typical Sections for Frontage Roads and Ramps "D" and "G"	
Date		Revision	
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION		TYPICAL SECTIONS MOANALUA RD. RESURFACING AIEA I.C. TO PUULOA I.C. F.A. PROJECT No. F-FR-078-1(25)	
SCALE: As Shown		DATE: June 1984	
SHEET No.		OF SHEETS	

ADD 4 S-1

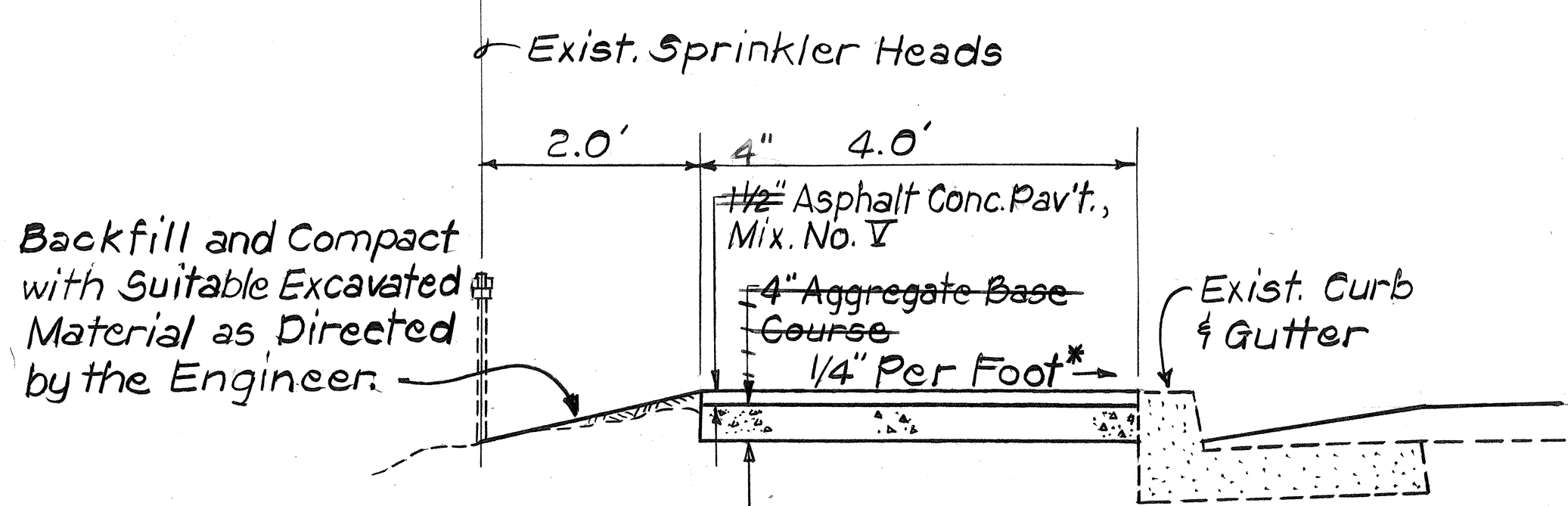
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-FR-078-1(25)	1984	C04-52	52



TYPICAL SECTION

ULUNE EXTENSION, RAMP "G" AND SERVICE ROAD STA. 10+13± TO STA. 14+60±

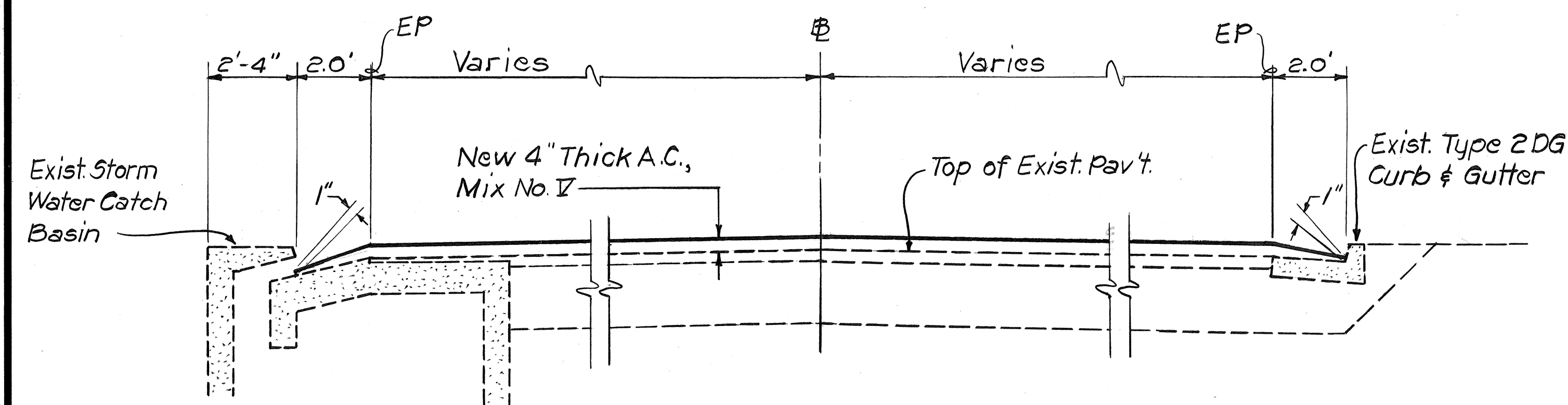
Scale: 3/8" = 1'-0"



* Exception at Exist. Frwy. Ramps

TYPICAL BITUMINOUS SIDEWALK SECTION

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



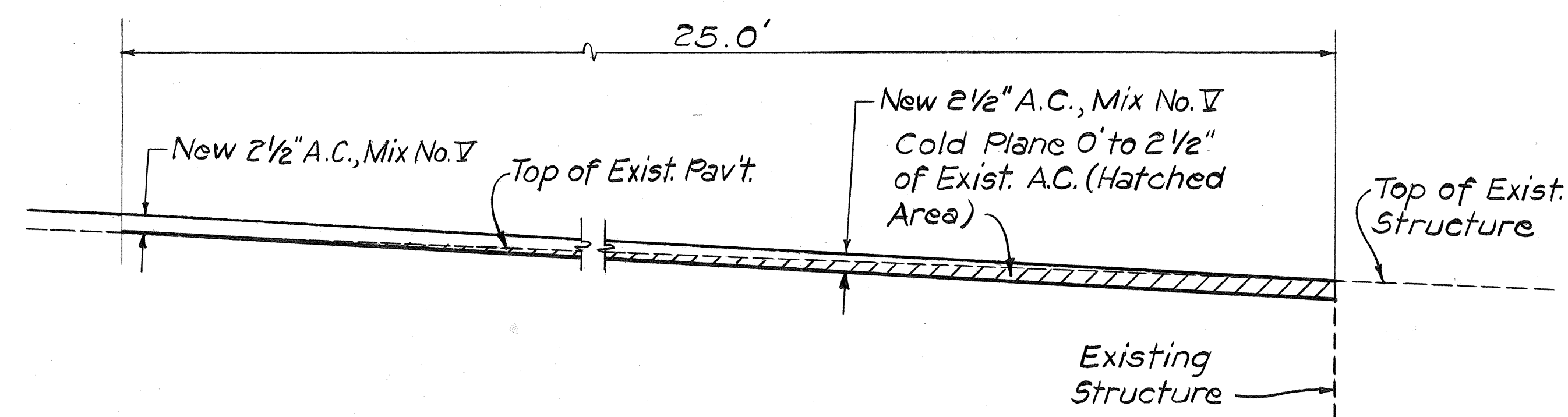
TYPICAL SECTION

SERVICE ROAD STA. 14+60± TO STA. 29+00±

Scale: 3/8" = 1'-0"

NOTES

- Where a variation in resurfacing thickness occur on the main thoroughfare, a transition shall be effected with a rate of 25 ft. per inch of difference and from the limits of the thicker to the thinner pavement.
- Backfill and compaction for Bituminous Sidewalk shall be incidental to Item No. ~~608.3000~~ Bituminous Sidewalk.
- The Contractor shall exercise due caution when excavating near underground utility and irrigation lines. The existence and location of utility facilities, as shown on the plans, are from the latest available data but is not guaranteed as to accuracy or completeness. The Contractor shall be responsible for and shall pay for all damages to existing utilities resulting from his operations.
- The depth of reconstruction shall be 7 inches (A.C. B. thickness) and the reconstruction shall be done as shown in the plans and the special provisions.



TYPICAL DETAIL ~ TRANSITION AT CONCRETE STRUCTURES

ULUNE EXTENSION AND SERVICE ROAD

Scale: 1 1/2" = 1'-0"

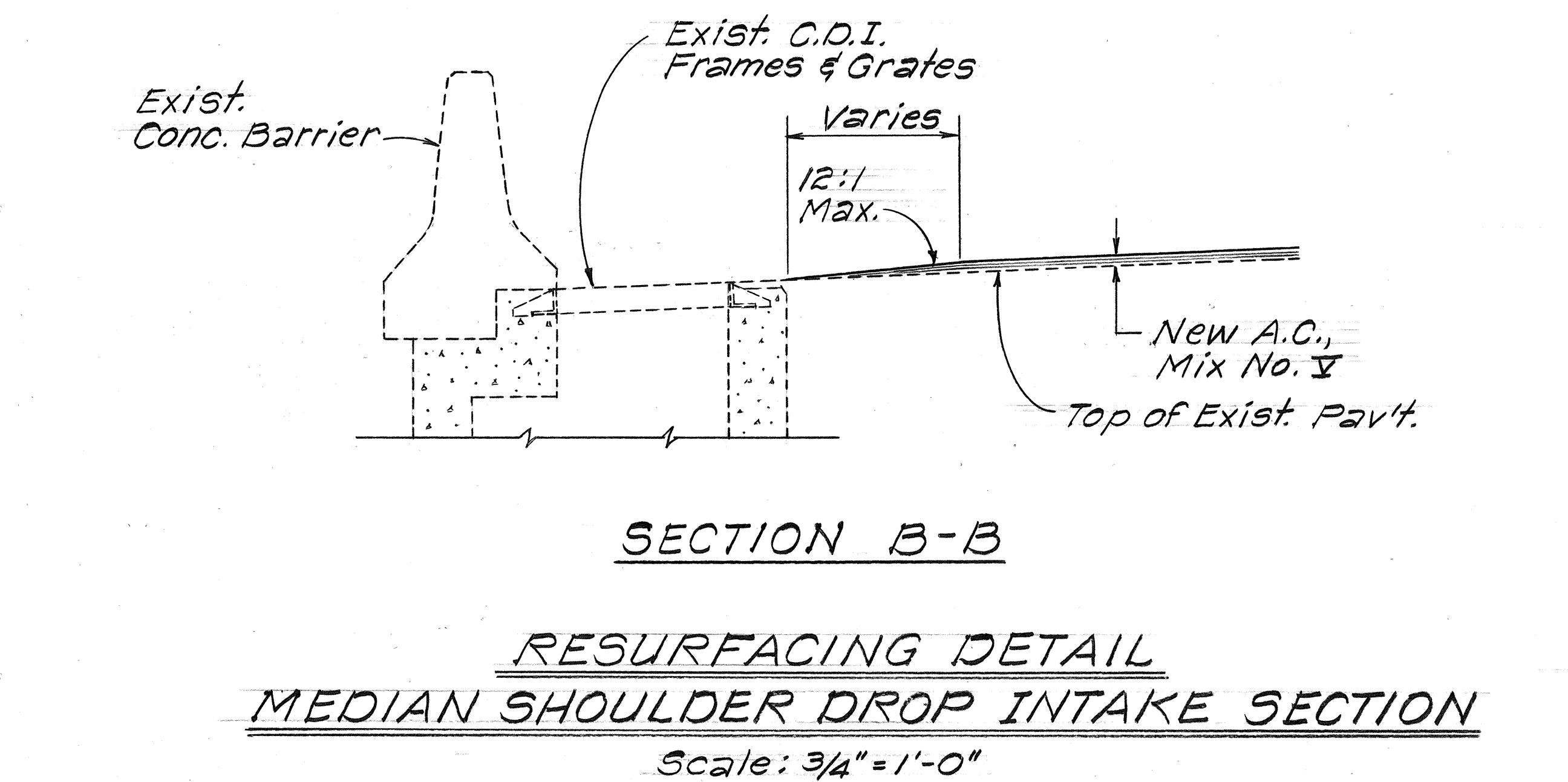
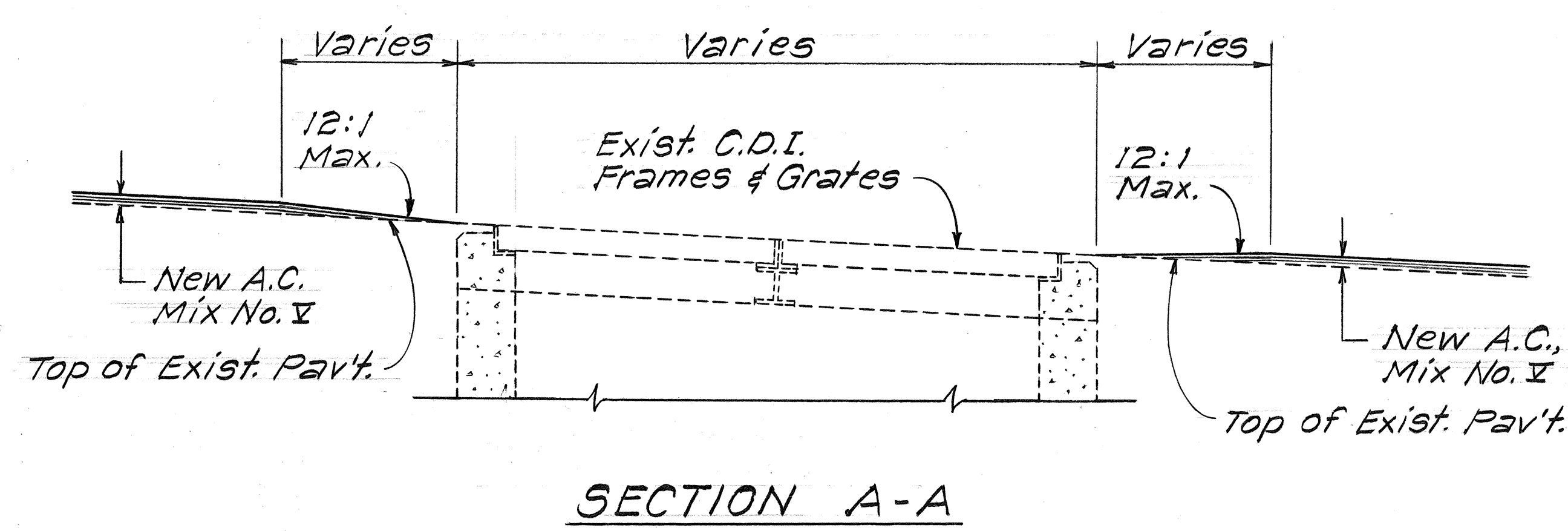
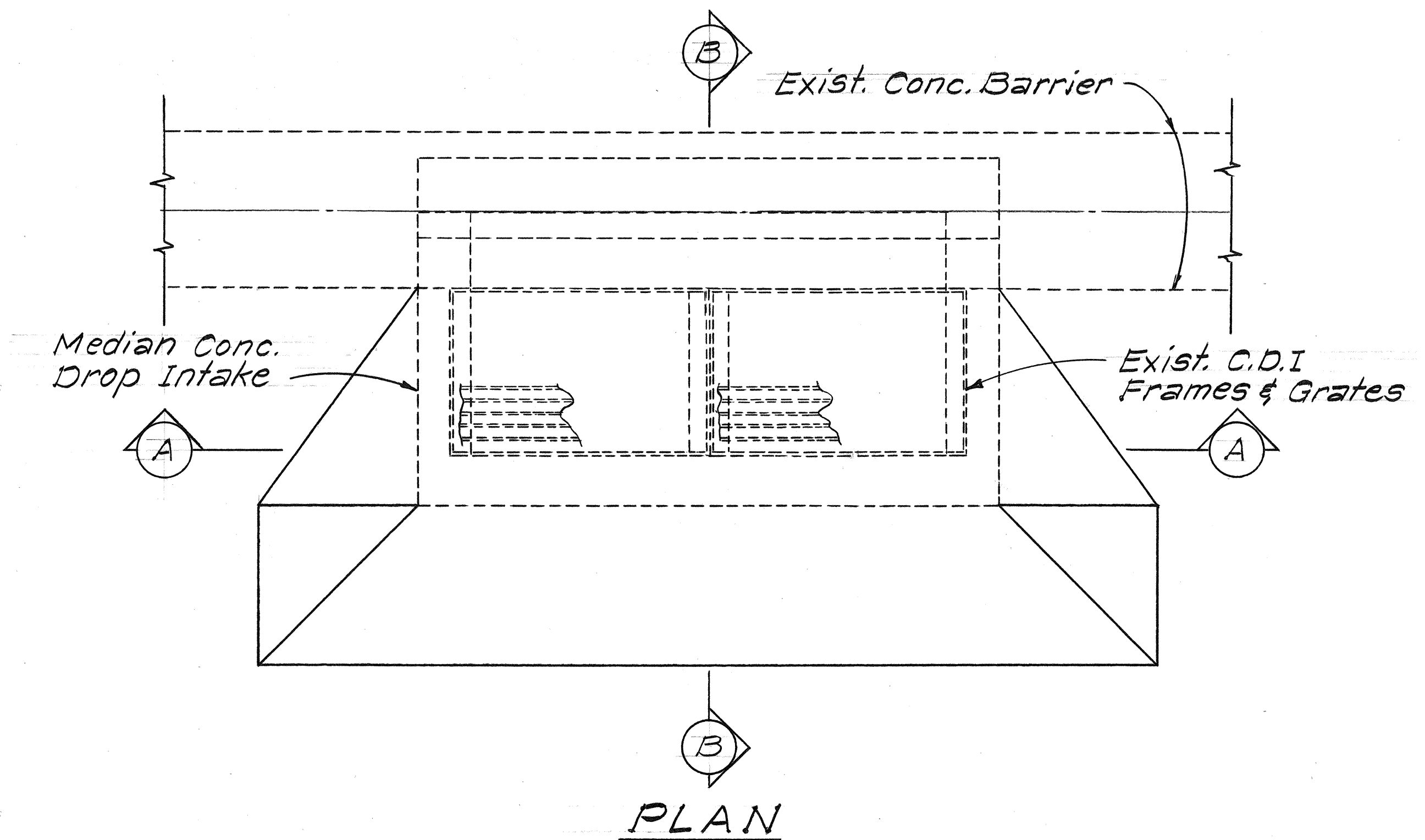
SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

11/14/84	Additional Notes and Typical Sections
DATE	REVISION

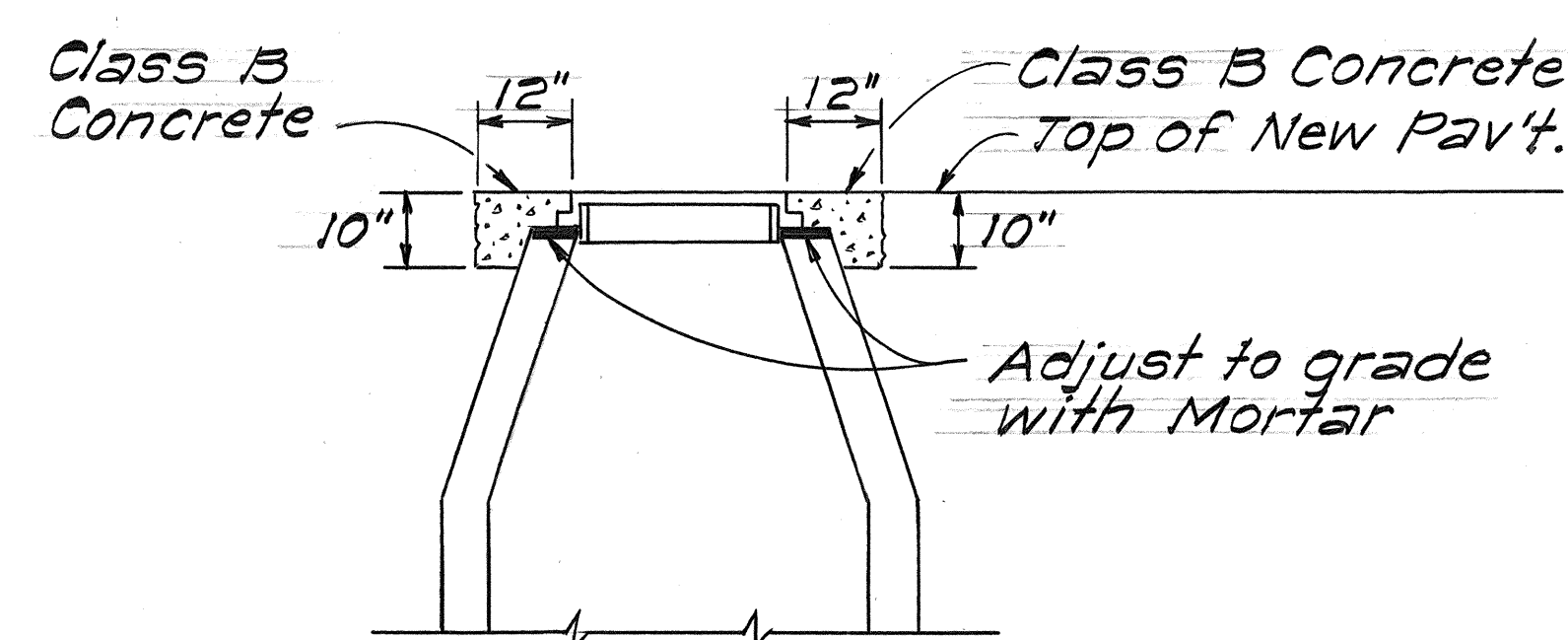
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION
NOTES & TYPICAL SECTIONS
MOANALUA ROAD RESURFACING
Aiea I.C. to Puuloa I.C.
F.A. Project No. F-FR-078-1(25)
Scale: As Shown Date: Nov., 1984
SHEET No. 3b OF 4 SHEETS

C.04 S-2

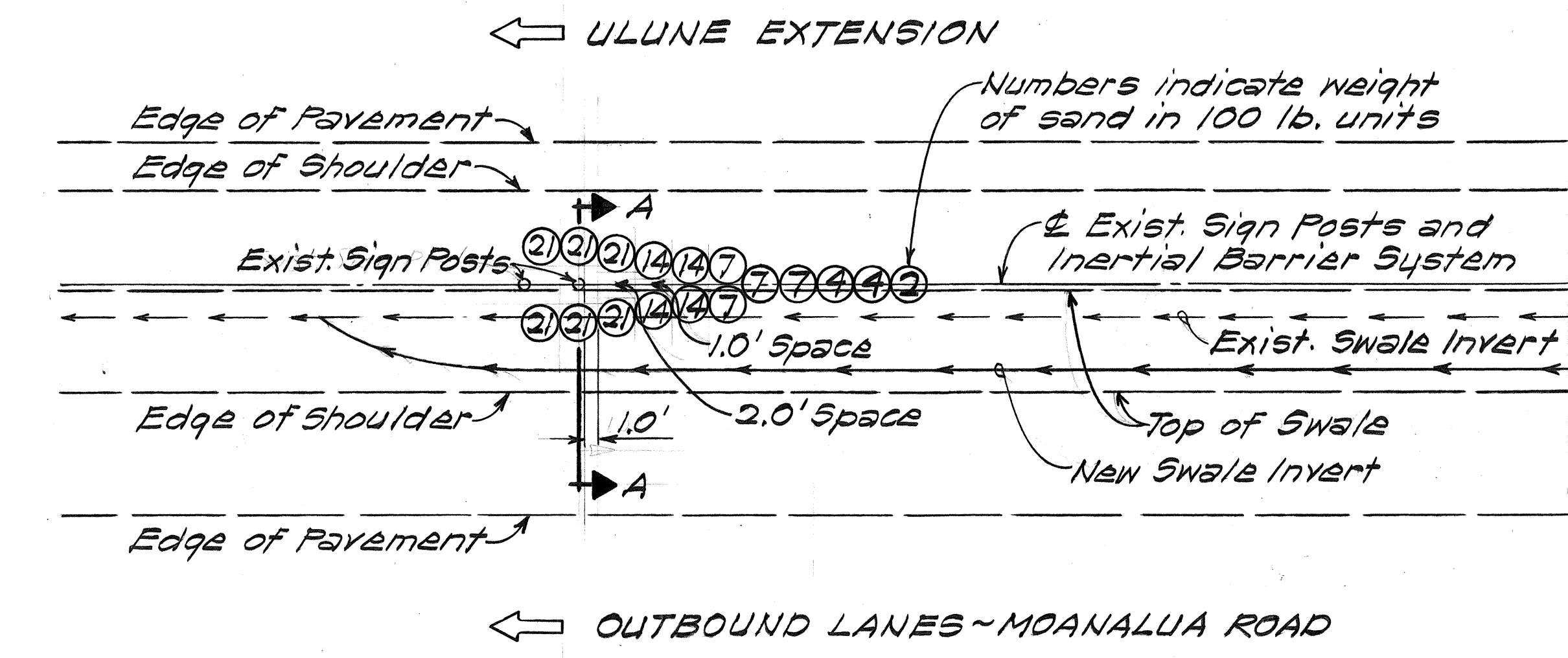
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	F-FR-078-1(25)	1984	5	52



RESURFACING DETAIL
MEDIAN SHOULDER DROP INTAKE SECTION
 Scale: 3/4" = 1'-0"

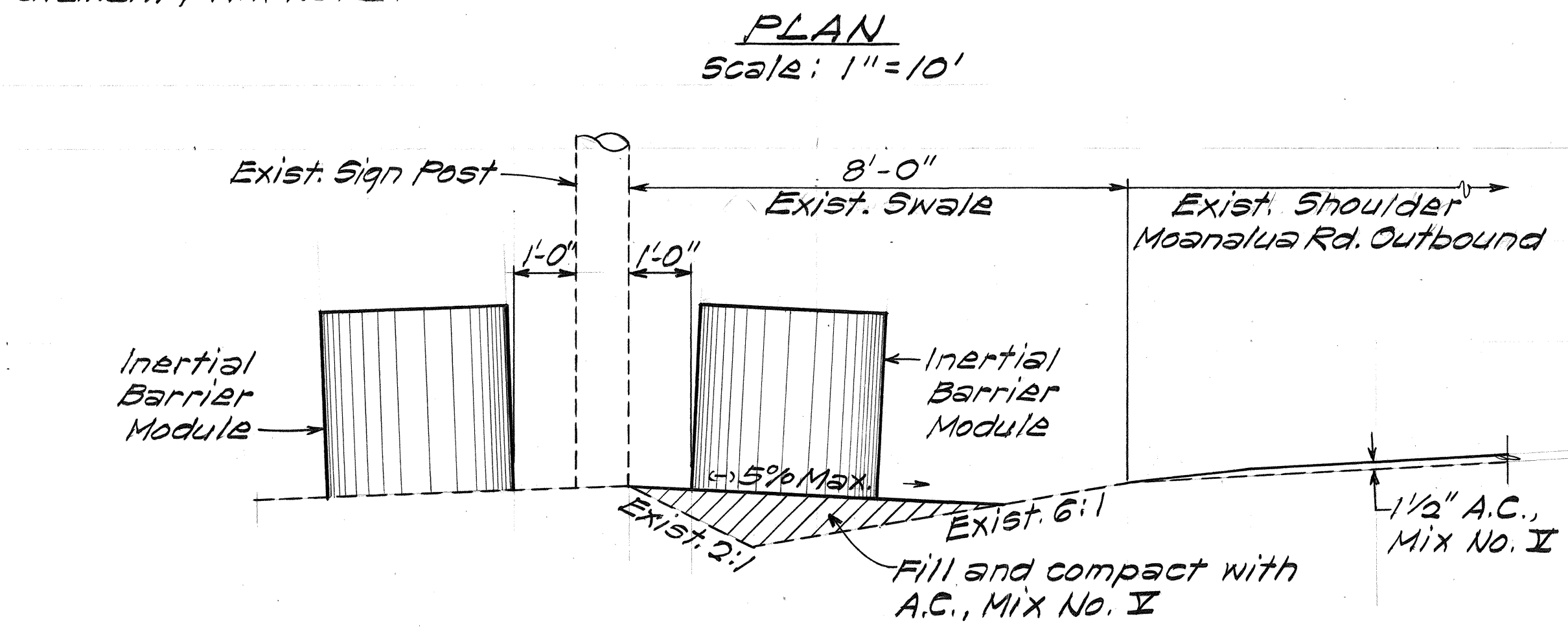


ADJUSTMENT OF STORM DRAIN
MANHOLE FRAME AND COVER
 Not to Scale



NOTE
 Contractor shall provide transitions at the beginning of the swale and after the existing sign posts as directed by the Engineer. Filling and compacting of the A.C., Mix No. V for flattening the existing swale will be paid for under Item No. 401.0600, Asphalt Concrete Pavement, Mix No. V.

APPROXIMATE LOCATION	MODULE SIZE BY WT. (LBS.)				
	300	400	700	1400	2100
Ulune Extension	1 Ea.	2 Ea.	4 Ea.	4 Ea.	6 Ea.
Unassembled Replacement Modules	1 Ea.	2 Ea.	4 Ea.	4 Ea.	6 Ea.



SECTION A-A
 Scale: 1/2" = 1'-0"
INSTALLATION OF INERTIAL BARRIER
ULUNE EXTENSION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

DETAILS

MOANALUA ROAD RESURFACING
 Aiea I.C. to Puuloa I.C.
 F.A. Project No. F-FR-078-1(25)
 Scale: As Shown Date: Mar, 1984

SHEET No. 4 OF 4 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	