

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	CMAQ-0300-(83)	2002	38	42

REFERENCE:

1. Refer to Standard Plans for additional details and notes not covered by details and typical drawings.

DRAINAGE NOTES

1. Existing drainage systems will be functional at all times during construction. The Contractor is to furnish materials, equipment, labor, tools and incidentals necessary to accomplish maintenance of flow. The cost shall be incidental to the various Contract items.
2. Demolishing, removing, and disposing existing drainage inlets shall not be paid for separately but shall be incidental to the various contract items.
3. The Contractor shall verify the locations of all existing culverts and utilities in the field. Any existing culverts and utilities damaged during construction shall be repaired or replaced by the Contractor at no cost to the State.
4. The Contractor shall verify all grades and dimensions in the field before commencing with any work.
5. The Contractor shall be solely responsible for the protection of adjacent property and existing and new structures from damage due to construction. Repairing any damage shall be at the Contractor's own expense, to the satisfaction of the Engineer. He shall conduct his work in such a manner and provide such temporary shoring or other measures as may be necessary to insure the safety of all concerned and to protect existing structures.
6. Concrete shall be Class A unless otherwise noted.
7. Unless noted otherwise, chamfer all exposed concrete edges three-quarters (3/4) of an inch.
8. The dimensions of the drainage structures shown on the plans are approximate. The Contractor shall verify the exact dimensions in the field prior to construction.
9. Only non-pneumatic type of drill as accepted by the Engineer will be permitted for drilling holes in concrete. Where indicated on the plans, the approximate diameter of drilled holes for installation of dowels shall be 5/8", and voids after installing dowels shall be filled with epoxy grout. The cost shall be incidental to the various Contract Items.
10. For additional reinforcing around existing culverts at new drainage structures, see Standard Plan H-4.

DESIGN SPECIFICATIONS - AASHTO:

1. AASHTO LRFD Bridge Design Specifications, 1998, with interim revisions.

MATERIALS:

1. Reinforced concrete: $f'c = 4,000 \text{ psi}$
2. Reinforcing steel: ASTM A 615, Grade 60
3. Admixture in concrete: See Special Provisions

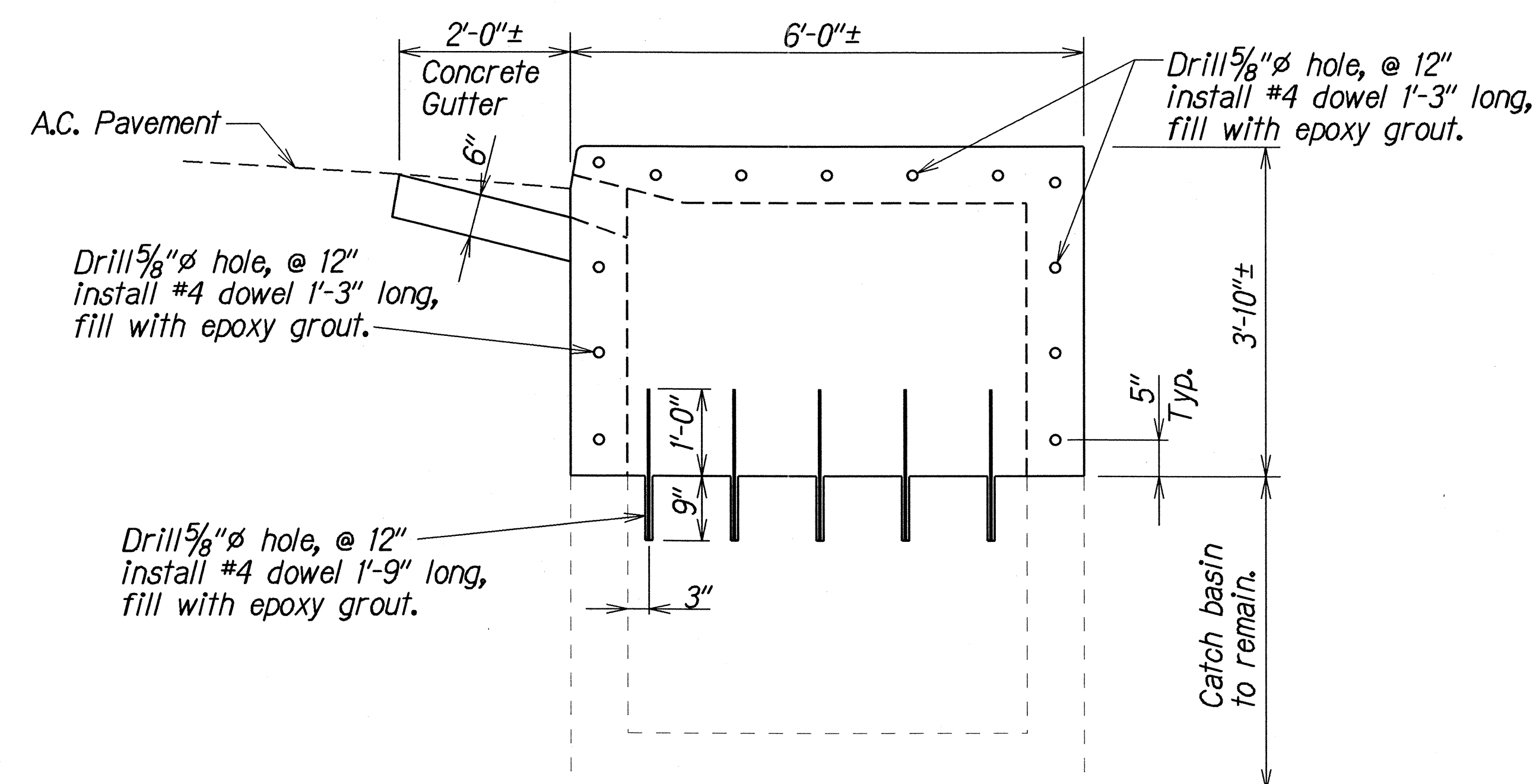
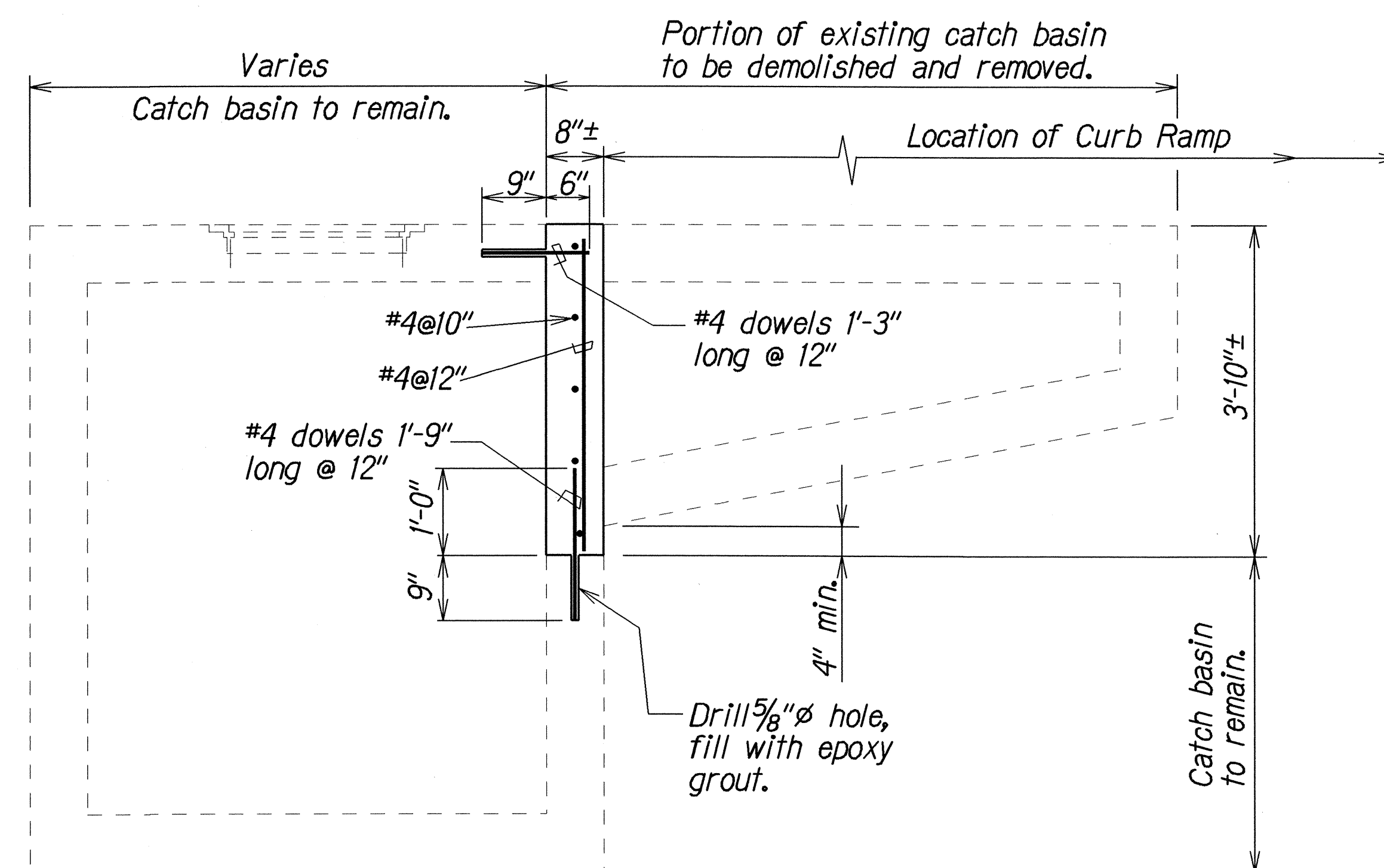
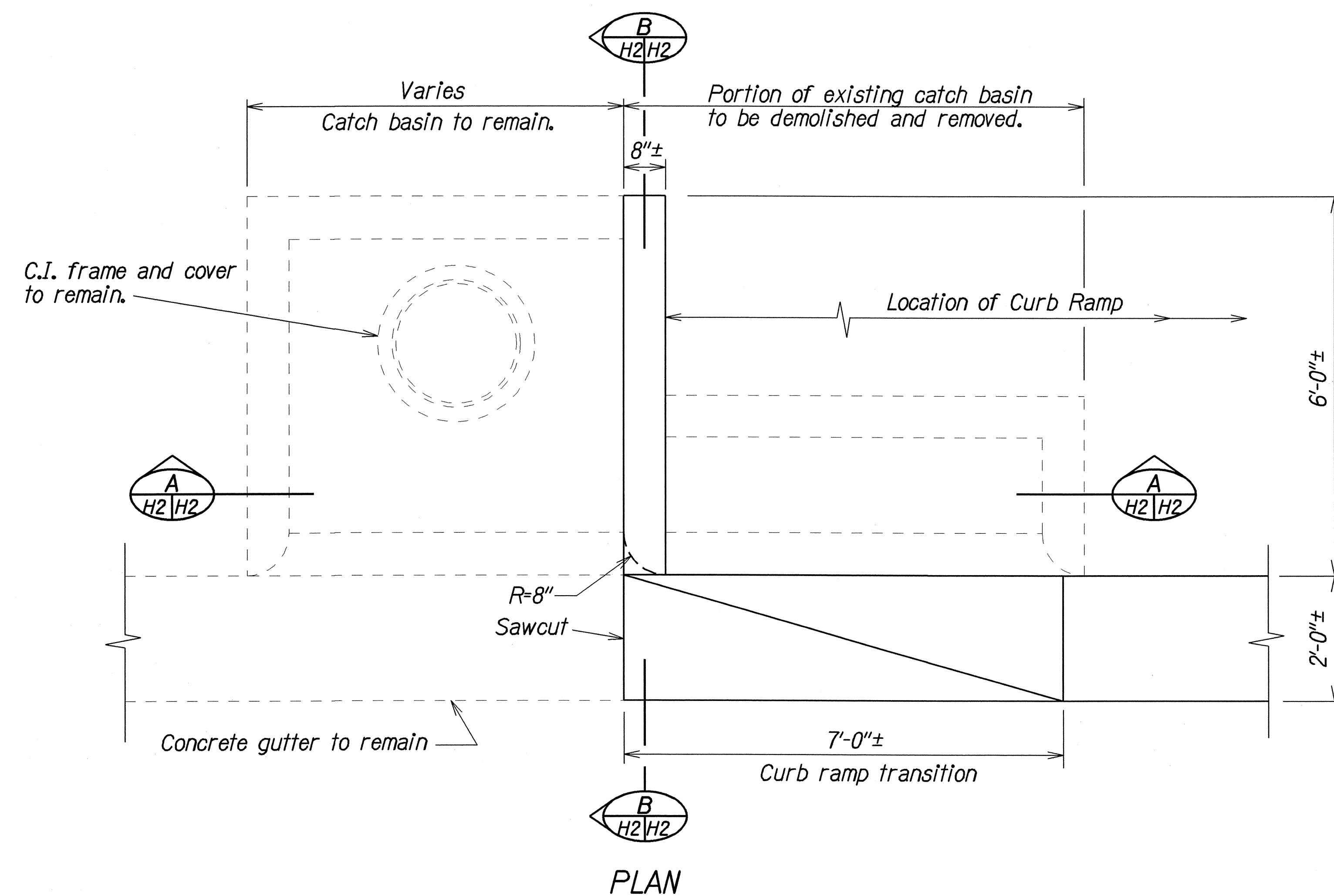
CONSTRUCTION METHODS:

1. Refer to Hawaii Standard Specifications for Road, Bridges and Public Works Construction, 1994 Edition and Special Provisions.
2. Except as noted otherwise, all dimensions are measured plumb.
3. For concrete finish, see Special Provisions.
4. Steel reinforcing shall be supported, bent and placed as per the ACI Detailing Manual, 1994.
5. The minimum cover measured from the surface of the concrete to the face of any reinforcing bars shall be as follows, except as noted otherwise:
a. Concrete cast or finished to a smooth surface: 2"
b. Concrete cast against and permanently exposed to earth: 3"
6. At time concrete is placed, reinforcing shall be free from mud, oil, laitance or other coatings adversely affecting bond capacity.
7. Reinforcement, dowels and other embedded items shall be positively secured before pouring.
8. All dimensions relating to reinforcing bars (e.g. spacing of bars, etc.) are to centers of bars unless noted otherwise.

ORIGINAL PLAN	DATE	9/17/01
DESIGNED BY	TRACED BY	
NOTED BY	DESIGNED BY	
QUANTITIES BY	CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE NOTES
PEDESTRIAN FACILITIES and ADA COMPLIANCE
Various Locations On Oahu
Federal Aid Project No. CMAQ-0300(83)
Date: Sept. 2001
SHEET No. HI OF 5 SHEETS

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TYPICAL DETAILS OF TYPE "I" CATCH BASIN RECONSTRUCTION

ORIGINAL PLAN	DATE
DESIGNED BY	
DRAWN BY	
CHECKED BY	
APPROVED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

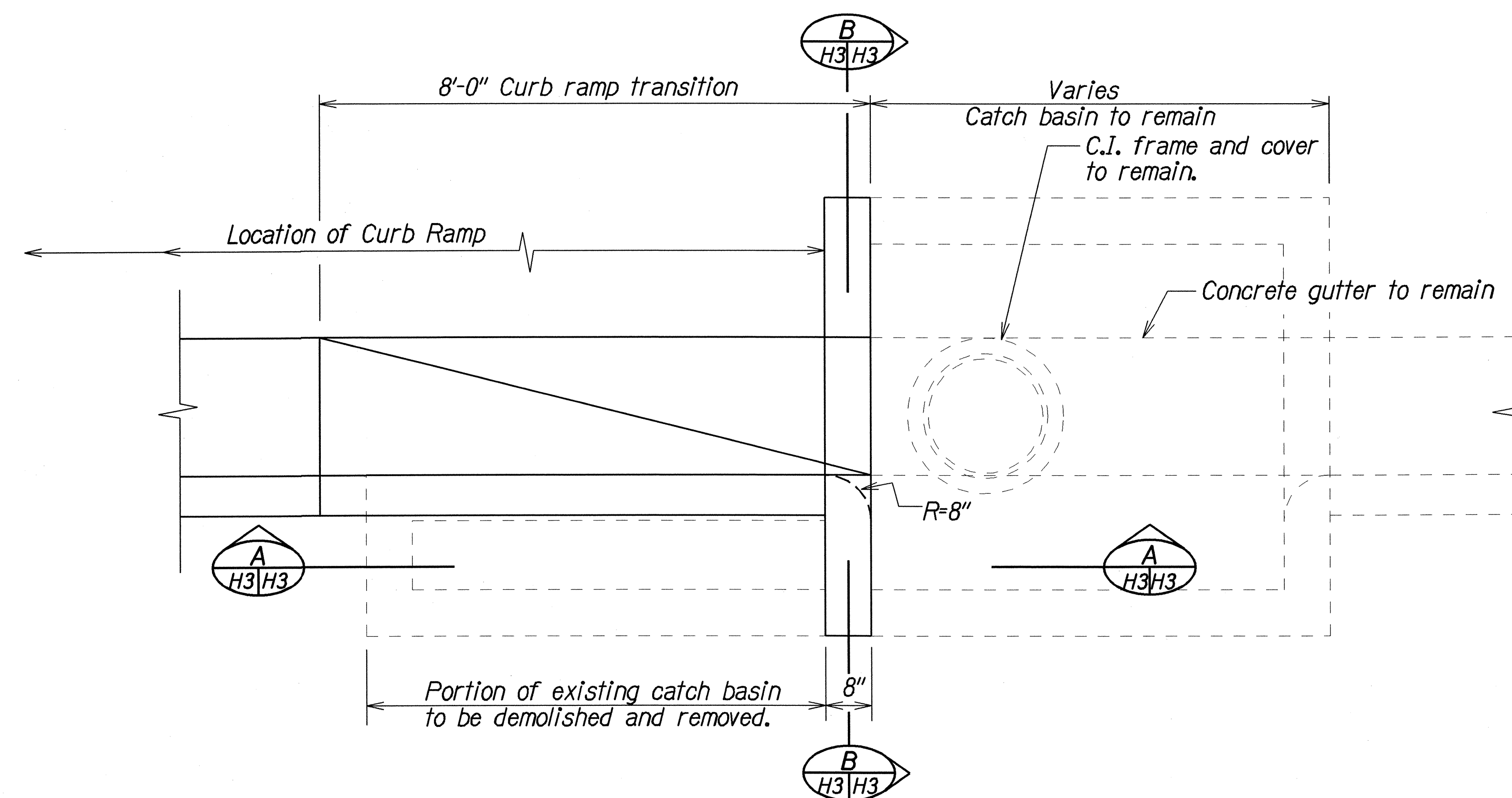
DRAINAGE DETAILS

PEDESTRIAN FACILITIES and ADA COMPLIANCE
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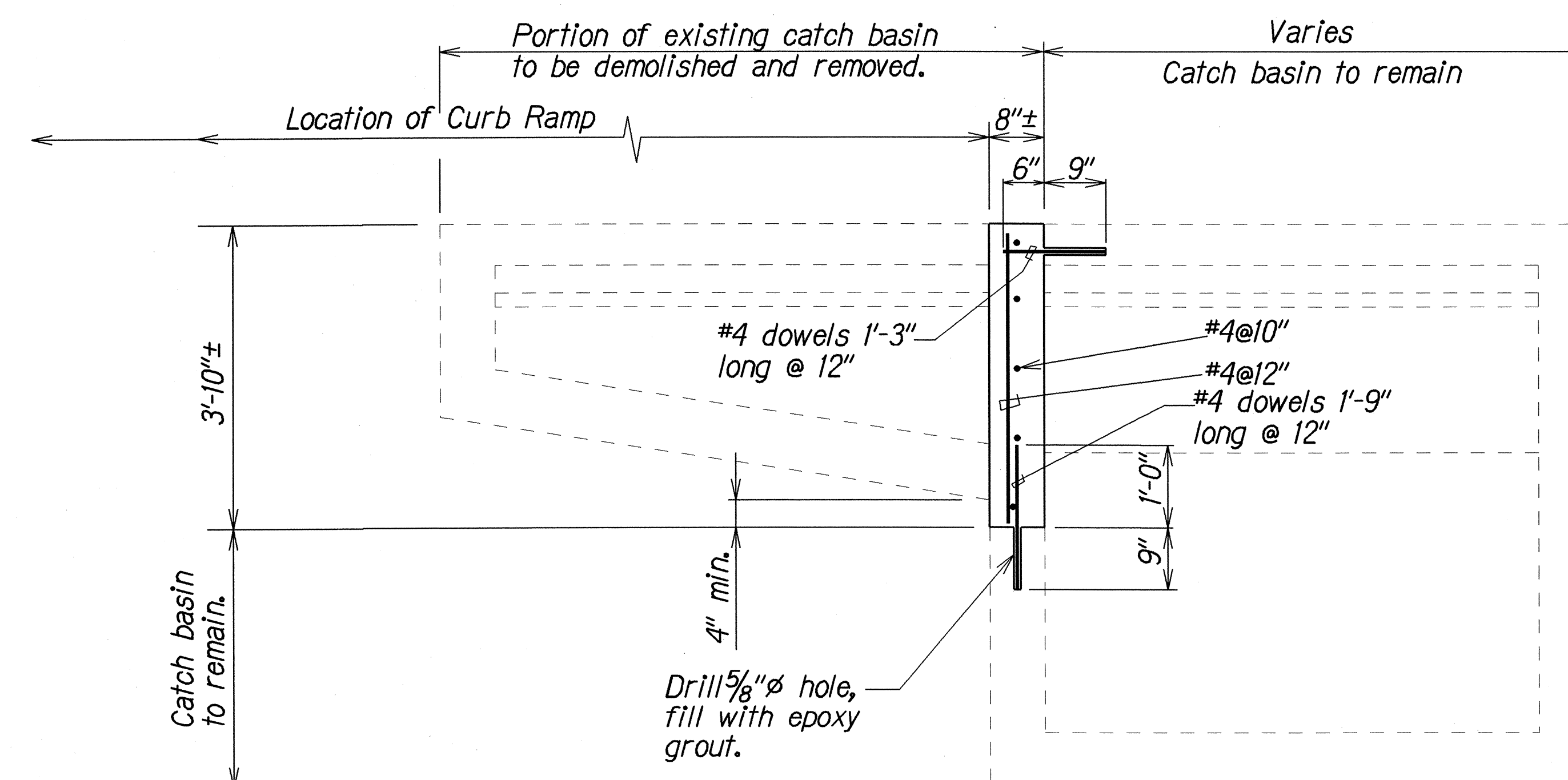
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SHEET No. H2 OF 5 SHEETS

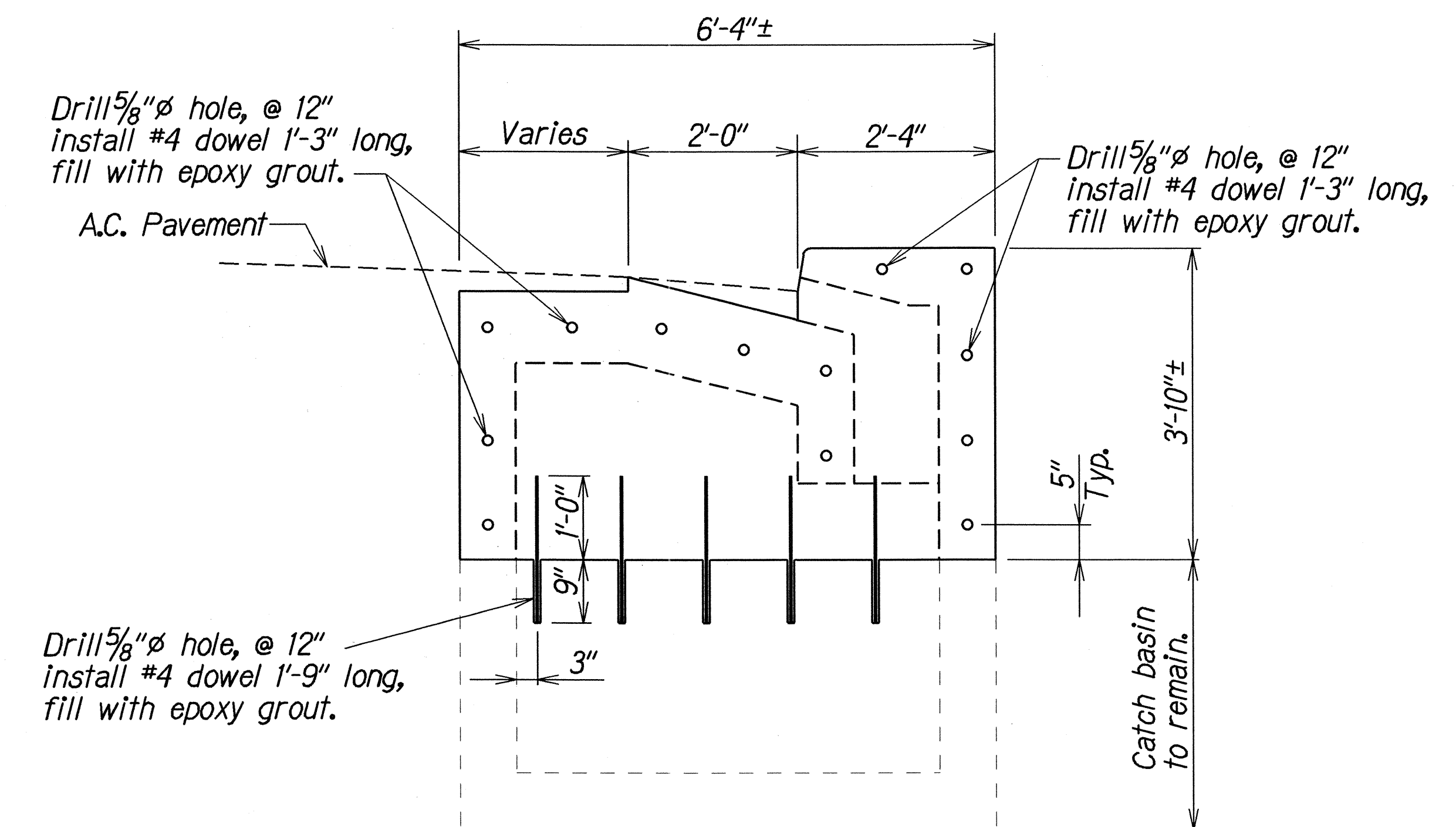
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PLAN



SECTION A
H3/H3



SECTION B
H3/H3

TYPICAL DETAILS OF TYPE "2" CATCH BASIN RECONSTRUCTION

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DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

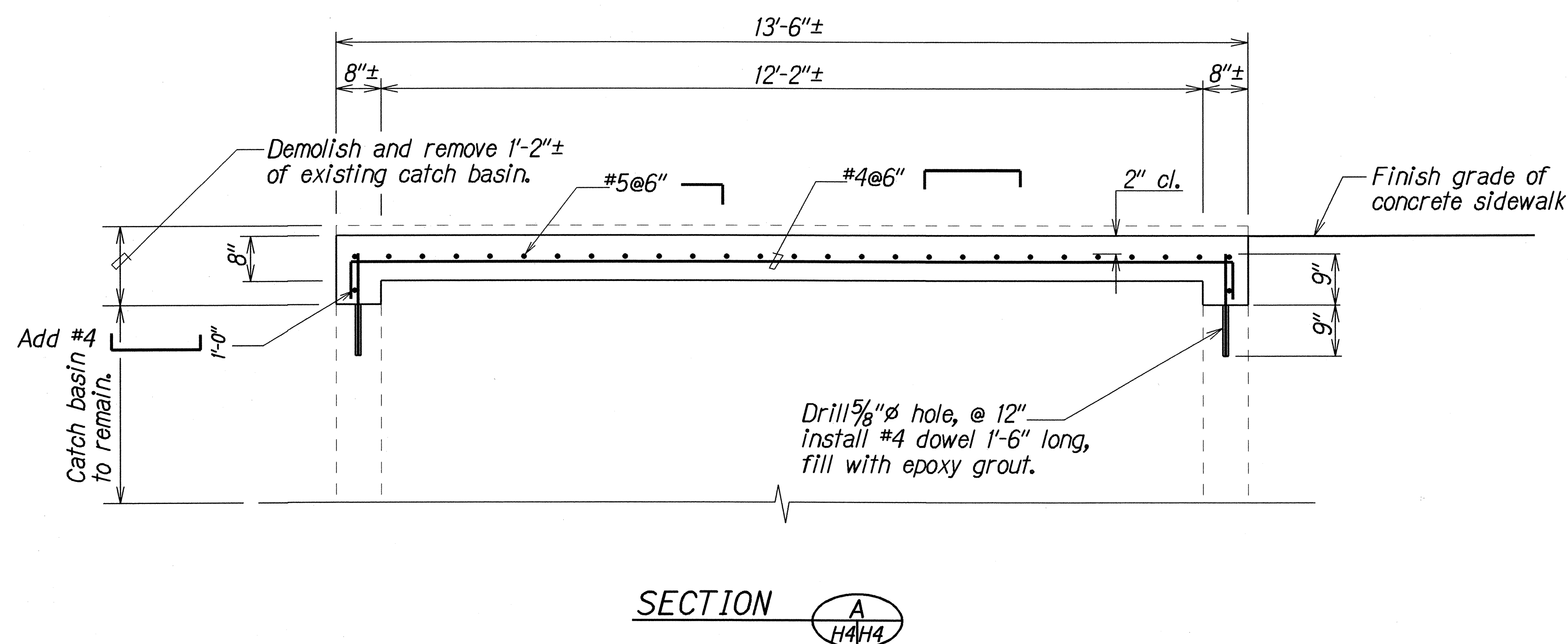
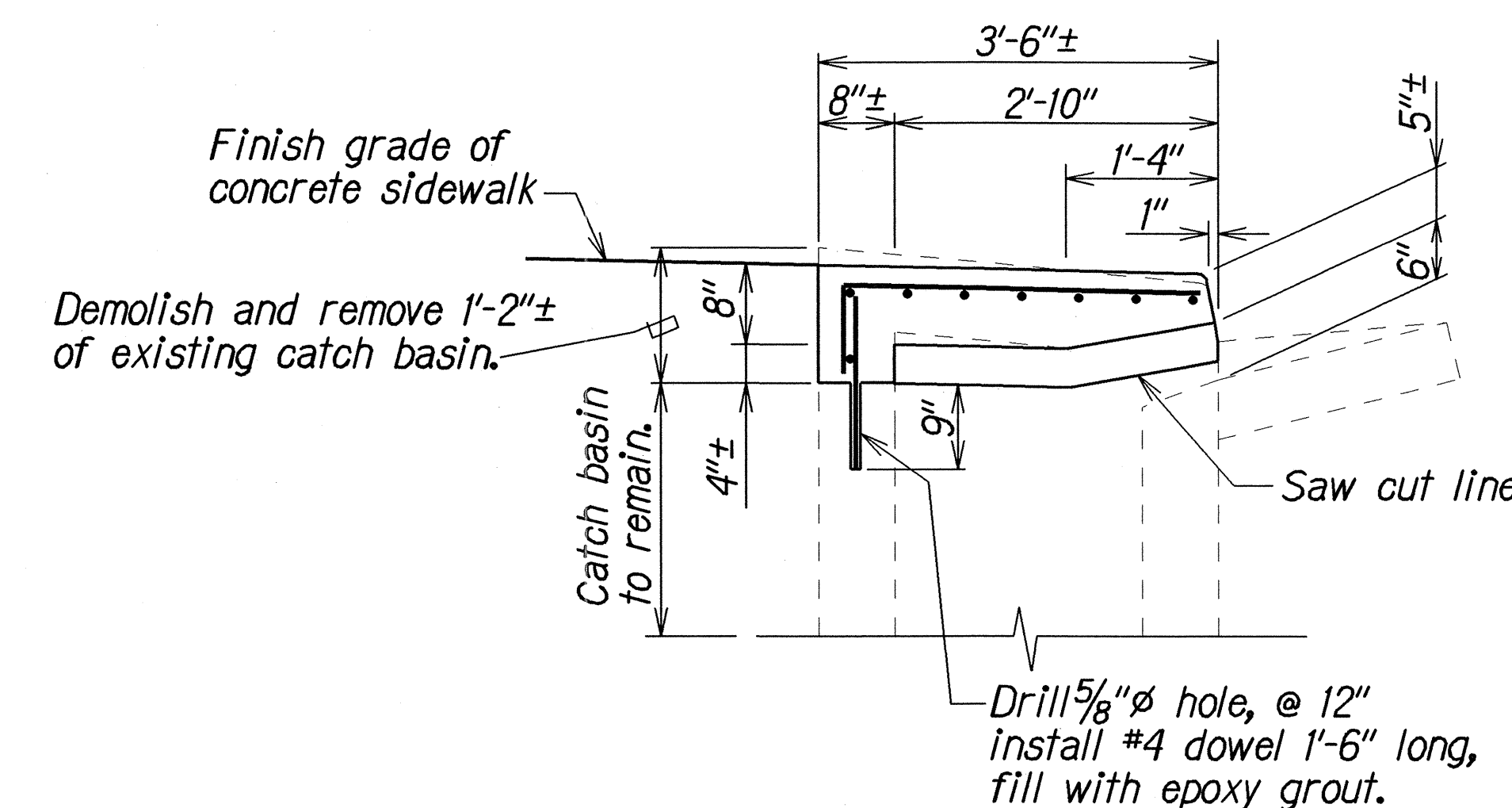
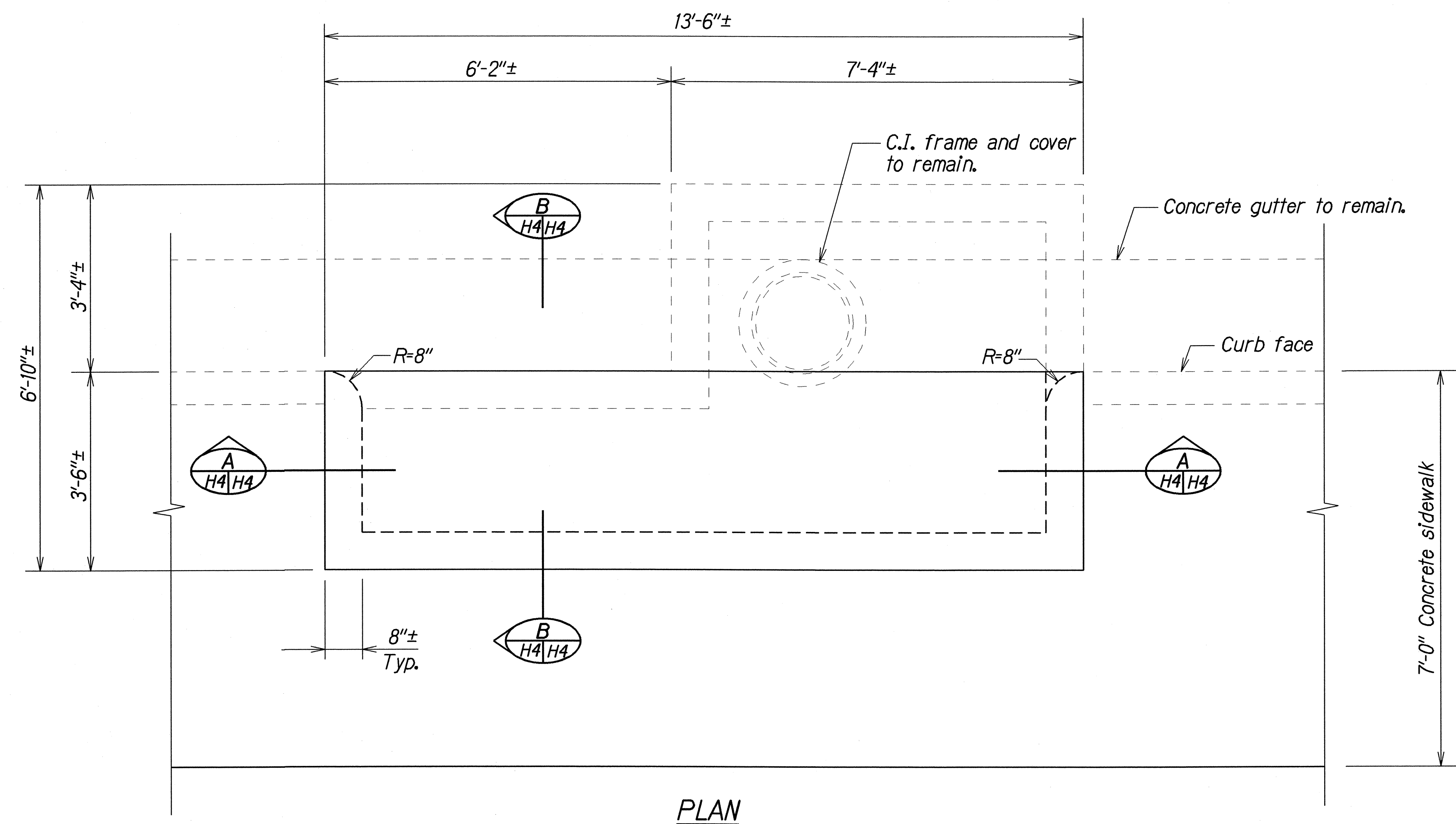
DRAINAGE DETAILS

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SHEET No. H3 OF 5 SHEETS

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TYPICAL DETAILS OF TYPE "3" CATCH BASIN RECONSTRUCTION

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QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS

PEDESTRIAN FACILITIES and ADA COMPLIANCE

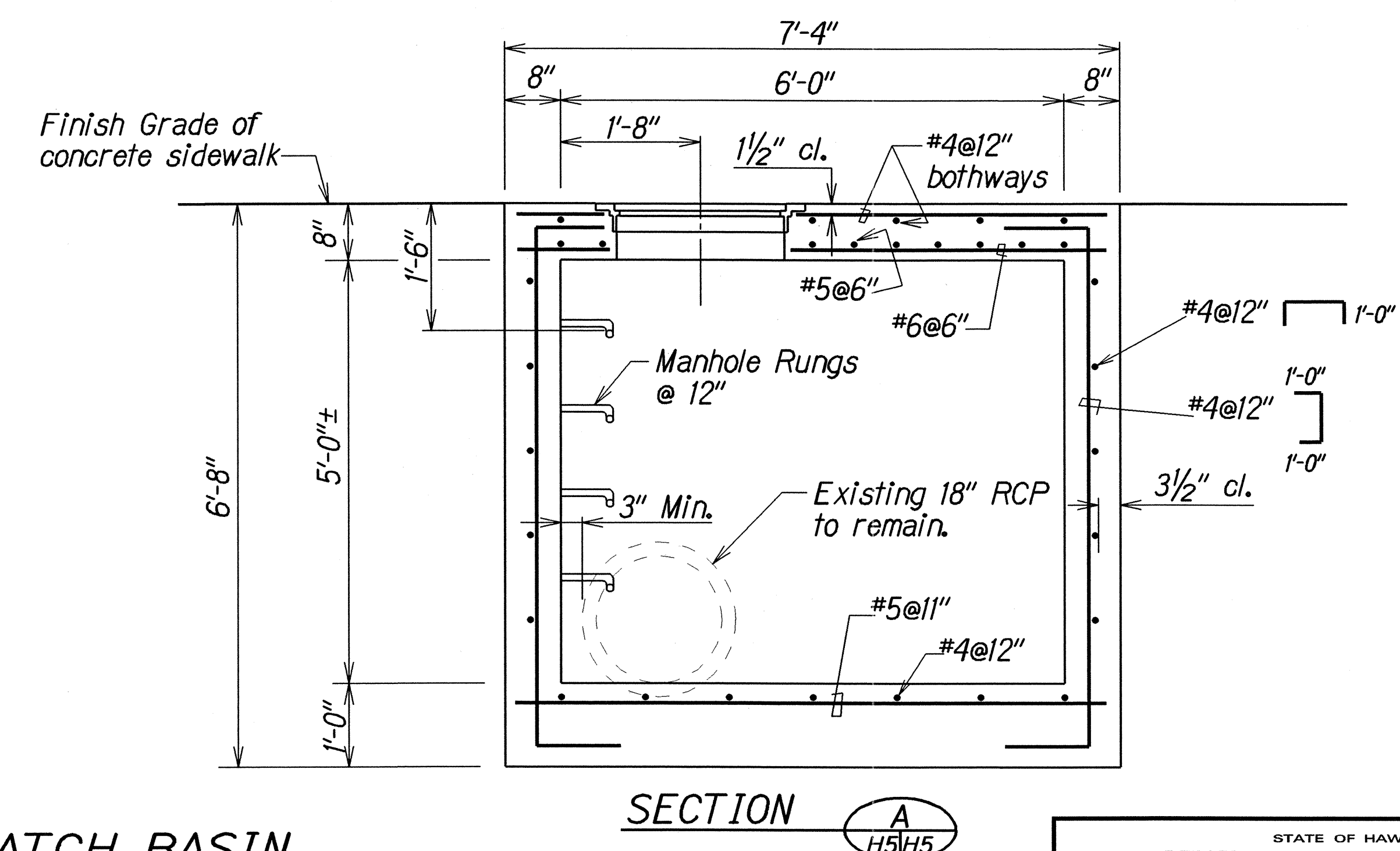
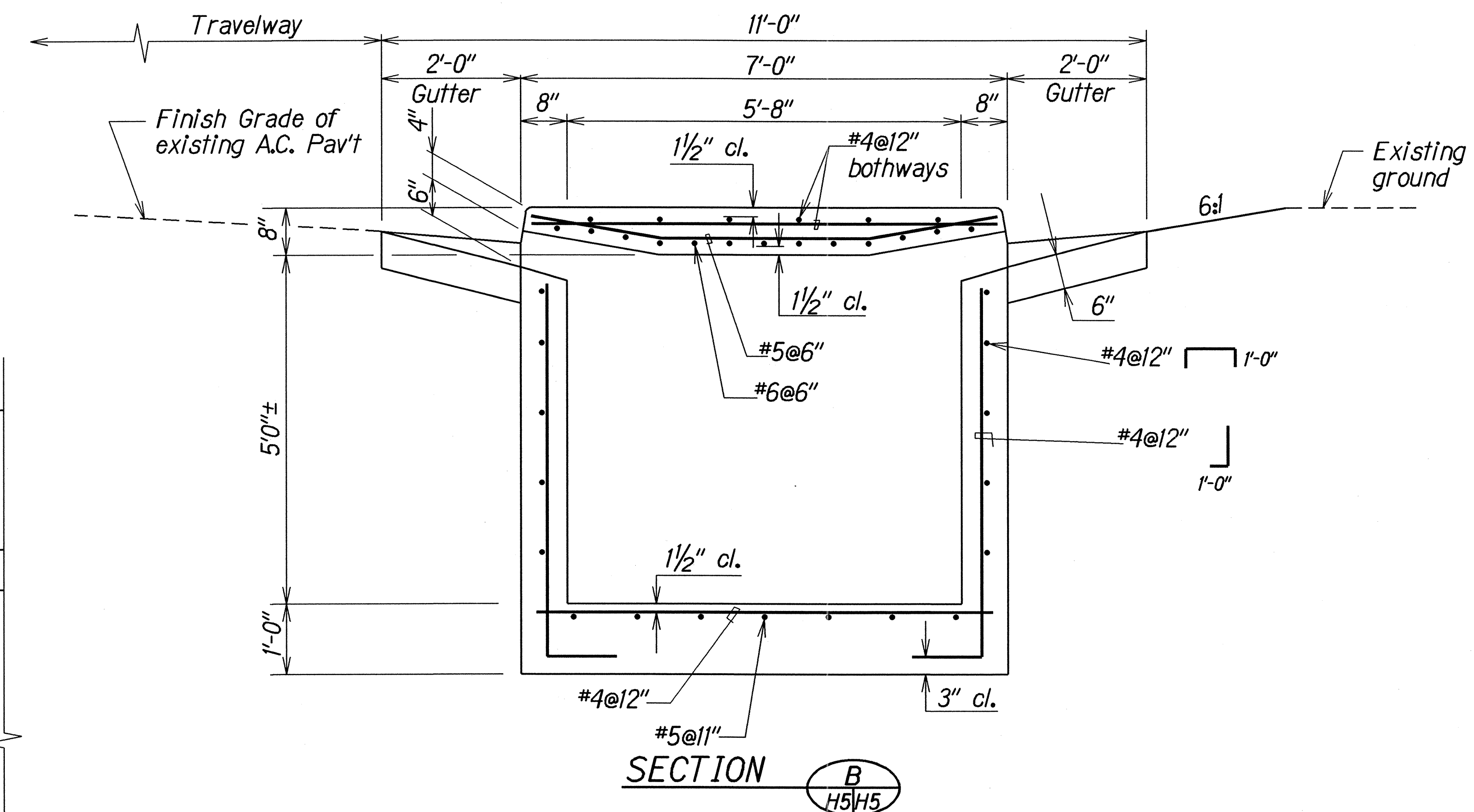
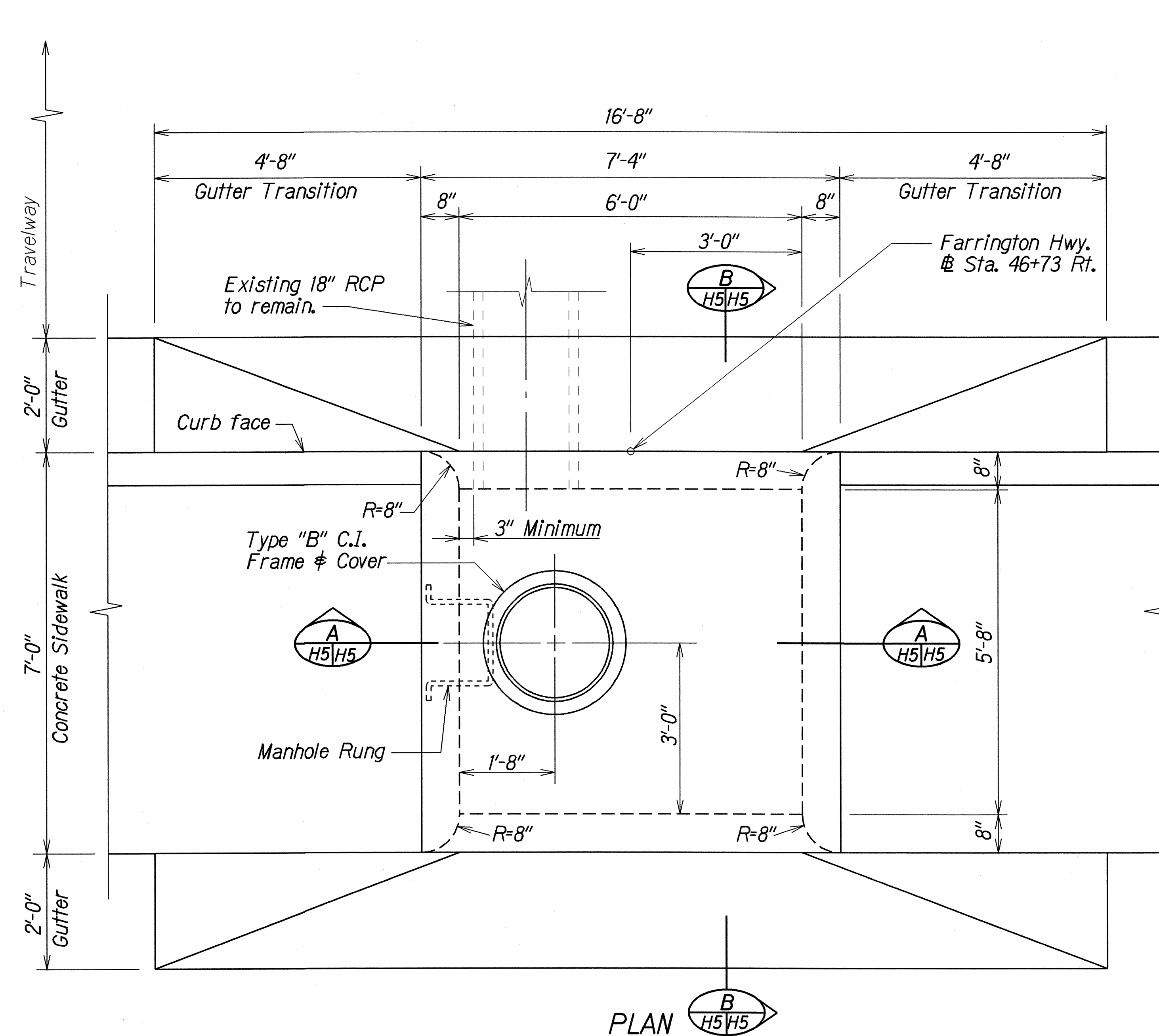
Various Locations On Oahu

Federal Aid Project No. CMAQ-0300(83)

Scale: 3/4"=1'-0" Date: Sept. 2001

SHEET No. **H4** OF **5** SHEETS

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DETAIL OF MODIFIED TYPE "D" CATCH BASIN

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DRAWN BY	
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NOTED BY	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII
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HIGHWAYS DIVISION

DRAINAGE DETAILS

PEDESTRIAN FACILITIES and ADA COMPLIANCE
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SHEET No. **H5** OF **5** SHEETS