

GENERAL:

- The existing bridge information shown in these drawings was obtained from the original bridge drawings and is presented for reference purposes only. No responsibility is assumed for the accuracy of the existing information presented. It is the Contractor's responsibility to verify independently all of the as-built information.
- The Contractor shall visit the construction site and shall verify all dimensions and conditions prior to starting any work and shall be responsible for coordination of all work and materials including those furnished by Sub-Contractors. The Hawaii Department of Transportation (D.O.T.) Representative shall be notified immediately of any discrepancies found.
- The Contract Structural Drawings and Specifications represent the finished structure. They do not indicate the method of construction. The Contractor shall provide all measures necessary to protect the structure during construction.
- The Contractor shall provide adequate shoring for all existing adjacent structures. Shoring for construction loads shall be designed by a licensed Civil Engineer experienced in this kind of work.

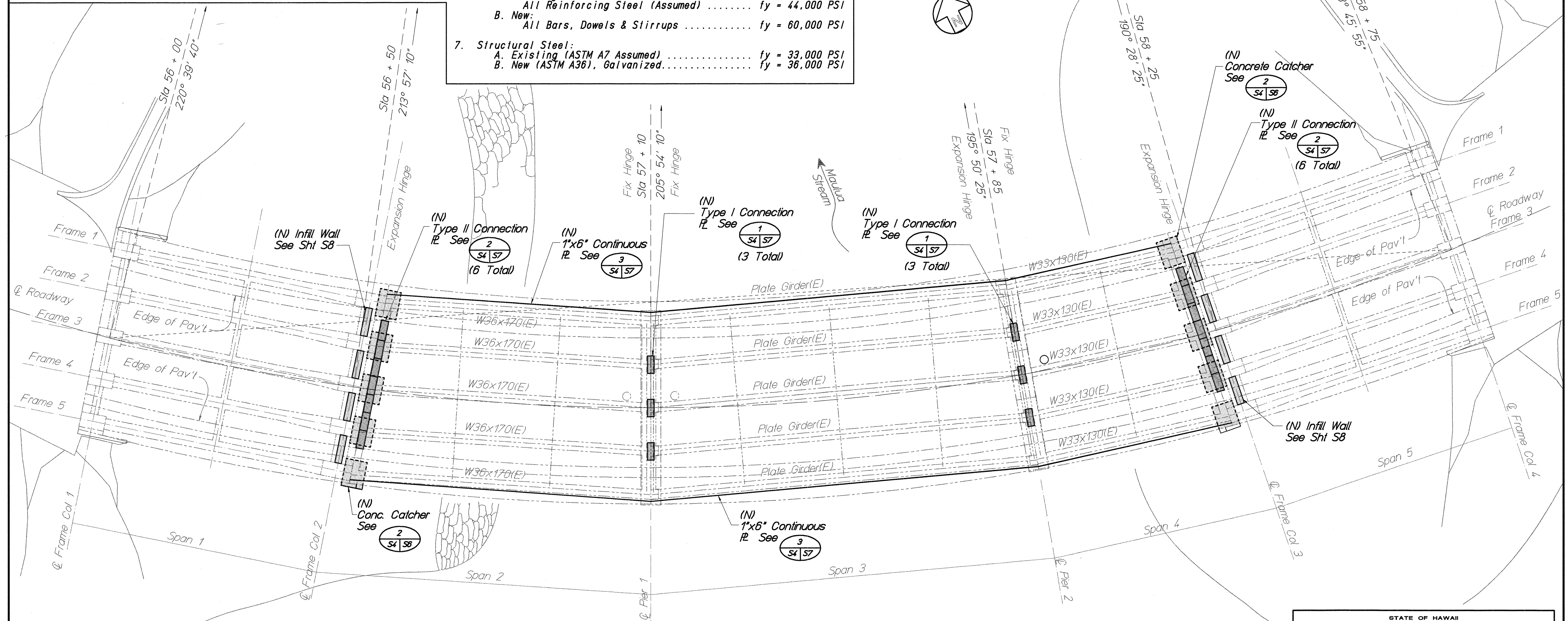
GENERAL NOTES

- General Specifications: Hawaii Department of Transportation, Standard Specification for Road, Bridge and Public Works Construction, 1994 together with Special Provisions prepared for this contract.
- Design Specifications: AASHTO, Standard Specifications For Highway Bridges, 16th Edition (1996)
- Caltrans Memo To Designers 20-4.
- Seismic Loading:
 - Seismic Performance Category D
 - Acceleration Coefficient 0.40
- Concrete:
 - Existing:
 - All Concrete (Assumed) $f'c = 3,900$ PSI
 - New:
 - Concrete Catchers $f'c = 3,000$ PSI
 - Concrete Infill Walls $f'c = 4,000$ PSI
- Reinforcing Steel:
 - Existing:
 - All Reinforcing Steel (Assumed) $f_y = 44,000$ PSI
 - New:
 - All Bars, Dowels & Stirrups $f_y = 60,000$ PSI
- Structural Steel:
 - Existing (ASTM A7 Assumed) $f_y = 33,000$ PSI
 - New (ASTM A36), Galvanized $f_y = 36,000$ PSI

BASIS FOR SEISMIC RETROFIT:

- The intent of the project is to retrofit the structures to prevent collapse due to a seismic event with a maximum acceleration coefficient of 0.4
- Steel plates shall be added to each side of the bridge to help the deck act as a diaphragm under lateral loading. Deck joints shall be closed to make the deck continuous.
- Steel plates shall be added to transfer transverse shear over the deck joints.
- Concrete catchers shall be added to the frame columns to support girders and deck in the event of excessive longitudinal displacement.
- Concrete infill walls shall be added at frame columns to help create a load path for the transverse seismic forces.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(47)	1999	8	20

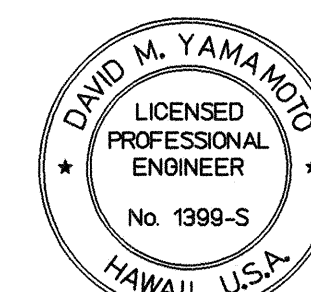
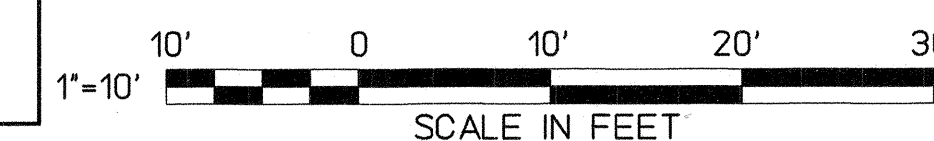


FRAMING PLAN
1"=10'-0"

Note:

- All Finish Elevations, Stations And Azimuths Are Approximate Only. They Are Based On The Original Contract Drawings Dated September 1951. Contractor Shall Verify Elevations, Stations And Azimuths As Required.

(E) Existing
(N) New



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DATE: November 1998
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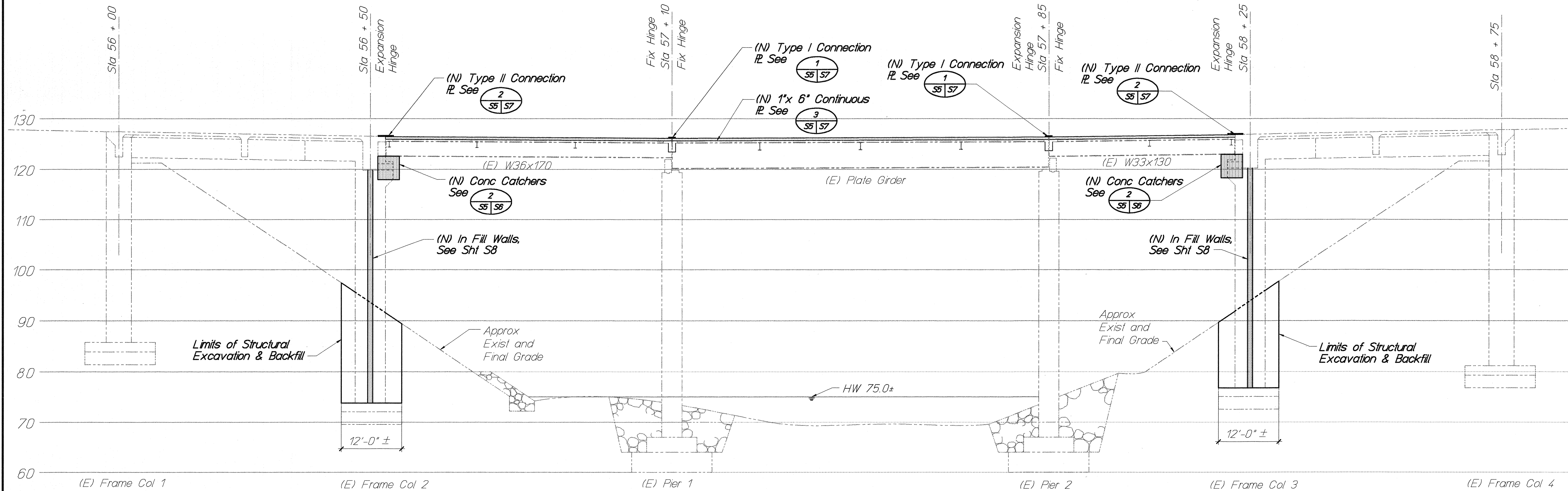
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MAULUA BRIDGE - FRAMING PLAN

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES, WEST OF NINOLE
FEDERAL AID PROJECT NO. BR-019-2(47)
SCALE: AS NOTED DATE: November 1998
SHEET No. S4 OF 16 SHEETS

Plot date: 24-Nov-98

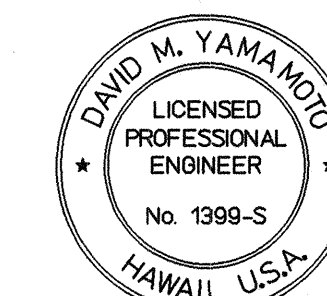
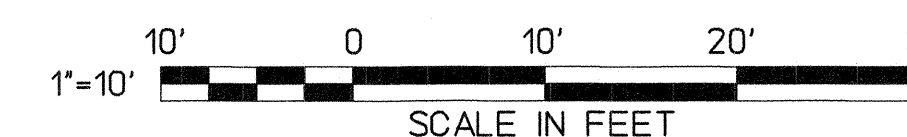
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(47)	1999	9	20



LONGITUDINAL SECTION ALONG CENTER OF ROADWAY
1"=10'-0"

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

(E) Existing
(N) New

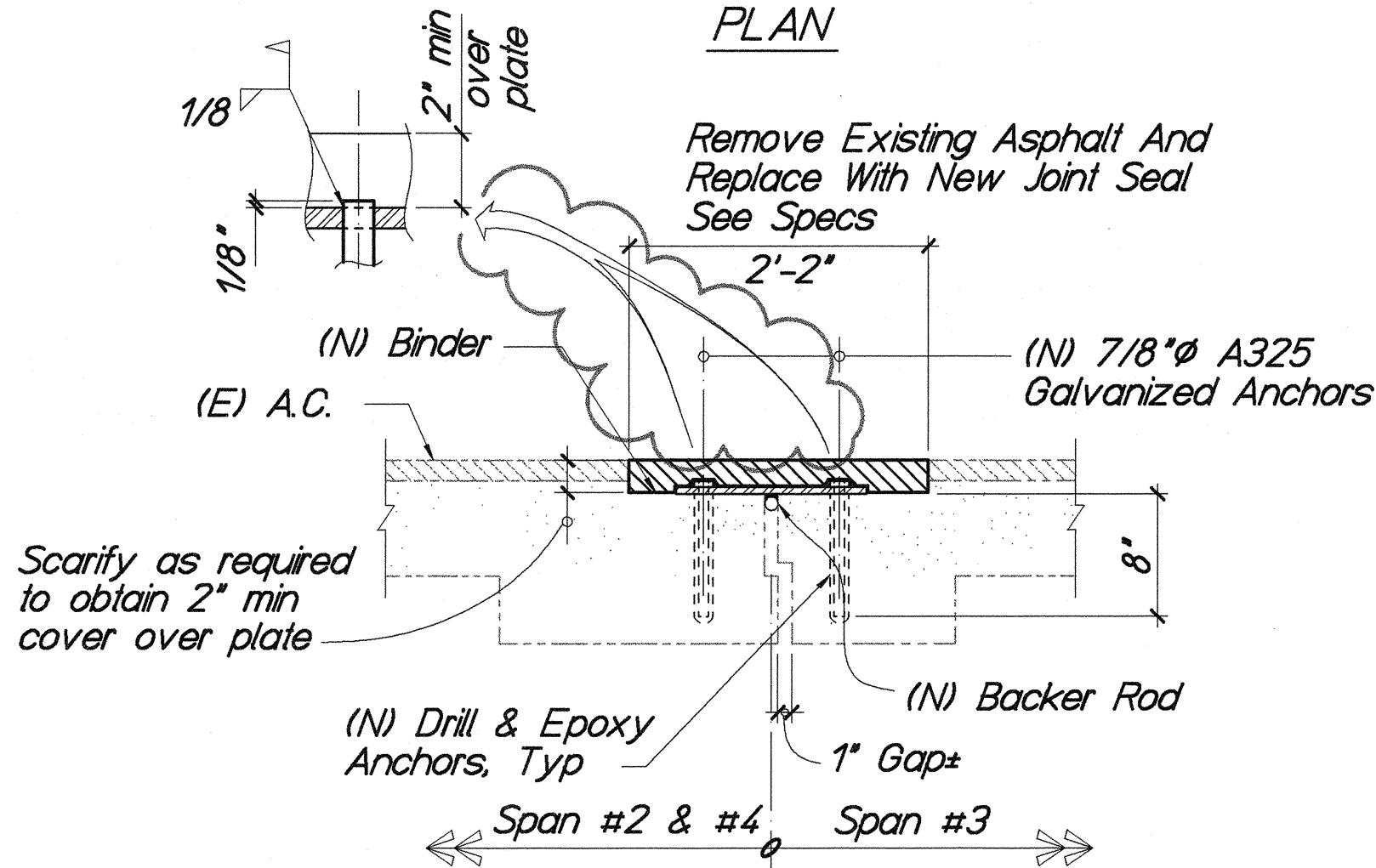
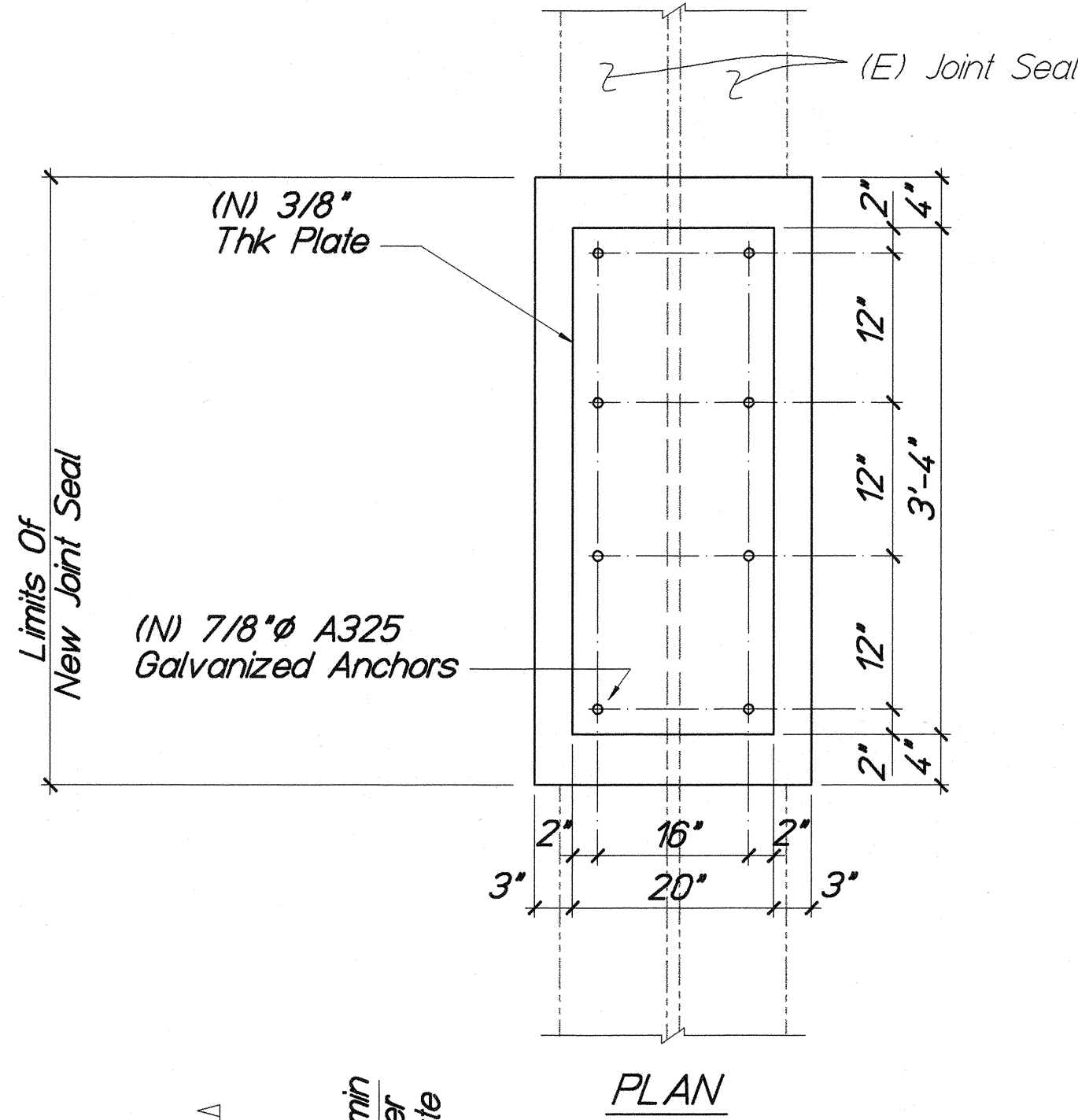


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SATO & ASSOCIATES, INC.

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
MAULUA BRIDGE LONGITUDINAL SECTION	
HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES, WEST OF NINOLE	
FEDERAL AID PROJECT NO. BR-019-2(47)	
SCALE: 1" = 10'	DATE: November 1998
SHEET No. S5	OF 16 SHEETS

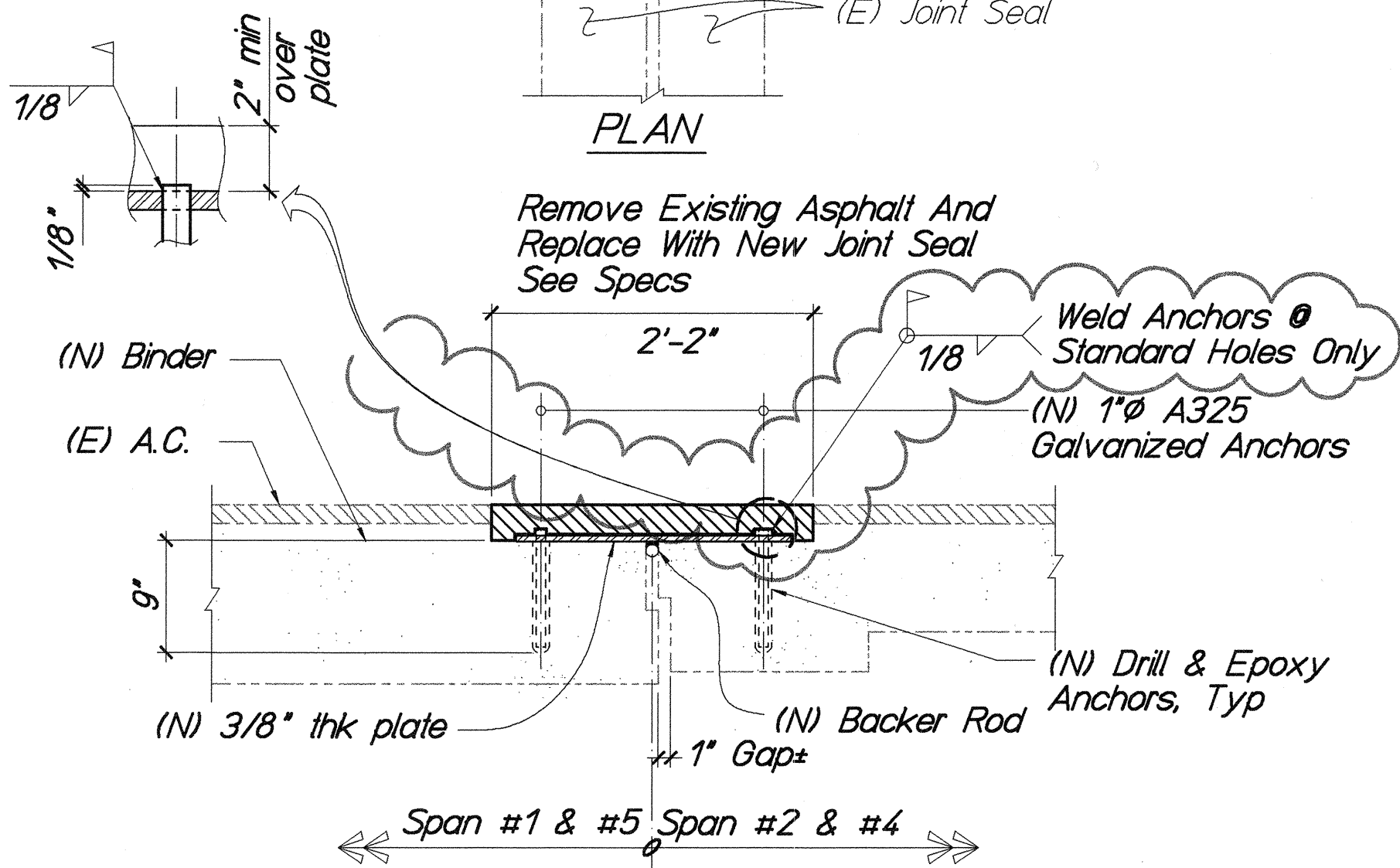
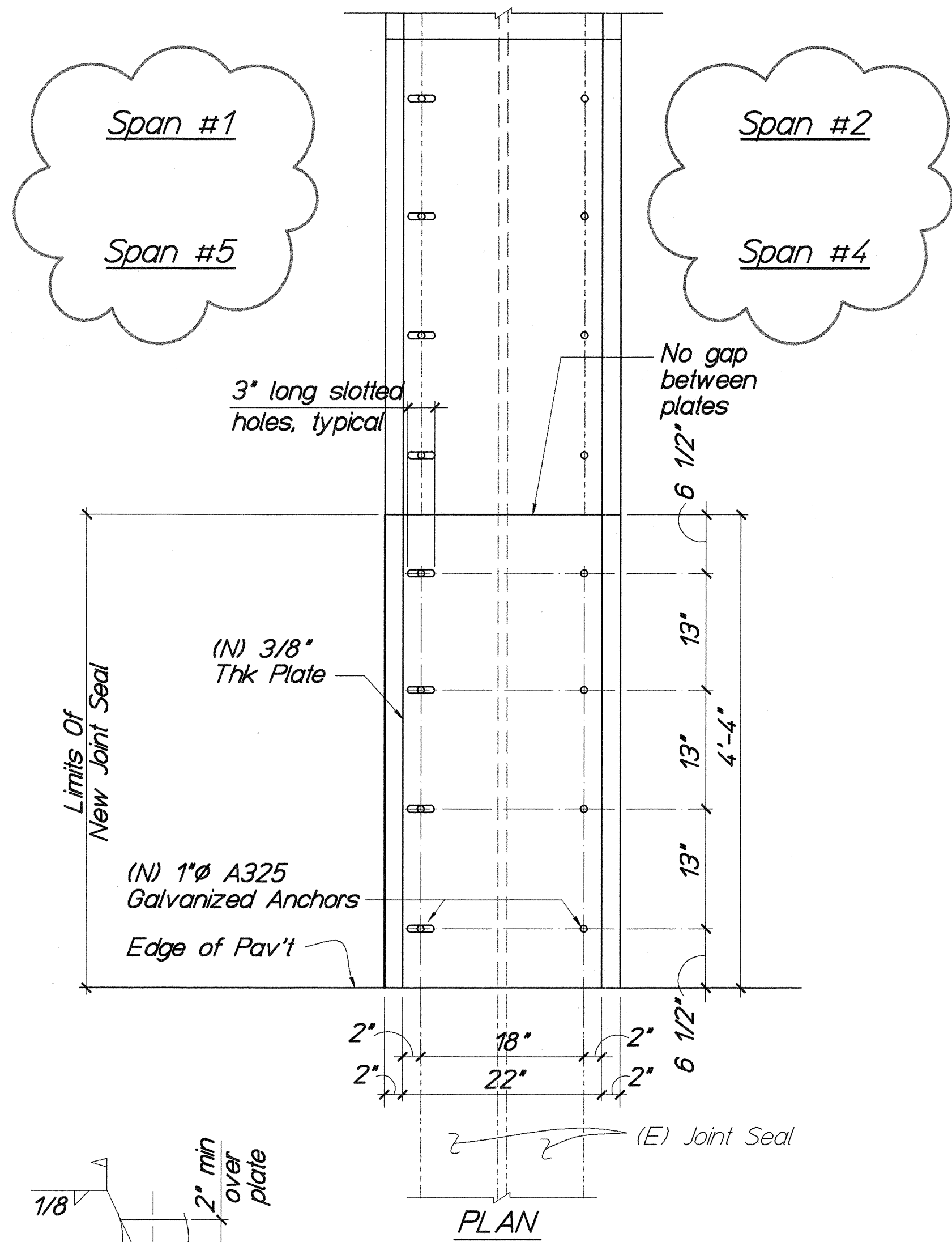
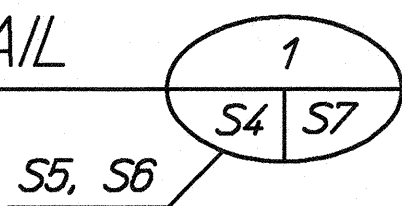
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(47)	1999	11	20

- Notes:
- All new Steel Plates shall be Galvanized per ASTM A123.
 - Steel Anchors shall be galvanized per ASTM A153.



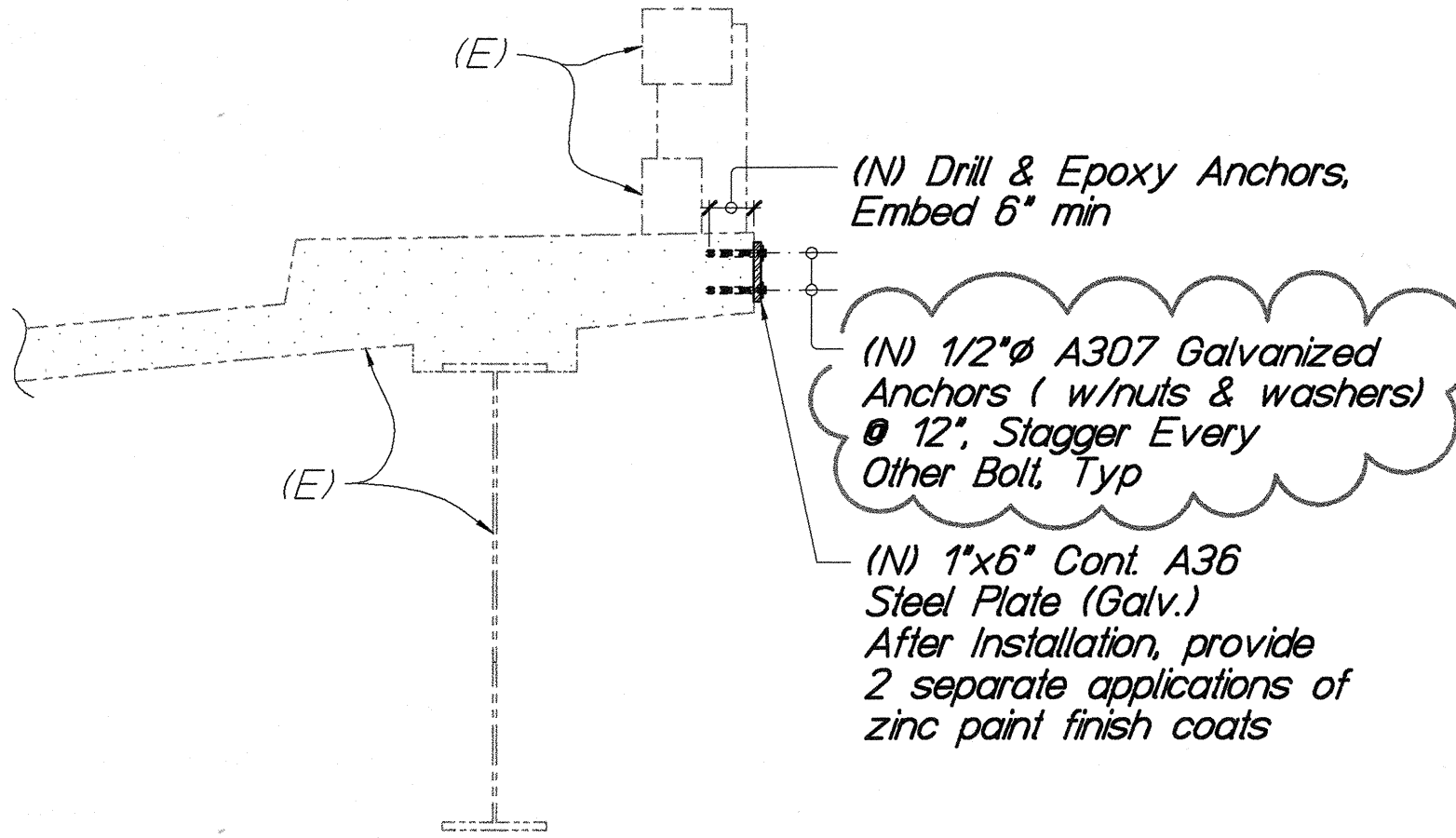
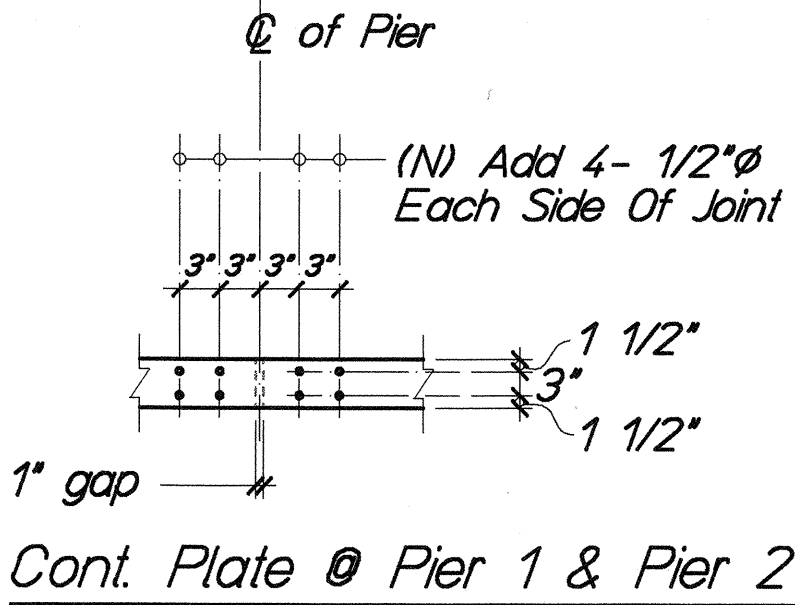
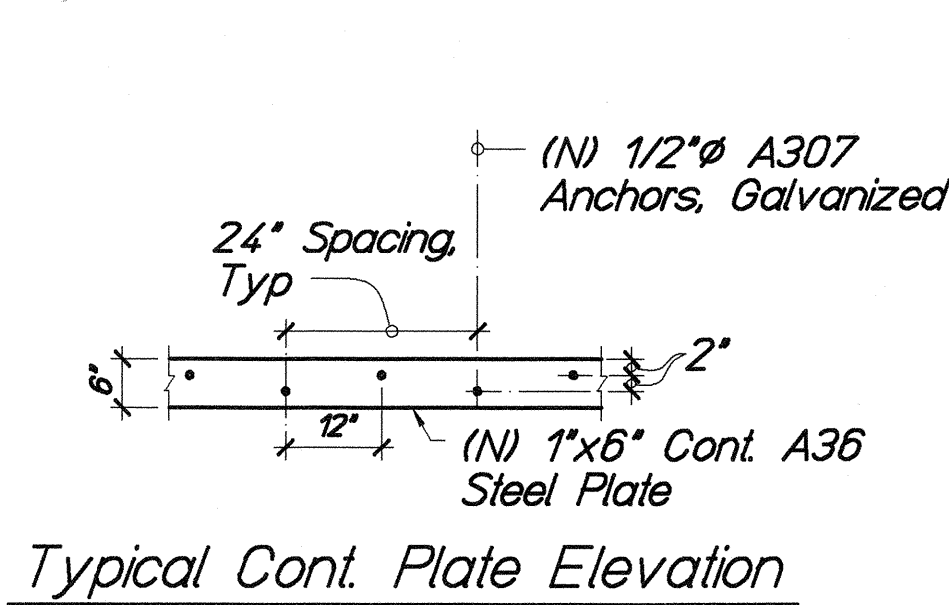
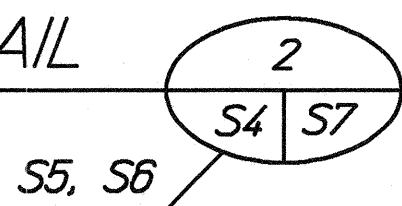
TYPE I PLATE DETAIL

1"=1'-0"



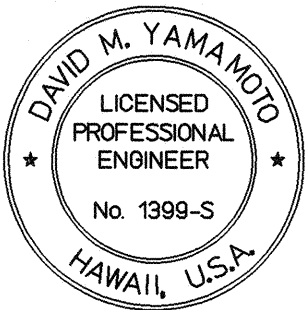
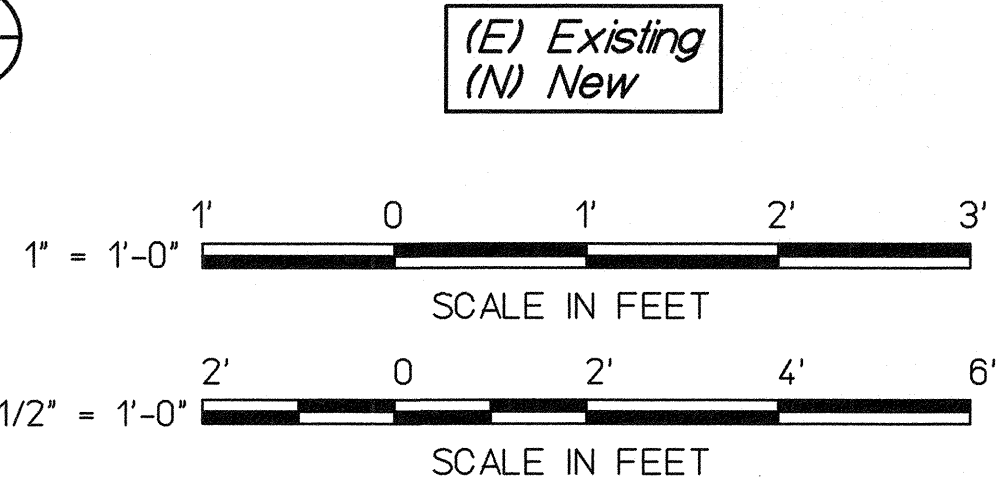
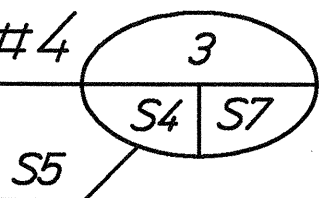
TYPE II PLATE DETAIL

1"=1'-0"



DETAIL @ SPANS #2, #3, & #4

1/2"=1'-0"



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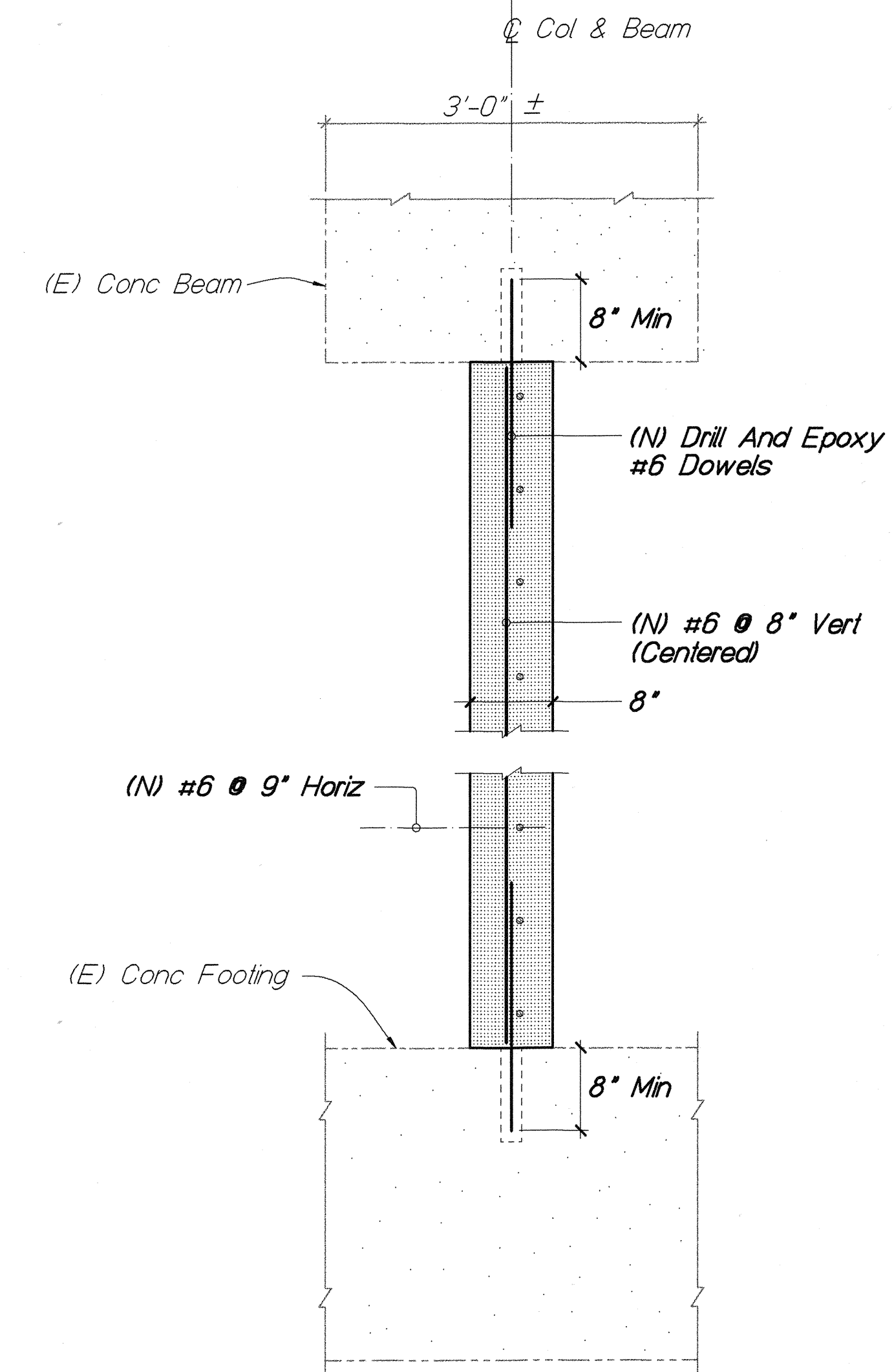
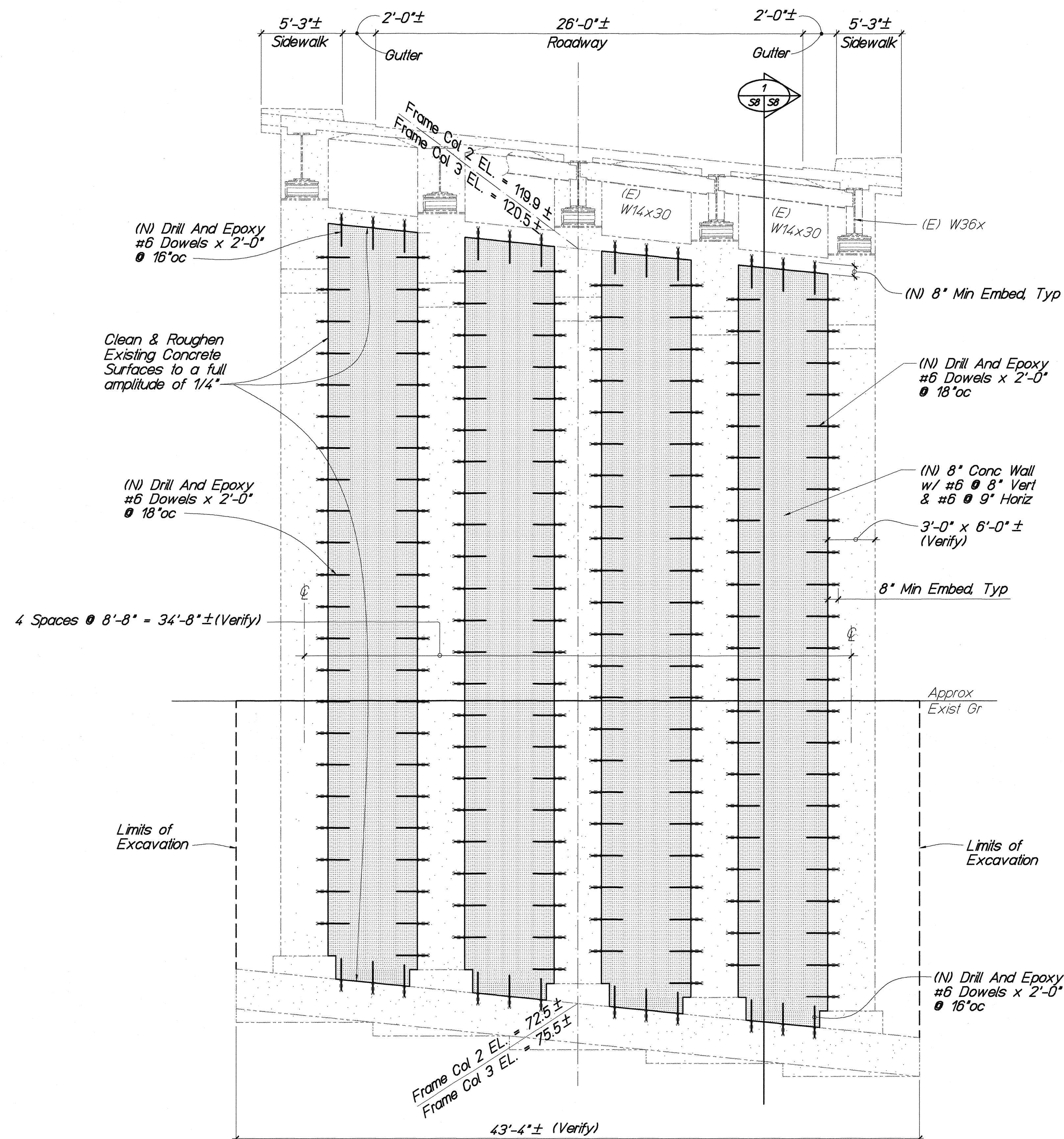
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

MAULUA BRIDGE - PLATE DETAILS

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES,
WEST OF NINOLE
FEDERAL AID PROJECT NO. BR-019-2(47)
SCALE: AS NOTED
DATE: November 1998

SHEET No. S7 OF 16 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(47)	1999	12	20



SECTION

1'-1'-0"

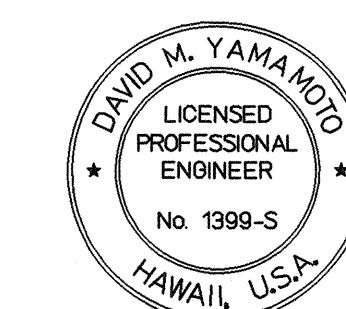
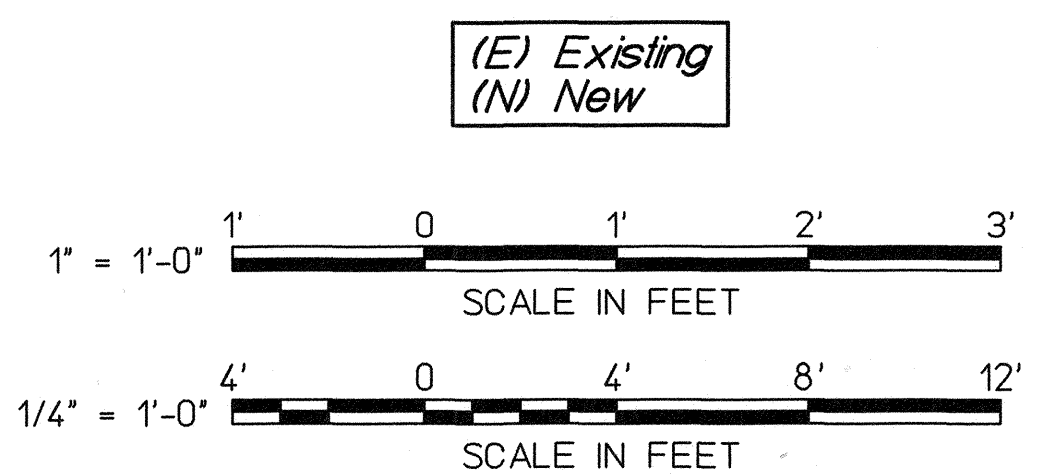
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S8 S8

FRAME COLUMN 2

(FRAME COLUMN 3 - SIMILAR)

1/4" = 1'-0"



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DATE: November 1998

SAITO & ASSOCIATES, INC.

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

MAULUA BRIDGE - INFILL WALL DETAILS

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES, WEST OF NINOLE

FEDERAL AID PROJECT NO. BR-019-2(47)

SCALE: AS NOTED

DATE: November 1998

SHEET No. S8 OF 16 SHEETS