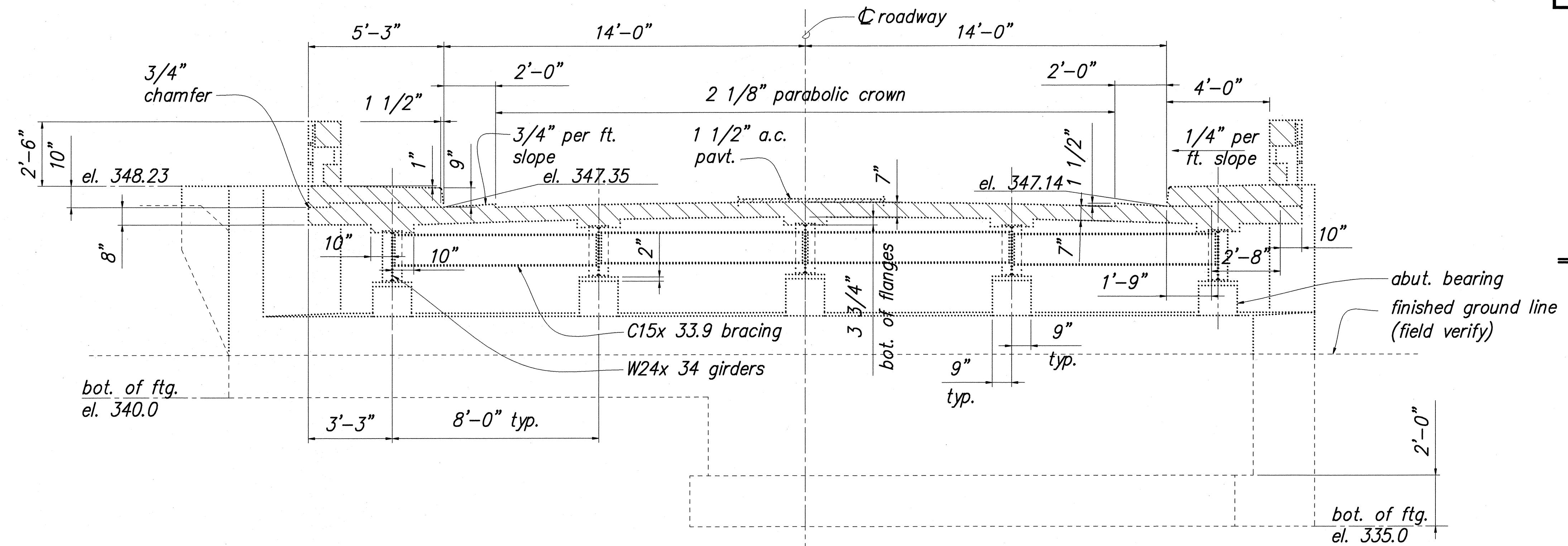


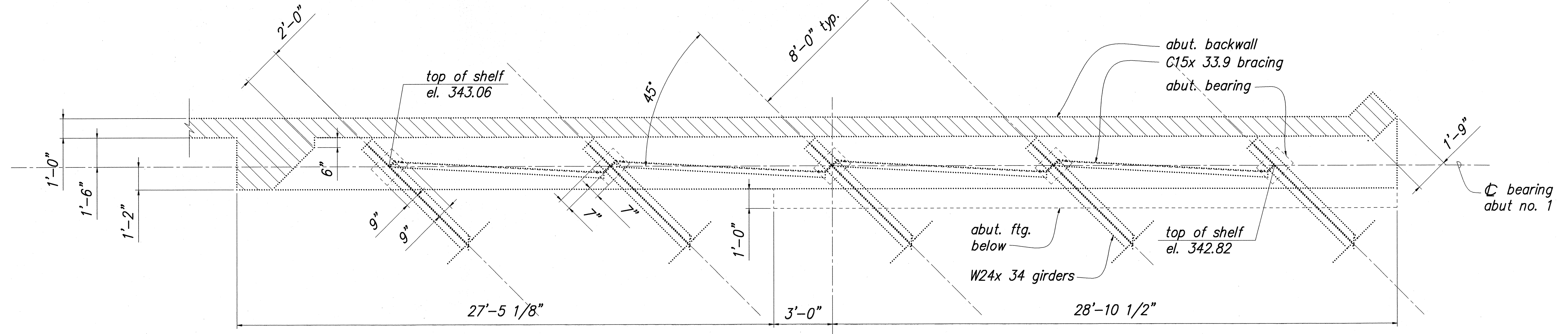
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	35	61



ABUTMENT NO. 1 - EXISTING CONDITIONS
NORMAL TO GIRDER ELEVATION

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

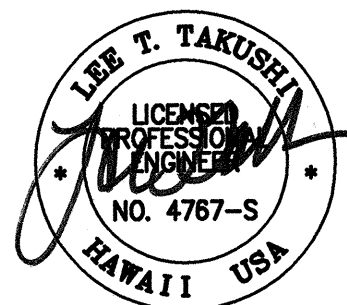
A
S4/S32



ABUTMENT NO. 1
EXISTING CONDITIONS SECTION PLAN

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

B
S32/S32



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KUWAIKAHI BRIDGE
ABUTMENT NO. 1 - EXISTING CONDITIONS
ELEVATION AND SECTION

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES,
VICINITY OF LAUPAHOEHOE
FEDERAL AID PROJECT NO. BR-019-2(44)

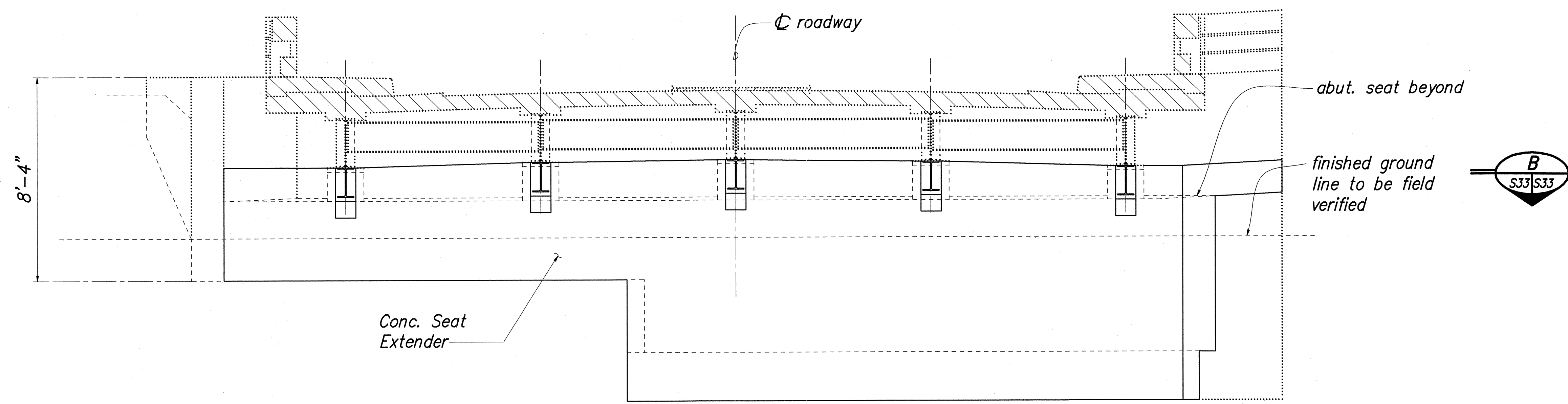
SCALE: AS NOTED DATE: APRIL 1998

SHEET No. S32 OF 58 SHEETS

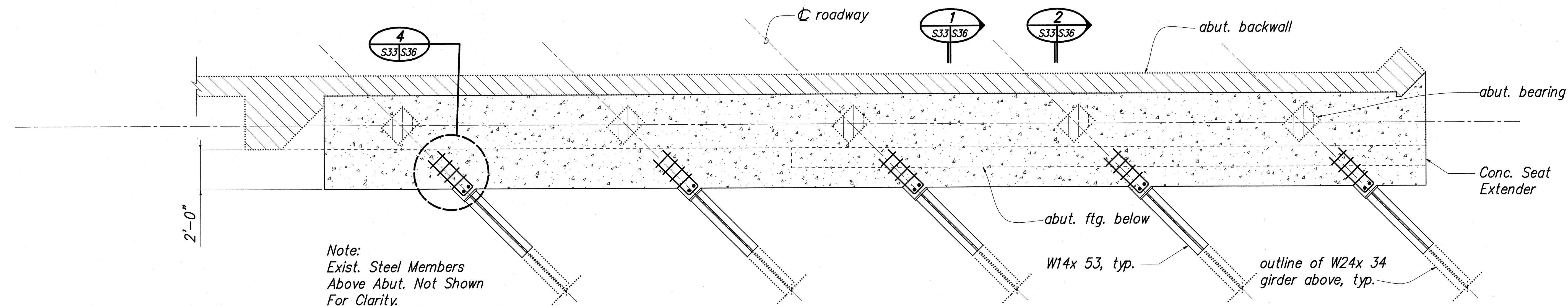
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	" "
No.	DESIGNED BY	" "
	CHECKED BY	" "

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	36	61



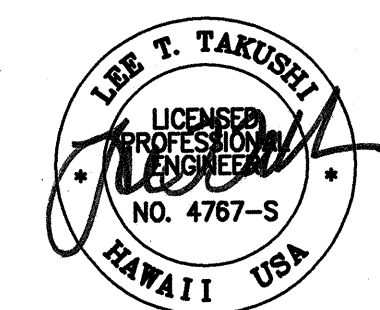
**ABUTMENT NO. 2- NEW CONDITIONS
NORMAL TO GIRDERS ELEVATION**
SCALE: 3/8"=1'-0" **A**
S4/S33



**ABUTMENT NO. 1
NEW CONDITIONS SECTION PLAN**
SCALE: 3/8"=1'-0" **B**
S33/S33

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

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

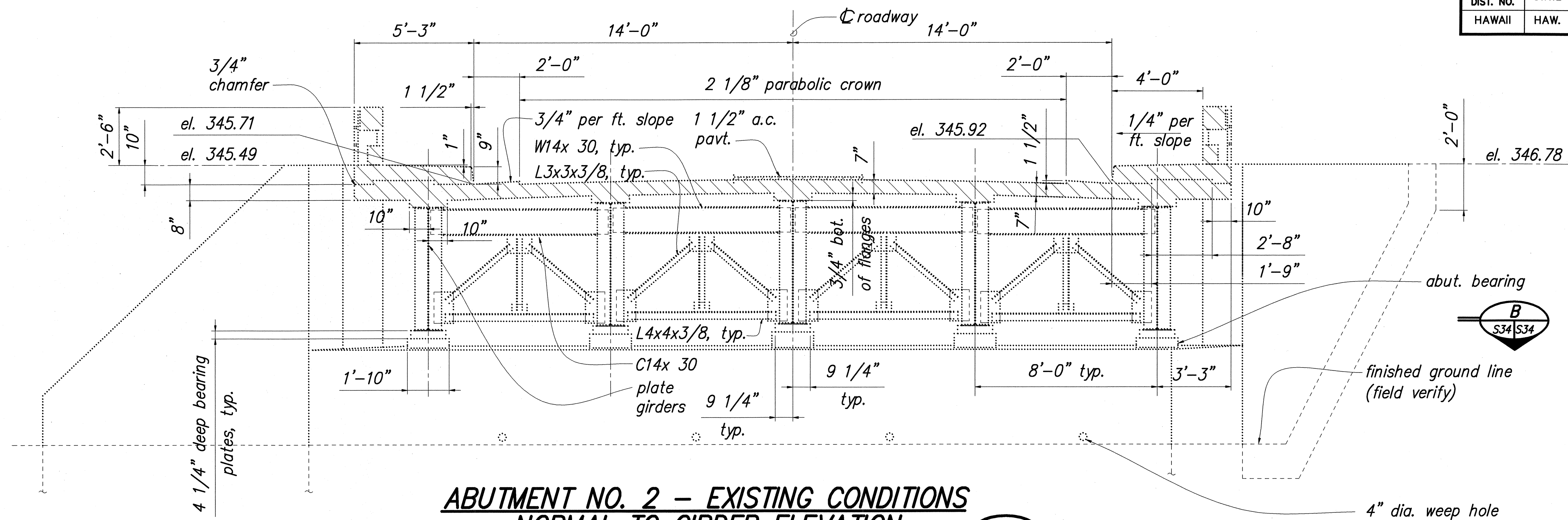
**KUWAIKAHI BRIDGE
ABUTMENT NO. 1 - NEW CONDITIONS
ELEVATION AND SECTION**

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES,
VICINITY OF LAUPAHOEHOE
FEDERAL AID PROJECT NO. BR-019-2(44)

SCALE: AS NOTED DATE: APRIL 1998

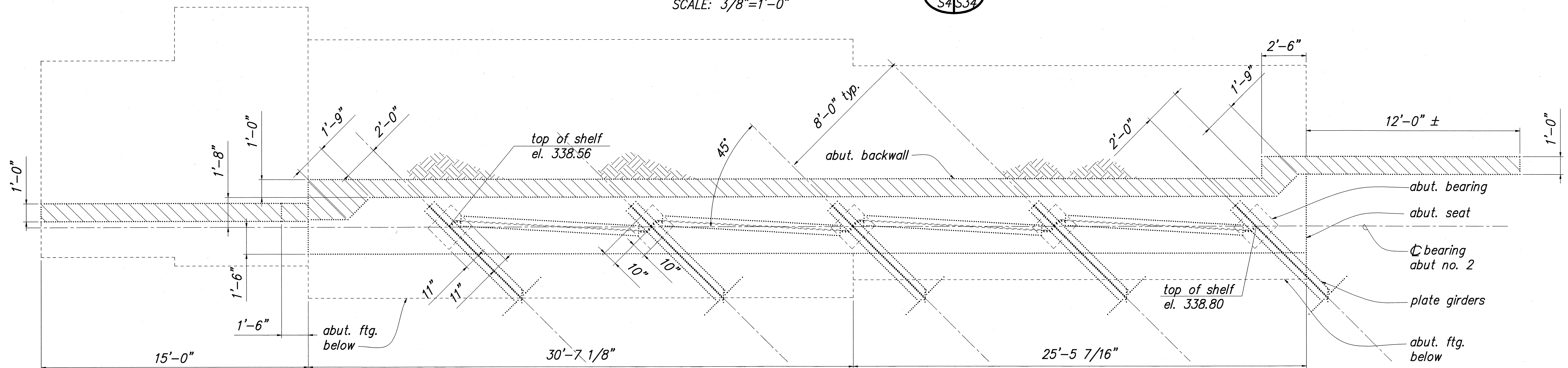
SHEET No. S33 OF 58 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	37	61



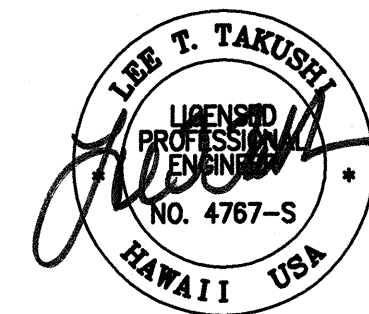
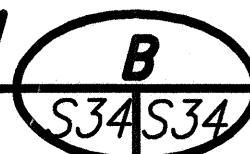
ABUTMENT NO. 2 – EXISTING CONDITIONS
NORMAL TO GIRDER ELEVATION

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



ABUTMENT NO. 2
EXISTING CONDITIONS SECTION PLAN

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



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

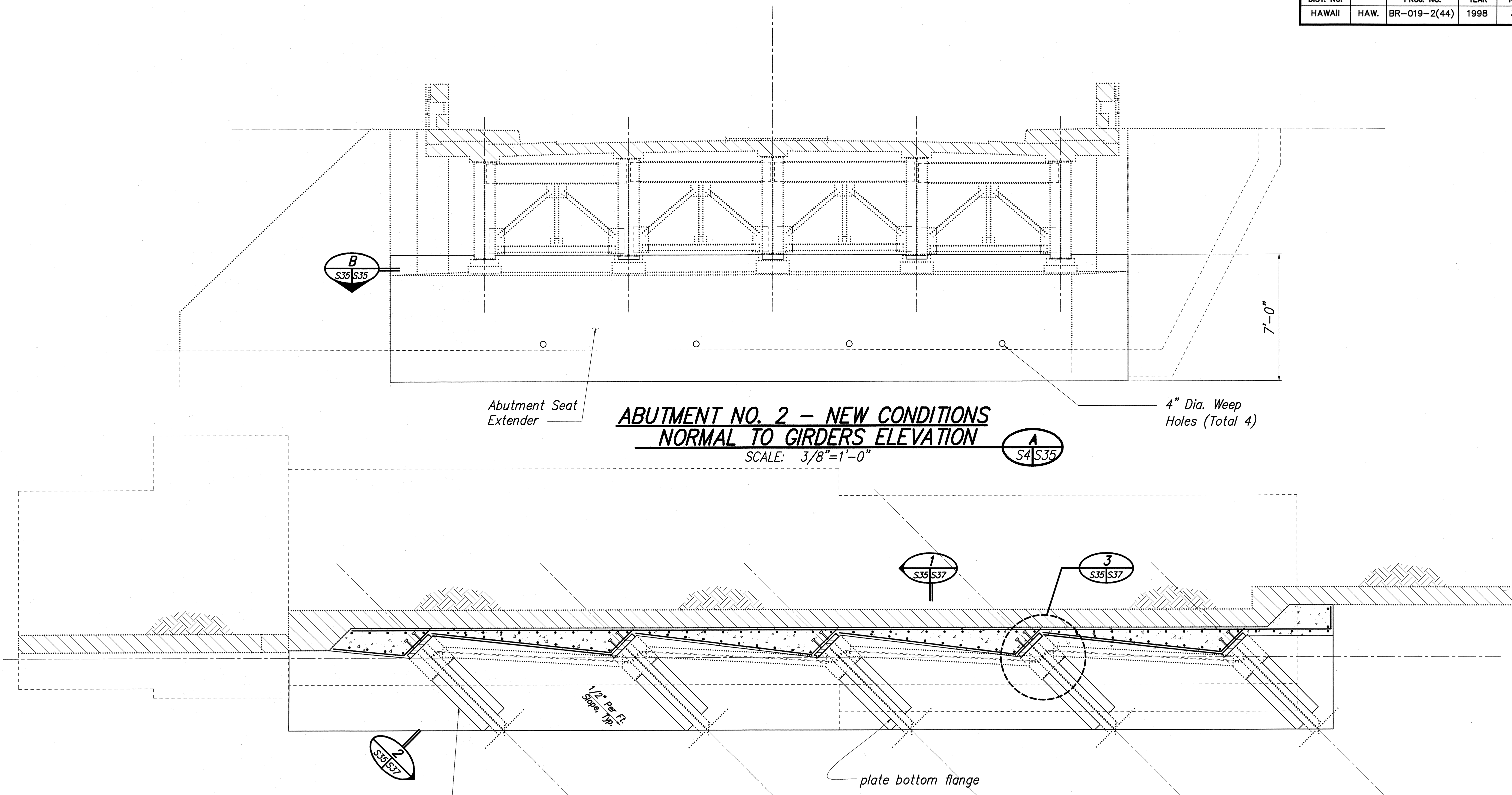
KUWAIKAHI BRIDGE
ABUTMENT NO. 2 - EXISTING CONDITIONS
ELEVATION AND SECTION

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES,
VICINITY OF LAUPAHOEHOE
FEDERAL AID PROJECT NO. BR-019-2(44)

SCALE: AS NOTED DATE: APRIL 1998

SHEET No. S34 OF 58 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	38	61

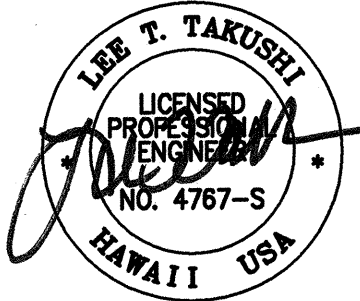


**ABUTMENT NO. 2 – NEW CONDITIONS
NORMAL TO GIRDERS ELEVATION**
SCALE: 3/8"=1'-0"

**ABUTMENT NO. 2
NEW CONDITIONS SECTION PLAN**
SCALE: 3/8"=1'-0"

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

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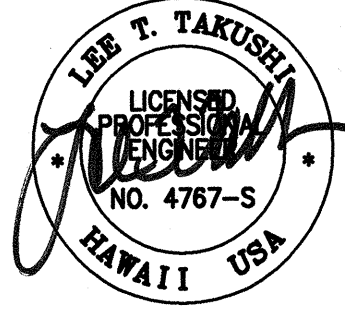
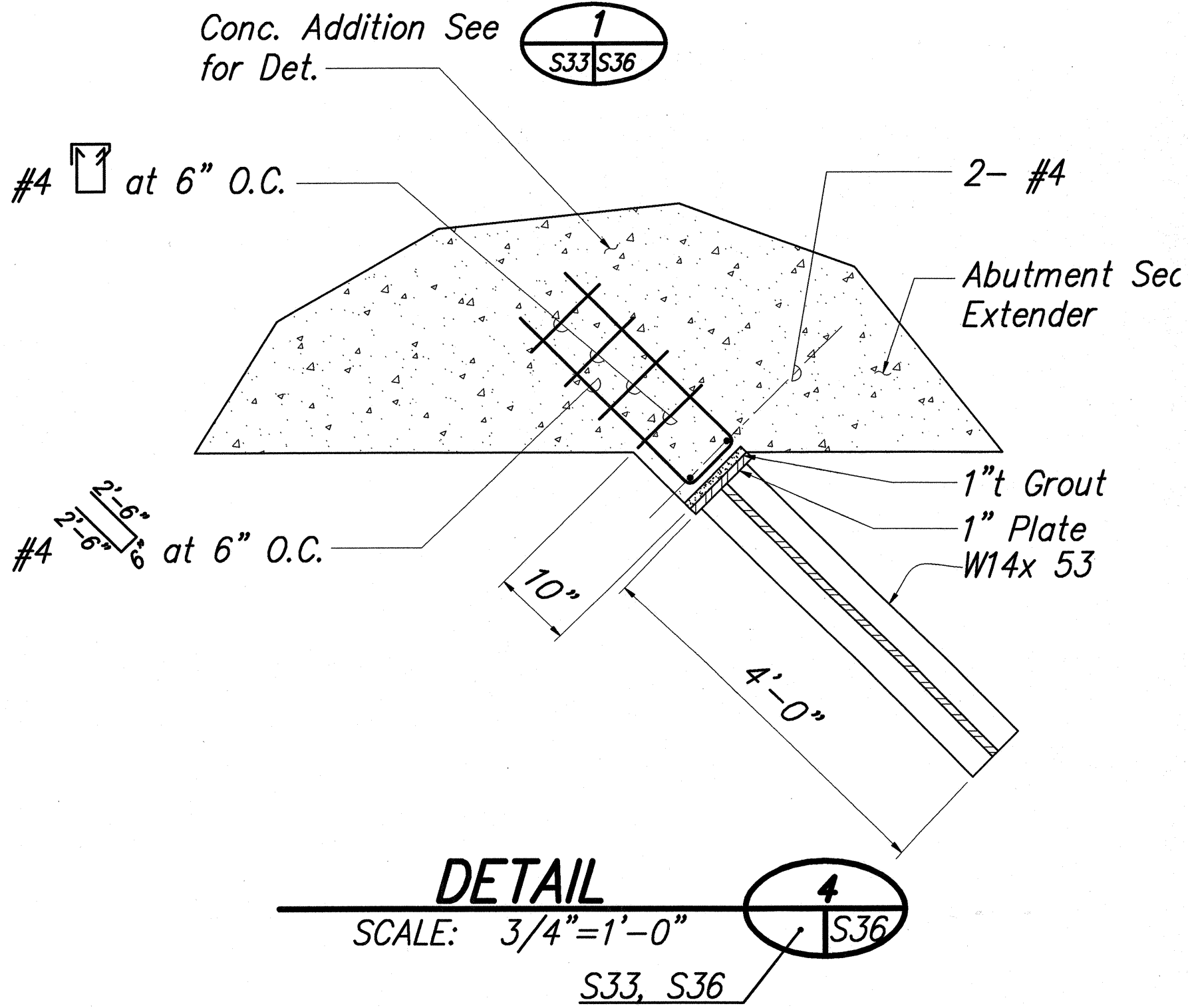
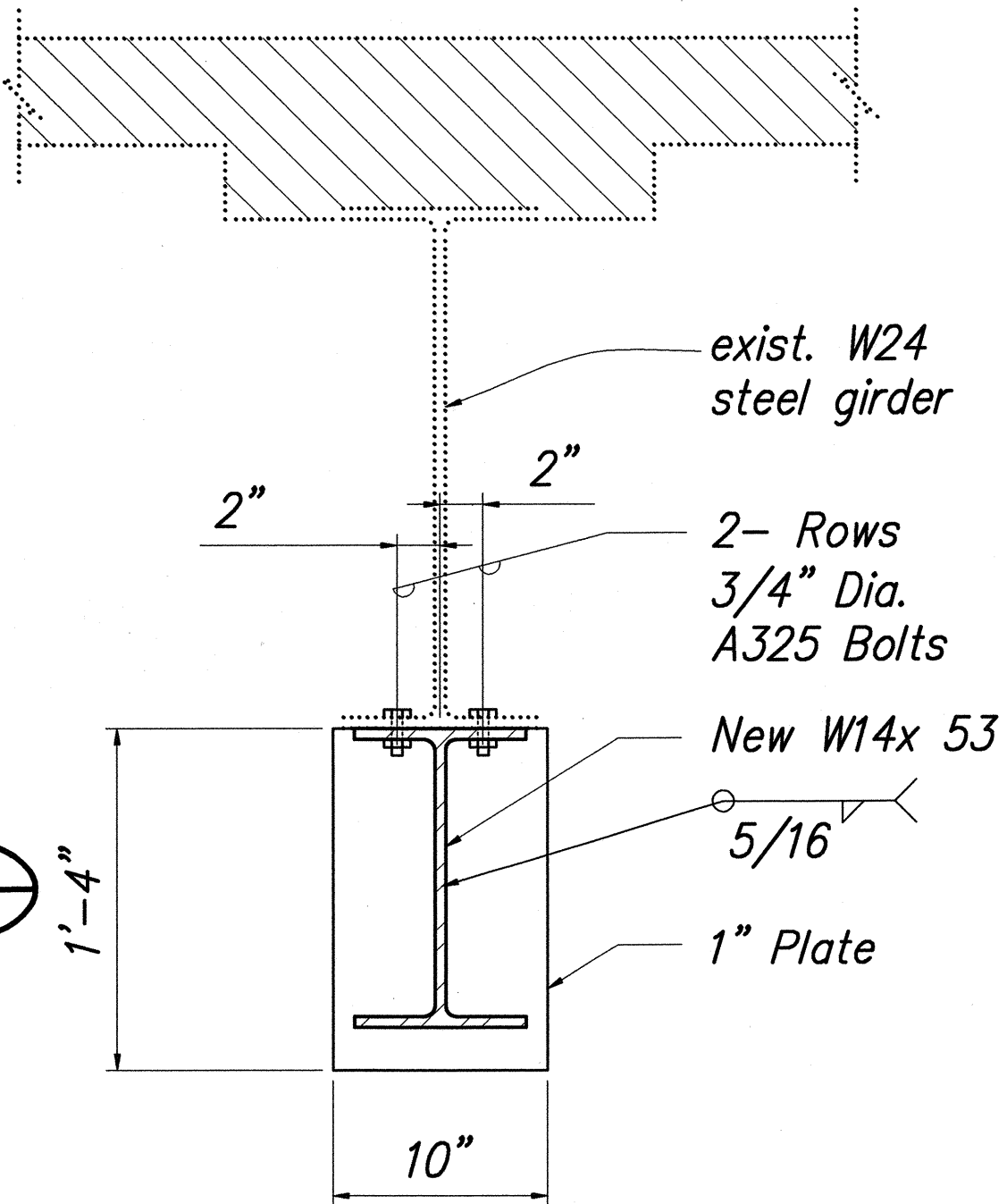
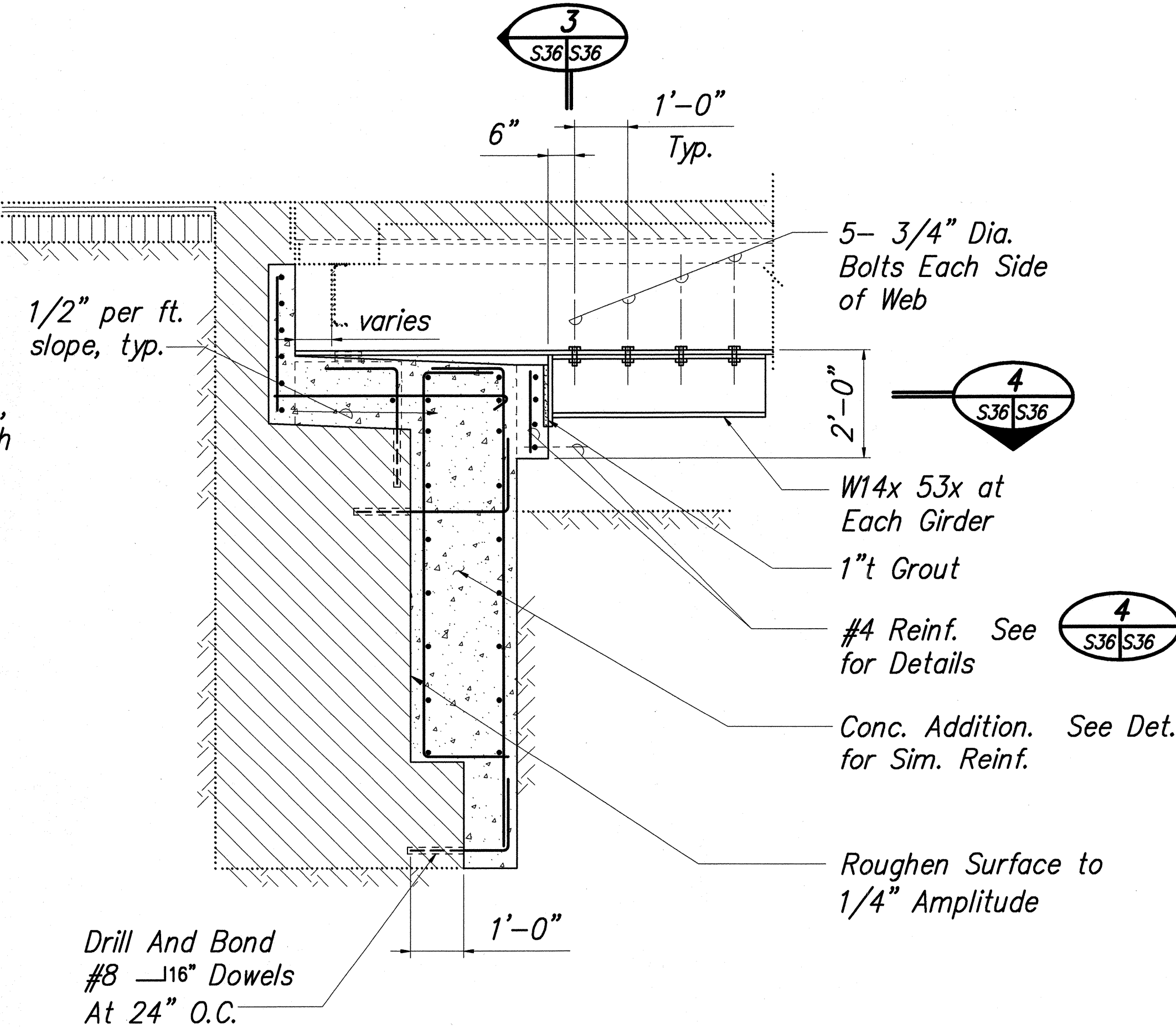
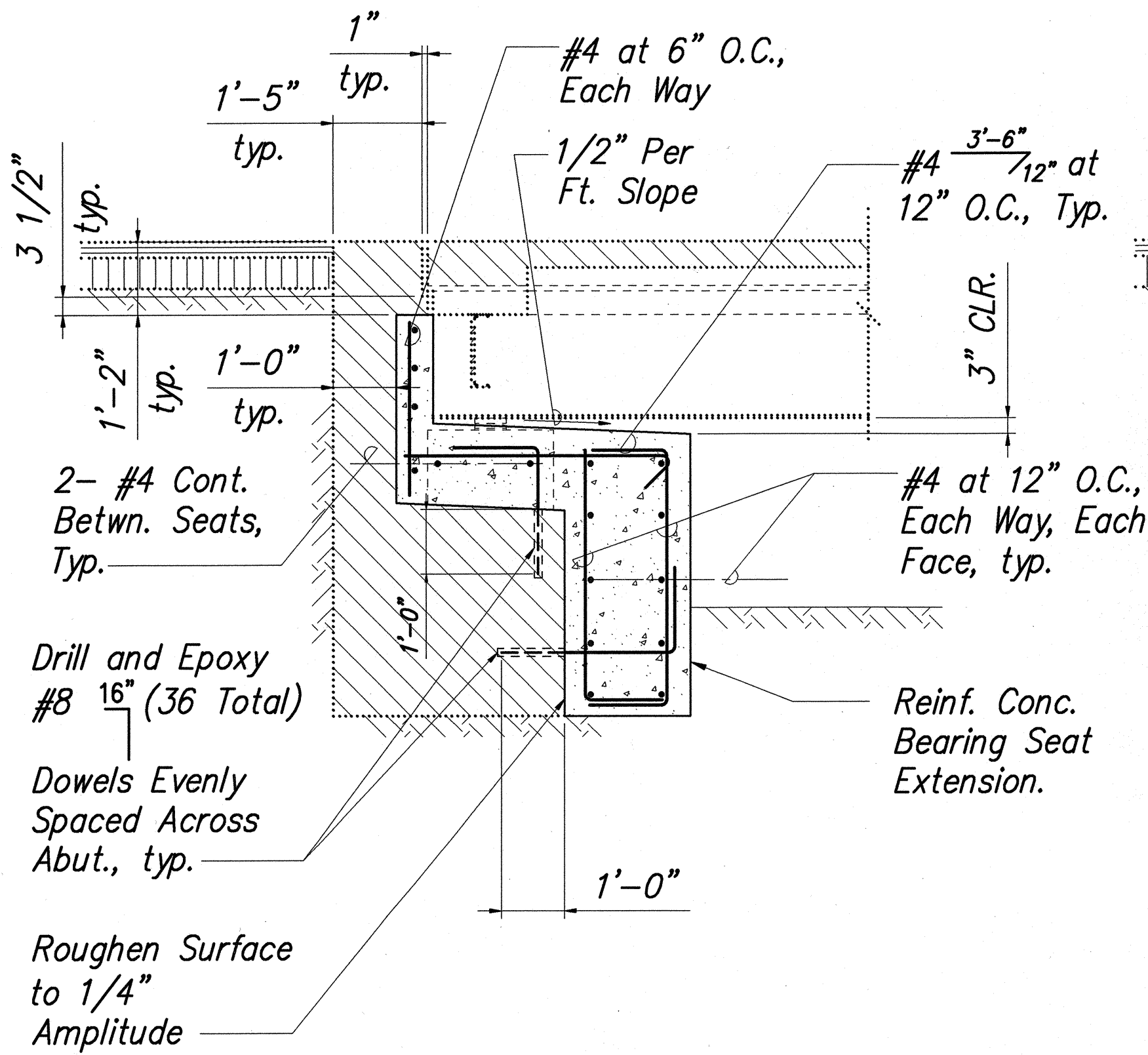
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KUWAIKAI BRIDGE
ABUTMENT NO. 2 - NEW CONDITIONS
ELEVATION AND SECTION

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES,
VICINITY OF LAUPAHOEHOE
FEDERAL AID PROJECT NO. BR-019-2(44)
SCALE: AS NOTED DATE: APRIL 1998

SHEET No. S35 OF 58 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	39	61



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KUWAIKAHI BRIDGE
ABUTMENT NO. 1
NEW CONDITIONS DETAILS

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES,
VICINITY OF LAUPAHOEHOE
FEDERAL AID PROJECT NO. BR-019-2(44)
SCALE: AS NOTED

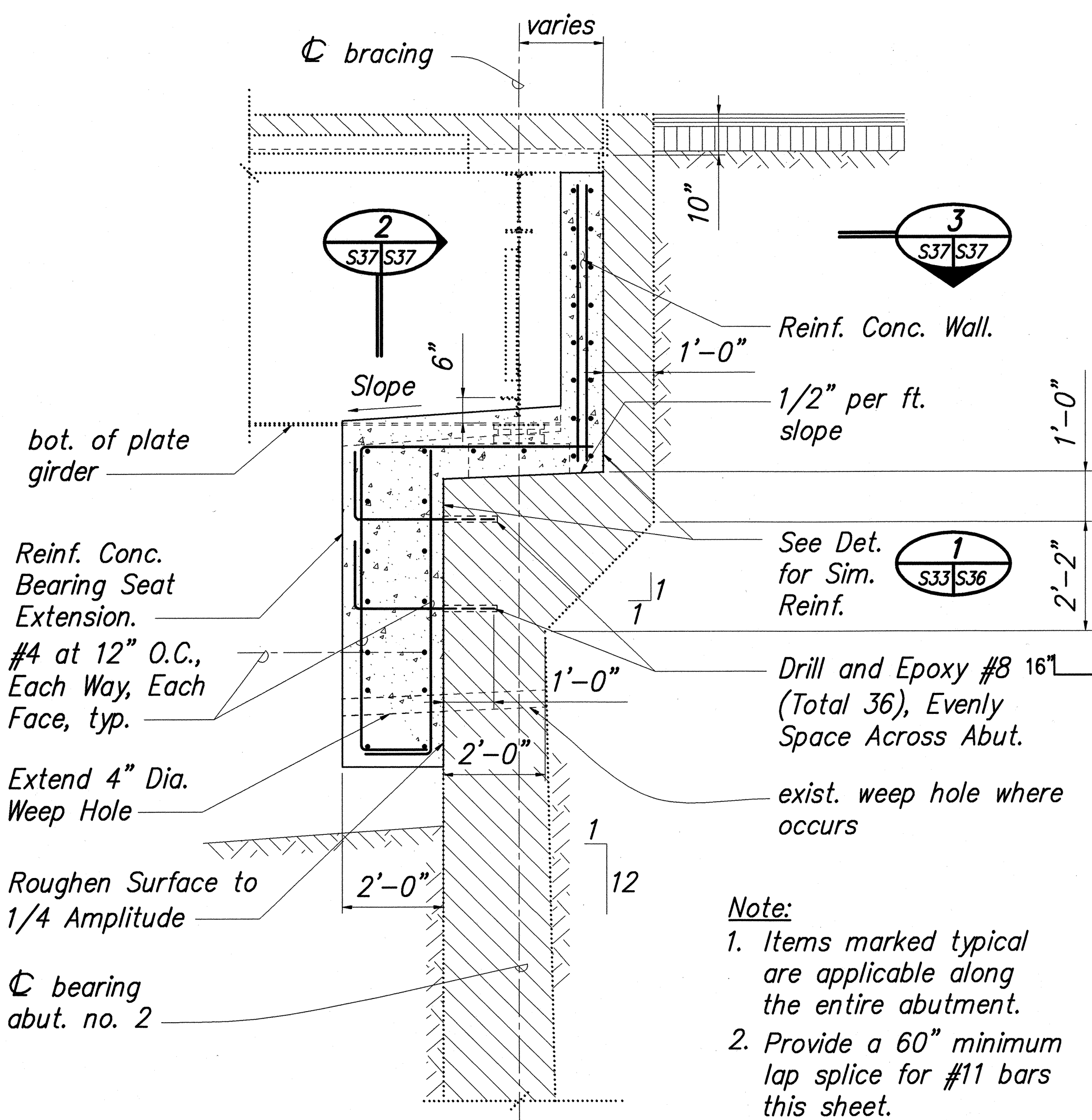
DATE: APRIL 1998

SHEET No. S36 OF 58 SHEETS

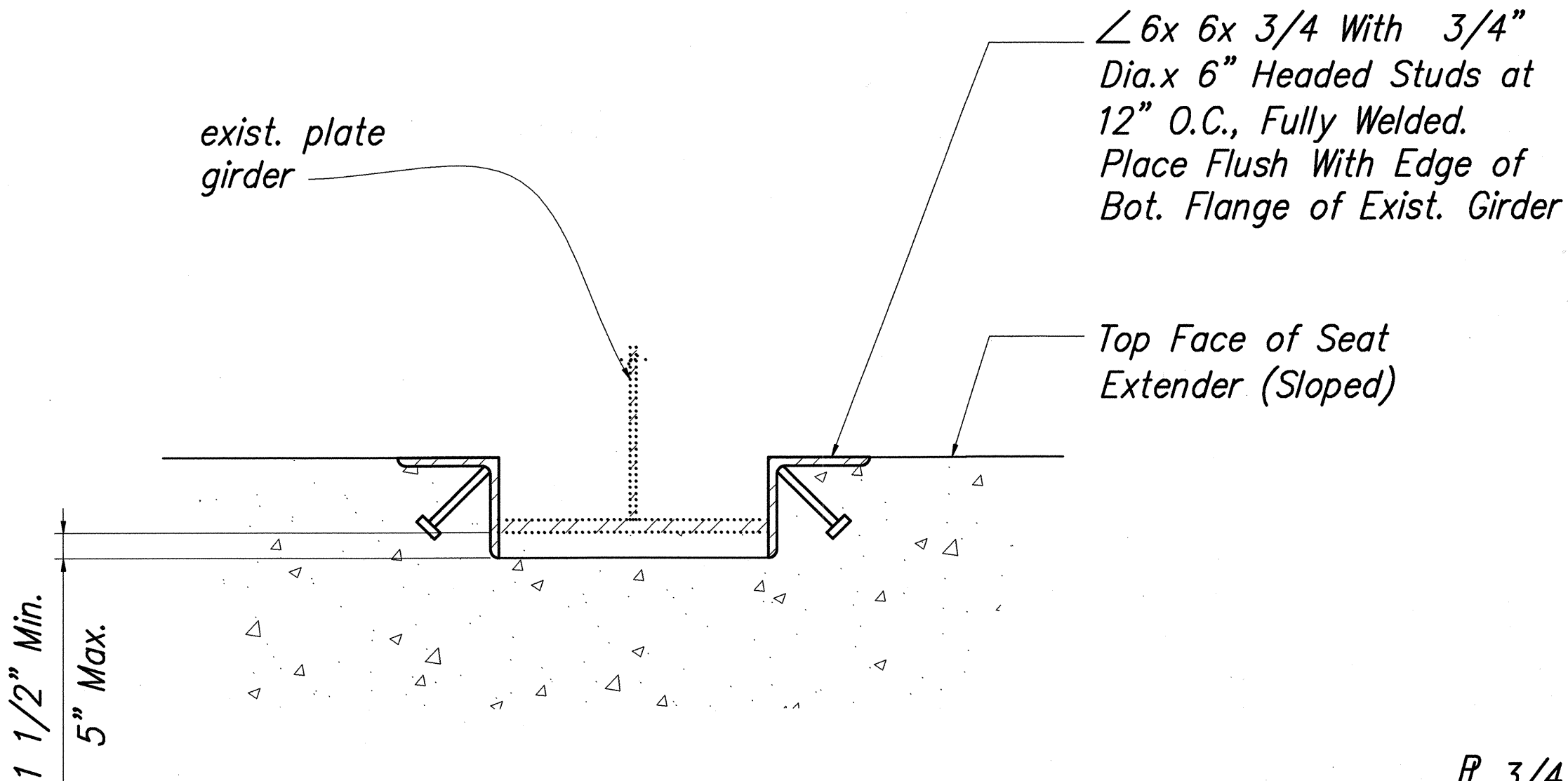
SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
DATE	

MAY 26 1998

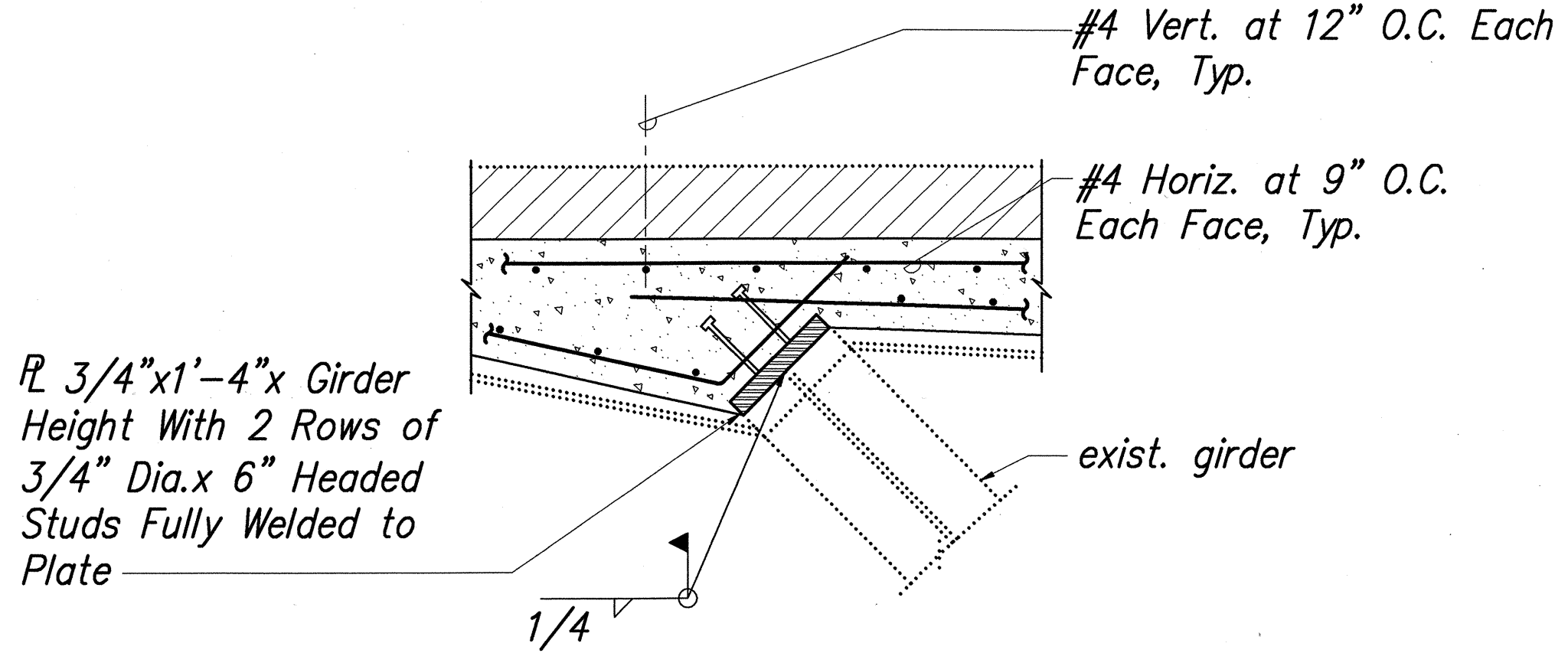
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	40	61



DETAIL
 SCALE: 1/2"=1'-0"
 S4, S35



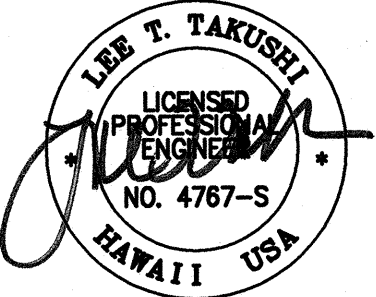
DETAIL
 SCALE: 1 1/2"=1'-0"
 S35, S37, S38



DETAIL
 SCALE: 1/2"=1'-0"
 S35, S37

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

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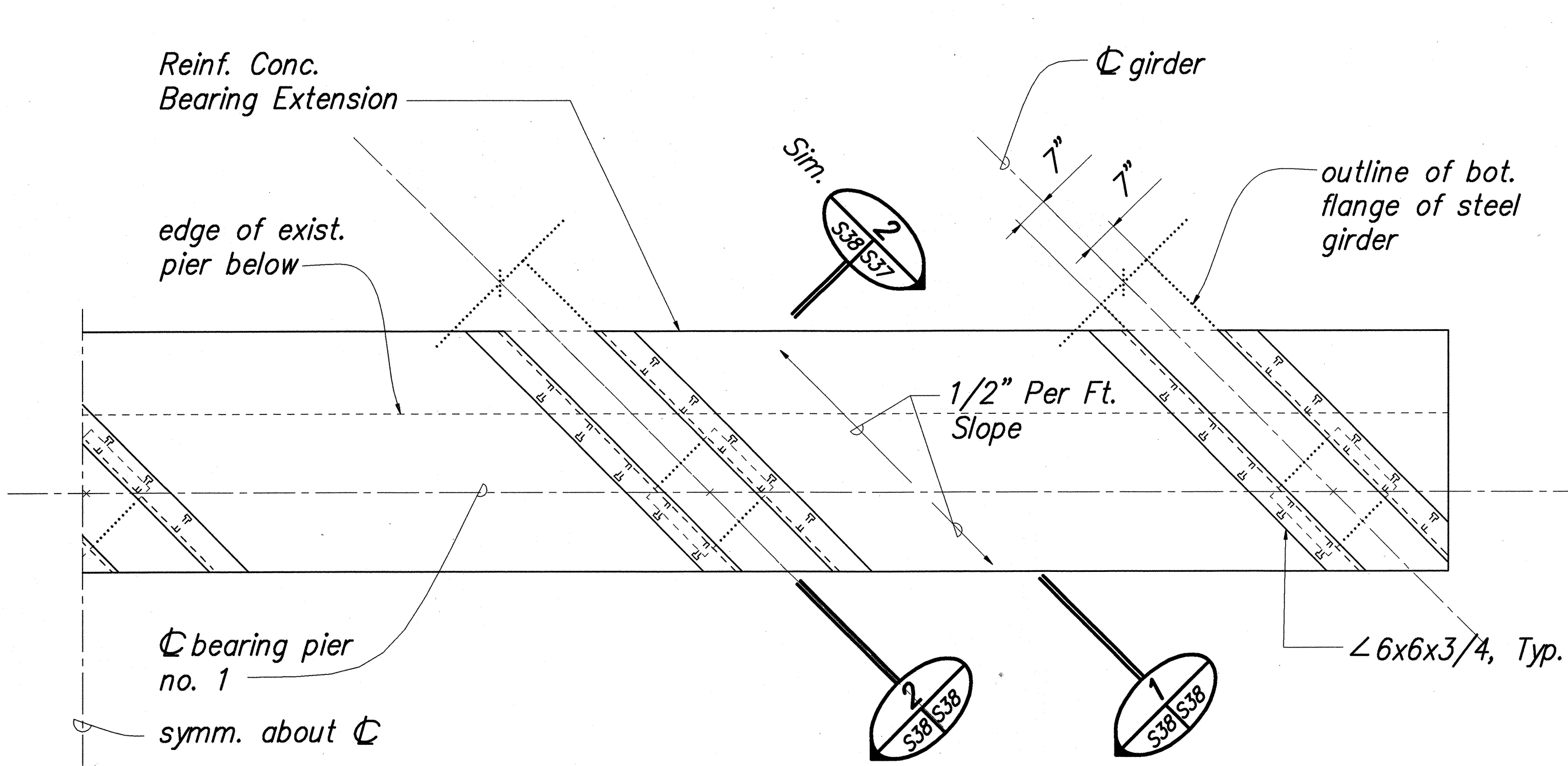
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

**KUWAIKAHI BRIDGE
 ABUTMENT NO. 2
 NEW CONDITIONS DETAILS**

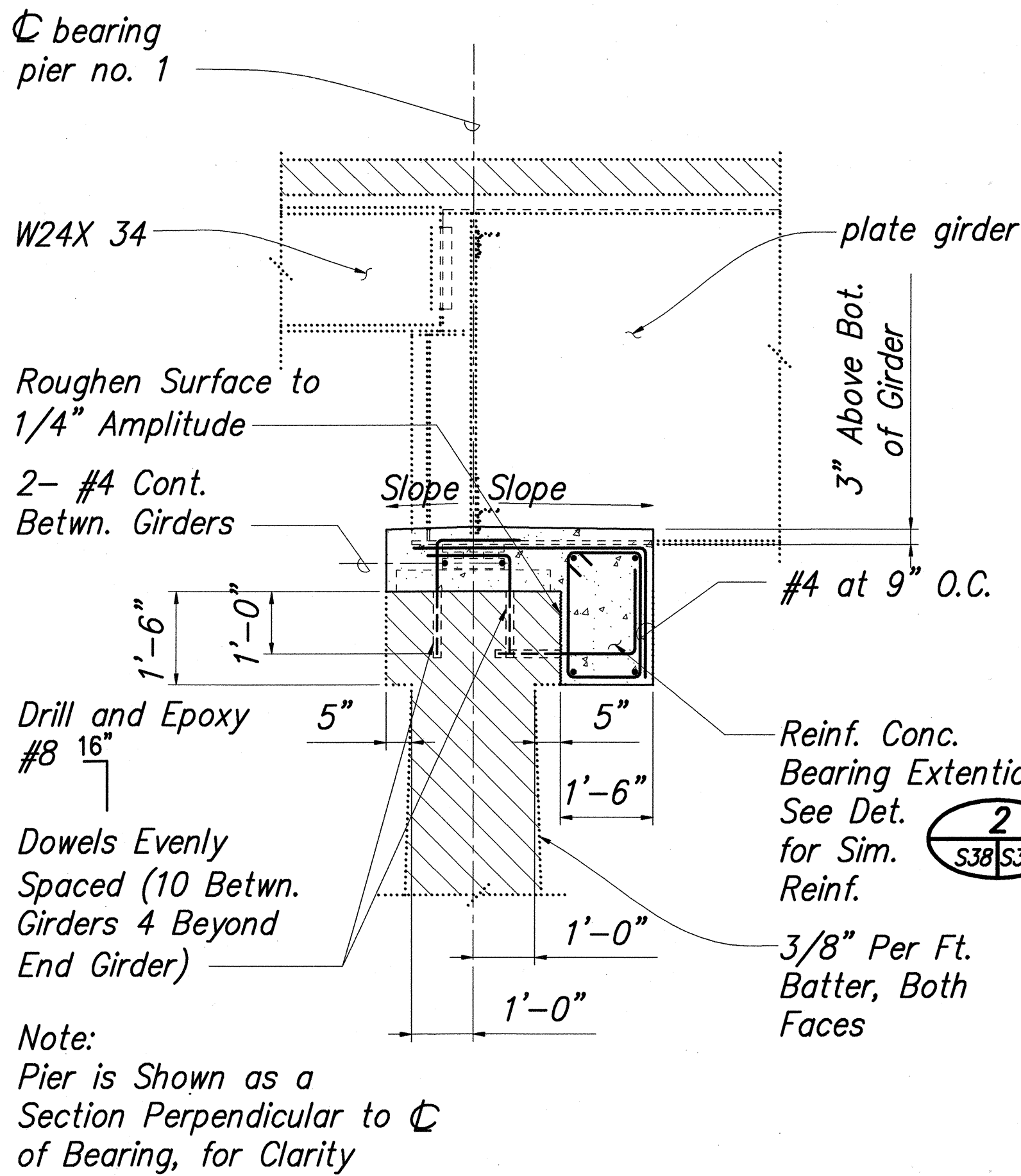
 HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES,
 VICINITY OF LAUPAHOEHOE
 FEDERAL AID PROJECT NO. BR-019-2(44)
 SCALE: AS NOTED DATE: APRIL 1998

SHEET No. S37 OF 58 SHEETS

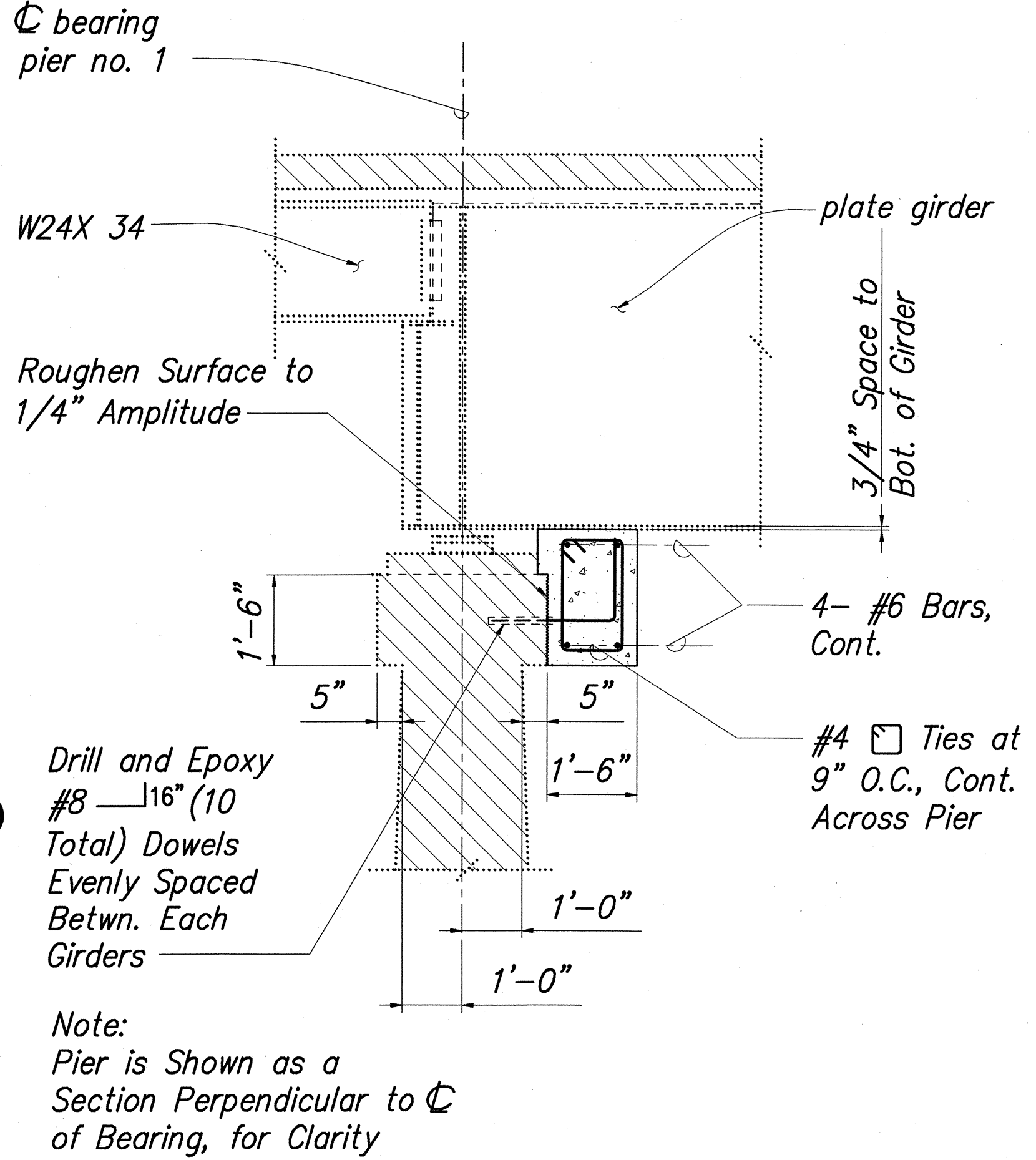
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	41	61



PIER 1 PLAN
SCALE: 1/2"=1'-0"

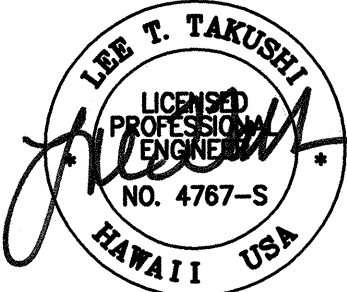


DETAIL
SCALE: 1/2"=1'-0"



DETAIL
SCALE: 1/2"=1'-0"

DESIGNED BY	DATE
DRAWN BY	" "
CHECKED BY	" "
NOTED BY	" "
QUANTITIES BY	" "
NO.	" "



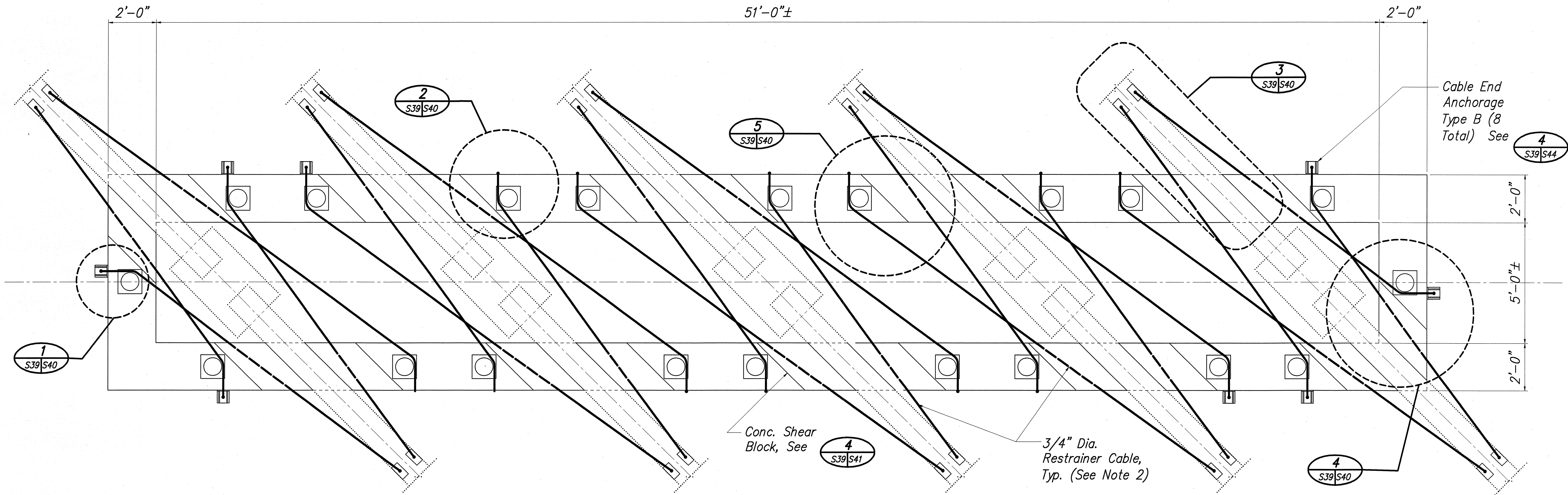
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KUWAIKAHI BRIDGE
PIER PLANS AND DETAILS

HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES,
VICINITY OF LAUPAHOEHOE
FEDERAL AID PROJECT NO. BR-019-2(44)
SCALE: AS NOTED
DATE: APRIL 1998

SHEET No. S38 OF 58 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	42	61

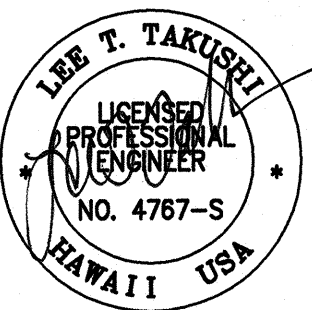


- Note:
- See **A** (S4/S42) for Pier 2 elevation.
 - Restrainer Cable Shall Be Galvanized and Coated With Corrosion Inhibiting Grease And Encapsulated In Hot Melt Extruded HDPE, Typ.

PIER 2 PLAN
SCALE: 1/2"=1'-0" **A** (S4/S39)

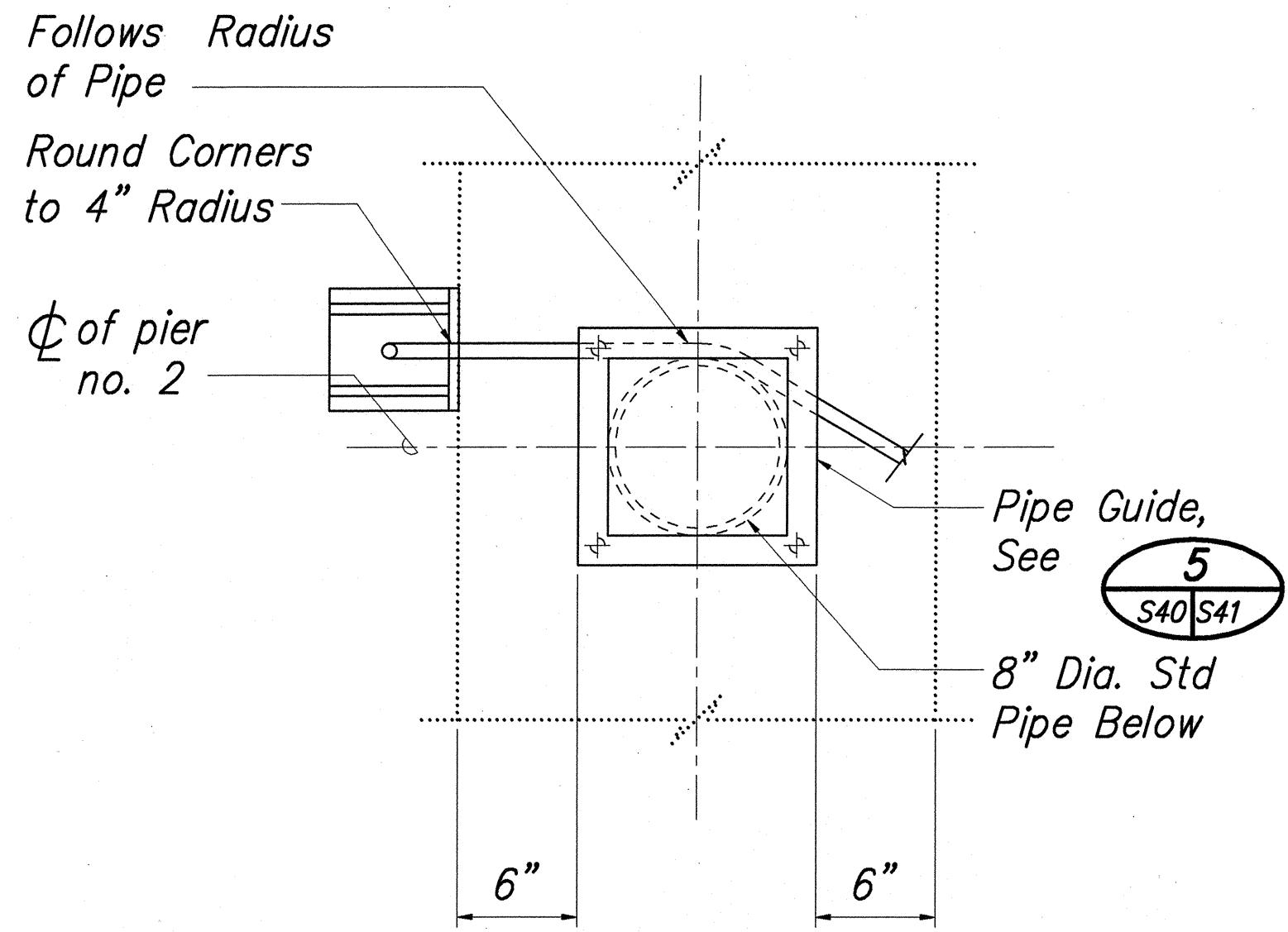
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	DESIGNED BY	
	CHECKED BY	

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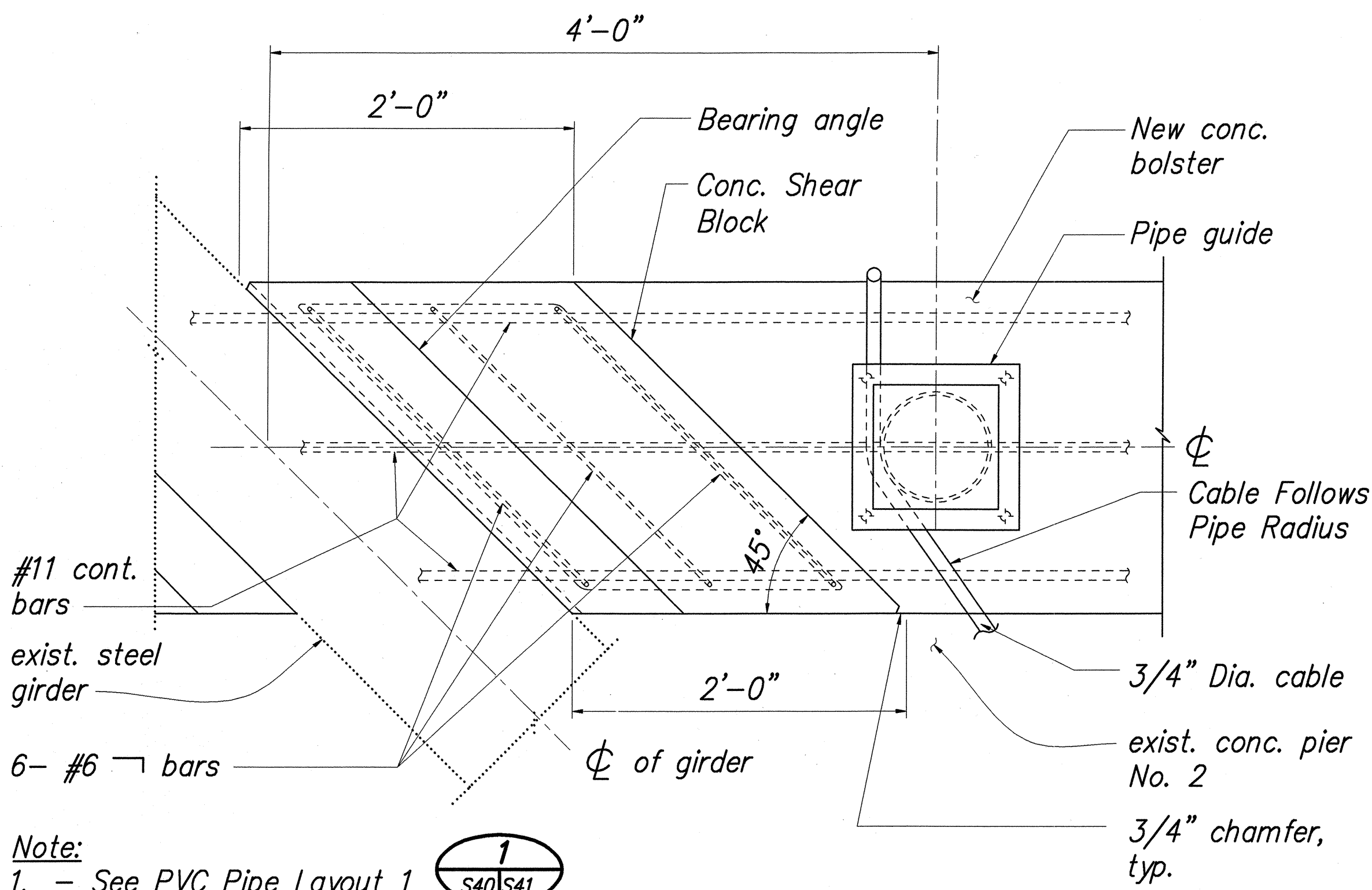


8/7/98	Cable Restrainer Details revised at Kuwaikahi Bridge, Pier No. 2 per Addendum No. 1
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION KUWAIKAHI BRIDGE - PIER PLANS AND DETAILS	
HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES, VICINITY OF LAUPAHOEHOE FEDERAL AID PROJECT NO. BR-019-2(44) SCALE: AS NOTED DATE: APRIL 1998	
SHEET No. S39 OF 58 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	43	61

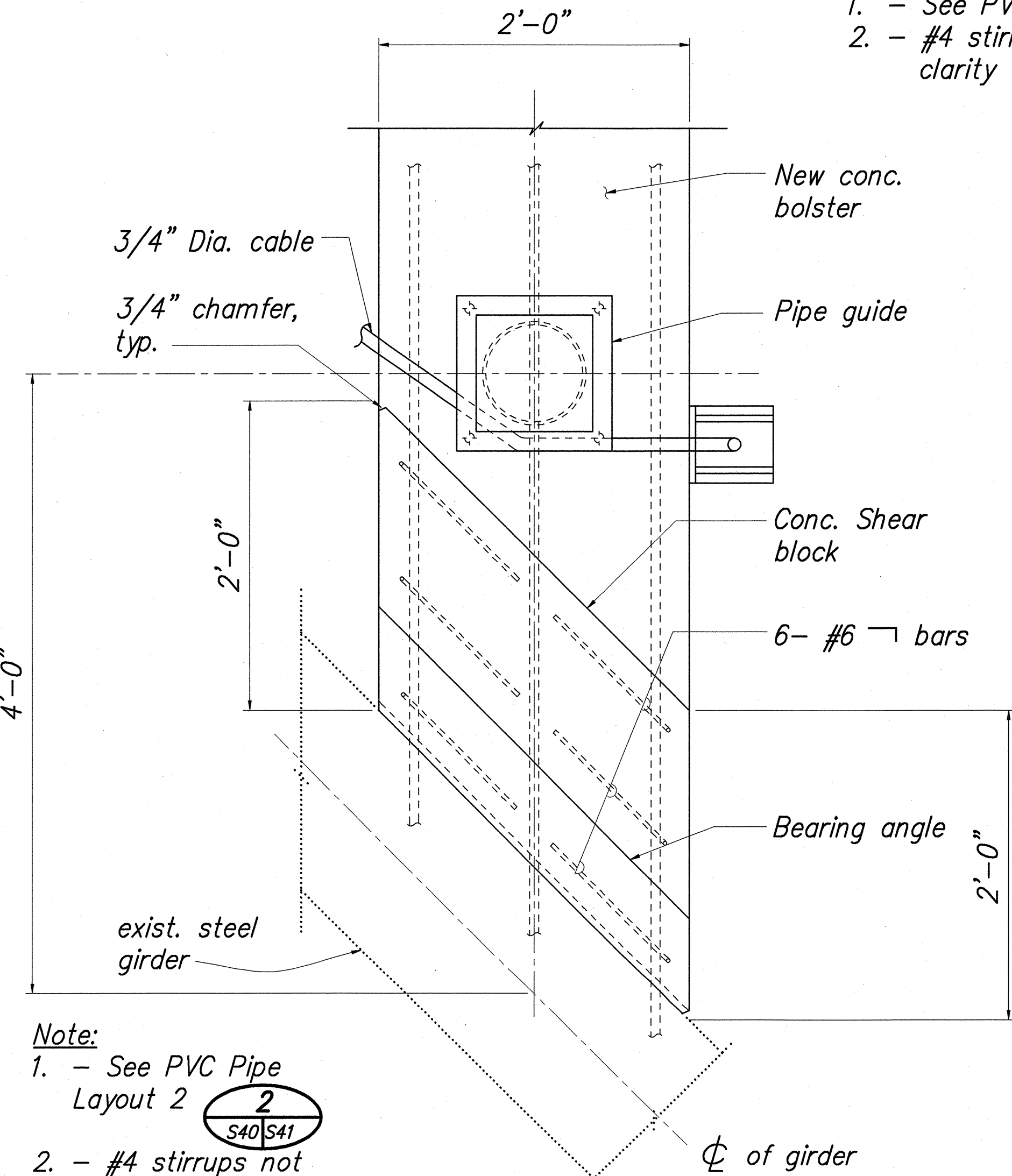


TYPICAL PLAN DETAIL 1
SCALE: 1 1/2" = 1'-0"



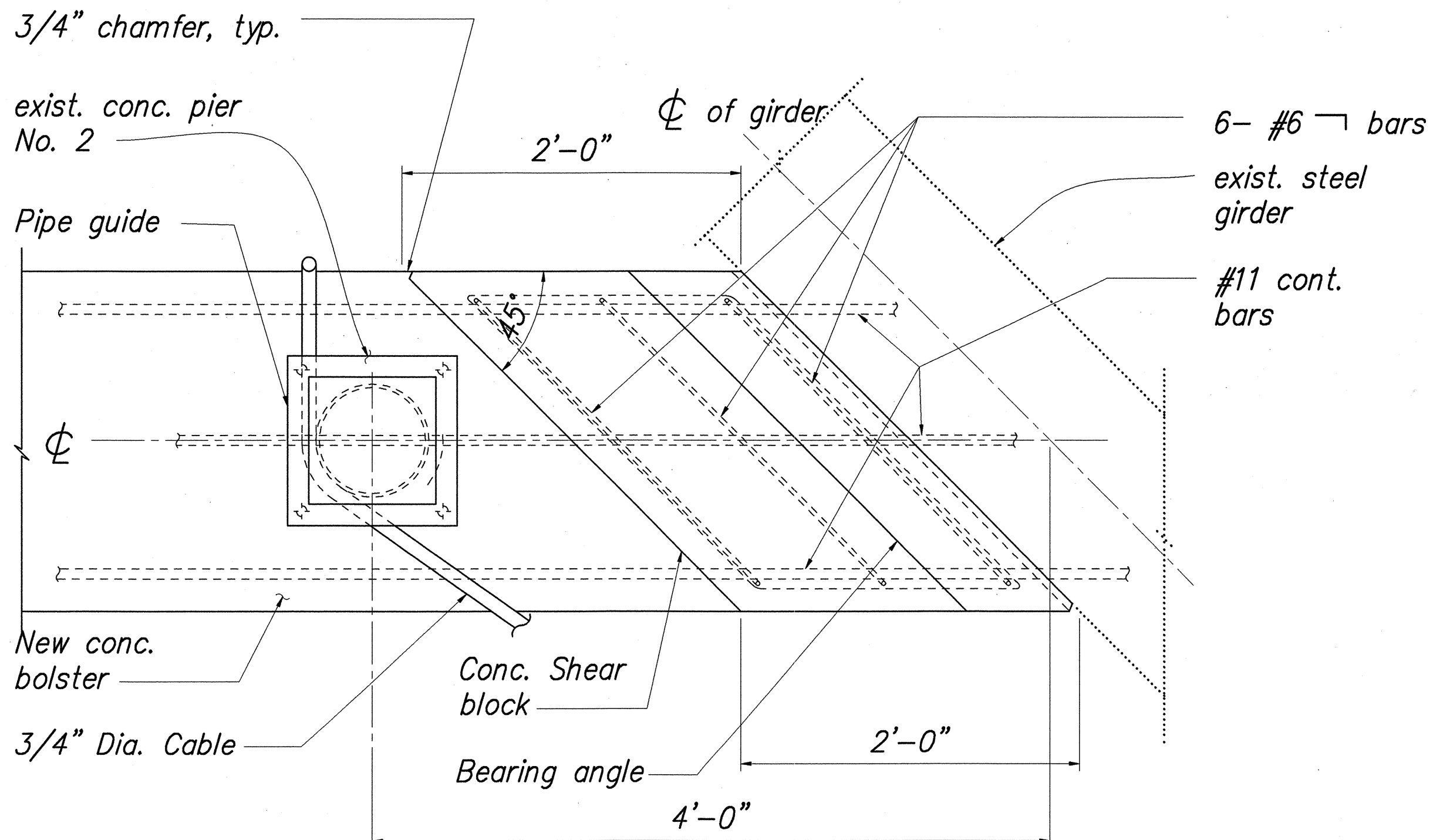
Note:
1. - See PVC Pipe Layout 1
2. - #4 stirrups not shown for clarity

TYPICAL PLAN DETAIL 2
SCALE: 1 1/2" = 1'-0"



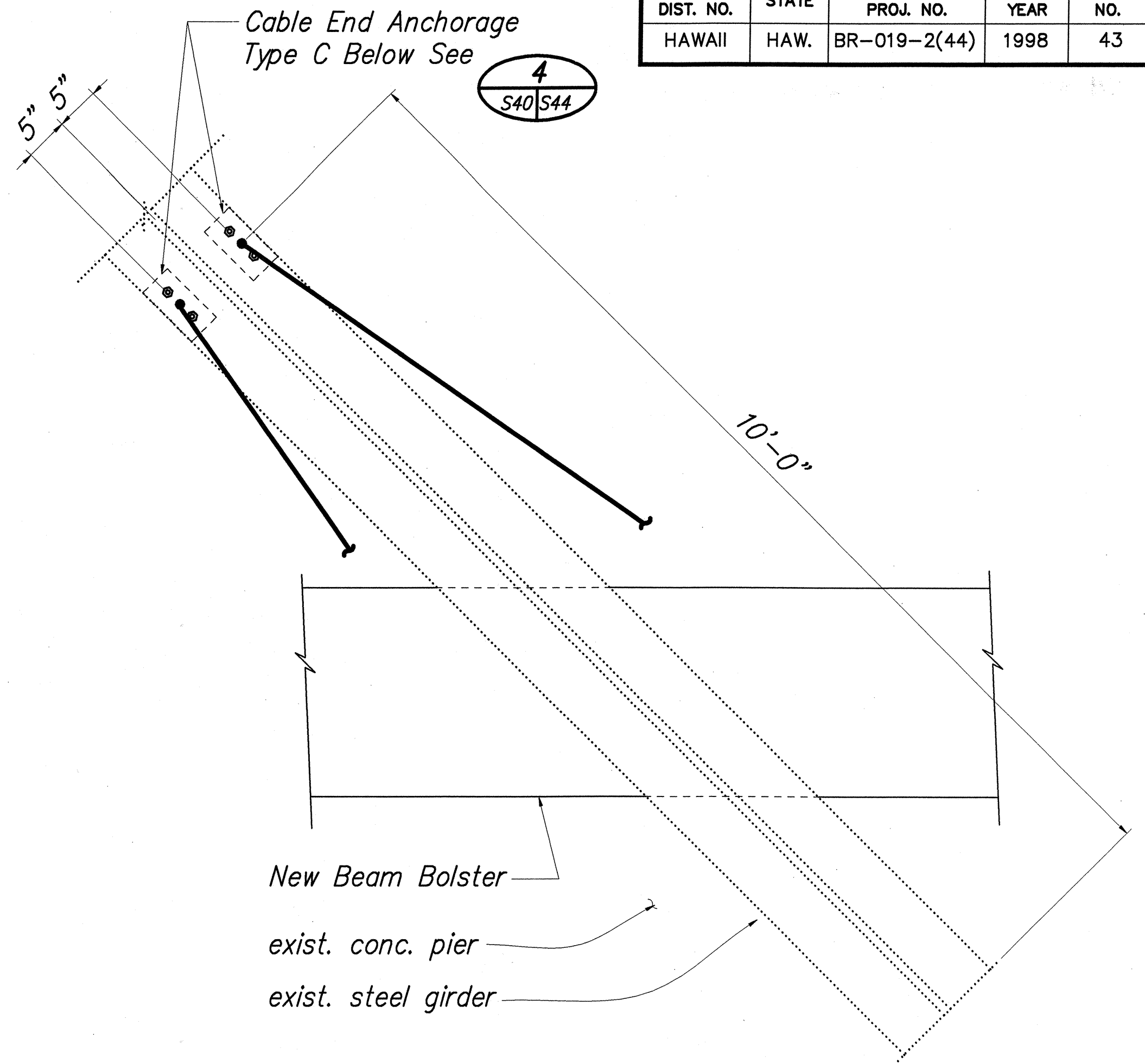
Note:
1. - See PVC Pipe Layout 2
2. - #4 stirrups not shown for clarity

TYPICAL PLAN DETAIL 3
SCALE: 1 1/2" = 1'-0"



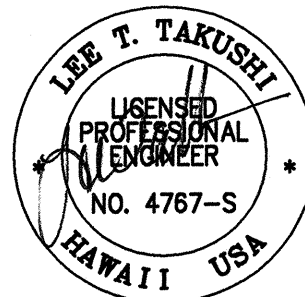
Note:
1. - See PVC Pipe Layout 3
2. - #4 stirrups not shown for clarity

TYPICAL PLAN DETAIL 4
SCALE: 1 1/2" = 1'-0"

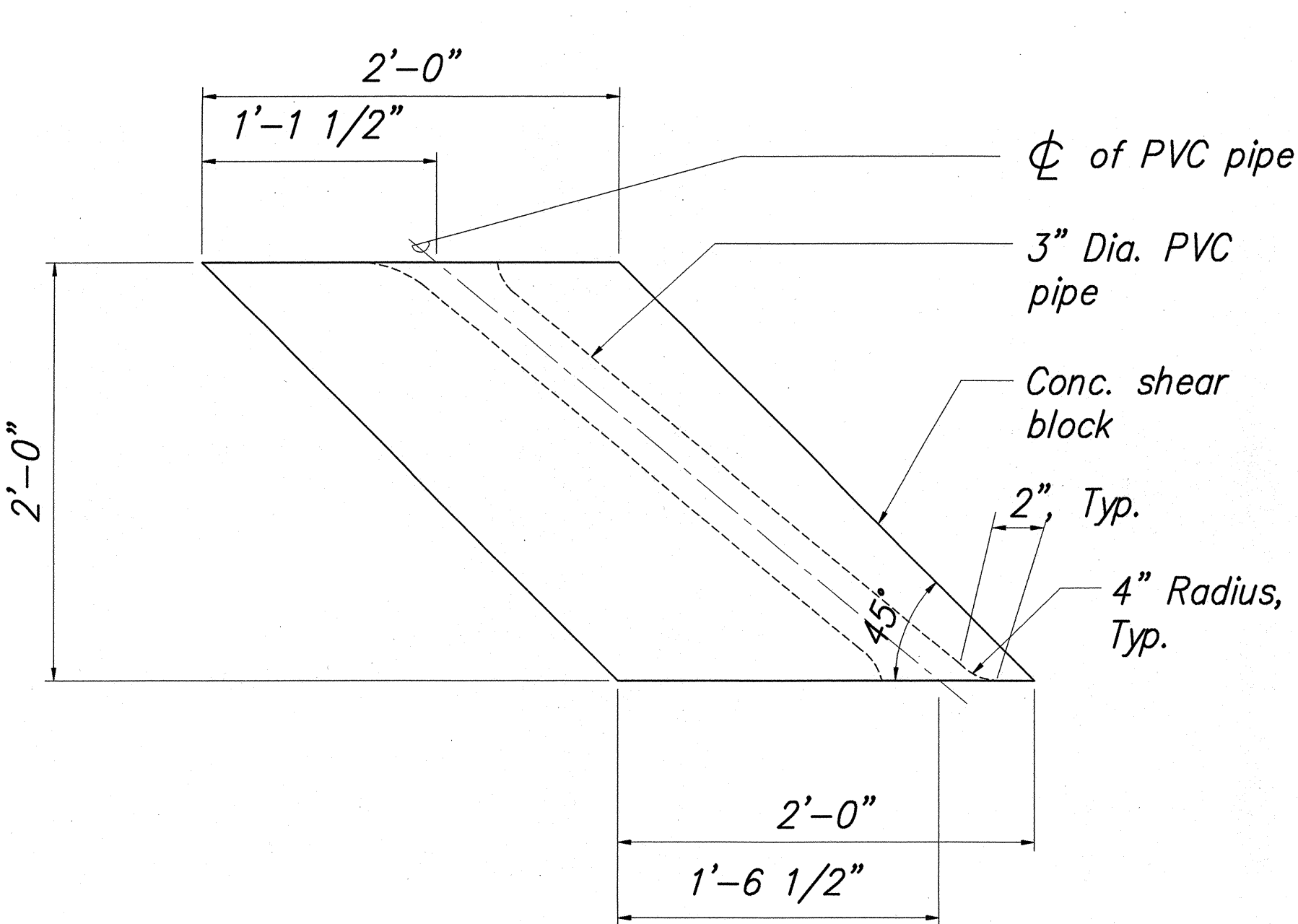


TYPICAL PLAN DETAIL 5
SCALE: 1" = 1'-0"

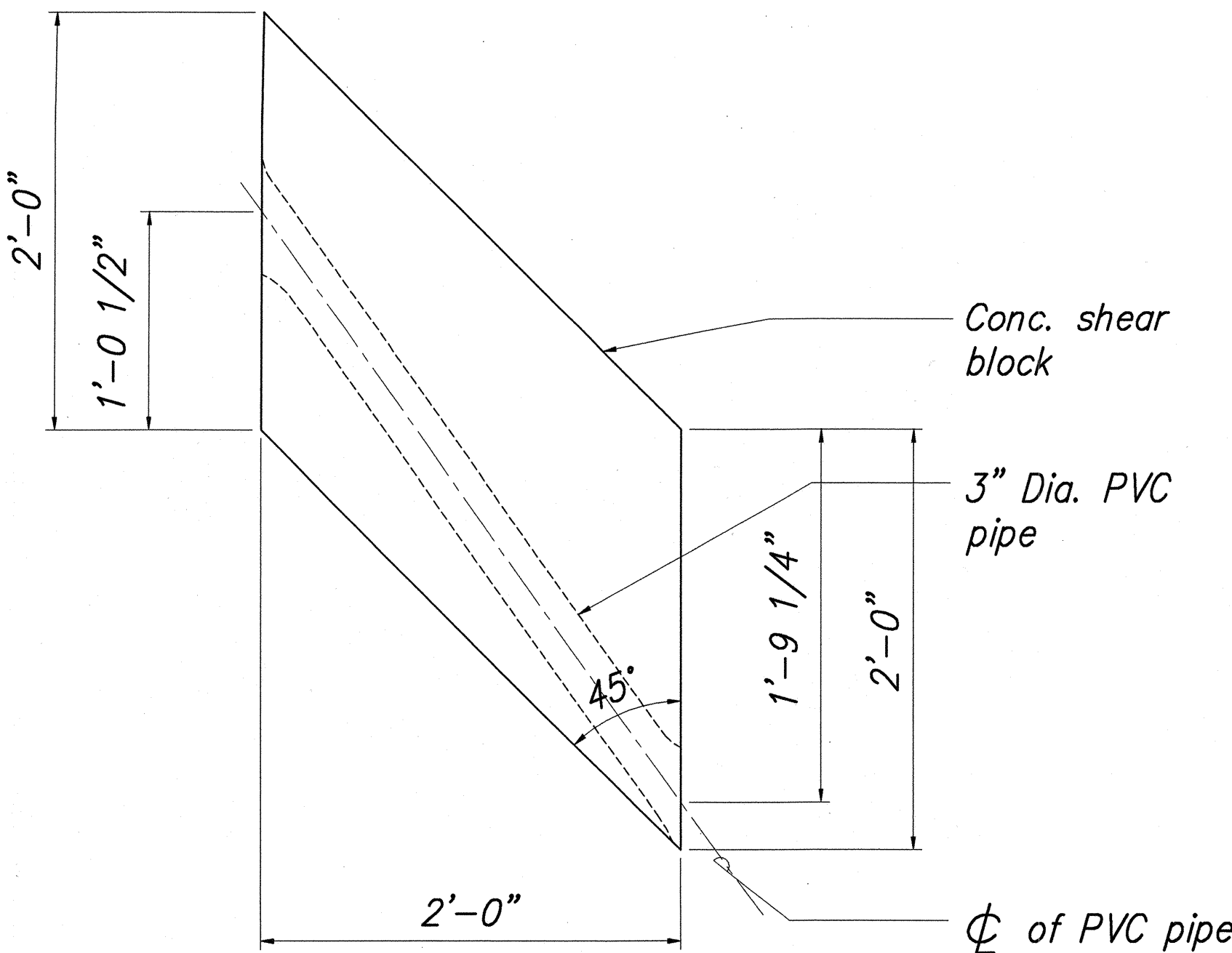
8/7/98	Cable Restrainer Details revised at Kuwaikahi Bridge, Pier No. 2 per Addendum No. 1
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
KUWAIKAHI BRIDGE PIER 2 DETAILS	
HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES, VICINITY OF LAUPAHOEHOE FEDERAL AID PROJECT NO. BR-019-2(44)	
SCALE: AS NOTED	DATE: APRIL 1998
SHEET No. S40 OF 58 SHEETS	



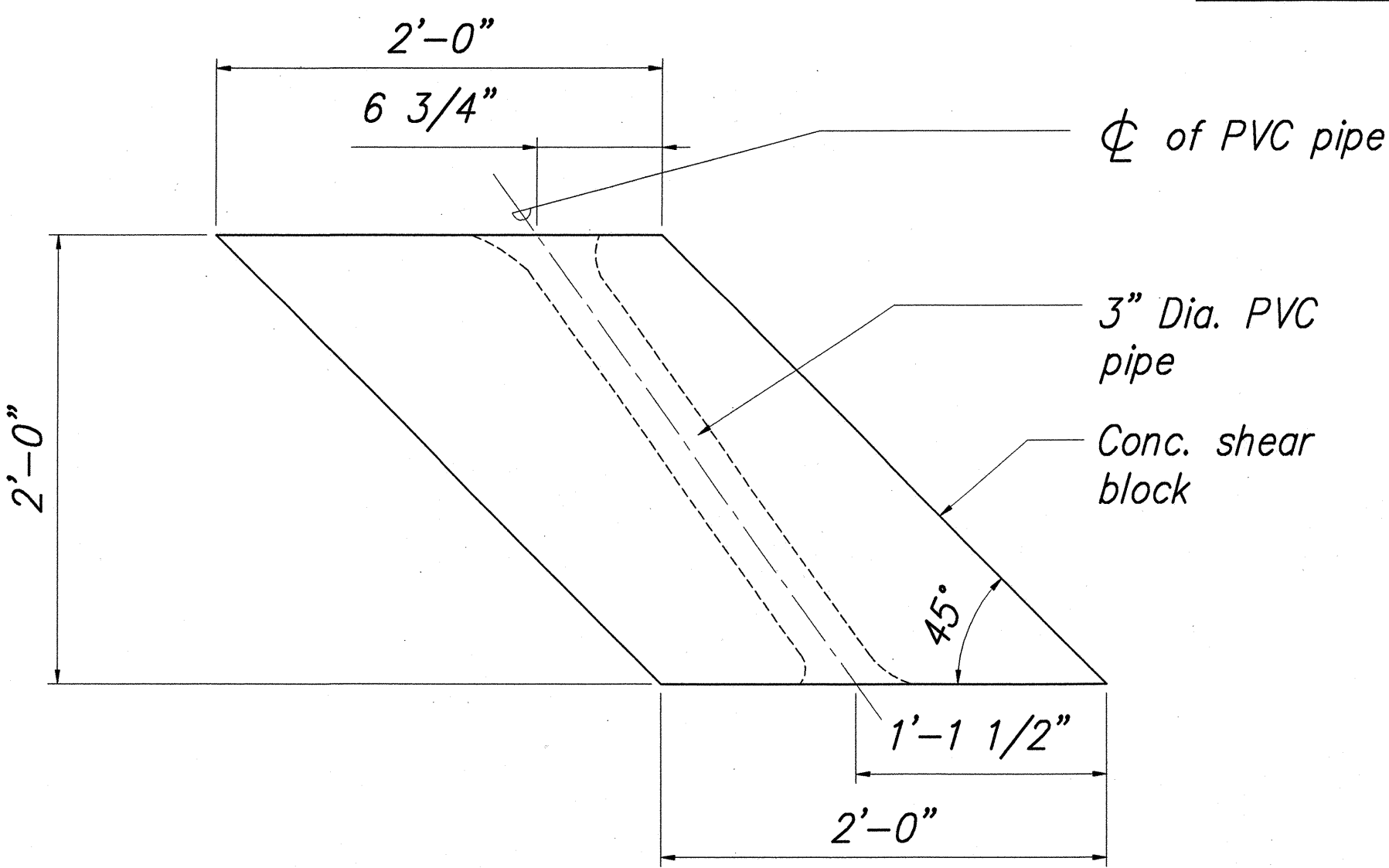
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	44	61



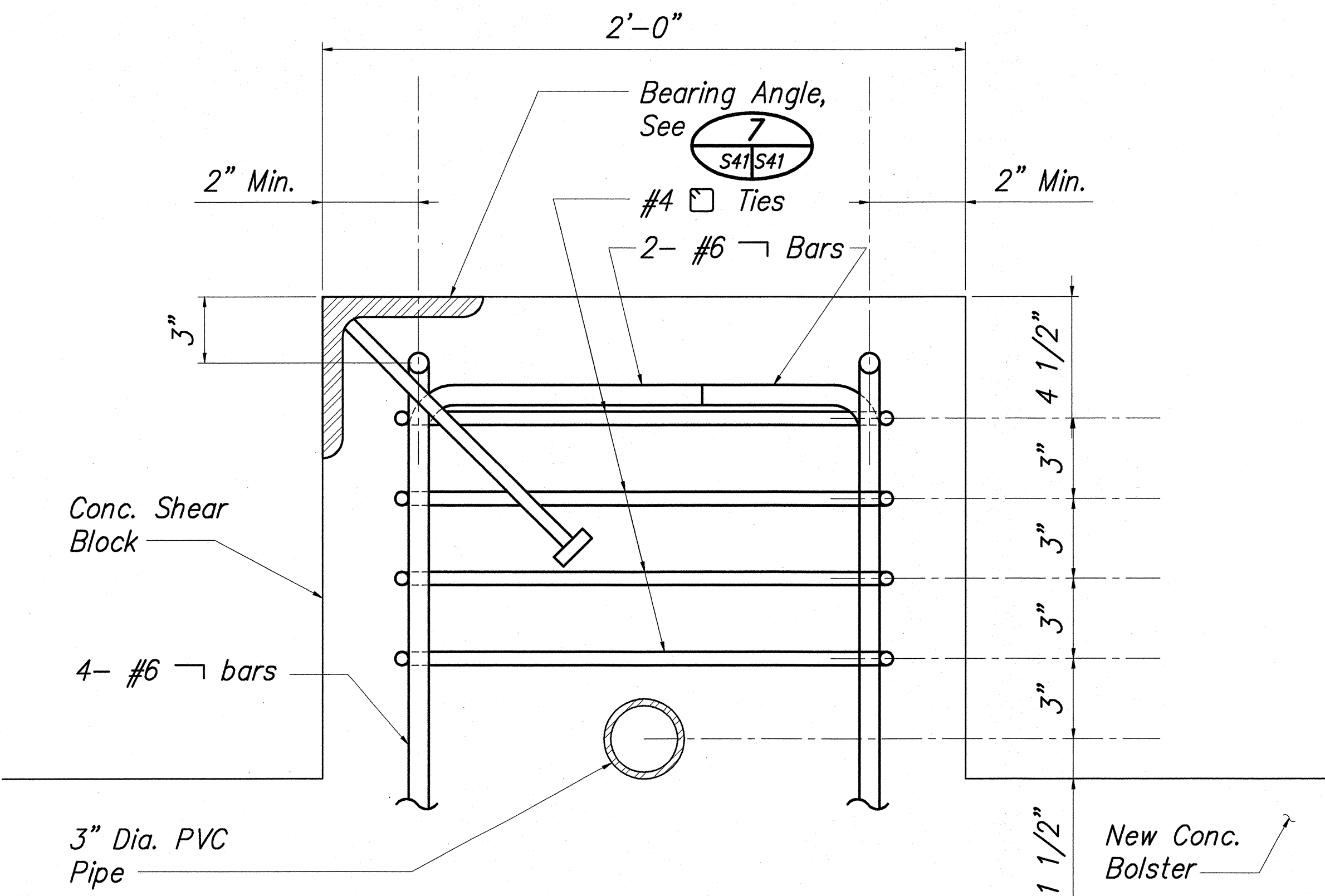
PVC PIPE LAYOUT 1
SCALE: 1 1/2"=1'-0"



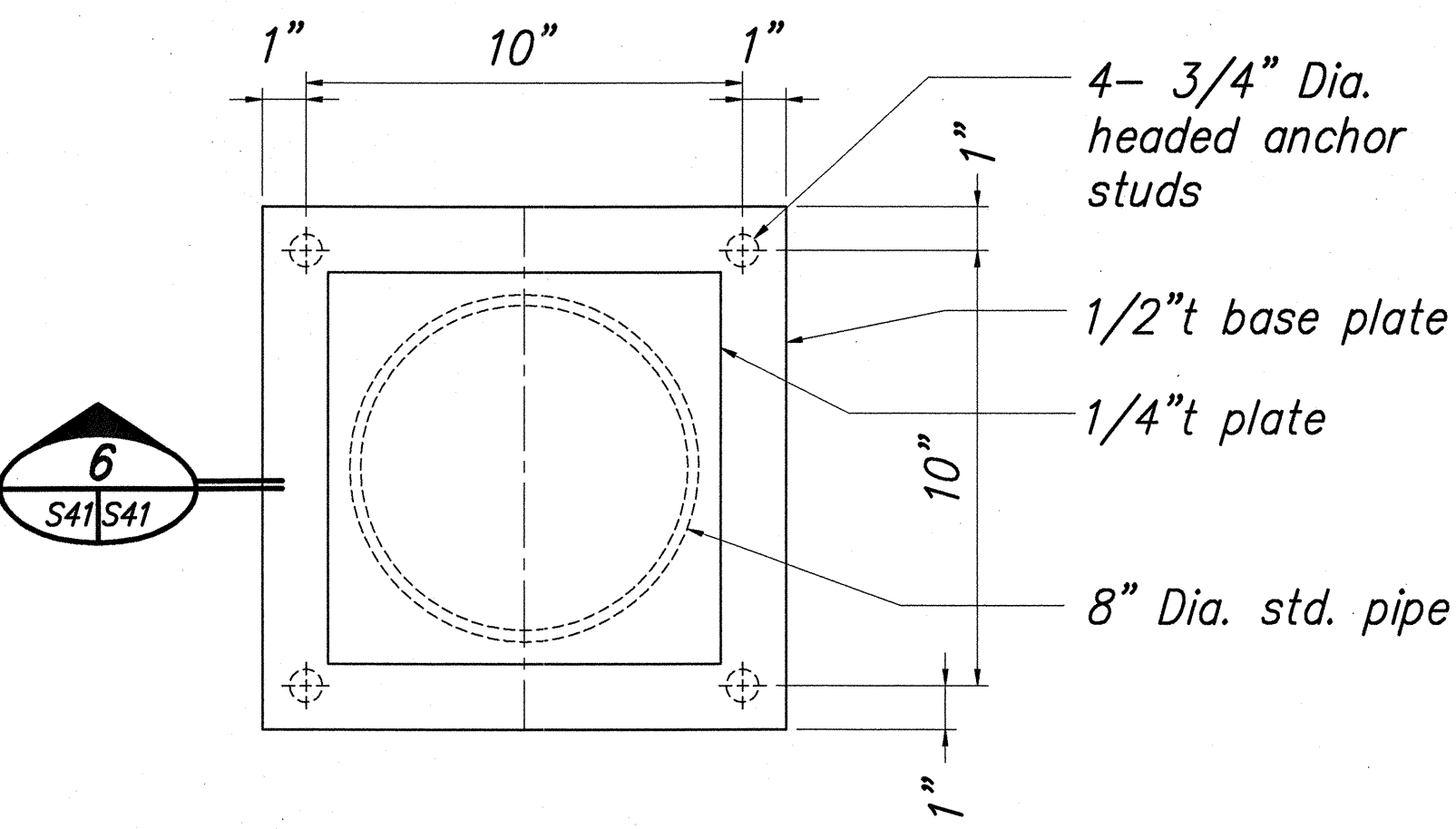
PVC PIPE LAYOUT 2
SCALE: 1 1/2"=1'-0"



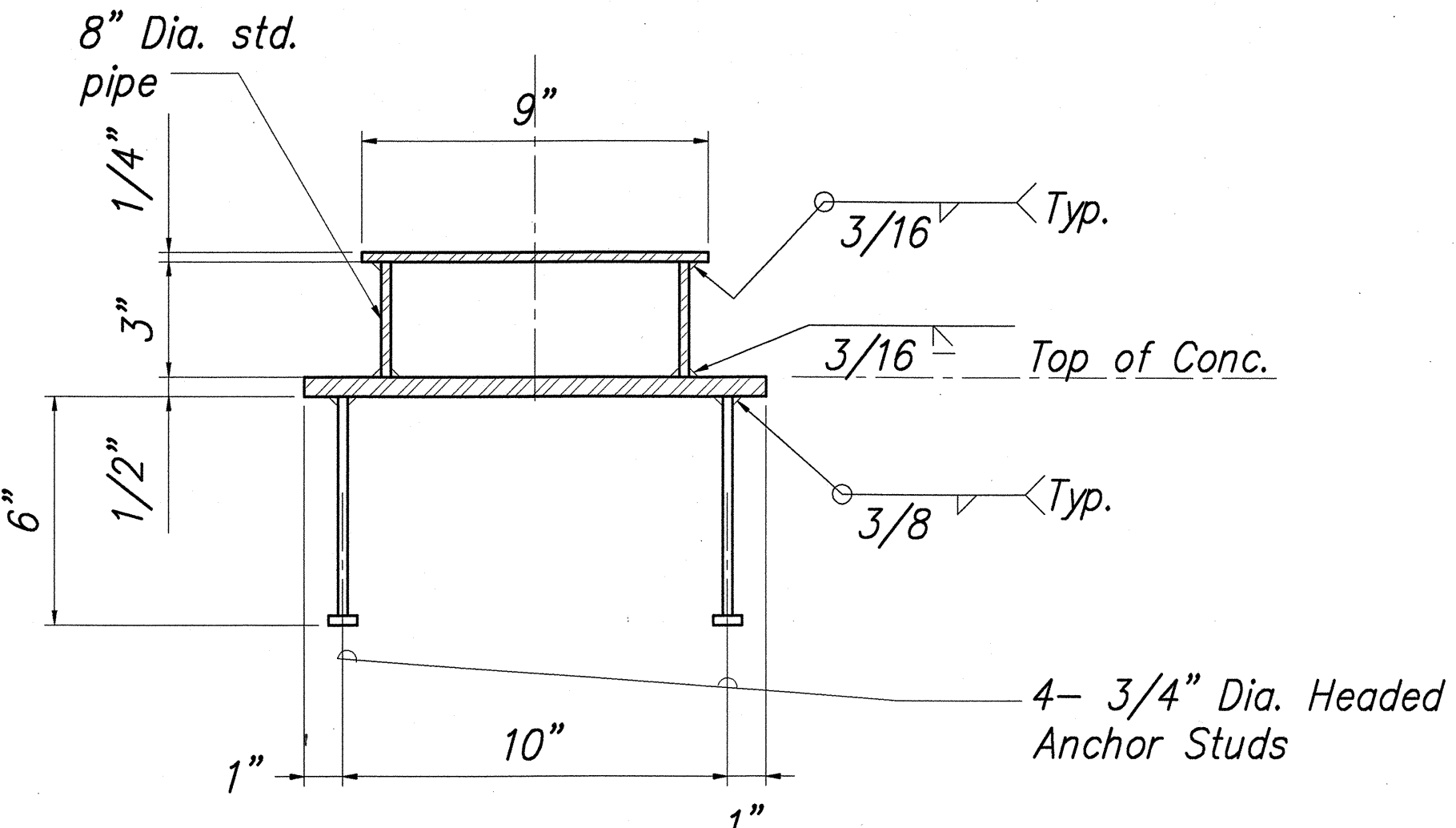
PVC PIPE LAYOUT 3
SCALE: 1 1/2"=1'-0"



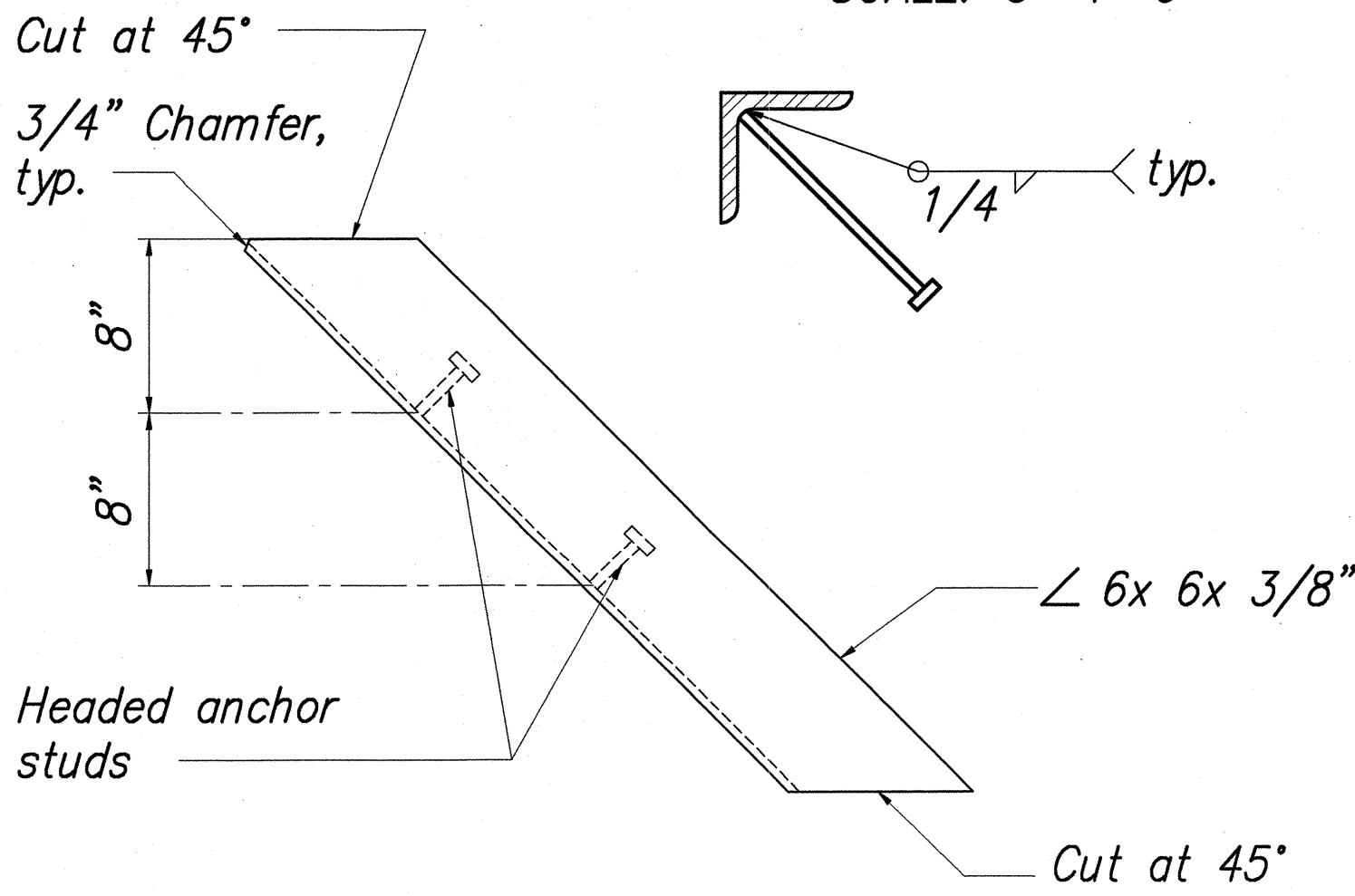
TYP. SECTION DETAIL
SCALE: 3"=1'-0"



TYPICAL PIPE GUIDE DETAIL PLAN
SCALE: 3"=1'-0"

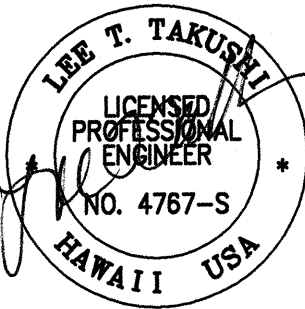


TYPICAL PIPE GUIDE SECTION
SCALE: 3"=1'-0"



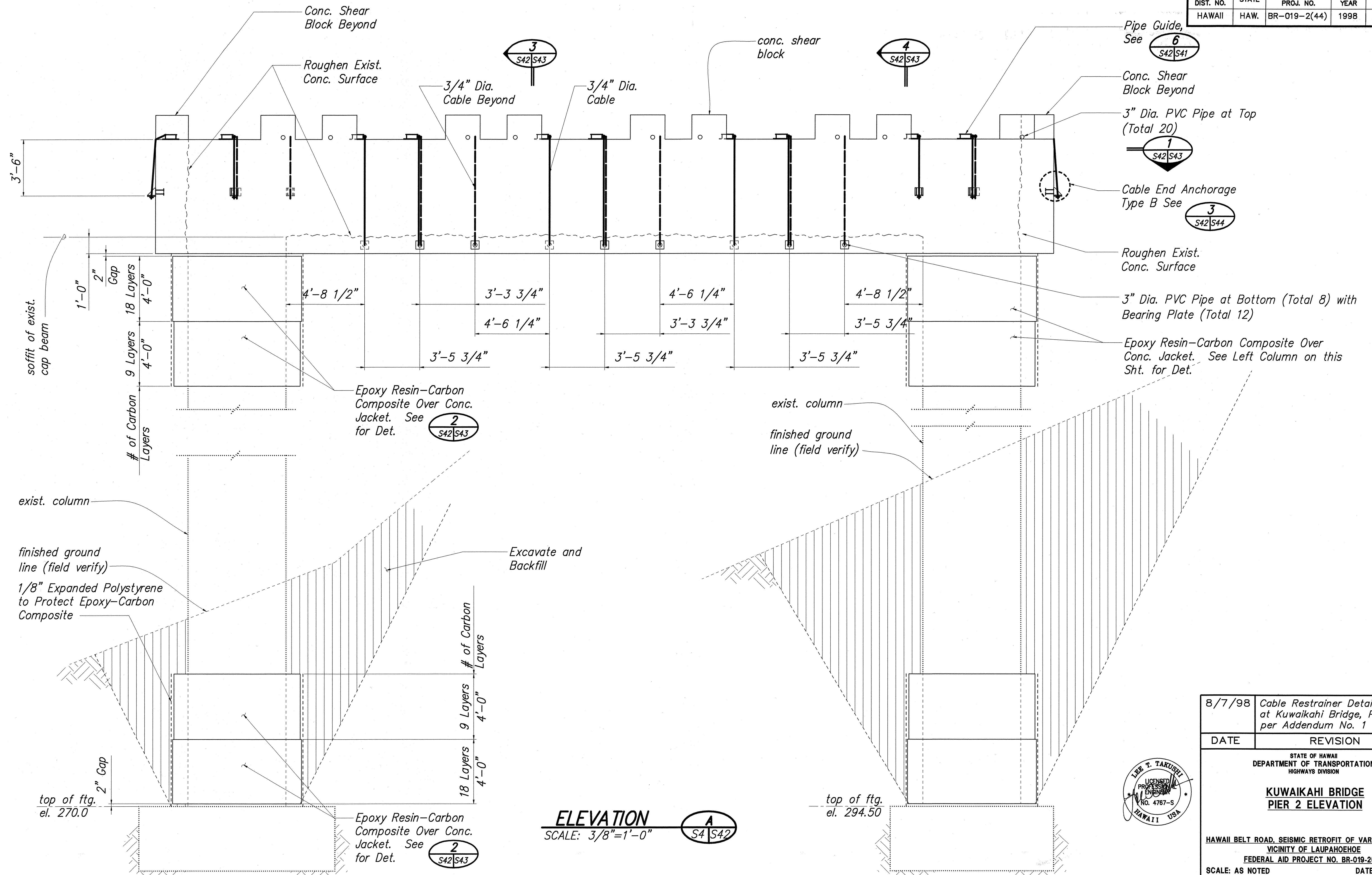
BEARING ANGLE DETAIL
SCALE: 1 1/2"=1'-0"

ORIGINAL PLAN	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
DATE	



8/7/98	Cable Restrainer Details revised at Kuwaikahi Bridge, Pier No. 2 per Addendum No. 1
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION KUWAIKAHI BRIDGE PIER 2 DETAILS	
HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES, VICINITY OF LAUPAHOEHOE FEDERAL AID PROJECT NO. BR-019-2(44) SCALE: AS NOTED DATE: APRIL 1998	
SHEET No. S41 OF 58 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	45	61



8/7/98	Cable Restrainer Details revised at Kuwaikahi Bridge, Pier No. 2 per Addendum No. 1
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION KUWAIKAHI BRIDGE PIER 2 ELEVATION	
HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES, VICINITY OF LAUPAHOEHOE FEDERAL AID PROJECT NO. BR-019-2(44) SCALE: AS NOTED DATE: APRIL 1998	

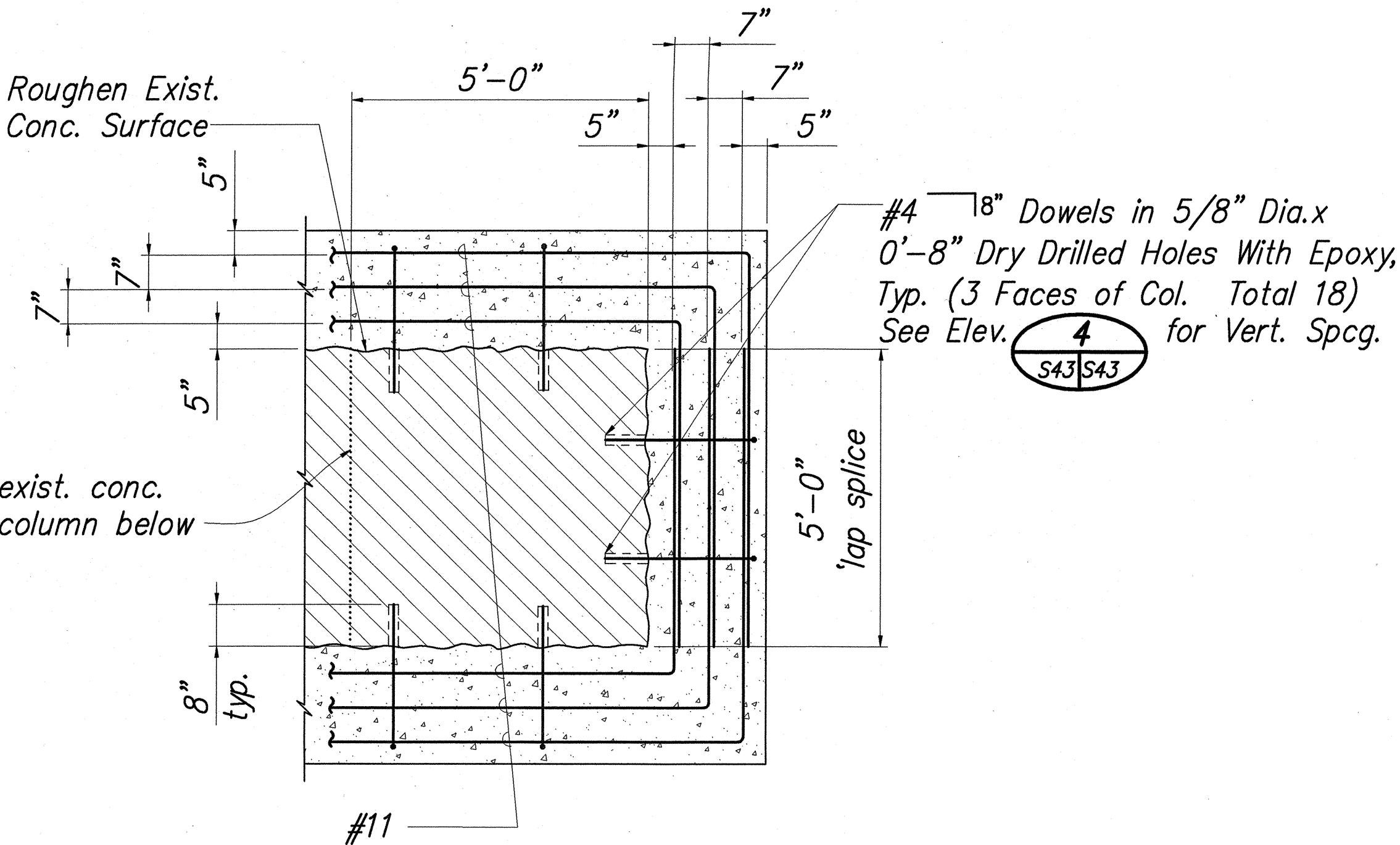
SHEET No. S42 OF 58 SHEETS

ADD. 45

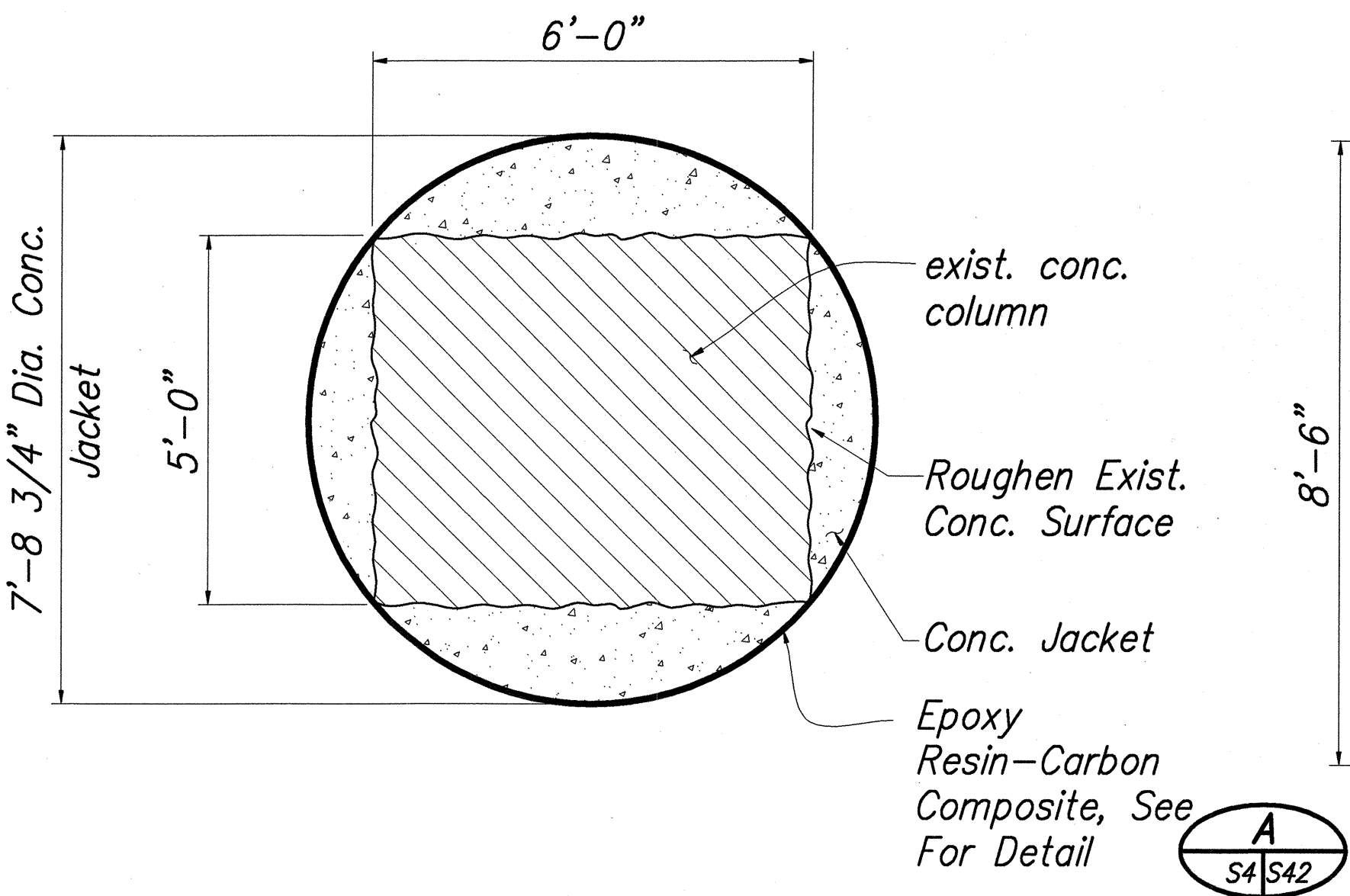
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	" "
No.	TRACED BY	" "
	QUANTITIES BY	" "
	CHECKED BY	" "

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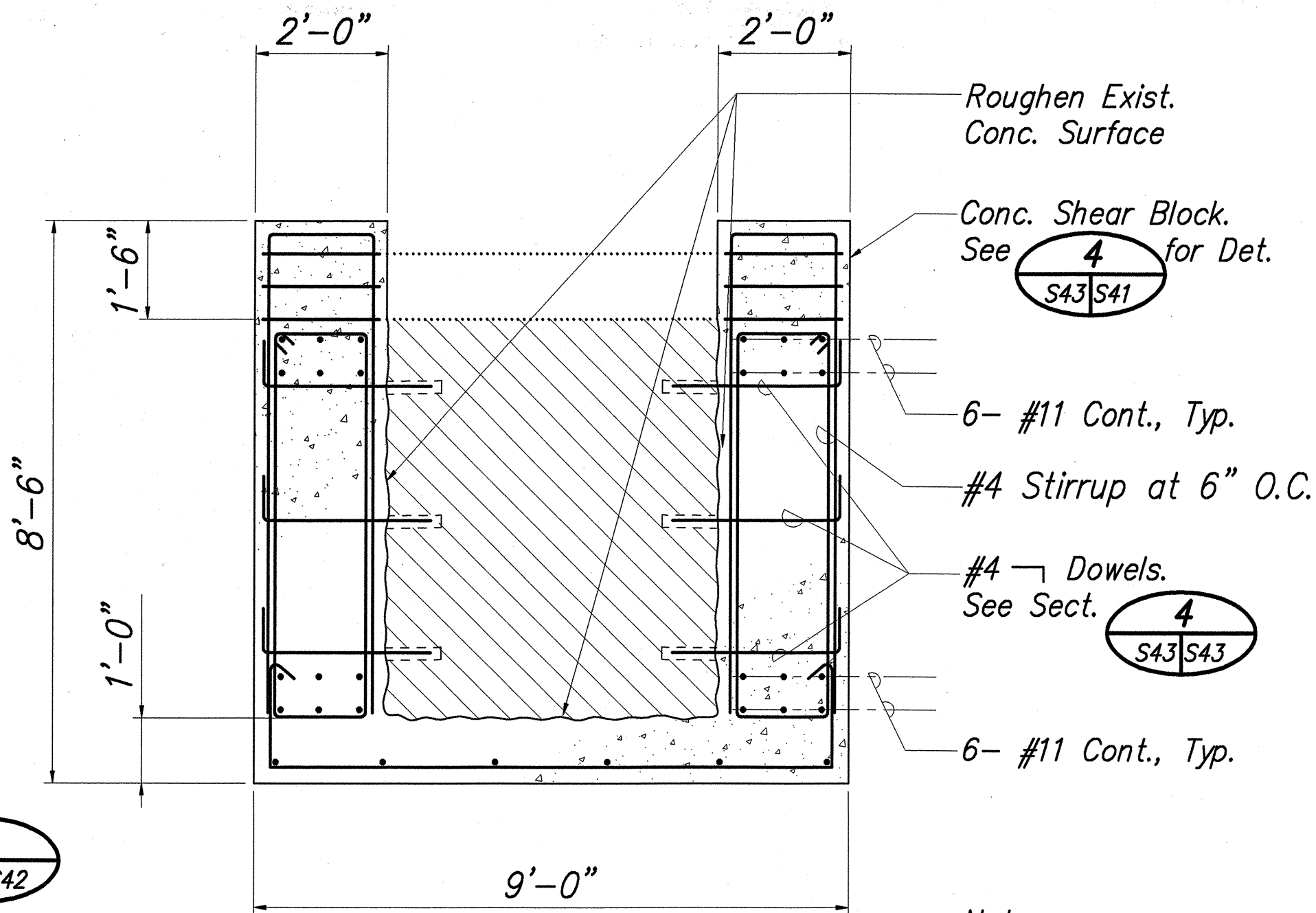
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	46	61



SECTION 1
SCALE: 1/2"=1'-0" S42 S43

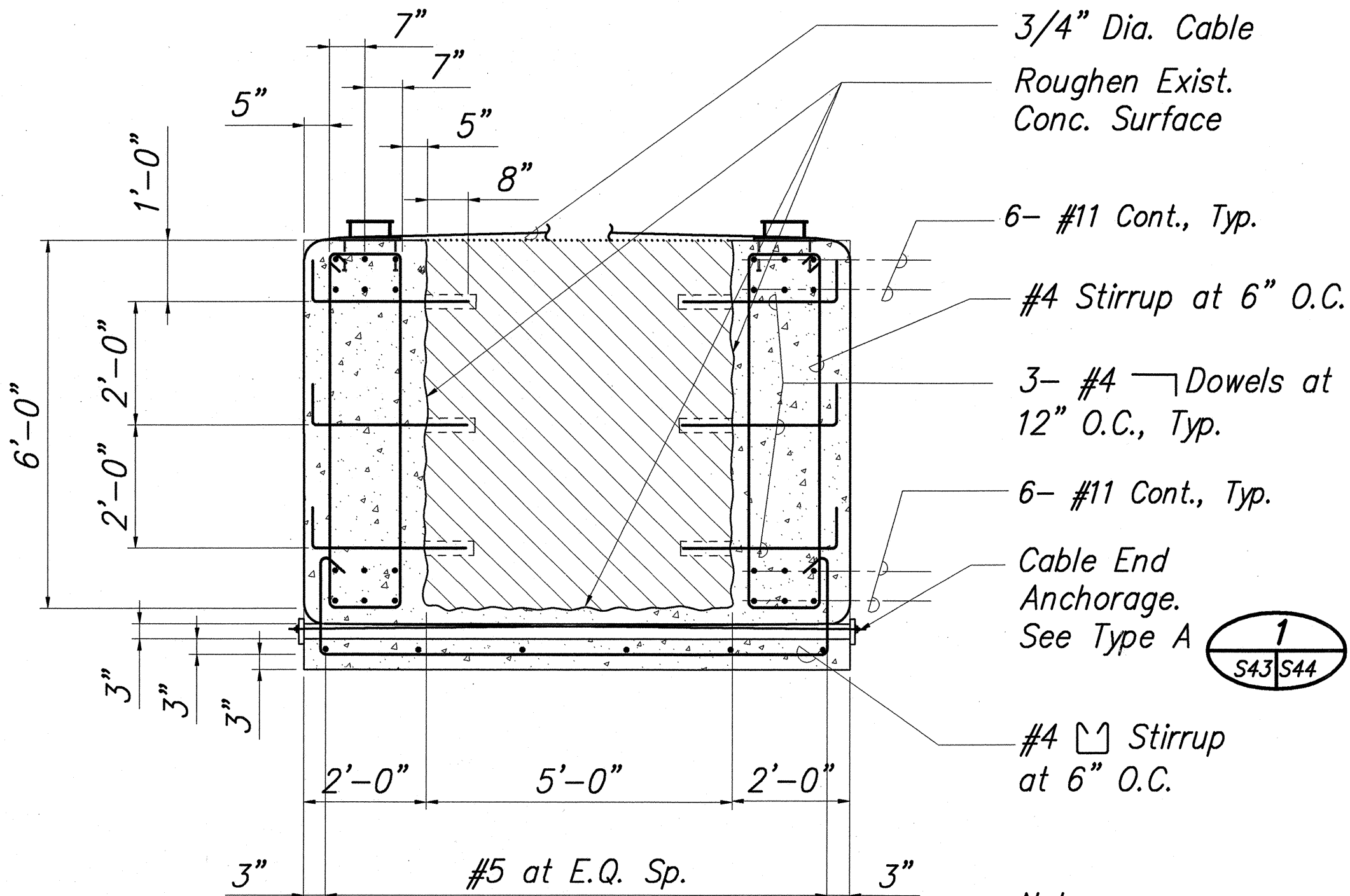


SECTION 2
SCALE: 1/2"=1'-0" S42 S43



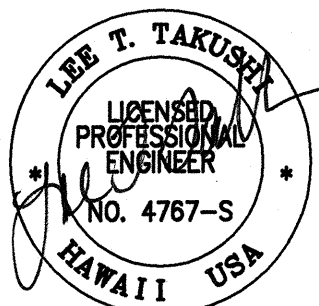
SECTION 3
SCALE: 1/2"=1'-0" S4, S42 S43

Note:
Exist. Steel Girder not
Shown for Clarity.



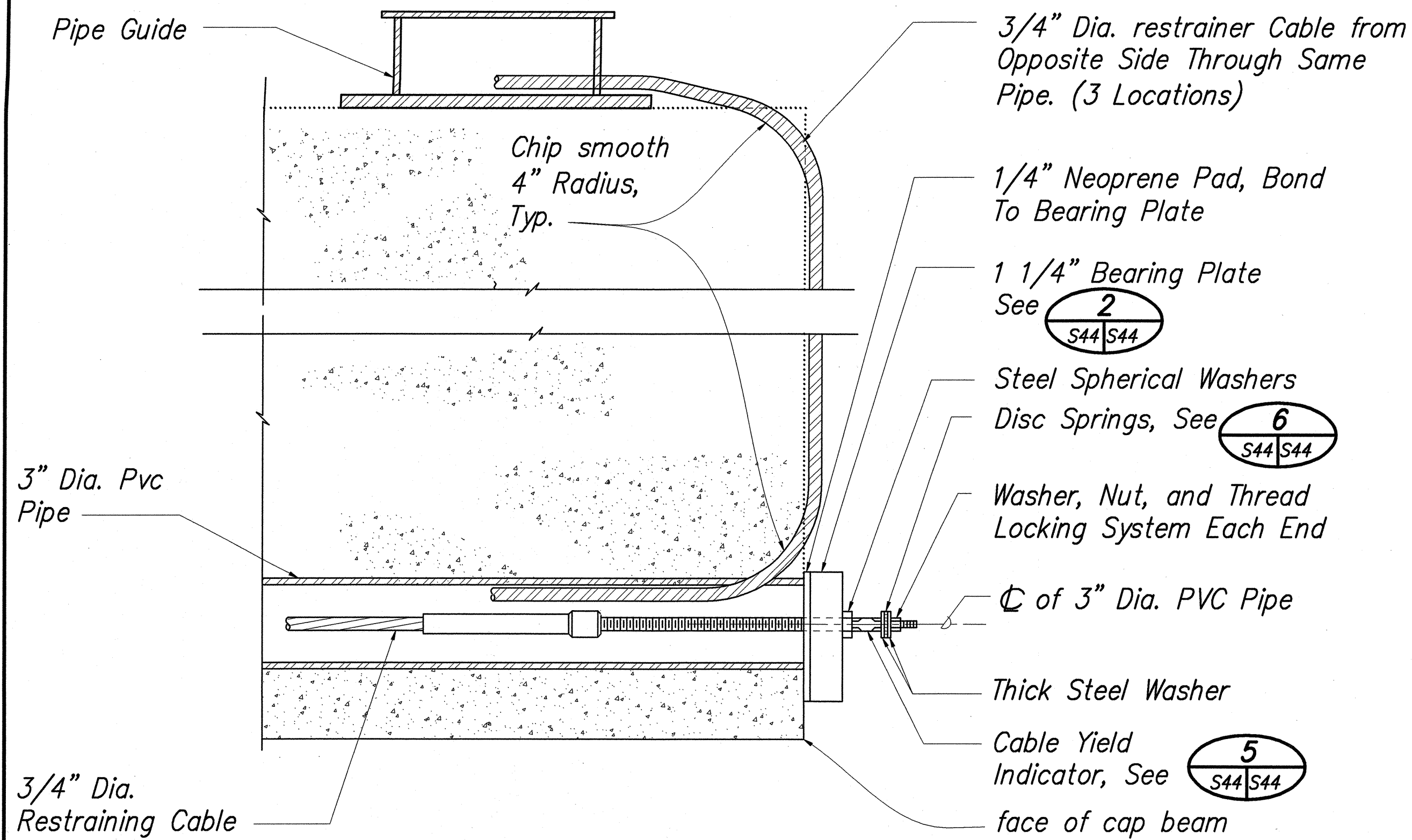
BEAM SECTION 4
SCALE: 1/2"=1'-0" S43 S43

Note:
Exist. Steel Girder not
Shown for Clarity.

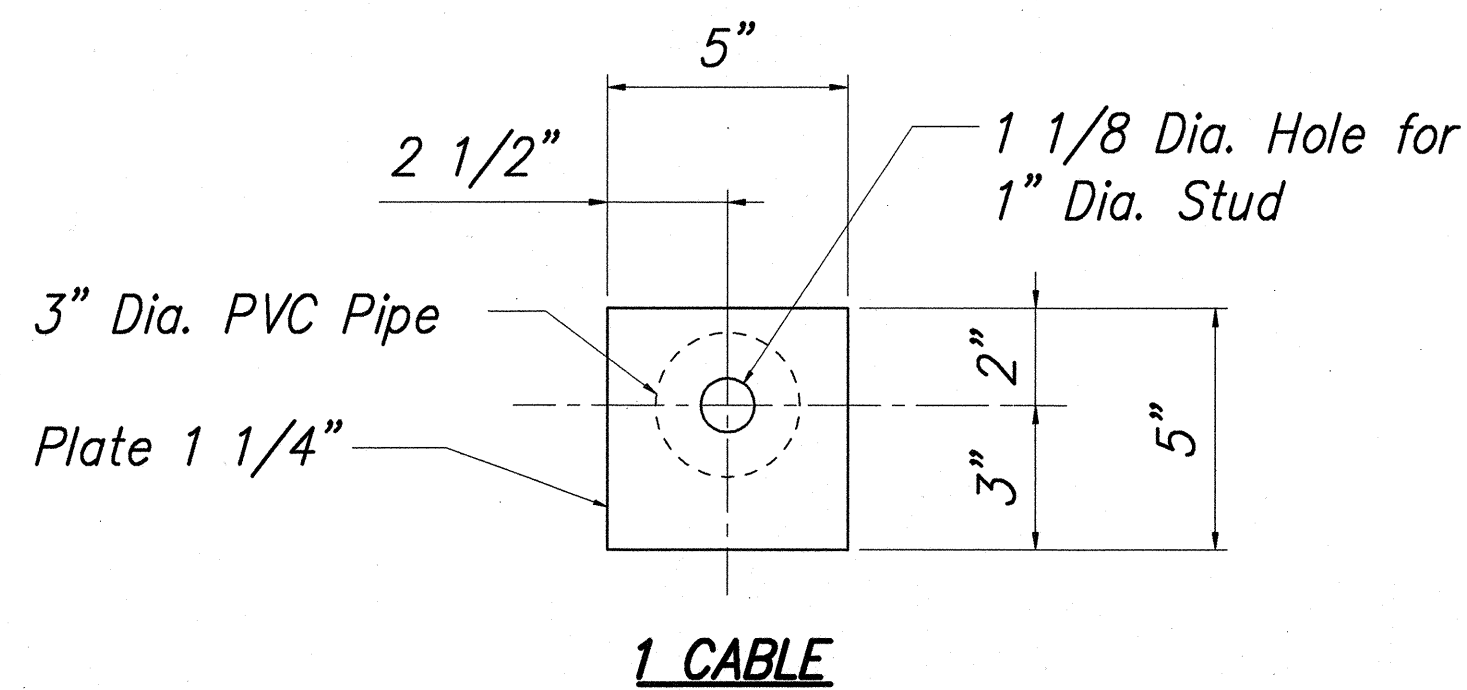


8/7/98	Cable Restrainer Details revised at Kuwaikahi Bridge, Pier No. 2 per Addendum No. 1
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
KUWAIKAHU BRIDGE SECTIONS	
HAWAII BELT ROAD, SEISMIC RETROFIT OF VARIOUS BRIDGES, VICINITY OF LAUPAHOEHOE FEDERAL AID PROJECT NO. BR-019-2(44)	
SCALE: AS NOTED	DATE: APRIL 1998
SHEET No. S43 OF 58 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-019-2(44)	1998	47	61



CABLE END ANCHORAGE TYPE A DETAIL **1** S44 S44
NOT TO SCALE



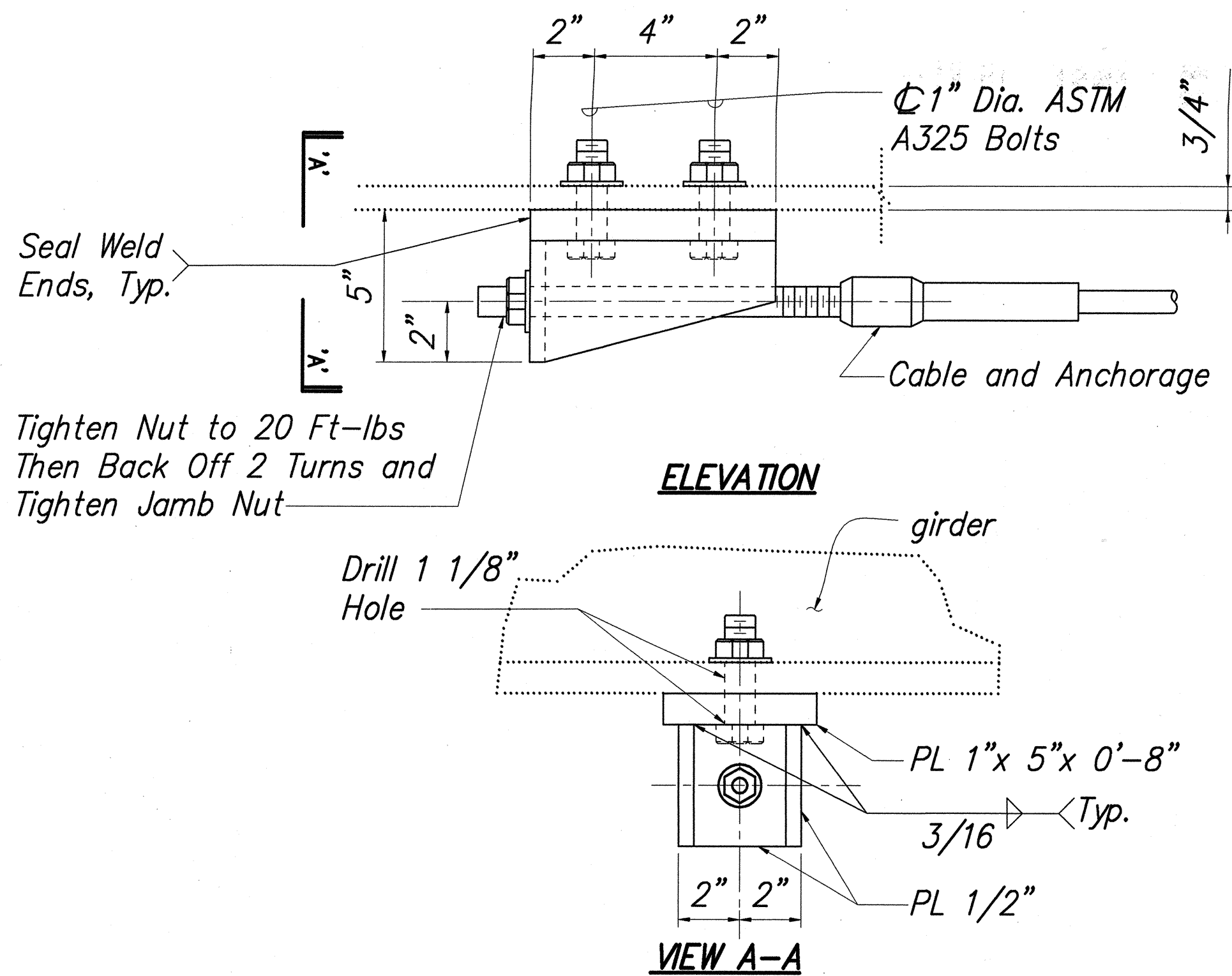
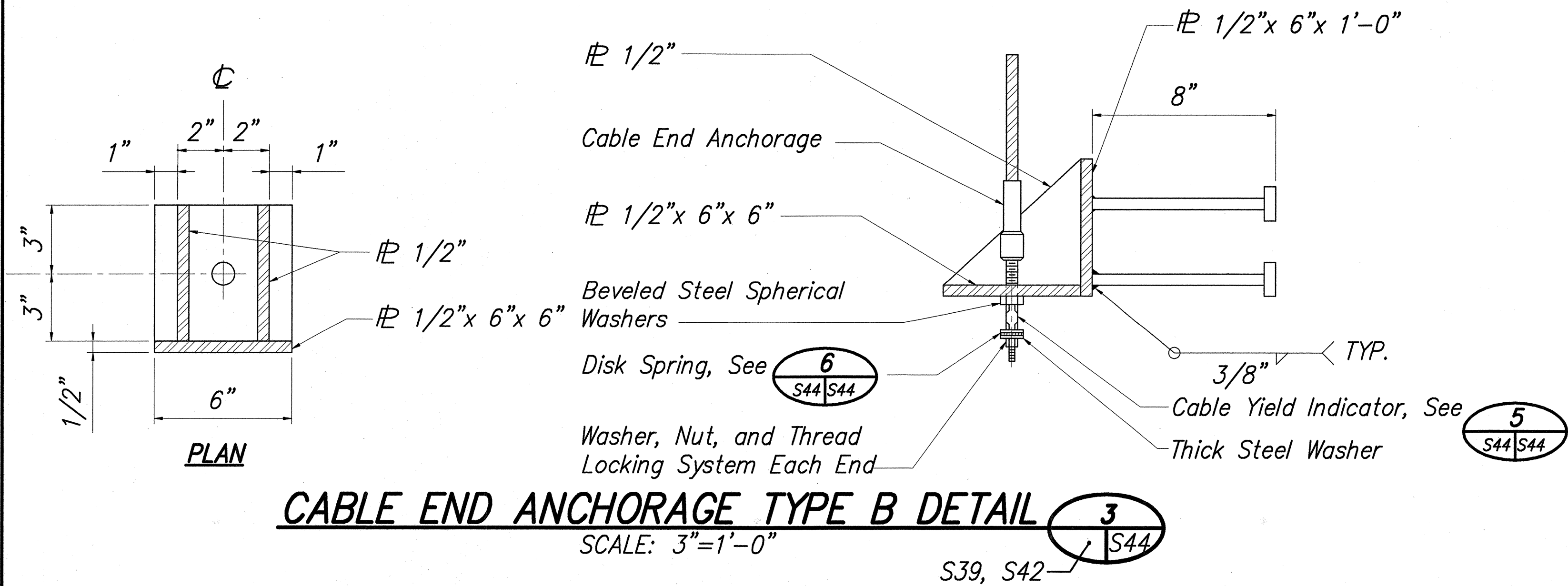
BEARING PLATE DETAIL **2** S44 S44
SCALE: 3"=1'-0"

Cable Length (ft.)	DISC SPRING					STEEL SPHERICAL WASHER			THICK WASHER		
	ID	OD	t	H	COLOR CODE	ID	OD	Nom. thick	ID	OD	t*
00.0 - 25.0	1.00	2.00	0.065	0.13	WHITE	1.19	2.25	0.50	1.03	2.00	0.25

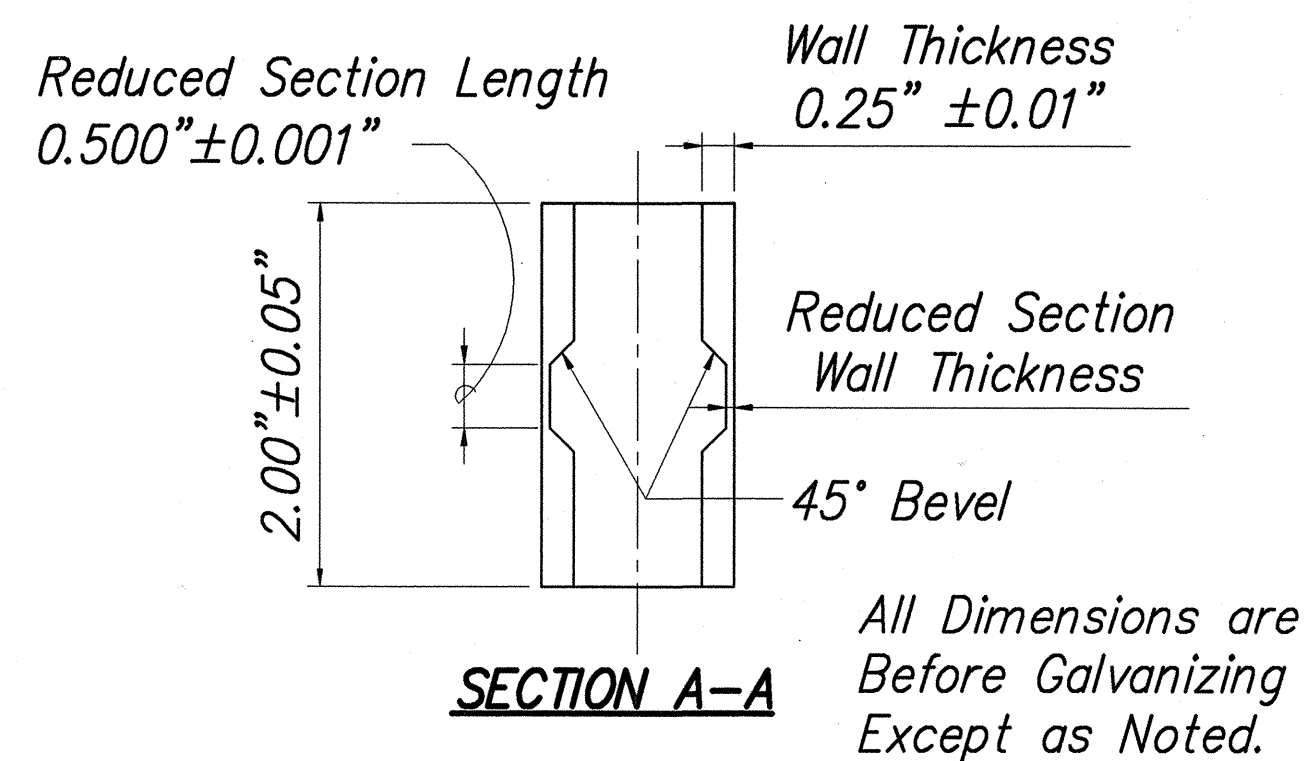
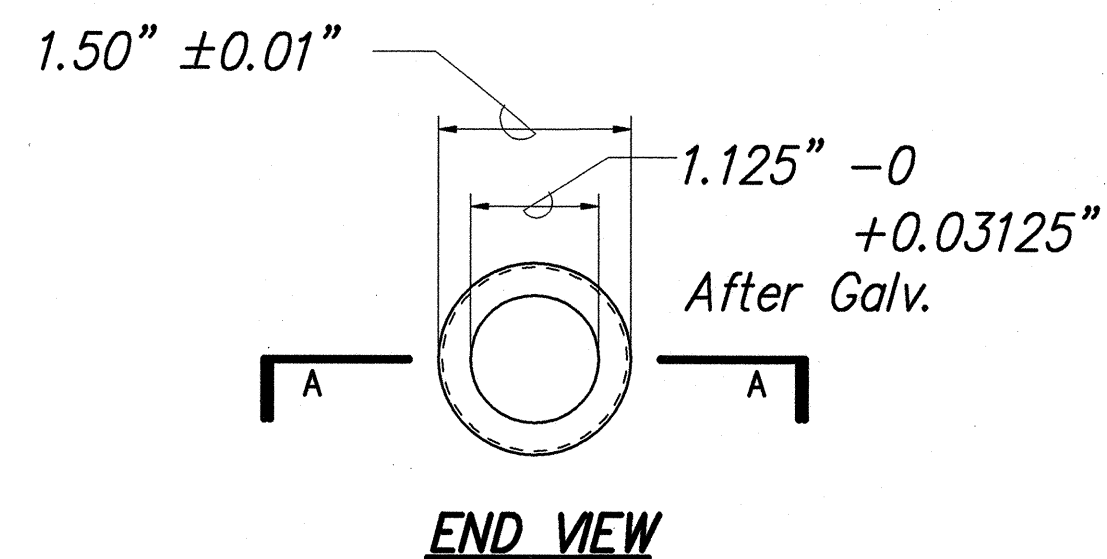
* = Minimum Value

NOTE: All OD and ID Dimensions for Washers and Disc Springs Shall Meet the Dimensional Tolerances for Harden Steel Washers. ASTM F436

DISC SPRINGS AND WASHERS
All Dimensions in Inches Except as Noted.

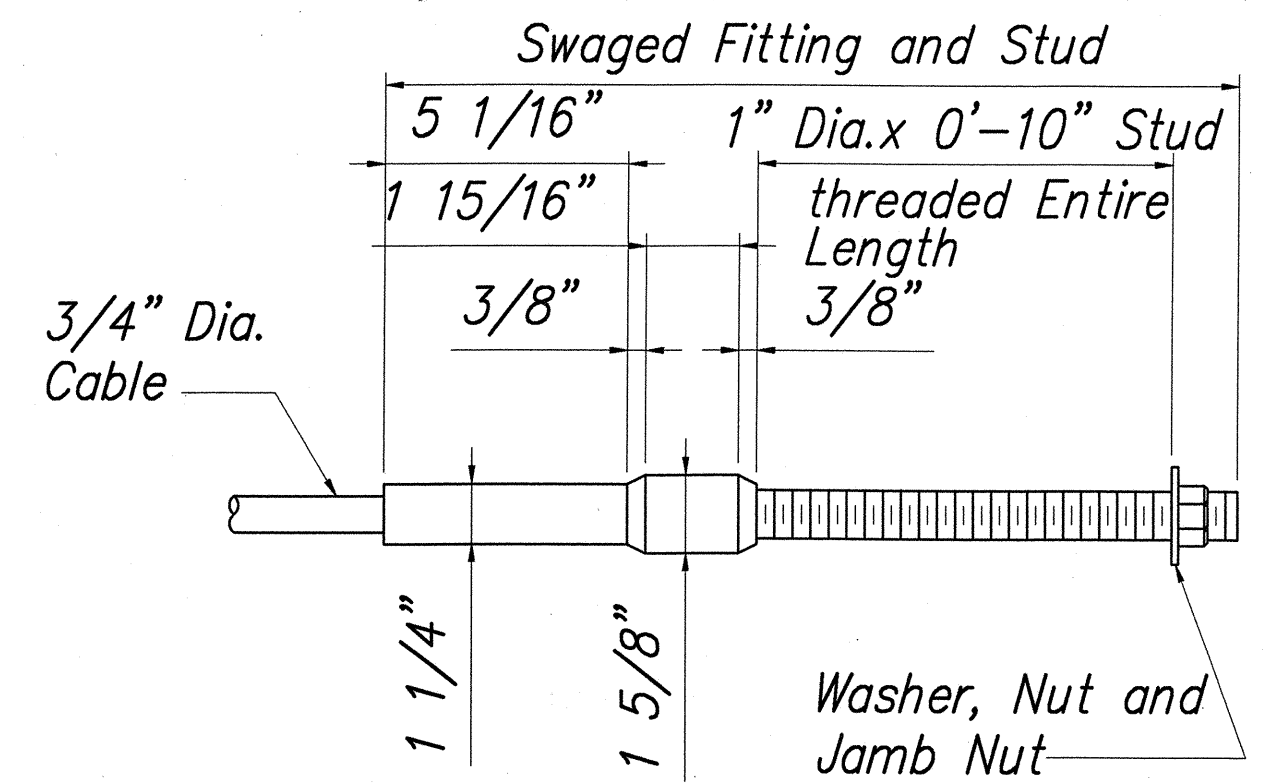


CABLE AND ANCHORAGE TYPE C DETAIL **4** S44 S44
SCALE: 3"=1'-0"

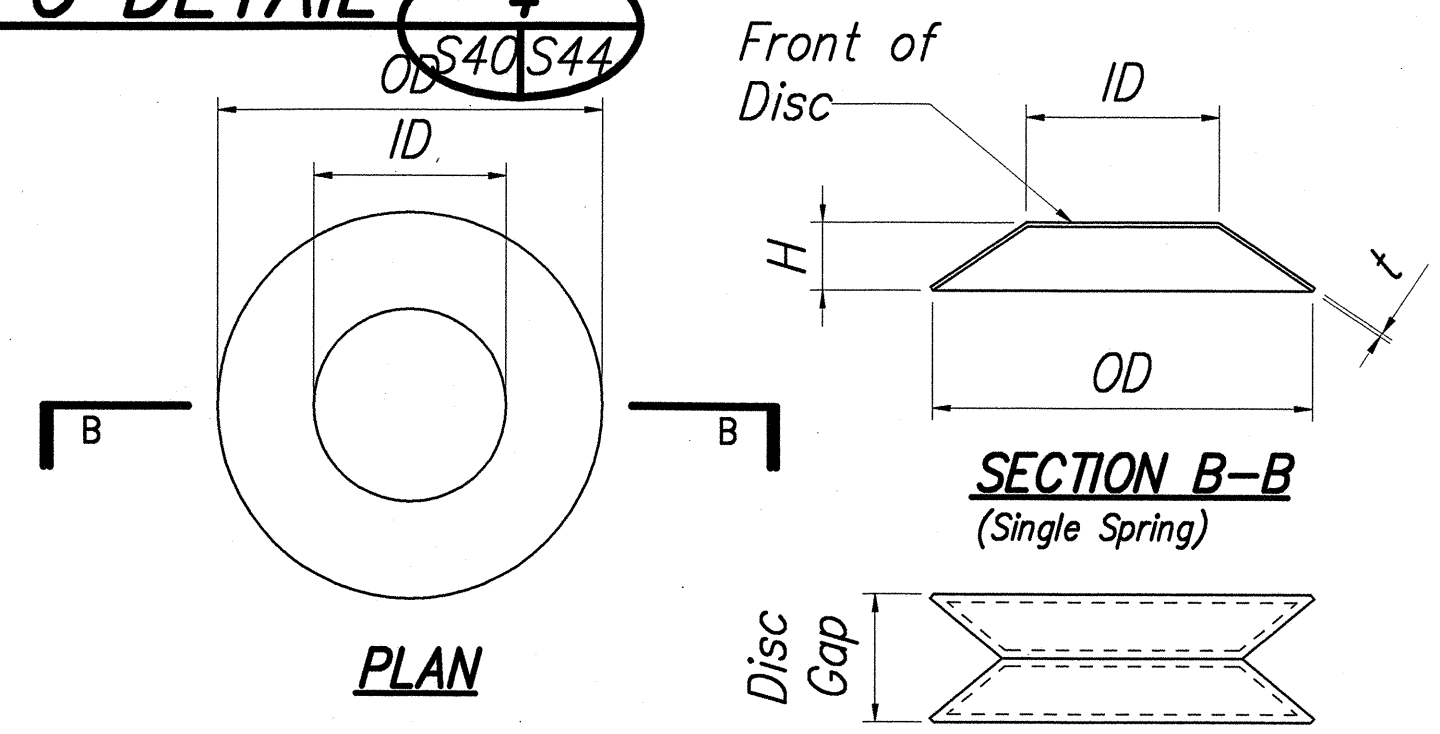


CABLE YIELD INDICATOR

DETAIL **5** S44 S44
NOT TO SCALE



CABLE END ANCHORAGE



AS INSTALLED ON STUD

DISC SPRING

Note: For Dimensions Not Shown, See Table

DETAIL **6** S44 S44
NOT TO SCALE

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KUWAIKAAHI BRIDGE ANCHORAGE DETAILS	
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