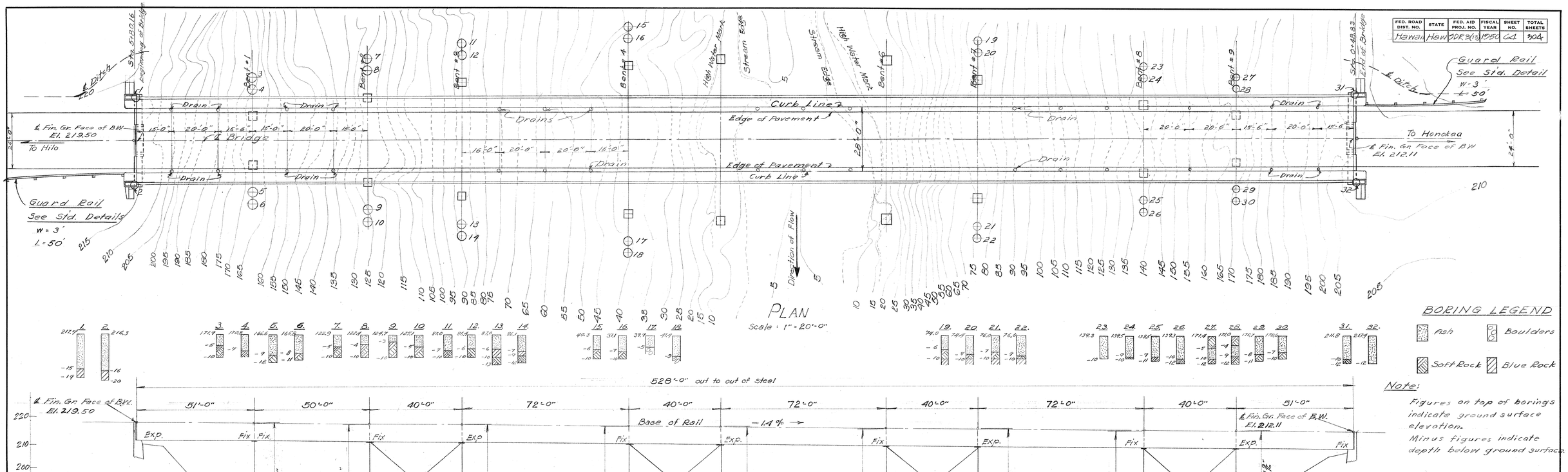
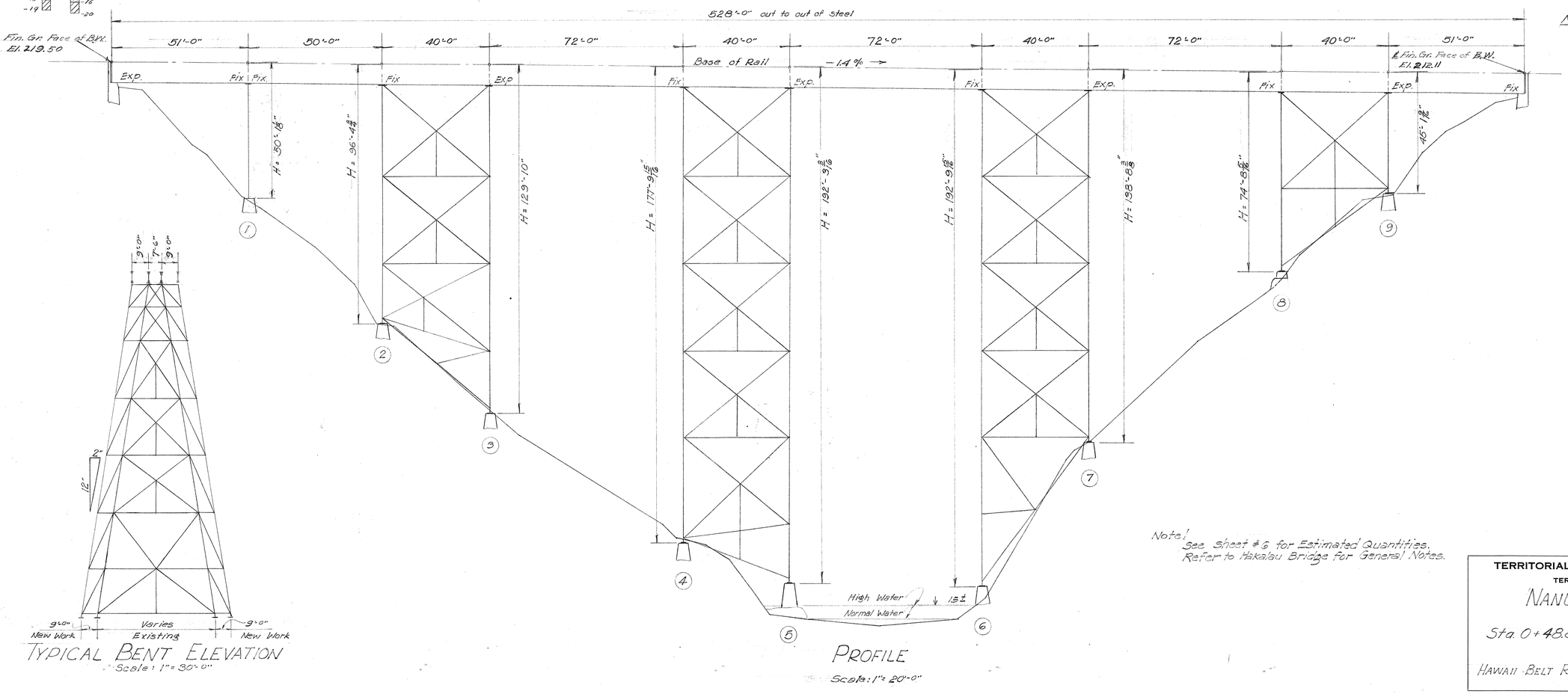
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	SDR 3(13)	1950	C1	504





TYPICAL BENT ELEVATION
Scale: 1" = 30'-0"

PROFILE
Scale: 1" = 20'-0"

BORING LEGEND

Ash | Boulders | Soft Rock | Blue Rock

Note:
Figures on top of borings indicate ground surface elevation.
Minus figures indicate depth below ground surface.

Note! See Sheet #6 for Estimated Quantities. Refer to Hakalau Bridge for General Notes.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY W. S. Bartels	3-49
	DRAWN BY T. Umeda	4-49
	TRACED BY	
NOTE BOOK No.	QUANTITIES BY A. Van Der Werff	4-49
	QUANTITIES CHECKED BY	
	CHECKED BY E. Edwards	4-49

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

NANUE BRIDGE

Sta. 0+48.83 to 5+80.16

HAWAII BELT ROAD SDR 3(13)

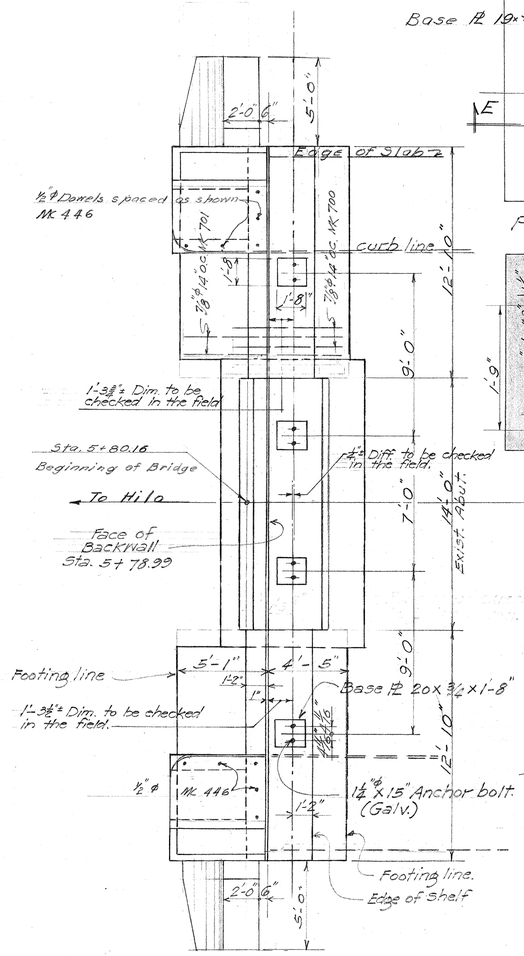
Apr. 1949

SHEET No. 1 OF 11 SHEETS

5465.64

WARNER'S No. 1007 A & CO., N.Y. U.S. PAT. OFF.

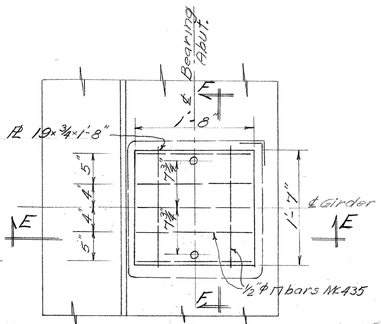
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR-3(13)	1950	65	904



ABUTMENT NO 1 HILO END

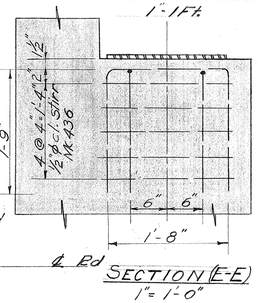
PLAN

¼" = 1 Ft.



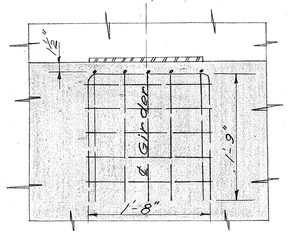
PLAN-BEARING SEAT

1" = 1 Ft.



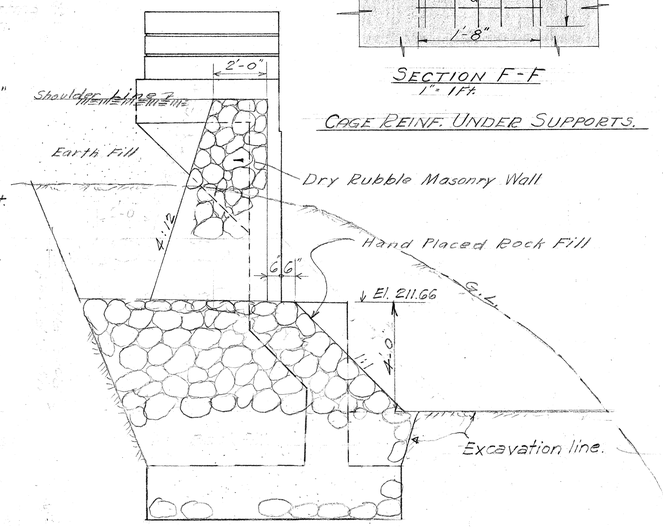
SECTION (E-E)

1" = 1'-0"



SECTION F-F

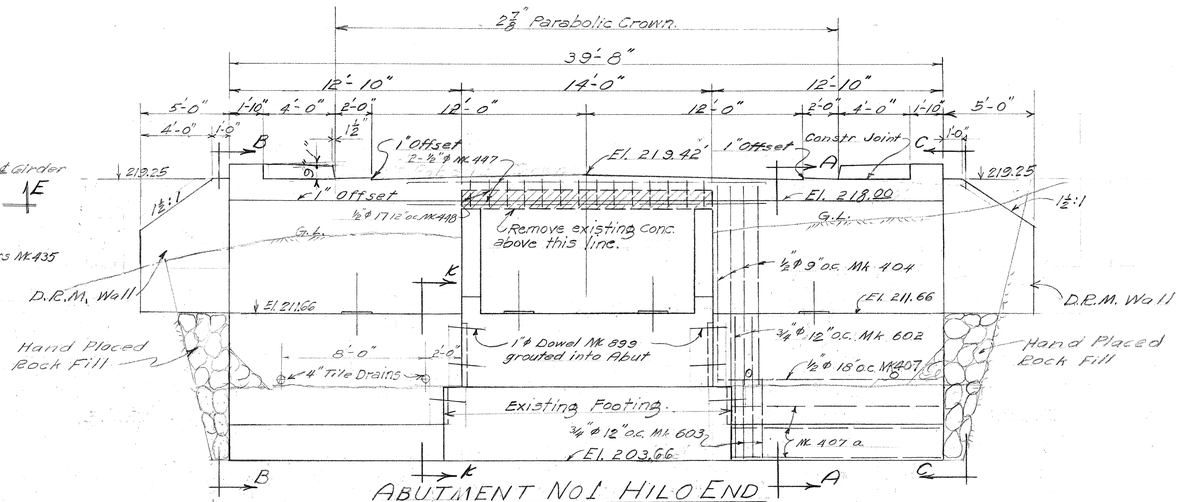
1" = 1 Ft.



SECTION B-B

⅜" = 1 Ft.

CAGE REINF. UNDER SUPPORTS.



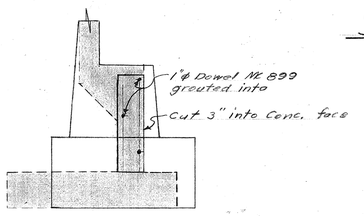
ABUTMENT NO 1 HILO END

FRONT ELEVATION

¼" = 1 Ft.

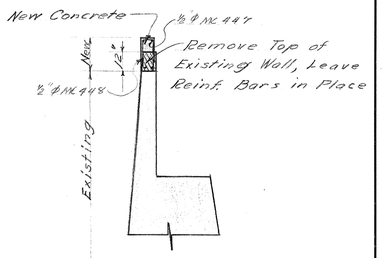
SECTION C-C

⅜" = 1 Ft.



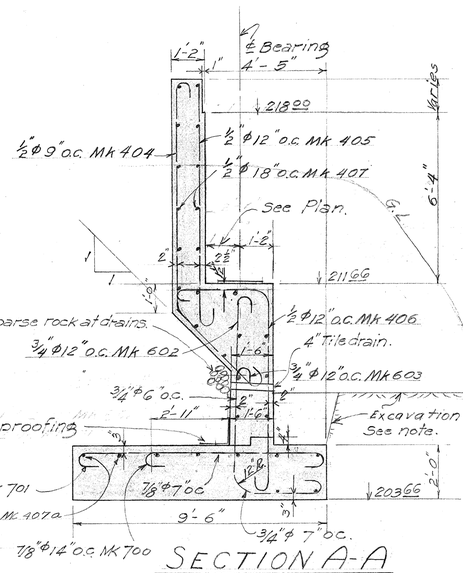
SECTION K-K

¼" = 1 Ft.



SECTION AT ℄

¼" = 1 Ft.



SECTION A-A

⅜" = 1 Ft.

Note! See Std. Details for treatment at constr. joint and method of applying waterproofing.
Original Ground Outside Excavation Lines Not to be Removed.
All concrete in Abutments to be Class A-1.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

NANUE BRIDGE

Sta. 0+48.83 to 5+80.16

Hawaii Belt Road SDR-3(13)

May 1949

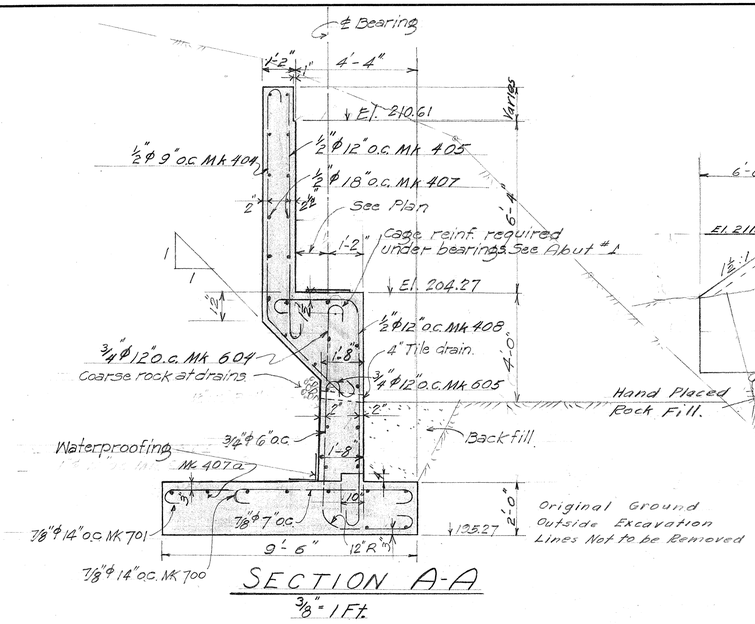
SHEET No. 2 OF 11 SHEETS

5468.65

65

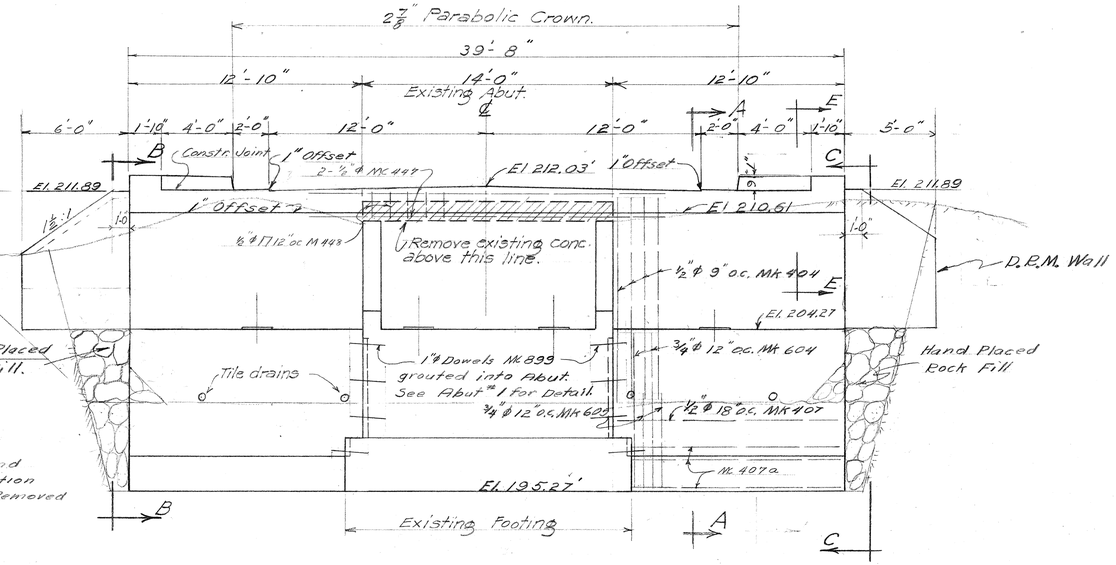
ORIGINAL PLAN	SURVEY PLOTTED BY W. R. Bates DATE 4-49
	DESIGNED BY " " "
	DRAWN BY A. Van De Water
	TRACED BY " " "
NOTE BOOK No.	QUANTITIES BY " " "
	QUANTITIES CHECKED BY " " "
	CHECKED BY " " "

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR-3(13)	1950	66	304



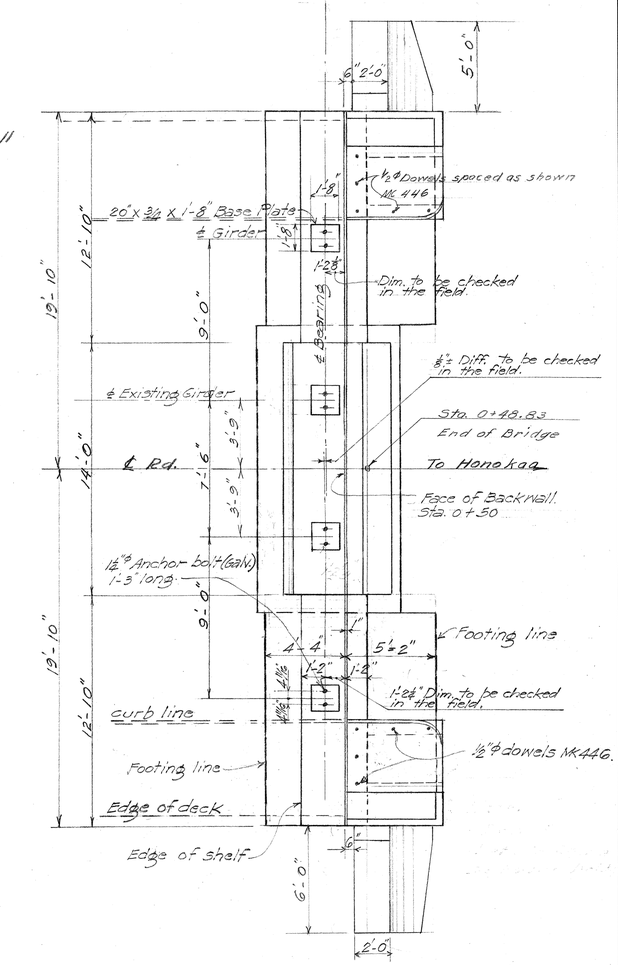
SECTION A-A

3/8" = 1 Ft.



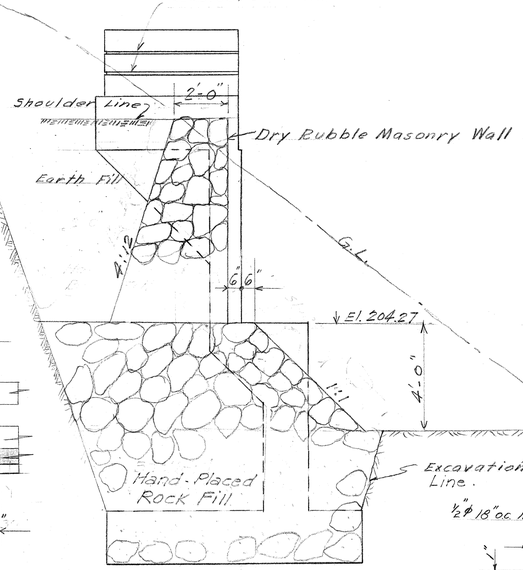
ABUTMENT NO 2 HONOKAA END
FRONT ELEVATION

¼" = 1 Ft.



SECTION G-G

3/8" = 1 Ft



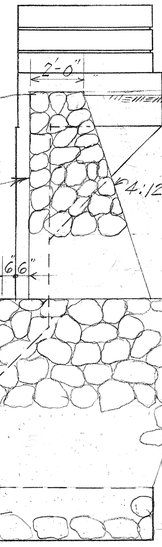
SECTION B-B

3/16" = 1 Ft.

Note: Omit Bar 405 At This Section

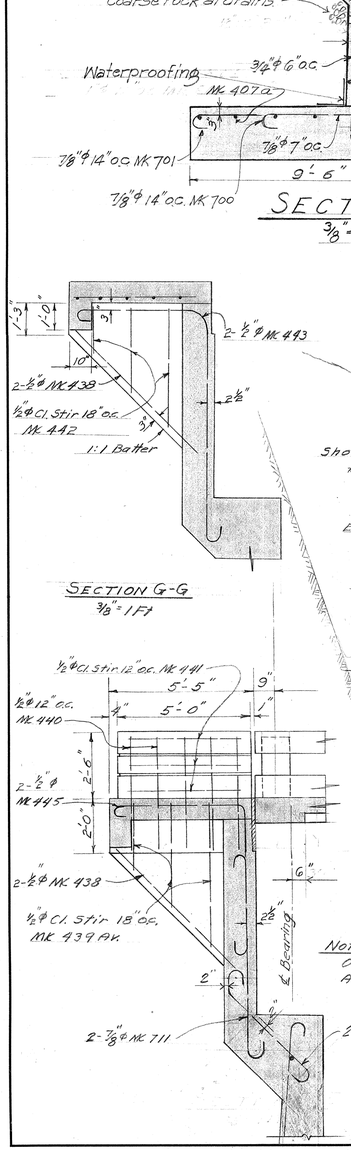
GROOVE DETAIL

¾" = 1'-0"



SECTION C-C

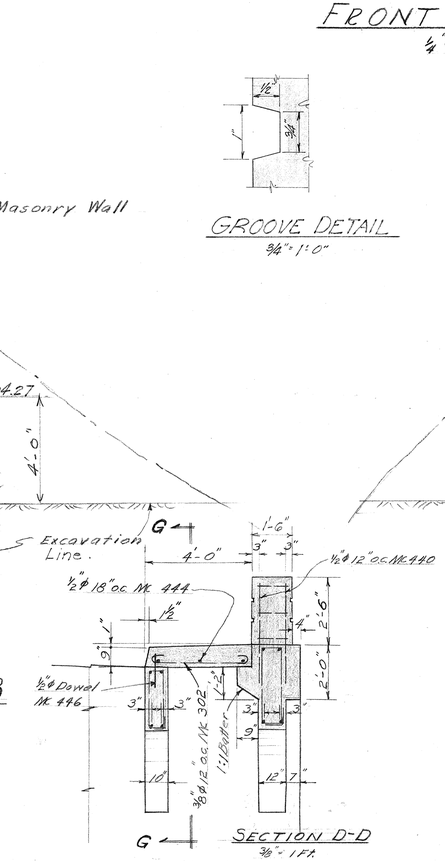
3/16" = 1 Ft.



Note: Omit Bar 405 At This Section

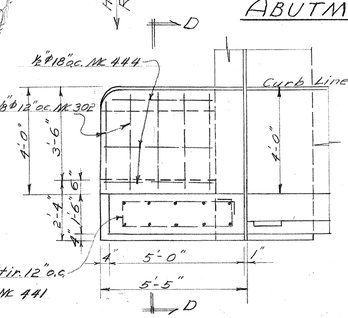
SECTION B-B

3/16" = 1 Ft.



SECTION D-D

3/16" = 1 Ft.



PLAN - END POST DETAIL

3/8" = 1 Ft.

ABUTMENT NO 2 HONOKAA END
PLAN

¼" = 1 Ft.

Note: All concrete in Abutments to be Class A-1.

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

NANUE BRIDGE
Sta. 0+48.83 to 5+80.16

Hawaii Belt Road SDR-3(13)

June 1949

SHEET No. 3 OF 11 SHEETS

5468.66

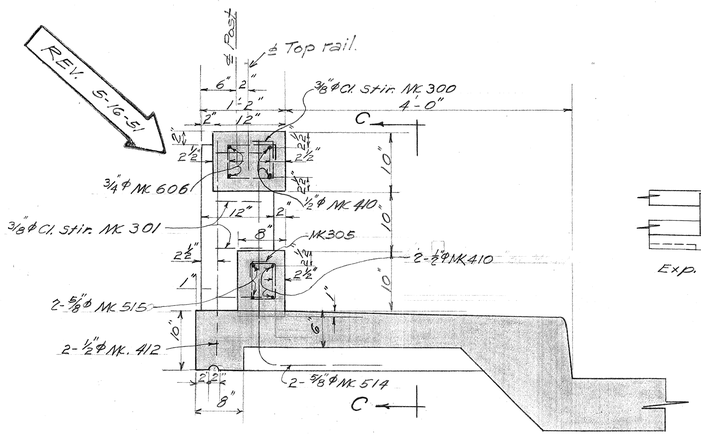
66

KEUFFEL & ESSER CO. "KEUFFEL & ESSER" No. 1807 MADE IN U.S.A.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR-3(13)	1950	67	104

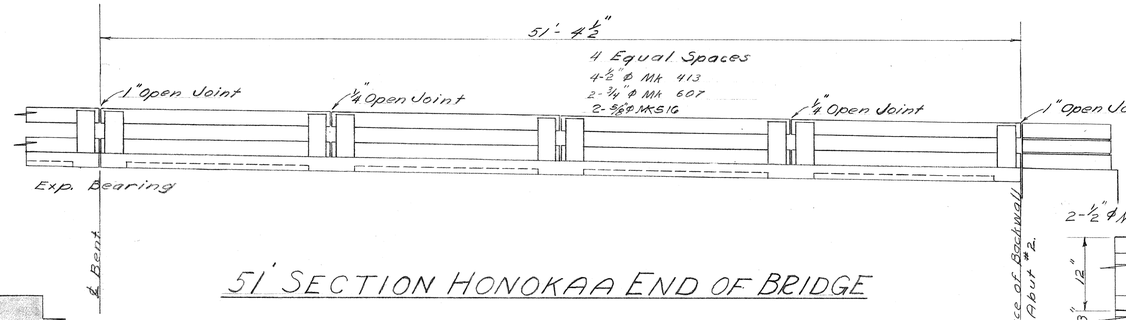
REV. 5-16-51 : Railing Posts shortened 2". Bottom Rail revised.

REV. 5-16-51

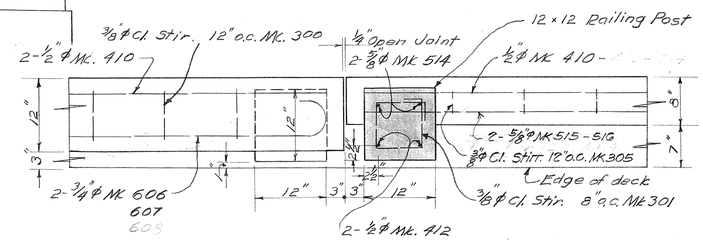


SECTION A-A

1" = 1 Ft

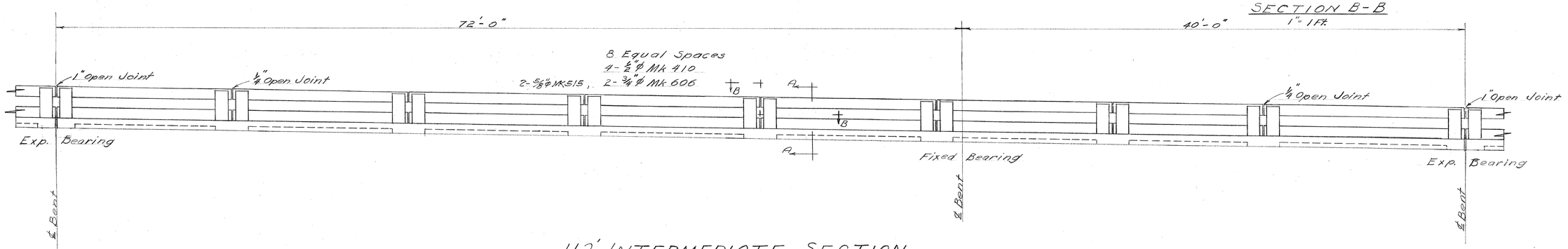


51' SECTION HONOKAA END OF BRIDGE

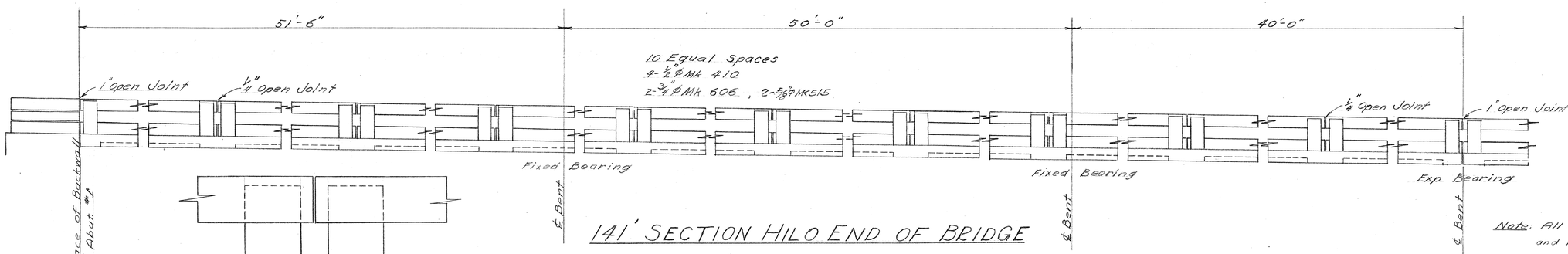


SECTION B-B

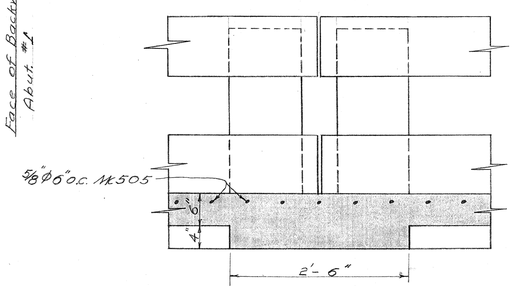
1" = 1 Ft.



112' INTERMEDIATE SECTION



141' SECTION HILO END OF BRIDGE



SECTION C-C

1" = 1 Ft.

RAILING LAYOUT (RIGHT)

¼" = 1 Ft.

LEFT RAILING SIMILAR

Note: All concrete in Handrails and Posts to be Class A-1.

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

NANUE BRIDGE
Sta. 0+48.83 to 5+80.16

Hawaii Belt Road SDR-3(13)

June 1949

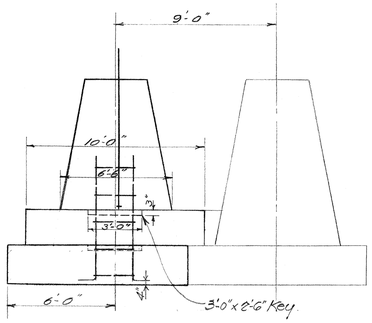
SHEET No. 4 OF // SHEETS

5465.67

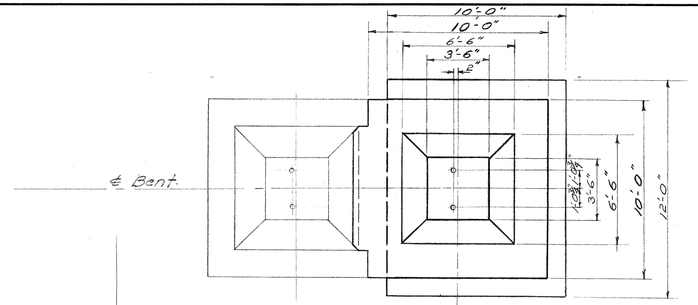
67

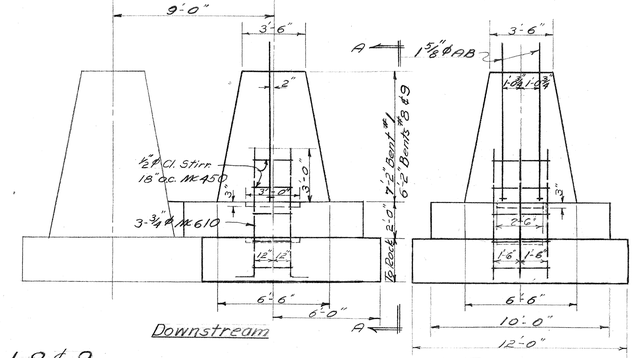
KEUFFEL & ESSER CO., N.Y. No. 1007

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	SDR-3(13)	1950	68	104



Upstream

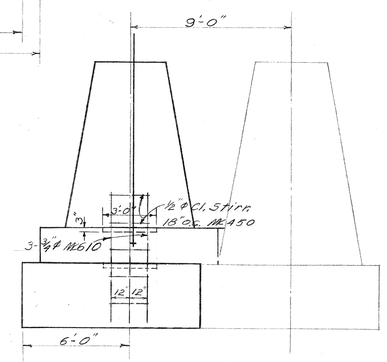




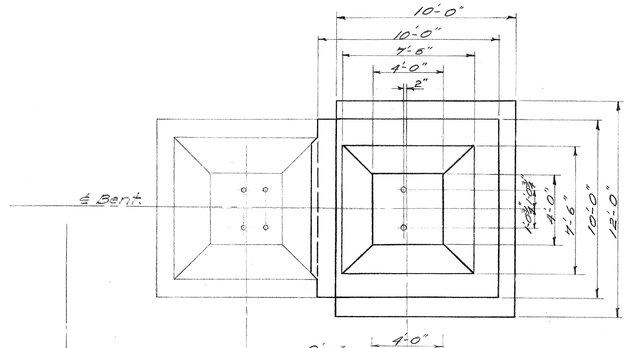
Downstream

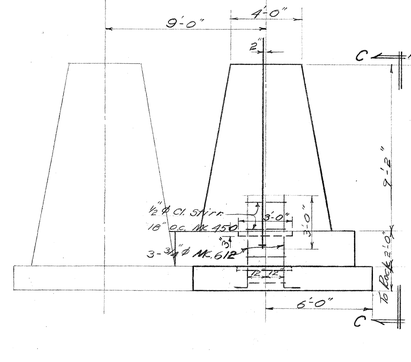
ELEV. A-A

BENTS No 1, 8 & 9

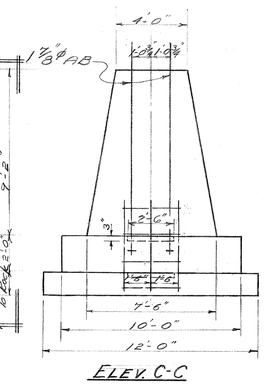


Upstream



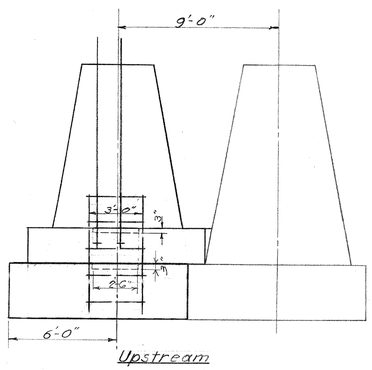


Downstream

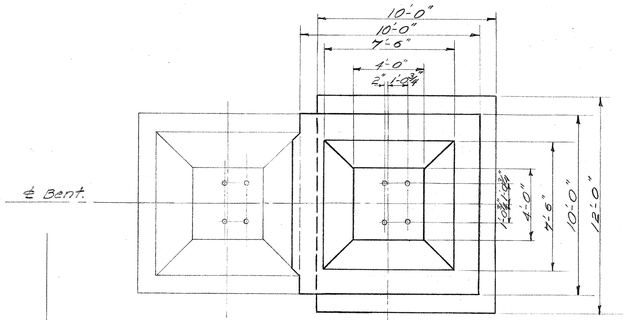


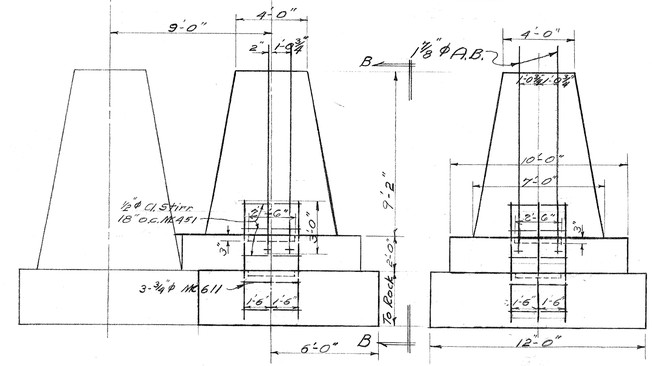
ELEV. C-C

BENT No. 7



Upstream





Downstream

ELEV. B-B

BENTS No. 2, 3 & 5

Note: All concrete in Piers to be Class B-2

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

NANUE BRIDGE
Sta. 0+48.83 to 5+80.16

Hawaii Belt Road SDR-3(13)

March 1950

SHEET No. 5 OF 11 SHEETS

5465.65

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

E.H.E. No. 1987 K & E CO., N.Y. U.S.A.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	HAW	SDR(13)	1950	6	204

REV. 5-16-51 ; Reinf. Steel Quant. changed. Hooks eliminated. Bottom rail reinf. revised. All bar deformations must conform to A.S.T.M.-A 305 12/12/50 1-5-51

ESTIMATED QUANTITIES

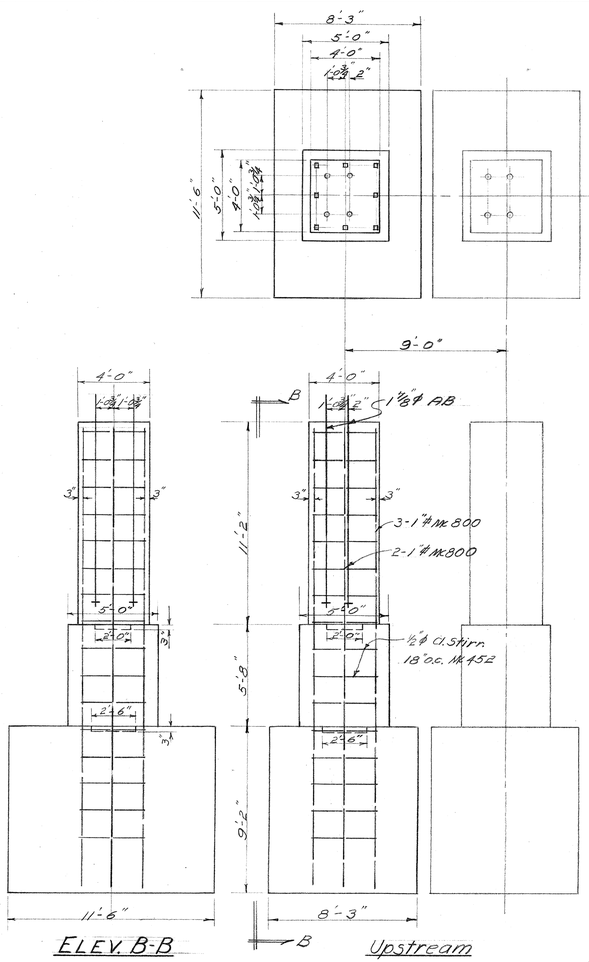
Item	Super-Structure	Railing & End Posts	Abutments No. 1	Abutments No. 2	PIERS	TOTAL
Class A-1 Conc.	580 cu. yds	69 cu. yds	42 cu. yds	42 cu. yds		733 cu. yds
Class B-2 Conc.					547 cu. yds	547 cu. yds
Struct. Excav.			200 cu. yds	265 cu. yds	1134 cu. yds	1599 cu. yds
~~Reinf. Steel.~~	~~110,707 lbs~~	~~13,065 lbs~~	~~3,966 lbs~~	~~3,496 lbs~~	~~2,520 lbs~~	~~133,754 lbs~~
Dry Rubble Mas.			7.5 cu. yds	8 cu. yds		15.5 cu. yds
Hand placed Rock Fill			13 cu. yds	12 cu. yds		25 cu. yds
A. C. Pavement	82.21 Tons					82.21 Tons
REINF. STEEL	105,801 Lbs.	12,992 Lbs.	2,985 Lbs.	3,046 Lbs.	2,520 Lbs.	127,344 Lbs.

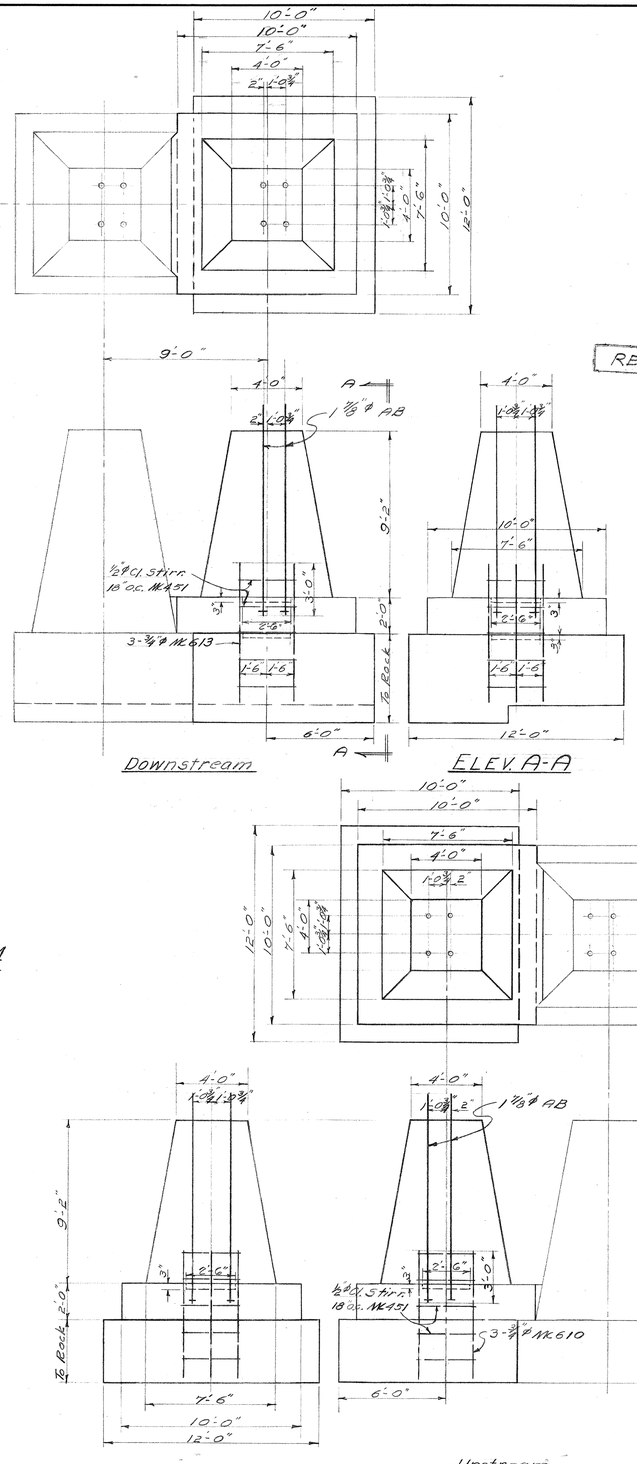
REV. 5-16-51

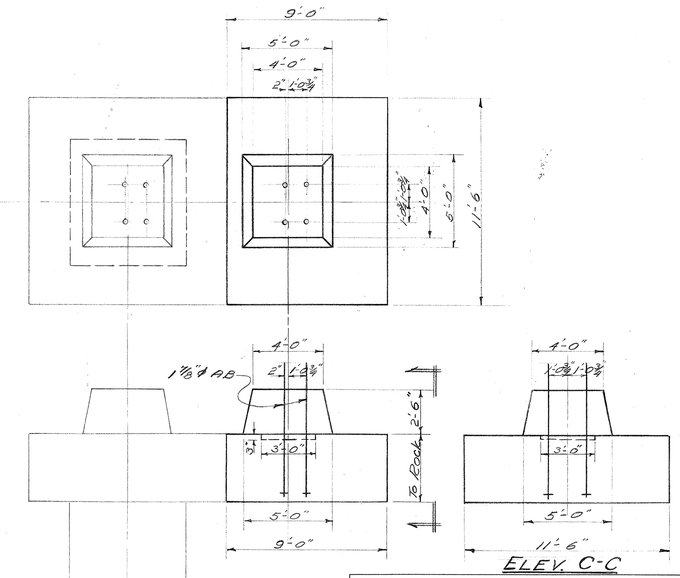
ESTIMATED QUANTITIES (Continued)

Item	Total
Furnishing, fabricating and erecting new steel.	122,870 #
Cleaning, fabricating and erecting salvaged steel.	969,250 #
Cleaning and applying 1st. coat of paint to steel in existing R.R. Bridge	1,046,000 #
Painting entire structure with two field coats of paint.	Lump sum
Removing and replacing ¾ ø x 2⅜ (Ave.) rivets in tower bracing system	2000 pcs.
Removing and replacing ⅞ ø x 3⅛ (Ave.) rivets	9200 pcs.
Removing damaged members from towers.	700 #

1-5-51







TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

NANUE BRIDGE
Sta. 0+48.83 to 5+80.16

Hawaii Belt Road SDR-3(13)

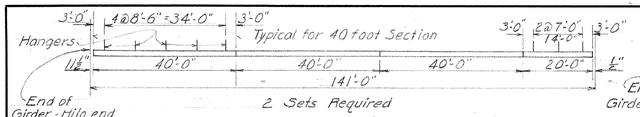
March 1950

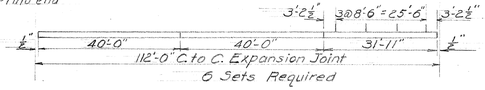
SHEET No. 6 OF 11 SHEETS

5468.69

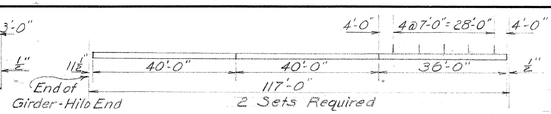
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	TOPOGRAPHY BY	"
	DRAWN BY	"
NOTE BOOK No.	TRACED BY	"
	QUANTITIES BY	"
	QUANTITIES CHECKED BY	"
	CHECKED BY	"

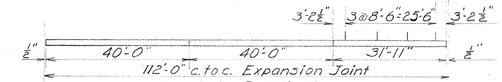
KEUFFEL & ESSER CO., N.Y. No. 1987

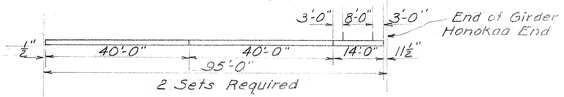


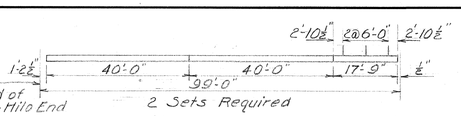




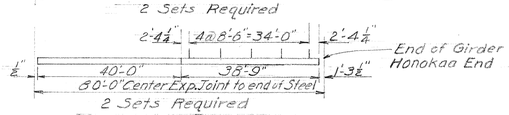












LIST OF 6"I 12.5#				HANGERS	
BRIDGE	No.	LENGTH	TOTAL LENGTH	No.	No.
UMAUMA	10	40'-0"	400'-0"		
"	2	18'-11"	37'-10"		
"	2	38'-9"	77'-6"		
"	2	17'-9"	35'-6"	72	
NANUE	20	40'-0"	800'-0"		
"	2	20'-0"	40'-0"		
"	6	31'-11"	191'-6"		
"	2	10'-0"	20'-0"		134
HAKALAU	28	40'-0"	1120'-0"		
"	2	36'-0"	72'-0"		
"	10	31'-11"	319'-2"		
"	2	14'-0"	28'-0"		194

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	SDE3(13)	1950	70	904

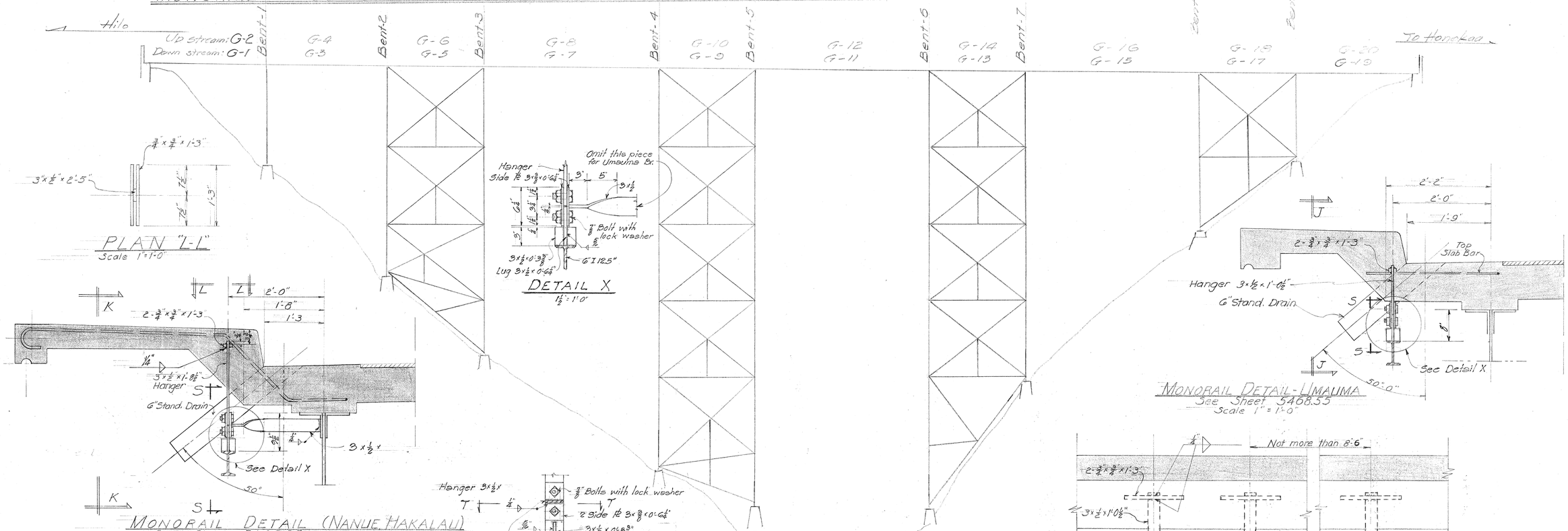
11/8/50
1/2/51

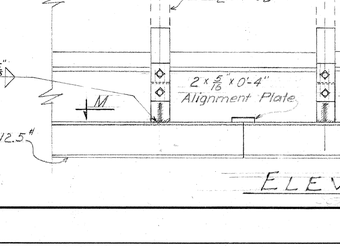
NANUE BRIDGE
Scale 1"=20'-0"

HAKALAU BRIDGE
Scale 1"=20'-0"

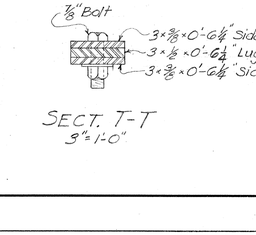
UMAUMA BRIDGE
Scale 1"=20'

MONORAIL LENGTHS AND LOCATION OF HANGERS



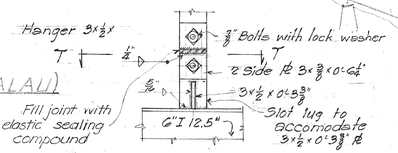


PLAN "L-L"
Scale 1"=1'-0"

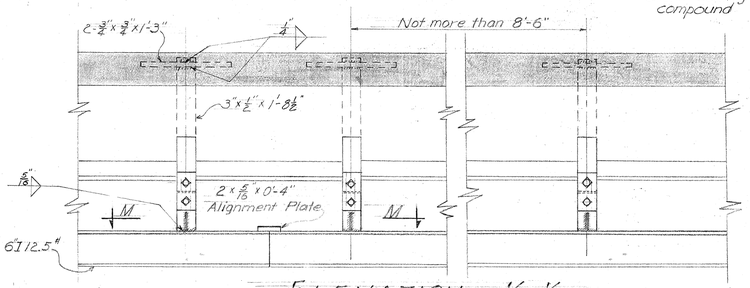


DETAIL X
1½"=1'0"

MONORAIL DETAIL (NANUE, HAKALAU)
See Sheet 5468.55
Scale 1"=1'-0"



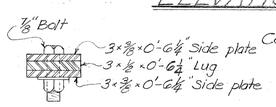
ELEV. S-S
1½"=1'-0"



ELEVATION K-K
Scale 1"=1'-0"

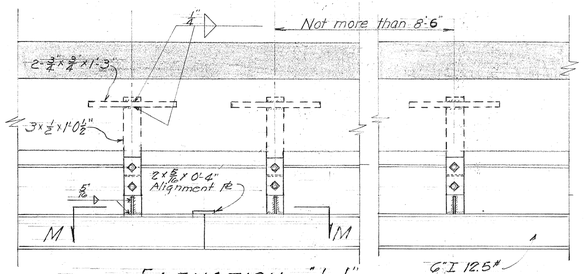
ELEVATION - LOOKING UP STREAM

Condition survey of Bridge

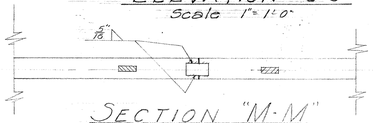


SECT. T-T
3"=1'-0"

MONORAIL DETAIL - UMAUMA
See Sheet 5468.55
Scale 1"=1'-0"



ELEVATION "J-J"
Scale 1"=1'-0"



SECTION "M-M"
Scale 1"=1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DESIGNED BY	
	DRAWN BY Fujioka	Aug. 1950
	TRACED BY	
NOTE BOOK No.	QUANTITIES BY A. Dekanuca	
	QUANTITIES CHECKED BY	
	CHECKED BY Y. Kuroda	11-15-50

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

NANUE BRIDGE
Sta. 0+48.83 to 5+80.16

Hawaii Belt Road SDR 3(13)

May 1950

SHEET No. 7 OF 11 SHEETS

5468.70

Nanue

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HSHWB11	HSH	SDR3(13)	1950	71	304

△ To Hilo

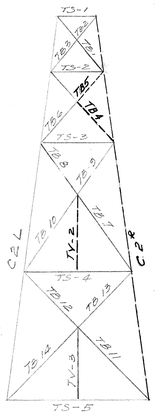
Bents : View looking Honokaa

Tower bracing : looking up stream

Bent 1

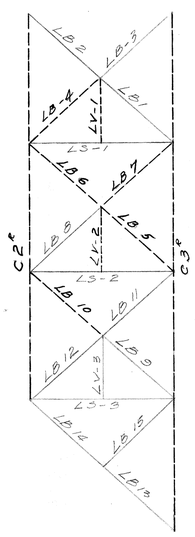


Bent 2

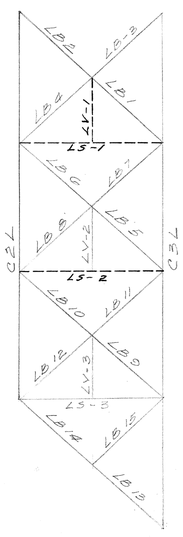


Tower Bracing — bent 2 & 3

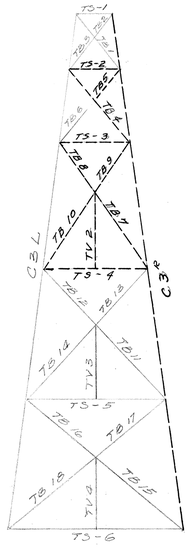
Down stream



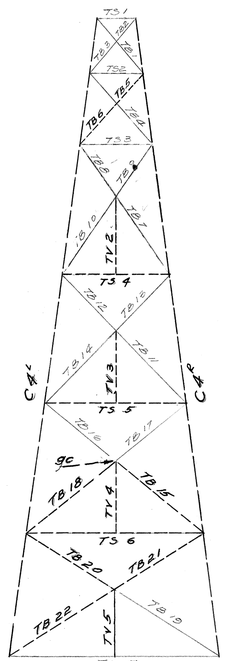
Up stream



Bent 3

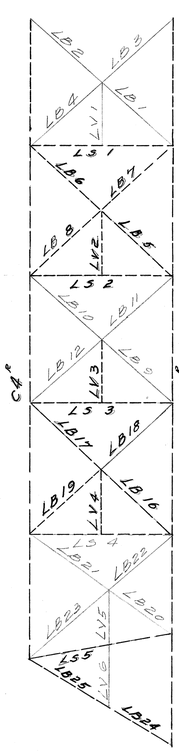


Bent 4

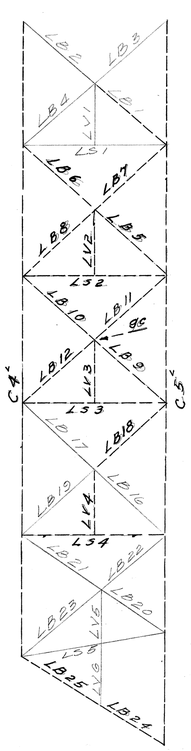


Tower Bracing — bent 4 - 5

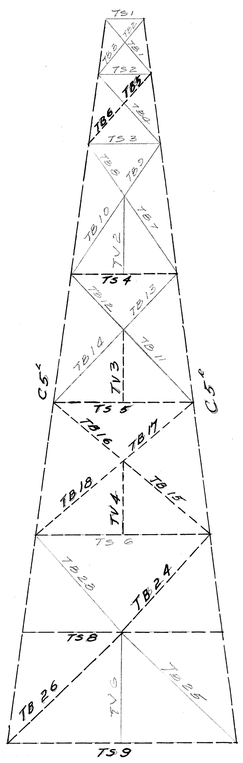
Down stream



Up stream



Bent 5



LIST OF CONDEMNED MEMBERS & PARTS.

Bent 1

TS-1	3 rivets	3/4"	1" grip
	18 rivets	3/4"	3/4" grip
TS-2	3 "	3/4"	1" "
TS-3	10 "	"	"
TB-6	3 "	"	"

Bent 2

TB-4	2 rivets	3/4"	3/4" grip
TB-5	6 "	"	"
TV-2	2 "	"	"
C2R	6 "	7/8"	1" grip

Down stream

LB-4	9 rivets	3/4"	3/4" grip
LB-5	4 "	"	"
LB-6	4 "	"	"
LB-7	30 "	"	"
LB-10	4 "	"	"
LV-1	4 "	"	"
LV-2	4 "	"	"

Up stream

LV-1	3 rivets	3/4"	3/4" grip
LS-1	32 "	3/4"	1" grip
LS-2	20 "	"	"

Bent 3

TS-2	4 rivets	3/4"	1" grip
	4 "	3/4"	3/4" "
TS-3	3 "	3/4"	1" grip
TS-4	10 "	"	"
TB-4	8 "	3/4"	3/4" grip
TB-5	4 "	"	" "
TB-7	5 "	"	" "
TB-8	3 "	"	" "
TB-9	7 "	"	"
TB-10	2 "	"	"
TV-2	3 "	"	"
C3R	6 "	7/8"	1 1/4" grip

Bent 4

TS-4	20 rivets	3/4"	1" grip
TS-5	50 "	"	"
TS-6	50 "	"	"
TB-5	12 "	3/4"	3/4" grip
TB-6	10 "	"	"
TB-15	5 "	"	"
TB-18	10 "	"	"
TB-20	10 "	"	"
TB-21	10 "	"	"
TB-22	Slightly Bent		
TV-2	12 rivets	3/4"	3/4" grip
TV-3	10 "	"	"
TV-4	2 "	"	"
TV-5	Replace entire member		
C4R	50 rivets	7/8"	1 1/8" grip
C4L	66 "	7/8"	3" grip
	20 "	7/8"	1 1/4" grip

Down stream

LS-1	30 rivets	3/4"	1" grip
LS-2	40 "	"	"
LS-3	50 "	"	"
LS-4	50 "	"	"
LS-5	3 "	"	"
LB-5	30 "	3/4"	3/4" grip
LB-6	20 "	"	"
LB-7	22 "	"	"
LB-8	30 "	"	"
LB-16	15 "	"	"
LB-17	15 "	"	"
LB-19	15 "	"	"
LB-24	10 "	"	1 1/8" grip
LB-25	10 "	"	1 1/2" grip
LV-2	10 "	"	3/4" grip
LV-3	10 "	"	"
LV-4	12 "	"	"
gc	replace gusset plates		

Up stream

LB-1	8 rivets	3/4"	3/4" grip
LB-3	22 "	"	"
LB-6	18 "	"	"
LB-7	18 "	"	"
LB-8	22 "	"	"
LB-9	10 "	"	"
LB-10	13 "	"	"
LB-11	23 "	"	"
LB-12	9 "	"	"
LB-18	4 "	"	"
LB-24	10 "	3/4"	1 1/8" grip
LB-25	10 "	"	1" grip
LS-2	40 "	"	"
LS-3	40 "	"	"
LS-4	40 "	"	"
LV-3	7 "	"	"
LV-4	6 "	"	"
gc	replace gusset plates		

Bent 5

TB-5	6 rivets	3/4"	3/4" grip
TB-6	6 rivets	"	"
TB-15	10 rivets	"	"
TB-16	6 "	"	"
TB-17	6 "	"	"
TB-18	10 "	"	"
TB-24	5 "	"	"
TB-26	4 "	"	"
TS-4	12 "	3/4"	1" grip
TS-5	20 "	"	"
	3 lattice bars		
TS-6	80 rivets	3/4"	1" grip
TS-8	50 "	"	"
TS-9	26 "	"	"
C5L	16 "	7/8"	3" grip
	20 "	7/8"	1 1/4" grip
C5R	88 "	7/8"	"
	20 "	7/8"	3" grip

Condition survey of Bridge

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

NANUE BRIDGE
Sta. 0+48.83 to 5+80.16

Hawaii Belt Road SDR 3(13)

May 1950

SHEET No. 8 OF 11 SHEETS

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

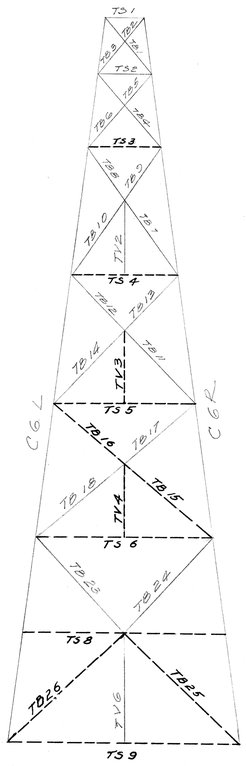
5468.71

76 71

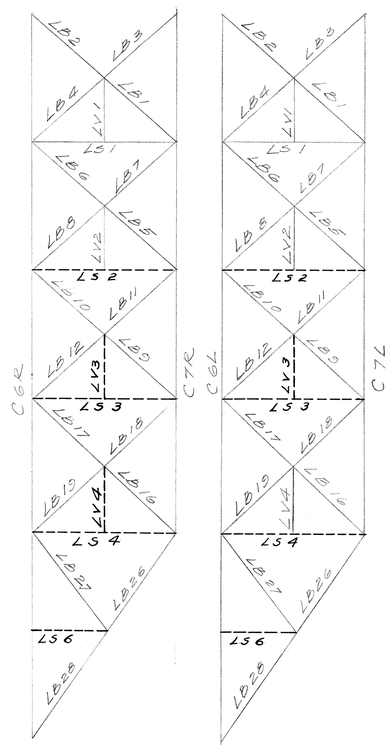
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR 3(13)	1950	72	704

To Hilo

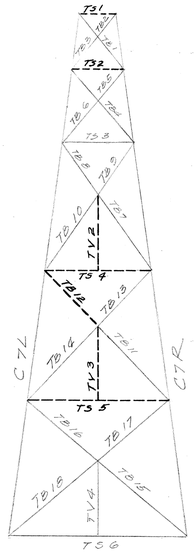
Bent 6



Tower Bracing Bent 6 & 7
Down stream Up stream



Bent 7



Bent 6

TS - 3	6 rivets	3/4" - 1" grip	
TS - 4	20 "	" "	
TS - 5	12 "	" "	
TS - 6	60 "	" "	
TS - 8	75 "	" "	
TS - 9	40 "	" "	
TB - 15	slightly bent		
TB - 16	"	"	
TB - 25	4 rivets	3/4" - 3 1/8" grip	
TB - 26	6 "	" "	
TV - 3	4 "	" "	
TV - 4	6 "	" "	

Down stream

LS - 2	16 rivets	1" grip
LS - 3	24 "	"
LS - 4	24 "	"
LS - 6	12 "	"
LV - 3	6 "	3/4" grip
LV - 4	6 "	"

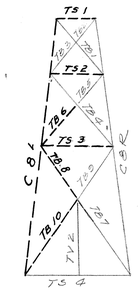
Up stream

LS - 2	8 rivets	1" grip
LS - 3	20 "	"
LS - 4	20 "	"
LS - 6	12 "	"
LV - 3	6 "	3/4" grip

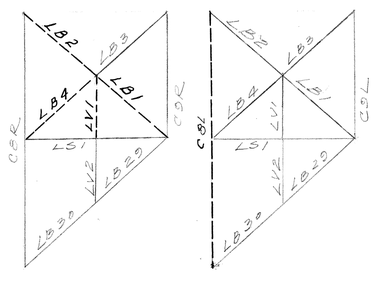
Bent 7

TS - 1	4 rivets	3/4" - 1" grip
TS - 2	6 "	" "
TS - 4	30 "	" "
TS - 5	12 "	" "
TV - 2	4 "	3/4" - 1 1/8" grip
TV - 3	3 "	" "

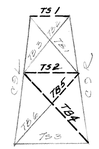
Bent 8



Tower Bracing Bent 8 & 9
Down stream Up stream



Bent 9



Bent 8

TS - 1	6 rivets	3/4" - 1" grip
TS - 2	12 rivets	" "
TS - 3	10 "	" "
TB - 6	6 "	3/4" - 3 1/8" grip
TB - 8	10 "	" "
TB - 10	4 "	" "
C&L	10 - 7/8" - 1 1/8" grip	

Down stream

LB - 1	6 rivets	3/4" - 3 1/8" grip
LB - 2	4 "	" "
LB - 4	6 "	" "
LV - 1	4 "	" "

Up stream

None

Bent 9

TS - 1	6 rivets	3/4" - 1" grip
TS - 2	30 rivets	" "
TB - 4	15 "	" 3/4" grip
TB - 5	6 "	" "

Condition survey of Bridge

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

NANUE BRIDGE
Sta. 0+48.83 to 5+80.16

Hawaii Belt Road SDR 3(13)

May 1950

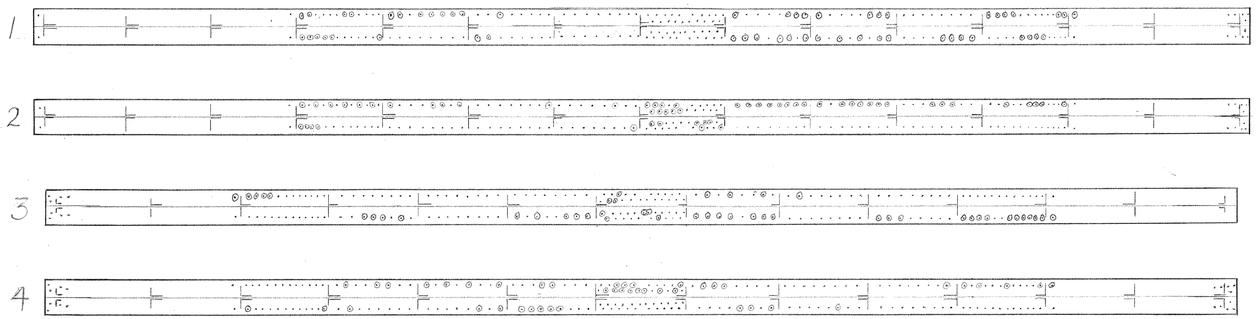
SHEET No. 9 OF 11 SHEETS

5468.72

72

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	SDR3(6)	1950	73	304

← To Hilo



SUMMARY OF RIVETS TO BE REPLACED

Dia.	Length	Grip	No.	Say:
7/8"	2 5/8"	1 1/8"	328	410
7/8"	3 1/4"	1 7/8"	148	180
7/8"	3 7/8"	2 1/8"	71	90
7/8"	4"	2 1/4"	44	60
7/8"	5 1/8"	3 1/4"	58	70

Use Last Col. (say) for estimating in Contract

All Rivets and Bolts at base plates of girders at Column connections on entire structure must be replaced. (these are not shown)

Approximate no of rivets for Col. to Girder Connection

Dia.	Length	Grip	No
7/8"	3"	1 3/8"	120

The top flanges rivets are not readily accessible to inspection but they are assumed to be entirely bad and should be figured on being replaced. approximate quantities are:

Dia.	Length	Grip	No
7/8"	2 5/8"	1 1/8"	1020
7/8"	3 1/4"	1 5/8"	1010
7/8"	3 7/8"	2 1/8"	230
7/8"	4	2 1/4"	120
7/8"	5 1/8	3 1/4"	290

-Legend-

. (Dot) indicates rivet

⊙ (circled dot) indicates condemned rivet

PLAN - BOTTOM FLANGE

GIRDERS NOT SHOWN HAVE NO COVER PLATES - NO RIVETS -

Condition survey of Bridge

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
NANUE BRIDGE
Sta. 0+48.83 to 5+80.16
Hawaii Belt Road SDR 3(13)
May 1950

SHEET No. 10 OF 11 SHEETS

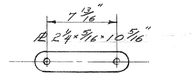
5468.73

73

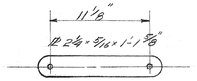
ORIGINAL PLAN	NOTE BOOK No.	SURVEY PLOTTED BY: DESIGNED BY: DRAWN BY: TRACED BY: QUANTITIES BY: QUANTITIES CHECKED BY: CHECKED BY:	DATE: : : : :

KEUFFEL & ESSER CO., N.Y. No. 1967

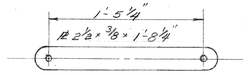
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR-3(13)	1950	71	904



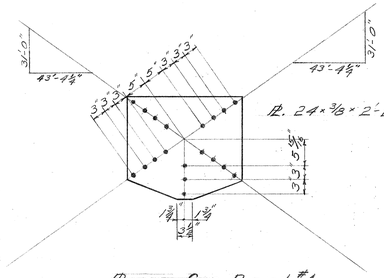
LAT'T. BAR - TRANS. BRACING UMAUMA
105 Required.



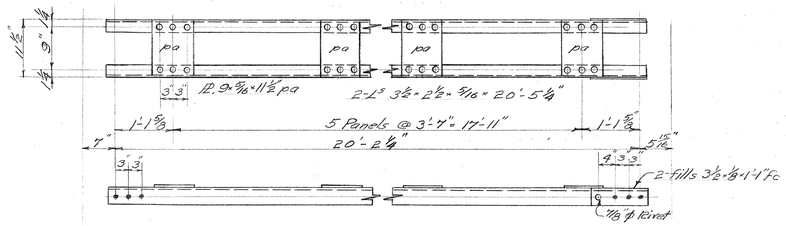
LATT BAR - TRANS. BRACING NANUE
3 Required



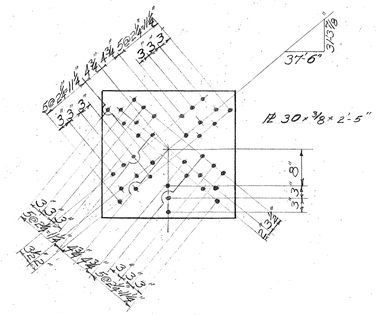
LATT. BAR - COLUMN. UMAUMA
91 Required



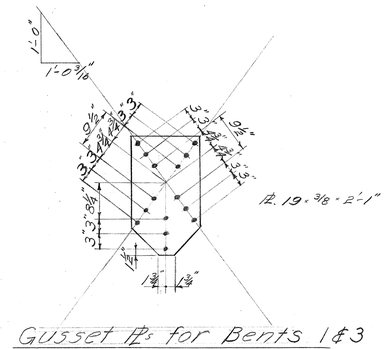
PL. gc for Bent #4
NANUE
2 Required



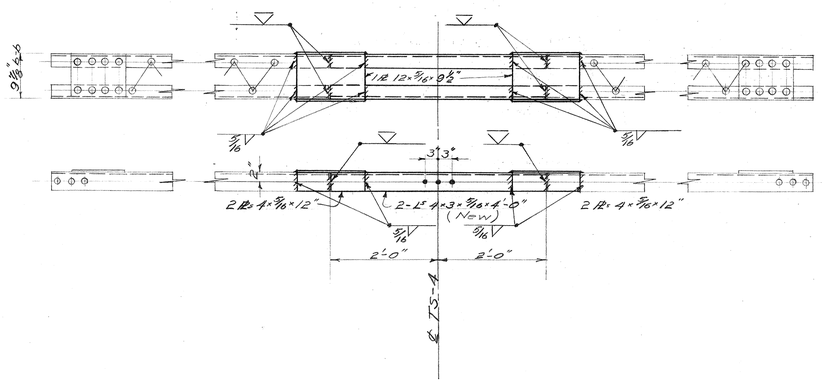
TV-5 NANUE
One Required



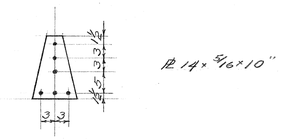
PL gc for Tower Bents #4 & #5
NANUE
2 Required



Gusset PLs for Bents 1 & 3
UMAUMA
4 Required



DETAIL OF REPAIRS FOR TS-4 UMAUMA



PL gc for Bent #3
UMAUMA
2 Required

Note! All replacements for condemned pieces and members, and repairs shall be new steel.

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII
NANUE BRIDGE
Sta. 0+48.83 to 5+80.16
UMAUMA BRIDGE
Sta. 100+46.73 to 103+25.38
Hawaii Belt Road SDR-3(13)
Feb. 1950

SHEET No. 11 OF 11 SHEETS

5468.74

71

AMERICAN BLUE PRINT CO., HONOLULU, T. H.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	702E3(8)	1950	75	104

Nov. 1, 1950 12/15/50

Order No. 3807 Sheet No. E1E

528'-0"

51'-0" | 50'-0" | 40'-0" | 72'-0" | 40'-0" | 72'-0" | 40'-0" | 72'-0" | 40'-0" | 51'-0"

TO HILO

TO PAAUILO

A1X | A1 | B4 | B4X | G6 | G9 | G7 | G6 | B4 | B4X | G6 | G9 | G7 | G6 | A2 | A1

EXP. FIX. FIX. FIX. 2-CPI EXP. FIX. 2-CPI EXP. FIX. 2-CPI EXP. FIX. 2-CPI EXP. FIX.

EAST ELEVATION

NOTE: These pieces are not available. See sheets 5468.75A 5468.75B and 5468.75C for details.

NOTE: BEAMS B1-E & B2-E ARE TO BE FIELD WELDED TO GIRDER AT EXPANSION JOINTS & AT ENDS OF BRIDGE ONLY.

NOTE: PIECES LISTED BELOW ARE LOCATED ON THE EAST & WEST SIDES OF THE TOWERS. NO REVAMPING IS REQ'D ON THIS MAT'L.

No. REQ'D	PIECE MARK	BRIDGE TAKEN FROM:
48	LB4	32 - KEALAHAKA 16 - MAILE
12	LB5	4 - KEALAHAKA 8 - MAILE
12	LB5A	4 - KEALAHAKA 8 - MAILE
18	LS4	10 - KEALAHAKA 8 - MAILE
12	LH2	8 - KEALAHAKA 4 - MAILE
6	LH3	2 - KEALAHAKA 4 - MAILE
24	LP27	16 - KEALAHAKA 8 - MAILE
12	LP28	4 - KEALAHAKA 8 - MAILE
84	SP5	64 KEALAHAKA 20 MAILE
112	SP7	72 KEALAHAKA 40 MAILE
24	SP8	24 KEALAHAKA
32	SP9	32 KEALAHAKA

CONN DET FOR STRUT

CONN DET FOR STRUT

TO BE FLUSH WITH EDGE OF VERTICAL LEG IN INTERMEDIATE CROSS FRAMES

TYP

STS-E

NEW PL

NEW PL

HIGH WATER

NORMAL WATER

1 2 3 4 5 6 7 8 9

KAULA | KEALAHAKA | LAUPAHOEHOE | LAUPAHOEHOE | LAUPAHOEHOE | KAULA ~~MAILE~~ | LAUPAHOEHOE | LAUPAHOEHOE | LAUPAHOEHOE | ~~KEALAHAKA~~ MAILE

A1X | A1 | B4 | B4X | G6 | G9 | G7 | G6 | B4 | B4X | G6 | G9 | G7 | G6 | B2 | B1

PLAN

1 BEAM B1-E
2 BEAMS B2-E

2 BEAMS B1-E
4 BEAMS B2-E

2 BEAMS B1-E
4 BEAMS B2-E

2 BEAMS B1-E
4 BEAMS B2-E

1 BEAM B1-E
2 BEAMS B2-E
2 BEAMS B1-E & 4 BEAMS B2-E

4 @ 5 FP

4 @ 5 EP

Rivets:
Holes:
Paint:

ERECTION PLAN
NANUE BRIDGE
HAWAII ISLAND, T. H.

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	1-20-50	ORDER NO.	3807
CHECKED BY	RA	2-20-50	SHEET NO.	E1E

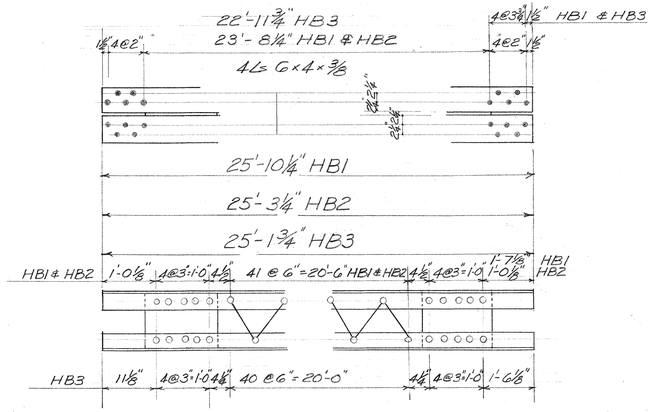
5468.75

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	SDR-3(13) Inserted 12/19/80	1980	75A	304

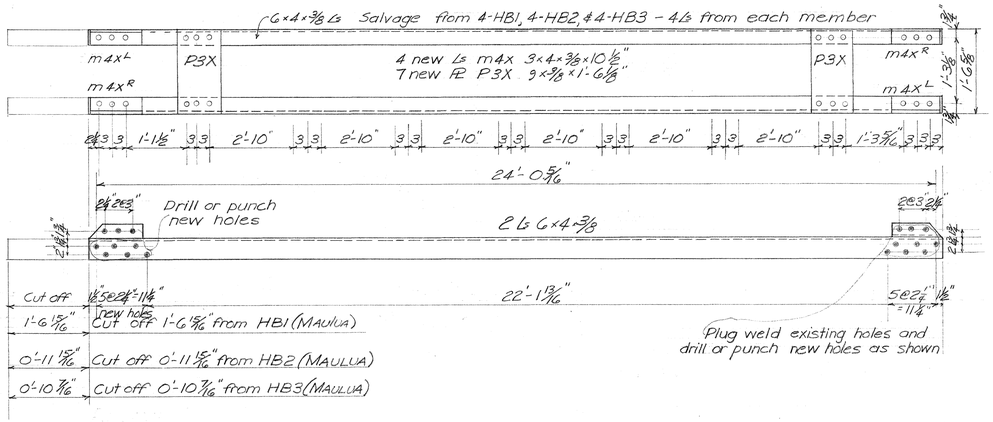
BILL OF MATERIAL

NO.	Description	Length Ft.	In.	Mark	Remarks
NOTE: REVAMP THE MATERIAL LISTED BELOW AS ON THE DETAILS					
4	BRACE	25	10¼	HB1	MAULUA
4	DO	25	3¼	HB2	
4	DO	25	1¾	HB3	
39	DO			LB Members (LAUP.)	
2	STRUT	40	0⅛	LS3	MAULUA
2	DO	40	0⅛	LS7	LAUPAHOEHOE
6	DO	40	0⅛	LS3	DO
78	L3x3x⅜	0	10⅛	m3X^{L}	
NEW MATERIAL IS LISTED BELOW					
168	PL 9x⅜	1	6⅛	P3X	
96	L3x4x⅜	0	10⅛	m4X	
24	PL 8x¼	1	8	da	
24	PL 30x⅜	2	5	LP27	
12	PL 30x⅜	2	6	LP28	

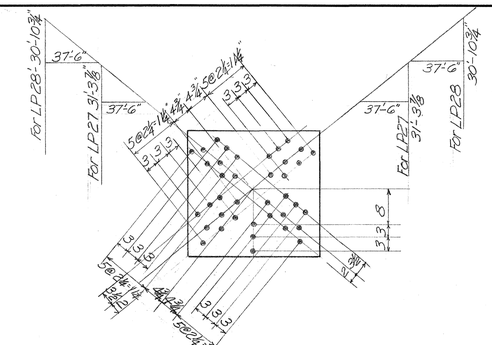
THE FOLLOWING SALVAGED MATERIAL REQUIRES NO REVAMPING:
9 LB4 (KEALAKAHA) - MAKES 9-LB4
3 LS1 (MAULUA) - MAKES 3-LS4
5 LS4 (LAUPAHOEHOE) MAKES 5-LS4



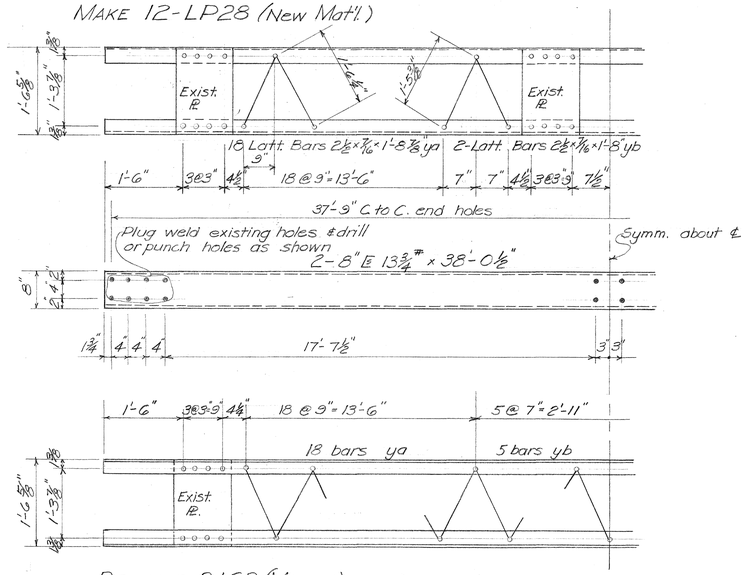
REVAMP 4-HB1, 4-HB2, 4-HB3 (MAULUA) AS SHOWN BELOW



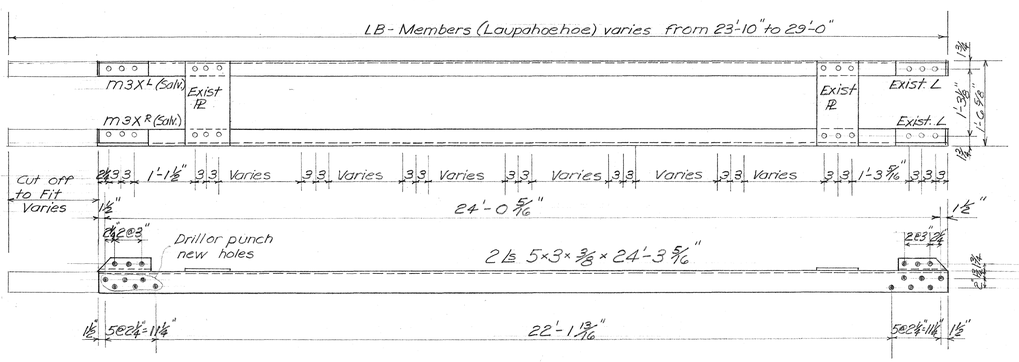
REVAMP 4-HB1 (MAULUA)
REVAMP 4-HB2 (MAULUA)
REVAMP 4-HB3 (MAULUA)
} MAKES - 24 - LB4



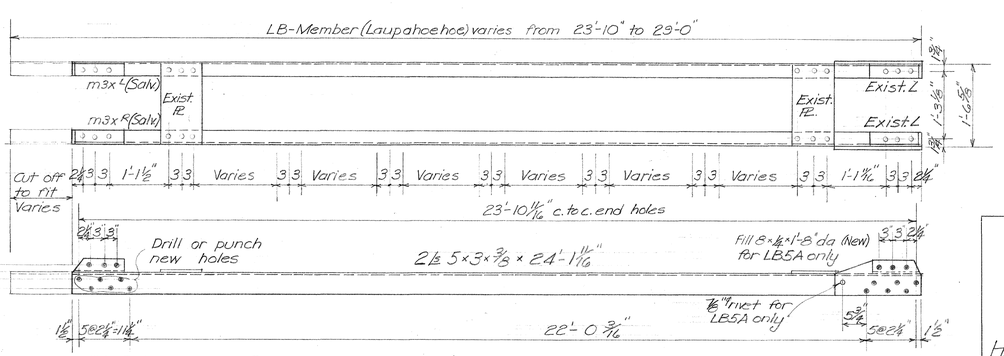
MAKE 24 - LP27 (New Mat'l.)
MAKE 12 - LP28 (New Mat'l.)



REVAMP 2 LS3 (MAULUA)
DO 2 LS7 (LAUPAHOEHOE)
DO 6 LS3 (LAUPAHOEHOE)
} MAKES 10 LS4



REVAMP 15-LB-MEMBERS (LAUPAHOEHOE) MAKES 15-LB4



REVAMP 12 LB-MEMBERS (LAUPAHOEHOE) MAKES 12-LB5
DO DO DO DO DO MAKES 12-LB5A
NOTE: For LB Members that are 23'-10" c. to c. end holes, butt-weld a required length of angle & revamp as shown.

NOTE:
Rivets ¾" ϕ
Holes 13⁄16" ϕ
All open holes 15⁄16" ϕ

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

NANUE BRIDGE

STA. 0+48.83 TO 5+80.16
HAWAII BELT ROAD SDR-3(13)

SHEET No. OF SHEETS

5468.75A

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

"KEUFFEL & ESSER CO., N.Y."

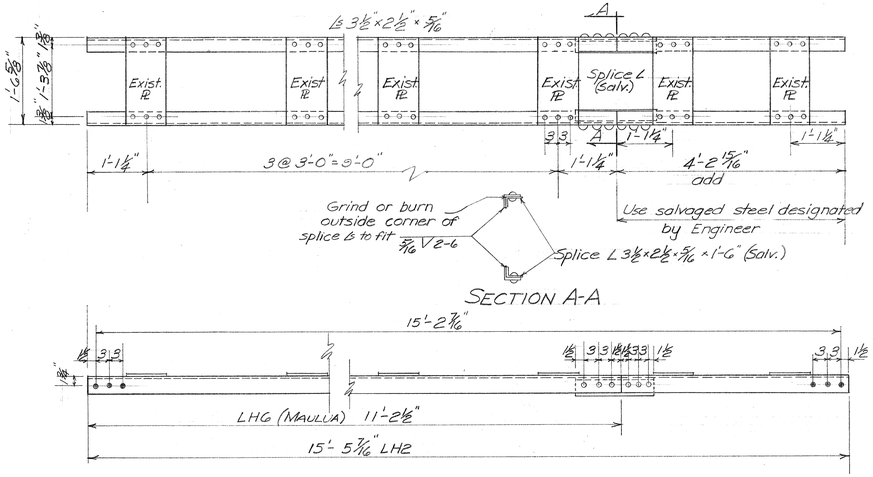
5468.75A

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Hawaii	SDR3(13)	1950	75B	304

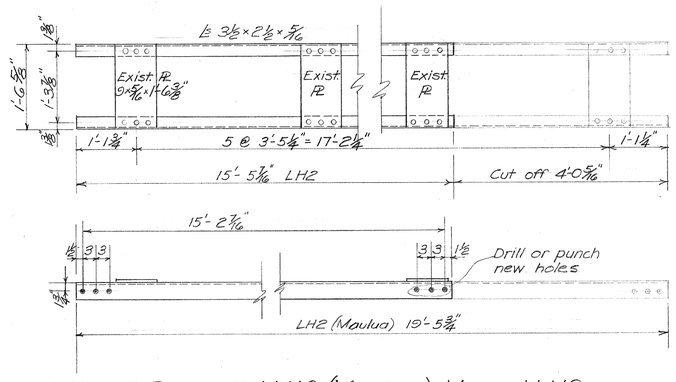
Inserted 12/19/50

BILL OF MATERIAL

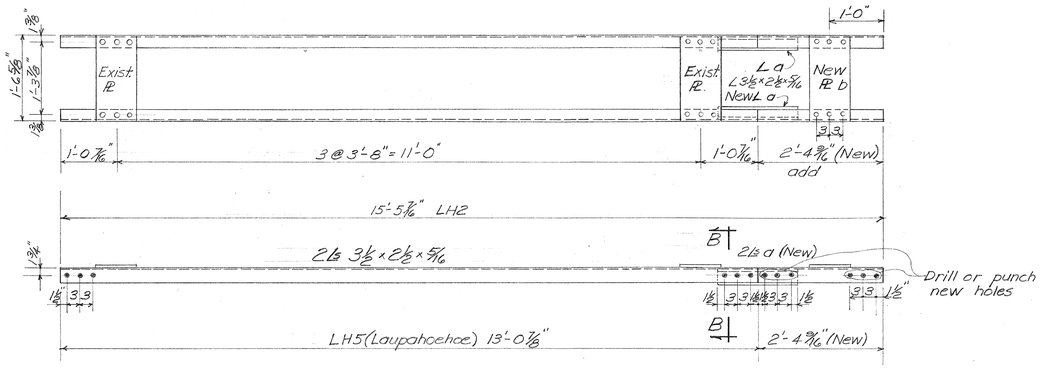
NO.	DESCRIPTION	LENGTH FT.	LENGTH IN.	MARK	REMARKS
NOTE: REVAMP THE MATERIAL LISTED BELOW AS ON THE DETAILS					
2	HANGARS	11	2½	LHG	MAULUA
1	DO	19	5¾	LH2	DO
6	DO	12	7¾	LH2	LAUPAHOEHOE
2	DO	13	0⅞	LH5	DO
1	DO	15	6⅛	LHG	DO
2	BRACE	18	3⅜	TB28H	MAULUA
2	DO	32	4⅞	TB31H	DO
2	DO	12	8⅞	TBGH	DO
NEW MATERIAL IS LISTED BELOW:					
16	L 3½×2½×5/16	1	6	a	
8	PL 9×5/16	1	6⅜	b	
6	L 4×3×5/16	2	0	c	



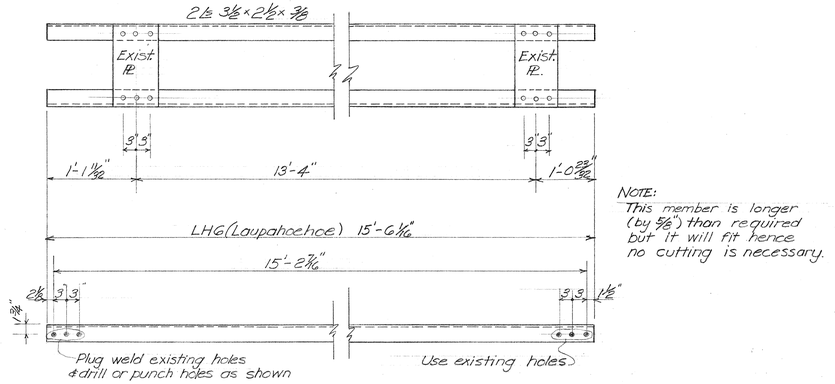
REVAMP 2 LHG (MAULUA) - MAKES 2-LH2



REVAMP 1 LH2 (MAULUA) - MAKES 1 LH2

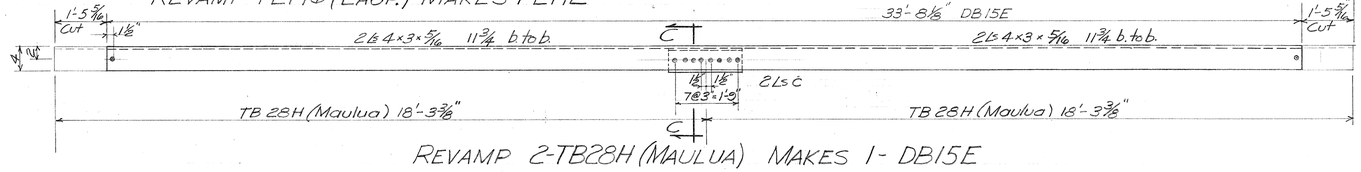


REVAMP 2-LH5 (LAUP.) - MAKES 2-LH2

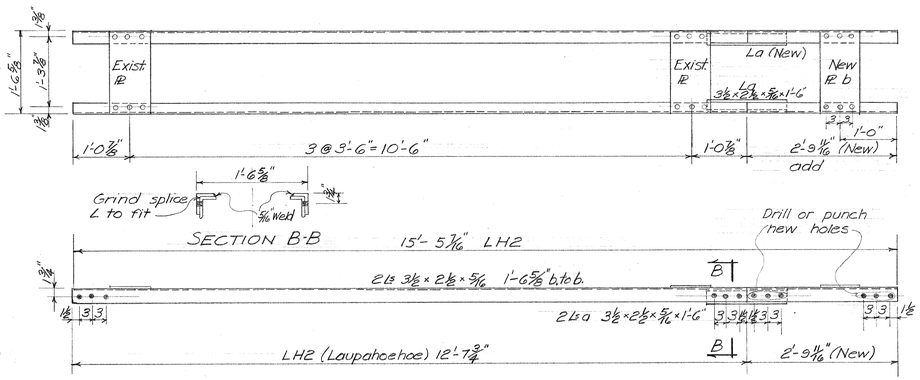


REVAMP 1 LHG (LAUP.) MAKES 1-LH2

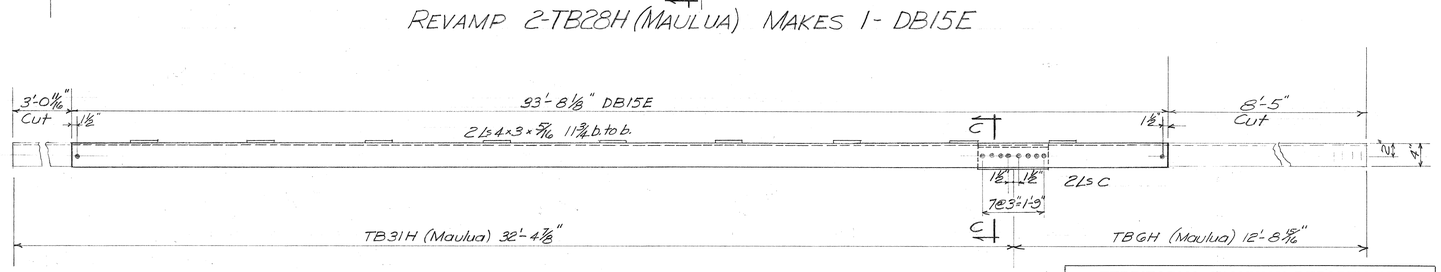
Rivets ¾" ϕ
Holes 13/16" ϕ
All open holes 15/16" ϕ



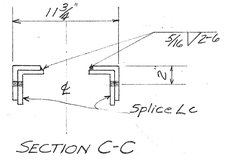
REVAMP 2-TB28H (MAULUA) MAKES 1- DB15E



REVAMP 6 LH2 (LAUPAHOEHOE) - MAKES 6-LH2



REVAMP 2-TB31H & TBGH (MAULUA) MAKES 2-DB15E



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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

NANUE BRIDGE

STA. 0+48.83 TO 5+80.16

HAWAII BELT ROAD SDR3(13)

SHEET No. OF SHEETS

5468.75B

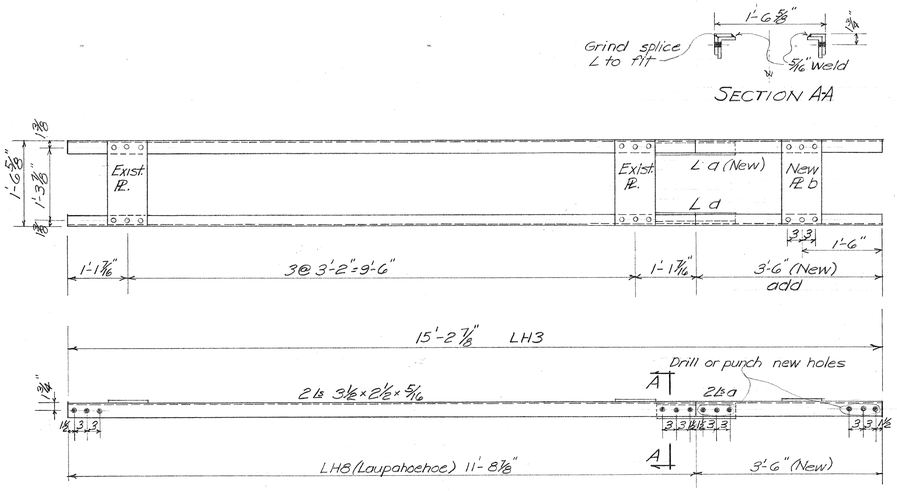
KEUFFEL & ESSER CO., N.Y. No. 1987

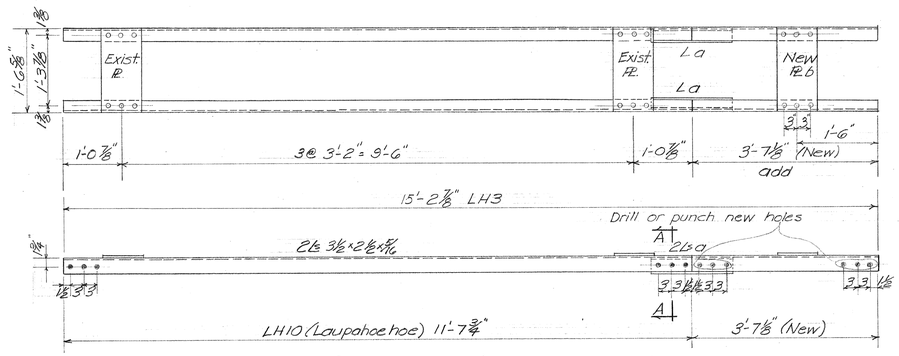
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	HAW.	SDR-3(13)	1960	75C	204

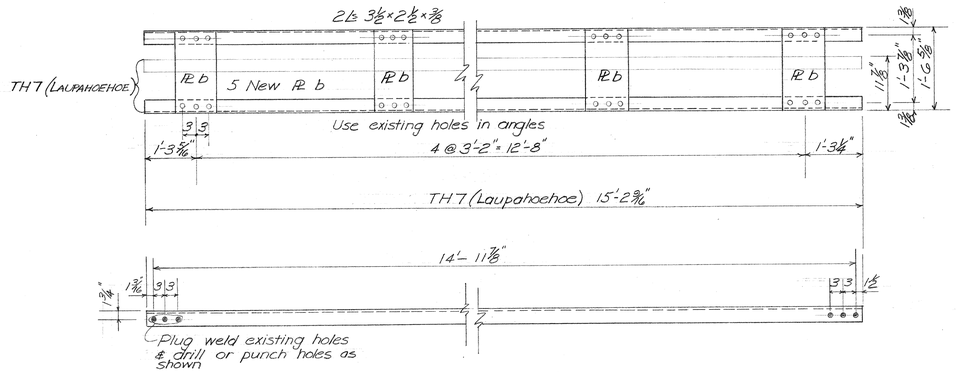
Inserted 12/19/59

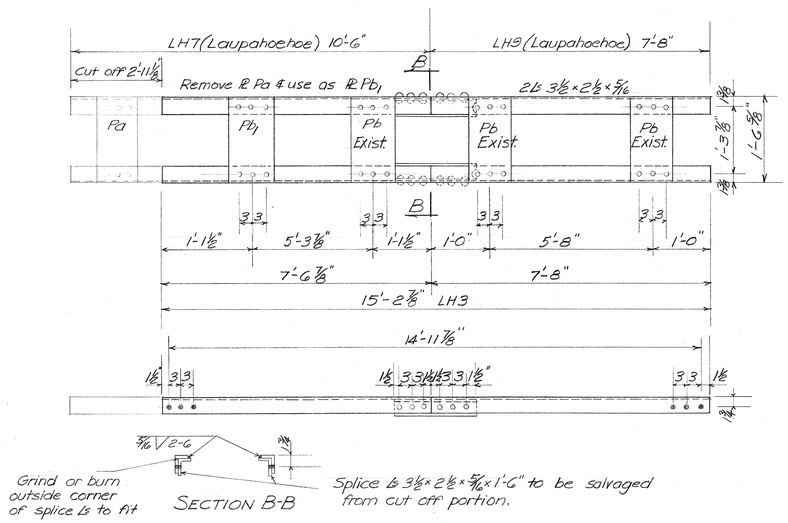
BILL OF MATERIAL

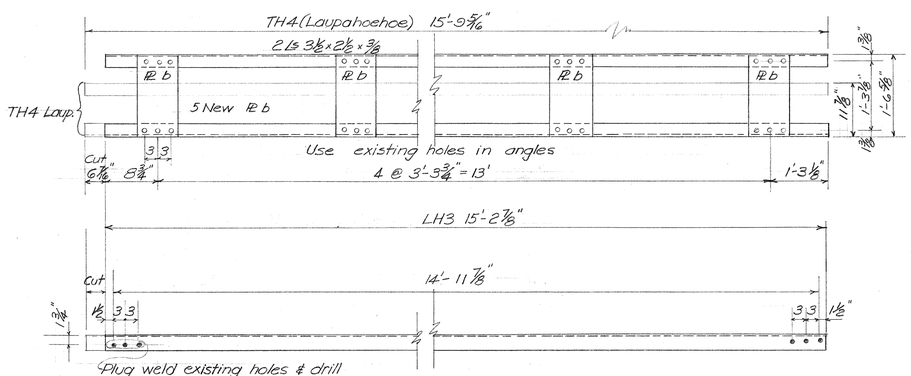
NO.	DESCRIPTION	LENGTH FT.	LENGTH IN.	MARK	REMARKS
NOTE: REVAMP THE MATERIAL LISTED BELOW A.S. ON THE DETAILS					
1	HANGAR	11	8 3/8	LH8	LAUPAHOEHOE
1	DO	11	7 1/4	LH10	DO
2	DO	15	2 3/8	TH7	DO
1	DO	10	6	LH7	DO
1	DO	7	8	LH9	DO
1	DO	15	9 5/8	TH7	DO
NEW MATERIAL IS LISTED BELOW:					
4	L 3 1/2 x 2 1/2 x 5/16	1	6	a	
29	PL 9 x 5/16	1	6 3/8	b	
2	BRACE			DB48E	
8	L 3 x 3 x 3/8	0	9	c	
4	L 5 x 3 x 3/8	23	10	d	

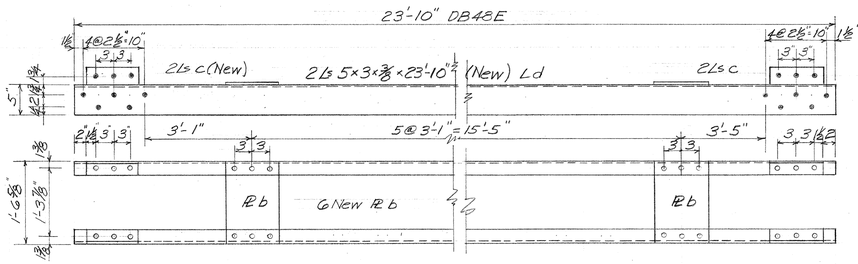












Rivets 3/4" ϕ
Holes 13/16" ϕ
All open holes 15/16" ϕ

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

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

NANUE BRIDGE
STA. 0+48.83 TO 5+80.16
HAWAII BELT ROAD SDR3(13)

SHEET No. OF SHEETS

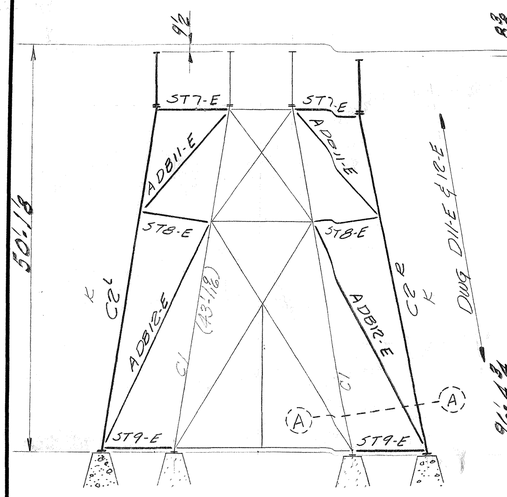
5468.75C

5468.75C

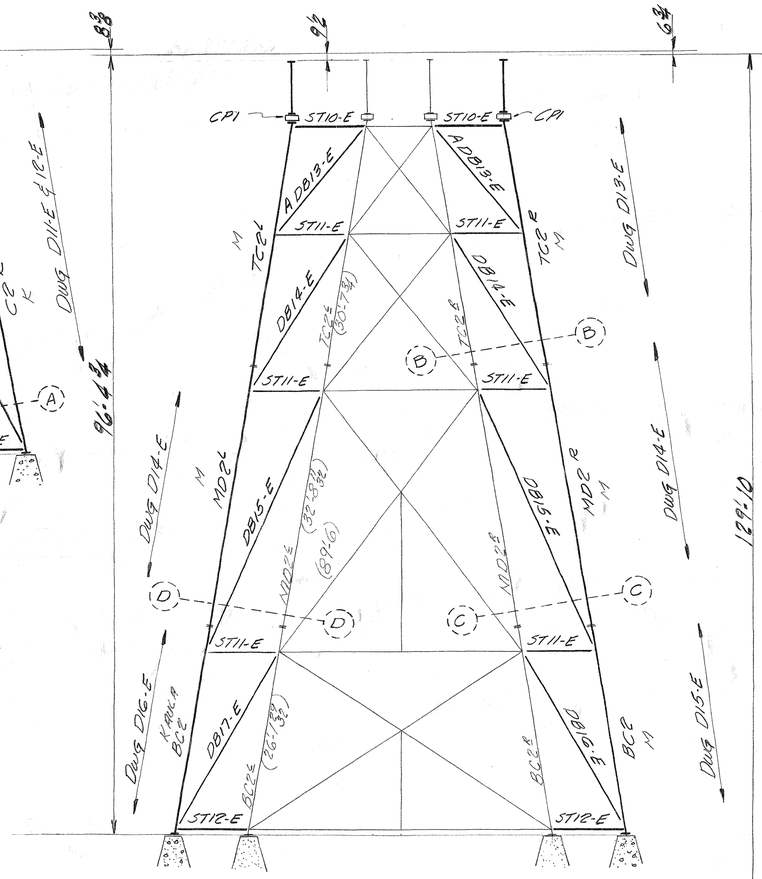
"IRENE" No. 1007 K & E CO., N.Y.
U.S.A.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	SDR 2(12)	1950	76	704

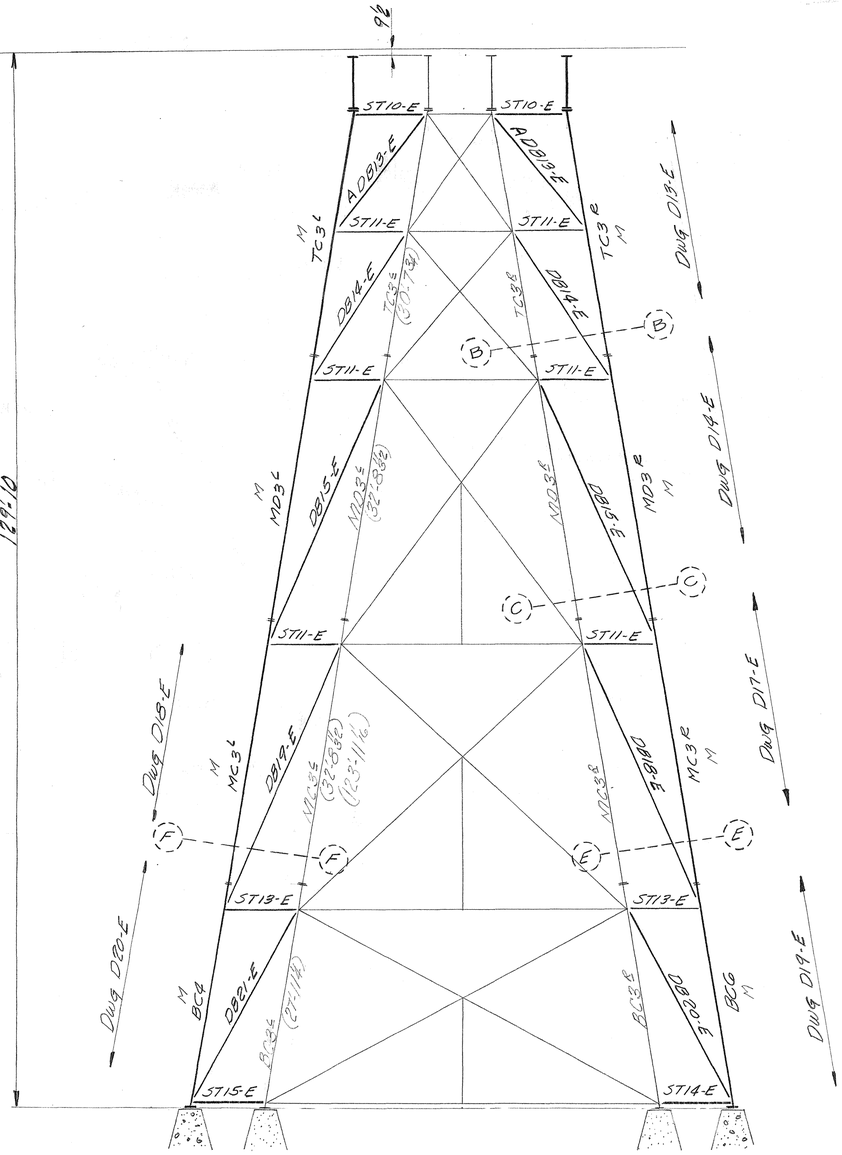
Order No. 3807 Sheet No. E2-E



BENT #1
(LOOKING NORTH)



BENT #2
(LOOKING NORTH)



BENT #3
(LOOKING SOUTH)

Rivets: 3/4"
Holes: 15/16"
Paint:

INDUSTRIAL DEV. CO.
ADDITION TO THE NANUE
BRIDGE - HAWAII -

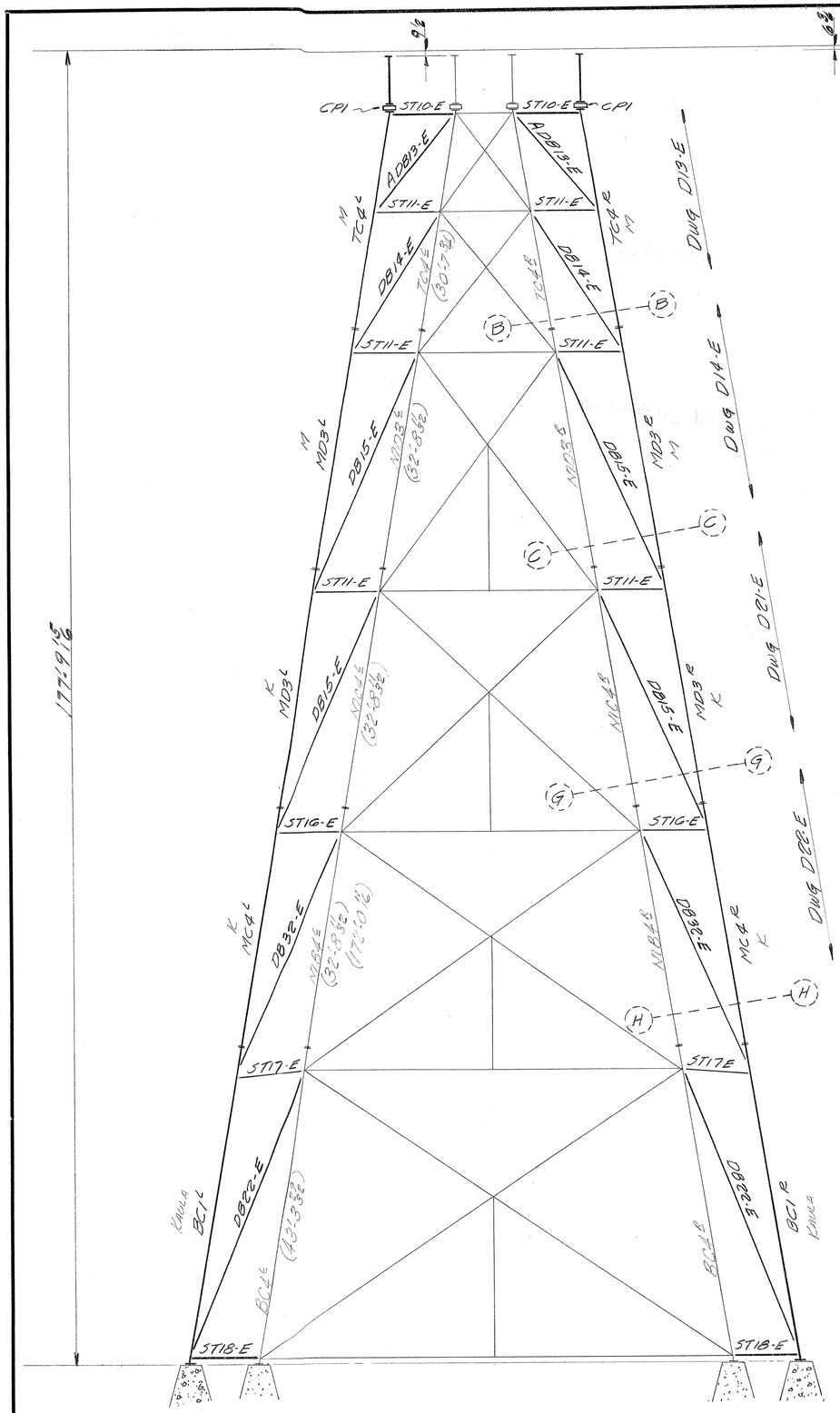
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	SEE DR	11-15-49	ORDER NO.	3807
CHECKED BY	RA	2-20-50	SHEET NO.	E2-E

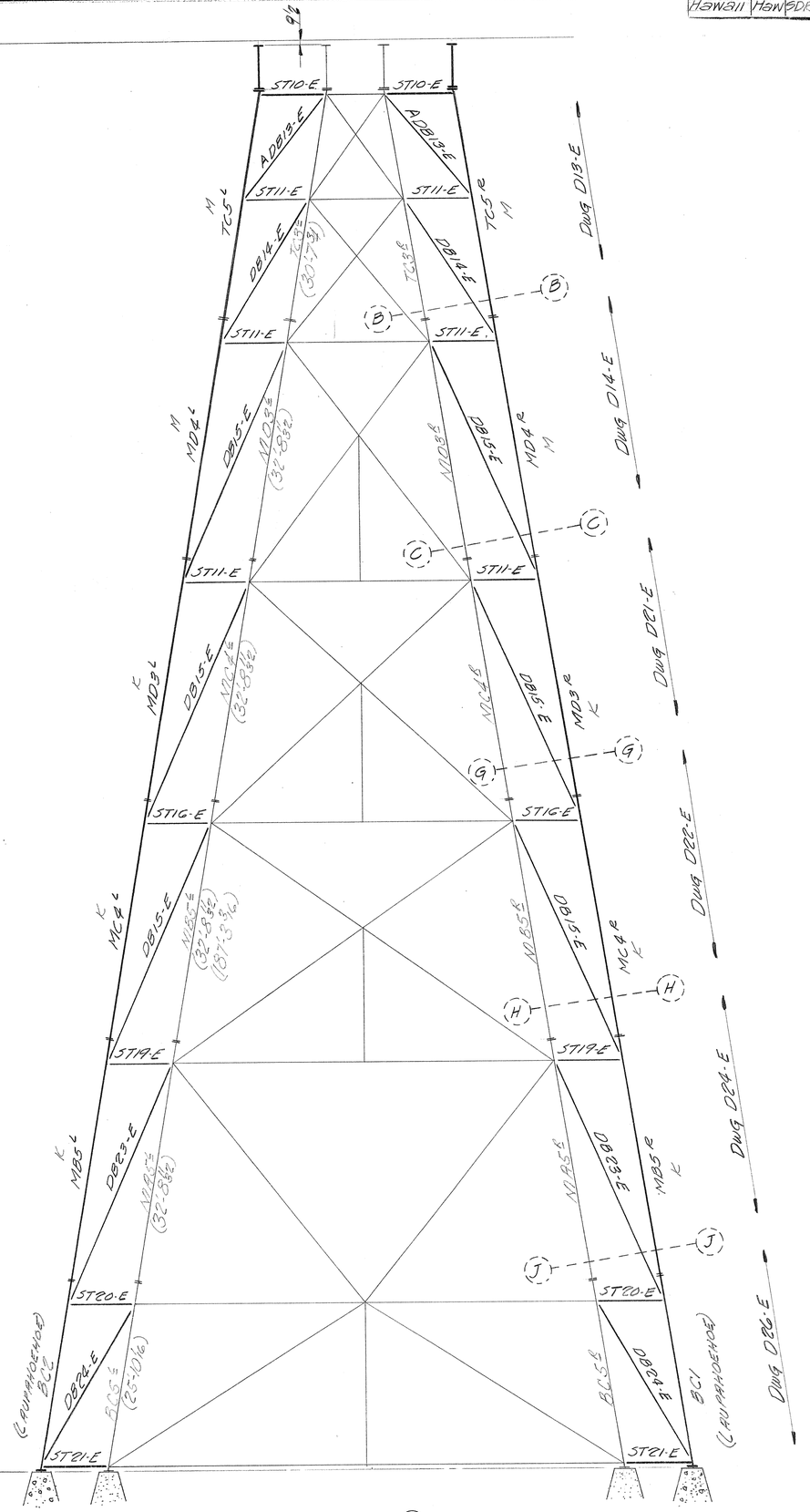
5 4 6 8 . 7 6

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HSW311	HSW	SDRE 3(13)	1950	77	1104

Order No. 3807 Sheet No. E3-E



BENT # 4
(LOOKING NORTH)



BENT # 5
(LOOKING SOUTH)

Rivets: 78 "
Holes: 15 "
Paint:

INDUSTRIAL DEV. CO.
ADDITION TO THE NANUE
BRIDGE - HAWAII -

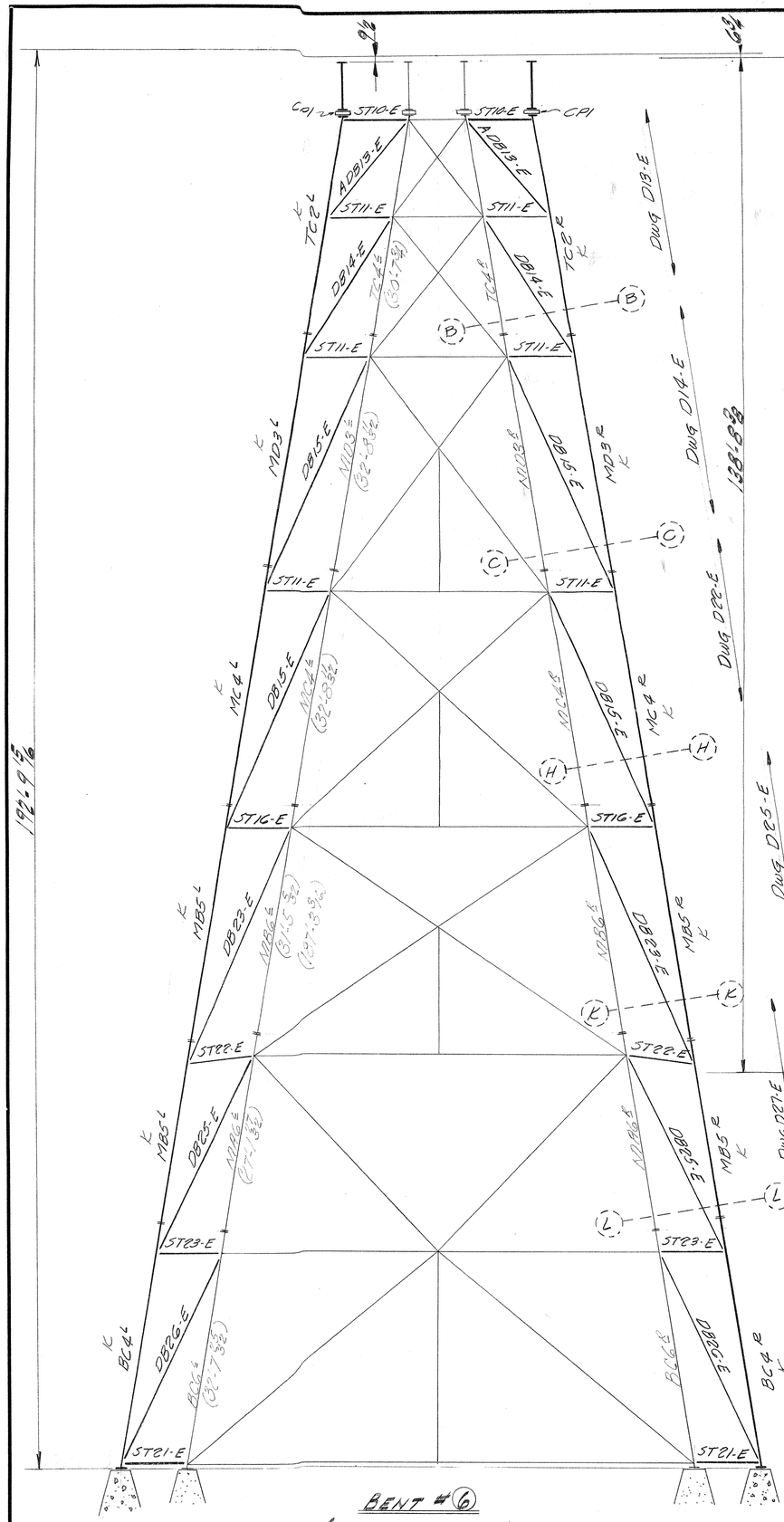
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	SEE DM	11-15-49	ORDER NO.	3807
CHECKED BY	RA	2-20-50	SHEET NO.	E3-E

54G.77 77

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR 3(19)	1950	78	304

Order No. 3807 Sheet No. E4-E



BENT #6
(LOOKING NORTH)

BENT #7
(LOOKING SOUTH)

BENT #8
(LOOKING NORTH)

BENT #9
(LOOKING SOUTH)

Rivets: ⅜"
Holes: 15/16"
Paint:

INDUSTRIAL DEV. CO.
ADDITION TO THE NANUE
BRIDGE - HAWAII -

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	SEE QW	11-16-49	ORDER NO.	3807
CHECKED BY	RA	2-20-50	SHEET NO.	E4-E

54GS.7S TD 78

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO	FISCAL YEAR	SHEET NO	TOTAL SHEETS
Hawaii	Haw	ODR3(13)	1950	79	304

Order No. 3807 Sheet No. E5-E

528:0 OUT TO OUT OF STEEL

51:0 | 50:0 | 40:0 | 72:0 | 40:0 | 72:0 | 40:0 | 72:0 | 40:0 | 51:0

C2L C2R | BC2 (R.) BC2 (NR.) | BC6 BC4 | BC1L BC1R | BC1 BC2 | BC4L BC4R | BC2R BC2L | BC3L BC3R | C1R C1L

BENT 1 | BENT 2 | BENT 3 | BENT 4 | BENT 5 | BENT 6 | BENT 7 | BENT 8 | BENT 9

ABUTMENT | ABUTMENT

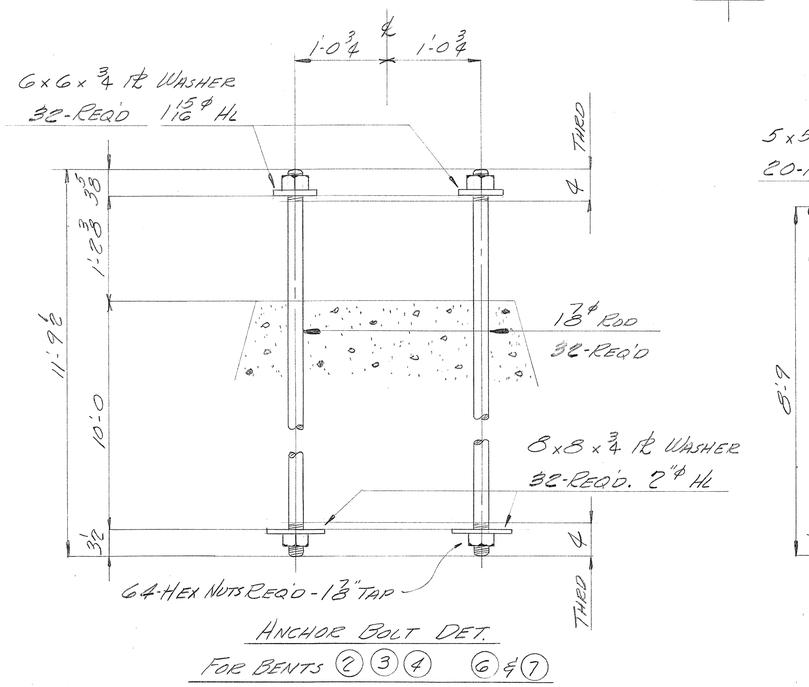
TO HILO | TO PAAUILO

℄ GIRDERS | ℄ GIRDERS

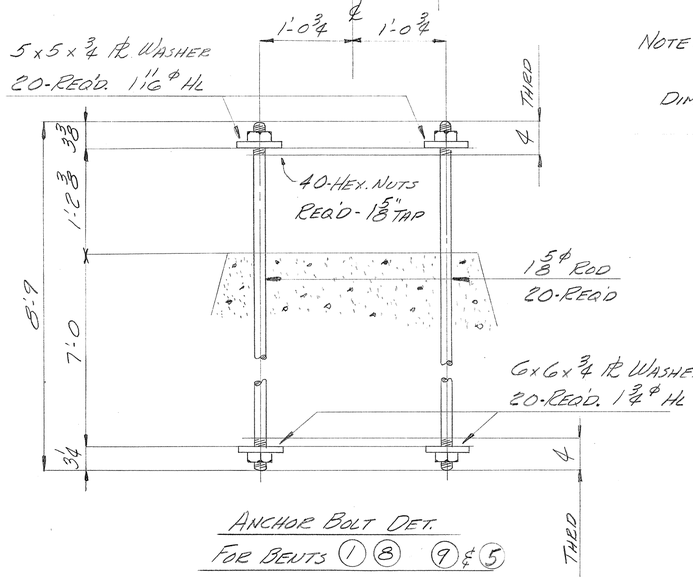
℄ BRIDGE

N

℄ LP-E | ℄ LP-E | ℄ LP-E



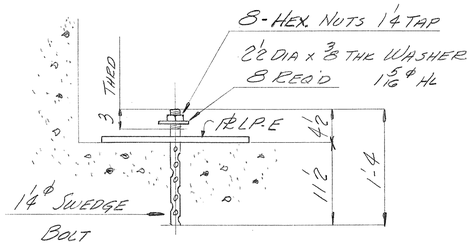
ANCHOR BOLT DET.
FOR BENTS (2) (3) (4) (6) & (7)



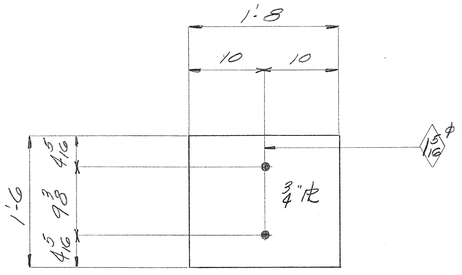
ANCHOR BOLT DET.
FOR BENTS (1) (8) (9) & (5)

NOTE:

DIM'S. GIVEN ON PLAN ARE FOR COL. BASE ℄'s.



ANCHORAGE FOR ABUTMENT



4-℄'s REQ'D MK LP-E

Rivets:
Holes:
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NAHUE BRIDGE
HAWAII

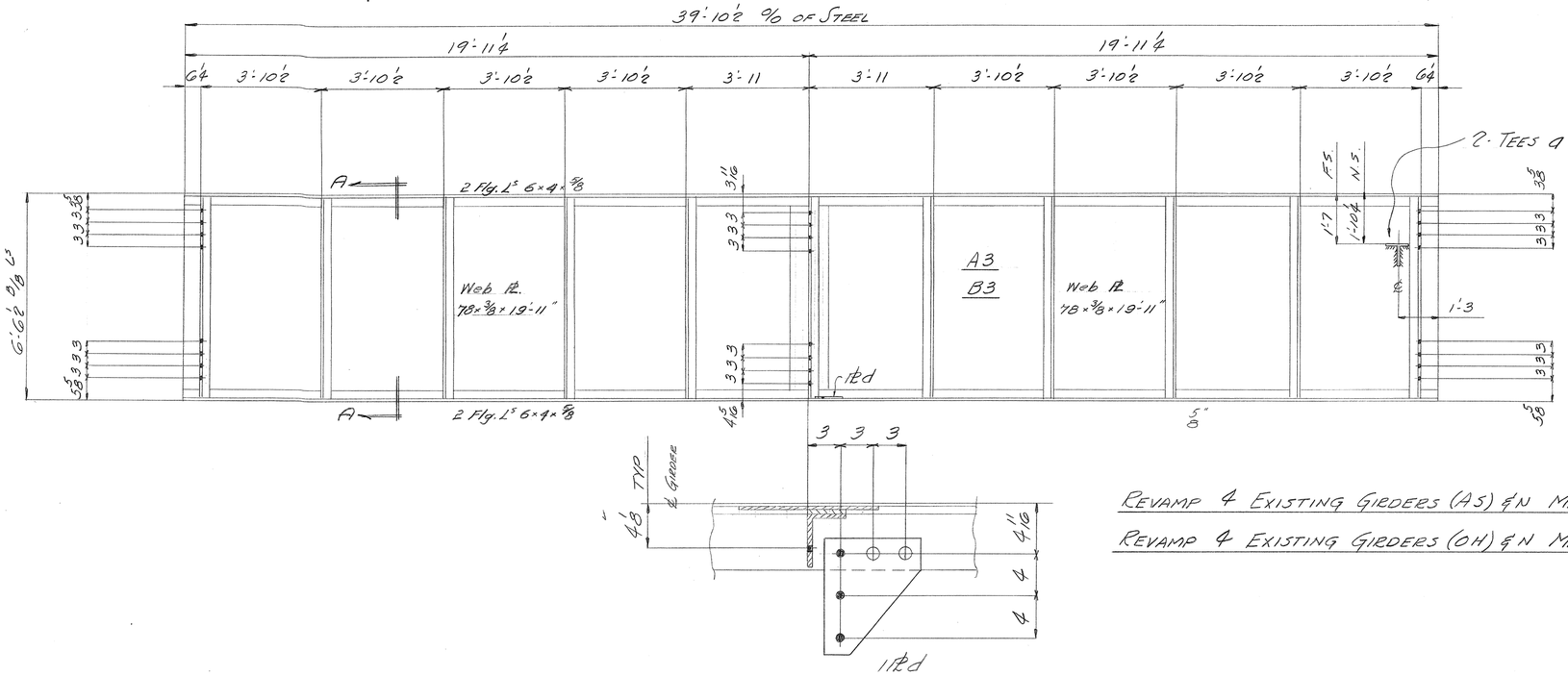
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	1-17-50	ORDER NO.	3807
CHECKED BY	RA	2-20-50	SHEET NO.	E5-E

5 4 6 8 . 7 9

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII 11	HAW	BDR 2(13)	1950	80	304

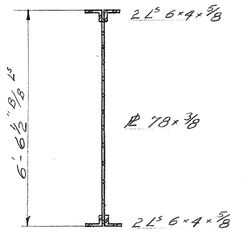
Order No. 3807 Sheet No. D1-E



REVAMP 4 EXISTING GIRDERS (AS) & N MK B3

REVAMP 4 EXISTING GIRDERS (OH) & N MK A3

PLAN VIEW OF BOTTOM CHORD



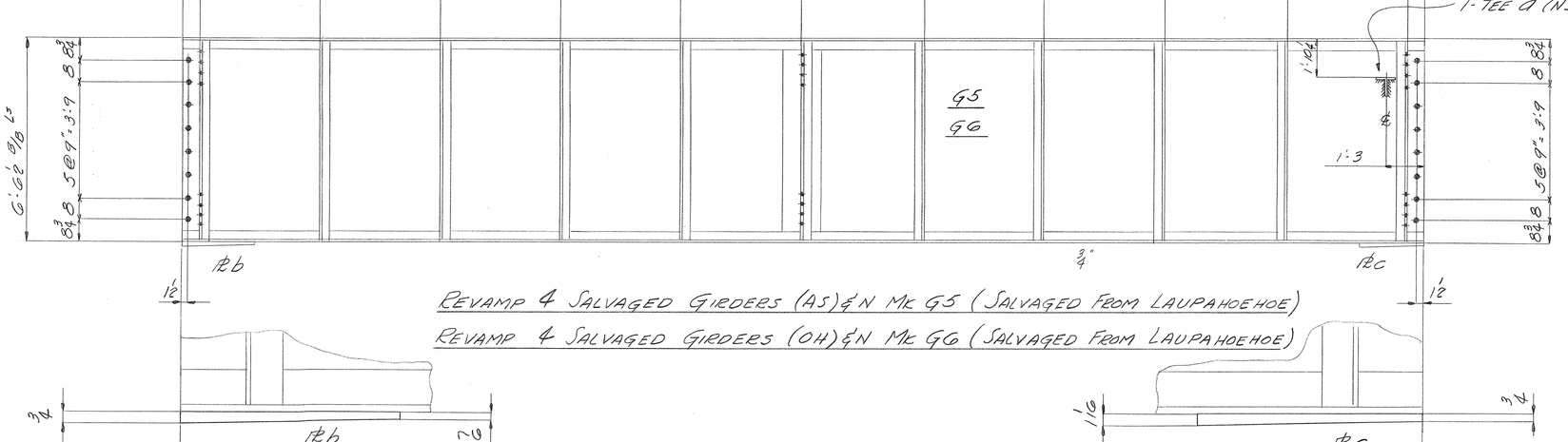
SECTION A-A

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT COMPANY

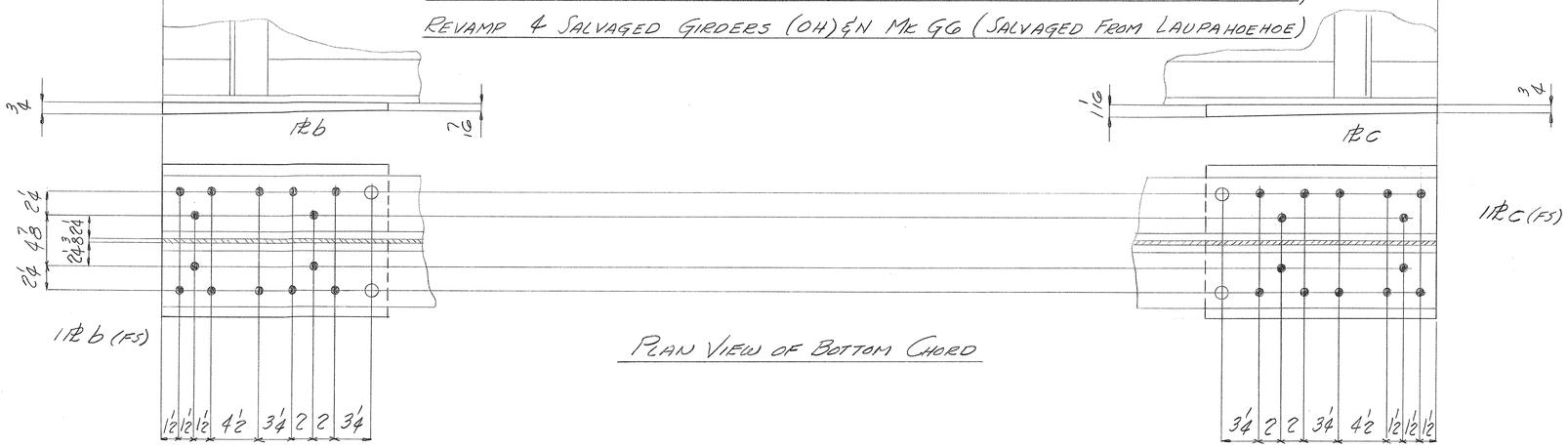
No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
8	EXIST. GIRDERS			A3 & B3	
	REVAMP AS. ON DETAIL				
8	SALV. GIRDERS			G5 & G6	
	REVAMP AS. ON DETAIL				
	SALVAGE FROM LAUPAHOEHOE				
24	ST. GWF 22.5		6	a	PLAIN
8	Pl 14×⅜	1	9	b	BEVEL TEMP
8	Pl 13×1/16	1	9	c	BEVEL TEMP
8	Pl 9×1/16		11	d	TEMP

NEW

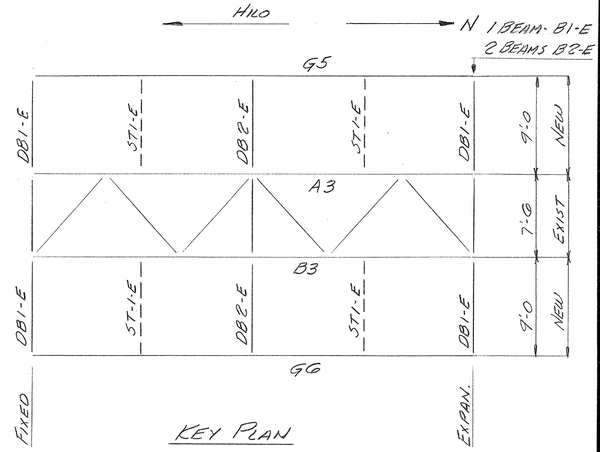


REVAMP 4 SALVAGED GIRDERS (AS) & N MK G5 (SALVAGED FROM LAUPAHOEHOE)

REVAMP 4 SALVAGED GIRDERS (OH) & N MK G6 (SALVAGED FROM LAUPAHOEHOE)



PLAN VIEW OF BOTTOM CHORD



KEY PLAN

Rivets: ⅞ ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	11-23-49	ORDER NO.	3807
CHECKED BY	DM	1-23-50	SHEET NO.	D1-E

54GS.80

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HSHW811	HSW	SDR2(13)	1950	81	304

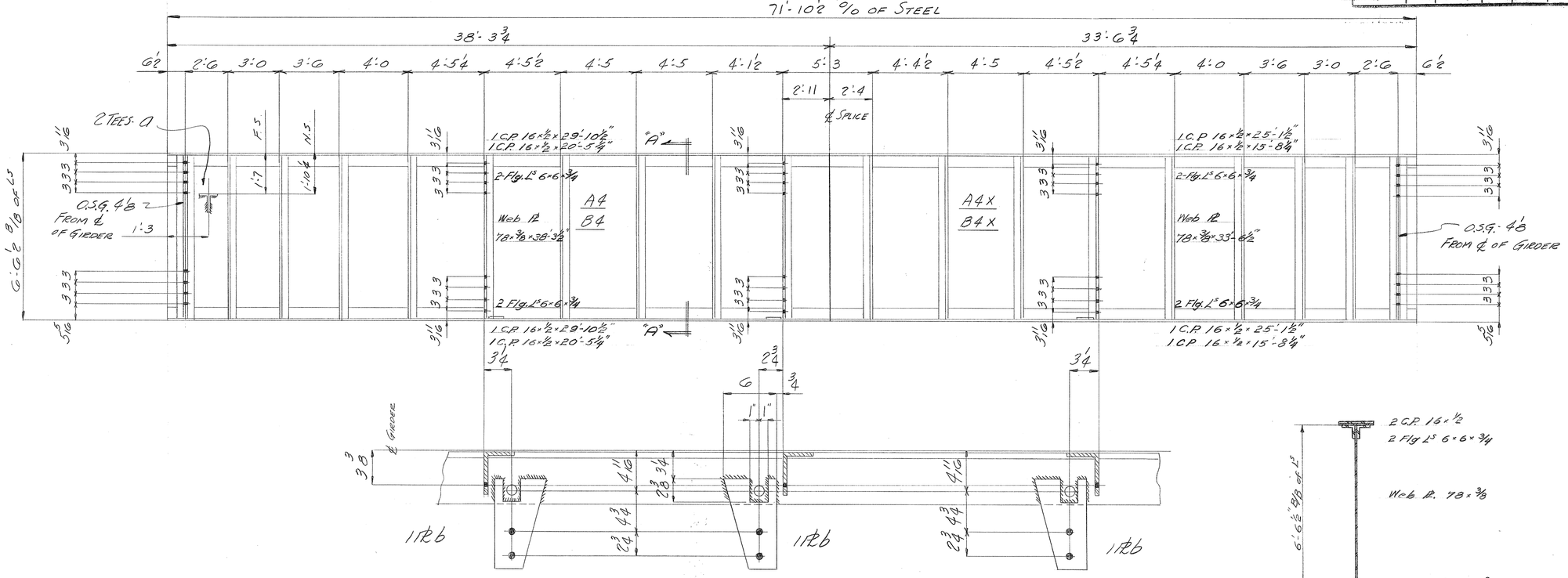
Order No. 3807 Sheet No. 02-E

BILL OF MATERIAL

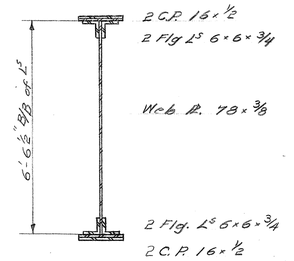
INDUSTRIAL DEVELOPMENT COMPANY

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
6	EXIST. GIRDERS			B4 & B4X	
	REVAMP A.S. ON DET.				
6	EXIST. GIRDERS			A4 & A4X	
	REVAMP A.S. ON DET.				
2	SALV. GIRDER			A4 & A4X	
	REVAMP A.S. ON DET				
	SALVAGE FROM ~~MAILE~~ KAULA				
2	SALV GIRDER			B4 & B4X	
	REVAMP A.S. ON DET				
	SALVAGE FROM ~~MAILE~~ KAULA				
14	ST. GUIDE 22.5		6	a	PLAIN
18	PL 6 x 3/16		10½	b	TEMP
2	PL 14½ x ¾	1	4	c	BEVEL TEMP
2	PL 14 x 13/16	1	2½	d	BEVEL TEMP

NEW



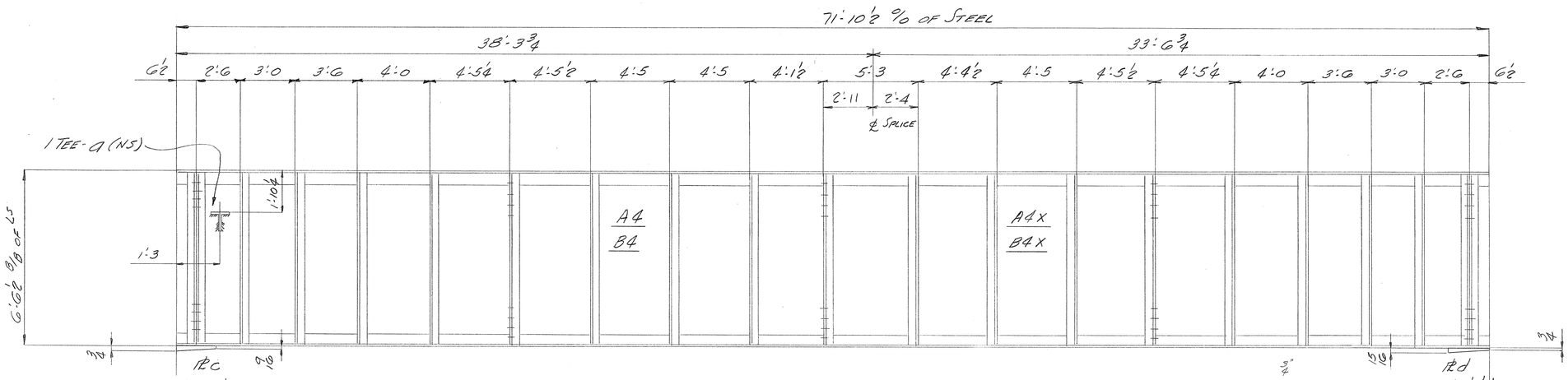
PLAN VIEW OF BOTTOM CHORD

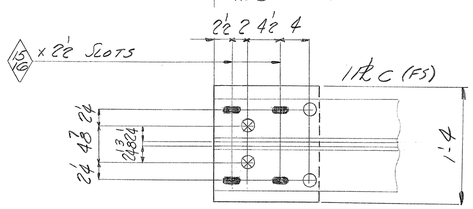


SECTION A-A

REVAMP 6 EXISTING GIRDERS (A5) & N MK B4 & B4X

REVAMP 6 EXISTING GIRDERS (OH) & N MK A4 & A4X

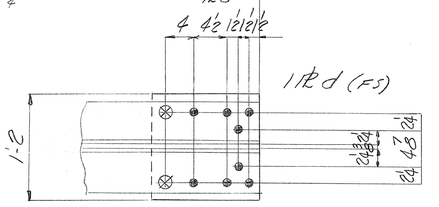




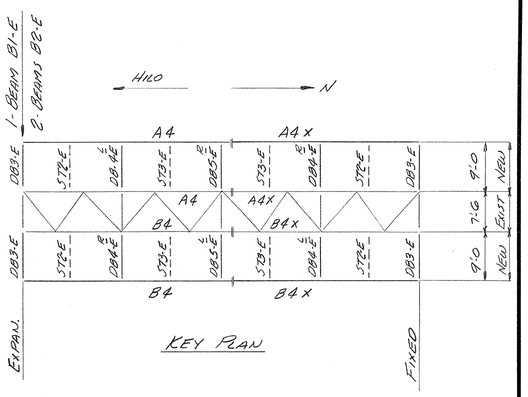
PLAN VIEW OF BOTT CHORD

REVAMP 2 SALVAGED GIRDERS (A5) & N MK A4 & A4X (SALVAGED FROM ~~MAILE~~ KAULA)

REVAMP 2 SALVAGED GIRDERS (OH) & N MK B4 & B4X (SALVAGED FROM ~~MAILE~~ KAULA)



PLAN VIEW OF BOTT CHORD



KEY PLAN

Rivets: ⅞ ϕ

Holes: 1⅛ ϕ U.N

Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE

HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	11-25-49	ORDER NO.	3807
CHECKED BY	DM	1-24-50	SHEET NO.	02-E

5468.81

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HI-EW-811	HI-EW	SDR-3(6)-950	82	704	

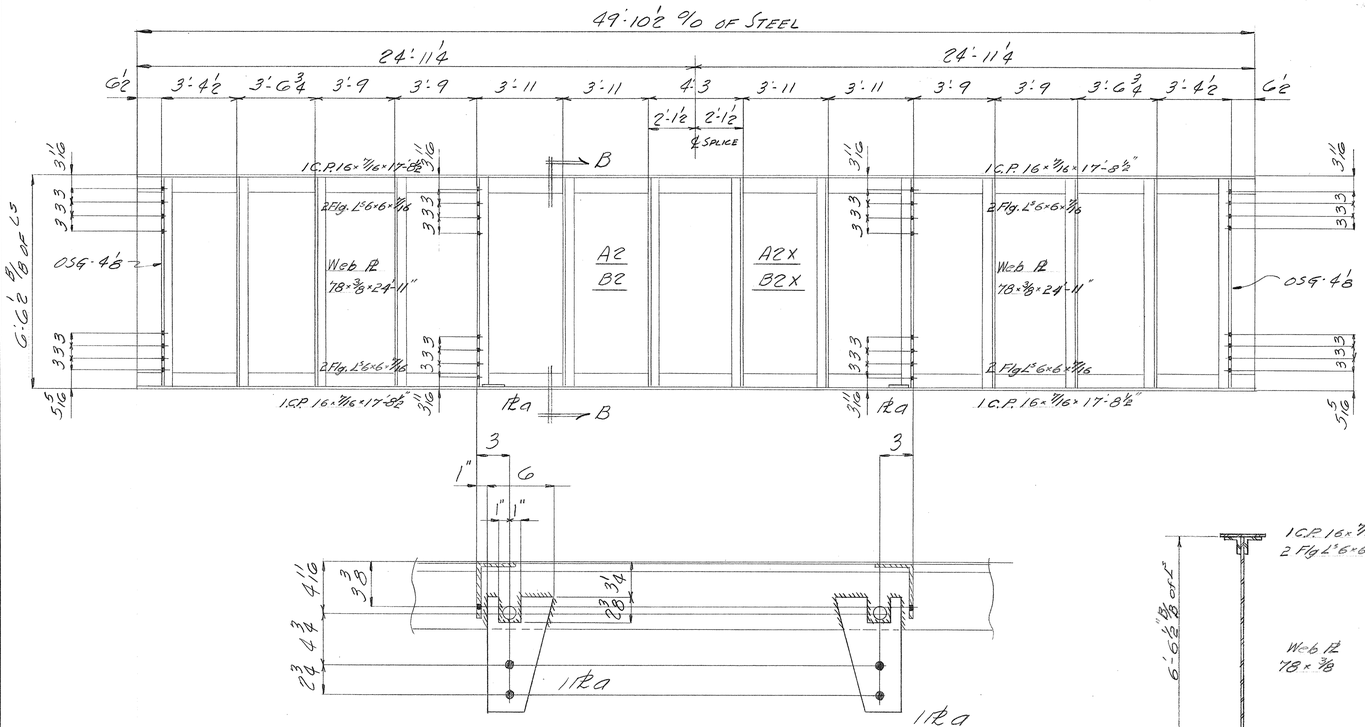
Order No. 3807 Sheet No. 03-E

BILL OF MATERIAL

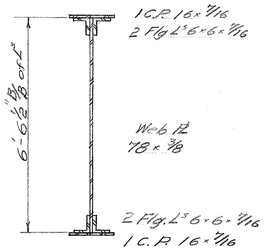
INDUSTRIAL DEVELOPMENT COMPANY

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
2	EXIST. GIRDER			A2 & A2X	
	REVAMP A.S. ON DET				
2	EXIST. GIRDER			B2 & B2X	
	REVAMP A.S. ON DET				
2	SALV. GIRDER			A4 & A4X	
	REVAMP A.S. ON DET.				
	SALVAGE FROM ~~KEALAHAKA~~ MAILE				
2	SALV GIRDER			B4 & B4X	
	REVAMP A.S. ON DET				
	SALVAGE FROM ~~KEALAHAKA~~ MAILE				
4	PL 6 x 5/8		10½	a	TEMP
4	PL 5½ x 3/8	6	4¾	b	FITTED
2	PL 4 x 5/16		10½	c	TEMP
2	PL 5 x 5/16		10	d	TEMP
2	PL 14½ x 3/4	1	4	f	BEVEL TEMP
2	PL 14 x 15/16	1	2½	g	BEVEL TEMP
8	PL 3 x 5/8	1	0	h	TEMP

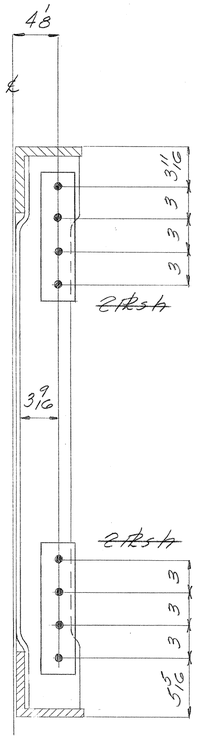
NEW



PLAN VIEW OF BOTTOM CHORD

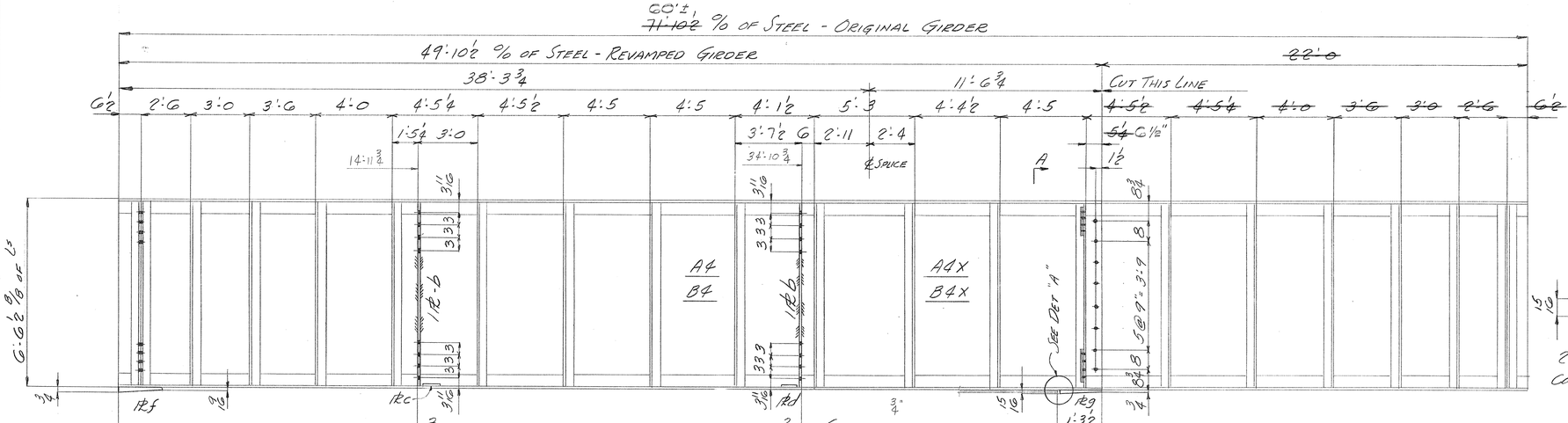


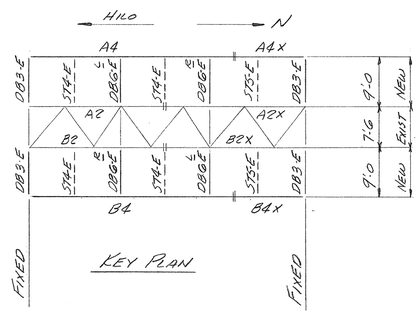
SECTION B-B



REVAMP 2 EXISTING GIRDERS (AS) & N MK B2 & B2X

REVAMP 2 EXISTING GIRDERS (OH) & N MK A2 & A2X





REVAMP 2 SALVAGED GIRDERS (AS) & N MK A4 & A4X
(SALVAGE FROM ~~KEALAHAKA~~ MAILE)

REVAMP 2 SALVAGED GIRDERS (OH) & N MK B4 & B4X
(SALVAGE FROM ~~KEALAHAKA~~ MAILE)

Rivets: 7/8
Holes: 15/16
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

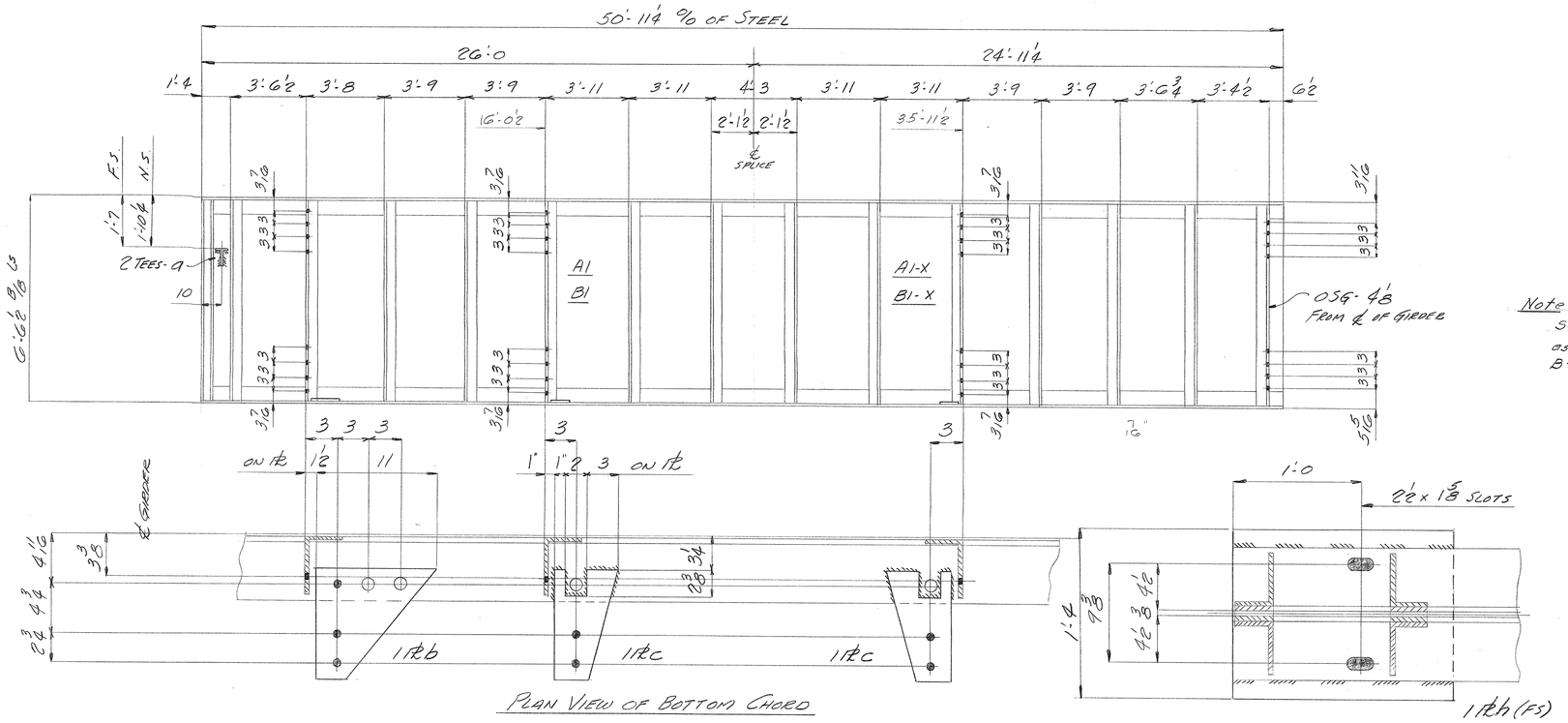
MADE BY	[illegible]	11-28-49	ORDER NO.	3807
CHECKED BY	OM	1-24-50	SHEET NO.	03-E

5465.82 sq ft

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	SDR-2(3)	1950	83	204

Order No. 3807 Sheet No. D4-E

a b c d f g h k m p s t



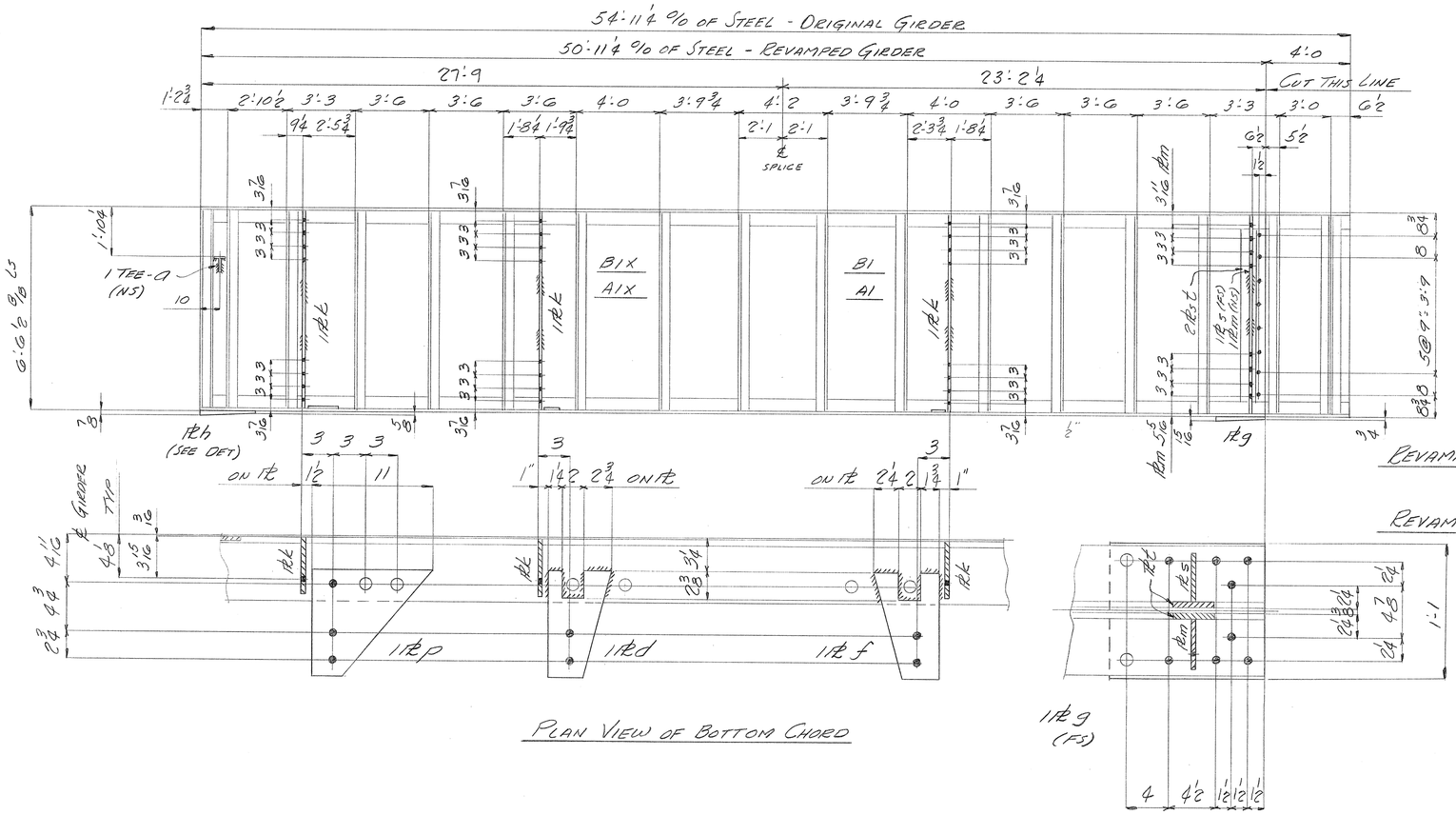
PLAN VIEW OF BOTTOM CHORD

DETAIL OF ℓth

REVAMP 2 EXISTING GIRDERS(AS)&N MK B1 & B1X

REVAMP 2 EXISTING GIRDERS(OH)&N MK A1 & A1X

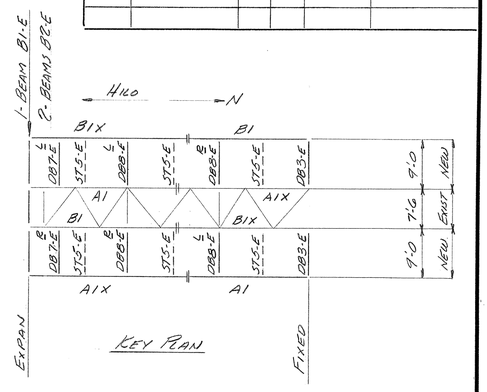
Note:
Section thru girder same as for 49'-10½" girder, section B-B Sht. D3-E.



PLAN VIEW OF BOTTOM CHORD

REVAMP 2 SALVAGED GIRDERS(AS)&N) MK B1X & B1
(SALVAGE FROM KAULA)

REVAMP 2 SALVAGED GIRDERS(OH)&N MK A1X & A1
(SALVAGE FROM KAULA)



BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT COMPANY

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
2	EXIST. GIRDER			A1 & A1X	
	REVAMP AS ON DET.				
2	EXIST. GIRDER			B1 & B1X	
	REVAMP AS. ON DET				
2	SALV. GIRDER			A1 & A1X	
	REVAMP AS. ON DET				
	SALVAGE FROM KAULA				
2	SALV. GIRDER			B1 & B1X	
	REVAMP AS ON DET				
	SALVAGE FROM KAULA				
6	ST GUF 22.5		6	a	PLAIN
2	PL 10½ x ⅜		11	b	TEMP
4	PL 6 x ⅜		10½	c	TEMP
2	PL 6 x 7/16		10½	d	TEMP
2	PL 6 x 5/16		10½	f	TEMP
2	PL 13 x 15/16	1	2½	g	BEVEL TEMP
2	PL 16 x ⅞	1	8¾	h	BEVEL TEMP
6	PL 5½ x ⅜	6	5¼	k	NEW
2	PL 5½ x ⅜	6	5¼	m	
2	PL 10½ x 7/16		11	p	TEMP
2	PL 5½ x ⅜	6	5¼	s	
4	PL 4 x ½	5	6¼	t	PLAIN

Rivets: ⅞"ϕ
Holes: 15/16"ϕ U.N.
Paint:

INDUSTRIAL DEVELOPMENT CO
ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	11-30-49	ORDER NO.	3807
CHECKED BY	DB	1-24-50	SHEET NO.	D4-E

54 68.83 TS 12

Order No. 3807 Sheet No. D5-E

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HBWB11	HBW	BDR3(13)	1950	84	404

a b c d f g h k

50'-11¼ % of Steel

24'-11¼ | 26'-0

6½ | 3'-4½ | 3'-6¾ | 3'-9 | 3'-9 | 3'-11 | 3'-11 | 4'-3 | 3'-11 | 3'-11 | 3'-9 | 3'-9 | 3'-8 | 3'-6½ | 1'-4

14'-11¾ | 2'-1½ | 2'-1½ | 34'-10¾

℄ Splice

N.S. 1:10½ | F.S. 1:7

2 Tees-a

058-4b

From ℄ of Girder 1:3

A5 / B5 | A5X / B5X

2 Tees-a

10

G:G½ 8/8 LS

Note: Section thru girder same as for 49'-10½" girder, section B-B Sht. D3-E.

℄ Girder

1Rb | 1Rb | 1Rc

Plan View of Bottom Chord

1Rm

Top

7/16" thk PL

4x4x3/4 LS

1Rp

B2-E 20-Beams Req'd x 8'-10

Revamp 2 Existing Girders(AS) ℄N Mk B5 ℄ B5X

Revamp 2 Existing Girders(OH) ℄N Mk A5 ℄ A5X

65'-11¼ % of Steel - Original Girder

50'-11¼ % of Steel - Revamped Girder

15'-0 | 19'-9 | 31'-2¼

Cut This Line

6½ | 3'-0 | 4'-0 | 4'-0 | 4'-0 | 4'-0 | 4'-0 | 4'-3½ | 4'-0 | 5'-3 | 4'-3½ | 4'-0 | 4'-0 | 4'-0 | 4'-0 | 4'-0 | 3'-2½ | 1'-4½

2'-1¾ | 1'-10½ | 2'-11 | 2'-4

℄ Splice

1 Tee-a (NS)

A2 / B2 | A1 / B1

1:3

10

G:G½ 8/8 LS

1Rg | 1Rd | 1Rf | 1Rh

2½ x 15/16 Slots

Cut Cover PL

Plan View Bottom Chord

Revamp 2 Salvaged Girders(AS) ℄N Mk B2 ℄ B1

(Salvage from Kealahaka)

Revamp 2 Salvaged Girders(OH) ℄N Mk A2 ℄ A1

(Salvage from Kealahaka)

Key Plan

Hilo — N

1 Beam B1-E | 2 Beams B2-E | 1 Beam B1-E | 2 Beams B2-E

Paint | Stg-E | Conc-E | Bridge-E | New | Exist

Expan | Fixed

Bill of Material

Industrial Development Company

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
2	Exist. Girder			B5 & B5X	
	Revamp A.S. on Det				
2	Exist Girder			A5 & A5X	
	Revamp A.S. on Det				
2	Salv. Girder			B2 & B1	
	Revamp A.S. on Det				
	Salvage from Kealahaka				
2	Salv. Girder			A2 & A1	
	Revamp A.S. on Det.				
	Salvage from Kealahaka				
20	Beams			B2E	
	Salv. from Kaula			(See Sht D10E)	
18	ST GWF 22.5		6	a	Plain
4	PL 6 x ½		10½	b	Temp
2	PL 10½ x ½		11	c	Temp
2	PL 6 x 5/16		10	d	Temp
2	PL 10½ x 5/16		11	f	Temp
2	PL 16 x ¾	1	4¾	g	Bevel Temp
2	PL 16 x ⅜	1	8¾	h	Bevel Temp
6	PL 5½ x ⅜	6	5	k	
20	PL 7⅜ x ⅜	8	10	m	Plain
20	PL 6¾ x ⅜	8	10	p	Plain
2	PL 4 x 5/16		10½	s	Temp

New

Rivets: ⅞ ϕ

Holes: 15/16 ϕ U.N.

Paint:

Industrial Development Co

Addition To Nanue Bridge

Hawaii

Independent Iron Works, Inc.
Oakland, Calif.

Made By	[illegible]	12-1-49	Order No.	3807
Checked By	OD	1-25-50	Sheet No.	D5-E

5468.84

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HBW-3(11)	HAW	SDR3(13)	1950	85	104

Order No. 3807 Sheet No. DG-E

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT COMPANY

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
4	SALV GIRDERS			G7 & G9	
	REVAMP AS ON DET				
	SALVAGE FROM LAUPAHOEHOE				
4	SALV GIRDERS			G8 & G10	
	REVAMP AS ON DET				
	SALVAGE FROM LAUPAHOEHOE				
4	ST GUSSETS			a	PLAIN
4	PL 6 x ¾	5	6⅜	b	PLAIN
2	PL 4¾ x ¾	6	4¾	c	
2	PL 4¾ x ¾	6	4¾	d	
8	PL 5½ x ⅜	6	4¾	f	
4	PL 14½ x ¾	1	4	g	BEVEL TEMP
2	PL 5⅜ x 15/16		10½	h	TEMP
2	PL 6 x 15/16		9¾	k	TEMP
2	PL 6 x 5/16		10½	m	TEMP
4	PL 14 x 15/16	1	2½	p	BEVEL TEMP
2	PL 5¾ x ⅜	6	5	s	
4	L 6 x 6 x ¾		5¾	t	PLAIN NEW
2	PL 5½ x ¾	6	4¾	v	
2	PL 5½ x ¾	6	4¾	w	
4	PL 5½ x ⅜	6	4¾	aa	
2	PL 6 x 15/16		10½	ab	TEMP
2	PL 6 x 5/16		9¾	ac	TEMP
2	PL 6 x 5/16		10½	ad	TEMP
4	L 6 x 6 x ¾		5¾	af & e	TEMP

72:6¾ % OF STEEL - ORIGINAL GIRDER
71:10½ % OF STEEL - REVAMPED GIRDER

CUT THIS LINE

33:2⅝ | 38:7⅞

2:11⅛ 3:0¼ 3:0¾ 4:8 4:10 4:10 4:0 4:3 4:1½ 5:3 4:0½ 4:3 4:3 4:0 4:10 4:8 3:0¾ 3:0¼ 3:0¾

4:3⅝ | 17:11¾ | 2:4 | 2:11 | 8⅜ SPLICE | 35:4¾ | 53:10⅝ | 1:2⅝ | 3:7⅜

G9 | G7

5@9"=3:9 = 3:9

1 TEE-G

TEE-G

1 PL d (FS) 1 PL c (NS) 2 PLS b

1 PL g | 1 PL f | 1 PL aa | 1 PL f | 1 PL p

ON PL 2 4 1¼ & GIRDERS

ON PL 2 4 1¾ & GIRDERS

REMOVE RIV TO CLEAR BRACE

1 PL h | 1 PL k | 1 PL m

PLAN VIEW OF BOTTOM CHORD

2 2½ x 15/16 SLOTS

1 PL g (FS) | 1 PL p (FS)

2 PLS t | 2 PLS af & e | 1 PL w (FS) | 1 PL v (NS) | 1 PL s

REVAMP 4 SALVAGED GIRDERS (O.H) & N MK G7 & G9 (SALVAGE FROM LAUPAHOEHOE)

71:4¾ % OF STEEL - ORIGINAL GIRDER
71:10½ % OF STEEL - REVAMPED GIRDER

33:9⅝ | 38:0⅞

3:6⅛ 3:0¼ 3:0¾ 4:8 4:10 4:0 4:3 4:1½ 5:3 4:0½ 4:3 4:3 4:0 4:10 4:8 3:0¾ 3:0¼ 2:5¾

3:8⅝ | 1:1⅜ | 2:4 | 2:11 | 1:3⅜ SPLICE | 7⅞ | 4:2⅜

G10 | G8

5@9"=3:9 = 3:9

1 TEE-G

1 PL w (FS) 1 PL v (NS) 1 PL s

2 PLS t | 2 PLS af & e

1 PL g | 1 PL f | 1 PL aa | 1 PL f | 1 PL p

ON PL 5 8 4 2 & GIRDERS

ON PL 2 2 2 2 7 8 & GIRDERS

ON PL 3 3 7 8 & GIRDERS

1 PL ab | 1 PL ac | 1 PL ad

PLAN VIEW OF BOTTOM CHORD

2 2 x 15/16 SLOTS

1 PL g (FS) | 1 PL p (FS)

REVAMP 4 SALVAGED GIRDERS (AS) & N MK G8 & G10 (SALVAGE FROM LAUPAHOEHOE)

Note: Section thru girder shown on sht DE-E

2 BEAMS 8"x21" 1 BEAM 8"x18"

HILO — N

G10 G8

A4 A4x B4 B4x

G9 G7

5@9"=3:9 = 3:9

FIXED

KEY PLAN

Rivets: ⅞"

Holes: 15/16" U.N.

Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	12-6-49	ORDER NO.	3807
CHECKED BY	DD	1-25-50	SHEET NO.	DG-E

5468.85

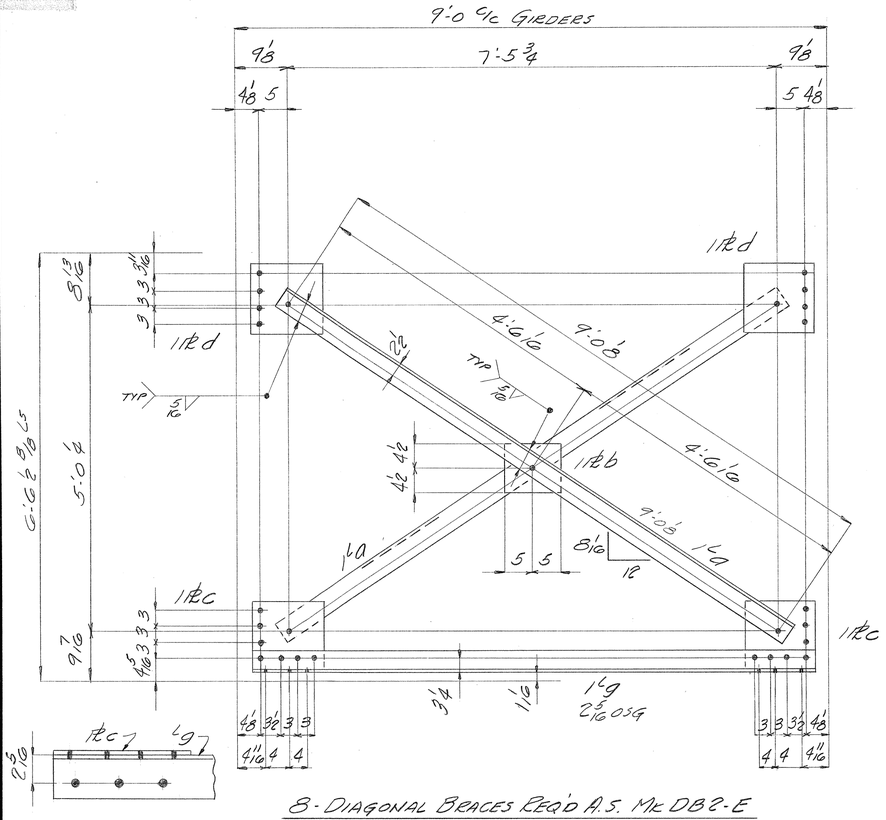
Order No. 3807 Sheet No. D7-E

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HEW	DR-2(12)	1950	86	304

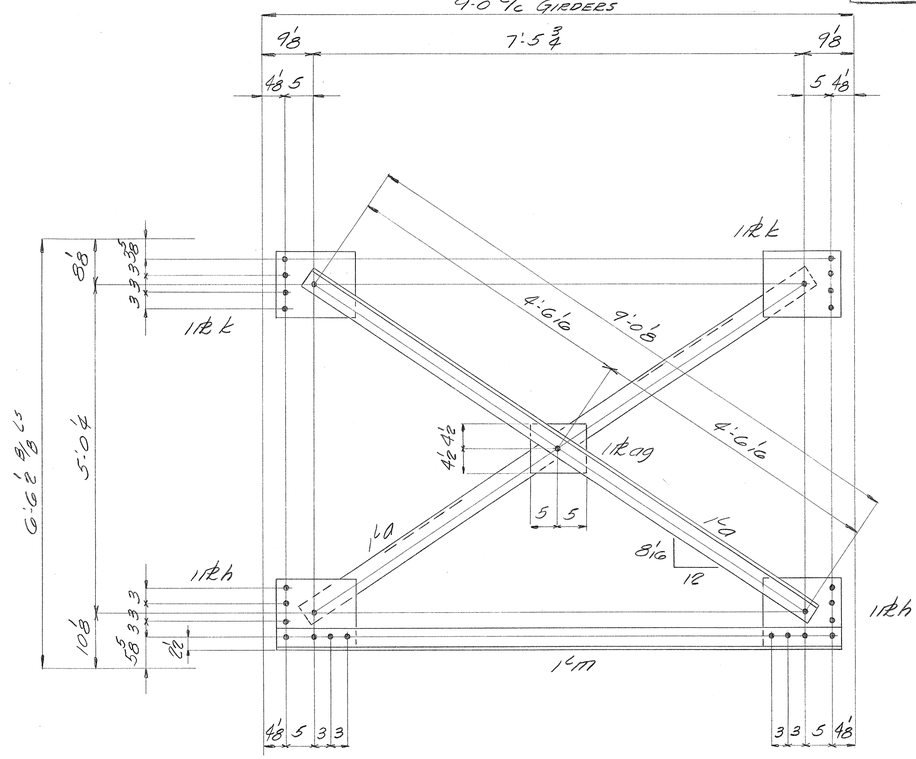
BILL OF MATERIAL
INDUSTRIAL DEVELOPMENT COMPANY

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
16	DIAG BRACES			DB1-E	
8	Do Do			DB2-E	
18	Do Do			DB3-E	
4	Do Do			DB4-E R L	
2	Do Do			DB5-E R L	
4	Do Do			DB6-E R L	
48	L 4x4x 3/8	9	3 3/8	a	SAME FROM TRUSS SEATING SEE DR. D10-E
8	L 4x4x 3/8	8	6 3/4	g	
16	L 4x4x 3/8	8	6 3/4	m	
20	L 4x4x 3/8	9	3 3/4	t	
4	L 4x4x 3/8	8	7 1/2	v R L	
2	L 4x4x 3/8	8	7 1/2	w R L	
4	L 4x4x 3/8	8	7 1/2	aa	
36	L 4x4x 3/8	9	2 5/8	ad	
18	L 4x4x 3/8	8	6 3/4	af	
18	PL 9 x 5/16		10	b	TEMP
16	PL 12 x 5/16	1	0 1/2	c	TEMP
16	PL 12 x 5/16	1	0 1/2	d	TEMP
32	PL 12 x 3/8	1	2	h	TEMP
32	PL 12 x 3/8	1	2	k	TEMP
10	PL 12 x 5/16	1	0 1/2	p	TEMP
10	PL 12 x 5/16	1	0 1/2	s	TEMP
36	PL 12 x 3/8	1	0 1/2	ab	TEMP
36	PL 12 x 3/8	1	0 1/2	ac	TEMP
34	PL 9 x 3/8		10	ag	TEMP
10	PL 12 x 5/16	1	0 1/2	ah	TEMP
10	PL 12 x 5/16	1	0 1/2	ak	TEMP

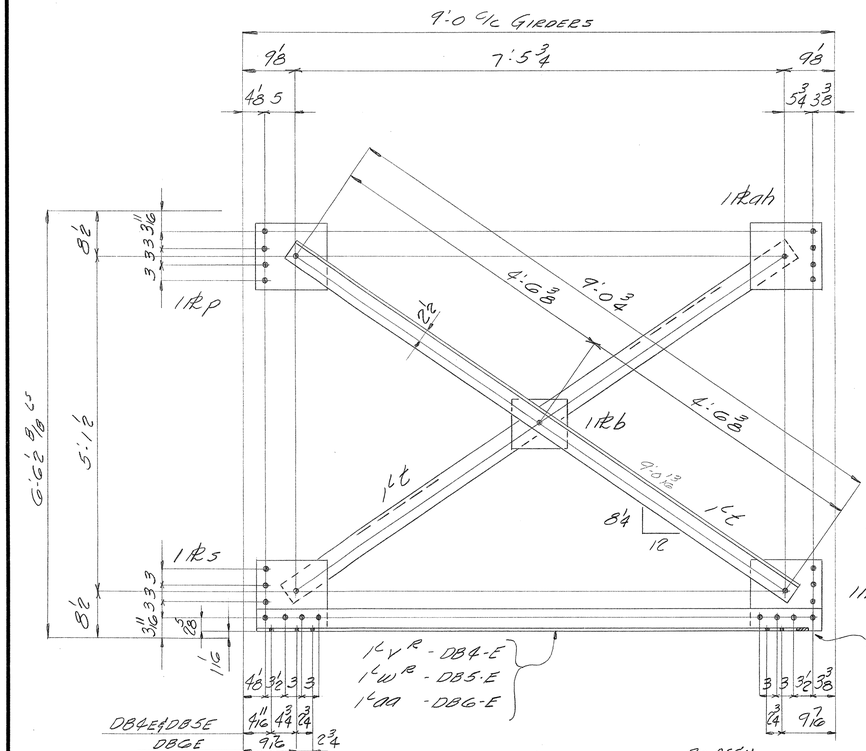
NEW PARTS



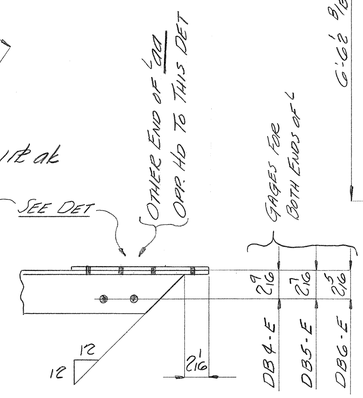
8 - DIAGONAL BRACES REQ'D A.S. MK DB2-E

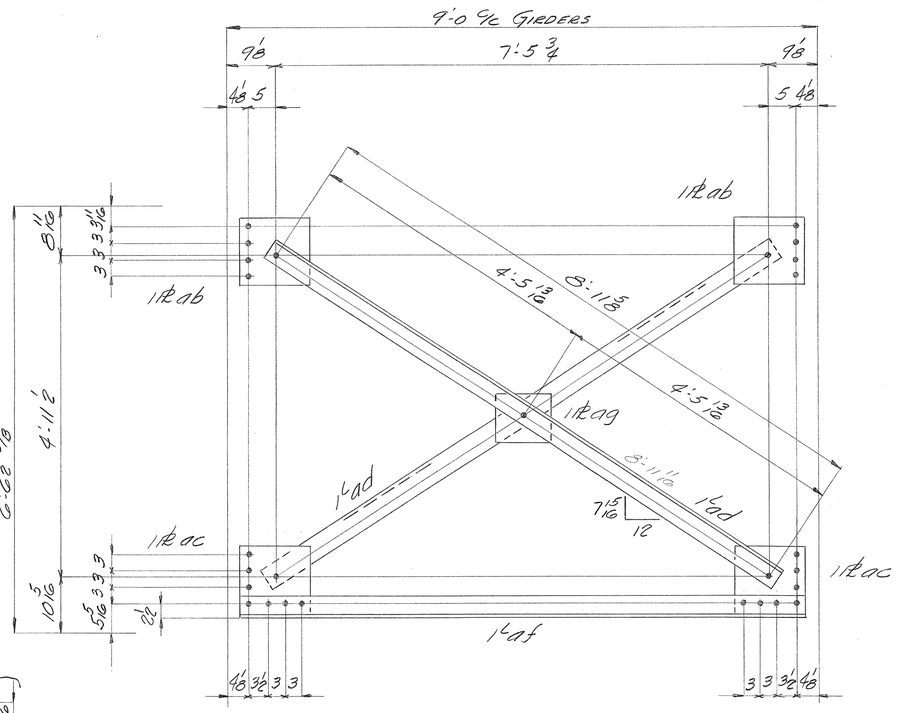


16 - DIAGONAL BRACES REQ'D A S MK DB1-E



4 - DIAGONAL BRACES REQ'D MK DB4-E R-AS'N L-OPP'N
2 - Do Do Do MK DB5-E R-AS'N L-OPP'N
4 - Do Do Do MK DBG-E R-AS'N L-OPP'N





18 - DIAGONAL BRACES REQ'D A.S. MK DB3-E

Rivets: 7/8
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE
HAWAII

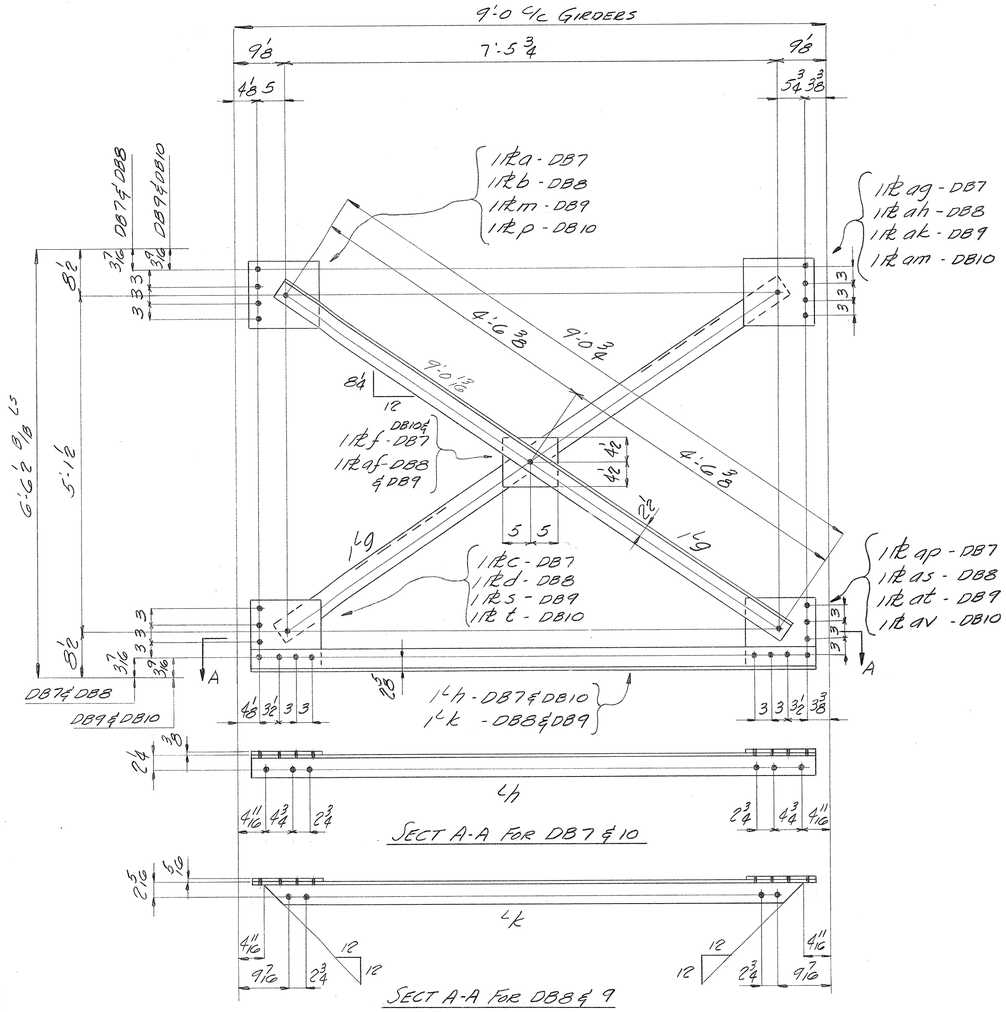
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	12-7-49	ORDER NO.	3807
CHECKED BY	DD	1-25-50	SHEET NO.	D7-E

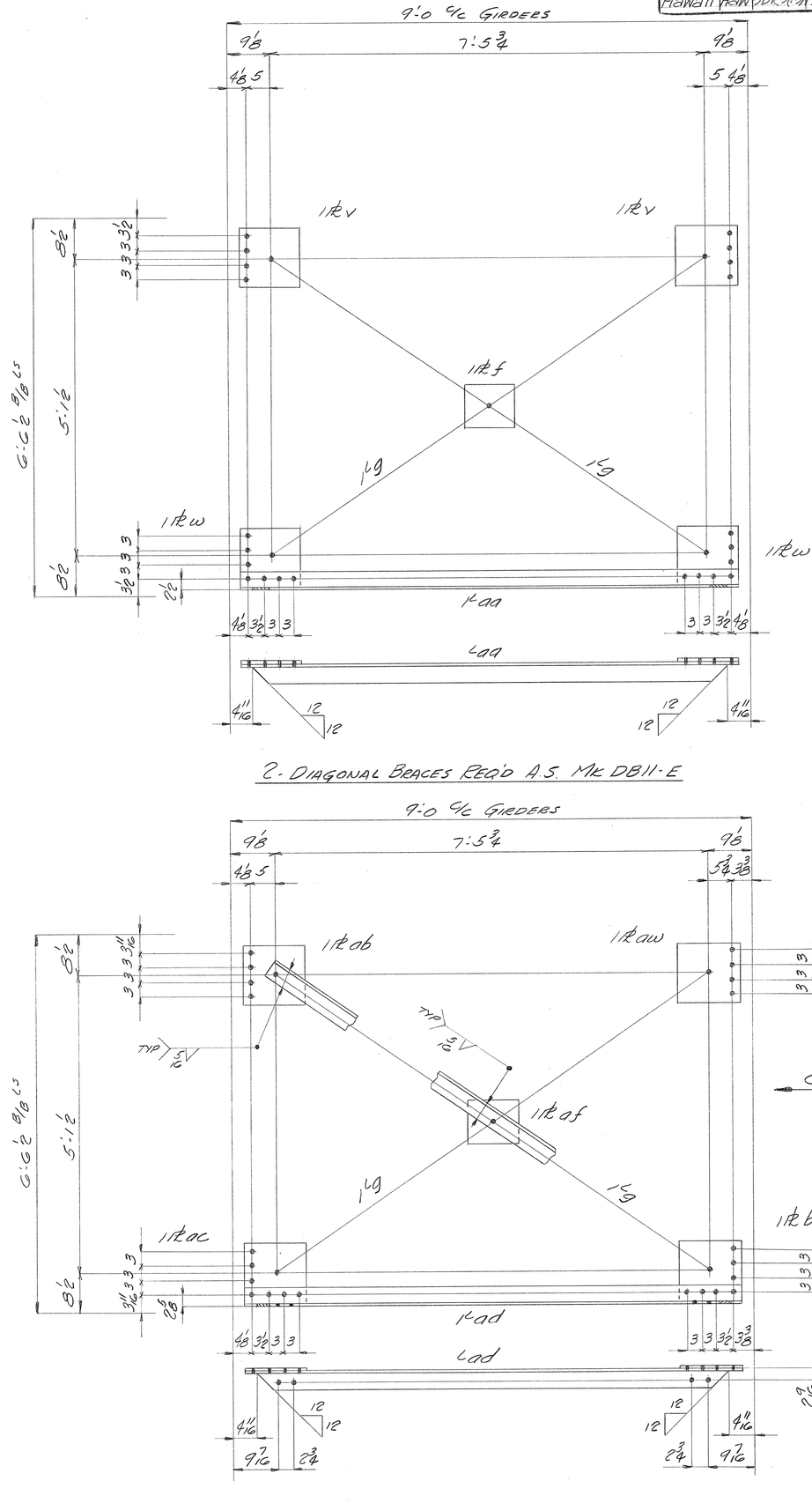
5465.86

Order No. 3807 Sheet No. DB-E

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	BDR-2(12)	1950	87	304



2 - DIAGONAL BRACES REQ'D				MK DB7-E R-ASGN L-OHGN
4 -	Do	Do	Do	MK DB8-E R-ASGN L-OHGN
4 -	Do	Do	Do	MK DB9-E R-ASGN L-OHGN
2 -	Do	Do	Do	MK DB10 E R-ASGN L-OHGN



2 - DIAGONAL BRACES REQ'D A.S. MK DB11-E

8 - DIAGONAL BRACES REQ'D A.S. MK DB12-E R-AS L-OH

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT COMPANY

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
2	DIAG. BRACES			DB7-E R L	
4	Do Do			DB8-E R L	
4	Do Do			DB9-E R L	
2	Do Do			DB10-E R L	
2	Do Do			DB11-E	
8	Do Do			DB12-E R L	
44	L 4x4x3/8	9	3 3/4	g	SEE FROM TABLE
4	L 4x4x3/8	8	7 1/2	h	BEARING SEE
8	L 4x4x3/8	8	7 1/2	k	SHT DIO-E
2	L 4x4x3/8	8	6 3/4	aa	
8	L 4x4x3/8	8	7 1/2	ad	
2	PL 12x3/8	1	0 1/2	a	TEMP
4	PL 12x5/16	1	0 1/2	b	
2	PL 12x3/8	1	0 1/2	c	
4	PL 12x5/16	1	0 1/2	d	
6	PL 9x3/8		10	f	
4	PL 12x5/16	1	0 1/2	m	
2	PL 12x3/8	1	0 1/2	p	
4	PL 12x5/16	1	0 1/2	s	
2	PL 12x3/8	1	0 1/2	t	
4	PL 12x3/8	1	0 1/2	v	
4	PL 12x3/8	1	0 1/2	w	
8	PL 12x5/16	1	0 1/2	ab	
8	PL 12x5/16	1	0 1/2	ac	
16	PL 9x5/16		10	af	
2	PL 12x3/8	1	0 1/2	ag	
4	PL 12x5/16	1	0 1/2	ah	
4	PL 12x5/16	1	0 1/2	ak	
2	PL 12x3/8	1	0 1/2	am	
2	PL 12x3/8	1	0 1/2	ap	
4	PL 12x5/16	1	0 1/2	as	
4	PL 12x5/16	1	0 1/2	at	
2	PL 12x3/8	1	0 1/2	av	
8	PL 12x5/16	1	0 1/2	aw	NEW MATL
8	PL 12x5/16	1	0 1/2	ba	

Rivets: 3/8
Holes: 15/16
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	12-8-49	ORDER NO.	3807
CHECKED BY	[illegible]	1-25-50	SHEET NO.	DB-E

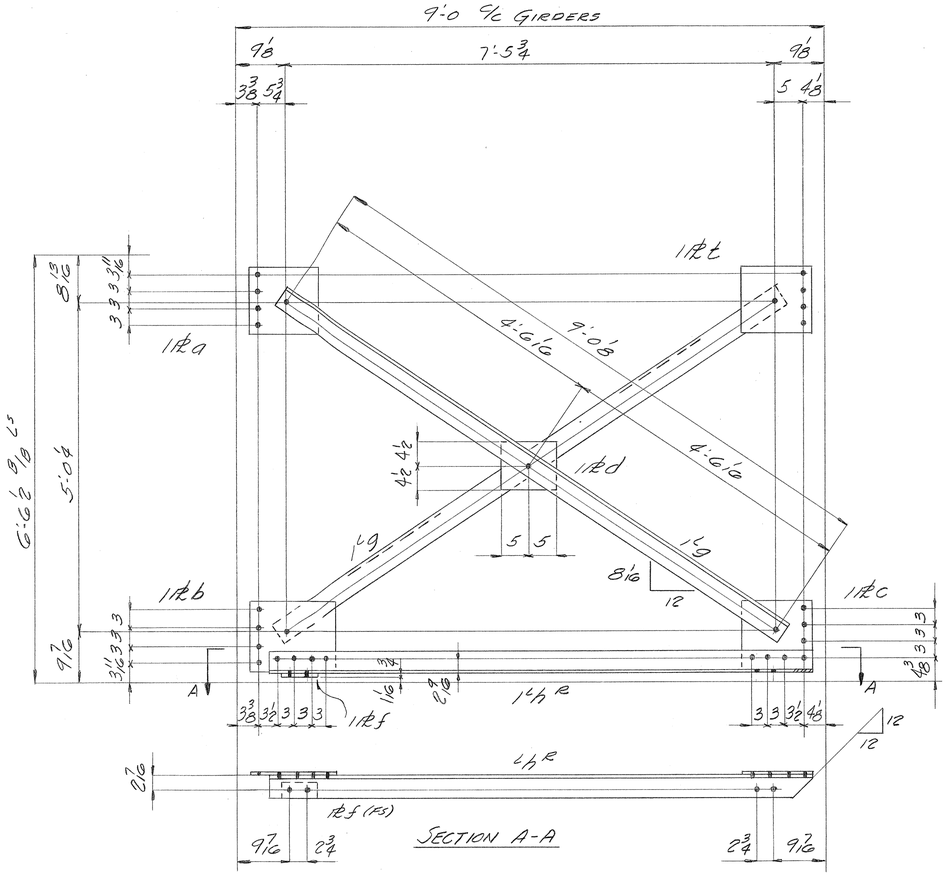
54GS.57

FED. ROAD DIST. NO.	STATE	FED. AID SEC. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHTS.
HBNEII	HAW	SDR 2(12)	1951	88	304

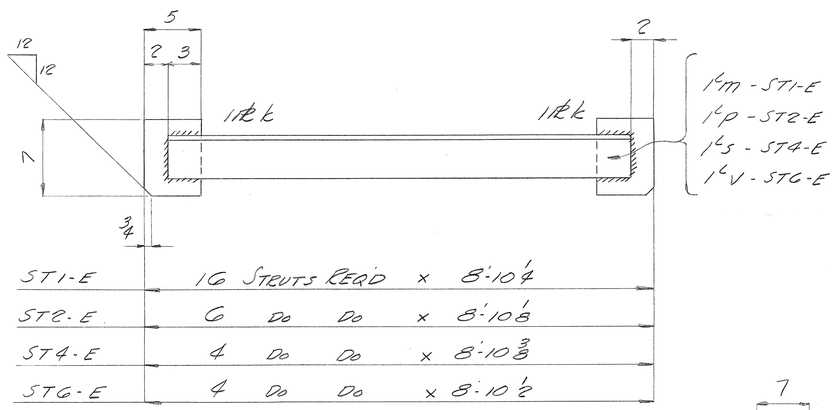
Order No. 3807 Sheet No. D9-E

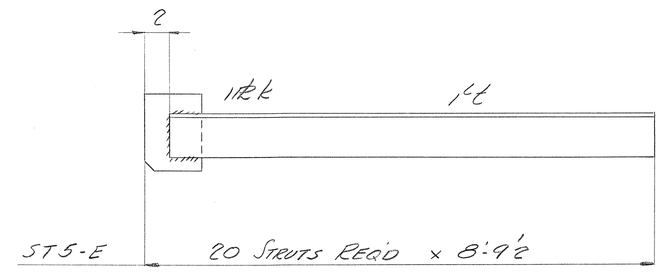
BILL OF MATERIAL — INDUSTRIAL DEVELOPMENT COMPANY

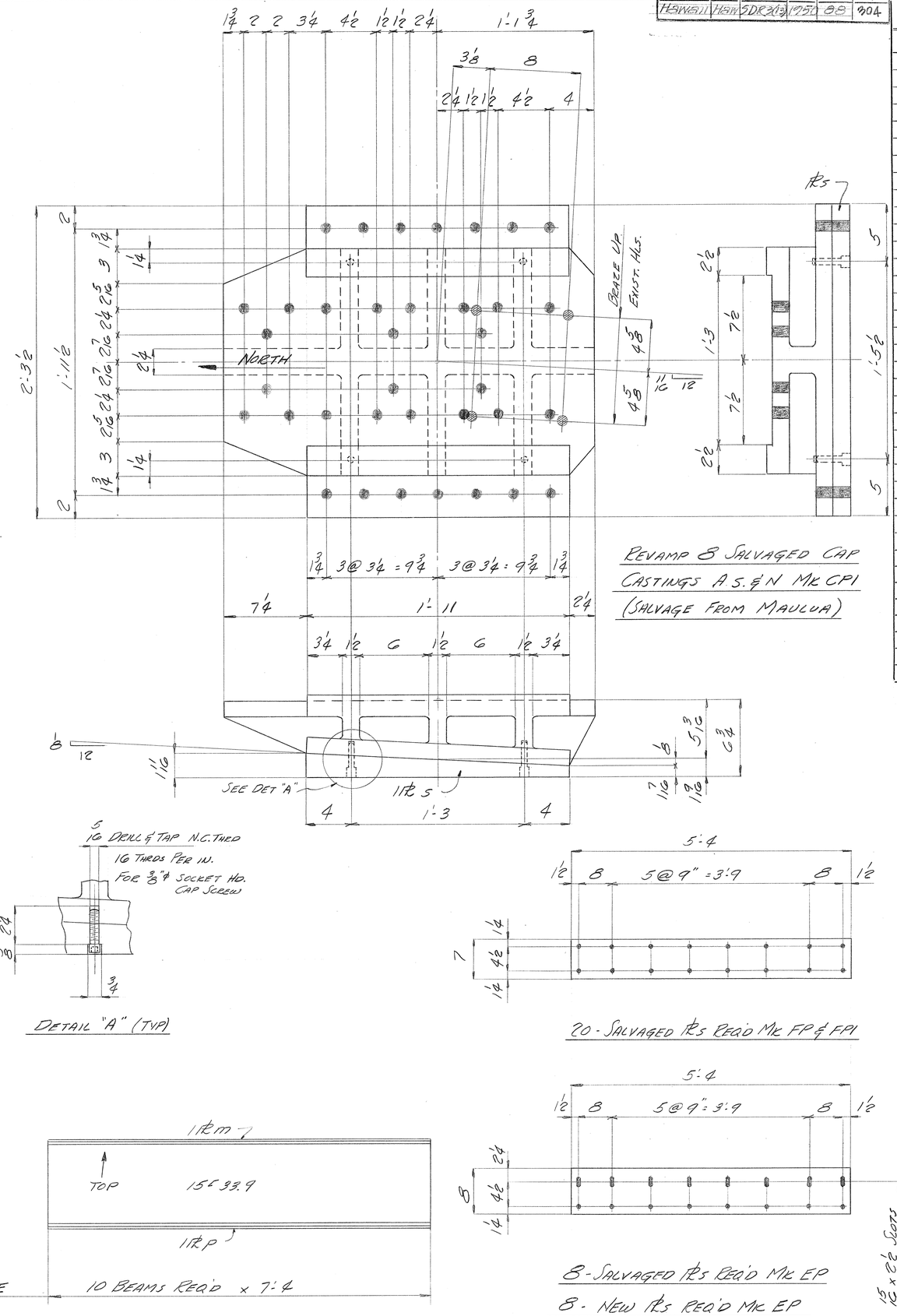
No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
4	DIAG BRACES			DB13-E	
16	STRUTS			ST1-E	
6	STRUTS			ST2-E	
8	L 4 x 4 x 3/8	8	9	ST3-E	PLAIN
4	STRUTS			ST4-E	
20	STRUTS			ST5-E	
4	STRUTS			ST6-E	
10	BEAMS	7	4	B1-E	SALV. FROM CAL. SECTIONS SEE SHT D10-E
8	CAP CASTINGS (SALV. FROM MAULUA)			CPI	REVAMP AS REQ'D ON DET.
8	L 4 x 4 x 3/8	9	3½	9	SALV FROM TOWER BRACING SEE SHT D10-E
4	L 4 x 4 x 3/8	8	7½	h	
16	L 4 x 4 x 3/8	8	6¼	m	
6	L 4 x 4 x 3/8	8	6½	p	
4	L 4 x 4 x 3/8	8	6¾	s	
20	L 4 x 4 x 3/8	8	7½	t	
4	L 4 x 4 x 3/8	8	6½	v	
4	PL 12 x 5/16	1	0½	a	TEMP
4	PL 12 x 5/16	1	3½	b	NEW
4	PL 12 x 5/16	1	0½	c	
4	PL 9 x 5/16		10	d	
4	PL 3 x 3/4		5¾	f	
80	PL 5 x 3/8		7	k	
32	3/8"ϕ SOCKET HD CAP SCREWS x 2" (FOR CPI) N.C. THRD 16 THRDS PER IN.				
4	PL 7 x 3/8 (SALV. FROM KEALAHAKA)	5	4	FPI	
16	PL 7 x 3/8 (SALV FROM MAILE)	5	4	FP	
8	PL 8 x 3/8 (SALV FROM MAILE)	5	4	EP	
8	PL 8 x 3/8	5	4	EP	NEW
10	PL 7 x 3/8	7	4	m	PLAIN (NEW)
10	PL 6 x 3/8	7	4	p	PLAIN (NEW)
8	PL 23 x 1 1/16	2	3½	s	BEVEL TEMP (NEW)
4	PL 12 x 5/16	1	0½	t	TEMP (NEW)



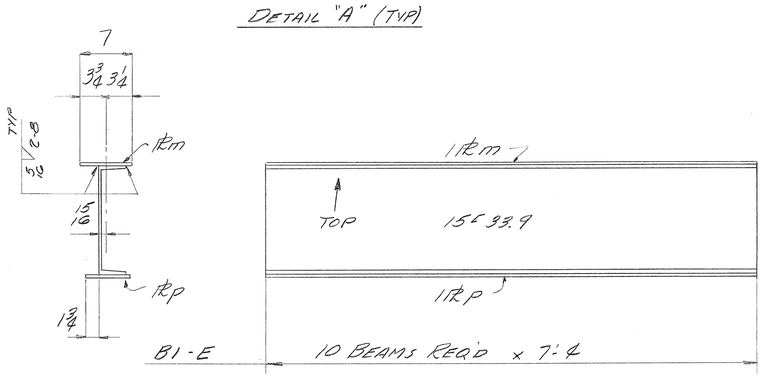
4 - DIAGONAL BRACES REQ'D MK DB13 E-43 E-OH







REVAMP & SALVAGED CAP CASTINGS A.S.&N. MK CPI (SALVAGE FROM MAULUA)



Rivets: 7/8 ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO
ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	12-9-49	ORDER NO.	3807
CHECKED BY	AP	1-26-50	SHEET NO.	D9-E

54GS.SS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HBW811	HAW	SDE-2(13)	1950	87	104

Order No. 3807 Sheet No. D10E

MATERIAL REQD. FOR DIAG. BRACES & STRUTS LISTED BELOW

MATL. LISTED BELOW IS TO BE USED FOR STRUTS & DIAG. BRACES (ALL MATL. REVARNISHED)

No.	Size	Length		Mark	Sht. No.	No.	Pc. Mk.	Size	Length		Bridge	Sht. No.
38	L 5 4 x 4 x 3/8	9	3/8	a	D7E	2	TS2	2 L 5 x 3 1/2 x 5/16	11	2 1/16	LAUPAHOEHOE	36
						5	TS7	2 L 5 x 3 x 5/16	10	1 5/16	Do.	36
						6	TS8	Do.	15	1 5/16	Do.	36
						1	TS22	2 L 5 x 3 1/2 x 3/8	10	1 5/16	Do.	36
						1	TS3	Do.	18	11 1/16	Do.	36
						2	TS9	2 L 5 x 3 x 5/16	24	2 5/16	Do.	36
8	L 4 x 4 x 3/8	8	6 3/4	g		2	TS9	Do.	24	2 5/16	Do.	36
						1	TS16	Do.	23	3 3/8	Do.	36
20	L 4 x 4 x 3/8	9	3 1/2	t		1	TS18	Do.	28	3 3/8	Do.	36
						1	TS20	2 L 5 x 3 1/2 x 3/8	16	0 3/8	Do.	36
						3	LB5	2 L 5 x 3 x 3/8	22	2 3/8	Do.	38
16	L 4 x 4 x 3/8	8	6 3/4	m		1	TS16	2 L 5 x 3 x 5/16	23	3 3/8	Do.	36
						1	LB3	2 L 5 x 3 x 3/8	22	5 3/8	Do.	38
						2	LB26	Do.	22	2 3/8	Do.	38
4	L 4 x 4 x 3/8	8	7 1/2	v &		1	LB6	Do.	24	3	Do.	38
2	Do	8	7 1/2	w &		1	LB7	Do.	22	8 1/2	Do.	39
4	Do	8	7 1/2	aa		1	LB6	Do.	24	3	Do.	38
36	Do	9	2 3/8	ad		4	LB7	Do.	22	8 1/2	Do.	39
						1	LB9	Do.	19	9 1/4	Do.	39
						4	LB16	Do.	21	9 7/16	Do.	40
18	L 4 x 4 x 3/8	8	6 3/4	af		1	LB18	Do.	12	2 1/16	Do.	40
						1	LB19	Do.	14	6 3/8	Do.	40
						1	LB20	Do.	28	11 3/4	Do.	40
						2	LB21	Do.	22	0 15/16	Do.	40
						1	LB22	Do.	21	7 3/16	Do.	40
44	L 4 x 4 x 3/8	9	3 3/4	9	D8E	1	LB23	Do.	21	7 3/16	Do.	40
						1	TS11	2 C 6 x 4 x 3/8	37	10 3/8	Do.	36
						2	TS13	Do.	33	3 15/16	Do.	36
						2	HB1	4 C 6 x 4 x 3/8	24	4	Do.	43
						1	HB2	Do.	23	8 4	Do.	43
4	L 4 x 4 x 3/8	8	7 1/2	h		1	HB2	Do.	23	8 4	Do.	43
8	Do	8	7 1/2	k		1	HB3	Do.	24	6	Do.	43
2	Do	8	6 3/4	aa		1	HB4	Do.	23	10 4	Do.	43
8	Do	8	7 1/2	ad		1	HB3	Do.	24	6	Do.	43
8	Do	9	3 3/8	9	D9E	1	HB4	Do.	23	10 4	Do.	43
2	Do	8	7 1/2	h &		1	HB6	2 L 5 x 3 1/2 x 5/16	11	3	Do.	44
16	Do	8	6 4	m		8	HB6	Do.	11	3	Do.	44
6	Do	8	6 3/8	p		3	HB6	Do.	11	3	Do.	44
8	Do	8	9	ST3E		3	HB5	Do.	23	4 4	Do.	44
4	Do	8	6 3/8	s		1	HB5	Do.	23	4 4	Do.	44
4	Do	8	6 1/2	v		1	HB5	Do.	23	4 4	Do.	44
4	Do	8	7 1/2	t		1	HB5	Do.	23	4 4	Do.	44
10	BEAMS	7	4	B1-E		2	C3 &	15'-E Col.	33	11	MAILE	13
20	BEAMS	8	10	B2E	D8E	4	MC4&	14 1/2 Deep Col.	32	8 1/2	KAULA	16
2	L 4 x 4 x 3/8	8	7 1/2	h	D9E	1	LB5H	2 L 5 x 3 x 3/8	21	11 1/2		
10	L 4 x 4 x 3/8	9	3 3/8	a	D7E	2	LB3H	2 L 5 x 3 x 3/8	23	7 1/2		
						1	LB10H	Do.	23	7 1/2		
16	L 4 x 4 x 3/8	8	7 1/2	t	D9E	2	LB2H	2 L 5 x 3 x 3/8	27	0 1/2		
						1	LB4H	Do.	22	1 1/2		
						1	LB11H	Do.	22	1 1/2		

BILL OF MATERIAL INDUSTRIAL DEV. CO.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS

Rivets:

Holes:

Paint:

INDUSTRIAL DEV. CO.

ADDITION TO THE WAIAKE BRIDGE -HAWAII-

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	SEE DWG	12-12-49	ORDER NO.	3807
CHECKED BY	[illegible]	1-26-50	SHEET NO.	D10-E

5468.89 = 87

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET CO.	TOTAL SHEETS
HAWAII	HAW	DF-2(2)	1950	20	304

Order No. 3807 Sheet No. D11-E

NOTE:
CUT 2'-11 7/16 SECTION OUT OF COL. & PROVIDE SPLICE A.S.&N.

43'-1 9/16 P/P on ℄ Col.

11'-2 9/16 to ⌀ C2E ONLY

21'-0 31/32 C2E ONLY

℄ SPLICE

NOTE:
NEW SPLICE IS TO BE WELDED FOR BEARING IN PLACE OF MILLED ENDS

FOR REST OF COL. SEE D12E

10'-10 1/32

·ONE- COL. C2E (R.S.E.N.) FOR BENT #①
·ONE- COL. C2E (O.H.E.N.) FOR BENT #①

NOTE: THIS SPLICE DETAIL IS FOR COL. C2E ONLY SEE SHT. NO. D12E FOR SPLICE DET. OF C2E'S

28'-8 7/8

ELEV. AT RIGHT SIDE OF BENT #① LOOKING NORTH

℄ SPLICE LINE (DRAWING)

ADBIE

ST7E

2 1/2 5×3×5/16×6'-10

2 1/2 4×3×5/16×12'-4 1/4

2 1/2 5×3×5/16×7'-1 3/4

2 1/2 4×3×5/16×28'-11 7/8

EXISTING COLUMNS

29'-0

43'-1 9/16 P/P on ℄ Col.

14'-1 9/16

NOTE:
FOR BILL OF MAT'L. SEE D12E

Note:
For section thru existing column see Sec. D-D, sht. D13-E.

VIEW B-B

VIEW A-A

SECTION C-C (C2E ONLY)

Rivets: 7⌀
Holes: 15/16⌀
Paint:

INDUSTRIAL DEV. CO.

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	11-29-49	ORDER NO.	3807
CHECKED BY	RA	2-8-50	SHEET NO.	D11-E

5468.90

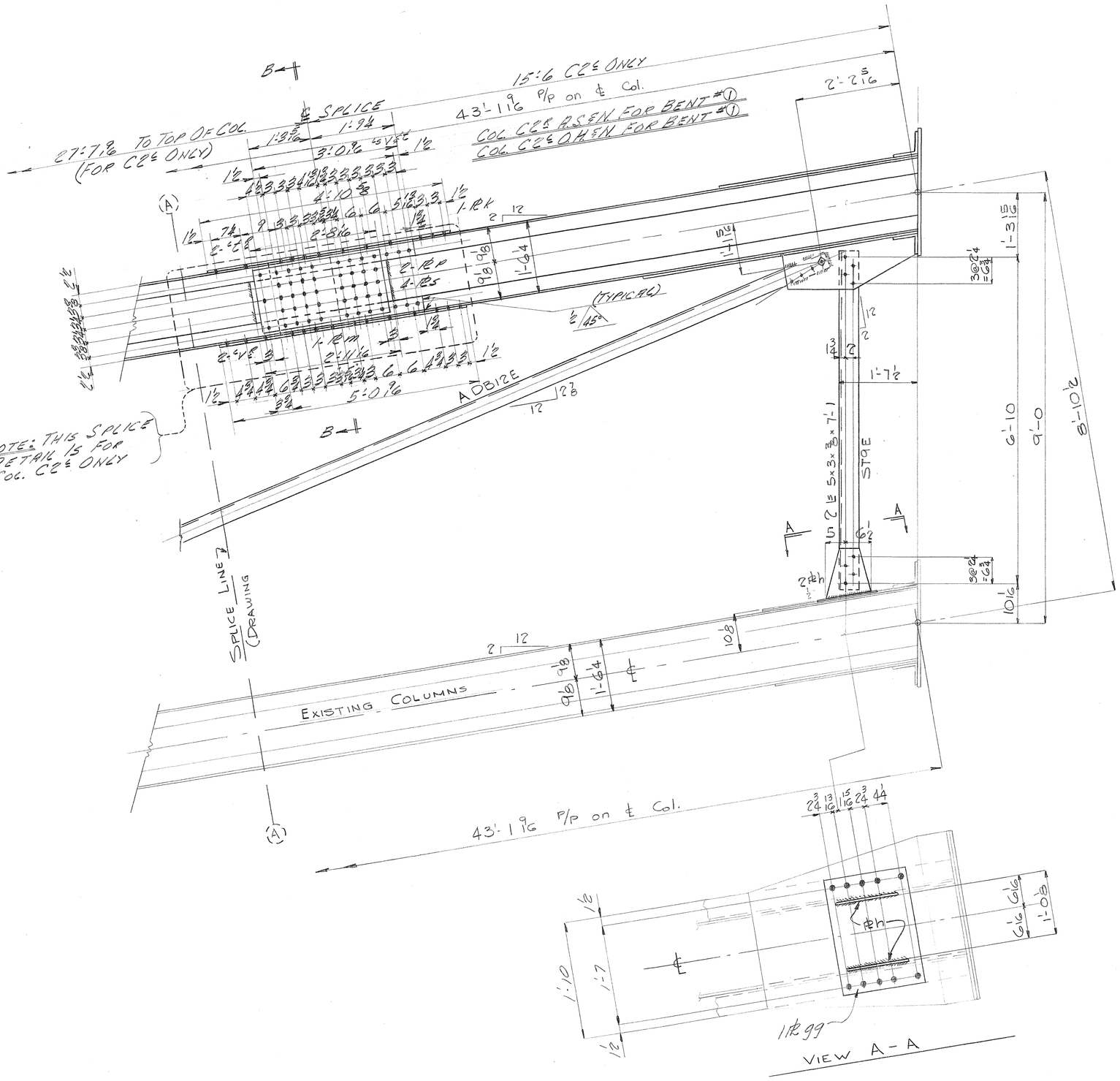
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDI2(6)	1950	91	304

11/8/50

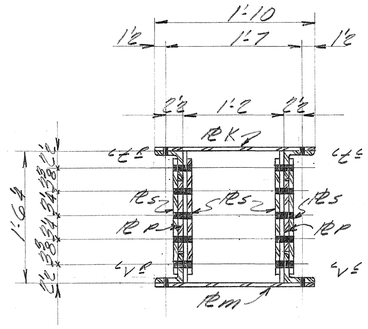
Order No. 3807 Sheet No. D12-E

BILL OF MATERIAL Indus. Dev. Co.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
1	COLUMN			C2R	KEALAHAKA
	SHEET D11E & D12E				
1	COLUMN			C2L	Do
	SHEET D11E & D12E				
2	STRUTS	6	10¾	ST7E	
2	Do	7	2¾	ST8E	
2	Do	7	1	ST9E	
2	DIAG. BRACE	12	4¼	ADB11E	
2	Do	28	11⅞	ADB12E	
4	PL 16½ × ⅜	1	6½	a	Temp New
4	PL 6 × ⅜	1	4	b	Do Do
2	PL 18 × ⅜	1	10	c	
2	PL 22 × ½	3	0½	d	
2	PL 9½ × 1/16	2	9½	f	
4	PL 16¼ × ½	2	6½	g	
4	PL 11½ × ½	1	1	h	
2	PL 15½ × ½	1	10	gg	
1	PL 22 × ½	4	10⅝	k	
1	PL 22 × ½	5	0½	m	
2	PL 9½ × 1/16	2	11	p	
4	PL 16¼ × ½	2	8	s	
2	∠ 4 × 4 × 1/16	3	0½	t2	
2	∠ 4 × 4 × 1/16	3	0½	v2	
	SEE SHT D12E FOR DETAILS OF DIAG. BRACES & STRUTS				



ELEVATION AT RIGHT SIDE OF BENT #1 - LOOKING NORTH



SECTION B-B

Rivets: 7⅞
Holes: 15/16
Paint:

INDUSTRIAL DEV. CO.

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

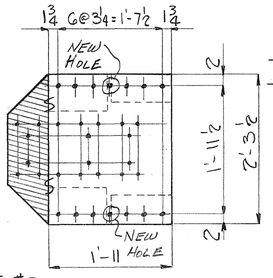
MADE BY	DAL	11-30-49	ORDER NO.	3807
CHECKED BY	RA	2-8-50	SHEET NO.	D12-E

5468.91

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	S DR 2(6)	1950	92	304

Order No. 3807 Sheet No. D13E

NOTE:
REVISE EXISTING CAP ℄ BY REMOVING FILLS, CUTTING A.S. & DRILLING TWO NEW HOLES.



VIEW C-C
FOR BENTS #②,#④ & #⑥ ONLY

ONE	COL.	TC2R	REQ'D.	AS&N FOR BENT	②
ONE	Do	TC2L	Do	OH&N Do Do	②
ONE	Do	TC3R	Do	AS&N Do Do	③
ONE	Do	TC3L	Do	OH&N Do Do	③
ONE	Do	TC4R	Do	AS&N Do Do	④
ONE	Do	TC4L	Do	OH&N Do Do	④
ONE	Do	TC5R	Do	AS&N Do Do	⑤
ONE	Do	TC5L	Do	OH&N Do Do	⑤

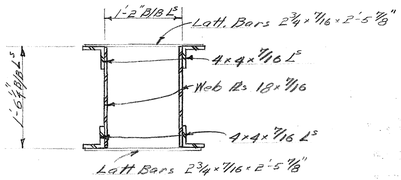
FROM MAILE

ONE	COL.	TC2R	REQ'D.	AS&N FOR BENT	⑥
ONE	Do	TC2L	Do	OH&N Do Do	⑥
ONE	Do	TC3R	Do	AS&N Do Do	⑦
ONE	Do	TC3L	Do	OH&N Do Do	⑦

FROM KEALAHAKA

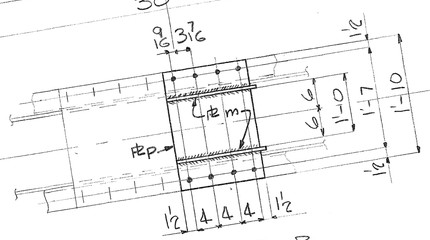
30'-7¾ P/P on ℄ Col.
16'-6 3/16
14'-1 9/16
8¾
3'-0
EXISTING SPLICE
(B)
11¾
1'-1¼
9⅛
12
℄
1'-2⅛
6'-10½
9'-0
6'-6½
14'-11¾ (c-c)
6'-10¾
15'-2¾
6'-6
12
STIOE
2 Ls 5×3½×⅜×6'-9⅛
ADB13E
2 Ls 4×3½×5/16×15'-2¾
STIIE
2 Ls 5×3½×7/16×7'-1¾
DB14E
2 Ls 4×3½×5/16×20'-10⅞
4 in 12
20'-7⅞
(DRAWING)
SPLICE LINE
4×4×7/16 L's
18×7/16 Web Pl's
4×4×7/16 L's
EXISTING COLUMNS
EXISTING SPLICE
(B)
1'-6⅞
16'-6 3/16
30'-7¾ P/P on ℄ Col.
14'-1 9/16
9 3/16
1'-6⅞

ELEVATION AT RIGHT SIDE OF SOUTH BENTS ⑧ ⑦ LOOKING NORTH BENTS ⑥ ④ ② LOOKING NORTH

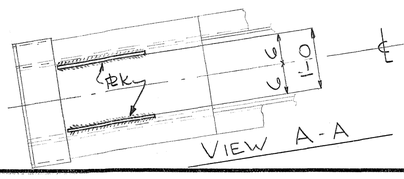


SECTION D-D

Section D-D is typical for columns TC3, TC4, C1 & C9



VIEW B-B



VIEW A-A

NOTE:
FOR BILL OF MAT'L. SEE D16E

Rivets: ⅞ ℄
Holes: 15/16 ℄
Paint:

INDUSTRIAL DEV. CO.

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	11-30-49	ORDER NO.	3807
CHECKED BY	RA	2-8-50	SHEET NO.	D13E

5468.92

Order No. 3807 Sheet No. D14E

FED. ROAD SECT. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HSHWB11	HAW	SDE 2(13)	1950	93	904

ONE COL. MD2R	REQ'D AS	FOR BENT	②		
ONE Do MD2L	Do	OH	Do	Do	②
ONE Do MD3R	Do	AS	Do	Do	③
ONE Do MD3L	Do	OH	Do	Do	③
ONE Do MD3R	Do	AS	Do	Do	④
ONE Do MD3L	Do	OH	Do	Do	④
ONE Do MD4R	Do	AS	Do	Do	⑤
ONE Do MD4L	Do	OH	Do	Do	⑤

FROM MAILE

ONE COL. MD3R	REQ'D AS	FOR BENT	⑥		
ONE Do. MD3L	Do	OH	Do	Do	⑥
ONE Do. MD3R	Do	AS	Do	Do	⑦
ONE Do. MD3L	Do	OH	Do	Do	⑦

FROM KEALAHAKA

32'-8 11/32

3'-0 5 3/4 ℄ EXISTING SPLICE

NOTE: REMOVE EXISTING INSIDE FILLS FROM MD3L BENTS 4, 6 & 7

(B) 1'-0 11 3/4

DB14E 14 3/16 12

STIIE 6'-10 3/4

2 L 5 x 3 1/2 x 7/16 x 7'-1 3/4

9'-0 8'-10 1/2 ℄ SPLICE LINE

3'-0 5 1/2

2 PL 3/8 x 1'-0 3/4 x 1'-2 1/2

1-PL 3/8 x 1'-0 3/4 x 1'-1

1-PL 3/8 x 1'-0 3/4 x 1'-0 1/4

1'-1 1/4

A 3 1/4 A

(B)

33'-5 1/8

2 L 5 x 3 1/2 x 5/16 x 33'-8 1/8

DB15E 12 12 1/2

9 1/8 1'-1 1/4

℄ SPLICE LINE (DRAWING)

ELEVATION AT RIGHT SIDE OF BENTS ③ ⑤ & ⑦ LOOKING SOUTH
BENTS ② ④ & ⑥ LOOKING NORTH

4 x 4 x 3/16 L's

18 x 7/16 Webs

4 x 4 x 3/16 L's

EXISTING COLUMNS

B B

℄ EXISTING SPLICE

(C) FOR OTHERS

(D) FOR MD2L

32'-8 11/32

3'-0 5 1/2

1'-4 1/8 1'-10

PL 3/8 PL 3/8 PL 3/8

1'-10 1'-7 1'-0 1'-1 1'-1

4 @ 4'-4 = 17'-4

VIEW A-A

1'-2 13/16 L's

Latt. Bars 2 3/4 x 7/16 x 2'-5 11/16

4 x 4 x 3/16 L's

1'-6 13/16 L's

Webs 18 x 7/16

4 x 4 x 3/16 L's

Latt. Bars 2 3/4 x 7/16 x 2'-5 11/16

SECTION B-B

NOTE: FOR BILL OF MAT'L. SEE D16E

Rivets: 7/8 ϕ

Holes: 15/16 ϕ

Paint:

INDUSTRIAL DEV. CO.

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	12-2-49	ORDER NO.	3807
CHECKED BY	RA	2-8-50	SHEET NO.	D14E

5468.93

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	SDR-2(13)	1950	20	104

Order No. 3807 Sheet No. D15E

gv
gw

VIEW CC

SECTION B-B

NOTE:
CUT 12'-3 15/16 SECTION OUT OF COL. & PROVIDE SPLICE A.S
26'-1 29/32 P/P on ℄ Col.

16'-3 7/8

ONE COL. BC2 REQ'D. — FROM MAILE

NOTE:
NEW SPLICE IS TO BE WELDED FOR BEARING IN PLACE OF MILLED ENDS.

9'-10 1/32

EXISTING SPLICE

SPLICE LINE (DRAWING)

EXISTING COLUMN.

2 PL 6×4×3/8 × 7'-1 5/8

2 L 4×3×5/16 × 22'-5 3/8

22'-2 3/8 (-1/4)

4×4×1/2 L's
18×7/16 Webs
4×4×1/2 L's

26'-1 29/32 P/P on ℄ Col.

EXISTING SPLICE

VIEW A-A

VIEW D-D

SECTION E-E

Section E-E is typical for columns BC2, BC8, MD2 & TC2

ELEV. AT RIGHT SIDE OF BENT ② LOOKING NORTH

FOR BILL OF MAT'L SEE D16-E

Rivets: 7/8 ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO.

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	12-2-49	ORDER NO.	3807
CHECKED BY	RA	2-8-50	SHEET NO.	D15E

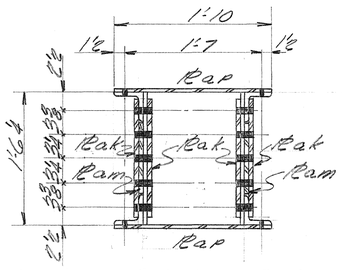
5465.94

3

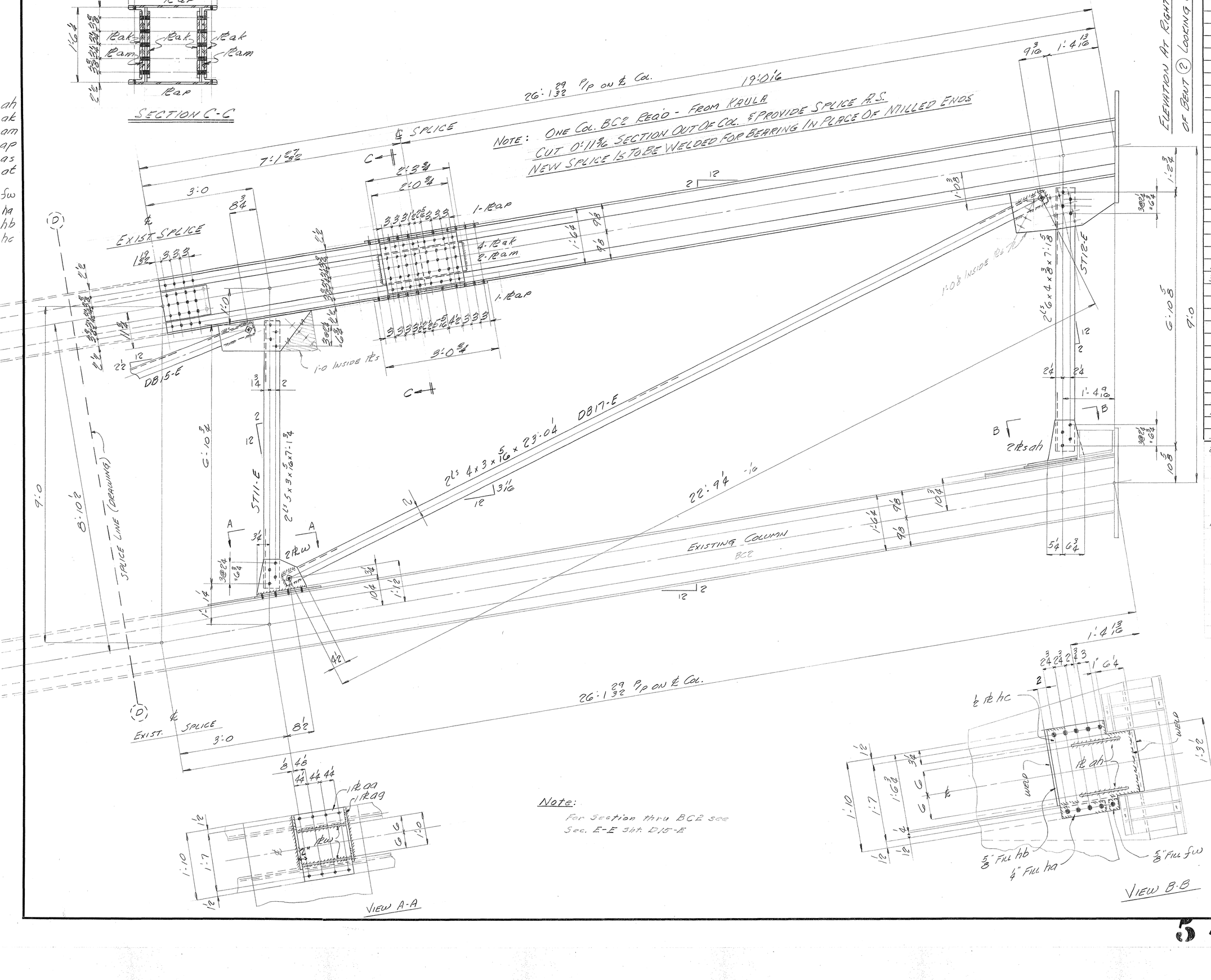
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW911	HAW	DR-3(13)	1950	25	304

Order No. 3807 Sheet No. D16E

ah
ak
am
ap
as
at
fw
ha
hb
hc



SECTION C-C



BILL OF MATERIAL

INDUS. DEV. Co.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
1	COLUMN			TC2R	MAILE D13-E
1				TC2L	
1				TC3R	
1				TC3L	
1				TC4R	
1				TC4L	
1				TC5R	
1				TC5L	MAILE "
1				TC2R	KEALAHAKA
1				TC2L	
1				TC3R	
1				TC3L	KEALAHAKA D13-E
1				MD2R	MAILE D14-E
1				MD2L	
2				MD3R	
2				MD3L	
1				MD4R	
1				MD4L	MAILE
2				MD3R	KEALAHAKA
2				MD3L	KEALAHAKA D14-E
1				BC2	MAILE D15-E
1	COLUMN			BC2	KAULA
16	STRUTS			STI0-E	
36	STRUTS			STI1-E	
2	STRUTS			STI2-E	
12	DIAG BRACE			ADB13-E	
12				DB14-E	
22				DB15-E	
1				DB16-E	
1	DIAG BRACE			DB17-E	
24	PL 16½ x ⅜	1	6	k	TEMP
24	PL 12 x ⅜	1	2½	m	
12	PL 15 x ⅜	1	10	p	
12	PL 15¾ x ⅜	1	10	s	
28	PL 11½ x ⅜	1	3¾	w	
2	PL 15¾ x ⅜	1	10	aa	
2	PL 22 x ½	2	11½	ab	
2	PL 9½ x ¾	2	6	ac	
4	PL 16 x ½	2	5⅛	ad	
2	PL 12 x ½	1	1	af	
14	PL 16¾ x ⅜	1	6	ag	
2	PL 12 x ½	1	3	ah	
4	PL 16 x ½	2	0 5/8	ak	
2	PL 9½ x ¾	2	3¾	am	
2	PL 22 x ½	3	0 5/8	ap	
1	PL 14¼ x ½	1	10	gv	
1	PL 15¼ x ⅜	1	6	gw	
1	PL 3 x ¼		11¼	ha	
1	PL 18¾ x ⅝	1	6¾	hb	
1	PL 20 x ½	1	10	hc	
1	PL 1¾ x ⅝		3	fw	TEMP

VIEW A-A

Note:
For Section thru BC2 see Sec. E-E Sht. D15-E

VIEW B-B

Rivets: ⅞ ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO.

ADDITION TO NANUE BRIDGE
HAWAII

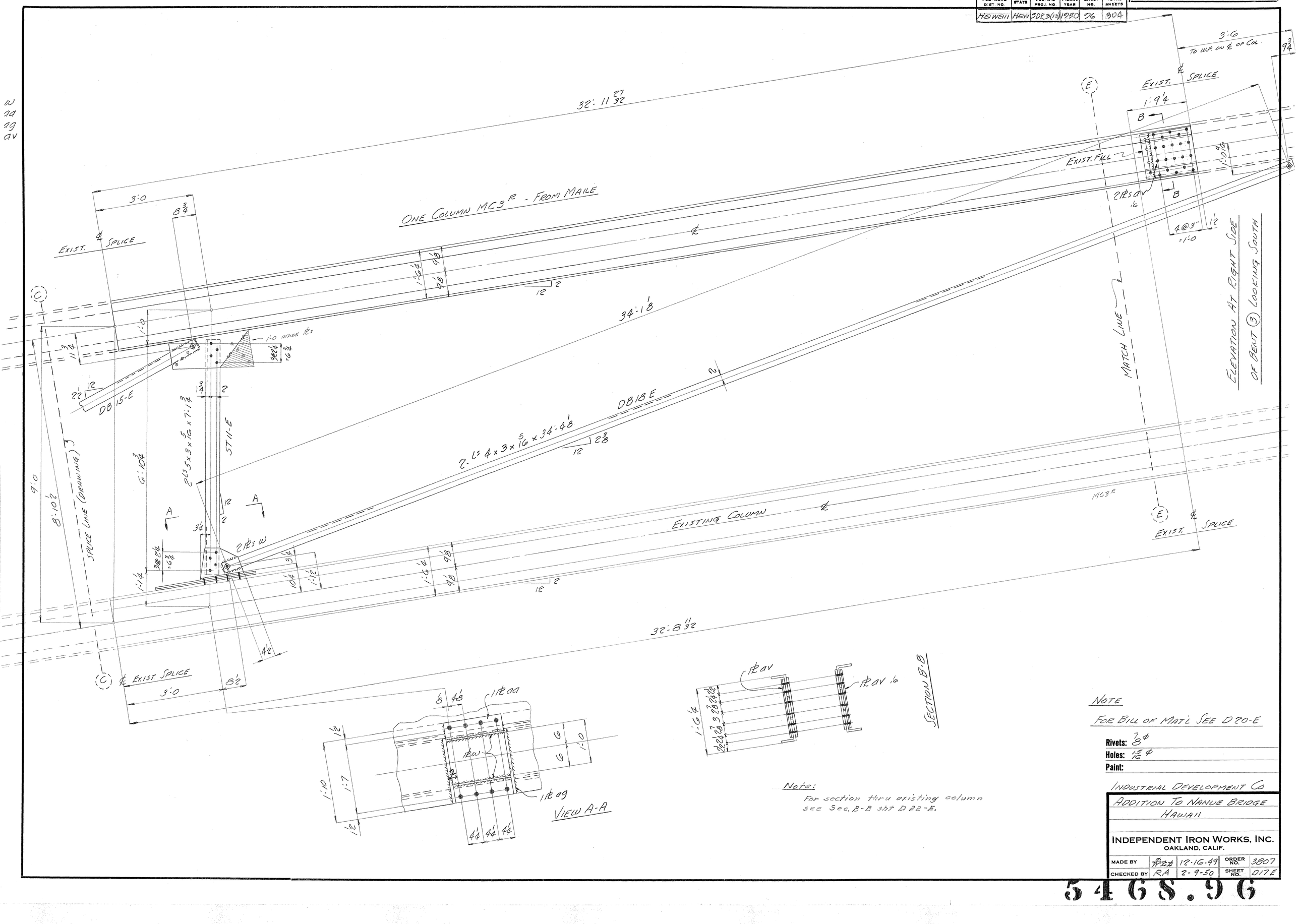
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	12-15-49	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D16E

5468.95 = 9½

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR3(13)	1950	96	304

Order No. 3807 Sheet No. D17E



VIEW A-A

SECTION B-B

Note:
For section thru existing column see Sec. B-B sht D 22-E.

Note

For Bill of Mat'l See D 20-E

Rivets: 7/8 ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	12-16-49	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D17E

5468.96

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	DK-3(6)	1950	27	204

Order No. 3807 Sheet No. D18E

ONE COLUMN MC3L - FROM MAILE

EXIST. ℄ SPLICE

3:0

8¾

32:11 27/32

℄

1:0

1:10

12

2

34:1¾

DB15-E

22½ 12

2L's 5×3×⅝ × 7:1¾

ST11-E

¾

2

12

A

A

3@24 = 6:3¾

2 Rs W

1:1½

3¾

10½

1:12

1:9½

9⅝

12

2

9:0

8:10½

SPLICE LINE (DRAWING) J

6:10½

2L's 4×3×⅝ × 34:4¾

12 28/32

12

EXISTING COLUMN ℄

(C) ℄ EXIST SPLICE

3:0

8½

44

32:8 11/32

(F)

EXIST. ℄ SPLICE

3:0

TO W.P. ON ℄ OF COL

1:9¼

℄

EXIST. SPLICE

B

B

EXIST. FILL

1:0½

2 Rs av

4@3" = 1:0

1½

98

ELEVATION AT RIGHT SIDE OF BENT ③ LOOKING NORTH

SECTION B-B

1 Rav

1 Rav

1:6¼

22 20 18 16 14 12 10 8 6 4 2

6

4⅜

1 Rbb - ⅜

1 Rbg - ⅜

½

1:10

1:7

12

6

6

1:10

Rbv

2"

44 44 44

VIEW A-A

Note:

For section thru existing column see Sec. B-B sht. D22-E

NOTE

FOR BILL OF MATL SEE D20-E

Rivets: ⅞ ϕ

Holes: 15/16 ϕ

Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE

HAWAII

INDEPENDENT IRON WORKS, INC.

OAKLAND, CALIF.

MADE BY	[illegible]	12-16-49	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D18E

5468.97

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SUR 2(13)	1950	98	304

Order No. 3807 Sheet No. D19-E

aw
ba
bb
bc
bd
bf
bg
ft
fw
gk
gm

NOTE: ONE COL. BC6 REQ'D - FROM MAILE
CUT 10:3 19/32 SECTION OUT OF COL. & PROVIDE SPLICE A.S.
NEW SPLICE IS TO BE WELDED FOR BEARING IN PLACE OF MILLED ENDS

ELEVATION AT RIGHT SIDE OF BENT (3) - LOOKING SOUTH

SECTION C-C

EXIST. SPLICE

MC3E MAILE

DB18E

DB20-E

ST13-E

ST14-E

2-L 4x3x5/16 x 24:5 7/8

2-C 6x4x3/8 x 7:3

2-C 13.75x7.04

SPLICE LINE (DRAWING)

BC3E EXISTING COLUMN

EXIST. SPLICE

MC3E

VIEW A-A

VIEW B-B

Note: For section thru BC3E see Sec. B-B sht DB2-E

NOTE: FOR BILL OF MATL SEE DB0-E

Rivets: 7/8 ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	12-19-49	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D19-E

5468.98

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR-3(19)	1950	99	304

11/10/50

Order No. 3807 Sheet No. D20-E

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT COMPANY

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
1	COLUMN			MC3R	MAILE D17E
1	COLUMN			MC3L	MAILE D18E
1	COLUMN			BC6	MAILE D19E
1	COLUMN			BC4	MAILE
2	STRUTS			ST13E	
1	STRUT			ST14-E	
1	STRUT			ST15-E	
1	DIAG BRACE			DB18-E	
1	DO DO			DB19-E	
1	DO DO			DB20-E	
1	DO DO			DB21-E	
1	PL 15 × 1/2	1	10	hd	TEMP
1	PL 16 × 3/8	1	6 3/4	hf	—
1	PL 3 × 1/4	1	0	ft	
1	PL 1 3/4 × 5/8		3	fw	
1	PL 20 3/8 × 1/2	1	10	gk	
4	PL 11/2 × 3/8	1	3 3/4	w	
2	PL 15 3/4 × 3/8	1	10	aa	
2	PL 16 3/4 × 3/8	1	6	ag	
4	PL 15 × 1/2	1	4	av	
4	PL 6 3/4 × 3/8	1	7	aw	
2	PL 19 × 3/8	1	10	ba	
2	PL 20 × 3/8	1	6	bb	
4	PL 16 × 1/2	3	0 4	bd	
2	PL 5 3/4 × 3/4	3	1 4	bf	
2	PL 22 × 1/2	2	10 1/2	bg	
4	PL 16 × 1/2	3	1 4	bh	
2	PL 5 3/4 × 3/4	3	2 4	bk	
2	PL 22 × 1/2	2	9 3/4	bm	
2	PL 1/2 × 1/2	1	0 4	pc	—
1	PL 18 1/4 × 5/8	1	8	gm	TEMP
MATERIAL LISTED ABOVE IS FOR DWG'S- D17E, 18-E, & 19-E, D20-E					
MATERIAL LISTED BELOW IS FOR DWG'S D21-E, 22-E, & 23-E					
4	COLUMNS			MD3R	KEALAHAKA D21-E
8	COLUMNS			MC4R	KEALAHAKA D22-E
2	COLUMNS			BC1R	KAULA D23-E
8	STRUTS			ST16-E	
2	STRUTS			ST17-E	
2	STRUTS			ST18-E	
2	DIAG BRACE			DB22-E	
2	DIAG BRACE			DB23-E	
24	PL 11/2 × 3/8	1	3 3/4	w	TEMP
14	PL 15 3/4 × 3/8	1	10	aa	
14	PL 16 3/4 × 3/8	1	6	ag	
8	PL 12 × 5/8	1	4	bp	
4	PL 11/2 × 3/8	1	4	bs	
4	PL 22 × 1/2	2	10	pa	
8	PL 16 × 1/2	2	4	pb	
4	FLL 15 3/8 × 1/2	1	4	bw	
8	PL 3 15/16 × 1/2		4	ca	
4	PL 3 15/16 × 1/8	1	4 3/8	cb	
4	PL 12 × 1/2	1	1	gh	
2	PL 1 3/4 × 5/8		3	fw	
2	PL 3 × 1/4		11 1/4	ha	
2	PL 18 3/4 × 5/8	1	8	hb	
2	PL 20 × 1/2	1	10	hc	TEMP

NEW MATL

NEW MATL

Rivets: 7/8 ϕ

Holes: 15/16 ϕ

Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	12-20-49	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D20-E

SECTION C-C

NOTE: ONE COL. BC4 REQ'D - FROM MAILE
CUT 15'-4 11/32" SECTION OUT OF COL. & PROVIDE SPLICE A.S.
NEW SPLICE IS TO BE WELDED FOR BEARING IN PLACE OF MILLED ENDS

EXIST SPLICE

MC3R - MAILE

DB19E

DB21-E

SPLICE LINE (DRAWING)

EXISTING COLUMN BC3L

EXIST. SPLICE

MC3L

(F)

ELEVATION AT EIGHT SIDE OF BENT (3) LOOKING NORTH

Note:
· For section thru BC3L see Sec. B-B sht. D22-E.

VIEW A-A

VIEW B-B

54GS.99

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	SDR 3(13)	1950	100	404

Order No. 3807 Sheet No. D21-E

1-1¼ bp - For Cols. MD3 R & L on Bent (4)

SECTION B-B

Exist. Fills

1-1¼ bp - For Cols MD3 L on Bent (4) & (5)

Exist Splice

3'-0

8¾

32'-8 11/32

(G)

Remove 1" Fills (Exist.) inside For Bent (4) Only

3'-0

8¾

Exist Splice

One Col MD3 R A.S. & N - Bent (4)	From Kealahaka
One Col MD3 L O.H. & N - Bent (4)	
One Col MD3 R A.S. & N - Bent (5)	
One Col MD3 L O.H. & N - Bent (5)	

2 1¼s bp

DB15-E

2 Ls 4 x 3 x 5/16 x 33'-8 1/2

2 Ls 5 x 3 x 5/16 x 7'-1¾

ST11-E

2 1¼s w

MC4 R

Existing Column

Splice Line Drawing

(C)

Exist Splice

3:0

8'2

32'-8 11/32

33'-5 1/2

(G)

Exist Splice

Elevation at Right Side of Bent (4) Looking North

Bent (5) Looking South

Note:

For section thru MC4 see Sec. B-B, sht. D22-E

View A-A

Note

For Bill of Mat'l See D20-E

Rivets: 7/8 ϕ

Holes: 15/16 ϕ

Paint:

Industrial Development Co

Addition To Nanue Bridge

Hawaii

Independent Iron Works, Inc.
Oakland, Calif.

Made By	[illegible]	12-21-49	Order No.	3807
Checked By	RA	2-9-50	Sheet No.	D21-E

5468.100

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	DR 2(6)	1950	101	304

Order No. 3807 Sheet No. D22-E

ONE COL MC4R A.S. & N - BENT (4)
ONE COL MC4L OH & N - BENT (4)
ONE COL MC4R AS & N - BENT (5)
ONE COL MC4L OH & N - BENT (5)
ONE COL MC4R AS & N - BENT (6)
ONE COL MC4L OH & N - BENT (6)
ONE COL MC4R AS & N - BENT (7)
ONE COL MC4L OH & N - BENT (7)

FROM KEALAHAKA

32'-8 11/32

3'-0

8 3/4

EXIST ℄ SPLICE

FOR OTHERS 3'-3 13/16

FOR BENT (4)

EXIST ℄ SPLICE

8 3/4

H

11 3/4

1'-0

11 3/4

2'-2 12

DB15-E

2 L 4x3x5/16 x 33'-11 7/8 DB32-E - FOR BENT (4)
2 L 4x3x5/16 x 33'-8 1/8 DB15-E - FOR OTHERS

2'-2 - DB15-E
12 2'-7/16 - DB32-E

33'-8 7/8 -1/16 FOR BENT (4)
33'-5 1/8 -1/16 FOR OTHERS

ELEVATION AT RIGHT SIDE OF
BENT (4) & (6) - LOOKING NORTH
BENT (5) & (7) - LOOKING SOUTH

9'-0

8'-10 1/2

SPLICE LINE (DRAWING)

G 10 3/8

STIIE - BENTS G & 7
STIGE - BENTS 4 & 5

2 L 5x3x5/16 x 7'-1 3/8 STIIE
2 L 6x4x3/8 x 7'-1 3/8 STIGE

A

A

2 PLS W

3@2 1/4 = 6 3/4

1'-1 1/4

3@2 1/4 = 6 3/4

10 1/4

3/4

1'-1 1/4

4 1/2

3'-4

8'-2

EXIST ℄ SPLICE

3'-0

BENTS 4 & 5 (G)

BENTS G & 7 (C)

B

B

4x4x3/4 L S

18 x 7/16 Web Pls

4x4x3/4 L S

32'-8 11/32

EXISTING COLUMN

1'-1 1/4

9'-8

9'-8

12

2

H

EXIST. ℄ SPLICE

1'-2 11/16 L S

Latt. Bars 2 3/4 x 7/16 x 2'-5 1/8"

4x4x3/4 L S

Web Pls 18 x 7/16

4x4x3/4 L S

Latt Bars 2 3/4 x 7/16 x 2'-5 1/8"

1'-6 3/4 L S

SECTION B-B

Section B-B is typical for columns MC3, MC4, MC7 & BC3. For section thru columns MB4 & MB5 see Sec. B-B, sht. D25E.

1/8 4@8

BENT G & 7
BENTS 4 & 5
BENTS G & 7
BENTS 4 & 5

G
5/16
5/16
1'-0
1 1/8

1'-10
1'-7
1/2

℄ W

1 PL 9 9

1 PL 9 9

2

4@4 4'

2

VIEW A-A

NOTE

FOR BILL OF MAT'L SEE D20-E

Rivets: 3/4
Holes: 13/16
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	12-22-49	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D22-E

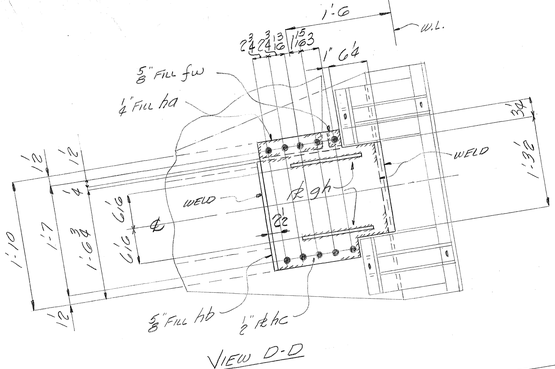
5468.101

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
13	HAW.	11 HBM 3 DR 3(16)	1950	102	104

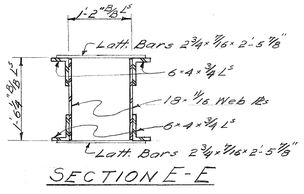
bc
bs
bt
bv
bw
cq
cb

gh

fw
ha
hb
hc

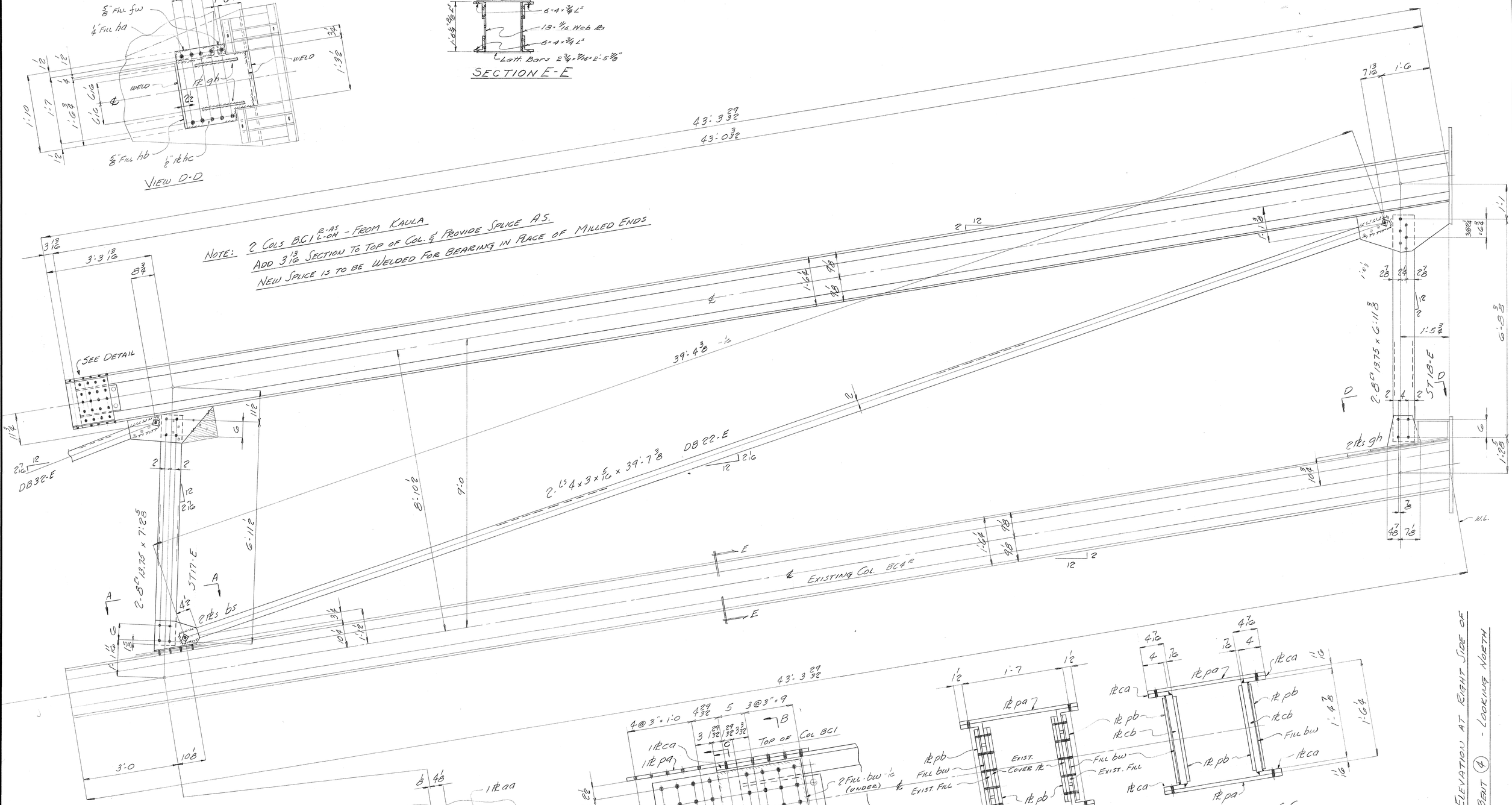


VIEW D-D

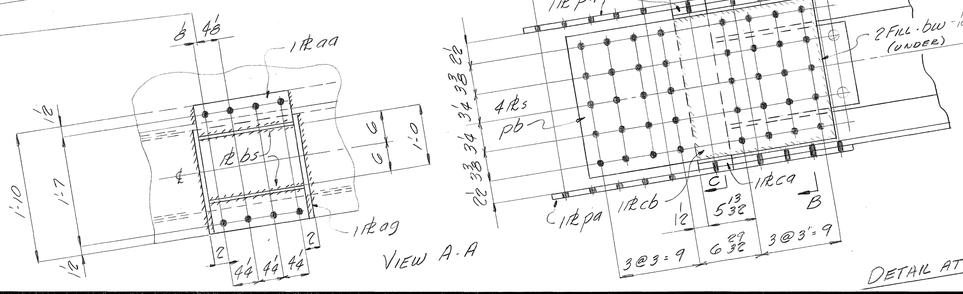


SECTION E-E

NOTE: 2 COLS BC1L-AS - FROM KAULA
ADD 3 13/16 SECTION TO TOP OF COL. & PROVIDE SPLICE A.S.
NEW SPLICE IS TO BE WELDED FOR BEARING IN PLACE OF MILLED ENDS

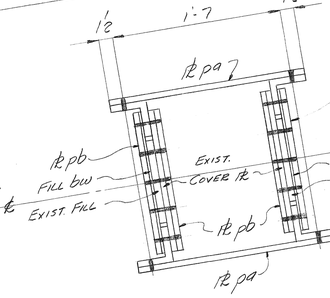


ELEVATION AT RIGHT SIDE OF BENT (4) - LOOKING NORTH



VIEW A-A

DETAIL AT TOP OF COL



SECTION B-B

SECTION C-C

NOTE
FOR BILL OF MATL SEE DWG D20-E

REVISIONS	ITEM ADDITION TO NANUE BRIDGE HAWAII					
	CUSTOMER INDUSTRIAL DEVELOPMENT CO					JOB NO. 3807
	DR'FTS'M'N	CHECKED	APPRV'D	NEXT ASSEMBLY	SCALE	DRWG. NO.
	1-13-50	RA				D23-E
		2-9-50				

WESTERN IRON WORKS OAKLAND, CALIFORNIA

THIS PRINT MUST NOT BE COPIED IN WHOLE OR IN PART OR USED DETRIMENTALLY TO OUR INTEREST

5468.102

8

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR 2(13)	1980	103	704

Order No. 3807 Sheet No. D24-E

bt
bv
cd

ONE COL. MB5R A.S.
ONE COL. MB5L O.H
} FROM KEALAHAKA

32:8 11/32

3:0

8 3/4

EXIST. ℄ SPLICE

11/4

9 1/4

2 12

DB15-E

2'2

24'

24'

42'13

12

2

G: 11 3/8

2.85 13/16 x 7:2 1/2

ST 19-E

A

A

2'2

2 1/2 cd

3 3

1:1 3/8

3

10 1/4'

1:1 1/4

SPLICE LINE (DRAWING)

(H)

EXIST ℄ SPLICE

3:0

98'

7 1/2'

42'

2.L5 4x3x5/16 x 33:6 7/8

DB23-E

2 1/2

12

8:10 1/2

℄

(J)

1:6 1/4

9 6

9 6

33:3 7/8

MA5R EXISTING COL.

12 2

EXIST. ℄ SPLICE

3:0

9 9/16

9 2/0

11/4

EXIST. ℄ SPLICE

ELEVATION AT RIGHT SIDE OF BENT (5) - LOOKING SOUTH

9:0

7 (SIM)

8 4'8

1 1/2 bt

1'2

1:10

1:7

1'2

6

6

1:0

2

1 1/2 cd

1 1/2 bv

44 44 44 44

VIEW A-A

Note:
For section thru MA5R see Sec. B-B, sht. D27-E.

NOTE
FOR BILL OF MATL SEE D26-E

Rivets: 7/8 ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	*****	12-28-49	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D24-E

5468.103

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HBWSII	HBW-DR-3(2)	1950	104	304

Order No. 3807 Sheet No. D25-E

00
09
Cf

ONE COL MB5 R A.S.
ONE COL MB5 L OH
} FROM KEALAHAKA

32'-8 11/32

3'-0
8 3/4
℄ EXIST SPLICE

3'-0
8 3/4
℄ EXIST SPLICE

DB15-E

DB23-E

2-L's 4x3x5/16 x 33'-6 7/8

2-L's 6x4x3/8 x 7'-1 3/4

ST16-E

2 PLs Cf

6x4x5/8 L's

18x3/16 Web PLs

6x4x5/8 L's

MB6 R EXISTING COL.

8'-10 1/2

33'-3 7/8

1'-6 1/4
1'-6
1'-8

1'-3 3/16

℄ EXIST SPLICE

(K)

(H)

SPACE LINE (OPENING)

9'-0

1'-1 1/4
3 3/8 x 1'-6 1/4
10 1/4
2 3/16
1'-1 1/16

5/8
9 15/16
3 33/34

EXIST ℄ SPLICE
3'-0

31'-5 5/32

1'-0

2'-2 12/12

2'-2 12/12

6'-10 3/4

7'-1 3/4

2'-2 12/12

2'-2 12/12

2'-2 12/12

2'-2 12/12

3'-6 1/4

3'-6 1/4

1'-0

1'-0

1'-0

1'-0

3/8 3/8

1 PL 00

1 PL Cf

1 PL 09

1'-10

1'-7

1'-2

1'-2

4'-4 4'-4 4'-4

VIEW A-A

1'-2" B/B L's

Latt. Bars 2 3/4 x 7/16 x 2'-5 7/8"

6x4x5/8 L's

18x3/16 Web PLs

6x4x5/8 L's

Latt Bars 2 3/4 x 7/16 x 2'-5 7/8"

1'-6 3/4 B/B L's

SECTION B-B

Section B-B is typical for columns MB4, MB5 & MB6

ELEVATION AT RIGHT SIDE OF BENT (G) - LOOKING NORTH

NOTE
FOR BILL OF MATL SEE D26-E

Rivets: 7/8 ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE
HAWAII

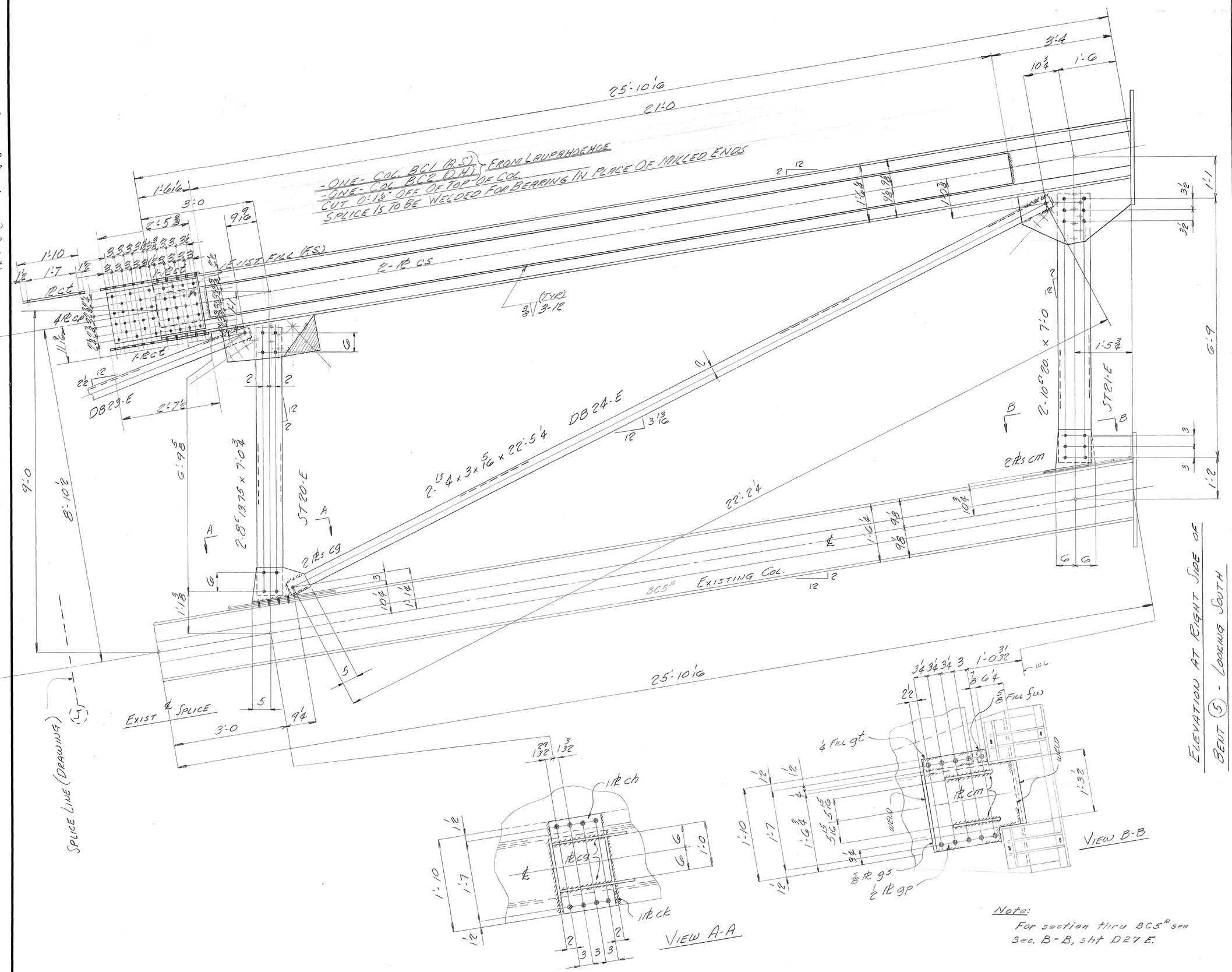
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	12-28-49	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D25-E

54GS.104

Order No. 3807 Sheet No. D26-E

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR-3(12)	1950	105	704



Elevation at Right Side of Sect (5) - Looking South

Note:
For section thru BC5R see Sec. B-B, sht D27E.

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT COMPANY

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
2	COLUMNS			MB5R	KEALAHAKA D24E
1	COLUMN			BC1	LAUPAHOEHOE
2	STRUTS			ST19E	
2	STRUTS			ST20E	
6	STRUTS			ST21E	
4	DIAG BRACE			DB23E	
2	DIAG BRACE			DB24E	
1	COLUMN			BC2	LAUPAHOEHOE
2	PL 21⅜ x ⅝	1	10	gp	TEMP
2	PL 18¾ x ⅝	1	9	gs	
2	PL 3 x ¼	1	0¾	gt	
2	PL 20 x ⅜	1	10	bt	
2	PL 18 x ⅜	1	9	bv	
4	PL 11 x ⅜	1	8	cd	
4	PL 11 x ⅜	1	6¼	cg	
2	PL 12 x ⅜	1	10	ch	
2	PL 13 x ⅜	1	6	ck	NEW MAT'L
4	PL 12 x ½	1	0	cm	
8	PL 16 x 7/16	2	5⅝	cp	
4	PL 10⅜ x ⅝	21	0	cs	
4	PL 22 x 7/16	2	7½	ct	TEMP
2	PL 1¾ x ⅝		3	fw	TEMP
MAT'L LISTED ABOVE ARE FOR DWG'S-D24E & D26-E					
MAT'L LISTED BELOW ARE FOR DWG'S-D25-E, D27-E & D28-E					
2	COLUMNS			MB5R	KEALAHAKA D25-E
2	COLUMNS			MB5R	DO D27E
2	COLUMNS			BC4R	DO D28-E
2	STRUTS			ST22-E	
2	STRUTS			ST23-E	
2	DIAG BRACE			DB25-E	
2	DIAG BRACE			DB26-E	
2	PL 15¾ x ⅜	1	10	aa	TEMP
2	PL 16¾ x ⅜	1	6	aa	
2	PL 20 x ⅜	1	10	bt	
2	PL 18 x ⅜	1	9	bv	
4	PL 11⅞ x ⅜	1	3¾	cf	
4	PL 12 x ½	1	0	cm	
4	PL 11¾ x ⅜	1	8	cv	
4	PL 5¾ x ⅝	3	1¾	cw	
8	PL 16 x 7/16	3	0¾	da	
4	PL 22 x 7/16	2	9⅜	db	
2	PL 15 x ⅜	1	10	dc	
2	PL 16 x ⅜	1	6	dd	
4	PL 10¾ x ⅜	1	3	df	NEW MAT'L
2	PL ⅝ x 1¾	0	3	fw	TEMP
2	PL ¼ x 3	1	0¾	ft	Da
2	PL ½ x 21⅜	1	10	gk	Da
2	PL ⅝ x 18¾	1	10	gm	Da

Rivets: ⅞ ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NAALUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

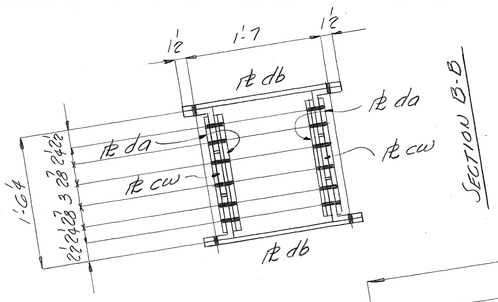
MADE BY	[illegible]	12-29-49	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D26-E

5468.105

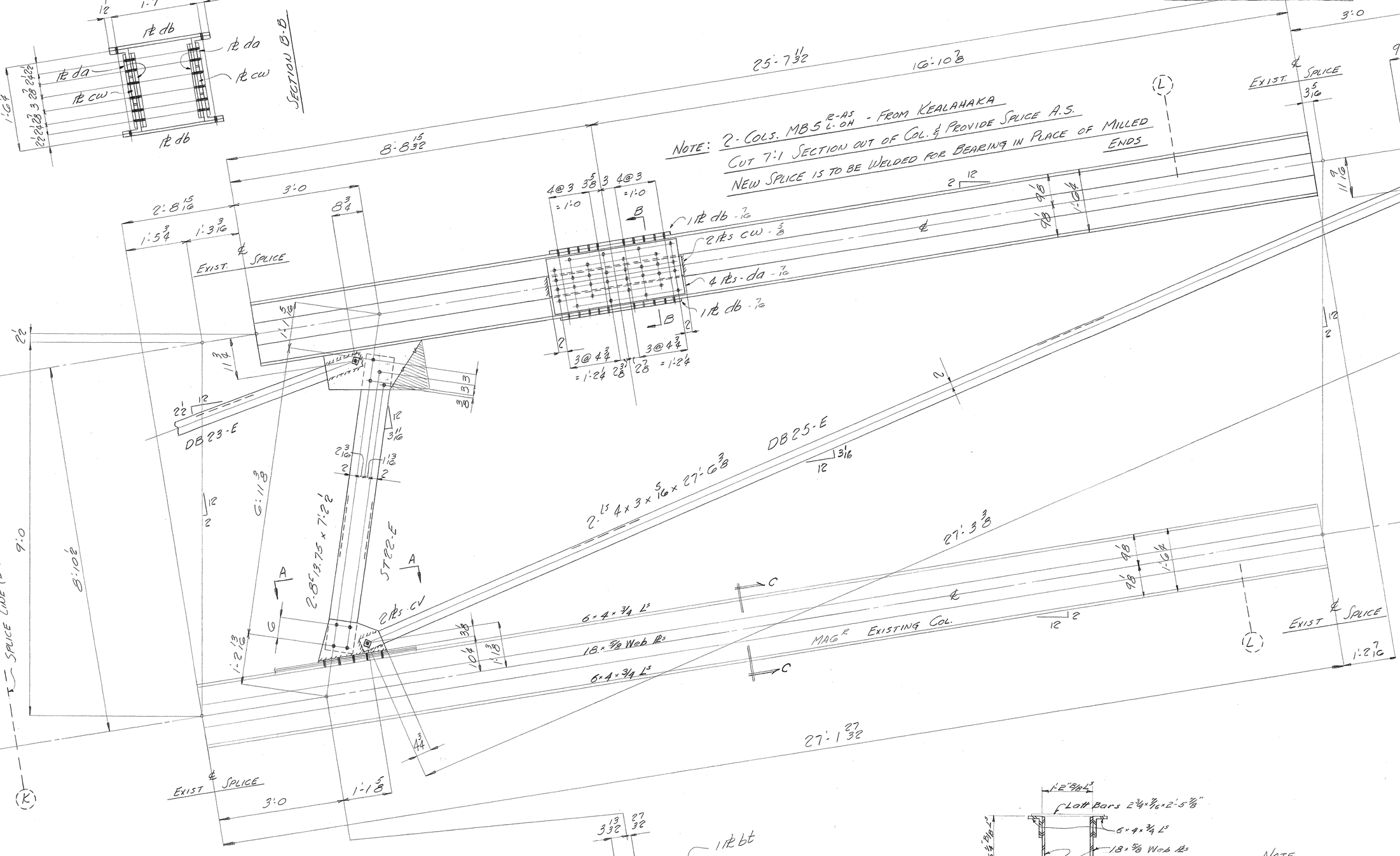
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR-2(6)	1950	106	204

Order No. 3807 Sheet No. D27-E

bt
bv
cv
cw
da
db

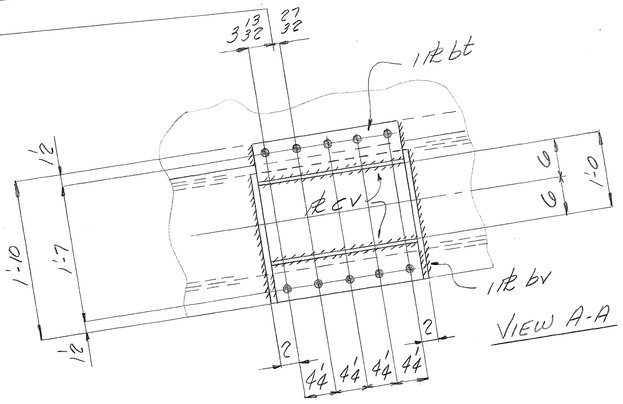


SECTION B-B

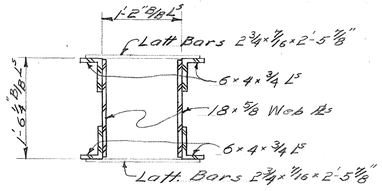


NOTE: 2-COLS. MB5 R-AS L-OH - FROM KEALAHAKA
CUT 7:1 SECTION OUT OF COL. & PROVIDE SPLICE A.S.
NEW SPLICE IS TO BE WELDED FOR BEARING IN PLACE OF MILLED ENDS

ELEVATION AT RIGHT SIDE OF BENT ⑥ - LOOKING NORTH



VIEW A-A



SECTION C-C

Section C-C is typical for columns BC5, MA5, MA6 & BC7.

NOTE

FOR BILL OF MATL SEE D26-E

Rivets: 7/8 ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NAVUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	1-3-50	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D27-E

5468.106

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII	2DR36(2)	1950	107	304

Order No. 3807 Sheet No. D28-E

cm
dc
dd
df
gt
fw
gk
gm

32'-11 3/32

2-Cols BC4 R:A5 L-OH - From KEALAHAKA

1'-2 7/16 | 3'-0 | 9 9/16

℄ Exist Splice

11/16

5

2 | 2

3 1/16 | 12

DB 25-E

2 Lr 4x3x5/16 x 29'-0 1/2

DB 26-E

12 | 28

8'-10 1/2

9'-0

11

2-10 20 x 7'-0 ST21-E

3 3

B | B

2 Rs cm

9 | 9

1'-2

3/32 | 3/32

1'-1

1'-5 3/4

6'-9

2-8 5/8 13.75 x 7'-2 3/8 ST23-E

6'-11 1/4

A | A

2 Rs df

6

1'-1 1/4

3

10 3/4 | 1'-6

C | C

6x4x3/4 Ls

18 x 5/8 Webs

6x4x3/4 Ls

BC6 R Existing Cols.

12 | 2

28'-9 1/2

32'-7 25/32

(L) Splice Line (Dramming)

Exist ℄ Splice

3'-0

8 3/4

6 | 6

Elevation at Right Side of Bent (6) - Looking North

1'-2 3/8 Ls

Loth. Bars 2 3/4 x 7/16 x 2'-5 5/8"

6x4x3/4 Ls

18 x 5/8 Web Pls

6x4x3/4 Ls

Loth Bars 2 3/4 x 7/16 x 2'-5 5/8"

1'-6 3/8 Ls

Section C-C

13/32 | 19/32

11 Rk dc

12 Rk df

11 Rk dd

3 3 3 3

1'-0

1'-7

View A-A

3 3 3 3/4 | 1'-0 15/16

W.L.

5/8" Fill fw (under)

7/8 64

2 1/2

1/4" Fill ft (under)

3 1/4

Rcm

Weld

5/16 5/16

1'-10

1'-7

1'-6 3/4

11/16

1'-3 1/2

1/2" Rk gk

5/8" Fill gm (under)

View B-B

NOTE

For Bill of Mat'l See D26-E

Rivets: 7/8 ϕ

Holes: 15/16 ϕ

Paint:

Industrial Development Co

Addition To Nanue Bridge

Hawaii

Independent Iron Works, Inc.
Oakland, Calif.

Made By	[illegible]	1-4-50	Order No.	3807
Checked By	RA	2-9-50	Sheet No.	D28-E

54GS.107

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	SDR2(2)	1950	108	304

Order No. 3807 Sheet No. D29-E

w
oa
ag

dg
dh
dk
dm
dp

ft
fv
fw
ga

SECTION B-B

SECTION D-D

NOTE: 2 COLS. BC2L R-AS L-OH - FROM KEALAHAKA
CUT 3-1 17/32 SECTION OUT OF COL. & PROVIDE SPLICE A.S.
NEW SPLICE IS TO BE WELDED FOR BEARING IN PLACE OF MILLED ENDS

EXIST ℄ SPLICE

DB 15-E

DB 27-E

2-L 4x3x5/16 x 33'-4 7/8

2-L 6x4x3/8 x 7'-1 3/4

STIG-E

STG4-E

2-BP 19.75 x G-11 1/4

BC7R EXISTING COL

EXIST ℄ SPLICE

℄

36'-11 1/16

29'-7 3/4

33'-1 7/8 -1/16

ELEVATION AT RIGHT SIDE OF BENT (7) LOOKING SOUTH

VIEW A-A

VIEW C-C

Note:
For Section thru BC7R see Sec. B-B, sht. D27-E

NOTE:
FOR BILL OF MAT'L SEE D33-E

Rivets: 7/8 ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO.

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

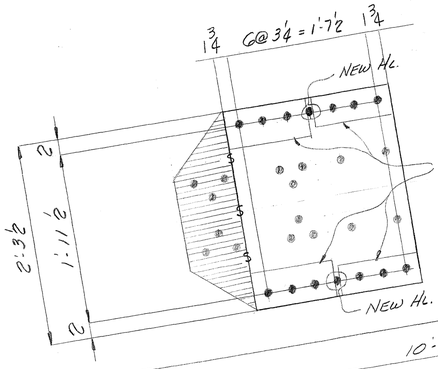
MADE BY	[illegible]	1-5-50	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D29-E

5468.108

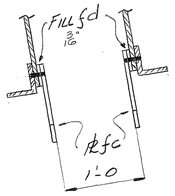
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII (FED)		DR-2(3)	1950	102	804

Order No. 3807 Sheet No. D30-E

ds
dt
dv
dw
fa
fb
fc
fd

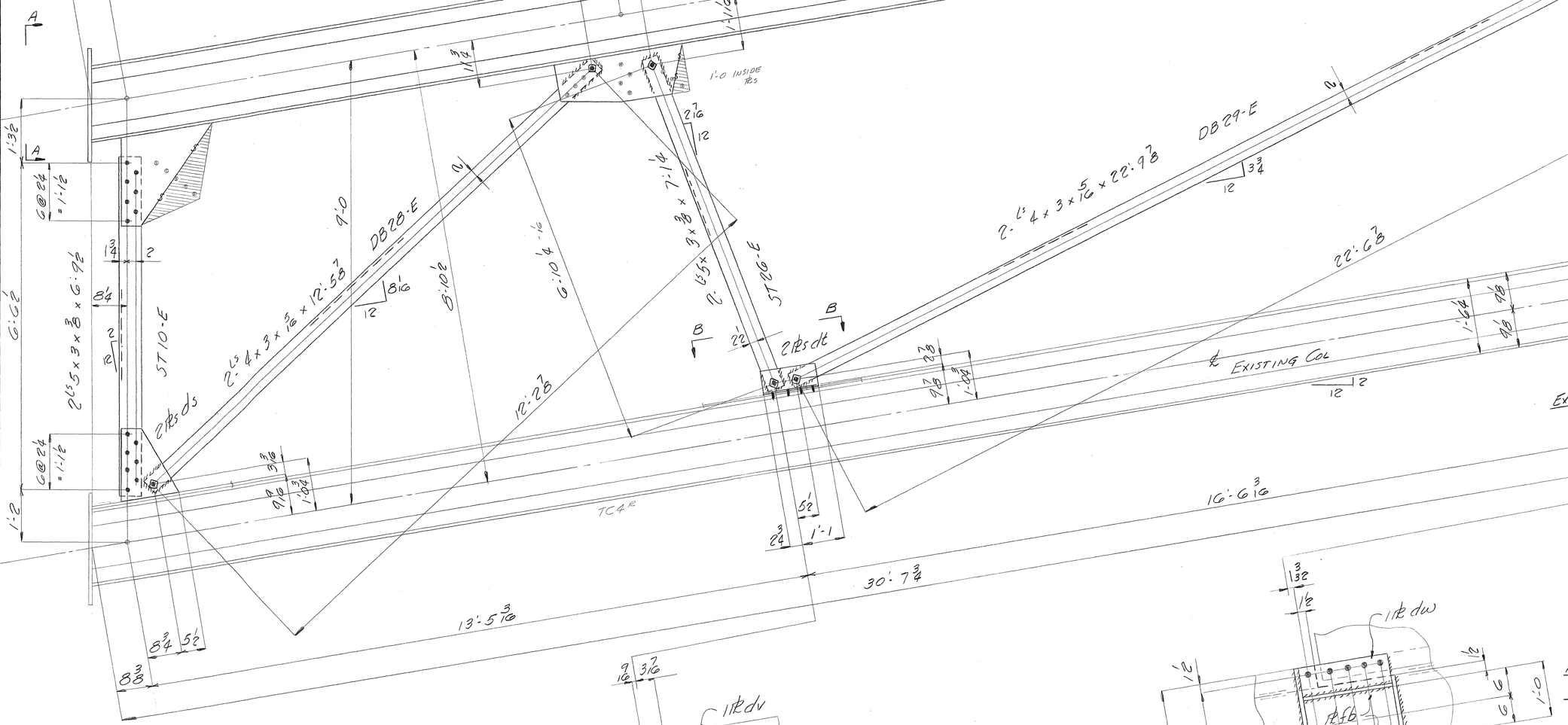


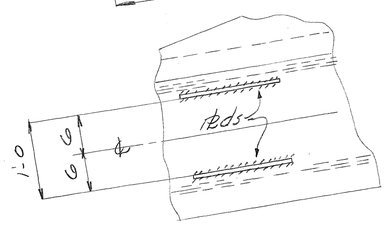
VIEW A-A

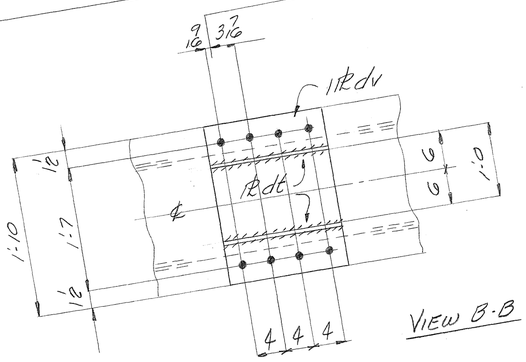


SECTION D-D

2 COLS TC1 R-AS L-OH - FROM KEALAHAKA

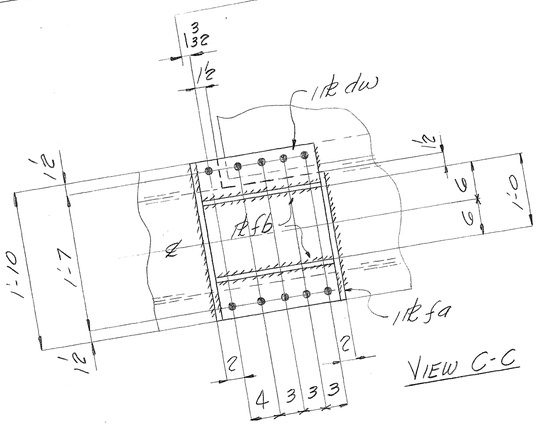






VIEW B-B

Note:
For section thru TC4R see Sec. D-D, sht. D13-E.



VIEW C-C

NOTE:-
FOR BILL OF MAT'L. SEE D33-E

Rivets: ¾ ϕ
Holes: 15/16 ϕ
Paint:

ELEVATION AT RIGHT SIDE OF BENT (8) - LOOKING NORTH

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NAWILI BRIDGE
HAWAII

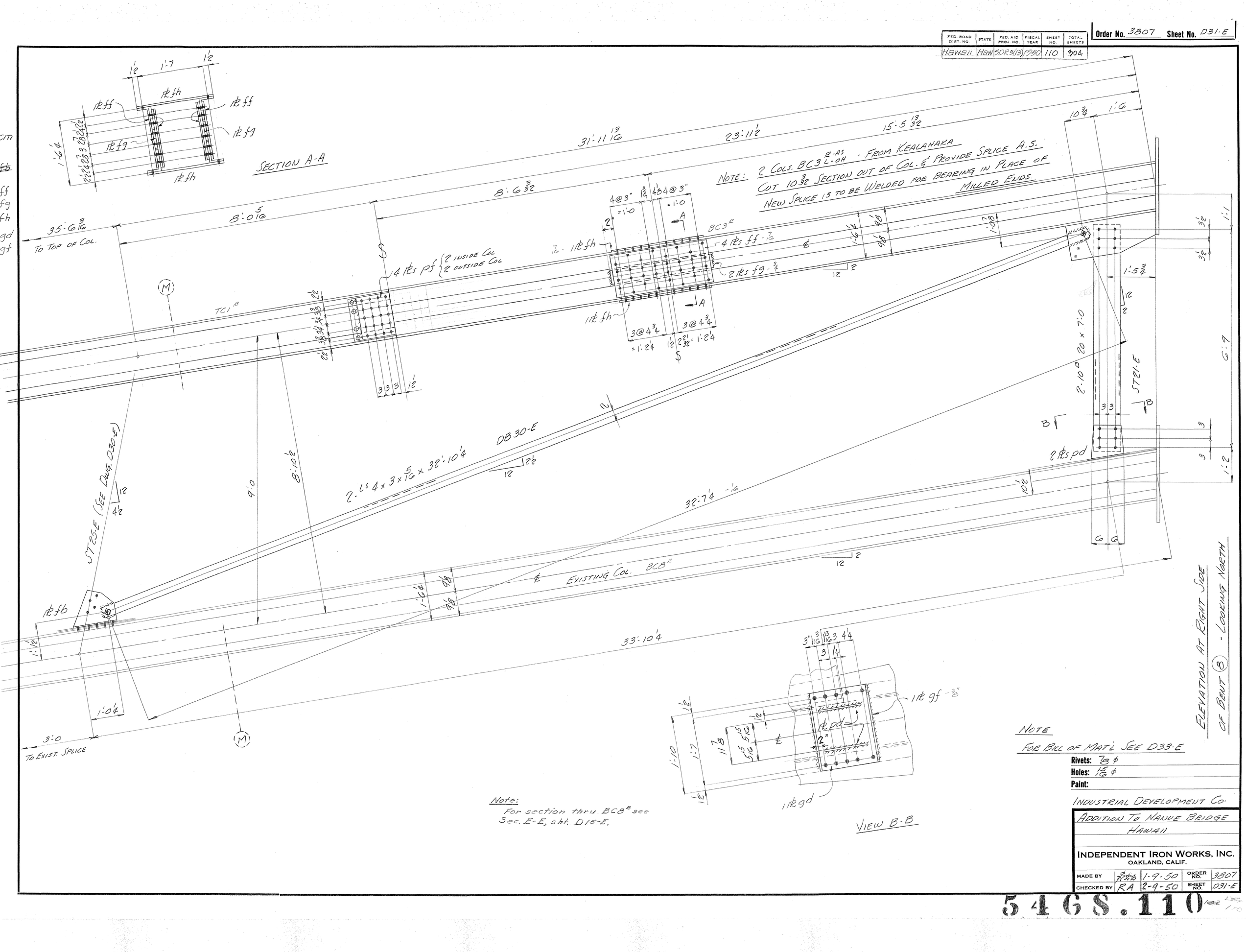
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	1-6-50	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D30-E

5468.109

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW 911	HAW	SDR 9(13)	1950	110	304

Order No. 3807 Sheet No. D31-E



Note:
For section thru BC8R see Sec. E-E, sht. D15-E.

NOTE
For Bill of Mat'l See D33-E

Rivets: 7/8 ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO.

ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	1-9-50	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D31-E

5468.110

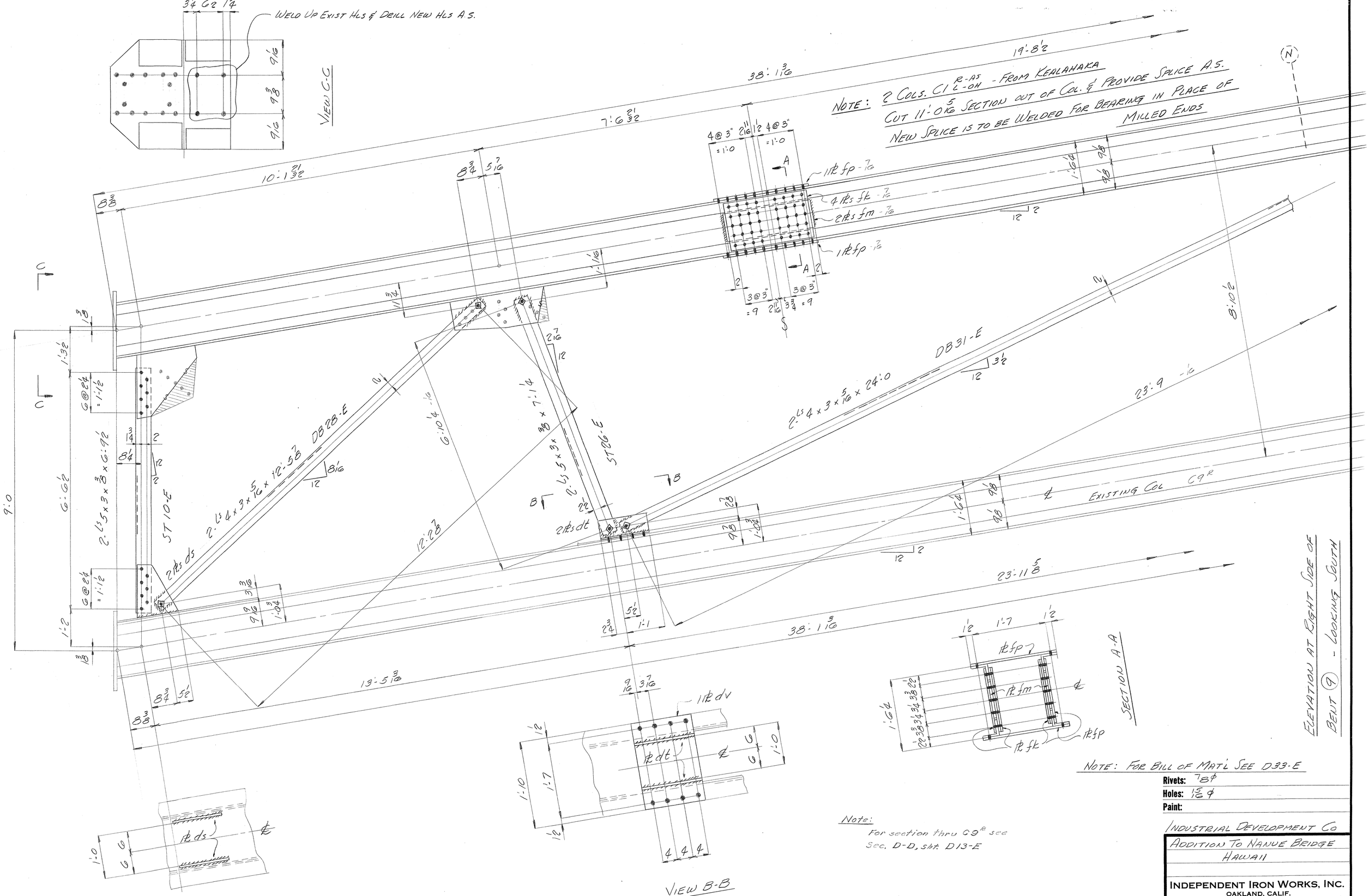
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	DBS(13)	1950	111	204

Order No. 3807 Sheet No. D32-E

dfs
dfd
dfv

dfk
dfm
dfp

NOTE: 2 COLS. C1 R-AS L-ON - FROM KEALAHAKA
CUT 11'-0 5/16 SECTION OUT OF COL. & PROVIDE SPLICE A.S.
NEW SPLICE IS TO BE WELDED FOR BEARING IN PLACE OF MILLED ENDS



VIEW B-B

Note:
For section thru C9R see Sec. D-D, sht. D13-E

NOTE: FOR BILL OF MATL SEE D33-E

Rivets: 78 ϕ
Holes: 15 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO

ADDITION TO NANUE BRIDGE
HAWAII

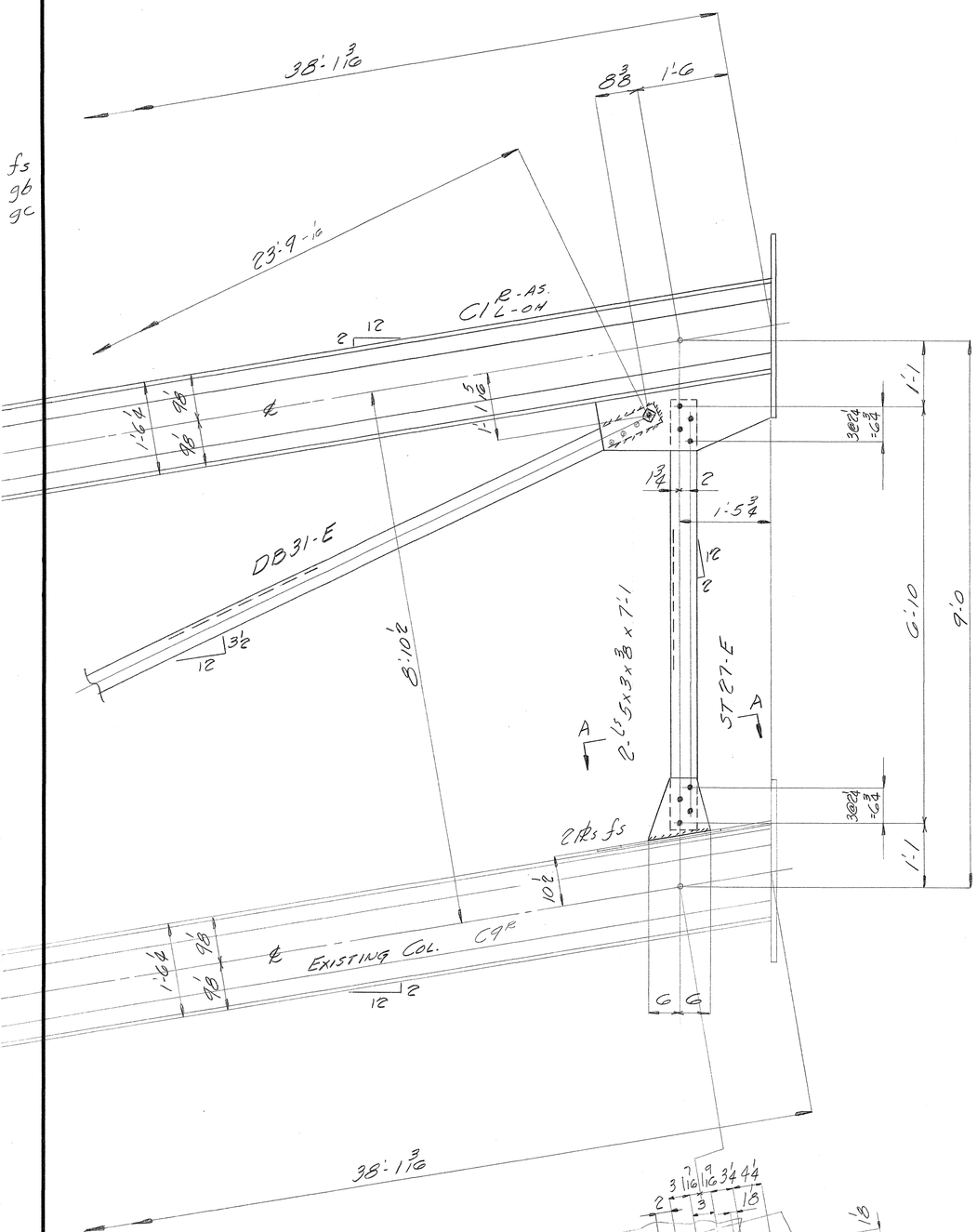
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	1-10-50	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D32-E

5468.111

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR-2(13)	1950	112	904

Order No. 3807 Sheet No. D33-E



ELEVATION AT EIGHT SIDE OF BENT (9) - LOOKING SOUTH

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT COMPANY

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
2	COLUMNS			BC2 R L	KHALAHALA D29-E
2	Do			TC1 R L	Do D30-E
2	Do			BC3 R L	Do D31-E
2	Do			C1 R L	Do D32-E Do D33-E
2	STRUTS			ST24-E	
2	Do			ST25-E	
4	Do			ST26-E	
2	Do			ST27-E	
2	DIAG BRACES			DB27-E	
4	Do			DB28-E	
2	Do			DB29-E	
2	Do			DB30-E	
2	Do			DB31-E	
MATL LISTED BELOW IS FOR SHTS. D29-E THRO D33-E					
4	℄ 11/2 x 3/8	1	3 3/4	w	TEMP
2	℄ 15 3/4 x 3/8	1	10	aa	
2	℄ 16 3/4 x 3/8	1	6	ag	
4	℄ 12 x 1/2	1	0	dg	
8	℄ 12 x 5/8	1	4	dh	
4	℄ 22 x 7/16	2	9 1/2	dt	
4	℄ 9 1/2 x 5/8	2	2 1/2	dm	
8	℄ 16 x 7/16	2	1 1/2	dp	
8	℄ 14 x 3/8	1	7 3/4	ds	
8	℄ 6 x 3/8	1	3 3/4	dt	
4	℄ 15 x 3/8	1	10	dv	
2	℄ 16 x 3/8	1	10	dw	
2	℄ 17 x 3/8	1	10	fa	
4	℄ 12 1/2 x 3/8	1	4	fb	
4	℄ 16 x 3/8	1	6	fc	
4	℄ 3 x 1/2	1	6	fd	
8	℄ 16 x 7/16	2	11 5/8	ff	
4	℄ 6 x 3/4	3	0 1/2	fg	
4	℄ 22 x 7/16	2	8 3/8	fh	
8	℄ 16 x 7/16	2	3 1/2	fk	
4	℄ 9 1/2 x 7/16	2	4 1/2	fm	
4	℄ 22 x 7/16	2	7 1/4	fp	
4	℄ 12 x 1/2	1	1	fs	NEW MATL
2	℄ 3 x 1/4	1	0	ft	
2	℄ 18 3/4 x 5/8	1	8 1/2	fv	
2	℄ 1 3/4 x 5/8		3	fw	
2	℄ 21 5/8 x 1/2	1	10	ga	
2	℄ 16 1/2 x 1/2	1	10	gb	
2	℄ 17 1/2 x 3/8	1	9 5/8	gc	
2	℄ 16 1/4 x 1/2	1	10	gd	
2	℄ 17 1/4 x 3/8	1	10	gf	
4	℄ 12 x 1/2	1	0	pd	
8	℄ 12 x 5/8	1	4	pf	TEMP

Rivets: 3/8 ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT CO

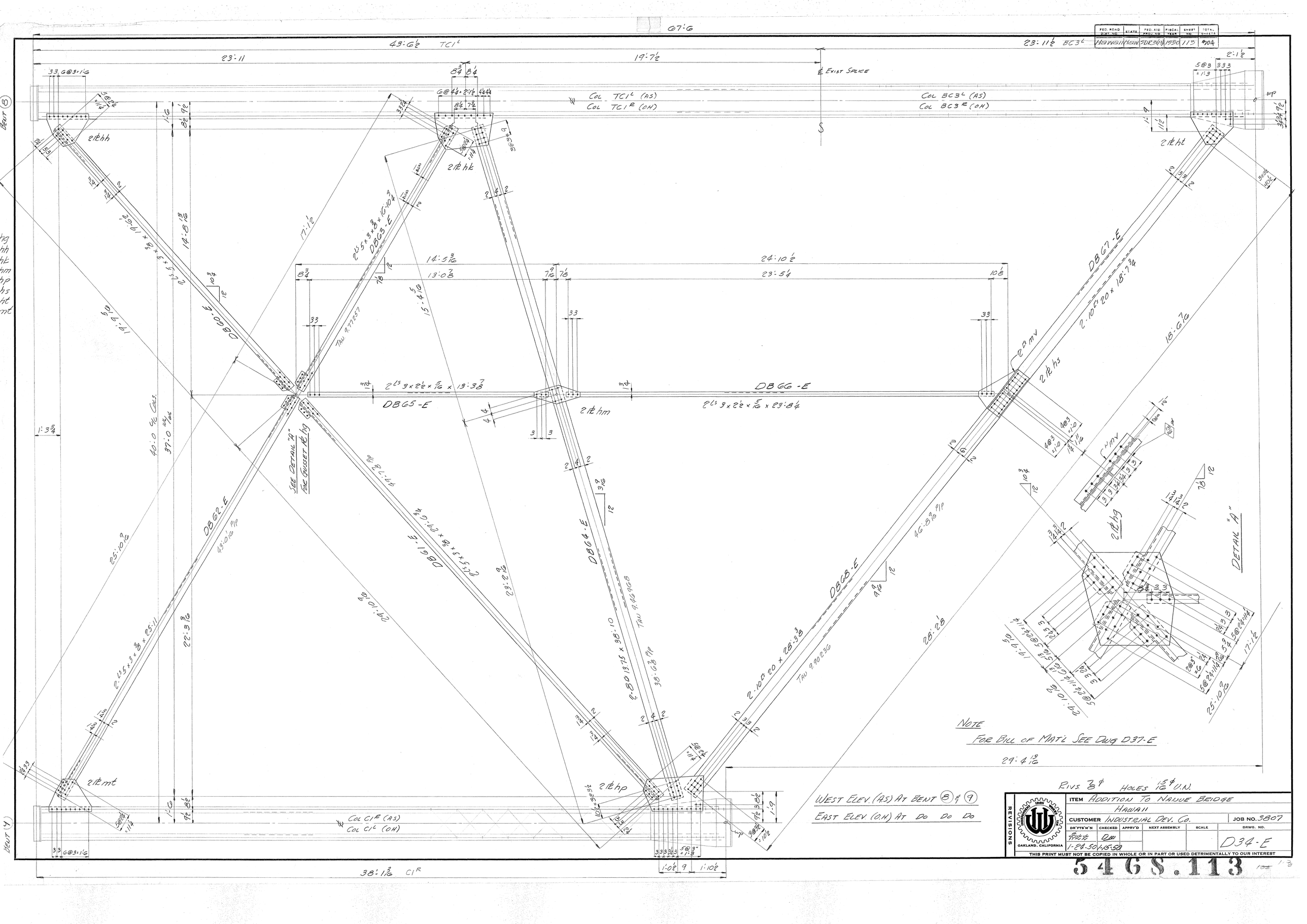
ADDITION TO NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	[illegible]	1-10-50	ORDER NO.	3807
CHECKED BY	RA	2-9-50	SHEET NO.	D33-E

5468.112 1-2 TEMP

FED. ROAD DIV. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HI	HWY-1	HWY-1(2)	DDR 30(3)	1950	113	404



REVISIONS	ITEM	ADDITION TO NAHUE BRIDGE HAWAII				
	CUSTOMER	INDUSTRIAL DEV. CO.				JOB NO. 3807
	DR'FTS'M'N	CHECKED	APPRV'D	NEXT ASSEMBLY	SCALE	DRWG. NO.
	[illegible]	[illegible]				D34-E
	1-24-50	1-25-50				

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5468.113

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HI	HWY	HM3DR(13)	1950	114	304

hv
hw
ka
kb
kc
kd
kf
kg
kh

BCG - WEST ELEV (OH)
BC4 - EAST ELEV (AS)

MC3 L - EAST ELEV (AS)
R - WEST ELEV (OH)

EAST ELEVATION (AS & N) AT BENTS ② & ③
WEST ELEVATION (OH & N) AT Do. Do Do

RIVS. 7/8" HOLES 15/16" U.N.

NOTE
FOR BILL OF MATL SEE DWG D37-E

REVISIONS	ITEM ADDITION TO NANUE BRIDGE HAWAII					
	CUSTOMER INDUSTRIAL DEVELOPMENT CO				JOB NO. 3807	
	DR'FTS'M'N	CHECKED	APPRV'D	NEXT ASSEMBLY	SCALE	DRWG. NO.
	1-27-50	1-15-50				D35-E

OAKLAND, CALIFORNIA

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5468.114

FED. ROAD PROJECT	STATE	FED. AID PROJECT	FISCAL YEAR	SHEET	TOTAL SHEETS
HSW811	HSW DK 2(13)	1950	113	704	

Col MB5 R-OH FROM KEALAHAKA AS

Col BC2 (A.S.) Col BC1 (O.H.) LAUPAHOEHOE

NEW SPLICE

BENT (5)

BENT (4)

℄ EXISTING SPLICE

40'-0 % COLS.
37'-0 %

LB4 LS4 LH2

DB46E 2 L 5×3½×⅜ × 22'-0½ (48'-5 %)

DB48E 2 L 5×3×⅜ × 23'-10 (52'-1⅜ %)

DB45E 2 L 5×3×⅜ × 26'-1

DB47E 2 L 5×3½×⅜ × 28'-0

DB43E 2 - 8 L 13.75 × 37'-7

DB44E 2 - 10 L 20 × 39'-5⅝

DB42E 2 L 3½×2½×5/16 × 16'-11

DB49E 2 L 3½×2½×5/16 × 9'-11

2 PL kp · 2 PL kq · 2 PL kr · 2 PL ks · 2 PL kt · 2 PL ku · 2 PL kv · 2 PL kw · 2 PL kk · 2 PL km · 2 PL ma

Col BC1 R-AS FROM KAULA OH

EAST ELEVATION A.S. - WEST ELEVATION O.H.

FOR BILL OF MATERIAL SEE SHEET D37A-E

RIVETS: ⅞ HOLES: 15/16

ITEM ADDITION TO THE NANUE BRIDGE HAWAII					
CUSTOMER INDUSTRIAL DEVELOPMENT CO.					JOB NO. 3807
DR'FTS'M'N	CHECKED	APPR'D	NEXT ASSEMBLY	SCALE	DRWG. NO.
LANDAUER					D-36E
1-27-50	1-15-50				

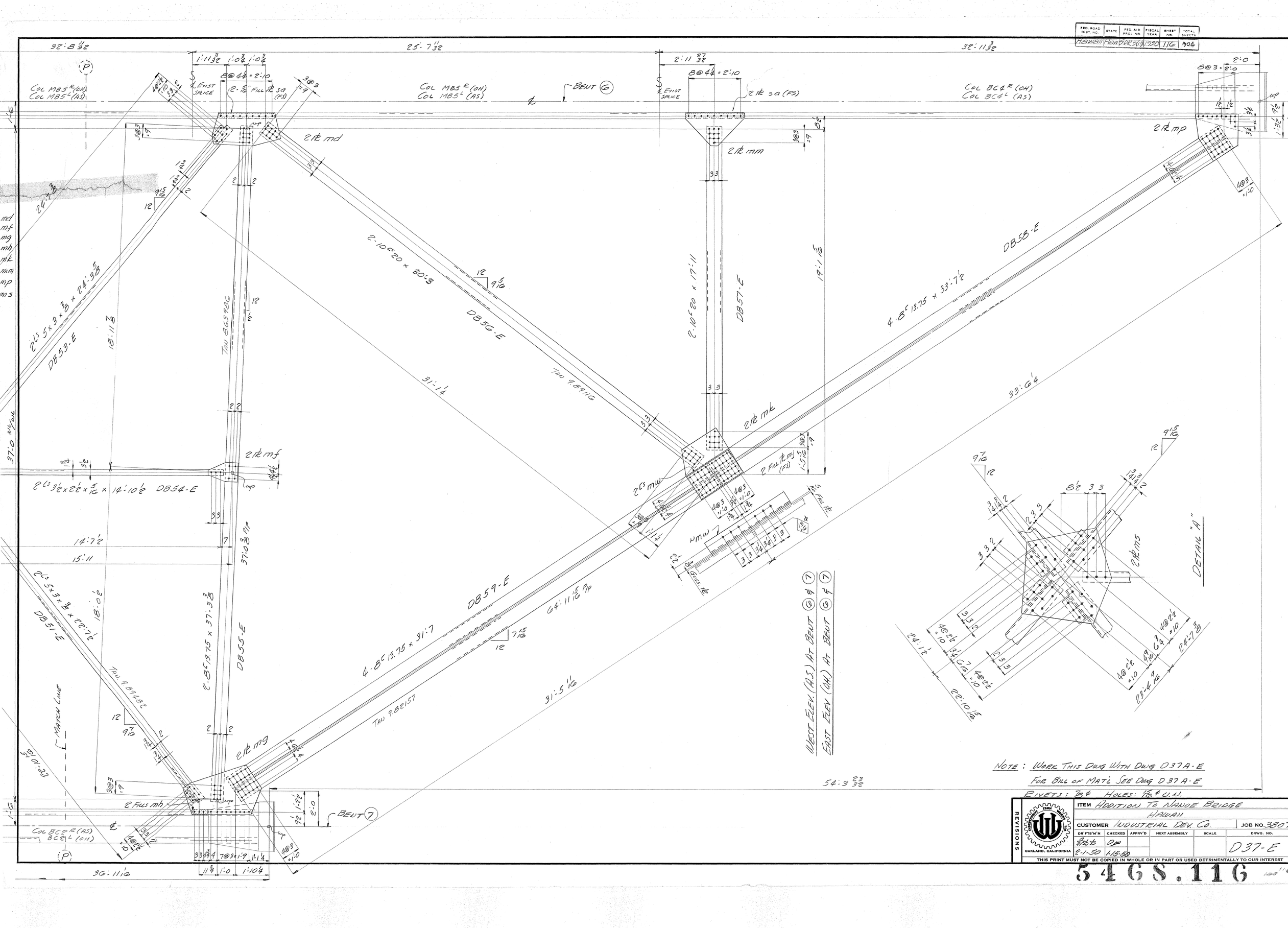
OAKLAND, CALIFORNIA

REVISIONS

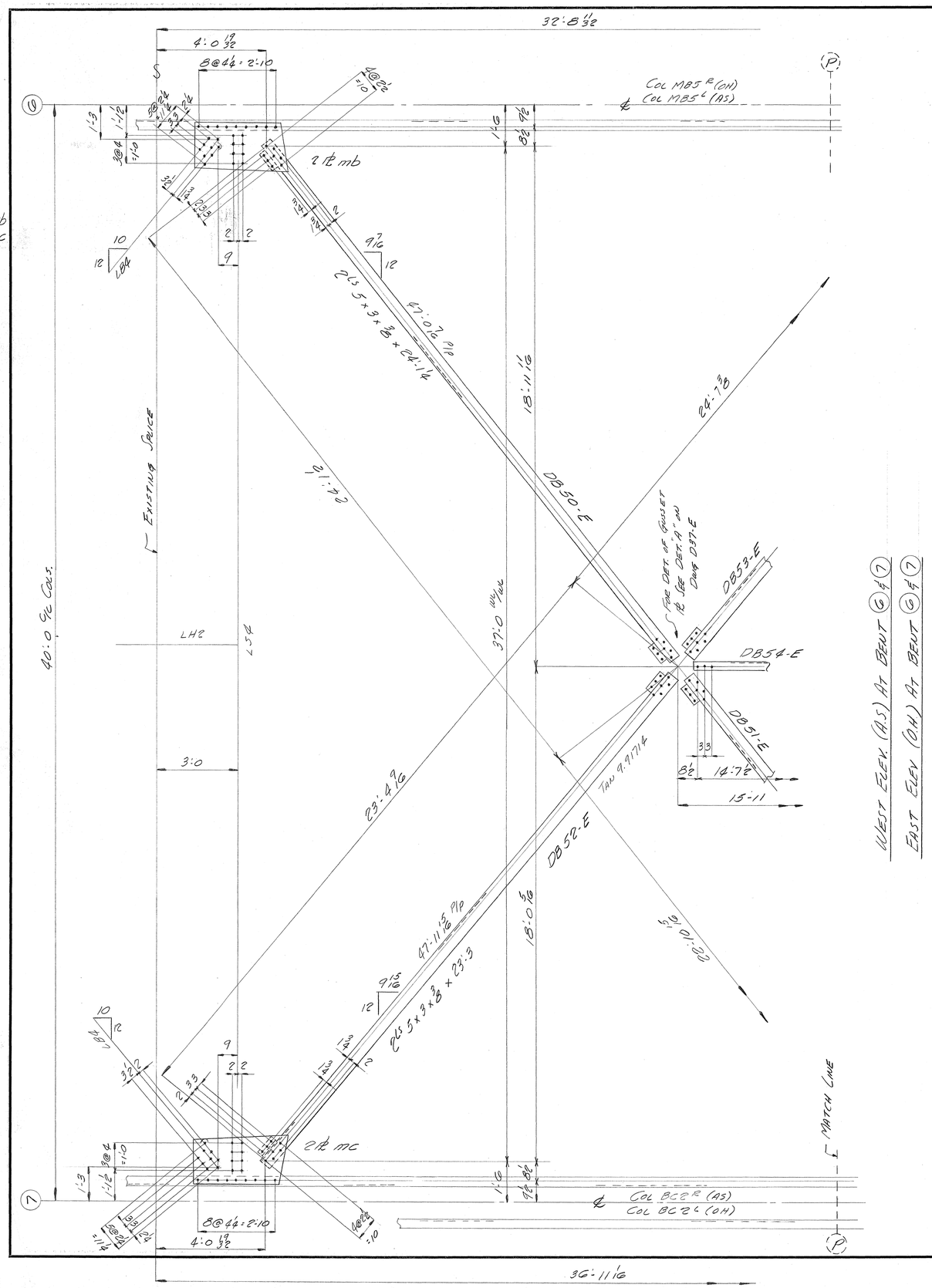
THIS PRINT MUST NOT BE COPIED IN WHOLE OR IN PART OR USED DETRIMENTALLY TO OUR INTEREST

5465.115

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
				116	204


Col MB5R(OH) Col MB5L(AS)
Col MB5R(OH) Col MB5L(AS)
Col BC4R(OH) Col BC4L(AS)
BENT (6)
BENT (7)
2 Flrs mh
2 Flrs mg
2 Flrs mf
2 Flrs mk
2 Flrs mm
2 Flrs mp
2 Flrs md
2 Flrs ms
2 Flrs mw
2 Flrs mx
2 Flrs my
2 Flrs mz
2 Flrs ma (FS)
2 Flrs mb (FS)
2 Flrs mc (FS)
2 Flrs mv
2 Flrs mw
2 Flrs mx
2 Flrs my
2 Flrs mz
2 Flrs ma
2 Flrs mb
2 Flrs mc

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
				117	204



WEST ELEV. (A.S.) AT BENT ⑥ & ⑦

EAST ELEV. (O.H.) AT BENT ⑥ & ⑦

MATERIAL LISTED BELOW DETAILED ON D34-E

No.	Description	Length Ft	Length Ins	Mark	Remarks
2	Diag Braces	19	6½	DBG0-E	See Dwgs: D37-E, D38 & D39-E, SDSG-E for Details of Diag. Braces
2		29	6¾	DBG1-E	
2		25	11	DBG2-E	
2		16	10¾	DBG3-E	
2		38	10	DBG4-E	
2		13	3⅜	DBG5-E	
2		23	8¼	DBG6-E	
2		18	7¾	DBG7-E	
2		28	3⅜	DBG8-E	

4	℔ 30 x 3/8	2	7	hg	TEMP
4	℔ 23 x 3/8	2	3	hh	
4	℔ 25 x 3/8	3	1	hk	
4	℔ 11 x 3/8	2	6	hm	
4	℔ 24 x ½	3	4	hp	
4	℔ 20 x 3/8	2	6½	hs	
4	℔ 21 x ½	2	3	ht	
4	℔ 23 x 3/8	2	3	mt	
4	℔ 10ᶜ20	2	6½	mv	NEW MATL

MATERIAL LISTED BELOW DETAILED ON D35-E

No.	Description	Length Ft	Length Ins	Mark	Remarks
2	Diag Braces	25	6½	DB33-E	See Dwgs: D00-E, D01-E & D64-E for Details of Diag. Braces
2		18	3¾	DB34-E	
2		29	9½	DB35-E	
2		11	7⅝	DB36-E	
2		39	3½	DB37-E	
2		18	5	DB38-E	
2		25	1¼	DB39-E	
2		24	6¼	DB40-E	
2		15	5	DB41-E	

4	℔ 30 x 3/8	3	0	hv	TEMP
4	℔ 22 x 3/8	3	1	hw	
4	℔ 21 x 3/8	3	2	hq	
4	℔ 30 x ½	3	6	hb	
4	℔ 3 x ½		10	hc	
4	℔ 12 x 3/8	1	8	hd	
4	℔ 24 x 3/8	3	2	hf	
4	℔ 24 x ½	2	0	hg	
4	℔ 21 x 3/8	2	6½	hh	
4	℔ 10ᶜ20	2	6½	mv	NEW MATL

MATERIAL LISTED BELOW DETAILED ON D36-E (DUMMY BAL)

No.	Description	Length Ft	Length Ins	Mark	Remarks
2	Diag Braces	16	11	DB42-E	See Dwgs: D50-E, D55-E for Det. of Diag Braces
2		37	7	DB43-E	
2		39	5⅜	DB44-E	
2		26	1	DB45-E	
2		22	0½	DB46-E	
2		28	0	DB47-E	
2		23	10	DB48-E	
2		9	11	DB49-E	

4	℔ 19 x 3/8	3	1	kk	TEMP
4	℔ 19 x 3/8	3	2	km	
4	℔ 28 x 3/8	2	6½	kp	
4	℔ 21 x 3/8	3	1	ks	
4	℔ 9 x 3/8	2	6	kt	
4	℔ 25 x ½	3	7	kv	
4	℔ 12 x 3/8	1	9	kw	
4	℔ 22 x ½	2	3	ma	NEW MATL

MATERIAL LISTED BELOW DET. ON D37-E & D37A-E

No.	Description	Length Ft	Length Ins	Mark	Remarks
2	Diag Braces	24	1¼	DB50-E	See Dwgs: D37-E, D62-E, D63-E & D64-E for Details of Diag Braces
2		22	7½	DB51-E	
2		23	3	DB52-E	
2		24	3⅝	DB53-E	
2		14	10½	DB54-E	
2		37	3⅜	DB55-E	
2		29	11	DB56-E	
2		17	11	DB57-E	
2		33	7½	DB58-E	
2		31	7	DB59-E	

4	℔ 23 x 3/8	3	5	mb	TEMP
4	℔ 22 x 3/8	3	6	mc	
4	℔ 21 x 3/8	3	11	md	
4	℔ 11 x 3/8	1	8	mf	
4	℔ 34 x ½	4	4	mg	
4	℔ 3 x ½		9	mh	
4	℔ 31 x 3/8	2	11	mk	
4	℔ 20½ x 3/8	3	1	mm	
4	℔ 27 x ½	2	7	mp	
4	℔ 29 x 3/8	2	8	ms	
4	℔ 18ᶜ427	2	6½	mw	
4	℔ 18 x 7/16	2	6½	my	
8	℔ 3½ x 7/16	3	1	sa	NEW MATL

NOTE: Rivets 7/8 ϕ Holes 15/16 ϕ

Work This Dwg With Dwg D37-E

REVISIONS	ITEM	Addition To Nanue Bridge, Hawaii				
	CUSTOMER	Industrial Dev. Co.				JOB NO. 3807
	DR'FTS'M'N	CHECKED	APPRV'D	NEXT ASSEMBLY	SCALE	DRWG. NO.
	[illegible]	DW				D37A-E
	2-1-50	1-16-50				

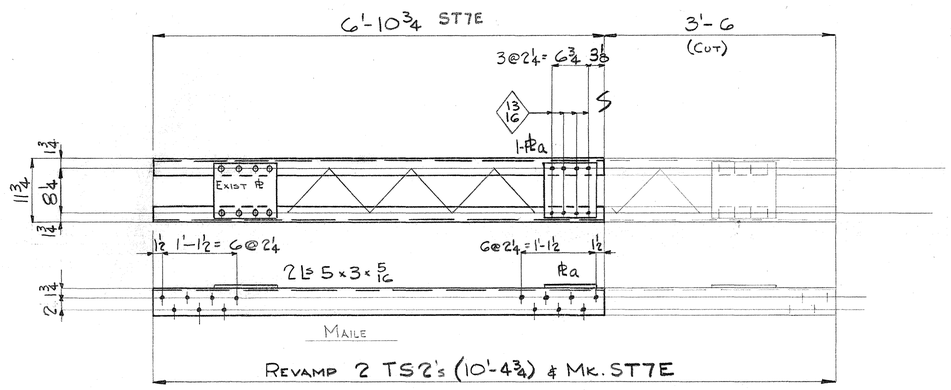
THIS PRINT MUST NOT BE COPIED IN WHOLE OR IN PART OR USED DETRIMENTALLY TO OUR INTEREST

OAKLAND, CALIFORNIA

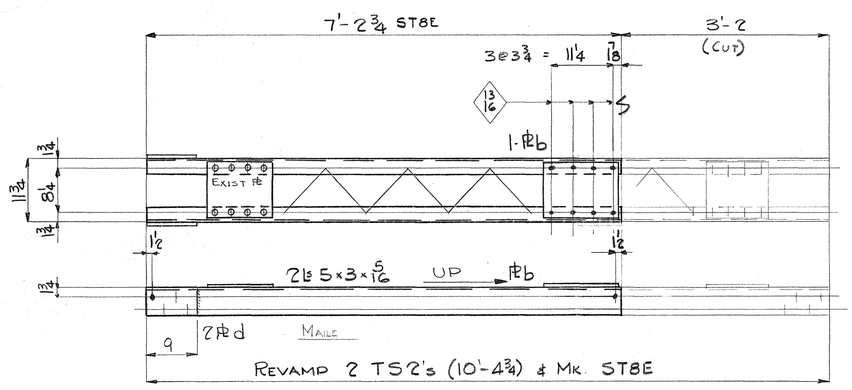
54GS.117

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	S.U.R.2(1a)	1950	118	304

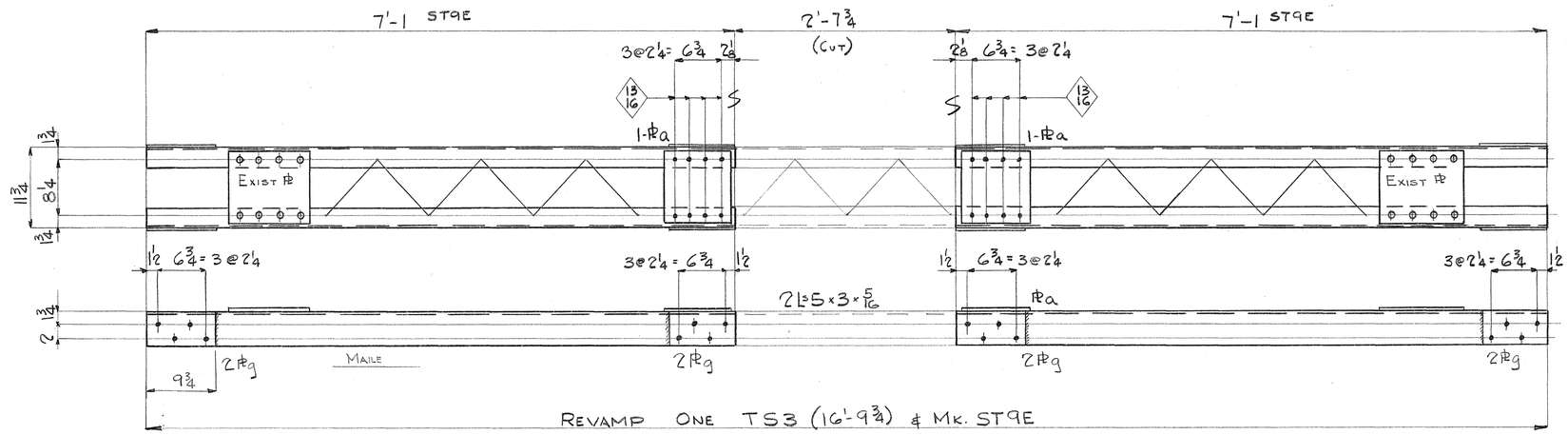
Order No. 3807 Sheet No. D38E



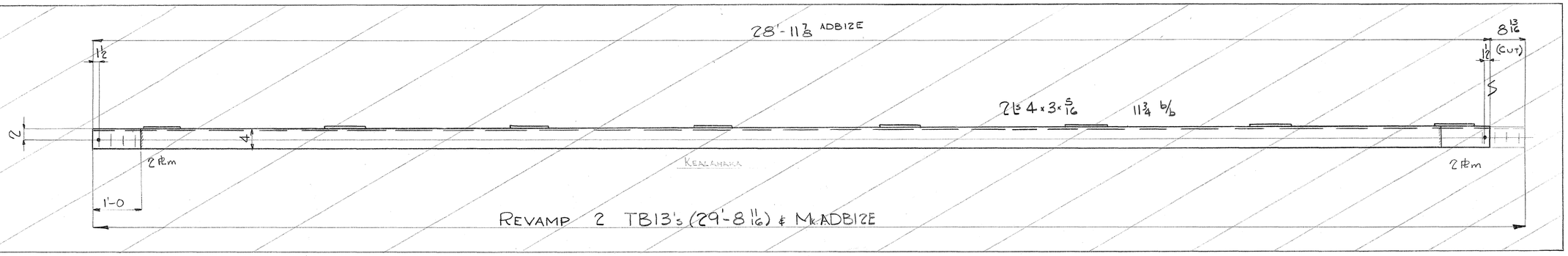
REVAMP 2 TS2's (10'-4¾) & MK. ST7E



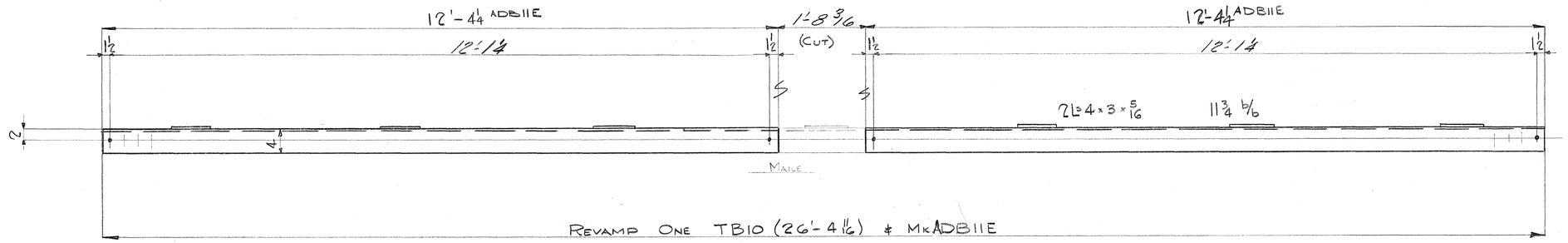
REVAMP 2 TS2's (10'-4¾) & MK. ST8E



REVAMP ONE TS3 (16'-9¾) & MK. ST9E



REVAMP 2 TB13's (29'-8 11/16) & MkADBIZE



REVAMP ONE TB10 (26'-4 1/16) & MkADBIIE

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT CO.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAILS.					
					SALV FROM:
4	BRACES	10	4¾	TS2	MAILE
1	Do	16	9¾	TS3	MAILE
1	Do	26	4 1/16	TB10	MAILE
4	Pl 9¼ x ⅜	0	10¾	a	Temp-New
2	Pl 10¾ x ⅜	1	1¾	b	Temp-New
4	Pl 5 x ⅜	0	9	d	Temp-New
8	Pl 5 x ⅜	0	9¾	g	Temp-New

Rivets: ¾ FOR 13/16 ϕ HOLES
Holes: 15/16 ϕ UN
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO NANUE BRIDGE
HAWAII

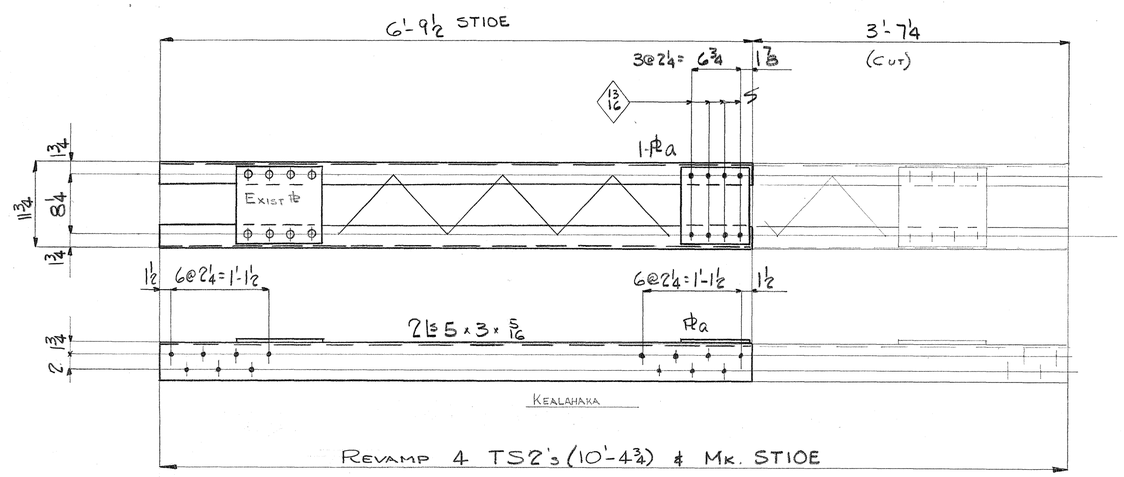
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	1-11-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D38E

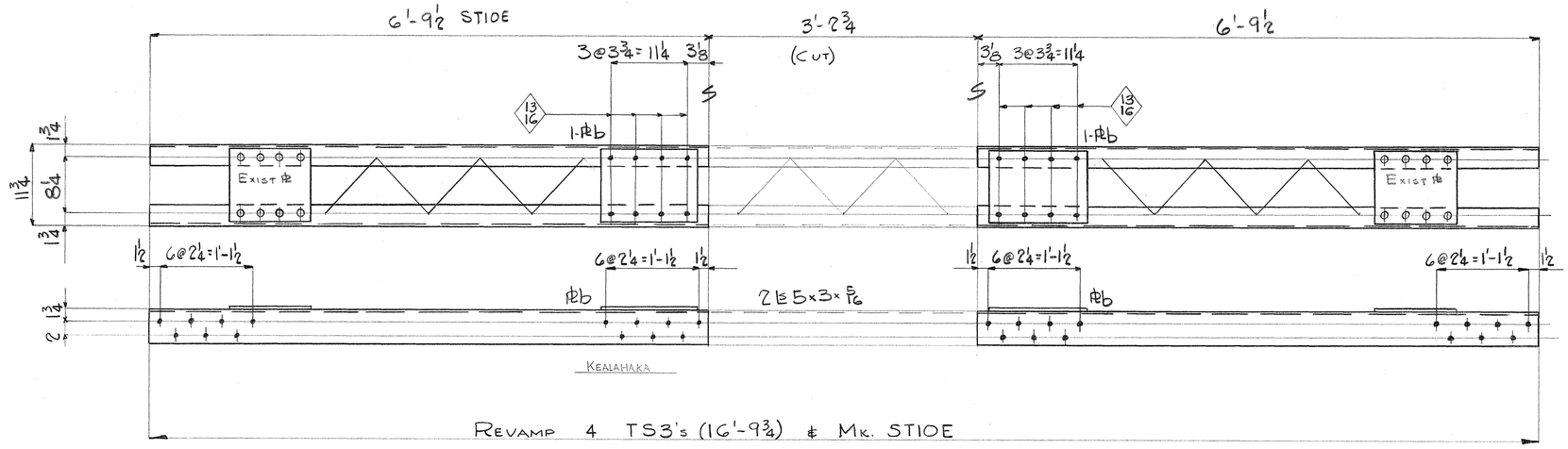
5468.118

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	3DR3(12)	1950	119	904

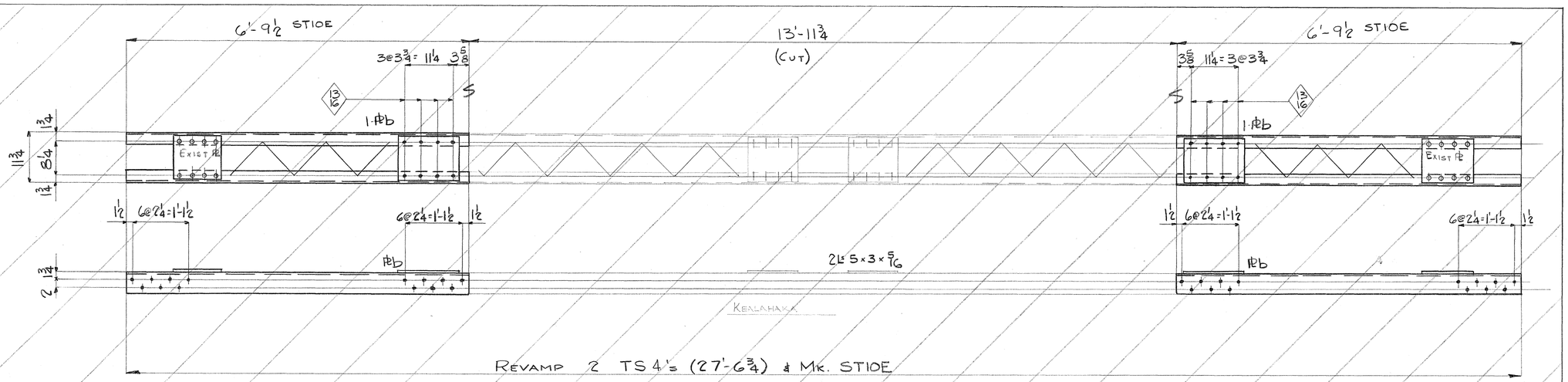
Order No. 3807 Sheet No. D39E



REVAMP 4 TS2's (10'-4¾) & MK. STIOE



REVAMP 4 TS3's (16'-9¾) & MK. STIOE



REVAMP 2 TS4's (27'-6¾) & MK. STIOE

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT CO.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAIL					
					SALV FROM:
4	BRACES	10	4¾	TS2	KEALAHAKA
4	Do	16	9¾	TS3	Do
4	PL 9¼ x ⅜	0	10¾	a	Temp. New
8	PL 10¾ x ⅜	1	1¾	b	Temp. New

Rivets: ¾ ϕ FOR 13/16 ϕ Holes
Holes: 15/16 ϕ UN.
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

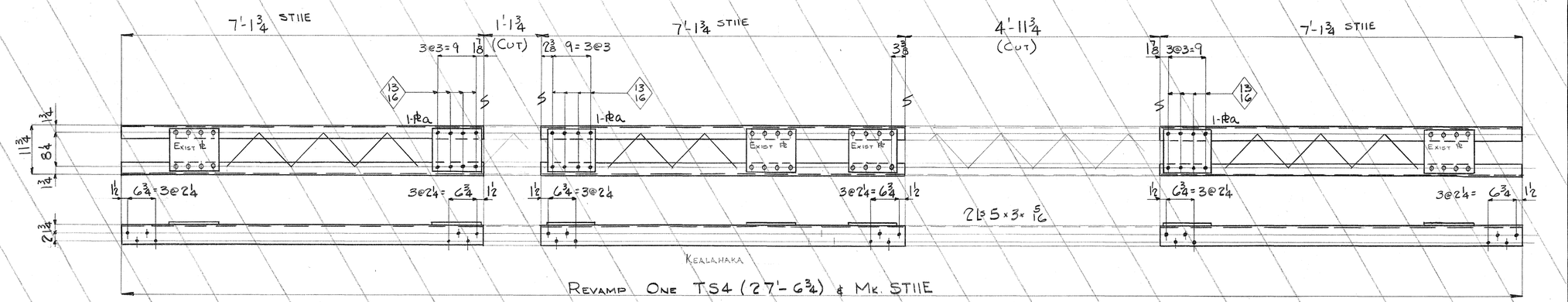
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	1-12-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D39E

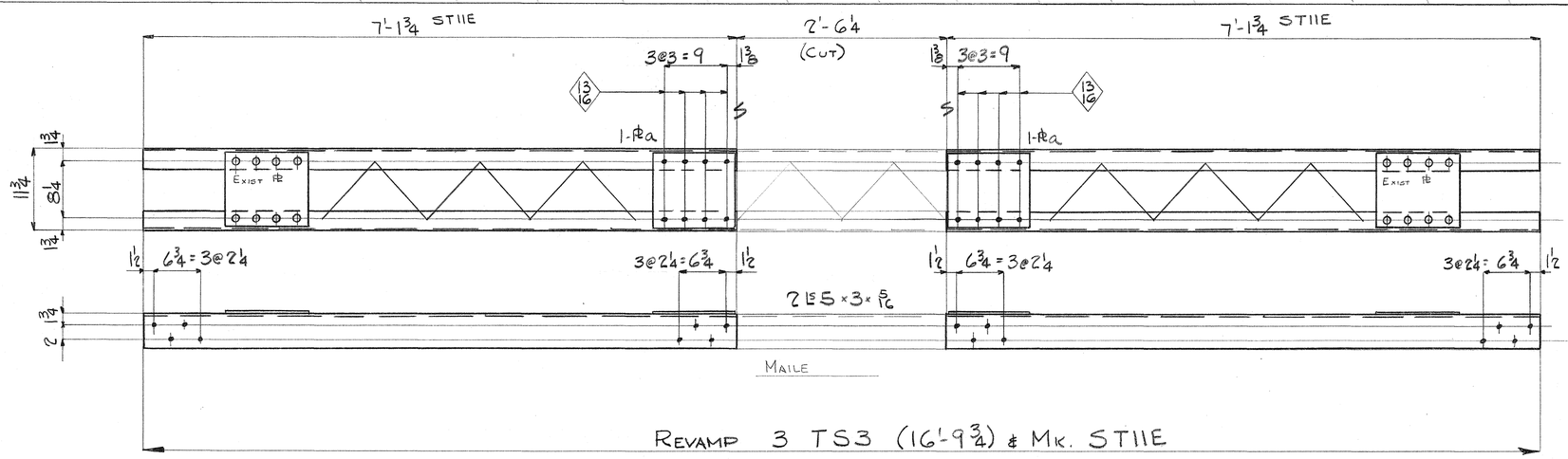
5468.119

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	HAW	FDR 2(13)	1950	120	704

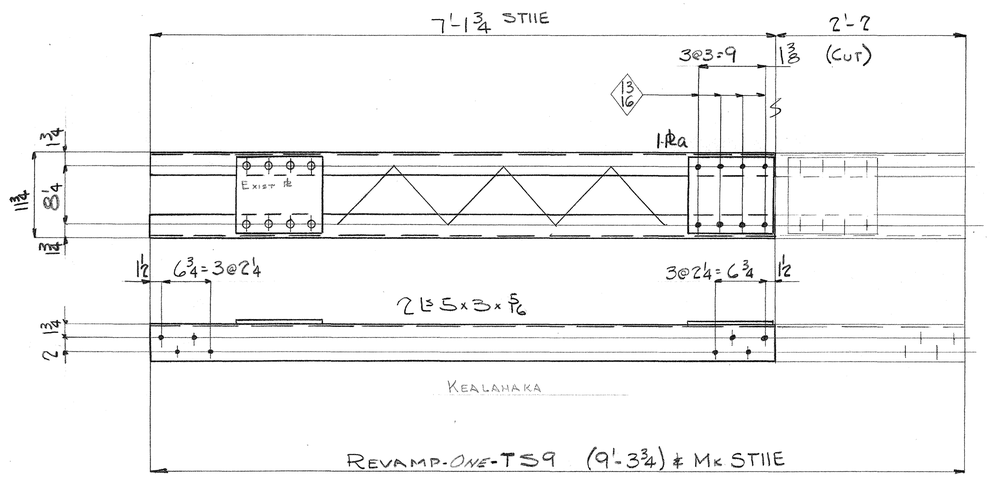
Order No. 3807 Sheet No. D40E



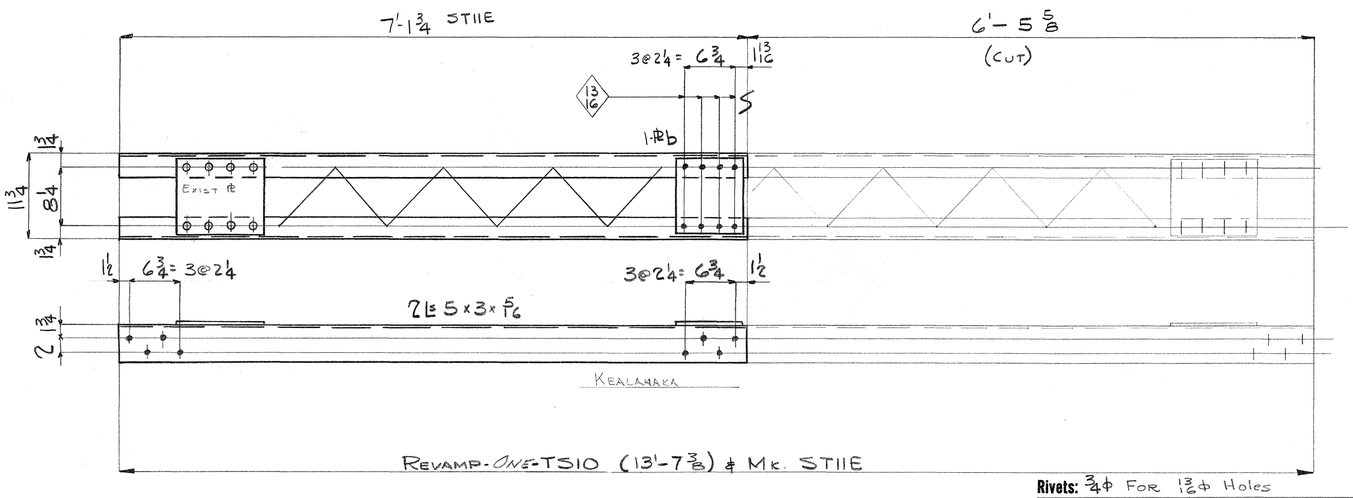
REVAMP ONE TS4 (27'-6 3/4) & MK. STIIE



REVAMP 3 TS3 (16'-9 3/4) & MK. STIIE



REVAMP-ONE-TS9 (9'-3 3/4) & MK STIIE



REVAMP-ONE-TS10 (13'-7 3/8) & MK. STIIE

BILL OF MATERIAL

Industrial Development Co.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAILS.					
					SALV. FROM:
3	BRACES	16	9 3/4	TS3	MAILE
1	Do	9	3 3/4	TS9	KEALAHAKA
1	Do	13	7 3/8	TS10	Do
7	PL 10 3/4 x 3/8	0	11 1/2	a	Temp-New
1	PL 9 1/4 x 3/8	0	10 3/4	b	Temp-New

Rivets: 3/4φ FOR 13/16φ Holes
Holes: 15/16φ UN
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	1-13-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D40E

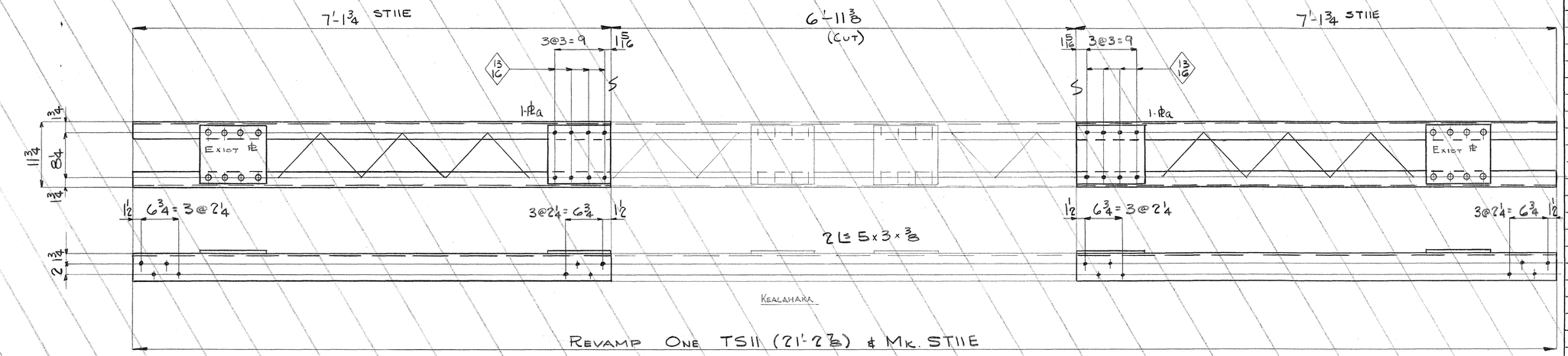
5468.120

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	NO. SHEETS
Hawaii	Haw 9DR 3(3)	1950	121	404	

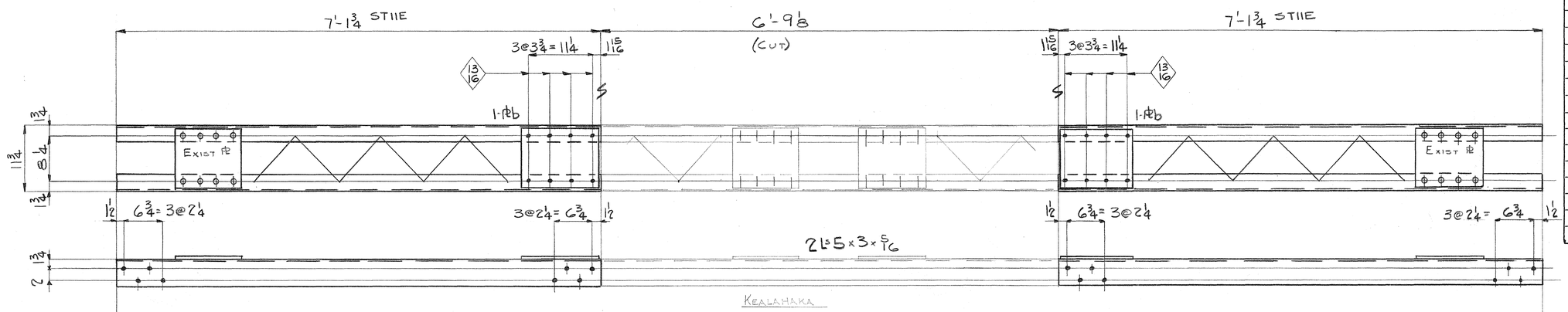
Order No. 3807 Sheet No. D41E

BILL OF MATERIAL — Industrial Development Co.

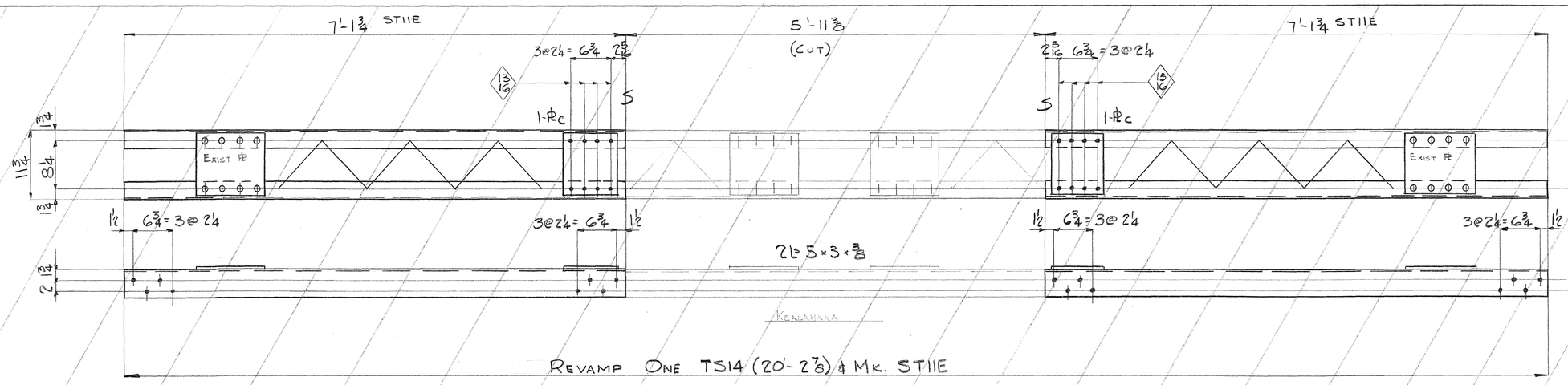
No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAILS.					
1	BRACE	21	0⅝	TS12	SALV FROM KEALAHAKA
2	PL 10¾ x ⅜	1	1¾	b	Temp-New



REVAMP ONE TS11 (21'-2⅜) & MK. STIIE



REVAMP ONE TS12 (21'-0⅝) & MK. STIIE



REVAMP ONE TS14 (20'-2⅞) & MK. STIIE

Rivets: ¾ϕ FOR 13/16ϕ Holes
Holes: 15/16ϕ U.N.
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

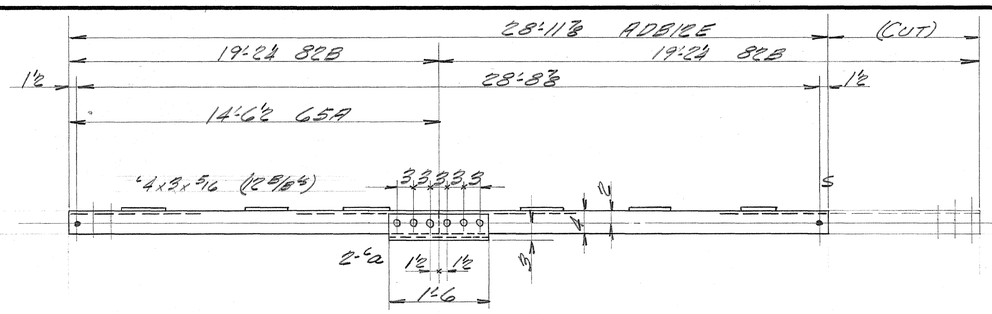
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	1-13-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D41E

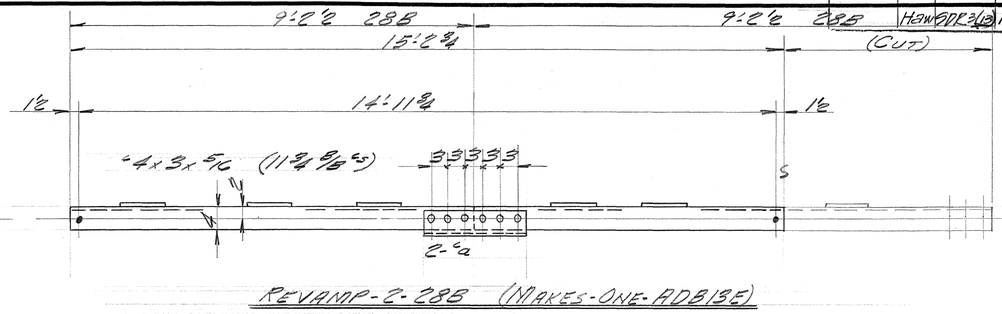
54GS.121

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
		HAW-SDR-3(12)	1950	C22	304

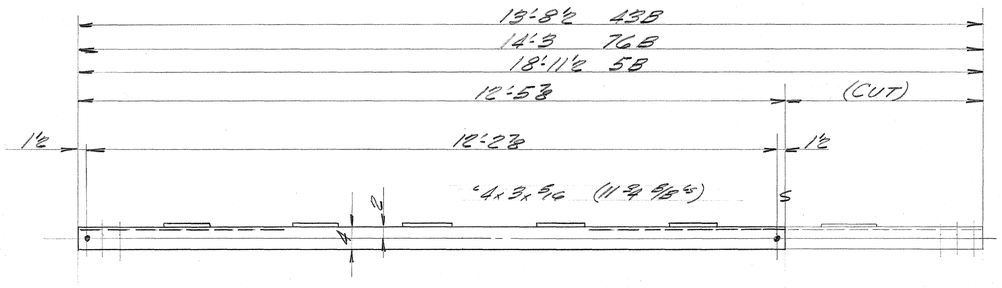
Order No. 3807 Sheet No. D42E



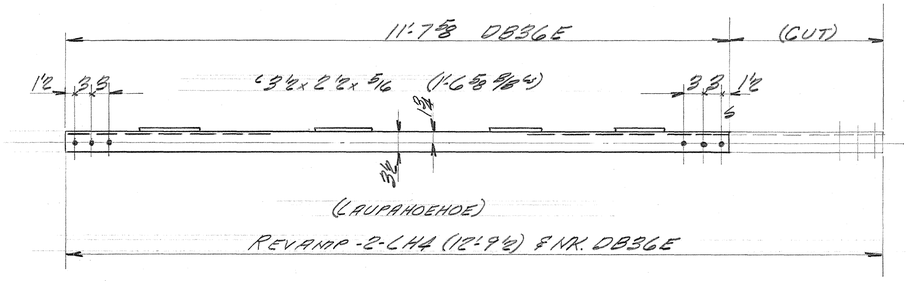
REVAMP - 3 - 82B
Do - ONE - 65A
} MAKES - 2 - ADBIEE



REVAMP - 2 - 28B (MAKES - ONE - ADBIEE)

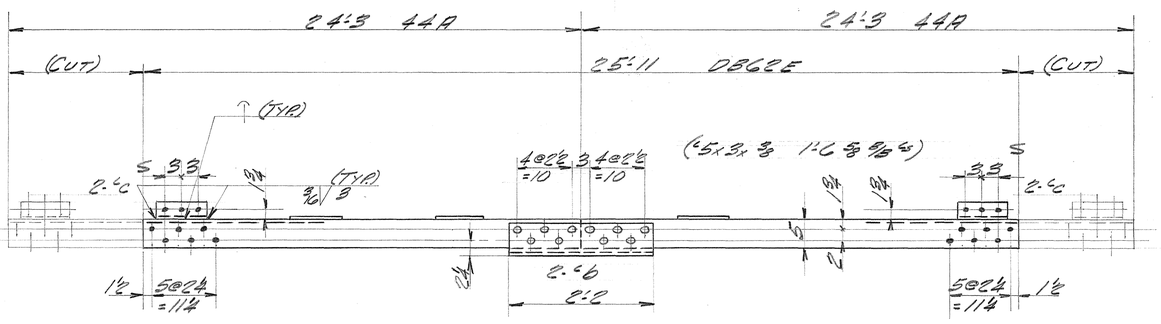


REVAMP - ONE - 43B
Do - ONE - 76B
Do - ONE - 5B
} MAKES - 3 - DB28E

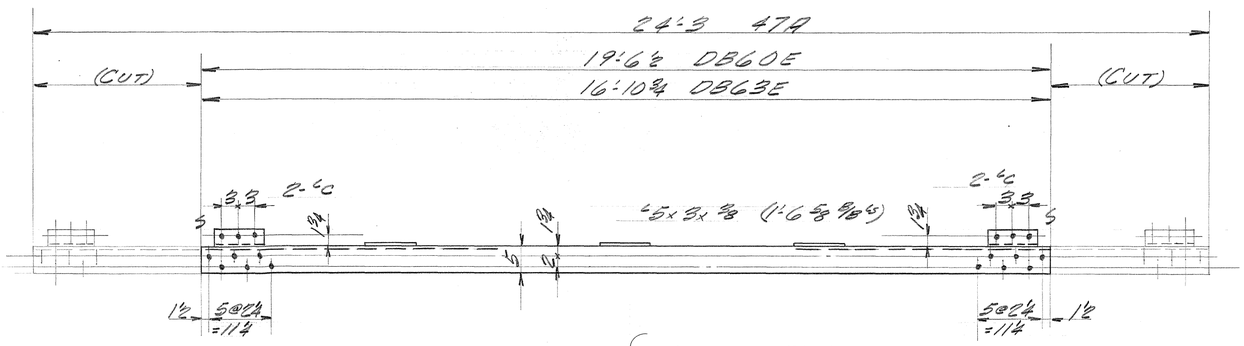


REVAMP - 2 - LH4 (12'-9½) & INK. DB36E

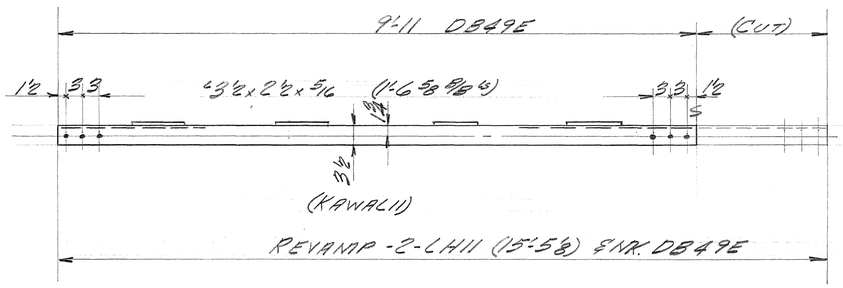
No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: REVAMP THE BRACES LISTED BELOW AS SHOWN ON THE DETAILS					
2	BRACES			LH4	(LAUPAHOEHOE)
2	Do.			LH11	(KAWAILI)
3	Do.			82B	
1	Do.			65A	
2	Do.			28B	
1	Do.			43B	
1	Do.			76B	
1	Do.			5B	
4	Do.			44A	
4	Do.			47A	
NEW MAT'L. IS LISTED BELOW					
6	L 5x3x⅜	1	6	a	TEMP.
4	L 6x3½x⅜	2	2	b	Do.
24	L 3x3x⅜	0	9	c	Do.
76	¾" ø RIVETS				



REVAMP - 4 - 44A (MAKES - 2 - DB62E)



REVAMP - 4 - 47A
} MAKES - 2 - DB60E
MAKES - 2 - DB63E



REVAMP - 2 - LH11 (15'-5⅜) & INK. DB49E

Rivets: ⅞"ø
Holes: 15/16"ø
Paint: (SEE SPECS.)

INDUSTRIAL DEV. CO.

ADDITION TO THE NANUE BRIDGE - HAWAII -

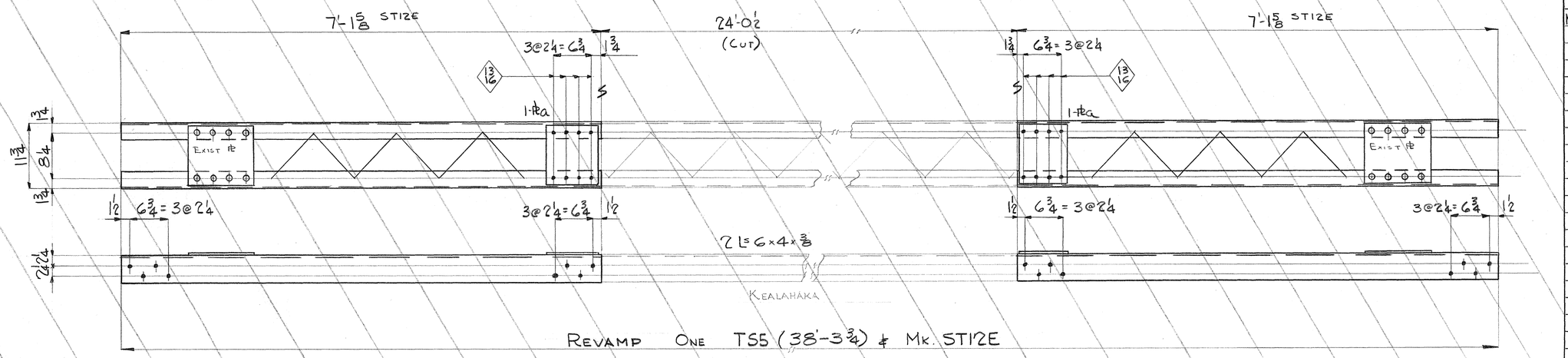
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DD	8-26-50	ORDER NO.	3807
CHECKED BY			SHEET NO.	D42E

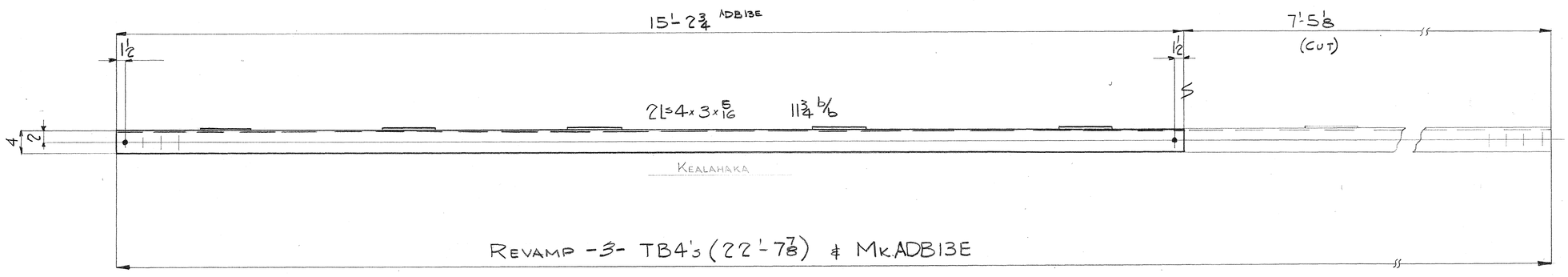
5468.122

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	SDR-3(12)N	1950	123	304

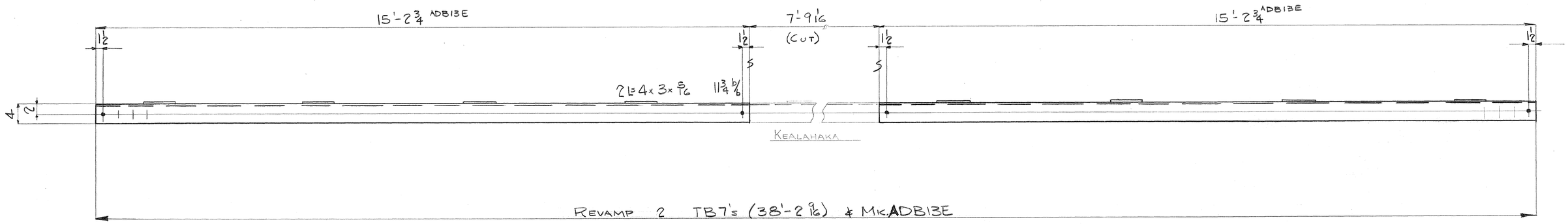
Order No. 3807 Sheet No. D43E



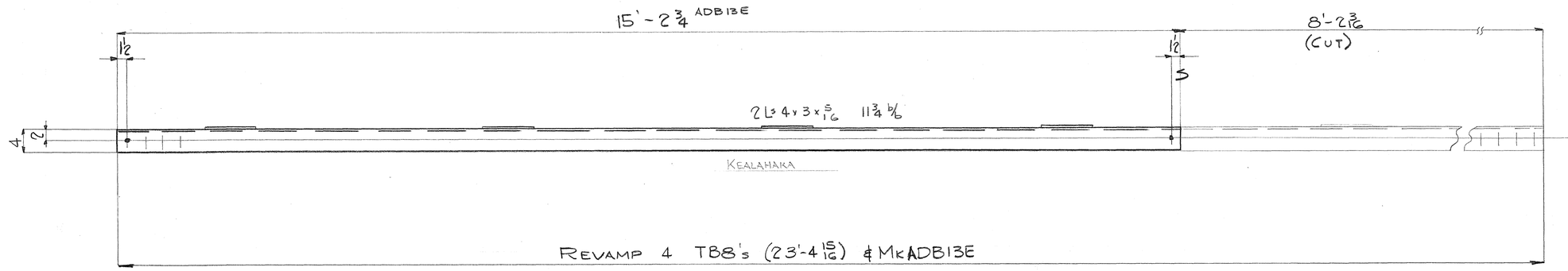
REVAMP ONE TS5 (38'-3 3/4) & Mk. STIZE



REVAMP -3- TB4's (22'-7 7/8) & Mk.ADBIZE



REVAMP 2 TB7's (38'-2 9/16) & Mk.ADBIZE



REVAMP 4 TB8's (23'-4 15/16) & Mk.ADBIZE

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT CO.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE:	BRACES LISTED BELOW ARE TO BE				
REVAMPED AS	SHOWN ON	DETAILS.			
					SALV. FROM:
3	BRACES	22	7/8	TB4	KEALAHAKA
2	Do	38	2 9/16	TB7	Do
4	Do	23	4 15/16	TB8	Do

Rivets: 3/4 Ø FOR 13/16 Ø HOLES
Holes: 15/16 Ø UN
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

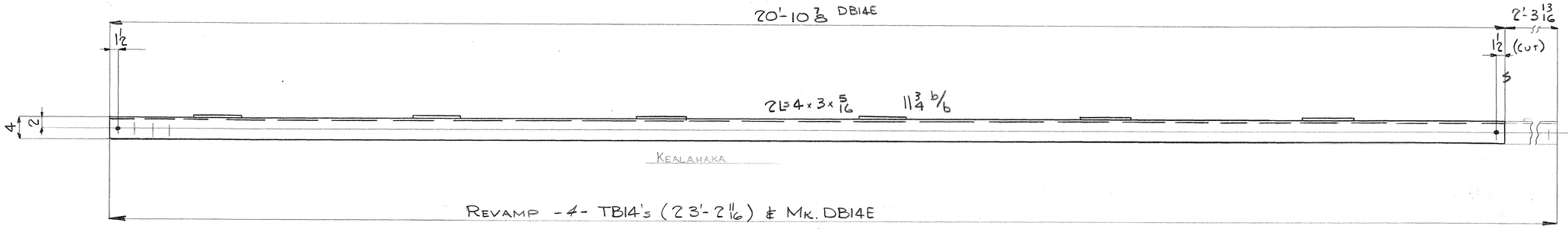
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	1-16-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D43E

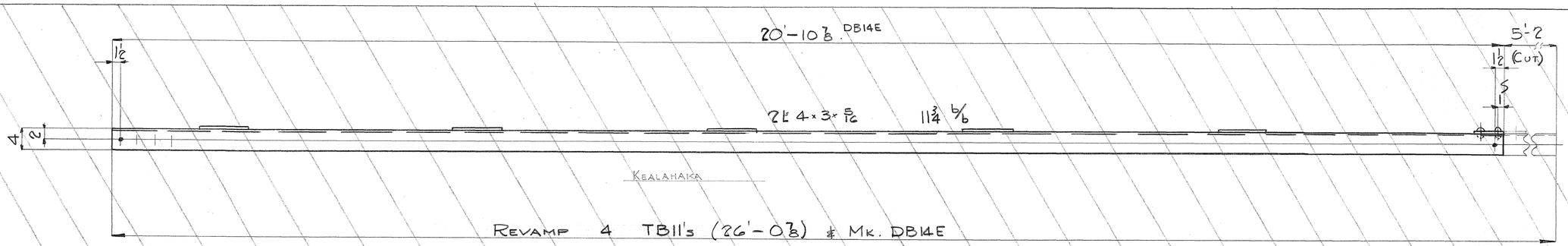
5468.123

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	SDR3(3)	1950	124	302

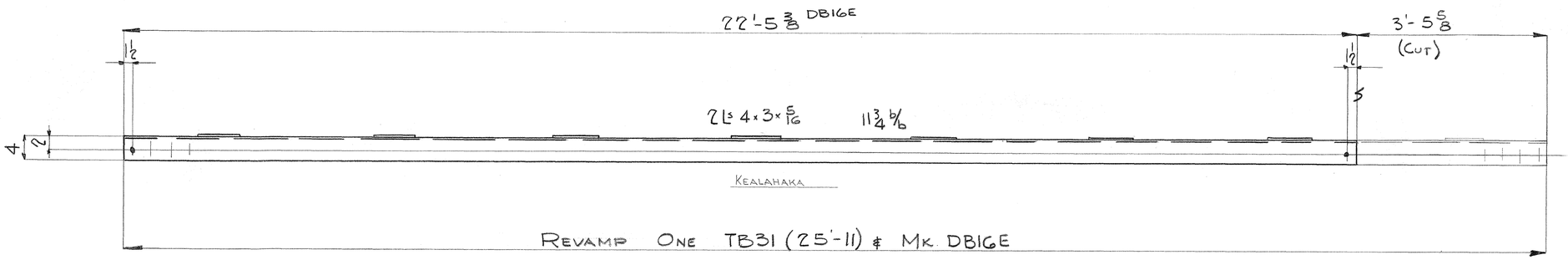
Order No. 3807 Sheet No. D44E



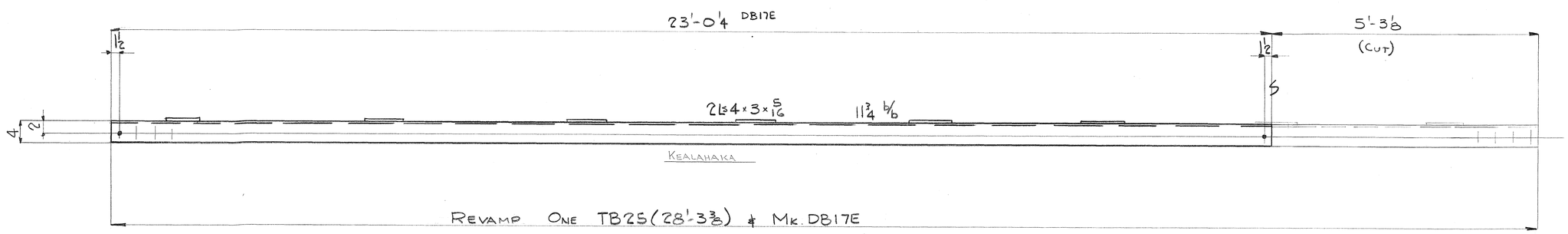
REVAMP -4- TB14's (23'-2 11/16) & MK. DB14E



REVAMP 4 TB11's (26'-0⅞) & MK. DB14E



REVAMP ONE TB31 (25'-11) & MK. DB16E



REVAMP ONE TB25 (28'-3⅜) & MK. DB17E

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT CO.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAILS.					
					SALV. FROM:
4	BRACES	23	2 11/16	TB14	KEALAHAKA
1	Do	28	3⅜	TB25	Do
1	Do	25	11	TB31	Do

Rivets:
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	1-16-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D44E

5468.124

Order No. 3807 Sheet No. D45E

FED. ROAD	STATE	FED. AID	FISCAL	SHEET	TOTAL
HAWAII	HEM SDC 2(12)		1950	125	304

BILL OF MATERIAL — NANUE BRIDGE

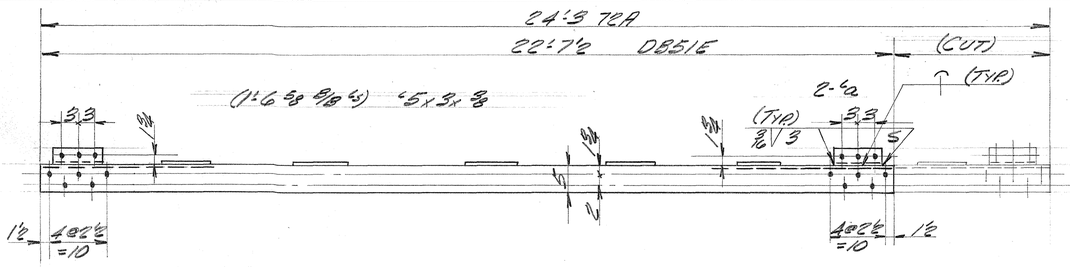
Nov. 1, 1950

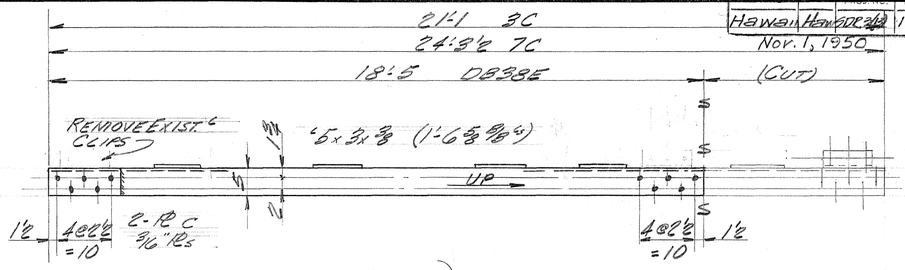
NO.	DESCRIPTION	LENGTH FT. INS.	PC. MK.	REMARKS
	NOTE: THE PIECES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON THE DETAILS			
2	BRACES		72A	
4			21A	
2			52B	
2			54B	
4			45B	
1			3C	
1			7C	
2			8C	
1			51B	
1			2C	
1			53B	
1			55B	
1			1C	
1			56B	
1			57B	
1			50B	
1			46B	
1			47B	
1			48B	
1			49B	
4			45B	
4			15B	

NEW MAT'L. IS LISTED BELOW

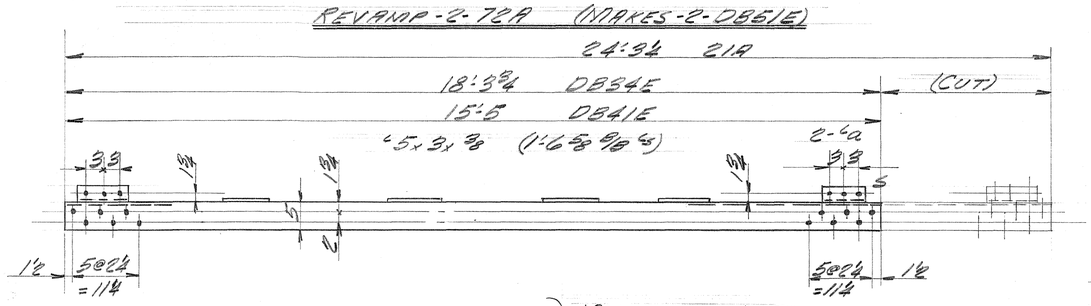
68	L 3" x 3" x 3/8"	0	9	a	TEMP.
12	L 6" x 3 1/2" x 3/8"	1	6	b	Do.
4	PL 5" x 3/16"	1	1	C	Do.
8	PL 8" x 3/16"	1	1	d	Do.
16	L 6" x 3 1/2" x 3/8"	1	3	5	Do.

168 3/4" RIVETS



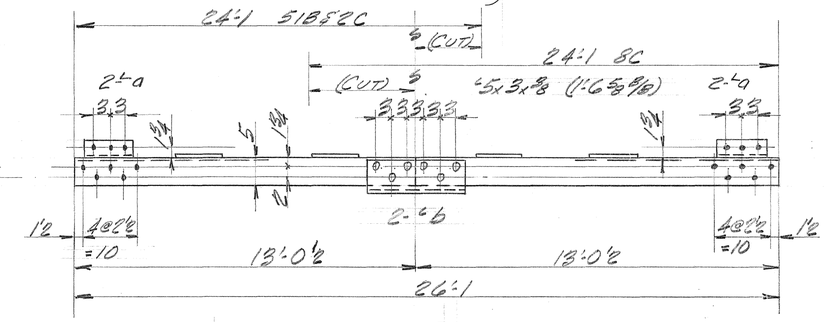


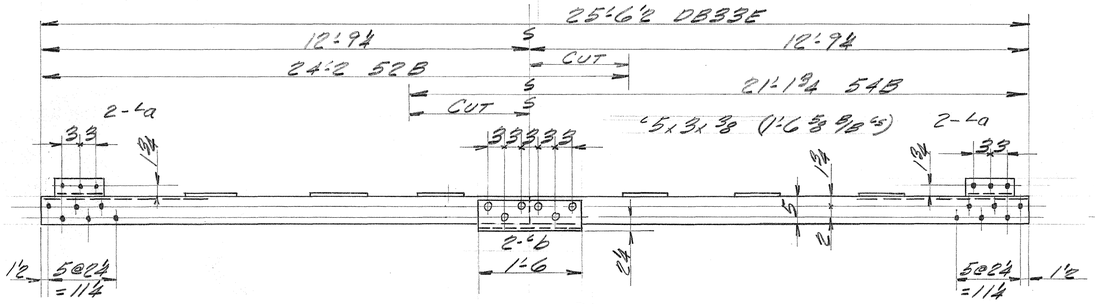
REVAMP - 2 - 72A (MAKES - 2 - DB51E)



REVAMP - 4 - 21A } MAKES - 2 - DB34E
MAKES - 2 - DB41E

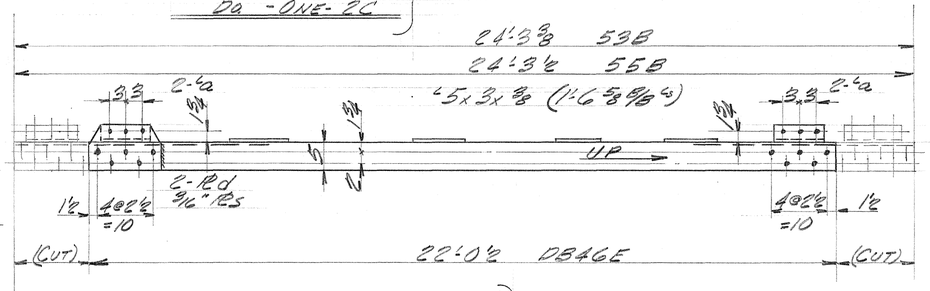
REVAMP - ONE - 3C
Do. - ONE - 7C
} MAKES - 2 - DB38E



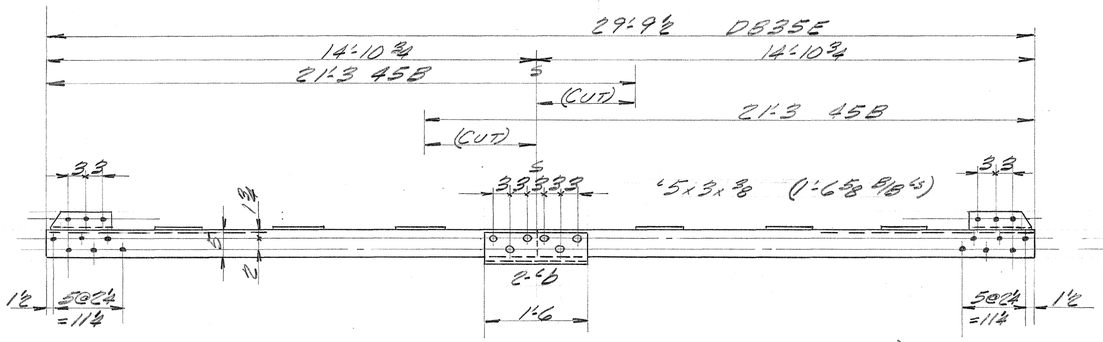


REVAMP - 2 - 52B
Do. - 2 - 54B
} MAKES - 2 - DB33E

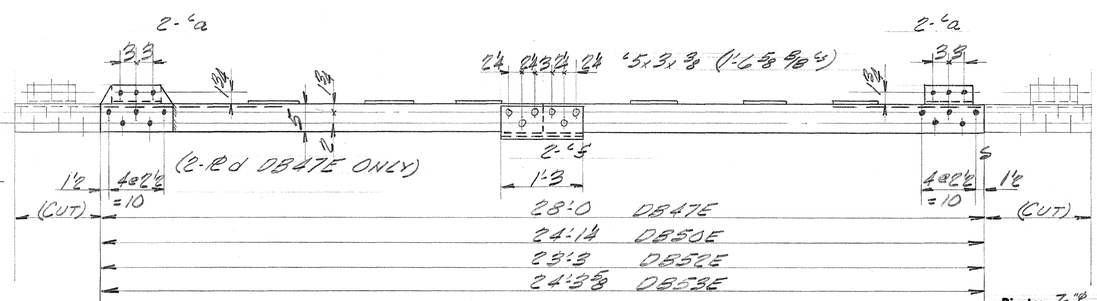
REVAMP - 2 - 8C
Do. - ONE - 51B
Do. - ONE - 2C
} MAKES - 2 - DB45E



REVAMP - ONE - 53B
Do. - ONE - 55B
} MAKES - 2 - DB46E



REVAMP - 4 - 45B (MAKES - 2 - DB35E)



MAKES - 2 - DB47E
- REVAMP - ONE - 1C (21'-10 1/2)
- Do. - ONE - 56B (24'-1 4)
- Do. - ONE - 57B (24'-4 3/4)
- Do. - ONE - 50B (18'-4 3/4)

MAKES - 2 - DB50E
- REVAMP - ONE - 46B (21'-3 1/4)
- Do. - ONE - 47B (21'-0 3/4)
- Do. - ONE - 48B (18'-7)
- Do. - ONE - 49B (16'-7 3/4)

(REVAMP - 4 - 45B (21'-3) MAKES - 2 - DB53E)

(REVAMP - 4 - 15B (24'-3) MAKES - 2 - DB52E)

Rivets: 3/4"ø
Holes: 15/16"ø
Paint: (SEE SPECS.)

INDUSTRIAL DEV. CO.

ADDITION TO THE NANUE BRIDGE -HAWAII-

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DW	8-27-50	ORDER NO.	3807
CHECKED BY			SHEET NO.	D45E

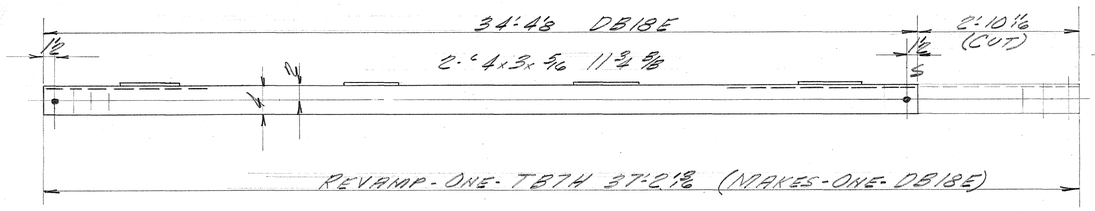
5468.125

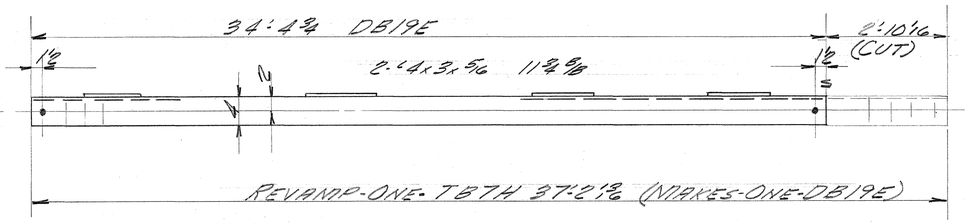
FED. ROAD DIST. NO.	STATE	FED. AID	FISCAL	SHEET	TOTAL
Hawaii	Haw	SDR3(9)	1960	126	304

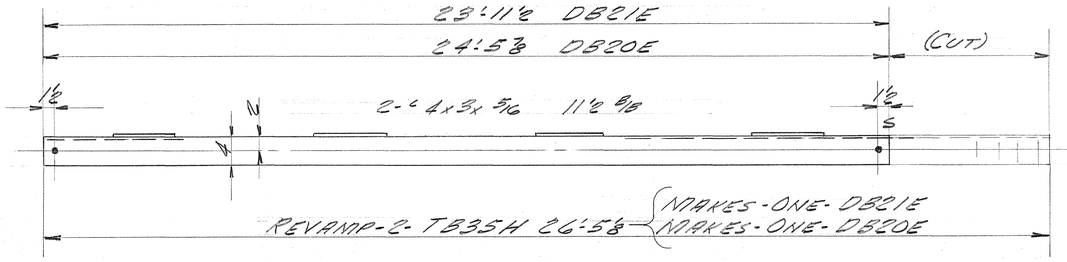
Order No. 3807 Sheet No. D46E

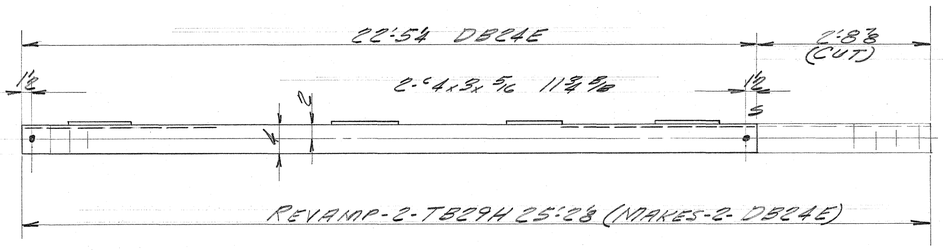
BILL OF MATERIAL NANUE BRIDGE

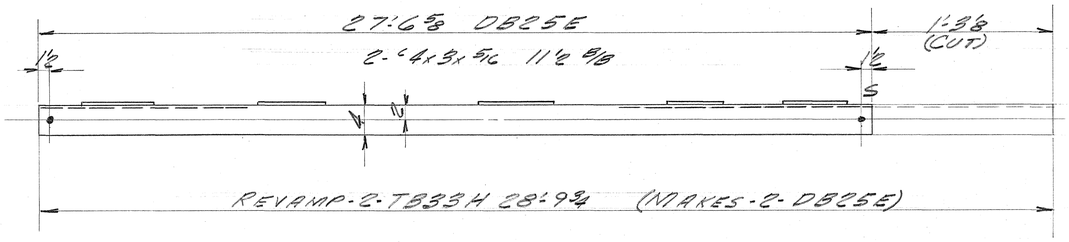
No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: REVAMP THE BRACES LISTED BELOW AS SHOWN ON THE DETAILS					
2	BRACES			TB7H	MANUFACTURED
3				TB35H	
5				TB29H	
2				TB33H	
5				TB34H	
3				TB9H	
1				TB4H	
1				TB17H	
4				TB28H	
4				TB12H	
NEW MAT'L LISTED BELOW					
14	L 5"x3"x 3/8	1	6	a	TEMP.
8	PL 4"x 1/4	0	6	b	Do.
4	PL 4"x 3/8	0	6	c	Do.

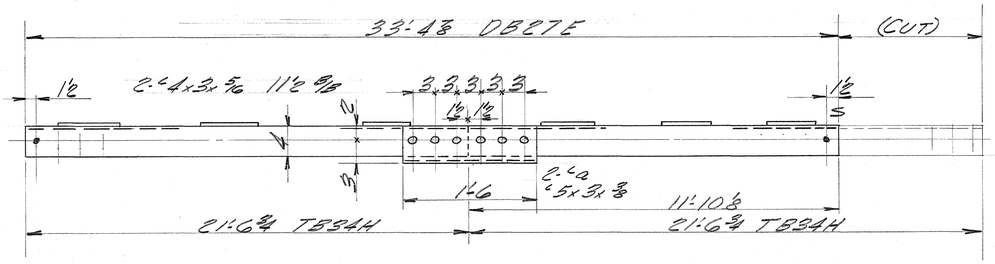




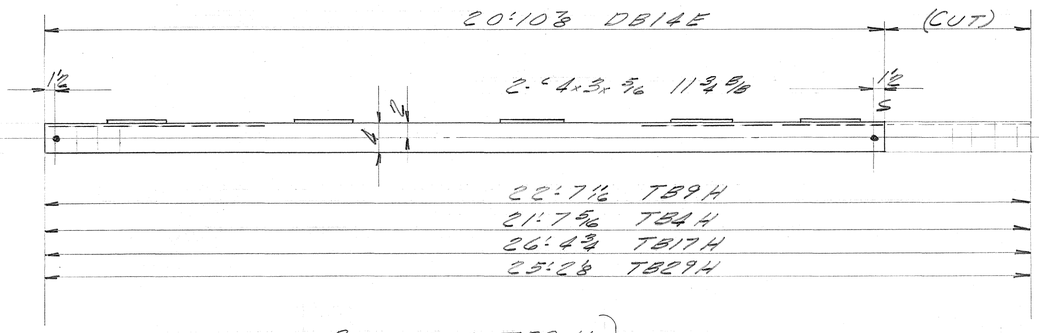




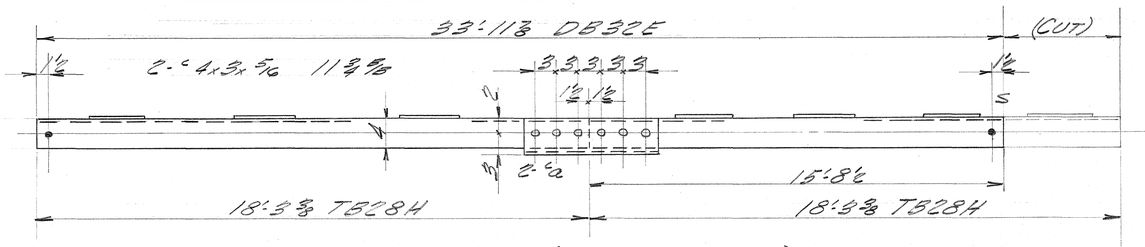




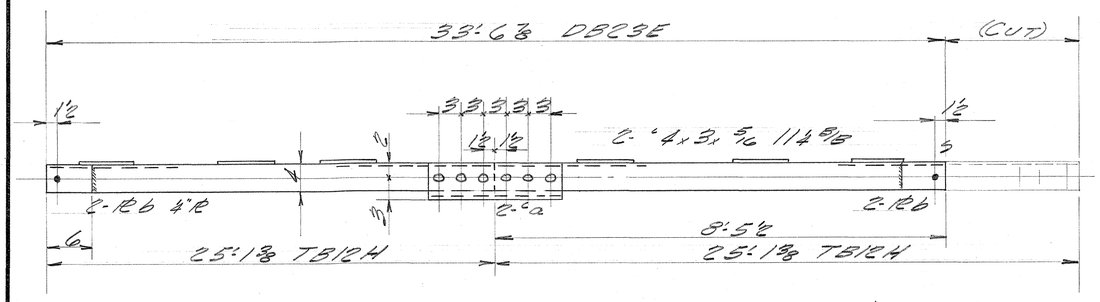
REVAMP-4-TB34H (MAKES-2-DB27E)



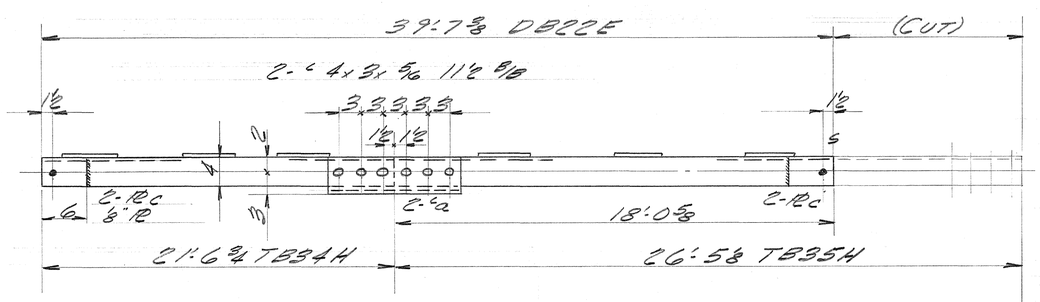
REVAMP-3-TB9H
REVAMP-ONE-TB4H
REVAMP-ONE-TB17H
REVAMP-3-TB29H
} MAKES-8-DB14E



REVAMP-4-TB28H (MAKES-2-DB32E)



REVAMP-4-TB12H (MAKES-2-DB23E)



REVAMP-ONE-TB34H
REVAMP-ONE-TB35H
} MAKES-ONE-DB22E

Rivets: 3/4"ø
Holes: 15/16"ø
Paint: (SEE SPECS)

INDUSTRIAL DEV. CO.

ADDITION TO THE NANUE BRIDGE - HAWAII -

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DD	9-23-59	ORDER NO.	3807
CHECKED BY			SHEET NO.	D46E

126

5468.126

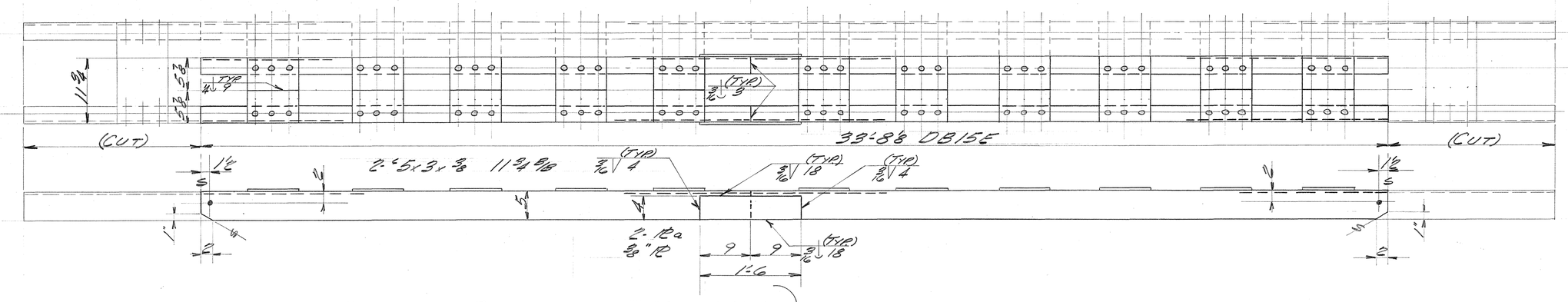
Order No. 3807 Sheet No. D47E

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	SDR 3(13)	1950	127	304

12/19/50

BILL OF MATERIAL — NANUE BRIDGE

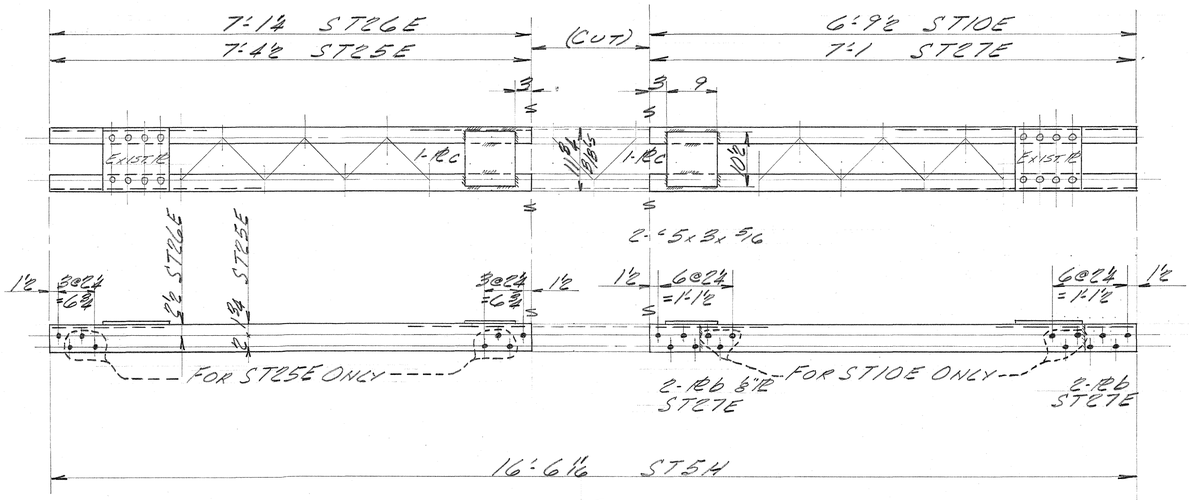
No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: REVAMP THE BRACES LISTED BELOW AS SHOWN ON THE DETAILS					
1	BRACE			89A	
1				8B	
1				9B	
1				10B	
2				11B	
1				12B	
1				14B	
2				16B	
1				21B	
1				22B	
1				23B	
1				24B	
1				52B	
2				3A	
2				18A	
4				2A	
3				25A	
5				TS5H	MAKUA
2				TS4H	Do.
NEW MATL. IS LISTED BELOW					
26	PL 4 x 3/8	1	6	a	PLAIN
4	PL 5 x 1/8	0	9 3/4	b	TEMP
12	PL 9 x 3/8	0	10 1/2	c	PLAIN



REVAMP - ONE -	89A	24'-2 1/2
Do. - ONE -	8B	24'-4
Do. - ONE -	9B	24'-3
Do. - ONE -	10B	24'-2
Do. - 2 -	11B	24'-3 1/2
Do. - ONE -	12B	24'-0
Do. - ONE -	14B	24'-3
Do. - 2 -	16B	24'-3 1/2
Do. - ONE -	21B	21'-3 1/2
Do. - ONE -	22B	24'-4
Do. - ONE -	23B	24'-2
Do. - ONE -	24B	24'-11 1/2
Do. - ONE -	52B	24'-2
Do. - 2 -	3A	24'-3 1/2
Do. - 2 -	18A	24'-3 1/2
Do. - 4 -	2A	24'-2
Do. - 3 -	25A	24'-3 1/2

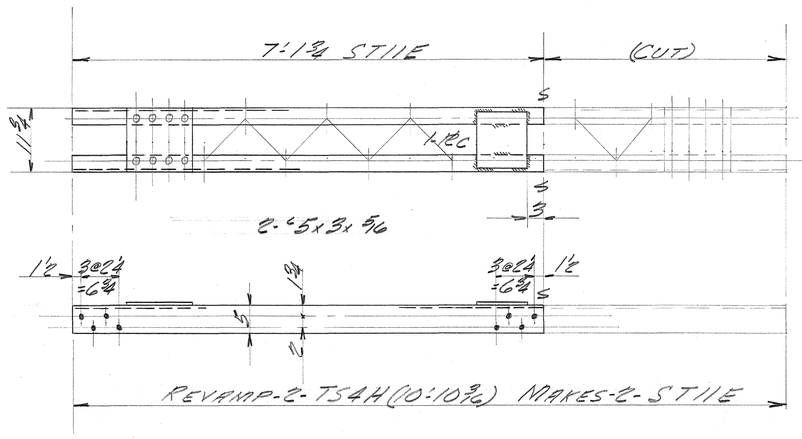
MAKES -13- DB15E

See sheet 5468.75B for details of 3 more DB15E



REVAMP - 5 - TS5H

MAKES - 4 - ST10E
MAKES - ONE - ST27E
MAKES - 2 - ST26E
MAKES - 2 - ST25E



Rivets: WELD
Holes: 1/8" ø
Paint: (SEE SPEC'S)

INDUSTRIAL DEV. CO.

ADDITION TO THE NANUE BRIDGE - HAWAII -

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DD	9-24-50	ORDER NO.	3807
CHECKED BY			SHEET NO.	D47E

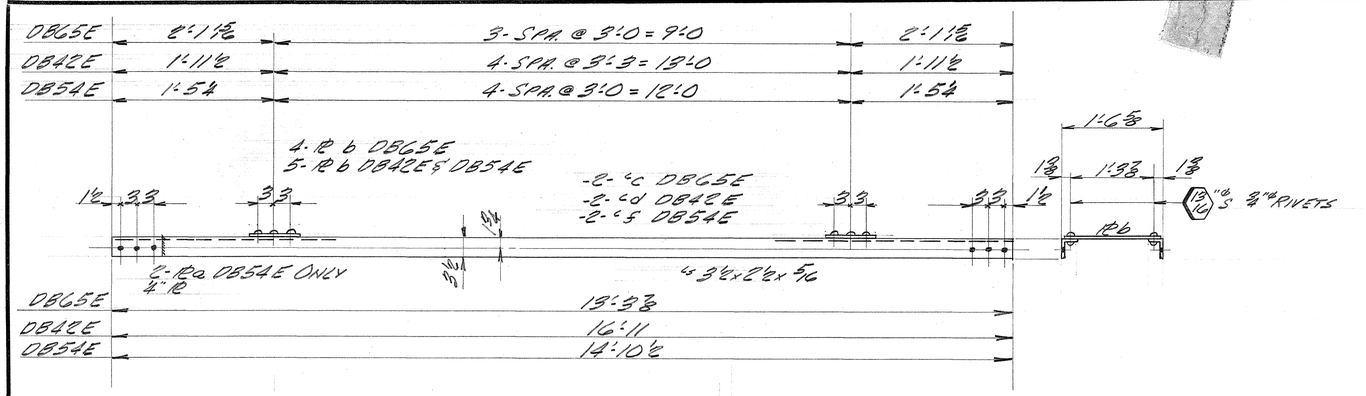
5468.127

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	SDR(4)3	1950	128	304

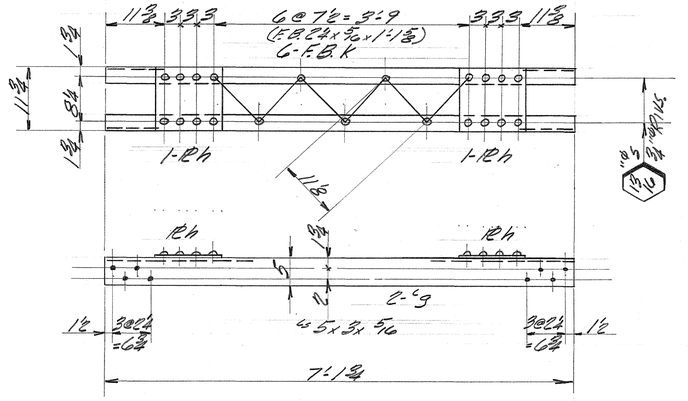
Order No. 3807 **Sheet No.** D48E

BILL OF MATERIAL — NANUE BRIDGE

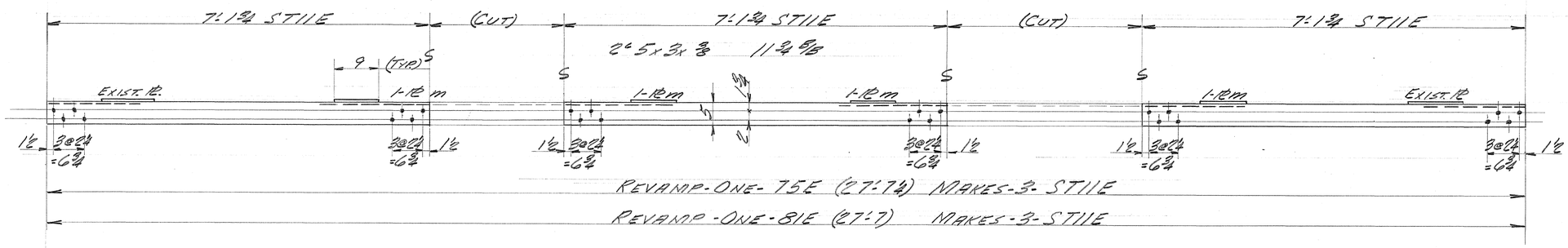
No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: REVAMP THE PIECES LISTED BELOW AS ON THE DETAILS					
1	BRACE			75E	
1	〃			81E	
1	〃			79E	
1	〃			83E	
1	〃			78E	
NEW MATL. IS LISTED BELOW					
1	BRACE			DB65E	
2	〃			DB42E	
2	〃			DB54E	
8	〃			STIIE	
4	PL 3½ x ¼	0	9	a	TEMP.
24	PL 9 x ⅜	1	6⅜	b	Do.
2	L 3½ x 2½ x ⅜	13	3⅜	c	
4	L 3½ x 2½ x ⅜	16	11	d	
4	L 3½ x 2½ x ⅜	14	10½	f	
16	L 5 x 3 x ⅝	7	1¾	g	
16	PL 10¾ x ⅝	1	0	h	TEMP.
48	F.B. 2¼ x ⅝	1	1⅝	k	Do.
312	¾" RIVETS				
36	PL 9 x ⅜	0	11	m	PLAIN



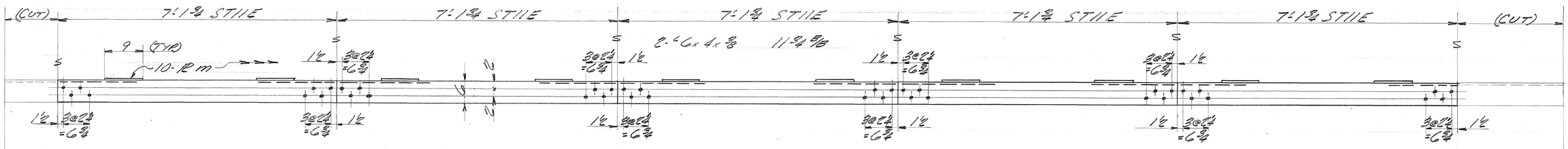
MAKE-ONE-BRACE(A.S.E.N.) DB65E
Do. -2- Do. DB42E
Do. -2- Do. DB54E
} NEW MATERIAL



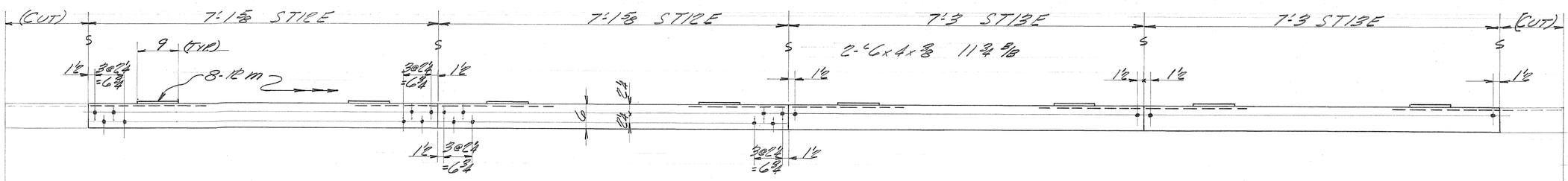
MAKE-8-BRACES MK. STIIE — (NEW MATL.)



REVAMP-ONE-75E (27'-7¾) MAKES-3-STIIE
REVAMP-ONE-81E (27'-7) MAKES-3-STIIE



REVAMP-ONE-79E (38'-10) MAKES-5-STIIE
REVAMP-ONE-83E (38'-4) MAKES-5-STIIE



REVAMP-ONE-78E (36'-3) MAKES-2-STIIE & 2-STIIE

Rivets: ¾" ø FOR 13/16" ø H.S.
Holes: 1 5/16" ø U.N.
Paint: (SEE SPECS.)

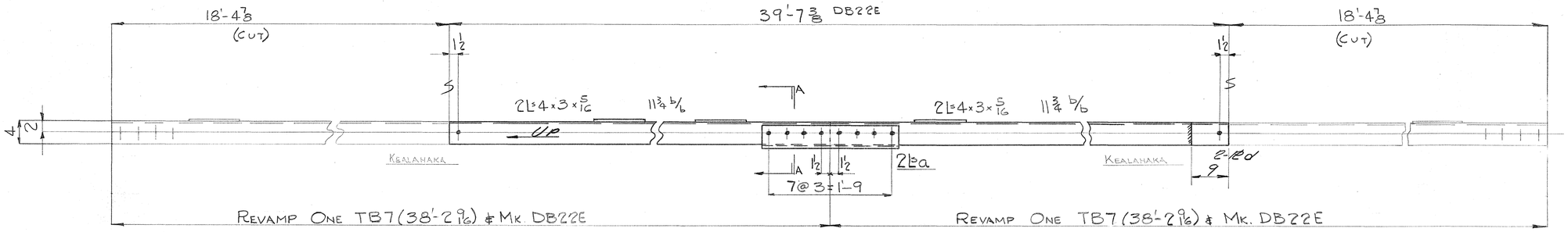
INDUSTRIAL DEV. CO.
ADDITION TO THE NANUE BRIDGE -HAWAII-
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

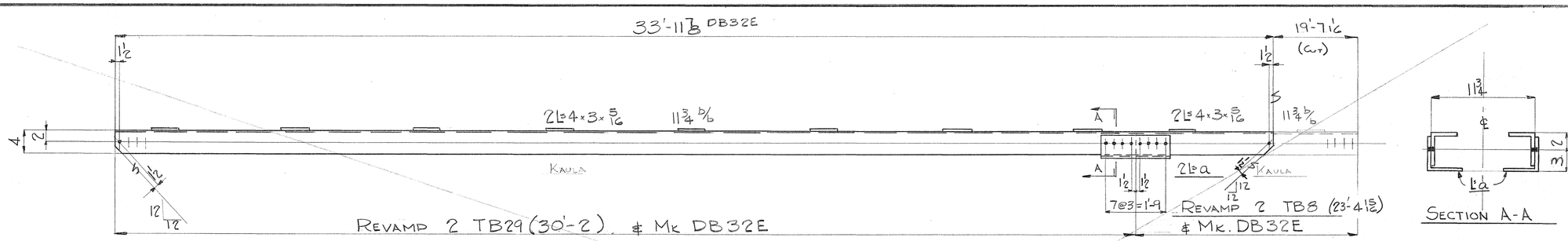
MADE BY	DD	10-8-50	ORDER NO.	3807
CHECKED BY			SHEET NO.	D48E

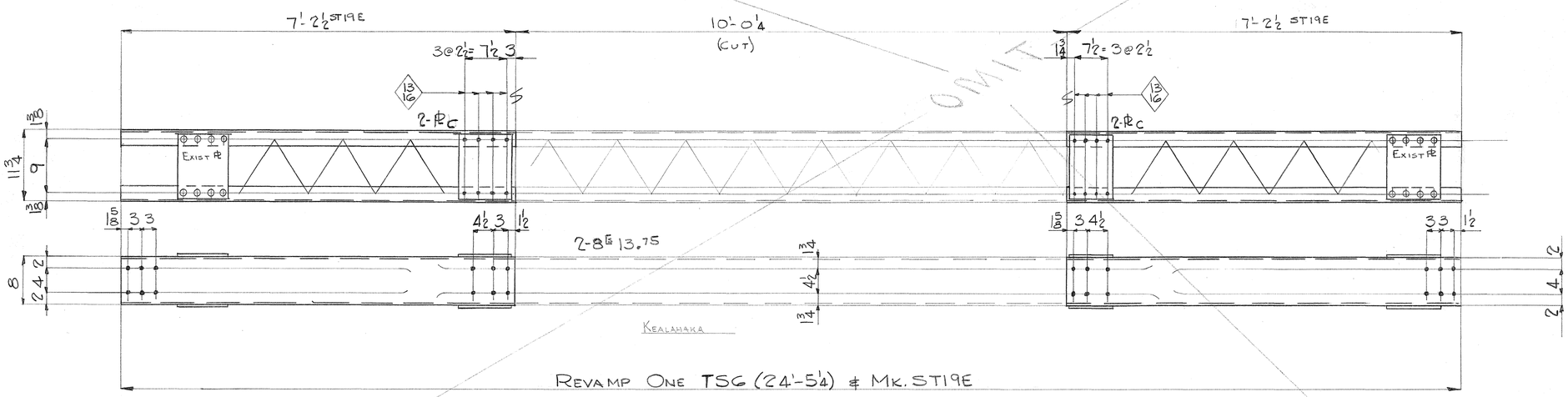
5468.128

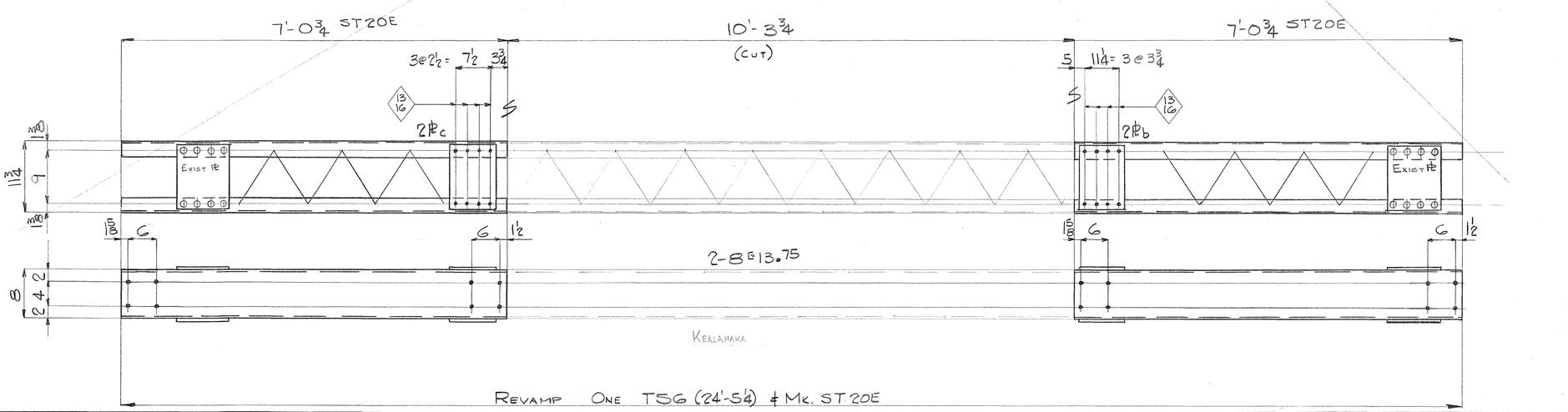
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW	SDR 36(7)	1950	129	304

Order No. 3807 Sheet No. D49E









BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT CO.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE:	BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAILS.				
2	BRACES	38	2 9/16	TB7	KEALAHAKA
2	L 5x3x1/2	2	0	a	TEMP. (NEW)
2	PL 4x1/2	0	9	d	Do. Ea

Rivets: 3/4 ϕ FOR 13/16 ϕ HOLES
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

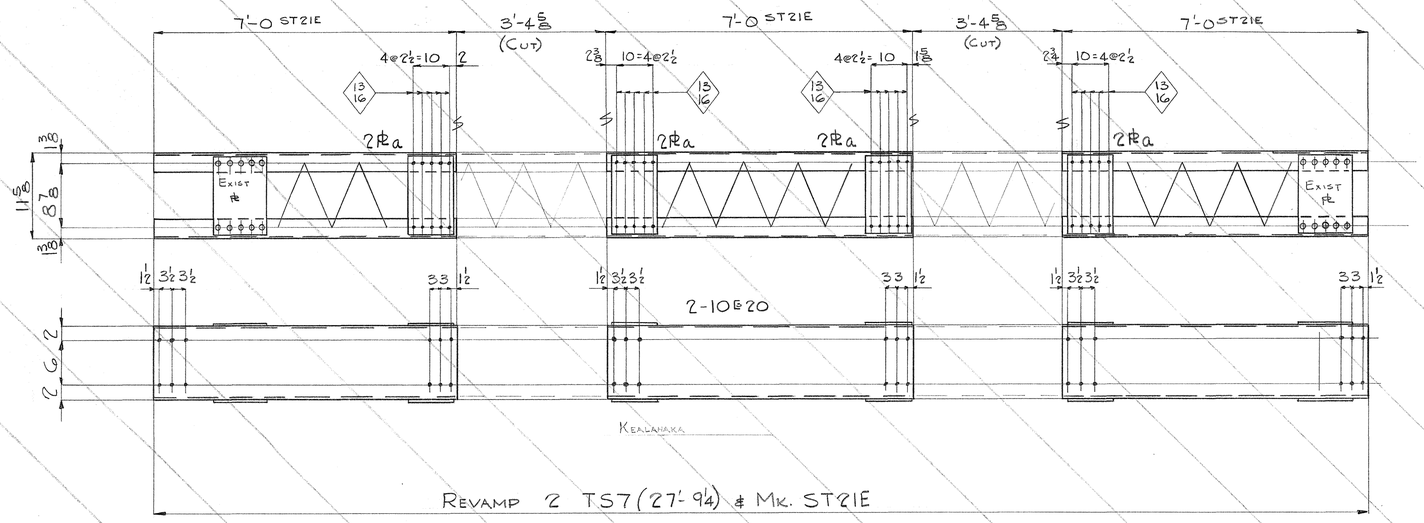
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	1-19-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D49E

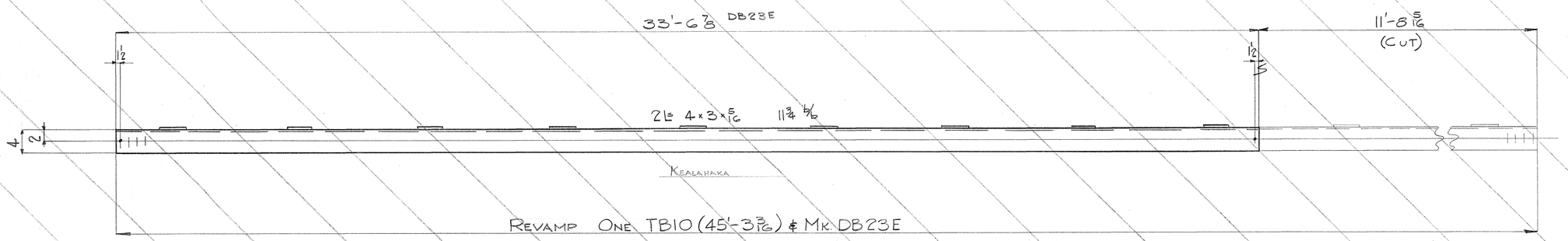
5468.129 129

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HEM	SDR 2(18)	1950	130	302

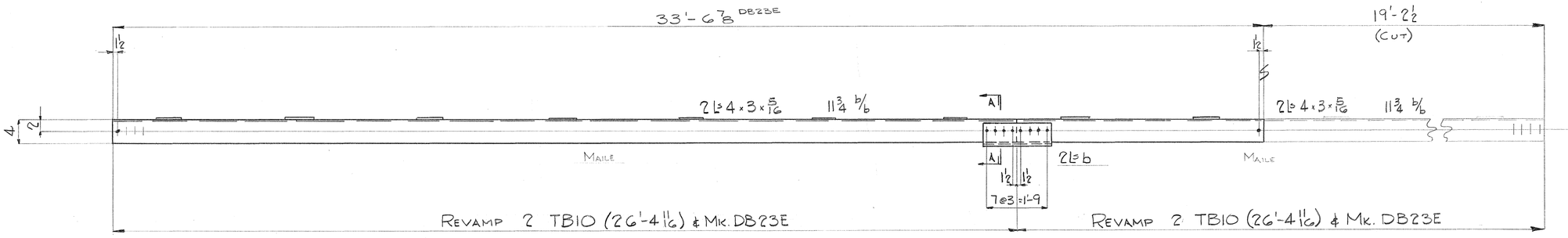
Order No. 3807 Sheet No. D50E



REVAMP 2 TS7 (27'-9 1/4) & MK. STRIE

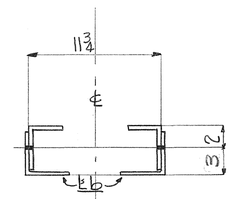


REVAMP ONE TB10 (45'-3 3/16) & MK. DB23E

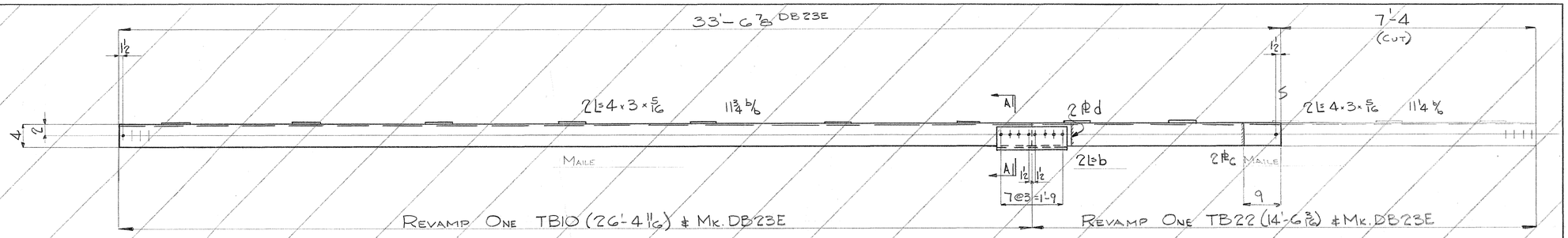


REVAMP 2 TB10 (26'-4 11/16) & MK. DB23E

REVAMP 2 TB10 (26'-4 11/16) & MK. DB23E



SECTION A-A



REVAMP ONE TB10 (26'-4 11/16) & MK. DB23E

REVAMP ONE TB22 (14'-6 3/16) & MK. DB23E

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT CO.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAILS.					
4	BRACES	26	4 11/16	TB10	MAILE
4	L 5 x 3 x 1/2	2	0	b	TEMP-NEW

Rivets: 3/4 ϕ FOR 13/16 ϕ HOLES
Holes: 15/16 ϕ UN
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

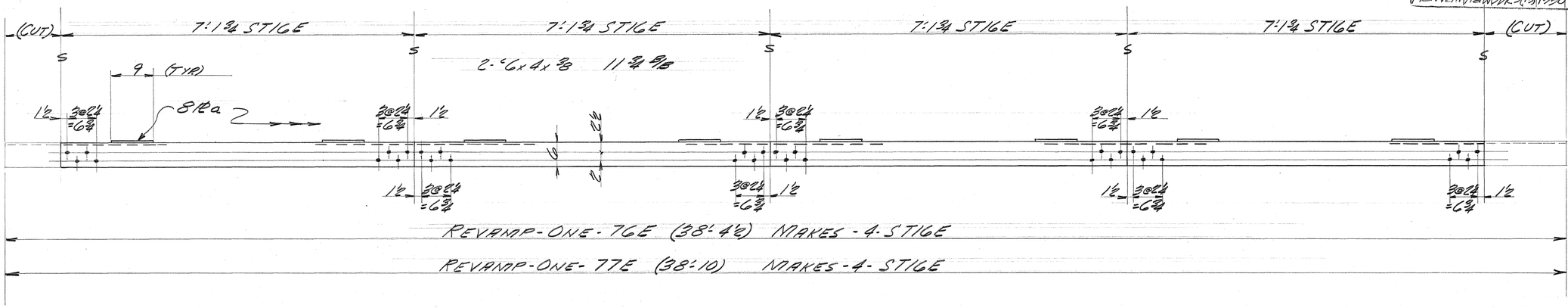
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	1-23-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D50E

5468.130/30

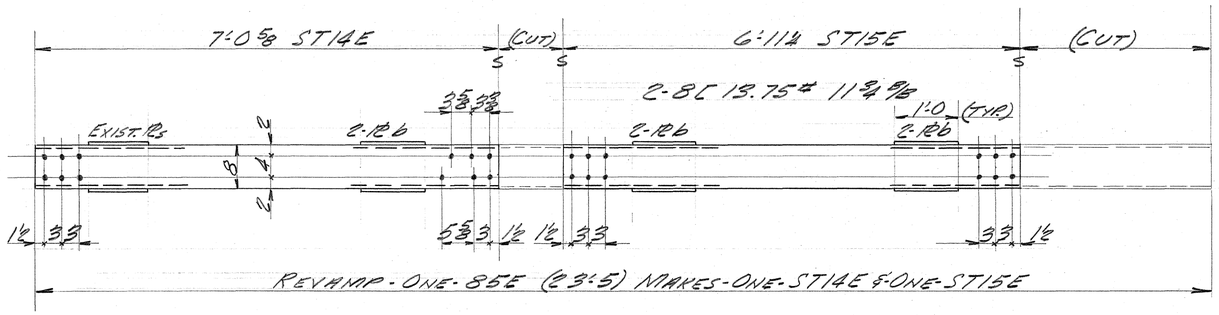
Order No. 3807 Sheet No. 051E

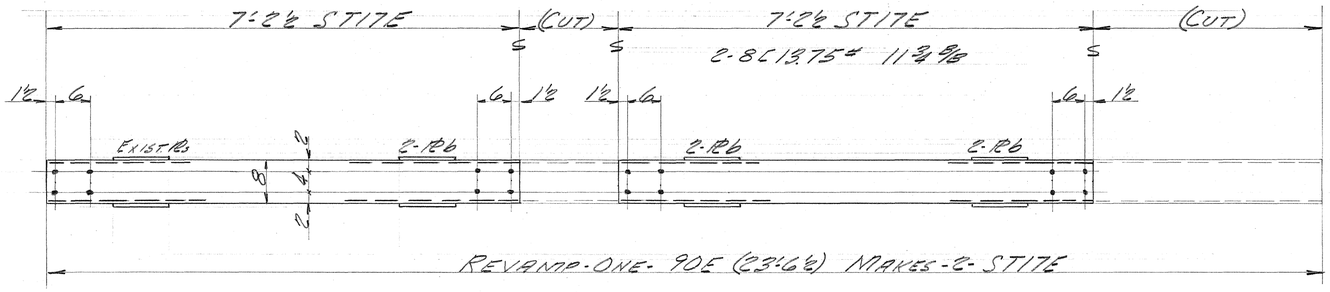
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Hawaii	RF2(13)	1950	131	304

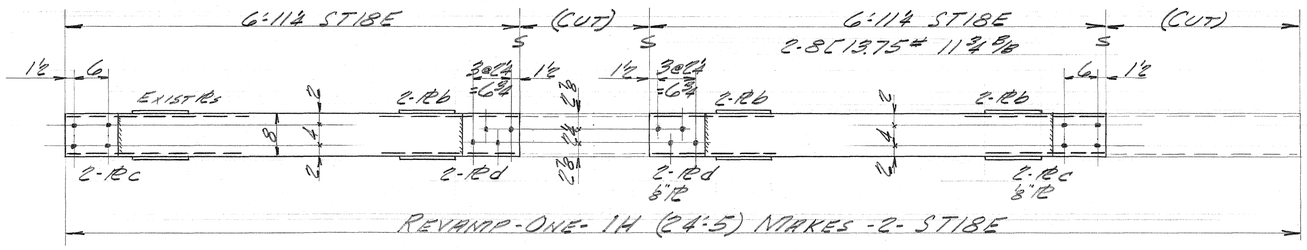


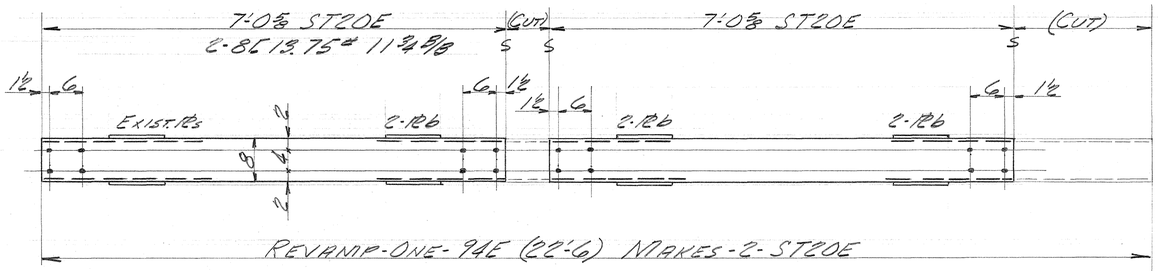
BILL OF MATERIAL NANUE BRIDGE

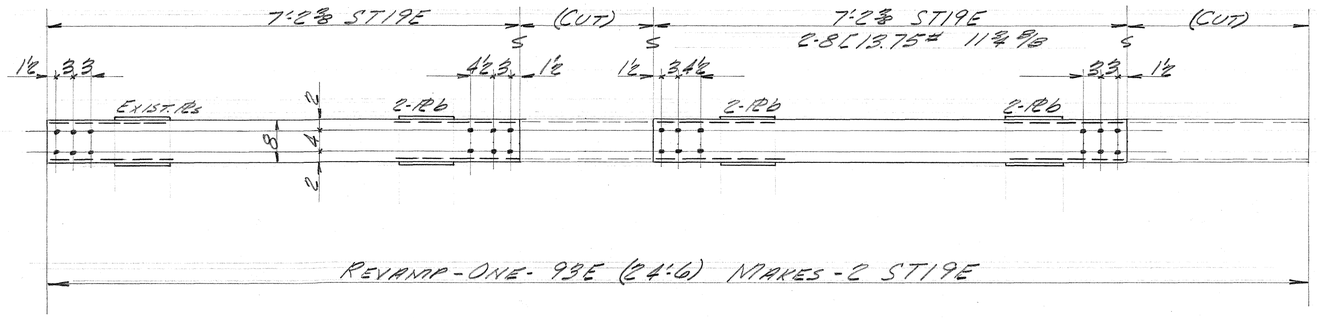
No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: THE MATERIAL LISTED BELOW IS TO BE REVAMPED AS ON THE DETAILS					
1	BRACE			76E	
1				77E	
1				85E	
1				90E	
1				1H	
1				93E	
1				94E	
NEW MATL. IS LISTED BELOW					
16	PL 9x⅜	0	11	a	PLAIN
30	PL 11x⅜	1	0	b	Do
4	PL 8x⅛	0	9	c	TEMP
4	PL 8x⅛	0	9¾	d	Do.











Rivets: WELD
Holes: 13/16" ø
Paint: (SEE SPECS)

INDUSTRIAL DEV. CO.

ADDITION TO THE NANUE BRIDGE -HAWAII-

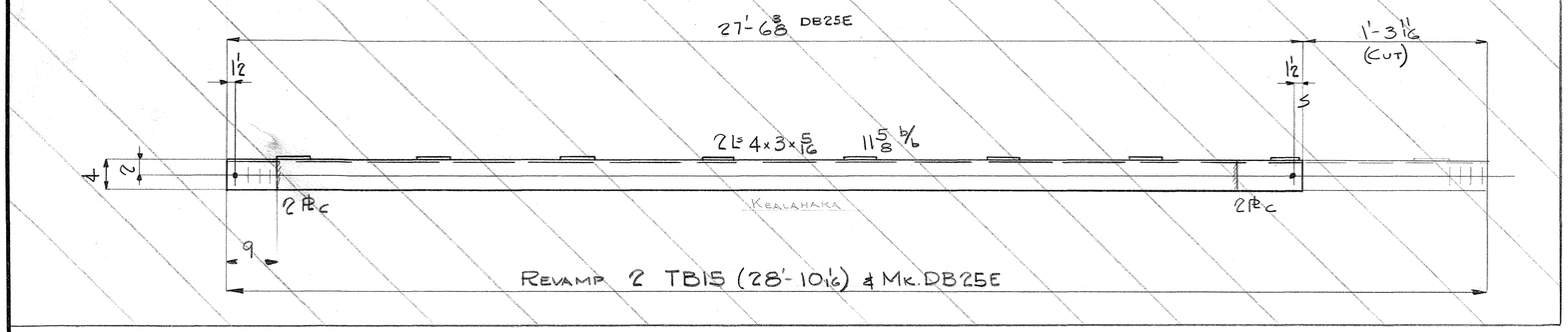
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

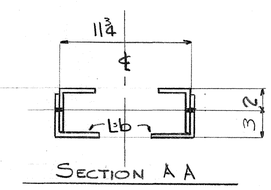
MADE BY	DB	10-9-50	ORDER NO.	3807
CHECKED BY			SHEET NO.	051E

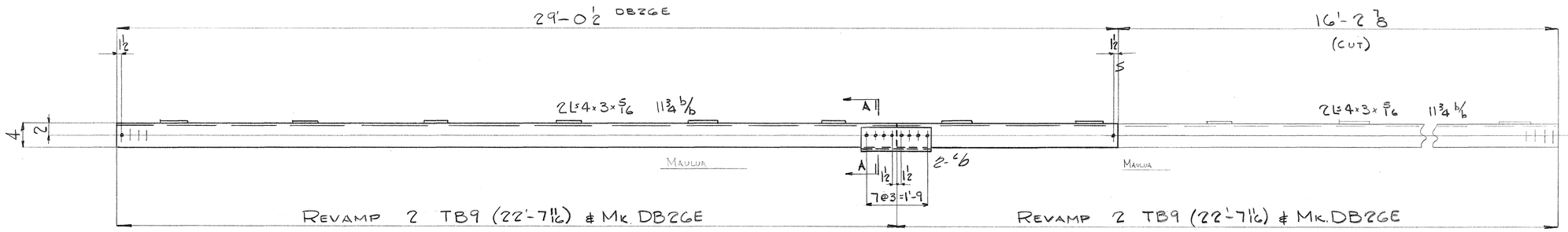
54GS.131

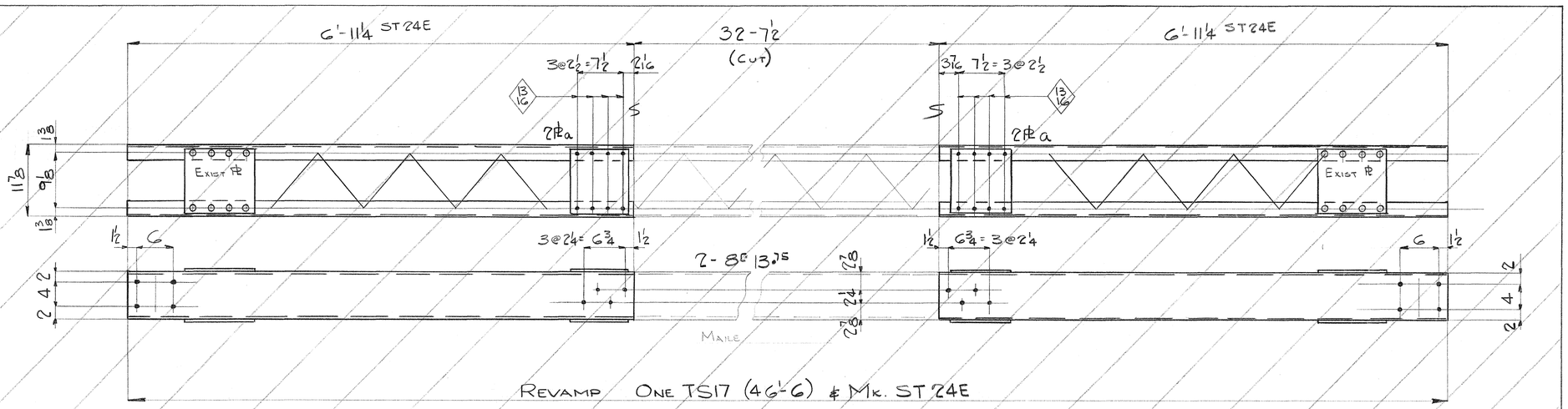
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWS11	HAWII	SDRX(10)	1950	132	304

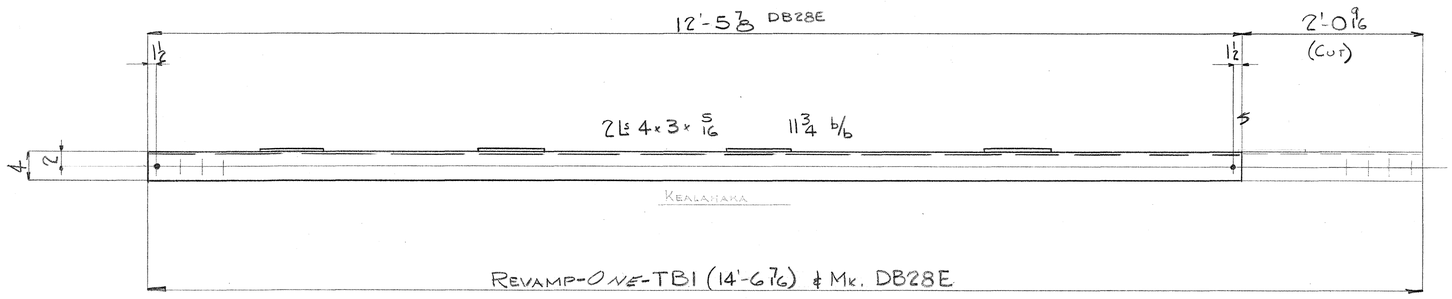
Order No. 3807 Sheet No. D52E











BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT CO.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAILS.					
					SALV FROM:
4	BRACES	22	7 1/16	TB9	MAULUA
1	DO	14	6 7/16	TB1	KEALAHAKA
4	L 5x3x½	2	0	b	TEMP. (NEW)

Rivets: ¾ ϕ FOR 13/16 ϕ HOLES
Holes: 15/16 ϕ UN
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

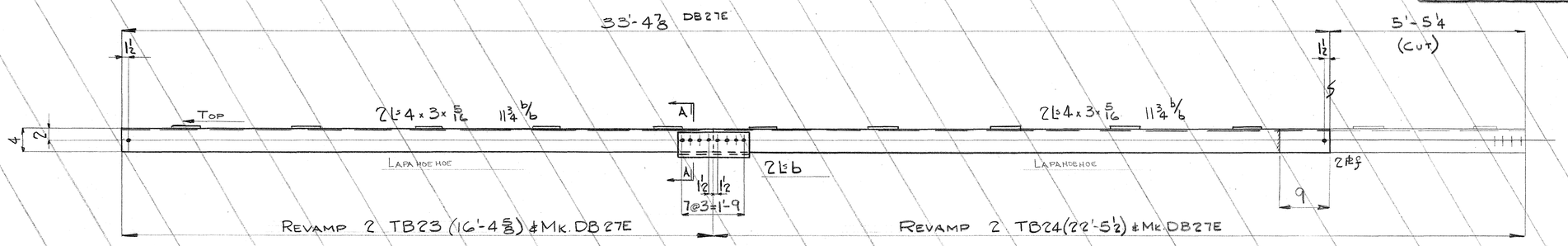
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	1-25-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D52E

5468.132

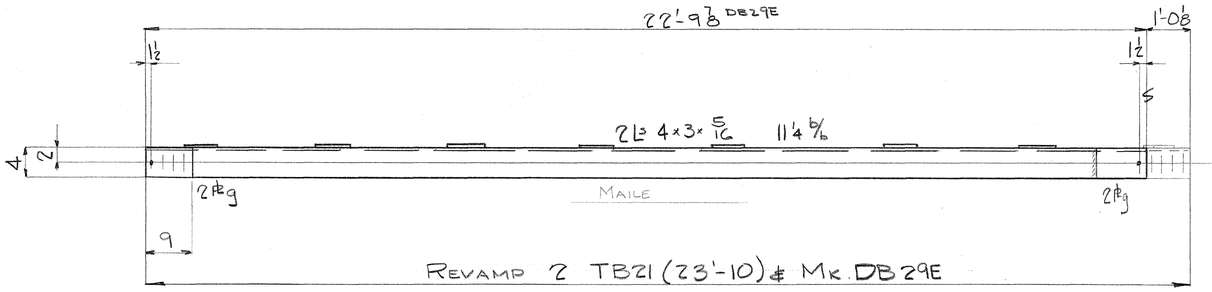
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAW 311	HAW	ODF 3(13)	1950	133	304

Order No. 3807 Sheet No. D53E

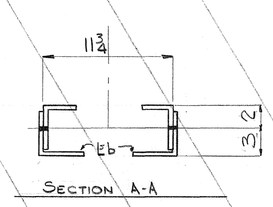


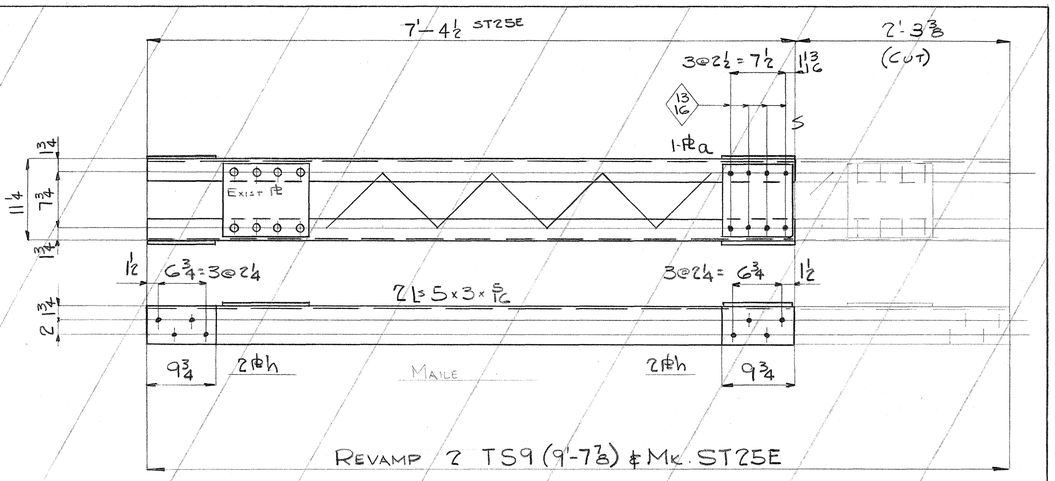
REVAMP 2 TB23 (16'-4 5/8) & MK. DB27E

REVAMP 2 TB24 (22'-5 1/2) & MK. DB27E

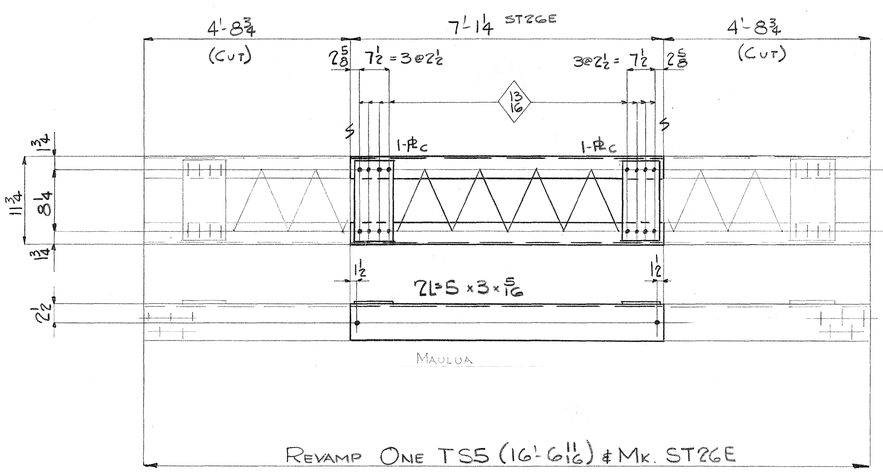


REVAMP 2 TB21 (23'-10) & MK. DB29E

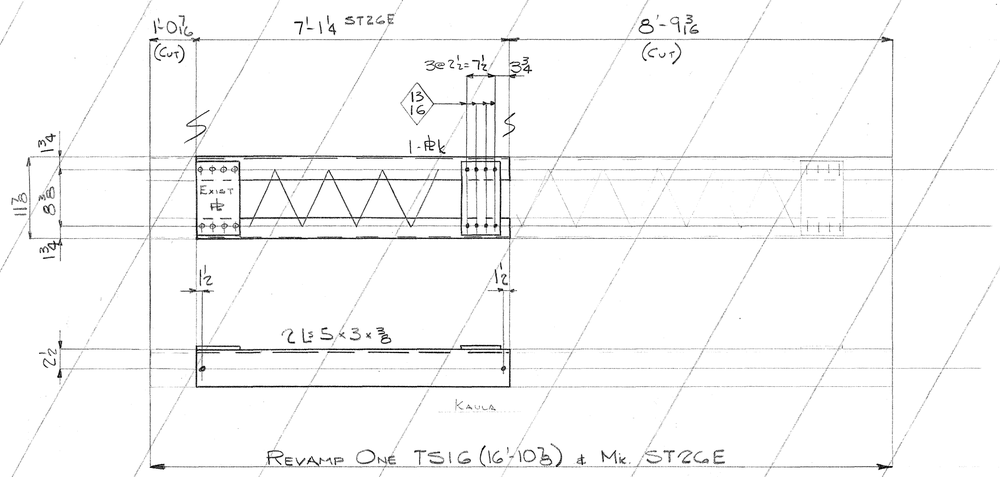




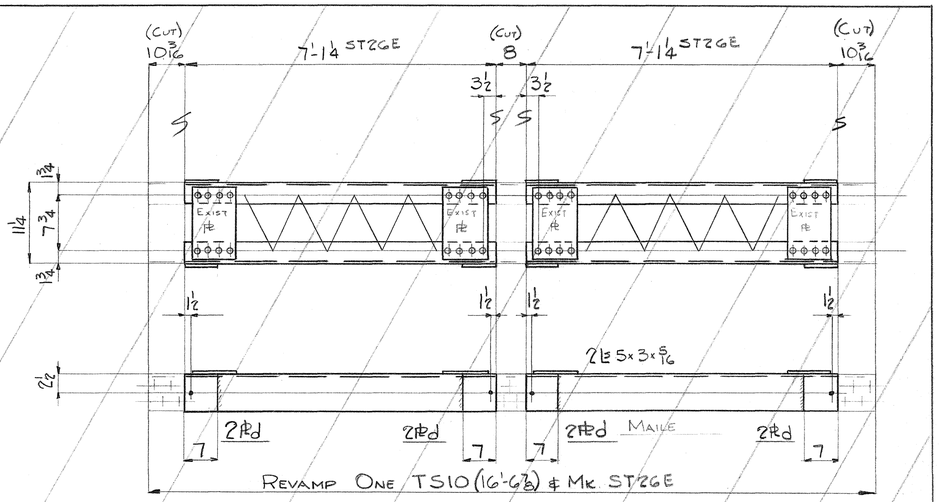
REVAMP 2 TS9 (9'-7 7/8) & MK. ST25E



REVAMP ONE TS5 (16'-6 11/16) & MK. ST26E



REVAMP ONE TS16 (16'-10 3/8) & MK. ST26E



REVAMP ONE TS10 (16'-6 7/8) & MK ST26E

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT CO.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE:	BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAIL.				
					SALV. FROM
2	BRACES	23	10	TB21	MAILE
1	Do	16	6 11/16	TS5	MAULUA
2	Pl 10 x 3/8	0	10 3/8	C	TEMP. (NEW)
8	Pl 4 x 5/16	0	9	g	Do Do

Rivets: 3/4φ FOR 13/16φ HOLES.

Holes: 15/16φ UN

Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

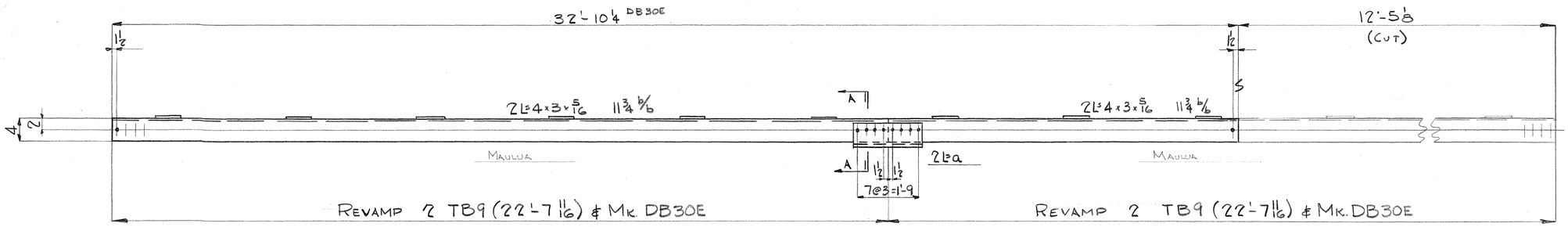
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

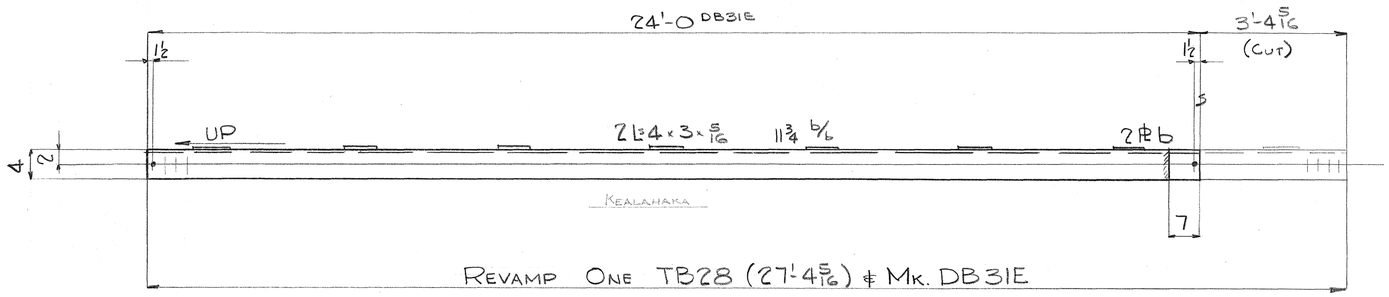
MADE BY	DAL	1-25-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D53E

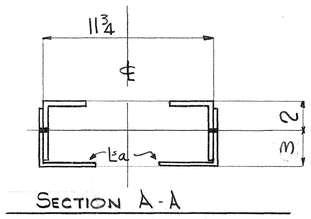
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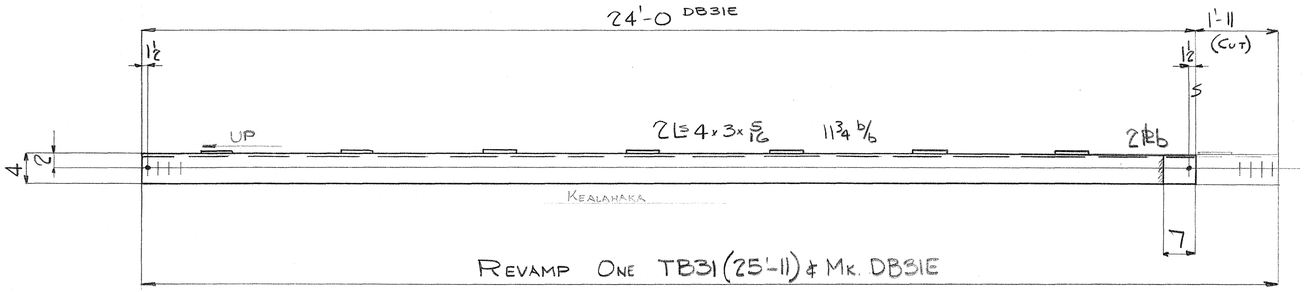
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HSWY11	HSW	SDR3(13)	1950	134	304

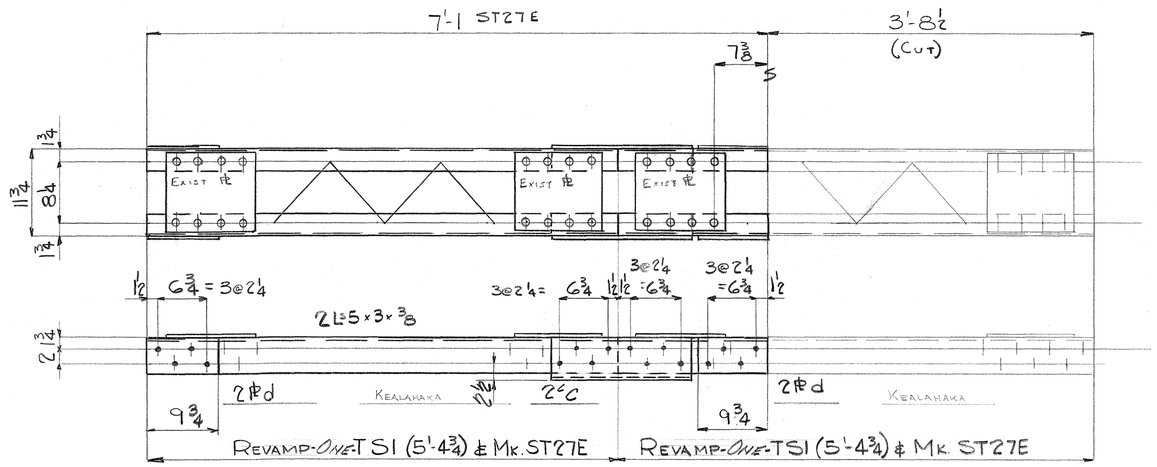
Order No. 3807 Sheet No. D54E











BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT CO.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE:	BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAILS.				
					SALV. FROM:
4	BRACES	22	7 11/16	TB9	MAULUA
1	DO	27	4 5/16	TB28	KEALAHAKA
1	DO	25	11	TB31	DO
2	DO	5	4¾	TS1	DO
4	L 5x3x½	2	0	a	TEMP-NEW
4	PL 4x⅜	0	7	b	DO DO
2	6x4x½	1	7½	c	DO DO
4	PL 5x⅜	0	9¾	d	DO DO

Rivets:
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

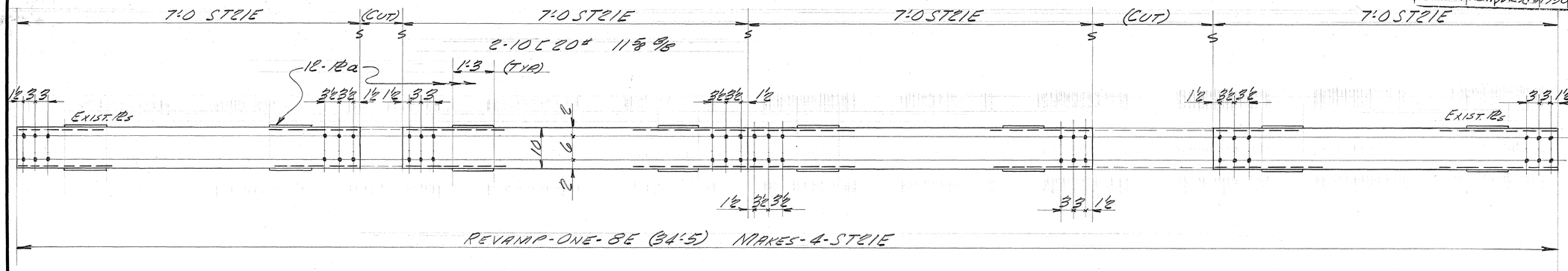
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

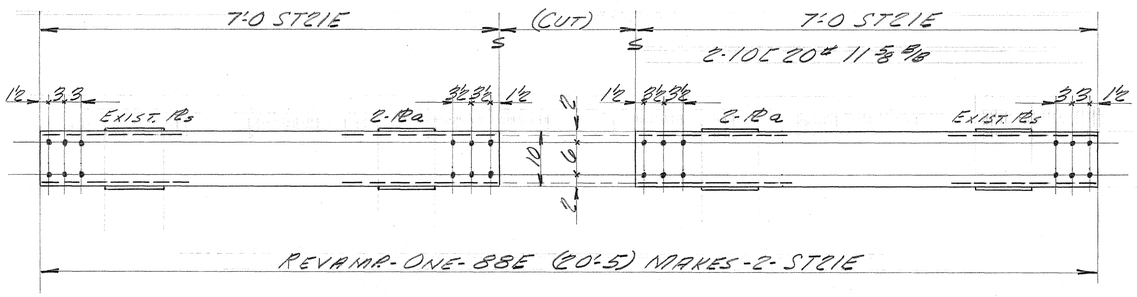
MADE BY	DAL	1-26-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D54E

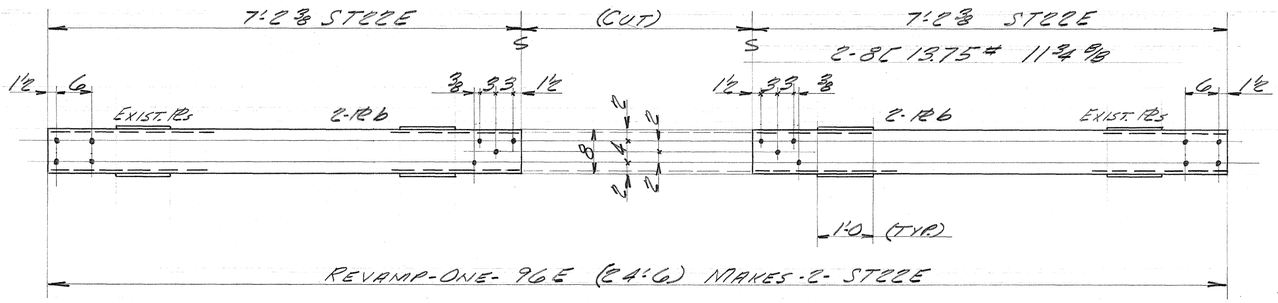
5468.134 126 134

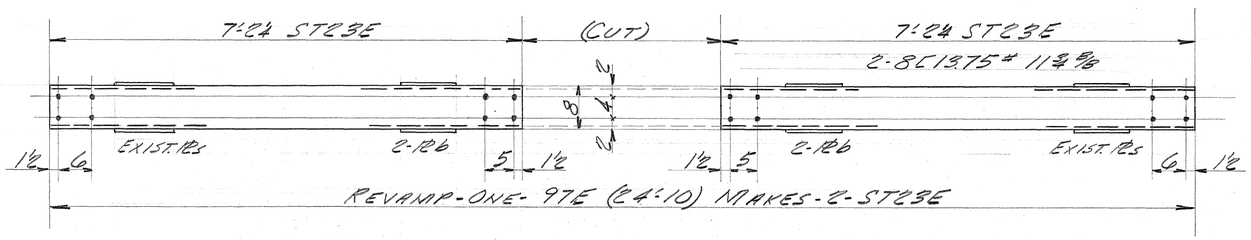
Order No. 3807 Sheet No. 055E

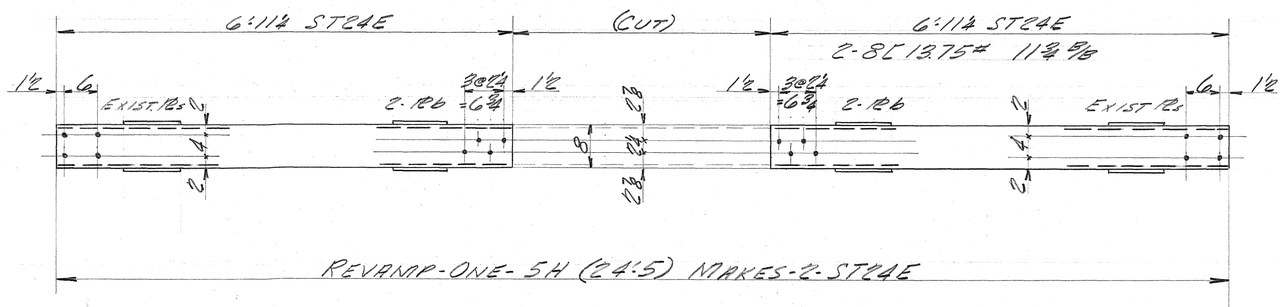
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL
Hawaii	Hawaii	DR 2(13)1950	135	304	











BILL OF MATERIAL — NANUE BRIDGE

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: REVAMP THE MATERIAL LISTED BELOW U.S ON THE DETAILS					
1	BRACE			8E	
1				88E	
1				96E	
1				97E	
1				5H	
NEW MAT'L. IS LISTED BELOW					
16	PL 11 x 3/8	1	3	a	PLAIN
12	PL 11 x 3/8	1	0	b	Oa

~~Rivets:~~ WELD
Holes: 15/16" ϕ
Paint: (SEE SPEC'S)

INDUSTRIAL DEV. CO.

ADDITION TO THE NANUE BRIDGE -HAWAII-

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DD	10-9-50	ORDER NO.	3807
CHECKED BY			SHEET NO.	055E

135

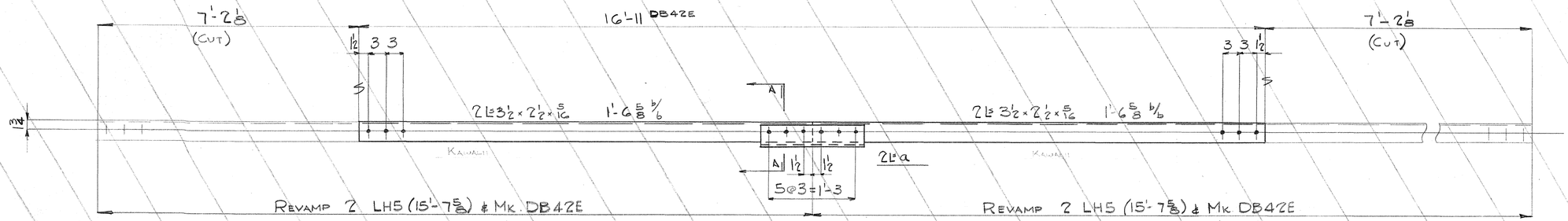
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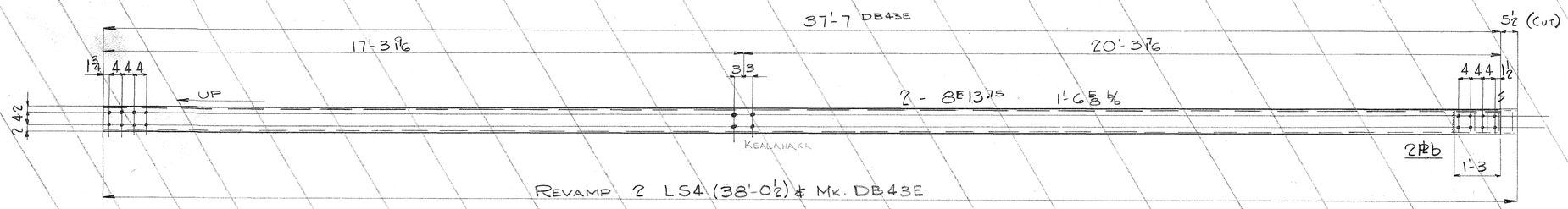
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	SDR2(13)	1950	136	304

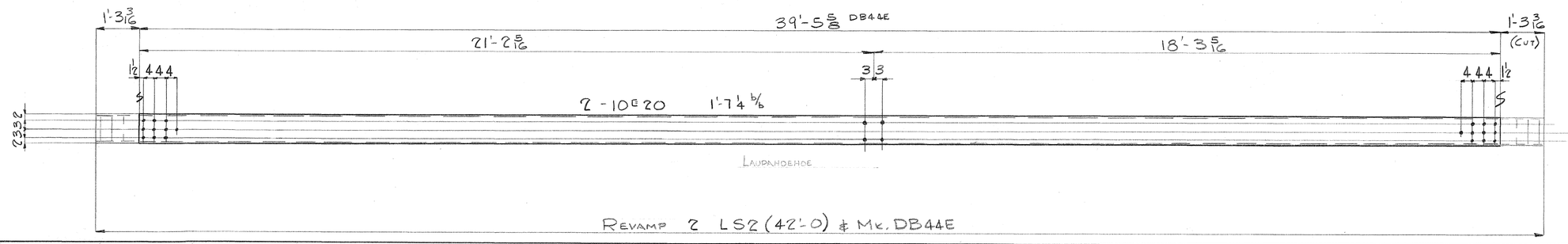
Order No. 3807 Sheet No. D56E

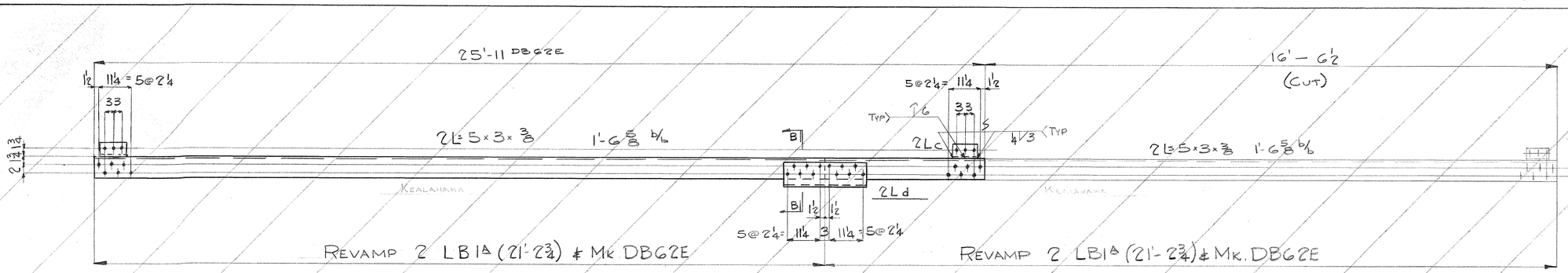
BILL OF MATERIAL — Industrial Development Co.

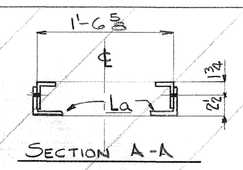
No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE:	BRACES LISTED BELOW ARE TO BE				
	REVAMPED AS SHOWN ON DETAILS.				
					SALV. FROM:
2	BRACES	42	0	LS2	LAUPAHOEHOE
4	Do	21	2¾	LB1	Do
4	L 6 × 4 × ½	2	4½	d	TEMP (NEW)
4	PL 8 × ¼	1	2¼	f	Do - Do.

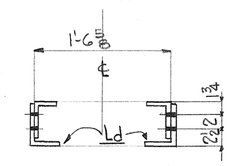


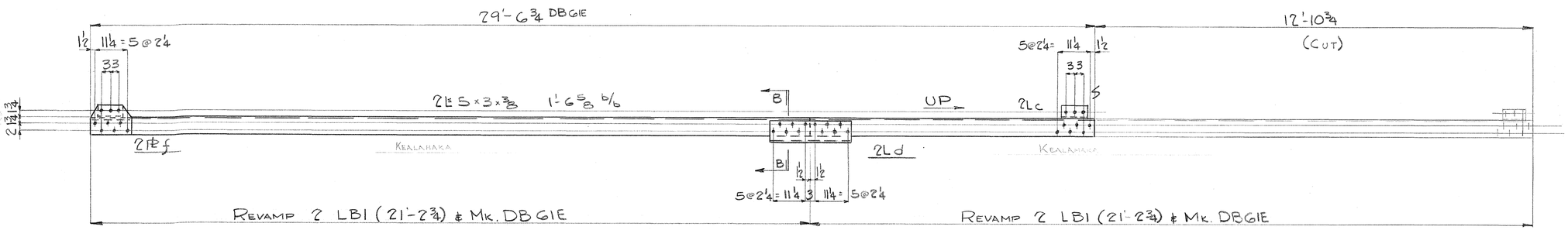












Rivets: ⅞ Φ
Holes: 15/16 Φ
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

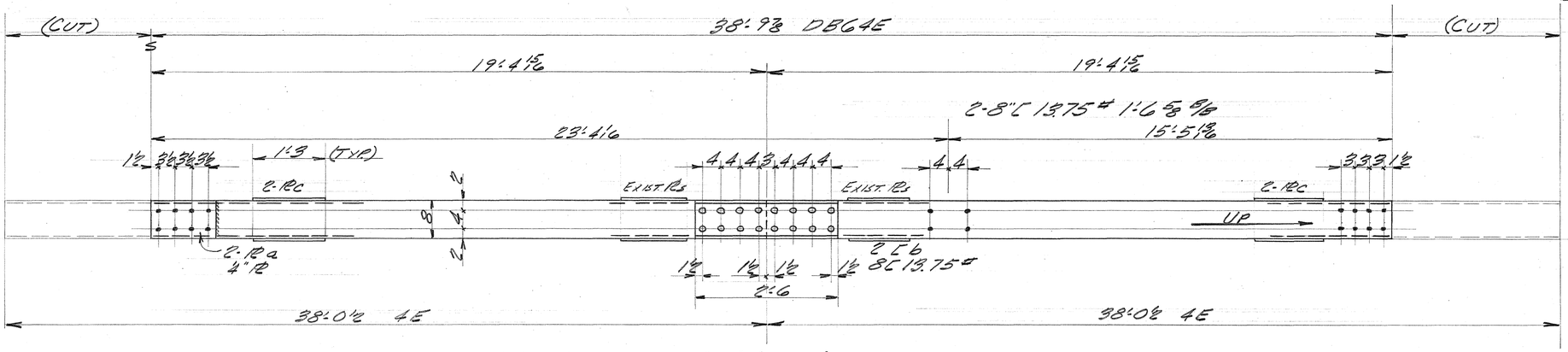
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	2-1-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D56E

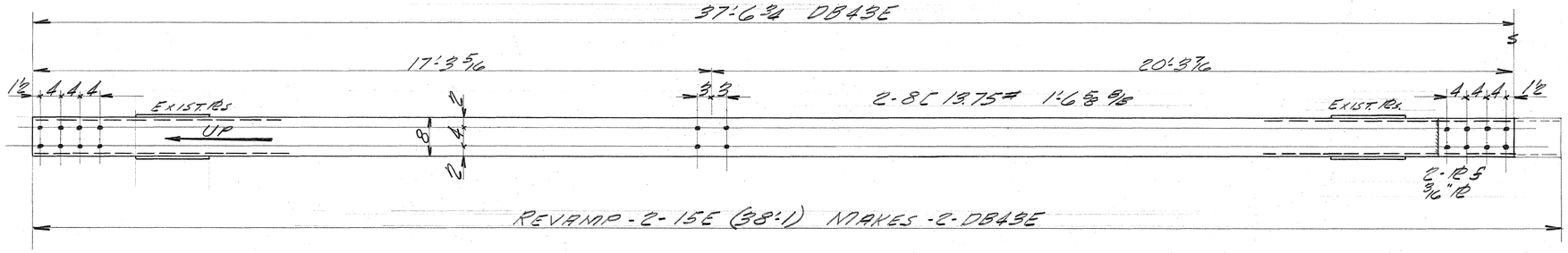
5468.136

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	DEAD	1950	137	304

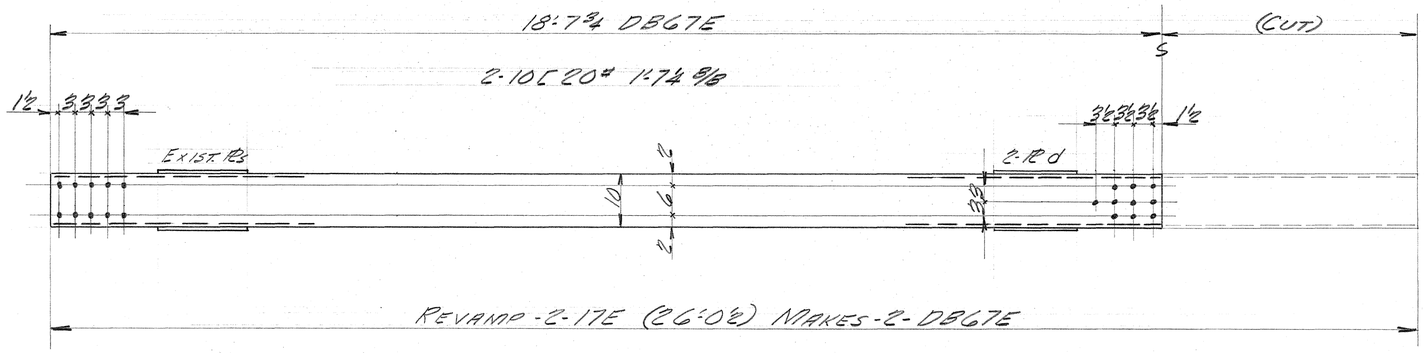
Order No. 3807 Sheet No. D57E



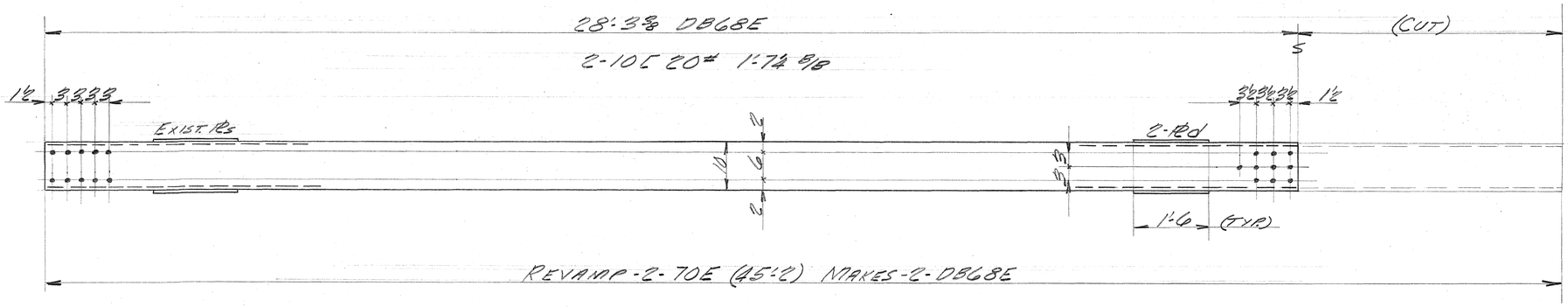
REVAMP - 4 - "4E" (38:0½) MAKES - 2 - DB64E



REVAMP - 2 - 15E (38:1) MAKES - 2 - DB43E



REVAMP - 2 - 17E (26:0½) MAKES - 2 - DB67E



REVAMP - 2 - 70E (45:2) MAKES - 2 - DB68E

BILL OF MATERIAL — NANUE BRIDGE

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: REVAMP THE MATERIAL LISTED BELOW AS SHOWN ON THE DETAILS					
4	BRACES			4E	
2				15E	
2				17E	
2				70E	
NEW MATL. IS LISTED BELOW					
4	R 8 x 4	1	1½	a	TENAR
4	8C 13.75#	2	6	b	Do.
8	R 15 x ⅜	1	3	c	PLAIN
8	R 18½ x ⅜	1	6	d	Do.
4	R 8 x 3/16	1	3	s	TENAR
64	¾" ⌀ RIVETS				

Rivets: ⅞" ⌀
Holes: 15/16" ⌀
Paint: (SEE SPECS.)

INDUSTRIAL DEV. CO.
ADDITION TO THE NANUE BRIDGE -HAWAII-
INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

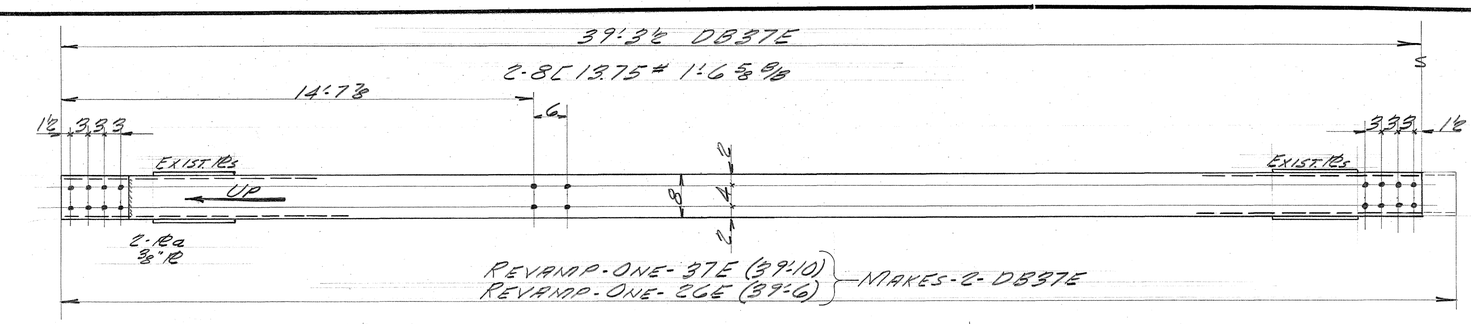
MADE BY	DD	10-9-50	ORDER NO.	3807
CHECKED BY			SHEET NO.	D57E

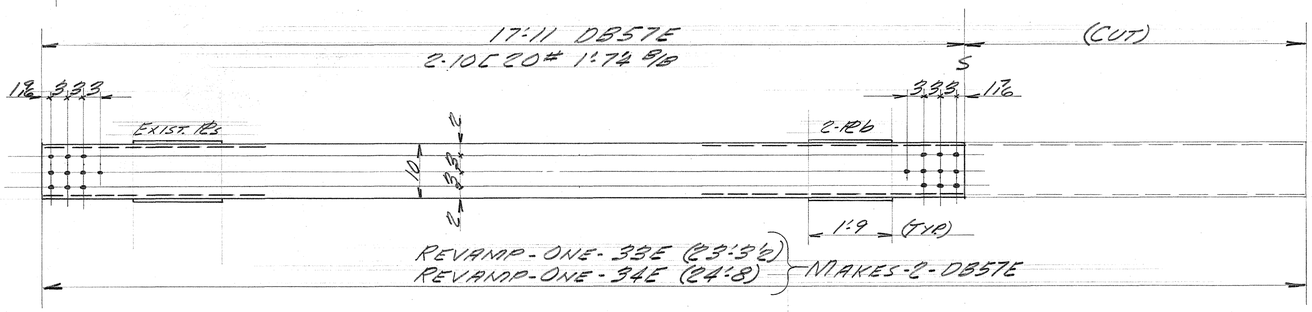
137

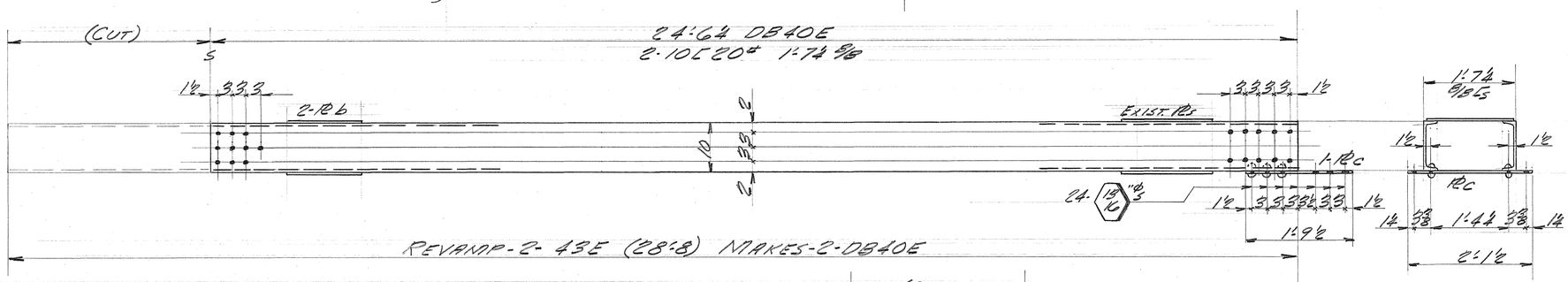
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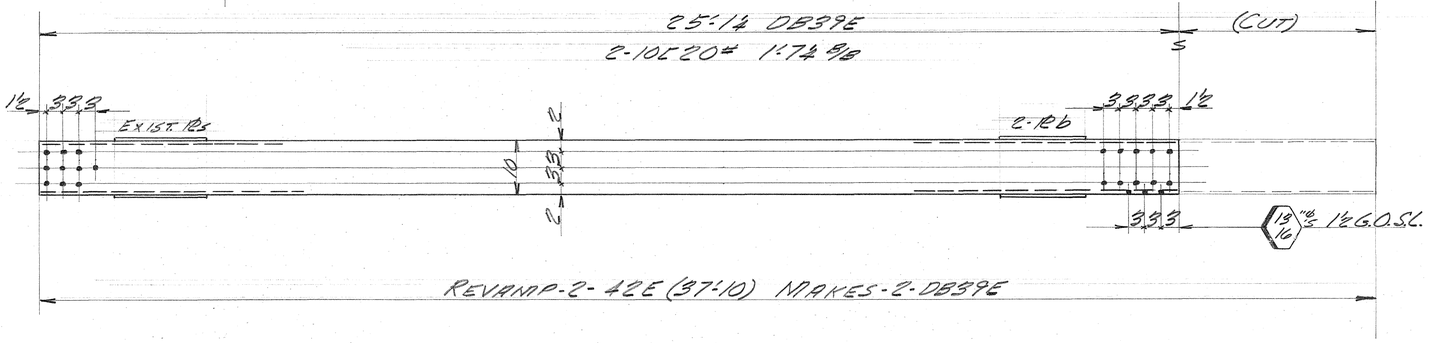
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAWAII 2(8)	1950	138	302	

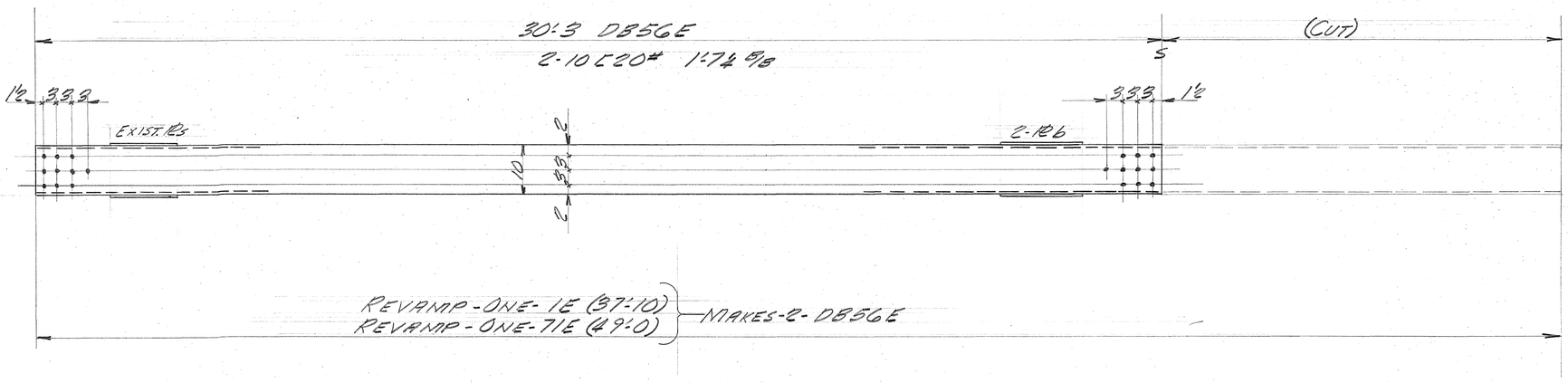
Order No. 3807 **Sheet No.** D58E











BILL OF MATERIAL — NANUE BRIDGE

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: THE MATERIAL LISTED BELOW IS TO BE REVAMPED A.S. ON THE DETAILS					
1	BRACE			37E	
1				2CE	
1				33E	
1				34E	
2				43E	
2				40E	
1				1E	
1				71E	
NEW MATL. IS LISTED BELOW					
4	R8 x 3/8	1	0	a	TENAR
16	R18½ x 3/8	1	9	b	PLAIN
2	R21½ x 3/8	2	1½	c	TENAR
12	3/4" RIVETS				

Rivets: 3/4" ø FOR 13/16" HLS.
Holes: 15/16" U.N.
Paint: (SEE SPECS.)

INDUSTRIAL DEV. CO.
ADDITION TO THE
NANUE BRIDGE
-HAWAII-

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

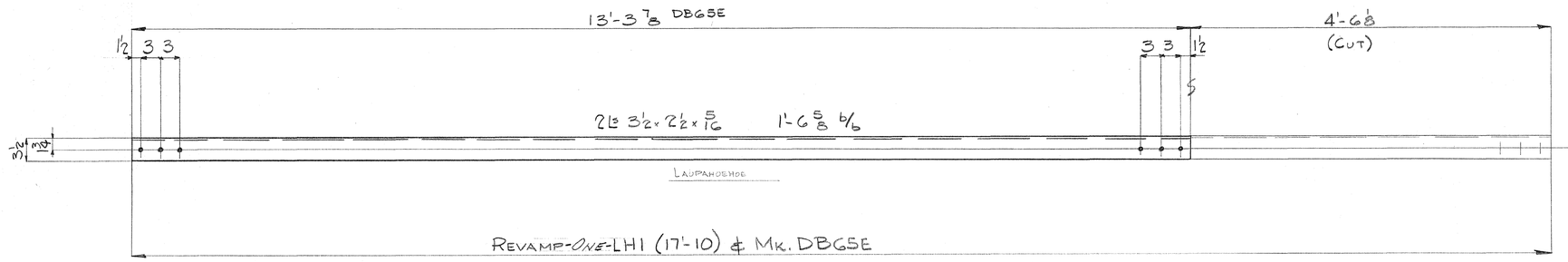
MADE BY	DW	10-9-50	ORDER NO.	3807
CHECKED BY			SHEET NO.	D58E

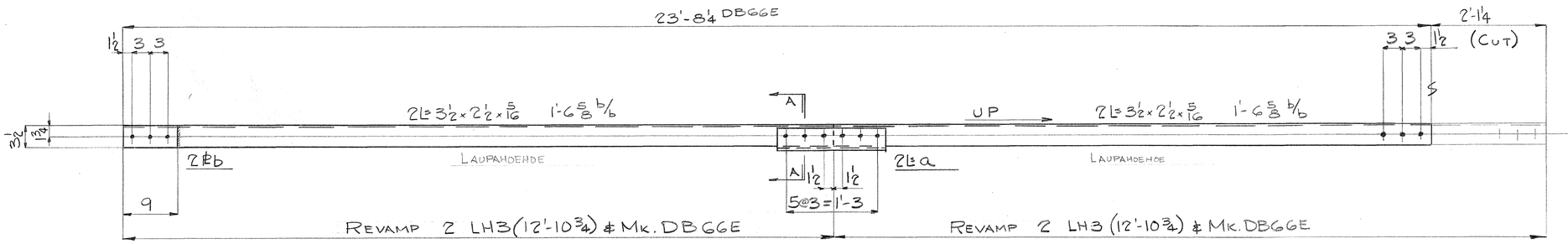
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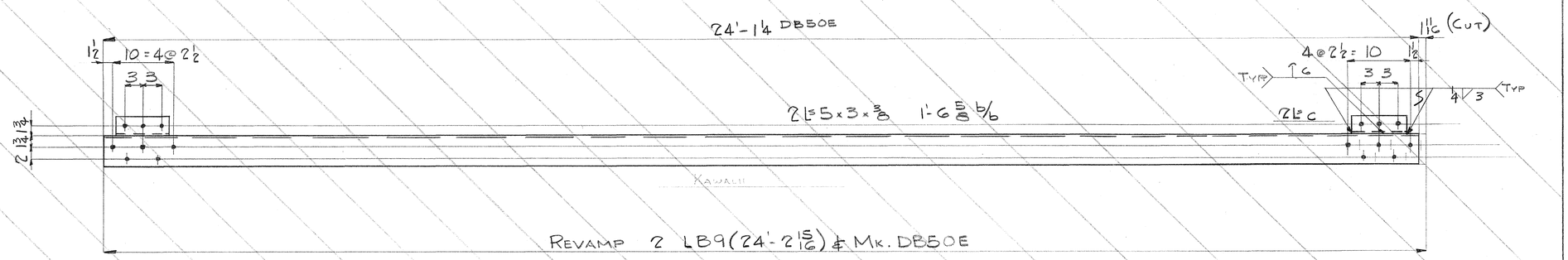
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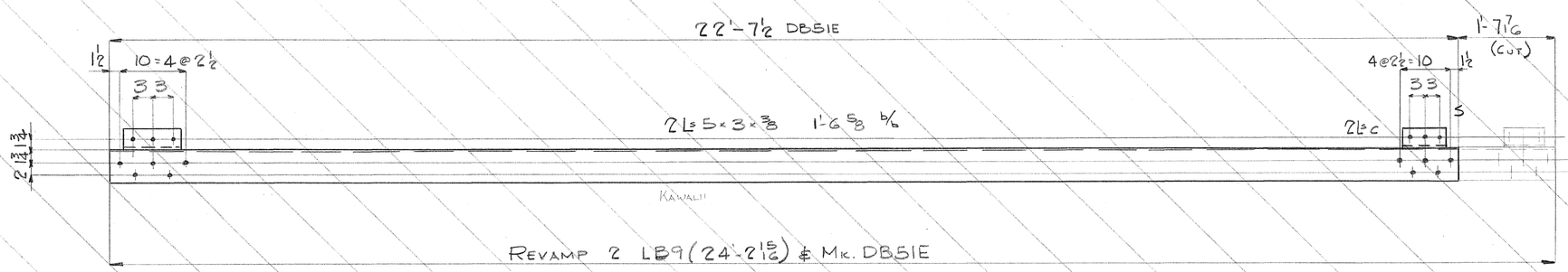
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
Hawaii	Haw	70 DR 2(3)	1950	139	304

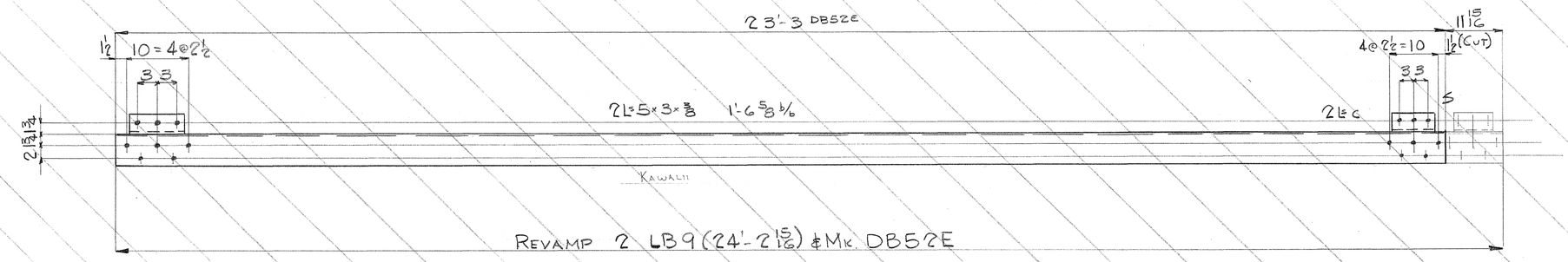
Order No. 3807 Sheet No. D59E









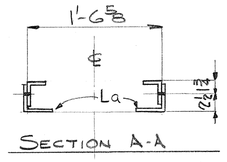


BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT CO.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAILS.					
					SALV. FROM:
1	BRACES	17	10	LH1	LAUPAHOEHOE
4	DO	12	10 3/4	LH3	DO
4	L 4x4x 3/8	1	6	a	Temp-New
4	PL 3 1/2 x 1/4	0	9	b	DO DO

NOTE:
EXISTING PL & L3 WHICH INTERFERE MAY BE REMOVED.



Rivets: 7/8 ϕ
Holes: 15/16 ϕ
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	2-3-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D59E

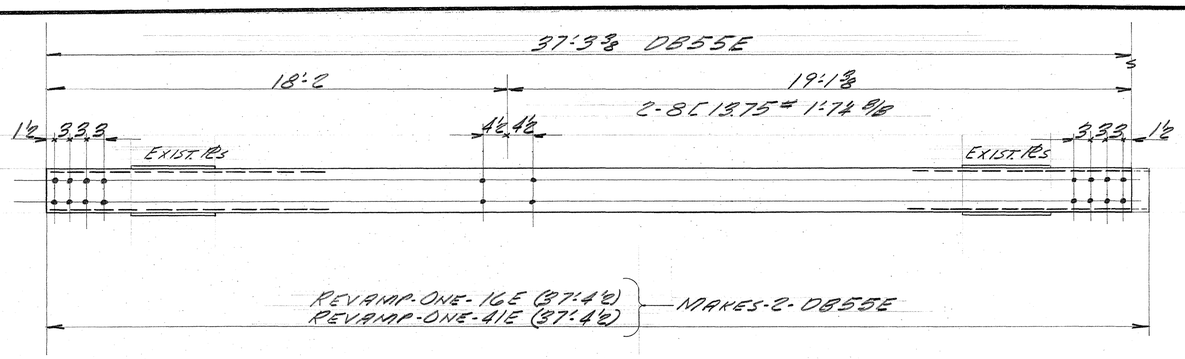
54GS.139 139

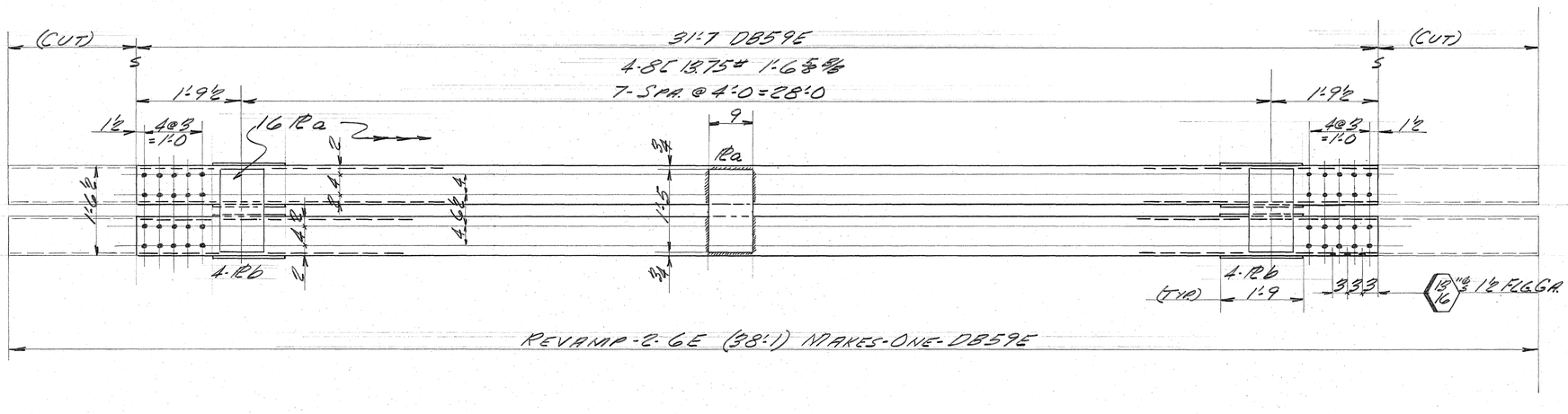
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
T13W311 Haw 5DR 2(13)	1950	140	301		

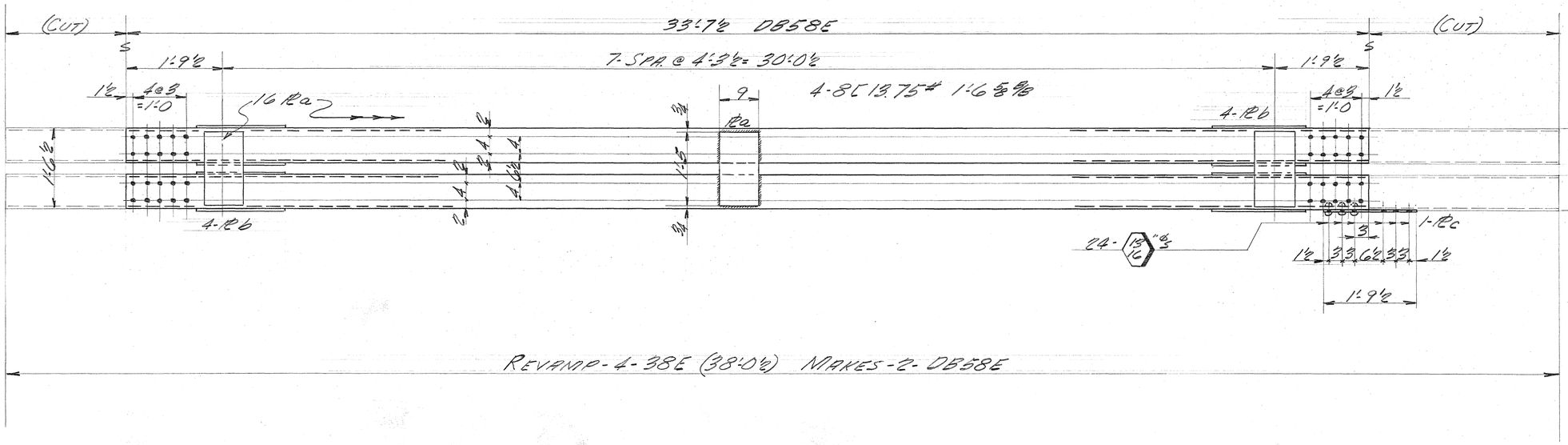
Order No. 3807 Sheet No. D60E

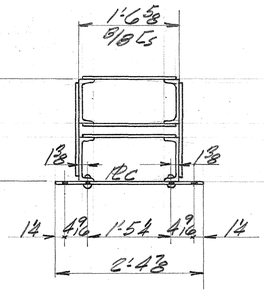
BILL OF MATERIAL — NANUE BRIDGE

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: THE MATERIAL LISTED BELOW IS TO BE REVAMPED P.S. ON THE DETAILS					
1	BRACE			16E	
1				41E	
2				6E	
4				38E	
NEW MAT'L. IS LISTED BELOW					
48	PL 9 x ½	1	5	a	PLAIN
24	PL 18 x ⅜	1	9	b	Do.
2	PL 21½ x ⅜	2	4⅜	c	TEMP.
12	¾" ⌀ RIVETS				









Rivets: ¾" ⌀ FOR 1⅜" ⌀ HOLES.
Holes: 15/16" ⌀ U.N.
Paint: (SEE SPECS.)

INDUSTRIAL DEV. CO.
ADDITION TO THE
NANUE BRIDGE
-HAWAII-

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DD	10-10-50	ORDER NO.	3807
CHECKED BY			SHEET NO.	D60E

140

5468.140

Order No. 3807 Sheet No. D61E

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HI(WS)11	HI	DR 3(10)	1950	141	304

17'-11 DB57E

1½ 9=3@3

2 - 10ϕ20 1'-7¼ b/b

3@3=9 1½

A A

2Pc

14'-9¼ (CUT)

2332

MAILE

REVAMP ONE LS8A (32'-8¼) & Mk. DB57E

17'-11 DB57E

1 15/16 9=3@3

2 - 10ϕ20 1'-7¼ b/b

3@3=9 1 15/16

B B

2Pc

7'-0¾ (CUT)

2332

MAILE

REVAMP ONE LS10 (24'-11¾) & Mk. DB57E

31'-7 DB59-E

6'-5 (CUT)

1'-9½ 7 SPACES @ 4'-0 = 28'-0 1'-9½

1½ 4@3 =1'-0

10 Pls b 2

1Pla

1Pla

1Pla

9

Plb

4-BL5 13.75 1:6 B/B

KAWAILI

4@3 =1'-0 1½

S

4 3@3 =9

13/16

Plb

Pla

Plb

1'-6⅝ 1'-3⅜

3 3 3

13/16 ϕ 1½" FLG. GA.

REVAMP - 2 - LSG (38'-0) & Mk DB59-E

4@3=1'-0 4

1½

1'-7¼ 1'-4¼

Pl c

1½

VIEW A-A

4@3=1'-0 3½

1½

1'-7¼ 1'-4¼

Pl c

1½

VIEW B-B

BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT Co

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAILS.					
2	BRACES	38	0	LSG	KAWAILI
4	Pl 11½ x 3/8	1	6 3/8	a	TEMP. NEW
16	Pl 9 x ½	1	5	b	TRAIN - NEW

Rivets: ¾ ϕ FOR 13/16 ϕ HOLES

Holes: 15/16 ϕ

Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE

HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL SEE	2-3-50	ORDER NO.	3807
CHECKED BY	RA	2-17-50	SHEET NO.	D61E

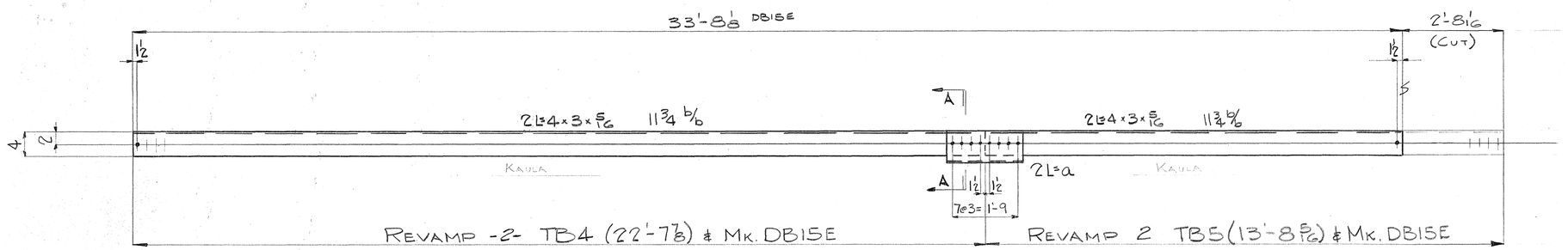
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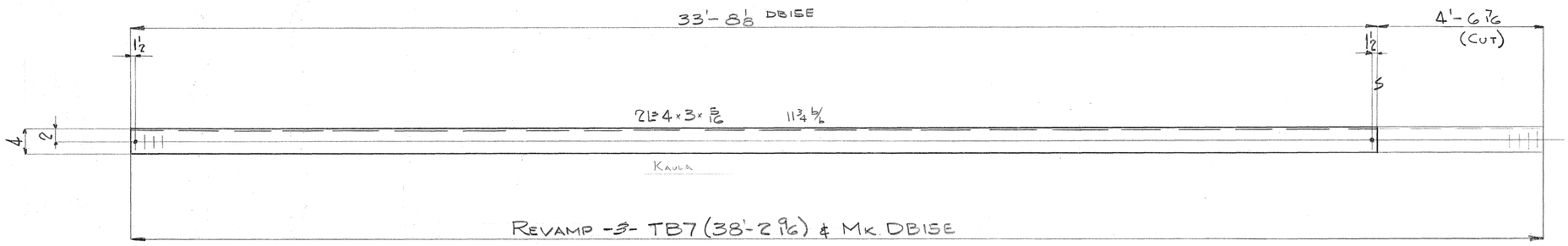
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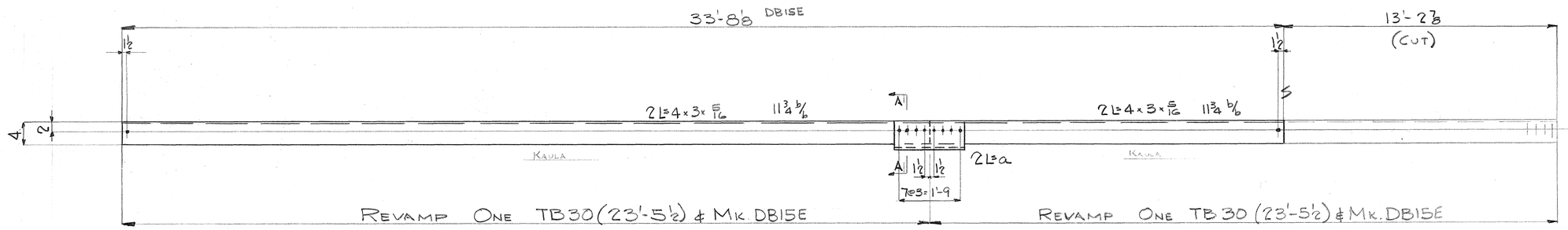
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HBW911	HBW 3DR3(13)	1950	142	304

Nov. 1, 1950

Order No. 3807 Sheet No. 0625



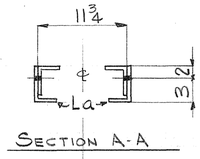




BILL OF MATERIAL

INDUSTRIAL DEVELOPMENT CO.

No.	Description	Length Ft.	Length Ins.	Mark	REMARKS
NOTE: BRACES LISTED BELOW ARE TO BE REVAMPED AS SHOWN ON DETAILS					
					SALV. FROM:
2	BRACES	22	7⅞	TB4	KAULA
5		13	8 5/16	TB5	Do
3		38	2 9/16	TB7	Do
2		23	5½	TB30	Do
6	L 5×3×½	2	0	a	Temp-New
— FINAL DRAWING —					



SECTION A-A

Rivets:
Holes: 15/16 & UN
Paint:

INDUSTRIAL DEVELOPMENT COMPANY

ADDITION TO THE NANUE BRIDGE
HAWAII

INDEPENDENT IRON WORKS, INC.
OAKLAND, CALIF.

MADE BY	DAL	7-15-50	ORDER NO.	3807
CHECKED BY	RA	8-17-50	SHEET NO.	0625

147

5468.142 105