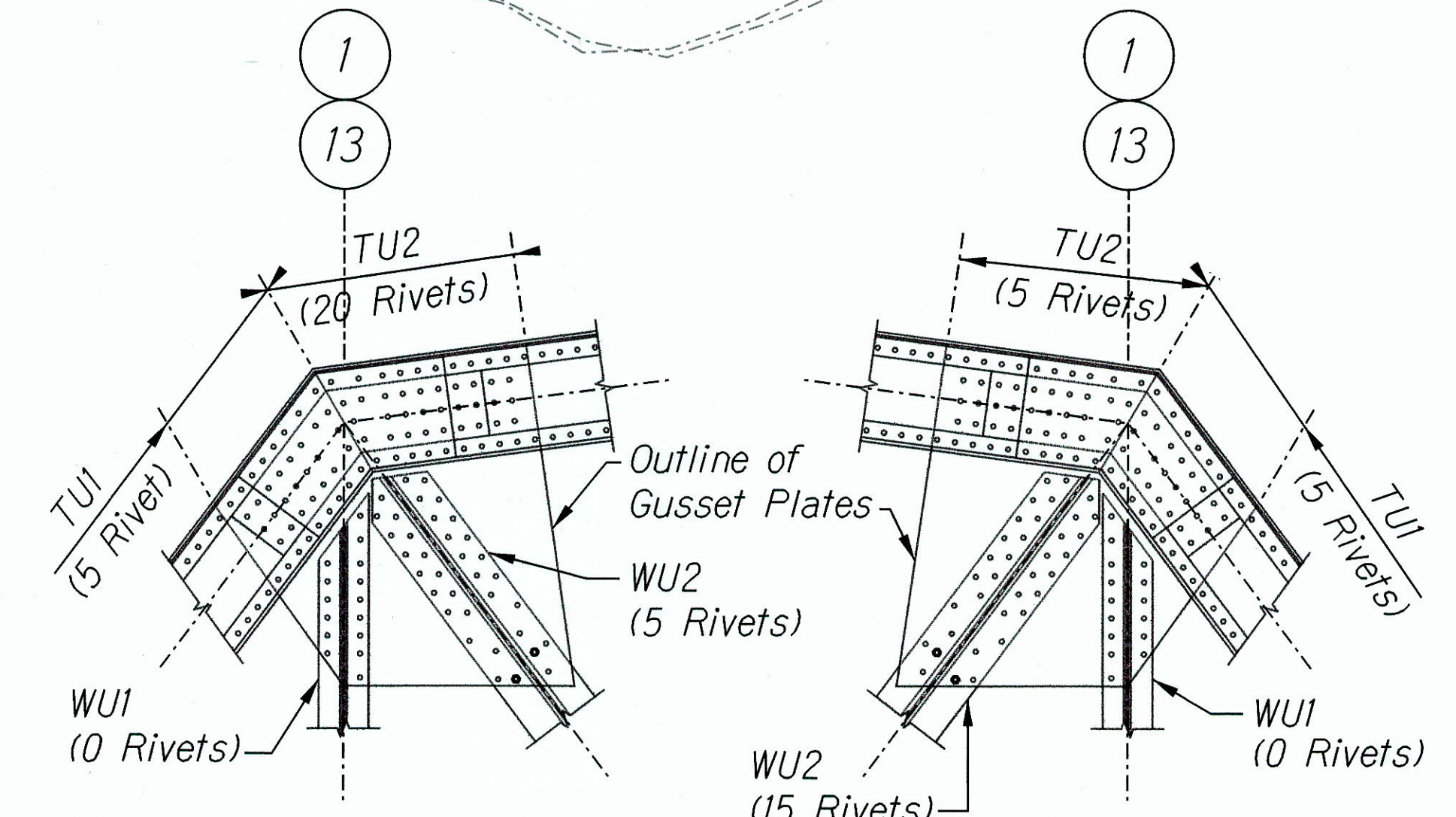
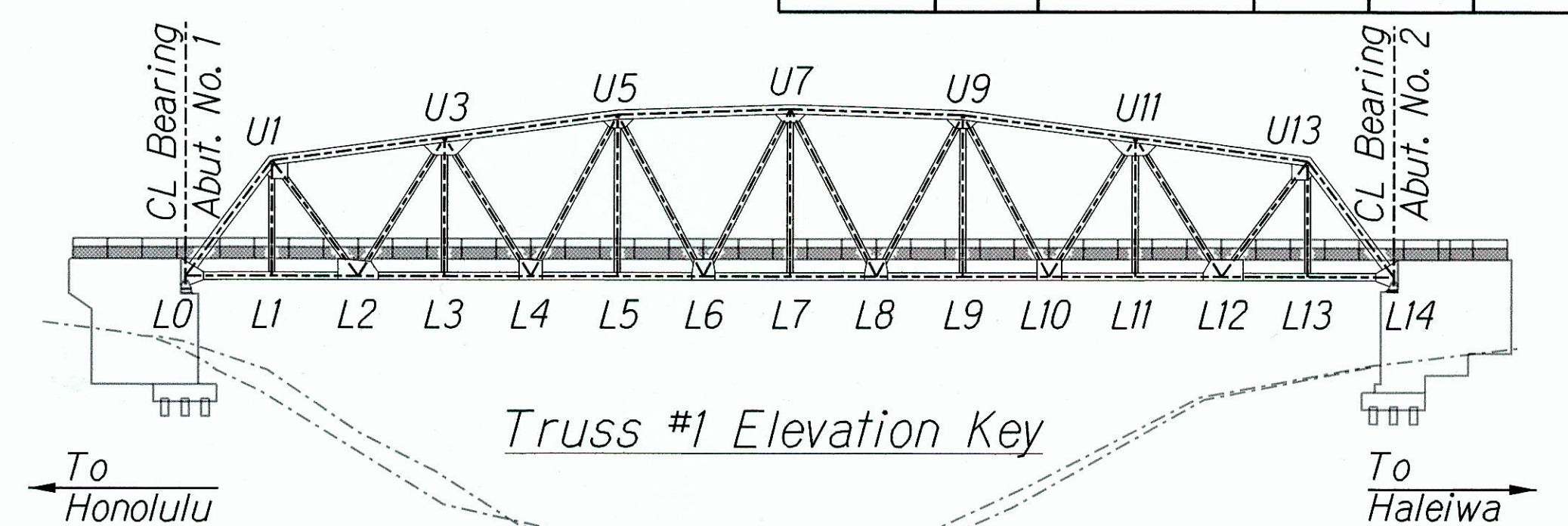


FED. ROAD DIST. NO.	STATE	FED AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-080-1(012)	2014	34	82

GUSSET PLATE REPAIR SCHEDULE TRUSS #1				
Gusset	Plate	Connected Member	Estimated No. Rivet Replacement	Detail
U1	Sidewalk	TU1	0 5	Type 1/S4.6
		TU2	1 20	
		WU1	0	
	Roadway	TU1	0 5	
		TU2	0 5	
		WU2	0 15	
U3	Sidewalk	TU2	4 15	Type 2/S4.6
		TU3	4 10	
		WU3	0	
		WU4	0 5	
	Roadway	TU2	4 20	
		TU3	4 15	
		WU3	0	
		WU4	0	
U5	Sidewalk	TU3	6 10	Type 3/S4.6
		TU4	6 20	
		WU6	0 5	
		WU7	0	
		WU8	0	
	Roadway	TU3	6 15	
		TU4	6 10	
		WU6	0	
		WU7	0	
		WU8	0	
U7	Sidewalk	TU4	4 15	Type 4/S4.6
		TU5	6 15	
		WU9	0 5	
		WU10	0 5	
		WU11	0	
	Roadway	TU4	6 20	
		TU5	6 10	
		WU9	0 10	
		WU10	0 5	
		WU11	0	

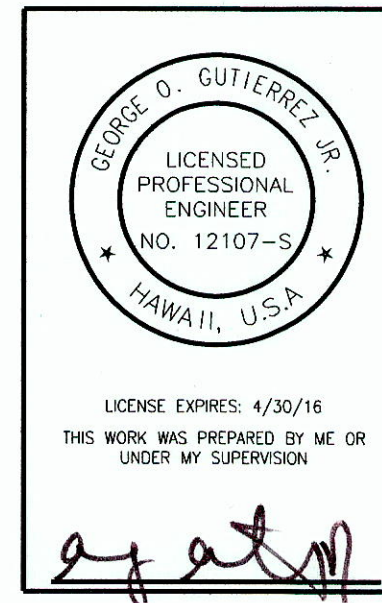
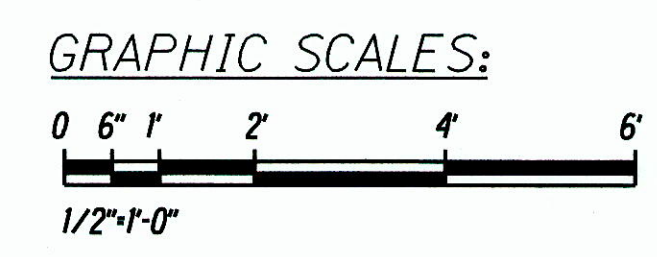
CONT'D GUSSET PLATE REPAIR SCHEDULE TRUSS #1				
Gusset	Plate	Connected Member	Estimated No. Rivet Replacement	Detail
U9	Sidewalk	TU5	8 25	Type 3/S4.6
		TU6	8 15	
		WU12	0 10	
		WU13	0 5	
	Roadway	WU14	0	
		TU5	5 20	
		TU6	6 15	
		WU12	0	
U11	Sidewalk	WU13	0	Type 2/S4.6
		WU14	0 5	
		TU6	10 20	
		TU7	9 20	
	Roadway	WU15	0 5	
		WU16	0 5	
		WU17	0 5	
		TU6	4 20	
U13	Sidewalk	WU15	0	Type 1/S4.6
		WU16	0 5	
		WU17	0	
		TU7	10 20	
	Roadway	TU8	4 0	
		WU18	0	
		WU19	0	
		TU7	5	
Roadway	TU8	5 15		
	WU18	0		
	WU19	0		



GUSSET U1
 SIDEWALK PLATE
 ROADWAY PLATE
 1 EXAMPLE GUSSET PLATE RIVET REPAIR
 S4.2 | S4.2 SCALE: 1/2" = 1'-0"

- Note:
- For rivet repair information and details, see sheet S4.1 and sheet S4.6.
 - The exact amount and location of rivet replacement and new bolt installation shall be confirmed based on actual field conditions and subject to Engineer's approval.

SURVEY PLOTTED BY _____ DATE _____
 DRAWN BY _____
 DESIGNED BY _____
 QUANTITIES BY _____
 CHECKED BY _____
 ORIGINAL PLAN _____
 NOTEBOOK _____
 No. _____



STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
**REPAIR TABLES -
 GUSSET PLATES**
 KAMEHAMEHA HIGHWAY
 Repair and Repaint Karsten Thot Bridge
 Federal Aid Project No. BR-080-1(012)
 Scale: As Noted Date: Sept 2014
 SHEET No. S4.2 OF 7 SHEETS

"AS-BUILT"

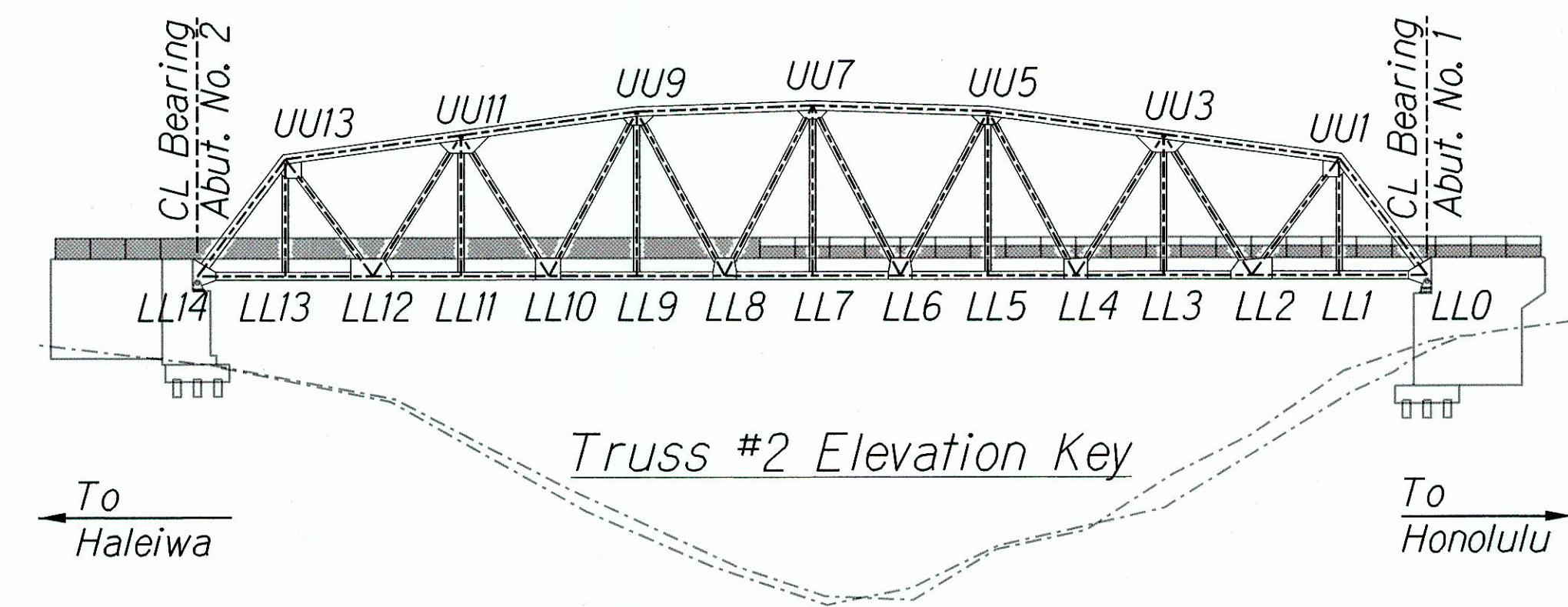
FED. ROAD DIST. NO.	STATE	FED AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-080-1(012)	2014	35	82

GUSSET PLATE REPAIR SCHEDULE TRUSS #2

Gusset	Plate	Connected Member	Estimated No. Rivet Replacement	Detail
UU1	Sidewalk	TU1	2 0	Type 1/S4.6
		TU2	4 15	
		WU1	0	
	Roadway	WU2	0 5	
		TU1	1 10	
		TU2	4 15	
UU3	Sidewalk	WU1	0	Type 2/S4.6
		TU2	4 30	
		TU3	4 20	
		WU3	0	
		WU4	0	
	Roadway	WU5	0	
		TU2	4 15	
		TU3	4 10	
		WU3	0	
UU5	Sidewalk	WU4	0	Type 3/S4.6
		WU5	0	
		WU6	0	
		WU7	0	
	Roadway	TU3	11 10	
		TU4	6 15	
		WU6	0	
		WU7	0	
UU7	Sidewalk	WU8	0	Type 4/S4.6
		TU4	0	
		TU5	4 5	
		WU9	4 0	
		WU10	0	
	Roadway	WU11	0	
		TU4	7 5	
		TU5	6 20	
		WU9	0	
		WU10	0 5	
		WU11	0	

CONT'D GUSSET PLATE REPAIR SCHEDULE TRUSS #2

Gusset	Plate	Connected Member	Estimated No. Rivet Replacement	Detail
UU9	Sidewalk	TU5	5 15	Type 3/S4.6
		TU6	0 5	
		WU12	0	
		WU13	0	
	Roadway	WU14	0	
		TU5	8 20	
UU11	Sidewalk	TU6	6 10	Type 2/S4.6
		WU12	0	
		WU13	0 5	
		WU14	0 5	
	Roadway	WU15	0	
		TU6	8 25	
		TU7	4 20	
UU13	Sidewalk	WU16	0	Type 1/S4.6
		WU17	0	
		WU18	0 5	
		WU19	0 5	
	Roadway	TU7	2 10	
		TU8	3 10	
		WU18	0 5	
Roadway	TU7	5 20		
	TU8	4 10		
	WU18	0 5		
	WU19	0		



- Note:
- For rivet repair information and details, see sheet S4.1 and sheet S4.6.
 - See sheet S4.2 for example gusset plate rivet identification.
 - The exact amount and location of rivet replacement and new bolt installation shall be confirmed based on actual field conditions and subject to Engineer's approval.

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

GEORGE O. GUTIERREZ, JR.
LICENSED PROFESSIONAL ENGINEER
NO. 12107-S
HAWAII, U.S.A.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**REPAIR TABLES -
GUSSET PLATES**

KAMEHAMEHA HIGHWAY
Repair and Repaint Karsten Thot Bridge
Federal Aid Project No. BR-080-1(012)

Scale: No Scale Date: Sept 2014

SHEET No. S4.3 OF 7 SHEETS

"AS-BUILT"

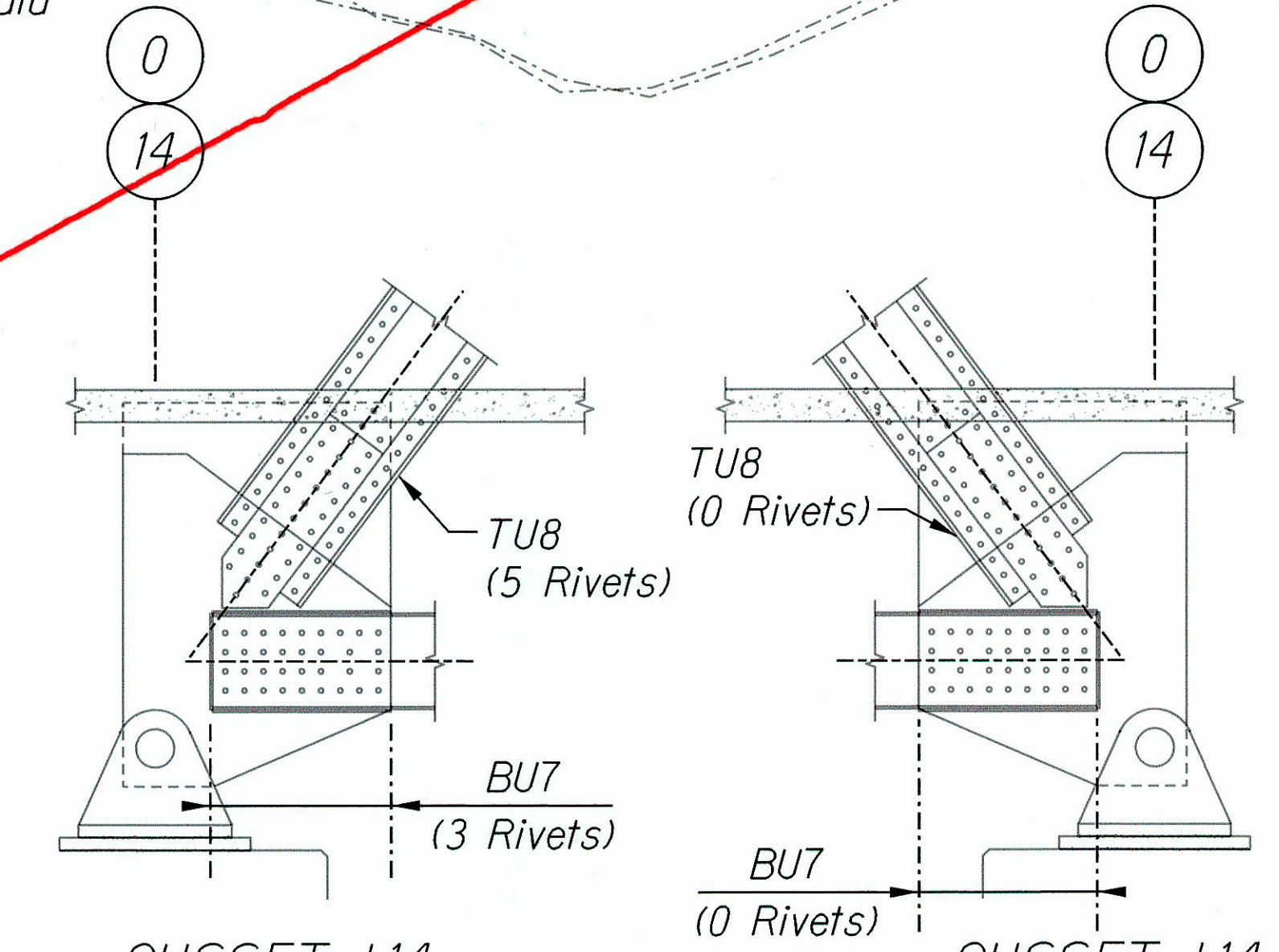
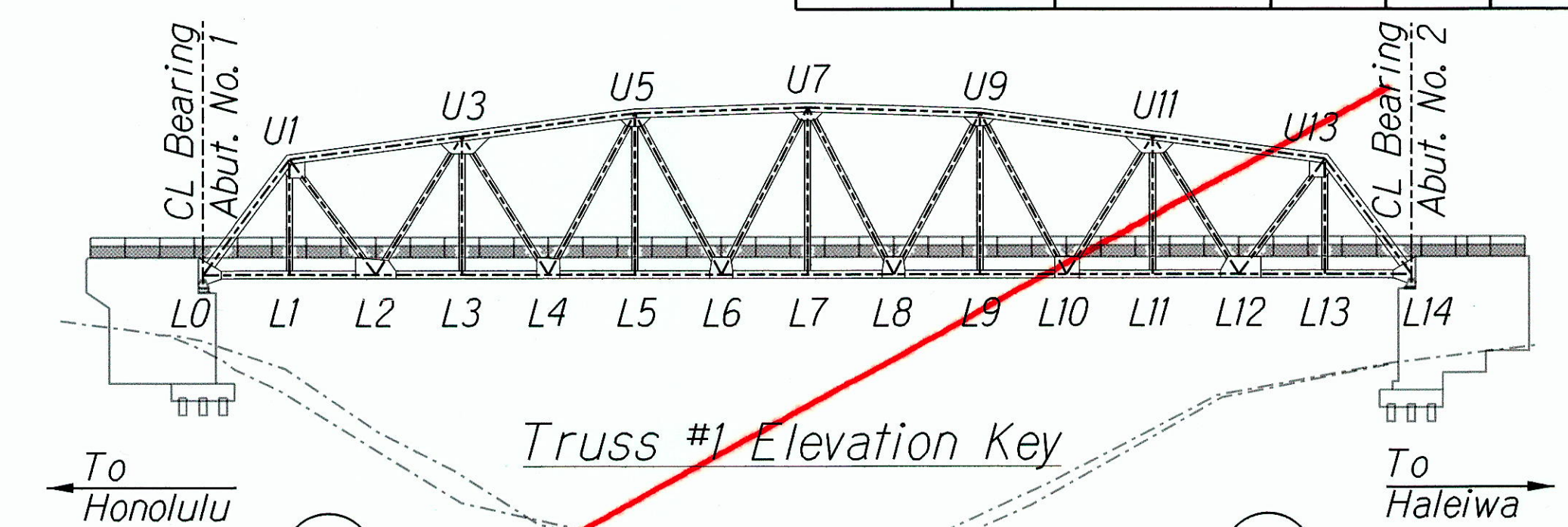
FED. ROAD DIST. NO.	STATE	FED AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-080-1(012)	2014	36	82

GUSSET PLATE REPAIR SCHEDULE TRUSS #1

Gusset	Plate	Connected Member	Estimated No. Rivet Replacement	Detail
L0	Sidewalk	TD1	5	Type 5/S4.7
		BD1	5	
		B0	15	
L0	Roadway	TD1	0	Type 5/S4.7
		BI4	5	
L1	Sidewalk	WD1	0	Type 6/S4.7
		BD1	2	
		WD1	0	
L1	Roadway	BD1	2	Type 6/S4.7
		BD1	0	
		BD1	0	
L2	Sidewalk	BD1	0	Type 7/S4.7
		WD2	0	
		WD3	0	
	Roadway	BD2	0	
		BD1	0	
		WD2	0	
L2	Roadway	WD3	0	Type 7/S4.7
		BD2	0	
		BD2	0	
L3	Sidewalk	BD2	1	Type 6/S4.7
		WD4	0	
		BD2	1	
L3	Roadway	WD4	1	Type 6/S4.7
		BD2	0	
		WD4	0	
L4	Sidewalk	BD2	0	Type 8/S4.7
		WD5	0	
		WD6	0	
	Roadway	BD3	0	
		BD2	0	
		WD5	0	
L4	Roadway	WD6	0	Type 8/S4.7
		BD3	0	
		BD3	0	
L5	Sidewalk	BD3	3	Type 6/S4.7
		WD7	1	
		BD3	1	
L5	Roadway	WD7	0	Type 6/S4.7
		BD3	0	
		BD3	0	
L6	Sidewalk	BD3	0	Type 9/S4.7
		WD8	0	
		WD9	0	
	Roadway	BD4	0	
		BD3	0	
		WD8	0	
L6	Roadway	WD9	0	Type 9/S4.7
		BD4	0	
		BD4	0	
L7	Sidewalk	BD4	1	Type 6/S4.7
		WD10	0	
		BD4	1	
L7	Roadway	BD4	1	Type 6/S4.7
		WD10	0	
		WD10	0	

GUSSET PLATE REPAIR SCHEDULE TRUSS #1

Gusset	Plate	Connected Member	Estimated No. Rivet Replacement	Detail
L8	Sidewalk	BU4	0	Type 9/S4.7
		WU11	0	
		WU12	0	
L8	Roadway	BU5	0	Type 9/S4.7
		BU4	0	
		WU11	0	
L8	Roadway	WU12	0	Type 9/S4.7
		BU5	0	
		BU5	0	
L9	Sidewalk	BU5	2	Type 6/S4.7
		WU13	0	
		WU13	0	
L9	Roadway	BU5	0	Type 6/S4.7
		WU13	0	
		WU13	0	
L10	Sidewalk	BU5	0	Type 8/S4.7
		WU14	0	
		WU15	0	
L10	Roadway	BU6	0	Type 8/S4.7
		BU5	0	
		WU14	0	
L10	Roadway	WU15	0	Type 8/S4.7
		BU6	0	
		BU6	0	
L11	Sidewalk	BU6	2	Type 6/S4.7
		WU16	0	
		WU16	0	
L11	Roadway	BU6	0	Type 6/S4.7
		WU16	0	
		WU16	0	
L12	Sidewalk	BU7	0	Type 7/S4.7
		WU17	0	
		WU17	0	
L12	Roadway	BU8	0	Type 7/S4.7
		BU7	0	
		WU17	0	
L12	Roadway	WU18	0	Type 7/S4.7
		BU8	0	
		BU8	0	
L13	Sidewalk	BU8	0	Type 6/S4.7
		WU19	0	
		WU19	0	
L13	Roadway	BU8	0	Type 6/S4.7
		BU8	0	
		WU19	0	
L14	Sidewalk	TU8	5	Type 5/S4.7
		BU7	3	
		BU7	0	
L14	Roadway	TU8	0	Type 5/S4.7
		BU7	0	
		BU7	0	

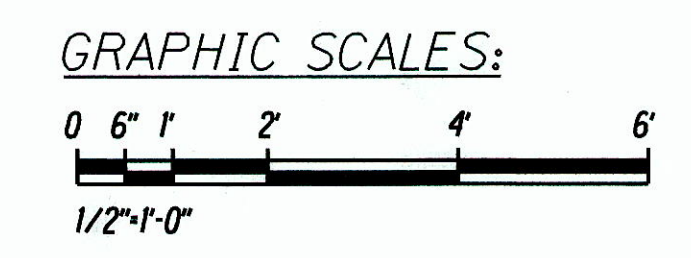


GUSSET L14 SIDEWALK PLATE
GUSSET L14 ROADWAY PLATE

1 EXAMPLE GUSSET PLATE RIVET REPAIR
S4.4 | S4.4 SCALE: 1/2" = 1'-0"

- Note:
- For rivet repair information and details, see sheet S4.1 and sheet S4.7.
 - The exact amount and location of rivet replacement and new bolt installation shall be confirmed based on actual field conditions and subject to Engineer's approval.

DESIGNED BY	DATE
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NO.	



LICENSE EXPIRES: 4/30/16
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

George O. Gutierrez, Jr.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**REPAIR TABLES -
GUSSET PLATES**

KAMEHAMEHA HIGHWAY
Repair and Repaint Karsten Thot Bridge
Federal Aid Project No. BR-080-1(012)

Scale: As Noted Date: Sept 2014

SHEET No. S4.4 OF 7 SHEETS

"AS-BUILT"

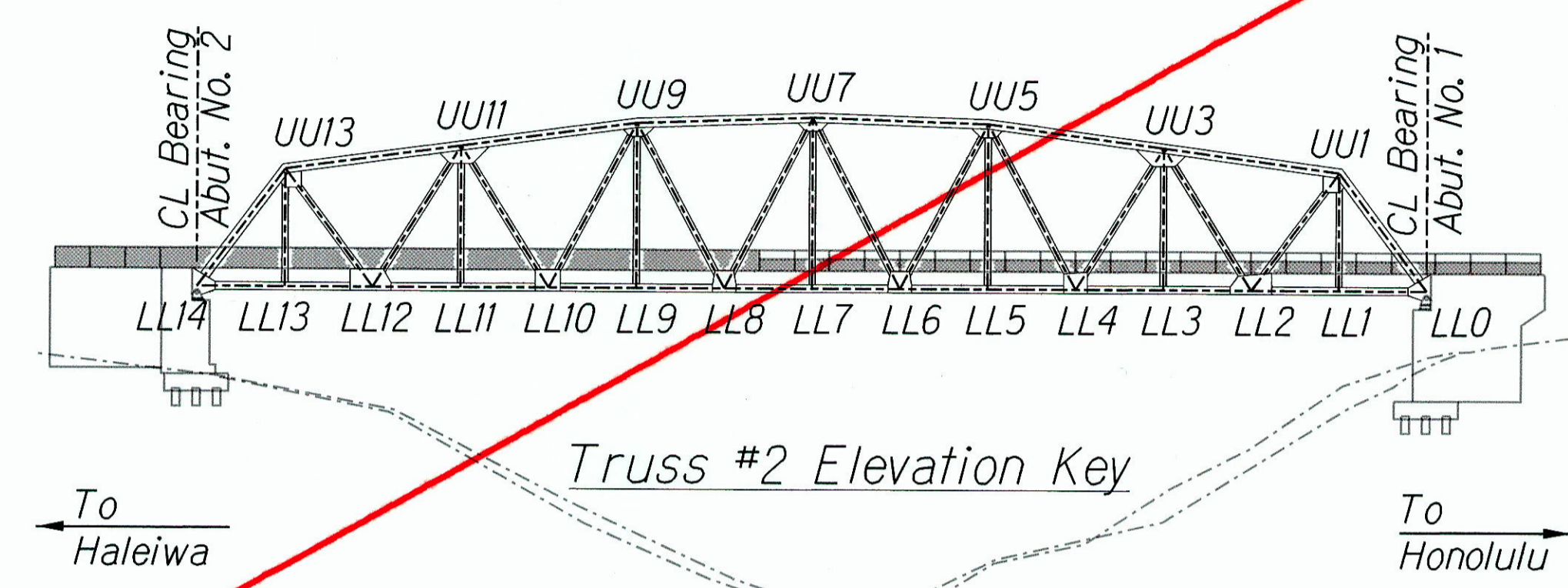
FED. ROAD DIST. NO.	STATE	FED AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-080-1(012)	2014	37	82

GUSSET PLATE REPAIR SCHEDULE TRUSS #2

Gusset	Plate	Connected Member	Estimated No. Rivet Replacement	Detail
LL0	Sidewalk	TD1	0	Type 5/S4.7
		BD1	10	
	B14	25		
	Roadway	TD1	5	
LL1	Sidewalk	BD1	0	Type 6/S4.7
		WD1	0	
LL2	Sidewalk	BD1	0	Type 7/S4.7
		WD2	0	
		WD3	0	
	Roadway	BD2	0	
		WD2	0	
		WD3	0	
LL3	Sidewalk	BD2	0	Type 6/S4.7
		WD4	2	
	Roadway	BD2	2	
		WD4	0	
LL4	Sidewalk	BD2	0	Type 8/S4.7
		WD5	0	
		WD6	0	
	Roadway	BD3	0	
		WD5	0	
		WD6	0	
LL5	Sidewalk	BD3	1	Type 6/S4.7
		WD7	0	
	Roadway	BD3	1	
		WD7	0	
LL6	Sidewalk	BD3	0	Type 9/S4.7
		WD8	0	
		WD9	0	
	Roadway	BD4	0	
		WD8	0	
		WD9	0	
LL7	Sidewalk	BD4	1	Type 6/S4.7
		WD10	0	
	Roadway	BD4	2	
		WD10	0	

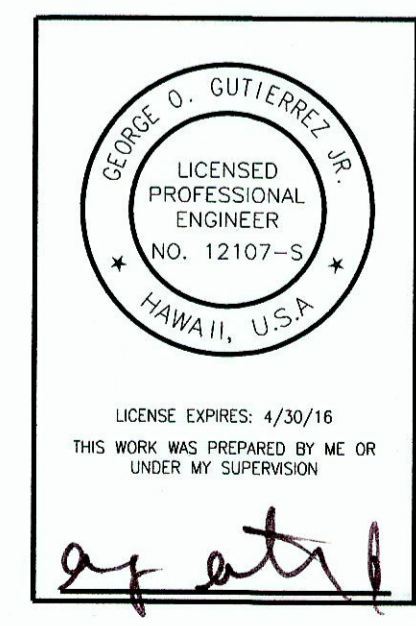
CONT'D GUSSET PLATE REPAIR SCHEDULE TRUSS #2

Gusset	Plate	Connected Member	Estimated No. Rivet Replacement	Detail
LL8	Sidewalk	BD4	0	Type 9/S4.7
		WD11	0	
		WD12	0	
	Roadway	BD5	0	
		WD11	0	
		WD12	0	
LL9	Sidewalk	BD5	2	Type 6/S4.7
	Roadway	BD5	1	
		WD13	0	
LL10	Sidewalk	BD5	0	Type 8/S4.7
		WD14	0	
		WD15	0	
	Roadway	BD6	0	
		BD5	0	
		WD14	0	
LL11	Sidewalk	BD6	0	Type 6/S4.7
	Roadway	BD6	0	
		WD16	0	
LL12	Sidewalk	BD7	5	Type 7/S4.7
		WD17	0	
		WD18	0	
	Roadway	BD8	0	
		BD7	0	
		WD17	0	
LL13	Sidewalk	BD8	2	Type 6/S4.7
		WD19	0	
	Roadway	BD8	4	
		WD19	0	
LL14	Sidewalk	B0	0	Type 5/S4.7
		TD8	0	
		BD7	10	
	Roadway	B0	25	
		TD8	0	
		BD7	20	



- Note:
1. For rivet repair information and details, see sheet S4.1 and sheet S4.7.
 2. See sheet S4.4 for example gusset plate rivet identification.
 3. The exact amount and location of rivet replacement and new bolt installation shall be confirmed based on actual field conditions and subject to Engineer's approval.

DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
TRACED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NO.	_____



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**REPAIR TABLES -
GUSSET PLATES**

KAMEHAMEHA HIGHWAY
Repair and Repaint Karsten Thor Bridge
Federal Aid Project No. BR-080-1(012)

Scale: No Scale Date: Sept 2014

"AS-BUILT"

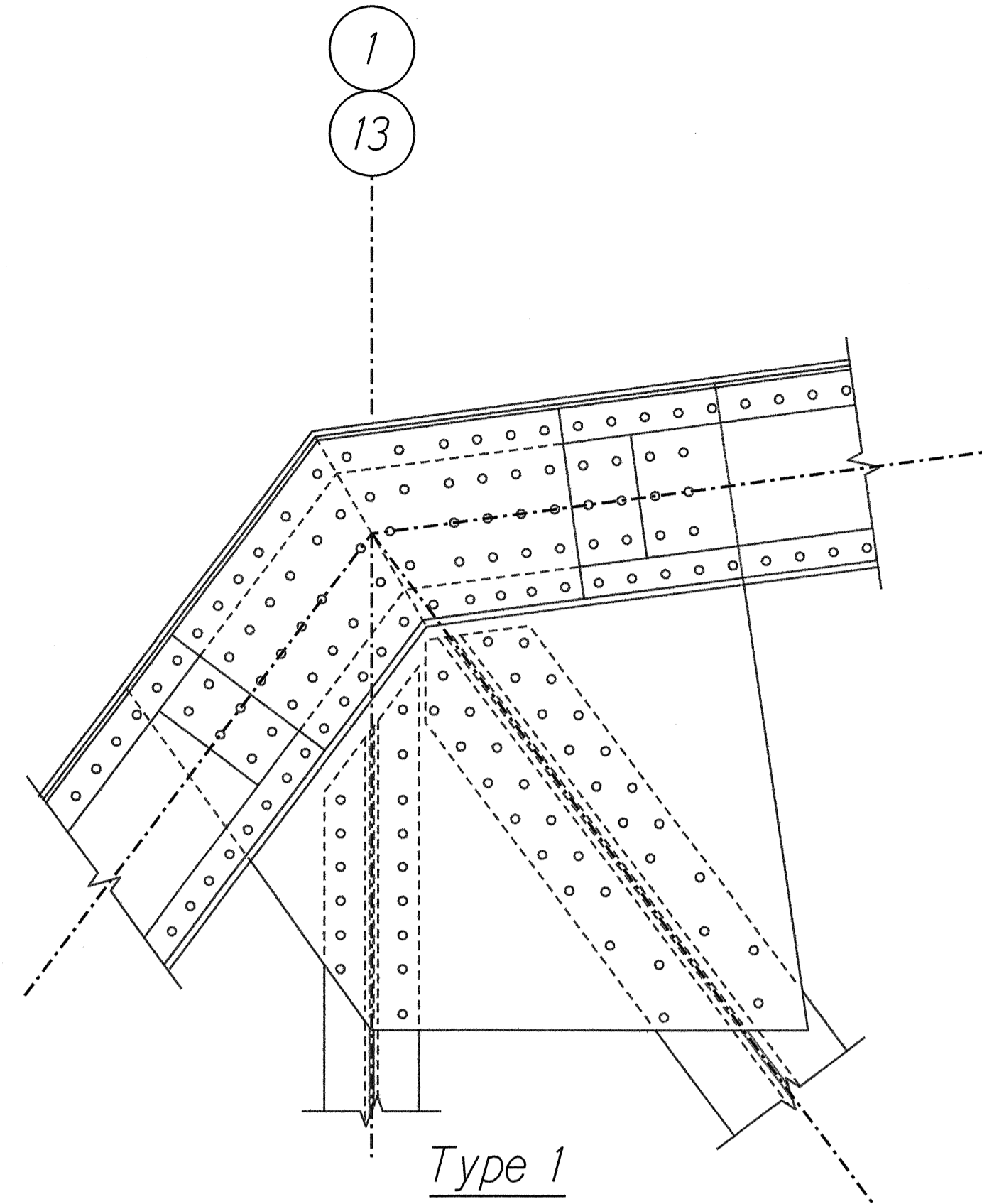
FED. ROAD DIST. NO.	STATE	FED AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-080-(K012)	2014	38	82

Notes:

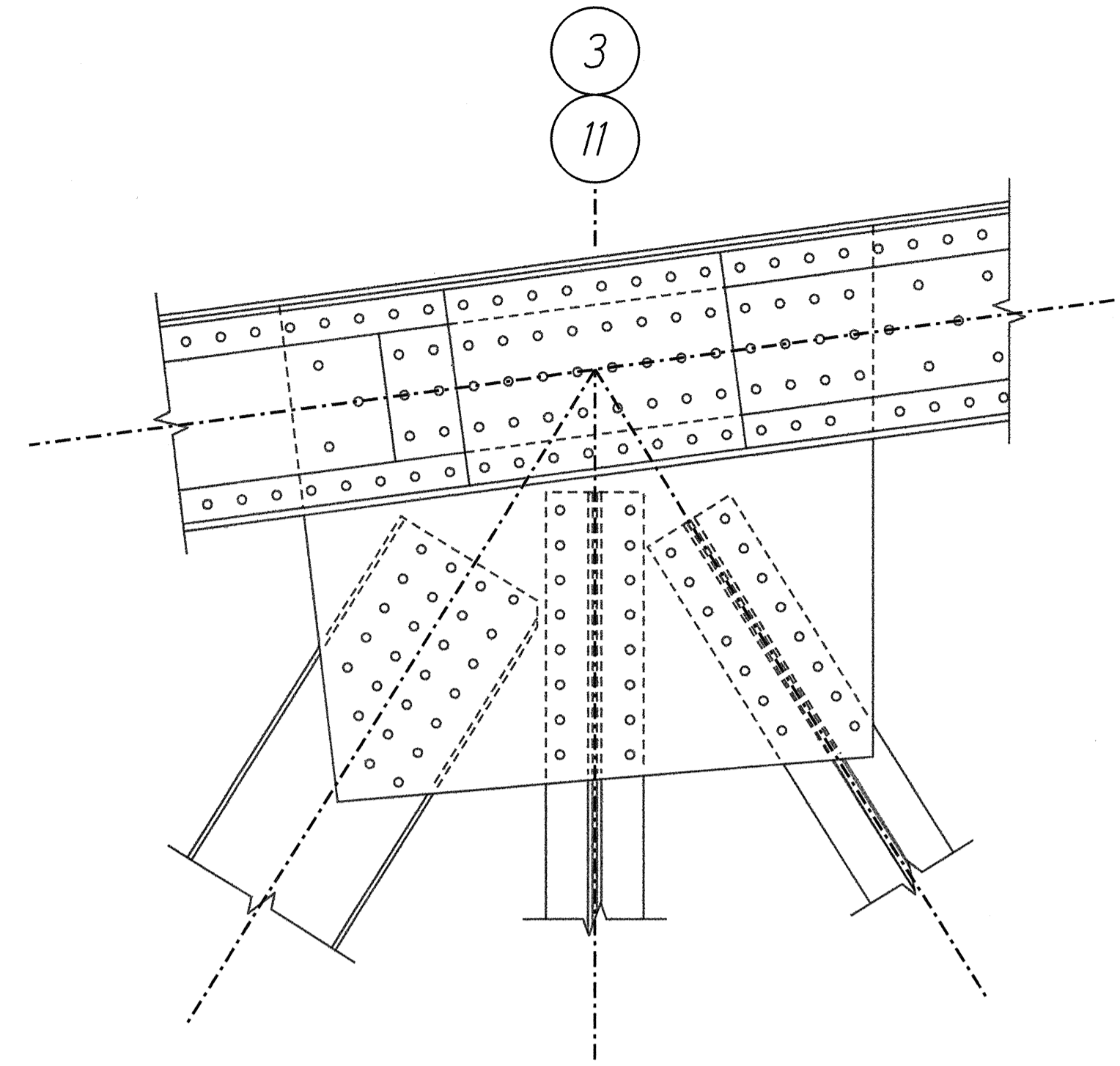
1. Refer to sheet S4.2 and S4.3 for repair schedule.
2. Refer to sheets S5.1 - S5.14 for truss member key plan.
3. Each gusset plate consists of multiple plates of different sizes and thicknesses. Bolt lengths will vary.



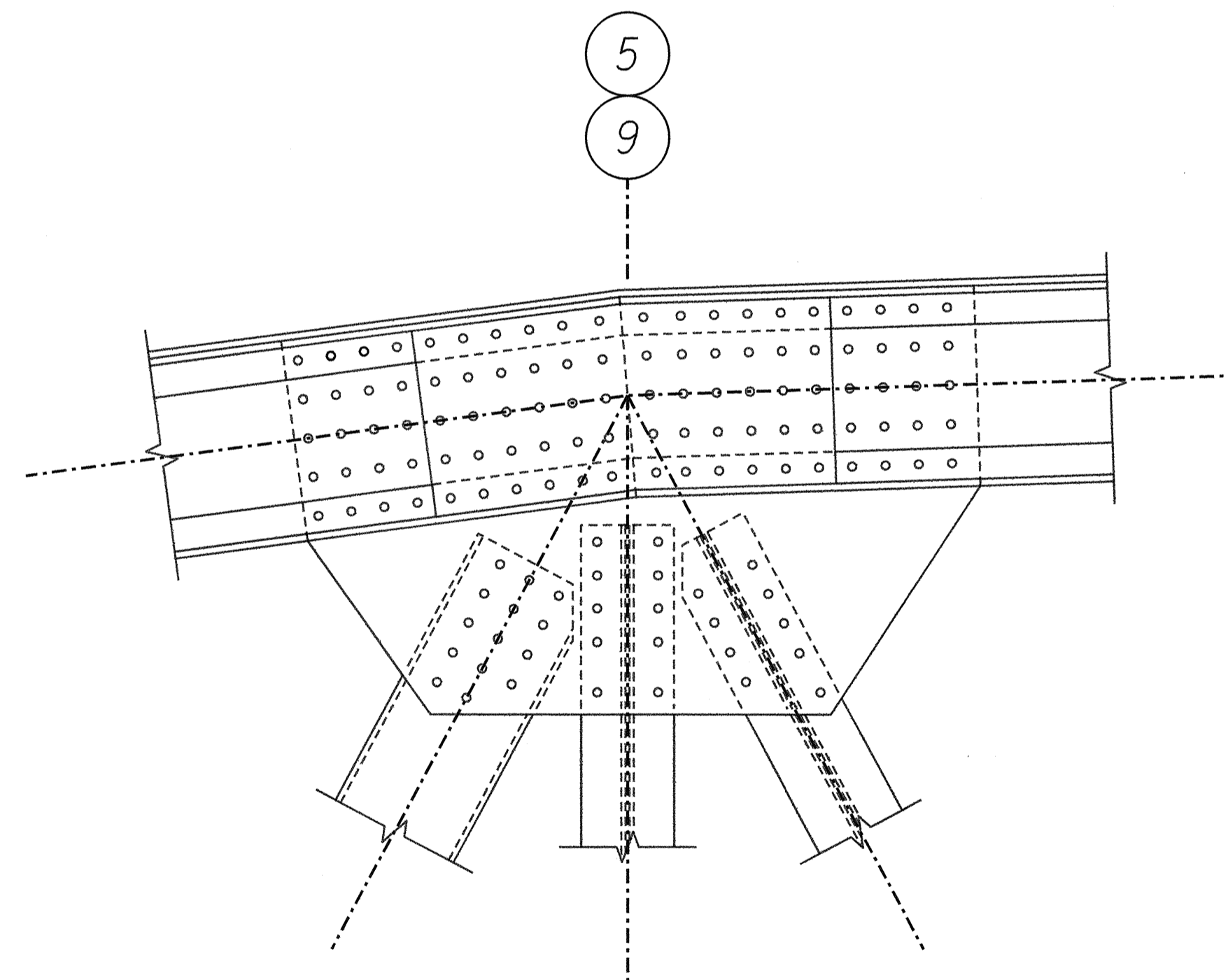
2 PHOTO - EXAMPLE GUSSET PLATE CONN
S4.6 | S4.6 (TYPE 2 SHOWN)



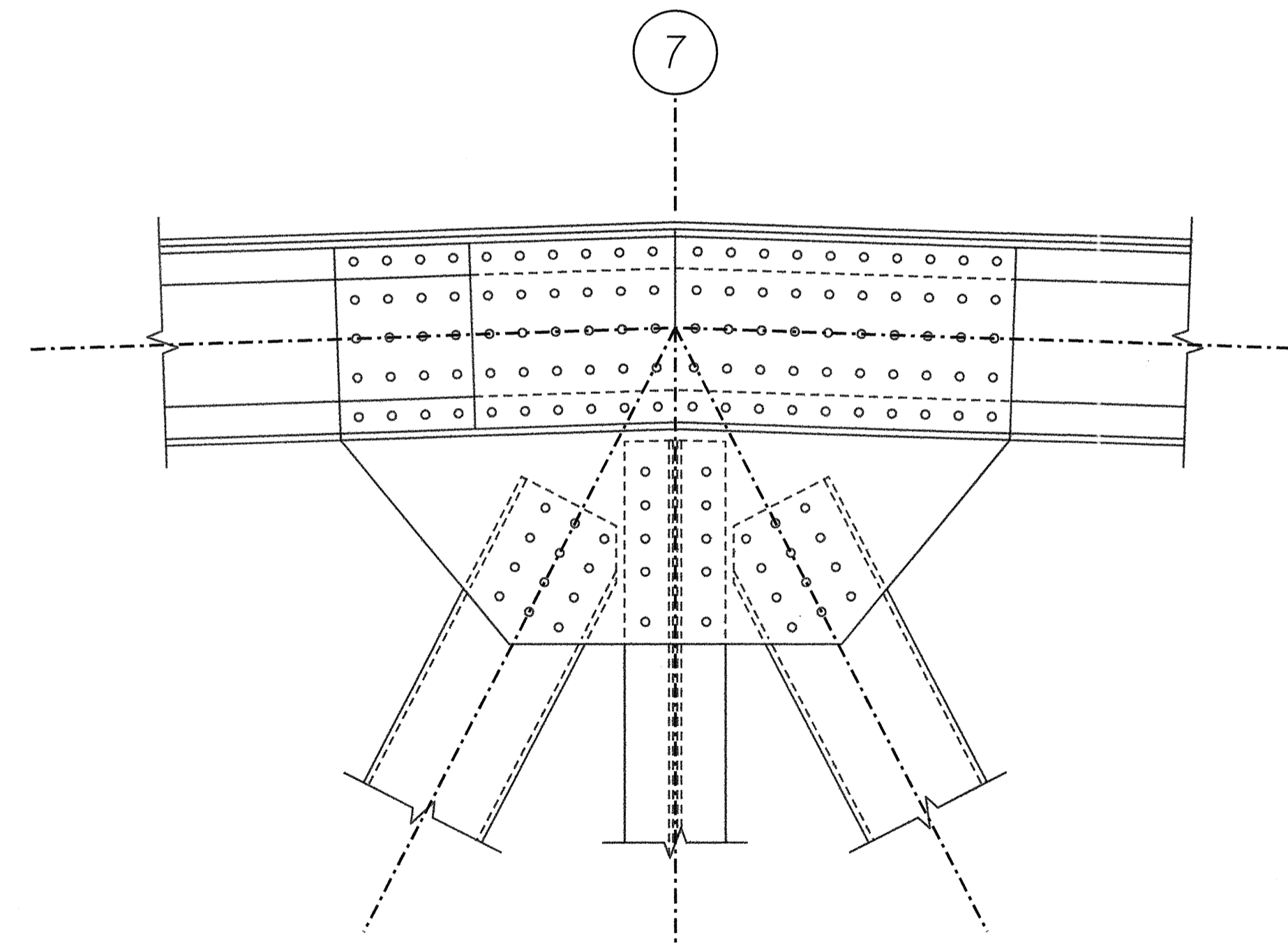
Type 1



Type 2



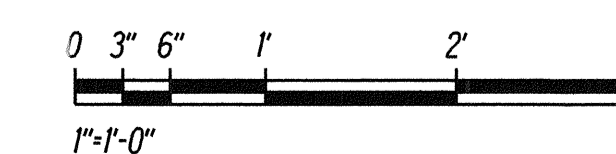
Type 3



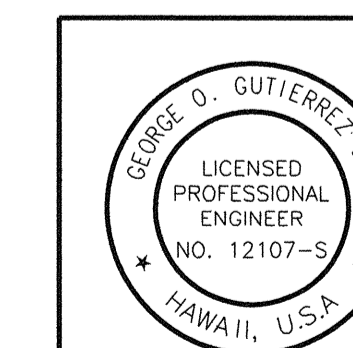
Type 4

1 TYPICAL TOP CHORD GUSSET PLATE DETAILS
S4.2, S4.3 | S4.6 SCALE: 1" = 1'-0"

GRAPHIC SCALES:



SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTEBOOK	
No.	



LICENSE EXPIRES: 4/30/16
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

George D. Gutierrez, Jr.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**TYPICAL TOP CHORD
GUSSET PLATE DETAILS**

KAMEHAMEHA HIGHWAY
Repair and Repaint Karsten Thot Bridge
Federal Aid Project No. BR-080-(K012)

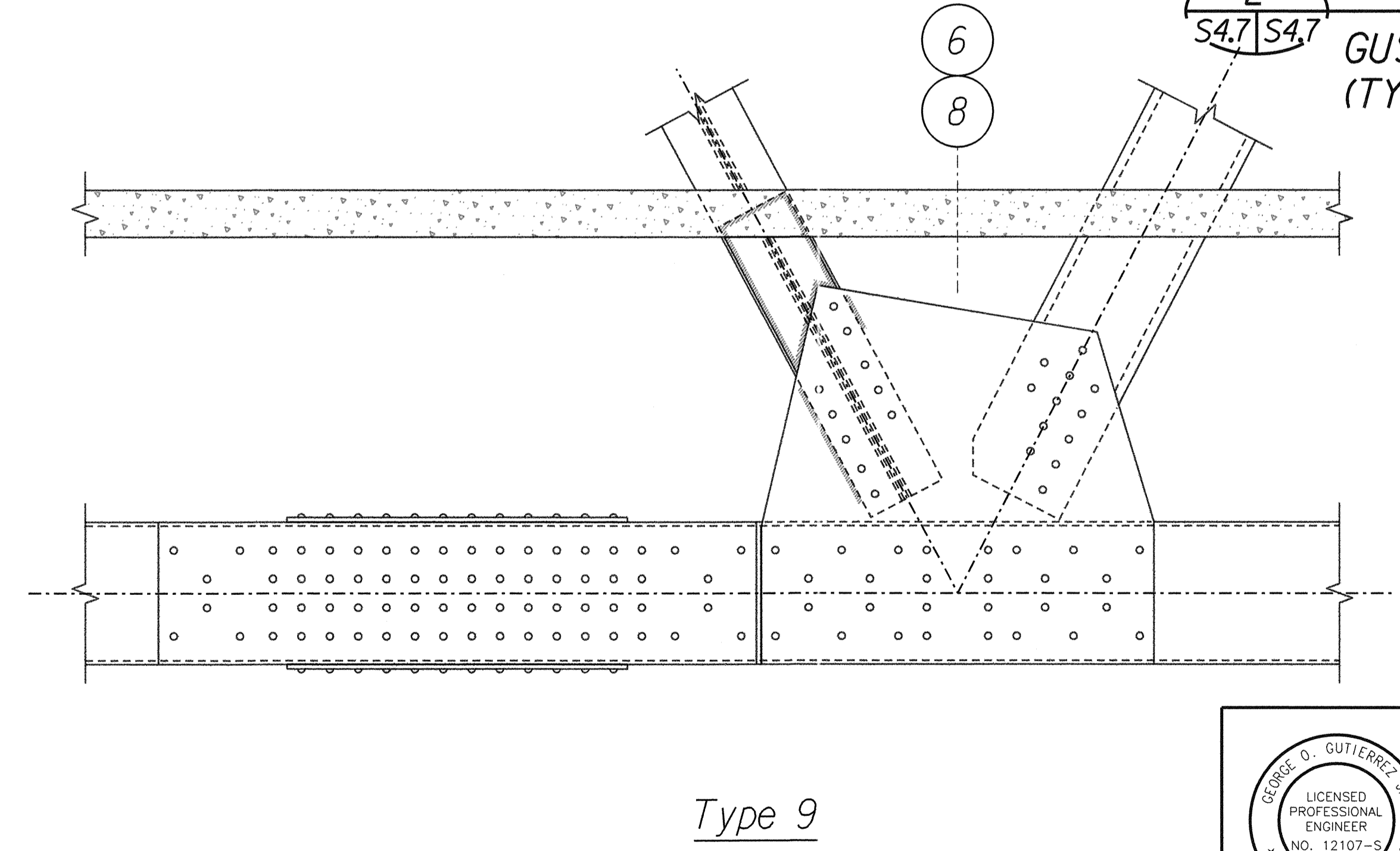
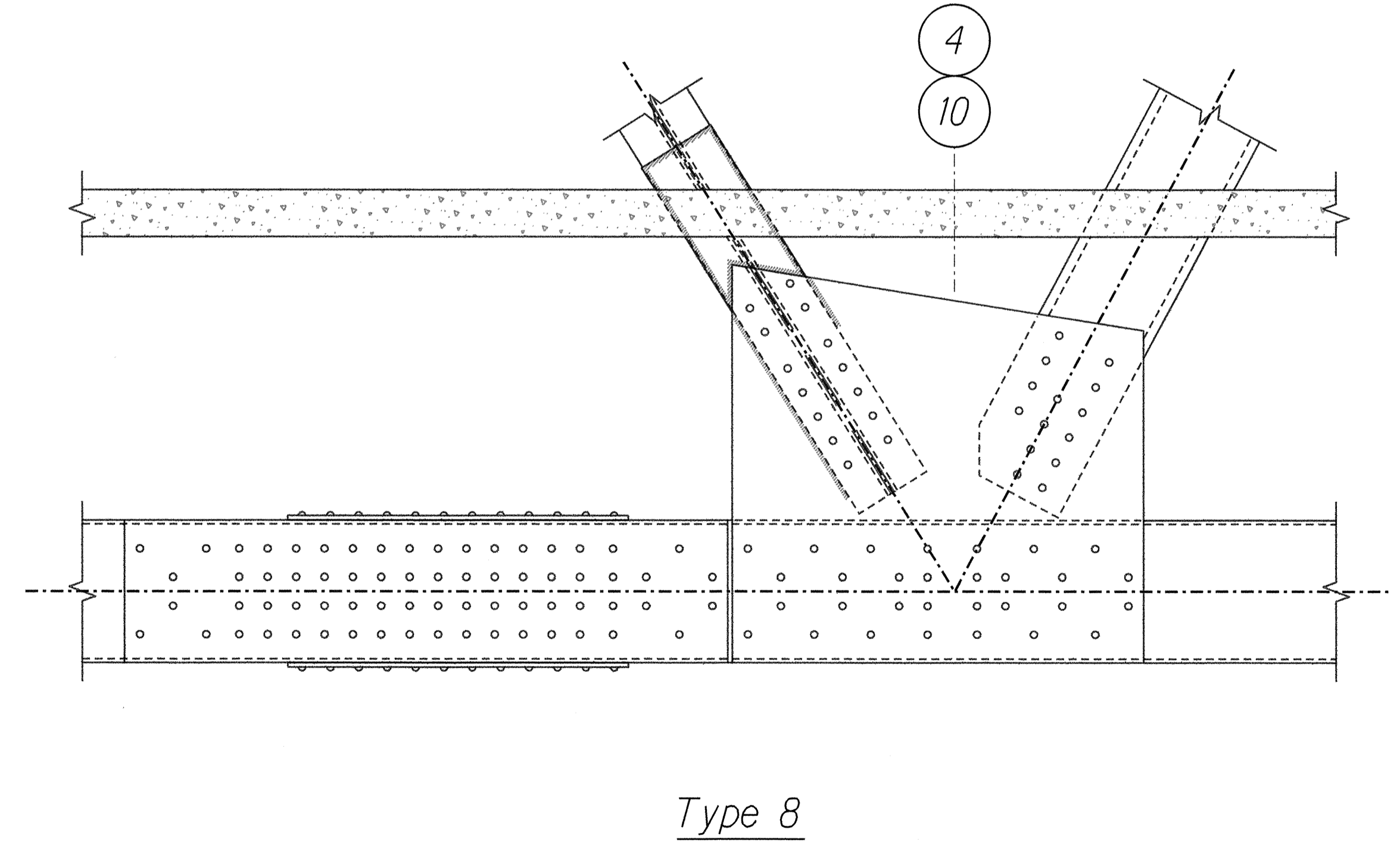
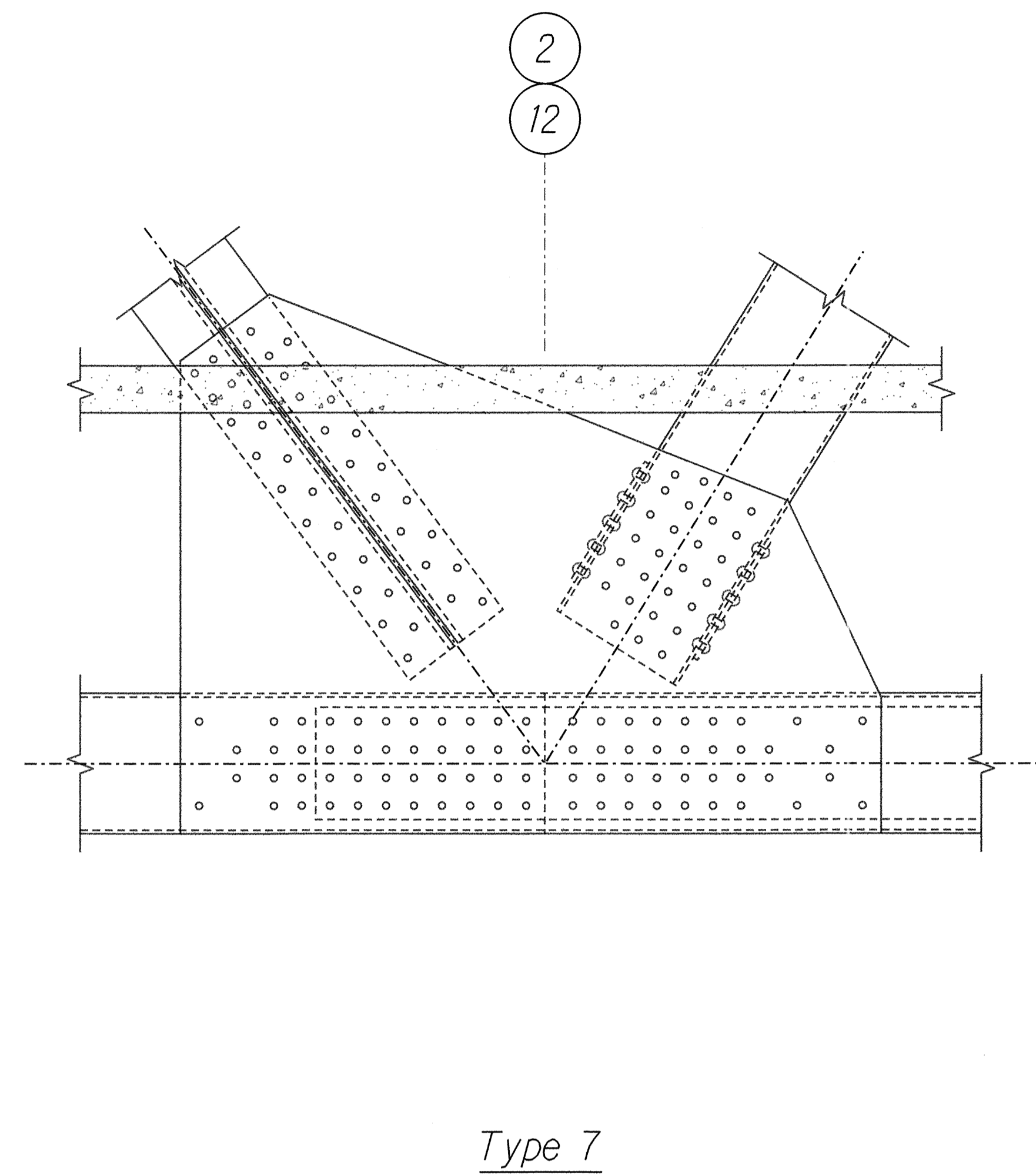
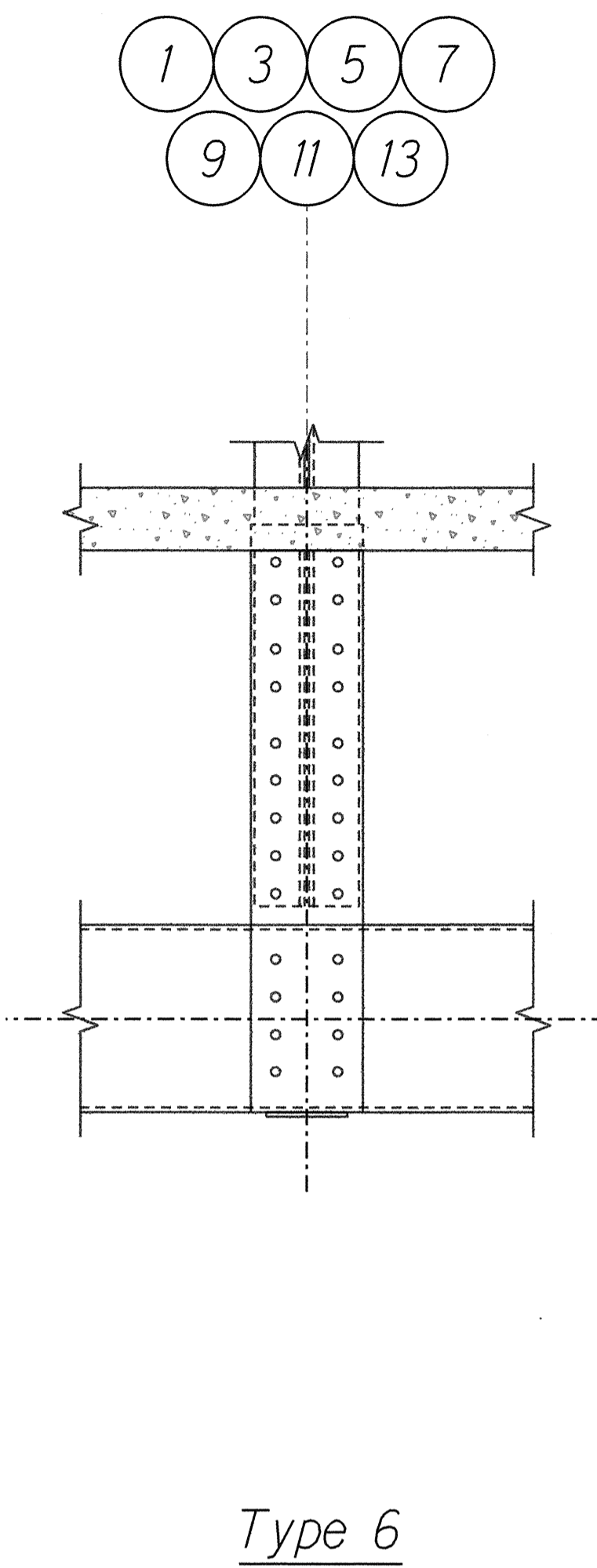
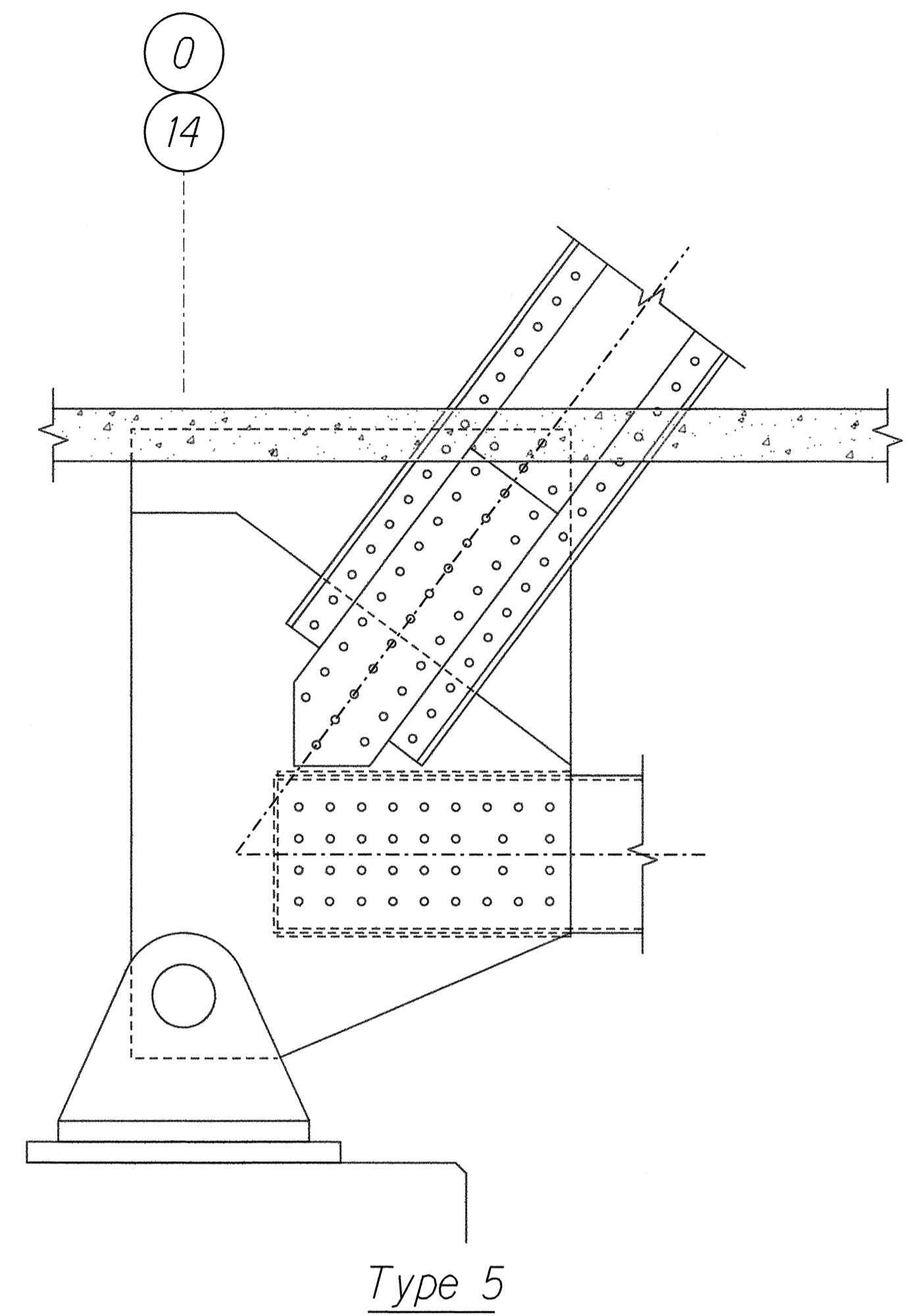
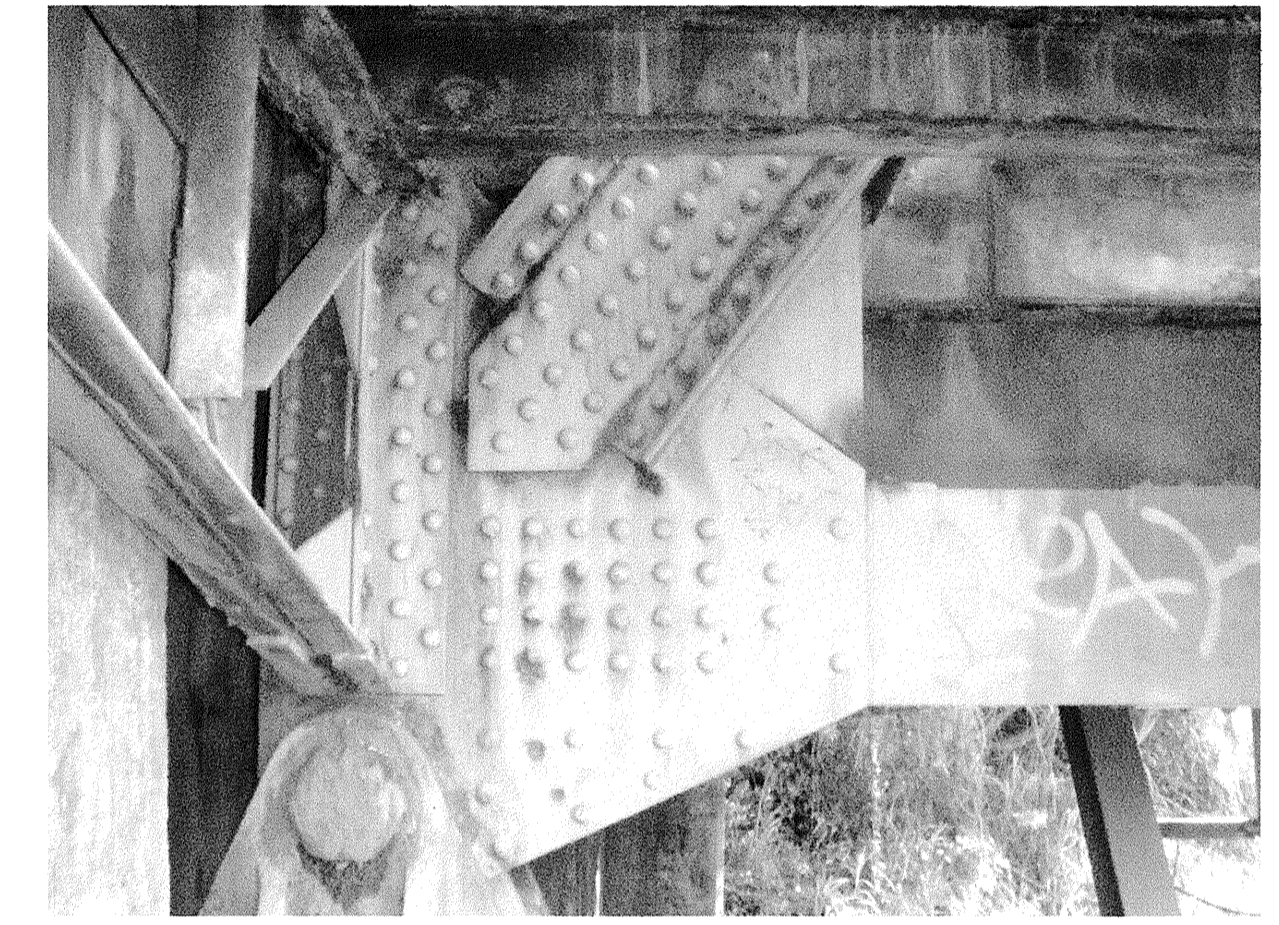
Scale: 1" = 1'-0" Date: Sept 2014

SHEET No. S4.6 OF 7 SHEETS

FED. ROAD DIST. NO.	STATE	FED AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-080-(012)	2014	39	82

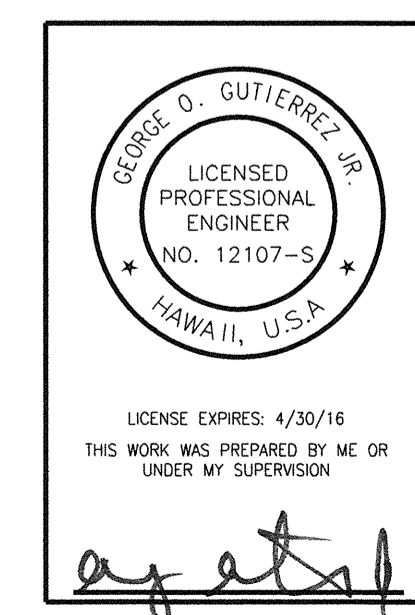
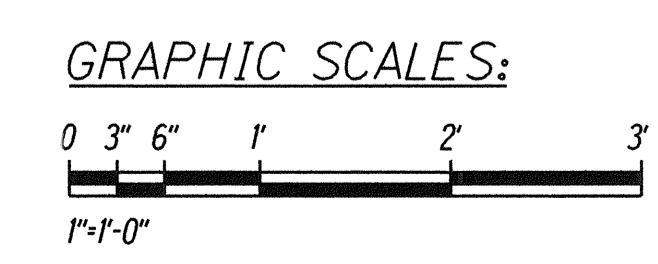
Notes:

1. Refer to sheet S4.4 and S4.5 for repair schedule.
2. Refer to sheets S5.1 - S5.14 for truss member key plan.
3. Each gusset plate consists of multiple plates of different sizes and thicknesses. Bolt lengths will vary.



2 PHOTO - EXAMPLE BOTTOM CHORD GUSSET PLATE CONNECTION (TYPE 5 SHOWN)
S4.7 S4.7

1 TYPICAL BOTTOM CHORD GUSSET PLATE DETAILS
S4.4, S4.5, S4.7 SCALE: 1" = 1'-0"



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**TYPICAL BOTTOM CHORD
GUSSET PLATE DETAILS**

KAMEHAMEHA HIGHWAY
Repair and Repaint Karsten Thot Bridge
Federal Aid Project No. BR-080-(012)

Scale: 1" = 1'-0" Date: Sept 2014

SHEET No. S4.7 OF 7 SHEETS

SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTEBOOK	
No.	