FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	9	31

SUMMARY OF ESTIMATED QUANTITIES			
ITEM NO.	ITEM	QUANTITY	UNIT
202.0441	REMOVAL OF PRATT TRUSSES (2 EACH)	LS	LS
501.0211	STRUCTURAL STEEL FOR BRACING OF WARREN TRUSSES (6,500 LBS)	LS	(LBS)
501.0212	REPAIRS TO WARREN TRUSSES (2 EACH)	LS	LS
501.0213	STRUCTURAL STEEL FOR PRATT TRUSSES (75,000 LBS)	LS	(LBS)
501.0214	MISCELLANEOUS STRUCUTRAL STEEL REPAIRS (5,000 LBS)	F.A.	F.A.
502.2111	TREATED TIMBER 6x12 DECK (10,800 BF)	LS	(BF)
502.2112	TREATED TIMBER 2x12 WEARING SURFACE (3,700 BF)	LS	(BF)
507.1000	GALVANIZED STEEL RAILING WITH POSTS	200	LF
695.4100	CERTIFIED INDUSTRIAL HYGIENIST	FA	FA
695.4200	ENVIRONMENTAL TECHNICIAN	FA	FA
696.0100	CLEAN AND PAINT WARREN TRUSSES (2 EACH)	LS	LS
696.0200	CLEAN AND PAINT PRATT TRUSSES (2 EACH)	LS	LS

GENERAL STRUCTURAL NOTES

1. *Construction Specifications:*
   - A. ***Hawaii Standard Specifications for Road, Bridge, and Public Works Construction, 1994,*** *issued by the State of Hawaii, Department of Transportation, Highways Division, and Special Provisions prepared for this project.*
2. *Design Specifications:*
   - A. ***AASHTO LRFD Bridge Design Specifications,*** *Second Edition, 1998.*
3. *Design Loads:*
   - A. *Deck and Stringers – H–15–44.*
   - B. *Warren Trusses acting alone – H15–44 one lane of traffic.*
   - C. *Pratt and Warren Trusses acting together – HS20–44 two lanes of traffic.*
4. *Job Site Safety:*
   - A. *The Contractor is solely responsible for the safety of workers and general public users of the bridge and waterway at all times. The methods of construction, adequacy of falsework and bracing, and other temporary work items used in the execution of the work are also solely the Contractor's responsibility. The Contractor shall prevent debris from falling on the roadway and into the Hanalei River. Details for Debris Control Scheme shall be submitted to the Engineer for review and approval.*
   - B. *The Contractor is solely responsible to provide all measures to protect the existing structures, workmen, and other persons during construction. Such measures shall include but are not limited to, shoring and support of existing bridges, shoring for excavation, bracing for forms and scaffolding, shoring for construction equipment.*
   - C. *The Engineer will not permit the Contractor to close the bridge to traffic during working hours. The Contractor shall keep the lanes open to traffic and allow traffic to flow at the normal posted speed limit without any delay during peak hours of 6:00 A.M. to 8:00 A.M. and 3:30 P.M. to 6:30 P.M.. The Contractor shall not delay traffic for more than 5 minutes during the hours of 8:00 A.M. to 3:30 P.M.. The Engineer will permit closure of the bridge to normal traffic only on Sunday, Monday, Tuesday, Wednesday, and Thursday from the hours of 10:00 P.M. to 5:00 A.M. of the following day. Emergency vehicles shall be allowed to cross the bridge at all times. Traffic delays permitted, <u>ONLY</u>, during times note above.*
5. *Materials:*
   - A. *Structural steel shapes, plates, and bars shall conform to ASTM A709, Grade 50 (AASHTO M 270), shall meet the required longitudinal Charpy V–Notch tests for Zone 1, and shall be hot–dip galvanized.*
   - B. *Bolts shall conform to Tension–Control ASTM A325, Type 1, hot–dip galvanized, threads excluded from the shear plane. Nuts shall be heavy hex nuts. Bolt size to be 3/4" diameter, except where otherwise noted.*
   - C. *Recessed pin shall be ASTM A668 Grade 50 hot dip galvanized.*
   - D. *6x12 timber decking shall be select structural, treated Douglas Fir. 2x12 timber wearing surface shall be No. 1, treated Douglas Fir.*
6. *Fabrication, Erection, and Construction Methods:*
   - A. *The Contractor shall visit the site to determine and observe actual field conditions that could affect his operations prior to submitting a bid.*
   - B. *Record drawings from Projects 56–D–01–81M and 56–D–01–87M have been used to prepare the plans. Actual conditions could vary from those indicated on the plans. The Contractor to verify existing dimensions, member configurations, member sizes, and elevations prior to the preparation of shop drawings.*
   - C. *All vertical dimensions are measured plumb, and horizontal dimensions are measured flat except where otherwise noted.*
   - D. *Bolt faying surfaces shall be free from debris, dirt, paint, mill scale, and other material prior to assembly.*
   - E. *The 1–inch diameter post tensioning threaded rod beneath each floor beam shall be re–tensioned to a final force of 72 kips, after losses.*
   - G. *In the event certain features of the construction are not fully shown on drawings, or called for in the notes or specifications, their construction shall be of the same character as for similar conditions that are shown or called for. The construction shall be reviewed and approved by the Engineer.*

INDEX TO STRUCTURAL DRAWINGS	
SHEET NO.	DESCRIPTION
S–1	SUMMARY OF ESTIMATED QUANTITIES, GENERAL NOTES, STRUCTURAL INDEX
S–2	CONSTRUCTION SEQUENCE
S–3	EXISTING PRATT TRUSS DEMOLITION
S–4	EXISTING PRATT TRUSS DEMOLITION
S–5	EXISTING PRATT TRUSS DEMOLITION
S–6	EXISTING ABUTMENT DETAILS
S–7	WARREN TRUSS TEMPORARY BRACING
S–8	WARREN TRUSS TEMPORARY BRACING
S–9	WARREN TRUSS TEMPORARY BRACING
S–10	WARREN TRUSS REPAIRS
S–11	WARREN TRUSS REPAIRS
S–12	WARREN TRUSS REPAIRS
S–13	WARREN TRUSS REPAIRS
S–14	PRATT TRUSS DECK PLAN, ELEVATION & SECTION
S–15	PRATT TRUSS TYPICAL SECTIONS
S–16	PRATT TRUSS BOTTOM CHORD DETAILS
S–17	PRATT TRUSS BOTTOM CHORD DETAILS
S–18	PRATT TRUSS BOTTOM CHORD DETAILS
S–19	PRATT TRUSS TOP CHORD DETAILS
S–20	PRATT TRUSS TOP CHORD DETAILS
S–21	PORTAL FRAME DETAILS & TOP CHORD SPLICE DETAILS
S–22	BRIDGE RAILING
S–23	PRATT TRUSS BEARING DETAILS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY GH	
NOTEBOOK	TRACED BY	
skuhb8.dgn	DESIGNED BY	
No.	QUANTITIES BY	
	CHECKED BY MGO	

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BYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Byron Okubo

DATE	REVISION

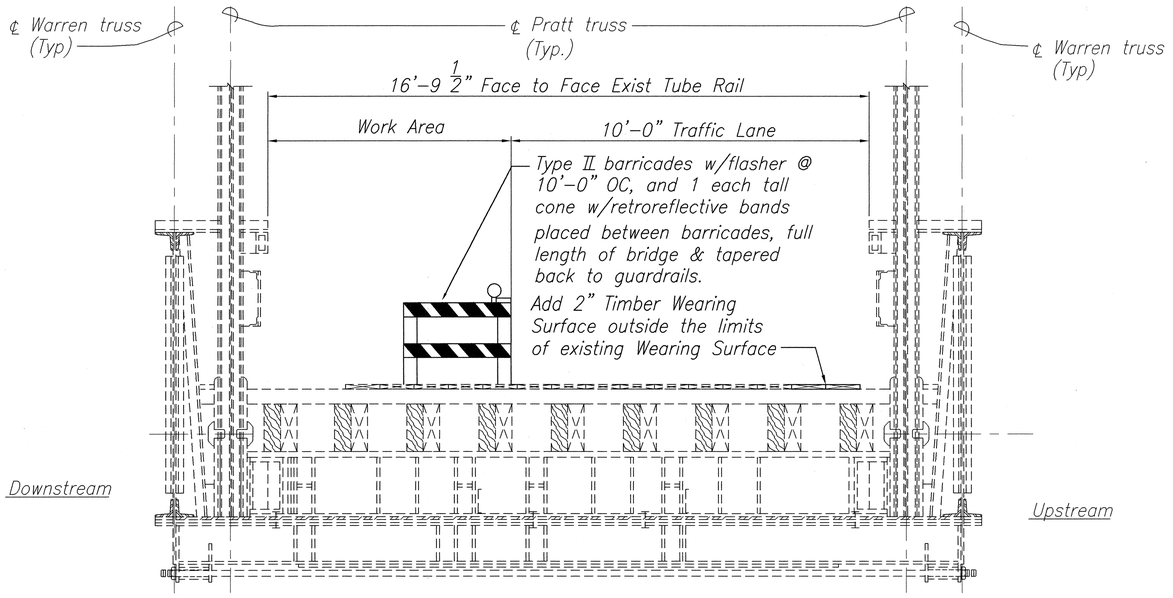
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SUMMARY OF ESTIMATED QUANTITIES
GENERAL NOTES, STRUCTURAL INDEX

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH–0560(11)
Scale: As Noted Date: Jan. 2000

SHEET No. S–1 **OF** 23 **SHEETS**

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	10	31



WORK ZONE DETAIL FOR TRUSS CONSTRUCTION
(UPSTREAM WORK AREA, AS SHOWN – DOWNSTREAM WORK AREA, SIMILAR OPPOSITE HAND)

GENERAL CONSTRUCTION SEQUENCE:

1. Submit Traffic Control Plan, Proposed Removal Plan for the Pratt trusses, Proposed Debris Control Scheme, and Proposed Construction Sequence for Pratt trusses to the Engineer for review and approval.
2. Install traffic control measures.
3. Install temporary steel bracing members for the Warren trusses.
4. Perform repairs to Warren trusses.
5. Remove existing Pratt trusses (except for floor beams) and poultry netting debris enclosure.
6. Install new floor beams as required to construct new Pratt trusses.
7. Construct new Pratt trusses.
8. Remove temporary bracing members for the Warren trusses.
9. Paint the Pratt and Warren trusses.
10. Replace timber deck members.
11. Contractor to submit actual construction sequence with detailed descriptions of each work task to the Engineer for review and approval.

ORIGINAL PLAN
NOTEBOOK skuhls2.dgn No.
SURVEY PLOTTED BY
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DESIGNED BY
QUANTITIES BY
CHECKED BY MGO
DATE

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Myron Okubo

DATE	REVISION

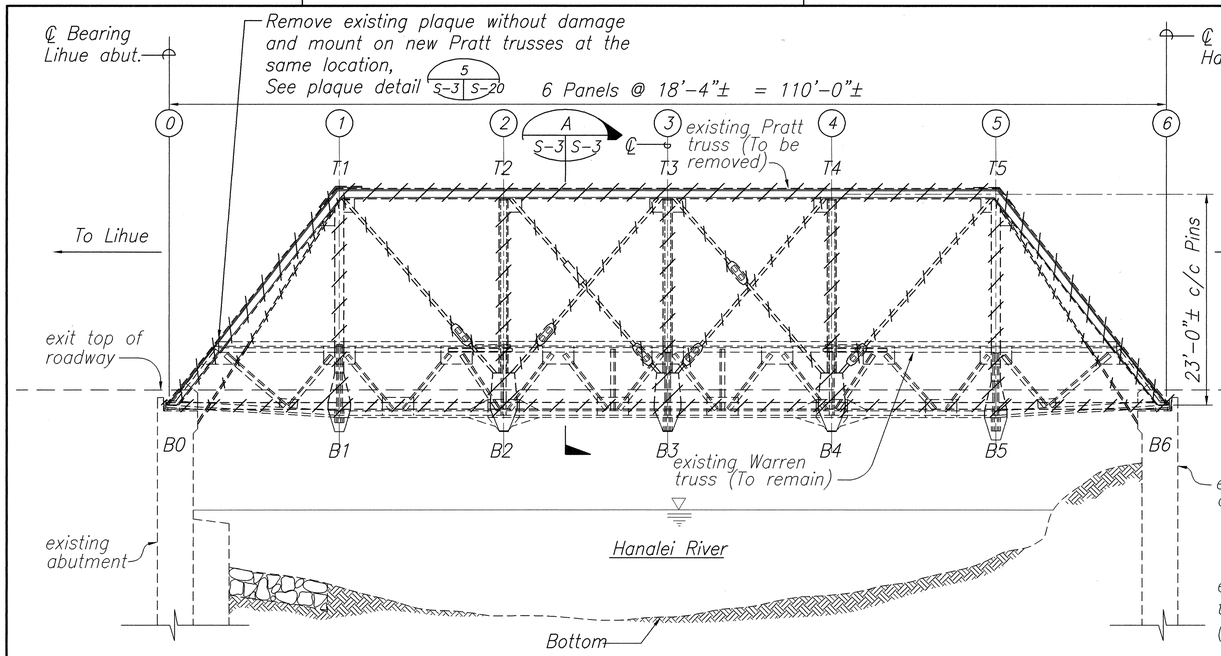
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONSTRUCTION SEQUENCE

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: OCT. 1999

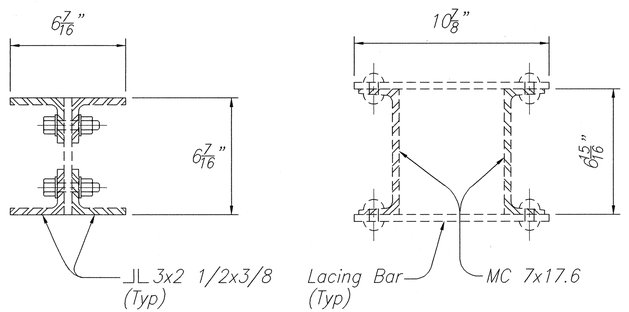
SHEET No. S-2 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	11	31



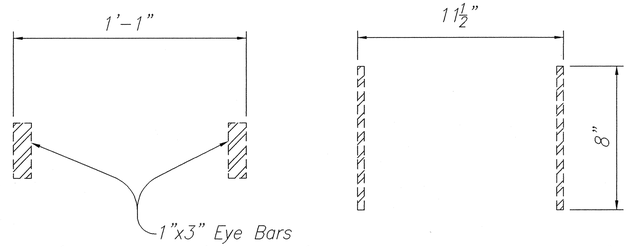
ELEVATION – EXISTING PRATT TRUSS – LOOKING UPSTREAM
Scale: N.T.S (Downstream Elevation Similar)

Notes:
1. Existing member sizes and configuration indicated to assist Contractor by describing members to be demolished.
2. Poultry netting debris enclosure not indicated for clarity. Removal of poultry netting debris enclosure incidental to "Removal of Pratt Trusses".
3. The Contractor shall provide protection to prevent debris from falling into the river. The cost shall be incidental to "Removal of Pratt Trusses" and will not be paid separately.



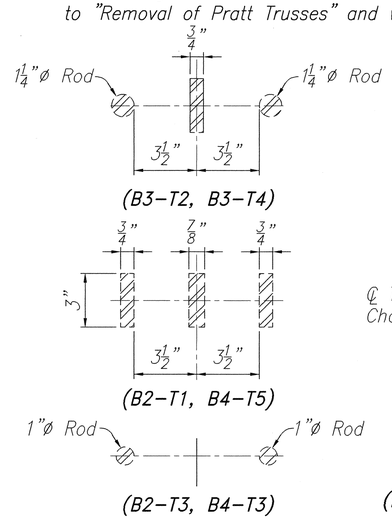
(B1–T1, B5–T5) (B2–T2, B3–T3, B4–T4)

VERTICAL MEMBERS
Scale: 3"=1'–0"

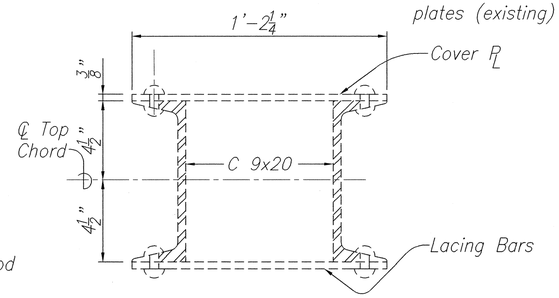


(B2–B3, B3–B4) (B0–B1, B1–B2, B4–B5, B5–B6)

BOTTOM CHORDS
Scale: 3"=1'–0"

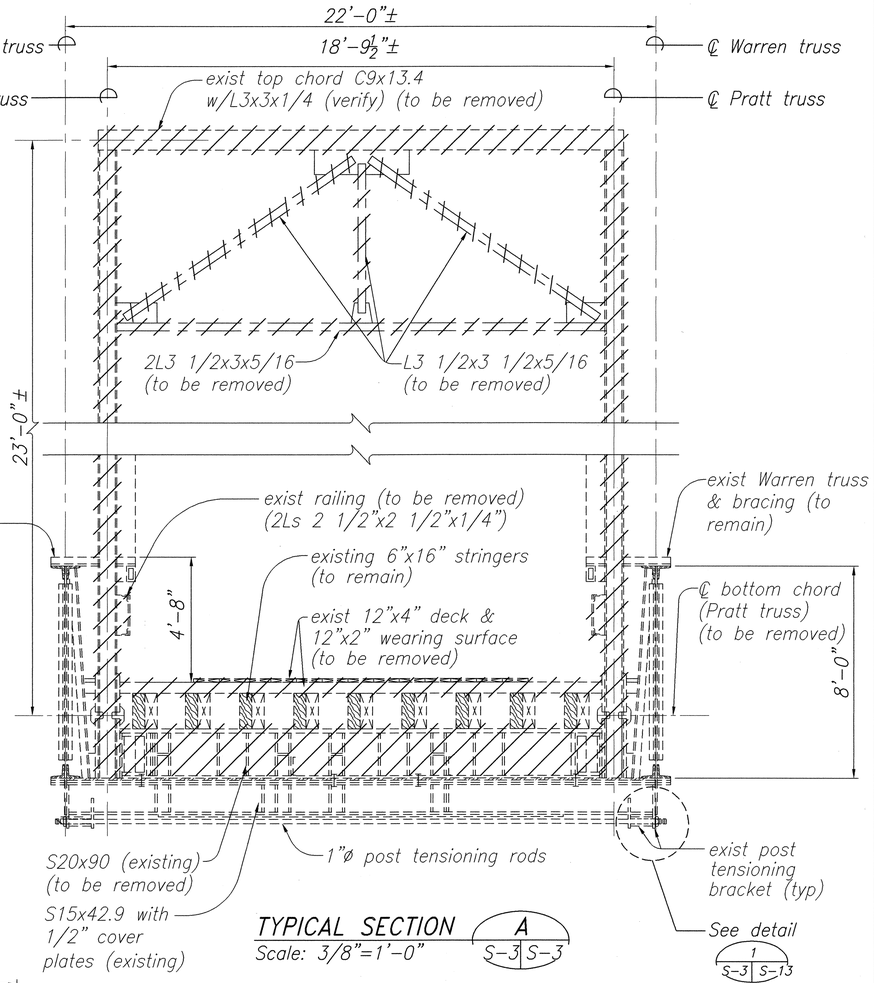


DIAGONAL MEMBERS
Scale: 3"=1'–0"



(B0–T1, T1–T2, T2–T3, T3–T4, T4–T5, B6–T5)

TOP CHORDS & END POSTS
Scale: 3"=1'–0"



TYPICAL SECTION A S-3 S-3
Scale: 3/8"=1'–0"

Legend:
Existing structures or portions of structures to be Removed

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXISTING PRATT TRUSS DEMOLITION

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: OCT. 1999

MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

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Myron Okubo

SHEET NO. S-3 OF 23 SHEETS

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY GH | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY MGO | DATE
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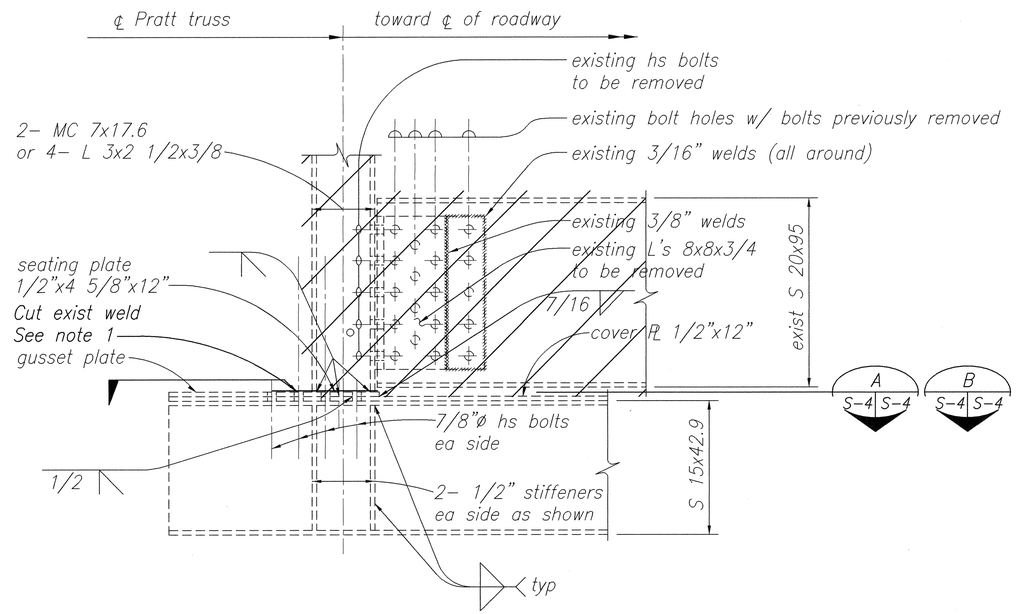
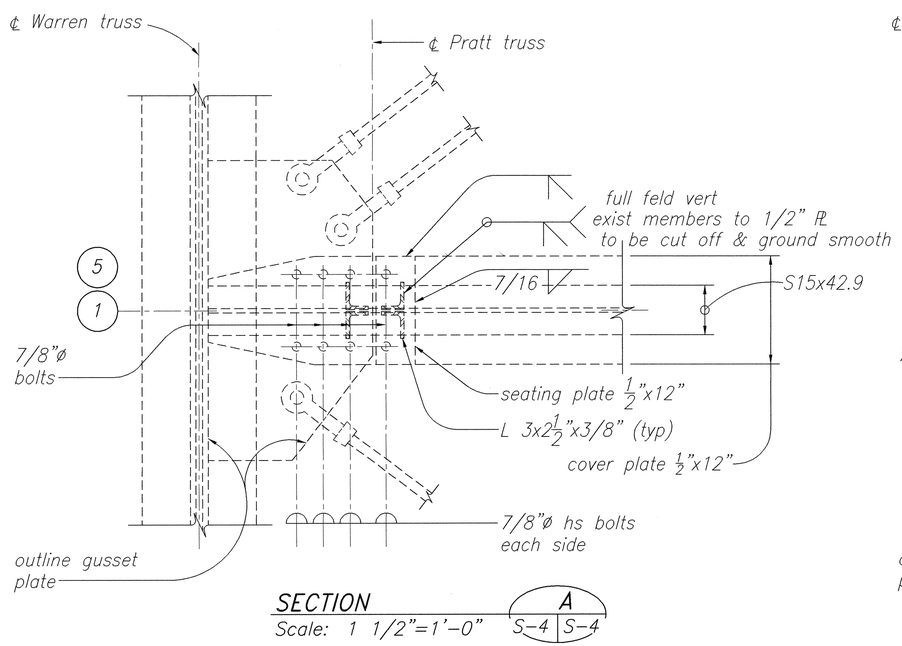
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	12	31



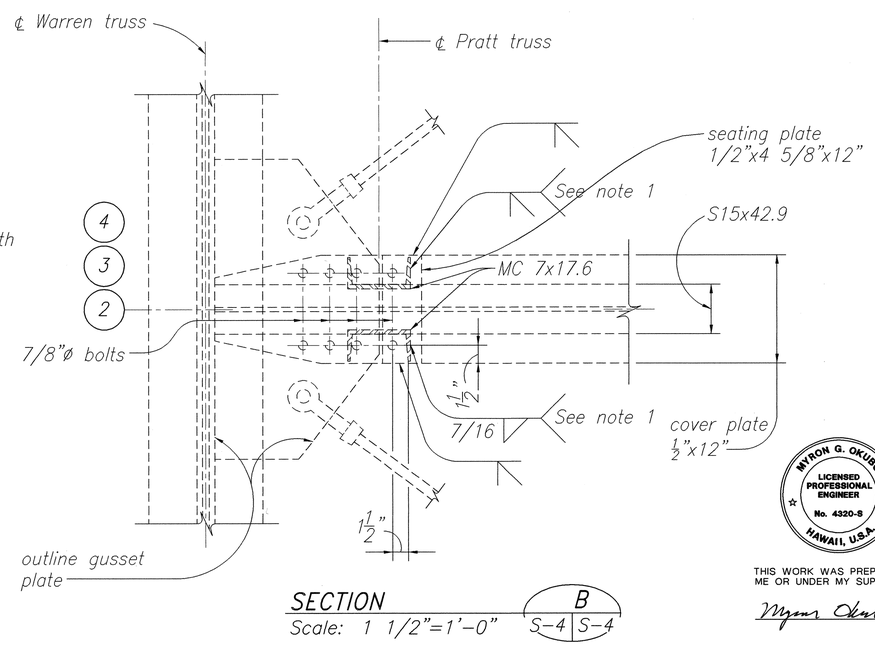
TYPICAL EXISTING BOTTOM CHORD CONNECTION

Scale: 1 1/2"=1'-0"

Note:
1. Cut of exist welds and ground smooth the surface connecting the vertical member to 1/2" plate.



SECTION A
Scale: 1 1/2"=1'-0"
S-4 | S-4



SECTION B
Scale: 1 1/2"=1'-0"
S-4 | S-4

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MYRON G. OKUBO
LICENSED PROFESSIONAL ENGINEER
No. 4320-S
HAWAII, U.S.A.

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXISTING PRATT TRUSS DEMOLITION

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: OCT. 1999

SHEET No. S-4 OF 23 SHEETS

ORIGINAL PLAN
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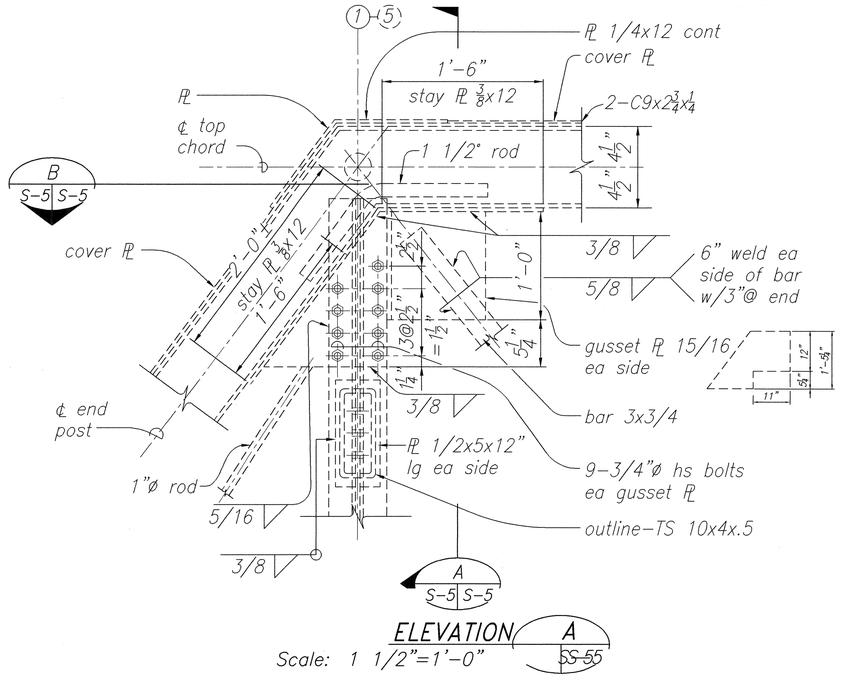
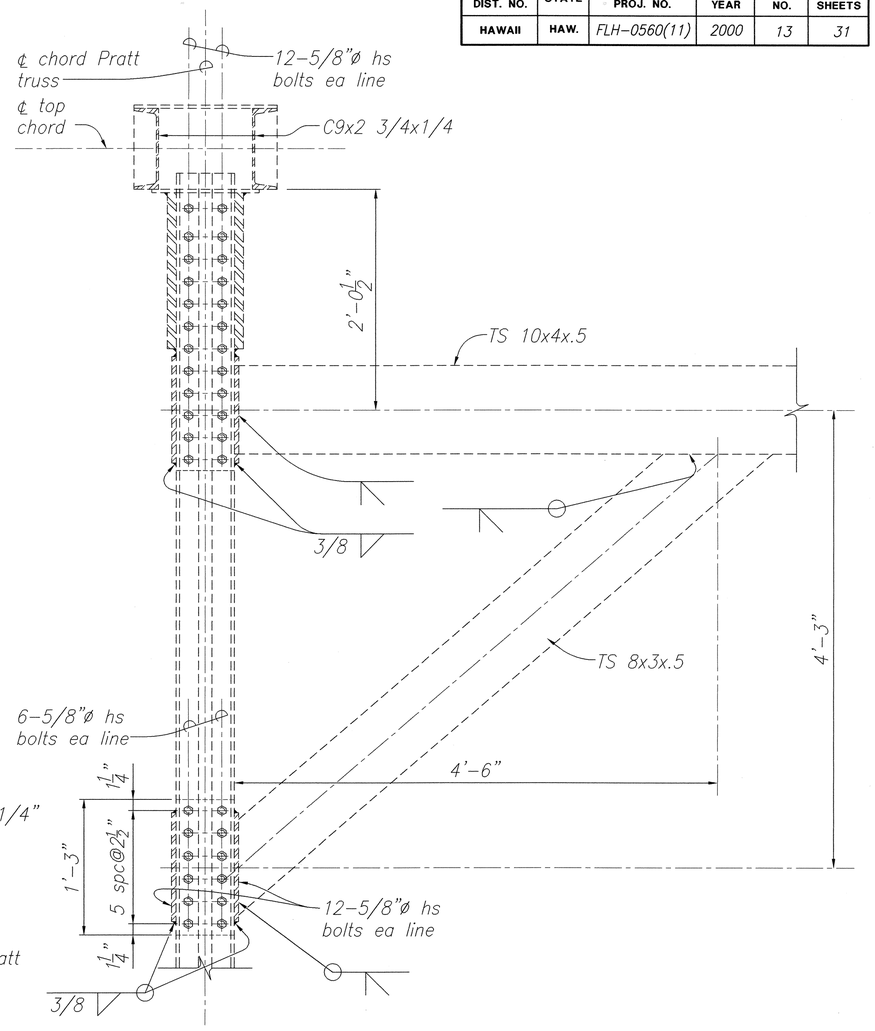
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	13	31



ELEVATION A SS-55

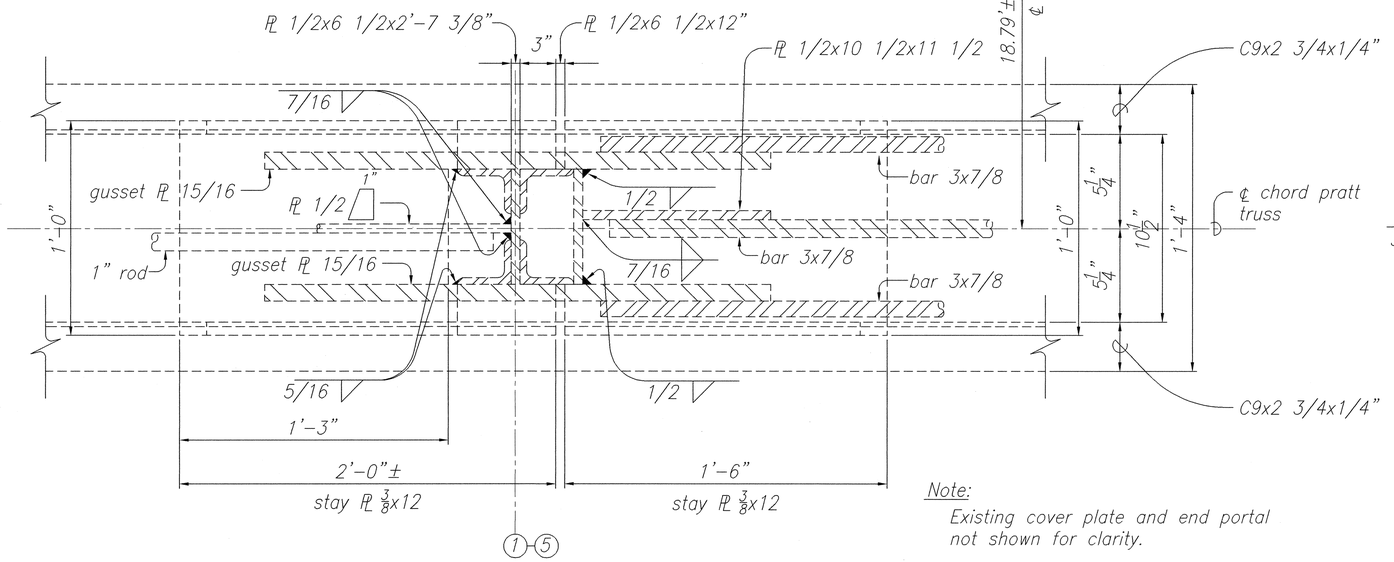
Scale: 1 1/2"=1'-0"

Note:
Poultry netting debris enclosure not indicated for clarity.



SECTION C SS-55

Scale: 1 1/2"=1'-0"



SECTION B SS-55

Scale: 3"=1'-0"

Note:
Existing cover plate and end portal not shown for clarity.

ORIGINAL PLAN

SURVEY PLOTTED BY — DATE
DRAWN BY Gil
TRACED BY
DESIGNED BY
QUANTITIES BY
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No.

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Myron Okubo

DATE	REVISION

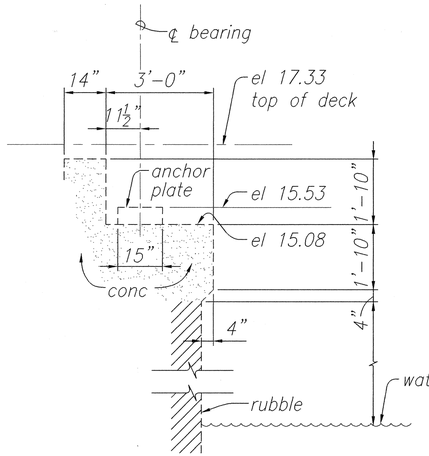
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXISTING PRATT TRUSS DEMOLITION

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: OCT. 1999

SHEET No. S-5 OF 23 SHEETS

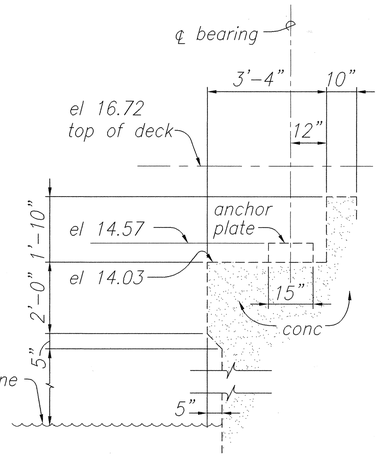
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	14	



SECTION THRU LIHUE ABUTMENT

Scale: 1/2"=1'-0"

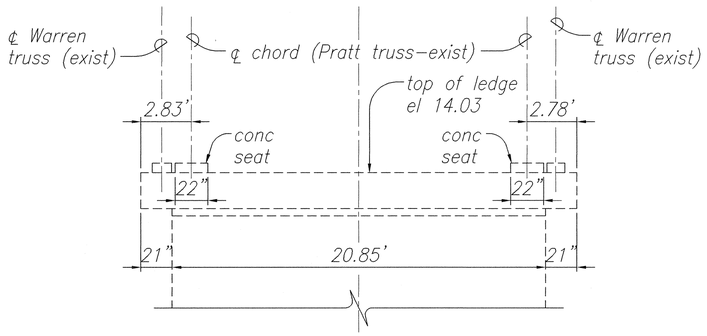
A S-6 | S-6



SECTION THRU HAENA ABUTMENT

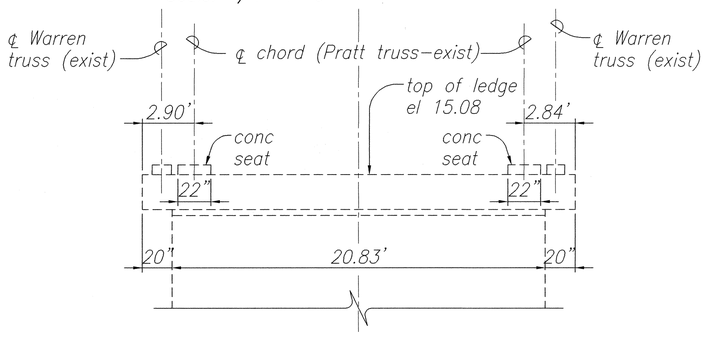
Scale: 1/2"=1'-0"

B S-6 | S-6



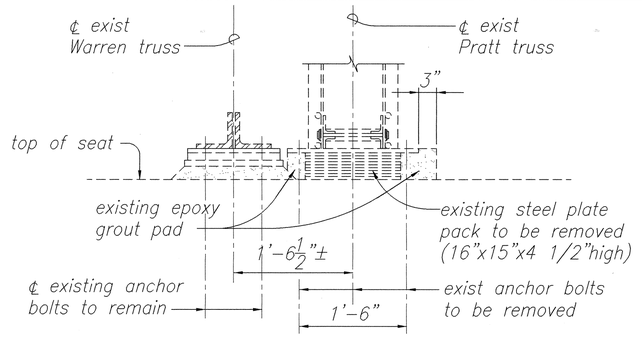
ELEVATION OF HAENA ABUTMENT

Scale: 1/4"=1'-0"

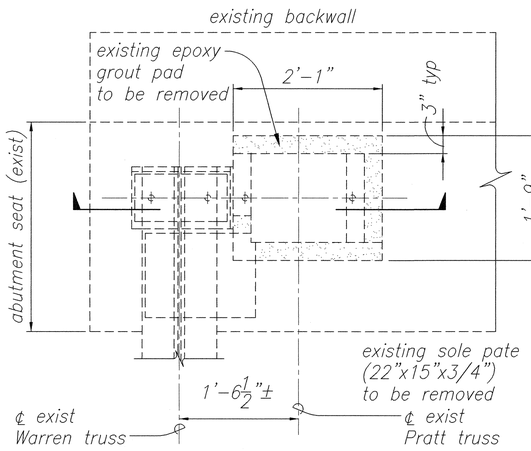


ELEVATION OF LIHUE ABUTMENT

Scale: 1/4"=1'-0"



SECTION



PLAN

EXISTING BEARING DETAIL

Scale: 1"=1'-0"

3 S-6 | S-6

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DRAWN BY GH
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CHECKED BY MGO
DATE

ORIGINAL PLAN
NOTEBOOK
skuhs6.dgn
No.

MYRON G. OKUBO
LICENSED PROFESSIONAL ENGINEER
No. 4320-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Myron Okubo

DATE	REVISION

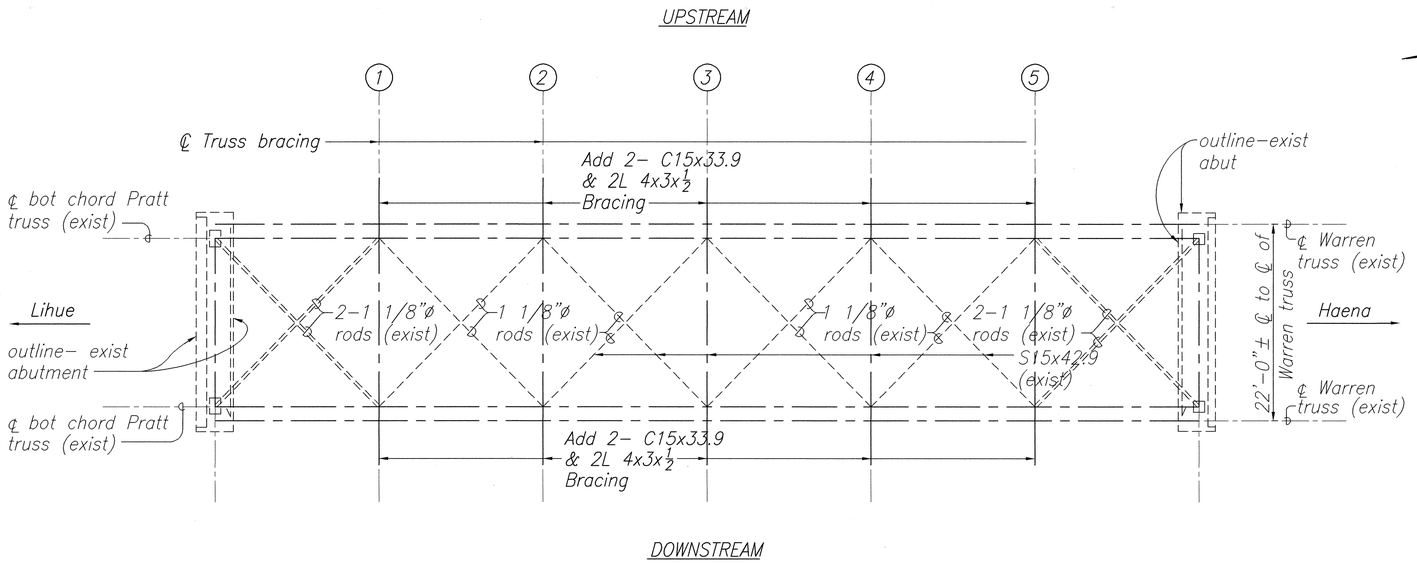
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXISTING ABUTMENT DETAILS

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: OCT. 1999

SHEET No. S-6 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	15	31

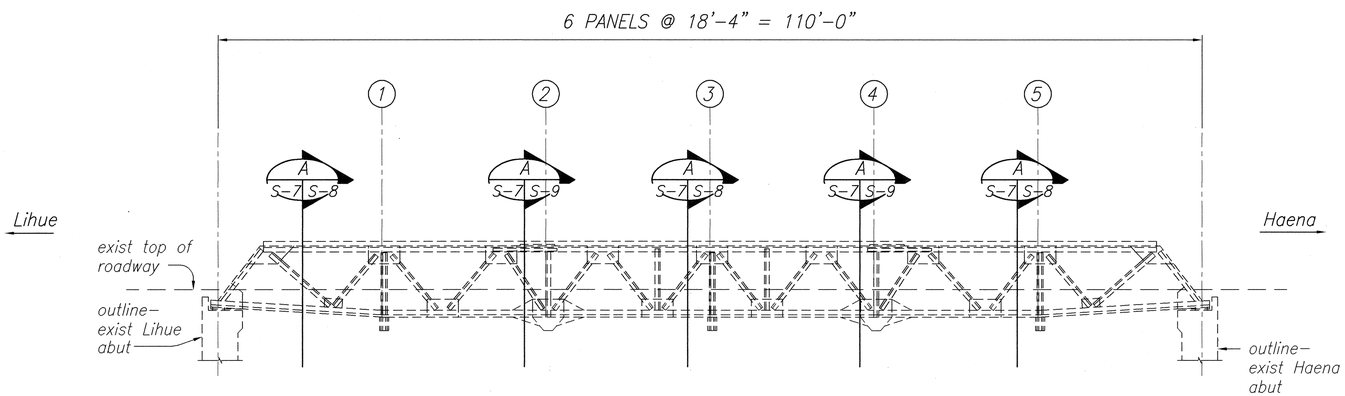


PLAN – BOTTOM CHORD DIAGRAM – WARREN TRUSS

Scale: None

Notes:

1. All bracing members shall be ASTM A36, hot-dipped galvanized.
2. Patch or plug weld all holes after removal of temporary bracing.



ELEVATION – WARREN TRUSS DIAGRAM LOOKING UPSTREAM

Scale: None Downstream elevation similar

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTEBOOK skuhs7.dgn	DRAWN BY GH	
	TRACED BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY MGO	

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MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

Myron Okubo

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WARREN TRUSS TEMPORARY BRACING

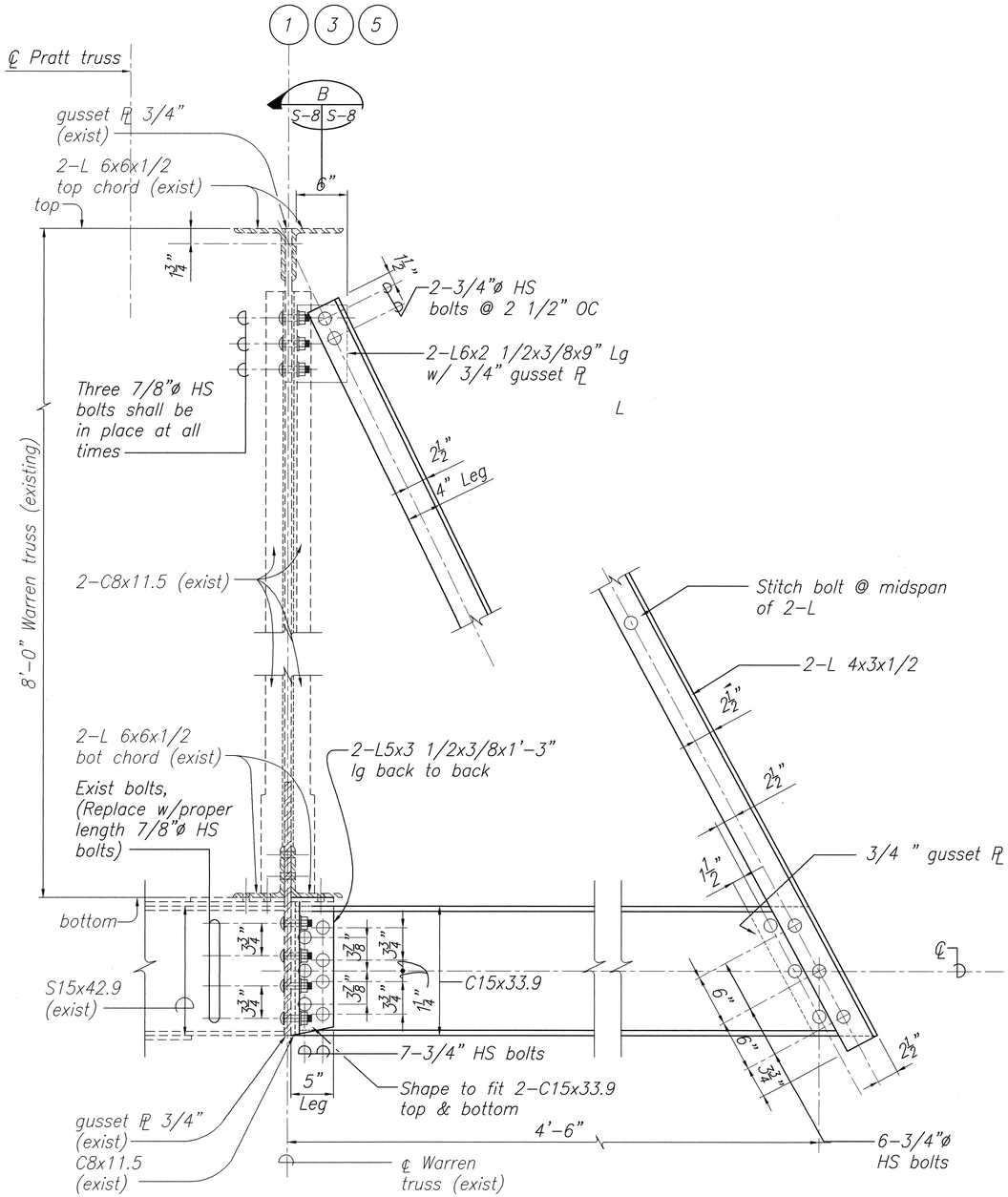
KUHIO HIGHWAY, REMOVE/REPAIR/REPLACE METAL MEMBERS, HANALEI BRIDGE

Federal Aid Project No. FLH-0560(11)

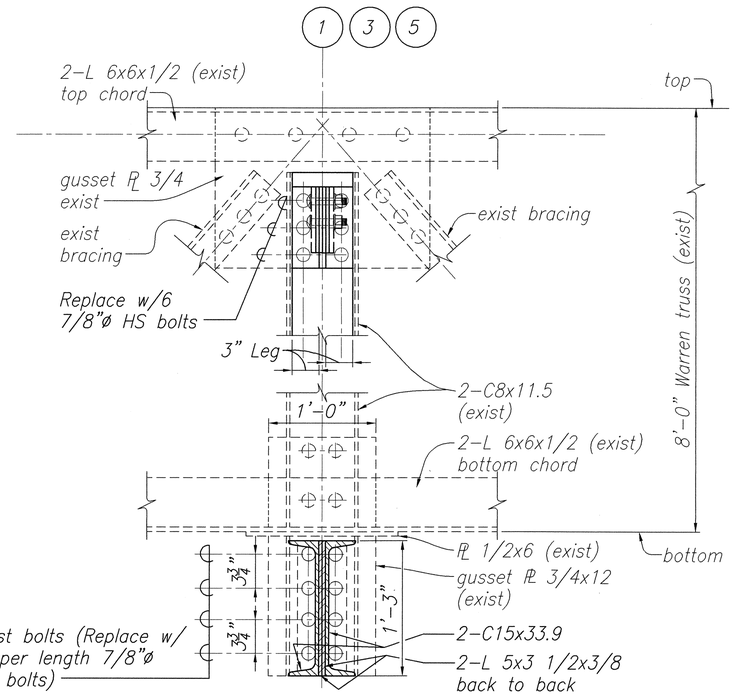
Scale: As Noted Date: Jan. 2000

SHEET No. S-7 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	16	31



SECTION – TYPICAL TEMPORARY TRUSS BRACING (A S-7 | S-8)
Scale: 1 1/2"=1'-0"



SECTION B (S-8 | S-8)
Scale: 1 1/2"=1'-0"

Note:

1. Work indicated on this sheet to be paid under "Structural Steel for Bracing of Warren Trusses".
2. Removal of the bracing members is incidental to "Structural Steel for Bracing of Warren Trusses".

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY GH | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY MGO | DATE
NOTEBOOK skuhbs8.dgn No.
N:\DWG\6186-01\VEN-STRUCT\STRUCT\9160152B

MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Myron Okubo

DATE	REVISION

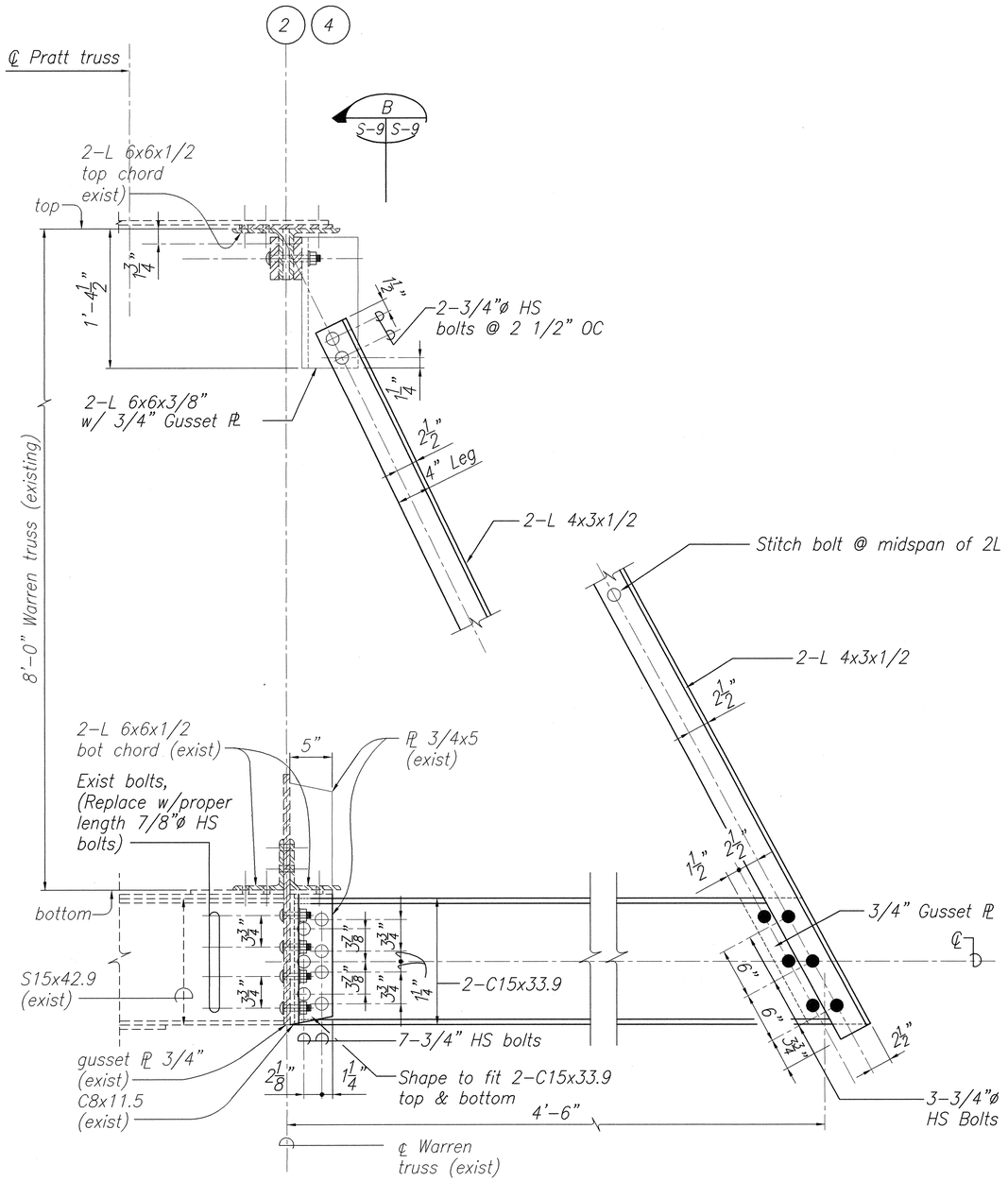
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WARREN TRUSS TEMPORARY BRACING

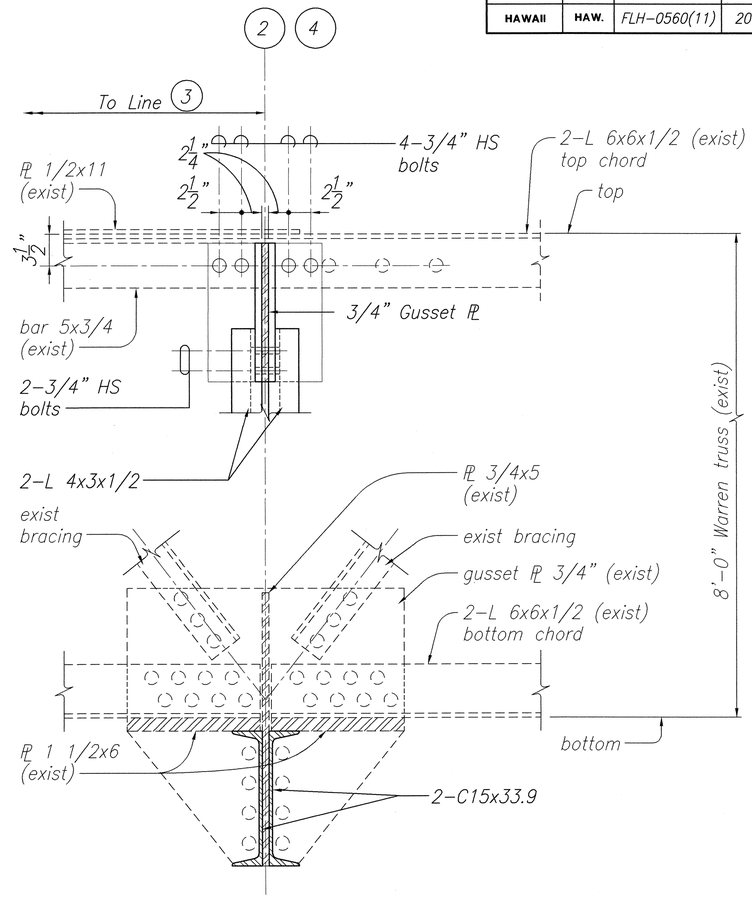
KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

SHEET No. S-8 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	17	31



SECTION – TYPICAL TEMPORARY TRUSS BRACING (A S-7 S-9)
Scale: 1 1/2"=1'-0"



SECTION (B S-9 S-9)
Scale: 1 1/2"=1'-0"

Note:

1. Work indicated on this sheet to be paid under "Structural Steel for Bracing of Warren Trusses".
2. Removal of the bracing members is incidental to "Structural Steel for Bracing of Warren Trusses".

ORIGINAL PLAN | SURVEY PLOTTED BY | DATE
DRAWN BY GH
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NOTEBOOK skuihbs9.dgn
QUANTITIES BY MKO
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MYRON G. OKUBO
LICENSED PROFESSIONAL ENGINEER
No. 4320-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Myron Okubo

DATE	REVISION

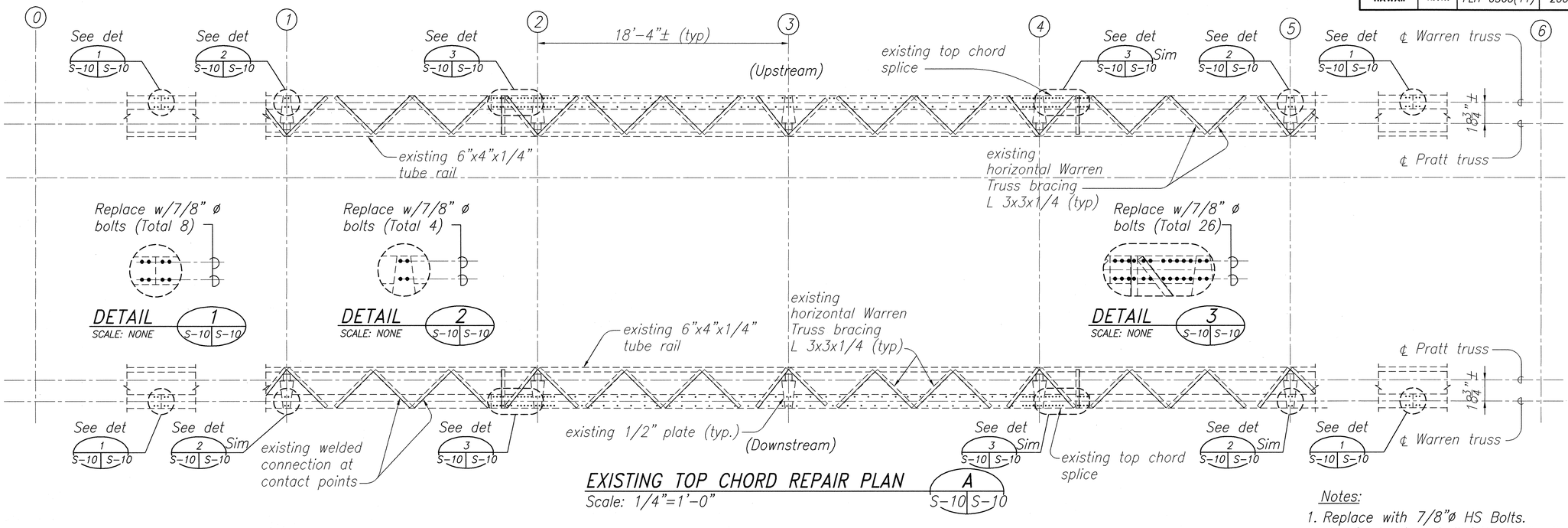
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WARREN TRUSS TEMPORARY BRACING

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

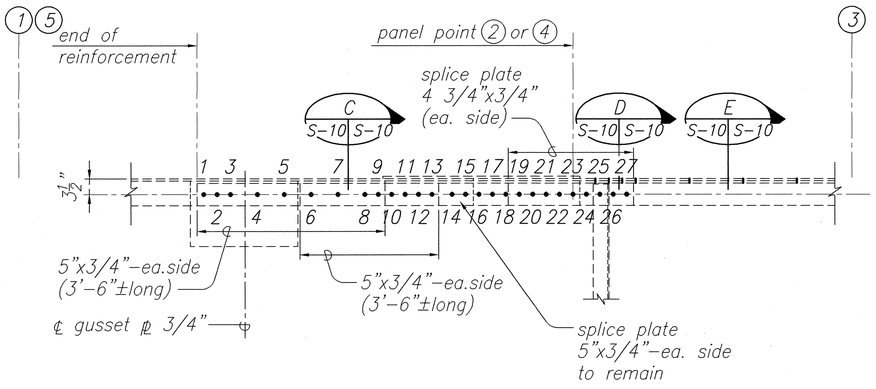
SHEET No. S-9 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	18	31



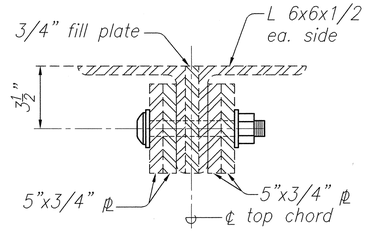
EXISTING TOP CHORD REPAIR PLAN — A S-10 S-10

Scale: 1/4"=1'-0"



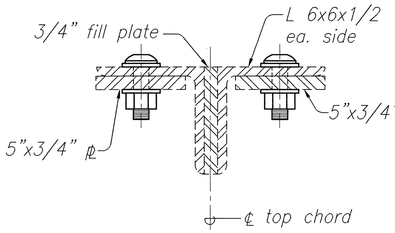
ELEVATION OF WARREN TRUSS TOP CHORD — B S-10 S-10

Scale: 3/4"=1'-0"



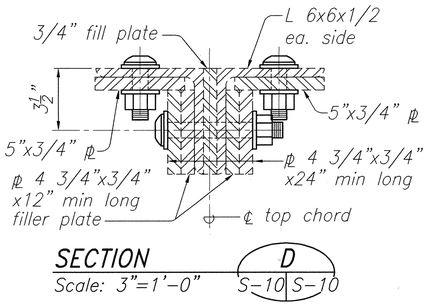
SECTION — C S-10 S-10

Scale: 3"=1'-0"



SECTION — E S-10 S-10

Scale: 3"=1'-0"



SECTION — D S-10 S-10

Scale: 3"=1'-0"

NOTE:
Prior to the preparation of shop drawings the Contractor must field verify all dimensions and arrangement of existing details.

LOCATION	BOLTS TO BE REPLACED
Grid 2 Downstream	14,15,16,17,18,19
Grid 2 Upstream	14,15,16,17,18,19
Grid 4 Downstream	14,15,16,17,18,19
Grid 4 Upstream	14,15,16,17,18,19

Notes:

1. Replace with 7/8"ø HS Bolts. the Contractor shall field verify dimensions and arrangement of existing details. Discrepencies noted shall be incorporated into the shop drawings.
2. Replace only one bolt at a time.
3. Work indicated on sheets S10-S13 to be paid under Repairs to Warren Trusses.
4. Contractor may remove horizontal Warren Truss bracing to faciltate construction after installation of temporary bracing, provided that horizontal Warren Truss bracing is replaced prior to removal of temporary bracing.

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY GH | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY MO | DATE
NOTEBOOK skwbs10.dgn No.

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MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

DATE	REVISION

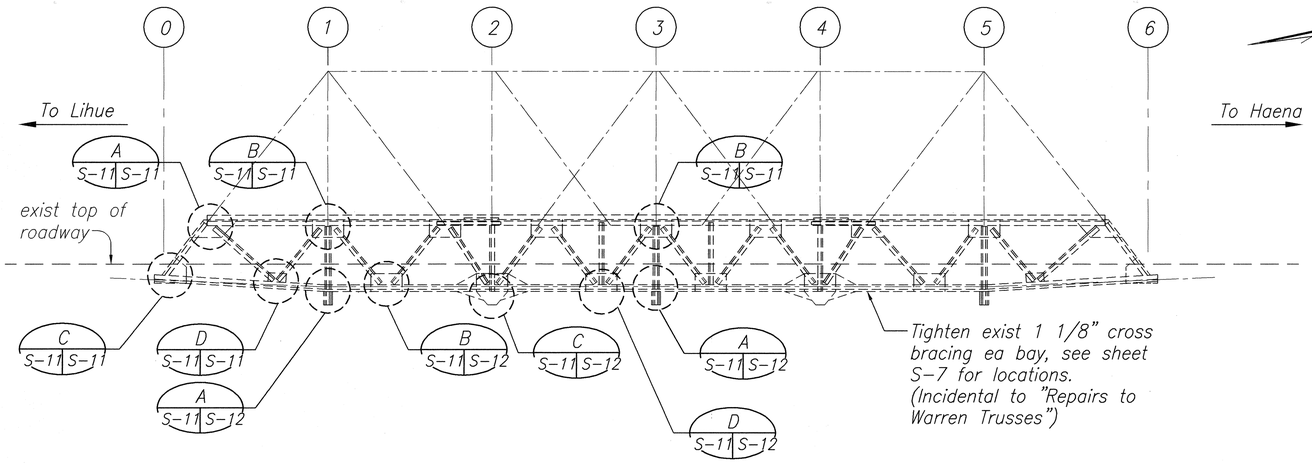
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WARREN TRUSS REPAIRS

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

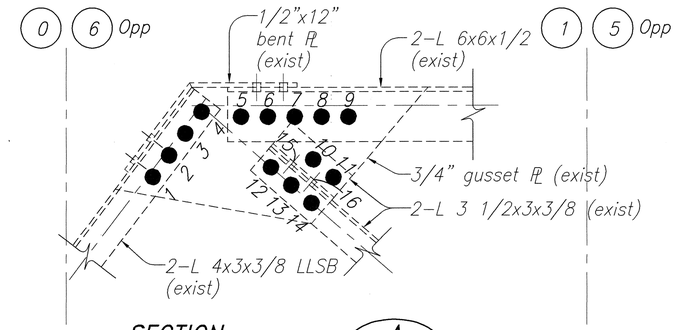
SHEET No. S-10 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	19	31



ELEVATION LOOKING UPSTREAM

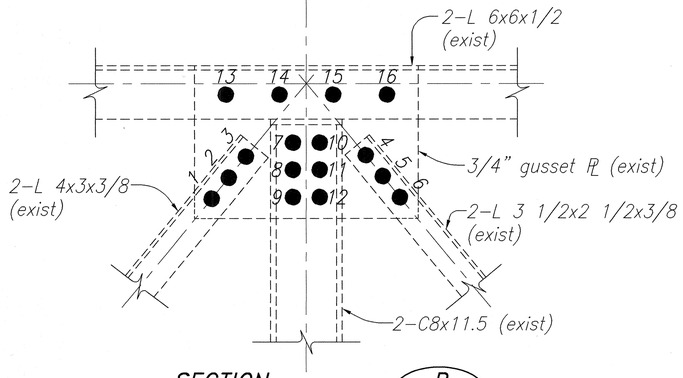
Scale: 1/8"=1'-0" DOWNSTREAM ELEVATION SIMILAR



SECTION A

Scale: 1 1/2"=1'-0" S-11 S-11

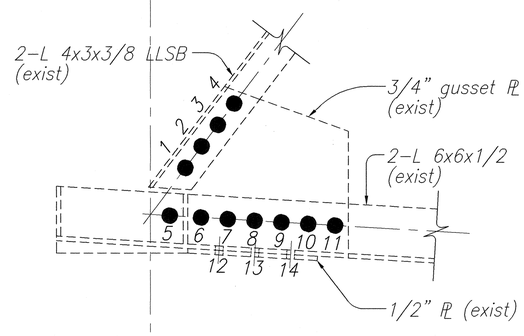
LOCATION	BOLTS TO BE REPLACED
Grid 0 Downstream	1,2,3,4, & 13
Grid 0 Upstream	1,2,3,8, & 9
Grid 6 Downstream	1,2,3,4,9,12,13, & 14
Grid 6 Upstream	1,2,3,4,7,8,9,12,13, & 14



SECTION B

Scale: 1 1/2"=1'-0" S-11 S-11

LOCATION	BOLTS TO BE REPLACED
Grid 1 Downstream	2,3,7,8,10,11, & 12
Grid 1 Upstream	7,8,9,10,11 & 12
Grid 3 Downstream	1,2,3,4,5,6,7,8,9,10,11 & 12
Grid 3 Upstream	1
Grid 5 Downstream	5,6,7,10,11 & 12
Grid 5 Upstream	None

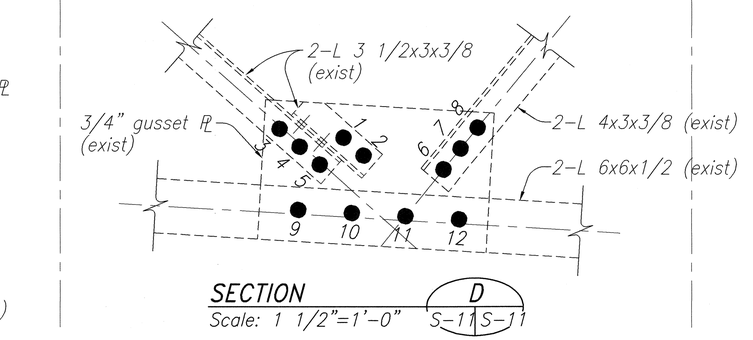


SECTION C

Scale: 1 1/2"=1'-0" S-11 S-11

LOCATION	BOLTS TO BE REPLACED
Grid 0 Downstream	None
Grid 0 Upstream	None
Grid 6 Downstream	None
Grid 6 Upstream	5,6,7,8,9,10 & 11

Note: See notes on sheet S-10.



SECTION D

Scale: 1 1/2"=1'-0" S-11 S-11

LOCATION	BOLTS TO BE REPLACED
Btwn Grid 0 & 1 Downstream	3,4,5 & 6
Btwn Grid 0 & 1 Upstream	6 & 7
Btwn Grid 5 & 6 Downstream	4,5,6 & 7
Btwn Grid 5 & 6 Upstream	3,4,5,6, & 7

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY GH | TRACED BY | DESIGNED BY | QUANTITIES BY MSO | CHECKED BY | DATE
NOTEBOOK skwhbs11.dgn No.

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MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Myron Okubo

DATE	REVISION

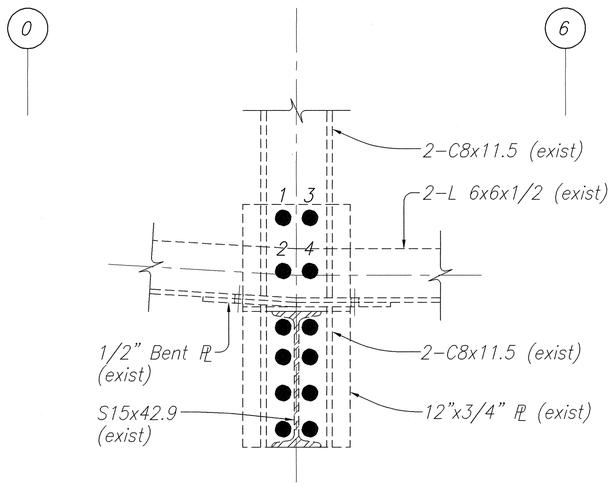
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WARREN TRUSS REPAIRS

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

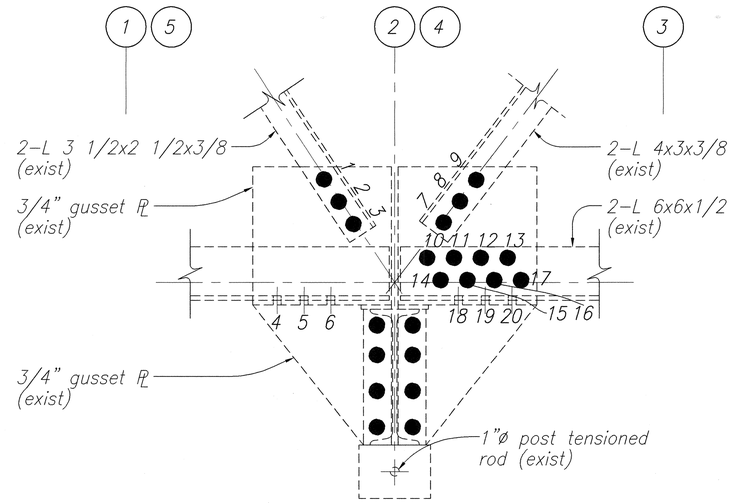
SHEET No. S-11 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	20	31



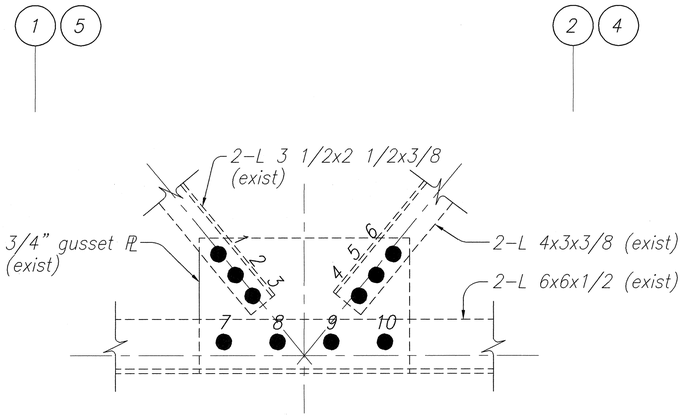
SECTION A
Scale: 1 1/2"=1'-0" S-11 S-12

LOCATION	BOLTS TO BE REPLACED
Grid 1 Downstream	2 & 4
Grid 1 Upstream	2 & 4
Grid 3 Downstream	2 & 4
Grid 3 Upstream	2 & 4
Grid 5 Downstream	2 & 4
Grid 5 Upstream	1,2,3 & 4



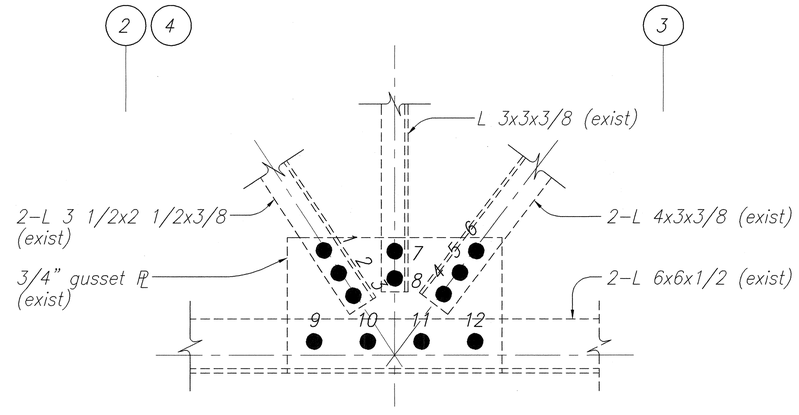
SECTION C
Scale: 1 1/2"=1'-0" S-11 S-12

LOCATION	BOLTS TO BE REPLACED
Grid 2 Downstream	2,4,5,6,7,9,10,11,12,13,14, 15,16,17,18,19 & 20
Grid 2 Upstream	1,3,4,5,6,14 & 19
Grid 4 Downstream	4,5,6,14,15,16 & 17
Grid 4 Upstream	1,2,3,4,5,6,12,18,19 & 20



SECTION B
Scale: 1 1/2"=1'-0" S-11 S-12

LOCATION	BOLTS TO BE REPLACED
Btwn Grid 1 & 2 Downstream	4,5, & 6
Btwn Grid 1 & 2 Upstream	4,5 & 6
Btwn Grid 4 & 5 Downstream	4,5 & 6
BtwnGrid 4 & 5 Upstream	1,2,3,4,5 & 6



SECTION D
Scale: 1 1/2"=1'-0" S-11 S-12

LOCATION	BOLTS TO BE REPLACED
Btwn Grid 2 & 3 Downstream	1,2,3,4,5,6 & 10
Btwn Grid 2 & 3 Upstream	1,2,3,4 & 5
Btwn Grid 3 & 4 Downstream	3
Btwn Grid 3 & 4 Upstream	1,2,3,4,5 & 6

Note: See notes on sheet S-10.

MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Myron Okubo

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

WARREN TRUSS REPAIRS

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

SHEET No. S-12 OF 23 SHEETS

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY GH | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY MGO | DATE
NOTEBOOK skwbs12.dgn No.

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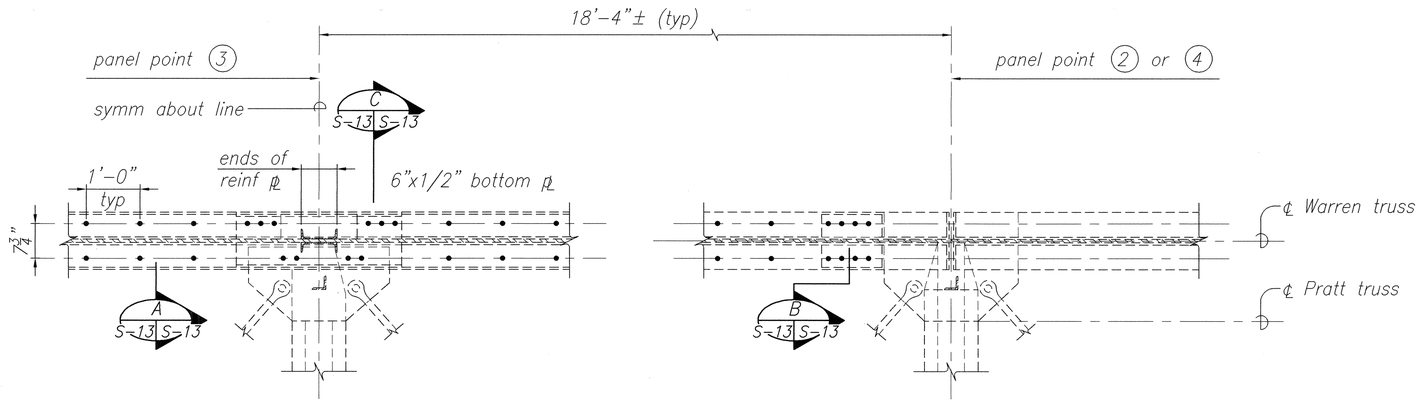
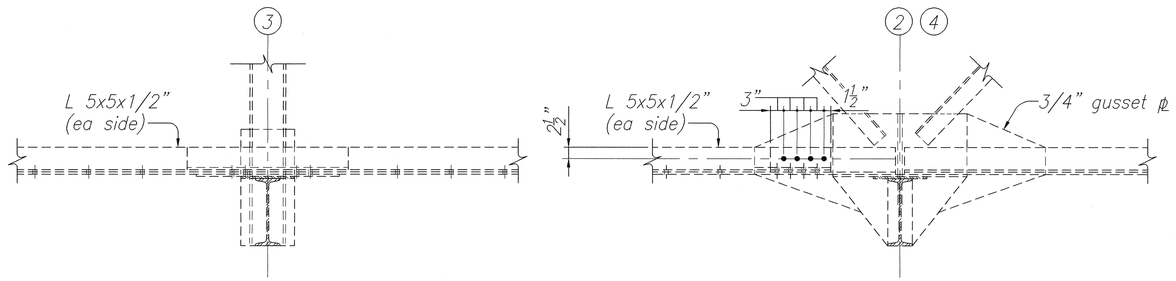
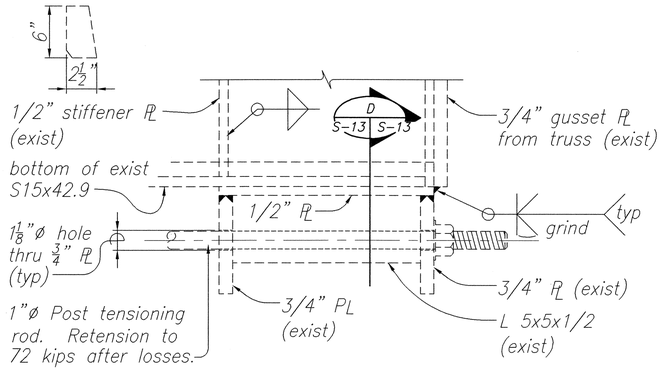
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	21	31



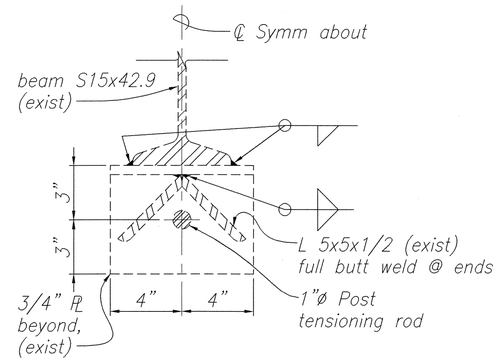
BOTTOM CHORD PARTIAL PLAN
Scale: 3/4"=1'-0"



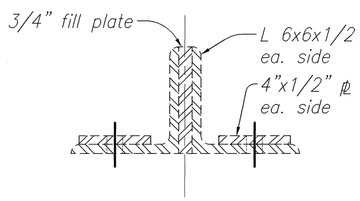
BOTTOM CHORD ELEVATION
Scale: 3/4"=1'-0"



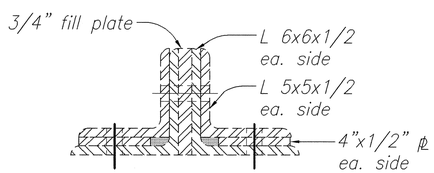
DETAIL 1
Scale: 3"=1'-0" S-3 S-13



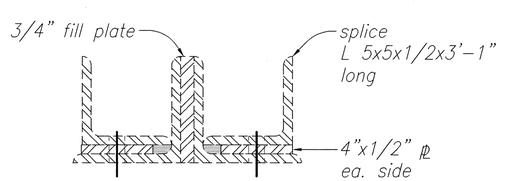
SECTION D
Scale: 3"=1'-0" S-13 S-13



SECTION A
Scale: 3"=1'-0" S-13 S-13



SECTION B
Scale: 3"=1'-0" S-13 S-13



SECTION C
Scale: 3"=1'-0" S-3 S-13

Note: See notes on sheet S-10.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY GH	
NOTEBOOK	TRACED BY	
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No.	QUANTITIES BY	
	CHECKED BY WKO	

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MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

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Myron Okubo

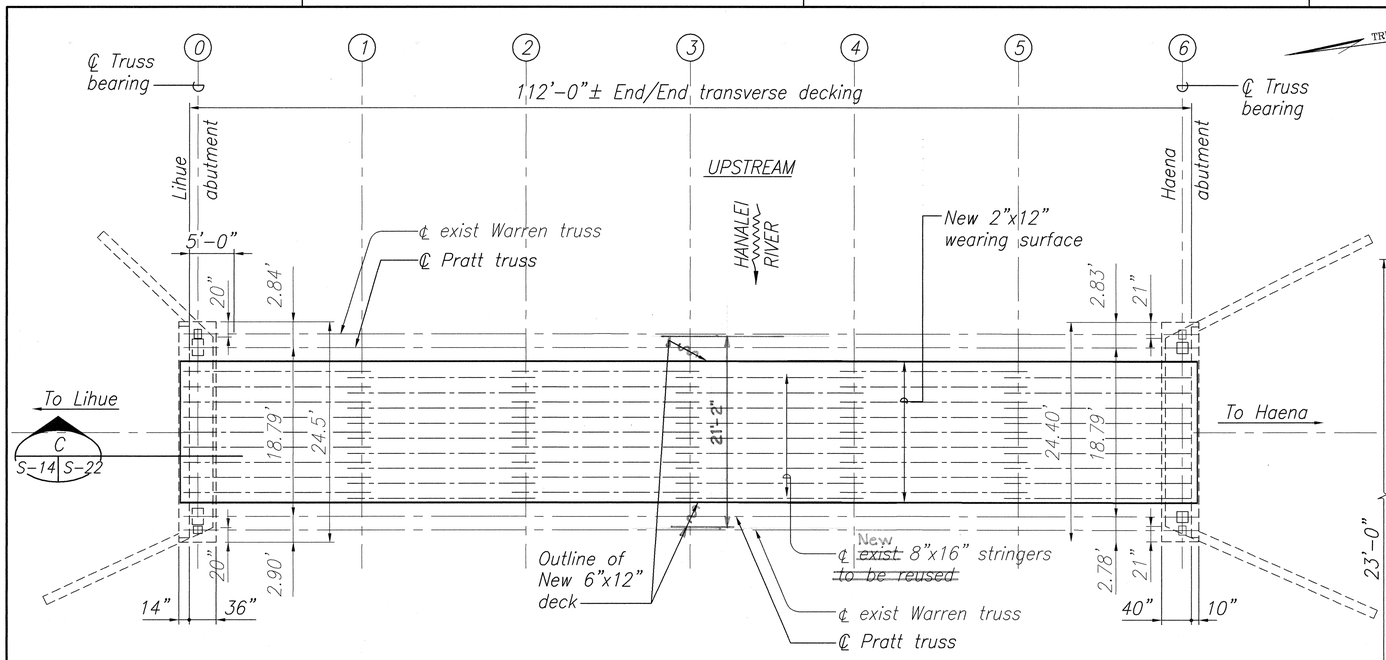
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

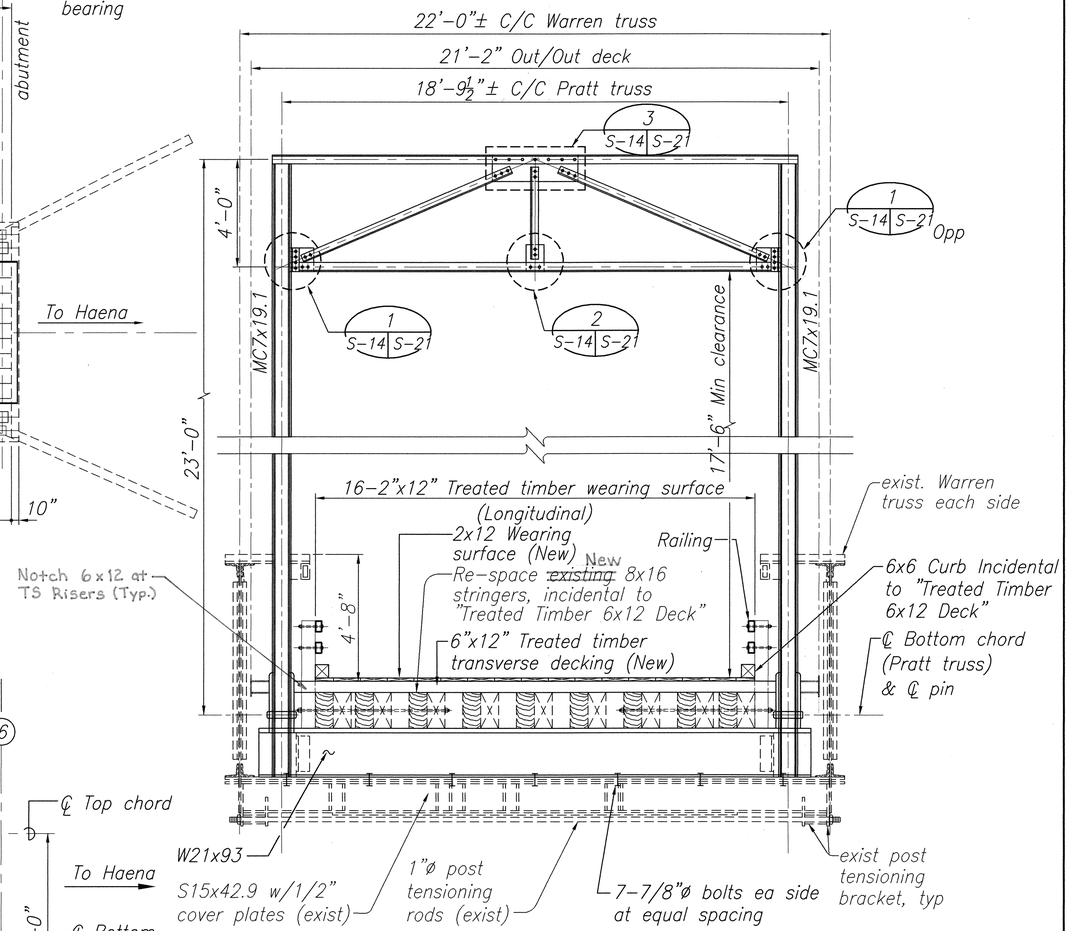
WARREN TRUSS REPAIRS
KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

SHEET No. S-13 OF 23 SHEETS

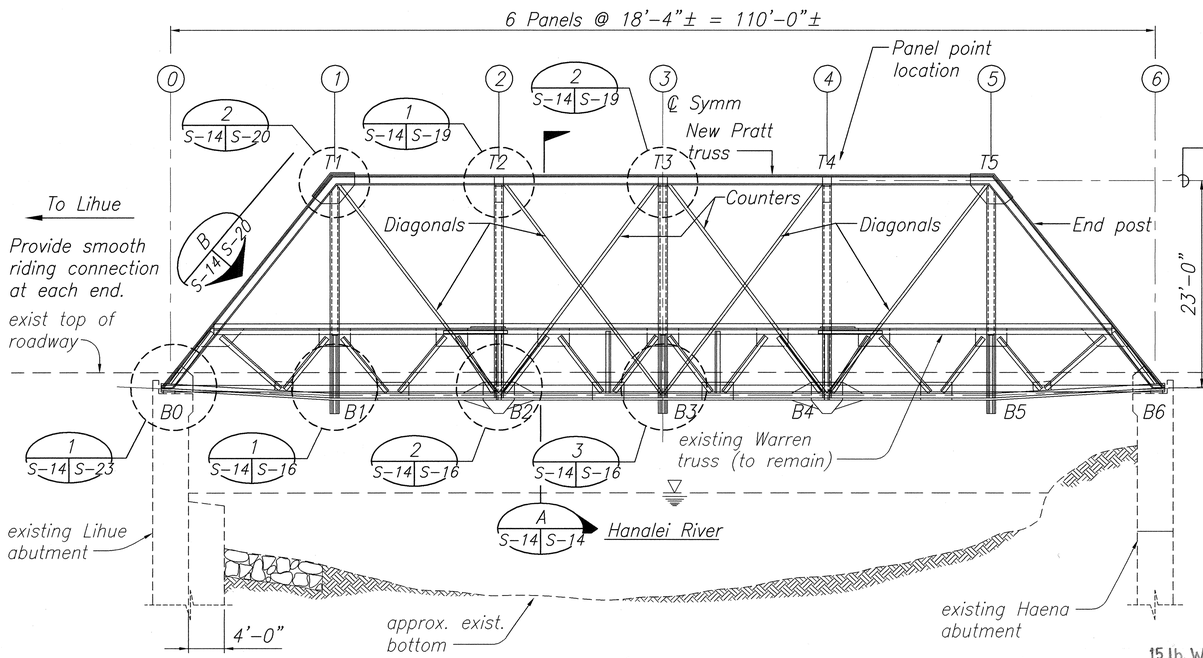
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	22	31



DECK PLAN
Scale: 1/8"=1'-0"



TYPICAL SECTION A
S-14 S-14
Scale: 3/8"=1'-0"



UPSTREAM ELEVATION – (DOWNSTREAM ELEVATION SIMILAR)
Scale: 1/8"=1'-0"

15 lb. Weight

NOTES FOR TIMBER DECK

1. The 2x12 timber wearing surface shall be be surfaced one side (S1S) with rough side up, placed parallel to direction of traffic. Fasten with 40d nails. staggered at 12" spacing.
2. The 6x12 transverse decking shall be surfaced four sides (S4S) laid with 3/4" gap between them. Each plank shall be fastened to each stringer using a 1/2"ø by 10" long lag screw, countersunk below the plank surface.
3. Prior to the placement of the decking, a layer of tar paper (8" wide) shall be placed on top of each stringer. (Incidental to "Treated Timber 6x12 Deck")

MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Myron Okubo

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PRATT TRUSS DECK PLAN, ELEVATION & SECTION

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

SHEET No. S-14 OF 23 SHEETS

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY GH | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY MGO | DATE
NOTEBOOK skuhs14.dgn | No.

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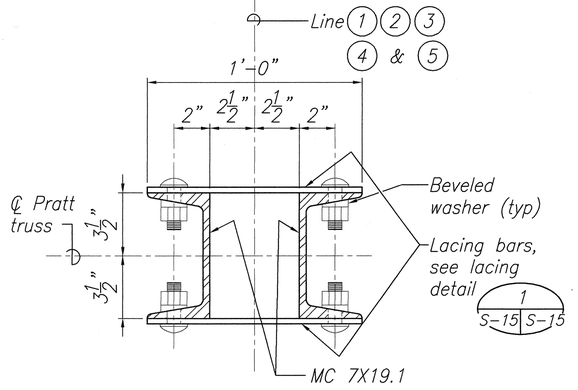
"AS-BUILT"

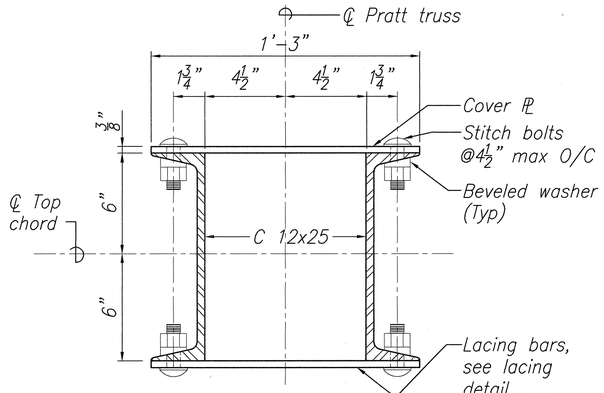
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	23	31



(B1-T1, B2-T2, B3-T3, B4-T4, B5-T5)

VERTICAL CHANNEL SECTIONS

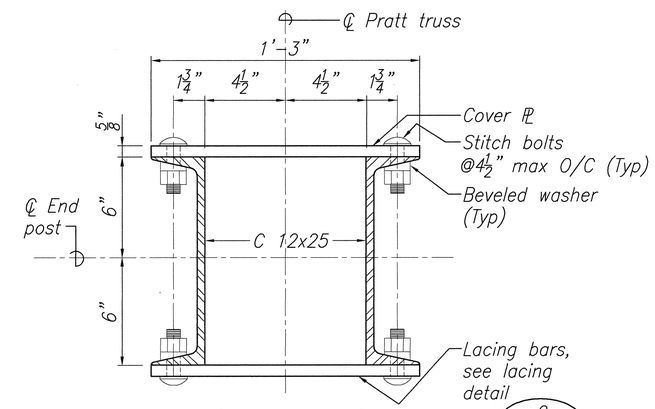
Scale: 3"=1'-0"



(T1-T2, T2-T3, T3-T4, T4-T5)

TOP CHORD SECTIONS

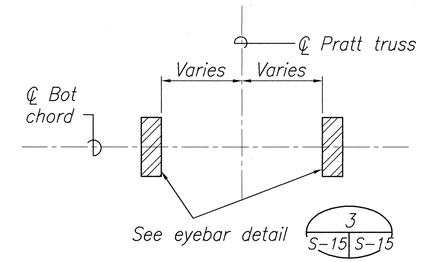
Scale: 3"=1'-0"



(B0-T1, B6-T5)

END POST SECTIONS

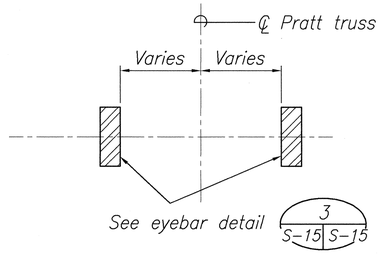
Scale: 3"=1'-0"



(B0-B1, B1-B2, B2-B3, B3-B4, B4-B5, B5-B6)

BOTTOM CHORD SECTIONS

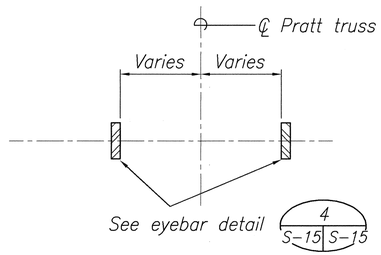
Scale: 3"=1'-0"



(B2-T1, B3-T2, B3-T4, B4-T5)

DIAGONAL SECTIONS

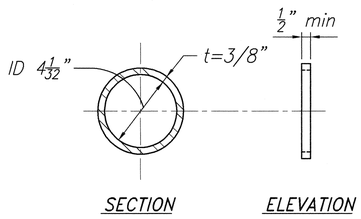
Scale: 3"=1'-0"



(B2-T3, B4-T3)

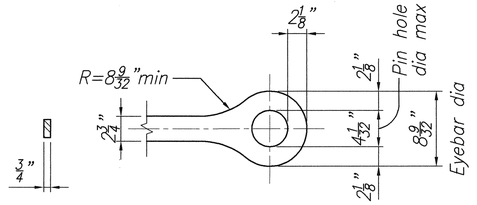
COUNTER SECTIONS

Scale: 3"=1'-0"



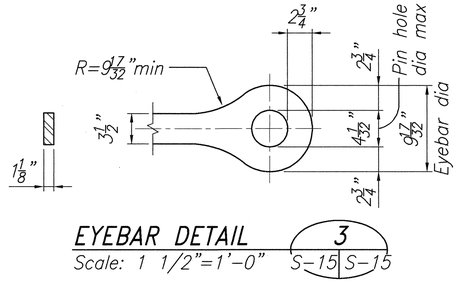
RING SPACER DETAIL

Scale: 3"=1'-0"



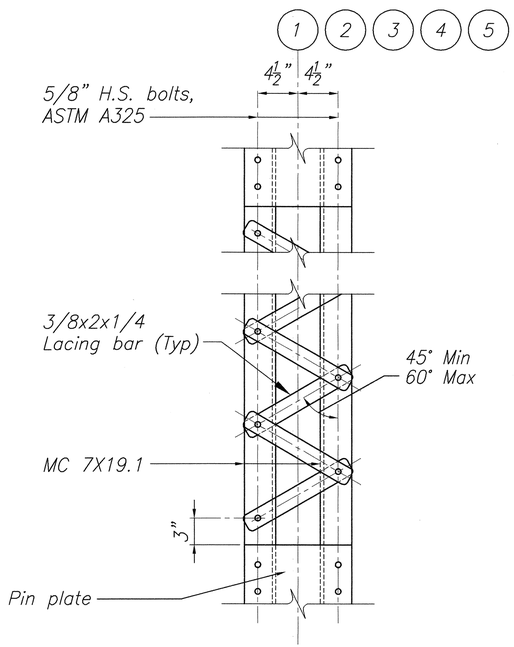
EYEBAR DETAIL 4

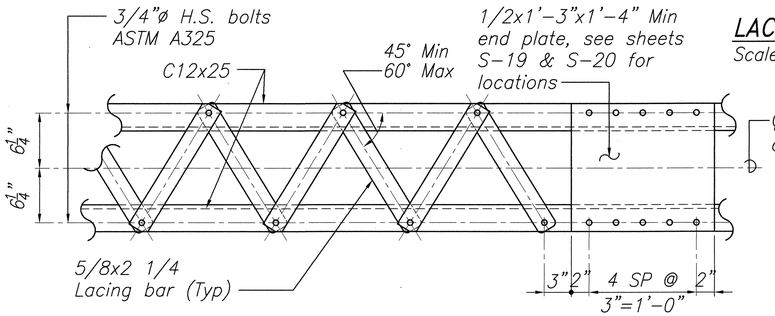
Scale: 1 1/2"=1'-0" S-15 S-15



EYEBAR DETAIL 3

Scale: 1 1/2"=1'-0" S-15 S-15





LACING DETAIL 1

Scale: 1 1/2"=1'-0" S-15 S-15

LACING DETAIL 2

Scale: 1 1/2"=1'-0" S-15 S-15

Key:

Panel point location

BO - T1

MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Myron Okubo

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PRATT TRUSS TYPICAL SECTIONS

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

SHEET No. S-15 OF 23 SHEETS

ORIGINAL PLAN | SURVEY PLOTTED BY | DRAWN BY GH | TRACED BY | DESIGNED BY | QUANTITIES BY | CHECKED BY MGO | DATE

NOTEBOOK | sk/hbs15.dgn

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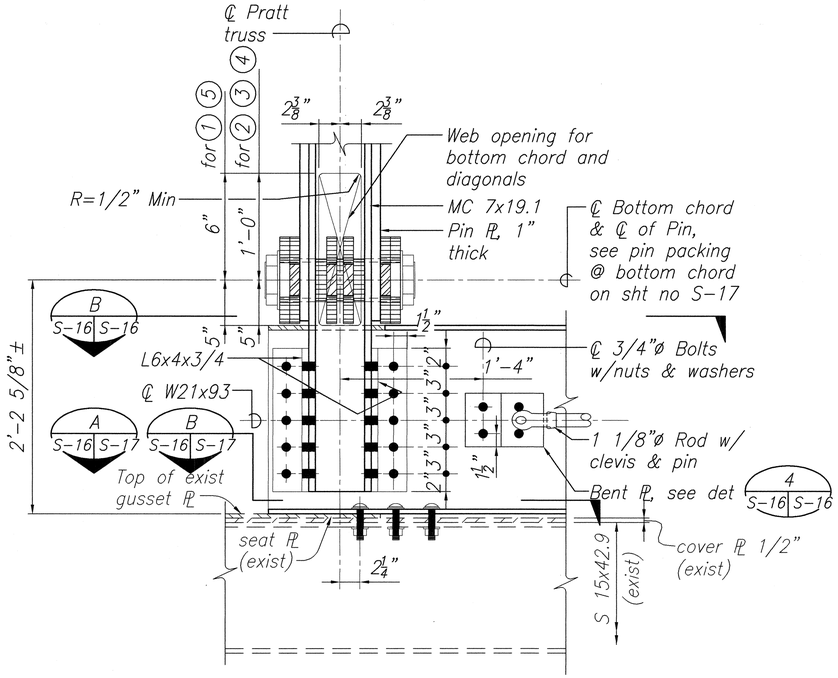
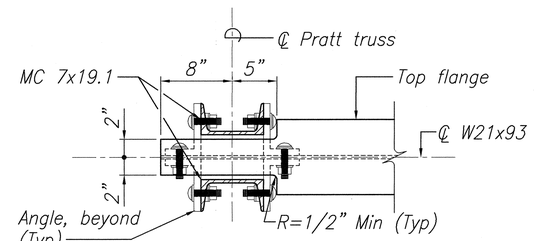
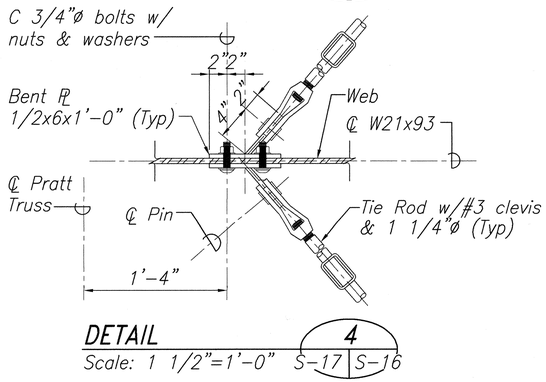
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	24	31



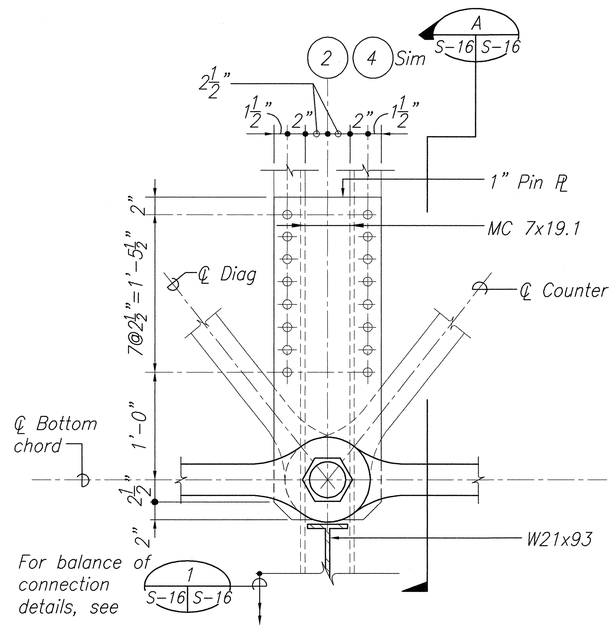
SECTION A — Scale: 1 1/2"=1'-0" S-16 S-16



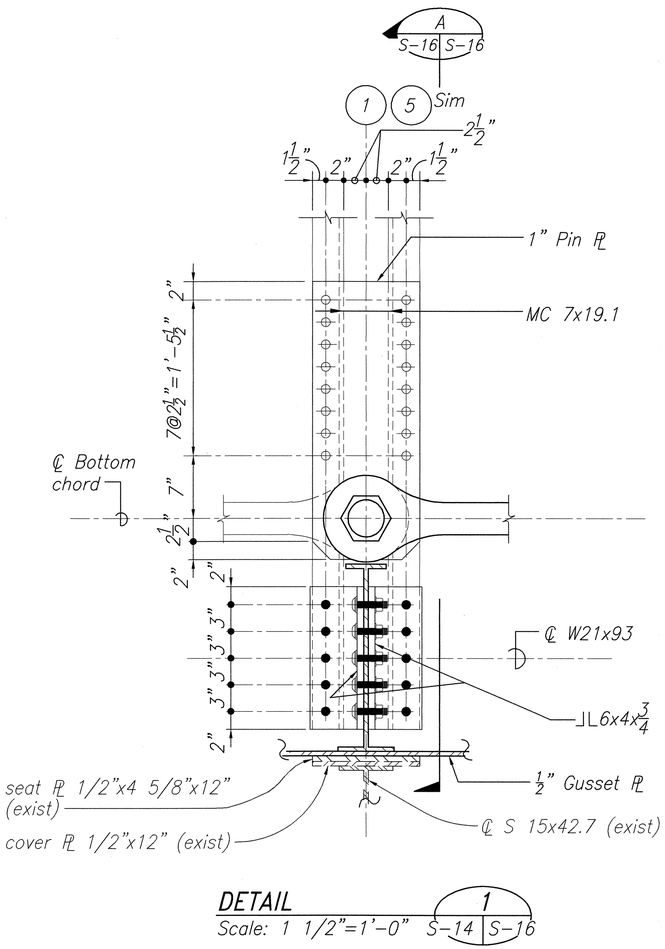
SECTION B — Scale: 1 1/2"=1'-0" S-16 S-16



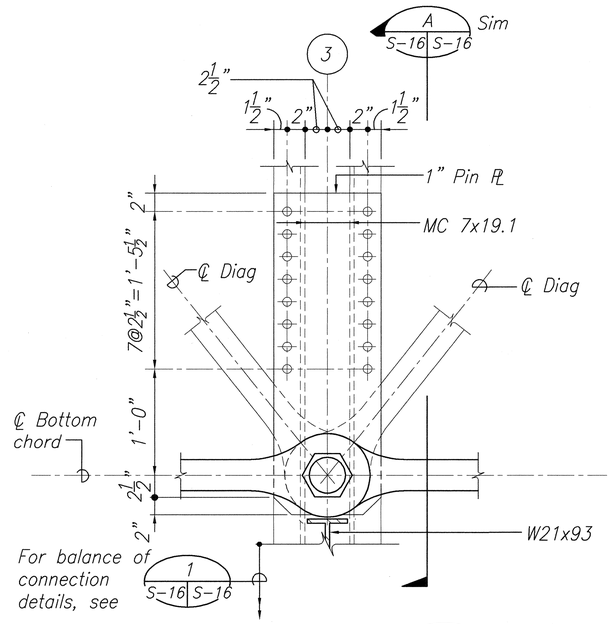
DETAIL 4 — Scale: 1 1/2"=1'-0" S-17 S-16



DETAIL 2 — Scale: 1 1/2"=1'-0" S-14 S-16



DETAIL 1 — Scale: 1 1/2"=1'-0" S-14 S-16



DETAIL 3 — Scale: 1 1/2"=1'-0" S-14 S-16

ORIGINAL PLAN

SURVEY PLOTTED BY
DRAWN BY GH
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY MGO
DATE

NOTEBOOK skuhbs16.dgn
No.

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MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

DATE	REVISION

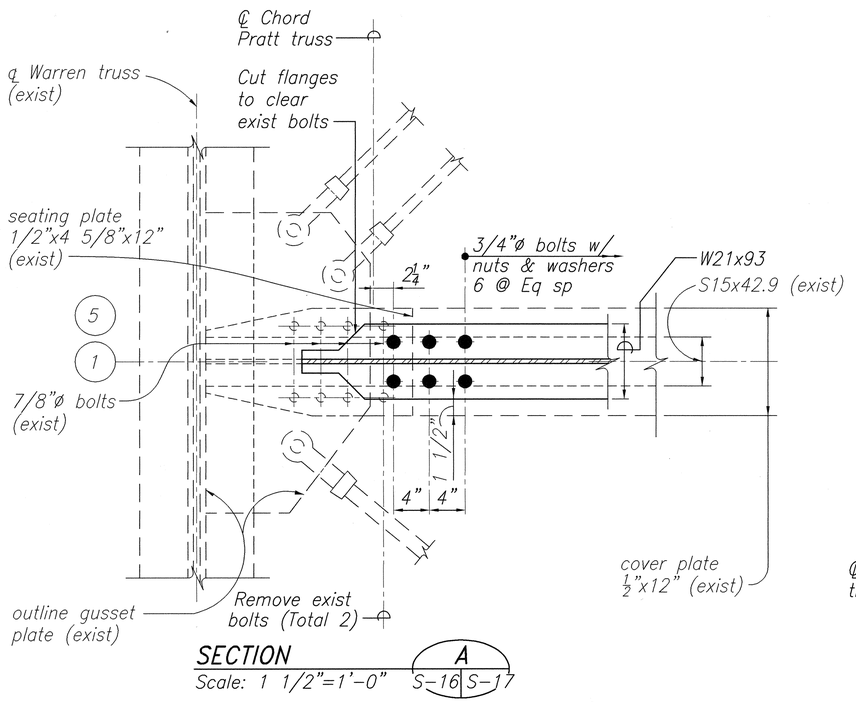
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PRATT TRUSS BOTTOM CHORD DETAILS

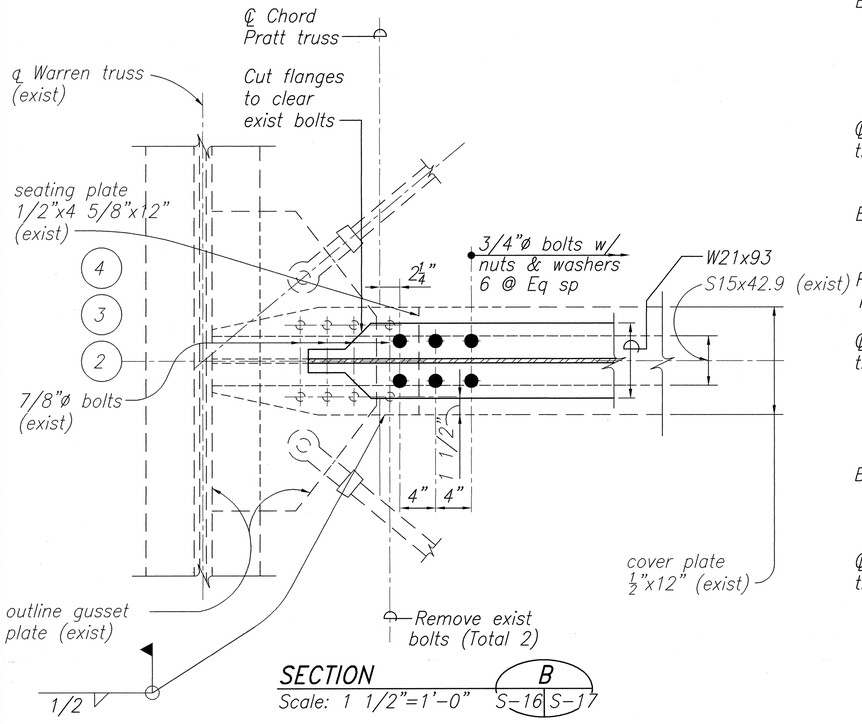
KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

SHEET No. S-16 OF 23 SHEETS

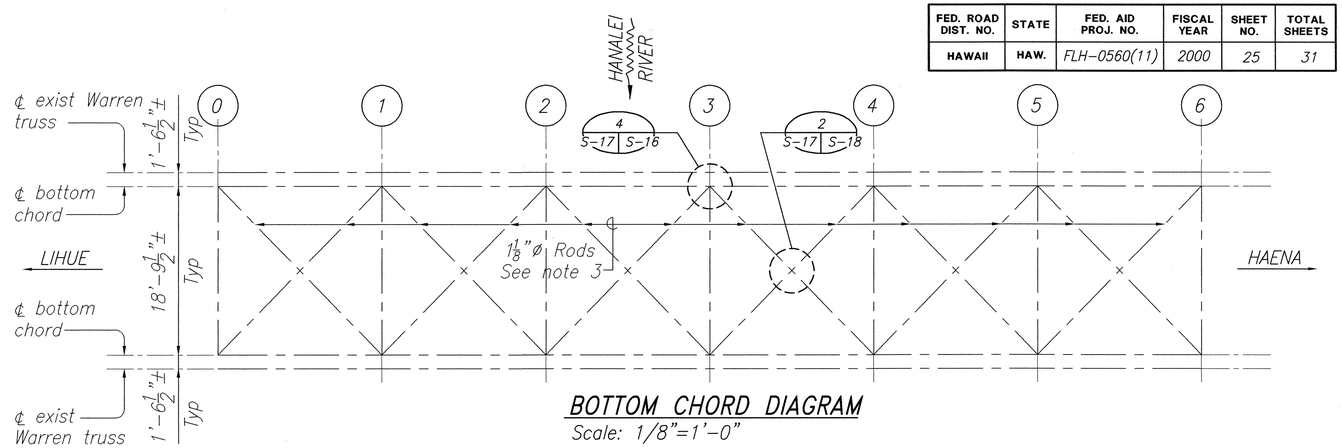
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	25	31



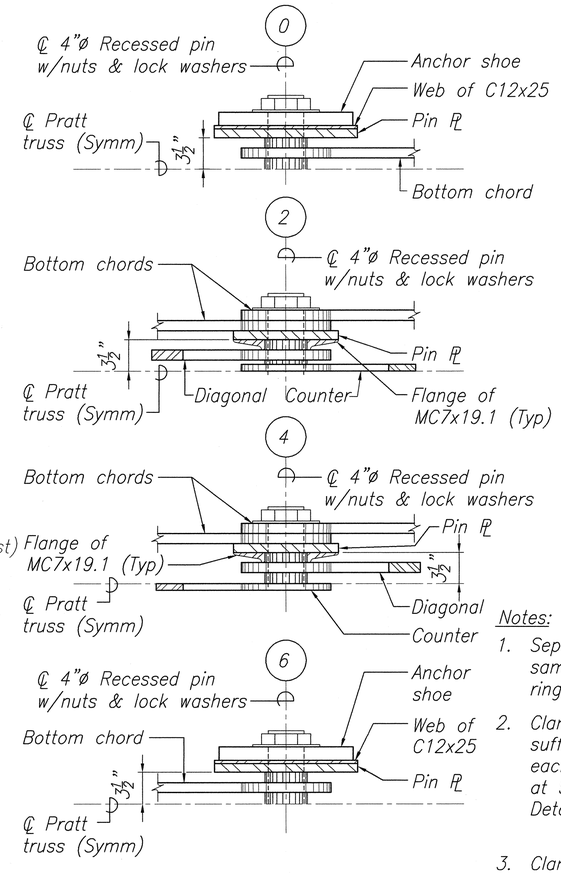
SECTION A
Scale: 1 1/2"=1'-0" S-16 S-17

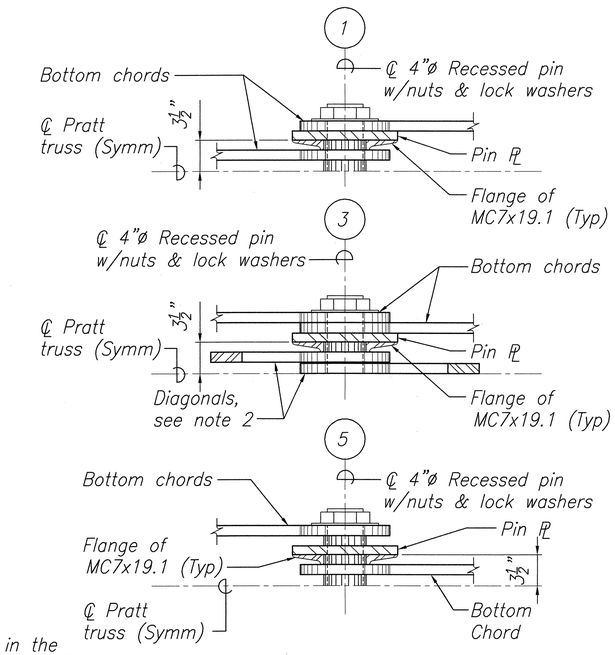


SECTION B
Scale: 1 1/2"=1'-0" S-16 S-17



BOTTOM CHORD DIAGRAM
Scale: 1/8"=1'-0"





Notes:

1. Separate the eyebars in the same panel by at least 1/2" ring spacers.
2. Clamp eyebars that are not sufficiently spaced to clear each other. Clamp spacing at 5'-0" max, see Clamp Detail 1 (S-18 S-18)
3. Clamp lateral bracings at the intersections. See Clamp Detail 2 (S-17 S-18)

PIN PACKING @ BOTTOM CHORD
Scale: 1 1/2"=1'-0"

MYRON G. OKUBO
LICENSED PROFESSIONAL ENGINEER
No. 4320-S
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Myron Okubo

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PRATT TRUSS
BOTTOM CHORD DETAILS

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

SHEET No. S-17 OF 23 SHEETS

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

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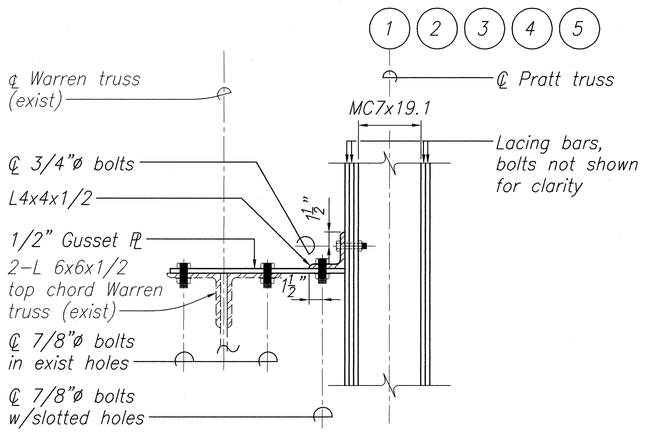
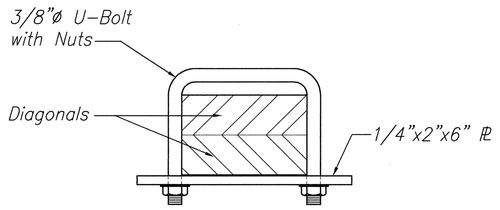
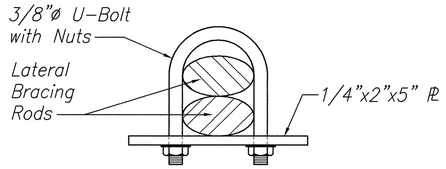
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	26	31



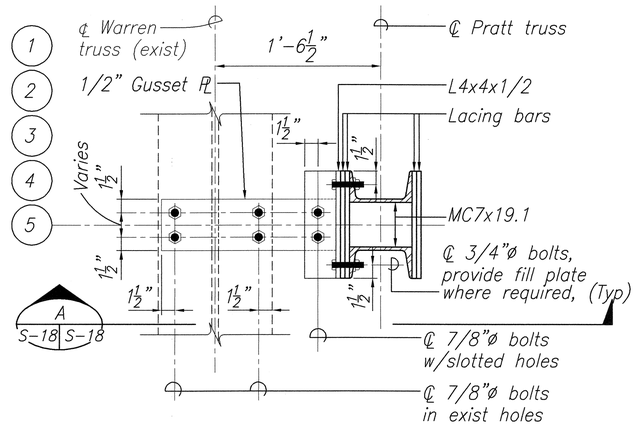
SECTION A
Scale: 1 1/2"=1'-0" S-18 | S-18



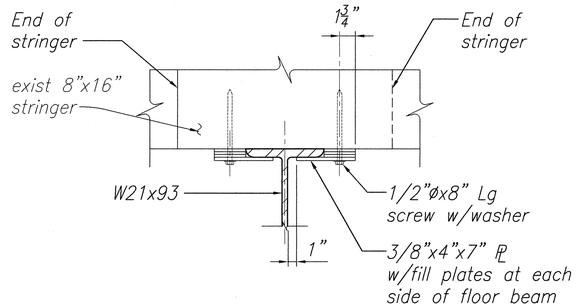
CLAMP DETAIL 1
Scale: 6"=1'-0" S-18 | S-18



CLAMP DETAIL 2
Scale: 6"=1'-0" S-17 | S-18



PLAN - CONNECTION DETAIL 4
Scale: 1 1/2"=1'-0" S-18 | S-18



STRINGER - FLOORBEAM CONNECTION DETAIL 3
Scale: 1 1/2"=1'-0" S-18 | S-18

ORIGINAL PLAN
SURVEY PLOTTED BY
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QUANTITIES BY
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DATE
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No.

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MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Myron Okubo

DATE	REVISION

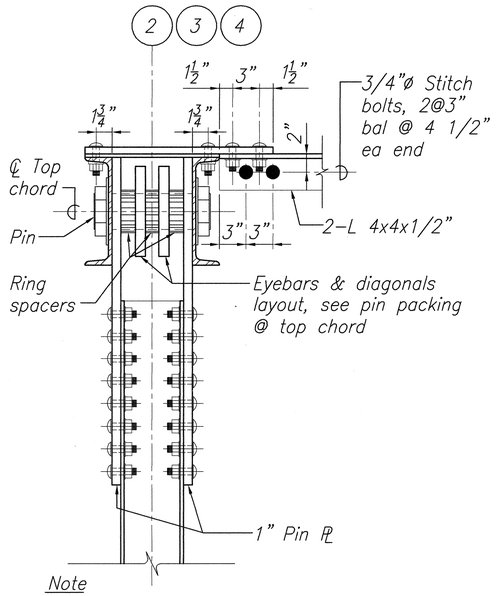
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PRATT TRUSS BOTTOM CHORD DETAILS

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

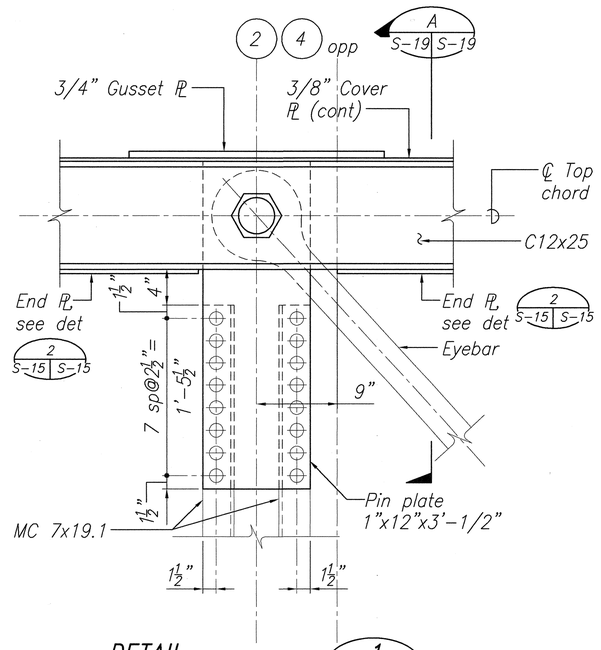
SHEET No. S-18 OF 23 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	27	31

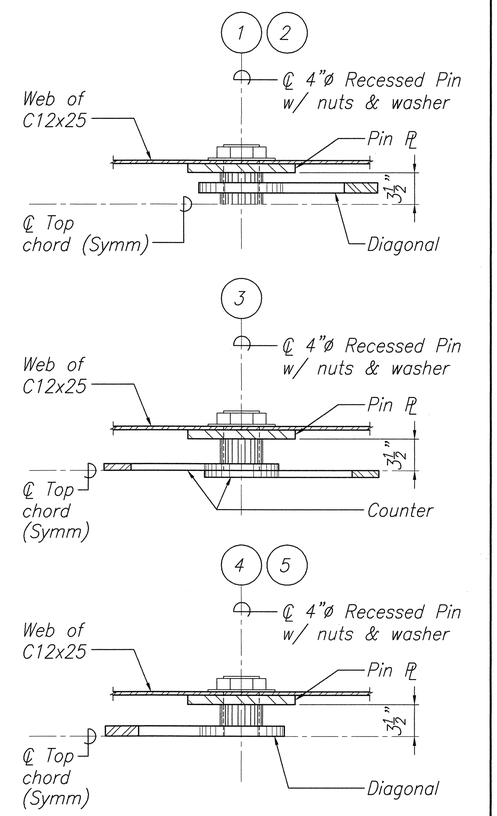


Note
Eyebar legs not shown for clarity.

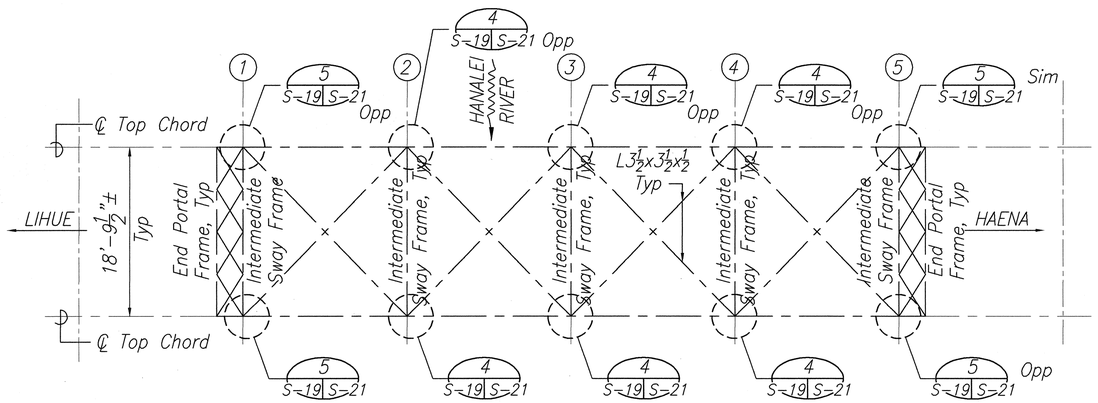
SECTION A
Scale: 1 1/2"=1'-0" S-19 | S-19



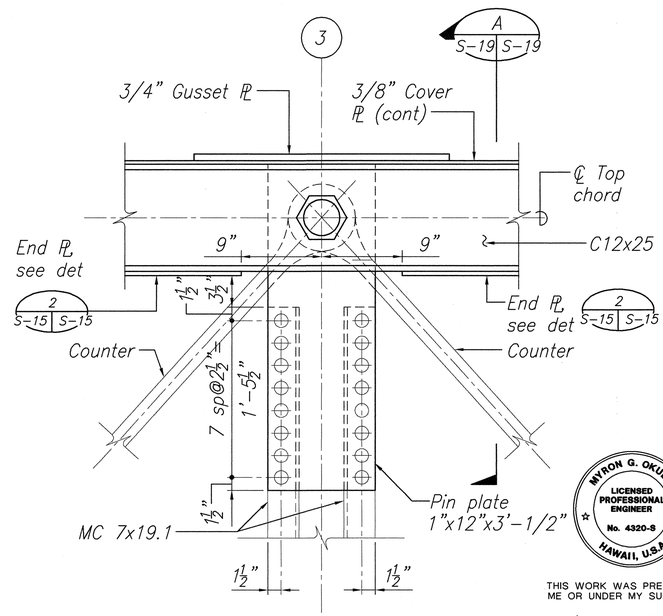
DETAIL 1
Scale: 1 1/2"=1'-0" S-14 | S-19



PIN PACKING @ TOP CHORD
Scale: 1 1/2"=1'-0"



TOP CHORD DIAGRAM
Scale: 1/8"=1'-0"



DETAIL 2
Scale: 1 1/2"=1'-0" S-14 | S-19

MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

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Myron Okubo

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PRATT TRUSS
TOP CHORD DETAILS
KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

SHEET No. S-19 OF 23 SHEETS

ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY GH
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY MGO
DATE
NOTEBOOK skuhbs19.dgn
No.

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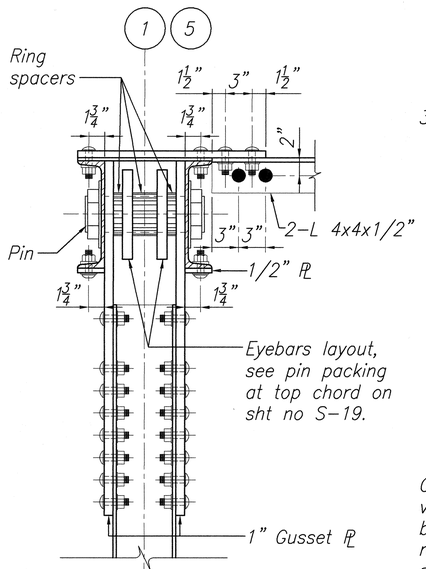
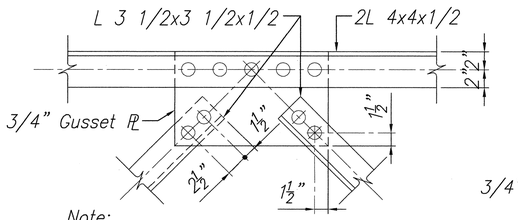
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	28	31



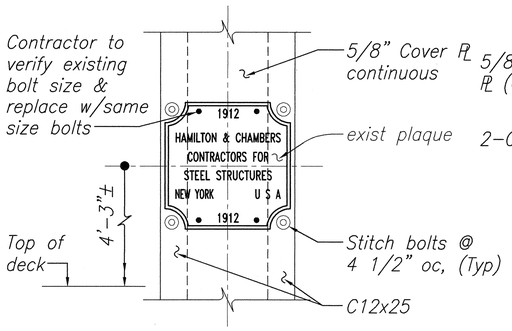
SECTION A
Scale: 1 1/2"=1'-0" S-20 | S-20



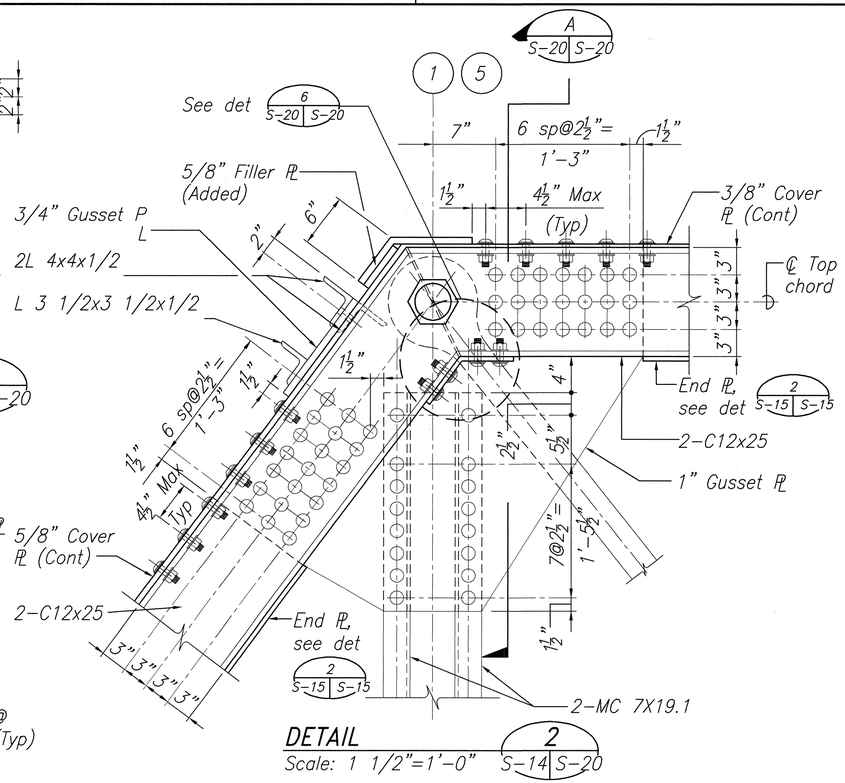
Note:

Bottom endpost portal frame intermediate connection similar to top.

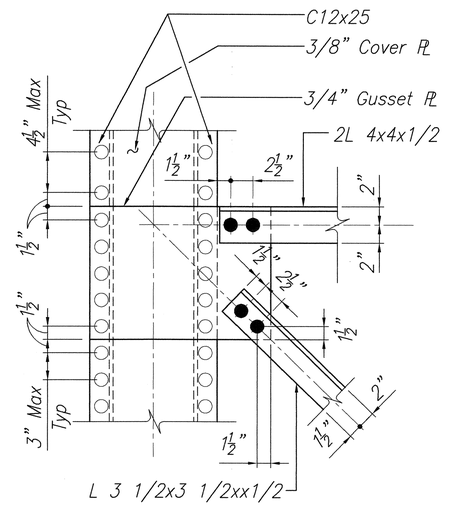
TOP END POST PORTAL FRAME INTERMEDIATE CONNECTION 4
Scale: 1 1/2"=1'-0" S-20 | S-20



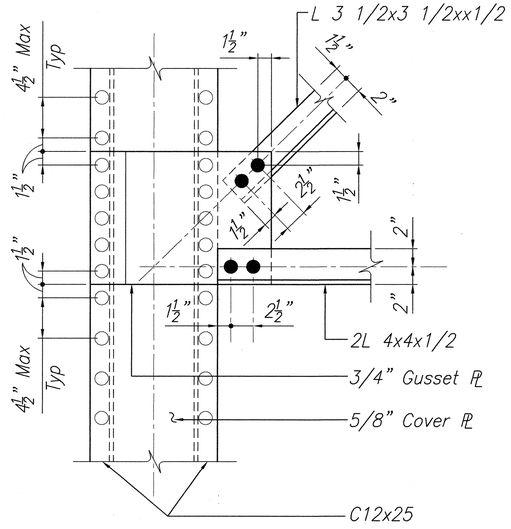
PLAQUE DETAIL 5
Scale: 1 1/2"=1'-0" S-3 | S-20



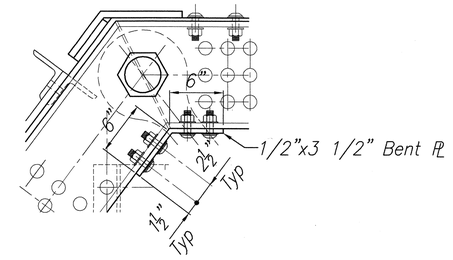
DETAIL 2
Scale: 1 1/2"=1'-0" S-14 | S-20



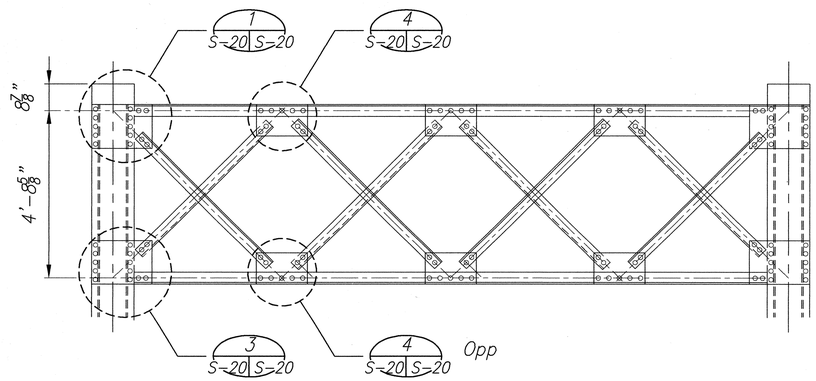
TOP END POST PORTAL FRAME 1
Scale: 1 1/2"=1'-0" S-20 | S-20



BOTTOM END POST PORTAL FRAME 3
Scale: 1 1/2"=1'-0" S-20 | S-20



DETAIL 6
Scale: 1 1/2"=1'-0" S-20 | S-20



END POST PORTAL FRAME ELEVATION B
Scale: 1/2"=1'-0" S-14 | S-20

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY GH	
	TRACED BY	
NOTEBOOK	DESIGNED BY	
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MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

Myron Okubo

DATE	REVISION

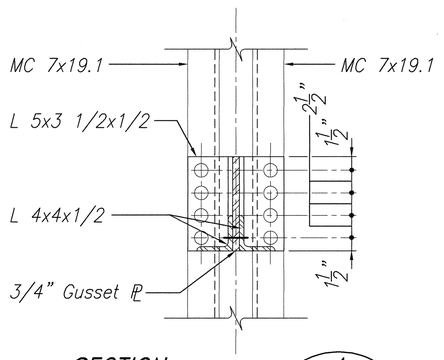
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PRATT TRUSS TOP CHORD DETAILS

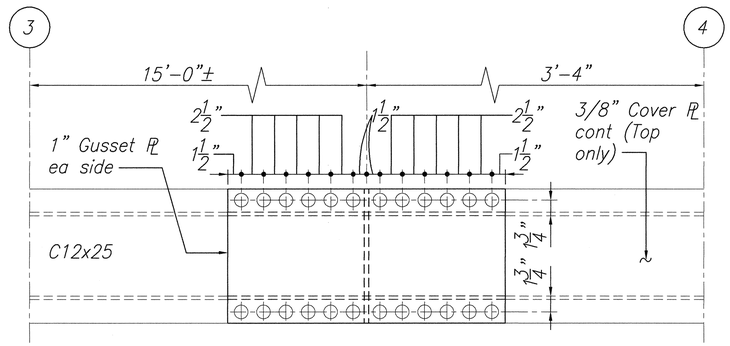
KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

SHEET No. S-20 OF 23 SHEETS

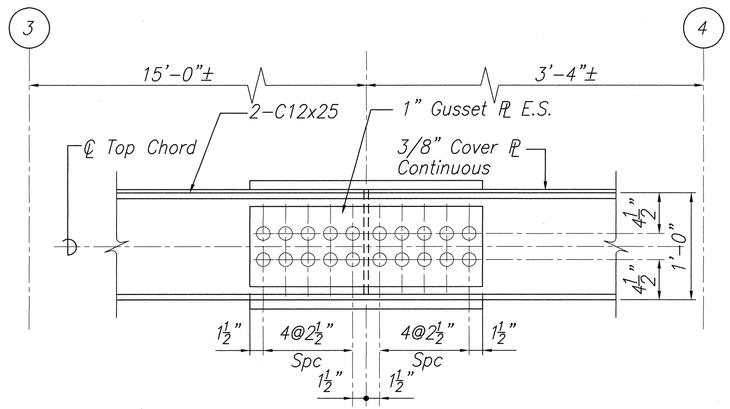
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	29	31



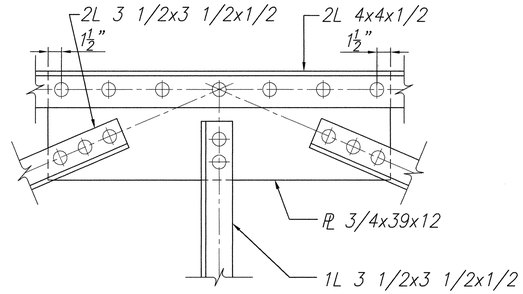
SECTION A
Scale: 1 1/2"=1'-0" S-21 | S-21



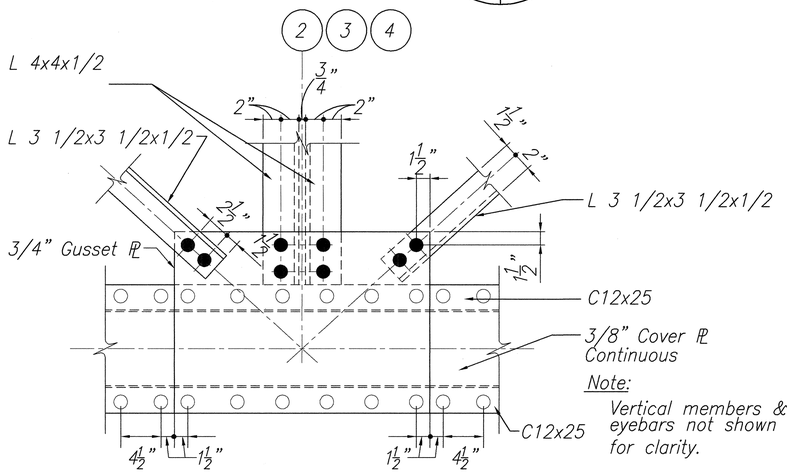
PLAN – TOP CHORD SPLICE DETAIL 7
Scale: 1 1/2"=1'-0" S-21 | S-21



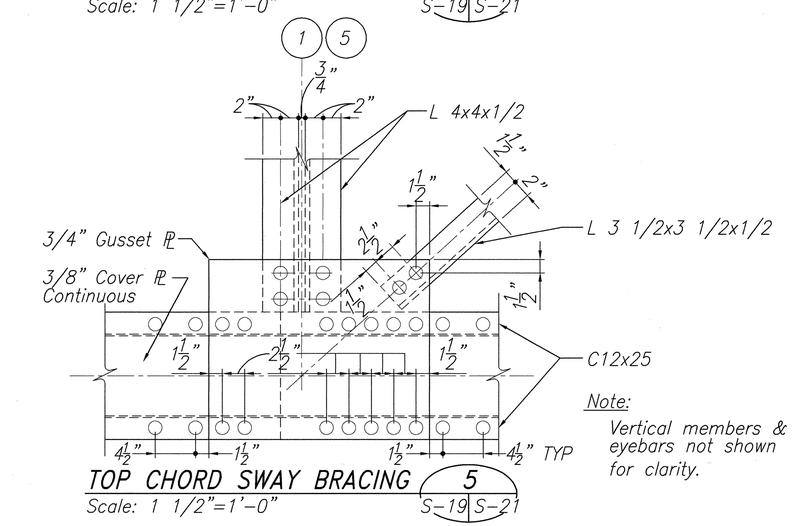
ELEVATION – TOP CHORD SPLICE DETAIL 6
Scale: 1 1/2"=1'-0" S-21 | S-21



DETAIL – PORTAL FRAME 3
Scale: 1 1/2"=1'-0" S-14 | S-21

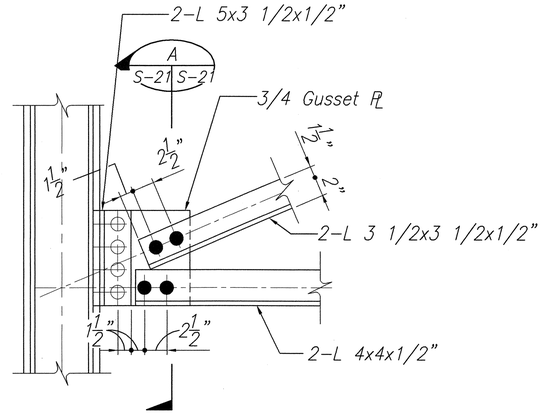


TOP CHORD SWAY BRACING 4
Scale: 1 1/2"=1'-0" S-19 | S-21

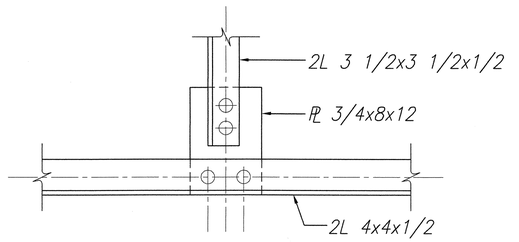


TOP CHORD SWAY BRACING 5
Scale: 1 1/2"=1'-0" S-19 | S-21

Note:
Vertical members & eyebars not shown for clarity.



DETAIL – PORTAL FRAME 1
Scale: 1 1/2"=1'-0" S-14 | S-21



DETAIL – PORTAL FRAME 2
Scale: 1 1/2"=1'-0" S-14 | S-21

Note:
Vertical members & eyebars not shown for clarity.

MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

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Myron Okubo

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PORTAL FRAME DETAILS & TOP CHORD SPLICE DETAILS

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

SHEET No. S-21 OF 23 SHEETS

ORIGINAL PLAN
SURVEY PLOTTED BY
DRAWN BY GH
NOTEBOOK
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY MGO
DATE
skuhbs21.dgn
No.

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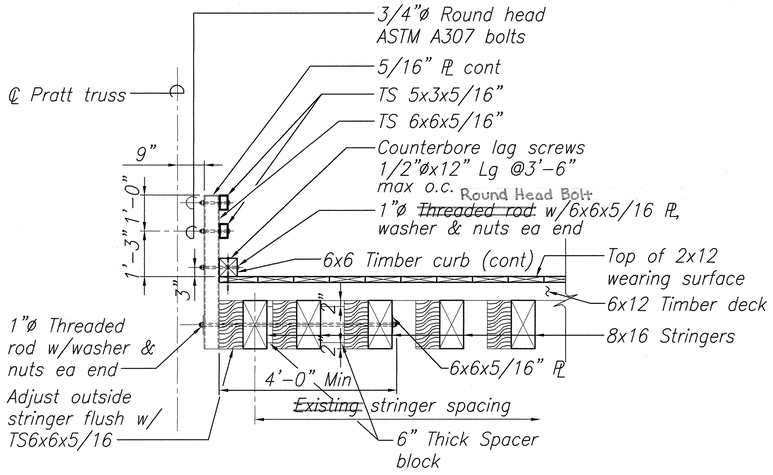
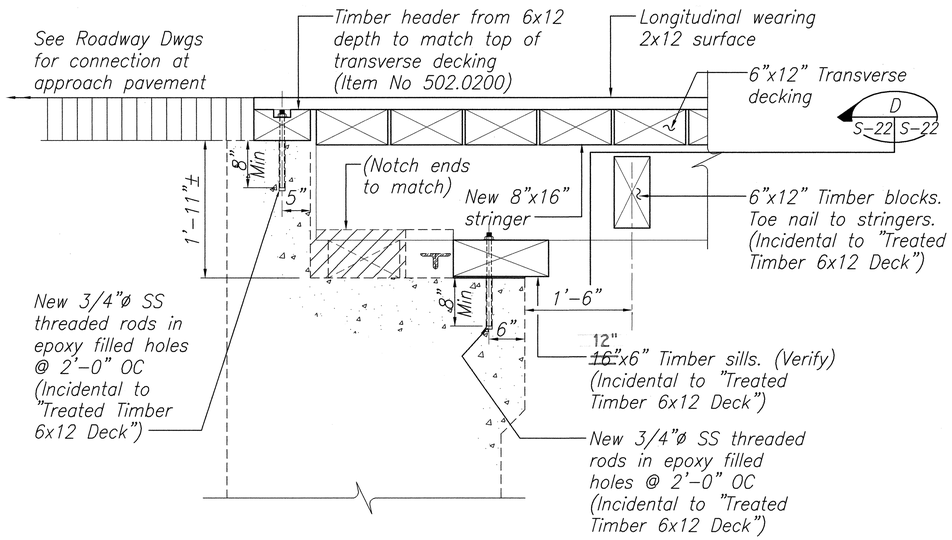
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	30	31



TYPICAL RAILING SECTION (A)

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

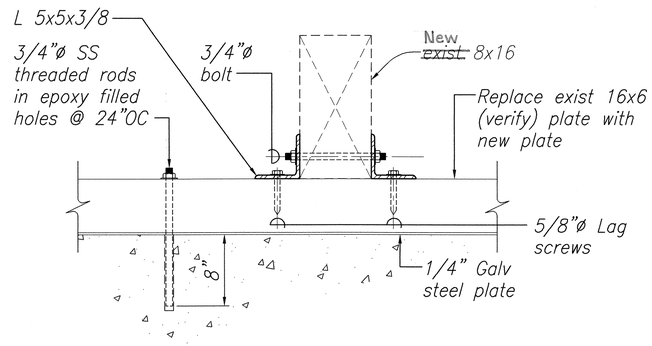


SECTION (C)

Scale: 1"=1'-0"

S-14 S-22

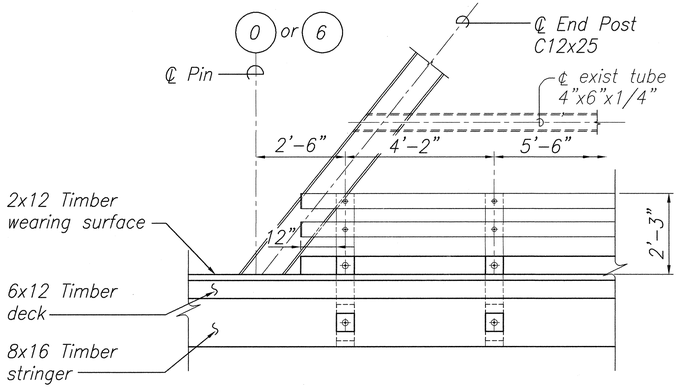
(Similar at Haena Abutment)



SECTION (D)

Scale: 1 1/2"=1'-0"

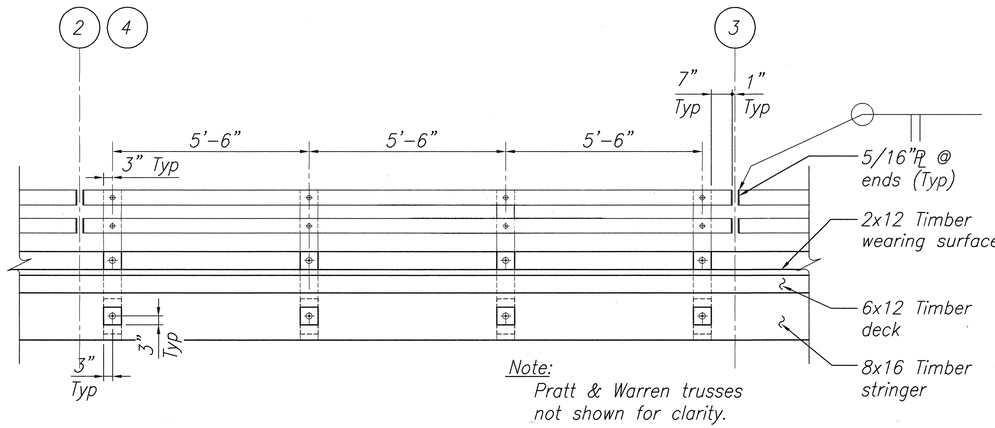
S-22 S-22



TYPICAL SECTION @ ENDPOST (B)

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

S-22 S-22



Note:
Pratt & Warren trusses not shown for clarity.

TYPICAL RAILING ELEVATION

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

Note:

1. Structural tubing for railing shall be ASTM A500, Grade B, hot-dipped galvanized. Other steel members for railing shall be ASTM A36, hot-dipped galvanized.
2. Railing, including bolts, spacer blocks, plates, tubes, and other items required to complete the work, shall be paid under "Item No. 507.1000 – Galvanized Steel Railing with Posts".

ORIGINAL PLANS BY: SURVEY PLOTTED BY: DRAWN BY: TRACED BY: DESIGNED BY: NOTEBOOK: QUANTITIES BY: CHECKED BY: MKO DATE

skuh0522.dgn

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MYRON G. OKUBO LICENSED PROFESSIONAL ENGINEER No. 4320-S HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Myron Okubo

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

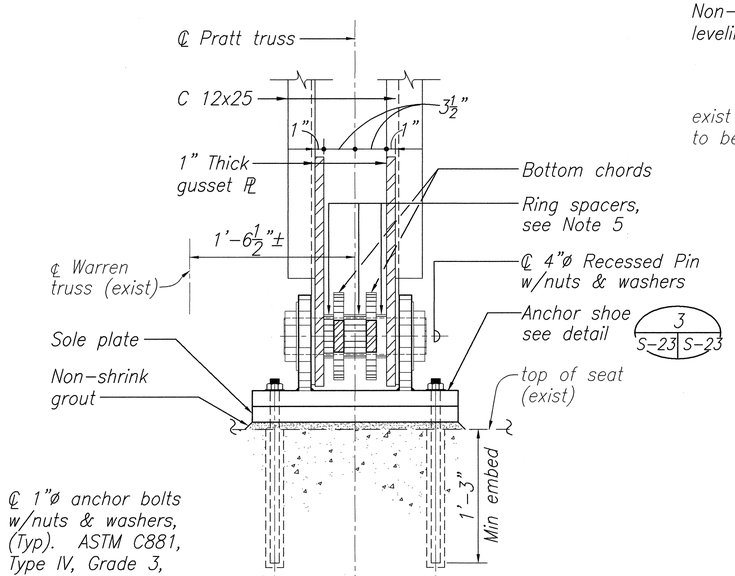
BRIDGE RAILING

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

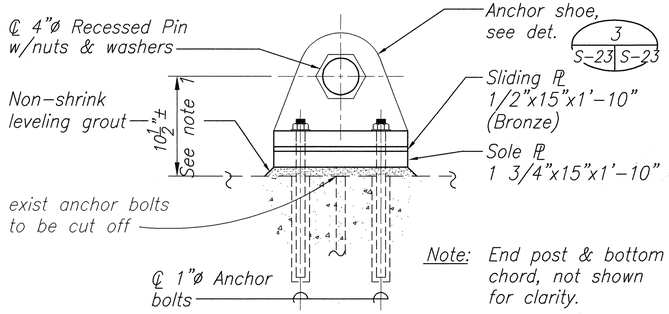
SHEET No. S-22 OF 23 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	FLH-0560(11)	2000	31	31

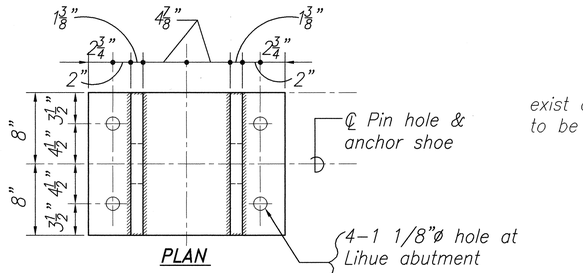


SECTION A
Scale: 1 1/2"=1'-0" S-23 S-23

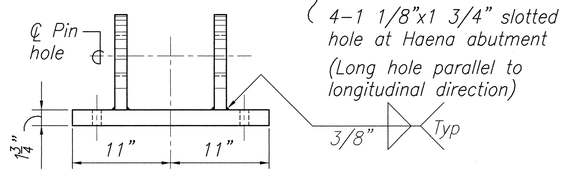


Note: End post & bottom chord, not shown for clarity.

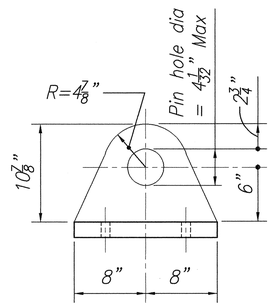
EXPANSION BEARING ASSEMBLY
DETAIL @ HAENA ABUTMENT 2 S-23 S-23
Scale: 1 1/2"=1'-0"



PLAN

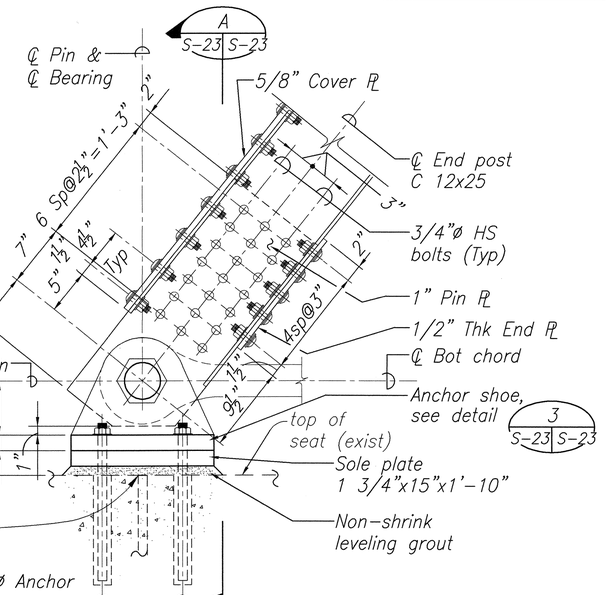


ELEVATION



SIDE VIEW

ANCHOR SHOE DETAILS 3 S-23 S-23
Scale: 1 1/2"=1'-0"



FIXED BEARING ASSEMBLY
DETAIL @ LIHUE ABUTMENT 1 S-14 S-23
Scale: 1 1/2"=1'-0"

Notes:

1. Contractor shall verify the dimension in the field and submit discrepancies to the Engineer for approval prior to installing the bearing seats. The final top of deck and top of roadway shall be flush.
2. Anchor shoes and sole plates shall be ASTM A709, grade 50 hot-dip galvanized.
3. Anchor bolts shall be ASTM A36, hot-dip galvanized.
4. Fill gaps with ring spacers. For ring spacer details, see Sheet Nos. S-15 & S-17.
5. For pin packing detail, see Sheet no. S-17.

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Myron Okubo

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PRATT TRUSS BEARING DETAILS

KUHIO HIGHWAY,
REMOVE/REPAIR/REPLACE METAL MEMBERS,
HANALEI BRIDGE
Federal Aid Project No. FLH-0560(11)
Scale: As Noted Date: Jan. 2000

SHEET No. S-23 OF 23 SHEETS

ORIGINAL PLAN
SURVEY PLOTTED BY ____ DATE
DRAWN BY JH
TRACED BY
DESIGNED BY
QUANTITIES BY
CHECKED BY MO
NOTEBOOK
SKUH0523.dgn
No. ____

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