


| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 6         | 30           |

## INDEX TO BRIDGE DRAWINGS

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|                  |                                    |
|------------------|------------------------------------|
| ORIGINAL<br>PLAN | SURVEY PLOTTED BY _____ DATE _____ |
| NOTE BOOK        | DRAWN BY _____                     |
|                  | TRACED BY _____                    |
|                  | DESIGNED BY _____                  |
|                  | QUANTITIES BY _____                |
|                  | CHECKED BY _____                   |

LEGEND FOR  
AS-BUILT POSTINGS

|   |                                     |
|---|-------------------------------------|
|  | Squiggly line for as-built deletion |
| <del>100.00</del>   | Double line for as-built deletion   |
| Roadway   | Text for as-built posting           |

|         |          |
|---------|----------|
|         |          |
| 08/9/11 | As Built |
| DATE    | REVISION |

A circular professional seal for Calvin T. Miyahara. The outer ring contains the text "CALVIN T. MIYAHARA" at the top and "HAWAII, U.S.A." at the bottom, separated by two stars. The center of the seal contains the text "LICENSED PROFESSIONAL ENGINEER" and "NO. 8133-S".

THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION.

Cabrin May APRIL 30, 2010  
KSF, INC. LIC. EXP. DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

## INDEX TO BRIDGE DRAWINGS

KAAHUMANU AVENUE  
Waiale Road Overpass Repairs  
Fed. Aid Proj. No. ARR-032-1(9)

Scale: None Date: Sept. 2009

SHEET No. *50.1* OF *16* SHEETS

AS-BUILT

BRIDGE GENERAL NOTES

|                     |       |              |             |             |              |
|---------------------|-------|--------------|-------------|-------------|--------------|
| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO.   | TOTAL SHEETS |
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | C.O. ADD. 7 | 30           |

1. General Specifications: Hawaii Department of Transportation, Hawaii Standard Specifications for Road and Bridge Construction, 2005, together with Special Provisions prepared for this contract.

2. Design Specifications:  
(A) AASHTO 2007 LRFD Bridge Design Specifications (4th Edition) and its subsequent interim specifications with interim supplements and modifications by the HDOT Highways Division.  
(B) State of Hawaii, Department of Transportation, Highways Division Design Criteria for Bridges and Structures dated April 15, 2008.

3. Loads:  
(A) Dead Load: An allowance of 25 PSF for future wearing surface of asphalt concrete has been provided for in the design.  
(B) Live Load: AASHTO HL-93 Truck Loading  
(C) Utility Load: An allowance of 150 PLF on each side of bridge for Utility Loads has been provided for in the design.

4. Materials:

- 1 (A) All structural steel shall be ASTM A 36 hot dipped galvanized after fabrication.
- (B) All bolts, washers, and nuts shall be ASTM A 325 hot dip galvanized after fabrication, unless otherwise specified. Washers shall be used with all bolts.
- 2 (C) All bolts, nuts and washers shall be ASTM A325 galvanized unless otherwise specified.
- (D) All threaded rods, washers and nuts shall be ASTM A 449 hot dip galvanized after fabrication, unless otherwise specified. Washers shall be used with threaded rods.
- (E) Installation of all epoxied dowels shall follow the recommendations of the epoxy manufacturer.
- (F) All welding shall conform to the latest ANSI / AASHTO / AWS D1.5 Bridge Welding Code. Unless noted otherwise, all welding shall be shielded arc welding done with E70 electrodes.
- (G) All fillet welds shall be a minimum of 1/4" unless otherwise noted.
- (H) All concrete shall have a 28 day compressive strength of 4000 psi and a maximum W/C Ratio of 0.45.
- (J) All reinforcing steel shall be ASTM A 615 Grade 60 unless otherwise noted.
- (K) Reinforcing steel shall be ASTM A706 where welded connections are required.

5. Reinforcement:

- (A) The cover measured from the surface of the concrete to the face of any reinforcing bars shall be 2", except as otherwise shown.
- (B) Reinforcing bar shall be detailed in accordance with the latest edition of the AASHTO LRFD Detailing Manual unless otherwise noted.
- (C) Minimum clear spacing between parallel bars shall be 1 1/2 times the diameter of bars (for non bundled bars). In no case shall be clear distance between the bars be less than 1 1/2 times the maximum size of the coarse aggregate or 1 1/2".

5. Reinforcement (Cont.):

- (D) All dimensions relating to reinforcing bars are to centers of bars unless otherwise noted.
- (E) Reinforcing bars shall be securely tied at all intersections and lap splices except where the spacing of intersections is less than one foot in each direction, in which case alternate intersections shall be tied.

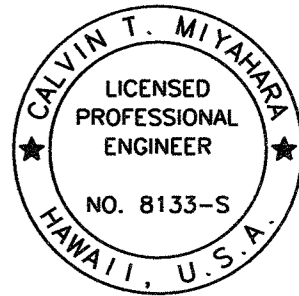
6. Construction Notes:

- (A) The Contractor shall verify all dimensions and site conditions and shall report any discrepancies in writing to the Engineer before commencing work or ordering materials.
- (B) The Contractor shall verify all site conditions and not rely upon these plans for existing bridge elevations and azimuths, roads, roadway gutters, curbs and sidewalks, etc.. Conditions may differ from those shown.
- (C) The Contractor shall be solely responsible for the protection of adjacent properties, utilities and existing and new structures from damage due to construction. Repairing any damage shall be at the Contractor's own expense, to the satisfaction of the Engineer.
- (D) The Contractor shall verify the location of all utility lines and notify the respective owners before commencing with excavation, and any temporary piling or sheeting.
- (E) The Contractor shall submit working drawings and calculations for the proposed bracing/shoring details needed. The load carrying capacity of the bridge while it is shored shall be equal to or greater than the existing bridge capacity. The drawings and calculations shall be stamped by a licensed Structural Engineer in the State of Hawaii. The above work, including working drawings and calculations, shall be incidental to the various contract items. The drawings and calculations shall be found acceptable by the Engineer before any construction work is to proceed.

7. General:

- (A) All items noted incidental will not be paid for separately.
- (B) Standard Plans refer to all structures in general, except for modifications as may be required for special conditions. For such modifications refer to the corresponding detailed drawings.
- (C) Plans of the existing bridge are available for review from the Highways Design Branch located at the State Department of Transportation, Highways Division Kakuhewea Building, Room 609, 601 Kamokila Boulevard, Kapolei, HI 96707 (phone number 692-7586).

|                   |      |
|-------------------|------|
| DATE              | ____ |
| SURVEY PLOTTED BY | ____ |
| DESIGNED BY       | ____ |
| TRACED BY         | ____ |
| NOTE BOOK         | ____ |
| QUANTITIES BY     | ____ |
| CHECKED BY        | ____ |



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*Calvin T. Miyahara*  
KSF, INC. APRIL 30, 2010  
LIC. EXP. DATE

|          |                |
|----------|----------------|
| 08/16/10 | 2 Revised Note |
| 10/09/09 | 1 Revised Note |
| DATE     | REVISION       |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

BRIDGE GENERAL NOTES

KAAHUMANU AVENUE  
Waiale Road Overpass Repairs  
Fed. Aid Proj. No. ARR-032-1(9)

Scale: None Date: Sept. 2009

SHEET No. 502 OF 16 SHEETS

C.O. ADD. 7

SYMBOLS AND ABBREVIATIONS

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 8         | 30           |

|                |                                  |             |   |                 |                                |           |   |            |  |
|----------------|----------------------------------|-------------|---|-----------------|--------------------------------|-----------|---|------------|--|
| ¢              | And                              | Cont.       | Continuous  | Fin. Gr.        | Finish Grade                   | M         | Modified                                | Q          | Flow Rate                              |
| @              | At                               | CF          | Cubic Feet  | (F)             | Fixed                          | MH        | Manhole                                 | Tan.       | Tangent                                |
| *              | Diameter                         | CY, Cu. Yd. | Cubic Yard  | FB              | Flat Bar                       | Max.      | Maximum                                 | Temp.      | Temporary                              |
| ≥              | Greater Than or Equal to         |             |   | Ftg.            | Footing                        | Mech.     | Mechanical                              | Thk.       | Thick                                  |
| ≤              | Less Than or Equal to            | Det.        | Detail  | FA              | Force Account                  | Min.      | Minimum                                 | T          | Top                                    |
| #              | Number                           | Dia.        | Diameter  |                 |                                | Misc.     | Miscellaneous                           | T&B        | Top and Bottom                         |
|                |                                  | Dim.        | Dimension   | Ga.             | Gage, Gauge                    | MPH       | Miles Per Hour                          | TOD        | Top of Deck                            |
| Abut.          | Abutment                         | Dist.       | Distance  | Galv.           | Galvanized                     |           |   | Reinf.     | Reinforced, Reinforcing, Reinforcement |
| Abbr.          | Abbreviation                     | DO          | Ditto   | GFRP            | Glass Fiber Reinforced Polymer | NF        | Near Face                               | Req'd.     | Required                               |
| Add.           | Additional, Added                | Dwls.       | Dowels  |                 |                                | N         | North                                   | Ret.       | Retaining                              |
| Alt.           | Alternate                        | Dn.         | Down  | Gr.             | Grade                          | NIC       | Not in Contract                         | ROW        | Right of Way                           |
| AB             | Anchor Bolt                      | Dbl.        | Double  | Grd.            | Ground                         | No.       | Number                                  | Rdwy.      | Roadway                                |
| AC             | Asphaltic Concrete               | DI          | Drain Inlet, Ductile Iron                         | GRP             | Grouted Rubble Pavement        | NTS       | Not to Scale                            |            |  |
| Approx.        | Approximate                      | Dwg., Dwgs. | Drawing, Drawings                                 |                 |                                |           |   | Sch.       | Schedule                               |
| Az.            | Azimuth                          | DS          | Drilled Shaft                                     | Ht.             | Height                         | O/S       | Offset                                  | Sect.      | Section                                |
|                |                                  |             |   | (H)             | Hinge                          | oc        | On Center                               | SDMH       | Sewer Drain Manhole                    |
| Bk.            | Back                             | EA, Ea, ea. | Each  | Horiz., H       | Horizontal                     | Opn'g     | Opening                                 | Sht.       | Sheet                                  |
| Bal.           | Balance                          | EF          | Each Face   | HS              | High strength                  | OB        | Outbound                                | SRA        | Shrinkage Reducing Admixture           |
| Ⓟ              | Baseline                         | EFH         | Each Face Horizontal                              | HECO            | Hawaiian Electric Company      | OD        | Outside Diameter                        |            |  |
| Bm.            | Beam                             | EFV         | Each Face Vertical                                |                 |                                |           |   | SI.        | Slope                                  |
| Brg., Brgs.    | Bearing, Bearings                | EW          | Each Way  | IB              | Inbound                        | P(e)      | Effective or Working Prestressing Force | S          | South                                  |
| BVC            | Beginning of Vertical Curve      | EP          | Edge of Pavement                                  | In.             | Inch                           | PP        | Precast Plank                           | Spc., Spg. | Spaces, Spacing                        |
| Bet.           | Between                          | EPS         | Expanded Polystyrene                              | ID              | Inside Diameter                | Perf.     | Perforated                              | Sprd.      | Spread                                 |
| BF             | Both Faces, Back Face            | E           | East  | IF              | Inside Face                    | PL, ℙ     | Plate                                   | Spec.      | Specification                          |
| BW             | Both Ways                        | Elec.       | Electrical  | Int.            | Interior                       | PCC       | Portland Cement Concrete                | SF         | Square Feet                            |
| BFE            | Bottom of Footing Elevation      | EMH         | Electrical Manhole                                | Inv.            | Invert                         | PC        | Point of Curvature                      | SY         | Square Yard                            |
| Bot., Bott., B | Bottom                           | El., Elev.  | Elevation   |                 |                                | PCF       | Pounds per Cubic Foot                   | SS         | Stainless Steel                        |
| Br.            | Bridge                           | Emb.        | Embankment  | Jt.             | Joint                          | PSF       | Pounds per Square Foot                  | Std.       | Standard                               |
| Blt.           | Bolt                             | Embed.      | Embedded, Embedment                               |                 |                                | PSI       | Pounds per Square Inch                  | Sta.       | Station                                |
|                |                                  | EVC         | End of Vertical Curve                             | K               | Kips                           | PLF       | Pounds per Linear Foot                  | Stagg.     | Staggered                              |
| Cant.          | Cantilever                       | Eq.         | Equal   | KF              | Kip Foot                       | PI        | Point of Intersection of Tangents       | Stirr.     | Stirrup                                |
| CIP            | Cast-in-Place                    | Est.        | Estimated   | KSF             | Kips Per Square Foot           | PIVC      | Point of Intersection of Vertical Curve | Str.       | Straight                               |
| Ⓒ              | Centerline                       | Exc.        | Excavation  | KSI             | Kips Per Square Inch           |           |   | Struct.    | Structure                              |
| CG             | Center of Gravity                | Excl.       | Excluding   | KLF             | Kips Per Linear Foot           | PT        | Point of Tangency, Post Tensioned       | SE         | Super Elevation                        |
| cgs            | Center to Gravity of Strands     | Exist., Ex. | Existing  |                 |                                |           |   | Symm.      | Symmetrical                            |
| cc             | Center to Center                 | Exp., (E)   | Expansion   | L               | Length                         |           |   |            |  |
| Cl.            | Class                            | EJ          | Expansion Joint                                   | lb., lbs., LBS. | Pound, Pounds                  |           |   |            |  |
| Clr.           | Clearance                        | Ext.        | Exterior  | Ltg. Std.       | Lighting Standard              | Pt., Pts. | Point, Points                           |            |  |
| Col.           | Column                           |             |   | LF              | Linear Feet/Foot               | PRC       | Point of Reverse Curvature              |            |  |
| Conc.          | Concrete                         | FF          | Far Face, Front Face                              | Lin. Ft.        | Linear Feet/Foot               | PVC       | Polyvinyl Chloride                      |            |  |
| Conn.          | Connection                       | F'c         | Specified Strength of Concrete                    | LS              | Lump Sum                       | Prestr.   | Prestressed                             |            |  |
| Const.         | Construction                     | F'ci        | Strength of Concrete at Time of Initial Prestress | Longit.         | Longitudinal                   | P/S       | Prestressed Strands                     |            |  |
| CJ             | Control Joint                    |             |   |                 |                                | PB        | Pull Box                                |            |  |
| Const. Jt.     | Construction Joint               | Ft.         | Feet, Foot  |                 |                                |           |   |            |  |
| CLSM           | Controlled Low Strength Material | Fig.        | Figure  |                 |                                |           |   |            |  |

|                   |       |
|-------------------|-------|
| DATE              | _____ |
| SURVEY PLOTTED BY | _____ |
| DESIGNED BY       | _____ |
| TRACED BY         | _____ |
| NOTE BOOK         | _____ |
| QUANTITIES BY     | _____ |
| CHECKED BY        | _____ |
| ORIGINAL PLAN     | _____ |



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*John My*  
KSF, INC. APRIL 30, 2010 LIC. EXP. DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

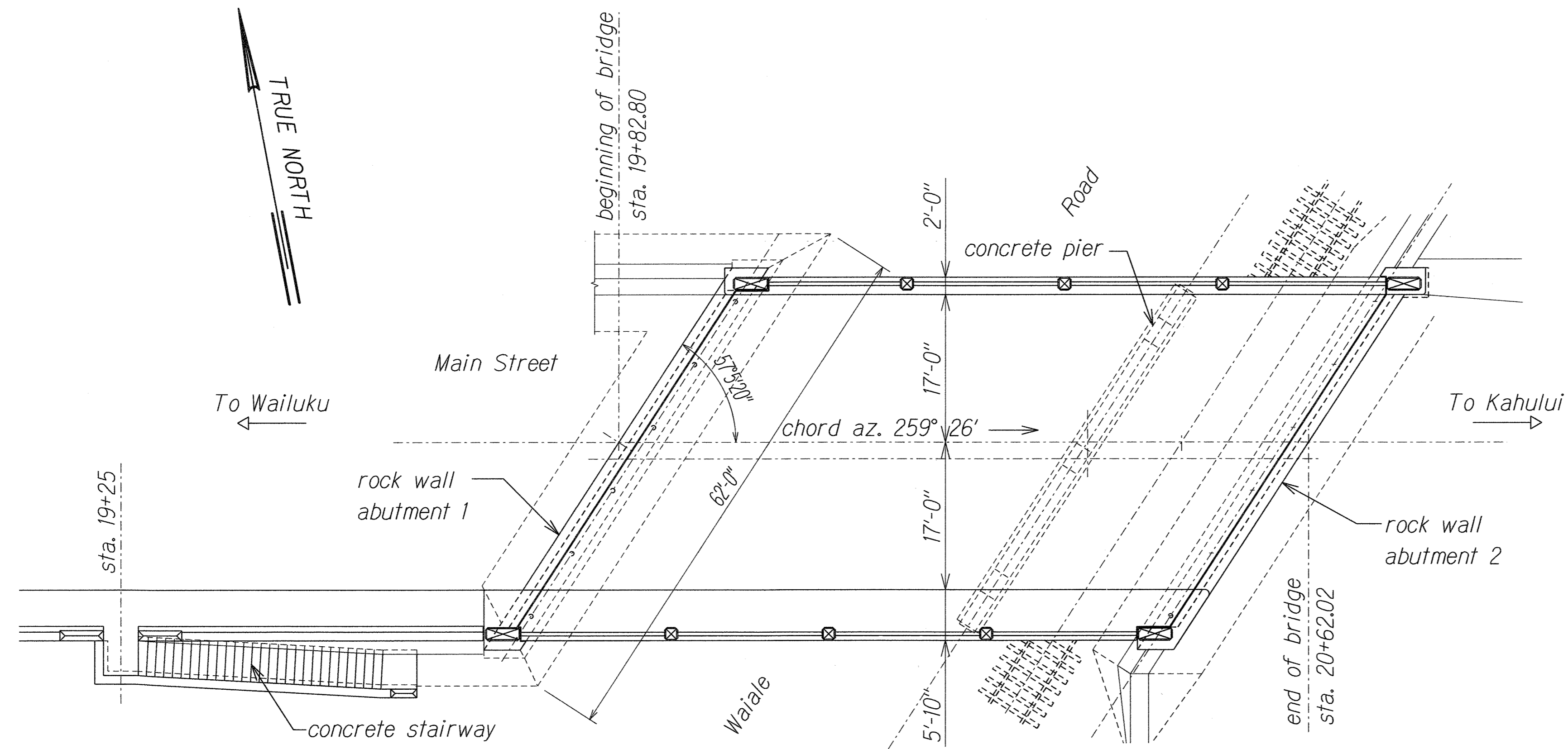
**SYMBOLS AND ABBREVIATIONS**

**KAAHUMANU AVENUE**  
**Waiale Road Overpass Repairs**  
**Fed. Aid Proj. No. ARR-032-1(9)**

Scale: None Date: Sept. 2009

SHEET No. 503 OF 16 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 9         | 30           |

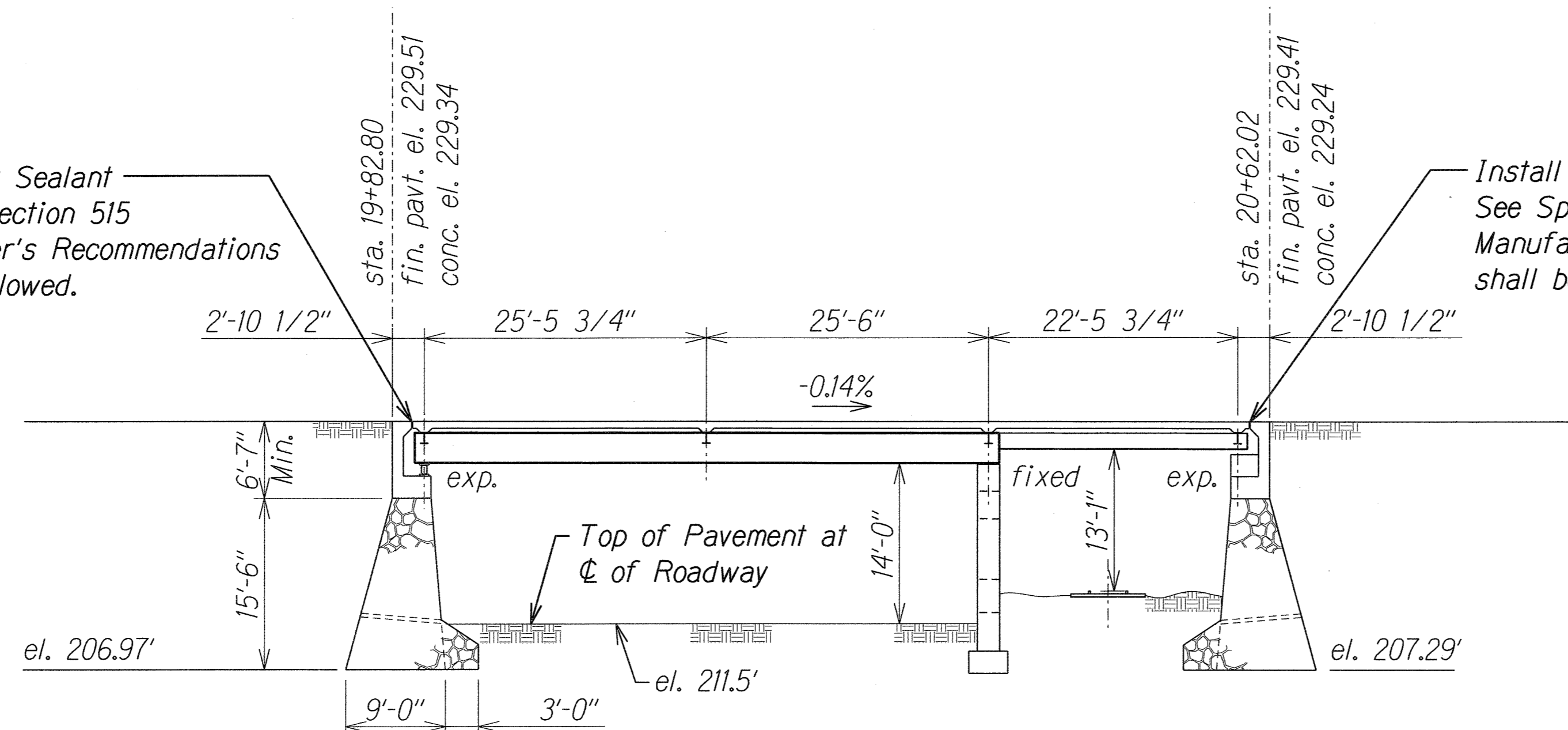


### EXISTING BRIDGE PLAN

Scale: 1" = 10'-0"



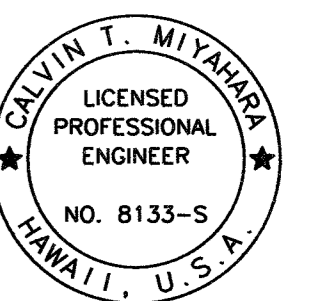
Install Joint Sealant  
See Spec. Section 515  
Manufacturer's Recommendations  
shall be Followed.



Install Joint Sealant  
See Spec. Section 515  
Manufacturer's Recommendations  
shall be Followed.

### SECTION OF EXISTING BRIDGE AT CL OF ROADWAY

Scale: 1" = 10'-0"



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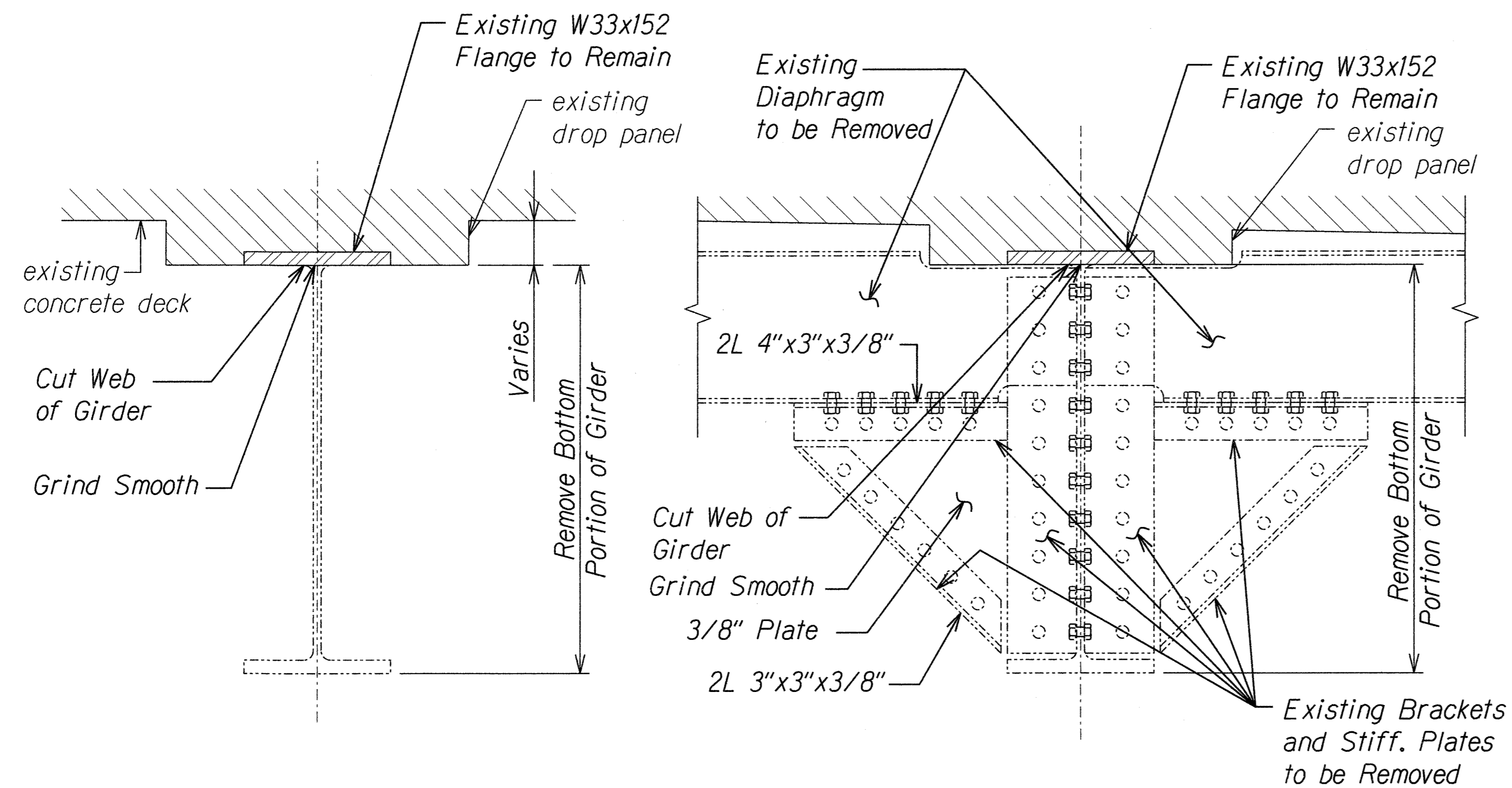
Calvin T. Miyahara  
KSF, INC. APRIL 30, 2010  
LIC. EXP. DATE

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| DESIGNED BY   | DATE |
| DRAWN BY      |      |
| CHECKED BY    |      |
| NOTED BY      |      |
| QUANTITIES BY |      |
| REVISIONS     |      |

|          |                    |
|----------|--------------------|
| 08/31/10 | 2 Revised Drawings |
| DATE     | REVISION           |

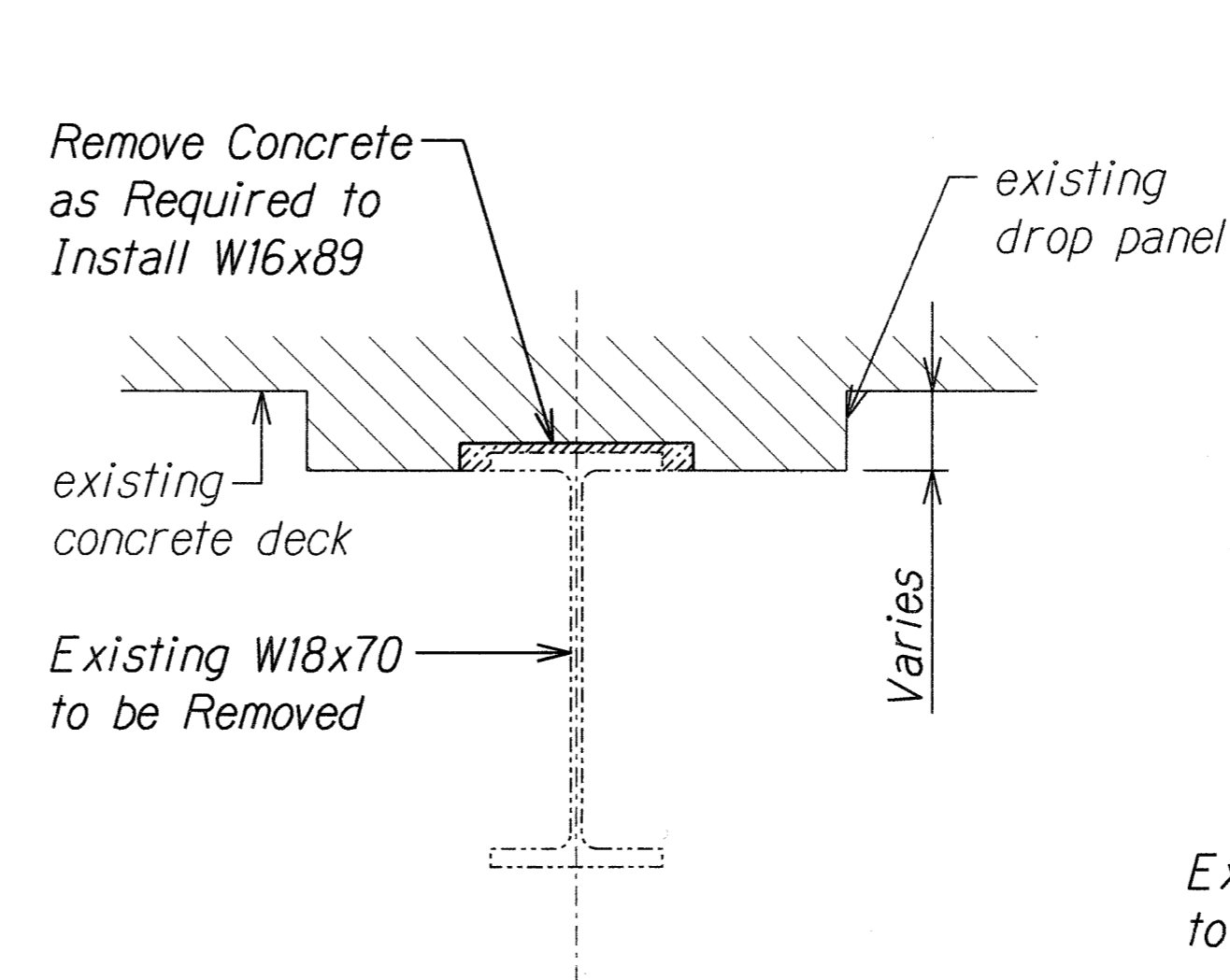
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**EXISTING BRIDGE PLAN  
AND SECTION**  
KAAHUMANU AVENUE  
Waiale Road Overpass Repairs  
Fed. Aid Proj. No. ARR-032-1(9)  
Scale: As Shown Date: Sept. 2009  
SHEET No. *SIJ* OF 16 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO.  | TOTAL SHEETS |
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| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | C.O. 10S-1 | 30           |

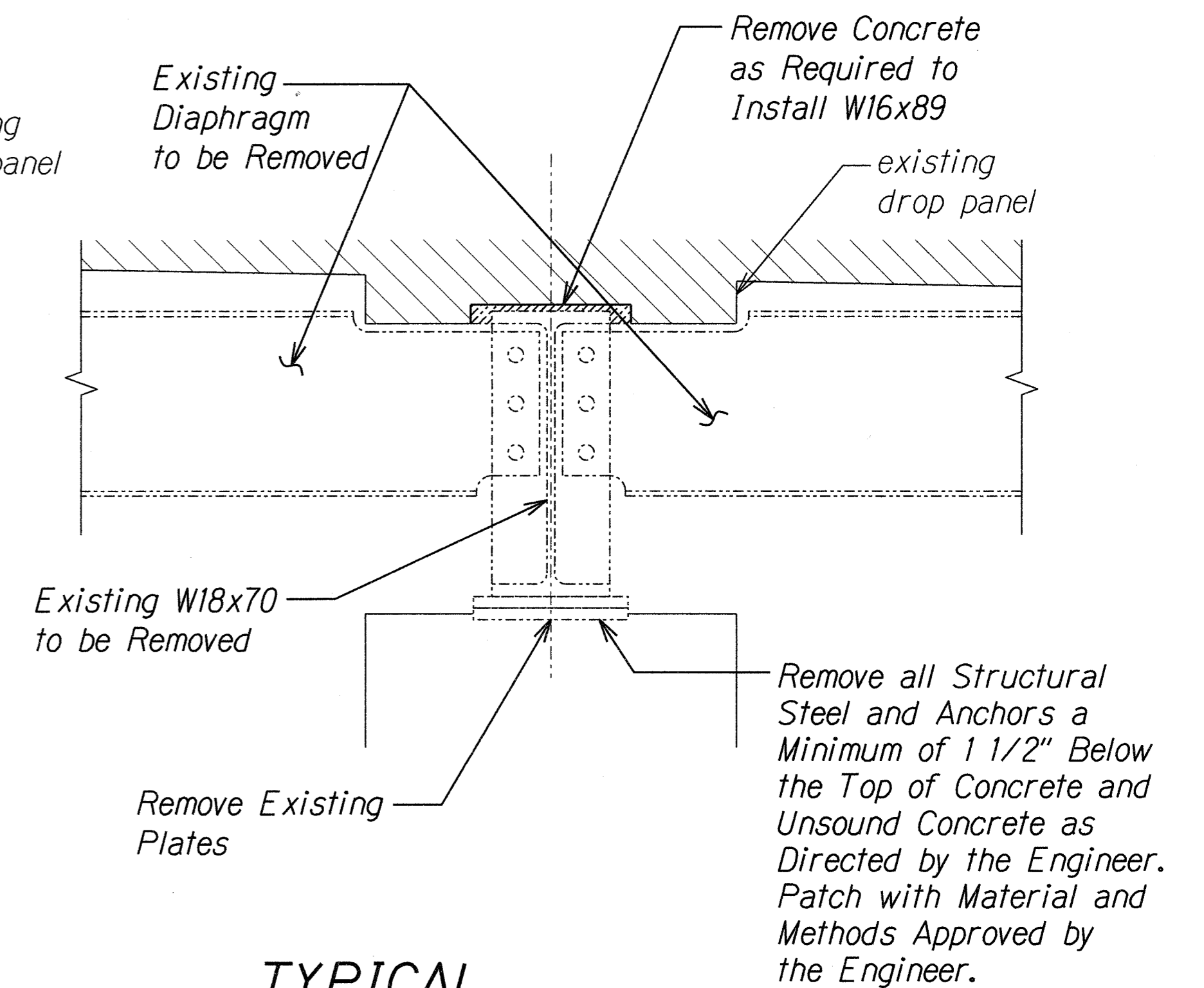


TYPICAL  
DEMOLITION SECTION 1  
Scale: 1 1/2" = 1'-0" SI.2 SI.2A

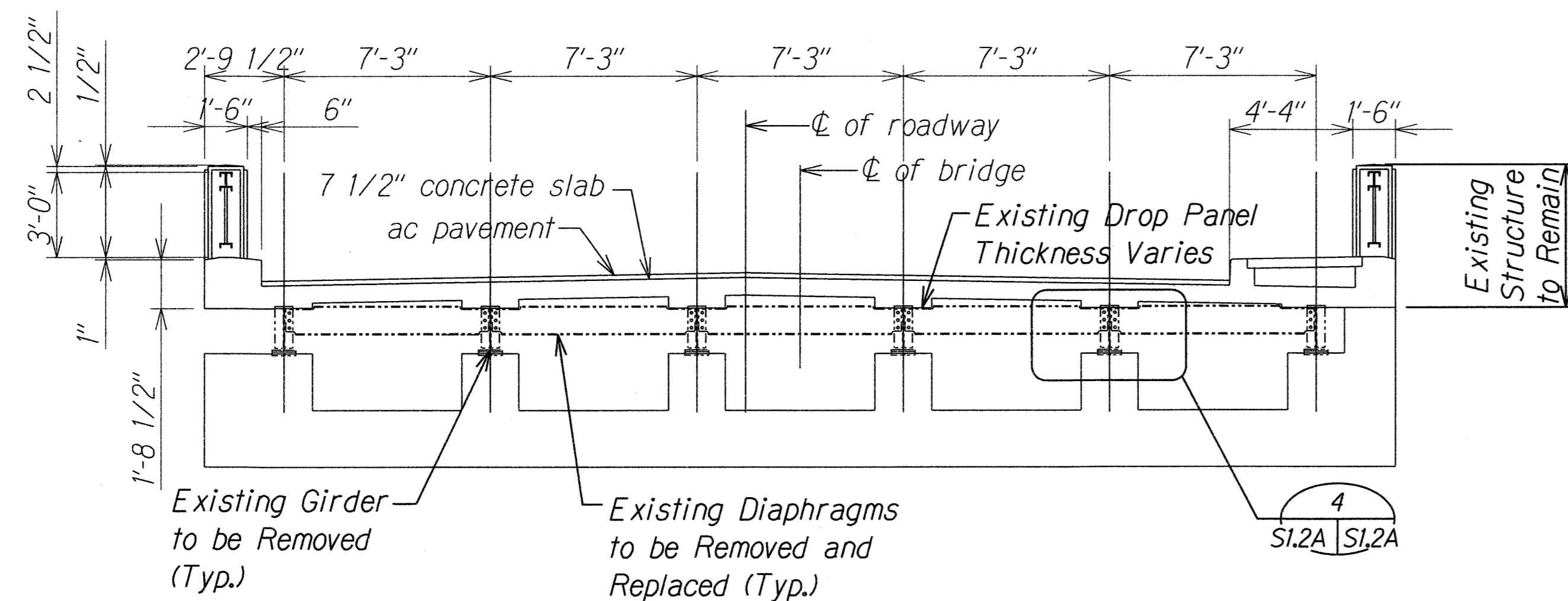
TYPICAL  
DEMOLITION SECTION 2  
Scale: 1 1/2" = 1'-0" SI.2 SI.2A



TYPICAL  
DEMOLITION SECTION 3  
Scale: 1 1/2" = 1'-0" SI.2A SI.2A



TYPICAL  
DEMOLITION SECTION 4  
Scale: 1 1/2" = 1'-0" SI.2A SI.2A

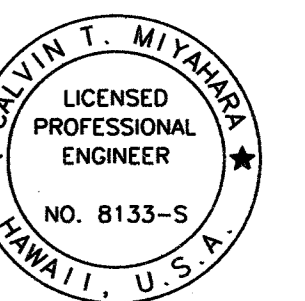


EXISTING ABUTMENT 2 SECTION A  
Scale: 1/4" = 1'-0" SI.2 SI.2A

Notes:

- Unsound concrete above girder shall be removed and patched as directed by the Engineer.
- Fill void above W16x89 girder with 4000 psi non shrink grout.

|               |      |
|---------------|------|
| ORIGINAL PLAN | DATE |
| DESIGNED BY   |      |
| TRACED BY     |      |
| NOTE BOOK     |      |
| QUANTITIES BY |      |
| CHECKED BY    |      |



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KSF, INC. APRIL 30, 2010  
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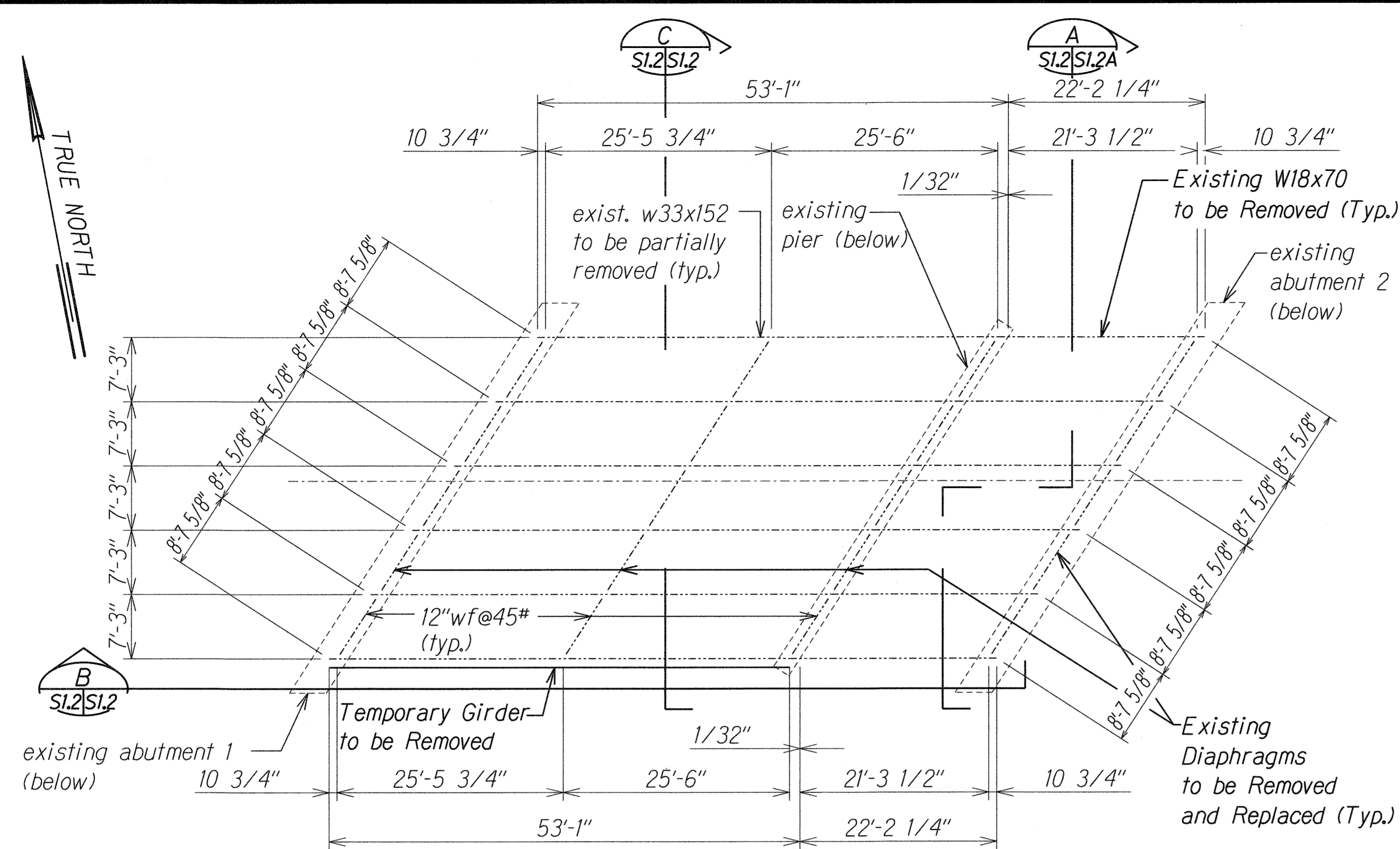
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**EXISTING STEEL FRAMING  
PLAN AND SECTIONS**  
KAAHUMANU AVENUE  
Waiale Road Overpass Repairs  
Fed. Aid Proj. No. ARR-032-1(9)

Scale: As Shown Date: Sept. 2009  
SHEET No. SI.2A OF 16 SHEETS

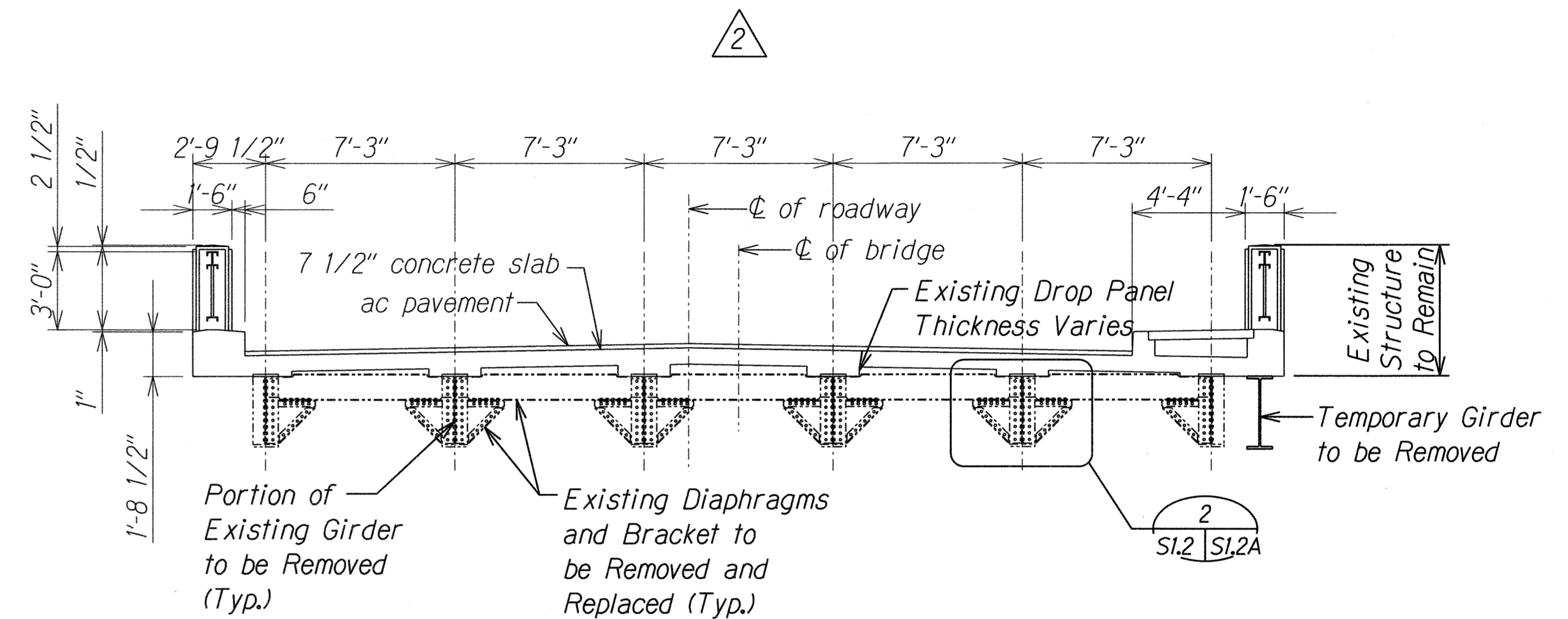
08/31/10 2 New Sheet

DATE REVISION

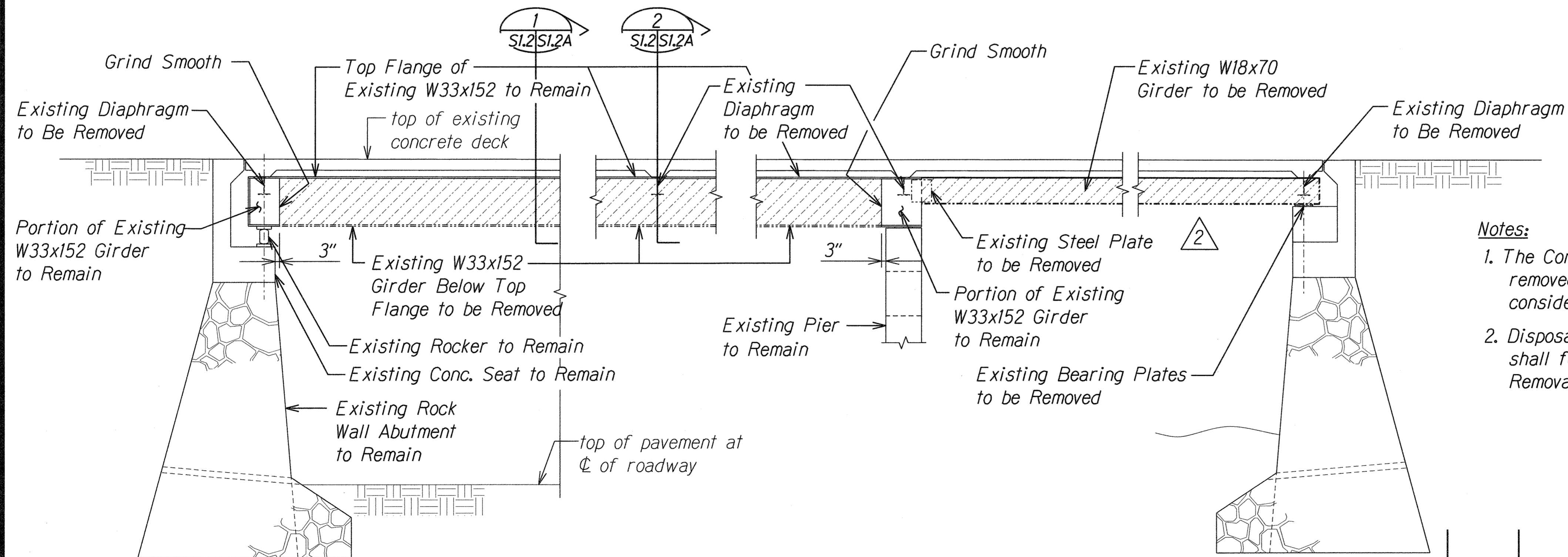
| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | C.O. 10   | 30           |



**EXISTING STEEL FRAMING PLAN**  
Scale: 1" = 10'-0"



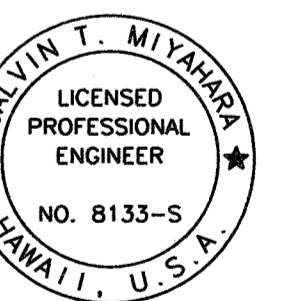
**EXISTING DECK SECTION**  
Scale: 1/4" = 1'-0"



**DEMOLITION SECTION**  
Scale: 1/4" = 1'-0"

**Notes:**

1. The Contractor shall dispose of all material removed from the bridge. This cost shall be considered incidental to the various Contract items.
2. Disposal of materials containing lead based paint shall follow the requirements stated in Section 695 Removal and disposal of lead base paint.



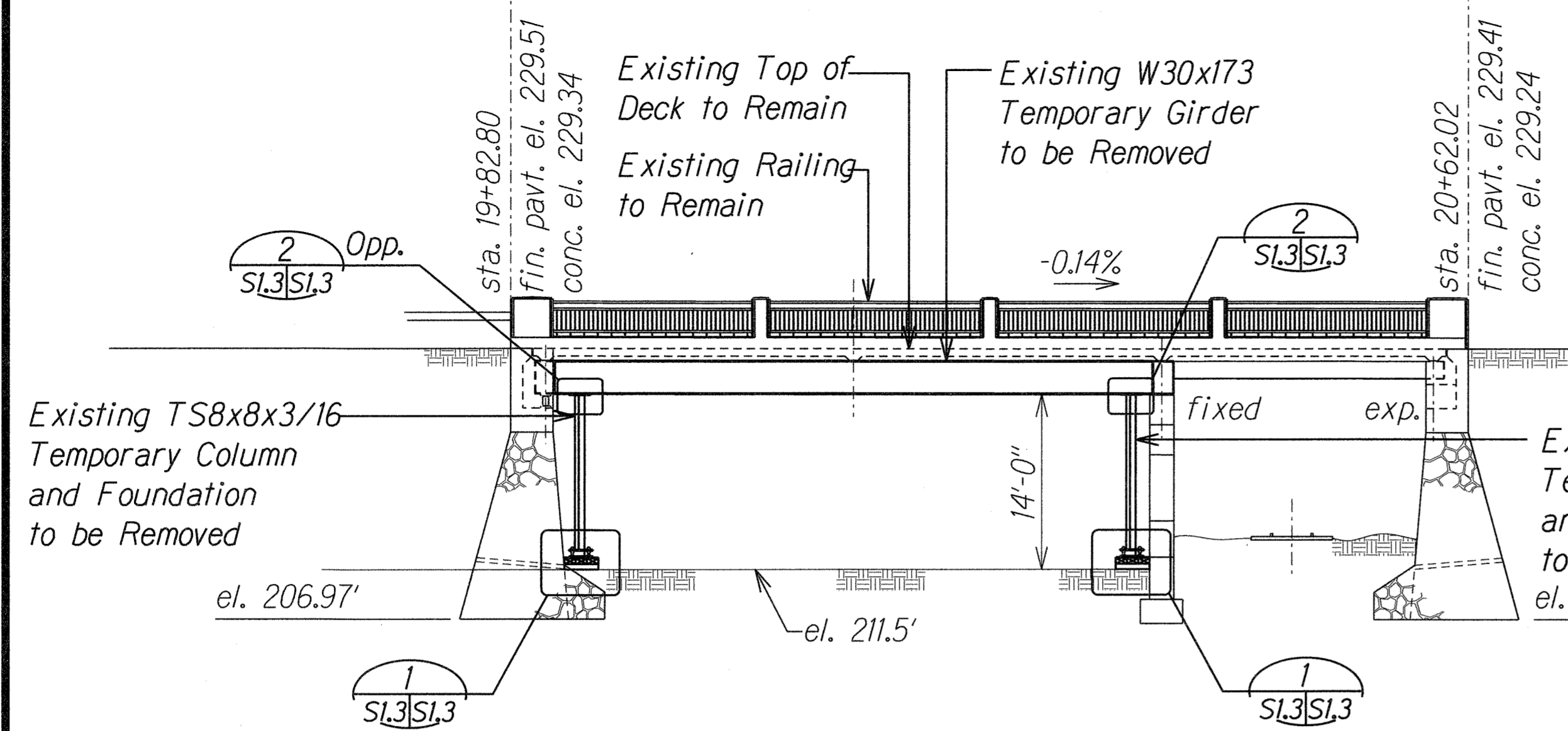
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APRIL 30, 2010  
LIC. EXP. DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**EXISTING STEEL FRAMING  
PLAN AND SECTIONS**  
KAAHUMANU AVENUE  
Waiale Road Overpass Repairs  
Fed. Aid Proj. No. ARR-032-1(9)

Scale: As Shown Date: Sept. 2009  
SHEET No. **SL2** OF 16 SHEETS

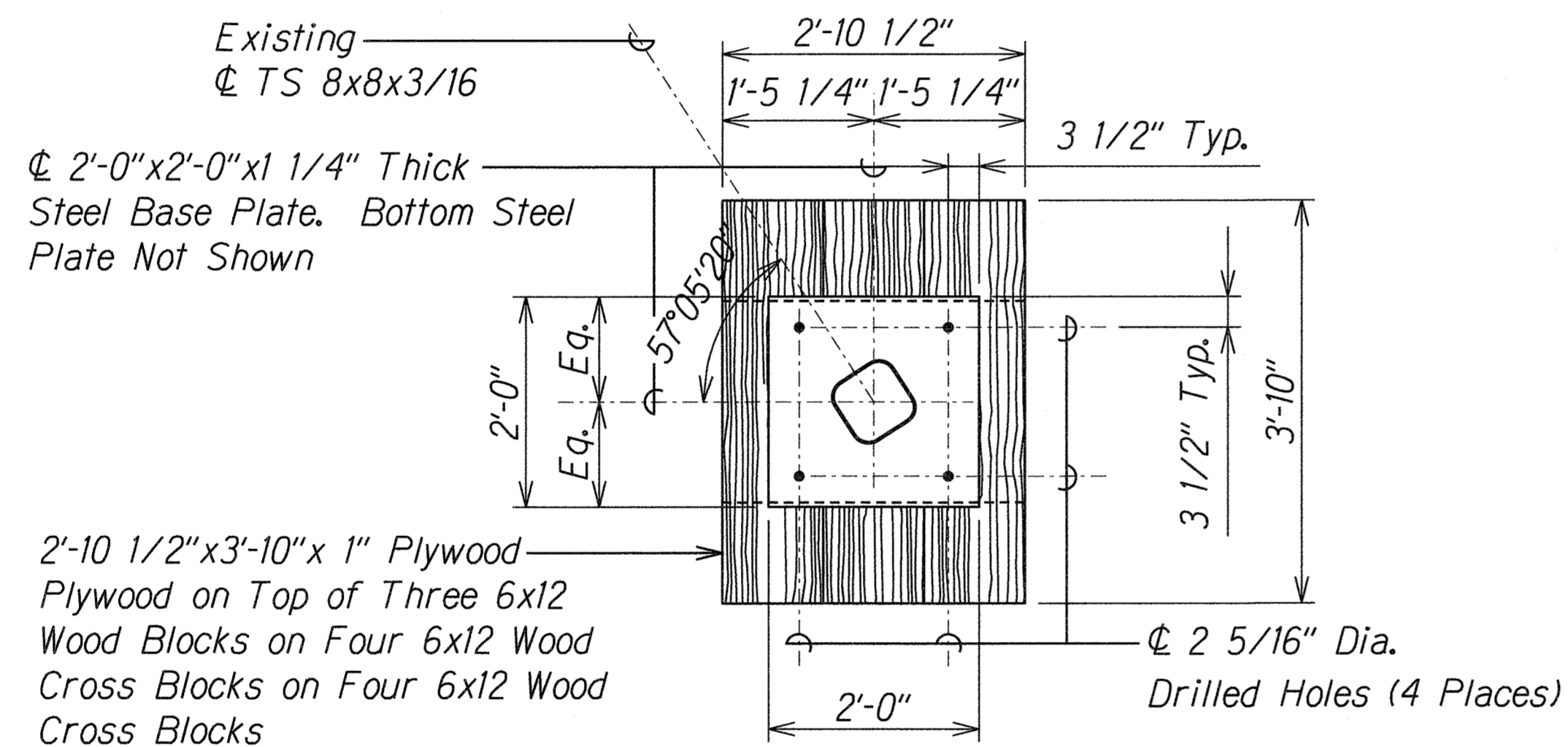
| 08/31/10 | 2 Revised Drawings |
|----------|--------------------|
| DATE     | REVISION           |

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
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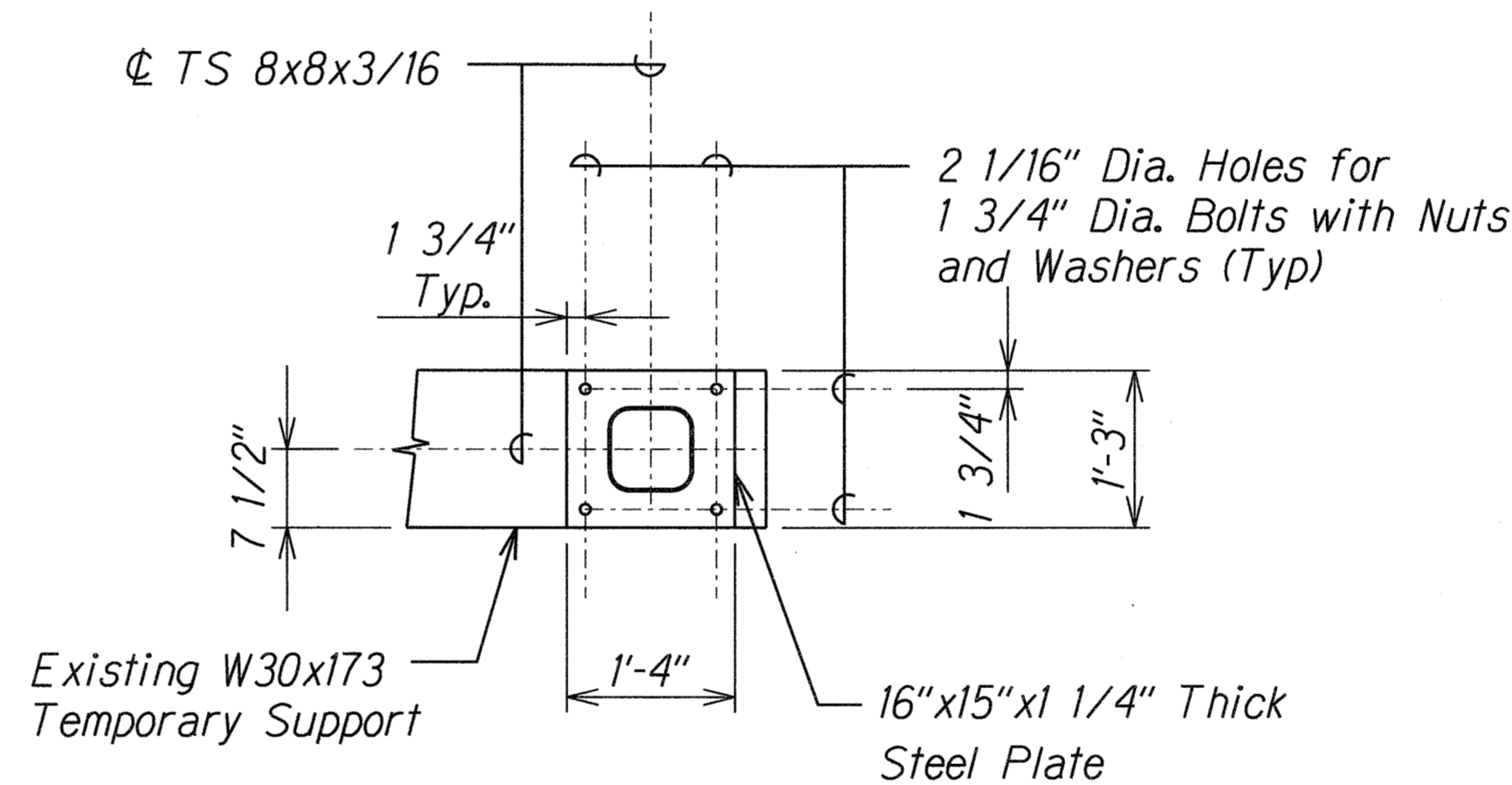
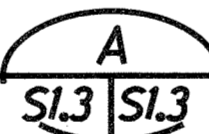
### EXISTING TEMPORARY SHORING - ELEVATION

Scale: 1" = 10'-0"



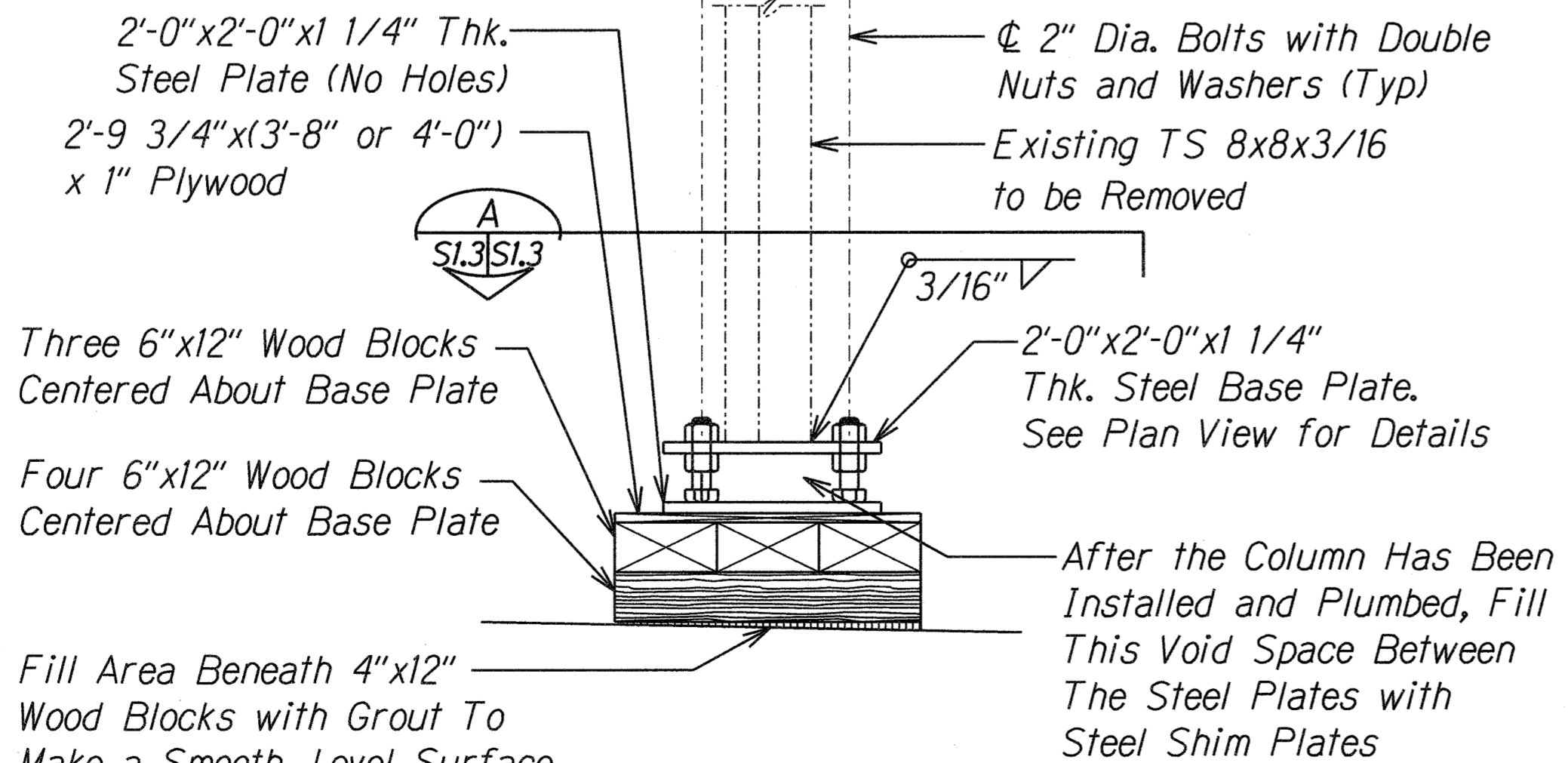
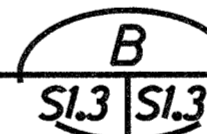
### PLAN A

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



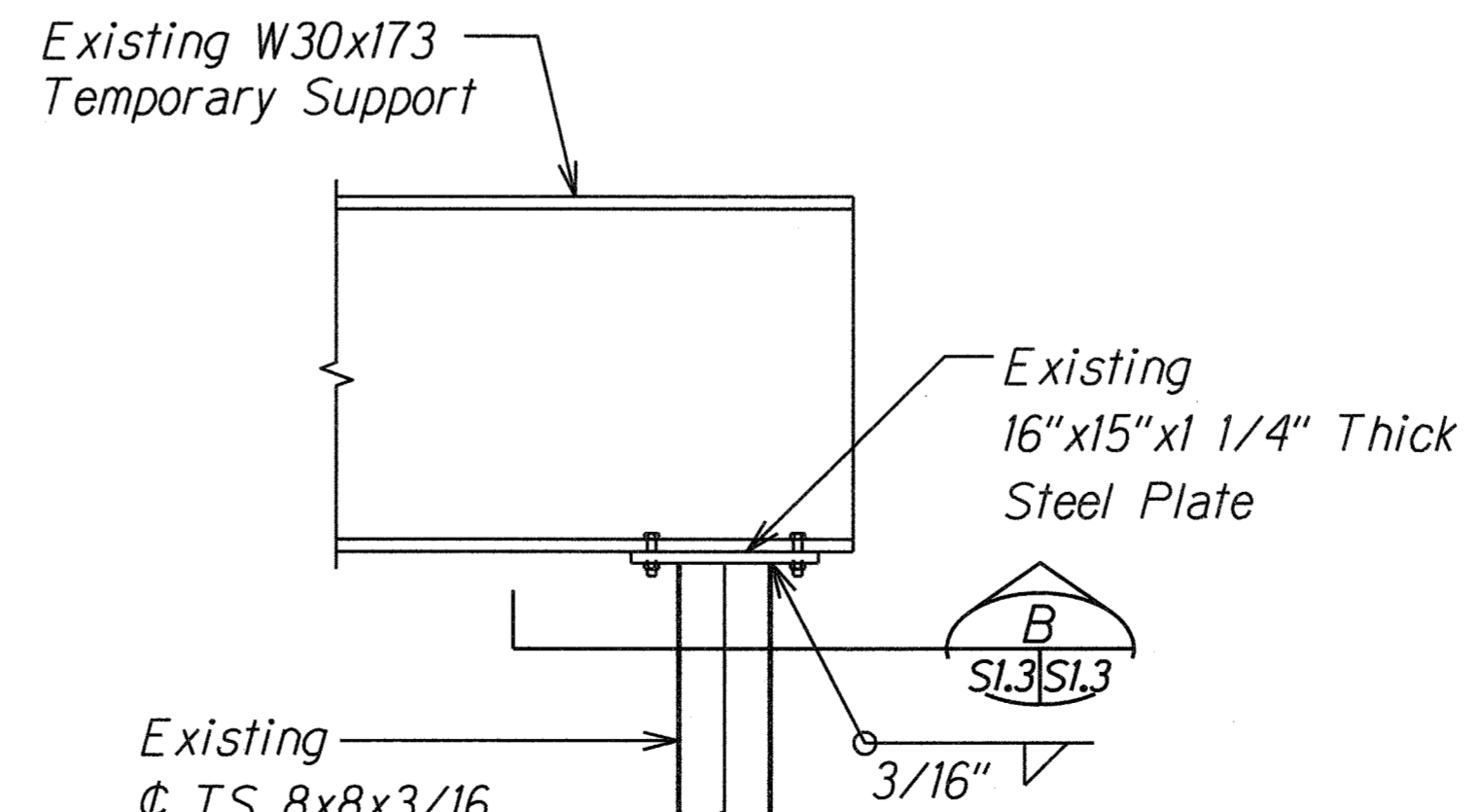
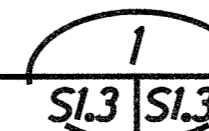
### PLAN B

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



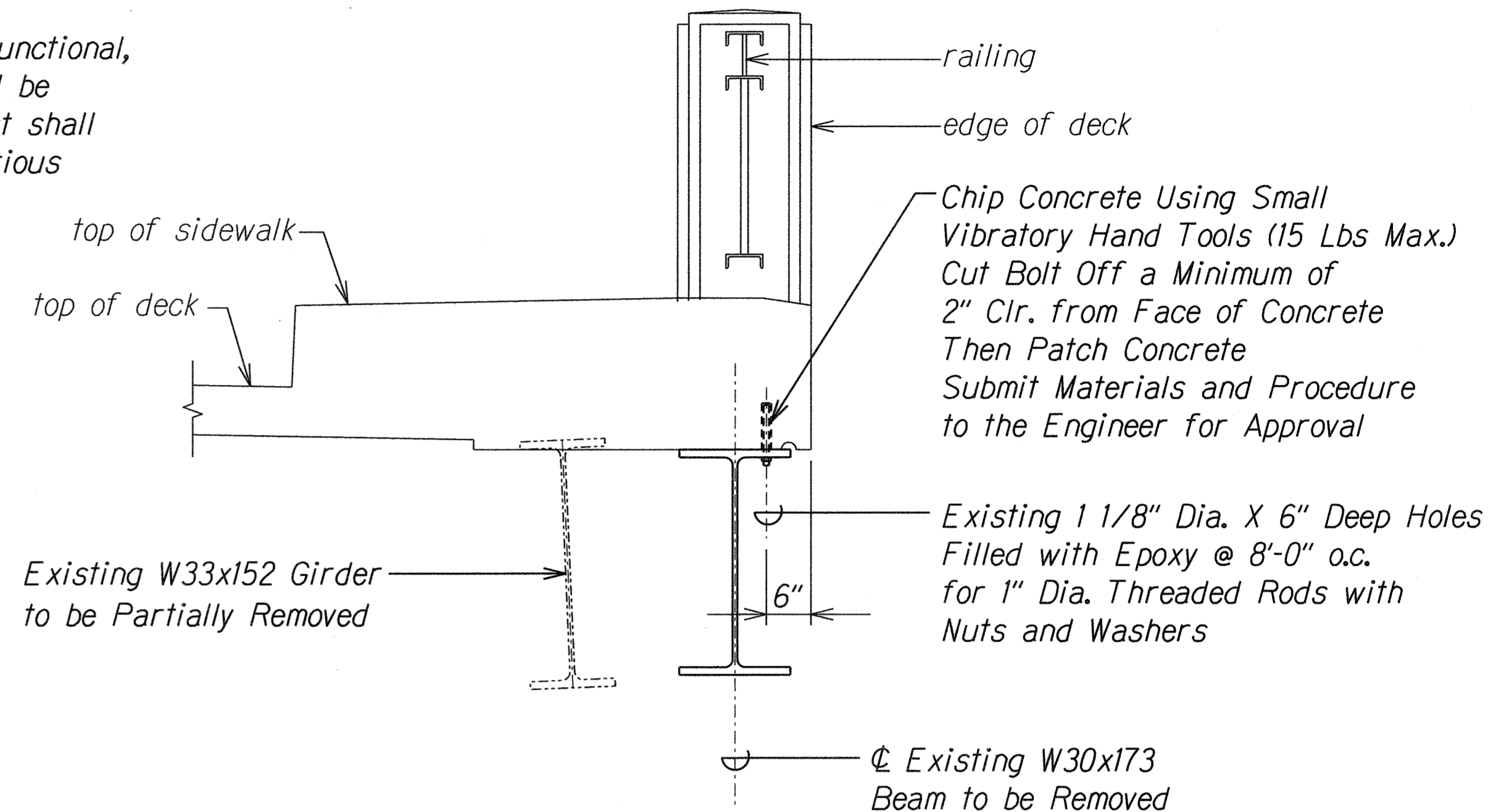
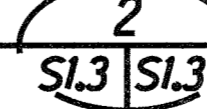
### DETAIL 1

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



### DETAIL 2

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



### SECTION C

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



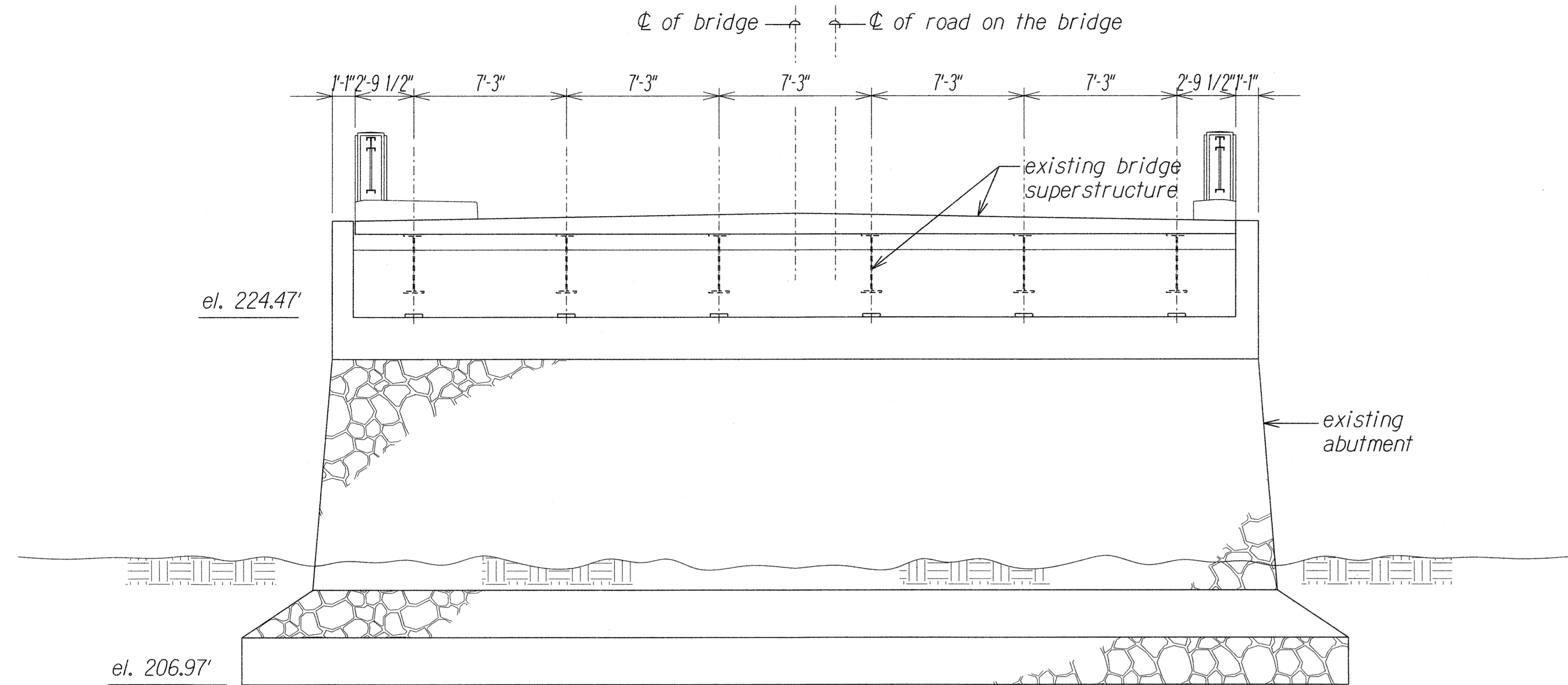
|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DESIGNED BY       |      |
| TRACED BY         |      |
| NOTE BOOK         |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |



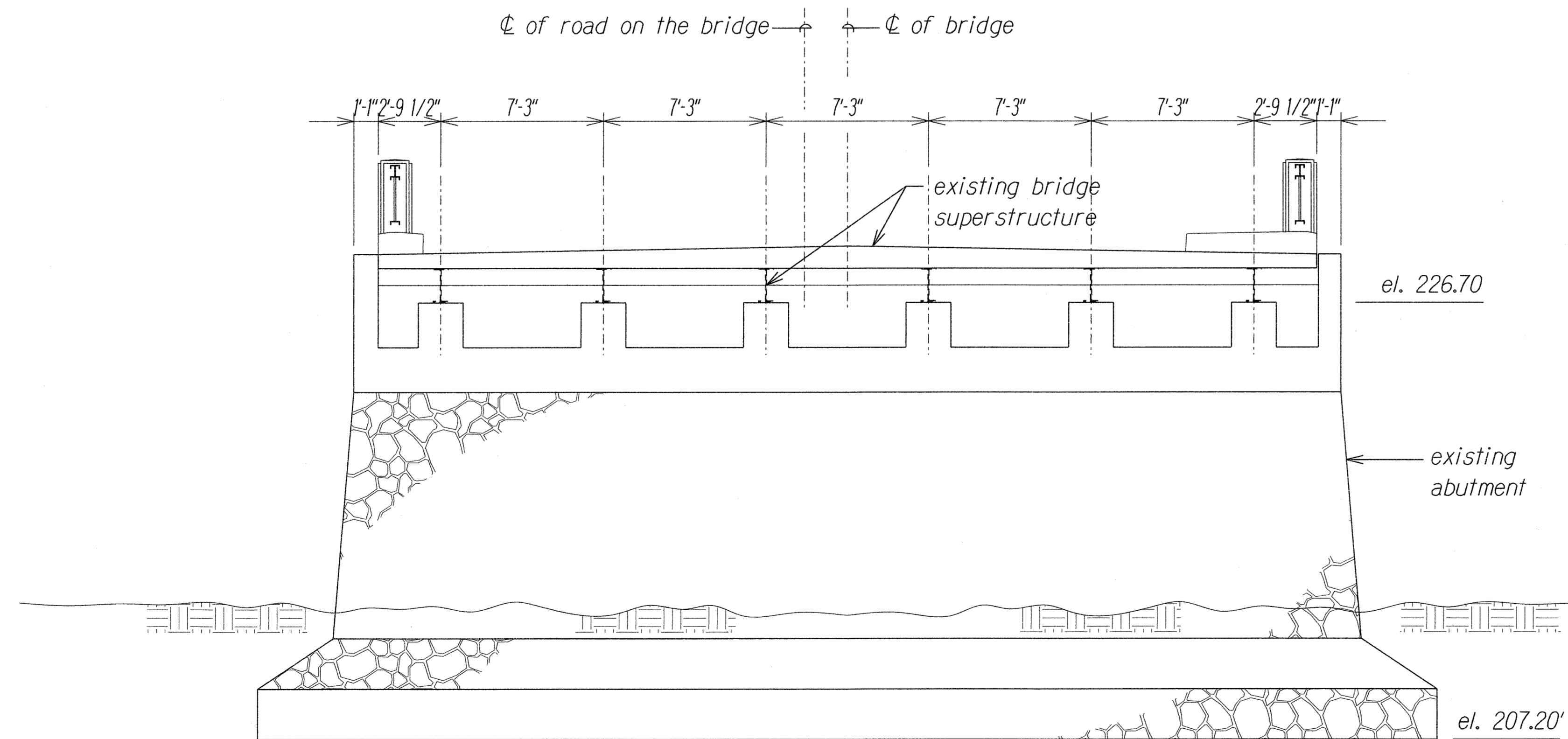
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
  
 KSF, INC. APRIL 30, 2010 LIC. EXP. DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
**EXISTING TEMPORARY SHORING DEMOLITION**  
 KAAHUMANU AVENUE  
 Waiale Road Overpass Repairs  
 Fed. Aid Proj. No. ARR-032-1(9)  
 Scale: As Shown Date: Sept. 2009  
 SHEET No. SL3 OF 16 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 12        | 30           |

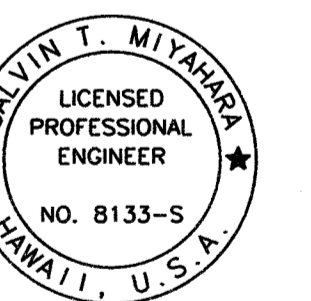


**EXISTING ABUTMENT 1 ELEVATION** A  
 Scale: 1/4" = 1'-0" SL4 SL4



**EXISTING ABUTMENT 2 ELEVATION** B  
 Scale: 1/4" = 1'-0" SL4 SL4

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DESIGNED BY       |      |
| TRACED BY         |      |
| NOTE BOOK         |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |



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OR UNDER MY SUPERVISION.

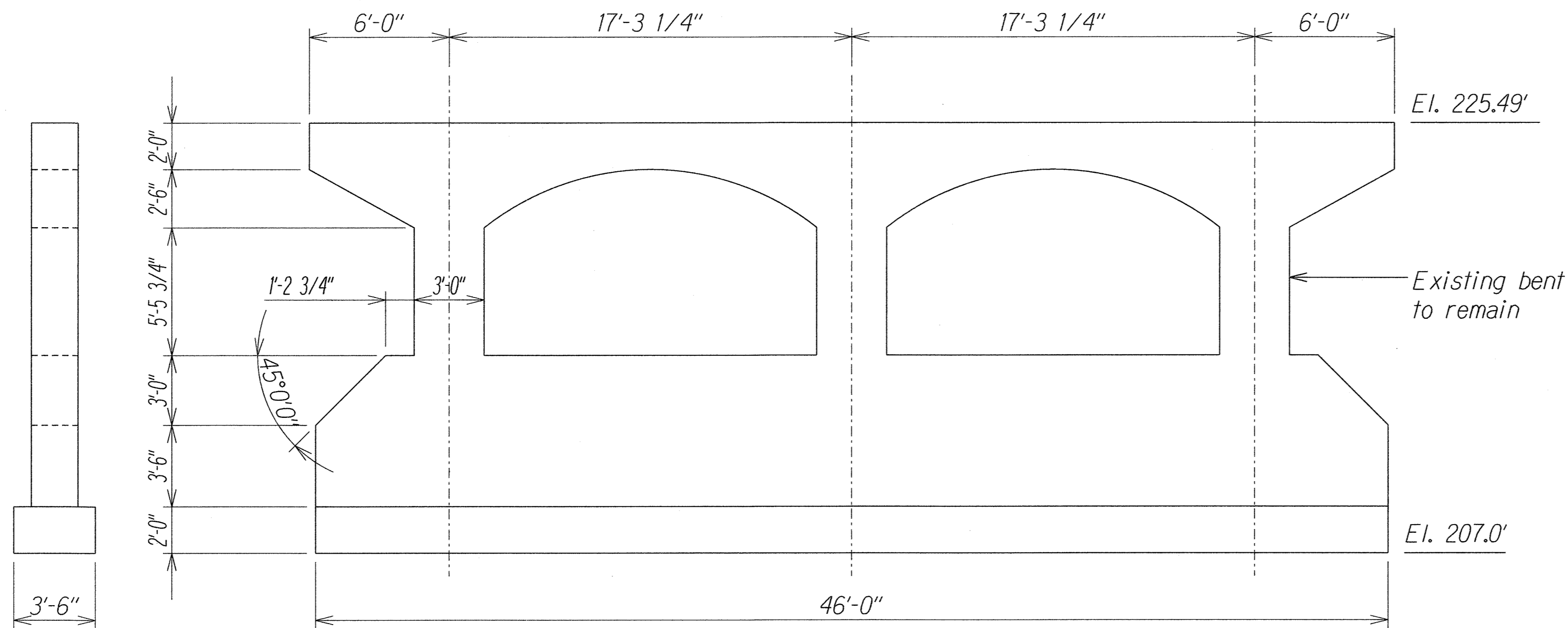
*Calvin T. Miyahara*  
KSF, INC. APRIL 30, 2010  
LIC. EXP. DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**EXISTING ABUTMENT 1 AND  
ABUTMENT 2 ELEVATIONS**  
KAAHUMANU AVENUE  
Waiale Road Overpass Repairs  
Fed. Aid Proj. No. ARR-032-1(9)

Scale: As Shown Date: Sept. 2009

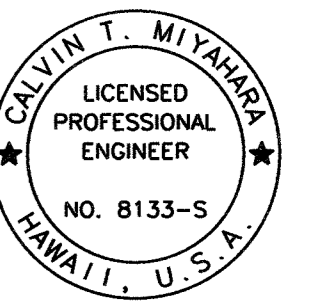
SHEET No. SL4 OF 16 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 13        | 30           |



**EXISTING CONCRETE BENT ELEVATION**  
 Scale: 1/4" = 1'-0"  
 A  
 S15 S1.5

|               |      |
|---------------|------|
| DESIGNED BY   | DATE |
| DRAWN BY      |      |
| NOTED BY      |      |
| CHECKED BY    |      |
| ORIGINAL PLAN |      |
| NOTE BOOK     |      |
| REVISION      |      |



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 LIC. EXP. DATE

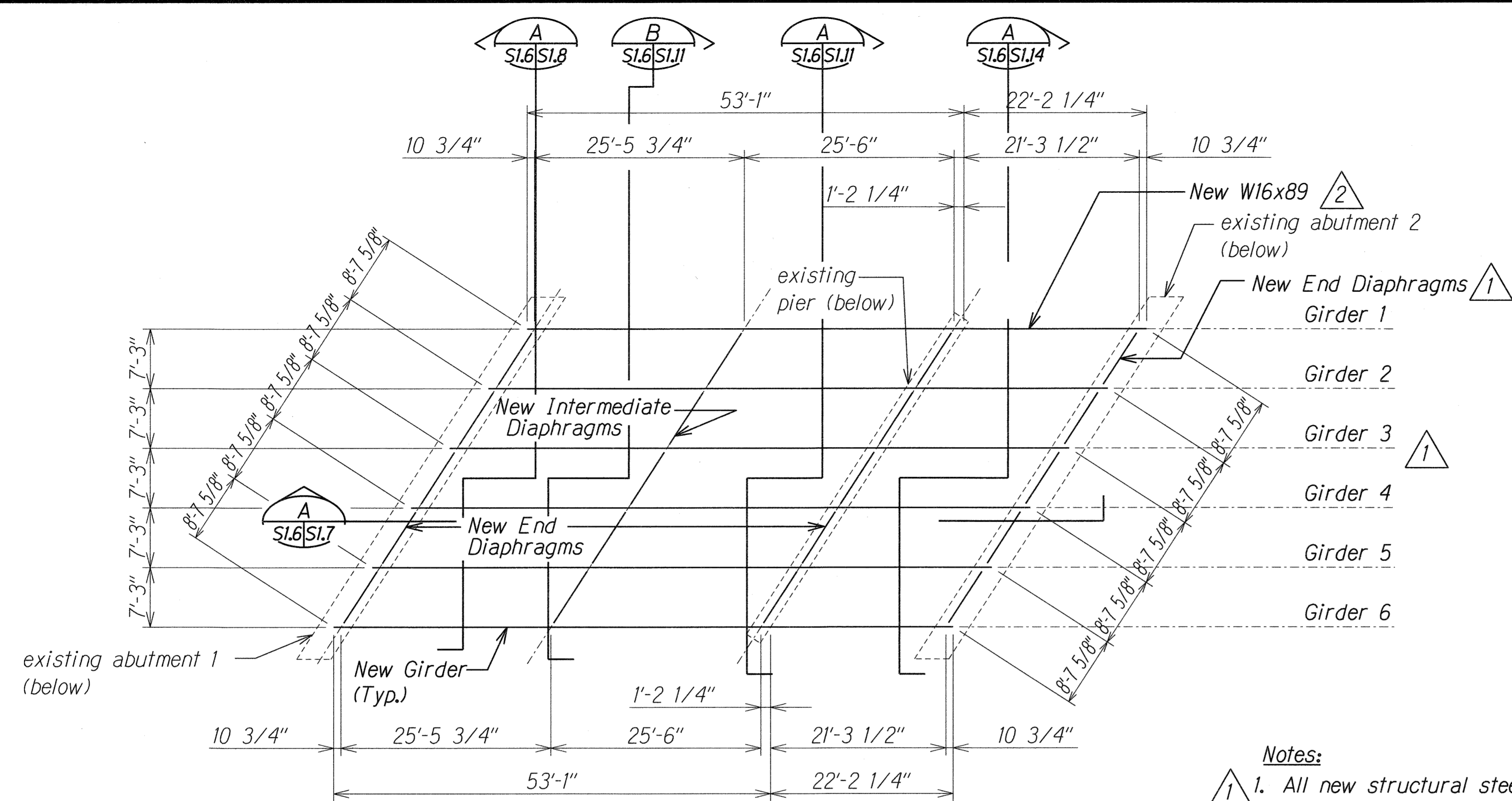
STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

**EXISTING CONCRETE BENT  
 ELEVATION**  
 KAAHUMANU AVENUE  
 Waiale Road Overpass Repairs  
 Fed. Aid Proj. No. ARR-032-1(9)

Scale: As Shown      Date: Sept. 2009

SHEET No. S15 OF 16 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO.    | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|--------------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | C.O. ADD. 14 | 30           |



|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DESIGNED BY       |      |
| TRACED BY         |      |
| NOTE BOOK         |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |



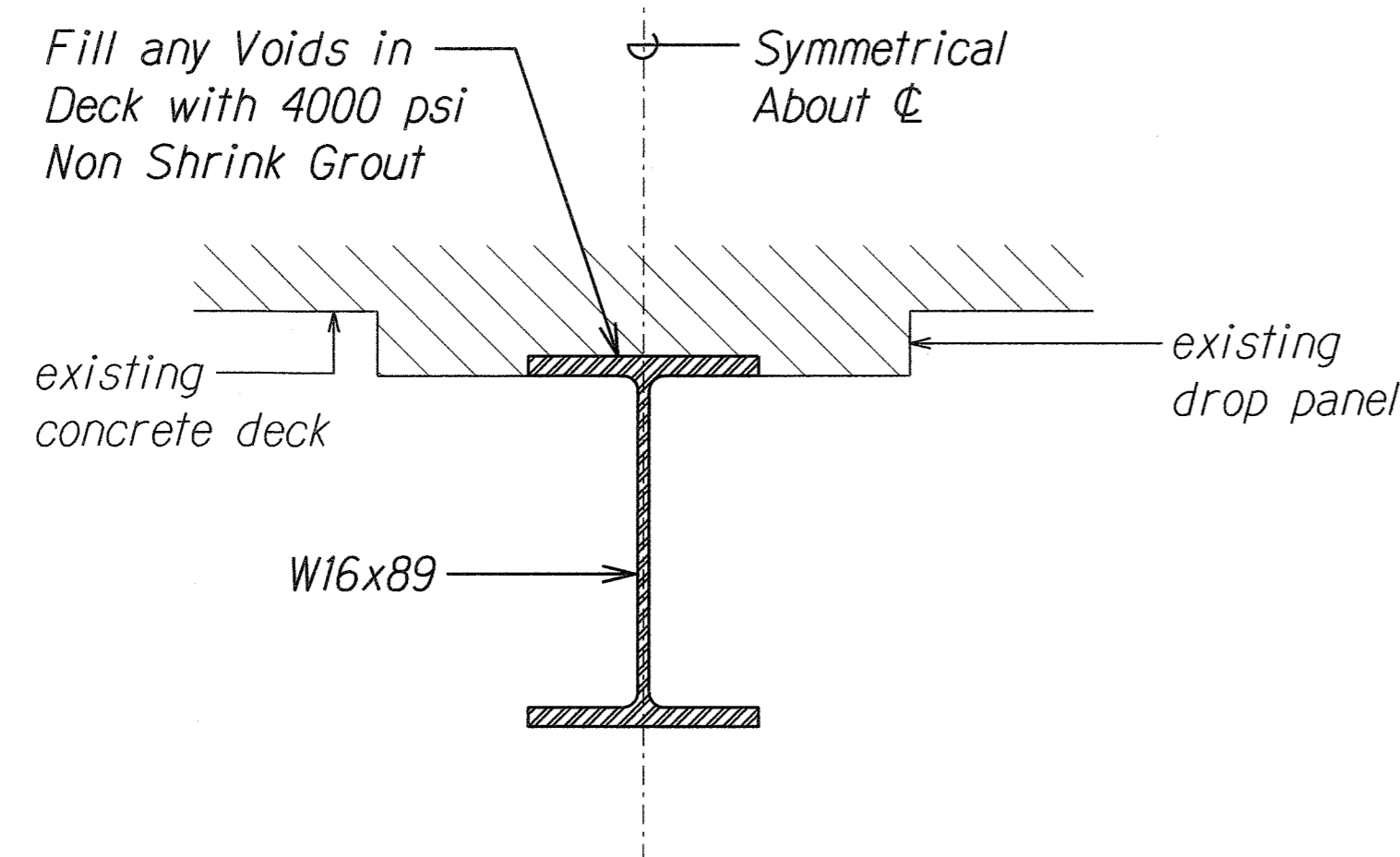
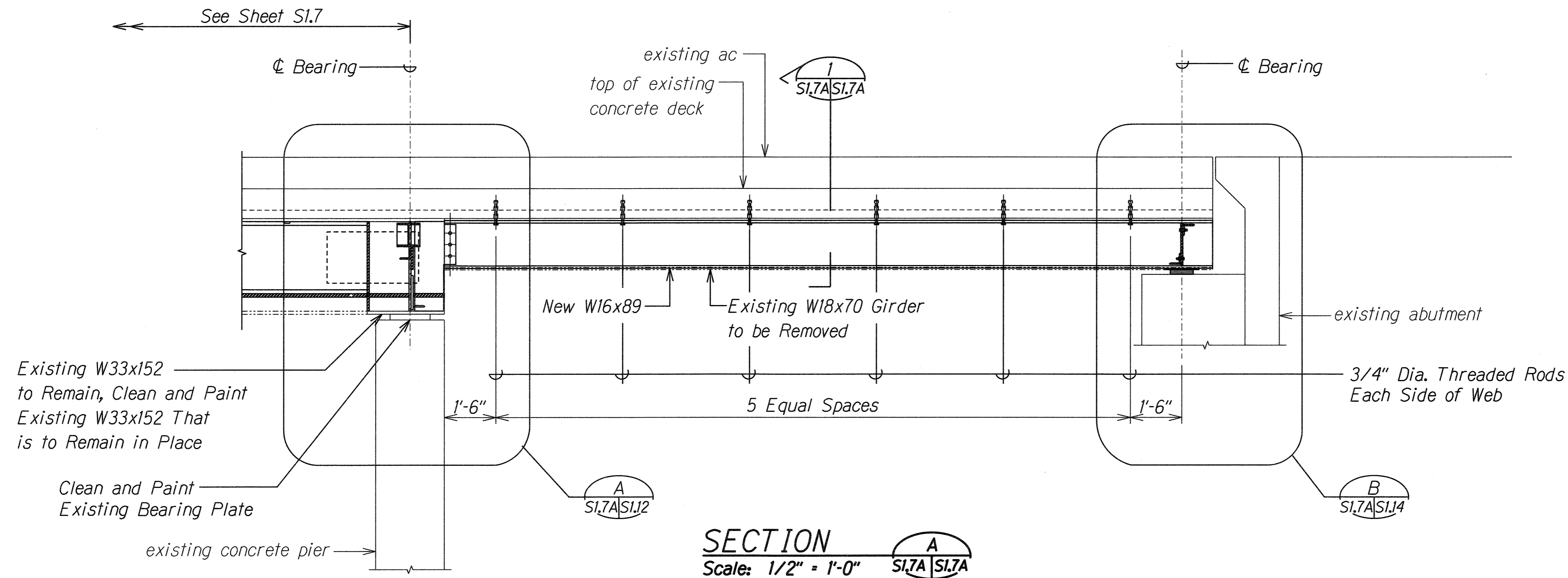
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LIC. EXP. DATE

|          |                    |
|----------|--------------------|
| 08/31/10 | 2 Revised Drawings |
| 10/09/09 | 1 Revised Notes    |
| DATE     | REVISION           |

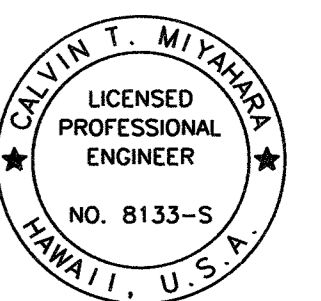
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**STEEL FRAMING PLAN**  
**KAAHUMANU AVENUE**  
**Waiale Road Overpass Repairs**  
**Fed. Aid Proj. No. ARR-032-1(9)**  
Scale: As Shown Date: Sept. 2009  
SHEET No. **SI.6** OF **16** SHEETS

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO.  | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|------------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | C.O. 15S-1 | 30           |



**Notes:**

1. The Contractor shall submit working drawings and procedures for shoring and for installing the girders. All work shall be approved by the Engineer before commencing with the work.
2. Shoring and bracing for deck, girders, etc. shall be provided before any removal or demolition work.
3. Shoring shall consider dead load deflections of the structure. If temporary beams are used as shoring, cambering the beams may be required.
4. Diaphragms not shown for clarity.
5. The girder temperature when it is installed shall be approximately the same as the temperature of the in place girders supporting the bridge.



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LIC. EXP. DATE

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DESIGNED BY       |      |
| TRACED BY         |      |
| NOTE BOOK         |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |

**TYPICAL DETAIL**  
Scale: 1 1/2" = 1'-0"  
S1.7A | S1.7A

08/31/10 2 New Sheet

DATE REVISION

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

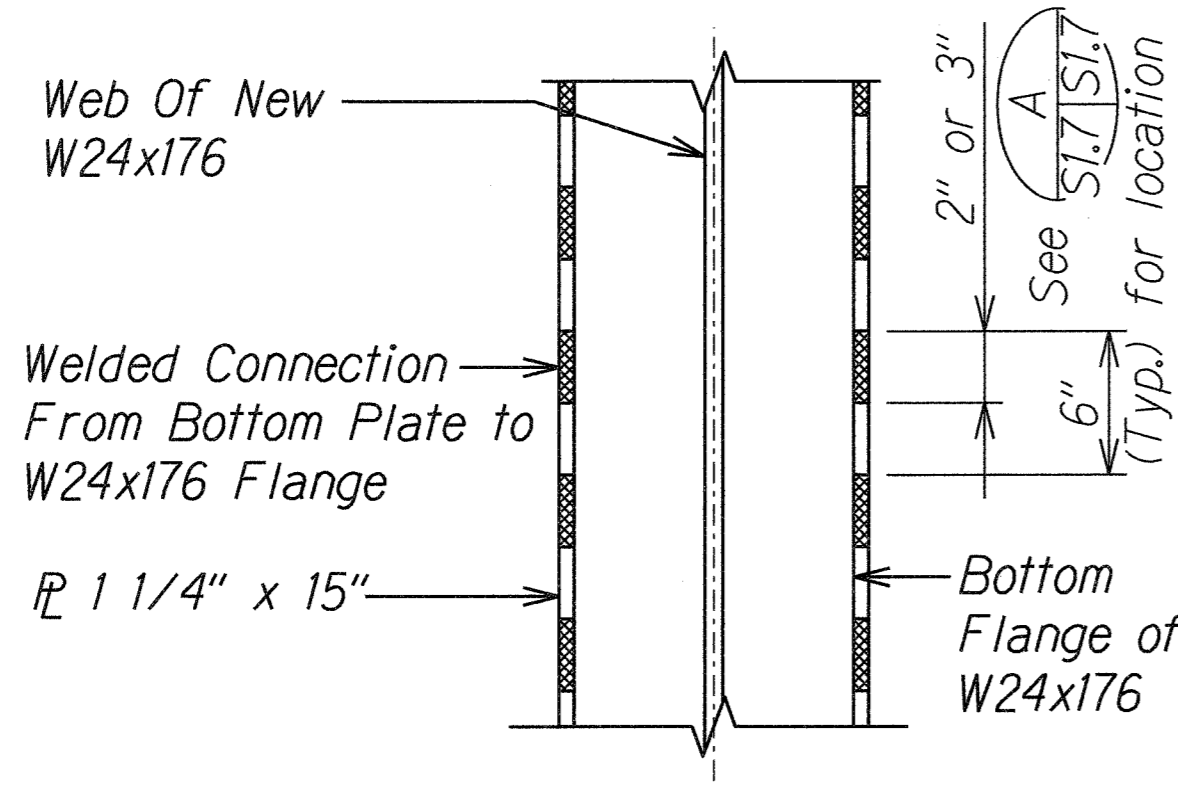
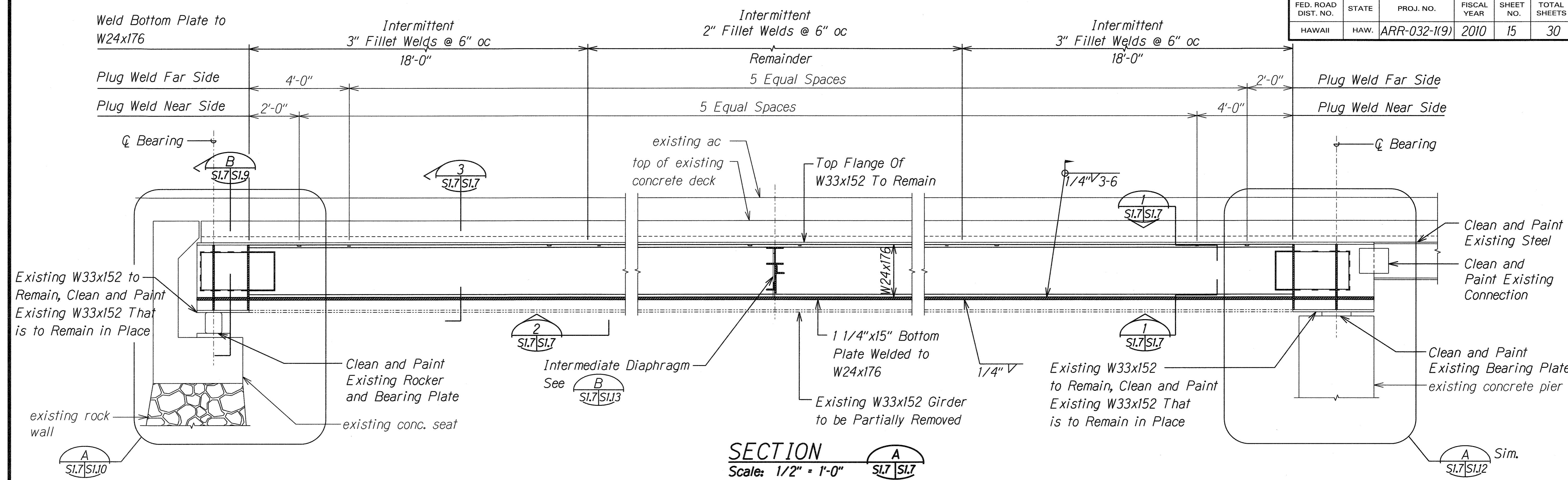
**GIRDER SECTIONS**

**KAAHUMANU AVENUE**  
**Waiale Road Overpass Repairs**  
**Fed. Aid Proj. No. ARR-032-1(9)**

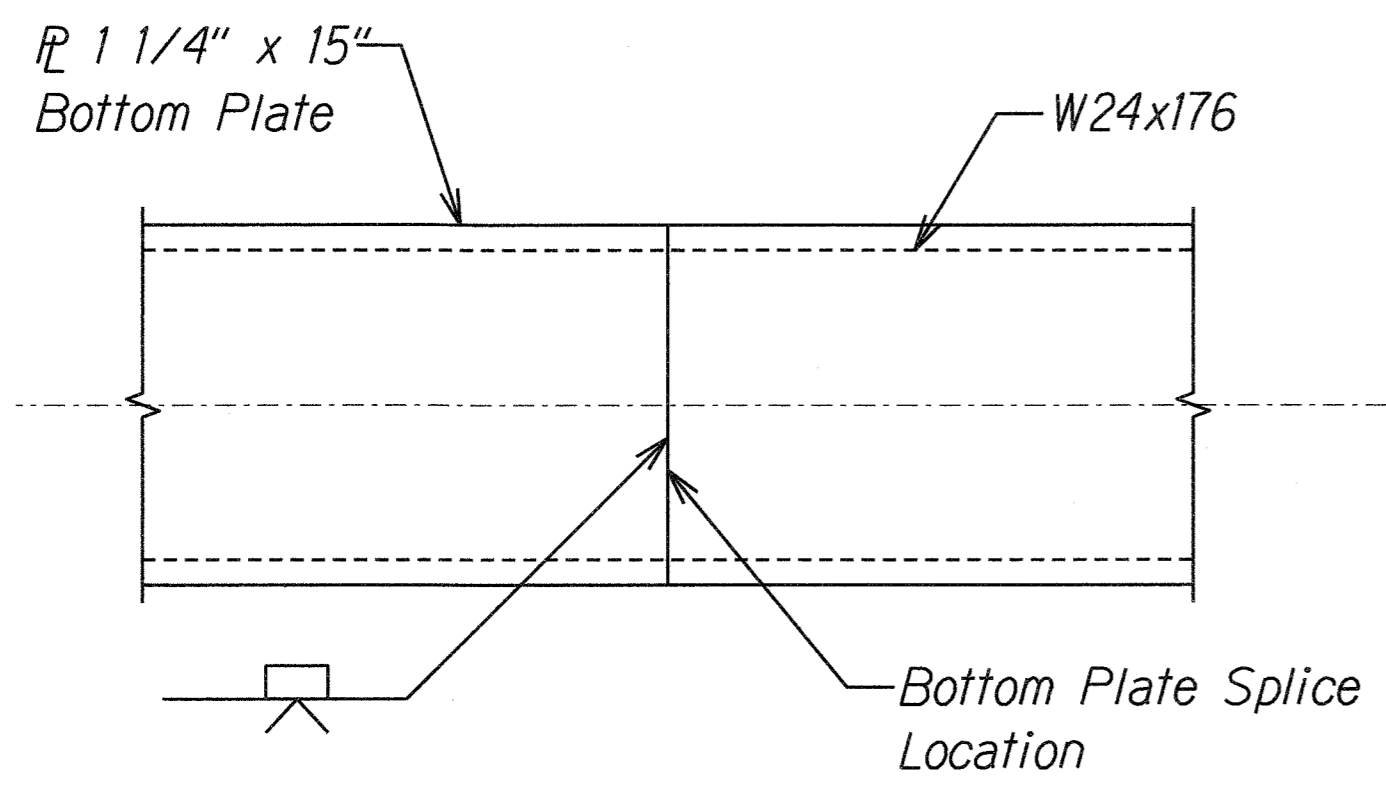
Scale: As Shown Date: Sept. 2009

SHEET No. S1.7A OF 16 SHEETS

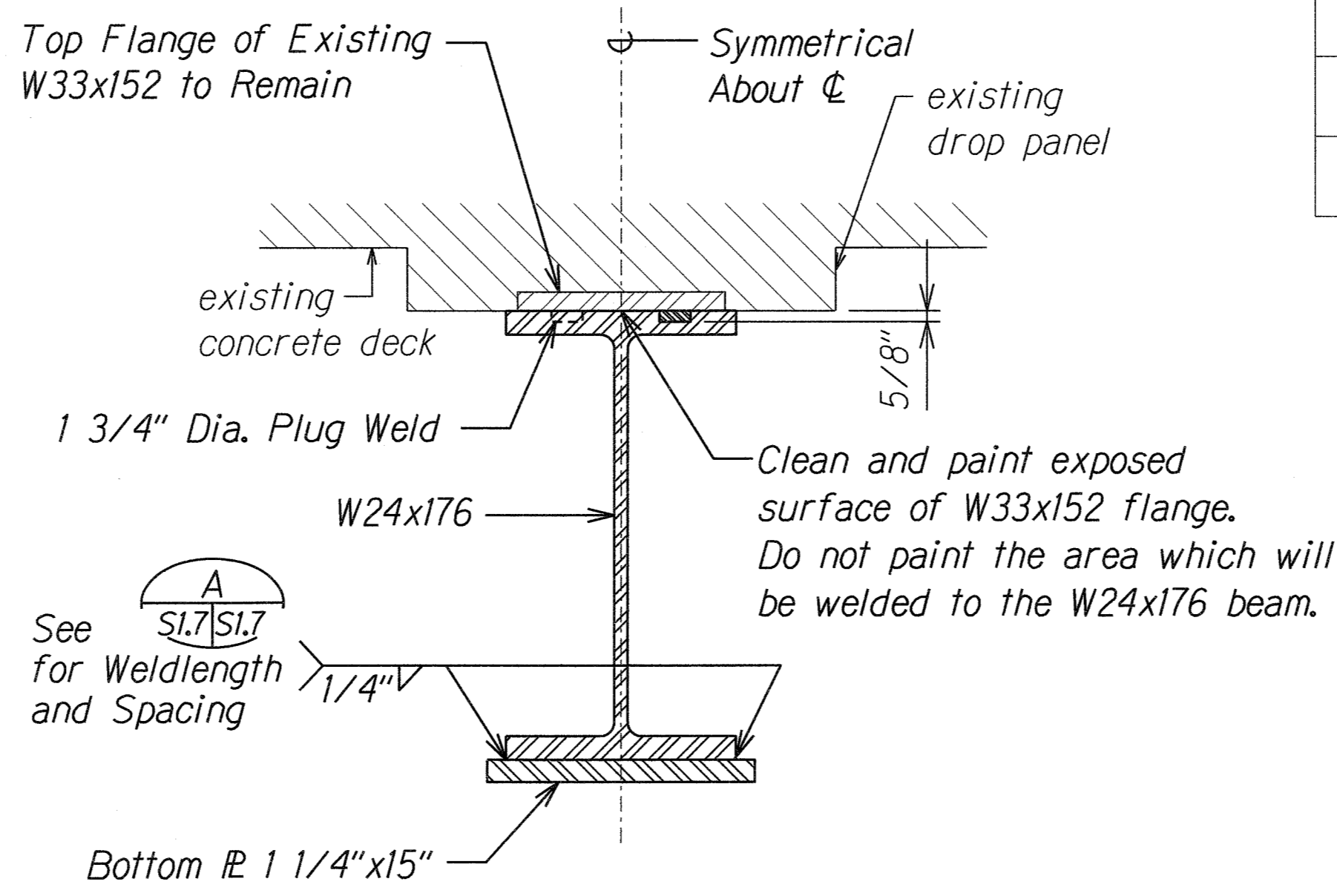
**C.O. 15S-1**



**SECTION DETAIL**  
Scale: 1 1/2" = 1'-0"



**BOTTOM PLATE SPLICE DETAIL**  
Scale: 1 1/2" = 1'-0"

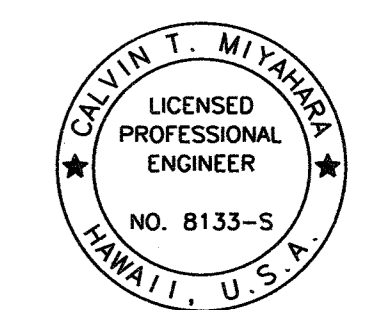


**TYPICAL DETAIL**  
Scale: 1 1/2" = 1'-0"

| STEEL BEAM CAMBER REQUIREMENT |   |       |       |       |       |       |       |       |   |
|-------------------------------|---|-------|-------|-------|-------|-------|-------|-------|---|
| Location                      | 0 | 1/8 L | 1/4 L | 3/8 L | 1/2 L | 5/8 L | 3/4 L | 7/8 L | L |
| Calculated Camber (in.)       | 0 | 0.475 | 0.872 | 1.132 | 1.223 | 1.132 | 0.872 | 0.475 | 0 |

L = Overall Length of Girder Including the Remaining Portion of the Existing W33x152

- Notes:**
- The Contractor shall submit working drawings and procedures for shoring and for installing the girders. All work shall be approved by the Engineer before commencing with the work.
  - Shoring and bracing for deck, girders, etc. shall be provided before any removal or demolition work.
  - Shoring shall consider dead load deflections of the structure. If temporary beams are used as shoring, cambering the beams may be required.
  - Diaphragms not shown for clarity.
  - The girder temperature when it is installed shall be approximately the same as the temperature of the in place girders supporting the bridge.



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KSF, INC. APRIL 30, 2010 LIC. EXP. DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**GIRDER SECTIONS**

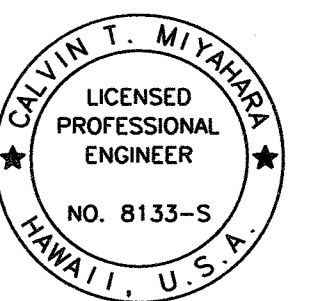
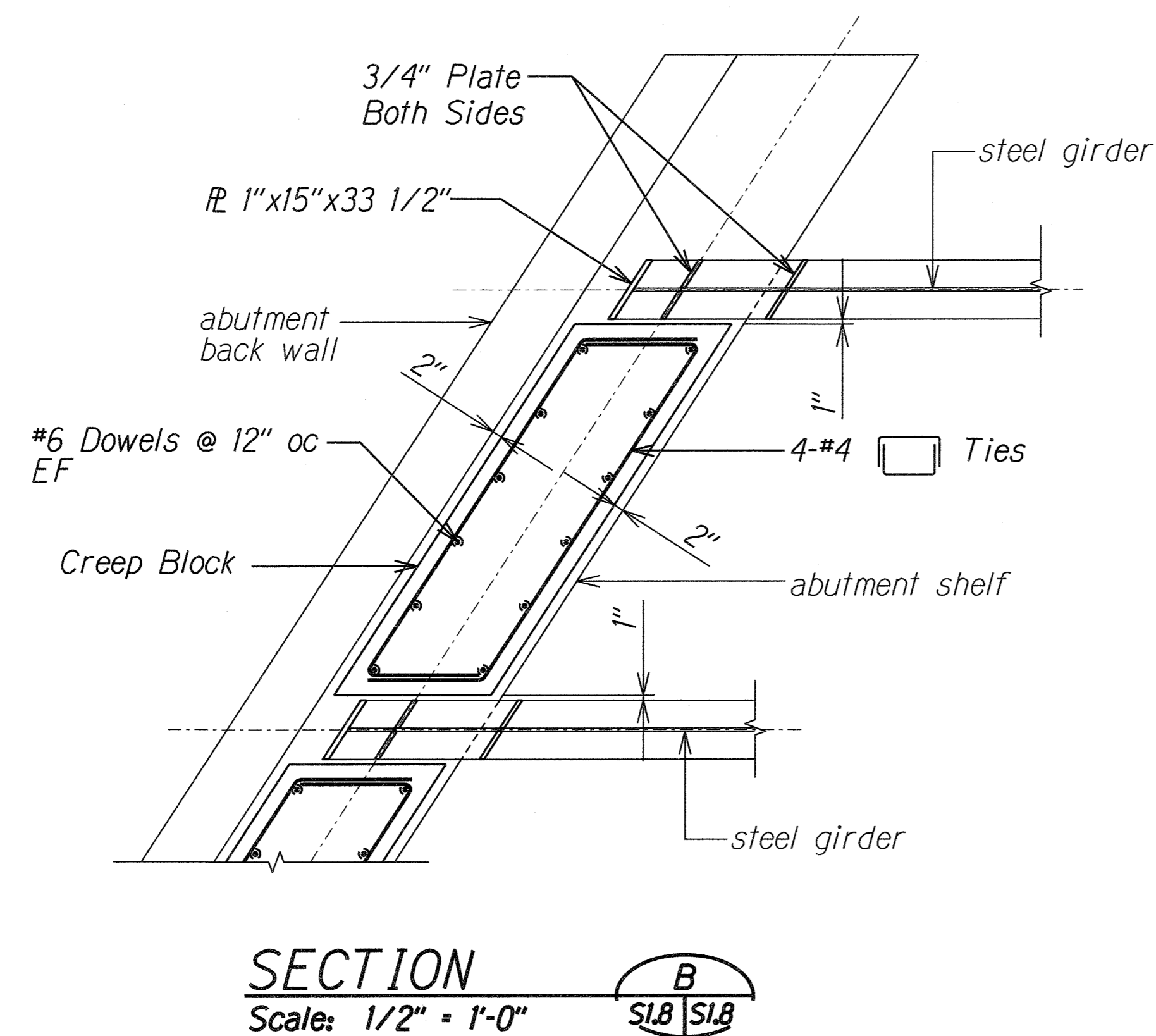
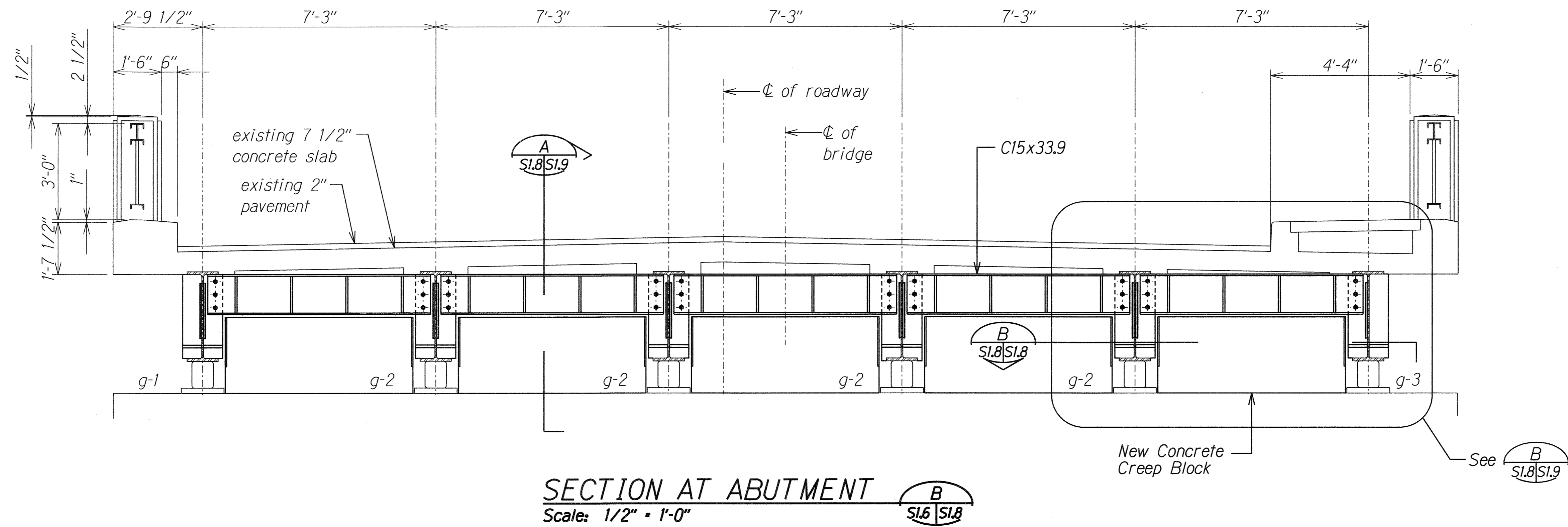
**KAAHUMANU AVENUE**  
**Waiale Road Overpass Repairs**  
**Fed. Aid Proj. No. ARR-032-1(9)**

Scale: As Shown Date: Sept. 2009

SHEET No. S1.7 OF 16 SHEETS

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DESIGNED BY       |      |
| TRACED BY         |      |
| NOTE BOOK         |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 16        | 30           |



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KSF, INC. APRIL 30, 2010  
LIC. EXP. DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

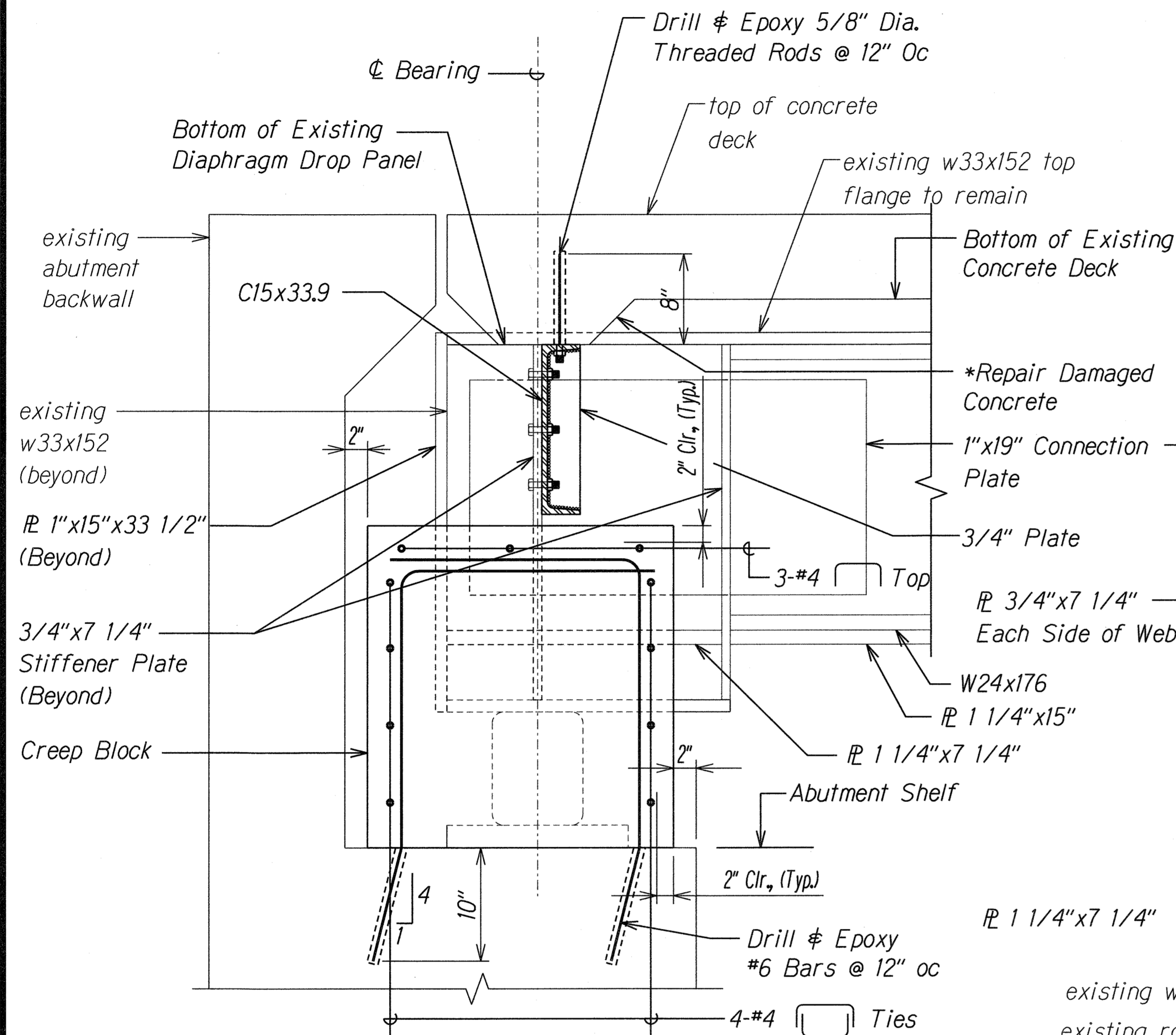
### SECTION AT ABUTMENT

KAAHUMANU AVENUE  
Waiale Road Overpass Repairs  
Fed. Aid Proj. No. ARR-032-1(9)

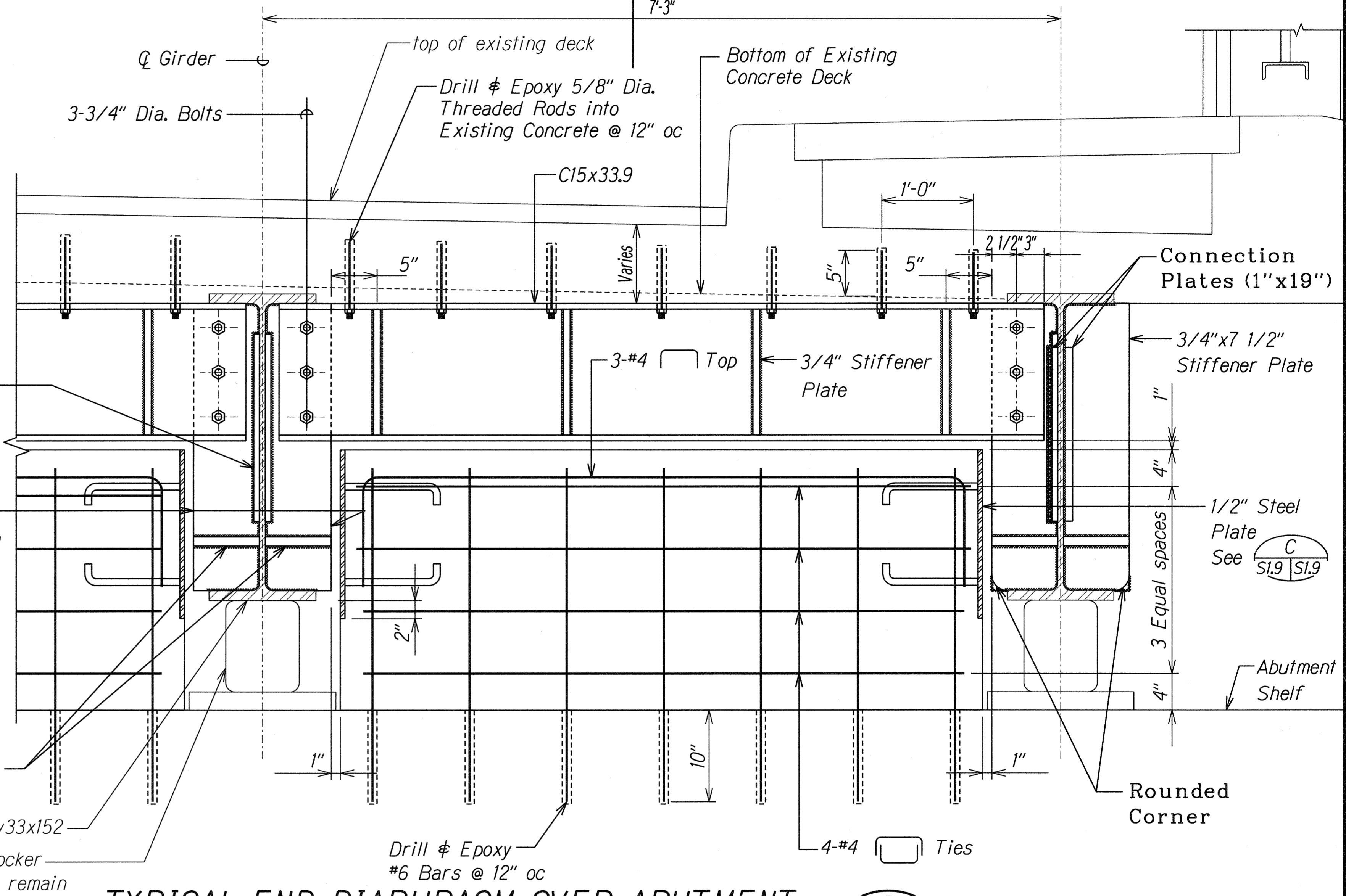
Scale: As Shown Date: Sept. 2009

SHEET No. S1.8 OF 16 SHEETS

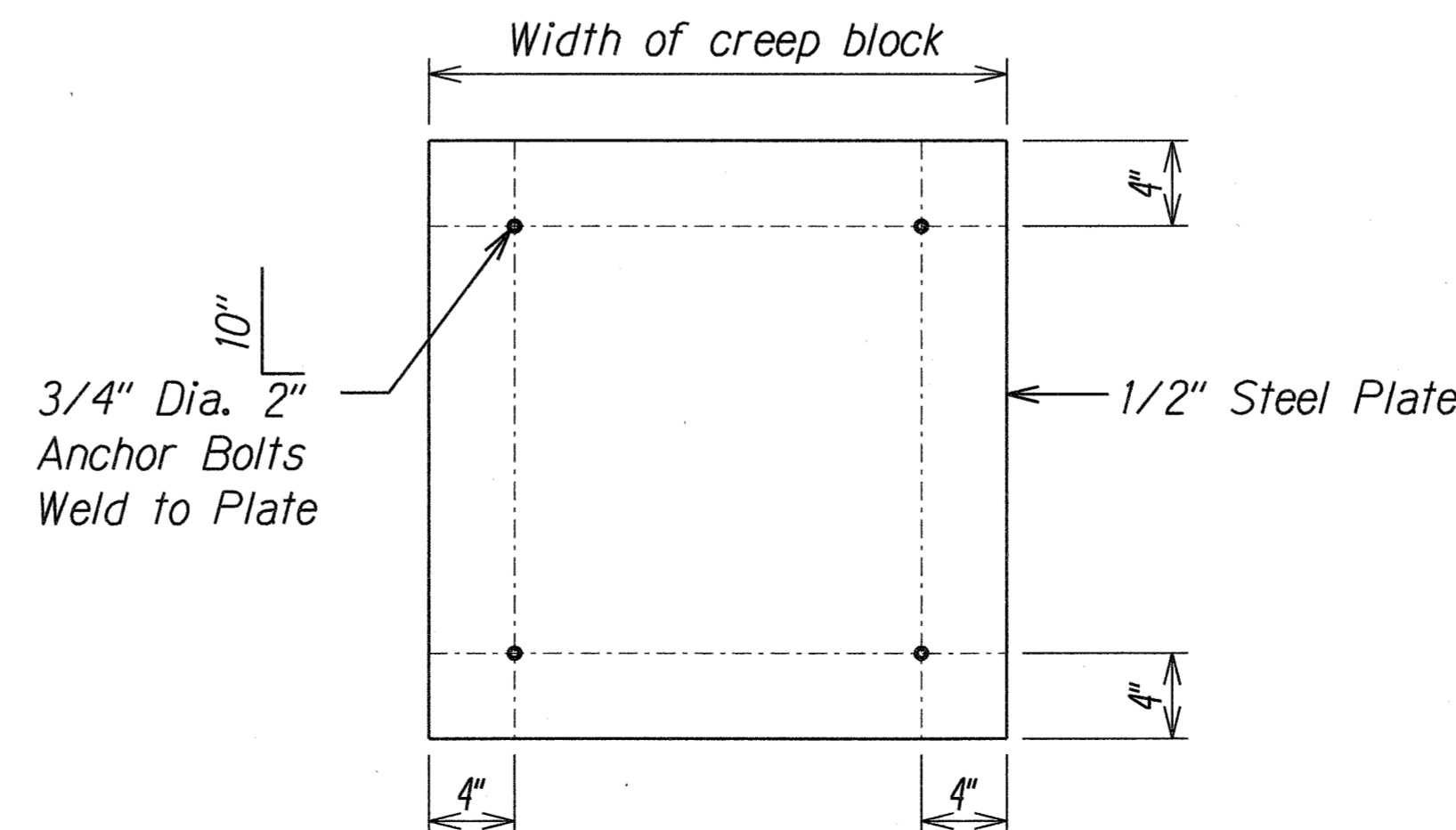
| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 17        | 30           |



**SECTION A**  
Scale: 1 1/2" = 1'-0" SL8, SL9, SL9



**TYPICAL END DIAPHRAGM OVER ABUTMENT B**  
Scale: 1 1/2" = 1'-0" SL7, SL9

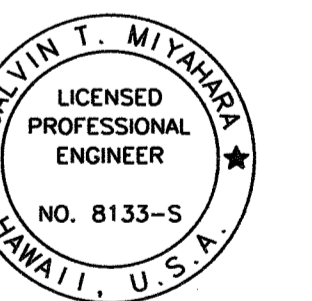


**ANCHOR PLATE DETAIL C**  
Scale: 1 1/2" = 1'-0" SL9, SL9

**\*Notes:**

1. Concrete damaged by removal of existing steel members shall be patched and restored to its original condition.
2. The Engineer shall make the determination on whether or not the concrete has been damaged.
3. The Contractor shall submit a work plan to repair the concrete. This work shall not proceed until the work plan is accepted by the Engineer.
4. All work done repairing the concrete shall be done at no increase in Contract price or Contract time.

| LEGEND FOR AS-BUILT POSTINGS |                                     |
|------------------------------|-------------------------------------|
|                              | Squiggly line for as-built deletion |
|                              | Double line for as-built deletion   |
|                              | Text for as-built posting           |



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KSF, INC. APRIL 30, 2010  
LIC. EXP. DATE

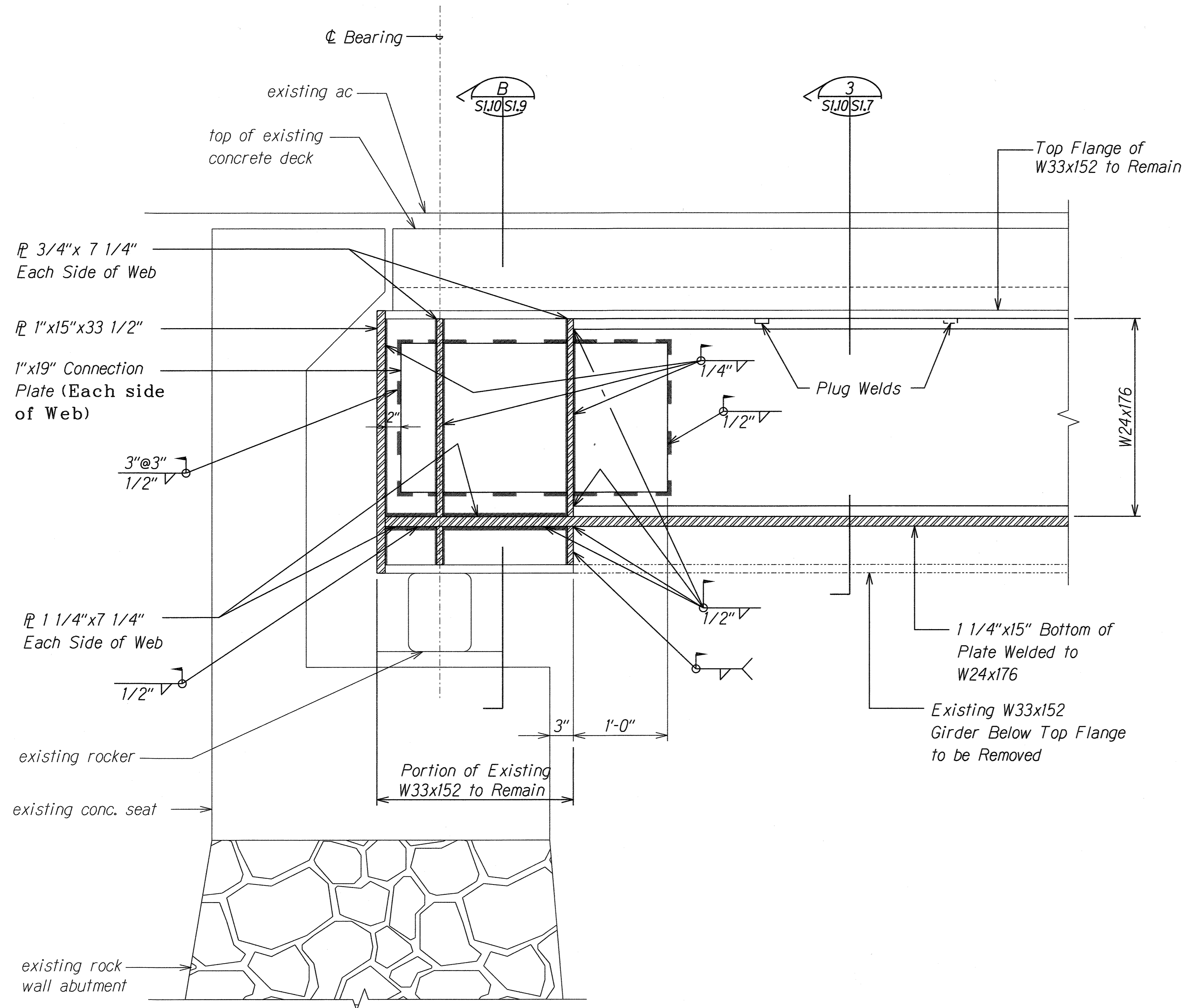
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|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| DESIGNED BY       |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |
| ORIGINAL PLAN     |      |
| NOTE BOOK         |      |
| DATE              |      |

|         |          |
|---------|----------|
| 08/9/11 | As Built |
| DATE    | REVISION |

|   |                  |
|---|------------------|
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION                |                  |
| <b>SECTIONS AT ABUTMENT</b>   |                  |
| KAAHUMANU AVENUE<br>Waiale Road Overpass Repairs<br>Fed. Aid Proj. No. ARR-032-1(9) |                  |
| Scale: As Shown   | Date: Sept. 2009 |
| SHEET No. SL9 OF 16 SHEETS  |                  |

AS-BUILT

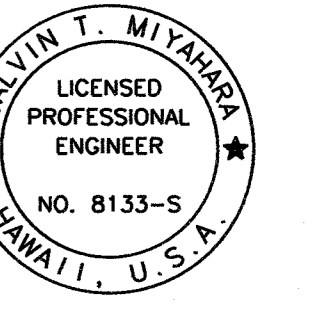
| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 18        | 30           |



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

**A**  
SL7 SL10

| LEGEND FOR AS-BUILT POSTINGS |                                     |
|------------------------------|-------------------------------------|
|                              | Squiggly line for as-built deletion |
|                              | Double line for as-built deletion   |
| Roadway                      | Text for as-built posting           |



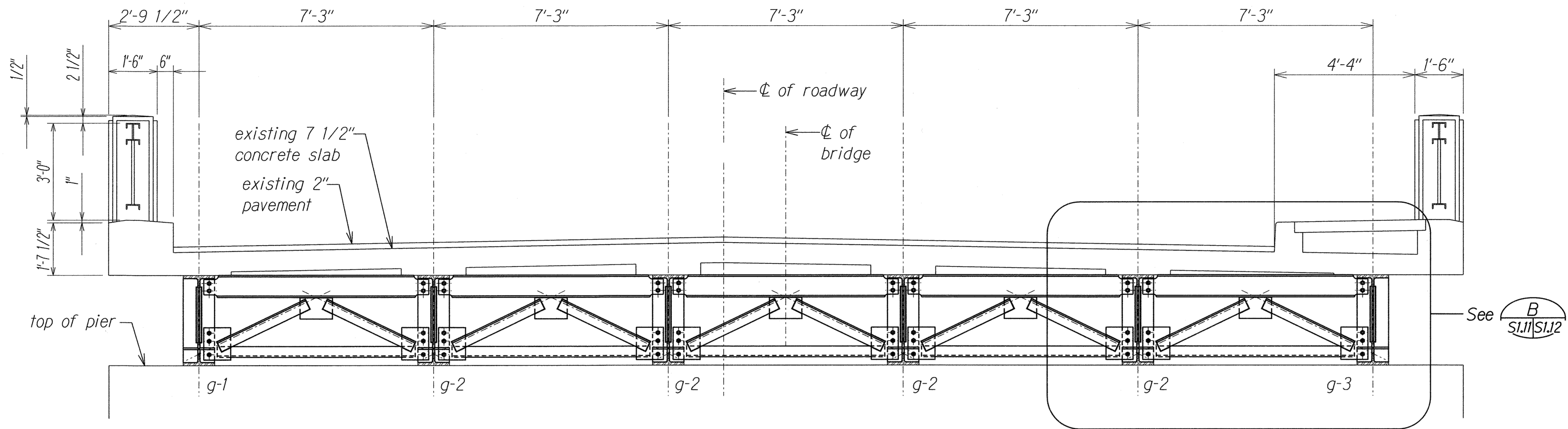
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
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KSF, INC. APRIL 30, 2010 U.C. EXP. DATE

|   |                  |
|---|------------------|
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION                |                  |
| <b>SECTION AT ABUTMENT</b>  |                  |
| KAAHUMANU AVENUE<br>Waiale Road Overpass Repairs<br>Fed. Aid Proj. No. ARR-032-1(9) |                  |
| Scale: As Shown   | Date: Sept. 2009 |
| SHEET No. SL10 OF 16 SHEETS   |                  |

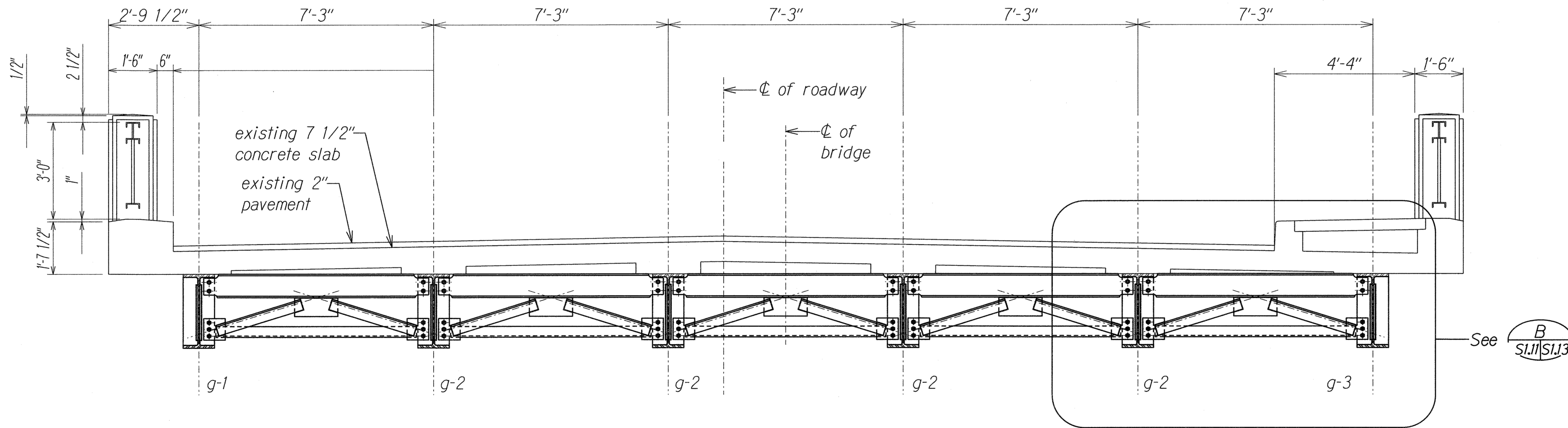
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|---------|----------|
| 08/9/11 | As Built |
| DATE    | REVISION |

AS-BUILT

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 19        | 30           |

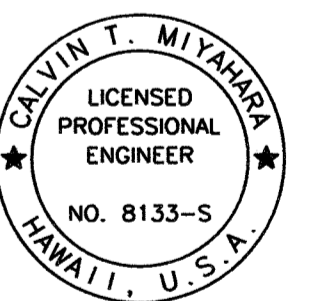


**SECTION - DIAPHRAGM AT PIER**  
 Scale: 1/2" = 1'-0"  
 B  
 SI.6 SI.11



**SECTION - INTERMEDIATE DIAPHRAGM**  
 Scale: 1/2" = 1'-0"  
 B  
 SI.6 SI.11

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



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 KSF, INC. APRIL 30, 2010  
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STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION

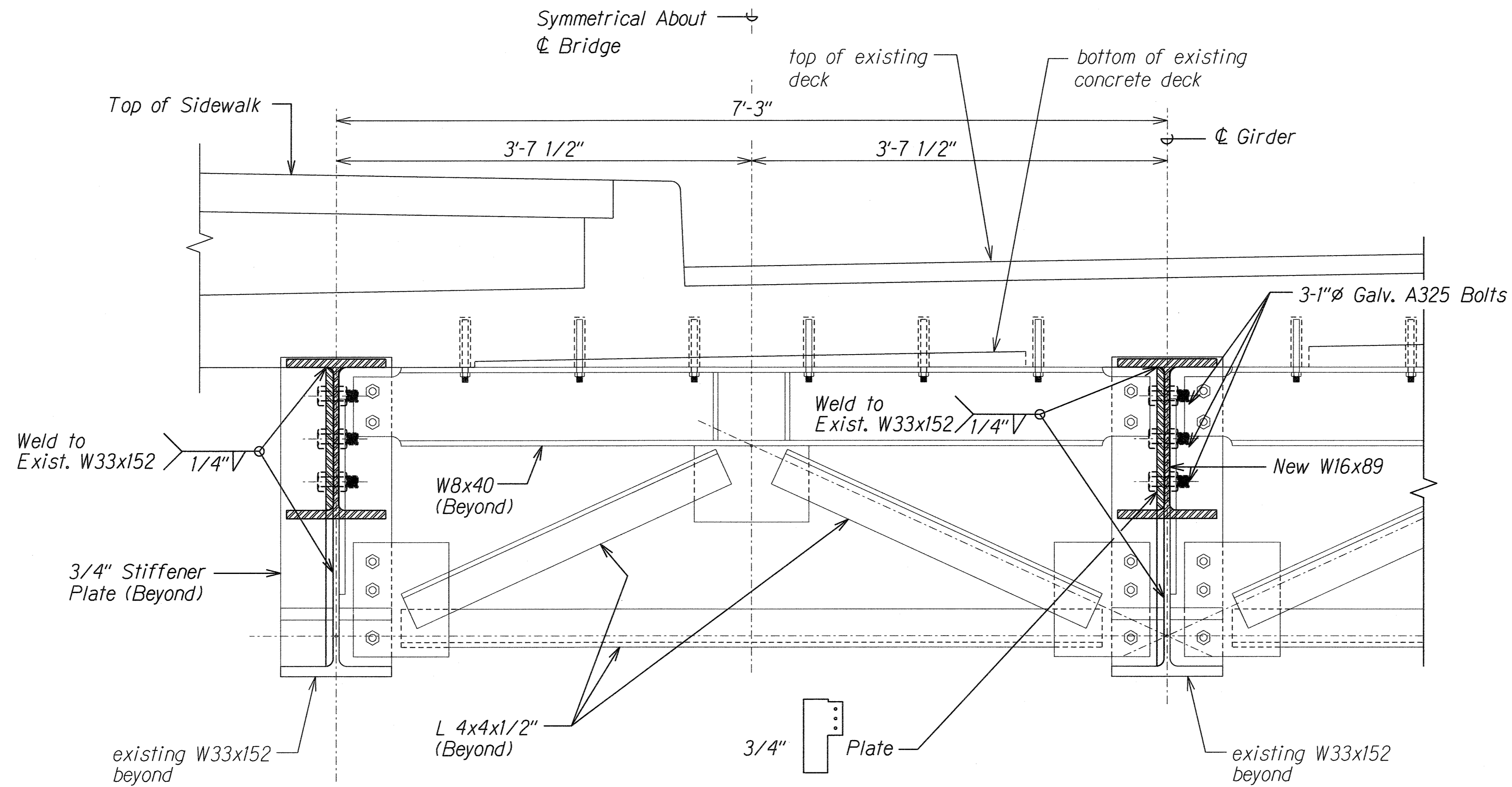
**DIAPHRAGM SECTIONS**

**KAAHUMANU AVENUE**  
**Waiale Road Overpass Repairs**  
**Fed. Aid Proj. No. ARR-032-1(9)**

Scale: Date: Sept. 2009

SHEET No. *SI.11* OF 16 SHEETS

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO.  | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|------------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | C.O. 20S-1 | 30           |



**TYPICAL END DIAPHRAGM OVER PIER**  
Scale: 1 1/2" = 1'-0"

A  
SLI2 SLI2A

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



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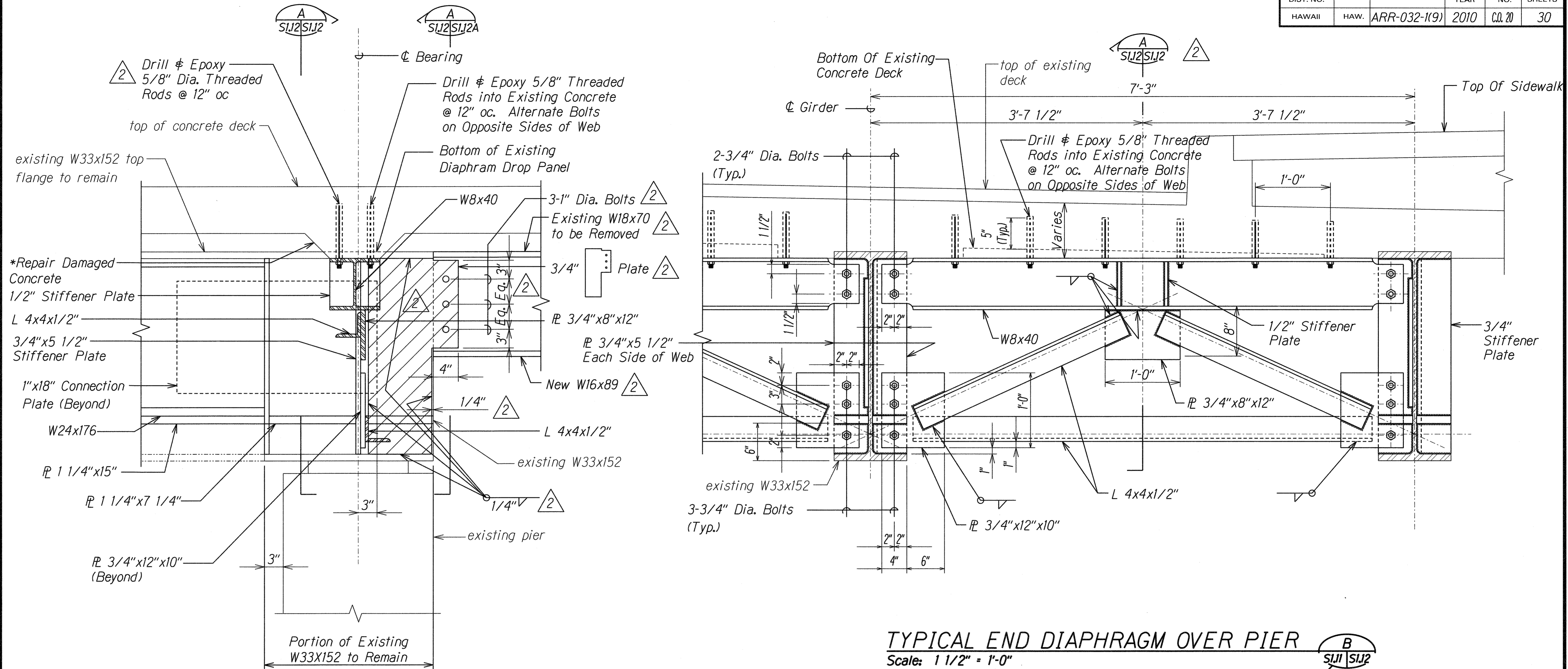
*Calvin T. Miyahara*  
KSF, INC. APRIL 30, 2010  
LIC. EXP. DATE

|  |
|--|
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION<br><b>END DIAPHRAGM OVER<br/>PIER - SECTIONS</b><br>KAAHUMANU AVENUE<br>Waiale Road Overpass Repairs<br>Fed. Aid Proj. No. ARR-032-1(9) |
| Scale: As Shown Date: Sept. 2009   |
| SHEET No. SLI2A OF 16 SHEETS   |

|          |             |
|----------|-------------|
| 08/31/10 | 2 New Sheet |
| DATE     | REVISION    |

C.O. 20S-1

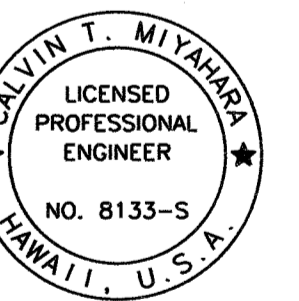
| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | C.O. 20   | 30           |



**\*Notes:**

1. Concrete damaged by removal of existing steel members shall be patched and restored to its original shape.
2. The Engineer shall make the determination on whether or not the concrete has been damaged.
3. The Contractor shall submit a work plan to repair the concrete. This work shall not proceed until the work plan is accepted by the Engineer.
4. All work done repairing the concrete shall be done at no increase in Contract price or Contract time.

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DESIGNED BY       |      |
| TRACED BY         |      |
| NOTE BOOK         |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |



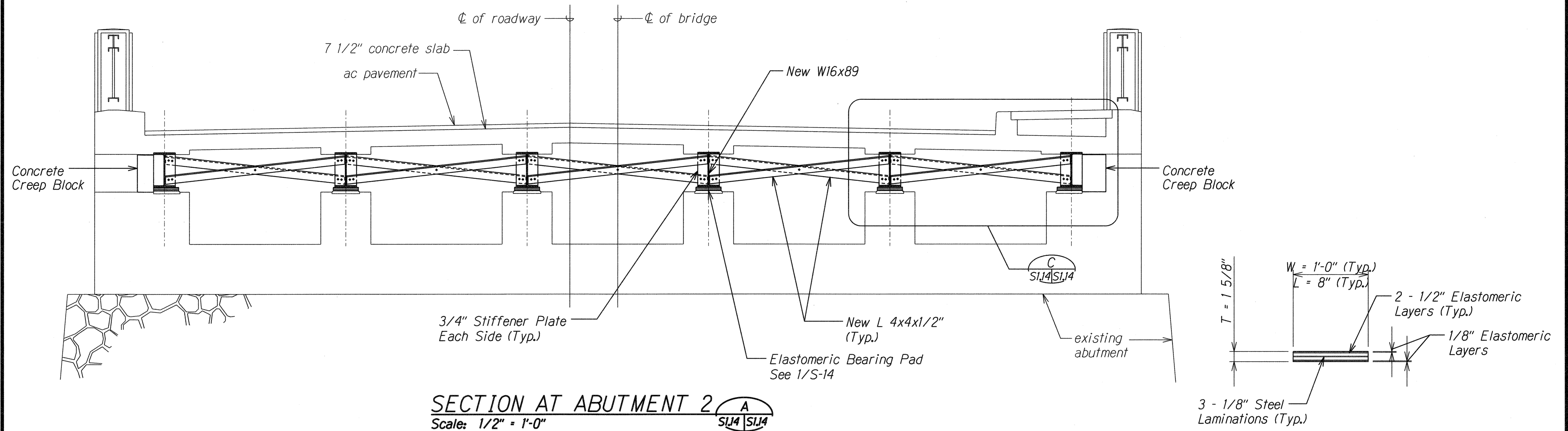
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OR UNDER MY SUPERVISION.  
*Calvin T. Miyahara*  
KSF, INC. APRIL 30, 2010  
LIC. EXP. DATE

|  |                  |
|--|------------------|
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION<br><b>END DIAPHRAGM OVER<br/>PIER - SECTIONS</b><br>KAAHUMANU AVENUE<br>Waiale Road Overpass Repairs<br>Fed. Aid Proj. No. ARR-032-1(9) |                  |
| Scale: As Shown  | Date: Sept. 2009 |
| SHEET No. SIJ2 OF 16 SHEETS  |                  |

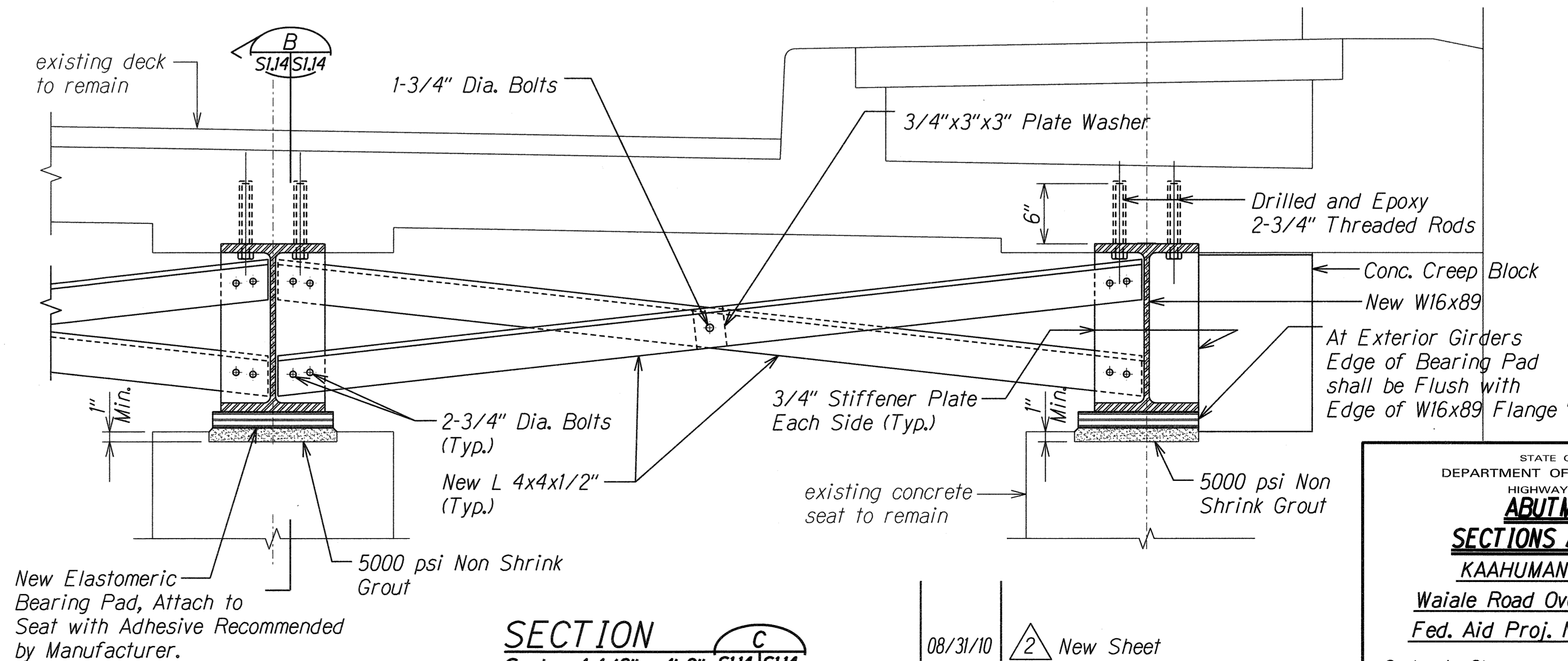
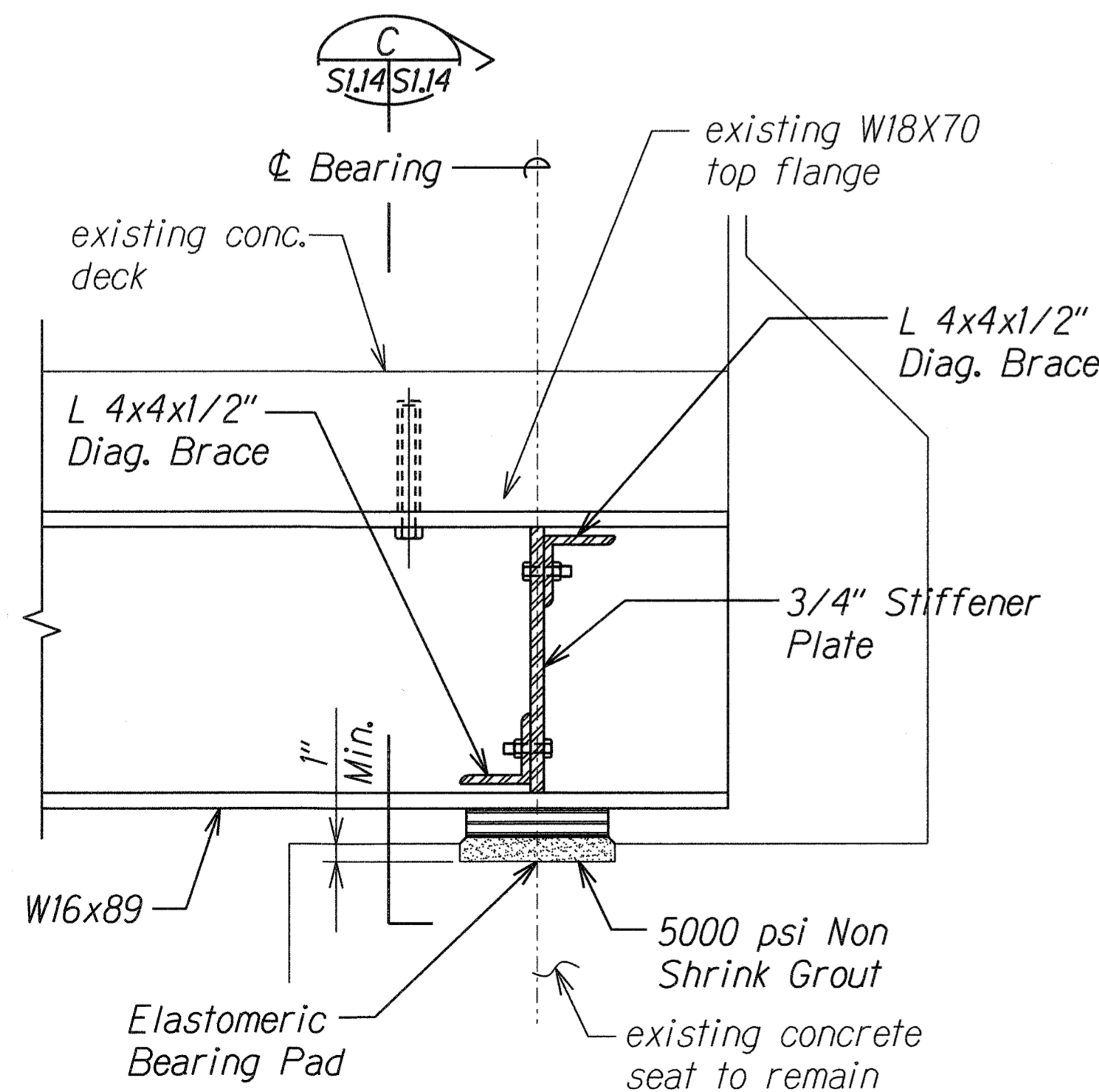
|          |                    |
|----------|--------------------|
| 08/31/10 | 2 Revised Drawings |
| DATE     | REVISION           |



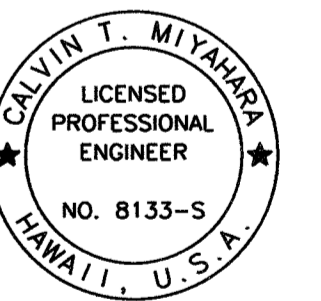
| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO.  | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|------------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | C.O. 21S-1 | 30           |



**ELASTOMERIC BEARING PAD DETAIL AT ABUTMENT 2**  
Scale: 1 1/2" = 1'-0"



|               |      |
|---------------|------|
| DESIGNED BY   | DATE |
| DRAWN BY      |      |
| CHECKED BY    |      |
| NOTED BY      |      |
| QUANTITIES BY |      |
| REVISION      |      |

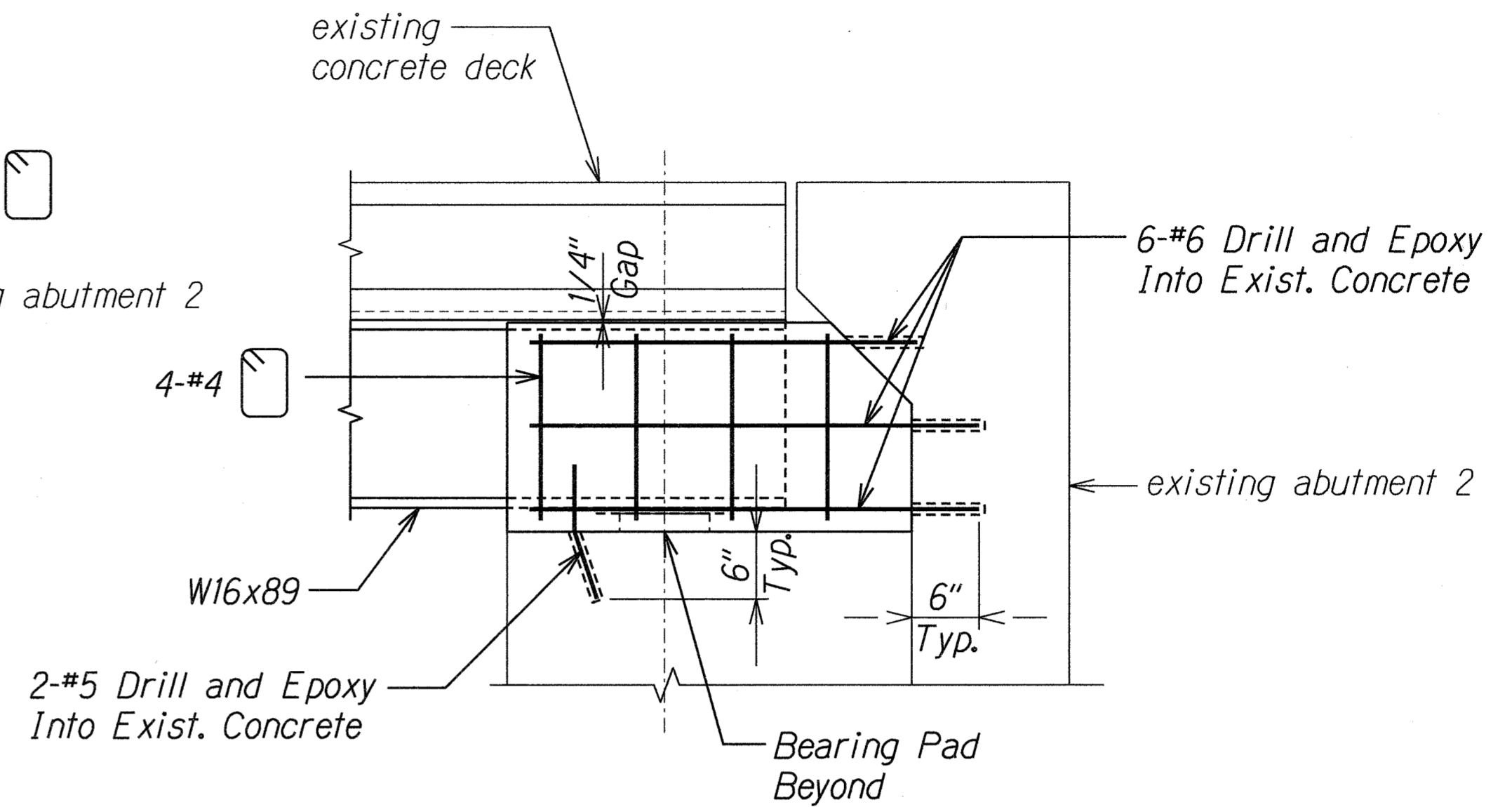
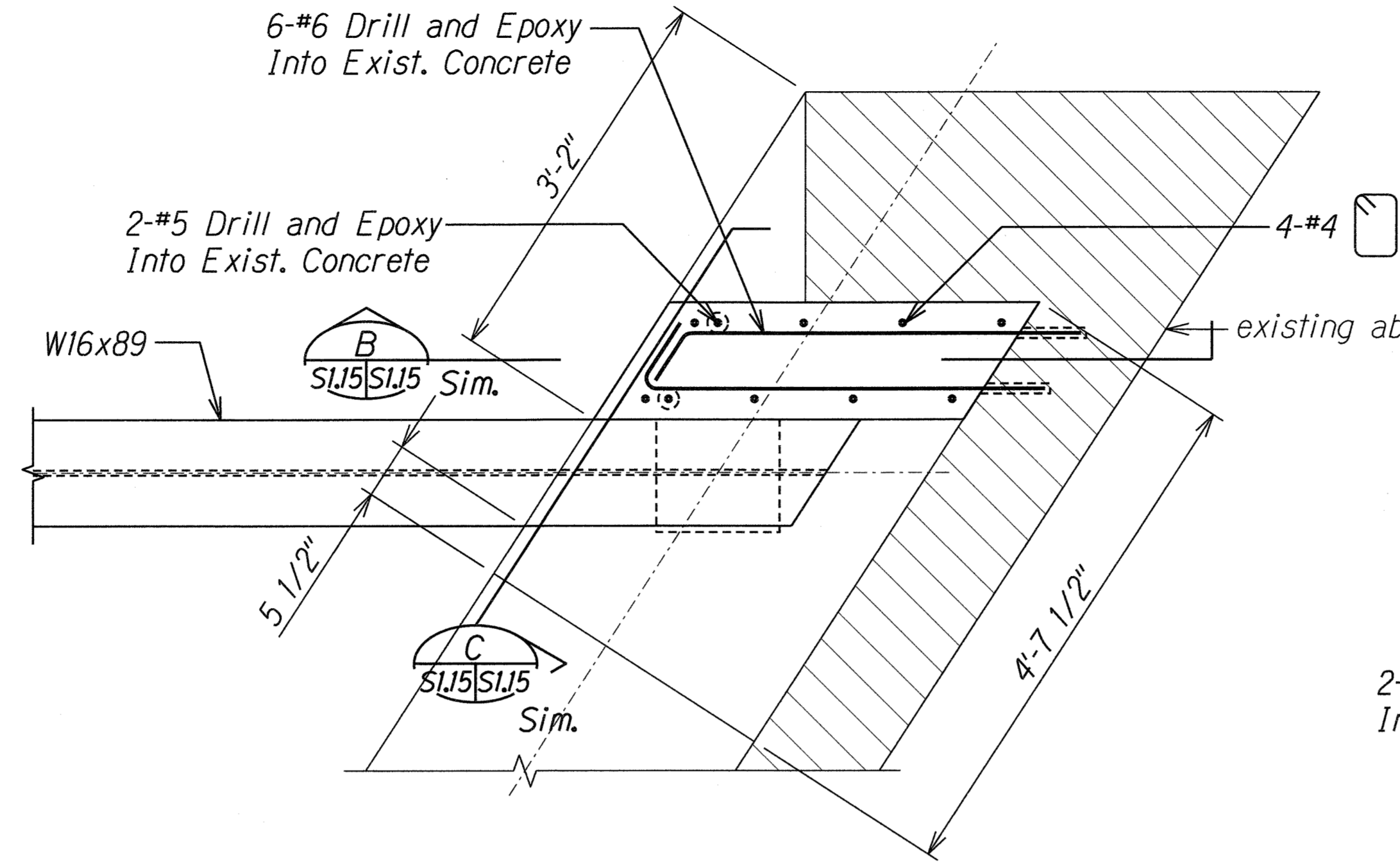


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KSF, INC. APRIL 30, 2010 LIC. EXP. DATE

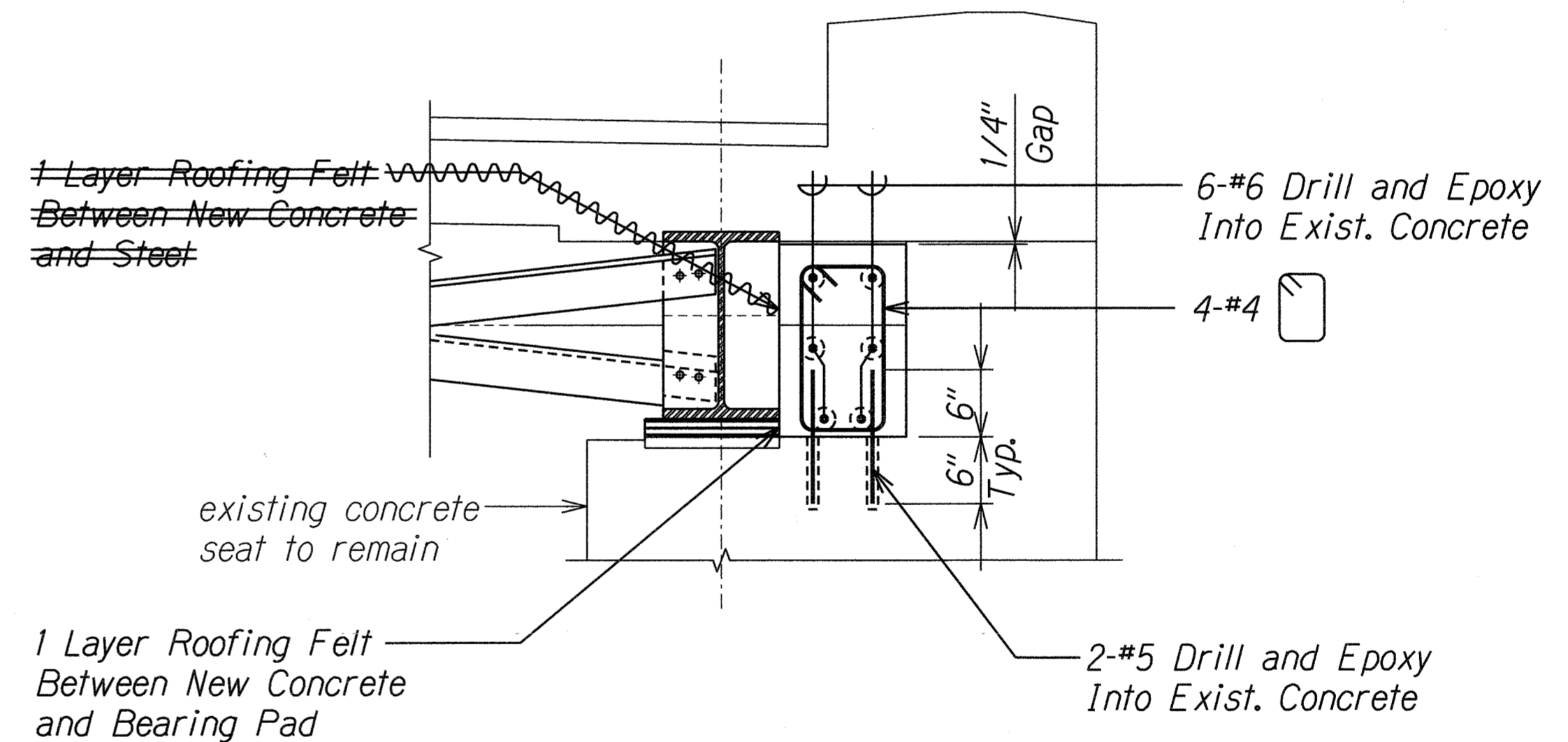
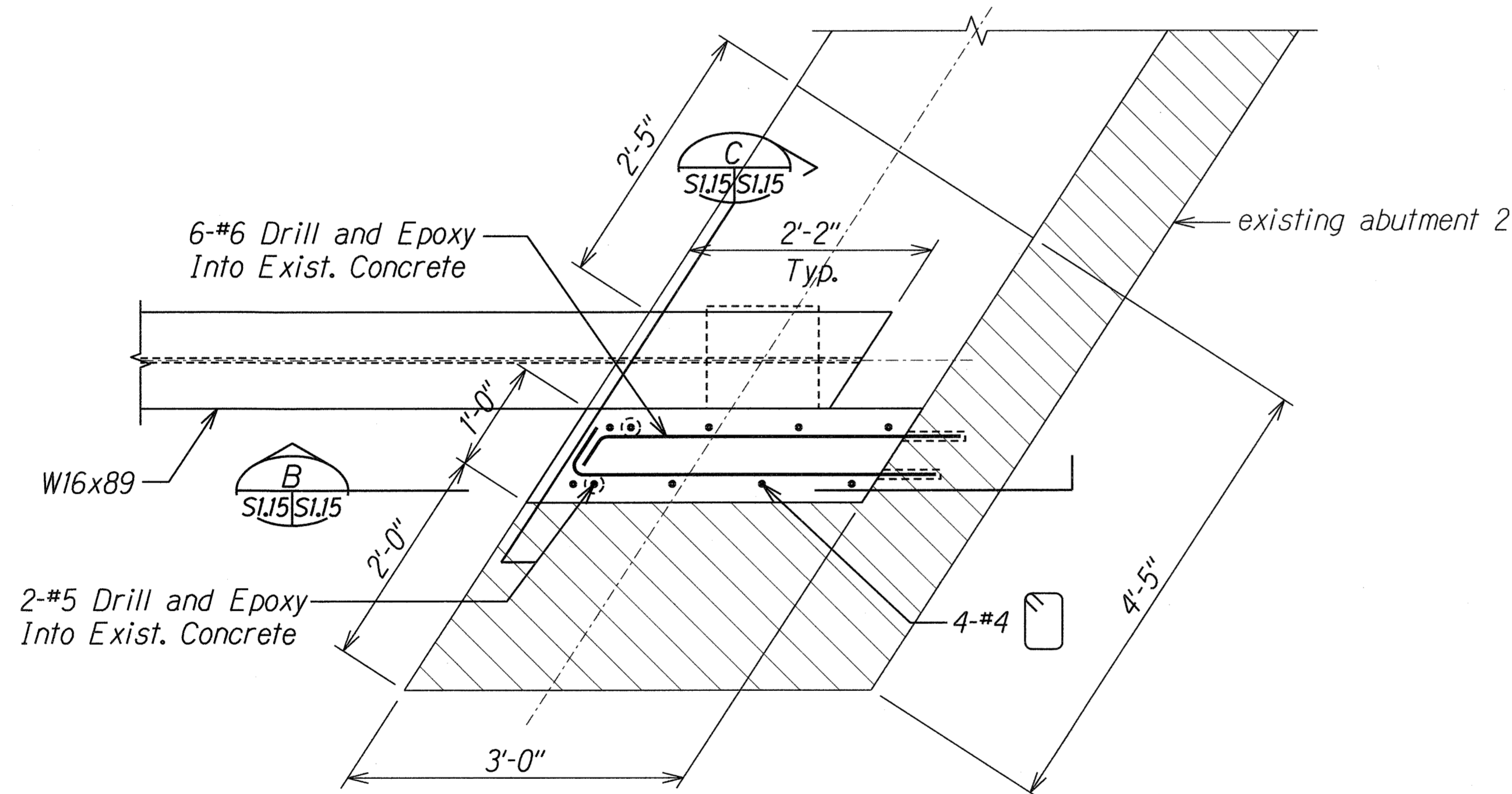
|  |
|--|
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION<br><b>ABUTMENT 2</b><br><b>SECTIONS AND DETAIL</b><br>KAAHUMANU AVENUE<br>Waiale Road Overpass Repairs<br>Fed. Aid Proj. No. ARR-032-1(9) |
| Scale: As Shown Date: Sept. 2009   |
| SHEET No. SIJ4 OF 16 SHEETS  |

|          |             |
|----------|-------------|
| 08/31/10 | 2 New Sheet |
| DATE     | REVISION    |

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO.  | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|------------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | C.O. 21S-2 | 30           |



**SECTION B**  
Scale: 1" = 1'-0" SIJ5 SIJ5

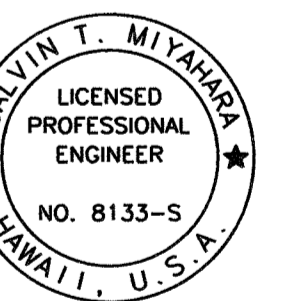


**SECTION C**  
Scale: 1" = 1'-0" SIJ5 SIJ5

**PLAN A**  
Scale: 1" = 1'-0" SIJ5 SIJ5

**LEGEND FOR AS-BUILT POSTINGS**

|         |                                     |
|---------|-------------------------------------|
|         | Squiggly line for as-built deletion |
|         | Double line for as-built deletion   |
| Roadway | Text for as-built posting           |



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KSF, INC. APRIL 30, 2010  
LIC. EXP. DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**ABUTMENT 2**  
**CREEP BLOCK PLAN AND SECTIONS**  
KAAHUMANU AVENUE  
Waiale Road Overpass Repairs  
Fed. Aid Proj. No. ARR-032-1(9)  
Scale: As Shown Date: Sept. 2009  
SHEET No. SIJ5 OF 16 SHEETS

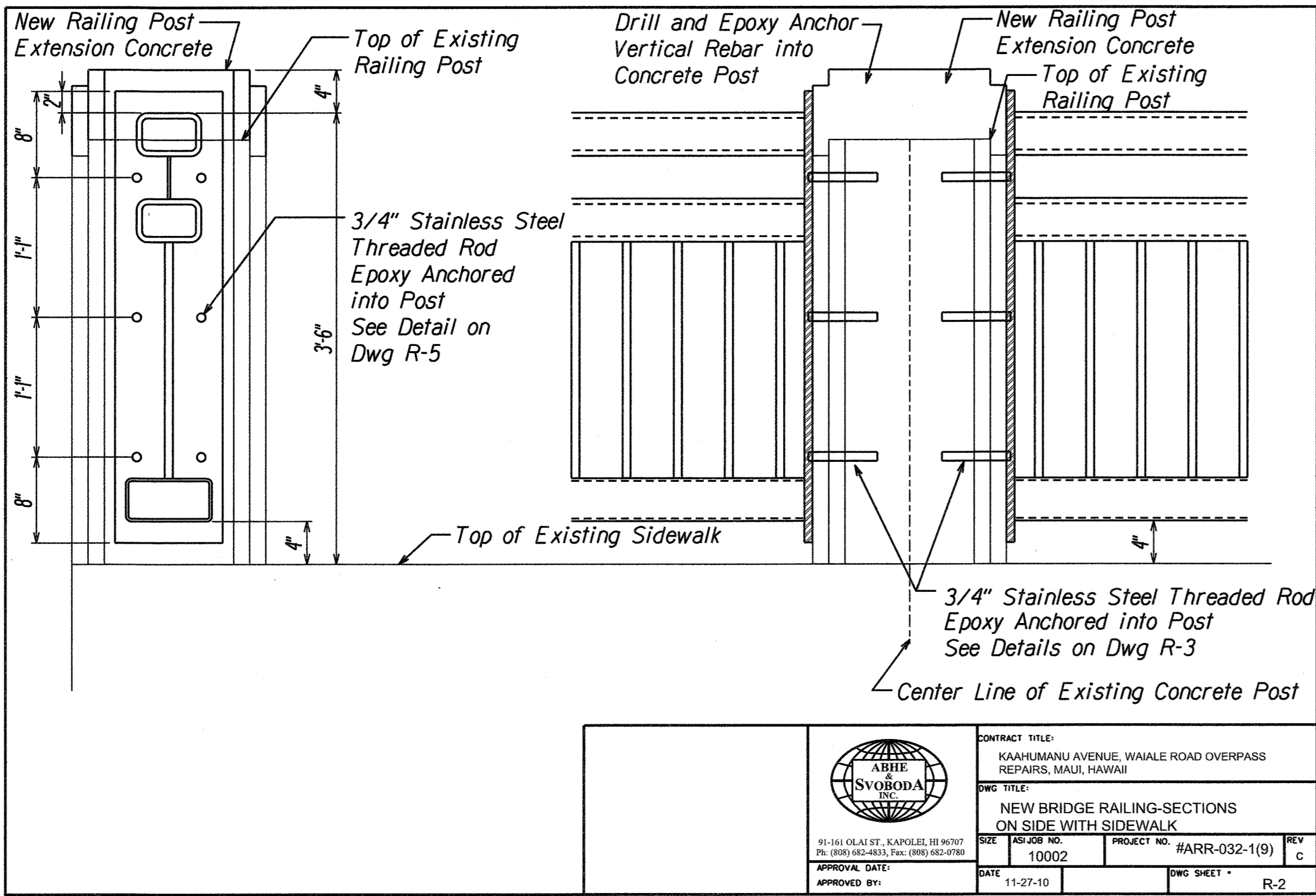
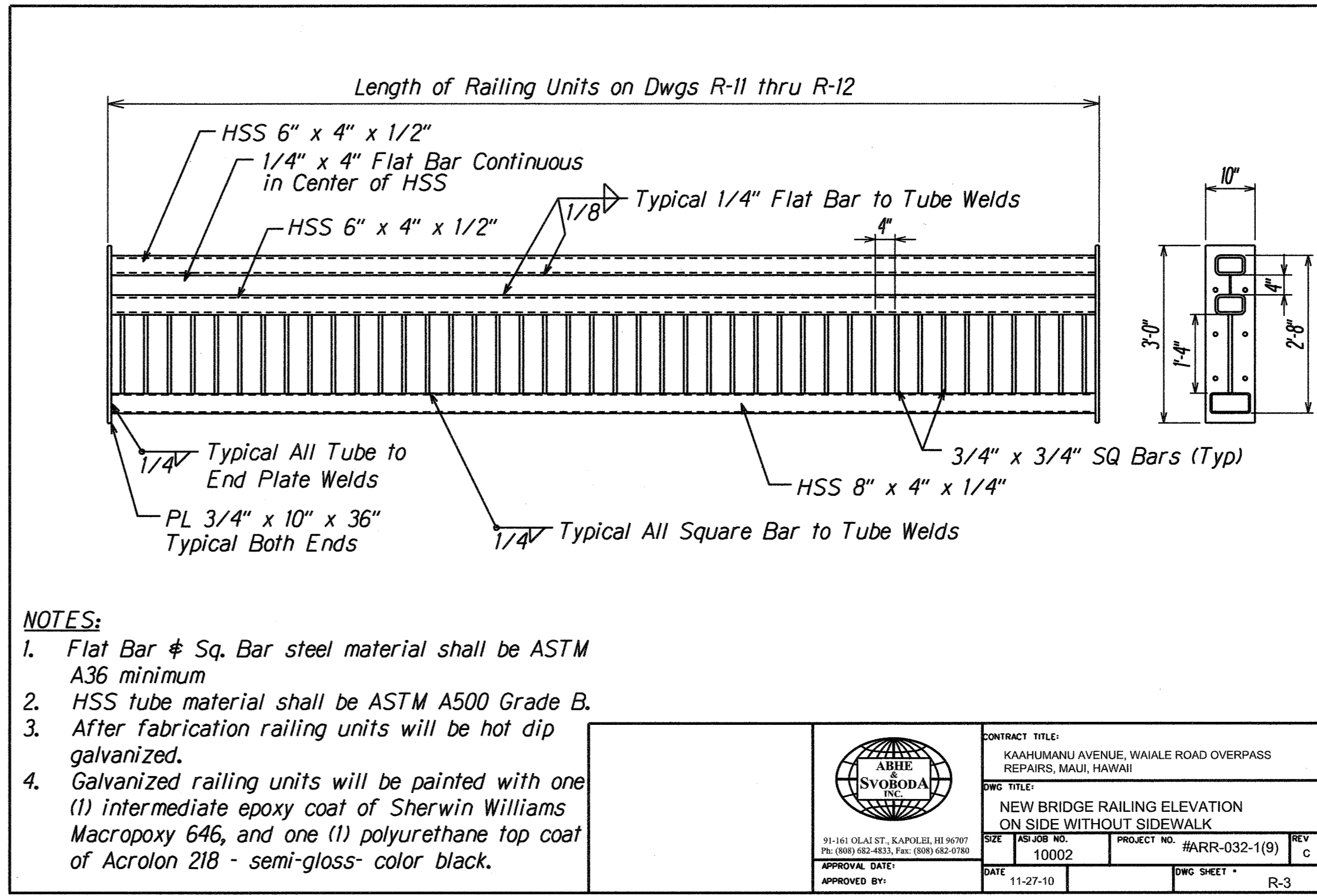
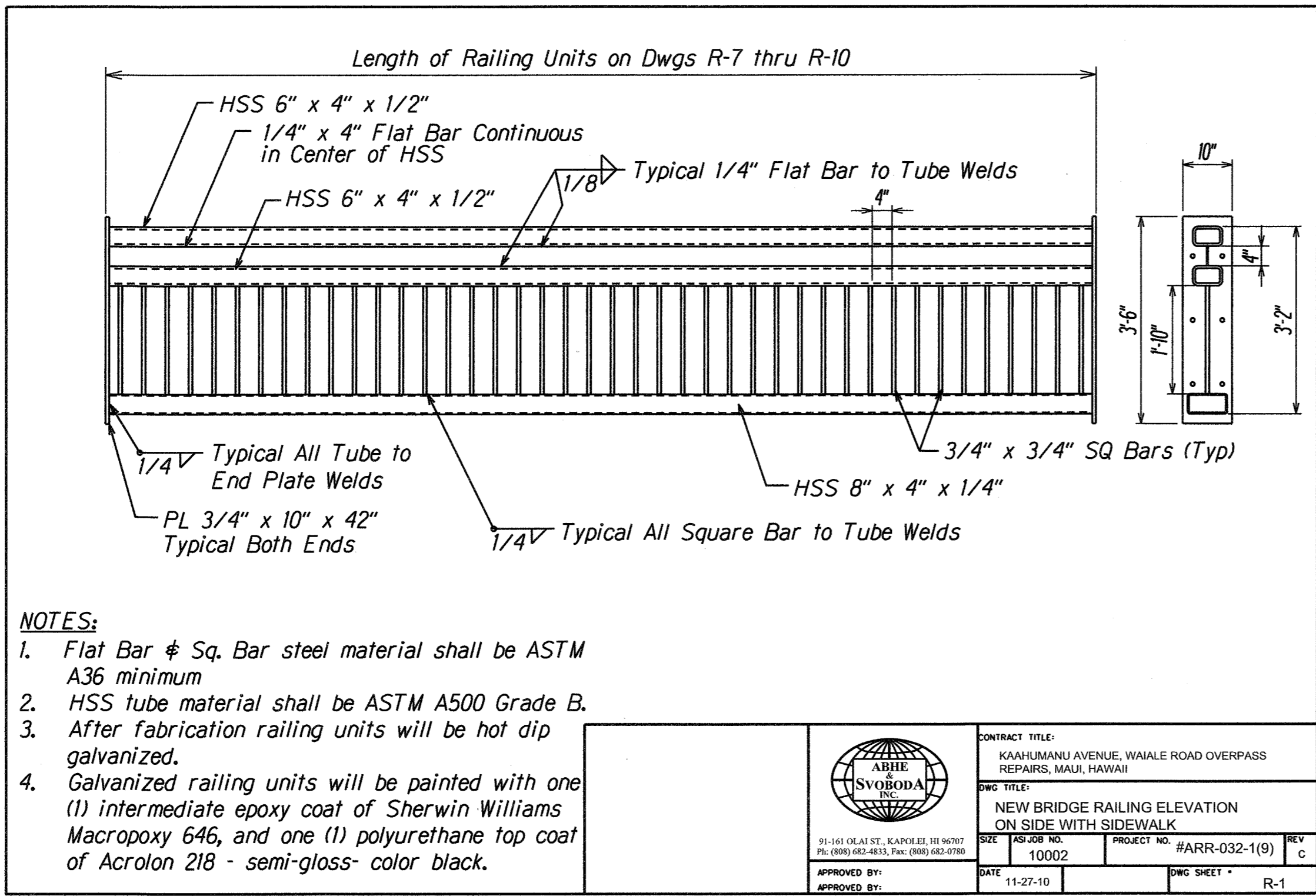
08/9/11 As Built  
08/31/10 New Sheet  
DATE REVISION

AS-BUILT

C.O. 21S-2

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| DESIGNED BY       |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |
| ORIGINAL PLAN     |      |
| NOTE BOOK         |      |
| DATE              |      |

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 21S-3     | 30           |



|               |                   |      |
|---------------|-------------------|------|
| ORIGINAL PLAN | SURVEY PLOTTED BY | DATE |
| NOTE BOOK     | DRAWN BY          |      |
|               | DESIGNED BY       |      |
|               | QUANTITIES BY     |      |
|               | CHECKED BY        |      |

|         |           |
|---------|-----------|
| 08/9/11 | New Sheet |
| DATE    | REVISION  |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**BRIDGE RAILING DETAILS**

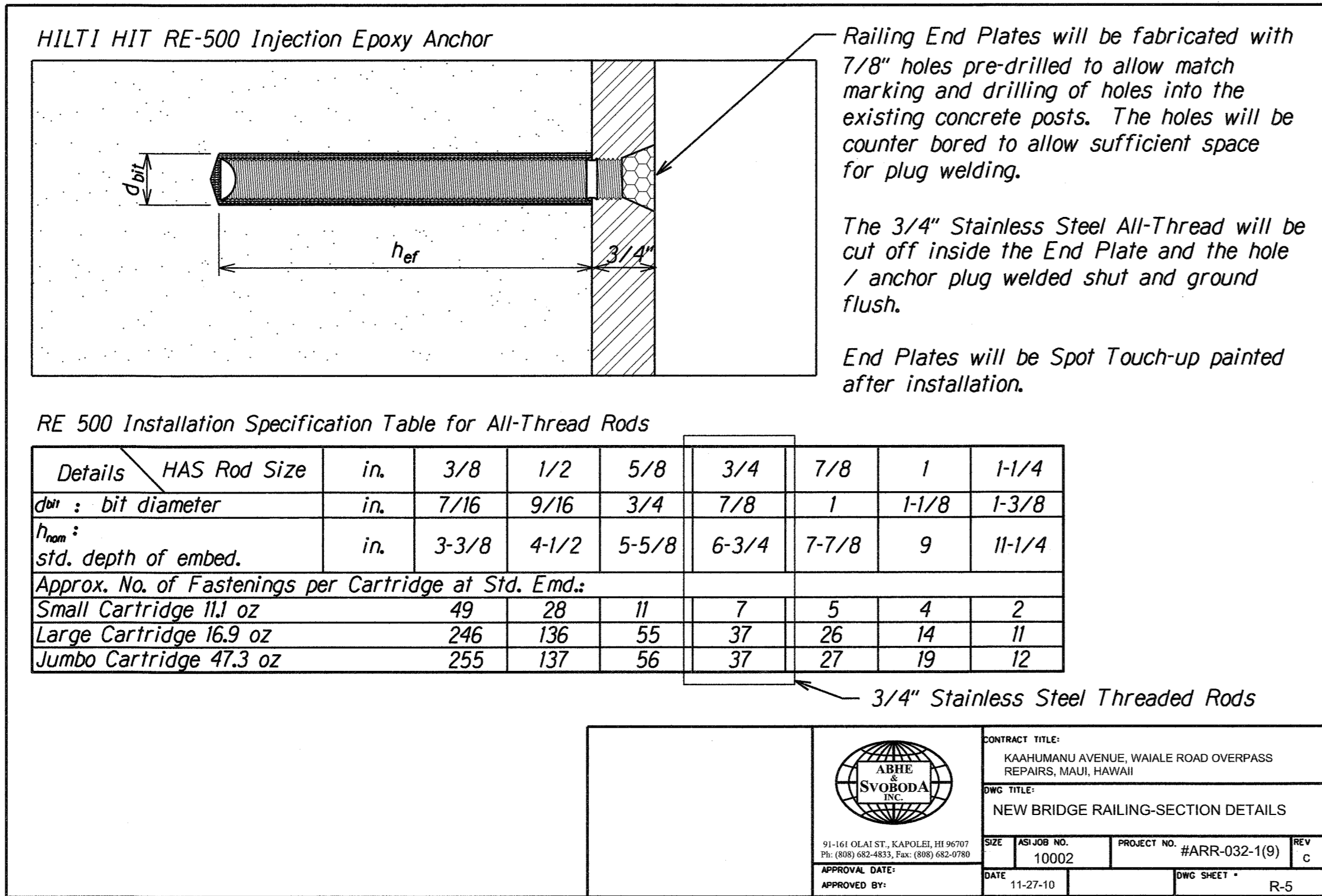
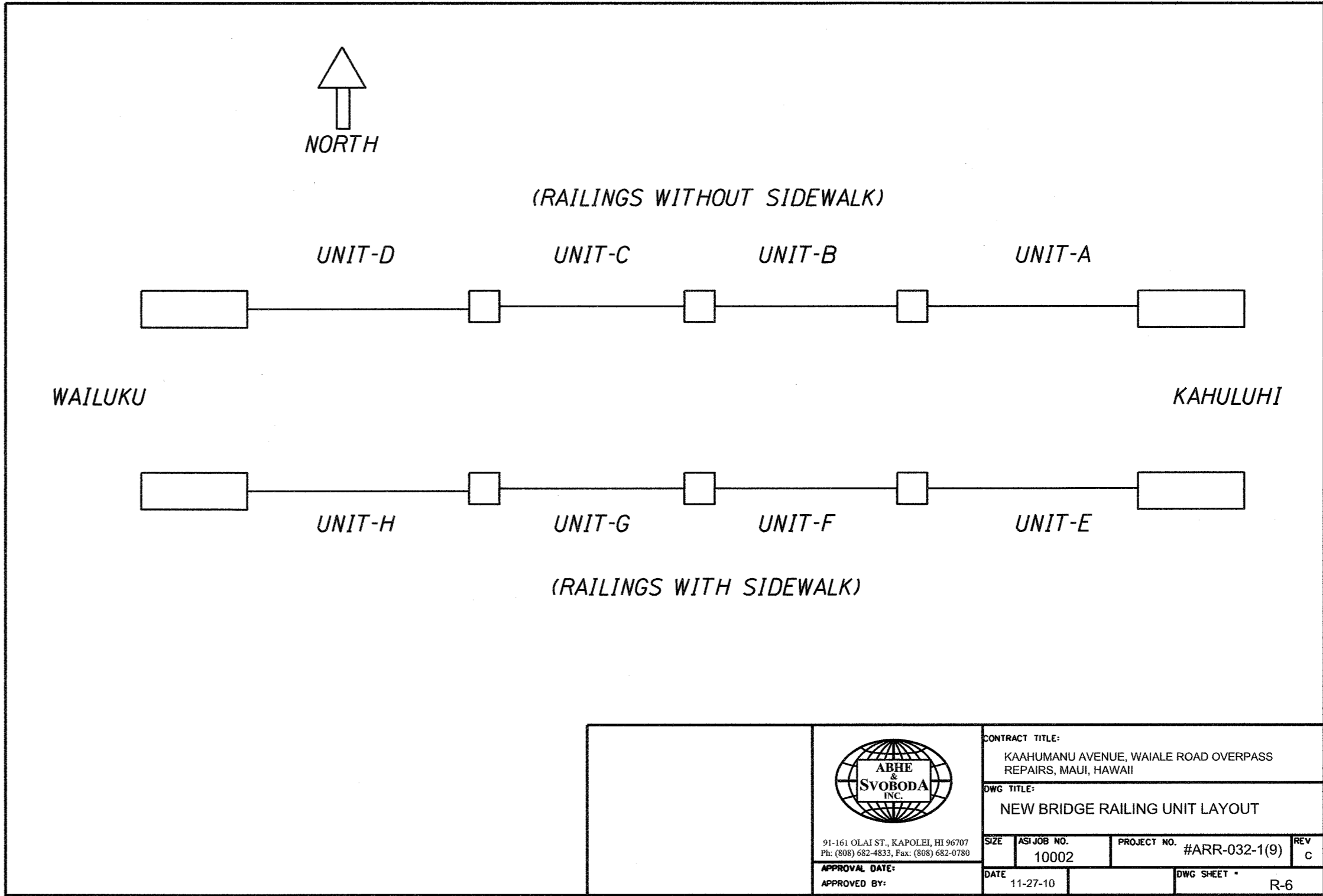
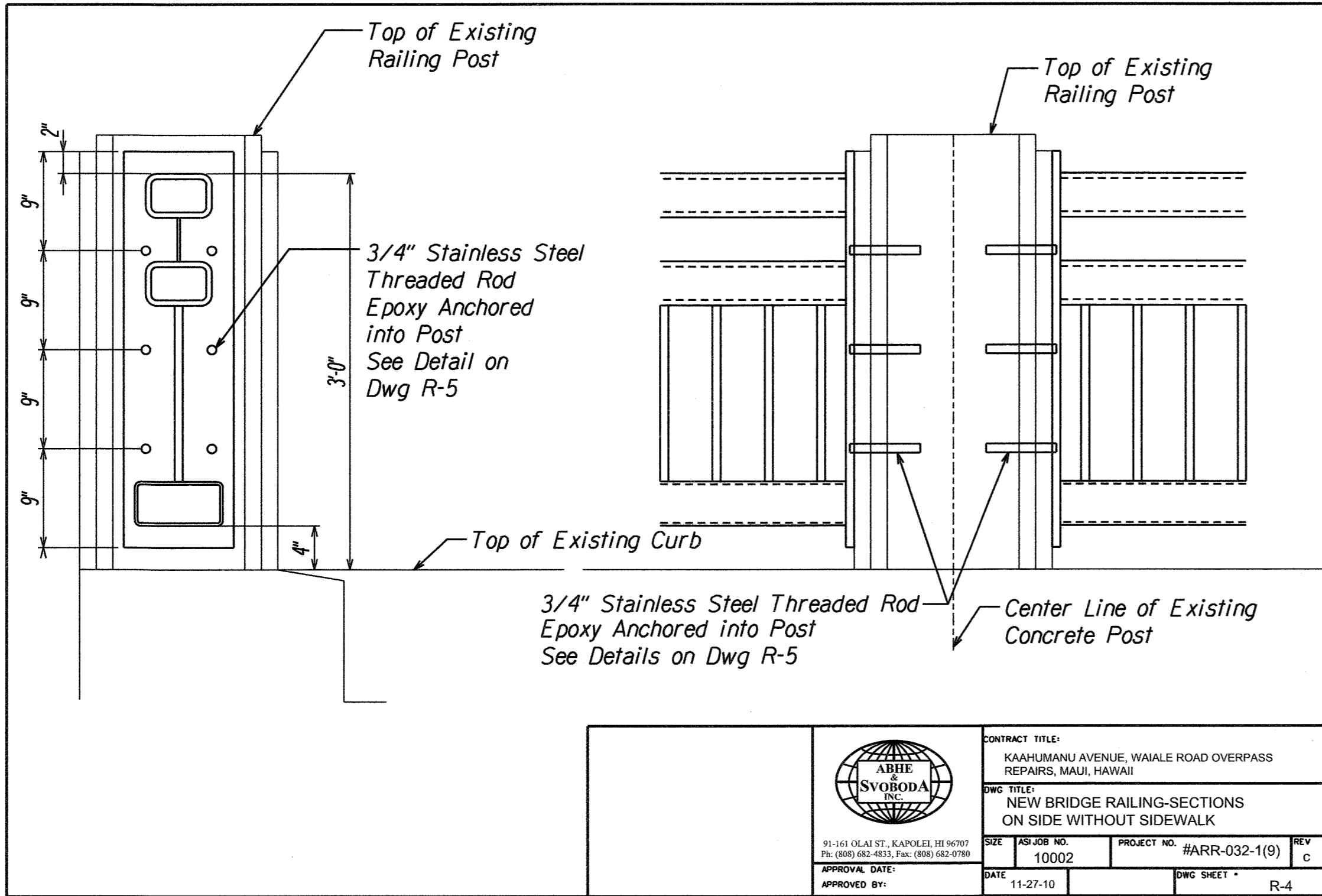
**KAAHUMANU AVENUE**  
**Waiale Road Overpass Repairs**  
**Fed. Aid Proj. No. ARR-032-1(9)**

Scale: Not to Scale Date: Sept. 2009

SHEET No. *SIJ6* OF 16 SHEETS

AS-BUILT

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 21S-4     | 30           |



|               |      |
|---------------|------|
| ORIGINAL PLAN | DATE |
| DESIGNED BY   |      |
| NOTED BY      |      |
| CHECKED BY    |      |
| QUANTITIES BY |      |
| DATE          |      |

|         |           |
|---------|-----------|
| 08/9/11 | New Sheet |
| DATE    | REVISION  |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

## BRIDGE RAILING DETAILS

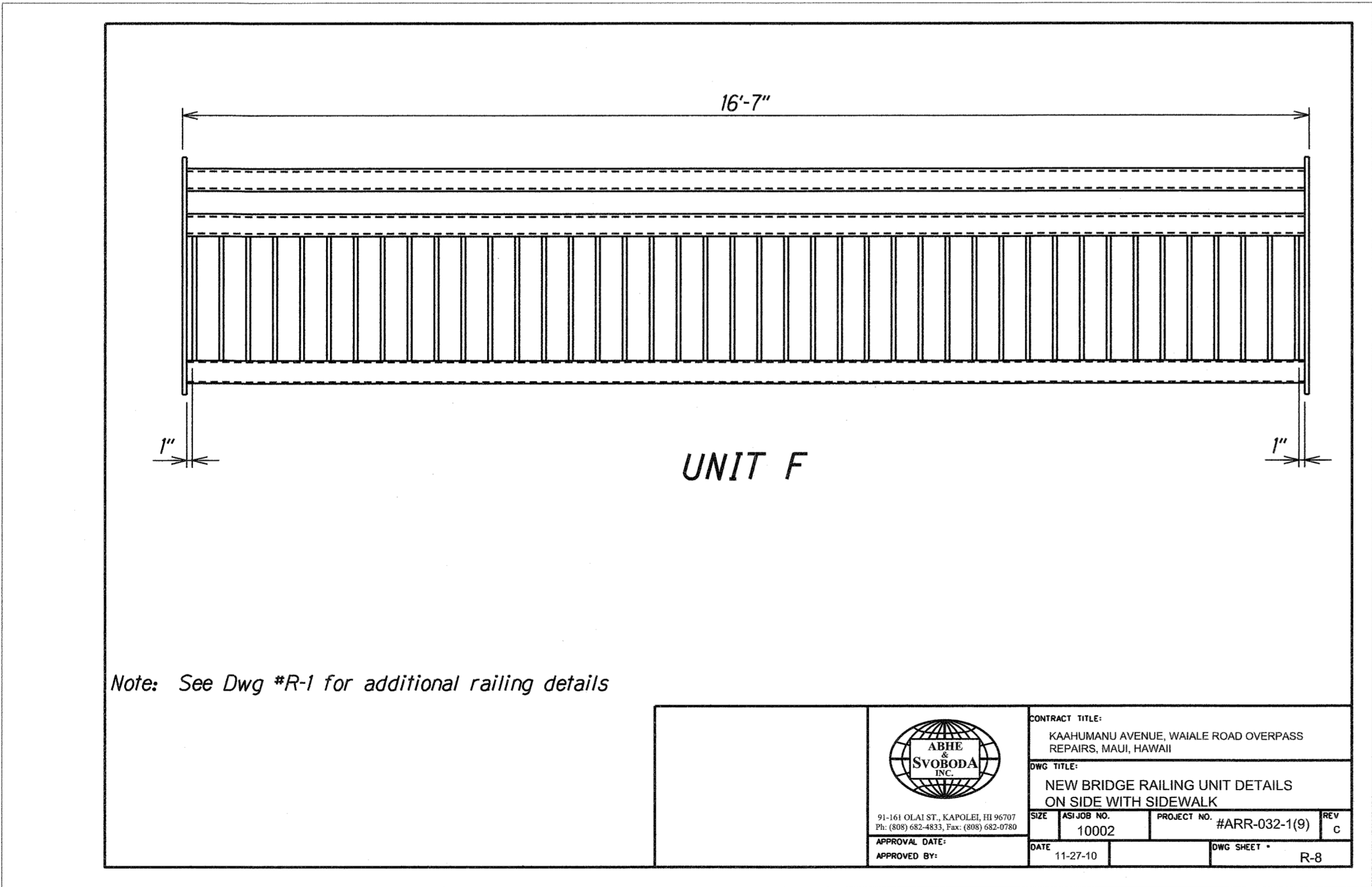
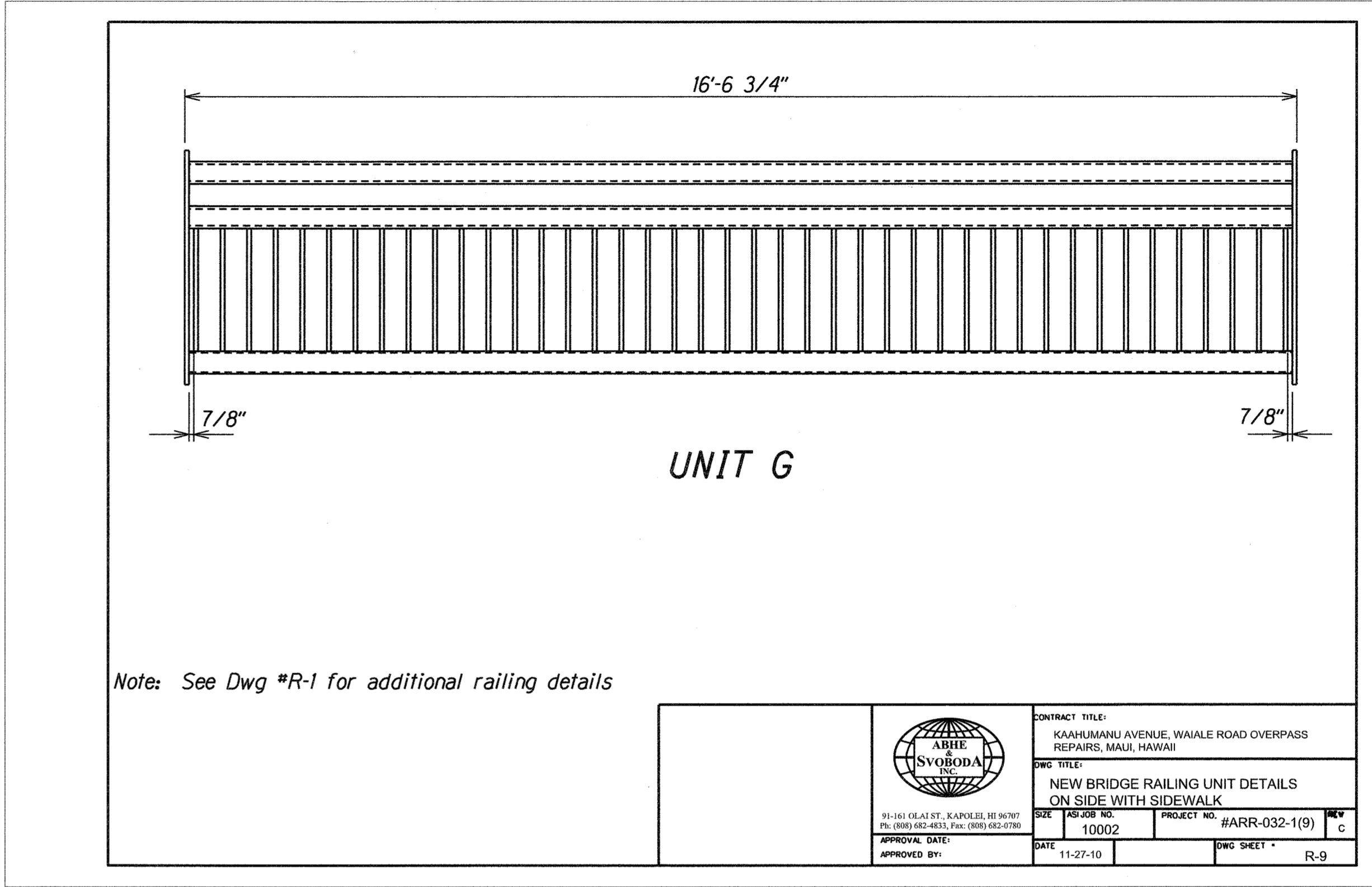
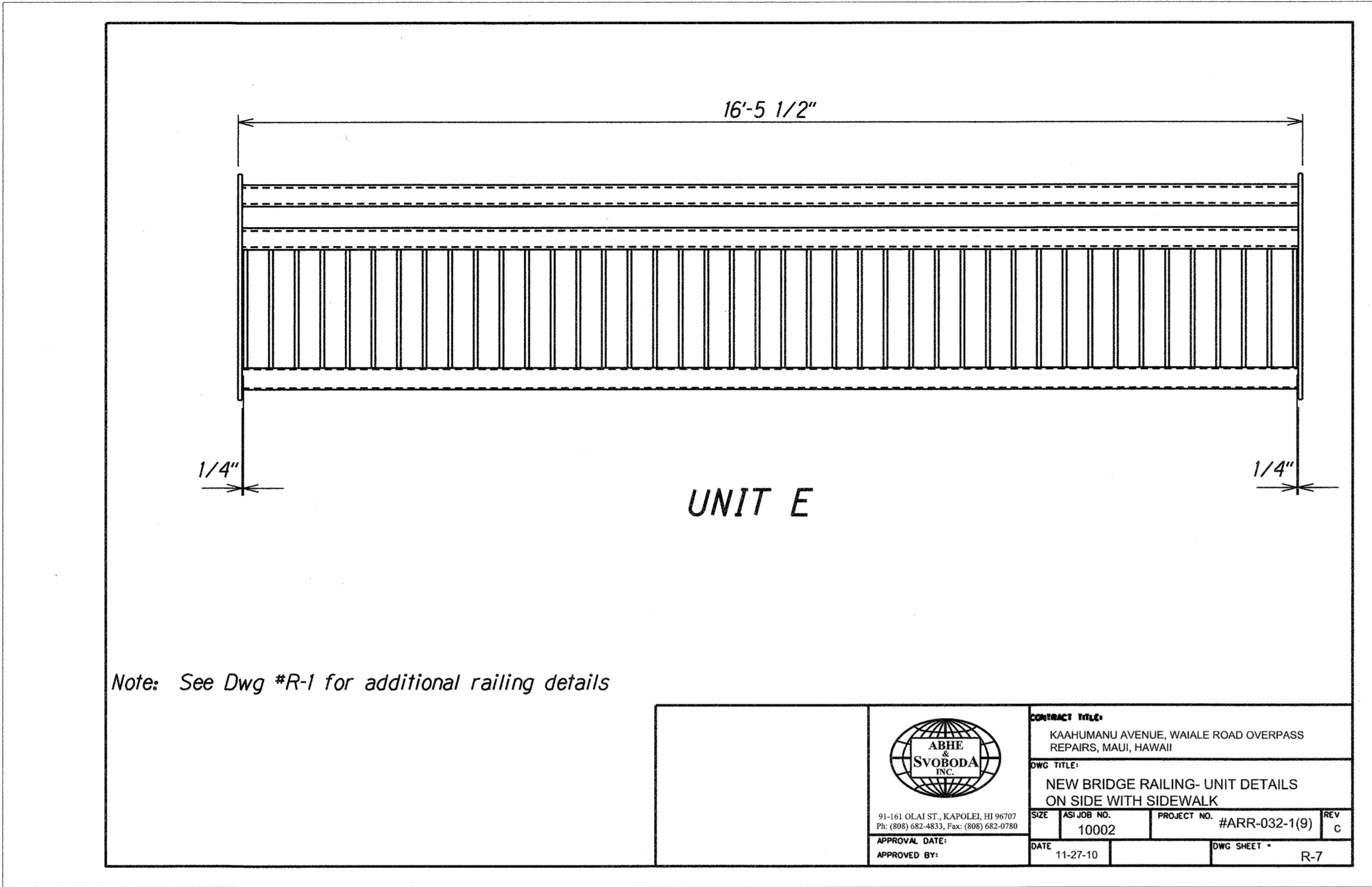
KAAHUMANU AVENUE  
Waiale Road Overpass Repairs  
Fed. Aid Proj. No. ARR-032-1(9)

Scale: Not to Scale Date: Sept. 2009  
SHEET No. 2117 OF 16 SHEETS

AS-BUILT

21S-4

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 21S-5     | 30           |



|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DESIGNED BY       |      |
| TRACED BY         |      |
| NOTE BOOK         |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |
| N.                |      |

|         |           |
|---------|-----------|
| 08/9/11 | New Sheet |
| DATE    | REVISION  |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**BRIDGE RAILING DETAILS**

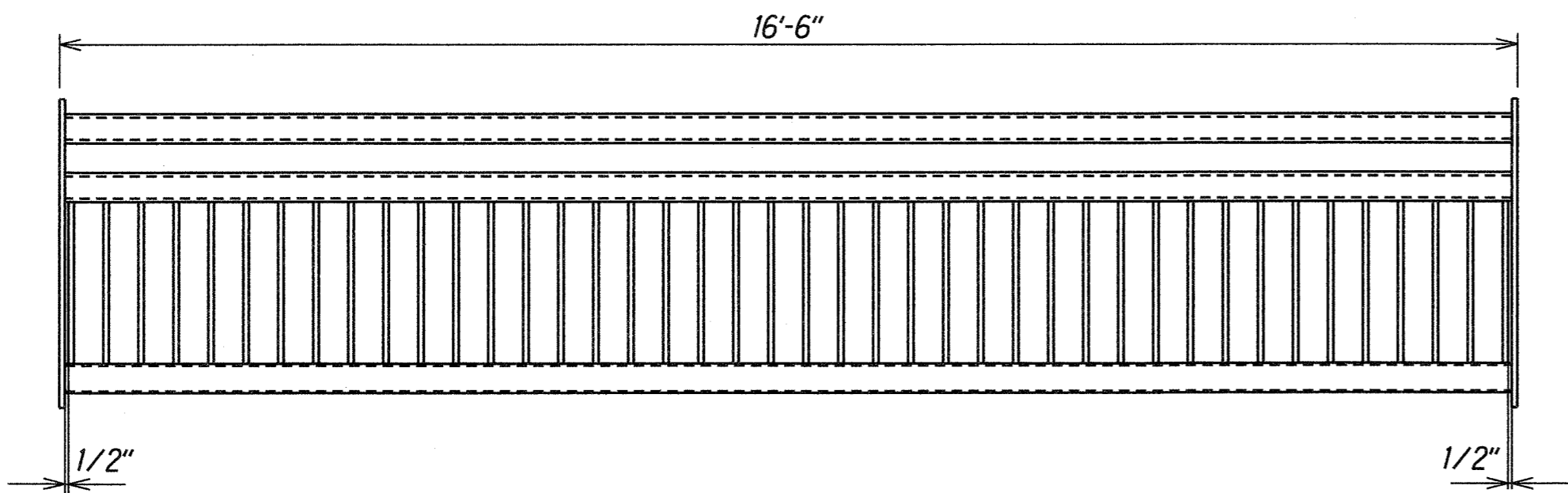
**KAAHUMANU AVENUE**  
**Waiale Road Overpass Repairs**  
**Fed. Aid Proj. No. ARR-032-1(9)**

Scale: Not to Scale Date: Sept. 2009

SHEET No. *SL18* OF 16 SHEETS

AS-BUILT

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 21S-6     | 30           |

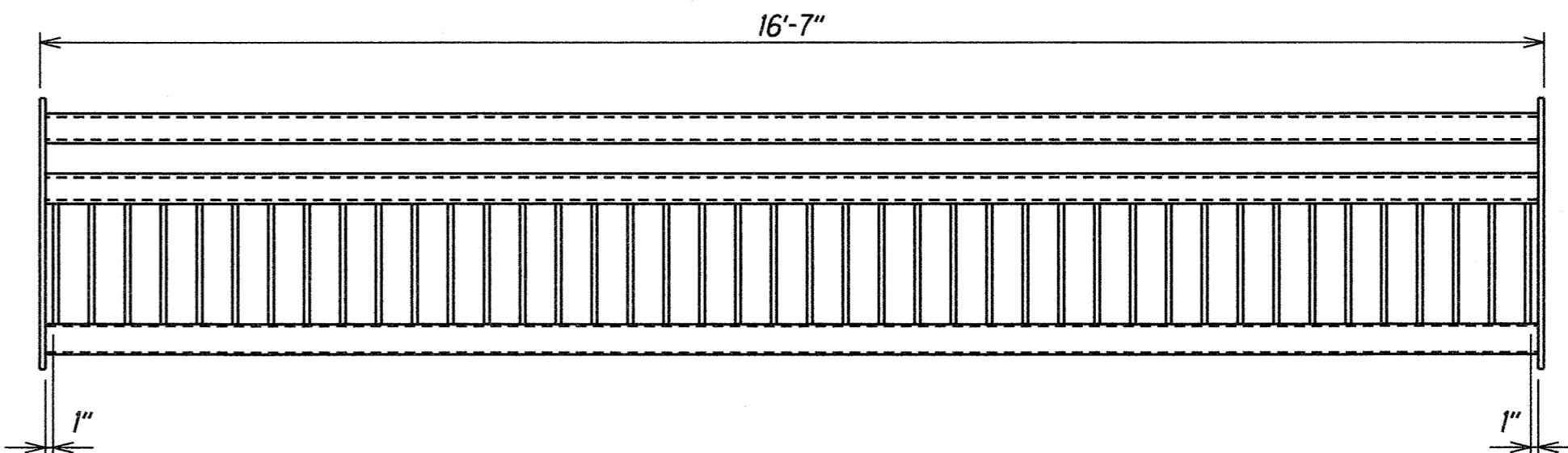


UNIT H

Note: See Dwg #R-1 for additional railing details



|   |            |               |           |
|---|------------|---------------|-----------|
| CONTRACT TITLE:<br>KAAHUMANU AVENUE, WAI'ALE ROAD OVERPASS<br>REPAIRS, MAUI, HAWAII |            |               |           |
| DWG TITLE:<br>NEW BRIDGE RAILING UNIT DETAILS<br>ON SIDE WITH SIDEWALK              |            |               |           |
| SIZE  | AS JOB NO. | PROJECT NO.   | REV       |
|   | 10002      | #ARR-032-1(9) | C         |
| APPROVAL DATE:  |            | DATE          | DWG SHEET |
| APPROVED BY:  |            | 11-27-10      | R-10      |

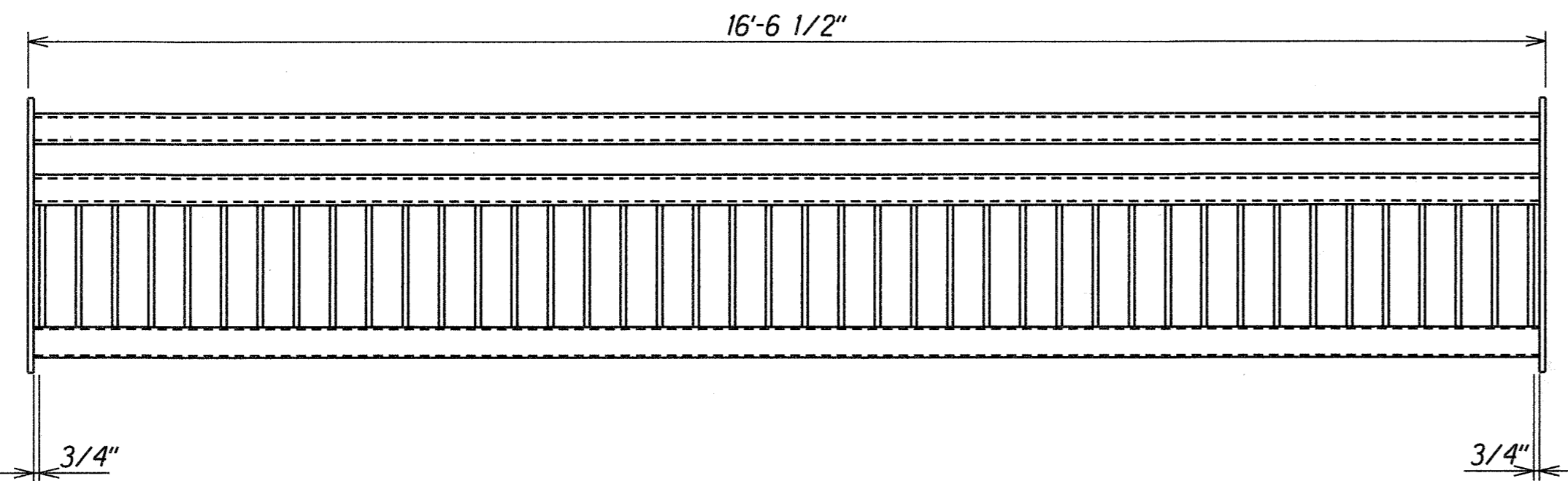


UNITS B & C

Note: See Dwg #R-3 for additional railing details



|   |            |               |           |
|---|------------|---------------|-----------|
| CONTRACT TITLE:<br>KAAHUMANU AVENUE, WAI'ALE ROAD OVERPASS<br>REPAIRS, MAUI, HAWAII |            |               |           |
| DWG TITLE:<br>NEW BRIDGE RAILING UNIT DETAILS<br>ON SIDE WITHOUT SIDEWALK           |            |               |           |
| SIZE  | AS JOB NO. | PROJECT NO.   | REV       |
|   | 10002      | #ARR-032-1(9) | C         |
| APPROVAL DATE:  |            | DATE          | DWG SHEET |
| APPROVED BY:  |            | 11-27-10      | R-12      |



UNITS A & D

Note: See Dwg #R-3 for additional railing details



|   |            |               |           |
|---|------------|---------------|-----------|
| CONTRACT TITLE:<br>KAAHUMANU AVENUE, WAI'ALE ROAD OVERPASS<br>REPAIRS, MAUI, HAWAII |            |               |           |
| DWG TITLE:<br>NEW BRIDGE RAILING UNIT DETAILS<br>ON SIDE WITHOUT SIDEWALK           |            |               |           |
| SIZE  | AS JOB NO. | PROJECT NO.   | REV       |
|   | 10002      | #ARR-032-1(9) | C         |
| APPROVAL DATE:  |            | DATE          | DWG SHEET |
| APPROVED BY:  |            | 11-27-10      | R-11      |

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

|         |           |
|---------|-----------|
| 08/9/11 | New Sheet |
| DATE    | REVISION  |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**BRIDGE RAILING DETAILS**

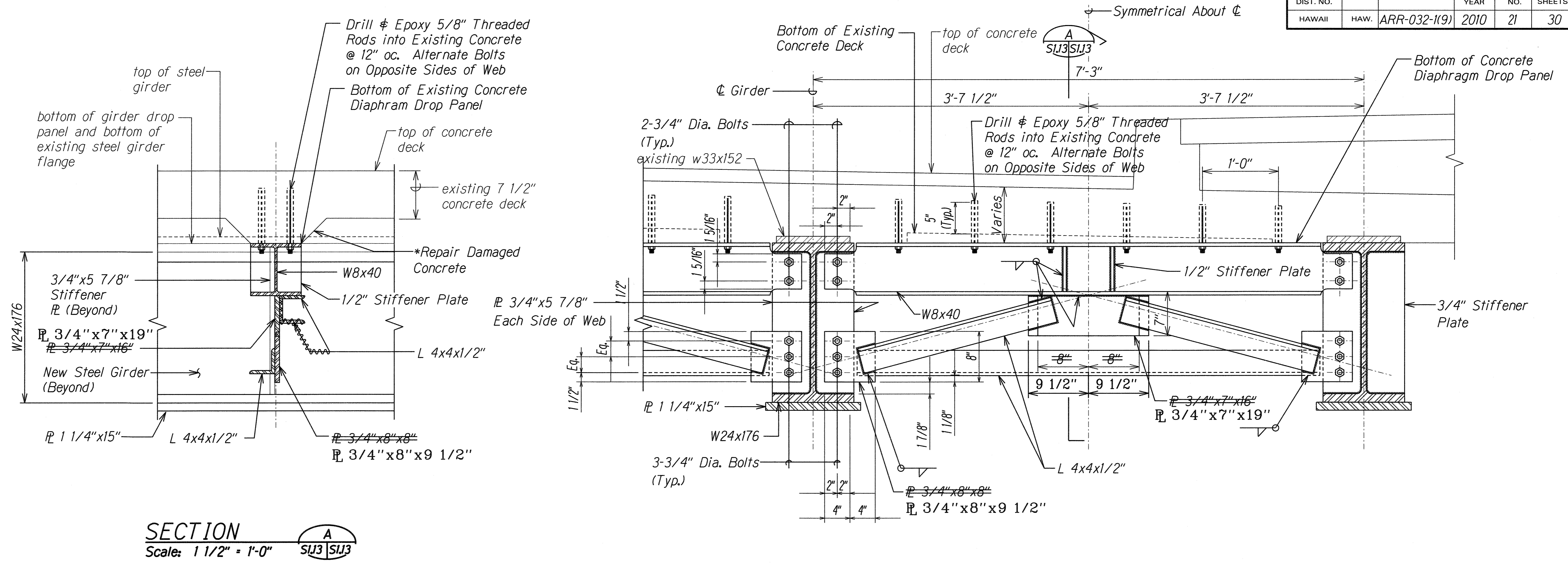
KAAHUMANU AVENUE  
Waiale Road Overpass Repairs  
Fed. Aid Proj. No. ARR-032-1(9)

Scale: Not to Scale      Date: Sept. 2009

SHEET No. *SIJ9* OF 16 SHEETS

AS-BUILT

| FED. ROAD DIST. NO. | STATE | PROJ. NO.    | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | ARR-032-1(9) | 2010        | 21        | 30           |



- \*Notes:**
1. Concrete damaged by removal of existing steel members shall be patched and restored to its original shape.
  2. The Engineer shall make the determination on whether or not the concrete has been damaged.
  3. The Contractor shall submit a work plan to repair the concrete. This work shall not proceed until the work plan is accepted by the Engineer.
  4. All work done repairing the concrete shall be done at no increase in Contract price or Contract time.

| LEGEND FOR AS-BUILT POSTINGS |                                     |
|------------------------------|-------------------------------------|
|                              | Squiggly line for as-built deletion |
|                              | Double line for as-built deletion   |
| Roadway                      | Text for as-built posting           |

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



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|         |          |
|---------|----------|
| 08/9/11 | As Built |
| DATE    | REVISION |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**INTERMEDIATE DIAPHRAGM - SECTIONS**

KAAHUMANU AVENUE  
Waiale Road Overpass Repairs  
Fed. Aid Proj. No. ARR-032-1(9)

Scale: Date: Sept. 2009

SHEET No. *SIJ3* OF 16 SHEETS

AS-BUILT