

WATERLINE CONSTRUCTION NOTES:

1. Unless otherwise specified, all materials and construction of water facilities and appurtenances shall be in accordance with the "Water System Standards, 2002" as adopted by the Department of Water, County of Kauai, including all subsequent amendments and additions.
2. All required project submittals (materials, shop drawings, chlorination plan, etc.) shall be approved by the Department Construction Management Division before a pre-construction conference can be scheduled. Once all project submittals have been approved by DOW Construction Engineer, the DOW Construction Engineer will notify the Contractor that a preconstruction conference can be arranged. The Contractor shall arrange a pre-construction conference at least ten (10) calendar days before construction and shall notify the Department of Water at least three (3) working days prior to start of construction.
3. The Contractor shall submit the names and telephone numbers of its authorized job superintendent and at least three (3) additional persons to contact in case of an emergency during non-working hours.
4. The Contractor shall notify the Department of Water at least 24 hours prior to any trenching, pipe laying, backfilling, testing or disinfection activities to ensure that inspection services will be available.
5. All materials (pipe, lubricants, paints, sealants, form oil, concrete admixtures, etc.) in direct contact with the potable water shall have National Sanitation Foundations (NSF) certifications. The Contractor shall submit these certifications to the Department of Water for review and approval prior to its application.
6. The location of existing water mains and appurtenances shown on the plans are approximate only. The Contractor shall verify the exact locations in the field. Excavation around any existing water main shall be done by hand.
7. The Contractor shall provide unobstructed access to existing hydrants, valves and water meters at all times.
8. The Contractor shall secure all excavations in accordance with OSHA regulations.
9. There shall be no physical connection between a public or private potable water system and a non-potable water system, sewer, or appurtenance thereto which could permit the passage of any sewage or polluted water into the potable water supply.
10. Trench excavation, backfilling in lifts, and repaving shall conform to the "Hawaii Standard Specifications for Road and Bridge Construction, 2005" as amended.
11. Warning tape shall be in accordance with Division 200, Section 212.08 of the "Water System Standards." The warning tape shall be four mil thick, non-metallic, acid and alkali resistant polyethylene and 6-inches wide with minimum strength of 1750 psi lengthwise and 1500 psi crosswise. Tape color shall be "Safety Precaution Blue" and shall bear a continuous printed inscription "CAUTION WATER LINE BURIED BELOW". Inscription shall be 2-inches high, black text.
12. All hydrants shall receive a minimum SSPC SP3 surface preparation and coated in accordance with Division 200, Section 206.01 of the "Water System Standards."

13. Unless otherwise directed, prior to the connection of any pipelines and/or laterals to the existing main, the pipelines/laterals installed shall be cleaned, pressure tested, chlorinated, flushed, and sampled in accordance with Division 300, Sections 302.27 to 302.29 of the "Water System Standards."

Water samples shall be tested for total coliforms by a laboratory certified by the State of Hawaii to perform coliform analysis. Presence of coliform bacteria is unacceptable.

In addition to the test for coliforms, a separate test for Heterotrophic Plate Count (HPC) shall be conducted. The HPC count shall be less than 300 cfu/ml.

Prior to chlorination, a Water Chlorination and Canitation Contractor with a C-37D license shall submit a chlorination plan with water source, injection points, sampling points and procedure clearly defined for approval by the DOW.

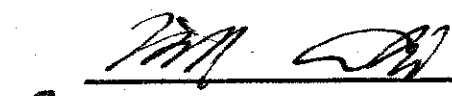
The tested pipelines and/or laterals must be connected to the existing DOW system within 14 calendar days of pulling the first disinfection sample tested by a certified laboratory. The Department of Water will require the Contractor to redo the cleaning, pressure testing, and/or disinfection of the pipelines and/or laterals at the Contractor's expense if the connection is not completed within these 14 calendar days.
14. Polyurethane foam "pigs" shall be "pushed" through the length of the installed pipeline using pressurized water.
15. All connections shall be scheduled in coordination with the Department of Water.
  - a. An advance deposit is required for operating valves, flushing lines and notifying consumers affected by a water shutdown during connections. The Contractor will be charged the actual cost.
  - b. The Contractor shall place the deposit prior to scheduling the connection date.
  - c. Shutdown shall be scheduled on Tuesdays through Thursdays. No connections shall be scheduled on Mondays, Fridays, weekends, and holidays, or from December 18 - January 8 of each year.
  - d. All materials shall be on hand and approved by the Engineer prior to scheduling the connection date.
  - e. Pumps used to de-water the connection area shall be operated in the presence of the Engineer prior to scheduling the connection date.
  - f. All connections shall be performed in the presence of the Engineer.
  - g. No live taps shall be scheduled from December 24 - December 31 of each year

16. In order to prevent damage to the polyethylene encasement from excessive handling, the polyethylene encasement shall be installed around the barrel of the ductile iron pipe at its final location along the trenchline. The polyethylene encased pipe shall be lifted using a fabric type sling or a suitably padded cable or chain to prevent damage to the polyethylene.
17. The Contractor shall take all necessary compaction tests while the waterline trench is being backfilled and while the subbase/basecourse is being placed. If the test results indicate that additional compaction is required, the corrective work shall be completed before any additional trench excavation or placing of subbase/basecourse is allowed.

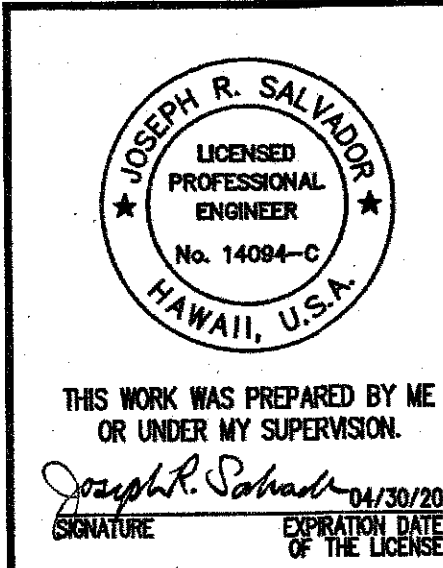
The Contractor shall retain the services of a registered Geotechnical Engineer for quality control. The compaction test results shall be certified by the Geotechnical Engineer and submitted to the Department of Water, State Highways Division (for work done within State R/W) and the Department of Public Works (for work done within County R/W). The Geotechnical Engineer shall certify that the compaction results meet the requirements of the current Standard Specifications for Road and Bridge Construction.
18. The Contractor shall connect all existing consumer piping to the new service laterals. The Department of Water will transfer the existing water meters only.
19. All fittings shall be mechanical joint (mj) at each end unless otherwise noted. "Megalug" retainer glands shall be used with all mechanical joint fittings and valves used in connecting new water mains to existing water mains unless otherwise noted.
20. All water valves that will be abandoned in place shall be placed in the "closed" position. Remove top section of valve box and concrete settlement slab. Fill remainder of valve box with concrete. Place backfill and repair pavement section to applicable State or County Standards backfill to finish grade in road shoulder area.
21. The Contractor shall obtain all applicable department of health permits prior to the start of construction. Permits include, but are not limited to, National Pollution Discharge Elimination System (NPDES) permits for storm water, hydrostatic test, dewatering, and for construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area.

The Contractor shall be responsible for the proper disposal of storm water discharges and effluent associated with construction activities including hydrotesting and disinfection operations, to safeguard public health and safety in accordance with applicable Department of Health requirements. All permits and licenses for storm water and construction water disposal, including all application, charges, fees, and taxes, are the responsibility of the Contractor.

Approved:

  
MANAGER AND CHIEF ENGINEER  
DEPARTMENT OF WATER  
COUNTY OF KAUAI

5/14/19  
DATE



5/10/19	Revised Note
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION <b>WAIPA STREAM BRIDGE</b> <b>TEMPORARY WATERLINE NOTES</b> KAUAI EMERGENCY FLOOD REPAIRS & CLEANUP At Various Locations April 2018, Rte. 560 Fed. Aid Proj. No. ER-19(007) Scale: None Date: Oct. 2018	
SHEET No. U-1 OF 5 SHEETS	



FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-19(007)	2018	C.O. 64	67

WATERLINE CONSTRUCTION NOTES, CONT:

22. The Contractor is responsible for dewatering trench as necessary where groundwater is encountered. All associated costs for dewatering shall be borne by the Contractor.
23. The use of known sewer pump trucks is prohibited for DOW projects for any use, including but not limited to dewatering and testing of new facilities.
24. The Contractor shall verify outside diameter of all existing asbestos-cement (ac) waterlines to be connected. Contractor shall verify use of proper gaskets prior to connection. Ac pipe and gasket information shall be submitted to Engineer for approval.
25. All removal, disposal and connection work that involves asbestos pipe/material shall be done in the presences of or by a licensed Asbestos Contractor.
- The licensed Asbestos Contractor shall submit their plan for all associated removal, disposal and connecting work for the project to DOW for review and approval prior to conducting the work.
26. All connections to existing ac pipe shall be at the nearest ac pipe joint. Ac pipe shall be removed by entire length(s) to facilitate the connection. Cutting of ac pipe is prohibited.
27. The Contractor shall follow all applicable OSHA, HIOSH and Federal regulations in handling and disposal of asbestos-cement pipe. Disposal of the pipe shall be at an approved asbestos material disposal site.
28. All waterworks brass fittings shall be in compliance with the Amended Section 1417 of Safe Drinking Water Act (SDWA) which takes effect on January 4, 2014. The Amendment includes a change to the definition of "Lead-Free" by reducing lead content from 8% to a weighted average of not more than 0.25% in the wetted surface material. All waterworks brass fittings installed for potable water service on January 4, 2014 and beyond shall conform to the amended definition of "Lead-Free".

As indicated in section 211 of Water System Standards - Brass Products, all brass fittings shall conform to NSF Standard 61 and Section 1417 of the Safe Drinking Water Act (SDWA), in addition, all brass fittings shall conform to NSF Standard 372.

29. Contractor shall install water facilities only after reaching final subgrade or higher. The Department of Water will not allow installation of any water facilities until the final subgrade layer at minimum has been achieved.
30. Prior to installation of new water lines and/or facilities, the Contractor shall have all facilities surveyed and staked out by a licensed Surveyor and the Contractor shall expose, verify, and backfill all existing underground utilities and structures in close proximity to crossings and connections prior to excavation of pipeline trench. Contractor shall provide the licensed Surveyor cut sheet and the probing information to the DOW Construction Engineer for review and approval before moving forward with installation via the submittal review process.
31. The Department shall be provided twenty (20) working days for all submittal reviews from the time of submission by the Contractor.

- △ 32. Unless otherwise specified, all ductile iron pipes, valves, and fittings shall be encased in one layer of 8 mil minimum thickness polyethylene material in accordance with ANSI A-21.5 and AWWA C105. The polyethylene encasement film shall be manufactured from virgin polyethylene and shall consist of three layers of co-extruded linear low density polyethylene (LLDPE), fused into a single thickness of not less than 8 mils. The inside surface of the polyethylene wrap to be in contact with the pipe exterior shall be infused with a blend of an antimicrobial to mitigate microbiologically influenced corrosion and a volatile corrosion inhibitor to control galvanic corrosion. Polyethylene material shall have permanent markings per AWWA C105.

Copper service laterals shall be encased with polyethylene wrap from the connection to ductile iron pipes to the angle ball valve located in the water meter box.

- △ 33 The Contractor shall verify the connection points before laying out the water line alignment. Contractor shall adjust alignment accordingly with concurrence from Engineer.
- △ 34. Contractor shall provide shop drawings prior to installation of water line.
- △ 35. Contractor shall provide necessary fittings and piping to complete water line connection in place.

SPECIAL WATERLINE NOTES TO DEVELOPER:

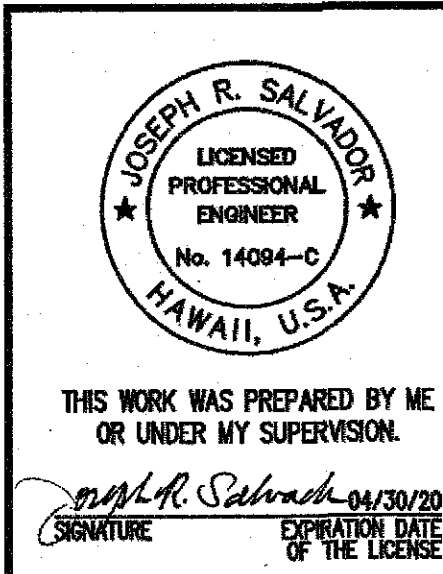
1. Contractor shall maintain temporary water line until final design water line is constructed and conveyed to the Department of Water.

Approved:

*[Signature]*  
MANAGER AND CHIEF ENGINEER  
DEPARTMENT OF WATER  
COUNTY OF KAUAI

5/14/19  
DATE

5/10/19	△ Added Note, Revised Numbering
DATE	REVISION



STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<b>WAIPA STREAM BRIDGE</b> <b>TEMPORARY WATERLINE NOTES</b>	
<b>KAUAI EMERGENCY FLOOD REPAIRS &amp; CLEANUP</b> <b>At Various Locations April 2018, Rte. 560</b> <b>Fed. Aid Proj. No. ER-19(007)</b>	
Scale: None	Date: Oct. 2018

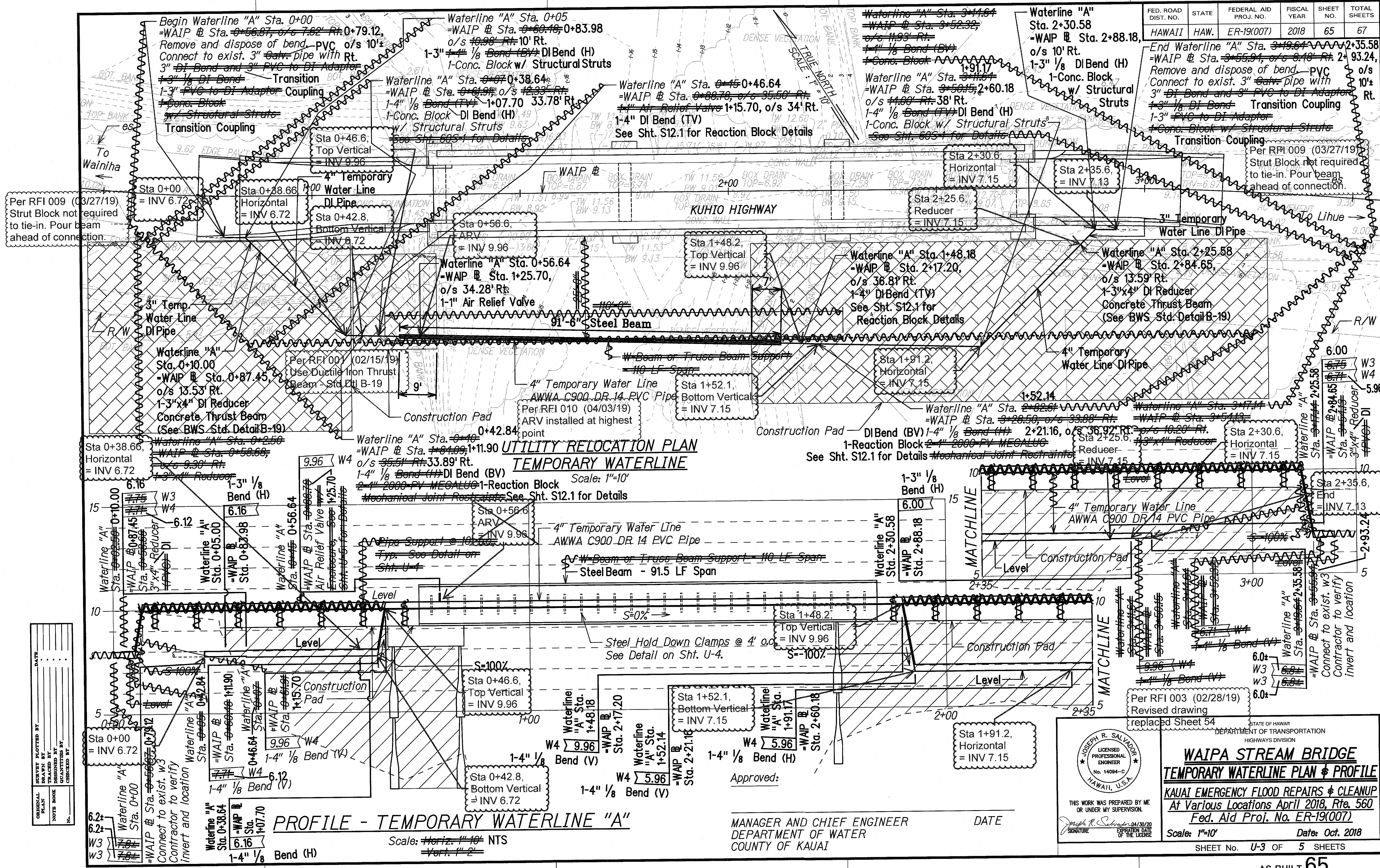
SHEET No. U-2 OF 5 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTED BY	DRAWN BY	
NOTED BY	DESIGNED BY	
NOTED BY	CHECKED BY	

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FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-19(007)	2018	65	67



DATE	_____
DESIGNED BY	_____
CHECKED BY	_____
APPROVED BY	_____
NOTED BY	_____
QUANTITIES BY	_____

### PROFILE - TEMPORARY WATERLINE "A"

Scale: Horiz. 1"=10' NTS  
Vert. 1"=2'

MANAGER AND CHIEF ENGINEER  
DEPARTMENT OF WATER  
COUNTY OF KAUAI

DATE

JOSEPH R. SALVADOR  
LICENSED PROFESSIONAL ENGINEER  
No. 14084-C  
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION.

Signature: \_\_\_\_\_  
Date: 04/30/20  
Expiration Date of License: \_\_\_\_\_

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

### WAIPA STREAM BRIDGE TEMPORARY WATERLINE PLAN & PROFILE

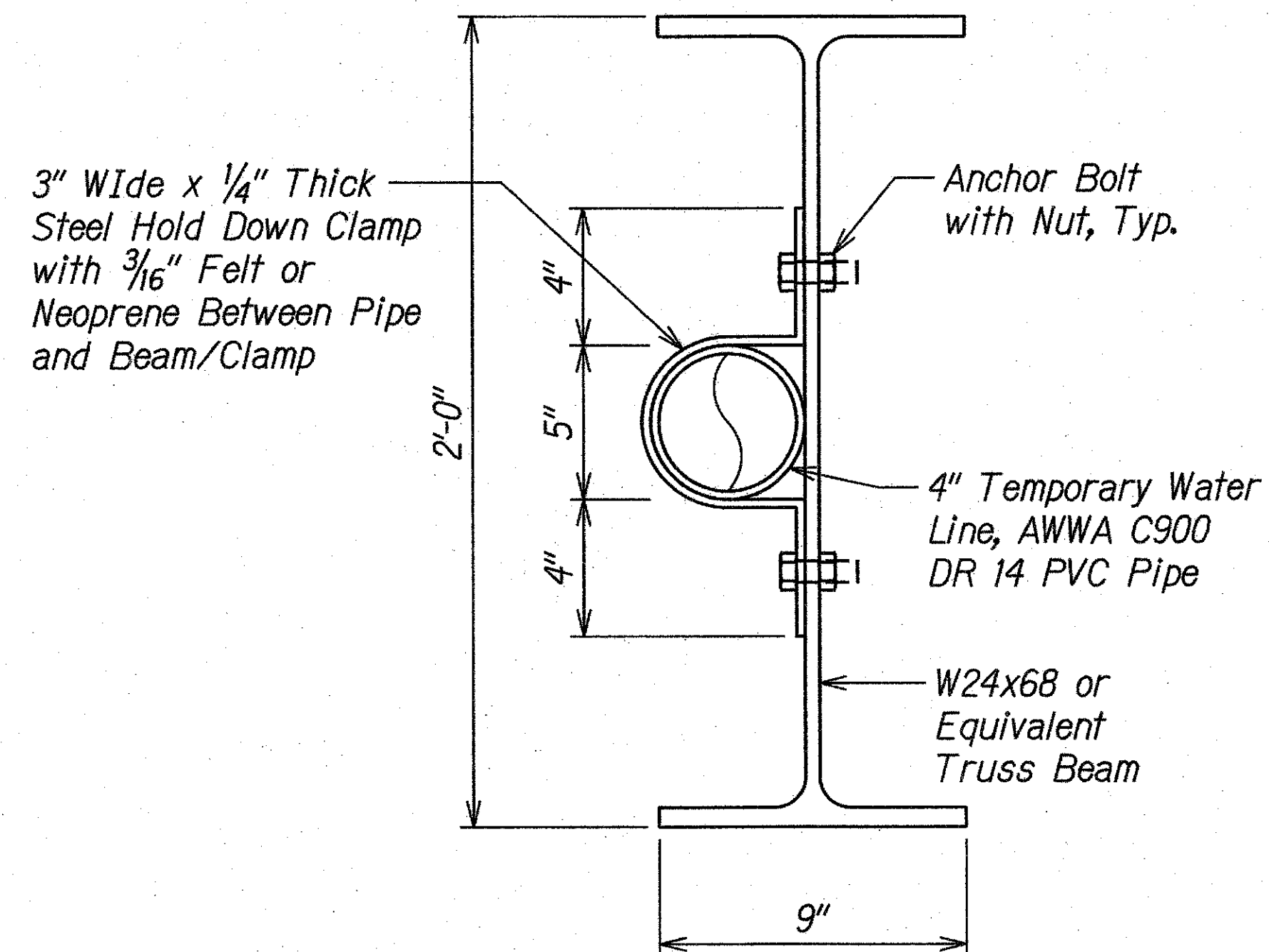
KAUAI EMERGENCY FLOOD REPAIRS & CLEANUP  
At Various Locations April 2018, Rte. 560  
Fed. Aid Proj. No. ER-19(007)

Scale: 1"=10' Date: Oct. 2018

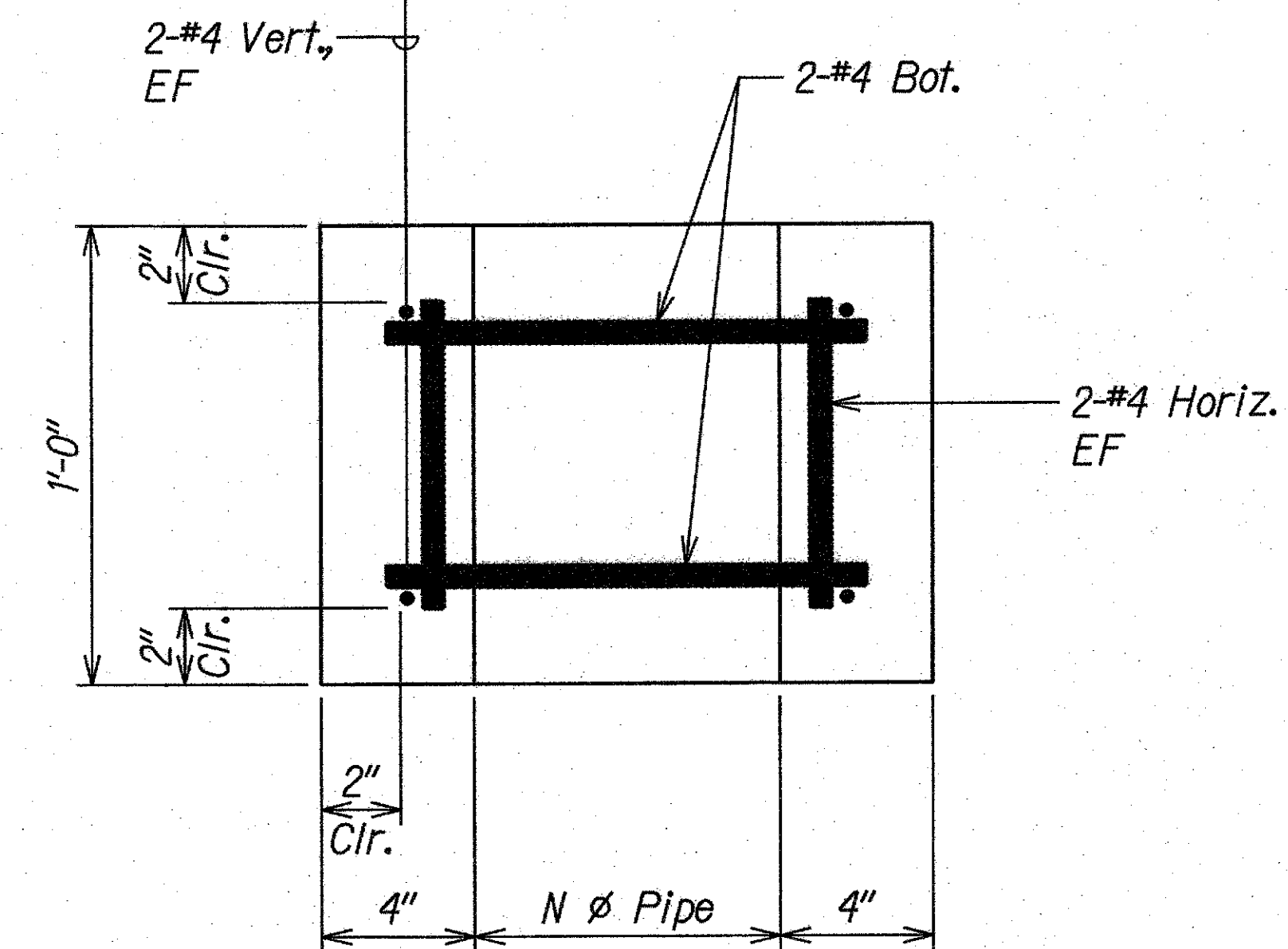
SHEET NO. U-3 OF 5 SHEETS



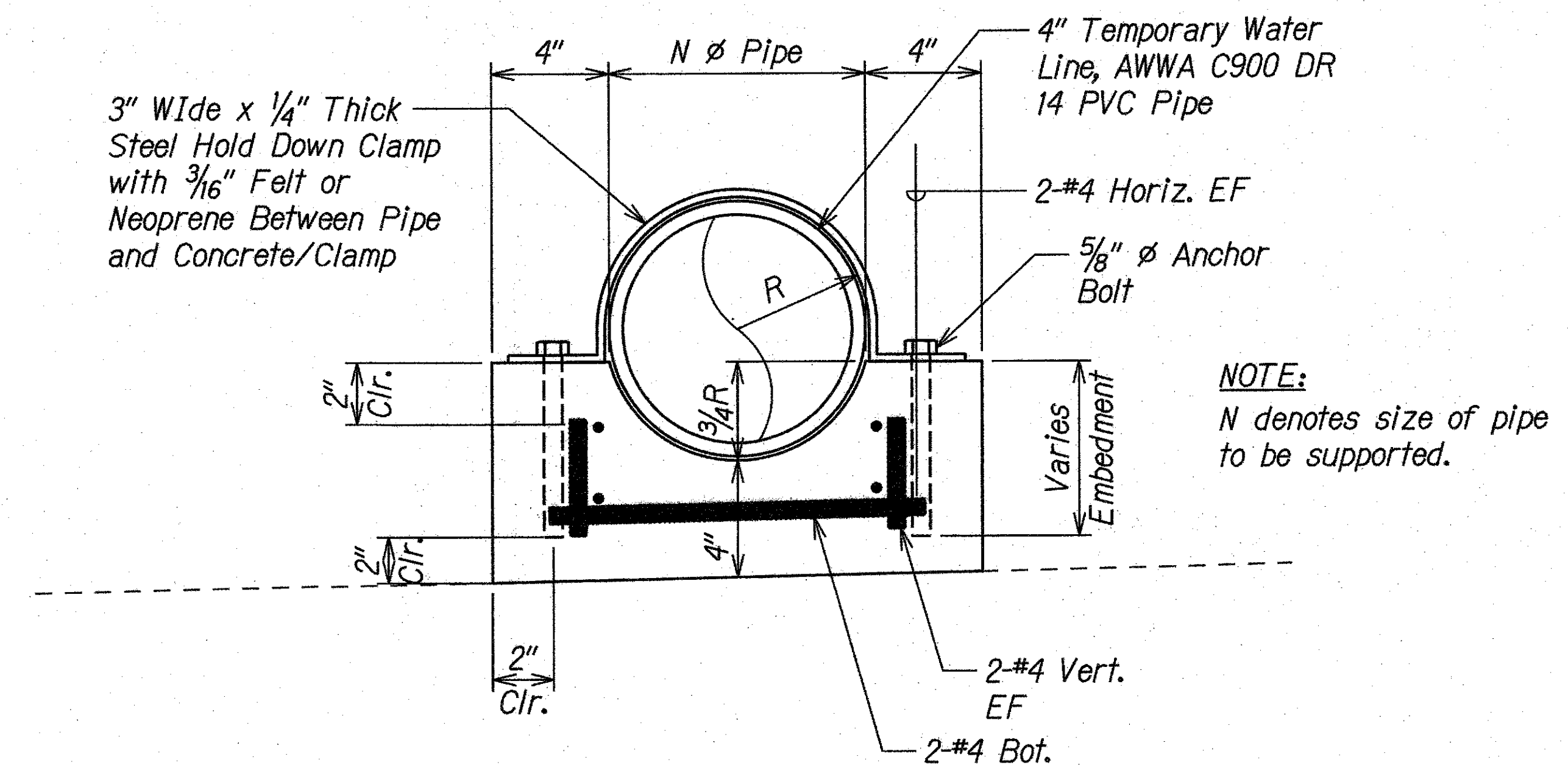
FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-19(007)	2018	66	67



**WATERLINE TO BEAM  
PIPE SUPPORT SECTION**  
Not to Scale



**PIPE SUPPORT PLAN**  
Not to Scale



**PIPE SUPPORT SECTION**  
Not to Scale

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

Approved:

*[Signature]* 1/28/19 DATE

MANAGER AND CHIEF ENGINEER  
DEPARTMENT OF WATER  
COUNTY OF KAUAI

JOSEPH R. SALVADOR  
LICENSED PROFESSIONAL ENGINEER  
No. 14094-C  
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

*Joseph R. Salvador*  
SIGNATURE

10/30/20  
EXPIRATION DATE OF THE LICENSE

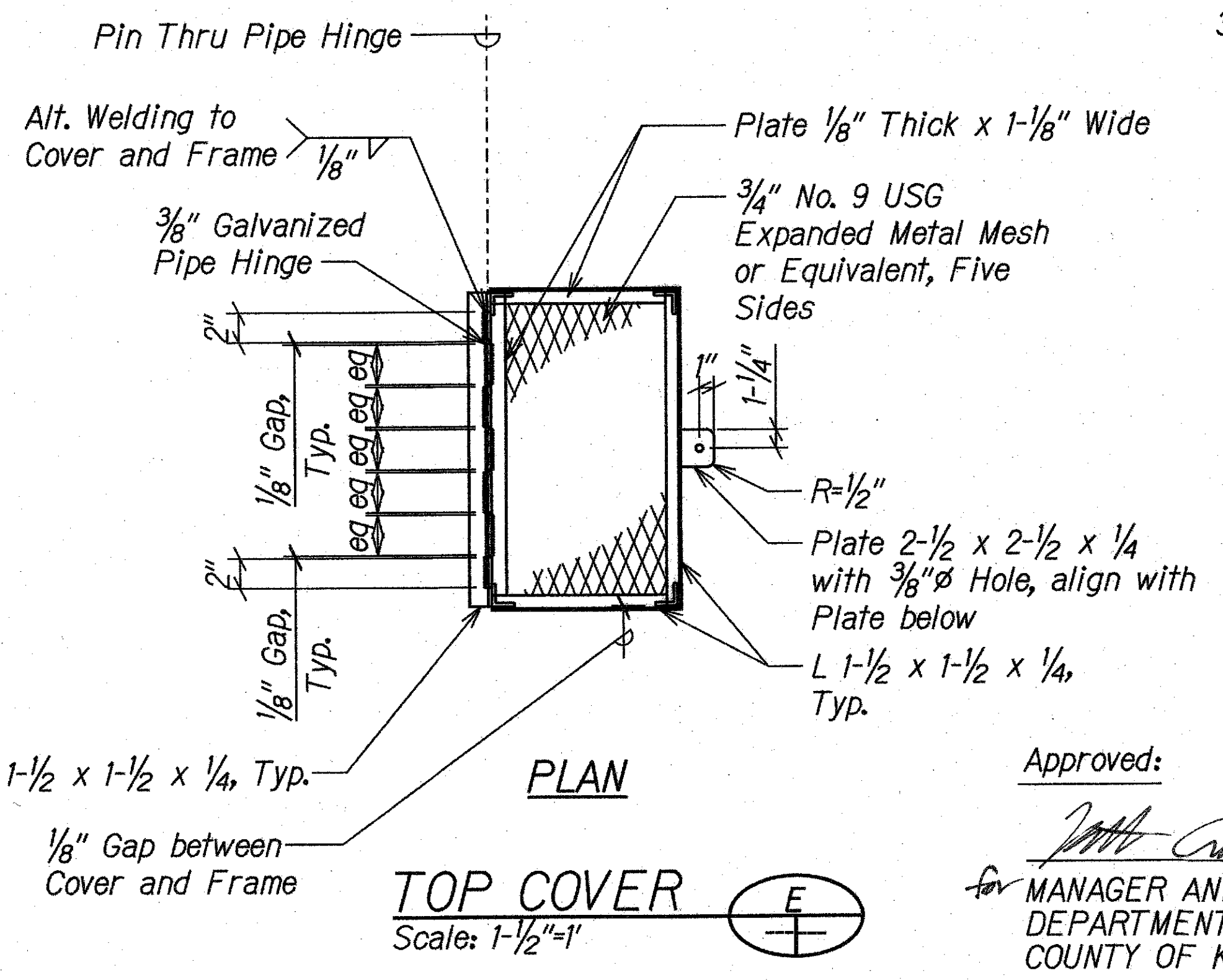
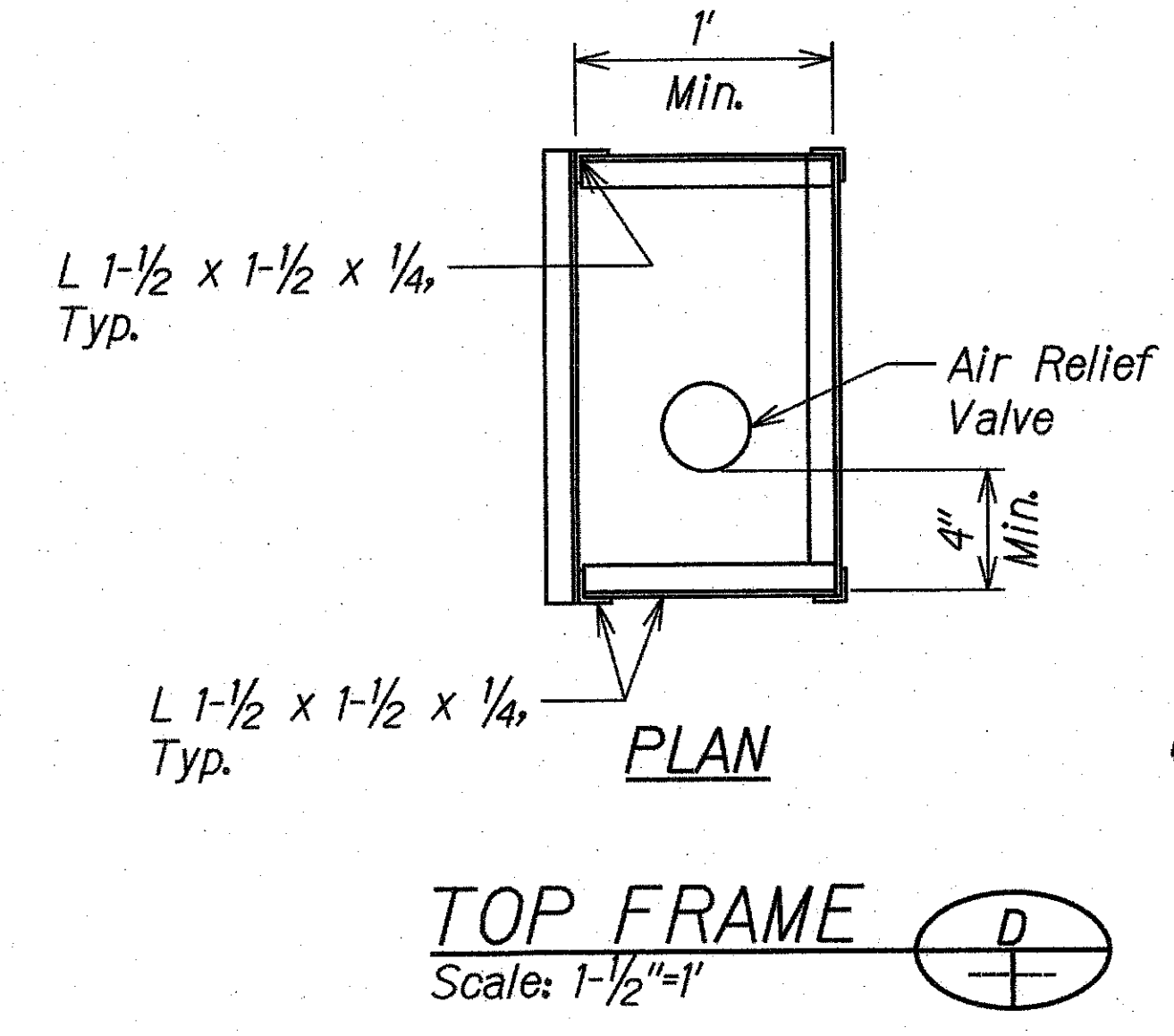
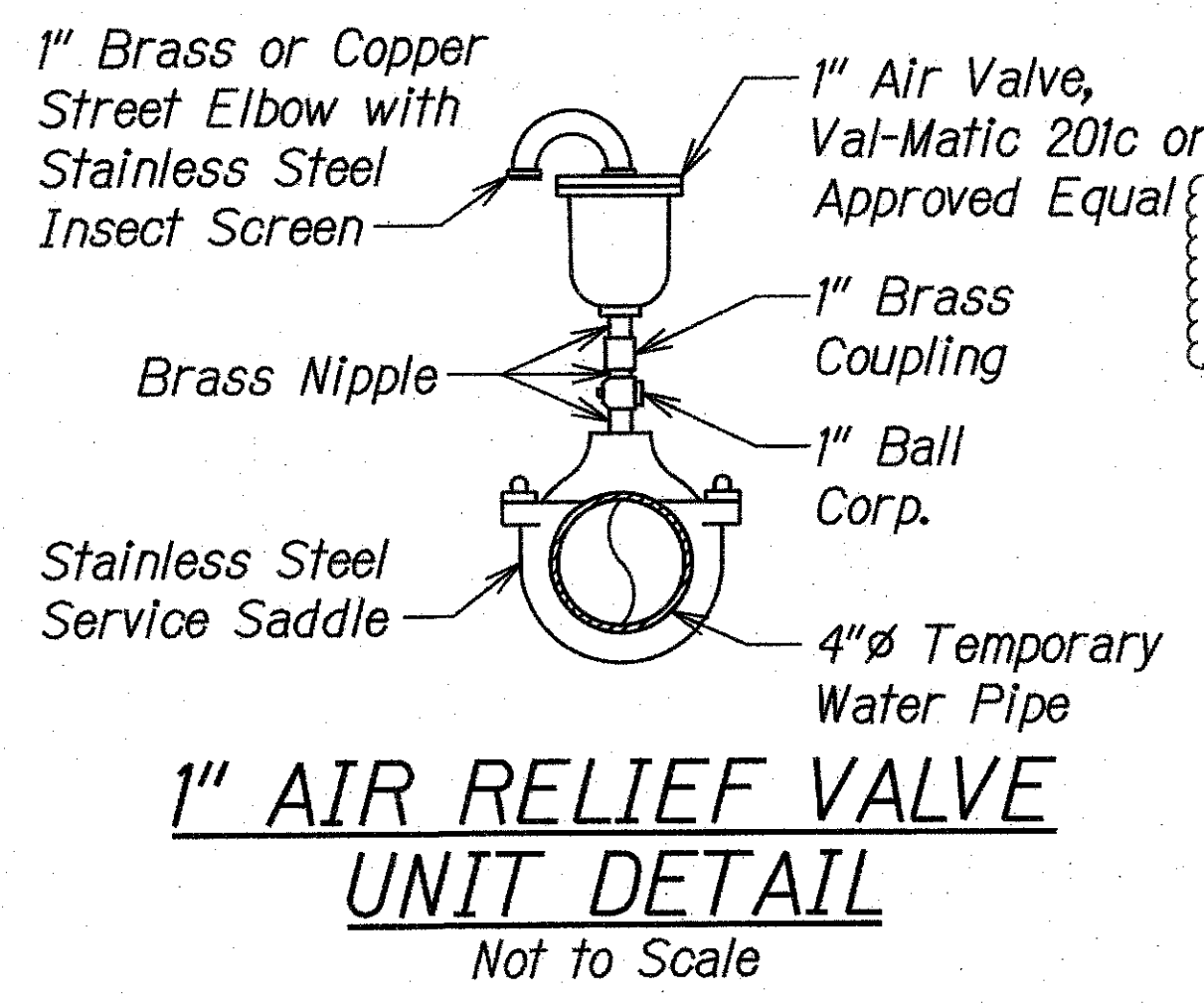
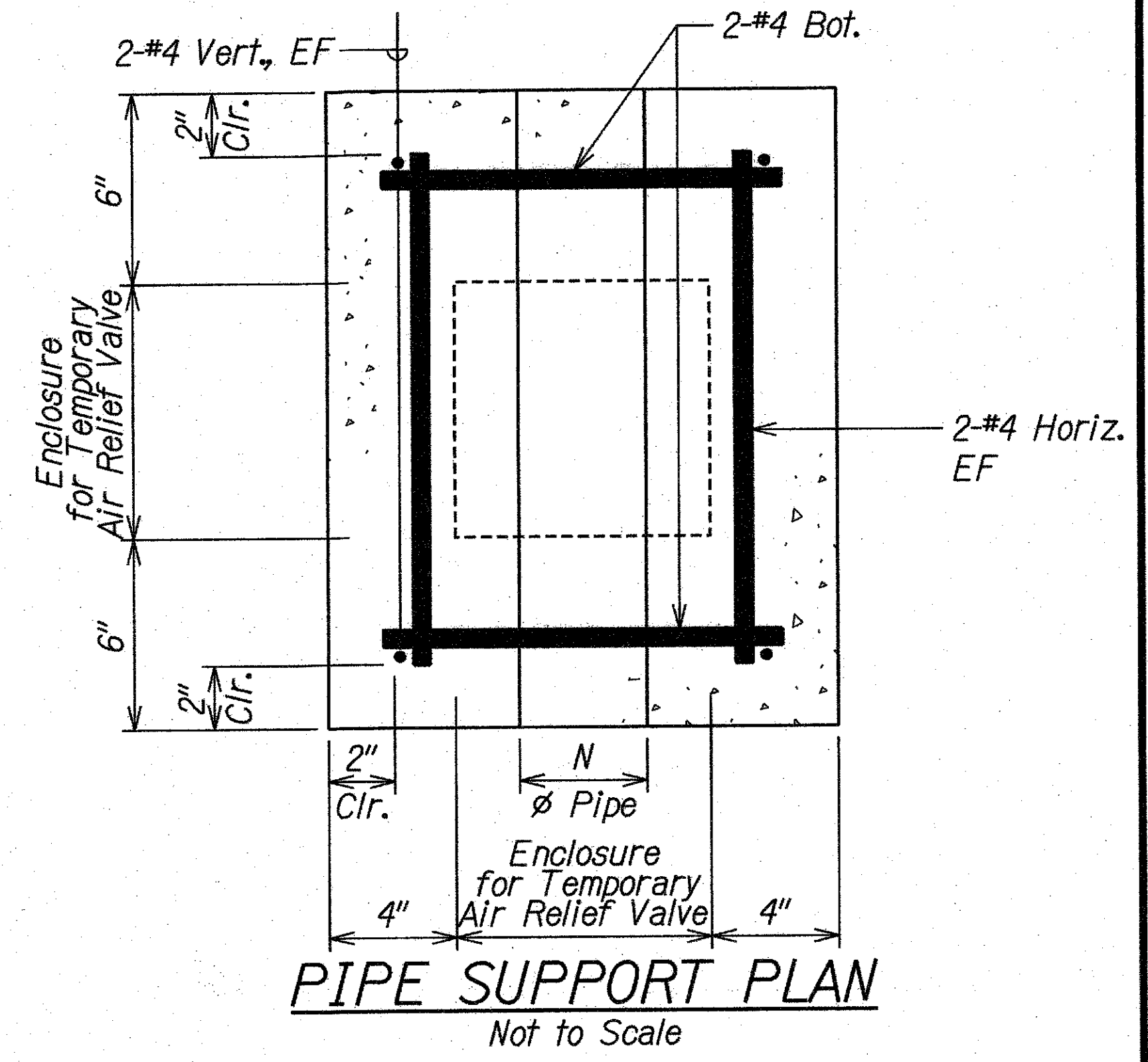
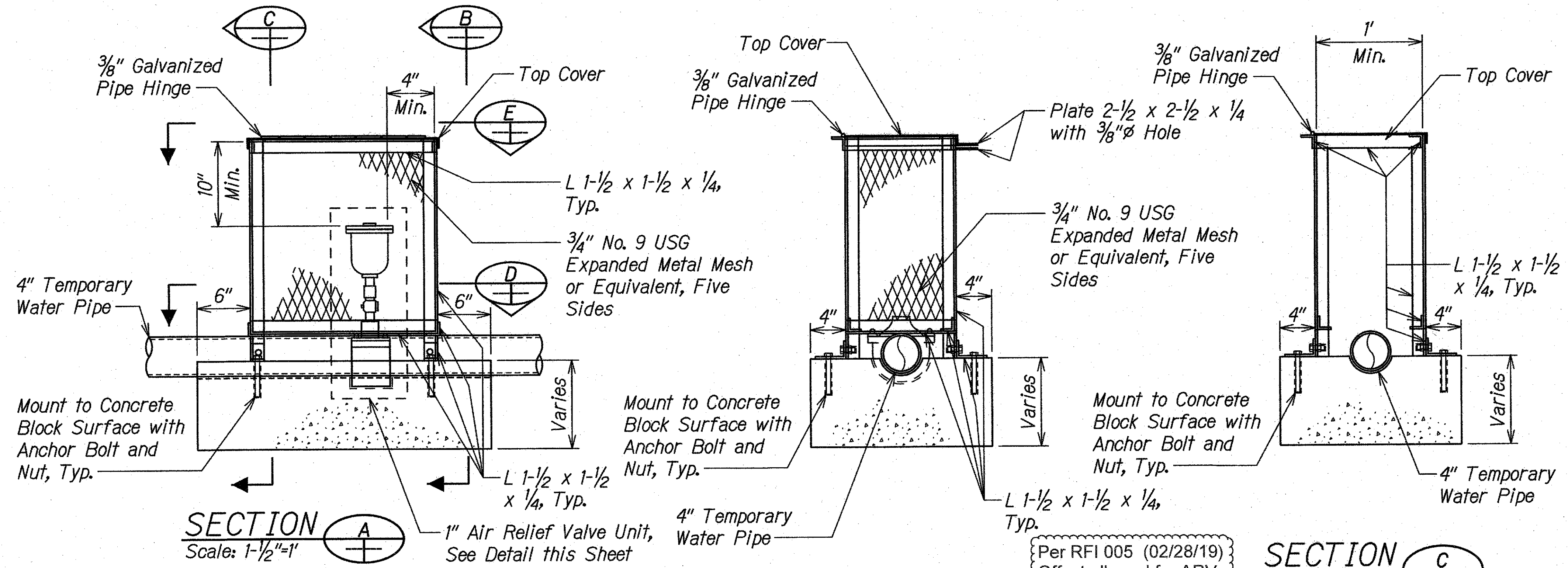
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TEMPORARY WATERLINE  
PIPE SUPPORT DETAILS**

**KAUAI EMERGENCY FLOOD REPAIRS & CLEANUP**  
**At Various Locations April 2018, Rte. 560**  
**Fed. Aid Proj. No. ER-19(007)**

Scale: NTS Date: Oct. 2018

SHEET No. U-4 OF 5 SHEETS



Approved: *[Signature]* 1/28/19  
DATE  
MANAGER AND CHIEF ENGINEER  
DEPARTMENT OF WATER  
COUNTY OF KAUAI

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
*Joseph R. Salvador*  
EXPIRATION DATE OF THE LICENSE: 04/30/20

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**TEMPORARY AIR RELIEF VALVE ENCLOSURE DETAILS**

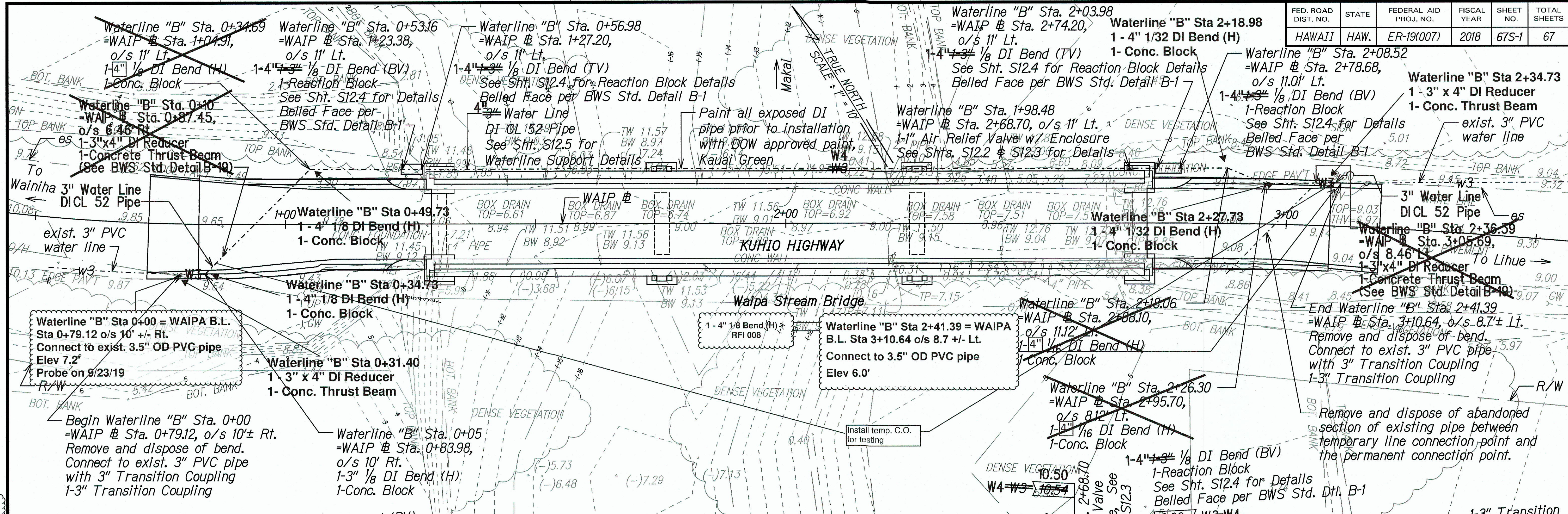
**KAUAI EMERGENCY FLOOD REPAIRS & CLEANUP**  
At Various Locations April 2018, Rte. 560  
Fed. Aid Proj. No. ER-19(007)

Scale: 1-1/2"=1' Date: Oct. 2018

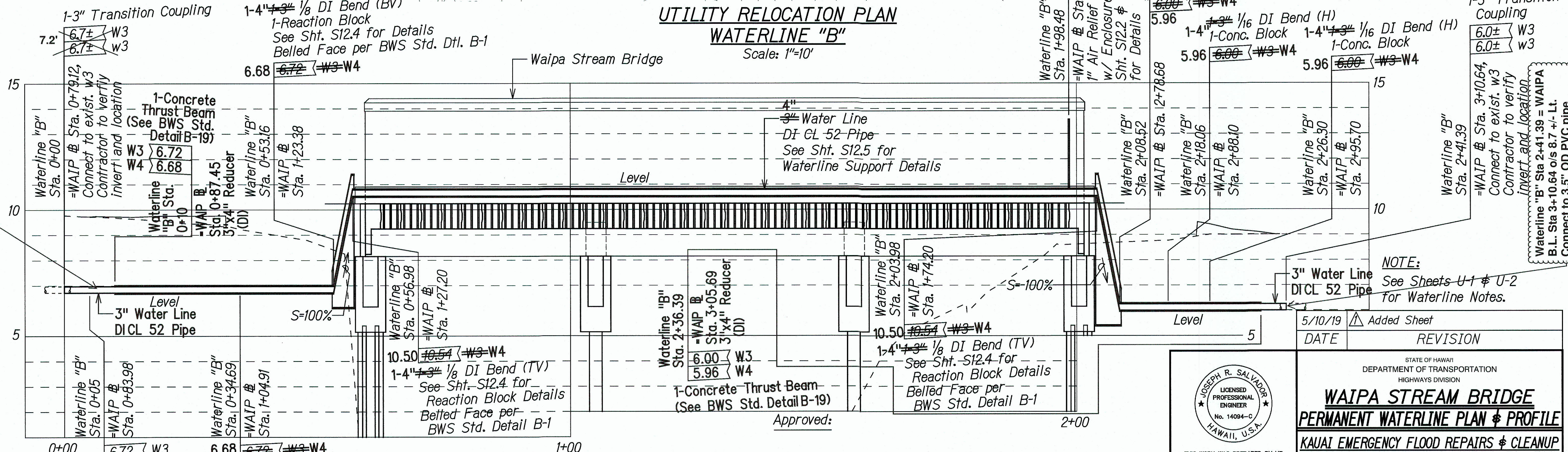
SHEET No. U-5 OF 5 SHEETS



FED. ROAD DIST. NO.	STATE	FEDERAL AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	ER-19(007)	2018	67S-1	67



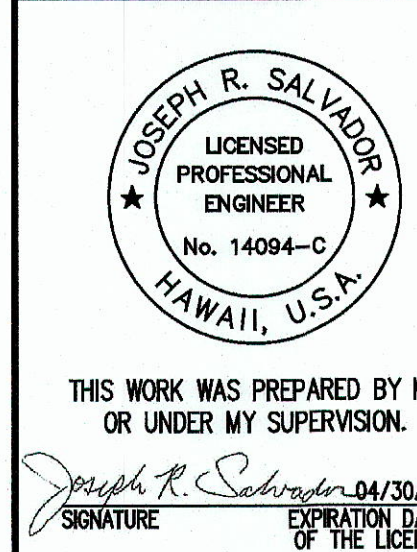
**UTILITY RELOCATION PLAN**  
**WATERLINE "B"**  
Scale: 1"=10'



**PROFILE - WATERLINE "B"**  
Scale: Horiz. 1"=10'  
Vert. 1"=2'

MANAGER AND CHIEF ENGINEER  
DEPARTMENT OF WATER  
COUNTY OF KAUAI

DATE



DATE	REVISION
5/10/19	Added Sheet
<b>WAIPA STREAM BRIDGE</b> <b>PERMANENT WATERLINE PLAN &amp; PROFILE</b> <b>KAUAI EMERGENCY FLOOD REPAIRS &amp; CLEANUP</b> <b>At Various Locations April 2018, Rte. 560</b> <b>Fed. Aid Proj. No. ER-19(007)</b> Scale: 1"=10' Date: Oct. 2018 SHEET No. U-5A OF 5 SHEETS	

"AS-BUILT"

67S-1