

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-093-1(10)	1987	10	27

NOTE: See Plan Sht. No. 11 for Water Schematic Layouts.

Sta. 93+64 to Sta. 95+35

Relocate 24" Waterline

- 190 Lin. Ft. 24" D.I. Pipe, Class 52
- 1-2" Air Relief Valve (103 P.S.I., Min.)
- 1-Type "B" Water Manhole (Ht.=6.6')
- 2-24" 1/8 Bend (H.T.V.)
- 2-24" 1/16 Bend (B.V.)
- 12 Lin. Ft. 24" Ball Joint D.I. Pipe, Class 53
- 2-24" Retainer Glands
- 150 Lin. Ft. Conc. Jacket for 24" Pipe
- 256 Cu. Yds. Structure Excavation

Sta. 95+35

12" Blowoff Connection

- 1-12" Gate Valve (150#), Flange Joint x Mechanical Joint
- 1-Standard Water Valve Box
- 1-12" Flap Valve, 18" Spigot anchored in bridge abutment
- 68 Lin. Ft. 12" D.I. Pipe, Class 52
- 1-12" 1/4 Bend (H)
- 2-Conc. Blocks (H)
- 21 Cu. Yds. Structure Excavation

85-067 Farr. Hwy.
S/N 534-24872
M/N 20200038 T 03
1" Cu. Lateral

Salvage and Relocate water meter with meter box cover
Install new Type "x" Meter Box

Sta. 93+82 to Sta. 95+22

Relocate 8" Waterline

- 150 Lin. Ft. 8" D.I. Pipe, Class 52
- 2-8" 1/8 Bend (H.T.V.)
- 2-8" 1/16 Bend (B.V.)
- 12 Lin. Ft. 8" Ball Joint D.I. Pipe, Class 53
- 2-8" Retainer Glands
- 120 Lin. Ft. Conc. Jacket for 8" Pipe
- 1-3/4" Air Relief Valve (103 P.S.I., Min.)
- 1-Air Relief Valve Box
- 1-8" Gate Valve (150#)
- 1-Standard Water Valve Box
- 125 Cu. Yds. Structure Excavation

Materials For Connection (8" Waterline)

- 2-8" Sleeve 12" Long
- 2-8" 1/8 Bend (H.T.V.) (for Struts)
- 2-Conc. Blocks (H.T.V.) w/Struts
- 16-Lin. Ft. 8" D.I. Pipe, Class 52
- 2-8" Sleeve Coupling w/Retainer Glands

Materials For Testing

- 2-2 1/2" Cleanout w/8" M.J. Cap
- 2-Conc. Blocks

Material For Connection (24" Waterline)

- 2-24" Buttstrap
- 2-24" 45° Conc. Cylinder Bend (H.T.V.) (for Struts)
- 2-24" 1/8 Bend (H.T.V.)
- 2-24" 1/16 Bend (B.V.)
- 2-24" Sleeve Coupling w/Retainer Glands
- 1-24" x 12" Conc. Cylinder Blowoff Tee, 12" Flange Outlet. (Sta. 95+35)

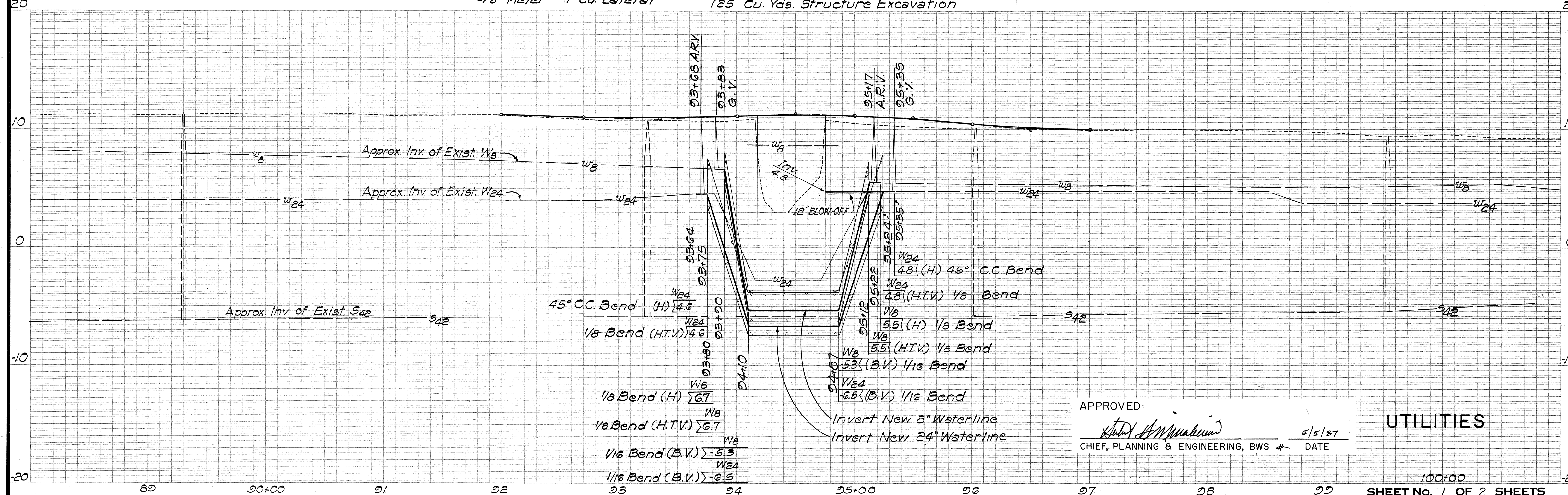
Materials For Testing

- 2-6" Cleanout w/24" M.J. Cap
- 2-Conc. Blocks

Salvage and Relocate 2 each water meters and meter box covers.
Install 2 each new Type "x" Meter Boxes.

85-066 B Farr. Hwy.
S/N 534-93340
M/N 78023621 T 02
1" Cu. Lateral

85-066 Farr. Hwy.
S/N 534-93345 Meter removed for N/P 2/22/82
5/8" Meter 1" Cu. Lateral



APPROVED:

[Signature]
CHIEF, PLANNING & ENGINEERING, BWS
DATE 5/5/87

UTILITIES

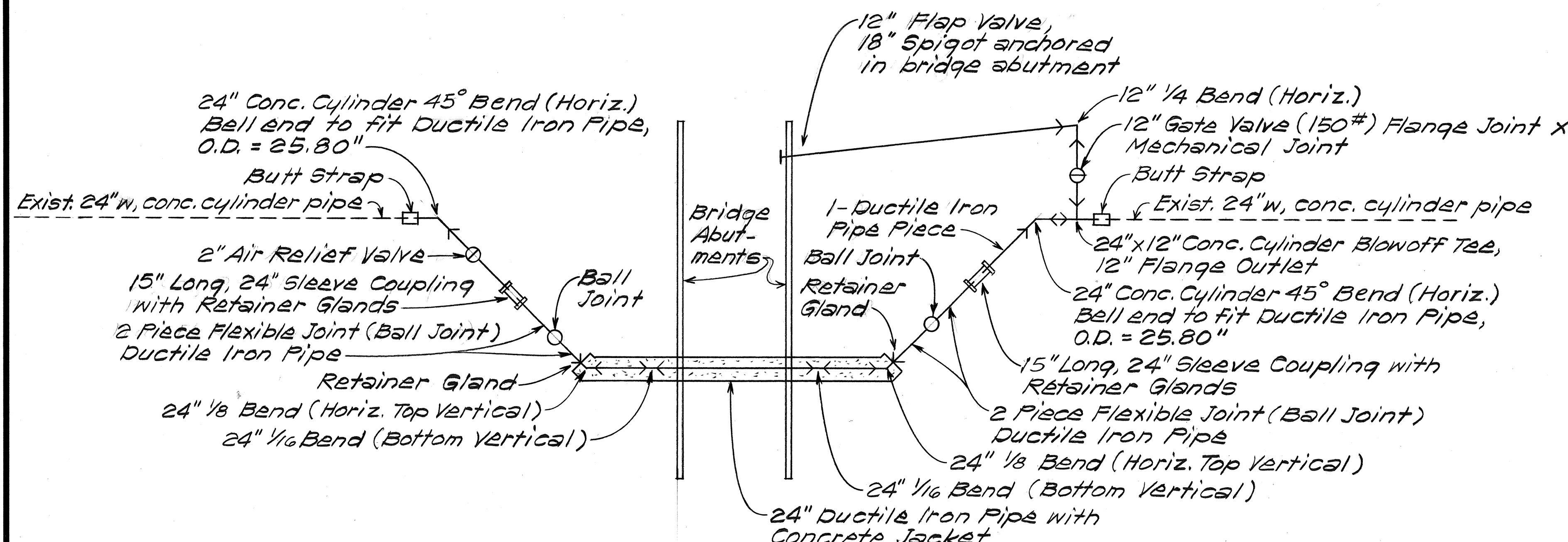
SHEET No. 1 OF 2 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-093-1(10)	1987	11	27

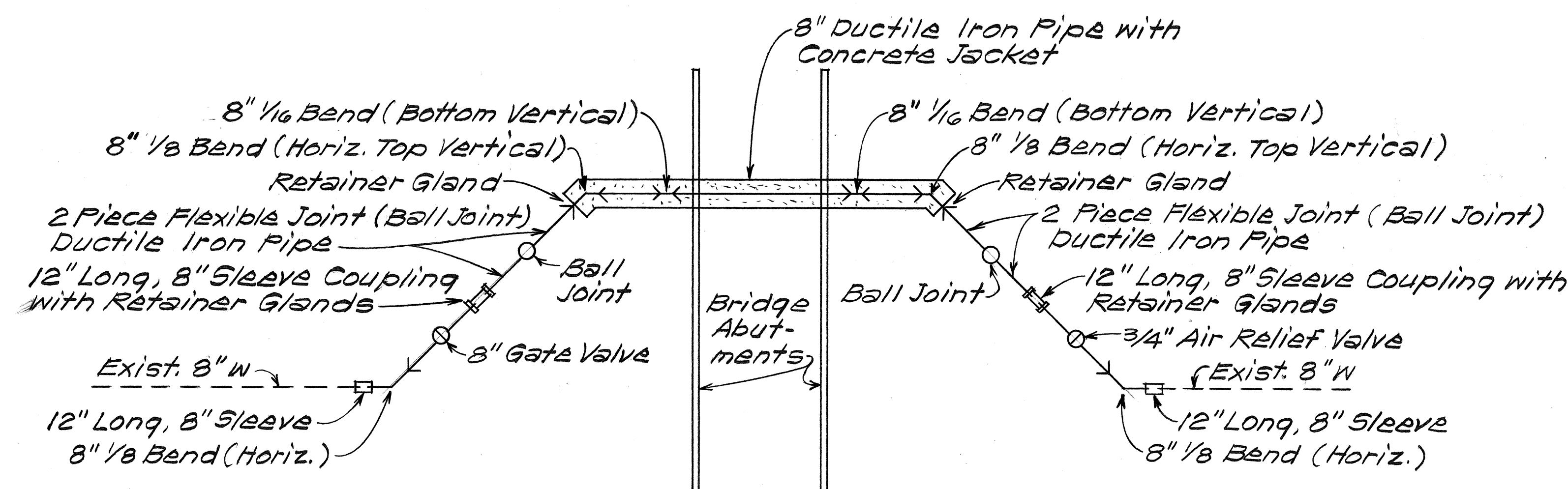
WATER NOTES

1. Unless otherwise specified, all materials and construction of water system facilities and appurtenances shall be in accordance with the STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, dated 1985, as amended, of the Hawaii Highways Division, Department of Transportation and the City and County of Honolulu Board of Water Supply's "Water System Standards", Volume 1, dated 1985, and the "Approved Material List and Standard Details For Water System Construction", Volume 2, dated 1985, and all subsequent amendments and additions.
2. All plans approved by the Board of Water Supply are based solely on the adequacy of the water supply. All other features of the water system, such as lines, grades, fittings etc., and drainage and other features of improvements shall not be the responsibility of the Board of Water Supply.
3. Test pressure shall be 150 psi.
4. The Contractor shall notify the Board of Water Supply in writing one week prior to commencing work on the water system.
5. The Contractor shall be responsible for the protection of all water lines during construction. The Contractor shall be especially careful when excavating behind water line tees and bends wherever there is a possibility of water line movement due to removal of the supporting earth beyond the existing reaction blocks. The Contractor shall take whatever measure he deems necessary to protect the water lines, such as constructing special reaction blocks (with BWS approval) and/or modifying his construction methods.
6. The existence and location of underground utilities and structures as shown on the plans are from the latest available data but is not guaranteed as to the accuracy or the encountering of other obstacles during the course of the work. The Contractor shall be responsible and shall pay for all damages to existing utilities.
7. Prior to installation, the Contractor shall submit for approval by Board of Water Supply, the manufacturer's certification that all cast iron (gray or ductile) fittings for the project conform in all respects to the Water System Standards, dated 1985.
8. Connections for the 8-inch and 24-inch waterline relocations shall be made alternately during normal working hours with a maximum downtime of 8 hours.

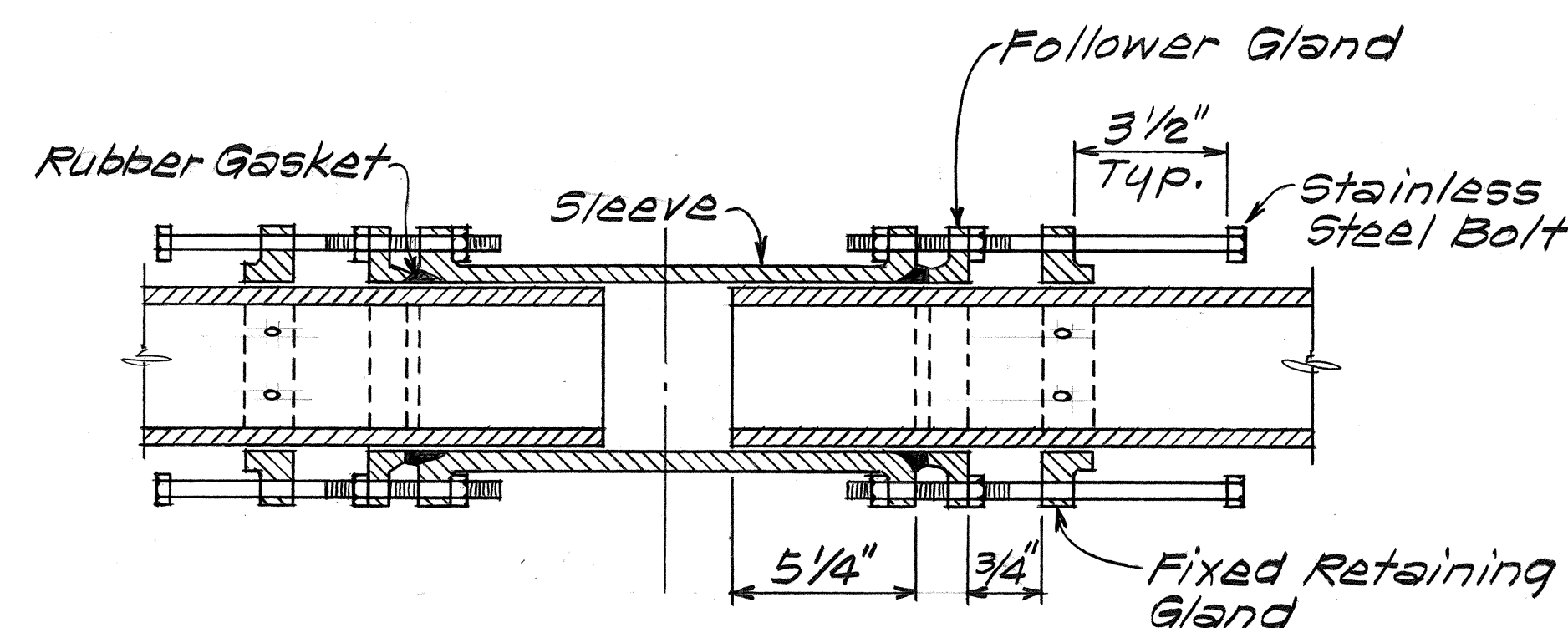
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
WATER DETAILS SCHEMATICS & NOTES	
FARRINGTON HIGHWAY	
FED. AID PROJ. NO. BR-093-1(10)	
Not to Scale	Date: Apr. 1987
SHEET NO. 2 OF 2 SHEETS	



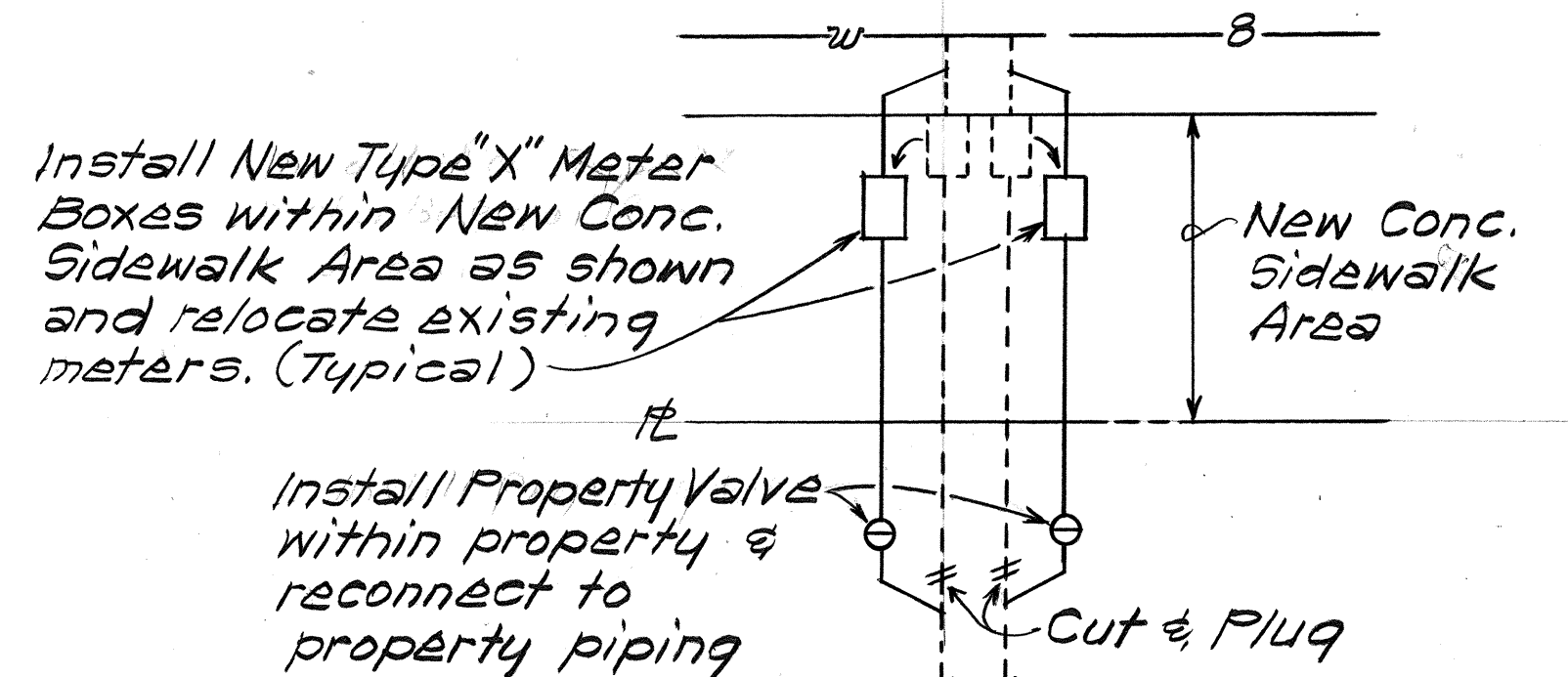
SCHEMATIC LAYOUT ~ 24" WATERLINE RELOCATION



SCHEMATIC LAYOUT ~ 8" WATERLINE RELOCATION



SLEEVE COUPLING DETAIL



SCHEMATIC LAYOUT ~ WATER METER RELOCATION

APPROVED:

[Signature]
CHIEF, PLANNING & ENGINEERING, BWS # DATE 5/5/87