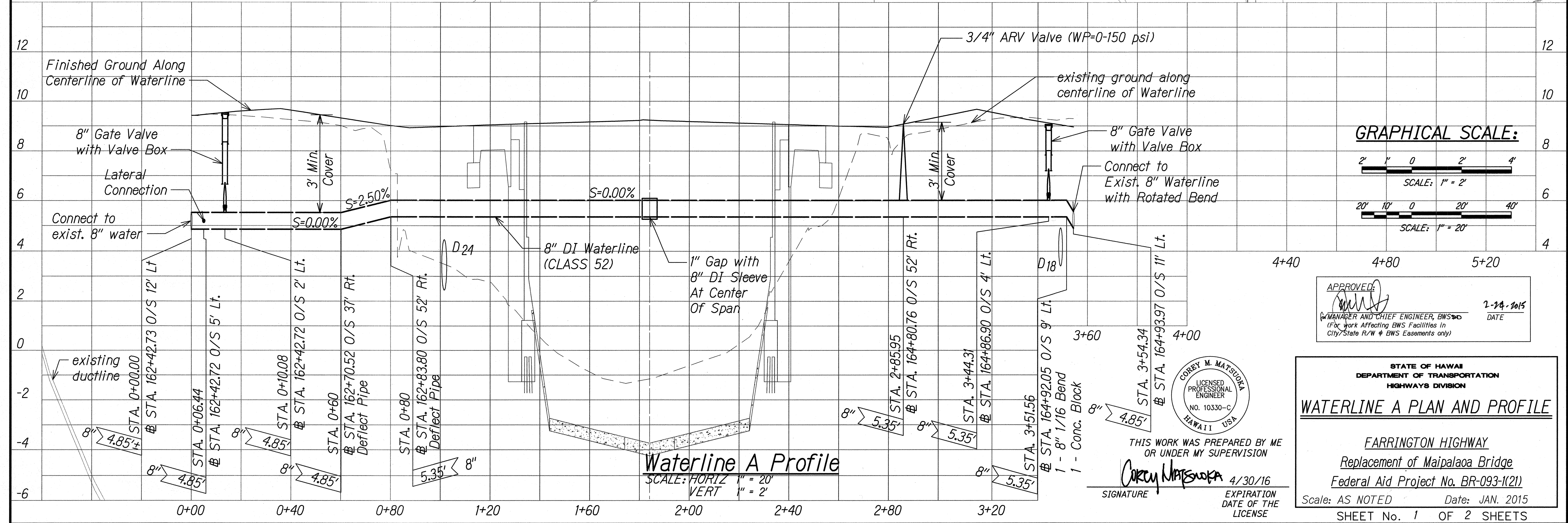
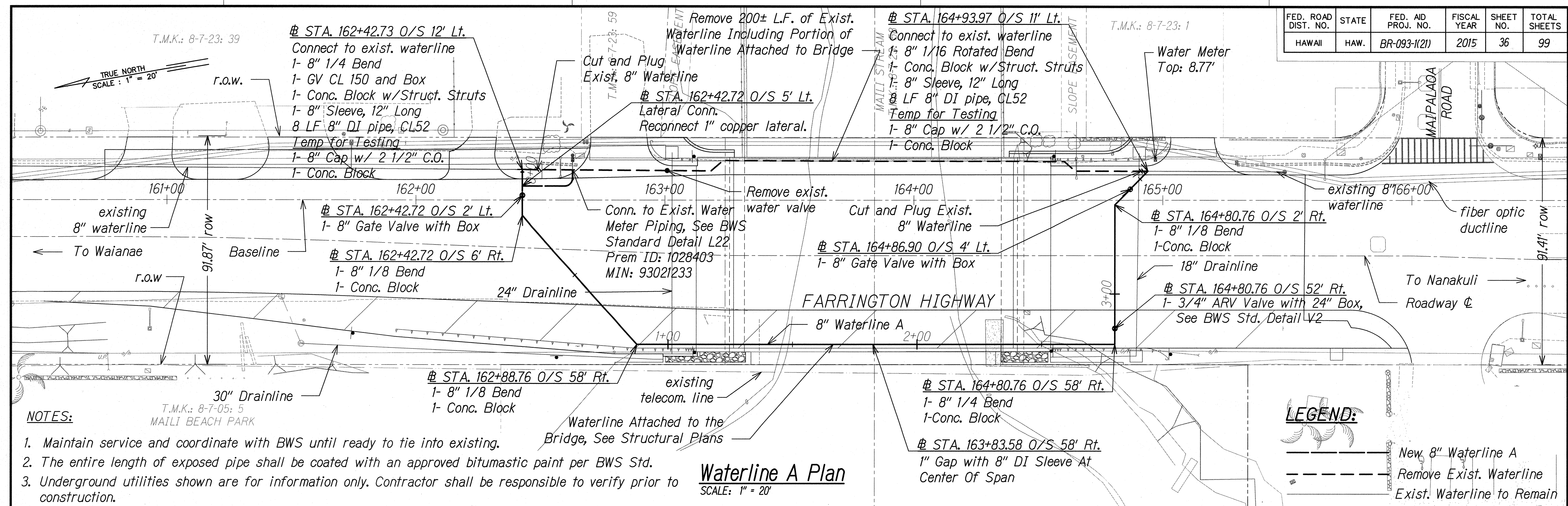
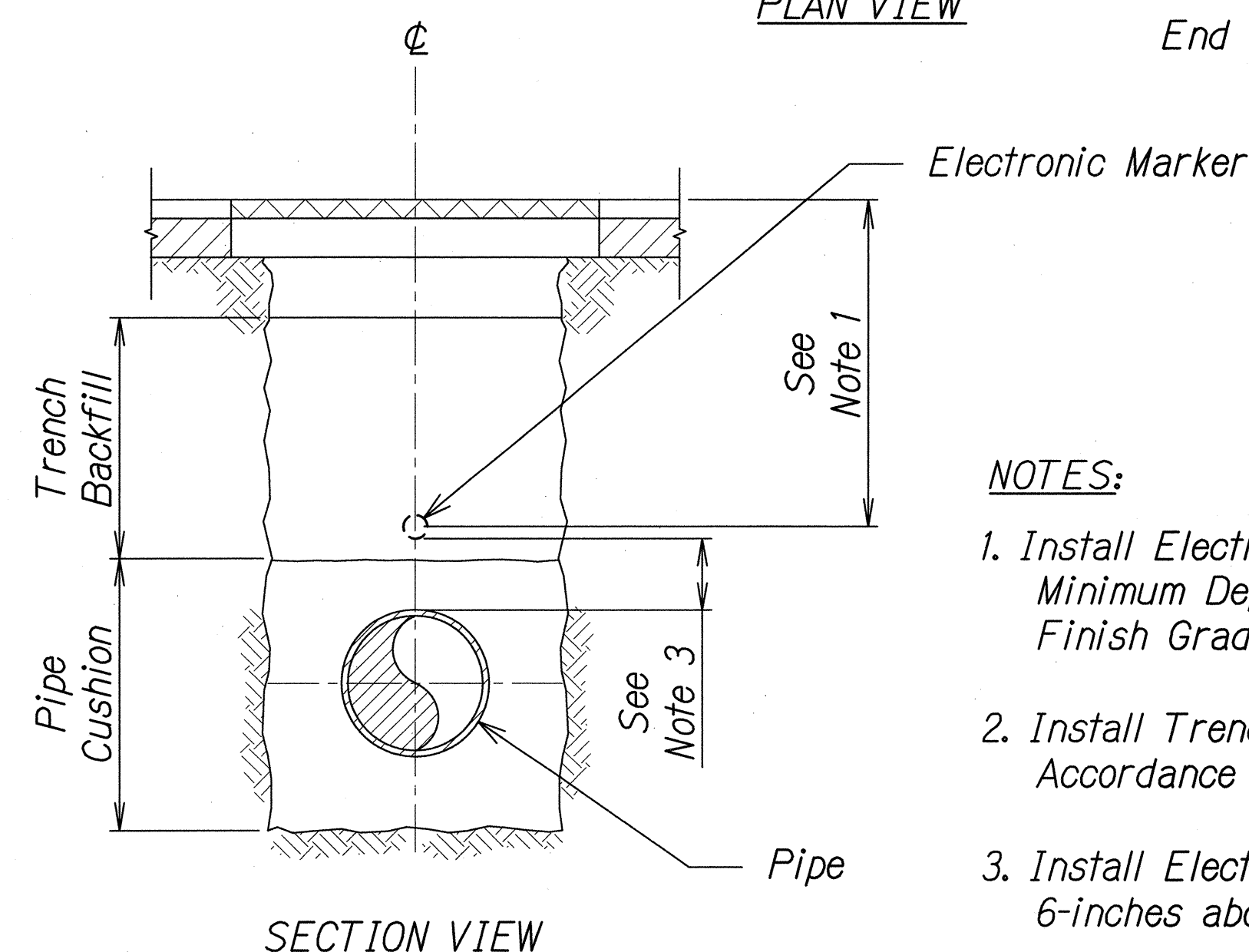
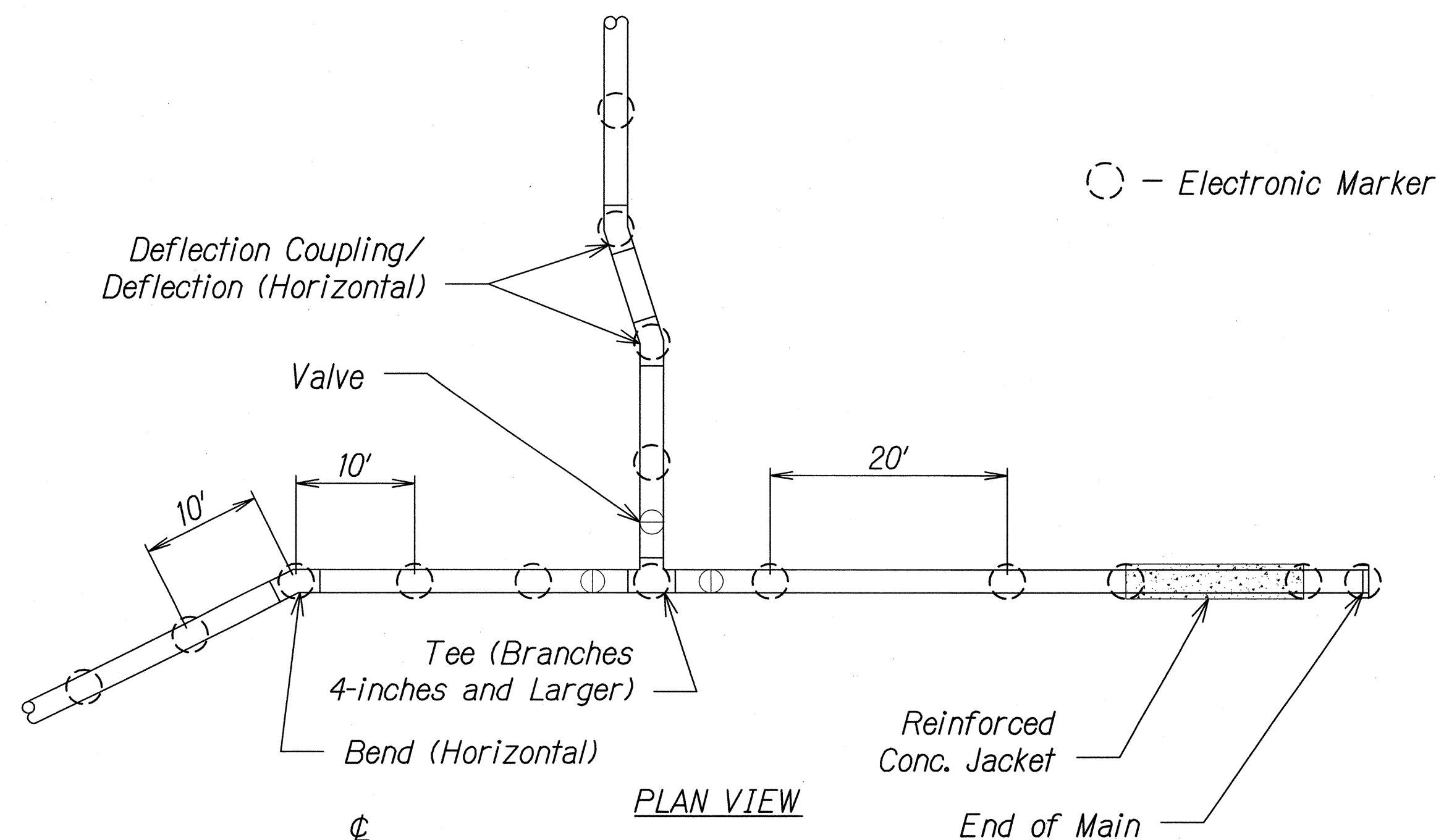


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	BR-093-K(21)	2015	36	99



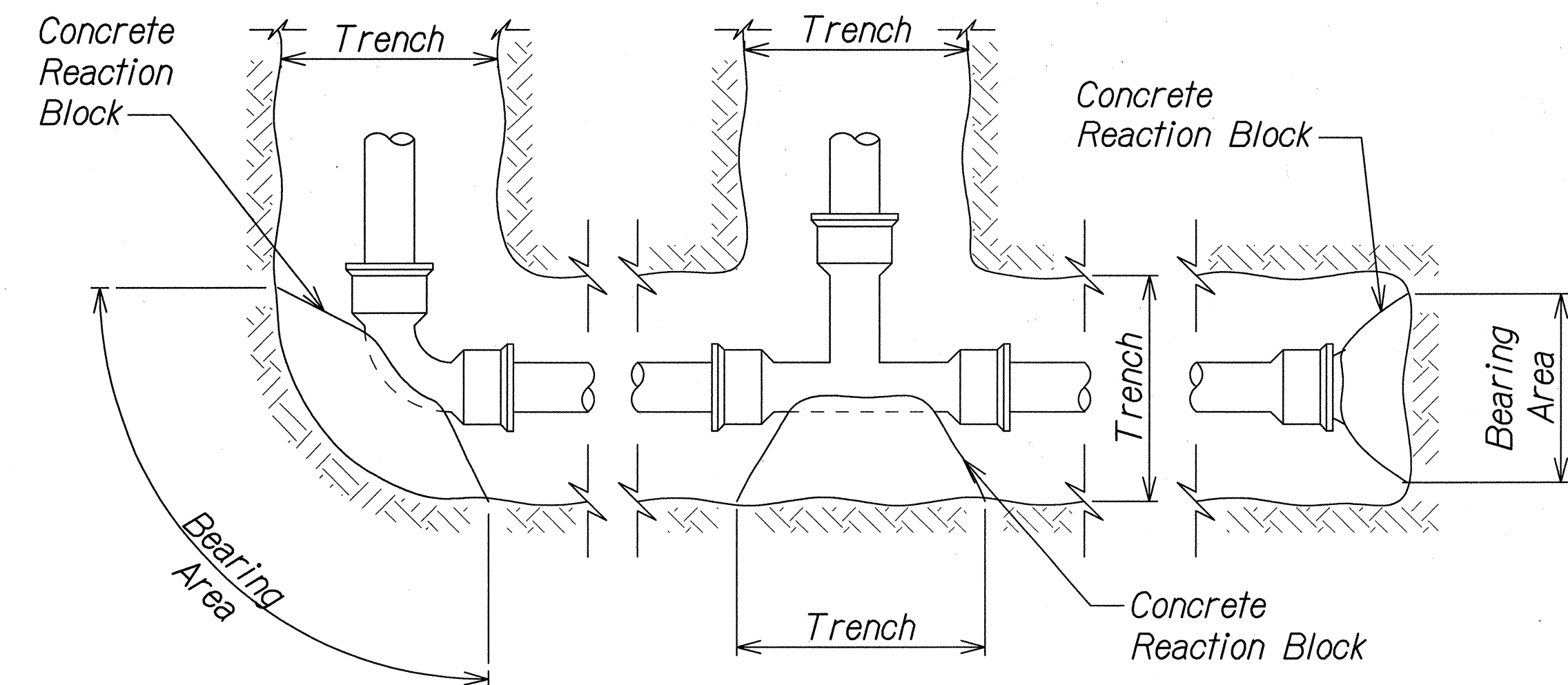


NOTES:

1. Install Electronic Marker over Center Line of Pipe at a Minimum Depth of 2 Feet and a Maximum of 3 Feet from Finish Grade.
2. Install Trench Backfill and Pipe Cushion Material in Accordance to the Plans and Specification.
3. Install Electronic Marker at a Minimum Clearance of 6-inches above the Pipe or Concrete Jacket.

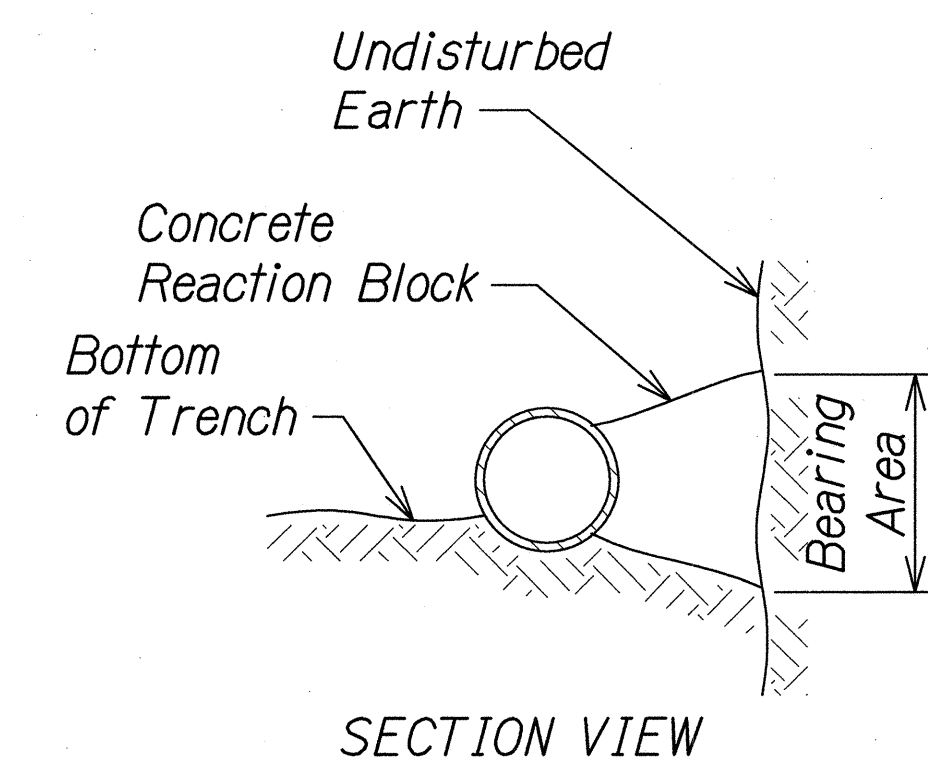
TYPICAL ELECTRONIC MARKER INSTALLATION

SCALE: N.T.S.



PLAN

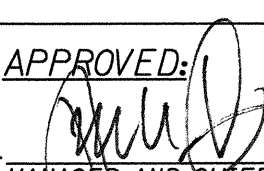
		MINIMUM BEARING AREAS (SQ. FT.) FOR HORIZONTAL THRUST BLOCKS							
PIPE SIZE	BEND	PRESSURE 250 PSI							
		TYPE OF SOIL CONDITION							
		A	B	C	D	E	F	G	
8"	TEES, CAPS	25.0	12.5	8.5	6.5	4.0	3.0	2.5	
	1/4	35.0	18.0	12.0	9.0	6.0	4.5	3.5	
	1/8	20.0	9.5	6.5	5.0	3.0	2.5	2.0	
	1/16	10.0	5.0	3.5	2.5	1.5	1.0	1.0	
	1/32	5.0	2.5	1.5	1.5	1.0	1.0	1.0	

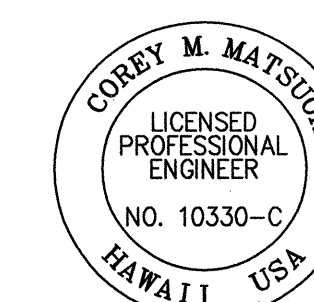


SECTION VIEW

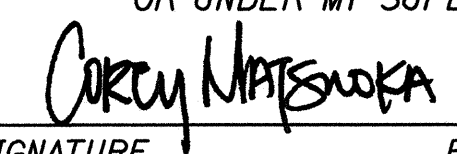
WATERLINE HORIZONTAL THRUST BLOCKS

SCALE: N.T.S.

APPROVED: 
MANAGER AND CHIEF ENGINEER, BWS
(For work Affecting BWS Facilities in City/State R/W & BWS Easements only)
DATE: 2-24-2015



THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION

SIGNATURE: 
EXPIRATION DATE OF THE LICENSE: 4/30/16

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
WATERLINE DETAILS
FARRINGTON HIGHWAY
Replacement of Maipalaoa Bridge
Federal Aid Project No. BR-093-1(21)
Scale: N.T.S. Date: JAN. 2015
SHEET No. 2 OF 2 SHEETS