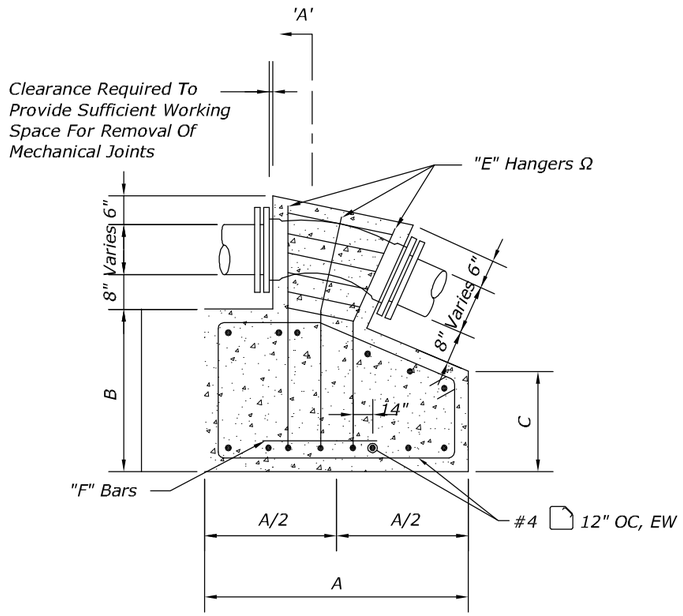
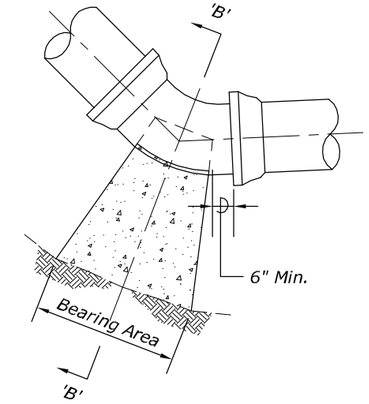
STATE	PROJECT	SHEET NO.
HI	HI STP SR 30(1)	T74



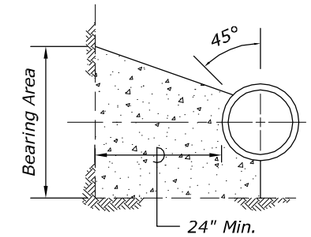
ELEVATION

NOTES:

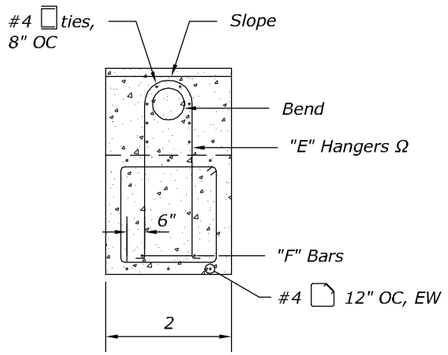
1. 2500 psi Concrete.
2. Min. 2" Cover Over All Reinforcement
3. AWWA C153 Fittings Not Acceptable For This Application (Except DWS Hawaii).
4. Unless Otherwise Noted, All Reinforcing Bars Shall Be ASTM A615, Grade 60.
5. Megalug Restraint Glands Required On Top Vertical Bends.



PLAN - BENDS



SECTION "B"



SECTION "A"

TOP VERTICAL THRUST BLOCK SCHEDULE							
SIZE	BEND	A	B	C	D	E	F
12"	1/4	6'-3"	6'-3"	6'-3"	5'-6"	(3)#7	(2)#7
	1/8	5'-6"	5'-6"	2'-9"	4'-6"	(2)#6	(2)#6
	1/16	5'-8"	4'-6"	3'-4"	2'-6"	(3)#4	(2)#4
	1/32	4'-3"	3'-9"	3'-3"	2'-0"	(2)#3	(2)#3
8"	1/4	5'-3"	5'-0"	5'-0"	5'-3"	(2)#6	(2)#6
	1/8	5'-3"	4'-9"	2'-3"	4'-0"	(2)#5	(2)#5
	1/16	5'-9"	3'-6"	2'-6"	2'-6"	(2)#4	(2)#4
	1/32	3'-6"	2'-4"	2'-6"	2'-6"	(2)#3	(2)#3

MINIMUM BEARING AREA (sq. ft.)					
SIZE	TEES, CAPS	1/4 BENDS	1/8 BENDS	1/16 BENDS	1/32 BENDS
12"	11.5	16.0	9.0	4.5	2.5
8"	6.5	9.0	5.0	2.5	1.5

TYPICAL THRUST BLOCK AT TOP VERTICAL BENDS DETAIL

TYPICAL THRUST BLOCK HORIZONTAL AND BOTTOM VERTICAL BENDS DETAIL

WATER MAIN TRENCH RESTORATION

BRIAN A. LOCK
LICENSED PROFESSIONAL ENGINEER
No. 9867-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

WILSON OKAMOTO CORPORATION

APRIL 30, 2020
LIC. EXP. DATE

NO SCALE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

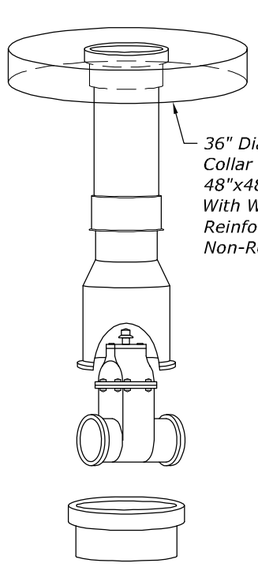
U.S. CUSTOMARY SPECIAL

WATER DETAILS

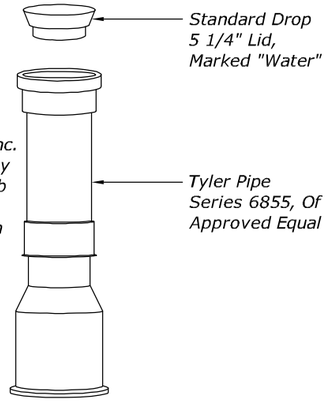
SPECIAL

DRAWING NO.:

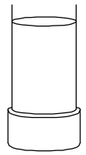
STATE	PROJECT	SHEET NO.
HI	HI STP SR 30(1)	T75



1 1/2" / 1 1/4"
VALVE BOX RISER



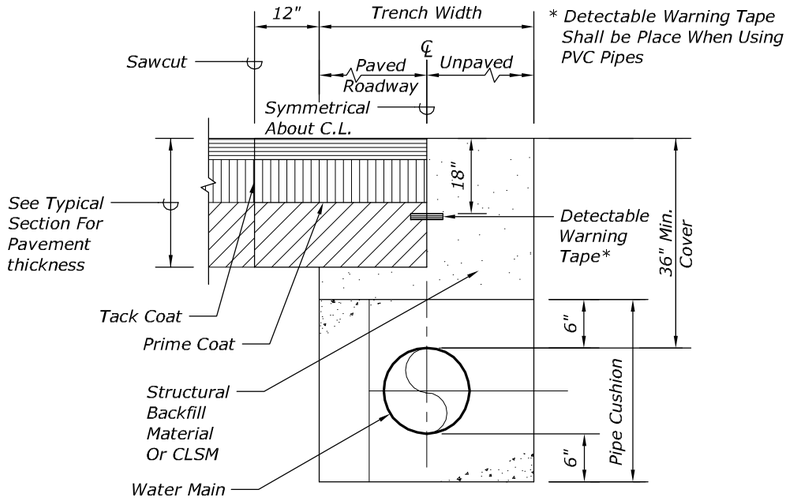
TWO-PIECE
VALVE BOX,
HEIGHT TO SUIT



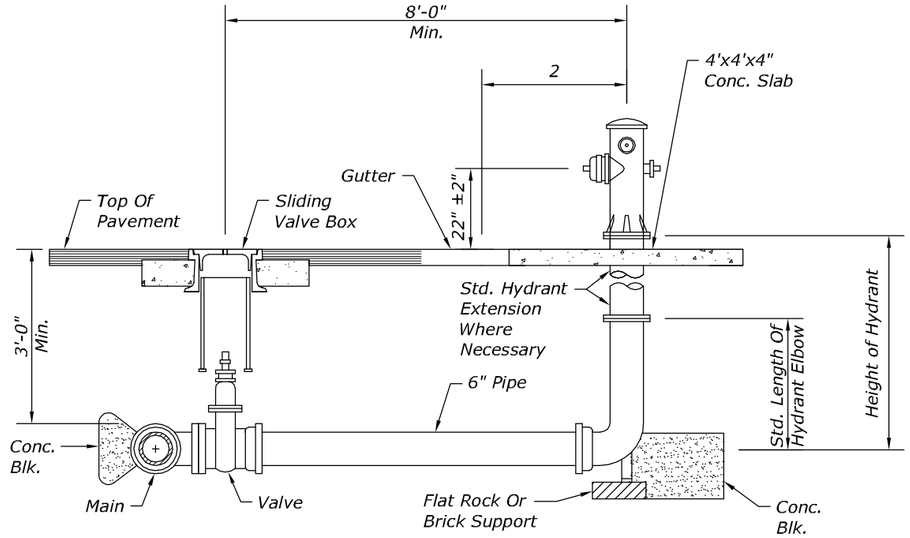
EXTENSION PIECE 60-A

NOTE:
1. Valve Box Assembly To Be Cast Iron.
2. Model Numbers Refer To Tyler Pipe Catalog.
3. Maximum 4' Depth To Valve Operator Unit.

6" SLIDING VALVE BOX ASSEMBLY



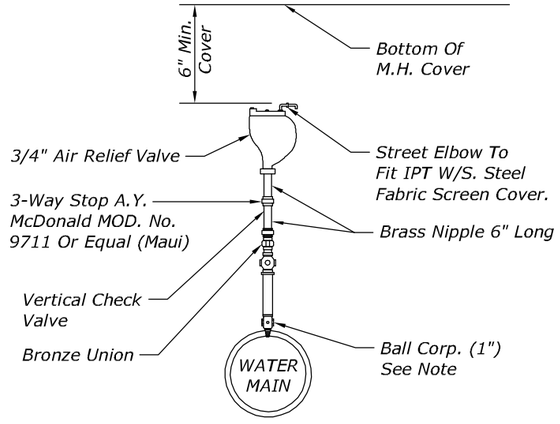
WATER MAIN TRENCH RESTORATION



STANDARD LENGTHS FOR HYDRANT ELBOWS
30"
36"
42"
48"

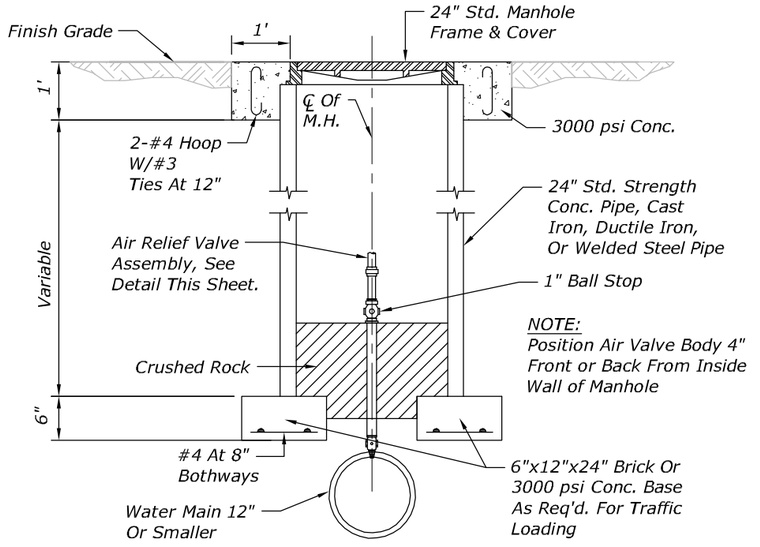
NOTE:
1. Gaskets For Flanged Joints Shall Be Duck-Insert Rubber Packing Garlock No. 19.
2. Bolts Shall Be Break-Off Type 5/8"x3" Long Machine Bolts With Cut Threads American Standard Heavy Hexagon Heads, Galvanized.
3. Nuts Shall Be American Standard Heavy Cold Punched Hexagon Nuts, Galvanized

FIRE HYDRANT DETAIL



NOTE:
1. For 2" Air Relief Valve, Size Of Ball Corp., Union, Vertical Check Valve And Nipple Shall Be 2".
2. Provide Type "F" Manhole For Buried Installation. (Maui Only). See Detail This Sheet.
3. For Combination Air Valve, Immersed Installation Not Permitted.

AIR RELIEF VALVE ASSEMBLY



ARV INSTALLATION TYPE "F" MANHOLE

BRIAN A. LOCK
LICENSED PROFESSIONAL ENGINEER
No. 9867-C
HAWAII, U.S.A.

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WILSON OKAMOTO CORPORATION — APRIL 30, 2020 LIC. EXP. DATE

NO SCALE

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WATER DETAILS

SPECIAL

DRAWING NO.: