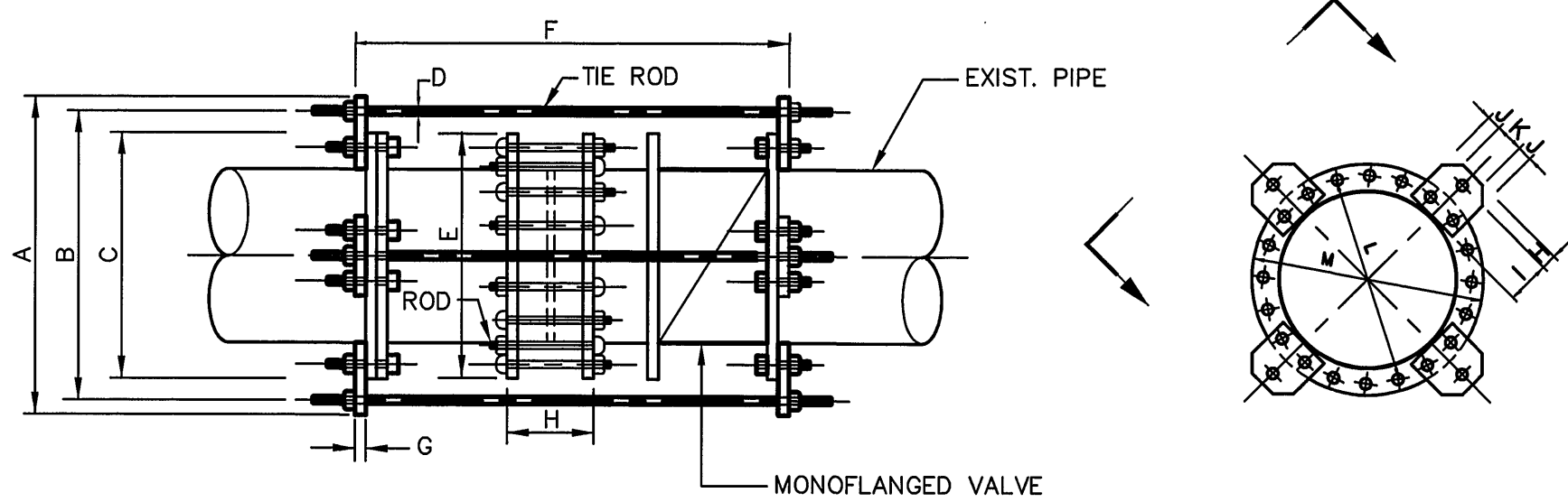


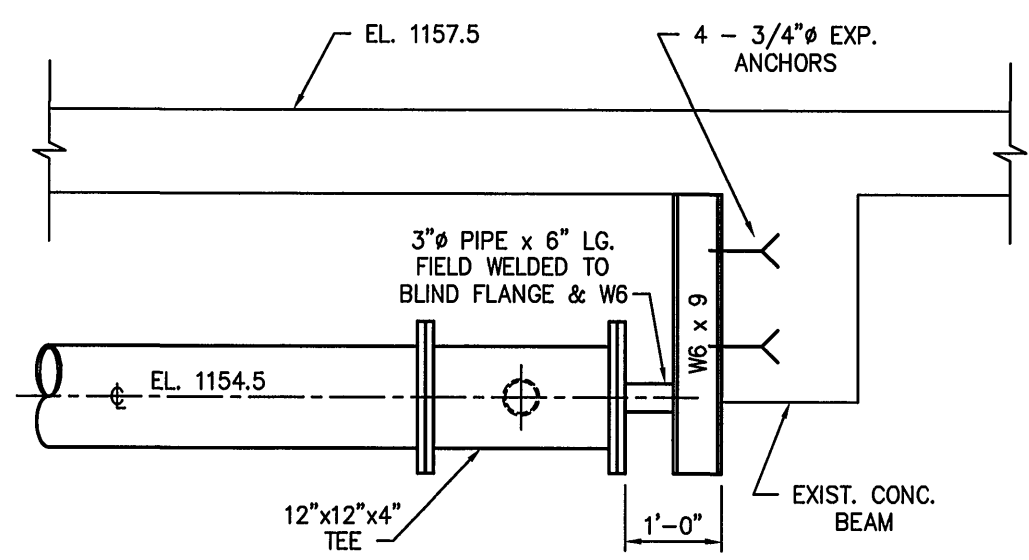
Ø	A	B	C	D	E	F	G	NO. OF TIE RODS
20"	31.5"	29.5"	27.5"	0.5"	24 1/16"	53"	3/4"	4
24"	40"	36"	32"	0.5"	28"	45 7/16"	3/4"	4

Ø	H	I	J	K	L	NO. OF BOLTS	BOLTS DIA.	M
20"	2"	6"	2"	4"	25"	20	1 1/4"	27.5"
24"	2"	6"	2"	4"	29.5"	20	1 1/4"	32.0"



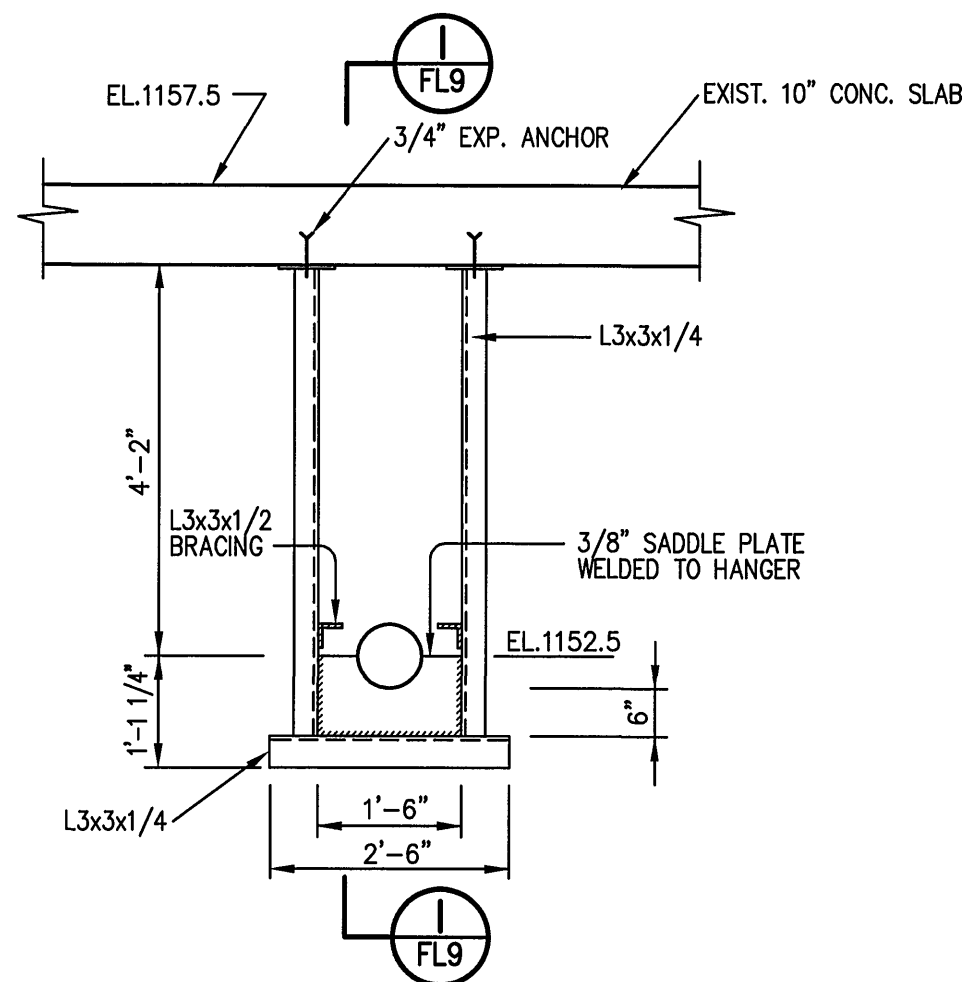
DETAIL OF RESTRAINING ROD ON 20" AND 24" PIPES AND VALVES

NOTE: REPLACE THE EXISTING GASKET OF DRESSER COUPLING WITH NEW GASKET ACCORDING TO AWWA STANDARD



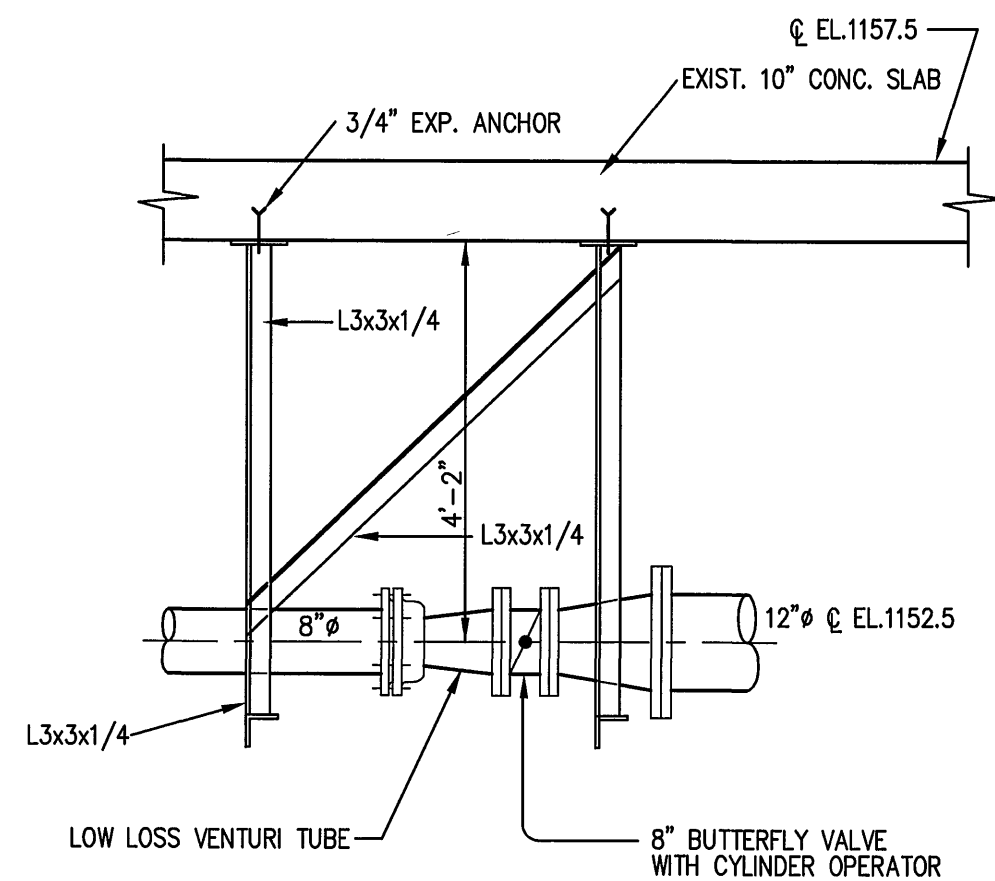
DETAIL OF 12"Ø PIPE RESTRAINT

SCALE: 1/2" = 1'-0"



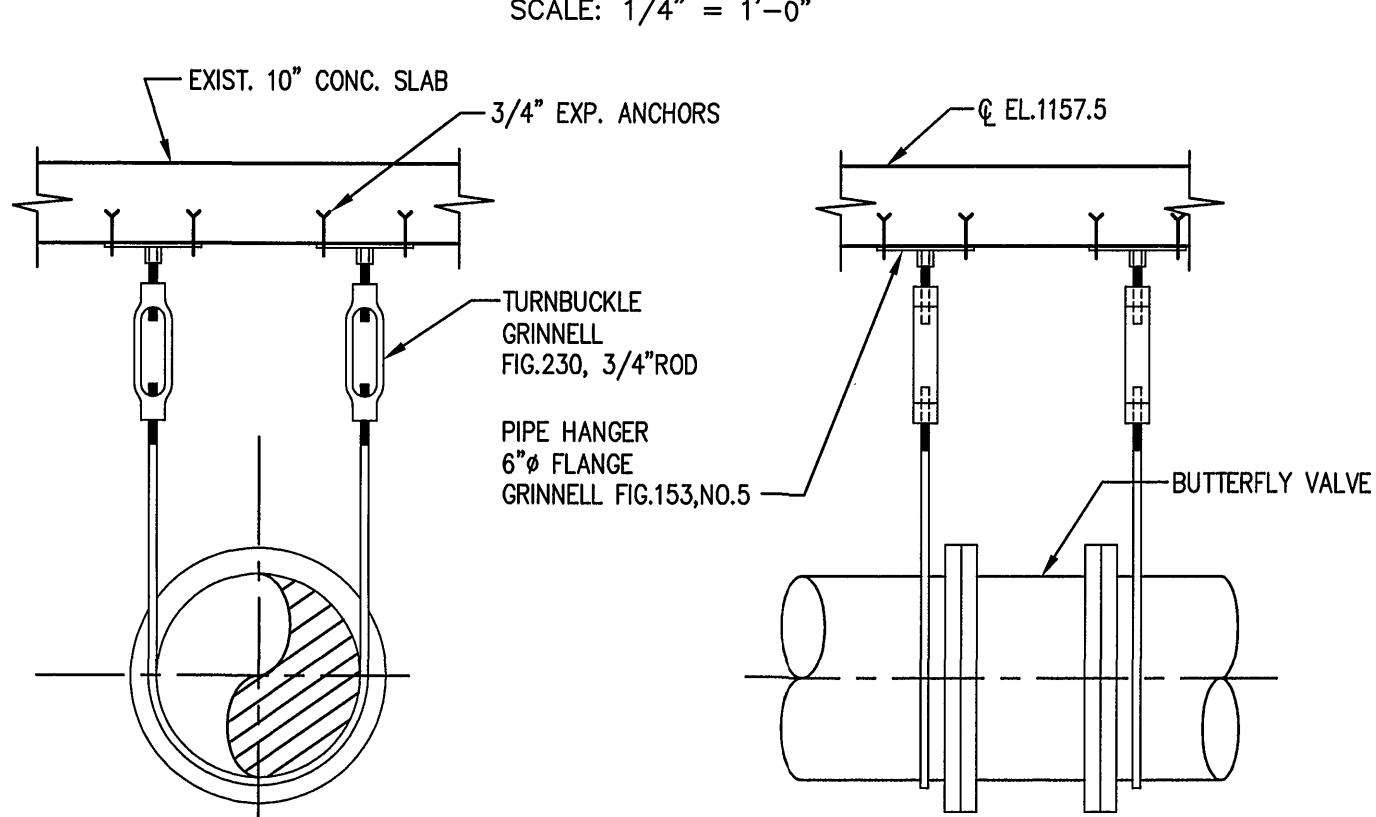
DETAILS OF 12"Ø SURFACE WASH PIPE SUPPORT ADJACENT TO THE VENTURI TUBE

SCALE: 1/2" = 1'-0"



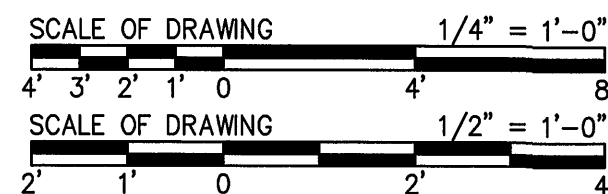
SECTION I - I

SCALE: 1/2" = 1'-0"



MONOFLANGED BUTTERFLY VALVE SUPPORT DETAILS

NOT TO SCALE



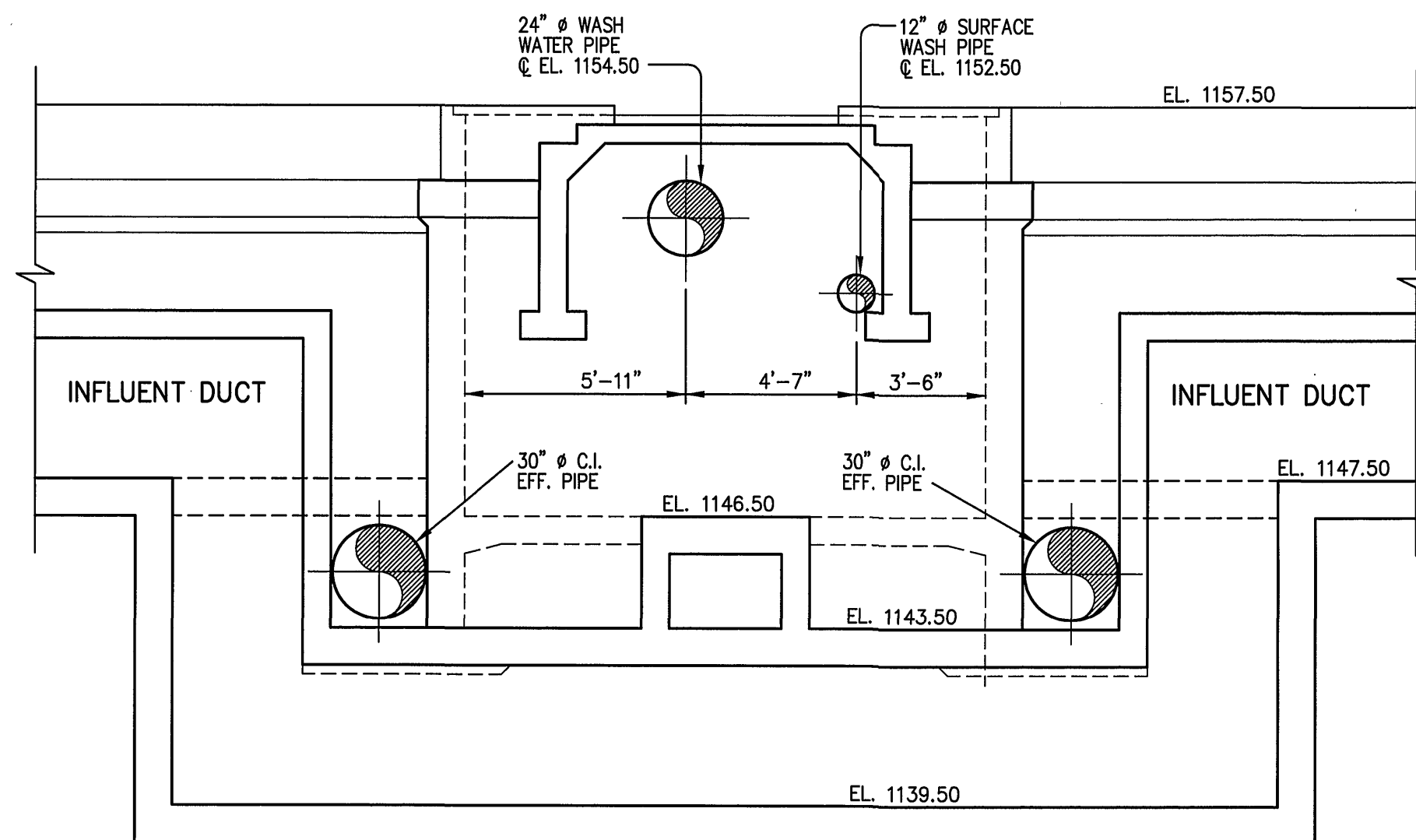
HYDRAULIC POSITIONER REPLACEMENT SCHEDULE

Replace the following hydraulic positioners located under the filter operating tables in the filter operating gallery with new hydraulic positioners:

Hydraulic Positioner	Filter No.										Total
	1	2	3	4	5	6	7	8	9	10	
Influent	X	X	X	X	X	X	X	X	X	X	10
Effluent				X		X			X	X	4
Backwash	X						X		X	X	4
Surface wash						X				X	2
Rewash						X			X		2
Waste			X		X	X		X	X		5
Total	2	1	2	2	1	5	3	1	5	5	27

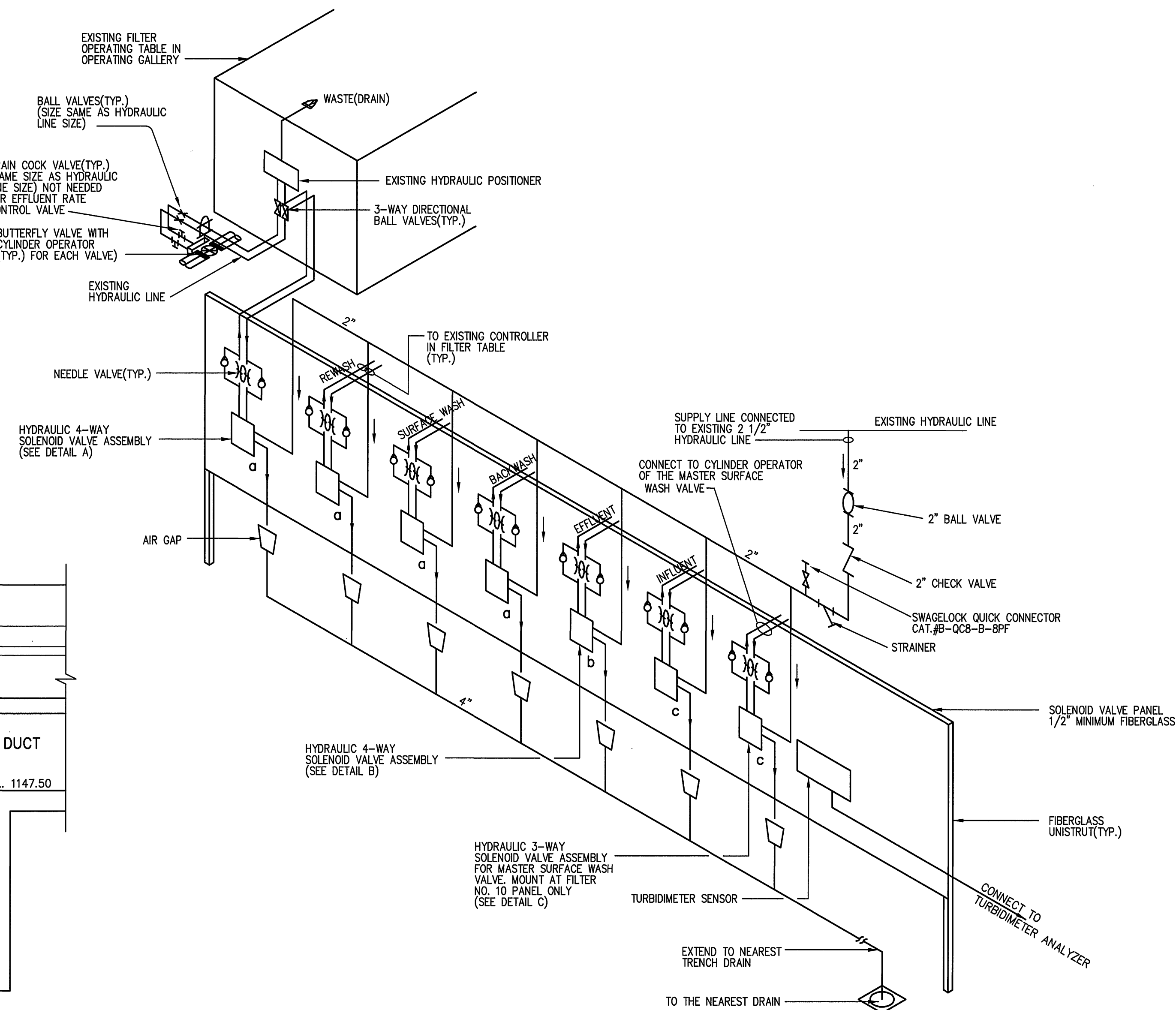
NOTE:

- The Contractor shall replace all the 2" pilot valves under the filter operating tables (1 through 10) for the turning on/off operation of the hydraulic lines with new 2" pilot valves.
- The Contractor shall furnish the required fittings (adapters, coupling, gaskets, etc.) for the replacement of each hydraulic positioner and pilot valve.



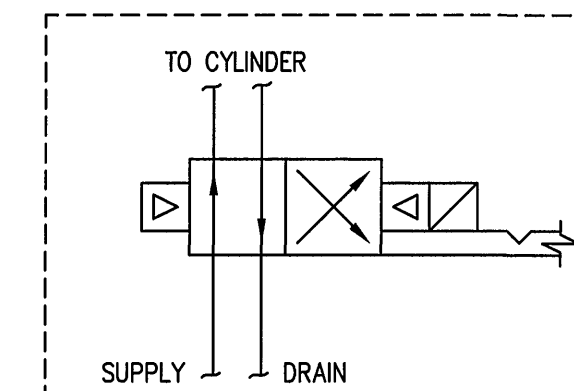
SECTION I - I

SCALE: 1/4" = 1'-0"



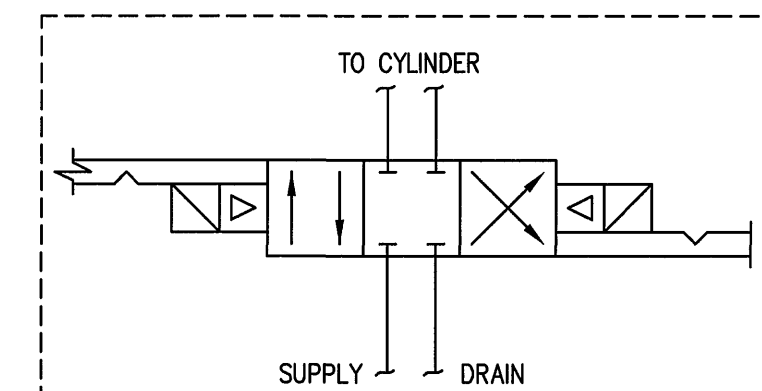
SOLENOID VALVE ASSEMBLY (TYPICAL FOR 10 FILTERS)

DRAWING OF RECORD
DATE: SEP 30 1997



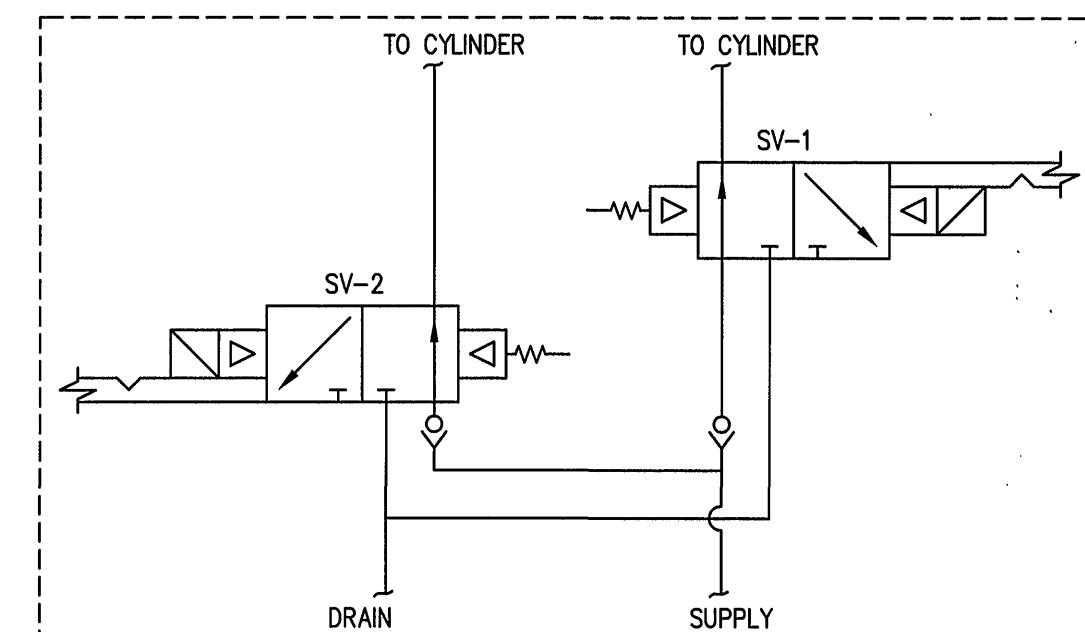
DETAIL a

4-WAY 2-POSITION SOLENOID VALVE ASSEMBLY (BACKWASH, WASTE (DRAIN), SURFACE WASH AND REWASH VALVES)



DETAIL b

4-WAY 3-POSITION SOLENOID VALVE ASSEMBLY (EFFLUENT VALVE)



DETAIL c

3-WAY SOLENOID VALVE ASSEMBLY (INFLUENT VALVE AND MASTER SURFACE WASH VALVE)

MATTERN & CRAIG CONSULTING ENGINEERS • SURVEYORS ROANOKE VIRGINIA ALVORD, BURDICK & HOWSON ENGINEERS CHICAGO	DESIGNED:		REV.	DATE	DESCRIPTION	BY	APP.	CARVINS COVE FILTER PLANT IMPROVEMENTS – PHASE I ROANOKE, VIRGINIA FILTER PIPING AND VALVE DETAILS AND SOLENOID VALVES SCHEMATIC		DATE APRIL 1992
	DRAWN: HFF									COMM. NO. 9130
	CHECKED:									SHEET FL9