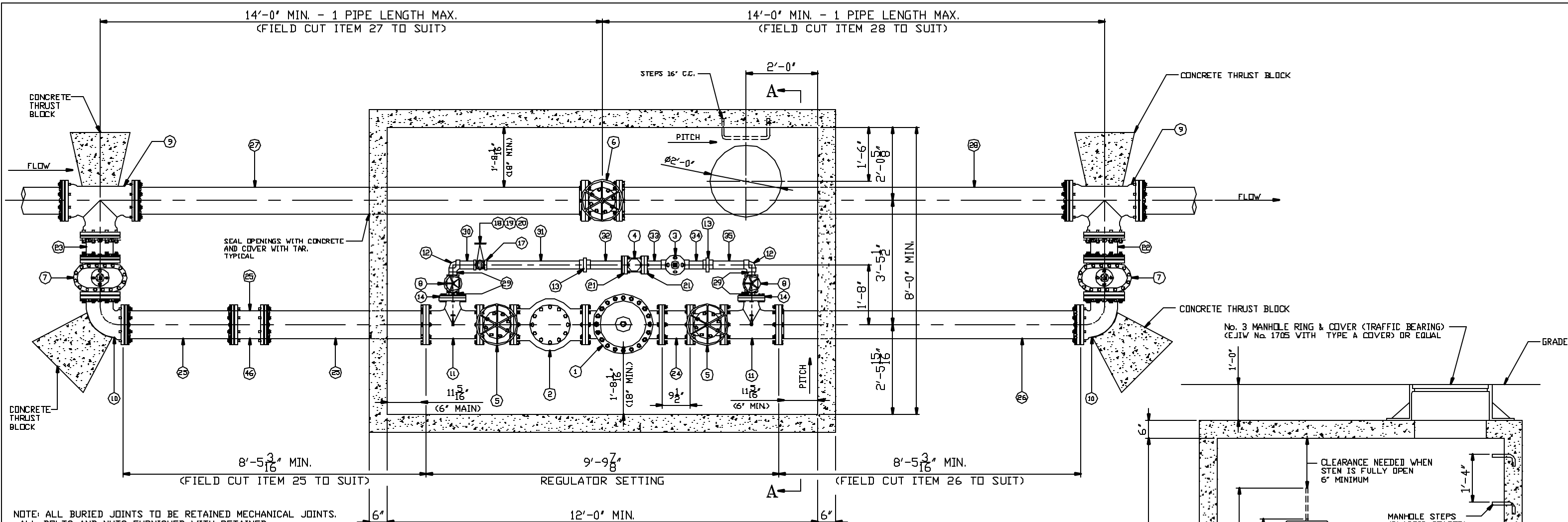


CLEVELAND DIVISION  
OF WATER  
CONSTRUCTION  
STANDARDS

*Regulators*



NOTE: ALL BURIED JOINTS TO BE RETAINED MECHANICAL JOINTS.  
 ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

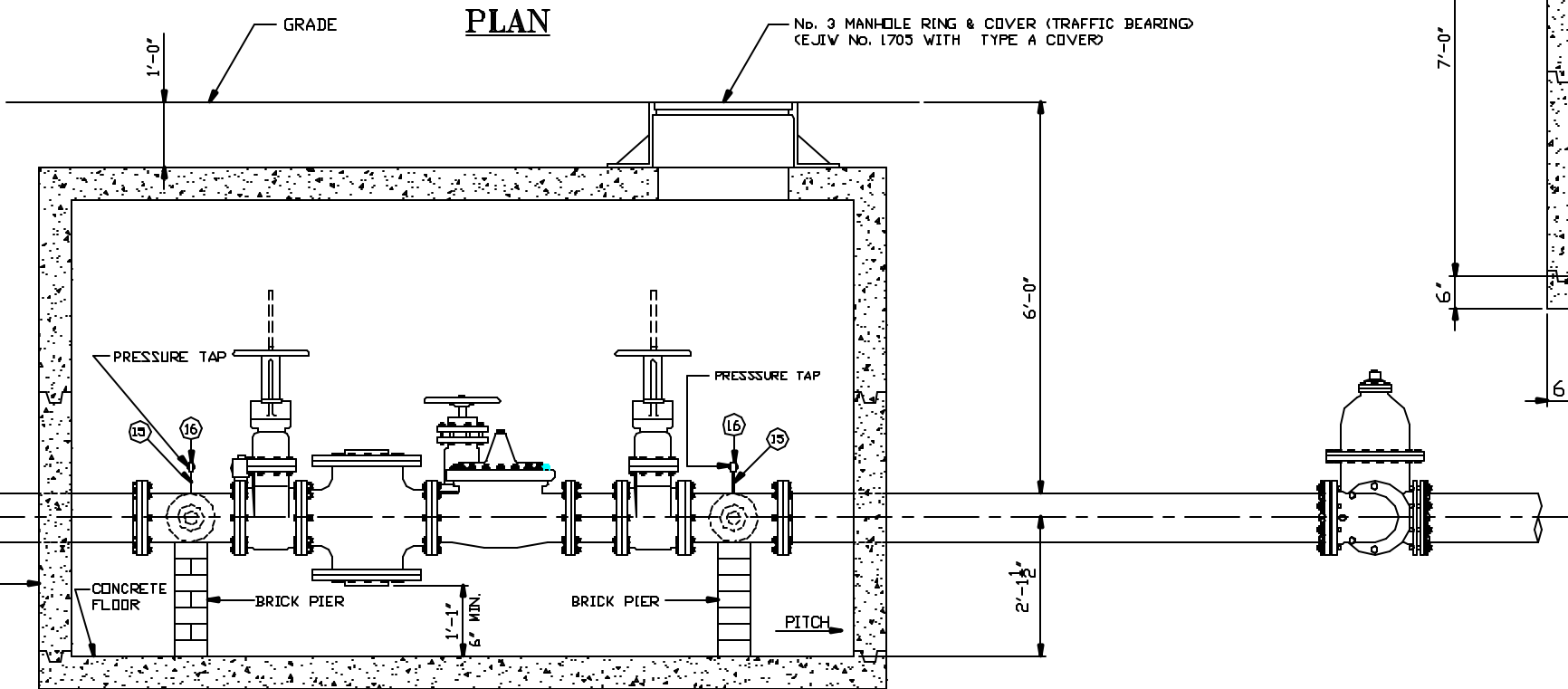
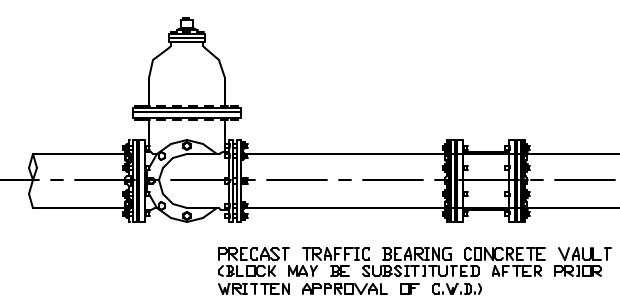
NOTE: PITCH VAULT TOWARD MANHOLE ACCESS.

ALL CONCRETE SHOULD BE CLASS "A".

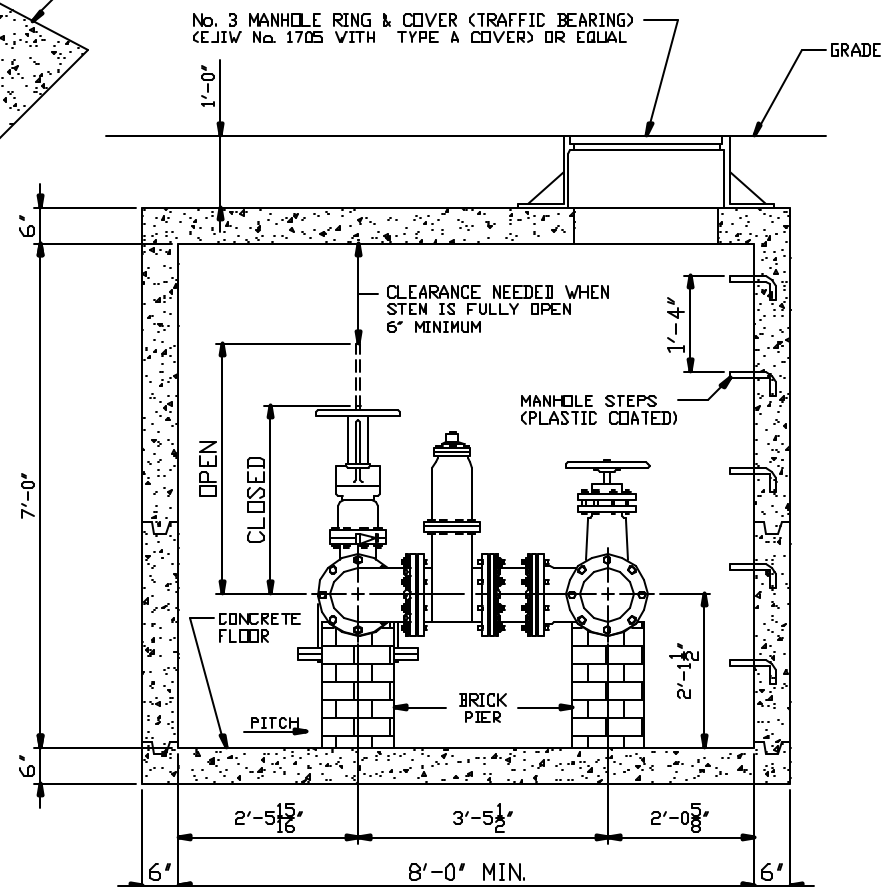
CONTRACTOR TO FURNISH ALL MATERIAL, CLEVELAND DIVISION OF WATER TO ASSEMBLE THE REGULATOR SETTING FOR A FEE.

ALL FLANGED JOINTS TO HAVE STAINLESS STEEL BOLTS AND NUTS AS PER ASTM A276/A193, TYPE 304, HEAVY HEX.

WEIGHT OF REGULATOR SETTING IS APPROXIMATELY 2073 LBS.

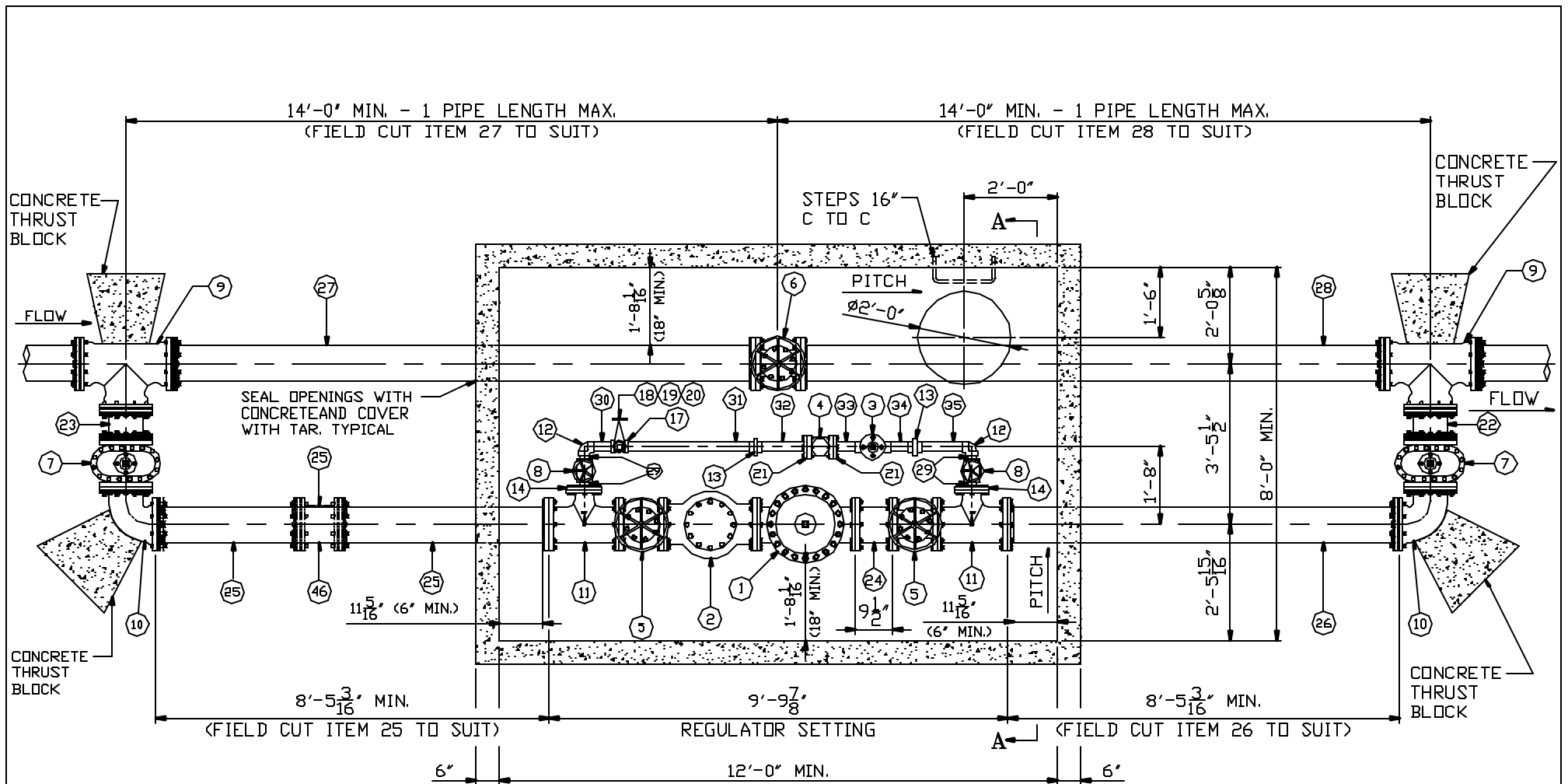


**ELEVATION**



**SECTION A-A**

REVISIONS			STANDARD DETAILS	
No.	DATE	BY	DEPARTMENT OF PUBLIC UTILITIES	
			DIVISION OF WATER	
			CLEVELAND, OHIO	
			SUBJECT	
			8" REGULATOR IN VAULT	
			DRAWN BY RSK	-SCALE-
			DATE 10-1-1997	3" = 1'-0"
			CHECKED BY MJS DATE 10-1-1997	No. REG8



## 8" REGULATOR - PLAN -

NOTE: ALL BURIED JOINTS TO BE RETAINED MECHANICAL JOINTS.

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

NOTE: PITCH VAULT TOWARD MANHOLE ACCESS.

ALL CONCRETE SHOULD BE CLASS "A".

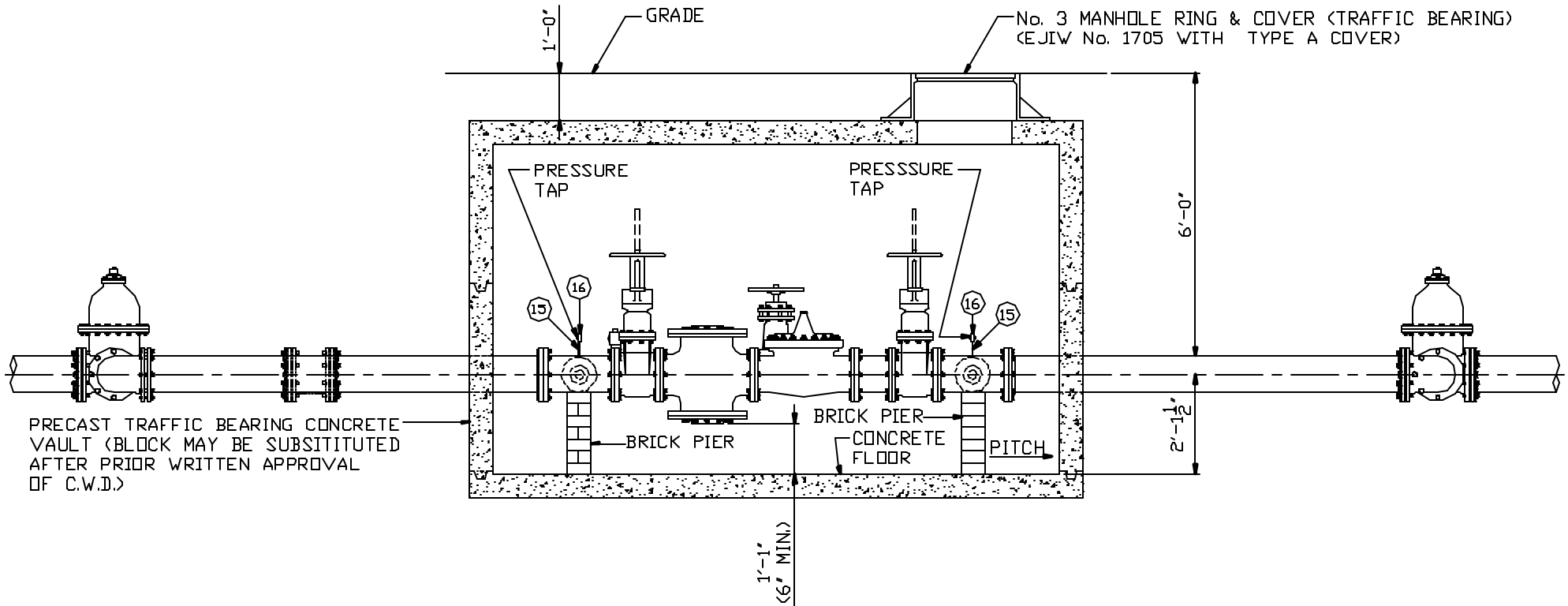
CONTRACTOR TO FURNISH ALL MATERIAL, CLEVELAND DIVISION OF WATER TO ASSEMBLE THE REGULATOR SETTING FOR A FEE.

ALL FLANGED JOINTS TO HAVE STAINLESS STEEL BOLTS AND NUTS AS PER ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX.

WEIGHT OF REGULATOR SETTING IS APPROXIMATELY 4550 LBS.

DATE: 10-1-97

BY: RSK



## 8" REGULATOR - ELEVATION -

NOTE: ALL BURIED JOINTS TO BE RETAINED MECHANICAL JOINTS.

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

NOTE: PITCH VAULT TOWARD MANHOLE ACCESS.

ALL CONCRETE SHOULD BE CLASS "A".

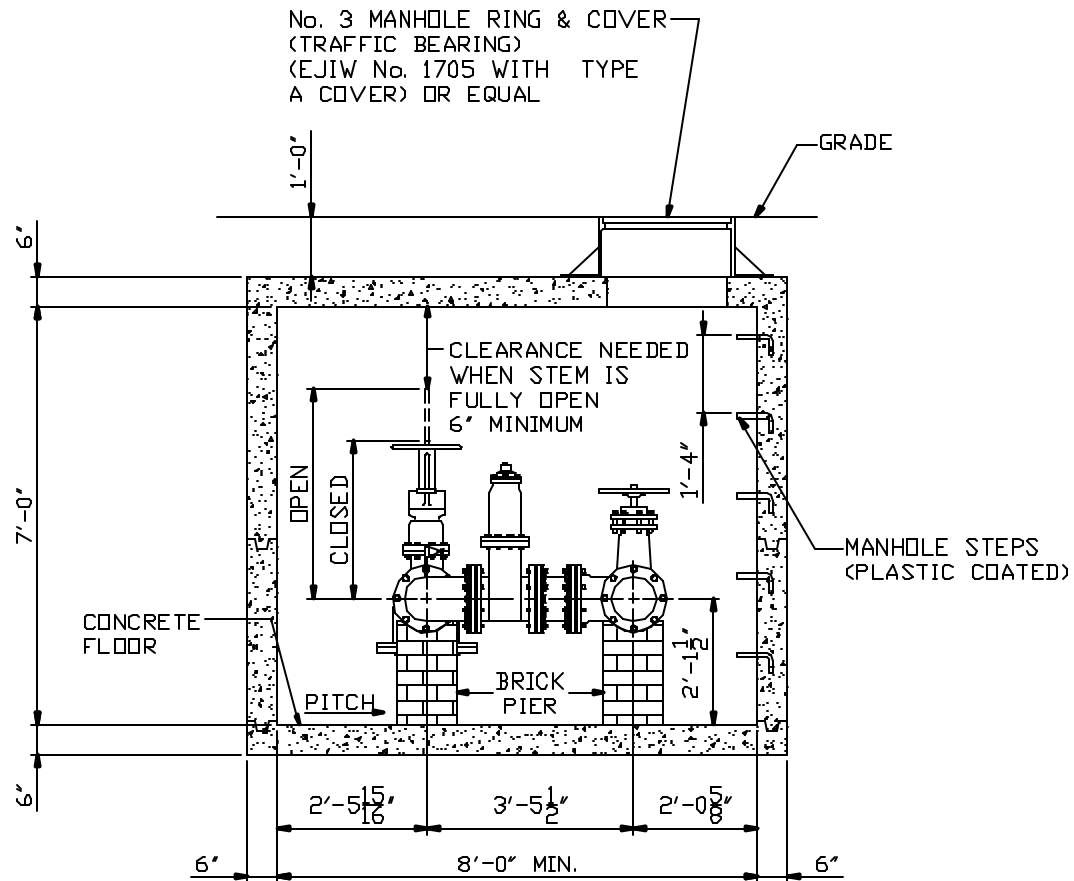
CONTRACTOR TO FURNISH ALL MATERIAL, CLEVELAND DIVISION OF WATER TO ASSEMBLE THE REGULATOR SETTING FOR A FEE.

ALL FLANGED JOINTS TO HAVE STAINLESS STEEL BOLTS AND NUTS AS PER ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX.

WEIGHT OF REGULATOR SETTING IS APPROXIMATELY 4550 LBS.

DATE: 10-1-97

BY: RSK



## 8" REGULATOR - SECTION A-A

NOTE: ALL BURIED JOINTS TO BE RETAINED MECHANICAL JOINTS.

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

NOTE: PITCH VAULT TOWARD MANHOLE ACCESS.

ALL CONCRETE SHOULD BE CLASS 'A'.

CONTRACTOR TO FURNISH ALL MATERIAL, CLEVELAND DIVISION OF WATER TO ASSEMBLE THE REGULATOR SETTING FOR A FEE.

ALL FLANGED JOINTS TO HAVE STAINLESS STEEL BOLTS AND NUTS AS PER ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX.

WEIGHT OF REGULATOR SETTING IS APPROXIMATELY 4550 LBS.

DATE: 10-1-97

BY: RSK

**MATERIALS REQUIRED FOR INSTALLATION OF 8" REGULATOR**

<u>ITEM</u>	<u>REQ'D</u>	<u>SIZE</u>	<u>DESCRIPTION</u>
1	1	8"	CLAYTON REGULATOR <b><u>OR</u></b> OCV REGULATOR <b><u>OR</u></b> EQUAL, FLANGED
2	1	8"	ROSS STRAINER, FLANGED
3	1	2"	CLAYTON REGULATOR <b><u>OR</u></b> OCV REGULATOR <b><u>OR</u></b> EQUAL, SCREWED <b><u>OR</u></b> FLANGED
4	1	2"	ROSS STRAINER, FLANGED
5	2	8"	O.S. & Y. GATE VALVE, FLANGED
6	1	8"	GATE VALVE, FLANGED <b><u>OR</u></b> RETAINED MECHANICAL JOINT WITH HAND WHEEL
7	2	2"	GATE VALVE, RETAINED MECHANICAL JOINT
8	2	2"	O.S. & Y. BRASS GATE VALVE, SCREWED
9	2	8" x 8" x 8"	TEE, RETAINED MECHANICAL JOINT
10	2	8"	90 DEGREE COMPACT ELBOW, RETAINED MECHANICAL JOINT x PLAIN END
11	2	8" x 8" x 4"	TEE, FLANGED
12	2	2"	90 DEGREE BRASS ELBOW, SCREWED
13	2	2"	UNIONS BRASS, SCREWED
14	2	2" x 9"	REDUCING FLANGE, SCREWED
15	2	1/4" x 4"	BRASS NIPPLE, SCREWED
16	2	1/4"	BALL VALVE BRASS, SCREWED
17	1	2" x 2" x 2"	BRASS TEE, SCREWED
18	1	2" x 6"	BRASS NIPPLE, SCREWED
19	1	2"	BRASS GATE VALVE, SCREWED
20	1	2"	BRASS PLUG, SCREWED
<u>ITEM</u>	<u>REQ'D</u>	<u>SIZE</u>	<u>DESCRIPTION</u>

21	2	2"	COMPANION FLANGE
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**NOTE: (4) 2" COMPANION FLANGES REQ'D IF FLANGED 2" REGULATOR IS USED**

**NOTE: PIPE LENGTHS ARE APPROXIMATE. CUT TO SUIT**

22	14-1/2" LONG	8"	CLASS 52 DUCTILE IRON PIPE PLAIN END x PLAIN END
23	14-1/2" LONG	8"	CLASS 52 DUCTILE IRON PIPE PLAIN END x PLAIN END
24	9" LONG	8"	CLASS 52 DUCTILE IRON PIPE FLANGED SPACER
25	103-3/4" LONG	8"	CLASS 52 DUCTILE IRON PIPE  FLANGED x PLAIN END
26	103-3/4" LONG	8"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END
27	153-1/4" LONG <b><u>OR</u></b> 1 PIPE LENGTH	8"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END <b><u>OR</u></b> PLAIN END x PLAIN END TO MATCH ITEM 6
28	153-1/4" LONG <b><u>OR</u></b> 1 PIPE LENGTH	8"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END <b><u>OR</u></b> PLAIN END x PLAIN END TO MATCH ITEM 6
29	(4) 2-5/16" LONG	2"	BRASS CLOSE NIPPLE
30	6" LONG	2"	BRASS PIPE
31	32-7/8" LONG	2"	BRASS PIPE
32	12" LONG	2"	BRASS PIPE
33	6" LONG	2"	BRASS PIPE
34	6" LONG	2"	BRASS PIPE
35	12" LONG	2"	BRASS PIPE
36	80	3/4" x 3-3/4"	MACHINE BOLTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
37	80	3/4"	HEX NUTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304

<u>ITEM</u>	<u>REQ'D</u>	<u>SIZE</u>	<u>DESCRIPTION</u>
38	10	8"	RING GASKETS
39	16	5/8" x 3-1/4"	MACHINE BOLTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
40	2	4"	RING GASKETS
41	8	5/8" x 2-3/4"	MACHINE BOLTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
42	2	2"	RING GASKETS
<b><u>NOTE: (4) 2" RING GASKETS REQ'D IF FLANGED 2" REGULATOR IS USED</u></b>			
43	24	5/8"	HEX NUTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
44	12	8"	RETAINED MECHANICAL JOINTS WITH ACCESSORIES
	14	8"	RETAINED MECHANICAL JOINTS WITH ACCESSORIES IF OPTIONAL SOLID SLEEVE USED
45	2	#2	VALVEBOXES SET TO GRADE FOR ITEM #7 (NOT SHOWN ON DRAWING FOR CLARITY)
46	1	8"	**OPTIONAL** RETAINED MECHANICAL JOINT SOLID SLEEVE (SHORT PATTERN)

### **Regulator Specifications**

The regulator valve shall be a pressure reducing/pressure sustaining surge control valve of the globe type manufactured by Cla-Val Company (Series 94, CWD Reg.) or OVC Control Valves (Model No: 127-25). The strainers shall be of the type manufactured by Ross Valve (Model No: 10B/10C).

The pressure reducing valve body and strainer body shall be either cast iron or ductile iron having a working pressure of minimum 250 psi.

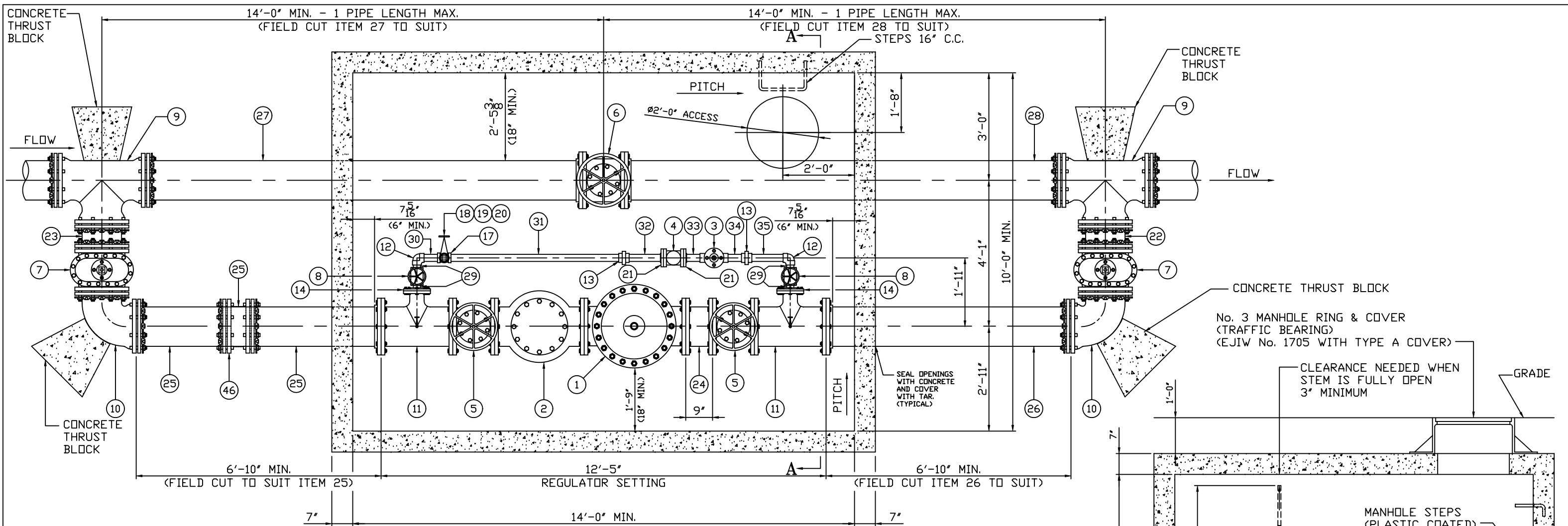
All components of the pressure reducing valve assembly shall also have a minimum 250 psi working pressure rating.

The flanges of the pressure reducing valve, strainer, valves and connecting pieces shall have a working pressure of 250 psi with dimensions and drilling of all end flanges conforming to the American 125 lb. Cast Iron Flange Standard. Flanges shall be plain face with a smooth finish.

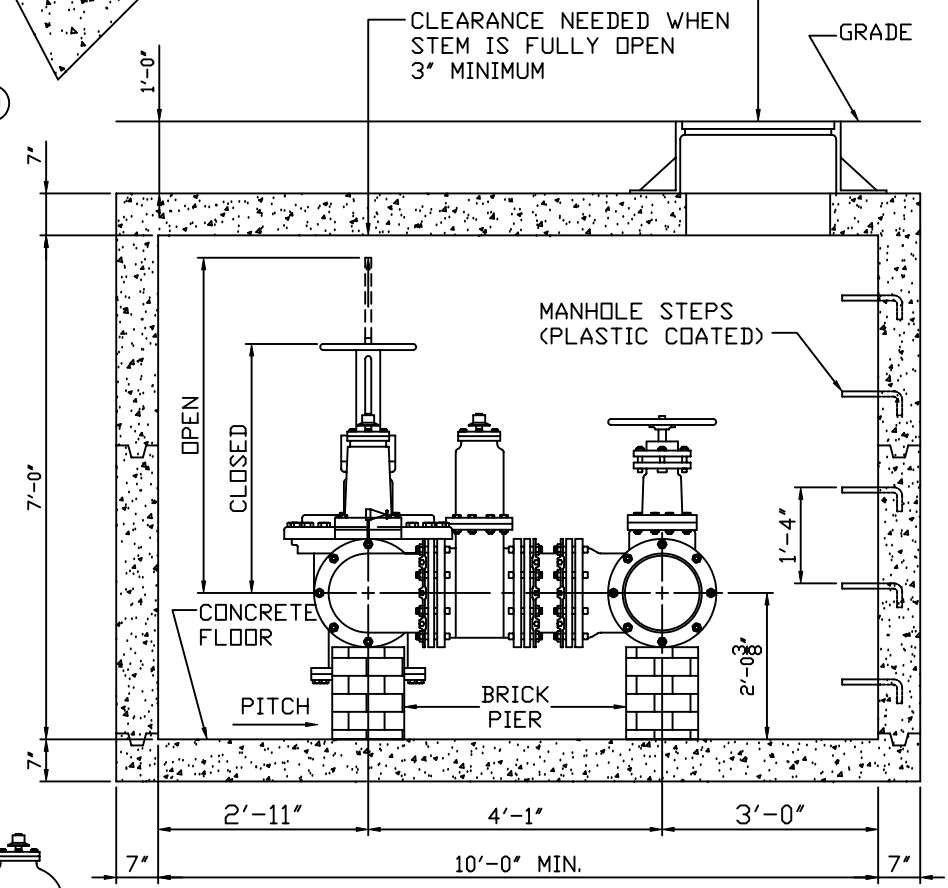
(SEE DRAWING No. 8REG)

6-11-1998

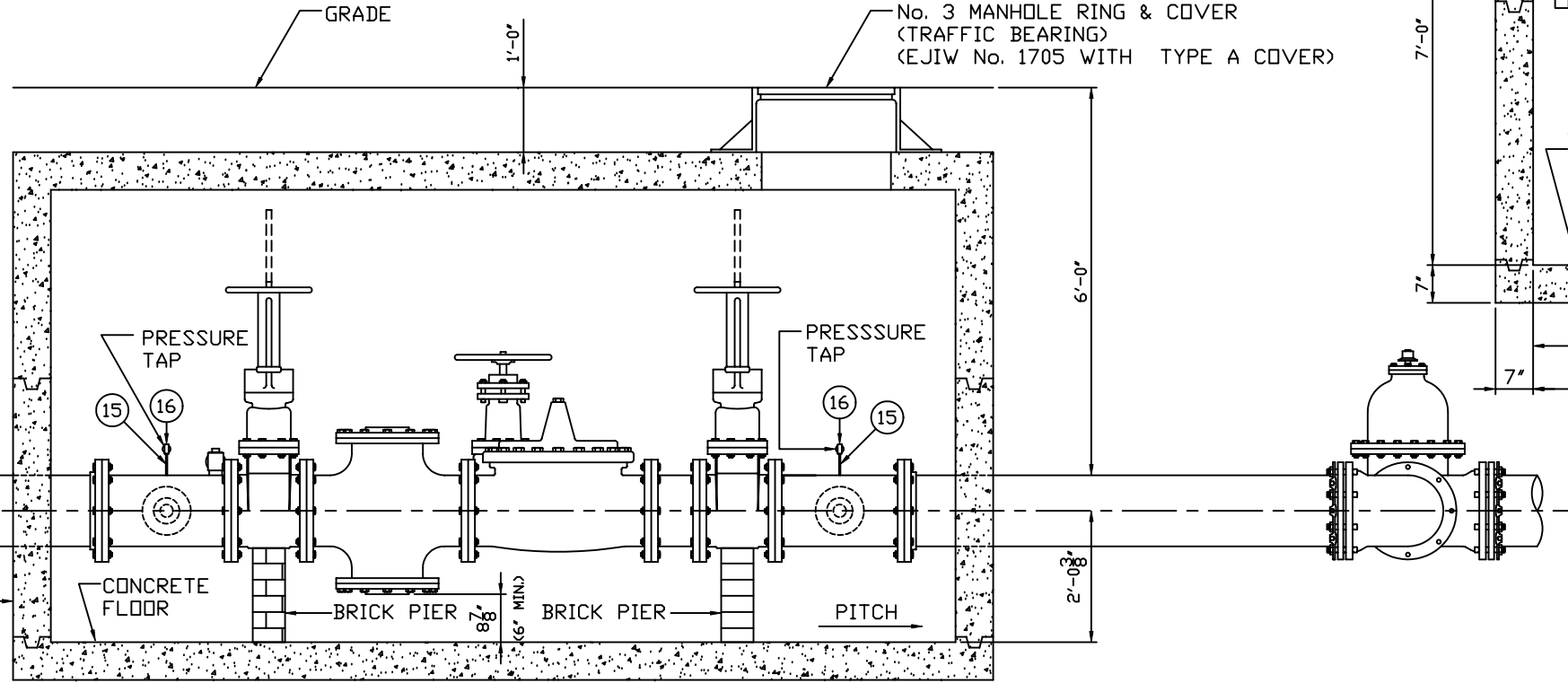




**PLAN**



**SECTION A-A**



**ELEVATION**

NOTE: ALL BURIED JOINTS TO BE RETAINED MECHANICAL JOINTS.  
 ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

NOTE: PITCH VAULT TOWARD MANHOLE ACCESS.

ALL CONCRETE SHOULD BE CLASS "A".

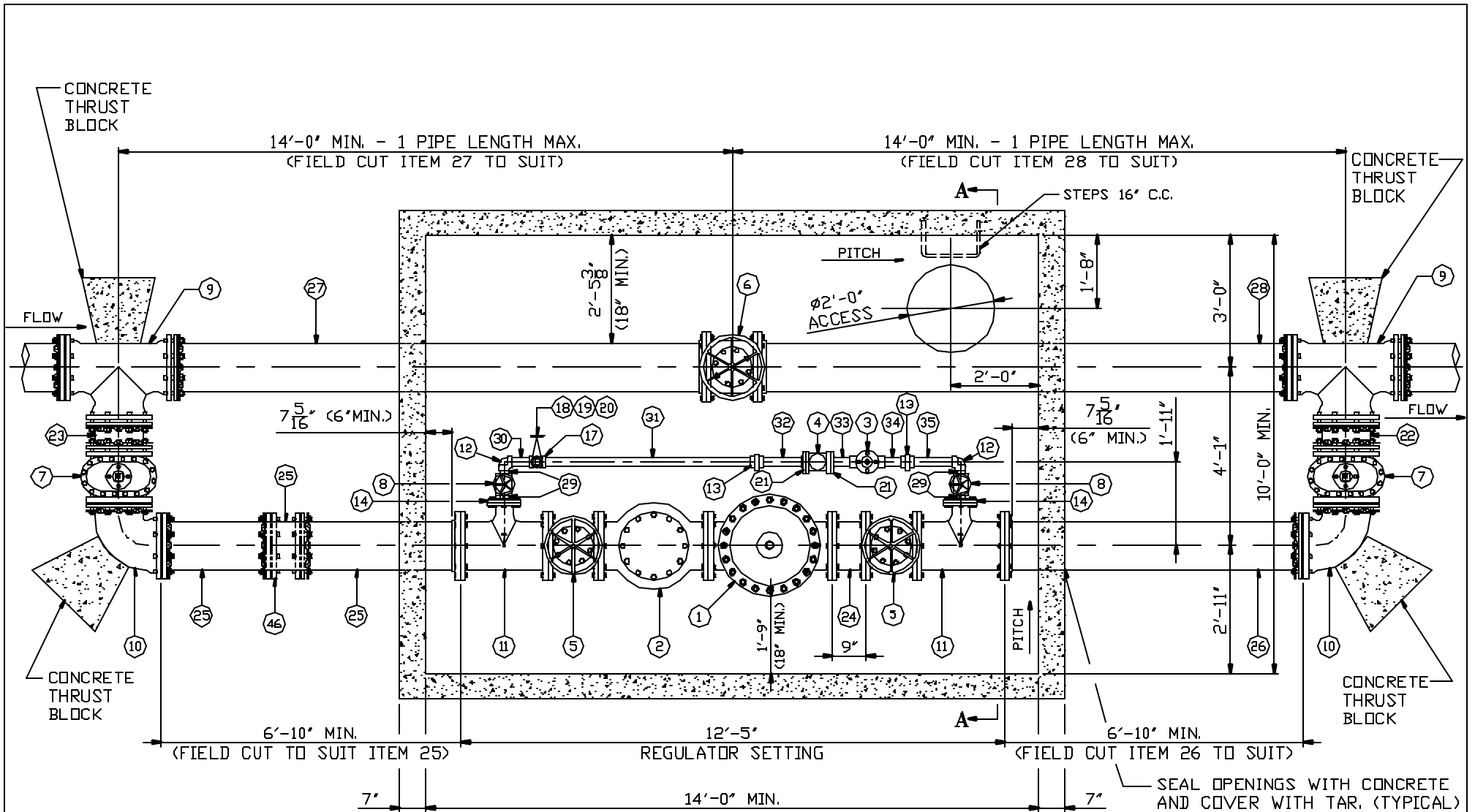
CONTRACTOR TO FURNISH ALL MATERIAL, CLEVELAND DIVISION OF WATER TO ASSEMBLE THE REGULATOR SETTING FOR A FEE.

ALL FLANGED JOINTS TO HAVE STAINLESS STEEL BOLTS AND NUTS AS PER ASTM A276/A193, TYPE 304, HEAVY HEX.

WEIGHT OF REGULATOR SETTING IS APPROXIMATELY 4550 LBS.

PRECAST TRAFFIC BEARING CONCRETE VAULT (BLOCK MAY BE SUBSTITUTED AFTER PRIOR WRITTEN APPROVAL OF C.W.D.)

REVISIONS			STANDARD DETAILS
No.	DATE	BY	
			DEPARTMENT OF PUBLIC UTILITIES DIVISION OF WATER CLEVELAND, OHIO
			SUBJECT 12" REGULATOR IN VAULT
			DRAWN BY RSK DATE 10-1-1997 CHECKED BY MJS DATE 10-1-1997
			-SCALE- 1" = 1'-0"
			No. REG12



## 12" REGULATOR - PLAN -

NOTE: ALL BURIED JOINTS TO BE RETAINED MECHANICAL JOINTS.

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

NOTE: PITCH VAULT TOWARD MANHOLE ACCESS.

ALL CONCRETE SHOULD BE CLASS "A".

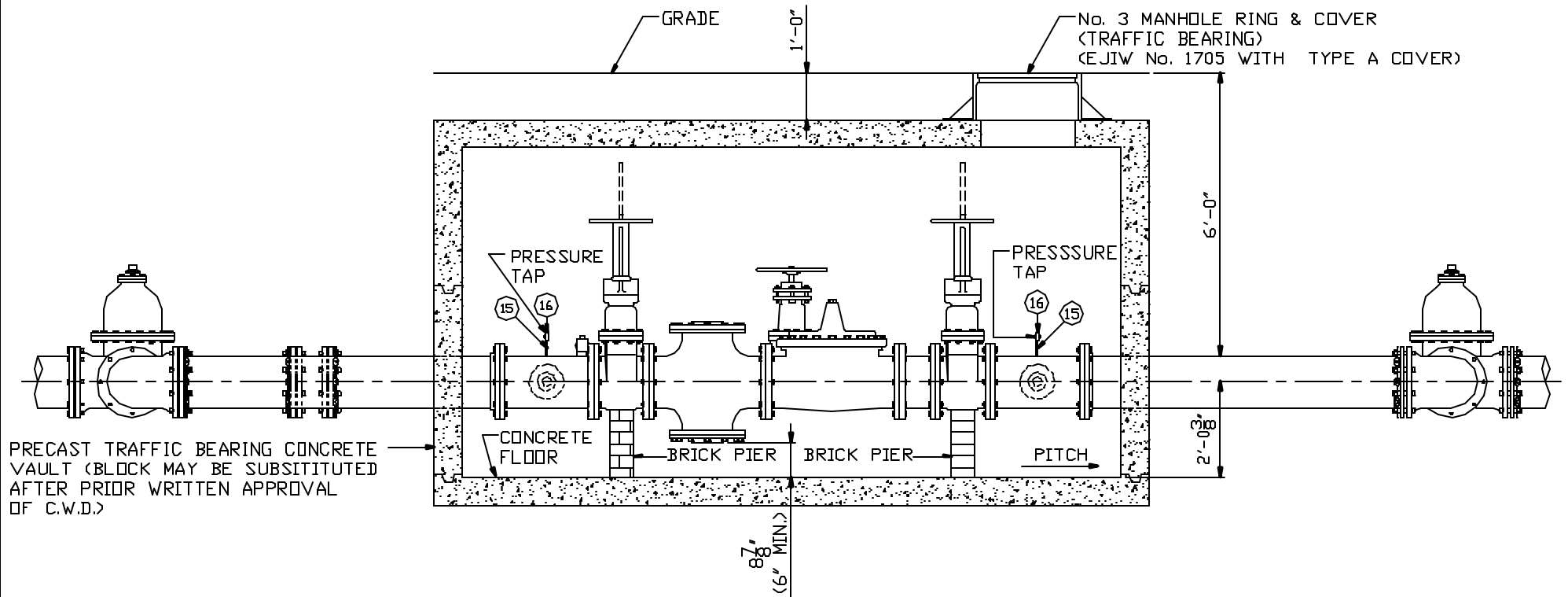
CONTRACTOR TO FURNISH ALL MATERIAL, CLEVELAND DIVISION OF WATER TO ASSEMBLE THE REGULATOR SETTING FOR A FEE.

ALL FLANGED JOINTS TO HAVE STAINLESS STEEL BOLTS AND NUTS AS PER ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX.

WEIGHT OF REGULATOR SETTING IS APPROXIMATELY 4550 LBS.

DATE: 10-1-97

BY: RSK



## 12" REGULATOR - ELEVATION -

NOTE: ALL BURIED JOINTS TO BE RETAINED MECHANICAL JOINTS.

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

NOTE: PITCH VAULT TOWARD MANHOLE ACCESS.

ALL CONCRETE SHOULD BE CLASS "A".

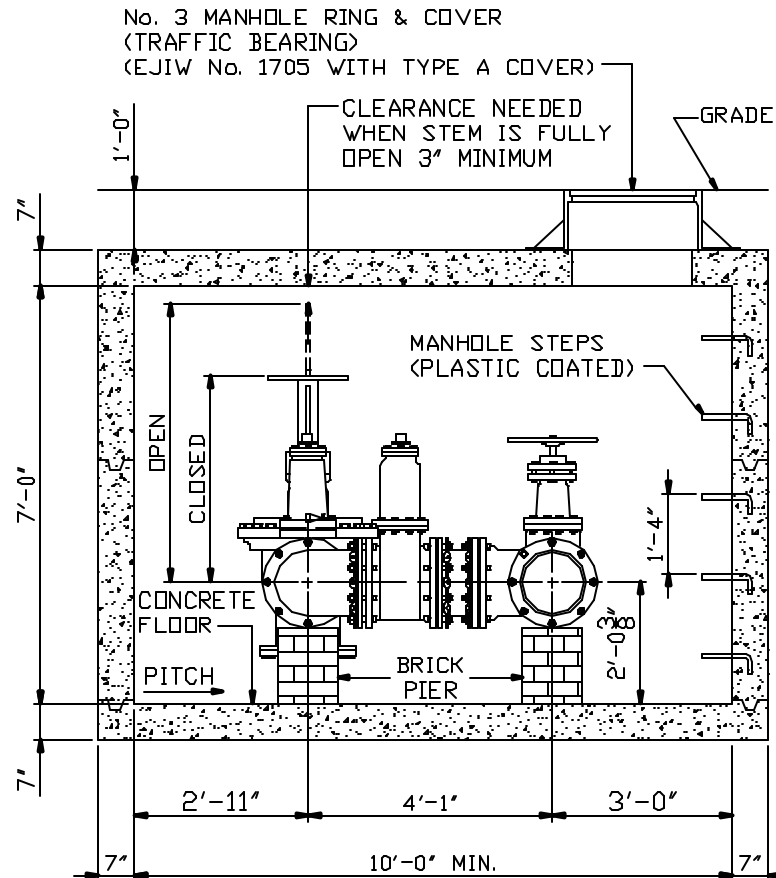
CONTRACTOR TO FURNISH ALL MATERIAL, CLEVELAND DIVISION OF WATER TO ASSEMBLE THE REGULATOR SETTING FOR A FEE.

ALL FLANGED JOINTS TO HAVE STAINLESS STEEL BOLTS AND NUTS AS PER ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX.

WEIGHT OF REGULATOR SETTING IS APPROXIMATELY 4550 LBS.

DATE: 10-1-97

BY: RSK



## 12" REGULATOR SECTION A-A

NOTE: ALL BURIED JOINTS TO BE RETAINED MECHANICAL JOINTS.

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

NOTE: PITCH VAULT TOWARD MANHOLE ACCESS.

ALL CONCRETE SHOULD BE CLASS "A".

CONTRACTOR TO FURNISH ALL MATERIAL, CLEVELAND DIVISION OF WATER TO ASSEMBLE THE REGULATOR SETTING FOR A FEE.

ALL FLANGED JOINTS TO HAVE STAINLESS STEEL BOLTS AND NUTS AS PER ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX.

WEIGHT OF REGULATOR SETTING IS APPROXIMATELY 4550 LBS.

DATE: 10-1-97

BY: RSK

**MATERIALS REQUIRED FOR INSTALLATION OF 12" REGULATOR**

<u>ITEM</u>	<u>REQ'D</u>	<u>SIZE</u>	<u>DESCRIPTION</u>
1	1	12"	CLAYTON REGULATOR <b><u>OR</u></b> OCV REGULATOR <b><u>OR</u></b> EQUAL, FLANGED
2	1	12"	ROSS STRAINER, FLANGED
3	1	2"	CLAYTON REGULATOR <b><u>OR</u></b> OCV REGULATOR <b><u>OR</u></b> EQUAL, SCREWED <b><u>OR</u></b> FLANGED
4	1	2"	ROSS STRAINER, FLANGED
5	2	12"	O.S. & Y. GATE VALVE, FLANGED
6	1	12"	GATE VALVE, FLANGED <b><u>OR</u></b> RETAINED MECHANICAL JOINT WITH HAND WHEEL
7	2	2"	GATE VALVE, RETAINED MECHANICAL JOINT
8	2	2"	O.S. & Y. BRASS GATE VALVE, SCREWED
9	2	12" x 12" x 12"	TEE, RETAINED MECHANICAL JOINT
10	2	12"	90 DEGREE COMPACT ELBOW, RETAINED MECHANICAL JOINT x PLAIN END
11	2	12" x 12" x 4"	TEE, FLANGED
12	2	2"	90 DEGREE BRASS ELBOW, SCREWED
13	2	2"	UNIONS BRASS, SCREWED
14	2	2" x 9"	REDUCING FLANGE, SCREWED
15	2	1/4" x 4"	BRASS NIPPLE, SCREWED
16	2	1/4"	BALL VALVE BRASS, SCREWED
17	1	2" x 2" x 2"	BRASS TEE, SCREWED
18	1	2" x 6"	BRASS NIPPLE, SCREWED
19	1	2"	BRASS GATE VALVE, SCREWED
20	1	2"	BRASS PLUG, SCREWED

<u>ITEM</u>	<u>REQ'D</u>	<u>SIZE</u>	<u>DESCRIPTION</u>
21	2	2"	COMPANION FLANGE
<b><u>NOTE: (4) 2" COMPANION FLANGES REQ'D IF FLANGED 2" REGULATOR IS USED</u></b>			
<b><u>NOTE: PIPE LENGTHS ARE APPROXIMATE. CUT TO SUIT</u></b>			
22	13-1/2" LONG	12"	CLASS 52 DUCTILE IRON PIPE PLAIN END x PLAIN END
23	13-1/2" LONG	12"	CLASS 52 DUCTILE IRON PIPE PLAIN END x PLAIN END
24	9" LONG	12"	CLASS 52 DUCTILE IRON PIPE FLANGED SPACER
25	84-1/2" LONG	12"	CLASS 52 DUCTILE IRON PIPE  FLANGED x PLAIN END
26	84-1/2" LONG	12"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END
27	149" LONG <b><u>OR</u></b> 1 PIPE LENGTH	12"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END <b><u>OR</u></b> PLAIN END x PLAIN END TO MATCH ITEM 6
28	149" LONG <b><u>OR</u></b> 1 PIPE LENGTH	12"	CLASS 52 DUCTILE IRON PIPE FLANGED x PLAIN END <b><u>OR</u></b> PLAIN END x PLAIN END TO MATCH ITEM 6
29	(4) 2-5/16" LONG	2"	BRASS CLOSE NIPPLE
30	6" LONG	2"	BRASS PIPE
31	54-3/4" LONG	2"	BRASS PIPE
32	12" LONG	2"	BRASS PIPE
33	6" LONG	2"	BRASS PIPE
34	6" LONG	2"	BRASS PIPE
35	12" LONG	2"	BRASS PIPE
36	120	7/8" x 3-3/4"	MACHINE BOLTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
37	120	7/8"	HEX NUTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304

<u>ITEM</u>	<u>REQ'D</u>	<u>SIZE</u>	<u>DESCRIPTION</u>
38	10	12"	RING GASKETS
39	16	5/8" x 3-1/4"	MACHINE BOLTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
40	2	4"	RING GASKETS
41	8	5/8" x 2-3/4"	MACHINE BOLTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
42	2	2"	RING GASKETS
<b><u>NOTE: (4) 2" RING GASKETS REQ'D IF FLANGED 2" REGULATOR IS USED</u></b>			
43	24	5/8"	HEX NUTS, STAINLESS STEEL PER ASTM A276/A193, TYPE 304
44	12	12"	RETAINED MECHANICAL JOINTS WITH ACCESSORIES
	14	12"	RETAINED MECHANICAL JOINTS WITH ACCESSORIES IF OPTIONAL SOLID SLEEVE USED
45	2	#2	VALVEBOXES SET TO GRADE FOR ITEM #7 (NOT SHOWN ON DRAWING FOR CLARITY)
46	1	12"	**OPTIONAL** RETAINED MECHANICAL JOINT SOLID SLEEVE (SHORT PATTERN)

### **Regulator Specifications**

The regulator valve shall be a pressure reducing/pressure sustaining surge control valve of the globe type manufactured by Cla-Val Company (Series 94, CWD Reg.) or OVC Control Valves (Model No: 127-25).

The strainers shall be of the type manufactured by Ross Valve (Model No: 10B/10C).

The pressure reducing valve body and strainer body shall be either cast iron or ductile iron having a working pressure of minimum 250 psi.

All components of the pressure reducing valve assembly shall also have a minimum 250 psi working pressure rating.

The flanges of the pressure reducing valve, strainer, valves and connecting pieces shall have a working pressure of 250 psi with dimensions and drilling of all end flanges conforming to the American 125 lb. Cast Iron Flange Standard. Flanges shall be plain face with a smooth finish.

(SEE DRAWING No. 12REG)

8-4-2008