SECTION 02512
WATER LINES - AIR VALVES, BLOWOFFS AND HYDRANTS

PART 1. GENERAL

1.1 This section covers air valves, hydrants, and blowoffs for water lines specified under Section 02513, Water lines.

1.2 Disposal of all air valves, blowoffs, and hydrants shall be at the discretion of the OWNER.

PART 2. PRODUCTS

2.1 All products and materials utilized in the execution of the work described herein shall meet or exceed the specified characteristics provided herein. All products and materials must be equal to those specified in Section 02080, Water/Wastewater material available for review at kub.org/standards or available for review at KUB/Procurement 4505 Middlebrook Pike.

2.2 Air valves shall be one of the following:

Manufacturer	1": KUB Item # 204222	2" KUB Item # 207480
ARI	D-040	D-040
Bermad	1" - 4405	2" – 4415
Multiplex Mfg Co.	Crispin UL-10	Crispin UL-20
Valve & Primer Corp	APCO MDL 143C	2" APCO Model 145C

PART 3. EXECUTION

3.1 AIR VALVES

A. Air valves for water lines shall be in accordance with the Materials specifications and as shown on the Standard Drawings.

B. Air valves shall be 1-inch size on pipelines 12 inches in diameter and smaller. For larger pipes, the air valves shall be 2-inch size.

C. Air valves shall be located at all high points on the pipeline or as directed by the OWNER.

D. Air valves shall be installed in precast concrete or brick manholes as shown on the Standard Drawings.

E. A tapping saddle shall be used on all air valve installations.

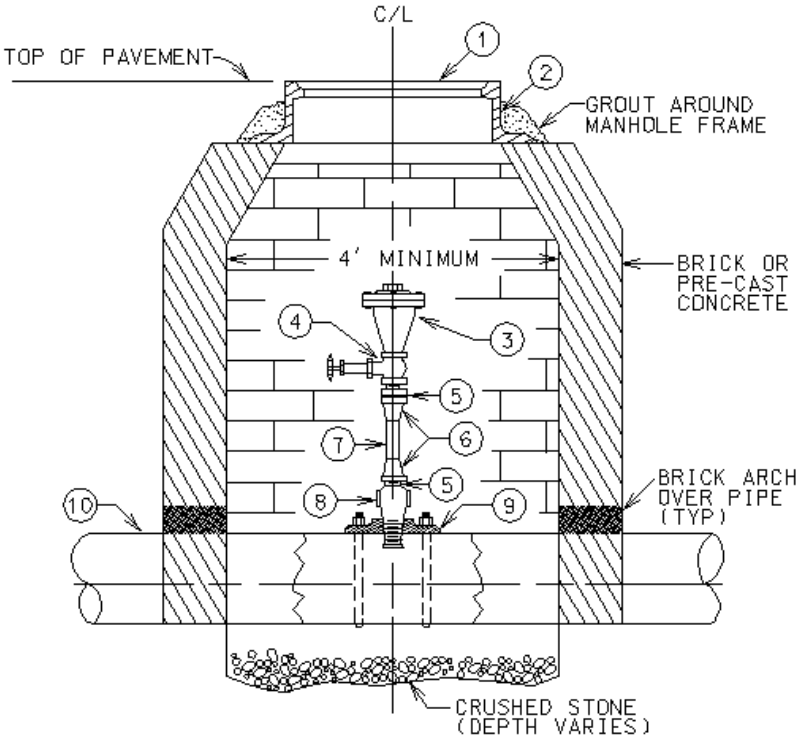

Figure 1-02512-a: Typical Installation of 1" and 2" Universal Air Valve – DI/CI Main

Notes:
I. Tapping saddle must be used with corporation stop.
II. Brass nipple may be substituted for item # 7 with Owner approval.

Material List for 1" Installation of Universal Air Valve

Item	Quantity	KUB Item #	Description
1	1	200020	Water Manhole Lid
2	1	200300	Manhole Frame
3	1	204224	Air Valve
4	1	207167	Brass Gate Valve
5	1	203307	All Thread Brass Nipple
6	1	203984	Female Fitting
7	1	290650	Copper Pipe
8	1	202770	1" Corporation Stop
9	1	207266	6 X 1 Tapping Saddle

		206961	8 X 1 Tapping Saddle
		205344	12 X 1 Tapping Saddle
10	1	290742	6" Ductile Iron Pipe
		295279	8" Ductile Iron Pipe
		295337	12" Ductile Iron Pipe

Material List for 2" Installation of Universal Air Valve

Item	Quantity	KUB Item #	Description
1	1	800020	Water Manhole Lid
2	1	800300	Manhole Frame
3	1	207480	2” Air Valve
4	1	205625	2” Brass Gate Valve
5	1	203216	2” All Thread Brass Nipple
6	1	203547	2” Coupling – Copper Compression x FPT
7	1	290668	2” Copper Pipe
8	1	202796	2” Corporation Stop
9	1	207043	16X 2 Tapping Saddle
10	1	295287	16" Ductile Iron Pipe

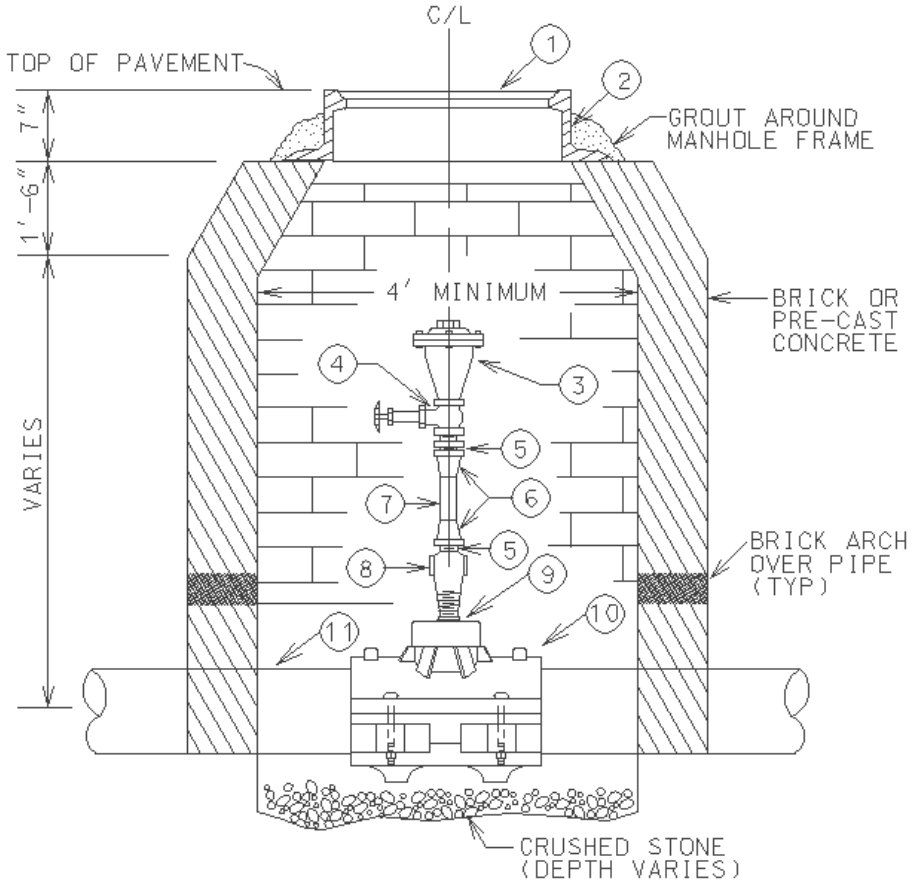

Figure 2-02512-b: Typical Installation of 1" Universal Air Valve – HDPE Main

Notes:

I. Tapping saddle must be used with corporation stop.

Material List for 1" Installation of Universal Air Valve

Item	Quantity	KUB Item #	Description
1	1	200020	Water Manhole Lid
2	1	200300	Manhole Frame
3	1	204224	1"Air Valve
4	1	207167	1" Brass Gate Valve
5	1	203307	1" All Thread Brass Nipple
6	1	203984	1" Coupling – Copper Compression x FPT
7	1	290650	1" Copper Pipe
8	1	202770	1" Corporation Stop
9	1	200701	2 (MIPT) x 1 (FCCT) Bushing
10	1	200223	8" DIPS x 2"IPS Electrofusion Corp Saddle
		Non Stock	12" DIPS x 2"IPS Electrofusion Corp Saddle
11	1	290742	8" HDPE Pipe
		Non Stock	12" HDPE Pipe

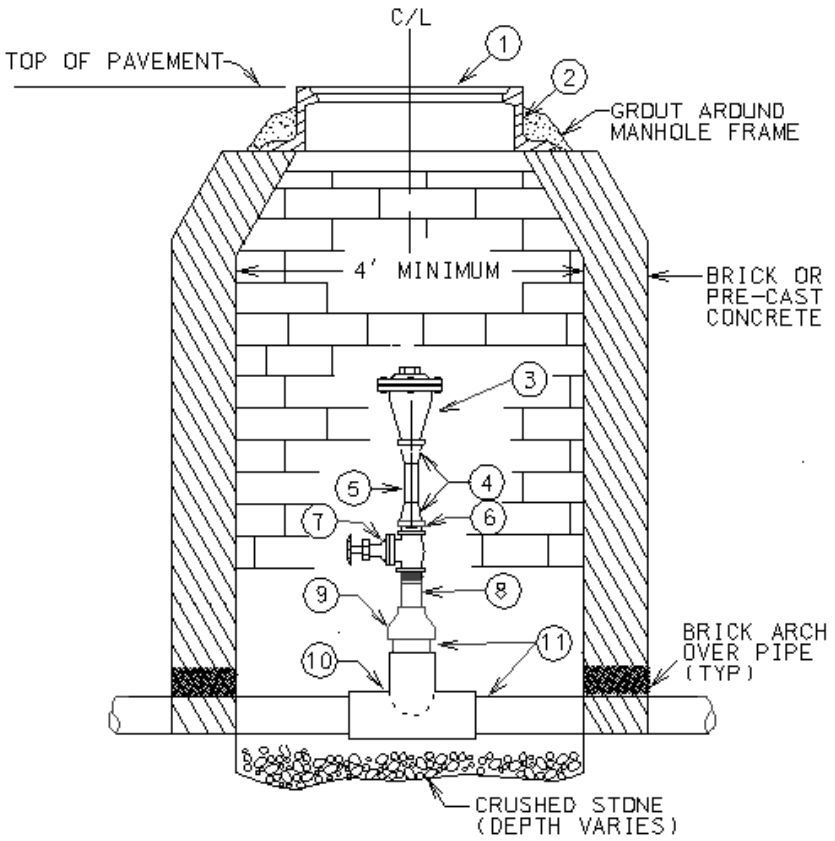

Figure 3-02512-c: Typical Installation of 1" Air Valve on 2" HDPE

Notes:

I. Brass nipple may be substituted for item # 5 with Owner approval.

Material List for 1" Installation of Universal Air Valve

Item	Quantity	KUB Item #	Description
1	1	200020	Water Manhole Lid
2	1	200300	Manhole Frame
3	1	204224	1" Air Valve
4	2	203984	1" Female Fitting
5	1	290650	1" Copper Pipe
6	1	203307	All Thread Brass Nipple
7	1	207167	1" Brass Gate Valve
8	1	800744	1" HDPE Transition Fitting
9	1	Non-stock	2 x 1-1/4" HDPE Reducer
10	1	800714	2" HDPE Tee
11		200214	2" HDPE Pipe

3.2 BLOWOFFS

A. Blowoffs, temporary and permanent, shall be in accordance with the Materials Specifications and as shown on the Standard Drawings, or as Directed by OWNER.

B. Blowoff valves shall be 2 inches in size unless otherwise directed by the OWNER.

C. Blowoffs shall be installed on all dead-end mains or as directed by the OWNER.

D. Tracer wire shall be installed within the valve box, bring up tracer wire in 1/2 inch IPS PE pipe inside the valve box; tracer wire shall looped and extend a minimum of 3 feet above the street or ground level or as approved by the OWNER.

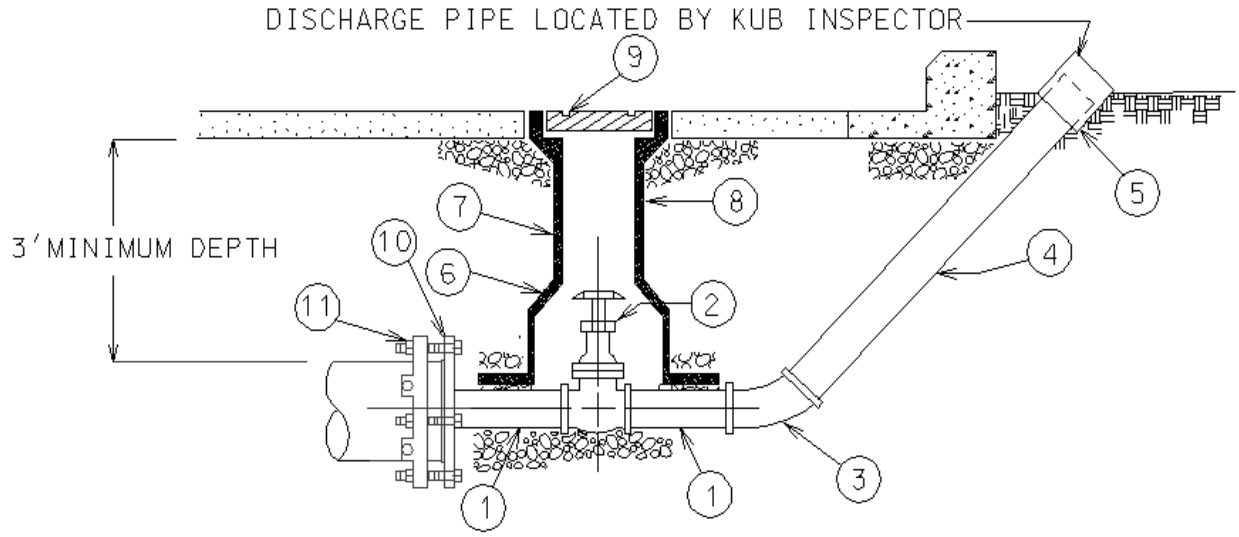

Figure 4-02512-d: Typical Blowoff Detail – 6”-12” Ductile Iron Main

Notes:

I. Thrust restraint gaskets to be installed for a minimum of three joints of ductile iron pipe, additional restrained joint gaskets shall be used if required by the pipe manufacturer.
II. Adjust valve box to grade.
III. All material from main to the 45 shall be brass.
IV. All pipe and fittings in contact with concrete thrust restraint blocks should be wrapped in plastic sheeting, minimum 6 mil thickness.
V. Blowoff to be located outside of asphalt when practical as directed by the OWNER.

VI. Do not allow the valve box base to rest directly on the pipe or valve. Use blocks or brick to support the valve box base.

VII. Tracer wire shall be installed within the valve box, bring up tracer wire in 1/2 inch IPS PE pipe inside the valve box; tracer wire shall looped and extend a minimum of 3 feet above the street or ground level or as approved by the OWNER.

Material List for 2" Typical Blowoff

Item	Quantity	KUB Item #	Description
1	2	205260	2" x 6" Brass Nipple
2	1	205625	2" Brass Gate Valve
3	1	203448	2" Brass 45° Bend
4	1	294819	2" Galvanized Pipe
5	1	200075	2" Cap
6	1	294074	Valve Box Base
7	1	294058	Valve Box Bottom
8	1	294041	Valve Box Top Section
9	1	294041	Valve Box Water Lid
10		291765	6" X 2" Tap Plug
	1	296764	8" X 2" Tap Plug
		296806	10" X 2" Tap Plug
		291781	12" X 2" Tap Plug
11		200106	6" Megalug Joint Restraint
	1	200108	8" Megalug Joint Restraint
		200110	10" Megalug Joint Restraint
		200112	12" Megalug Joint Restraint
12	1-Lot	290783	Bricks to support valve box base (not shown)
13	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)

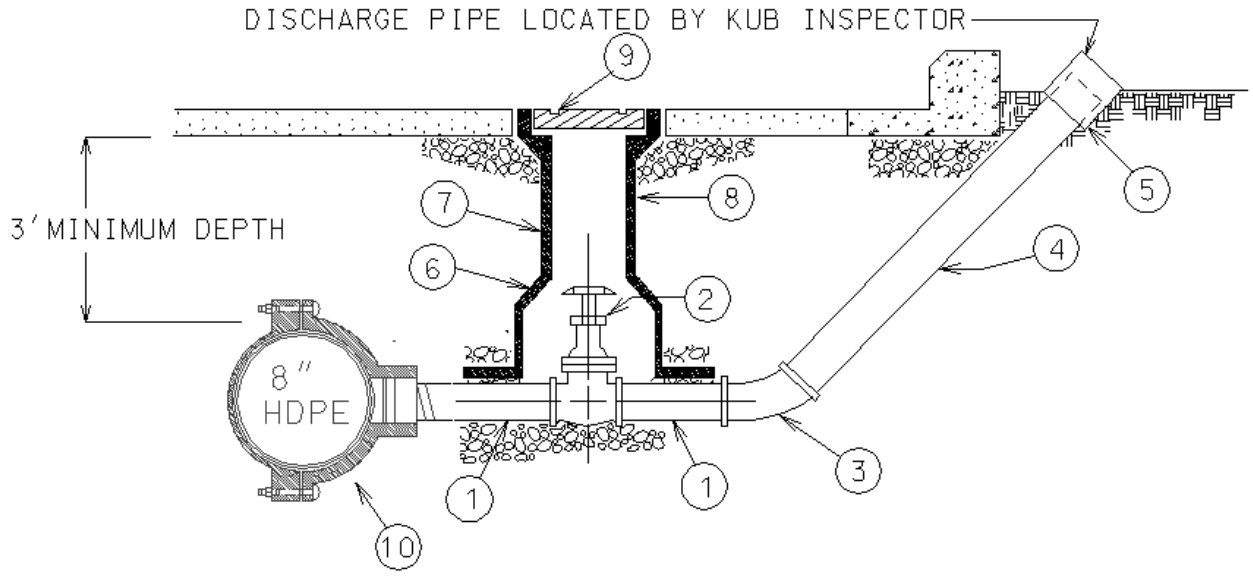

Figure 5-02512-e: 2" Blowoff - 8" HDPE Main

Notes:

I. Adjust valve box to grade.

II. All material from main to the 45 shall be brass.

III. Blowoff to be located outside of asphalt when practical, as directed by the OWNER.

IV. Do not allow the valve box base to rest directly on the pipe or valve. Use blocks or brick to support the valve box base.

V. Tracer wire shall be installed within the valve box, bring up tracer wire in 1/2 inch IPS PE pipe inside the valve box; tracer wire shall looped and extend a minimum of 3 feet above the street or ground level or as approved by the OWNER.

Material List for 2" Blowoff - 8" HDPE Main

Item	Quantity	KUB Item #	Description
1	2	205260	2" x 6" Brass Nipple
2	1	205625	2" Brass Gate Valve
3	1	203448	2" Brass 45° Bend
4	1	294819	2" Galvanized Pipe
5	1	200075	2" Cap
6	1	294074	Valve Box Base
7	1	294058	Valve Box Bottom
8	1	294041	Valve Box Top Section
9	1	294041	Valve Box Water Lid
10	1	200223	8" x 2" Electrofusion Corp Saddle
11	1-Lot	290783	Bricks to support valve box base (not shown)
12	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)

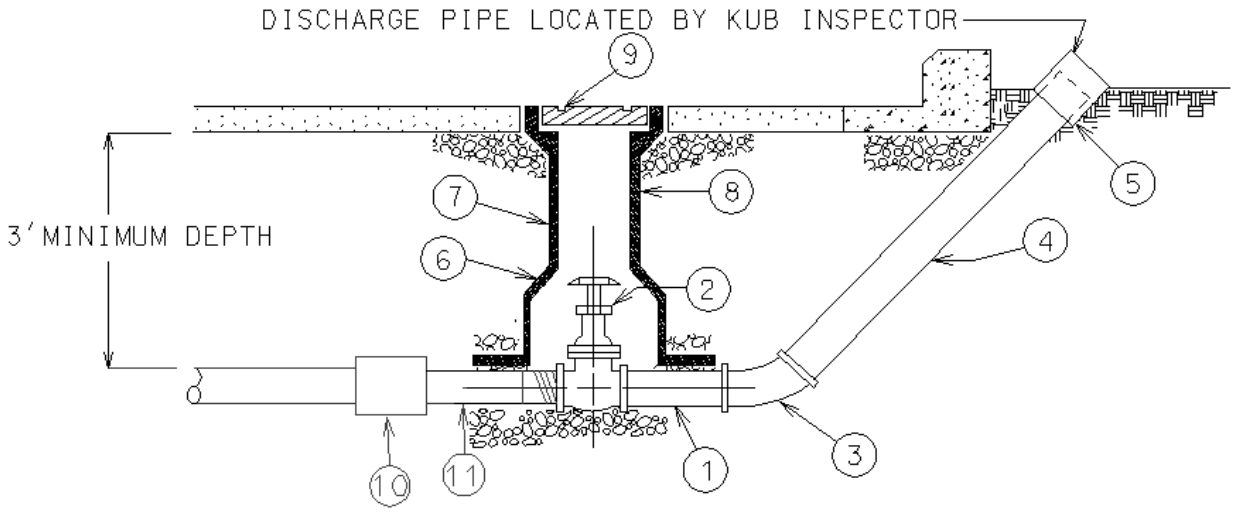

Figure 6-02512-f: 2" Blowoff - 2" HDPE Main

Notes:

I. All material from main to the 45 shall be brass.

II. Adjust valve box to grade.

III. Blowoff to be located outside of asphalt when practical as directed by the OWNER.

IV. Do not allow the valve box base to rest directly on the pipe or valve. Use blocks or brick to support the valve box base.

V. Tracer wire shall be installed within the valve box, bring up tracer wire in 1/2 inch IPS PE pipe inside the valve box; tracer wire shall looped and extend a minimum of 3 feet above the street or ground level or as approved by the OWNER.

Material List for 2" Blowoff - 2" HDPE Main

Item	Quantity	KUB Item #	Description
1	2	205260	2" x 6" Brass Nipple
2	1	205625	2" Brass Gate Valve
3	1	203448	2" Brass 45° Bend
4	1	294819	2" Galvanized Pipe
5	1	200075	2" Cap
6	1	294074	Valve Box Base
7	1	294058	Valve Box Bottom
8	1	294041	Valve Box Top Section
9	1	294041	Valve Box Water Lid
10	1	800713	2" Socket Fusion Coupling
11	1	800731	2" Transition Fitting – MPT x HDPE
12	1-Lot	290783	Bricks to support valve box base (not shown)
13	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)

3.3 HYDRANTS

A. Hydrants shall be in accordance with AWWA C502, the Materials Specifications, and as shown on the Standard Drawings. Hydrants shall open right or the clockwise direction.

B. Hydrants shall be installed on a 6-inch branch with 6-inch gate valve. As shown on the in the standard drawings or in the project drawings.

C. Hydrants shall be aligned vertically to the satisfaction of the OWNER. Hydrants shall be located no greater than 10 feet from the curb or edge of pavement or as directed by the OWNER.

D. Hydrant shoes shall have 2 positive-acting noncorrodible drain valves that drain the hydrant completely by opening as soon as the main valve is closed. The drain valve shall close tightly when the main valve is open.

E. Provide drainage at the base of the hydrant by placing coarse gravel or clean crushed stone at least 6 inches above the drain opening in the hydrant to a distance of 18 inches below the elbow. Connect no drainage system to a sanitary sewer.

F. The gate valve shall be rodded to the tee on the main and to the hydrant shoe. Mega-lugs are acceptable substitutes to rods for ductile iron main installations.

G. Tie rods and related hardware on all hydrants, if required, shall be stainless steel.

H. Hydrant extensions shall be used when required to place the hydrant nozzles to the proper elevation (min. 6" above grade) as determined by the OWNER. Extensions shall be compatible with the fire hydrant being adjusted and shall have one set of shear bolts in the top flange and machine bolts in the bottom flange.

I. Hydrants shall be placed as directed by the OWNER. Where practical the hydrant shall be located a minimum of 25 feet out of the turn radius of intersections or at property lines.

J. Hydrants shall not be located more than 10 feet from the curb or edge of pavement, unless directed by the OWNER.

K. Tracer wire shall be installed within the valve box, bring up tracer wire in 1/2 inch IPS PE pipe inside the valve box; tracer wire shall looped and extend a minimum of 3 feet above the street or ground level or as approved by the OWNER.

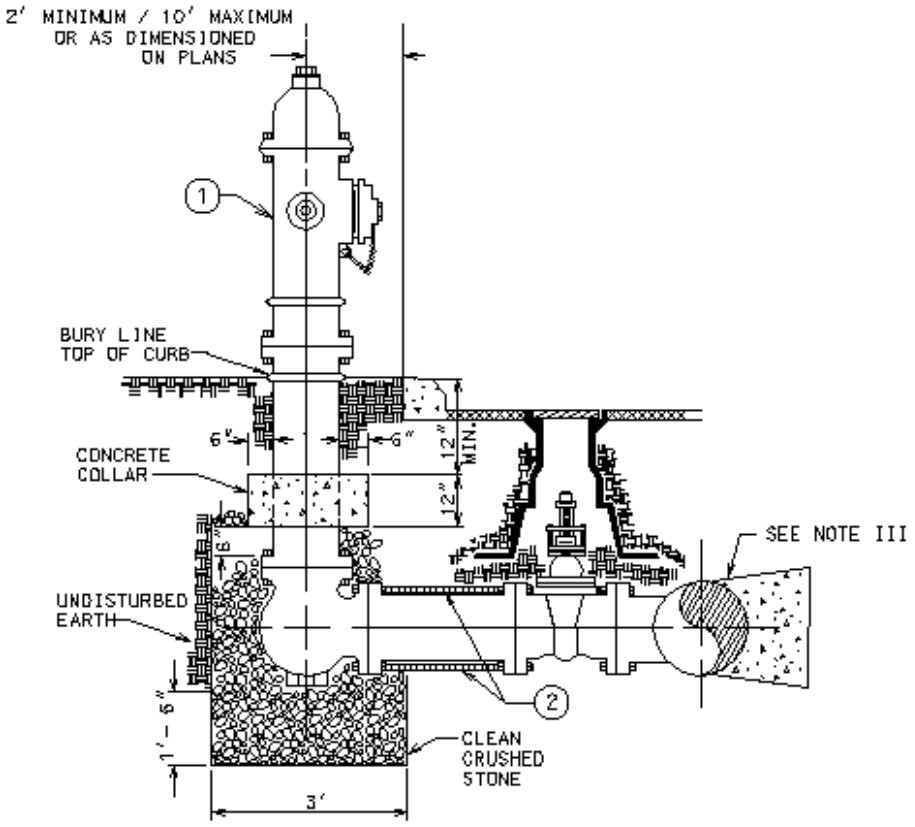

Figure 7-02512-g: Typical Installation of Fire Hydrant – Ductile Iron Mains

Notes:

I. Concrete collar to be used if soil is loose or poor load bearing.
II. Dig bell holes. Lay pipe on bottom of trench.
III. The gate valve must be rodded to tee on main and separately to hydrant shoe. Place thrust blocking behind tee. (see Thrust Blocking 02513-5) Ductile Iron – Megalug; Cast Iron - Stainless Rods
IV. Tie Rods and related hardware to be stainless steel.
V. Hydrant type and material to be as directed by latest revision of standard specification.
VI. Size of concrete thrust restraint to be determined by OWNER.
VII. All hydrants shall be traffic type with bury line positioned as shown in section.
VIII. Do not allow the valve box base to rest directly on the pipe or valve. Use blocks or brick to support the valve box base.
IX. Tracer wire shall be installed within the valve box, bring up tracer wire in 1/2 inch IPS PE pipe inside the valve box; tracer wire shall looped and extend a minimum of 3 feet above the street or ground level or as approved by the OWNER.

Material List for Typical Installation of Fire Hydrant

Item	Quantity	KUB Item #	Description
1	1	294249	3 1/2 Foot Bury Hydrant
2	1	213280	3/4 All Thread Rod
		293118	4 1/2 Foot Bury Hydrant

12	1-Lot	290783	Bricks to support valve box base (not shown)
13	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)

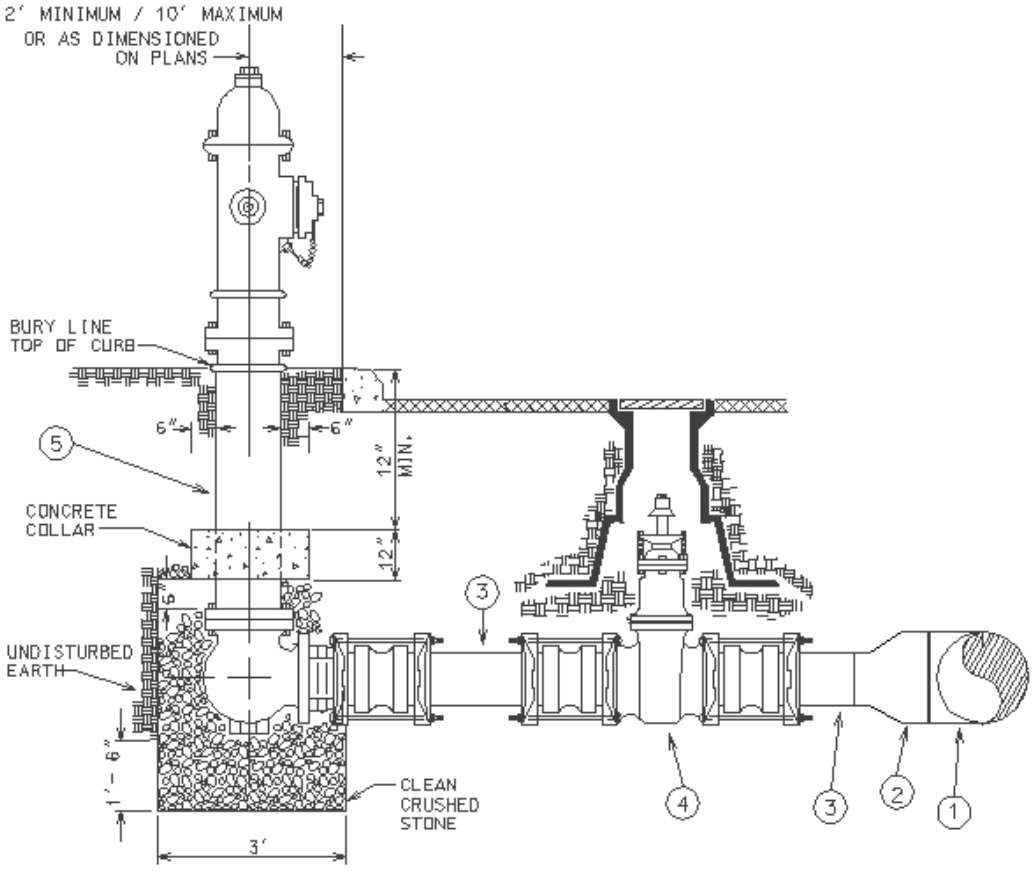

Figure 8-02512-h: Typical Installation of Fire Hydrant – HDPE Mains

Notes:

I. Dig bell holes, lay pipe on bottom of trench.

II. Concrete collar to be used if soil is loose or poor load bearing.

III. Hydrant type and material to be as directed by latest revision of standard specification.

IV. All hydrants shall be traffic type with bury line positioned as shown in section.

V. Do not allow the valve box base to rest directly on the pipe or valve. Use blocks or brick to support the valve box base.

VI. Tracer wire shall be installed within the valve box, bring up tracer wire in 1/2 inch IPS PE pipe inside the valve box; tracer wire shall looped and extend a minimum of 3 feet above the street or ground level or as approved by the OWNER.

Material List for Typical Installation of Fire Hydrant

Item	Quantity	KUB Item #	Description
1	1	200224	8" DIPS – HDPE Tee – Butt Fusion
2	1	200229	8"x 6" Reducer – Butt Fusion
3		200215	6" DIPS – HDPE Pipe
4	1	200706	6" Aquagrip Gate Valve
5	1	200700	3 1/2 Foot Bury Hydrant – Aquagrip
			4 1/2 Foot Bury Hydrant – Aquagrip
12	1-Lot	290783	Bricks to support valve box base (not shown)
13	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)

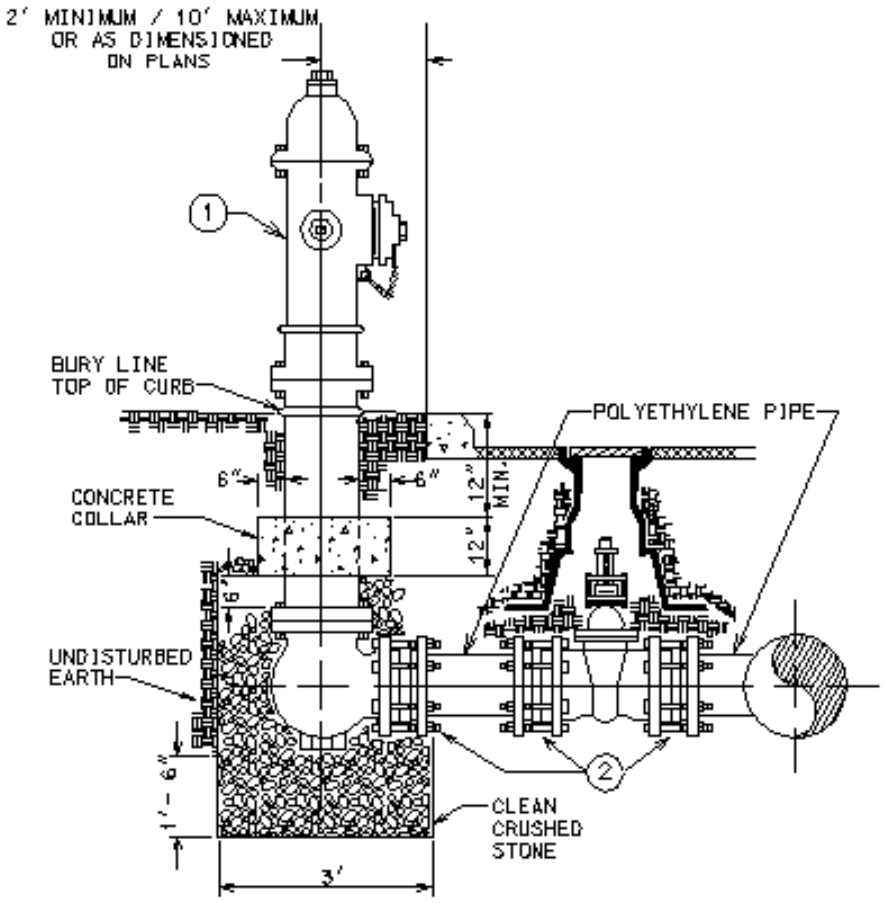

Figure 9-02512-i: Typical Installation of Fire Hydrant – HDPE Mains / MJ Adapters

Notes:

I. Dig bell holes, lay pipe on bottom of trench.

II. Mechanical Joint Adapters shall be used in order to restrain the hydrant and gate valve to the main.

III. Hydrant type and material to be as directed by latest revision of standard specification.

IV. Concrete collar to be used if soil is loose or poor load bearing.

VII. All hydrants shall be traffic type with bury line positioned as shown in section.

VIII. Do not allow the valve box base to rest directly on the pipe or valve. Use blocks or brick to support the valve box base.

IX. Tracer wire shall be installed within the valve box, bring up tracer wire in 1/2 inch IPS PE pipe inside the valve box; tracer wire shall looped and extend a minimum of 3 feet above the street or ground level or as approved by the OWNER.

Material List for Typical Installation of Fire Hydrant

Item	Quantity	KUB Item #	Description
1	1	294249	3 1/2 Foot Bury Hydrant
2	2		6" MJ Adapter
		293118	4 1/2 Foot Bury Hydrant
3	1-Lot	290783	Bricks to support valve box base (not shown)
4	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)

END OF SECTION

HOME