

**SECTION 02515**  
**WATER LINE TIE-INS**

**PART 1. GENERAL**

1.1 This section covers tie-in details for water lines specified under Sections 02512, 2513 and 2514.

1.2 Disposal of all materials removed from service shall be at the discretion of the OWNER.

**1.3 REFERENCE DRAWING & MATERIAL LIST:**

<u>Description</u>	<u>Drawing</u>	<u>Page</u>
2" Copper to 2 inch HDPE	Figure 1-2515-a	2
2" PVC to 2" HDPE	Figure 2-2515-b	3
Existing 2" HDPE to 2" HDPE	Figure 3-2515-c	4
2" HDPE to 6" / 8" / 12" PVC	Figure 4-2515-d	5
2" HDPE to 6" / 8" / 12" DI/CI/ AC	Figure 5-2515-e	6
2" HDPE to 8" / 12" HDPE	Figure 6-2515-f	7
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8" HDPE to 8 " DI/ CI - End of Line	Figure 8-2515-h	9

**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 [www.kub.org/standards](http://www.kub.org/standards) or available for review at KUB/Procurement 4505 Middlebrook Pike.



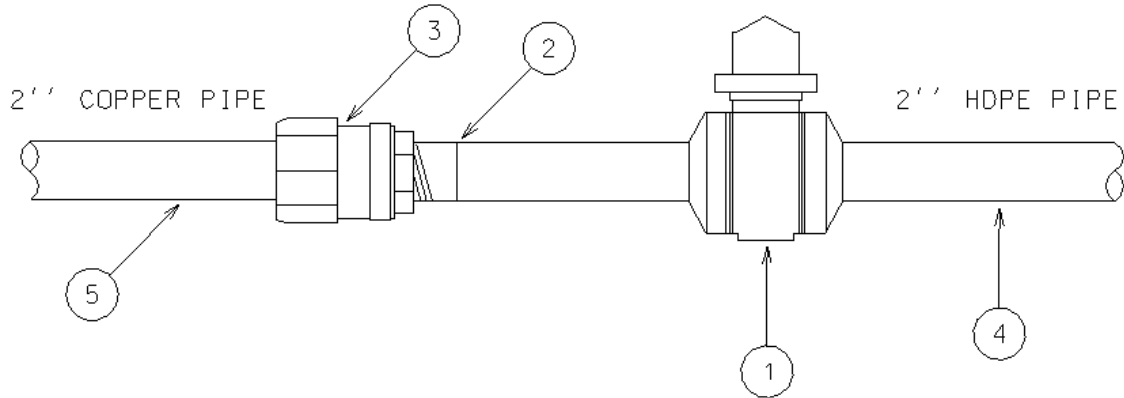
### **PART 3. HDPE PIPE JOINING – PROCEDURES AND QUALIFICATIONS**

- A. HDPE pipe must be joined using a qualified joining procedure and by persons qualified on that procedure.
- B. HDPE shall be joined using butt fusion, unless otherwise approved by owner. All mains and services shall be butt fused, unless otherwise approved by owner. Fusion shall take place in weather conditions acceptable to the OWNER.
- C. Procedure Qualification - all joining methods for polyethylene pipe be qualified. The polyethylene pipe manufacturers have developed qualified procedures for heat fusion of HDPE pipe. KUB has adopted the Plexco Pipe procedure for all saddle and butt fusion of polyethylene pipe and fittings. KUB has adopted Central Plastics Procedures for electrofusion. All heat fusion joints will be visually inspected to determine if they have the same appearance as a joint properly made under the qualified procedure.
- D. Joiner Qualification - persons making either heat fusion or mechanical joints shall be qualified using applicable joining procedures mentioned above. Each person will be required to qualify for each of the joints they are expected to make. The qualifying procedure for polyethylene pipe joiners will consist of :
  - 1. Training and experience with the qualified procedure.
  - 2. Making a specimen joint according to the qualified procedure.
  - 3. Visual inspection of the specimen joint to determine if it has the same appearance as a joint properly made under the qualified procedure.
  - 4. For heat fusion joints, three longitudinal straps, 1 inch wide, cut from the joint will be examined for defects and then deformed by back bend, root bend, or torque. If failure indicates outside the joined area, the joint is acceptable.
  - 5. For service saddle tee fusion, the test specimen will be secured and struck with a 3 lb. hammer.
- E. Qualification of persons making joints for each procedure will remain effective for 1 year from the date of testing, unless the OWNER requires more frequent retraining due to quality of joints completed.
- F. CONTRACTOR fusion training shall be completed by a manufacturer or manufacturer representative acceptable to the OWNER. CONTRACTOR shall provide proof of training acceptable to the OWNER.
- G. All personnel performing plastic pipe fusion shall at all times while performing the fusion have readily available on the job site proof of qualification from the manufacturer or other acceptable training company.

- H. Mechanical couplings designed for use in HDPE piping systems have qualified installation procedures developed by the manufacturers. These procedures shall be followed for installation. All field mechanical joints will be visually inspected to determine if they have the same appearance as a joint properly made under the qualified procedure. All mechanical couplings used in plastic piping systems shall be designed to resist pullout.
  
- I. Aqua-grip or other OWNER approved fittings shall be used for wet tie-ins.

**PART 4. EXECUTION**

**3.0 GENERAL DRAWINGS**



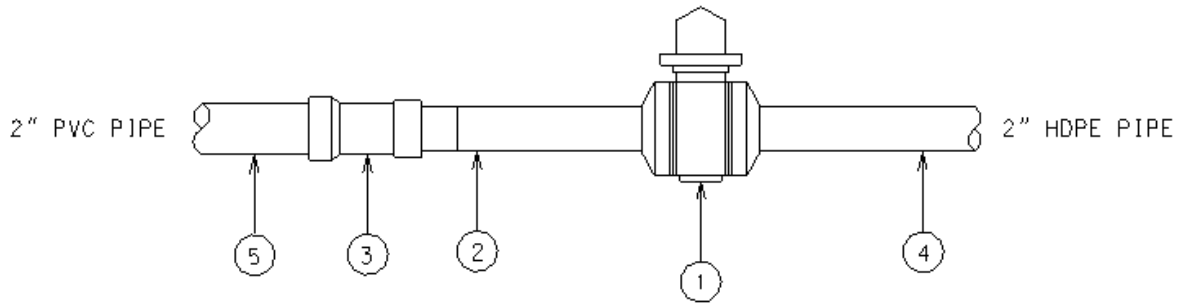
**Figure 1-02515-a : Main Connection – 2 inch Copper to 2 inch PVC**

Notes:

- I. Valve jacket to be installed as shown in section 2514 - 3.4.
- II. Backfill around valve shall be compacted.
- III. Tracer wire shall be installed 6 inches above the main and 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 Main Connection – 2 inch Copper to 2 inch HDPE**

<b>Item</b>	<b>Quantity</b>	<b>KUB Item #</b>	<b>Description</b>
1	1	200217	2" IPS AWWA - HDPE Ball Valve
2	1	800731	2" Transition Fitting – MPT x HDPE
3	1	205161	2" Brass Coupling – FPT x Compression
4		200214	2" HDPE Water Pipe
5		290668	2" Copper Water Pipe
6	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)



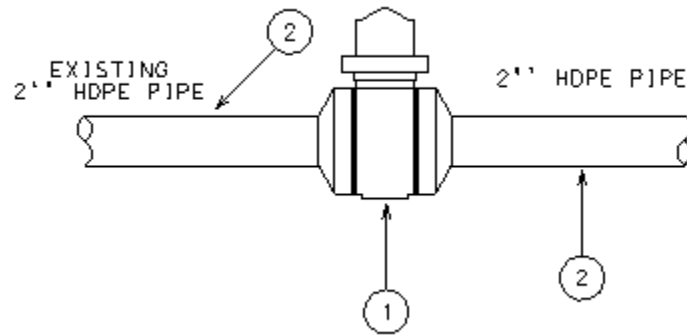
**Figure 2-02515-b : Main Connection – 2 inch HDPE to 2 inch PVC**

Notes:

- I. Valve jacket to be installed as shown in section 2514 - 3.4.
- II. HDPE pipe shall be restrained as required in section 2513.
- III. Backfill around valve shall be compacted.
- IV. Tracer wire shall be installed 6 inches above the main and 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 Main Connection – 2 inch PVC to 2 inch HDPE**

<u>Item</u>	<u>Quantity</u>	<u>KUB Item #</u>	<u>Description</u>
1	1	200217	2” IPS AWWA – HDPE Ball Valve
2	1	800731	2” Transition Fitting – MPT x HDPE
3	1	205161	2” Transition Fitting – FPT x PVC slip joint
4		200214	2” HDPE Water Pipe
5		295899	2” PVC Water Pipe
6	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)



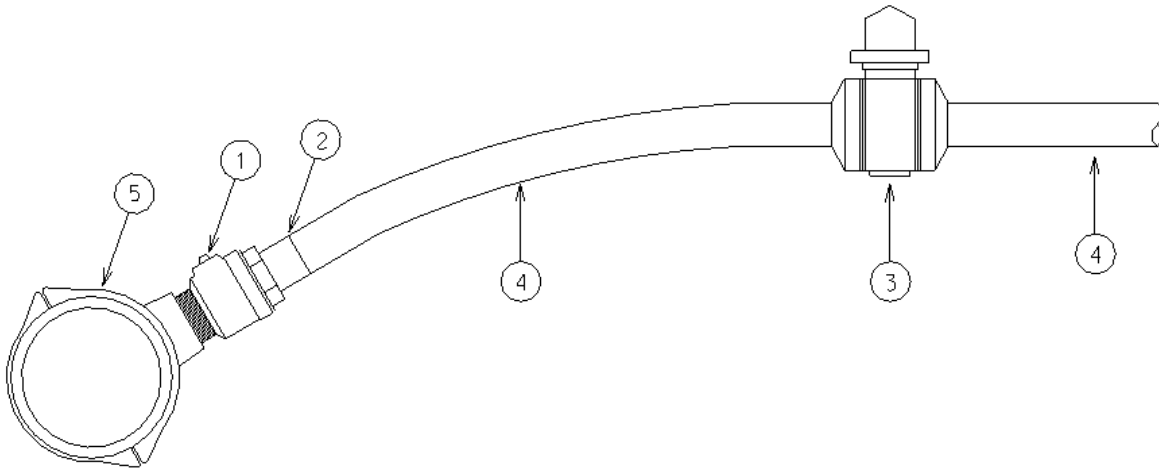
**Figure 3-02515-c : Main Connection – Existing 2 inch HDPE to 2 inch HDPE**

Notes:

- I. Valve jacket to be installed as shown in section 2514 - 3.4.
- II. Backfill around valve shall be compacted.
- III. Tracer wire shall be installed 6 inches above the main and 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 Main Connection – Existing 2 inch HDPE to 2 inch HDPE**

<b>Item</b>	<b>Quantity</b>	<b>KUB Item #</b>	<b>Description</b>
1	1	200217	2" IPS AWWA - HDPE Ball Valve
2		200214	2" HDPE Water Pipe
3	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)



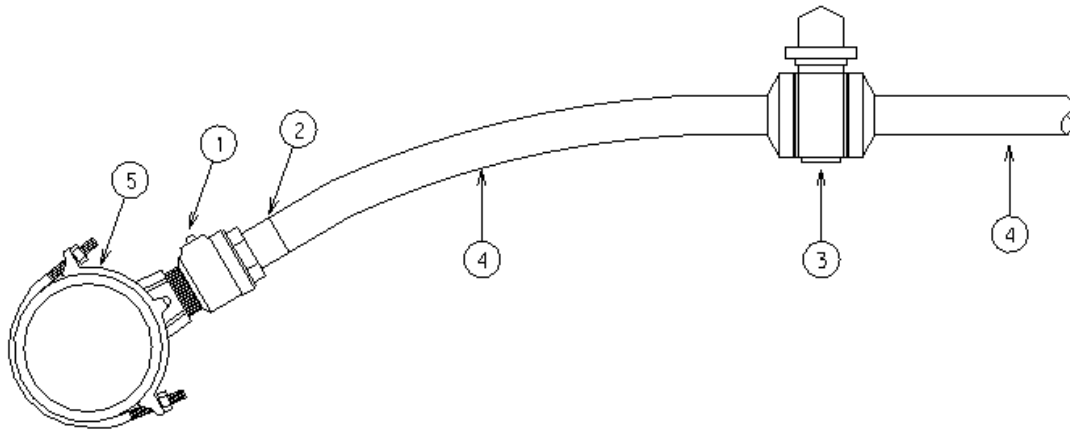
**Figure 4-02515-d : Main Connection – 2 inch HDPE to 6-12 inch PVC**

Notes:

- I. Valve jacket to be installed as shown in section 2514- 3.4.
- II. Backfill around tapping tee and valve shall be compacted.
- III. Tracer wire shall be installed 6 inches above the main and 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 Main Connection – 2 inch HDPE to 6, 8 & 12 inch PVC**

<b>Item</b>	<b>Quantity</b>	<b>KUB Item #</b>	<b>Description</b>
1	1	202796	2" Corporation Stop
2	1	800731	2" Transition Fitting – MPT x HDPE
3	1	200217	2" IPS AWWA - HDPE Ball Valve
4		200214	2" HDPE Water Pipe
5		Non-Stock	8" PVC x 2" FPT - Bronze Tapping Saddle
		200218	6" PVC x 2" FPT - Bronze Tapping Saddle
		Non-Stock	12" PVC x 2" FPT - Bronze Tapping Saddle
6	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)



**Figure 5-02515-e : Main Connection – 2 inch HDPE to 6, 8 or 12 inch DI/ CI/ AC**

Notes:

- I. Valve jacket to be installed as shown in section 2514 - 3.4.
- II. Backfill around tapping tee and valve shall be compacted.
- III. Tracer wire shall be installed 6 inches above the main and 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 Main Connection – 2 inch HDPE to 6, 8 or 12 inch DI/ CI/ AC**

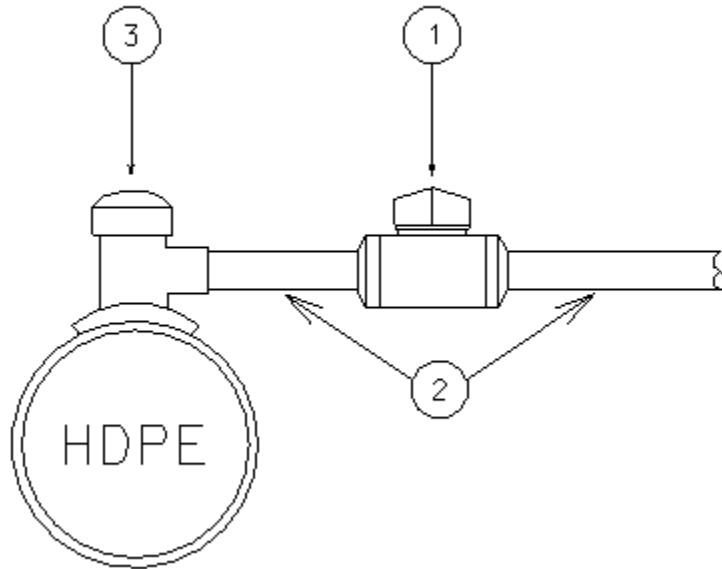
<u>Item</u>	<u>Quantity</u>	<u>KUB Item #</u>	<u>Description</u>
1	1	202796	2” Corporation Stop
2	1	800731	2” Transition Fitting – MPT x HDPE
3	1	200217	2” IPS AWWA - HDPE Ball Valve
4		200214	2” HDPE Water Pipe
5	1	210922	8” DI/CI/ AC x 2” FPT -Tapping Saddle
		207043	6” DI/CI/ AC x 2” FPT -Tapping Saddle
		Non stock	12” DI/CI/ AC x 2” FPT -Tapping Saddle
6	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)

**3.3 HDPE MAIN CONNECTIONS / VALVES**

- A. HDPE main connections shall be as shown in this section or as directed by the OWNER.



- B. HDPE full port ball valves shall be used on 2 inch HDPE lines. Valves shall be AWWA and NSF 61 approved.



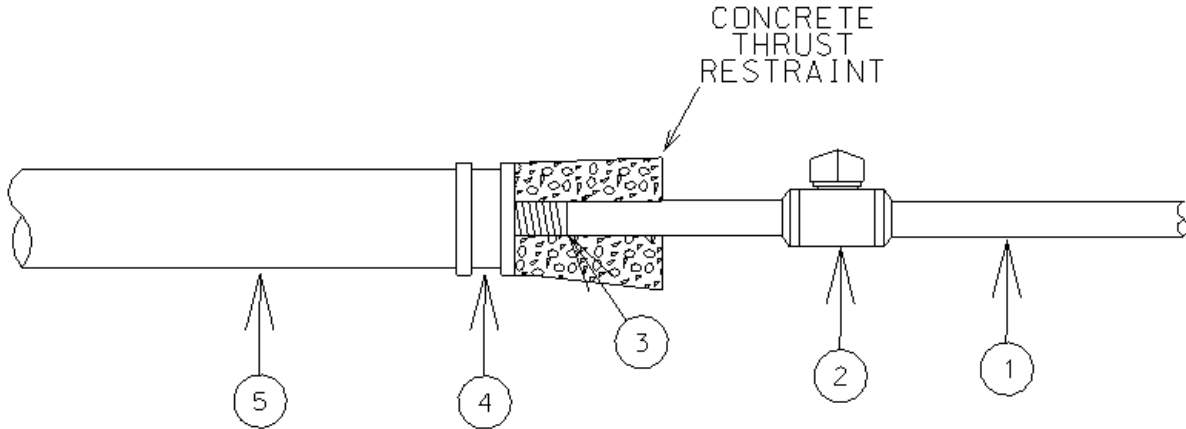
**Figure 6-02515-f : Main Connection – 2 inch HDPE to 8 or 12 inch HDPE**

Notes:

- J. Valve jacket to be installed as shown in section 2514 - 3.4.
- II. Backfill around tapping tee and valve shall be compacted.
- III. Hand tighten the cap on the tapping tee. **DO NOT** use a wrench to tighten the cap.
- IV. Tracer wire shall be installed 6 inches above the main and 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 Main Connection – 2 inch HDPE to 8 inch HDPE**

<u>Item</u>	<u>Quantity</u>	<u>KUB Item #</u>	<u>Description</u>
1	1	200217	2" IPS AWWA - HDPE Ball Valve
2	2	200214	2" HDPE Water Pipe
3	1	200221	8" DIPS x 2"IPS High Volume Tap Tee
		Non-Stock	12" DIPS x 2"IPS High Volume Tap Tee
4	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)



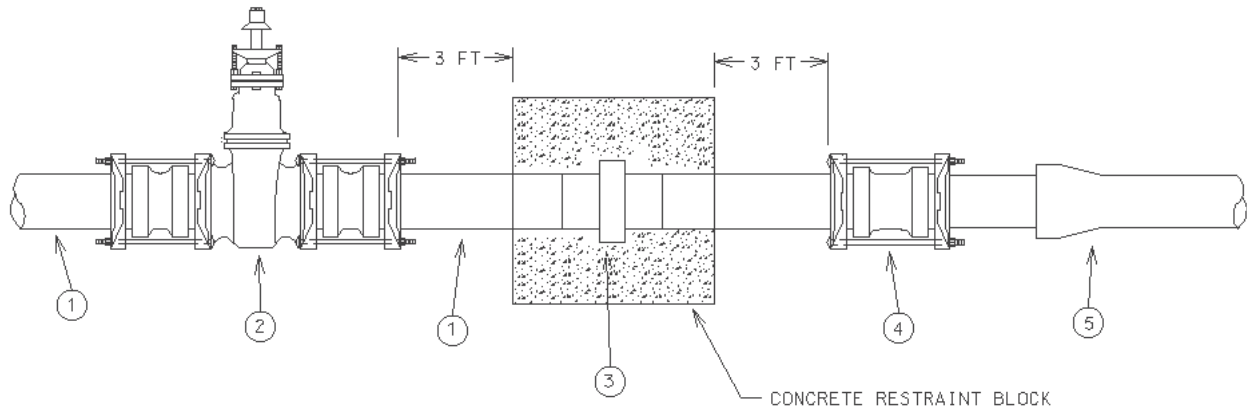
**Figure 7-02515-g : Main Connection – 2 inch HDPE to 6, 8 or 12 inch DI / CI - End of Line**

Notes:

- I. Valve jacket to be installed as shown in section 3.7.
- II. All pipe and fittings in contact with concrete thrust restraint blocks should be wrapped in plastic sheeting, minimum 6 mil thickness.
- III. Thrust restraint block to be installed as shown in Section 02513.
- IV. Tracer wire shall be installed 6 inches above the main and 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 Main Connection – 2 inch HDPE to 8 inch DI / CI - End of Line**

<u>Item</u>	<u>Quantity</u>	<u>KUB Item #</u>	<u>Description</u>
1	1	200214	2"IPS HDPE Pipe
2	1	200217	2" IPS AWWA - HDPE Ball Valve
3	1	800731	2" Transition Fitting
4	1	296764	8" x 2" Tap Plug
5		295279	8" Ductile Iron Pipe
6	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)



**Figure 8-02515-h : Main Connection – 8 inch HDPE to 8 inch DI - End of Line**

Notes:

- I. Valve jacket to be installed as shown in section 3.7.
- II. All pipe and fittings in contact with concrete thrust restraint blocks should be wrapped in plastic sheeting, minimum 6 mil thickness.
- III. Thrust restraint block to be installed as shown in Section 02513.
- IV. Tracer wire shall be installed 6 inches above the main and 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 Main Connection – 8 inch HDPE to 8 inch DI - End of Line**

<u>Item</u>	<u>Quantity</u>	<u>KUB Item #</u>	<u>Description</u>
1	1	200216	8” DIPS HDPE Pipe
2	1	200708	8” Aquagrip Valve
3	1	200222	8” Thrust Restraint Fitting
4	1	200698	8” Aquagrip Coupling
5		295279	8” Ductile Iron Pipe
6	1-Lot	383448	#12 Solid Cu. Insulated Tracer Wire (not shown)

END OF SECTION

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