

City of Carmel Water Utility

Approved List of Construction Materials

1. **Water Main:** Shall be Ductile Iron Pressure Class 350 and domestically manufactured by US Pipe, American Pipe, CLOW/McWane, Griffin Pipe or approved equal. PVC water main can be used upon approval of Carmel Water Utility. PVC water mains shall be C-900 DR-18 for 8" water mains and smaller. For water mains 12" and larger C-900 DR-14 will be required.
2. **Reflective Warning Tape:** Shall be installed 18" above pipe, be a minimum of 3" in width and 4.5 mils thickness, Blue in color meeting the requirements of APWA color coding for potable water and shall have the words "CAUTION BURIED WATER LINE BELOW" imprinted in bold solid black lettering on the tape; and made from high grade polyethylene with a foil backing detectable at 18" to 24" below grade by non-ferrous locating equipment.
3. **Tracing Wire:** Shall be as follows:
 - a. For direct bury applications tracer wire shall be a minimum #10 AWG solid strand hard drawn copper wire, jacketed in a solid blue polyethylene jacket 30 mils thick minimum and recommended for direct burial applications. THHN rated wire is not acceptable.
 - b. For directional drilling applications tracer wire shall be a minimum #10 AWG solid strand copper clad steel wire jacketed in a solid blue polyethylene jacket 30 mils thick minimum and recommended for directional drilling applications; and as manufactured by Copperhead. THHN rated wire is not acceptable.
4. **Fire Hydrants:** Shall be **Mueller** or **American Darling** (Safety Yellow, M.A.B. #0433291 or Sherwin Williams #F75YP2) **(Carmel Clay Spec. Hydrants shall be open right and shall have a factory applied safety blue stripe around the hydrant bonnet) (Carmel Spec shall be open left and will not have a factory blue stripe around the hydrant bonnet).** Contractor is expected to confirm with Carmel Water Utility before ordering hydrants on which spec to use before ordering material. The hydrant pumper nozzle shall be of one-piece design, compatible with 5" Storz hose coupling. The nozzle shall be an integral part of the fire hydrant and must be furnished by the manufacturer or authorized distributor designated by the manufacturer. Mueller Model #290220 for casting and #290221 for cap. **Storz "adaptors" will not be accepted.**
5. **Valves:** Shall be resilient seat gate valves, **Mueller** or **American** (Carmel Clay Spec. valves shall be open right). (Carmel Spec valves shall open left). Contractor is expected to confirm with Carmel Water Utility before ordering valves on which spec to use before ordering material. Butterfly valves shall be used for sizes over 12".
6. **Fittings:** Shall be Union Tyler or "domestic" Star fittings.

7. **Mechanical Joints:** Shall be made with Megalugs or “domestic: Star Grips 3000 & “domestic” PVC Star Grips 4000.
8. **Valve Boxes:** Shall be Union Tyler or East Jordon Iron Works.
9. **Posi Caps or Box Loks:** Shall be installed with each gate valve. **(Not to be used on butterfly valves)**
10. **Curb Boxes:** Shall be Union Tyler.
11. **Tapping Sleeves:** Shall be Smith Blair, Romac, JCM or Ford full stainless steel sleeves with stainless steel bolts and nuts.
12. **Repair Clamps:** Shall be full circle stainless steel sleeves with stainless steel bolts and nuts. Smith Blair 261, 262 and 263; Ford FLS1, FLS2 and FLS3; JCM 131; Romac SS1, SS2 and SS3.
13. **Tapped Repair Clamps:** (For ¾”, 1”, 1 ½”, and 2” taps on PVC and 2” Ductile Iron taps and all Ductile Iron service repairs) shall be full circle stainless steel sleeves with stainless steel bolts and nuts. Smith Blair 372; Ford FS313, FS323 and FS333; JCM 502; Romac 305 and 306.
14. **Sample Stations:** Shall be installed at the Utility’s request and shall be Kupferle Main Guard #66 Sampling Station.
15. **Service Lines:** Shall be ¾”, 1”, 1 ½” and 2” Type K Copper.
16. **Underground Service Line Valves and Fittings:** All underground service line valves, fittings, service saddles and meter setters shall be rated for High Pressure and conform to the current edition of AWWA C800.
17. **Brass:** Shall be no-lead compression fittings. **Pack Joints not allowed.** (See Meter Pit Specs. For Make and Model #)
18. **Joint Restraints:** Shall be Field Lok Gaskets or mechanical bell joint restraints.
19. **HDPE Sleeves:** Shall be used for service lines that cross under city or private streets.*
 - * ¾” & 1” service lines shall use 3” HDPE Sleeve
 - * 1 ½” & 2” service lines shall use 4” HDPE Sleeve
20. **Additional Kickers:** Shall be solid concrete block. **No poured concrete.** Poured concrete will only be allowed for installation of water stops around HDPE pipe.