1. **Gate Valve** shall be flanged x mechanical joint, resilient seat type as per AWWA standard C-509. Sizes greater than 12 inches shall require butterfly valves as per AWWA C-504, PolyWrap.

2. Approved restraining gland and bell and spigot joint restraint. PolyWrap. Length of joint restraint shall be approved by the city engineer. Other methods of thrust restraint shall be submitted and approved by the city engineer prior to installation.

3. Flanged reducer.

4. 4 inch flanged gate valve with resilient seat as per AWWA standard C-509, PolyWrap.

5. 4 inch flanged ductile iron pipe, PolyWrap.

6. 4 inch flanged 90 degree bend.

7. Thrust block (typ.) see standard detail #519.

8. 4 inch flanged x I.P.S. adapter and 4 inch A.B.S. plug.

9. Tracer wire as per city standard (see standard detail #513).

10. Provide extension if operating nut exceeds maximum of four (4) feet from finished grade. Extension shall include a steadying plate.

### Blowoff Assembly

**NOTES:**

A. For water mains 12 inches or greater in diameter, blowoff shall be 4 inches except as allowed in note B.

B. For water mains 12 inches to 16 inches in diameter that do not exceed 200 feet in length, blowoff shall be 2 inches.

C. All nuts, bolts and washers on flanged fittings shall be stainless steel and wrapped with 8 mil polyethylene encapsulation.

D. Concrete shall be class "A".

E. Cul-de-sac installation:
   1. Use standard blowoff assembly B & C.
   2. If fire hydrant is at end of line, no blowoff is required.

F. End of water mains installation:
   1. To be extended later: install gate valve and blowoff riser, A & C.
   2. Not to be extended: install blowoff assembly assembly, B & C.
   3. If fire hydrant is at end of line, no blowoff assembly required.
   4. No services beyond gate valve A, unless approved by the City Engineer.