

1. ALL JOINTS SHALL BE RESTRAINED ON BOTH SIDES OF THE FITTING AND DOCUMENTED BY THE INSPECTOR FOR THE LENGTH SHOWN UNLESS OTHERWISE INDICATED.
2. RESTRAINED LENGTH SHOWN REFERS TO ANY DESIGNED OR POTENTIAL LINE STOP, INCLUDING ALL GATE VALVES.
3. RESTRAINED LENGTH SHOWN REFERS TO THE BRANCH LINE ONLY. THE CONTINUOUS PIPE LENGTH OF THE MAIN RUN SHALL BE A MINIMUM OF 10' ON EACH SIDE OF THE TEE.
4. RESTRAINED LENGTH SHOWN IS BASED ON REDUCING PIPE DIAMETER TO ONE SIZE SMALLER THAN PIPE LISTED (ANY OTHER DIAMETER REDUCTION WILL REQUIRE ADDITIONAL CALCULATIONS BEFORE INSTALLATION). RESTRAINED LENGTH SHOWN IS UPSTREAM ON THE LARGE SIDE OF THE REDUCER.
5. **12" AND SMALLER DIAMETER:** IF UNDER 150 PSI WORKING PRESSURE, RESTRAINED JOINT(S) ARE TO BE USED. IF EQUAL TO OR OVER 150 PSI WORKING PRESSURE, BOTH THRUST BLOCK(S) AND RESTRAINED JOINT(S) SHALL BE USED.
6. **LARGER THAN 12" DIAMETER:** IF UNDER 100 PSI WORKING PRESSURE, RESTRAINED JOINT(S) ARE TO BE USED. IF EQUAL TO OR OVER 100 PSI WORKING PRESSURE, BOTH THRUST BLOCK(S) AND RESTRAINED JOINT(S) SHALL BE USED (UNLESS OTHERWISE APPROVED BY THE PARTICIPATING UTILITY).
7. FOR RESTRAINED JOINT PIPING REQUIREMENTS AT FITTING R.J. AND R.J. DIP MAY BE USED INTERCHANGEABLY WITH APPROVAL FROM PARTICIPATING UTILITY. CONTRACTOR MUST PLAN ACCORDINGLY FOR THE DIFFERENCE IN PVC AND DIP BELL AND SPIGOT DIMENSIONS.

MINIMUM THRUST RESTRAINT OF PIPE JOINTS DESIGN LENGTHS

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TYPICAL WATER PRESSURE TEST RIG

01/01/14

* SEE FIGURE 4.
For 14-inch and larger push-on joints, maximum deflection angle may be larger than shown above. Consult the manufacturer.

* SEE FIGURE 4.

DUCTILE IRON PIPE DEFLECTION ALLOWANCE TABLES

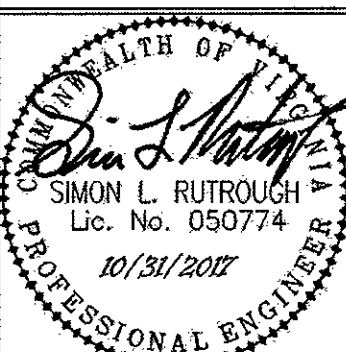


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SCALE:
SHEET NO.

C14

2. SETTER TO BE A Y. McDONALD 720-215-WX0033, FORD V872-15W-1-33 OR APPROVED EQUAL.
3. SADDLES MUST BE MADE WITH ALL PLASTIC & DUCTILE IRON PIPE. SERVICE SADDLES SHALL BE USED IN ACCORDANCE WITH WATER DISTRIBUTION PIPING SPECIFICATION. SERVICE SADDLES FOR PLASTIC PIPE SHALL BE PERMANENTLY IDENTIFIED BY THE MANUFACTURER'S NAME AND MODEL NUMBER, E.G., 60933, FOR DUCTILE IRON PIPE USE THE ABOVE OR POWERSEAL 3413, ROMAC 202 OR FORT METER F202.
- METER BOX SHALL BE CARBONMID-STATES PLASTICS, INC. PLASTIC BOX WITH "A" DOMESTIC SERIES W/INLET AND OUTLET 12" DIA. COUPLERS. METERS SHALL BE 12" DIA. COUNCIL BLUFFS METER BOX WITH "F" DOMESTIC SERIES FRAME WITH A NICOR DOMESTIC 12.25 CX LXID WITH SENSUS RECESS OR APPROVED EQUAL. METER BOX SHALL NOT BE PLACED IN AREAS SUBJECT TO VEHICULAR TRAFFIC. MAJOR WORK AREAS SHALL BE RECLOSED IMMEDIATELY AFTER COMPLETION OF WORK. CONSULT WITH PARTICIPATING UTILITY TO DETERMINE SITE SPECIFIC REQUIREMENTS.
- CORPORATION STAFF SHALL BE F81000-4-GNL, MUELLER B-2500R OR APPROVED EQUAL.
6. SERVICE SHALL BE 12" COPPER OR COPPER CLAY LINE SIZE POLYETHYLENE (PE) 4770, BODGR (200 psi), 12" POLYURETHANE (PUL) 4770, 12" POLYURETHANE (PUL) 4770, 12" POLYURETHANE (PUL) 4770.



**SINGLE RESIDENTIAL
WATER SERVICE
(REPLACEMENT OF EXISTING SERVICE)**

05/05/17

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- [illegible]



**DOUBLE RESIDENTIAL
WATER SERVICE
(REPLACEMENT OF EXISTING SERVICE)**

05/05/17

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