

**NOTES:**

1. ALL TRENCH EXCAVATION AND COMPACTION SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
2. CORPORATION STOP AND SERVICE PIPE SHALL MATCH SIZE OF METER.
3. METER LID SHALL HAVE 1-3/4" HOLE IN CENTER OF LID.
4. IF PARK STRIP IS LESS THAN 3 FEET, THEN MOVE TO BEHIND SIDEWALK.
5. EACH SERVICE SHALL HAVE ITS OWN TAP. DO NOT COMBINE SERVICES TO REDUCE NUMBER OF TAPS.

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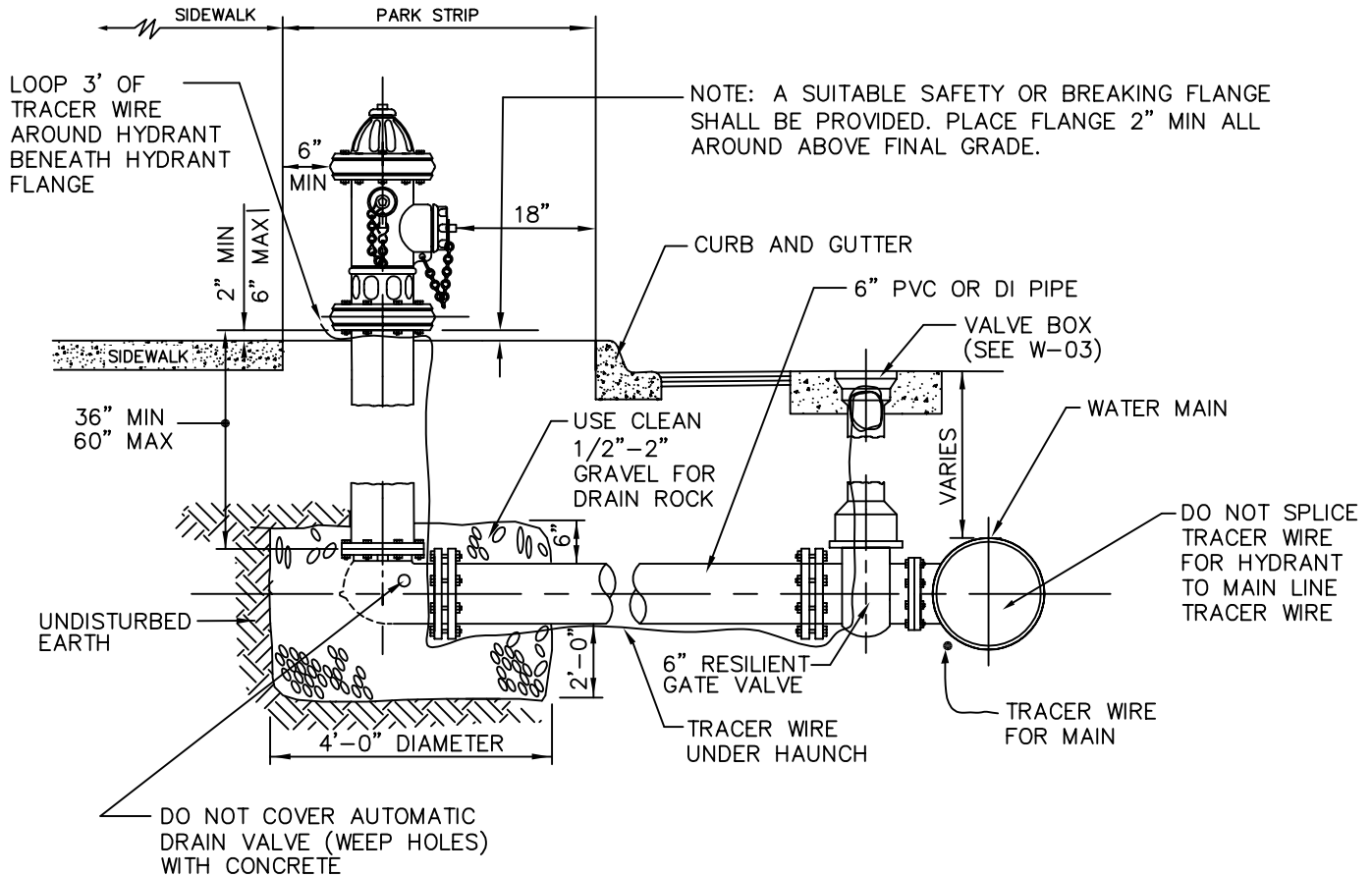


## 3/4" AND 1" WATER SERVICE CONNECTION

Standard  
 Drawing  
 W-01

rev. 07-2010

# UNIFORM DESIGN STANDARDS FOR WATER DISTRIBUTION SYSTEMS



## HYDRANT ASSEMBLY DETAIL

**NOTES:**

1. IF PARK STRIP IS LESS THAN 3 FEET, INSTALL HYDRANT BEHIND SIDEWALK.
2. NO HYDRANT SHALL BE LOCATED WITHIN 25 FEET OF ANY STRUCTURE OR 6 FEET OF A DRIVEWAY, POWER POLE, LIGHT STANDARD, OR ANY OTHER OBSTRUCTION. FOR WALLS, FENCE, AND PLANTER LOCATIONS, A PERIMETER AROUND THE HYDRANT MEASURING A MINIMUM OF 3 FEET FROM ITS CIRCUMFERENCE SHALL BE MAINTAINED CLEAR OF ALL OBSTRUCTIONS AT ALL TIMES. HYDRANTS MUST BE LOCATED A MINIMUM OF 6 FEET AWAY FROM THE BEGINNING OF A TURNING RADIUS.
3. 6" FIRE HYDRANT LATERAL SHALL BE THE SAME PRESSURE CLASS AS THE DISTRIBUTION MAIN.
4. DUCTILE IRON PIPE TO BE ENCASED WITH TWO LAYERS EIGHT MILS THICK POLYETHYLENE FILM. DO NOT ENCASE FIRE HYDRANT BARREL.
5. ALL FIRE HYDRANTS SHALL BE REPAINTED AS REQUIRED IF DAMAGED DURING INSTALLATION.
6. ELEVATION OF FIRE HYDRANTS SHALL BE VERIFIED PRIOR TO INSTALLATION WHEN SITE IS STILL ROUGH GRADED.
7. RESTRAIN ALL JOINTS AS REQUIRED FOR THRUST CONTROL. CONCRETE THRUST BLOCKS ONLY ALLOWED WITH PRIOR CITY APPROVAL.

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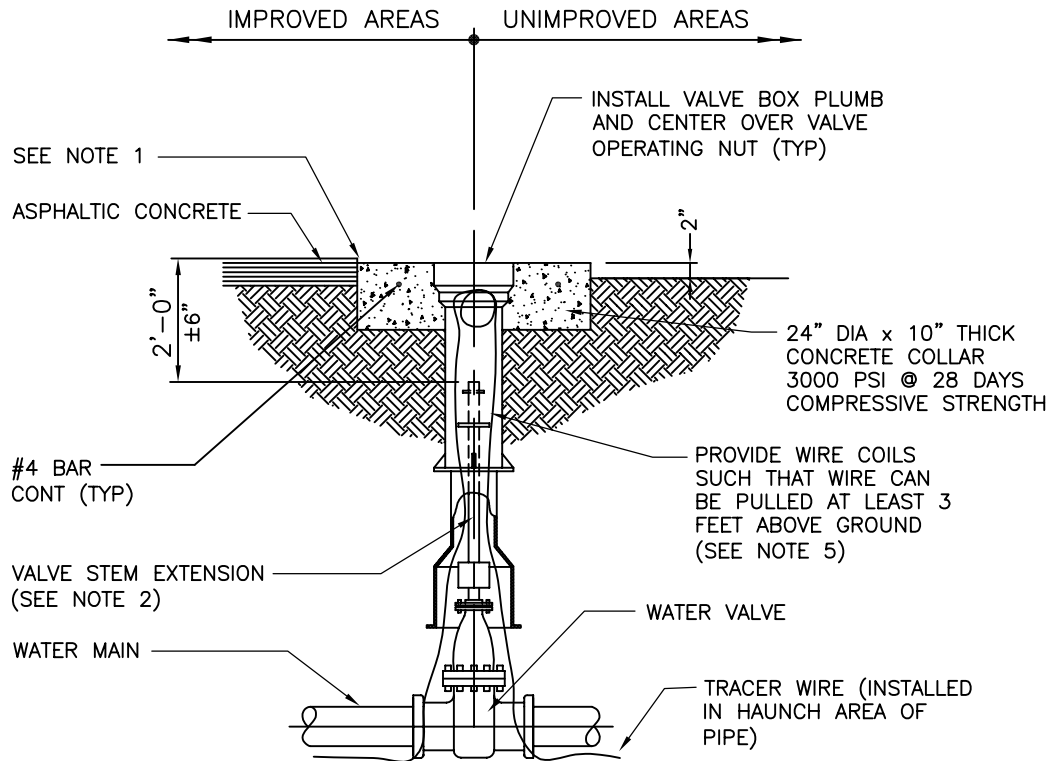


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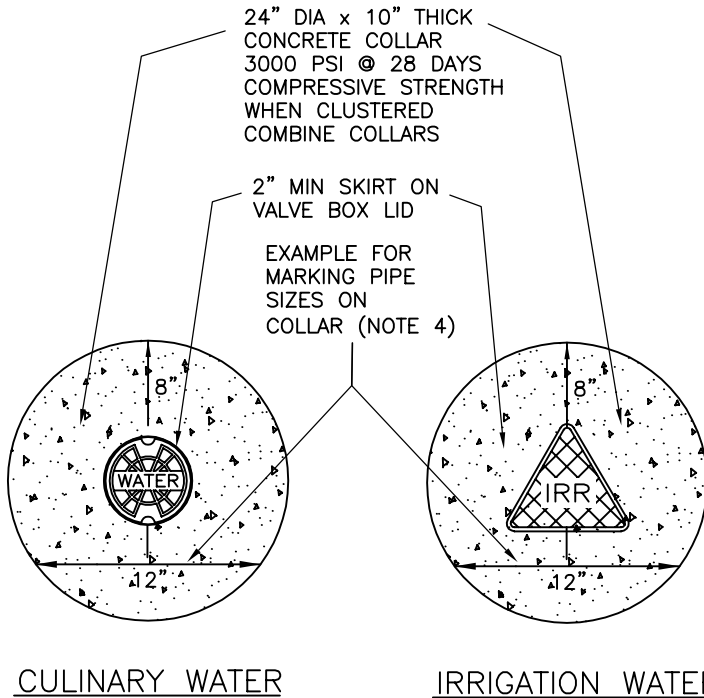
## FIRE HYDRANT INSTALLATION

Standard  
Drawing  
W-02

# UNIFORM DESIGN STANDARDS FOR WATER DISTRIBUTION SYSTEMS



## SECTION



### NOTES:

1. FINAL RIM ELEVATION TO BE 1/8" BELOW FINAL STREET GRADE.
2. A VALVE STEM EXTENSION SHALL BE PROVIDED TO WITHIN 2' OF FINISHED GRADE WHERE THE DEPTH TO THE OPERATING NUT EXCEEDS 5'.
3. CONTRACTOR TO FORM CONCRETE COLLAR IN UNIMPROVED AREAS WITH SONOTUBE OR EQUAL AND REMOVE PRIOR TO BACKFILL INSTALLATION (TYP).
4. MARK PIPE SIZES ON COLLARS.
5. WHEN TRACER WIRE TERMINATES IN VALVE BOX, INSTALL GREASED WIRE NUT.
6. THIS DETAIL SHALL APPLY TO IRRIGATION SYSTEM VALVES WITH THE EXCEPTION THAT IRRIGATION SYSTEMS SHALL USE TRIANGLE SHAPED VALVE BOX LIDS AND RINGS.

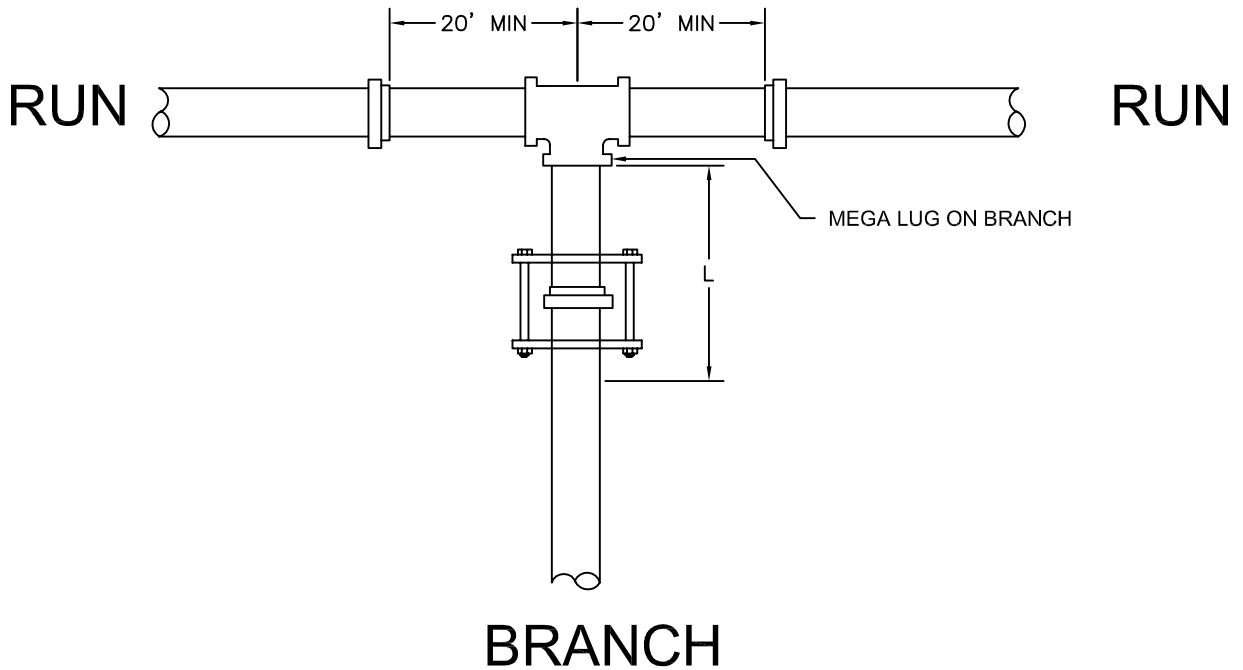
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## VALVE AND VALVE BOX INSTALLATION

Standard  
Drawing  
W-03



		RUN SIZE DIAMETER									
		4	6	8	10	12	14	16	18	20	24
BRANCH SIZE DIAMETER	4	*	*	*	*	*	*	*	*	*	*
	6		*	*	*	*	*	*	*	*	*
	8			*	*	*	*	*	*	*	*
	10				10	*	*	*	*	*	*
	12					28	12	4	*	*	*
	14						45	31	17	3	*
	16							62	49	37	11
	18								78	67	44
	20									95	74
	24										127

\* - FOR THIS CONDITION NEED ONLY RESTRAIN THE BRANCH OUTLET OF THE TEE.

RESTRAINED LENGTHS, "L" (IN FEET)

1. RESTRAIN THE TWO MECHANICAL JOINTS ON THE RUN SIDES OF THE TEE. THERE SHOULD BE A FULL 20' LENGTH OF PIPE INSTALLED ON EACH SIDE OF THE RUN.
2. ALL JOINTS WITHIN THE LENGTH "L" ON THE BRANCH MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH-ON PIPE PER CITY SPECIFICATION.

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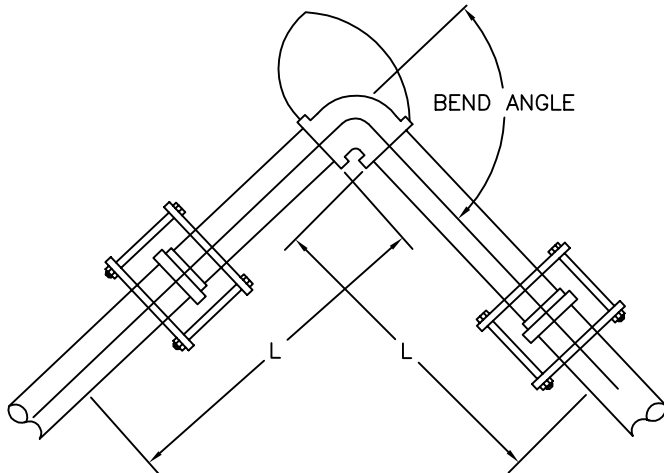


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## STANDARD TEE PVC RESTRAINING SYSTEM DETAIL

Standard  
Drawing  
W-04

MEGA LUG ON JOINT



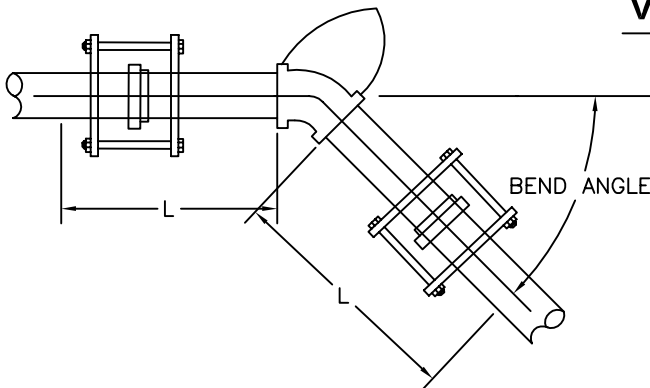
## HORIZONTAL BEND

1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER CITY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

		SIZE DIAMETER								
		4	6	8	10	12	14	16	18	20
BEND ANGLE	11.25	2	3	4	4	5	6	7	7	8
	22.5	4	6	7	9	10	12	13	15	16
	45	8	12	15	18	21	24	28	30	33
	90	20	28	37	44	52	59	67	73	81

RESTRAINED LENGTHS, "L" (IN FEET)

MEGA LUG ON JOINT



## VERTICAL DOWN BEND

1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER CITY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

		SIZE DIAMETER								
		4	6	8	10	12	14	16	18	20
BEND ANGLE	11.25	6	8	10	12	14	15	17	20	20
	22.5	11	15	19	23	27	31	35	40	40
	45	23	31	40	48	56	64	72	80	80

RESTRAINED LENGTHS, "L" (IN FEET)

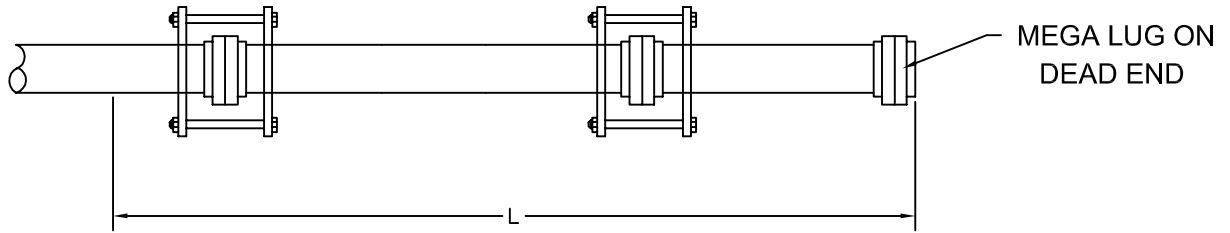
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## STANDARD BENDS FOR PVC RESTRAININGSYSTEM DETAIL

Standard  
Drawing  
W-05



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER CITY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

PIPE SIZE IN INCHES								
4	6	8	10	12	14	16	18	20
44	62	82	99	118	135	153	169	187

RESTRAINED LENGTHS, "L" (IN FEET)

## RESTRAINED JOINT LENGTHS USAGE GENERAL NOTES

RESTRAINED LENGTH CALCULATIONS ARE BASED ON THE FOLLOWING DESIGN TYPICALLY USED WITH BACKFILL IN ST. GEORGE.

1. THREE (3) FEET MINIMUM DEPTH OF COVER.
2. A SAFETY FACTOR OF 1.5
3. SOIL TYPE SANDY CLAY
4. TYPE 5 TRENCH COMPACTION FROM FOUR (4) INCHES MINIMUM UNDER THE PIPE TO THE CENTER LINE OF THE PIPE, AND COMPACTED GRANULAR OR SELECTED MATERIAL FROM THE CENTER LINE OF THE PIPE TO THE TOP OF THE PIPE (90 PERCENT STANDARD PROCTOR DENSITY, AASHTO T-99).
5. 200 PSI TEST PRESSURES FOR FOUR (4) THROUGH SIXTEEN (16) INCH SIZE PIPES.

IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRAINED LENGTH CANNOT BE MET, THE RESTRAINED JOINT LENGTH SHALL BE DETERMINED BY THE WATER AND POWER ENGINEER.

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### IN LINE / DEAD END ON PVC PIPE DETAIL

Standard  
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W-06