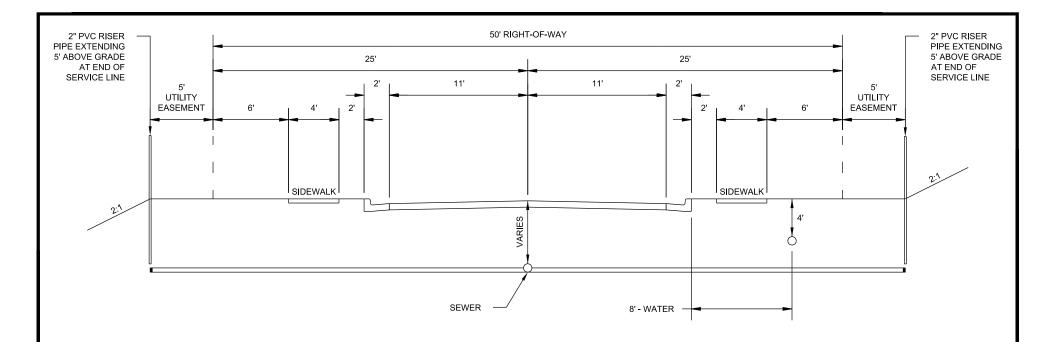
### **Standard Water Details**

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- 1. NO TREES OR FENCES ALLOWED WITHIN THE ROAD R/W OR UTILITY EASEMENT EXCEPT WHERE REQUIRED BY CITY, COUNTY, OR OTHER GOVERNMENT ORDINANCE.
- 2. ALL TREES SHALL BE CLEARED AND SHOULDERS GRADED WITHIN 6" OF FINAL GRADE (INCLUDING UTILITY EASEMENT) PRIOR TO THE INSTALLATION OF ANY UTILITIES.
- UTILITY PLACEMENT SHALL REMAIN CONSISTENT FROM BACK OF CURB THROUGHOUT THE PROJECT REGARDLESS OF ANY INCONSISTENCIES IN ROAD CONSTRUCTION. EXAMPLES: STORM SEWERS, CULVERTS, CUL-DE-SACS, ETC...(EXCEPT CATV).
- TOTAL CLEARED AND GRADED WIDTH TO BE 60' MINIMUM. ELECTRIC, GAS, TELEPHONE, AND CABLE TELEVISION.
- PROPERTY CORNER REFERENCE SHALL BE PLACED ON CURB AND GUTTER AND ON 10' OFFSET STAKE.
- 6. UTILITY EASEMENT SHALL BE SHOWN AND RECORDED WITH THE FINAL PLAT.

- 7. WATER METER BOXES SHALL BE LOCATED 6' BACK OF R/W. SEWER SERVICES SHALL BE STUBBED OUT 17' BACK OF CURB.
- 8. WATER LATERALS SHALL BE MARKED WITH A BLUE "W" ON CURB. SEWER LATERALS SHALL BE MARKED WITH A GREEN "X" ON CURB.
- 9. DEPTH REQUIREMENTS INDICATE MINIMUM DEPTH AT TIME OF INSTALLATION BELOW CURB LINE.
- 10. THIS STANDARD MAY BE COMBINED WITH JOINT USE STANDARD.
- 11. UTILITIES SHALL BE LOCATED WITHIN PLUS/MINUS 6" OF PLAN LOCATION.



### HENRY COUNTY WATER AUTHORITY

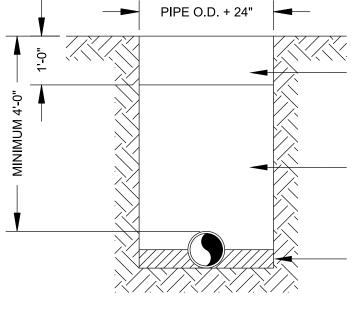
# RESIDENTIAL UTILITY PLACEMENT FOR ROAD WITH 50' RIGHT-OF-WAY

SPEC. DATE: 2023

REVISED: 09/11/2018

SCALE: N.T.S.

DETAIL NO.



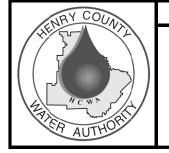
SELECT EARTH BACKFILL PLACED IN 6" LIFTS AND COMPACTED TO MINIMUM 90 PERCENT STANDARD PROCTOR, (ASTM D698) OR AS REQUIRED BY HCWA

SELECT EARTH BACKFILL PLACED IN 6" LIFTS AND COMPACTED TO MINIMUM 90 PERCENT STANDARD PROCTOR, (ASTM D698) OR AS REQUIRED BY HCWA

FLAT BOTTOM TRENCH (I.E. UNDISTURBED EARTH) WITH SELECT EARTH BACKFILL LIGHTLY CONSOLIDATED TO CENTERLINE OF PIPE

#### NOTES:

- DUCTILE IRON PIPE FOR WATER MAINS SHALL BE BEDDED IN ACCORDANCE WITH ANSI/AWWA C150/A21.50 AND ANSI/AWWA C151/A21.51, TYPE 2 LAYING CONDITION.
- 2. MINIMUM DEPTH OF COVER SHALL BE 4'-0" UNLESS OTHERWISE APPROVED BY HCWA.



HENRY COUNTY WATER AUTHORITY

SPEC. DATE: 2023

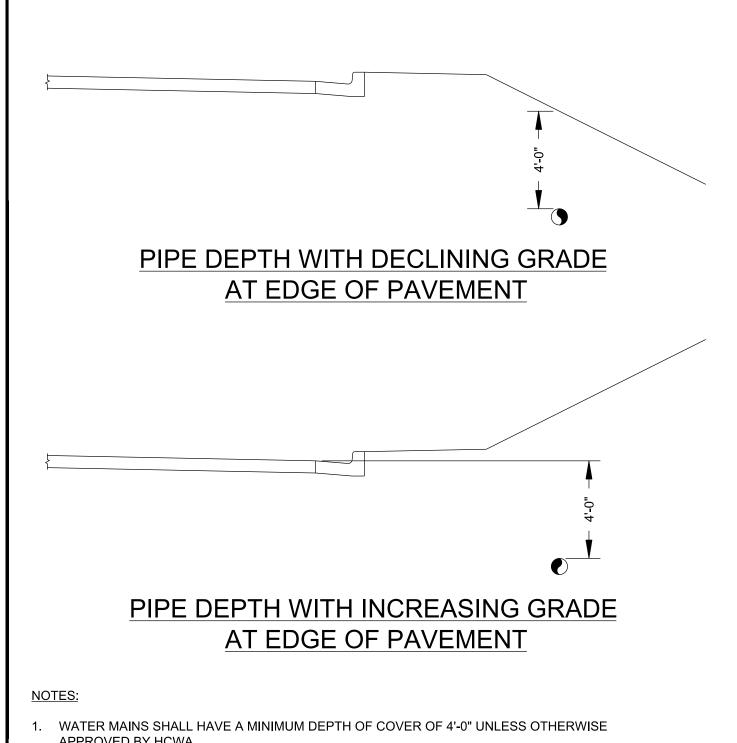
REVISED: 9/11/2018

SCALE: N.T.S.

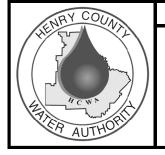
DETAIL NO.

W02

WATER LINE TRENCH DETAIL



APPROVED BY HCWA.



### HENRY COUNTY WATER AUTHORITY

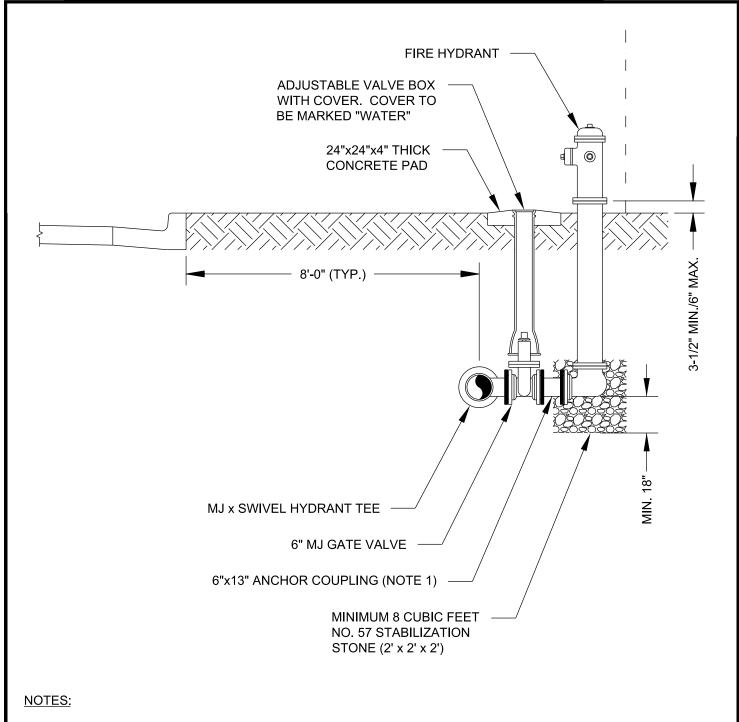
### PIPE DEPTH AT **EDGE OF PAVEMENT**

#### SPEC. DATE: 2023

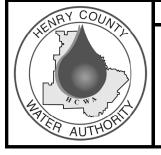
REVISED: 9/11/2018

SCALE: N.T.S.

DETAIL NO.



1. LONGER ANCHOR COUPLINGS MAY BE USED WHEN REQUIRED. IF ANCHOR COUPLINGS ARE NOT USED, VALVE SHALL BE RODDED TO THE TEE AND HYDRANT SHALL BE RODDED TO THE VALVE USING A MINIMUM OF TWO (2) 3/4" THREADED RODS ON EACH CONNECTION.



### HENRY COUNTY WATER AUTHORITY

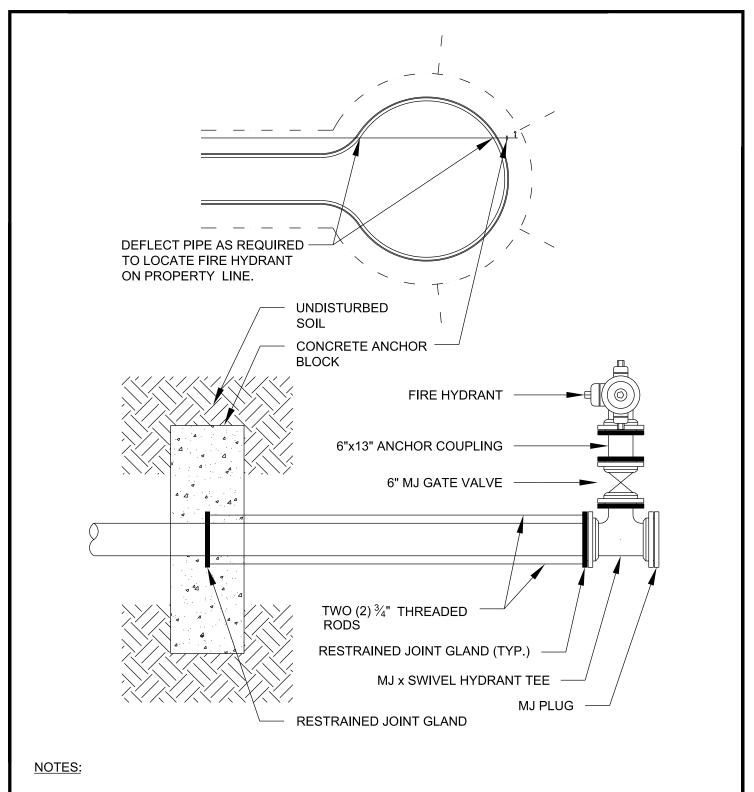
# TYPICAL FIRE HYDRANT ASSEMBLY

SPEC. DATE: 2023

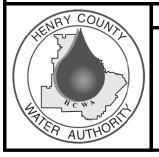
REVISED: 01/31/2018

SCALE: N.T.S.

DETAIL NO.



1. ALL FITTINGS AND VALVES SHALL BE RESTRAINED.



### FIRE HYDRANT IN

HENRY COUNTY WATER AUTHORITY

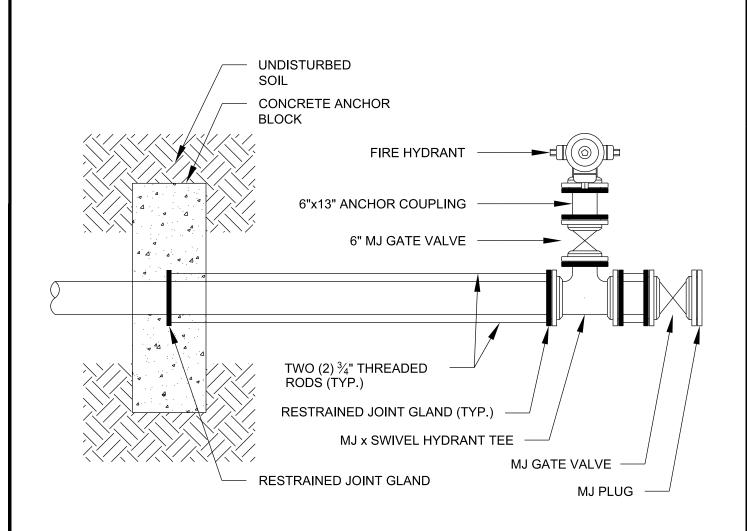
CUL-DE-SAC

SPEC DATE: 2023

**REVISED:** 01/31/2018

SCALE: N.T.S.

DETAIL NO.



- 1. ALL FITTINGS AND VALVES SHALL BE RESTRAINED.
- 2. FIELD CONDITION MAY REQUIRE ADDITIONAL RESTRAINT AS DIRECTED BY HCWA.



HENRY COUNTY WATER AUTHORITY

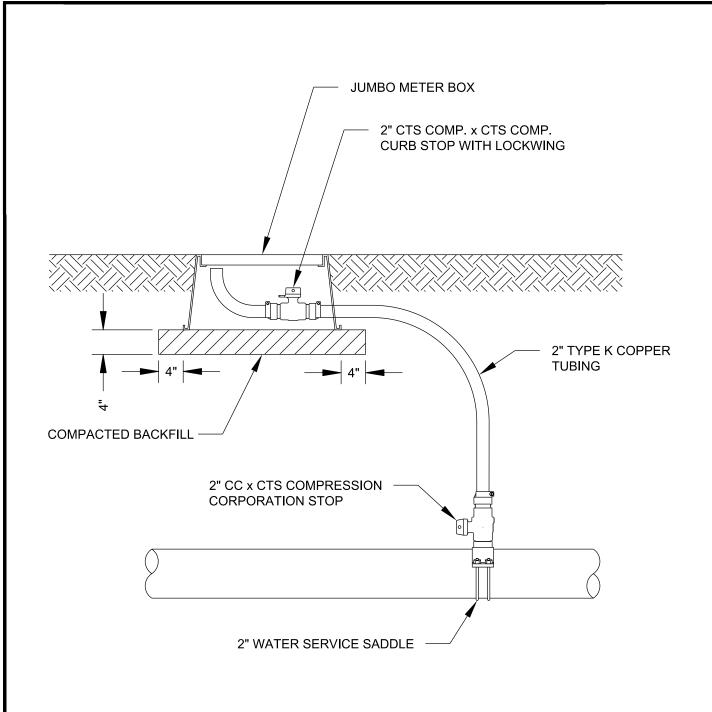
FIRE HYDRANT AT DEAD END

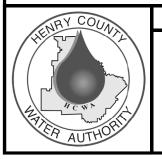
SPEC. DATE: 2023

REVISED: 01/31/2018

SCALE: N.T.S.

DETAIL NO.





SPEC. DATE: 2023

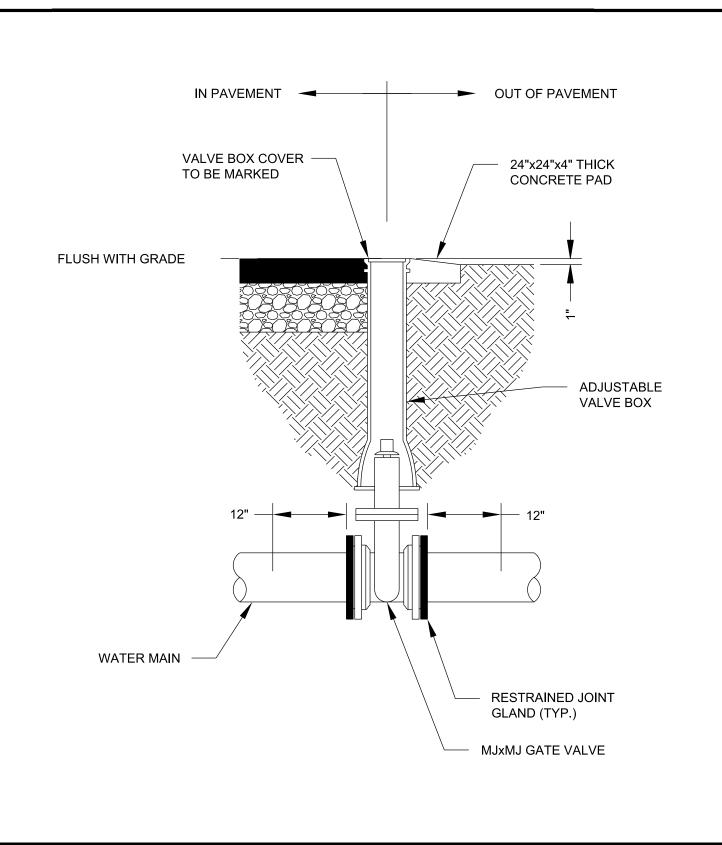
REVISED: 02/02/2018

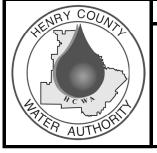
SCALE: N.T.S.

DETAIL NO.

W07

WATER LINE BLOW-OFF





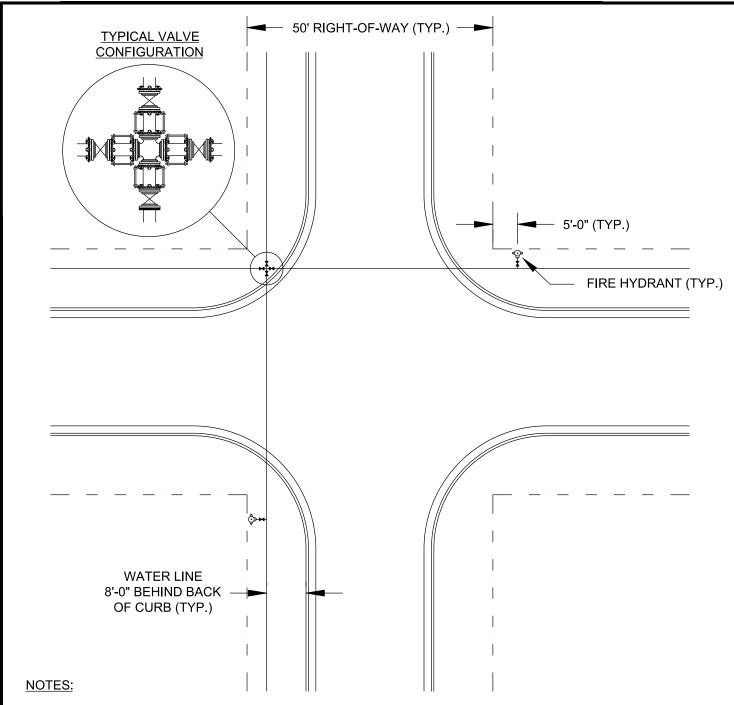
WATER LINE ISOLATION VALVE

SPEC. DATE: 2023

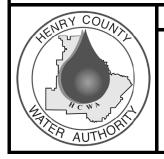
REVISED: 01/31/2018

SCALE N.T.S.

DETAIL NO.



- 1. WHERE EXISTING STRUCTURES EXIST AND INTERFERE WITH THE ROUTE OF THE WATER LINE, THE WATER LINE SHALL BE ROUTED AROUND THE STRUCTURE BY PIPE JOINT DEFLECTION OR, WHERE NECESSARY, WITH MAXIMUM 45° BENDS.
- 2. VALVES AT CROSS CONNECTIONS SHALL BE RODDED TO THE FITTING USING A MINIMUM OF TWO ¾" THREADED RODS. THE MJ FLANGE ON THE OPPOSITE SIDE OF THE FITTING SHALL BE RESTRAINED USING A MEGALUG.



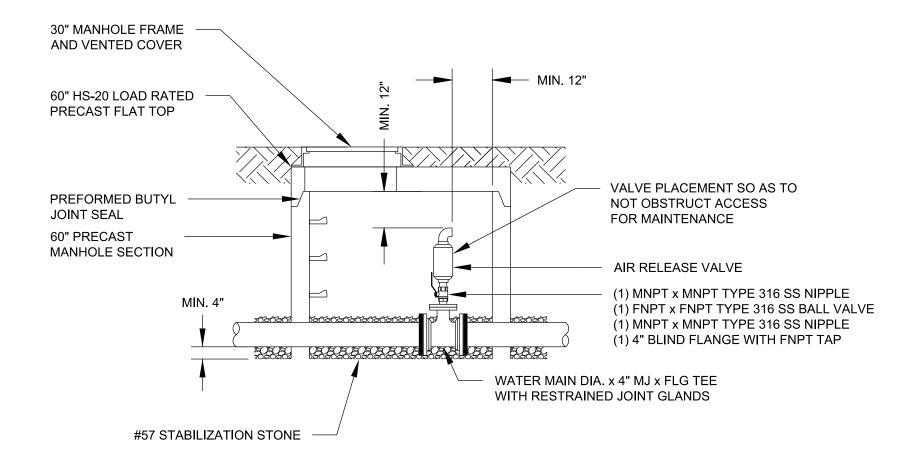
WATER LINE INTERSECTION

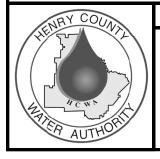
SPEC DATE: 2023

REVISED: 02/21/2018

SCALE: N.T.S.

DETAIL NO.





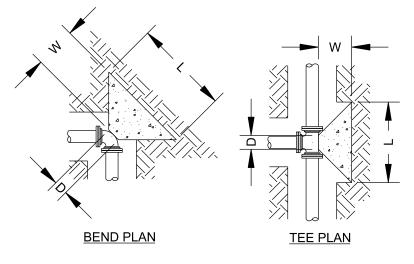
WATER MAIN
COMBINATION AIR/VACUUM VALVE

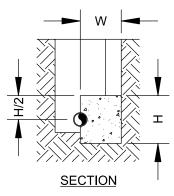
SPEC DATE: 2023

REVISED: 01/31/2018

SCALE: N.T.S.

DETAIL NO.





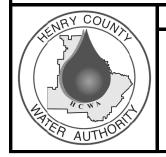
TEES						
PIPE DIA. (IN)	D DIM.	L DIM.	H DIM.	W DIM.	CONC. VOLUME (YD³)	THRUST (LBF)
4	0'-6"	2'-4"	1'-2"	0'-11"	0.06	4,072
6	0'-8"	3'-4"	1'-8"	1'-4"	0.16	8,413
8	0'-9"	4'-5"	2'-3"	1'-10"	0.39	14,473
10	0'-11"	5'-5"	2'-9"	2'-3"	0.73	21,773
12	1'-1"	6'-5"	3'-3"	2'-8"	1.20	30,791
			90° B	ENDS		
PIPE DIA. (IN)	D DIM.	L DIM.	H DIM.	W DIM.	CONC. VOLUME (YD³)	THRUST (LBF)
4	0'-5"	2'-9"	1'-5"	1'-2"	0.10	5,758
6	0'-8"	4'-0"	2'-0"	1'-8"	0.29	11,898
8	0'-9"	5'-3"	2'-8"	2'-3"	0.67	20,468
10	0'-11"	6'-5"	3'-3"	2'-9"	1.21	30,792
12	1'-1"	8'-7"	3'-10"	3'-3"	2.00	43,545
			45° B	ENDS		
PIPE DIA. (IN)	D DIM.	L DIM.	H DIM.	W DIM.	CONC. VOLUME (YD³)	THRUST (LBF)
4	0'-4"	2'-0"	1'-0"	0'-10"	0.04	3,116
6	0'-7"	2'-11"	1'-6"	1'-2"	0.11	6,439
8	0'-8"	3'-10"	1'-11"	1'-7"	0.25	11,077
10	0'-11"	4'-9"	2'-5"	1'-11"	0.49	16,664
12	1'-1"	6'-7"	2'-10"	2'-3"	0.79	23,566
			22½° E	BENDS		
PIPE DIA. (IN)	D DIM.	L DIM.	H DIM.	W DIM.	CONC. VOLUME (YD³)	THRUST (LBF)
	0'-5"	1'-5"	0'-9"	0'-6"	0.01	1,589
4						
6	0'-7"	2'-1"	1'-1"	0'-9"	0.04	3,283
		2'-1"	1'-1" 1'-5"	0'-9" 1'-0"	0.04 0.09	3,283 5,647
6	0'-7"					

1. THRUST BLOCK DIMENSIONS ARE BASED ON THE FOLLOWING DESIGN CRITERIA.

WORKING PRESSURE = 150 PSI SOIL BEARING CAPACITY = 1,500 PSF SAFETY FACTOR = 1.5

THESE ARE THE MINIMUM DESIGN CRITERIA. IF ACTUAL WORKING PRESSURE IS GREATER THAN 150 PSI OR IF ACTUAL SOIL BEARING CAPACITY IS LESS THAN 1,500 PSF, DIMENSIONS SHALL BE RECALCULATED.

- 2. THRUST BLOCK CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2,500 PSI.
- 3. THRUST BLOCK SHALL BEAR AGAINST UNDISTURBED SOIL.
- 4. A MINIMUM 10 MIL PLASTIC SHEET SHALL BE PLACED BETWEEN CONCRETE AND PIPE.
- 5. ALL BOLTS SHALL REMAIN ACCESSIBLE. DO NOT COVER WITH CONCRETE.



# CONCRETE THRUST BLOCK

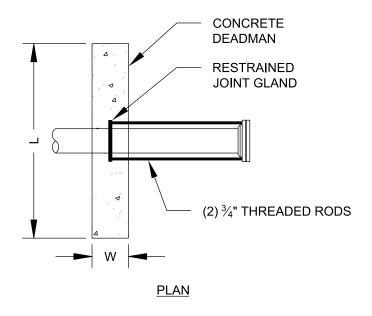
HENRY COUNTY WATER AUTHORITY

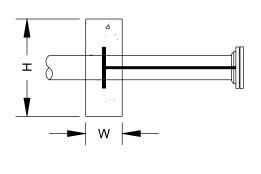
SPEC DATE: 2023

REVISED: 01/01/2018

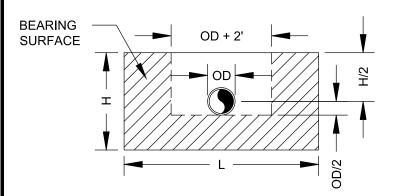
SCALE: N.T.S.

DETAIL NO.





**SECTION** 



DEADMAN DIMENSION							
PIPE DIA. (IN)	L DIM.	H DIM.	W DIM.	CONC. VOLUME (YD³)	THRUST (LBF)		
4	3'-0"	1'-7"	1'-0"	0.18	4,072		
6	4'-3"	2'-1"	1'-0"	0.33	8,413		
8	5'-4"	2'-8"	1'-0"	0.53	14,473		
10	6'-0"	3'-6"	1'-0"	0.78	21,773		
12	7'-1"	4'-0"	1'-0"	1.05	30,791		

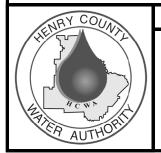
#### NOTES:

1. DEADMAN DIMENSIONS ARE BASED ON THE FOLLOWING DESIGN CRITERIA.

WORKING PRESSURE = 150 PSI SOIL BEARING CAPACITY = 1,500 PSF SAFETY FACTOR = 1.5

THESE ARE THE MINIMUM DESIGN CRITERIA. IF ACTUAL WORKING PRESSURE IS GREATER THAN 150 PSI OR IF ACTUAL SOIL BEARING CAPACITY IS LESS THAN 1,500 PSF, DIMENSIONS SHALL BE RECALCULATED.

- 2. DEADMAN CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 2,500 PSI.
- 3. DEADMAN SHALL BEAR AGAINST UNDISTURBED SOIL.
- 4. A MINIMUM 10 MIL PLASTIC SHEET SHALL BE PLACED BETWEEN CONCRETE AND PIPE.
- 5. ALL BOLTS SHALL REMAIN ACCESSIBLE. DO NOT COVER WITH CONCRETE.



### CONCRETE DEADMAN

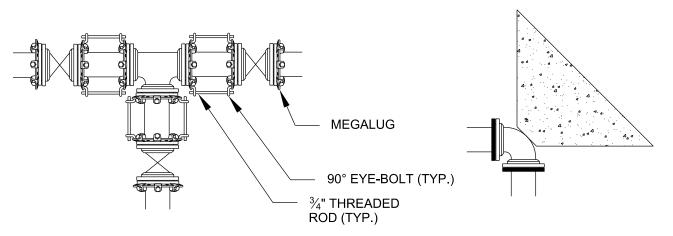
HENRY COUNTY WATER AUTHORITY

SPEC DATE: 2023

REVISED: 01/31/2018

SCALE: N.T.S.

DETAIL NO.

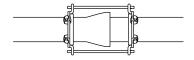


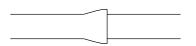
FITTING WITH TIE-RODS AND MEGALUGS

FITTING WITH RESTRAINED

JOINT GLAND AND

THRUST BLOCK





TIE-RODS FROM
RESTRAINED JOINT GLAND TO
RESTRAINED JOINT GLAND

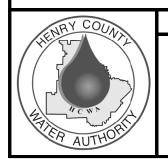
PUSH-ON JOINT WITH RESTRAINED JOINT GASKET

ROD SIZE (IN)	# OF RODS
3/4"	2
3/4"	4
3/4"	4
3/4"	4
3/4"	4
3/4"	6
	SIZE (IN)  3/4"  3/4"  3/4"  3/4"  3/4"

**TIE-ROD CHART** 

#### NOTES:

- RESTRAINED JOINT LENGTHS SHALL BE CALCULATED BY THE DESIGN ENGINEER. CALCULATIONS SHALL BE SUBMITTED TO HCWA.
- 2. THREADED ROD SHALL HAVE A MINIMUM YIELD STRENGTH OF 50,000 PSI.



HENRY COUNTY WATER AUTHORITY

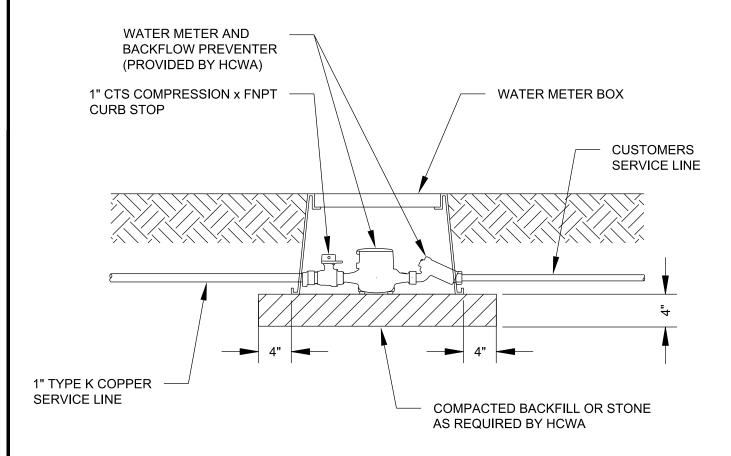
THRUST RESTRAINT

SPEC DATE: 2023

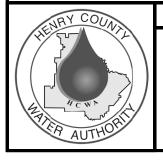
REVISED: 02/02/2018

SCALE: N.T.S.

DETAIL NO.



- HCWA WILL PROVIDE RESIDENTIAL WATER METERS AND BACKFLOW PREVENTERS. ALL
  OTHER APPURTENANCES SHALL BE PROVIDED BY THE DEVELOPER AND/OR CONTRACTOR.
- 2. WATER METER BOX LIDS SHALL HAVE 2-INCH DIAMETER HOLE OFFSET FOR TOUCH READ INSTALLATION.
- 3. EACH SERVICE SHALL BE MARKED WITH A "W" SAW CUT INTO TOP OF CURB AND PAINTED BLUE.
- 4. INSERT A 4-FOOT LONG PIECE OF 1" PVC PIPE THROUGH THE HOLE IN THE METER BOX LID TO MARK THE METER LOCATION. PAINT PVC PIPE BLUE.
- 5. NO PERMANENT STRUCTURES SHALL BE LOCATED WITHIN 5 FEET OF WATER SERVICE.
- 6. TYPICAL INSTALLATION MAY BE MODIFIED AT DISCRETION OF HCWA.



### HENRY COUNTY WATER AUTHORITY

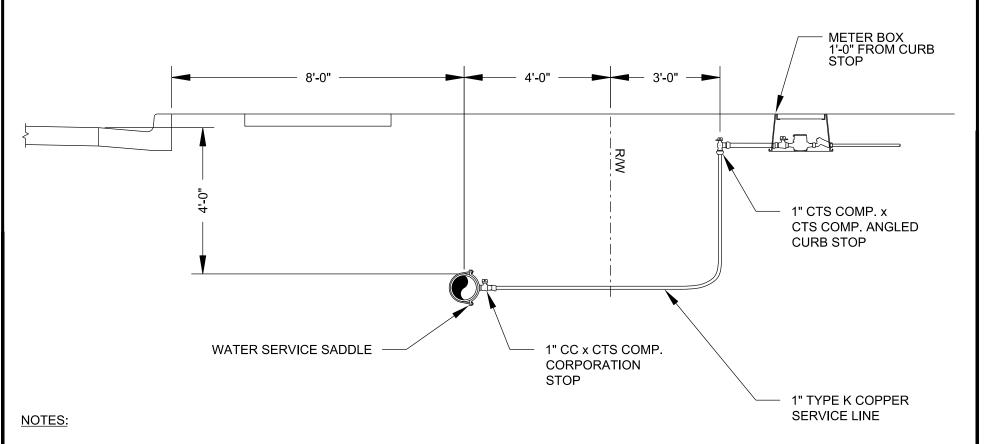
# RESIDENTIAL WATER METER DETAIL

SPEC DATE: 2023

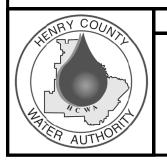
REVISED: 02/02/2018

SCALE: N.T.S.

DETAIL NO.



- EACH SERVICE SHALL BE MARKED WITH A "W" SAW CUT INTO TOP OF CURB AND PAINTED BLUE.
- 2. INSERT A 4-FOOT LONG PIECE OF 1" PVC PIPE THROUGH THE HOLE IN THE METER BOX LID TO MARK THE METER LOCATION. PAINT PVC PIPE BLUE.
- 3. NO PERMANENT STRUCTURES SHALL BE ALLOWED WITHIN 5 FEET OF WATER SERVICE.
- 4. TYPICAL INSTALLATION MAY BE MODIFIED AT THE DISCRETION OF HCWA.



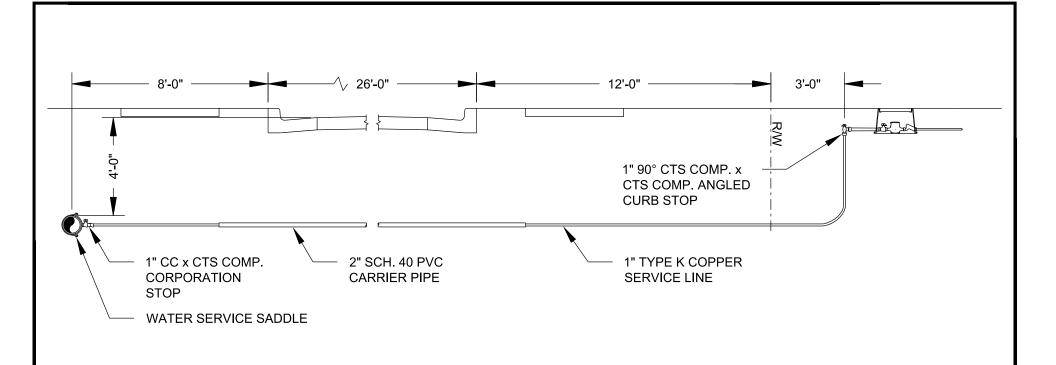
# SHORT SIDE RESIDENTIAL SERVICE DETAIL

SPEC. DATE: 2023

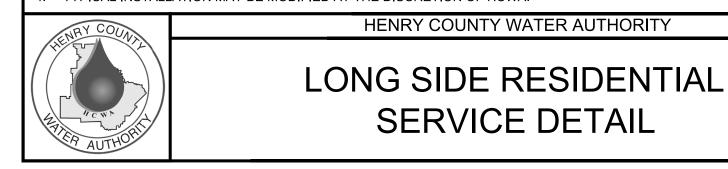
REVISED: 11/29/2023

SCALE: N.T.S.

DETAIL NO.



- EACH SERVICE SHALL BE MARKED WITH A "W" SAW CUT INTO TOP OF CURB AND PAINTED BLUE.
- INSERT A 4-FOOT LONG PIECE OF 1" PVC PIPE THROUGH THE HOLE IN THE METER BOX LID TO MARK THE METER LOCATION. PAINT PVC PIPE BLUE.
- 3. NO PERMANENT STRUCTURE SHALL BE ALLOWED WITHIN 5 FEET OF WATER SERVICE.
- 4. TYPICAL INSTALLATION MAY BE MODIFIED AT THE DISCRETION OF HCWA.

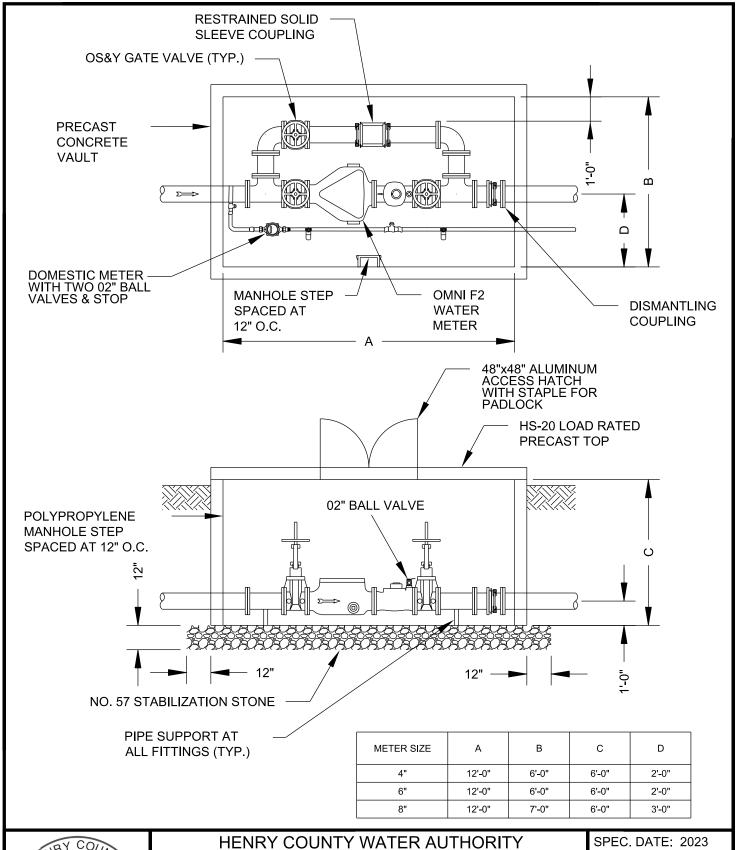


SPEC. DATE: 2023

REVISED: 11/29/2023

SCALE: N.T.S.

DETAIL NO.



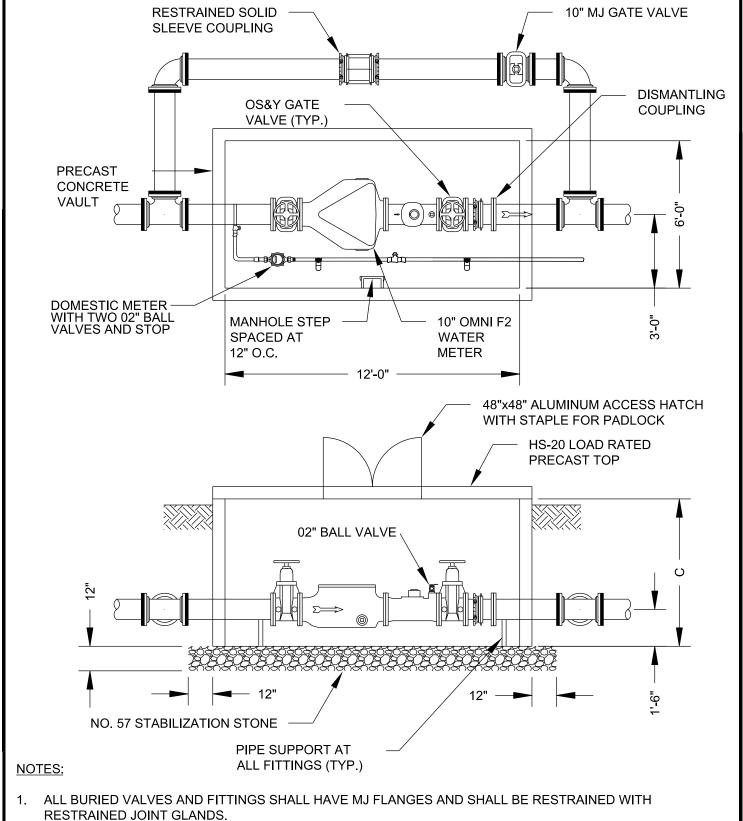


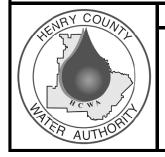
4", 6", AND 8" OMNI F2 FIRELINE METER

REVISED: 11/6/2023

SCALE: N.T.S.

DETAIL NO.





### 10" OMNI F2 COMPACT FIRELINE METER

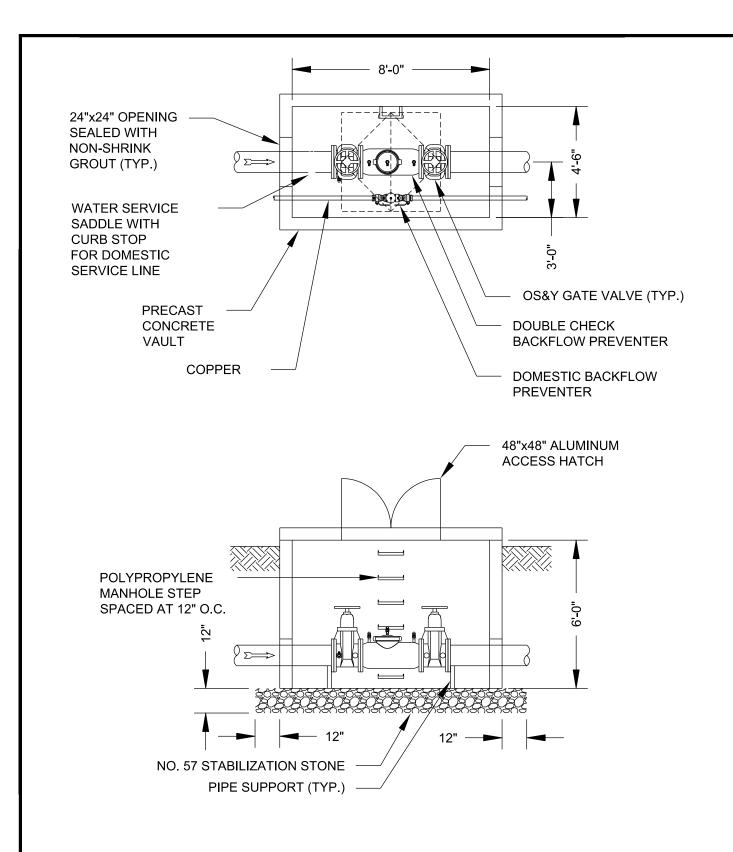
HENRY COUNTY WATER AUTHORITY

SPEC DATE: 2023

REVISED: 11/6/2023

SCALE: N.T.S.

DETAIL NO.



### **HCWA VARIANCE REQUIRED**



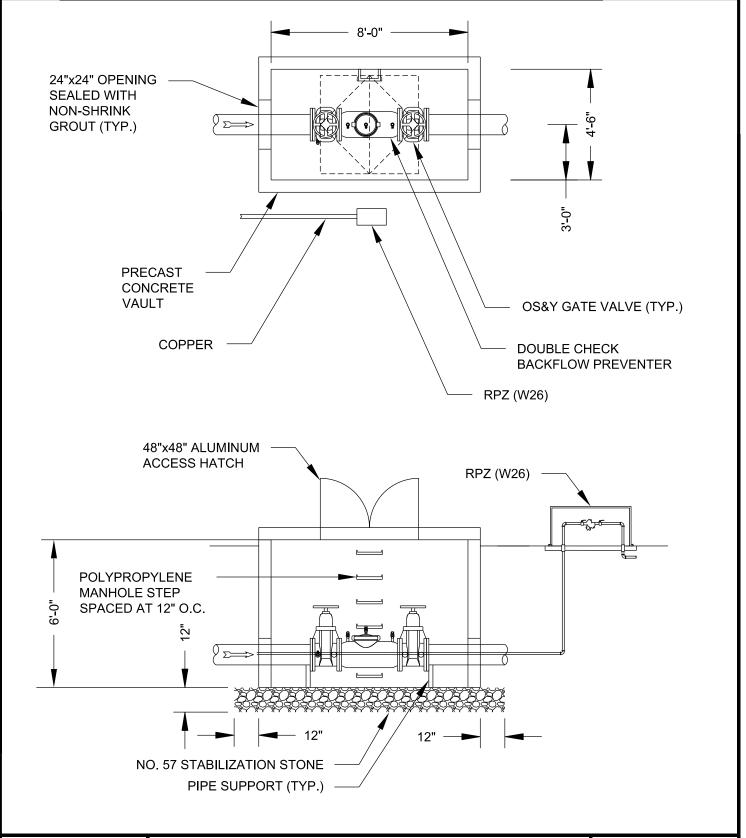
HENRY COUNTY WATER AUTHORITY

LOW RISK BACKFLOW PREVENTER (4" AND LARGER) SPEC. DATE: 2023

REVISED: 5/17/2022

SCALE: N.T.S.

DETAIL NO.



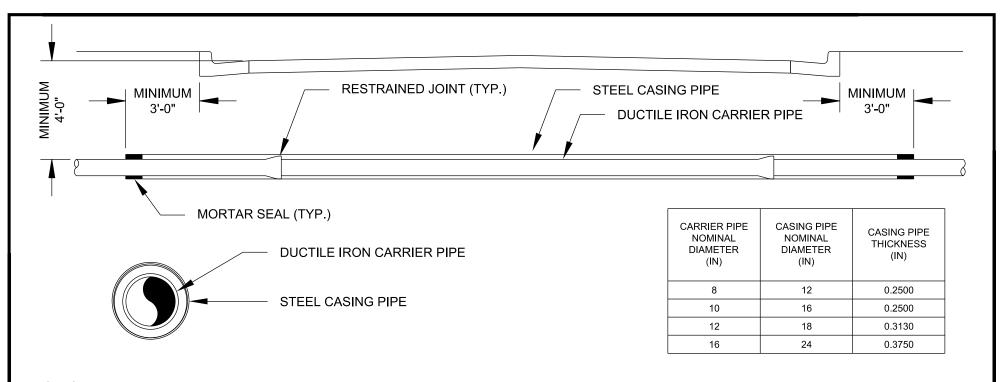


COMMERCIAL / INDUSTRIAL BACKFLOW PREVENTER (4" AND LARGER) SPEC. DATE: 2023

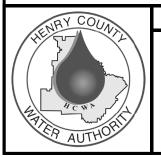
REVISED: 5/17/2022

SCALE: N.T.S.

DETAIL NO.



- 1. JOINTS INSIDE CASING PIPE SHALL BE RESTRAINED.
- ENDS OF CASING PIPE SHALL BE SEALED WITH CEMENT MORTAR OR AS APPROVED BY HCWA.
- 3. ALL COUNTY ROAD CROSSINGS SHALL BE INSTALLED IN ACCORDANCE WITH HENRY COUNTY DOT STANDARDS AND PERMIT REQUIREMENTS.
- 4. ALL STATE HIGHWAY CROSSINGS SHALL BE INSTALLED IN ACCORDANCE WITH GEORGIA DOT STANDARDS AND PERMIT REQUIREMENTS.
- 5. ALL RAILROAD CROSSINGS SHALL BE INSTALLED IN ACCORDANCE WITH AMERICAN RAILWAY ENGINEERING ASSOCIATION REGULATIONS AND IN ACCORDANCE WITH PERMIT REQUIREMENTS.

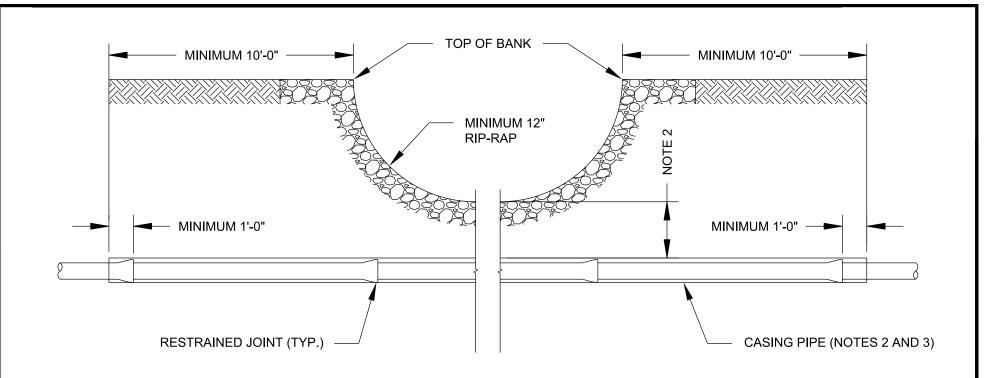


### TYPICAL JACK AND BORE DETAIL

REVISED: 09/14/2018

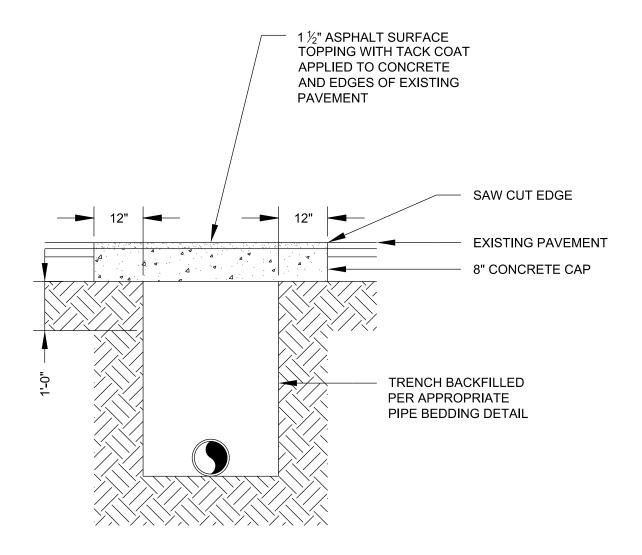
SCALE: N.T.S.

DETAIL NO.

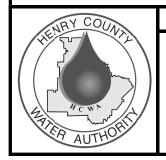


- 1. PIPE USED FOR CREEK CROSSINGS SHALL BE DUCTILE IRON PIPE. ADDITIONAL RESTRAINT MAYBE REQUIRED BY HCWA.
- 2. CASING PIPE IS REQUIRED WHEN DEPTH OF COVER IS LESS THAN 3 FEET FROM THE CREEK BOTTOM. MINIMUM 12" COVER TO TOP OF CASING.
- 3. REFER TO DETAIL W21 FOR CASING DIAMETER.
- 4. PLACE STONE RIP-RAP APPROXIMATELY 5 FEET UPSTREAM AND 5 FEET DOWNSTREAM FROM CENTERLINE OF PIPE ALONG CREEK BED.

HENRY COUNTY	HENRY COUNTY WATER AUTHORITY	SPEC. DATE: 2023
		REVISED: 09/14/2018
	CREEK CROSSING	SCALE: N.T.S.
		DETAIL NO.
AUTHORITA		W22



- THIS DETAIL IS THE MINIMUM PAVEMENT REPAIR REQUIREMENT. HENRY COUNTY DOT OR GEORGIA DOT PAVEMENT REPAIR DETAILS SHALL SUPERCEDE THIS DETAIL AND SHALL BE USED WHERE APPLICABLE.
- 2. CONCRETE FOR CONCRETE CAP SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 2,500 PSI @ 28 DAYS.



HENRY COUNTY WATER AUTHORITY

SPEC. DATE: 2023

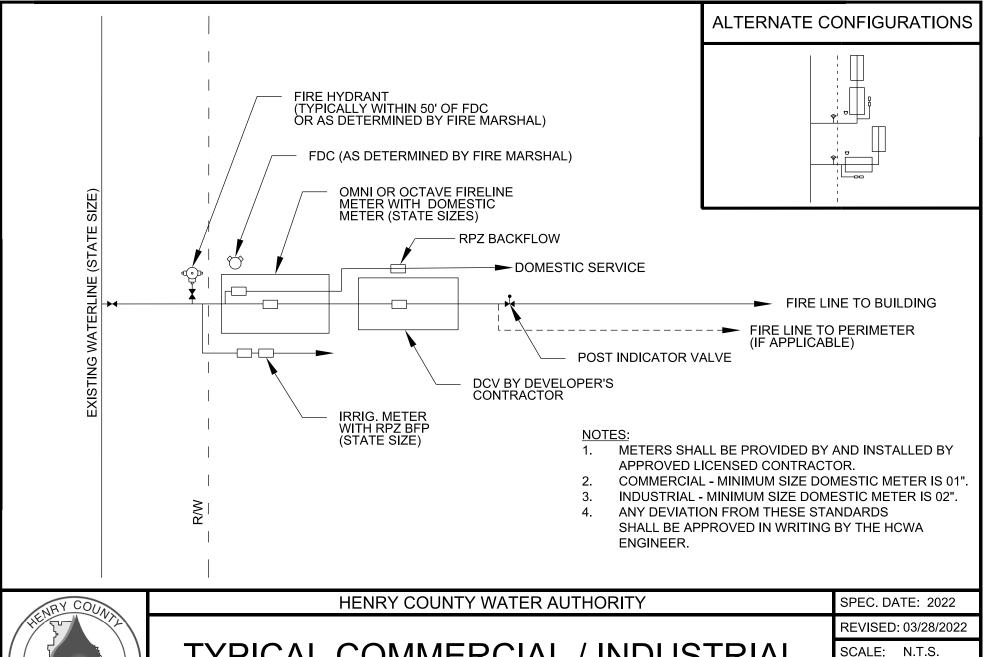
REVISED: 09/14/2018

SCALE: N.T.S.

DETAIL NO.

**W23** 

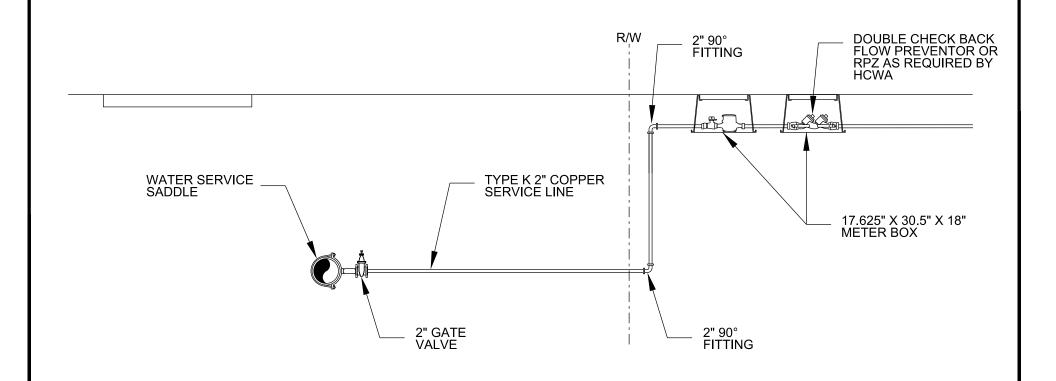
PAVEMENT REPAIR



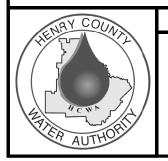


# TYPICAL COMMERCIAL / INDUSTRIAL METER CONFIGURATIONS

DETAIL NO.



- 1. NO PERMANENT STRUCTURES SHALL BE ALLOWED WITHIN 5 FEET OF WATER SERVICE.
- 2. TYPICAL INSTALLATION MAY BE MODIFIED AT THE DISCRETION OF HCWA.



# 2 " METER INSTALLATION DETAIL

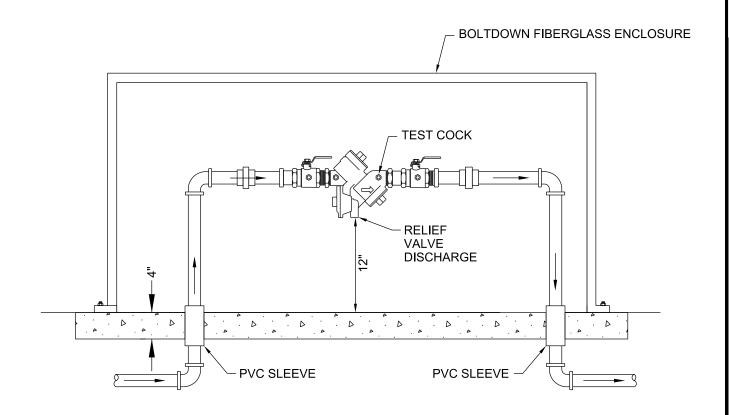
HENRY COUNTY WATER AUTHORITY

SPEC DATE: 2023

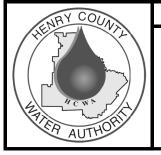
REVISED: 09/14/2018

SCALE: N.T.S.

DETAIL NO.



- 1. NO PERMANENT STRUCTURES SHALL BE ALLOWED WITHIN 5 FEET.
- 2. TYPICAL INSTALLATION MAY BE MODIFIED AT THE DISCRETION OF HCWA.
- 3. MINIMUM OF 4 TEST COCKS.



HENRY COUNTY WATER AUTHORITY

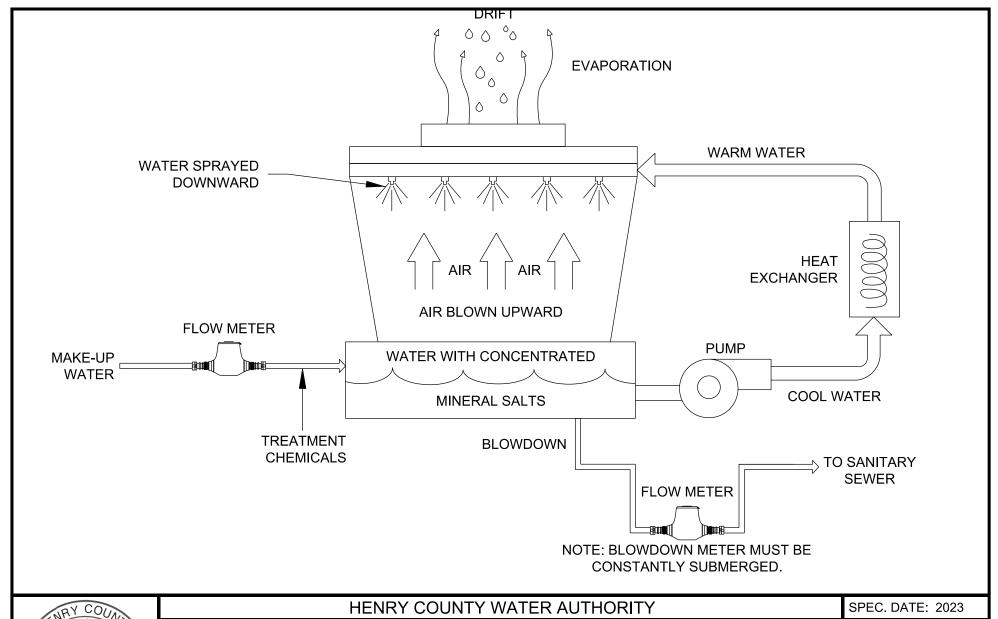
REDUCED PRESSURE ZONE DETAIL

SPEC DATE: 2023

REVISED: 11/13/2018

SCALE: N.T.S.

DETAIL NO.



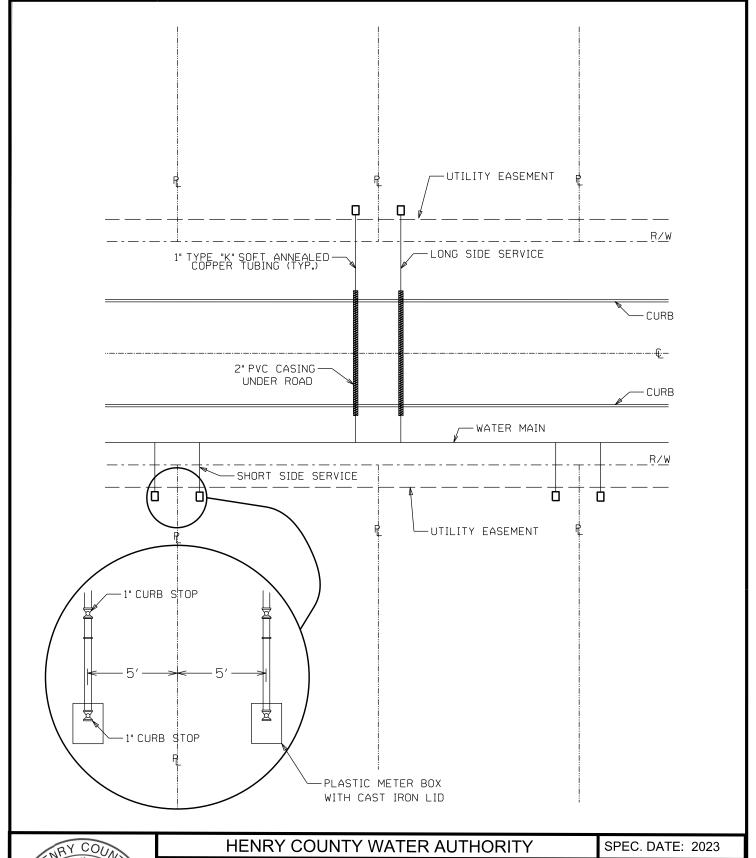


# COOLING TOWER METER CONFIGURATION

REVISED: 09/14/2018

SCALE: N.T.S.

DETAIL NO.

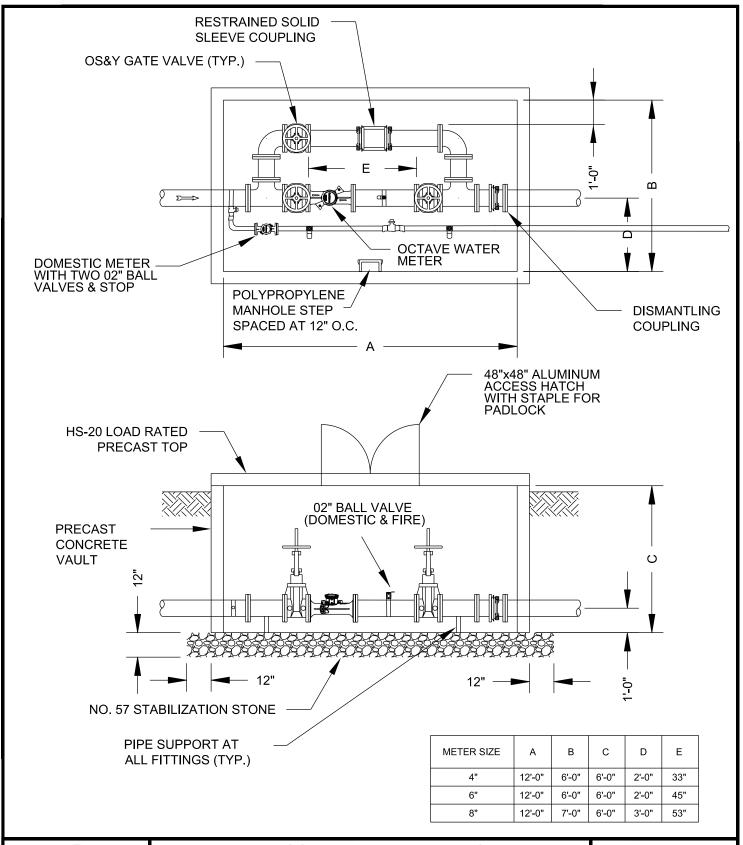




WATER METER LOCATION FOR SUBDIVISION

REVISED: 09/14/2018

SCALE: N.T.S.



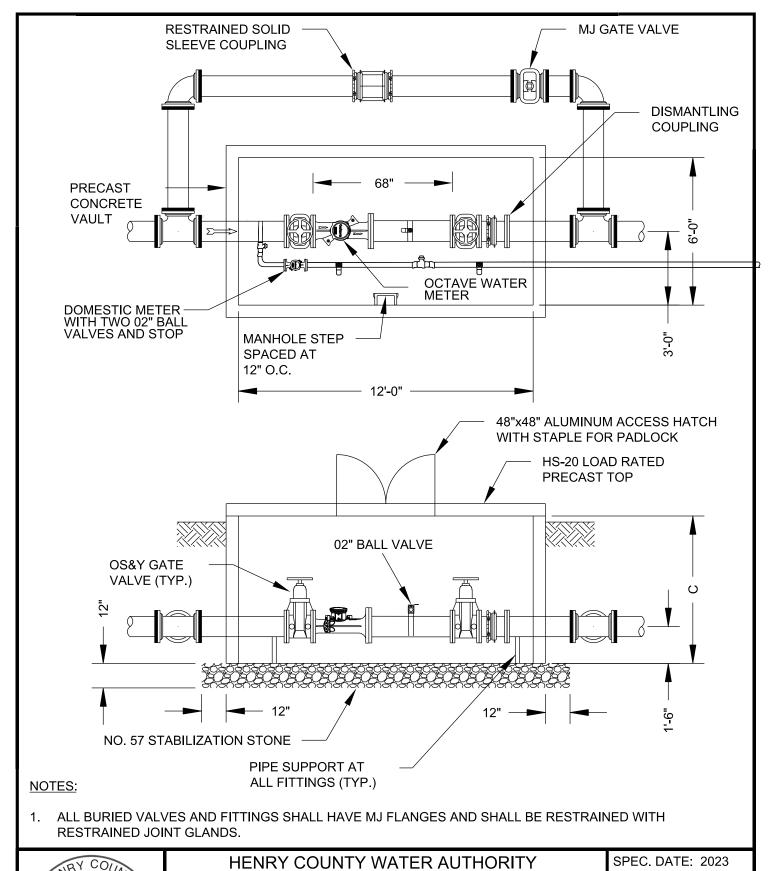


4", 6", AND 8" OCTAVE FIRELINE METER SPEC DATE: 2023

**REVISED:** 8/10/2023

SCALE: N.T.S.

DETAIL NO.





### 10" & 12" OCTAVE FIRELINE METER

SPEC DATE: 2023

REVISED: 11/6/2023

SCALE: N.T.S.

DETAIL NO.