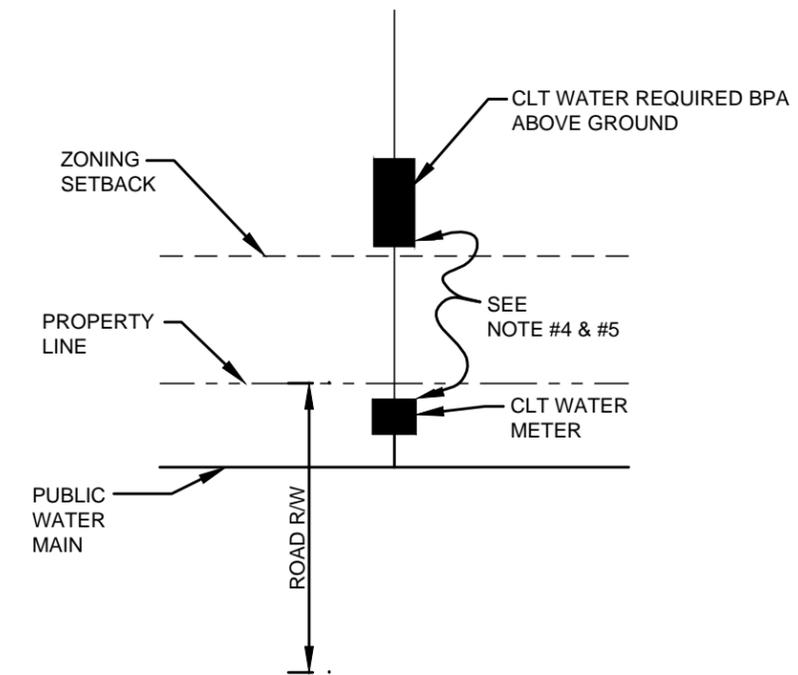


- NOTES:
1. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO CLT WATER SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO CLT WATER APPROVED LIST OF BPA's.
 2. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS & SPECIFICATIONS.
 3. INSULATED ENCLOSURE SHALL BE AS SPECIFIED IN CLT WATER ENCLOSURE INFORMATION - HEATED INSULATED ENCLOSURE IS RECOMMENDED. NO INSULATION SHALL BE WRAPPED AROUND BPA.
 4. ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL AND MUST BE OUTSIDE OF ZONING SET-BACK/ DIRECTLY BEHIND METER.
 5. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
 6. EACH CLT WATER-REQUIRED BPA IS REQUIRED TO BE TESTED BY A CLT WATER - APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO CLT WATER WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO CLT WATER.
 7. ALL INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.



TYPICAL LOCATION REQUIREMENT FOR ABOVE GROUND INSTALLATION
N.T.S.

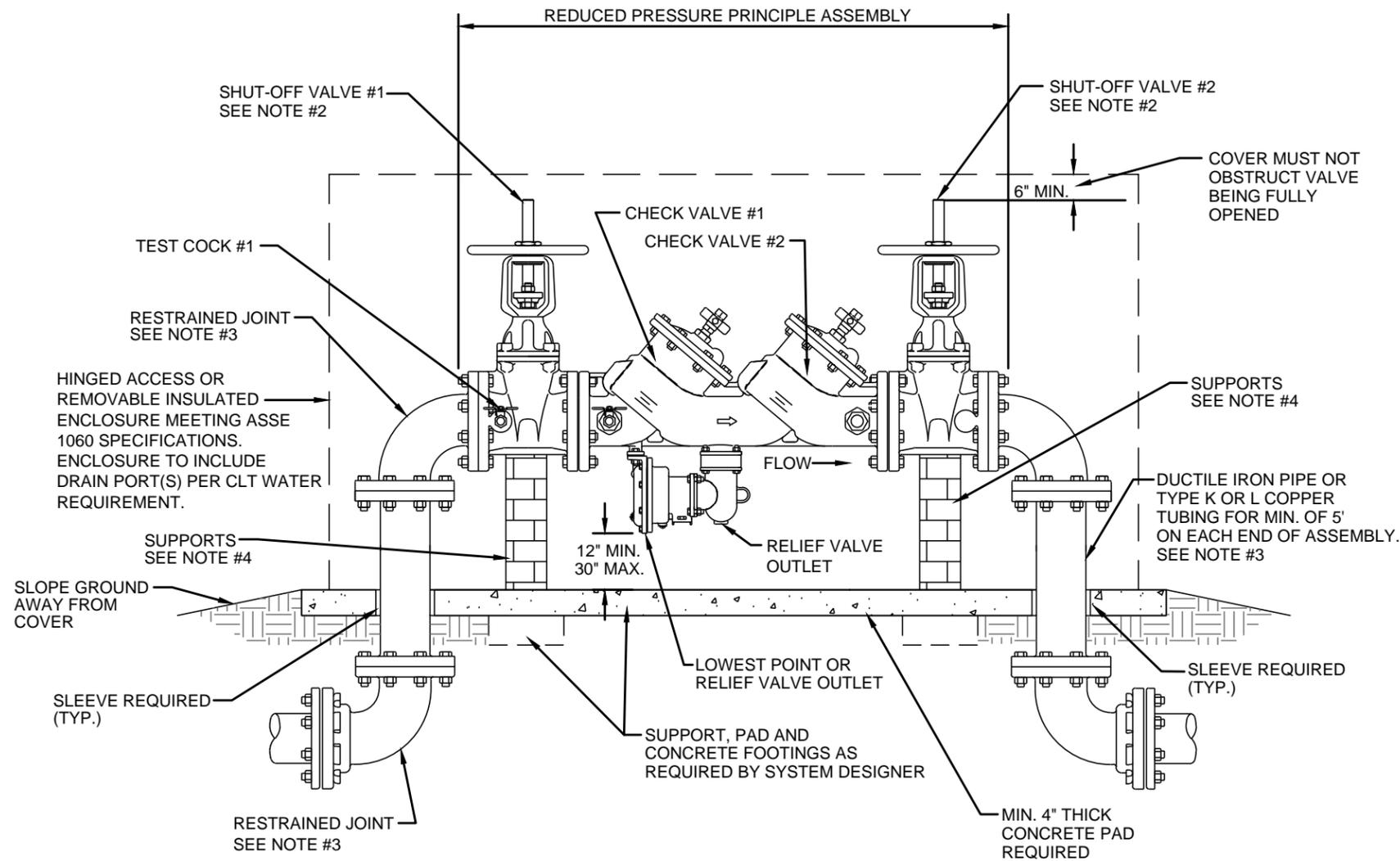
NO SCALE

STANDARD NO.	1
VERSION NO.	1.1
VERSION DATE	5.3.2016

REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP) 1 1/2" & 2" ABOVE GROUND

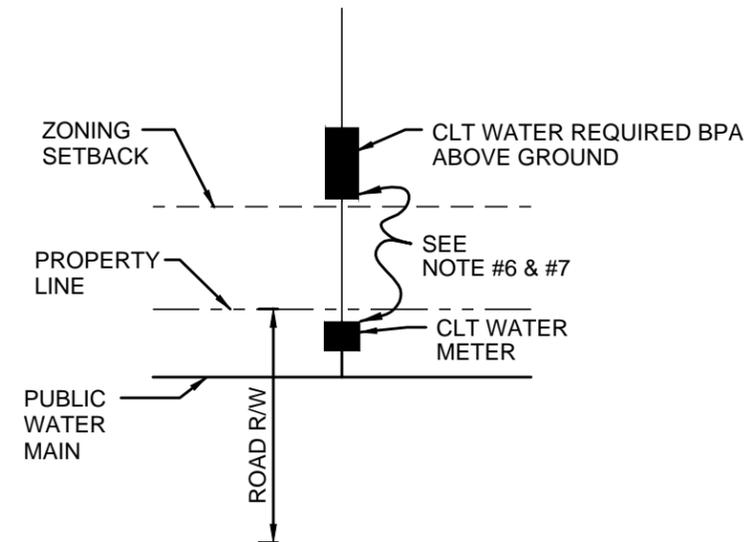
CHARLOTTE WATER
STANDARD DETAILS
BACKFLOW PREVENTION

CHARLOTTE WATER
 A CITY OF CHARLOTTE DEPARTMENT



NOTES:

1. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO CLT WATER SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO CLT WATER APPROVED LIST OF BPA's.
2. FIRE LINE SERVICES SHALL HAVE OUTSIDE STEM AND YOKE (OS & Y) HANDWHEEL OPERATORS OR BUTTERFLY VALVES, AND LISTED ON APPROVED LIST AS FIRE APPROVED. IF SERVING FIRE SPRINKLERS, TAMPER SWITCHES ARE REQUIRED.
3. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS SPECIFICATION. ALL JOINTS SHALL BE RESTRAINED WITH MEGALUG RESTRAINTS OR APPROVED EQUAL.
4. SUPPORT OF ASSEMBLY SHALL BE DESIGNED BY OWNER, 8" - 12" SHALL BE SUPPORTED AT EACH VALVE AND SHALL NOT BLOCK RELIEF VALVE ON DRAIN PORT.
5. INSULATED ENCLOSURE SHALL BE AS SPECIFIED IN CLT WATER ENCLOSURE INFORMATION - HEATED INSULATED ENCLOSURE ARE REQUIRED FOR FIRE LINE SERVICES. NO INSULATION SHALL BE WRAPPED AROUND BPA.
6. ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL AND MUST BE OUTSIDE OF ZONING SET-BACK DIRECTLY BEHIND METER.
7. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
8. EACH CLT WATER-REQUIRED BPA IS REQUIRED TO BE TESTED BY A CLT WATER - APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO CLT WATER WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO CLT WATER.
9. ALL INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.



TYPICAL LOCATION REQUIREMENT FOR ABOVE GROUND INSTALLATION
N.T.S.

NO SCALE

STANDARD NO.

2

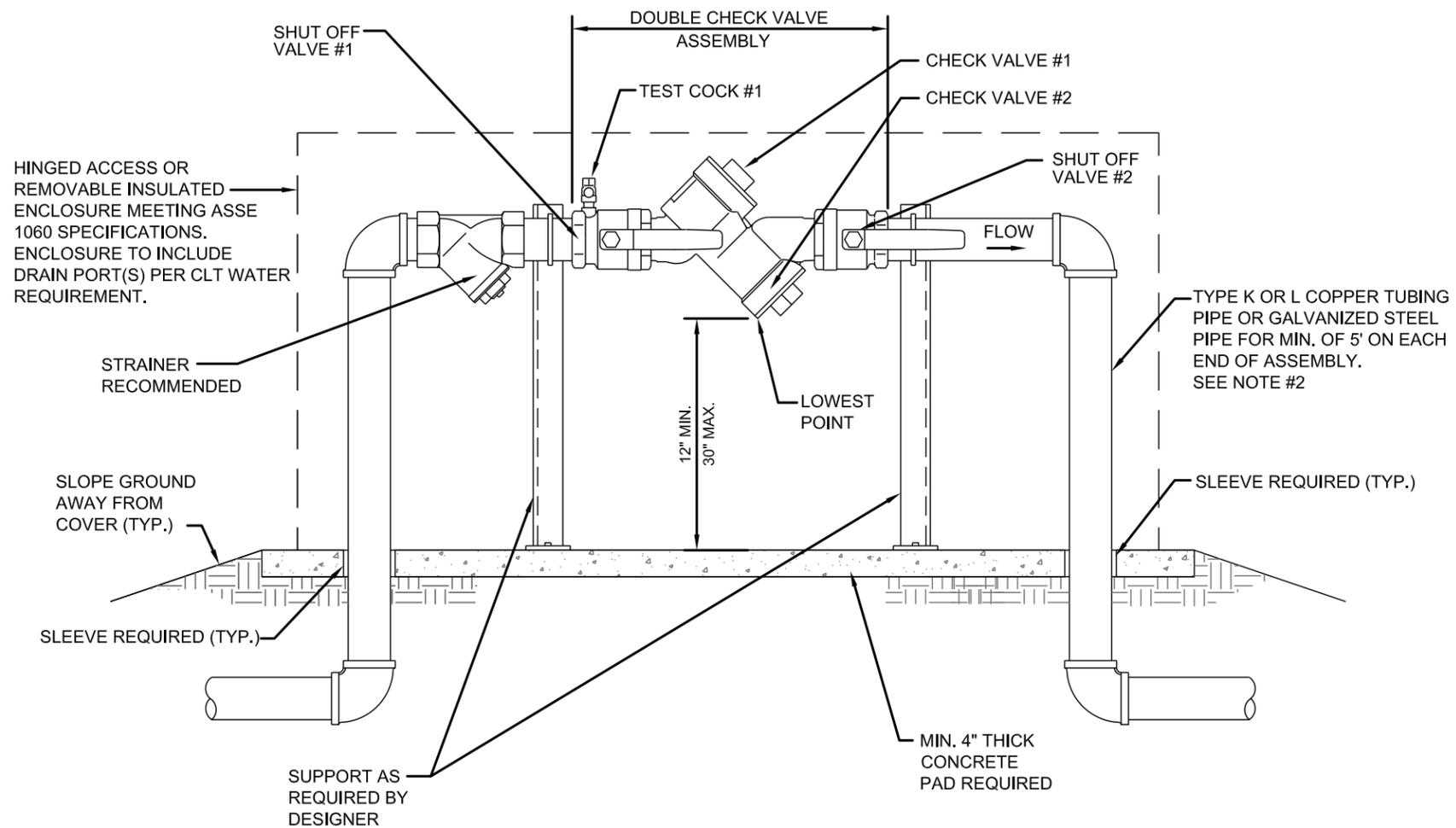
VERSION NO. 1.2

VERSION DATE 5.3.2016

REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP) 2 1/2" - 12" ABOVE GROUND

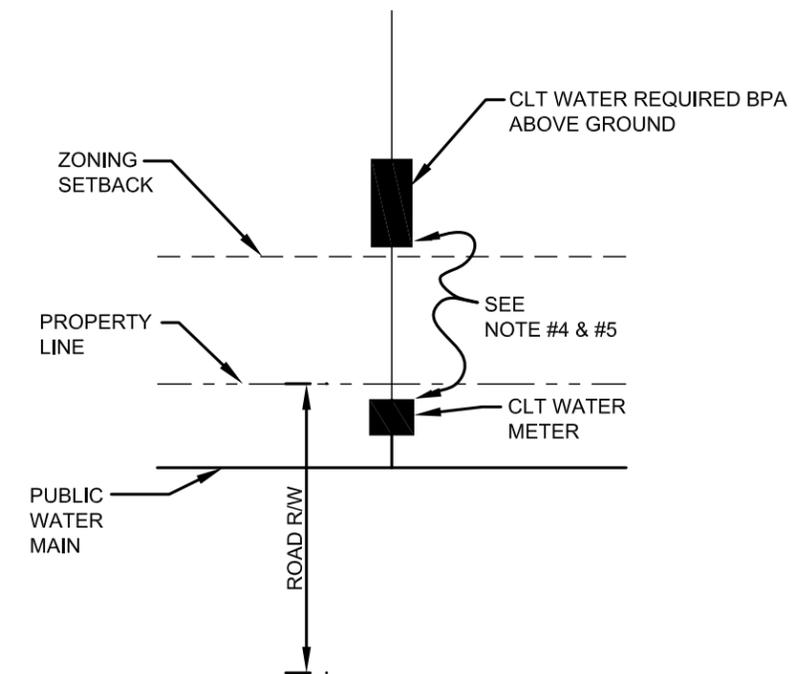
CHARLOTTE WATER
STANDARD DETAILS
BACKFLOW PREVENTION

CHARLOTTE WATER



NOTES:

1. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO CLT WATER SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO CLT WATER APPROVED LIST OF BPA's.
2. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS & SPECIFICATIONS.
3. INSULATED ENCLOSURE SHALL BE AS SPECIFIED IN CLT WATER ENCLOSURE INFORMATION - HEATED INSULATED ENCLOSURE IS RECOMMENDED. NO INSULATION SHALL BE WRAPPED AROUND BPA.
4. ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL AND MUST BE OUTSIDE OF ZONING SET-BACK DIRECTLY BEHIND METER.
5. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
6. EACH CLT WATER-REQUIRED BPA IS REQUIRED TO BE TESTED BY A CLT WATER - APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO CLT WATER WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO CLT WATER.
7. ALL INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.



TYPICAL LOCATION REQUIREMENT FOR ABOVE GROUND INSTALLATION

N.T.S.

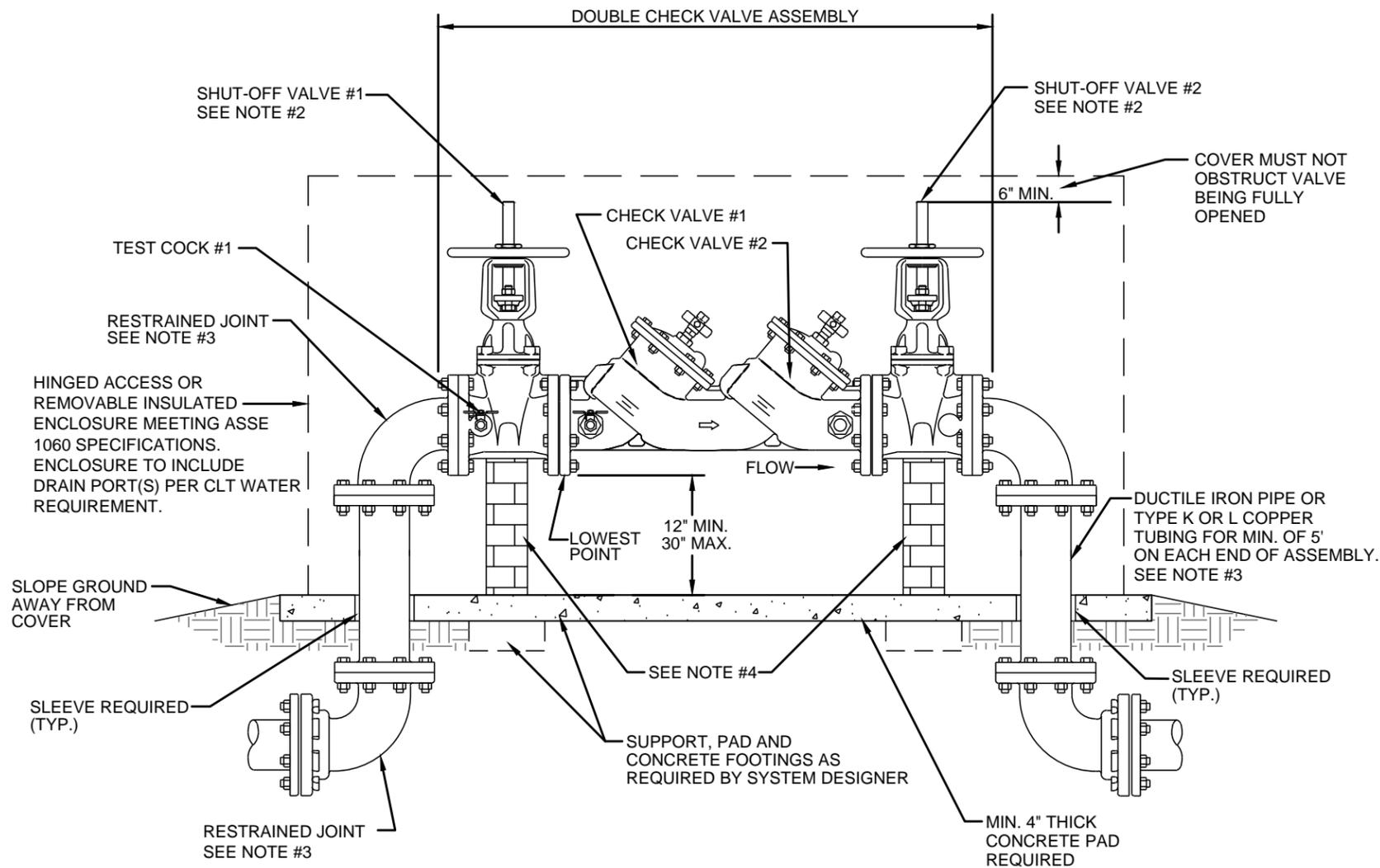
NO SCALE

STANDARD NO. 3

VERSION NO. 1.1
VERSION DATE 05.03.2016

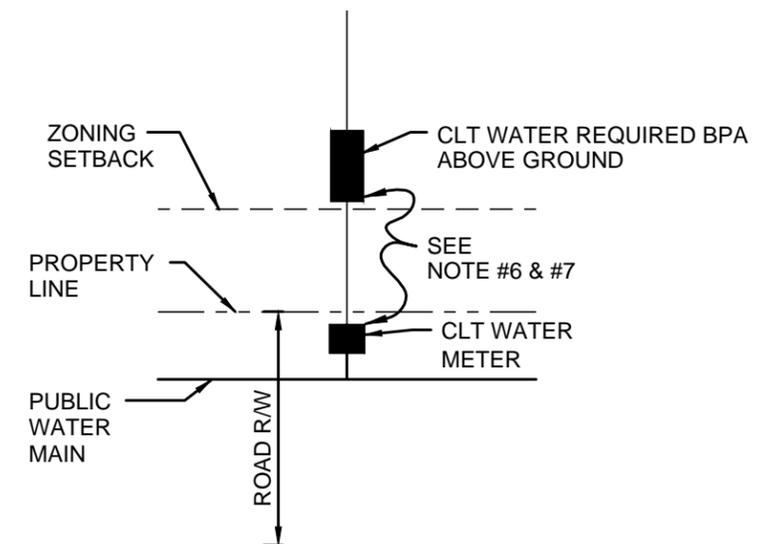
DOUBLE CHECK VALVE ASSEMBLY (DC) 1 1/2" & 2" ABOVE GROUND

CHARLOTTE WATER STANDARD DETAILS BACKFLOW PREVENTION



NOTES:

1. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO CLT WATER SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO CLT WATER APPROVED LIST OF BPA's.
2. FIRE LINE SERVICES SHALL HAVE OUTSIDE STEM AND YOKE (OS & Y) HANDWHEEL OPERATORS OR BUTTERFLY VALVES, AND LISTED ON APPROVED LIST AS FIRE APPROVED. IF SERVING FIRE SPRINKLERS, TAMPER SWITCHES ARE REQUIRED.
3. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS SPECIFICATION. ALL JOINTS SHALL BE RESTRAINED WITH MEGALUG RESTRAINTS OR APPROVED EQUAL.
4. SUPPORT OF ASSEMBLY SHALL BE DESIGNED BY OWNER, 8" - 12" SHALL BE SUPPORTED AT EACH VALVE.
5. INSULATED ENCLOSURE SHALL BE AS SPECIFIED IN CLT WATER ENCLOSURE INFORMATION - HEATED INSULATED ENCLOSURE ARE REQUIRED FOR FIRE LINE SERVICES. NO INSULATION SHALL BE WRAPPED AROUND BPA.
6. ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL AND MUST BE OUTSIDE OF ZONING SET-BACK DIRECTLY BEHIND METER.
7. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
8. EACH CLT WATER-REQUIRED BPA IS REQUIRED TO BE TESTED BY A CLT WATER - APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO CHARLOTTE WATER WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO CLT WATER.
9. ALL INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.

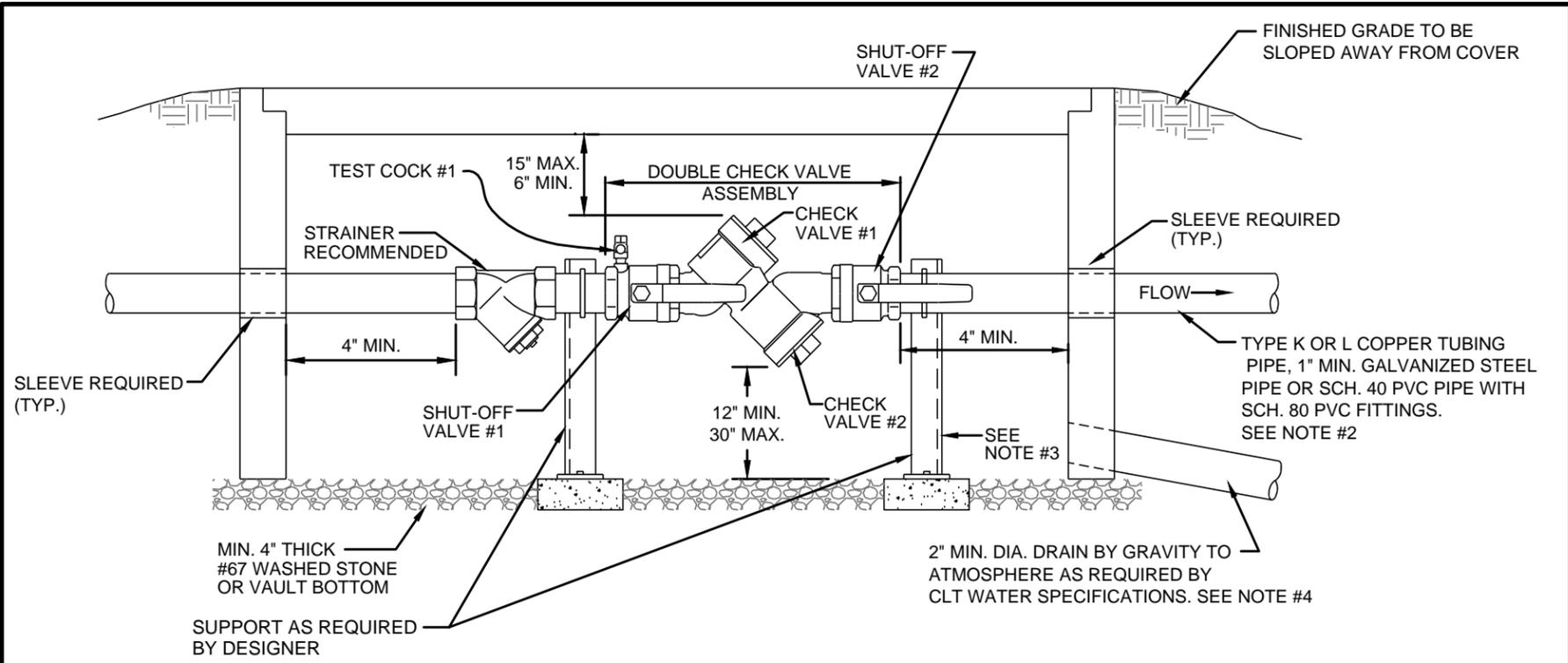


TYPICAL LOCATION REQUIREMENT FOR ABOVE GROUND INSTALLATION
N.T.S.

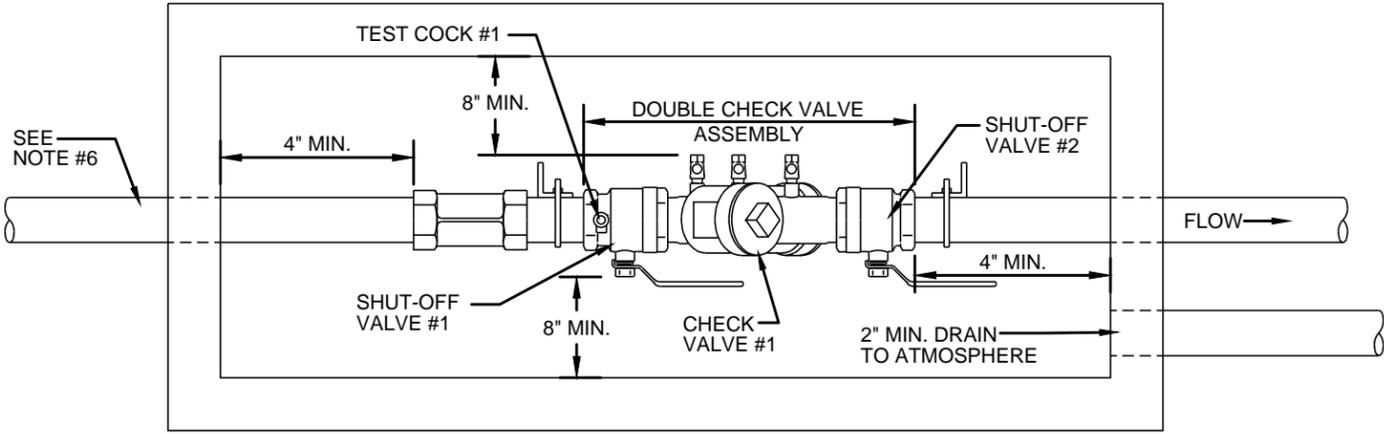
NO SCALE	
STANDARD NO.	4
VERSION NO.	1.2
VERSION DATE	05.03.2016

DOUBLE CHECK VALVE ASSEMBLY (DC)
2 1/2" - 12" ABOVE GROUND

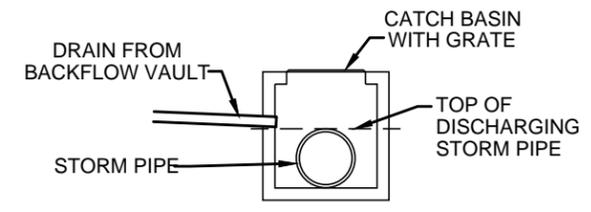
CHARLOTTE WATER
STANDARD DETAILS
BACKFLOW PREVENTION



ELEVATION VIEW



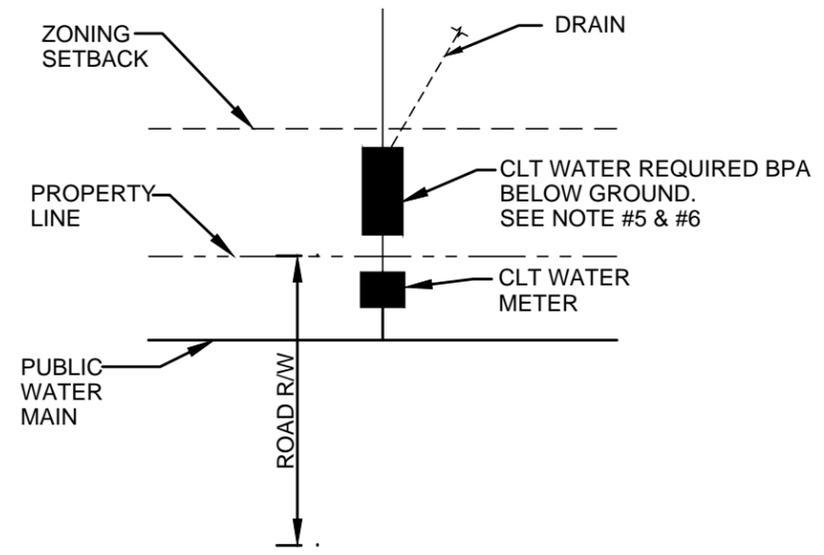
PLAN VIEW



DRAIN ALTERNATIVE:
TIE INTO CATCH BASIN OR STORMWATER MANHOLE PER DETAIL SHOWN ABOVE. NO TIE IN TO STORMWATER PIPE WILL BE ACCEPTED.

NOTES:

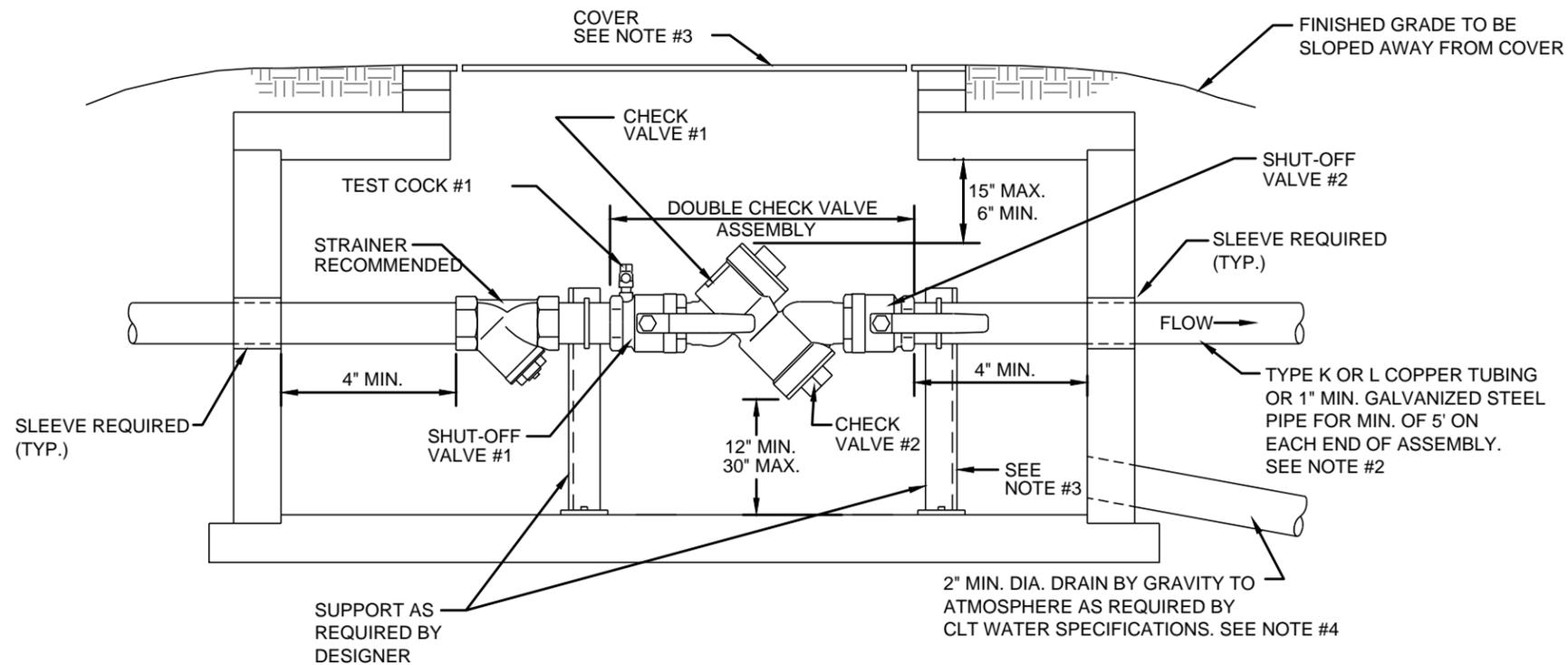
1. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO CLT WATER SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO CLT WATER APPROVED LIST OF BPA's.
2. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS & SPECIFICATIONS.
3. VAULT, DOORS OR COVERS AND SUPPORT OF ASSEMBLY SHALL BE DESIGNED BY OWNER AND AS REQUIRED.
4. DRAIN INLET MAY BE PROVIDED AS SHOWN OR AS FLOOR DRAIN.
5. ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL.
6. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
7. EACH CLT WATER-REQUIRED BPA IS REQUIRED TO BE TESTED BY A CLT WATER - APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO CLT WATER WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO CLT WATER.
8. INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.



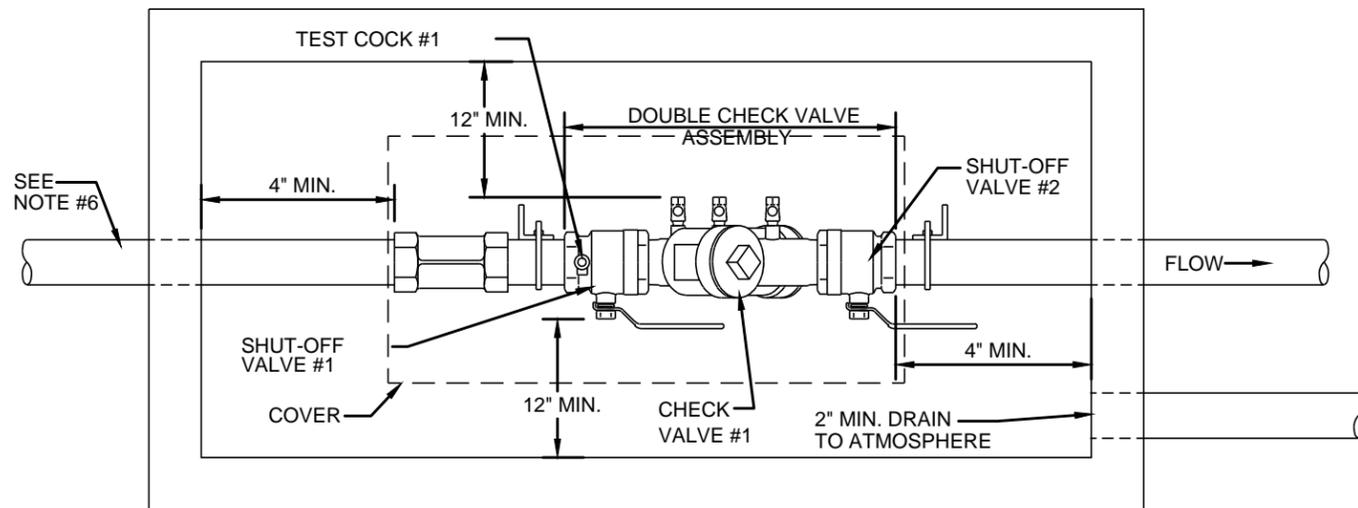
TYPICAL LOCATION REQUIREMENT FOR BELOW GROUND INSTALLATION

N.T.S.

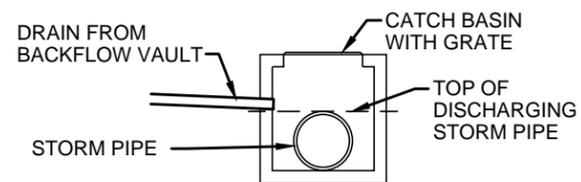
NO SCALE	STANDARD NO.	5	VERSION DATE	5.3.2016
	VERSION NO.	1.1	VERSION DATE	5.3.2016
DOUBLE CHECK VALVE ASSEMBLY (DC) 3/4" & 1" BELOW GROUND VAULT				
CHARLOTTE WATER	STANDARD DETAILS	BACKFLOW PREVENTION		
CHARLOTTE WATER	A CITY OF CHARLOTTE DEPARTMENT			



ELEVATION VIEW



PLAN VIEW

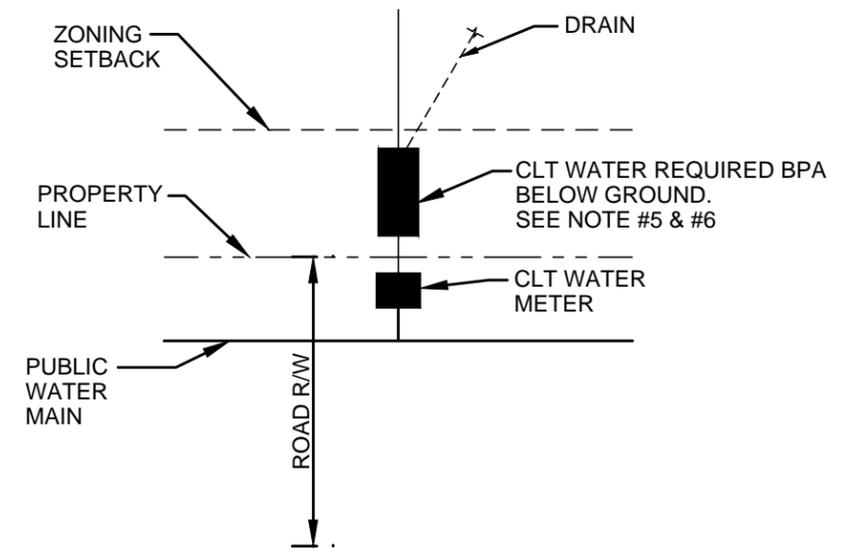


DRAIN ALTERNATIVE:

TIE INTO CATCH BASIN OR STORMWATER MANHOLE PER DETAIL SHOWN ABOVE. NO TIE IN TO STORMWATER PIPE WILL BE ACCEPTED.

NOTES:

1. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO CLT WATER SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO CLT WATER APPROVED LIST OF BPA's.
2. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS & SPECIFICATIONS.
3. VAULT, DOORS OR COVERS AND SUPPORT OF ASSEMBLY SHALL BE DESIGNED BY OWNER AND AS REQUIRED.
4. DRAIN INLET MAY BE PROVIDED AS SHOWN OR AS FLOOR DRAIN.
5. ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL.
6. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
7. EACH CLT WATER-REQUIRED BPA IS REQUIRED TO BE TESTED BY A CLT WATER - APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO CLT WATER WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO CLT WATER.
8. INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.



TYPICAL LOCATION REQUIREMENT FOR BELOW GROUND INSTALLATION

N.T.S.

NO SCALE

STANDARD NO.

6

VERSION DATE

5.3.2016

VERSION NO.

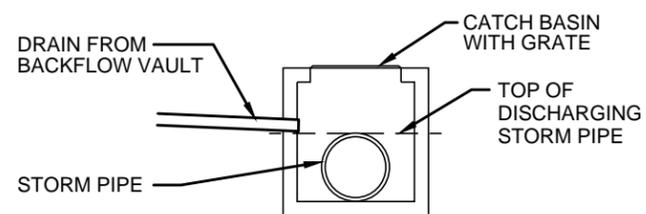
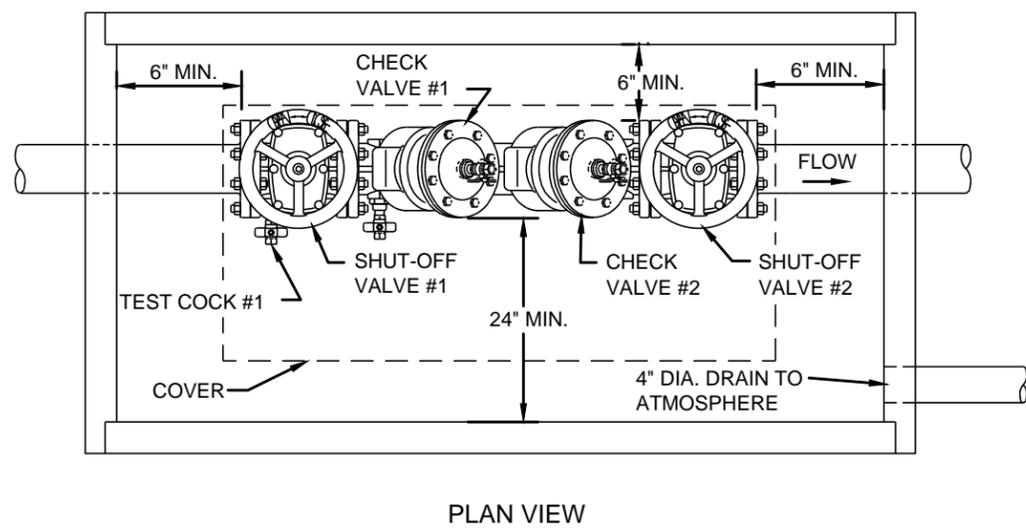
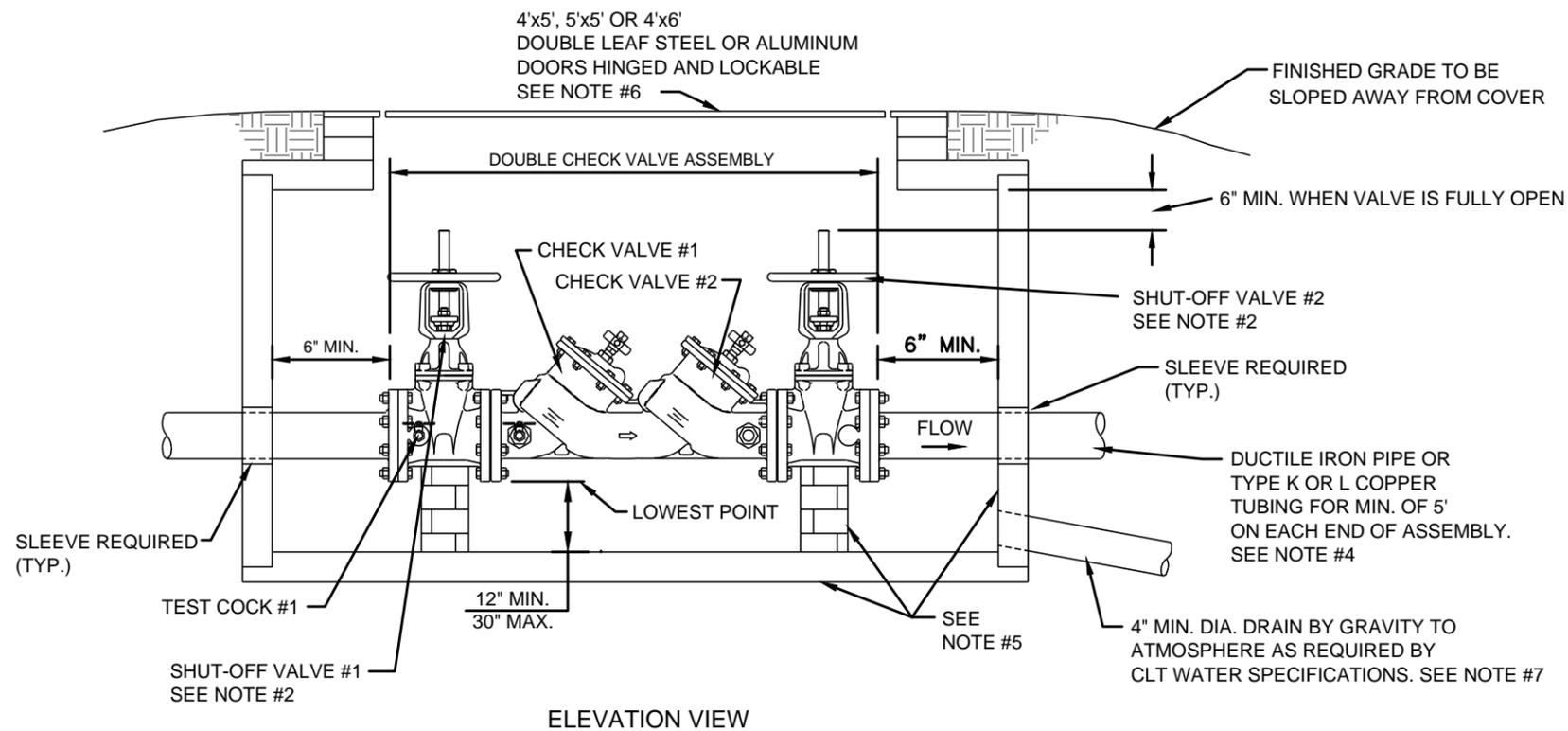
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DOUBLE CHECK VALVE ASSEMBLY (DC)
1 1/2" & 2" BELOW GROUND VAULT

CHARLOTTE WATER
STANDARD DETAILS
BACKFLOW PREVENTION

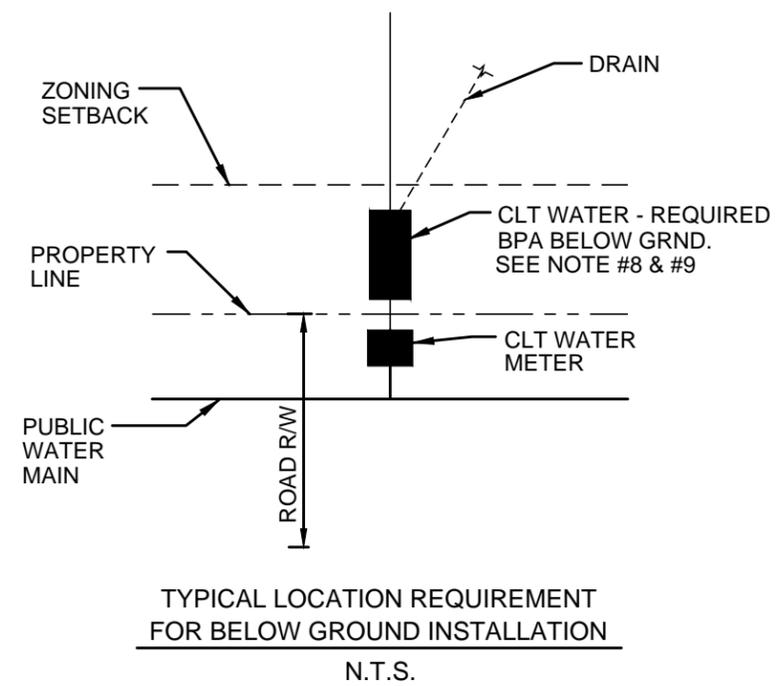
CHARLOTTE
WATER

A CITY OF CHARLOTTE DEPARTMENT



DRAIN ALTERNATIVE:
TIE INTO PRIVATE CATCH BASIN OR PRIVATE STORMWATER MANHOLE PER
DETAIL SHOWN ABOVE. NO TIE IN TO STORMWATER PIPE OR PUBLIC CATCH
BASIN / MANHOLE WILL BE ACCEPTED.

- NOTES:
- BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO CLT WATER SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO CLT WATER APPROVED LIST OF BPA's.
 - FIRE LINE SERVICES SHALL HAVE OUTSIDE STEM AND YOKE (OS & Y) HANDWHEEL OPERATORS OR BUTTERFLY VALVES, AND LISTED ON APPROVED LIST AS FIRE APPROVED. IF SERVING FIRE SPRINKLERS, TAMPER SWITCHES ARE REQUIRED.
 - ASSEMBLIES SHALL BE INSTALLED UPRIGHT AND IN THE HORIZONTAL POSITION.
 - PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS & SPECIFICATIONS.
 - VAULT AND SUPPORT OF ASSEMBLY SHALL BE DESIGNED BY OWNER, 8" - 12" SHALL BE SUPPORTED AT EACH VALVE.
 - ACCESS DOORS SHALL BE AS SPECIFIED IN CLT WATER WATER DETAILS #23, 25, OR 28 OR APPROVED EQUAL.
 - DRAINAGE INLET MAY BE PROVIDED AS SHOWN OR AS FLOOR DRAIN.
 - ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL.
 - THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
 - EACH CLT WATER-REQUIRED BPA IS REQUIRED TO BE TESTED BY A CLT WATER - APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO CLT WATER WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO CLT WATER.
 - ALL INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.



NO SCALE

STANDARD NO. 7

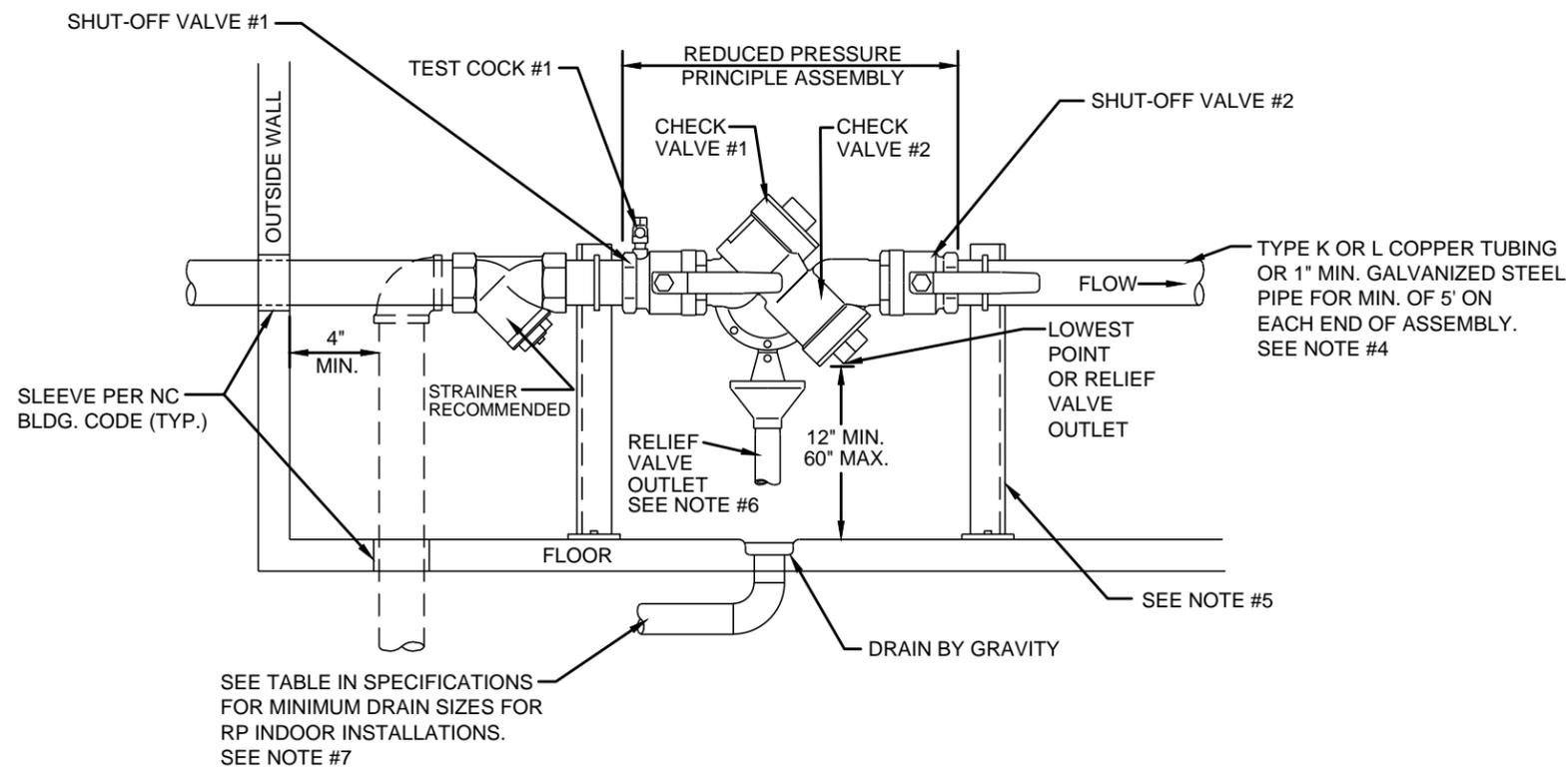
VERSION NO. 1.2

VERSION DATE 5.3.2016

CHARLOTTE WATER
STANDARD DETAILS
BACKFLOW PREVENTION

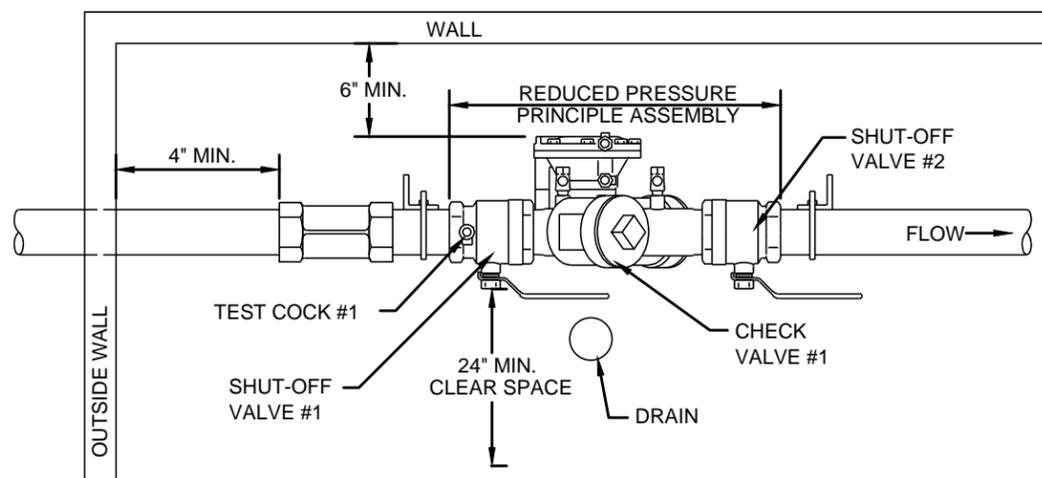
DOUBLE CHECK VALVE ASSEMBLY (DC)
2 1/2" - 12" BELOW GROUND VAULT

CHARLOTTE
WATER
A CITY OF CHARLOTTE DEPARTMENT



ELEVATION VIEW

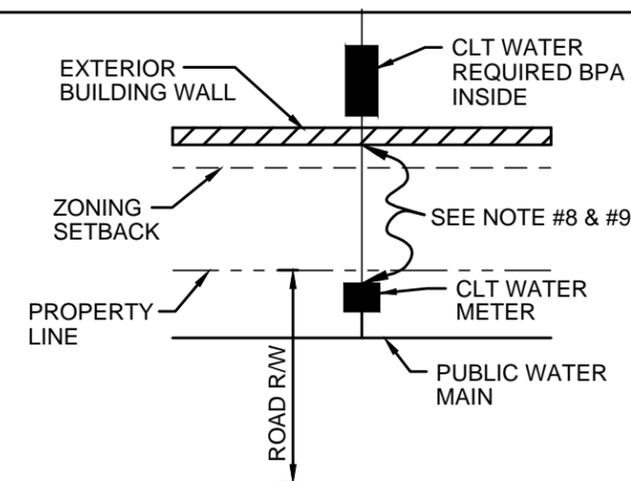
SEE TABLE IN SPECIFICATIONS FOR MINIMUM DRAIN SIZES FOR RP INDOOR INSTALLATIONS. SEE NOTE #7



PLAN VIEW

NOTES:

1. INDOOR INSTALLATION SHALL ONLY BE PERMITTED IN CASES WHERE ADEQUATE SPACE FOR THE BACKFLOW PREVENTION ASSEMBLY IS NOT AVAILABLE OUTSIDE. CLT WATER WILL REVIEW ON A CASE BY CASE BASIS.
2. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO CLT WATER SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO CLT WATER APPROVED LIST OF BPA's.
3. ASSEMBLIES SHALL BE INSTALLED UPRIGHT AND IN THE HORIZONTAL POSITION.
4. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS & SPECIFICATIONS.
5. SUPPORT FOR ASSEMBLY SHALL BE DESIGNED BY OWNER AS REQUIRED.
6. AN AIR GAP DRAIN IS RECOMMENDED TO REDUCE SPLASHING OF MINOR DISCHARGES FROM THE RELIEF VALVE DRAIN PORT.
7. INDOOR INSTALLATION OF RP'S SHOULD PROVIDE FOR DRAINAGE CAPABLE OF HANDLING IN EXCESS OF THE MAXIMUM DISCHARGE RATE EXPECTED BY THE BACKFLOW ASSEMBLY MANUFACTURER.
8. ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL.
9. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
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11. ALL INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.



TYPICAL LOCATION REQUIREMENT FOR INSIDE INSTALLATION
N.T.S.

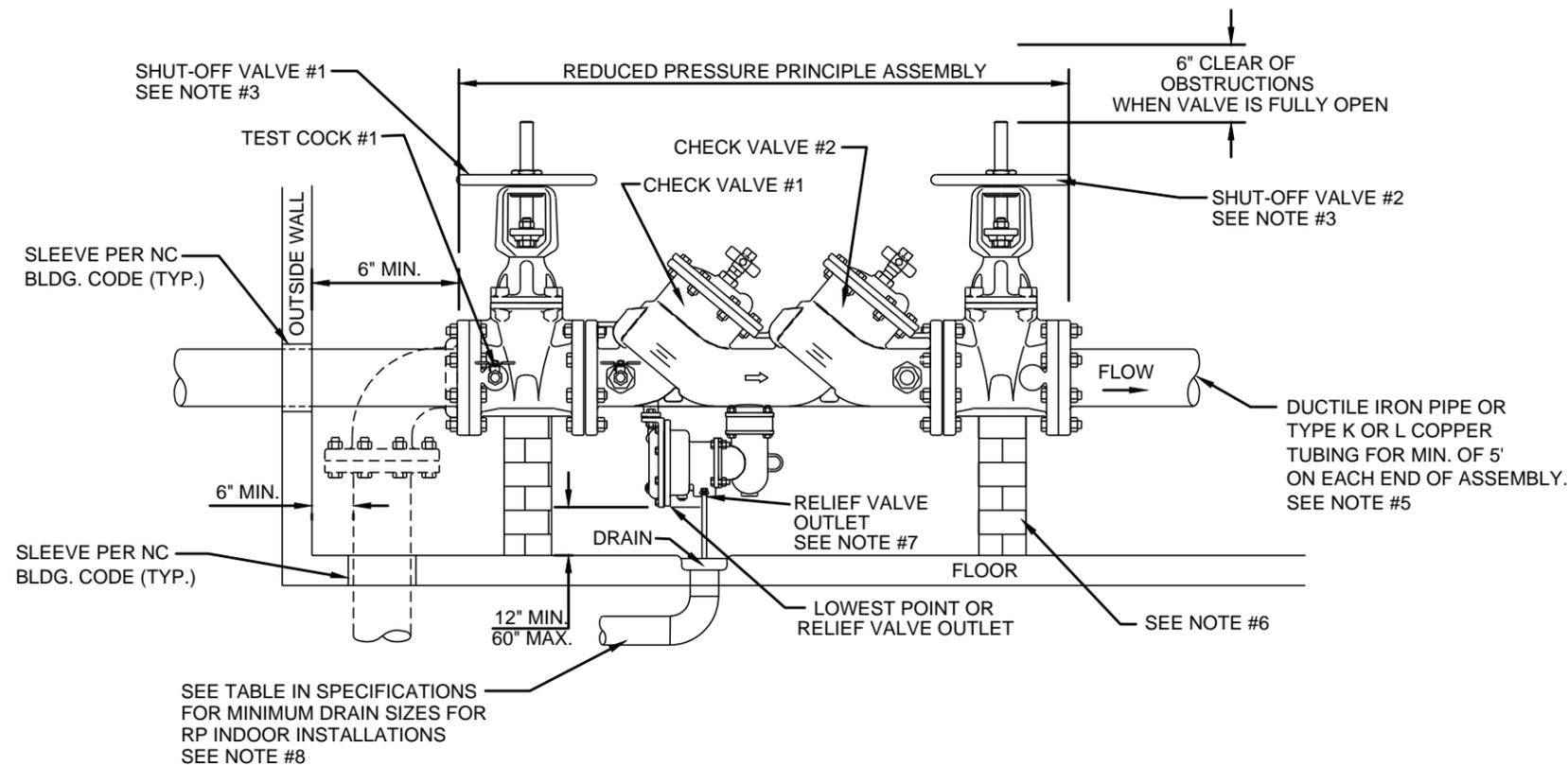
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STANDARD NO.	8	VERSION DATE	5.3.2016
VERSION NO.	1.1		

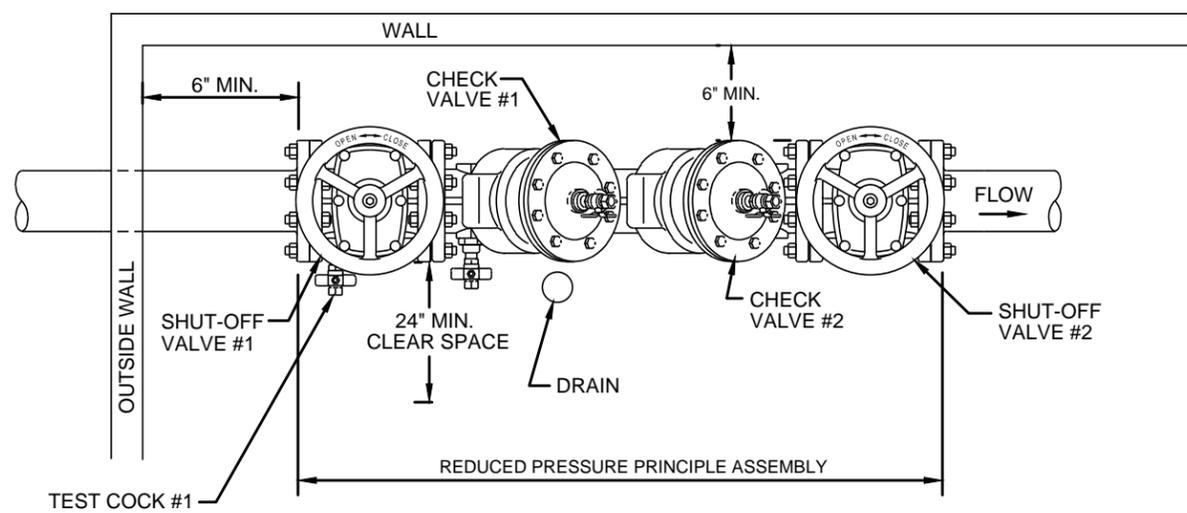
REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP) 3/4" - 2" INDOOR

CHARLOTTE WATER
STANDARD DETAILS
BACKFLOW PREVENTION

CHARLOTTE WATER
A CITY OF CHARLOTTE DEPARTMENT



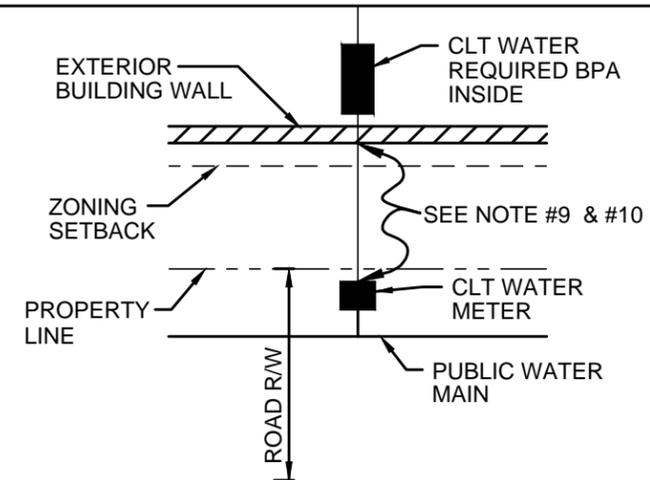
ELEVATION VIEW



PLAN VIEW

NOTES:

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3. FIRE LINE INSTALLATIONS SHALL HAVE OUTSIDE STEM AND YOKE (OS&Y) HANDWHEEL OPERATORS OR BUTTERFLY VALVES, AND LISTED ON APPROVED LIST AS FIRE APPROVED. IF SERVING FIRE SPRINKLERS, TAMPER SWITCHES ARE REQUIRED.
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5. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS & SPECIFICATIONS.
6. SUPPORT FOR ASSEMBLY SHALL BE DESIGNED BY OWNER, 8" - 12" SHALL BE SUPPORTED AT EACH VALVE AND SHALL NOT BLOCK RELIEF VALVE ON DRAIN PORT.
7. AN AIR GAP DRAIN IS RECOMMENDED TO REDUCE SPLASHING OF MINOR DISCHARGES FROM THE RELIEF VALVE DRAIN PORT.
8. INDOOR INSTALLATION OF RP'S SHOULD PROVIDE FOR DRAINAGE CAPABLE OF HANDLING IN EXCESS OF THE MAXIMUM DISCHARGE RATE EXPECTED BY THE BACKFLOW ASSEMBLY MANUFACTURER.
9. ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL.
10. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
11. EACH CLT WATER-REQUIRED BPA IS REQUIRED TO BE TESTED BY A CLT WATER - APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO CLT WATER WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO CLT WATER.
12. ALL INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.



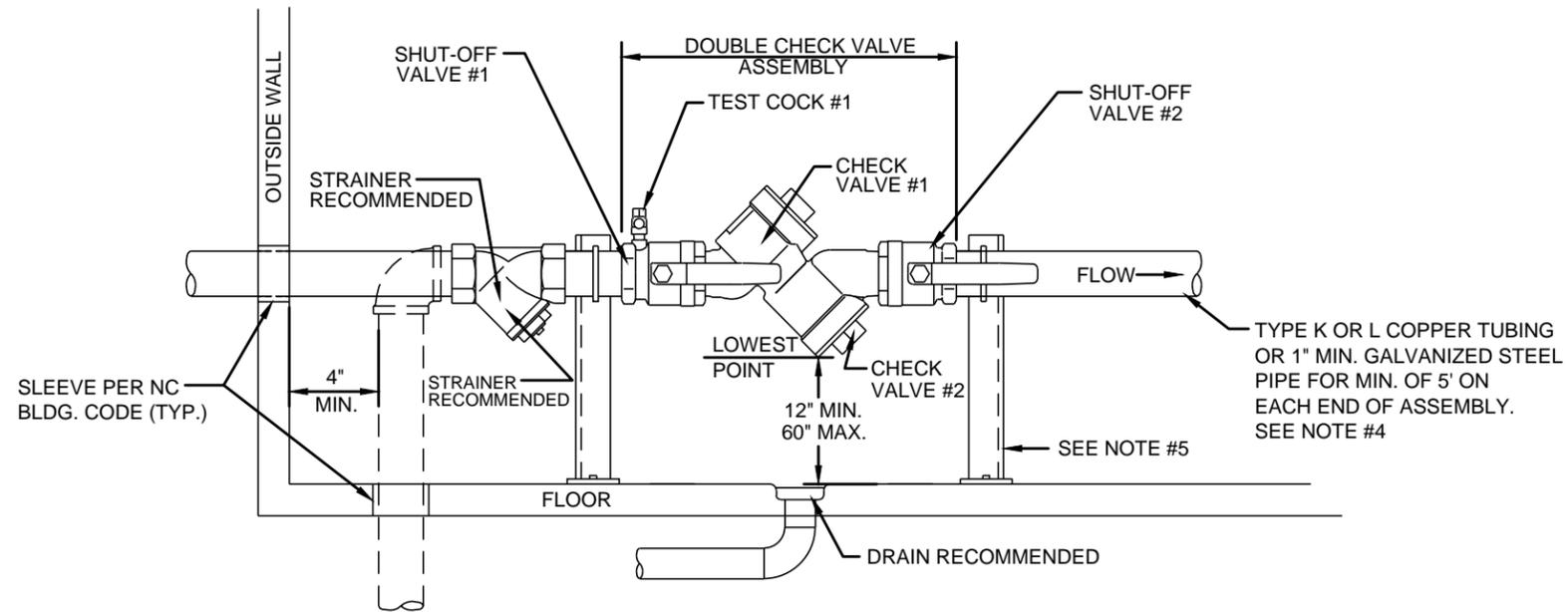
TYPICAL LOCATION REQUIREMENT FOR INSIDE INSTALLATION
N.T.S.

NO SCALE

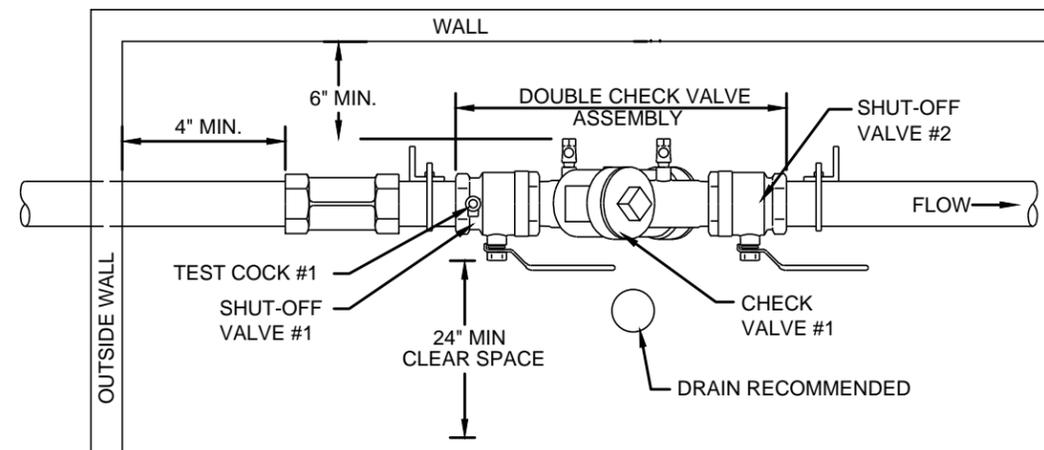
STANDARD NO.	9	VERSION DATE	5.3.2016
VERSION NO.	1.2		

REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP) 2 1/2" - 12" INDOOR

CHARLOTTE WATER
STANDARD DETAILS
BACKFLOW PREVENTION



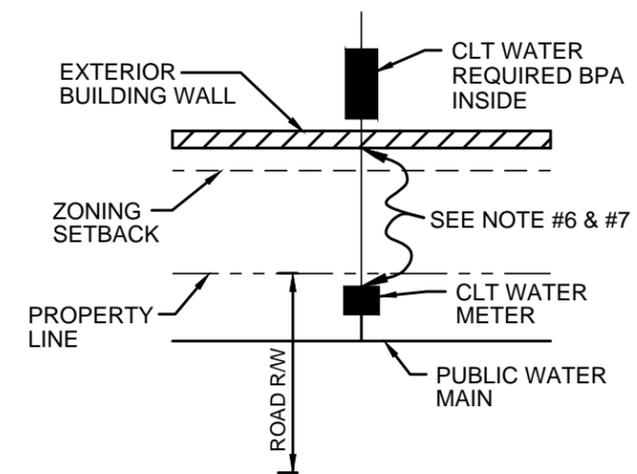
ELEVATION VIEW



PLAN VIEW

NOTES:

1. INDOOR INSTALLATION SHALL ONLY BE PERMITTED IN CASES WHERE ADEQUATE SPACE FOR THE BACKFLOW PREVENTION ASSEMBLY IS NOT AVAILABLE OUTSIDE. CLT WATER WILL REVIEW ON A CASE BY CASE BASIS.
2. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO CLT WATER SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO CLT WATER APPROVED LIST OF BPA's.
3. ASSEMBLIES SHALL BE INSTALLED UPRIGHT AND IN THE HORIZONTAL POSITION.
4. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS & SPECIFICATIONS.
5. SUPPORT FOR ASSEMBLY SHALL BE DESIGNED BY OWNER AS REQUIRED.
6. ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL.
7. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
8. EACH CLT WATER-REQUIRED BPA IS REQUIRED TO BE TESTED BY A CLT WATER - APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO CLT WATER WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO CLT WATER.
9. ALL INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.



TYPICAL LOCATION REQUIREMENT FOR INSIDE INSTALLATION
N.T.S.

NO SCALE

STANDARD NO.

10

VERSION NO.

1.1

VERSION DATE

5.3.2016

DOUBLE CHECK VALVE ASSEMBLY (DC)

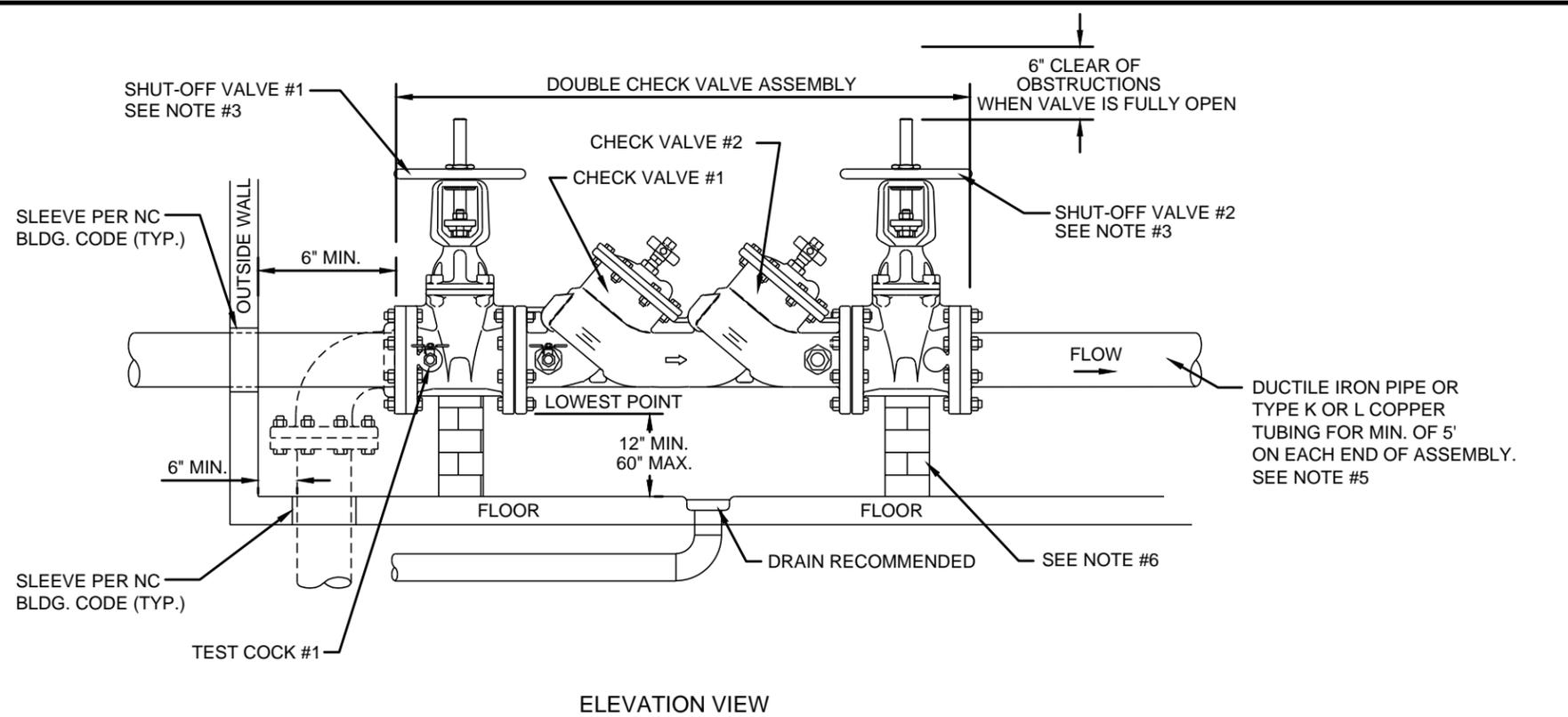
3/4" - 2"-INDOOR

CHARLOTTE WATER

STANDARD DETAILS
BACKFLOW PREVENTION

CHARLOTTE WATER

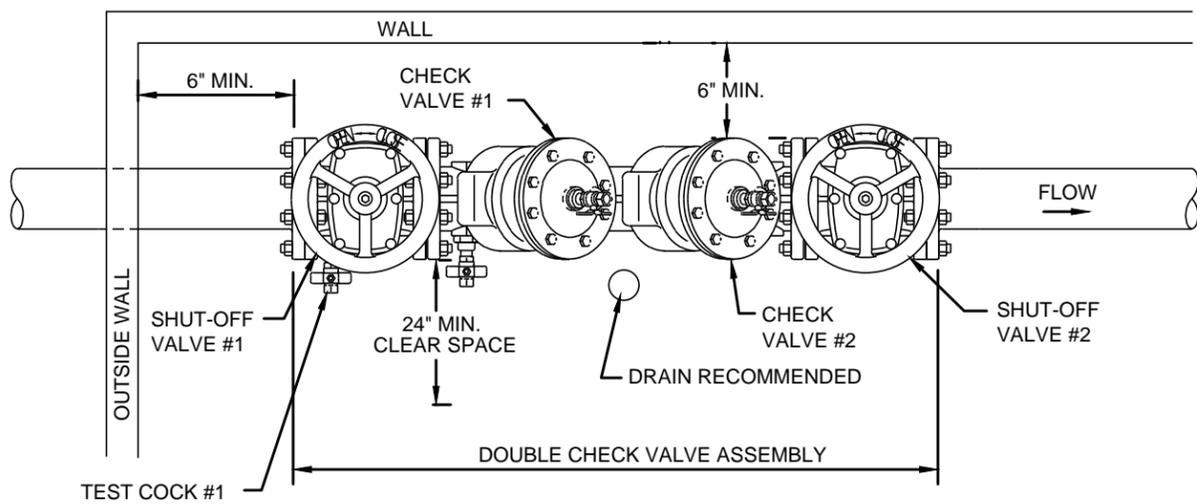
A CITY OF CHARLOTTE DEPARTMENT



ELEVATION VIEW

3.

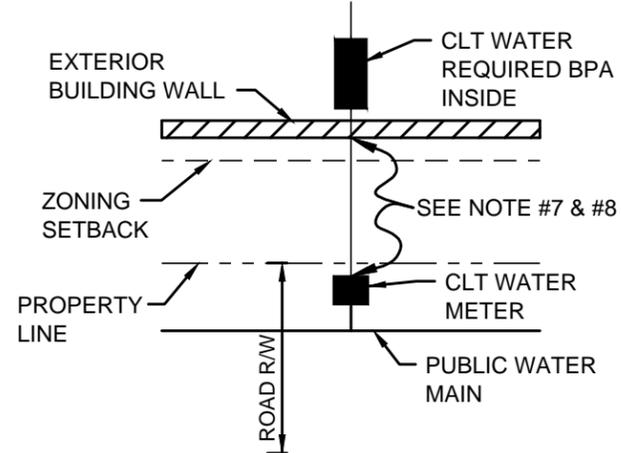
FIRE LINE INSTALLATIONS SHALL HAVE OUTSIDE STEM AND YOKE (OS&Y) HANDWHEEL OPERATORS. IF SERVING FIRE SPRINKLERS, TAMPER SWITCHES ARE REQUIRED.



PLAN VIEW

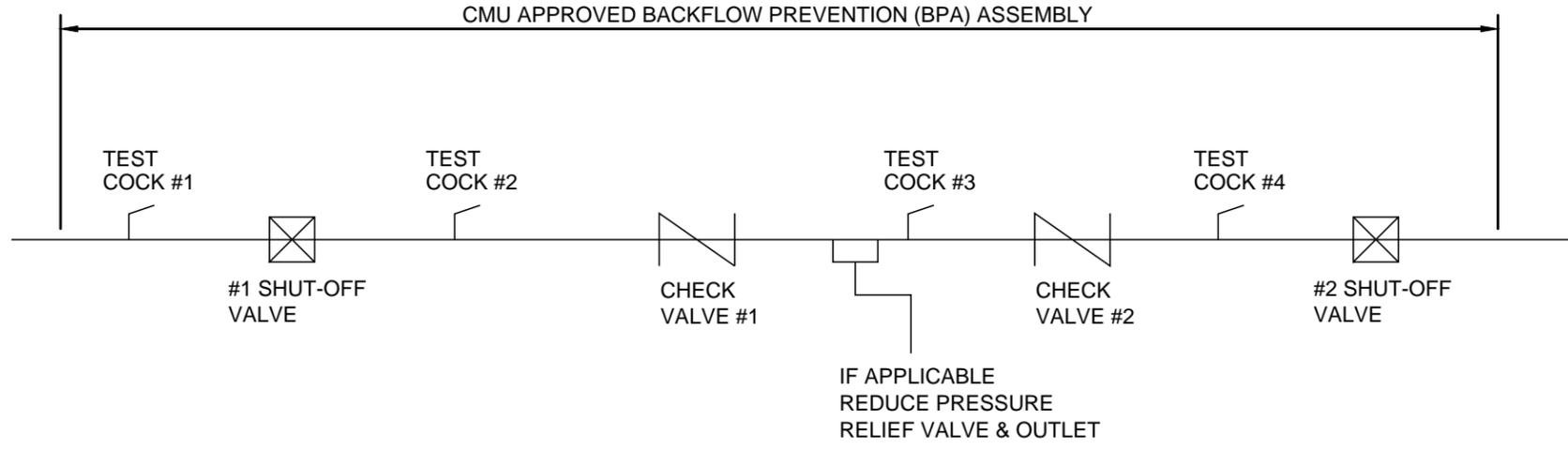
NOTES:

1. INDOOR INSTALLATION SHALL ONLY BE PERMITTED IN CASES WHERE ADEQUATE SPACE FOR THE BACKFLOW PREVENTION ASSEMBLY IS NOT AVAILABLE OUTSIDE. CLT WATER WILL REVIEW ON A CASE BY CASE BASIS.
2. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO CLT WATER SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO CLT WATER APPROVED LIST OF BPA's.
3. FIRE LINE INSTALLATIONS SHALL HAVE OUTSIDE STEM AND YOKE (OS&Y) HANDWHEEL OPERATORS OR BUTTERFLY VALVES, AND LISTED ON APPROVED LIST AS FIRE APPROVED. IF SERVING FIRE SPRINKLERS, TAMPER SWITCHES ARE REQUIRED.
4. ASSEMBLIES SHALL BE INSTALLED UPRIGHT AND IN THE HORIZONTAL POSITION.
5. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS & SPECIFICATIONS.
6. SUPPORT FOR ASSEMBLY SHALL BE DESIGNED BY OWNER, 8" - 12" SHALL BE SUPPORTED AT EACH VALVE.
7. ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL.
8. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
9. EACH CLT WATER-REQUIRED BPA IS REQUIRED TO BE TESTED BY A CLT WATER - APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO CLT WATER WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO CLT WATER.
10. ALL INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.



TYPICAL LOCATION REQUIREMENT FOR INSIDE INSTALLATION
N.T.S.

NO SCALE	STANDARD NO. 11	VERSION NO. 1.2	VERSION DATE 5.3.2016
	DOUBLE CHECK VALVE ASSEMBLY (DC)		
2 1/2" - 12" INDOOR			
CHARLOTTE WATER	STANDARD DETAILS		
BACKFLOW PREVENTION			
A CITY OF CHARLOTTE DEPARTMENT			



NO SCALE

STANDARD NO.

12

VERSION NO.

1.1

VERSION DATE

5.3.2016

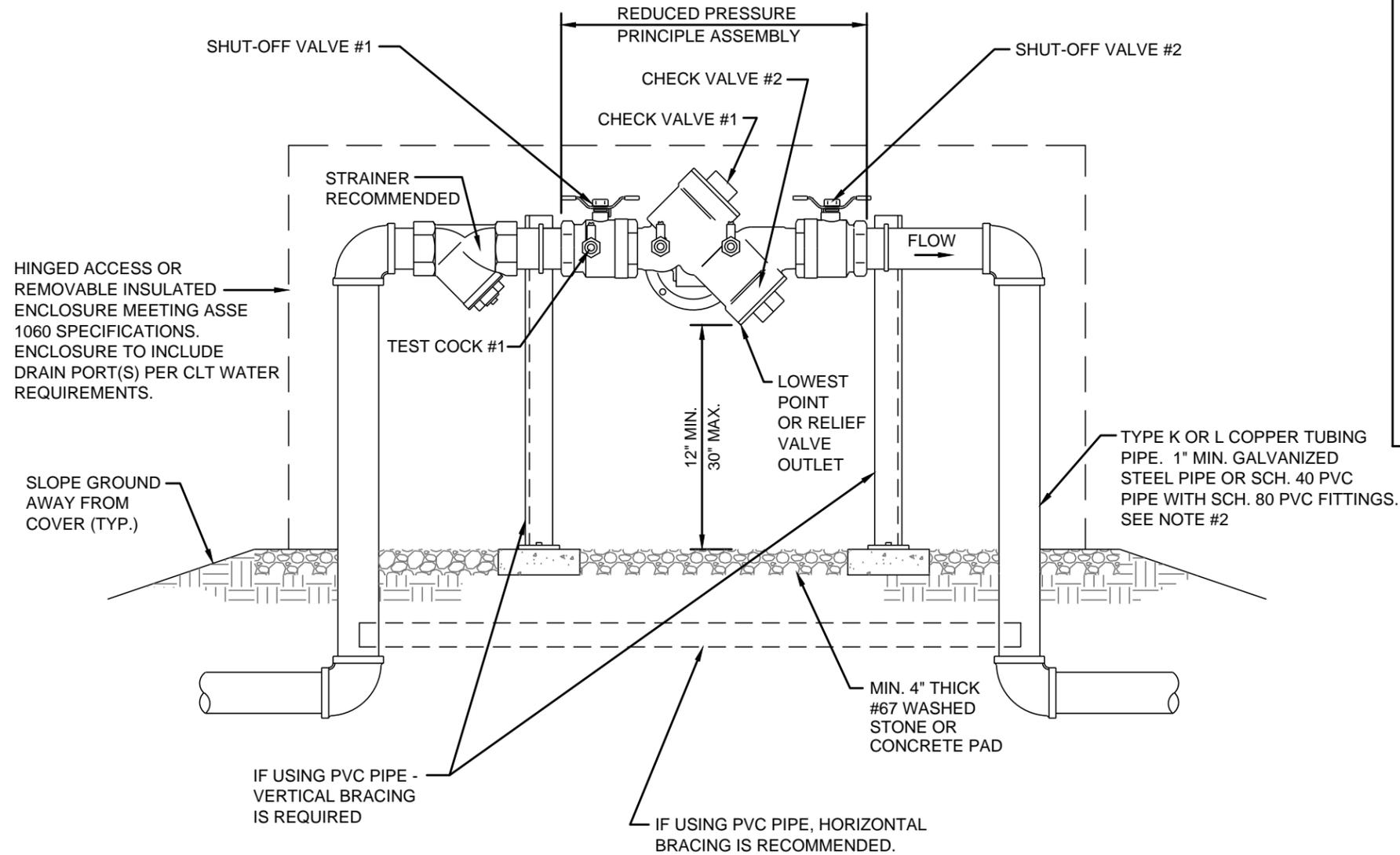
TEST COCK LOCATION

CHARLOTTE WATER

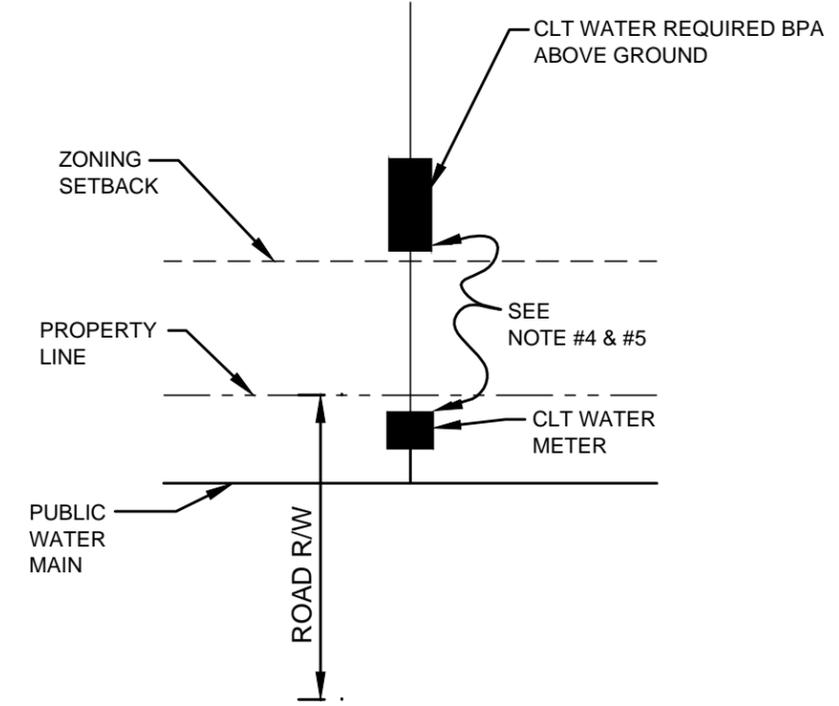
STANDARD DETAILS

BACKFLOW PREVENTION



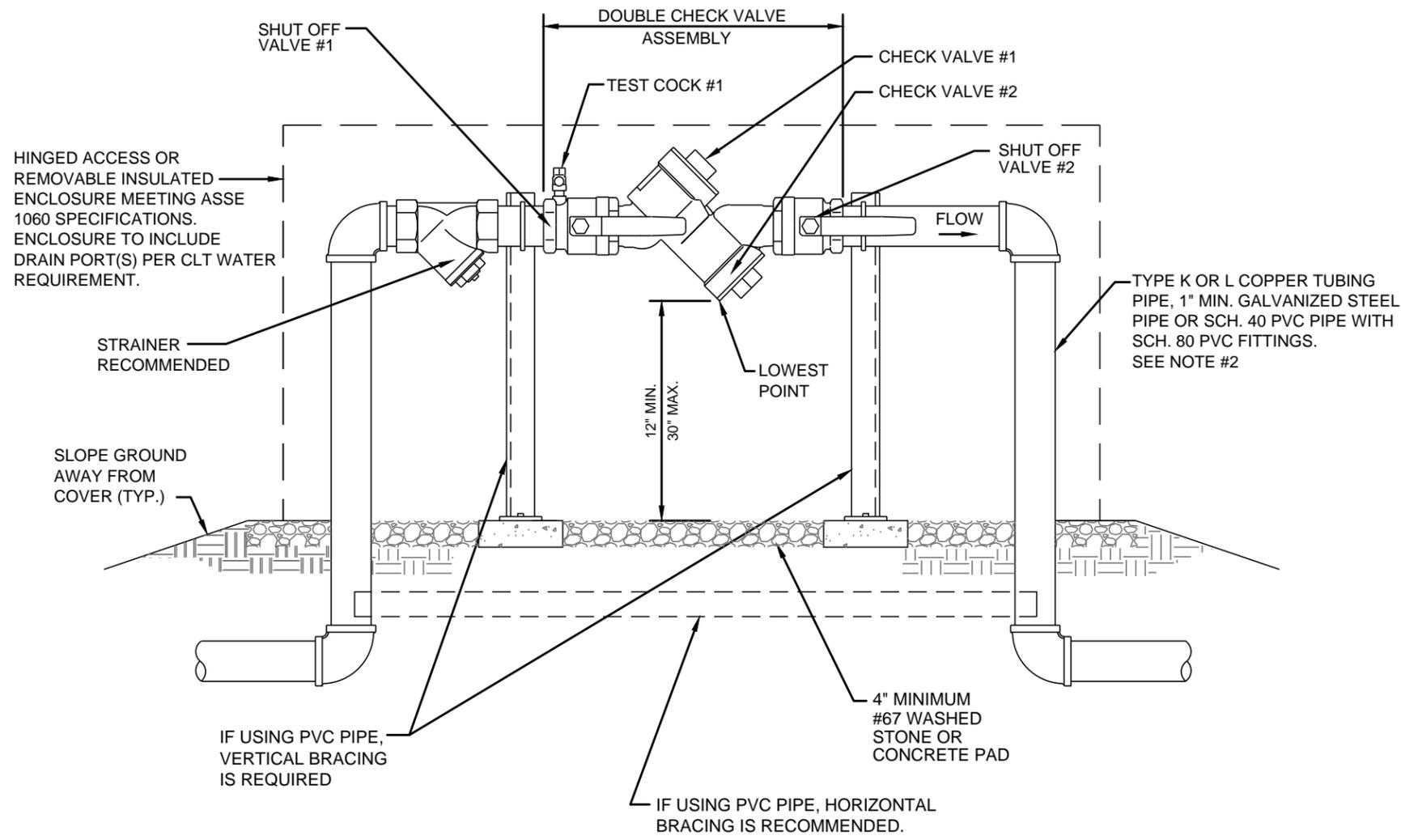


- NOTES:
1. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO CLT WATER SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO CLT WATER APPROVED LIST OF BPA's.
 2. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS & SPECIFICATIONS. IF USING PVC PIPE / FITTINGS, VERTICAL SUPPORT IS REQUIRED AND HORIZONTAL BRACING IS RECOMMENDED.
 3. INSULATED ENCLOSURE SHALL BE AS SPECIFIED IN CLT WATER ENCLOSURE INFORMATION - HEATED INSULATED ENCLOSURE IS RECOMMENDED. NO INSULATION SHALL BE WRAPPED AROUND BPA.
 4. ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL AND MUST BE OUTSIDE OF ZONING SET-BACK DIRECTLY BEHIND METER.
 5. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER-USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
 6. EACH CLT WATER-REQUIRED BPA IS REQUIRED TO BE TESTED BY A CLT WATER - APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO CLT WATER WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO CLT WATER.
 7. ALL INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.



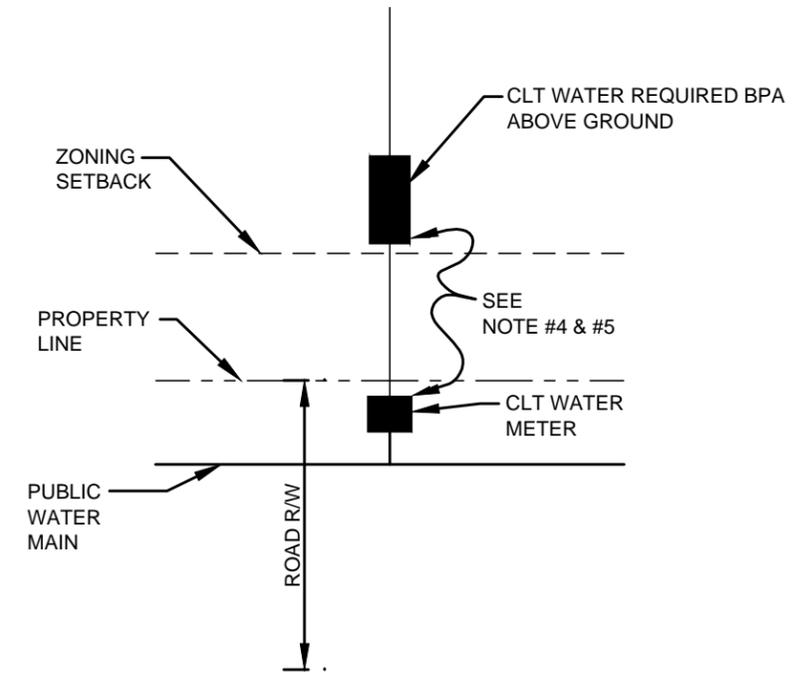
TYPICAL LOCATION REQUIREMENT FOR ABOVE GROUND INSTALLATION
N.T.S.

CHARLOTTE WATER <small>A CITY OF CHARLOTTE DEPARTMENT</small>	STANDARD DETAILS BACKFLOW PREVENTION	REDUCED PRESSURE PRINCIPLE ASSEMBLY (RP) 3/4" - 1" ABOVE GROUND	STANDARD NO. 13 VERSION NO. 1.1 VERSION DATE 5.3.2016	NO SCALE



NOTES:

1. BACKFLOW PREVENTION ASSEMBLIES (BPA's) SHALL CONFORM TO CLT WATER SPECIFICATIONS. SHUT-OFF VALVES ARE SPECIFIC TO EACH APPROVED BPA AND NO SUBSTITUTIONS OF SHUT-OFF VALVES ARE PERMITTED. REFER TO CLT WATER APPROVED LIST OF BPA's.
2. PIPE MATERIAL AND FITTINGS SHALL BE AS SPECIFIED IN CLT WATER STANDARDS & SPECIFICATIONS.
3. INSULATED ENCLOSURE SHALL BE AS SPECIFIED IN CLT WATER ENCLOSURE INFORMATION - HEATED INSULATED ENCLOSURE IS RECOMMENDED. NO INSULATION SHALL BE WRAPPED AROUND BPA.
4. ALL LOCATIONS FOR BPA'S REQUIRE CLT WATER APPROVAL AND MUST BE OUTSIDE OF ZONING SET-BACK DIRECTLY BEHIND METER.
5. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER - USING APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CLT WATER - REQUIRED BACKFLOW PREVENTER.
6. EACH CLT WATER-REQUIRED BPA IS REQUIRED TO BE TESTED BY A CLT WATER - APPROVED CERTIFIED TESTER PRIOR TO PLACING THE WATER SYSTEM IN SERVICE. TEST RESULTS SHALL BE SUBMITTED TO CLT WATER WITHIN 30 DAYS AND TESTED ANNUALLY THEREAFTER SUBMITTING RESULTS TO CLT WATER.
7. ALL INSTALLATIONS INTENDED FOR ADDRESSING CLT WATER REQUIREMENTS, REQUIRE PRIOR APPROVAL FROM THE APPROPRIATE CLT WATER BACKFLOW INSPECTOR.



TYPICAL LOCATION REQUIREMENT FOR ABOVE GROUND INSTALLATION
N.T.S.

NO SCALE
STANDARD NO. 14
VERSION NO. 1.1
VERSION DATE 5.3.2016

DOUBLE CHECK VALVE ASSEMBLY (DC) 3/4" & 1" ABOVE GROUND

CHARLOTTE WATER
STANDARD DETAILS
BACKFLOW PREVENTION