INSTALL METER WIRE PROVIDED BY TOWN AT SIDE OF HOUSE NO MORE THAN 4" BACK FROM FRONT AND 4" ABOVE FINISHED GRADE AT EXTERIOR OF HOUSE. METER WIRE SHALL NOT BE BLOCKED BY FENCE, LANDSCAPING, FIXTURES, OR BACKFLOW ASSEMBLY. LEAVE WIRE LONG ENOUGH TO FREELY MOVE 2" IN AND OUT OF EXTERIOR WALL. WIRE CANNOT BE PINCHED AT EXTERIOR WALL. TOTAL LENGTH OF WIRE SHALL NOT EXCEED 50'.

INSTALL METER WIRE INSIDE OF CONDUIT THROUGH FINISHED WALLS & CEILINGS 2" EMT OR PLASTIC

EXPANSION TANK (2 GAL. MIN) OR RELIEF VALVE INSPECTED BY YOUR BUILDING DEPARTMENT

TO SYSTEM BALL TYPE VALVE
IRRIGATION SERVICE LINE

DC BACKFLOW BALL VALVE INSTALLED WITH TEST COCKS ACCESSIBLE FOR TESTING

2"x4"x24" MIN. W/PIPE STRAP ANCHORED

BALL TYPE VALVES ONLY

METER YOKE

P.R.V.

METER FOR MUX (WIRE MUST BE IN A CONDUIT IF GOING THROUGH MASONRY)

METERS WILL NOT BE SET IF CURB STOP BOX IS NOT UP TO FINISHED GRADE, IF WIRE IS MISSING OR IN WRONG AREA, OR IF AN ASSEMBLY IS NOT IN PLACE.

IRRIGATION BACKFLOW AS REQUIRED

CONTAINMENT BACKFLOW PREVENTION ASSEMBLY (DOUBLE-CHECK VALVE ASSEMBLY)

DC BACKFLOW BALL VALVE

BALL TYPE VALVE

STOP W/ SERVICE INSULATOR (IF DIIP MAIN)

STANDARD CONCRETE BRICK OR EQUAL NOT TO EXTEND UNDERNEATH SERVICE LINES.

METER SET FRONT VIEW

NOTES:
1. METER SHALL BE SUPPLIED BY THE TOWN AND AVAILABLE FOR PICKUP AT CASTLE ROCK WATER PROOF OF PERMIT AND PAID TAP FEES ARE REQUIRED IN ORDER TO OBTAIN METER.
2. TWO 2x4's MUST BE SECURED TO WALL WITH METER TREE SECURED TO 2x4s. BOTH 2x4s MUST BE 24" MIN. LENGTH. PIPE SHALL BE SECURED TO 2x4 WITH 3/4" STRAP SCREWED ON EITHER SIDE, OR WITH PIPE BRACKETS. IF SINGLE NAIL PIPE BRACKETS ARE USED, TWO MUST BE USED IN OPPOSING DIRECTION ON EACH 2x4. METER TREE SHOULD NOT MOVE AWAY FROM WALL OR 2x4.
3. COPPER METER YOKE SHALL BE AN A.Y. MCDONALD 743Y2----OD 33 REVERSE C STYLE METER INSETTER OR AN APPROVED EQUAL (5/8" X 3/4" METER).
4. 3/4" TYPE K COPPER – INSTALLED CONTINUOUS FROM CURB STOP TO METER YOKE AND INSULATED WITH POLYWRAP.
5. CURB STOP SHALL BE LOCATED IN ACCORDANCE WITH DETAIL W-2 AND BE FREE OF DEBRIS TO ALLOW OPERATION.
6. CURB STOPS ARE NOT ALLOWED IN DRIVEWAYS WITHOUT AN APPROVED TECHNICAL CRITERIA VARIANCE. REFER TO DETAIL W-40.
7. THE P.R.V. MUST BE MAINTAINABLE AND ADJUSTABLE.
8. COMPRESSION FITTINGS ARE NOT ALLOWED ON METER TREE.
9. BACKFLOW PREVENTION ASSEMBLY INSTALLATION IS REQUIRED PRIOR TO CALLING IN A METER SET.
10. A DOUBLE CHECK VALVE ASSEMBLY IS REQUIRED. FOR OTHER INSTALLATION ORIENTATIONS, CALL CASTLE ROCK WATER. THERE SHALL BE NO TEES PRIOR TO THIS POINT.
11. ALL ASSEMBLIES, INCLUDING TESTABLE ISOLATION DEVICES, MUST BE TESTED BY A CERTIFIED COLORADO CROSS CONNECTION CONTROL TECHNICIAN, AND SUCCESSFULLY PASS PRIOR TO ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. CASTLE ROCK WATER RECOMMENDS ANNUAL TESTING.
12. METER SHALL NOT BE LOCATED IN A CRAWL SPACE.
13. TRACER WIRE SHALL BE INSTALLED ON ALL WATER MAINS. REFER TO TOWN OF CASTLE ROCK STANDARD TRACER WIRE REQUIREMENTS UNDER GENERAL NOTES.

INSIDE RESIDENTIAL WATER METER SET

Issued By: Town of Castle Rock, Development Services March 2, 2020

Sheet Revisions

Town of Castle Rock

Development Services

INSIDE RESIDENTIAL WATER METER SET

DETAIL PLAN NO.

W-1A

Sheet 1 of 1
NOTES:

1. BALL VALVE, PN: B21-333
2. METER WILL BE PROVIDED BY THE TOWN AND INSTALLED BY THE CONTRACTOR.
3. BALL VALVE, PN: B21-333 (FORD)
4. PRV MUST BE INSTALLED PER PLUMBING CODE.
5. REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY, HORIZONTAL INSTALLATION. CALL CASTLE ROCK WATER FOR OTHER INSTALLATION ORIENTATIONS. THERE SHALL BE NO TEES PRIOR TO THIS POINT.
6. NUMBER 2 METER YOKE PN: CH88-233 (1” – V82 FORD METER BOX CO.)
7. CURB STOP SHALL BE PLACED IN THEUTILITY EASEMENT OR ROW, IF PLACED IN PAVEMENT, A VARIANCE WILL BE REQUIRED. REFER TO DETAIL W-40.
8. EXPANSION TANK (2 GAL. MIN.), AS REQUIRED BY PLUMBING CODE.
9. 3/4” & 1” TYPE K COPPER – INSTALLED CONTINUOUS FROM CURB STOP TO METER YOKE AND INSULATED WITH POLYWRAP.
10. METERS WILL NOT BE SET IF CURB STOP BOX IS NOT UP TO FINISHED GRADE, IF WIRE IS MISSING OR IN WRONG AREA, OR IF AN ASSEMBLY IS NOT IN PLACE.
11. METER SHALL NOT BE LOCATED IN A CRAML SPACE.

INSTALL METER WIRE INSIDE OF CONDUIT THROUGH FINISHED WALLS & CEILINGS 1/2" EMT

EXPANSION TANK

TO SYSTEM

METER YOKE

P.R.V. AS REQUIRED

BALL VALVE

WIRE FOR MVU
(WIRE MUST BE IN A CONDUIT IF GOING THROUGH MASONRY)

REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY (AS REQUIRED BY TOWN)

6" VALVE BOX WATERFALLS AFC 2500 BOX (DUCTILE) OR TYLER 6860 BASE SHALL NOT REST ON PIPE (FOR CURBSTOP WITHIN PAVEMENT)

McDONALD TYPE CURB STOP BOX WITH STEM

CORP STOP (W/SERVICE INSULATOR IF D.I.P. MAIN)

STANDARD CONCRETE BRICK OR EQUIVALENT, NOT TO EXTEND UNDERNEATH SERVICE LINES.

INSTALL METER WIRE PROVIDED BY TOWN NO MORE THAN 4' BACK FROM FRONT AND 4' ABOVE FINISHED GRADE AT EXTERIOR OF BUILDING. METER WIRE SHALL NOT BE BLOCKED BY FENCE OR LANDSCAPING. LEAVE WIRE LONG ENOUGH TO FREELY MOVE 2' IN AND OUT OF EXTERIOR WALL. TOTAL LENGTH OF WIRE SHALL NOT EXCEED 50'.

METER LAY LENGTH

3/4" x 3/4" = 7 3/4" 1" = 11 1/4"

*LAY LENGTH INCLUDES TWO 3/8" GASKETS

3/4" AND 1" INSIDE COMMERCIAL WATER METER SET

Town of Castle Rock
Issued by: Town of Castle Rock, Development Services March 2, 2020

DETAIL PLAN NO.
W-1B

Sheet 1 of 1
NOTES:

1. Any variation or deviation from this standard requires approval prior to installation from Castle Rock Water.

2. Meter pit shall be installed in landscaped area within the 10' utility easement along front lot line, a minimum of 3' within the easement. Prior approval required for installations in roadways, driveways or sidewalks, road lids or other special modifications may be required.

3. Curb stop shall be a minimum of 24 inches from inlet side of meter pit. Located in landscaped area if possible. Curb stop shall not be located in paved areas unless approved by variance.

4. All meter pits shall be furnished with CI meter pit lid with 7 1/2-inch ø x 3 1/4-inch deep recess and 2 inch ø center hole for meter remote unit, plus three drain holes in recessed area.

5. All meter pits shall be furnished with plastic frost lid with 3-inch deep pan, five drain holes, lifting handle, and slot for signal wire running full depth of lid.

6. Meter pit shall be a total height of 48 inches and 24 inches 1/2 for both 3/4 and 1 inch services. Pit shall be installed to maintain pit lid 3-inch below finished grade. All required installations shall be brought to grade before meter is set. Meters will not be set if curb stop box is not up to grade, if wire is missing or in wrong area, or if an approved backflow prevention assembly is not in place.

7. Type "K" copper service lines shall be continuous from main to curb stop and insulated with polywrap.

8. Compression (with crush ring) couplings shall be used at the curb stop.

9. Copper meter shall be Ford V84W-44G-33 (3/4" x 3"). Ford V84W-44G-44 (1"), or Mueller B-2474-Specify size (with lock rings).

10. Hydrant meter pit support, use min. 3/4" dia. PVC sched. 40 pipe for support bar w/ two 3/4" PVC caps and heavy duty nylon fasteners. Seal exterior holes around support pipe with Permatex RTV silicone adhesive prior to installing pipe caps.
WITHIN R.O.W.

FRAME AND RECESSED LID WITH INNER FROST COVER (COVER TO HAVE OFFSET, 1 3/8" TOUCH READ PIT (UP). HOLE MUST BE DRILLED IN LID FOR TOUCH READ PAD.

GRADE RINGS AS REQUIRED (NOT TO EXCEED 12")

BALL ANGLE VALVE W/ PADLOCK WINGS

48" I.D. REINFORCED PRECAST MANHOLE SECTION W/ KNOCKOUTS

TYPE K COPPER SERVICE TO BUILDING, PRV, AND BACKFLOW

BRACE PIPE EYELETS FOR SUPPORT OF METER (2) 3/4" O.D. PIPE 2 FT. LONG WITH BRACE PIPE INSTALLED

BY-PASS BALL VALVE W/ PADLOCK WINGS (NORMAL LOCKED OFF)

GAPS IN KNOCKOUTS TO BE FILLED WITH EXPANDING FOAM (TYP)

CURB BOX (McDONALD 5603 ARCH PATTERN W/ 5601-1 LID AND 304 STAINLESS STEEL ROD OR APPROVED EQUAL)

FOR INSTALLATIONS IN PAVEMENT ONLY: USE 6" VALVE BOX WATEROUS AFC 2500 BOX (DUCTILE) OR TYLER 6650 BASE; BOX SHALL NOT REST ON PIPE.

CURB BOX (McDONALD 5603 ARCH PATTERN W/ 5601-1 LID AND 304 STAINLESS STEEL ROD OR APPROVED EQUAL)

DOUBLE STRAP BRONZE SERVICE CLAMP FOR ALL DIP AND PVC MAINS.

CORP STOP (WITH INSULATOR IF USING DIP MAIN)

BYPASS BALL VALVE FORD B22-666 (1 3/8") FORD B22-777 (2") OR APPROVED EQUAL

STANDARD BRICK OR EQUAL NOT TO EXTEND UNDER SERVICE LINES.

METER LAY LENGTH TABLE

<table>
<thead>
<tr>
<th>METER</th>
<th>LAY LENGTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 1/2&quot; METER</td>
<td>13 3/4&quot;</td>
</tr>
<tr>
<td>2&quot; METER</td>
<td>15 1/2&quot;</td>
</tr>
</tbody>
</table>

*LENGTH INCLUDES TWO (2) 3/8" GASKETS
1. METER AND WIRE SUPPLIED BY THE TOWN, CONTRACTOR TO INSTALL.

2. METER WILL NOT BE RELEASED TO CONTRACTOR IF CURB STOP BOX IS NOT UP TO FINISHED GRADE, IF WIRE IS MISSING OR IN WRONG AREA, OR IF AN ASSEMBLY IS NOT IN PLACE.

3. PRIOR TO METER RELEASE, IRRIGATION POINT OF CONNECTION MUST BE COMPLETE AS INDICATED ON TOWN DETAIL IR-8.

**METER LAY LENGTH**

- 3/4" = 7 3/4"
- 1" = 11 1/4"

*LAY LENGTHS INCLUDE TWO 1/8" GASKETS*
NOTES:
1. VAULT WALL & FLOOR THICKNESS 6" MIN.
2. ALL VALVES TO HAVE HANDWHEELS AND BE LOCKABLE OR CHAINABLE.
3. VAULT SHOP DRAWINGS ARE TO BE SUBMITTED AT TIME OF PROJECT PLAN APPROVAL.
4. BYPASS TEES CAN RUN ON OUTSIDE OF VAULT.
5. BYPASS VALVES MUST BE LOCATED WITHIN VAULT.
6. THE PIPE MATERIAL BETWEEN THE EXISTING WATER LINE AND THE OUT-IN-TEE SHALL REMAIN CONSISTENT.
7. THE MINIMUM CLEARANCE BETWEEN THE VAULT WALL AND ALL FLANGES, FITTINGS, VALVES, METERS, ETC. SHALL BE 2 FEET.
8. WHEN INSTALLING SENSUS 6'METER WITH STRAINER, A MINIMUM OF 2 1/2 PIPE DIAMETERS OF STRAIGHT RUN PIPE OR EQUIVALENT FULL OPEN COMPONENTS IS REQUIRED UPSTREAM AND DOWNSTREAM OF THE METER OR STRAINER FLANGES. FULL OPEN FLOW COMPONENTS MAY CONSIST OF STRAIGHT PIPE, FULL OPEN GATE VALVES, BYPASS TEES AND CONCENTRIC REDUCERS. (1 NOMINAL PIPE SIZE REDUCTION ONLY). FOR ALL OTHER INSTALLATION CONFIGURATIONS, A MINIMUM OF 5 PIPE DIAMETERS OF STRAIGHT RUN IS REQUIRED UPSTREAM.
9. AN APPROVED BACKFLOW ASSEMBLY IS REQUIRED DOWNSTREAM OF THE VAULT REDUCED PRESSURE BACKFLOW ASSEMBLIES CANNOT BE INSTALLED UNDERGROUND PER CROSS CONNECTION REGULATION. BACKFLOW ASSEMBLIES FOR IRRIGATION APPLICATIONS MUST ALSO BE ABOVE GROUND IN A BACKFLOW BOX.
10. SHOP DRAWINGS MUST BE PROVIDED TO AND APPROVED BY CASTLE ROCK WATER.
11. ALL PIPES SHALL BE FULLY RESTRAINED.
NOTES:

1. 1/4 TURN BALL VALVES WITH HANDLE BYPASS TO BE LOCKABLE.

2. BACKFLOW PREVENTERS SHALL CONFORM TO THE COLORADO CROSS CONNECTION CONTROL MANUAL AND THE FOUNDATION FOR CROSS CONNECTION CONTROL HYDRAULIC RESEARCH FOR PROPER APPLICATIONS, INSTALLATION AND INSPECTION. MINIMUM CLEARANCE 12", MAXIMUM CLEARANCE 36", MINIMUM SIDE CLEARANCE WHEN SIDE LOCK FACES A WALL 24". WHEN TEST LOCKS ARE FACING AWAY FROM WALL MINIMUM CLEARANCE OF 12". NO ELECTRICAL COMPONENTS IN THE SAME GENERAL AREA AS THE BACKFLOW ASSEMBLY.

3. METER INSTALLED AND CONNECTIONS MADE BY TOWN.

4. WIRE SUPPLIED BY TOWN TO BE 3 CONDUCTOR 18 GAUGE.
NOTES:
1. INSTALL METER IN HORIZONTAL PLANE W/ METER SET UPRIGHT ONLY.
2. NO GATE OR BUTTERFLY VALVES ON 1 1/2" OR 2" SERVICE. USE 1/4 TURN BALL VALVES WITH HANDLE. BYPASS MUST BE LOCKABLE WITH PADLOCK PROVIDED BY CASTLE ROCK WATER.
3. METER AND WIRE PROVIDED BY THE TOWN. CONTRACTOR TO INSTALL METER AND WIRE.
4. BACKFLOW PREVENTION ASSEMBLIES MUST HAVE TEN (10) PIPE DIAMETERS UPSTREAM FROM NEAREST FITTING & THREE (3) PIPE DIAMETERS DOWNSTREAM TO NEXT FITTING.
5. IF WIRE EXITS THROUGH MASONRY, IT MUST BE PLACED INSIDE A CONDUIT.
6. REDUCED PRESSURE BACKFLOW PREVENTORS, AS DETERMINED BY CASTLE ROCK WATER, SHALL CONFORM TO THE COLORADO CROSS CONNECTION CONTROL MANUAL AND THE FOUNDATION FOR CROSS CONNECTION CONTROL HYDRAULIC RESEARCH FOR PROPER APPLICATION, INSTALLATION AND INSPECTION. MIN CLEARANCE 12", MAX CLEARANCE 36" FROM FLOOR. MIN SIDE CLEARANCE WHEN TEST COCK FACES A WALL 24". WHEN TEST COCKS FACE AWAY FROM WALL MIN CLEARANCE 12". NO ELECTRICAL COMPONENTS IN THE SAME GENERAL AREA AS THE BACKFLOW ASSEMBLY. CONTRACTOR TO PROVIDE PASSING TEST RESULTS ON ALL BACKFLOW PREVENTION ASSEMBLIES TO CASTLE ROCK WATER.
7. METER AND BYPASS ASSEMBLY SHALL BE SECURED PROPERLY.
8. IF CURBSTOP IS LOCATED IN CONCRETE, APPROVED VARIANCE MUST BE IN PLACE AND FEES PAID (SEE DETAIL W-40).
9. METERS WILL NOT BE SET IF CURB STOP BOX IS NOT UP TO FINISHED GRADE OR IF AN ASSEMBLY IS NOT IN PLACE. METER SHALL NOT BE LOCATED IN A CRAWL SPACE.
10. IF CONTINUOUS WATER SERVICE IS REQUIRED DURING BACKFLOW TESTING, A SECONDARY BACKFLOW BYPASS WILL BE REQUIRED.
1. VAULT SHALL BE DESIGNED FOR HS20 LOADING.

2. VAULT PENETRATIONS SHALL BE SEALED WITH LINK-SEAL AND NON-SHRINK GROUT (TYP.).

3. ALL PRV'S TO BE PRESSURE REDUCING/PRESSURE SUSTAINING, CLA-VAL.

4. ALL WORK TO CONFORM TO TOWN OF CASTLE ROCK STANDARD SPECIFICATIONS.

5. RESTRAINED JOINT SECTIONS OF PIPE SHALL BE MEG-A-LUGGED.

6. ALL GATE VALVES LOCATED IN THE VAULT SHALL HAVE RISING STEM WHEEL OPERATORS. GATE VALVES SHALL BE THE SAME SIZE AS THE CONNECTING PIPING.

7. ALL PIPING SHALL BE DUCTILE IRON PRESSURE CLASS 350. ALL JOINTS SHALL BE FLANGED. A RESTRAINED FCA SHALL BE INSTALLED DOWNSTREAM OF EACH PRV.

8. PRESSURE GAUGES SHALL BE 4” DIAL NON-YELLOWING GLYCERIN FILLED, WITH SNubber. MUST HAVE BALL VALVE FOR ISOLATION. PRESSURE

9. MANUFACTURERS REPRESENTATIVE SHALL CERTIFY THE INSTALLATION OF THE PRV’S.

10. FABRICATED OR PRECAST CONCRETE VAULT DESIGN SHALL BE REVIEWED BY THE TOWN.

11. ALL BURIED PIPE AND FITTINGS SHALL BE WRAPPED WITH 8 MIL POLYETHYLENE.

12. SHOP DRAWINGS TO BE SUBMITTED TO CASTLE ROCK WATER FOR REVIEW AND APPROVAL.

13. ALL PRV VAULTS MUST BE VENTED.

14. PRV PRESSURE SETTING WILL BE DETERMINED BY CASTLE ROCK WATER.

15. FOR MAINS 16” OR LARGER, UTILITIES WILL DETERMINE THE REQUIRED SIZING FOR PRV #3 AND #4.

### PRPSV Design Parameters & Settings

<table>
<thead>
<tr>
<th>MAIN DIA (D”)</th>
<th>DESIGN FLOW (gpm @ 10 fps)</th>
<th>PRESSURE REDUCING – PRESSURE SUSTAINING VALVE CONNECTING PIPE SIZES</th>
<th>VAULT SIZES</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>1600</td>
<td>PRV #1/D1: 6” / 6”; PRV #2/D2: 6” / 6”; PRV #3/D3: 3” / 4”; PRV #4/D4*: NA</td>
<td>10” x 10”</td>
</tr>
<tr>
<td>12</td>
<td>3200</td>
<td>PRV #1/D1: 6” / 6”; PRV #2/D2: 6” / 6”; PRV #3/D3: 3” / 4”; PRV #4/D4*: NA</td>
<td>10” x 10”</td>
</tr>
<tr>
<td>16</td>
<td>6200</td>
<td>PRV #1/D1: 8” / 8”; PRV #2/D2: 8” / 8”; PRV #3/D3: TBD; PRV #4/D4*: TBD</td>
<td>12” x 12”</td>
</tr>
<tr>
<td>18</td>
<td>8000</td>
<td>PRV #1/D1: 8” / 8”; PRV #2/D2: 8” / 8”; PRV #3/D3: TBD; PRV #4/D4*: TBD</td>
<td>12” x 12”</td>
</tr>
<tr>
<td>20</td>
<td>10000</td>
<td>PRV #1/D1: 8” / 8”; PRV #2/D2: 12” / 12”; PRV #3/D3: TBD; PRV #4/D4*: TBD</td>
<td>12” x 12”</td>
</tr>
<tr>
<td>24</td>
<td>14000</td>
<td>PRV #1/D1: 12” / 12”; PRV #2/D2: 12” / 12”; PRV #3/D3: TBD; PRV #4/D4*: TBD</td>
<td>12” x 12”</td>
</tr>
</tbody>
</table>

**NOTE:**

PRV #4 WILL ONLY BE INSTALLED WHEN THE DOWNSTREAM SYSTEM IS NOT SUPPLIED BY A RESERVOIR. IF 12” OR LARGER PRV’S ARE INSTALLED INSIDE VAULT, LIFTING HOIST & ROTATING BOOM SHALL BE INSTALLED.

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**Sheet Revisions**

Date: 8/20

**Comments**

**Town of Castle Rock**

**Development Services**

**PRESSURE REDUCING VALVE VAULT**

**DETAIL PLAN NO.**

W-7B

Sheet 2 of 2

**Issued By:** Town of Castle Rock, Development Services March 2, 2020
1. Air Release Valve shall be placed at the high point of the main water line or as determined through plan review.

2. ARD-040 combination air valve "Barak" shall be used. Sizing to be established from the manufacturers sizing tables & approved by the Town.

3. Casting specs: ASTM A-48 w/ a min tensile strength of 30,000 PSI (Class 30). (Neenah type R-1758 ring & cover or eq).

4. Do not use in applications where manholes are within drainage ways.

5. Standard manufacturer's lettering sizes & patterns (lettering shall be cast as part of cover).
NOTE: VENT PIPES TO BE LOCATED IN THE FIELD AT THE NEAREST INTERSECTION OF THE STREET PROPERTY LINE & SIDE LOT LINE. PAINT PIPE SAFETY YELLOW & LOCATE MANHOLE W/ DISTANCE & DIRECTIONS SIMILAR TO MARKER POST.

VENT PIPE INSTALLATION

FABRICATED VENT SCREEN
7" GALVANIZED PLATE WELDED TO TOP
1/2 OF 6" THREADED COUPLING (GALV.)
1/2" NO. 9-11 FLATTENED EXPANDED METAL SCREEN (GALV.)
1/2 OF 6" THREADED COUPLING (GALV.)
6 5/8" O.D. GALVANIZED STEEL PIPE OR SCH. 40 W/ THREADED JOINTS
BREAKAWAY PVC COUPLING
2'-6" X 2'-6" CONCRETE PAD W/ #3 REBAR @ 12" O.C. EACH WAY
6" GALVANIZED STEEL PIPE

VENT PIPE & BREAK-AWAY COUPLING DETAILS
RESIDENTIAL VENT PIPE

NOTE:
COLOR SHALL BE OLIVE GREEN OR FLAT BLACK TO MATCH SURROUNDINGS.
NOTES:

1. CARE SHALL BE TAKEN WHEN INSTALLING VALVES TO ASSURE PROPER SUPPORT OF THE VALVE. THE ENGINEER MAY REQUIRE 3/4" CRUSHED ROCK TO BE INSTALLED UNDER THE VALVE TO PROVIDE PROPER SUPPORT.

2. VALVES SHALL NOT BE PLACED IN CONCRETE CROSS PANS, GUTTERS, OR OTHER DRAINAGE WAYS.

3. OPERATING NUTS OR EXTENSIONS SHALL NOT BE SET CLOSER THAN THREE (3) FEET FROM FINISHED GRADE. IF OPERATING NUT IS DEEPER THAN FIVE (5) FEET FROM FINAL GRADE, PROVIDE A 1 1/4" EXTENSION SHAFT W/ CENTERING RING. OPERATOR EXTENSIONS SHALL BE CONNECTED TO THE VALVE OPERATOR NUT USING A SET SCREW.

4. GATE VALVE SHALL BE POLYETHYLENE WRAPPED (8 MIL).

5. CONCRETE COLLARS & MARKER POSTS ARE REQUIRED WHEN VALVE IS LOCATED IN AN UNPAVED AREA.

6. VALVE BOXES ARE TO BE BROUGHT UP TO GRADE @ THE TIME OF PAVEMENT PLACEMENT OR OVERLAY. VALVE BOX ADJUSTING RINGS ARE NOT ALLOWED.

7. SEE DETAILS W-13 & W-14 FOR TYPICAL VALVE LOCATIONS.

8. TRACER WIRE SHALL BE ROUTED AROUND TO NORTH OR EAST OF VALVE BOX (SEE DETAIL W-28).
5 1/2" FIRE HYDRANT "PACER WB67-250" BY WATEROUS CO. OR "SUPER CENTURION 250 WITH PUMPER NOZZLE" BY MUELLER CO. (OPEN LEFT)

LEAVE 2-3' SURPLUS TRACER WIRE FOR TEST STATION PAD

SEE VALVE BOX DETAIL W-10

STREET

1'-6' TYP W/ ATTACHED WALK

CONCRETE THRUST BLOCK (TYP) - SEE DETAIL & SPECS ON W-22

4" TYP W/ DETACHED WALK

PLUMB

3 TO 9' ABOVE FINISHED GRADE

R.O.W.

1' W/O C&G OR WALK

DIP CL-350 AWWA C-150

6" R.W. GATE VALVE (MJ x MJ)

BOND BREAKER

TEE (MJ x SWVEL)

W/ ATTACHED WALK

5 1/2" FIRE HYDRANT "PACER WB67-250" BY WATEROUS CO. OR "SUPER CENTURION 250 WITH PUMPER NOZZLE" BY MUELLER CO. (OPEN LEFT)

3' TYP W/ DETACHED WALK

NOTE:
1. ALL HYDRANTS SHALL BE PAINTED "SAFETY YELLOW" FROM THE FACTORY. FIELD RE-PAINTING MAY BE REQUIRED BY THE PUBLIC WORKS INSPECTOR.

2. THE CONNECTIONS SHALL BE 2 - 2 1/2" NOZZLES AND 1 - 5 1/2" PUMPER NOZZLE, ALL THREADS TO BE NATIONAL STANDARD W/ 1 1/2" PENTAGONAL CAP NUTS. ALL HYDRANTS SHALL BE AWWA C-502-94 STANDARD OPEN LEFT.

3. NO TAPS SHALL BE ALLOWED BETWEEN THE HYDRANT & THE MAIN.

4. THE ENTIRE FIRE HYDRANT ASSEMBLY SHALL BE WRAPPED W/ 8 MIL POLYETHYLENE, INCLUDING THE RISER PORTION, TO FINISHED GRADE. CUT HOLE IN WRAP AT WEEP HOLE.

5. ALL FIRE HYDRANTS SHALL BE INSTALLED PLUMB & LOCATED ACCORDING TO PROJECT PLANS.

6. SEE FIRE HYDRANT LOCATION DETAILS W-13 & W-14 FOR PROPER LOCATION RELATIVE TO OTHER IMPROVEMENTS & REFER TO APPROVED PLANS.

7. THE MECHANICAL JOINTS OF THE FIRE HYDRANT ASSEMBLY SHALL BE RESTRAINED VIA MEG-A-LUG JOINT CLAMPS.

8. NO MORE THAN ONE HYDRANT EXTENSION, NOT TO EXCEED 24", MAY BE USED. OVERALL HEIGHT MAY NOT EXCEED 8'.

9. A TRACER WIRE TEST STATION IS REQUIRED BEHIND OR ADJACENT TO ALL FIRE HYDRANTS; REFER TO DETAIL W-28.

10. FOR BURY DEPTHS GREATER THAN 8', REFER TO DETAIL W-11A.

TYPICAL JOINT RESTRAINT DETAIL FOR MULTIPLE JOINT ASSEMBLIES (NOT TO SCALE)
DEEP BURY FIRE HYDRANT ASSEMBLY

- 5 3/4" FIRE HYDRANT "PACER WB67-250" BY WATEROUS CO.
- OR "SUPER CENTURION 250 WITH PUMPER NOZZLE" BY MUELLER CO. (OPEN LEFT)
- LEAVE 2-3' SURPLUS TRACER WIRE FOR TEST STATION PAD
- 3" TO 9" ABOVE FINISHED GRADE
- TYPICAL JOINT RESTRAINT DETAIL FOR MULTIPLE JOINT ASSEMBLIES (NOT TO SCALE)
- BOND BREAKER
- MEG-A-LUG RESTRAINTS
- MUELLER VERTICAL AQUAGRIP SHOE, FOR BURY DEPTHS 8" AND GREATER
- CONCRETE THRUST BLOCK (TYP) - SEE DETAIL & SPECS ON W-22
- 6" R.W. GATE VALVE (MJ x MJ)
- DIP CL-350 AWWA C-150
- SEE VALVE BOX DETAIL W-10
- STREET
- 1'-6' TYP W/ ATTACHED WALK
- 1' W/O C&G OR WALK
- 1'-6' TYP W/ DETACHED WALK

NOTES:
1. ALL HYDRANTS SHALL BE PAINTED "SAFETY YELLOW" FROM THE FACTORY. FIELD RE-PAINTING MAY BE REQUIRED BY THE PUBLIC WORKS INSPECTOR.
2. THE CONNECTIONS SHALL BE 2 - 2 3/4" NOZZLES AND 1 - 5 3/4" PUMPER NOZZLE. ALL THREADS TO BE NATIONAL STANDARD W/ 1 3/4" PENTAGONAL CAP NUTS. ALL HYDRANTS SHALL BE AWWA C-502-94 STANDARD OPEN LEFT.
3. NO TAPS SHALL BE ALLOWED BETWEEN THE HYDRANT & THE MAIN.
4. THE ENTIRE FIRE HYDRANT ASSEMBLY SHALL BE WRAPPED W/ 8 MIL POLYETHYLENE, INCLUDING THE RISER PORTION, TO FINISHED GRADE. CUT HOLE IN WRAP AT WEEP HOLE.
5. ALL FIRE HYDRANTS SHALL BE INSTALLED PLUMB & LOCATED ACCORDING TO PROJECT PLANS.
6. SEE FIRE HYDRANT LOCATION DETAILS W-13 & W-14 FOR PROPER LOCATION RELATIVE TO OTHER IMPROVEMENTS & REFER TO APPROVED PLANS.
7. THE MECHANICAL JOINTS OF THE FIRE HYDRANT ASSEMBLY SHALL BE RESTRAINED VIA MEG-A-LUG JOINT CLAMPS.
8. NO MORE THAN ONE HYDRANT EXTENSION, NOT TO EXCEED 24", MAY BE USED. OVERALL HEIGHT MAY NOT EXCEED 8'.
9. A TRACER WIRE TEST STATION IS REQUIRED BEHIND OR ADJACENT TO ALL FIRE HYDRANTS; REFER TO DETAIL W-28.
NOTES:
1. TO BE USED IN AREAS WHERE HYDRANTS ARE EXPOSED TO VEHICULAR TRAFFIC.
2. STEAMER CONNECTION ON FIRE HYDRANT SHALL BE DIRECTED AS NOTED ON PLANS.

4 BOLLARDS, ARRANGED AS SHOWN.

4" DIA GALV STEEL POST SCHED 40, PAINTED SAFETY YELLOW & FILLED WITH CONCRETE

3" REFLECTIVE TAPE BY 3M OR APPROVED EQUAL (SEE DETAIL W-23)

MIN 2500 PSI MAX 3/4" AGGREGATE CONCRETE

UNDISTURBED GROUND
NOTE:
1. VALVES SHALL NOT BE PLACED IN CONCRETE CROSS PANS OR WITHIN GUTTER PORTIONS.
HYDRANT PLACED @ THE Deepest point of CUL-DE-SAC @ LOT LINE EXTENDED

GATE VALVE; NO CONNECTIONS BEYOND THIS VALVE

SEE PROJECT PLANS FOR LOCATION OF SERVICE LINES – SEE TYP SERVICE LINE DETAILS

GATE VALVE

LOT LINE (TYP)

RIGHT OF WAY LINE

SEE FIRE HYDRANT ASSEMBLY DETAIL W-11

6’ TYP
NOTES:
1. ALL FITTINGS SHALL BE MJ WITH MEG-A-LUG.
2. LOCATION OF STUB OUT SHALL BE PER PLAN.
3. LOCATION OF STUB OUT MUST BE SHOWN WITH CARBONITE MARKER.
4. STUB OUT SHALL BE PRESSURE TESTED & CLEAR WATER TESTED @ TIME OF MAIN LINE TESTING. VALVE SHALL BE CLOSED AFTER TESTS.
5. STUB OUT SHALL BE FULLY RESTRAINED FROM THE TEE.
6. FOR TRACER WIRE INSTALLATION, REFER TO DETAIL W-28.
NOTES:

1. PLUG SHALL BE MECHANICALLY RESTRAINED:
   a. FOR SLEEVE TYPE MACHINED COUPLING PIPE OR PIPE WITHOUT BELL, ROD BACK TO THE NEXT COUPLING UPSTREAM.
   b. FOR BELL & SPIGOT PIPE, TIE TO BELL (SHOWN).

2. BLOW OFF ASSEMBLY SHALL BE INSTALLED AT TEMPORARY DEAD ENDS ONLY.

3. FOR TRACER WIRE INSTALLATION, REFER TO DETAIL W-28

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TEMPORARY BLOW-OFF ASSEMBLY

DETAIL PLAN NO. W-16

Sheet 1 of 1
1. WHERE WATER LINE COVER EXCEEDS 7’-6" AT THE LOW POINT OF THE CONDUIT CROSSING, VERTICAL BENDS ARE REQUIRED. WHEN COVER IS LESS THAN 7’-6", PIPE JOINTS MAY BE DEFLECTED 1/2 THE MANUFACTURER’S RECOMMENDED DEFLECTION IN LIEU OF VERTICAL BENDS. THE LIMITS OF THE DEPRESSED AREA SHALL BE DOCUMENTED ON THE "AS-BUILT" DRAWINGS.

2. IF UTILITY CROSSING IS SANITARY SEWER & IS OVER A RAW OR POTABLE WATER LINE, ALL UTILITY CROSSING JOINTS WITHIN 10’ SHALL BE ENCASED 1’ BOTH SIDES OF THE JOINT W/ CONCRETE. SEE ENCASEMENT DETAIL W-20.

3. MULTIPLE JOINTS BETWEEN MEG-A-LUG FITTINGS SHALL BE RESTRAINED.

4. SEE PIPE RESTRAINT TABLE (DETAIL W-18) FOR SPECIFICATIONS.

5. NO TEES, SERVICE CONNECTIONS, VALVES, OR FIRE HYDRANT CONNECTIONS ARE ALLOWED IN LOWERING.

6. PIPE MATERIAL IN LOWERED SECTION SHALL MATCH THE MAIN LINE.
### PIPE RESTRAINT TABLE

#### LEGEND
- **L** = LENGTH
- **M1** = MINIMUM OF 1 FULL LENGTH OF PIPE

#### NOTES:
1. LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM VALVES & BENDS.
2. MINIMUM 5' GROUND COVER REQUIRED.
3. ALL FITTINGS SHALL BE FITTED WITH MEG-A-LUGS.
4. PIPE RERAINTS SHALL BE AS FOLLOWS:
   A. D.I.P. – RESTRAINTS FOR STD. MECHANICAL JOINTS SHALL BE OF HIGH STRENGTH DUCTILE IRON CONFORMING TO ASTM A536, GRADE 65–45–12. MECH. JOINTS SHALL HAVE A WATER WORKING PRESSURE OF 100 P.S.I. MINIMUM AND SHALL BE EBBRA IRON INC., MEG-A-LUG SERIES 1100, FORD METER BOX CO., UNI-FLANGE 1400 OR APPROVED EQUAL.

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>4&quot;</th>
<th>6&quot;</th>
<th>8&quot;</th>
<th>12&quot;</th>
<th>16&quot;</th>
<th>20&quot;</th>
<th>24&quot;</th>
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<tbody>
<tr>
<td>FITTING</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
<td>L</td>
</tr>
<tr>
<td>90° BEND, TEE, PLUG OR VALVE</td>
<td>30', 45', 60', 86', 108', 132', 155'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>45° BEND</td>
<td>M1</td>
<td>M1</td>
<td>M1</td>
<td>M1</td>
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</tr>
<tr>
<td>22 1/2° BEND</td>
<td>M1</td>
<td>M1</td>
<td>M1</td>
<td>M1</td>
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<td>M1</td>
</tr>
<tr>
<td>11 1/4° BEND</td>
<td>M1</td>
<td>M1</td>
<td>M1</td>
<td>M1</td>
<td>M1</td>
<td>M1</td>
<td>M1</td>
</tr>
</tbody>
</table>
NOTES:
1. CONCRETE ENCASEMEMENT WILL BE REQUIRED ON SEWER LINE WHEN CLEAR VERTICAL DISTANCE FROM WATER LINE IS LESS THAN 1"-6" OR HORIZONTAL DISTANCE IS LESS THAN 10' BETWEEN PARALLEL LINES. CONCRETE ENCASEMEMENT REQUIRED IN ALL CASES WHERE SEWER LINE IS ABOVE WATER LINE OR IS UNDER A WATERWAY CROSSING.

2. TRACER WIRE SHALL BE CONTINUOUS ON TOP CENTER OF WATER AND SEWER MAINS, PER TRACER WIRE GENERAL NOTES. CONCRETE WILL BE POURED OVER TOP OF TRACER WIRE.

<table>
<thead>
<tr>
<th>PIPE I.D.</th>
<th>NO. OF LONGITUDINAL BARS &amp; LOCATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot; TO 8&quot;</td>
<td>4 - #4 BARS 1 EACH CORNER</td>
</tr>
<tr>
<td>10&quot; TO 18&quot;</td>
<td>8 - #4 BARS 3 EACH SIDE</td>
</tr>
<tr>
<td>21&quot; TO 33&quot;</td>
<td>12 - #4 BARS 4 EACH SIDE</td>
</tr>
<tr>
<td>36&quot;</td>
<td>16 - #4 BARS 5 EACH SIDE</td>
</tr>
</tbody>
</table>
NOTES:

1. ALL TRENCHES SHALL BE BACKFILLED IN ACCORDANCE WITH THIS DETAIL UNLESS OTHERWISE SPECIFIED BY PUBLIC WORKS.

2. PRIOR TO PLACEMENT OF CONCRETE, ALL EDGES SHALL BE CARED TO A CLEAN, STRAIGHT, AND VERTICAL EDGE.

3. PRIOR TO PLACEMENT OF ASPHALT, 18 INCHES OF ADJACENT ASPHALT SHALL BE MILLED TO 2 INCH DEPTH ON ALL SIDES TO MATCH EXISTING PAVEMENT. INNER SURFACE TO BE TACKED WITH HHS-1.

4. WHEN SUBSTITUTING FOR BACKFILL MATERIAL, FLOWABLE FILL SHALL CONFORM TO CGSCE CLSM STANDARDS.

5. TRENCH WIDTH SHALL NOT BE MORE THAN 16" NOR LESS THAN 12" WIDER THAN THE DIAMETER OF THE PIPE.

6. 95% OF ASTM D698 STANDARD COMPACTION EFFORT IS REQUIRED ON ALL TRENCHING ZONES IN BOTH IMPROVED & UNIMPROVED AREAS.

7. IN UNIMPROVED AREAS, ALL DISTURBED AREAS SHALL BE REGRADED, SEEDED & MULCHED.

8. IN CONCRETE ROADWAYS, A MINIMUM OF 1/2 PANEL WIDTH OR 10' X 5' SECTION WILL BE ALLOWED TO REMAIN, OTHERWISE THE ENTIRE CONCRETE PANEL MUST BE REPLACED.

9. USE #4 REBAR AT 2' CENTERS ALONG THE PERIMETER OF CONCRETE REPLACEMENT SECTIONS.

10. 6" MAXIMUM COMPACTED LIFT THICKNESS IF FLOWABLE FILL NOT REQUIRED.

11. BENDING MATERIAL DEPTH WHEN INSTALLING STORM SEWER SHALL BE AT SPRING LINE, EXCEPT IN AREAS OF UNSUITABLE BACKFILL, THEN BENDING MATERIAL SHALL BE 12" ABOVE PIPE.

12. TRENCH WIDTHS LESS THAN 4' OR TRENCHING THAT EXPERIENCES CAVE-INS OR SLOUGHING SHALL REQUIRE FLOWABLE FILL IN ORDER TO ACHIEVE COMPACTION.
NOTE:

1. Bearing areas shown on the chart are minimum areas & are designed using the following criteria:
   A. Internal working pressure of 150 PSI.
   B. Transient (water hammer) pressure of 120 PSI for 4", 6" & 8" diameter lines, 110 PSI for 12" lines, & 70 PSI for 20" lines.
   C. Thrustblock concrete shall have a minimum strength of 3000 PSI.

2. All sizes of bends, tees & dead ends shall have concrete thrustblocks.

3. Thrustblocks are not a substitute for joint restraint.
REFLECTIVE TAPE – 3M OR APPROVED EQUAL

4" CARSONITE FLEXIBLE MARKERBLUE IN COLOR MARKED "WATER" PURPLE IN COLOR MARKED "REUSE" GREEN IN COLOR MARKED "SANITARY" OR "STORM"

1" STENCIL LETTERS PAINT BLACK – LABEL OBJECT & DISTANCE FROM OBJECT – TO FACE OF OBJECT

GROUND LINE

UNDISTURBED GROUND

NOTE:
1. USE MARKER POST IN AREAS WHERE UTILITY CANNOT BE LOCATED FROM OTHER IMPROVEMENTS.

ACCEPTABLE MARKER POST ABBREVIATIONS

45° = 45° BEND
90° = 90° BEND
22° = 22 1/2° BEND
11° = 11 1/4° BEND
GV = GATE VALVE
MH = MANHOLE
AR = AIR RELIEF VALVE
AV = AIR VACUUM VALVE
PRV = PRESSURE REDUCING VALVE
BV = BLOW-OFF VALVE
FM = SEWER FORCE MAIN
RAW = RAW WATER LINE
WTR = POTABLE WATER LINE
NOTES:
1. MINIMUM ID OF CASING PIPE SHALL ACCOMMODATE MAXIMUM OD OF CARRIER PIPE JOINTS AND/OR RESTRAINTS.
2. MINIMUM CASING PIPE DIAMETER AND THICKNESS SHALL BE PER TABLE UNLESS SPECIFIED BY ENGINEER.
3. IF CARRIER PIPE RESTRAINT IS REQUIRED, RESTRAINED CASING SPACERS SHALL BE USED (E.G. FORD).
4. ANODES SHALL BE "ULTRAMAG HIGH POTENTIAL MAGNESIUM", MINIMUM 46 LBS EACH, PACKAGED READY FOR BURIAL; MODEL NO. 1703, OR APPROVED EQUAL.
5. 24" OF SURPLUS WIRE SHALL BE LEFT AT ALL CONNECTIONS
6. TERMINAL BOARD SHALL HAVE x4 TERMINALS.
7. TRACER WIRE SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD NOTES AND DETAILS, AND SHALL BE DIRECTED THROUGH PIPE CASING. TRACER WIRE SHALL BE CONTINUOUS THROUGH THE CASING PIPE WITH NO SPlice.
NOTES:

1. CASTING SPECIFICATIONS: ASTM A-48 WITH A MINIMUM TENSILE STRENGTH OF 30,000 PSI (CLASS 30). (NEENAH TYPE R-1706 RING AND COVER OR EQUIVALENT).

2. TOTAL MINIMUM WEIGHT APPROXIMATELY 410 LBS.

3. DO NOT USE IN APPLICATIONS WHERE MANHOLES ARE WITHIN DRAINAGE WAYS.

4. STANDARD MANUFACTURER’S LETTERING SIZES & PATTERNS. (LETTERING SHALL BE CAST AS PART OF COVER).

5. MANHOLES PLACED OUTSIDE OF ROW MUST HAVE CARBONITE MARKER.

LABEL LID FOR EACH TYPE OF UTILITY — SEWER, WATER OR STORM

LETSING NOTCH 1" WIDE X 1 1/2" DEEP
SMOOTH LID TO BE USED IN SIDEWALK OR SIMILAR AREAS.

FROST LID

SECTION A - A

23 7/8"

24 1/8"

8"
NOTES:

1. ABANDONMENT TO INCLUDE REMOVAL OF ALL RELATED FIXTURES INCLUDING, BUT NOT LIMITED TO, ALL SECTIONS OF CONCRETE METER PIT, TOP BONNET INCLUDING LID AND INNER LID, METER YOKE, COPPER LINE FROM MAIN TO INTERIOR OF METER PIT, ALL VALVES, AND VALVE BOXES.

2. METER WILL BE REMOVED BY A REPRESENTATIVE OF CASTLE ROCK WATER.

3. AFTER INITIAL ACCEPTANCE, ALL EQUIPMENT BECAME THE PROPERTY OF THE TOWN OF CASTLE ROCK. ALL REMOVED EQUIPMENT WILL BE RETURNED TO THE TOWN UNLESS DEEMED TO BE NO LONGER USABLE OR IS DESTROYED IN THE PROCESS OF REMOVAL, AS DETERMINED BY TOWN OF CASTLE ROCK REPRESENTATIVE.

4. CORPORATION STOP ON MAIN WILL BE SHUT-OFF AND ABANDONED PIPING REMOVED.

5. A PLUGGING DEVICE WILL BE ADDED TO THE CORPORATION STOP TO PREVENT ANY LEAKING THAT MAY OCCUR IN THE EVENT THAT THE CORPORATION STOP FAILS AFTER IT HAS BEEN ABANDONED.

6. AREA TO BE REPAIRED AND REPLACED TO MATCH THE CONDITIONS OF SURROUNDING AREA.

7. IN SOME INSTANCES, CORPORATION STOPS MAY BE FOUND THAT WERE DIRECTLY TAPPED INTO THE MAIN LINE WITHOUT A SADDLE. IN THESE INSTANCES IT MAY BE REQUIRED TO REMOVE THE CORPORATION STOP AND INSTALL A SADDLE WITH A NEW CORPORATION OVER THE HOLE. DEPENDING ON THE INTEGRITY OF THE EXISTING MAIN, A STAINLESS REPAIR CLAMP MAY BE REQUIRED IN PLACE OF A SADDLE, AT DISCRETION OF THE TOWN REPRESENTATIVE.

8. CROSS CONNECTION CONTROL TECHNICIAN FOR THE TOWN SHALL BE NOTIFIED OF ANY SERIAL NUMBERS OF BACK FLOW PREVENTION DEVICES REMOVED FROM SERVICE.

9. ABANDONMENT REQUEST LETTER MUST BE SUBMITTED TO CASTLE ROCK WATER BILLING TO DISCONTINUE ACCOUNT.
**NOTES:**

1. REFER TO STANDARD NOTES FOR TOWN OF CASTLE ROCK GENERAL TRACER WIRE REQUIREMENTS.

2. TRACER WIRE AND TEST STATION LIDS SHALL BE BLUE FOR POTABLE WATER DISTRIBUTION SYSTEM AND PURPLE FOR RECLAIMED OR RAW WATER COMPONENTS.

3. TRACER WIRE IN PLAN IS SHOWN AWAY FROM PIPE FOR CLARITY. TRACER WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5-FOOT INTERVALS.

4. TRACER WIRE SHALL BE LAID CONTINUOUSLY, PASSING AROUND THE OUTSIDE OF VALVES AND FITTINGS ON THE NORTH OR EAST SIDE.

5. TEST STATIONS SHALL BE INSTALLED AT EVERY FIRE HYDRANT, AS SHOWN, OR AT A MINIMUM INTERVAL OF 500 FEET. TEST STATIONS NOT LOCATED NEAR HYDRANTS MUST BE PLACED BEHIND EDGE OF PAVEMENT.


7. TEST STATIONS SHALL LIE WITHIN UTILITY EASEMENT OR PUBLIC R.O.W.
NOTES:
1) SAMPLING STATIONS SHALL BE AN ECLIPSE NO. 88 SAMPLING STATION OR AN APPROVED EQUAL.
2) ALL STATIONS SHALL BE ENCLOSED IN A LOCKABLE, NON-REMOVABLE, ALUMINUM-CAST HOUSING.
3) A COPPER VENT TUBE WILL ENABLE EACH STATION TO BE PUMPED FREE OF STANDING WATER TO PREVENT FREEZING AND TO MINIMIZE BACTERIA GROWTH.
4) PADLOCK PROVIDED BY CASTLE ROCK WATER.
5) CONCRETE FILLED PAINTED SAFETY YELLOW BOLLARDS TO BE INSTALLED PER INSPECTOR IF STATION IS SUBJECT TO TRAFFIC.

2'x2'x4' CONCRETE

BRASS STANDPIPE
48" TO 60" DEPTH OF BURY

3/4" BRASS BEND

3/4" DOMESTIC COPPER SOFT K-TYPE

GROUNDBEDING

APPROVED PIPE BEDDING

CURB BOX (McDONALD 5603 ARCH PATTERN W/ 5601-I LID AND 304 STAINLESS STEEL ROD)

RECESS STATION 1/2" BELOW SURFACE ELEVATION

1/4" CORP STOP (WITH INSULATOR IF USING DIP MAIN)

BALL VALVE CURB STOP

3/4" DOMESTIC COPPER SOFT K-TYPE

DOUBBLE STRAP BRONZE SERVICE CLAMP FOR ALL DIP AND PVC MAINS

WATER MAIN

2'-0"

1/4" UNTHREADED NOZZLE WITH BRASS CAP

LOCKABLE ALUMINUM-CASE HOUSING

COPPER VENT TUBE WITH 1/4" BALL VALVE
1. CARE SHALL BE TAKEN WHEN INSTALLING VALVES TO ASSURE PROPER SUPPORT OF THE VALVE. THE ENGINEER MAY REQUIRE 3/4” CRUSHED ROCK TO BE INSTALLED UNDER THE VALVE TO PROVIDE PROPER SUPPORT.

2. VALVES SHALL NOT BE PLACED IN CONCRETE CROSS PANS, GUTTERS, OR OTHER DRAINAGE WAYS.

3. OPERATING NUTS OR EXTENSIONS SHALL NOT BE SET CLOSER THAN THREE (3) FEET FROM FINISHED GRADE. IF OPERATING NUT IS DEEPER THAN FIVE (5) FEET FROM FINAL GRADE, PROVIDE A VALVE STEM EXTENSION (SEE DETAIL W-37).

4. GATE VALVE SHALL BE POLYETHYLENE WRAPPED (8 MIL).

5. CONCRETE COLLARS & MARKER POSTS ARE REQUIRED WHEN VALVE IS LOCATED IN AN UNPAVED AREA.

6. VALVE BOXES ARE TO BE BROUGHT UP TO GRADE @ THE TIME OF PAVEMENT PLACEMENT OR OVERLAY. VALVE BOX ADJUSTING RINGS ARE NOT ALLOWED.

7. INSTALL SOLID SLEEVE WITH MEGALUG MECHANICAL JOINT RESTRAINT.

8. NO TRACER WIRE ALLOWED INSIDE OF VALVE BOX. SHOULD HAVE SEPARATE MONUMENT STYLE VALVE BOX W/ CP TEST STATION FOR TRACER WIRE (SEE DETAIL W-28).
SUPPLIED BY THE TOWN
SUPPLIED BY THE CONTRACTOR

APPROVED BACKFLOW ASSEMBLY

2½" THROTTLE VALVE

DISCHARGE TO GRADE
DECHLORINATION IS REQUIRED

THROTTLE VALVE

SMOOTH, UNTHREADED
SAMPLING FAUCET

18" MIN
ABOVE GRADE

TEMPORARY BLOW OFF
ASSEMBLY PER DETAIL W-16

MAIN DISINFECTION
UP TO 12"

DETAIL PLAN NO.
W-35A
Sheet 1 of 1
MAIN DISINFECTION
UP TO 12"

EXISTING TEMPORARY BLOW OFF ASSEMBLY

DRY KICK WITH 2x4 OR 4x4

SQUEEGE

TEMPORARY BLOW OFF ASSEMBLY PER DETAIL W-16

APPROVED BACKFLOW ASSEMBLY

2 1/2" THROTTLE VALVE

SUPPLIED BY THE TOWN
SUPPLIED BY THE CONTRACTOR

6" MIN. ABOVE FINISHED GRADE

CAP BLOW OFFS WITH PVC CAPS WHEN NOT IN USE

SMOOTH, UNEARTHED SAMPLING FAUCET

THROTTLE VALVE

DISCHARGE TO GRADE DECHLORINATION IS REQUIRED

18" MIN. ABOVE FINISHED GRADE
NOTES:

1. VALVE EXTENSION SHALL BE STEEL WITH BLACK ENAMEL FINISH OR EQUIVALENT.

2. TOP OF OPERATING NUT TO BE LOCATED 3 TO 5 FEET BELOW FINISHED GRADE.

3. VALVE STEM EXTENSIONS SHALL ONLY BE USED IF THE VALVE'S OPERATION NUT IS GREATER THAN 7' BELOW FINISHED GRADE.
NOTES:
1. PIPES MUST BE WRAPPED WITH POLYETHYLENE TUBING.
2. FLOWFILL SHALL EXTEND TO OR BEYOND PIPE SPRINGLINES.
NOTES:

1. IN PAVEMENT, DEPRESS CURB STOP APPROXIMATELY 2" BELOW FINISHED GRADE.

2. A TECHNICAL CRITERIA VARIANCE, FIELD CHANGE ORDER AND/OR ASSOCIATED FEES MAY BE REQUIRED FOR CURB STOPS PLACED IN PAVEMENTS.

3. UNLESS REPAIRS OF TOWN-OWNED INFRASTRUCTURE IS NEEDED, THE PROPERTY OWNER IS RESPONSIBLE FOR PAVEMENT AROUND CURB STOP.

4. CURB STOP SHALL BE MCDONALD 5607 w/ 304 STAINLESS STEEL ROD OR APPROVED EQUAL.
CONTRACTOR AND INSPECTOR TO NOTIFY CASTLE ROCK WATER PRIOR TO INSTALLATION OF LOW POINT BLOWOFF.

LOW POINT BLOWOFF

DETAIL PLAN NO. W-41
Sheet 1 of 1

Issued By: Town of Castle Rock, Development Services March 2, 2020
NOTES:

1. BALL VALVE, PN: B21-333
2. METERS WILL BE PROVIDED BY THE TOWN AND INSTALLED BY THE CONTRACTOR.
3. BALL VALVE, PN: B11-333 (FORD)
4. CURB STOP LOCATED PER PLAN. CURB STOPS ARE NOT ALLOWED IN PAVED AREAS WITHOUT AN APPROVED TECHNICAL CRITERIA VARIANCE. REFER TO DETAIL W-40.
5. EXPANSION TANK (2 GAL. MIN.), AS REQUIRED BY PLUMBING CODE.
6. BACKFLOW PREVENTION ASSEMBLY INSTALLATION IS REQUIRED PRIOR TO METER BEING RELEASED.
7. REQUIRED REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY TYPES ARE CONTINGENT ON TYPE OF WATER USE, AS DETERMINED BY TOWN OF CASTLE ROCK WATER.
8. METERS WILL NOT BE SET IF CURB STOP BOX IS NOT UP TO FINISHED GRADE, IF WIRE IS MISSING OR IN WRONG AREA, OR IF THE REQUIRED POINT OF CONNECTION COMPONENTS ARE NOT INSTALLED, AS SPECIFIED IN TOWN DETAIL IR-9.
9. METERS SHALL NOT BE LOCATED IN A CRAWL SPACE.
10. A LOCKABLE METER BYPASS IS REQUIRED FOR DOMESTIC METERS GREATER THAN 1" (REFER TO DETAIL W-66). BYPASSES SHALL NOT BE INSTALLED ON IRRIGATION SERVICES.
11. INSTALL METER WIRE PROVIDED BY TOWN NO MORE THAN 4' BACK FROM FRONT AND 4' ABOVE FINISHED GRADE AT EXTERIOR OF BUILDING. METER WIRE SHALL NOT BE BLOCKED BY FENCE OR LANDSCAPING. LEAVE WIRE LONG ENOUGH TO FREELY MOVE 2' IN AND OUT OF EXTERIOR WALL. TOTAL LENGTH OF WIRE SHALL NOT EXCEED 50'.

CASTLE ROCK WATER ACCEPTS DUAL METERS ONLY IF LANDSCAPE AREA IS LESS THAN 5,000 SQ. FT.

METER LAY LENGTH

\[
\begin{align*}
\frac{3}{8}" & = 7 \frac{3}{4}" \\
1" & = 11 \frac{3}{4}" \\
1 \frac{1}{2}" & = 13 \frac{3}{4}" \\
2" & = 15 \frac{3}{4}"
\end{align*}
\]

INSIDE COMMERCIAL DUAL METER

Sheets

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<thead>
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