PRIMED & TAPED WITH 15 MIL POLYETHYLENE TAPE-1/2 LAPPED

FINISHED GRADE

SIDEWALK

METER BOX

36" MIN

FOR 3/4" & 1" METERS, L=12"
FOR 1 1/2" & 2" METERS, L=15"

3/4" & 1" METER: COUPLINGS
1-1/2" & 2" METER: FLANGED CONNECTIONS

SCH 80
6" PVC (MAX)
MIP x MIP

BRASS FIP X FIP COUPLINGS

ANGLE CURB STOP WITH LOCK WINGS

METER

SUPPORT METER BOX ON TOP OF 2" X 4" REDWOOD BLOCKS OR BRICKS

COPPER TUBING SHOULD BE BENT WHEN POSSIBLE INSTEAD OF USING 1/4 BEND COUPLING

WATER MAIN

TYPE "K" COPPER TUBING

CORPORATION STOP

MAIN TYPE

SERVICE CONNECTION TYPE

D.I.P. & C.I.P.
STAINLESS STEEL FULL CIRCLE CLAMP WITH THREADED CORPORATION STOP TO BE USED ON ALL 1" AND 2" SERVICES.
7-1/2" WIDE BAND FOR 1" TAPS
12-1/2" WIDE BAND FOR 2" TAPS

A.C.P.
DOUBLE STRAP SERVICE CLAMP WITH THREADED CORPORATION STOP.

P.V.C.
SERVICE SADDLES FOR S-90 OR AS APPROVED BY ENGINEER.

NOTE:
1. INSTALL 1/4" PLYWOOD TO BLOCK PIPE PENETRATIONS INTO METER BOX.
2. CLEAN METER BOX OF DEBRIS. NO EARTH-TO-METER CONTACT.
3. SEE STANDARD DETAIL D-31 FOR CATHODIC PROTECTION REQUIREMENTS, WHEN REQUIRED BY ENGINEER BASED ON LOCATION.

CITY OF MOUNTAIN VIEW
PUBLIC WORKS DEPARTMENT
STANDARD DETAIL

1" AND 2" WATER SERVICES
WITH
3/4", 1", 1-1/2", AND 2" WATER METERS

FILE NO. D-1
GATE VALVE ANCHOR REQUIRED WHEN VALVE IS NOT CONNECTED BY FLANGE JOINT TO MAIN TEE
NOTES:

1. THE METER AND METER BOX MAY BE ROTATED 90° TO COMPENSATE FOR SPACE REQUIREMENTS.
2. ALL JOINTS SHALL BE FLANGED TYPE, OR MECHANICAL TYPE JOINTS WITH RETAINER GLANDS. COAT BOLTS, NUTS AND RETAINER GLANDS WITH MASTIC COATING SOLUTION.
3. WRAP ALL METER PIPE, FITTINGS AND VALVES WITH 8 MIL POLYETHYLENE, EXCEPT FOR PIPING IN METER BOX.
4. INSTALL STRAINER UPSTREAM OF METER.
5. LOCATION OF METER + BACKFLOW TO BE DETERMINED BY CITY ENGINEER.
6. INSTALL 1/4" PLYWOOD TO BLOCK PIPE PENETRATIONS INTO METER BOX.
7. CLEAN METER BOX OF DEBRIS. NO EARTH TO METER CONTACT.
8. SEE STANDARD DETAIL D-31A FOR CATHODIC PROTECTION REQUIREMENTS, WHEN REQUIRED BY ENGINEER BASED ON LOCATION.
REDUCE IF NECESSARY

HOUSE IN METER BOX

NIPPLE

LOCK WINGS

METER

3/4" - 1" METERS: COUPLINGS
1.5" - 2" METERS: FLANGED CONNECTIONS

IN-LINE CURB STOPS

SAME AS OPPOSITE

SERVICE SIZE PER TABLE

FROM CITY WATER MAIN

ANGLE CURB STOP

INSTALL CHRISTY GOST TRAFFIC VALVE BOX PER DETAIL D-8

<table>
<thead>
<tr>
<th>SERVICE SIZE</th>
<th>METER SIZE</th>
<th>SPACING &quot;S&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>3/4&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>1&quot;</td>
<td>1&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>2&quot;</td>
<td>1 1/2&quot;</td>
<td>28&quot;</td>
</tr>
<tr>
<td>2&quot;</td>
<td>2&quot;</td>
<td>30&quot;</td>
</tr>
</tbody>
</table>

SINGLE SERVICE CONNECTING TWO METERS
(ADDITIONAL SERVICES MAYBE APPROVED BY CITY ENGINEER)

NOTES:
1. ALL MANIFOLD NIPPLES, FITTINGS, AND PIPE MATERIALS SHALL BE BRASS WITH I.P. THREADS.
2. USE SEPARATE BOX FOR EACH METER. INSTALL SERVICE PER DETAIL D-1.
3. FINAL PIPE CONFIGURATION TO BE DETERMINED BY CITY ENGINEER.
4. ALL REDUCTIONS SHALL OCCUR AFTER CURB STOPS, UNLESS CURB STOPS AND METERS ARE 1" OR SMALLER.
BACKFLOW PREVENTION ASSEMBLY (AS REQUIRED BY CITY ENGINEER)

1" OR 2" TYPE K COPPER (TYPICAL)

30" MIN.

WATER METER (TYPICAL)

CURB STOP (TYPICAL)

SEE NOTE 3

CORP. STOP (TYPICAL)

THRUST BLOCK (TYPICAL)

INSTALL BLOW-OFF VALVE PER DETAIL D-9

BLIND FLANGE

4" P.V.C. OR D.I.P. FLANGE SPOOL

FLANGE & M.J. 90° ELL

4" PVC

WATER MAIN

WATER MAIN

STANDARD THRUST BLOCK FOR TEE SEE DETAIL D-14

TAPPING SLEEVE & VALVE

NOTES:
1. USE OF THIS DETAIL AND FINAL PIPE CONFIGURATION REQUIRE APPROVAL OF CITY ENGINEER.
2. WHEN IRRIGATION SERVICE IS USED, IT SHALL BE LAST SERVICE.
3. PRIME & TAPE PIPE WITH 15 MIL POLYETHYLENE TAPE - 1/2 LAPPED (TYPICAL).
4. STAMP OR GRIND "W" AT FACE OF CURB.
5. SEE DETAIL D-1 FOR WATER SERVICE INSTALLATION DETAILS.
EXISTING 1" OR 2" SERVICES

1" x 3/4" REDUCER (IF REQUIRED)

COPPER TO COPPER UNIONS OR COMPRESSION COUPLINGS

NEW MAIN

EXISTING WATERLINE

2" Ø COPPER FOR 2" SERVICE
1" Ø COPPER FOR 1" SERVICE

2" Ø COPPER FOR 2" SERVICE
1" Ø COPPER FOR 1" SERVICE

CITY OF MOUNTAIN VIEW
PUBLIC WORKS DEPARTMENT
STANDARD DETAIL

TRANSFER SERVICE
(USED WHEN REPLACING MAIN AND NCT SERVICES)
1. Reduced pressure backflow prevention assemblies shall be required for any use where toxic materials are used or where positive protection for the public water supply is required. Typical applications include: hospitals, medical and dental laboratories, mortuaries, industrial plants, dry cleaners, landscape irrigation, or as determined by the city.

2. Approved reduced pressure backflow prevention assemblies shall be listed in the latest edition of the city standard provisions.

3. Backflow prevention assemblies shall be installed adjacent to and on property side of sidewalk where applicable. The assembly shall be installed as close as possible to the water meter.

4. All assemblies 3/4" to 2" will have full port domestic ball valves, with threaded ends. 3" and larger assemblies will have resilient seated gate valves, with flanged ends.

5. Pressure differential valve is to be at least 12" above grade to a maximum of 20".

6. No connection between the backflow prevention assembly and water meter will be permitted. Backflow prevention assemblies smaller than 2.5" shall be placed directly behind the water meters. Unless there is a conflict with other utilities, driveways or sidewalks. Backflow prevention assemblies 2.5" or larger shall be placed as close to the meter as possible, unless an exemption is granted by the public services department. If an exemption is granted, the backflow prevention assembly shall be screened with landscaping and the trenches shall be left open so that the city can verify that there are no connections between the backflow prevention assembly and the meter. The city reserves the right to test the system to ensure that these requirements are met.

7. Where a backflow prevention assembly is installed more than 8' behind the water or irrigation meter, the piping between the backflow prevention assembly and the meter shall be encased in controlled density fill (CDF).

CITY OF MOUNTAIN VIEW
PUBLIC WORKS DEPARTMENT
STANDARD DETAIL
REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY

[Diagram of backflow prevention assembly with specified dimensions and instructions]

[Signature and date on bottom left corner]
DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) PER CITY APPROVED MATERIAL LIST, OR CITY APPROVED EQUAL. APPROVED ASSEMBLY SHALL BE PURCHASED AND INSTALLED AS A WHOLE UNIT WITH GATE VALVES, BY-PASS METER, BY-PASS BACKFLOW PREVENTER, AND BALL VALVES. METER SHALL READ IN CUBIC FEET.

1. OUTSIDE SCREW & YOKE (DS & Y) GATE VALVES SHALL BE ELECTRONICALLY MONITORED BY FIRE SPRINKLER MONITORING SYSTEM, CHAIN AND LOCK PER FIRE DEPT. STANDARD.
2. PVC CLASS 150 (MIN.) C-900 OR DIP FOR ON-SITE; PVC CLASS 200 (MIN.) C-900 OR DIP FOR OFF-SITE.
3. BASE SUPPORT; BRICK, CONCRETE OR BASE ROCK COMPACTED TO 85%.
4. POST INDICATOR VALVE (PIV) - U.L. LISTED.
5. TEE FOR FIRE DEPARTMENT CONNECTION.
6. FIRE DEPARTMENT CONNECTION (FDC), 2-1/2" INLETS WITH CLAPPER). FINISHED LOCATION 6" MAX. BEHIND RIGHT-OF-WAY. 3" ABOVE FINISH GRADE.
7. METER "READ HOLE COVER", 7" x 14" - CENTERED OVER METER.
8. PRE-CAST CONCRETE SECTIONAL VAULT MAINTAIN MINIMUM CLEARANCES.
9. WATER METER AS PROVIDED BY ASSEMBLY MANUFACTURER - SHALL READ IN CUBIC FEET.
10. DOUBLE CHECK VALVE AS PROVIDED BY ASSEMBLY MANUFACTURER.
11. RESILIENT SEAT BALL VALVE AS PROVIDED BY ASSEMBLY MANUFACTURER.
12. RED BRASS THREADED NIPPLES (LENGTH VARIES).
13. POOR IN PLACE CONCRETE SUPPORT.
14. 3/4" REBAR SUPPORT, 24" INTO GROUND.
15. FIRE PIT SHALL BE INSTALLED ON THE ADDRESS SIDE OF THE BUILDING UNLESS OTHERWISE APPROVED BY FIRE DEPT. AND PUBLIC WORKS DEPT.
16. MINIMUM 18" CLEARANCE BETWEEN PIV AND FDC.
17. NOTCHED OPENING EACH END OF VAULT CENTERED 21" FROM INSIDE (SIZE VARIES), TOP OF OPENING TO BE CURVED.
18. ALL WEATHER EXPOSED SURFACES OF THE FDC AND PIV TO BE PAINTED RED (TYE) MAINTAIN MIN - 3" CLEARANCE AROUND PIV AND FDC.
19. ALL FERROUS BURIED PIPES TO BE WRAPPED WITH 8-MIL POLYETHYLENE AND SECURED WITH 10-MIL POLY TAPE.
20. ALL NUTS & BOLTS SHALL BE STAINLESS STEEL AND MASTIC COATED.

CITY OF MOUNTAIN VIEW
PUBLIC WORKS DEPARTMENT
STANDARD DETAIL

DOUBLE CHECK DETECTOR ASSEMBLY
(BELOW GRADE)
THIS DETAIL IS NOT FOR NEW CONSTRUCTION

FILE NO. D-5A
NOTES:

1. DETECTOR, PIPE SIZE, AND FDC LOCATION TO BE APPROVED BY FIRE DEPARTMENT. DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) SHALL BE PURCHASED AND INSTALLED AS A WHOLE UNIT WITH GATE VALVES, BY-PASS METER, BY-PASS BACKFLOW PREVENTOR, AND BALL VALVES. METER SHALL READ IN CUBIC FEET.

2. OUTSIDE SCREW & YOKE (OS & Y) GATE VALVES SHALL BE ELECTRONICALLY MONITORED BY FIRE SPRINKLER MONITORING SYSTEM. CHAIN AND LOCK PER FIRE DEPT. STANDARD.

3. FIRE DEPARTMENT CONNECTION (FDC) (2-2 1/2" INLETS WITH CLAPPERS) SHALL FACE STREET FRONTAGE. FINISHED LOCATION 5' MAX BEHIND RW. 3' MIN CLEARANCE AROUND BACKFLOW AND FDC. ALL WEATHER EXPOSED SURFACES OF THE FDC TO BE PAINTED RED.

4. WAFER CHECK VALVE - U.L. LISTED, FM APPROVED.

5. INSTALL TWO ADJUSTABLE PIPE SUPPORTS (GRINNELL OR APPROVED EQUAL) UNDER GATE VALVE.

6. EXPOSED PIPING AND FITTINGS SHALL BE FLANGED DUCTILE IRON.

7. 4" THICK P.C.C. PAD - EXTEND PAD MINIMUM 2' BEYOND ASSEMBLY (ALL AROUND).

8. STANDARD P.C.C. THRUST BLOCKS - 2 CU FT FOR 3" & 4" DIA. PIPE.

9. PVC CLASS 150 (MIN.) C 900 OR DIP FOR ON-SITE; PVC CLASS 200 (MIN.) C 900 OR DIP FOR OFF-SITE.

10. ALL FERROUS BURIED PIPES TO BE WRAPPED WITH 8-MIL POLYETHYLENE AND SECURE WITH 10-MIL POLY TAPE. ALL NUTS AND BOLTS SHALL BE STAINLESS STEEL AND MASTIC COATED.

11. MOUNT APPROVED STREET SIGN ON FDC ASSEMBLY FACING STREET FRONTAGE WITH STAINLESS STEEL STRAPS AND SCREWS.

12. 2" ANNULAR SPACE BETWEEN PIPE AND CONCRETE. FILL IN 2" SPACE WITH SAND.

13. 1" PVC CONDUIT FOR TAMPER SWITCH - ELEC. TO BLDG. ASR.

CITY OF MOUNTAIN VIEW
PUBLIC WORKS DEPARTMENT
STANDARD DETAIL

FIRE DOUBLE CHECK
DETECTOR ASSEMBLY
(ABOVE GRADE)
1. TESTING, CERTIFICATION AND REPAIR (IF NEEDED) OF NEW ASSEMBLIES ON FIRE LINES SHALL BE COMPLETED BY AN INDEPENDENT AWWA CERTIFIED BACKFLOW PREVENTION ASSEMBLY TESTER. THE REPORT SHALL BE FORWARD TO THE CITY’S CROSS CONNECTION CONTROL SPECIALIST PRIOR TO ACCEPTANCE OF THE PROJECT.

NOTES:

1. DETECTOR, PIPE SIZE, AND FDC LOCATION TO BE APPROVED BY FIRE DEPARTMENT. DOUBLE CHECK DETECTOR ASSEMBLY (DCDA) SHALL BE PURCHASED AND INSTALLED AS A WHOLE UNIT WITH GATE VALVES, BY-PASS METER, BY-PASS BACKFLOW PREVENTOR, AND BALL VALVES. METER SHALL READ IN CUBIC FEET.

2. OUTSIDE SCREW & YOKE (OS & Y) GATE VALVES SHALL BE ELECTRONICALLY MONITORED BY FIRE SPRINKLER MONITORING SYSTEM. CHAIN AND LOCK PER FIRE DEPT. STANDARD.

3. FIRE DEPARTMENT CONNECTION (FDC) (2-2 1/2" INLETS WITH CLAPPERS) SHALL FACE STREET FRONTAGE. FINISHED LOCATION 5' MAX BEHIND R/W. 3' MIN CLEARANCE AROUND BACKFLOW AND FDC. ALL WEATHER EXPOSED SURFACES OF THE FDC TO BE PAINTED RED.

4. WAFER CHECK VALVE - U.L. LISTED, FM APPROVED.

5. 1" PVC CONDUIT FOR TAMPER SWITCH - ELEC. TO BLDG. ASR.

6. EXPOSED PIPING AND FITTINGS SHALL BE FLANGED DUCTILE IRON. INSTALL PIPE SUPPORT AS NEEDED.

7. 4" THICK P.C.C. PAD - EXTEND PAD MINIMUM 2' BEYOND ASSEMBLY (ALL AROUND).

8. STANDARD P.C.C. THRUST BLOCKS - 2 CU FT FOR 3" & 4" DIA. PIPE.

9. PVC CLASS 150 (MIN.) C 900 OR DIP FOR ON-SITE; PVC CLASS 200 (MIN.) C 900 OR DIP FOR OFF-SITE.

10. ALL FERROUS BURIED PIPES TO BE WRAPPED WITH 8-MIL POLYETHYLENE AND SECURE WITH 10-MIL POLY TAPE. ALL NUTS AND BOLTS SHALL BE STAINLESS STEEL AND MASTIC COATED.

11. MOUNT APPROVED STREET SIGN ON FDC ASSEMBLY FACING STREET FRONTAGE WITH STAINLESS STEEL STRAPS AND SCREWS.

12. 2" ANNULAR SPACE BETWEEN PIPE AND CONCRETE. FILL IN 2" SPACE WITH SAND.

CITY OF MOUNTAIN VIEW
PUBLIC WORKS DEPARTMENT
STANDARD DETAIL

FIRE DOUBLE CHECK
DETECTOR ASSEMBLY
(ABOVE GRADE - COMPACT)
NOTES:

1. METER TO BE 5/8" X 3/4" OR 3/4", ALL BRONZE, STRAIGHT READER IN CUBIC FEET.
2. ALL WEATHER EXPOSED SURFACES OF THE FDC AND PV TO BE PAINTED RED, MAINTAIN MIN MIN - 3" CLEARANCE AROUND PV AND FDC.
3. ALL PROVISIONS FOR THRUST AND ANCHORAGE TO BE INCLUDED.
4. ALL FERROUS BURIED PIPES TO BE WRAPPED WITH 6-MIL POLYETHYLENE AND SECURED WITH 10-MIL POLY TAPE.
5. ALL NUTS AND BOLTS SHALL BE STAINLESS STEEL AND MASTIC COATED.
6. SECURE DETECTOR METER AND PIPING TO 3/4" REBAR SUPPORTS, 24" INTO GROUND.
7. ABOVE GROUND CHECK VALVE SHALL BE U.L. LISTED, FM APPROVED.
8. FIRE PIT SHALL BE INSTALLED ON THE ADDRESS SIDE OF THE BUILDING UNLESS OTHERWISE APPROVED BY FIRE DEPARTMENT AND PUBLIC WORKS DEPARTMENT.

CITY OF MOUNTAIN VIEW
PUBLIC WORKS DEPARTMENT
STANDARD DETAIL

DETECTOR CHECK VALVE
(BELOW GRADE)

THIS DETAIL IS NOT FOR NEW CONSTRUCTION
FACE OF CURB FOR 6'+ SIDEWALK
BACK OF CURB FOR 5' SIDEWALK
(UNLESS OTHERWISE SHOWN
ON THE PLAN)

FLANGE, BOLTS & NUTS SHALL
BE KEPT CLEAR OF CONCRETE

SEE VALVE BOX
DETAIL D-6

SEE THRUST BLOCK
DETAIL D-14 FOR TEES

FLANGE JOINT

WATER
MAIN

TWO (2) 4" x 8" x 14"
CONCRETE BLOCKS

MECHANICAL JOINT (M.J.),
INSTALL M.J. PLUG IF
HYDRANT RUN IS OMITTED

6" DIA. BREAK-OFF SPOOL
WITH BREAK-OFF BOLTS
6" MIN. LENGTH &
18" MAX. LENGTH

FIRE HYDRANTS ARE TO BE
PAINTED WITH RUST
PREVENTIVE PAINT
(BRIGHT SILVER)

TOP OF
SIDEWALK

BURY PIPE

UNDISTURBED
EARTH

1' MIN:
2 - 6"

GATE VALVE ANCHOR REQUIRED WHEN VALVE IS
NOT CONNECTED BY FLANGE JOINT TO MAIN TEE

CITY OF MOUNTAIN VIEW
PUBLIC WORKS DEPARTMENT
STANDARD DETAIL

FIRE HYDRANT
NOTES:
1. WHEN THERE IS A NEED TO RAISE VALVE COVER TO MEET NEW GRADE, ONLY ONE ADDITIONAL RING MAY BE ADDED.
2. FLANGES, BOLTS, AND NUTS SHALL BE KEPT CLEAR OF CONCRETE.
3. COAT EXPOSED PORTIONS OF ANCHOR RODS WITH A MASTIC COATING SOLUTION AND WRAP IN 10 MIL POLYETHYLENE TAPE.
CHRISTY G12C VALVE BOX AND G12C LID WITH "WATER" ON COVER

PAVEMENT SURFACE

CLASS 'B' CONCRETE COLLAR

MECHANICAL CAP OR FLANGE WITH RESTRAINT JOINT (MEGALUG OR APPROVED EQUAL)

COAT EXPOSED PORTIONS OF ANCHOR RODS WITH MASTIC COATING SOLUTION AND WRAP IN 15 MIL POLYETHYLENE TAPE.

CURB STOP

TYPE 'K' COPPER TUBING (2" FOR BLOW-OFF)

PRIME & WRAP WITH 15 MIL POLYETHYLENE TAPE

BEND COPPER TUBING WHEN POSSIBLE

INSTALL BLOW-OFF ONLY AT LOCATIONS DESIGNATED ON THE PLANS.

CITY OF MOUNTAIN VIEW
PUBLIC WORKS DEPARTMENT
STANDARD DETAIL

BLOW-OFF AT END OF MAIN
CITY OF MOUNTAIN VIEW
PUBLIC WORKS DEPARTMENT
STANDARD DETAIL

2" BLOW-OFF VALVE
NOTE:
1. INSTALL ARV ABOVE 100 YEAR FLOODPLAIN
2. PAINT METAL BOX AND DOOR, BOTH INSIDE AND OUTSIDE, WITH ONE COAT OF VINYL WASH PRIMER AND ONE COAT OF DARK OLIVE GREEN ENAMEL.
3. USE SAME DIAMETER SEAMLESS COPPER TUBING AS REQUIRED SIZE OF AIR VACUUM RELIEF VALVE.
4. INSTALLATION OF ARVs AT END OF MAINS REQUIRE APPROVAL OF CITY ENGINEER.

CITY OF MOUNTAIN VIEW
PUBLIC WORKS DEPARTMENT
STANDARD DETAIL

AIR RELIEF VALVE

TYPE "K" COPPER TUBING SHALL AT ALL POINTS BE RISING FROM THE CORPORATION STOP TO THE AIR & VACUUM RELIEF VALVE

A CRISPIN UNIVERSAL AIR & VACUUM RELIEF VALVE OR APPROVED EQUAL.

B CURB STOP

1" CORPORATION STOP MOUNTED TO TOP OF MAIN

SEE DETAIL D-1 FOR SERVICE CONNECTION SCHEDULE.

1" DIA. TYPE K COPPER TUBING

WATER MAIN

PRIME & WRAP WITH 15 MIL POLYETHYLENE TAPE (TYPICAL)
CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

STANDARD
P.V.C. AND D.I.P. STUB-OUT

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>BEARING (SF.)</th>
<th>L x H</th>
</tr>
</thead>
<tbody>
<tr>
<td>6&quot;</td>
<td>3</td>
<td>1'-9&quot; x 1'-9&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>5</td>
<td>2'-3&quot; x 2'-3&quot;</td>
</tr>
<tr>
<td>10&quot;</td>
<td>9</td>
<td>3'-0&quot; x 3'-0&quot;</td>
</tr>
<tr>
<td>12&quot;</td>
<td>12</td>
<td>3'-5&quot; x 3'-5&quot;</td>
</tr>
<tr>
<td>14&quot;</td>
<td>16</td>
<td>4'-0&quot; x 4'-0&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>21</td>
<td>4'-7&quot; x 4'-7&quot;</td>
</tr>
</tbody>
</table>

CENTER BEARING AREA ON Φ OF PIPE
UNDISTURBED EARTH
1/2" Φ - 12" O.C. BOTH WAYS
NOTE:
FLANGES, BOLTS, AND NUTS SHALL BE KEPT CLEAR OF CONCRETE

\[ H = \text{HEIGHT} \]
\[ L = \text{WIDTH} \]

<table>
<thead>
<tr>
<th>PIPE SIZE</th>
<th>REQUIRED AREA - SQ. FT.</th>
<th>DIMENSIONS - L x H</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5 5/8'</td>
<td>11 1/4'</td>
</tr>
<tr>
<td>6&quot;</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>8&quot;</td>
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<tr>
<td>16&quot;</td>
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<td>4</td>
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</tbody>
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CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

STANDARD THRUST BLOCK
FOR HORIZONTAL AND VERTICAL DOWNWARD BENDS

FILE NO. D-13
1/2" Ø REBARS – 12" ON CENTERS BOTH WAYS

MINIMUM 1" CLEARANCE

UNDISTURBED EARTH

CONCRETE BLOCKS

MASTIC BOLTS AND WRAP ENTIRE TEE WITH 8 MIL POLYETHYLENE.

PLAN

1/2" Ø REBAR COAT EXPOSED PORTIONS OF REBAR WITH A MASTIC COATING SOLUTION AND WRAP IN 10 MIL POLYETHYLENE TAPE.

SECTION

NOTE:
FLANGES, BOLTS, AND NUTS SHALL BE KEPT CLEAR OF CONCRETE.

<table>
<thead>
<tr>
<th>SIDE OUTLET PIPE SIZE</th>
<th>BEARING (S.F.)</th>
<th>L x H</th>
</tr>
</thead>
<tbody>
<tr>
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<td>2</td>
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<tr>
<td>16&quot;</td>
<td>21</td>
<td>4'-7&quot; x 4'-7&quot;</td>
</tr>
</tbody>
</table>

CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

STANDARD THRUST BLOCK
FOR TEES

FILE NO. D-14
THrust Block Dimension—Upward Thrust

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>11 1/4&quot; Bend</th>
<th>22 1/2&quot; Bend</th>
<th>45° Bend</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>L</td>
<td>W</td>
<td>H</td>
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<tr>
<td>6&quot;</td>
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<td>2'0&quot;</td>
<td>1'0&quot;</td>
</tr>
<tr>
<td>8&quot;</td>
<td>2'0&quot;</td>
<td>2'0&quot;</td>
<td>1'0&quot;</td>
</tr>
<tr>
<td>10&quot;</td>
<td>3'0&quot;</td>
<td>2'0&quot;</td>
<td>2'0&quot;</td>
</tr>
<tr>
<td>12&quot;</td>
<td>3'0&quot;</td>
<td>2'0&quot;</td>
<td>2'0&quot;</td>
</tr>
</tbody>
</table>

NOTE:
FLANGES, NUTS AND BOLTS SHALL BE KEEP CLEAR OF CONCRETE.

CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

STANDARD ANCHOR
FOR UPWARD THRUST
NOTE:
REDUCER ANCHOR IS REQUIRED ONLY WHEN LARGER CONNECTION JOINT IS OTHER THAN FLANGED

CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

STANDARD REDUCER ANCHOR
NOTE:
THE 4" IRON PIPE SHALL BE COATED WITH ZINC CHROMATE PRIMER BEFORE INSTALLATION.
NOTES: TYPICAL CATHODIC PROTECTION SYSTEM

A. POLYETHYLENE ENCASED D.I. PIPE AND FITTINGS WITH BONDED JOINTS. 
(SEE D-26 FOR BONDING REQUIREMENTS).

B. DETERMINE ANODE TEST STATION (ATS) REQUIREMENTS BY THE FOLLOWING STEPS:

STEP 1: DETERMINE LENGTH (L) BY THE FOLLOWING FORMULA:

\[ L = W + N \times (X + 5) \]

WHERE \( N = \) NUMBER OF FIRE HYDRANTS
\( X \) & \( W = \) DEFINED AS SHOWN ABOVE

STEP 2: DETERMINE SOIL RESISTIVITY OF SOIL AT PROPOSED ATS.

STEP 3: DETERMINE THE NUMBER OF "n" OF ANODES TO BE INSTALLED 
FROM TABLE I, D-19

C. INSULATING FITTING NOT REQUIRED FOR CONNECTION TO EXISTING 
NON-METALLIC PIPE. PROVIDE 2-WIRE TEST STATION AT D.I. PIPE 
ENDS PER D-25 WHERE INSULATING FITTINGS ARE NOT REQUIRED.
### TABLE 1:
NEW DUCTILE IRON PIPE LINES
ANODE REQUIREMENTS FOR WRAPPED PIPE
(WITH KNOWN SOIL RESISTIVITY)

<table>
<thead>
<tr>
<th>SIZE OF PIPE D (INCHES)</th>
<th>PIPE LENGTH (FEET)</th>
<th>NUMBER &quot;n&quot; OF ANODES REQUIRED</th>
<th>SOIL RESISTIVITY (Ohm·m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>LESS THAN 10</td>
<td>11 TO 30</td>
</tr>
<tr>
<td>4</td>
<td>50</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>2 (1)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>2 (1)</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>50</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>2 (1)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>2 (1)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>3 (1)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>3 (1)</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>50</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>150</td>
<td>2 (1)</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>200</td>
<td>2 (1)</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>3 (1)</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>3 (1)</td>
<td>4</td>
</tr>
<tr>
<td>12</td>
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<tr>
<td></td>
<td>100</td>
<td>2 (1)</td>
<td>2 (2)</td>
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<tr>
<td></td>
<td>150</td>
<td>3 (1)</td>
<td>3 (2)</td>
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<tr>
<td></td>
<td>200</td>
<td>3 (1)</td>
<td>3 (3)</td>
</tr>
<tr>
<td></td>
<td>250</td>
<td>4 (2)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>300</td>
<td>5 (2)</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**

1. USE 20-POUND MAGNESIUM ANODES PER STANDARD DETAILS (SEE D-37). THE VALUES IN BRACKETS INDICATES THE NUMBER OF 60-POUND ANODES WHICH ARE REQUIRED IN LIEU OF 20-POUND ANODES.

2. IF SOIL RESISTIVITY IS NOT DETERMINED FOR THE LOCATION, USE MAGNESIUM ANODES FOR 71 TO 120 OHM·M SOIL RESISTIVITY.

3. TABULAR VALUES ARE BASED ON POLYETHYLENE ENCASED PIPE AND FITTINGS, BONDED FOR CONTINUITY AND OTHER ELECTRICALLY INSULATED METAL PIPES.
NOTE:
PROVIDE 2-#10 TYPE CP CABLES FROM EACH FITTING AND BOND ALL METAL ELEMENTS PER D-26
MAGNESIUM ANODE (TYP.)
INSTALL VERTICAL OR HORIZONTAL
SEE D-37

NOTE: ANODES MUST BE AT LEAST 5' FROM
PIPE (SEE TABLE). VERTICAL INSTALLATION
METHOD REQUIRES 10' O.C. BETWEEN ANODES.

<table>
<thead>
<tr>
<th>V</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>1'</td>
<td>4.9'</td>
</tr>
<tr>
<td>2'</td>
<td>4.7'</td>
</tr>
<tr>
<td>3'</td>
<td>4.2'</td>
</tr>
<tr>
<td>4'</td>
<td>3.5'</td>
</tr>
<tr>
<td>5'</td>
<td>2.4'</td>
</tr>
<tr>
<td>6'</td>
<td>0'</td>
</tr>
</tbody>
</table>

CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

STANDARD ALTERNATIVE ANODE INSTALLATION
CAST IRON TRAFFIC RING AND COVER

LOOP CABLES 18"

PAVEMENT TO MATCH EXISTING SURFACE

12"

6"

6"

#10 TEST AND DRAIN CABLES TO PIPE

#10 ANODE CABLES NUMBER AS REQUIRED

TERMINAL BOX WITH ANODES: SEE D-24

CTS: SEE D-25

CHRISTY G-12 VALVE BOX

CLASS "B" CONCRETE COLLAR

DRAIN ROCK 1/4" x 3/8"
6" THICK

12" PVC RISER

CLASS "B" CONCRETE BASE

CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

STANDARD TEST AND ANODE JUNCTION BOX

FILE NO. D-23
CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

STANDARD ANODE TERMINAL BOX
(COVER NOT SHOWN)
NOTE:
BOND DETAIL IS USED FOR MECHANICAL AND PUSH-ON JOINTS

TABLE 2

<table>
<thead>
<tr>
<th>PIPE SIZE (INCHES)</th>
<th>BOND SIZE (AWG No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 TO 10</td>
<td>#6</td>
</tr>
<tr>
<td>12 TO 16</td>
<td>#4</td>
</tr>
<tr>
<td>20 TO 24</td>
<td>#2</td>
</tr>
<tr>
<td>30 TO 42</td>
<td>#1</td>
</tr>
</tbody>
</table>

CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

STANDARD JOINT BOND
FOR DUCTILE IRON PIPE
ELEVATION

SECTION

FILE TO BARE METAL AND CLEAN SURFACE (TYPICAL)

TABLE 2

<table>
<thead>
<tr>
<th>PIPE SIZE (INCHES)</th>
<th>BOND SIZE (AWG No.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 TO 10</td>
<td>#6</td>
</tr>
<tr>
<td>12 TO 16</td>
<td>#4</td>
</tr>
<tr>
<td>20 TO 24</td>
<td>#2</td>
</tr>
<tr>
<td>30 TO 42</td>
<td>#1</td>
</tr>
</tbody>
</table>

CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

STANDARD
FLEXIBLE COUPLING BOND
TABLE II:
NEW COPPER SERVICE LINES
ANODE REQUIREMENTS FOR WRAPPED PIPE
(WITH KNOWN SOIL RESISTIVITY)

<table>
<thead>
<tr>
<th>SIZE OF SERVICE (INCHES)</th>
<th>SOIL RESISTIVITY (Ohm·m)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LESS THAN 10</td>
</tr>
<tr>
<td>1/2 &amp; 5/8</td>
<td>1 # 12</td>
</tr>
<tr>
<td>1, 3/4 &amp; 1-1/4</td>
<td>1 # 12</td>
</tr>
<tr>
<td>1-1/2 &amp; 2</td>
<td>1 # 12</td>
</tr>
<tr>
<td>2-1/2 &amp; 3</td>
<td>1 # 17</td>
</tr>
</tbody>
</table>

NOTES:

1. USE MAGNESIUM ANODES PER STANDARD DETAILS FOR VALUES BELOW DOUBLE LINE, AND ZINC ANODES PER STANDARD DETAILS FOR VALUES ABOVE DOUBLE LINES.

2. IF SOIL RESISTIVITY IS NOT DETERMINED FOR THE LOCATION, USE (1) 17# MAGNESIUM ANODE FOR SERVICES 1-1/2" AND SMALLER, AND (2) 17# MAGNESIUM ANODES FOR SERVICES LARGER THAN 2" AND UP TO 50 FEET LONG.

3. TABULAR VALUES ARE BASED ON 50 FEET OF SERVICE LINE OR LESS. FOR SERVICE LINES FROM 50 FEET TO 100 FEET LONG, USE 2 TIMES THE TABULAR VALUE.
NOTES:
1. SEE STANDARD DETAIL D-1 FOR LOCATION PLAN.
2. FIELD APPLY BITUMASTIC 50 ON ALL BARE METAL AND COVER WITH POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH AWWA STANDARD C105.
3. USE CLAMP FOR COUPLING TYPE METER, ATTACH SHUNT TO SERVICE WITH SOLDER TYPE TERMINAL RING TO BOLT FOR FLANGED METERS.
NOTES:
1. FOR METER INSTALLATION SEE STANDARD D-3
2. PROVIDE 2-WIRE TEST STATION FOR SERVICES WHICH ARE ATTACHED TO OLD A/C OR C.I. PIPE. PROVIDE CATHODIC PROTECTION IN ACCORDANCE WITH PLANS AND STANDARD D-18 FOR NEW DUCTILE IRON PIPE.
3. CONNECT TEST LEAD TO SERVICE PIPE IF WATER MAIN IS A.C.
4. ADD INSULATED FLANGES TO ISOLATE METER ONLY IF THE INSTALLATION DOES NOT REQUIRE CATHODIC PROTECTION.

CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

STANDARD 4" OR LARGER METER INSTALLATION
CORROSION CONTROL DETAILS
COPPER SERVICE INSTALLATION - ACP MAINS

DEPARTMENT OF PUBLIC WORKS
CITY OF MOUNTAIN VIEW

STANDARD 2" OR SMALLER

NOTES:
1. SEE STANDARD DETAIL D-1 FOR LOCATION PLAN.
2. FIELD APPLY BITUMASTIC 50 ON ALL BARE METAL AND COVER WITH POLYETHYLENE ENCASEMENT IN ACCORDANCE WITH AWWA STANDARD C105.
3. USE CLAMP FOR COUPLING TYPE METER. ATTACH SHUNT TO SERVICE WITH SOLDER TYPE TERMINAL RING TO BOLT FOR FLANGED METERS.
CURB STOP:
MUELLER H-15174,
JONES J-1900,
FORD B-11333,
OR FORD B-21333.

CRISPIN UNIVERSAL AIR &
VACUUM AIR RELIEF VALVE
OR APPROVED EQUAL.

METAL
ENCLOSURE
SEE D-11

FINISHED
GRADE

5' MIN.

1'' TYPE "K"
COPPER
TUBING

SEE D-31
1-17# Mg ANODE
UNLESS NOTED
OTHERWISE ON PLAN

3' MIN.

CORPORATION STOP
MUELLER No. H-15000

1'' TYPE "K"
COPPER
TUBING

PRIME AND TAPE WITH 12-MIL
P.E. TAPE - 1/2 LAPPED.

8-MIL POLYETHYLENE WRAP

SEE NOTE 4

MANUAL AIR RELIEF VALVE

AUTOMATIC AIR & VACUUM VALVE

NOTES:
1. CONNECTION TO WATER MAIN SHALL CONFORM TO STANDARD DETAILS AND SPECIFICATIONS.
2. USE SAME DIAMETER SEAMLESS COPPER TUBING AS REQUIRED SIZE OF AIR & VACUUM RELIEF VALVE.
3. AIR RELIEF VALVE AND CURB STOP SHALL BE PLACED IN BOX SUCH THAT THE WALL OF THE BOX
   WILL NOT INTERFERE WITH THE INSTALLATION AND REMOVAL OF THE VALVES.
4. FOR A/C : DOUBLE STRAP SERVICE CLAMP.
   FOR PVC : SERVICE SADDLE APPROVED BY ENGINEER.
   FOR DIP, OP : SEE DETAILS IN D-31

CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

STANDARD AIR RELIEF VALVE
CATHODIC PROTECTION

FILE NO. D-34
CHRISTY G-12 VALVE BOX

PAVEMENT

CLASS 'B' CONCRETE COLLAR
HAND TAMPED BASE
MATERIAL AROUND COLLAR

COAT EXPOSED PORTIONS OF ANCHOR
RODS WITH MASTIC COATING AND WRAP
IN 10 MIL POLYETHYLENE TAPE.

CURB STOP
MUELLER H-15174, JONES J-1900
FORD B-11333 OR FORD B-21333

1"  6"

CONCRETE BASE

SEE D-31

PRIME & WRAP
WITH 15 MIL
POLYETHYLENE TAPE

3' MIN.

1-17# MG ANODE
UNLESS NOTED
OTHERWISE ON
PLAN

8-MIL POLYETHYLENE
WRAP

SEE VALVE
ANCHOR DETAIL
SHEET D-8

BLIND
FLANGE

CORPORATION STOP
SEE D-9

NYLON BUSHING
1 1/2"x1" — AIR RELIEF
2"x1 1/2" — BLOW OFF

NOTE:
INSTALL AIR RELIEF OR BLOW-OFF ONLY AT LOCATIONS DESIGNATED ON THE PLANS.
1/8" THICK STEEL WASHER

PHENOLIC SLEEVE FULL LENGTH OVER BOLT

PHENOLIC WASHER (TYP. EACH SIDE OF FLANGE)

1/8" THICK INSULATING NEOPRENE FACED
PHENOLIC FULLFACE GASKET
FULL LENGTH INSULATING SLEEVE (TYP.)

PROTECTED PIPE
UNPROTECTED PIPE

INSULATING FLANGE
STANDARD MAGNESIUM ANODE

CITY OF MOUNTAIN VIEW
DEPARTMENT OF PUBLIC WORKS
STANDARD DETAIL

SECTION A-A

<table>
<thead>
<tr>
<th></th>
<th>W (LB)</th>
<th>X (IN)</th>
<th>Y (IN)</th>
<th>Z (IN)</th>
<th>L (IN)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>17</td>
<td>3</td>
<td>2 3/4</td>
<td>5</td>
<td>50</td>
</tr>
<tr>
<td></td>
<td>60</td>
<td>4 1/2</td>
<td>4 3/4</td>
<td>7</td>
<td>59 3/4</td>
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<tr>
<td></td>
<td>20</td>
<td>3</td>
<td>2 3/4</td>
<td>5</td>
<td>59 3/4</td>
</tr>
</tbody>
</table>

TO JUNCTION BOX

POTTING COMPOUND

COVER ALL EXPOSED COPPER SILVER SOLDER CONNECTION 2 TURNS (MIN.)

STEEL CORE

W' LB MAGNESIUM ANODE

BACKFILL
75% GYPSUM
20% BENTONITE
5% SODIUM SULFATE

#10 TYPE CP CABLE

W (LB) 17 60 20
X (IN) 3 4 1/2 3
Y (IN) 2 3/4 4 3/4 2 3/4
Z (IN) 5 7 5
L (IN) 50 59 3/4 59 3/4