STANDARD WET BARREL FIRE HYDRANT
FOR USE BELOW 3000 FEET ELEVATION

HYDRANT TYPE.

DISTANCE BEHIND CURB OR SIDEWALK

USE STEEL ALLOY SHEER BOLTS FOR MOUNTING

3' MIN

36' MIN.

6" TJ DIP CLASS 50

6" FLG x FLG G.V.
6" FLG x MJ. ADAP. (RES)
6" MEGA-LUG OR APPROVED EQUAL.

N.T.S
STANDARD DRY BARREL FIRE HYDRANT
FOR USE ABOVE 3000 FEET ELEVATION
N.T.S.

HYDRANT TYPE.

DISTANCE BEHIND CURB OR SIDEWALK.

AUTOMATIC DRAIN TO REMAIN OPEN, AND BE PROVIDED W/ GRAVEL PIT.

3' MIN.

36' MIN.

6' FLG x MJ HYDRANT BURY (RES) ASSEMBLY (DOMESTIC)
48' MAX HEIGHT

6' TJ DIP CLASS 50

6' FLG x FLG G.V.
6' FLG x MJ ADAP. (RES)
6' MEGA-LUG OR APPROVED EQUAL

BEARING AREA

BEARING AREA
GATE VALVE/VALVE CAN INSTALLATIONS
N.T.S.

DETAIL - A

SEE DETAIL-B

36"

FLG x FLG GV

FLG x MJ ADAP

TJ DIR CL 50

VALVE INSTALLATION
4-INCH BLOWOFF DETAIL
N.T.S.

BLOW OFF TYPE.

2' MIN.

4"X4" THREADED NIPPLE
4" THREADED COMP. FLG.

4" FLG×FLG CMLC
FABRICATED SPOOL.

3' MIN.

CONC. MORTAR
3" MIN. ABOVE
EXIST. GROUND.

FINISHED
GRADE.

4" TJ. D.I.P. CLASS 50

4" FLG×MJ 90° BEND (RES)

4" FLG×FLG G.V.
4" FLG×MJ ADAP (RES)
4" MEGA-LUG OR APPROVED
EQUAL.

BEARING AREA
FIRE SERVICE DETAIL
N.T.S.

FIRE SERVICE MATERIALS
(G.V., D.I.P, ADAP. E.T.C)
MAY VARY IN SIZE, ACCORDING
TO PLANS OR APPLICATION.

FLG X FLG
G.V.

FLG X MJ ADPT.
MEGA OR
APPROVED
EQUAL

DUCTILE
IRON
PIPE

WILKINS MOD. 475 DA

6" ROUND
VALVE LID
MARKED
"WATER"

FINISH
GRADE

SEE PLATE
NO. 2

36' MIN

BEARING AREA
SEE PLATE NO. II-2

12' MIN.
36' MAX.
DRAIN DETAIL
N.T.S.

FINISH GRADE.

36' MIN.

90° BEND.

DRAINS TO BE INSTALLED AT LOWEST POINT.

WHEN CROSSING UNDER WASHES, BOX CULVERT, STORM DRAINS, ETC. DRAIN ASSBLY'S ARE REQUIRED.

<table>
<thead>
<tr>
<th>DRAIN SIZE</th>
<th>P.SIZE</th>
<th>D.SIZE</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;-18&quot;</td>
<td>4&quot;</td>
<td></td>
</tr>
<tr>
<td>18&quot;-UP</td>
<td>6&quot;</td>
<td></td>
</tr>
</tbody>
</table>

FLG×FLG ADAP (RES) W/ MEGA LUG OR APPROVED EQUAL MJ. D.I.P CL.50 (RES)

FLG=FLG 90° BEND.

SEE PLANS FOR DIRECTION OF PIPE, AND SEE PLATES NO. 3, 7 FOR BLOW OFF RISER DETAILS.
NEW OR EXISTING WATER MAIN AND NEW SEWER

<table>
<thead>
<tr>
<th>ZONE</th>
<th>SPECIAL CONSTRUCTION REQUIRED FOR SEWER</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Sewer lines will not be permitted in this zone without special permission</td>
</tr>
<tr>
<td>B.</td>
<td>Extra-strength vitrified clay pipe with compression joints; or cast iron pipe with compression joints.</td>
</tr>
<tr>
<td>C. or D.</td>
<td>Class 150 or heavier cast-iron pipe with hot dip bituminous coating and approved mechanical joints; or any sewer pipe within a continuous steel casing, which casing shall have a thickness of not less than one-fourth inch and with all voids between sewer pipe and casing pressure grouted with sand-cemented grout.</td>
</tr>
</tbody>
</table>

Note: Dimensions are from outside of water main to outside of sewer.
NEW WATER MAIN AND EXISTING SEWER

Zone A
A. No water mains shall be constructed without prior approval.

B. If the sewer does not meet the Zone B requirements given above the water main shall be of Class 200 pipe of equivalent.

C. No water mains shall be constructed without special permission from the Tribal Water Department. If permission is granted the sewer shall be encased with reinforced concrete and the water main shall be Class 200 pipe or equivalent.

D. The sewer shall be encased with reinforced concrete.

House Laterals

The special construction requirements shall apply to house laterals that cross above a water main, but not to those house laterals that cross below a water main.

Definitions
1. Compression joints are rubber ring or gasket joints
2. Mechanical joints are bolted joints.
3. Acceptable reinforced concrete encasement is as follows:

Concrete shall have a 28-day compressive strength of 3000 PSI
1" AND 2" COMBINATION AIR-VAC ASSEMBLY DETAIL
N.T.S.

GALVANIZED STEEL VENTED A.V.R.
PROTECTIVE ENCLOSURE, W/ RED
OXIDE PRIMER.

L = 2'0" (NO SIDEWALK)
0'-6' MIN - 1'6" MAX
(BEHIND SIDEWALK)

MINIMUM RADIUS

<table>
<thead>
<tr>
<th>SIZE</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>45&quot;</td>
</tr>
<tr>
<td>2&quot;</td>
<td>80&quot;</td>
</tr>
</tbody>
</table>

SLOPE 1/8 FT.

BRASS 90 BEND

MALE-JONES SUPER GRIP COPPER COMPRESSION FITTING OR EQUAL

BRASS CORR STOP

DOUBLE STRAP TAPPING SADDLE

PIPELINE

VALVE

<table>
<thead>
<tr>
<th>VALUE</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>18&quot;</td>
<td>32&quot;</td>
</tr>
<tr>
<td>2&quot;</td>
<td>20&quot;</td>
<td>36&quot;</td>
</tr>
</tbody>
</table>

1/2" HOLES

10 GA STEEL

3-L CLIPS 1/4" x 2
1/2" x 2 1/2" x 1'

AIR GAP 3/4" MIN.

ANCHOR BOLTS - MIN 3" L
4" AND 6" COMBINATION AIR-VAC ASSEMBLY DETAIL
N.T.S.

L = 2'-0" (NO SIDEWALK)
0'-6" MIN - 1'-6" MAX
(LEAD MIN. CLR. ALL AROUND)

<table>
<thead>
<tr>
<th>VALVE SIZE</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;</td>
<td>24&quot;</td>
<td>40&quot;</td>
</tr>
<tr>
<td>6&quot;</td>
<td>30&quot;</td>
<td>44&quot;</td>
</tr>
</tbody>
</table>

DETAIL NOTES:

1. COMBINATION AIR/VACUUM VALVE. SEE DISTRICT STANDARDS
2. GALVANIZED STEEL VENTED ENCLOSURE. 16 GA. WITH ACCESS DOOR
3. FLANGED GATE VALVE
4. 6" THICK CONCRETE PAD
5. DUCTILE IRON PIPE. ALL JOINTS RESTRAINED.
6. 90° BEND. RESTRAINED
7. FLANGED OUTLET
8. VALVE BOX ASSEMBLY PER DISTRICT STANDARD PLATE NO. 2-1
9. 8" RISER PIPE PER DISTRICT STANDARD PLATE NO. 2
10. RESILIENT SEATED GATE VALVE, FLANGED
11. 90° BEND. FLANGED
12. THREADED PRE-FAB PVC SCREEN OUTLET WITH RIGID STAINLESS STEEL SCREEN
13. 4-5/8" X 3" ANCHOR BOLTS (EQUALLY SPACED)
14. 4-2" x 2" x 1/2" x 1/4" L-CLIPS

SLOPE UPVARD %2 HORIZONTAL
3/4" AIR GAP
WATER MAIN
TRENCH DETAIL
N.T.S.

EXIST GRADE

PAVEMENT REPLACEMENT.

BACKFILL COMPACTED PER PERMIT REQUIREMENTS.

FINAL BACKFILL MATERIAL.

TRENCH WIDTH AND EXCAVATION.

MINIMUM DEPTH
36"

8" MINIMUM

UN-DISTURBED EARTH

INITIAL BACKFILL DETAILS.
SERVICE TRENCH DETAIL
N.T.S.

WATER MAIN

18"  12"

18"  18"

30°

LIMITS OF TRENCH

SERVICE LINE.

24" M.T.N. TRENCH BEHIND CURB OR R/W.

SECTION 3. 3-04 FOR PAVEMENT REPLACEMENT.

FINISHED GRADE.

12°

DEPTH

30"

MINIMUM

SECTION 3. 3-03-C FOR COMPACTION.

FINAL BACKFILL MATERIAL.

INITIAL BACKFILL COPPER TRACER WIRE.

SERVICE LINE

6" MIN.

UN-DISTURBED EARTH.
SERVICE LINE DETAIL
N.T.S.

BRASS METER CONNECTION

CURB

METER
12"

METER BOX

FINISH GRADE

30' MIN.

MALE I.P. x COMP. FOR

JONES OR MUELLER ANGLE METER STOP

GATE VALVE

MIN RADIUS

<table>
<thead>
<tr>
<th>SIZE</th>
<th>R</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>45°</td>
</tr>
<tr>
<td>2&quot;</td>
<td>80°</td>
</tr>
</tbody>
</table>

DOUBLE STRAP SADDLE

CORP STOP

F.I.P. x COMP.
2 - INCH BLOWOFF DETAIL
N.T.S.

BLOW OFF TYPE.

FINISHED
GRADE

2" MIN.

2" GALV. (FABRICATED)
NIPPLE.

2" GALV. 90° BEND.

2" GALV. (RISER) NIPPLE TO
BE FABRICATED ON SITE,
ACCORDING TO GRADE
AND SPECS.

DOUBLE STRAP SADDLE
W/2" OUT.

2" CORP. STOP.

2" GALV. COUPL.

2" & 6" GALV. NIPPLE.

2" BRASS G.V. (300 PSI RATING)
CONCRETE ENCASEMENT DETAILS
N.T.S.

END VIEW

SIDE VIEW

15' Min. 15' Min.

5' Min. 3' Min.

DUCTILE OR STEEL MAIN

PROFILE
FLEXIBLE COUPLING TIE DETAILS
NO SCALE

PLAN VIEW

DETAIL "A"

Notes:
1. Install ties along the horizontal axis of pipeline.
2. Contractor to furnish cool tar enamel and paint all exposed surfaces.
BAFFLE INSTALLATION DETAILS
NO SCALE

2" x 12" Redwood Plank
8" x 4" Redwood Stake
3/16" galv. nails (typical)

PLAN

SECTION A-A

Mound backfill over trench to top of bottles and taper fill from outside edge of bottle to natural ground at 4:1 maximum slope.

BAFFLE SPACING TABLE

<table>
<thead>
<tr>
<th>Slope Gradient</th>
<th>Baffle Spacing</th>
</tr>
</thead>
<tbody>
<tr>
<td>20% (5:1)</td>
<td>15 feet</td>
</tr>
<tr>
<td>25% (4:1)</td>
<td>12'</td>
</tr>
<tr>
<td>35% (3:1)</td>
<td>9'</td>
</tr>
<tr>
<td>50% (2:1)</td>
<td>7'</td>
</tr>
</tbody>
</table>
## THRUST BLOCK SIZE FOR HORIZONTAL PRESSURES
(BASED ON 2500 LB/SQ.FT. BEARING PRESSURE)

<table>
<thead>
<tr>
<th>PIPE DIA</th>
<th>PIPE CLASS</th>
<th>PRESS PSI</th>
<th>AREA IN SQUARE FEET</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>TEES</td>
</tr>
<tr>
<td>6</td>
<td>150</td>
<td>150</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td>3.0</td>
</tr>
<tr>
<td>8</td>
<td>150</td>
<td>150</td>
<td>4.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td>5.5</td>
</tr>
<tr>
<td>10</td>
<td>150</td>
<td>150</td>
<td>6.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td>8.5</td>
</tr>
<tr>
<td>12</td>
<td>150</td>
<td>150</td>
<td>9.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td>12.5</td>
</tr>
<tr>
<td>14</td>
<td>150</td>
<td>150</td>
<td>12.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td>16.5</td>
</tr>
</tbody>
</table>

## REDUCERS

<table>
<thead>
<tr>
<th>REDUCER SIZE</th>
<th>PIPE CLASS</th>
<th>PRESS PSI</th>
<th>DIMENSIONS</th>
<th>X</th>
<th>HEIGHT</th>
<th>T</th>
</tr>
</thead>
<tbody>
<tr>
<td>8 X 6</td>
<td>150</td>
<td>150</td>
<td>9&quot;</td>
<td>2' – 6&quot;</td>
<td>12&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td>9&quot;</td>
<td>2' – 6&quot;</td>
<td>12&quot;</td>
<td></td>
</tr>
<tr>
<td>10 X 8</td>
<td>150</td>
<td>150</td>
<td>12&quot;</td>
<td>3' – 0&quot;</td>
<td>12&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td>12&quot;</td>
<td>3' – 0&quot;</td>
<td>12&quot;</td>
<td></td>
</tr>
<tr>
<td>12 X 10</td>
<td>150</td>
<td>150</td>
<td>12&quot;</td>
<td>3' – 0&quot;</td>
<td>12&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td>12&quot;</td>
<td>3' – 0&quot;</td>
<td>12&quot;</td>
<td></td>
</tr>
<tr>
<td>14 X 12</td>
<td>150</td>
<td>150</td>
<td>12&quot;</td>
<td>3' – 4&quot;</td>
<td>12&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>200</td>
<td>12&quot;</td>
<td>3' – 4&quot;</td>
<td>12&quot;</td>
<td></td>
</tr>
</tbody>
</table>
THRUST BLOCK DETAILS
NO SCALE

NOTE: FOR THRUST BLOCK SIZES SEE PLATE No.11-2

TRENCH WALL
(TYPICAL)

BEARING AREA
REQUIRED

(TREE

BEARING AREA
REQUIRED
(USE 1/2 OF AREA
REQUIRED FOR TEE)

SECTION
A

HORIZONTAL ELBOW

TRENCH WALL

REDUCER

4" STEEL
OR A.C. PIPE

TEE WITH PLUG

UNDISTURBED
EARTH

PLUG

PLATE 11-1
METER BOX INSTALLATION

\[ \text{WATER METER} \]

\[ \text{CARSON BROOKS MODEL 910} \]

\[ \text{CARSON BROOKS MODEL 1419-12} \]

\[ \text{3/4" x 1/2" BRASS NIPPLE} \]
\[ \text{3/4" GATE VALVE} \]
\[ \text{3/4" x 6" BRASS NIPPLE} \]
\[ \text{3/4" COUPLING BRASS} \]
\[ \text{3/4" x 2 1/2" METER CONNECTION} \]
\[ \text{5/8" x 3/4" OR 3/4" METER BUSHING} \]

5/8" x 3/4" & 3/4" METER INSTALLATIONS FOR THIS SIZE BOX ONLY. LARGER METERS 1" 1220-12, 1 1/2" & 2" 1730-12 BOXES.
DRAFTING LEGEND

W W EXISTING WATER PIPELINE
S S EXISTING SEWER LINE
G G EXISTING GAS LINE
E E EXISTING ELECTRICAL CONDUIT
SD SD EXISTING STORM DRAIN
TT EXISTING TELEPHONE CONDUIT

F.H. PROPOSED WATER PIPELINE
FIRE HYDRANT ASSEMBLY

BO. GATE VALVE
BLOWOFF ASSEMBLY

S DOMESTIC SERVICE □1" DENOTES SIZE

AV.R. AIR AND VACUUM RELEASE ASSEMBLY
FLANGED FITTINGS

BF. BLIND FLANGE

2124 O INVERTED ELEV OF PROPOSED PIPE
FLANGED

FLG. RING TITE

R.T. MECHANICAL JOINT

MJ. CEMENT MORTAL LINED AND WRAPPED S.T.L. PIPE

CML & W. CEMENT MORTAR LINED AND COATED S.T.L. PIPE

CML & C. AMERICAN WATER WORKS ASSOCIATION

AWWA

(RE S) RESTRAINED FITTINGS