GUIDELINES AND POLICIES
- DETAIL DRAWINGS -

Version 1, April 1, 2008
Revised: June 18, 2008

Springfield Water and Sewer Commission
P.O. Box 995
Springfield, MA 01101-0995

Daniel Rodriguez, Chairman
William E. Leonard, Commissioner
Carmen E. Serrano-Gerena, Commissioner
(W-01.0) UTILITY SEPERATION DETAIL
(W-02.0) NON-PAVED AREA TRENCH DETAIL
(W-02.1) TRENCH BACKFILLING-METHOD 1 FOR LUDLOW ROADWAYS
(W-02.2) TRENCH BACKFILLING-METHOD 2 FOR LUDLOW ROADWAYS
(W-02.3) TRENCH BACKFILLING-METHOD 1 FOR ARTERIAL STREETS IN SPRINGFIELD
(W-02.4) TRENCH BACKFILLING-METHOD 2 FOR ARTERIAL STREETS IN SPRINGFIELD
(W-03.0) STANDARD AIR VALVE ASSEMBLY DETAIL
(W-03.1) AIR VALVE ONE PIECE ASSEMBLY DETAIL 1
(W-03.2) AIR VALVE ONE PIECE ASSEMBLY DETAIL 2
(W-04.0) END OF MAIN
(W-04.1) END OF MAIN DETAIL
(W-05.0) STANDARD TEE INSTALLATION
(W-05.1) ALTERNATE 1 TEE INSTALLATION
(W-06.0) REPAIR TO EXISTING WATER MAINS
(W-06.1) INSTALL VALVE OR FITTING AT A DEAD END OF A WATER MAIN
(W-06.3) CUTTING-INTO EXISTING WATER MAIN WITH BELL FACING VALVE
(W-06.4) CUTTING-INTO EXISTING WATER MAIN WITH BELL FACING AWAY FROM VALVE
(W-06.5) CUTTING-INTO EXISTING WATER MAIN WITH NO BELL FOUND
(W-06.6) CONCRETE THRUST COLLAR
(W-06.7) SOCKET CLAMP DETAIL
(W-06.8) THREADED ROD DETAIL AND CONNECTION TO MJ DETAIL
(W-07.0) STANDARD FIRE HYDRANT ASSEMBLY
(W-07.1) ALTERNATE 1 FIRE HYDRANT ASSEMBLY
(W-07.2) ALTERNATE 2 FIRE HYDRANT ASSEMBLY
(W-07.3) RELOCATION OF FIRE HYDRANT ASSEMBLY (STRAIGHT BACK)
(W-08.0) VALVE BOX
(W-09.0) DUCTILE IRON TAPPING SLEEVE
(W-09.1) STAINLESS STEEL TAPPING SLEEVE
(W-10.0) FLUSHING DEVICE
(W-11.0) NEW WATER SERVICE
(W-11.1) REPLACEMENT WATER SERVICE
(W-12.0) TYPICAL SERVICE BOX DETAIL IN PAVED AREAS
(W-12.1) TYPICAL SERVICE BOX DETAIL IN NON-PAVED AREAS
(W-13.0) 4-8 INCH METERPIT PIPING
(W-13.1) 4-8 INCH METER INSTALLATION
(W-13.2) METER PIT FOR 4-INCH WATER SERVICE PIPE
(W-13.3) METER PIT FOR 6-INCH WATER SERVICE PIPE
(W-13.4) METER PIT FOR 8-INCH WATER SERVICE PIPE
(W-13.5) METER PIT FOR 10 AND 12-INCH WATER SERVICE PIPE
(W-14.0) THRUST BLOCK BEHIND FITTING
(W-14.1) THRUST BLOCKS
(S-01.0) TRENCH DETAIL FOR SEWER PIPES
(S-02.0) PRECAST CONCRETE SEWER MANHOLE
(S-02.1) PRECAST CONCRETE SEWER PIPE CONNECTIONS
(S-02.2) END OF SEWER MAIN
(S-02.3) EXTERIOR DROP MANHOLE
(S-02.4) INTERIOR DROP MANHOLE
(S-02.5) 32 X 8 INCH FRAME & COVER
(S-02.6) 24 X 6 INCH FRAME & COVER
(S-03.0) UTILITY CROSSING DETAIL
(S-04.0) EXISTING SEWER MAIN TO BUILDING CONNECTION
(S-04.1) NEW SEWER MAIN TO BUILDING CONNECTION
(S-04.2) CLEAN OUT WITH SWEEP
(S-04.3) SEWER SERVICE CONNECTION WITH CHIMNEY GREATER THAN 12 FT DEEP
(S-04.4) BUILDING CONNECTION TO SEWER MAIN WITH CONFLICTS
(S-05.0) BUILDING AND MAINLINE SEWER REPAIR
(S-06.0) WETWELL AND VALVE VAULT PRECAST
1. All materials will conform to SWSC material specifications and installation procedures shall conform to SWSC guidelines and policies.

2. All water main should have a minimum depth of 5' from top of pipe to finish grade.

3. See detail W-02.0, W-02.1, W-02.2, W-02.3 or W-02.4 for trench details.

4. On 50-foot wide streets water mains shall be installed 18-feet from the north or east street line, all other widths require engineering & technical services approval.
MIN WIDTH = (PIPE DIA + 12")
BOTH SIDES OF PIPE

NON-PAVED AREA
SEE NOTE 4

5'-0" MIN
UNDISTURBED EARTH

MINIMUM 12" CLEARANCE
6" MINIMUM

BACKFILL WITH SAND,
CRUSHED STONE,
SCREENED GRAVEL,
OR SELECT COMMON
BORROW/FILL
TO 6" ABOVE PIPE
IN 12" LIFTS
COMPACTION TO 95%
PROCTOR

BACKFILL THIS SECTION OF THE
TRENCH WITH COMMON BORROW FILL
FOR THE FULL WIDTH OF THE TRENCH
IN 12" LIFTS COMPACTION TO 90%
PROCTOR NO ROOTS ALLOWED
NO ROCKS OVER 6" DIAMETER

BELLO.D.
PIPE O.D.

6" MIN. BEDDING
SUCH AS SAND,
CRUSHED STONE,
SCREENED GRAVEL,
OR SELECT COMMON
BORROW/FILL
COMPACTION TO 90%
PROCTOR

EXCAVATE FOR BELL 2"-6"

EXISTING PAVEMENT
EXCAVATOR AND
REPLACED WITH BINDER COURSE
STRUCTURAL GRAVEL
FLDABLE FILL
BEDDING SAND
COMMON BORROW
MILLED AND
REPLACED WITH
TACK COAT
UNDISTURBED EARTH

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS
   AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC
   GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM
   TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR
   TRENCH DETAILS.
4. REQUIREMENTS FOR SUBBASE AND BASE MATERIAL TYPE ARE TO
   BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL
   JURISDICTION IN PAVED AREAS.
5. REQUIREMENTS FOR GRAVEL, LOAM AND/OR SEED ARE TO BE IN
   ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION
   IN NON-PAVED AREAS.
6. FOR LOCATION OF WATER MAINS SEE DETAIL (W-01.0).
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAINS SHOULD HAVE A MINIMUM DEPTH OF 6’ FROM TOP OF PIPE.
3. TO FINISH GRADE.
4. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
5. REQUIREMENTS FOR SUBBASE AND BASE MATERIAL TYPE ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN PAVED AREAS.
6. FOR LOCATION OF WATER MAINS SEE DETAIL (W-01.0).
7. REQUIREMENTS FOR GRAVEL, LOAM AND/OR SEED ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN NON-PAVED AREAS.
8. REPLACE WITH SAME DEPTH OF ASPHALT OR MINIMUM 5-INCHES.
9. ALL MATERIALS USED TO MEET MASS. STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
10. SAW CUT EDGE OF UTILITY PATCH IF NO MILLING IS REQUIRED.
11. MILL TO REMOVE TOP COURSE.
12. LEAVE 12-INCH MINIMUM LIP BETWEEN EDGE OF TOP AND EDGE OF BINDER COURSE.
13. AFTER TRENCH WORK IS COMPLETED, FILL AROUND PIPE TO BOTTOM WITH GRATED GRAVEL FILL AND COMPACT IN 6-INCH LIFTS.
14. REPLACE LAYERS OF BINDER AND DEEP BASE.
15. TACK AREA OF MILING 1 GALLON PER 25 SQUARE YARDS.
16. REPLACE TOP COURSE.
17. SEAL EDGES OF UTILITY PATCH WITH HOT Poured RUBERIZED ASPHALT SEALANT.
MIN WIDTH = PIPE DIA + 12" ON BOTH SIDES OF PIPE

12" OF DENSE GRADED CRUSHED STONE FOR ROAD BASE TO ALLOW FOR THE PLACEMENT OF THE PROPER BITUMINOUS PATCH. THROUGH COMPACTION THE FULL WIDTH OF THE TRENCH TO (95% PROCTOR) NO ROOTS ALLOWED

BACKFILL WITH SAND, CRUSHED STONE, SCREENED GRAVEL, OR SELECT COMMON BORROW/FILL TO 8" ABOVE PIPE IN 12" LIFTS COMPACTION TO 95% PROCTOR

6" MIN. BEDDING SUCH AS SAND, CRUSHED STONE, SCREENED GRAVEL, OR SELECT COMMON BORROW/FILL COMPACTION TO 95% PROCTOR

MINIMUM 12" CLEARANCE

PIPE O.D.

BELL O.D.

UNDISTURBED EARTH

EXCAVATE FOR BELL 2" - 6"

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE.
3. TO FINISH GRADE.
4. SEE DETAIL W-02.0, W-02.1, W-02.2, OR W-02.4 FOR TRENCH DETAILS.
5. REQUIREMENTS FOR SUBBASE AND BASE MATERIAL TYPE ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN PAVED AREAS.
6. FOR LOCATION OF WATER MAINS SEE DETAIL (W-01.0).
7. REQUIREMENTS FOR GRAVEL, LOAM AND/OR SEED ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN NON-PAVED AREAS.
8. REPLACE WITH SAME DEPTH OF ASPHALT OR MINIMUM 5-INCHES.
9. ALL MATERIALS USED TO MEET MASS. STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
10. SAW CUT EDGE OF UTILITY PATCH IF NO MILLING IS REQUIRED.
11. MILL TO REMOVE TOP COURSE.
12. LEAVE 12-INCH MINIMUM LIP BETWEEN EDGE OF TOP AND EDGE OF BINDER COURSE.
13. AFTER TRENCH WORK IS COMPLETED, FILL AROUND PIPE TO BOTTOM WITH GRADED GRAVEL FILL AND COMPACT IN 6-INCH LIFTS.
14. REPLACE LAYERS OF BINDER AND DEEP BASE.
15. TACK AREA OF MILLING 1 GALLON PER 25 SQUARE YARDS.
16. REPLACE TOP COURSE.
17. SEAL EDGES OF UTILITY PATCH WITH HOT Poured RUBERIZED ASPHALT SEALANT.
MIN WIDTH = PIPE DIA + 12" ON BOTH SIDES OF PIPE

12" OF "FLOWABLE FILL" FOR ROAD BASE
100-140 PSI STRENGTH PER SPRINGFIELD DPW

BACKFILL THIS SECTION OF THE TRENCH WITH COMMON BORROW FILL FOR THE FULL WIDTH OF THE TRENCH IN 12" LIFTS COMPACTION TO 95% PROCTOR NO ROOTS ALLOWED NO ROCKS OVER 6" DIAMETER

BACKFILL WITH SAND, CRUSHED STONE, SCREENED GRAVEL OR SELECT COMMON BORROW/FILL TO 6" ABOVE PIPE IN 12" LIFTS COMPACTION TO 95% PROCTOR

BELL O.D.
PIPE O.D.

6" MIN. BEDDING SUCH AS SAND, CRUSHED STONE, SCREENED GRAVEL OR SELECT COMMON BORROW/FILL COMPACTION TO 95% PROCTOR

EXCAVATE FOR BELL 2"-6"

EXISTING PAVEMENT

EXISTED AND REPLACED WITH BINDER COURSE

BENDING SAND

FLOWABLE FILL

MILLED AND REPLACED WITH TOP COURSE

COMMON BORROW

UNDISTURBED EARTH

UNDISTURBED EARTH

TACK COAT

SPECIALTY PAVEMENT

5'-0" MIN

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE
3. TO FINISH GRADE.
4. SEE DETAIL W-02.0, W-02.1, W-02.3, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
5. REQUIREMENTS FOR SUBBASE AND BASE MATERIAL TYPE ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN PAVED AREAS.
6. FOR LOCATION OF WATER MAINS SEE DETAIL (W-01.0).
7. REQUIREMENTS FOR GRAVEL, LOAM AND/OR SEED ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN NON-PAVED AREAS.
8. REPLACE WITH SAME DEPTH OF ASPHALT OR MINIMUM 5-INCHES.
9. ALL MATERIALS USED TO MEET MASS. STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
10. SAW CUT EDGE OF UTILITY PATCH IF NO MILLING IS REQUIRED.
11. MILL TO REMOVE TOP COURSE.
12. LEAVE 12-INCH MINIMUM LIP BETWEEN EDGE OF TOP AND EDGE OF BINDER COURSE.
13. AFTER TRENCH WORK IS COMPLETED, FILL AROUND PIPE TO BOTTOM WITH GRADED GRAVEL FILL AND COMPACT IN 6-INCH LIFTS.
14. REPLACE LAYERS OF BINDER AND DEEP BASE.
15. TACK AREA OF MILLING 1 GALLON PER 25 SQUARE YARDS.
16. SEAL EDGES OF UTILITY PATCH WITH HOT Poured RUBERIZED ASPHALT SEALANT.
12" OF DENSE GRADED CRUSHED STONE FOR ROAD BASE COMPACTED TO A MINIMUM OF 95% PROCTOR

BACKFILL THIS SECTION OF THE TRENCH WITH COMMON BORROW FILL FOR THE FULL WIDTH OF THE TRENCH IN 12" LIFTS COMPACTED TO 95% PROCTOR NO ROOTS ALLOWED NO ROCKS OVER 6" DIAMETER

BACKFILL WITH SAND, CRUSHED STONE, SCREENED GRAVEL OR SELECT COMMON BORROW/FILL TO 6" ABOVE PIPE IN 12" LIFTS COMPACTED TO 95% PROCTOR

6" MIN. BEDDING SUCH AS SAND, CRUSHED STONE, SCREENED GRAVEL OR SELECT COMMON BORROW/FILL COMPACTED TO 95% PROCTOR

EXCAVATE FOR BELL 2"-6"

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE
3. TO FINISH GRADE.
4. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
5. REQUIREMENTS FOR SUBBASE AND BASE MATERIAL TYPE ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN PAVED AREAS.
6. FOR LOCATION OF WATER MAINS SEE DETAIL (W-01.0).
7. REQUIREMENTS FOR GRAVEL, LOAM AND/OR SEED ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN NON-PAVED AREAS.
8. REPLACE WITH SAME DEPTH OF ASPHALT OR MINIMUM 5-INCHES.
9. ALL MATERIALS USED TO MEET MASS. STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
10. SAW CUT EDGE OF UTILITY PATCH IF NO MILLING IS REQUIRED.
11. MILL TO REMOVE TOP COURSE.
12. LEAVE 12-INCH MINIMUM LIP BETWEEN EDGE OF TOP AND EDGE OF BINDER COURSE.
13. AFTER TRENCH WORK IS COMPLETED, FILL AROUND PIPE TO BOTTOM WITH GRADED GRAVEL FILL AND COMPACT IN 6-INCH LIFTS.
14. REPLACE LAYERS OF BINDER AND DEEP BASE.
15. TACK AREA OF MILLING 1 GALLON PER 25 SQUARE YARDS.
16. REPLACE TOP LAYER OF MILLING WITH HOT POUR REDUCED ASPHALT SEALANT.
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE
3. TO FINISH GRADE
4. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
5. REQUIREMENTS FOR SUBBASE AND BASE MATERIAL TYPE ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN PAVED AREAS.
6. FOR LOCATION OF WATER MAINS SEE DETAIL (W-01.0).
7. REQUIREMENTS FOR GRAVEL, LOAM AND/OR SEED ARE TO BE IN ACCORDANCE WITH LOCAL AUTHORITY HAVING LOCAL JURISDICTION IN NON-PAVED AREAS.
8. REPLACE WITH SAME DEPTH OF ASPHALT OR MINIMUM 5-INCHES.
9. ALL MATERIALS USED TO MEET MASS. STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES.
10. SAW CUT EDGE OF UTILITY PATCH IF NO MILLING IS REQUIRED.
11. MILL TO REMOVE TOP COURSE.
12. LEAVE 12-INCH MINIMUM LIP BETWEEN EDGE OF TOP AND EDGE OF BINDER COURSE.
13. AFTER TRENCH WORK IS COMPLETED, FILL AROUND PIPE TO BOTTOM WITH GRADED GRAVEL FILL AND COMPACT IN 6-INCH LIFTS.
14. REPLACE LAYERS OF BINDER AND DEEP BASE.
15. TACK AREA OF MILLING 1 GALLON PER 25 SQUARE YARDS.
16. REPLACE TOP COURSE.
17. SEAL EDGES OF UTILITY PATCH WITH HOT Poured RUBERIZED ASPHALT SEALANT.

MIN WIDTH = PIPE DIA + 12" ON BOTH SIDES OF PIPE

12" OF DENSE GRADED CRUSHED STONE FOR ROAD BASE TO THE PROPER ELEVATION TO ALLOW FOR THE PLACEMENT OF THE PROPER BITUMINOUS PATCH. THE FULL WIDTH OF THE TRENCH TO (95% PROCTOR) NO ROOTS ALLOWED

BACKFILL WITH SAND, CRUSHED STONE, SCREENED GRAVEL, OR SELECT COMMON BORROW/FILL TO 6" ABOVE PIPE IN 12" LIFTS COMPACT TO 95% PROCTOR

MINIMUM 12" CLEARANCE
6" MINIMUM

PIPE O.D.
BELL O.D.
UNDISTURBED EARTH

EXCAVATE FOR BELL 2"-6"

EXISTING PAVEMENT
BINDER COURSE 5" OR EQUAL TO EXISTING PAVING-TYPE-I
COMMON BORROW
DENSE GRADED CRUSHED STONE
BEDDING SAND
UNDISTURBED EARTH

SPRINGFIELD WATER AND SEWER COMMISSION
WATER DETAIL W-02.5
REV. DATE
TEMPORARY TRENCH BACKFILLING-METHOD FOR ALL STREETS IN SPRINGFIELD & LUDLOW ACCEPT SPRINGFIELD ARTERRIALS
SCALE: NTS
6/16/08 MAB
1" or 2" BRASS CAP W/ FEMALE I.P. THREAD (SEE NOTE 2)

6" to 8"

1" or 2" BALL VALVE CURB STOP WITH FEMALE I.P. THREADS ON BOTH ENDS W/ STOP & WASTE FEATURE (SEE NOTE 1)

1" or 2" BRASS BLOW-OFF PIPE W/ MALE I.P. THREADS ON BOTH ENDS

TWO 1" OR 2" BRASS 90° ELBOWS W/ FEMALE I.P. THREADS ON BOTH ENDS W/ 2" BRASS BLOW-OFF PIPE W/ MALE I.P. THREADS ON BOTH ENDS (SEE DETAIL A AND NOTE 3)

1" OR 2" TAPERED INLET BALL CCPORATION W/ FEMALE I.P. THREADS ON THE OUTLET & TEE HEAD ADAPTER

TAPPING NOTES:
FOR 1" = USE DIRECT TAPPING
FOR 2" = MUST USE SWSC SADDLE

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. INSTALL STOP & WASTE W/ DRAIN HOLE ON THE DOWNSTREAM SIDE (AWAY FROM WATER MAIN).
3. CAPS TO BE INSTALLED HAND TIGHT.
4. SWING ELBOWS ALLOW FOR PIPE MOVEMENT.
5. VALVE BOX AND BUFFALO BOX ARE TO BE SET TO GRADE IN PAVEMENT AND BURIED 6" BELOW GRADE IN UNPAVED ROADS. RISER PIPE TO BE SET 2" BELOW VALVE BOX TOP IN UNPAVED ROADS.
*USE OF THIS DEVICE REQUIRES APPROVAL BY THE SWSC PRIOR TO INSTALLATION

<table>
<thead>
<tr>
<th>NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BALL TYPE COPORATION: USAGE (Mueller B25008) OR APPROVED EQUAL. AWWA/CC X Male Iron Pipe (IP) Threads</td>
</tr>
<tr>
<td>2</td>
<td>LOWER OPERATING LEVER: Cast or Stamped Brass to Spec.</td>
</tr>
<tr>
<td>3</td>
<td>BALL TYPE CURB STOP: FOR 1&quot; AIR VALVE: USE (FORD B11-444SW) OR APPROVED EQUAL. FOR 2&quot; AIR VALVE: USE (FORD B11-777SW) OR APPROVED EQUAL. Female Iron Pipe (IP) Threads Both Ends and Stop and Waste on the Riser Side of Stop.</td>
</tr>
<tr>
<td>4</td>
<td>LOWER MALE ADAPTER: Copper (Domestic)</td>
</tr>
<tr>
<td>5</td>
<td>RISER: Copper Type L (Domestic)</td>
</tr>
<tr>
<td>6</td>
<td>UPPER MALE ADAPTER: Copper (Domestic)</td>
</tr>
<tr>
<td>7</td>
<td>T-HANDLE: Cast Brass</td>
</tr>
<tr>
<td>8*</td>
<td>OPERATING ROD T-HANDLE SECUREMENT: Stainless Steel Roll Pin</td>
</tr>
<tr>
<td>9</td>
<td>ROD TO RISER CONNECTION: Split Ring (By Size of Riser), Attached to 3/8&quot; Split Ring by Coated 3/8&quot;-16 x 1 1/2&quot; Set Screw and Stainless Steel 3/8&quot; Spacer Nut</td>
</tr>
<tr>
<td>10</td>
<td>OPERATING ROD: Brass Round (CDA 360, ASTM B-16)</td>
</tr>
<tr>
<td>11*</td>
<td>LOWER MECHANISM SECUREMENT: Stainless Steel Roll Pin</td>
</tr>
<tr>
<td>12</td>
<td>3/8&quot; x 1/2&quot; STAINLESS STEEL BOLT: With Nylock Safety Nut</td>
</tr>
<tr>
<td>13</td>
<td>LOWER LEVEL TO VALVE COTTER PIN: Marine Type Brass</td>
</tr>
</tbody>
</table>

NOTE: *

VISUALLY OBSTRUCTED
TOP OF BOX FLUSH WITH FINISH PAVEMENT

12' MINIMUM OVERLAP

SELECT GRAVEL FILL (TYP.)

4" X 8" X 16" CEMENT BLOCK UNDER VALVE BOX BASE FOR SUPPORT

OPERATING HANDLE 26"

3 PIECE VALVE BOX WITH #6 VALVE BOX BASE

DIAMETER VARIES WITH APPLICATION

BALL TYPE CORPORATION AWWA/CC X MALE IRON PIPE THREADS

OPERATING ROD

AIR VENT & FITTING

3" CLEARANCE BETWEEN BLOCKING AND TOP OF TAPPING SADDLE

WATER MAIN

TAPPING SADDLE

TAPPING NOTES:
FOR 1" = USE DIRECT TAPPING
FOR 2" = MUST USE SWSC SADDLE

USE OF THIS DEVICE REQUIRES APPROVAL BY THE SWSC PRIOR TO INSTALLATION

<table>
<thead>
<tr>
<th>VALVE DIAMETER</th>
<th>PIPE LENGTH</th>
<th>REQUIRED COVER</th>
</tr>
</thead>
<tbody>
<tr>
<td>1&quot;</td>
<td>30&quot;</td>
<td>4.0'</td>
</tr>
<tr>
<td>1&quot;</td>
<td>36&quot;</td>
<td>4.5'</td>
</tr>
<tr>
<td>1&quot;</td>
<td>42&quot;</td>
<td>5.0'</td>
</tr>
<tr>
<td>2&quot;</td>
<td>30&quot;</td>
<td>4.0'</td>
</tr>
<tr>
<td>2&quot;</td>
<td>36&quot;</td>
<td>4.5'</td>
</tr>
<tr>
<td>2&quot;</td>
<td>42&quot;</td>
<td>5.0'</td>
</tr>
<tr>
<td>CUSTOM</td>
<td>CUSTOM</td>
<td>AS REQUIRED BY ENGINEER</td>
</tr>
</tbody>
</table>

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND OLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W–02.0, W–02.1, W–02.2, W–02.3 OR W–02.4 FOR TRENCH DETAILS.
4. MIN 3"x3"x3" PRE CAST CONCRETE THRUST BLOCK MAY BE USED WITH SWSC APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH – SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATER MAIN SEE DETAIL (W–14.1).
6. FOR RESTRAINT METHODS OTHER THAN RETAINER GLAND SEE DETAILS (W–06.1 THRU W–06.6).
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL PIPE SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W–02.0, W–02.1, W–02.2, W–02.3 OR W–02.4 FOR TRENCH DETAILS.
4. MIN 3'x3'x3' PRE CAST CONCRETE THRUST BLOCK MAY BE USED WITH SWSC APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH – SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATER MAIN SEE DETAIL (W–14.1).
6. FOR RESTRAINT METHODS OTHER THAN RETAINER GLAND SEE DETAILS (W–06.1 THRU W–06.6).

THIS DETAIL MUST BE APPROVED FOR USE BY THE S.W.S.C BEFORE IT CAN BE INSTALLED

SPRINGFIELD WATER AND SEWER COMMISSION
WATER DETAIL W–05.1

ALTERNATE 1
TEE INSTALLATION

SCALE: NTS
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. NUMBER OF THREADED RODS IS BASED ON MAXIMUM PRESSURE OF 150 P.S.I. IN MAIN.
3. THREADED RODS ARE TO BE FABRICATED FROM 4140 B-7 ALLOY STEEL.
4. STEEL THREADED RODS SHALL HAVE A YIELD STRESS OF NOT LESS THAN 105,000 P.S.I.
5. EYE-BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 50,000 P.S.I. EACH.
6. RESTRAINT FOR 20 INCHES AND LARGER PIPES MUST BE DESIGNED ON A CASE-BY-CASE BASIS AND APPROVED BY ENGINEERING & TECHNICAL SERVICES (ET&S).
7. ALL COMPONENTS TO BE PROTECTIVE COATED WITH PROTECTIVE COATINGS AND TAPE.
NOTES:

1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. NUMBER OF THREADED RODS IS BASED ON MAXIMUM PRESSURE OF 150 P.S.I IN MAIN.
3. THREADED RODS ARE TO BE FABRICATED FROM 4140 B-7 ALLOY STEEL.
4. STEEL THREADED RODS SHALL HAVE A YIELD STRESS OF NOT LESS THAN 105,000 P.S.I.
5. EYE-BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 50,000 P.S.I EACH.
6. RESTRAINT FOR 20 INCHES AND LARGER PIPES MUST BE DESIGNED ON A CASE-BY-CASE BASIS AND APPROVED BY ENGINEERING & TECHNICAL SERVICES (ET&S).
7. ALL COMPONENTS TO BE PROTECTIVE COATED WITH PROTECTIVE COATINGS AND TAPE.
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL
   CONFORM TO SWSC GUIDELINES AND POLICIES.
2. NUMBER OF THREADED RODS IS BASED ON MAXIMUM PRESSURE OF 150 P.S.I IN MAIN.
3. THREADED RODS ARE TO BE FABRICATED FROM 4140 B–7 ALLOY STEEL.
4. STEEL THREADED RODS SHALL HAVE A YIELD STRESS OF NOT LESS THAN 105,000 P.S.I.
5. EYE–BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 50,000 P.S.I EACH.
6. RESTRAINT FOR 20 INCHES AND LARGER PIPES MUST BE DESIGNED ON A CASE–BY–CASE BASIS AND APPROVED
   BY ENGINEERING & TECHNICAL SERVICES (ET&S).
7. ALL COMPONENTS TO BE PROTECTIVE COATED WITH PROTECTIVE COATINGS AND TAPE.
NOTES:

1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. NUMBER OF THREADED RODS IS BASED ON MAXIMUM PRESSURE OF 150 P.S.I IN MAIN.
3. THREADED RODS ARE TO BE FABRICATED FROM 4140 B-7 ALLOY STEEL.
4. STEEL THREADED RODS SHALL HAVE A YIELD STRESS OF NOT LESS THAN 105,000 P.S.I.
5. EYE-BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 50,000 P.S.I EACH.
6. RESTRAINT FOR 20 INCHES AND LARGER PIPES MUST BE DESIGNED ON A CASE-BY-CASE BASIS AND APPROVED BY ENGINEERING & TECHNICAL SERVICES (ET&S).
7. ALL COMPONENTS TO BE PROTECTIVE COATED WITH PROTECTIVE COATINGS AND TAPE.
CONCRETE STOP COLLAR
SEE DETAIL (W-06.6)

FULL LENGTH OF DUCTILE IRON PIPE

-2 FULL LENGTHS OF PIPE
-18-20 FOOT LENGTHS
MUST BE BACK FILLED & COMPACTED PROPERLY
PRIOR TO WATER BEING TURNED ON

TEE BOLTS/NUTS
SET SCREWS
SEEN DETAIL
(W-06.8)

COUPLING

SET SCREWS

4-BOLT SOCKET CLAMP
SEE DETAIL
(W-06.7)

CAST IRON PIPE

NO EXISTING JOINTS

VALVE OR FITTING

BUTT JOINTS
TOGETHER

RETAILER GLAND

WASHER
SEE DETAIL
(W-06.7)

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. NUMBER OF THREADED RODS IS BASED ON MAXIMUM PRESSURE OF 150 P.S.I. IN MAIN.
3. THREADED RODS ARE TO BE FABRICATED FROM 4140 B-7 ALLOY STEEL.
4. STEEL THREADED RODS SHALL HAVE A YIELD STRESS OF NOT LESS THAN 105,000 P.S.I.
5. EYE-BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 50,000 P.S.I. EACH.
6. RESTRAINT FOR 20 INCHES AND LARGER PIPES MUST BE DESIGNED ON A CASE-BY-CASE BASIS AND APPROVED BY ENGINEERING & TECHNICAL SERVICES (ET&S).
7. ALL COMPONENTS TO BE PROTECTIVE COATED WITH PROTECTIVE COATINGS AND TAPE.
CONCRETE THRUST COLLAR

1. IN LIEU OF CONCRETE STOP COLLAR THE CONTRACTOR MAY MECHANICALLY RESTRRAIN (BY APPROVED METHOD) THREE (3) FULL PIPE LENGTHS FROM PROPOSED LOCATION OF STOP COLLAR.

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. NUMBER OF THREADED RODS IS BASED ON MAXIMUM PRESSURE OF 150 P.S.I IN MAIN.
3. THREADED RODS ARE TO BE FABRICATED FROM 4140 B-7 ALLOY STEEL.
4. STEEL THREADED RODS SHALL HAVE A YIELD STRESS OF NOT LESS THAN 105,000 P.S.I.
5. EYE-BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 50,000 P.S.I EACH.
6. RESTRRAINT FOR 20 INCHES AND LARGER PIPES MUST BE DESIGNED ON A CASE-BY-CASE BASIS AND APPROVED BY ENGINEERING & TECHNICAL SERVICES (ET&S).
7. ALL COMPONENTS TO BE PROTECTIVE COATED WITH PROTECTIVE COATINGS AND TAPE.
## SOCKET CLAMP DATA CHART

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>250</td>
<td>4550</td>
<td>5</td>
<td>14 5/8</td>
<td>2</td>
<td>1/2</td>
<td>5/8 x 3 1/2</td>
<td>5/8</td>
<td>3 dia or 3 x 3</td>
<td>1/2</td>
<td>3 dia or 3 x 3</td>
<td>3/4</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>250</td>
<td>9340</td>
<td>7 1/8</td>
<td>16 7/8</td>
<td>2</td>
<td>1/2</td>
<td>5/8 x 3 1/2</td>
<td>5/8</td>
<td>3 dia or 3 x 3</td>
<td>1/2</td>
<td>3 dia or 3 x 3</td>
<td>3/4</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>250</td>
<td>16080</td>
<td>9 5/16</td>
<td>19 1/8</td>
<td>2</td>
<td>1/2</td>
<td>5/8 x 3 3/4</td>
<td>5/8</td>
<td>3 dia or 3 x 3</td>
<td>1/2</td>
<td>3 dia or 3 x 3</td>
<td>3/4</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>250</td>
<td>24180</td>
<td>11 1/2</td>
<td>21 3/8</td>
<td>2</td>
<td>1/2</td>
<td>5/8 x 3 3/4</td>
<td>5/8</td>
<td>3 dia or 3 x 3</td>
<td>1/2</td>
<td>3 dia or 3 x 3</td>
<td>3/4</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>250</td>
<td>34230</td>
<td>13 1/2</td>
<td>25 1/8</td>
<td>3</td>
<td>3/4</td>
<td>7/8 x 4 1/2</td>
<td>3/4</td>
<td>3-1/2 dia or 3-1/2 x 3-1/2</td>
<td>1/2</td>
<td>3 dia or 3 x 3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>115</td>
<td>27600</td>
<td>17 7/8</td>
<td>31 3/8</td>
<td>4</td>
<td>3/4</td>
<td>1 x 4 1/2</td>
<td>4 dia or 4 x 4</td>
<td>1/2</td>
<td>3-1/2 dia or 3-1/2 x 3-1/2</td>
<td>1</td>
<td>2</td>
<td>notes 2, 5, 6, 8, &amp; 9</td>
</tr>
</tbody>
</table>

1. At Max Hydrostatic Test Pressure
2. All Socket Clamps and associated hardware shall meet the requirements of National Fire Protection Association 24
3. Socket Clamps shall be as provided by PHD Manufacturing, Inc. - Figure 590, Anvil Company, Figure 595, Cooper B-Line, Figure B3134, Carpenter and Patterson, Figure 158DB, or the equal product of another manufacturer.
4. Socket Clamps shall be provided as provided by PHD Manufacturing, Inc. - Figure 590, Anvil Company, Figure 594, Cooper B-Line, Figure B3134W, Carpenter and Patterson, Figure 258, or the equal product of another manufacturer.
5. Bent Eye Bolts shall be constructed of high strength low alloy steel, per ASTM A588, grade B, Unified National Coarse (UNC) rolled thread.
7. Threaded Rods shall be constructed of 4140 alloy steel, per ASTM A193, grade B7, Unified National Coarse (UNC) rolled thread.
8. Washers for bent eye bolts shall be cadmium plated and constructed of case hardened C1006 steel, grade 2, Rockwell hardness B5.
9. Heavy hex nuts shall be constructed of medium carbon steel, ASTM A194, grade 2H, and Unified National Coarse (UNC) threaded.

**NOTES:**

1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. NUMBER OF THREADED RODS IS BASED ON MAXIMUM PRESSURE OF 150 P.S.I IN MAIN.
3. THREADED RODS ARE TO BE FABRICATED FROM 4140 B-7 ALLOY STEEL.
4. STEEL THREADED RODS SHALL HAVE A YIELD STRESS OF NOT LESS THAN 105,000 P.S.I.
5. EYE-BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 50,000 P.S.I EACH.
6. RESTRRAIN FOR 20 INCHES AND LARGER PIPES MUST BE DESIGNED ON A CASE-BY-CASE BASIS AND APPROVED BY ENGINEERING & TECHNICAL SERVICES (ET&S).
7. ALL COMPONENTS TO BE PROTECTIVE COATED WITH PROTECTIVE COATINGS AND TAPE.
BENT EYE BOLT CONNECTION TO MECHANICAL JOINTS

THRU RESTRAINT — THREADED ROD

BENT EYE BOLT

THREADED ROD

BENT EYE BOLT

180° APART

4” THRU 12” JOINTS

16” JOINTS

PIECE SIZE

No. THREADED RODS*

4” THRU 10”

2 – 3/4”Ø

12”

2 – 1”Ø

16”

4 – 1”Ø

GREATER THAN 16”

APPROVAL BY ET&S

*STANDARD LENGTHS ARE 3’, 6’ & 12’ COUPLINGS MAY BE USED FOR LONGER LENGTHS.

SEE SOCKET CLAMP DATA CHART DETAIL (W–06.7) FOR HARDWARE, MATERIAL, MANUFACTURERS AND BOLT TIGHTENING REQUIREMENTS

NOTES:

1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. NUMBER OF THREADED RODS IS BASED ON MAXIMUM PRESSURE OF 150 P.S.I IN MAIN.
3. THREADED RODS ARE TO BE FABRICATED FROM 4140 B–7 ALLOY STEEL.
4. STEEL THREADED RODS SHALL HAVE A YIELD STRESS OF NOT LESS THAN 105,000 P.S.I.
5. EYE–BOLTS SHALL HAVE A MINIMUM TENSILE STRENGTH OF 50,000 P.S.I EACH.
6. RESTRAINT FOR 20 INCHES AND LARGER PIPES MUST BE DESIGNED ON A CASE–BY–CASE BASIS AND APPROVED BY ENGINEERING & TECHNICAL SERVICES (ET&S).
7. ALL COMPONENTS TO BE PROTECTIVE COATED WITH PROTECTIVE COATINGS AND TAPE.
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
4. ALL FIRE HYDRANTS SHALL BE INSTALLED PLUMB & LOCATED ACCORDING TO PROJECT PLANS.
5. NO TAPS SHALL BE ALLOWED BETWEEN THE HYDRANT & THE VALVE.
6. THE MECHANICAL JOINTS OF THE FIRE HYDRANT ASSEMBLY SHALL BE RESTRAINED VIA RETAINER GLAND. IF MORE THAN ONE SECTION IS USED, RETAINER GLAND RESTRAINTS SHALL BE USED AT ALL CONNECTIONS.
7. FOR RESTRAINT METHODS OTHER THAN RETAINER GLAND SEE DETAILS (W-08.1 THRU W-08.6).
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
4. ALL FIRE HYDRANTS SHALL BE INSTALLED PLUMB & LOCATED ACCORDING TO PROJECT PLANS.
5. NO TAPS SHALL BE ALLOWED BETWEEN THE HYDRANT & THE VALVE.
6. THE MECHANICAL JOINTS OF THE FIRE HYDRANT ASSEMBLY SHALL BE RESTRAINED VIA RETAINER GLAND. IF MORE THAN ONE SECTION IS USED, RETAINER GLAND RESTRAINTS SHALL BE USED AT ALL CONNECTIONS.
7. FOR RESTRAINT METHODS OTHER THAN RETAINER GLAND SEE DETAILS (W-06.1 THRU W-06.6).

THIS DETAIL MUST BE APPROVED FOR USE BY THE S.W.S.C BEFORE IT CAN BE INSTALLED.
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5\' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
4. ALL FIRE HYDRANTS SHALL BE INSTALLED PLUMB & LOCATED ACCORDING TO PROJECT PLANS.
5. NO TAPS SHALL BE ALLOWED BETWEEN THE HYDRANT & THE VALVE.
6. THE MECHANICAL JOINTS OF THE FIRE HYDRANT ASSEMBLY SHALL BE RESTRAINED VIA RETAINER GLAND. IF MORE THAN ONE SECTION IS USED, RETAINER GLAND RESTRAINTS SHALL BE USED AT ALL CONNECTIONS.
7. FOR RESTRAINT METHODS OTHER THAN RETAINER GLAND SEE DETAILS (W-06.1 THRU W-06.6).

THIS DETAIL MUST BE APPROVED FOR USE BY THE S.W.S.C BEFORE IT CAN BE INSTALLED.

SPRINGFIELD WATER AND SEWER COMMISSION

WATER DETAIL W-07.2

ALTERNATE 2
FIRE HYDRANT ASSEMBLY

SCALE: NTS
TOP OF BOX Flush WITH FINISH PAVEMENT

12" MINIMUM OVERLAP

2" OPERATING NUT CENTERED IN VALVE BOX BOTTOM

3" CLEARANCE BETWEEN BLOCKING AND TOP OF BONNET

BOTTOM DETAIL

STANDARD BRICK 4"x2-2/3"x16" PLACED UNDER VALVE BOX BOTTOM FOR SUPPORT

NOTE: COVER MUST BE MARKED "WATER"

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
(MJ X FL) MECHANICAL JOINT BY TAPPING RESILIENT SEAT GATE VALVE WITH RETAINER GLAND DOWN STREAM SIDE OF VALVE AND BOX TO SURFACE PER DETAIL (W-08.0)

(1) FULL LENGTH OF PIPE

MIN 3' x 3' x 3' PRE CAST CONCRETE THRUST BLOCK MAY BE USED WITH SWSC APPROVAL OR CONCRETE THRUST BLOCK PLOURED AGAINST UNDISTURBED EARTH – SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATER MAIN (SEE DETAIL W-14.1)

4 MIL POLY BETWEEN CONCRETE AND FITTING IF POUR ED THRUST BLOCK

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
MIN 3'x3'x3' PRE CAST CONCRETE
THRUST BLOCK MAY BE USED WITH
SWSC APPROVAL OR CONCRETE
THRUST BLOCK Poured AGAINST
UNDISTURBED EARTH — SIZE TO BE
BASED ON SIZE OF FITTING AND
PRESSURE IN WATER MAIN
(SEE DETAIL W-14.1)

4 MIL POLY BETWEEN CONCRETE AND
FITTING IF Poured THRUST BLOCK

EXISTING MAIN

RETAINER GLAND

NEW PIPE
(DUCTILE IRON PIPE CL-350)

(MJ X FL) MECHANICAL JOINT BY
TAPPING RESILIENT SEAT GATE
VALVE WITH RETAINER GLAND DOWN
STREAM SIDE OF VALVE AND BOX
TO SURFACE PER DETAIL (W-08.0)

TAPPING SLEEVE, STAINLESS STEEL

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL
   SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM
   TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM
   TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR
   TRENCH DETAILS.
3/4" OR 2" BRASS STRAIGHT BALL VALVE WITH FNPT INLET X FNPT OUTLET & STRAIGHT LEVER HANDLE

3/4" OR 2" BRASS NIP

WATTS 3/4" or 2" CHECK VALVE

1"x 2" BRASS CTS QUICK JOINT INLET X 1"x 2" MNPT OUTLET

1/2

3/4

1/2

3/4

12" MIN.

36" MAX.

* TEFLO N TAPE ALL THREADS

1" OR 2" COPPER TUBING OR BRASS PIPE

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
NOTES:
1. ALL BRASS MUST BE LEAD FREE. ALL MUELLER PART NUMBERS REFERENCED IN THIS DRAWING MAY BE USED, FOR ADDITIONAL APPROVED MANUFACTURERS SEE THE SWSC MATERIAL SPECIFICATIONS.
2. TAPS DONE BY SWSC.
3. BLOCKING UNDER ALL FITTINGS
4. ALL PIPE OR AWWA/CC THREADED JOINTS TO BE SEALED WITH TEFLOM PIPE JOINT SEAL TAPE (PTFE). QUICK TYPE COMPRESSION JOINTS ARE NOT SEALED WITH TEFLOM TAPE.
5. ¾" COPPER TUBING SHALL NOT BE USED. ALL SERVICES SHALL BE 1" OR LARGER COPPER TUBING.
6. THE CORPORATION AT THE WATER MAIN IS FOR EMERGENCY USE AND THE BOX WILL BE BURIED 2 FEET BELOW FINISHED GRADE.
7. A SECOND OPERATIONAL CURB STOP SHALL BE INSTALLED IN THE TREEBELT. THE ARCH PATTERN BOX WILL BE SET AT FINISHED GRADE.
8. BOTH CURB BOXES WILL BE MEASURED FOR LOCATION TIES. A MINIMUM OF (3) TIES FOR EACH BOX.
NOTES:
1. ALL BRASS MUST BE LEAD FREE. ALL MUeller PART NUMBERS REFERENCED IN THIS DRAWING MAY BE USED, FOR ADDITIONAL APPROVED MANUFACTURERS SEE THE SWSC SPECIFICATIONS.
2. TAPS DONE BY SWSC.
3. BLOCKING UNDER ALL FITTINGS
4. ALL PIPE OR AWWA/CC THREADED JOINTS TO BE SEALED WITH TEFLOn PIPE JOINT SEAL TAPE (PTFE). QUICK TYPE COMPRESSION JOINTS ARE NOT SEALED WITH TEFLOn TAPE.
5. 3/4 COPPER TUBING SHALL NOT BE USED. ALL SERVICES SHALL BE 1" OR LARGER COPPER TUBING.
6. THE CORPORATION AT THE WATER MAIN IS FOR EMERGENCY USE AND THE BOX WILL BE BURIED 2 FEET BELOW FINISHED GRADE.
7. A SECOND OPERATIONAL CURB STOP SHALL BE INSTALLED IN THE TREEBELT. THE ARCH PATTERN BOX WILL BE SET AT FINISHED GRADE.
8. BOTH CURB BOXES WILL BE MEASURED FOR LOCATION TIES. A MINIMUM OF (3) TIES FOR EACH BOX.
NOTES:
1. METERS SHALL BE SEALED BY COMMISSION INSTALLERS & METER READERS ONLY.
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.

STANDARD SERVICE BOX SEE SWSC TECHNICAL SPECIFICATIONS

THE ARCH PATTERN BASE SHALL ACCOMMODATE 3/4 TO 2-INCH BALL TYPE CORPORATIONS AND BALL TYPE CURB STOPS.

A.) FOR 1-INCH BALL TYPE CORPORATIONS AND BALL TYPE CURB STOPS THE ARCH SHALL BE AT LEAST 5-INCHES TALL WITH A 3-INCH BY 3-INCH ARCH & CENTERED OVER 1-INCH BALL TYPE CORPORATION.

B.) FOR 1-1/2-INCH TO 2-INCH BALL TYPE CORPORATIONS AND BALL TYPE CURB STOPS THE ARCH SHALL BE AT LEAST 7-INCHES TALL WITH A 4-INCH BY 4-INCH ARCH.

APPROXIMATELY 1/2" TO BE REMOVED FROM SIDE OF BASE CLOSEST TO WATER MAIN IN ORDER TO CONFIRM THE BASE IS OVER THE 1-1/2"-2" BALL TYPE CURB STOPS (SEE DETAIL A).

SLIDE TYPE
BUFFALO SERVICE BOX

SLIDE TYPE BUFFALO SERVICE BOX

1" - 2" SERVICE

DETAIL A
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES WILL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.

SERVICE BOX COVER
WITH BRASS PENTAGON HEAD NUT
AND THE WORD "WATER" CAST INTO COVER

STANDARD SERVICE BOX SEE SWSC TECHNICAL SPECIFICATIONS

THE ARCH PATTERN BASE SHALL ACCOMODATE 3/4 TO 2-INCH BALL TYPE CORPORATIONS AND BALL TYPE CURB STOPS.

A.) FOR 1-INCH BALL TYPE CORPORATIONS AND BALL TYPE CURB STOPS THE ARCH SHALL BE AT LEAST 5-INCHES TALL WITH A 3-INCH BY 3-INCH ARCH & CENTERED OVER 1-INCH BALL TYPE CORPORATION.

B.) FOR 1-1/2-INCH TO 2-INCH BALL TYPE CORPORATIONS AND BALL TYPE CURB STOPS THE ARCH SHALL BE AT LEAST 7-INCHES TALL WITH A 4-INCH BY 4-INCH ARCH.

C.) SEE DETAIL (W-12.0) IF THIS INSTALLATION IS USED AT A WATER MAIN.

SLIDE TYPE
BUFFALO SERVICE BOX

(1) STANDARD CONCRETE BRICK
4"x2-2/3"x8"
PLACED UNDER CORPORAUTION OR CURBSTOP AND VALVE BOX BOTTOM FOR SUPPORT
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. VAULT TOP, WALLS & FLOOR THICKNESS SHALL BE IN ACCORDANCE WITH DETAILS (W-13.2 THRU W-13.5).
3. FLANGES THAT CONNECT METER MUST BE SUPPLIED BY THE CONTRACTOR.
4. ALL VALVES IN THE VAULT MUST HAVE HAND WHEELS. BYPASS VALVES MUST LOCKABLE OR CHAINABLE.
5. BYPASS PIPE CAN RUN ON OUTSIDE OF THE VAULT WITH A SHUT OFF VALVE.
6. ALL JOINTS TO BE RETAINER GLANDS.
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. THE CONE REDUCER (OPTIONAL), 8" METER AND CHECK VALVE (OPTIONAL) WILL BE SUPPLIED BY THE SWSC. ALL OTHER ITEMS WILL BE SUPPLIED AND INSTALLED BY THE CONTRACTOR.
3. EACH OS&Y THAT'S BOLTED TO THE INLET FLANGE AND THE OUTLET FLANGE MUST BE RODDED BACK TO THE TEE AND SECURED FROM ANY MOVEMENT.
4. EACH EXTERIOR BEND AND TEE MUST HAVE THRUST BLOCKS.
5. THE INLET AND OUTLET OPENINGS ARE TO BE SEALED AND WATER TIGHT AND FLUSH WITH THE INTERIOR AND EXTERIOR WALLS.
OUTSIDE DIMENSIONS
L = 9'-0"
W = 7'-0"
H = 7'-6"

THICKNESS DIMENSIONS
ROOF 6"
WALLS 6"
FLOOR 6"

H2O LOAD RATED
ROOF TO BE MADE IN
(2) REMOVABLE SECTIONS

8" DIAMETER FORMED HOLE IN WALL
BLACK POLYMER COATED STEEL STEPS @ 12" ON CENTER
2'-0"

LIFT HOOKS (TPP)

FLOOR LINE
ROOF AND FLOOR
3'-3"
3'-3"

TOP

TOP

30" DIAMETER HOLE IN ROOF

6'-0"

LENGTH - INSIDE DIMENSION

6'-6"

HEIGHT - INSIDE DIMENSION

12"-14" X 3" SUMP IN FLOOR

30" DIAMETER HOLE IN ROOF

8" DIAMETER FORMED HOLE IN WALL

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. VAULT TOP, WALLS & FLOOR THICKNESS SHALL BE IN ACCORDANCE WITH DETAILS (W-13.2 - W-13.5).
3. FORMED HOLES SHALL BE TAPERED TOWARD THE INSIDE OF VAULT.
4. ALL JOINTS SHALL BE SHIPLAPPED AND GASKETS SHALL BE BUTYL RUBBER CONFORMING TO A.S.T.M. C990.

SPRINGFIELD WATER AND SEWER COMMISSION
WATER DETAIL W-13.2
WATER SERVICE PIPE
SCALE: NTS

REV. DATE
4/1/08 WAB
OUTSIDE DIMENSIONS
L = 11'-0"
W = 7'-0"
H = 7'-6"

THICKNESS DIMENSIONS
ROOF 6"
WALLS 6"
FLOOR 6"

H2O LOAD RATED
ROOF TO BE MADE IN
(2) REMOVABLE SECTIONS

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND
INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND
POLICIES.
2. VAULT TOP, WALLS & FLOOR THICKNESS SHALL BE IN ACCORDANCE WITH DETAILS
(W-13.2 – W-13.5).
3. FORMED HOLES SHALL BE TAPPRED TOWARD THE INSIDE OF VAULT.
4. ALL JOINTS SHALL BE SHIPLAPPED AND GASKETS SHALL BE BUTYL RUBBER
CONFORMING TO A.S.T.M. C990.
OUTSIDE DIMENSIONS
L = 11' - 0"
W = 7' - 0"
H = 7' - 6"

THICKNESS DIMENSIONS
ROOF 6"
WALLS 6"
FLOOR 6"

H2O LOAD RATED
ROOF TO BE MADE IN
(2) REMOVABLE SECTIONS

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. VAULT TOP, WALLS & FLOOR THICKNESS SHALL BE IN ACCORDANCE WITH DETAILS (W-13.2 - W-13.5).
3. FORMED HOLES SHALL BE TAPPED TOWARD THE INSIDE OF VAULT.
4. ALL JOINTS SHALL BE SHIPLAPPED AND GASKETS SHALL BE BUTYL RUBBER CONFORMING TO A.S.T.M. C990.

SCALE: NTS
OUTSIDE DIMENSIONS
L = 12' - 2"
W = 9' - 0"
H = 7' - 8"

THICKNESS DIMENSIONS
ROOF 8"
WALLS 6"
FLOOR 6"

H2O LOAD RATED
ROOF TO BE MADE IN
(2) REMOVABLE SECTIONS

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND
   INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND
   POLICIES.
2. VAULT TOP, WALLS & FLOOR THICKNESS SHALL BE IN ACCORDANCE WITH DETAILS
   (W-13.2 - W-13.5).
3. FORMED HOLES SHALL BE TAPPEDER TOWARD THE INSIDE OF VAULT.
4. ALL JOINTS SHALL BE SHIPLAPPED AND GASKETS SHALL BE BUTYL RUBBER
   CONFORMING TO A.S.T.M. C990.
STANDARD DIAMOND PATTERN WITH CUSTOM
LOGO COVER LETTERING OPTIONS:
"WATER"

(2) BLIND, NON-PENETRATING
PICK HOLES

POCKET LIFT HANDLE
POCKET CAST INTO THE COVER
WITH A PRESS FIT
STAINLESS STEEL PIN FOR LIFTING

SECTION A-A

BACK OF COVER TO READ:
"NAME OF MANUFACTURER"
"COUNTRY OF ORIGIN"
"TENSILE STRENGTH CLASS PER ASTM"
"MM/DD/YY"

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL
SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL
CONFORM TO SWSC GUIDELINES AND POLICIES.
2. FRAME & COVER SHALL BE MADE FROM ASTM A48 CLASS
358 GRAY CAST IRON.
UNDISTURBED EARTH

4 MIL POLY BETWEEN CONCRETE AND FITTING IF Poured THRUST BLOCK

MIN 3'x3'x3' PRE CAST CONCRETE THRUST BLOCK MAY BE USED WITH S.W.S.C. APPROVAL OR CONCRETE THRUST BLOCK POURED AGAINST UNDISTURBED EARTH - SIZE TO BE BASED ON SIZE OF FITTING AND PRESSURE IN WATER MAIN SEE DETAIL (W-14.1)

LIMITS OF COMPACTED GRAVEL ON EACH SIDE OF THRUST BLOCK

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5' FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
SPECIAL NOTE:
THRUST BLOCKS ARE NOT AN ACCEPTABLE METHOD OF THRUST RESTRAINT IN MOST SITUATIONS, AND WILL ONLY BE PERMITTED IN SPECIAL CASES.

ANCHORS BASED ON MAXIMUM ALLOWABLE WATER PRESSURE OF 125 PSI SHOULD ONLY BE USED WHEN SOIL CONDITIONS ARE STABLE.

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC MATERIAL SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. ALL WATER MAIN SHOULD HAVE A MINIMUM DEPTH OF 5’ FROM TOP OF PIPE TO FINISH GRADE.
3. SEE DETAIL W-02.0, W-02.1, W-02.2, W-02.3 OR W-02.4 FOR TRENCH DETAILS.
4. 4 MIL POLY BETWEEN CONCRETE AND FITTING IF Poured THRUST BLOCK.
NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES & POLICIES AND SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4' FROM TOP OF PIPE TO FINISH GRADE.
3. IF 4' OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.
4. ALL SERVICE LINES SHALL BE PVC SDR-35 AND MUST BE A MINIMUM OF 6" DIAMETER, NO EXCEPTIONS.
ELEVATION

BRICK COURSES SHALL BE USED TO BRING MANHOLE RIM TO REQUIRED ELEVATION (MIN 2, MAX 3 COURSES OF BRICK OR CONCRETE GRADE RINGS AS REQUIRED) SEAL INSIDE AND OUTSIDE OF BRICK WITH HYDRAULIC CEMENT.

COAT WITH (2) COATS OF BITUMINOUS DAMPROOFING

TABLE 1

<table>
<thead>
<tr>
<th>MANHOLE DIAMETER</th>
<th>SIDE WALL MIN. THICKNESS</th>
<th>BOTTOM SLAB MIN. THICKNESS</th>
<th>MAX PIPE DIAMETER ALLOWED</th>
<th>RCP</th>
</tr>
</thead>
<tbody>
<tr>
<td>4'</td>
<td>5'</td>
<td>6'</td>
<td>18'</td>
<td>24'</td>
</tr>
<tr>
<td>5'</td>
<td>6'</td>
<td>8'</td>
<td>30'</td>
<td>36'</td>
</tr>
<tr>
<td>6'</td>
<td>7'</td>
<td>8'</td>
<td>36'</td>
<td>48'</td>
</tr>
</tbody>
</table>

* PIPE DIAMETER MAY VARY DEPENDING ON NUMBER OF PENETRATIONS.

POLYPROPYLENE COATED STEEL MANHOLE STEPS 12" O.C.

STANDARD BARREL SECTION COMBINATIONS OF 1', 2', 3' OR 4' LENGTHS AS NEEDED

8" MIN.

12" MINIMUM OF 3/4" CRUSHED STONE

FOR FILTER FABRIC USE REQUIREMENTS, SEE TRENCH DETAIL FOR SEWER PIPES DETAIL (S-01.0)

BRICK OR CONCRETE FILL

UNDISTURBED EARTH

PLAN

WALL OF MANHOLE

SECTION B-B SEE DETAIL (S-02.1)

PIECE

PIECE (TOP)

SEWER BRICK INVERT

PRE-CAST CONCRETE SEWER MANHOLE

SECTION A-A

WALL OF MANHOLE

SLOPE 1'/FT

BRICK, STONE AND/OR DRY CONCRETE FILL AS APPROVED BY SWSC

8" MINIMUM

BRICK ON EDGE

UNDISTURBED EARTH

12" MINIMUM SCREENED GRAVEL

NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES & POLICIES AND SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4' FROM TOP OF PIPE TO FINISH GRADE.
3. IF 4' OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.
4. REINFORCED CONCRETE MANHOLE SECTIONS CONFORMING TO A.S.T.M.C478.
5. DESIGN PRECAST SECTIONS WITH FRAME AND COVER FOR AASHTO H-20 LOADING.
6. PRE-CAST CONCRETE SHALL BE 5,000 PSI @ 28 DAYS.
7. ALL BRICK SHALL BE HARD NON-POUROUS CLAY.
8. ADJUTITURES, AIR & PLASTIZERS PER ASTM C233-82.
9. REINFORCING PER ASTM A615 FOR WIRE FABRIC.

SPRINGFIELD WATER AND SEWER COMMISSION
SEWER DETAIL S-02.0
SEX-02.0

SCALE: NTS

REV. DATE 4/1/08 MAB
MAXIMUM STUB LENGTH

<table>
<thead>
<tr>
<th>PIPE MATERIAL</th>
<th>&quot;A&quot; (MAX.)</th>
<th>&quot;A&quot; (MIN.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RC</td>
<td>4’-0”</td>
<td>2’-0”</td>
</tr>
<tr>
<td>PVC</td>
<td>3’-3”</td>
<td>2’-0”</td>
</tr>
<tr>
<td>DI</td>
<td>4’-6”</td>
<td>2’-0”</td>
</tr>
</tbody>
</table>

FLEXIBLE MANHOLE SEAL

POURED OR HAND PACKED
NON-SHRINK GROUT.
HALLEMITE, WATERPLUG,
EMBECO OR APPROVED EQUAL

INSIDE FACE
OF MANHOLE

FORMED OPENING

INSIDE FACE
OF MANHOLE

FORMED OPENING

MANHOLE WATER STOP
GASKET AND #316
STAINLESS STEEL CLAMP

POUR CEMENT

HYDRAULIC CEMENT SEAL*

*THIS METHOD REQUIRES SWSC APPROVAL

NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES & POLICIES AND MATERIAL SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4’ FROM TOP OF PIPE TO FINISH GRADE.
3. IF 4’ OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.
4. REINFORCED CONCRETE MANHOLE SECTIONS CONFORMING TO A.S.T.M.C478.
5. DESIGN PRECAST SECTIONS WITH FRAME AND COVER FOR AASHTO H-20 LOADING.
6. PRE-CAST CONCRETE SHALL BE 5,000 PSI @ 28 DAYS.
7. ALL BRICK SHALL BE HARD NON-POUROUS CLAY.
8. ADMIXTURES, AIR & PLASTICIZERS PER ASTM C233-82.
9. REINFORCING PER ASTM A615 FOR WIRE FABRIC.
10. DESIGN LOADING PER AASHTO HS20-44, ACI 318-83; ASTM C478-82, C490-82, C611-71.
NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES & POLICIES AND MATERIAL SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4' FROM TOP OF PIPE TO FINISH GRADE.
3. IF 4' OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.
4. ALL SERVICE LINES SHALL BE PVC SDR-35 AND MUST BE A MINIMUM OF 6" DIAMETER, NO EXCEPTIONS.
12" MIN. OF 3/4" CRUSHED STONE

FOR FILTER FABRIC USE

1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES & POLICIES AND SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4' FROM TOP OF PIPE TO FINISH GRADE.
3. IF 4' OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.
4. REINFORCED CONCRETE MANHOLE SECTIONS CONFORMING TO A.S.T.M.C478.
5. DESIGN PRECAST SECTIONS WITH FRAME AND COVER FOR AASHO H-20 LOADING.
6. PRE-CAST CONCRETE SHALL BE 5,000 PSI @ 28 DAYS.
7. ALL BRICK SHALL BE HARD NON-POUROUS CLAY.
8. ADMIXTURES, AIR & PLASTICIZERS PER A.S.T.M. C233-82.
9. REINFORCING PER A.S.T.M. A615 FOR WIRE FABRIC.

TABLE 1

<table>
<thead>
<tr>
<th>MANHOLE DIAMETER</th>
<th>SIDE WALL MIN. THICKNESS</th>
<th>BOTTOM SLAB MIN. THICKNESS</th>
<th>MAX PIPE DIAMETER ALLOWED D/PVC</th>
</tr>
</thead>
<tbody>
<tr>
<td>4'</td>
<td>5'</td>
<td>6'</td>
<td>18'</td>
</tr>
<tr>
<td>5'</td>
<td>6'</td>
<td>8'</td>
<td>30'</td>
</tr>
<tr>
<td>6'</td>
<td>7'</td>
<td>8'</td>
<td>36'</td>
</tr>
</tbody>
</table>

*PIPE DIAMETER MAY VARY DEPENDING ON NUMBER OF PENETRATIONS.
STANDARD DIAMOND PATTERN WITH CUSTOM LOUD COVER LETTERING OPTIONS: "SEWER"

SECTION A–A

BACK OF COVER TO READ:
"NAME OF MANUFACTURER"
"COUNTRY OF ORIGIN"
"TENSILE STRENGTH CLASS PER ASTM"
"MM/DD/YY"

NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC SPECIFICATIONS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. FRAME & COVER SHALL BE MADE FROM ASTM A48 CLASS 35B GRAY CAST IRON.
NOTES:
1. ALL MATERIALS WILL CONFORM TO SWSC SPECIFICATIONS AND INSTALLATION PROCEDURES. SHALL CONFORM TO SWSC GUIDELINES AND POLICIES.
2. FRAME & COVER SHALL BE MADE FROM ASTM A48 CLASS 35B GRAY CAST IRON.

SECTION A-A
BACK OF COVER TO READ:
"NAME OF MANUFACTURER"
"COUNTRY OF ORIGIN"
"TENSILE STRENGTH CLASS PER ASTM"
"MM/DD/YY"

24" X 6" SEWER
FRAME & COVER

SCALE: NTS
NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES & POLICIES AND SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4' FROM TOP OF PIPE TO FINISH GRADE.
3. IF 4' OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.
4. IF DEPTH OF COVER ABOVE CONCRETE ENCASMENT IS GREATER THAN 6'-0" REINFORCEMENT STEEL SHALL BE USED.
INSPECTION JURISDICTION

S.W.S.C.  PLUMBING INSPECTOR

STREET
4' MINIMUM

BUILDING SEWER
MINIMUM SLOPE 1/4" PER FOOT OR 2%
ALL FITTINGS TO BE LONG SWEEPS
PIPE AND FITTINGS SHALL BE P.V.C. SDR-35

SEE CONNECTION DETAIL TO AN EXISTING SEWER MAIN

BUILDING SEWER

Detectable Metallic Underground 6" Tape

TRENCH CROSS-SECTION

BACKFILL IN 6" LIFTS OF CLEAN GRAVEL AND THOROUGHLY COMPACTED

3/4" CRUSHED STONE (TRAPROCK)

WHERE REQUIRED BY ENGINEER SHALL BE WRAPPED IN APPROVED FILTER FABRIC

SEWER SERVICE CONNECTION
STRAP ON SADDLE
STAINLESS STEEL (TYP) BAND CLAMP
GASKET
SEWER MAIN PIPE
LATERAL STRAP-ON SADDLE
FLEXIBLE RUBBER ADAPTER (FERNCO OR APPROVED EQUAL)
WHEN CONNECTING TO EXISTING SERVICE
FINISHED GRADE
EXCAVATE AS REQUIRED
BACKFILL PER SPECIFICATIONS
3/4" STONE
PVC HOUSE OR BUILDING LATERAL
12" MIN. BELOW THE PIPE
LINER PIPE
SEE DETAIL THIS SHEET
EXISTING SERVICE LATERAL

6" MIN. ABOVE AND ON THE SIDES OF THE PIPES
6"

NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES & POLICIES AND SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4" FROM TOP OF PIPE TO FINISH GRADE.
3. IF 4" OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.
4. ALL SERVICE LINES SHALL BE PVC SDR-35 AND MUST BE A MINIMUM OF 6" DIAMETER, NO EXCEPTIONS.
INSPECTION JURISDICTION

S.W.S.C. PLUMBING INSPECTOR

STREET
4' MINIMUM

BUILDING SEWER
MINIMUM SLOPE 1/4" PER FOOT OR 2%
ALL FITTINGS TO BE LONG SWEEPS
PIPE AND FITTINGS SHALL BE P.V.C. SDR-35

SEE CONNECTION DETAIL TO AN NEW SEWER MAIN

EXISTING SEWER MAIN

BUILDING SEWER

BACKFILL IN 6" LIFTS OF CLEAN GRAVEL AND THOROUGHLY
COMPACTED

3/4" CRUSHED STONE (TRAPROCK)
WHERE REQUIRED BY ENGINEER
SHALL BE WRAPPED IN APPROVED
FILTER FABRIC

TRENCH CROSS-SECTION

NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES &
POLICIES AND SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4' FROM TOP OF PIPE TO
FINISH GRADE.
3. IF 4' OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.
4. ALL SERVICE LINES SHALL BE PVC SDR-35 AND MUST BE A MINIMUM OF 6" DIAMETER,
NO EXCEPTIONS.
"NEENAH" R-7506 SERIES OR EQUAL FLOOR BOX FRAME AND LID, OR EQUAL WITH STAINLESS STEEL CAP SCREW LID CLOSURE

1/2" ALL AROUND

6" MIN.

4" 6"

EARTH

CONCRETE

2 LAYERS OF 30lb. FELT ALL AROUND OR FIBER PACKING

PVC SDR-35 LONG SWEEP 45° BEND

3'-0" MIN.

SIZE 45° WYE PER PLAN

* REQUIRED — FOR ALL SERVICES OVER 100’ AND/OR FOR EVERY 2 BENDS

NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES & POLICIES AND SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4’ FROM TOP OF PIPE TO FINISH GRADE.
3. IF 4’ OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.
4. ALL SERVICE LINES SHALL BE PVC SDR-35 AND MUST BE A MINIMUM OF 6” DIAMETER. NO EXCEPTIONS.
5. CLEAN OUT PIPE DIAMETER SHALL BE THE SAME AS THE SEWER LINE AT THE WYE.
SECTION B-B

SEWER OR DRAIN SERVICE CONNECTION

WITH CHIMNEY GREATER THAN 12’ DEEP

NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES & POLICIES AND MATERIAL SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4’ FROM TOP OF PIPE TO FINISH GRADE.
3. IF 4’ OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.
4. ALL SERVICE LINES SHALL BE PVC SDR-35 AND MUST BE A MINIMUM OF 6” DIAMETER, NO EXCEPTIONS.
5. CLEAN OUT PIPE DIAMETER SHALL BE THE SAME AS THE SEWER LINE AT THE WYE.
NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES & POLICIES AND MATERIAL SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4' FROM TOP OF PIPE TO FINISH GRADE.
3. IF 4' OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.
4. ALL SERVICE LINES SHALL BE PVC SDR-35 AND MUST BE A MINIMUM OF 6" DIAMETER, NO EXCEPTIONS.
NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES & POLICIES AND SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4' FROM TOP OF PIPE TO FINISH GRADE.
3. IF 4' OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.
4. SEWER REPAIR SECTION MATERIAL SHALL BE THE SAME MATERIAL AS THE HOST PIPE, OR AS APPROVED BY SWSC.
5. REPAIR SECTION SHALL BE SIZED TO BUTT AGAINST THE HOST PIPES.

PVC SLIP COUPLINGS, RUBBER COUPLINGS (FERNCO OR APPROVED EQUAL)
BRICK OR EGG SHAPED SEWER REPAIR MAY HAVE ADDITIONAL REQUIREMENTS BY SWSC
NOTES:
1. ALL MATERIALS AND INSTALLATION PROCEDURES SHALL CONFORM TO SWSC GUIDELINES & POLICIES AND MATERIAL SPECIFICATIONS.
2. ALL SEWER MAIN PIPE SHOULD HAVE A MINIMUM DEPTH OF 4' FROM TOP OF PIPE TO FINISH GRADE.
3. IF 4' OF COVER IS NOT POSSIBLE PIPE SHALL BE INSULATED.