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22-2

DETAIL

TYPICAL MEDIAN

3' 10' - 0" Concrete Taper

3'

R 8"

Surface

Pavement

10' - 0" Concrete Taper

B

2.25'

R

Surface

Pavement

10' - 0"

111.02' Typ.

B

2.25'

R

1' - 9"

4' - 6"

1' - 9"

SECTION A-A

N.T.S.

Varies 1/4"/FT

Expansion Joint

Asphalt

Pavement

Surface

SECTION B-B

N.T.S.

NOSE DETAIL LEFT TURN BAY ISLANDS

N.T.S.

CAR STORAGE LENGTH

(Varies)

45.59'

R 327.48'

R 327.48'

R 327.48'

R 327.48'

R 327.48'

3.62'

Radius

3.62'

Radius

2.25'

Radius

10' - 0' Concrete Taper

10' - 0'

3'

R 2.25'

1' - 8'

4' - 6'

1' - 8'

10' - 0'

8"
GRAVEL STREET & DRIVEWAY DETAIL
N.T.S.

EXISTING GRAVEL
UNDISTURBED SOIL

3" ASPHALT CONCRETE
EXISTING

6" CONCRETE CAP
UNDISTURBED SOIL

PRIME & SEAL STREET PATCH DETAIL
N.T.S.

EXISTING 6" ASPHALT (BM-2)
UNDISTURBED SOIL

6" AB-3

EXISTING

Pavement Prime & Seal

STREET PATCH DETAIL
N.T.S.

EXISTING

6" CONCRETE CAP
UNDISTURBED SOIL

Pavement Concrete Asphalitic

CITY OF BONNER SPRINGS

ADDED OF 4-1-2005

DATE OF REVISIONS DRAWING TITLE STANDARD DETAIL

PAVEMENT PATCHING DETAILS

22-3
1. Butt type joint (lanes poured separately).
2. Butt type joint, use bond breaker.
3. Butt type joint (lanes poured separately).

---

**Type 1 - Contraction Joint**

- D x 18" Smooth dowel
- Epoxy or cement grout to fill drilled hole
- Approved vertical & horizontal alignment support device required.

---

**Type 2 - Centerline Joint**

- Existing slab
- Alt. A - Sawed
- Alt. B - Formed

---

**Type 2 - Full Width Patch**

- (Two Lanes Poured Separately)

---

**Notes:**

- Dowel sizes used shall be selected as follows:
  - 8" Thick Pavement - Use 1" Dia.
  - 9" Thick Pavement - Use 1-1/8" Dia.
  - 10" Thick Pavement - Use 1-1/4" Dia.
  - 11" Thick Pavement - Use 1-3/8" Dia.
  - 12" Thick Pavement - Use 1-1/2" Dia.

---

**City of Bonner Springs**

**Rigid Pavement Joint Repair**

**Drawing Title:** 22-4

**Standard Detail:**

**Adopted:** 07-11-2005

**Revisions:**

- 8/15/2011

---

**Additional Notes for Dowels:**

- Contractor from using 15' slab lengths throughout.
- If the patch exceeds 15' the patch must contain welded wire mesh reinforcement. This mesh shall consist of W4 longitudinal wire at 6' spacing and W4 transverse wire at 12' spacing. Mesh shall be placed at mid-depth of slab and shall extend to within 6" of the longitudinal edge and to within 9" of the transverse edge of the patch. If a continuous repair exceeds 30' then the repair should be divided into as many 30' slabs as possible. If the remaining portion is between 1' and 5' combine it with the last 30' segment and divide it into equal parts. If the remaining portion is between 6' and 29' leave as is. The above does not prevent the contractor from using 15' slab lengths throughout.
GENERAL NOTES:

1. 1/2" Expansion Joints shall be placed at radius points and at 150' intervals.

2. 1" deep Contraction Joints shall be installed at approximately 10' intervals. These joints shall pass across the entire curb section.

3. Depth of curb shall be a minimum of 8" through the handicap access ramp.

4. Steel reinforcement may be omitted from curb & gutter placed on a minimum of 3" of asphaltic concrete.

STRAIGHT CURB
(TYPE C-1)

DOWELLED CURB
(TYPE DC)

ROLL BACK CURB & GUTTER
(TYPE CG-2)
Provide storm drainage pipe W/ end sections. diameter and length to be approved by the public works director (15" Dia. min. class III RCP OR 16 Ga. CMP)

SECTION A-A

* Match exist. roadway crown (0.5% Min. - 2% Max.)
** For residential zoning districts: 4" Min. hot mix asphalt (BM-2)
For agricultural zoning districts: 6" Min. rock (AB-3)

Depth to be approved by the public works director prior to installation.
CONTRACTION JOINT
N.T.S.

Provide storm drainage pipe W/ end sections. Diameter and length to be approved by the public works director prior to installation.

N.T.S.

SECTION A-A

- Change in slope (12% Max.)
- Change in slope (8% Max.)
- Match exist. roadway crown (0.5% Min. - 2% Max.)

PLAN
N.T.S.

CONTRACTION JOINT
N.T.S.

Exp. joint

Depth to be approved by the public works director prior to installation.
NOTES:

1. Joints shall be formed at right angles to the alignment of the sidewalk and to the depths indicated below.

2. The sidewalk shall be marked off into square sections by contraction joints. Contraction joints shall be one-eighth (1/8) inch wide by one (1) inch deep and may be formed by tooling or by use of a concrete saw.

3. Expansion joints shall be formed by a one-half (1/2) inch thick preformed joint filler, extending the full depth of the slab, and secured so that they are not moved by depositing and compacting the concrete at these joints.

4. Expansion joints shall be placed where sidewalk abuts other structures and shall not be spaced more than 50 feet apart on straight runs for hand laid sidewalks and not more than 100 feet apart on straight runs for machine laid sidewalks.

5. Sidewalks shall conform to the latest ADA guidelines.
JOINT DETAILS
N.T.S.

1. Joints shall be formed at right angles to the alignment of the sidewalk and to the depths indicated below.

2. The sidewalk shall be marked off into square sections by contraction joints. Contraction joints shall be one-eighth (1/8) inch wide by one (1) inch deep and may be formed by tooling or by use of a concrete saw.

3. Expansion joints shall be formed by a one-half (1/2) inch thick preformed joint filler, extending the full depth of the slab, and secured so that they are not moved by depositing and compacting the concrete at these joints.

4. Expansion joints shall be placed where sidewalk abuts other structures and shall not be spaced more than 50 feet apart on straight runs for hand laid sidewalk and not more than 100 feet apart on straight runs for machine laid sidewalks.

5. Sidewalks shall conform to the latest ADA guidelines.
**TYPICAL MONUMENT BOX**

**MONUMENT BOX IN EXISTING PAVEMENT**

**Existing Pavement**

- Concrete Backfill

**Surface**

- 2" Asphaltic Concrete

**Existing Subgrade**

- Undisturbed Subgrade

**Neenah R1968 36-B**

- 4" Diameter Brass Cap With Township, Range, Section Stamped on the Top With True Section Corner Etched on the Surface After Marker is Set. (Stem Length Approx. 3.0", Stem Dia. Approx. 0.62")

- 6" Dia. Conc. Shaft With 12" Dia Base.

- 2" Asphalitic Concrete Surface

- Concrete Backfill

- Existing Pavement

**Stem Dia. Approx. 0.62"** is Set. (Stem Length Approx. 3.0", Stem Dia. Approx. 0.62")

- 6" Dia. Conc. Shaft With 12" Dia Base.

---

**City of Bonner Springs**

**MONUMENT BOX DETAIL**

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<th>By</th>
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<td>8/15/2011</td>
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**Drawing Title**

- MONUMENT BOX DETAIL

**Adopted**

- 07-11-2005
Class "A" Concrete Embedment

Plain Reinforced

Reinforced

1.00%

0.40%

4.8

2.8

FACTOR

LOAD

TYPE

P

FACTOR

TABLE OF BEDDING DEPTHS & SIDE CLEARANCES

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STANDARD EMBEDMENTS

N.T.S.

Nominal Trench Boundaries

4-#4 Bars

Nominal Pipe Diameter

"A" Fill Below Pipe (See Table)

"B" Side Clearances (See Table)

Hand Placed & Hand Tamped Backfill

Granular Fill

Concrete

FRONT SECTION

SECTION THROUGH COLLAR

CONCRETE COLLAR DETAIL

N.T.S.

CITY OF BONNER SPRINGS

REVISIONS

DATE

BY

ADOPTED: 07-11-2005

ARW

Embedment Changes

8/15/2011

Embelements

N.T.S.

Embelements for Sewer Conduit

25-1
Notes:
All Concrete Shall Be MCIB A618-1-4 (4000 P.S.I.) Concrete.
The Min. Thickness, Sides and Bottom, Shall be 6". The Top of The Concrete Shall Be at Least to the Center of the Pipe.
**SECTION A-A**

**PLAN**

**N.T.S.**

**Note:**

All Concrete Shall Be MCIB A618-I-4 (4000 P.S.I. Concrete) With a Minimum Thickness (All Sides) of 6 Inches.

### PIPE DIA. CONCRETE QUANTITIES PER LINEAR FOOT (FOR INFORMATION ONLY)

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Casing Pipe and End Seal Detail

END VIEW

SECTION

Steel Casing Pipe

End Seals

Casing Spacer

Carrier Pipe

Carrier Pipe

Pipe Reference Mark

Casing Spacers

Boring Width

CITY OF BONNER SPRINGS

DRAWING TITLE

STANDARD DETAIL

ADOPTED: 04-11-2005

REVISIONS

DATE

DRAWING TITLE

25-4

N.T.S.
**CLEANOUT DETAILS**

1. TRACER WIRE MATERIALS TO BE PER SECTION 2503.6.
2. TRACER WIRE TO BE INSTALLED PER SECTION 2506.5.
NOTES:

Impervious ditch checks shall be placed where shown on the plans. Length (10' Min.) shall be as noted on the plans. Flowable fill shall consist of a Portland Cement grout having a minimum 28 day compressive strength of 500 psi. Compacted clay shall be compacted to obtain 90% of Max. density at optimum moisture +/- 2%.

Regular backfill (above ditch check) shall be free of debris, organic material, and stones > 12" in any dimension.

Top of impervious material shall be a minimum of 2'-0" below finished grade.

IMPERVIOUS DITCH CHECK DETAIL
N.T.S.

NOTES:

Preplaced-aggregate concrete shall be placed to the limits shown on the plans.

Clay backfill (above preplaced-aggregate concrete) shall be compacted to 95% Max. dry density at optimum moisture +/- 2%.

Top of preplaced-aggregate concrete shall be a minimum of 1'-0" above the top of the largest O.D. of the pipe (bell end).

Size and spacing of the perforations and spacing of PVC pipe longitudinal to the trench shall be determined by the contractor.

See specifications for additional requirements.
CONCRETE OR BRICK MANHOLE ADAPTER
N.T.S.

Concrete or Brick Manhole Wall
Grout
(Use for Pipes Entering Existing Brick or Concrete Manhole Walls)
Concrete Manhole adapter
Entrance Pipe

FLEXIBLE WALL CONNECTION
N.T.S.

Concrete Invert Bench
Gasket

Concrete Invert
Top of MH Base

WATERSTOP GASKET
N.T.S.

Concrete Manhole Wall
PSX Gasket
(Use for Pipes Entering Existing Concrete Manhole Walls)
Concrete Manhole Wall
Core Drill
Manhole Wall
Entrance Pipe

Stainless Steel Clamp
Gasket
Pipe Wall
NOTES:

1. Place stop on pipe near center of manhole wall.

2. Tighten steel band to assure positive seal against pipe outside. 
   A screwdriver may be used to take up initial slack, but a 
   socket wrench (5/16") is preferred to insure proper tightness.

3. All methods and materials used shall be in accordance with the 
   Manufacturer's recommendations.

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Floor of manhole shall be shaped as shown in the examples to increase hydraulic efficiency.

**SHAPED MANHOLE INVERT ISOMETRIC**

**SHAPED INVERT PLAN**

**SHAPED INVERT SECTION C-C**
NOTES:
1. All manholes are to be precast concrete and of eccentric cone type unless otherwise specified.
2. Manhole top adjustments shall be accomplished by the use of concrete adjustment rings.
3. Top of manhole casing shall be set in accordance with Section 2510.6.1 of the Standard Specifications or as directed by the Engineer.
4. Reinforcement in all sections shall equal or exceed A.S.T.M. C-478 Specifications except as modified by Section 2500 of the Standard Specifications.
5. The Engineer shall designate modifications for manholes with special designs.
6. The inside diameter of the manhole shall be a minimum of 4'-0" for pipe diameters from 12" through 24", 5'-0" for pipe diameters from 27" through 36", and 6'-0" for pipe diameters 42" through 48".
7. Clearance tolerance of pipe openings: The maximum allowable pipe opening on a horizontal axis shall be the outside diameter of the pipe plus 8. The maximum allowable pipe opening on a vertical axis shall be the outside diameter of the pipe plus 8. The minimum clearance between the outside surface of an installed pipe and the concrete of the manhole shall be 2".
8. Installation of pipe openings: All required pipe openings shall be cast into the manhole barrel sections.
9. No direct payment will be made for shaping floor or connecting pipes as shown on the plans.
10. Brick adjustment rings are NOT allowed.
11. See Manhole Invert Shaping Detail 25-10 and Section 2510 of the Standard Drawings and Standard Specifications.
12. Manhole coatings shall be per Section 2510.3 of the Standard Specifications.
inside Drop Manhole Notes:
1. Contractor shall submit detailed drawings showing inside drop manhole connection materials and hardware to be used prior to construction.
2. Interior of drop manhole to be coated per Section 2510 of the Standard Specifications.

TYPICAL INSIDE DROP MANHOLE  
(ECCENTRIC CONE)

TYPICAL OUTSIDE DROP MANHOLE  
(ECCENTRIC CONE)

General Notes:
1. See Standard Manhole Detail 25-11A for additional dimensions and typical information.
2. See Typical Manhole Invert Shaping Detail 25-10.
4. Difference between inverts must be 2.0" or greater to be considered a Drop Manhole.

CITY OF BONNER SPRINGS

DRAWING TITLE  
MANHOLE DETAILS  
25-11B
Clay & Bailey No. 2020 or Deeter No. 2016 manhole ring and cover (cast in top)

Attach locator wire to vault with corrosion resistant materials near top with 6" minimum tail

6" galvanized Schedule 40 steel vent pipe
w/ No. 24 galvanized mesh insect screen and wall sleeve, cast into manhole top

48" standard dia. precast shallow type manhole (per ASTM C478)

Air & vacuum valve anchored to manhole or supported with pipe.

Stainless steel ball valve (Size to match inlet for air and vacuum valve)

Threaded nipple (Size to match inlet for air and vacuum valve)

Locator wire

Reducing flange

Sewer pipe

Pipe gasket (Typ.)

Tapping saddle or flanged tee

12" dia. hole

18" of ½" - ¾" Gravel

TYPICAL AIR AND VACUUM VALVE VAULT DETAIL

(Dimensions will vary with pipe diameter)

N.T.S.

Notes:
1. Sewage combination air & vacuum valve complete with accessories for flashing shall be APCO Series 440 SCAV or Model 445 or approved equal.

2. Valve shall be sized to meet Manufacturer's design criteria.

3. If valve is anchored to manhole wall for support, anchor straps and materials shall be corrosion resistant.
**GENERAL REVISIONS**

1. Three covers and risers shown. Two covers and risers centered over baffles are optional.
2. Interceptor size - 1000 Gal minimum (revise the size dimensions, as needed, for larger capacity interceptors).
3. All joints of the frame & cover, concrete adjustment rings and the lid of the interceptor shall be sealed per section 2500.
4. Piping on the interior of the interceptor shall be ABS with solvent-cemented joints.
5. Grease Interceptor shall be vacuum tested for water tightness after the backfill operations have been completed in accordance with BSU technical specifications.
6. Interceptor shown in paved installation. Workhole frames and cover shall be installed as indicated for manhole covers per section 2510, if installed in pavement, structure shall be designed for H-20 loading.
7. Interior shall be epoxy coated. See section 2510.3 for interior coating requirements.
8. Grade to drain away from manholes and cleanouts.

**NOTES:**

See Note 3 (Typ.)

**ITEM**

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</table>

* LARGER PIPE MAY BE SUBSTITUTED TO MATCH UPSTREAM PIPE DIAMETER.
** REFER TO CLEAN OUT DETAIL(S) ON STANDARD DETAIL SHEET 25-6.
NO DUMPING

DRAINS TO RIVER

21" min, 26" max.
Centered on Inlet

Face of steel inlet frame

CURB INLET STAMP
N.T.S.

Stamping tool to form 2" high letters using 1/4" dia. round steel rod. Stamp concrete 1/4" deep after broom finishing.
TYPICAL VALVE BOX & OPERATING NUT EXTENSION

N.T.S.

Notes:
1. If valve box is located in any kind of pavement, Clay & Bailey 2196 valve cover or approved equal shall be required.
2. Set steel post (3'-0" Min.) above grade next to valve box location. Post to remain until final grading and seeding or sod is in place.
ALTERNATIVE FIRE HYDRANT INSTALLATION DETAIL

N.T.S.

Notes:
1. The direction of the steamer nozzle shall be verified by the Engineer.
2. In general, the steamer nozzle shall face the roadway.
3. Hydrant shall be placed a minimum of 24" behind curb.
4. Anchor couplings shall be 24" min. Pipe with set screw retainer glands shall be installed between hydrant and valve if longer length is required and no more than 72" behind curb.
5. Fire Hydrants must be freshly painted yellow after installation.
TYPICAL AIR AND VACUUM VALVE VAULT DETAIL

(Dimensions will vary with pipe diameter)

N.T.S.

6' galvanized Schedule 40 steel vent pipe w/ 24 galvanized mesh insect screen and wall sleeve, cast into manhole top

4'-0" dia. circular vault (per ASTM C478)

APCO No. 143C combination air valve or approved equal

Ball valve (Size to match inlet for air and vacuum valve)

Threaded, galvanized, Schedule 40 steel nipple (Size to match inlet for air and vacuum valve)

Locator wire

12" reducing flange

Manhole gasket (typ.)

12" Series 2/100 flange adapter, EBA Iron Sales, or approved equal (2 req'd)

12" Series 2/100 flange adapter, EBA Iron Sales, or approved equal (2 req'd)

Clay & Bailey No. 2020 or Deeter No. 2016 manhole ring and cover (cast in top)

Attach locator wire to vault with corrosion resistant materials near top with 6' minimum tail

18" of ¹⁄₂" - ¾" Gravel

12" flanged tee

12" dia. hole

18" of ½" - ¾" Gravel

4'-0" dia. circular vault (per ASTM C478)

12" flanged tee

12" dia. hole

18" of ½" - ¾" Gravel
NOTE:
1. All pipes shall have a locator wire. See Standard Drawing 29-9.

Pipe bedding material per 2901.6 of the Standard Specifications

* increase in rock. See Detail 29-5
TYPICAL PAVED STREET/DRIVEWAY TRENCH DETAIL

NOTES:
1. The one foot either side of the actual trench width shall not be removed until the trench has been filled.
2. If patching concrete pavement, tie patch to existing pavement by using #4 by 24" Grade 60 epoxy-coated rebar spaced 18" apart. Rebar shall be imbedded 12" deep into existing pavement by drilling and epoxying.
3. If patching concrete pavement adjacent to or across a contraction joint, the contraction joint will be re-established by using 18" long epoxy-coated dowel bars placed on 12" centers. Dowel sizes used shall be selected as follows:
   - 8" Thick Pavement - Use 1" Dia.
   - 9" Thick Pavement - Use 1-1/8" Dia.
   - 10" Thick Pavement - Use 1-1/4" Dia.
   - 11" Thick Pavement - Use 1-3/8" Dia.
   - 12" Thick Pavement - Use 1-1/2" Dia.
4. All pipes shall have a locator wire. See Standard Drawing 29-9.

TYPICAL GRAVEL STREET/DRIVEWAY TRENCH DETAIL
### Table of Bedding Depths & Side Clearances

<table>
<thead>
<tr>
<th>Pipe Dia.</th>
<th>Rock</th>
<th>Soil</th>
<th>A</th>
<th>B</th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>4&quot;-18&quot;</td>
<td>6&quot;</td>
<td>6&quot;</td>
<td>4&quot;</td>
<td>6&quot;</td>
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<td>20&quot;-24&quot;</td>
<td>9&quot;</td>
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<td>4&quot;</td>
<td>7&quot;</td>
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<td>26&quot;-30&quot;</td>
<td>9&quot;</td>
<td>9&quot;</td>
<td>4&quot;</td>
<td>8&quot;</td>
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</tbody>
</table>

- **A**: Fill Below Pipe (See Table)
- **B**: Side Clearances (See Table)
- **D**: Nominal Pipe Diameter
- **Hand Placed & Hand Tamped Backfill**
- **Granular Fill**
- **Concrete**

### Concrete Collar Detail

**N.T.S.**

### Standard Embedments

**N.T.S.**
SEWER AND STORM DRAIN CROSSING

N.T.S.

CONCRETE ENCASEMENT ELEVATION

CONCRETE ENCASEMENT SECTION

CHE crossed from 1'-6" to 1'-6"
crossed from 1'-6" to 1'-6"
crossed from 1'-6" to 1'-6"
crossed from 1'-6" to 1'-6"

Proposed water main

Existing sewer or storm drain pipe

Flexible seal coupling (Typ.)

Existing sewer or storm drain pipe

#3 U-bars @ 1'-6" ctrs.

Actual trench side slope to be determined by Contractor in accordance w/ OSHA Standards

Wrap w/tar paper

Flexible seal coupling (Typ.)

#7 Cont.

One full length of ductile iron pressure pipe, length centered under/over existing sewer or storm drain pipes, with both ends at equal distance from sewer or storm drain crossing (Typ.)

Min. 18" clearance — use 3" styrofoam if less than 18" unless otherwise noted.

Min. 18" clearance — use 3" styrofoam if less than 18" unless otherwise noted.

Proposed water main

#3 U-bars @ 1'-6" ctrs.

Min. 18" clearance -- use 3" styrofoam if less than 18" unless otherwise noted.

Proposed water main

#3 U-bars @ 1'-6" ctrs.

Place conc. against undisturbed earth

Pipe O.D.

Pipe O.D.

Min. 18" clearance -- use 3" styrofoam if less than 18" unless otherwise noted.

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Min. 18" clearance -- use 3" styrofoam if less than 18" unless otherwise noted.
THRUST BLOCK SCHEDULE

<table>
<thead>
<tr>
<th>Size</th>
<th>Fitting</th>
<th>&quot;A&quot;</th>
<th>&quot;B&quot;</th>
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<tr>
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<td>Tee</td>
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<td>45°</td>
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<td>11 1/4°</td>
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<td>11 1/4°</td>
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Notes:
1. All concrete for Thrust Blocking shall be MCIB A618-1-4 (4000 P.S.I. concrete)
2. MJ fittings with retainer glands required for ALL vertical bends in unrestricted pipe.

CITY OF BONNER SPRINGS

THRUST BLOCK DETAIL

N.T.S.

GRAVITY BLOCK DETAIL

N.T.S.
ANCHOR BLOCK DETAIL

N.T.S.

Plan View

18" min. each side

Trench Width

Pour concrete against undisturbed earth

Water main pipe (One full joint) Unless otherwise noted

MJ retainer gland "Clow" F-1058 or approved equal.

24" min. or equal to trench width

+4 Bars (Total of 4 Req'd)

MJ gate valve

M.J. bell

Pour concrete against undisturbed earth

Water main pipe

+4 Bars (Total of 4 Req'd)

Pipe Size

12" Min.

4" 4"

6" 4"

8" 7"

12" 15"

Front View

3:4 2:0 8 P M

Date:

M:T R N 1 1 -1 0 0 -5 1 4 -0 0 2 .0 _ Project Disciplines Roadway Design Bonner Water & Sewer det 29-8.jhansen

File:

Time:

By:

City of Bonner Springs

Revisions:

Adopted 07-11-2005

Drawing Title

Standard Detail

ANCHOR BLOCK DETAIL 29-8
LOCATOR WIRE DETAIL

N.T.S.

* Secure above pipe per the
Standard Specifications

Locate wire

Valve box and base

Existing ground

3" min. tail length

Coil locator wire around valve and up outside
of valve box. Loop locator wire over top of
valve box and under valve cover.

Std. valve cover & lid

Marking Tape
TYPICAL SERVICE METER SETTING
N.T.S.

SERVICE LINE TO MAIN CONNECTION DETAIL
N.T.S.
Legend

1. Brass pipe or rigid copper tubing (compression).
2. Wheel gate valve or resilient seated ball valve. Valves to be lockable.
3. Meter to be installed by BSU
4. Approved double check valve assembly with resilient seated ball valves and 4 test cocks (fitted with brass plugs).
5. 24" Lid & cover GCI #2259, Clay & Bailey #2213 or approved equal.
6. 18" of 1/2" or 3/4" crushed rock.
7. Resilient seated ball valves. Valves to be lockable.

Notes:
1. All backflow prevention assemblies shall be installed horizontally or as approved by BSU

2. AB-3, CA-5 Gravel will NOT be allowed as backfill material around water service. (See Section 2904.1 of the Standard Specifications.)
Legend:

1. Water Meter (Provided by City)
2. MJ Gate Valve (6")
3. MJ Gate Valve (8")
4. Approved Double Check Valve Assembly
5. 8" to 6" Reducer (Flanged)
6. Rockwell 913 Steel Flanged Coupling Adapter or approved equal.

Notes:

Dimensions shown are typical, and will vary with pipe diameter. Detail shown is for a 6" Meter with an 8" Double Check Valve Assembly. Refer to Manufacturer’s specifications for exact valve and fitting dimensions when different pipe sizes are used.

Shop drawings shall be submitted by the Contractor and approved by the City Engineer prior to installation.

All Concrete used in construction shall be MCIB A618-1-4 or approved equal.

Double Check Valve Assembly shall be approved by the City prior to installation.

Wall thickness shown is typical and will vary based on loading conditions and structure depth. ALL concrete dimensions shall be designed by a Licensed Structural Engineer prior to submittal of shop drawings.

CITY OF BONNER SPRINGS

ADOPTED OF-11-2005

DRAWING TITLE METER PIT DETAIL FOR 3" & LARGER WATER SERVICE

STANDARD DETAIL 29-11

REVISIONS 8/15/2011 WFL

DATE 12/7/2012 ARW

Engineer prior to submittal of shop drawings.
Notes:
1. All backflow assemblies shall be installed horizontally or as approved by BSU.
2. Valve assembly with 4 test cocks (shall be fitted with brass plugs).
3. All piping & fittings shall be brass.
VALVE & TEE CONNECT
N.T.S.

Note: Anchoring Coupling does not mean rodding together.
It means Anchoring Coupling.
END OF LINE ASSEMBLY (OPTION 1)
N.T.S.

END OF LINE ASSEMBLY (OPTION 2)
N.T.S.
4" AND LARGER MAIN LINE BLOW OFF

N.T.S.

END OF LINE BLOW OFF

N.T.S.

CITY OF BONNER SPRINGS

WATERLINE BLOW OFF DETAIL

DRAWING TITLE

STANDARD DETAIL

ADOPTED OF-4-1-2005

REVISIONS

DATE

DRAWER

29-15

General Revisions 8-15-2005 WFL

General Revisions 12-7-2012 ARW

Crushed Rock

unsuitable material.

of dirt and other

To be kept free

Weep Hole -

Crushed Rock

1' - 0' min. depth

2" x 24" Nipple

Saddle

Weep Hole -

To be kept free

of dirt and other

unsuitable material.

Flushing Hydrant

Meter Box

Anchoring Block

1/4" Ø Weep Hole -

To be kept free

of dirt and other

unsuitable material.
1. MJ fittings with retainer glands required for ALL vertical bends.

2. Pipe joints on the downhill section shall be restrained to prevent separation through the use of concrete joint encasement or set screw retainer glands, as directed by the Engineer.

3. See Standard Detail 29-7 for Gravity Block Details.

NOTE:

- Large 12"-18" thick stones shall be selected from on-site trench rock excavations, if suitable. If suitable rock is not present, Contractor shall provide and install suitable riprap from off-site quarry at no additional cost to the Owner. Determination of rock suitability shall be made by the Engineer.

CITY OF BONNER SPRINGS

ADOPED DATE

DRAWING TITLE

STANDARD DETAIL

WATER CROSSING DETAILS

29-16