<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>TRENCH PAY WIDTH</td>
</tr>
<tr>
<td>UNSHEETED (Wu)</td>
</tr>
<tr>
<td>-----------------</td>
</tr>
<tr>
<td>8”</td>
</tr>
<tr>
<td>12”</td>
</tr>
<tr>
<td>16”</td>
</tr>
<tr>
<td>20”</td>
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<tr>
<td>24”</td>
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<tr>
<td>30”</td>
</tr>
<tr>
<td>36”</td>
</tr>
<tr>
<td>42”</td>
</tr>
<tr>
<td>48”</td>
</tr>
</tbody>
</table>

NOTES:

1. PIPE LAYING CONDITION TYPE 2A (TRENCH INSTALLATION) SHALL BE USED FOR ALL DUCTILE IRON PIPE SEWER CONSTRUCTION UNLESS OTHERWISE SPECIFIED.

2. TRENCHES MAY BE EXCAVATED WIDER THAN THE TRENCH PAY WIDTH (Ws or Wu) ABOVE A LINE 1’-0” FROM TOP OF PIPE, AT CONTRACTOR’S OPTION AND AT NO ADDITIONAL COST TO THE AUTHORITY.

3. IF EXCAVATION TO A DEPTH GREATER THAN 4.5 FEET IS REQUIRED, EXCAVATION SUPPORT SHEETING MAY BE ORDERED OR TRENCH SHIELDS UTILIZED AT CONTRACTOR'S OPTION. COSTS UNDER THIS OPTION SHALL BE PART OF THE UNIT PIECE BID FOR EXCAVATION.

4. SHEETING, IF USED, SHALL BE REMOVED IN CONJUNCTION WITH THE BACKFILLING OPERATION UNLESS OTHERWISE SPECIFIED OR SHOW ON DRAWINGS. HOWEVER, IF APPROVED IN WRITING, SHEETING MAY BE CUT-OFF AND LEFT IN PLACE BELOW A LINE 1’-0” ABOVE THE TOP OF PIPE OR AS DIRECTED BY THE ENGINEER.
OPTIMAL TRENCH EXCAVATION
(REFER TO NOTE #2)

TRENCH PAY WIDTH
(Ws OR Wu)

NO LEDGE OR UNEXCAVATED
MATERIAL SHALL PROJECT
BEYOND THIS LINE

6" MIN.

Wu/2

6" MIN.

12"

SHEETING (REFER TO NOTES #3 & #4)

COMPACTED TRENCH BACKFILL
(SEE SPECIFICATION SECTION 02220)

4" MIN. LAYER, UNCOMPACTED
TRENCH BACKFILL MATERIAL

PAYMENT LIMIT FOR
NORMAL EXCAVATION

FLAT-BOTTOM TRENCH GRADE
(UNDISTURBED EARTH)

BELL OF PIPE (IF ANY)

HALF SECTION IN ROCK
HALF SECTION IN EARTH

D

PAYMENT LIMIT FOR
ROCK EXCAVATION

D-10.02

STANDARD DETAIL
DUCTILE IRON SEWER
PIPE LAYING CONDITION TYPE 3A
(TRENCH INSTALLATION)
DISTRIBUTION OF COLUMBIA
WATER AND SEWER AUTHORITY

<table>
<thead>
<tr>
<th>PIPE DIA</th>
<th>TRENCH PAY WIDTH (Ws or Wu)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>UNSHEETED (Ws)</td>
</tr>
<tr>
<td>8&quot;</td>
<td>2' – 4&quot;</td>
</tr>
<tr>
<td>12&quot;</td>
<td>2' – 8&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>3' – 0&quot;</td>
</tr>
<tr>
<td>20&quot;</td>
<td>3' – 4&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
<td>3' – 8&quot;</td>
</tr>
<tr>
<td>30&quot;</td>
<td>4' – 2&quot;</td>
</tr>
<tr>
<td>36&quot;</td>
<td>5' – 7&quot;</td>
</tr>
<tr>
<td>42&quot;</td>
<td>6' – 1&quot;</td>
</tr>
<tr>
<td>48&quot;</td>
<td>6' – 7&quot;</td>
</tr>
</tbody>
</table>

NOTES:

1. PIPE LAYING CONDITION TYPE 3A (TRENCH INSTALLATION) SHALL BE USED FOR DUCTILE IRON PIPE SEWER CONSTRUCTION ONLY WHEN SPECIFIED OR SHOWN ON DRAWINGS.

2. TRENCHES MAY BE EXCAVATED WIDER THAN THE TRENCH PAY WIDTH (Ws or Wu) ABOVE A LINE 1’–0" FROM TOP OF PIPE, AT CONTRACTOR’S OPTION AND AT NO ADDITIONAL COST TO THE AUTHORITY.

3. IF EXCAVATION TO A DEPTH GREATER THAN 4.5 FEET IS REQUIRED, EXCAVATION SUPPORT SHEETING MAY BE ORDERED OR TRENCH SHIELDS UTILIZED AT CONTRACTORS OPTION. COSTS UNDER THIS OPTION SHALL BE PART OF THE UNIT PRICE BID FOR EXCAVATION.

4. SHEETING, IF USED, SHALL BE REMOVED IN CONJUNCTION WITH THE BACKFILLING OPERATION UNLESS OTHERWISE SPECIFIED OR SHOWN ON DRAWINGS. HOWEVER, IF APPROVED IN WRITING, SHEETING MAY BE CUT-OFF AND LEFT IN PLACE BELOW A LINE 1’–0" ABOVE THE TOP OF PIPE OR AS DIRECTED BY THE ENGINEER.
DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

OPTIONAL TRENCH EXCAVATION
(REFER TO NOTE #2)

TRENCH PAY WIDTH
(Ws OR Wu)

Ws/2 or
Wu/2

NO LEDGE OR UNEXPECTED
MATERIAL SHALL PROJECT
BEYOND THIS LINE

BELLOFPIPE(IFANY)

6" MIN.

12"

SHEETING (REFER TO NOTES #3 & #4)

COMPACTED TRENCH BACKFILL
(SEE SPECIFICATION SECTION 02220)

D / 8 LAYER OR 4" MIN. PIPE
BEDDING MATERIAL (NOTE #6)

PAYMENT LIMIT FOR
NORMAL EXCAVATION

PIPE BEDDING
MATERIAL (NOTE #6)

6" MIN.

4" MIN.

FLAT-BOTTOM TRENCH GRADE
(UNDISTURBED EARTH)

HALF SECTION IN ROCK  HALF SECTION IN EARTH

APPROVED DATE: June 20, 2003

DIRECTOR, DEPARTMENT OF ENGINEERING
AND TECHNICAL SERVICES

STANDARD DETAIL
DUCTILE IRON SEWER
PIPE LAYING CONDITION TYPE 4A
(TRENCH INSTALLATION)
### PIPE Diameter D vs Trench Pay Width (Ws or Wu)

<table>
<thead>
<tr>
<th>Pipe Diameter D</th>
<th>Trench Pay Width (Ws or Wu)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Unsheeted (Wu)</td>
</tr>
<tr>
<td>8&quot;</td>
<td>2' – 4&quot;</td>
</tr>
<tr>
<td>12&quot;</td>
<td>2' – 8&quot;</td>
</tr>
<tr>
<td>16&quot;</td>
<td>3' – 0&quot;</td>
</tr>
<tr>
<td>20&quot;</td>
<td>3' – 4&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
<td>3' – 8&quot;</td>
</tr>
<tr>
<td>30&quot;</td>
<td>4’ – 2”</td>
</tr>
<tr>
<td>36&quot;</td>
<td>5’ – 7”</td>
</tr>
<tr>
<td>42&quot;</td>
<td>6’ – 1”</td>
</tr>
<tr>
<td>48&quot;</td>
<td>6’ – 7”</td>
</tr>
</tbody>
</table>

### NOTES:

1. Pipe laying condition Type 4A (trench installation) shall be used for ductile iron pipe sewer construction only when specified or shown on drawings.

2. Trenches may be excavated wider than the trench pay width (Ws or Wu) above a line 1’-0” from top of pipe, at contractor’s option and at no additional cost to the authority.

3. If excavation to a depth greater than 4.5 feet is required, excavation support sheeting may be ordered or trench shields utilized at contractor’s option. Costs under this option shall be part of the unit price bid for excavation.

4. Sheet ing, if used, shall be removed in conjunction with the backfilling operation unless otherwise specified or shown on drawings. However, if approved in writing, sheeting may be cut-off and left in place below a line 1’-0” above the top of pipe or as directed by the engineer.

5. Compacted trench backfill, 80% between pipe bedding and 12 inches above top of pipe.

6. Pipe bedding material shall be gravel or crushed stone conforming to ASTM C-33, grading size no. 67 or no. 57.

---

**APPROVED DATE:** June 20, 2003  
**DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES:**  
**PREPARED BY:** OBG/BKJ  
**CHECKED BY:** W.DARROW  
**REVISION NO.:** 0  
**DATE:** 6/20/03  
**STANDARD DETAIL:** DUCTILE IRON SEWER PIPE LAYING CONDITION TYPE 4A (TRENCH INSTALLATION)
TRENCH PAY WIDTH
(Ws OR Wu)

W (UNSHEETED)

IF ROCK IS ENCOUNTERED, NO LEDGE OR UNEXCAVATED MATERIAL SHALL PROJECT BEYOND THIS LINE

6" MIN.

W+3 (SHEETED)

SHEETING

BELL OF PIPE (IF ANY)

PIPE BEDDING, ASTM C33, #57

EXCAVATE FOR PIPE BELLS IN BEDDING

TRENCH SUBGRADE

HALF SECTION IN ROCK
HALF SECTION IN EARTH

CONCRETE PIPE SEWER
TRENCH LAYING CONDITION

STANDARD DETAIL
### Table: Pipe Diameter and Bedding Dimensions

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>PIPE BEDDING DIMENSION</th>
<th>TRENCH PAY WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>D</td>
<td>W</td>
</tr>
<tr>
<td>12”</td>
<td>12”</td>
<td>5”</td>
</tr>
<tr>
<td>15”</td>
<td>12”</td>
<td>5”</td>
</tr>
<tr>
<td>18”</td>
<td>12”</td>
<td>6”</td>
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<tr>
<td>21”</td>
<td>12”</td>
<td>7”</td>
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<td>27”</td>
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<td>30”</td>
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<td>33”</td>
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<td>10”</td>
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<td>36”</td>
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<tr>
<td>42”</td>
<td>18”</td>
<td>13”</td>
</tr>
<tr>
<td>48”</td>
<td>24”</td>
<td>15”</td>
</tr>
<tr>
<td>54”</td>
<td>24”</td>
<td>16”</td>
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<tr>
<td>60”</td>
<td>24”</td>
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<td>96”</td>
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<td>102”</td>
<td>24”</td>
<td>30”</td>
</tr>
<tr>
<td>108”</td>
<td>24”</td>
<td>32”</td>
</tr>
</tbody>
</table>

### Notes:
1. If necessary to exceed W below a horizontal plane 1’-0” above top of pipe, see specification section 02220.

2. Sheeting, if used, shall be removed in conjunction with the backfilling operation unless otherwise specified or shown on drawing. However, if approved in writing, sheeting may be cut-off and left in place below a line 1’-0” above the top of the pipe or as directed by the engineer.
6” MAXIMUM (UNSheETED), 5” NOMINAL

IF ROCK IS ENCOUNTERED, NO LEDGE OR UNEXCAVATED MATERIAL SHALL PROJECT BEYOND THIS LINE

TRENCH BACKFILL

D = 15” OR AS SPECIFIED

CLASS 4000 CONCRETE BEDDING

TRENCH SUBGRADE

CONCRETE SADDLE BLOCK, STD. DET. S-30.04

HALF SECTION IN ROCK  HALF SECTION IN EARTH

SADDLE BLOCKS – 2 PER STANDARD PIPE LENGTH, NOT REQUIRED AT PIPE ENTRY TO BASIN AND MANHOLE IF PIPE IS INSTALLED AFTER BASIN AND/OR SEWER MANHOLE

RUBBER GASKET

SECTION A – A

CATCH BASIN CONNECTION PIPE TRENCH LAYING CONDITION
TRENCH PAY WIDTH (Ws OR Wu)

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>TRENCH WIDTH CLEAR</th>
<th>TRENCH PAY WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>D</td>
<td>W</td>
<td>Wu/2 or Wu/2</td>
</tr>
</tbody>
</table>

W (UNSHEETED)

IF ROCK IS ENCOUNTERED, NO LEDGE OR UNEXCAVATED MATERIAL SHALL PROJECT BEYOND THIS LINE

6" MIN.

CAREFULLY PLACE BEDDING AROUND PIPE HAUNCH IN BEDDING SECOND COURSE

12"

EXCAVATE FOR SOCKET JOINTS IN FIRST COURSE OF BEDDING

TRENCH SUBGRADE

W+3 (SHEETED)

SHEETING

PIPE BEDDING, ASTM C33, #57

BEDDING, FOURTH COURSE

BEDDING, THIRD COURSE

BEDDING, SECOND COURSE

4" MIN. BEDDING, FIRST COURSE. LEVEL CROSS SECTION AND UNIFORM TO PIPE GRADE.

HALF SECTION IN ROCK  
HALF SECTION IN EARTH

### TRENCH PAY WIDTH (Ws OR Wu)

<table>
<thead>
<tr>
<th>PIPE DIAMETER</th>
<th>TRENCH WIDTH CLEAR</th>
<th>TRENCH PAY WIDTH</th>
</tr>
</thead>
<tbody>
<tr>
<td>10&quot;</td>
<td>12&quot;</td>
<td>2'-11&quot;</td>
</tr>
<tr>
<td>12&quot;</td>
<td>12&quot;</td>
<td>3'-0&quot;</td>
</tr>
<tr>
<td>15&quot;</td>
<td>12&quot;</td>
<td>3'-3&quot;</td>
</tr>
<tr>
<td>18&quot;</td>
<td>12&quot;</td>
<td>3'-7&quot;</td>
</tr>
<tr>
<td>21&quot;</td>
<td>12&quot;</td>
<td>3'-10&quot;</td>
</tr>
<tr>
<td>24&quot;</td>
<td>12&quot;</td>
<td>4'-1&quot;</td>
</tr>
<tr>
<td>27&quot;</td>
<td>12&quot;</td>
<td>5'-4&quot;</td>
</tr>
</tbody>
</table>

### NOTES:

1. IF NEEDED TO EXCEED W BELOW A HORIZONTAL PLANE 1'-0" ABOVE TOP OF PIPE, SEE SPECIFICATION SECTION 02220.

2. SHEETING, IF USED, SHALL BE REMOVED IN CONJUNCTION WITH THE BACKFILLING OPERATION UNLESS OTHERWISE SPECIFIED OR SHOWN ON DRAWING.
SECTIONAL PLAN

24" DIAMETER FRAME AND COVER
2 - 5/8" STEEL DOWELS - 180° APART
18" OR LESS BRICK GRADE ADJUSTMENT COURSES

MANHOLE STEPS IN LINE 12° O/C

CONCRETE FILL

BRICK BENCH AND INVERT

SECTION A - A

NOTES:
1. STRUCTURAL CALCULATIONS MUST BE SUBMITTED FOR APPROVAL PRIOR TO MANUFACTURE OF BASE AND TRANSITION SLABS.

2. 1', 2', 3' OR 4' OR A COMBINATION THEREOF AS NEEDED FOR GRADE ADJUSTMENT

3. PROVIDE ENTRY SEALS ON SANITARY AND COMBINED SEWER CONNECTIONS 24" AND SMALLER.

STANDARD DETAIL PRECAST CONCRETE MANHOLE FOR NEW 10" THRU 21" DIAMETER SEWERS (48" DIAMETER PRECAST BASE)
SECTIONAL PLAN

15' OR LESS TO INVERT
24" DIA. COVER WITH
36" X 24" DIA. ADAPTER RING

GREATER THAN 15' DEPTH
36" DIAMETER COVER
FOR DETAIL SEE
STD. DET. S-20.20

MANHOLE STEPS
IN LINE 12" O/C

BRICK BENCH
AND INVERT

CONCRETE FILL

60" DIAMETER BASE SECTION

36" DIAMETER FRAME

2 - 5/8" STEEL DOWELS - 180" APART
18" OR LESS BRICK GRADE
ADJUSTMENT COURSES

PRECAST FLATTOP SLAB FOR 48" DIA.
RISER WITH 36" DIA. ECCENTRIC
OPENING, STD. DET. S-20.23

48" DIAMETER RISER SECTIONS
(TRANSITION RISER 48" ID TO 24"ID.
MAY BE USED AS OPTION. SEE STD.
DET. S-20.11)

PRECAST SLAB FOR 60" DIA. RISER
WITH 48" DIA. ECCENTRIC OPENING,
STD. DET. S-20.24

60" DIAMETER BASE SECTION

8" MIN.

9"

5'-0"

SECTION A - A

NOTES:

1. STRUCTURAL CALCULATIONS MUST
BE SUBMITTED FOR APPROVAL
PRIOR TO MANUFACTURE OF BASE
AND TRANSITION SLABS.

2. 1', 2', 3' OR 4' OR A COMBINATION
THEREOF AS NEEDED FOR GRADE
ADJUSTMENT

3. PROVIDE ENTRY SEALS ON
SANITARY AND COMBINED SEWER
CONNECTIONS 24" AND SMALLER.

STANDARD DETAIL
PRECAST CONCRETE MANHOLE
FOR NEW 24" THRU 30" DIAMETER SEWERS
(60" DIAMETER PRECAST BASE)
SECTIONAL PLAN

15' or less to invert
24" dia. cover with
36" x 24" dia. adapter ring

18" or less brick grade
adjustment courses

Precast flattop slab for 48" dia.
riser with 36" dia. eccentric
opening, std. det. S-20.23

48" diameter riser sections
(transition riser 48" I.D. to 24" I.D.
may be used as option. See std.
det. S-20.11)

Precast slab for 72" dia. riser
with 48" dia. eccentric opening,
std. det. S-20.26

NOTES:
1. Structural calculations must be
   submitted for approval prior to
   manufacture of base and
   transition slabs.
2. 1', 2', 3', or 4' or a combination
   thereof as needed for grade
   adjustment

SECTION A - A

CONCRETE FILL

BRICK BENCH
AND INVERT

MANHOLE STEPS
 IN LINE 12" O/C

SEE NOTE 2

A

A

12" MIN.

72" DIA. BASE SECTION

SEE NOTE 2

9" MIN.

36" DIAMETER FRAME
2 - 5/8" steel dowels - 180° apart

FOR DETAIL SEE
STD. DET. S-20.20

BRICK BENCH
AND INVERT

CONCRETE FILL

72" DIA. BASE SECTION

MANHOLE STEPS
72" DIA. BASE SECTION
15' OR LESS TO INVERT 24" DIA. COVER WITH 36" X 24" DIAMETER ADAPTER RING

GREATER THAN 15' DEPTH 36" DIA. COVER

MANHOLE STEPS IN LINE 12" O.C.

SEE NOTE 2

FOR DETAIL SEE STD. DET. SW/20.20

12" MIN.

SECTION A - A

NOTES:
1. STRUCTURAL CALCULATIONS MUST BE SUBMITTED FOR APPROVAL PRIOR TO MANUFACTURE OF BASE AND TRANSITION SLABS.
2. 1', 2', 3' OR 4' OR A COMBINATION THEREOF AS NEEDED FOR GRADE ADJUSTMENT

STANDARD DETAIL
PRECAST CONCRETE MANHOLE FOR NEW 54" THRU 60" DIAMETER SEWERS (96" DIAMETER PRECAST BASE)
24" DIAMETER FRAME AND COVER

2 - 5/8" STEEL DOWELS - 180° APART

18" OR LESS BRICK GRADE ADJUSTMENT COURSES

TRANSITION RISER 48" I.D. TO 24" I.D. (48" DIA. RISER SECTIONS AND PRECAST SLAB WITH 24" DIA. ECCENTRIC OPENING MAY BE UTILIZED. STD. DETAIL S-20.01)

MAN HOLE STEPS
IN LINE 12° 0/C

48" DIAMETER BASE SECTION WITH DOG HOUSE OPENINGS AS REQUIRED

BRICK & MORTAR SEAL 4" MINIMUM AROUND PIPING

CONCRETE FILM

BASE POURED TO SPRINGLINE OF PIPE

NOTES:
1. ALL CONCRETE TO BE CLASS 4000. AIR ENTRAINED, TYPE II CEMENT.
2. ALL REINFORCEMENT PER ASTM A-615. GRADE 60.
3. FOR MANHOLES OVER EXISTING PVC SEWERS USE STANDARD DETAIL SW/20.01 INSTEAD OF THIS ONE. CUT EXISTING PVC SEWER AND RECONNECT ON EITHER SIDE OF MANHOLE

SECTIONAL PLAN

ENTRY SEAL (TYP.)

APPROXIMATE LIMIT OF SEWER TO BE REMOVED

BRICK BENCH

EX. PIPE SEWER WITH CONCRETE BEDDING & JOINT ENCASEMENT

#5 @ 6" EF EW

6" MIN. OF UNIFORM GRADED SCREENED GRAVEL OR CRUSHED STONE ASTM-3 #67

SECTION A - A

PRECAST CONCRETE MANHOLE OVER EXISTING 10" THRU 21" DIAMETER SEWERS WITH CAST IN PLACE CONCRETE BASE

APPROVED DATE: June 20, 2003

DATE: 6/20/03

REVISION NO.: 0

PREPARED BY: OBG/BKJ

CHECKED BY: W. Darrow

STANDARD DETAIL

DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES
SECTIONAL PLAN

36" DIAMETER FRAME AND COVER

2 - 5/8" STEEL DOWELS - 180° APART

18" OR LESS BRICK GRADE
ADJUSTMENT COURSES

TRANSITION RISER, 60" I.D. TO 24" I.D. (60" DIA. RISER SECTIONS AND PRECAST SLAB WITH 24" DIA. ECCENTRIC OPENING MAY BE UTILIZED. STD. DETAIL S-20.02)

MANHOLE STEPS
IN LINE 12" O/C

60" DIAMETER BASE SECTION WITH DOG HOUSE OPENINGS AS REQUIRED

BRICK & MORTAR SEAL 4" MINIMUM AROUND PIPING

CONCRETE FILL

BASE Poured TO SPRINGLINE OF PIPE

NOTES:
1. ALL CONCRETE TO BE CLASS 4000. AIR ENTRAINMENT, TYPE II CEMENT.
2. ALL REINFORCEMENT PER ASTM A-615. GRADE 60.
3. FOR MANHOLES OVER EXISTING PVC SEWERS USE STANDARD DETAIL SW/20.02 INSTEAD OF THIS ONE. CUT EXISTING PVC SEWER AND RECONNECT ON EITHER SIDE OF MANHOLE

SECTION A - A

PRECAST CONCRETE MANHOLE OVER EXISTING 24" THRU 30" DIAMETER SEWERS WITH CAST IN PLACE CONCRETE BASE
NOTE:
FOR CLARITY, REINFORCING NOT SHOWN.
NOTES:
1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60
3. WWF PER ASTM A185
NOTES:
1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60
3. WWF PER ASTM A185

PRECAST FLATTOP SLAB
FOR 48" DIAMETER MANHOLE RISER
WITH 36" DIAMETER ECCENTRIC OPENING
NOTES:

1. STRUCTURAL CALCULATIONS MUST BE SUBMITTED FOR APPROVAL PRIOR TO MANUFACTURE.

2. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.

3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.

4. WWF PER ASTM A185

PRECAST REDUCER SLAB FOR 60" DIAMETER MANHOLE RISER TO 48" DIAMETER ECCENTRIC RISER
DISTRIBUTION OF COLUMBIA
WATER AND SEWER AUTHORITY

SECTIONAL PLAN

MANHOLE STEP

10" ECCEN.

48" DIA.

2 - #6 EXTRA TOP & BOTTOM

4x4-W4.0xW4.0 WWF MINIMUM EACH FACE

A

A

2 - #6 EXTRA TOP AND BOTTOM

72" DIA. RISER

48" DIA. RISER

11 3/4"

16 1/2"

4 3/4"

10" ECCEN.

MH RISER (TYP.)

FOR DETAIL SEE STD. DET. S-20.20

2 - #6 EXTRA TOP AND BOTTOM

SECTION A - A

NOTES:

1. STRUCTURAL CALCULATIONS MUST BE SUBMITTED FOR APPROVAL PRIOR TO MANUFACTURE

2. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT

3. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60

4. WWF PER ASTM A185

APPROVED DATE: June 20, 2003

DATE: 6/20/03

DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES

PREPARED BY: OBG/BKJW

CHECKED BY: W.DARNOW

STANDARD DETAIL
PRECAST REDUCER SLAB
FOR 72" DIAMETER MANHOLE RISER TO 48" DIAMETER ECCENTRIC RISER
2 - #4, 7'-0" LONG CURVED TO PROVIDE CONTINUITY DURING SHIPPING

2 - #6 @ 6" @ BOTTOM

2 - #6 @ 6" @ BOTTOM

#4 - 7" LONG TOP & BOTTOM

2'-1"

R = 2 1/4"

PROVIDE AT LEAST (3) #4 CIRCUMFERENTIAL REBARS AS INDICATED

BAR BENDING DETAIL
NO SCALE

NOTES:
1. STRUCTURAL CALCULATIONS MUST BE SUBMITTED FOR APPROVAL PRIOR TO MANUFACTURE.

SECTION A-A

DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES

APPROVED DATE: June 20, 2003

REVISED DATE: 6/20/03

PREPARED BY: OBG/BKV
CHECKED BY: W. Darrow

STANDARD DETAIL
PRECAST REDUCER SLAB
FOR 96" DIAMETER MANHOLE RISER TO 48" DIAMETER ECCENTRIC RISER
2 FEET OF CHAIN AND HOOK MOUNTED TO RISER USING 3/4 INCH DIAMETER STAINLESS STEEL BOLT, 3 INCH IN LENGTH, WITH DOUBLE EXPANSION SHIELD

MANHOLE STEPS IN LINE, ONE FOOT CENTER TO CENTER TO

O-RING JOINTS

40" DIAMETER x 1/4" THICK STAINLESS STEEL (S.S.) OPENING COVER WITH 3 - 2"x2"x4" LENGTH S.S. L's WELDED TO COVER 120' APART & 2 - 2" DIA. HOLES 180' APART. COVER TO BE PLACED OVER OPENING WHEN MANHOLE IS NOT IN USE BY PERSONNEL

INTERMEDIATE PLATFORM SLAB SEE SHEET 2 OF 2

SECTION VIEW

72" DIA. MANHOLE RISER

STANDARD DETAIL
INTERMEDIATE PLATFORM SLAB
FOR 72" DIAMETER MANHOLE RISER WITH 36" DIAMETER ACCESS OPENING AND COVER

APPROVED DATE: June 20, 2003
REVISION NO.: 0
STANDARD DETAIL
DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES
DATE: 6/20/03
PREPARED BY: OB/G/KV
INTERMEDIATE PLATFORM SLAB
CHECKED BY: W.DARROW
FOR 72" DIAMETER MANHOLE RISER WITH 36" DIAMETER ACCESS OPENING AND COVER

S-20.31
1 OF 2
NOTES:
1. STRUCTURAL CALCULATIONS MUST BE SUBMITTED FOR APPROVAL PRIOR TO MANUFACTURE
2. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
3. ALL REINFORCING SHALL HAVE A MINIMUM OF 2-INCHES OF COVER.
4. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60
5. WWF PER ASTM A185

STANDARD DETAIL
INTERMEDIATE PLATFORM SLAB
FOR 72" DIAMETER MANHOLE RISER WITH
36" DIAMETER ACCESS OPENING AND COVER
2 FEET OF CHAIN AND HOOK MOUNTED TO RISER USING 3/4 INCH DIAMETER STAINLESS STEEL BOLT, 3 INCH IN LENGTH, WITH DOUBLE EXPANSION SHIELD

40" DIAMETER x 1/4 INCH THICK STAINLESS STEEL (S.S.) OPENING COVER WITH 3 – 2"x2"x4" LENGTH S.S. L'S WELDED TO COVER 120° APART & 2 – 2" DIA.HOLES 180° APART. COVER TO BE PLACED OVER OPENING WHEN MANHOLE IS NOT IN USE BY PERSONAL.

O-RING JOINTS

INTERMEDIATE PLATFORM SLAB SEE SHEET 2 OF 2

MANHOLE STEPS IN LINE, ONE FOOT CENTER TO CENTER

INTERMEDIATE PLATFORM SLAB SEE SHEET 2 OF 2

96" DIA. MANHOLE RISER

SECTION VIEW

STANDARD DETAIL
INTERMEDIATE PLATFORM SLAB
FOR 96" DIAMETER MANHOLE RISER
WITH 36" DIA. ACCESS OPENING AND COVER
NOTES:
1. STRUCTURAL CALCULATIONS MUST BE SUBMITTED FOR APPROVAL PRIOR TO MANUFACTURE OF INTERMEDIATE PLATFORM SLAB.
2. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
3. ALL REINFORCING SHALL HAVE A MINIMUM OF 2-INCHES OF COVER.
4. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
5. WWF PER ASTM A185.

STANDARD DETAIL
INTERMEDIATE PLATFORM SLAB
FOR 96" DIAMETER MANHOLE RISER WITH 36" DIA. ACCESS OPENING AND COVER
SECTIONAL PLAN

SEWER DIAMETER | FRAME DIAMETER (A)
----------------|-------------------
10" THRU 21"    | 24"               
24" THRU 36"    | 36" *             

* IF SURFACE TO INVERT < 15', A 36"X24" DIA. ADAPTER RING WITH 24" DIA. COVER SHALL BE USED.

NOTES:
1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINLED, TYPE II CEMENT
2. REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60
3. WHEN THE MANHOLE DEPTH EXCEEDS 15 FEET, THE BRICK WALL THICKNESS SHALL BE INCREASED TO 12 INCHES BELOW THE 15 FOOT DEPTH

CAST IRON FRAME AND COVER AS REQUIRED

MANHOLE STEPS, IN LINE, 12" O.C.

FOR NEW 10" THRU 36" DIAMETER SEWERS WITH CAST IN PLACE CONCRETE BASE
SECTIONAL PLAN

EXISTING SEWER WITH CONCRETE BEDDING AND JOINT ENCASEMENT

PIPE ENTRY SEAL 21" & SMALLER DIA.

BRICK BENCH

SEWER DIAMETER | FRAME DIAMETER (A)
----------------|-------------------
10" THRU 21"    | 24"
24" THRU 36"    | 36" *

* IF SURFACE TO INVERT < 15', A 36"X24" DIA. ADAPTER RING WITH 24" DIA. COVER SHALL BE USED.

NOTES:

1. ALL CONCRETE TO BE CLASS 4000 AIR ENTRAINMENT TYPE II CEMENT.

2. REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60.

3. WHEN THE MANHOLE DEPTH EXCEEDS 15 FEET, THE BRICK WALL THICKNESS SHALL BE INCREASED TO 12 INCHES BELOW THE 15 FOOT DEPTH.

CAST IRON FRAME AND COVER AS REQUIRED

2 - 5/8" STEEL DOWELS 180° APART

3' TO 4'

VARIABLE

4'-0" SQUARE BRICK BENCH

8" BRICK WITH 1/2" CEMENT PLASTER

APPROXIMATE LIMIT OF PORTION OF SEWER TO BE REMOVED

PIPE ENTRY SEAL 21" & SMALLER DIA.

CONCRETE OR MASONRY FILL

6" MIN. OF UNIFORM GRADED SCREENED GRAVEL OR CRUSHED STONE ASTM C-33 #67

EXISTING SEWER WITH CONCRETE BEDDING AND JOINT ENCASEMENT

SECTION B - B

BRICK BENCH

EXISTING SEWER

MANHOLE STEPS IN LINE, 12" O.C.

STANDARD DETAIL

BRICK MANHOLE

OVER EXISTING 10" THRU 36" DIAMETER SEWERS WITH CAST IN PLACE CONCRETE BASE
SEWER DIAMETER | FRAME AND COVER DIAMETER (A)
---|---
10" THRU 21" | 24"
24" THRU 36" | 36" *

* 15 – FEET OR LESS, SURFACE TO INVERT, A 36" X 24" DIAMETER ADAPTER RING WITH 24" DIAMETER COVER SHALL BE USED.
NOTES:
1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINMENT, TYPE II CEMENT.
2. REINFORCING STEEL SHALL CONFIRM TO ASTM A-615 GRADE 60.

STANDARD DETAIL
CONCRETE TRANSITION SLAB
FOR BRICK MANHOLE RISER
OVER 48” PRECAST MANHOLE BASE
NOTES:

1. ALL CONCRETE TO BE CLASS 4,000 AIR ENTRAINED, TYPE II CEMENT.

2. REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60.

3. FOR MANHOLES DEPTHS GREATER THAN 15' TO INVERT, USE 36" DIAMETER CAST IRON FRAME AND COVER. FOR MANHOLE DEPTHS EQUAL TO 15' OR LESS, USE A 36"X 24" ADAPTER RING WITH A 24" DIAMETER COVER.

4. MAXIMUM TOTAL DEPTH 20 FT.

<table>
<thead>
<tr>
<th>SEWER DIAMETER</th>
<th>DIMENSION &quot;A&quot;</th>
<th>DIMENSION &quot;B&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>33&quot; THRU 36&quot;</td>
<td>4'-0&quot;</td>
<td>7'-2&quot;</td>
</tr>
<tr>
<td>42&quot;</td>
<td>4'-3&quot;</td>
<td>7'-10 1/4&quot;</td>
</tr>
<tr>
<td>48&quot;</td>
<td>4'-10&quot;</td>
<td>8'-4&quot;</td>
</tr>
</tbody>
</table>

STANDARD DETAIL
CAST IN PLACE CONCRETE MANHOLE BASE FOR NEW 33" THRU 48" DIAMETER SEWERS WITH PIPE OR BRICK RISER OPTIONS
DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

2 - 5/8" STEEL DOWELS - 180' APART
18" OR LESS BRICK ADJUSTMENT COURSES

PRECAST FLATTOP SLAB FOR 48" DIAMETER RISER WITH 36" DIAMETER ECCENTRIC OPENING. STD. DET. S-20.23

36" DIAMETER COVER SEE NOTE 3

36" DIA. FRAME

48" DIA. RISER SECTIONS (TRANSITION RISER 48" I.D. TO 36" I.D. MAY BE USED AS OPTION)

MANHOLE STEPS, IN LINE, ONE-FOOT CENTER TO CENTER

"O" RING

2" MAXIMUM (MANHOLE STEP SIDE ONLY)

DIMENSION "B"

3" CL. (TYP.)

1"-0" (TYP.)

9" MIN.

9" PVC WATERSTOP (TYP.)

1"-0" (TYP.)

#5 @ 8" EWIF (TYPICAL)

#5 DIAGONAL E.F. END WALL AND AROUND PIPE OPENINGS

1"-0" LAP

CONCRETE FILL

6" MINIMUM OF UNIFORM GRADED SCREENED GRAVEL OR CRUSHED STONE, ASTM C-33 #67

SECTION A - A

STANDARD DETAIL
CAST IN PLACE CONCRETE MANHOLE BASE FOR NEW 33" THRU 48" DIAMETER SEWERS WITH PIPE OR BRICK RISER OPTIONS
NOTE:
1. All concrete to be class 4000, air entrained, type II cement.
2. Reinforcing steel shall conform to ASTM A615, grade 60.
3. For manhole depths greater than 15' to invert, use 36" diameter cast iron frame and cover. For manhole depths equal to 15' or less, use a 36"x 24" adapter ring with a 24" diameter cover.
4. Maximum depth 20 ft.
SECTION A-A

NOTE:
FIRST POUR SHALL BE ALLOWED TO CURVE A MINIMUM 24 HOURS PRIOR TO EXCAVATING AND PLACING SECOND POUR.

CAST IN PLACE CONCRETE MANHOLE BASE ON EXISTING 3-Foot TO 4-Foot DIAMETER CONCRETE MASONRY SEWERS
CAST IN PLACE CONCRETE MANHOLE BASE
ON EXISTING 3-FOOT TO 4-FOOT DIAMETER CONCRETE MASONRY SEWERS
NOTES:

1. ALL CONCRETE TO BE CLASS 4000 AIR ENTRAIN, TYPE II CEMENT.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60
3. FOR MANHOLE DEPTHS GREATER THAN 15' TO INVERT, USE 36" DIAMETER CAST IRON FRAME AND COVER. FOR MANHOLE DEPTHS EQUAL TO 15' OR LESS, USE A 36" X 24" ADAPTER RING WITH A 24" DIAMETER COVER.
4. MAXIMUM DEPTH 20 FT.
NOTE:
FIRST POUR SHALL BE ALLOWED TO CURE A MINIMUM 24 HOURS PRIOR TO EXCAVATING AND PLACING SECOND POUR.

SECTION A-A

CAST IN PLACE CONCRETE MANHOLE BASE ON EXISTING 2'-0"X 3'-0" THRU 4'-0"X 6'-0"
EGG - SHAPED SEWERS
CAST IN PLACE CONCRETE MANHOLE BASE
ON EXISTING 2'-0"x 3'-0" THRU 4'-0"x 6'-0"
EGG - SHAPED SEWERS
NOTES:

1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT
2. REINFORCING STEEL SHALL CONFORM TO ASTM A-615 GRADE 60
3. FOR DEPTHS 15 FT. OR LESS TO INVERT USE 36"X24" ADAPTER RING WITH 24" DIAMETER COVER
4. FOR DEPTHS 15'-6" OR GREATER, USE 36" DIAMETER COVER
5. MAXIMUM DEPTH 20 FT.
NOTE:
FIRST POUR SHALL BE ALLOWED TO CURE A MINIMUM 24 HOURS PRIOR TO EXCAVATING AND PLACING SECOND POUR.
NOTES:
1. OUTSIDE FLOW DIVERTER SHALL BE USED FOR ALL DROP MANKHOLES UNLESS OTHERWISE SPECIFIED OR SHOWN ON DRAWINGS
3. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAIN, TYPE II CEMENT.
SECTIONAL PLAN
PRECAST MANHOLE

PRECAST MANHOLE

MANHOLE ENTRY SEAL

3/4" DIA. ANCHOR BOLT, 15"
LONG GALVANIZED WITH 3/4"
DOUBLE EXPANSION SHIELD 18"
O.C. VERTICALLY EACH SIDE OF
CONCRETE ENCASEMENT

2 1/2" MIN.

SECTION B – B

WYE-BRANCH OR TEE, PVC

MANHOLE ENTRY SEAL

"A"

PIECE JOINT

SANITARY OR COMBINED
SEWER, OR SANITARY
LATERAL 24" DIA. MAXIMUM

GRAVEL BEDDING

45° BEND (STREET ELBOW), PVC

PIPE STRAPS AND 3/4" DIA. 2" LENGTH
BOLTS W/ DOUBLE EXPANSION SHIELD AT
4"-0" O.C. MAXIMUM.

90° BEND, PVC

3/4" DIA. ANCHOR BOLT

MANHOLE ENTRY SEAL

CONCRETE ENCASEMENT

6" MIN. COMPACTED #57 GRAVEL
(TYP.) OR UNDISTURBED GROUND

APPROVED DATE: June 20, 2003

DIRECTOR, DEPARTMENT OF ENGINEERING
AND TECHNICAL SERVICES

REVISION NO.: 0

DATE: 6/20/03

PREPARED BY: PRECAST

CHECKED BY: W. DARROW

STANDARD DETAIL

PRECAST

DROP MANHOLE

FLOW DIVERTER OUTSIDE
DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

SECTIONAL PLAN
BRICK MANHOLE

SECTION A – A

NOTE:
1. DROP MANHOLES WITH INSIDE FLOW DIVERTER SHALL BE USED ONLY WHEN SPECIFIED BY WASA.
3. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINMENT, TYPE II CEMENT.

STANDARD DETAIL
BRICK DROP MANHOLE
FLOW DIVERTER – INSIDE
NOTES:
1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINMENT, TYPE II CEMENT
2. REINFORCING SHALL BE CENTERED IN WALLS AND BASE AND SHALL CONFORM TO ASTM AC15 GRADE 60.

PRECAST TOP STD. DET. S-30.11

4-#5X 4'-0" CENTERED IN WALL

15" RCPR BASIN CONNECTION

ADD'L REINFORCING AT OPENING

FILL VOID WITH SAND Topped WITH 1" MAX. OF MORTAR TOPPING

#6 DOWEL, 2' LONG, 4 REQUIRED

CONCRETE BEDDING

15" DIA. RCPR BASIN CONNECTION PIPE STD. DET. S-12.02

CONCRETE GUTTER

#5@8" E.W.

8"

3'-6"

1'-6" MIN.

1'-3" LAP

5'-8"

5'-10"

5" 6"

7'-0"

8"

3'-6"

2'-2"

8"
DIRECTIONS:

1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.

2. REINFORCING SHALL BE CENTERED IN WALLS AND BASE, AND SHALL CONFORM TO ASTM A615 GRADE 60.
DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

SUPPORT CHEEK BLOCK
STD. DET. S-30.04

SEE DETAIL A
SHT. 2 OF 3

STEEL ANGLE

USE STANDARD END WALL FOR DOUBLE BASIN

8"

1'-4"

2'-5"

9'-8"
(STANDARD DOUBLE BASIN)

CONCRETE BEDDING
15" DIA. RCPR BASIN CONNECTION PIPE STD. DET. S-12.02

8"

1'-6"

1'-3"

LAP

SECTION A-A

CATCH BASIN TOP
STD. DET. S-30.11

CATCH BASIN BODY

CORNER CHEEK BLOCK
STD. DET. S-30.04

VIEW C-C

NOTES:
1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.

STANDARD DETAIL

STANDARD DOUBLE AND STANDARD TRIPLE BASINS
SECTION B–B

15" RCPR BASIN CONNECTION PIPE – LOCATION VARIES

4'–10"

8"

PRECAST TOP (TYP.)

8"

SUPPORT CHEEK BLOCK

4 #5 X 4"–0"
ADD'L @ OP'NG.

1'–3" LAP

9'–8" (STANDARD DOUBLE BASIN)

14'–6" (STANDARD TRIPLE BASIN)

#5@ 8" E.W.

12" 11" 7"

6"

1'–2"

DETAIL A

STANDARD DETAIL

STANDARD DOUBLE AND STANDARD TRIPLE BASINS
NOTES:
1. SEE SPECIFICATIONS
2. CLASS 4000 CONCRETE, AIR ENTRAINMENT, TYPE II CEMENT.
SHALLOW TYPE CATCH BASIN WITH CATCHMENT MANHOLE

1. CLASS 4000 CONCRETE, AIR ENTRAINED, TYPE II CEMENT.
2. REINFORCING STEEL SHALL CONFORM TO ASTM A615, GRADE 60.
NOTE:
ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
NOTES:
1. SEE SPECIFICATIONS
2. CLASS 4000 CONCRETE, AIR ENTRAINED, TYPE II CEMENT.
3. REINFORCING STEEL, ASTM A615, GRADE 60, 1 1/2" CLEAR COVER UNLESS NOTED
4. STEEL ANGLE PER ASTM A36, GALVANIZED PER ASTM A123
5. STUD ANCHORS SHALL BE LOW CARBON STEEL, ASTM A108, TYPE H4L NELSON HEADED ANCHORS WITH FLUXED ENDS, BY NELSON STUD WELDING CO. OR APPROVED EQUAL

PLAN VIEW

BOTTOM VIEW

SECTION A - A

RIGHT VIEW

REINFORCING PLAN

SEE STD. DET. S-90.31 FOR FRAME & COVER DETAILS FRAME FLUSH WITH TOP

L4X4X1/2X4'-10" GALVANIZED AFTER FABRICATION

1 2" WELDED STUD ANCHORS

2 - #5 ADDITIONAL DIAGONAL BARS @ 4 SIDES OF OPENING

4 - #5 @ EQUAL SPACES

2" (TYP.)

4 - 1/2" X 6" STUD WELDED ANCHORS @ EQUAL SPACES

8" PRECAST STANDARD CATCH BASIN TOP

STANDARD DETAIL

1 OF 1

DISTRIBUTION OF COLUMBIA WATER AND SEWER AUTHORITY

APPROVED DATE: June 20, 2003

REVISION NO.: 0

DATE: 6/20/03

PREPARED BY: OBG/BKJW

CHECKED BY: W.DARROW

DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES
NOTES:
1. CLASS 4000 CONCRETE, AIR ENTRAINED, TYPE II CEMENT
2. REINFORCING STEEL, ASTM A615, GRADE 60
3. STEEL ANGLE PER ASTM A36, GALVANIZED PER ASTM A123
4. STUD ANCHORS SHALL BE LOW CARBON STEEL, ASTM A108, TYPE H4L NELSON HEADED ANCHORS WITH FLUXED ENDS, BY NELSON STUD WELDING CO. OR APPROVED EQUAL
NOTES:

1. CLASS 4000 CONCRETE, AIR ENTRAINED, TYPE II CEMENT
2. REINFORCING STEEL, ASTM A615, GRADE 60
3. STEEL ANGLE PER ASTM A36, GALVANIZED PER ASTM A123
4. STUD ANCHORS SHALL BE LOW CARBON STEEL, ASTM A108, TYPE H4L NELSON HEADED ANCHORS WITH FLUXED ENDS, BY NELSON STUD WELDING CO. OR APPROVED EQUAL

SECTION A – A

STANDARD DETAIL
4” PRECAST CATCH BASIN
ELONGATION TOP
(FOR REPLACEMENT ONLY)
SEWER

SLOTS FORMED BY 1" X 1" V'S IN BOTTOM OF FORM

SECTION A - A
3 1/2" FOR 10'R
2 1/2" FOR 15'R
1 1/2" FOR 20' & 25'R

NOTES:
1. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED
2. REINFORCING STEEL ASTM A615, GRADE 60
3. STEEL CHANNEL PER ASTM A36, GALVANIZED PER ASTM A123

FILET WELD

CURB GUARD AND ANCHOR BARS DETAIL

SEE WELDING DETAIL (TYP.)

PRECAST CORNER CATCH BASIN TOP
(FOR REPLACEMENT ONLY)
NOTES:

1. GRAY IRON CASTINGS PER ASTM A-48, CLASS 30A.

2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE -0" +1/16".

3. WHEN THE CATCH BASIN CONNECTION PIPE IS NOT PERPENDICULAR TO THE CATCH BASIN WALL, THE WALL SHALL BE MODIFIED TO INSTALL WATER SEAL ON SAME ALIGNMENT AS THE CATCH BASIN PIPE, SEE SECTIONAL PLAN, SHEET 2 OF 2 FOR TYPICAL DETAIL.
SECTIONAL PLAN

TYPICAL FOR NON-PERPENDICULAR CATCH BASIN CONNECTION PIPE
SECTIONAL PLAN

18" DIA. RCPR, CLASS III

8"
3'-3"

CONCRETE BEDDING

A

1/2"Ø X 3/4" STAINLESS STEEL BOLT WITH LOCK NUT

B

SEALANT (G.E. RTV-102 OR EQUAL)

SECTION A-A

24" X 24" X 1/8" STAINLESS STEEL PLATE WITH 4"Ø OPENING

3/4"Ø X 3" STAINLESS STEEL BOLTS, 7 REQUIRED

6" X 6" X 1/8" STAINLESS STEEL PLATE

SECTION B-B

4'-5 1/2"

CONCRETE BEDDING

14" MIN.

12" MIN.

STANDARD DETAIL
WATER SEAL FOR 18" DIAMETER CATCH BASIN CONNECTION (COMBINED SYSTEM ONLY)
NOTES:
1.GRAY IRON CASTING PER ASTM A-48, CLASS 30A.
2.ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE -0 + 1/16".
3.ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED TYPE II CEMENT.
4.BASIN TO BE USED IN UNPAVED AREAS ONLY.
5.REINFORCING SHALL BE CENTERED IN WALL AND BASE AND SHALL CONFORM TO ASTM A615 GRADE 60.
PLAN

SECTION B – B

SECTION C – C

STANDARD DETAIL
FIELD INLET
GRATE TYPE CATCH BASIN
NOTES:

1. GRAY IRON CASTINGS PER ASTM A-48, CLASS 30A.
2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE – 0 + 1/16”.
3. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINEMENT, TYPE II CEMENT.
4. REINFORCING SHALL BE CENTERED IN WALL AND BASE AND SHALL CONFORM TO ASTM A615 GRADE 60.

SECTION A – A

CUT AND REMOVE FLANGE OF FRAMES WHEN CONSTRUCTING A DOUBLE GRATE BASIN

DOUBLE GRATE BASIN

CATCH BASIN CONNECTION PIPE

CONCRETE BEDDING

C.I. FRAME AND GRATE

7’-0” SINGLE GRATE BASIN

3’-0” HIGH OPENING, FULL WIDTH OF BASIN

6’-0”

8” (TYP.)

#5Ø8” E.W.

1’-3” LAP

1’-6” MIN.

3’-10”

7’-0”

2’-6”

SECTIONAL PLAN

CATCH BASIN CONNECTION PIPE

CONCRETE BEDDING

GRATE TYPE CATCH BASIN WITH SAFETY GRATE

STANDARD DETAIL

DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES

PREPARED BY: OBG/BKV

CHECKED BY: W. DARROW

REVISION NO.: 0

DATE: 6/20/03

APPROVED DATE: June 20, 2003
PLAN

SECTION C–C

SECTION B–B

SECTION D–D

DISTRIBUTION OF COLUMBIA
WATER AND SEWER AUTHORITY

APPROVED DATE: June 20, 2003
DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES

REVISION NO.: 0
DATE: 6/20/03
PREPARED BY: OBG/BKJV
CHECKED BY: W.DARROW

STANDARD DETAIL
GRATE TYPE CATCH
BASIN WITH SAFETY GRATE
NOTES:
1. GRAY IRON CASTINGS PER ASTM A-48, CLASS 30A.
2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE - 0 + 1/16".
3. ALL CONCRETE TO BE CLASS 4000, AIR ENTRAINED, TYPE II CEMENT.
4. REINFORCING SHALL BE CENTERED IN WALL AND BASE AND SHALL CONFORM TO ASTM A615 GRADE 60.
NOTE:

1. CONNECTIONS AT AN ANGLE GREATER THAN 45° FROM THE HORIZONTAL WILL ONLY BE PERMITTED WHEN SPECIFICALLY APPROVED BY WASA, AND MAY REQUIRE ADDITIONAL OR DIFFERENT PIPE RESTRAINT THAN ZEE STRAPS.
NOTE:
1. ALL CONCRETE TO BE CL. 4000, AIR ENTRAINED, TYPE II CEMENT
2. REINFORCING STEEL SHALL CONFORM TO ASTM A-615, GRADE 60.
NOTES:
1. MATERIALS AND WORKMANSHIP BETWEEN THE WYE BRANCH AND THE BUILDING MUST BE IN ACCORDANCE WITH D.C. PLUMBING CODE.
2. VERTICAL BENDS FOR GRADE (NOT SHOWN) MAY BE REQUIRED ON SEWER LATERAL.
INSTALL IN PUBLIC SPACE CLOSE TO PROPERTY LINE, OR IMMEDIATELY ADJACENT TO APPROVED PROJECTION IN PUBLIC SPACE

PLAN

- PROPERTY LINE
- BRASS, RECESSED SQUARE SOCKET SCREW PLUG
- PVC SEWER CLEANOUT ADAPTER THREADED FOR SCREW PLUG
- SOLVENT WELD ADAPTER TO PIPE, SOLVENT CEMENT PER ASTM D2564
- FINISH GRADE
- BACKFILL PER BOCA PLUMBING CODE AND THE D.C. AMENDMENTS THERETO
- BUILDING SEWER CONNECTION TO SEWER
- WYE — SAME MATERIAL AS BUILDING SEWER CONNECTION WITH ADAPTER AS NEEDED

ELEVATION

- 4" DIAMETER PVC STAND PIPE ASTM D2665
- 4" DIAMETER 45° PVC BEND ASTM D3311

STANDARD DETAIL

BUILDING SEWER COLLECTION CLEANOUT

APPROVED DATE: June 20, 2003
DIRECTOR, DEPARTMENT OF ENGINEERING AND TECHNICAL SERVICES

REVISED DATE: 6/20/03
PREPARED BY: OBG/BKV
CHECKED BY: W. DARROW
NOTES:
1. GRAY IRON CASTINGS PER ASTM A-48, CLASS 30A.
2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE −0" +1/16".
3. THE WORD "SEWER" IN 1" LETTER SHALL BE CAST IN THE DEPRESSION SHOWN IN THE CENTER OF TOP OF COVER AND TO BE FLUSH WITH SURFACE OF COVER.

SECTION A–A
NOTES:

1. GRAY IRON CASTINGS PER ASTM A 48, CLASS 30A.

2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE –0” +1/16”.

3. THE WORD "SEWER" IN 1” LETTER SHALL BE CAST IN THE DEPRESSION SHOWN IN THE CENTER OF TOP OF COVER AND TO BE FLUSH WITH SURFACE OF COVER.

STANDARD DETAIL
DETAILS OF 36” CAST IRON MANHOLE COVER
NOTE:
1. GRAY IRON CASTINGS PER ASTM A48, CLASS 30A.
2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION,
ROUGHNESS SYMBOL 250, TOLERANCE –0” +1/16”.

STANDARD DETAIL
MANHOLE ADAPTER RING 36” DIA. TO 24” DIA.
FOR USE ON SEwers 15’ OR LESS
IN DEPTH REQUIRING 36” DIAMETER FRAME
NOTE:
1. GRAY IRON CASTINGS PER ASTM A 48, CLASS 30A.
2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION,
   ROUGHNESS SYMBOL 250, TOLERANCE -0" +1/16".
NOTES:
1. GRAY IRON CASTINGS PER ASTM A-48, CLASS 30A, OR 35.
2. ALL MACHINE FINISH TO BE A.S.A. SPECIFICATION, ROUGHNESS SYMBOL 250, TOLERANCE -0" +1/16".
3. THE WORD "SEWER" IN 1" LETTERS SHALL BE CAST IN THE DEPRESSION SHOWN IN THE CENTER OF TOP OF COVER AND TO BE FLUSH WITH SURFACE OF COVER.

STANDARD DETAIL
DETAILS OF 24" CAST IRON COVER AND FRAME FOR BASIN TOP

APPROVED DATE: June 20, 2003
REVISION NO.: 0
DATE: 6/20/03
PREPARED BY: 086/BKW
CHECKED BY: W.Darrow