APPENDIX “C”

STANDARD CONSTRUCTION REQUIREMENTS AND DETAILS FOR STREETS, SIDEWALKS, DRIVEWAYS, EROSION CONTROL, AND STORM DRAINAGE SYSTEMS
TYPICAL SECTION WHERE BUILDING LOT DRAINS TOWARDS STREET

TYPICAL SECTION WHERE BUILDING LOT DRAINS AWAY FROM STREET

2.2' PAVEMENT BACK CURB TO BACK CURB
4.0' RIGHT OF WAY

TYPICAL SECTION - COURTS - DEADEND

2.5' PAVEMENT BACK CURB TO BACK CURB
5.0' RIGHT OF WAY

TYPICAL SECTION - CUL-DE-SACS - DEADEND

2.5' PAVEMENT BACK CURB TO BACK CURB
5.0' RIGHT OF WAY

TYPICAL SECTION - LOCAL STREETS

NOTE: SLOPES OUTSIDE OF STREET PAVEMENT ARE MINIMUM STANDARD EXCEPT FOR AREAS IN TRANSITION FROM UPWARD TO DOWNWARD SLOPES ALONG SAME SIDE OF STREETS.
TYPICAL SECTION - SUBCOLLECTOR STREETS

TYPICAL SECTION - COLLECTOR STREETS
NOTE: SLOPES OUTSIDE OF STREET PAVEMENTS ARE MINIMUM STANDARD EXCEPT FOR AREAS IN TRANSITION FROM UPWARD TO DOWNWARD SLOPES SAME SIDE OF STREETS.

TYPICAL SHOULDER AND DITCH DETAIL
OPTION TO CURB AND GUTTER - ALL STREETS
FRONT YARD DEPTH - 50' MIN. LOT WIDTH - 100' MIN.
RESIDENTIAL DRIVEWAY APRON DETAILS

APRON PLAN VIEW

APRON GRADE WHERE LOTS DRAIN TO STREET

APRON GRADE WHERE LOTS DRAIN AWAY FROM STREET

NOTE: SLOPES OUTSIDE OF STREET PAVEMENTS ARE MINIMUM STANDARD EXCEPT FOR AREAS IN TRANSITION FROM UPWARD TO DOWNWARD EDGES ON SAME SIDE OF STREETS.
**7380 Catch Basin Curb Inlet**

Heavy Duty

770 pounds (349 kg) total weight

Approx. 160 sq. in. of opening

---

**7390 Catch Basin Curb Inlet**

Heavy Duty

635 pounds (288 kg) total weight

Approx. 360 sq. in. of opening

---

**7391 Catch Basin Curb Inlet**

Heavy Duty

1180 pounds (535 kg) total weight

Approx. 720 sq. in. of opening

Multiple Curb Inlet

---

**7395 Catch Basin Curb Inlet**

Heavy Duty

660 pounds (299 kg) total weight

Approx. 360 sq. in. of opening
COURT
ALTERNATE T-TYPE

COURT

LOCAL

CUL-DE-SAC

TURN AROUND DETAILS
FOR DEADEND STREETS
DETAIL OF TEMPORARY TURNAROUND FOR FUTURE STREET EXTENSION
Curb and Gutter Details

Integral Curb
Concrete Pavement

Concrete Curb
Asphalt Pavement

\( \frac{3}{4} \)\(^{\circ}\) Dowels 18" Long
18" O.C. Type 1 Expansion Joint
With Cap

\( \frac{3}{4} \)\(^{\circ}\) Dowels 18" Long 18" O.C.
Type 1 or Type 3 to Coincide with
Expansion or Construction Joints

Note: Transverse expansion, contraction, and construction joints shall
conform to these regulations
OPEN CENTER CUL DE SAC

FULLY PAVED CUL DE SAC

NOTES:
1. For 22' courts R=48'
2. For 22' courts R=27.5'
3. For 25' cul de sacs, R may be reduced to 32.5' (see sheet C-18).

OPEN CENTER OFFSET CUL DE SAC

FULLY PAVED OFFSET CUL DE SAC

ALTERNATE T-TYPE (courts)

INTERSECTION

KEY:
E=Expansion Joint
L=Longitudinal Joint
unmarked joints are to be contraction joints

TYPICAL CONCRETE JOINTING PLAN
JOINT DETAILS

TYPE 1 - Expansion Joint
- Fill with joint sealer per 2.7.2
- Expansion joint filler per 2.7.1
- 1/4" expansion cap
- 3/8" smooth dowel 18" long @ 18° o.c.
- Lubricate this end

TYPE 2 - Transverse Contraction Joint (sawed or grooved joint)
- Fill with joint sealer per 2.7.2
- Sawed or grooved with metal jointing tool per item 10.2

TYPE 3 - Transverse Construction Joint (planned - coincide with contraction joint)
- Edged joint
- Butt joint formed bulkhead
- 3/8" smooth dowel 18" long @ 18° o.c.

TYPE 4 - Transverse Construction Joint (emergency - not coincide with contraction joint)
- Edged joint
- Butt joint formed bulkhead
- 5/8" rebar 24" long 18° o.c. (deformed bars)

TYPE 5 - Longitudinal Sawed Joint
- Fill with joint sealer per 2.7.2
- 1/2" rebar 18" long 5" 0° o.c. held in place with metal chairs (deformed bars)

TYPE 6 - Longitudinal Construction Joint (threaded rebar)
- Edge joint
- Fill with joint sealer per 2.7.2
- 5/8" threaded rebar with coupler 5" 0° o.c. (deformed bars)

TYPE 7 - Longitudinal Construction Joint Alt. (drilled) or per item 10.4
- 1/2" rebar 18" long 5" 0° o.c. drilled 9" into one side on 30° angle (deformed bars)
MANHOLE DETAIL
IN CONCRETE PAVEMENT

3/4" φ Smooth bars 18" long
20" O.C. around box

One Corner should match transverse joint

Longitudinal joint (if possible)

Manhole Boxout

Only at joints (Transverse or longitudinal)
TYPICAL WATER MAIN AND FIRE HYDRANT ASSEMBLY LOCATION FOR ALL STREETS

1 - ANCHORING TEE - GLOW PART NO. F-1217 OR APPROVED EQUAL

2 - HYDRANT ADAPTER WILL BE SOLID X SWIVEL GLOW PART NO. F-11211MS OR APPROVED EQUAL
OFFSET DOME MAY
BE USED WHERE DIRECTED
BY THE ENGINEER

ADJUST FRAME TO
GRADE WITH CONC.
BRICK MASONRY OR
PRECAST CONC.
RINGS.

BASE SAME
AS STD. M.H.

SECTION

SLAB TOP MANHOLE

SECTION

PRECAST CONC. M.H.
BARREL SECTIONS

SET & LEVEL LOWER
SECTION IN BASE.
BEFORE CONC. SETS.

CAST IN
PLACE CONCRETE OR PRECAST
BOTTOM

8’-10’ MIN.

6’ MIN.

INVERT SHOWN ON
PROFILE OF SEWER

SECTION

STANDARD MANHOLE
OFFSET DOME MAY BE USED WHERE DIRECTED BY THE ENGINEER.

INVERT SHOWN ON PROFILE OF SEWER

PRECAST CONC. NH. BARREL SECTIONS

STACK DIAMETER SAME AS INLET SEWER FOR 6"/10"/12" FOR LARGER INLET SEWERS USE 12" STACK

CAST-IN-PLACE CONCRETE OR PRECAST BOTTOM

SECTION

STANDARD DROP MANHOLE
PLAN
CURB PLATE
SIDE

SECTION A-A
FRAME = GRATE

FRONT VIEW
BACK VIEW

CB CASTINGS DETAILS - SINGLE

GRATE TYPE SHALL BE AS SHOWN IN THE PLAN VIEW AND SHOWN IN THE CORNER OF THE CASTING (HOLE SPECIFY OF OR)

Casting designs shall be essential, all of the same and equally

Casting shall be placed in the diagonal direction. Acceptance shall be determined with the final inspection.

CRIB PLATE SHALL BE SECURED TOARML Y SEATS FOR ALL PORTIONS OF THE FRAME WITHOUT BEARING

SS STEEL BOLTS
PLAN VIEW

SECTION A-A

SECTION B-B

RIGID PAVEMENT BLOCKOUT DETAIL

- Blockouts shall be cast with 4000 psi air entrained Portland cement concrete.
- Blockouts for single inlet catch basins shall bear the same dimensions as the double inlet catch basin.
- 3/4 x 18" dowels are required for concrete pavement or gutter blockout - see Sheet C-10 for dowel details.
- Two 1/2 x 18" pieces of deformed re-bar are required along butt joint of isolation area.
- Pavement thickness shall conform to the related street classifications per Section 7 Table 5 of these regulations.
PLAN VIEW

SECTION A-A

ALTERNATIVE - A
FLEXIBLE PAVEMENT BLOCKOUT DETAIL

- Blockouts shall be paved with 4000 psi air entrained Portland cement concrete.
- Blockouts for single inlet catch basins shall bear the same dimensions as the double inlet catch basin.
- 3/4 x 18" dowels are required for concrete pavement or gutter blockout - see sheet C-10 for dowel details.
- Pavement thickness shall conform to the related street classifications per Section 7, Table 3 of these regulations.
PLAN VIEW

- 3/4" smooth dowels
- Transition from roll to vertical curb
- 2'-6" 5'-0" 2'-6"
- 10'-0"
- 7'-14"

SECTION B-B

- Blockouts shall be paved with 3000 psi air entrained Portland cement concrete
- Blockouts for single inlet catch basins shall bear the same dimensions as the double inlet catch basin
- 3/4" x 18" dowels are required for concrete pavement or gutter blockout - see sheet C-10 for dowel details
- Pavement thickness shall conform to the related street classifications per Section 7 - Table 5 of these regulations

SECTION A-A

ALTERNATIVE - B

Flexible pavement blockout detail
STEP 1
- If the original groundline is at least 12" above the top of the pipe, continue with Step 2.
- If the original groundline is not at least 12" above the top of the pipe, continue with Step 3.
- Excavate to within 1 foot of the top of the proposed pipe.

STEP 2
- Excavate to within 1 foot of the top of the proposed pipe.
- Excavate to width and depth shown.

STEP 3
- Meet density requirements for proposed foundation.

STEP 4
- Compact sand or No. 10 coarse aggregate in trench to meet density requirements for proposed foundation.

STEP 5
- Compact sand or No. 10 coarse aggregate in trench to meet density requirements for proposed foundation.

PIECE SHAPE
- Meet density requirements for proposed foundation.

PIPE MATERIAL
- Meet density requirements for proposed foundation.

PRINT REGISTRATION FOR CII CERTIFICATE OF COMPLIANCE
- Printed by CII Certificate of Compliance

APPENDIX C - 22
- Appendix C - 22

STANDARD SPECIFICATIONS FOR ENGINEERING CONSTRUCTION
- Standard Specifications for Engineering Construction

NO. 1 PIPE, NO. 2 PIPE, NO. 3 PIPE
- No. 1 Pipe, No. 2 Pipe, No. 3 Pipe
## ENSIONS AND QUANTITIES

<table>
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<tr>
<th>HEAD WALL TYPE</th>
<th>DIAMETER OF PIPE</th>
<th>HEADWALL DIMENSIONS</th>
<th>CUBIC YARDS CONCRETE FOR ONE HEADWALL</th>
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### NOTES
- Circular Pipe includes slightly elliptical concrete pipe with circular reinforcement.
- Volume displaced by barrel of pipe has been computed using inside dimension of pipe.
- The dimension and/or the angle of intersection between the walls may be varied on construction.
- Volume based on values of 18'' for earth, 12'' for rock.
- Straight face Headwalls for 24 inch pipe and smaller used as inlets are prohibited.
- Safety Guards or Railings may be required.

---

**CONCRETE HEADWALLS FOR 12''—27'' CIRCULAR PIPE CulVERTS**

**STANDARD DRAWING No. RDH-000**

**KENTUCKY BUREAU OF HIGHWAYS**
Safety Guard or Railing required for inlets and outlets having vertical drop 4'-0" or greater. Minimum 42" high 4' maximum opening solid material non-ladder type.

MINIMUM DIMENSIONS

- **A:** 7"
- **B:** Pipe I.D. + 14"
- **C:** Pipe I.D. + 6"
- **D:** 4" or 2 x Pipe I.D. whichever is greater
- **E:** 6" or 2.5 x Pipe I.D. whichever is greater
- **F:** 3"
- **G:** 6"
- **H:** Pipe I.D. + 12"
- **I:** 6"

Concrete headwalls with sidewalls for 24 inch pipe and smaller used as inlets require enclosure grates, per Appendix D of these regulations. Capacity of inlet shall be two (2) times pipe discharge diameter at same maximum headwater depth.

HEADWALL DETAIL for 12" thru 36" I.D. Pipe
ENCLOSURE GRATE FOR INLET HEADWALL
24" DIAMETER PIPE OR LESS

Grate to be painted per specifications on file using H.B. Fuller Powder Coating IF5301 or equivalent

4 ea. - 1/2" x 2-1/4" Flat Cold Rolled Stock C1018 punched with holes 1/4" larger than cross member diameter

Round Steel Bar C1018 continuous 3/4" diameter for Headwalls with E of 5'-3" less or 1" diameter C1018 for Headwalls with E greater than 5'-3"

Four 4-1/2" x 2-1/4" x 3" anchor tabs to be welded into place. Grate to be mounted to Headwall with 4 - 5/8" x 5" corrosion proof bolts.

6" Maximum spacing between cross members

6" Maximum opening

All connections between cross members and 1/2" x 2-1/4" Flat Steel to be Welded Joints

All ends to be ground to ensure there are no sharp corners or edges
The unit price bid for each structure shall include all concrete, structural steel grating, excavation, labor and incidentals necessary for its construction as detailed on this sheet.

Size and location of pipe shall be as shown on the plans. Payment for all pipe within the limits of a structure shall be included in the unit price bid for the structure.

Structural Steel Grating shall have the following properties:
- Minimum Yield Strength: 50,000 psi
- Minimum Tensile Strength: 58,000 psi
- Minimum Elongation: 21% in 2"

Structural Steel Grating is to be fabricated from 2 7/8" structural steel bars and 1/4" fillet welds.

Slopes Box Inlet or Outlet Type I is intended to be used with the following pipe sizes:
- BCC Pipe Arch - 15" (equiv. round)
- BCC Pipe Arch - 18" (equiv. round)
- RC Elliptical Pipe - 18" (equiv. round)

Maximum dimension of any surface integrage opening shall be such that a sphere with a diameter of 6 inches cannot pass through any opening.

Capacity of surface openings shall be minimum 2 times x-section area of pipe discharge.

Fitted grates shall be attached via cable or chain cast into concrete with sufficient slack for removal and maintenance.

APPROXIMATE QUANTITIES
- Class X Concrete: 80 Cu.Yds.
- Grating No. 1: 120 Lbs.
- Structural Steel Grating: 220 Lbs.
- Total: 250 Lbs.
RIP RAP APRON AND CUTOFF WALL

SECTION A-A

SECTION B-B

TO BE USED WHERE RIP RAP APRON IS CALLED FOR ON PLANS AND NO DETAIL IS PROVIDED.
SILT TRAP TYPE A

NOTE: SILT TRAP TO BE CLEANED WHEN IT IS APPROXIMATELY 50% FILLED WITH SEDIMENT. SILT TRAPS TO BE PLACED IN SURFACE DRAIN DITCHES AND SIDE DITCHES JUST BEFORE THE WATER (RUNOFF) LEAVES THE RIGHT OF WAY, ENTERS A WATER COURSE, AND AT THE END OF CUT SECTIONS, AND IMMEDIATELY PRECEDING DITCH INLETS. LOCATION OF TRAP AND SIZE (OTHER THAN AS SHOWN) TO BE AS DIRECTED BY THE ENGINEER WHO SHALL REVISE SIDE IF AND AS MAY BE REQUIRED. DIMENSIONS ARE APPROXIMATE.
SILT TRAP TYPE B

PLAN

SECTION A-A

NOTE: ALL DIMENSIONS OF BASIN AND DIKE WILL NOT REQUIRE CONSTRUCTION TO NEAT LINES. THE PLAIN VIEW ABOVE INDICATES THE SILT BASIN IS ROUND, HOWEVER, IT IS DRAWN IN THIS MANNER FOR ILLUSTRATION PURPOSES ONLY. THE BASIN MAY BE CONSTRUCTED AS LONG AS THE AREA AND DEPTH OF THE BASIN IS AT LEAST AS LARGE AS INDICATED. DIKES MAY BE CONSTRUCTED OF EARTH OR BROKEN ROCK. EARTH DIKE MUST BE CONSTRUCTED WITH A PIPE AS SHOWN, HOWEVER, BROKEN ROCK DIKES MAY NOT NEED A PIPE.

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<thead>
<tr>
<th>DI</th>
<th>DB</th>
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<tr>
<td>SDB</td>
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TYPICAL DETAILS FOR SEDIMENTATION BASIN

SECTION A-A

DETAIL "A"

DETAIL SHOWING LOCATION OF PERFORATIONS IN 24" PIPE
NOTES:
1. Sidewalk ramps shall be constructed of minimum 4000 psi air-entrained concrete. A broom finish or equal non-skid finish is required.
2. Normal gutter line shall be maintained through the area of the ramp for drainage.
3. Minimum thickness for ramps, shall be 4-inches, same as sidewalks.
4. No free draining granular fill permitted under ramps.
5. Handicap ramps shall meet the requirements of Americans with Disabilities Act of 1990.
6. Installation along state highways shall be constructed per state highway standards.
7. Wider walks required for other land uses. (see section 7.3 F)

Plan - Sidewalk Ramp at Intersection

Section AA

Typical Installation for Sidewalk Ramps