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* Metric drawings are designated with an (M) extension.
GENERAL NOTES:

1. 3/4" isolation Joints with 5/8" dia. x 2' smooth dowels shall be placed at radius points and at 150' intervals. These dowel bars shall be greased and wrapped on one end with expansion tubes.

2. 6" deep Contraction Joints shall be installed at approximately 10' intervals. These joints shall pass across the entire curb section.

3. Fix dowel bars with bar supports.

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

5. Concrete shall conform to Standard Specifications Section 2208.2.8.

6. Asphaltic concrete surface course shall conform to Standard Specifications Section 2205.2.

Curb Replacement Detail

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY
METROPOLITAN CHAPTER
CURB DETAILS

STRAIGHT CURB
(TYPE C-1)

DOWELLED CURB
(TYPE DC)

STRAIGHT BACK CURB & GUTTER
(TYPE CG-1)

ROLL BACK CURB & GUTTER
(TYPE CG-2)

STRAIGHT BACK DRY CURB & GUTTER
(TYPE CG-1 DRY)

ROLL BACK DRY CURB & GUTTER
(TYPE CG-2 DRY)

Concrete Fill (Depth Varies, 6" Minimum)
Saw Cut to Rock Base or Subgrade
Aggregate leveling course, if used, shall conform to Standard Specifications Section 2202

The top 6" of subgrade shall shall conform to Standard Specifications Section 2201
GENERAL NOTES:

1. 20mm Isolation Joints with 15mm dia. x 600mm smooth dowels shall be placed at radius points and at 45M intervals. These dowel bars shall be greased and wrapped on one end with expansion tubes.

2. 25mm deep Contraction Joints shall be installed at approximately 3M intervals. These joints shall pass across the entire curb section.

3. Fix dowel bars with bar supports.

4. Depth of curb shall be a minimum of 220mm through the handicap access ramp.

5. Concrete shall conform to Standard Specifications Section 2208.2.8

6. Asphaltic concrete surface course shall conform to Standard Specifications Section 2205.2

Curb & Gutter:

- 50mm Asphaltic Concrete Surface Course
- Concrete Fill (Depth Varies, 150mm Minimum)
- Saw Cut to Rock Base or Subgrade
- Aggregate leveling course, if used, shall conform to Standard Specifications Section 2202
- The top 150mm of subgrade shall conform to Standard Specifications Section 2201

Curb Replacement Detail

American Public Works Association
Kansas City Metropolitan Chapter

Curb Details (Metric)

Standard Drawing Number C-1 (M)
Adopted: May 23, 2001
I - b

SECTION A-A (CG-1 CURB SHOWN)

SECTION B-B (C-1 CURB)

SECTION C-C (CG-2 CURB)

NOTES:
1. The top 6" of driveway subgrade shall be compacted to 95% of standard maximum density.
2. Concrete shall conform to KCDB mix No. WA810-1/4-4, except in CBD where WA810-1/4 with 'rap' acid aggregates as required, Section 2208.2.4.
3. Expansion joint filler and joint sealing compound shall conform to Standard Specifications Section 2209.2.
4. Curing membranes shall conform to Standard Specifications Section 2208.2F.
5. Curb transitions on driveway edges are considered part of driveway.
6. In CBD, 6 x 6 - W2.9 x W2.9 reinforcing shall be placed in center of slab thickness.
7. On Park Department! Property place 6 x 6 - W1.4 x W4 reinforcing in center of slab thickness and use radius instead of flange.
8. Contraction joints shall be spaced at 12" max., both directions.
9. Two 3/8” x 2” smooth dowels (one for C-1 Curbs). See curb standards for placement.
10. Form 3/4” lip at pavement line on driveway in C-1 & CS Curbs.
11. If driveway is < 1.5", fill with concrete as part of the sidewalk.
NOTES:

1. The top 1.5cm of driveway subgrade shall be compacted to 95% of standard maximum density.

2. Concrete shall conform to MCB Mix No. WAB10-1-4, except in CBD where WM10-1-4 with Trap Rock Aggregate is required, Section 2508.2.4.

3. Expansion joint filler and joint sealing compound shall conform to Standard Specifications Section 3308.2.4.

4. Curbing membranes shall conform to Standard Specifications Section 2308.2B.

5. Curb transitions on driveway edges are considered part of driveway.

6. In CBD, 150 x 150 mm20 x XM20 reinforcing shall be placed in center of slab thickness.

7. In Park Department Property place 150 x 150 mm10 x XM10 reinforcing in center of slab thickness and use radius instead of flare.

8. Contraction joints shall be spaced at 3.6m max., both directions.

9. Two 25mm dia. x 0.6m smooth dowels (one for C—1 Curbs). See curb standards for placement.

10. Form 20mm lip at pavement line on drives in C-1 & CS Curbs.

11. If driveway is < 0.5m, fill with concrete as part of the sidewalk.
**TYPE I**
(Parkway 1.5" to < 5")

**SECTION A-A (C-1 CURB SHOWN)**

**EXPANSION JOINT DETAILS**

**NOTES:**
1. The top 6" of driveway subgrade shall be compacted to 95% of standard maximum density.
2. Concrete shall conform to MOB Mix No. W4010-1-4, except in CSD where W4010-1-4 with Trap Rock Aggregate is required, Section 2209.2.4.
3. Expansion joint filler and joint sealing compound shall conform to Standard Specifications Section 2209.2.
4. Curing membranes shall conform to Standard Specifications Section 2209.2.
5. Curb transitions on driveway flares are considered part of driveway.
6. In CSD, 6" x 6" x 2.9 x 2.9 reinforcing shall be placed in center of slab thickness.
7. On Park Department Property place 6' x 6' x 4' x W4 reinforcing in center of slab thickness and use radius instead of flare.
8. Construction joints shall be spaced at 12" max., both directions.
9. Two 5" x 2' smooth swells (one for C-1 Curb). See curb standards for placement.
10. Form 1/4" gap at pavement line on drives in C-1 & C3 Curbs.
11. If Parkway is < 1.5", fill with concrete as part of the sidewalk.

**AMERICAN PUBLIC WORKS ASSOCIATION**
**KANSAS CITY**
**METROPOLITAN CHAPTER**

**CONCRETE DRIVEWAY DETAILS**

**STANDARD DRAWING NUMBER** 0-2

**ADOPTED:** APRIL 17, 1990
NOTES:

1. The top 152mm of driveway subgrade shall be compacted to 95% of standard maximum density.
2. Concrete shall conform to MOB Mt No. W4610-1-4, except in CSD where W4610-1-4 with Trap Rock Aggregate is required, Section 2209.2.A.
3. Expansion joint files and joints sealing compound shall conform to Standard Specifications Section 2209.2.
4. Curing membranes shall conform to Standard Specifications Section 2209.2.F.
5. Curb transitions on driveway faces are considered part of driveway.
6. In CSD, 150 x 150 MW10 x MW10 reinforcing shall be placed in center of slab thickness.
7. On Park Department Property place 150 x 150 MW10 x MW10 reinforcing in center of slab thickness and use radius instead of flare.
8. Contraction joints shall be spaced at 3.6m max, both directions.
9. Two #15M 9 x 3.6m smooth dowels (one for C-1 Curb). See curb standards for placement.
10. Pour 20mm lip at pavement line on drive in C-1 & CS Curbs.
11. If driveway is < 0.5m, fill with concrete as part of the sidewalk.
Curb Expansion

Transition Face of Curb Inlet is 11" to 11 1/2" above Face of Curb inlet.

Expansion Joint (See Curb Standards for details).

Additional material when 11" curb inlet is used.

SECTION A-A

(Precoat)

CONSTRUCTION PLAN

Additonal material when 11" curb inlet is used.

PLAN (with Deflectors)

DEFLECTOR CHANNEL FORM DETAIL

Note: Broom finish top surface.

Deflectors Not Specified

Note: Use 5-D' if curb at sump point.

PLAN

DEFLECTOR CHANNEL FORM DETAIL

NOTE: Forms shall be well aligned and hand placed at time of pour. Note: sketch not to scale. 

Additional material when 11" curb inlet is used.

SECTION B-B

(Not in Place)

Concrete Inlet (Min. Depth Min).

SEC777ON B-B 7

3' Clear Tfl.

(Cast In Place)

Curb Inlet - TYPE 1

DETERMINED TO DEPTH OF 7'-0' (USE DIMENSIONS TO DEPT OF 7'-0' ….)

EXPANSION JOINT

Concrete Inlet with 10" H Bar (Cast in Place)

Expansion Joint (See Curb Standards for details)

GENERAL NOTES:

1. Minimum clearance from top of curb inlet to top of entering or leaving pipe shall be 2'-0" in front and 2'-0" in back of the curb.

2. Forms and materials shall conform to APWA Standards.

3. Transition shall be AS/AI/AI with 1/2" clear joint unless shown otherwise.

4. Anchors shall not project through the concrete structure. Reinforcing bars shall be bent around pipe opening. A diagonal bar shall be used to tie all cut ends together.

5. Clean out manhole ring and cover over outlet.


7. 4" field tile or precast hole shall be located at entering pipe and in the front face sump points. These tiles or openings shall be capped with 24" galvanized wire mesh.
**Deflector Channel Form Detail**

**Notes:**
- Forms shall be well oiled and hand placed at time of pour. Allow for adequate curing and hardening of concrete.

**SECTION A-A**

**Precast**

**Concrete Inlet**

**Details:**
- Concrete Inlet (Main Shown 6")
- Deflector Channels (where specified)
- Bar Types: V-Bars, 15m Bars, 10m Bars

**SECTION B-B**

**Cast in Place**

**Concrete Inlet**

**Details:**
- Concrete Inlet (Main Shown 6")
- Deflector Channels (where specified)
- Bar Types: V-Bars, 15m Bars, 10m Bars
GENERAL NOTES:

1. The true dimension listed is the "L" dimension. The modified dimension is the "W" dimension. "L" listed on the project plans are listed at the inside face of the wall.

2. Floor of inlet shall be sloped with invert to provide smooth flow.

3. Locate delin ring and cover over outlet.

4. Slab shall be placed on 400 C 0.2 vertically.

5. Slope of exposed coping with 20" channel or 10" beveled edge.

6. Grade is to be maintained in the street grade and Simpson sheets shall be level.

7. The sum of "L" and "W" shall not exceed 4200 without special design. (See project plans for details.)

8. Ring & Cover to be Heacock R-1537, Clip & Bolts.

9. Concrete footing shall be reinforced with Grade 60 reinforcing bars.

POLICY:

- Expansion joint (See Cub & Gutter Standard)
- Expansion joint (See Cub & Gutter Standard)

PLAN

SECTION A-A

SECTION B-B

FRONT VIEW

NOTES:

1. All walls shall be prefabricated in accordance with appropriate AWS Specifications & Procedures.

2. All walls as exposed surfaces shall be dressed as to provide a pleasing finished appearance.

3. The entire frame shall be painted a single coat of Sprayon #377-77 primer (Red) or equal.

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY
CURED INLET - TYPE 2
METROPOLITAN CHAPTER
CURED TOP SLAB (10M Bars) at 300 cfs max.

NOTES:

- Concrete Curb Doweled (10M Bars)
- Shall be centered Vertically & Horizontally
- Concrete Top Slab (10M Bars) at 300 cfs max.

MEASUREMENTS:

- All measurements in millimeters.
GENERAL NOTES:
1. Locate rhy and swor over outlet.
2. All work and materials shall conform to fill 2900
3. Use 16" channel strip on all exposed concrete corners.
4. Sizes required at 10" toe set depth from top of
   control to invert except 4".
5. Bottom 2" will not be allowed to project through
   the corners of the structure.
6. All minimum reinforcing shall be 1 H-bar over a
   12" wide piece pipe and 2 H-bars over 8 precast
7. Limit section page to 8" x 11" No. 5 galvanized bars
   shall be used in concrete caps.
8. Shear load past excavation on plant plus number
   of men in sawing.
9. O.A. = outside pipe radius.
10. Ring & Cover shown to be asphalt 16-1507, City & Bailey
    (1990), design 50/150, or approved equal.
    (City may vary by municipality, refer to plans &
    specifications document.)
11. 4" x 6" drain tile or overflow hole shall be located at
    entering pipe and in the front face bump points.
    These tiles or openings shall be capped with 4" 
    galvanized iron mesh in the outside of the drain
    pipe and over the river and base concrete.
GENERAL NOTES:
1. Locate ring and cover over outlet.
2. All work and materials shall conform to APWA Spec 2000.
3. Use 20 course strip on all exposed concrete slabs.
4. Slope required is 400 G.F.P. over 8 ft. from top of casing to invert equals 1.00.
5. Barriers will not be allowed to project through the corners of the structure.
6. The minimum reinforcing shall be 1 ft. on center over 6 in. center pipe and 2 ft. on center over 8 in. center pipe.
7. Left opening subject to 150 psi. 134 gavr. gusseted in corners below.
8. Show field grade terracing on plans plus number and size of openings.
9. G.F.P. = outside pipe radius.
10. Ring & Cover to be Notch E-1357. City & Boley 6220001242 or equivalent shall be used.
11. Contractor may rely on municipality to refer plans & control documents.
12. 10 ft. head tie in proposed hole shall be located at entering pipe and in the front face burial points. These ties or openings shall be capped with 6 in. diameter w/ flush cap on the outside of the hole and cover the insert and base troweled.

REINFORCING:

NOTE: All dimensions in mm.

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY
METROPOLITAN CHAPTER
FIELD INLET
DETAILS
METRIC
STANDARD DRAWINGS
NUMBER 11 - 114
ADOPTED: APRIL 17, 1990
NOTE:

1. Location point at center of inlet.
2. A separate top step may be utilized.
3. Not recommended for use in areas with bicycle traffic.

**Double Grate Inlet Details**

**Single Grate Inlet Details**
NOTE:
1. Location point at center of inlet.
2. A separate top slat may be utilized.
3. Not recommended for use in areas with bicycle traffic.

SECTION C-C

SECTION B-B

SECTION A-A

DOUBLE GRATE INLET DETAILS

SINGLE GRATE INLET DETAILS

Note: All units are in millimeters.
GENERAL NOTES:
1. Select plan and score cover outlet.
2. All work and materials shall conform to Section 2000 APWA.
3. Use 3" Diameter pipe or 3" diameter pipe in all exposed concrete pipes.
4. Structural design shall be made in accordance with the American Concrete Institute Code.
5. The minimum cover and length shall be 1 ft. for each 12" of pipe diameter and 2 ft. for each 12" of pipe length.
6. Use only high-strength concrete for pipe-in-pipe construction.
7. Use only high-strength concrete for pipe-in-pipe construction.
8. Use only high-strength concrete for pipe-in-pipe construction.
9. Use only high-strength concrete for pipe-in-pipe construction.
10. Reinforcing of covers in streets require special design.
11. Reinforcing of covers in streets require special design.
12. Reinforcing of covers in streets require special design.
13. Reinforcing of covers in streets require special design.
14. Reinforcing of covers in streets require special design.

AMERICAN PUBLIC WORKS ASSOCIATION
KANSAS CITY
METROPOLITAN CHAPTER
JUNCTION BOX DETAILS
STANDARD DRAWING NUMBER 61 - 1
APPROVED APRIL 17, 1996
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 manholes casting shall be flush and on some slope on finished surface or as directed by the Engineer.

4. Reinforcement in all sections shall equal or exceed A.S.T.M. No. 4-78 specifications.

5. The Engineer shall designate modifications for manholes with special designs.

6. The inside diameter of the manhole shall be 4'-0" for pipe diameters from 12" thru 24", 5'-0" for pipe diameters from 27" thru 36", and 6'-0" for pipe diameters 42" thru 48".

8. Clearance Tolerance of Pipe Openings: The Minimum Allowable Pipe Opening on a Horizontal Aisle Shall be the Outside Diameter of the Pipe Plus 12". The Maximum Allowable Pipe Opening on a Vertical Aisle Shall be the Outside Diameter Plus 8". The Minimum Clearance Between the Outside Surface of an Instalable pipe and the Concretes of the Manhole Shall be 2".

9. Installation of Pipe Openings: All required pipe openings shall be cast in manhole units. Field alterations of openings will be permitted providing walls are scored with a weaver saw to a depth sufficient to sever reinforcing steel. A chipping hammer may then be used to remove the concrete. Minimum distance between any two adjacent pipes shall be 4".

10. No direct payment for shaping floor or connecting pipes as shown in plans.

11. Ring & Cover to be Neenah R-1736, Clay & Bailey $23.00, or approved equal. (Casting may vary by municipality refer to plans & contract documents.)

12. Sanitary Sewers shall be coated and conform to Section 2603.

GENERAL NOTES:

STANDARD PRECAST MANHOLE
(ECCENTRIC CONE)

(See Eccentric Cone For Other Details)

STANDARD PRECAST MANHOLE
(SHALLOW TYPE)

(See Eccentric Cone For Other Details)
GENERAL NOTES:
1. All manholes are to be precast concrete and of Eccentric Cone type unless otherwise specified.
2. Manholes top adjustments shall be accomplished by the use of concrete adjustment rings.
3. Top of manhole casing shall be set flush or 1/2" below finished surface or as directed by the Engineer.
4. Reinforcement in all sections shall equal or exceed A.S.T.M. C-478 specifications.
5. The engineer shall designate modifications for manholes with special designs.
6. The inside diameter of the manhole shall be 1200 for pipe diameters from 300 thru 600, 1500 for pipe diameters from 675 thru 900, and 1800 for pipe diameters 1050 thru 1200.
8. Installation of Pipe Openings: All required pipe openings shall be cast into manhole units. Field alterations of openings will be permitted provided walls are scored with a masonry saw to a depth sufficient to sever reinforcing steel. A chipping hammer may then be used to remove the concrete. Minimum distance between any two adjacent pipes shall be 400.
9. Material:
   a. Reinforcing steel: Hotrolled, deformed, ASTM-A 1011, Grade 60.
   b. Reinforcing steel: Grade 70, Grade 80, or Grade 100.
   c. Reinforcing steel: The minimum yield strength shall be 40,000 psi.
   d. Reinforcing steel: The minimum tensile strength shall be 60,000 psi.
10. The designer shall specify the type of reinforcing steel to be used.
11. All manholes shall be constructed in accordance with the applicable Section of the Standard Specifications for Highway Construction.
12. All manholes shall be designed to meet or exceed the requirements of the Standard Specifications for Highway Construction.

STANDARD PRECAST MANHOLE
(Concentric Cone)
(See Eccentric Cone For Other Details)

STANDARD PRECAST MANHOLE
(Shallow Type)
(See Eccentric Cone For Other Details)
**TYPICAL SECTION**

(RESIDENTIAL COLLECTOR)

- Concrete Sidewalk
- CC-1 or CC-2 Curb & Gutter
- Compacted Subgrade (Typical)

**TYPICAL SECTION**

(RESIDENTIAL LOCAL STREET)

- Concrete Sidewalk
- CC-1 or CC-2 Curb & Gutter
- Compacted Subgrade (Typical)

**TYPICAL SECTION**

(RESIDENTIAL ACCESS STREET)

- Concrete Sidewalk
- CC-1 or CC-2 Curb & Gutter
- Compacted Subgrade (Typical)

**GENRAL NOTES:**

1. Where the local authority requires 4′ from the curb to the sidewalk on one or both sides of the street, and there are no special conditions, use residential local street (Typical) section.
2. See Table 1 for pavement type.

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*This width may be used only in general."

**NOT TO SCALE**

- Street dimension is intended to be used for design purposes.
- The actual width of street may vary based on local regulations.

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AMERICAN PUBLIC WORKS ASSOCIATION

KANSAS CITY

METROPOLITAN CHAPTER

STREET SECTION DETAILS

NUMBER 51 - 2

ADOPTED: APRIL 1, 1994
GENERAL NOTES:
1. Where the local authority requires 1.2m from the curb to the sidewalk on one or both sides of the street and there are no special conditions, use residential street general section, 66-14/3.
2. See Table 1/4 for pavement type.

- This width may be used only in planned development where a minimum of 9.0m street parking spaces are provided for each dwelling unit.
- Must be approved by the local authority during the preliminary plan development stage and varies depending on specific conditions such as slope, terrain, site features, use, etc.