SIDEWALK & DRIVE APRON DETAILS
2" edging shall be required in downtown areas and other areas as required by the City Engineer.

All joints shall be 1/4 thickness of walk minimum and shall have 1/4" radius.

Thickness of walk through drives and one walk section each side of drive to be thickened to 6" for residential drives and 8" thick for commercial drives.

1/2" expansion joint shall be provided every 50 linear feet in walk.

1/2" expansion joints must be used whenever new work abuts existing structures and walk.

See City of Kent specifications for concrete.

*This dimension subject to change by the Engineer.

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CITY OF KENT, OHIO
DEPARTMENT OF PUBLIC SERVICE
ENGINEERING DIVISION
CONSTRUCTION STANDARDS

STANDARD SIDEWALK LAYOUT

DATE 7/26/89   BY CLW  NO. CS-1
CITY ENGINEER
THE THICKNESS OF WALK THROUGH THE DRIVEWAY AND FOR THE APRON FOR RESIDENTIAL DRIVES SHALL BE 6" AND 8" FOR COMMERCIAL DRIVES.

THE DISTANCE IN WHICH TO DROP C" BELOW THE NORMAL GRADE IS BASED ON A CROSS SLOPE OF 1/4" PER FOOT FROM THE BACK OF WALK TO THE TOP OF FULL HEIGHT "C" CURB IS 6". IN THE EVENT HIGHER CROSS SLOPES ARE ENCOUNTERED, THE MAXIMUM LONGITUDINAL SLOPE FOR THE SIDEWALK TO DROP FROM THE NORMAL GRADE TO THE DRIVEWAY IS 12%. THEREFORE THE LENGTH OF THE DROP SECTION MAY EXCEED 6'.

L/2 OR C'-0" WHICHEVER IS LESS.

DRIVEWAY DROPS SHALL BE FORMED WHEN CURB IS PLACED OR SHALL BE SAW CUT, STONE GROUND OR DIAMOND GROUND TO FORM A SMOOTH AND EVEN FINISHED SURFACE. CURB DAMAGED DURING INSTALLATION OF DRIVE DROPS SHALL BE REPLACED.

FOR SECTION B-B AND SECTION C-C SEE SHEET DS-3
CONCRETE DRIVE

SECTION D-D

ASPHALT DRIVE

SECTION D-D

GRAVEL DRIVE

SECTION E-E

FOR NOTES PERTINENT TO NUMBERS ON THIS DRAWING SEE SHEET DS-4
APRON DETAILS SECTIONS D-D AND E-E NOTES

1. SEE APPROPRIATE WALK AND APRON DETAILS WHICH ARE DETERMINED BY THE DISTANCE BETWEEN THE BACK OF WALK AND THE BACK OF CURB.

2. FOR DRIVEWAY PROFILE GRADE CONTROLS SEE SHEET DS-14.

3. SURFACE RESTORATION INCLUDES GRADING, SEEDING, MULCHING, FERTILIZING, LIMING AND TOPSOILING.

4. THE THICKNESS (t) OF CONCRETE SHALL BE SIX INCHES (6") FOR RESIDENTIAL DRIVES AND EIGHT INCHES (8") FOR COMMERCIAL DRIVES.

5. THE COMBINED THICKNESS OF THE ASPHALT CONCRETE COURSES SHALL BE FOUR INCHES (4") OR EQUAL TO THE THICKNESS OF THE EXISTING ASPHALT PAVEMENT COURSES IN THE DRIVE, WHICHEVER IS GREATER. FOR ADDITIONAL COURSE BUILD-UP INFORMATION SEE SHEET PJ-8.

6. ITEM 304 AGGREGATE BASE SHALL ONLY BE USED IF THE EXISTING DRIVEWAY HAS BEEN CONSTRUCTED USING AGGREGATE BASE OR IF DIRECTED TO USE ITEM 304 BY THE ENGINEER.

7. ITEM 408 PRIME COAT SHALL BE APPLIED TO THE SURFACE OF ITEM 304 AGGREGATE BASE OR OTHERWISE WHEN DIRECTED BY THE ENGINEER. ITEM 408 PRIME COAT SHALL BE APPLIED AT THE RATE OF 0.40 GALLONS PER SQUARE YARD.

8. ITEM ASPHALT CONCRETE INTERMEDIATE COURSE OR ITEM 411 STABILIZED CRUSHED AGGREGATE SHALL EXTEND TO THE BOTTOM OF THE THICKENED CONCRETE WALK SECTION AND THEN TAPER TO THE NORMAL COURSE THICKNESS IN TWO FEET (2').

9. THE DEPTH (d) OF THE ITEM 411 STABILIZED CRUSHED AGGREGATE COURSE SHALL BE SIX INCHES (6") OR EQUAL TO THE THICKNESS OF THE EXISTING GRAVEL COURSES IN THE DRIVE, WHICHEVER IS GREATER.
**THE THICKNESS OF WALK THROUGH THE DRIVEWAY AND FOR THE SHALL BE 6" FOR RESIDENTIAL DRIVES AND 8" FOR COMMERCIAL.**

**THE DISTANCE IN WHICH TO DROP 1" BELOW THE NORMAL GRADE IS BASED ON A CROSS SLOPE OF 1/4" PER FOOT FROM THE BACK OF THE WALK TO THE TOP OF FULL HEIGHT CURB I.A 6. IN THE EVENT HIGHER CROSS SLOPES ARE ENCOUNTERED, THE MAXIMUM LONGITUDINAL SLOPE FOR THE SIDEWALK TO DROP FROM THE NORMAL GRADE TO THE DRIVEWAY IS 12%. THEREFORE THE LENGTH OF THE DROP SECTION MAY EXCEED 5'.

CITY OF KENT, OHIO
DEPARTMENT OF PUBLIC SERVICE
ENGINEERING DIVISION
CONSTRUCTION STANDARDS
CURBED STREET APRON DETAILS FOR TREE LAWNS 3' OR GREATER BUT LESS THAN 6'
DATE 7/26/89 BY GLW NO. DS-5
CITY ENGINEER T. R. BENTLEY
DRIVEWAY DROPS SHALL BE FORMED WHEN CURB IS PLACED OR SHALL BE SAW CUT, STONE GROUND OR DIAMOND GROUND TO FORM A SMOOTH AND EVEN FINISHED SURFACE. CURB DAMAGED DURING INSTALLATION OF DRIVE DROPS SHALL BE REPLACED.

* THE THICKNESS OF WALK THROUGH THE DRIVEWAY AND FOR THE APRON SHALL BE 6" FOR RESIDENTIAL DRIVES & 8" FOR COMMERCIAL.

** THE DISTANCE IN WHICH TO DROP 1" BELOW THE NORMAL GRADE IS BASED ON A CROSS SLOPE OF 1/8" PER FOOT FROM THE BACK OF THE WALK TO THE TOP OF FULL HEIGHT CURB IS 6". IN THE EVENT HIGHER CROSS SLOPES ARE ENCOUNTERED, THE MAXIMUM LONGITUDINAL SLOPE FOR THE SIDEWALK TO DROP FROM THE NORMAL GRADE TO THE DRIVEWAY IS 12%, THEREFORE THE LENGTH OF THE DROP SECTION MAY EXCEED 5'.

CITY OF KENT, OHIO
DEPARTMENT OF PUBLIC SERVICE
ENGINEERING DIVISION
CONSTRUCTION STANDARDS
CURBED STREET APRON DETAILS FOR TREE LAWNS 3 OR GREATER BUT LESS THAN 6
DATE 7/26/89 BY CLW NO. DS-6
CITY ENGINEER: J. L.Drugan
**THE THICKNESS OF WALK THROUGH THE DRIVEWAY AND FOR THE APRON SHALL BE 6" FOR RESIDENTIAL DRIVES AND 8" FOR COMMERCIAL.**

**THE DISTANCE IN WHICH TO DROP 1" BELOW THE NORMAL GRADE IS BASED ON A CROSS SLOPE OF 1/4" PER FOOT FROM THE BACK OF WALK TO THE TOP OF FULL HEIGHT CURB i.e. 6". IN THE EVENT HIGHER CROSS SLOPES ARE ENCOUNTERED, THE MAXIMUM LONGITUDINAL SLOPE FOR THE SIDEWALK TO DROP FROM THE NORMAL GRADE TO THE DRIVEWAY IS 12%, THEREFORE THE LENGTH OF THE DROP SECTION MAY EXCEED 6".
Asphalt drive aprons are not authorized for use on streets or streets that already have concrete drive aprons.
Anchor bolts (as detailed) for anchoring both ends of metal pipes shall meet ASTM A307. The bolt shall be galvanized according to ASTM A153.

CORRUGATED METAL PIPE

Unless otherwise specified, anchor bolts shall be used only on pipes with span or rise greater than 24 inches.

CONCRETE PIPE

HEADWALL FOR CORRUGATED METAL PIPE

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<tr>
<th>CIRCULAR</th>
<th>PIPE ARCH</th>
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<tr>
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<td>3'-0&quot;</td>
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<td>4'-0&quot;</td>
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HEADWALL FOR CONCRETE PIPE

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<thead>
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<tbody>
<tr>
<td>12&quot;</td>
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<td>3'-6&quot;</td>
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<tr>
<td>24&quot;</td>
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ANCHOR BOLT

CITY OF KENT, OHIO
DEPARTMENT OF PUBLIC SERVICE ENGINEERING DIVISION
CONSTRUCTION STANDARDS
HEADWALL DETAILS

DATE 10/29/87  BY  GLW NO. DS-11
CITY ENGINEER
ASPHALT DRIVE APRONS ARE NOT AUTHORIZED FOR USE ON STREETS WITH CURB, ON CONCRETE STREETS, OR STREETS THAT ALREADY HAVE CONCRETE DRIVE APRONS.

* 1/2" ITEM ASPHALT CONCRETE SURFACE COURSE
* 8" CONC. WALK
* 4-1/2" ITEM ASPHALT CONCRETE BASE COURSE

EXIST. BERM OR SHOULDER TO BE REMOVED
4'-0" MIN. 6'-0" OR GREATER IS DESIRABLE

LOW POINT
4" MIN. WIDTH HOT ASPHALT CEMENT SEAL
5/16"/FT.

EXISTING ASPHALT PAVEMENT
SAW CUT EXISTING PAVEMENT
ASPHALT CEMENT COATING

CONTROLLED DENSITY FILL (TYPE "A")

STEEL WELL CASING CULVERT PIPE
(DIAMETER SHALL BE DETERMINED BY ENGINEERING CALCULATIONS)

SUBGRADE - COMPACTION
2'+ PIPE O.D. (MIN.)

THE LOW POINT IN THE APRON AND THE LOCATION OF THE CULVERT DO NOT HAVE TO COINCIDE. HOWEVER, NEITHER SHALL BE CLOSER THAN 4' TO THE EXISTING EDGE OF PAVEMENT. IN ADDITION, THE ENGINEER MAY DIRECT THAT THE DITCH LOCATION BE MOVED AND/OR THE DEPTH OF THE DITCH ON EITHER SIDE OF THE CULVERT PIPE BE LOWERED IN ORDER TO INSURE THAT THE PIPE IS AN ADEQUATE DISTANCE FROM THE EDGE OF THE EXIST. PAVEMENT AND THAT THE DEPTH OF THE DITCH IS SUFFICIENT TO CARRY THE WATER FLOW AND TO ALLOW THE PIPE TO FALL BELOW THE PROPOSED ASPHALT PAVEMENT.

* THE THICKNESS OF THE ASPHALT COURSES SHOWN ARE MINIMUMS AND MAY BE INCREASED.

† 8" CONCRETE WALK SHALL BE PROVIDED ONLY IF CONCRETE WALK CURRENTLY EXISTS AT THE PROPOSED DRIVE LOCATION SEE SHEET DS-3.

A SAG VERTICAL CURVE WITH A K ≥ .8 MAY BE USED WITH PRIOR APPROVAL FROM THE ENGINEER.

FOR GRADE CONTROLS BEYOND THE BACK OF WALK SEE SHEET DS-14.
ASPHALT DRIVE APRONS ARE NOT AUTHORIZED FOR USE ON STREETS WITH CURB, ON CONCRETE STREETS, OR STREETS THAT ALREADY HAVE CONCRETE DRIVE APRONS.

EXISTING BERM OR SHOULDER TO BE REMOVED 4'-0" (MIN) 6'-0" OR GREATER IS DESIRABLE

4" MIN. WIDTH HOT ASPHALT CEMENT SEAL

STEEL WELL CASING CULVERT PIPE (DIAMETER SHALL BE DETERMINED BY ENGINEERING CALCULATIONS USING A TWO YEAR DESIGN STORM)

* THE THICKNESS OF THE ASPHALT COURSES SHOWN ARE MINIMUMS AND MAY BE INCREASED.

† 6" CONCRETE WALK SHALL BE PROVIDED ONLY IF CONCRETE WALK CURRENTLY EXISTS AT THE PROPOSED DRIVE LOCATION SEE SHEET DS-3.

A SAG VERTICAL CURVE WITH A K ≥ .8 MAY BE USED WITH PRIOR APPROVAL FROM THE ENGINEER.

FOR GRADE CONTROLS BEYOND THE BACK OF WALK SEE SHEET DS-14.

THE LOW POINT IN THE APRON AND THE LOCATION OF THE CULVERT DO NOT HAVE TO COINCIDE. HOWEVER, NEITHER SHALL BE CLOSER THAN 4" TO THE EXISTING EDGE OF PAVEMENT. IN ADDITION, THE ENGINEER MAY DIRECT THAT THE DITCH LOCATION BE MOVED AND/OR THE DEPTH OF THE DITCH ON EITHER SIDE OF THE CULVERT PIPE BE LOWERED IN ORDER TO INSURE THAT THE PIPE IS AN ADEQUATE DISTANCE FROM THE EDGE OF THE EXIST. PAVEMENT AND THAT THE DEPTH OF THE DITCH IS SUFFICIENT TO CARRY THE WATER FLOW AND TO ALLOW THE PIPE TO FALL BELOW THE PROPOSED ASPHALT PAVEMENT.
For tree lawn and walk treatments see sheets DS-2, 5, 8, 7.

*** Although the use of grade breaks is allowable, 10' vertical curves are desirable at these locations with a K=2 for both crest and sag curves.

For asphalt aprons see sheets DS-8 and DS-10.