



# **Curb, Gutter, Sidewalk & Driveway Apron Specifications Manual**

Prepared by the  
City of Oxford  
Service Department  
Engineering Division  
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Oxford, Ohio 45056  
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Revised 2017

## **CRITERIA FOR REPAIRING SIDEWALK, CURBING, AND DRIVEWAY APRONS**

The objectives for the repair of sidewalks, curb, gutter and driveway aprons are as follows: pedestrian safety, proper drainage, coordination with other City of Oxford street projects, and maintaining property values.

The following three sections indicate the check-list for the determination of replacement for sidewalks, curb, gutter and driveway aprons.

### **Sidewalks**

1. Any block having a crack or cracks in it more than one quarter (1/4) inch wide.
2. Adjoining blocks or portions thereof whose edges differ vertically by more than one quarter (1/4) of an inch.
3. Blocks that have holes in them one (1) inch or more in diameter or are cracked or broken in such a manner that pieces of concrete are missing or loose.
4. Blocks having depressions, reverse cross slope (sloping away from the street), or below back of curb grade causing the collection of mud or water.
5. Sidewalk that has a twenty-five (25) percent or larger area that is generally deteriorated as evident by spalling, raveling, or irregular surfaces.
6. Blocks which cause an abrupt change in the slope of the sidewalk.
7. Sidewalks that have settled due to utility installation or replacement.

### **Curb and Gutter**

1. Any section that has horizontal cracks or cracks causing spalling or breaking away of the curb section.
2. Any section having vertical cracks.
3. Adjoining sections or portions whose edges differ vertically by more than one half (1/2) inch.
4. Any section in which the concrete has deteriorated leaving aggregate exposed.
5. Sections where the gutter collects water.
6. Any section having material (asphalt, concrete, mortar, etc.) added to the gutter so as to impede normal flow.
7. Sections that cause an abrupt change in slope.

### **Driveway Aprons**

1. Driveway apron sections having cracks in it more than one half (1/2) inch wide.

2. Driveway apron sections that differ vertically by more than one half (1/2) inch above or below the sidewalk.
3. Driveway apron sections that are cracked or broken in such a manner that pieces of concrete are missing or loose.
4. Driveway aprons that are dipped across the sidewalk in such a manner that creates an abrupt change of grade in the sidewalk.
5. Abandoned driveway aprons shall be removed and replaced with curb, gutter and sidewalk.
6. Contractors shall be responsible to obtain all necessary permits.
7. All work in the ROW will require a preliminary and final inspection by City staff.

### Permits

The following permits must be obtained prior to starting construction on any segment of curb, gutter, or sidewalk:

- Curb, Gutter , and Sidewalk Permit
- Street Cut Permit
- Right of Way Permit, if applicable

Permits are issued by the Community Development Department. A fee may apply.

### Workmanship

All work shall be performed in accordance with this CGS Specification Manual. Work that does not conform to the Manual is considered defective and must be removed and replaced.

### Inspections

The Contractor must call the Community Development Department, Division of Building and Housing, at 513/524-5209 to schedule an inspection. Inspections include, but are not limited to, forms prior to pouring concrete, placed concrete, and site restoration.

# **CONCRETE SIDEWALK CONSTRUCTION SPECIFICATIONS**

## **General**

Description: This work shall consist of constructing concrete sidewalks on a prepared base course in accordance with these specifications, Item 608 of the most recent edition of the Ohio Department of Transportation's Construction Material Specifications Manual and to the line, grades, and dimensions shown on the plans or established by the City Engineer.

Included Work: The work shall encompass excavation to grade, excavation of unsuitable sub-grade materials, furnishing and placing of backfill and bedding material, and removal of existing sidewalks located in the area of the new work.

## **Materials**

Base Course Material: Material for the base course shall consist of any clean, granular material meeting the requirements of Item 304 of the most recent version of the Ohio Department of Transportation's Construction Materials and Specifications Manual.

Concrete: Concrete shall be ODOT class "QC Misc." or "QC1" with a minimum of 4000 psi strength, 8% nominal air meeting the requirements of Item 499 of the most recent version of the Ohio Department of Transportation's Construction Materials and Specifications Manual.

Incidentals: Preformed joint filler shall conform to the requirements of ASTM D994.

## **Construction**

Base Course: Excavation shall be carried to the required depth of four (4) inches and the foundation shall be shaped to the proper section and thoroughly compacted. If soft or unsuitable sub-grade material is encountered, it shall be removed to a depth as directed by the City of Oxford and backfilled with acceptable material. If suitable granular sub-grade material is encountered at the grade of the sidewalk and compaction not disturbed, the base course need not be placed.

Forms: Sidewalk forms shall be wood, at least two (2) inches in thickness or steel of equal rigidity. The height of the forms shall be the same as the thickness of the concrete sidewalk. Flexible strips may be used on curves. Forms shall be held securely in place by stakes or braces, in such a manner to keep the form top of edges true to line and grade. Sidewalks shall be sloped at one quarter (1/4) of an inch per foot toward the curb.

Expansion Joints: City of Oxford approved expansion joints shall be placed to within one quarter (1/4) of an inch below the surface of the concrete. Expansion joints (1/2 inch thick) shall be placed at intervals of 100 feet for new sidewalk construction. Expansion joints shall also be

placed between the sidewalk and driveway approaches, intersecting sidewalks, and buildings; between the sidewalk and all structures (fire hydrants, light standards, and poles which extend through the sidewalk); at all points of curvature in the sidewalk; and where new sidewalk abuts existing sidewalk.

**Control Joints:** The surface of the sidewalk shall be divided by control joints constructed at right angles to the centerline of the sidewalk. These control joints shall extend to one-fourth the thickness of the slab in depth and shall be placed at intervals no greater than five (5) feet and be edged.

**Placing and finishing:** The sub-grade and forms shall be visually inspected by the City of Oxford prior to the placement of the concrete. **STAKES AND REBAR SHALL BE CAPPED FOR SAFETY.** Concrete shall be placed continuously for the entire width of the slab, and finished to a true and even surface with a straight float. The concrete sidewalk shall be four (4) inches thick except through driveways, which shall be seven (7) inches thick. *Sidewalks shall be kept at correct sidewalk grade when constructed within driveway aprons ramped in the gutter. The surface shall be given a swirled float finish or light transverse brooming. Sidewalk forms shall remain in place for a minimum of 24 hours after the concrete is placed and shall be fenced or surrounded by construction tape. The work area shall be free of hazards to pedestrians. Sidewalk shall be cured with City of Oxford approved curing compounds. After the concrete has set and the forms removed, the excavated areas shall be backfilled within 48 hours of placement.* If blemishes in the concrete are made prior to curing, i.e. graffiti, footprints, tire tracks, etc., the concrete shall be repaired to meet City of Oxford approval or be replaced.

### **Ramps**

All ramps shall conform to ADA standards for accessible design.

**Detectable Warning:** Detectable warning mats shall be of vitrified polymer composite construction, cast in place type, manufactured by "Armor Tile" or approved equal. The dimension of each tile shall be 2'x4', color to be brick red.

# CONCRETE CURB AND GUTTER CONSTRUCTION SPECIFICATIONS

## General

Description: This work shall consist of the construction of concrete curb and gutter on a prepared bed in accordance with these specifications and Item 609 of the most recent edition of the Ohio Department of Transportation's Construction and Materials Specifications Manual and to the line, grades, and dimensions shown on the plans or established by the City Engineer.

Included Work: This work shall encompass excavation to grade, excavation of unsuitable sub-grade materials, furnish and placing of backfill and bedding material, and removal of existing curb and gutter located in the area of work.

## Materials

Base Course Material: Material for the base course shall consist of any clean, granular material meeting the requirements of Item 304 of the most recent version of the Ohio Department of Transportation's Construction Material and Specifications Manual.

Concrete: Concrete shall be ODOT class "QC Misc." or "QC1" with a minimum of 4000 psi strength, 8% nominal air meeting the requirements of Item 499 of the most recent version of the Ohio Department of Transportation's Construction Material and Specifications Manual.

## Construction

Base Course: Excavation shall be carried to the required depth and the sub-grade shall be shaped to the proper section and thoroughly compacted. The base course shall be four (4) inches thick of granular material and shall be placed and compacted. If soft or unsuitable sub-grade material is encountered, it shall be removed to a depth as directed by the City of Oxford and backfilled with acceptable material. If suitable granular sub-grade material is encountered at the grade of the curb and gutter and compaction not disturbed, the base course need not be placed.

Forms and Joints: Curb forms shall be held securely in place by stakes or braces in such a manner to hold the top of the form edges to true line and grade. **STAKES AND REBAR SHALL BE CAPPED FOR SAFETY.** Forms shall be placed in all repair work abutting the existing street pavement. The existing pavement shall be saw cut and removed to allow forms to be installed. All curb and combination curb and gutter shall have control joints constructed at ten (10) foot intervals with an average depth of at least one half of an inch (1/2") or more. City of Oxford approved expansion joints shall be placed to within one quarter (1/4) of an inch below the surface of the concrete. Expansion joints shall be placed at intervals of 100 feet for new construction. Expansion joints shall also be placed where new curb and gutter abuts existing curb and gutter and between curb, gutter and sidewalk.

Placing and Finishing: The sub-grade and forms shall be visually inspected by the City of Oxford prior to the placement of the concrete. The gutter plate shall have a minimum slope of **ONE INCH (1") PER FOOT** and a minimum thickness of six (6) inches with total minimum thickness of curb at twelve (12) inches. The concrete shall be placed in the forms to permit thorough spading. The curb and gutter concrete shall be placed separately from driveway approach and sidewalk concrete. The concrete shall be spaded in such a manner as to eliminate all voids. The top of curb shall be floated in such a manner to thoroughly compact the concrete and produce a smooth and even surface. The finished surface shall be free of irregularities, waves, and shall be uniform in texture. Concrete curb, and combination curb and gutter shall be cured in accordance with Item 452 of the most recent version of the Ohio Department of Transportation's Construction Material and Specifications Manual.

The work area shall be fenced or surrounded by caution tape and shall be free of hazards to pedestrians.

*Forms for curb and combination curb and gutter shall remain in place for a minimum of 24 hours after the concrete is placed. Once the forms and spoil material have been removed, it shall be the Contractor's responsibility to backfill and compact all voids between the new gutter and pavement with chips and dust or City of Oxford approved equal as to eliminate any and all hazards.*

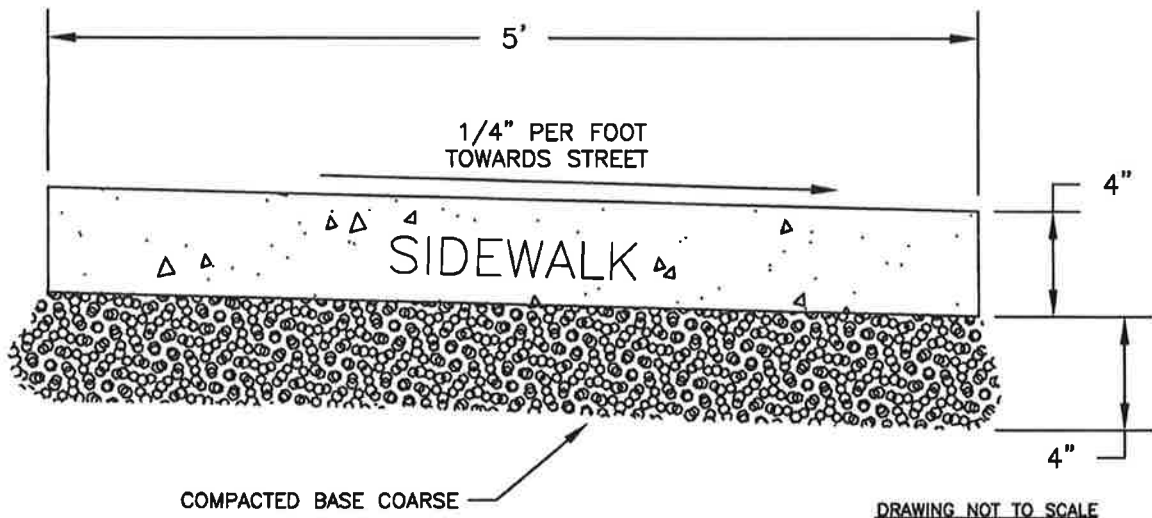
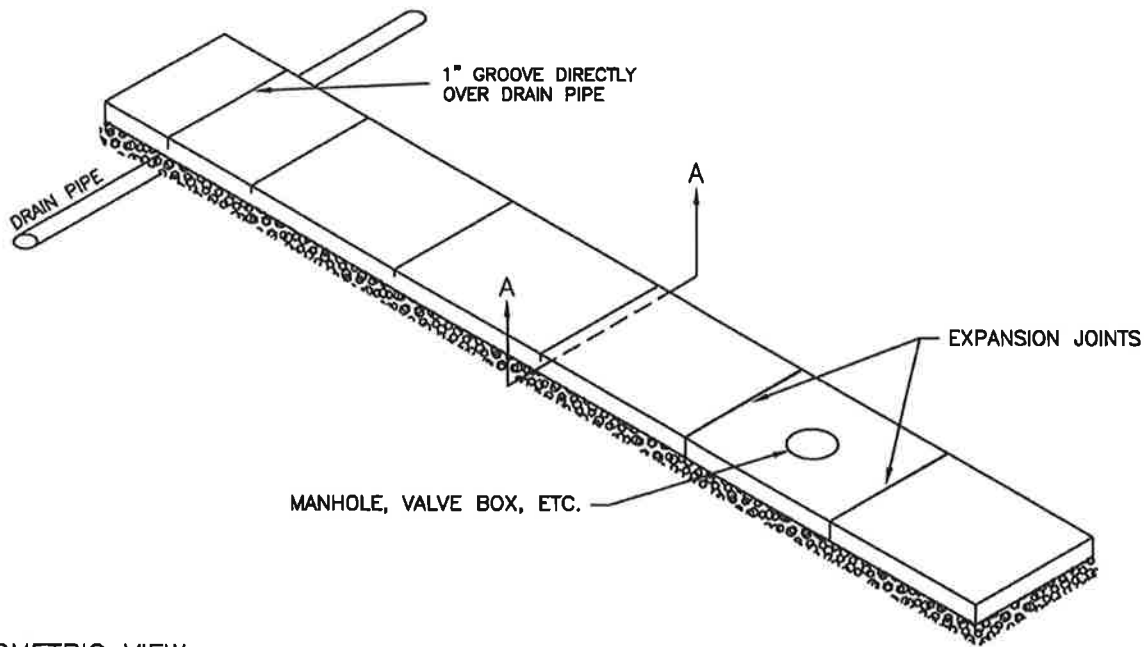
Upon completion of the new curb, the City of Oxford Streets & Maintenance Division shall replace the pavement to meet the newly installed curb.

Method of Measurement: The footage of curb length measured will be the actual number of lineal footage of curb or combination curb and gutter complete in place and accepted by the City of Oxford. The measurement shall be taken along the front of curb.

Basis of Payment: The accepted curb and gutter, measured as above, shall be paid for at the contract unit price per lineal foot.







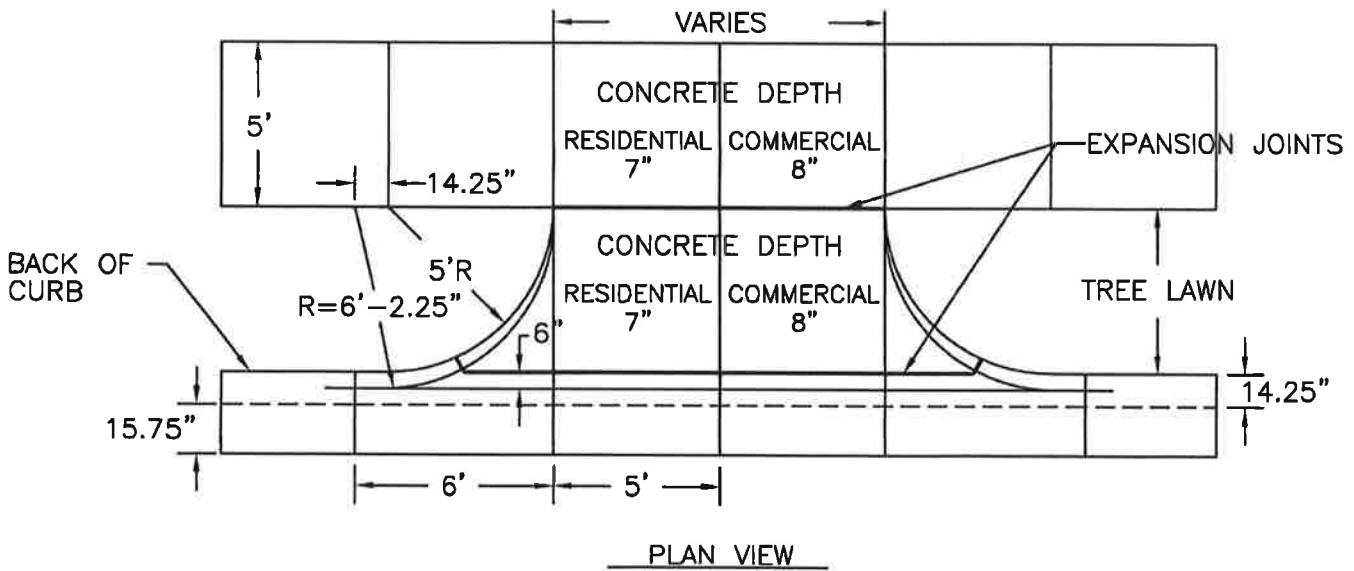
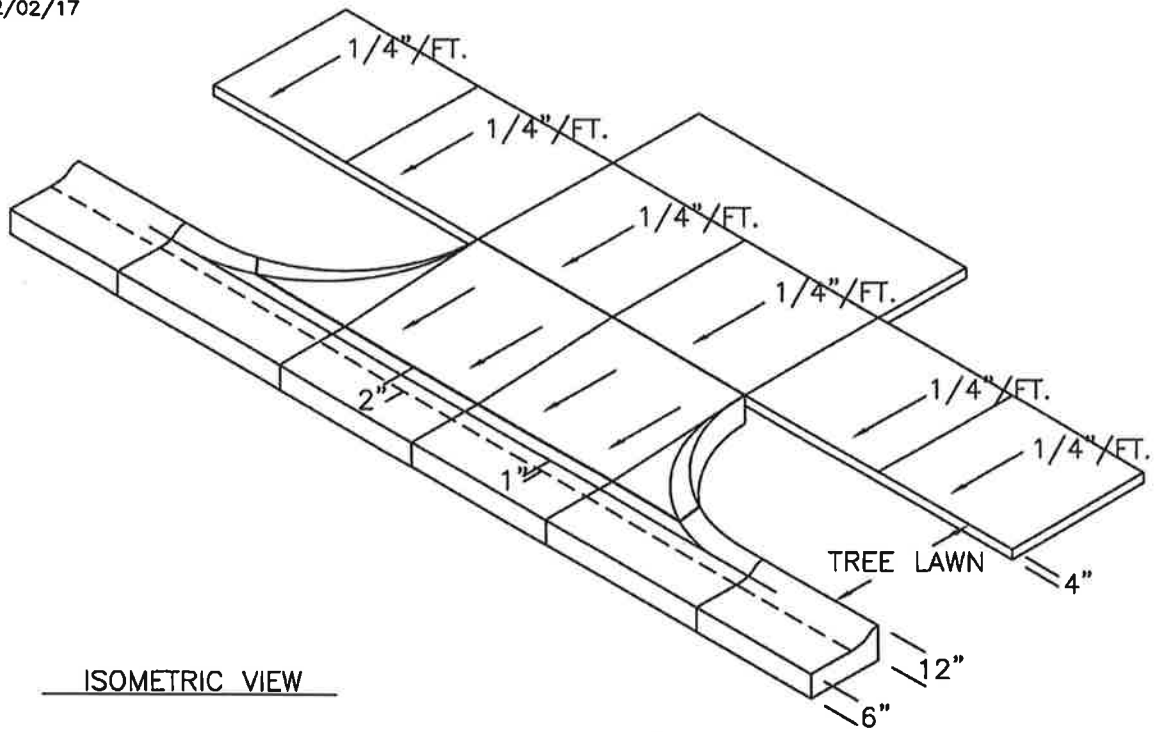
SECTION A-A

City of Oxford Engineering Division
<b>STANDARD SIDWALK</b>
City of Oxford Standard Drawing # 80

SURFACE OF SIDWALK SHALL BE DIVIDED BY EDGED CONTROL JOINTS CONSTRUCTED AT RIGHT ANGLES TO THE CENTERLINE OF THE SIDWALK. THE CONTROL JOINTS SHALL EXTEND 1 INCH IN DEPTH AND SHALL BE PLACED AT INTERVALS NO GREATER THAN 10 FEET.

EXPANSION JOINTS SHALL BE PLACED TO WITHIN 1/4" BELOW THE SURFACE OF THE CONCRETE AND AT INTERVALS OF 100 FEET FOR NEW CONSTRUCTION.

CONCRETE SHALL BE ODOT CLASS QC MISC. OR QC1, MINIMUM 4000 PSI STRENGTH



NOTE: EXPANSION JOINTS SHALL BE PLACED BETWEEN SIDEWALK AND DRIVEWAY APPROACHES, INTERSECTING SIDEWALKS AND BUILDINGS. BETWEEN SIDEWALK AND ALL STRUCTURES (FIRE HYDRANTS, LIGHT STANDARDS AND POLES WHICH EXTEND THROUGH THE SIDEWALK); AT ALL POINTS OF CURVATURE IN THE SIDEWALK AND WHERE NEW SIDEWALK ABUTS EXISTING SIDEWALK.

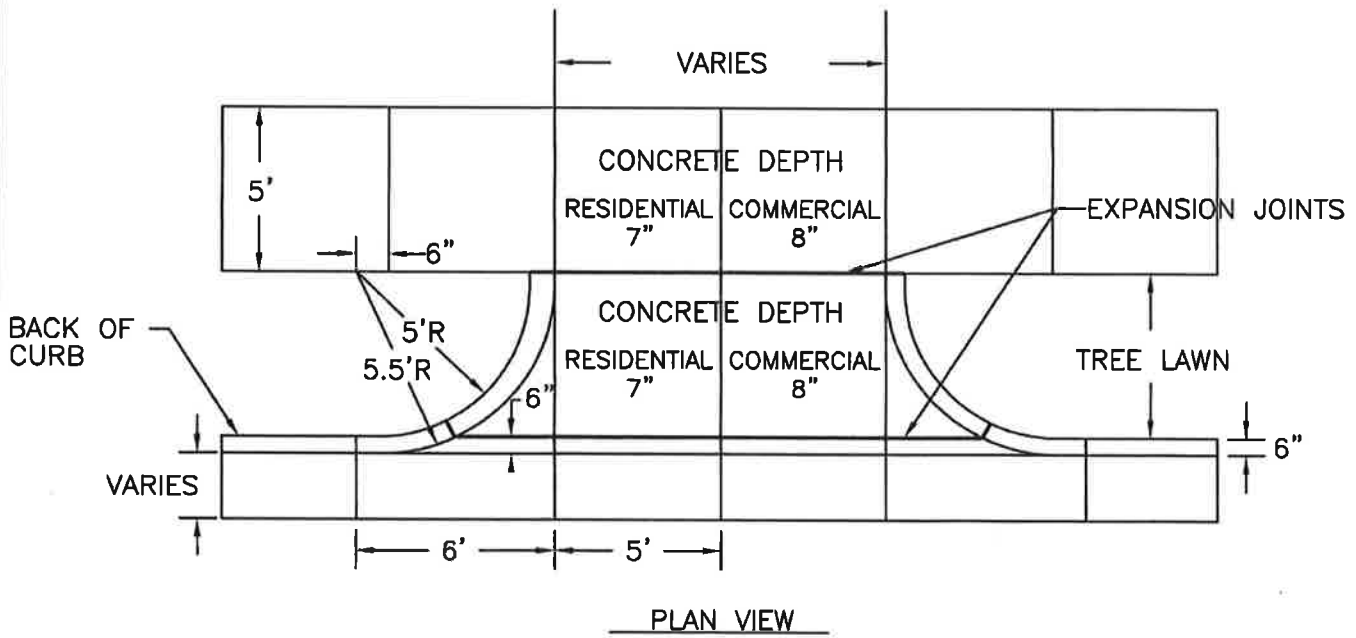
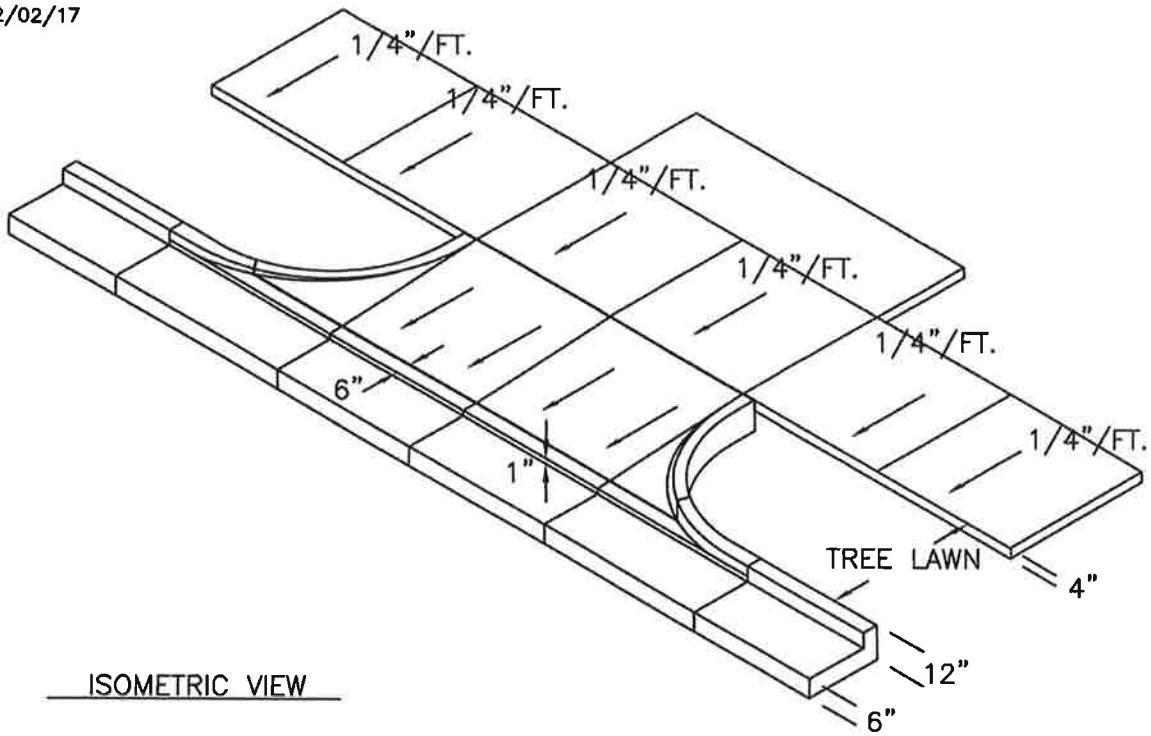
CONCRETE SHALL BE ODOT CLASS QC MISC. OR QC1, MINIMUM 4000 PSI STRENGTH.

DRAWING NOT TO SCALE

CITY OF OXFORD  
ENGINEERING DIVISION

STANDARD  
DRIVEWAY CUT

STANDARD DRAWING #81



NOTE: EXPANSION JOINTS SHALL BE PLACED BETWEEN SIDEWALK AND DRIVEWAY APPROACHES, INTERSECTING SIDEWALKS AND BUILDINGS. BETWEEN SIDEWALK AND ALL STRUCTURES (FIRE HYDRANTS, LIGHT STANDARDS AND POLES WHICH EXTEND THROUGH THE SIDEWALK); AT ALL POINTS OF CURVATURE IN THE SIDEWALK AND WHERE NEW SIDEWALK ABUTS EXISTING SIDEWALK.

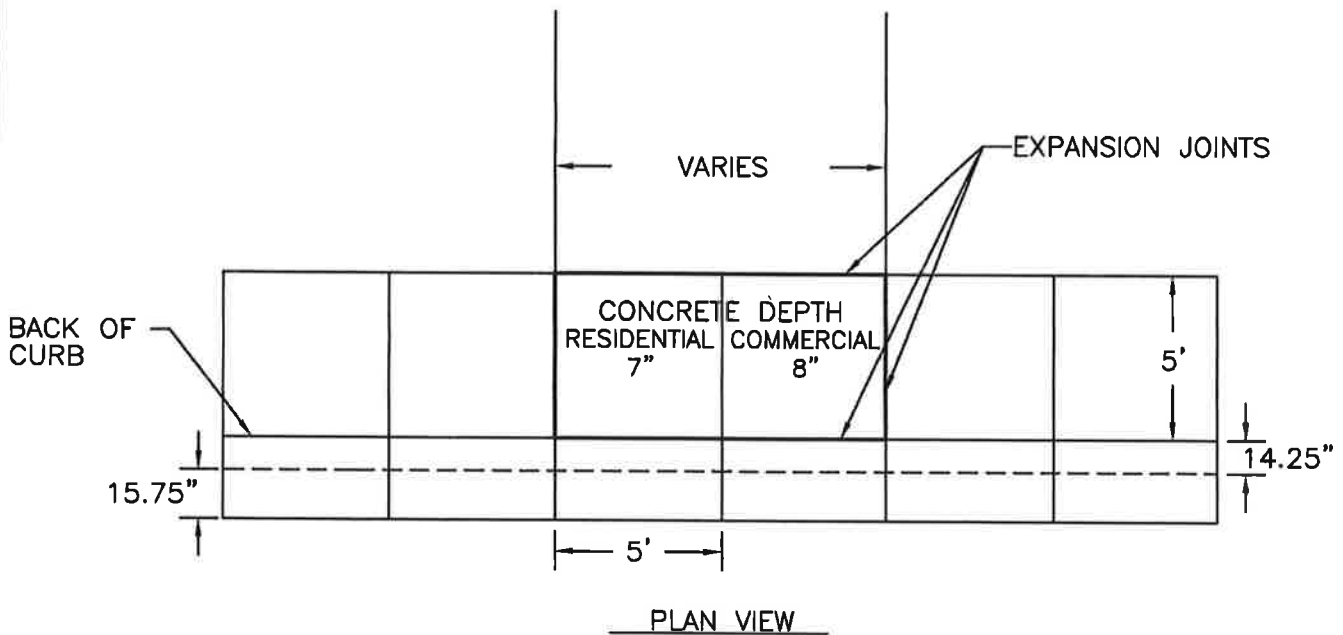
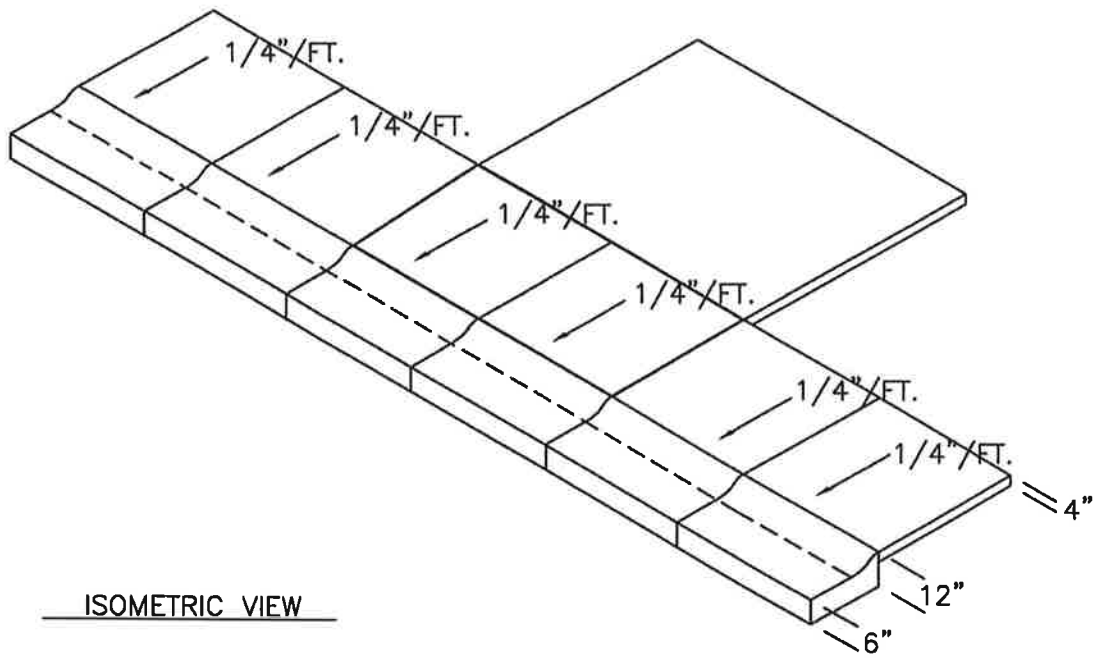
CONCRETE SHALL BE ODOT CLASS QC MISC. OR QC1, MINIMUM 4000 PSI STRENGTH.

DRAWING NOT TO SCALE

CITY OF OXFORD  
ENGINEERING DIVISION

STANDARD  
DRIVEWAY CUT

STANDARD DRAWING #82



NOTE: EXPANSION JOINTS SHALL BE PLACED BETWEEN SIDEWALK AND DRIVEWAY APPROACHES, INTERSECTING SIDEWALKS AND BUILDINGS. BETWEEN SIDEWALK AND ALL STRUCTURES (FIRE HYDRANTS, LIGHT STANDARDS AND POLES WHICH EXTEND THROUGH THE SIDEWALK); AT ALL POINTS OF CURVATURE IN THE SIDEWALK AND WHERE NEW SIDEWALK ABUTS EXISTING SIDEWALK.

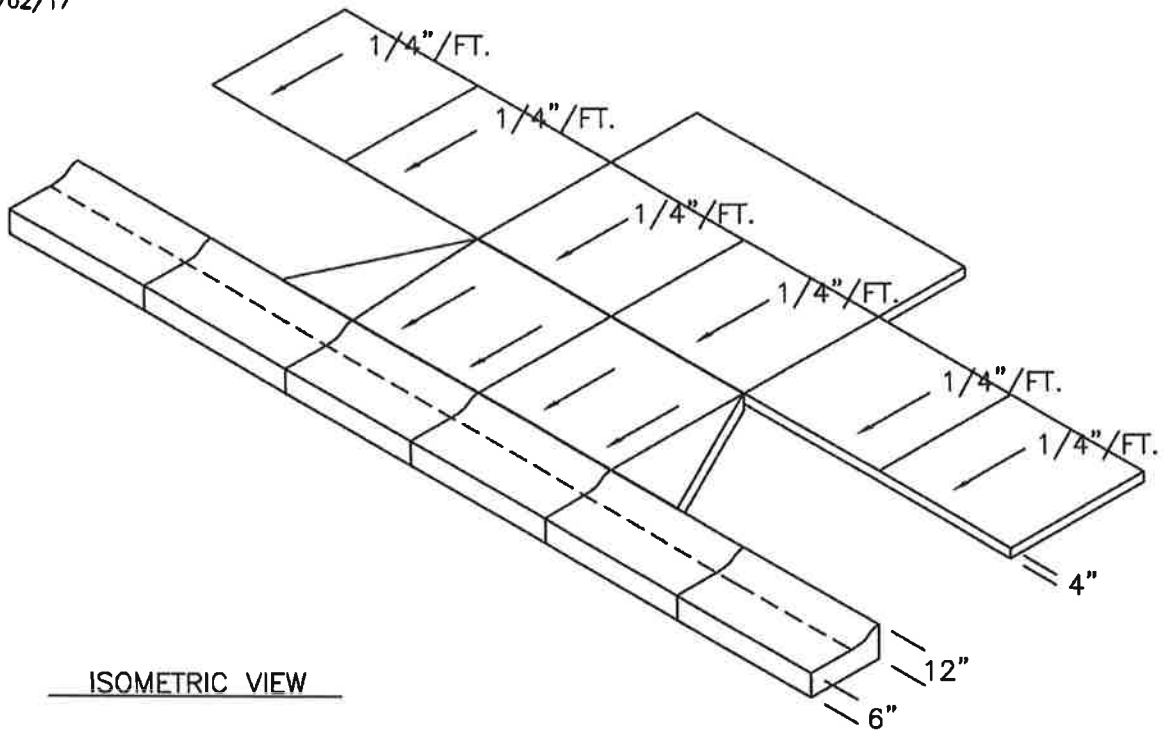
CONCRETE SHALL BE ODOT CLASS QC MISC. OR QC1, MINIMUM 4000 PSI STRENGTH.

DRAWING NOT TO SCALE

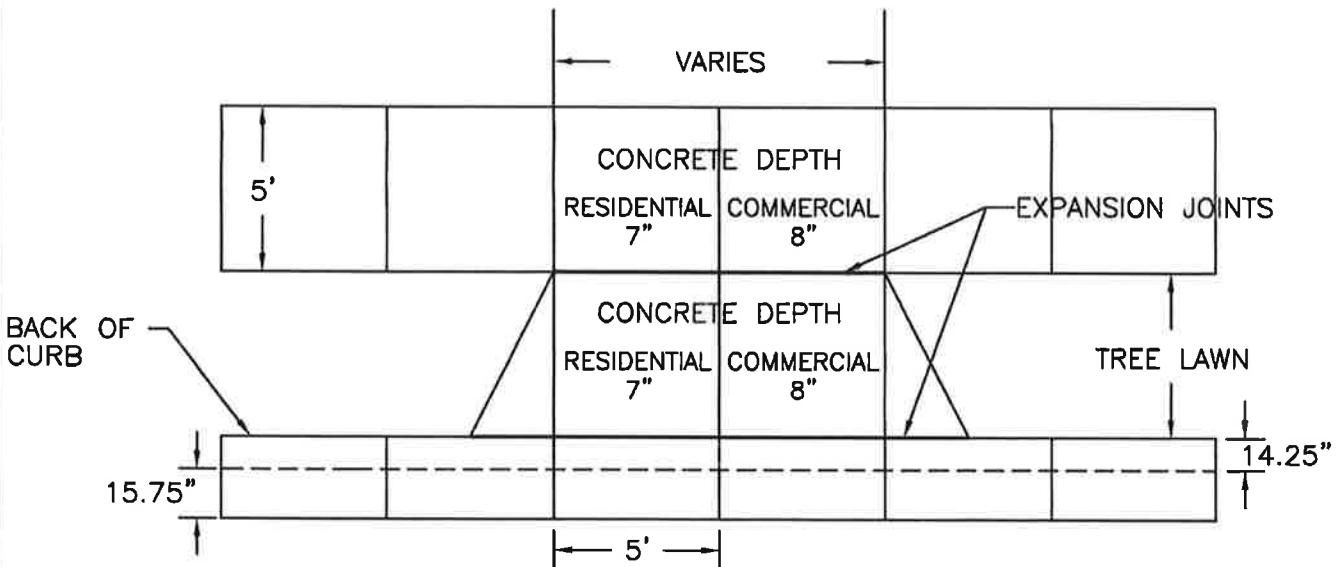
CITY OF OXFORD  
ENGINEERING DIVISION

STANDARD  
DRIVEWAY CUT

STANDARD DRAWING #83



ISOMETRIC VIEW



PLAN VIEW

NOTE: EXPANSION JOINTS SHALL BE PLACED BETWEEN SIDEWALK AND DRIVEWAY APPROACHES, INTERSECTING SIDEWALKS AND BUILDINGS. BETWEEN SIDEWALK AND ALL STRUCTURES (FIRE HYDRANTS, LIGHT STANDARDS AND POLES WHICH EXTEND THROUGH THE SIDEWALK); AT ALL POINTS OF CURVATURE IN THE SIDEWALK AND WHERE NEW SIDEWALK ABUTS EXISTING SIDEWALK.

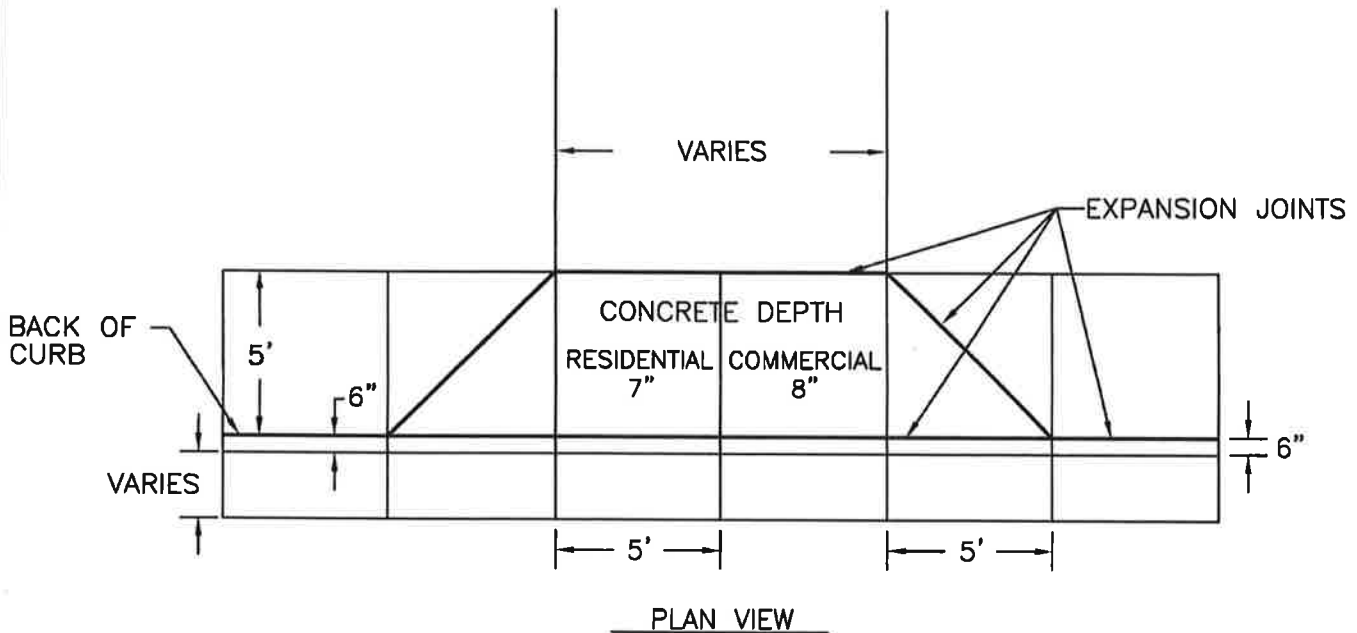
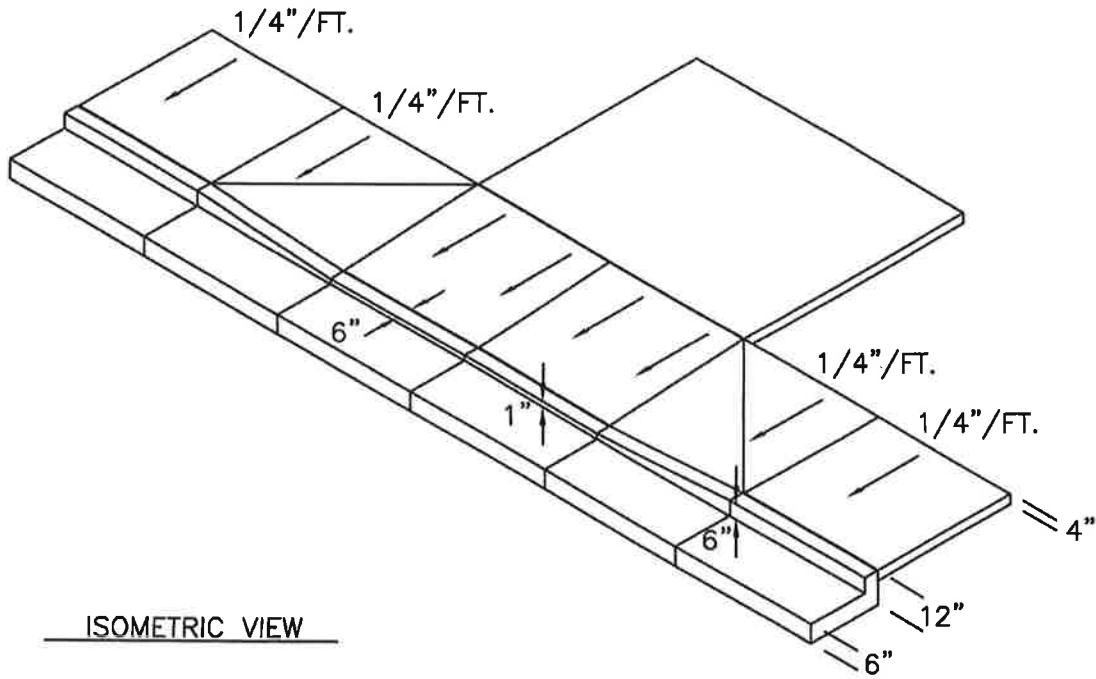
CONCRETE SHALL BE ODOT CLASS QC MISC. OR QC1, MINIMUM 4000 PSI STRENGTH.

DRAWING NOT TO SCALE

CITY OF OXFORD  
ENGINEERING DIVISION

STANDARD  
DRIVEWAY CUT

STANDARD DRAWING #84



NOTE: EXPANSION JOINTS SHALL BE PLACED BETWEEN SIDEWALK AND DRIVEWAY APPROACHES, INTERSECTING SIDEWALKS AND BUILDINGS. BETWEEN SIDEWALK AND ALL STRUCTURES (FIRE HYDRANTS, LIGHT STANDARDS AND POLES WHICH EXTEND THROUGH THE SIDEWALK); AT ALL POINTS OF CURVATURE IN THE SIDEWALK AND WHERE NEW SIDEWALK ABUTS EXISTING SIDEWALK.

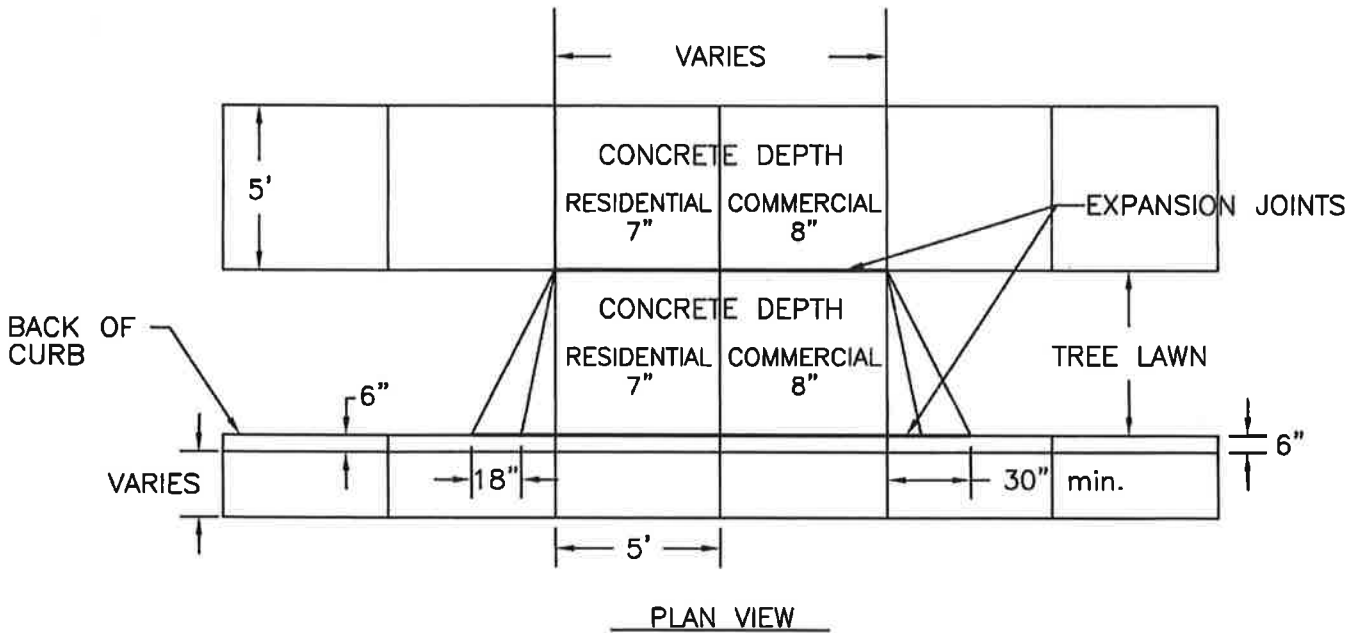
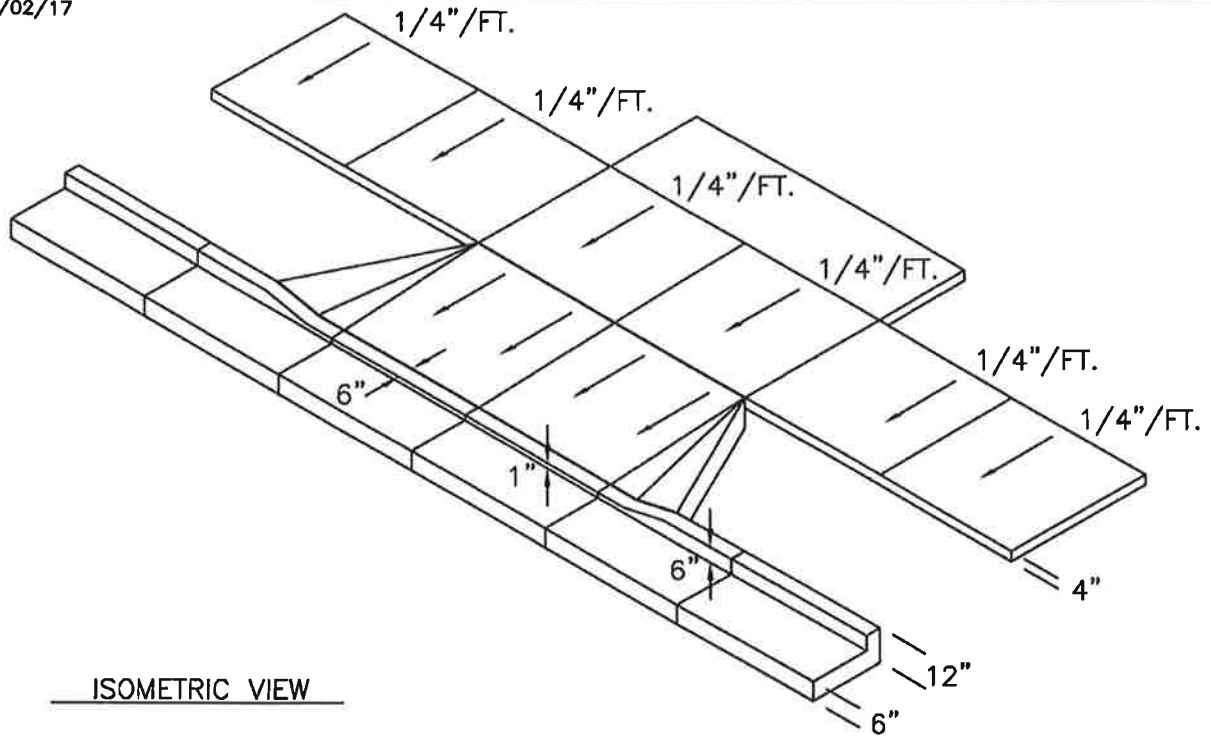
CONCRETE SHALL BE ODOT CLASS QC MISC. OR QC1, MINIMUM 4000 PSI STRENGTH.

DRAWING NOT TO SCALE

CITY OF OXFORD  
ENGINEERING DIVISION

STANDARD  
DRIVEWAY CUT

STANDARD DRAWING #85



NOTE: EXPANSION JOINTS SHALL BE PLACED BETWEEN SIDEWALK AND DRIVEWAY APPROACHES, INTERSECTING SIDEWALKS AND BUILDINGS. BETWEEN SIDEWALK AND ALL STRUCTURES (FIRE HYDRANTS, LIGHT STANDARDS AND POLES WHICH EXTEND THROUGH THE SIDEWALK); AT ALL POINTS OF CURVATURE IN THE SIDEWALK AND WHERE NEW SIDEWALK ABUTS EXISTING SIDEWALK.

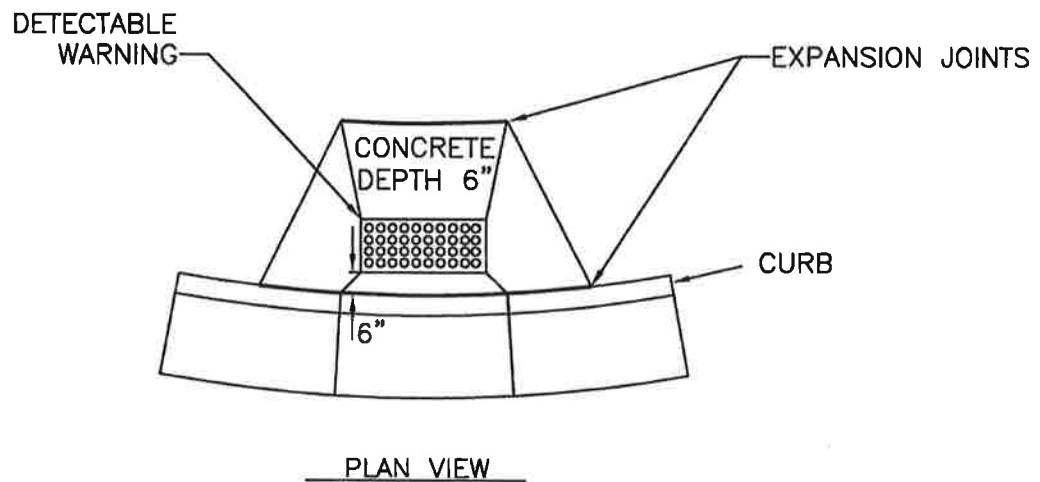
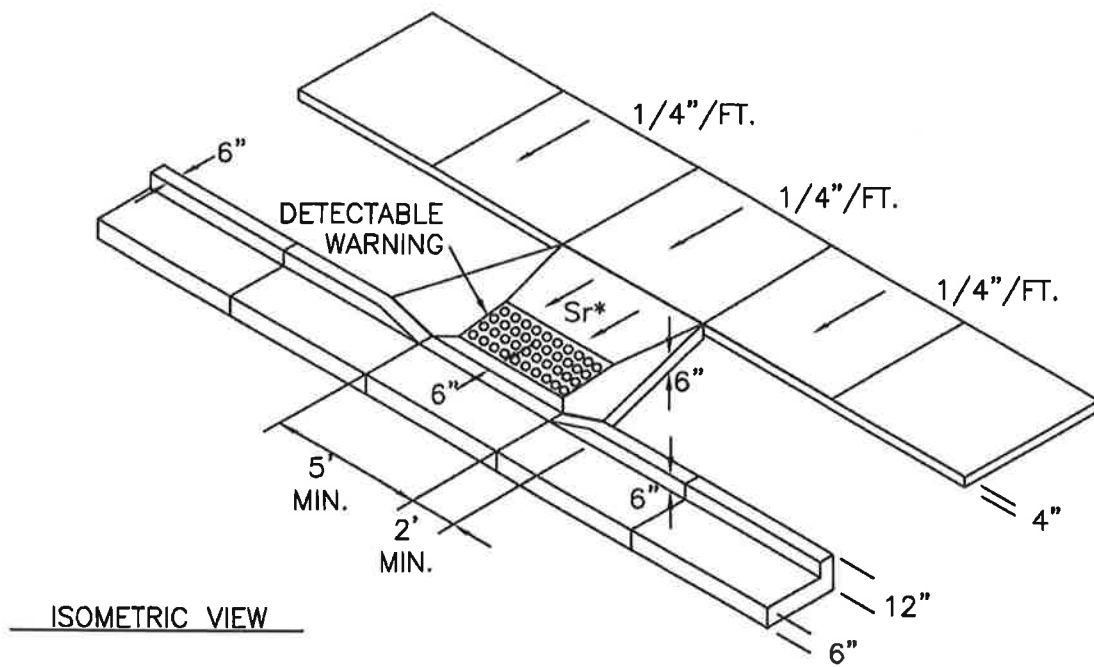
CONCRETE SHALL BE ODOT CLASS QC MISC. OR QC1, MINIMUM 4000 PSI STRENGTH.

DRAWING NOT TO SCALE

CITY OF OXFORD  
ENGINEERING DIVISION

STANDARD  
DRIVEWAY CUT

STANDARD DRAWING #86



\* NOTE: THE SLOPE OF THE RAMP IS PREFERRED TO BE 12:1 OR FLATTER RELATED TO THE HORIZONTAL.

IN EXISTING SIDEWALKS WHERE THE MAXIMUM RAMP SLOPE ( $S_r$ ) IS NOT FEASIBLE, IT MAY BE REDUCED AS FOLLOWS:

- A) 10:1 FOR A MAX. RISE OF 6"
- B) 8:1 FOR A MAX. RISE OF 3"
- C) 6:1 OVER A MAX. RUN OF 2'-0" FOR HISTORIC AREAS WHERE A FLATTER SLOPE IS NOT FEASIBLE.

CONCRETE SHALL BE ODOT CLASS QC MISC. OR QC1, MINIMUM 4000 PSI STRENGTH.

DRAWING NOT TO SCALE

CITY OF OXFORD  
ENGINEERING DIVISION

CURB RAMPS

STANDARD DRAWING #87