

# BOROUGH OF GREENCASTLE

**CONCRETE CURB, CONCRETE SIDEWALK, BRICK SIDEWALK, DRIVEWAYS,  
APPROACHES AND MISCELLANEOUS NEW CONCRETE CONSTRUCTION  
SPECIFICATIONS FOR THE BOROUGH OF GREENCASTLE**



**Adopted by Borough Council  
July 2, 2012**

**CONCRETE CURB, CONCRETE SIDEWALK, BRICK SIDEWALK, DRIVEWAYS,  
APPROACHES AND MISCELLANEOUS NEW CONCRETE CONSTRUCTION  
SPECIFICATIONS FOR THE BOROUGH OF GREENCASTLE**

These specifications are to be applied to all curbs and sidewalks within the Borough of Greencastle. Any location that is within the right-of-way of a PennDOT maintained road must follow all PennDOT specification and standard as they supersede these specifications.

**1. Installation of New Sidewalks or Curbs**

- a. All new construction within the Borough of Greencastle shall be required, subject to the exemptions in subsection d. below, to install sidewalks and curbs to Borough specifications at the cost to the developer or property owner in accordance with the sidewalk policy as Council from time to time may establish.
- b. Developed properties that are currently not required to have sidewalks or curbs will be considered exempt until such time as sidewalk and curbs are required in accordance with the sidewalk policy as Council from time to time may establish, except however, when a property has a capital improvement in excess of \$20,000 in value, the installation of sidewalks and curbs shall be required, subject to the exemptions of subsection d. below, which cost shall be attributable to the property owner.
- c. In the event of change in ownership of currently developed properties, the new property owner shall have three years from the date of the closing on the property to install sidewalks and/or curbs to Borough specifications and at the property owners cost, subject to the exemptions of subsection d. below.

If any of the following conditions are met, the requirements in subsections a., b. and c. above shall not be applicable to the property which is adjacent to or abuts a street. The presence of such conditions must be reviewed and approved by the Curb and Sidewalk Board of Appeals: (See Standard Drawing No. 2012-8 – Sidewalk Construction Exemption Criteria)

- 1) If the top of the curb elevation is greater than two (2) feet above the flow-line elevation AND if the right-of-way elevation is greater than two (2) feet above or below the top of the curb elevation. (This condition shall only pertain to exemptions for the installation of sidewalks.)
- 2) If the right-of-way line elevation is greater than two (2) feet above or below the top of the curb elevation. (This condition shall only pertain to exemptions for the installation of sidewalks.)
- 3) If the roadway drainage patterns would be substantially altered by the installation of the sidewalk and/or curb, as determined by the Borough's Engineer, which determination shall be final. (This condition shall pertain to

exemptions for the installations of sidewalks and curbs.)

Examples of conditions 1. and 2. above are graphically depicted on the attached Criteria for Exemption from Sidewalk and/or Curb Construction.

- d. All work done pursuant to these specifications shall consist of constructing plain cement concrete curb and sidewalk, or brick sidewalks, in accordance with these specifications and Borough of Greencastle Code of Ordinances, in conformity to the details shown on the standard drawings and to the lines and grades established by the Borough. Exemptions from the requirements of these specifications shall be granted only by the Sidewalk Board of Appeals consistent with the requirements of the Borough of Greencastle Code of Ordinances. NOTE: The Borough of Greencastle is not responsible for establishing line and grade in new developments.

## 2. Standard Drawings

Standard Drawing No. 2012-1 – Curb and Sidewalk Maintenance Program

Standard Drawing No. 2012-2 – Guidelines used to determine Curb and Sidewalk Violations Requiring Repair or Replacement

Standard Drawing No. 2012-3 – Plain Cement Concrete Curb

Standard Drawing No. 2012-4 – Standard Curb Specifications

Standard Drawing No. 2012-5 – Detailing Joints

Standard Drawing No. 2012-6 – Brick Pavement and Root Obstruction Detail

Standard Drawing No. 2012-7 – Standard Curb and Sidewalk Details

Standard Drawing No. 2012-8 – Sidewalk Construction Exemption Criteria

All driveways and handicap ramps are to follow PennDOT specifications for roadway construction. (Most current edition)

## 3. SPECIAL REQUIREMENTS: Curb and Sidewalk shall meet the following requirements:

- a. Borough of Greencastle Code of Ordinances.
- b. A permit for construction shall be obtained from the Borough Code Administration Department. The cost of said permit is established by Borough Council.
- c. Line and grade for the curb and sidewalk with exception of new developments will be furnished by the Borough Engineer. A minimum of two (2) weeks notice shall be given to the Borough Engineer prior to start of construction for the necessary survey and design work to be accomplished. Additional time may be required depending upon the Borough's road construction schedule.
- d. All curb and sidewalk, when formed up, shall be inspected by the Borough prior to pouring of concrete. A minimum of **twenty-four (24) hours** notice shall be given prior to start of concrete placement. The contractor shall be responsible to raise to

grade any water box located in the sidewalk area. All water boxes shall be straightened and free of any dirt, gravel, cement or other debris. Adjustments of gas boxes shall be coordinated with Columbia Gas.

- e. Tree or root obstruction. Where trees or tree roots obstruct the conventional method of sidewalk or curb installation, brick pavers may be used with a compacted sand base only when authorized by the Borough. In order to maintain a gradual grade when installing brick sidewalks where a root obstruction may require an elevation difference, the appropriate ratio required shall be 12 inches to one inch. See Standard Drawing 2012-6, Typical Design Involving Root Obstructions.
- f. The Borough shall be contacted upon completion of the work in order that final inspection for approval may be made, and if applicable, so that the Borough maintenance department can be contacted to replace the blacktop areas. If the roadway is excavated or in any other way damaged during the period of curb/sidewalk repairs the permittee shall be charged a fee of \$20.00 per square foot for restoration work
- g. Safety Precautions: During the excavation, construction, repair or relay, curing and backfilling of any curb and/or sidewalk, the contractor shall place and maintain adequate hazard warnings to vehicular and pedestrian traffic by means of barricades, flares, lights or similar means in accordance with the requirements of the Pennsylvania Department of Transportation, as set forth in Publication 213.

4. **MATERIALS**: Materials for cement concrete curb and sidewalk shall conform to the following minimum requirements.

- a. Cement concrete shall consist of Portland cement, fine aggregate, coarse aggregate, water and admixtures conforming to the materials, design and control requirements specified for Class A Cement Concrete, 3000 psi, twenty-eight (28) days compressive strength, in the Pennsylvania Department of Transportation's Form 408 Specifications, Section 704.
- b. Expansion joint filler shall be pre-molded filler of approved composition of cork and rubber conforming to AASHTO designation M153, or fiber conforming to ASTM designation D1751 and AASHTO M213, or as approved by the Borough Engineer.
- c. Mortar shall conform to ASTM C270-68 for Type M Mortars.
- d. Material other than concrete for curb and sidewalk may be used with Borough approval.
- e. Continuous, slip form, or monolithic curb machines may be used for the construction of concrete curbs when authorized by the Borough Engineer. Installation of this type of curb must be constructed in a uniform height and width, line and grade as described in this Resolution.

- f. Utilities, which often must remove existing curb and sidewalk to maintain their lines and facilities, may be permitted to replace any curb and sidewalk disturbed, removed, or destroyed, in a manner exactly as it existed before it was disturbed, removed, or destroyed. No tunneling under curb on sidewalk shall be permitted.

**5. CONSTRUCTION REQUIREMENTS:** Cement curb and sidewalk shall be constructed as follows:

- a. **Excavation:** Excavation shall be made to the required depth and the material upon which the concrete is to be placed shall be suitable and compacted to a firm even surface. The curb shall rest on unyielding subgrade; all soft subgrade shall be removed and replaced with compacted crushed stone necessary to provide a uniform bearing throughout its length. Re-bars may be required in areas where the ground stability is questionable. The subgrade for all sidewalk shall consist of four (4) inches of crushed stone. All rock shall be removed to a depth of four (4) inches under the bottom of the sidewalk and replaced with stone as previously described.
- b. **Forms:** Forms shall be straight, free from warp, and of sufficient strength when staked to resist the pressure of the concrete without springing. Wood forms shall be nominal two (2) inch surfaced planks. At least three (3) stakes shall be provided for each ten- (10) feet of form.

Curb forms shall be of a depth equal to the depth of the curb, designed to permit fastening of the face and back forms at the tops. These fastenings shall be constructed in a manner that will not obstruct satisfactory finishing and edging of the top of the curb but will permit removal of the inside or face forms. The outside or back forms shall be straight from top to bottom. The inside or the face forms shall have a batter from the top of the curb to the surfaced line of the pavement, as indicated on the standard drawings, and shall be straight from this line to the bottom. When set, the top of the form shall not depart from grade more than 1/2" when checked with a 10' straight edge. The alignment shall not vary more than 1/2" in ten feet.

All forms and templates shall be thoroughly cleaned and treated with an approved material as required to prevent the concrete from adhering thereto. Foil, bituminous paper, or other material, which will adhere to or discolor the concrete shall not be used. Forms and templates, which are worn, bent, warped, or broken, shall not be used.

Drainage openings, if placed in the sidewalk, should be installed such that invert of pipe is 3/4" or more above existing road surface, measured at the curb line. Any variations must be approved by the Borough Engineer.

- c. **Joints:** Curb shall be constructed in uniform lengths or sections of thirty (30) feet maximum, except where shorter sections are necessary for closures or curves, but no section shall be less than five (5) feet. Expansion joints shall be placed at intervals of

not more than thirty (30) feet and shall extend to the entire depth of the curb. Expansion joint filler 1/4 inch in thickness and shaped to the cross section of the curb shall be placed at the ends of the sections of curved curb and at expansion joints. Two No. 4 ribbed re-bars two (2) feet in length shall be placed horizontally at each jointure, one eight (8) inches from the top of the curb and the other a minimum of four (4) inches from the bottom (in center of curb).

Cement sidewalks shall be constructed in separate slabs thirty (30) feet in length except for closures. These slabs shall be separated by transverse expansion joint filler, 1/4 of an inch in thickness, for the full depth of the concrete. The slabs shall be divided by contraction joints spaced in uniform lengths or sections of five (5) feet transversely. Where slabs are more than five (5) feet in width, there shall be a longitudinal contraction joint in the center. Contraction joints may be either hand-formed or sawed joints, **3/16 inches wide and one (1) inch deep.** Sawing of joints shall be done as soon as practicable after the concrete has set sufficiently to preclude raveling during the sawing and before any shrinkage cracking occurs in the concrete. The saw cut may be decreased at the edge adjacent to a curb or structure to obtain a maximum depth that will avoid damage to them. Where sidewalk is poured monolithically with the curb, a longitudinal contraction joint shall be made at the back edge of the curb. All construction joints shall have tooled edges.

Expansion joint filler, 1/4 of an inch in thickness for the full depth of the concrete, shall be placed longitudinally against the curb where the sidewalk is poured separately.

Where existing light standards, poles, fire hydrants, or other similar structures are within the limits of the curb and sidewalk area, the concrete around such structures shall be scored in a block eight (8) inches wider than the maximum dimension of the structure at the surface elevation. Scoring shall be to a depth of one (1) inch. Prior to placing the concrete around such structures, pre-molded expansion joint filler, 1/4 of an inch of thickness, shall be placed around the structure for the full depth of the concrete.

- d. Placing and Finishing Concrete: Concrete for curb shall be placed in the forms in horizontal layers not to exceed six (6) inches, and spaded sufficiently to eliminate all voids.

The curb shall be depressed as indicated or directed. (The top surface of the curb shall be finished true to line and grade in a smooth, neat, and even manner by means of wood

floats, and the edges of the face and back shall be rounded to a radius of not more than 3/4 inch and 1/4 inch, respectively, while the concrete is still plastic.

Concrete for sidewalk shall be four (4) inches in depth unless otherwise specified. The concrete shall be placed immediately after mixing, shall be tamped and struck off with a template or screed, sufficiently rigid to retain its shape. These operations shall be repeated until the surface is of uniform texture, true to grade and cross section, and free from porous areas.

After the concrete has been struck off and consolidated, it shall be further smoothed, trued and consolidated by means of a wood float. Care shall be taken not to bring to the surface an excess of water and fine sand by over-finishing. An edger having a 1/4-inch radius shall be used for edging all joints.

The rate of concrete placement shall not exceed the rate at which the various placing and finishing operations can be performed in accordance with these specifications.

- e. Curing of Concrete: Immediately after finishing operations have been completed and marring of the concrete will not occur, the entire surface of the newly placed concrete shall be covered and cured by use of cotton or jute mats, burlap, or other approved material. Sufficient covering material and water to keep the covering saturated for the full curing period shall be provided. Curing materials shall remain in place and be maintained for a period of 72 hours unless materials or conditions warrant shorter or longer curing periods.
- f. Removal of Forms: Forms shall not be removed within 12 hours after the concrete has been placed. After removal of the forms, minor honeycombed areas shall be filled with mortar composed of one part of cement and two parts of fine aggregate. Major honeycombed areas will be considered as defective work and shall be removed and replaced. Any irregular surface shall be corrected by rubbing with a carborundum stone.

When forms are removed before the expiration of the curing period, the edges of the concrete should be sprayed with curing compound.

- g. Backfilling: After removal of the forms, spaces adjacent to the concrete shall be backfilled with approved material in layers of not more than four (4) inches in depth, which shall be thoroughly compacted to the required elevation and cross section. On the street side or face side of the curb, the asphalt paving shall be trimmed to provide a neat, straight edge a minimum of twelve (12) inches from the curb face and then backfilled to within three (3) inches of the pavement surface with compacted crushed stone. The Borough shall be notified so that a final inspection of the work can be made and the Borough will place the finish asphalt paving along the curb (in streets owned and maintained by the Borough).

The portion of the sidewalk opposite the curb will be backfilled such that the fill will be level with the top of the sidewalk and sloped to meet adjacent yard as approved by the Borough Engineer.

- h. Street Restoration During Winter Months: The Borough of Greencastle will not do permanent restoration of bituminous material between the curb face and the existing streets from November 1 through April 1. The permittee will be responsible for temporary restoration during that period. Cold patch or its equal must be used to provide an impervious temporary patch.

- i. Freezing Conditions: Newly poured concrete shall be prevented from freezing during the 72-hour curing period.
- j. Driveway Ramps: Driveway ramps crossing sidewalks shall be constructed in similar manner for curb and sidewalk except that the sidewalk shall be six (6) inches in thickness and the curb cut for the driveway shall be five (5) inches from the top of curb for a normal six (6) inch curb reveal, or to a depth that will result in the depressed curb being one (1) inch above the roadway surface. Curb and sidewalk shall always be continuous across driveways, and in no case shall there be a step down from sidewalk to driveway, but the driveway ramp shall be smoothly transitioned to the sidewalk elevation. The ramp may extend for the full width of the sidewalk but the back edge of the ramp shall be at the same elevation as the back edge of the sidewalk. Any alterations to the above shall be approved by the Borough.

When driveways are built where there is no sidewalk, they shall be so constructed as to provide the proper line and grade for a future sidewalk.

Driveways shall have a minimum width of ten (10) feet and a maximum width of twenty-four (24) feet in residential districts excluding any parking bay or turn-around, or otherwise provided in the prevailing zoning district.

Each driveway shall be constructed with adequate provisions for drainage.

No commercial or industrial driveway shall be constructed within three (3) feet of any building, other than one relating to vehicular storage, unless a raised protective curb is provided.

Commercial and industrial driveways shall be constructed similar to the standard residential entrance with the addition of 6" x 6" - 10 gauge welded wire mesh reinforcement installed in the driveway.

- k. Trees and Stumps: Existing trees which are dead or decayed to the extent that they are deemed a safety hazard by the Borough shall be removed prior to construction. Tree stumps shall also be removed prior to construction. Curb and sidewalk shall be constructed around all other trees to remain in place as directed and approved by the Borough. All vacant tree wells must be addressed as directed by the Shade tree Commission.
- l. Specifications for the Installation, Repair, Removal, And Replacement Of Parking Meters, Sign Posts And Curb Boxes
  - 1) Any contractor and/or owner of a property shall notify the Borough twenty-four (24) hours before wanting the removal of parking meter posts, signs or curb boxes. The Borough will removal, reset, repair, relocation or installation of new

parking meter posts, signs or curb boxes. The borough will not do any work on Columbia Gas lines, meters or detector wires.

- 2) Installation of breakaway sign supports are required in areas of newly poured cement walks where signs either existed in the past or are deemed needed at the time the sidewalk is installed. The Borough shall provide the PVC sleeves, for installation of signs, when the concrete is poured. The Borough shall provide direction for the location of the sign sleeves.
- 3) Curb boxes must provide access to shut-off valves at all times. Lids must be properly attached, removable, and installed flush with the top of the surrounding walkway.

6. **NEW DEVELOPMENTS:** In all new residential developments, sidewalks must be constructed within the Borough right-of-way a minimum of four feet and a maximum of eight feet from the curb for the purpose of retaining a grass area which shall be maintained by the property owner. Each sidewalk shall be constructed to align with the sidewalks on either side of the property where abutting properties have existing sidewalk.

Sidewalk and driveway approaches, either new or replacement, valley gutters and curb turn fillets shall be constructed at the locations shown on the plans and where directed by the Engineer, and shall be in accordance with these specifications and plans.

#### 7. **SPECIFICATIONS FOR BRICK SIDEWALKS:**

a. **MATERLALS:** Materials for brick sidewalk shall conform to the following minimum requirements:

- 1) Brick pavers shall be solid (uncorded) 4" x 8" x 2 1/4" units extruded from fire clay or shale and shall meet the requirements of ASTM Specification C-216-75a, Grade SW, Type FBS.
- 2) Brick pavers shall have a twenty-four (24) hour cold water absorption rate of 4% or less; and a five (5) hour boiling test absorption.
- 3) Brick pavers shall have a high compressive strength and shall be capable of withstanding freeze-thaw conditions. Materials to be used for brick pavers shall be approved by the borough Engineer.
- 4) Cement concrete base, mortar, and expansion joint filler shall conform to the section pertaining to materials for cement concrete and curb, Section 4.
- 5) The Applicant or Contractor shall submit the specifications and sample to the Borough for approval and selection prior to placing an order.

- 6) Sand shall be a fine aggregate composed of hard, tough, durable, uncoated particles, thoroughly cleaned by washing, free from harmful amounts of clay, silt, vegetation, or other substances determined to be deleterious.

b. **CONSTRUCTION REQUIREMENTS:** Brick sidewalks shall be constructed as follows:

- 1) Excavation: Excavation shall conform to Section 200 of PennDOT Publication 408.
- 2) Brick placement: Brick pavers shall rest on top of a three quarter-inch (3/4") mortar bed placed on four-inch (4") cement concrete base. Brick pattern shall be running bond set perpendicular to the curb face.

The finished paving shall be tightly jointed, level, true to groove and firmly supported to insure no high/low areas after wear.

- 3) Joints: Expansion joint filler, one-quarter (1/4) inch in thickness, shall be placed longitudinally against all curb, sidewalk, walls, and permanent buildings abutting the concrete cement base.
- 4) Root Obstruction: Where root obstruction makes it impractical to conform to particular sections of the brick sidewalk specifications, the following applies:
  - a) Brick pavers shall be positioned on a minimum of a four-inch (4") compacted sand bed to alleviate the irregularities and voids as shown in Standard Drawing No. 2012-6.
  - b) Slope of the brick sidewalk shall have a maximum ratio of 12: 1.
  - c) Brick pavers shall be laid on the sand bed with tight butt joints in a running band configuration, and shall be driven securely into place.
- 5) Area shall be thoroughly cleaned of sand, brick pieces, and all foreign material.
- 6) Existing brick sidewalks may be relaid for the purpose of routine maintenance in a sand bed in accordance with specifications.

c. **ADDITIONAL REQUIREMENTS:** Any other areas not mentioned shall be addressed by the curb and sidewalk specifications where applicable.

## 8. **MAINTENANCE OF EXISTING CURB/SIDEWALK, BRICK OR CONCRETE.**

The object of this section of the specification is to set minimum maintenance standards established by Borough Council through their Sidewalk/Curb Maintenance Program.

- a. All materials and construction methods shall conform to these specifications (New Installation/Replacement) where applicable.

- b. Those areas that have been inspected and noted as requiring remedial maintenance measures shall be repaired in a manner consistent with sound construction practices. The Borough or its representative shall have authority to determine the appropriateness of the various maintenance methods.
- c. A permit must be obtained from the Borough for all replacement or installation of curb or sidewalk.
- d. Construction materials must be consistent with the project being undertaken. Where patching is allowed an approved polymer-modified or epoxy type quickset mortar and grout must be used.
- e. All mortar and grout must be:
  - 1) High strength
  - 2) Fast-set
  - 3) Non-shrink
- f. All patching materials must contain bonding additives to achieve adhesion to concrete surfaces. The Borough Engineering Department shall maintain a list of acceptable products.
- g. Maximum allowable deviation for both curb and sidewalk. are depicted in Standard Drawing 2012-2.
- h. When asphalt driveways exist the following rules and regulations shall apply:
  - 1) Existing curbs across driveway openings, which are found to be substandard, are to be replaced or repaired in accordance with current specifications.
  - 2) An asphalt driveway now serving as a sidewalk which does not meet existing maintenance standards or which does not provide for a barrier-free transition between the driveway and sidewalk shall be resurfaced with asphalt or a cement concrete sidewalk shall be installed at the proper grade established by the Borough.
- i. If the roadway is excavated or in any other way damaged during the period of curb/sidewalk repairs the permittee shall be charged a fee of \$20.00 per square foot for restoration work.
  - a. When existing pavement is to be removed the contractor/owner shall saw cut the existing pavement to create a smooth edge and preserve as much of the existing pavement as possible.
- j. Sidewalks that are replaced will match the width of existing sidewalk or be four foot wide, which ever is greater.

- k. Existing curb and sidewalk shall have a straight or sawn edge before placement of new concrete.
- l. The requirements described herein may not fit all situations and cannot replace the need for the use of sound judgment in the maintenance of curb/sidewalk. Therefore, it may be necessary for the Borough Engineer to judge each case on its merits alone.

## 9. CURB RAMPS

### a. Requirements

It is the requirement of the State of Pennsylvania that adequate and reasonable access for the safe and convenient movement of the physically handicapped persons, including those in wheelchairs, be made across curbs constructed or replaced at all intersections of existing or future ordained Borough and/or State streets and alleys.

All curb and sidewalk areas in the Borough being constructed or reconstructed shall provide curb ramps for the physically handicapped.

All curb ramps shall meet the design specification of PennDOT RC-67M

### b. Recommended Design And Construction Practices

- 1) Drainage structure shall not be placed in line with ramps.
- 2) Any median strip or traffic island must contain wheelchair ramps.
- 3) It may become necessary to adjust the width of the sidewalk wider than four (4') feet at intersections to accommodate the design of wheelchair ramps.

The requirements described herein may not fit all situations and cannot replace the need for the use of sound judgment in the design of curb ramps. The designer should, therefore, keep in mind that several variables involved at an intersection may present a special problem. Any deviation from the above must be approved by the Borough Engineer.

10. **TRAFFIC CONTROL:** For the purpose of ensuring safe and efficient traffic movement through work zones, and also to provide safety for the work force, the Borough has adopted by reference the Pennsylvania Department of Transportation's Publication 213 (67PA Code, Chapter 212), Work Zone Traffic Control Guidelines.

Traffic control shall be strictly the responsibility of the contractor pursuant of these regulations.

## 11. Curb and Sidewalk Repair and Maintenance Program

A five-year inspection cycle as follows:

Year 1 - Properties on streets within one block of the square

Year 2 - \* Properties south of E. Baltimore Street and east of S. Carlisle Street

Year 3 - \* Properties south of W. Baltimore Street and west of S. Carlisle Street

Year 4 - \* Properties north of W. Baltimore Street and west of N. Carlisle Street

Year 5 - \* Properties north of E. Baltimore Street and east of N. Carlisle Street

\* Less properties on streets within one block of the square

Once the 5 year cycle is complete it starts over again at year 1.

1. Inspections will be done in the spring/early summer of the year above. Replacement or repair must be completed by August 31st of the following year.
2. During inspections, areas with no sidewalks will comply with timeline for installation of sidewalk and curb and not the replacement/repair date.
3. The Borough may require installation/repair of curbs at any time when necessary for street resurfacing.

### Appeals Board

Direct the Borough Solicitor to draft, for Council approval and advertising, a Board of Appeals ordinance which includes the following provisions:

1. A board of appeals of three members, who must be Borough residents, to serve three year terms (staggered terms at the beginning of one year, two years and three years).
2. Proposed criteria for board of appeals determinations to include geography (grade), feasibility, safety, or any other criteria which would be in the best interests of the public.
3. A provision that all appeals from the board of appeals will be made to the Franklin County Court of Common Pleas.

**BOROUGH OF GREENCASTLE  
CURB/SIDEWALK MAINTENANCE PROGRAM**

**OVERVIEW**

In an effort to promote public safety, the Borough of Greencastle conducts an annual curb/sidewalk maintenance program. This program, in accordance with Borough Ordinances, consists of the inspection, maintenance and when deemed necessary by Borough Council, installation of curb and sidewalk throughout Greencastle.

For administrative purposes, the Borough has been divided into 5 inspection zones. During each year of the five year cyclical program, one zone is inspected and property owners are directed to repair existing curb/sidewalk deficiencies by the prescribed deadline. Areas to be repaired are marked with red paint and are listed on the property inspection report, which will also specify the method of repair required and the compliance deadline.

**DEFICIENCY MARKINGS**

'X' or ' ' indicate replacement work is needed. Please be advised that when replacement had been required as the appropriate corrective action, patching will not be accepted.

(') or 'P' indicate concrete is to be repaired; patching is an option. When patching has been listed as an acceptable remedy, the property owner may either patch or replace, according to his or her discretion. Any patchwork must be done with an acceptable patching compound.

**PERMITS**

Permits are required for all replacement work and for new installation, but not for patchwork. Fees are as follows; \$25 for each lot, parcel or tract.

**NEW INSTALLATION**

Borough Council will decide whether or not curb and/or sidewalk must be installed at development lots which do not have both along street frontage.

**NON-COMPLIANCE**

Following the compliance deadline, the Borough will hire a contractor to complete all unfinished or unacceptable work and assess the property owner cost plus a 15% administrative fee. A municipal lien (with annual interest rate) will be considered among the Borough options to ensure recovery cost. In some cases, a payment plan can be arranged with Borough Council.

**APPEALS**

Anyone wishing to contest his or her maintenance or new installation directive may appeal to the Curb and Sidewalk committee within 10 days of receiving notice. The application fee for an appeal is \$150.00

Your cooperation with this public safety program will be greatly appreciated. Should there be any questions, please contact the Borough of Greencastle, 60 North Washington Street, Greencastle, PA 17225, 717-597-7143.

**BOROUGH OF GREENCASTLE  
STANDARD CONSTRUCTION  
DETAILS**

**FREDERICK  
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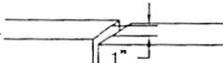
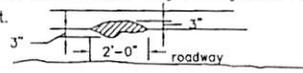
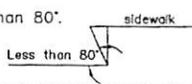


**STANDARD DRAWING NO. 2012-01  
BOROUGH OF GREENCASTLE CURB/SIDEWALK  
MAINTENANCE PROGRAM**

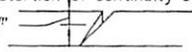
## GUIDELINES USED TO DETERMINE CURB AND SIDEWALK VIOLATIONS REQUIRING REPAIR OR REPLACEMENT

The following are maximum allowable standards for both curb and sidewalk which are used to evaluate the conditions of curb and sidewalk during the inspection process. Any deficiency exceeding these standards will result in the requirement of making repairs. All repairs must be made to the Borough Standards and Specifications.

### CURBS

- (a) Any crack or shift of 1 inch or greater from either vertical or horizontal will require replacement. 
- (b) Cracks or separations of less than 1", but where there is no shifting of the curb, can be patched with epoxy type quick set mortar.
- (c) Spalling: Spalling areas less than measurements shown may be patched with epoxy type quick set mortar. Any area greater than these measurements require replacement. Minimum length of curb to be replaced is two (2) feet. 
- (d) Leaning: Replacement of curb is required if the angle of curb at the street is less than 80°. 
- (e) All curbs shall be constructed of plain cement concrete. All other materials shall be considered substandard.
- (f) Curb Reveal: A 3" minimum reveal if the minimum required, however, each case of less than 3" will be reviewed independently to determine possible corrective measures.
- (g) The profile of the curb shall be uniform and consistent with good engineering practices. If the curb has sunk, remedial measures may be required.

### SIDEWALK

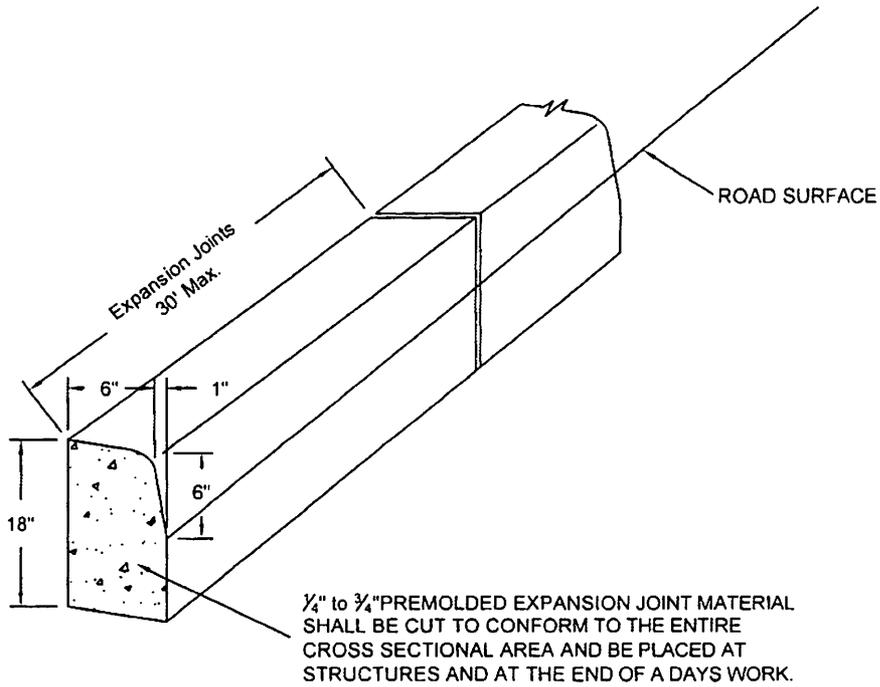
- (h) Joints: Any heave, depression, or other distortion of continuity of the sidewalk 1" or greater will require replacement to eliminate hazard. Patching is not permitted to correct this deficiency. 
- (i) Cracks: Cracks will be permitted to be patched using an epoxy type quick set mortar so long as cracked sidewalk area raises or settles no more than 1". If more than 75% of the area of the slab is cracked or if cracks have caused settlements or rises in the concrete slab exceeding 1", the entire slab shall be replaced.
- (j) Spalling: Concrete spalling of a depth of 1/2" to 1" may be repaired using an epoxy type quick set mortar. If the spoiled area greater than 1" depth exceeds 75% of the slab, the entire slab shall be replaced otherwise patching will be permitted. Spalling concrete of a depth 1/2" or less will require no repair so long as none of the specifications herein are exceeded.
- (k) Any obstruction, such as a curb box, expansion joint material, etc. that is 1" or greater in elevation difference to the sidewalk shall be corrected.
- (l) Uneven or sunken slabs: any sidewalk slab shall be corrected.
- (m) Sidewalks other than cement concrete: All non-concrete sidewalks shall be separately inspected & individual determination shall be made on a case-by-case basis as determined by the Borough Engineer.
- (n) Sidewalks sunken below curb grade that present a tripping hazard and shall require other maintenance shall be replaced.

BOROUGH OF GREENCASTLE  
STANDARD CONSTRUCTION  
DETAILS

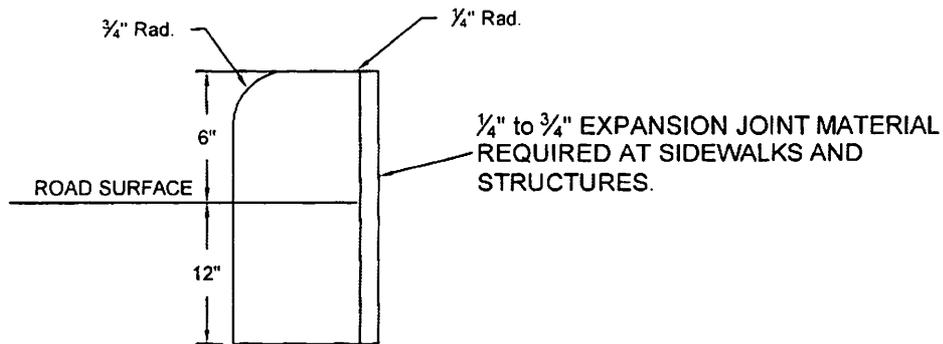
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STANDARD DRAWING NO. 2012-02  
GUIDELINES USED TO DETERMINE CURB AND  
SIDEWALK VIOLATIONS REQUIRING REPAIR  
OR REPLACEMENT



**PLAIN CEMENT CONCRETE CURB**  
(NOT TO SCALE)

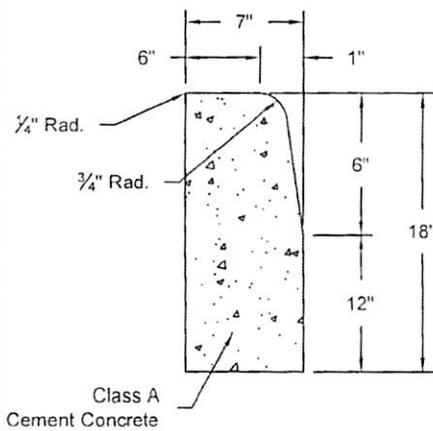


BOROUGH OF GREENCASTLE  
CURB AND SIDEWALK  
DETAILS

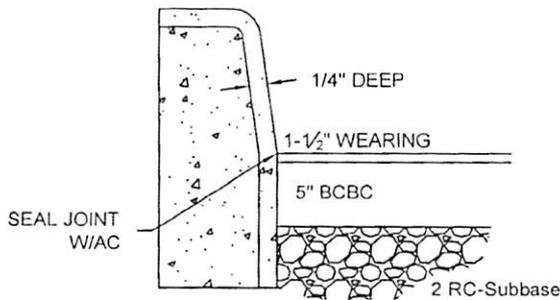
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PLAIN CEMENT CONCRETE CURB  
STANDARD DRAWING NO. 2012-03



**TYPICAL CROSS SECTION**



**DETAIL A CONTRACTION JOINT**

**RESTORATION:**

IF ROADWAY IS CUT TO SET FORMS.

1. MUST SAW CUT
2. COMPACT SUBBASE
3. PLACE MINIMUM 6" STONE
4. LEAVE TOP 4" OPEN FOR BOROUGH TO PAVE
5. CONTRACTOR TO CONTACT BOROUGH WHEN READY FOR PAVEMENT REPAIR

**ASSURE THAT YOUR CONTRACTOR READS AND UNDERSTANDS THESE REQUIREMENTS BEFORE STARTING WORK!**



**BOROUGH OF GREENCASTLE  
CURB AND SIDEWALK  
DETAILS**

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**STANDARD CURB SPECIFICATIONS  
STANDARD DRAWING NO. 2012-04**

**SECTION 630--PLAIN CEMENT CONCRETE CURB**

**630.1 DESCRIPTION**--This work is construction of plain cement concrete depressed curb for curb ramps, and reinforced cement concrete depressed curb for driveways.

**630.2 MATERIAL**--

Class A Cement Concrete--Section 704

Class A Cement Concrete (Slip-Forming)-- Section 704, except with a maximum slump of 38 mm (1 1/2 inches).

Premolded Expansion Joint Filler--Section 705.1

Covers for Curing and Protection--Section 711.1

Curing Compound--Section 711.2(a)

Mortar--Section 1001.2(d)

Caulking Compound--Section 705.8

Reinforcement Bars--Section 709.1(a)

**630.3 CONSTRUCTION**--As shown on the Standard Drawing RC 64M, as specified in Section 501.3, and as follows:

(a) **Excavation.** Excavate as required. Remove existing curb, pavement, and sidewalk to neat lines when indicated, then compact the material, upon which the curb is to be constructed, to a firm even surface.

(b) **Forms.** Use acceptable metal forms specified in Section 501.3(d), use wood forms on sharp curves and short tangent sections. Use forms that will not discolor the concrete.

(c) **Placing, Finishing, and Curing Concrete.** Conform to weather restrictions for concrete placement specified in Section 501.3(b). Place the concrete in the forms in layers not exceeding 130 mm (5 inches) in depth when spading, or layers not exceeding 380 mm (15 inches) in depth when using a vibrator to eliminate voids. Provide drainage openings through the curb, at the elevation and of the size required, where indicated or directed. Smoothly and evenly finish the top surface of the curb using a wood float. Round the edges of the face and back of the curb top while the concrete is still plastic. Place depressed curbs for drives or curb ramps, where indicated or directed. Place bars as indicated for depressed curb at drives as specified in Section 1002.3. Cure concrete as specified in Section 501.3(l)

(d) **Curb Machine.** The concrete curb may be placed with an acceptable, self-propelled machine.

Uniformly feed the concrete to the machine so that it maintains the shape of the section without slumping after extrusion.

The Representative will not allow voids or honeycomb on the surface of the finished curb.

Immediately after extrusion, perform any additional surface finishing.

(e) **Joints.** Form or saw contraction joints to dimensions shown on Standard Drawing RC 64M and as specified in Section 501.3(l)2. Place 19 mm (3/4-inch) premolded expansion joint material conforming to the cross-sectional area of the curb where indicated and at the end of the workday. Prepare and caulk joints according to caulking manufacturer's recommendations.

(f) **Removal of Forms.** Do not remove forms until such time that it will not be detrimental to the concrete. Correct irregular surfaces by rubbing with a carborundum stone. Do not brush finish or plaster. Fill minor defects with mortar.

(g) **Backfilling and Embankment.** As soon as possible after the removal of forms, backfill the voids in front and back of the curb, using acceptable embankment material, as specified in Section 206.3(b)4.

Complete embankments in back of raised curbs, as indicated, and as specified in Section 206.3, except carefully compact the embankment by means of mechanical tampers, or rollers, if allowed, not exceeding 7.3 tonnes (8 tons).

Replace existing pavement and sidewalk damaged or removed during construction.

Dispose of unsuitable and surplus material.

(h) **Curb Modification.** Modify curb construction within existing pavement limits and existing structures, where indicated or directed. Drill holes and insert dowel bars with nonshrink mortar, as required.

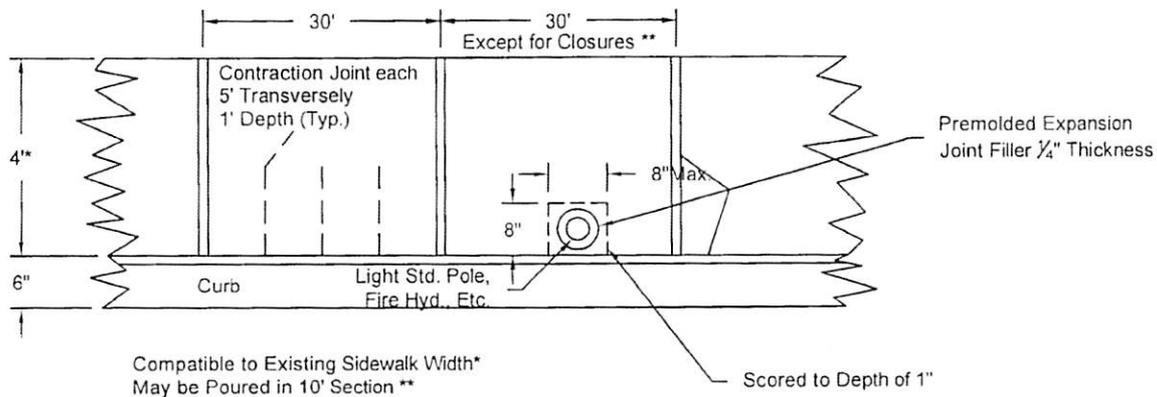
(i) **Depressed Curb.** Construct depressed curb with sloped sides as detailed on Standard Drawings RC 64M and RC 67M.

1. **Driveways.** Construct reinforced cement concrete depressed curb where indicated or directed. Place reinforcement bars to extend the entire length of the depressed curb and sloped sides.

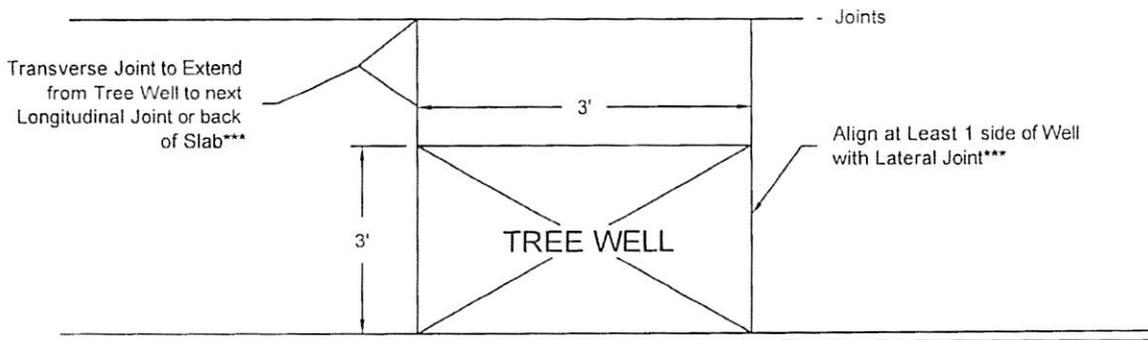
2. **Curb Ramps.** Construct plain cement concrete depressed curb with a level surface that extends across the curb width where indicated or directed. Construct the depressed curb flush with the adjacent roadway surface elevation.

Install depressed curb for all curb ramps and at median or traffic refuge island access openings where the opening meets adjacent roadway pavement.

### ELEVATED VIEW (Not to Scale)



### PLACEMENT OF TREE WELL (Not to Scale)



\*\*\* For Repairs Affecting Existing Tree Wells Not Aligned With Lateral Joints Install Transverse Joints Between Inside Corners, of well (Corners Opposite the Curb) and Longitudinal Joint or Back of Slab.

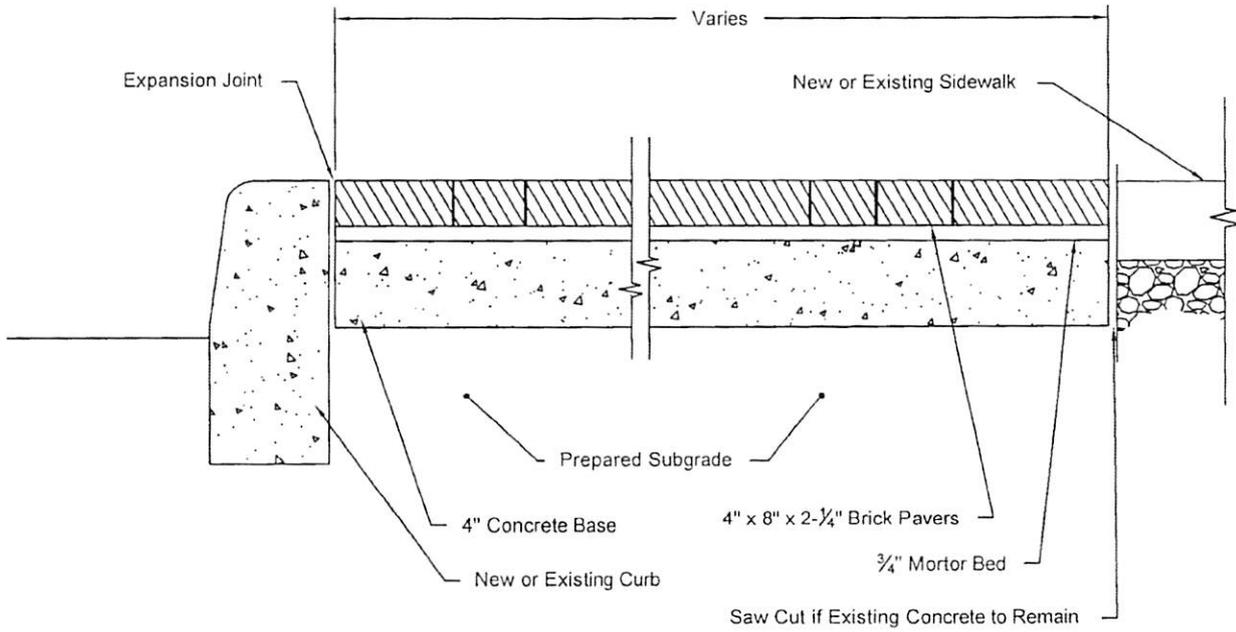


BOROUGH OF GREENCASTLE  
CURB AND SIDEWALK  
DETAILS

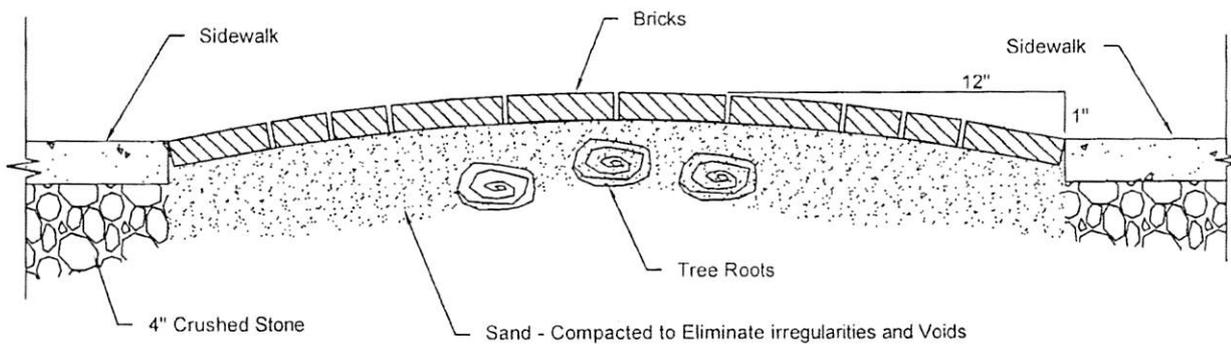
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DETAILING JOINTS  
STANDARD DRAWING NO. 2012-05



TYPICAL BRICK PAVEMENT (Not to Scale)



TYPICAL DESIGN INVOLVING ROOT OBSTRUCTION (Not to Scale)

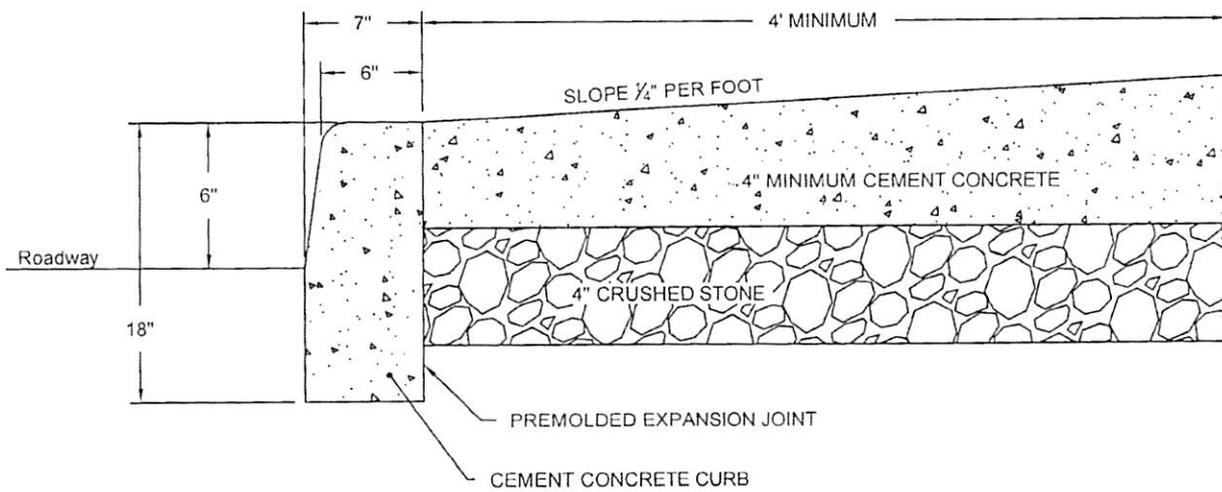


BOROUGH OF GREENCASTLE  
CURB AND SIDEWALK  
DETAILS

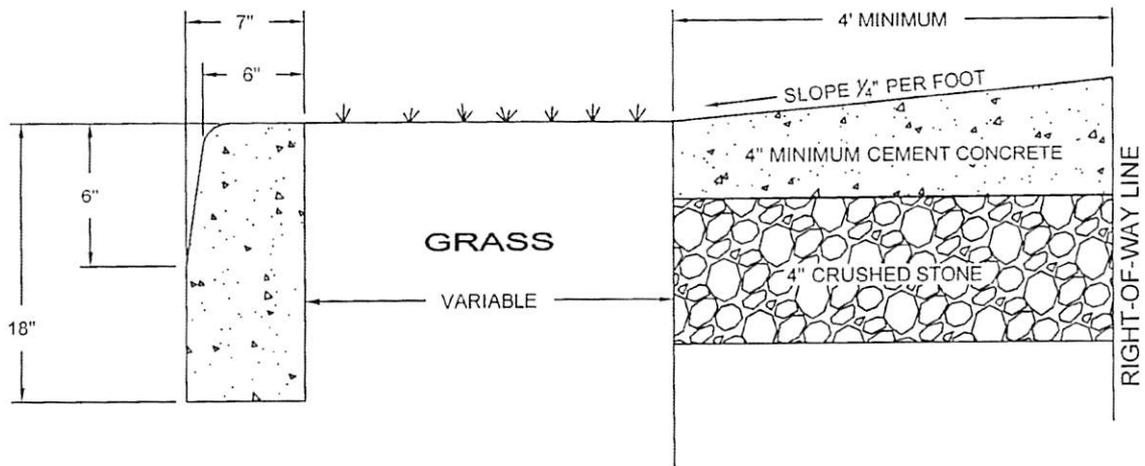
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BRICK PAVEMENT & ROOT  
OBSTRUCTION DETAIL  
STANDARD DRAWING NO. 2012-06



(NOT TO SCALE)



(NOT TO SCALE)

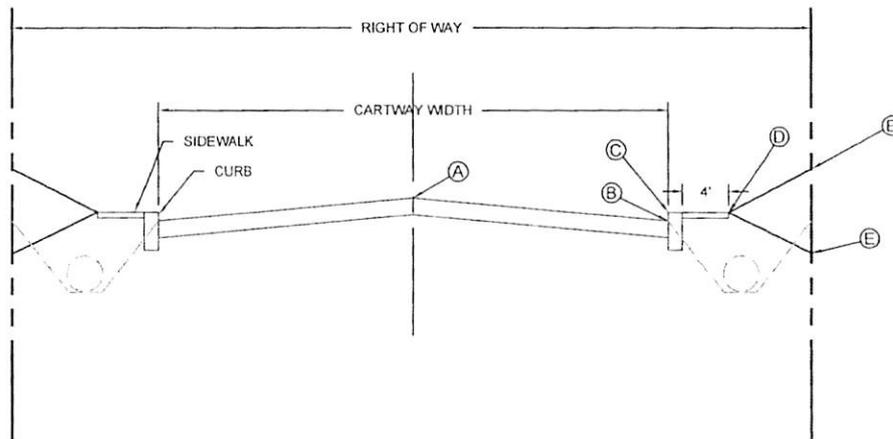


BOROUGH OF GREENCASTLE  
CURB AND SIDEWALK  
DETAILS

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STANDARD CURB AND SIDEWALK  
DETAILS  
STANDARD DRAWING NO. 2012-07



**SIDEWALK CONSTRUCTION EXEMPTION CRITERIA**

1. IF C IS  $\geq 2'$  ABOVE B -AND- IF E IS  $\geq 2'$  ABOVE OR BELOW C
2. IF E IS  $\geq 2'$  ABOVE OR BELOW C
3. IF ROADWAY DRAINAGE WILL BE ALTERED BY THE INSTALLATION OF SIDEWALK AND/OR CURB.

BOROUGH OF GREENCASTLE  
STANDARD CONSTRUCTION  
DETAILS

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STANDARD DRAWING NO. 2012-08  
SIDEWALK CONSTRUCTION  
EXEMPTION CRITERIA