

## STREETS AND SIDEWALKS

### *160 Attachment 1*

#### Borough of Perkasio

### **Specifications for Reconstruction and/or Repair of Curb and Sidewalks**

#### **I. CONDITIONS REQUIRING RECONSTRUCTION AND/OR REPAIR**

- A. Every owner of a property in the Borough of Perkasio shall, on 60 days notice from the Borough Council, reconstruct/repair any section of sidewalk and/or curb where one or more of the following conditions exist:
- (1) More than 25% of the surface of a sidewalk section or slab is deteriorated, except when such section has been replaced by the present property owner within the prior ten-year period and does not constitute a safety hazard as determined by the Borough Manager or other Borough representative.
  - (2) More than 25% of a section or slab of concrete curbing has deteriorated, except when such section has been replaced by the present property owner within the prior ten-year period and does not constitute a safety hazard as determined by the Borough Manager or other Borough representative.
  - (3) A section or slab of sidewalk, and/or brick within the Town Center Overlay District, out of vertical alignment with an adjacent section or slab in excess of 1/2 inch. **[Amended 3-19-2012 by Ord. No. 957]**
  - (4) Curbs or curbstones out of vertical alignment with adjacent curbs or curbstones or an adjacent section or slab of sidewalk in excess of 1/2 inch. **[Amended 3-19-2012 by Ord. No. 957]**
  - (5) Curbs or curbstones out of horizontal alignment with adjacent curbstone in excess of 3/4 inch.
  - (6) A section of slab or sidewalk, and/or brick within the Town Center Overlay District, having a crack width in excess of 1/2 inch at any one point along a length of one foot or greater. **[Amended 3-19-2012 by Ord. No. 957]**
  - (7) Any other instance which may create a pedestrian safety hazard, as determined by the Borough Manager or other Borough representative.
- B. Every owner of a property in the Borough of Perkasio shall, on 60 days notice from the Borough Council, reconstruct/repair any section of concrete sidewalk slabs where one or more of the above listed conditions exist. However, where a condition exists of an emergency nature, such repairs shall be made within 48 hours of such notice.
- C. The following provisions shall apply to areas of monolithic concrete sidewalk slabs:
- (1) Monolithic concrete sidewalk slabs that do not exhibit any of the above-listed deficiencies may be preserved in lieu of replacement with standard curb and sidewalk sections.

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- (2) Monolithic concrete sidewalk slabs may be utilized as the reconstructed/repared section of sidewalk whether or not the existing sidewalk is monolithic.
  - (3) Handicap ramps constructed within intersection radii curbs may be constructed as Monolithic concrete slabs.
- D. The construction of granite curb is no longer permitted within Perkasio Borough. However, existing lengths of granite curb shall be permitted to remain if it is determined that the condition of such curb does not warrant its replacement. Determination of such condition shall be made following a field inspection by the Borough Engineer or other Borough representative, and shall be in accordance with the provisions outlined in Section I.A above. If it is determined that said granite block must be replace, such replacement shall be of concrete, and shall be in accordance with the following specifications.
- E. Any property owner, upon his/her own initiative and without notice from any Borough authority, may construct, reconstruct or repair a sidewalk or curbing in front or alongside his/her property to the Borough Specifications.
- F. Slab-jacking shall be an acceptable method of repair for sections of sidewalk that have developed vertical separations as outlined in Section A above. Standards for slabjacking are contained herein. However, slab-jacking shall not be permitted for slabs of monolithic sidewalks, nor for sections of sidewalk constructed of materials other than concrete. Such sidewalk slabs shall be reconstructed to the standards as described within these Specifications.
- F. The notice referred to in the preceding sections of this document may be written or printed or partially written or partially printed.

## II. DEFINITIONS

- A. DETERIORATION - Includes cracking, scaling, spalling, vehicular or fire damage and surface disintegration. Surface disintegration is a deterioration of the cement resulting in an irregular surface with depression greater than 1/4 inch in depth.
- B. REPAIR - Patching with suitable concrete sealant material, minor cracks, holes or deteriorated sections of existing concrete, sidewalk and curb. Concrete sealant material shall be installed in strict accordance with the manufacturer's specifications. A repair option may be given at the discretion of the Borough Engineer for certain circumstances where more than 25% of the surface of curbing or sidewalk has deteriorated.

## III. PERMIT REQUIREMENTS AND FEES

- A. No curb or sidewalk construction or reconstruction shall be performed by or for any property owner unless such property owner or his agent shall have first notified the Borough and obtained a permit for such construction or reconstruction. This permit shall be required if the work has been requested by the Borough or if it has been initiated by the property owner.
- B. No fee shall be required for the permit if said permit is obtained prior to the commencement of work. **However, if work begins before a permit has been issued, a fee of \$75.00 will be charged.**
- C. The permit shall remain in effect for a period of 60 days from date of issuance.

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### IV. PENALTIES

In accordance with the Code of the Borough of Perkasio, the maximum fine or penalty for each offence under these regulations shall be an amount not to exceed \$1,000.00.

### V. BOROUGH TO ACT AT EXPENSE OF PROPERTY OWNER

Upon the failure of any owner of property in the Borough of Perkasio to construct, reconstruct or repair any curb or sidewalk after notices have been given in accordance with this policy, the Borough reserves the right to perform the necessary construction, reconstruction or repair to be completed at the expense of said owner and may collect the cost thereof and all additional charges, expenses and applicable penalties.

Where grade stakes are necessary, the owner will protect such stakes from being moved or removed. If the Borough Engineer is required to survey and establish grade stakes a second time by reason of same having been moved or not usable due to the owner's delay in proceeding with construction, the Borough may charge to the owner the cost of such second survey.

### VI. DUTIES OF THE BOROUGH ENGINEER

- A. Except as otherwise provided herein, it shall be the duty and responsibility of the Borough Engineer to determine, in the case of any individual property, whether or not the sidewalk and/or curb shall be reconstructed or repaired and, if so, the specific part or parts thereof to be reconstructed or repaired.
- B. The Engineer may, at any time during the course of work of constructing, reconstructing or repairing any curb or sidewalk, visit the site of such work to ascertain whether such work is being performed according to the requirements of this policy.
- C. The Borough Engineer shall be responsible for establishing the grading and/or line of grading for the construction, reconstruction or repair of sidewalks and/or curbs.
- D. The Borough Engineer shall determine the radius of curbing at street intersections.

### VII. CONSTRUCTION SPECIFICATIONS

#### A. DESIGN STANDARDS

- (1) All construction, reconstruction and repair of curbs and sidewalks shall be in strict conformity with these regulations. Any variation from these standards shall be made only with the expressed approval of Borough Council; provided, however, that the Borough Engineer may make minor adjustments in these regulations and specifications where special or unusual topographic or use conditions exist or under conditions specifically indicated in these regulations.
- (2) Whenever existing sidewalk, constructed of slate, brick, or material other than concrete requires construction, reconstruction, or repair, such new sidewalk shall be constructed of concrete. Within the Town Center Overlay District, brick or a stamped-brick pattern shall also be required as part of the sidewalk construction (see Section VII.J).
- (3) All materials and workmanship for sidewalks and curbs constructed within Perkasio Borough shall be in strict accordance with the following specifications, with the requirements of the Standard Details and Specifications for Construction in the

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Borough of Perkasio, copies of which are on file at the Borough offices, and with the requirements of PennDOT Publications 72 and 408, latest versions. Any variation from these standards shall be made only with the expressed approval of the Perkasio Borough Council; provided, however, that the Borough Engineer may make minor adjustments in this policy and specifications where special or unusual topographical or use conditions exist or under conditions specifically indicated in these regulations

- (4) The Borough Council shall determine, for each street or section, the standard width of the curb-sidewalk area, the curb-grass area, or the plot-sidewalk area, whichever shall apply to the specific street or section.
- (5) A radius curb shall be constructed at all street, alley and/or vehicular public way intersections.
- (6) In all cases where sidewalks are constructed, reconstructed or repaired over excavations or openings under such sidewalks, such sidewalks shall be supported by iron or steel beams or girders or stone or concrete arches of a design subject to the approval of the Borough Engineer.
- (7) During the excavation, construction, repair, curing and backfilling of any curb, sidewalk or driveway, the contractor shall provide, place and maintain adequate hazard warnings to vehicular and pedestrian traffic by means of a PennDOT Type 1 barricade with lights or similar means.
- (8) Any work performed along a PennDOT roadway must be performed to the standards of the Pennsylvania Department of Transportation. The Borough may request that the specifications contained herein be utilized if the requirements exceed those of PennDOT.
- (9) All repair, replacement, reconstruction, etc. of curbs and/or sidewalks must be performed in a like-kind manner to the original construction, with respect to the dimensions thereof. Any proposed repair, replacement, reconstruction, etc that will alter these existing dimensions must therefore meet the requirements of the Perkasio Borough Subdivision and Land Development Ordinance and the Perkasio Borough Roadway Construction Standards and Specifications, as amended.

### B. MATERIALS

- (1) All materials shall be obtained from an approved source listed in the applicable Pennsylvania Department of Transportation bulletin:
  - a. Crushed aggregate, Bulletin 14.
  - b. Construction materials, Bulletin 15.
  - c. Bituminous materials, Bulletin 41.
  - d. Ready-mix concrete, Bulletin 42.
  - e. Sources approved by the Borough.
- (2) The permittee shall provide written evidence that the material source is currently approved by the Pennsylvania Department of Transportation.

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- (3) The permittee shall provide written certification that materials comply with these and/or Pennsylvania Department of Transportation criteria of quality/gradation.

### C. REMOVAL OF EXISTING SIDEWALK AND CURB

- (1) Where existing sidewalk, and/or curb, is to be removed, the contractor shall be responsible for excavation and immediate removal of all excavated materials from the site in a manner and to a location as approved by Perkasio Borough.
- (2) Where conditions require removal of curbs and/or sidewalks adjacent to that which is to remain, the contractor shall saw cut at the nearest scoring mark or remove material to the nearest expansion joint or construction joint, as directed by the Borough Engineer or other Borough representative.

### D. PREPARATION OF SUBGRADE

- (1) For sidewalks, the foundation for the bed shall be formed at a depth of eight inches below and parallel with the finished surface of the sidewalk, unless otherwise indicated on the drawing or specification. For curbs, this depth shall be 18 inches.
- (2) All boulders, organic materials, soft clay, spongy material and other unsuitable materials shall be removed to a depth determined by the Borough Engineer.
- (3) All fill and/or backfill shall be of suitable material and shall be thoroughly tamped and compacted.
- (4) PennDOT 2B stone shall be spread on the prepared foundation of sidewalk to form a compacted bed, four inches in depth, unless otherwise specified or indicated on the drawings. This material shall be thoroughly tamped and compacted.

### E. FORMS

- (1) **Forms for the curb and sidewalk shall be metal. However, in certain limited circumstances where approved by the Borough Engineer or other Borough representative, wood forms may be used such as on sharp curves and/or short tangent sections and curb sections less than 10 feet in length.** All forms shall be straight, free from warp and of sufficient strength when staked to resist the pressure of concrete without springing. At least three stakes shall be provided for each 10 feet of straight metal form. If wooden forms are approved, stakes shall be provided at minimum two foot intervals. Metal forms shall be of approved section and shall have a flat surface on top and wood forms shall be nominal two-inch surfaced planks (e.g., 2"x8", 2"x10", etc). These forms shall be of a depth equal to the depth of the sidewalk or curb.
- (2) Curb forms shall be designed to permit secure fastening of the face and back forms at the top. 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 of the face forms shall have a batter from the top of the curb to the finished surface line of the pavement, as indicated on the drawing, and shall be straight from this line to the bottom.

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- (3) Steel templates 1/8 of an inch in thickness of the width of the curb and not less than two inches longer than the depth of the curb shall be used to separate adjacent sections. Forms shall be well secured and accurately set to given lines, the upper edges conforming to the grade of the finished work. All forms shall be thoroughly cleaned and treated with an approved material, as required, to prevent the concrete from adhering thereto. Oil, 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, broken or otherwise deformed shall not be used.
- (4) The forms shall remain in place at least 12 hours after placing the concrete.
- (5) The use of a curbing machine shall be permitted only upon receipt of written approval from the Borough Engineer.

### F. JOINTS; SECTIONS; OBSTRUCTIONS

- (1) Sidewalk shall be constructed in separate slabs of 30 feet in length except for closures. These slabs shall be separated by a transverse premolded expansion joint filler, 1/4 of an inch in thickness, for the full depth of the concrete. Transverse premolded expansion joint filler shall also be placed adjacent to existing structures. The slabs between expansion joints shall be divided into blocks five feet in length by scoring transversely. Where the slabs are more than six feet in width, they shall be scored longitudinally in the center. Transverse and longitudinal scoring shall extend for a depth of at least 1/4 the thickness of the concrete slab.
- (2) Premolded expansion joint filler, 1/4 of an inch thickness for the full depth of the concrete, shall be placed longitudinally between curb and sidewalk.
- (3) Where existing trees, light standards, utility poles, fire hydrants and similar structures are within the limits of the sidewalk area, the concrete around such structures shall be scored in a block 12 inches wider than the maximum dimensions of the structure at the sidewalk elevation. Prior to placing the concrete around such structures, premolded expansion joint filler, 1/4 of an inch in thickness, shall be placed around the structure, for the full depth of the concrete in the sidewalk.
- (4) Curbs shall be constructed in uniform lengths or sections of 10 feet, except where shorter sections are necessary for closures or curves, but no section shall be less than four feet. Premolded expansion joint filler, 1/4 of an inch in thickness and cut to conform to the cross section of the curb, shall be placed at the ends of sections of curved curbs and at intervals of not more than 30 feet on straight sections. Intermediate joints between sections shall be formed of two thicknesses of one-ply bituminous paper cut neatly to the cross section of the curb and one paper placed on each side of the one-eighth-inch steel template. If the method of handling the work is such that the templates cannot be removed satisfactorily, the curb shall be constructed in alternate sections.

### G. SURFACE DRAINAGE

- (1) All curb and sidewalk construction shall provide for surface drainage under the sidewalk. Plastic conductor pipes shall be placed at right angles to the curb at locations of existing drainage facilities and/or as directed by the Borough Engineer.

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- (2) Surface drainage shall be carried under the sidewalk and through the curb in plastic pipe meeting the standards in PennDOT Publication 408, or as approved by the Borough Engineer or other Borough representative, having an inside diameter of three inches and shall be one piece from the street side of the curb to six inches inside the building side of the sidewalk. The building end of the conductor pipe shall be provided with a hub and the building storm drains shall be properly connected to it. A piece of six by six (opening's size) and at least 10 by 10 (thickness gauge) mesh concrete reinforcing material shall be installed over the rain conductor pipe along its entire length and shall extend 30 inches on each side of the pipe. The concrete shall be scored over the center line of the pipe. The invert of the pipe at the street shall be exactly 5-1/2 inches from the top of the curb. The grade of the pipe to the street shall not be less than 1/4 inch per foot.
- (3) Drainage structures must not be placed in line with handicap ramps.

### H. CONCRETE

- (1) Air-entrained concrete having an air content 5% to 7% and a minimum twenty-eight-day compressive strength of 3,000 pounds per square inch (Class A) shall be used.
- (2) Cement content per cubic yard of concrete shall not be less than six bags, and mixing water shall not exceed six gallons per sack of cement, including that contained in the aggregates.
- (3) The slump of the mix shall not be less than one inch or more than three inches.
- (4) Test cylinders to determine the strength of the concrete shall be furnished to the Borough Engineer when requested. Cost of transporting to the testing lab and testing of these cylinders shall be paid by the contractor.

### I. PLACING OF CONCRETE

- (1) **The Borough must be notified at least 48-hours in advance of the pouring of concrete. An inspection of the forms is required prior to the pouring of concrete. The Borough Engineer or other Borough representative must also observe the pouring of concrete.**
- (2) Prior to placing the concrete, the contractor shall notify the Borough Engineer so that he may approve the subgrade and the line and grade of the forms.
- (3) Concrete shall be placed immediately after mixing.
- (4) In no case shall concrete be placed when the subgrade is thawing or during unfavorable weather conditions or when the prevailing atmospheric temperature is below 40° F. and falling.
- (5) The concrete for sidewalks shall be placed to a depth of four inches, unless otherwise indicated on the drawings or specified. The concrete for driveways shall be placed to a depth of six inches and the surface shall be tapered as shown on the drawings. The curb shall be depressed as indicated on the drawing or as directed.
- (6) The concrete for the curb shall be placed in the forms to a minimum depth of 18 inches and shall be placed in horizontal layers not to exceed five inches and shall be



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spaded sufficiently to eliminate all voids. An approved vibrator may be used when permitted by the Borough Engineer or other Borough representative.

- (7) Curb thickness shall be a minimum of eight inches at the base tapering to seven inches at the top.
- (8) Whenever it is necessary to open an improved street for the purpose of installing curb forms or curbs, the street shall be cut by an appropriate means to assure a straight and even paving edge. If such edge is cut prior to the finished curb construction and damaged in the process of construction, the damaged edge shall be recut.
- (9) In the event the Borough is required to recut any improperly cut pavement, the cost thereof shall be charged to the person or contractor.
- (10) In the process of construction or reconstruction of curb and sidewalk, the permittee shall use diligence in protecting all public structures, such as existing trees, drainage structures and utilities. Any cost to the Borough for repair to damaged structures shall be charged to the person or contractor who caused such damage.

### J. TOWN CENTER BRICKS

- (1) Any section of sidewalk within the Town Center Overlay District requiring full replacement shall be provided with a brick row formed from a stamped-brick pattern. Any section of sidewalk within the Town Center Overlay District requiring repair and/or reconstruction shall be provided with real brick as described below.
- (2) The stamped-brick pattern shall be installed as indicated within Figure 8. Real brick shall be installed as described below, and in accordance with Figure 9.
- (3) Placement of the brick shall occur after the concrete has been properly cured.
- (4) The brick notch shall be thoroughly cleaned and all debris removed prior to the placement of brick.
- (5) Mortar shall be used to secure each brick in place within the sidewalk area.
- (6) The finished elevation of the placed bricks shall be flush with the surrounding concrete sidewalk and curb. The Borough Engineer or other Borough representative shall inspect the final placement to verify this requirement.

### K. FINISHING

- (1) The top surface of the curb and sidewalk shall be finished true to line and grade in a smooth, neat and even manner by means of wood floats except where otherwise specified. The edges of the curb face shall be rounded to a radius of not more than 3/4 of an inch while the concrete is plastic. The top surface of all sidewalks shall slope toward the street with a slope of 3/8 of an inch to the foot.
- (2) On steep grades or as directed by the Borough Engineer, the surface of the sidewalk shall be roughened to provide better footing. This may be accomplished by lifting a wood float straight up from the surface or by brooming.

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- (3) Unless otherwise directed, an edger having a one-fourth-inch radius shall be used for edging all joints.
- (4) Any irregular surface shall be corrected by rubbing with carborundum stone. Brush finishing or plastering will not be permitted and all rejected curb shall be promptly removed and replaced at the expense of the contractor.
- (5) All joints in the curb shall be opened from top to bottom immediately after the forms are removed and the edges adjacent to the joints shall be sharp and clean cut. After forms are removed, minor defects shall be filled with mortar composed of one part cement and two parts fine aggregate.
- (6) Major honeycombed areas will be considered as defective work and shall be removed and replaced at the expense of the contractor. Coloring of cement surfaces shall not be permitted.

### L. CURING

- (1) White-pigmented liquid membrane-forming curing compound shall be applied to the finished surface as soon as possible without marring the surface.
- (2) Curing time shall be a minimum of 72 hours after placing the concrete. The concrete shall be protected from the elements and freezing at all times during the curing process.
- (3) Concrete injured during the curing time by freezing shall be removed and replaced by the contractor at his own expense.

### M. BACKFILLING

- (1) After the concrete has cured for a period of not less than 72 hours, the space between the curb and sidewalk shall be backfilled with material approved by the Borough Engineer or other Borough representative in layers of not less than four inches in depth, which shall be thoroughly compacted mechanically to the required cross section and elevations.
- (2) The excavated area between the curb and the existing street shall be backfilled with PennDOT 2A Modified stone aggregate and compacted to a level 2-1/2 inches below the finished street surface, unless otherwise specified by the Borough Engineer or other Borough representative.
- (3) The contractor shall provide a neat saw cut around the area to be patched and leave the area prepared for final paving.
- (4) In the event the Borough is required to correct any deficiencies in backfill or pavement preparation, the cost thereof shall be charged to the person or contractor.

- N. SLAB-JACKING - Slab-jacking shall be an acceptable method of repair for sections of sidewalk that have developed vertical separations as outlined in Section A above. However, slab-jacking shall not be permitted for slabs of monolithic sidewalks, nor for sections of sidewalk constructed of materials other than concrete. Such sidewalk slabs shall be reconstructed to the standards as described within these Specifications.

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- (1) Drill Holes
    - a. Holes shall be of a diameter no larger than 1-5/8 inches.
    - b. Holes shall be spaced approximately five (5') feet apart, such that no more than 25 square feet of concrete shall be raised by pumping at any one hole.
    - c. All holes necessary for the specific area of repair shall be drilled prior to the beginning of any pumping.
  - (2) Grout/Slurry
    - a. The type of grout/slurry mixture to be utilized in the slab-jacking process must be approved by the Borough Engineer.
    - b. Grout/slurry material shall consist primarily of non-organic material mixture with a minimum 80 psi and no expansive or shrinkage qualities.
  - (3) Installation
    - a. The grout/slurry mixture shall be pumped under concrete using a method to reduce pulsating, pressure and stress on concrete.
    - b. Existing joints may be saw-cut, if needed, to allow the concrete slab to move.
    - c. Contractor shall remove and legally dispose of all residue from raising.
  - (4) Finishing
    - a. Final slab elevation must be within 1/8 inch of all surrounding slabs and curbs.
    - b. Drill holes shall be filled with PennDOT Class A concrete. Patch must be troweled to match surrounding elevations
  - (5) Performance
    - a. Slab-jacking is designed to be a long term or permanent fix to a settlement problem. Any area of slab-jacking that fails within one year after installation, such that it achieves the conditions requiring repair and/or reconstruction as outlined within this document, shall require full replacement as detailed.
- O. DRIVEWAY APRONS - Driveway aprons, constructed of reinforced concrete, shall be required at all locations where vehicular access is provided from a Borough or State roadway to a tract of land. The driveway apron slope shall not exceed 4% within the road right-of-way. Driveway aprons shall be constructed according to Figure 12.
- P. HANDICAP RAMPS - All curb and sidewalk areas shall be constructed or reconstructed to provide curb cut ramps for the physically handicapped, except where a curb cut ramp cannot be physically constructed to safe standards because of, but not limited to, very narrow and/or very steep sidewalks and unavoidable trees or other obstructions.
- (1) Design standards

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- a. Handicap ramps should be poured monolithic as it makes a stronger ramp.
  - b. The curb cut ramps should be as close to the intersection as possible to keep the widths of crosswalks to a minimum. The ramps at intersections with wide sidewalk areas should be constructed with gentle slopes and adequate turning space as illustrated in Figure 2.
  - c. The ramps at intersections with less than eleven-foot-wide sidewalks shall be constructed as illustrated in Figure 4 by depressing the curbs and sidewalks to the height necessary to achieve the necessary ramp slopes and provide safe pedestrian and wheelchair movement.
  - d. At existing or proposed midblock crosswalks where curbs are constructed or reconstructed, curb cut ramps should be provided in the immediate vicinity of hospitals, medical centers and stadiums.
  - e. Existing driveway ramps near street intersections should be constructed for use as wheelchair ramps where curbs are being constructed or reconstructed (see Figure 9).
  - f. All constructed, reconstructed or repaired handicap ramps must be constructed to meet the current standards of the Americans with Disabilities Act (ADA), including detectable warnings.
  - g. Local conditions must be carefully evaluated along any proposed improvement project to determine the type and extent of adjacent development that would entail significant land use by physically handicapped persons.
- (2) Design and construction practices
- a. Preferably, there should be two ramps at each corner (see Figure 1). However, one ramp at the middle of the curb return (see Figure 7) is acceptable, provided that the crosswalks are made wide enough so that a wheelchair may enter either crosswalk from the ramp. Ramps may also be provided at midblock crosswalks where the need exists. It is important to a blind person using the sidewalk that the location of the ramps be as uniform as possible within a general area (see Figure 3 for a typical layout at an intersection).
  - b. Provide a minimum three-foot landing area at top of the curb cut ramp to allow adequate turning space for wheelchairs. To achieve this on any sidewalk:
    - i. It will be necessary to depress the curb and sidewalk at each outer area (see Z in Figure 4) of all intersection corners to an appropriate height, not less than three inches, depending upon the sidewalk width. The slope of this Area Z should be 24 to one. For eleven-foot-or-wider sidewalks, this transition is not required.
    - ii. It will be necessary to depress the curb and sidewalk (see Area W in Figure 4) at the end of the central length arch of the curb radius to three inches at a twelve-to-one slope for narrow sidewalks (generally less

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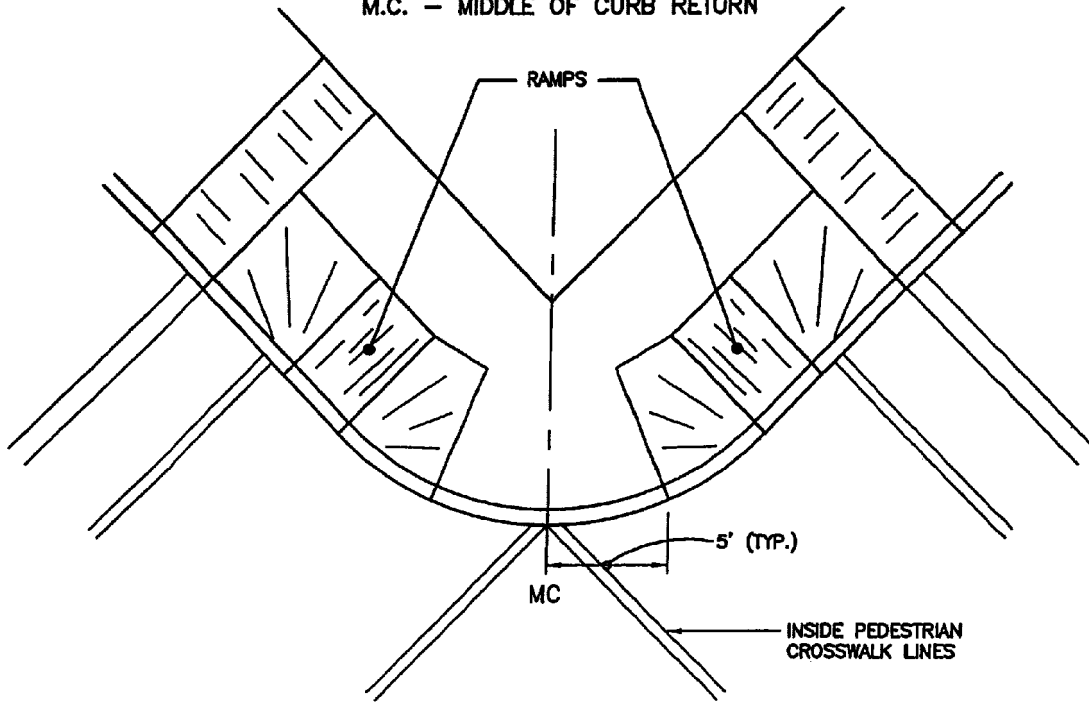
than seven feet). From this point onwards, the sidewalk and curb should be warped at a twelve-to-one slope. For wider sidewalks, as a rule, the curb and sidewalk should be warped directly at a twelve-to-one slope without providing the Area W, as shown on Figure 4. An eight-to-one slope may be used for seven-foot-wide sidewalks, omitting the Area W shown on Figure 4.

- iii. If an additional right-of-way is available, an alternate solution would be the addition of a three-foot landing area behind the sidewalk while maintaining a twelve-to-one ramp slope.
- c. The slope of the wheelchair ramp should meet the requirements of the ADA. Typically this requires a maximum slope of 12 to one.
- d. The length of the side ramp should be measured along the curb so that the slope is not steeper than 12 to one.
- e. All curb cut ramps should have a minimum four-foot width at the curb. However, the top width of the ramp may be narrowed to three feet where necessary.
- f. When the edge of the ramp is at a distance less than four feet from an existing object, such as a traffic signal or utility pole or tree, reduce the height of the curb by a variable slope to such height so that the curb cut ramps shall be placed with the minimum three-foot landing area at acceptable slopes.

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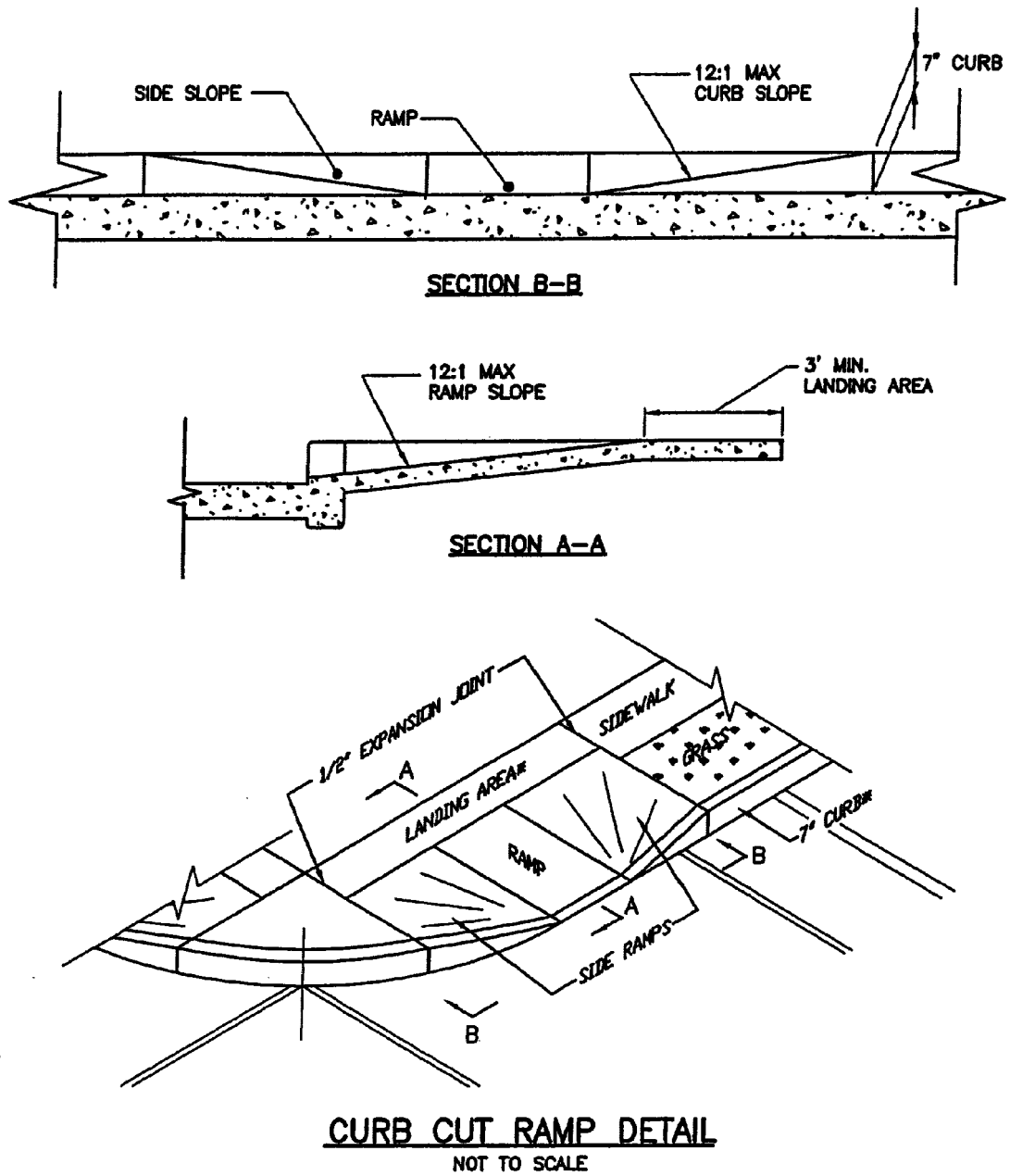
Figure 1

BOROUGH OF PERKASIE  
M.C. - MIDDLE OF CURB RETURN



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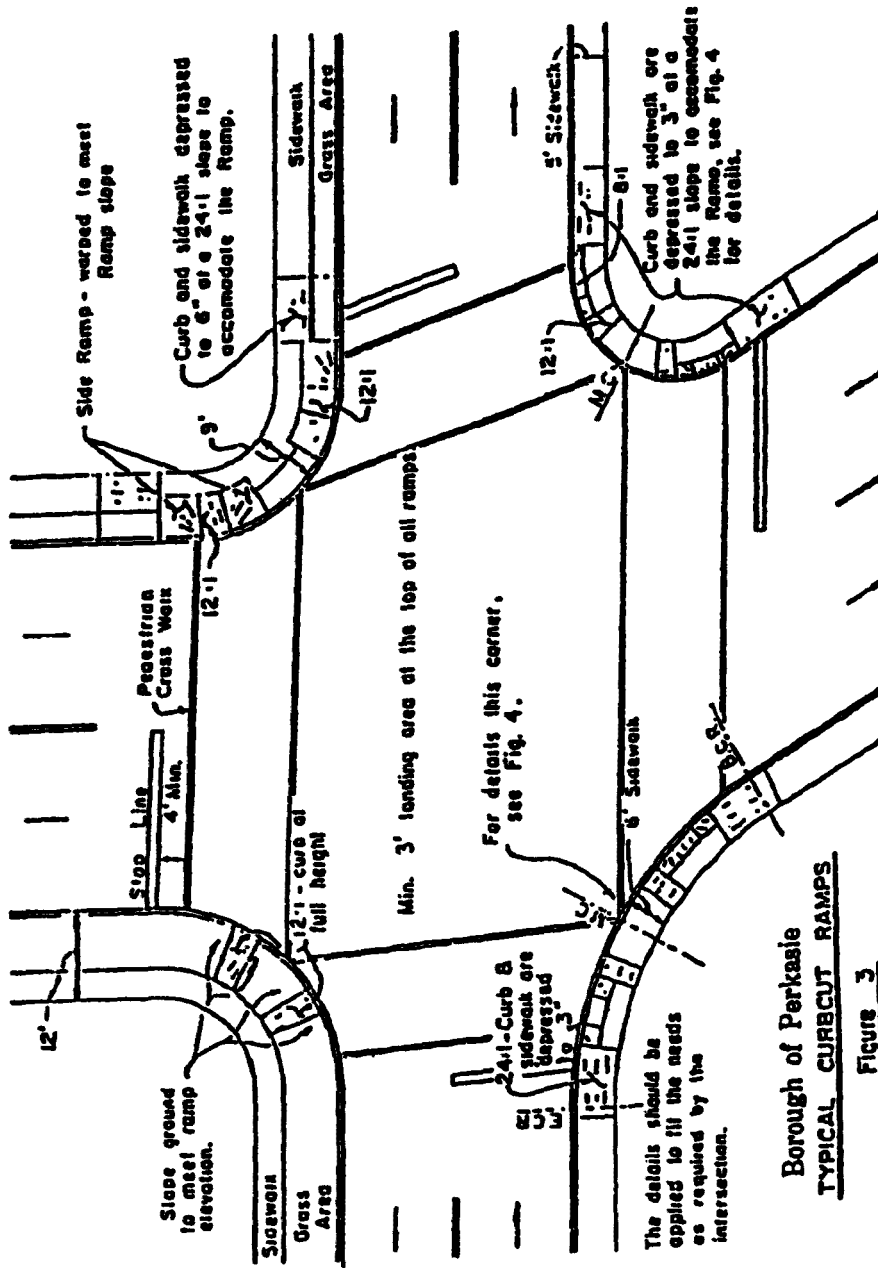
Figure 2



\* THE METHOD SHOWN IS APPLICABLE FOR 11' AND WIDER WITH FULL CURB HEIGHT. FOR SIDEWALKS NARROWER THAN 11', REDUCE THE CURB HEIGHT AT 24:1 SLOPE BEFORE THE SIDE RAMP TO ACCOMMODATE THE LANDING AREA OF 3 FEET. REFER TO LENGTH "Z" IN FIGURE 4.

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Figure 3

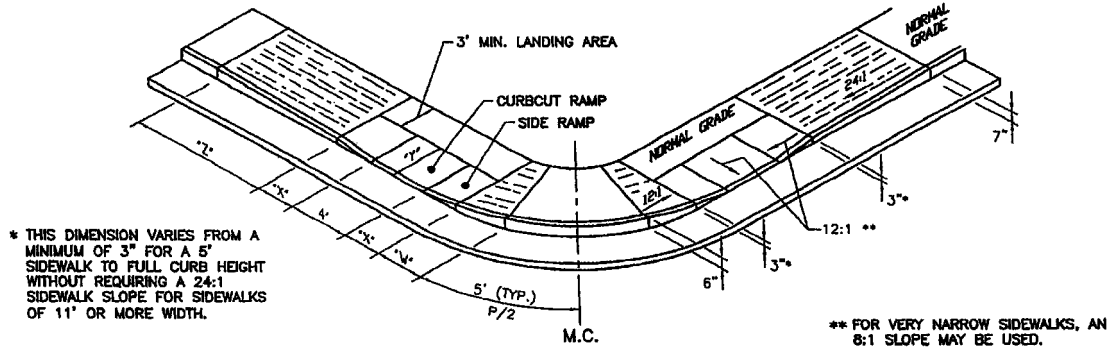




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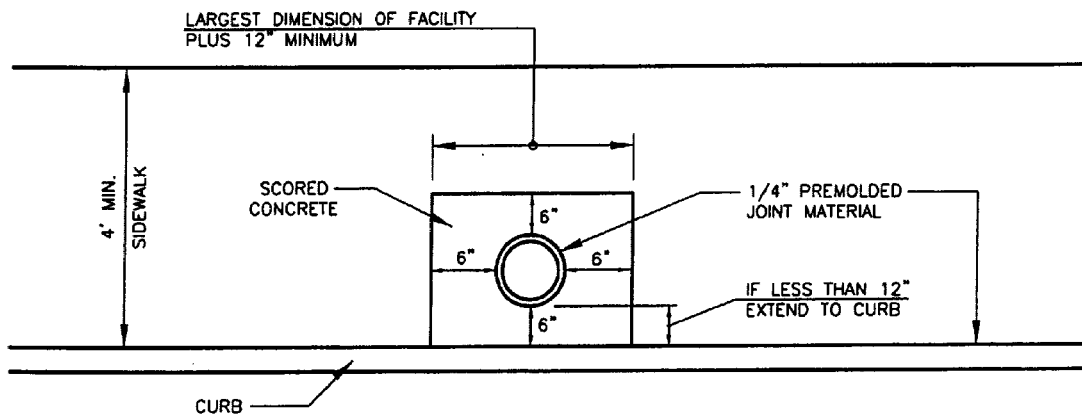
## Figure 4

- W** - LENGTH NEEDED TO MAINTAIN A MAX. 12:1 SLOPE ALONG THE FACE OF THE CURB.
- X** - LENGTH NEEDED TO MAINTAIN A MAX. 12:1 SLOPE ALONG THE FACE OF THE CURB.
- Y** - LENGTH NEEDED TO MAINTAIN A MAX. 12:1 SLOPE FROM THE CURB LINE TO THE TOP OF THE RAMP.
- Z** - LENGTH NEEDED TO MAINTAIN A MAX. 24:1 SLOPE ON THE CURB AND SIDEWALK AREAS.



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Figure 5



**NOTES:**

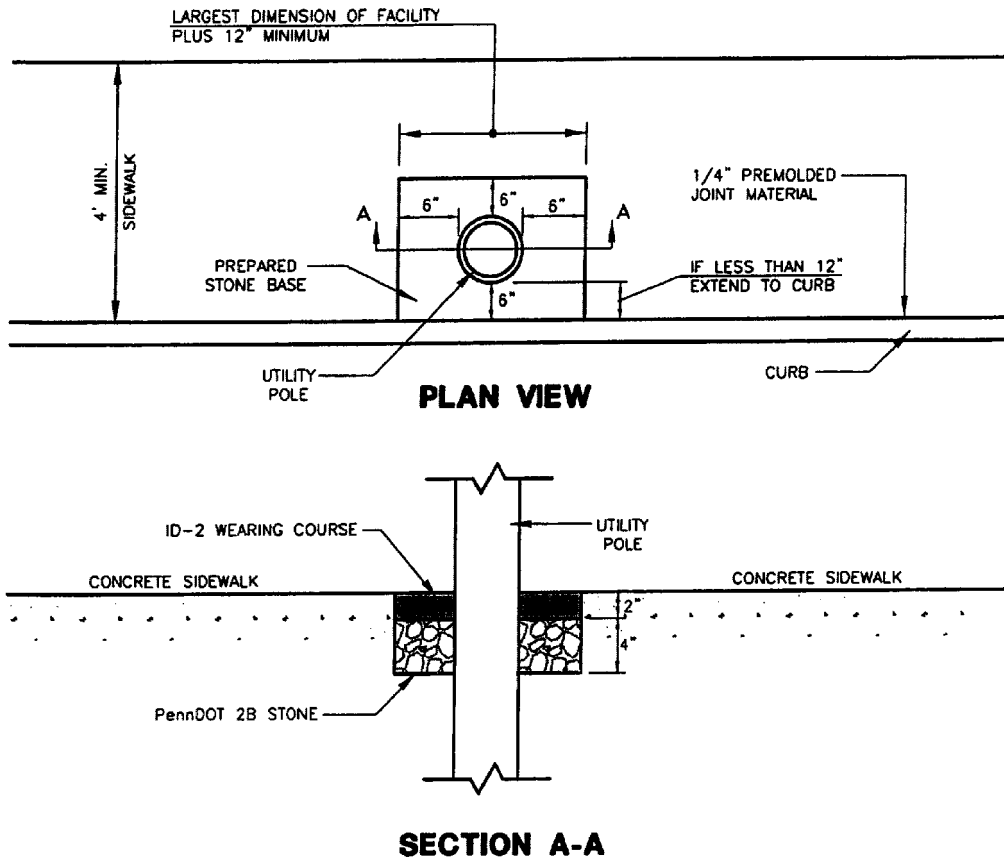
1. THIS DETAIL IS APPLICABLE TO WATER VALVE BOXES, CURB STOP BOXES, FIRE HYDRANTS, STREET SIGNS, TRAFFIC CONTROL AND INFORMATION SIGNS, MAIL BOX POSTS AND ALL OTHER FACILITIES, WHETHER PERMANENT OR TEMPORARY, LOCATED IN THE SIDEWALK AREA.
2. ALL MATERIAL SHALL CONFORM TO THE REQUIREMENT OF PennDOT PUBLICATION 408, LATEST EDITION.

**SIDEWALK CONSTRUCTION AROUND UTILITIES**

NO SCALE

STREETS AND SIDEWALKS

Figure 6



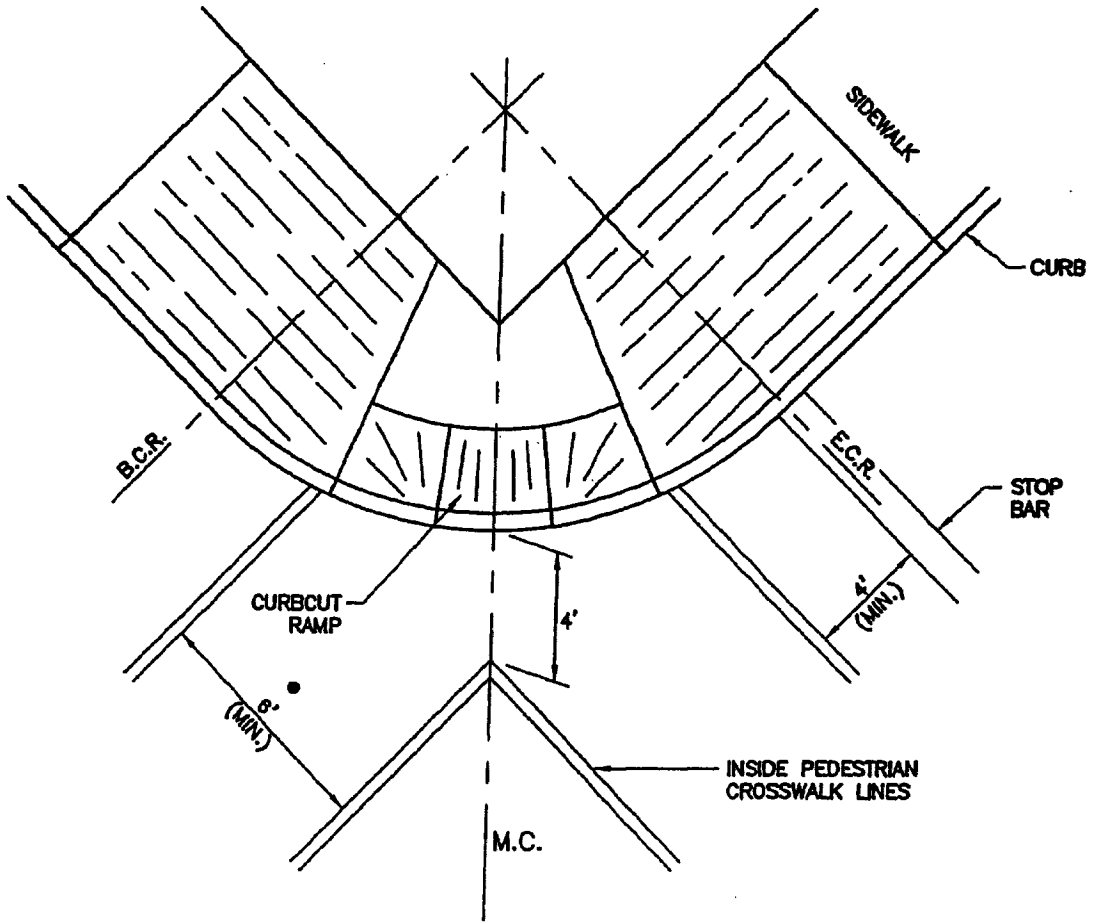
**NOTES:**

1. CONTRACTOR SHALL SUPPLY A MINIMUM OF 4" PennDOT 2B STONE TO A DEPTH OF 2" BELOW THE FINISHED GRADE AROUND THE SIDEWALK.
2. ALL MATERIAL SHALL CONFORM TO THE REQUIREMENT OF PennDOT PUBLICATION 408, LATEST EDITION.

**SIDEWALK CONSTRUCTION AROUND UTILITY POLES**

NO SCALE

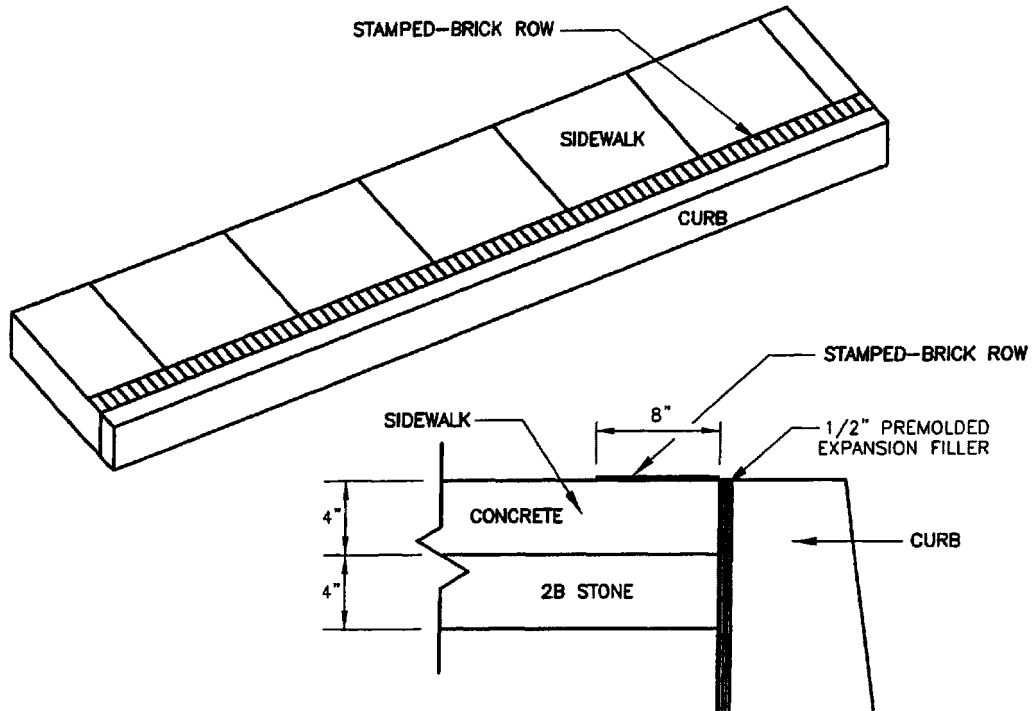
Figure 7



**SINGLE HANDICAP RAMP AT INTERSECTIONS**  
NOT TO SCALE

STREETS AND SIDEWALKS

Figure 8



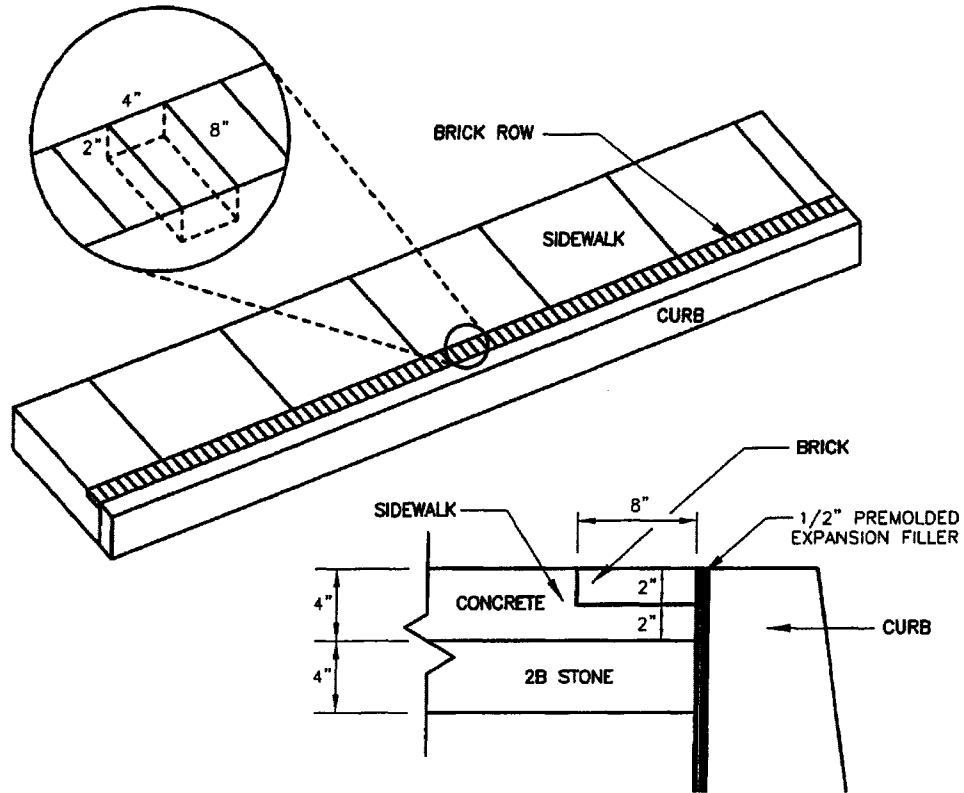
**NOTES:**

1. PLACEMENT OF THE STAMPED-BRICK PATTERN SHALL BE PERFORMED WITH THE BRICK PATTERN ORIENTED AS SHOWN ABOVE.
2. STAMPED-BRICK PATTERN SHALL CLOSELY MATCH ACTUAL INSTALLED BRICK WITH RESPECT TO SIZE. (8" depth X 4" width).
3. PLACEMENT OF BRICK PATTERN IS REQUIRED ALONG ALL CURBS WITHIN THE TOWN CENTER OVERLAY DISTRICT.
4. STAMPED BRICK PATTERNS SHALL BE PROVIDED WITH A BRICK-RED DYE.

**TOWN CENTER BRICK-STAMPED SIDEWALKS**

NO SCALE

Figure 9



**NOTES:**

1. THE NOTCH FOR THE BRICK PLACEMENT SHALL BE CONSTRUCTED AS A MONOLITHIC PART OF THE CONCRETE SIDEWALK.
2. THE BRICK NOTCH SHALL BE CLEAN AND FREE OF DEBRIS PRIOR TO THE PLACEMENT OF ANY BRICK.
3. EACH BRICK SHALL BE SET AND HELD IN PLACE WITH MORTAR, BETWEEN THE BRICK, THE CONCRETE SIDEWALK, THE CURB, AND EACH ADJACENT BRICK.

**TOWN CENTER BRICK ROW RECONSTRUCTION**

NO SCALE

# STREETS AND SIDEWALKS

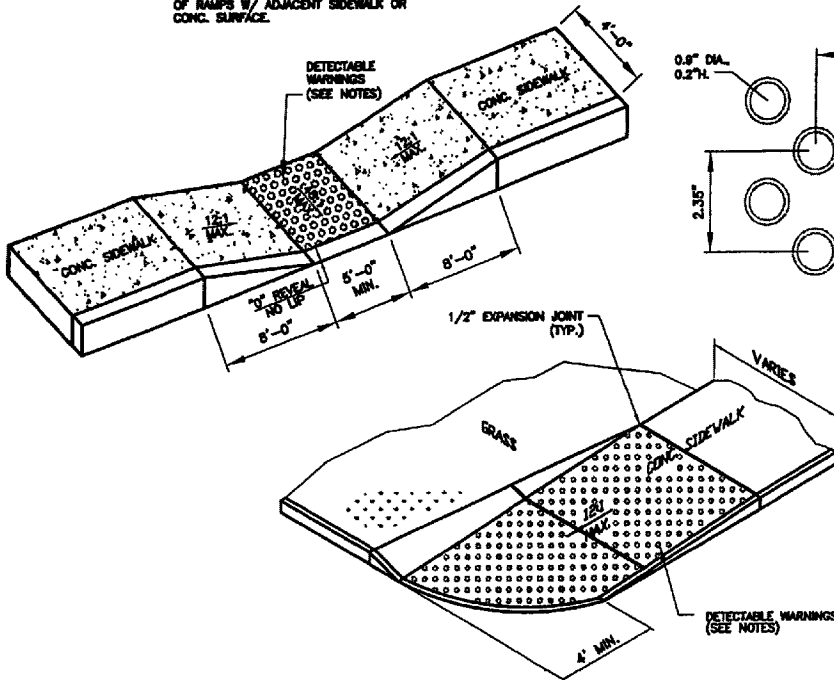
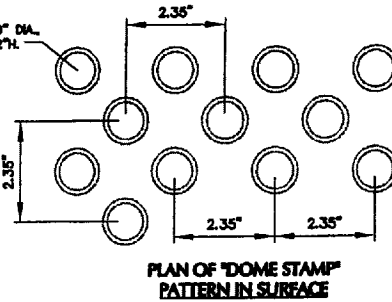
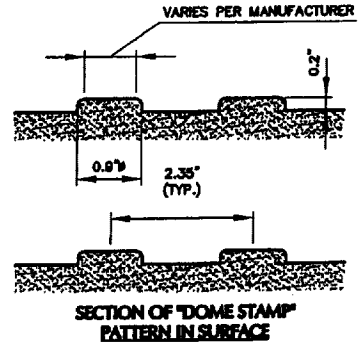
Figure 10

**GENERAL NOTES:**

1. CONCRETE SHALL BE 3500PSI, AIR ENTRAINED WITH A 4" SLUMP (MAX.)
2. TRANSVERSE CONTROL JOINTS 1/8" WIDE AND 1" DEEP AT THE DIRECTION OF BOROUGH ENGINEER OR HIS/HER REPRESENTATIVE IN FIELD.
3. CONCRETE TO BE PLACED ON A 4" (MIN.) LAYER OF ASHTO #57 STONE OR 2A CLEAN STONE.
4. ALL EDGES TO BE ROUNDED WITH A 1/4" TOOL.
5. WEATHER PROTECTION AND CURING COMPOUNDS SHALL BE USED IN ACCORDANCE WITH PENNDOT SPECIFICATION PUB. 408 CURRENT EDITION.
6. CURING COMPOUND SHALL BE ASHTO M148 TYPE 1-D, TO BE IN ACCORDANCE WITH PENNDOT PUB. 408, SECTION 711.2 CURRENT EDITION.
7. INSTALL SHEAR DONNELS 2'-0" O.C. AND KEYS IN TO PREVENT HEAVING OF RAMPS W/ ADJACENT SIDEWALK OR CONC. SURFACE.

**DETECTABLE WARNINGS NOTES:**

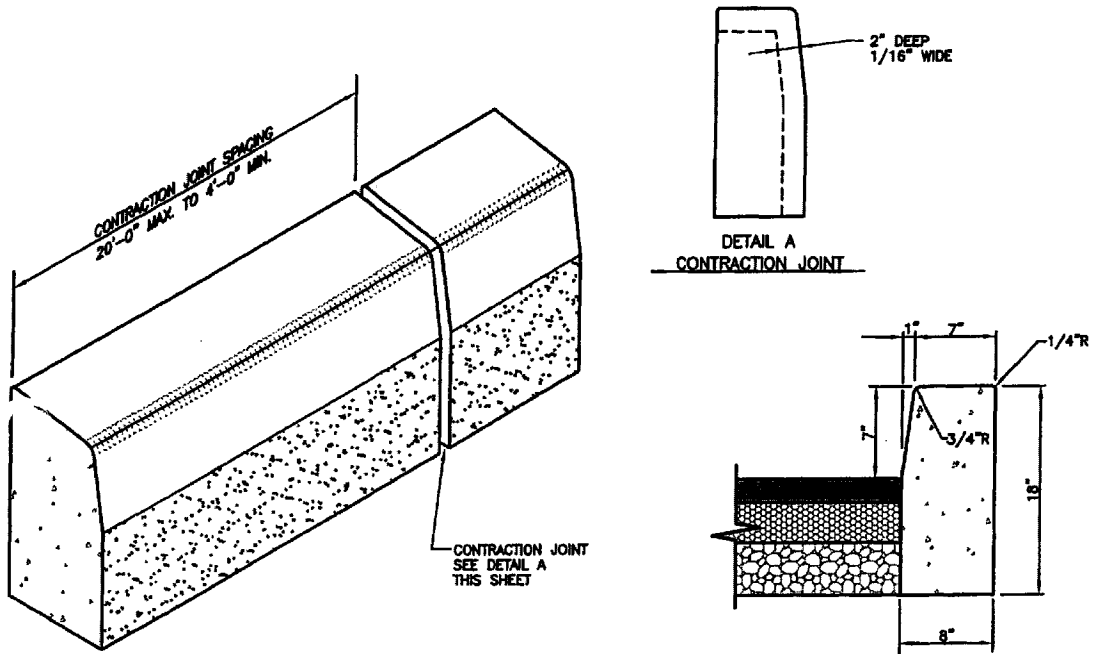
1. DETECTABLE WARNINGS SHALL CONSIST OF TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 IN., A HEIGHT OF NOMINAL 0.2 IN., AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 IN.
2. DETECTABLE WARNINGS SHALL EXTEND THE FULL WIDTH AND DEPTH OF THE CURB RAMP.
3. DETECTABLE WARNINGS SHALL VISUALLY CONTRAST WITH ADJOINING SURFACES. DETECTABLE WARNINGS SHALL BE CONSTRUCTED WITH RED PIGMENT IN THE CONCRETE.
4. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
5. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND CONTACT.



**HANDICAP RAMP DETAIL**  
NOT TO SCALE

PERKASIE CODE

Figure 11



**CONCRETE CURBING NOTES :**

1. CONCRETE SHALL BE PennDOT CLASS 'A'.
2. THREE-QUARTER INCH (3/4") EXPANSION MATERIAL JOINTS SHALL BE PLACED AT MINIMUM INTERVALS OF 30 FEET.
3. MAXIMUM CONTRACTION JOINT SPACING SHALL BE (20) FEET. MINIMUM CONTRACTION JOINT SPACING SHALL BE FOUR (4) FEET.
4. FLEXIBLE FORMS SHALL BE REQUIRED FOR ALL CURB RADII WITH A RADIUS OF LESS THAN 150 FEET.
5. ALL PROPOSED SHALL BE SPRAYED WITH CONCRETE CURBING COMPOUND.

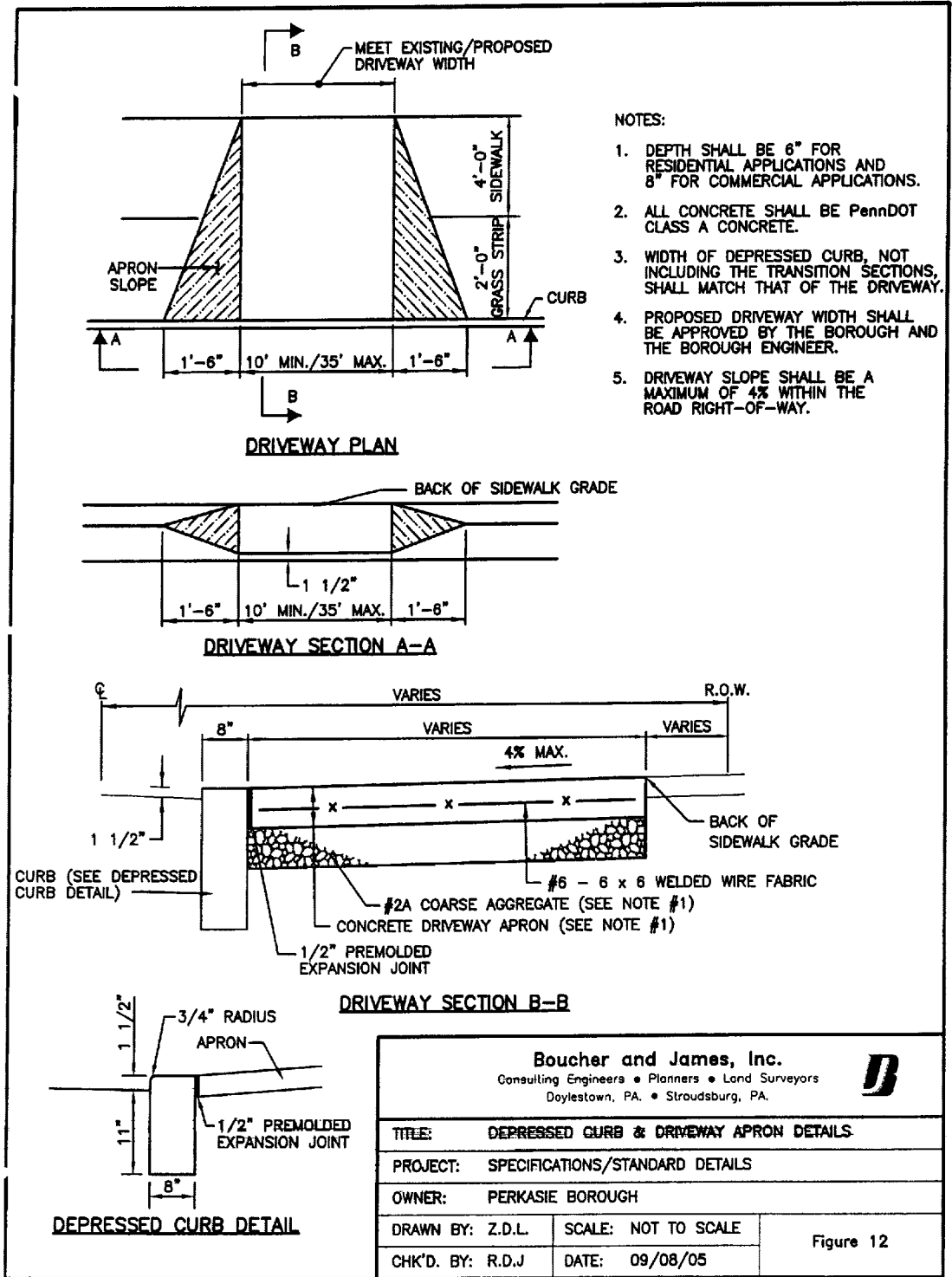
**PLAIN CEMENT CONCRETE CURB**

NO SCALE



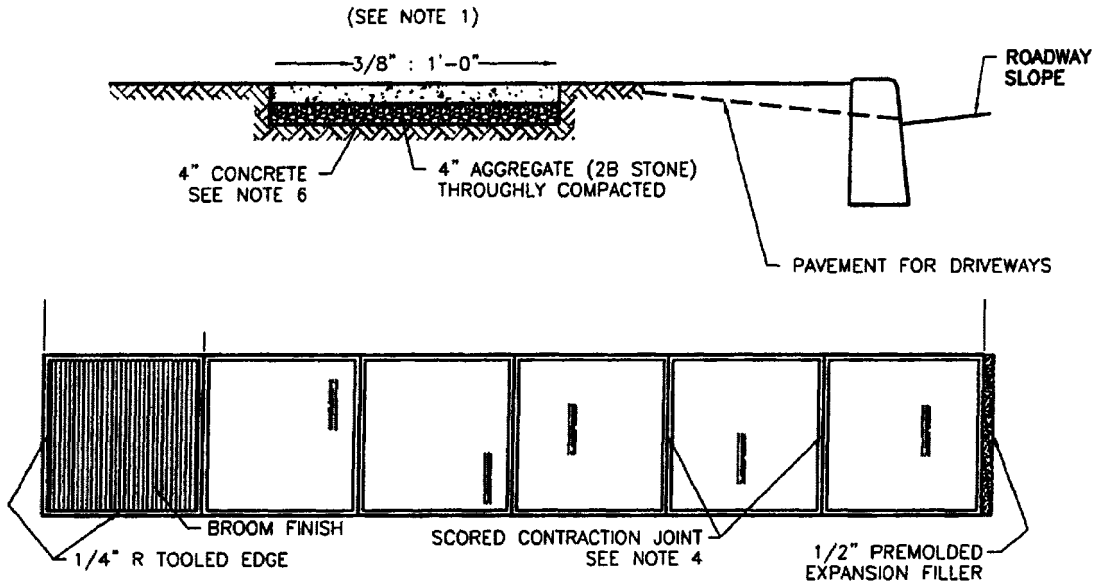
STREETS AND SIDEWALKS

Figure 12



PERKASIE CODE

Figure 13



**NOTES:**

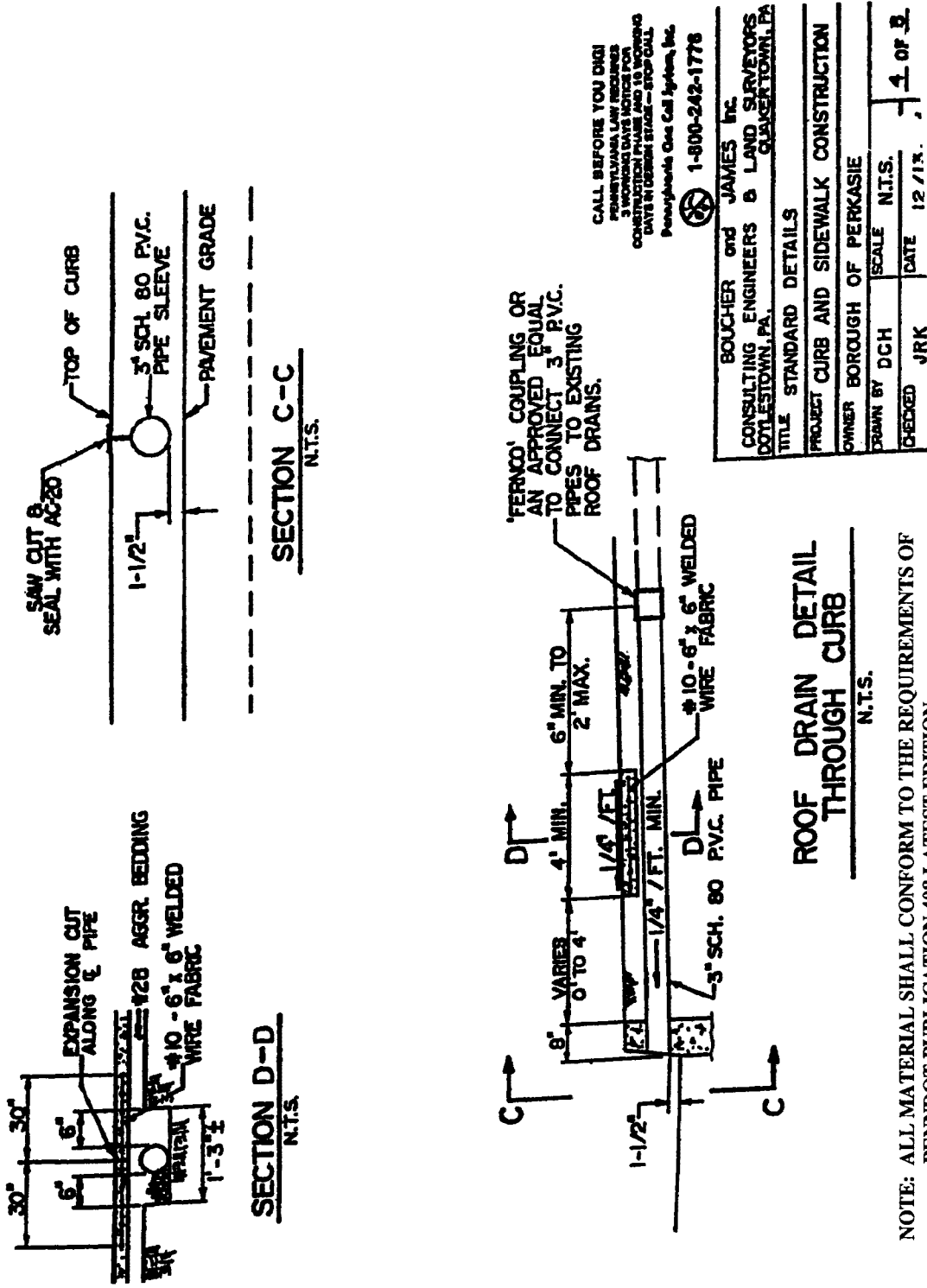
1. LOCATION OF SIDEWALK MAY VARY WITH STREET WIDTH BUT MUST CONFORM TO SURROUNDING SECTIONS AND MUST BE APPROVED BY BOROUGH ENGINEER.
2. PROVIDE MATERIAL AND CONSTRUCTION METHODS MEETING THE REQUIREMENTS OF PENNDOT SPECIFICATIONS, PUBLICATION 408.
3. PLACE 1/4" PREMOLDED EXPANSION MATERIAL FOR THE FULL DEPTH OF THE SIDEWALK AT 30' INTERVALS, OPPOSITE EXPANSION JOINTS IN ADJACENT CURB, BETWEEN THE SIDEWALK AND THE CURB AND BETWEEN THE SIDEWALK AND RIGID STRUCTURES.
4. FORM TRANSVERSE DUMMY JOINTS AT 5 FOOT INTERVALS, APPROXIMATELY 1/8" WIDE AND AT LEAST 1" DEEP.
5. PROVIDE A LIGHT BROOM FINISH.
6. WHERE SIDEWALK IS ADJACENT TO A DRIVEWAY APRON, THE CONCRETE SHALL BE REINFORCED AND THE DEPTH SHALL MATCH THE APRON DEPTH.

**CONCRETE SIDEWALK**

NO SCALE

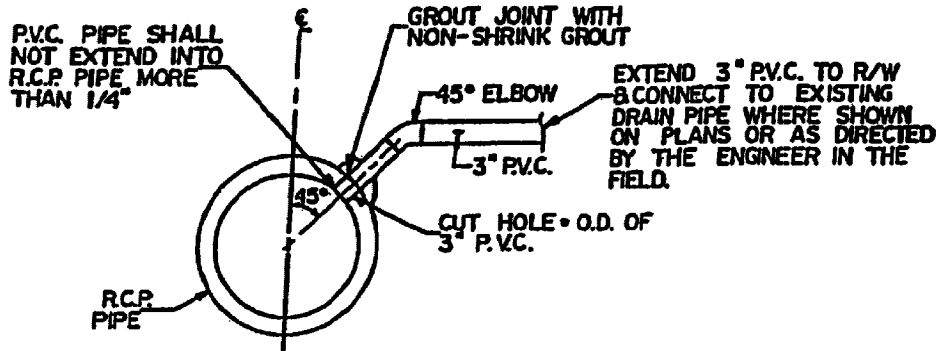
STREETS AND SIDEWALKS

Figure 14



PERKASIE CODE

Figure 15



**ROOF DRAIN DETAIL  
THROUGH R.C.P.**  
N.T.S.

**NOTE: DETAIL MAY BE MODIFIED  
BY THE ENGINEER TO MEET  
ACTUAL FIELD CONDITIONS.**

**NOTE: ALL MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF PENNDOT  
PUBLICATION 408 LATEST EDITION.**

CALL BEFORE YOU DIG!  
PENNSYLVANIA LAW REQUIRES  
3 WORKING DAYS NOTICE FOR  
CONSTRUCTION PHASE AND 10 WORKING  
DAYS IN DESIGN STAGE-- STOP CALL  
Pennsylvania One Call System, Inc.

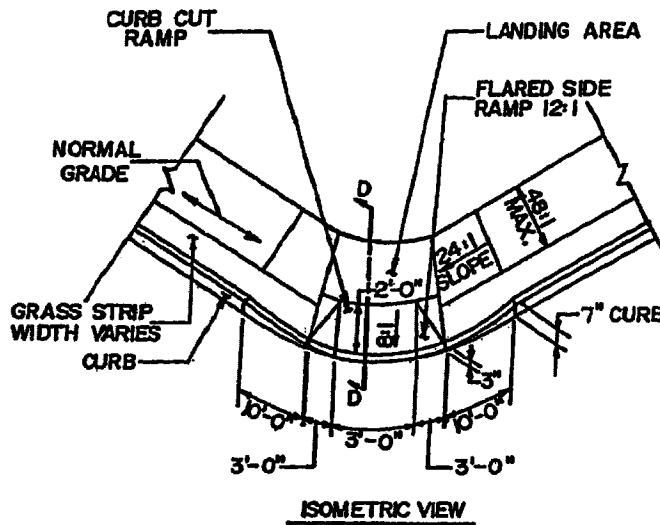
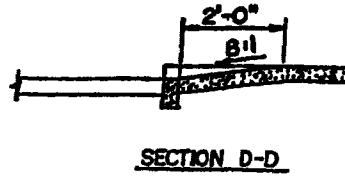


1-800-242-1776

BOUCHER and JAMES Inc. CONSULTING ENGINEERS & LAND SURVEYORS DOYLESTOWN, PA. QUAKERTOWN, PA.		
TITLE STANDARD DETAILS		
PROJECT CURB AND SIDEWALK CONSTRUCTION		
OWNER BOROUGH OF PERKASIE		
DRAWN BY DCH	SCALE N.T.S.	5 of 8
CHECKED JRK	DATE 7/3/89	


STREETS AND SIDEWALKS

Figure 16



**TYPE I - SINGLE CURB CUT RAMP**  
N.T.S.

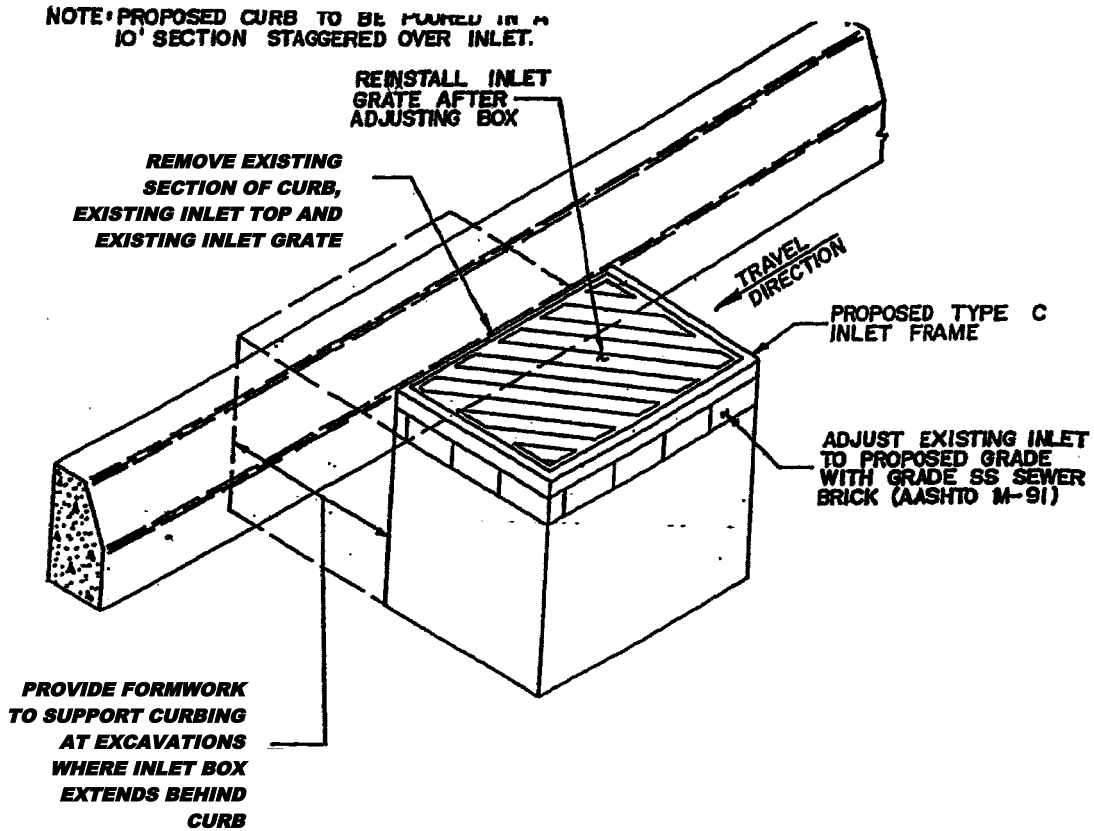
**NOTE:** ALL MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF PENNDOT PUBLICATION 408 LATEST EDITION.

CALL BEFORE YOU DIG!  
PENNSYLVANIA LAW REQUIRES  
3 WORKING DAYS NOTICE FOR  
CONSTRUCTION PHASE AND 10 WORKING  
DAYS IN DESIGN STAGE—STOP CALL  
Pennsylvania One Call System, Inc.  
 1-800-242-1776

BOUCHER and JAMES Inc. CONSULTING ENGINEERS & LAND SURVEYORS DOYLESTOWN, PA. QUAKER TOWN, PA.		
TITLE STANDARD DETAILS		
PROJECT CURB AND SIDEWALK CONSTRUCTION		
OWNER BOROUGH OF PERKASIE		
DRAWN BY DCH	SCALE N.T.S.	6 of 8
CHECKED JRK	DATE 7/3/89	

PERKASIE CODE

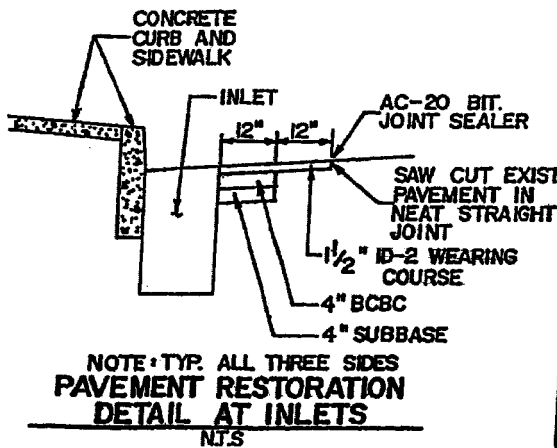
Figure 17



**INLET RESTORATION DETAIL**

N.T.S.

NOTE: ALL MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF PENNDOT PUBLICATION 408 LATEST EDITION.



CALL BEFORE YOU DIG!  
PENNSYLVANIA LAW REQUIRES  
3 WORKING DAYS NOTICE FOR  
CONSTRUCTION PHASE AND 10 WORKING  
DAYS IN DESIGN STAGE - STOP CALL  
Pennsylvania One Call System, Inc.



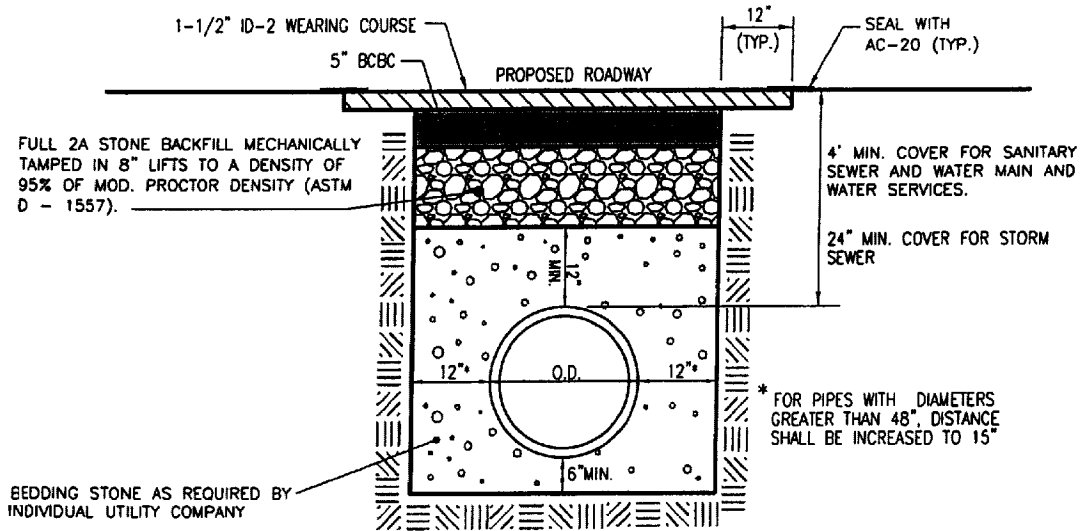
1-800-242-1776

REVISED: 2/11/91

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TITLE STANDARD DETAILS		
PROJECT CURB AND SIDEWALK CONSTRUCTION		
OWNER BOROUGH OF PERKASIE		
DRAWN BY DCH	SCALE N.T.S.	7 OF 8
CHECKED MSG	DATE 1/10/91	

# STREETS AND SIDEWALKS

Figure 18



**NOTE:**

ALL UTILITY TRENCHES WITHIN EXISTING ROADWAYS, PROPOSED ROADWAYS, ALL RIGHT OF WAYS, EASEMENT TO SCALE, PROPOSED DRIVEWAYS, APRONS AND SIDEWALKS MUST, WITHOUT EXCEPTION, BE BACKFILLED WITH FULL DEPTH 2A STONE AFTER TOP SCREENING. ALL UTILITY TRENCHES MUST BE COMPACTED (MECHANICALLY TAMPED) IN 8" LIFTS. I.E. GAS, ELECTRIC, WATER, CABLE ETC.

## TYPICAL ROADWAY UTILITY TRENCH DETAIL

N.T.S.