SIDEWALK AND DRIVEWAY DESIGN AND CONSTRUCTION GUIDELINES

TABLE OF CONTENTS

SIDEWALK REQUIREMENTS

All sidewalk construction shall conform to the provisions of City of Cibolo Unified Development Code (UDC), City of Cibolo Design and Construction Manual and the latest criteria of the Americans with Disabilities Act (ADA) draft guidelines for Public Right of Way Chapter 11, Section 1101 to 1111, and the Texas Accessibility Standards (TAS) adopted amendments to Texas Administrative Code 16, Chapter 68.102.

Any existing sidewalks shall be required to be upgraded or replaced to meet the UDC and/or ADA.

Sidewalks shall be constructed so as to connect with adjoining sidewalks. The change of grade between adjacent surfaces shall be less than 11%. The change of grade shall be defined as the algebraic difference of the adjacent surface slopes. If the change of grade between adjacent surfaces is greater than or equal to 11%, a leveling strip, 2 feet in length, shall be provided to transition the adjacent surfaces.

Sidewalks on private streets shall meet the same criteria as for public Streets. Sidewalks shall be included in the same lot as the private Streets or within an access easement designated on the plat if located on private lots. Deed restrictions shall be required to ensure that sidewalks remain unobstructed.

Replacement sidewalks shall be Class “A” Concrete, as described on page B3, Standard Specification 300, “Concrete (Natural Aggregate)”, matching the existing thickness but shall have a minimum thickness of four (4) inches. The concrete shall be placed on two (2) inches of gravel, crushed rock or flexible base material, except that the width and location shall match the existing sidewalk. All sidewalk replacement shall be extended to the nearest expansion or dummy joint of the existing sidewalk. Expansion joint material, that is 1/2-inch in thickness and conforms with Standard Specification Item No. 304, shall be placed at a distance not to exceed forty eight (48) feet between joints and passing through the entire thickness of the concrete being placed. A minimum of two (2) round and smooth dowel bars 3/8 inches in diameter and eighteen (18) inches in length shall be spaced eighteen (18) inches apart at each expansion joint. Weakened plane joints shall be made 3/4-inch deep and placed at intervals equal to the sidewalk width. The edges of all joints shall have a 1/4-inch radius. The concrete shall receive a broom finish unless the surface is to match an existing exposed aggregate surface.

Reinforcement shall match the existing, but in no case shall it be less than one layer of 6” x 6” - W2.9 x W2.9 welded wire fabric or equivalent. It shall be supported such that it will be at the mid-depth of the slab. During the placement of concrete, care shall be taken that the reinforcement remains at this position by means of stays, precast blocks, ties, hangers, metal chairs or other approved supports. If the replacement sidewalk is matching an existing sidewalk at a weakened plane joint, then the reinforcement shall be lapped a minimum of six (6) inches. See Standard Specification 502, “Concrete Sidewalks and Driveways”, on page B15 for complete requirements.

Concrete for sidewalks shall be placed as soon as practical after the utility has been placed. Sides of sidewalks shall be backfilled immediately after the forms are removed.

When a sidewalk is being replaced within the radius of a curb return at an intersection, a sidewalk Wheelchair Ramp shall be installed. See pages C5 to C15 for design details.

All variance requests shall be processed per the requirements of the UDC for a non-zoning variance.

CURB OR CURB AND GUTTER REQUIREMENTS

Replacement curb and gutter shall be Class "A" concrete, conforming to Standard Specification Item No. 300.1, with finish mortar to be applied within one (1) hour of placement of the concrete. The curb and gutter shall be placed on a minimum of two (2) inches of crusher screenings, gravel or crushed rock, which shall be spread, wetted and thoroughly tamped. It shall be formed with "mules" and "S" trowels. Expansion joints, 1/2-inch wide of expansion joint material, shall be placed at intervals not to exceed forty-eight (48) feet. Weakened plane joints shall be made 3/4-inch deep and placed at eight (8) feet intervals. The edges of all joints shall have a 1/4-inch radius. All replacement curb or curb and gutter shall be constructed to the nearest expansion or dummy joint of the existing curb and gutter. If removed to a weakened plane joint, 2 - #4, 24" long smooth dowels, shall be inserted a minimum of twelve (12) inches into the existing curb. A minimum of one (1) inch gap shall be provided at the end of the drilled hole.

If the excavation occurs under the existing curb and gutter and undermines more than four (4) feet of curb line, the undermined curb and gutter shall be removed and replaced to the nearest joints on each side of the cut.

If the excavation occurs under machine laid curb (not an integral curb and gutter) and has no joints, the curb shall be removed two (2) feet back from the excavation wall on each side but no less than a total of eight (8) feet.

If the curb or curb and gutter is undermined less than four (4) feet, Class "G" concrete (Standard Specification 300.5) or Controlled Low Strength Material (CLSM) may be used as backfill and bedding under the curb.

The Class "G" concrete or CLSM shall be placed over the bedding material encasing the utility line and shall extend a minimum of six (6) inches in the back and in the front of the curb or curb and gutter and two (2) inches below the proposed pavement.

The placement of the concrete or CLSM shall insure that all undermined areas will rest on the concrete or CLSM free of voids. There shall be a minimum of twelve (12) inches of Class "G" concrete or CLSM under the bottom of the existing curb or curb and gutter.

All curb or curb and gutter with visible signs of damage or movement shall be removed and replaced. Concrete and CLSM used shall be in accordance with City of San Antonio Standard Specifications.

The change of grade between adjacent surfaces shall be less than 11%. The change of grade shall be defined as the algebraic difference of the adjacent surface slopes. In the case of a street access ramp designed at the 8.33% maximum slope, the adjacent pavement cross slope shall be less than 2.67% (i.e. 8.33 - (-2.67) = 11). In addition, the adjacent pavement cross slope shall be less than or equal to 5%. If the change of grade between adjacent surfaces is greater than or equal to 11%, a leveling strip, 2 feet in length, shall be provided to transition the adjacent surfaces. See drawings C11 and C12 for design details.

TRAFFIC CONTROL

SIGNS, BARRICADES AND WARNING DEVICES

The Right of Way User working in any public rights of way is responsible for the safe movement of traffic (pedestrian and/or vehicular) through the construction area. Right of Way User shall meet all the requirements for barricading and traffic control as specified in Texas Manual on Uniform Traffic Control Devices (TMUTCD).

Only those individuals who are qualified by means of adequate training in safe traffic control practices and have a basic understanding of the principles established by applicable standards and regulations, including those in TMUTCD, should place and maintain the traffic control devices in the construction area.

If the Right of Way User does not subcontract the barricading to a firm specializing in traffic control, then they must have a trained and qualified person(s) and must submit the qualifications and name(s) of employees to the Traffic Engineer for approval prior to the start of the work. They must also at this time submit for review a traffic control plan with all signs barricades conforming to the requirements of TMUTCD.

All barricades used by the Right of Way User shall be of the type, size and design specified by TMUTCD. If a firm specializing in traffic control does not supply traffic control devices, then the devices must be inspected and approved by the Traffic Engineer.

Flashing or steady burning amber lights as specified by the City of Cibolo Barricade and Construction Standard sheets (BC-89) and the TMUTCD are required on barricades.

All traffic control devices must display accurate information describing the exact road situation.

If the City Engineer finds non-compliance with the TMUTCD, he will notify the City and non-compliant contractor in writing of the violation. If the non-compliant contractor ignores the citation, the City Engineer will call a firm specializing in traffic control and place the necessary devices as required. The City will pay the charges but the Right of Way User must reimburse the City for all expenses plus five hundred dollars ($500) for non-compliance. Failure to clear all charges will be sufficient grounds for denying the subsequent street cut permits.

All traffic control devices must be removed immediately upon completion of the work.

Prior to start of excavation, construction or any work associated with a permitted project, the Right of Way User shall install, erect or mount the following signs:

1) 48” x 30” minimum, per TxDOT Standard Sign G20-6, Contractor’s informational sign, containing the following:

    a) Name of the Contractor
    b) Contractor’s emergency phone number(s)
    c) Name of the Right of Way User
    d) Estimated completion date

2) Other information could be provided on the sign that would provide the general public additional contractor related data. This sign shall be clearly displayed minimum one (1) per block. The sign shall be clearly displayed and maintained for the duration of the project.78” x 48” minimum, TxDOT Standard Sign G20-8, Right of Way User informational sign, containing the following:

a) Name of the Right of Way User
b) Address of the Right of Way User
c) City
d) State
e) Right of Way User emergency phone number(s)
f) Estimated start and completion dates

Other information could be provided on the sign that would provide the general public additional project related data. This sign shall be clearly displayed minimum one (1) per project, located at the terminus end of the project. The sign shall be clearly displayed and maintained for the duration of the project.

TRAFFIC SIGNAL EQUIPMENT

Whenever any excavation is to be performed within five hundred (500) feet of a signalized intersection, approval from the City Engineer must be obtained prior to the start of the work. The approval will be in the form of an agreement signed by the applicant and the Traffic Operation's representative on a form depicting the intersection layout and traffic control equipment (loops, stub-outs, pull boxes, conduits, etc.) that will be affected by the planned excavation.

The applicant must notify the City Engineer no less than seventy-two (72) hours prior to the start of the work. The notification should include specific information pertaining to location, scope and duration of planned excavation.

The City Engineer will subsequently determine if a joint meeting between the applicant and a Traffic Operation's representative is needed to be held at the job site, wherein the City Engineer's representative will locate the existing traffic control equipment which may be affected by the scope of the planned work. The City Engineer will subsequently depict the located equipment on the back of a work order. Both parties must sign this work order.

Forty-eight (48) hours prior to start of work, the applicant must notify the City Engineer to modify or adjust the programming parameters controlling the traffic signal operation if deemed necessary.

The applicant is responsible to repair or replace at their own expense and to the satisfaction of the City Engineer, any damage to the traffic control equipment including, but not limited to, vehicle loops, loop home-runs, loop stub-outs, conduits, risers and cabinets. The Right of Way User must hire a firm specializing in the installation of traffic signal equipment and have the signal restored to its original operational function. All materials, labor and procedures shall conform to the specifications of the City.

The applicant is responsible for all liability for personal injury and/or property damage which may be caused as a result of the incurred damages should the applicant fail to notify Traffic Operations prior to the start of work and request Traffic Operations to modify or adjust the programming parameters controlling the traffic signal operation if deemed necessary.

Should the proposed scope of work conflict with the existing traffic equipment (signals, signs, markings), the Right of Way User is responsible to identify and implement any and all temporary measures (outside the controller box) required to continue traffic control operations during construction in accordance with City guidelines. These measures as well as the traffic management plan are to be approved by the City.

If the Right of Way User ignores the restitution of the signal, then the City will make the correction. The Right of Way User must reimburse the City of all costs incurred including a ten percent (10%) Administrative Fee and a five hundred dollar ($500) penalty per day per occurrence for non-compliance. Failure to clear all charges will be sufficient grounds for denying the next requested permit.

CONTROLLED LOW STRENGTH MATERIAL
(Flowable Fill)

This specification identifies the basic requirements for furnishing, mixing and transporting Controlled Low Strength Material (Flowable Fill).

Flowable Fill is a low strength concrete material suitable as a backfill for utility trenches, abandoned pipes, manholes and valves. It is a heavy material and will exert a high fluid pressure against any forms, embankment or wall used to contain the Flowable Fill.

MATERIALS:

Materials shall conform to the following:

Cement	- ASTM C150	
Fly Ash	- ASTM C618, Class C or Class F	
Water	- ASTM C94	
Admixtures	- ASTM C260 and/or C494	
Fine Aggregates	- Natural or manufactured sand or combinations thereof, free from injurious amounts of salt, alkali, vegetable matter or other objectionable material. It is intended that the fine aggregate be fine enough to stay in suspension in the mortar to the extent required for proper flow. The fine aggregate shall conform to the following gradation:	
	Sieve Size	**% Passing**
	¾ inch	100
	No. 200	0 - 10

If a flowable mixture cannot be produced, the sand may be rejected.

MIX DESIGN:

The 28 day unconfined compressive strength must be less than 150 PSI, while three (3) day strength must exceed 25 PSI. The quantities of dry material per cubic yard are as follows:

	WITH FLY ASH	**WITHOUT FLY ASH**
Cement	50.0 lbs	141.0 lbs
Fly Ash	250.0 lbs	N/A
Water	60.0 gals	49.9 gals
Fine Aggregate	2910.0 lbs	2800.0 lbs

CONSISTENCY:

Consistency shall be tested by filling an open-ended three inch (3”) diameter cylinder six inches (6”) high to the top with flowable fill. The cylinder shall be immediately pulled straight up and the correct consistency of the flowable fill shall produce a minimum eight-inch (8”) diameter circular-type spread with no segregation.

BATCH, MIXING AND TRANSPORTATION:
Materials are to be measured by weight and/or volumetric methods. The flowable fill may be mixed in a central concrete mixer, a ready mix truck, or by other acceptable methods. The flowable fill shall be transported to the point of placement in a revolving drum mixer or in an agitator unit.

PLACING:
For pipe trench backfill, provide bulkheads at units of fill placement sufficient to confine backfill. Bulkheads are to be structural.

COVERING:
CLSM may be covered when it adequately supports the weight of construction equipment no less than 24 hours after completion of placement.

ITEM 300
CONCRETE (NATURAL AGGREGATE)

This item shall govern for the material used; for storing and handling of materials; and for proportioning, mixing and transportation of concrete for all concrete construction.

This specification does not cover the placement, consolidation, curing, or protection of the concrete.

MATERIAL:

The concrete shall be composed of Portland Cement, mineral filler, if necessary, natural aggregates (fine and coarse), and water, proportioned and mixed as hereinafter provided in theses specifications. Concrete shall meet all the requirements as set forth in ASTM C-94.

CLASSIFICATIONS AND PROPORTIONS:

The minimum cement content, maximum allowable water content, and maximum slump of the various classes of concrete shall conform to Table 1.

TABLE 1

Class	Minimum compressive strength @ 28 days **psi [MPa]**	Maximum water-cement ratio	Slump range **inches [mm]**	Minimum - maximum sacks cement per **cubic yard [cubic meter]**
A	3,000 [20]	7.0	2 - 5 [50 - 125]	5.0
B	2,500 [17]	8.0	2 - 5 [50 - 125]	4.5
C	2,000 [14]	9.0	1 - 4 [25 - 102]	4.0
D	1,000 [6]	11.0	1 - 4 [25 - 102]	2.0
G	(as specified on plans)	5.50	2 - 3 [50 - 80]	6.0 - 8.0

ITEM 301
REINFORCING STEEL

This item shall provide for the furnishing and placing of bar reinforcing steel of the size and quantity designated for use in structures and other concrete items that require reinforcing steel as shown on the plans and in accordance with these specifications.

MATERIALS:

Reinforcing steel shall be grade 60 and all bar reinforcement shall be deformed, conforming to the requirements of Item 440, "Reinforcing Steel" of the Texas Department of Transportation Standard Specifications. Reinforcing steel bars produced outside of the United States are acceptable if such bar reinforcement conforms to the requirements of the ASTM Specifications for the various designations of bars.

BENDING, TOLERANCES AND STORAGE:

Bending, tolerances and storage of reinforcing steel shall conform to articles 440.3, "Bending", 440.4, "Tolerances", and 440.5, "Storage" in Item 440, "Reinforcing Steel" of the Texas Department of Transportation Standard Specifications.

SPLICES:

No splicing of bars, except when provided on the plans, will be permitted without approval of the Engineer.

PLACING REINFORCEMENT:

All steel reinforcing shall be accurately placed in the position shown on the plans and firmly held during the placing and setting of concrete. All reinforcement shall be free from dust, rust, mill scale, paint, oil, mortar or foreign material. Bars shall be tied at all intersections, except that where spacing of bars in each direction is less than 12 inches [305mm], only alternate intersections need be tied. Distances from forms shall be maintained by means of stays, precast blocks, ties, hangers, metal chairs or other approved supports. Blocks for holding reinforcing bars from contact with the forms shall be precast concrete blocks of approved shape and dimensions or other equally suitable devices. The use of pebbles, pieces of broken stones or brick, metal pipe and wooden blocks shall not be permitted. Reinforcement in any sections shall be placed and then inspected and approved by the Inspector before the placing of concrete begins.

TABLE 1

Bar Size **Number [mm]**	Nominal diameter **inches [mm]**	Nominal Area **square inch [mm^2]**	Weight **pound per foot [kg/m]**
2 [6]	0.250 [6.35]	0.05 [32.26]	0.167 [0.249]
3 [10]	0.375 [9.525]	0.11 [70.97]	0.376 [0.560]
4 [12]	0.500 [12.7]	0.20 [129.03]	0.668 [0.994]
5 [15]	0.625 [15.875]	0.31 [200.00]	1.043 [1.552]
6 [20]	0.750 [19.05]	0.44 [283.87]	1.502 [2.235]
7 [22]	0.875 [22.225]	0.60 [387.10]	2.044 [3.042]
8 [25]	1.000 [25.4]	0.79 [509.68]	2.670 [3.973]
9 [28]	1.128 [28.651]	1.00 [645.16]	3.400 [5.060]
10 [30]	1.270 [32.258]	1.27 [819.35]	4.303 [6.404]
11 [35]	1.410 [35.814]	1.56 [1006.45]	5.313 [7.907]
14 [40]	1.693 [43.00]	2.25 [1451.61]	7.65 [11.384]
18 [55]	2.257 [57.328]	4.00 [2580.64]	13.60 [20.239]

ITEM 303
WELDED WIRE FLAT SHEETS

This item shall govern the furnishing of the various sizes of welded wire flat sheets as indicated on the plans or as directed by the Engineer.

MATERIAL:

All welded wire flat sheets used in construction shall conform to the requirements of ASTM A - 185. Welded wire rolls shall not be used.

CONSTRUCTION METHODS:

All splices between the welded wire flat sheets shall overlap sufficiently to allow the distance between the outer-most cross wires of each lapped fabric sheet to be no less than the spacing of the cross wires plus 2 inches [50mm].

Distances from forms or concrete surfaces shall be maintained by means of stays, precast blocks, ties, hangers, metal chairs or other approved supports. The use of pebbles, pieces of broken stones or brick, metal pipe and wooden block shall not be permitted.

At the edge of the construction, the wire fabric shall not be less than 1 inch [25mm] nor more than 3 inches [76mm] from the edge of the concrete and shall have no wires projecting beyond the last member parallel to the edge of the concrete.

ITEM 304

EXPANSION JOINT MATERIALS

This item shall govern the furnishing and placing of all expansion joint material as herein specified in the various items of these specifications or as shown on the plans or as directed by the Engineer.

MATERIAL:

The material used for expansion joints shall conform to either of the following:

1. Preformed Bituminous Fiber Material shall be formed from cane or other suitable fibers of a cellular nature securely bound together and uniformly impregnated with a suitable asphaltic binder and shall meet the requirements of the Standard Specifications for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction, ASTM D-1751.

2. Boards for expansion joints shall be obtained from Redwood or Cypress timber and shall be sound heartwood, free from sapwood, knots, clustered Birdseye, checks and splits, occasional sound or hollow Birdseye, when not in clusters, will be permitted provided the board is free from any other defects that will impair its usefulness as a joint filler.

CONSTRUCTION METHODS:

All materials use shall extend the full depth of the concrete and shall be perpendicular to the exposed face. All joints shall be shaped to conform to the contour of the finished section in which they are installed. All material shall be a minimum of ½ inch [13mm] thick.

ITEM 305

MEMBRANE CURING

This item shall consist of curing by the impervious membrane method of all curbs, sidewalks, driveways, drive approaches, concrete rip rap, concrete structures and other concrete as specified in the various items of these specifications or as indicated on the plans.

MATERIALS:

The membrane curing compound shall comply with the "Standard Specification for Liquid Membrane-forming Compounds for Curing Concrete", ASTM C309, Type 1 clear or translucent without dye, Type 1 - D clear or translucent with fugitive dye, or Type 2 white pigmented. The vehicle shall be a Class A - no restriction on vehicle solids material, or Class B - vehicle solid restricted to all resin material. The material shall have a minimum flash point of 80º F [27º C] when tested by the "Pensky-Martin Closed Cup Method".

It shall be of such consistency that it can be satisfactorily applied as fine mist through an atomizing nozzle by means of approved pressure spraying equipment at atmospheric temperatures above 40° F [4° C].

It shall be of such a nature that it will not produce permanent discoloration of concrete surfaces nor react deleteriously with neither the concrete nor its components. Type 1 - D compound shall contain a fugitive dye that will be distinctly visible not less than 4 hours or more than 7 days after application. Type 2 compound shall not settle out excessively or cake in the container and shall be capable of being mixed to a uniform consistency by moderate stirring and shall exhibit a daylight reflectance of not less than 60 percent of that of magnesium oxide.

The compound shall produce a firm, continuous, uniform moisture impermeable film free from pinholes and shall adhere satisfactorily to the surfaces of damp concrete. It shall, when applied to the damp concrete surface, at the rate of coverage specified herein, dry to touch in not more than 4 hours and shall not be tacky or track off concrete after 12 hours. It shall adhere in a tenacious film and when sprayed, in a single application at the specified rate, on the vertical face of damp concrete, shall not run off or appreciably sag.

The compound shall not disintegrate, check, peel or crack during the required curing period. It shall not peel or pick up under traffic and shall disappear from the surface of the concrete by gradual disintegration.

The compound shall be delivered to the job only in the manufacturer's original sealed containers which shall be legibly marked with the name of the manufacturer, the trade name of the compound, the type of compound and class of vehicle, the nominal percentage of non-volatile material, and a batch number or symbol with which test samples may be correlated.

The permissible percentage moisture loss (at the rate of coverage specified herein) shall not exceed the following:

24 hrs. after application	2%
72 hrs. after application	4%

CONSTRUCTION METHODS:

Just before using the membrane-curing compound, it shall be thoroughly agitated in its original container until any settlement has been uniformly redispersed. Redispersion shall be checked with a 1 inch by 1 inch [25mm x 25mm] wooden slat or similar device scraped along the interior of the container and then examined for accumulation of settlement and uniformity of dispersion. The compound shall be maintained in a uniform condition, substantially free of settlement, during its use.

The compounds shall not be applied to a dry surface and if the surface of the concrete has become dry, it shall be thoroughly moistened by water fogging prior to application of membrane.

The membrane-curing compound shall be applied after the surface finishing has been completed, and immediately after the free surface moisture has disappeared. The surface shall be sealed with a single coat of the specified type of curing compound applied uniformly at the rate of coverage recommended by the manufacturer and directed by the Inspector, but not less than one (1) gallon per 180 square feet [1 liter per 5 square meters] of surface area. The curing compound shall not be thinned or diluted in any manner prior to application. The Contractor shall provide satisfactory means and facilities to properly control and check the rate of application of the compound.

At locations where the coating shows discontinuities, pinholes, or other defects, or if rain falls on the newly coated surface before the film has dried sufficiently to resist damage, an additional coat of the compound shall be applied immediately at the same rate of coverage specified herein.

To insure proper coverage, the Inspector will inspect all treated areas after application of the compound for the period of time designated in the governing specification for curing, either for membrane curing or for other methods. Dry areas are identifiable because of the lighter color of dry concrete as compared to damped concrete. All suspected areas shall be tested by placing a few drops of water on the suspected areas. If the water stands in round beads or small pools, which can be blown along the surface of the concrete without wetting the surface, the water impervious film is present. If the water wets the surface of the concrete as determined by obvious darkening of the surface or by visible soaking into the surface, no water impervious film is present. Should the foregoing test indicate that any area during the curing period is not protected by the required water impervious film, an additional coat or coats of the compound shall be applied immediately, and the rate of application of the membrane compound shall be increased until the areas are uniformly covered by the required water impervious film.

When temperatures are such as to warrant protection against freezing, curing by this method shall be supplemented with an approved insulating material capable of protecting the concrete for the specified curing period.

If at any time, there is reason to believe that the method of curing is unsatisfactory or is detrimental to the work, the Contractor, when notified, shall immediately cease the use of this method and shall change to curing by one of the other methods specified under this contract.

ITEM 500

CONCRETE CURBING

This item shall govern for installation of Portland cement concrete curbing with or without reinforcing steel as required, construction on an approved subgrade or base in accordance with this specification and in conformity with the lines, grades, section and details shown on the plans, or as established by the Engineer.

MATERIALS:

1. Concrete: All concrete shall conform to the provisions of Item 300, "Concrete (Class A)" or shall be of the class as noted on the plans.

2. Reinforcing Steel: All reinforcing steel shall conform to the provisions of Item 301, "Reinforcing Steel".

3. Expansion Joint Materials: All expansion joint materials shall conform to the provisions of Item 304, "Expansion Joint Materials".

4. Membrane Curing Compound: All membrane curing compound shall conform to the provisions of Item 305, "Membrane Curing".

CONSTRUCTION METHODS:

Subgrade for curbing shall be excavated so as to have a cushion, a minimum of 2 inches [50mm] thick of crusher screenings, gravel or crushed rock, which shall be spread, wetted and thoroughly tamped. If dry, the cushion shall be sprinkled lightly before concrete is deposited thereon. Where the subgrade is rock, or gravel, 70% of which is rock, the 2 inch [50mm] cushion need not be used. The Inspector will determine if the subgrade meets the above requirement.

If the subgrade is undercut, or the natural ground is below "top of subgrade", the necessary backfill shall be made with an approved material and compacted with a mechanical tamper. Hand tamping will not be permitted.

Forms shall be of metal or well-seasoned wood. Forms shall be clean, straight and free from warp and of the depth required. All forms shall be securely staked to line and grade and maintained in a true position during the depositing of concrete. The inside forms shall be rigidly attached to the outside forms. Before concrete is placed, all forms shall be oiled with light form oil.

The reinforcing steel, if required, shall be placed in position as shown on the typical section. Care shall be exercised to keep all steel in its proper location.

Expansion joint material shall be provided at intervals not to exceed 48 feet [15m], and shall extend the full width and depth of the concrete. Templates for "dummy" joints shall be of steel, not less than 3/16 of an inch [5mm] in thickness and patterned to the shape of the curb. Templates shall be cleaned, oiled, and spaced to cut the curb in sections of 8 feet [2.5m] in length. The templates shall extend a distance of 8 inches [203mm] into the curb from the top down.

Two round smooth dowel bars 3/8 of an inch [10mm] in diameter and 18 inches [457mm] in length shall be installed at each expansion joint. One 9 inch [229mm] end of each dowel shall be thoroughly coated with hot oil asphalt so that it will not bond to the concrete; approved types of slip joints may be used in lieu of coating ends of dowels. The dowels shall be placed on the vertical centerline 3 inches [76mm] from the top and bottom.

Concrete shall be placed in the forms, rodded and tamped to exclude all air and honeycomb. After the concrete has become sufficiently set, the exposed edges shall be rounded by the use of an edging tool to the radii indicated on the plans. After the inside form has been removed, the surface shall be dusted with a dust consisting of one (1) part "Portland Cement" and two (2) parts fine sand. The entire exposed surface of the curb shall be floated to a uniform smooth surface then finished with a camel hairbrush or wood float to a gritty texture. It is not permissible to plaster curb where forms have stayed on over-night. The forms must be removed and the curb finished monolithic the same day as concrete is poured. Immediately after finishing the curb, it shall be protected by a membrane compound-curing agent.

The curb shall be backfilled to the full height of the concrete, tamped and sloped as directed by the Inspector. The top 4 inches [102mm] of fill shall be of clean topsoil, free of stones and debris.

ITEM 501

MACHINE LAID CURB

This item shall govern for installation of Portland Cement concrete curb, constructed on an approved base in accordance with this specification and in conformity with the lines, grades, sections and details shown on the plans or as established by the Engineer.

MATERIALS:

1. Concrete: All concrete shall conform to the provisions of Item 300, "Concrete (Class A)" or shall be of the class as noted on the plans.

2. Expansion Joint Materials: All expansion joint materials shall conform to the provisions of Item 304, "Expansion Joint Materials".

3. Membrane Curing Compound: All membrane curing compound shall conform to the provisions of Item 305, "Membrane Curing".

CONSTRUCTION METHODS:

The base required between the curbs shall be extended to a line designated on the typical sections and details.

The curb shall be laid by a curbing extrusion machine approved by the Engineer. The line for top of curb shall be maintained from a guide-line or guide-rails set by the Contractor from survey marks established by the Consultant. Curb outline shall strictly conform to the details shown on the plans. The forming tube of the extrusion machine shall be readily adjustable vertically during the forward motion of the machine, to provide required variable height of curb necessary to conform to the established grade line. If a guideline is used, a pointer or gauge shall be attached to the machine in such a manner that a comparison can be made between the curb and the guideline in order to provide a continual check on the curb grade. Other methods may be used if approved by the Engineer.

The concrete shall be fed into the machine in such a manner and at such consistency that the finished curb will present a well compacted mass with a surface free from voids and honeycomb and true to established shape, line and grade.

Immediately following extrusion, any voids between the trench walls and curb shall be filled with well compacted concrete and finished off flush with the surface of the base.

Any additional surface finishing specified and/or required shall be performed immediately after the above void-filling operation. "Dummy" joints shall be cut to a depth of 1/2-inch [13mm] at 8-foot [2.5m] intervals or as directed by the Inspector.

Whenever the curb end abuts a concrete structure, a 1/2-inch [13mm] pre-molded expansion joint, conforming to the curb section, shall be placed between the two concrete surfaces.

Whenever extrusion is suspended long enough to produced a cold joint, 3/8 inch [10mm] smooth dowel bars, 18 inches [457mm] long, shall be embedded 9 inches [229mm] into the completed curb, one-quarter (1/4) curb height from top and bottom. The end of the curb at the point of suspension of extrusion shall be cut back until all remaining concrete is of a dense well compacted nature.

Any addition of concrete to the extruded curb is to be applied and finished before the extruded curb has achieved its initial set.

When finishing operations are completed, the curb is to be coated with membrane curing compound.

When the curb has cured, it shall be backfilled to the full height of the concrete, tamped and sloped as directed by the Inspector. The top 4 inches [102mm] of fill shall be clean topsoil, free of stones and debris.

ITEM 502

CONCRETE SIDEWALKS AND DRIVEWAYS

This item shall govern for concrete sidewalks and driveways, composed of Portland Cement concrete, constructed as herein specified on an approved subgrade, in conformity to the lines, grades & details shown on the plans or as established by the Engineer.

MATERIALS:

1. Concrete: All concrete for sidewalks and driveways shall conform to the provisions of Item 300, "Concrete (Class A)".
2. Reinforcing Steel: All reinforcing steel shall conform to the provisions of Item 301, "Reinforcing Steel".
3. Welded Wire Flat Sheets: All welded wire fabric shall conform to the provisions of Item 303, "Welded Wire Flat Sheets".
4. Expansion Joint Materials: All expansion joint materials shall conform to the provisions of Item 304, "Expansion Joint Materials".
5. Membrane Curing Compound: All membrane curing compound shall conform to the provisions of Item 305, "Membrane Curing".
6. Exposed aggregate sidewalks: Natural aggregate: All natural aggregate (fine and coarse) shall be obtained from a "Medina River Source" or other similar source. These aggregates shall be of a tan to brown color so as to impart an "earth-tone" color. Samples of the aggregates shall be submitted prior to construction for approval by the City.

CONSTRUCTION METHODS:

The subgrade shall be excavated and shaped to the lines, grades and cross section shown on the plans or as directed by the Engineer, and shall be thoroughly compacted. A cushion, 2 inch [50mm] minimum thickness, of crusher screenings, gravel, crush rock or flex base material shall be spread, wetted thoroughly, tamped and leveled. The cushion shall be moist at the time the concrete is placed. If the subgrade is undercut, or the natural ground is below "top of subgrade" then necessary backfill shall be made with approved material and compacted with a mechanical tamper. Hand tamping will not be permitted.

Where the subgrade is rock or gravel, 70% of which is rock, the 2-inch [50mm] cushion need to be used. The Inspector will determine id the subgrade meets the above requirement. Forms shall be of metal or well-seasoned wood of a section satisfactory to the Inspector, clean, straight, free from warp, and of a depth equal to the thickness of the finished work. All forms shall be securely stacked to line and grade maintained in a true position during the depositing of concrete. Forms for curbs, sidewalks, and driveways shall be cut to grade. Grade nails or chalk lines will not be permitted. Before concrete is placed, forms shall be thoroughly oiled with a light form oil.

Expansion joint material, 1/2-inch thick [13mm], shall be provided at intervals not to exceed 48 feet [15m] and where the new construction abuts the existing curbs or driveways if the Inspector deems it necessary. The expansion joint material shall be placed vertically and shall extend the full depth and width of the concrete.

A minimum of two (2) round smooth dowel bars 3/8 inches [10mm] in diameter and 18 inches [457mm] in length shall be spaced 18 inches [457mm] apart at each expansion joint. Nine inches [229mm] of each dowel shall be thoroughly coated with hot oil asphalt or greased, so that it will not bond to the concrete. Approved types of slip joints may be used in lieu of coating ends of dowels.

Sidewalks shall be marked with transverse "dummy" joints as shown on details sheets, by the use of approved joining tools.

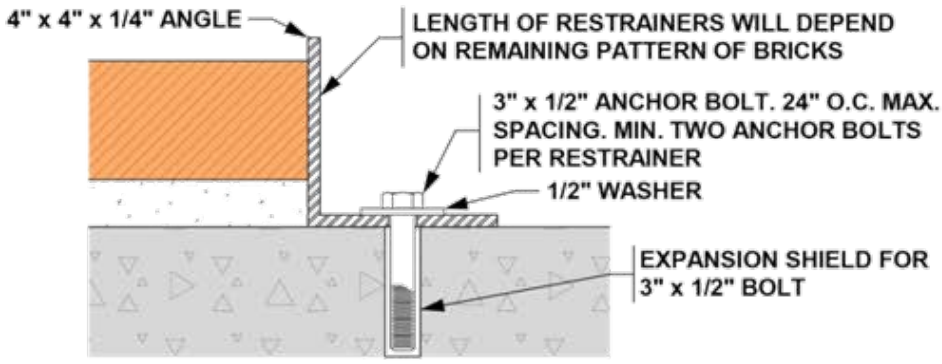
Concrete sidewalks and driveways shall be reinforced as shown on the plans. Reinforcement for sidewalks shall consist of either one (1) layer of 6"x6" - W2.9 x W2.9 welded wire flat sheets or No. 3 (3/8") [10mm] reinforcing steel, placed not more than 18 inches [457mm] on centers both directions. Reinforcement for driveways shall consist of either one (1) layer of 6"x6" W4.7 x W4.7 welded wire flat sheet or No. 3 (3/8") [10mm] reinforcing steel placed not more than 12 inches [305mm] on centers both directions. All reinforcements shall be placed equidistant from the top and bottom of the concrete. Care shall be exercised to keep all steel in its proper position during the depositing of concrete. Splices in wire fabric shall conform to the requirements set forth in Item 303, "Welded Wire Flat Sheets". Splices in the No. 3 bars shall have a minimum lap of 12 inches [305mm].

Reinforcing for commercial driveways shall consist of either on (1) layer of 6"x6" – W7.5 x W7.5 welded wire flat sheets or No. 4 (1/2") [12mm] reinforcing steel placed not more than 12 inches [305mm] on centers both directions. The concrete slab shall be a minimum of 6 inches [152mm] thick or as shown on the plans.

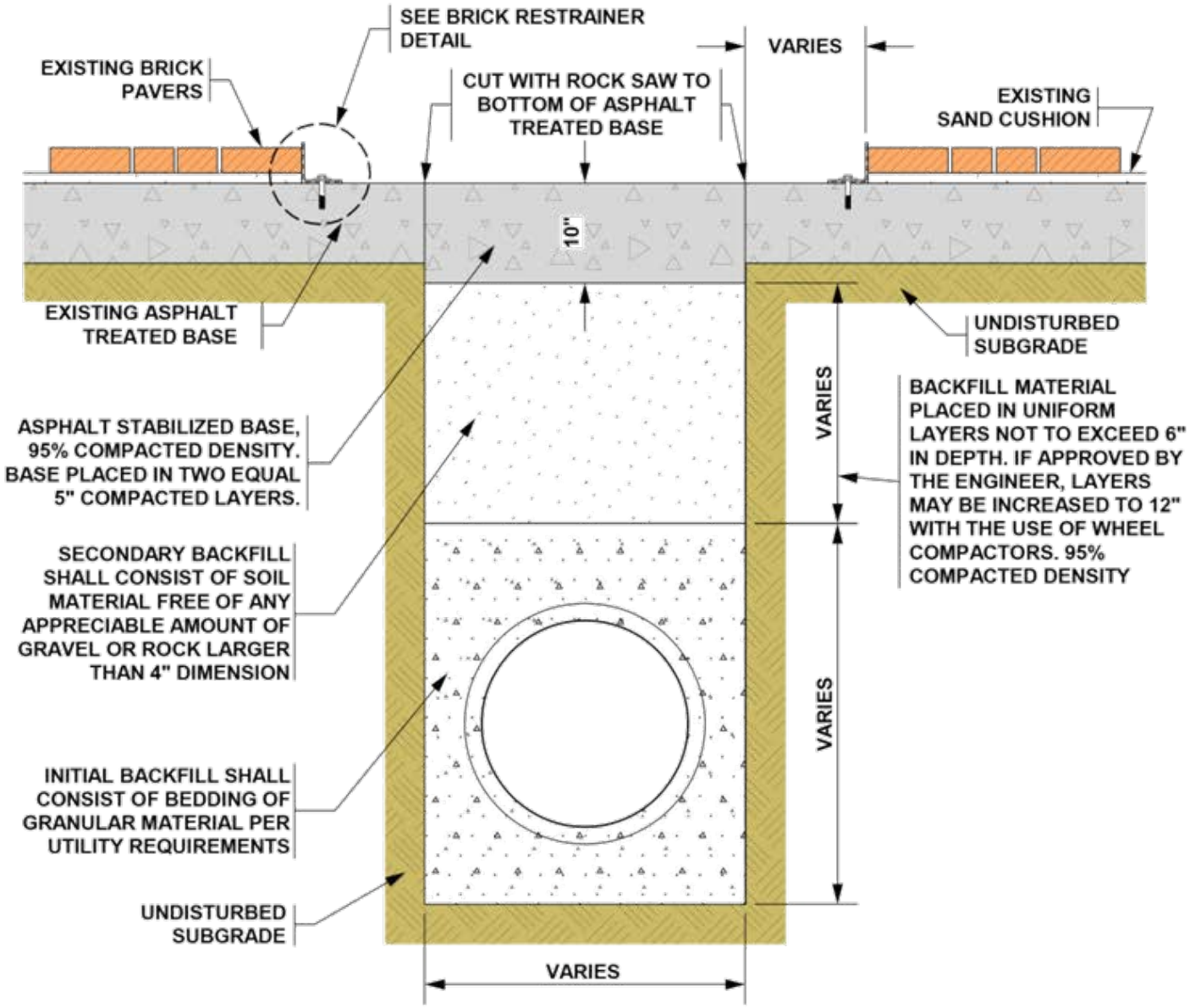
Concrete shall be placed in the forms and spaded, tamped and thoroughly compacted until mortar entirely covers the surface and has a monolithic finish. The top surface shall be floated and troweled to a uniform smooth surface, then finished with a camel hairbrush or wood float to a gritty texture. The outer edges and joints shall be rounded with approved tools to the radii shown on the plans.

Finish for Exposed Aggregate Sidewalks: Wash concrete surface after initial set with staff bristle brush and water to remove matrix and clean each piece of exposed coarse aggregate. Unless otherwise acceptable to the Inspector, perform washing and brushing 3-4 hours after casting. Care shall be taken to uniformly expose about a third of each piece of coarse aggregate, removing no more of the matrix than necessary to achieve a uniform exposure of coarse aggregate across the panel surface and as required to achieve appearance similar to adjacent existing work. After seven days, follow with a final cleaning with a mild acid solution and a final rinsing with clear water.

Immediately after finishing, the surface shall be protected by a membrane-curing compound, or by wetted cotton or burlap mats. Either method shall be subject to approval by the Inspector. All necessary excavation for the sidewalk section will be considered incidental work, pertaining to this item and will not be paid for directly. The adjacent excavation and grading of the slopes shall be done in a manner acceptable to the Inspector.

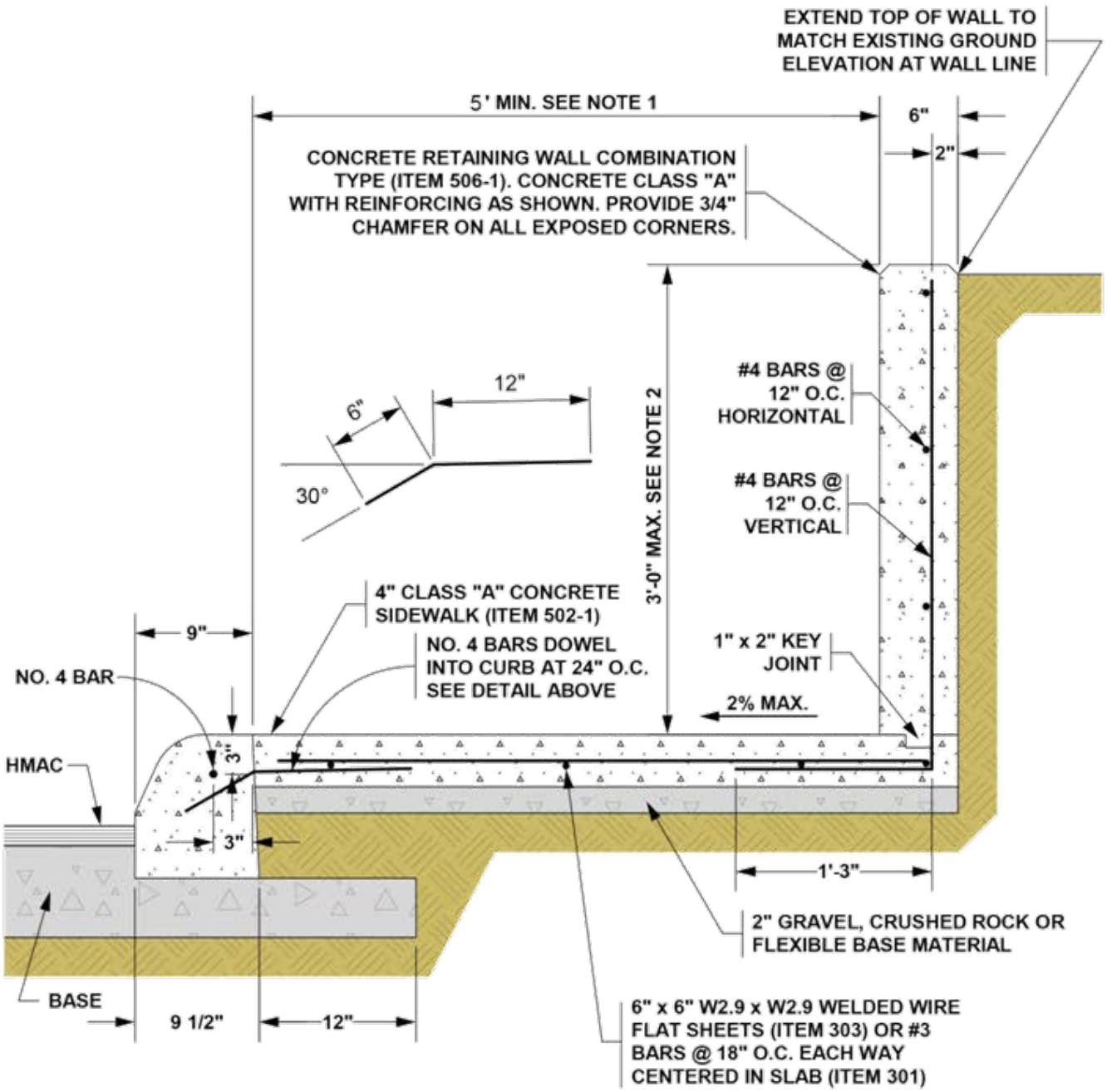


BRICK RESTRAINER DETAIL SCALE: 3" = 1'



BRICK SURFACED STREET SECTION SCALE: 3/4" = 1'

BRICK SURFACED STREET DETAIL



RETAINING WALL AND SIDEWALK SECTION

SCALE: 1" = 1'

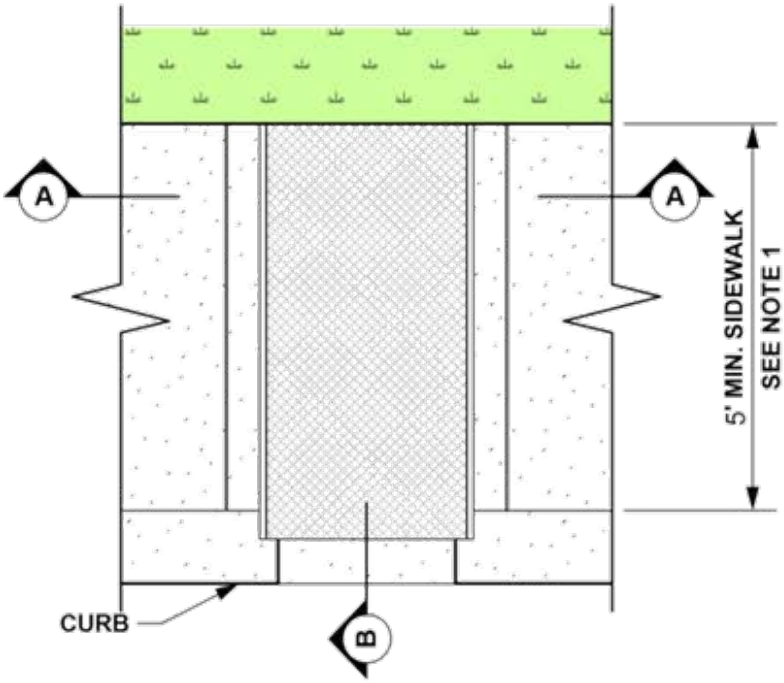
NOTES

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.

2. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.

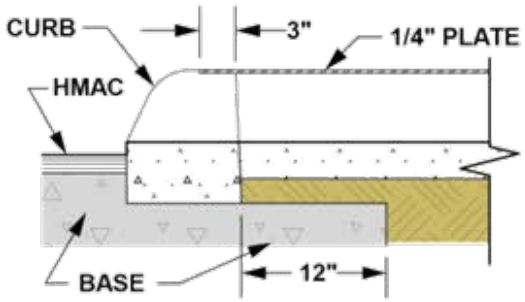
3. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.

CONCRETE RETAINING WALL COMBINATION TYPE

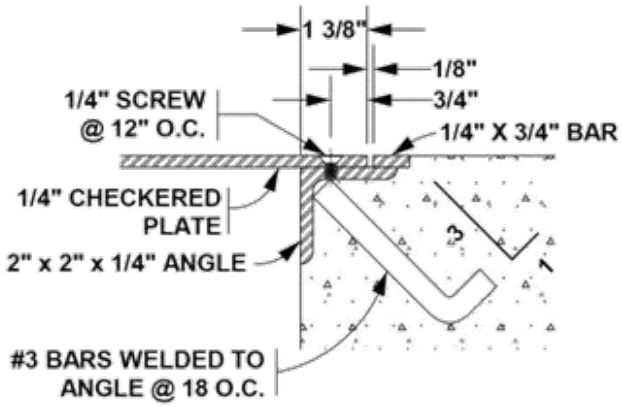


SIDEWALK DRAIN SCALE: 1" = 2'

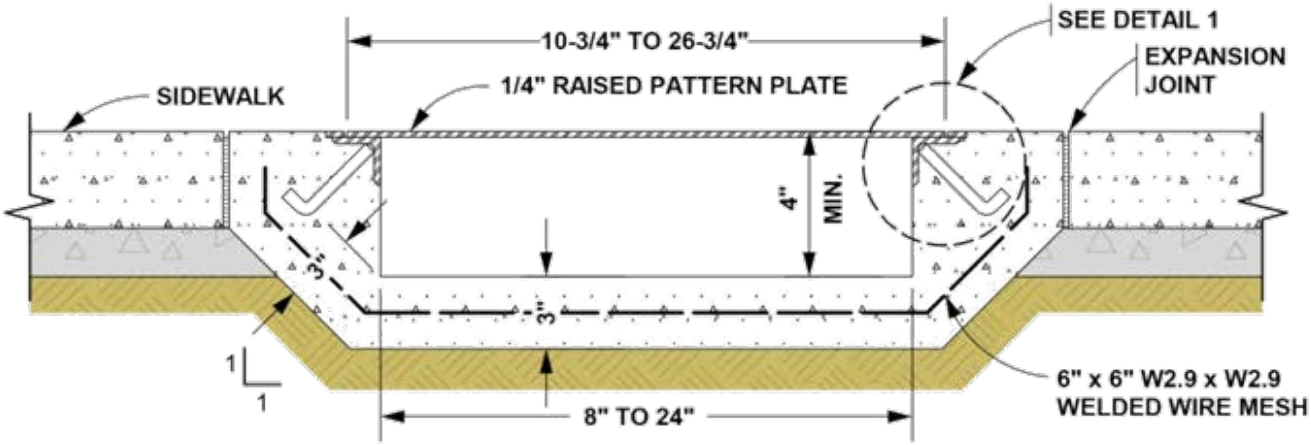
PLAN VIEW WITH SIDEWALK ABUTTING CURB



SECTION B SCALE: 3/4" = 1'



DETAIL 1 SCALE: 3" = 1'

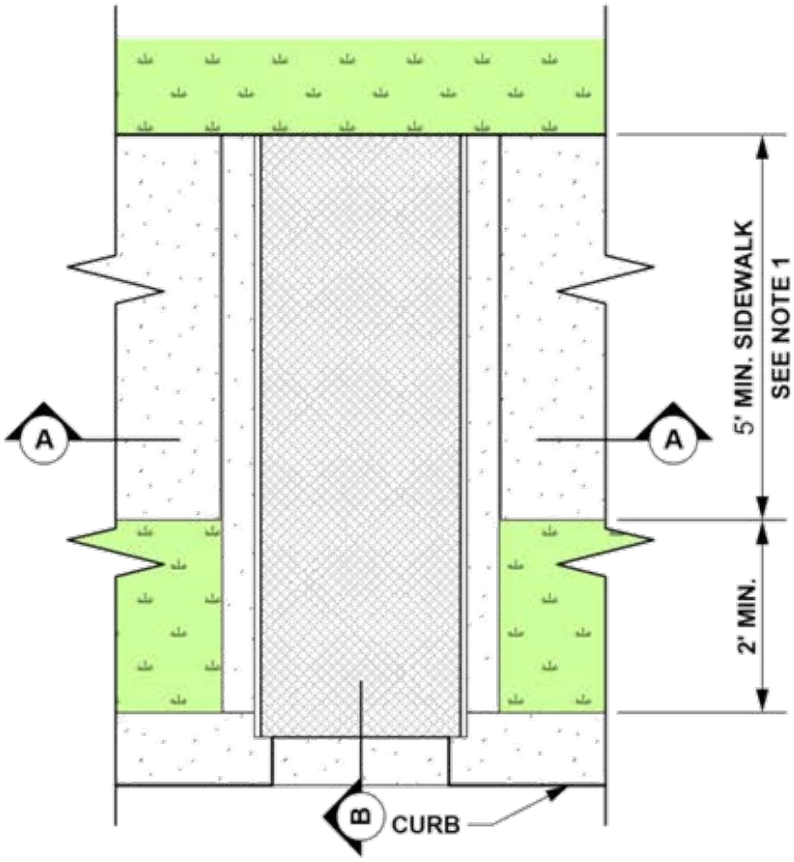


SECTION A SCALE: 1 1/2" = 1'

NOTES

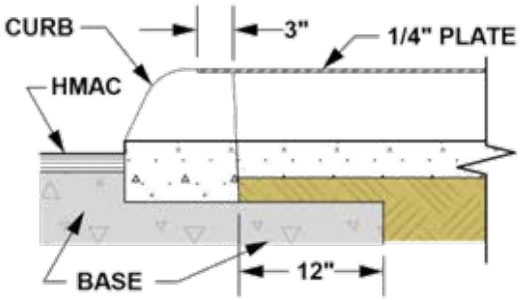
2. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.

3. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.

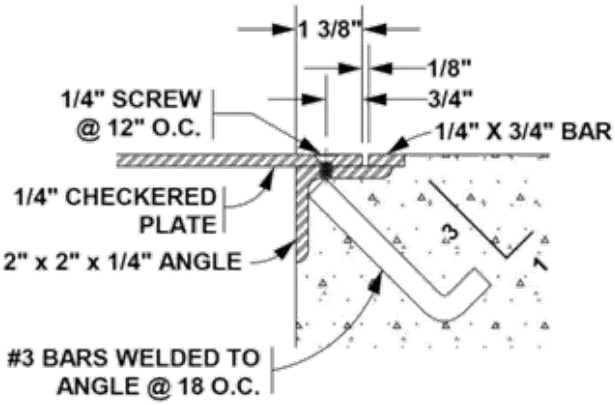


SIDEWALK DRAIN SCALE: 1" = 2'

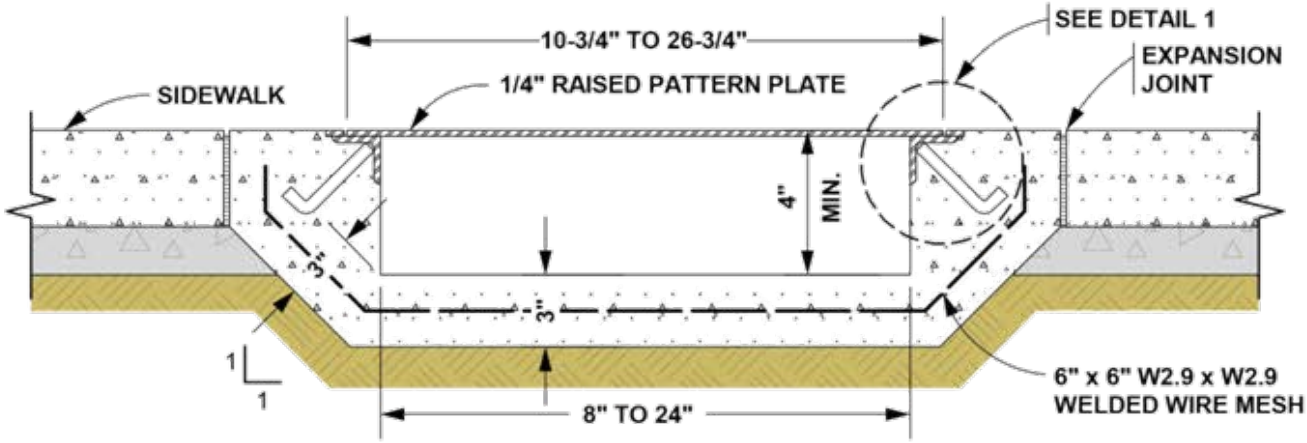
PLAN VIEW WITH SIDEWALK SEPARATED FROM CURB



SECTION B SCALE: 3/4" = 1'



DETAIL 1 SCALE: 3" = 1'



SECTION A SCALE: 1 1/2" = 1'

NOTES

2. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.

3. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.

SIDEWALKS AND WHEELCHAIR RAMPS GENERAL NOTES

1. WHEN POSSIBLE SIDEWALKS SHOULD BE PLACED NEXT TO THE PROPERTY LINE, ALLOWING A MINIMUM OF 1 FOOT BUFFER. DEVIATION OF THE PATHWAY FROM A STRAIGHT LINE IS ENCOURAGED TO AVOID TREES OR OTHER OBSTRUCTIONS.

2. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.

3. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.

4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.

5. ALL CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23mm), A HEIGHT OF NOMINAL 0.2 INCHES (5mm), AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60mm).

6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.

7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.

8. CONSTRUCTION OF ALL WHEELCHAIR RAMPS TO BE INCLUDED UNDER ITEMS "500-CONCRETE CURBING", "501-MACHINE LAID CURB" AND/OR "502-CONCRETE SIDEWALKS". RAMP SURFACE SHALL BE BRUSH FINISHED.

9. THESE DETAILS ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS OF WHEELCHAIR RAMPS TO BE SHOWN ON CONSTRUCTION PLANS. CITY CONSTRUCTION INSPECTOR CAN ADJUST LOCATIONS FOR SAFETY OR UTILITY CLEARANCE.

10. WHEELCHAIR RAMP SHALL BE CONSTRUCTED WITH 4" CLASS "A" CONCRETE AND 2" GRAVEL, CRUSHED ROCK OR FLEXIBLE BASE MATERIAL.

11. REINFORCING STEEL SHALL BE #3 BARS AT 18" O.C. EACH WAY OR 6" x 6" - W2.9 x W2.9.

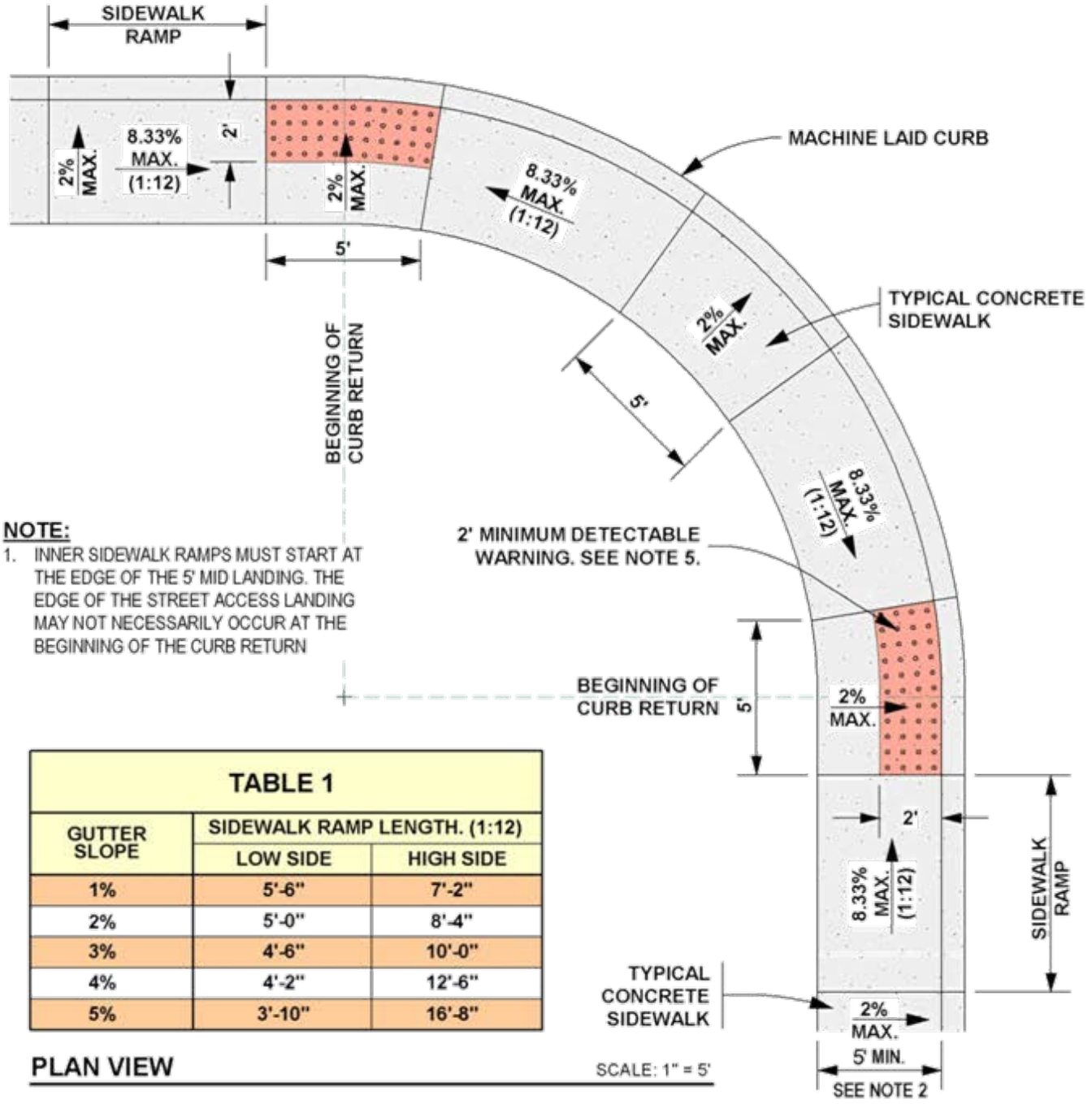
12. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY, ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS, AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.

13. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.

14. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33 - (-2.67) = 11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.

15. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.

16. ADA COMPLIANCE IN ALTERATIONS INCLUDE ONLY THAT WORK WITHIN THE LIMITS, BOUNDARIES, OR SCOPE OF A PLANNED PROJECT.



NOTE:

1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MID LANDING. THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN

TABLE 1

GUTTER SLOPE	SIDEWALK RAMP LENGTH. (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-2"
2%	5'-0"	8'-4"
3%	4'-6"	10'-0"
4%	4'-2"	12'-6"
5%	3'-10"	16'-8"

PLAN VIEW

SCALE: 1" = 5'

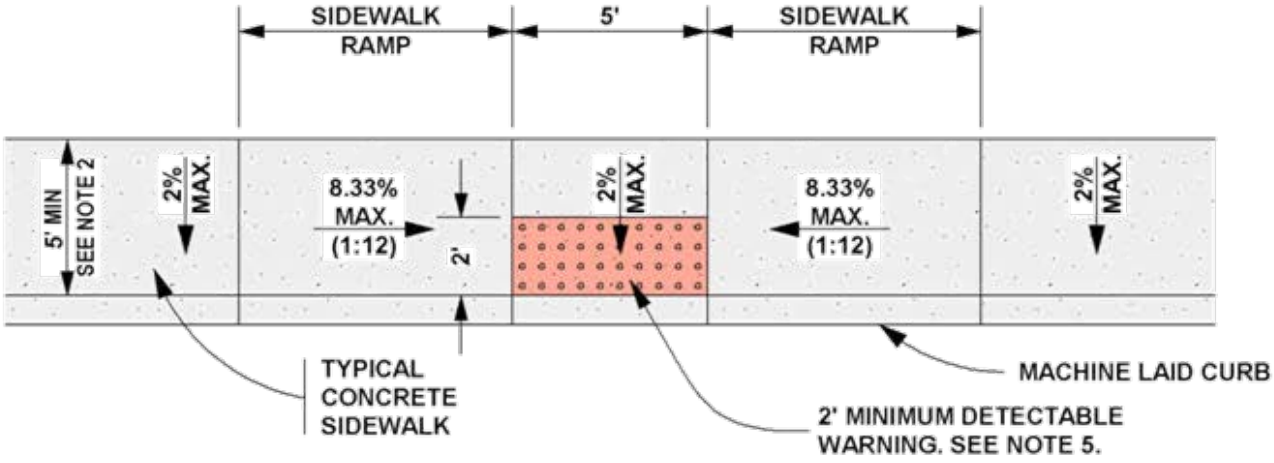
SIDEWALKS AND WHEELCHAIR RAMPS GENERAL NOTES

2. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.
3. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.
4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
5. ALL CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23mm), A HEIGHT OF NOMINAL 0.2 INCHES (5mm), AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60mm).
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USEDTO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
13. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.

WHEELCHAIR RAMP DETAIL TYPE I

WITH SIDEWALK ABUTTING CURB

TABLE 1		
GUTTER SLOPE	SIDEWALK RAMP LENGTH. (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-2"
2%	5'-0"	8'-4"
3%	4'-6"	10'-0"
4%	4'-2"	12'-6"
5%	3'-10"	16'-8"



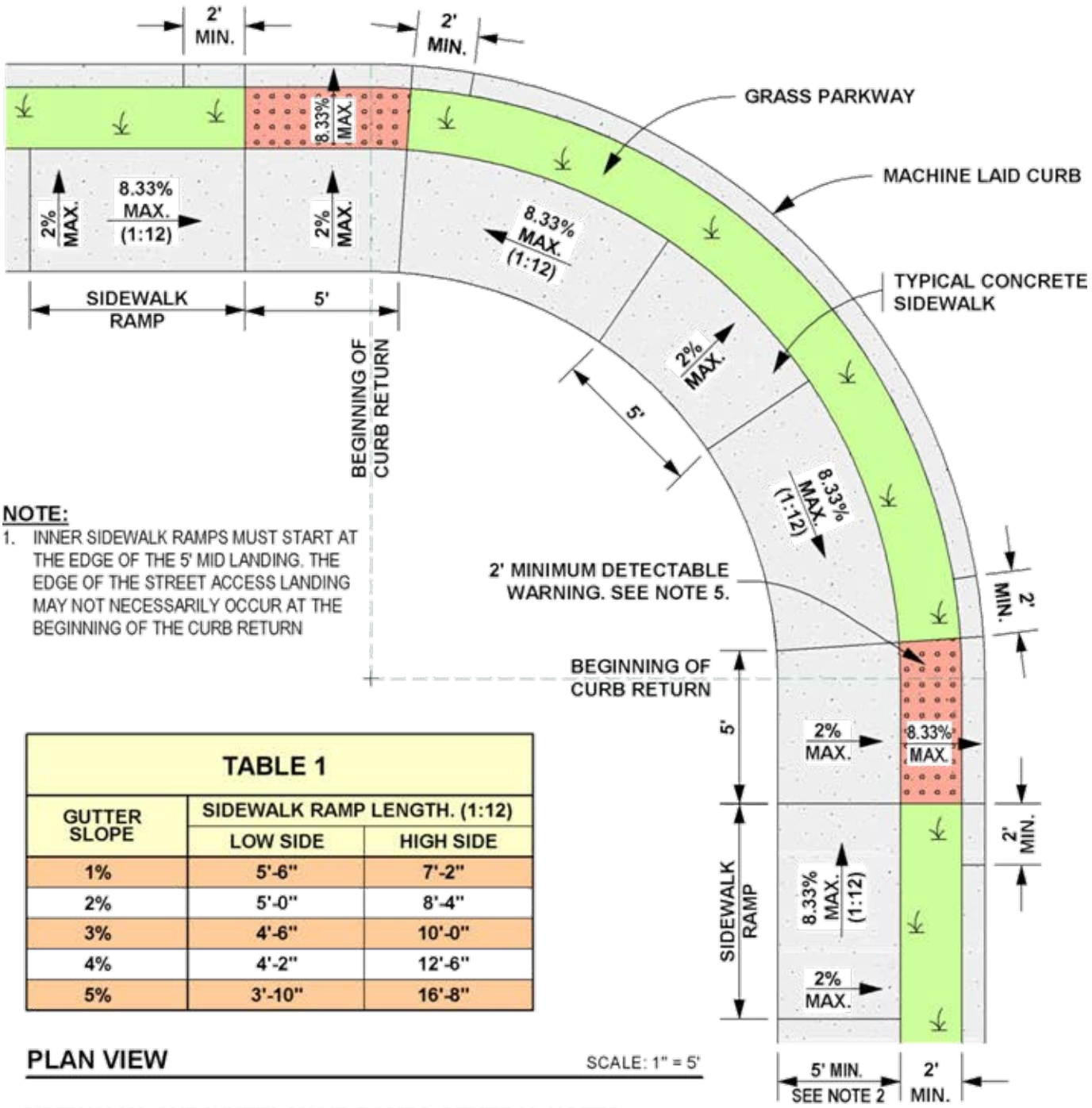
PLAN VIEW SCALE: 1" = 5'

SIDEWALKS AND WHEELCHAIR RAMPS GENERAL NOTES

2. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.
3. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.
4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
5. ALL CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23mm), A HEIGHT OF NOMINAL 0.2 INCHES (5mm), AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60mm).
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USEDTO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
13. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.

WHEELCHAIR RAMP DETAIL TYPE II

WITH SIDEWALK ABUTTING CURB



NOTE:

1. INNER SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' MID LANDING. THE EDGE OF THE STREET ACCESS LANDING MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN

TABLE 1

GUTTER SLOPE	SIDEWALK RAMP LENGTH. (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-2"
2%	5'-0"	8'-4"
3%	4'-6"	10'-0"
4%	4'-2"	12'-6"
5%	3'-10"	16'-8"

PLAN VIEW

SCALE: 1" = 5'

SIDEWALKS AND WHEELCHAIR RAMPS GENERAL NOTES

2. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.

3. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.

4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.

5. ALL CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23mm), A HEIGHT OF NOMINAL 0.2 INCHES (5mm), AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60mm).

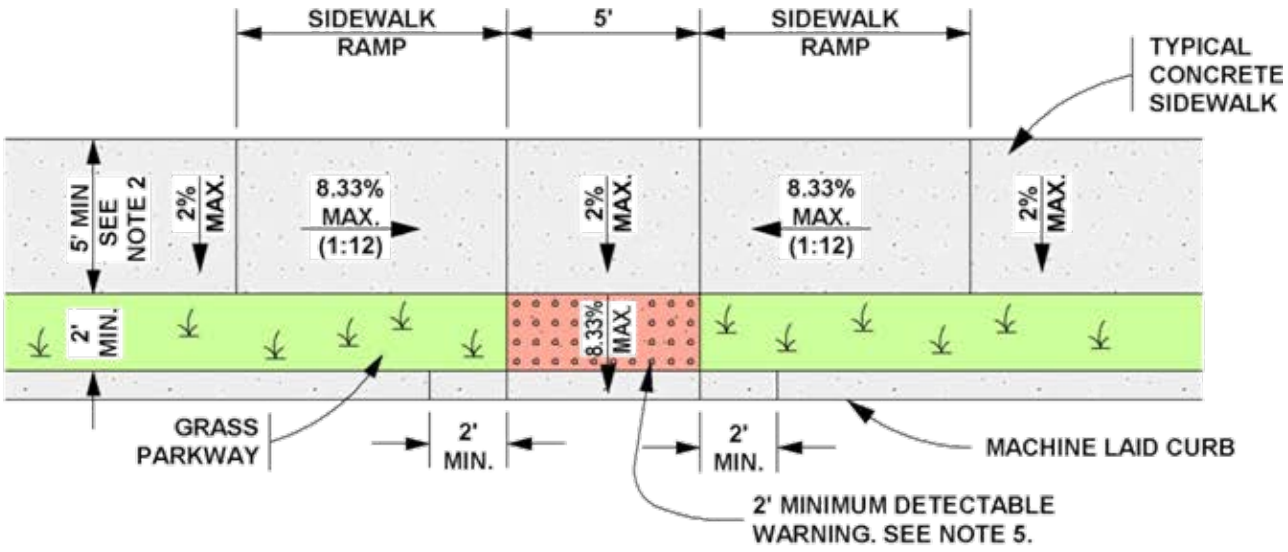
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USEDTO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.

13. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.

WHEELCHAIR RAMP DETAIL TYPE III

WITH SIDEWALK SEPARATED FROM CURB

TABLE 1		
GUTTER SLOPE	SIDEWALK RAMP LENGTH. (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-2"
2%	5'-0"	8'-4"
3%	4'-6"	10'-0"
4%	4'-2"	12'-6"
5%	3'-10"	16'-8"



PLAN VIEW SCALE: 1" = 5'

SIDEWALKS AND WHEELCHAIR RAMPS GENERAL NOTES

2. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.

3. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.

4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.

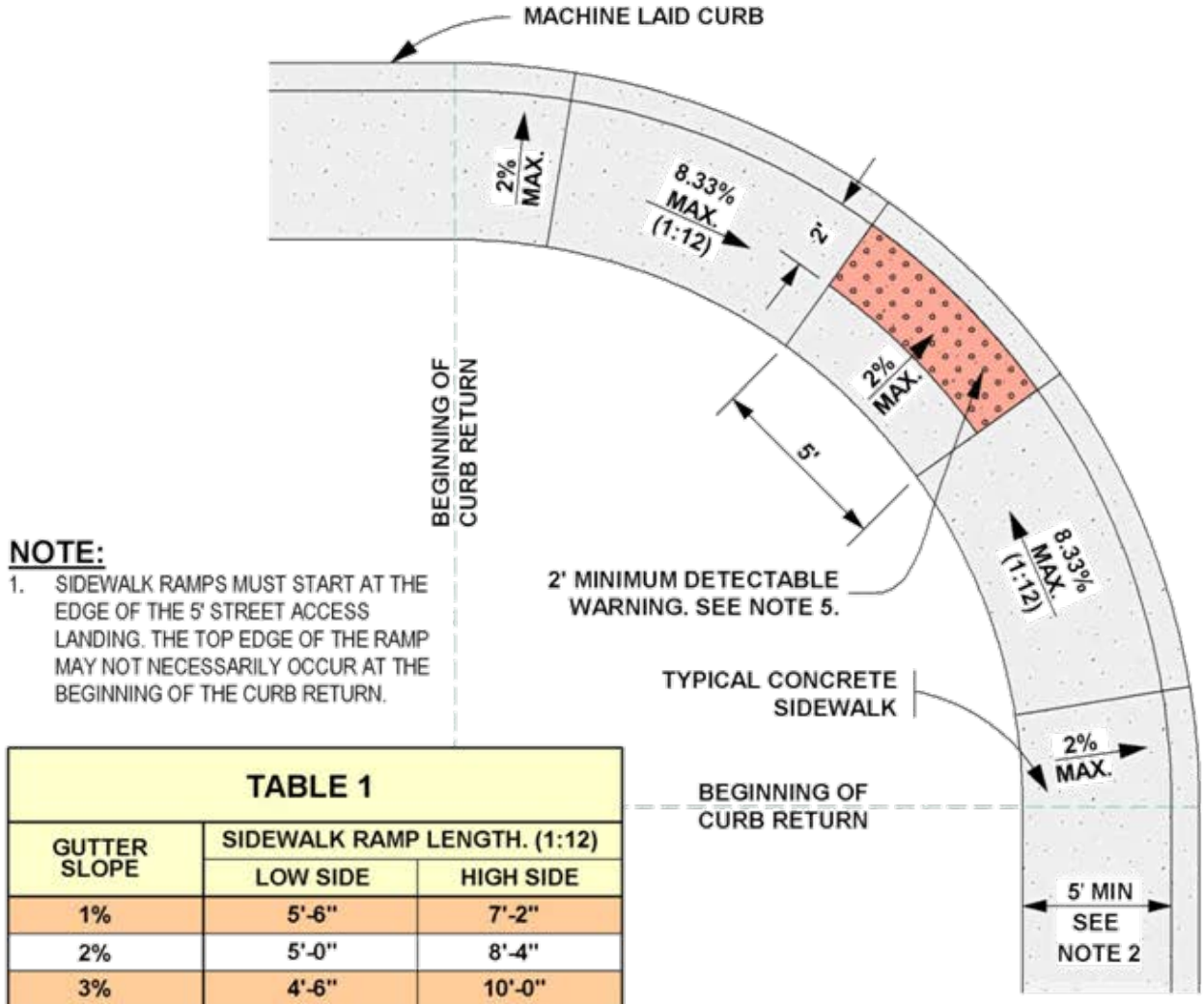
5. ALL CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23mm), A HEIGHT OF NOMINAL 0.2 INCHES (5mm), AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60mm).

6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USEDTO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.

13. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.

WHEELCHAIR RAMP DETAIL TYPE IV

WITH SIDEWALK SEPARATED FROM CURB



NOTE:

1. SIDEWALK RAMPS MUST START AT THE EDGE OF THE 5' STREET ACCESS LANDING. THE TOP EDGE OF THE RAMP MAY NOT NECESSARILY OCCUR AT THE BEGINNING OF THE CURB RETURN.

TABLE 1

GUTTER SLOPE	SIDEWALK RAMP LENGTH. (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-2"
2%	5'-0"	8'-4"
3%	4'-6"	10'-0"
4%	4'-2"	12'-6"
5%	3'-10"	16'-8"

PLAN VIEW

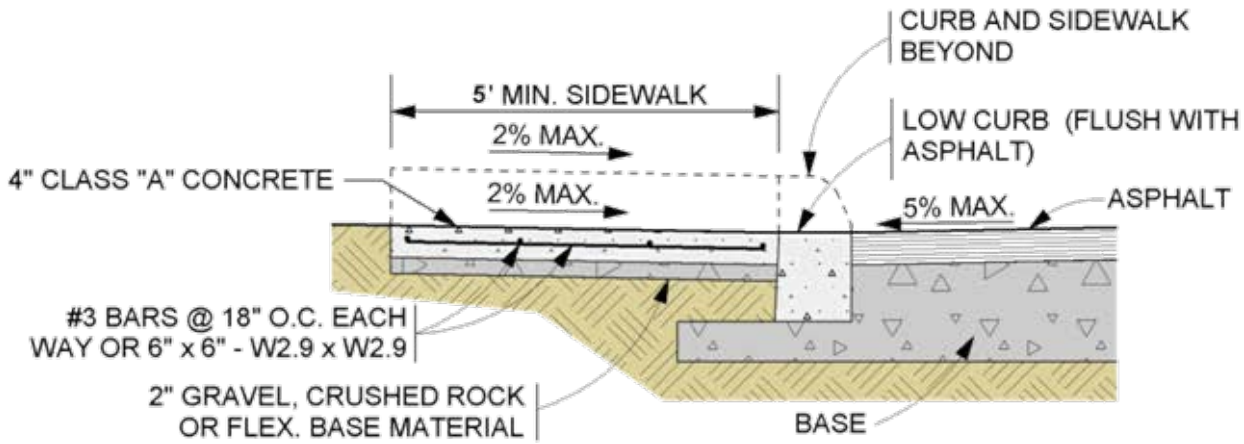
SCALE: 1" = 5'

SIDEWALKS AND WHEELCHAIR RAMPS GENERAL NOTES

2. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.
3. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.
4. SIDEWALK RAMP LENGTHS PRESENTED IN TABLE 1 ARE GUIDELINES ONLY. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE.
5. ALL CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23mm), A HEIGHT OF NOMINAL 0.2 INCHES (5mm), AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60mm).
6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USEDTO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.
7. SIDEWALK RAMP TYPE V SHALL BE USED ONLY WHERE THERE IS SIGNIFICANT RESTRICTION WITHIN THE PARKWAY TO CONSTRUCT TYPE I OR TYPE III RAMPS.
13. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.

WHEELCHAIR RAMP DETAIL TYPE V

WITH SIDEWALK ABUTTING CURB



STREET ACCESS LANDING SECTION 0 1 2 3 FT

SIDEWALKS AND WHEELCHAIR RAMPS GENERAL NOTES

2. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.

3. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.

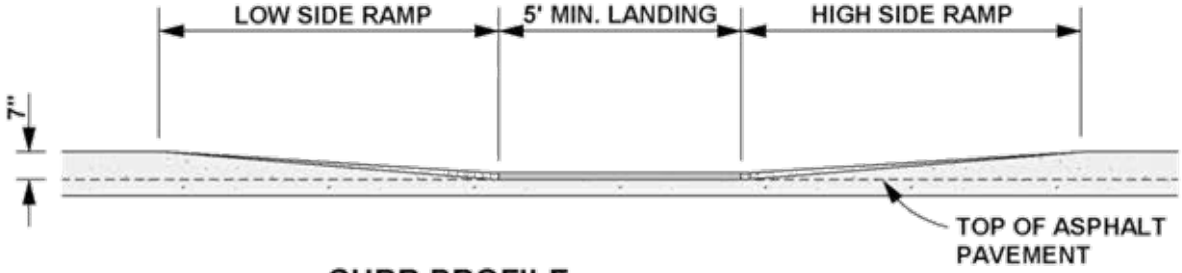
13. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.

14. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33 - (-2.67) = 11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.

15. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.

TABLE 1

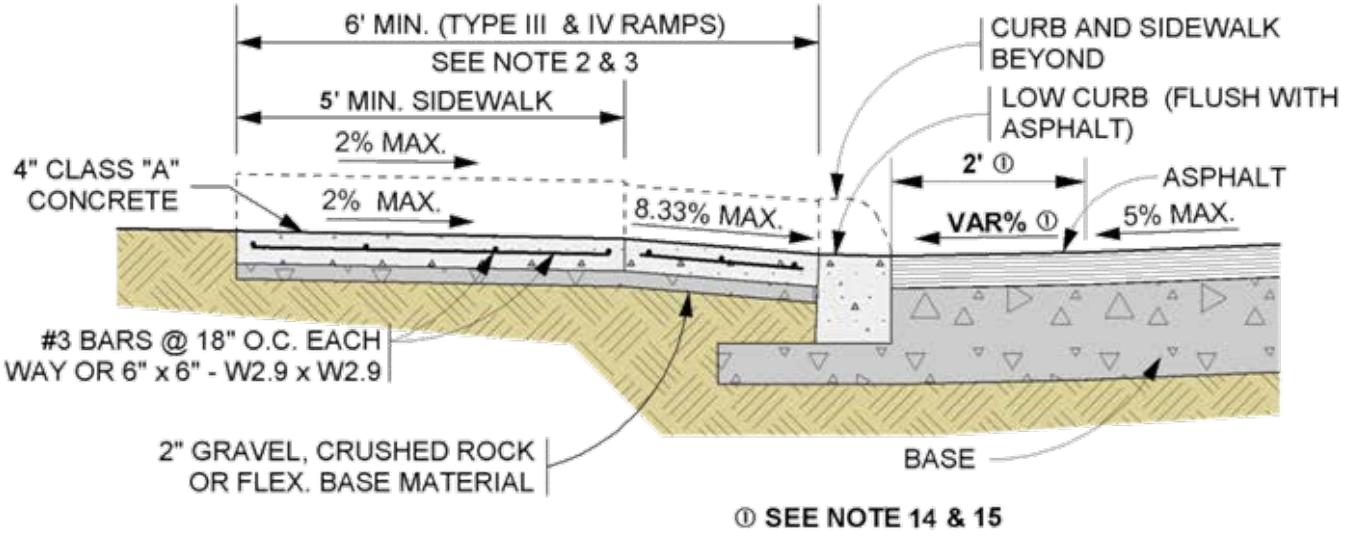
GUTTER SLOPE	SIDEWALK RAMP LENGTH. (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-2"
2%	5'-0"	8'-4"
3%	4'-6"	10'-0"
4%	4'-2"	12'-6"
5%	3'-10"	16'-8"



CURB PROFILE SCALE: 1" = 4'

WHEELCHAIR RAMP SECTION AND CURB PROFILE

WITH SIDEWALK ABUTTING CURB



STREET ACCESS RAMP SECTION 0 1 2 3 FT

SIDEWALKS AND WHEELCHAIR RAMPS GENERAL NOTES

2. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.

3. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.

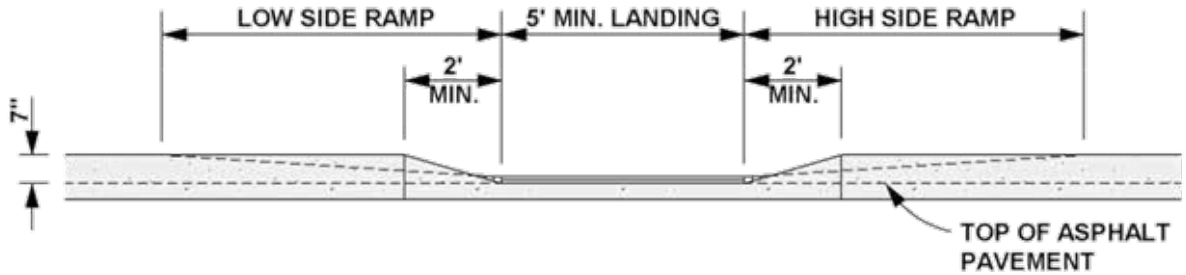
13. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.

14. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES. IN THE CASE OF A STREET ACCESS RAMP DESIGNED AT THE 8.33% MAXIMUM SLOPE, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN 2.67% (I.E. 8.33 - (-2.67) = 11). IN ADDITION, THE ADJACENT PAVEMENT CROSS SLOPE SHALL BE LESS THAN OR EQUAL TO 5%.

15. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.

TABLE 1

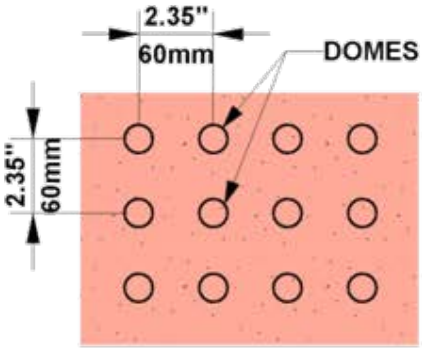
GUTTER SLOPE	SIDEWALK RAMP LENGTH. (1:12)	
	LOW SIDE	HIGH SIDE
1%	5'-6"	7'-2"
2%	5'-0"	8'-4"
3%	4'-6"	10'-0"
4%	4'-2"	12'-6"
5%	3'-10"	16'-8"



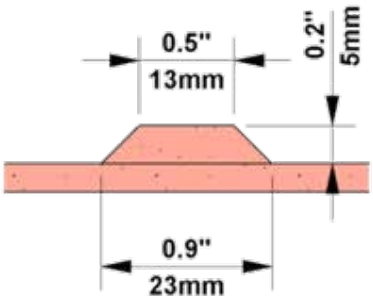
CURB PROFILE SCALE: 1" = 4'

WHEELCHAIR RAMP SECTION AND CURB PROFILE

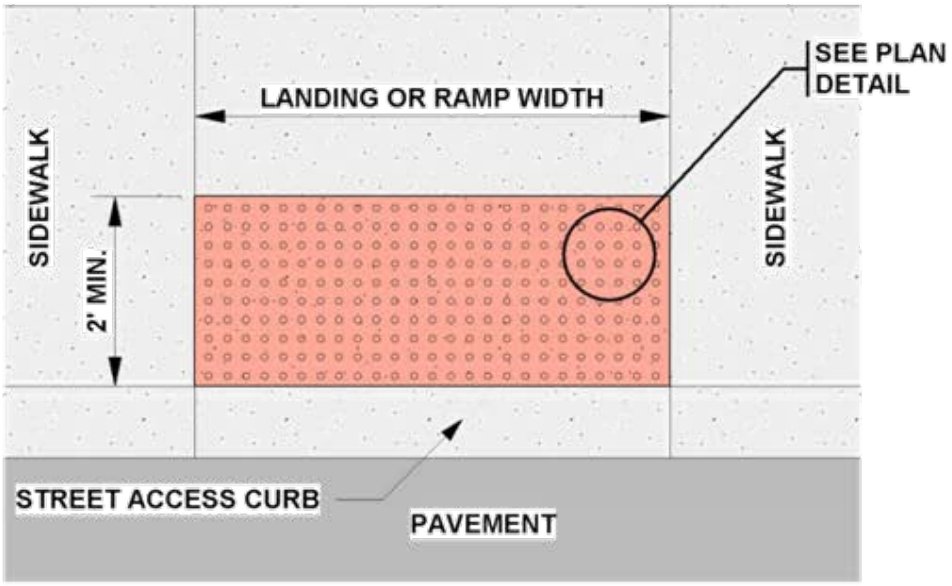
WITH SIDEWALK SEPARATED FROM CURB



PLAN DETAIL
NO SCALE



DOME SECTION
NO SCALE



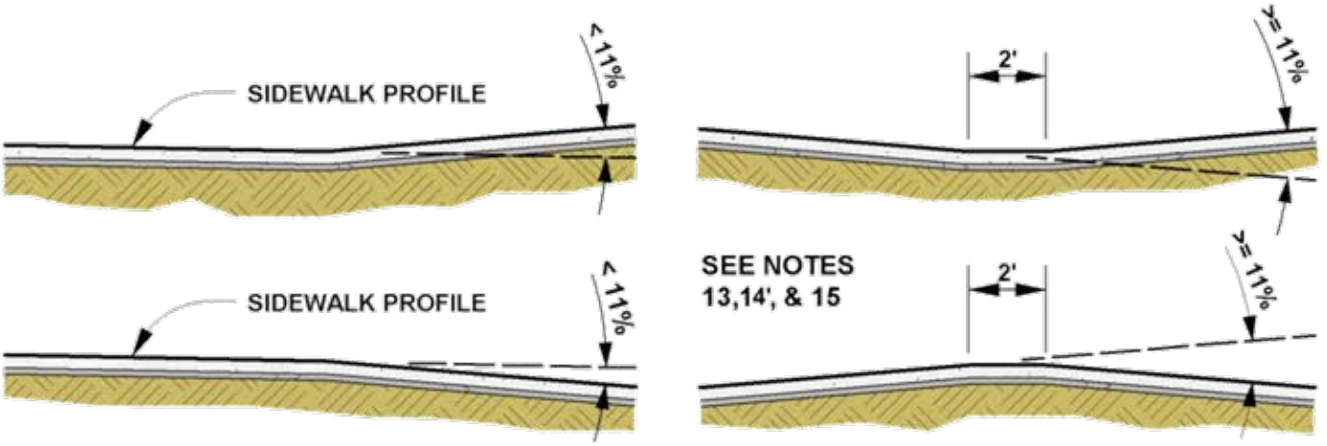
PLAN VIEW
NO SCALE

SIDEWALKS AND WHEELCHAIR RAMPS GENERAL NOTES

5. ALL CURB RAMPS OR LANDINGS ABUTTING THE CROSSWALK SHALL HAVE A DETECTABLE WARNING 24 INCHES DEEP (IN THE DIRECTION OF PEDESTRIAN TRAVEL) AND EXTENDING THE FULL WIDTH OF THE CURB RAMP OR LANDING. THE DETECTABLE WARNING SHALL CONSIST OF RAISED TRUNCATED DOMES, ALIGNED IN A GRID PATTERN WITH A DIAMETER OF A NOMINAL 0.9 INCHES (23mm), A HEIGHT OF NOMINAL 0.2 INCHES (5mm), AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES (60mm).

6. DETECTABLE WARNINGS SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USEDTO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE.

13. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.



SIDEWALK PROFILES AND GRADE REQUIREMENTS

SIDEWALKS AND WHEELCHAIR RAMPS GENERAL NOTES

2. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.

3. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.

12. SIDEWALK GRADES SHALL NOT EXCEED THE GRADE ESTABLISHED FOR THE ADJACENT ROADWAY, ANY SIDEWALK CONSTRUCTION THAT DEVIATES FROM THE NATURAL GRADE OF THE ROADWAY TO CREATE A GRADE STEEPER THAN THE EXISTING ROADWAY WILL REQUIRE RAMPS, HANDRAILS, AND RESTING PLATFORMS TO BE CONSTRUCTED IN ACCORDANCE WITH ADA AND TAS STANDARDS.

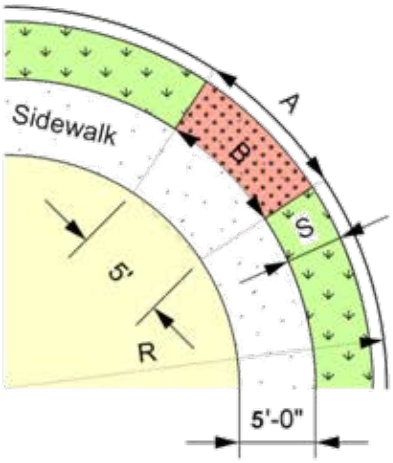
13. SIDEWALK CROSS GRADE SHALL HAVE A MAXIMUM SLOPE OF 2%. LANDINGS SHALL HAVE A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.

14. THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES SHALL BE LESS THAN 11%. THE CHANGE OF GRADE SHALL BE DEFINED AS THE ALGEBRAIC DIFFERENCE OF THE ADJACENT SURFACE SLOPES.

15. IF THE CHANGE OF GRADE BETWEEN ADJACENT SURFACES IS GREATER THAN OR EQUAL TO 11%, A LEVELING STRIP, 2 FEET IN LENGTH, SHALL BE PROVIDED TO TRANSITION THE ADJACENT SURFACES.

SIDEWALK PASSING SPACE & GRADE REQUIREMENTS

R		Sidewalk setback from curb (S)				
		0'	2'	3'	4'	5'
15'	A	7' 4-3/4"	9' 2-7/8"	10' 6-3/4"	12' 4-1/8"	14' 10-5/8"
	B		7' 6-1/2"	7'11"	8' 5-1/4"	9' 2-1/8"
16'	A	7'2"	8' 9-1/8"	9' 10-1/4"	11' 3-1/4"	13'2"
	B		7'3"	7' 6-1/2"	7'11"	8' 5-1/4"
17'	A	6' 11-7/8"	8' 4-1/2"	9' 3-5/8"	10' 5-5/8"	11' 11-5/8"
	B		7' 0-1/4"	7'3"	7' 6-1/2"	7'11"
18'	A	6'10"	8' 0-3/4"	8' 10-1/2"	9' 10-1/4"	11'1"
	B		6'10"	7' 0-1/4"	7'3"	7' 6-1/2"
19'	A	6' 8-3/8"	7' 9-3/4"	8' 6-1/8"	9' 4-3/8"	10' 4-3/4"
	B		6' 8-1/8"	6'10"	7' 0-1/4"	7'3"
20'	A	6'7"	7' 7-1/8"	8' 2-5/8"	8' 11-5/8"	9' 10-1/4"
	B		6' 6-5/8"	6' 8-1/8"	6'10"	7' 0-1/4"
21'	A	6' 5-7/8"	7' 4-7/8"	7' 11-5/8"	8' 7-5/8"	9'5"
	B		6' 5-1/4"	6' 6-5/8"	6' 8-1/8"	6'10"
22'	A	6' 4-3/4"	7'3"	7' 9-1/8"	8' 4-1/4"	9' 0-1/2"
	B		6' 4-1/8"	6' 5-1/4"	6' 6-5/8"	6' 8-1/8"
23'	A	6' 3-7/8"	7' 1-1/4"	7' 6-7/8"	8' 1-3/8"	8' 8-3/4"
	B		6' 3-1/8"	6' 4-1/8"	6' 5-1/4"	6' 6-5/8"
24'	A	6'3"	6' 11-3/4"	7'5"	7' 10-7/8"	8' 5-5/8"
	B		6' 2-1/8"	6' 3-1/8"	6' 4-1/8"	6' 5-1/4"
25'	A	6' 2-1/4"	6' 10-1/2"	7' 3-1/4"	7' 8-5/8"	8' 2-3/4"
	B		6' 1-3/8"	6' 2-1/8"	6' 3-1/8"	6' 4-1/8"
26'	A	6' 1-5/8"	6' 9-1/4"	7' 1-3/4"	7' 6-3/4"	8' 0-3/8"
	B		6' 0-5/8"	6' 1-3/8"	6' 2-1/8"	6' 3-1/8"
27'	A	6'1"	6' 8-1/4"	7' 0-3/8"	7'5"	7' 10-1/4"
	B		6'0"	6' 0-5/8"	6' 1-3/8"	6' 2-1/8"
28'	A	6' 0-3/8"	6' 7-1/4"	6' 11-1/8"	7' 3-1/2"	7' 8-3/8"
	B		5' 11-1/2"	6'0"	6' 0-5/8"	6' 1-3/8"
29'	A	5' 11-7/8"	6' 6-3/8"	6' 10-1/8"	7' 2-1/8"	7' 6-5/8"
	B		5' 10-7/8"	5' 11-1/2"	6'0"	6' 0-5/8"
30'	A	5' 11-3/8"	6' 5-5/8"	6' 9-1/8"	7' 0-7/8"	7' 5-1/8"
	B		5' 10-1/2"	5' 10-7/8"	5' 11-1/2"	6'0"
31'	A	5'11"	6' 4-7/8"	6' 8-1/8"	6' 11-3/4"	7' 3-3/4"
	B		5'10"	5' 10-1/2"	5' 10-7/8"	5' 11-1/2"
32'	A	5' 10-1/2"	6' 4-1/8"	6' 7-3/8"	6' 10-3/4"	7' 2-1/2"
	B		5' 9-5/8"	5'10"	5' 10-1/2"	5' 10-7/8"
33'	A	5' 10-1/8"	6' 3-1/2"	6' 6-1/2"	6' 9-3/4"	7' 1-3/8"
	B		5' 9-1/4"	5' 9-5/8"	5'10"	5' 10-1/2"
34'	A	5' 9-7/8"	6'3"	6' 5-7/8"	6' 8-7/8"	7' 0-1/4"
	B		5' 8-7/8"	5' 9-1/4"	5' 9-5/8"	5'10"
35'	A	5' 9-1/2"	6' 2-3/8"	6' 5-1/8"	6' 8-1/8"	6' 11-1/4"
	B		5' 8-5/8"	5' 8-7/8"	5' 9-1/4"	5' 9-5/8"
36'	A	5' 9-1/4"	6' 1-7/8"	6' 4-1/2"	6' 7-3/8"	6' 10-3/8"
	B		5' 8-1/4"	5' 8-5/8"	5' 8-7/8"	5' 9-1/4"
37'	A	5' 8-7/8"	6' 1-1/2"	6'4"	6' 6-5/8"	6' 9-5/8"
	B		5'8"	5' 8-1/4"	5' 8-5/8"	5' 8-7/8"
38'	A	5' 8-5/8"	6'1"	6' 3-1/2"	6'6"	6' 8-7/8"
	B		5' 7-3/4"	5'8"	5' 8-1/4"	5' 8-5/8"
39'	A	5' 8-3/8"	6' 0-5/8"	6'3"	6' 5-1/2"	6' 8-1/8"
	B		5' 7-1/2"	5' 7-3/4"	5'8"	5' 8-1/4"
40'	A	5' 8-1/8"	6' 0-1/4"	6' 2-1/2"	6' 4-7/8"	6' 7-3/8"
	B		5' 7-1/4"	5' 7-1/2"	5' 7-3/4"	5'8"



CURB AND SIDEWALK ARC LENGTH TABLE

CONCRETE DRIVEWAY GENERAL NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:

   A) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 502-2

   B) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503-1 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE

   C) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503-2 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE

2. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.

3. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

TYPE	MINIMUM	MAXIMUM
RESIDENTIAL	10'	20'
COMMERCIAL - ONE WAY	12'	20'
COMMERCIAL - TWO WAY	24'	30'

4. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.

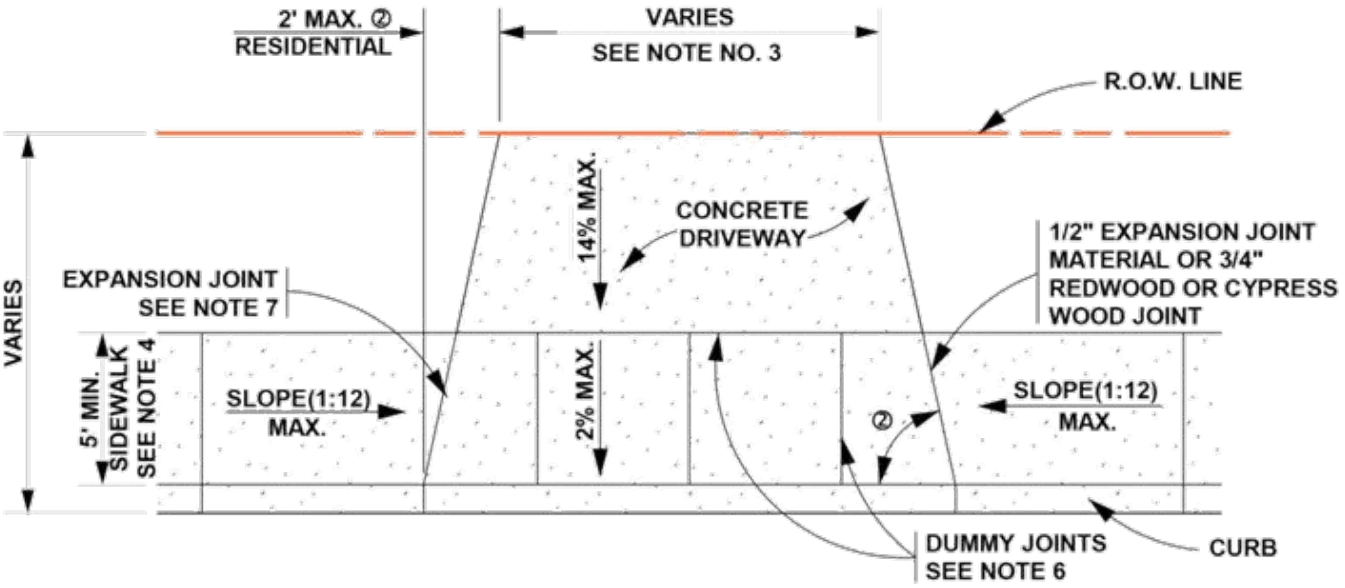
5. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.

6. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.

7. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3/8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.

8. WHERE SIDEWALKS CROSS DRIVEWAYS, THE SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.

9. SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.



② - 45° FOR COMMERCIAL DRIVEWAY

PLAN VIEW

CONCRETE DRIVEWAY GENERAL NOTES

3. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

TYPE	MINIMUM	MAXIMUM
RESIDENTIAL	10'	20'
COMMERCIAL - ONE WAY	12'	20'
COMMERCIAL - TWO WAY	24'	30'

4. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.

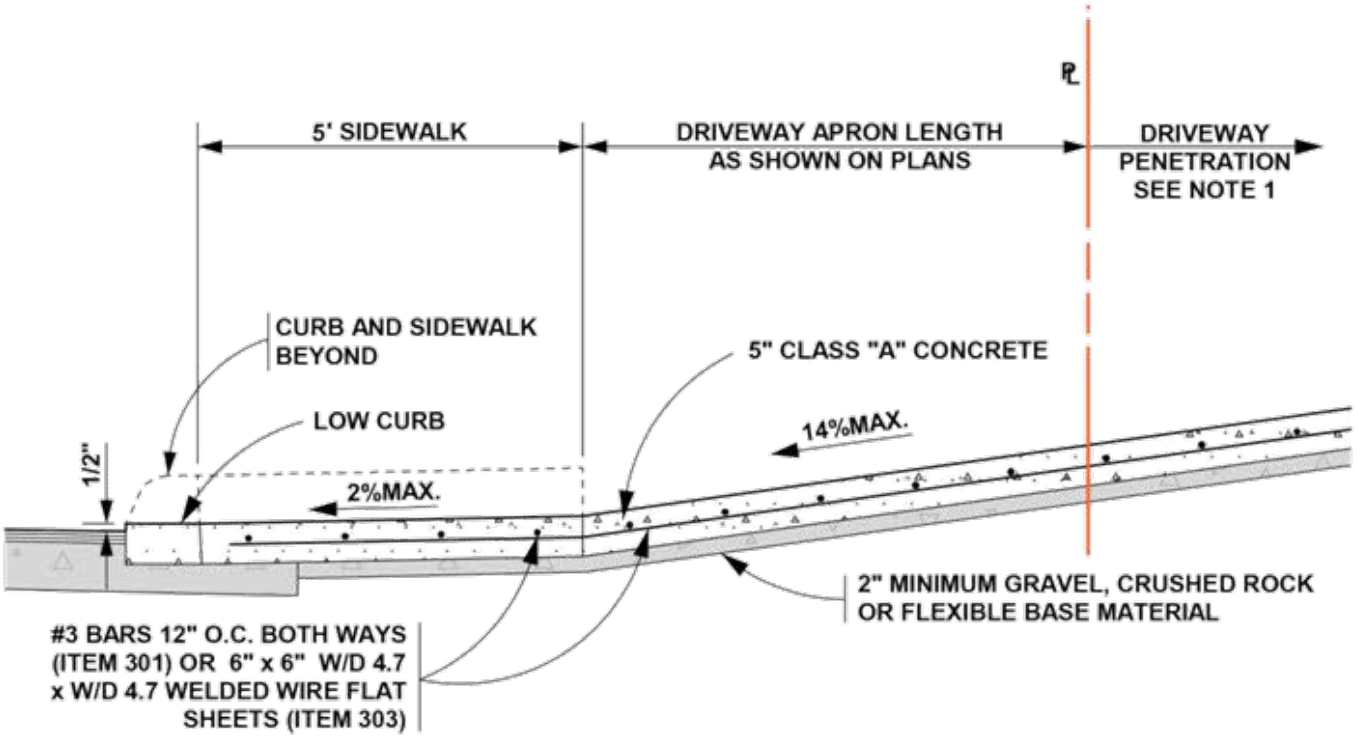
5. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.

6. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.

7. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3/8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.

CONCRETE DRIVEWAY PLAN VIEW

WITH SIDEWALK ABUTTING CURB



DRIVEWAY SECTION

CONCRETE DRIVEWAY GENERAL NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:

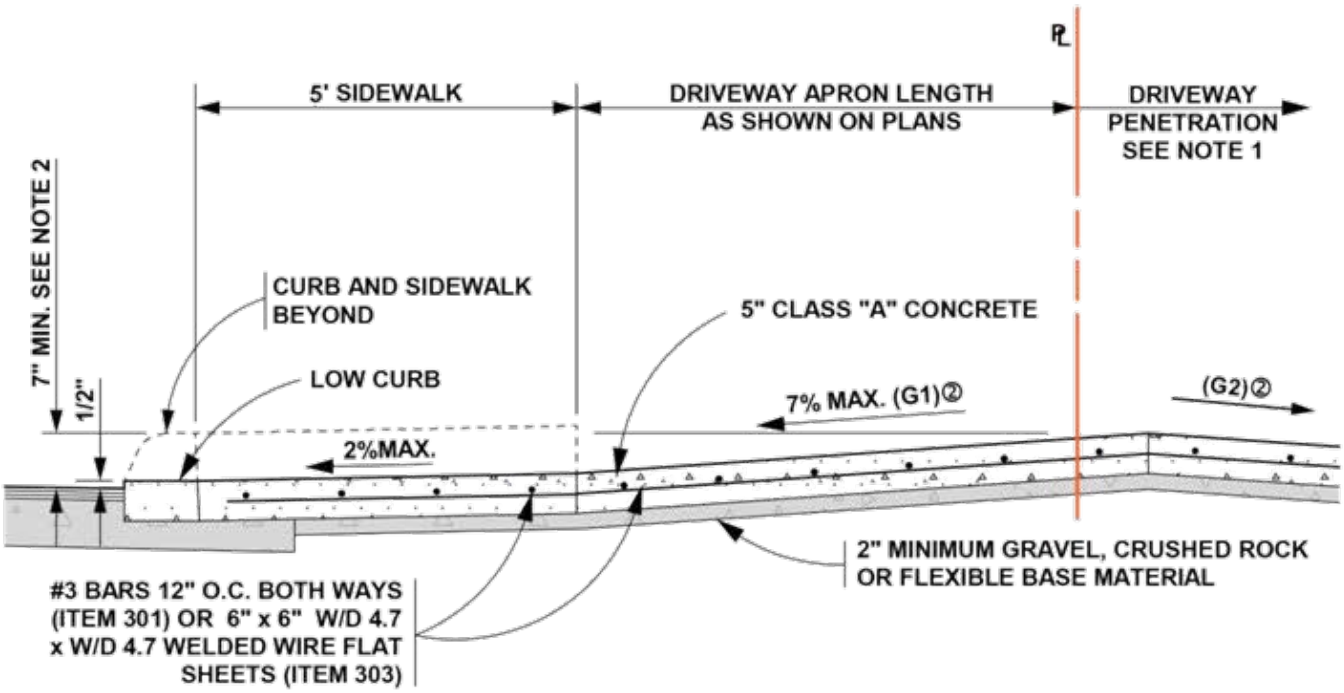
   A) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 502-2

   B) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503-1 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE

   C) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503-2 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE

RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB



② - THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

DRIVEWAY SECTION

CONCRETE DRIVEWAY GENERAL NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:

   A) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 502-2

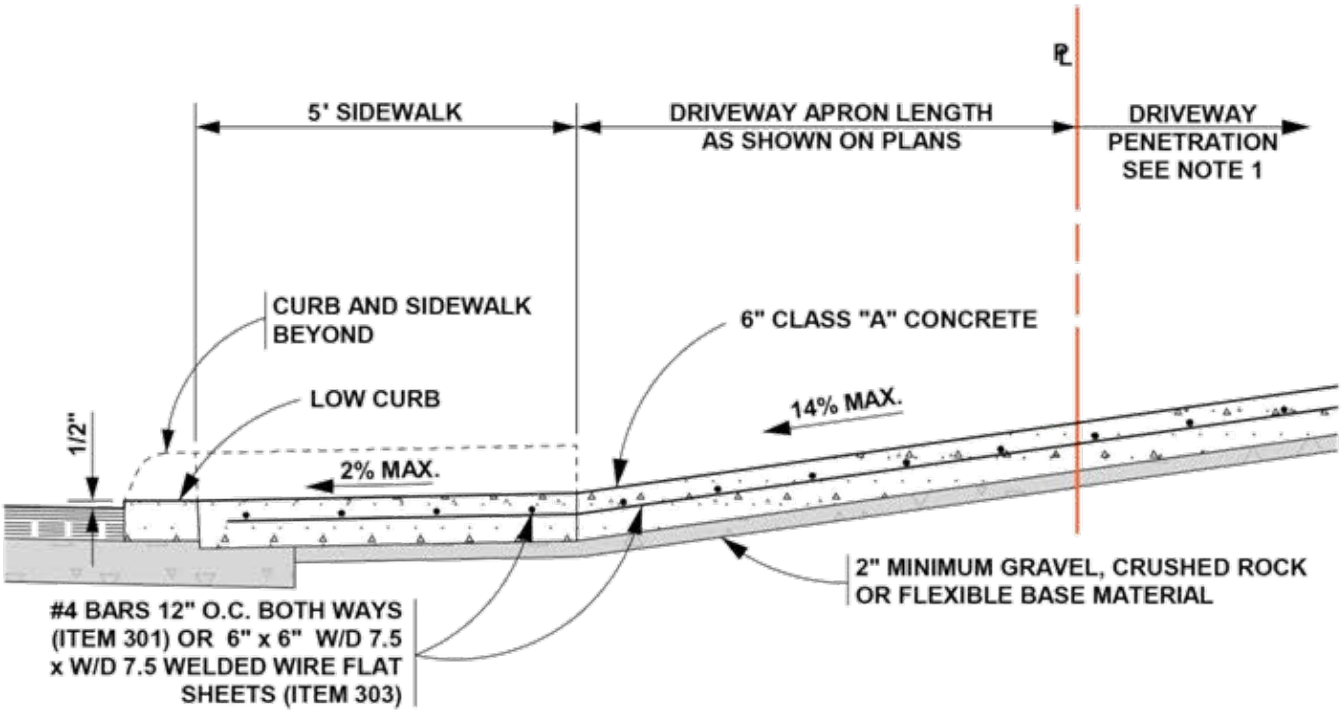
   B) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503-1 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE

   C) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503-2 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE

2. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.

RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB & LOWER PROPERTY ELEVATION



DRIVEWAY SECTION

CONCRETE DRIVEWAY GENERAL NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:

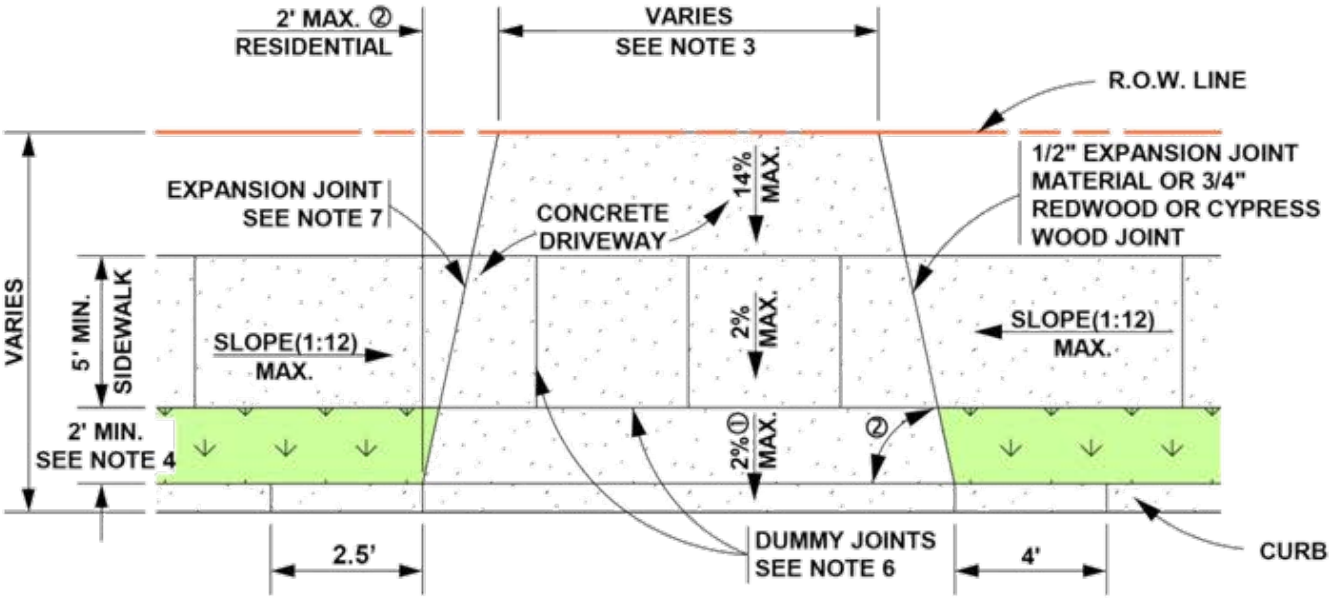
   A) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 502-2

   B) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503-1 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE

   C) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503-2 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE

COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB



① - 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER
② - 45° FOR COMMERCIAL DRIVEWAY

PLAN VIEW

CONCRETE DRIVEWAY GENERAL NOTES

3. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

TYPE	MINIMUM	MAXIMUM
RESIDENTIAL	10'	20'
COMMERCIAL - ONE WAY	12'	20'
COMMERCIAL - TWO WAY	24'	30'

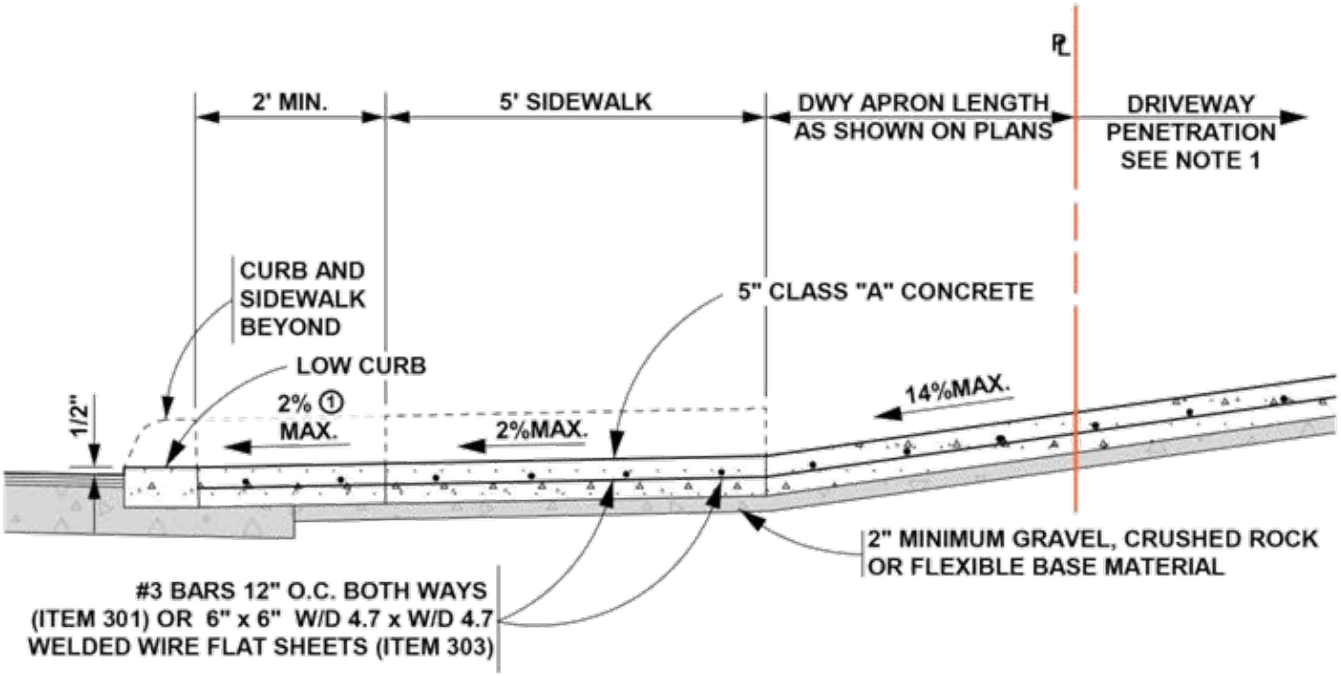
4. FOR ALL STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 5' (6' IF ADJOINING COMMERCIAL) & IF SEPARATED FROM THE CURB, THE SIDEWALK MUST BE A MINIMUM OF 2' FROM THE BACK OF CURB.

5. SIDEWALKS LOCATED AT THE BACK OF CURB SHALL HAVE A MINIMUM WIDTH OF 6'.

6. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.

7. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3/8" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.

CONCRETE DRIVEWAY PLAN VIEW
WITH SIDEWALK SEPARATED FROM CURB
WITH SIDEWALK SEPARATED FROM CURB



① - 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

DRIVEWAY SECTION

CONCRETE DRIVEWAY GENERAL NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:

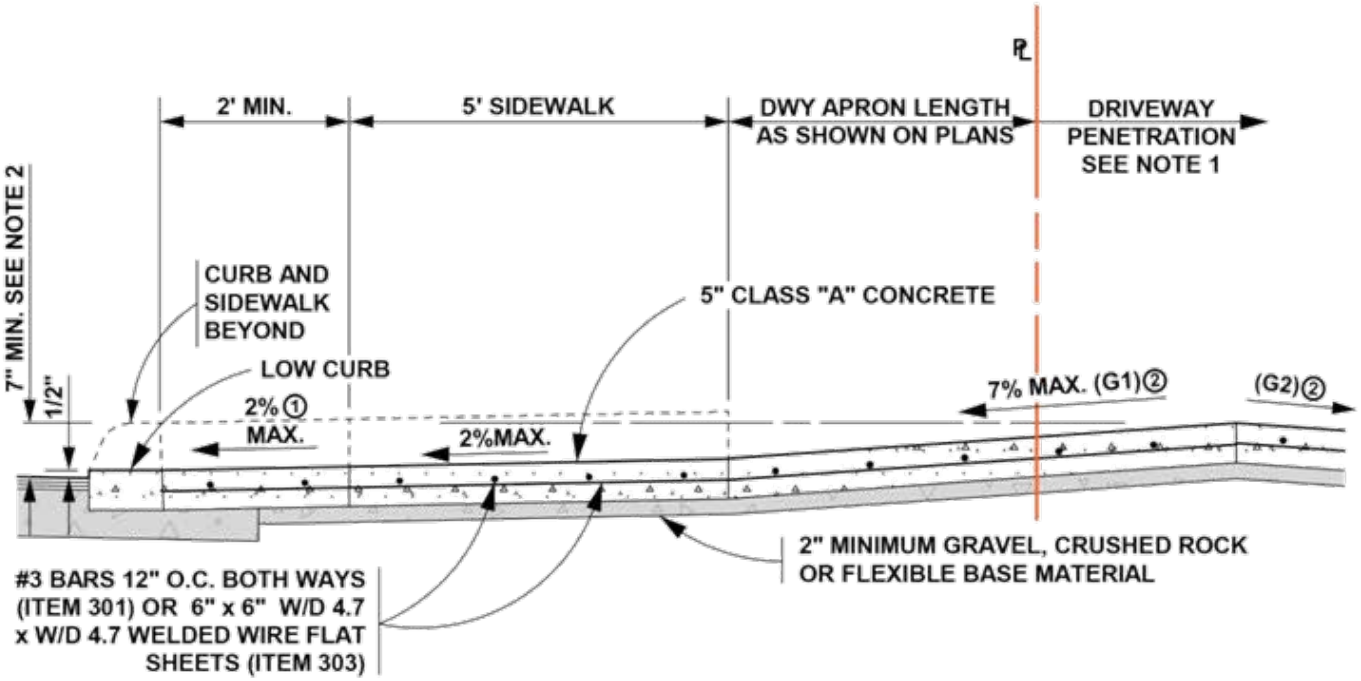
   A) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 502-2

   B) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503-1 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE

   C) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503-2 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE

RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB



① - 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER
② - THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

DRIVEWAY SECTION

CONCRETE DRIVEWAY GENERAL NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:

   A) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 502-2

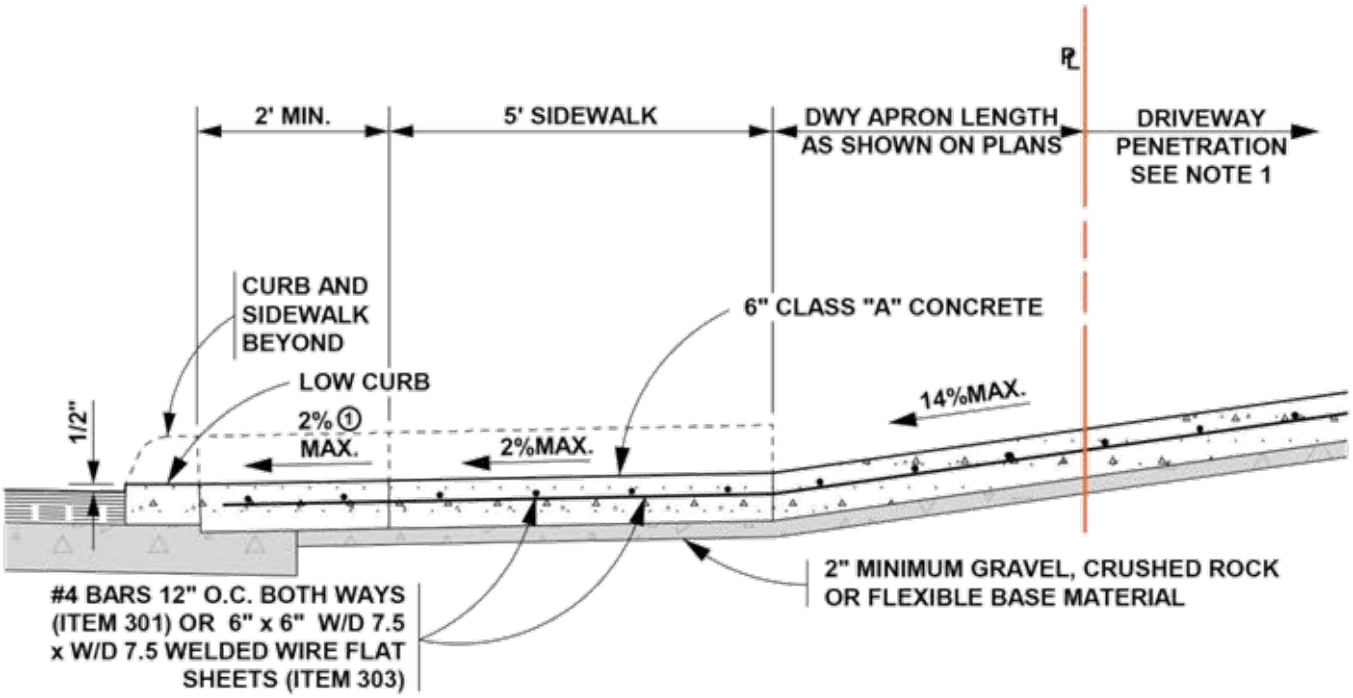
   B) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503-1 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE

   C) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503-2 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE

2. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.

RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK SEPARATED FROM CURB & LOWER PROPERTY ELEVATION



① - 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

DRIVEWAY SECTION

SCALE: 1" = 2'

CONCRETE DRIVEWAY GENERAL NOTES

1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:

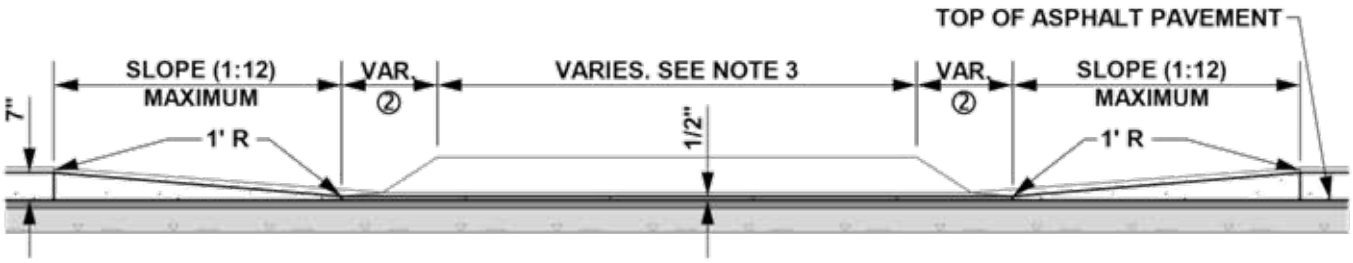
   A) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 502-2

   B) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503-1 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE

   C) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503-2 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE

COMMERCIAL DRIVEWAY SECTION

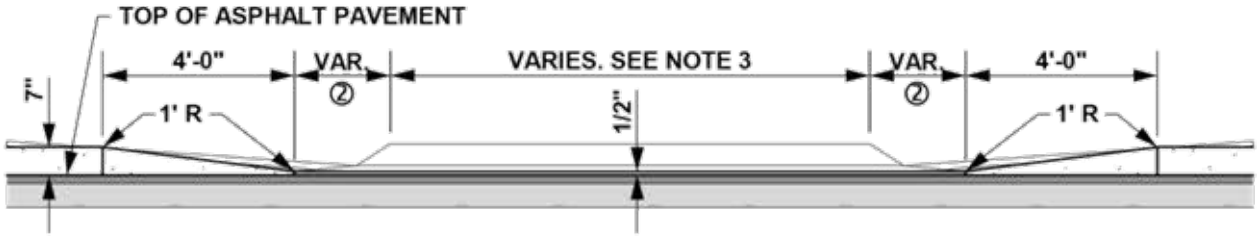
WITH SIDEWALK SEPARATED FROM CURB



DRIVEWAY CURB PROFILE SCALE: 1" = 4'

WITH SIDEWALK ABUTTING THE CURB

② RESIDENTIAL : 2' MAXIMUM;
COMMERCIAL: SEE PLAN VIEW



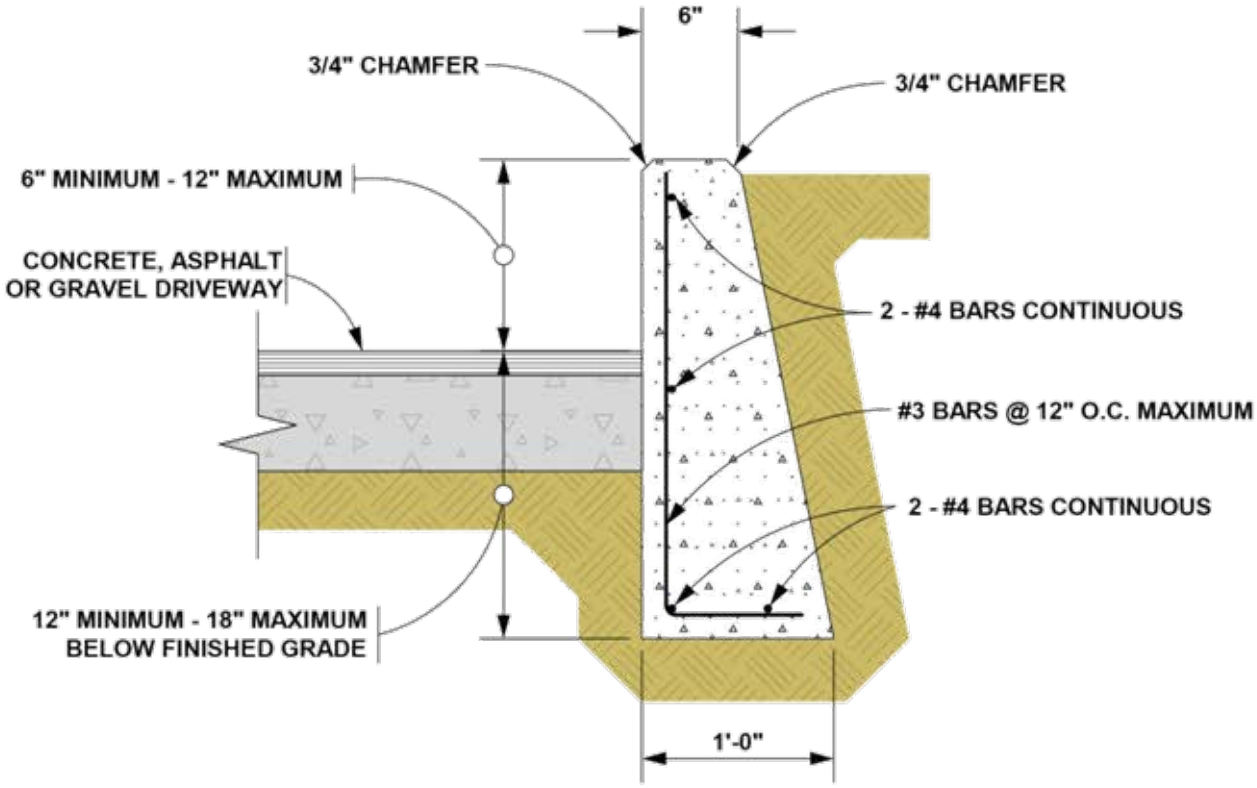
DRIVEWAY CURB PROFILE SCALE: 1" = 4'

WITH SIDEWALK SEPARATED FROM CURB

CONCRETE DRIVEWAY GENERAL NOTES

3. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

TYPE	MINIMUM	MAXIMUM
RESIDENTIAL	10'	20'
COMMERCIAL - ONE WAY	12'	20'
COMMERCIAL - TWO WAY	24'	30'



NOTE:
COST OF REINFORCEMENT TO BE INCLUDED
IN UNIT COST OF CONCRETE

RETAINING WALL SECTION SCALE: 1" = 1'

DRIVEWAY CONCRETE RETAINING WALL

ITEM 300-1 ON COMPACTED SUBGRADE