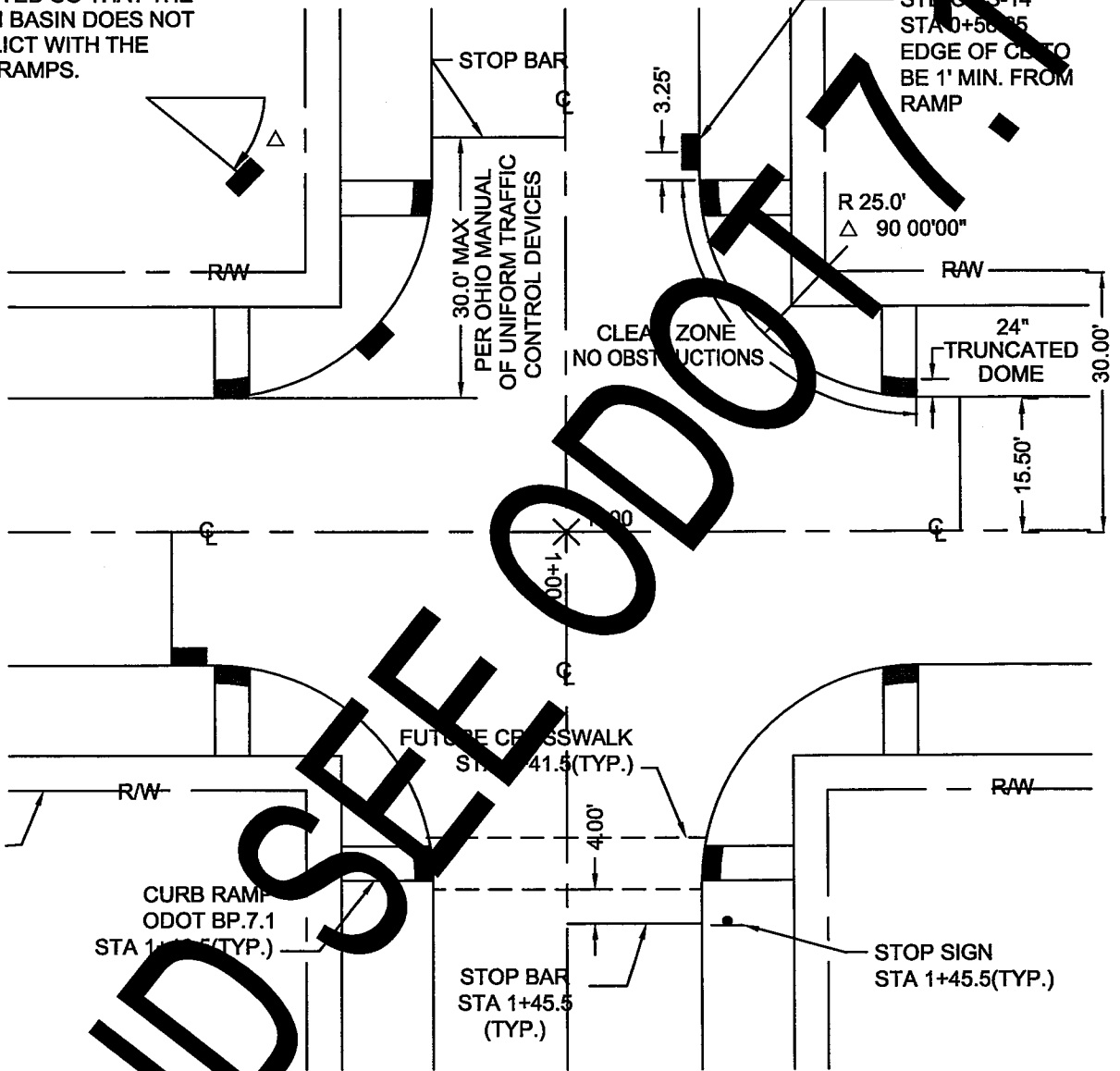


STREET SLOPES TO BE ADJUSTED SO THAT THE CATCH BASIN DOES NOT CONFLICT WITH THE CURB RAMPS.



VOID SEE ODOT

SEE ODOT STANDARD DRAWING BP 7.1 FOR ADDITIONAL DETAILS

APPROVED \_\_\_\_\_  
 \_\_\_\_\_  
 CITY ENGINEER

TYPICAL  
CURB RAMP  
STANDARDS

CITY OF LANCASTER, OHIO  
DEPARTMENT OF ENGINEERING

STANDARD  
CONSTRUCTION DRAWING

DWG. BY: .....  
 CHK'D BY: .....

FILE NUMBER  
**P-8**

REVISED: 4/21/10

**LEGEND**

- 1 Dimension may be reduced to 3'-0" in existing sidewalks if the landing is unconstrained along the back edge.
- 2 May be reduced to 3'-4" in existing sidewalks to better fit the walk configuration or where site conditions are restricted by narrow walks, pole foundations, drainage inlets, etc. The width may be tapered.
- 3 Where landing width (D) has been reduced to 3'-0" the flared sides shall have a maximum slope of 12:1.
- 4 Flared sides are not required where the edges of a curb ramp are protected by landscaping or other barriers to travel by wheelchair users or pedestrians across the edge of the curb ramp. However, if the flared sides are used in these areas, they may be of any slope.
- 5 The slope of the ramp toward the curb is preferred to be 12:1 or flatter related to the horizontal.  
  
In existing sidewalks, where the maximum ramp slope (S<sub>R</sub>) is not feasible, it may be reduced as follows:  
 A) 10:1 for a max. rise of 6",  
 B) 8:1 for a max. rise of 3",  
 C) 6:1 over a max. run of 2'-0" for historic areas where a flatter slope is not feasible.
- 6 The minimum length of a perpendicular ramp is 6' from the back of a 6" curb and may be increased where feasible to obtain a flatter ramp slope or to better blend with the walk configuration.
- 7 Gutter counter slopes at the foot of perpendicular curb ramps should not exceed 20:1 over a distance of 2'-0" from the curb.
- 8 Detectable Warnings (truncated domes) are to be installed in the location shown. Dimensions of the domes are 24" from the back of the curb by the width of the ramp. See DETECTABLE WARNINGS NOTES on Sheet 3.
- 9 The bottom edge of the ramp shall change planes perpendicular to the landing.
- 10 The edge of the curb shall be flush with the edge of the adjacent pavement and gutter.
- 11 The landing at the bottom of the ramp shall be >= 4' x 4' with a maximum 1:48 cross slope in two directions.

General: Max. 1/4" lip between curb ramp and pavement.

For Parallel Ramps construct curb behind the sidewalk if required elsewhere in the plans.

See Sheet 3 for Sections.

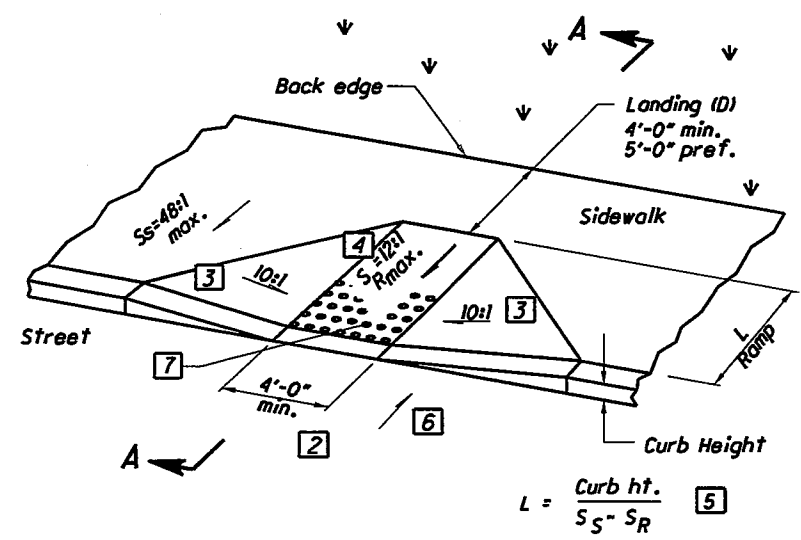
Dimensions derived by equations are nominal. Construct ramps to meet required slopes and existing conditions.

$$L_{LOW} = \frac{\text{Curb height}}{0.083 + \text{Street Slope}}$$

$$L_{HIGH} = \frac{\text{Curb height}}{0.083 - \text{Street Slope}}$$

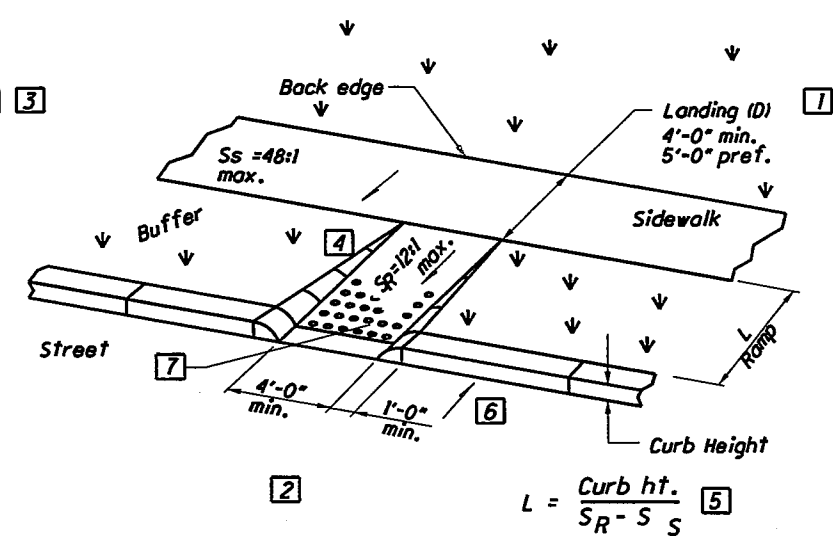
Street Slope	Ramp Length @ 1"/ft	
	LOW SIDE*	HIGH SIDE*
0.01	5'-5"	6'-10"
0.02	4'-10"	7'-11"
0.03	4'-5"	9'-5"
0.04	4'-1"	11'-8"
0.05	3'-9"	15'-2"

\* Measured along the back of a 6" high curb.



Type A1 (Perpendicular with flared sides)

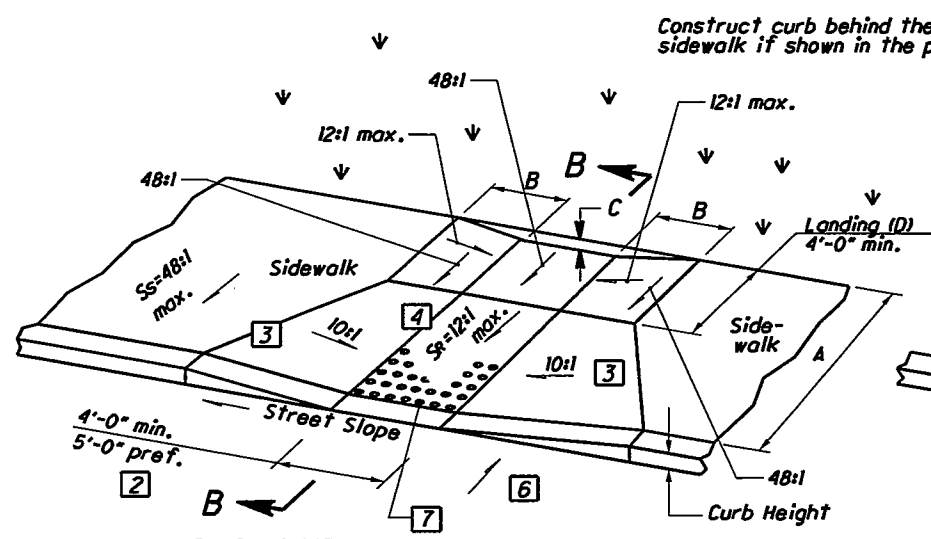
$$L = \frac{\text{Curb ht.}}{S_S - S_R}$$



Type A2 (Perpendicular with returned curb)

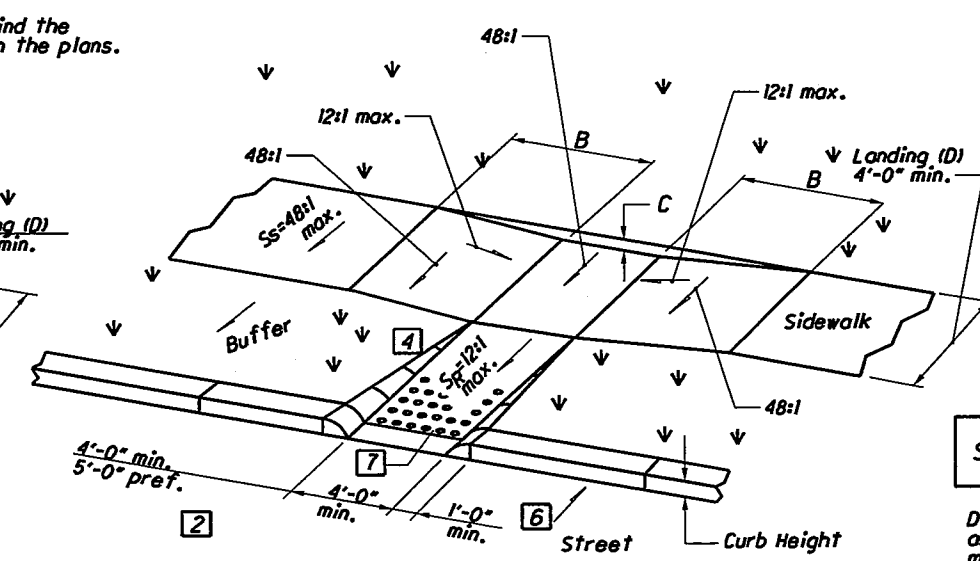
$$L = \frac{\text{Curb ht.}}{S_R - S_S}$$

**PERPENDICULAR CURB RAMP DETAILS**



Type C1 (Combined with flared sides)

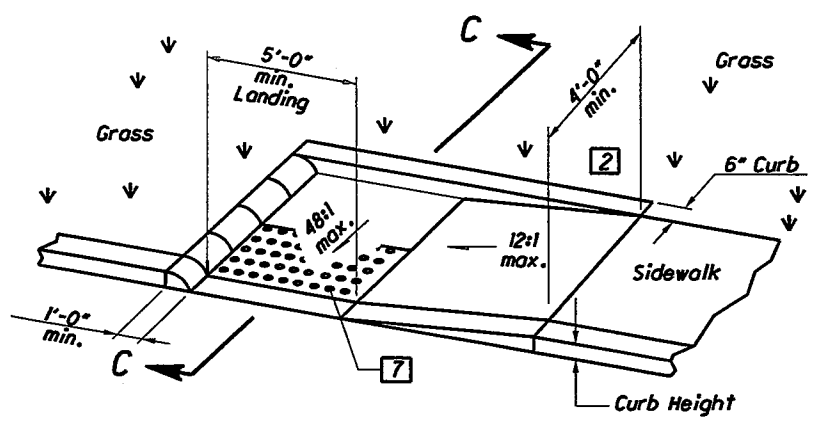
B = C / 0.083  
 C = [Curb ht. + A(S<sub>S</sub>)] - [(A-D)S<sub>R</sub> + D(0.02)]



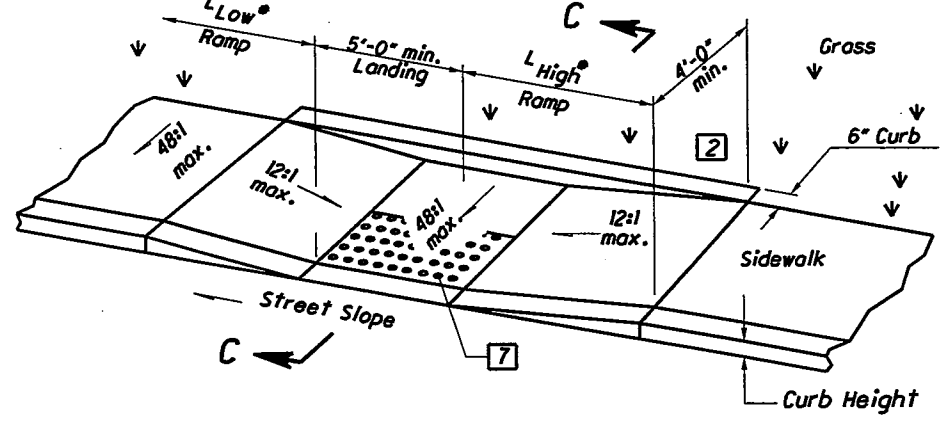
Type C2 (Combined with returned curb)

\* See Equations and Table to the right.

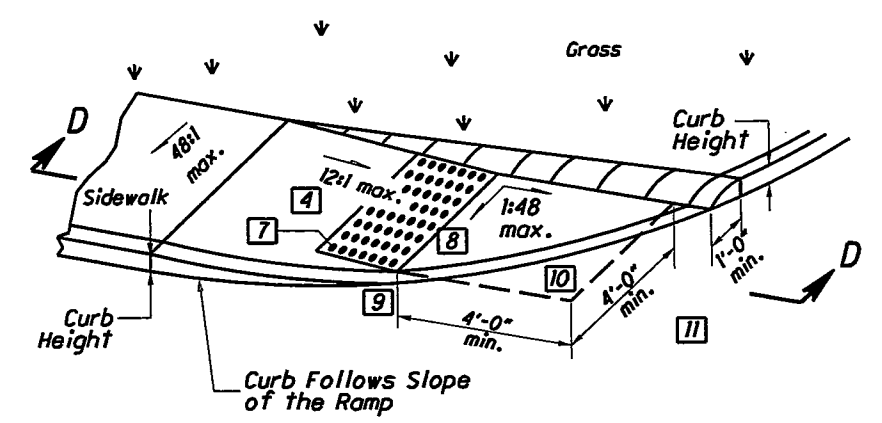
**COMBINED CURB RAMP DETAILS**



Type B1 (Single sided Parallel)

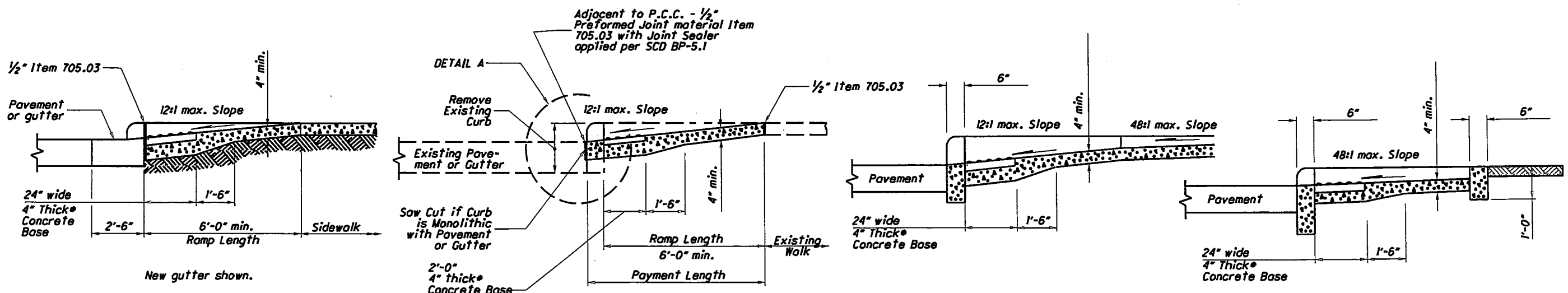


Type B2 (Double sided Parallel)



Type B3 (Single sided Parallel)

**PARALLEL CURB RAMP DETAILS** -- For Parallel Ramps construct curb behind the sidewalk if required elsewhere in the plans.

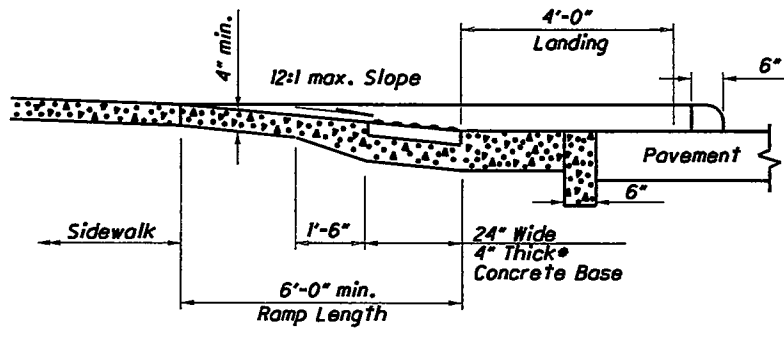


**SECTION A-A  
NORMAL DETAIL**  
See Sheet 2.

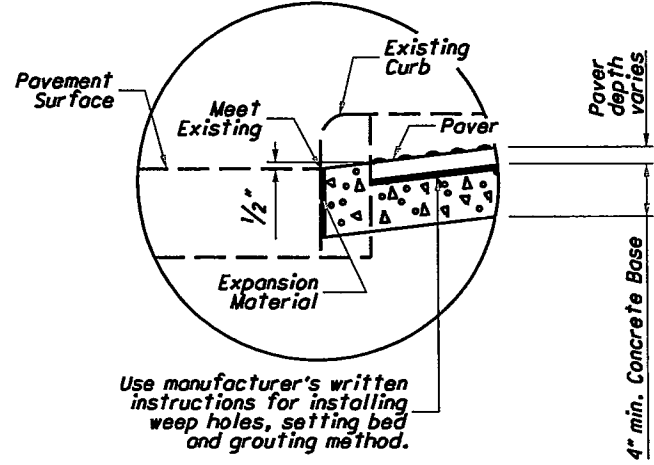
**SECTION A-A  
EXISTING WALK DETAIL**  
See Sheet 2.

**SECTION B-B**  
See Sheet 2.

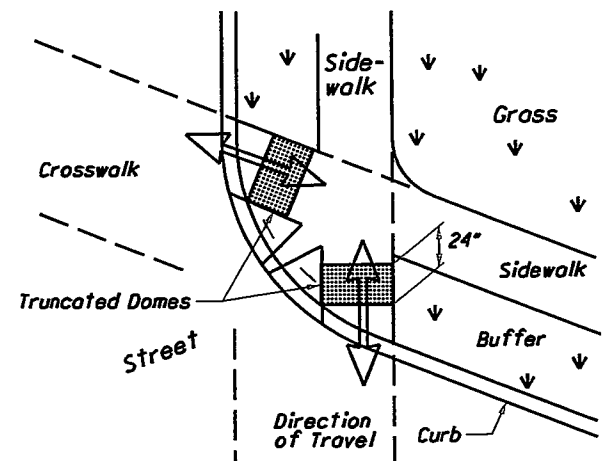
**SECTION C-C**  
See Sheet 2.



**SECTION D-D**  
See Sheet 2.



**DETAIL A**



**DOMES ALIGNMENT**

\*Where possible, pour ramp area integral with the curb, otherwise use 6" thick walk.

**DETECTABLE WARNINGS NOTES**

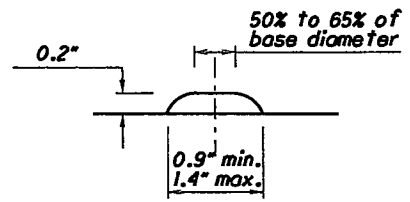
**PLACEMENT:** Truncated domes are to be installed at any location where pedestrians might cross paths with vehicular traffic lanes, such as the base of curb ramps or at blended curbs. A 24" strip of domes is to be installed for the full width of the ramp. Typical street corner placement locations are shown on Sheet 1.

Ramp cross sections underneath truncated domes are a 4" thick concrete base. Ramp cross sectional details shown here depict nominal 2" thick cast-in place truncated domes. Increase base thickness to maintain the 4" thickness if using deeper products. Do not decrease thickness for thinner products. See DETAIL A.

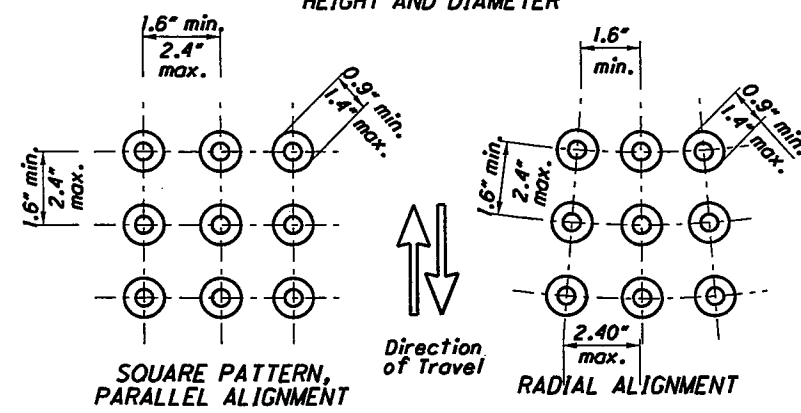
**ALIGNMENT:** Truncated domes should be aligned with the primary direction of pedestrian travel as shown on the DOMES ALIGNMENT Detail. Normally the domes should be flush with the back of the curb, but in skewed conditions of at least one corner of the 24" strip should be adjacent to the back of curb, as shown on the DOMES ALIGNMENT ON RADIUS CURB Detail. For non-standard layouts, dome materials may have to be mitered and placed segmentally.

**VISUAL CONTRAST:** Color of the truncated domes should contrast with surrounding concrete walk and ramp. Use of a red blend is recommended for concrete curb ramps. Black is not an acceptable color.

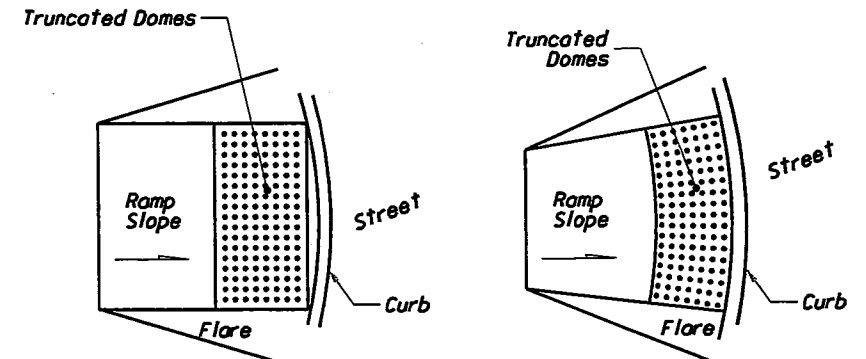
**PRODUCTS:** Approved products may be found on the Office of Roadway Engineering Service's Truncated Domes Approved List. Install products as per manufacturer's printed instructions.



**HEIGHT AND DIAMETER**

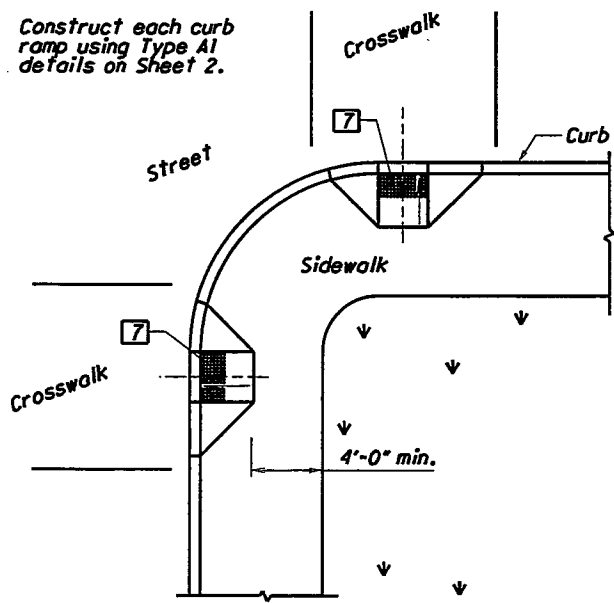


**TRUNCATED DOMES DETAILS**



**DOMES ALIGNMENT ON RADIUS CURB**

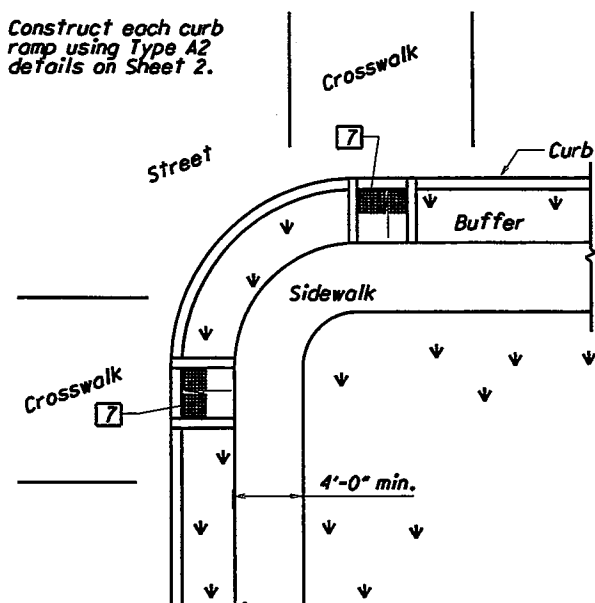
Construct each curb ramp using Type A1 details on Sheet 2.



Use curb ramps with flared sides at locations with wide sidewalks.

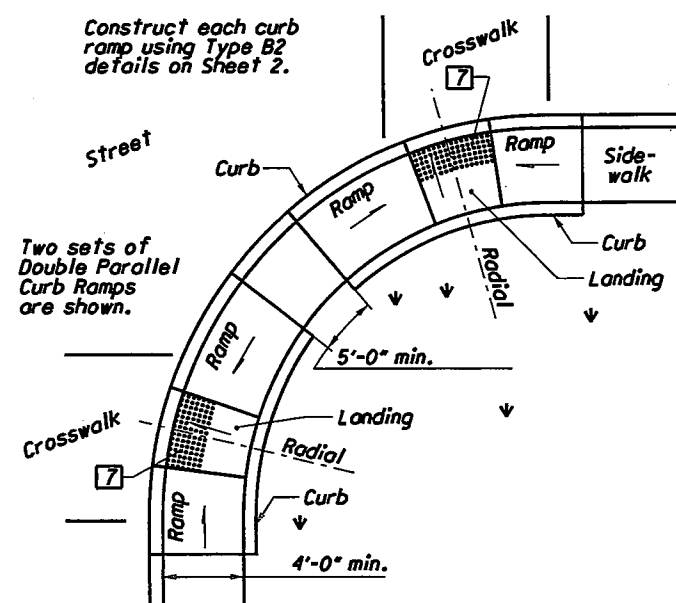
PERPENDICULAR CURB RAMPS

Construct each curb ramp using Type A2 details on Sheet 2.



Use curb ramps with returned curbs where buffer is wide enough to accommodate ramp slope.

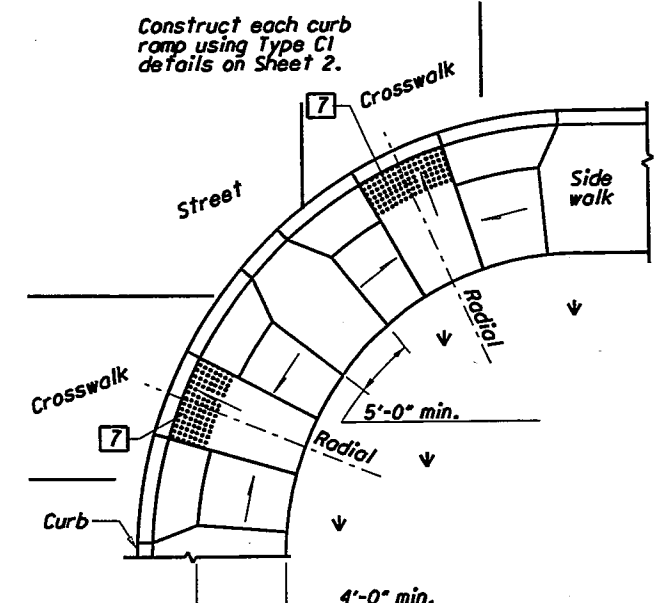
Construct each curb ramp using Type B2 details on Sheet 2.



Place on streets having wide turning radius and where sidewalks are narrow.

PARALLEL CURB RAMPS

Construct each curb ramp using Type C1 details on Sheet 2.



Curb ramp placement where streets have wide turning radius, and sufficient sidewalks width.

COMBINATION CURB RAMPS

PREFERRED CONSTRUCTION PLACEMENT

For LEGEND, See Sheet 2.

CURB RAMP NOTES

**GENERAL:** This drawing shows curb ramp types details and placement examples for new curb ramp construction, including the installation of truncated domes.

Curb ramp types are shown on Sheet 2 and include Perpendicular, Parallel, and Combined types as specified to be constructed in the locations shown on the project plans. The contractor may adjust the placement of curb ramps if existing field conditions warrant, according to CONSTRUCTION PLACEMENT details (this sheet), and with the approval of the Engineer.

**DETECTABLE WARNINGS:** Install Truncated Domes on each curb ramp with approved materials, as shown on Sheet 3. Install these proprietary products as per manufacturer's written instructions.

**DRAINAGE:** Contractor is to ensure the base of each constructed curb ramp allows for proper drainage, without exceeding allowable cross slope or ramp slopes. Vertical change in level exceeding 1/8" between the pavement and gutter, and 2) gutter and ramp, are not allowed.

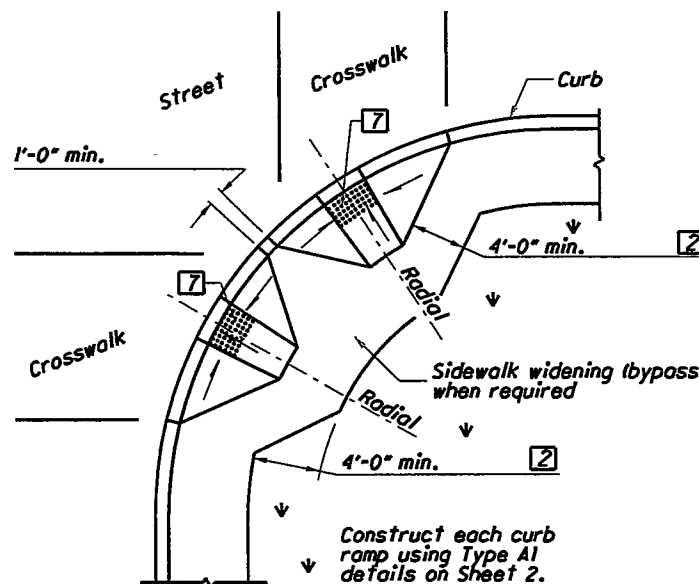
**SURFACE TEXTURE:** Texture of concrete surfaces by coarse brooming transverse to the ramp slopes and is to be rougher than the adjacent walk.

**JOINTS:** Provide expansion joints in the curb ramp as extensions of walk joints and consistent with Item 608.03 requirements for a new concrete walk. Provide a 1/2" Item 705.03 expansion joint filler around the edge of ramps built in existing concrete walks. Lines shown on this drawing indicate the ramp edges and slope changes, and do not necessarily indicate joint lines.

**PAYMENT:** Measure Walk and Truncated Domes per Item 608 and Curb per Item 609, through the curb ramp area including new walk landing area paid for under their respective Items. Removal of existing curb, walk (or existing curb ramps) are paid under Item 202.

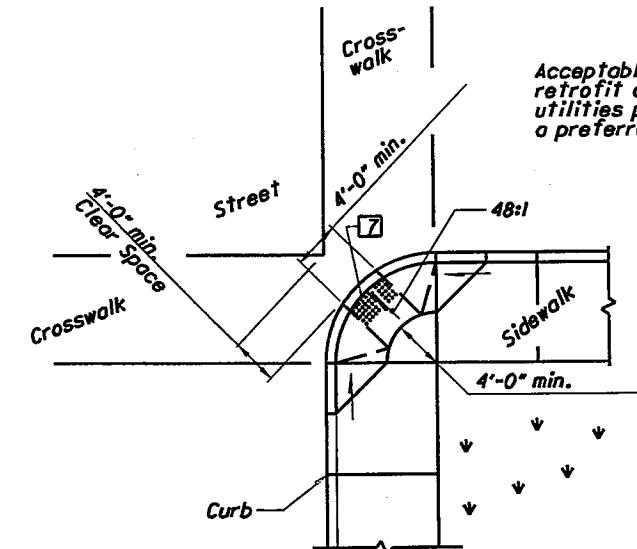
Curb ramps constructed in new or existing curb and walks are paid for under the following items:  
 Item 608 - Walk, Square Foot  
 Item 608 - Truncated Domes, Square Foot  
 Item 609 - Curb, Foot  
 and includes the cost of any additional materials and installation, grading, forming and finishing.

Acceptable design on corners with wide turning radius where user is able to maneuver within crosswalk limits so as not to encroach into adjacent vehicle lanes.



PERPENDICULAR RAMPS

Acceptable design for retrofit only where utilities prevent using a preferred layout.



DIAGONAL RAMP (Type D)

Use this design only for existing walks, and when site constraints prohibit other designs. The diagonal Type D ramp may be constructed as either a Perpendicular, Parallel or Combination curb ramp type. Avoid using where curb radii are less than 20'-0". Since these are unique designs, each occurrence should be individually detailed on the project plans.

ACCEPTABLE CONSTRUCTION PLACEMENT