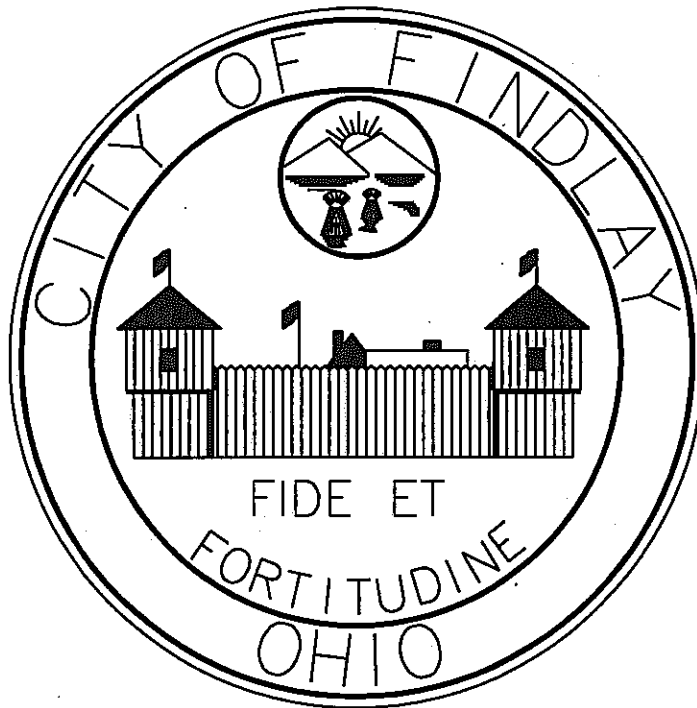
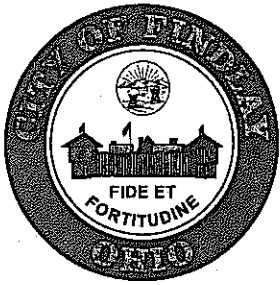


STANDARDS & SPECIFICATIONS  
FOR THE CONSTRUCTION OF  
CURB RAMPS



*ADOPTED BY:  
THE CITY OF FINDLAY  
ENGINEERING DEPARTMENT  
EFFECTIVE APRIL 01, 2005*



**ENGINEERING DEPARTMENT**  
318 DORNEY PLAZA, ROOM 304  
FINDLAY, OH 45840  
TELEPHONE: 419-424-7121  
FACSIMILE: 419-424-7120

JACQUELINE J. SCHROEDER, P.E.  
CHIEF ENGINEER

JOHN E. SEMAN, E.I.  
ASSISTANT CITY ENGINEER

Revised April 7, 2004

## **HANDICAP CURB RAMP CONSTRUCTION POLICIES**

In order to facilitate administration and provide more efficient operations for the City of Findlay, the following statements regard handicap curb ramp construction:

Construction Practice	Section 1
Curb and Gutter	Section 2
Detectable Warnings	Section 3
Acceptable Materials	Section 4
Standard Drawings	Section 5

### **SECTION 1: CONSTRUCTION PRACTICE**

#### **TOLERANCES LABELED ON THE STANDARD DETAIL DRAWINGS SHALL GOVERN ALL DIMENSIONS HEREIN DESCRIBED**

**Compacted Aggregate Base:** The aggregate base shall be composed of ODOT Item No. 411 Stabilized Crushed Aggregate not less than 2 inches in depth and as wide or wider than the ramp. The aggregate base shall be compacted and brought to an even surface below the proposed surface of the finished ramp. Soft, spongy, or organic subgrade shall be removed and replaced with compacted aggregate. Wherever a fill is necessary, the material used shall be compacted aggregate and shall be spread in lifts not to exceed 4 inches loose with each layer compacted. All surplus material from excavation for the ramp shall be removed. Placing of material onto adjacent property will not be permitted unless written consent is received from the owner.

**Forms:** Steel forms are desirable, but wood 2 X 4 forms may be used if they are kept 1/2 inch above the stone grade to produce the proper thickness in accordance with the standard drawings. Other types of forms which exhibit properties similar to steel and wood 2 X 4 forms may also be approved. If wooden forms are used, they shall not be warped or twisted and shall be secured to resist concrete pressure without springing and to provide line and grade within accepted tolerances. Forms shall not be removed until sufficient time has been allowed for the concrete to cure. Any valve boxes, manhole covers, meter boxes or similar fixed items must be adjusted to be flush with the surface of the finished ramp. The cost of any utility relocation required for construction of the ramp in other than standard location shall be borne by the utility company or the City.

**Concrete Installation:** Concrete placed between November 15 and April 15 shall meet the cold weather concreting requirements of ODOT Item 511.15. All concrete shall conform to ODOT Item No. 499, or be a minimum of six bags of cement (ODOT Class C). The aggregate base shall be wetted immediately before placing the concrete. Approved expansion joint filler 1/2 inch thick and extending the full depth of the ramp shall be placed between the ramp and any fixed structure including, but not limited to existing concrete driveways, existing walks, existing curbing, valve boxes, meter boxes, manhole covers, telephone poles, fire hydrants, etc. Concrete shall be placed in one course to the full thickness and screeded to bring the top to a smooth, even surface.

**Finish, Curing, and Jointing:** Sprinkling of dry cement on the surface to hasten drying is prohibited. The surface shall have a light broom finish. The grain of the finish shall be perpendicular to the length of the ramp. To achieve a quality finish, use of fiber reinforcement is not recommended. The ramp shall be kept moist for not less than 48 hours after it has been poured. This may be accomplished in one of two ways: 1) The ramp may be cured with a wet burlap and polyethylene sheeting or 2) by using a manufactured curing compound. If a curing compound is used, it shall be a white-pigmented liquid applied at a uniform rate of no less than 1 gallon per 200 square feet. The curing compound shall be applied immediately after finish work is complete and the free water has disappeared on the surface. Refer to ODOT Construction and Materials Specifications 2000, Item No. 511.17 Method A and Method B.

The ramp shall be built with contraction joints. Additionally, the ramp shall be jointed at logical locations such as abrupt changes in direction, geometry, section, or at manhole covers, valve boxes, etc. Joints shall be **TOOLED** to a depth of not less than 1 inch. Total joint depth shall be 1/4 the thickness of the slab. For ramps greater than 4 inches thick, the tooled joint may be deepened by use of a saw. Deepening by saw shall be accomplished approximately 24 hours after the concrete has been placed.

## **SECTION 2: CURB AND GUTTER**

Curb ramps shall be constructed at all intersections in which sidewalks are to be installed and curbs exist. Curb ramps shall be constructed as City of Findlay standard Type 1 or Type 2. Grades and slopes shall be in accordance with the Federal Americans with Disabilities Act (ADA) guidelines in effect at the time of construction. Removal of existing curb for proposed curb ramps shall be in accordance with the following procedure:

- A. Saw cut the joint between the pavement and existing curb structure to facilitate clean removal. Remove the entire existing curb or curb and gutter. Pour new curb or curb and gutter with a drop in accordance with City of Findlay Type 1 or Type 2 curb ramp. Pour the proposed ramp against the back of the new curb.

**OR**

ramp. The proposed surface of the ramp shall match at the gutter line and be raised to 1/4 inch above the gutter line at the back of the curb.

### **SECTION 3: DETECTABLE WARNINGS**

Detectable warnings shall be constructed on the walking surface of each curb ramp; and also constructed on the walking surface of any walk approaching an intersection, alley or other public way. The detectable warning surface must also meet the Federal Americans with Disabilities Act (ADA) guidelines in effect at the time of construction and must be in accordance with the City's acceptable standard. Detectable warning surfaces must be a minimum of four feet wide by two feet long and consist of raised truncated domes with a diameter of 0.9 inches, a height of 0.2 inches, and a center-to-center spacing of 2.35 inches. Warning surfaces shall be constructed of Class C concrete, black in color, with raised domes produced by stamping. The integrally colored concrete used for the warning shall not be cured with white curing compound.

### **SECTION 4: ACCEPTABLE MATERIALS**

The following materials are accepted by the City of Findlay for use in handicap curb ramp construction:

#### **A. Surface**

1. Plain Portland Cement Concrete (ODOT Item No. 499 and Item No. 511). Bagged mixes that are available for retail sale **do not** qualify as an acceptable material.

#### **B. Expansion Joint Filler**

1. Rubber Expansion Joint (ASTM D 1751 & D 1752)
2. Fiber Expansion Joint Filler (ASTM D 1751)
3. Polyethylene Closed-Cell Expansion Joint Filler  
(For use around small radii such as manholes, valve boxes, hydrants, etc.)

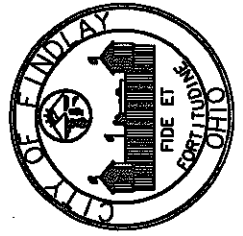
#### **C. Curing Compounds**

1. Curing compound conforming to ODOT Item No. 507.07

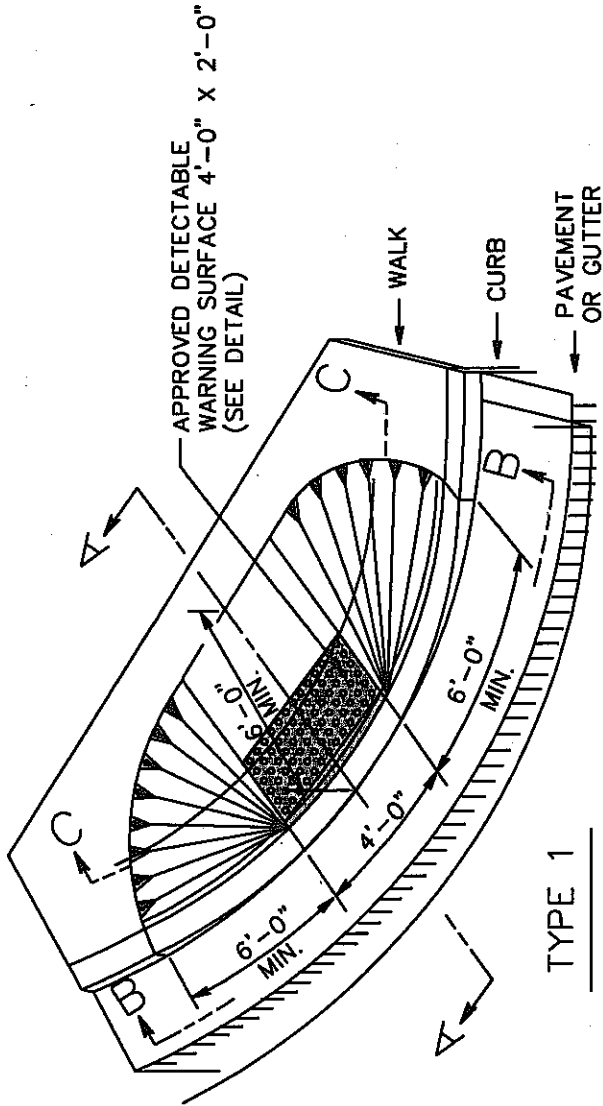
### **SECTION 5: STANDARD DRAWINGS**

The following pages include City of Findlay standard drawings for curb ramp construction.

1. Curb Ramp Details (2 pages)
2. Typical Concrete Curb
3. Detectable Warning Details (2 pages)

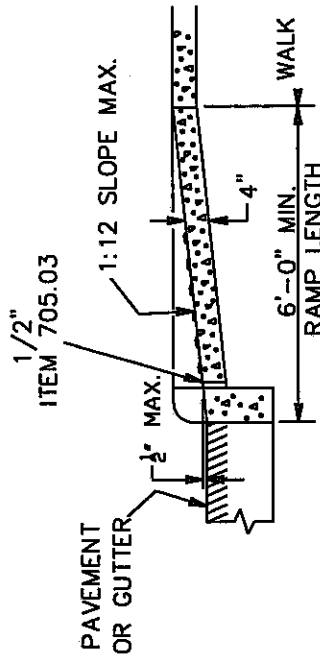


CURB RAMP DETAILS  
MARCH 01, 2003

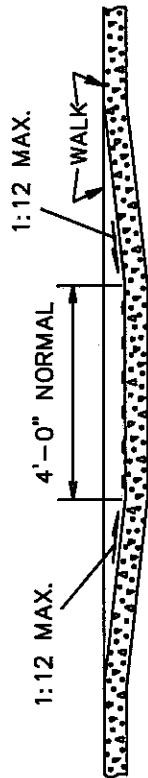


TYPE 1

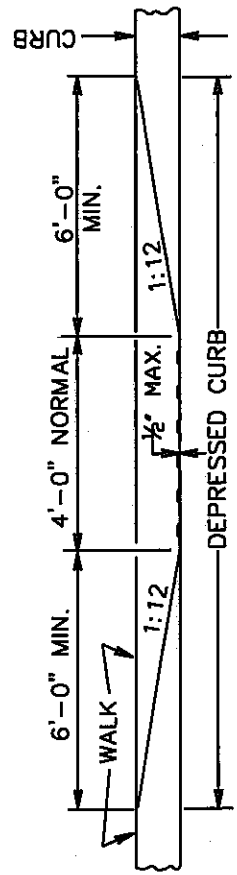
DETECTABLE WARNING COLOR



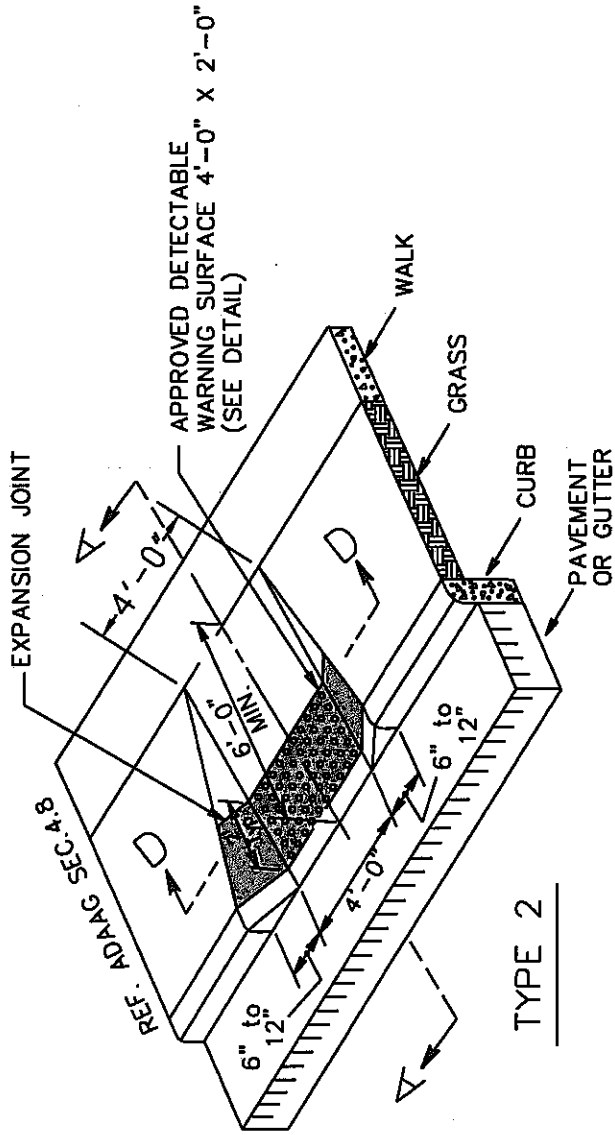
SECTION A-A  
TYPE 1&2  
NORMAL DETAIL



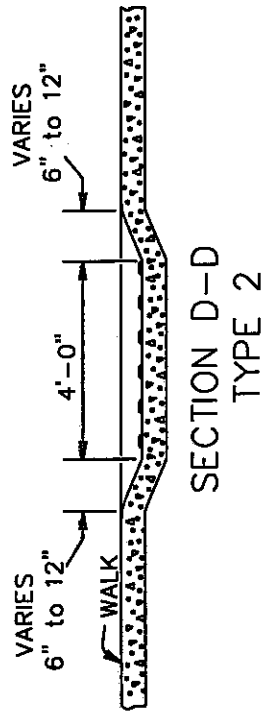
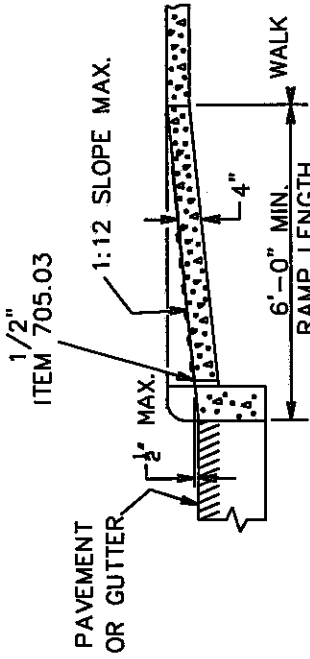
SECTION C-C  
TYPE 1



VIEW B-B  
TYPE 1



DETECTABLE WARNING COLOR

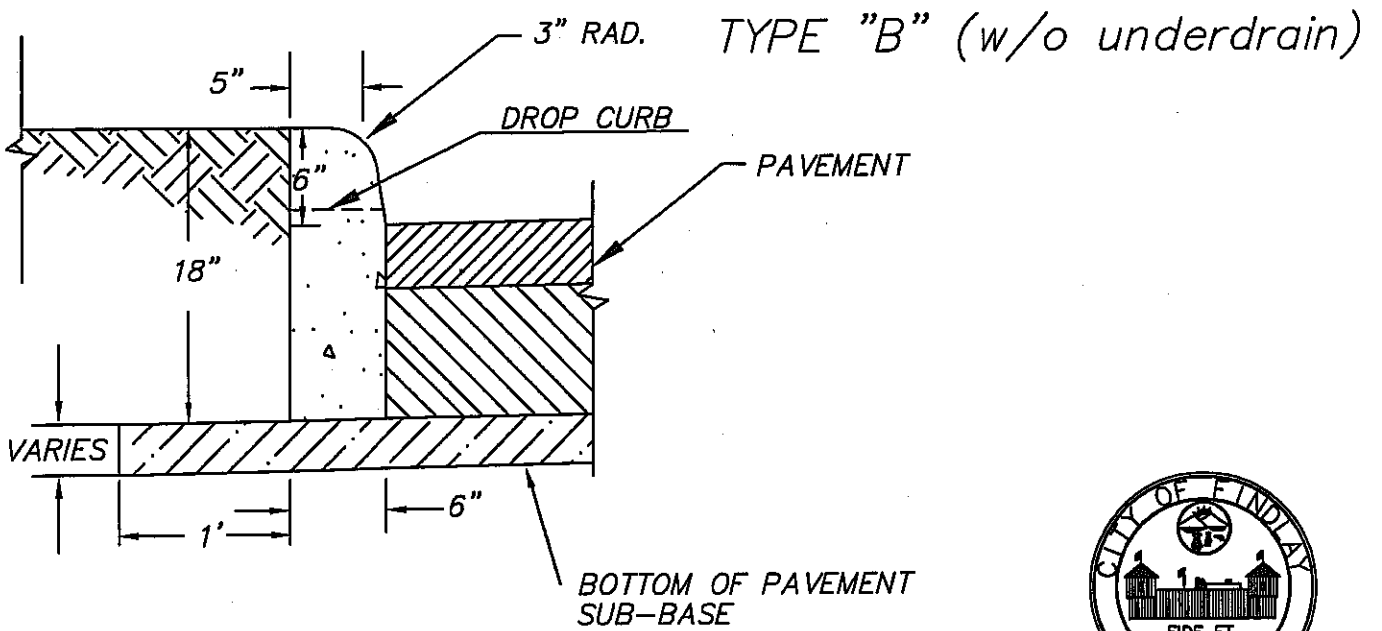
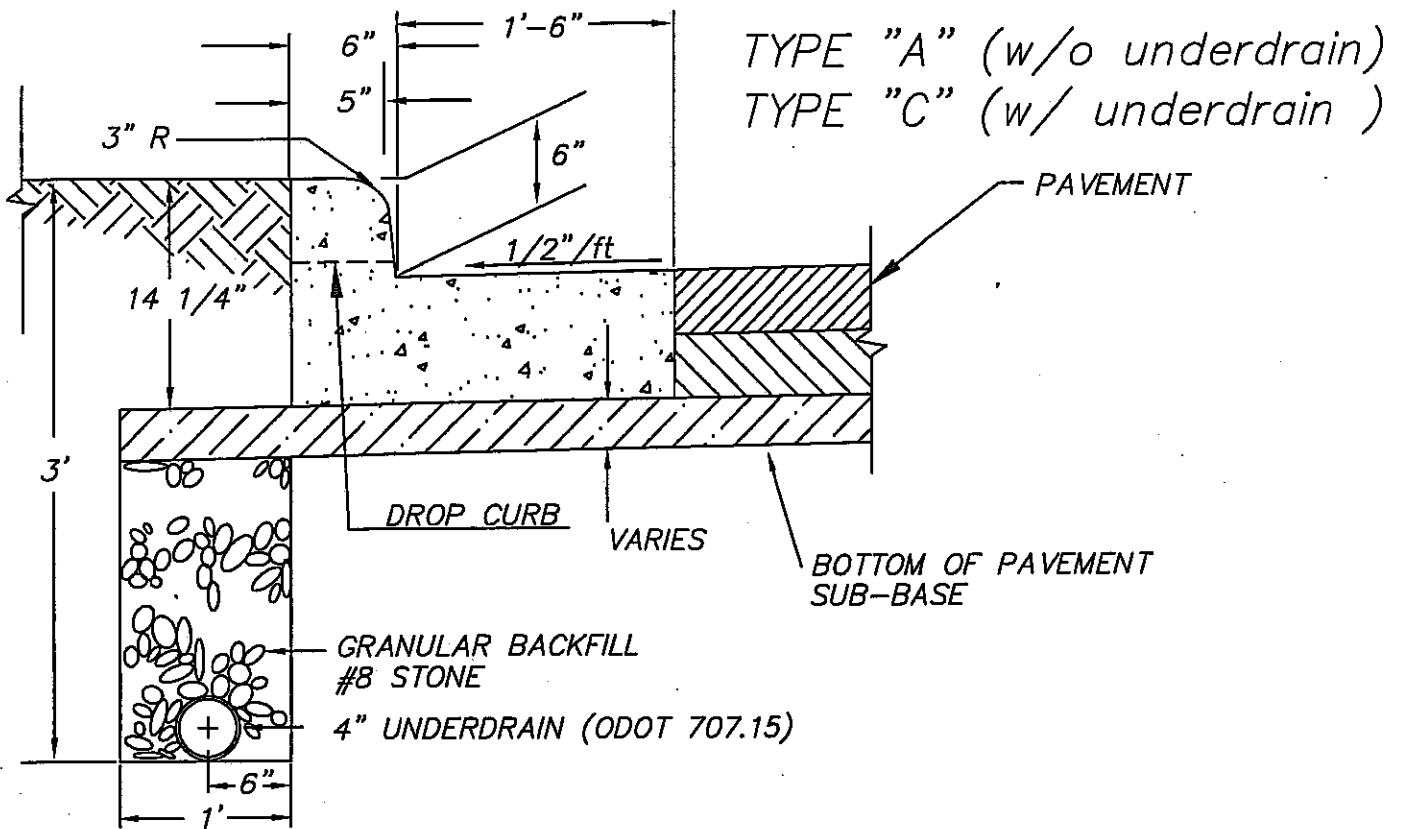


CURB RAMP DETAILS

MARCH 01, 2003

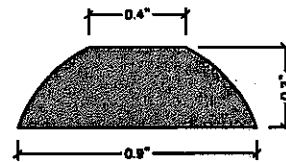
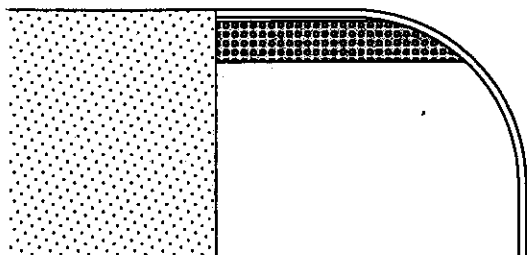
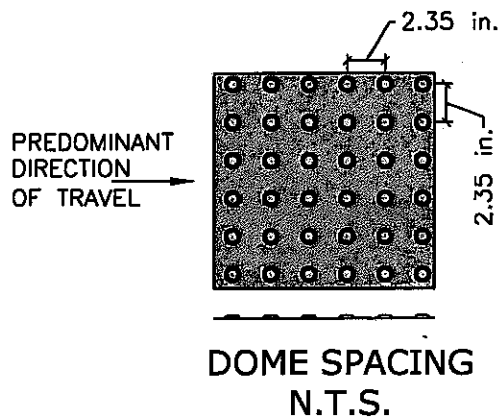
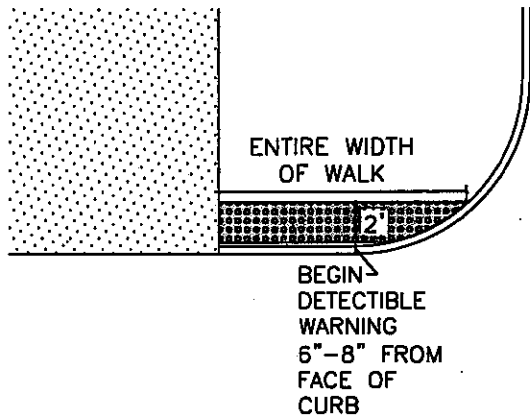


# TYPICAL CONCRETE CURB



CURB DETAILS  
 MARCH 01, 2003

# DETECTABLE WARNING DETAIL



**STREET/ALLEY CROSSING  
W/ OUT RAMP  
(ASPHALT FLUSH W/ WALK)  
N.T.S.**

**DOME CROSS SECTION  
N.T.S.**

COLOR SHALL BE DYE INTRODUCED INTO THE CONCRETE MIX TO ENSURE COLOR THROUGHOUT THE SECTION DYED CONCRETE AREA SHALL MEASURE 24" FROM BACK OF CURB (6" FORM FACE) AND BE THE ENTIRE WIDTH OF THE SECTION.

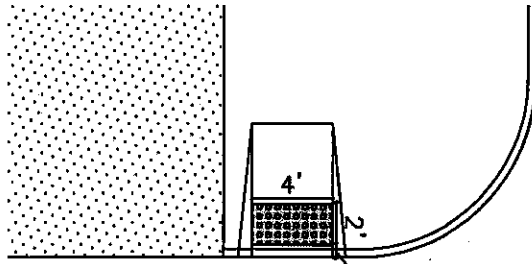
DETECTABLE WARNING TO BE BLACK AND PROVIDE 70% CONTRAST IN LIGHT REFLECTANCE BETWEEN IT AND ADJOINING SURFACE

INSTALL DETECTABLE WARNING 24" FROM THE BACK OF THE CURB (6" FROM FACE) FOR THE ENTIRE WIDTH OF THE BOTTOM OF THE RAMP OPENING. (48") DOMES ARE TO BE ALIGNED ON A SQUARE GRID IN THE DIRECTION OF PREDOMINATE TRAVEL.

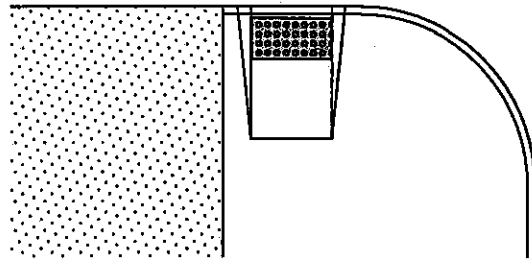


MARCH 01, 2003

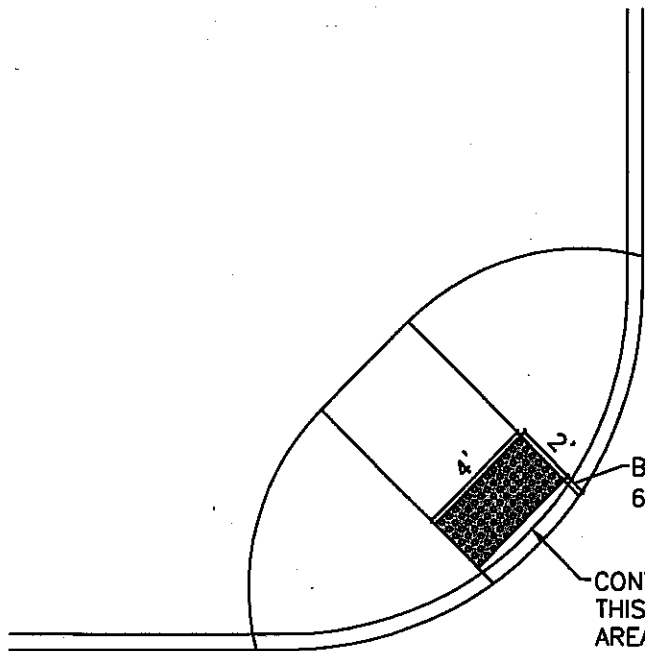
# DETECTABLE WARNING DETAIL



BEGIN  
DETECTIBLE  
WARNING  
6"-8" FROM  
FACE OF  
CURB



STRAIGHT SIDE CURB RAMP  
N.T.S.



BEGIN DETECTIBLE WARNING  
6"-8" FROM FACE OF CURB

CONTRACTOR SHALL POUR  
THIS AREA WITH THE TACTILE  
AREA

FLARED SIDE CURB RAMP  
N.T.S.



MARCH 01, 2003