

GENERAL NOTES

1. Maximum and minimum standards do not have tolerances and are not to be exceeded or unmet unless existing physical or site constraints are deemed technically infeasible. Technical infeasibility must be justified.
2. The minimum for a level landing (turning space) is 4-foot x 4-foot sloping with a preferred design slope of 1.5% in both directions and a maximum 2% slope.
3. On steep grades, where existing conditions do not allow for the curb ramp slope to meet a running slope of 8.3% or less, the curb ramp length is not required to exceed 15 feet from the curb break or from the landing break if the landing is at the bottom of the ramp.
4. All curb ramp grade breaks shall be perpendicular to the running slope.
5. All curb ramp joints and grade breaks shall be flush. When retrofitting, any vertical discontinuities should not exceed a maximum of $\frac{1}{4}$ inch vertical rise or $\frac{1}{4}$ - $\frac{1}{2}$ inch beveled rise.
6. Counter slope grades should be adjusted according to the grade break at the bottom of the ramp. With a maximum curb ramp grade of 8.3%, the maximum counter slope should not exceed 5%. When ramp slopes are less, the counter slope can be adjusted to a higher amount not to exceed 8.3% (i.e. ramp slope of 2%, counter slope can be 6.3%).
7. Beyond the bottom grade break, a clear space of 4-foot x 4-foot minimum shall be provided within the width of the pedestrian crosswalk, and outside the parallel vehicle travel lane. On ramps that have landings at street level, the clear space may exist within the ramp.
8. There shall be a minimum of 12-inch Aggregate Subbase Course - Gravel under the sidewalk surface on pedestrian ramps.
9. The running slope of a "Blended Transition" shall not exceed 5% slope and will have a minimum 4-foot level pedestrian access route at the top of the ramp. (See 801(26) for details.)
10. A temporary pedestrian access route shall be provided whenever the existing pedestrian access route in the public right of way is blocked by construction, alteration, maintenance, or other temporary conditions. Refer to MUTCD for guidance.

DETECTABLE WARNING FIELDS

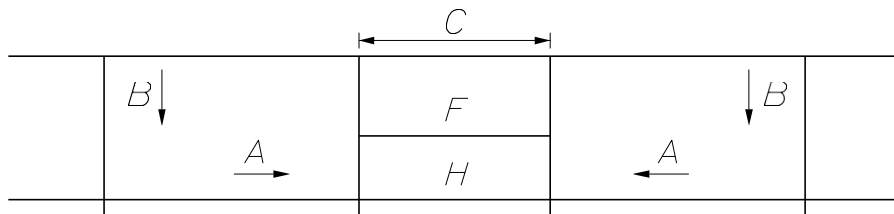
1. Detectable warning fields shall be installed on ramps at intersections where there is a warranted stop or yield sign, at signalized intersections, and midblock crossings.
2. Detectable warning fields shall span the width of the pedestrian ramp. See Standard Detail 608(02).
3. The detectable warning shall be placed in a position to stop pedestrians from entering vehicular traffic. Where possible, detectable warning fields should align with pedestrian traffic.
4. All detectable warning fields placed at the same intersection shall be made up of the same uniform material type. Detectable warnings shall be contrasting in color to the adjacent walkway.
5. Detectable warning fields shall not be placed more than 5 feet back from the gutter line.

DRAINAGE AND OBSTRUCTIONS

1. Drainage structures, traffic signal equipment, or other obstructions shall not be installed in the curb ramp or turning space areas.
2. When retrofitting ramps, all options should be used to avoid drainage grates. If that is not possible, ADA compliant drainage grates should be considered.
3. Before retrofitting ramps, the contractor shall verify removal limits are sufficient to provide positive drainage, maintain existing drainage patterns, and avoid ponding in the final configuration.

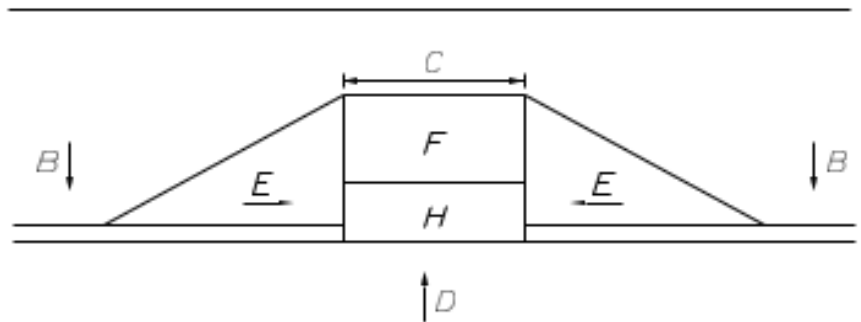
CURB RAMP REQUIREMENTS

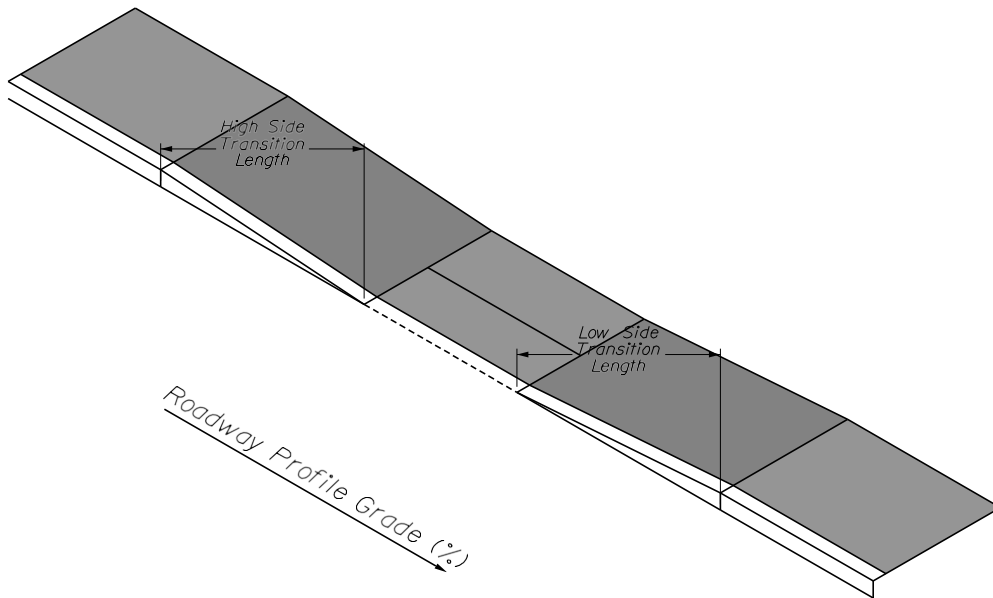
Running Slope	A	Max. 8.33% (1:12) <i>Applies up to a maximum of 15 feet</i>
Cross Slope	B	1.5% (1:67) Standard 2.1% (1:48) (Maximum) <i>Ramp cross slope at street crossings without stop or signal control may match roadway profile.</i>
Clear Width	C	5'feet – 8 feet preferred. Min. 4feet – 8 feet <i>Existing ramp width may remain 4 feet.</i>
Counter Slope	D	Counter slope grades should be adjusted according to the grade break at the bottom of the ramp. With a curb ramp grade of 8.3%, the maximum counter slope should not exceed 5% When ramp slopes are less, the counter slope can be adjusted to a higher amount not to exceed 8.3%
Flared Sides	E	Max. 10% (1:10)
Level Landing	F	4 feet by 4 feet <i>Maximum slope of 2% in any direction. May include Detectable Warnings.</i>
Clear Space	G	Minimum 4 feet by 4 feet <i>Located at the bottom of the ramp outside active travel lanes. Not Required on parallel ramps</i>
Detectable Warnings	H	<i>Required at traffic-controlled intersections and mid-block crossings. Extend the full width of curb opening except for a 2 inches maximum border.</i>



PARALLEL RAMP

STANDARD RAMP

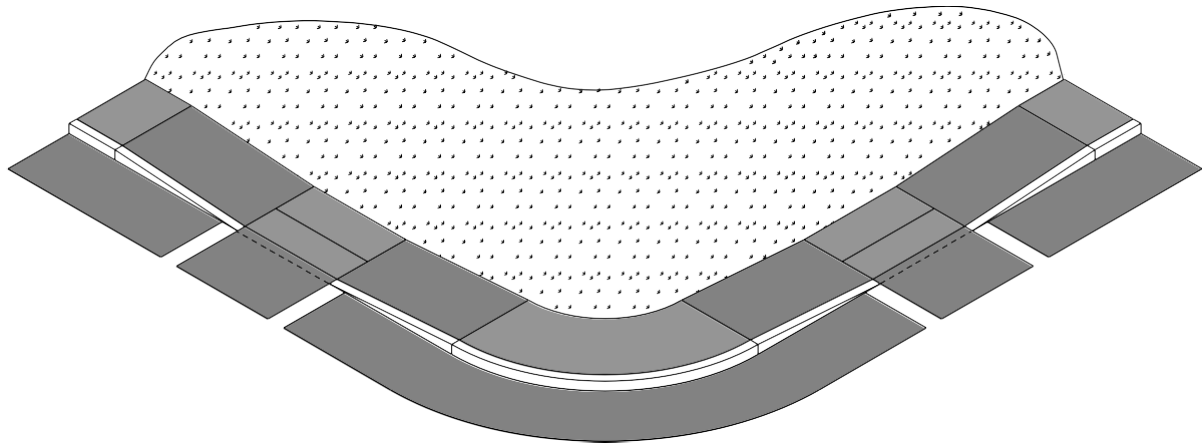




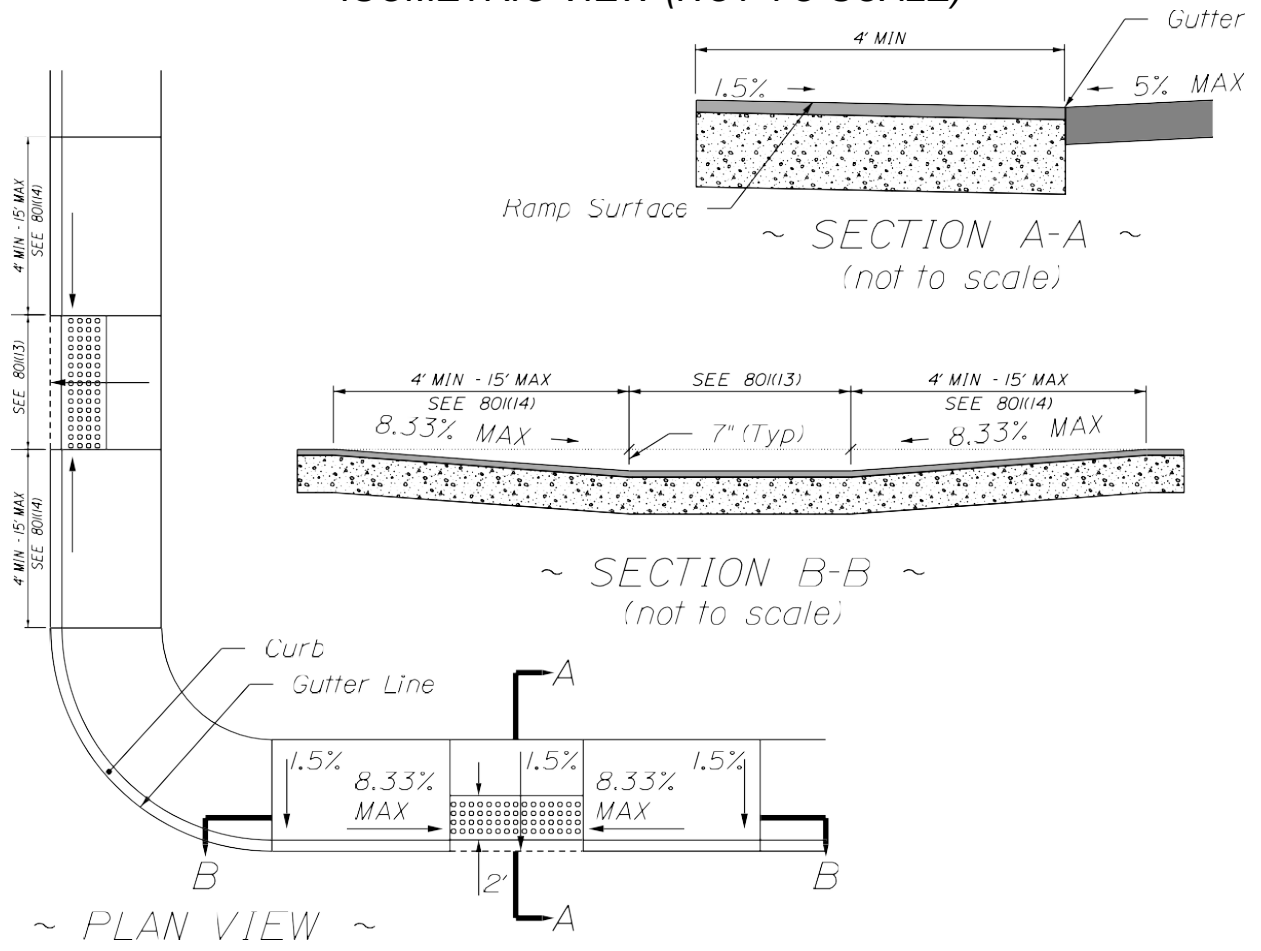
Curb Ramp Length Table						
Curb Reveal (Inches)		7	6	5	4	3
	Roadway Profile Grade	Minimum Transition Length Required (Feet)				
Low Side Transition Length	-7% and Lower	4.0	4.0	4.0	4.0	4.0
	-6%	8.0	4.0	4.0	4.0	4.0
	-5%	8.0	4.0	4.0	4.0	4.0
	-4%	8.0	8.0	4.0	4.0	4.0
	-3%	8.0	8.0	4.0	4.0	4.0
	-2%	8.0	8.0	8.0	4.0	4.0
	-1%	8.0	8.0	8.0	4.0	4.0
	-0.5% to 0.5%	8.0	8.0	8.0	8.0	4.0
High Side Transition Length	1%	10.0	8.0	8.0	8.0	4.0
	2%	10.0	10.0	8.0	8.0	8.0
	3%	12.0	10.0	10.0	8.0	8.0
	4%	15.0	12.0	12.0	10.0	8.0
	5%	15.0	15.0	15.0	12.0	10.0
	6%	15.0	15.0	15.0	15.0	12.0
	7% and Higher	15.0	15.0	15.0	15.0	15.0

Length of ramp slope is measured at curbline and is not required to exceed 15 feet regardless of ramp running slope.

Choose roadway profile grade by rounding up for positive grades and down for negative grades. Round to the nearest whole integer. If constraints prevent placement of the ramp length required by the table, place the maximum length possible and check the slope. If above the maximum allowable slope, consider design modifications before considering technical infeasibility.

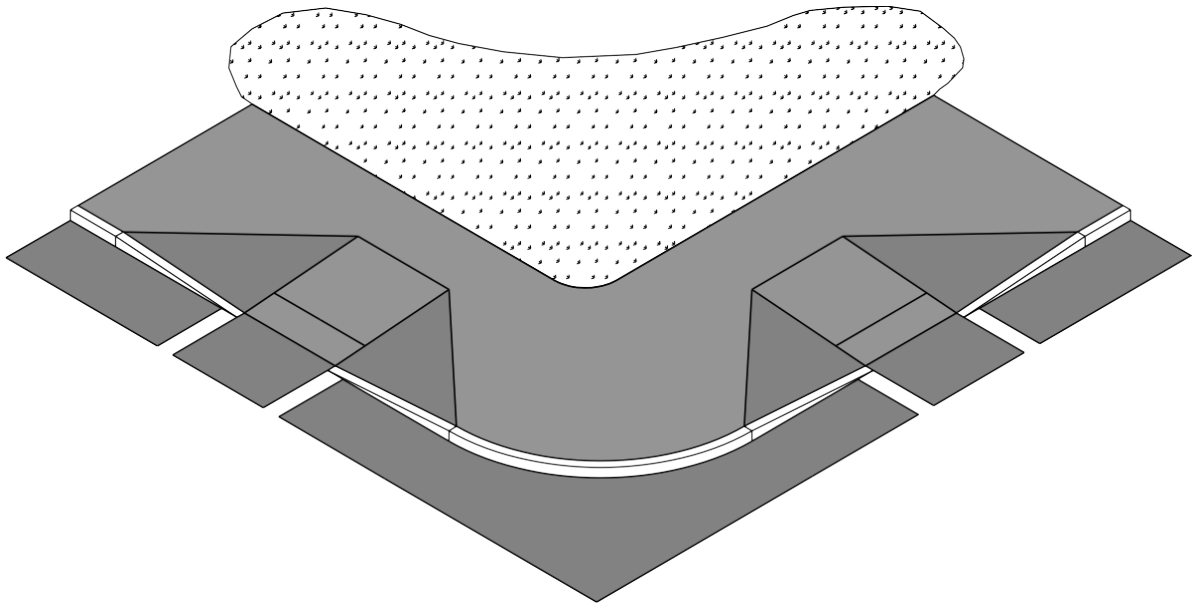


ISOMETRIC VIEW (NOT TO SCALE)

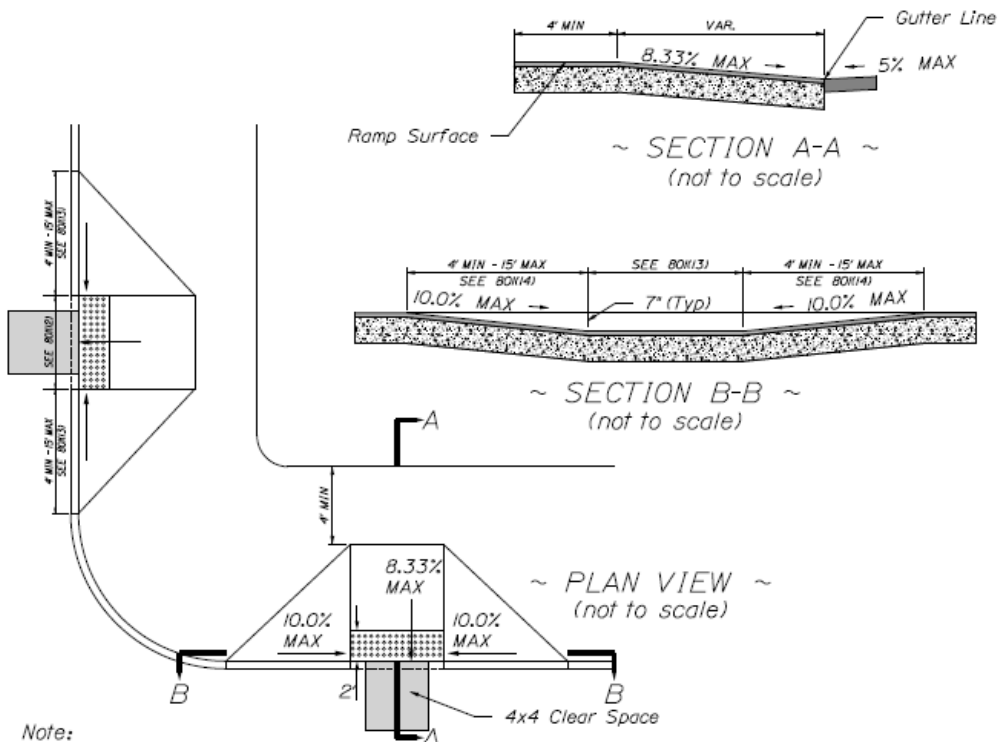


NOTES:

- This desirable design is the preferred option. Use other options only when required by design constraints.
- To achieve 8.3% running slope, the pedestrian ramp may need to be extended. If the ramp length has been extended to a maximum of 15 feet and other design modifications have been considered, running slope may exceed 8.3%



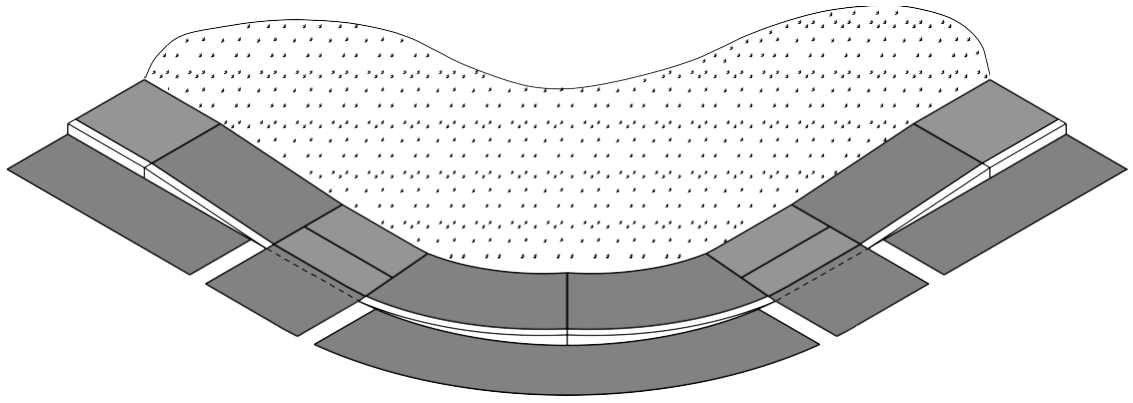
ISOMETRIC VIEW (NOT TO SCALE)



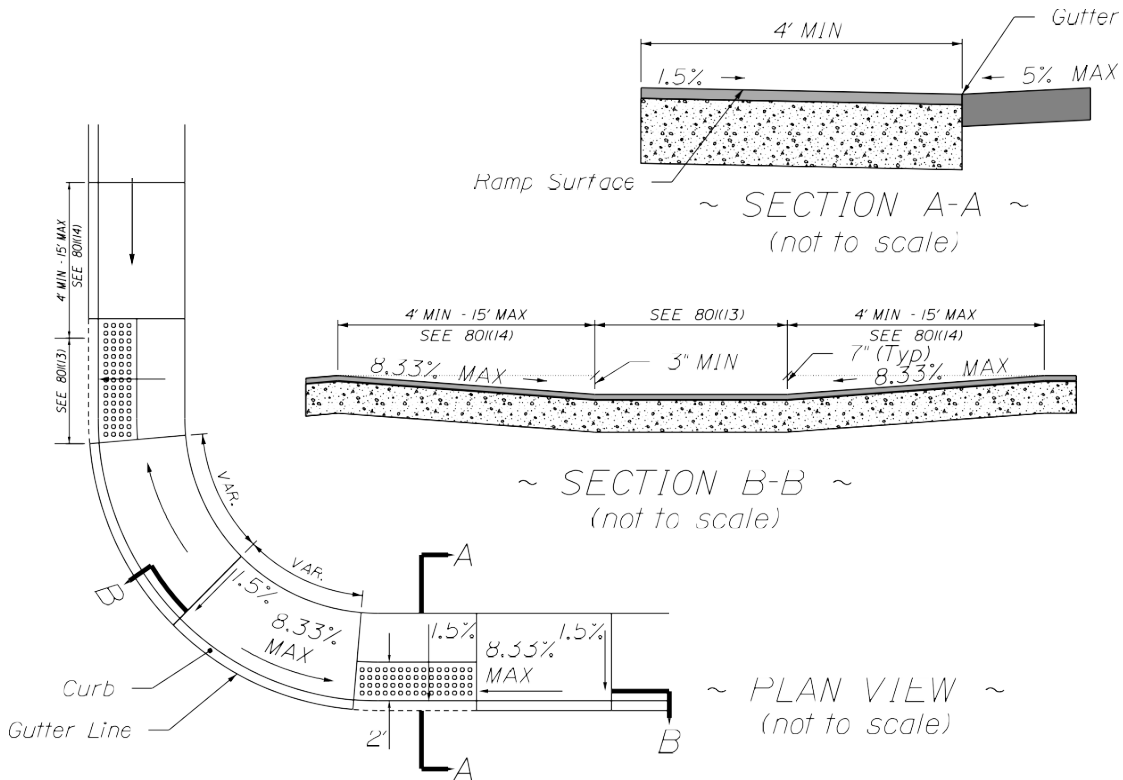
NOTE:

- This desirable design is the preferred option. Use other options only when required by design constraints.

PERPENDICULAR CURB RAMP - OPTION 1
801(16)

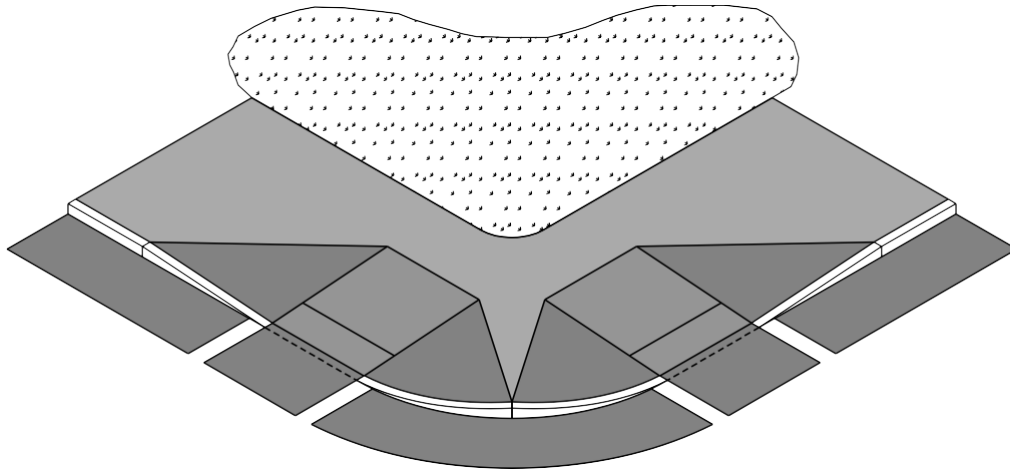


ISOMETERIC VIEW (NOT TO SCALE)

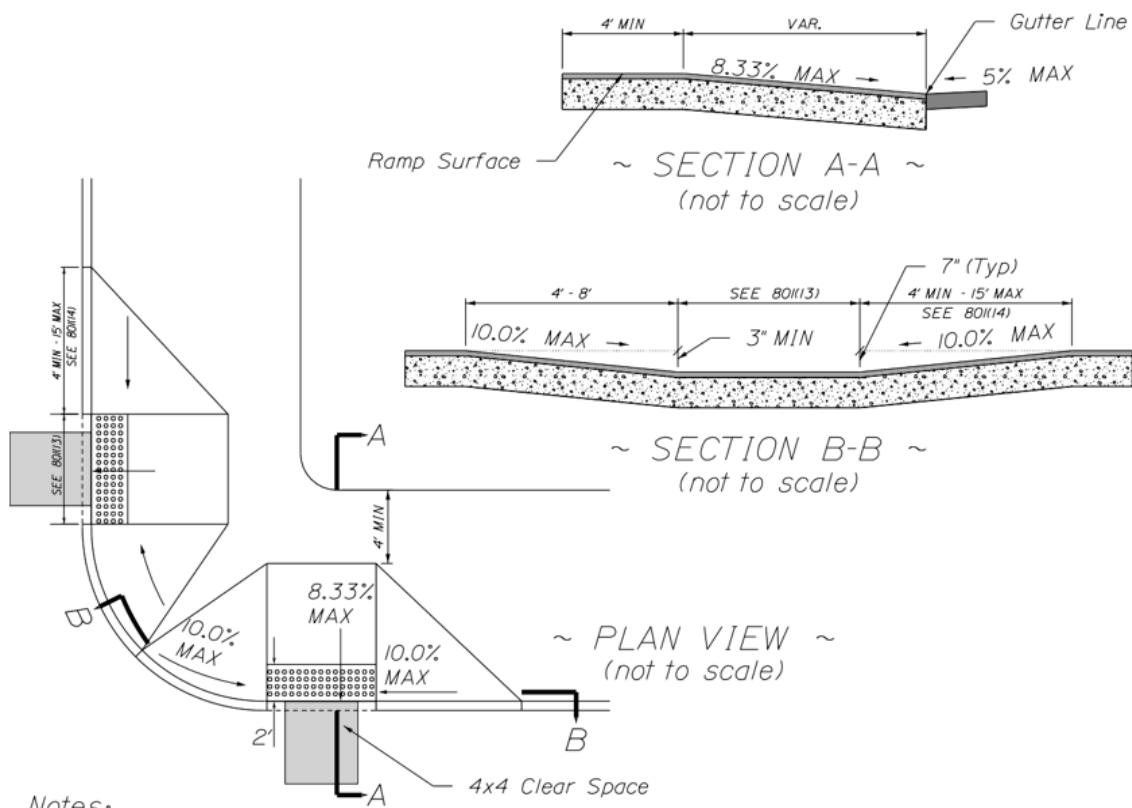


NOTES:

- This less desirable design should not be used unless required by design constraints. It may not provide adequate curb reveal. Use option 1 when possible.
- No vehicular access shall be permitted through the radius curb.
- a minimum curb reveal of 3" is required at the apex of the curb radius.
- Minimal terminal curb length shall be 4 ft.
- To achieve 8.3% running slope, the pedestrian ramp may need to be extended. If the ramp length has been extended to a maximum of 15 feet and other design modifications have been considered, running slope may exceed 8.3%.



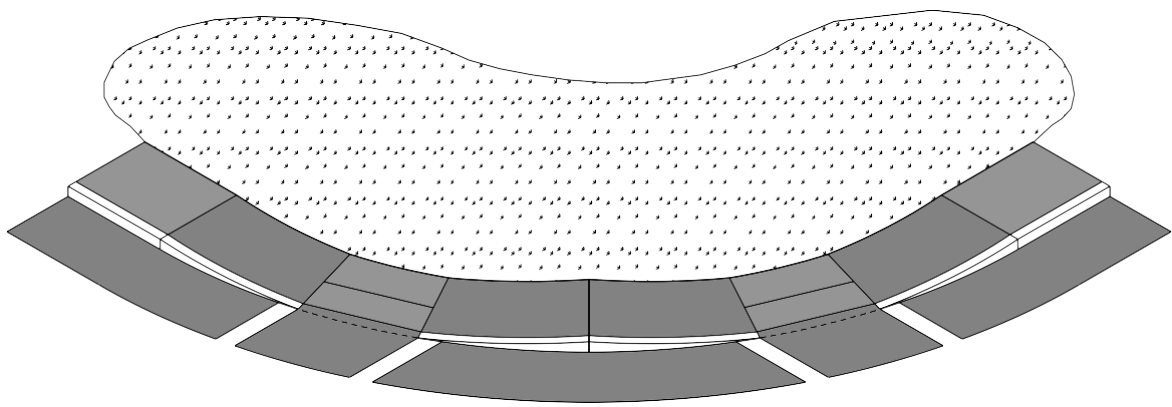
ISOMETERIC VIEW (NOT TO SCALE)



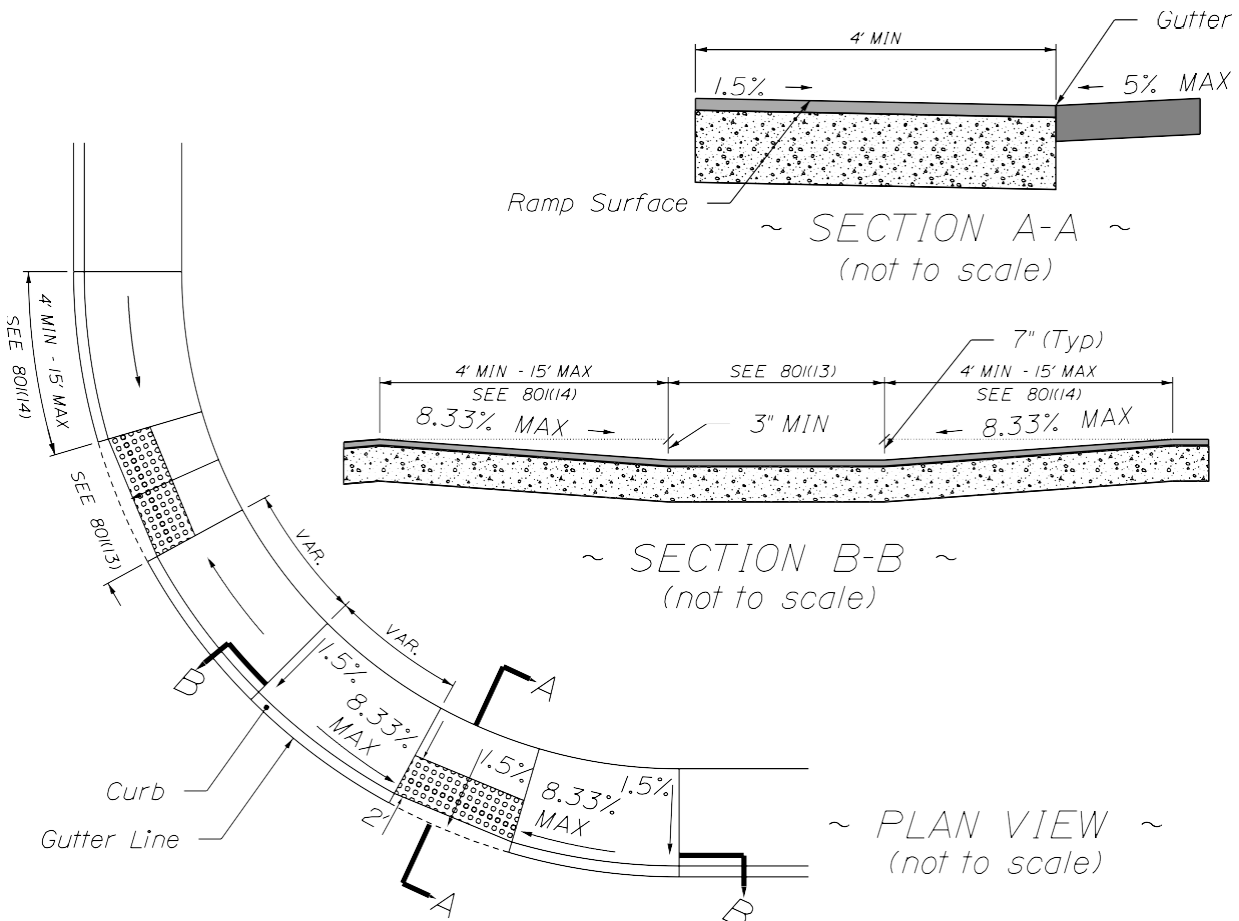
NOTES:

- This less desirable design should not be used unless required by design constraints. It may not provide adequate curb reveal. Use option 1 when possible.
- No vehicular access shall be permitted through the radius curb.
- A minimum curb reveal of 3" is required at the apex of the curb radius.
- Minimal terminal curb length shall be 4 ft.

**PERPENDICULAR CURB RAMP - OPTION 2A
801(18)**



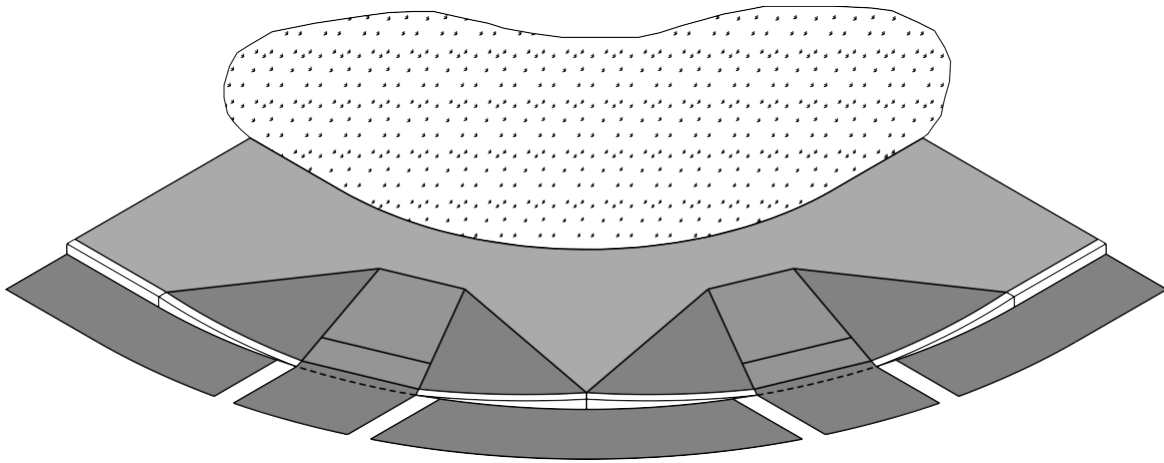
ISOMETRIC VIEW (NOT TO SCALE)



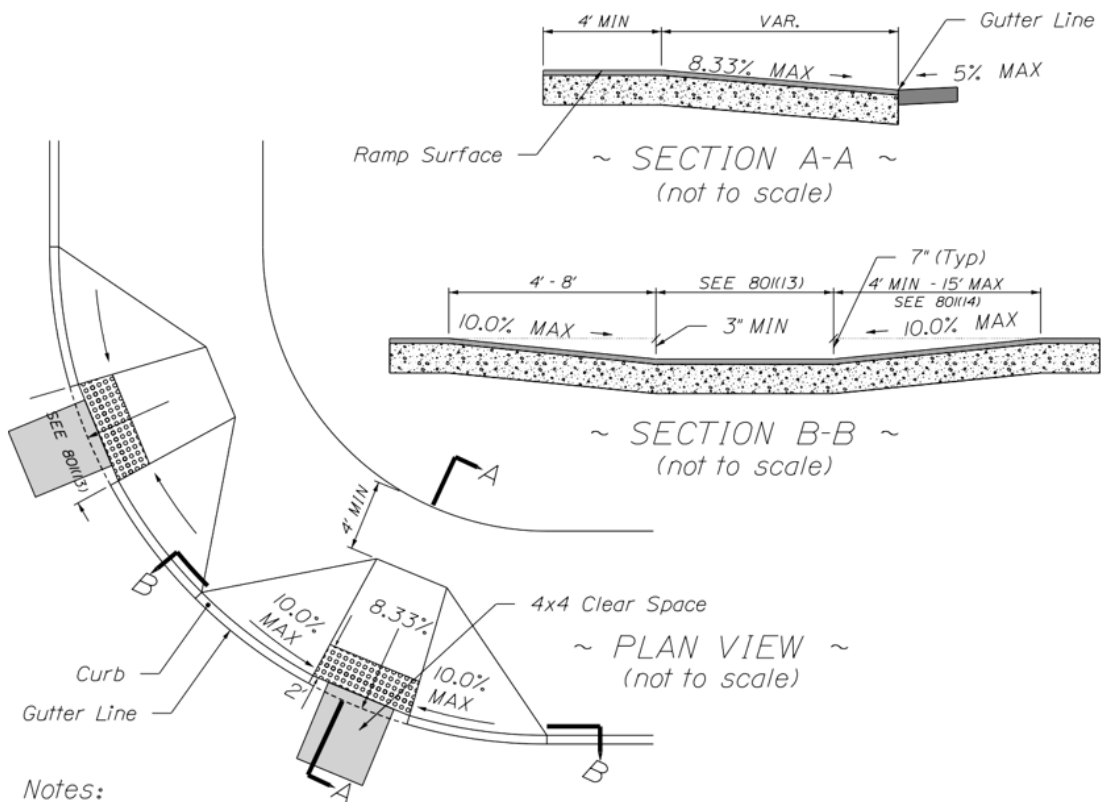
Notes:

NOTES:

- This less desirable design should not be used unless required by design constraints. It may not provide adequate curb reveal. Use option 1 when possible.
- No vehicular access shall be permitted through the radius curb.
- a minimum curb reveal of 3" is required at the apex of the curb radius.
- Minimal terminal curb length shall be 4 ft.
- To achieve 8.3% running slope, the pedestrian ramp may need to be extended. If the ramp length has been extended to a maximum of 15 feet and other design modifications have been considered, running slope may exceed 8.3%.

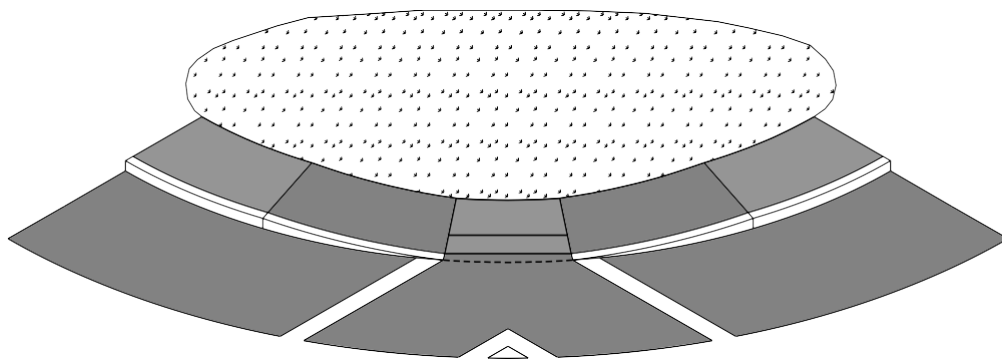


ISOMETERIC VIEW (NOT TO SCALE)

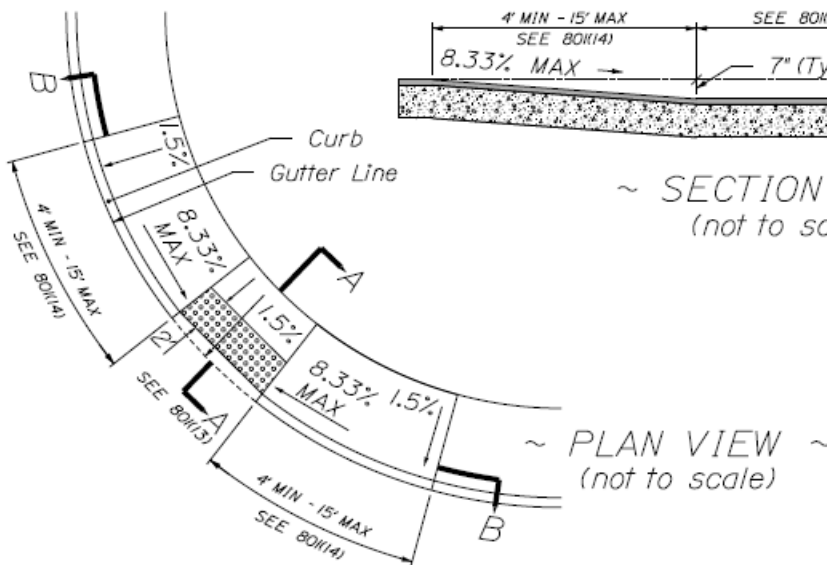
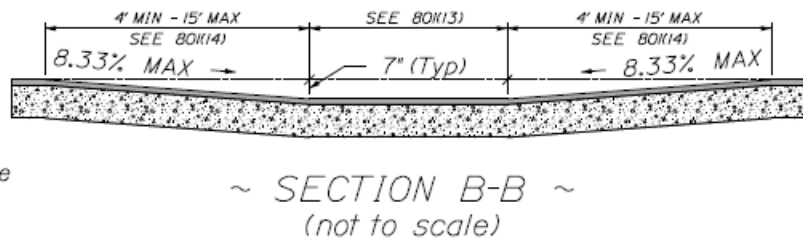
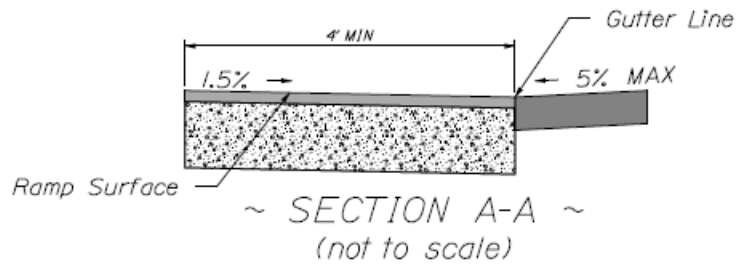


NOTES:

- This less desirable design should not be used unless required by design constraints. It may not provide adequate curb reveal. Use option 1 when possible.
- No vehicular access shall be permitted through the radius curb.
- A minimum curb reveal of 3" is required at the apex of the curb radius.
- Minimal terminal curb length shall be 4 ft.



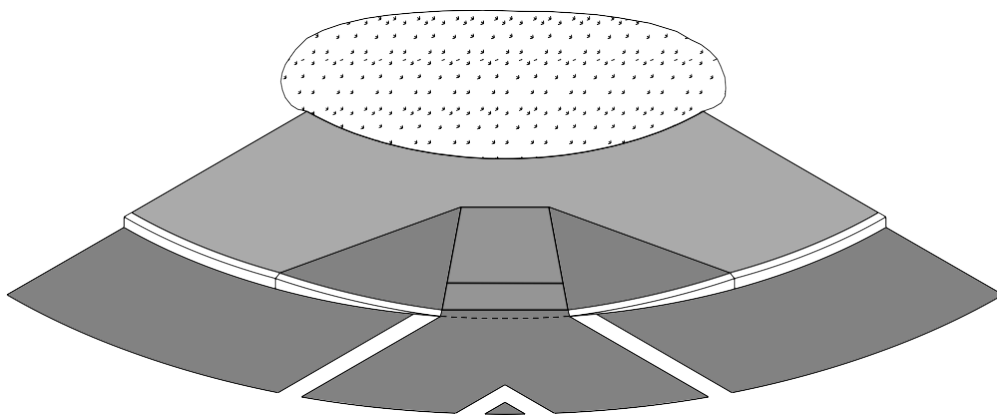
ISOMETRIC VIEW (NOT TO SCALE)



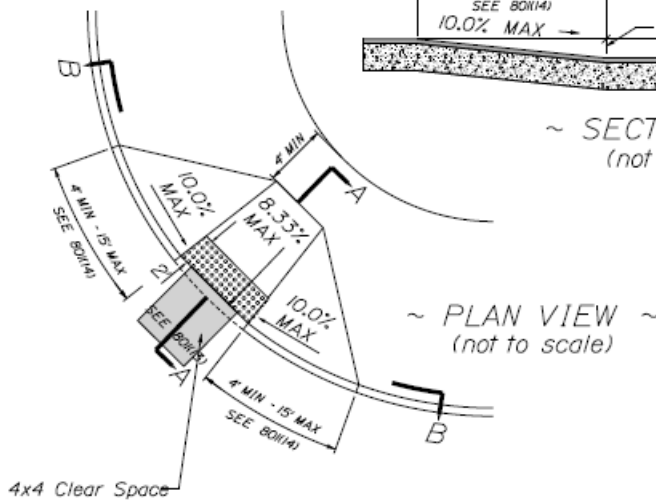
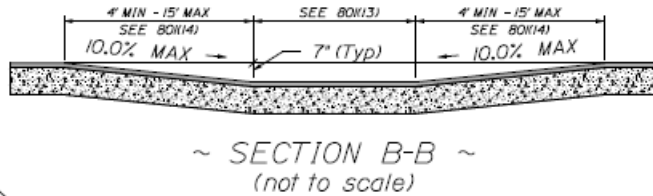
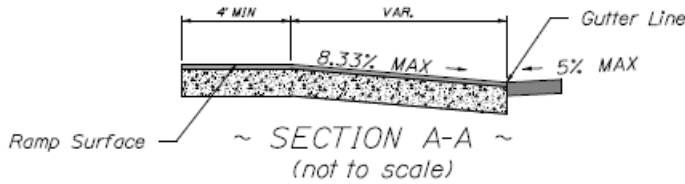
NOTES:

- This less desirable design should not be used unless required by design constraints. It may not provide adequate curb reveal. Use option 1 when possible.
- No vehicular access shall be permitted through the radius curb.
- a minimum curb reveal of 3" is required at the apex of the curb radius.
- Minimal terminal curb length shall be 4 ft.
- To achieve 8.3% running slope, the pedestrian ramp may need to be extended. If the ramp length has been extended to a maximum of 15 feet and other design modifications have been considered, running slope may exceed 8.3%.

**PARALLEL CURB RAMP - OPTION 3
801(21)**



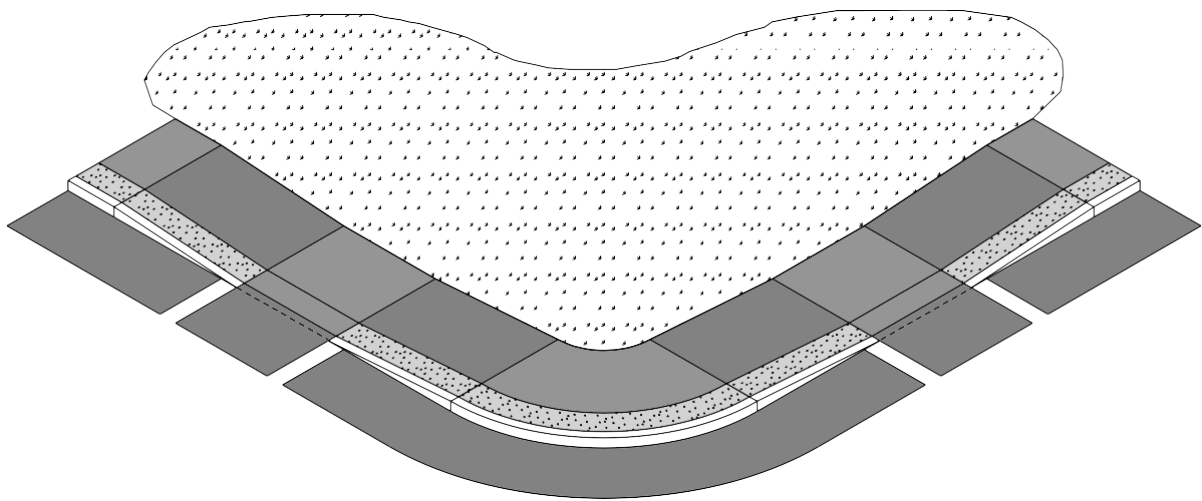
ISOMETERIC VIEW (NOT TO SCALE)



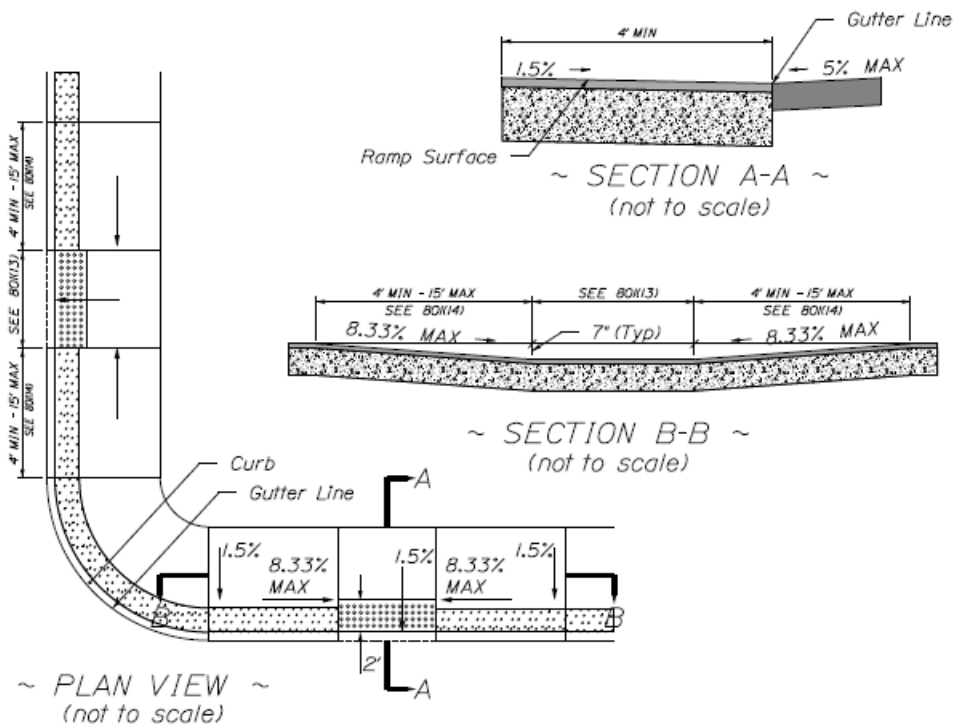
NOTES:

- This less desirable design should not be used unless required by design constraints. It does not provide directional cues. Use Option 1 or Option 2 when possible.
- No vehicular access shall be permitted through the curb radius.

**PERPENDICULAR CURB RAMP - OPTION 3
801(22)**

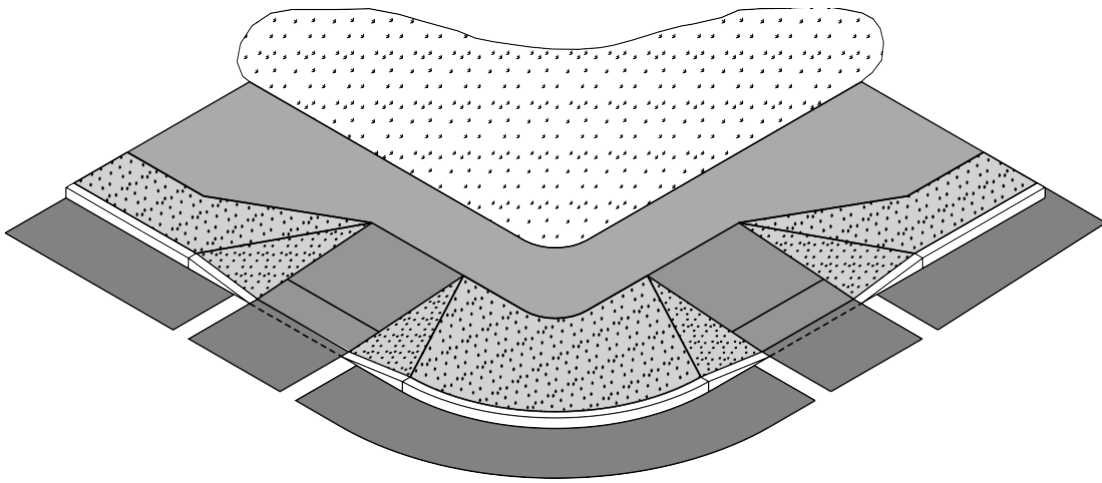


ISOMETERIC VIEW (NOT TO SCALE)

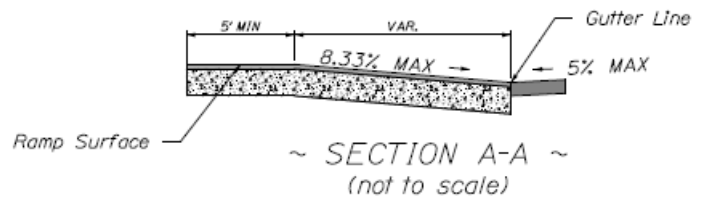


NOTES:

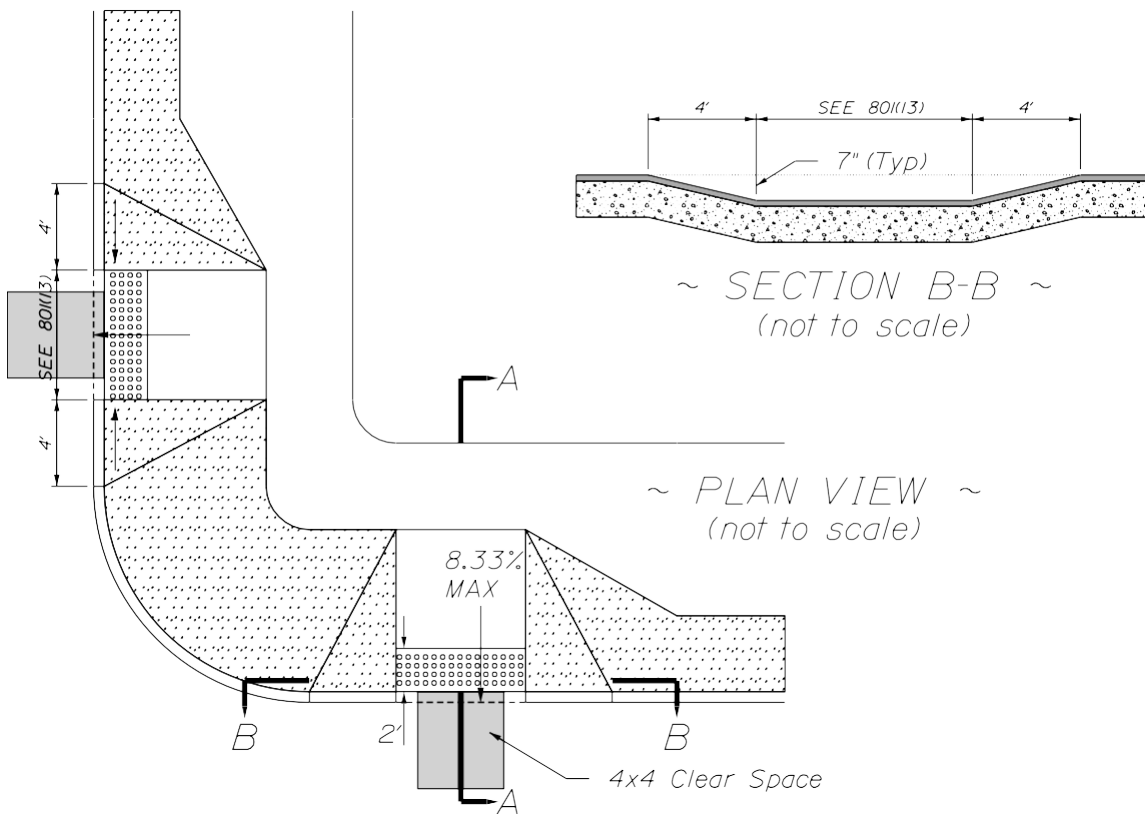
- To achieve 8.3% running slope, the pedestrian ramp may need to be extended. If the ramp length has been extended to a maximum of 15 feet and other design modifications have been considered, running slope may exceed 8.3%.



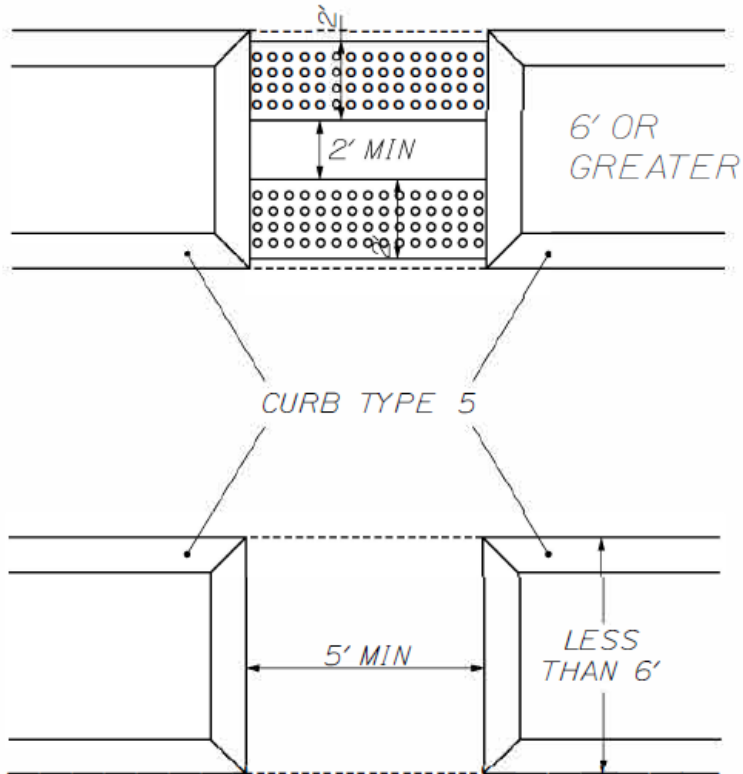
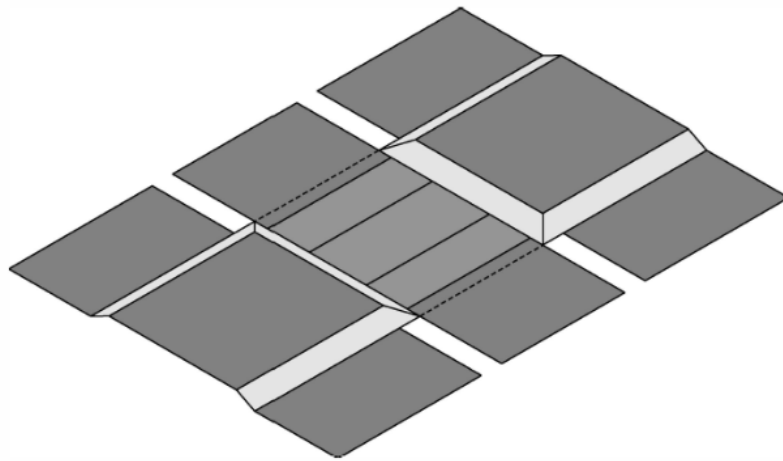
ISOMETERIC VIEW (NOT TO SCALE)



(not to scale)



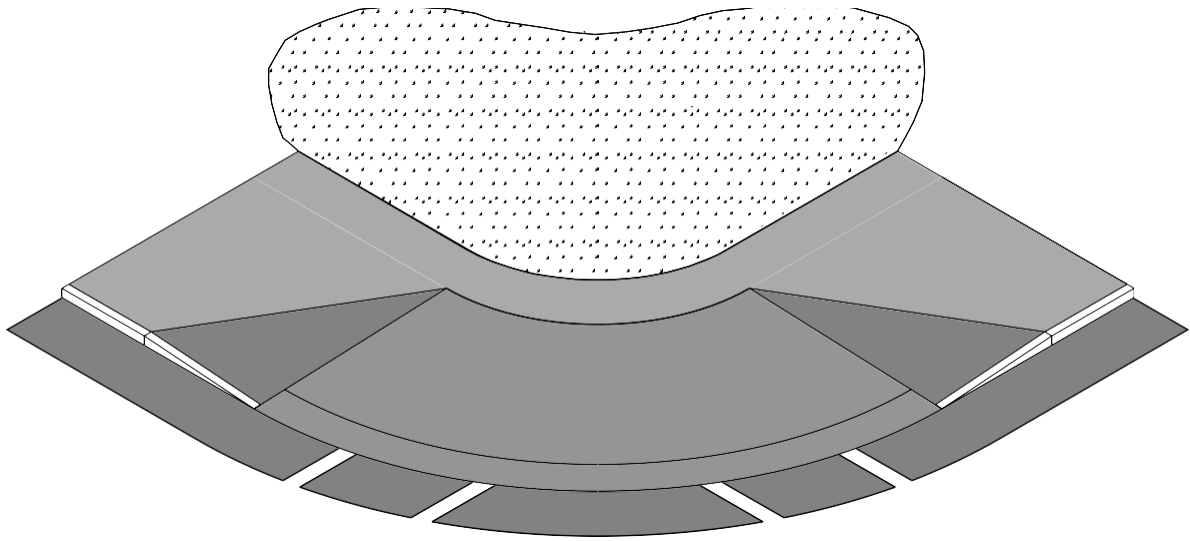
PERPENDICULAR CURB RAMP – ESPLANADE
801(24)



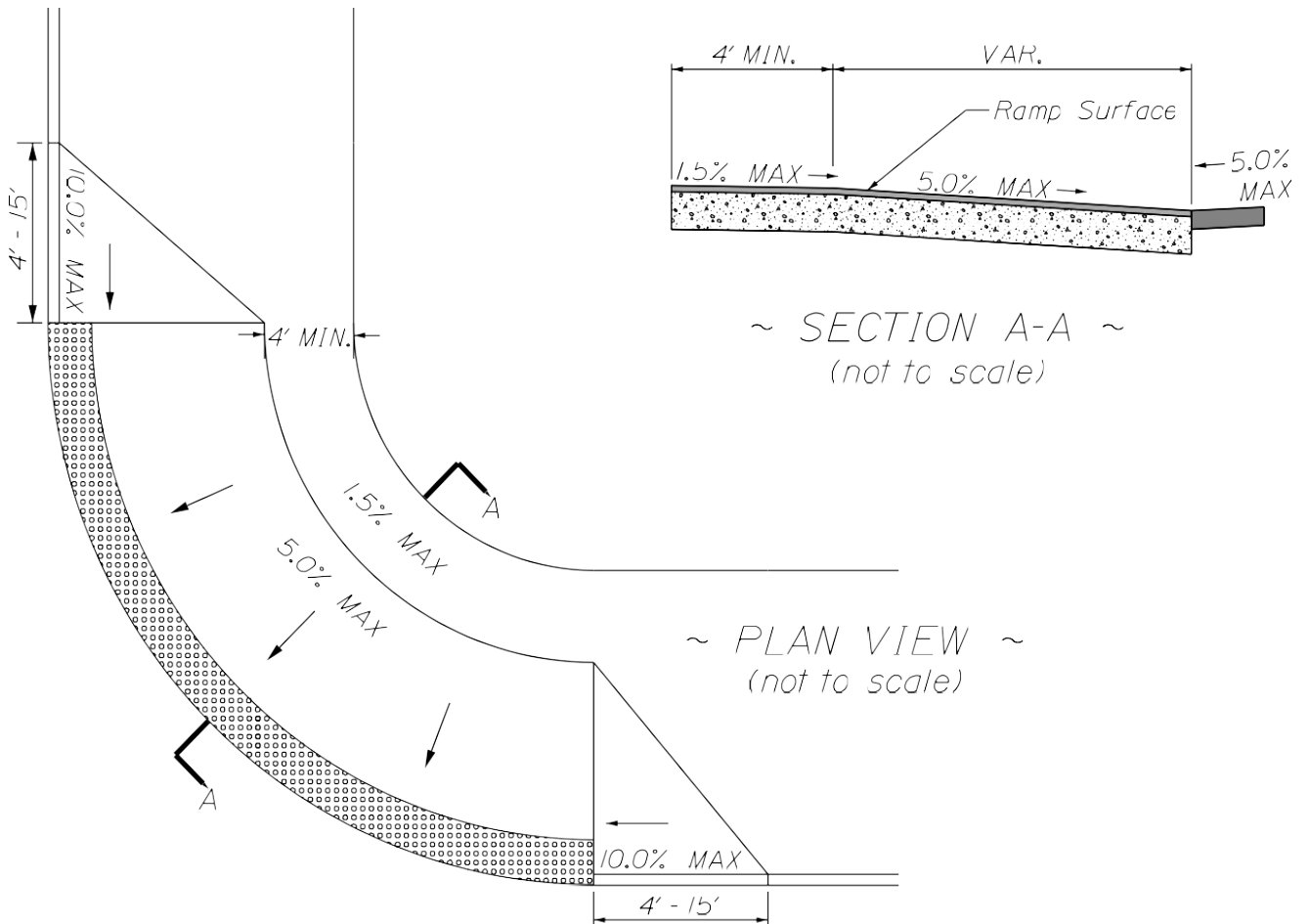
NOTE:

- Omit Detectable Warnings if minimum of 2 ft. between Detectable Warnings cannot be met.

**ISLAND CROSSINGS
801(25)**

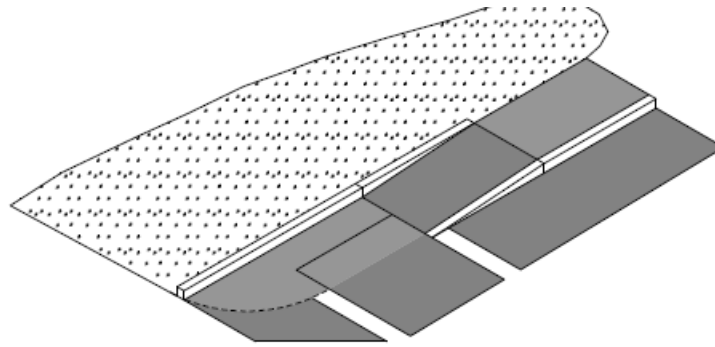


ISOMETERIC VIEW (NOT TO SCALE)

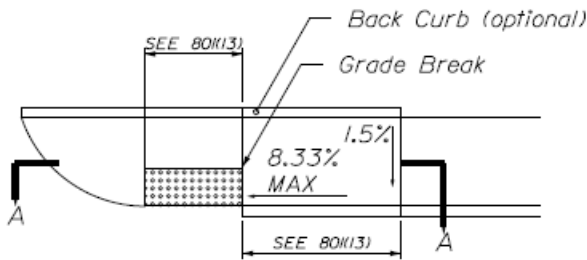


NOTE:- This Option should only be used after all other options have been considered and deemed technically infeasible.

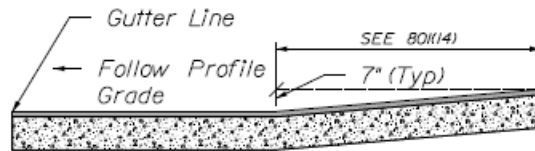
**BLENDED TRANSITION
801(26)**



~ PERSPECTIVE VIEW ~
(not to scale)



~ PLAN VIEW* ~
(not to scale)

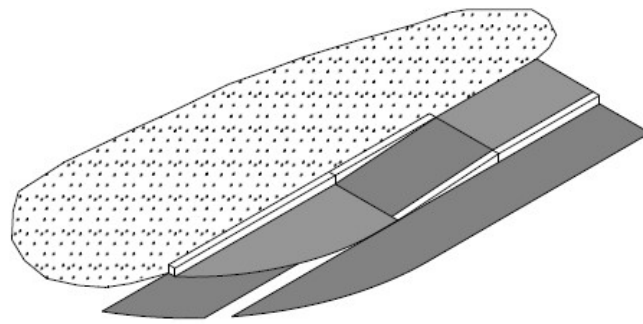


~ SECTION A-A ~
(not to scale)

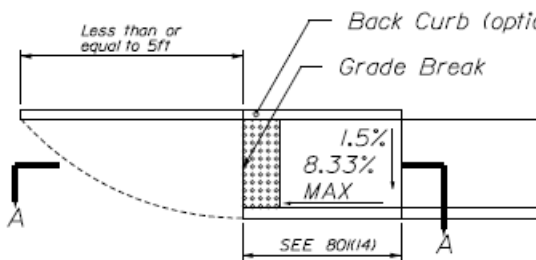
NOTES:

- This less desirable design should be used only when all other options have been considered and exhausted.
- For use only when no sidewalk is present at driveway/non-signalized intersections.
- To achieve 8.3% running slope, the pedestrian ramp may need to be extended. If the ramp length has been extended to a maximum of 15 feet and other design modifications have been considered, running slope may extend 8.3%

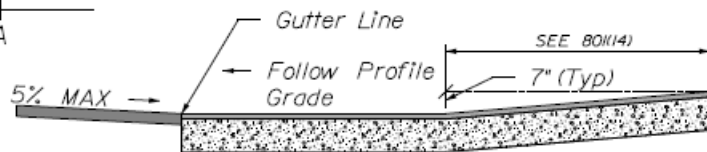
**CURB RAMP ADJACENT TO DRIVEWAY OR ENTRANCE
801(27)**



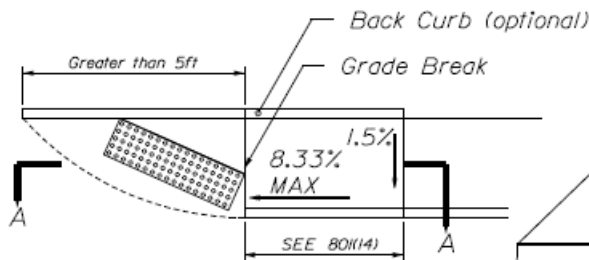
~ PERSPECTIVE VIEW ~
(not to scale)



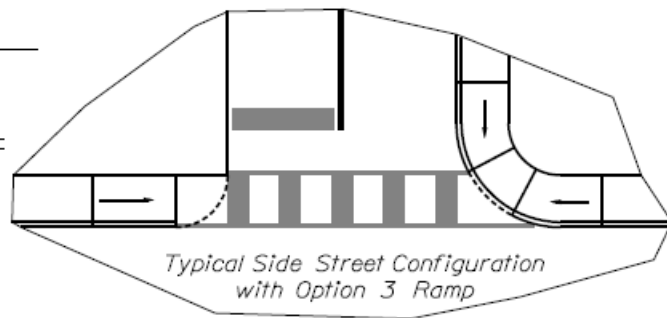
~ *PLAN VIEW* ~
(not to scale)



~ SECTION A-A ~
(not to scale)



~ **PLAN VIEW** ~
(not to scale)



Typical Side Street Configuration
with Option 3 Ramp

NOTES:

-No vehicular access shall be permitted through the curb radius.

-For use only when no sidewalk is present on the side street.

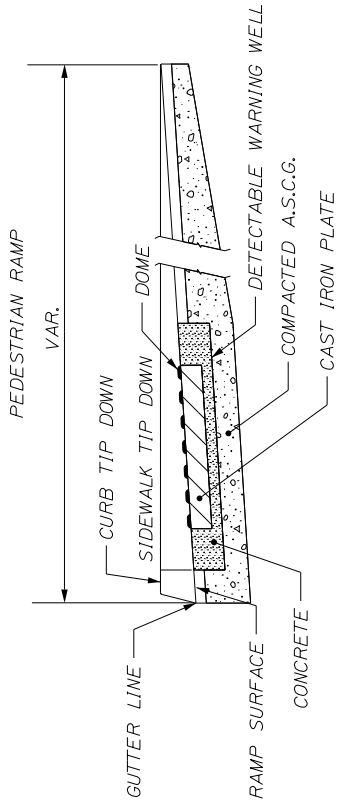
* Use this detectable placement if the distance from the grade break to the gutter line is less than or equal to 5 feet.

** Use this detectable placement if the distance from the grade break to the gutter line is greater than 5 feet.

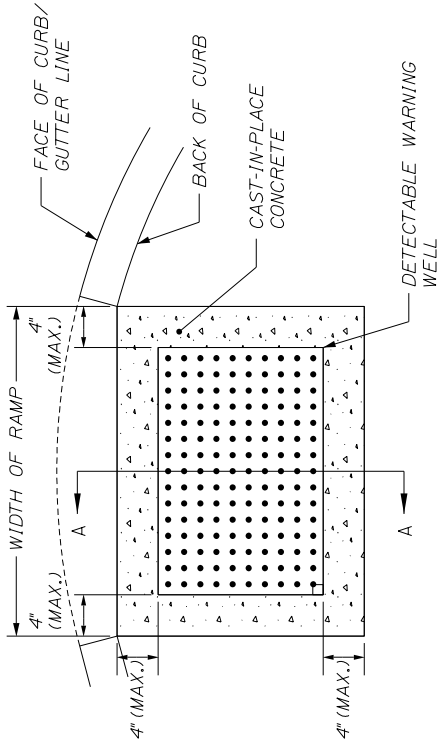
-To achieve 8.33% running slope, the pedestrian ramp may need to be extended. If the ramp length has been extended to a maximum of 15 feet and other design modifications have been considered, running slope may exceed 8.3%

VIEWS AND DETAILS OF THE DETECTABLE WARNING

(NOT TO SCALE)

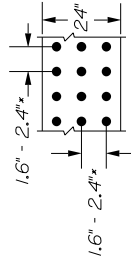


SIDE SECTION VIEW OF
DETECTABLE WARNING, WELL, CURB AND GUTTER



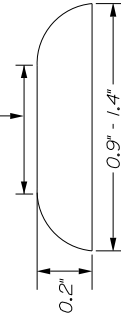
PLAN VIEW OF
DETECTABLE WARNING AND WELL

* SHALL BE EQUAL IN
BOTH DIRECTIONS



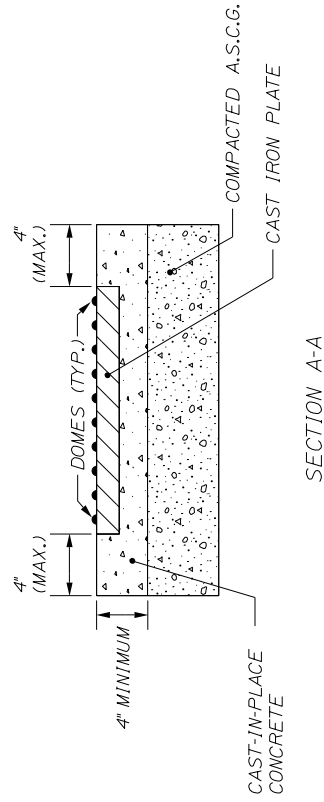
PLAN VIEW

THE TOP DIAMETER OF THE
TRUNCATED DOMES SHALL BE
50% TO 65% OF THE BASE
DIAMETER.



ELEVATION VIEW

DOMES AND DETECTABLE WARNING DETAILS



SECTION A-A

DETECTABLE WARNINGS
Supersedes 608(02)