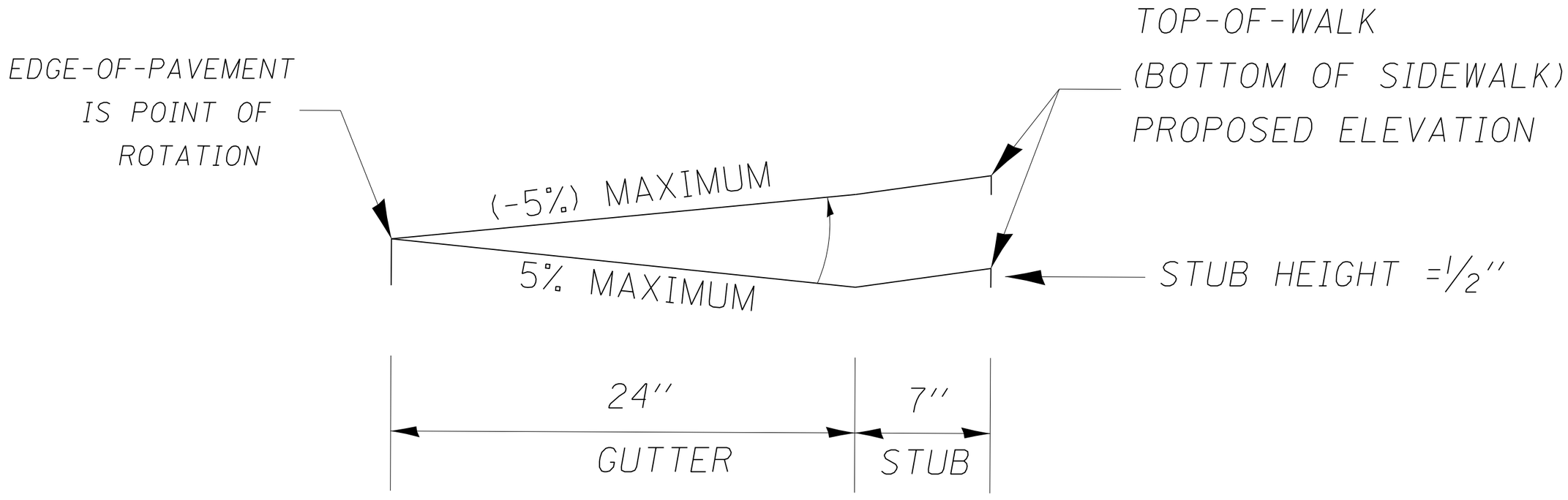
VISUAL WALK-THROUGH

FOR SPEED, WHEN THERE ARE NUMEROUS ADA CORNERS
TO DESIGN, WE JUST SET :

PROPOSED TOP-OF-WALK ELEVATION	=	EXISTING EDGE-OF-PAVEMENT ELEVATION

BUT OTHERWISE...

THE TOP-OF-WALK CELL IS FORMULATED TO TO ''TWIST'' THE CURB,
FOR A COMPLIANT LANDING EDGE (LESS THAN 2%)



SPREADSHEET CELL FORMULATION, TOP-OF-WALK

PROPOSED TOP-OF-WALK

= EOP ± (4.2 / 100) X GUTTER WIDTH + 0.5 / 12

STUB HEIGHT IS 0.5 INCH, THEN DIVIDED BY 12 TO EXPRESS IN FEET

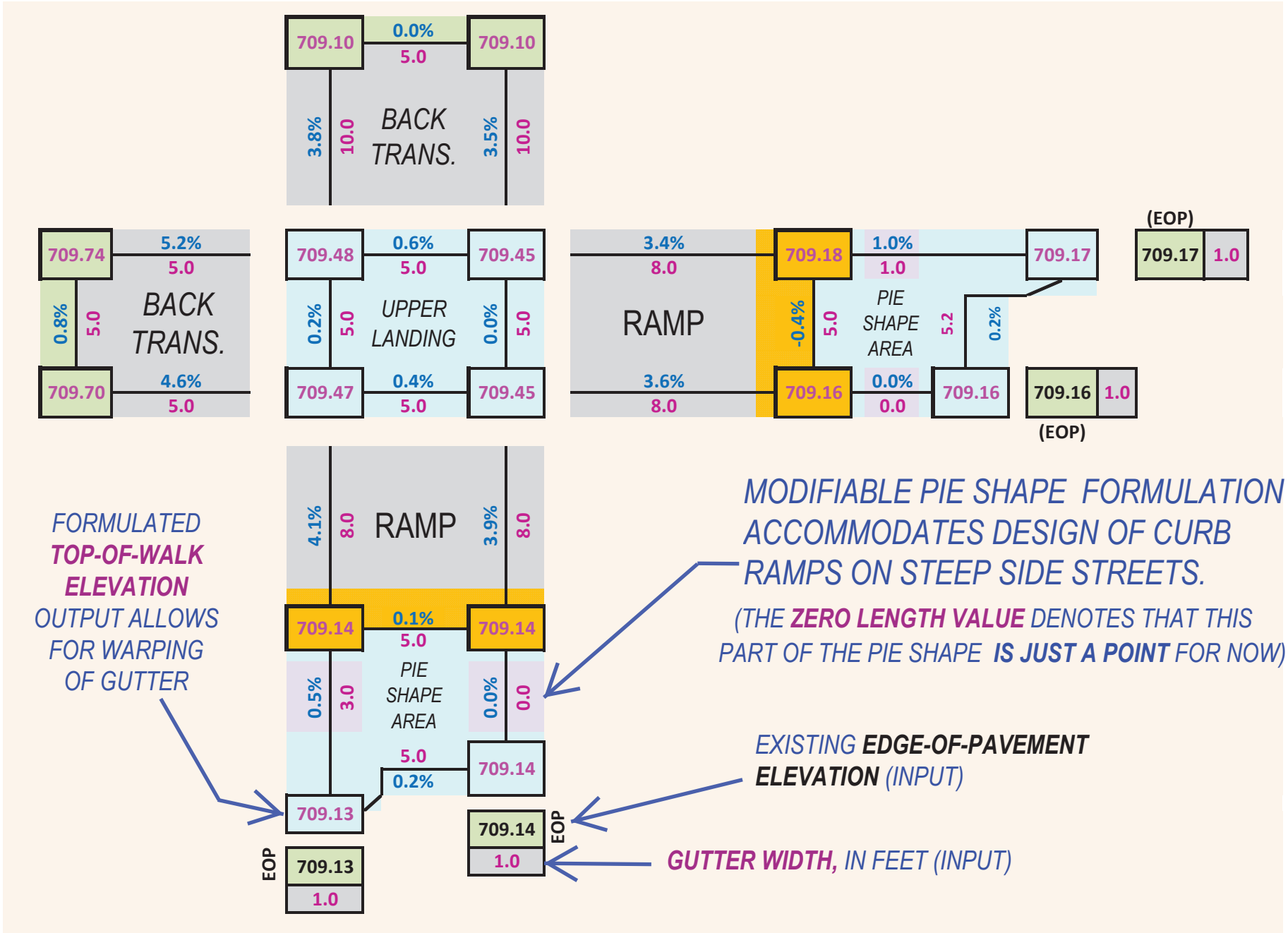
"TWIST" GUTTER AT DIFFERENT POINTS OF CURB BY CHANGING VALUE WITHIN THE RANGE OF

- (5 / 100) TO + (5 / 100)

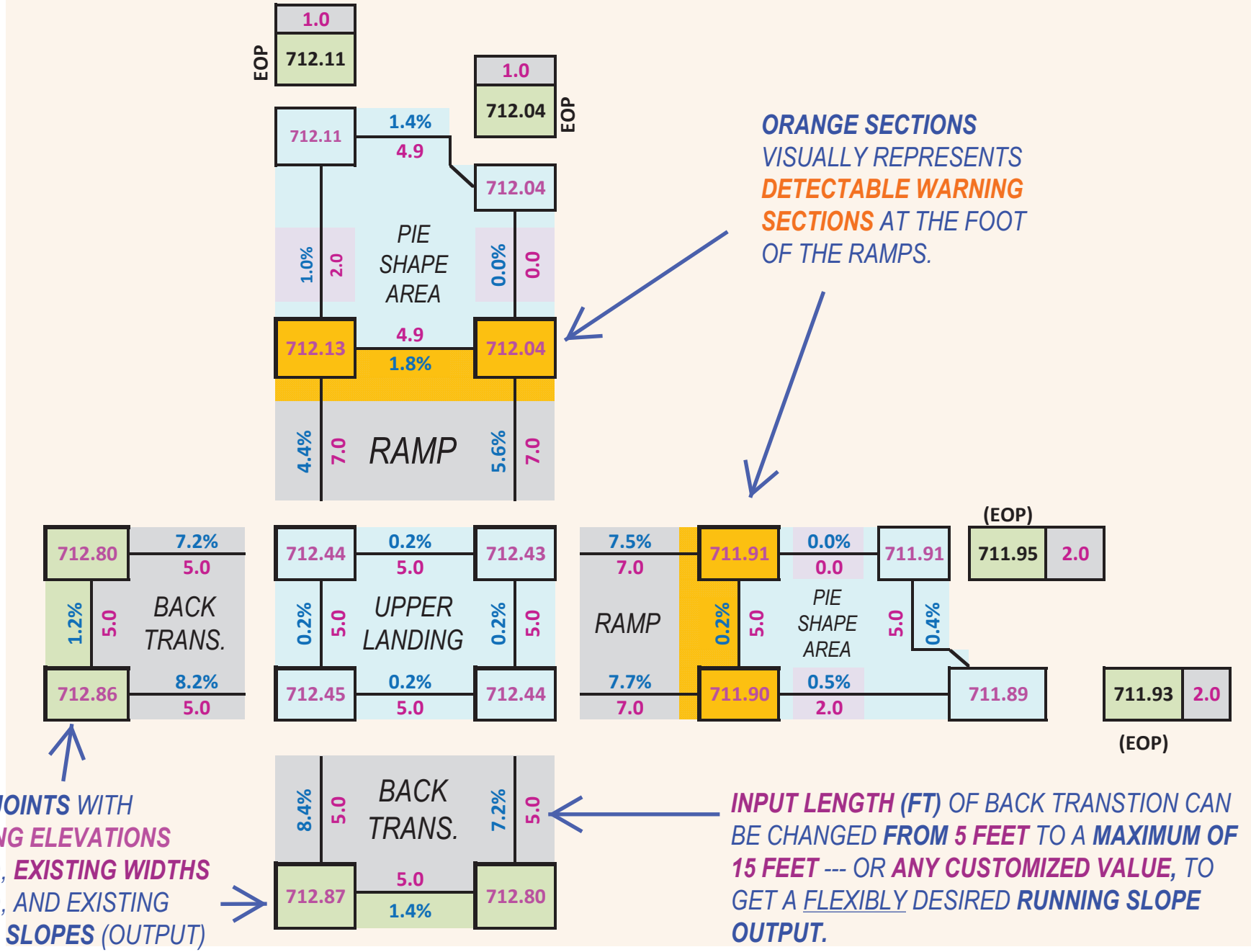
GUTTER PROJECTED DOWN FROM EDGE-OF-PAVEMENT (- SIGN AFTER E.O.P.)

GUTTER PROJECTED UP FROM EDGE-OF-PAVEMENT (+ SIGN AFTER E.O.P.)

TEMPLATE FOR PERPENDICULAR NORTHWEST CORNER



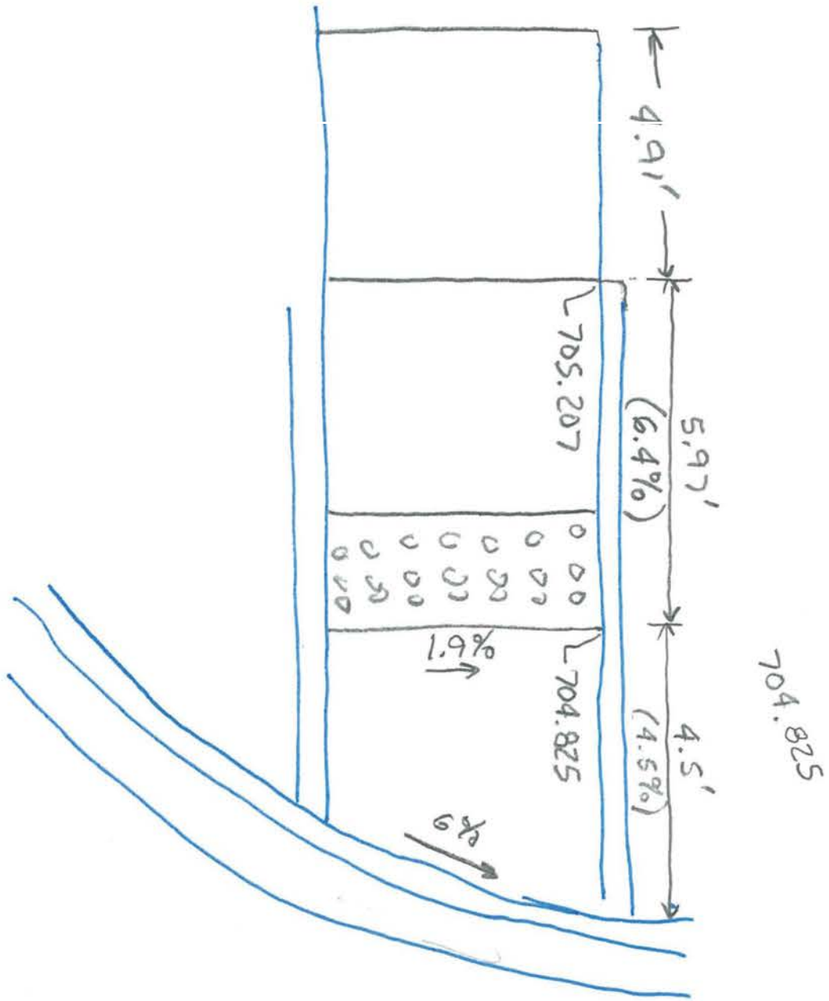
TEMPLATE FOR SOUTHWEST PERPENDICULAR CORNER



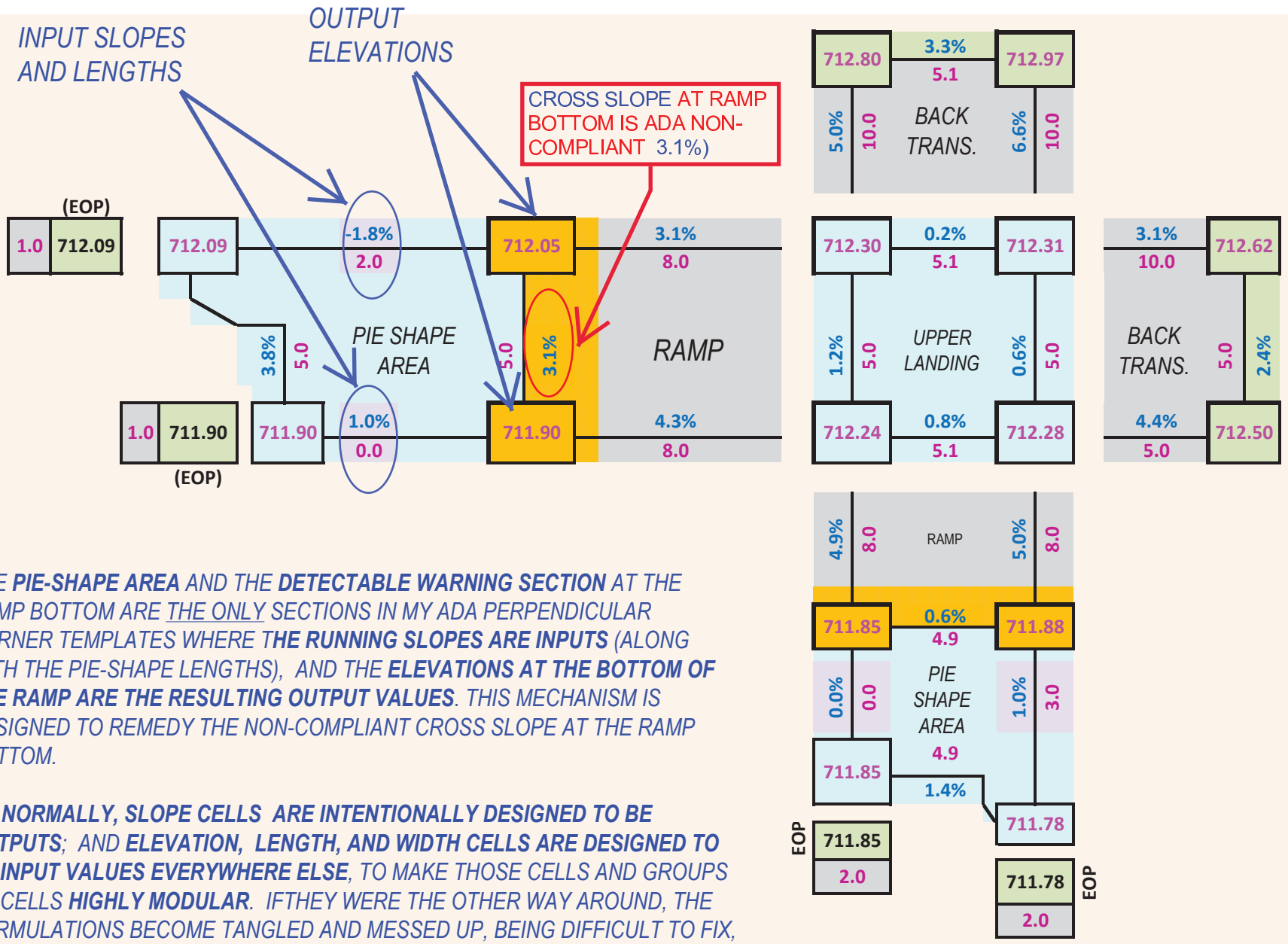
TO ADDRESS THE **RAMP BOTTOM CROSS SLOPE** BEING **NON-COMPLIANT**, ELONGATE THE PIE SECTION SO THAT IT BECOMES A TRAPEZOID WITH TWO SIDES. THEN **ITERATE EACH RUNNING SLOPE ON EACH SIDE** TO **ACHIEVE A COMPLIANT CROSS SLOPE** AT THE **BOTTOM OF THE RAMP**.

WITH THIS MECHANISM, WE ACHIEVE:

- A COMPLIANT CURB RAMP (1.9% CROSS SLOPE IN THIS CASE)
- A NON-COMPLIANT CROSSWALK (6% X SLOPE IN THIS CASE)
- A TRANSITION PANEL BETWEEN THE TWO PIECES ABOVE, WHICH CAN BE IMPROVED IN THE FUTURE TO MATCH CORRECTED CROSSWALK
- NO MAXIMUM EXTENT PRACTICABLE NEEDED FOR THE CURB RAMP ITSELF



TEMPLATE FOR NORTHEAST PERPENDICULAR CORNER

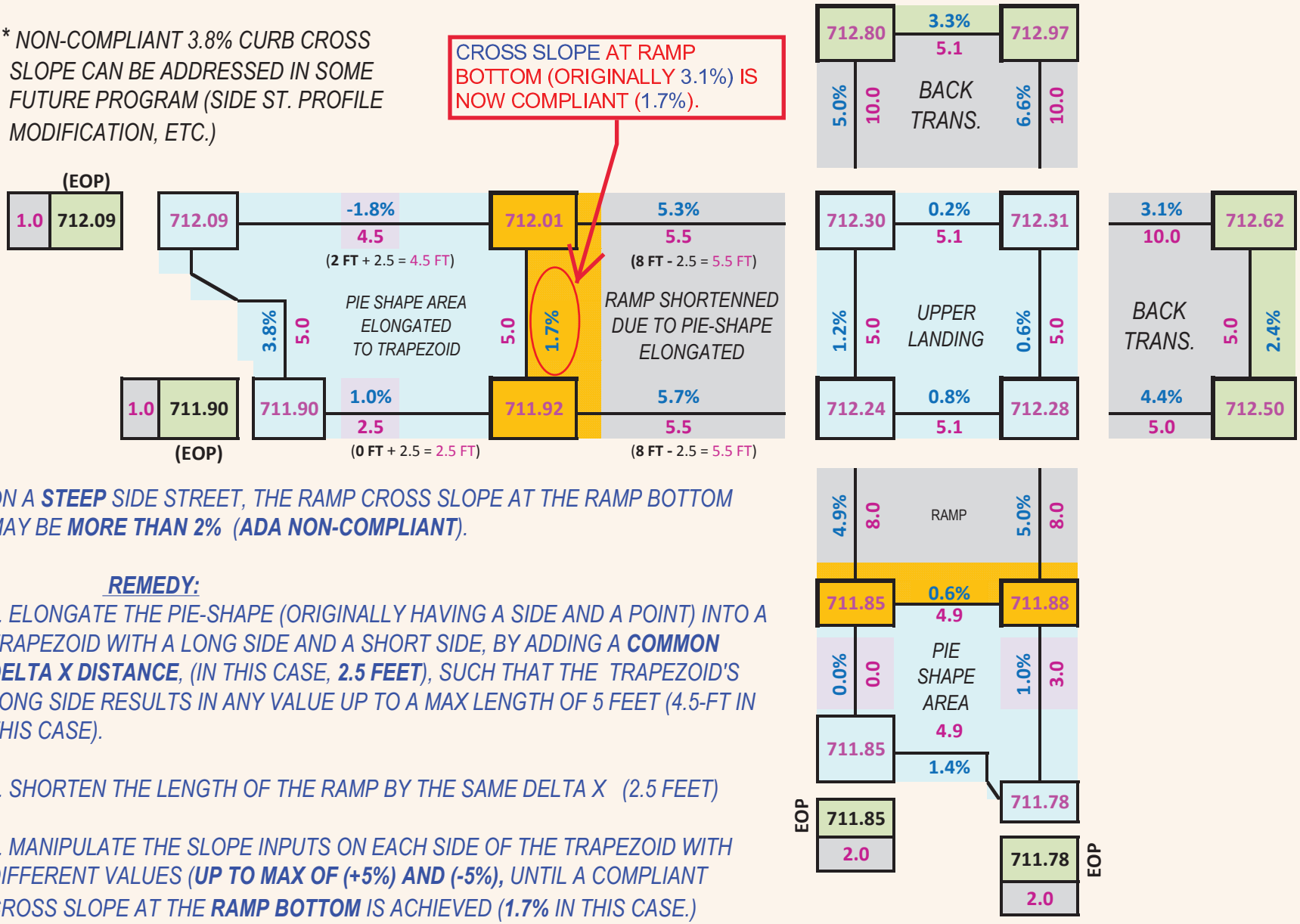


*THE **PIE-SHAPE AREA** AND THE **DETECTABLE WARNING SECTION** AT THE RAMP BOTTOM ARE THE ONLY SECTIONS IN MY ADA PERPENDICULAR CORNER TEMPLATES WHERE **THE RUNNING SLOPES ARE INPUTS** (ALONG WITH THE PIE-SHAPE LENGTHS), AND THE **ELEVATIONS AT THE BOTTOM OF THE RAMP ARE THE RESULTING OUTPUT VALUES**. THIS MECHANISM IS DESIGNED TO REMEDY THE NON-COMPLIANT CROSS SLOPE AT THE RAMP BOTTOM.*

**** **NORMALLY, SLOPE CELLS ARE INTENTIONALLY DESIGNED TO BE OUTPUTS**; AND **ELEVATION, LENGTH, AND WIDTH CELLS ARE DESIGNED TO BE INPUT VALUES EVERYWHERE ELSE**, TO MAKE THOSE CELLS AND GROUPS OF CELLS **HIGHLY MODULAR**. IFTHEY WERE THE OTHER WAY AROUND, THE FORMULATIONS BECOME TANGLED AND MESSED UP, BEING DIFFICULT TO FIX, ONCE YOU START MOVING AND COPYING THE CELLS AROUND. ****

TEMPLATE FOR NORTHEAST PERPENDICULAR CORNER (PIE-SHAPE IS ELONGATED)

** NON-COMPLIANT 3.8% CURB CROSS SLOPE CAN BE ADDRESSED IN SOME FUTURE PROGRAM (SIDE ST. PROFILE MODIFICATION, ETC.)*



*ON A **STEEP** SIDE STREET, THE RAMP CROSS SLOPE AT THE RAMP BOTTOM MAY BE **MORE THAN 2%** (**ADA NON-COMPLIANT**).*

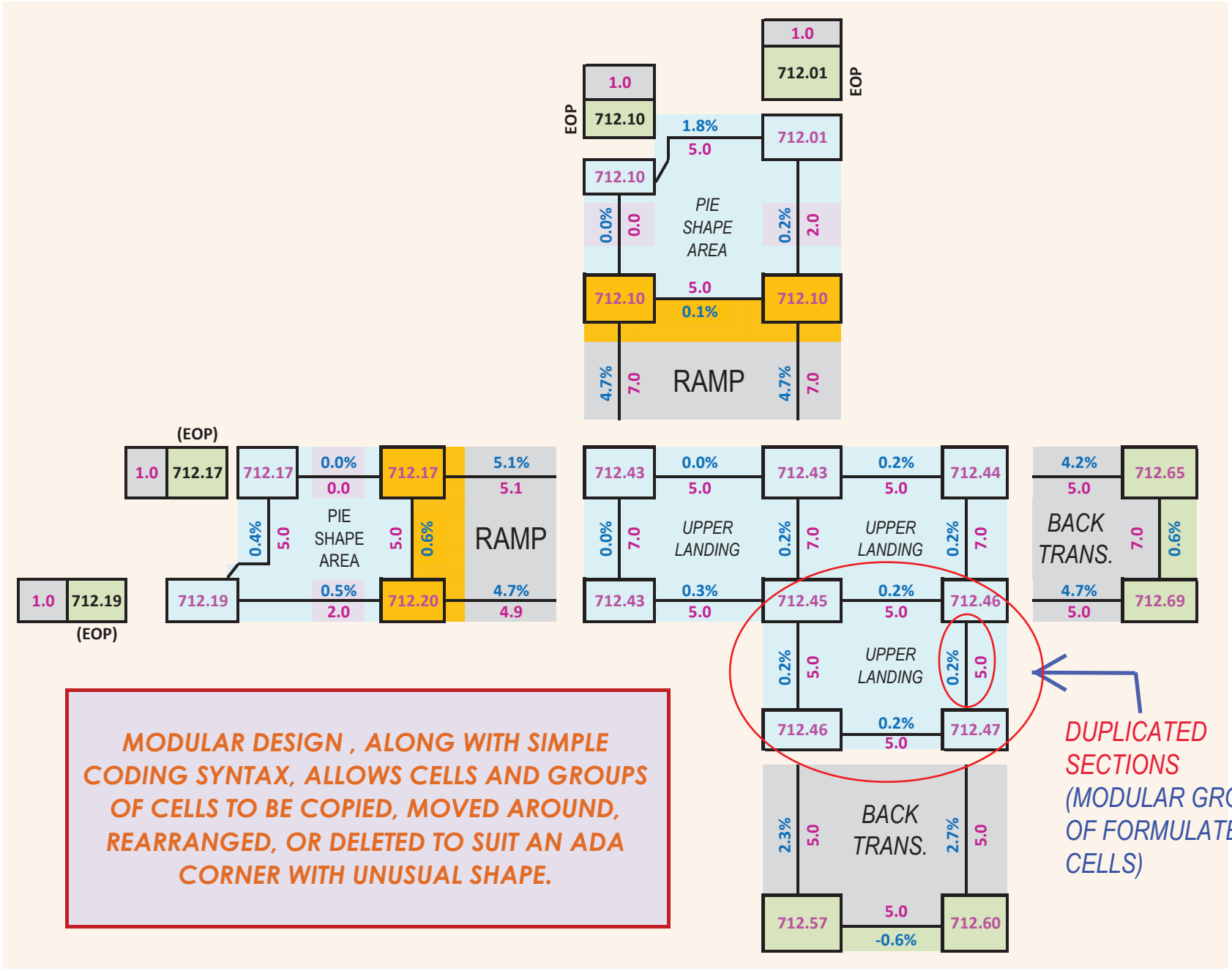
REMEDY:

*1. ELONGATE THE PIE-SHAPE (ORIGINALLY HAVING A SIDE AND A POINT) INTO A TRAPEZOID WITH A LONG SIDE AND A SHORT SIDE, BY ADDING A **COMMON DELTA X DISTANCE**, (IN THIS CASE, **2.5 FEET**), SUCH THAT THE TRAPEZOID'S LONG SIDE RESULTS IN ANY VALUE UP TO A MAX LENGTH OF 5 FEET (4.5-FT IN THIS CASE).*

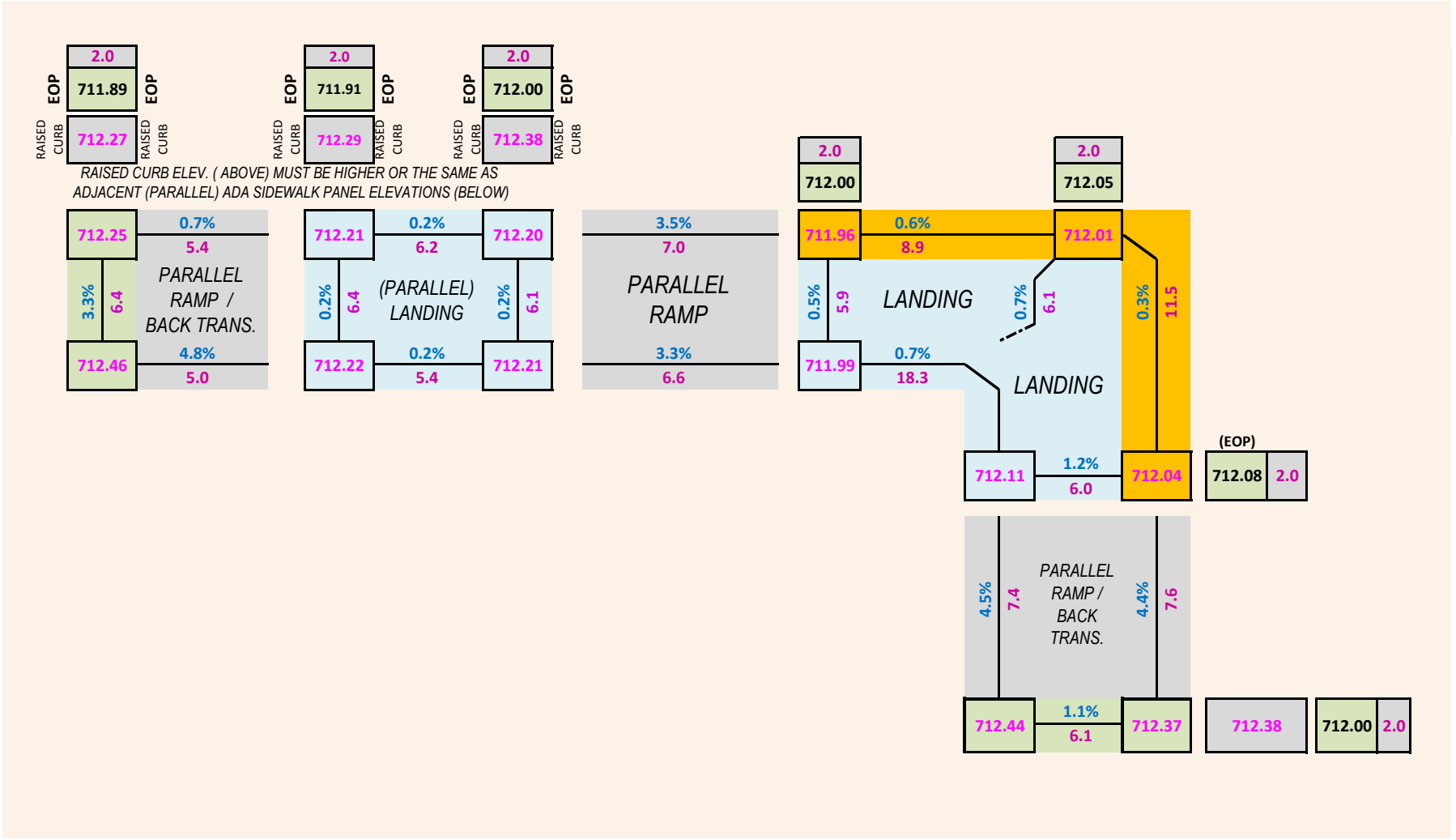
2. SHORTEN THE LENGTH OF THE RAMP BY THE SAME DELTA X (2.5 FEET)

*3. MANIPULATE THE SLOPE INPUTS ON EACH SIDE OF THE TRAPEZOID WITH DIFFERENT VALUES (**UP TO MAX OF (+5%) AND (-5%),** UNTIL A COMPLIANT CROSS SLOPE AT THE **RAMP BOTTOM** IS ACHIEVED (**1.7%** IN THIS CASE.)*

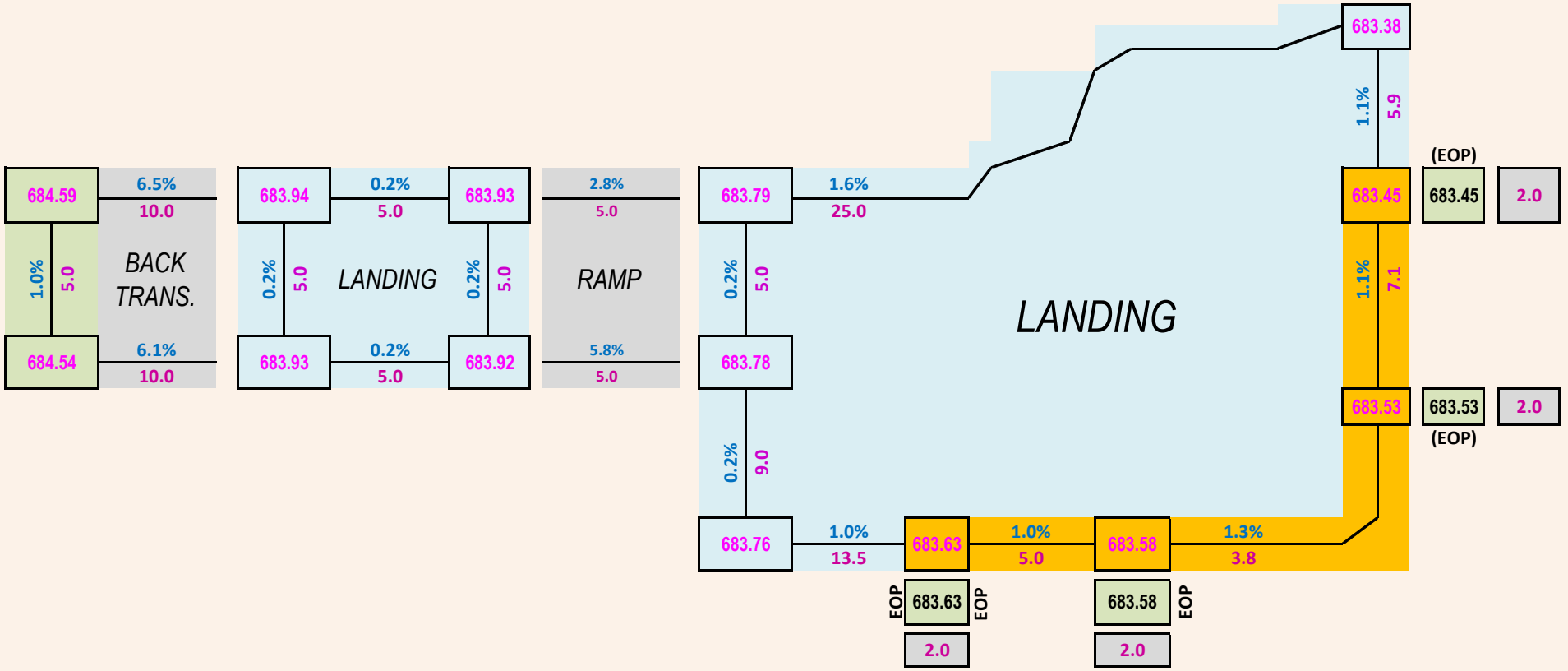
TEMPLATE FOR SOUTHEAST PERPENDICULAR CORNER



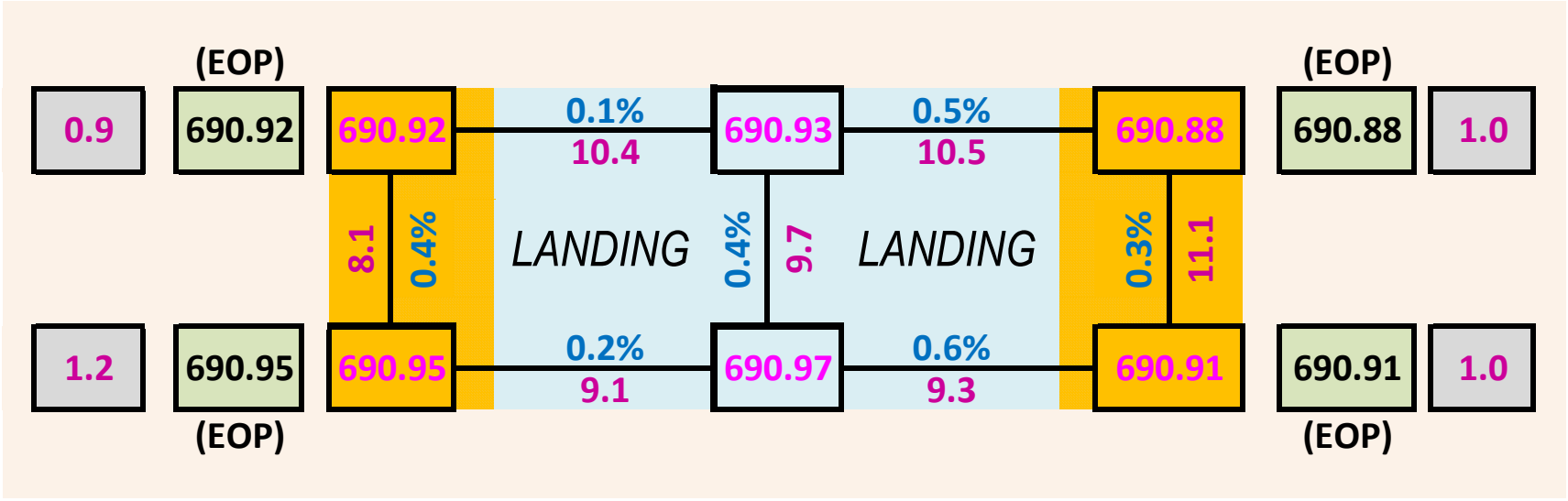
TEMPLATE FOR SOUTHWEST PARALLEL CORNER



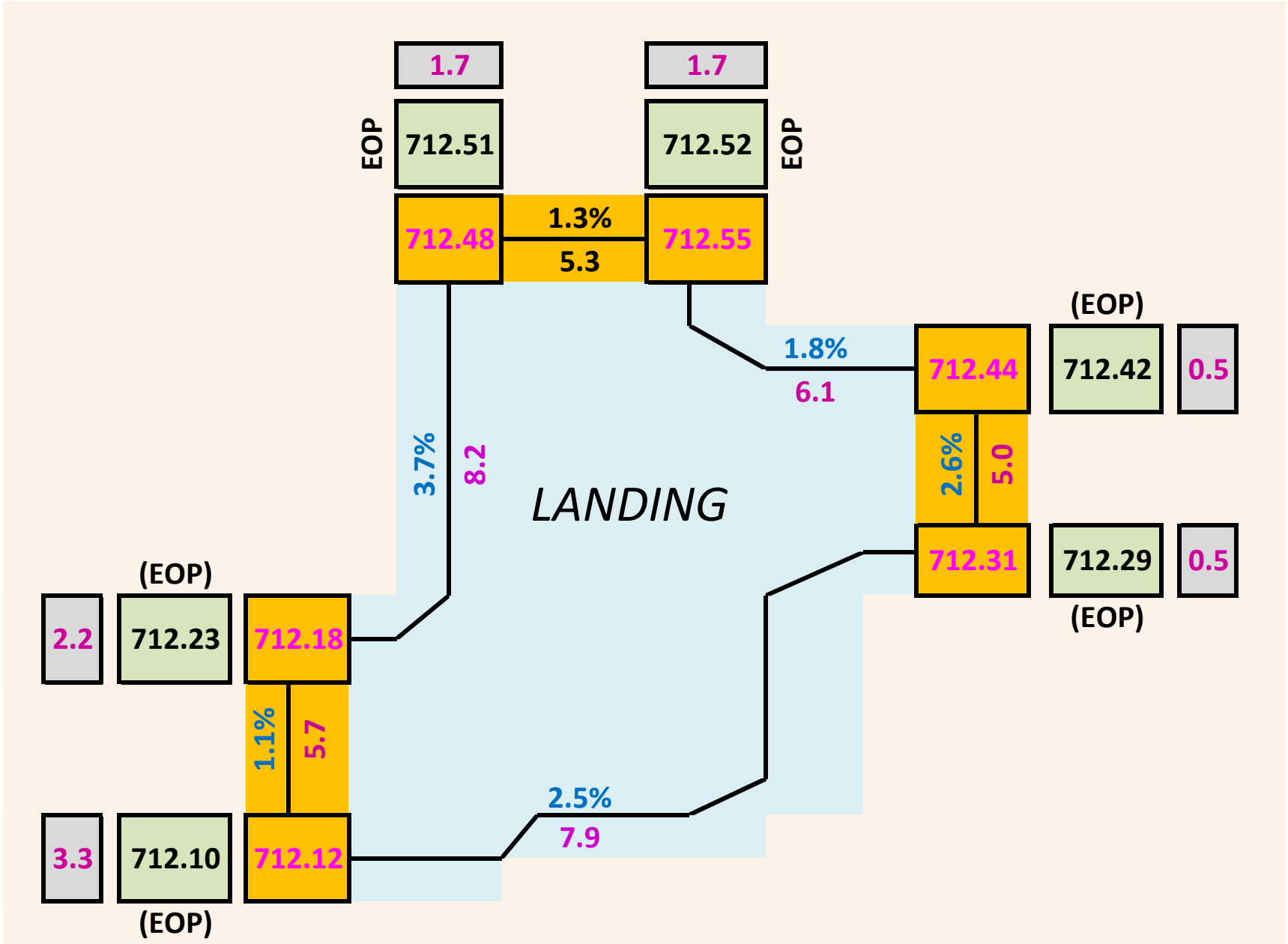
DEPRESSED CORNER TEMPLATE (NORTHWEST CORNER)



ADA MEDIAN ISLAND CROSSING



ADA PCC CHANNELIZATION GORE CROSSING



WALK-THROUGH

(TEXTUAL DESCRIPTION)

If your roadway with ADA corners to be designed are in a relatively flat area, then just for designing quickness, just set the formulated top-of-walk cell (light blue) equal to the existing pavement elevation cell (olive green). Delete the formulation. But if you want to retain the formulation, then for a 1-ft wide gutter (B-6.12), the gutter slope should be 4.2/100 (that is, 4.2%), to make it equal to the EOP… just like I have it in the cells of the spreadsheet above. For a 2-ft wide gutter (B-6.24) then to retain the formulation while making the top-of-walk elevation equal to the EOP elevation, then the gutter slope should be 2.2/100 (that is, 2.2%).

The purpose of the formulated top-of-walk is that it is one of 2 mechanisms for attempting to make a non-compliant cross-slope at the bottom of the curb ramp, into a cross slope that is compliant. ***This is the case on a steep side street***.

Mechanism 1: twisting the gutter by varying the gutter slope on each side of the curb adjacent to the pie-shape.

Example:
top-of-walk on one side of the curb ramp will have a slope ratio of 4.2/100 (that is, 4.2%), and top-of-walk on the other side will have a slope ratio of 1.1/100 (or 1.1%), and so forth. This is a model of a "twisting" gutter.

Mechanism 2: In addition to Mechanism 1, you can model the **elongation of the pie-shape** (a point of zero length, and a side of measured length) **into a trapezoid** with two sides (one long side and one short side) with the long side length equal to up to a max length of 5 feet. This is done by adding a common delta length to the original length dimension values of the pie-shape (again, which is a point of zero length, and a side of some measured length), and subtracting that common delta length from the original two side lengths of the ramp.

Note:

Only in the pie-shape section of the spreadsheet perpendicular templates, are the two length slopes of the pie shape designed to be inputs, with the resulting two elevations at the bottom of the curb ramp as resulting outputs. That way, the elongated pie-shape slopes can be used for iterating a compliant curb ramp bottom slope once the pie-shape is elongated.

In all other sections of the spreadsheet, the slopes are the output of input elevations and dimensions. This is to retain the modularity of the cells and group of cells in case you need to move them around, or duplicate them, or rearrange them for a sidewalk corner with a slightly unusual shape (besides the typical rectangular ramps, etc.)