FLH Standard Criteria Files

Section 6 –

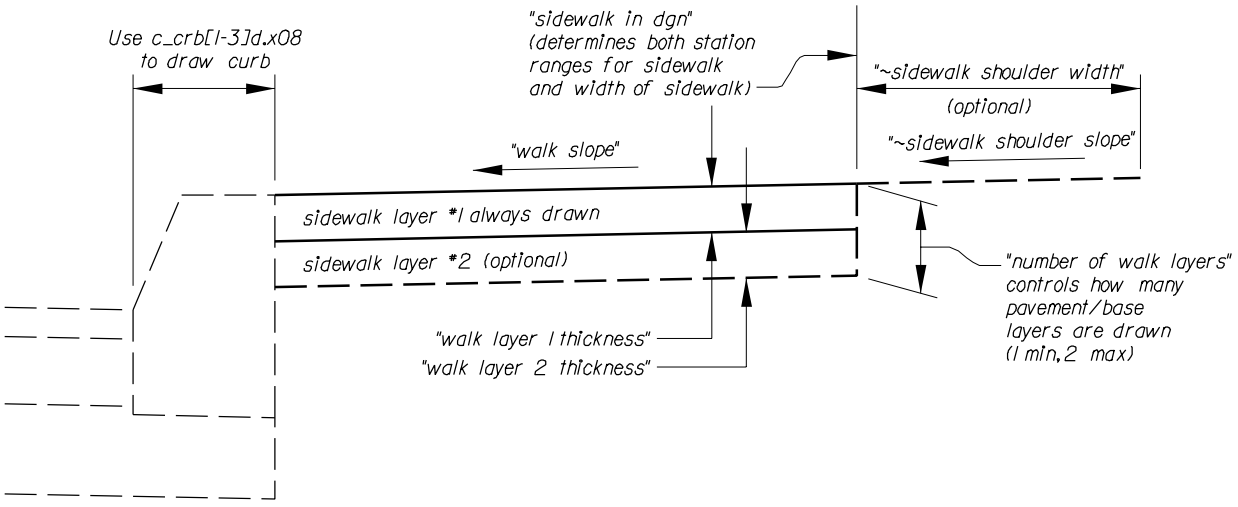
Sidewalk Criteria Files

Sidewalk Criteria Files

Criteria File	Elements Drawn by Criteria File
c_wlk1d.x08	Sidewalk pavement layer plus an optional base course layer. Station ranges for sidewalk set by lines drawn in plan view dgn file. Sidewalk width is variable and is set by lines drawn in plan view dgn file. Optional gravel shoulder may be drawn off outside edge of sidewalk.
c_wlk1s.x08	Sidewalk pavement layer plus an optional base course layer. Station ranges for sidewalk set in exceptions data file. Sidewalk width is fixed. Optional gravel shoulder may be drawn off outside edge of sidewalk.
c_wlk2d.x08	Urban sidewalk or sidewalk plus parkway. Outside edge of sidewalk is forced to match existing ground so that no additional cut/fill is required outside the sidewalk. Inside edge of sidewalk ties to top of curb. Width of and station range(s) for the sidewalk are set by lines drawn in plan view dgn file. Draws sidewalk pavement layer plus an optional base course layer plus optional parkway between sidewalk and roadway curb. (CFL only)
fh_wlk1b.x08	Sidewalk pavement layer plus up to three base course layers. Origin point is inside bottom corner of sidewalk pavement layer. No way to set station ranges for sidewalk.
fh_wlk1t.x08	Sidewalk pavement layer plus up to three base course layers. Origin point is inside top corner of sidewalk pavement layer. No way to set station ranges for sidewalk.

c_wlk1d.x08

Draws sidewalk pavement plus an optional base course layer under the sidewalk. An optional gravel shoulder may be drawn at the outside edge of the sidewalk. Station range(s) for the sidewalk are defined using line(s) drawn in a plan view dgn file. The width of sidewalk is also set by these lines drawn in plan view dgn and therefore the sidewalk width is variable.



define variables that must be assigned values in the input data file:

"number of walk layers" (min 1, max 2)
"walk layer 1 thickness"
"walk layer 2 thickness"
"walk slope" (%)
"sidewalk shoulder width"

define_dgn variables that must be assigned values in the input data file:

"sidewalk in dgn"

Variables that must be defined in exceptions data file:

None

Notes for c_wlk1d.x08:

1. The station range(s) for sidewalk are set using lines drawn in a plan view dgn file as specified by the "sidewalk in dgn" define_dgn variable.

2. The width of the sidewalk is also set by these lines drawn in plan view dgn -- the outside edge of the sidewalk is drawn to match the offset of the "in dgn" line.

3. By default the "sidewalk in dgn" line will be found if it is drawn anywhere within a distance of 50 meters out from the point where the preceding curb criteria file left off. If the "in dgn" line isn't found within this distance, then the sidewalk will not be drawn. The user may adjust the search distance by defining "~max sidewalk search dist" in the input file.

4. This criteria always draws the sidewalk pavement layer; the depth of the pavement is equal to "walk layer 1 thickness". Optionally, a single base course layers may be drawn by setting "number of walk layers" to 2. Set "number of walk layers" equal to 1 to not draw any base course layers.

5. An optional (gravel) shoulder may be drawn by setting the "~sidewalk shoulder width" parameter to the desired shoulder width. The slope of this shoulder is set with the "~sidewalk shoulder slope" parameter. By default, "sidewalk shoulder slope" is set to zero so that no sidewalk shoulder is drawn unless the user defines this parameter in the input file.

6. The "walk slope" define variable is a percent value using the standard GEOPAK slope sign convention (i.e., +2.00 is a 2% slope up and away from centerline; -2.00 is a 2% slope down and away from centerline).

7. This criteria should always immediately follow one of the c_crb[1-3]d.x08 criteria files in the include sequence because it uses two marked points (600 and 601) set in those criteria files.

8. The level/symbology used to draw the curb section will allow the user to get both slope stake books and earthwork quantities. However, in order to accomplish this the earthwork input file and the slope stake report dialog must be set up exactly as follows:
   In the earthwork input file:
   - Make sure there is a Proposed Undercut with soil type CONC_CURB and lv=18,19 co=18,19. Set all the multiplication factors to 0.000001.

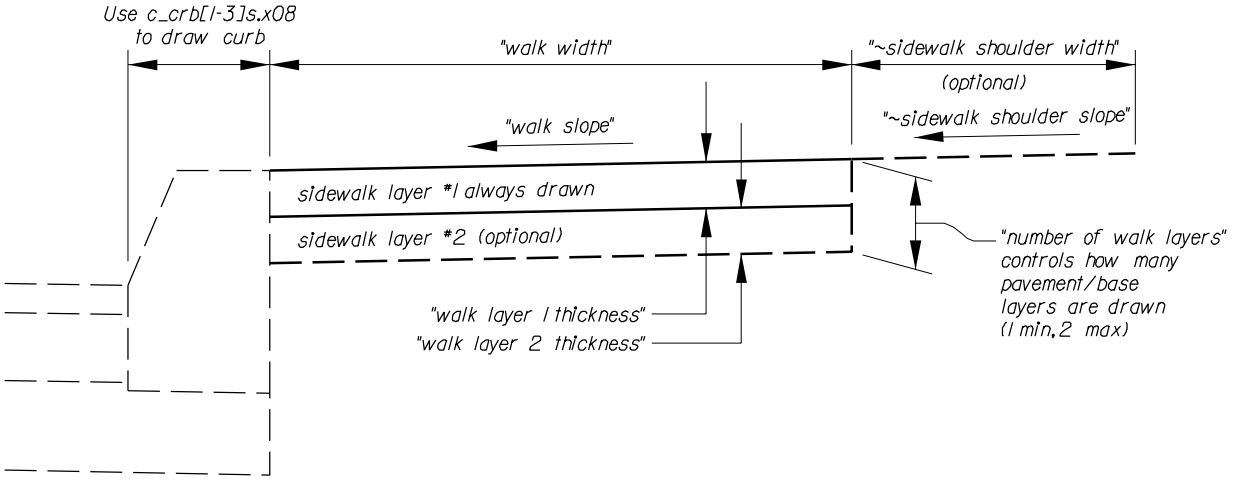
   In the slope stake report dialog include only the following level/symbology:
   - The level and color of the bottom layer of the roadway pavement section only. Don't include the level/symbology for any of the other pavement layers.
   - lv=18 and co=18. These are a part of (but not all of) the curb elements. Don't include the remaining curb elements (lv=2,19 co=0,19).
   - lv=10 co=10. These are the cut/fill slope elements.
   - lv=10 co=16. These are the ditch foreslope elements.
   - If sidewalk is used, then add the level and color of only the bottom layer of the sidewalk section. (Either lv=14 co=14 or lv=15 co=15.)

9. Differences between this criteria (c_wlk1d.x08) and c_wlk1s.x08:
   Station ranges for sidewalk
   - c_wlk1d.x08 -- uses lines drawn in plan view dgn file
   - c_wlk1s.x08 -- uses exceptions data file

   Width of sidewalk
   - c_wlk1d.x08 -- variable width set by lines drawn in plan view dgn file
   - c_wlk1s.x08 -- fixed width set with "walk width" parameter

c_wlk1s.x08

Draws sidewalk pavement plus an optional base course layer under the sidewalk. An optional shoulder may also be drawn outside the sidewalk. Station range(s) for sidewalk are defined in the exceptions data file. Sidewalk width is fixed.



define variables that must be assigned values in the input data file:

"number of walk layers" (min 1, max 2)
"walk layer 1 thickness"
"walk layer 2 thickness"
"walk slope" (%)
"walk width"
"sidewalk shoulder width"

define_dgn variables that must be assigned values in the input data file:

none

Variables that must be defined in exceptions data file:

_d_use_sidewalk_lt
_d_use_sidewalk_rt

Notes for c_wlk1s.x08:

1. The station range(s) for sidewalk are set using the _d_use_sidewalk_[lt,rt] variables in the exceptions data file.

2. The width of the sidewalk is fixed as defined by "walk width".

3. This criteria always draws the sidewalk pavement layer; the depth of the pavement is equal to "walk layer 1 thickness". Optionally, one additional base course layers may be drawn by setting "number of walk layers" to 2. Set "number of walk layers" equal to 1 to not draw any base course layers.

Notes for c_wlk1s.x08 (continued):

4. An optional (gravel) shoulder may be drawn by setting the "~sidewalk shoulder width" parameter to the desired shoulder width. The slope of this shoulder is set with the "~sidewalk shoulder slope" parameter. By default, "sidewalk shoulder width" is set to zero so that no sidewalk shoulder is drawn unless the user defines this parameter in the input file.

5. The "walk slope" define variable is a percent value using the standard GEOPAK slope sign convention (i.e., +2.00 is a 2% slope up and away from centerline; -2.00 is a 2% slope down and away from centerline).

6. This criteria should always immediately follow one of the c_crb[1-3]s.x08 criteria files in the include sequence because it uses two marked points (600 and 601) set in those criteria files.

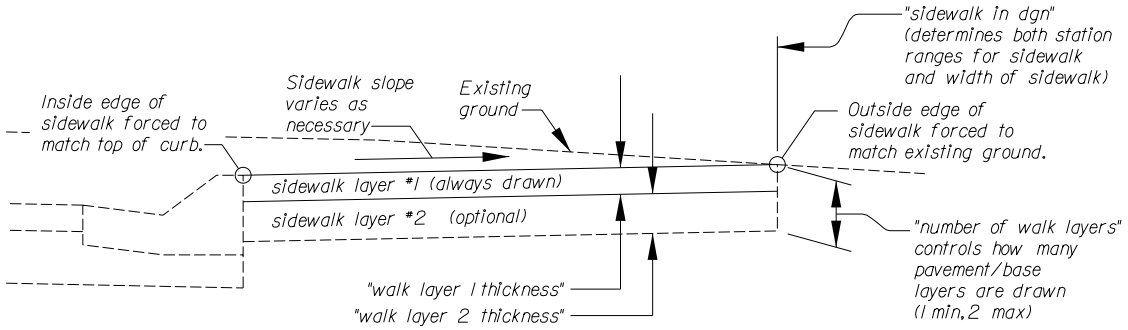
7. See the Notes section for c_wlk1d.x08 for an outline of the level/symbology to use for earthwork and slope stake books.

8. Differences between this criteria (c_wlk1s.x08) and c_wlk1d.x08:
   Station ranges for sidewalk
   - c_wlk1d.x08 -- uses lines drawn in plan view dgn file
   - c_wlk1s.x08 -- uses exceptions data file

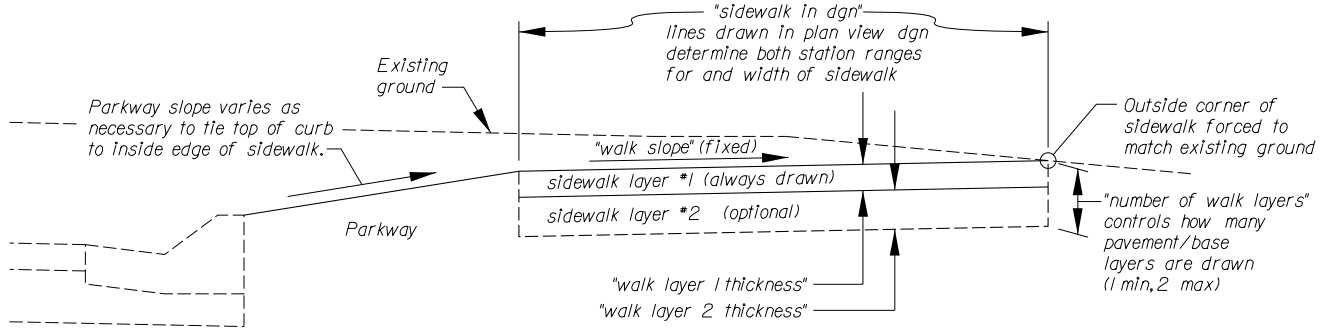
   Width of sidewalk
   - c_wlk1d.x08 -- variable width set by lines drawn in plan view dgn file
   - c_wlk1s.x08 -- fixed width set with "walk width" parameter

c_wlk2d.x08

Draws sidewalk pavement plus an optional base course layer under the sidewalk plus optional parkway between roadway curb and sidewalk. Station range(s) for sidewalk, width of sidewalk, and sidewalk only or sidewalk plus parkway are defined using line(s) drawn in a plan view dgn file. Originally written for an urban project where outside edge of sidewalk needed to match exactly the grade of existing yards, business entrances, etc.



CASE I - ONLY ONE "SIDEWALK IN DGN" LINE FOUND



CASE II - TWO "SIDEWALK IN DGN" LINES FOUND

define variables that must be assigned values in the input data file:

"number of walk layers" (min 1, max 2)
"walk layer 1 thickness"
"walk layer 2 thickness"
"walk slope" (%)

define_dgn variables that must be assigned values in the input data file:

"sidewalk in dgn"

Variables that must be defined in exceptions data file:

None

c_wlk2d.x08

Notes for c_wlk2d.x08:

1. This criteria file was originally written for an urban section of a project where the outside edge of the sidewalk needed to match exactly the existing grade of yards, business entrances, etc., to minimize the construction area.

2. The station range(s) for sidewalk are set using lines drawn in a plan view dgn file as specified by the "sidewalk in dgn" define_dgn variable.

3. The width of the sidewalk is also set by these lines drawn in plan view dgn -- the outside edge of the sidewalk is drawn to match the offset of the "in dgn" line.

4. The number of "sidewalk in dgn" lines found in the plan view file determines whether the configuration drawn is sidewalk only or sidewalk plus parkway:
    a. If a single "sidewalk in dgn" line is found then the sidewalk will be drawn from the top of curb out to match the existing ground elevation at the offset of the "in dgn" line.
    b. If two "sidewalk in dgn" lines are foun then a grass parkway will be drawn from the top of curb out to the first "in dgn" line and the sidewalk will be drawn from that point out to match the existing ground elevation at the offset of the second "in dgn" line.

5. This criteria always draws the sidewalk pavement layer; the depth of the pavement is equal to "walk layer 1 thickness". Optionally, a single base course layers may be drawn by setting "number of walk layers" to 2. Set "number of walk layers" equal to 1 to not draw any base course layers.

6. The "walk slope" define variable is a percent value using the standard GEOPAK slope sign convention (i.e., +2.00 is a 2% slope up and away from centerline; -2.00 is a 2% slope down and away from centerline).

7. Notice that "walk slope" is used only for the sidewalk plus parkway case; for the sidewalk only case the slope of the sidewalk varies as necessary to tie the inside edge of the sidewalk to the top of curb and the outside edge of the sidewalk to the existing ground elevation.

8. The slope of the parkway varies as necessary to tie to the top of the curb on the inside and the inside edge of the sidewalk on the outside.

9. This criteria should always immediately follow one of the c_crb[1-3]d.x08 criteria files in the include sequence because it uses two marked points (600 and 601) set in those criteria files.

10. The level/symbology used to draw the curb section will allow the user to get both slope stake books and earthwork quantities. However, in order to accomplish this the earthwork input file and the slope stake report dialog must be set up exactly as follows:

In the earthwork input file:

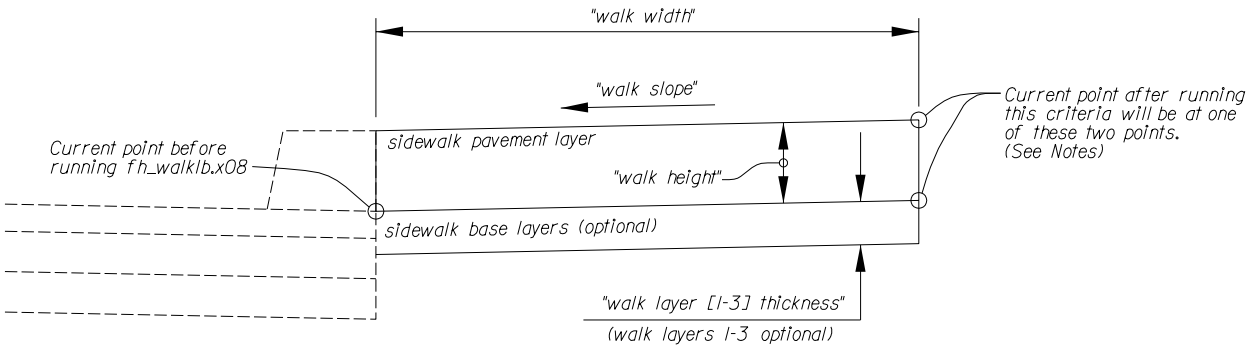
- Make sure there is a Proposed Undercut with soil type CONC_CURB and lv=18,19 co=18,19. Set all the multiplication factors to 0.000001.

In the slope stake report dialog include only the following level/symbology:

- The level and color of the bottom layer of the roadway pavement section only. Don't include the level/symbology for any of the other pavement layers.
- lv=18 and co=18. These are a part of (but not all of) the curb elements. Don't include the remaining curb elements (lv=2,19 co=0,19).
- lv=10 co=10. These are the cut/fill slope elements.
- lv=10 co=16. These are the ditch foreslope elements.
- If sidewalk is used, then add the level and color of only the bottom layer of the sidewalk section. (Either lv=14 co=14 or lv=15 co=15.)

fh_wlk1b.x08

Draws sidewalk pavement layer. Will also, optionally, draw up to a maximum of 3 base course layers under the sidewalk pavement. Origin point for this fh_wlk1b.x08 is the inside bottom corner of the sidewalk pavement layer. (Contrast this with fh_wlk1t.x08, where the origin point is the inside top corner of the sidewalk pavement layer.)



define variables that must be assigned values in the input data file:

"walk width"
"walk slope"
"walk height"
"walk taper front"
"walk taper back"
"number of walk layers"
"walk layer 1 thickness"
"walk layer 2 thickness"
"walk layer 3 thickness"

define_dgn variables that must be assigned values in the input data file:

None

Variables that must be defined in exceptions data file:

None

Notes for fh_wlk1b.x08:

1. There is no method built into fh_wlk1b.x08 to allow the user to turn the sidewalk on and off for station ranges. The only way the user could accomplish this would be to use multiple instances of side slope lt/rt blocks with station ranges in the proposed cross-section input file. For example, if the user wanted sidewalk only from Stations 1+500 thru 1+600 on a project that ran from 1+000 to 2+0000 then the following syntax would have to be written into the input file:

   side slope lt where sta <1+500 r 1
   [block of include statement without fh_wlk1b.x08]
   side slope lt where sta >= 1+500 r 1 and sta <= 1+600 r 1
   [block of include statements with fh_wlk1b.x08]
   side slope lt where sta > 1+600 r 1
   [block of include statement without fh_wlk1b.x08

2. fh_wlk1b.x08 always draws the sidewalk pavement layer. Optionally, it will draw up to a maximum of three base course layers (as specified in the input file by the define variables "number of walk layers" and "walk layer [1-3]"); "number of walk layers may be set to zero.

3. The "walk slope" define variable is a percent value using the standard GEOPAK slope sign convention (i.e., +2.00 is a 2% slope up and away from centerline; -2.00 is a 2% slope down and away from centerline).

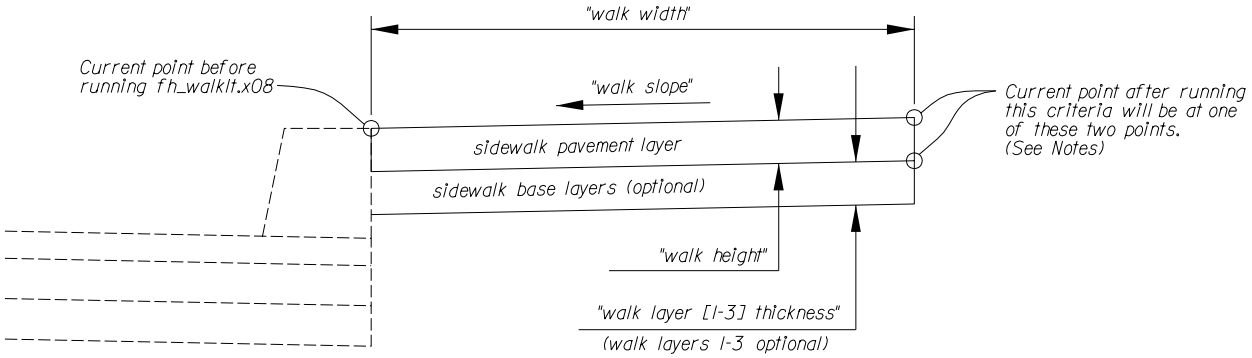
4. Define variables "walk taper front" and "walk taper back" are provided to allow the user to make the inside and outside edges of the sidewalk pavement something other than vertical. However, these parameters should normally be set to 0 (for vertical pavement edges).

5. Typically fh_wlk1b.x08 should immediately follow one of the curb criteria files (e.g., fh_crb2b.x08 or fh_crb2t.x08) in the input file include sequence.

6. The location of the current point immediately after executing fh_wlk1b.x08 varies depending upon the location of the outside top corner of the sidewalk pavement layer: if the point is below existing ground, then the current point will be the outside top corner of the sidewalk pavement layer, if the point is above existing ground, then the current point will be the outside bottom corner of the sidewalk pavement layer.

fh_wlk1t.x08

Draws sidewalk pavement layer. Will also, optionally, draw up to a maximum of 3 base course layers under the sidewalk pavement. Origin point for this fh_wlk1b.x08 is the inside top corner of the sidewalk pavement layer. (Contrast this with fh_wlk1b.x08, where the origin point is the inside bottom corner of the sidewalk pavement layer.)



define variables that must be assigned values in the input data file:

"walk width"
"walk slope"
"walk height"
"walk taper front"
"walk taper back"
"number of walk layers"
"walk layer 1 thickness"
"walk layer 2 thickness"
"walk layer 3 thickness"

define_dgn variables that must be assigned values in the input data file:

None

Variables that must be defined in exceptions data file:

None

Notes for fh_wlk1t.x08:

1. There is no method built into fh_wlk1t.x08 to allow the user to turn the sidewalk on and off for station ranges. The only way the user could accomplish this would be to use multiple instances of side slope lt/rt blocks with station ranges in the proposed cross-section input file. For example, if the user wanted sidewalk only from Stations 1+500 thru 1+600 on a project that ran from 1+000 to 2+0000 then the following syntax would have to be written into the input file:

   side slope lt where sta <1+500 r 1
   [block of include statement without fh_wlk1b.x08]
   side slope lt where sta >= 1+500 r 1 and sta <= 1+600 r 1
   [block of include statements with fh_wlk1b.x08]
   side slope lt where sta > 1+600 r 1
   [block of include statement without fh_wlk1b.x08

2. fh_wlk1t.x08 always draws the sidewalk pavement layer. Optionally, it will draw up to a maximum of three base course layers (as specified in the input file by the define variables "number of walk layers" and "walk layer [1-3]"); "number of walk layers may be set to zero.

3. The "walk slope" define variable is a percent value using the standard GEOPAK slope sign convention (i.e., +2.00 is a 2% slope up and away from centerline; -2.00 is a 2% slope down and away from centerline).

4. Define variables "walk taper front" and "walk taper back" are provided to allow the user to make the inside and outside edges of the sidewalk pavement something other than vertical. However, these parameters should normally be set to 0 (for vertical pavement edges).

5. Typically fh_wlk1t.x08 should immediately follow one of the curb criteria files (e.g., fh_crb2b.x08 or fh_crb2t.x08) in the input file include sequence.

6. The location of the current point immediately after executing fh_wlk1t.x08 varies depending upon the location of the outside top corner of the sidewalk pavement layer: if the point is below existing ground, then the current point will be the outside top corner of the sidewalk pavement layer, if the point is above existing ground, then the current point will be the outside bottom corner of the sidewalk pavement layer.