

FLH Standard Criteria Files

Section 3 –

Special Shoulder Widening Criteria Files

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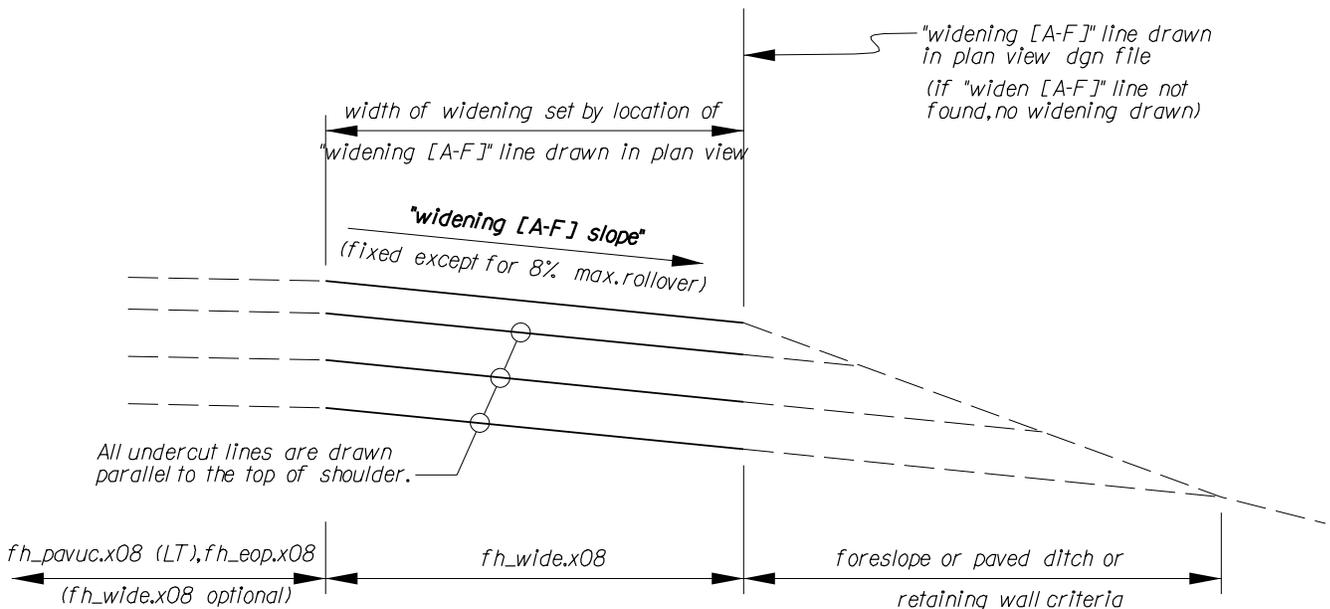
Available special shoulder widening criteria files:

Criteria File	Rules for Drawing Shoulder Widening
fh_wide.x08	Draws up to a maximum of six different fixed slope shoulder widenings. Each of the six widenings has its own fixed slope. Station range for each widening set using lines drawn in plan view dgn file. Widening widths are set by the same lines drawn in plan view dgn file. Undercut layers parallel to shoulder finish grade.
addlanes.x08	Draws the structural section for lane(s) that are to be added onto the shoulder of an existing roadway without reconstructing the existing travel lanes. (e.g., a right turn lane).

fh_wide.x08

Draws up to six different fixed slope/variable width roadway widenings with the following properties:

- each widening is independent
- each widening has its own fixed slope (except as noted in next item)
- any one or all of the widening slopes will be adjusted as required to maintain a maximum rollover of 8% from the travel lane to the shoulder
- each widening uses a line different line drawn in plan view dgn to locate the outside limit of the widening (i.e., its width)
- station ranges for the various widenings are controlled by the location of the widening lines drawn in plan view dgn file
- slope of the undercut layers parallel to shoulder finish grade slope



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

- "widening A slope" (e.g., 10 = 10% down and away from centerline)
- "widening B slope"
- "widening C slope"
- "widening D slope"
- "widening E slope"
- "widening F slope"

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

- "widening A"
- "widening B"
- "widening C"
- "widening D"
- "widening E"
- "widening F"

fh_wide.x08

Variables that must be defined in exceptions data file:

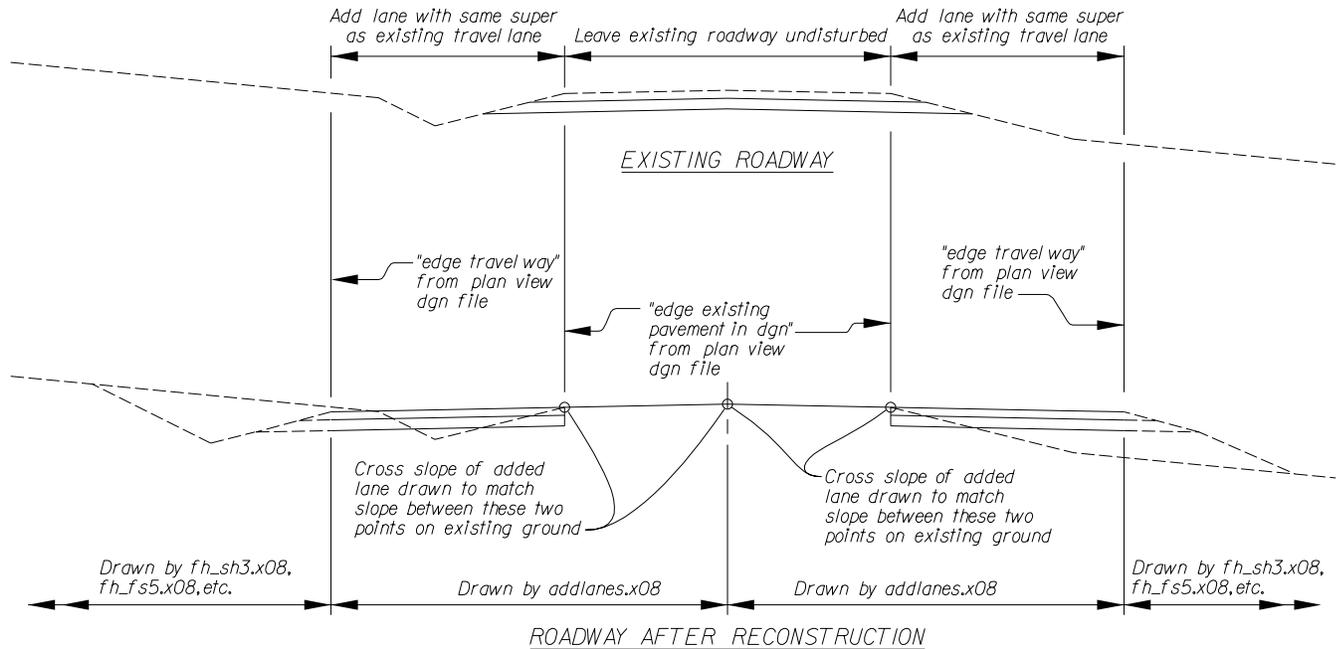
None

Notes for fh_wide.x08:

1. This criteria file is optional. If the user does decide to include it in the proposed cross-section input file, then values must be assigned in the input file to all fourteen of the variables "widening [A-F]" and "widening [A-F] slope".
2. If none of the "widening [A-F]" lines are found in the plan view dgn file for a given cross-section, then nothing will be drawn by this criteria file at that cross-section.
3. Widening will be drawn only for the first of the "widening [A-F] lines found at a given cross-section. For example, if you have a "widening B" line drawn outside a "widening A" line for a particular cross-section, only the A widening will be found and drawn on the cross-section at that station. (i.e., This criteria won't do "compound" widening.)
4. The slope of all shoulder undercut layers is drawn to match the "widening [A-F] slope".
5. This criteria expects the values the user supplies for "widening [A-F] slope" to be percent values with a positive values meaning a slope down and away from the roadway centerline. (Just the opposite of the standard GEOPAK slope sign convention.)
6. The "first full length layer" variable controls whether the widening is paved ("first full length layer" = 1) or a gravel ("first full length layer" = 2 or more).

addlanes.x08

Draws the structural section for additional lanes (e.g., a right turn lane) that are to be added at the shoulder of an existing roadway without reconstructing the existing travel lanes. May be used on one or both sides of the roadway.



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

- "number of layers"
- "pave layer [1-5] thickness"

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

- "edge existing pavement in dgn"
- "edge travel way"

Variables that must be defined in exceptions data file:

None

Notes for addlanes.x08:

1. Takes the place of fh_pavuc.x08 and fh_eop.x08 in the input file include sequence. Don't include either fh_pavuc.x08 or fh_eop.x08 when using this criteria file.
2. May be used on both sides of the roadway as shown in the example above, or on only one side.
3. Assumes existing ground x-sections are the as-built template of the existing roadway.
4. Uses two lines drawn in a plan view dgn file to define the added lane: "edge existing pavement in

addlanes.x08

- dgn" to locate the inside edge of the added lane, and "edge travel way" to locate the outside edge. If either (or both) of these lines are not found at a particular x-section then nothing will be drawn.
5. No provision is made within the criteria file itself to allow the user to restrict the added lanes to a specific station range. If you need to use this criteria for only a part of the entire length of a project then the station ranges will have to be incorporated into the side slope lt/side slope rt blocks in the input file.
 6. This is a "shapeless" criteria file: the cross slope of the added lane is determined using the existing ground elevation at the centerline and at the "edge existing pavement in dgn" line. The input file should not include the "shape dgn = ..." group of statements and shapes should not be drawn for either the existing roadway or the added lanes. (However the "criteria for shape cluster..." group of statements does need to be in the input file.)
 7. Although a COGO profile name is required in the "criteria for shape cluster..." section of the input file, the true controlling profile is the existing ground at centerline.
 8. Draws the structural section only out to the "edge travel way" line. To finish off the proposed x-section the user needs to include at least a foreslope criteria file (fh_fs[1-5].x08) and a slope selection criteria file (fh_ss3.x08). In addition, any of the other non-traveled way criteria files (e.g., curb, sidewalk, paved ditch, retaining wall, etc.) may be used.
 9. When running slope stake books, the level/symbology for all the structural section layers must be specified in the Finish Grade section of the dialog to get correct slope stakes. (The "follow the lowest layer" rule applies here.)
 10. By default, a slope label is placed for the superelevation of the added lane(s). If slope labels aren't needed, add a define "~place super slope labels" 0 statement to the input file to turn them off.
 11. Text size for the superelevation slope labels may be set with by adding a define "text size" nnn (where nnn is the desired text size) statement to the input file. By default the text size is set to 0.30. (The "text size" value applies to the slope labels created by all the criteria files.)
 12. Originally written for Blue Lakes Road project (CA PFH 134).