

14_06 Concrete Monolithic Islands

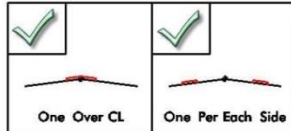
Question:

What is the proper way to put monolithic conc islands on a two lane road that widens out for left turn lane in terms of xsc?

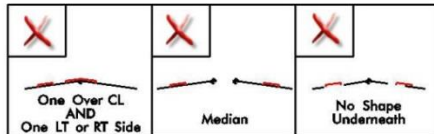
Answer:

Until recently, concrete islands are placed exclusively through the median curbing criteria (mldccc cr). This requires the cross section to have a median definition or a gap between the two shape clusters.

The NCDOT Criteria has been modified to draw concrete islands for an undivided facility. It is required that a Geopak shape be created underneath the concrete island. Below is a sketch depicting the different cases where this new Criteria feature is applicable.



Below is a sketch depicting the different cases where this new feature is non-applicable.



There are three new variables that has to be defined in order to draw the concrete islands.

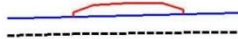
DEFINE "TM01 DRAW MCT" 1

Switch to draw the concrete islands. **Default** is 0, not to draw the concrete islands. Define as 1 to draw concrete islands in the XSC file.

DEFINE "TM01 MCI KEYED IN DEPTH" 1.5

Defined, in inches, if the concrete island is Surface Mounted (**Default** depth of 0) or Keyed In (depth value greater than 0). This also affects the level the concrete islands are drawn in the XSC. If a keyed in depth is define to be any value greater than zero, then the concrete island is drawn on level "Prop Conc Sin Monolithic Keyed In Island". Else, it will be drawn on level "Prop Conc Sin Monolithic Surface Mount Island". Also affected is the way the proposed pavement is drawn.

For surface mounted concrete island, the proposed pavement surface is draw across the and below the concrete island.



For concrete islands with a keyed in depth, the proposed pavement surface is broken across the concrete island.



DEFINE_DGN "CONCRETE ISLAND"

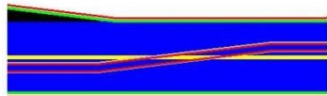
DGN = R:\Roadway\Proj\sigl_rdy_dgn.dgn
LVNAME = Prop Conc Sin Monolithic Keyed In Island

Define DGN statement to tell Criteria in what file and what level the concrete island shape is on.

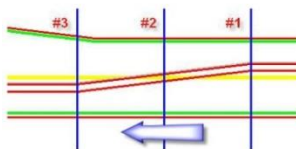


DEMO:

Create the Geopak shapes (dependent- blue and independent- black) across concrete islands.



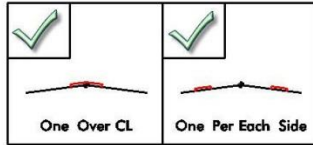
Below are three cross sections cut by the blue pattern lines. The concrete island starts on the right side of the centerline (#1) and then move to on top of the centerline (#2) and on the last cross section, it is on the left side (#3).



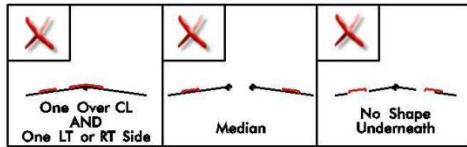
Since then, beginning with the 2002 to the current 2006 Drawing Standards, the nominal gutter back slope is currently 0.25'/1' (or 4:1) and the gutter back depth is set to 12".

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Below is a sketch depicting the different cases where this new feature is non-applicable.

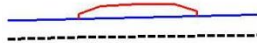


There are three new variables that has to be defined in order to draw the concrete islands.

DEFINE "TM01 DRAW MCI" 1
Switch to draw the concrete islands. Default is 0, not to draw the concrete islands. Define as 1 to draw concrete islands in the XSC file.

DEFINE "TM01 MCI KEYED IN DEPTH" 1.5
Defined, in inches, if the concrete island is Surface Mounted (Default depth of 0) or Keyed In (depth value greater than 0). This also affects the level the concrete islands are drawn in the XSC. If a keyed in depth is define to be any value greater than zero, then the concrete island is drawn on level "Prop Conc Sin Monolithic Keyed In Island". Else, it will be drawn on level "Prop Conc Sin Monolithic Surface Mount Island". Also affected is the way the proposed pavement is drawn.

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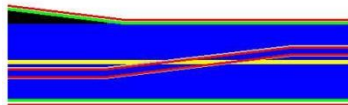
DEFINE_DGN "CONCRETE ISLAND"
DGN = R:\Roadway\Proj\tpj#\rty_dsn.dgn
LVNAME = Prop Conc Sin Monolithic Keyed In Island

Define DGN statement to tell Criteria in what file and what level the concrete island shape is on.

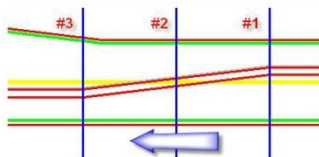


DEMO:

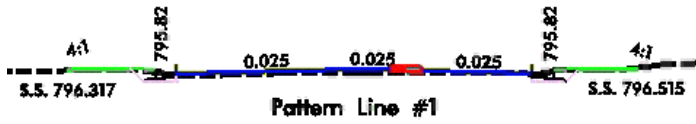
Create the Geopak shapes (dependent- blue and independent- black) across concrete islands.



Below are three cross sections cut by the blue pattern lines. The concrete island starts on the right side of the centerline (#1) and then move to on top of the centerline (#2) and on the last cross section, it is on the left side (#3).

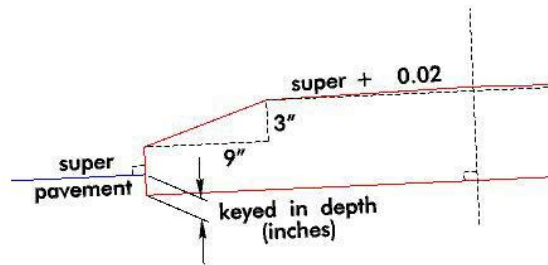


Here are the three cross sections played through the Cross Section Movie Navigator.



DISSECTION:

Per Roadway Drawing Standard 852.01, Criteria draws the concrete island (Surface Mounted and Keyed In) as depicted in the following typical.



Currently, Criteria does **NOT** support curb and gutters in conjunction with concrete islands for an undivided facility. This may be in the plans for future or in next version of Criteria.

REFERENCE:

Roadway Standard Drawings, 2006, STD. 852.01 Concrete Islands

@ Triangle Town Blvd and I-540 (Raleigh, NC)



@ Old Wake Forest Rd and Capital Blvd/US 1 (Raleigh, NC)

