Index 425-052 Ditch Bottom Inlet Types C, D, E, and H

Design Criteria

FDOT Design Manual (FDM); ***Drainage Manual (DM)***; ***Drainage Design Guide (DDG)***

Design Assumptions and Limitations

These inlets are suitable for bicycle traffic and are to be used in ditches, medians, and other areas subject to infrequent traffic loadings, but are not to be placed in areas subject to repeated heavy traffic loadings. These inlets may be placed in areas subject to occasional pedestrian traffic such as landscaped areas and pavement areas where pedestrians can walk around the outlet.

Inlets subject to minimal debris should be constructed without slots. Where debris is a problem, inlets should be constructed with slots. Slotted inlets located within the roadway clear zones and areas subject to pedestrians shall have traversable slots. The traversable slot modification is not adaptable to Inlet Type H. Slots may be constructed at either or both ends as shown on the Plans. Traversable slots shall not be used in areas subject to occasional bicycle traffic.

Specify steel grates on all inlets where bicycle traffic is anticipated, and on all inlets with traversable slots. Either cast iron or steel grates may be used on inlets without slots where bicycle traffic is not anticipated. Either cast iron or steel grates may be used on all inlets with non-traversable slots. Subject to the selection described above, when Alternate G grate is specified in the Plans, either the steel grate, hot dip galvanized after fabrication, or the cast iron grate may be used, unless the Plans stipulate the particular type.

Recommended maximum pipe sizes for concrete pipe:

TYPE C

For 2’0” Wall: 18”

For 3’1” Wall: 24”, 18” where pipe enters a 2’0” wall

TYPE D

For 3’1” Wall: 24”

For 4’1” Wall: 36”

TYPE E

For 3’0” Wall: 24”

For 4’6” Wall: 36”

TYPE H (2 and 3 Grate Inlet)

For 3’0” Wall: 24”

For 6’7” Wall: 1~60” or 2~24”

TYPE H (4 Grate Inlet)

For 3’0” Wall: 24”

For 8’9” Wall: 1~78” or 2~30”

Sizes for other types of pipe must be checked for fit in accordance with ***Index 425-001***.

For larger pipe see bottom detail in ***Index 425-010***.

TRAVERSABLE SLOT INLETS (PARTIAL) for EXISTING INLETS

The general purpose of these conversions is to remove the hazard of the protruding inlet top, while not creating a hazard by depressing the top too deeply. Corrective procedure depends on the approach ditch grade and hydraulic requirements of the site. The selection of the appropriate case depends on the relationship between inlet top and ditch elevation, and on the vertical clearance between the top of the uppermost pipe(s) and the grate. The purpose for the Case 1 conversion is to add the traversable slot to an existing inlet where top removal, change in grate elevation, and ditch transitions are not required. Case 2 will normally be applicable to ditches with flatter grades adjoining the inlet. Case 3 will normally be applicable to ditches with steeper grades adjoining the inlet where buildup of the existing ditch is acceptable.

Determine whether tight soil or other conditions at each individual inlet indicates the need for underdrain in Case 3 conversions and call for Underdrain, Type I in the Plans.

Plan Content Requirements

Include Drainage Structure information in the Plans in accordance with the requirements of the Basis of Estimates Manual (***BOE***) and the ***FDM.***

TRAVERSABLE SLOT INLETS (PARTIAL) for EXISTING INLETS

Stipulate in the plans which case is to be constructed at each individual inlet location.

Where the existing inlet top is above the existing ditch (Case 2) but borrow material will be required to adjust the ditch (Case 3), and vertical clearance or other conditions do not prevent removal of the inlet top, specify Case 2.

When the detention ditch concept is to be used with Case 3, stipulate ‘Case 3 (Detention) in the Plans.

Inlets converted to traversable slot tops under Case 1, Case 2, and Case 3 are paid for as Inlets Partial, Each. Case is not included in the pay item description.

Payment

Item number	Item Description	Unit Measure
425-152-	Inlets, Dt Bot, Type C	EA
425-154-	Inlets, Dt Bot, Type D	EA
425-155-	Inlets, Dt Bot, Type E	EA
425-158-	Inlets, Dt Bot, Type H	EA
520-1	Performance Turf	SY

See the ***BOE*** and ***Specification 425*** for additional information on payment, pay item use and compensation.