Index 440-001 Underdrain and Index 440-002 Underdrain Inspection Box

Design Criteria

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

Design Assumptions and Limitations

The type of underdrain should be selected to meet design water removal rate and soil conditions. Caution is prescribed in the use of these typical sections since special designs may be required to satisfy project conditions.

Type I underdrain is intended for minimum water removal conditions.

Type II underdrain is intended for moderate water removal conditions. Where reactive conditions may create chemical clogging, the use of an inert material and/or elimination of the geotextile may be necessary.

Type III underdrain is intended for maximum water removal conditions. Geotextile is required between the coarse aggregate or fine aggregate including those described in General Notes 2 and 3. Where reactive conditions may create chemical clogging, the use of an inert material and/or elimination of the geotextile may be necessary.

Type V underdrain is intended for use in detention basins and other locations which require a filtration system. The standard fine aggregate specified for Type V underdrain conforms to filtration gradation requirements of ***Chapter 62-25 FAC***.

The designer should evaluate whether an external geotextile envelope is required around underdrain Types I and III. When required, specify the fabric in the plans.

In lieu of the box detailed in ***Index 440-002***, Manhole Type P Alternate A, Index 425-010, with Type I Frame and Cover, ***Index 425-001***, may be used and is recommended when high ADT increases the chance of repeated vehicle loadings.

Plan Content Requirements

Plan details for underdrains should include the location of: (a) Type V underdrain, (b) nonstandard locations of Type I, II, and III underdrain, (c) underdrain inspection boxes, (d) cleanouts for Type V underdrain, and (e) underdrain outlet pipes.

Flow line elevations at the beginning, bends, junctions, and ends of underdrain pipes and outlet pipes should be specified.

For underdrain inspection box See ***FDOT Design Manual (FDM) 925.***

Payment

Item number	Item Description	Unit Measure
440- 1- AA	Underdrain	LF
440- 70-	Underdrain Inspection Box	EA
440- 73- A	Underdrain Outlet Pipe	LF

See the ***BOE*** and ***Specification 440*** for additional information on payment, pay item use and compensation.