

LONGITUDINAL SUBDRAIN SHOULDER AND BACKSLOPE

Refer to Soils Sheets

① Refer to EW-203, EW-204, or EW-211.
*Not a bid item

Line No.	Road or Lane Ident.	Location		Side	Depth (D)	Longitudinal Subdrain (DR-303)						Subdrain Outlet		Porous* Backfill	Class "A" Crushed Stone	Remarks	
		Station to Station	Station			Shoulder		Backslope		Bridge Berm ①		DR-303, DR-304, or DR-305	Station				Standard Road Plan and Type
						Size	Length	Size	Length	Size	Type						
		IN	IN	FT	IN	FT	IN	FT	IN	FT			CY	CY			
1	US 34	623+70.00	627+30.00	RT	66.0			4.0	420.0			625+20.00	DR-304		0.2	Site 1 Elev. 660	
2	US 34	624+60.00	627+30.00	RT	66.0			4.0	310.0			626+00.00	DR-304		0.2	Site 1 Elev. 670	
3	US 34	625+90.00	626+75.00	RT	66.0			4.0	140.0			626+50.00	DR-304		0.2	Site 1 Elev. 680	
4	US 34	1005+75.00	1007+00.00	RT	66.0			4.0	155.0			1006+50.00	DR-304		0.2	Site 2 Elev. 815	
5	US 34	1025+75.00	1026+75.00	RT	66.0			4.0	135.0			1026+25.00	DR-304		0.2	Site 3 Elev. 845	
6	US 34	1025+75.00	1026+75.00	RT	66.0			4.0	135.0			1026+50.00	DR-304		0.2	Site 3 Elev. 855	
Total							0.0		1295.0				DR-304 = 6				

103-6
04-19-11

EMBANKMENT WITH MOISTURE CONTROL

Moisture content shall be within the limits of minus 2 and plus 2 percentage points of Optimum Moisture Content for maximum density within the area described and listed below.

Moisture Control is required for all Class 10 fill placed in all locations and depths. Stability berms placed outside the normal foreslope template and topsoil will not require Moisture Control.

103-7
08-01-08

SHRINKAGE DATA

Material	%	Remarks
Class 10	30%	
Topsoil	40%	
Boulders		25 CY


ROCK EROSION CONTROL

Refer to EC-301

Road Identification	Begin Station	End Station	Side	L (L)	W (W)	Rock Erosion Control (REC)					Material Bid Quantities			Remarks	
						Type 1	Type 2	Type 3	Type 4	Type 5	Erosion Stone	Class E Revetment	Eng. Fabric		
						Rock Ditch Check	Rock Ditch	Rock Flume	Rock Splash Basin	Rock Slope Protection	TON	TON	SY		
U.S. 34	1025+75.00	1026+85.00	Lt./Rt. Rt	110	6								79.2	135.0	Site 3

GEOTECHNICAL DESIGN

I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.



Signature: Mark A. Dell Date: 10/5/16
 Mark A. Dell
 Printed or Typed Name
 My license renewal date is December 31, 2017

Pages or sheets covered by this seal: CS.1, Q.1-5, W.1-18