

**Temporary 12" Slope Pipe Capacity Calculations**

Percent Slope across ROW (%)	Maximum Headwater* (in)	12" Pipe Maximum Flow Rate, Q (cfs)
1	24	4.70
2	24	5.92
3	24	5.93
4	24	5.95
5	24	5.95
6	24	5.97
7	24	5.98
8	24	6.00
9	24	6.01
10	24	6.02
11	24	6.04
12	24	6.05
13	24	6.06
14	24	6.08
15	24	6.09
16	24	6.10
17	24	6.11
18	24	6.13
19	24	6.14
20	24	6.15
21	24	6.17
22	24	6.18
23	24	6.19
24	24	6.20
25	24	6.22

Percent Slope across ROW (%)	Maximum Headwater* (in)	12" Pipe Maximum Flow Rate, Q (cfs)
26	24	6.23
27	24	6.24
28	24	6.25
29	24	6.27
30	24	6.28
31	24	6.29
32	24	6.30
33	24	6.32
34	24	6.32
35	24	6.34
36	24	6.35
37	24	6.37
38	24	6.38
39	24	6.39
40	24	6.40
41	24	6.42
42	24	6.43
43	24	6.44
44	24	6.45
45	24	6.46
46	24	6.48
47	24	6.49
48	24	6.50
49	24	6.51
50	24	6.53

\* 24" Height of Sand Bag Diversion

# Culvert Report

## 1% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	1.00
Invert Elev Up (ft)	=	101.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

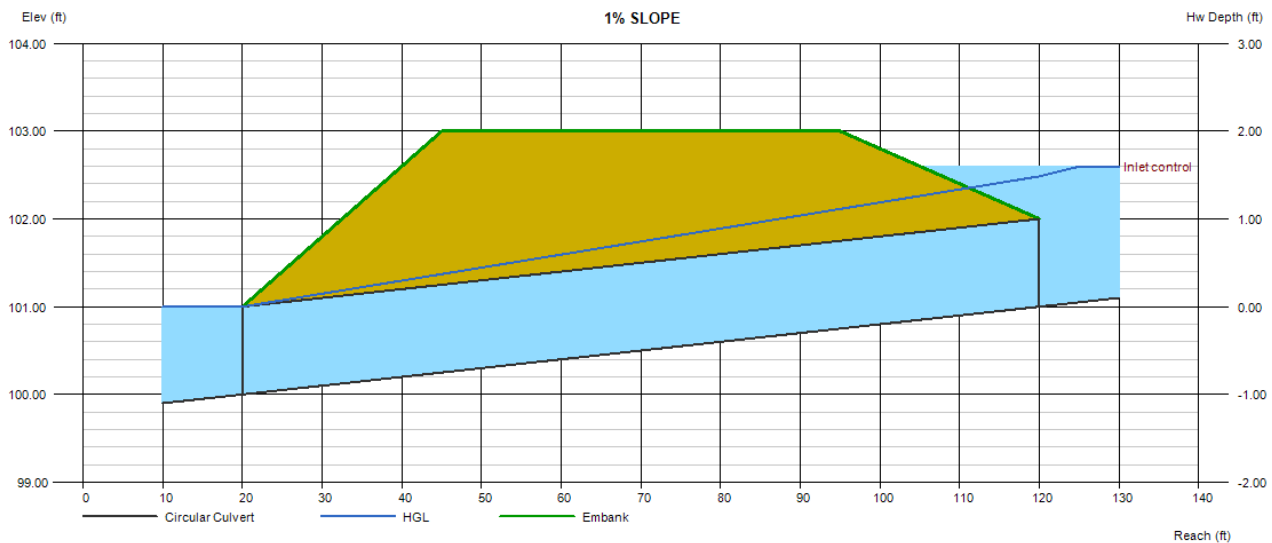
Top Elevation (ft)	=	103.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	4.70
Qmax (cfs)	=	4.70
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	4.70
Qpipe (cfs)	=	4.70
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	5.99
Veloc Up (ft/s)	=	5.98
HGL Dn (ft)	=	101.00
HGL Up (ft)	=	102.48
Hw Elev (ft)	=	102.60
Hw/D (ft)	=	1.60
Flow Regime	=	Inlet Control



# Culvert Report

## 2% SLOPE

Invert Elev Dn (ft)	= 100.00
Pipe Length (ft)	= 100.00
Slope (%)	= 2.00
Invert Elev Up (ft)	= 102.00
Rise (in)	= 12.0
Shape	= Circular
Span (in)	= 12.0
No. Barrels	= 1
n-Value	= 0.012
Culvert Type	= Circular Culvert
Culvert Entrance	= Smooth tapered inlet throat
Coeff. K,M,c,Y,k	= 0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

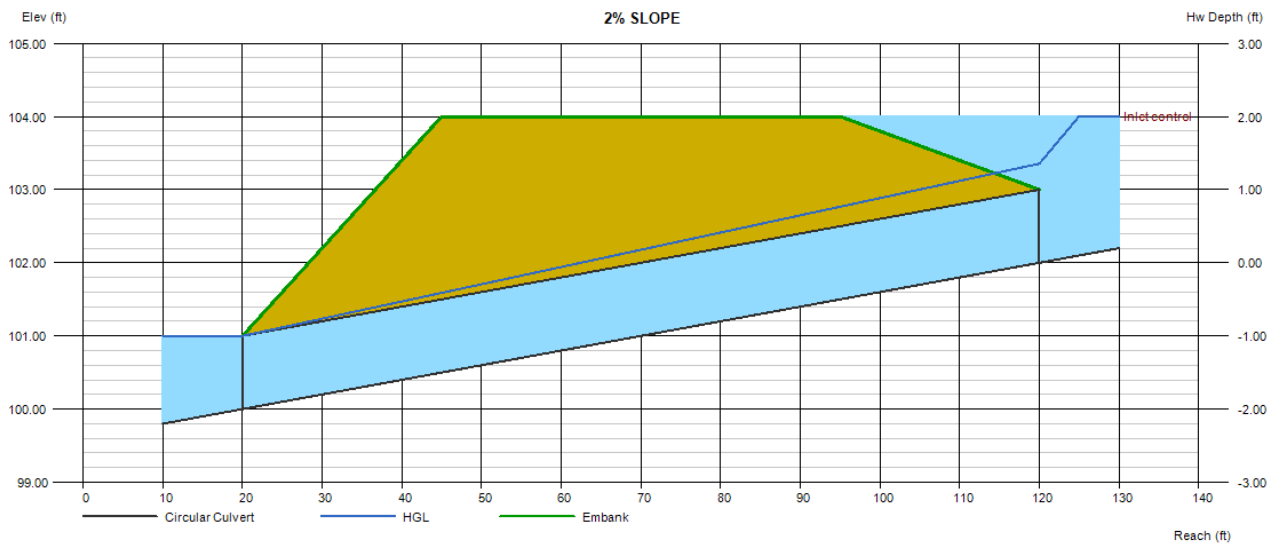
Top Elevation (ft)	= 104.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

### Calculations

Qmin (cfs)	= 5.92
Qmax (cfs)	= 5.92
Tailwater Elev (ft)	= Normal

### Highlighted

Qtotal (cfs)	= 5.92
Qpipe (cfs)	= 5.92
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 7.54
Veloc Up (ft/s)	= 7.54
HGL Dn (ft)	= 101.00
HGL Up (ft)	= 103.36
Hw Elev (ft)	= 104.00
Hw/D (ft)	= 2.00
Flow Regime	= Inlet Control



# Culvert Report

## 3% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	3.00
Invert Elev Up (ft)	=	103.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

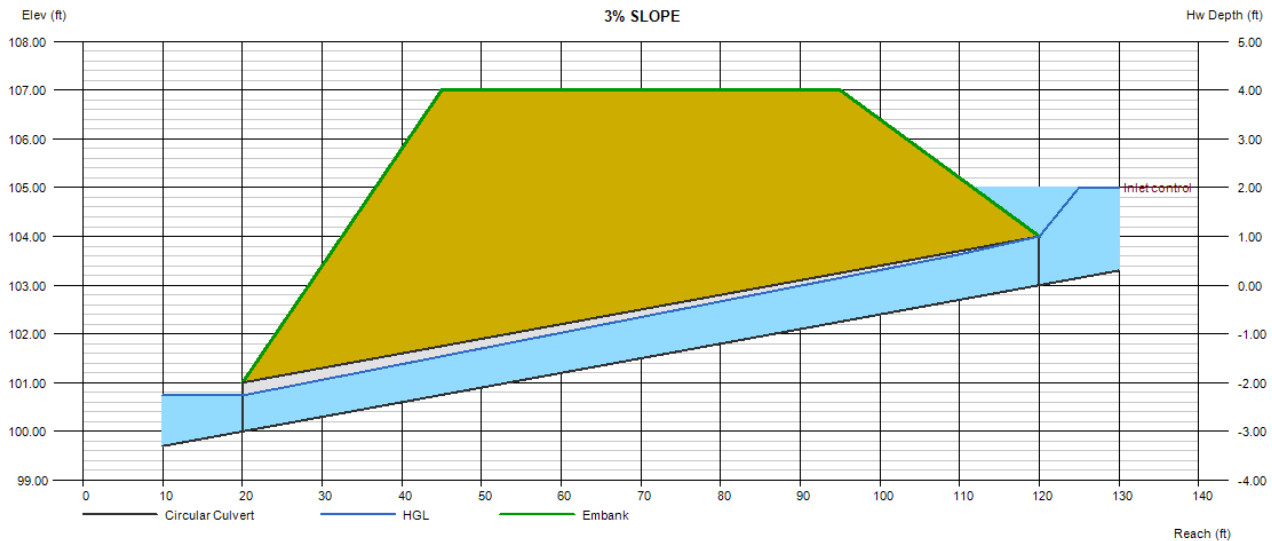
Top Elevation (ft)	=	107.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	5.93
Qmax (cfs)	=	5.93
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	5.93
Qpipe (cfs)	=	5.93
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	9.55
Veloc Up (ft/s)	=	7.68
HGL Dn (ft)	=	100.74
HGL Up (ft)	=	103.95
Hw Elev (ft)	=	105.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 4% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	4.00
Invert Elev Up (ft)	=	104.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

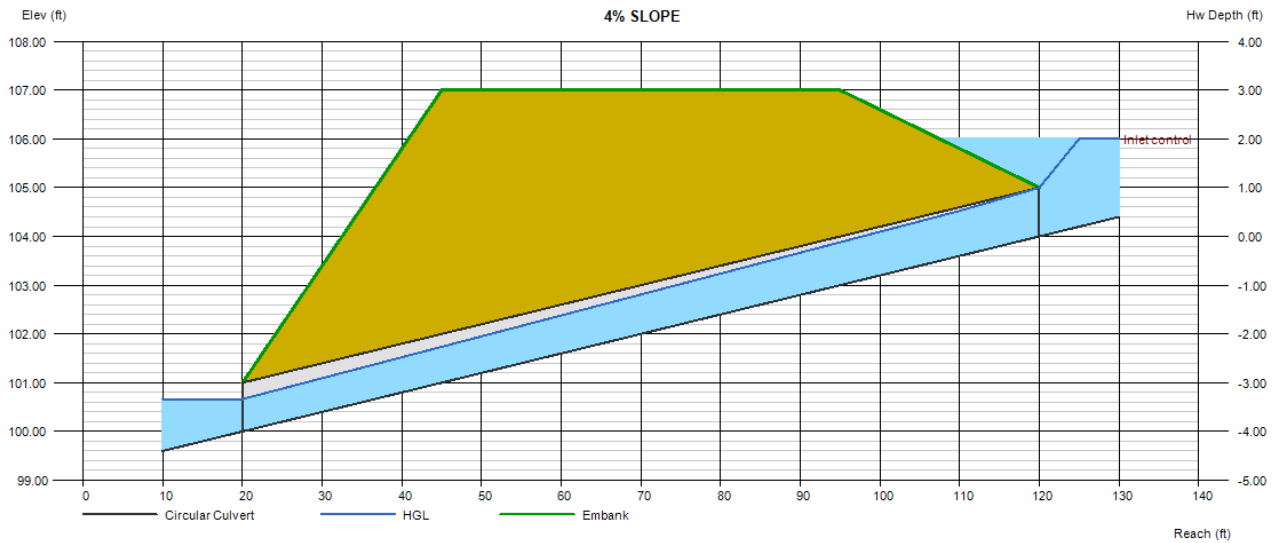
Top Elevation (ft)	=	107.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	5.95
Qmax (cfs)	=	5.95
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	5.95
Qpipe (cfs)	=	5.95
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	10.75
Veloc Up (ft/s)	=	7.70
HGL Dn (ft)	=	100.66
HGL Up (ft)	=	104.95
Hw Elev (ft)	=	106.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

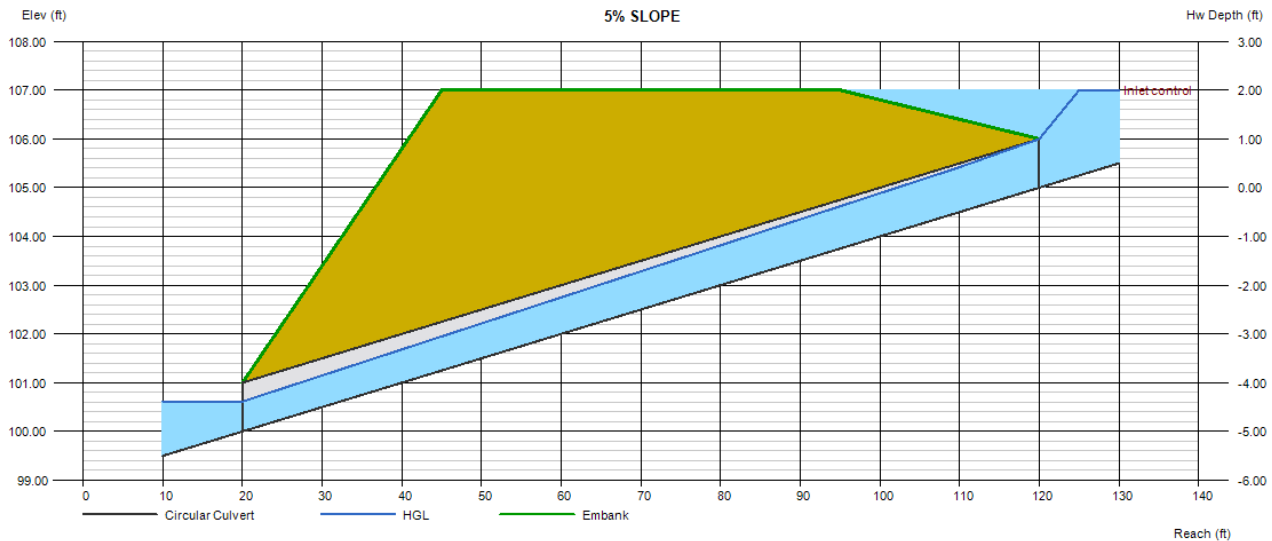
## 5% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	5.00
Invert Elev Up (ft)	=	105.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

<b>Embankment</b>	
Top Elevation (ft)	= 107.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

<b>Calculations</b>	
Qmin (cfs)	= 5.95
Qmax (cfs)	= 5.95
Tailwater Elev (ft)	= Normal

<b>Highlighted</b>	
Qtotal (cfs)	= 5.95
Qpipe (cfs)	= 5.95
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 11.77
Veloc Up (ft/s)	= 7.70
HGL Dn (ft)	= 100.61
HGL Up (ft)	= 105.95
Hw Elev (ft)	= 107.00
Hw/D (ft)	= 2.00
Flow Regime	= Inlet Control



# Culvert Report

## 6% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	6.00
Invert Elev Up (ft)	=	106.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

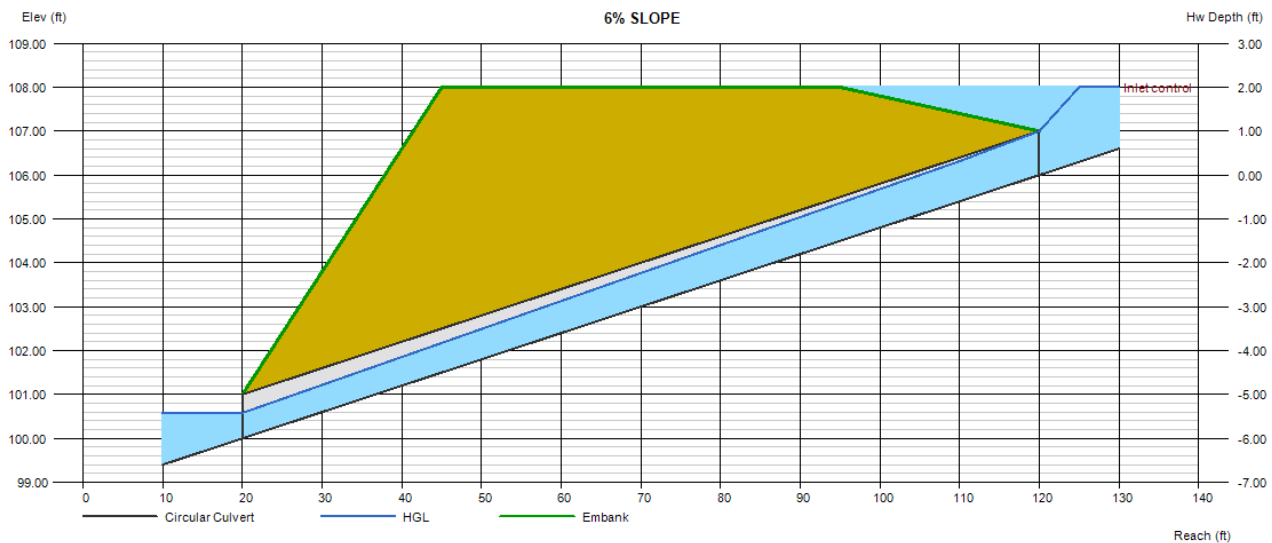
Top Elevation (ft)	=	108.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	5.97
Qmax (cfs)	=	5.97
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	5.97
Qpipe (cfs)	=	5.97
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	12.66
Veloc Up (ft/s)	=	7.73
HGL Dn (ft)	=	100.58
HGL Up (ft)	=	106.95
Hw Elev (ft)	=	108.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 7% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	7.00
Invert Elev Up (ft)	=	107.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

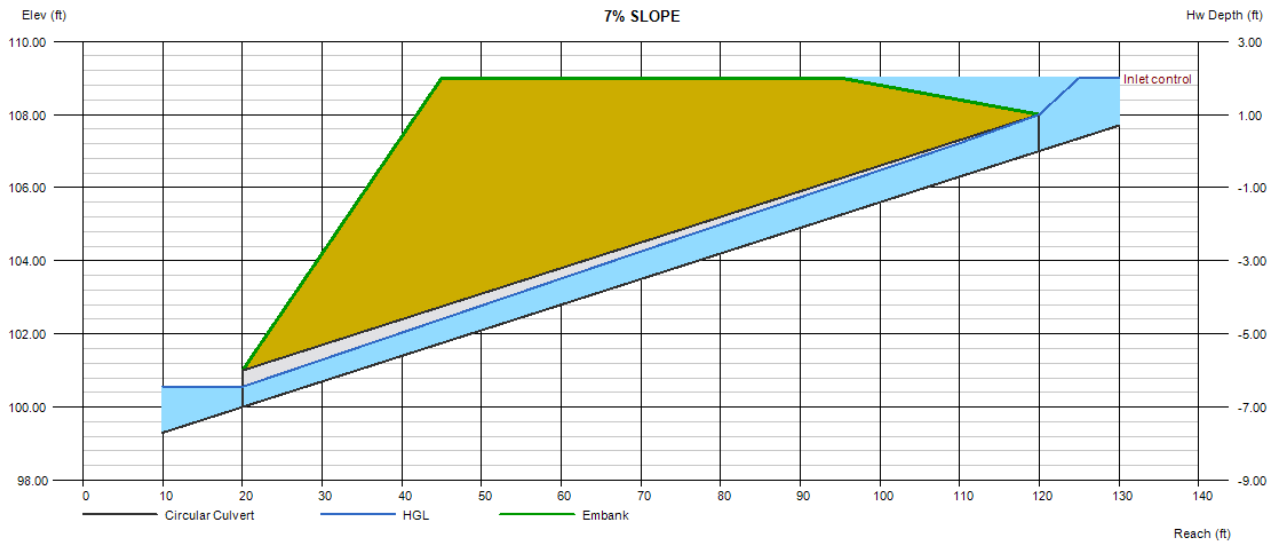
Top Elevation (ft)	=	109.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	5.98
Qmax (cfs)	=	5.98
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	5.98
Qpipe (cfs)	=	5.98
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	13.38
Veloc Up (ft/s)	=	7.74
HGL Dn (ft)	=	100.55
HGL Up (ft)	=	107.95
Hw Elev (ft)	=	109.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 8% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	8.00
Invert Elev Up (ft)	=	108.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

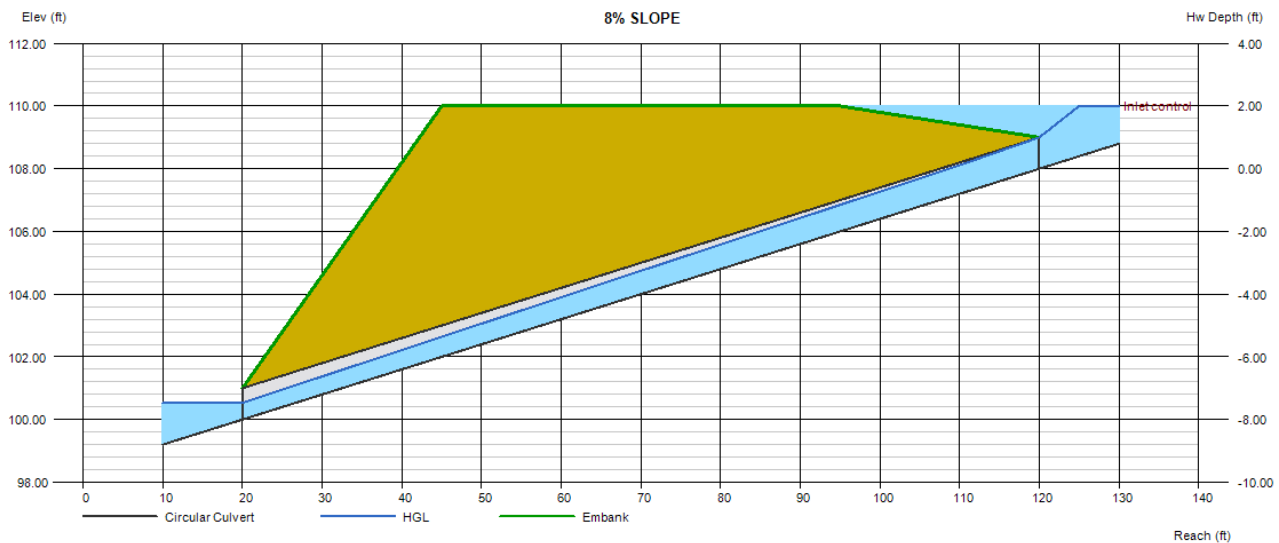
Top Elevation (ft)	=	110.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.00
Qmax (cfs)	=	6.00
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.00
Qpipe (cfs)	=	6.00
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	14.13
Veloc Up (ft/s)	=	7.76
HGL Dn (ft)	=	100.53
HGL Up (ft)	=	108.96
Hw Elev (ft)	=	110.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 9% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	9.00
Invert Elev Up (ft)	=	109.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

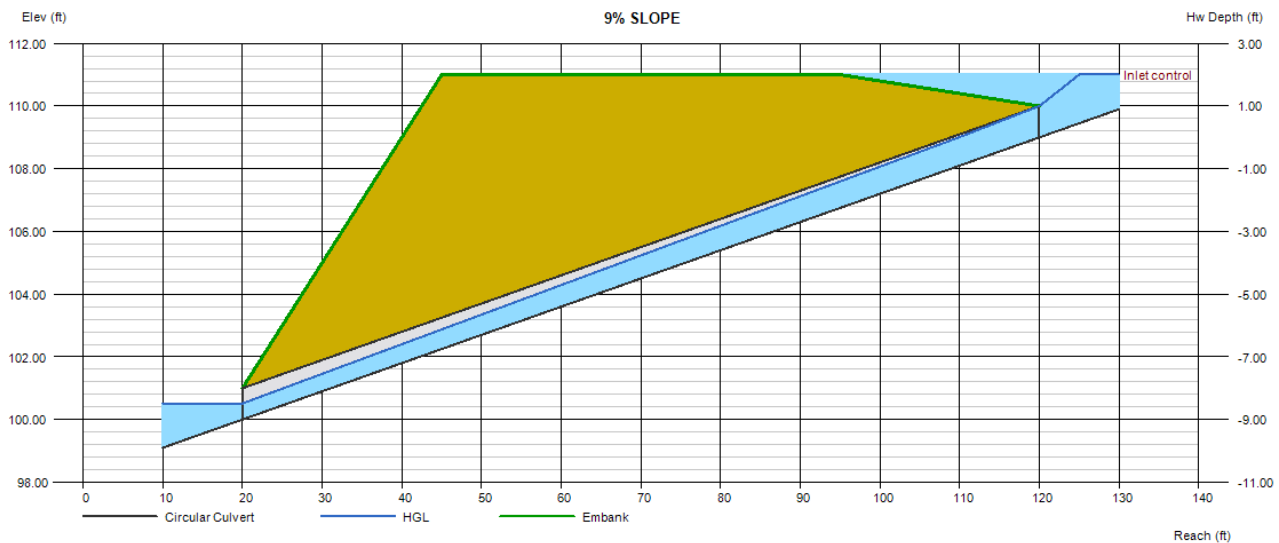
Top Elevation (ft)	=	111.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.01
Qmax (cfs)	=	6.01
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.01
Qpipe (cfs)	=	6.01
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	14.76
Veloc Up (ft/s)	=	7.77
HGL Dn (ft)	=	100.51
HGL Up (ft)	=	109.96
Hw Elev (ft)	=	111.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

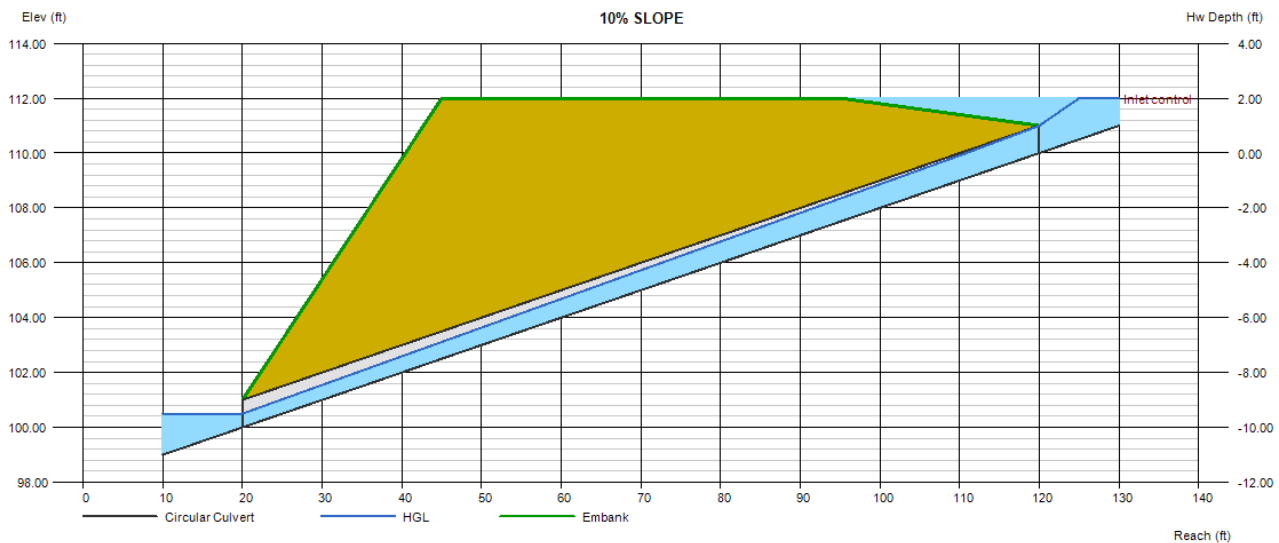
## 10% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	10.00
Invert Elev Up (ft)	=	110.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

<b>Embankment</b>	
Top Elevation (ft)	= 112.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

<b>Calculations</b>	
Qmin (cfs)	= 6.02
Qmax (cfs)	= 6.02
Tailwater Elev (ft)	= Normal

<b>Highlighted</b>	
Qtotal (cfs)	= 6.02
Qpipe (cfs)	= 6.02
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 15.35
Veloc Up (ft/s)	= 7.79
HGL Dn (ft)	= 100.50
HGL Up (ft)	= 110.96
Hw Elev (ft)	= 112.00
Hw/D (ft)	= 2.00
Flow Regime	= Inlet Control



# Culvert Report

## 11% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	11.00
Invert Elev Up (ft)	=	111.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

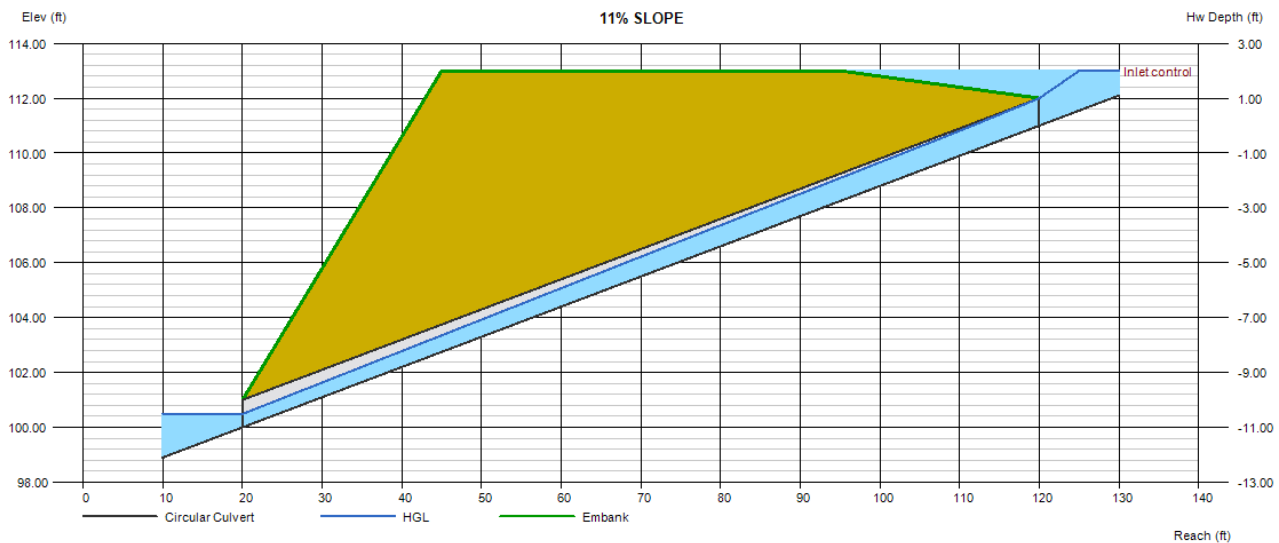
Top Elevation (ft)	=	113.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.04
Qmax (cfs)	=	6.04
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.04
Qpipe (cfs)	=	6.04
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	15.90
Veloc Up (ft/s)	=	7.81
HGL Dn (ft)	=	100.49
HGL Up (ft)	=	111.96
Hw Elev (ft)	=	113.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 12% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	12.00
Invert Elev Up (ft)	=	112.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

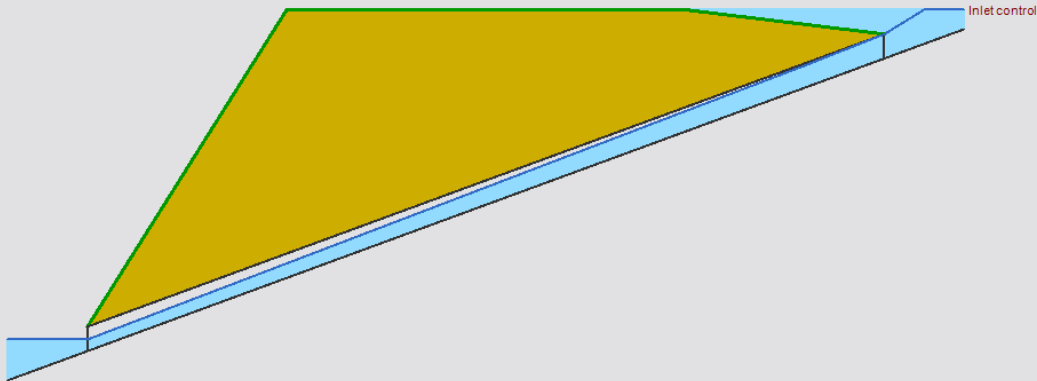
Top Elevation (ft)	=	114.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.05
Qmax (cfs)	=	6.05
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.05
Qpipe (cfs)	=	6.05
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	16.47
Veloc Up (ft/s)	=	7.82
HGL Dn (ft)	=	100.47
HGL Up (ft)	=	112.96
Hw Elev (ft)	=	114.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 13% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	13.00
Invert Elev Up (ft)	=	113.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

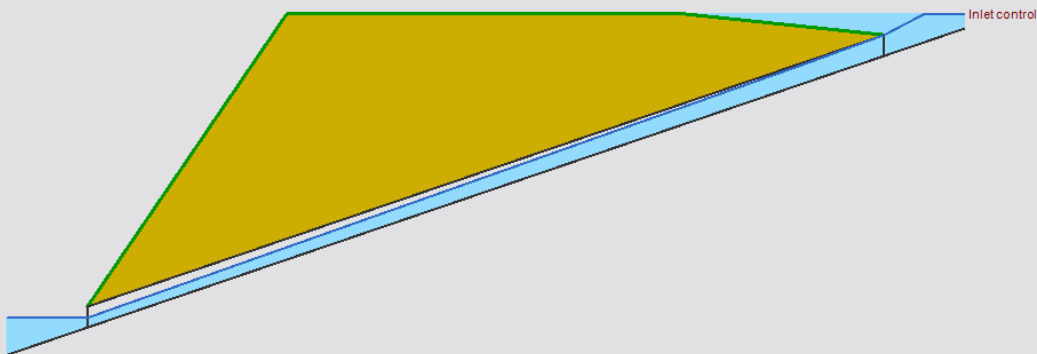
Top Elevation (ft)	=	115.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.06
Qmax (cfs)	=	6.06
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.06
Qpipe (cfs)	=	6.06
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	16.96
Veloc Up (ft/s)	=	7.83
HGL Dn (ft)	=	100.46
HGL Up (ft)	=	113.96
Hw Elev (ft)	=	115.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 14% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	14.00
Invert Elev Up (ft)	=	114.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

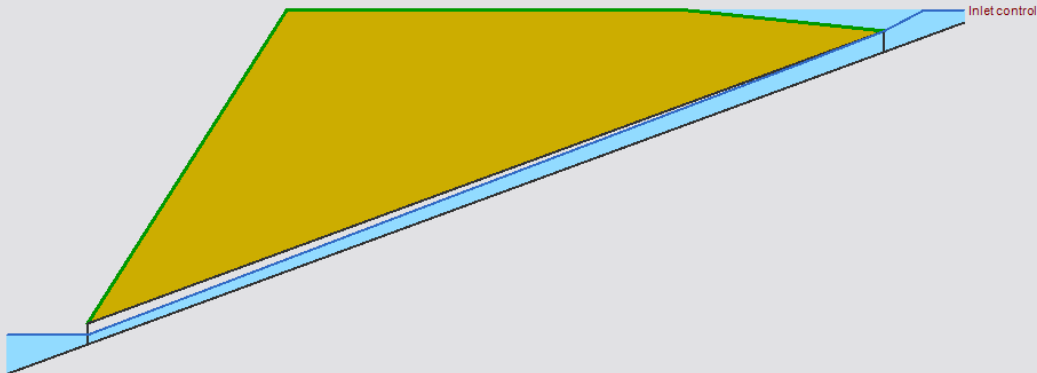
Top Elevation (ft)	=	116.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.08
Qmax (cfs)	=	6.08
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.08
Qpipe (cfs)	=	6.08
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	17.50
Veloc Up (ft/s)	=	7.86
HGL Dn (ft)	=	100.45
HGL Up (ft)	=	114.96
Hw Elev (ft)	=	116.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 15% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	15.00
Invert Elev Up (ft)	=	115.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

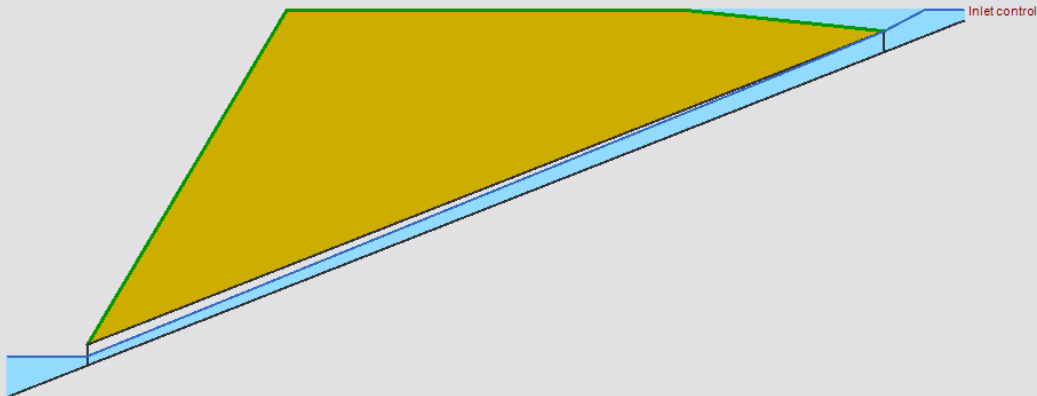
Top Elevation (ft)	=	117.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.09
Qmax (cfs)	=	6.09
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.09
Qpipe (cfs)	=	6.09
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	17.91
Veloc Up (ft/s)	=	7.87
HGL Dn (ft)	=	100.45
HGL Up (ft)	=	115.96
Hw Elev (ft)	=	117.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 16% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	16.00
Invert Elev Up (ft)	=	116.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

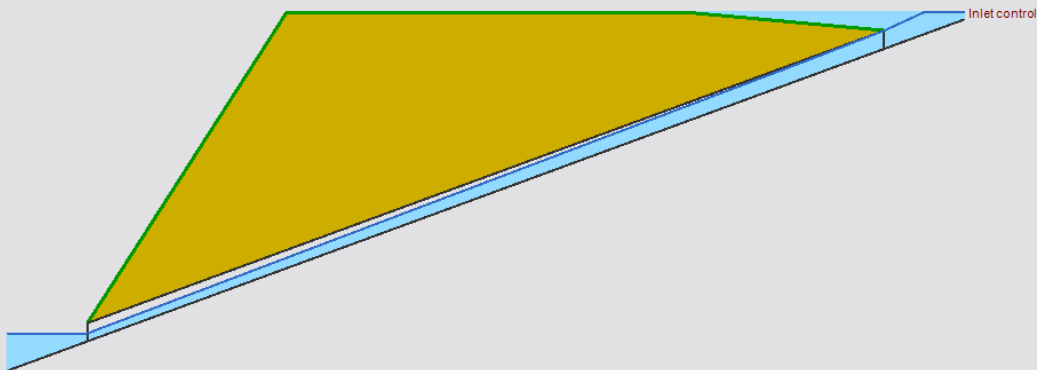
Top Elevation (ft)	=	118.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.10
Qmax (cfs)	=	6.10
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.10
Qpipe (cfs)	=	6.10
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	18.34
Veloc Up (ft/s)	=	7.88
HGL Dn (ft)	=	100.44
HGL Up (ft)	=	116.96
Hw Elev (ft)	=	118.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 17% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	17.00
Invert Elev Up (ft)	=	117.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

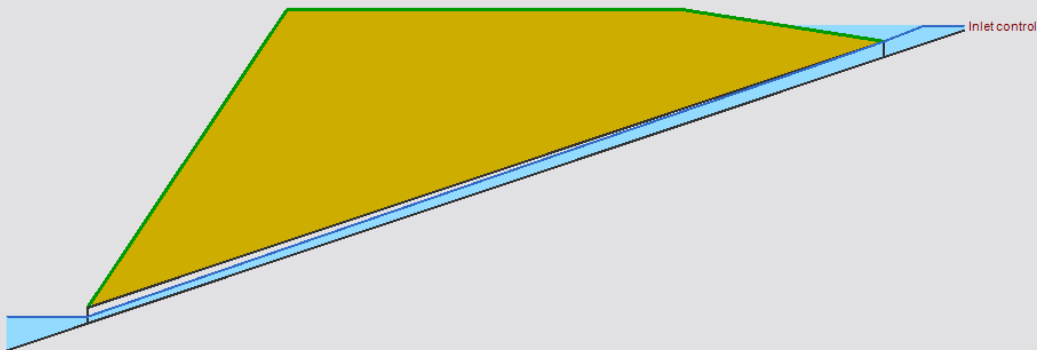
Top Elevation (ft)	=	120.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.11
Qmax (cfs)	=	6.11
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.11
Qpipe (cfs)	=	6.11
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	18.79
Veloc Up (ft/s)	=	7.89
HGL Dn (ft)	=	100.43
HGL Up (ft)	=	117.96
Hw Elev (ft)	=	119.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 18% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	18.00
Invert Elev Up (ft)	=	118.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

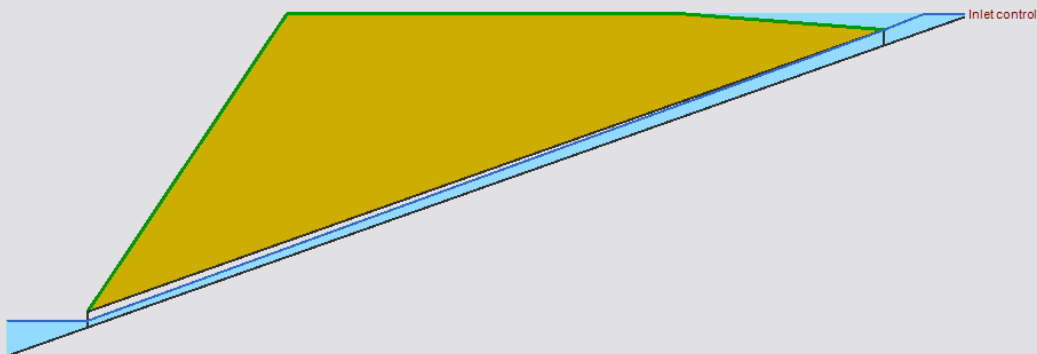
Top Elevation (ft)	=	120.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.13
Qmax (cfs)	=	6.13
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.13
Qpipe (cfs)	=	6.13
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	19.14
Veloc Up (ft/s)	=	7.92
HGL Dn (ft)	=	100.43
HGL Up (ft)	=	118.96
Hw Elev (ft)	=	120.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 19% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	19.00
Invert Elev Up (ft)	=	119.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

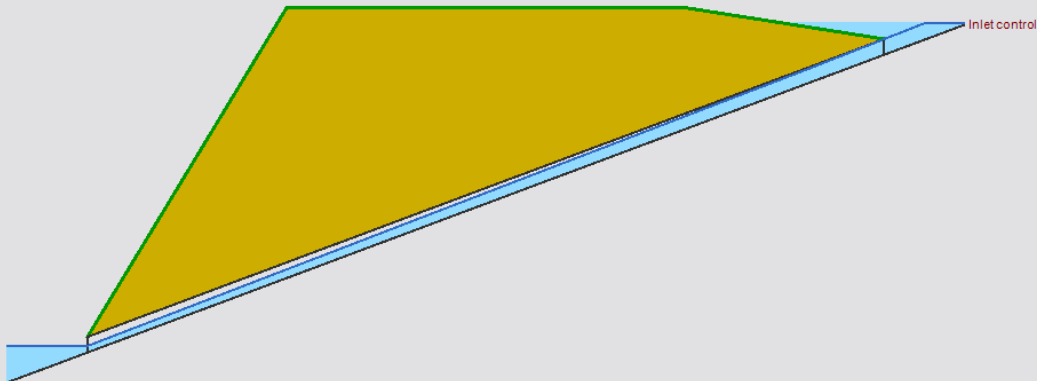
Top Elevation (ft)	=	122.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.14
Qmax (cfs)	=	6.14
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.14
Qpipe (cfs)	=	6.14
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	19.62
Veloc Up (ft/s)	=	7.93
HGL Dn (ft)	=	100.42
HGL Up (ft)	=	119.96
Hw Elev (ft)	=	121.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 20% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	20.00
Invert Elev Up (ft)	=	120.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

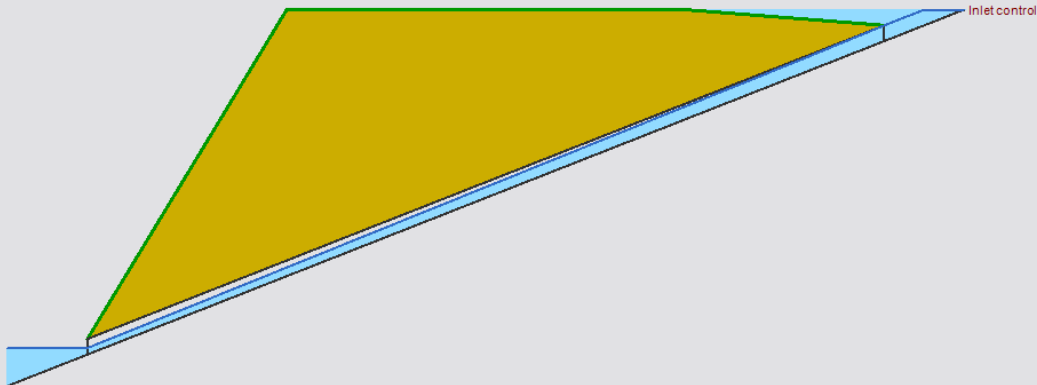
Top Elevation (ft)	=	122.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.15
Qmax (cfs)	=	6.15
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.15
Qpipe (cfs)	=	6.15
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	19.96
Veloc Up (ft/s)	=	7.94
HGL Dn (ft)	=	100.42
HGL Up (ft)	=	120.96
Hw Elev (ft)	=	122.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 21% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	21.00
Invert Elev Up (ft)	=	121.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

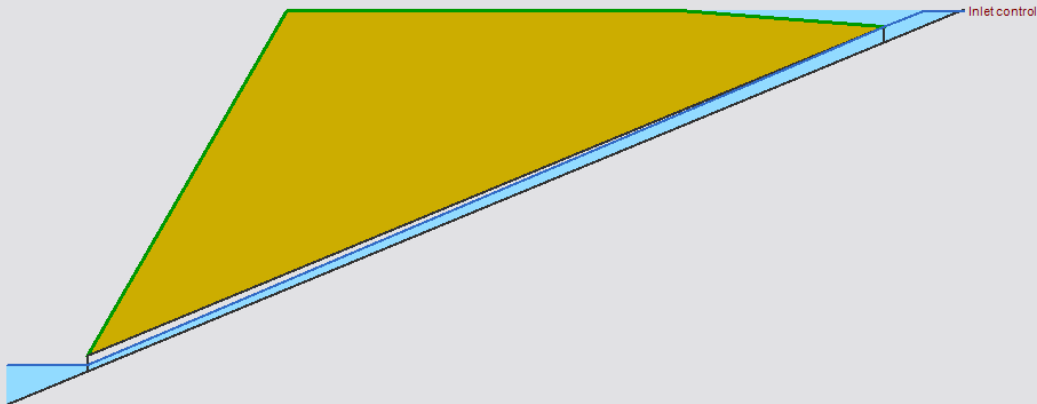
Top Elevation (ft)	=	123.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.17
Qmax (cfs)	=	6.17
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.17
Qpipe (cfs)	=	6.17
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	20.34
Veloc Up (ft/s)	=	7.96
HGL Dn (ft)	=	100.41
HGL Up (ft)	=	121.96
Hw Elev (ft)	=	123.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 22% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	22.00
Invert Elev Up (ft)	=	122.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

Top Elevation (ft)	=	124.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.18
Qmax (cfs)	=	6.18
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.18
Qpipe (cfs)	=	6.18
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	20.71
Veloc Up (ft/s)	=	7.98
HGL Dn (ft)	=	100.41
HGL Up (ft)	=	122.96
Hw Elev (ft)	=	124.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 23% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	23.00
Invert Elev Up (ft)	=	123.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

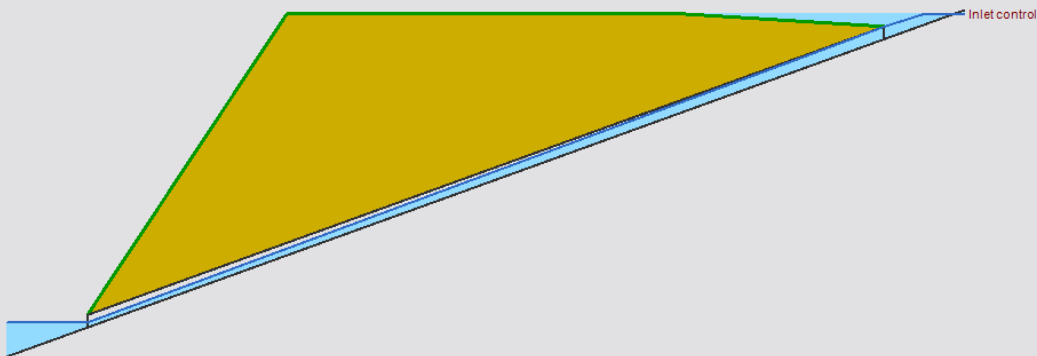
Top Elevation (ft)	=	125.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.19
Qmax (cfs)	=	6.19
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.19
Qpipe (cfs)	=	6.19
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	21.08
Veloc Up (ft/s)	=	7.99
HGL Dn (ft)	=	100.40
HGL Up (ft)	=	123.96
Hw Elev (ft)	=	125.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 24% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	24.00
Invert Elev Up (ft)	=	124.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

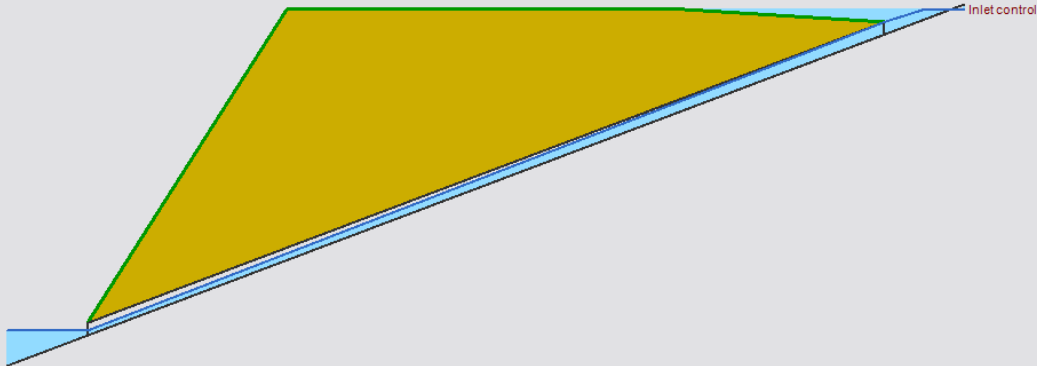
Top Elevation (ft)	=	126.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.20
Qmax (cfs)	=	6.20
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.20
Qpipe (cfs)	=	6.20
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	21.46
Veloc Up (ft/s)	=	8.00
HGL Dn (ft)	=	100.40
HGL Up (ft)	=	124.96
Hw Elev (ft)	=	126.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 25% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	25.00
Invert Elev Up (ft)	=	125.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

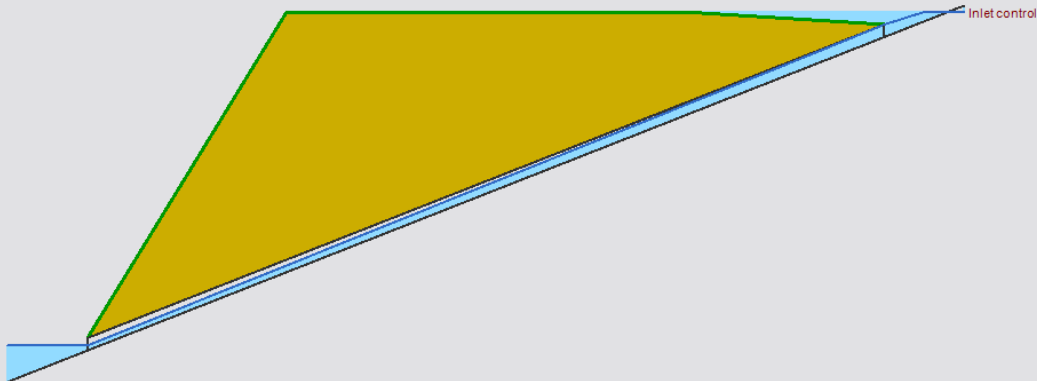
Top Elevation (ft)	=	127.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.22
Qmax (cfs)	=	6.22
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.22
Qpipe (cfs)	=	6.22
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	21.71
Veloc Up (ft/s)	=	8.02
HGL Dn (ft)	=	100.39
HGL Up (ft)	=	125.96
Hw Elev (ft)	=	127.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 26% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	26.00
Invert Elev Up (ft)	=	126.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

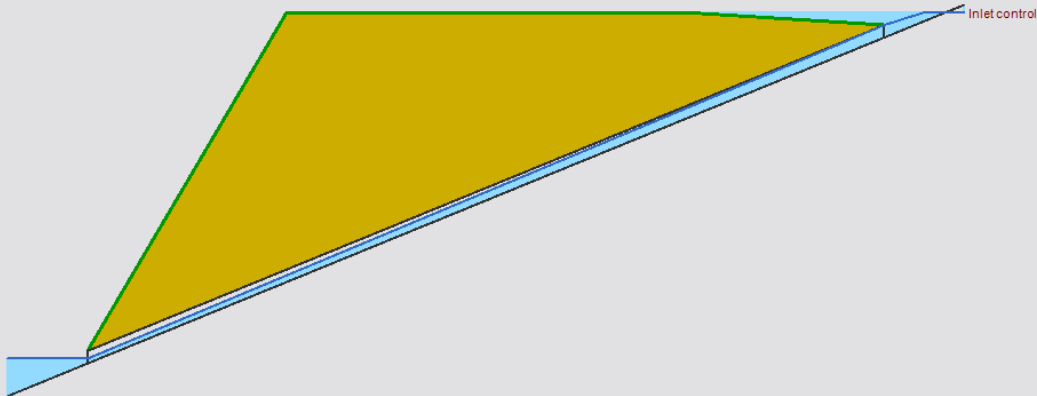
Top Elevation (ft)	=	128.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.23
Qmax (cfs)	=	6.23
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.23
Qpipe (cfs)	=	6.23
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	22.12
Veloc Up (ft/s)	=	8.04
HGL Dn (ft)	=	100.39
HGL Up (ft)	=	126.96
Hw Elev (ft)	=	128.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 27% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	27.00
Invert Elev Up (ft)	=	127.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

Top Elevation (ft)	=	129.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.24
Qmax (cfs)	=	6.24
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.24
Qpipe (cfs)	=	6.24
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	22.34
Veloc Up (ft/s)	=	8.05
HGL Dn (ft)	=	100.39
HGL Up (ft)	=	127.96
Hw Elev (ft)	=	129.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 28% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	28.00
Invert Elev Up (ft)	=	128.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

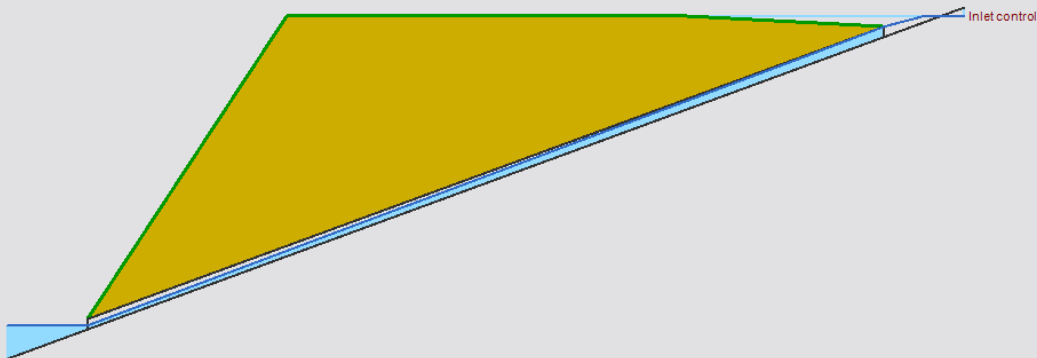
Top Elevation (ft)	=	130.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.25
Qmax (cfs)	=	6.25
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.25
Qpipe (cfs)	=	6.25
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	22.76
Veloc Up (ft/s)	=	8.06
HGL Dn (ft)	=	100.38
HGL Up (ft)	=	128.96
Hw Elev (ft)	=	130.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 29% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	29.00
Invert Elev Up (ft)	=	129.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

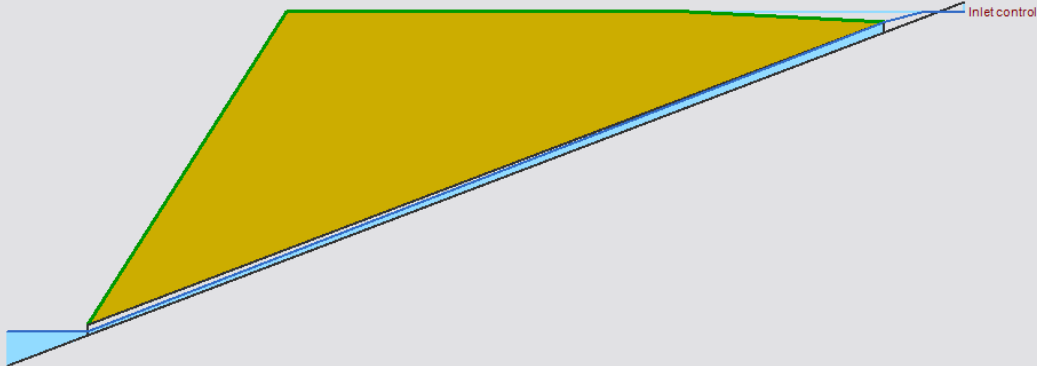
<b>Embankment</b>	
Top Elevation (ft)	= 131.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

### Calculations

Qmin (cfs)	=	6.27
Qmax (cfs)	=	6.27
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.27
Qpipe (cfs)	=	6.27
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	23.03
Veloc Up (ft/s)	=	8.08
HGL Dn (ft)	=	100.38
HGL Up (ft)	=	129.96
Hw Elev (ft)	=	131.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 30% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	30.00
Invert Elev Up (ft)	=	130.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

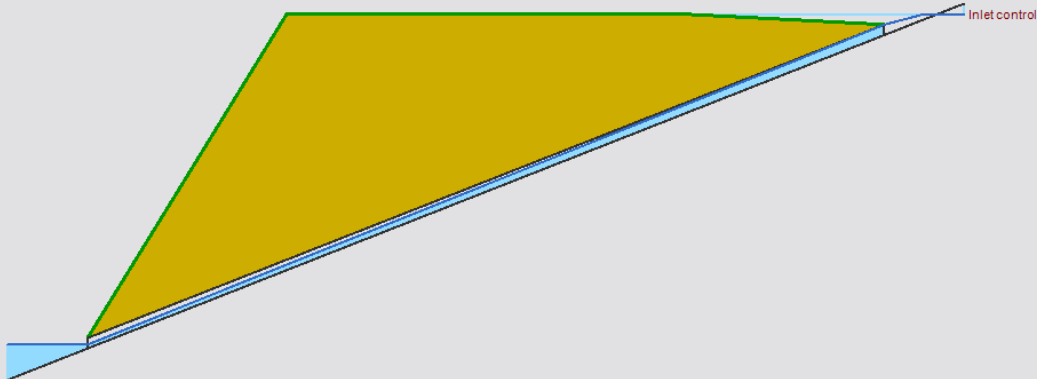
Top Elevation (ft)	=	132.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.28
Qmax (cfs)	=	6.28
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.28
Qpipe (cfs)	=	6.28
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	23.27
Veloc Up (ft/s)	=	8.10
HGL Dn (ft)	=	100.38
HGL Up (ft)	=	130.96
Hw Elev (ft)	=	132.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 31% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	31.00
Invert Elev Up (ft)	=	131.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

Top Elevation (ft)	=	133.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.29
Qmax (cfs)	=	6.29
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.29
Qpipe (cfs)	=	6.29
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	23.51
Veloc Up (ft/s)	=	8.11
HGL Dn (ft)	=	100.37
HGL Up (ft)	=	131.96
Hw Elev (ft)	=	133.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 32% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	32.00
Invert Elev Up (ft)	=	132.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

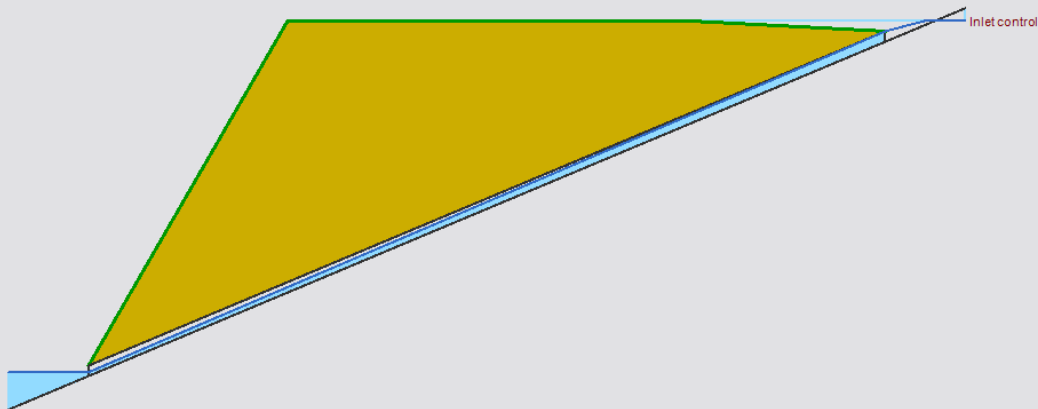
Top Elevation (ft)	=	134.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.30
Qmax (cfs)	=	6.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.30
Qpipe (cfs)	=	6.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	23.96
Veloc Up (ft/s)	=	8.12
HGL Dn (ft)	=	100.37
HGL Up (ft)	=	132.96
Hw Elev (ft)	=	134.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 33% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	33.00
Invert Elev Up (ft)	=	133.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

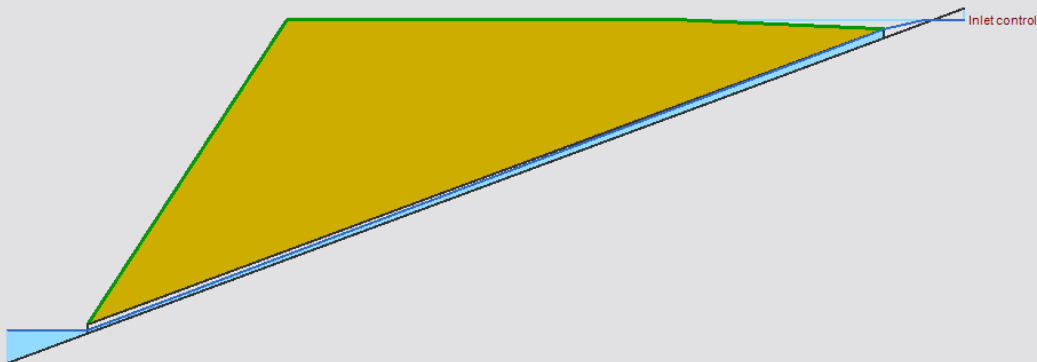
Top Elevation (ft)	=	135.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.32
Qmax (cfs)	=	6.32
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.32
Qpipe (cfs)	=	6.32
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	24.26
Veloc Up (ft/s)	=	8.14
HGL Dn (ft)	=	100.37
HGL Up (ft)	=	133.96
Hw Elev (ft)	=	135.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 34% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	34.00
Invert Elev Up (ft)	=	134.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

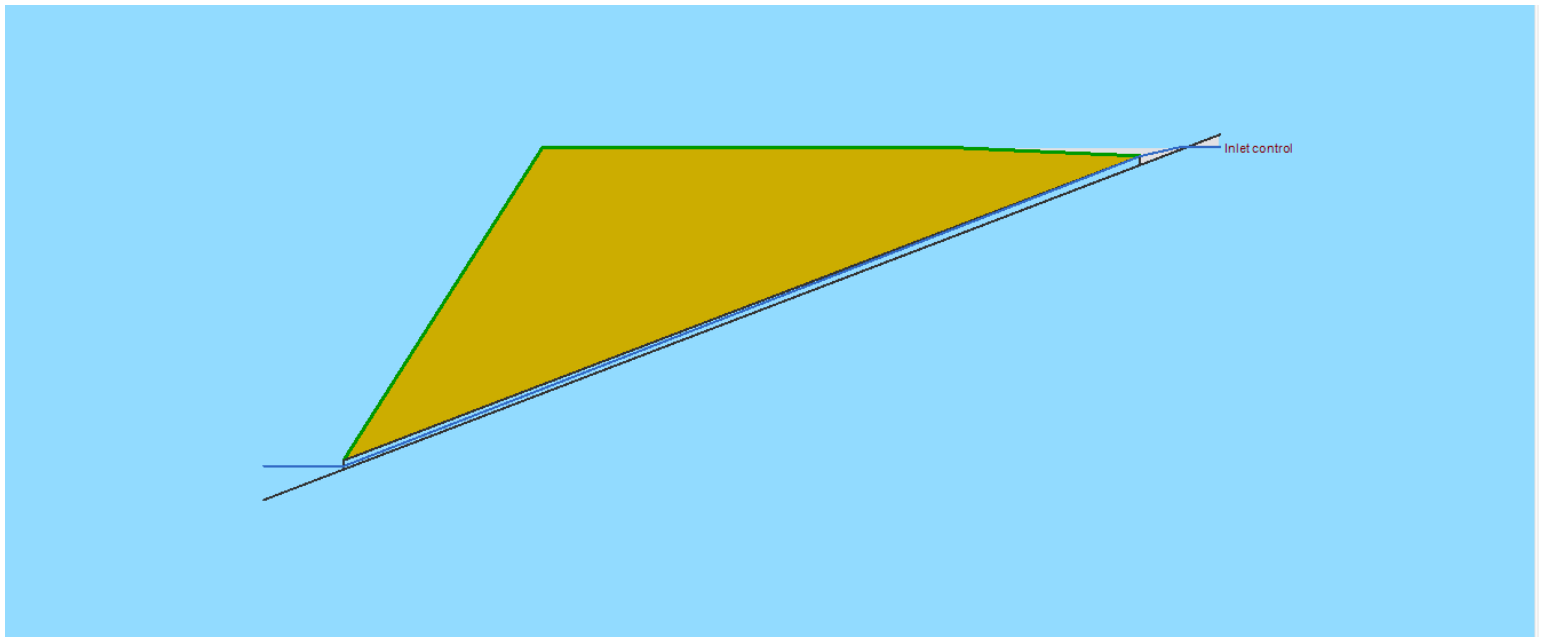
Top Elevation (ft)	=	136.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.32
Qmax (cfs)	=	6.32
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.32
Qpipe (cfs)	=	6.32
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	24.47
Veloc Up (ft/s)	=	8.14
HGL Dn (ft)	=	100.36
HGL Up (ft)	=	134.96
Hw Elev (ft)	=	136.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 35% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	35.00
Invert Elev Up (ft)	=	135.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

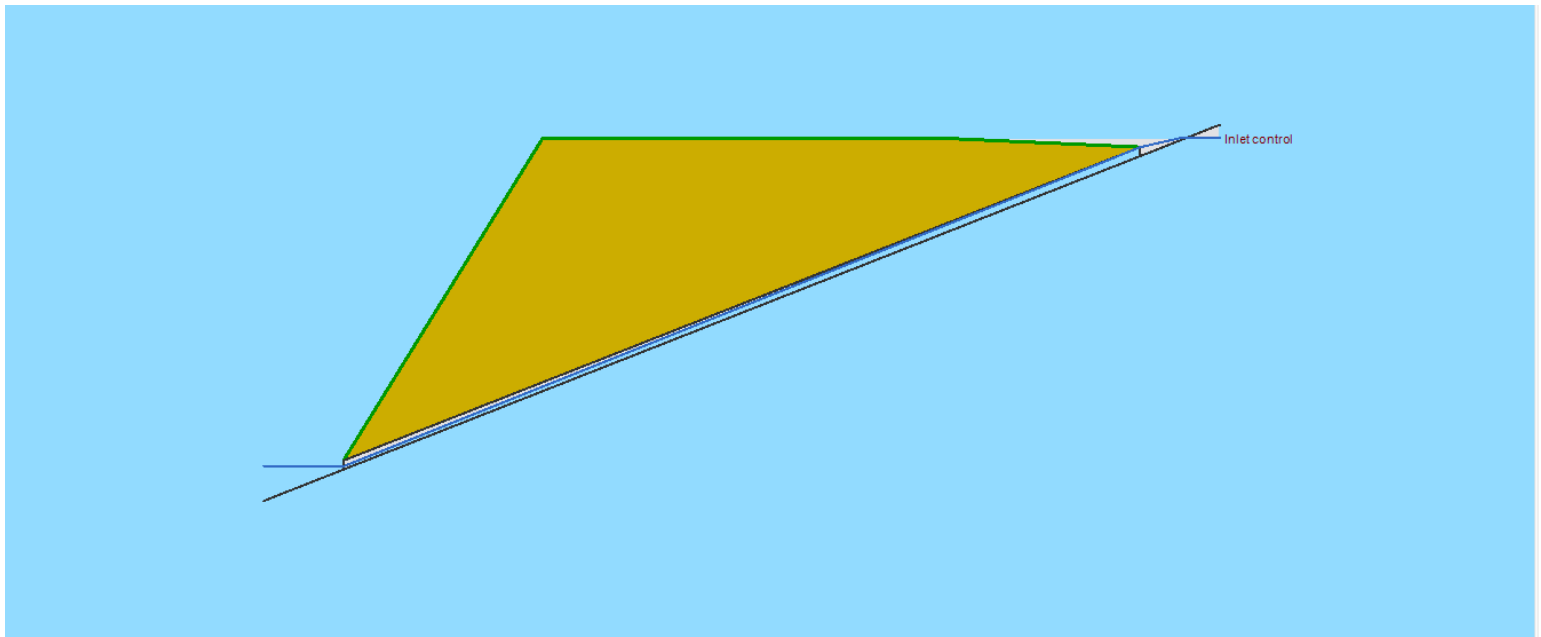
Top Elevation (ft)	=	137.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.34
Qmax (cfs)	=	6.34
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.34
Qpipe (cfs)	=	6.34
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	24.77
Veloc Up (ft/s)	=	8.17
HGL Dn (ft)	=	100.36
HGL Up (ft)	=	135.96
Hw Elev (ft)	=	137.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

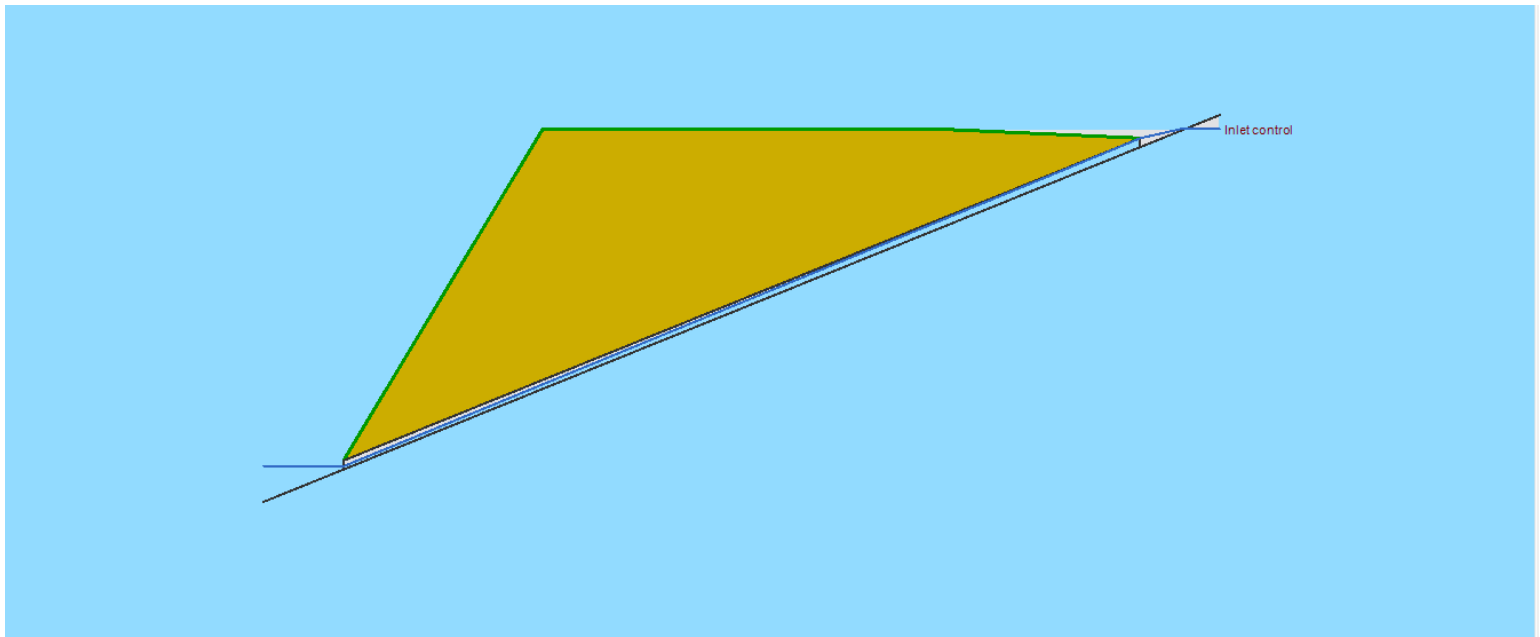
## 36% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	36.00
Invert Elev Up (ft)	=	136.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

<b>Embankment</b>	
Top Elevation (ft)	= 138.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

<b>Calculations</b>	
Qmin (cfs)	= 6.35
Qmax (cfs)	= 6.35
Tailwater Elev (ft)	= Normal

<b>Highlighted</b>	
Qtotal (cfs)	= 6.35
Qpipe (cfs)	= 6.35
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 25.04
Veloc Up (ft/s)	= 8.18
HGL Dn (ft)	= 100.36
HGL Up (ft)	= 136.96
Hw Elev (ft)	= 138.00
Hw/D (ft)	= 2.00
Flow Regime	= Inlet Control



# Culvert Report

## 37% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	37.00
Invert Elev Up (ft)	=	137.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

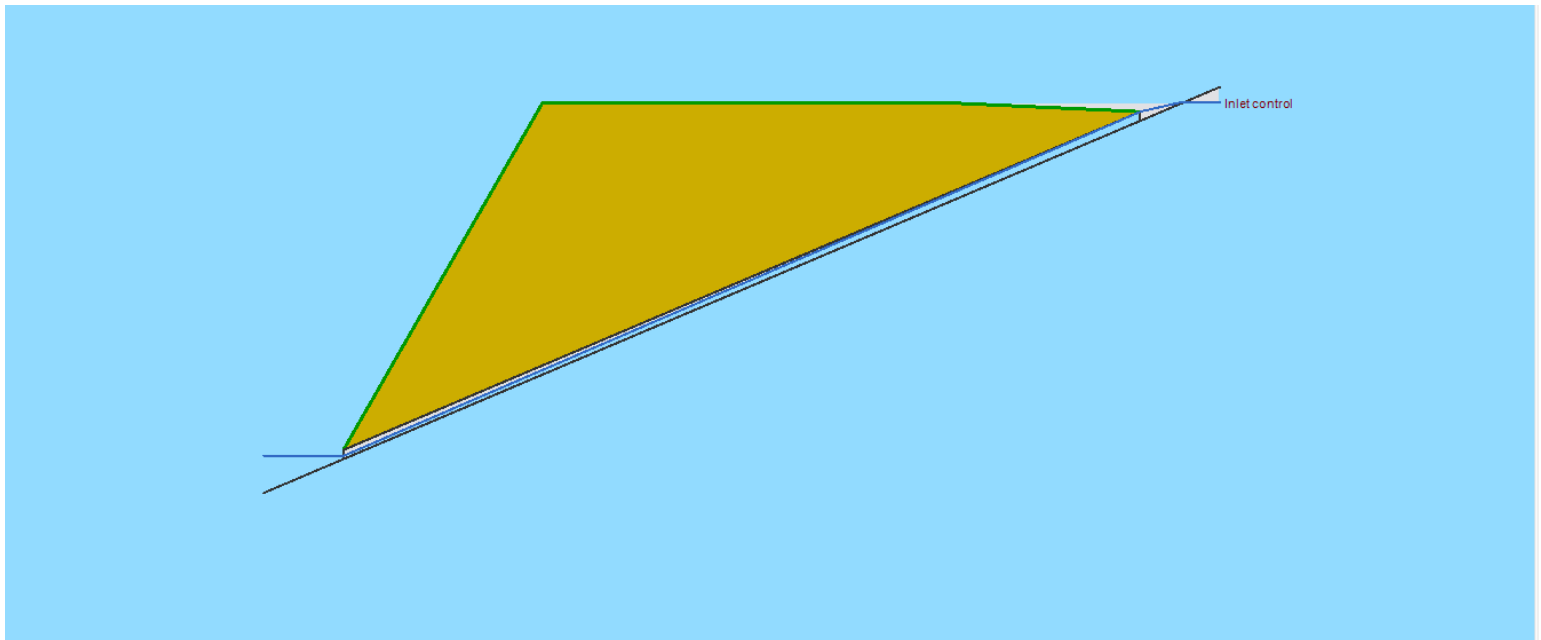
Top Elevation (ft)	=	139.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.37
Qmax (cfs)	=	6.37
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.37
Qpipe (cfs)	=	6.37
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	25.35
Veloc Up (ft/s)	=	8.20
HGL Dn (ft)	=	100.36
HGL Up (ft)	=	137.96
Hw Elev (ft)	=	139.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 38% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	38.00
Invert Elev Up (ft)	=	138.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

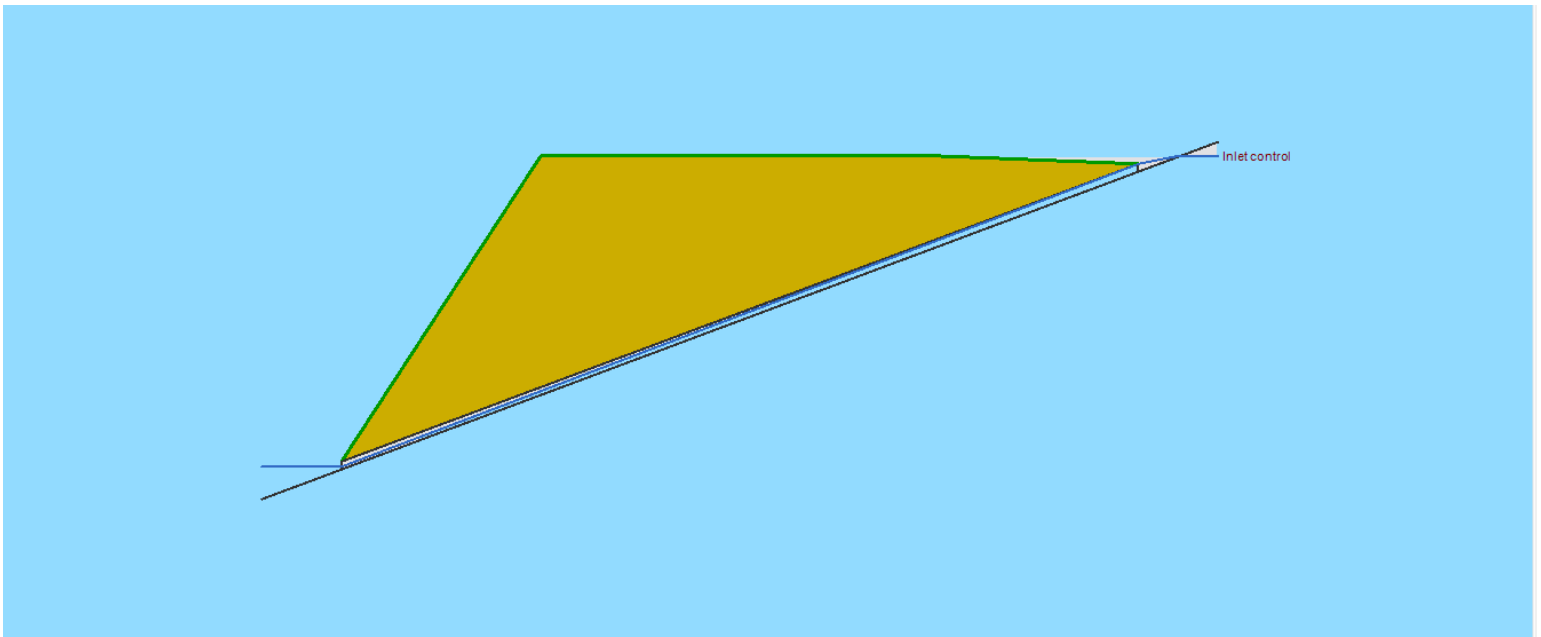
Top Elevation (ft)	=	140.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.38
Qmax (cfs)	=	6.38
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.38
Qpipe (cfs)	=	6.38
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	25.38
Veloc Up (ft/s)	=	8.22
HGL Dn (ft)	=	100.36
HGL Up (ft)	=	138.96
Hw Elev (ft)	=	140.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 39% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	39.00
Invert Elev Up (ft)	=	139.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

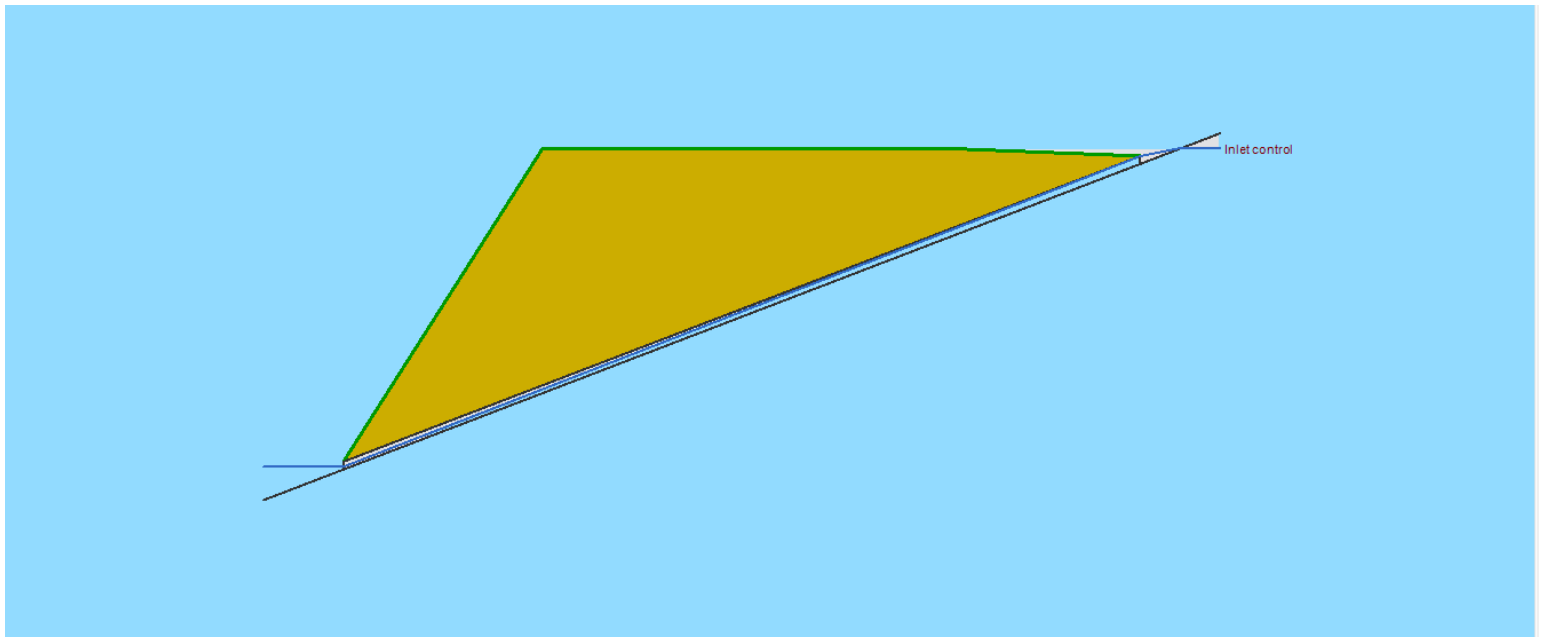
Top Elevation (ft)	=	141.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.39
Qmax (cfs)	=	6.39
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.39
Qpipe (cfs)	=	6.39
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	25.66
Veloc Up (ft/s)	=	8.23
HGL Dn (ft)	=	100.35
HGL Up (ft)	=	139.96
Hw Elev (ft)	=	141.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 40% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	40.00
Invert Elev Up (ft)	=	140.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

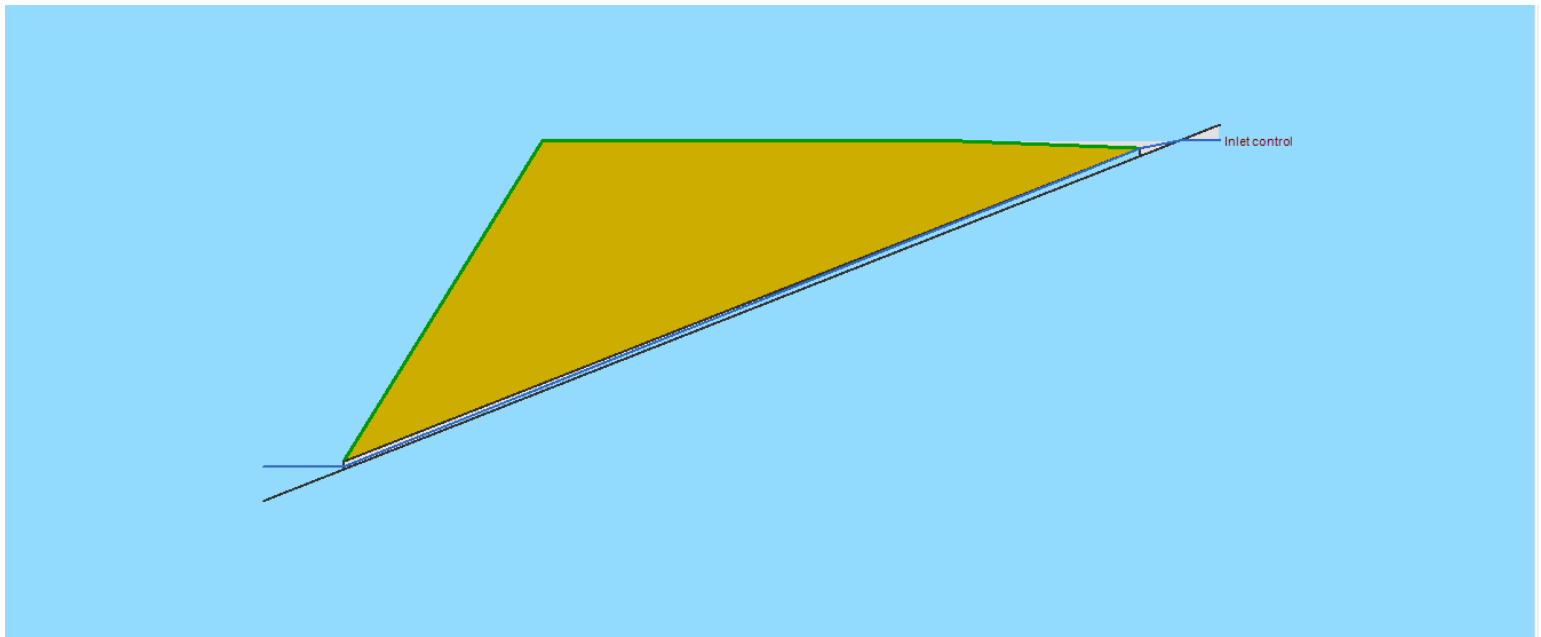
Top Elevation (ft)	=	142.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.40
Qmax (cfs)	=	6.40
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.40
Qpipe (cfs)	=	6.40
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	25.94
Veloc Up (ft/s)	=	8.24
HGL Dn (ft)	=	100.35
HGL Up (ft)	=	140.96
Hw Elev (ft)	=	142.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 41% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	41.00
Invert Elev Up (ft)	=	141.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

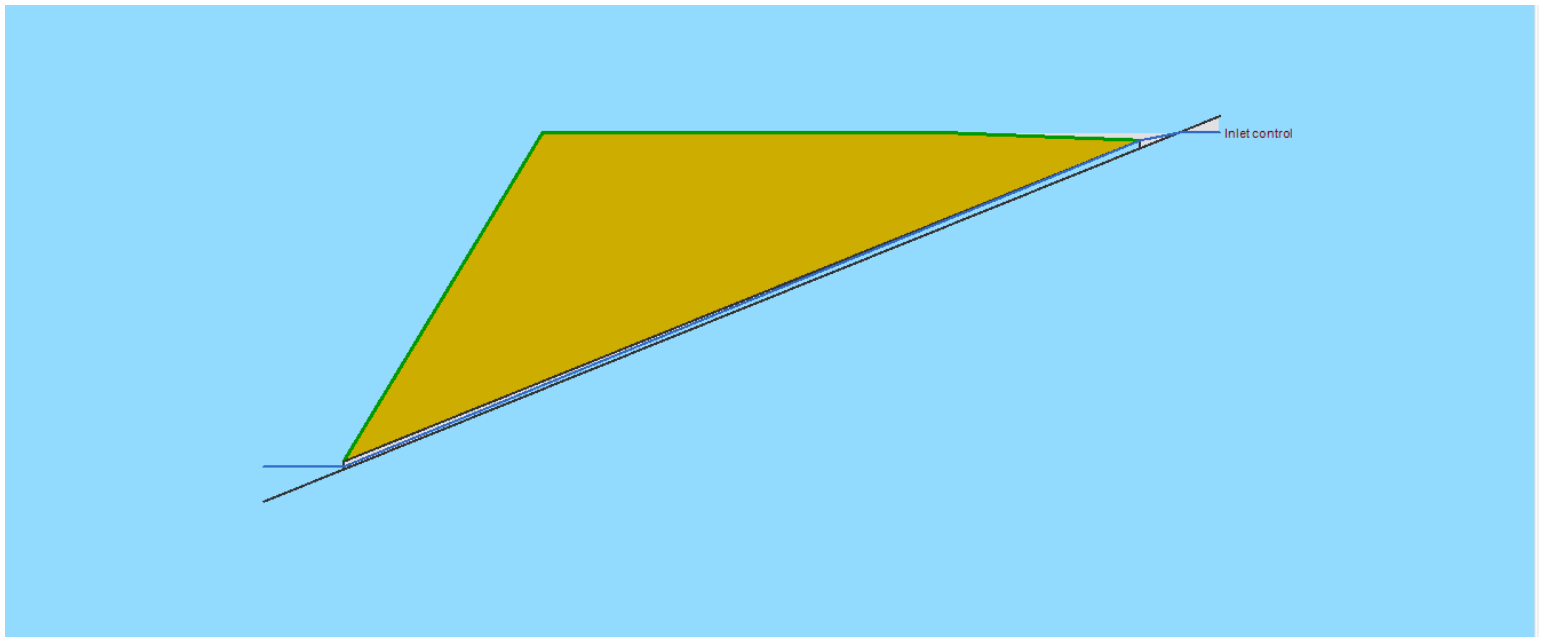
Top Elevation (ft)	=	143.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.42
Qmax (cfs)	=	6.42
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.42
Qpipe (cfs)	=	6.42
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	26.26
Veloc Up (ft/s)	=	8.26
HGL Dn (ft)	=	100.35
HGL Up (ft)	=	141.97
Hw Elev (ft)	=	143.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 42% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	42.00
Invert Elev Up (ft)	=	142.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

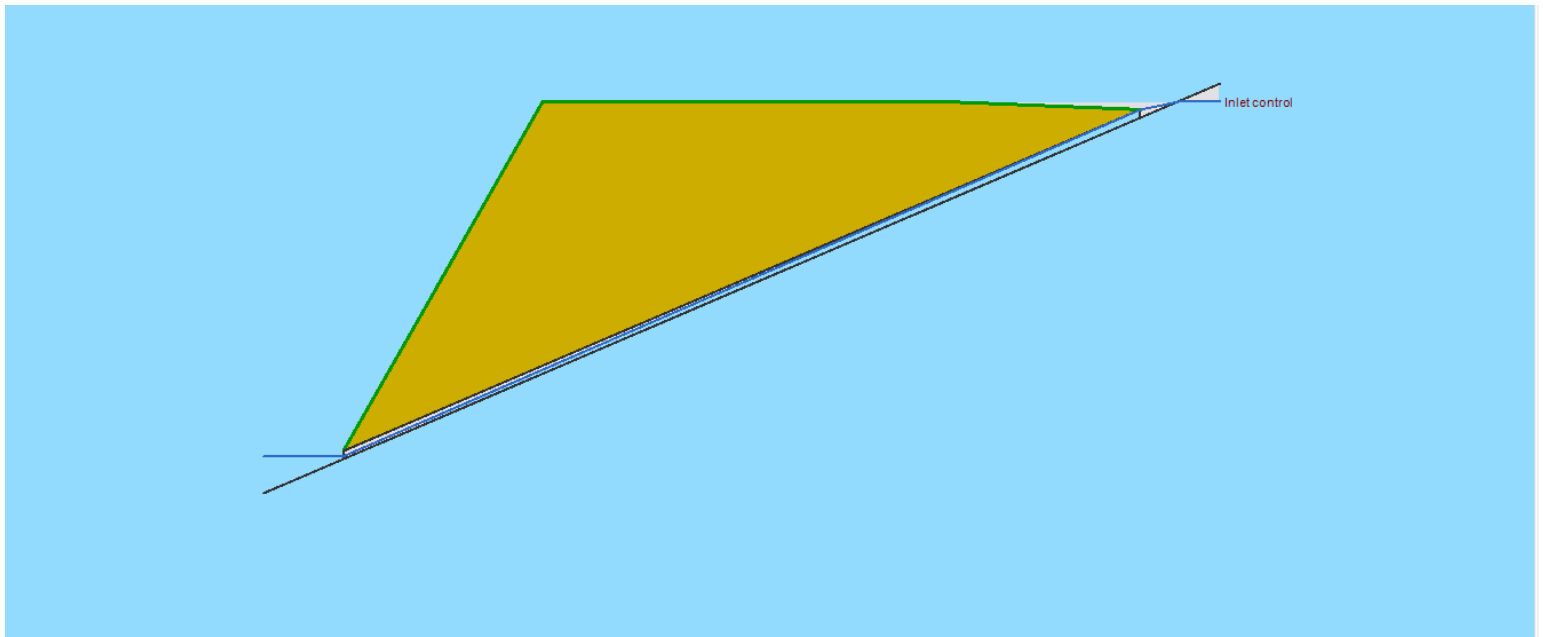
Top Elevation (ft)	=	144.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.43
Qmax (cfs)	=	6.43
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.43
Qpipe (cfs)	=	6.43
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	26.55
Veloc Up (ft/s)	=	8.28
HGL Dn (ft)	=	100.35
HGL Up (ft)	=	142.97
Hw Elev (ft)	=	144.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 43% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	43.00
Invert Elev Up (ft)	=	143.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

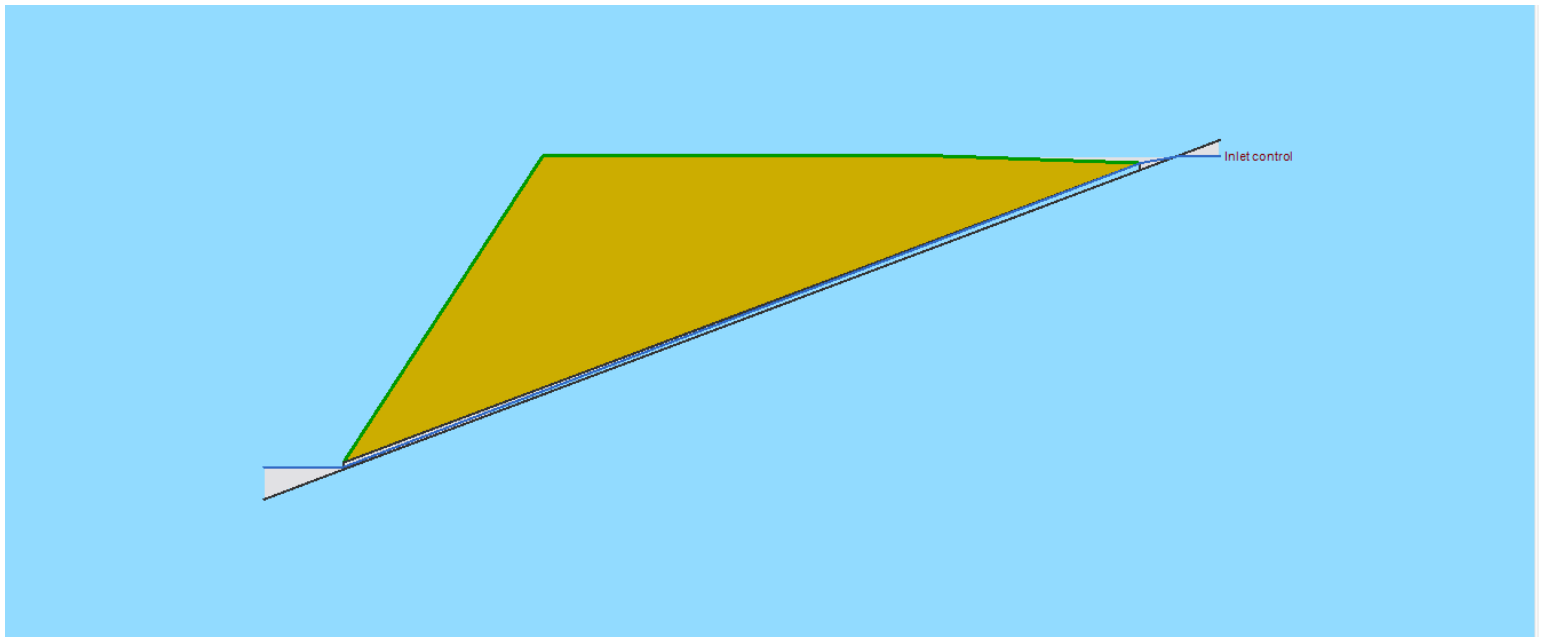
Top Elevation (ft)	=	145.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.44
Qmax (cfs)	=	6.44
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.44
Qpipe (cfs)	=	6.44
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	26.84
Veloc Up (ft/s)	=	8.29
HGL Dn (ft)	=	100.34
HGL Up (ft)	=	143.97
Hw Elev (ft)	=	145.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 44% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	44.00
Invert Elev Up (ft)	=	144.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

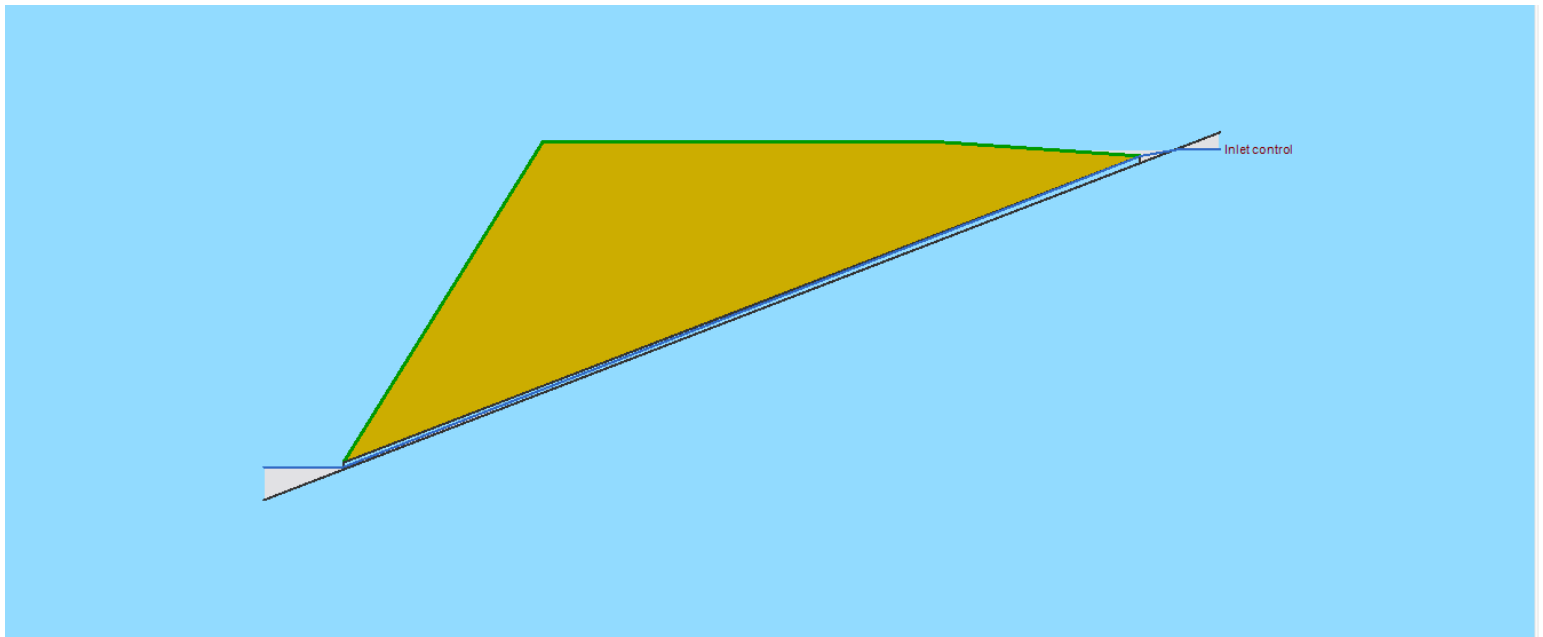
Top Elevation (ft)	=	147.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.45
Qmax (cfs)	=	6.45
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.45
Qpipe (cfs)	=	6.45
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	26.88
Veloc Up (ft/s)	=	8.30
HGL Dn (ft)	=	100.34
HGL Up (ft)	=	144.97
Hw Elev (ft)	=	146.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 45% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	45.00
Invert Elev Up (ft)	=	145.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

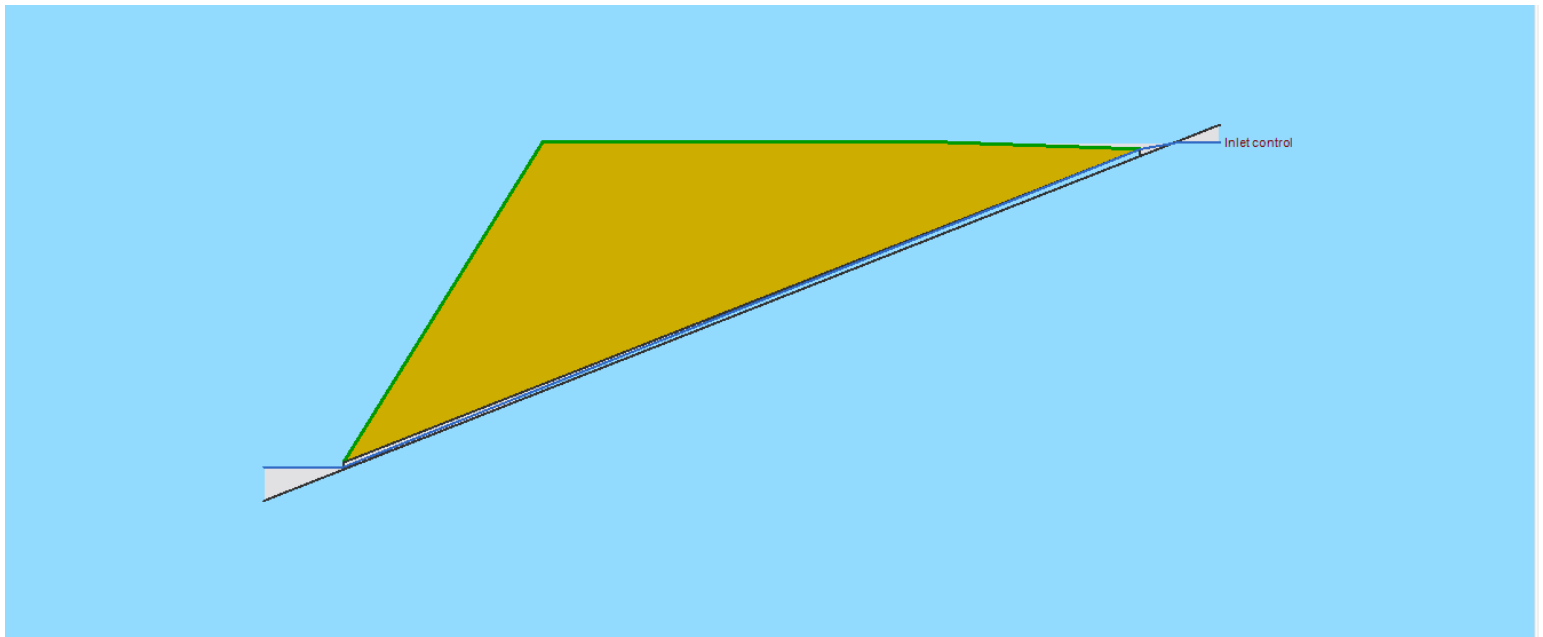
Top Elevation (ft)	=	147.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.46
Qmax (cfs)	=	6.46
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.46
Qpipe (cfs)	=	6.46
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	27.18
Veloc Up (ft/s)	=	8.31
HGL Dn (ft)	=	100.34
HGL Up (ft)	=	145.97
Hw Elev (ft)	=	147.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 46% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	46.00
Invert Elev Up (ft)	=	146.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

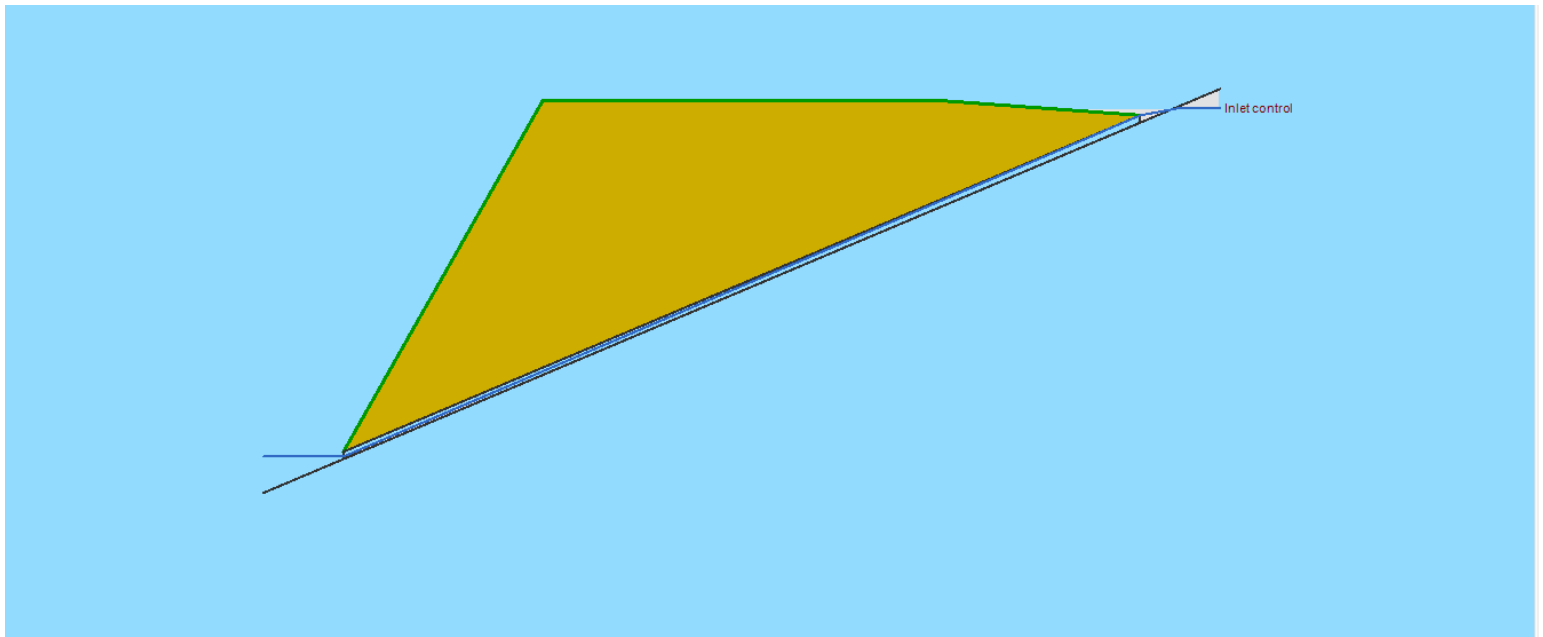
Top Elevation (ft)	=	149.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.48
Qmax (cfs)	=	6.48
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.48
Qpipe (cfs)	=	6.48
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	27.52
Veloc Up (ft/s)	=	8.34
HGL Dn (ft)	=	100.34
HGL Up (ft)	=	146.97
Hw Elev (ft)	=	148.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 47% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	47.00
Invert Elev Up (ft)	=	147.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

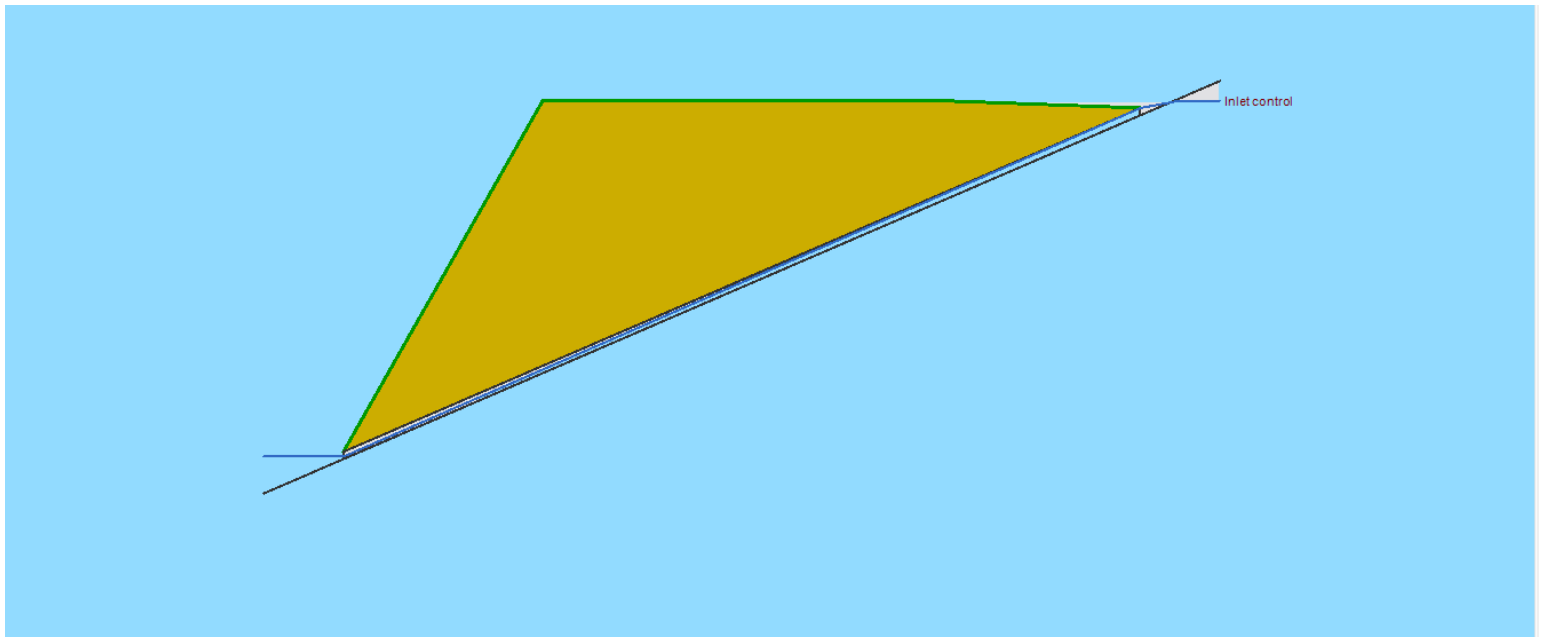
Top Elevation (ft)	=	149.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.49
Qmax (cfs)	=	6.49
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.49
Qpipe (cfs)	=	6.49
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	27.57
Veloc Up (ft/s)	=	8.35
HGL Dn (ft)	=	100.34
HGL Up (ft)	=	147.97
Hw Elev (ft)	=	149.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 48% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	48.00
Invert Elev Up (ft)	=	148.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

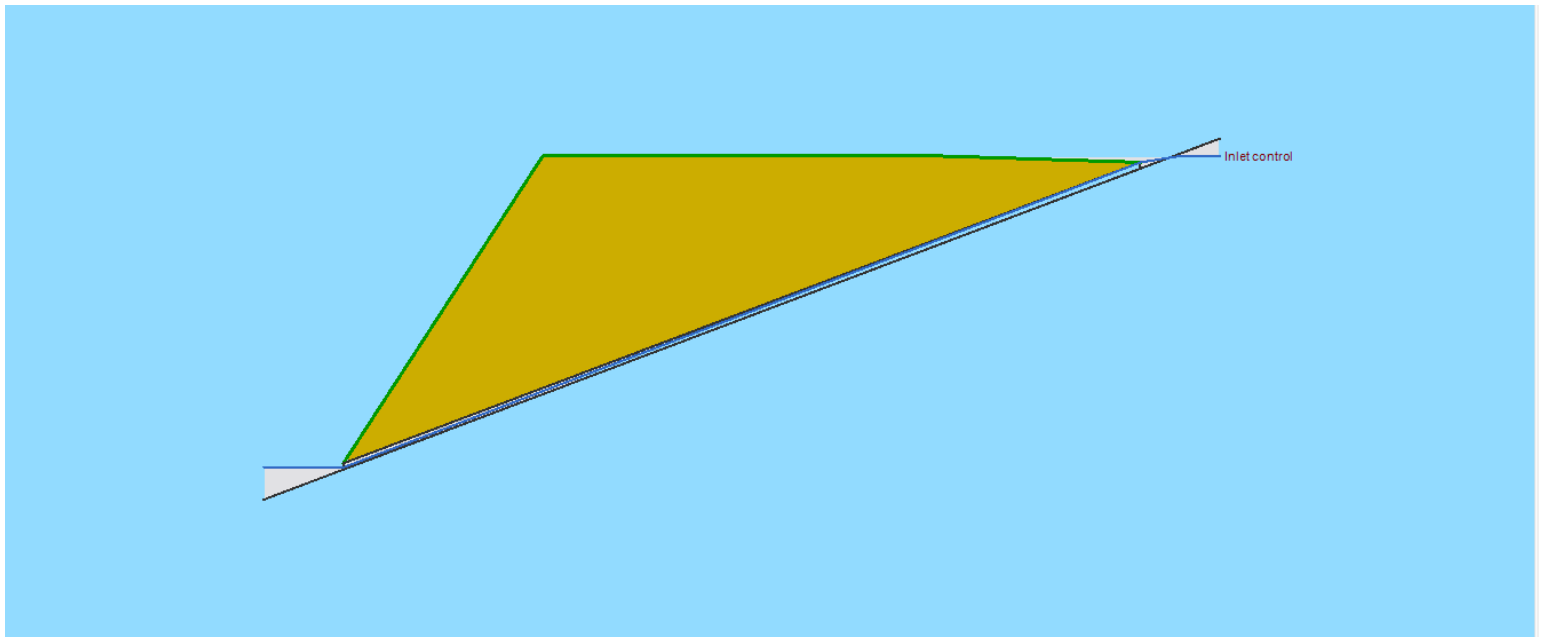
Top Elevation (ft)	=	150.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.50
Qmax (cfs)	=	6.50
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.50
Qpipe (cfs)	=	6.50
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	27.87
Veloc Up (ft/s)	=	8.36
HGL Dn (ft)	=	100.34
HGL Up (ft)	=	148.97
Hw Elev (ft)	=	150.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 49% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	49.00
Invert Elev Up (ft)	=	149.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

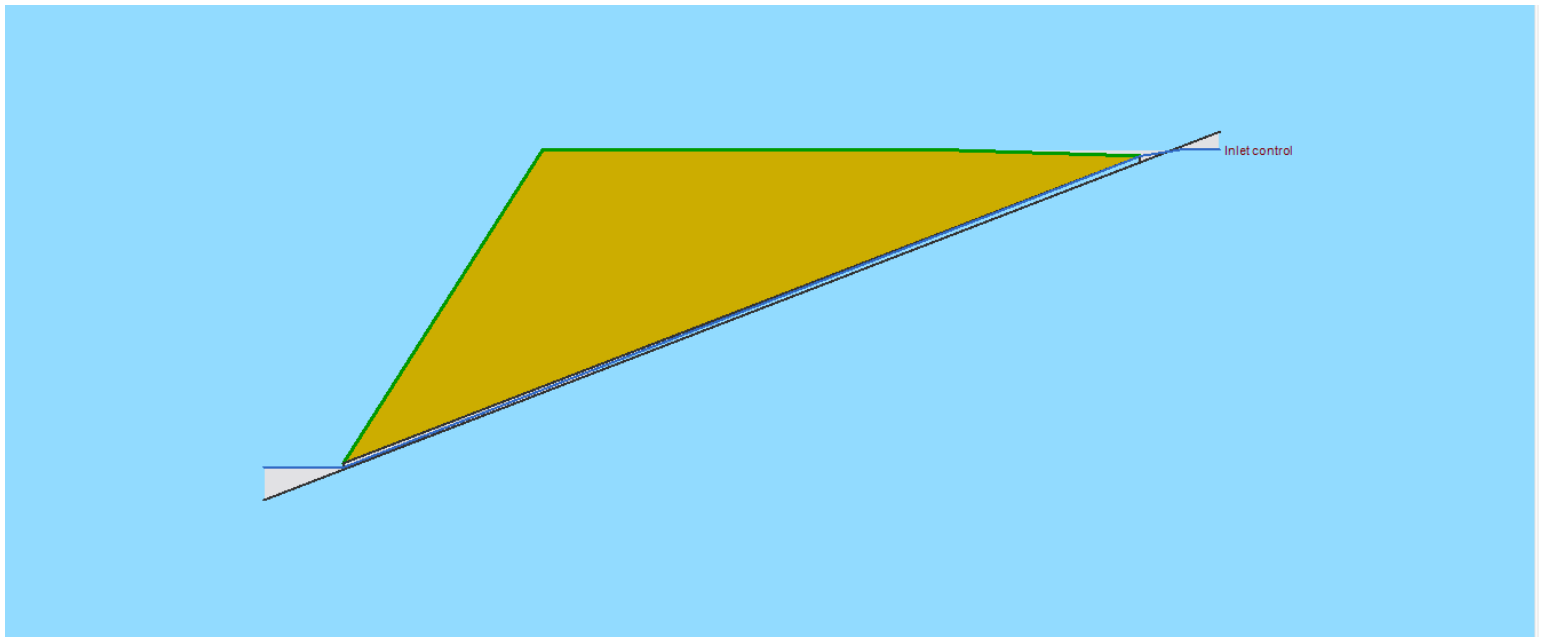
Top Elevation (ft)	=	151.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.51
Qmax (cfs)	=	6.51
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.51
Qpipe (cfs)	=	6.51
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	28.19
Veloc Up (ft/s)	=	8.37
HGL Dn (ft)	=	100.34
HGL Up (ft)	=	149.97
Hw Elev (ft)	=	151.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



# Culvert Report

## 50% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	50.00
Invert Elev Up (ft)	=	150.00
Rise (in)	=	12.0
Shape	=	Circular
Span (in)	=	12.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

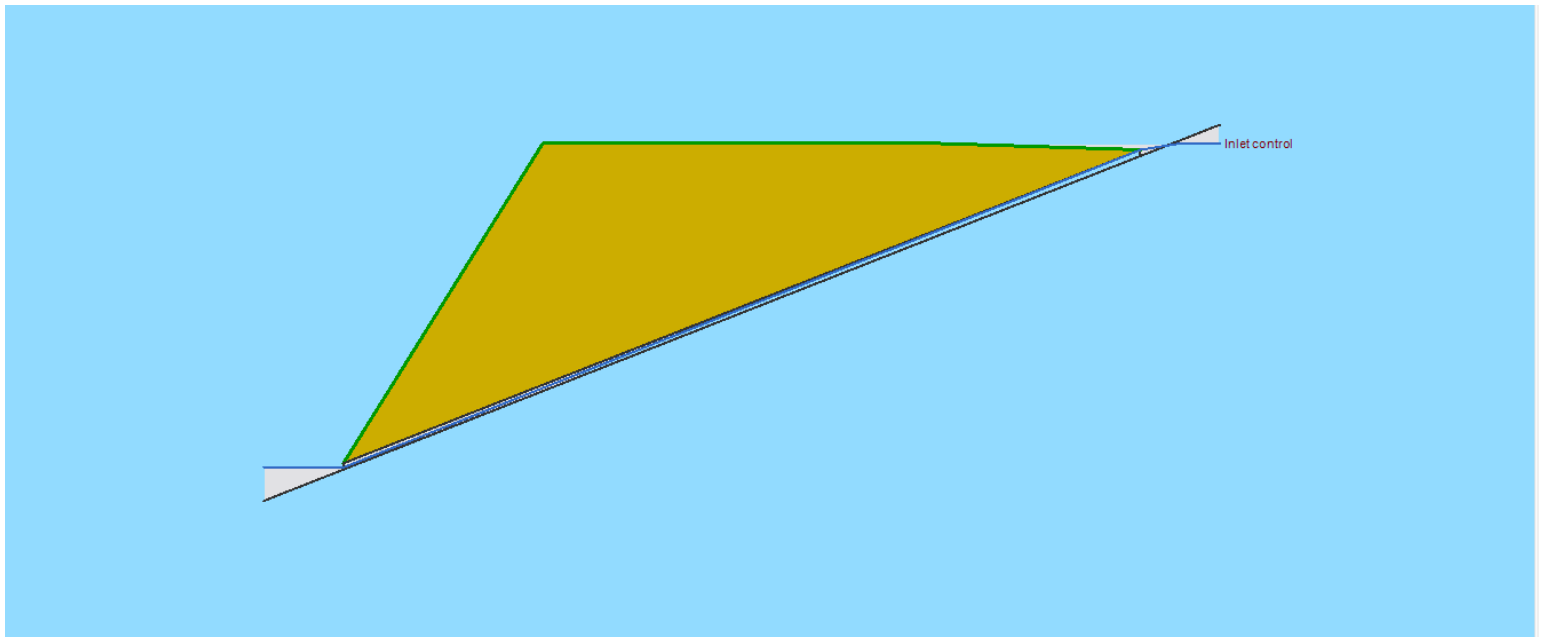
Top Elevation (ft)	=	152.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	6.53
Qmax (cfs)	=	6.53
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	6.53
Qpipe (cfs)	=	6.53
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	28.27
Veloc Up (ft/s)	=	8.40
HGL Dn (ft)	=	100.34
HGL Up (ft)	=	150.97
Hw Elev (ft)	=	152.00
Hw/D (ft)	=	2.00
Flow Regime	=	Inlet Control



**Temporary 18" Slope Pipe Capacity Calculations**

Percent Slope across ROW (%)	Maximum Headwater* (in)	18" Pipe Maximum Flow Rate, Q (cfs)
1	24	10.27
2	24	10.33
3	24	10.38
4	24	10.44
5	24	10.50
6	24	10.56
7	24	10.61
8	24	10.67
9	24	10.72
10	24	10.78
11	24	10.83
12	24	10.89
13	24	10.94
14	24	11.00
15	24	11.05
16	24	11.11
17	24	11.16
18	24	11.21
19	24	11.27
20	24	11.30
21	24	11.30
22	24	11.30
23	24	11.30
24	24	11.30
25	24	11.30

Percent Slope across ROW (%)	Maximum Headwater* (in)	18" Pipe Maximum Flow Rate, Q (cfs)
26	24	11.30
27	24	11.30
28	24	11.30
29	24	11.30
30	24	11.30
31	24	11.30
32	24	11.30
33	24	11.30
34	24	11.30
35	24	11.30
36	24	11.30
37	24	11.30
38	24	11.30
39	24	11.30
40	24	11.30
41	24	11.30
42	24	11.30
43	24	11.33
44	24	11.30
45	24	11.30
46	24	11.30
47	24	11.30
48	24	11.30
49	24	11.30
50	24	11.30

\* 24" Height of Sand Bag Diversion

# Culvert Report

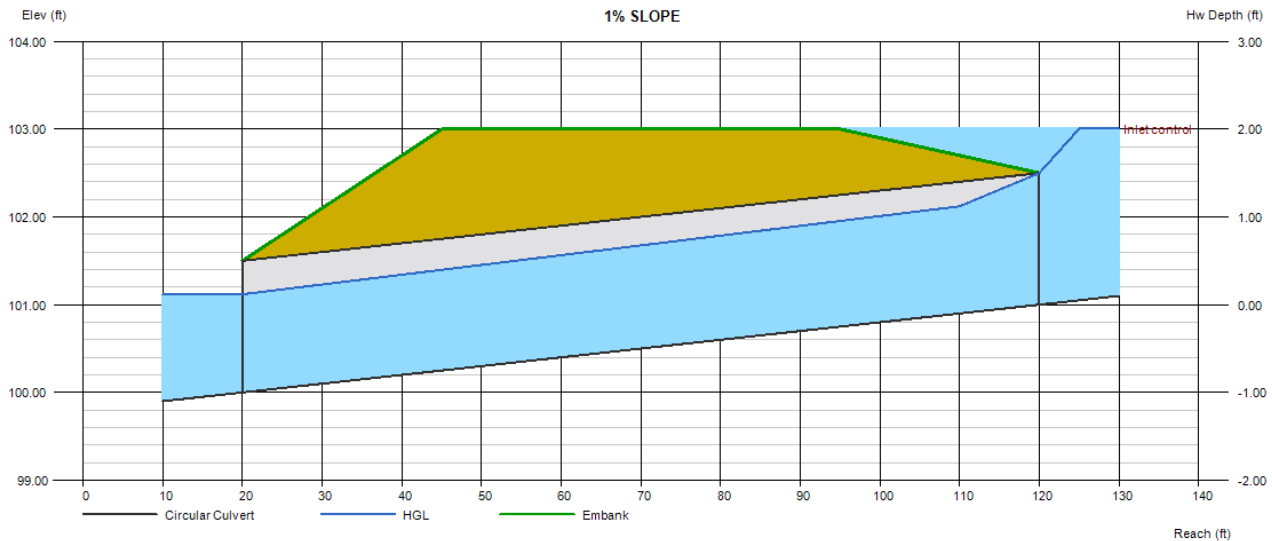
## 1% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	1.00
Invert Elev Up (ft)	=	101.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

<b>Embankment</b>	
Top Elevation (ft)	= 103.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

<b>Calculations</b>	
Qmin (cfs)	= 10.27
Qmax (cfs)	= 10.27
Tailwater Elev (ft)	= Normal

<b>Highlighted</b>	
Qtotal (cfs)	= 10.27
Qpipe (cfs)	= 10.27
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 7.26
Veloc Up (ft/s)	= 6.61
HGL Dn (ft)	= 101.12
HGL Up (ft)	= 102.23
Hw Elev (ft)	= 103.00
Hw/D (ft)	= 1.34
Flow Regime	= Inlet Control



# Culvert Report

## 2% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	2.00
Invert Elev Up (ft)	=	102.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

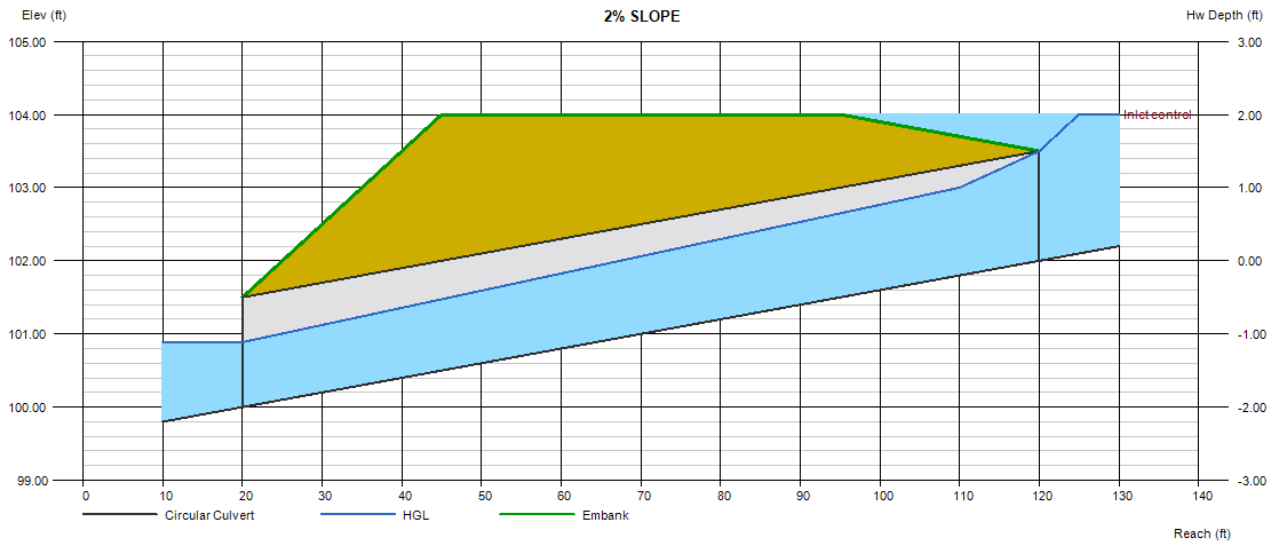
Top Elevation (ft)	=	104.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	10.33
Qmax (cfs)	=	10.33
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	10.33
Qpipe (cfs)	=	10.33
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	9.49
Veloc Up (ft/s)	=	6.63
HGL Dn (ft)	=	100.89
HGL Up (ft)	=	103.24
Hw Elev (ft)	=	104.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 3% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	3.00
Invert Elev Up (ft)	=	103.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

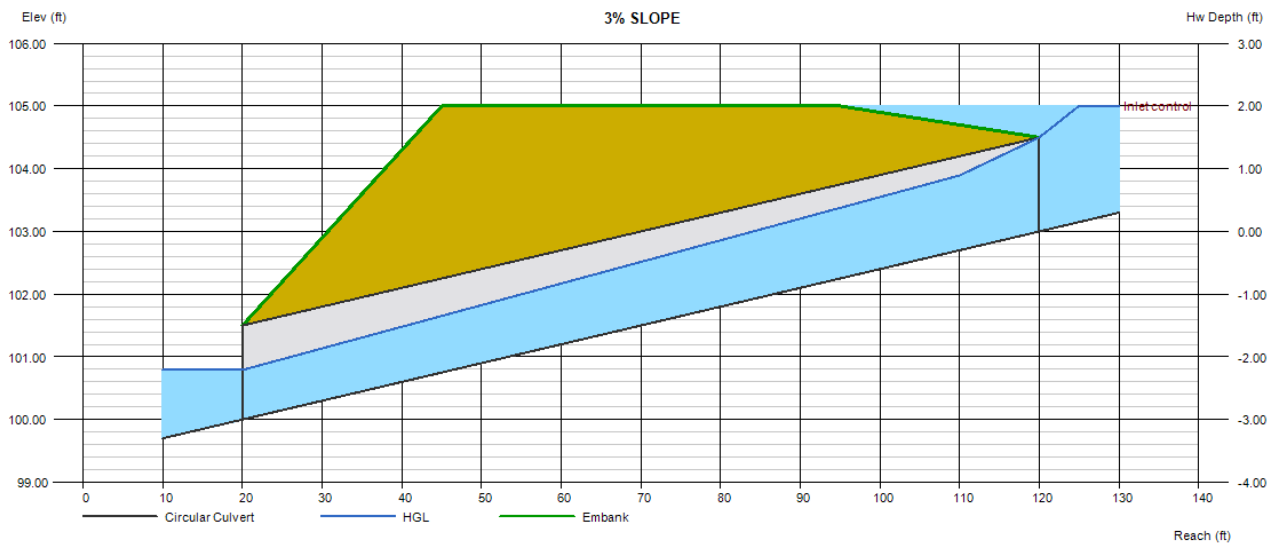
Top Elevation (ft)	=	105.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	10.38
Qmax (cfs)	=	10.38
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	10.38
Qpipe (cfs)	=	10.38
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	10.99
Veloc Up (ft/s)	=	6.65
HGL Dn (ft)	=	100.79
HGL Up (ft)	=	104.24
Hw Elev (ft)	=	105.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 4% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	4.00
Invert Elev Up (ft)	=	104.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

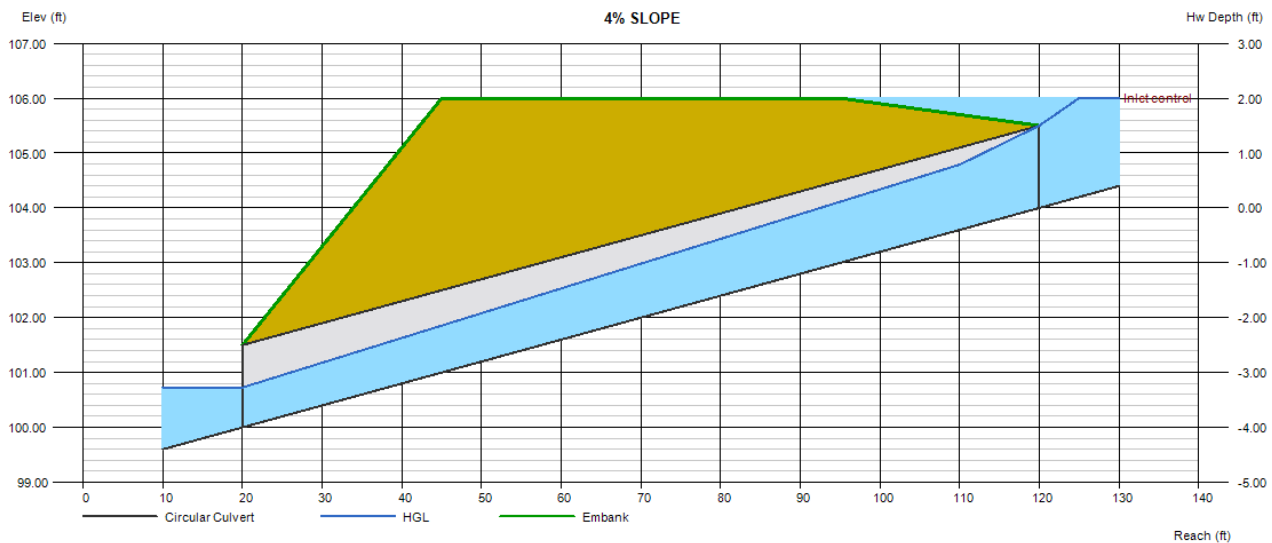
Top Elevation (ft)	=	106.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	10.44
Qmax (cfs)	=	10.44
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	10.44
Qpipe (cfs)	=	10.44
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	12.30
Veloc Up (ft/s)	=	6.68
HGL Dn (ft)	=	100.73
HGL Up (ft)	=	105.24
Hw Elev (ft)	=	106.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 5% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	5.00
Invert Elev Up (ft)	=	105.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

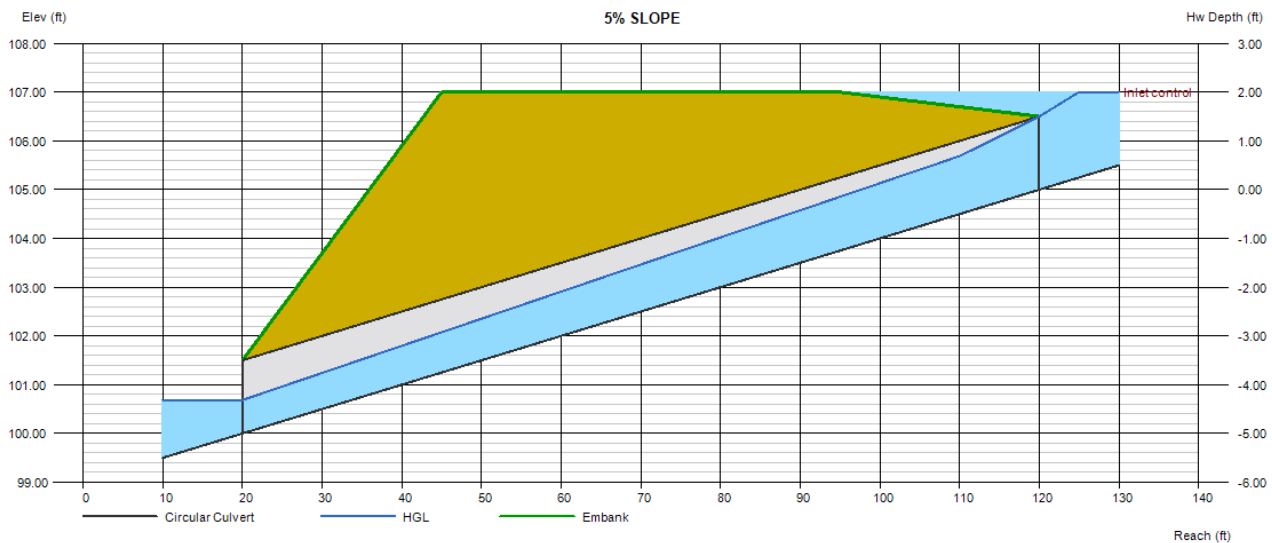
Top Elevation (ft)	=	107.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	10.50
Qmax (cfs)	=	10.50
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	10.50
Qpipe (cfs)	=	10.50
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	13.34
Veloc Up (ft/s)	=	6.70
HGL Dn (ft)	=	100.69
HGL Up (ft)	=	106.24
Hw Elev (ft)	=	107.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 6% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	6.00
Invert Elev Up (ft)	=	106.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

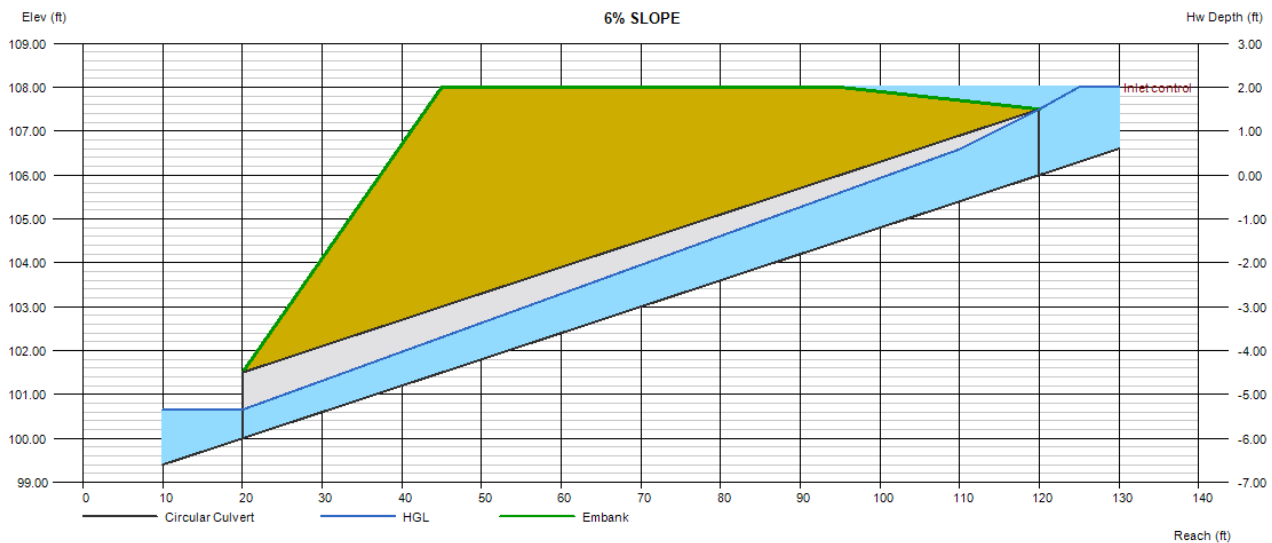
Top Elevation (ft)	=	108.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	10.56
Qmax (cfs)	=	10.56
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	10.56
Qpipe (cfs)	=	10.56
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	14.32
Veloc Up (ft/s)	=	6.72
HGL Dn (ft)	=	100.65
HGL Up (ft)	=	107.25
Hw Elev (ft)	=	108.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 7% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	7.00
Invert Elev Up (ft)	=	107.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

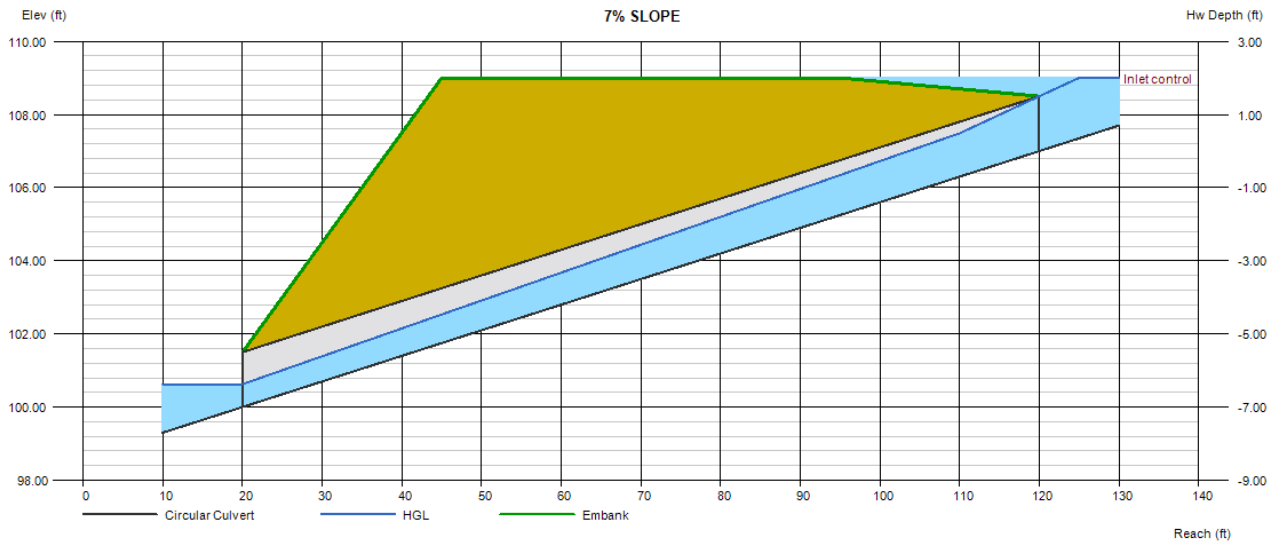
Top Elevation (ft)	=	109.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	10.61
Qmax (cfs)	=	10.61
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	10.61
Qpipe (cfs)	=	10.61
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	15.18
Veloc Up (ft/s)	=	6.74
HGL Dn (ft)	=	100.63
HGL Up (ft)	=	108.25
Hw Elev (ft)	=	109.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

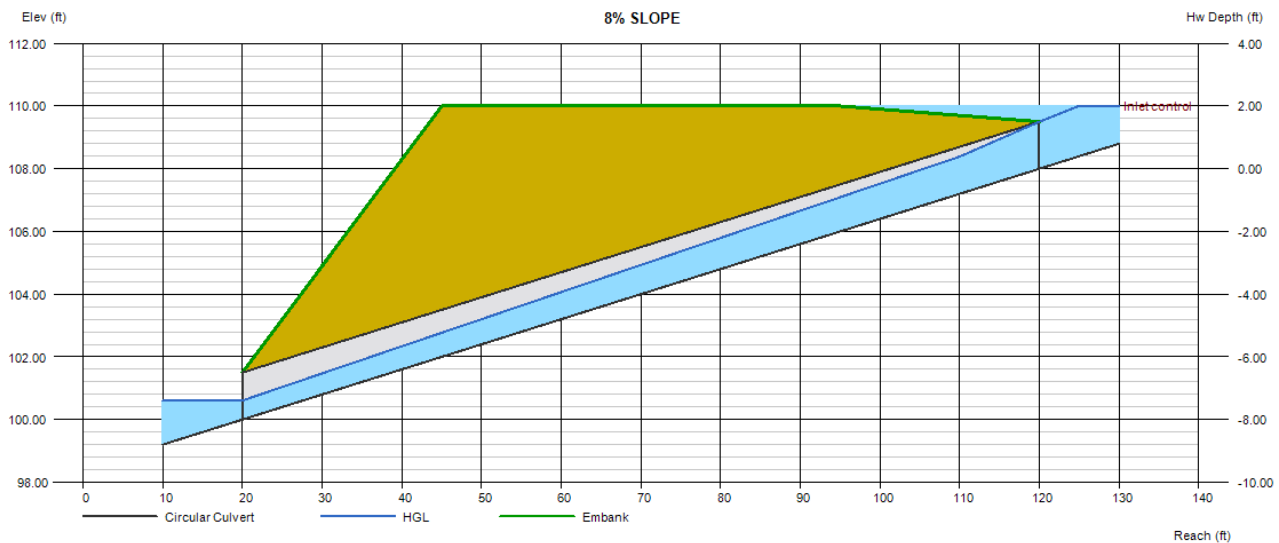
## 8% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	8.00
Invert Elev Up (ft)	=	108.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

<b>Embankment</b>	
Top Elevation (ft)	= 110.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

<b>Calculations</b>	
Qmin (cfs)	= 10.67
Qmax (cfs)	= 10.67
Tailwater Elev (ft)	= Normal

<b>Highlighted</b>	
Qtotal (cfs)	= 10.67
Qpipe (cfs)	= 10.67
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 15.89
Veloc Up (ft/s)	= 6.77
HGL Dn (ft)	= 100.61
HGL Up (ft)	= 109.25
Hw Elev (ft)	= 110.00
Hw/D (ft)	= 1.34
Flow Regime	= Inlet Control



# Culvert Report

## 9% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	9.00
Invert Elev Up (ft)	=	109.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

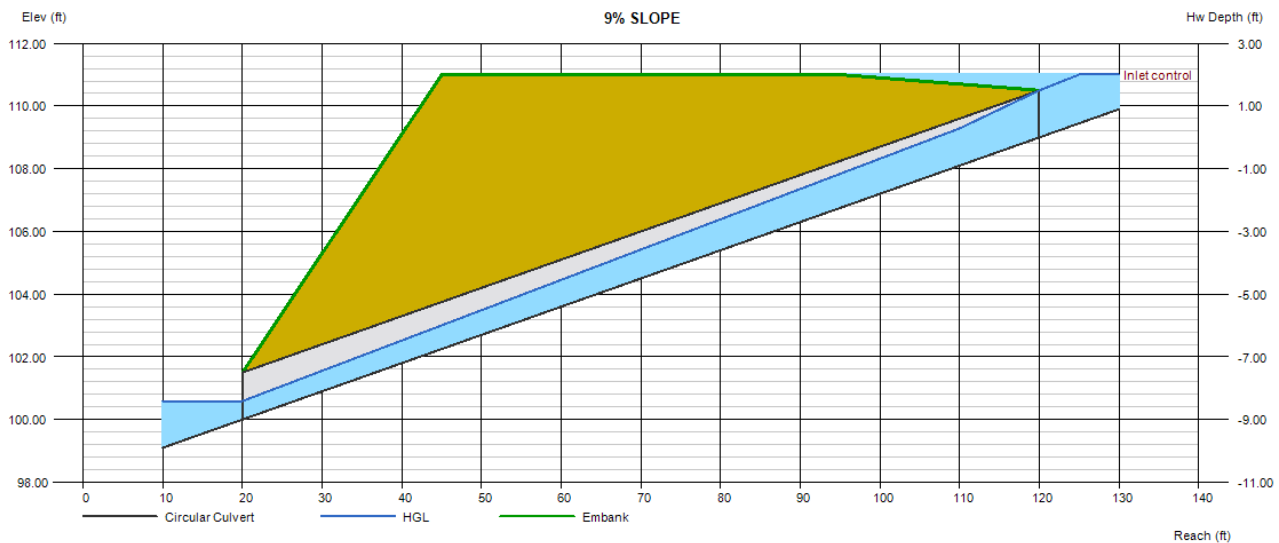
Top Elevation (ft)	=	111.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	10.72
Qmax (cfs)	=	10.72
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	10.72
Qpipe (cfs)	=	10.72
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	16.63
Veloc Up (ft/s)	=	6.79
HGL Dn (ft)	=	100.59
HGL Up (ft)	=	110.26
Hw Elev (ft)	=	111.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

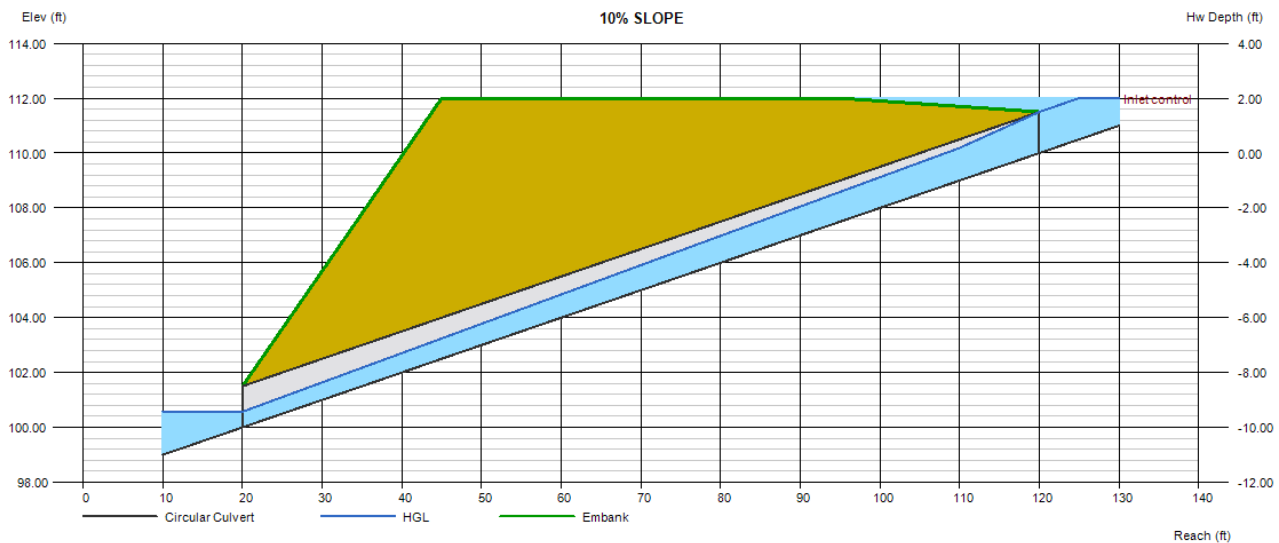
## 10% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	10.00
Invert Elev Up (ft)	=	110.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

<b>Embankment</b>	
Top Elevation (ft)	= 112.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

<b>Calculations</b>	
Qmin (cfs)	= 10.78
Qmax (cfs)	= 10.78
Tailwater Elev (ft)	= Normal

<b>Highlighted</b>	
Qtotal (cfs)	= 10.78
Qpipe (cfs)	= 10.78
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 17.45
Veloc Up (ft/s)	= 6.81
HGL Dn (ft)	= 100.57
HGL Up (ft)	= 111.26
Hw Elev (ft)	= 112.00
Hw/D (ft)	= 1.34
Flow Regime	= Inlet Control



# Culvert Report

## 11% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	11.00
Invert Elev Up (ft)	=	111.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

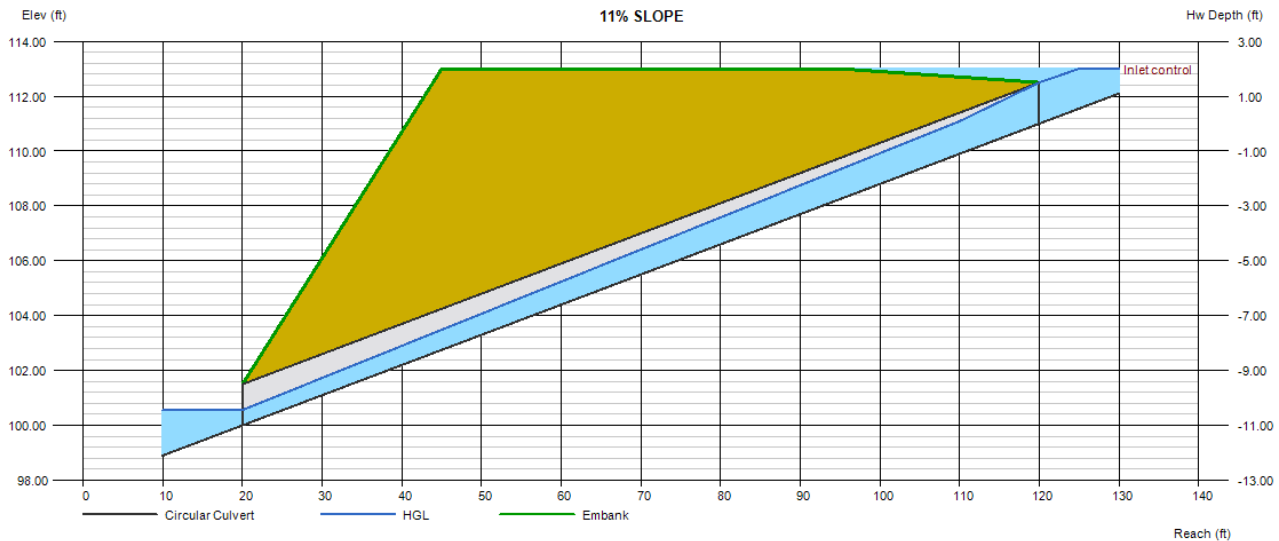
Top Elevation (ft)	=	113.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	10.83
Qmax (cfs)	=	10.83
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	10.83
Qpipe (cfs)	=	10.83
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	17.99
Veloc Up (ft/s)	=	6.83
HGL Dn (ft)	=	100.56
HGL Up (ft)	=	112.26
Hw Elev (ft)	=	113.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 12% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	12.00
Invert Elev Up (ft)	=	112.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

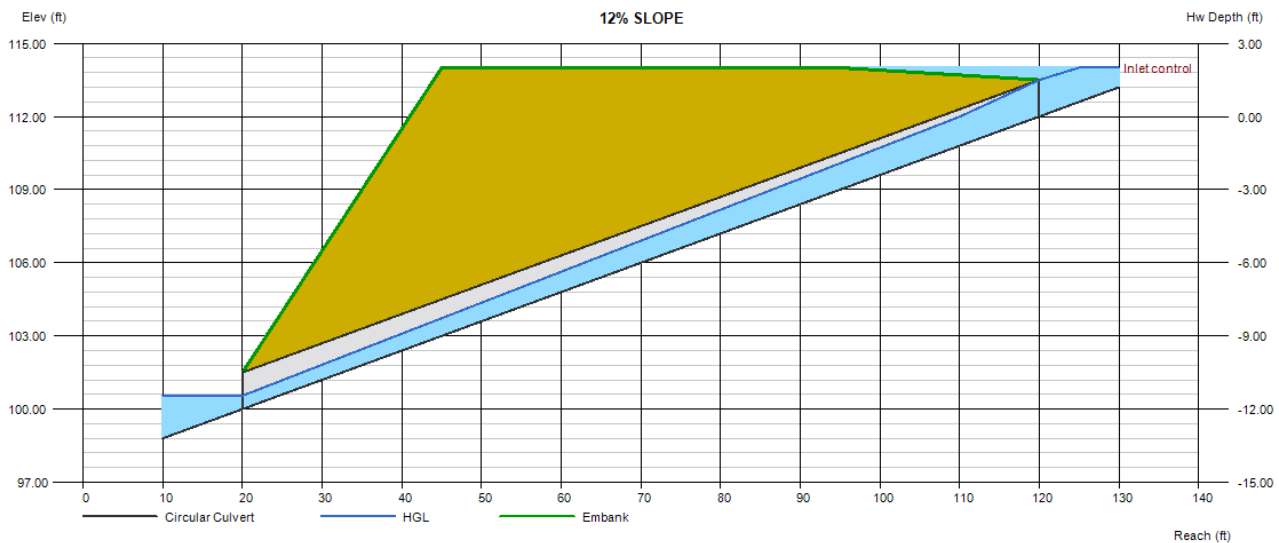
Top Elevation (ft)	=	114.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	10.89
Qmax (cfs)	=	10.89
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	10.89
Qpipe (cfs)	=	10.89
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	18.58
Veloc Up (ft/s)	=	6.85
HGL Dn (ft)	=	100.55
HGL Up (ft)	=	113.26
Hw Elev (ft)	=	114.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

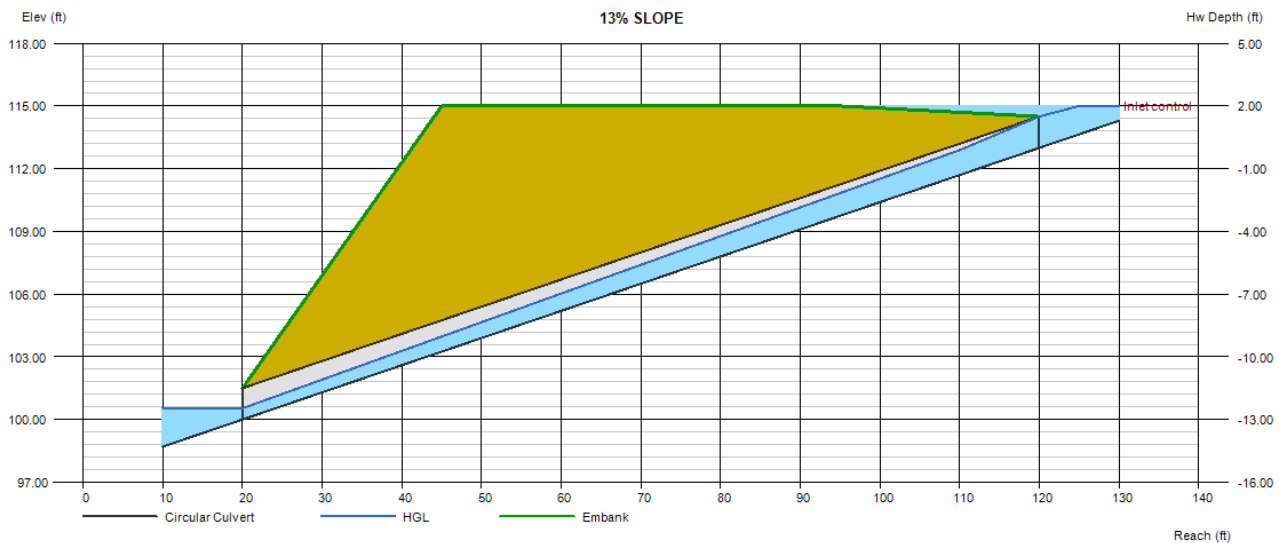
## 13% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	13.00
Invert Elev Up (ft)	=	113.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

<b>Embankment</b>	
Top Elevation (ft)	= 115.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

<b>Calculations</b>	
Qmin (cfs)	= 10.94
Qmax (cfs)	= 10.94
Tailwater Elev (ft)	= Normal

<b>Highlighted</b>	
Qtotal (cfs)	= 10.94
Qpipe (cfs)	= 10.94
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 19.17
Veloc Up (ft/s)	= 6.87
HGL Dn (ft)	= 100.54
HGL Up (ft)	= 114.27
Hw Elev (ft)	= 115.00
Hw/D (ft)	= 1.34
Flow Regime	= Inlet Control



# Culvert Report

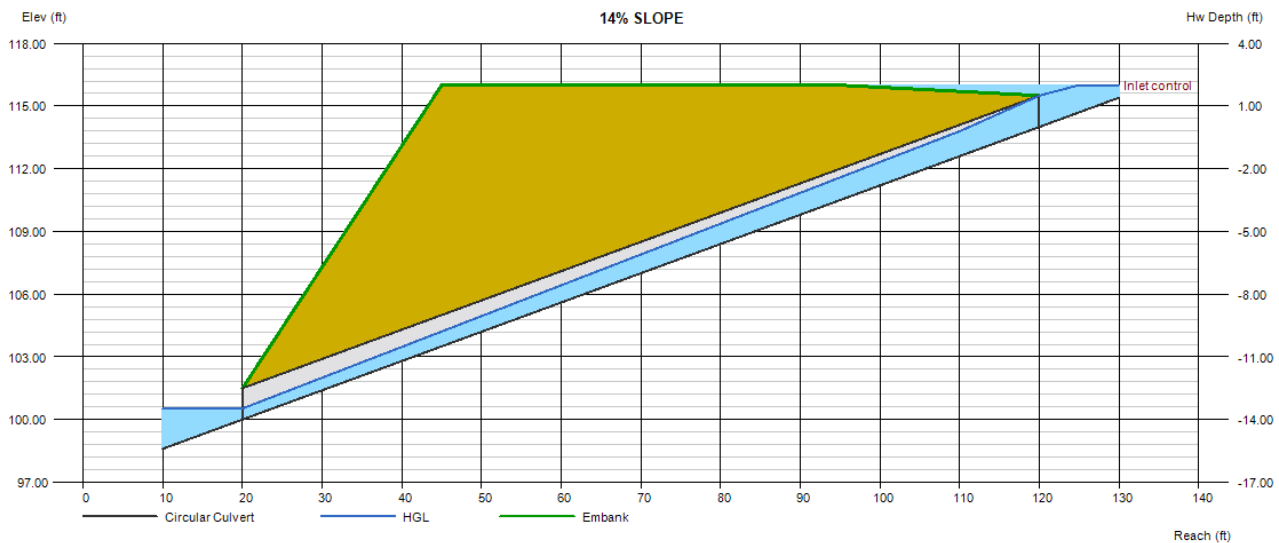
## 14% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	14.00
Invert Elev Up (ft)	=	114.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

<b>Embankment</b>	
Top Elevation (ft)	= 116.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

<b>Calculations</b>	
Qmin (cfs)	= 11.00
Qmax (cfs)	= 11.00
Tailwater Elev (ft)	= Normal

<b>Highlighted</b>	
Qtotal (cfs)	= 11.00
Qpipe (cfs)	= 11.00
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 19.81
Veloc Up (ft/s)	= 6.90
HGL Dn (ft)	= 100.53
HGL Up (ft)	= 115.27
Hw Elev (ft)	= 116.00
Hw/D (ft)	= 1.34
Flow Regime	= Inlet Control



# Culvert Report

## 15% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	15.00
Invert Elev Up (ft)	=	115.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

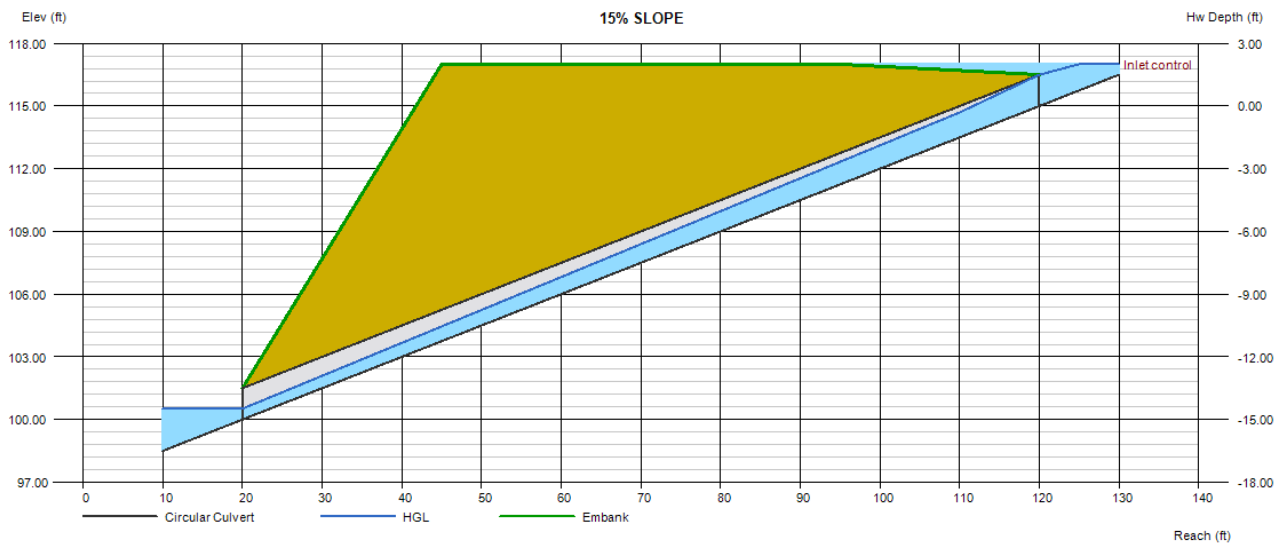
Top Elevation (ft)	=	117.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.05
Qmax (cfs)	=	11.05
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.05
Qpipe (cfs)	=	11.05
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	20.47
Veloc Up (ft/s)	=	6.92
HGL Dn (ft)	=	100.52
HGL Up (ft)	=	116.27
Hw Elev (ft)	=	117.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

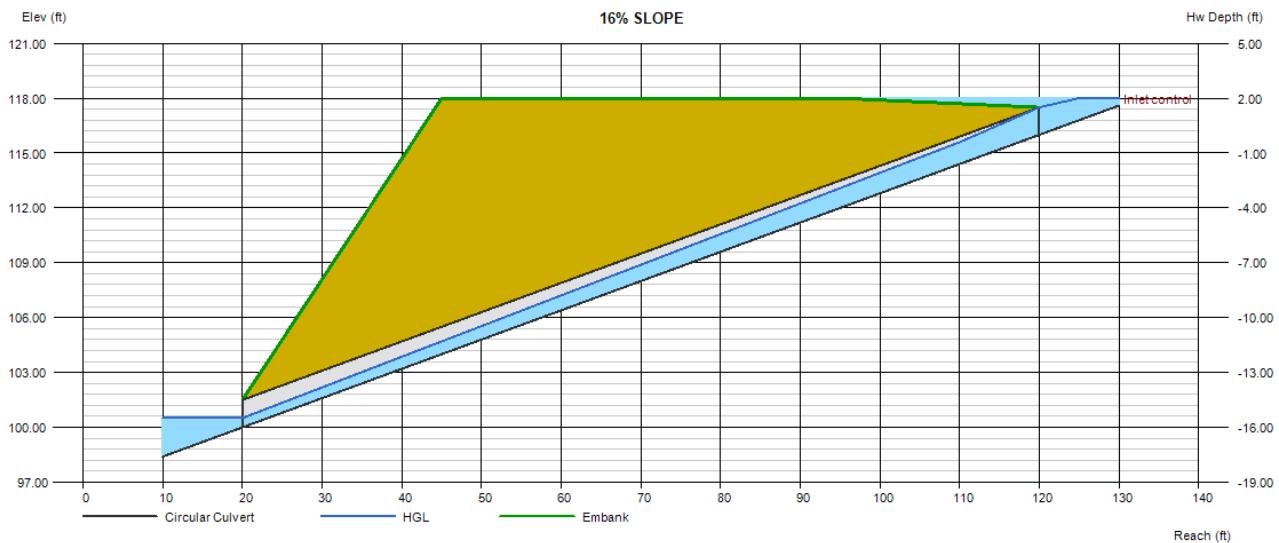
## 16% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	16.00
Invert Elev Up (ft)	=	116.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

<b>Embankment</b>	
Top Elevation (ft)	= 118.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

<b>Calculations</b>	
Qmin (cfs)	= 11.11
Qmax (cfs)	= 11.11
Tailwater Elev (ft)	= Normal

<b>Highlighted</b>	
Qtotal (cfs)	= 11.11
Qpipe (cfs)	= 11.11
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 20.97
Veloc Up (ft/s)	= 6.94
HGL Dn (ft)	= 100.51
HGL Up (ft)	= 117.27
Hw Elev (ft)	= 118.00
Hw/D (ft)	= 1.34
Flow Regime	= Inlet Control



# Culvert Report

## 17% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	17.00
Invert Elev Up (ft)	=	117.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

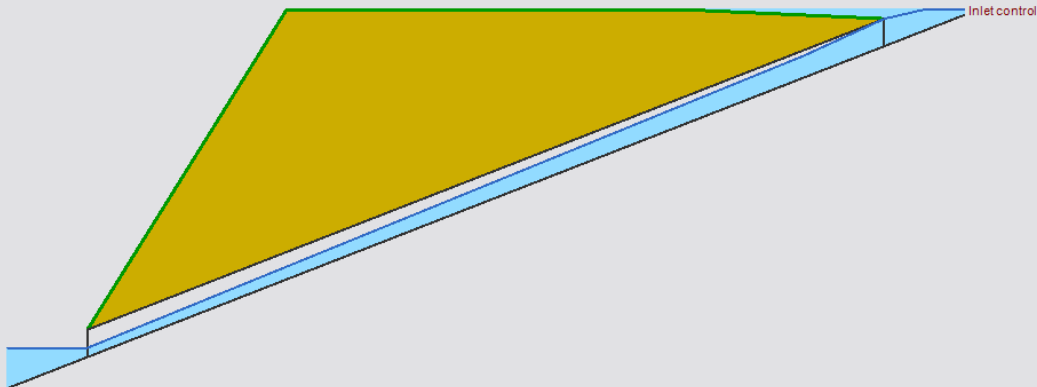
Top Elevation (ft)	=	119.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.16
Qmax (cfs)	=	11.16
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.16
Qpipe (cfs)	=	11.16
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	21.47
Veloc Up (ft/s)	=	6.96
HGL Dn (ft)	=	100.50
HGL Up (ft)	=	118.28
Hw Elev (ft)	=	119.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 18% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	18.00
Invert Elev Up (ft)	=	118.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

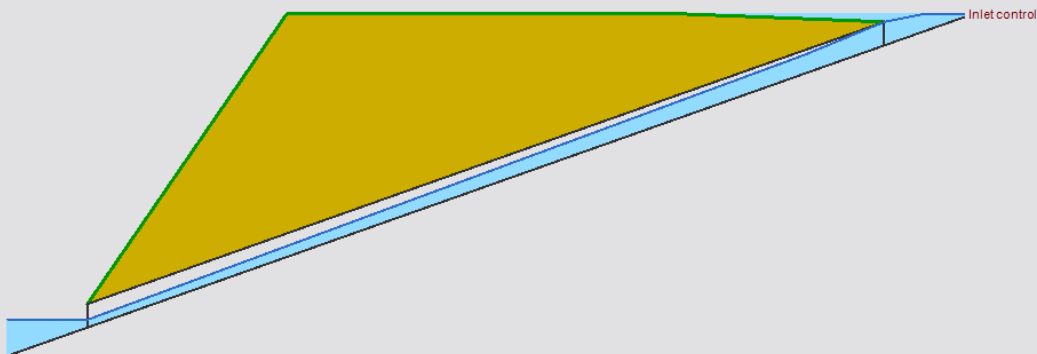
Top Elevation (ft)	=	120.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.21
Qmax (cfs)	=	11.21
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.21
Qpipe (cfs)	=	11.21
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	21.99
Veloc Up (ft/s)	=	6.98
HGL Dn (ft)	=	100.50
HGL Up (ft)	=	119.28
Hw Elev (ft)	=	120.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 19% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	19.00
Invert Elev Up (ft)	=	119.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

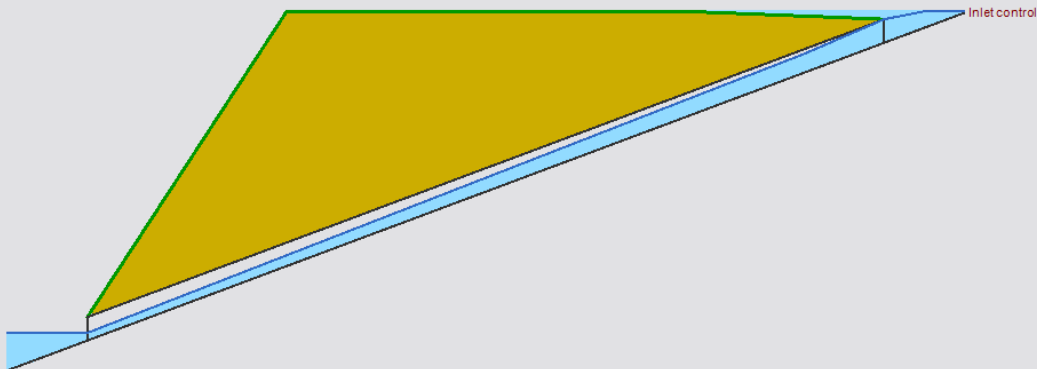
<b>Embankment</b>	
Top Elevation (ft)	= 121.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

### Calculations

Qmin (cfs)	=	11.27
Qmax (cfs)	=	11.27
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.27
Qpipe (cfs)	=	11.27
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	22.33
Veloc Up (ft/s)	=	7.01
HGL Dn (ft)	=	100.49
HGL Up (ft)	=	120.28
Hw Elev (ft)	=	121.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 20% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	20.00
Invert Elev Up (ft)	=	120.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

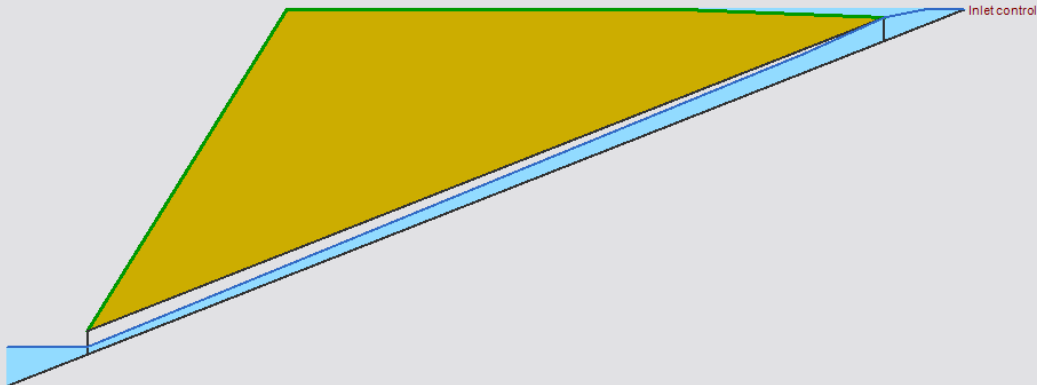
Top Elevation (ft)	=	122.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	22.84
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.49
HGL Up (ft)	=	121.28
Hw Elev (ft)	=	122.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 21% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	21.00
Invert Elev Up (ft)	=	121.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

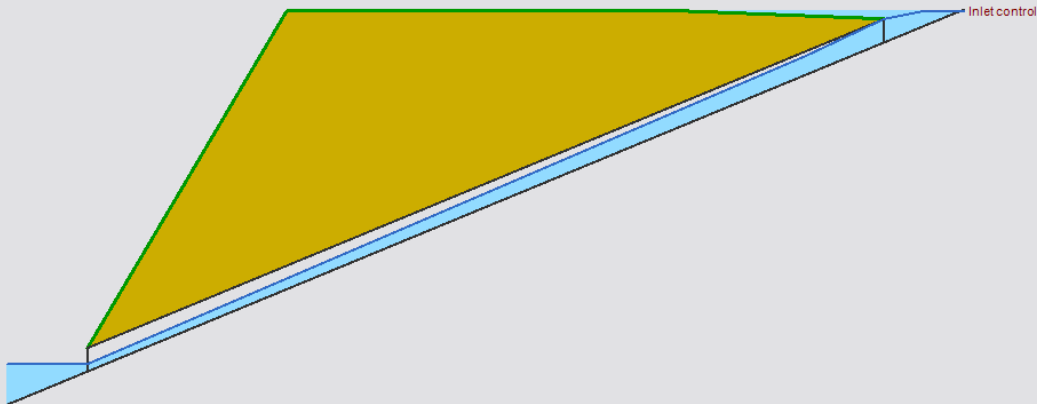
<b>Embankment</b>	
Top Elevation (ft)	= 123.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	23.30
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.48
HGL Up (ft)	=	122.28
Hw Elev (ft)	=	123.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 22% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	22.00
Invert Elev Up (ft)	=	122.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

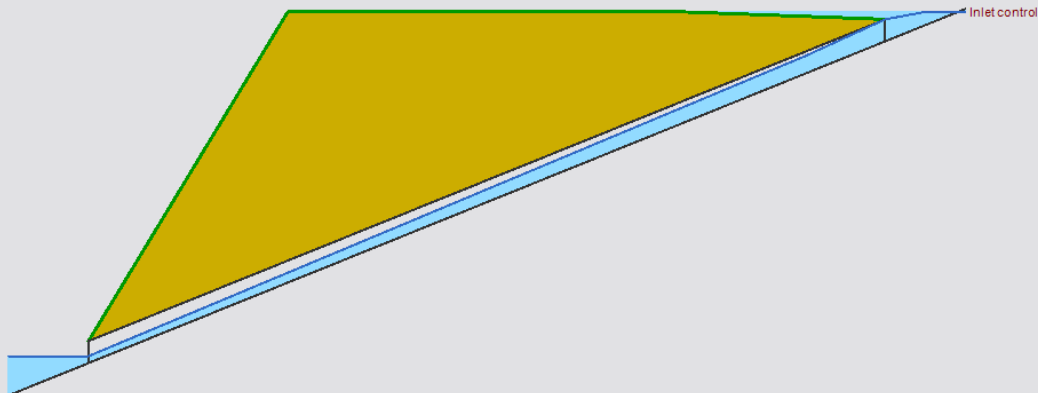
Top Elevation (ft)	=	124.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	23.53
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.47
HGL Up (ft)	=	123.28
Hw Elev (ft)	=	124.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 23% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	23.00
Invert Elev Up (ft)	=	123.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

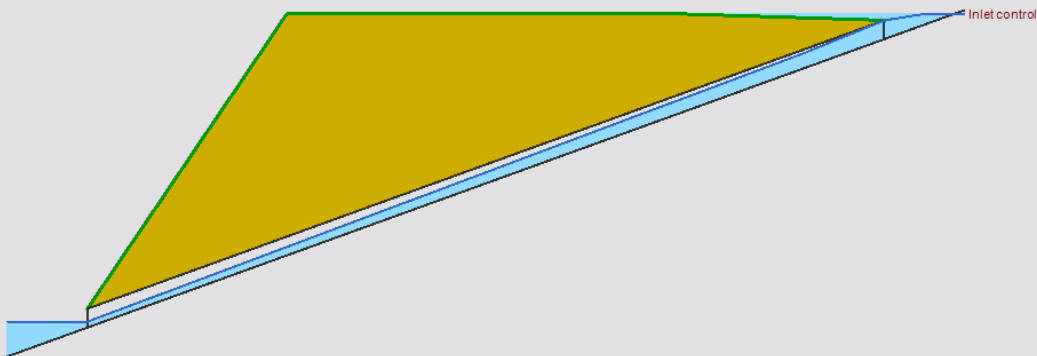
Top Elevation (ft)	=	125.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	24.02
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.47
HGL Up (ft)	=	124.28
Hw Elev (ft)	=	125.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 24% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	24.00
Invert Elev Up (ft)	=	124.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

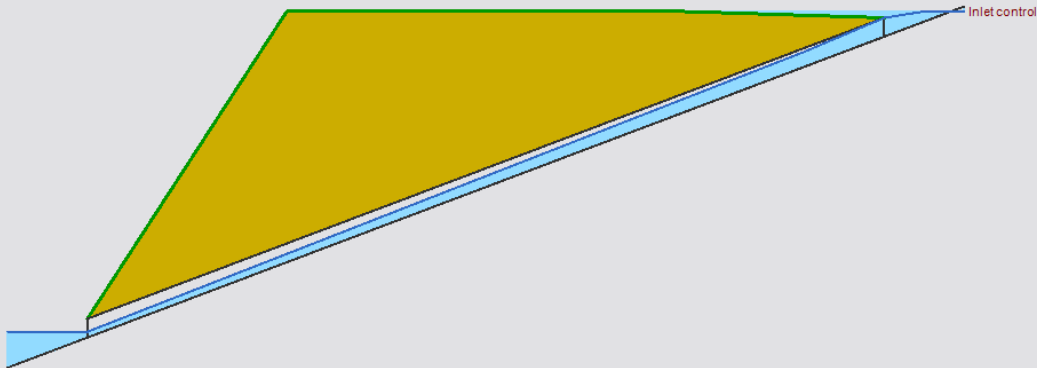
Top Elevation (ft)	=	126.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	24.52
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.46
HGL Up (ft)	=	125.28
Hw Elev (ft)	=	126.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

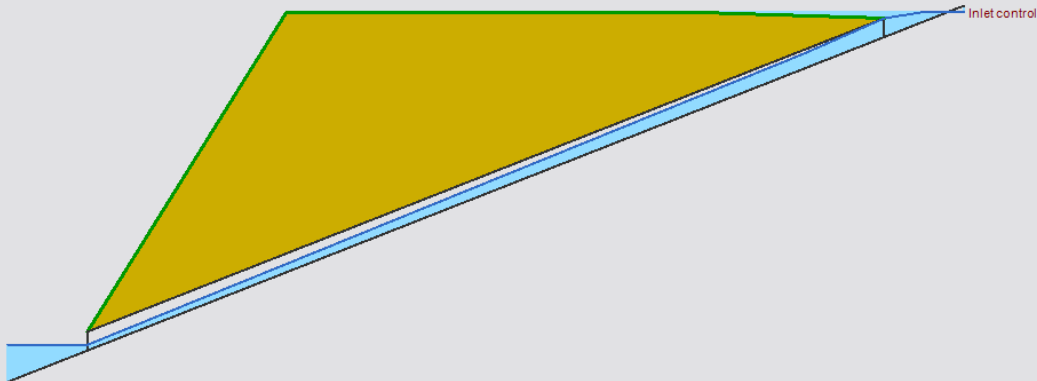
## 25% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	25.00
Invert Elev Up (ft)	=	125.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

<b>Embankment</b>	
Top Elevation (ft)	= 127.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

<b>Calculations</b>	
Qmin (cfs)	= 11.30
Qmax (cfs)	= 11.30
Tailwater Elev (ft)	= Normal

<b>Highlighted</b>	
Qtotal (cfs)	= 11.30
Qpipe (cfs)	= 11.30
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 24.78
Veloc Up (ft/s)	= 7.02
HGL Dn (ft)	= 100.46
HGL Up (ft)	= 126.28
Hw Elev (ft)	= 127.00
Hw/D (ft)	= 1.34
Flow Regime	= Inlet Control



# Culvert Report

## 26% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	26.00
Invert Elev Up (ft)	=	126.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

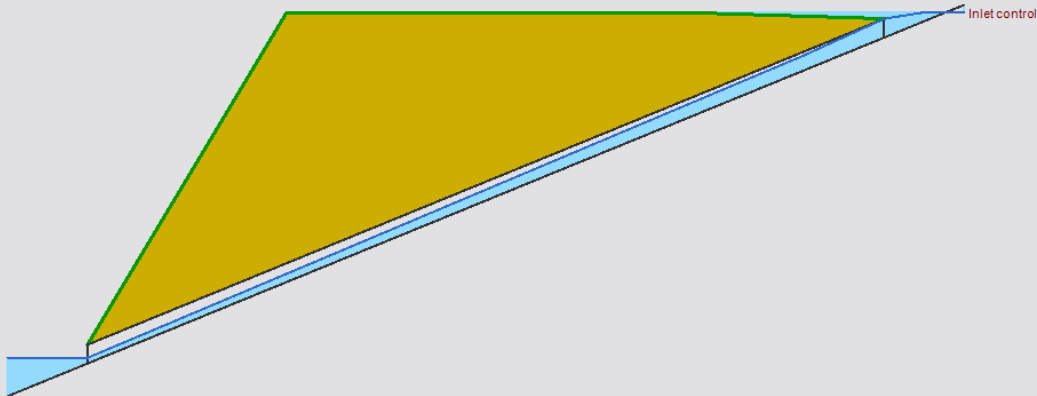
Top Elevation (ft)	=	128.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	25.04
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.45
HGL Up (ft)	=	127.28
Hw Elev (ft)	=	128.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 27% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	27.00
Invert Elev Up (ft)	=	127.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

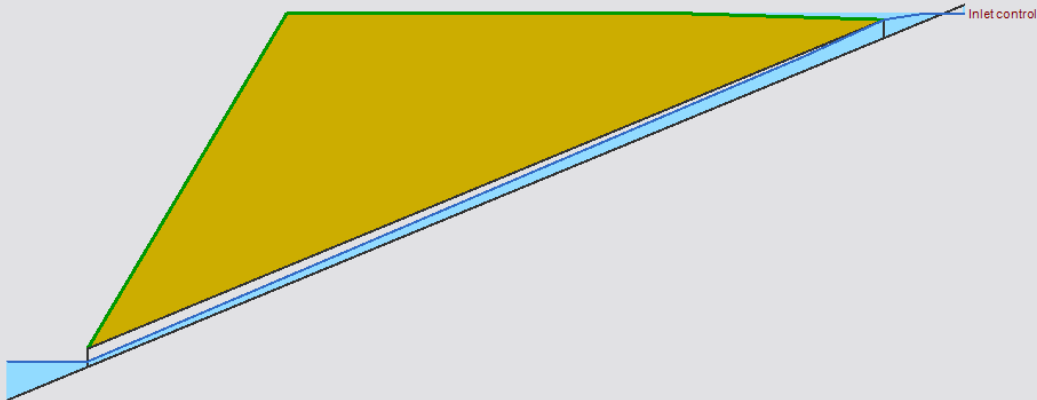
Top Elevation (ft)	=	129.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	25.57
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.45
HGL Up (ft)	=	128.28
Hw Elev (ft)	=	129.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 28% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	28.00
Invert Elev Up (ft)	=	128.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

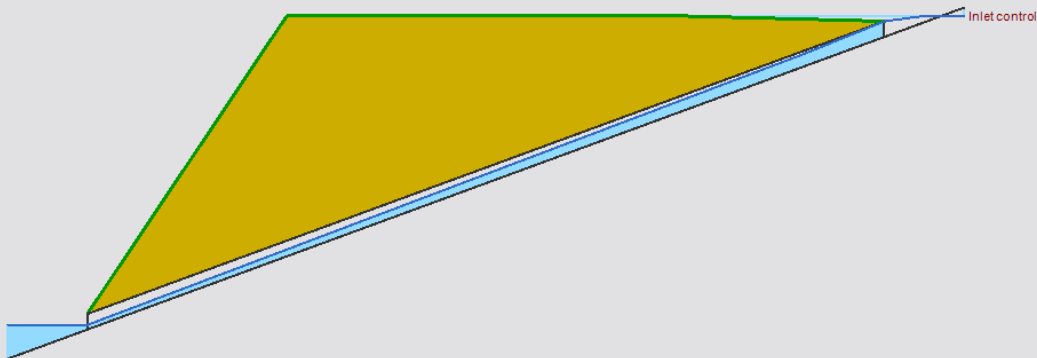
Top Elevation (ft)	=	130.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	25.85
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.44
HGL Up (ft)	=	129.28
Hw Elev (ft)	=	130.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 29% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	29.00
Invert Elev Up (ft)	=	129.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

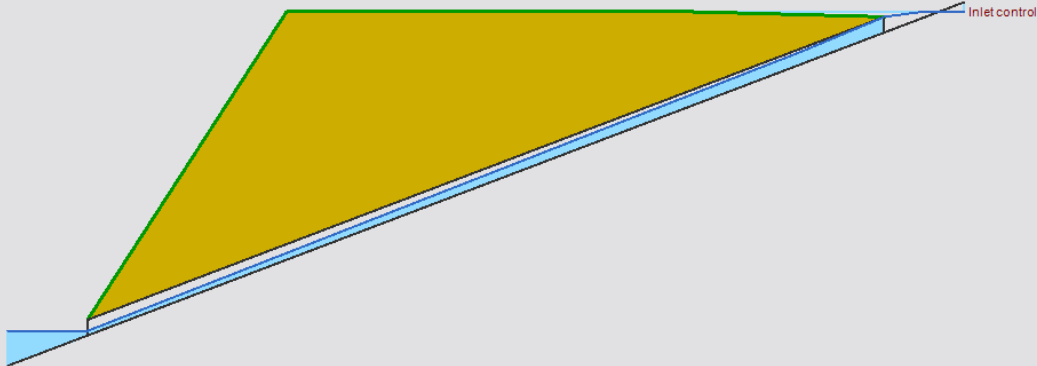
<b>Embankment</b>	
Top Elevation (ft)	= 131.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	26.13
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.44
HGL Up (ft)	=	130.28
Hw Elev (ft)	=	131.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 30% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	30.00
Invert Elev Up (ft)	=	130.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

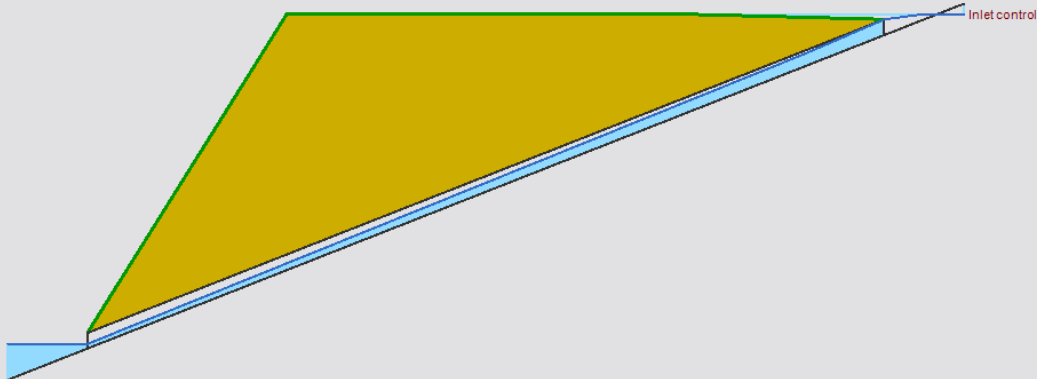
<b>Embankment</b>	
Top Elevation (ft)	= 132.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	26.41
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.44
HGL Up (ft)	=	131.28
Hw Elev (ft)	=	132.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 31% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	31.00
Invert Elev Up (ft)	=	131.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

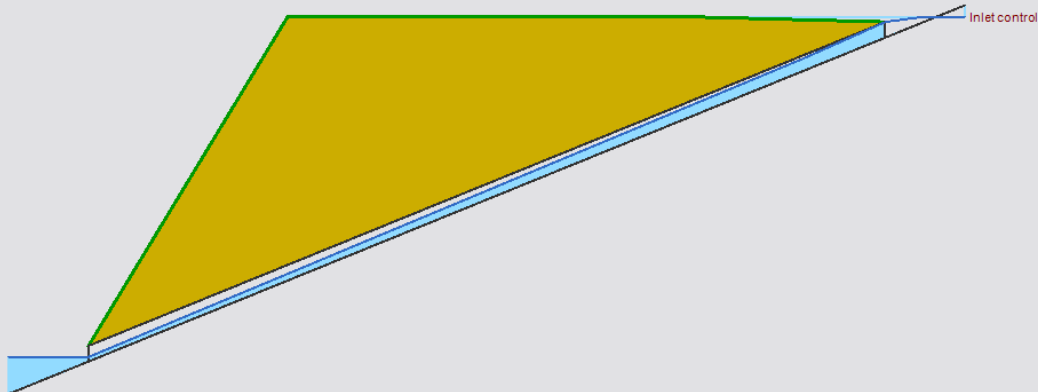
Top Elevation (ft)	=	133.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	26.70
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.43
HGL Up (ft)	=	132.28
Hw Elev (ft)	=	133.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 32% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	32.00
Invert Elev Up (ft)	=	132.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

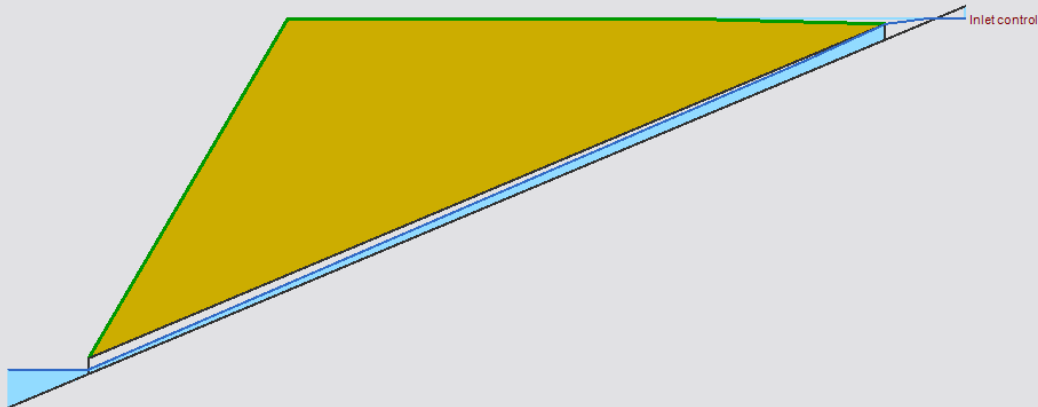
Top Elevation (ft)	=	134.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	27.00
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.43
HGL Up (ft)	=	133.28
Hw Elev (ft)	=	134.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 33% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	33.00
Invert Elev Up (ft)	=	133.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

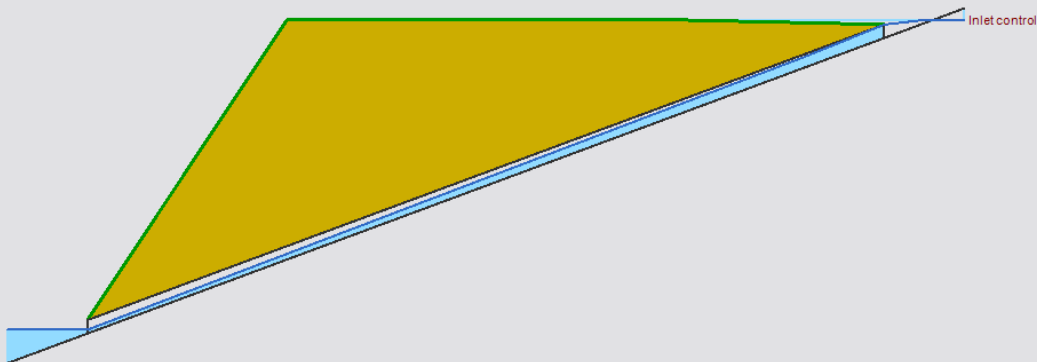
<b>Embankment</b>	
Top Elevation (ft)	= 135.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	27.30
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.43
HGL Up (ft)	=	134.28
Hw Elev (ft)	=	135.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 34% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	34.00
Invert Elev Up (ft)	=	134.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

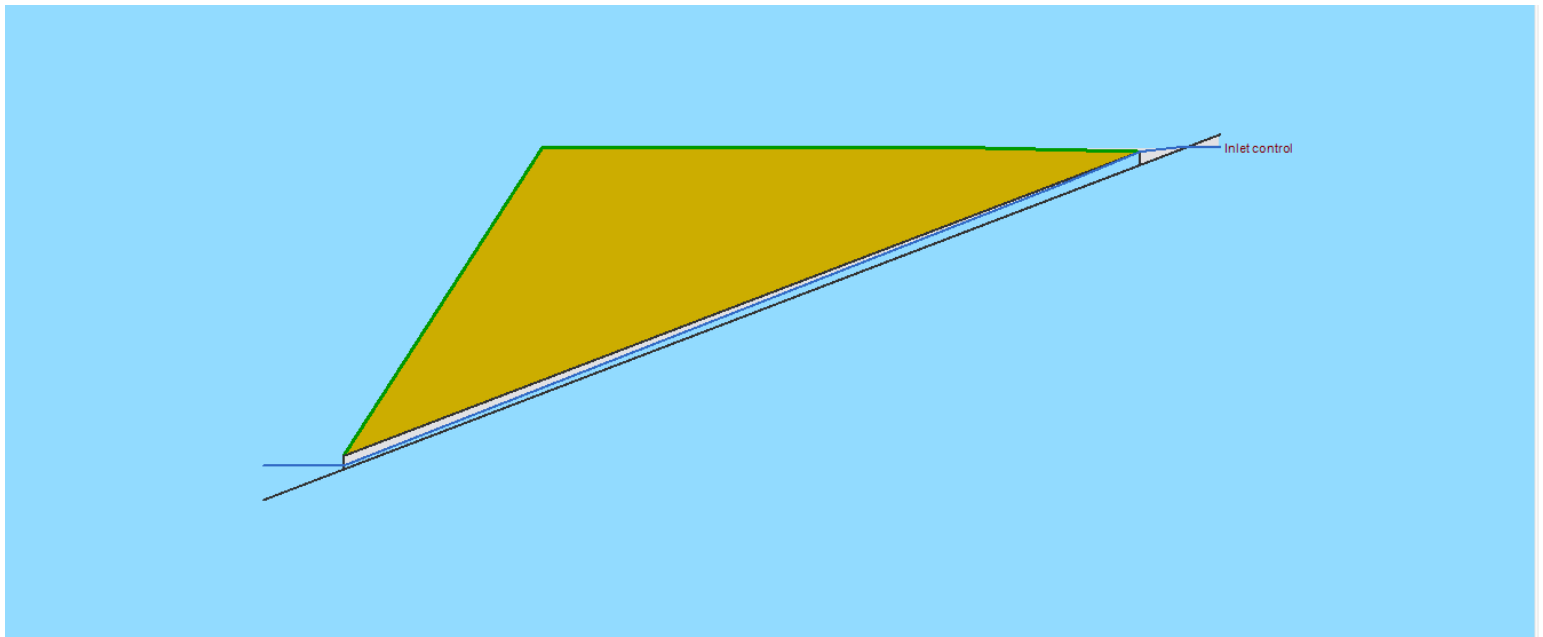
Top Elevation (ft)	=	136.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	27.60
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.42
HGL Up (ft)	=	135.28
Hw Elev (ft)	=	136.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 35% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	35.00
Invert Elev Up (ft)	=	135.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

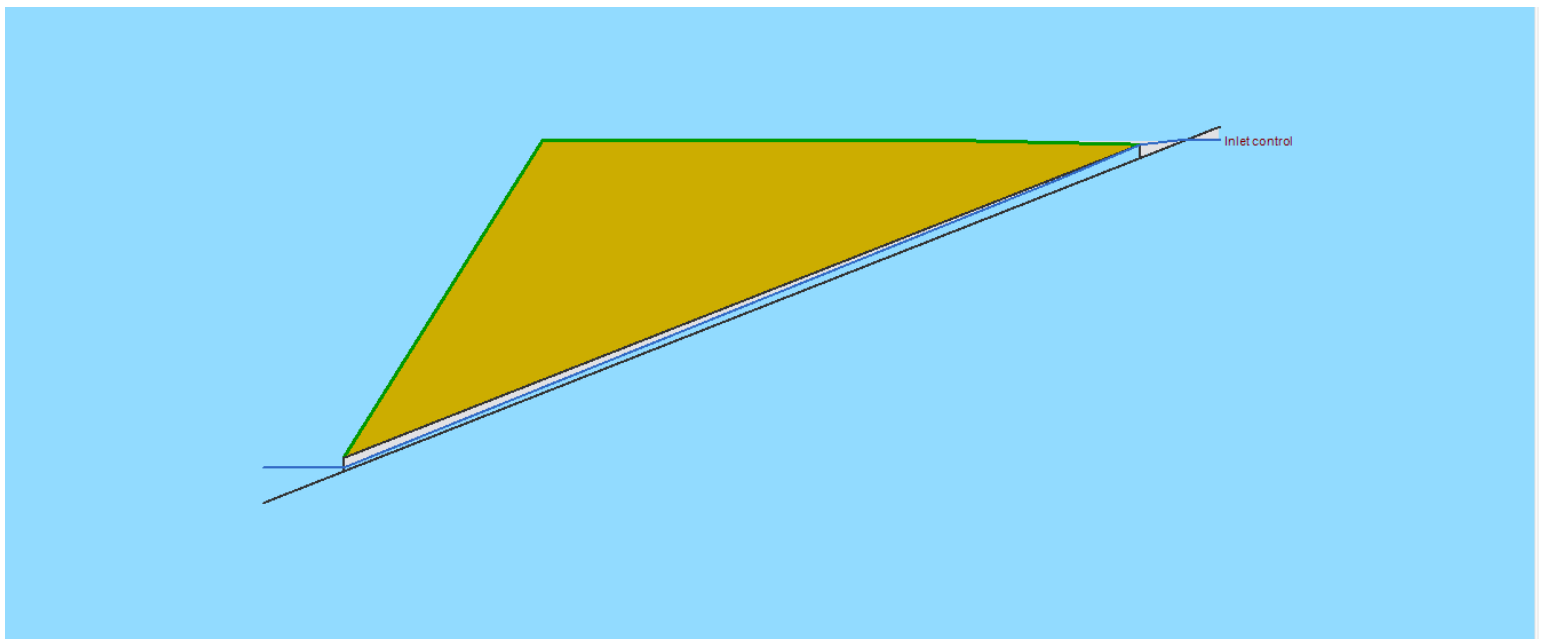
Top Elevation (ft)	=	137.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	27.91
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.42
HGL Up (ft)	=	136.28
Hw Elev (ft)	=	137.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 36% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	36.00
Invert Elev Up (ft)	=	136.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

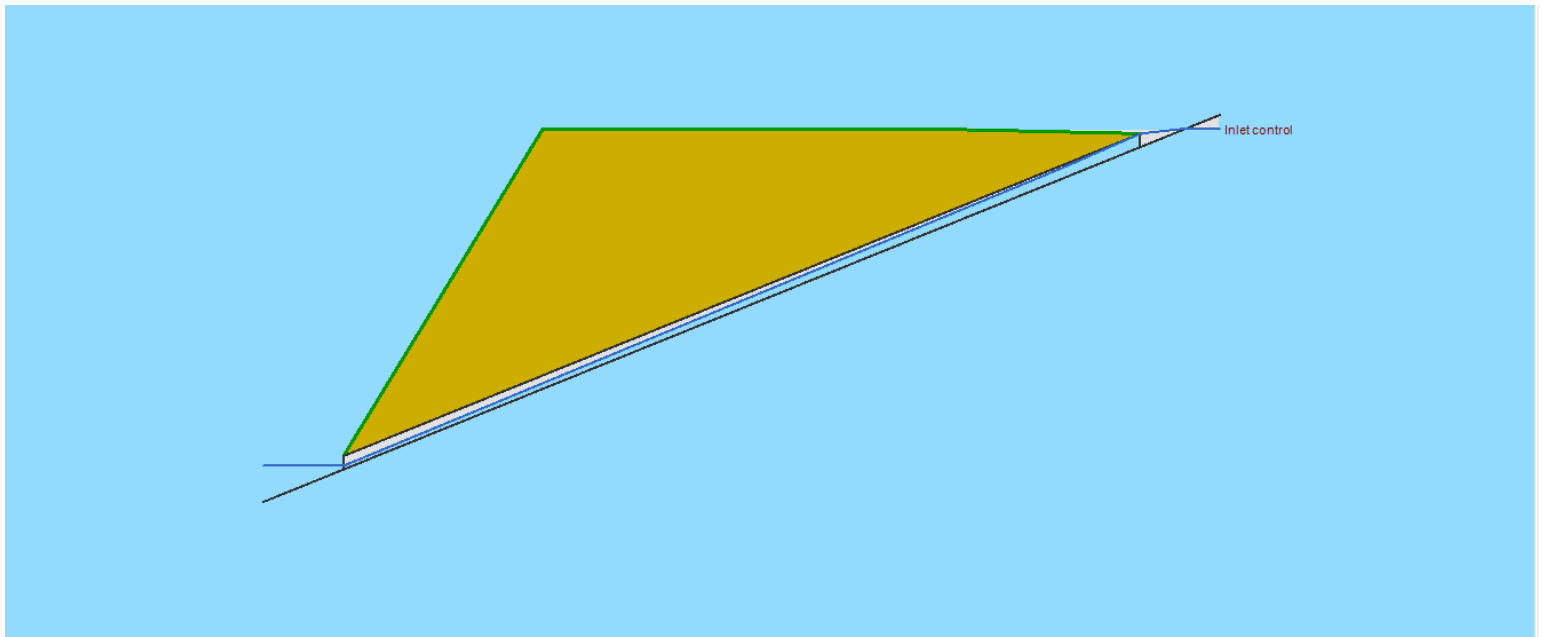
Top Elevation (ft)	=	138.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	28.23
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.42
HGL Up (ft)	=	137.28
Hw Elev (ft)	=	138.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 37% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	37.00
Invert Elev Up (ft)	=	137.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

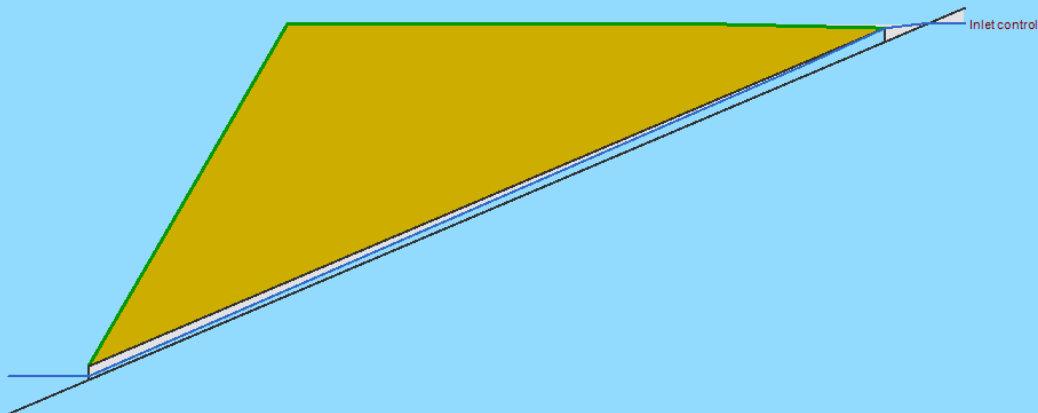
<b>Embankment</b>	
Top Elevation (ft)	= 139.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	28.55
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.41
HGL Up (ft)	=	138.28
Hw Elev (ft)	=	139.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 38% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	38.00
Invert Elev Up (ft)	=	138.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

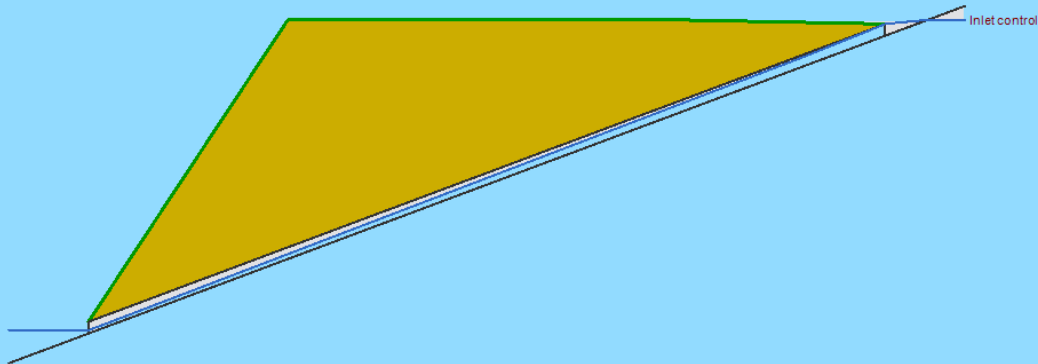
Top Elevation (ft)	=	140.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	28.87
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.41
HGL Up (ft)	=	139.28
Hw Elev (ft)	=	140.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 39% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	39.00
Invert Elev Up (ft)	=	139.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

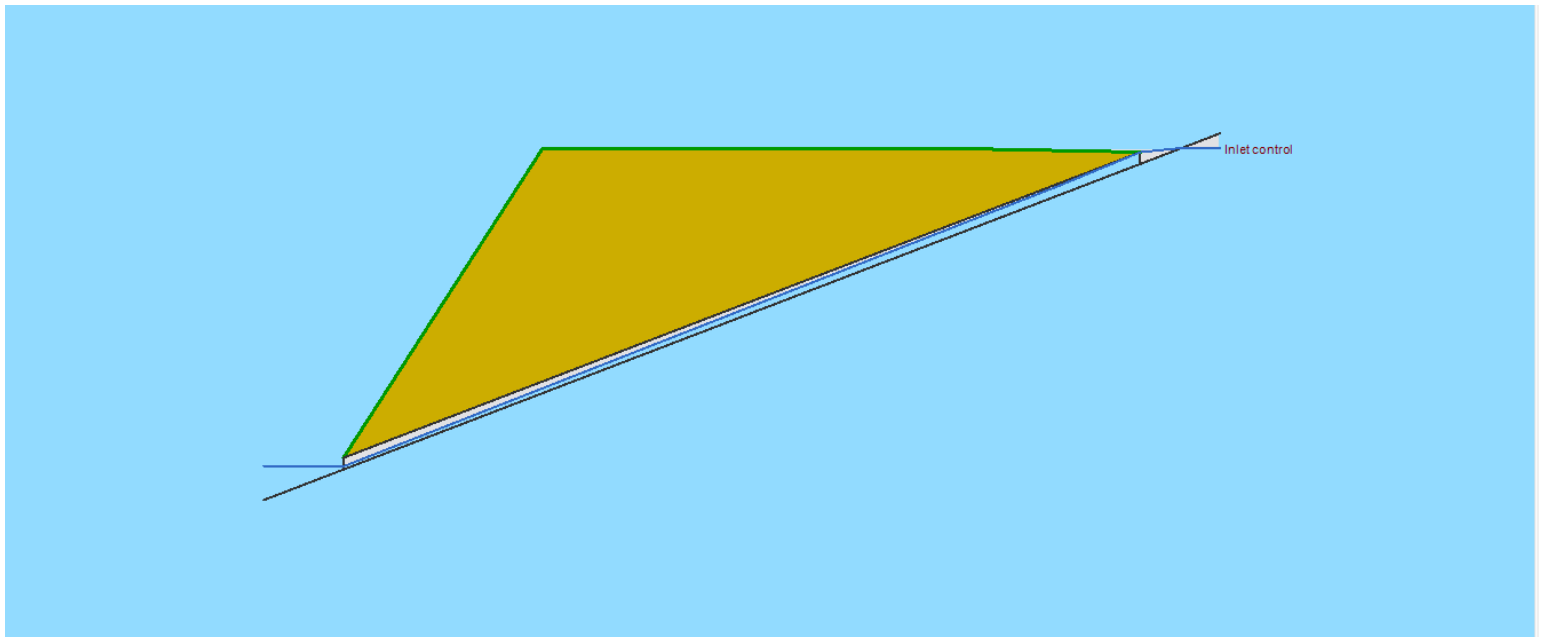
<b>Embankment</b>	
Top Elevation (ft)	= 141.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	29.21
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.41
HGL Up (ft)	=	140.28
Hw Elev (ft)	=	141.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 40% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	40.00
Invert Elev Up (ft)	=	140.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

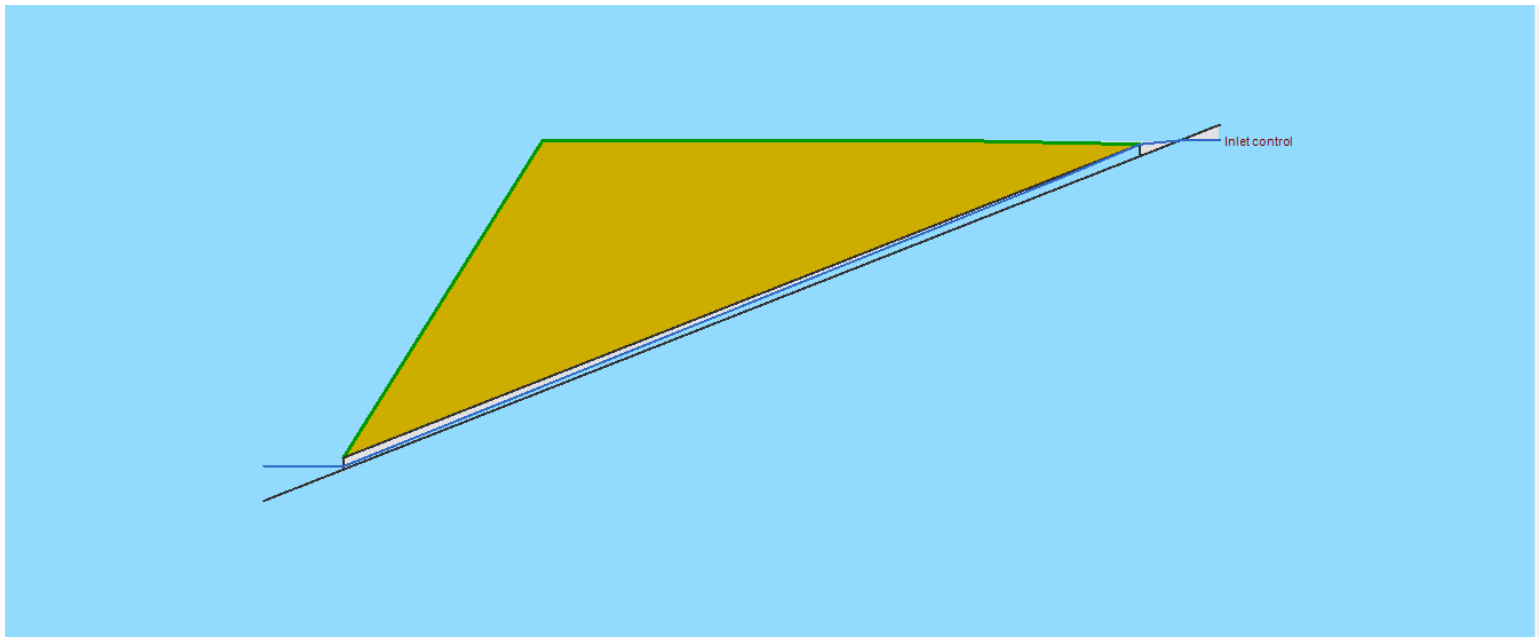
Top Elevation (ft)	=	142.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	29.21
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.41
HGL Up (ft)	=	141.28
Hw Elev (ft)	=	142.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 41% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	41.00
Invert Elev Up (ft)	=	141.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

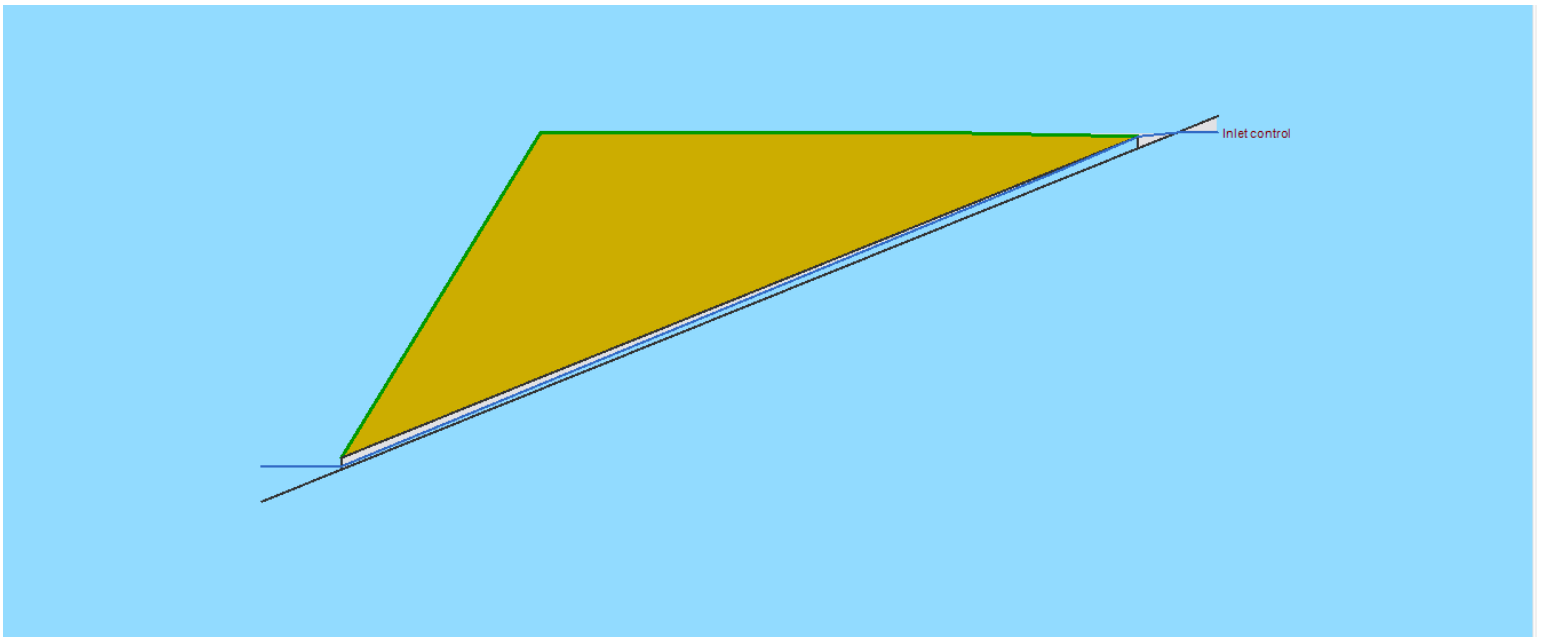
Top Elevation (ft)	=	143.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	29.54
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.40
HGL Up (ft)	=	142.28
Hw Elev (ft)	=	143.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 42% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	42.00
Invert Elev Up (ft)	=	142.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

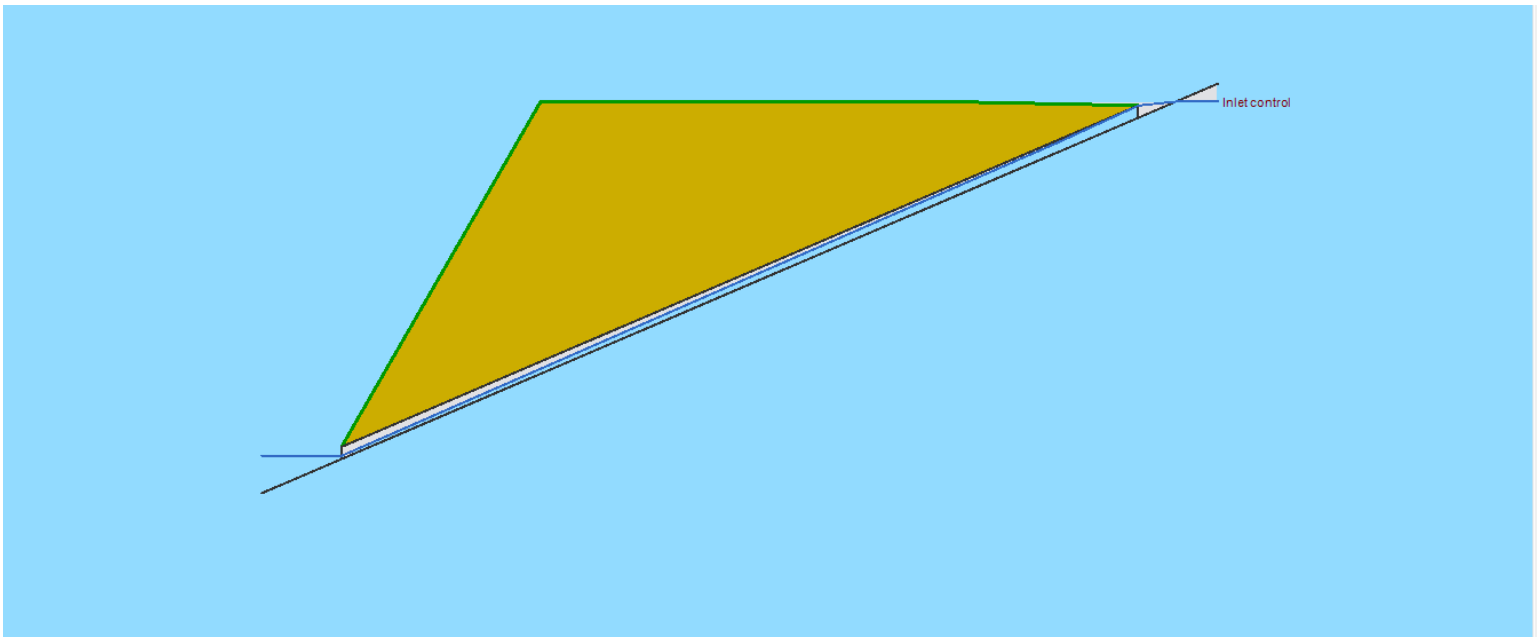
Top Elevation (ft)	=	144.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	29.89
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.40
HGL Up (ft)	=	143.28
Hw Elev (ft)	=	144.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 43% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	43.00
Invert Elev Up (ft)	=	143.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

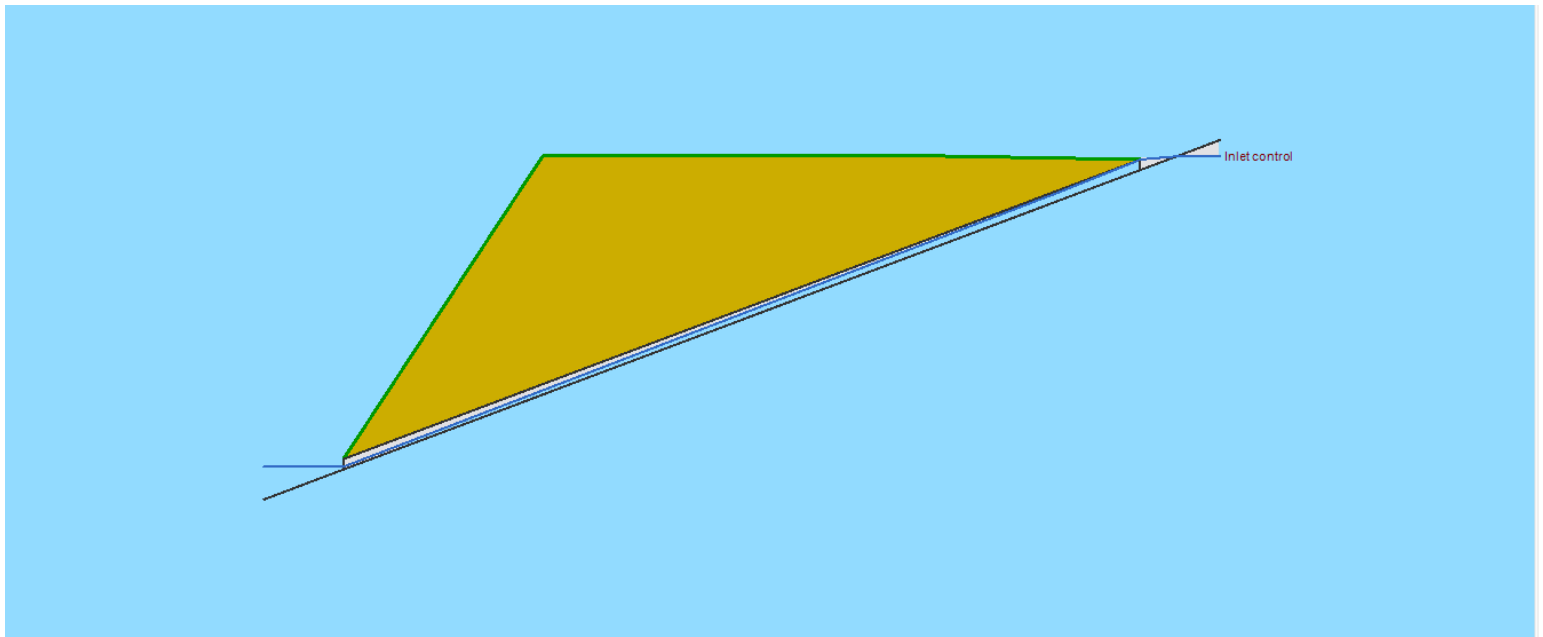
Top Elevation (ft)	=	145.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	30.24
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.40
HGL Up (ft)	=	144.28
Hw Elev (ft)	=	145.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 44% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	44.00
Invert Elev Up (ft)	=	144.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

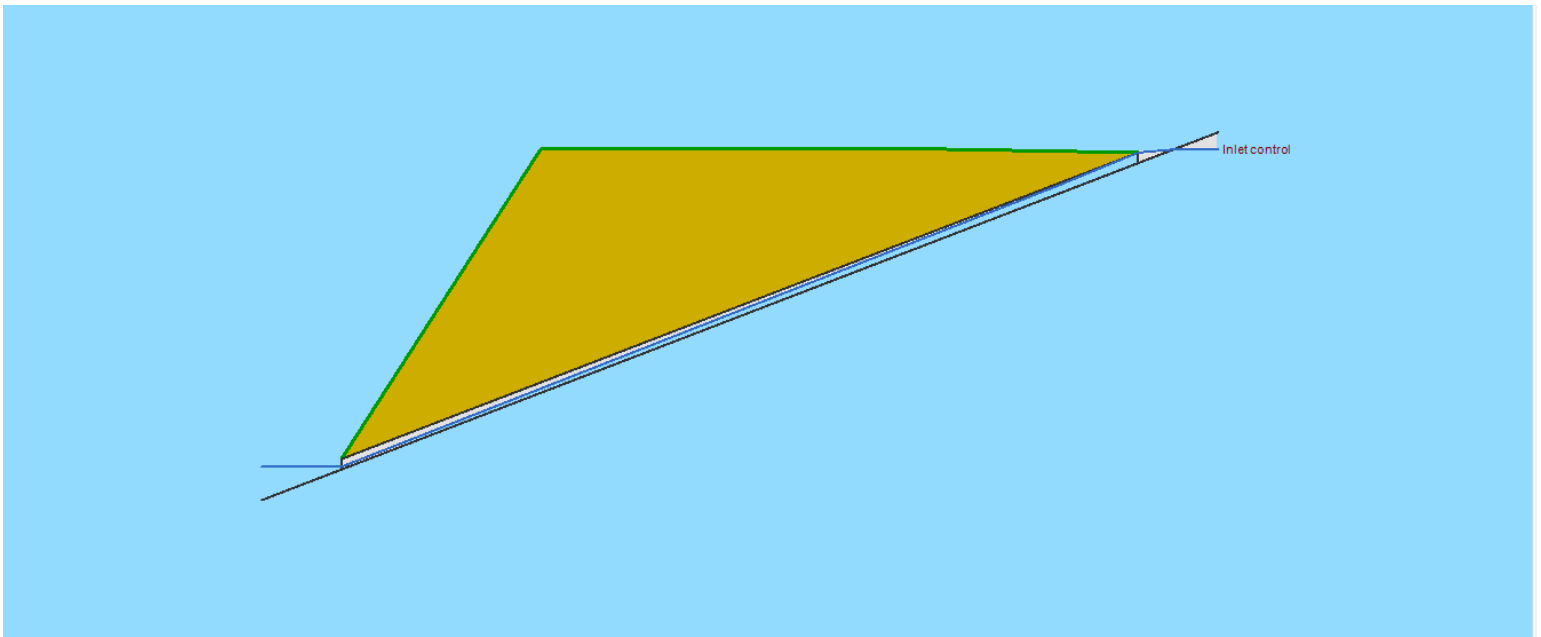
Top Elevation (ft)	=	146.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	30.24
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.40
HGL Up (ft)	=	145.28
Hw Elev (ft)	=	146.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 45% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	45.00
Invert Elev Up (ft)	=	145.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

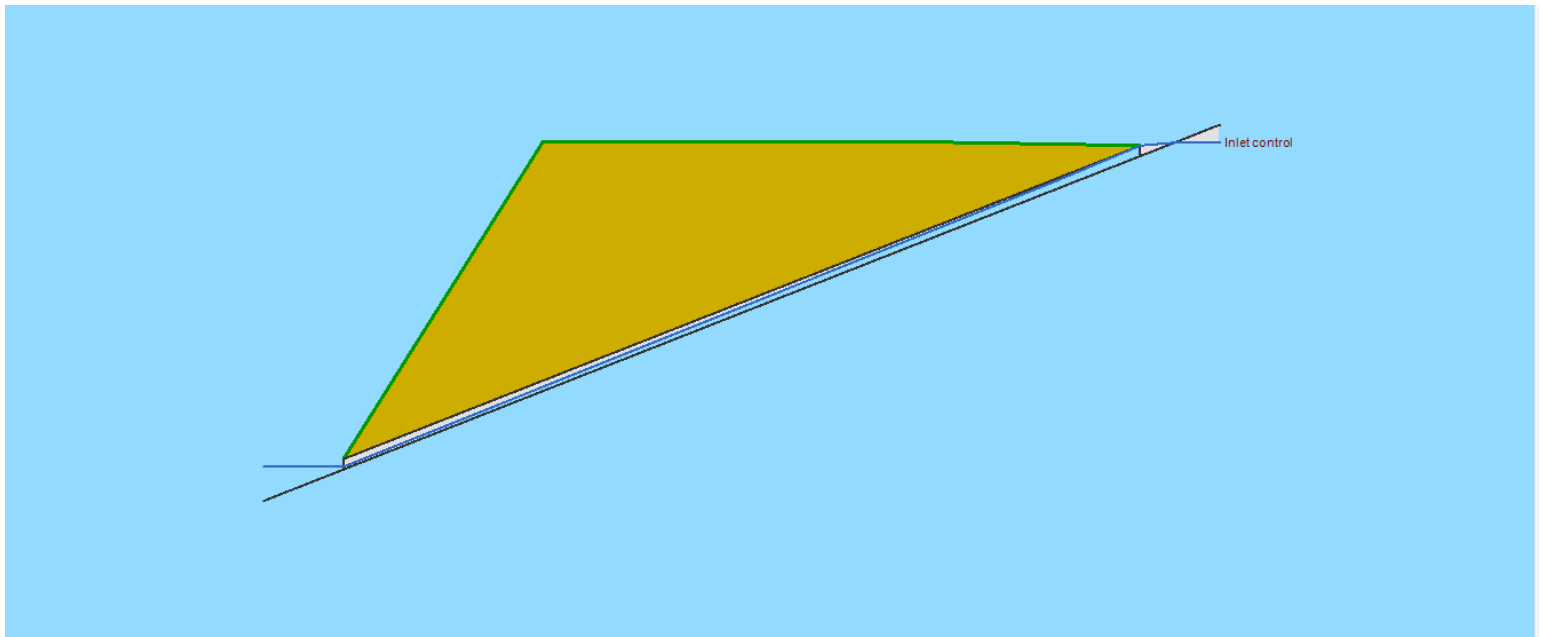
Top Elevation (ft)	=	147.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	30.60
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.39
HGL Up (ft)	=	146.28
Hw Elev (ft)	=	147.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 46% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	46.00
Invert Elev Up (ft)	=	146.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

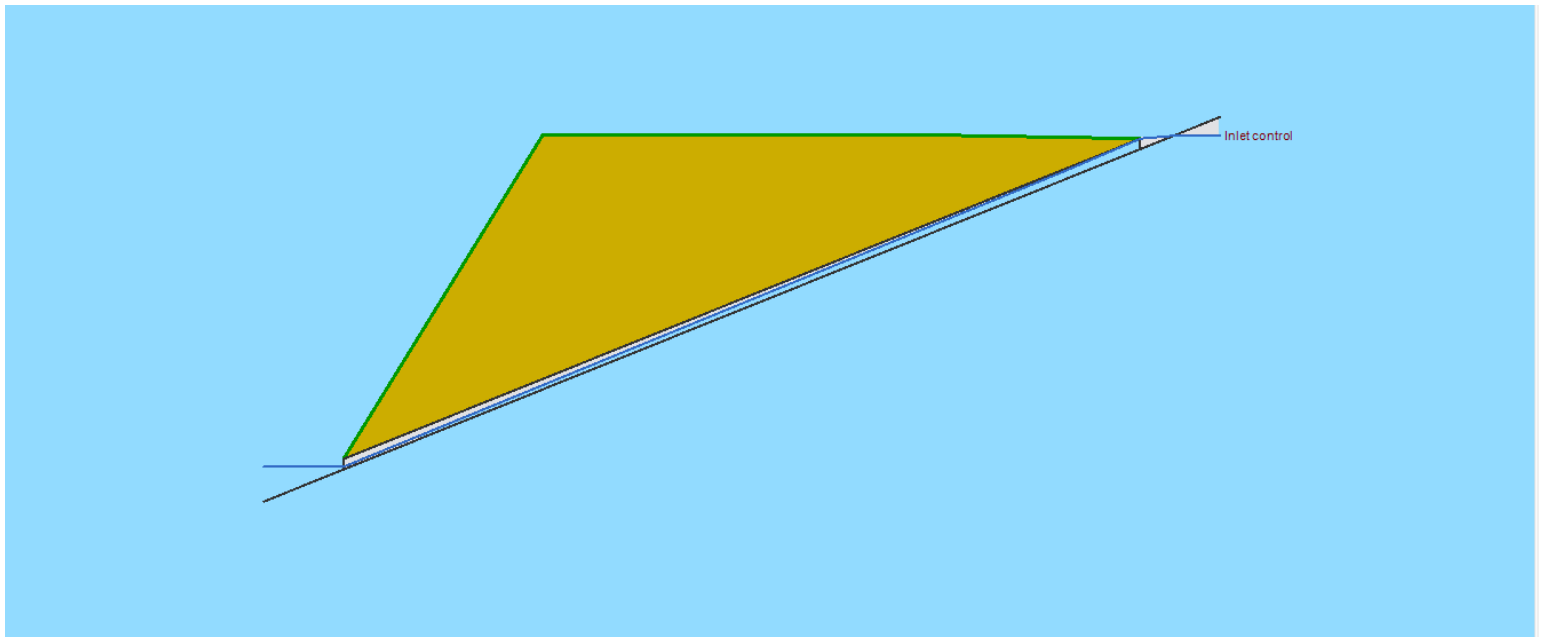
Top Elevation (ft)	=	148.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	30.96
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.39
HGL Up (ft)	=	147.28
Hw Elev (ft)	=	148.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 47% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	47.00
Invert Elev Up (ft)	=	147.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

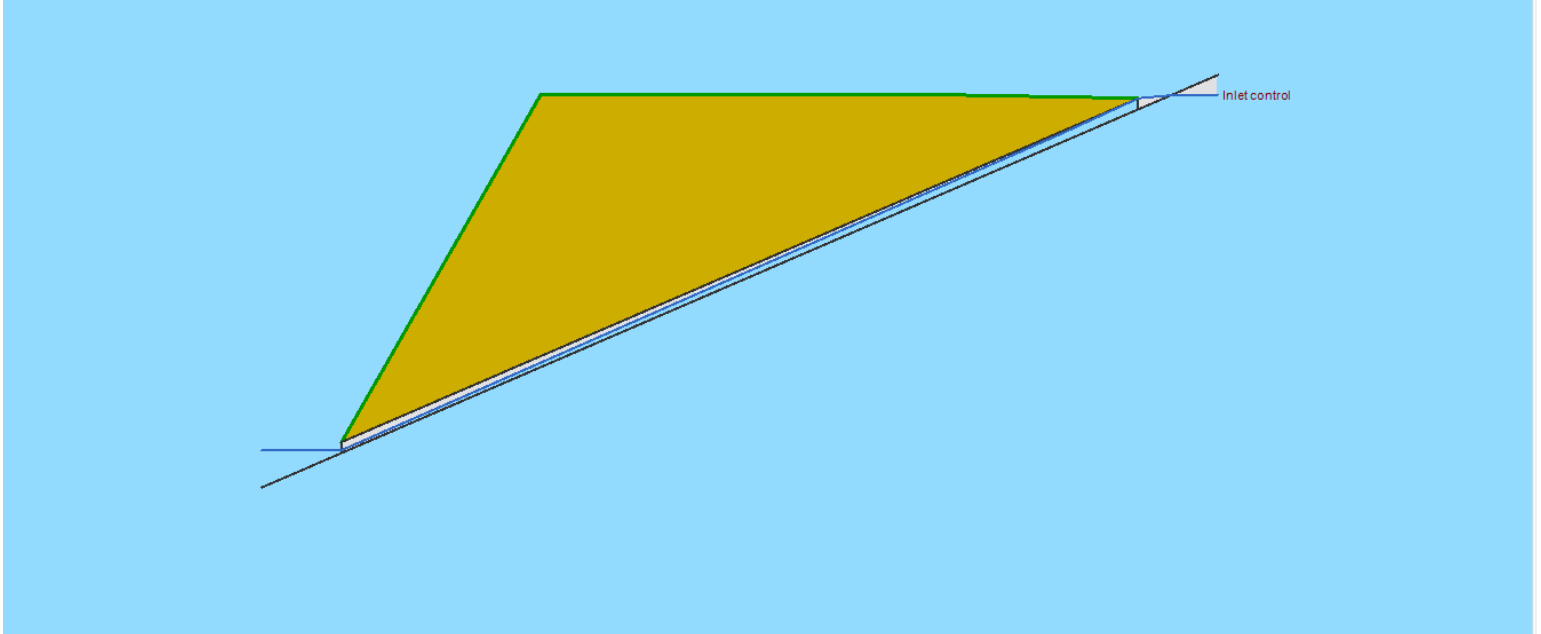
Top Elevation (ft)	=	149.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	30.96
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.39
HGL Up (ft)	=	148.28
Hw Elev (ft)	=	149.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

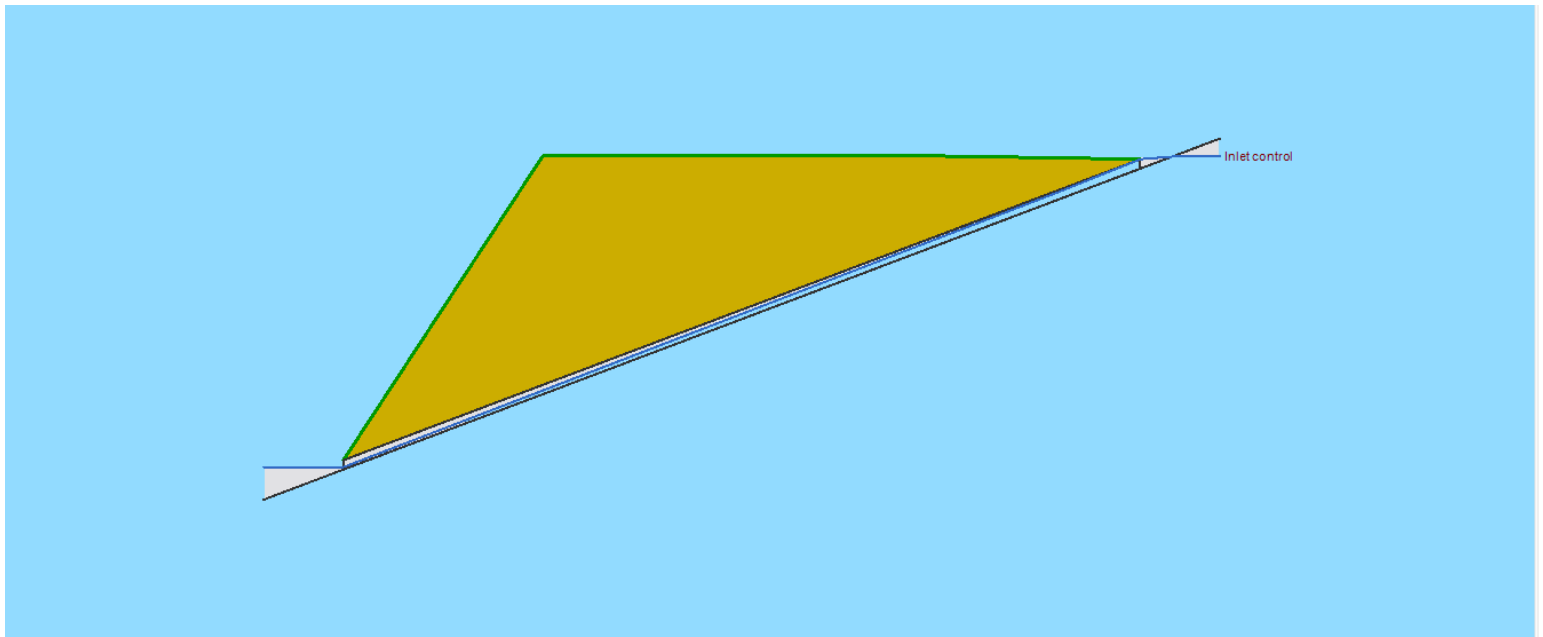
## 48% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	48.00
Invert Elev Up (ft)	=	148.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

<b>Embankment</b>	
Top Elevation (ft)	= 150.00
Top Width (ft)	= 50.00
Crest Width (ft)	= 50.00

<b>Calculations</b>	
Qmin (cfs)	= 11.30
Qmax (cfs)	= 11.30
Tailwater Elev (ft)	= Normal

<b>Highlighted</b>	
Qtotal (cfs)	= 11.30
Qpipe (cfs)	= 11.30
Qovertop (cfs)	= 0.00
Veloc Dn (ft/s)	= 31.33
Veloc Up (ft/s)	= 7.02
HGL Dn (ft)	= 100.39
HGL Up (ft)	= 149.28
Hw Elev (ft)	= 150.00
Hw/D (ft)	= 1.34
Flow Regime	= Inlet Control



# Culvert Report

## 49% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	49.00
Invert Elev Up (ft)	=	149.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

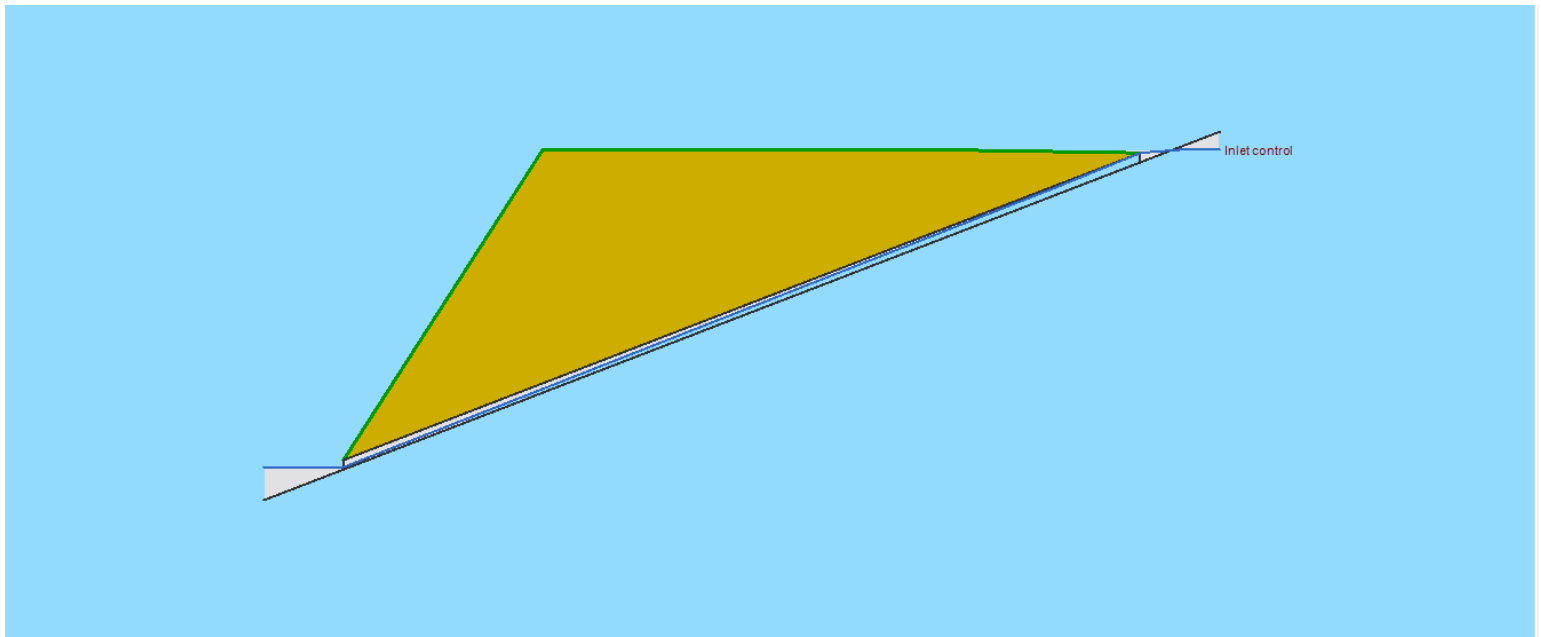
Top Elevation (ft)	=	151.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	31.71
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.38
HGL Up (ft)	=	150.28
Hw Elev (ft)	=	151.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control



# Culvert Report

## 50% SLOPE

Invert Elev Dn (ft)	=	100.00
Pipe Length (ft)	=	100.00
Slope (%)	=	50.00
Invert Elev Up (ft)	=	150.00
Rise (in)	=	18.0
Shape	=	Circular
Span (in)	=	18.0
No. Barrels	=	1
n-Value	=	0.012
Culvert Type	=	Circular Culvert
Culvert Entrance	=	Smooth tapered inlet throat
Coeff. K,M,c,Y,k	=	0.534, 0.555, 0.0196, 0.9, 0.2

### Embankment

Top Elevation (ft)	=	152.00
Top Width (ft)	=	50.00
Crest Width (ft)	=	50.00

### Calculations

Qmin (cfs)	=	11.30
Qmax (cfs)	=	11.30
Tailwater Elev (ft)	=	Normal

### Highlighted

Qtotal (cfs)	=	11.30
Qpipe (cfs)	=	11.30
Qovertop (cfs)	=	0.00
Veloc Dn (ft/s)	=	31.71
Veloc Up (ft/s)	=	7.02
HGL Dn (ft)	=	100.38
HGL Up (ft)	=	151.28
Hw Elev (ft)	=	152.00
Hw/D (ft)	=	1.34
Flow Regime	=	Inlet Control

