PREPARED BY:

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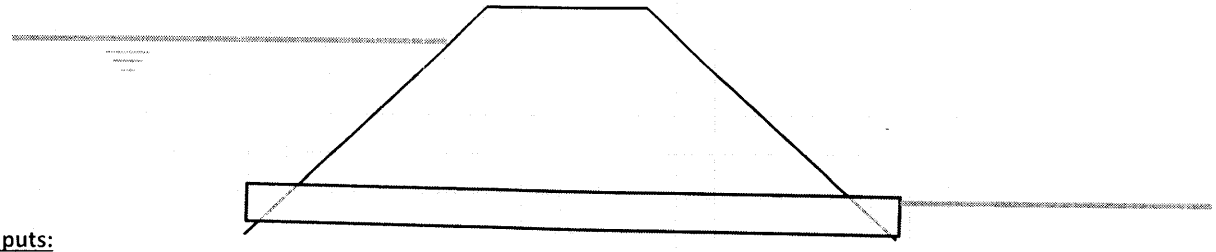
Project: GAY HILL ROAD - MONTVILLE CT
LOT 7 CROSS CULVERT CAPACITY

Calc By: J.J.L Date: 9/26/22

Chk'd By: _____ Date: _____

Scale: NTS. Sheet: 1 of 1



Inputs:

Headwater (Upstream Water Surface) Elevation:	352.50	Feet
Culvert Inlet Invert Elevation:	350.00	Feet
Culvert Diameter:	18.00	Inches
Length of Culvert:	70.00	Feet
Culvert Outlet Invert Elevation:	348.00	Feet
Tailwater (Downstream) Elevation:	347.00	Feet

Select Culvert Material:	Smooth_HDPE
Select Culvert Inlet Type:	Headwall - Square Edge

Outputs:

CAPACITY = 10.9 cfs

INLET CONTROLS (Submerged Equation)

Manning's n value:	0.012	Smooth_HDPE
Entrance Coefficient, Ke:	0.5	Headwall - Square Edge

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Project: GAY HILL ROAD - MONTVILLE CT
LEVEL SPREADER CALCULATION
Calc By: J.J.L Date: 9/24/22
Chk'd By: _____ Date: _____
Scale: NTS Sheet: 1 of 1

NOTES:
1. FIRST 10 FT DOWNSLOPE HAS TO BE LESS THAN OR EQUAL TO 4%
2. MAXIMUM DOWNSLOPE SLOPE IS 6%
3. MAXIMUM FLOW LENGTH IS 100FT
4. MINIMUM STRUCTURE LENGTH IS 10FT, MAX IS 200FT
5. LENGTH IS DEPENDENT ON FLOW AND DOWNSTREAM GROUND COVER (13FT -100FT / CFS)
6. ALLOWABLE DOWNSTREAM VELOCITY
   GRAVEL 5FPS
   GRASS 4FPS
   MULCH 1-2FPS
7. DESIGN DOWNSTREAM VELOCITY =33% OF ALLOWABLE
   GRAVEL 1.65FPS
   GRASS 1.32FPS
   MULCH 0.33-0.66FPS
8. FLOW TO LEVEL SPREADER SHOULD PASS THROUGH A DROP MANHOLD BEFORE ENTERING THE PIPE TO THE LEVEL SPREADER. THE PIPE ENTERING THE LEVEL SPREADER MUST BE LESS THAN OR EQUAL TO 1.0%

$L = Q / (X \cdot V)$

Where X = "Equivalent" Water Height over Level Spreader - 1" = 0.09'
V = 1.33 for grass and thicket, 0.67 for mulch, and 1.5 for gravel

MAX Q FROM 8" OUTLET PIPE @ BASIN 2 = 6.27 CFS

$L = 6.27 \text{ CFS} / (0.09' \cdot 1.33^{ft}/_{s})$

$L = 6.27 \, ft^3/s \, / \, 0.119 \, ft^2/s$

L = 53' FOR LEVEL SPREADER