

SITE DATA

County GUILFORD SR 3426 Bridge Over: POLECAT CREEK TRI. NO. 1 (STREAM NO. 43)
Drainage Area 1.7 SQ. MI. (1100ac) QUAD MAP (PLESANT GARDEN) Source Character URBANWOODED
River Basin CAPE FEAR
Stream Classification (Such as Trout, High Quality Water, etc.) C
Proposed Structure 15'-4" x 10'-0" CASPPA w/HW/EW & SILLS (BURIED 1' @ INLET) Sta. 13+15 Skew 119 degrees
Existing Structure 2 @ 84" CMP w/HW
Existing Structures Up and Down Stream UPSTREAM : P-614 (SR 3430) 2- LINES OF 117"x79" CMPA
DOWNSTREAM: Brg#25 (SR 3430) STEEL PLANK DECK ON I-BEAMS
(SPAN: 1@35'5", 1@35'9")

Historical Flood Information:
Date Elev. Est. Freq. Source
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Channel Slope 0.01 Source Field Survey Normal Water Surface Elev. 752.8'
Manning's n : Left 0.8, 0.12 Channel 0.06 Right 0.8, 0.12 Source FIS
Flood Study / Status REDELINEATED POLECAT CREEK TRIB 1 STREAM 43 Floodway Established? YES

CULVERT DESIGN DATA

Hydrological Method USGS URBAN REGRESSION (2014-5030)
Hydraulic Design Method HDS-5

Size & Type	0	Ke	Inlet Control		Outlet Control							Remarks
			HW/D	H.W.	dc	$\frac{dc+0}{2}$	h ₀	H	LS ₀	H.W.	H.W. ELEV.	
2@84" CMP Q25	940	0.5	1.5	11.2	5.8	6.4		5.3	0.01	11.7	763.8	OUTLET CONTROL
" " FEMA Q100	1680	0.5	3.4	22.9	6.8	6.9		14.9	0.01	21.8	775.0	INLET CONTROL
15'-4" x 10'-0" CASPPA Q25	940	0.5	1.0	9.3	5.6	7.5		2.2	0.6	9.1	759.9	INLET CONTROL
" " FEMA Q100	1680	0.5	1.7	14.9	7.4	8.4		6.2	0.6	14.0	765.5	INLET CONTROL

Design Control MAINTAIN OR IMPROVE EXISTING LOS
Outlet Velocity (V₁₀) 13.0 ft/s
Required Outlet Protection CLASS II RIP RAP

PROJECT DESCRIPTION
REPLACE PIPES ON SR 3426 EAST SHERATON PARK RD
LAT=35.96965 /LONG=-79.79512

SCALE:

1" = 50' HORIZ

1" = 10' VERT.

COMPUTATIONS

EXISTING IA=5% (Streamstats) URBAN REGRESSION EQUATION
FUTURE IA=20% SIR 2014-5030

Q₁₀ = 800 cfs

Q₂₅ = 1000 cfs

Q₅₀ = 1150 cfs

Q₁₀₀ = 1300 cfs

Q₂₀₀ = 1450 cfs

FEMA₁₀₀ = 1680 cfs

PROJECT REFERENCE NO.

17BP.7.C.11

HYDRAULICS
ENGINEER



SURVEY BY:
DESIGNED BY: Galen Cail
DRAWN BY: Galen Cail
CHECKED BY:
DATE: 9/2021

2 @ 84" Open Area=77.0 sq ft
15'-4" x 10'-0" Buried Area=111.2 sq ft

