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SITE DATA

County **GUILFORD** SR **SR 3098 ABERNATHY RD** Bridge Over **UT TO BIG ALAMANCE CRK**
 Drainage Area **515 ac** (0.80 sq miles) Source **USGS QUAD-GIBSONVILLE** Character **MINOR URBAN - SOME RESIDENTIAL**
 River Basin **CAPE FEAR** JORDAN LAKE
 Stream Classification (Such as Trout, High Quality Water, etc.) **WS-IV, NSW**

Proposed Structure **12'-11" x 7'-6" CASPPA w/HW & EW** Sta. **14+75.14** Skew **87°**
 Existing Structure **2 @ 72" CMP w/HW & EW**
 Existing Structures Up and Down Stream **UPSTREAM: Driveway pipe**
DOWNSTREAM: Trib. to Big Alamance Crk.

Historical Flood Information:
 Date Elev. Est. Freq. Source Period of Knowledge
 Date Elev. Est. Freq. Source Period of Knowledge

Channel Slope **1.0%** Source **Survey** Normal Water Surface Elev.
 Manning's n : Left O.B. **0.12** Channel **0.04** Right O.B. **0.12** Source **FIELD OBSERVATION**
 Flood Study / Status **Non-FEMA** Floodway Established? **N/A**

CULVERT DESIGN DATA

Hydrological Method **USGS URBAN 2014-5030** IA=25% future
 Hydraulic Design Method **HDS-5** Proposed Analyzed Buried 1.0 ft.

Size & Type	Q	K _e	Inlet Control		Outlet Control						Remarks	
			H ₁ /D	H ₂ /D	d _c	d _c +D/2	h ₀	H	L _{S0}	H.W.		H.W. ELEV.
2 @ 72" CMP Q25	600	0.5	1.22	8.4	4.7	5.3	-	3.3	0.0	8.6	569.7	
" " Q100	720	0.5	1.60	10.3	5.1	5.5	-	4.8	0.0	10.3	571.4	
12'-11"x7'-6" CSPPA Q25	600	0.5	1.1	7.4	4.0	5.5	-	2.2	0.6	7.1	568.2	
" " Q100	720	0.5	1.2	8.5	5.0	6.0	-	3.1	0.6	8.5	569.3	

Design Control **Maintain or Improve 25 yr. LOS & 100 yr. Backwater**
 Outlet Velocity (V₀) **11.1 ft/s**
 Required Outlet Protection **Class I Rip Rap**

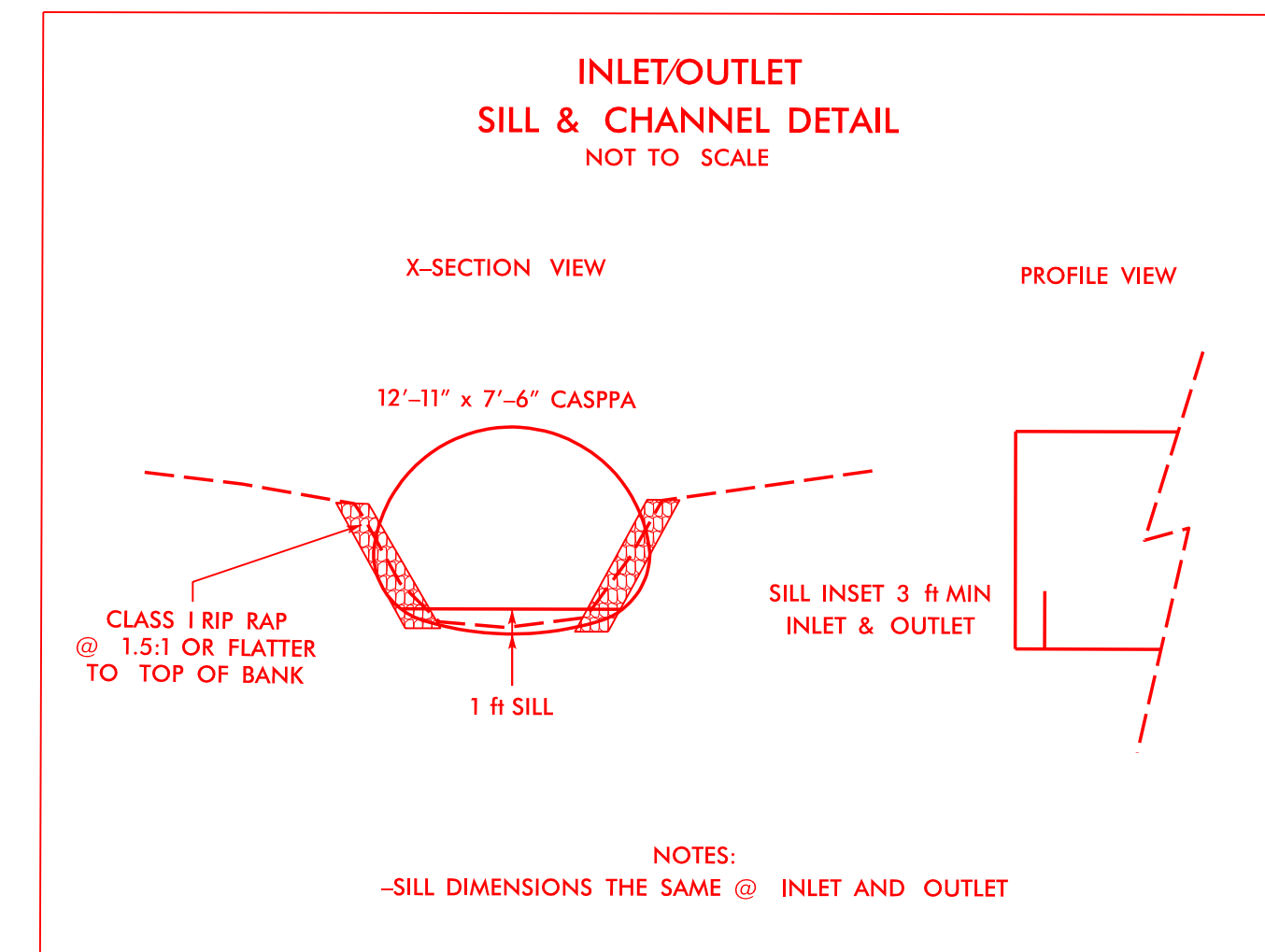
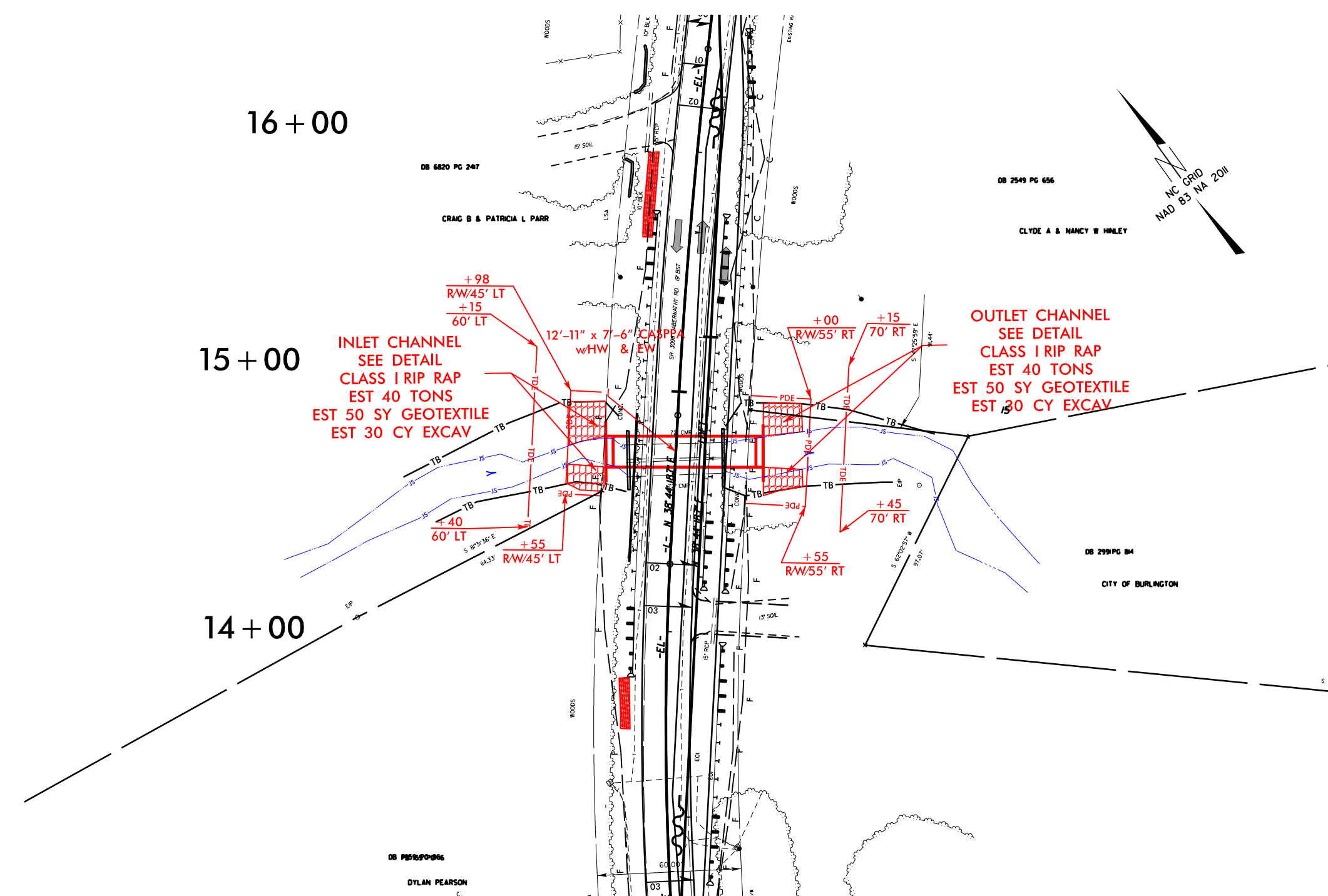
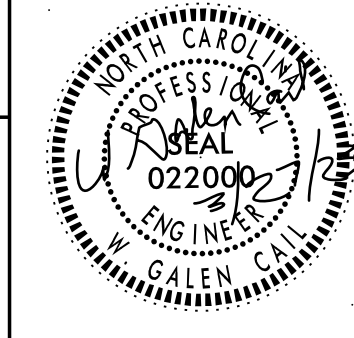
PROJECT DESCRIPTION
 REPLACE CULVERT 40-2179 ON SR 3098 (ABERNATHY RD)
 OVER UT TO BIG ALAMANCE CRK
 LAT: 36.03747 LONG: -79.60298

SCALE:
1" = 50' HORIZ **1" = 10' VERT.**

COMPUTATIONS
 URBAN REGION 1
 SIR 2014-5030 IA=25% (future) FEMA DISCHARGE Non-FEMA

Q₁₀ = 500
 Q₂₅ = 600
 Q₅₀ = 650
 Q₁₀₀ = 720
 Q₃₀₀ = 870

PROJECT REFERENCE NO. **BP7.C002.1**
 HYDRAULICS ENGINEER
 SURVEY BY:
 DESIGNED BY: **wgc**
 DRAWN BY:
 CHECKED BY:
 DATE: **3/27/23**



2 @ 72" Open Area=56.6 sq ft
 12'-11" x 7'-6" CASPPA Buried Area=68.8 sq ft

