



5/28/99

PROJECT REFERENCE NO. <b>R-2915D</b>	SHEET NO. <b>25</b>
ROADWAY DESIGN ENGINEER <b>BARRY C. SMITH</b> NORTH CAROLINA PROFESSIONAL SEAL 034375	HYDRAULICS ENGINEER <b>W. HENRY WELLS JR.</b> NORTH CAROLINA PROFESSIONAL SEAL 9334
 <b>KCI</b> <small>Engineers • Planners • Scientists • Construction Managers</small> <small>4601 Six Forks Road, Landmark Center II, Suite 220 Raleigh, NC 27609-5210 Phone (919) 783-9214 • Fax (919) 783-9266</small>	
 <b>SUNGATE DESIGN GROUP, P.A.</b> <small>401 JONES FRANKLIN ROAD RALEIGH, NORTH CAROLINA 27606 TEL (919) 859-2243 FAX (919) 859-6258 ENG FROM LICENSE NO. C-400</small>	

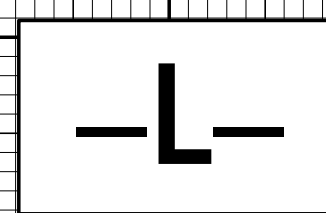
**CULVERT HYDRAULIC DATA**  
84" CMP Sta. 474+18 -L-

DESIGN DISCHARGE	= 500	CFS
DESIGN FREQUENCY	= 50	YRS
DESIGN HW ELEVATION	= 3094.0	FT
BASE DISCHARGE	= 600	CFS
BASE FREQUENCY	= 100	YRS
BASE HW ELEVATION	= 3097.9	FT
OVERTOPPING DISCHARGE	= 500 +	CFS
OVERTOPPING FREQUENCY	= 50 +	YRS
OVERTOPPING ELEVATION	= 3096.0	FT

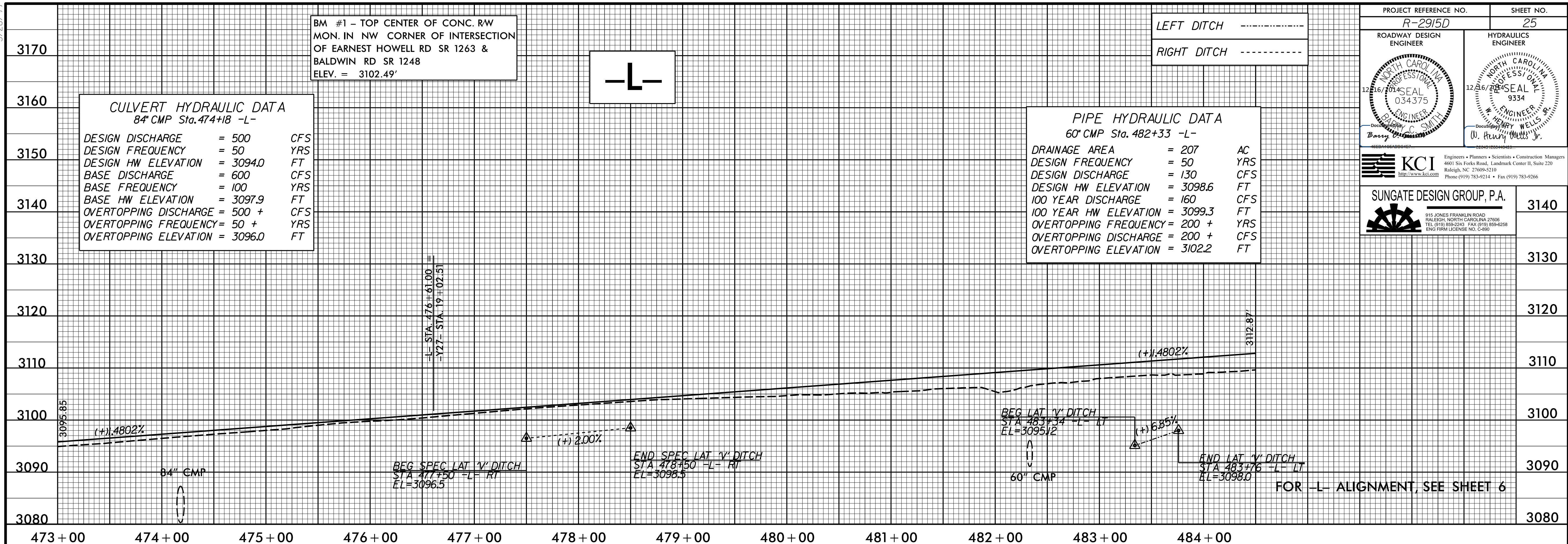
**PIPE HYDRAULIC DATA**  
60" CMP Sta. 482+33 -L-

DRAINAGE AREA	= 207	AC
DESIGN FREQUENCY	= 50	YRS
DESIGN DISCHARGE	= 130	CFS
DESIGN HW ELEVATION	= 3098.6	FT
100 YEAR DISCHARGE	= 160	CFS
100 YEAR HW ELEVATION	= 3099.3	FT
OVERTOPPING FREQUENCY	= 200 +	YRS
OVERTOPPING DISCHARGE	= 200 +	CFS
OVERTOPPING ELEVATION	= 3102.2	FT

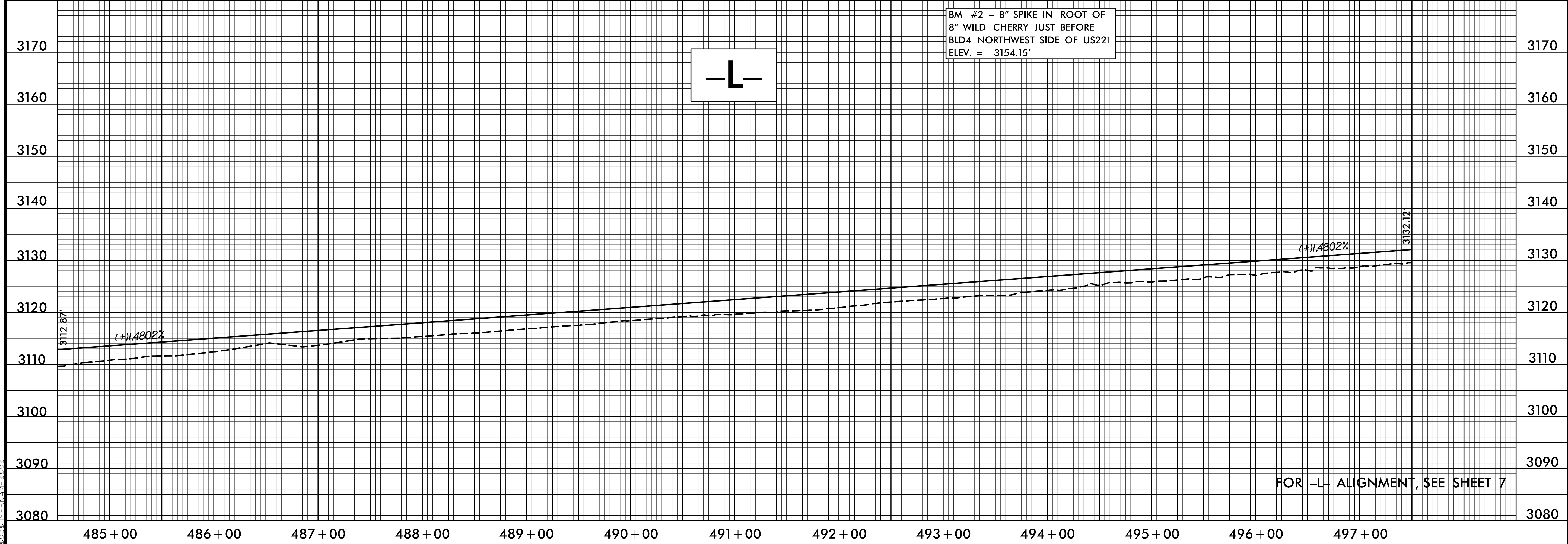
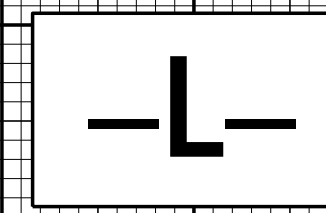
BM #1 - TOP CENTER OF CONC. RW  
MON. IN NW CORNER OF INTERSECTION  
OF EARNEST HOWELL RD SR 1263 &  
BALDWIN RD SR 1248  
ELEV. = 3102.49'



LEFT DITCH -----  
RIGHT DITCH -----



BM #2 - 8" SPIKE IN ROOT OF  
8" WILD CHERRY JUST BEFORE  
BLD4 NORTHWEST SIDE OF US221  
ELEV. = 3154.15'



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 5/28/99 11:05 AM  
 BARRY C. SMITH