

L for time of concentration:
 $(6449-449)/2 = 3000'$

Use 5 fps flow rate

$T_c = (3000/5)$
 $T_c = 600 \text{ sec or } 10 \text{ min.}$

Intensity for 100 yr storm,
 $I = 2.80 \text{ in/hr}$

$Q = CIA$

Assume strong storm, saturated ground as has happened occasionally in last 20 yrs.

$C = .85$

$I = 2.80$

$A = 27.2 \text{ Acres}$

$Q = .85 \times 2.80 \times 27.2$

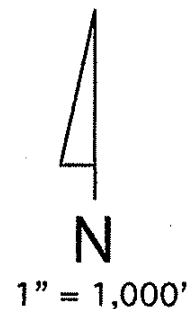
$Q = 64.75 \text{ CFS @ Brush Road culvert.}$

Use 48" HDPE culvert for smooth walls and to pass any debris that gets through debris rack.

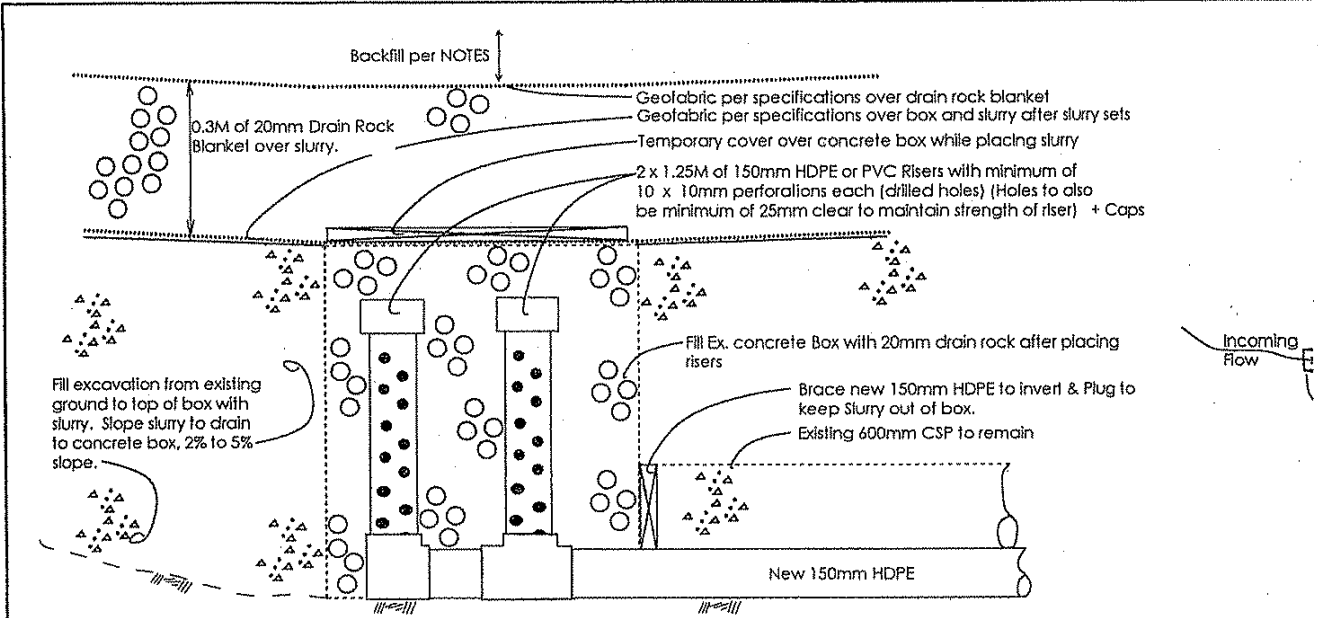
Per Figure 120, Capacity - Velocity Curves for Outlets Unsubmerged, p 234 of Handbook of Culvert and Drainage Practice, Henry D. Gilbert, 1947:

A 48" pipe (1200mm) @ 0.50% carries 80 cfs,
 $v = 8 \text{ fps}$

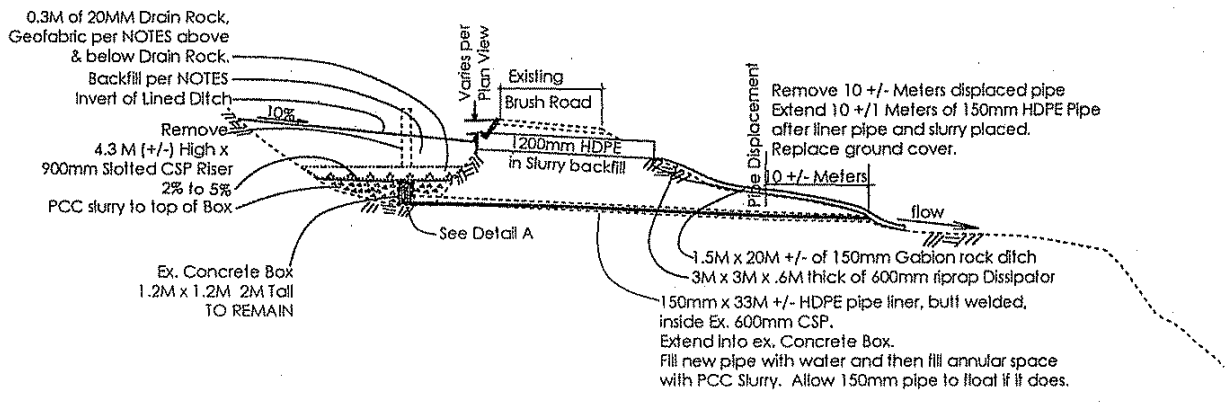
A 60" pipe (1500mm) @ 0.50% Carries 140 cfs
 $v = 9 \text{ fps}$



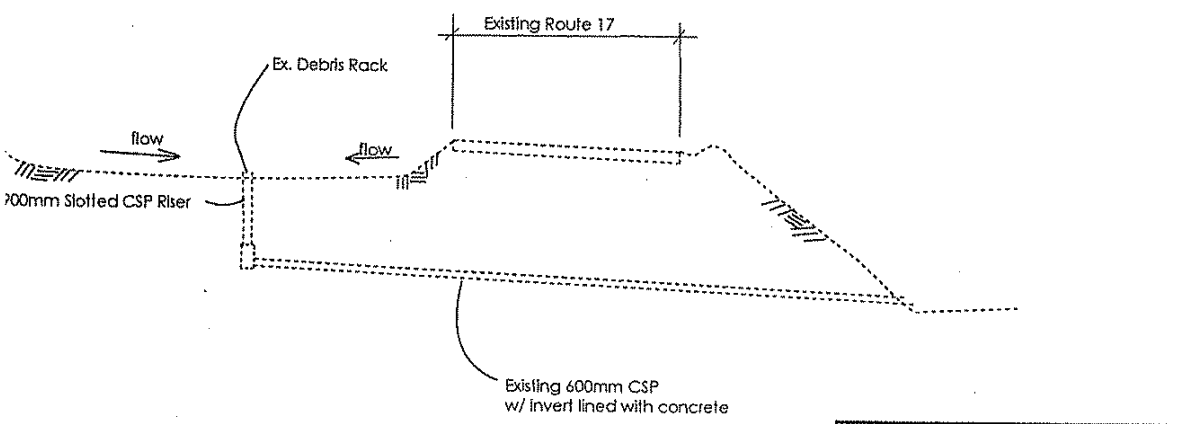
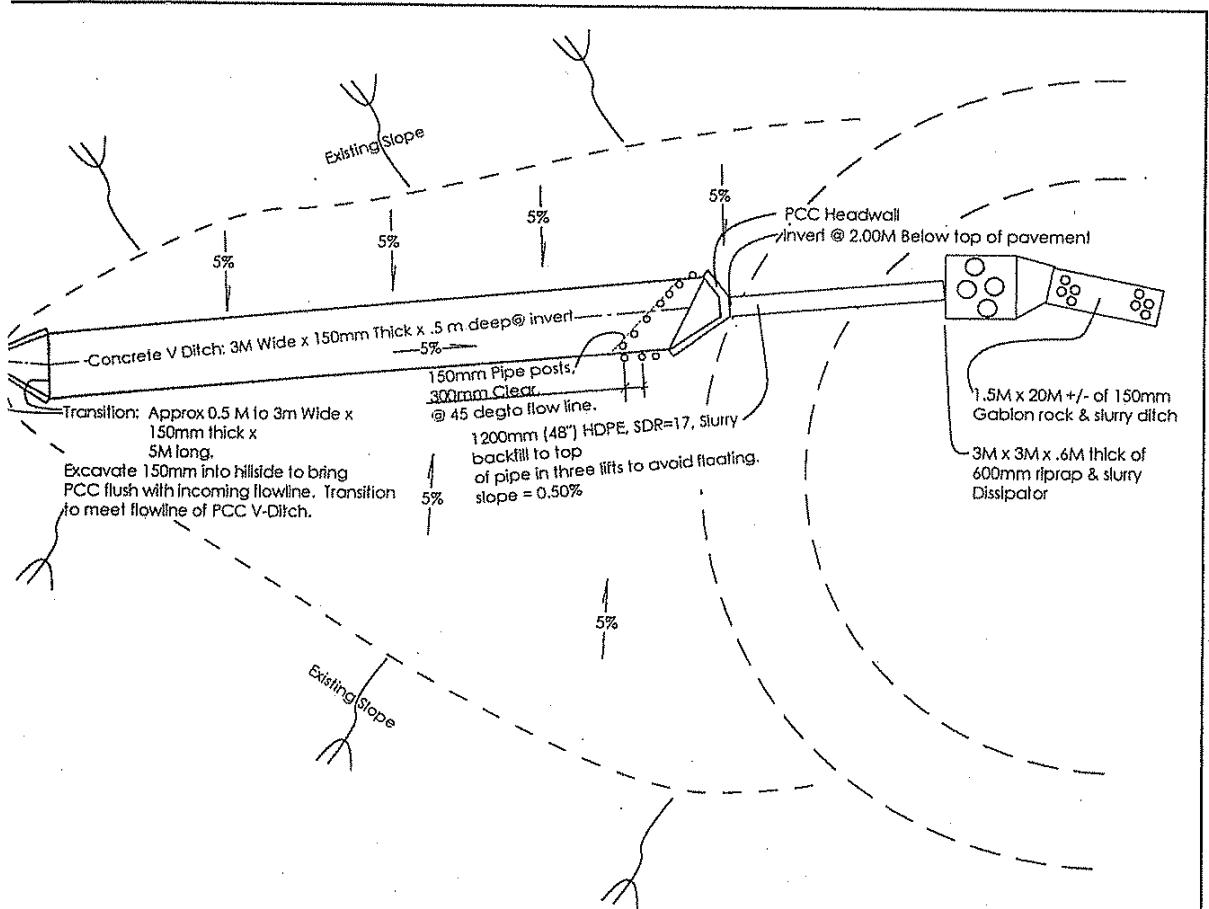
Brush Road Culvert
 Hydrological Study
 Roy A. Nelson, CE
 408-353-4303
 October 3, 2006



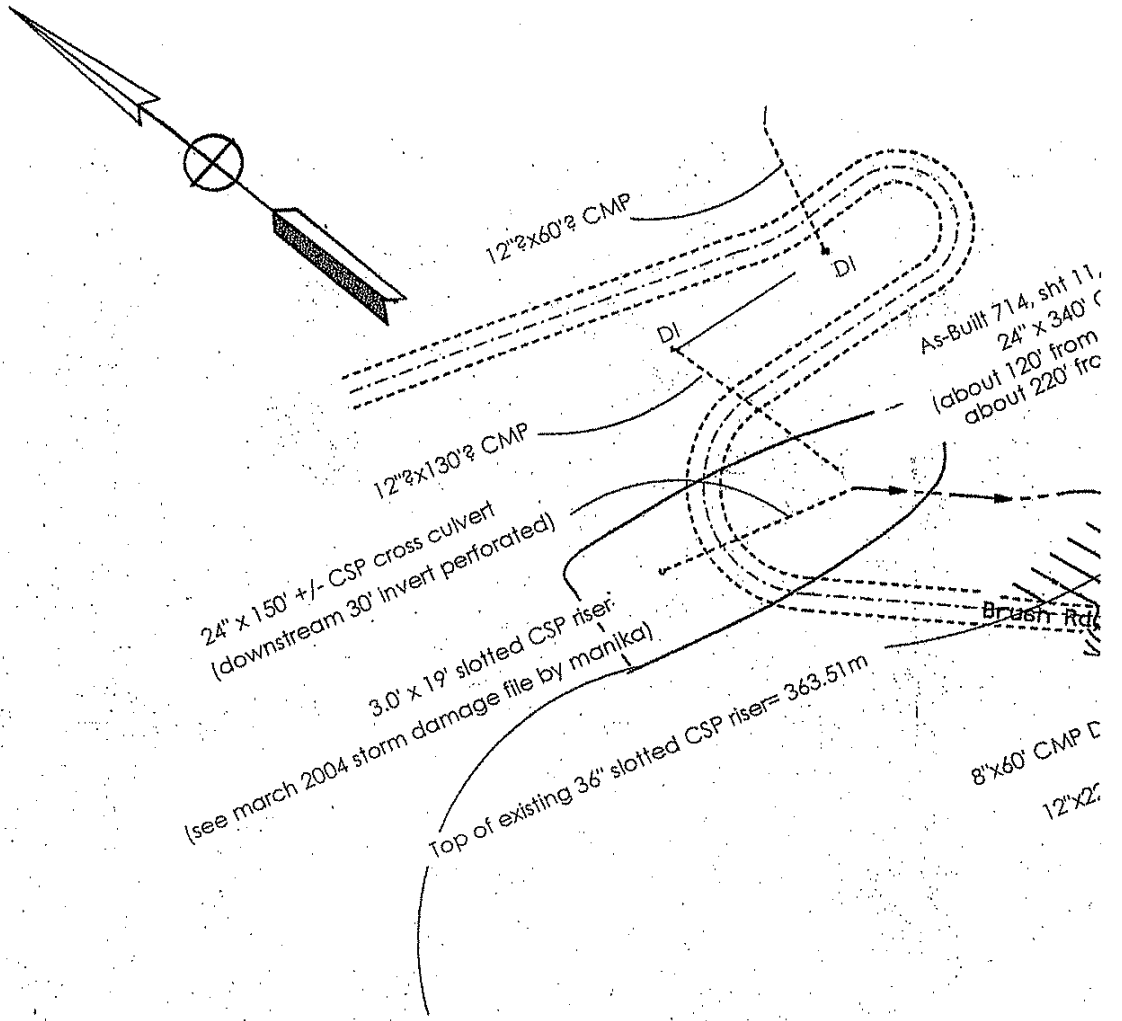
DETAIL A
NOT TO SCALE



Section View
Proposed Repair Plan
Brush Rd. near Route 17 PM 2.02



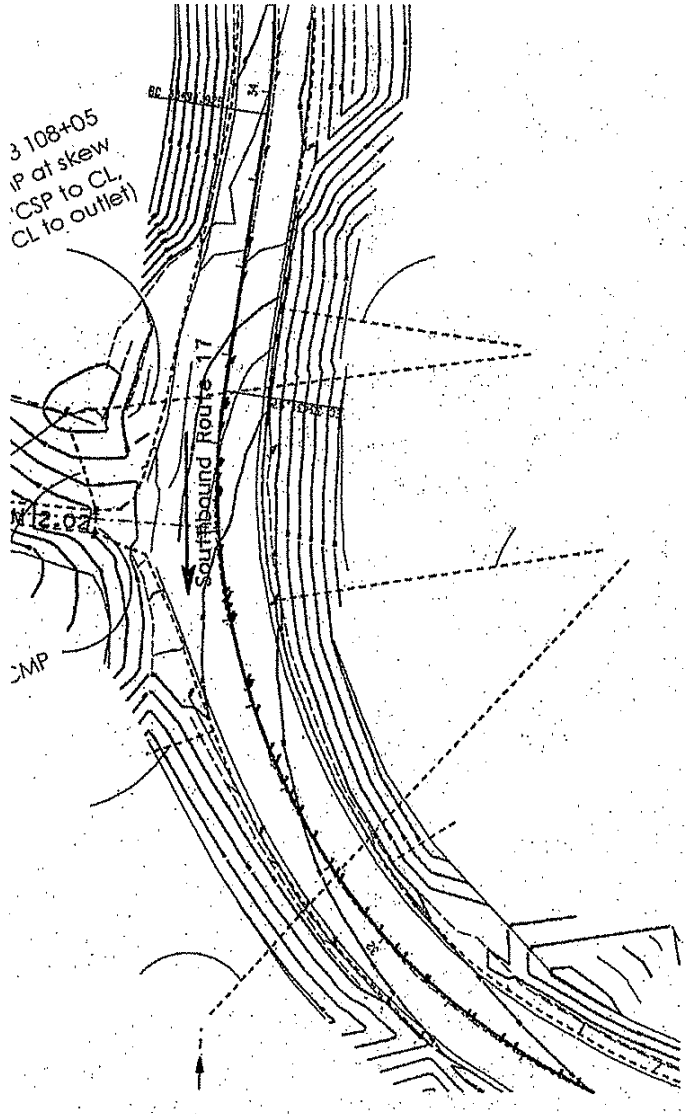
Brush Road Improvement Plans	
ROY A. NELSON, CE	8/18/06
24500 CULSWOOD DR. LAGUNA HILLS, CA 92653 404-389-4000	



Plan

Brush Rd Damaged Culvert

Near SCI 17 PM 2.02



Bruh Road Improvement Plans	
ROY A. NELSON, CE	8/18/06
2440 GLENWOOD DR. LOS ANGELES, CA 90008 408-550-4300	