

Mr. Von Shipman, P.E. March 17, 2010 Page 3

condition has three 42-inch pipes/SNOUTs that generate a lower head loss than the current chain link fence located at the culvert inlet.

Roadway Elevation: 170.5 ft

WSE in feet at Baytree Road (Junction: INLET)

	1.2 inch	5 yr	10 yr	25 уг	100 yr
Existing	161.7	169.5	171.4	173.1	174.3
3 Snouts	161.4	169.9	171.3	171.9	172.2

■ <u>Structural Flooding</u>: There is an industrial warehouse located on the east bank of the existing ditch. Since no surveyed finished floor elevation is available, CDM staff considered an elevation of 171 ft as the benchmark, which corresponds to the closest survey spot elevation in the vicinity to the building. The model results show that the predicted flood elevation is lower for the proposed conditions for all the storms, particularly for the severe storms. This is due to the fact that under the proposed condition most of the head loss occurs in the initial portion of the existing culvert and generating a head difference between the upstream and downstream sections of Baytree Road. The model does include a roadway overflow that becomes active at elevation 170.0, but in most cases the flood levels are below this value.

Warehouse Estimated FFE: 171 ft

WSE in feet at Warehouse (Junction: RDITCH)

	1.2 inch	5 yr	10 yr	25 yr	100 yr
Existing	167.7	168.0	168.1	173.3	174.0
3 Snouts	167.7	168.0	168.1	168.7	169.3

The peak flow through the existing culvert decreases for all of the design storms, due to the increased head loss that occurs through the SNOUTs.

Flow in CFS through existing 4x4 box culvert flow

	1.2 inch	5 yr	10 yr	25 yr	100 yr
Existing	63 cfs	304 cfs	355 cfs	485 cfs	499 cfs
3 Snouts	62 cfs	270 cfs	311 cfs	357 cfs	317 cfs

The box is designed to overflow for the 10-year storm.