

31 8.11. PROJECT ROCK-31 - PUBLIC WORKS POND 2

At the southern end of the Public Works yard (Figure 8.12) another dry retention pond could be enlarged by digging it one foot deeper, providing .04 acre feet of additional storage volume. Treatment efficiency would increase from 24.4% to 34.7%, removing an additional 6.9 lb/yr and 1.4 lb/yr of TN and TP respectively from the 6.96 acre subbasin. The estimated cost of the pond is \$9,470.

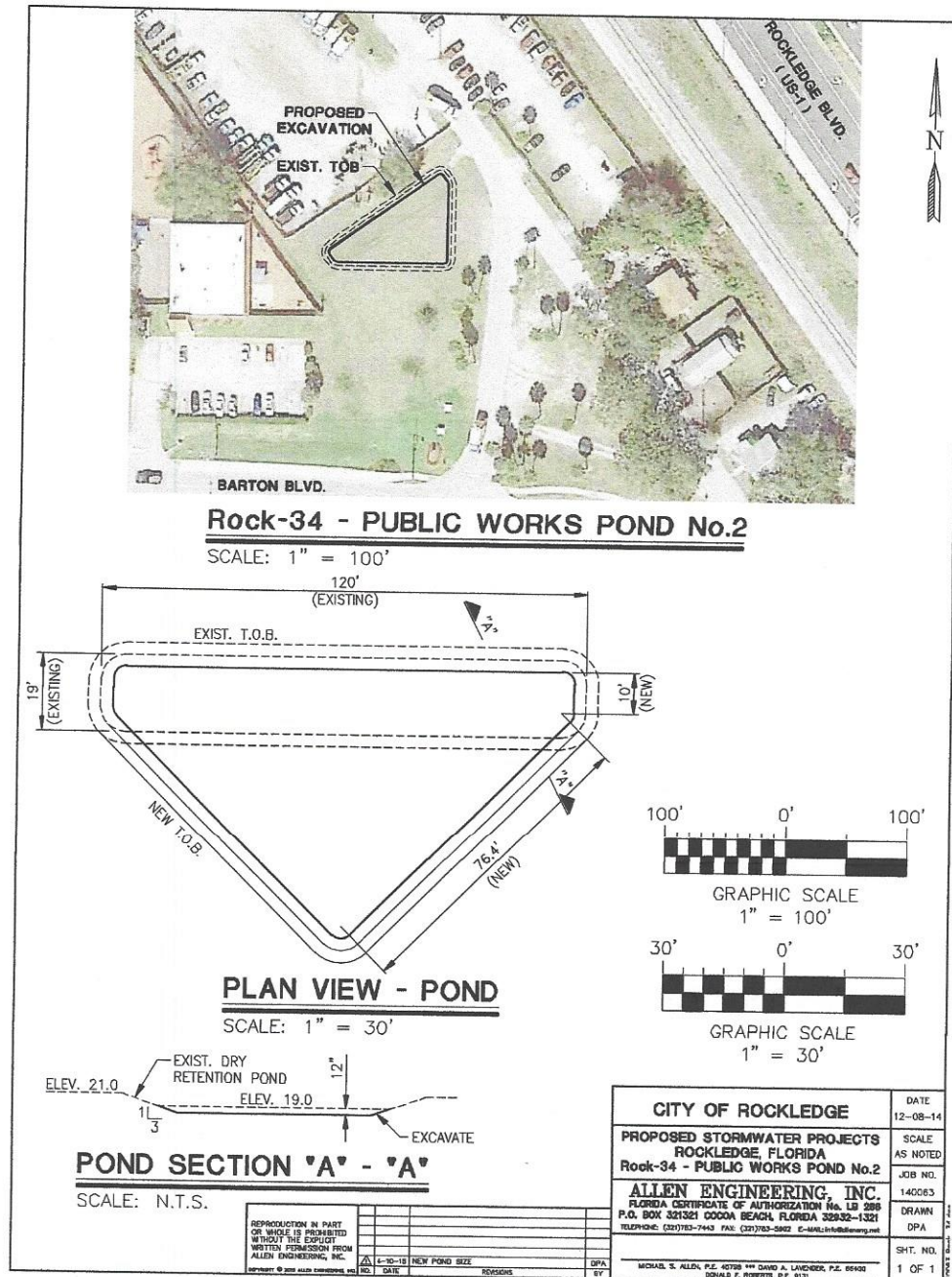
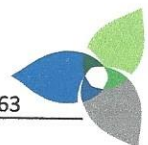


Figure 8.12 - Public Works Pond 2



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Rockledge Project Rock - 31 - Public Works Pond2				
Pollutant Removal Calculations				
				3/23/15
BMP Type:	Dry Retention - Online			
Basin No.	3D			
Drainage Area:	6.96	acres		
Annual Runoff Volume from PLSM =		16.03	ac-ft/yr	
TN from PLSM =	67.33	lb/yr		
TP from PLSM =	13.22	lb/yr		
Calculate existing retention volume				
Elevation	Area (ac)	Depth change	Ave. Area (ac)	Volume (ac-ft)
21	0.072	0	0	0
19	0.052	2	0.062	0.124
Existing Retention Volume				0.124
Calculate proposed retention volume				
Dig pond one foot deeper				
Elevation	Area (ac)	Depth change	Ave. Area (ac)	Volume (ac-ft)
21	0.072	0	0	0
19	0.052	2	0.062	0.124
18	0.034	1	0.043	0.043
Proposed Retention Volume				0.167
1" Retention Volume =		0.58	ac-ft	
Existing Retention Volume =		0.21	inches	
Proposed Retention Volume		0.29	inches	
From FDEP BRL BMP Removal Efficiencies				
For 0.21		inches use FDEP formula		
Removal Efficiency = $0.3178 \ln(.21) + 0.7405 =$			24.45	%
For 0.29		inches use FDEP formula		
Removal Efficiency = $0.3178 \ln(.29) + 0.7405 =$			34.71	%
Increased Removal Efficiency =		10.26	%	
Annual TN load removed =		6.91	lb	
Annual TP load removed =		1.36	lb	
TN Load passes to Basin 3B=		60.42	lb	
TP Load passes to Basin 3B=		11.86	lb	