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8.10. PROJECT ROCK-30 - PUBLIC WORKS POND 1

The City's Public Works yard currently has two small stormwater retention ponds. Soils at the site are Type A and groundwater is low due to the adjacent main canal. It is proposed to enlarge the northern pond by digging it one foot deeper, providing an additional 0.14 inches of retention volume for 5.69 acres of the Public Works site. (Figure 8.11) No right-of-way acquisition would be required for this pond to treat 7.2 lb/yr of TN and 1.4 lb/yr of TP. This project is estimated to only cost \$4,090.

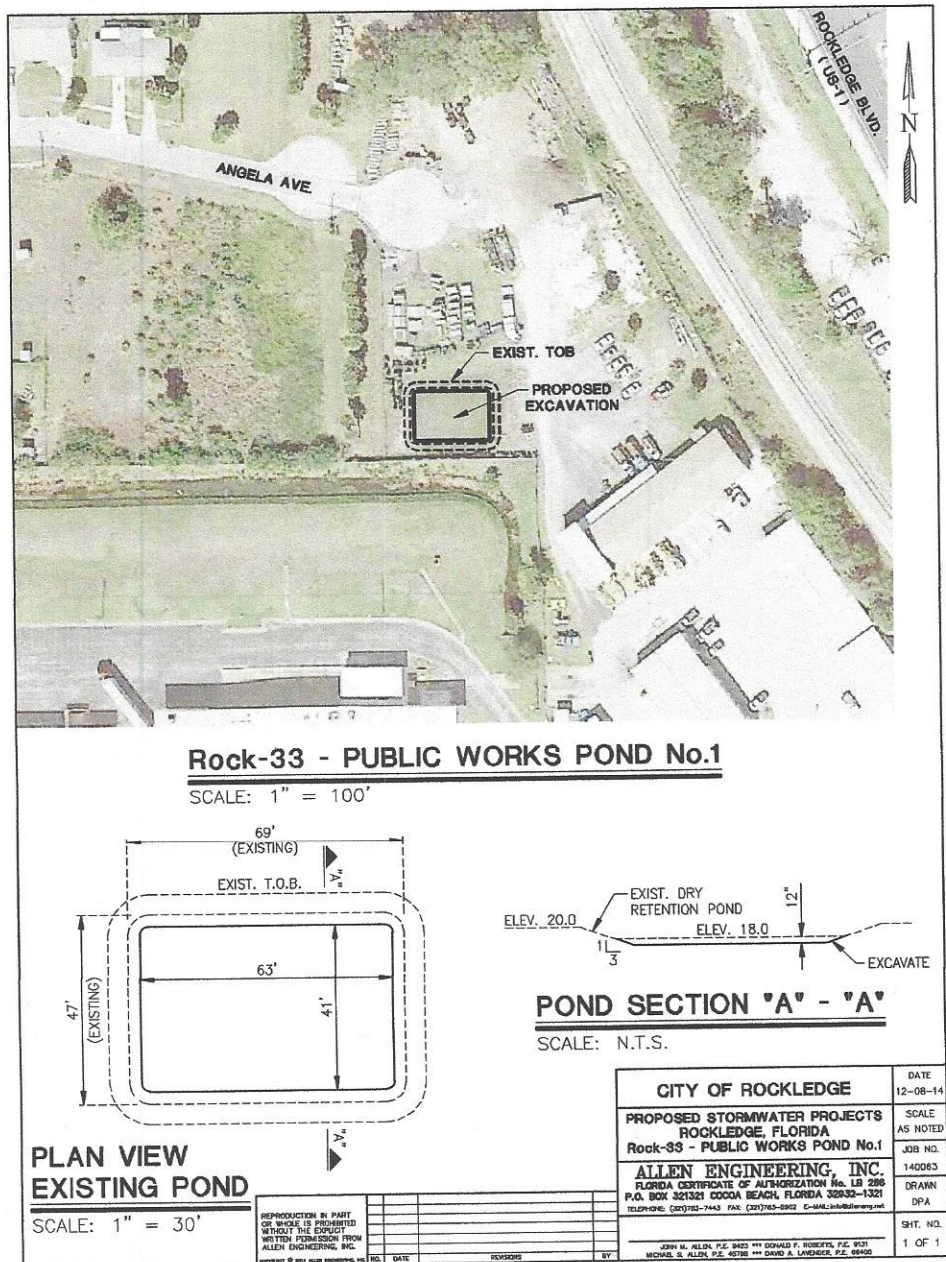
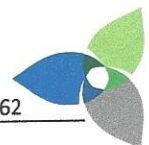


Figure 8.11 - Public Works Pond 1 Location



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Rockledge Project Rock - 33 Public Works Pond1				
Pollutant Removal Calculations				
				3/23/15
BMP Type:	Dry Retention - Online			
Basin No.	3C			
Drainage Area:	5.69	acres		
Annual Runoff Volume from PLSM =		12.73	ac-ft/yr	
TN from PLSM =	57.01	lb/yr		
TP from PLSM =	11.40	lb/yr		
Calculate existing retention volume				
Elevation	Area (ac)	Depth change	Ave. Area (ac)	Volume (ac-ft)
20	0.11	0	0	0
18	0.07	2	0.09	0.18
Existing Retention Volume				0.18
Calculate proposed retention volume				
Dig pond one foot deeper				
Elevation	Area (ac)	Depth change	Ave. Area (ac)	Volume (ac-ft)
20	0.11	0	0	0
18	0.07	2	0.09	0.18
17	0.06	1	0.065	0.065
Proposed Retention Volume				0.245
1" Retention Volume =		0.47	ac-ft	
Existing Retention Volume =		0.38	inches	
Proposed Retention Volume =		0.52	inches	
From FDEP BRL BMP Removal Efficiencies				
Removal Efficiency for 0.75" =		65	%	
Removal Efficiency for 0.5" =		52	%	
Removal Efficiency for 0.25" =		30	%	
Removal Efficiency for .38" =		40.4	%	
Removal Efficiency for .52" =		53	%	
Increased Removal Efficiency =		12.6	%	
Annual TN load removed =		7.18	lb	
Annual TP load removed =		0.82	lb	
TN Load passes to Basin 3B=		49.83	lb	
TP Load passes to Basin 3B=		10.58	lb	