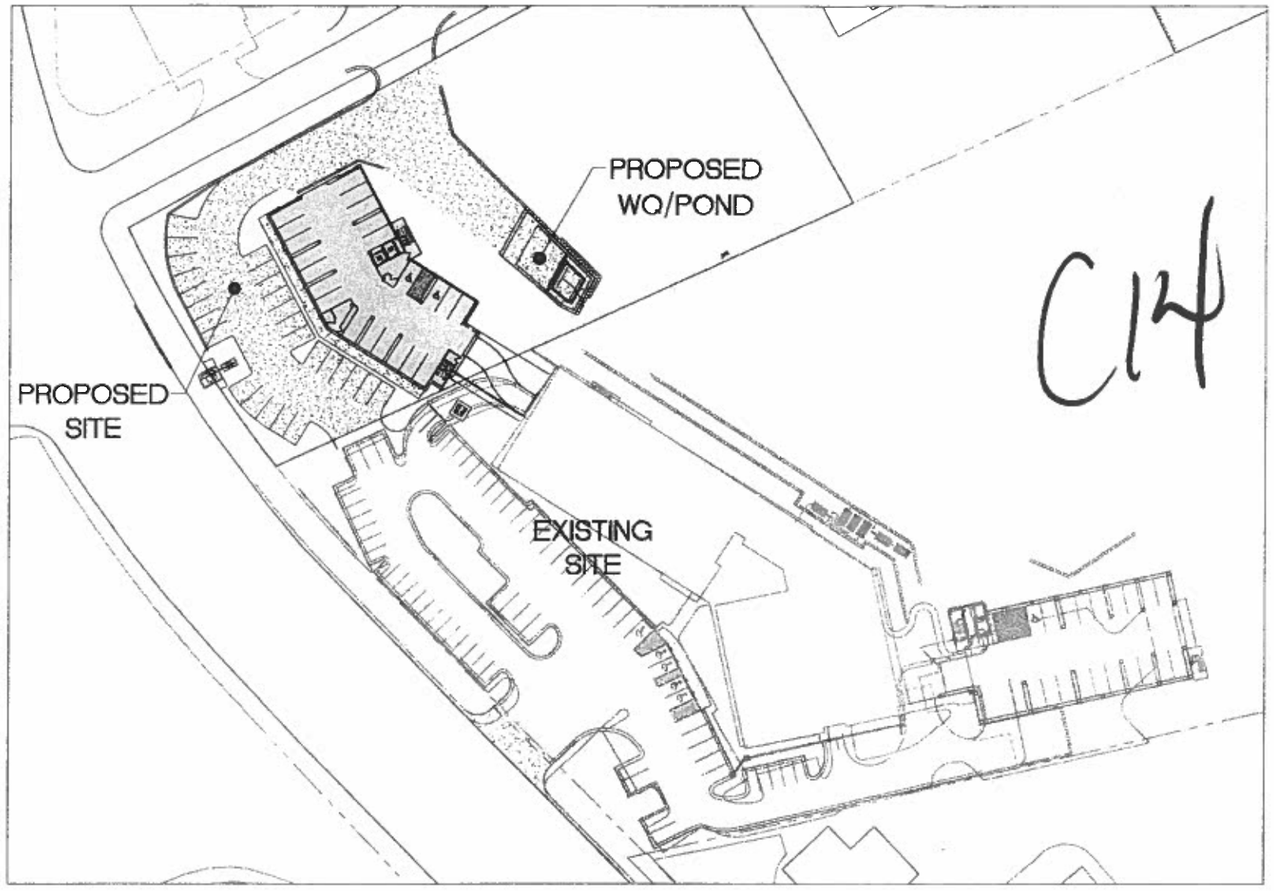


C14

PARTIAL BIOFILTRATION POND CALCULATIONS
FOR DEVELOPMENT PERMITS

DRAINAGE AREA DATA

Drainage Area to Control (DA)	0.842	ac.
Drainage Area Impervious Cover	21.0%	
Capture Depth (CD) (.5*+(IC-20)/100))=	0.51	in.

WATER QUALITY CONTROL CALCULATIONS	Required		Provided	
Pond # 1				
Design Peak Flow Rate (25Yr., Post Dev.)	5.57	cfs		
Design Peak Flow Rate (100 Yr., Post Dev.)	7.56	cfs		
Water Quality Volume (WQV=CD*DA*3630)	1559	cf	1692	cf
Maximum Ponding Depth Above			1.50	ft
Partial Sedimentation Pond Volume (min. 20% WQV)	312	cf	727	cf
Filtration Pond Area ((WQV/(4+1.33*H))	260	sf	283	sf
Filtration Pond Volume			966	cf
Water Quality Elevation	931.50			
Elevation of Splitter/Overflow Weir (minimumWQ elev)	931.50		931.50	
Length of Splitter Weir			8	ft
Required Head to Pass Q100	1.00	ft (max)	0.43	ft
Pond Freeboard Provided to Pass Q100	0.25	ft (min)	0.25	ft
Biofiltration Pond Drawdown Time	48	hr (min)	48.9	hr
Underdrain Orifice Size (dia)			0.625	in
Underdrain Orifice Size (area)			0.307	sq. in.

Biological Elements Calculations

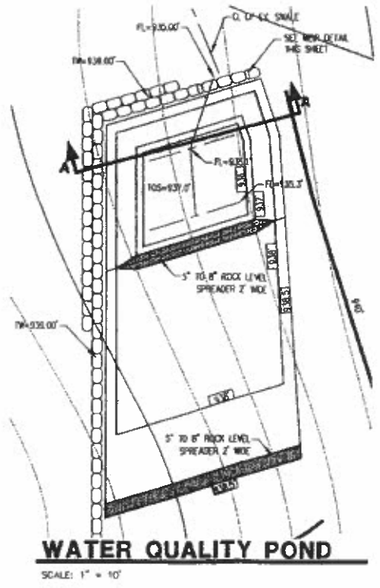
Surface Area of Entire Pond Bottom (SA)	1175			
Total Plantings Required (min. 10% of SA)(TP)	118	plants		
Sedimentation Pond Plantings (min 20% of TP)	24	plants	50	plants
Filtration Pond Planting (min 50% of TP)	59	plants	70	plants

Sedimentation

Stage (ft)	Area (sf)	Storage (cf)
937	0	0
938	619	309.5
938.5	1050	728.8
-	-	-
-	-	-
-	-	-
	Total=	727

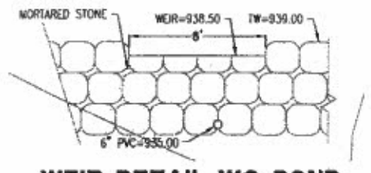
Filtration

Stage (ft)	Area (sf)	Storage (cf)
935.3	6	6
936	219	78.7
937	283	327.7
938	472	705.2
938.5	570	965.7
-	-	-
-	-	-
	Total=	966



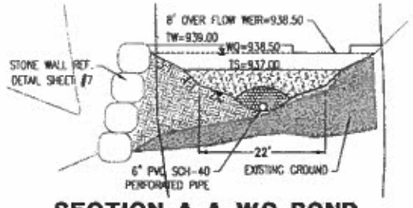
WATER QUALITY POND

SCALE: 1" = 10'



WEIR DETAIL WQ POND

SCALE: NTS



SECTION A-A WQ POND

SCALE: NTS

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eileen merritts ATS Engineers Inspectors & Surveyors
www.ats-engineers.com
812 S. CAPITAL OF TEXAS HWY, STE 490
AUSTIN, TEXAS 78746
(512) 330-0665
FAX: (512) 329-4889

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JUDGE'S OVERLOOK
6916 BEE CAVES
AUSTIN, TX

KERRI K. MERRITT
92280
LICENSED PROFESSIONAL ENGINEER
2/22/11

DATE ISSUED
2-22-2011

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1 of 1

POND EXHIBIT

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