

P.I. FACTOR IN CUBIC FEET PER SECOND PER ACRE

DURATION OF RAIN IN MINUTES	% IMPERVIOUS	15-YEAR RAINFALL FREQUENCY								20-YEAR RAINFALL FREQUENCY							
		15	20	30	60	90	120	15	20	30	60	90	120				
5	0	1.59	1.61	1.52	1.22	1.04	0.92	1.85	1.68	1.60	1.29	1.08	0.96				
5	5	1.70	1.70	1.59	1.27	1.06	0.95	1.76	1.76	1.68	1.34	1.11	0.99				
5	10	1.80	1.79	1.68	1.33	1.12	0.97	1.87	1.87	1.77	1.40	1.15	1.02				
5	15	1.81	1.80	1.78	1.38	1.15	1.00	1.88	1.87	1.85	1.45	1.19	1.05				
5	20	2.01	2.00	1.89	1.43	1.19	1.03	2.09	2.09	1.95	1.50	1.22	1.07				
5	25	2.15	2.09	1.92	1.49	1.22	1.06	2.20	2.18	2.03	1.56	1.26	1.10				
5	30	2.23	2.19	2.00	1.54	1.26	1.08	2.31	2.28	2.11	1.61	1.30	1.13				
5	35	2.33	2.28	2.09	1.58	1.29	1.11	2.42	2.38	2.20	1.66	1.33	1.16				
5	40	2.44	2.39	2.19	1.63	1.32	1.13	2.53	2.50	2.28	1.71	1.37	1.18				
5	45	2.54	2.48	2.28	1.69	1.37	1.15	2.64	2.59	2.36	1.78	1.41	1.22				
5	50	2.65	2.58	2.37	1.74	1.40	1.19	2.75	2.69	2.46	1.83	1.44	1.24				
5	55	2.76	2.67	2.44	1.78	1.43	1.22	2.86	2.79	2.54	1.88	1.48	1.27				
5	60	2.86	2.76	2.50	1.82	1.47	1.24	2.97	2.89	2.63	1.94	1.52	1.30				
5	65	2.97	2.86	2.57	1.90	1.51	1.27	3.08	3.00	2.71	1.99	1.56	1.33				
5	70	3.07	2.97	2.66	1.96	1.54	1.29	3.19	3.10	2.81	2.04	1.59	1.35				
5	75	3.18	3.06	2.74	2.00	1.56	1.30	3.30	3.19	2.89	2.10	1.63	1.38				
5	80	3.29	3.15	2.81	2.05	1.62	1.33	3.41	3.29	2.98	2.15	1.67	1.41				
5	85	3.39	3.24	2.89	2.10	1.65	1.35	3.52	3.39	3.06	2.21	1.70	1.44				
5	90	3.50	3.36	2.99	2.16	1.68	1.40	3.63	3.50	3.14	2.27	1.74	1.46				
5	95	3.60	3.45	3.07	2.21	1.72	1.43	3.74	3.60	3.24	2.32	1.78	1.50				
5	100	3.71	3.54	3.15	2.26	1.75	1.45	3.85	3.70	3.32	2.37	1.81	1.52				
5	RAINFALL	3.30	4.60	3.70	2.40	1.96	1.53	5.50	4.80	3.90	2.92	1.92	1.60				

TABLE 4-2

P.I. VALUES FOR VARIOUS IMPERVIOUS CONDITIONS  
(15 YEAR & 20 YEAR RAINFALL FREQUENCIES)

PROPOSED LAND USAGE

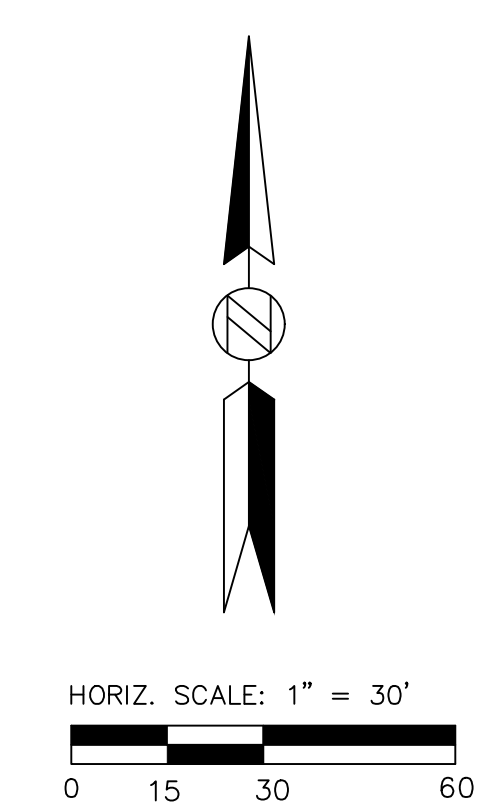
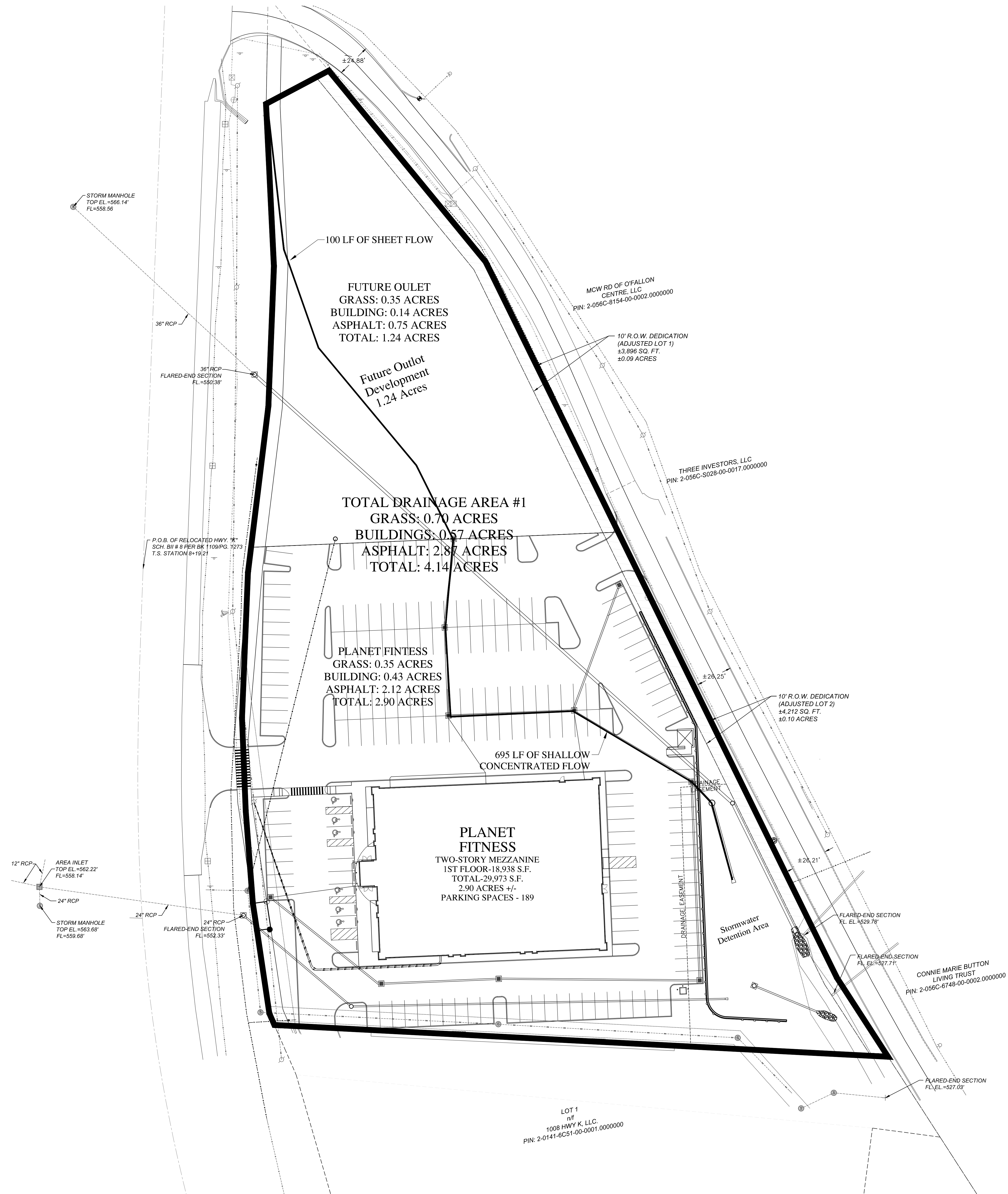
LAND DESCRIPTION	RUNOFF COEF.	AREA (AC.)	PERCENT IMP.	CURVE NUMBER	PI	FLOW (CFS)
BUILDING/ROOF	0.95	0.57	100%	98	3.54	2.02
ASPHALT	0.90	2.87	100%	98	3.54	10.16
LANDSCAPING/GRASS	0.35	0.70	30%	60	2.19	1.53
TOTAL AREA		4.14		92		13.71

EXISTING LAND USAGE

LAND DESCRIPTION	RUNOFF COEF.	AREA (AC.)	PERCENT IMP.	CURVE NUMBER	PI	FLOW (CFS)
BUILDING/ROOF	0.95	0.14	100%	98	3.54	0.51
ASPHALT	0.90	0.21	100%	98	3.54	0.74
GRASS	0.35	3.79	30%	69	2.19	8.29
TOTAL AREA		4.14				9.55

DIFERENTIAL

LAND DESCRIPTION	RUNOFF COEF.	AREA (AC.)	PERCENT IMP.	CURVE NUMBER	PI	FLOW (CFS)
						4.17



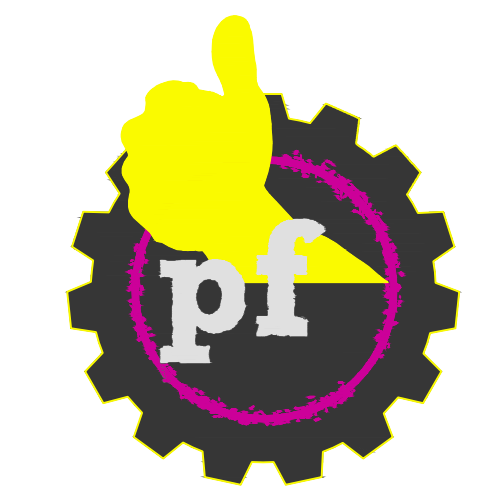
Architect:  
**MT STUDIO**  
 210 South Market St., Suite B  
 Troy, OH 45373  
 p 937.760.3884  
 mtwiss@gomtstudio.com

Civil Engineer:  
**RDC**  
 REYLING DESIGN & CONSULTING  
 4516 Boardwalk | Smithton, IL | 62285  
 reylngdc@gmail.com  
 Missouri Firm License: 2016012969  
 MO Certificate of Authority: LC001485066

RDC Project No. 20-115



LICENSE EXPIRES - 12.31.2023  
 DATE SIGNED - 12.01.2021  
 ENGINEER OF RECORD:  
 Todd J. Reyling, PE  
 Missouri PE 2011020072



New Ground Up Building for:  
**PLANET FITNESS**  
 914 Highway K  
 O'Fallon, MO 63366  
 St. Charles County  
 MTSTUDIO PROJECT NUMBER:

ISSUED / REVISED	DATE
ISSUED TO CITY	05.12.2021
REVISED PER CITY COMMENTS	07.20.2021
REVISED PER CITY COMMENTS	08.10.2021
REVISED PER CITY COMMENTS	11.19.2021
REVISED PER CITY COMMENTS	12.01.2021

Proposed  
 Drainage  
 Area Map  
**C401**