



Planning & Development Division
Planning & Economic Development Department

Room 160
411 West First Street
Duluth, Minnesota 55802



218-730-5580



planning@duluthmn.gov

File Number	PL 22-089	Contact	clee@duluthmn.gov	
Type	Variance – Maximum Parking	Planning Commission Date	June 14, 2022	
Deadline for Action	Application Date	May 18, 2022	60 Days	July 17, 2022
	Date Extension Letter Mailed	May 18, 2022	120 Days	September 15, 2022
Location of Subject		2327 Mountain Shadow Drive		
Applicant	PF Baseline Fitness	Contact	Scott Bernstein	
Agent	Todd Reyling	Contact		
Legal Description		Lots 2 & 3, Block 1, Village Mall		
Site Visit Date		Sign Notice Date	May 31, 2022	
Neighbor Letter Date		Number of Letters Sent	30	

Proposal

A variance to maximum parking requirements to allow 178 parking spaces for a 22,000 sq. ft. fitness center.

Recommended Action: Approve with conditions or modifications.

	Current Zoning	Existing Land Use	Future Land Use Map Designation
Subject	MU-C	Personal Services	Large Scale Commercial
North	MU-C	Commercial	Large-Scale Commercial
South	MU-C	Retail/Commercial	Large Scale Commercial
East	MU-C	Large commercial site	Large Scale Commercial
West	MU-C	Retail/Commercial	Large Scale Commercial

Summary of Code Requirements

Sec. 50-24.4 – Maximum Parking Limits – No more than 150 percent of the minimum required number off-street parking spaces, excluding the adjustments allowed in 50-24.3, shall be provided.

Sec. 50-37.9.C – General Variance Criteria (paraphrased): Granting of variances of any kind is limited to situations where, due to characteristics of the applicant's property, enforcement of the ordinance would cause the landowner exceptional practical difficulties or undue hardship. The Planning Commission must find the following for a variance to be granted: a) That the landowner is proposing to use the property in a reasonable manner, b) that the need for relief from the normal regulations is due to circumstances unique to the property and not caused by the landowner, c) that granting the variance will not alter the essential character of the area, d) that granting the variance is consistent with the intent of the UDC and Comprehensive Plan.

Section 50-37.9.G.3 – Variances from the maximum parking limits provided in 50-24.4 shall not exceed 200 percent of the minimum requirement provided in Table 50-24.1. In addition to meeting the general variance criteria in 50-37.9C, a parking study that provides justification for the number of off-street parking spaces proposed is required. It must include estimates of parking demand based on recommendations of the Institute of Traffic Engineers (ITE), or other acceptable estimates as approved by the City Engineer and should include other reliable data collected from uses or combinations of uses that are the same as or comparable with the proposed use. Comparability will be determined by density, scale, bulk, area, type of activity, and location. The study must document the source of data used to develop the recommendations.

Comprehensive Plan Governing Principles and/or Policies and Current History (if applicable):

Governing Principle #8 – Encourage mix of activities, uses, and densities. A mix of uses and activities also allows for shared parking and for people to visit multiple destinations with one car trip. This project is located in proximity to retail uses and large multifamily buildings (Capstone).

Zoning – MU-C District: Established to provide for community and regional commercial development along commercial corridors and nodal centers. Intended non-residential uses include retail, lodging, service, and recreational facilities needed to support the community and region. Development should facilitate pedestrian connections between residential and non-residential uses.

Future Land Use – Large-Scale Commercial: Mall, shopping center, and big box retail development, with associated surrounding retail and service uses, but only ancillary office uses. Oriented primarily to the motorist, with planned internal circulation patterns while still accommodating pedestrian movement. Requires access to regional transportation routes. May include regional green infrastructure for watershed protection.

History: Site is currently Country Lanes North operating as an indoor and outdoor entertainment facility. This structure will be demolished and the fitness center will be built on the cleared site. The planning review for Planet Fitness was approved in May 2022 via PL 22-064.

Review and Discussion Items

Staff finds that:

1. The applicant is proposing to construct a Planet Fitness fitness center in a 22,300 sq. ft. standalone building.
2. Minimum parking for other commercial uses can be determined by the Land Use Supervisor. The LUS has determined that for this use, 4 spaces per 1,000 sq. ft. of building area is appropriate. This use would require 89 parking spaces for the proposed 22,500 sq. ft. building. Maximum parking without a variance is 134 spaces.
3. According to the developer, Planet Fitness needs the ability to park 180 clients and staff during peak hours and days. Planet Fitness' experience nationally is that 190-200 or more parking spaces are needed for clients. The developer's request is a variance to allow 178 parking spaces, which is 200% of the maximum.
4. The parking variance criteria in Sec. 50-37.9.G.3 limits the maximum variance the Planning Commission can approve to 200% of the minimum parking, or 178 parking spaces.
5. In evaluation of the Variance General Criteria, staff finds the applicant is proposing a reasonable use of the site with an appropriately-scaled commercial building for an MU-C zone, and the proposal variance is reasonable at 178 parking spaces, but is not reasonable at 189 parking spaces due to the 200% maximum variance allowed by the UDC.
6. The developer has demonstrated that there is space on their site to locate the requested parking while meeting landscaping and basic storm water requirements. This level of parking would not be out of character with the large parking lots in the mall area that were created before the UDC parking maximum standards were adopted.
7. The UDC parking maximum was established to reduce the amount of impervious surfaces and the associated environmental impacts as well as to incentivize creative site designs that encourage alternative transportation usage.
8. No comments from citizens, City staff, or any other entity were received regarding the application.
9. Per UDC Section 50-37.1.N. approved variances lapse if the project or activity authorized by the permit or variance is not begun within one-year.

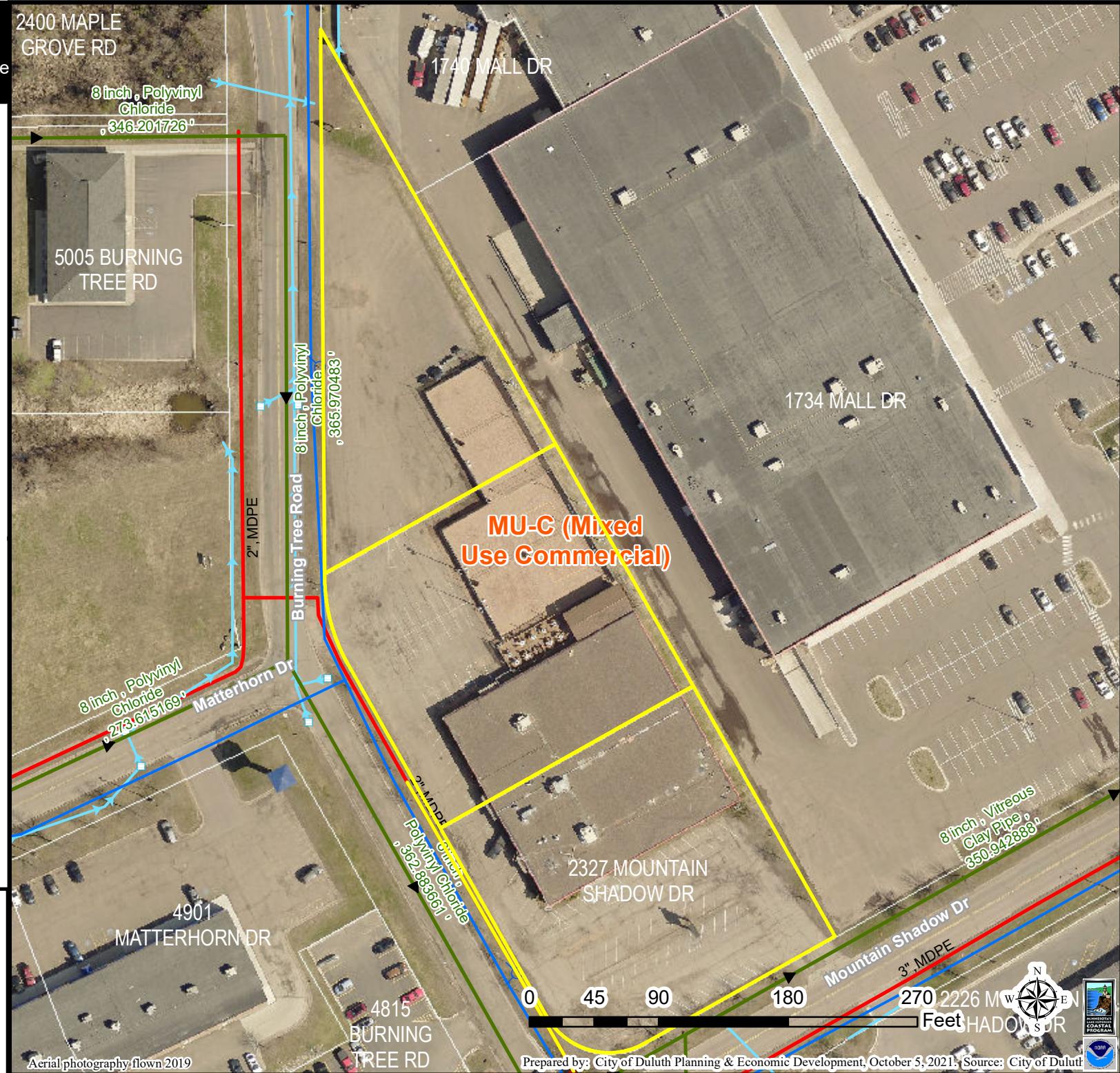
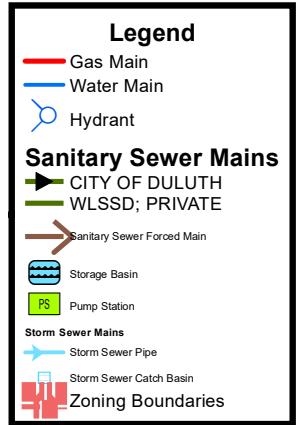
Staff Recommendation:

Based on the above findings, staff recommends that Planning Commission approve a variance to allow 178 parking spaces with the following conditions:

- 1) The parking lot shall be constructed as shown in the site plan dated April 4, 2022 with 178 parking stalls.
- 2) Any alterations to the approved plans that do not alter major elements of the plan may be approved by the Land Use Supervisor without further Planning Commission; however, no such administration approval shall constitute a variance from the provisions of Chapter 50.



PL22-064
MU-C Planning Review & Variance
2327 Mountain Shadow Dr.



The City of Duluth has tried to ensure that the information contained in this map or electronic document is accurate. The City of Duluth makes no warranty or guarantee concerning the accuracy or reliability. This drawing/data is neither a legally recorded map nor a survey and is not intended to be used as one. The drawing/data is a compilation of records, information and data located in various City, County and State offices and other sources affecting the area shown and is to be used for reference purposes only. The City of Duluth shall not be liable for errors contained within this data provided or for any damages in connection with the use of this information contained within.





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Variance Application Supplemental Form

In order to submit a complete variance application, please explain how your request meets all of the below variance criteria. This is information that is required by the zoning code and will be shared with the Planning Commission during their review. You may fill out this form, or attach your information in a separate letter. This information will be shared with the Planning Commission in order to help them determine the appropriateness of the variance application and request.

List the UDC Section you are seeking relief from (example: "50-14.5 – front yard setback in an R-1"):

50-24.2 required parking spaces

1. Please explain how the exceptional narrowness, shallowness or shape of the property, or exceptional topographic or other conditions related to the property, would result in practical difficulties under strict application of the requirements of the UDC:

The property dimensions do not apply to this variance request.

2. Please explain how the special circumstances or conditions that create the need for relief is due to circumstances unique to the property, and were NOT created by the property owner or the property owners' predecessors-in-interest:

This variance request is regarding the intended use of the property. Fitness Centers especially

Planet Fitness is a heavy parker during peak hours. The property owner has not created any unique circumstances

3. Please explain the special circumstances or conditions applying to the building or land in question are peculiar to this property or immediately adjoining properties, and do not apply generally to other land or buildings in the vicinity:

Planet Fitness is a heavy parking use during peak hours. We are requesting additional parking per the code for, 1. the ease of traffic through the parking lot and to keep the local roads free of traffic, 2. so our customers are not parking on adjoining properties parking lots due to insufficient parking on the Planet Fitness parking lot.

4. Please explain how the application proposes to use the property in a reasonable manner, which would not be permitted by this code except for a variance:

The City code currently has no requirements for a Fitness Center use. After discussing with the Planning Department, the closest use is Commercial use which allows only 4 spaces per 1,000sf of gross floor area. These facilities normally follow the use of a gym or event center. Typically a Planet Fitness has roughly 4-6k members per club location requiring much more parking than 4 spaces per 1,000. We would like to use the 200% parking as allowed by the City's parking variance.

5. Please explain how that if the variance is granted it will not impair an adequate supply of light and air to adjacent property, or unreasonably increase the congestion in public streets or the danger of fire or imperil the public safety, or unreasonably diminish or impair established property values within the surrounding areas, or in any other respect impair the health, safety or public welfare of the inhabitants of the city:

By allowing this variance, vehicles would be able to move around the site easier than a restricted parking lot with less parking. More parking would be available to a heavy user such as a Planet Fitness and allow vehicles to turn more freely off of Mountain Shadow Drive and Burning Tree Road.

6 Please explain how, if the variance is granted, it will not substantially impair the intent of zoning code and the official zoning map, and will not alter the essential character of the neighborhood:

We don't believe that allowing additional parking spaces would affect the current zoning or alter the character of the existing neighborhood.



Does your variance request need to meet any of the specific criteria in UDC Section 50-37.9, subsections D through M (E. Unsewered Areas, F. Two Family Dwellings in R-1, G. Parking Regulations, H. Reduce Setbacks, I. MU-C District, J. Airport Overlay, K. Flood Plain Regulations, L. Shorelands, or M. Non-Conforming Buildings)?

Yes No

Discuss what subsections are applicable and how this request meets those: _____
It appears that Section G. refers to residential districts. Also, Section I does not apply, we are meeting all landscaping and buffering requirements.

Note: We have included check-in data for other Planet Fitness clubs in the surrounding market.

January 2022 West St. Paul Check Ins

Week One

	1	2	3	4	5	6	7
0	5	1	0	1	1	1	10
1	0	0	2	1	2	1	1
2	2	0	0	2	1	0	1
3	1	1	1	2	2	2	1
4	1	4	18	14	12	12	5
5	3	27	5	25	26	17	9
6	10	39	26	26	30	28	21
7	5	22	18	16	15	14	31
8	22	42	30	18	24	23	55
9	32	36	31	15	22	19	35
10	26	26	21	27	16	20	43
11	26	38	36	21	30	32	47
12	17	34	24	22	23	19	35
13	33	31	24	33	22	33	4
14	22	30	48	29	30	24	28
15	43	62	41	38	46	30	33
16	26	72	72	39	65	1	31
17	18	68	88	36	61	28	35
18	19	60	52	59	23	33	28
19	35	56	49	45	40	43	34
20	32	44	41	46	37	39	32
21	20	26	31	30	27	38	27
22	13	22	17	16	17	10	13
23	6	12	7	6	8	12	14

Week Two

	1	2	3	4	5	6	7
0	9	4	3	2	5	3	5
1	7	3	0	5	3	1	5
2	1	3	0	1	0	1	2
3	0	9	0	5	4	6	1
4	3	15	10	13	16	7	3
5	7	23	43	37	32	25	8
6	5	23	34	36	31	32	15
7	14	22	37	17	18	16	23
8	35	26	38	33	27	22	45
9	38	30	26	34	28	27	35
10	41	27	27	30	26	26	50
11	32	26	13	33	18	28	39
12	36	33	30	25	32	23	44
13	22	30	30	21	29	17	29
14	27	45	39	42	28	21	34
15	32	51	58	68	48	33	36
16	33	78	72	91	80	44	21
17	26	82	70	67	77	43	39
18	2	62	65	69	60	43	19
19	0	42	50	56	58	41	26
20	3	47	69	46	47	35	21
21	1	45	31	48	30	30	10
22	8	18	19	4	16	20	14
23	8	10	10	9	12	10	8

Week Three

	1	2	3	4	5	6	7
0	2	10	10	6	4	5	2
1	6	2	1	2	3	5	2
2	4	0	1	2	3	0	2
3	3	5	3	5	0	3	3
4	2	15	18	13	12	12	2
5	5	28	38	28	18	24	7
6	13	23	31	31	24	22	13
7	17	26	25	17	25	20	35
8	29	48	29	35	38	26	39
9	43	36	28	34	30	19	54
10	29	49	30	27	29	21	50
11	26	44	27	41	17	24	45
12	20	31	17	33	23	38	41
13	17	38	16	30	33	28	45
14	28	54	42	44	36	31	23
15	30	59	59	50	54	34	35
16	25	55	78	92	91	55	28
17	35	79	90	74	63	52	22
18	29	62	77	62	59	39	18
19	41	45	56	71	51	40	23
20	31	48	36	28	49	31	23
21	11	53	35	45	32	20	21
22	10	16	10	18	7	27	14
23	11	10	10	9	9	6	3

Week Four

	1	2	3	4	5	6	7
0	6	8	5	4	6	10	5
1	2	4	2	6	3	3	11
2	6	2	0	5	0	0	1
3	4	4	6	2	4	5	2
4	1	15	13	16	17	13	4
5	6	28	25	23	27	28	5
6	1	27	28	25	25	33	14
7	17	11	24	28	34	13	30
8	20	22	35	35	28	18	41
9	39	27	16	47	26	26	55
10	29	30	13	28	29	33	55
11	30	29	37	36	30	19	44
12	38	38	44	40	29	35	42
13	35	33	30	30	32	29	36
14	46	47	33	40	33	36	44
15	27	59	38	54	50	47	18
16	27	77	95	81	64	48	36
17	32	56	83	77	54	57	26
18	27	73	76	61	86	43	27
19	42	60	64	76	54	49	24
20	35	62	47	38	46	28	36
21	19	47	28	44	25	32	32
22	15	16	16	20	17	35	16
23	6	8	5	13	10	11	9

January 2022 Crystal Check Ins

Week One

	1	2	3	4	5	6	7
0	5	5	4	4	7	2	8
1	1	1	2	4	1	1	4
2	1	2	1	2	2	3	1
3	0	2	2	4	1	2	1
4	0	12	14	6	5	6	1
5	5	20	26	20	24	15	4
6	10	26	35	26	26	14	18
7	10	27	27	24	23	17	23
8	22	27	25	19	23	22	34
9	36	41	24	22	37	31	49
10	37	45	47	26	26	33	35
11	36	42	38	27	29	28	53
12	34	43	38	29	38	36	41
13	46	32	22	25	27	26	24
14	47	42	42	23	32	37	22
15	29	50	69	49	39	43	33
16	42	97	86	58	74	61	22
17	33	50	98	68	65	48	28
18	26	54	63	50	44	34	29
19	33	50	51	40	55	26	14
20	20	3	30	53	29	35	22
21	20	3	38	27	20	24	16
22	8	2	16	22	10	28	18
23	4	12	14	11	9	19	11

Week Two

	1	2	3	4	5	6	7
0	9	1	7	5	6	6	6
1	2	1	5	1	2	2	3
2	2	1	0	2	3	4	1
3	3	5	3	4	6	2	2
4	2	12	10	15	11	10	2
5	5	16	22	23	24	19	8
6	9	22	30	27	37	34	17
7	14	0	25	26	23	22	19
8	21	11	29	29	21	15	24
9	42	27	50	42	44	21	59
10	36	35	34	34	27	25	36
11	42	29	36	36	44	35	58
12	37	33	30	47	44	24	52
13	30	41	35	19	40	21	42
14	19	37	54	53	38	16	32
15	26	60	50	51	39	25	29
16	40	68	85	81	45	49	39
17	24	89	91	82	76	33	33
18	40	61	82	54	67	38	31
19	23	42	64	60	42	21	25
20	38	40	49	40	39	35	29
21	22	37	39	40	31	19	41
22	18	19	26	22	23	17	22
23	11	5	5	12	8	19	8

Week Three

	1	2	3	4	5	6	7
0	6	2	4	3	4	3	11
1	5	2	2	5	1	3	2
2	0	0	1	2	1	1	2
3	0	2	3	6	1	1	3
4	4	10	18	13	7	12	8
5	3	18	25	14	17	8	3
6	13	32	40	37	34	33	8
7	18	27	29	22	19	18	17
8	20	30	26	20	25	26	34
9	46	43	34	27	24	29	38
10	43	60	29	34	35	29	42
11	37	51	40	35	29	39	65
12	39	53	34	24	33	32	47
13	31	56	34	28	26	28	29
14	40	46	36	51	36	32	49
15	30	53	70	71	64	46	30
16	24	71	60	76	70	49	37
17	30	91	104	94	70	47	22
18	28	69	63	62	52	33	25
19	26	60	44	61	58	41	22
20	27	46	65	40	30	21	26
21	30	46	58	39	37	32	12
22	20	22	32	19	22	30	14
23	15	11	7	16	19	18	10

Week Four

	1	2	3	4	5	6	7
0	4	3	5	5	9	4	7
1	1	2	3	3	3	2	2
2	0	4	0	1	0	4	4
3	0	3	2	3	3	0	3
4	0	10	7	12	14	4	0
5	0	10	17	13	17	16	10
6	0	37	34	33	38	37	11
7	12	21	24	31	21	17	23
8	33	15	23	21	14	23	29
9	23	24	34	31	29	23	43
10	40	31	30	23	23	28	42
11	45	37	39	30	32	36	41
12	56	35	37	41	37	36	25
13	31	29	26	23	24	24	29
14	34	42	35	43	33	41	28
15	29	55	43	62	66	42	29
16	28	65	88	86	77	55	32
17	38	92	86	92	67	46	27
18	16	65	63	63	61	41	25
19	20	61	53	63	40	34	24
20	19	49	54	41	57	26	32
21	21	34	52	41	33	28	19
22	16	34	24	31	26	20	19
23	7	8	10	6	11	12	11

January 2022 Urbandale Check Ins

Week One

	1	2	3	4	5	6	7
0	0	0	1	2	3	3	0
1	0	0	1	1	1	0	0
2	0	0	1	3	2	2	0
3	0	0	7	8	4	7	0
4	0	14	23	18	13	17	0
5	0	35	52	40	30	40	0
6	0	41	27	39	29	42	13
7	30	31	26	23	29	30	56
8	23	46	40	45	42	44	51
9	27	53	51	44	38	56	65
10	67	67	50	41	57	42	68
11	58	74	55	55	46	31	64
12	46	54	59	48	56	50	74
13	50	63	55	53	51	43	62
14	38	67	50	62	59	53	49
15	48	64	88	82	68	77	41
16	50	81	114	112	100	82	34
17	32	93	105	96	80	65	36
18	10	77	73	61	86	44	12
19	0	63	69	58	48	27	0
20	0	41	45	38	31	19	0
21	0	23	28	32	25	0	0
22	0	19	11	25	13	0	0
23	0	8	9	4	2	0	0

Week Two

	1	2	3	4	5	6	7
0	0	0	4	4	3	4	0
1	0	0	2	3	3	1	0
2	0	0	3	3	2	2	0
3	0	0	4	6	7	4	0
4	0	11	23	16	23	21	0
5	0	49	56	47	45	34	0
6	0	40	36	48	34	29	0
7	47	39	28	33	33	26	7
8	33	48	40	37	41	20	18
9	54	49	40	39	48	38	22
10	60	58	45	46	48	44	27
11	61	64	63	47	42	46	44
12	46	52	46	45	37	52	34
13	52	45	48	44	38	39	33
14	62	54	57	62	43	33	44
15	52	85	75	90	54	38	42
16	48	139	88	94	86	34	37
17	57	109	108	82	89	20	30
18	25	89	89	80	56	15	12
19	1	73	65	48	47	11	2
20	0	50	51	53	38	2	0
21	0	33	31	17	35	0	0
22	0	9	7	18	28	0	0
23	0	11	4	8	6	0	0

Week Three

	1	2	3	4	5	6	7
0	0	0	1	3	1	3	0
1	0	0	0	1	1	4	0
2	0	0	2	3	0	3	0
3	0	0	3	6	1	6	0
4	0	5	23	19	1	12	0
5	0	35	63	59	2	40	0
6	8	41	49	38	8	45	0
7	28	34	26	34	4	20	64
8	20	41	31	49	3	27	44
9	59	77	41	48	10	34	57
10	48	81	52	47	6	49	78
11	52	54	66	41	10	43	58
12	42	69	42	40	6	54	53
13	47	50	56	45	18	41	46
14	42	74	53	35	53	44	47
15	26	56	73	81	67	82	51
16	41	77	94	90	100	79	36
17	36	101	132	95	80	60	32
18	15	83	65	64	62	63	14
19	0	56	68	34	59	29	0
20	0	46	48	3	43	16	0
21	0	29	22	4	28	0	0
22	0	14	17	0	11	0	0
23	0	6	7	2	4	0	0

Week Four

	1	2	3	4	5	6	7
0	0	0	6	7	5	8	0
1	0	0	0	0	3	8	5
2	0	0	2	6	0	1	0
3	0	0	7	5	5	5	0
4	0	1	18	22	16	21	0
5	0	48	55	56	39	43	0
6	7	56	55	44	52	53	1
7	29	38	28	33	30	26	63
8	28	33	36	46	43	52	52
9	67	52	42	52	43	29	86
10	45	54	34	51	34	13	81
11	56	47	43	57	61	2	53
12	48	45	58	50	36	22	55
13	52	48	47	41	38	8	41
14	44	47	38	43	45	9	47
15	60	83	86	82	74	7	46
16	44	100	110	116	87	30	47
17	38	99	107	93	99	65	34
18	14	90	76	81	77	54	14
19	0	62	67	67	62	37	0
20	0	54	45	44	44	17	0
21	0	37	25	36	33	0	0
22	0	29	16	20	14	0	0
23	0	10	5	6	6	0	0

January 2022 Moreno Valley Check Ins

Week One

	1	2	3	4	5	6	7
0	4	10	24	20	11	13	20
1	5	5	11	10	15	14	3
2	1	6	9	11	7	7	6
3	2	10	12	13	11	13	12
4	8	20	15	20	20	18	7
5	15	19	32	26	28	26	10
6	19	28	24	23	21	23	14
7	19	40	36	24	33	34	41
8	32	28	28	28	24	29	32
9	26	44	44	28	33	38	31
10	27	49	58	41	35	41	51
11	40	41	46	49	40	38	37
12	32	65	45	44	39	31	33
13	27	44	46	43	43	37	35
14	32	44	49	40	44	41	29
15	35	58	55	60	45	46	25
16	29	59	60	55	50	30	27
17	38	73	76	80	60	45	33
18	23	88	84	61	70	44	33
19	28	75	75	65	56	61	29
20	20	73	42	39	53	43	35
21	26	37	44	40	24	35	19
22	23	29	40	31	33	18	19
23	18	22	25	28	27	14	10

Week Two

	1	2	3	4	5	6	7
0	8	6	17	13	18	18	20
1	3	1	10	5	5	6	11
2	3	5	5	5	6	6	4
3	1	6	14	11	14	10	8
4	1	21	19	18	15	20	12
5	6	38	41	37	39	30	14
6	18	23	30	16	27	31	23
7	24	25	30	27	45	30	35
8	31	59	53	45	66	50	38
9	36	55	51	45	38	46	32
10	49	36	47	37	41	40	40
11	36	54	41	48	42	42	45
12	23	40	36	44	42	34	33
13	33	40	31	36	41	41	30
14	37	33	28	67	30	36	28
15	23	60	41	53	36	44	30
16	26	62	82	64	55	41	26
17	31	74	93	88	73	46	40
18	31	78	79	72	85	45	24
19	34	91	85	61	80	62	42
20	36	62	54	59	50	29	46
21	28	44	59	43	41	24	24
22	26	34	38	40	29	35	26
23	11	18	24	18	25	24	12

Week Three

	1	2	3	4	5	6	7
0	7	12	15	23	20	13	18
1	8	2	10	12	10	9	11
2	4	2	4	4	6	6	4
3	6	9	9	11	6	13	10
4	7	18	18	26	19	22	10
5	12	23	39	38	35	37	16
6	16	23	33	40	32	40	25
7	41	33	38	33	32	33	41
8	45	37	54	67	54	42	39
9	34	60	32	40	44	51	55
10	29	34	49	40	38	31	34
11	33	50	60	46	47	44	43
12	31	49	45	25	30	36	49
13	23	57	49	42	44	32	38
14	22	46	43	67	46	29	27
15	27	66	47	55	40	36	21
16	20	49	69	61	56	49	21
17	27	65	93	82	68	59	30
18	36	73	68	109	74	51	33
19	30	73	77	87	66	49	47
20	37	58	62	95	75	47	29
21	43	35	50	49	39	26	37
22	26	34	17	44	42	45	28
23	13	20	23	24	23	18	16

Week Four

	1	2	3	4	5	6	7
0	11	12	12	21	21	17	12
1	3	14	9	11	6	9	12
2	4	9	10	12	9	5	2
3	9	9	17	15	12	17	15
4	12	24	21	30	25	23	10
5	13	29	44	32	33	21	13
6	18	28	37	40	36	20	29
7	29	46	33	34	29	38	36
8	35	56	68	60	51	48	55
9	33	53	52	63	40	36	54
10	38	40	58	38	34	47	47
11	28	49	41	64	52	48	35
12	23	55	64	52	46	33	45
13	34	39	47	52	35	28	37
14	31	48	54	56	42	33	37
15	34	41	57	63	48	37	34
16	20	86	92	73	64	47	27
17	30	101	79	109	80	47	36
18	33	83	95	84	93	74	39
19	53	90	102	97	84	58	27
20	37	78	80	77	64	36	29
21	35	58	54	40	61	33	36
22	33	39	33	37	31	39	33
23	17	0	37	25	21	31	26

STORMWATER DETENTION NOTE:

WITH THE DESIGN AND CONSTRUCTION OF THE VILLAGE MALL DEVELOPMENT, THE STORMWATER FLOWS OF THIS PROJECT (PLANET FITNESS) WERE CONSIDERED. BASED UPON THE REDUCTION OF IMPERVIOUS AREA NO STORMWATER DETENTION IS REQUIRED FOR THE PLANET FITNESS DEVELOPMENT.

EXISTING TOTAL IMPERVIOUS AREA: 104,757 S.F. (2.40 ACRES) (96.5%)
EXISTING TOTAL PERVIOUS AREA (OPEN SPACE): 3,829 S.F. (0.09 ACRES) (3.5%)

PROPOSED TOTAL IMPERVIOUS AREA: 88,087 S.F. (2.02 ACRES) (81.1%)
PROPOSED TOTAL PERVIOUS AREA (OPEN SPACE): 20,499 S.F. (0.47 ACRES) (18.9%)

REDUCTION IN IMPERVIOUS AREA: 15.9%

STORMWATER QUALITY NOTE:

STORMWATER QUALITY WILL BE PROVIDED FOR THIS DEVELOPMENT WITH A BIO-RETENTION PONDS THROUGHOUT THE PROPERTY.

HYDRAULIC ANALYSIS:

***** ANALYSIS OPTIONS *****	
FLOW UNITS	CFS
SUBBASIN HYDROGRAPH METHOD.....	RATIONAL
TIME STEP CONCENTRATION.....	SCS
RETURN PERIOD.....	10 YEARS
LINK ROUTING METHOD	HYDRODYNAMIC
STARTING DATE	APR-03-2022 00:00:00
ENDING DATE	APR-03-2022 01:00:00
REPORT TIME STEP	00:00:10

RAINFALL REQUIREMENTS

Atlas 14 IDF regionalization
To assist in using Atlas 14 with the Rational Method, MnDOT has created 32 Atlas 14 Rainfall Intensity-Duration-Frequency (IDF). These regions supersede the 3 regions specified in the MnDOT Drainage Manual (2000). These tables were designed to be used with the Rational Method which is typically used for storm drain design and catch basin spacing.

Region: Saint Louis Counties: Saint Louis									
Intensity (inches/hour)									
Time of Concentration	2 year	3 year	5 year	10 year	25 year	50 year	100 year		
5 min	4.884	5.406	6.144	7.176	8.592	9.684	10.848		
10 min	3.576	3.956	4.494	5.256	6.294	7.086	7.944		
15 min	2.908	3.218	3.656	4.272	5.116	5.764	6.460		
30 min	2.008	2.227	2.538	2.974	3.568	4.020	4.514		
60 min	1.289	1.432	1.636	1.930	2.347	2.677	3.014		

CATCHMENT SUMMARY (10-YEAR STORM)

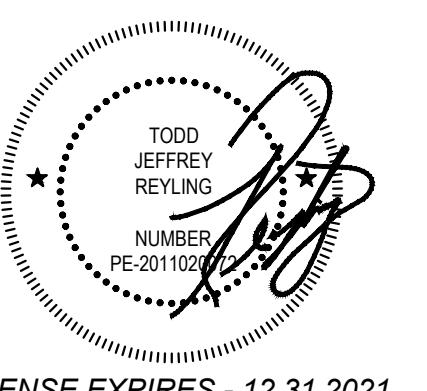
SN	Element	Area	Drainage	Weighted	Accumulated		Total	Peak	Rainfall	Time
					ID	Node ID	Runoff	Precipitation	Runoff	Intensity
					(acres)		(inches)	(inches)	(cfs)	(inches/hr)
										(days hh:mm:ss)
1	(Catchment),CATCH#1	0.35	STRCT#1	0.9000	0.88	0.79	1.66	5.256	0 00:10:00	
2	(Catchment),CATCH#2	0.12	STRCT#2	0.9000	0.88	0.79	0.55	5.256	0 00:10:00	
3	(Catchment),CATCH#3	0.38	STRCT#3	0.9000	0.88	0.79	1.79	5.256	0 00:10:00	
4	(Catchment),CATCH#4	0.25	STRCT#4	0.9000	0.88	0.79	1.17	5.256	0 00:10:00	
5	(Catchment),CATCH#5	0.31	STRCT#5	0.9000	0.88	0.79	1.46	5.256	0 00:10:00	
6	(Catchment),CATCH#6	0.18	STRCT#6	0.9000	0.88	0.79	0.87	5.256	0 00:10:00	
7	(Catchment),CATCH#7	0.55	STRCT#7	0.9000	0.88	0.79	2.60	5.256	0 00:10:00	

STRUCTURES SUMMARY (10-YEAR STORM)

SN	Element	Invert	Ground/Rim	Initial	Peak	Peak	Maximum	Maximum	Time of	Time of	Total	Total
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(days hh:mm)	(ac-inches)	(minutes)	
		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)				
1	DS#1	1324.00	1326.00	0.00	0.00	0.00	1324.00	0.00	0 00:00	0.00	0.00	0.00
2	DS#2	1323.50	1326.00	0.00	0.00	0.00	1323.50	0.00	0 00:00	0.00	0.00	0.00
3	DS#3	1323.00	1326.00	0.00	0.00	0.00	1323.00	0.00	0 00:00	0.00	0.00	0.00
4	DS#4	1324.11	1326.00	0.00	0.00	0.00	1324.11	0.00	0 00:00	0.00	0.00	0.00
5	DS#5	1322.87	1326.00	0.00	0.00	0.00	1322.87	0.00	0 00:00	0.00	0.00	0.00
6	NUL#1	1322.70	1325.64	0.00	0.13	0.00	1322.85	0.15	0 00:11	0.00	0.00	0.00
7	STRCT#1	1320.60	1323.00	0.00	3.77	1.65	1321.69	1.09	0 00:10	0.00	0.00	0.00
8	STRCT#2	1320.84	1323.00	0.00	0.55	0.55	1321.71	0.87	0 00:10	0.00	0.00	0.00
9	STRCT#3	1321.35	1323.70	0.00	1.79	1.79	1322.00	0.65	0 00:10	0.00	0.00	0.00
10	STRCT#4	1320.75	1323.00	0.00	5.67	1.17	1321.94	1.19	0 00:10	0.00	0.00	0.00
11	STRCT#5	1321.20	1323.25	0.00	1.46	1.46	1322.11	0.91	0 00:10	0.00	0.00	0.00
12	STRCT#6	1321.06	1324.00	0.00	3.19	0.87	1322.16	1.10	0 00:10	0.00	0.00	0.00
13	STRCT#7	1321.91	1324.30	0.00	2.60	2.60	1322.85	0.94	0 00:11	0.00	0.00	0.00

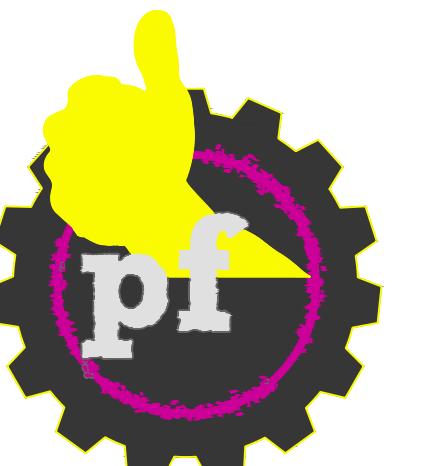
PIPES SUMMARY (10-YEAR STORM)

SN	From (Inlet)	To (Outlet)	Length	Inlet	Outlet	Average	Pipe	Peak	Time of	Max	Travel	Design	Max Flow /	Max	Total	Max
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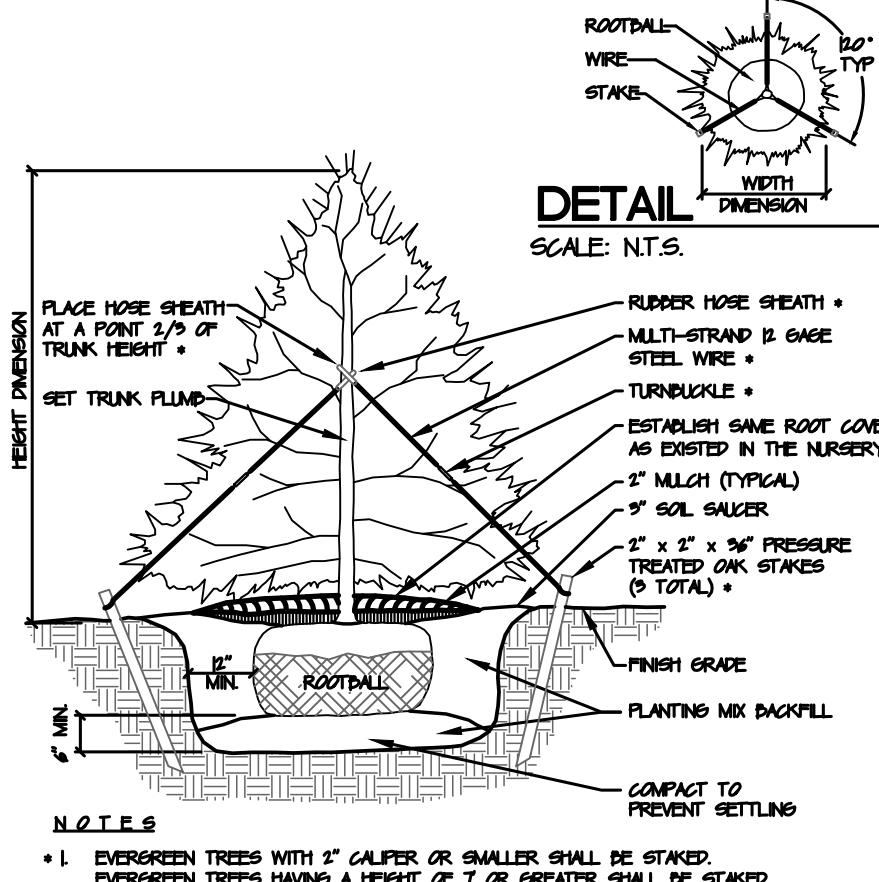
LICENSE EXPIRES - 12/31/2021
DATE SIGNED - 02/17/2021

ENGINEER OF RECORD:
Todd J. Reylind, PE
Missouri PE 201102072

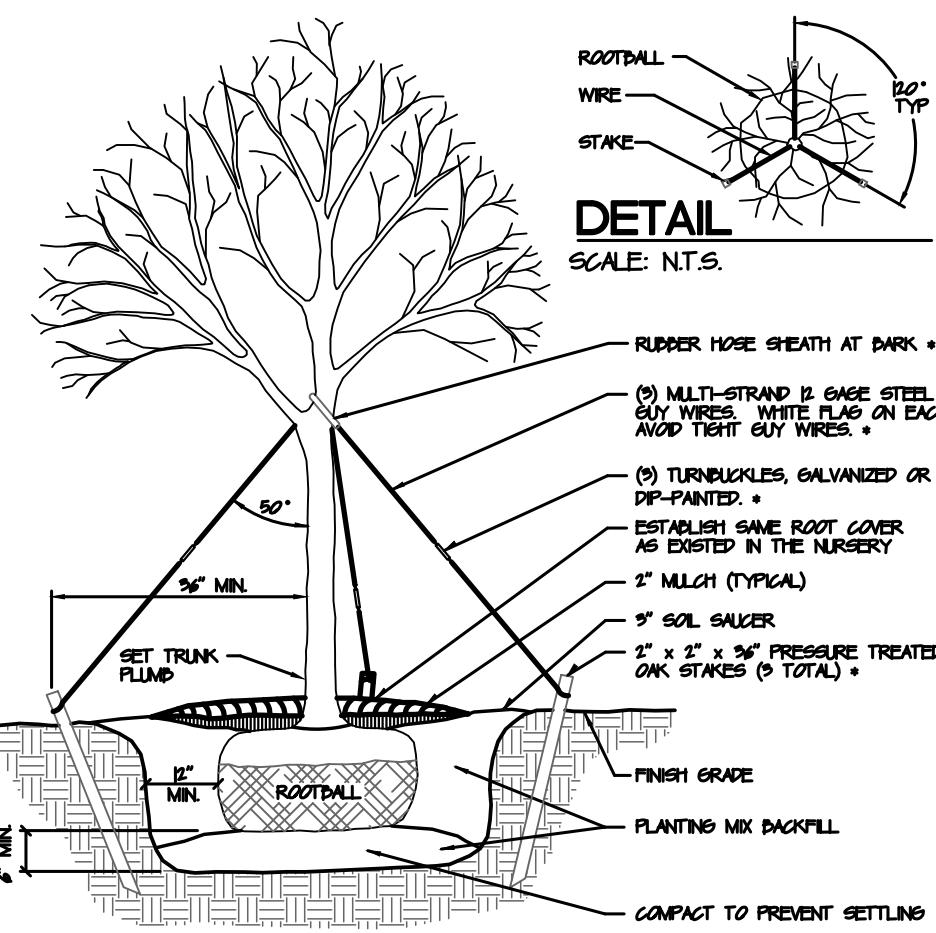


New Ground Up Building for:
PLANET FITNESS
Burning Tree Rd and Mountain Shadow Dr
Duluth, MN
MSTUDIO PROJECT NUMBER:

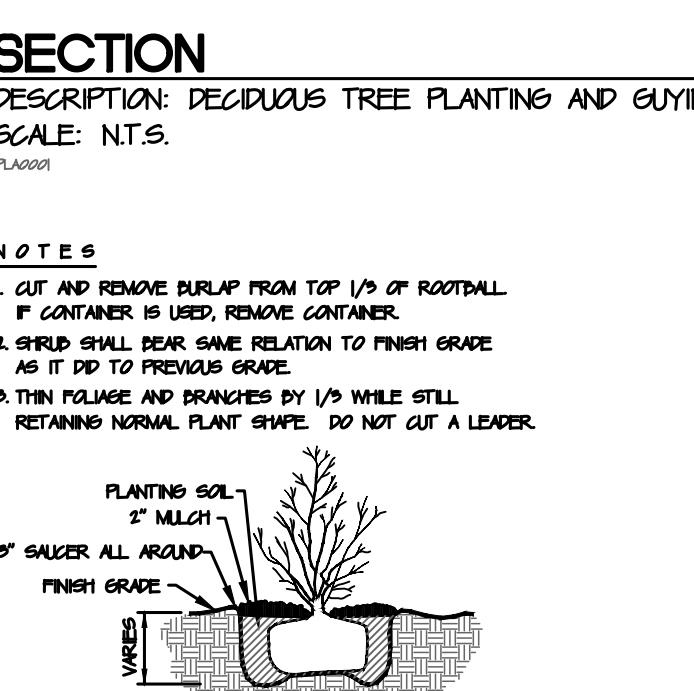
ISSUED / REVISED DATE
ISSUED TO CITY 04.05.2022



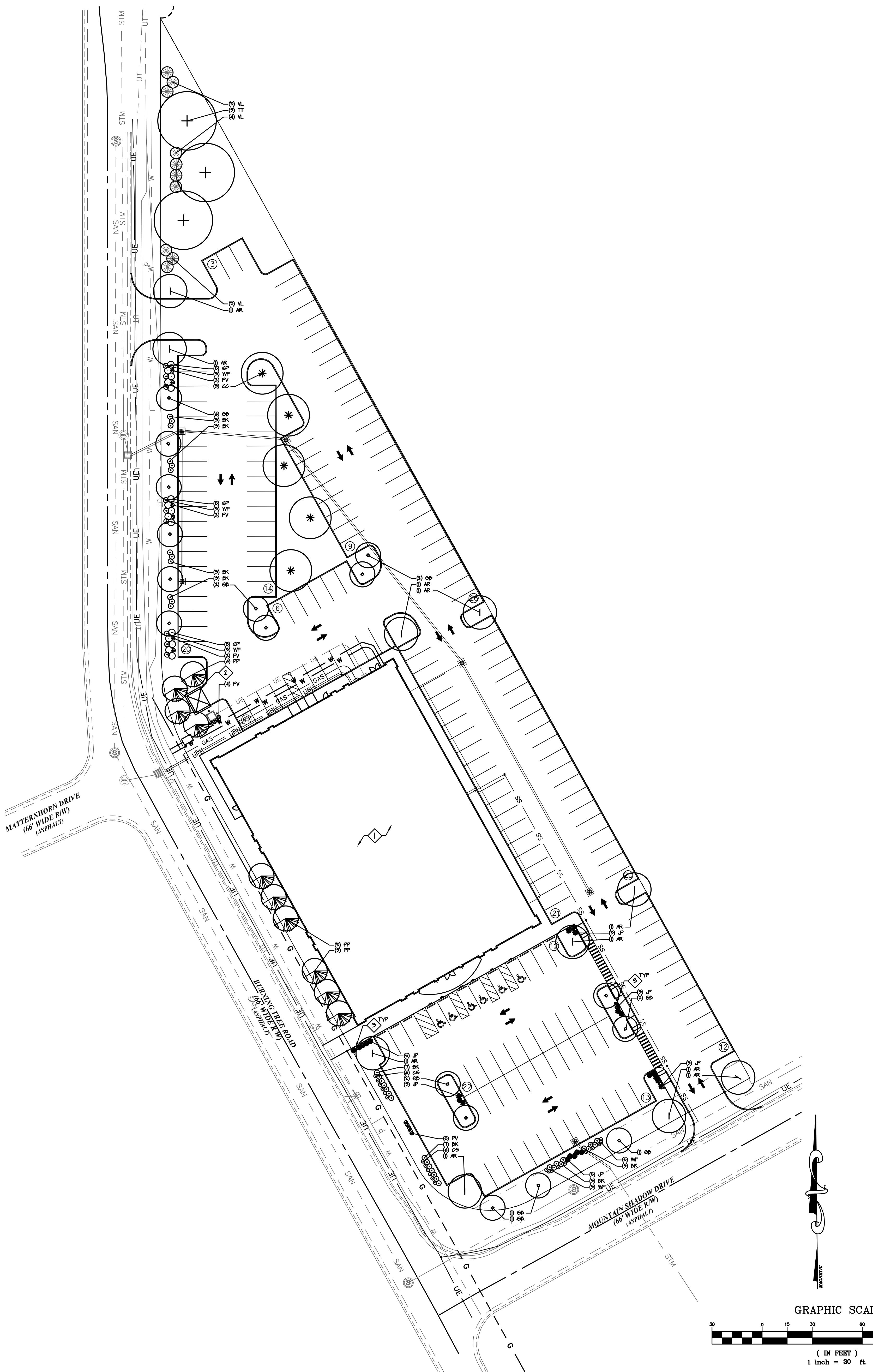
DETAIL
DESCRIPTION: EVERGREEN TREE PLANTING AND GUYING
SCALE: N.T.S.



DETAIL
DESCRIPTION: DECIDUOUS TREE PLANTING AND GUYING
SCALE: N.T.S.



DETAIL
DESCRIPTION: SHRUB PLANTING
SCALE: N.T.S.



GENERAL NOTES

- CONTRACTOR IS TO VERIFY LOCATIONS OF ALL UTILITIES WITH THE OWNER AND UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION.
- CONTRACTOR IS RESPONSIBLE FOR DETERMINING IN THE FIELD ACTUAL LOCATIONS AND ELEVATIONS OF EXISTING UTILITIES WHETHER INDICATED ON THE PLANS OR NOT. CONTRACTOR IS RESPONSIBLE FOR NOTIFYING UTILITY SERVICE A MINIMUM OF 48 HOURS PRIOR TO CONSTRUCTION.
- CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR DAMAGE OF UTILITY LINES.
- CONTRACTOR TO EXAMINE FINISH SURFACE GRADE ACCURACY AND TOPSOIL FOR DEPTH AND QUALITY. IF CONDITIONS ARE UNSATISFACTORY, NOTIFY LANDSCAPE DESIGNER AND OWNER AND DO NOT BEGIN WORK UNTIL CONDITIONS HAVE BEEN CORRECTED.
- PRIOR TO INSTALLATION, REPAIR ALL DAMAGES MADE TO EXISTING CONDITIONS TO A SATISFACTORY MANNER.
- EXISTING VEGETATION TO REMAIN SHALL BE PRESERVED IN ACCORDANCE TO ACCEPTABLE NURSERY INDUSTRY PROCEDURES.
- PLANT MATERIALS SHALL CONFORM TO THE STANDARDS OF THE AMERICAN ASSOCIATION OF NURSERYMEN AND SHALL HAVE PASSED INSPECTION REQUIRED UNDER STATE REGULATIONS.
- ALL PLANTINGS TO BE IN ACCORDANCE WITH THE CITY OF DULUTH ZONING ORDINANCE.
- IF PROPOSED PLANT LOCATIONS CONFLICT WITH UTILITIES, LIGHTS, EXISTING PLANT MATERIALS, OR EXISTING PLANT MATERIALS, NOTIFY LANDSCAPE DESIGNER TO CONSULT ON THE ADJUSTMENTS OF ANY PLANT LOCATIONS.
- ALL PARKING ISLANDS AND PENINSULAS TO BE COVERED WITH DECORATIVE LANDSCAPE ROCK SO AS NO EXPOSED EARTH SHALL BE SEEN. COLOR AND SIZE TO BE APPROVED BY OWNER. PREEMERGENT AND LANDSCAPE FABRIC TO BE INSTALLED PRIOR TO ROCK.
- SEED ALL DISTURBED LAWN AREAS THAT ARE NOT LANDSCAPED.
- CONTRACTOR IS RESPONSIBLE FOR MAINTAINING POSITIVE DRAINAGE IN LAWN AREAS. CONTRACTOR IS RESPONSIBLE FOR PLANT'S LIVABILITY WITH A 10 YEAR MATERIAL AND LABOR WARRANTY FOR ALL.
- PERPETUAL MAINTENANCE OF LANDSCAPE SHALL BE PROVIDED AND ANY DEAD OR DISEASED MATERIAL SHALL BE REMOVED AND REPLACED WITH APPROVED SPECIES WITHIN THREE MONTHS, WHETHER PERMITTING.
- ANY CONTRACTOR RECOMMENDED SUBSTITUTIONS MUST BE APPROVED BY THE LANDSCAPE DESIGNER. UNAPPROVED SUBSTITUTIONS SHALL BE REMOVED WITH APPROPRIATE PLANTS.
- IF ANY DISCREPANCIES BETWEEN PLAN AND PLANT SCHEDULE, ACCEPT THE PLAN TO BE CORRECT.

DRAWING NOTES

- PROPOSED PLANET FITNESS SEE ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.
- PROPOSED COMPUTER AND ENCLOSURE SEE ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.
- LANDSCAPE POULDER COLOR, SHAPE, SIZE TO VARY AND BE APPROVED BY OWNER. LANDSCAPE POULDER TO BE PLACED 1/2 TO 1 1/2 FEET.

ZONING CALCULATIONS

ARTICLE 4 SECTION 50-254 (ABD)

STREET FRONTAGE AND PARKING BUFFER	
1 TREE/50' LF FRONTAGE	5 SHRUBS/25' LF FRONTAGE
741' LF PURNING TREE RD	741/50 = 21.74
741/25 = 29.64 x 9 = 267.32	22 TREES REQUIRED
22 SHRUBS REQUIRED	22 SHRUBS PROVIDED
200' LF MOUNTAIN SHADOW DR	200/25 = 8 x 9 = 72
200/25 = 8 TREES	24 TREES REQUIRED
6 TREES PROVIDED	28 SHRUBS PROVIDED

VIA	
1 TREE/200' SOFT LANDSCAPE AREA	
4566.69 SOFT 4566.69/300 = 15.2	16 TREES REQUIRED
17 TREES PROVIDED	

PLANTING SCHEDULE				
QUANTITY	KEY	BOTANICAL NAME	COMMON NAME	SIZE / REMARKS
10	AR	ACER rubrum 'Somerset'	Somerset Maple	2" B&B
30	BK	BUXUS koreana 'Wintergreen'	Wintergreen Boxwood	No. 3 Container, 15" H
5	CC	CERATIS canadensis	Eastern Redbud	1 3/4" B&B
12	CS	CORNUS sericea 'Kelseyi'	Kelsey Dwarf Dogwood	No. 3 Container, 15" H
17	GB	GINKGO biloba 'Princeton Sentry'	Princeton Sentry Ginkgo	No. 10 Container, 6' H
24	JP	JUNIPERUS x pfitzeriana 'Monson'	Sea of Gold Juniper	No. 3 Container, 12" H
15	PV	PANICUM virgatum 'Shenandoah'	Shenandoah Switch Grass	Clump, No. 2 Container
10	PP	PICEA pungens 'Hoops'	Hoops Blue Spruce	6' H, B&B
15	SP	SAUSS purpurea 'Nonna'	Blue Arctic Willow	No. 3 Container, 15" H
3	TT	TIJUCA tormentosa 'Sterling Silver'	Sterling Silver Linden	2" B&B
10	VL	VIBURNUM lantana 'Mohican'	Mohican Viburnum	30" B&B
19	WF	WEIGELA florida 'Minuet'	Minuet Weigela	No. 3 Container, 15" H

GRAPHIC SCALE
(IN FEET)
1 inch = 30 ft.