



AGENDA
PARKS, RECREATION & NATURAL RESOURCES COMMITTEE
MEETING

July 17, 2024 - 6:00 PM
City Hall Council Chambers

1. Call to Order
2. Approval of Minutes
 - a. June 5, 2024 Meeting Minutes
3. Citizen Comments
4. Discussion Items
 - a. Sundance Lakeville Second Addition Preliminary Plat
5. Staff Report
6. Adjourn

CITY OF LAKEVILLE
PARKS, RECREATION & NATURAL RESOURCES COMMITTEE
MEETING MINUTES
June 5, 2024

Committee Chair Weberg called the meeting to order at 6:01 p.m. in the City Council Chambers

Members Present: Holly Weberg, Lindsay Haneman, Erin Young, Steve Henneberry, Shahid Nadeem

Members Absent: Surya Ganesan (alternate), Monica Joubert, Daniel Volkosh

Staff Present: Parks and Recreation Director John Hennen, Arts Center Manager Joe Masiarchin, Environmental Resources Manager Mac Cafferty, Environmental Resources Specialist Maria Friedges, Senior Administrative Assistant Stella Eskelson

1. Approval of April 17, 2024 minutes

A motion was made by Haneman, seconded by Henneberry to approve the April 17, 2024 minutes as written.

Ayes: unanimous

2. Citizen comments

Brad Anderson – Neighbor to Antlers Park: Expressed concerns over the amount of litter that has been in the park since its reopening and requested that additional trash receptacles be on site. Also mentioned the distance from the restrooms to the beach, a need for more bike racks and for staff to consider either a cornhole or horseshoe amenity on site. Staff noted the concerns and will monitor the park and need for changes as the season progresses.

3. Introduction of Joe Masiarchin, Parks and Recreation Director

Joe was introduced as the new Parks and Recreation Director and shared some of his background in previous roles with Germantown and his participation in park planning and other elements. Masiarchin's experience includes fundraising for park improvement projects, master planning and more. Nikki Pretzer has been hired as the new Arts Center Manager and began the week of June 25. Joe will officially take over operations on June 10.

4. SWPPP Public Meeting public meeting was opened at 6:10 p.m.

Environmental Resources Specialist Maria Friedges gave a presentation on the Storm Water Pollution Prevention Plan (SWPPP), a list of best management practices implemented to protect the health of the water system and outlined the minimum control measurements required for the City to meet the Minnesota Pollution Control Agency (MPCA) permit. For each best management practice, there are required goals, timelines and education efforts associated with them. The goals include, clean water, public education and outreach, public participation and involvement, illicit discharge detection and elimination, construction site stormwater runoff control, construction stormwater management and pollution prevention/good housekeeping. Staff facilitates several projects and education/volunteer events throughout the year, part of the public outreach campaign includes the Annual Watershed Cleanup and Earth Day Celebration. Staff also developed other educational programs including videos and educational tips that are blasted out via social media platforms. In collaboration with the Recreation department, Puppet Wagon, Ritter Farm Park After Dark and Nature Detectives programming are some of the other environmental programs available.

There were no citizens present and the Storm Water Pollution Prevention Program Public Meeting was closed at 6:33 p.m.

5. Kenyon Green Preliminary Plat

This plat consists of a 49-unit workforce rental apartment building and 15 units of attached market rate rental townhome dwellings on 6.49 acres to be known as Kenyon Green. The proposed development is located west of Interstate 35, north of 185th Street and South of Kenyon Avenue.

There is a wetland impact of 0.1895 acres that will be replaced by wetland banking credits. The 2015 Parks, Trails and Open Space Plan does not identify the need to a park in this area and the park dedication requirement will be satisfied through a cash contribution at the time of final plat.

A motion was made by Henneberry, seconded by Haneman to approve the Kenyon Green Preliminary Plat as presented by city staff in the May 30, 2024 planning and engineering memos.

Ayes: unanimous

6. Staff Report and Park Bond Referendum Update

The construction of Grand Prairie Park has experienced some delays with the wet weather, the project will move forward in the coming weeks.

Budget preparation is underway, staff is looking at current programming, staff needs and revenue to prepare for the coming year.

7. Citizen comments

No citizens were present.

Motion was made by Haneman, seconded by Henneberry to adjourn the June 5, 2024 meeting.

Ayes: unanimous

8. Adjourn

Meeting 6:45 p.m.



Memorandum

To: Planning Commission
From: Frank Dempsey, AICP, Associate Planner
Date: July 12, 2024
Subject: Packet Material for the July 18, 2024 Planning Commission Meeting

Agenda

- Item:** 1) Preliminary and final plat of one townhome lot to include nine buildings and 167 dwelling units, one common club building, nine single family rental residential lots and homes, and one outlot to be known as Sundance Lakeville Second Addition;
- 2) A conditional use permit to allow multiple family dwellings (townhome buildings) on a single parcel.

Action Deadline: August 23, 2024

BACKGROUND

Ryan Sailer, representing Timberland Partners, Inc. has submitted applications and plans for a preliminary plat, final plat, and conditional use permit for Sundance Lakeville Second Addition, which proposes one lot and one block with 13 townhome buildings and 167 dwelling units and nine single family home lots with rental homes all totaling 15.75 acres north of 162nd Street (CSAH 46), west of Buck Hill Road and east of Kendale Avenue.

The 18.75 acre property had been agricultural property until approximately 2000, after which time the property had been an aggregate mining operation for approximately five years.

This is the second phase of the proposed Sundance Lakeville development. At their June 20 meeting the Planning Commission recommended approval of the first phase of development, which proposes two medical office buildings.

The preliminary and final plat plans have been submitted to:

1. The Engineering Division

2. The Parks and Recreation Department
3. Dakota County Plat Commission

EXHIBITS

- A. Zoning Map
- B. Aerial Photo
- C. Project Narrative
- D. Property Survey
- E. Preliminary Plat
- F. Final Plat
- G. Site Plans
- H. Grading, Drainage, Utility Plans
- I. Tree Preservation Plan and Tree Inventory
- J. Landscaping Plan
- K. Townhome Architectural Plans
- L. Single Family Architectural Plans
- M. May 23, 2024 Traffic Study

Zoning and Surrounding Uses. The subject property on which the townhomes and single-family homes will be located is zoned M-1, Mixed Use I-35 Corridor District and RST-1, Single and Two Family Residential District. The proposed preliminary plat is surrounded by the following land uses:

Direction	Existing Use	Land Use Plan	Zoning
North	Single family homes (City of Burnsville)	Low Density Residential (Burnsville)	R-1, Single Family District
South	162 nd Street (CSAH 46) and commercial development	162 nd Street Right of Way and Commercial	C-3, General Commercial District
East	Buck Hill Road/stormwater basin and I-35 right of way	Restricted Development	Undesignated (Right-of-Way)
West	Kendale Drive easement and single family homes on Kendale Drive and Dupont Avenue and a single family home on 4.1 acres	Low to Medium Density Residential	RST-2, Single and Two Family Residential District

STAFF ANALYSIS

On November 23, 2023, the City Council approved an amendment to the 2040 Comprehensive Land Use Plan for 14 acres of the 18.75 acre property from Commercial and Medium Density

Residential to high density residential and low to medium density residential and to rezone the 14 acres from C-3, General Commercial and RM-1, Medium Density Residential to M-1, Mixed Use I-35 Corridor District and RST-2, Single and Two Family Residential District. Following the amended land use plan and zoning, an application and plans for the proposed medical buildings was submitted for consideration of approval on the south three acres of the commercial zoned property abutting 162nd Street and Buck Hill Road. On June -20, 2024, the Planning Commission held a public hearing to consider the preliminary and final plat of Sundance Lakeville for two commercial medical office buildings abutting 162nd Street and Buck Hill Road. The City Council approved the preliminary plat of Sundance Lakeville that included two commercial (medical) buildings adjacent to 162nd Street at its July 1, 2024 meeting.

PRELIMINARY PLAT AND FINAL PLAT

a. Comprehensive Plan. The property is located in Planning District No. 1 of the 2040 Comprehensive Land Use Plan and is within the current Metropolitan Urban Service Area (MUSA). City municipal services, including sanitary sewer service, are available to serve the property. The subject property is guided -CMU, Corridor Mixed Use in the 2040 Comprehensive Land Use Plan. The proposed Sundance Lakeville Second Addition preliminary and final plat meets the recommended goals and objectives outlined in Planning District No. 1 of the 2040 Comprehensive Plan.

b. Lot/Block/Outlot. The proposed lots exceed the minimum lot area and lot width requirements of the M-1 and RST-2 Districts.

M-1 District Townhome Lot Requirements

Lot Area and Lot Width Requirements	Townhome Lot 1
20,000 Square Feet	11.5 acres
100 feet	263 feet

c. Streets. Sundance Lakeville abuts 162nd Street (CSAH 46) and will have a shared private drive access at Buck Hill Road. The private street will be extended west to Kendale Drive when the residential area to the north is developed. The private drive will include an easement to allow the commercial and residential portions of the development as well as the public to use the private street connection between Kendale Drive and Buck Hill Road. No parking signs shall be installed on both sides of the private street between Kendale Drive and Buck Hill Road.

162nd Street (CSAH 46) is classified as a minor arterial road in the City's Transportation Plan and is constructed as a 4-lane divided road. The Dakota County Plat Commission review of the preliminary and final plat indicated that no additional road right-of-way is required with the

proposed final plat. There will be no private driveway access to 162nd Street with the proposed medical buildings site plan.

Buck Hill Road is classified as a major collector road providing access via a signalized intersection at 162nd Street. No additional right-of-way is required for Buck Hill Road.

Kendale Drive is classified as a local street with a 32-foot-wide street constructed temporarily as a rural section road until such time the remaining undeveloped properties adjacent to Kendale Drive are developed. Kendale Drive was constructed as a rural section road in 2001 as part of the Streefland Addition development to the west and is between 60 and 80-feet wide and partly within a temporary roadway easement. The road width is suitable for the commercial and residential development proposed for the 18.75 acre property. Kendale Drive to the west is 60 feet wide within the single-family residential development. Kendale Drive will be platted as right-of-way and developed as an urban street (curb, gutter and sidewalks) at the time of development of the remaining properties in this area.

The Dakota County Plat Commission met at its April 10, 2024 meeting to review the Sundance Lakeville preliminary plat under the terms of the Contiguous Plat Ordinance (plats adjacent to County Roads). The Plat Commission determined that the development of the combined residential and commercial portions of the 18.75 acre property in addition to the existing and projected traffic along 162nd Street necessitates the construction of a restricted turning movement median in 162nd Street (CSAH 46). Left turns from southbound Kendale Drive to eastbound 162nd Street will not be allowed. Right turning movements to and from Kendale Drive from 162nd Street will remain. The restricted access at Kendale Drive will require vehicles to use the shared private road across the Sundance Lakeville development to access the signalized intersection at Buck Hill Road.

Traffic Study. A traffic study was completed by Alliant Engineering on in 2023 with a final traffic study report prepared May 23, 2024 to determine the existing and post-development conditions of and anticipated traffic volumes between Buck Hill Road, 162nd Street (CSAH 46) and Kendale Drive. The study identified traffic volumes in 2017, 2021 and adjustments to 2021 traffic to account for lingering impacts to traffic volumes during the COVID pandemic. The study concluded that all intersections impacted by the development of the 18.75 acre Sundance Lakeville commercial and residential developments, future low-medium density residential to the west, and the existing neighborhoods utilizing Kendale Drive and Buck Hill Road will operate under a high grade (A & C) level of service or better through year 2045 anticipated peak hours of traffic. Traffic volumes on 162nd Street (CSAH 46) are presently 8,300 Average Daily Traffic (ADT) vehicles per day and anticipated to be 11,800 ADT by 2040.

d. Grading, Drainage, Erosion Control and Utilities. City sanitary sewer and water is currently available to the site, which is within the current MUSA. All public utilities will be constructed by the developer to serve the proposed preliminary and final plat following final plat approval.

City sanitary sewer lift station No. 26 is under construction to provide sanitary sewer service for the development of the 18.75 acre property and other future property developments within the Crystal Lake watershed that services this area. Sanitary sewer now going through the Crystal Lake lift station in Burnsville will be diverted to the lift station under constructed in conjunction with Sundance commercial and residential plats. The Developer shall pay a cash fee for construction of sanitary sewer lift station No. 26. The construction of lift station No. 26 was anticipated upon determination that the Crystal Lake lift station was very near capacity.

Grading and utility plans have been submitted with the Sundance Lakeville Second Addition preliminary and final plat plans. Grading, drainage, erosion control, utility, and tree preservation review comments are addressed in the engineering report prepared by Jon Nelson, Assistant City Engineer and Mac Cafferty, Environmental Resources Manager, dated July 8, 2024. A copy of the engineering report is attached for reference.

e. Park Dedication, Trails and Sidewalks. The City's Comprehensive Parks, Trails, and Open Space Plan does not identify any future park land needs in the area of the plat. A bituminous trail is in place along the north side of 162nd Street (CSAH 46). Concrete sidewalk will be installed along Kendale Drive in conjunction with development of the residential Sundance Lakeville project. Park dedication will be satisfied with a cash fee in effect at the time of final plat approval. The 2024 park dedication cash fee rate in lieu of park land is \$9,383 per dwelling unit for high density residential and \$5,774 per dwelling unit for low density residential.

f. Wetlands. There are no wetlands associated with the Sundance Lakeville Second Addition preliminary and final plat property.

g. Tree Preservation. The tree preservation plan identifies 738 significant trees on the entire 18.75 acre site. Due to the high-density residential development proposed, most trees will be removed with the residential development phase of construction. A tree preservation plan for Sundance Lakeville Second Addition shall be submitted prior to issuance of a city grading permit. The proposed landscape plan outlines the tree replacement proposed as part of the site development.

h. Premature Subdivision Criteria. The preliminary plat is not premature under the terms of the Subdivision Ordinance. All utilities and public streets are in place to serve the subject property.

i. Capital Improvement Program (CIP). All proposed improvements necessary for the development of Sundance Lakeville Second Addition will be privately funded by the developer.

CONDITIONAL USE PERMIT

Section 11-65-7 of the Zoning Ordinance allows multi-family buildings on a single parcel subject to approval of a conditional use permit. The purpose of this requirement is to compliance with development density, building height, floor area ratio, exterior design, and building height requirements as well as establishment of a ownership requirement for the for uniform property and building exterior maintenance.

Lot Area. Section 11-65-7.L.1.a(1) of the Zoning Ordinance requires multiple family uses to provide a minimum of 1,675 square feet of net lot area per dwelling unit. The area Lot 1, Block 1 is 14.74 acres or 642,074 square feet. Based on 167 dwelling units, the lot area per unit for the proposed multiple family use is 3,844 square feet per dwelling unit, which complies with the Zoning Ordinance.

Floor Area Ratio. Section 11-65-7.L.1.a(2) of the Zoning Ordinance limits the floor area ratio for the proposed multiple family building to 0.7 as the subject site abuts single family lots zoned RST-2 District to the west. The gross floor area of the proposed buildings range between 18,019 and 20,490 square feet and the area of the proposed lot is 642,074 square feet. The floor area ratio of the proposed development is between 0.28 and 0.32, which fall within the limits established by the Zoning Ordinance.

Setbacks. The table below outlines the setbacks required for development of the subject site by Section 11-65-13 of the Zoning Ordinance. The locations of the proposed multiple family buildings within the lot meets or exceeds the minimum setbacks required by the Zoning Ordinance.

	Buck Hill Rd.	Kendale Dr.	North	South	East
Required	30 ft.	30 ft.	30ft.	0 ft.	35+ ft
Proposed	45+ ft.	100+ ft.	30ft.	13+ ft.	35+ ft

Dwelling Units. The proposed building has a mix of 1-bedroom, 2-bedroom and 3-bedroom dwelling units summarized in the table below:

	Min Floor Area Required	Proposed Floor Area	# of Units	% of Total Units
1 Bedroom	700sf.	728-855sf.	67	40.2%
2 Bedroom	800sf.	1,035-1,148sf.	92	55.1%
3 Bedroom	880sf.	1,336-1,660	8	4.7%

The proposed dwelling units comply with the minimum floor area requirements specified in Section 11-17-13.B of the Zoning Ordinance.

Exterior finish. The exterior materials for the proposed building must comply with Section 11-65-7.R.3.c of the Zoning Ordinance requiring minimum of 25 percent of each building elevation shall have an exterior finish of brick, stucco, and/or natural or artificial stone and shall have more than 60% of all elevations of one type of exterior finish. The submitted building elevation plans identify the type of all exterior finish materials and include a schedule indicating the percent of the total area of the exterior of the principal building using required materials. The use of brick or stone for

the exterior finish of all proposed buildings complies with the requirements of the Zoning Ordinance.

Building Height. Multiple family buildings within the M-1 District are limited to a height of four stories or 48 feet by Section 11-65-7.N.2 of the Zoning Ordinance. Illustrations of the proposed townhome buildings indicate a gable roof design with heights between 28 and 31.4 feet.

Parking. The proposed building is to have 167 dwelling units and 240 total bedrooms equal to 1.44 bedrooms per dwelling unit. Section 11-19-13 of the Zoning Ordinance requires multiple family dwellings to provide 2.0 parking stalls per dwelling unit if there are less than 2.0 bedrooms per dwelling unit. Section 11-65-7.R.d of the Zoning Ordinance further requires that a minimum of 1.0 of the required parking stalls per dwelling unit be provided within an enclosed garage attached to the principal building. Based on 167 dwelling units, 334 parking stalls are required and 338 parking spaces are proposed in addition to 41 guest parking spaces and ADA accessible parking spaces. The breakdown of surface and garage parking shown on the submitted plans is summarized below:

Garage Stalls	169
Driveway Stalls	169
Guest Parking	41
Total	379

The site plan shall provide the required number of ADA accessible parking spaces on site.

The proposed off-street parking areas and drive aisles are setback more than 15 feet from the west property line abutting the RST-2 lots. Section 11-19-7.I.1 of the Zoning Ordinance requires off-street parking stalls to have minimum dimensions of 9 feet by 20 feet. The proposed driveway aisles are 20 feet in width as allowed in the M-1 District. The townhome driveway setback from the private driveways is 20 feet as allowed by the M-1 District and consistent with other similar townhome developments in Sprit of Brandtjen Farms and numerous Dakota County CDA townhomes developed in Lakeville. The proposed surface parking stalls comply with these minimum dimensions. The parking stalls must striped as required by Section 11-19-7.I.13 of the Zoning Ordinance. The parking area must be surrounded by perimeter concrete curb as required by Section 11-19-7.I.15 of the Zoning Ordinance.

Tenant Clubhouse/Recreation Lot. The site plan provides a location for outdoor recreation amenities including a swimming pool, patio area, grilling stations and a 5,000+ square foot clubhouse building as a benefit to tenants of the townhomes and single family homes within the development. The clubhouse and pool area are located at the southwest corner of the site and are setback not less than 33 feet from the south property line (162nd Street) as required by the Zoning Ordinance. The building elevation plans show a community building consistent with the exterior building materials as the townhome buildings and in compliance with Zoning ordinance requirements. Section 11-21-5.A of the Zoning Ordinance requires details regarding fencing for

the patio and pool area to be submitted for review and approval by the Zoning Administrator, including compliance with Section 11-21-5.G of the Zoning Ordinance related to pools.

Landscaping/Screening. The landscape plan proposes 219 overstory, evergreen, and ornamental trees as noted in the table below:

Landscape Materials	
111	Overstory trees (2.5-inch min. diameter)
72	Conifer trees (8-foot minimum height)
36	Ornamental trees
39	Shrub plantings

The site and landscape plan propose a minimum 30-foot landscaped buffer between the townhome property and the single-family homes to the north. A 30-foot landscaped buffer is consistent with the 30-foot required landscaped buffer between single family homes and commercial zoned property. The landscape plan design along the north boundary of Lot 1 shall be amended to include a row of evergreen trees planted south of the utility easement to provide additional year-round screening of the townhome buildings from the north.

All landscaped areas shall be irrigated in compliance with Zoning Ordinance requirements. Evergreen trees shall be a minimum of eight feet in height. Deciduous trees shall be a minimum of 2.5-inch caliper. All shrubs shall comply with minimum size/height requirements, not container sizes. The landscape plan shall be amended to identify minimum shrub heights in accordance with Zoning Ordinance requirements, not container size as shown. A landscape security based on the contractor estimate shall be submitted with the final plat consideration as financial security for installation of the approved landscaping.

Exterior Lighting. Plans for exterior lighting have not yet been submitted but will be submitted by the developer and reviewed and administered during the building permit process. All exterior lighting shall comply with Zoning Ordinance requirements, shall be downcast and not glare onto public right of way or other residential properties. The developer shall submit a lighting plan showing the location, height, type, and illumination pattern of all exterior lighting. The intensity of exterior lighting is limited to one foot-candle measured at the right of way or property line.

Signs. Any signage shall comply with Section 11-23-19.D of the Zoning Ordinance allowing uses within the M-1 District one freestanding sign per lot not to exceed 100 square feet in area and 20 feet in height. A sign permit is required to be issued prior to placement of any sign upon the property in accordance with Section 11-23-5 of the Zoning Ordinance.

Waste Storage. Individual units will be responsible for indoor trash and recycling storage in each unit as required by the Zoning Ordinance.

Findings of Fact in consideration of the conditional use permit are attached.

SITE PLAN

RST-2 Lots. Nine single family home lots are proposed at the northwest corner of the property with a 230 foot long cul-de-sac street accessed from Kendale Drive.

RST-2 District Lot Area and Lot Width Requirements

RST-2	Minimum Lot Width and Lot Area	Lots 2-9
Lot Width	Corner 85 ft. Interior 70 ft.	Lots 2 and 4 shall be revised for lot width prior to approval of the preliminary plat
Lot Area	Corner 10,500 ft. Interior 8,400 ft.	All lots comply with minimum area requirements

RST-2 District Single Family Home Setback Requirements

Front	Side (Interior)	Side (Corner)	Rear
20 feet house 25 feet garage	7 feet	20 feet	30 feet

The lots comply with minimum lot area and lot width requirements except for Lot 2 and 4 which do not clearly determine lot width at the 20 foot garage setback line. The preliminary plat shall be revised to demonstrate compliance with minimum lot width prior to City Council consideration of the preliminary plat.

The proposed Sundance Lakeville Second Addition townhome and single family home development is consistent with the goals and policies of the 2040 Comprehensive Plan for inclusion of multiple family land uses within mixed use residential and commercial developments adjacent to the I-35 corridor in proximity to transit facilities to provide market support for surrounding business and expand housing choices within Lakeville. Furthermore, the proposed development complies with the performance standards applicable to multiple family uses within the M-1 District established by the Zoning Ordinance and Subdivision Ordinance. Findings of fact supporting the approval of a conditional use permit to allow for the proposed multiple family use has been drafted for consideration by the Planning Commission.

RECOMMENDATION

Community Development Department staff recommends approval of the preliminary and final plat of Sundance Lakeville Second Addition, subject to the following stipulations:

1. Implementation of the recommendations listed in the July 8, 2024 engineering report.

2. Lots 2-10 shall confirm compliance with minimum lot width requirements of the RST-2 District prior to City Council consideration of the preliminary plat.
3. Park dedication must be paid at the time of final plat approval.
4. The landscape plan design along the north boundary of Lot 1 shall be amended to include a row of evergreen trees planted south of the utility easement to provide additional year-round screening of the townhome buildings from the north.
5. All landscaped areas shall be irrigated. Trees and shrubs shall not be planted in street right-of-way or within the transmission line utility easement and shall comply with minimum size requirements.
6. The developer shall submit a financial security to guarantee installation of the approved landscaping at the time of final plat approval.
7. All signs shall comply with the Zoning Ordinance requirements. A sign permit shall be issued by the Planning Department prior to the installation of any signs.
8. Snow storage shall not take place in required parking spaces.
9. A site lighting plan shall be submitted prior to issuance of a building permit. Site lighting shall not exceed one foot candle at the property line adjacent to public right-of-way. All exterior light fixtures shall be down-cast design so as not to glare onto public right-of-way.
10. The trash enclosures shall be constructed of materials consistent with the principal building and shall include a durable, maintenance free gate.
11. A private easement allowing shared public access over the private street between Buck Hill Road and Kendale Drive shall be submitted prior to final plat approval. The private easement shall include commitments to street construction to City of Lakeville standards, maintenance and repair, and maintenance and repair of the private storm sewer system within the private street.
12. No parking signs shall be installed on both sides of the private street between Kendale Drive and Buck Hill Road.

**RST-2, SINGLE AND TWO FAMILY
RESIDENTIAL DISTRICT**
156,508 SF (3.59 AC)

STORMWATER POND

FUTURE R.C.
21,682 SF (-)
INCLUDED IN
11 UNITS

**M-1 MIXED USE I-35
CORRIDOR DISTRICT
485,781 SF (11.15 AC)**

**FUTURE R.O.W DEDICATION:
21,682 SF (.49 AC)
INCLUDED IN 3.59 AC.**

**R.O.W DEDICATION:
43,932 SF (1.01 AC)**

C-3, GENERAL COMMERCIAL
130,933 SF (3.01 AC)

SINGLE STORY
12,500 SF

PROPERTY LINE

BUILDING SETBACK
EXPOSURE

5' INTERIOR PARKING SETBACK

TRASH ENCLOSURE

TWO STORY
14,000 SF

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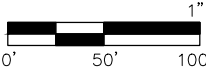
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EXHIBIT A

PROPERTY ZONING



DATE: 9-28-2023
DRAWN BY: TLM
SCALE: 1"=100' (11"x17")



ALLIANT

ENGINEERING

City of Burnsville

158TH ST

DUPONT AVE

KENDA EDR

**Sundance
Lakeville
Second
Addition**

**Sundance
Lakeville**

BUCK HILL RD

162ND ST (CSAH 46)

KENT TRL

KENYON AVE

N

City of Lakeville
Sundance Lakeville
Second Addition
Location Map

EXHIBIT B

Source: Esri, Maxar, Earthstar

**SUNDANCE LAKEVILLE
CUP, ADMINISTRATIVE PERMIT, PRELIMINARY AND FINAL PLAT APPLICATION
SUBMITTAL NARRATIVE**

Timberland Partners and Davis Medical Group are proposing to construct a mix of multifamily residential, single-family residential, and medical office on a currently vacant 18.75 parcel of land located north of 162nd Street (CSAH 46) and west of Buck Hill Road. The existing zoning on the site includes a mix of RST-2, M-1, and C-3.

More specifically, Timberland Partners proposes to construct 167 townhome-style apartments and 9 single-family rental homes on approximately 14.25 acres of the parcel. Both the multifamily and single-family project components will be branded as Sundance Lakeville and will include 100% market rate rentals targeting young couples, with and without children, and empty nesters looking to downsize. No public subsidy or assistance is requested.

Sundance will contain thirteen (13) two-story buildings, each containing 8-16 flats, or dwelling units, on 11.15 acres that has been rezoned to M-1. The nine (9) single-family homes are located on approximately 3.10 acres that has been rezoned to RST-2.

The multifamily buildings will include a mix of one-, two-, and three-bedroom units. All units will have direct access entries and at least one dedicated attached garage space. There are no common corridors or common entries associated with any of the units, allowing residents increased privacy and sense of safety. The single-family homes will be a mix of 3- and 4-bedroom homes on sizable lots, each with their own individual yard. Both the single-family and multifamily components will be constructed as one cohesive development through connectivity and shared amenities including a 5,000+ square foot clubhouse which will include a full kitchen, community room, game lounge, and fitness center. It will also contain offices for our award-winning on-site management team. Connected to the clubhouse will be a large outdoor pool with an outdoor kitchen, including grilling stations, and a fire pit. Site amenities will also include natural wetland buffers, ample green space, and a dog run and dog spa.

The proposed plan includes ample resident and guest parking which exceeds city code and is thoughtfully designed in a manner to provide residents with a true neighborhood feel. All interior roads are proposed to be private, with the main east-west road that will traverse the site from Kendale Drive to Buck Hill Road serving as shared access to both the Sundance development and the Davis project. Both parties will execute a Private Roadway, Stormwater Retention and Utility Easement Agreement which will outline care and maintenance requirements of the shared road roadway and stormwater system.

Lakeville-based RT Residential, a division of the Tradition Companies, will be the general contractor for Sundance Lakeville ensuring that the project will be built to the highest quality and integrity.

Sundance Lakeville will be developed, owned, and managed by Timberland Partners. Timberland is based in Bloomington, Minnesota, and currently owns and manages over 20,000 apartment homes located in 18 states. Timberland does not provide any third-party management services, managing only what we own and focusing on providing a safe, clean, and quality living experience for our residents.

EXHIBIT C



LEGEND

- FOUND IRON MONUMENT
- DAKOTA COUNTY CIM
- HYDRANT
- × WATER VALVE
- TELEPHONE BOX
- SANITARY MANHOLE
- CATCH BASIN
- ELECTRIC BOX
- × LIGHT
- STORM MANHOLE
- POWER POLE
- BOLLARD
- TRANSFORMER
- COMMUNICATION VAULT
- TRAFFIC LIGHT
- ▽ FES
- HANDHOLE
- 4550 TREE W/TAG NO.
- ⊕ ELECTRIC METER
- ⊕ WELL
- ⊕ TV BOX
- TITLE EXCEPTION NO.
- 993.24 × SPOT ELEVATION
- △ SIGN
- SANITARY SEWER
- STORM SEWER
- WATERMAIN
- UNDERGROUND TELEPHONE
- OVERHEAD UTILITIES
- UNDERGROUND ELECTRIC
- FIBER OPTIC
- FENCE
- EDGE OF LANDSCAPE/MAINTAINED AREA
- EDGE OF TREES
- CONCRETE
- BITUMINOUS
- CURB & GUTTER

EXHIBIT D

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ENGINEERING

733 Marquette Ave, Ste 700
Minneapolis, MN 55402
612.758.3080 MAIN
612.758.3099 FAX
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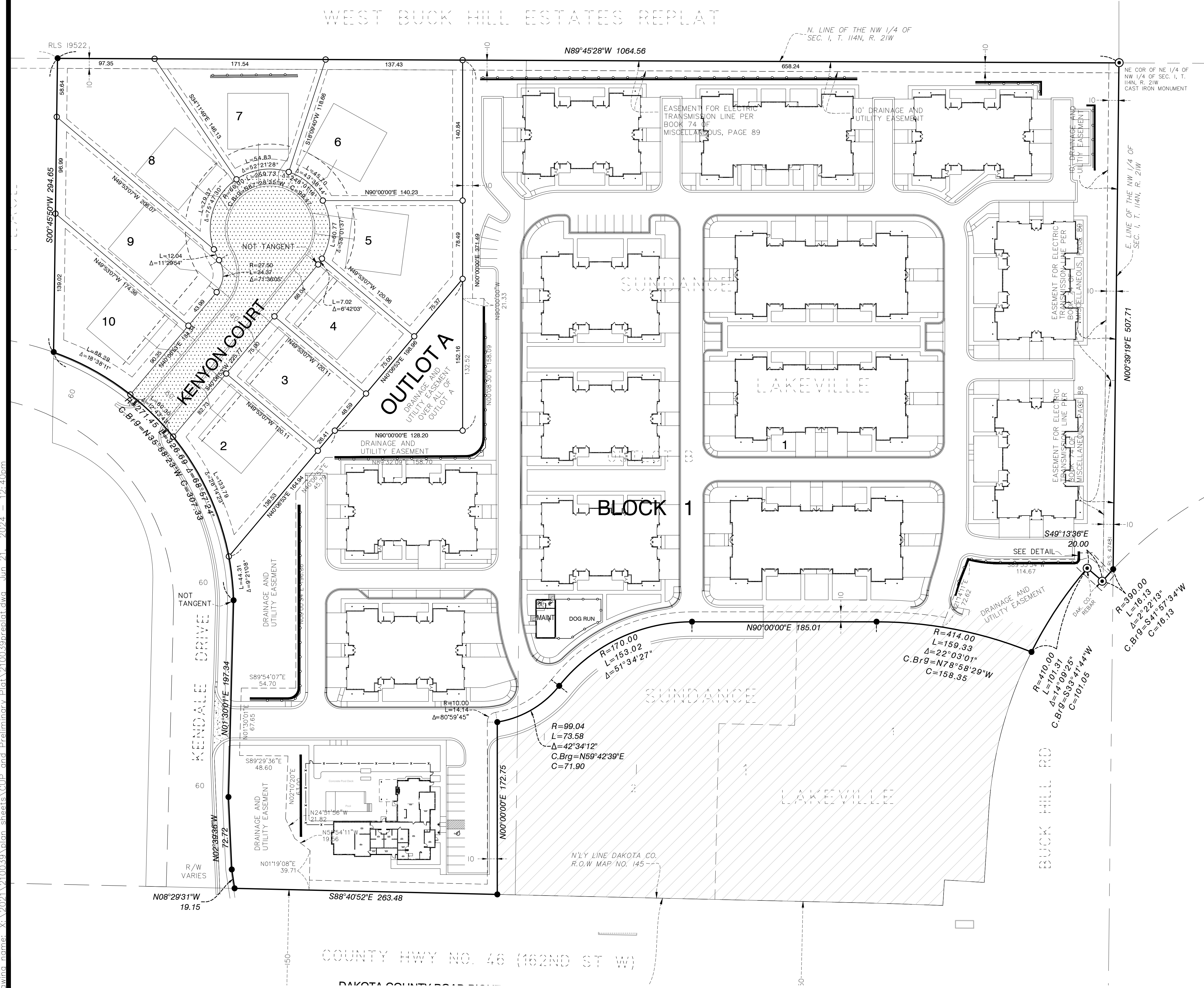
ALTA/NSPS LAND TITLE SURVEY

LAKEVILLE SITE AT
CR 46 & I 35
NO ASSIGNED ADDRESS
LAKEVILLE, MN

DRAWN BY	JDT
CHECKED BY	DBO
DATE ISSUED	01/31/2020
SCALE	1"=60'
JOB NO.	19-0190
FIELD CREW	PG,DA

SUNDANCE LAKEVILLE

WEST BUCK HILL ESTATES REPLAT



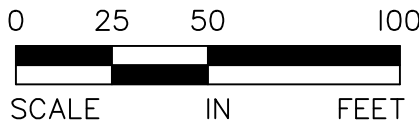
PARCEL AREA TABLE		
PARCEL	AREA SF	AREA AC
Lot 1	485,781	11.15
Lot 2	12,562	0.29
Lot 3	9,008	0.21
Lot 4	9,011	0.21
Lot 5	13,879	0.32
Lot 6	21,921	0.50
Lot 7	12,936	0.30
Lot 8	17,570	0.40
Lot 9	15,129	0.35
Lot 10	13,056	0.30
Outlot A	9,753	0.22
Right of Way	21,683	0.50
Total	642,290	14.74

LEGEND:

- EXISTING PROPERTY LINE
- PROPOSED LOT LINE
- RIGHT-OF-WAY TO BE DEDICATED
- DRAINAGE AND UTILITY EASEMENT
- PLACED IRON
- FOUND IRON

EXHIBIT E

FOR REVIEW ONLY
PRELIMINARY
NOT FOR CONSTRUCTION



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733 Marquette Avenue
Suite 700
Minneapolis, MN 55402
612.758.3080
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SUNDANCE LAKEVILLE

LAKEVILLE, MINNESOTA

CUP/PRELIMINARY & FINAL PLAT

PRELIMINARY PLAT

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA

DAN SJOBLUM, PE

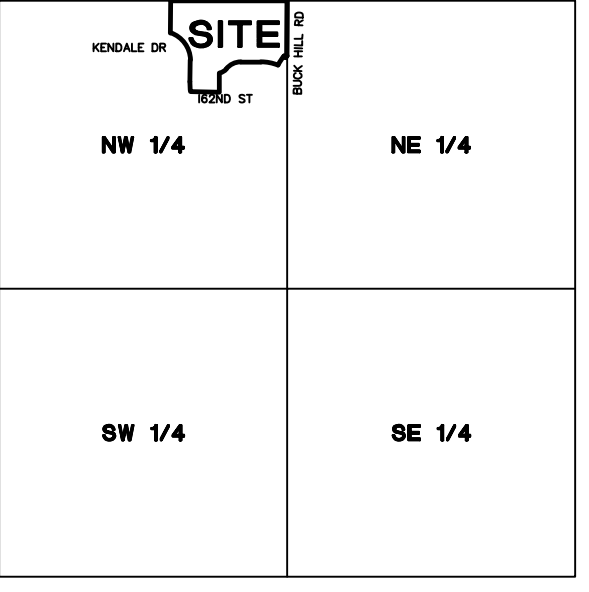
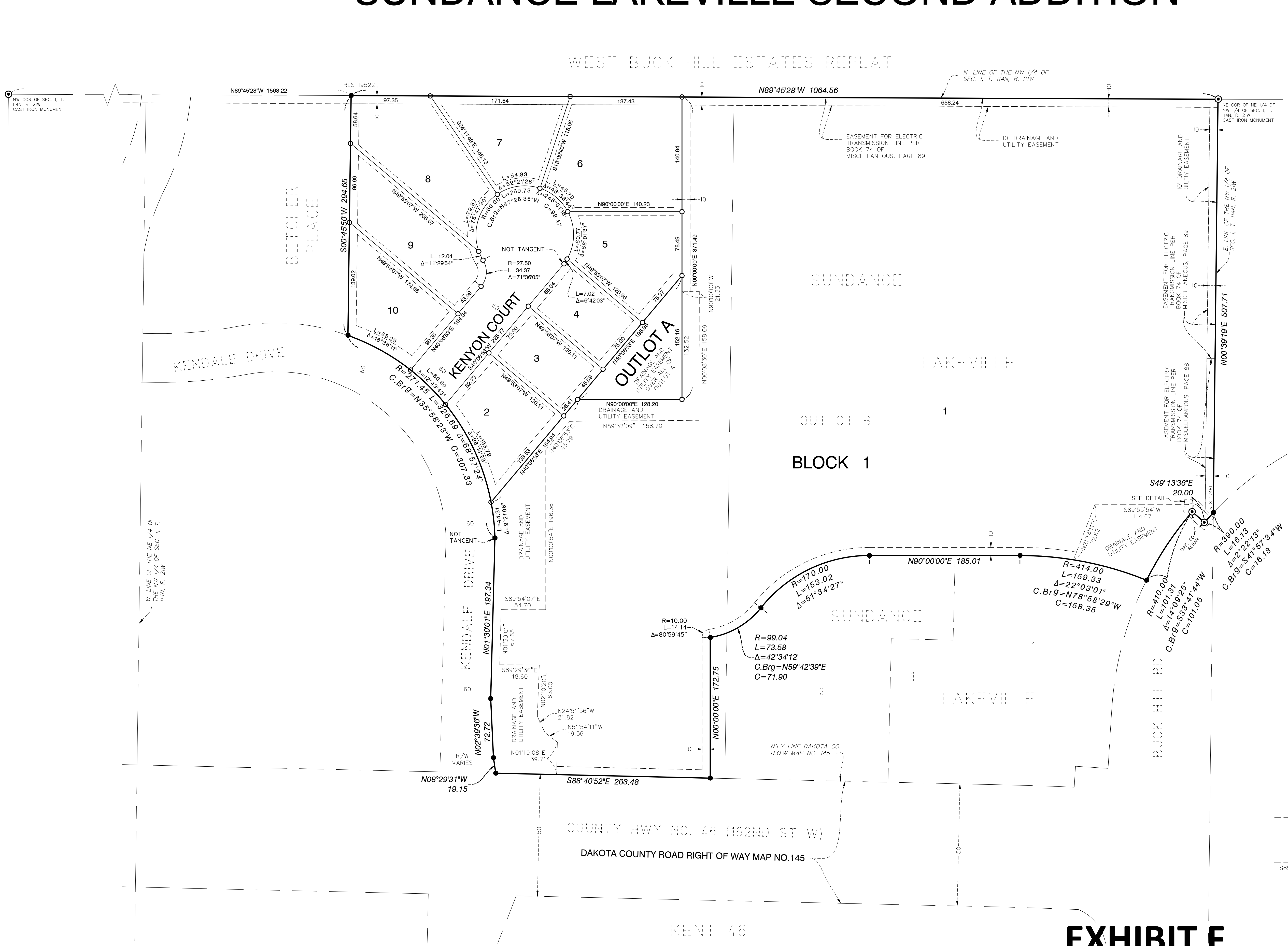
QUALITY ASSURANCE/CONTROL

BY	DATE
4-25-24	CUP, ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITTAL
5-23-24	STORMWATER UPDATE
6-21-24	STORMWATER COMMENTS

PROJECT TEAM DATA

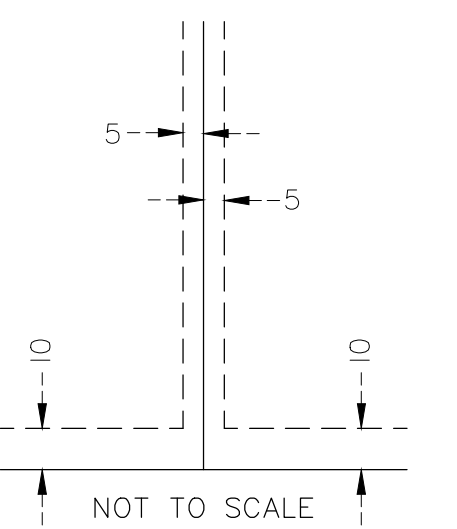
DESIGNED: JG
DRAWN: JG
PROJECT NO: 221-0039

SUNDANCE LAKEVILLE SECOND ADDITION



VICINITY MAP
SECTION 1, T. 114, R. 21
NOT TO SCALE

DRAINAGE AND UTILITY EASEMENTS ARE SHOWN THUS:



Being 5 feet in width and adjoining lot lines and 10 feet in width and adjoining street lines and rear lot lines as shown on this plat, unless otherwise shown.

THE EAST LINE OF THE NORTHWEST QUARTER OF SECTION 1, TOWNSHIP 114, RANGE 21 IS ASSUMED TO HAVE A BEARING OF N00°39'19"E

- Denotes monument found 1/2 inch iron pipe marked by license no. 57366 unless otherwise shown
- Denotes 1/2 inch x 18 inch iron monument set marked by license no. 57366 unless otherwise shown
- ⊙ Denotes Dakota County monument as shown

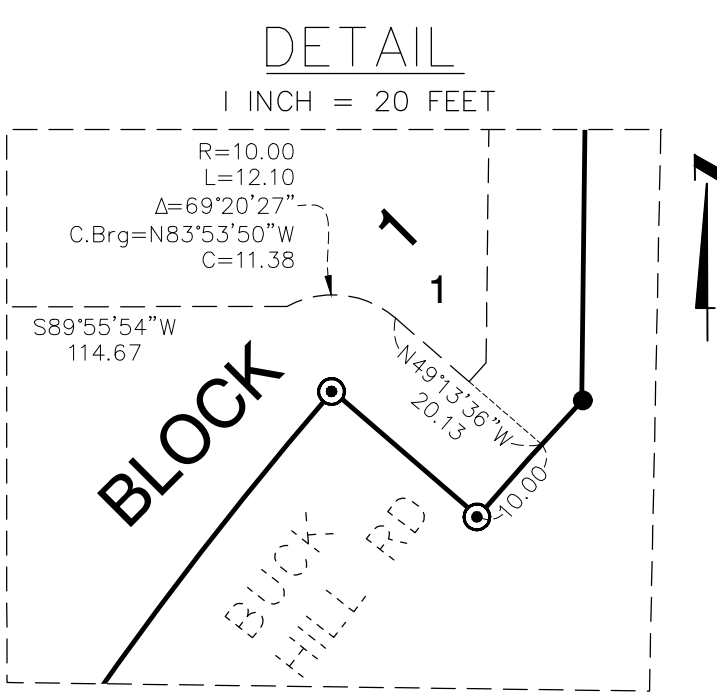
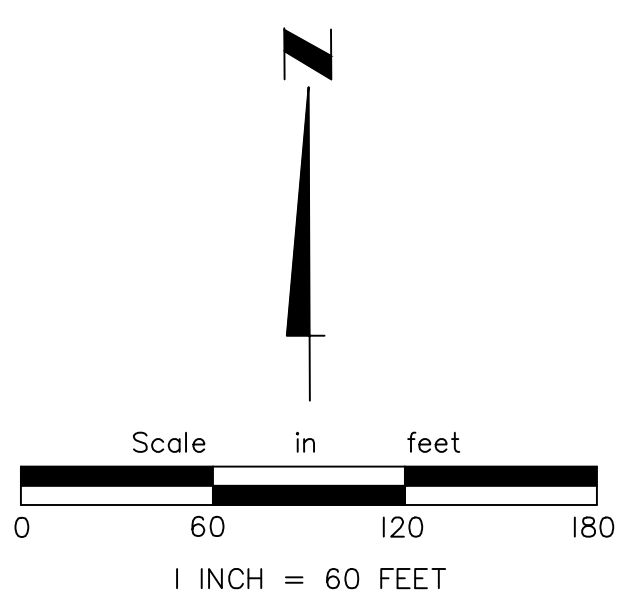
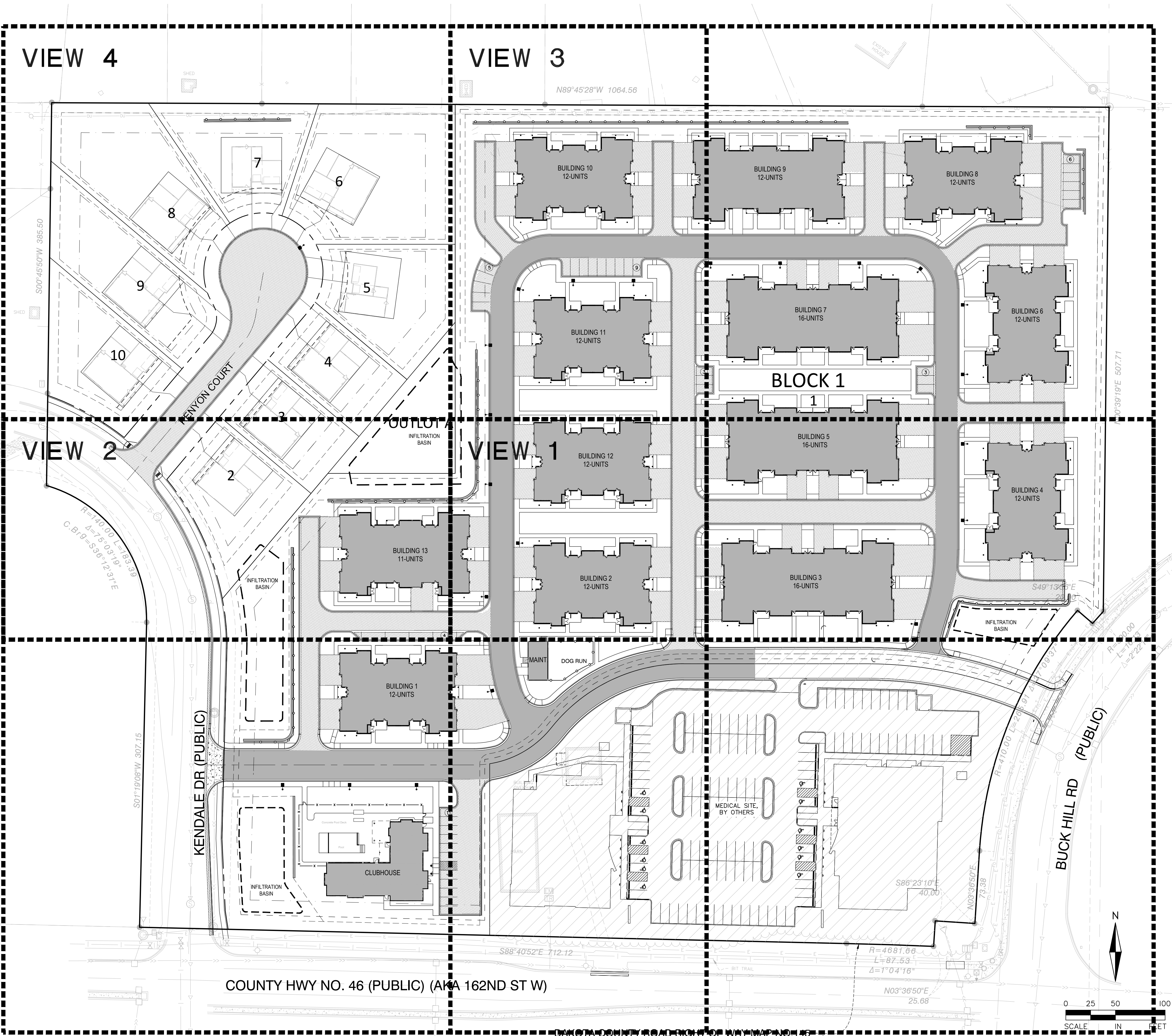


EXHIBIT F



Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plat\210039site.dwg Jun. 21, 2024 12:41pm



SITE PLAN NOTES:

- 1. REFER TO ARCHITECTURAL DRAWINGS FOR CONCRETE STOOPS ADJACENT TO PROPOSED BUILDING.
- 2. CONTINUOUS CONCRETE CURB & GUTTER WHICH CHANGES TYPE SHALL HAVE A MIN. FIVE FOOT (5') TRANSITION ON PRIVATE ROADS.
- 3. ALL CONCRETE CURB AND GUTTER ADJACENT TO CONCRETE WALK BE SEPARATED BY A 1/2 INCH EXPANSION JOINT.
- 4. PAVEMENT STRIPING SHALL BE 4 INCH WHITE.
- 5. ALL WORK WITHIN THE R.O.W. SHALL COMPLY WITH CITY OF LAKEVILLE ENGINEERING DESIGN STANDARDS.
- 6. ALL STREET SIGNAGE, PUBLIC & PRIVATE, SHALL COMPLY WITH THE MN MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- 7. ALL CURB AND GUTTER TO BE CONCRETE B618 OR D412 AS NOTED, PER CITY OF LAKEVILLE STANDARDS, UNLESS OTHERWISE NOTED.
- 8. TYPICAL PRIVATE PARKING STALL = 9'x18'

SITE DATA:

TOTAL SITE PARCEL AREA: 18.75 AC
EXISTING ZONING = M-1, RST-2, C-3
PROPOSED ZONING = M-1, RST-2, C-3

PROPOSED LOT AREAS:

GROSS AREA = 18.75 AC
KENDALE DRIVE DEDICATION = 1.00 AC
SINGLE FAMILY ROW = 0.50 AC
NET AREA = 17.25 AC

PROPOSED COMMERCIAL LOT SUMMARY:

COMMERCIAL AREA: = 3.00 AC
PLANS BY OTHERS. SEE DAVIS MEDICAL PLAN SET.

PROPOSED TOWNHOME LOT SUMMARY:

TOWNHOME AREA = 11.15 AC
TOTAL UNITS = 167
TOTAL BEDROOMS = 240 (1.44/UNIT)
TOTAL LOTS/NET AREA = 14.98 UNITS/ACRE
PRIVATE ROAD WIDTH: = 32'/24'
MINIMUM DRIVEWAY DEPTH: = 20'
VISITOR PARKING STALLS = 41

PARKING PROVIDED:

GARAGE STALLS:
- 16 STALLS PER 16 UNIT BUILDING (16A) * 3 = 48 STALLS
- 14 STALLS PER 12 UNIT BUILDING (12B) * 1 = 14 STALLS
- 12 STALLS PER 12 UNIT BUILDING (12A) * 8 = 96 STALLS
- 11 STALLS PER 11 UNIT BUILDING (11A) * 1 = 11 STALLS
DRIVEWAY STALLS: = 169 STALLS (1/GARAGE)
TOTAL UNIT PARKING PROVIDED = 338 STALLS
TOTAL UNIT PARKING REQUIRED (2 STALLS/UNIT) = 334 STALLS
ADDITIONAL VISITOR PARKING: = 41 STALLS

SINGLE FAMILY LOT SUMMARY:

LOT AREA (LESS ROW) = 3.10 AC
TOTAL LOTS = 9
TOTAL LOTS/NET AREA = 2.9 UNITS/ACRE
LOT SIZE MINIMUM (SQUARE FEET) = 10,200 (CORNER), 8,400 (INTERIOR)
LOT WIDTH = 85 FEET (CORNER), 70' (INTERIOR)
ROAD WIDTH = 32' (TO BACK OF CURB)

BUILDING SETBACKS:

	C-3	M-1	RST-2
FRONT:	30'	30'	20'
REAR:	10'	10'/30'	30'
SIDE:	10'	10'	7'

PARKING SETBACKS:

	C-3	M-1
ROW:	15'	15'
INTERNAL:	5'/0'	5'/0'

LEGEND:

- EXISTING CURB & GUTTER
- CURB & GUTTER
- PROPOSED STREET LIGHT
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- BUILDING SETBACK
- PARKING SETBACK
- CONCRETE PAVEMENT
- HEAVY DUTY BITUMINOUS
- LIGHT DUTY BITUMINOUS, PAVEMENT SECTION PER CITY DETAIL



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Minneapolis, MN 55402
612.758.3080
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SUNDANCE LAKEVILLE

LAKEVILLE, MINNESOTA

CUP/PRELIMINARY & FINAL PLAT

SITE PLAN OVERALL

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DAN SJOBLOM, PE

QUALITY ASSURANCE/CONTROL

DATE	ISSUE
4-25-24	CUP, ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITTAL
5-23-24	STORMWATER UPDATE
6-21-24	STORMWATER COMMENTS

PROJECT TEAM DATA

DESIGNED: JG
DRAWN: JG
PROJECT NO: 221-0039

EXHIBIT G

Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plat\210039site.dwg Jun 21, 2024 12:41pm



LEGEND:

- EXISTING CURB & GUTTER
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SUNDANCE LAKEVILLE
LAKEVILLE, MINNESOTA
CUP/PRELIMINARY & FINAL PLAT
SITE PLAN - VIEW 1

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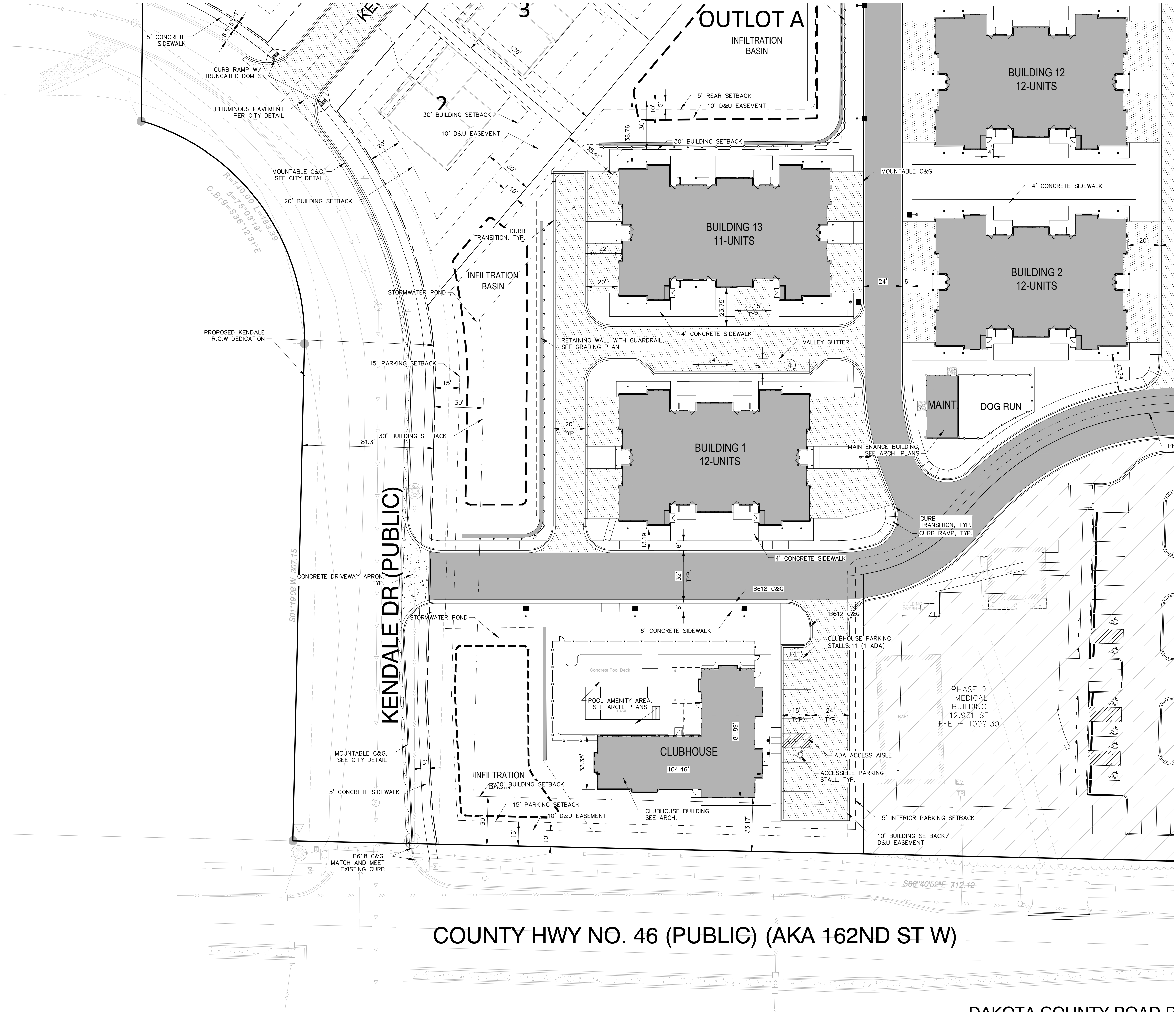
DAN SJOBLÖM, PE

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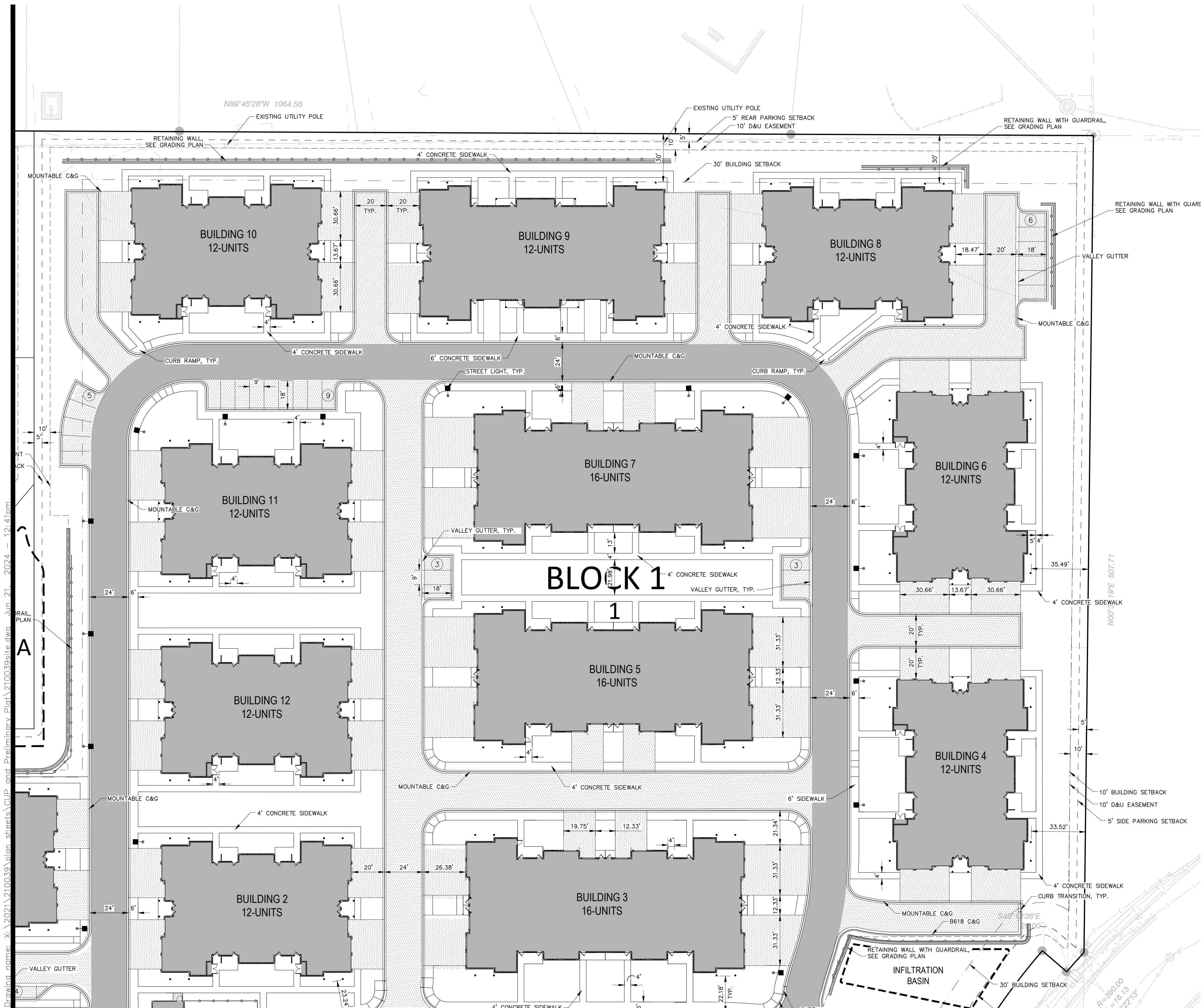
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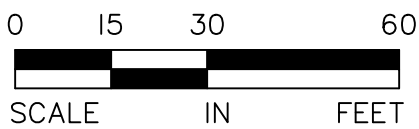
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SUNDANCE LAKEVILLE
LAKEVILLE, MINNESOTA
CUP/PRELIMINARY & FINAL PLAT
SITE PLAN - VIEW 3

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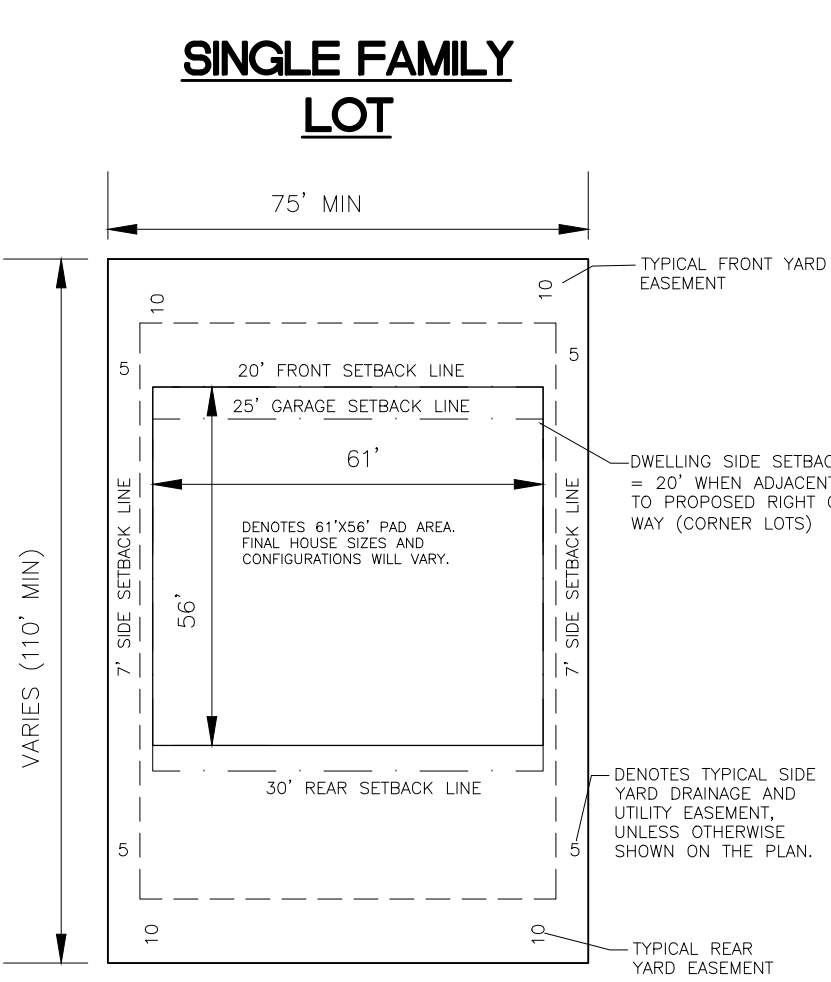
DAN SJOBLOM, PE

QUALITY ASSURANCE/CONTROL

BY	DATE
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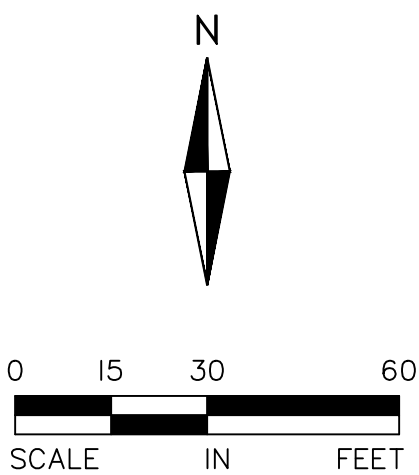
PROJECT TEAM DATA	
DESIGNED:	JG
DRAWN:	JG
PROJECT NO:	221-0039

Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plt\210039site.dwg Jun 21, 2024 12:42pm



LEGEND:

- EXISTING CURB & GUTTER
- CURB & GUTTER
- PROPOSED STREET LIGHT
- RIGHT-OF-WAY LINE
- PROPERTY LINE
- BUILDING SETBACK
- PARKING SETBACK
- CONCRETE PAVEMENT
- HEAVY DUTY BITUMINOUS
- LIGHT DUTY BITUMINOUS, PAVEMENT SECTION PER CITY DETAIL



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SUNDANCE LAKEVILLE

LAKEVILLE, MINNESOTA

CUP/PRELIMINARY & FINAL PLAT

SITE PLAN - VIEW 4

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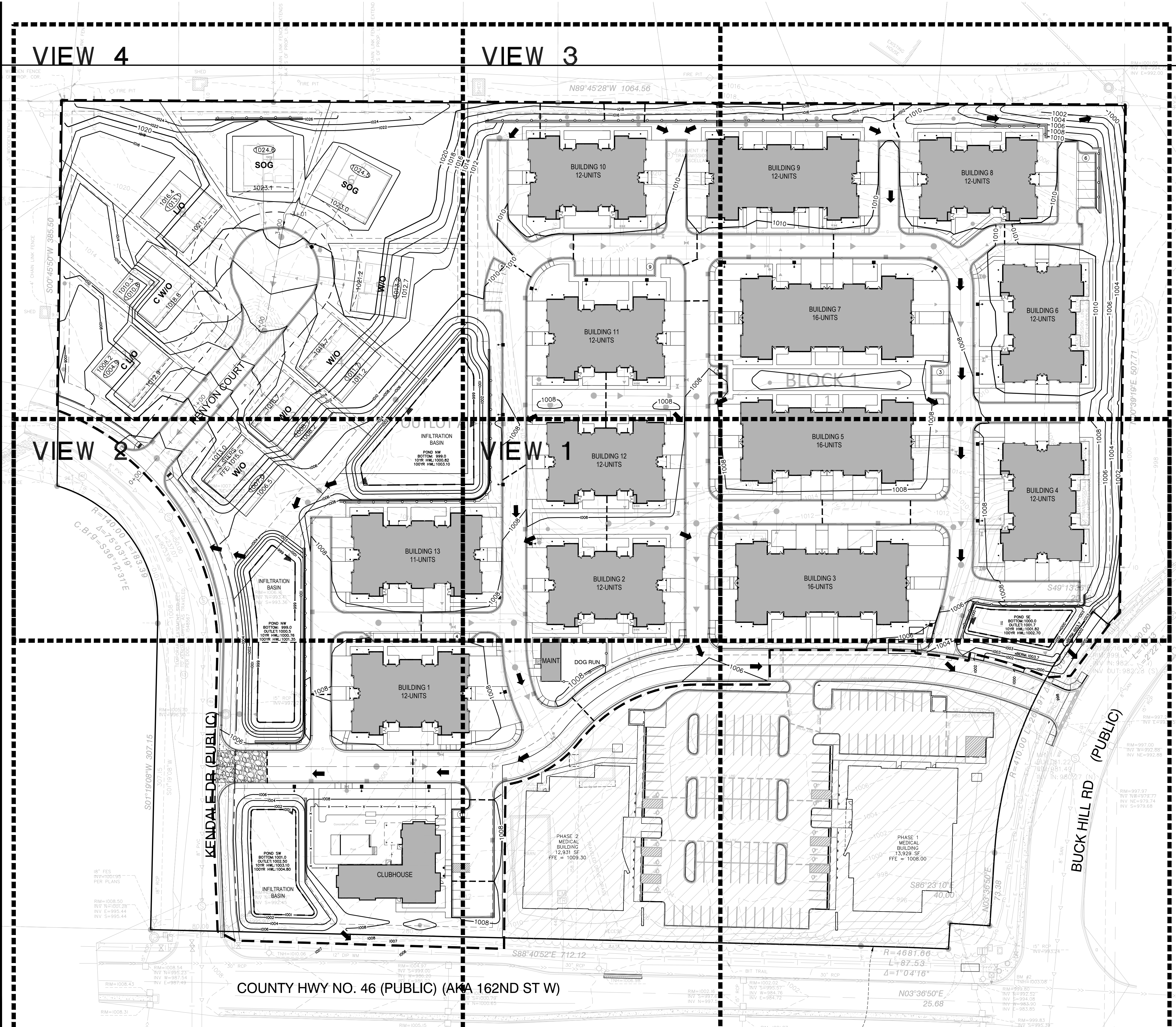
DAN SJOBLOM, PE

QUALITY ASSURANCE/CONTROL

BY	DATE
4-25-24	CUP ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITTAL
5-23-24	STORMWATER UPDATE
6-21-24	STORMWATER COMMENTS

PROJECT TEAM DATA	
DESIGNED:	JG
DRAWN:	JG
PROJECT NO:	221-0039

Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plat\210039grade.dwg Jun 21, 2024 — 12:42pm



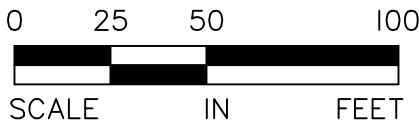
GRADING NOTES:

1. ALL FINISHED GRADES SHALL SLOPE AWAY FROM PROPOSED BUILDINGS.
2. THE CONTRACTOR SHALL KEEP THE ADJACENT ROADWAYS FREE OF DEBRIS AND PREVENT THE OFF-SITE TRACKING OF SOIL IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY AND WATERSHED.
3. NOTIFY GOPHER STATE ONE CALL, AT (800)252-1166, 48 HOURS PRIOR TO START OF CONSTRUCTION.
4. ALL IMPROVEMENTS TO CONFORM WITH CITY CONSTRUCTION STANDARDS SPECIFICATION, LATEST EDITION.
5. ROCK CONSTRUCTION ENTRANCES SHALL BE PROVIDED AT ALL CONSTRUCTION ACCESS POINTS.
6. REFER TO GEOTECHNICAL REPORT AND PROJECT MANUAL, FOR SOIL CORRECTION REQUIREMENTS AND TESTING REQUIREMENTS.
7. STRIP TOPSOIL PRIOR TO ANY CONSTRUCTION. REUSE STOCKPILE ON SITE. STOCKPILE PERIMETERS MUST BE PROTECTED WITH SILT FENCE.
8. PRIOR TO STARTING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE SURE THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL OF THE PERMITTING AUTHORITIES.
9. IMMEDIATELY FOLLOWING GRADING OF (3:1 OR GREATER) SIDE SLOPES AND DRAINAGE SWALES, WOOD FIBER BLANKET OR OTHER APPROVED SOIL STABILIZING METHOD (APPROVED BY ENGINEER) SHALL BE APPLIED OVER APPROVED SEED MIXTURE AND A MINIMUM OF 4" TOPSOIL.
10. THE GENERAL CONTRACTOR MUST DISCUSS DEWATERING PLANS WITH ALL SUBCONTRACTORS TO VERIFY NPDES REQUIREMENTS. IF DEWATERING IS REQUIRED DURING CONSTRUCTION, CONTRACTOR SHOULD CONSULT WITH EROSION CONTROL INSPECTOR AND ENGINEER TO DETERMINE APPROPRIATE METHOD.
11. REFER TO STORMWATER POLLUTION PREVENTION PLAN (SWPPP) FOR ALL EROSION AND SEDIMENT CONTROL DEVICE LOCATION, DESCRIPTIONS, NOTES AND DETAILS INCLUDING CONCRETE WASHOUT STATION INSTRUCTIONS.
12. BUILDING PERMITS ARE REQUIRED FOR ALL RETAINING WALLS 4 FEET IN HEIGHT OR GREATER AND THE WALLS SHALL BE DESIGNED BY A STRUCTURAL ENGINEER WITH DESIGN REVIEWED AND APPROVED BY THE CITY PRIOR TO INSTALLATION.
13. A 4 FOOT SAFETY RAILING IS REQUIRED ATOP ALL WALLS 30" IN HEIGHT OR GREATER.
14. HAULING OF EXCESS MATERIAL MUST STAY ON COUNTY ROADWAYS ONCE IT HAS LEFT THE SITE ALONG GLACIER WAY.
15. RETAINING WALL CONTRACTOR AND/OR RETAINING WALL STRUCTURAL ENGINEER ARE RESPONSIBLE TO REVIEW CIVIC SITE ENGINEERING DRAWINGS. ANY OBSERVED CONCERNS WITH CIVIL SITE ENGINEERING DESIGN ELEMENTS RELATED TO RETAINING WALLS THAT REQUIRE MODIFICATIONS TO THE CIVIL SITE DESIGN IS THEIR RESPONSIBILITY TO COORDINATE WITH PROJECT OWNER AND CIVIL SITE ENGINEER. IF NO COORDINATION IS REQUESTED IT SHALL BE UNDERSTOOD THAT ALL CONDITIONS WITHIN THE CIVIL SITE DESIGN AND PLANS ARE ACCEPTABLE AND ABLE TO BE PROVIDED FOR IN THE RETAINING WALL DESIGN AND CONSTRUCTION.

GRADING LEGEND:

- B612 CURB & GUTTER
- EXISTING CURB & GUTTER
- PROPERTY LINE
- RIGHT-OF-WAY
- DRAINAGE & UTILITY EASEMENT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- TOP OF WALL
- BOTTOM OF WALL
- FINISHED FLOOR ELEVATION
- GARAGE FLOOR ELEVATION
- PROPOSED RETAINING WALL
- PROPOSED CATCH BASIN/MANHOLE
- PROPOSED STORM SEWER
- PROPOSED DRAINAGE DIVIDE
- EOF ROUTING
- GRADING LIMITS

EXHIBIT H



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733 Marquette Avenue
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Minneapolis, MN 55402
612.758.3080
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SUNDANCE LAKEVILLE

LAKEVILLE, MINNESOTA

CUP/PRELIMINARY & FINAL PLAT

GRADING AND EROSION CONTROL PLAN OVERALL

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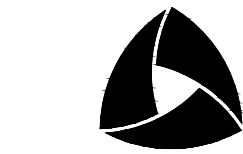
DAN SJOBLOM, PE

QUALITY ASSURANCE/CONTROL

BY	DATE
4-25-24	CUP, ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITTAL
5-23-24	STORMWATER UPDATE
6-21-24	STORMWATER COMMENTS

PROJECT TEAM DATA	
DESIGNED:	JG
DRAWN:	JG
PROJECT NO:	221-0039

Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plt\210039\grade.dwg Jun 21, 2024 — 12:42pm



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SUNDANCE LAKEVILLE

LAKEVILLE, MINNESOTA

CUP/PRELIMINARY & FINAL PLAT

GRADING AND EROSION CONTROL PLAN - VIEW 1

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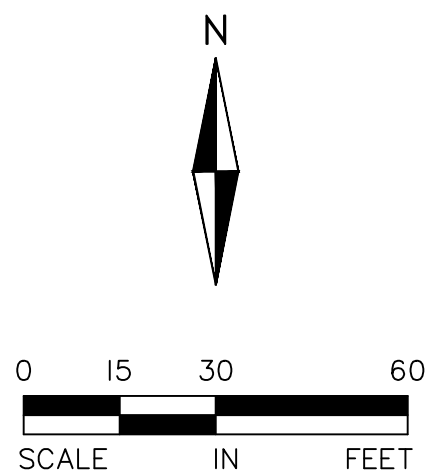
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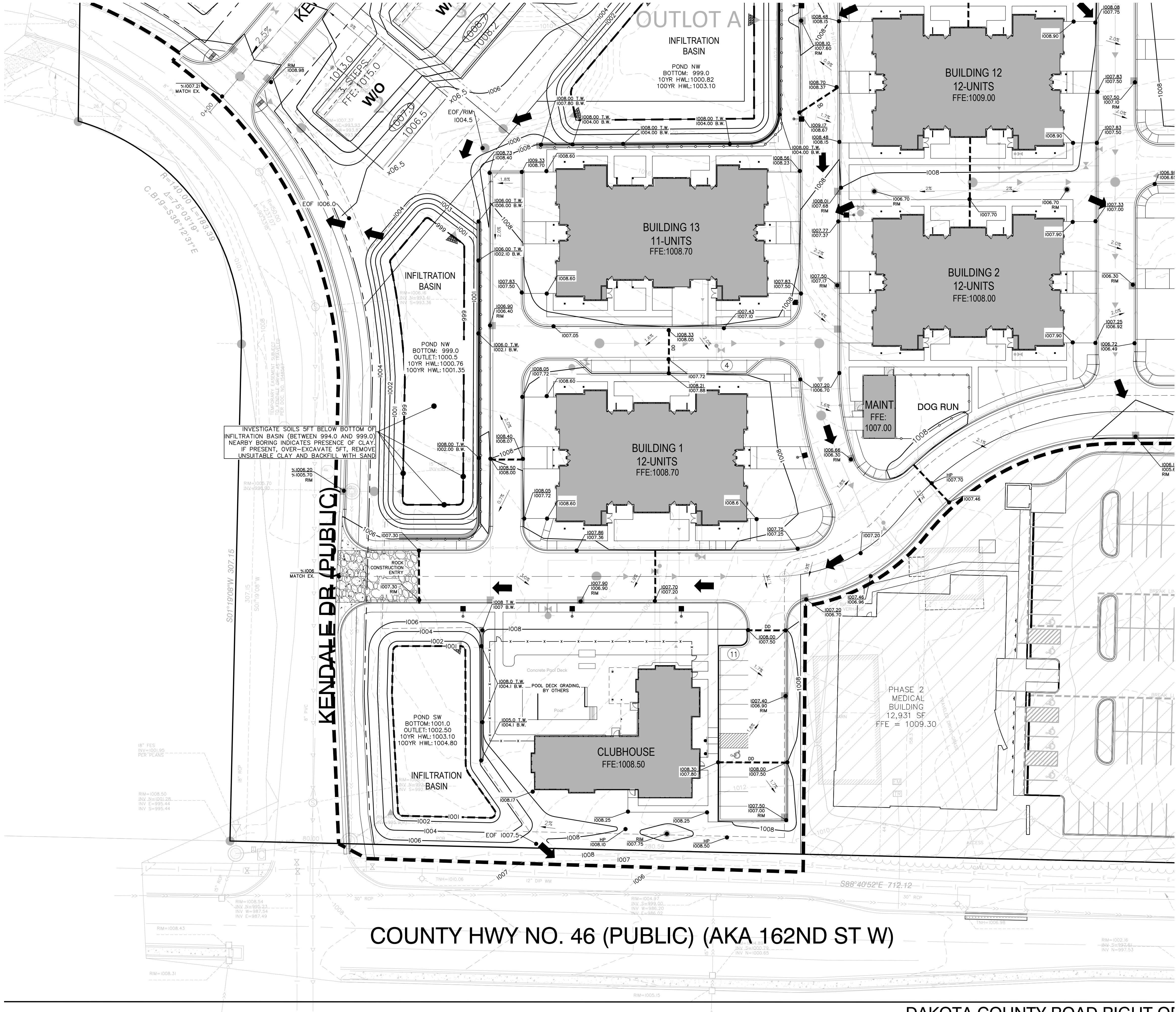
BY	DATE
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DRAWN: JG
PROJECT NO: 221-0039



Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plat\210039grade.dwg Jun 21, 2024 12:43pm



GRADING LEGEND:

- B612 CURB & GUTTER
- EXISTING CURB & GUTTER
- PROPERTY LINE
- RIGHT-OF-WAY
- DRAINAGE & UTILITY EASEMENT
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SPOT ELEVATION
- TOP OF WALL
- BOTTOM OF WALL
- FFE FINISHED FLOOR ELEVATION
- GFE GARAGE FLOOR ELEVATION
- PROPOSED RETAINING WALL
- PROPOSED CATCH BASIN/MANHOLE
- PROPOSED STORM SEWER
- PROPOSED DRAINAGE DIVIDE
- EOF ROUTING
- GRADING LIMITS

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA.

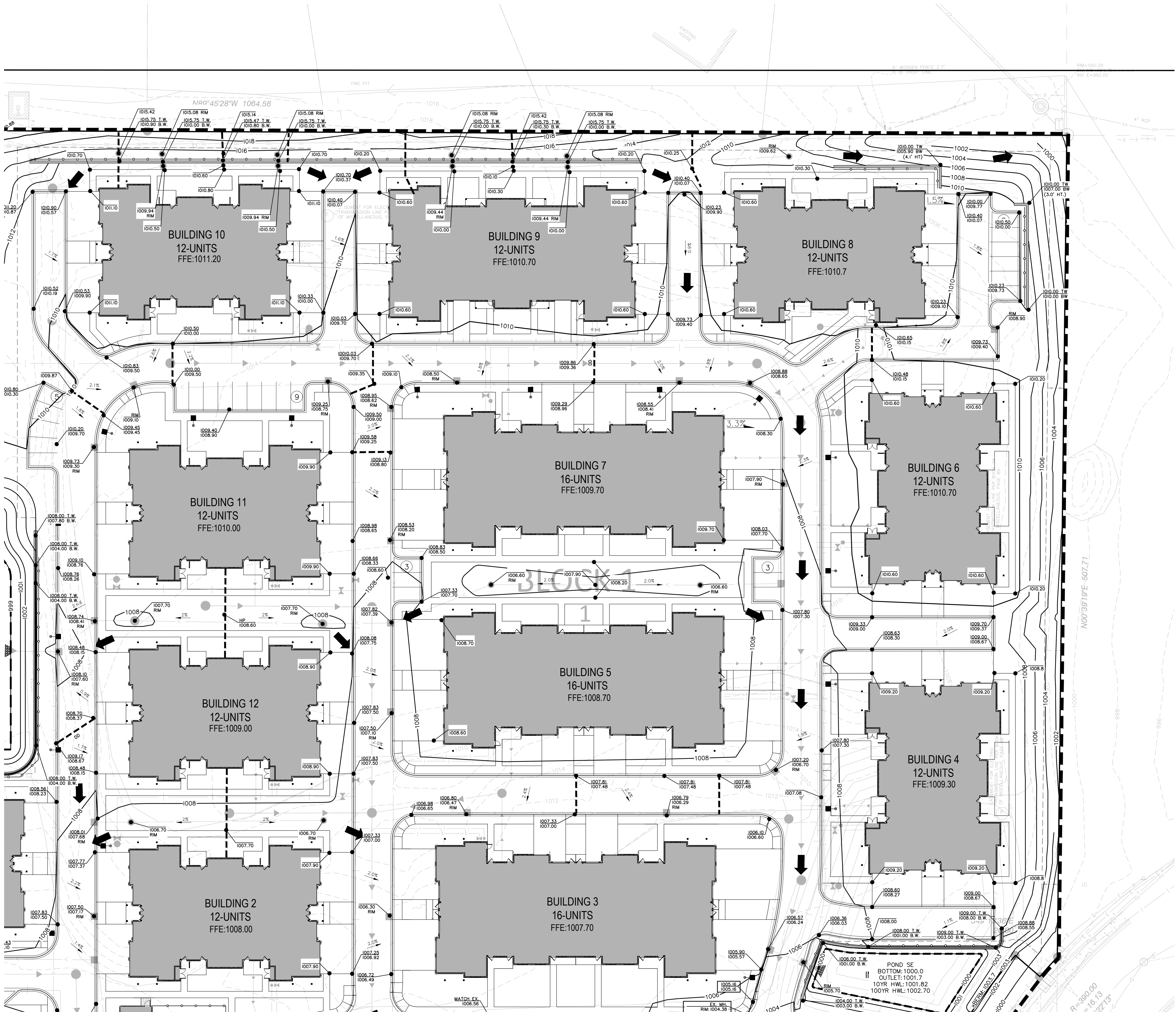
DAN SJOBLUM, PE

QUALITY ASSURANCE/CONTROL

DATE	ISSUE
4-25-24	CUP ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITTAL
5-23-24	STORMWATER UPDATE
6-21-24	STORMWATER COMMENTS

PROJECT TEAM DATA	
DESIGNED:	JG
DRAWN:	JG
PROJECT NO:	221-0039

Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plat\210039\grade.dwg, Jun 21, 2024 -- 12:43pm



GRADING LEGEND:

- B612 CURB & GUTTER
- EXISTING CURB & GUTTER
- PROPERTY LINE
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- PROPOSED CATCH BASIN/MANHOLE
- PROPOSED STORM SEWER
- PROPOSED DRAINAGE DIVIDE
- EOF ROUTING
- GRADING LIMITS



0 15 30 60
SCALE IN FEET

SUNDANCE LAKEVILLE

LAKEVILLE, MINNESOTA

CUP/PRELIMINARY & FINAL PLAT

GRADING AND EROSION CONTROL PLAN - VIEW 3

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly-licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA.

DAN SJOBLOM, PE

QUALITY ASSURANCE/CONTROL

BY	DATE
4-25-24	CUP, ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITTAL
5-23-24	STORMWATER UPDATE
6-21-24	STORMWATER COMMENTS

PROJECT TEAM DATA	
DESIGNED:	JG
DRAWN:	JG
PROJECT NO:	221-0039

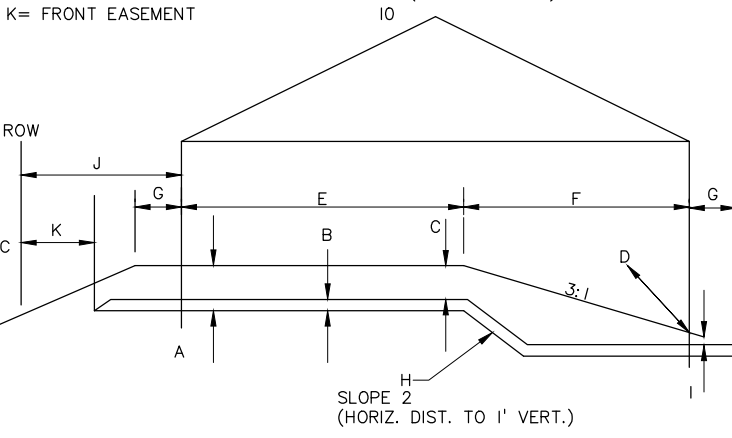
DAN SJOBLOM, PE

BY _____ DATE _____

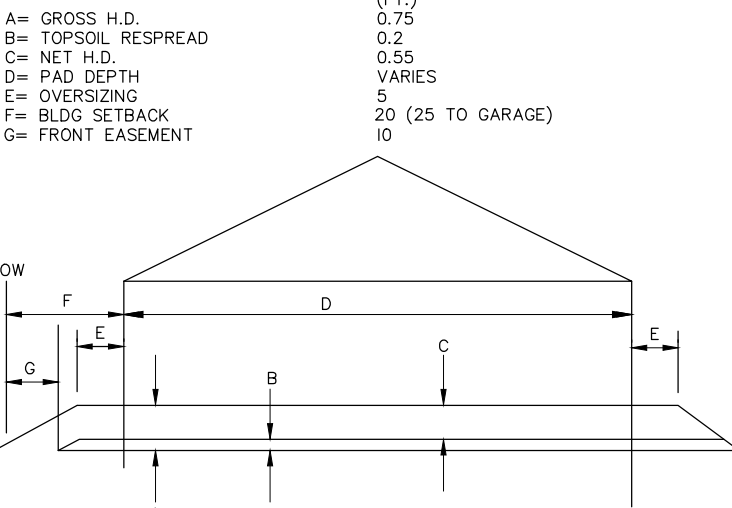
DATE	ISSUE
-25-24	CUP, ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITT.
-23-24	STORMWATER UPDATE
-21-24	STORMWATER COMMENTS

DESIGNED: _____
DRAWN: _____
PROJECT NO: 221-003

A= GROSS H.D.	(FT.)
B= TOPSOIL RESPREAD	3.0
C= NET H.D.	0.2
D= F.G. GFE TO F.G. REAR EL	2.8
E= BENCH LENGTH	SEE PLAN (L), (W)
F= SLOPE & REAR FLAT LENGTH	25
G= OVERSIZING	40
H= S/G SLOPE (X' VERT. TO 1 HORIZ.)	5
I= F.G. TO TOP OF BLACK @ RFL	2
J= BLDG SETBACK	0
K= FRONT EASEMENT	20 (25 TO GARAGE)
	10



LOOK OUT AND WALK OUT PAD (SINGLE FAMILY)
NOT TO SCALE
ALL NUMBERS IN FEET



SLAB ON GRADE PAD (SINGLE AND MULTI-FAMILY)
NOT TO SCALE
ALL NUMBERS IN FEET

SOG	SLAB	ON
L/O	LOOK	OUT
W/O	WALK	OUT

NOTES:
1. C/(L,W) REFERENCES A CORNER PRODUCT TYPE.

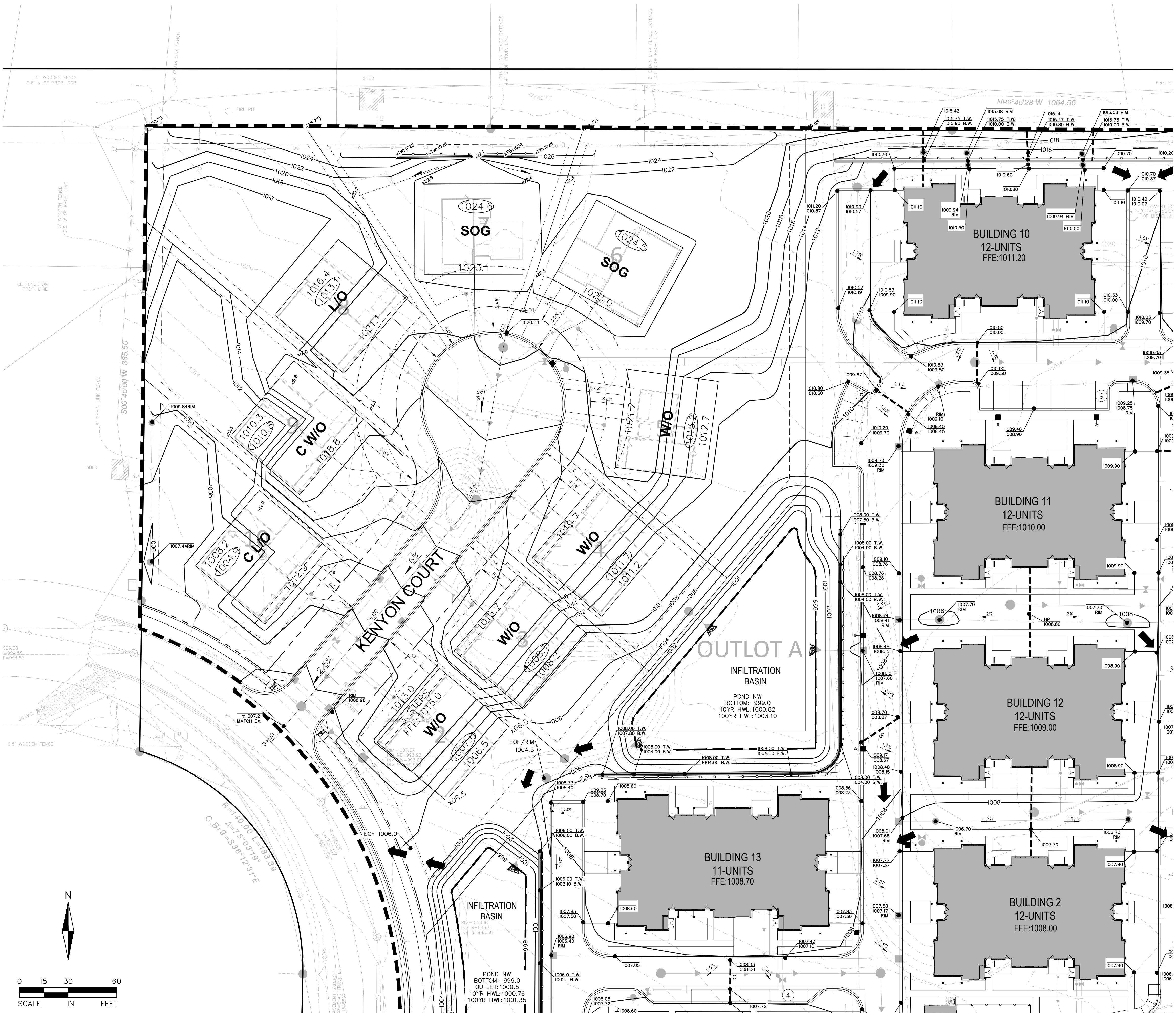
Diagram illustrating the components of a house pad and their corresponding elevations:

- FRONT OF PAD
- 954.3 (I) ← GARAGE FLOOR ELEVATION
- W ← REQUIRED STEPS (STEP = .5')
- HOUSE PAD TYPE
- 950.3 ← LOWEST FLOOR ELEVATION
- 957.6 ← REAR ELEVATION
- REAR OF PAD

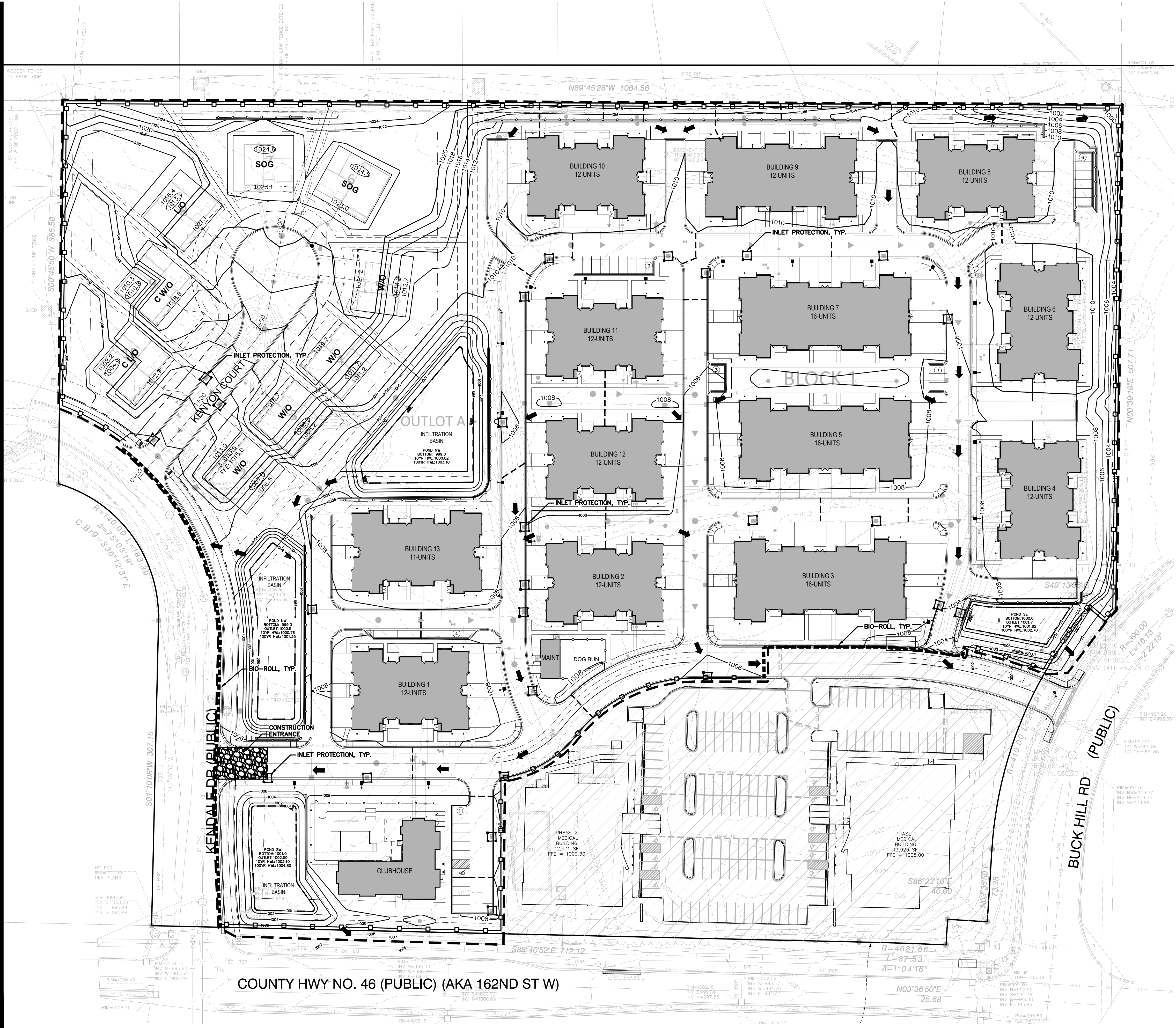
Legend:

- F—FULL BASEMENT
- L—LOOK OUT
- W—WALK OUT

-  B612 CURB & GUTTER
-  EXISTING CURB & GUTTER
-  PROPERTY LINE
-  RIGHT-OF-WAY
-  DRAINAGE & UTILITY EASEMENT
-  - - - 908.0 - - - EXISTING CONTOUR
-  908.0 - - - PROPOSED CONTOUR
-  908.5
908.0
TW:908.5
BW:908.0 PROPOSED SPOT ELEVATION
-  TOP OF WALL
BOTTOM OF WALL
-  FFE FINISHED FLOOR ELEVATION
-  GFE GARAGE FLOOR ELEVATION
-  PROPOSED RETAINING WALL
-  PROPOSED CATCH BASIN/MANHOLE
-  PROPOSED STORM SEWER
-  - - - - - PROPOSED DRAINAGE DIVIDE
-  EOF ROUTING
-  - - - - - GRADING LIMITS



Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plat\210039swppp_pln.dwg Jun 21, 2024 12:43pm



LEGEND:

- INLET PROTECTION
- SILT FENCE
- BIO ROLL

N

0 25 50 100
SCALE IN FEET

ALLIANT

733 Marquette Avenue
Suite 700
Minneapolis, MN 55402
612.758.3080
www.alliant-inc.com

SUNDANCE LAKEVILLE
LAKEVILLE, MINNESOTA
CUP/PRELIMINARY & FINAL PLAT
STORMWATER POLLUTION PREVENTION (SWPPP) PLAN

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed PROFESSIONAL ENGINEER under the laws of the State of MINNESOTA.

DAN SJOBLUM, PE

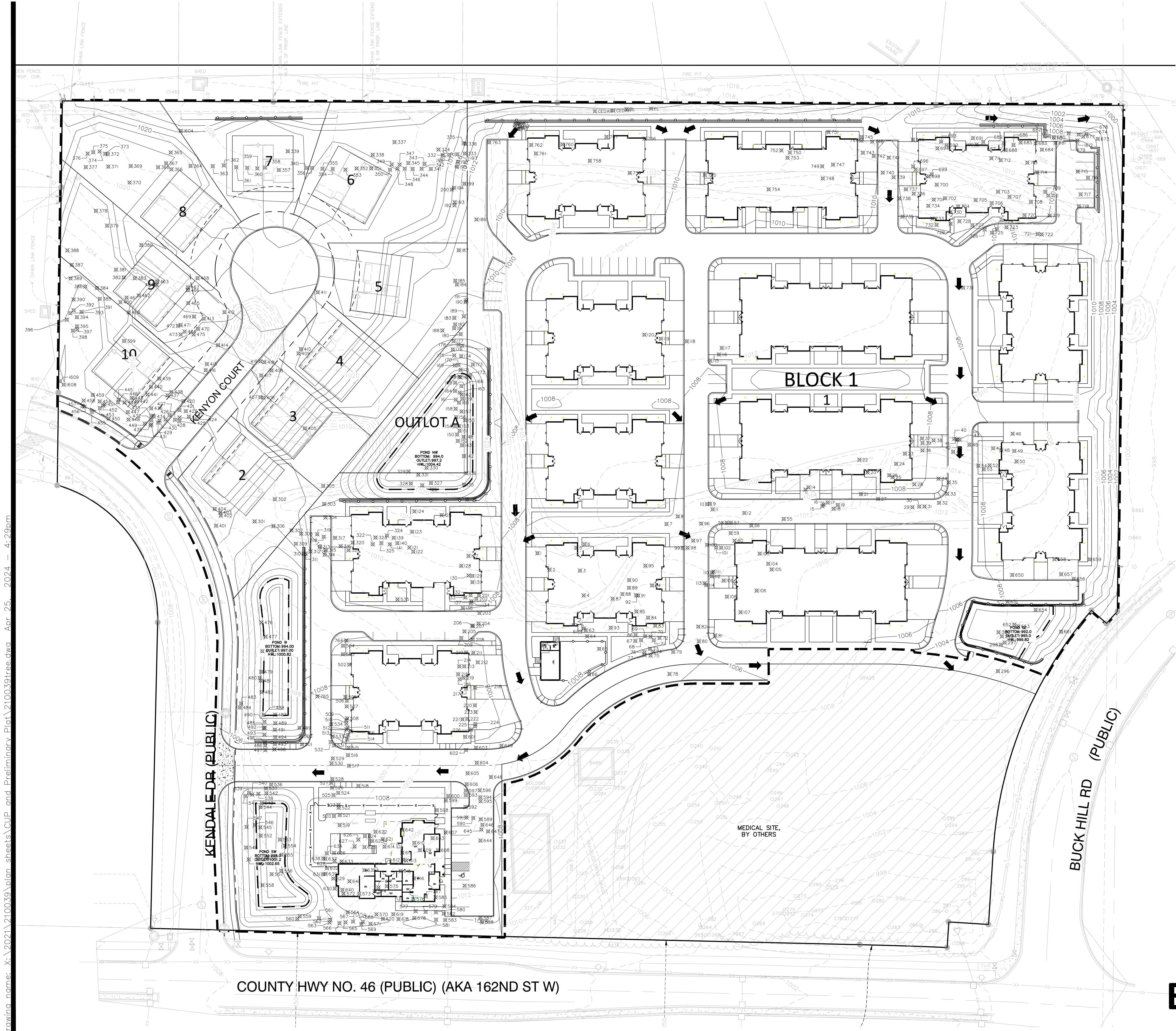
QUALITY ASSURANCE/CONTROL

DATE	ISSUE
4-25-24	CUP, ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITTAL
5-23-24	STORMWATER UPDATE
6-21-24	STORMWATER COMMENTS

PROJECT TEAM DATA

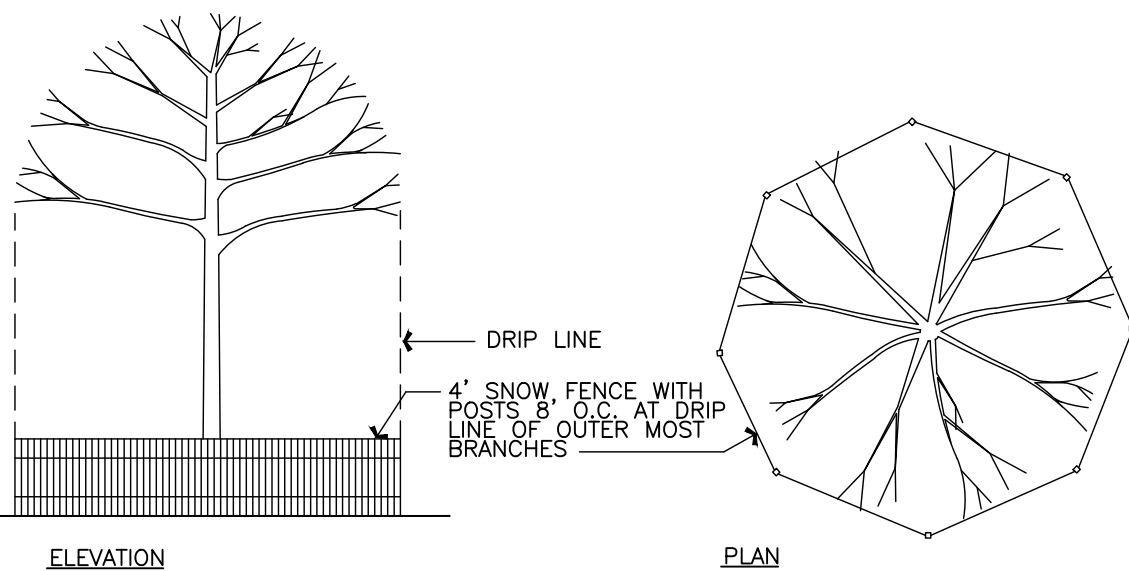
DESIGNED:	Value
DRAWN:	AAA
PROJECT NO:	221-0039

Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plat\210039tree.dwg Apr 25, 2024 4:29pm



TREE PRESERVATION NOTES:

- BEFORE ANY CONSTRUCTION OR GRADING OF DEVELOPMENT PROJECT IS TO OCCUR, A TREE PROTECTION FENCE (AT LEAST 4 FEET IN HEIGHT AND STAKED WITH POSTS NO LESS THAN EVERY 8 FEET) SHALL BE INSTALLED WHERE NOTED ON PLAN. SIGNS SHALL BE PLACED ALONG THIS FENCE LINE IDENTIFYING THE AREA AS A TREE PROTECTION AREA AND PROHIBITING GRADING BEYOND THE FENCE LINE. THIS FENCE MUST REMAIN IN PLACE UNTIL ALL GRADING AND CONSTRUCTION ACTIVITY IS TERMINATED.
- NO EQUIPMENT, CONSTRUCTION MATERIALS OR SOIL MAY BE STORED WITHIN FENCED AREAS PROTECTING SIGNIFICANT TREES.
- NO ENCROACHMENT, LAND DISTURBANCE, GRADE CHANGE, TRENCHING, FILLING, COMPACTION OF CHANGE IN SOIL CHEMISTRY SHALL OCCUR WITHIN FENCED AREAS PROTECTING SIGNIFICANT TREES.
- CONTRACTOR TO PREVENT THE CHANGE IN SOIL CHEMISTRY DUE TO CONCRETE WASHOUT AND LEAKAGE OR SPILLAGE OF TOXIC MATERIALS, SUCH AS FUELS OR PAINTS.
- DRAINAGE PATTERNS ON THE SITE SHALL NOT CHANGE CONSIDERABLY CAUSING DRASTIC ENVIRONMENTAL CHANGES IN THE SOIL MOISTURE CONTENT WHERE TREES ARE INTENDED TO BE PRESERVED.
- NO SIGNIFICANT TREES SHALL BE REMOVED UNTIL THIS TREE PRESERVATION PLAN IS APPROVED BY THE CITY.



NOTE: TREE PROTECTION SHALL BE PROVIDED BY CONTRACTOR AS REQUIRED TO ENSURE SURVIVABILITY OF EXISTING TREES TO REMAIN. NO HEAVY EQUIPMENT SHALL BE STORED WITHIN THE TREE DRIP LINE AS DESIGNATED ABOVE.

TREE PROTECTION FENCE
NOT TO SCALE

LEGEND

- 3802 EXISTING TREE TO REMAIN
- 3803 TREE TO BE REMOVED
- 3802 OFFSITE TREE
- TREE PROTECTION LIMITS

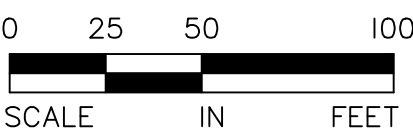


EXHIBIT I



ALLIANT

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Suite 700
Minneapolis, MN 55402
612.758.3080
www.alliant-inc.com

SUNDANCE LAKEVILLE

LAKEVILLE, MINNESOTA

CUP/PRELIMINARY & FINAL PLAT

TREE PRESERVATION PLAN

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed LANDSCAPE ARCHITECT under the laws of the State of MINNESOTA

JOHN GRONHOVD, PLA, ASLA
59223

QUALITY ASSURANCE/CONTROL

BY	DATE
DATE	ISSUE
4-25-24	CUP, ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITTAL

PROJECT TEAM DATA	
DESIGNED:	JG
DRAWN:	CS
PROJECT NO:	221-0039

Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plat\210039\treedwa - Apr 25, 2024 - 4:29pm

TAG #	DBH	Common Name	Notes	Status
1	8	Cottonwood		Remove
2	6	Cottonwood		Remove
3	7	Cottonwood		Remove
4	6	Cottonwood		Remove
5	7	Elm		Remove
6	6	Elm		Remove
7	7	Elm		Remove
8	9	Elm		Remove
9	7	Elm		Remove
10	15	Elm		Remove
11	6	Elm		Remove
12	10	Elm		Remove
13	9	Elm		Remove
14	14	Elm		Remove
15	23	Elm	2X trunk 12,11	Remove
16	7	Elm		Remove
17	6	Elm		Remove
18	7	Elm		Remove
19	6	Elm		Remove
20	6	Elm		Remove
21	9	Cottonwood		Remove
22	7	Cottonwood		Remove
23	13	Cottonwood		Remove
24	14	Elm	2x trunk 8,6	Remove
25	7	Elm		Remove
26	7	Elm		Remove
27	6	Box Elder		Remove
28	13	Box Elder		Remove
29	13	Elm		Remove
30	7	Elm		Remove
31	11	Elm		Remove
32	11	Elm		Remove
33	11	Elm		Remove
34	12	Elm		Remove
35	9	Box Elder		Remove
36	7	Elm		Remove
37	9	Elm		Remove
38	17	Elm	2x trunk 9,8	Remove
39	7	Cottonwood		Remove
40	21	Cottonwood	2x trunk 11,10	Remove
41	11	Cottonwood		Remove
42	8	Cottonwood		Remove
43	7	Cottonwood		Remove
44	12	Cottonwood		Remove
45	11	Elm		Remove
46	8	Cottonwood		Remove
47	14	Cottonwood	2x trunk 8,6	Remove
48	10	Black Willow		Remove
49	11	Cottonwood		Remove
50	12	Cottonwood		Remove
51	10	Cottonwood		Remove
52	14	Cottonwood		Remove
53	6	Cottonwood		Remove
54	6	Cottonwood		Remove
55	19	Cottonwood	2x trunk 11,8	Remove
56	17	Cottonwood		Remove
57	6	Cottonwood		Remove
58	6	Cottonwood		Remove
59	8	Cottonwood		Remove
60	8	Cottonwood		Remove
61	8	Elm		Remove
62	8	Elm		Remove
63	7	Elm		Remove
64	8	Elm		Remove
65	7	Cottonwood		Remove
66	6	Box Elder		Remove
67	6	Cottonwood		Remove
68	6	Cottonwood		Remove
69	6	Cottonwood		Remove
70	6	Cottonwood		Remove
71	10	Cottonwood		Remove
72	10	Cottonwood		Remove
73	7	Cottonwood		Remove
74	7	Cottonwood		Remove
75	15	Cottonwood	2x trunk 8,7	Remove
76	8	Cottonwood		Remove
77	10	Cottonwood		Remove
78	9	Cottonwood		Remove
79	9	Cottonwood		Remove
80	7	Elm		Remove
81	12	Elm		Remove
82	12	Elm		Remove
83	7	Box Elder		Remove
84	9	Elm		Remove
85	7	Box Elder		Remove
86	8	Elm		Remove
87	6	Box Elder		Remove
88	7	Elm		Remove
89	15	Elm	2x trunk 8,7	Remove
90	6	Elm		Remove
91	9	Elm		Remove
92	6	Elm		Remove
93	8	Box Elder		Remove
94	6	Elm		Remove
95	8	Elm		Remove
96	10	Cottonwood		Remove
97	11	Cottonwood		Remove
98	10	Cottonwood		Remove

TAG #	DBH	Common Name	Notes	Status
99	15	Cottonwood	2x trunk 8,7	Remove
100	9	Cottonwood		Remove
101	7	Cottonwood		Remove
102	6	Cottonwood		Remove
103	8	Elm		Remove
104	15	Box Elder		Remove
105	7	Box Elder		Remove
106	7	Elm		Remove
107	9	Cottonwood		Remove
108	16	Box Elder	2x trunk 9,7	Remove
109	15	Box Elder	2x trunk 8,7	Remove
110	18	Cottonwood	2x trunk 10,8	Remove
111	18	Cottonwood	2x trunk 11,7	Remove
112	11	Cottonwood		Remove
113	13	Cottonwood		Remove
114	11	Elm		Remove
115	6	Cottonwood		Remove
116	6	Cottonwood		Remove
117	6	Cottonwood		Remove
118	7	Cottonwood		Remove
119	6	Cottonwood		Remove
120	6	Cottonwood		Remove
121	12	Scotch Pine		Remove
122	11	Scotch Pine		Remove
123	9	Scotch Pine		Remove
124	12	Scotch Pine		Remove
125	7	Elm		Remove
126	12	Elm		Remove
127	9	Elm		Remove
128	12	Scotch Pine		Remove
129	9	Black Cherry		Remove
130	7	Elm		Remove
131	8	Elm		Remove
132	7	Elm		Remove
133	7	Elm		Remove
134	7	Black Cherry		Remove
135	10	Scotch Pine		Remove
136	10	Scotch Pine		Remove
137	9	Elm		Remove
138	7	Scotch Pine		Remove
139	9	Scotch Pine		Remove
140	12	Scotch Pine		Remove
141	10	Scotch Pine		Remove
142	13	Scotch Pine		Remove
143	12	Scotch Pine		Remove
148	9	Scotch Pine		Remove
150	10	Scotch Pine		Remove
151	10	Scotch Pine		Remove
152	8	Scotch Pine		Remove
153	10	Scotch Pine		Remove
154	10	Scotch Pine		Remove
155	10	Scotch Pine		Remove
156	9	Scotch Pine		Remove
157	9	Scotch Pine		Remove
158	13	Scotch Pine		Remove
159	10	Scotch Pine		Remove
160	9	Scotch Pine		Remove
161	9	Scotch Pine		Remove
162	8	Scotch Pine		Remove
163	8	Scotch Pine		Remove
164	8	Scotch Pine		Remove
165	11	Scotch Pine		Remove
166	10	Scotch Pine		Remove
167	10	Scotch Pine		Remove
168	6	Scotch Pine		Remove
169	8	Scotch Pine		Remove
170	11	Scotch Pine		Remove
171	8	Scotch Pine		Remove
172	8	Elm		Remove
173	7	Elm		Remove
174	7	Box Elder		Remove
175	11	Scotch Pine		Remove
176	10	Scotch Pine		Remove
177	12	Scotch Pine		Remove
178	9	Scotch Pine		Remove
179	11	Scotch Pine		Remove
180	10	Scotch Pine		Remove
181	8	Scotch Pine		Remove
182	9	Scotch Pine		Remove
183	11	Scotch Pine		Remove
184	10	Scotch Pine		Remove
185	12	Scotch Pine		Remove
186	15	Elm	2x trunk 8,7	Remove
187	9	Elm		Remove
188	8	Elm		Remove
189	9	Elm		Remove
190	6	Elm		Remove
191	7	Elm		Remove
192	17	Scotch Pine		Remove
193	13	Scotch Pine		Remove
194	13	Scotch Pine		Remove
195	13	Scotch Pine		Remove
196	8	Scotch Pine		Remove
197	8	Scotch Pine		Remove
198	8	Scotch Pine		Remove
199	6	Elm		Remove
200	6	Elm		Remove
201	10	Elm		Remove

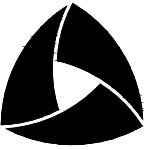
TAG #	DBH	Common Name	Notes	Status
202	9	Elm		Remove
203	15	Elm		Remove
204	7	Elm		Remove
205	6	Elm		Remove
206	6	Elm		Remove
207	7	Elm		Remove
208	11	Elm		Remove
209	7	Scotch Pine		Remove
210	12	Scotch Pine		Remove
211	7	Elm		Remove
212	7	Box Elder		Remove
213	6	Scotch Pine		Remove
214	7	Elm		Remove
215	9	Elm		Remove
216	8	Elm		Remove
217	8	Elm		Remove
218	13	Box Elder		Remove
219	8	Box Elder		Remove
220	9	Box Elder		Remove
221	8	Box Elder		Remove
222	6	Box Elder		Remove
223	10	Box Elder		Remove
224	7	Elm		Remove
225	9	Box Elder		Remove
226	7	Box Elder		Remove
227	7	Elm		By Others
228	9	Elm		By Others
229	7	Elm		By Others
230	7	Box Elder		By Others
231	14	Cottonwood		By Others
232	7	Elm		By Others
233	8	Box Elder		By Others
234	7	Cottonwood		By Others
235	6	Elm		By Others
236	8	Elm		By Others
237	7	Elm		By Others
238	6	Elm		By Others
239	10	Elm		By Others
240	8	Elm		By Others
241	7	Box Elder		By Others
242	7	Elm		By Others
243	8	Cottonwood		By Others
244	6	Elm		By Others
245	6	Elm		By Others
246	9	Elm		By Others
247	8	Elm		By Others
248	7	Elm		By Others
249	7	Box Elder		By Others
250	13	Box Elder		By Others
251	8	Box Elder		By Others
252	12	Box Elder		By Others
253	8	Elm		By Others
254	17	Cottonwood		By Others
255	6	Elm		By Others
256	7	Elm		By Others
257	6	Elm		By Others
258	7	Elm		By Others
259	9	Cottonwood		By Others
260	7	Cottonwood		By Others
261	7	Elm		By Others
262	6	Elm		By Others
263	8	Elm		By Others
264	7	Elm		By Others
265	23	Elm	2x trunk 13,10	By Others
266	7	Elm		By Others
267	9	Elm		By Others
268	9	Elm		By Others
269	9	Elm		By Others
270	7	Elm		By Others
271	7	Elm		By Others
272	12	Elm		By Others
273	6	Elm		By Others
274	8	Elm		By Others
275	6	Elm		By Others
276	8	Elm		By Others
277	7	Elm		By Others
278	7	Elm		By Others
279	10	Elm		By Others
280	6	Elm		By Others
281	6	Elm		By Others
282	15	Black Cherry	2x trunk 8,7	By Others
283	9	Elm		By Others
284	8	Elm		By Others
285	10	Elm		By Others
286	18	Elm	2x trunk 10,8	By Others
287	21	Elm	2x trunk 12,9	By Others
288	12	Elm		By Others
289	14	Elm	2x trunk 8,6	By Others
290	14	Elm		By Others
291	8	Elm		By Others
292	8	Elm		By Others
293	7	Cottonwood		By Others
294	8	Cottonwood		By Others
295	9	Cottonwood		By Others
296	9	Cottonwood		Remove
297	10	Cottonwood		Remove
298	7	Cottonwood		Remove
299	6	Cottonwood		Remove

TAG #	DBH	Common Name	Notes	Status
300	7	Cottonwood		Remove
301	6	Elm		Remove
302	6	Elm		Remove
303	8	Elm		Remove
304	6	Elm		Remove
305	7	Elm		Remove
306	10	Scotch Pine		Remove
307	8	Scotch Pine		Remove
308	10	Scotch Pine		Remove
309	13	Scotch Pine		Remove
310	11	Scotch Pine		Remove
311	12	Scotch Pine		Remove
312	11	Scotch Pine		Remove
313	8	Scotch Pine		Remove
314	14	Scotch Pine		Remove
315	7	Scotch Pine		Remove
316	12	Scotch Pine		Remove
317	12	Scotch Pine		Remove
318	9	Scotch Pine		Remove
319	12	Scotch Pine		Remove
320	9	Scotch Pine		Remove
321	10	Scotch Pine		Remove
322	13	Scotch Pine		Remove
323	9	Scotch Pine		Remove
324	12	Scotch Pine		Remove
325	9	Scotch Pine		Remove
326	10	Scotch Pine		Remove
327	11	Scotch Pine		Remove
328	11	Scotch Pine		Remove
329	11	Scotch Pine		Remove
330	11	Scotch Pine		Remove
331	12	Scotch Pine		Remove
332	10	Scotch Pine		Remove
333	7	Box Elder		Remove
334	15	Box Elder	2x trunk 8,7	Remove
335	10	Box Elder		Remove
336	21	Box Elder	2x trunk 13,8	Remove
337	14	Elm	2x trunk 7,7	Remove
338	16	Green Ash		Remove
339	19	Elm	2x trunk 10,9	Remove
340	7	Elm		Remove
341	12	Scotch Pine		Remove
342	11	Scotch Pine		Remove
343	6	Scotch Pine		Remove
344	11	Scotch Pine		Remove
345	11	Scotch Pine		Remove
346	9	Scotch Pine		Remove
347	11	Scotch Pine		Remove
348	9	Scotch Pine		Remove
349	9	Scotch Pine		Remove
350	12	Scotch Pine		Remove
351	13	Red Pine		Remove
352	19	Red Pine		Remove
353	16	Red Pine		Remove
354	10	Red Pine		Remove
355	14	Red Pine		Remove
356	13	Red Pine		Remove
357	15	Red Pine		Remove
358	13	Red Pine		Remove
359	16	Red Pine		Remove
360	15	Red Pine		Remove
361	12	Red Pine		Remove
362	15	Red Pine		Remove
363	14	Red Pine		Remove
364	7	Elm		Remove
365	11	Elm		Remove
366	6	Elm		Remove
367	13	Red Pine		Remove
368	15	Scotch Pine		Remove
369	22	Red Pine		Remove
370	6	Red Pine		Remove
371	25	Elm	2x trunk 15,10	Remove
372	8	Elm		Remove
373	8	Elm		Remove
374	11	Elm		Remove
375	8	Elm		Remove
376	11	Elm		Remove
377	6	Elm		Remove
378	6	Elm		Remove
379	9	Elm		Remove
380	6	Elm		Remove
381	8	Red Pine		Remove
382	10	Elm		Remove
383	6	Elm		Remove
384	6	Elm		Remove
385	8	Elm		Remove
386	12	Elm		Remove
387	10	Elm		Remove
388	7	Elm		Remove
389	10	Scotch Pine		Remove
390	6	Elm		Remove
391	7	Elm		Remove
392	6	Elm		Remove
393	10	Elm		Remove
394	13	Elm		Remove
395	12	Elm		Remove
396	7	Elm		Remove
397	7	Elm		Remove

Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plg\210039tree.dwg Apr 25, 2024 -- 4:29pm

TAG #	DBH	Common Name	Notes	Status
594	10	Scotch Pine	2x trunk 11,11	Remove
595	22	Elm		Remove
596	6	Elm		Remove
597	19	Elm		Remove
598	7	Box Elder		Remove
599	8	Crab Apple		Remove
601	14	Scotch Pine		Remove
602	13	Scotch Pine		Remove
603	12	Elm		Remove
604	14	Elm		Remove
605	10	Scotch Pine		Remove
606	12	Scotch Pine		Remove
607	6	Elm		Remove
608	10	Elm		Remove
609	8	Elm		Remove
610	8	Elm		Remove
611	8	Elm		Remove
612	6	Elm		Remove
613	8	Elm		Remove
614	7	Elm		Remove
615	7	Elm		Remove
616	8	Elm		Remove
617	8	Elm		Remove
618	6	Elm		Remove
619	15	Scotch Pine	2x trunk 8,7	Remove
620	9	Scotch Pine		Remove
621	15	White Pine		Remove
622	15	White Pine		Remove
623	12	White Pine		Remove
624	9	White Pine		Remove
625	12	White Pine		Remove
626	13	White Pine		Remove
627	14	Scotch Pine		Remove
628	12	Scotch Pine		Remove
629	11	Scotch Pine		Remove
630	9	White Pine		Remove
631	10	White Pine		Remove
632	6	White Pine		Remove
633	12	White Pine		Remove
634	9	White Pine		Remove
635	6	Scotch Pine		Remove
636	7	Elm		Remove
637	8	Elm		Remove
638	7	Elm		Remove
639	6	Elm		Remove
640	8	Elm		Remove
641	7	Elm		Remove
642	11	Elm		Remove
643	6	Elm		Remove
644	17	Elm	2x trunk 9,8	Remove
645	11	Elm		Remove
646	8	Elm		Remove
647	9	Elm		Remove
648	7	Elm		Remove
649	6	Elm		Remove
650	6	Cottonwood		Remove
651	8	Cottonwood		Remove
652	8	Cottonwood		Remove
653	11	Cottonwood		Remove
654	12	Cottonwood		Remove
655	9	Elm		Remove
656	10	Cottonwood		Remove
657	8	Elm		Remove
658	6	Elm		Remove
659	7	Elm		Remove
660	6	Elm		Remove
661	12	Elm		Remove
662	8	Elm		Remove
663	18	Elm		Remove
664	12	Elm		Remove
665	21	Elm		Remove
666	17	Elm		Remove
667	10	Elm		Remove
668	9	Elm		Remove
669	8	Elm		Remove
670	7	Elm		Remove
671	15	Elm		Remove
672	14	Elm		Remove
673	11	Elm		Remove
674	12	Elm		Remove
675	7	White Spruce		Remove
676	9	White Spruce		Remove
677	6	Elm		Remove
678	8	Elm		Remove
679	13	Elm		Remove
680	11	Elm		Remove
681	14	Elm		Remove
682	8	Elm		Remove
683	11	Elm		Remove
684	12	Elm		Remove
685	7	Elm		Remove
686	11	Elm		Remove
687	7	Elm		Remove
688	11	Elm		Remove
689	16	Elm	2x trunk 8,8	Remove
690	10	Elm		Remove
691	9	Elm		Remove
692	9	Elm		Remove

TAG #	DBH	Common Name	Notes	Status
693	14	Elm	2x trunk 8,6	Remove
694	6	Elm		Remove
695	6	Elm		Remove
696	7	Cottonwood		Remove
697	7	Cottonwood		Remove
698	8	Cottonwood		Remove
699	8	Cottonwood		Remove
700	10	Elm		Remove
701	6	Cottonwood		Remove
702	9	Cottonwood		Remove
703	6	Elm		Remove
704	6	Elm		Remove
705	6	Elm		Remove
706	8	Elm		Remove
707	6	Elm		Remove
708	7	Elm		Remove
709	7	Elm		Remove
710	8	Elm		Remove
711	8	Elm		Remove
712	7	Elm		Remove
713	8	Elm		Remove
714	7	Elm		Remove
715	8	Elm		Remove
716	18	Elm	2x trunk 10,8	Remove
717	6	Elm		Remove
718	8	Elm	NO TAG	Remove
719	6	Elm		Remove
720	7	Elm		Remove
721	6	Elm		Remove
722	7	Cottonwood		Remove
723	10	Elm		Remove
724	6	Cottonwood		Remove
725	6	Elm		Remove
726	10	Cottonwood		Remove
727	6	Cottonwood		Remove
728	10	Cottonwood		Remove
729	8	Cottonwood		Remove
730	6	Cottonwood		Remove
731	6	Cottonwood		Remove
732	7	Cottonwood		Remove
733	6	Cottonwood		Remove
734	9	Cottonwood		Remove
735	8	Cottonwood		Remove
736	7	Cottonwood		Remove
737	7	Cottonwood		Remove
738	8	Cottonwood		Remove
739	7	Elm		Remove
740	9	Cottonwood		Remove
741	6	Cottonwood		Remove
742	6	Cottonwood		Remove
743	6	Cottonwood		Remove
744	6	Elm		Remove
745	7	Elm		Remove
746	7	Elm		Remove
747	6	Cottonwood		Remove
748	9	Cottonwood		Remove
749	11	Cottonwood		Remove
750	9	Cottonwood		Remove
751	6	Elm		Remove
752	9	Cottonwood		Remove
753	10	Cottonwood		Remove
754	7	Elm		Remove
755	6	Elm		Remove
756	10	Cottonwood		Remove
757	8	Elm		Remove
758	7	Elm		Remove
759	7	Elm		Remove
760	8	Cottonwood		Remove
761	8	Elm		Remove
762	6	Cottonwood		Remove
763	10	Elm		Remove
764	10	Tamarack		Remove
765	6	Scotch Pine		Remove
766	9	Elm		Remove
767	6	Scotch Pine		Remove
768	20	Scotch Pine	2x trunk 11,9	Offsite
1482	21	Maple		Offsite
1483	22	Maple		Offsite
1484	11	Pine		Offsite
1485	13	Pine		Offsite
1486	13	Pine		Offsite
1487	14	Pine		Offsite
1601	12	Pine		Offsite
1602	15	Pine		Offsite
1603	12	Pine		Offsite
1604	14	Pine		Remove
1605	14	Pine		Remove
1606	17	Pine		Remove
1607	14	Elm		Remove
1608	12	Elm		Remove
1609	10	Elm		Remove
1610	8	Elm		Offsite
1611	14	Elm		Offsite
1612	11	Elm		Offsite
6762	7	Elm		Offsite



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733 Marquette Avenue
Suite 700
Minneapolis, MN 55402
612.758.3080
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SUNDANCE LAKEVILLE

LAKEVILLE, MINNESOTA

CUP/PRELIMINARY & FINAL PLAT

TREE INVENTORY

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed LANDSCAPE ARCHITECT under the laws of the State of MINNESOTA

JOHN GRONQVOD, PLA, ASLA

59223

QUALITY ASSURANCE/CONTROL

BY DATE

DATE ISSUE

4-25-24 CUP, ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITTAL

PROJECT TEAM DATA

DESIGNED: JG
DRAWN: CS
PROJECT NO: 221-0039

Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plt\210039and.dwg Apr. 25, 2024 4:28pm



LEGEND:

- PROPOSED DECIDUOUS OVERSTORY TREES
- PROPOSED DECIDUOUS ORNAMENTAL TREES
- PROPOSED CONIFEROUS TREES
- PROPOSED SHRUBS
- PROPOSED ORNAMENTAL GRASSES
- LANDSCAPE EDGER (TYP.)
- SIDE SLOPE SEED MIX (MN STATE MIX 33-261, SEE SEEDING NOTES) NOTE: AREAS NOT HATCHED TO BE TURF SEEDED OR SODDED.

EXHIBIT J

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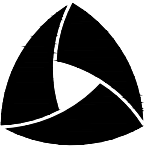
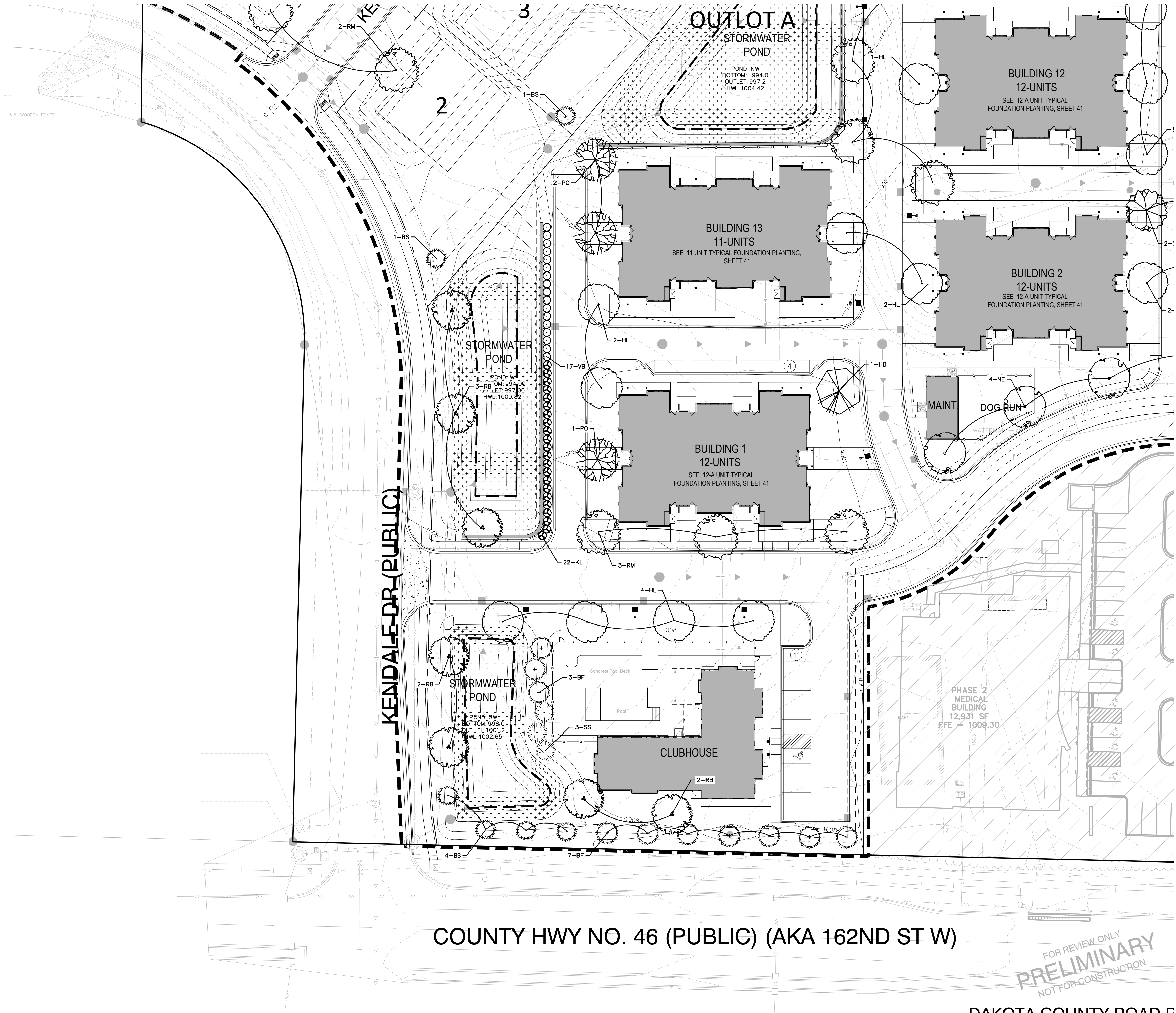
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QUALITY ASSURANCE/CONTROL

BY	DATE
DATE	ISSUE
4-25-24	CUP, ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITTAL

PROJECT TEAM DATA	
DESIGNED:	JG
DRAWN:	CS
PROJECT NO:	221-0039

Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plt\210039land.dwg Apr. 25, 2024 4:28pm



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SUNDANCE LAKEVILLE

**PROJECT ADDRESS 1
LAKEVILLE, MINNESOTA**

CUP/PRELIMINARY & FINAL PLAT

LANDSCAPE PLAN - VIEW 2

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JOHN GRONHOVD, PLA, ASLA

Date 59223 License No.

QUALITY ASSURANCE/CONTROL

BY DATE

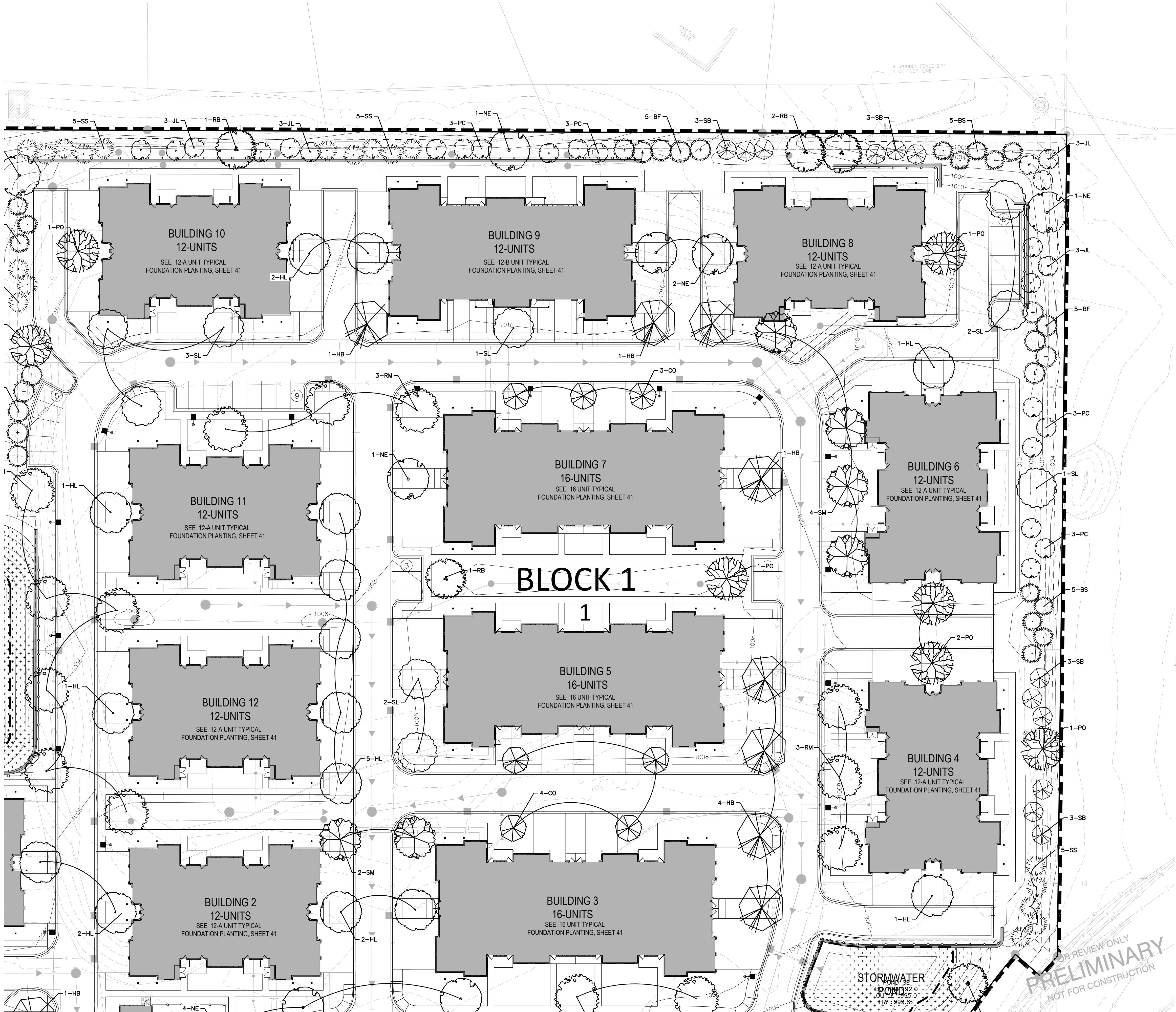
DATE ISSUE

4-25-24 CUP, ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITTAL

PROJECT TEAM DATA

DESIGNED: MK
DRAWN: JG

Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plg\210039land.dwg Apr 25, 2024 4:28pm



LEGEND:

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- PROPOSED DECIDUOUS ORNAMENTAL TREES
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- PROPOSED SHRUBS
- PROPOSED ORNAMENTAL GRASSES
- LANDSCAPE EDGER (TYP.)
- SIDE SLOPE SEED MIX (MN STATE MIX 33-261, SEE SEEDING NOTES) NOTE: AREAS NOT HATCHED TO BE TURF SEEDED OR SODDED.

SUNDANCE LAKEVILLE
PROJECT ADDRESS 1
LAKEVILLE, MINNESOTA
CUP/PRELIMINARY & FINAL PLAT
LANDSCAPE PLAN - VIEW 3

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Date 59223
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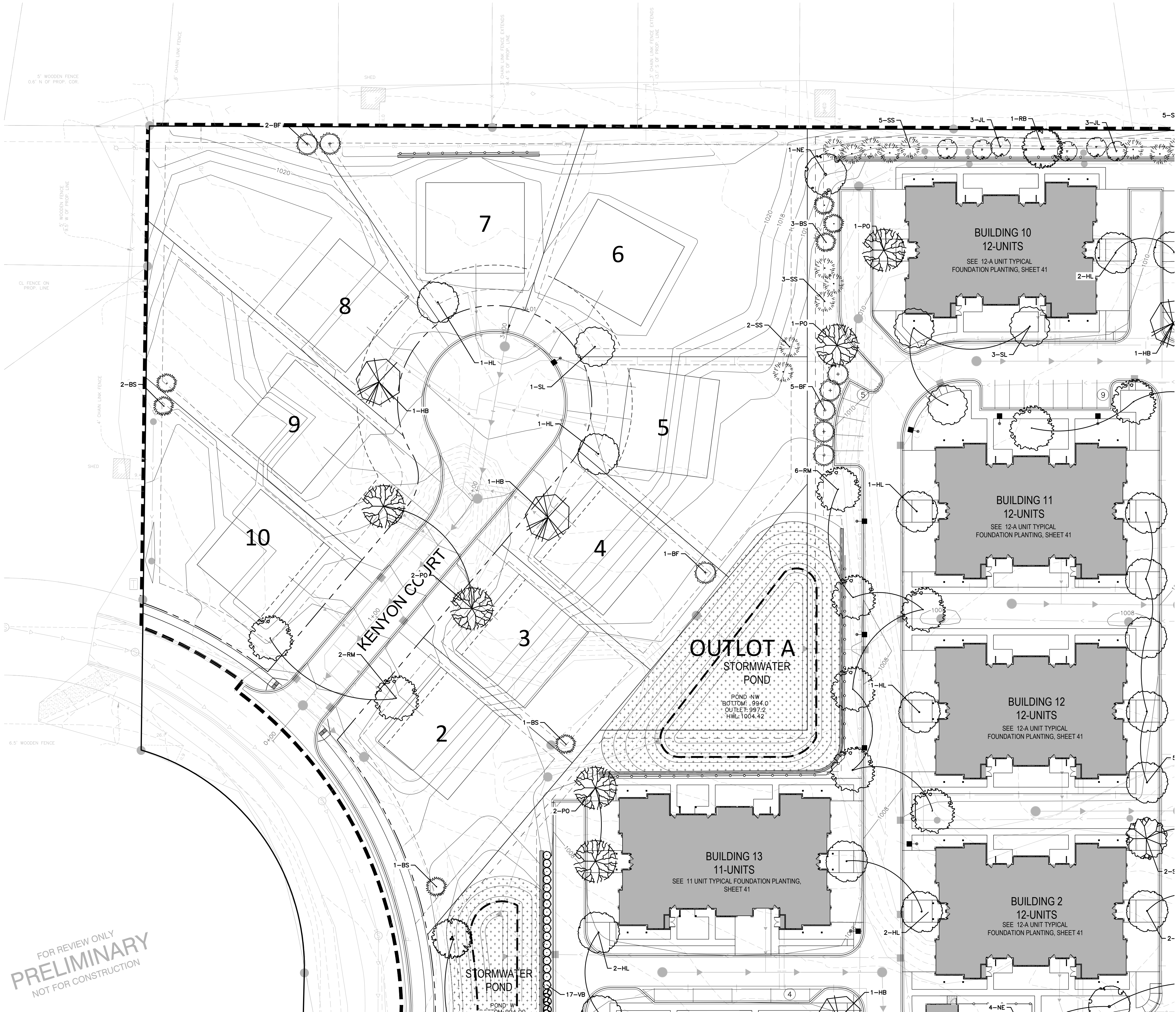
QUALITY ASSURANCE/CONTROL

BY	DATE
DATE	ISSUE
4-25-24	CUP, ADMIN. PERMIT, PRELIMINARY, FINAL PLAT SUBMITTAL

PROJECT TEAM DATA
DESIGNED: MK
DRAWN: JG

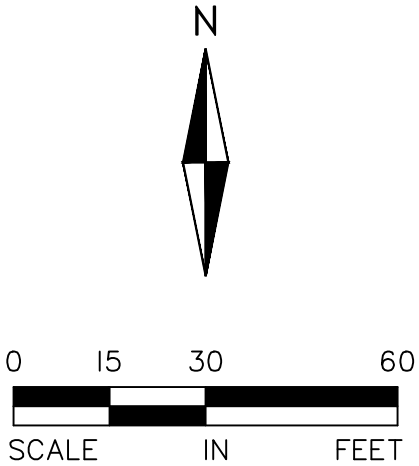
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LEGEND:

- PROPOSED DECIDUOUS OVERSTORY TREES
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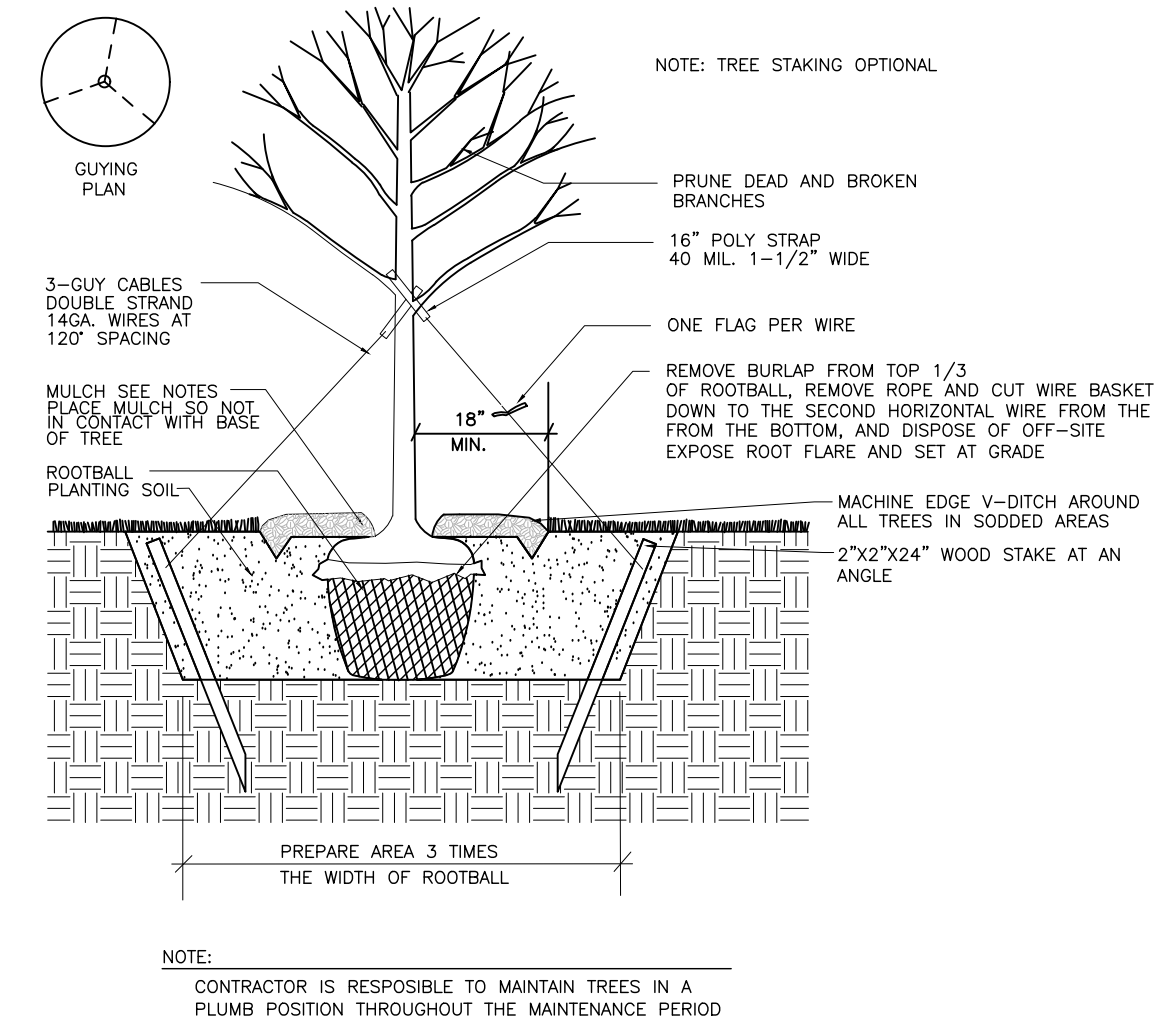
JOHN GRONHOVD, PLA, ASLA
Date 59223
License No.

QUALITY ASSURANCE/CONTROL

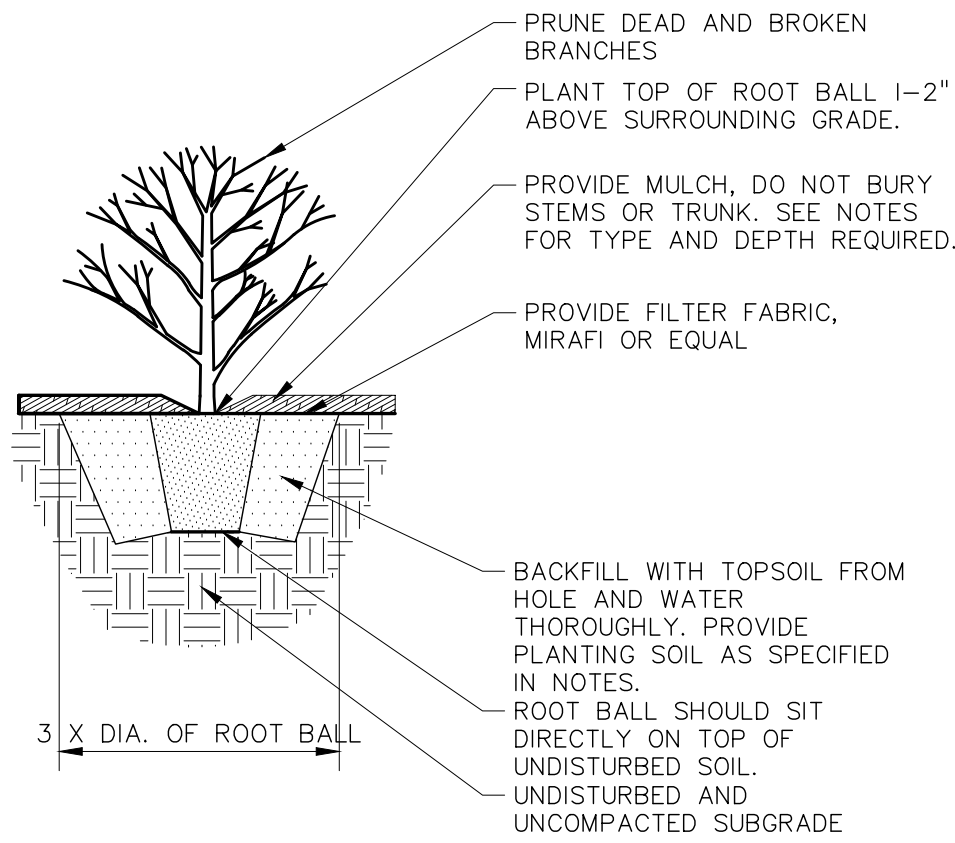
BY	DATE
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PROJECT TEAM DATA
DESIGNED: MK
DRAWN: JG

Drawing name: X:\2021\210039\plan sheets\CUP and Preliminary Plg\210039land.dwg Apr. 25, 2024 4:28pm



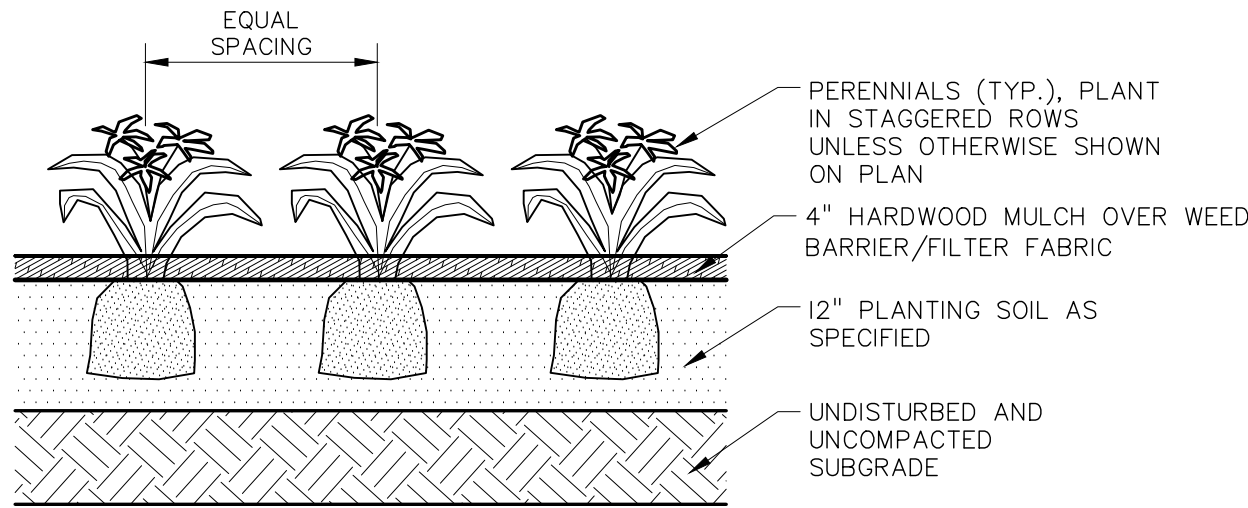
1 TREE PLANTING



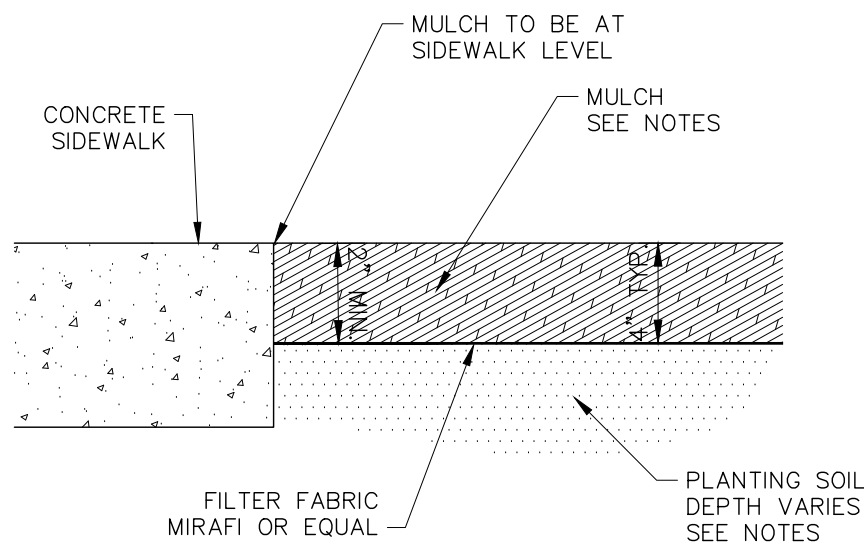
2 SHRUB PLANTING

PLANTING NOTES:

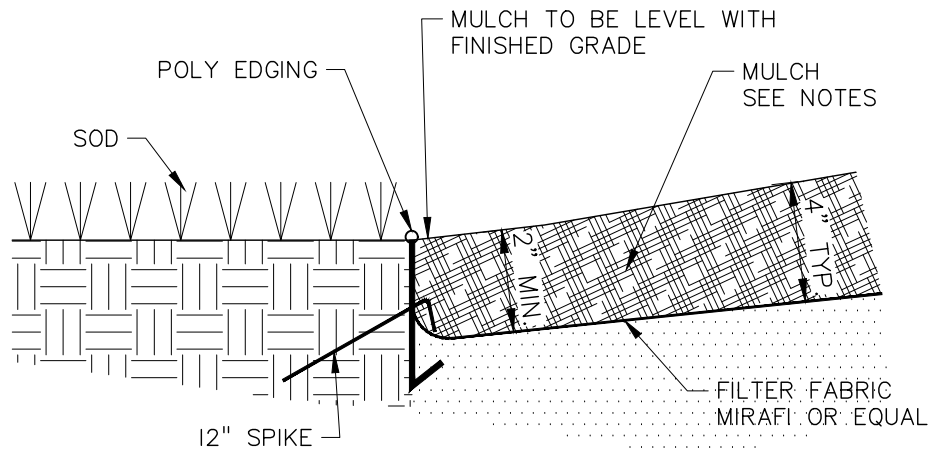
- INSTALL 4" MIN. TOP SOIL TO ALL SOD, SEED AND SHRUB AREAS. FINE GRADE ALL SOD AND SEED AREAS. INSTALL 12" TOP SOIL TO PERENNIAL AREAS.
- STAKE OR MARK ALL PLANT MATERIAL LOCATIONS PRIOR TO INSTALLATION. HAVE OWNERS REPRESENTATIVE APPROVE ALL STAKING PRIOR TO INSTALLATION.
- ALL SHRUB AREAS UNLESS SPECIFIED AS OTHER, TO BE BED MULCHED WITH 3" DEPTH OF DARK BROWN SHREDDED HARDWOOD MULCH OVER FILTER FABRIC, UNLESS SPECIFIED AS OTHER. WEED PRE-EMERGENT SHALL BE SPREAD IN ALL LANDSCAPE BEDS. POLY-EDGED TO BE VALLEY VIEW BLACK DIAMOND OR APPROVED EQUAL.
- INSTALL 4-6" DEPTH SHREDDED HARDWOOD MULCH AROUND ROOT SAUCER OF ALL TREES ISOLATED FROM PLANT BEDS. DO NOT PILE MULCH AGAINST THE BASE OF A PLANT OR TREE TRUNK; PULL THE MULCH AWAY FROM THE BASE ONE TO TWO INCHES.
- PLANT SOIL SHALL CONSIST OF 33% SELECT LOAMY TOPSOIL, 33% PEAT MOSS, 33% PIT RUN SAND.
- COMPLETELY GUARANTEE ALL WORK FOR A PERIOD OF ONE YEAR BEGINNING AT THE DATE OF ACCEPTANCE. MAKE ALL REPLACEMENTS PROMPTLY (AS PER DIRECTION OF OWNER).
- ALL MATERIAL SHALL COMPLY WITH THE LATEST EDITION OF THE AMERICAN STANDARD FOR NURSERY STOCK, AMERICAN ASSOCIATION OF NURSERYMEN.
- ALL TREE TRUNKS SHALL BE WRAPPED WITH BROWN CREPE TREE WRAP. APPLY WRAP IN NOVEMBER AND REMOVE IN APRIL.
- CALL GOPHER STATE ONE CALL AT 651-454-0002 OR, 811 FOR LOCATING ALL UNDERGROUND UTILITIES AND AVOID DAMAGE TO UTILITIES DURING THE COURSE OF THE WORK.
- MAINTAIN ALL PLANT MATERIALS, INCLUDING WATERING, UNTIL THE TIME OF ACCEPTANCE.
- COORDINATE INSTALLATION WITH GENERAL CONTRACTOR.
- STAKING AND GUYING OF TREES OPTIONAL: MAINTAIN PLUMBNESS OF TREES FOR DURATION OF WARRANTY PERIOD.
- SWEEP AND WASH ALL PAVED SURFACES AND REMOVE ALL DEBRIS RESULTING FROM LANDSCAPE OPERATIONS.
- LANDSCAPE CONTRACTOR SHALL INSTALL KENTUCKY BLUE GRASS SOD IN DENOTED AREAS INCLUDING ALL R.O.W. PER LOCAL INDUSTRY STANDARDS. SOD SHALL BE LAID PARALLEL TO THE CONTOURS AND HAVE STAGGERED JOINTS.
- SUPPLY DESIGN AND INSTALLATION FOR NEW WATER EFFICIENT IRRIGATION SYSTEM. DESIGN SYSTEM INCLUDING CONTROLS, ELECTRICAL AND WATER SERVICE CONNECTIONS WITH 100% COVERAGE OF NEW SOD AND PLANTING AREAS. SOD, SEED AND SHRUB AREAS TO BE ON SEPARATE ZONES. DESIGN TO INCLUDE DRIP IRRIGATION IN SHRUB AREAS ADJACENT TO BUILDING. EXCESS WATER SHALL NOT COME IN CONTACT WITH BUILDING AND SIDEWALKS. THE IRRIGATION SYSTEM SHALL HAVE A RAIN/FREEZE SENSOR SHUTOFF. USE RAINBIRD OR APPROVED EQUAL COORDINATE WITH G.C. AND WORK OF OTHER SECTIONS.



3 PERENNIAL PLANTINGS



4 MULCH AT SIDEWALK DETAIL



5 MULCH AT SOD DETAIL

SEEDING NOTES:

SIDE SLOPE MIX: MN STATE SEED MIX 33-261 (STORMWATER SOUTH & WEST)
SEEDING RATE: 35 LBS/ACRE (PURE LIVE SEED)

TURF SEED MIX: MN STATE SEED MIX 25-131 (LOW MAINTENANCE TURF)
SEEDING RATE: 220 LBS/ACRE (PURE LIVE SEED)

APPLY SEED PER THE FOLLOWING (REFER TO MN STATE SEED MIX MANUAL):

- MULCH SEEDED AREAS WITH MNDOT TYPE 3 (MOA CERTIFIED WEED FREE) MULCH AT A RATE OF 1 TON PER ACRE WITHIN 48 HOURS OF SEEDING. MULCH SHOULD THEN BE DISC ANCHORED TO KEEP IT FROM BLOWING AWAY.
- IN INFILTRATION BASINS SUBSTITUTE 6" RAIN GARDEN, RATHER THAN TOP SOIL SPECIFIED ELSEWHERE ON THE SITE. USE SEED MIX 2114 "INFILTRATION POND", DO NOT EXCAVATE BASINS UNTIL CONTRIBUTING DRAINAGE AREA HAS BEEN PERMANENTLY STABILIZED.
- SITE TO BE PREPARED BY LOOSENING TOPSOIL TO A MINIMUM DEPTH OF 3 INCHES. THE SITE TO BE HARROWED OR RAKED FOLLOWING SEEDING, AND THEN PACKED USING A CULTI-PACKER OR EQUIVALENT. SEE MNDOT SEEDING MANUAL FOR REFERENCE.
- SEEDING SHALL BE APPLIED FROM APRIL 15 - JULY 20 OR SEPTEMBER 20 - FREEZE UP.
- IF HYDROSEEDING UTILIZE APPROXIMATELY 500 GALLONS OF WATER PER ACRE. REFER TO MN/DOT SPEC 3884 FOR PROPER INSTALLATION OF HYDRO-SEED. ALL NATIVE SEEDS USED ON THIS PROJECT SHALL BE CERTIFIED TO BE OF MINNESOTA ORIGIN BY THE MINNESOTA CROP IMPROVEMENT ASSOCIATION (MCIA).
- MAINTAIN SEEDED AREAS BY WATERING, REMULCHING AND REPLANTING AS NECESSARY TO ESTABLISH A UNIFORMLY DENSE STAND OF THE SPECIFIED GRASSES UNTIL ACCEPTED.
- ANY AREAS FAILING TO ESTABLISH A STAND SHALL BE RESEEDED, REFERTILIZED AND REMULCHED WHENEVER 70% VEGETATIVE COVER IS NOT ACHIEVED. RESEEDING SHALL CONFORM IN ALL RESPECTS TO THESE SPECIFICATIONS. THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO THE WORK AREAS RESULTING FROM EROSION AND/OR EQUIPMENT. THE CONTRACTOR SHALL REPAIR DAMAGE, INCLUDING REGRADING, RESEEDING, ETC. AS NECESSARY, BEFORE SIGNIFICANT DAMAGE OCCURS.

LANDSCAPE SCHEDULE:

QTY	KEY	COMMON NAME / SCIENTIFIC NAME	SIZE	NOTES
111 - OVERSTORY TREES				
11	HB	Common Hackberry <i>Celtis occidentalis</i>	2.5" Cal. B&B	Straight Trunk, No V-Crotch
23	HL	Skyline Honeylocust <i>Gleditsia triacanthos var. inermis 'Skyline'</i>	2.5" Cal. B&B	Straight Trunk, No V-Crotch
12	PO	Northern Pin Oak <i>Quercus ellipsoidalis</i>	2.5" Cal. B&B	Straight Trunk, No V-Crotch
10	NE	New Horizon Elm <i>Ulmus carpinifolia 'New Horizon'</i>	2.5" Cal. B&B	Straight Trunk, No V-Crotch
10	SL	Sentry Linden <i>Tilia americana 'McKSentry'</i>	2.5" Cal. B&B	Straight Trunk, No V-Crotch
12	RB	Clump River Birch <i>Betula nigra</i>	8' ht. B&B	Clump Form
20	RM	Autumn Blaze Red Maple <i>Acer x freemanii 'Jeffersred'</i>	2.5" Cal. B&B	Straight Trunk, No V-Crotch
7	CO	Crimson Spire Oak <i>Quercus 'Crimson Spire'</i>	2.5" Cal. B&B	Straight Trunk, No V-Crotch
6	SM	Fall Fiesta Sugar Maple <i>Acer saccharum 'Bailista'</i>	2.5" Cal. B&B	Straight Trunk, No V-Crotch
72 - CONIFEROUS TREES				
28	BF	Balsam Fir <i>Abies balsamea</i>	8' ht. B&B	Full Form
21	BS	Blackhills Spruce <i>Picea glauca densata</i>	8' ht. B&B	Full Form
23	SS	Swiss Stone Pine <i>Pinus cembra</i>	8' ht. B&B	Full Form
36 - ORNAMENTAL TREES				
12	JL	Japanese Tree Lilac <i>Syringa reticulata</i>	2" Cal. B&B	Straight Trunk, No V-Crotch
12	PC	Prairiefire Crabapple <i>Malus 'Prairiefire'</i>	2" Cal. B&B	Straight Trunk, No V-Crotch
12	SB	Autumn Brilliance Serviceberry <i>Amerlanchier x grandiflora 'Autumn Brilliance'</i>	2" Cal. B&B	Tree Form
39 - SHURBS				
22	KL	Dwarf Korean Lilac	24" ht. cont.	min. 5 canes at ht. spec.
17	VB	Compact Viburnum <i>Viburnum trilobum 'Bailey Compact'</i>	24" dia. cont.	min. 5 canes at ht. spec.
NOTE: QUANTITIES ON PLAN TO SUPERCEDE LIST QUANTITY IN EVENT OF DISCREPENCY. DEVELOPER RESERVES THE RIGHT TO SUBSTITUTE TREES OF LIKE KIND, AND IN ADHERENCE WITH CITY SIZE REQUIREMENTS.				



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CUP/PRELIMINARY & FINAL PLAT

LANDSCAPE SCHEDULE, NOTES AND DETAILS

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JOHN GRONHOVD, PLA, ASLA

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Date License No.

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PROJECT TEAM DATA

DESIGNED: MK
DRAWN: JG



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	BLACK EYED SUSAN (BES)
	WALKERS LOW CATMINT (CAT)
	PLUM PUDDING CORAL BELLS (CBL)
	BAJA DAYLILY (DAY)
	PRAIRIE DROPSEED (PDS)
	PATRIOT HOSTA (PTH)
	LANDSCAPE EDGER (TYP).
	SHRUBS
	ORNAMENTAL GRASSES

11 UNIT QTY	A-12 UNIT QTY	B-12 UNIT QTY	16 UNIT QTY	KEY	COMMON NAME / SCIENTIFIC NAME	SIZE	NOTES
65	48	66	75	254 - OVERSTORY TREES			
13	12	17	15	AH	Annabelle Hydrangea <i>Hydrangea arborescens</i> 'Annabelle'	24" ht. cont.	min. 5 canes at ht. spec.
20	0		19	BH	Dwarf Bush Honeysuckle <i>Diervilla lonicera</i>	24" ht. cont.	min. 5 canes at ht. spec.
0	16	16	16	DW	Alleman's Compact Dogwood <i>Cornus sericea</i> 'Alleman's'	24" ht. cont.	min. 5 canes at ht. spec.
5	10	10	8	KL	Dwarf Korean Lilac	24" ht. cont.	min. 5 canes at ht. spec.
11	10	23	12	NF	Neon Flash Spirea <i>Spirea japonica</i> 'Neon Flash'	18" ht. cont.	min. 5 canes at ht. spec.
16			5	VB	Compact Viburnum <i>Viburnum trilobum</i> 'Bailey Compact'	24" dia. cont.	min. 5 canes at ht. spec.
48	16	32	42	138 - ORNAMENTAL GRASSES			
22	16	18	9	KFG	Feather Reed Grass <i>Calamagrostis x acutiflora</i> 'Karl Foerster'	#3 cont.	
26	0	14	21	*PDS	Prairie Dropseed <i>Sporobolus heterolepis</i>	#1 cont.	
0	0	0	12	RSG	Shenandoah Red Switch Grass <i>Panicum virgatum</i> 'Shenandoah'	#1 cont.	
132	139	139	121	531 - PERENNIALS			
13	33	65	11	*BES	Black Eyed Susan <i>Rudbeckia fulgida</i> 'Goldstrum'	#1 cont.	
37	26	34	10	*DAY	Baja Daylily <i>Hemerocallis</i> 'Baja'	#1 cont.	
31	37	30	36	*CAT	Walker's Low Catmint <i>Nepeta X faassenii</i> 'Walker's Low'	#1 cont.	
26	0	0	31	*CBL	Plum Pudding Coral Bells <i>Heuchera</i> 'Plum Pudding'	#1 cont.	
25	43	10	33	*PTH	Patriot Hosta <i>Hosta</i> 'Patriot'	#1 cont.	
*Quantities calculated using hatch areas. 24" spacing = 25 plants per 100 SF.							

SUNDANCE LAKEVILLE

PROJECT ADDRESS 1
LAKEVILLE MINNESOTA

CUP/PRELIMINARY & FINAL PLAT
TYPICAL LANDSCAPE PLANS

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed LANDSCAPE ARCHITECT under the laws of the State of MINNESOTA

JOHN GRONHOVD, PLA, ASLA
59223
Date License No

QUALITY ASSURANCE/CONTROL

[illegible]

PROJECT TEAM DATA

DESIGNED: MK
DRAWN: JG

SUNDANCE LAKEVILLE



Unit Mix				Gross Square Footage Building							
Name	Garage Stalls	Total Unit Count	Unit Area w/ Mezz	Site	Count	Level -1	Level 1	Level 2	Level 3	Building Total Gross Area	Total Gross Building Areas
Unit A1	1	45	797 R²	11-Unit Building (11A)	1	-	9,134R²	8,885R²	-	18,019R²	18,019R²
Unit A2	1	14	813 R²	12-Unit Building (12A)	8	-	8,384R²	8,315R²	1,190R²	17,709R²	141,672R²
Unit A3 - Type A	1	2	728 R²	12-Unit Building (12B)	1	-	10,374R²	10,115R²	-	20,490R²	20,490R²
Unit A7	1	6	855 R²	16-Unit Building (16A)	3	-	11,803R²	11,454R²	-	23,257R²	69,771R²
Unit B2	1	50	1,221 R²	Clubhouse	1	-	5,120R²	-	-	5,120R²	5,120R²
Unit B2	2	2	1,221 R²	Maintenance	1	-	1,014R²	-	-	1,014R²	1,014R²
Unit B3	1	2	1,134 R²	x Grand Total	15	-	-	-	-	-	256,086R²
Unit B4	1	2	1,188 R²								
Unit B4	2	1	1,188 R²								
Unit B5 - Type A	2	1	1,098 R²								
Unit B6	1	2	1,305 R²								
Unit B7	1	32	1,111 R²								
Unit C2	2	1	1,433 R²								
Unit C3 - Type A	2	1	1,422 R²								
Unit C4	1	6	1,660 R²								
Grand total		167									

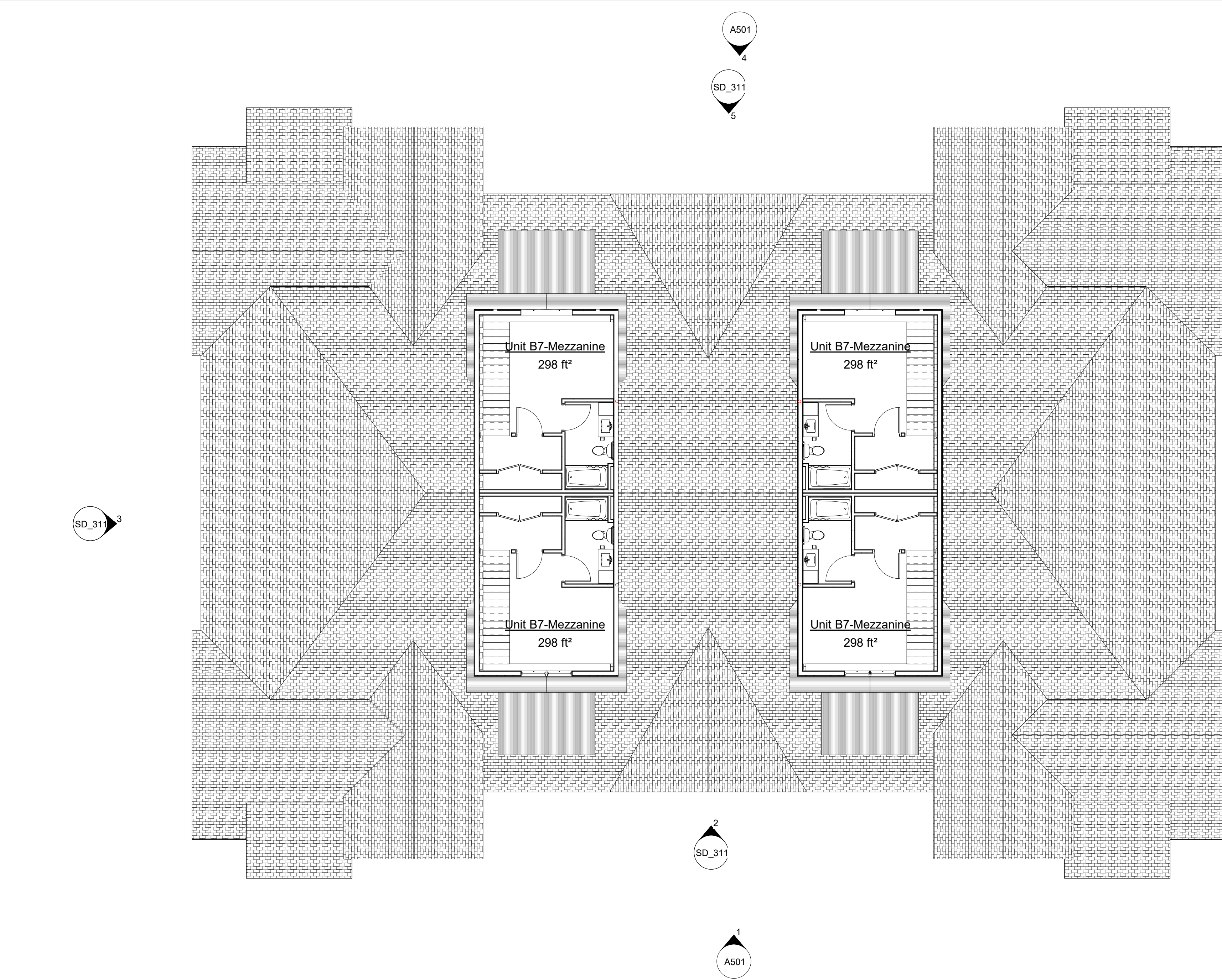
Residential Unit Mix - 12-Unit Building (12A) - 8 Buildings on Site																	
Name	Garage Stalls	Count	HUD Gross Square Footage					HUD Net Rentable Square Footage						Rooms			
			Main Floor	Mezzanine	Stairs	Garage Area	Total Unit Gross	Total Gross Area	Main Floor Net	Stairs Net	Mezzanine Net	Garage Net	Total Unit Net	Total Net Area	Bed	Bath	Unit Type
Level 1																	
Unit A1	1	4	797 R²	0 R²	0 R²	381 R²	1,178 R²	4,713 R²	740 R²	0 R²	0 R²	339 R²	1,079 R²	4,316 R²	1	1	Type B
Level 2																	
Unit B2	1	4	1,221 R²	0 R²	92 R²	318 R²	1,631 R²	6,524 R²	1,153 R²	68 R²	0 R²	289 R²	1,510 R²	6,040 R²	2	2	-
Unit B7	1	4	813 R²	298 R²	96 R²	411 R²	1,618 R²	6,471 R²	759 R²	83 R²	321 R²	367 R²	1,529 R²	6,117 R²	2	2	-
Grand total		12						17,709 R²						16,473 R²			

Residential Unit Mix - 11-Unit Building w/ Type A (11A)																
Name	Garage Stalls	Count	HUD Unit Gross Square Footage				HUD Net Rentable Square Footage						Rooms			Unit Type
			Main Floor	Stairs	Garage Area	Total Unit Area	Total Area	Main Floor	Stairs	Garage Net	Total	Total Net Area	Bed	Bath		
Level 1																
Unit A1	1	1	797 R²	0 R²	381 R²	1,178 R²	1,178 R²	740 R²	0 R²	339 R²	1,079 R²	1,079 R²	1	1		Type B
Unit B3	1	1	1,134 R²	0 R²	419 R²	1,554 R²	1,554 R²	1,070 R²	0 R²	372 R²	1,442 R²	1,442 R²	2	2		Type B
Unit B5 - Type A	2	1	1,098 R²	0 R²	723 R²	1,820 R²	1,820 R²	1,035 R²	0 R²	676 R²	1,711 R²	1,711 R²	2	2		Type A
Level 2																
Unit A2	1	1	813 R²	96 R²	412 R²	1,321 R²	1,321 R²	759 R²	83 R²	367 R²	1,208 R²	1,208 R²	1	1	-	
Unit A2	1	1	813 R²	132 R²	412 R²	1,357 R²	1,357 R²	759 R²	83 R²	337 R²	1,178 R²	1,178 R²	1	1	-	
Unit B2	1	2	1,221 R²	92 R²	318 R²	1,631 R²	3,262 R²	1,153 R²	68 R²	289 R²	1,510 R²	3,020 R²	2	2	-	
Unit B2	1	1	1,221 R²	114 R²	379 R²	1,714 R²	1,714 R²	1,153 R²	68 R²	346 R²	1,567 R²	1,567 R²	2	2	-	
Unit B2	2	1	1,221 R²	114 R²	716 R²	2,051 R²	2,051 R²	1,153 R²	68 R²	668 R²	1,890 R²	1,890 R²	2	2	-	
Unit B4	1	1	1,188 R²	95 R²	412 R²	1,695 R²	1,695 R²	1,125 R²	88 R²	367 R²	1,579 R²	1,579 R²	2	2	-	
Unit B4	2	1	1,188 R²	132 R²	748 R²	2,068 R²	2,068 R²	1,125 R²	88 R²	696 R²	1,908 R²	1,908 R²	2	2	-	
Grand total		11					18,019 R²					16,583 R²				

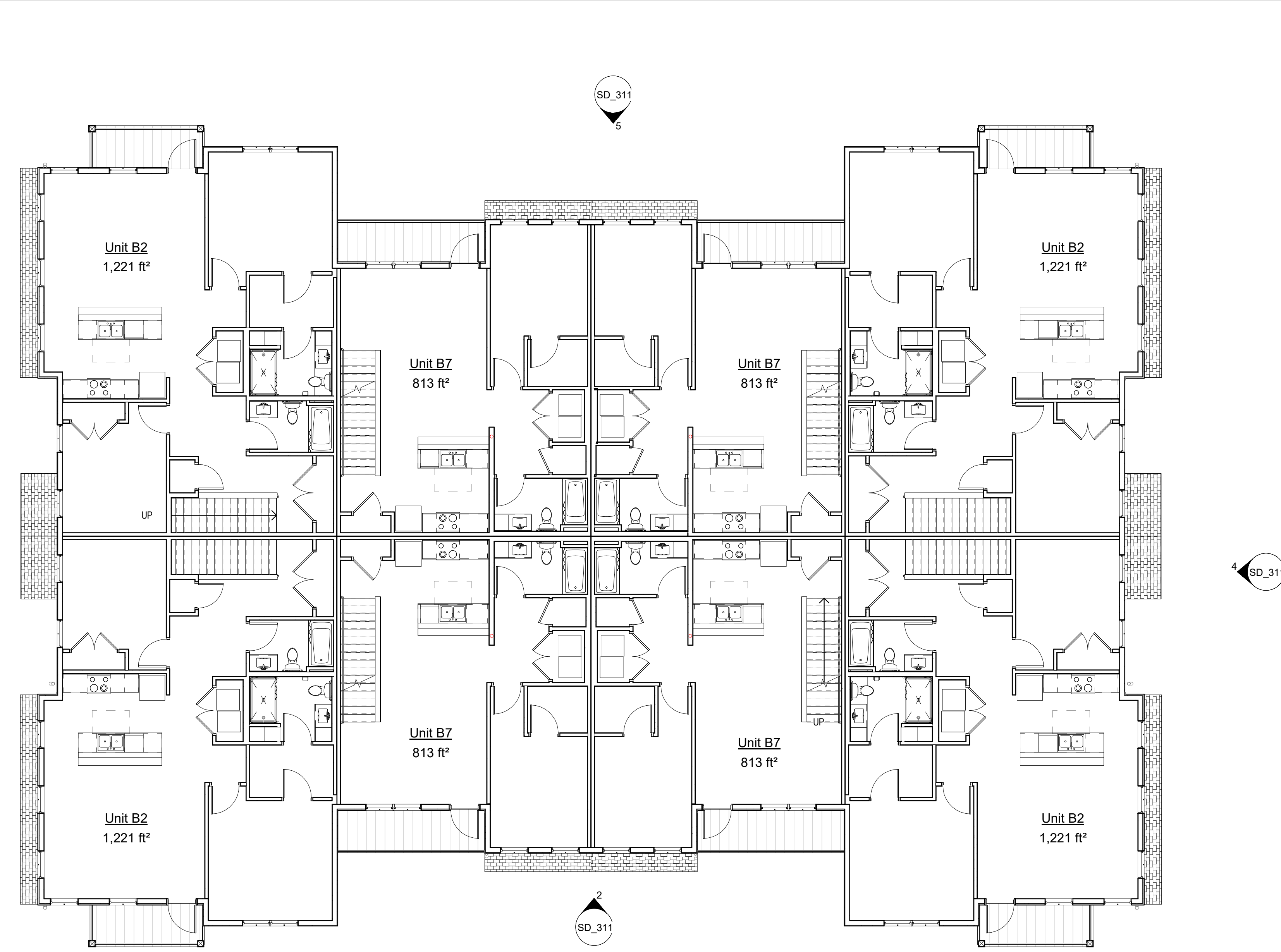
Residential Unit Mix - 16-Unit Building (16A)																
Name	Garage Stalls	Count	HUD Unit Gross Square Footage				HUD Net Rentable Square Footage						Rooms			Unit Type
			Main Floor	Stairs	Garage Area	Total Unit Area	Total Area	Main Floor	Stairs	Garage Net	Total	Total Net Area	Bed	Bath		
Level 1																
Unit A1	1	4	797 R²	0 R²	381 R²	1,178 R²	4,713 R²	740 R²	0 R²	339 R²	1,079 R²	4,316 R²	1	1		Type B
Unit A7	1	2	855 R²	0 R²	385 R²	1,240 R²	2,479 R²	798 R²	0 R²	346 R²	1,144 R²	2,288 R²	1	1		Type B
Level 2																
Unit A2	1	2	813 R²	96 R²	412 R²	1,321 R²	2,642 R²	753 R²	83 R²	337 R²	1,173 R²	2,346 R²	1	1	-	
Unit A2	1	2	813 R²	96 R²	373 R²	1,282 R²	2,564 R²	753 R²	83 R²	352 R²	1,188 R²	2,376 R²	1	1	-	
Unit B2	1	4	1,221 R²	92 R²	318 R²	1,631 R²	6,524 R²	1,148 R²	86 R²	287 R²	1,521 R²	6,084 R²	2	2	-	
Unit C4	1	2	1,660 R²	96 R²	412 R²	2,168 R²	4,335 R²	1,502 R²	76 R²	337 R²	1,915 R²	3,829 R²	3	2	-	
Grand total		16					23,257 R²					21,239 R²				

Residential Unit Mix - 12-Unit Building (12B) - 1 Building on Site																
Name	Garage Stalls	Count	HUD Unit Gross Square Footage				HUD Net Rentable Square Footage						Rooms			Unit Type
			Main Floor	Stairs	Garage Area	Total Unit Area	Total Area	Main Floor	Stairs	Garage Net	Total	Total Net Area	Bed	Bath		
Level 1																
Unit A3 - Type A	1	2	728 R²	0 R²	491 R²	1,219 R²	2,437 R²	675 R²	0 R²	454 R²	1,129 R²	2,258 R²	1	1		Type A
Unit B3	1	1	1,134 R²	0 R²	419 R²	1,553 R²	1,553 R²	1,070 R²	0 R²	372 R²	1,442 R²	1,442 R²	2	2		Type B
Unit C3 - Type A	2	1	1,422 R²	0 R²	699 R²	2,121 R²	2,121 R²	1,336 R²	0 R²	653 R²	1,989 R²	1,989 R²	3	2		Type A
Level 2																
Unit B2	1	1	1,221 R²	92 R²	318 R²	1,631 R²	1,631 R²	1,153 R²	68 R²	289 R²	1,510 R²	1,510 R²	2	2	-	
Unit B2	1	1	1,221 R²	92 R²	437 R²	1,750 R²	1,750 R²	1,153 R²	68 R²	367 R²	1,618 R²	1,618 R²	2	2	-	
Unit B2	2	1	1,221 R²	92 R²	773 R²	2,086 R²	2,086 R²	1,153 R²	68 R²	722 R²	1,943 R²	1,943 R²	2	2	-	
Unit B4	1	1	1,188 R²	95 R²	412 R²	1,695 R²	1,695 R²	1,125 R²	88 R²	367 R²	1,568 R²	1,568 R²	2	2	-	
Unit B6	1	2	1,305 R²	96 R²	412 R²	1,813 R²	3,627 R²	1,102 R²	76 R²	367 R²	1,545 R²	3,090 R²	2	2	-	
Unit C2	2	1	1,433 R²	96 R²	412 R²	1,941 R²	1,941 R²	1,366 R²	76 R²	367 R²	1,809 R²	1,809 R²	3	2	-	
Grand total		12					20,490 R²					18,751 R²				

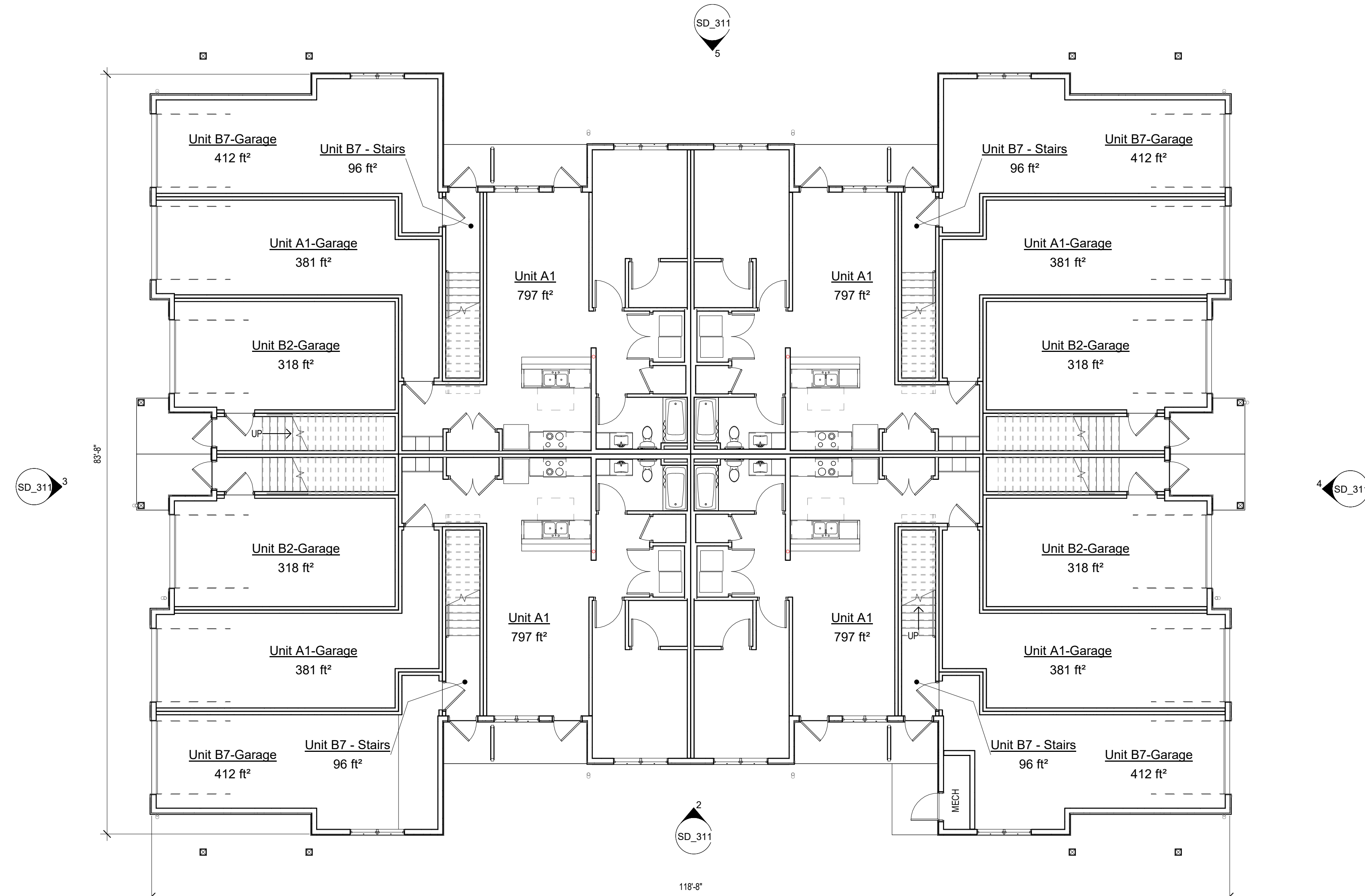
EXHIBIT K1



③ Level 3 Copy 1 - 12-Unit Building (12A)
1/8" = 1'-0"

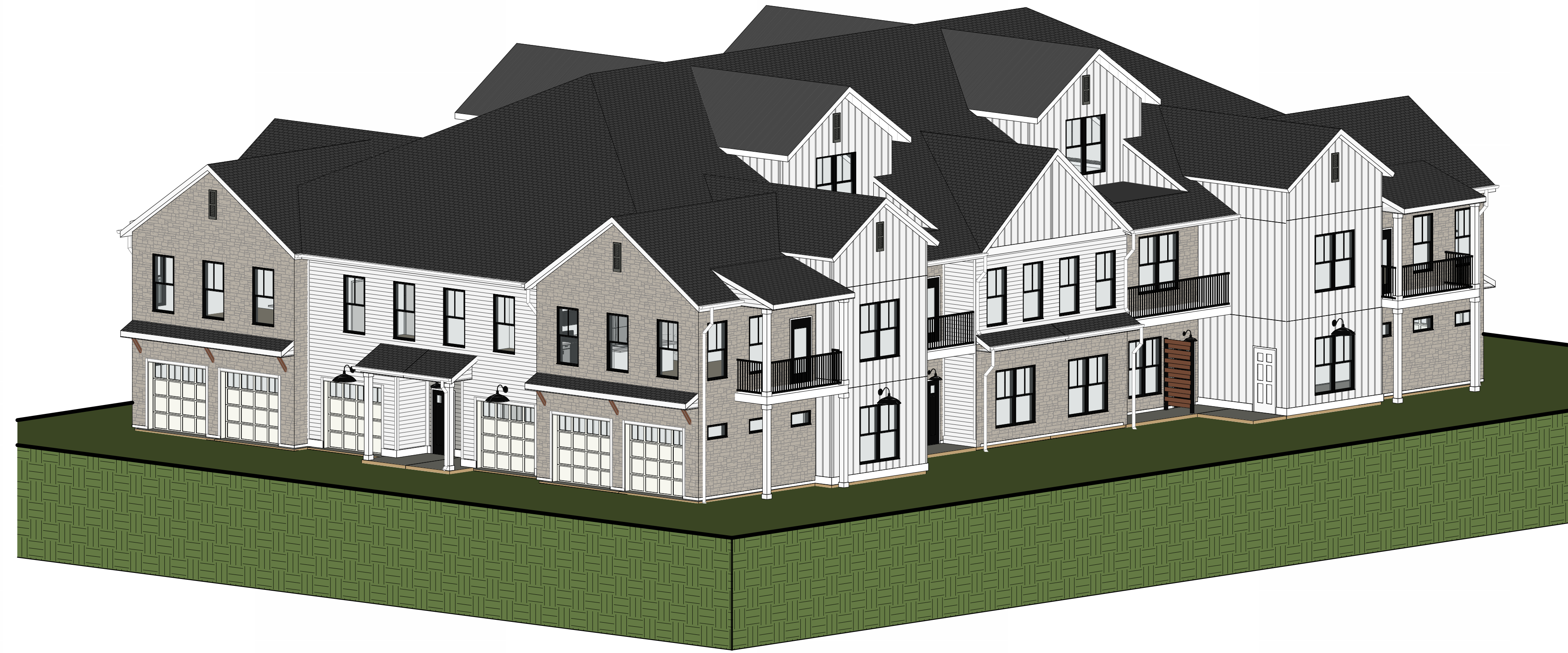


② Level 2 - 12-Unit Building
1/8" = 1'-0"



① Level 1 - 12-Unit Building
1/8" = 1'-0"

Residential Unit Mix - 12-Unit Building (12A) - 8 Buildings on Site																	
Name	Garage Stalls	Count	HUD Gross Square Footage					HUD Net Rentable Square Footage					Rooms		Unit Type		
			Main Floor	Mezzanine	Stairs	Garage Area	Total Unit Gross	Total Gross Area	Main Floor Net	Stairs Net	Mezzanine Net	Garage Net	Total Unit Net	Total Net Area		Bed	Bath
Level 1																	
Unit A1	1	4	797 ft²	0 ft²	0 ft²	381 ft²	1,178 ft²	4,713 ft²	740 ft²	0 ft²	0 ft²	339 ft²	1,079 ft²	4,316 ft²	1	1	Type B
Level 2																	
Unit B2	1	4	1,221 ft²	0 ft²	92 ft²	318 ft²	1,631 ft²	6,524 ft²	1,153 ft²	88 ft²	0 ft²	289 ft²	1,510 ft²	6,040 ft²	2	2	-
Unit B7	1	4	813 ft²	298 ft²	96 ft²	411 ft²	1,618 ft²	6,471 ft²	759 ft²	83 ft²	321 ft²	367 ft²	1,529 ft²	6,117 ft²	2	2	-
Grand total		12						17,709 ft²						16,473 ft²			



⑥ 12-Unit Building - 3D Exteriors - 1



⑦ 12-Unit Building - 3D Exteriors - 2



EXTERIOR MATERIALS TAG KEY	
4.1	CULTURED STONE - COLOR: TBD
5.1	ALUMINUM RAILINGS - COLOR: BLACK
5.2	CORRUGATED METAL ROOFING - COLOR: BLACK
5.3	METAL FENCE POST - COLOR: BLACK
5.4	PREFINISHED ALUMINUM GUTTERS & DOWNSPOUTS - COLOR: WHITE
6.1	CEDAR TIMBER - COLOR: STAINED
7.1	LAP SIDING - COLOR: SW 7006 EXTRA WHITE
7.3	BOARD & BATTEN SIDING - SW 7006 EXTRA WHITE
7.4	TRIM - COLOR: SW 7006 EXTRA WHITE
7.5	PVC SKIRTBOARD - COLOR: WHITE
7.6	ASPHALT SHINGLES - COLOR: CHARCOAL
7.7	DECORATIVE 12"x36" LOUVER - COLOR: BLACK
8.1	GLAZING
26.1	EXTERIOR LIGHTING - COLOR: BLACK

① 12-Unit Building (12A) - Front Elevation
 3/16" = 1'-0"



② 12-Unit Building (12A) - Side Elevation 1
 3/16" = 1'-0"



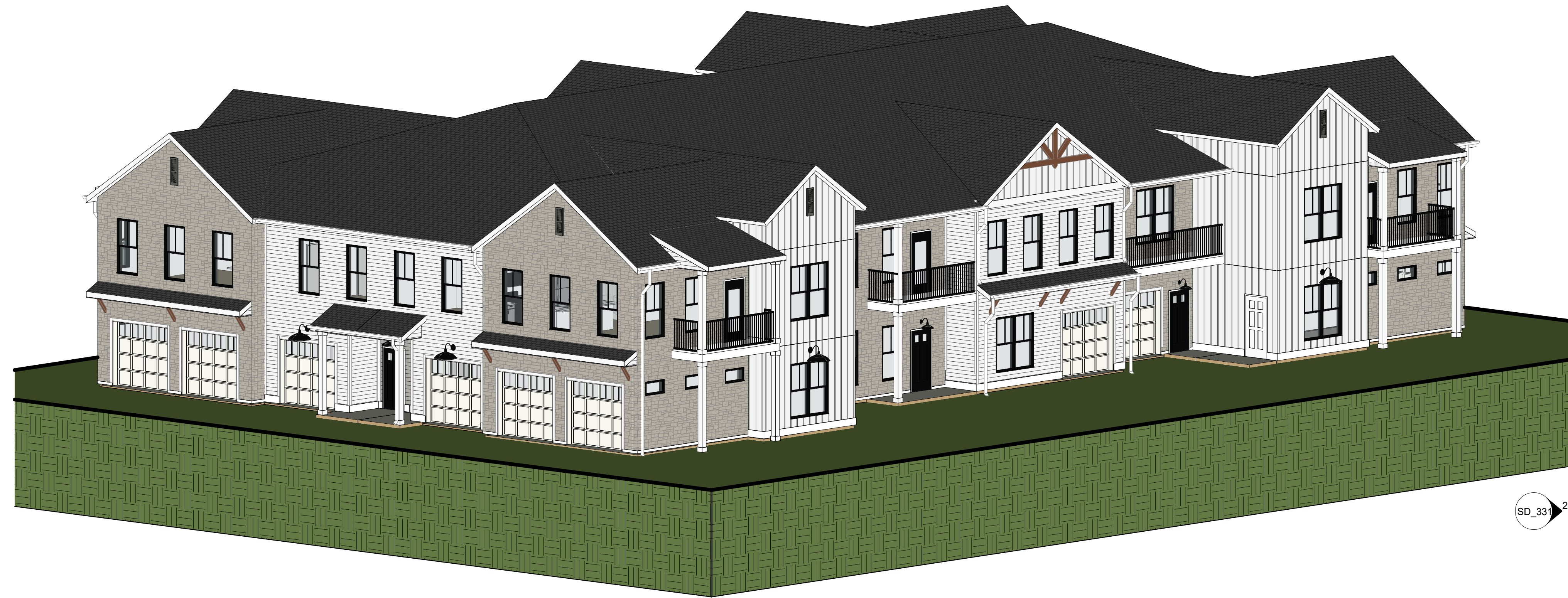
③ 12-Unit Building (12A) - Side Elevation 2
 3/16" = 1'-0"



④ 12-Unit Building (12A) - Back Elevation
 3/16" = 1'-0"

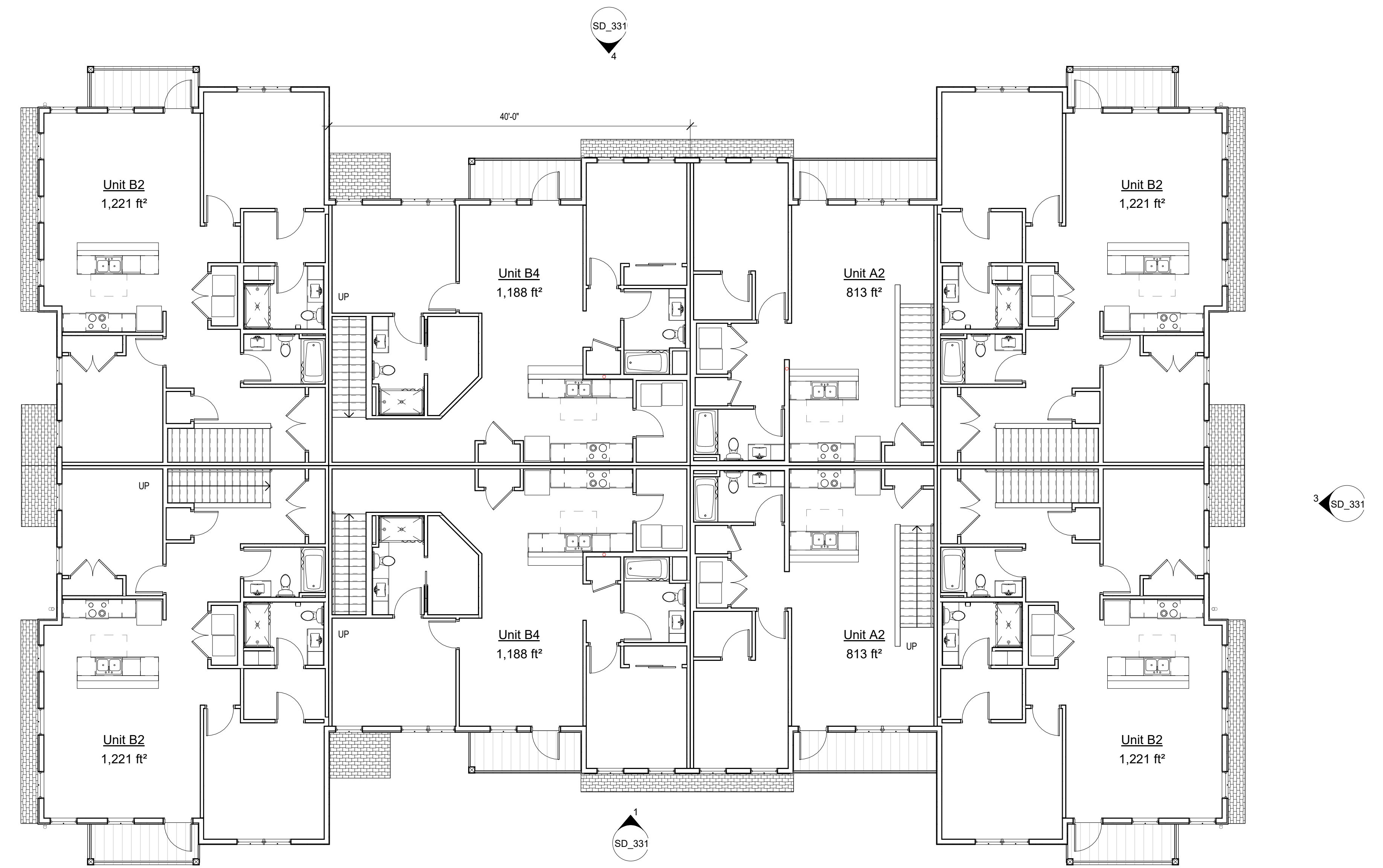


4 11-Unit Building - 3D Exteriors - 2

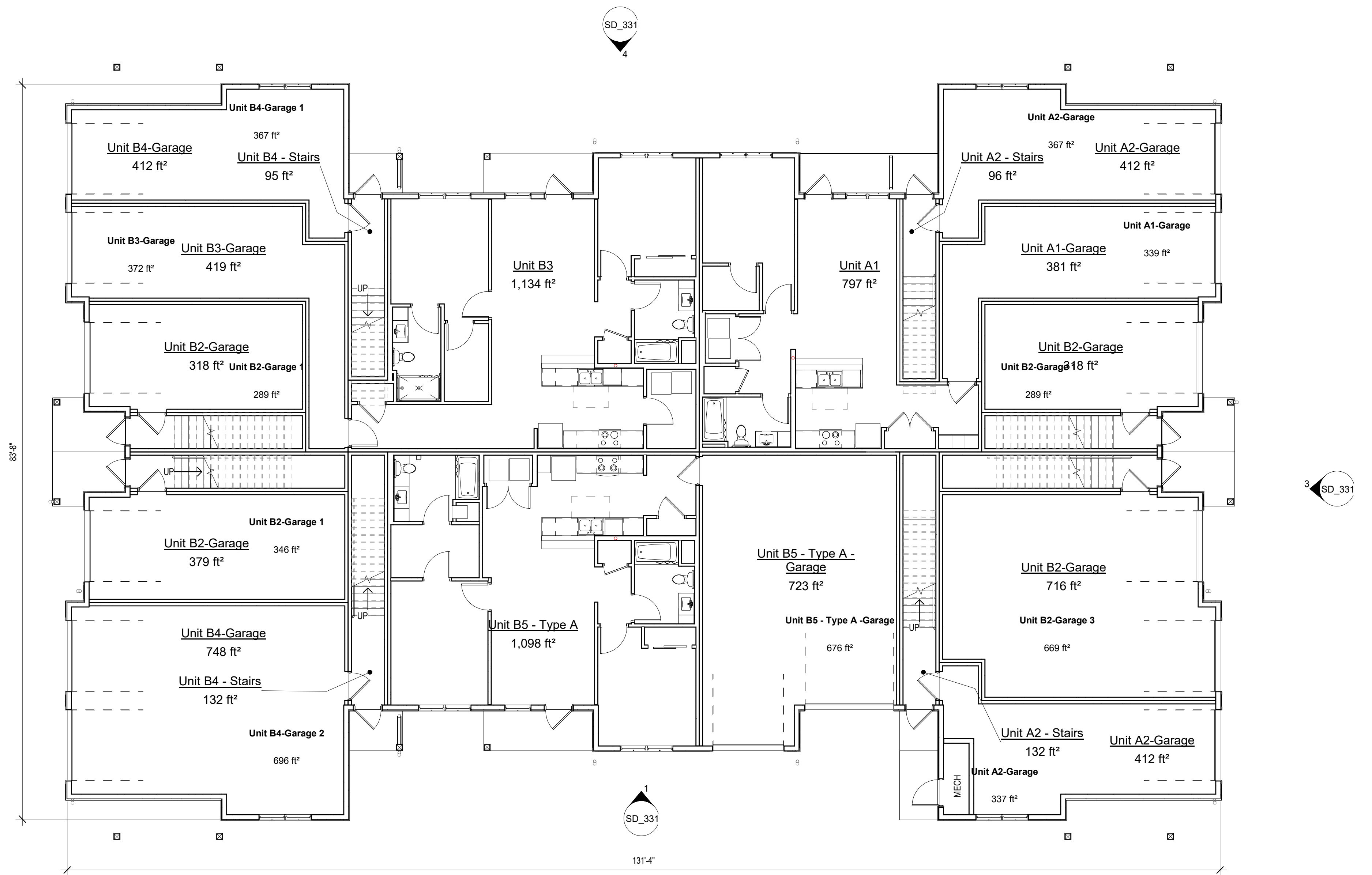


3 11-Unit Building - 3D Exteriors - 1

Residential Unit Mix - 11-Unit Building w/ Type A (11A)															
Name	Garage Stalls	Count	HUD Unit Gross Square Footage				HUD Net Rentable Square Footage				Rooms		Unit Type		
			Main Floor	Stairs	Garage Area	Total Unit Area	Total Area	Main Floor	Stairs	Garage Net	Total	Total Net Area		Bed	Bath
Level 1															
Unit A1	1	1	797 ft²	0 ft²	381 ft²	1,178 ft²	1,178 ft²	740 ft²	0 ft²	339 ft²	1,079 ft²	1,079 ft²	1	1	Type B
Unit B3	1	1	1,134 ft²	0 ft²	419 ft²	1,554 ft²	1,554 ft²	1,070 ft²	0 ft²	372 ft²	1,442 ft²	1,442 ft²	2	2	Type B
Unit B5 - Type A	2	1	1,098 ft²	0 ft²	723 ft²	1,820 ft²	1,820 ft²	1,035 ft²	0 ft²	676 ft²	1,711 ft²	1,711 ft²	2	2	Type A
Level 2															
Unit A2	1	1	813 ft²	96 ft²	412 ft²	1,321 ft²	1,321 ft²	759 ft²	83 ft²	367 ft²	1,208 ft²	1,208 ft²	1	1	-
Unit A2	1	1	813 ft²	132 ft²	412 ft²	1,357 ft²	1,357 ft²	759 ft²	83 ft²	337 ft²	1,178 ft²	1,178 ft²	1	1	-
Unit B2	1	2	1,221 ft²	92 ft²	318 ft²	1,631 ft²	3,262 ft²	1,153 ft²	68 ft²	289 ft²	1,510 ft²	3,020 ft²	2	2	-
Unit B2	1	1	1,221 ft²	114 ft²	379 ft²	1,714 ft²	1,714 ft²	1,153 ft²	68 ft²	346 ft²	1,567 ft²	1,567 ft²	2	2	-
Unit B2	2	1	1,221 ft²	114 ft²	716 ft²	2,051 ft²	2,051 ft²	1,153 ft²	68 ft²	689 ft²	1,890 ft²	1,890 ft²	2	2	-
Unit B4	1	1	1,188 ft²	95 ft²	412 ft²	1,695 ft²	1,695 ft²	1,125 ft²	88 ft²	367 ft²	1,579 ft²	1,579 ft²	2	2	-
Unit B4	2	1	1,188 ft²	132 ft²	748 ft²	2,068 ft²	2,068 ft²	1,125 ft²	88 ft²	696 ft²	1,908 ft²	1,908 ft²	2	2	-
Grand total		11					18,019 ft²					16,583 ft²			



2 Level 2 - 11-Unit Building
1/8" = 1'-0"



1 Level 1 - 11-Unit Building
1/8" = 1'-0"



EXTERIOR MATERIALS TAG KEY	
4.1	CULTURED STONE - COLOR: TBD
5.1	ALUMINUM RAILINGS - COLOR: BLACK
5.2	CORRUGATED METAL ROOFING - COLOR: BLACK
5.3	METAL FENCE POST - COLOR: BLACK
5.4	PREFINISHED ALUMINUM GUTTERS & DOWNSPOUTS - COLOR: WHITE
6.1	CEDAR TIMBER - COLOR: STAINED
7.1	LAP SIDING - COLOR: SW 7006 EXTRA WHITE
7.3	BOARD & BATTEN SIDING - SW 7006 EXTRA WHITE
7.4	TRIM - COLOR: SW 7006 EXTRA WHITE
7.5	PVC SKIRTBOARD - COLOR: WHITE
7.6	ASPHALT SHINGLES - COLOR: CHARCOAL
7.7	DECORATIVE 12"x36" LOUVER - COLOR: BLACK
8.1	GLAZING
26.1	EXTERIOR LIGHTING - COLOR: BLACK



Residential Unit Mix - 16-Unit Building (16A)															
Name	Garage Stalls	Count	HUD Unit Gross Square Footage				HUD Net Rentable Square Footage				Rooms		Unit Type		
			Main Floor	Stairs	Garage Area	Total Unit Area	Total Area	Main Floor	Stairs	Garage Net	Total	Total Net Area		Bed	Bath
Level 1															
Unit A1	1	4	797 ft²	0 ft²	381 ft²	1,178 ft²	4,713 ft²	740 ft²	0 ft²	339 ft²	1,079 ft²	4,316 ft²	1	1	Type B
Unit A7	1	2	855 ft²	0 ft²	385 ft²	1,240 ft²	2,479 ft²	798 ft²	0 ft²	346 ft²	1,144 ft²	2,288 ft²	1	1	Type B
Level 2															
Unit A2	1	2	813 ft²	96 ft²	412 ft²	1,321 ft²	2,642 ft²	753 ft²	83 ft²	337 ft²	1,173 ft²	2,346 ft²	1	1	-
Unit A2	1	2	813 ft²	96 ft²	373 ft²	1,282 ft²	2,564 ft²	753 ft²	83 ft²	352 ft²	1,188 ft²	2,376 ft²	1	1	-
Unit B2	1	4	1,221 ft²	92 ft²	318 ft²	1,631 ft²	6,524 ft²	1,148 ft²	86 ft²	287 ft²	1,521 ft²	6,084 ft²	2	2	-
Unit C4	1	2	1,660 ft²	96 ft²	412 ft²	2,168 ft²	4,335 ft²	1,502 ft²	76 ft²	337 ft²	1,915 ft²	3,829 ft²	3	2	-
Grand total		16					23,257 ft²					21,239 ft²			



② 16-Unit Building - 3D Exteriors - 2



① 16-Unit Building - 3D Exteriors - 1

EXTERIOR MATERIALS
 PRIMARY MATERIALS
 - FIBER CEMENT SIDING/TRIM = 1,843 SF = 49%
 - STONE VENEER = 1,950 SF = 51%
 TRANSPARENCY
 - GLAZING/DOORS = 1,168 SF = 31%



③ 16-Unit Building - Front Elevation1
 3/16" = 1'-0"

EXTERIOR MATERIALS
 PRIMARY MATERIALS
 - FIBER CEMENT SIDING/TRIM = 785 SF = 42%
 - STONE VENEER = 1,094 SF = 58%
 TRANSPARENCY
 - GLAZING/DOORS = 567 SF = 30%



① 16-Unit Building- Side Elevation 2
 3/16" = 1'-0"

EXTERIOR MATERIALS
 PRIMARY MATERIALS
 - FIBER CEMENT SIDING/TRIM = 785 SF = 42%
 - STONE VENEER = 1,094 SF = 58%
 TRANSPARENCY
 - GLAZING/DOORS = 567 SF = 30%

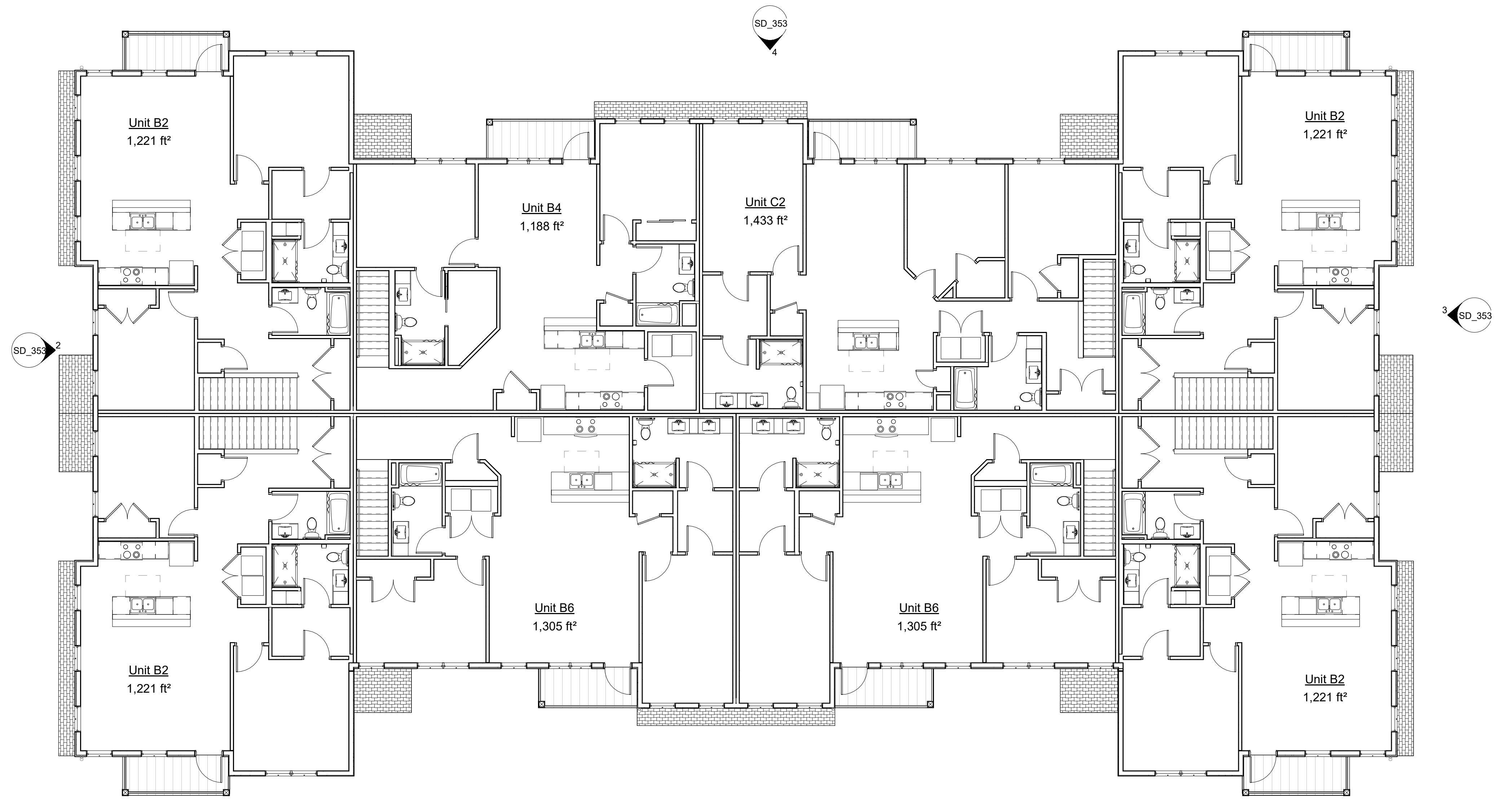


② 16-Unit Building - Side Elevation 1
 3/16" = 1'-0"

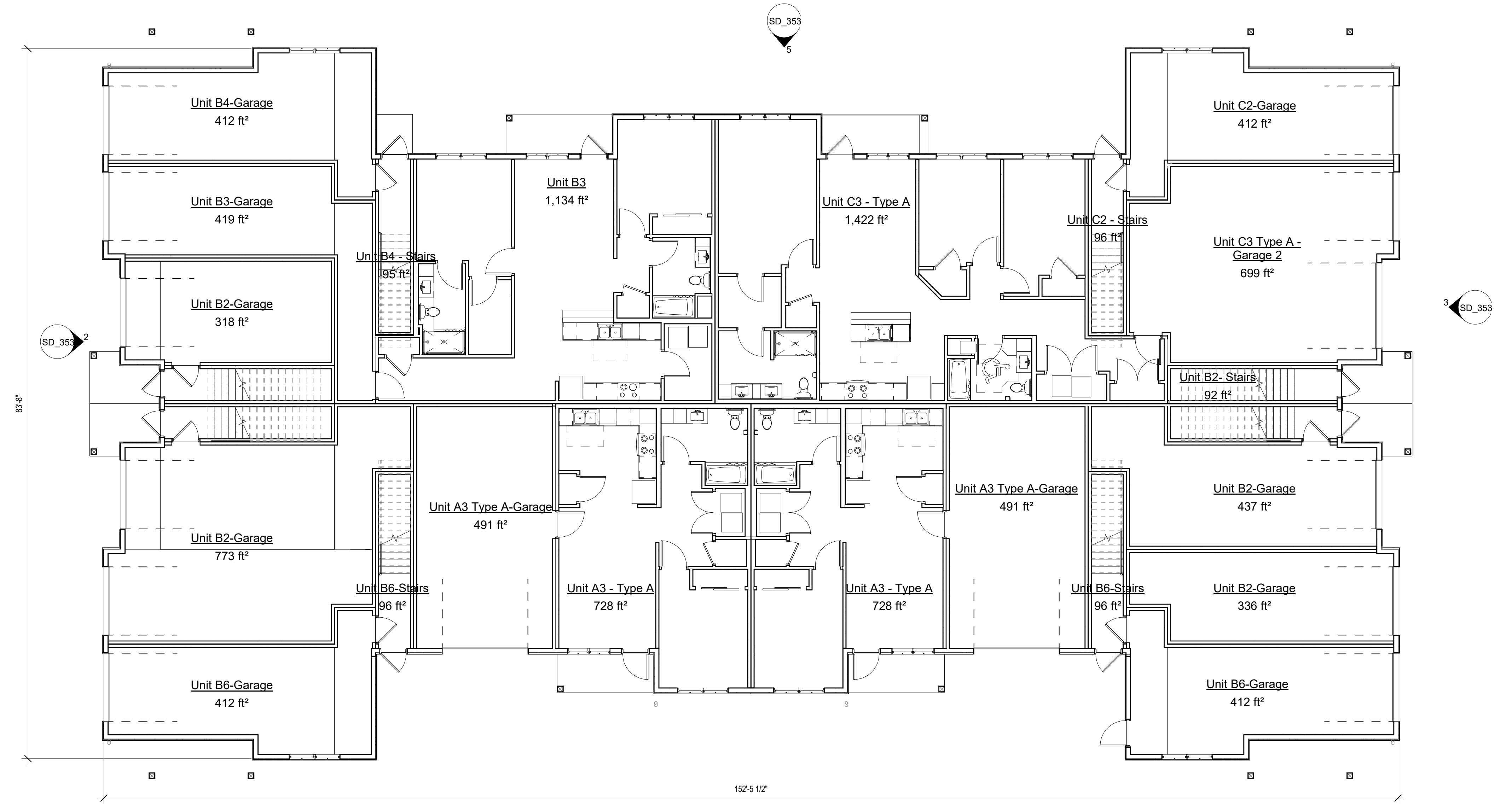
EXTERIOR MATERIALS
 PRIMARY MATERIALS
 - FIBER CEMENT SIDING/TRIM = 1,843 SF = 49%
 - STONE VENEER = 1,950 SF = 51%
 TRANSPARENCY
 - GLAZING/DOORS = 977 SF = 26%



④ 16-Unit Building - Back Elevation1
 3/16" = 1'-0"



② Level 2 - Floor Plans - 12B - 12-Unit Building (Type A)
1/8" = 1'-0"



① Level 1 - Floor Plans - 12B - 12-Unit Building (Type A)
1/8" = 1'-0"

Residential Unit Mix - 12-Unit Building (12B) - 1 Building on Site															
Name	Garage Stalls	Count	HUD Unit Gross Square Footage				HUD Net Rentable Square Footage				Rooms		Unit Type		
			Main Floor	Stairs	Garage Area	Total Unit Area	Total Area	Main Floor	Stairs	Garage Net	Total	Total Net Area		Bed	Bath
Level 1															
Unit A3 - Type A	1	2	728 ft²	0 ft²	491 ft²	1,219 ft²	2,437 ft²	675 ft²	0 ft²	454 ft²	1,129 ft²	2,258 ft²	1	1	Type A
Unit B3	1	1	1,134 ft²	0 ft²	419 ft²	1,553 ft²	1,553 ft²	1,070 ft²	0 ft²	372 ft²	1,442 ft²	1,442 ft²	2	2	Type B
Unit C3 - Type A	2	1	1,422 ft²	0 ft²	699 ft²	2,121 ft²	2,121 ft²	1,336 ft²	0 ft²	653 ft²	1,989 ft²	1,989 ft²	3	2	Type A
Level 2															
Unit B2	1	1	1,221 ft²	92 ft²	318 ft²	1,631 ft²	1,631 ft²	1,153 ft²	68 ft²	289 ft²	1,510 ft²	1,510 ft²	2	2	-
Unit B2	1	1	1,221 ft²	92 ft²	336 ft²	1,649 ft²	1,649 ft²	1,153 ft²	68 ft²	302 ft²	1,523 ft²	1,523 ft²	2	2	-
Unit B2	1	1	1,221 ft²	92 ft²	437 ft²	1,750 ft²	1,750 ft²	1,153 ft²	68 ft²	397 ft²	1,618 ft²	1,618 ft²	2	2	-
Unit B2	2	1	1,221 ft²	92 ft²	773 ft²	2,086 ft²	2,086 ft²	1,153 ft²	68 ft²	722 ft²	1,943 ft²	1,943 ft²	2	2	-
Unit B4	1	1	1,188 ft²	95 ft²	412 ft²	1,695 ft²	1,695 ft²	1,125 ft²	76 ft²	367 ft²	1,568 ft²	1,568 ft²	2	2	-
Unit B6	1	2	1,305 ft²	96 ft²	412 ft²	1,813 ft²	3,627 ft²	1,162 ft²	76 ft²	367 ft²	1,545 ft²	3,090 ft²	2	2	-
Unit C2	2	1	1,433 ft²	96 ft²	412 ft²	1,941 ft²	1,941 ft²	1,366 ft²	76 ft²	367 ft²	1,809 ft²	1,809 ft²	3	2	-
Grand total		12					20,490 ft²					18,751 ft²			



① 12-Unit Type A Building - 3D Exteriors - 1



② 12-Unit Type A Building - 3D Exteriors 2



③ 12-Unit Building (Type A) - Front
3/16" = 1'-0"



④ 12-Unit Building (Type A) - Left
3/16" = 1'-0"



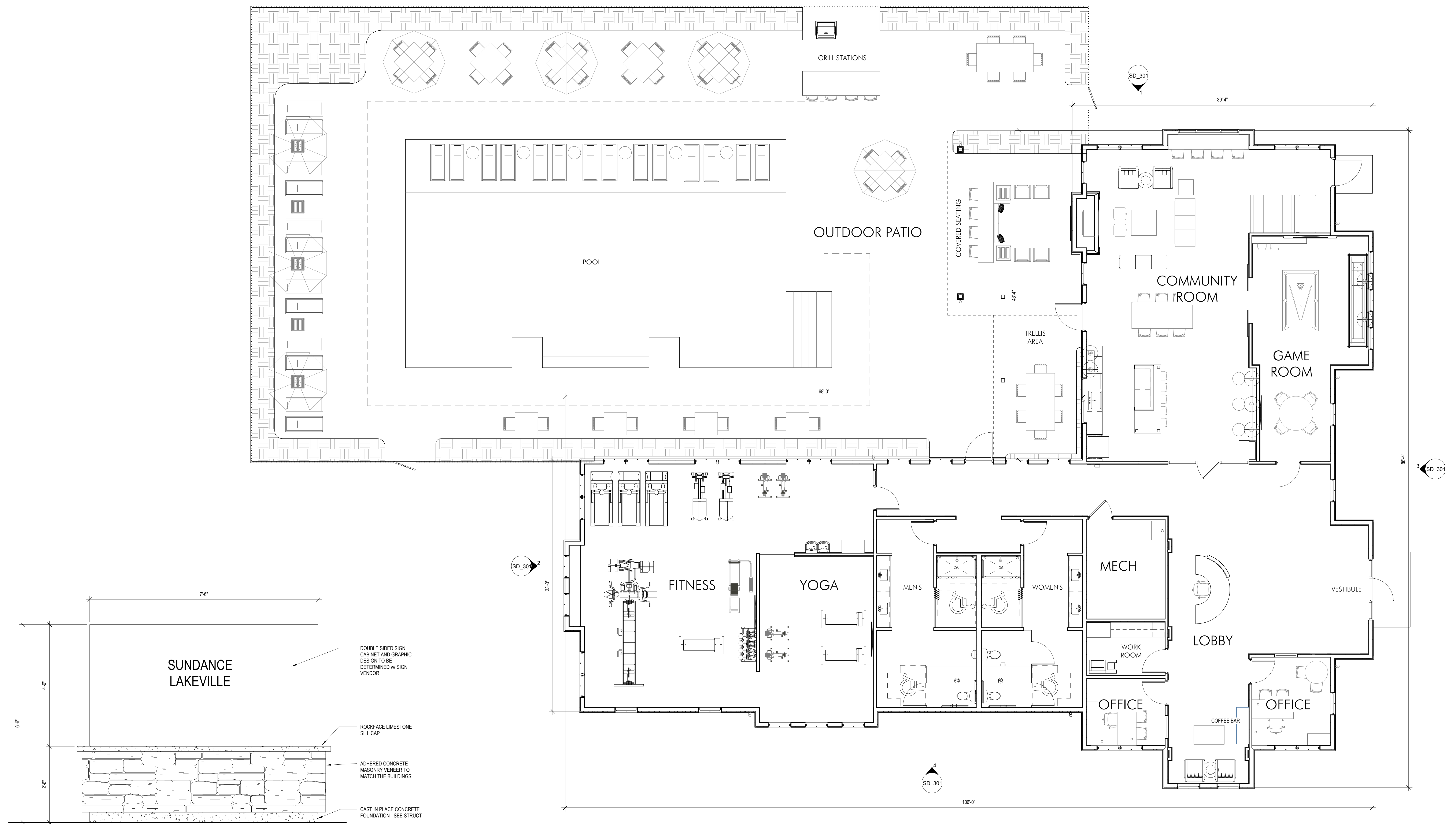
⑥ 12-Unit Building (Type A) - Right
3/16" = 1'-0"

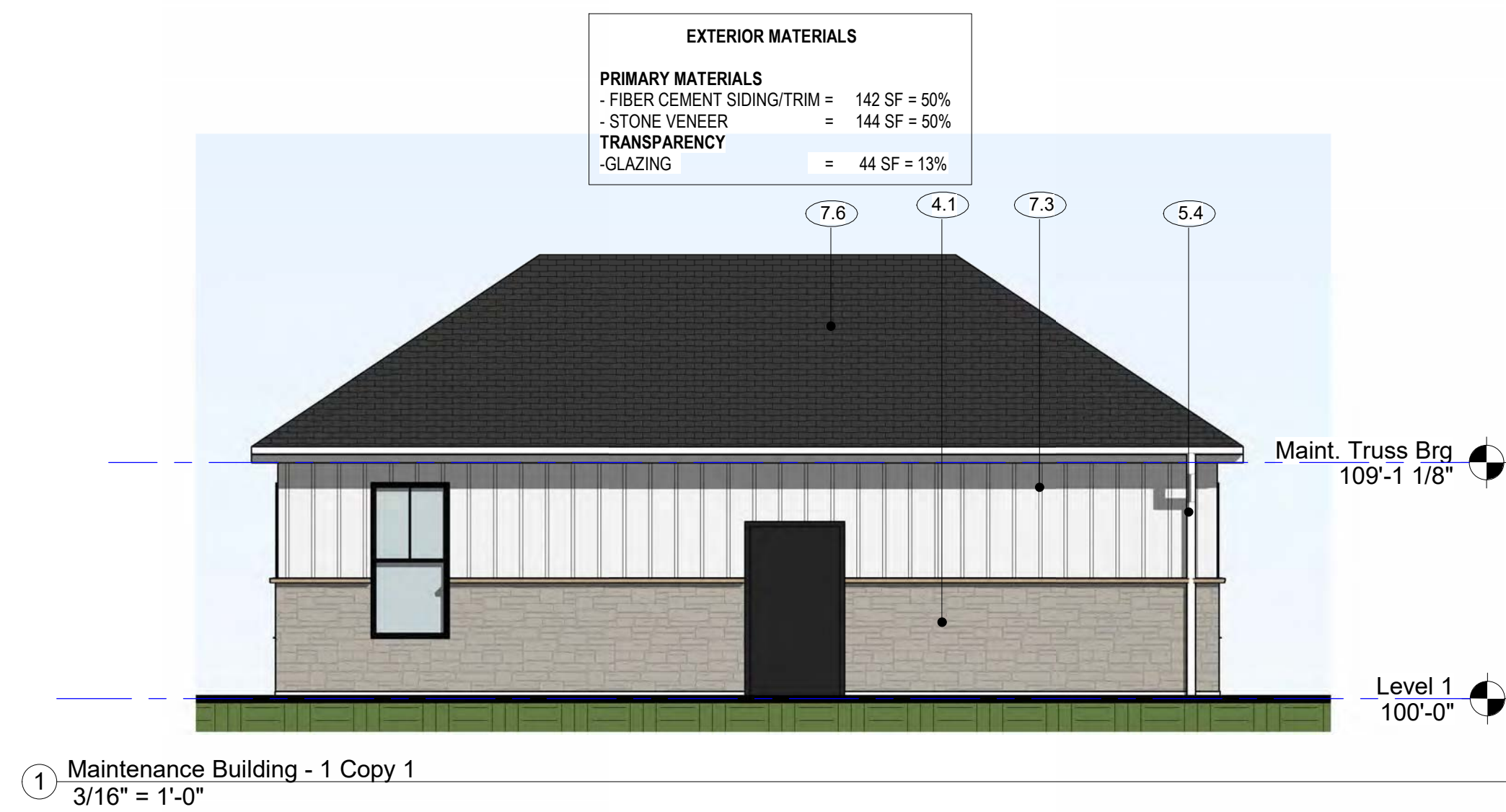


⑤ 12-Unit Building (Type A) - Rear
3/16" = 1'-0"



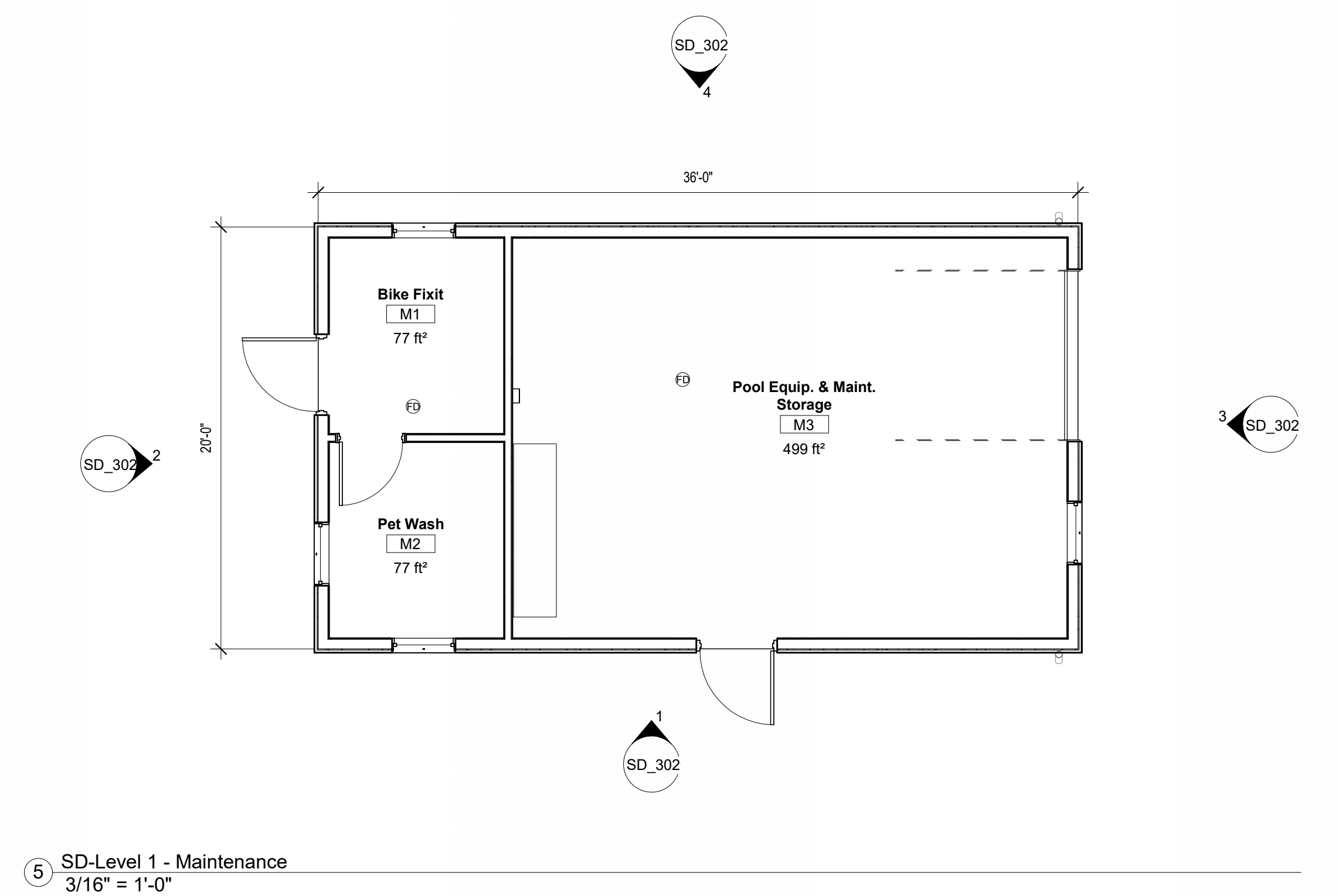
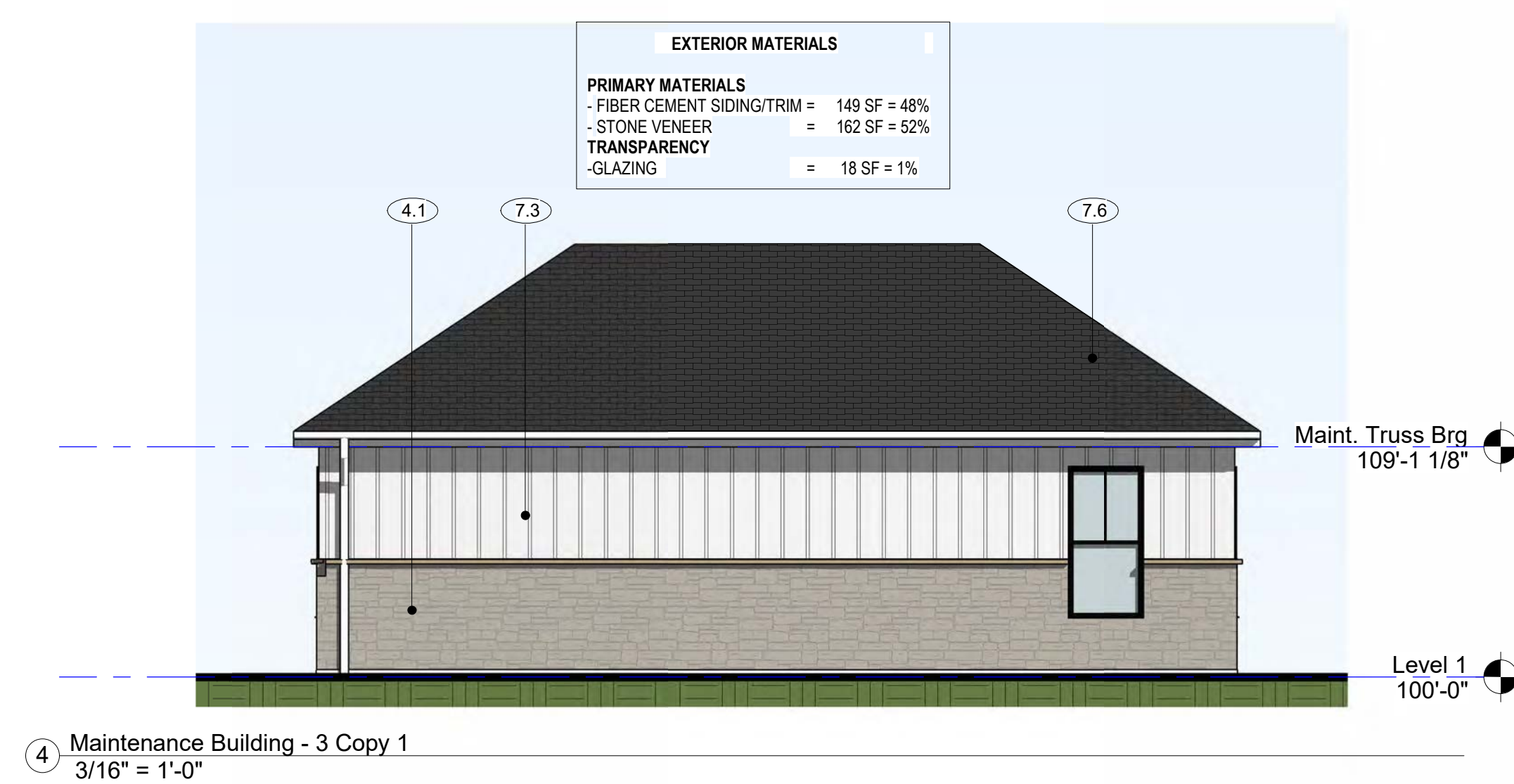
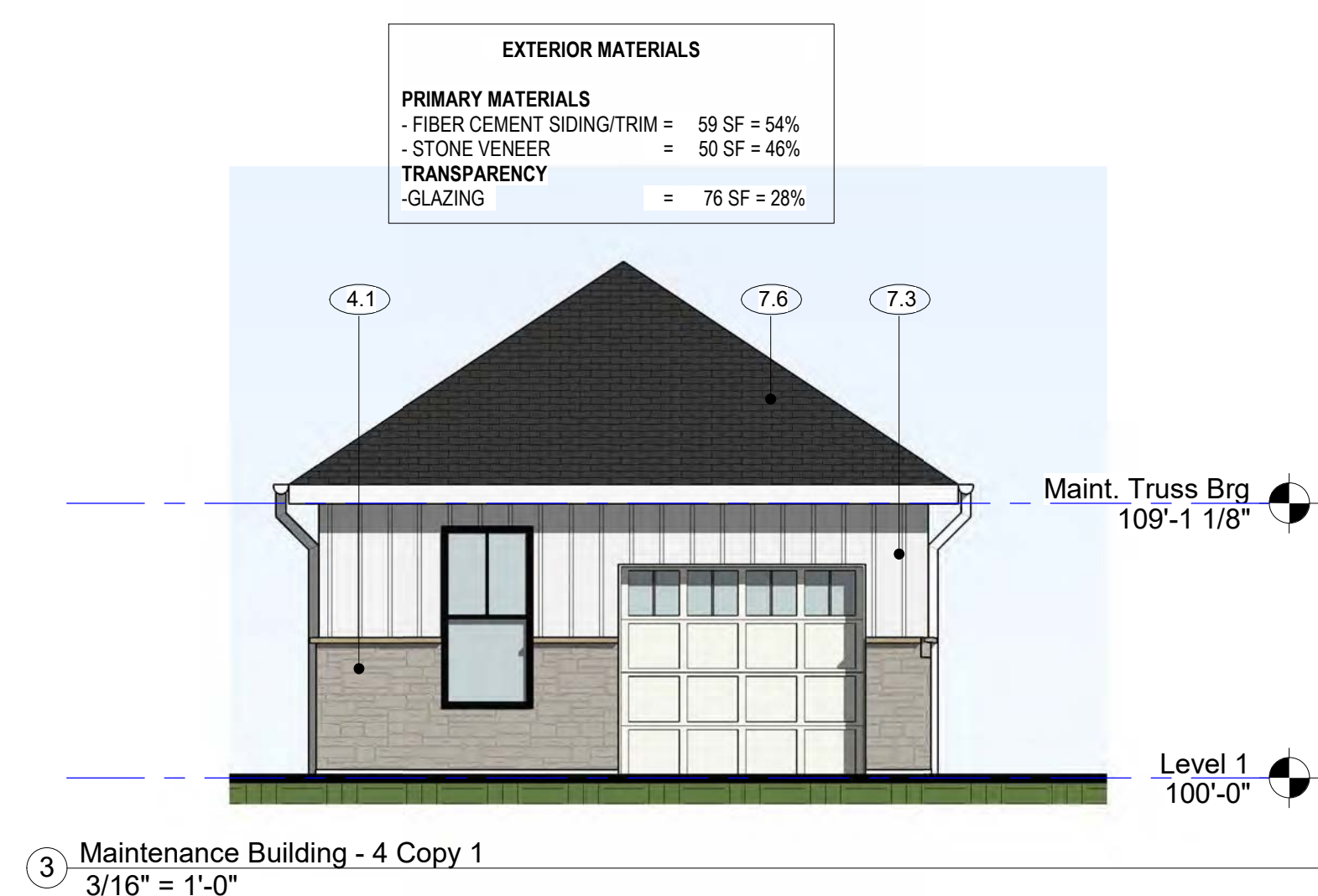
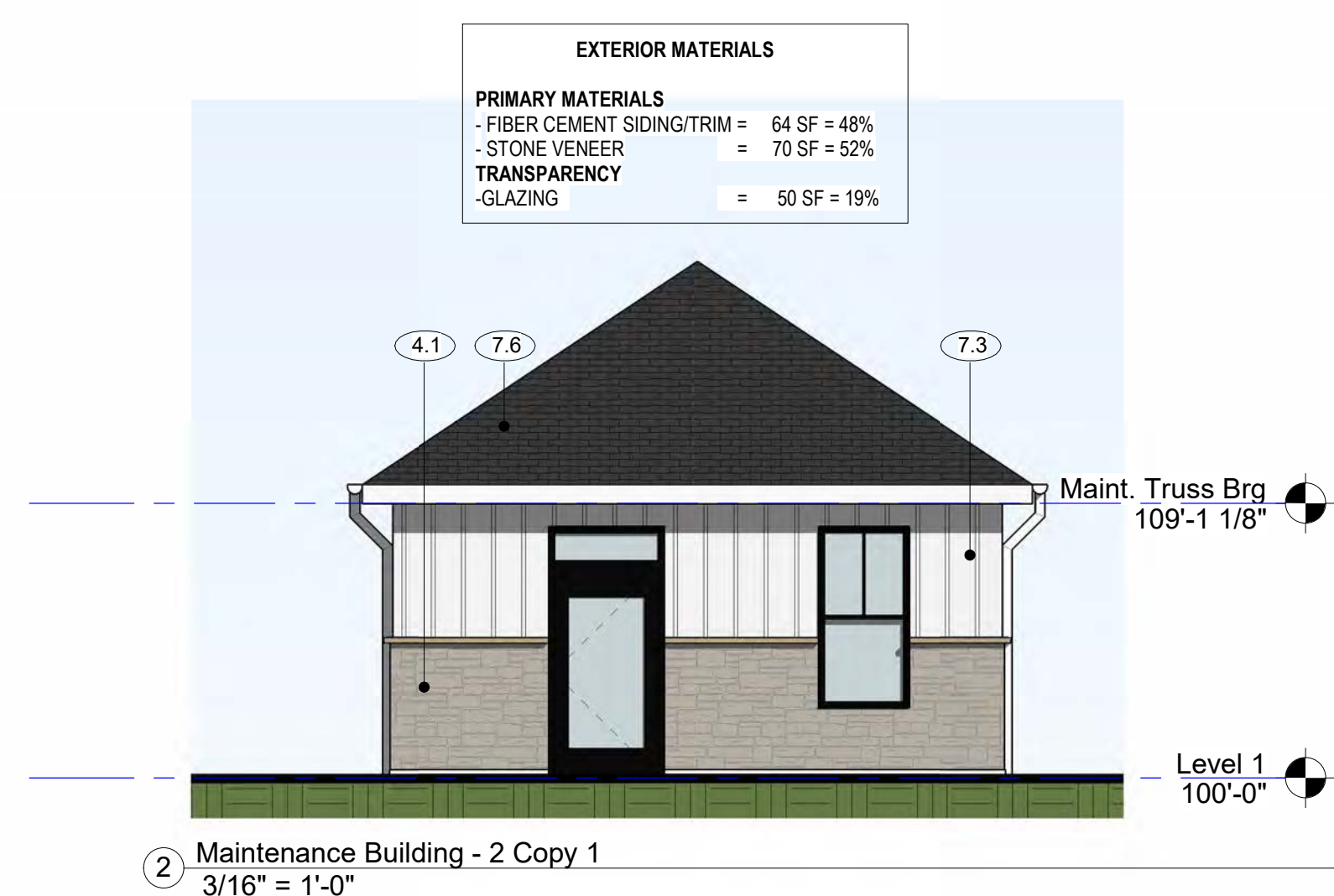
EXHIBIT K2





EXTERIOR MATERIALS TAG KEY

④.1	CULTURED STONE - COLOR: TBD
⑤.1	ALUMINUM RAILINGS - COLOR: BLACK
⑤.2	CORRUGATED METAL ROOFING - COLOR: BLACK
⑤.3	METAL FENCE POST - COLOR: BLACK
⑤.4	PREFINISHED ALUMINUM GUTTERS & DOWNSPOUTS - COLOR: WHITE
⑥.1	CEDAR TIMBER - COLOR: STAINED
⑦.1	LAP SIDING - COLOR: SW 7006 EXTRA WHITE
⑦.3	BOARD & BATTEN SIDING - SW 7006 EXTRA WHITE
⑦.4	TRIM - COLOR: SW 7006 EXTRA WHITE
⑦.5	PVC SKIRTBOARD - COLOR: WHITE
⑦.6	ASPHALT SHINGLES - COLOR: CHARCOAL
⑦.7	DECORATIVE 12"x36" LOUVER - COLOR: BLACK
⑧.1	GLAZING
⑩.1	EXTERIOR LIGHTING - COLOR: BLACK





LOWER LEVEL FLOOR PLAN
SCALE: 3/32" = 1'-0"



MAIN LEVEL FLOOR PLAN
SCALE: 3/32" = 1'-0"

APPROXIMATE SQUARE FOOTAGE	
ABOVE GRADE FINISHED	1,866 SQ. FT.
BELOW GRADE FINISHED	0 SQ. FT.
BELOW GRADE UNFINISHED	1,866 SQ. FT.
GARAGE	692 SQ. FT.

Square footages are measured to the exterior finished surface of the outside walls. Square footage calculations were made based on plan dimensions only and may vary from the finished square footage of the house as built. In addition, plan dimensions are not exact and are subject to some variance. However, all construction shall be in substantial compliance with the Contract Documents.



FRONT ELEVATION
SCALE: 3/32" = 1'-0"

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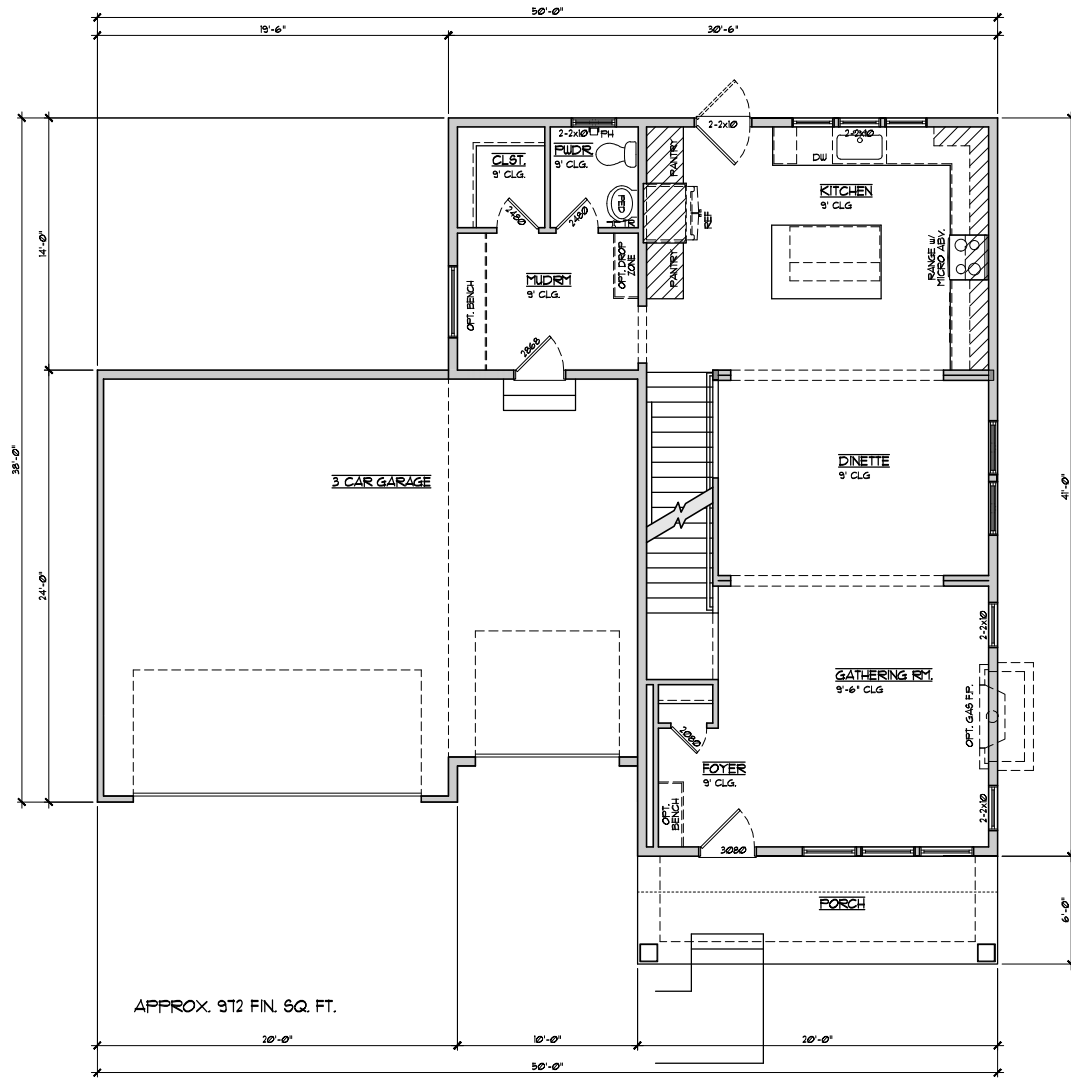
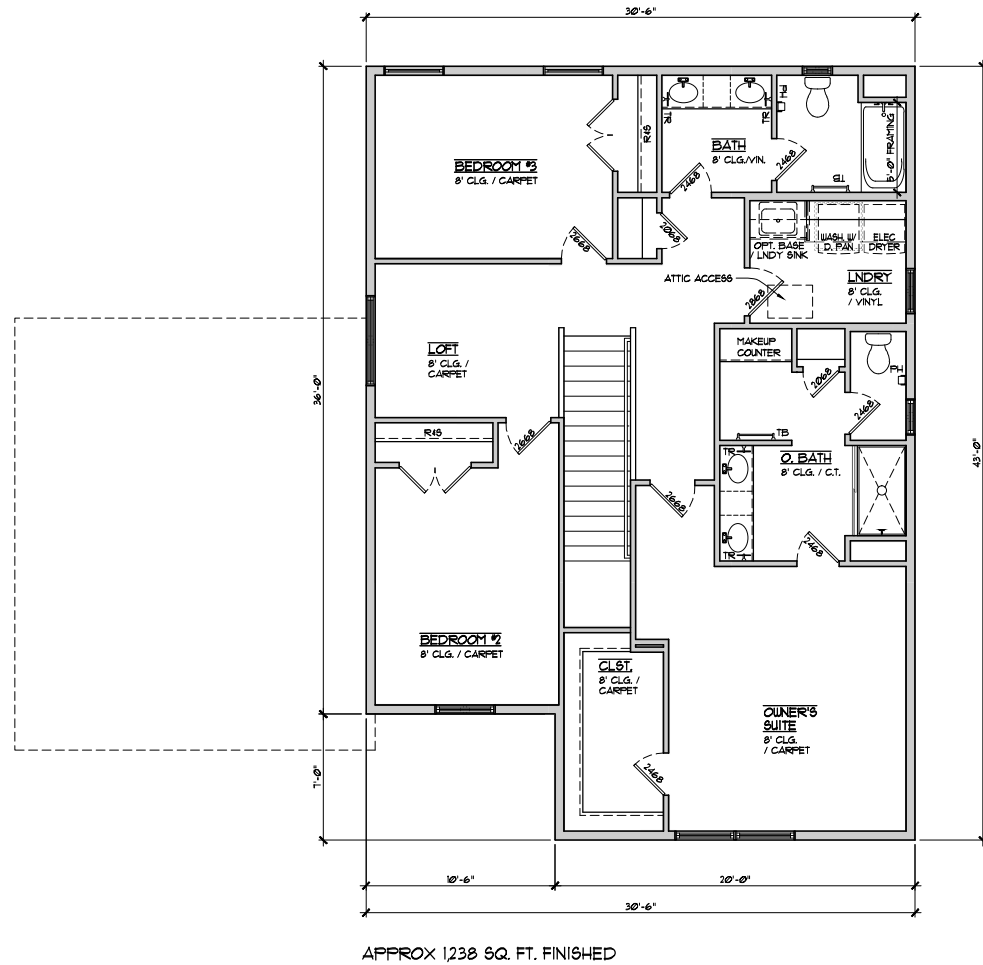
SINGLE FAMILY
THREE BEDROOM RAMBLER
SUNDANCE LAKEVILLE

GENERAL CONTRACTOR:
RT RESIDENTIAL, INC.
16972 BRANDTJEN FARM DRIVE
LAKEVILLE, MN 55044
TEL: (952) 322-8700

DATE ISSUED: 6/18/21
BID SET:
PERMIT:
REVISIONS:
7/23/21 - 3 BEDRM.

SHEET
1 OF 1

EXHIBIT L

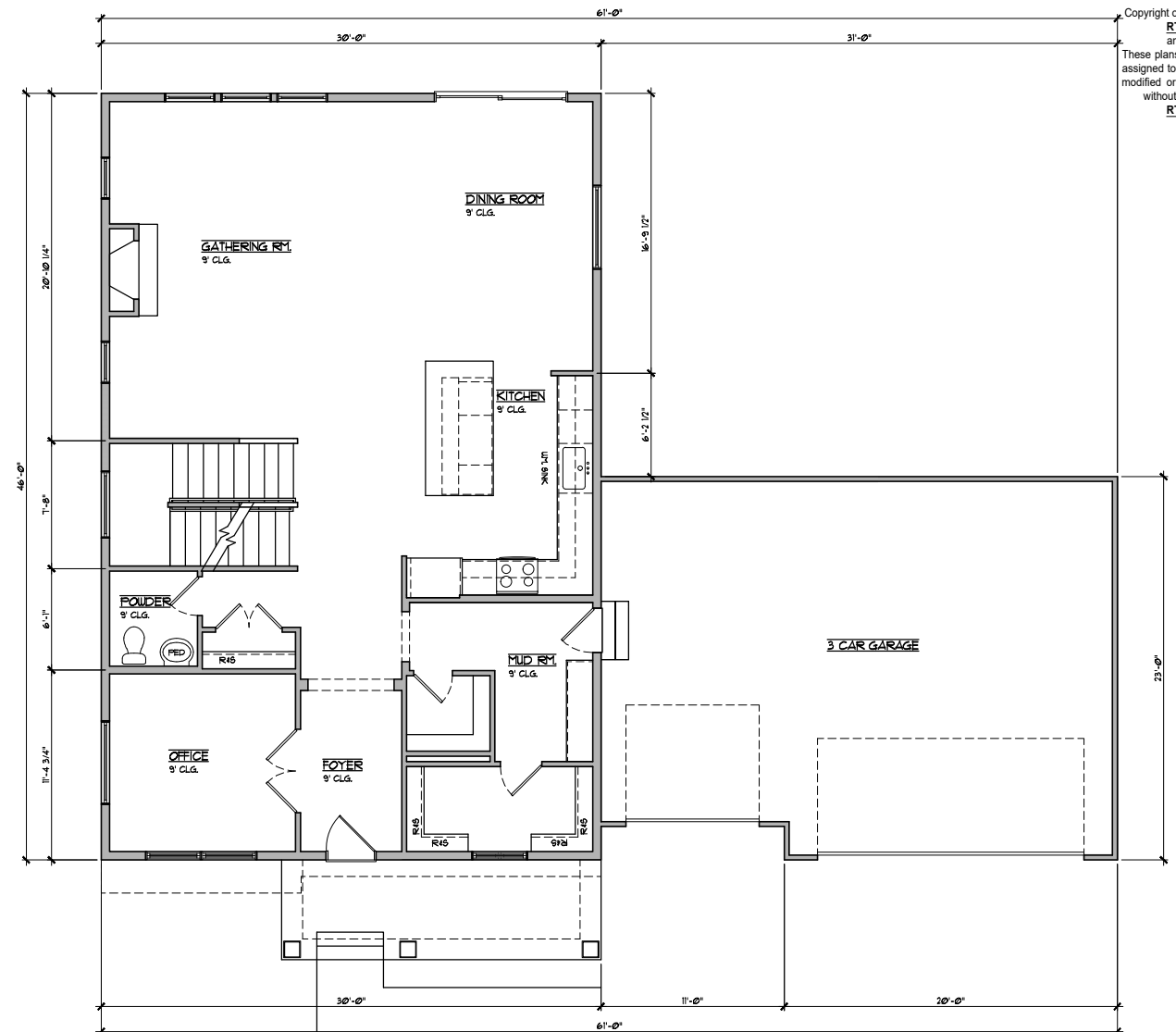
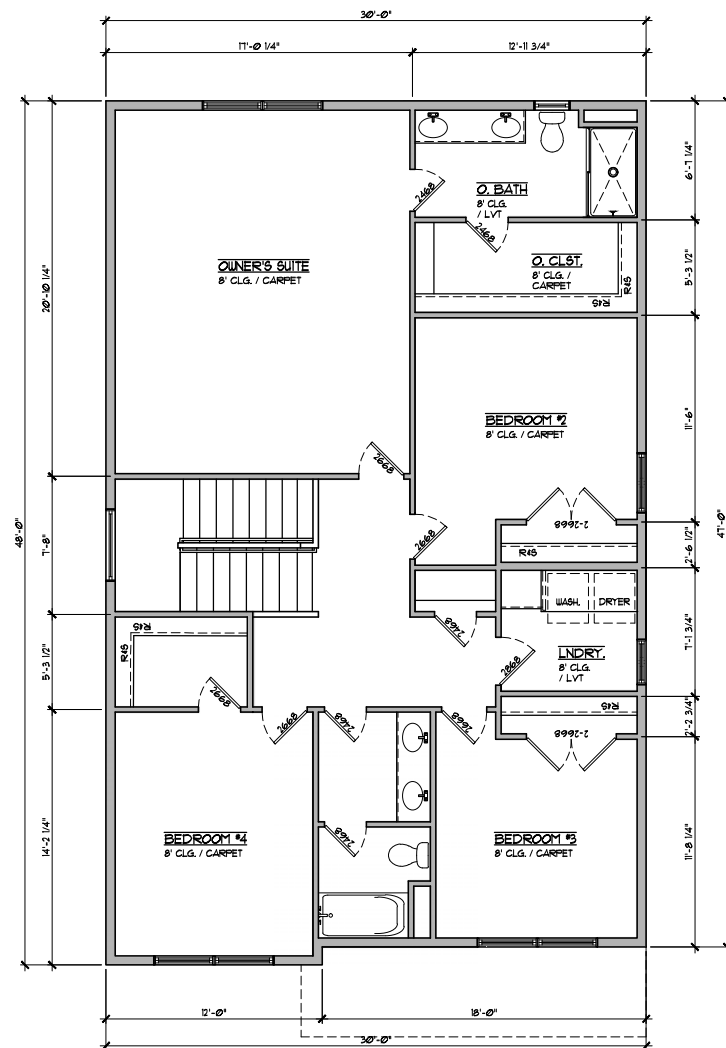


APPROXIMATE SQUARE FOOTAGE	
ABOVE GRADE FINISHED	2,210 SQ. FT.
BELOW GRADE FINISHED	0 SQ. FT.
BELOW GRADE UNFINISHED	972 SQ. FT.
GARAGE	695 SQ. FT.

Square footages are measured to the exterior finished surface of the outside walls. Square footage calculations were made based on plan dimensions only and may vary from the finished square footage of the house as built. In addition, plan dimensions are not exact and are subject to some variance. However, all construction shall be in substantial compliance with the Contract Documents.



FRONT ELEVATION
SCALE: 3/32" = 1'-0"



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SUITE 700
MINNEAPOLIS, MN 55437

SINGLE FAMILY
FOUR BEDROOM PLAN
SUNDANCE LAKEVILLE

APPROXIMATE SQUARE FOOTAGE	
ABOVE GRADE FINISHED	2,802 SQ. FT.
BELOW GRADE FINISHED	0 SQ. FT.
BELOW GRADE UNFINISHED	1,380 SQ. FT.
GARAGE	691 SQ. FT.

Square footages are measured to the exterior finished surface of the outside walls. Square footage calculations were made based on plan dimensions only and may vary from the finished square footage of the house as built. In addition, plan dimensions are not exact and are subject to some variance. However, all construction shall be in substantial compliance with the Contract Documents.



GENERAL CONTRACTOR:
RT RESIDENTIAL, INC.
6972 BRANDTJEN FARM DRIVE
LAKEVILLE, MN 55044
TEL (952) 322-8700

DATE ISSUED: 6/18/21
 BID SET:
 PERMIT:
 REVISIONS:

SHEET
1 OF 1

Sundance Lakeville Traffic Impact Study

Lakeville, MN

Prepared For:

Timberland Partners, Inc.
8500 Normandale Lake Blvd.
Suite 700
Minneapolis, MN 55437



Prepared By:

Nick Grage, PE, PTOE, RSP₁

Alliant Engineering, Inc.
733 Marquette Ave, Suite 700
Minneapolis, MN 55402



**Final Report
May 23, 2024**

EXHIBIT M

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1.0 Introduction

Alliant Engineering has completed a traffic impact study for the proposed Sundance Lakeville residential development located in the northwest quadrant of the County State Aid Highway 46 (CSAH 46) & Buck Hill Road intersection in Lakeville, MN (see **Figure 1**). The main objectives of this study are to evaluate existing traffic operations within the study area, identify potential traffic impacts to the adjacent roadway network due to development generated trips, and recommend improvements to address identified issues. The assumptions, analysis, and study conclusions/recommendations offered for consideration are as follows.

2.0 Existing Conditions

The existing conditions were reviewed to establish a baseline for identifying any future impacts associated with the proposed development. The evaluation of existing conditions includes intersection turning movement counts, field observations, and an intersection operations analysis.

2.1 Study Area Intersections

In consultation with City of Lakeville staff, the following study intersections were identified:

- CSAH 46 (162nd Street W) & Kendale Drive
- CSAH 46 & Buck Hill Road

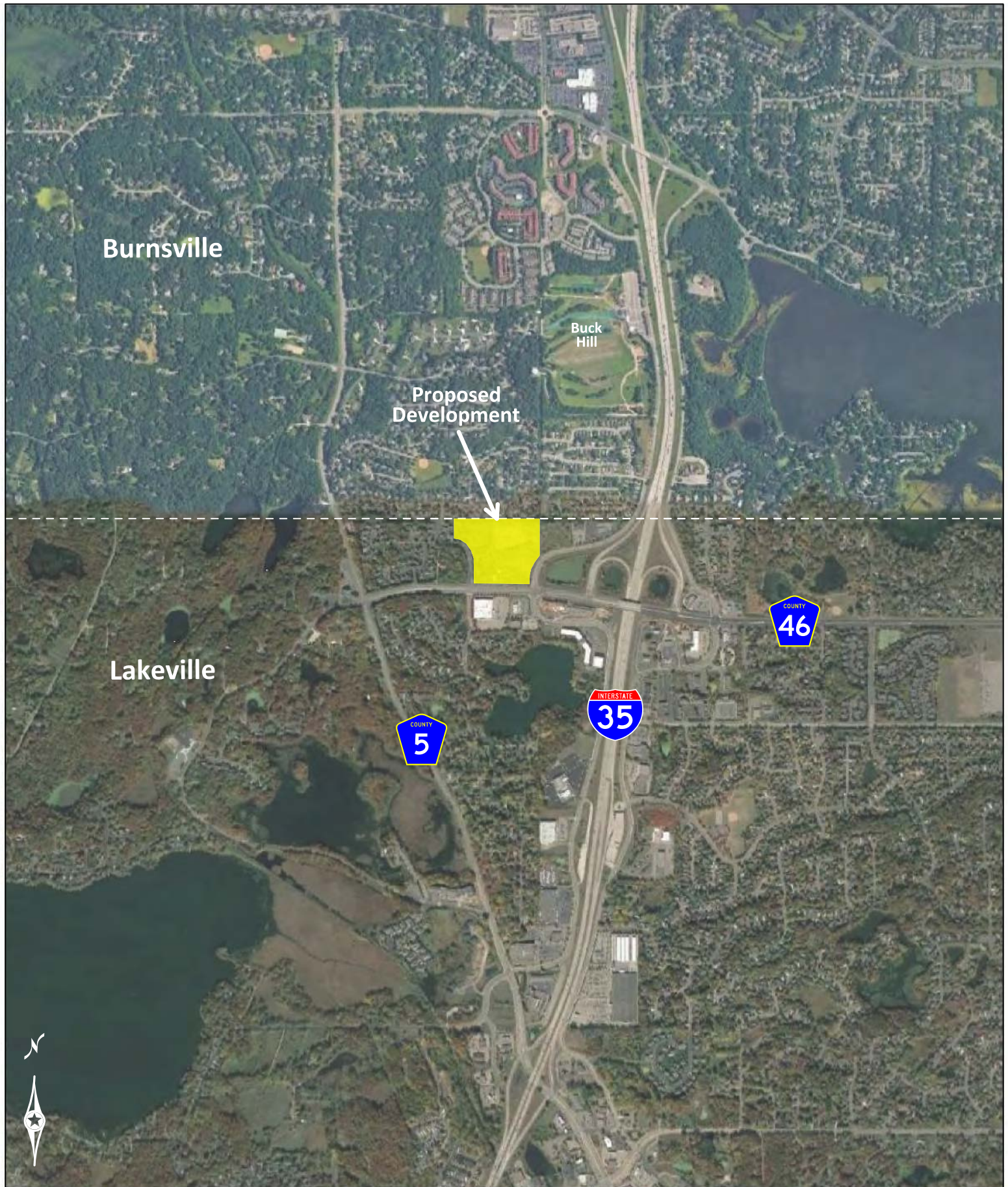
2.2 Data Collection

2.2.1 Traffic Volumes

To document existing conditions, weekday turning movement counts were collected at the study intersections by Alliant Engineering in August 2023 over the following time periods:

- AM Peak Period: 6:00-9:00 a.m.
- PM Peak Period: 4:00-7:00 p.m.

The existing peak hour traffic volumes at the study intersections are shown in **Figure 2**. Collected turning movement counts are included in **Appendix A**. Previously collected 2017 and 2021 turning movement counts, including applied adjustments to 2021 counts to account for any lingering impacts from the COVID-19 pandemic, were no longer considered as traffic volumes are considered to have normalized throughout the greater Twin Cities area.

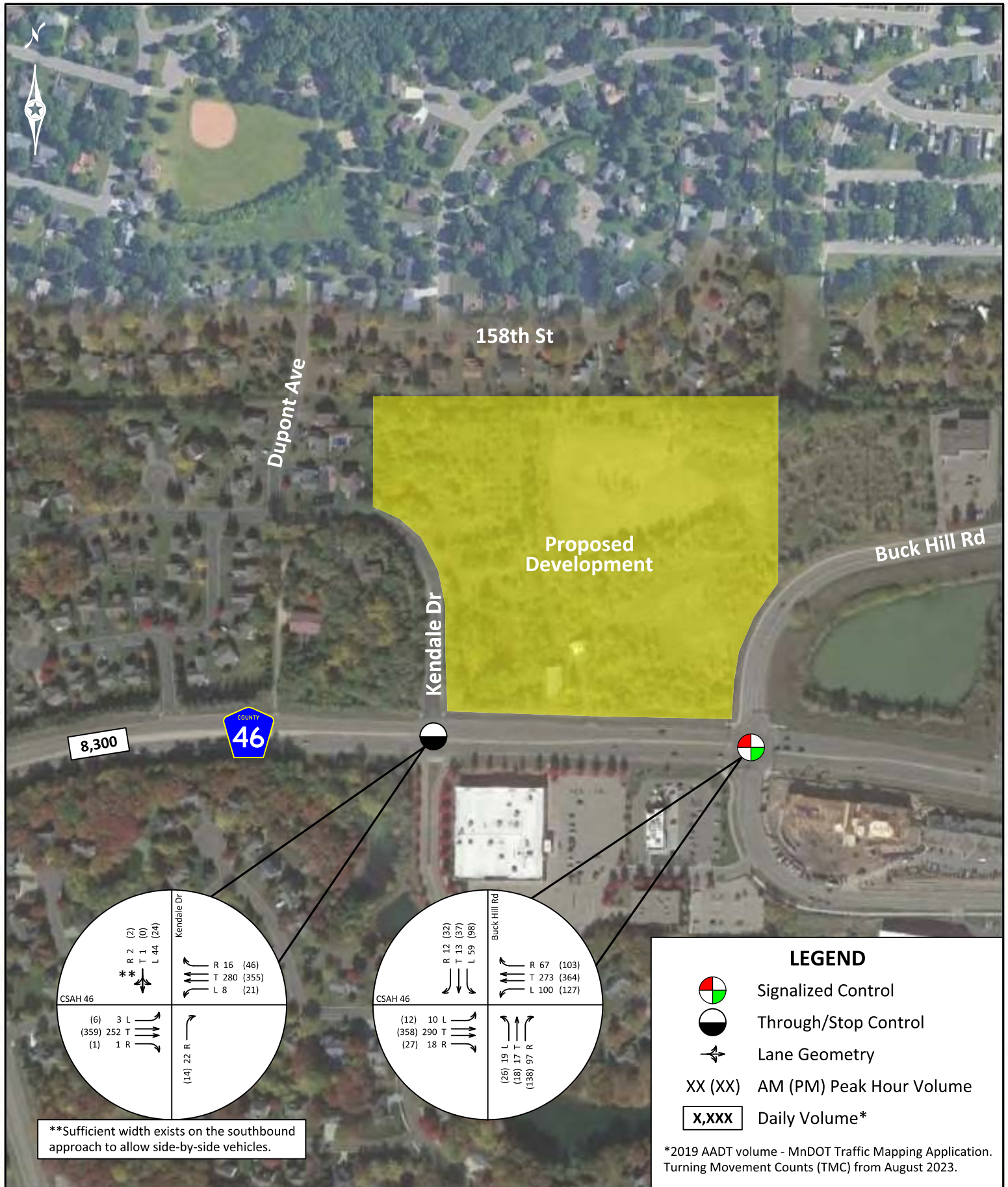


Sundance Lakeville TIS

Figure 1
Project Location



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Sundance Lakeville TIS



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Figure 2
Existing Conditions

2.2.2 Roadway/Intersection Characteristics

Field observations were completed to identify roadway and intersection characteristics within the study area (i.e., geometry, posted speed limits, and traffic controls), which are summarized in **Table 1** and **Table 2**.

Table 1 – Roadway Characteristics

Roadway	Cross-Section	Speed Limit	Functional Classification
CSAH 46	4-Lane Divided	45 mph	Minor Arterial
Kendale Drive	2-Lane Undivided	30 mph	Local
Buck Hill Road	3-Lane Undivided	40 mph	Collector

Table 2 – Intersection Characteristics

Intersection	Traffic Control	Lane Designations by Approach ⁽¹⁾			
		NB	SB	EB	WB
CSAH 46 & Kendale Drive	Through/Stop	R	LTR ⁽²⁾	L/T/T/R	L/T/T/R
CSAH 46 & Buck Hill Road	Traffic Signal	L/T/R	L/T/R	L/T/T/R	L/T/T/R

(1) L=Left-Turn, T=Through, R=Right-Turn

(2) Dakota County plans to restrict Kendale Drive to a three-quarter access, eliminating SB left-turn and through movements

2.2.3 Pedestrian/Bicycle Accommodations

Existing pedestrian/bicycle accommodations within the study area were also documented:

- Mixed-use trails run along both the north and south sides of CSAH 46
- A sidewalk runs along the west side of Buck Hill Road

2.3 Traffic Operations Analysis

An existing conditions traffic operations analysis was completed using Synchro/SimTraffic software to establish a baseline condition to which future traffic operations could be compared. Operations analysis results identify a Level of Service (LOS) which indicates the quality of traffic flow through an intersection. The LOS results are based on average delay per vehicle, which correspond to the delay threshold values presented in **Table 3**. Intersections are given a ranking from LOS A through LOS F. LOS A indicates the best traffic operation, with vehicles experiencing minimal delays. LOS F indicates an intersection where demand exceeds capacity, or a breakdown of traffic flow. The LOS D/E threshold for overall intersection operations is often used as the indicator of congestion in an urban area. For side-street stop-controlled intersections, a key measure of operational effectiveness is the side-street LOS. Long delays and poor LOS can occur on side-street approaches even if the overall intersection is functioning well, making side-street LOS a valuable design criterion.

Table 3 – Level of Service Criteria

Level of Service	Description	Delay per Vehicle (seconds)	
		Signalized Intersection	Unsignalized Intersection
A	Free Flow: Low volumes and no delays.	0 - 10	0 - 10
B	Stable Flow: Speeds restricted by travel conditions, minor delays.	> 10 - 20	> 10 - 15
C	Stable Flow: Speeds and maneuverability closely controlled due to higher volumes.	> 20 - 35	> 15 - 25
D	Stable Flow: Speeds considerably affected by change in operating conditions. High density traffic restricts maneuverability, volume near capacity.	> 35 - 55	> 25 - 35
E	Unstable Flow: Low speeds, considerable delay, volume at or slightly over capacity.	> 55 - 80	> 35 - 50
F	Forced Flow: Very low speeds, volume exceed capacity, long delays with stop and go traffic.	> 80	> 50

Source: Highway Capacity Manual, 6th Edition, Transportation Research Board, Exhibits 19-8, 20-2, 21-8, 22-8.

After LOS, the second component of the traffic operations analysis is a study of vehicular queuing, or the lineup of vehicles waiting to pass through an intersection. An intersection can operate with an acceptable LOS, but if queues from the intersection block entrances to turn lanes or adjacent driveways, unsafe operating conditions could result. The 95th percentile queue, or the length of queue with only a five percent probability of being exceeded during an analysis period, is considered the standard for design purposes.

The existing traffic operations analysis was performed at the study intersections for the volume adjusted a.m. and p.m. peak hours. Results of the existing traffic operations analysis, presented in **Table 4**, indicate that each study intersection currently operates at overall LOS A during the a.m. and p.m. peak hours. In addition, no significant side-street delay or queuing issues were observed in the field or traffic simulations. Detailed operations and queuing analysis results are presented in **Appendix B**.

Table 4 – Existing Traffic Operations Analysis

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 46 & Kendale Drive	A / A	1.2 / 6.8	A / A	1.2 / 9.4
CSAH 46 & Buck Hill Road	A / C	7.2 / 25.5	A / C	8.3 / 21.0

LOS Results: Overall Intersection / Worst Approach

Delay Results: Overall Intersection / Worst

3.0 Proposed Development

The proposed Sundance Lakeville development, shown in **Figure 3**, is expected to provide nine (9) single-family detached homes and 167 multi-family townhomes in the northwest quadrant of the CSAH 46/Buck Hill Road intersection in Lakeville. In addition, the development will include two single-story retail centers, covering about 26,500 sq. ft. combined, on the south side of the developed area. While the proposed development construction timeframe is currently unknown, a year 2025 completion was assumed for the purpose of this study. Access to the development is proposed at the following locations:

- Along Buck Hill Road approximately 250 feet north of CSAH 46 (East Access)
 - The outbound (eastbound) approach is expected to be stop controlled and consist of a single shared left-turn/right-turn lane
- Along Kendale Drive approximately 200 feet north of CSAH 46 (West Access)
 - The outbound (westbound) approach is expected to be stop controlled and consist of a single shared left-turn/right-turn lane
- Along Kendale Drive approximately 500 feet north of CSAH 46 (Single-Family Access)
 - The outbound (westbound) approach is expected to be stop controlled and consist of a single shared left-turn/right-turn lane

3.1 Trip Generation

Trip generation estimates for the proposed Sundance Lakeville development were completed for the weekday a.m. and p.m. peak hours as well as on a daily basis by utilizing the *Institute of Transportation Engineers Trip Generation Manual, 10th Edition (ITE TGM)*. Results of the trip generation estimates, shown in **Table 5**, indicate the proposed development is expected to generate approximately 136 a.m. peak hour trips, 268 p.m. peak hour trips, and 2,656 daily trips. The distribution of development generated trips, shown in **Figure 4**, was estimated based on a review of existing traffic volumes/patterns and by engineering judgement. This trip distribution was then applied to the estimated proposed development generated trips in the future conditions analysis years.

Table 5 – Trip Generation Estimates – Sundance Lakeville

Land Use (ITE Code)	Units	Size	AM Peak Hour Trips ⁽¹⁾			PM Peak Hour Trips ⁽¹⁾			Daily Trips
			Trips In	Trips Out	Total Trips	Trips In	Trips Out	Total Trips	
Single-Family Detached Housing (210)	Dwellings	9	2	4	6	5	3	8	86
Multifamily Housing (220)	Dwellings	167	16	51	67	54	31	85	1,126
Strip Retail Plaza [<40k sq ft] (822)	1000 sq ft.	26.5	38	25	63	87	88	175	1,444
Total Development Trips			56	80	136	146	122	268	2,656

Source: Institute of Transportation Engineers Trip Generation Manual, 11th Edition

Setting Assumption: General urban/suburban setting

(1) Peak hour of the adjacent roadway network

Sundance Lakeville TIS



Figure 3
Proposed Site Plan



Sundance Lakeville TIS



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Figure 4
Trip Directional Distribution

4.0 Future Conditions

To determine potential traffic impacts associated with the proposed development, future conditions were evaluated using Synchro/SimTraffic software. The future conditions evaluated in this study were the year 2025 (i.e., one year after assumed development completion) and the year 2045 (20-year horizon).

4.1 Planned Developments and Infrastructure Improvements

Planned developments and infrastructure improvements that may influence future traffic volumes within the study area were reviewed.

4.1.1 *Planned Developments*

The Moments memory care senior living facility opened in December of 2018 in the southeast quadrant of the CSAH 46/Buck Hill Road intersection. A second phase of the Moments was expected to open later in year 2021 with 60 new memory care senior living units. Given the updated turning movement counts collected in August 2023 it is assumed that trips related to The Moments Phase II development are included in the analysis. It should be noted that a general background traffic growth rate was applied in the future conditions analysis and is expected to account for any variations in the limited trips added by The Moments Phase II development. No other planned developments within the study area are known at this time.

4.1.2 *Planned Infrastructure Improvements*

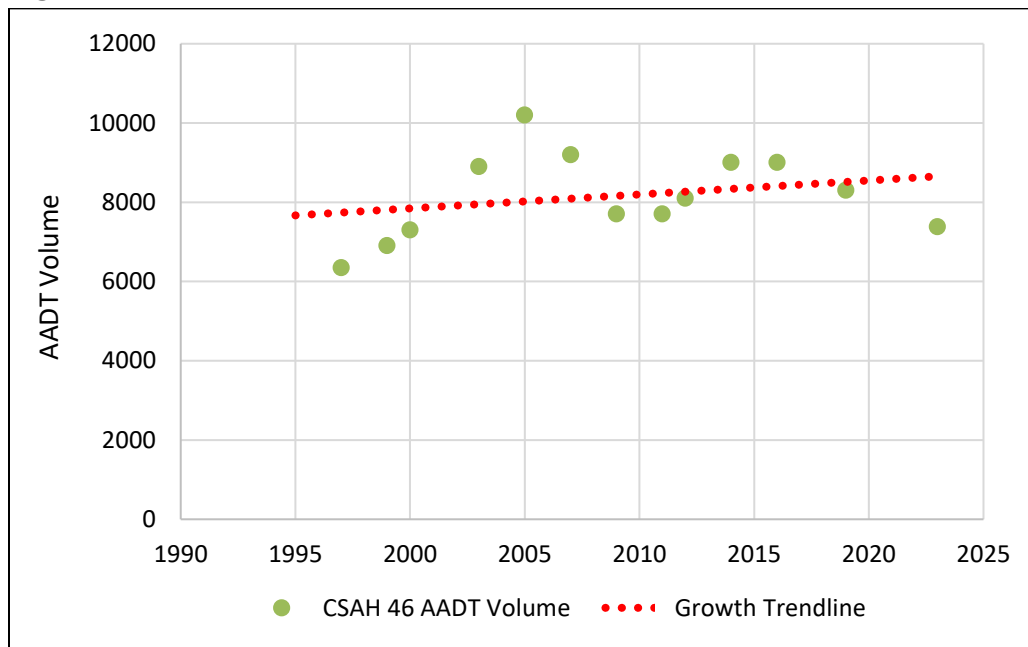
The existing configuration of the CSAH 46/Kendale Drive intersection restricts the northbound approach to a three-quarter access preventing northbound left-turn and through movements. This design was intentional, as Dakota County plans to also restrict the northbound approach to a three-quarter access as well, eliminating southbound left-turn and through movements. Once these movements are restricted, motorists destined for CSAH 46 eastbound and/or I-35 will likely utilize the proposed roadway internal to the development site to access CSAH 46 via Buck Hill Road. To account for this change in traffic patterns, volumes associated with the restricted movements were redistributed to the CSAH 46/Buck Hill Road intersection to evaluate 2025 and 2045 conditions.

According to information presented in the *Lakeville 2040 Comprehensive Plan*, no other significant roadway improvements are planned within the study area through the year 2040.

4.2 Background Traffic Growth

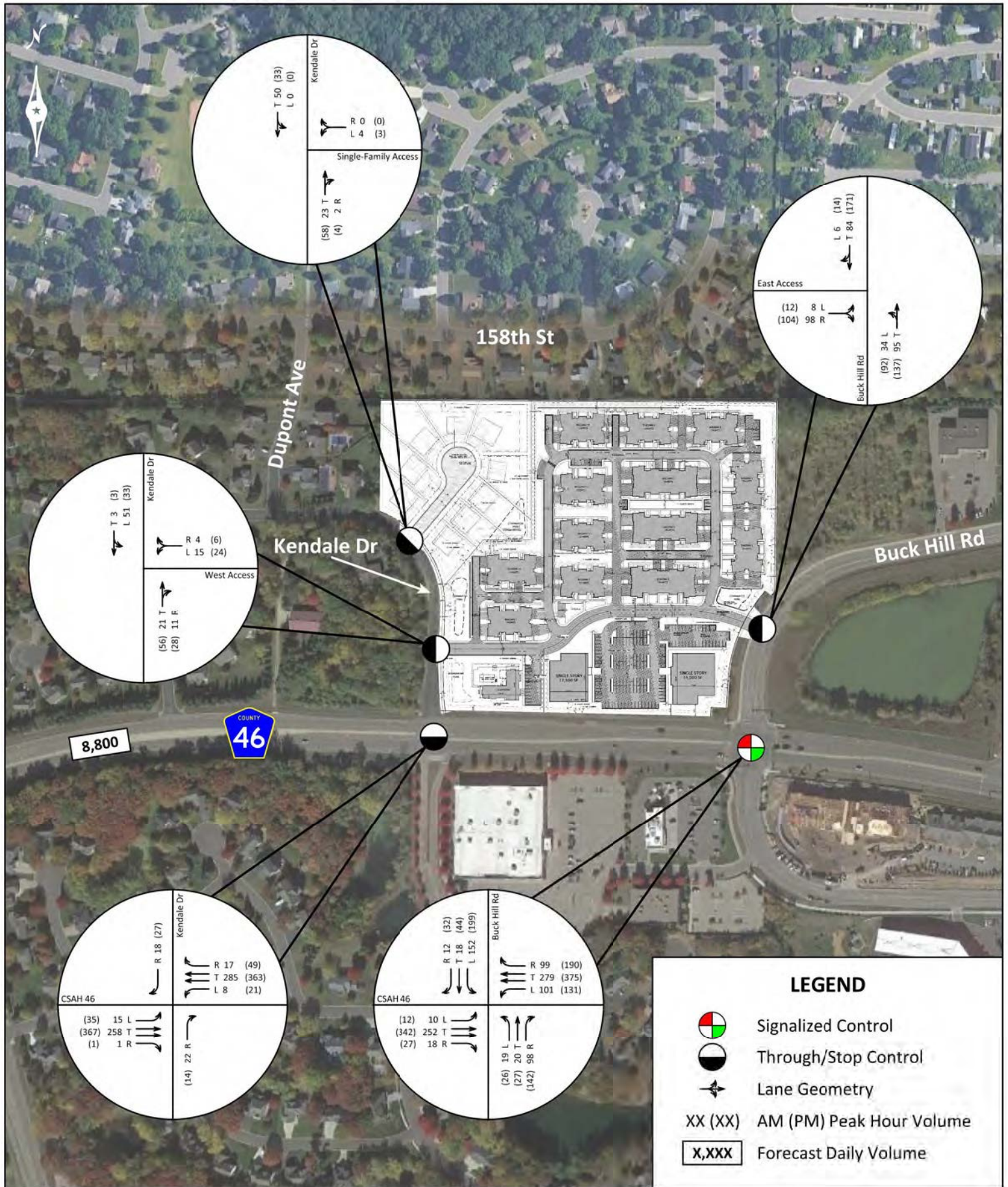
Historical annual average daily traffic (AADT) volumes along CSAH 46 were provided by the Minnesota Department of Transportation (MnDOT) via its online *Traffic Mapping Application*. The historical AADT data was reviewed to determine growth trends within the study area. The CSAH 46 AADT volume data, shown in **Figure 5**, indicates a slight growth trend over a 20+ year period. Based on this data, and traffic forecasts in the *Lakeville 2040 Comprehensive Plan*, a conservative annual growth rate of one percent was applied to existing traffic volumes to provide an estimate of future background traffic growth. The resultant year 2025 conditions and year 2045 conditions, a combination of background traffic volumes, redistributed trips, and trips generated by the proposed development, are shown in **Figure 6** and **Figure 7**, respectively.

Figure 5 – CSAH 46 Historical AADT Volume



Per Dakota County comments received on May 10th, 2024, historical AADT volumes were once again reviewed and compared to projections from the Dakota County 2040 Transportation Plan which suggests the study segment of CSAH 46 between CSAH 5 to I-35 West Ramp would reach 11,800 AADT in 2040. The most recent draft AADT available – 7,384 in 2023 – supports 2019 AADT volumes which show traffic volumes along CSAH 46 decreasing rather than increasing.

When 2040 AADT estimates were developed using the Dakota County Travel Demand Model the 2019 AADT of 8,300 along this segment of CSAH 46 was not utilized – instead the 2016 AADT of 9,000 was included, resulting in a higher projection for 2040. Applying an annual growth rate of one percent, as noted above, is still expected to be a conservative estimate of future traffic volumes which, based on 2019 and 2023 AADTs, is not expected to reach 11,800 per the Dakota County 2040 Transportation Plan.

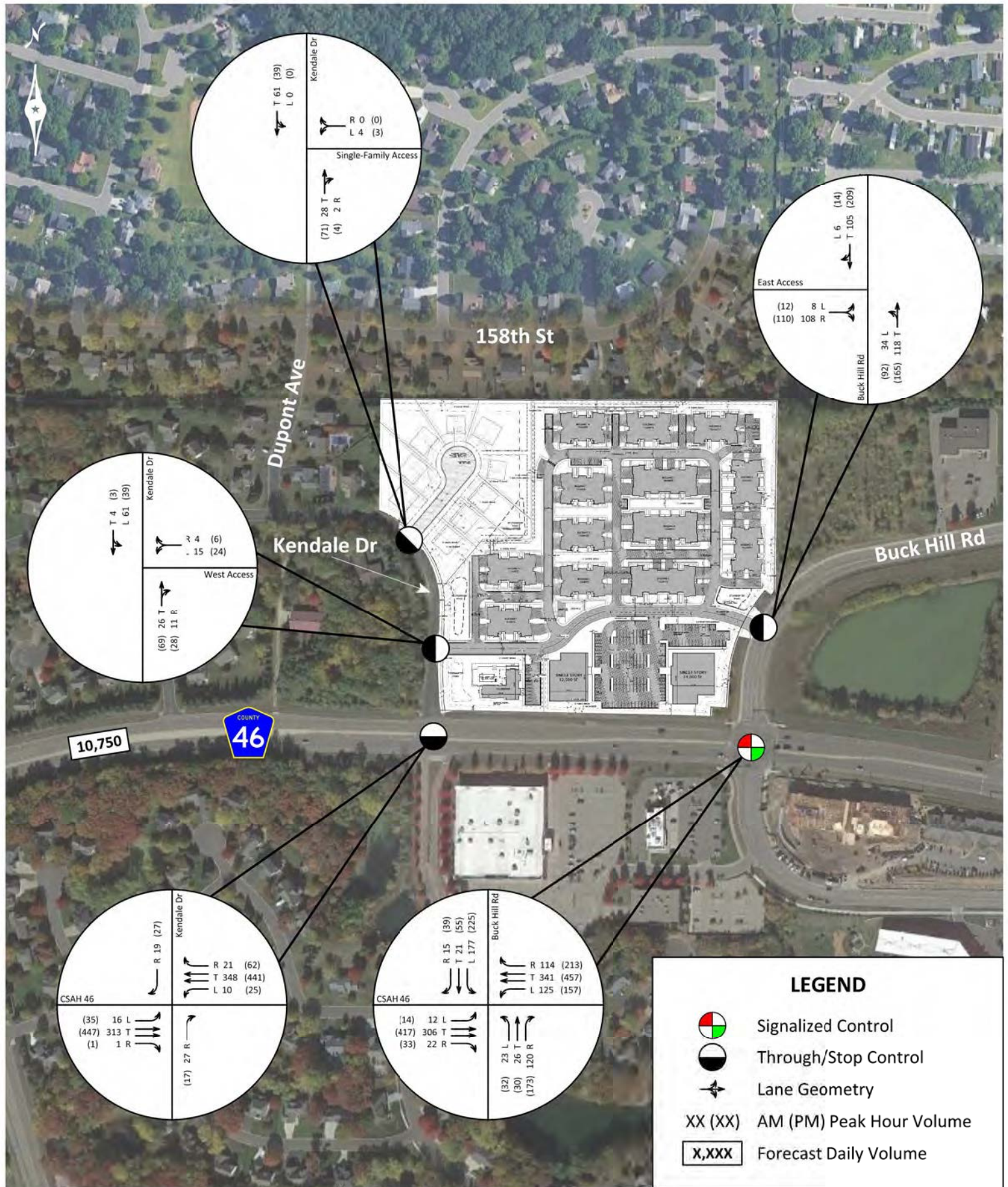


Sundance Lakeville TIS

Figure 6
Year 2025 Conditions



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Sundance Lakeville TIS

Figure 7
Year 2045 Conditions



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4.3 Traffic Operations Analysis

Future conditions traffic operations analyses were completed using Synchro/SimTraffic software to determine potential traffic impacts associated with the proposed development.

4.3.1 Year 2025 Conditions

Results of the year 2025 traffic operations analysis, presented in **Table 6**, indicate that all study intersections and proposed access locations are expected to operate at overall LOS B during the a.m. and p.m. peak hours. In addition, no significant side-street delay or queuing issues were observed in the traffic simulations. Detailed operations and queuing analysis results are presented in **Appendix B**.

Table 6 – Year 2025 Traffic Operations Analysis

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 46 & Kendale Drive	A / A	0.8 / 2.7	A / A	1.1 / 3.0
CSAH 46 & Buck Hill Road	A / C	9.6 / 29.0	B / C	10.3 / 23.7
Buck Hill Road & East Access	A / A	1.9 / 3.4	A / A	1.9 / 3.8
Kendale Drive & West Access	A / A	1.8 / 4.2	A / A	1.4 / 4.3
Kendale Drive & Single-Family Access	A / A	0.3 / 4.4	A / A	0.2 / 4.1

LOS Results: Overall Intersection / Worst Approach Delay Results: Overall Intersection / Worst Approach

4.3.2 Year 2045 Conditions

Results of the year 2045 traffic operations analysis, presented in **Table 7**, indicate that all study intersections and proposed access locations are expected to operate at overall LOS B or better during the a.m. and p.m. peak hours. In addition, no significant side-street delay or queuing issues were observed in the traffic simulations. Detailed operations and queuing analysis results are presented in **Appendix B**.

Table 7 – Year 2045 Traffic Operations Analysis

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 46 & Kendale Drive	A / A	0.8 / 2.7	A / D	2.0 / 28.8
CSAH 46 & Buck Hill Road	B / C	10.8 / 31.1	B / C	11.4 / 24.7
Buck Hill Road & East Access	A / A	1.9 / 3.6	A / A	2.0 / 4.2
Kendale Drive & West Access	A / A	1.9 / 4.2	A / C	4.0 / 19.2
Kendale Drive & Single-Family Access	A / A	0.3 / 4.7	A / A	0.2 / 4.3

LOS Results: Overall Intersection / Worst Approach Delay Results: Overall Intersection / Worst Approach

Generally, the proposed development is expected to have minimal impact on study area traffic operations even with the redistributed Kendale Drive southbound volumes. Therefore, no geometric or traffic control improvements are required from an operations perspective.

4.4 Additional Considerations

Additional considerations related to the proposed development include the following:

4.4.1 Development Site Through Traffic

The East Access and West Access of the proposed development will be linked by an east/west roadway running parallel to CSAH 46. In addition to proposed development trips, this new roadway will facilitate southbound Kendale Drive movements restricted by the planned conversion of the CSAH 46/Kendal Drive intersection to a three-quarter access by Dakota County. As a public road rather than a private road, traffic along Buck Hill Road destined for Kendale Drive may also utilize this new roadway but the impact is expected to be negligible.

4.4.2 Residential Neighborhood Through Traffic

For access to and from CSAH 5 west of the Sundance Lakeville site, a limited number of motorists associated with the proposed development, particularly those originating from and destined to the Single-Family Access, may choose to route through the adjacent residential neighborhood via Kendale Drive, Dupont Avenue, and 158th Street. However, the narrow, winding, and low-speed nature of these roadways is expected to make this route less attractive than CSAH 46 to the majority of residents associated with the proposed development. Consequently, less than 150 daily trips associated with the proposed Sundance Lakeville development would be expected to utilize the Kendale Drive, Dupont Avenue, and 158th Street residential neighborhood route.

5.0 Site Plan/Access Review

A review of the proposed site plan was completed to identify any issues and recommended potential improvements regarding vehicle ingress/egress, internal traffic circulation, and pedestrian/bicycle connectivity. The following key points are offered for consideration:

- The proposed East Access along Buck Hill Road is expected to provide approximately 250 feet of effective southbound vehicle storage between the driveway and CSAH 46. This distance is expected to accommodate the southbound forecast 95th percentile peak period queues at the CSAH 46/Buck Hill Road intersection through the year 2045.
 - Note: 95th percentile queues are defined as the queue length that only has a five-percent probability of being exceeded. Average queues are expected to be much shorter, and typically there is not a need to design turn lanes beyond this metric.
- The proposed internal roadways appear to adequately accommodate typical passenger vehicles. However, turning movements should be reviewed to ensure design vehicles such as garbage/recycling trucks have adequate accommodations to negotiate internal roadways.
- Establish appropriate traffic control (e.g., through/stop control) at internal roadway intersections to minimize driver confusion and the potential for conflicts.
- Sidewalks and/or trails within the proposed development should be extended to meet the existing sidewalk along Buck Hill Road and the existing trail along CSAH 46.

5.1 Sight Line Analysis

Alliant conducted a sight line analysis for the proposed accesses along both Kendale Drive and Buck Hill Road based on the current site plan and aerial imagery. Approximate sight distances measured for both accesses, looking to the northwest and northeast, are show below in **Table 8**.

Table 8 – Sight Line Analysis

Access	Distance from Intersection	Speed Limit	Design Sight Distance	Measured Sight Distance
Kendale Drive & West Access	200 feet	30 mph	335 feet	310 feet
Buck Hill Road & East Access	250 feet	40 mph	445 feet	450 feet

All sight distances were conservatively compared to Table 9-7, Design Intersection Sight Distance for Case B1, Left Turn from Stop from the *AASHTO Policy on Geometric Design of Highways and Streets*, 7th Edition which assumes a passenger car as the design vehicle.

- Kendale Drive & West Access: The required intersection sight distance for a 30-mph roadway is 335 feet. Comparing the required distance to the approximate sight distances measured (310 feet), the sight distance to the northwest is not meeting by 25 feet. However, if the curvature of the roadway reduces approaching vehicle speeds to 25 mph the required distance would only be 280 feet and the approximate sight distance would be adequate. Furthermore, the proximity of the West Access to the stop-controlled intersection of CSAH 46/Kendale Drive would also reduce approaching vehicle speeds.
- Buck Hill Road & East Access: The required intersection sight distance for a 40-mph roadway is 445 feet. Comparing the required distance to the approximate sight distances measured, the sight distance to the northeast (450 feet) would be adequate.
 - The removal of scrub trees along the east side of Buck Hill Road may provide additional visibility for both eastbound motorists and northbound left-turning motorists if sight lines remain a concern.

Existing foliage, time of day (sunrise, sunset), seasonal variations, and stop bar placement may impact the actual site distances for stopped vehicles exiting either development access. Despite the Kendale Drive & West Access approximate sight distance being slightly below the required distance neither access is expected to pose a safety risk due to sight lines.

6.0 Conclusions and Recommendations

The following study conclusions and recommendations are offered for consideration:

- Results of the existing traffic operations analysis indicate that all study intersections currently operate at overall LOS A during the a.m. and p.m. peak hours. In addition, no significant side-street delay or queuing issues were observed in the field or traffic simulations.
- The proposed Sundance Lakeville development is expected to provide nine (9) single-family detached homes and 167 multi-family townhomes in the northwest quadrant of the CSAH 46/Buck Hill Road intersection in Lakeville. In addition, the development will include two single-story retail centers, covering about 26,500 sq. ft. combined, on the south side of the developed area. While the proposed development construction timeframe is currently unknown, a year 2025 completion was assumed for the purpose of this study.
 - The proposed development is expected to generate approximately 136 a.m. peak hour trips, 268 p.m. peak hour trips, and 2,656 daily trips.
- Results of the year 2025 traffic operations analysis indicate that all study intersections and proposed access locations are expected to operate at overall LOS B during the a.m. and p.m. peak hours with all study intersections and proposed access locations expected to operate at overall LOS B or better during the year 2045 a.m. and p.m. peak hours. In addition, no significant side-street delay or queuing issues were observed in the traffic simulations.
 - Generally, the proposed development is expected to have minimal impact on study area traffic operations even with the redistributed Kendale Drive southbound volumes. Therefore, no geometric improvements are required from an operations perspective.
- Additional considerations related to the proposed development include the following:
 - The new east/west roadway will facilitate southbound Kendale Drive movements restricted by the planned conversion of the CSAH 46/Kendal Drive intersection to a three-quarter access by Dakota County. As a public road rather than a private road, traffic along Buck Hill Road destined for Kendale Drive may also utilize this new roadway but the impact is expected to be negligible.
 - For access to and from CSAH 5 west of the Sundance Lakeville site, a limited number of motorists associated with the proposed development, particularly those originating from and destined to the Single-Family Access, may choose to route through the adjacent residential neighborhood via Kendale Drive, Dupont Avenue, and 158th Street. However, the narrow, winding, and low-speed nature of these roadways is expected to make this route less attractive than CSAH 46 to the majority of residents associated with the proposed development. Consequently, less than 150 daily trips associated with the proposed development would be expected to utilize the Kendale Drive, Dupont Avenue, and 158th Street residential neighborhood route.
- A review of the proposed site plan was completed to identify any issues and recommended potential improvements regarding vehicle ingress/egress, internal traffic circulation, and pedestrian/bicycle connectivity and is documented in **Section 5.0: Site Plan/Access Review**.

Appendix A – Collected Turning Movement Counts

ALLIANT ENGINEERING, INC.

733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: CSAH 46 (162nd St SW) & Kendale Dr
Date: 6/3/2021
Duration: 6:00-9:00, 16:00-19:00

Site Code: 360
Ref Pt: N/A
Page No: 1 of 3

All Vehicles (Cars & Trucks) Printed

Start Time	Kendale Dr Southbound						CSAH 46 (162nd St SW) Westbound						Kendale Dr Northbound						CSAH 46 (162nd St SW) Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
6:00	--	12	--	--	12	1	--	1	26	1	28	--	--	--	--	1	1	1	--	--	24	--	24	--	65	2
6:15	--	7	--	--	7	--	--	--	43	1	44	--	--	--	--	3	3	--	--	--	27	2	29	--	83	--
6:30	--	10	--	--	10	--	--	--	60	1	61	--	--	--	--	6	6	--	--	--	46	--	46	--	123	--
6:45	--	16	--	--	16	--	--	--	64	3	67	--	--	--	--	3	3	--	1	--	52	--	53	--	139	--
Hour Total	--	45	--	--	45	1	--	1	193	6	200	--	--	--	--	13	13	1	1	--	149	2	152	--	410	2
7:00	--	10	--	--	10	--	--	1	62	1	64	--	--	--	--	3	3	--	--	--	37	--	37	--	114	--
7:15	--	7	1	1	9	--	--	2	66	6	74	--	--	1	--	3	4	--	--	1	53	--	54	--	141	--
7:30	--	10	--	1	11	--	--	1	66	1	68	--	--	--	--	6	6	1	--	--	56	--	56	--	141	1
7:45	--	13	--	--	13	--	--	1	93	6	100	--	--	--	--	9	9	--	--	1	70	1	72	--	194	--
Hour Total	--	40	1	2	43	--	--	5	287	14	306	--	--	1	--	21	22	1	--	2	216	1	219	--	590	1
8:00	--	14	--	--	14	--	--	4	55	3	62	--	--	--	--	4	4	--	--	1	67	--	68	--	148	--
8:15	--	11	--	--	11	1	1	1	57	2	61	--	--	--	--	2	2	--	--	--	54	--	54	--	128	1
8:30	--	8	--	--	8	--	--	1	63	6	70	--	--	--	--	3	3	1	--	--	46	--	46	--	127	1
8:45	--	16	--	--	16	--	--	4	60	5	69	--	--	--	--	1	1	--	--	--	41	--	41	--	127	--
Hour Total	--	49	--	--	49	1	1	10	235	16	262	--	--	--	--	10	10	1	--	1	208	--	209	--	530	2
16:00	--	5	--	--	5	--	--	2	79	12	93	--	--	--	--	2	2	--	--	--	86	--	86	--	186	--
16:15	--	9	--	1	10	--	1	5	95	18	119	--	--	--	--	3	3	2	1	2	95	1	99	--	231	2
16:30	--	7	--	1	8	--	--	5	95	7	107	--	--	--	--	4	4	--	--	1	84	--	85	--	204	--
16:45	--	3	--	--	3	1	--	6	70	8	84	--	--	--	--	2	2	--	--	1	96	--	97	--	186	1
Hour Total	--	24	--	2	26	1	1	18	339	45	403	--	--	--	--	11	11	2	1	4	361	1	367	--	807	3
17:00	--	5	--	--	5	--	--	5	94	13	112	--	--	--	--	5	5	1	1	2	79	--	82	--	204	1
17:15	--	10	1	--	11	--	--	8	82	12	102	--	--	--	--	1	1	--	--	--	92	1	93	--	207	--
17:30	1	8	--	1	10	1	1	4	88	14	107	--	--	--	--	2	2	--	--	--	78	2	80	--	199	1
17:45	--	7	--	--	7	1	--	3	79	5	87	--	--	--	--	1	1	1	--	2	68	--	70	--	165	2
Hour Total	1	30	1	1	33	2	1	20	343	44	408	--	--	--	--	9	9	2	1	4	317	3	325	--	775	4
18:00	--	7	--	--	7	--	--	1	53	12	66	--	--	--	--	5	5	--	--	--	64	--	64	--	142	--
18:15	--	11	1	1	13	--	1	6	67	9	83	--	--	--	--	6	6	--	--	--	60	--	60	--	162	--
18:30	--	5	--	--	5	--	1	9	87	7	104	--	--	--	--	1	1	1	--	--	58	--	58	--	168	1
18:45	--	7	--	--	7	--	--	2	50	13	65	--	--	--	--	--	0	--	--	1	48	1	50	--	122	--
Hour Total	--	30	1	1	32	--	2	18	257	41	318	--	--	--	--	12	12	1	--	1	230	1	232	--	594	1
Grand Total	1	218	3	6	228	5	5	72	1654	166	1897	--	--	1	--	76	77	8	3	12	1481	8	1504	--	3706	13
% of App.	0.4%	95.6%	1.3%	2.6%			0.3%	3.8%	87.2%	8.8%			0.0%	1.3%	0.0%	98.7%			0.2%	0.8%	98.5%	0.5%				
% of Total	0.0%	5.9%	0.1%	0.2%	6.2%	38.5%	0.1%	1.9%	44.6%	4.5%	51.2%	0.0%	0.0%	0.0%	0.0%	2.1%	2.1%	61.5%	0.1%	0.3%	40.0%	0.2%	40.6%	0.0%		
Cars Total	1	217	3	6	227	5	5	71	1638	165	1879	--	--	--	--	75	75	6	3	11	1459	8	1481	--	3662	11
Cars % of Movement	100%	99.5%	100%	100%	99.6%	45.5%	100%	98.6%	99.0%	99.4%	99.1%	0.0%	0.0%	0.0%	0.0%	98.7%	97.4%	54.5%	100%	91.7%	98.5%	100%	98.5%	0.0%	98.8%	
Trucks Total	--	1	--	--	1	--	--	1	16	1	18	--	--	1	--	1	2	2	--	1	22	--	23	--	44	2
Trucks % of Movement	0.0%	0.5%	0.0%	0.0%	0.4%	0.0%	0.0%	1.4%	1.0%	0.6%	0.9%	0.0%	0.0%	100%	0.0%	1.3%	2.6%	#####	0.0%	8.3%	1.5%	0.0%	1.5%	0.0%	1.2%	

ALLIANT ENGINEERING, INC.

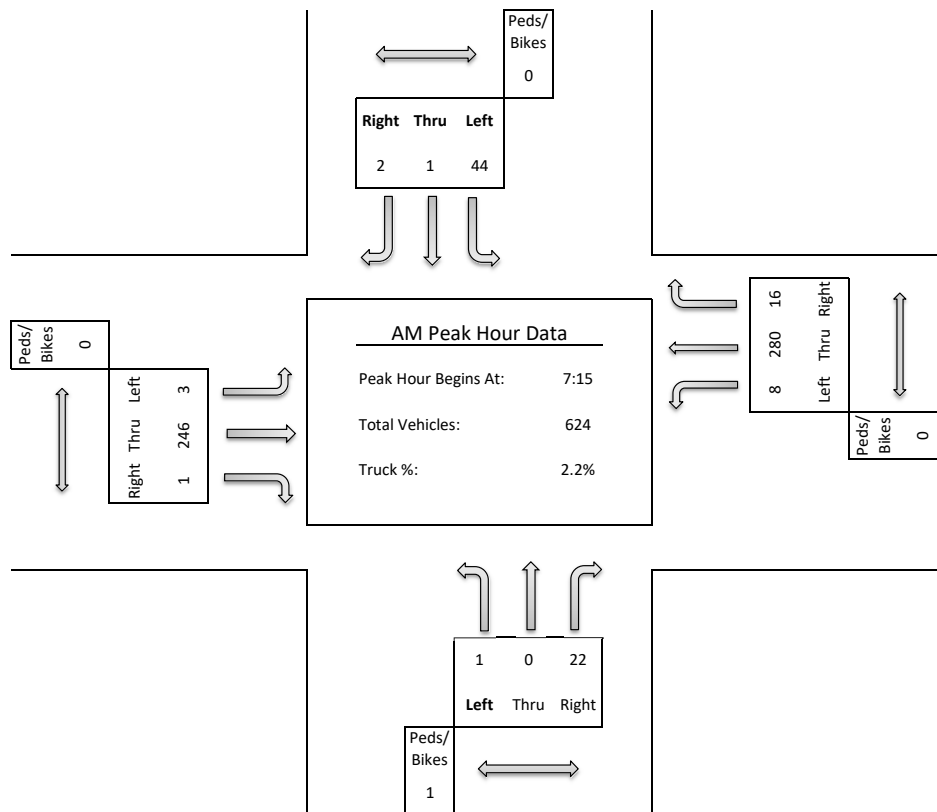
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: CSAH 46 (162nd St SW) & Kendale Dr
Date: 6/3/2021
Duration: 6:00-9:00, 16:00-19:00

Site Code: 360
Ref Pt: N/A
Page No: 2 of 3

All Vehicles (Cars & Trucks) Printed

Start Time	Kendale Dr Southbound						CSAH 46 (162nd St SW) Westbound						Kendale Dr Northbound						CSAH 46 (162nd St SW) Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
7:15	--	7	1	1	9	--	--	2	66	6	74	--	--	1	--	3	4	--	--	1	53	--	54	--	141	--
7:30	--	10	--	1	11	--	--	1	66	1	68	--	--	--	--	6	6	1	--	--	56	--	56	--	141	1
7:45	--	13	--	--	13	--	--	1	93	6	100	--	--	--	--	9	9	--	--	1	70	1	72	--	194	--
8:00	--	14	--	--	14	--	--	4	55	3	62	--	--	--	--	4	4	--	--	1	67	--	68	--	148	--
Hour Total	--	44	1	2	47	--	--	8	280	16	304	--	--	1	--	22	23	1	--	3	246	1	250	--	624	1
% of App.	0.0%	93.6%	2.1%	4.3%			0.0%	2.6%	92.1%	5.3%			0.0%	4.3%	0.0%	95.7%			0.0%	1.2%	98.4%	0.4%				
% of Total	0.0%	7.1%	0.2%	0.3%	7.5%	0.0%	0.0%	1.3%	44.9%	2.6%	48.7%	0.0%	0.0%	0.2%	0.0%	3.5%	3.7%	#####	0.0%	0.5%	39.4%	0.2%	40.1%	0.0%		
Cars Total	--	44	1	2	47	--	--	8	275	15	298	--	--	--	--	22	22	1	--	2	240	1	243	--	610	1
Cars % of Movement	0.0%	100%	100%	100%	100%	0.0%	0.0%	100%	98.2%	93.8%	98.0%	0.0%	0.0%	0.0%	100%	95.7%	#####		0.0%	66.7%	97.6%	100%	97.2%	0.0%	97.8%	
Trucks Total	--	--	--	--	0	--	--	--	5	1	6	--	--	1	--	--	1	--	--	1	6	--	7	--	14	--
Trucks % of Movement	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.0%	1.8%	6.3%	2.0%	--	0.0%	100%	0.0%	0.0%	4.3%	--	0.0%	33.3%	2.4%	0.0%	2.8%	--	2.2%	



ALLIANT ENGINEERING, INC.

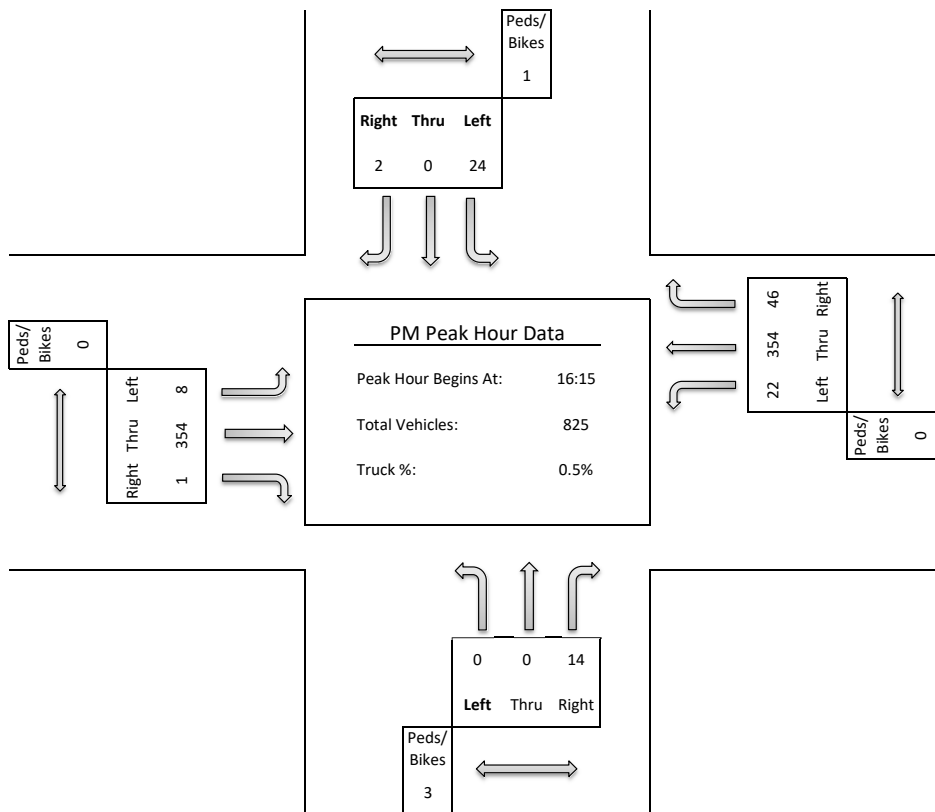
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: CSAH 46 (162nd St SW) & Kendale Dr
Date: 6/3/2021
Duration: 6:00-9:00, 16:00-19:00

Site Code: 360
Ref Pt: N/A
Page No: 3 of 3

All Vehicles (Cars & Trucks) Printed

Start Time	Kendale Dr Southbound						CSAH 46 (162nd St SW) Westbound						Kendale Dr Northbound						CSAH 46 (162nd St SW) Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
16:15	--	9	--	1	10	--	1	5	95	18	119	--	--	--	--	3	3	2	1	2	95	1	99	--	231	2
16:30	--	7	--	1	8	--	--	5	95	7	107	--	--	--	--	4	4	--	--	1	84	--	85	--	204	--
16:45	--	3	--	--	3	1	--	6	70	8	84	--	--	--	--	2	2	--	--	1	96	--	97	--	186	1
17:00	--	5	--	--	5	--	--	5	94	13	112	--	--	--	--	5	5	1	1	2	79	--	82	--	204	1
Hour Total	--	24	--	2	26	1	1	21	354	46	422	--	--	--	--	14	14	3	2	6	354	1	363	--	825	4
% of App.	0.0%	92.3%	0.0%	7.7%			0.2%	5.0%	83.9%	10.9%			0.0%	0.0%	0.0%	100%			0.6%	1.7%	97.5%	0.3%				
% of Total	0.0%	2.9%	0.0%	0.2%	3.2%	25.0%	0.1%	2.5%	42.9%	5.6%	51.2%	0.0%	0.0%	0.0%	0.0%	1.7%	1.7%	75.0%	0.2%	0.7%	42.9%	0.1%	####	0.0%		
Cars Total	--	24	--	2	26	1	1	21	351	46	419	--	--	--	--	13	13	3	2	6	354	1	363	--	821	4
Cars % of Movement	0.0%	100%	0.0%	100%	100%	25.0%	100%	100%	99.2%	100%	99.3%	0.0%	0.0%	0.0%	0.0%	92.9%	92.9%	75.0%	100%	100%	100%	100%	100%	0.0%	99.5%	
Trucks Total	--	--	--	--	0	--	--	--	3	--	3	--	--	--	--	1	1	--	--	--	--	--	0	--	4	--
Trucks % of Movement	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.0%	0.8%	0.0%	0.7%	--	0.0%	0.0%	0.0%	7.1%	7.1%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.5%	



ALLIANT ENGINEERING, INC.

733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: CSAH 46 (162nd St SW) & Buck Hill Rd
Date: 8/23/2023
Duration: 6:00-9:00, 16:00-19:00

Site Code: 361
Ref Pt: N/A
Page No: 1 of 3

All Vehicles (Cars & Trucks) Printed

Start Time	Buck Hill Rd Southbound						CSAH 46 (162nd St SW) Westbound						Kenyon Ave Northbound						CSAH 46 (162nd St SW) Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
6:00	--	3	--	1	4	--	--	4	29	3	36	--	--	1	--	8	9	--	--	--	34	2	36	--	85	--
6:15	--	5	--	--	5	--	--	17	42	7	66	--	--	2	--	8	10	--	--	1	35	3	39	1	120	1
6:30	--	9	4	--	13	--	--	14	63	9	86	--	--	4	1	17	22	--	--	1	57	5	63	--	184	--
6:45	--	15	2	1	18	--	--	18	58	15	91	--	--	6	2	19	27	--	--	2	67	4	73	--	209	--
Hour Total	--	32	6	2	40	--	--	53	192	34	279	--	--	13	3	52	68	--	--	4	193	14	211	1	598	1
7:00	--	14	4	1	19	--	--	21	63	11	95	--	--	1	2	10	13	--	--	1	48	1	50	--	177	--
7:15	--	9	3	3	15	--	--	21	69	15	105	--	--	2	2	21	25	--	--	2	62	4	68	--	213	--
7:30	--	20	1	2	23	--	1	19	61	9	90	--	--	8	4	38	50	1	--	2	66	4	72	1	235	2
7:45	--	15	4	2	21	--	--	22	95	31	148	--	--	6	6	20	32	--	--	2	87	4	93	--	294	--
Hour Total	--	58	12	8	78	--	1	83	288	66	438	--	--	17	14	89	120	1	--	7	263	13	283	1	919	2
8:00	--	11	7	3	21	--	--	24	56	9	89	--	--	4	5	21	30	--	--	3	78	5	86	--	226	--
8:15	--	13	1	5	19	--	--	35	57	18	110	--	--	1	2	18	21	--	--	3	59	5	67	--	217	--
8:30	--	14	1	5	20	1	1	36	64	14	115	--	--	3	4	31	38	--	--	--	50	4	54	1	227	2
8:45	--	11	1	1	13	--	--	25	65	19	109	--	--	7	3	22	32	--	--	3	54	5	62	--	216	--
Hour Total	--	49	10	14	73	1	1	120	242	60	423	--	--	15	14	92	121	--	--	9	241	19	269	1	886	2
16:00	--	20	8	9	37	--	--	26	72	25	123	--	--	8	3	27	38	--	--	4	86	7	97	2	295	2
16:15	--	26	11	10	47	--	3	30	99	22	154	--	--	8	2	27	37	--	--	2	92	7	101	--	339	--
16:30	--	16	10	9	35	--	1	30	92	23	146	--	--	8	4	44	56	--	--	6	85	5	96	--	333	--
16:45	--	30	6	3	39	--	--	37	76	28	141	--	--	5	6	28	39	--	--	3	93	10	106	1	325	1
Hour Total	--	92	35	31	158	--	4	123	339	98	564	--	--	29	15	126	170	--	--	15	356	29	400	3	1292	3
17:00	--	26	10	10	46	--	1	30	97	30	158	--	--	5	6	39	50	--	--	1	88	5	94	--	348	--
17:15	--	25	9	8	42	--	--	24	93	40	157	--	--	8	3	21	32	--	--	6	91	3	100	--	331	--
17:30	--	28	6	3	37	--	--	29	96	28	153	--	--	9	6	33	48	--	--	5	77	6	88	--	326	--
17:45	--	27	4	11	42	--	1	24	65	34	124	--	--	7	7	21	35	--	--	4	64	6	74	3	275	3
Hour Total	--	106	29	32	167	--	2	107	351	132	592	--	--	29	22	114	165	--	--	16	320	20	356	3	1280	3
18:00	--	21	4	8	33	--	1	24	58	40	123	--	--	2	9	26	37	--	--	6	67	5	78	--	271	--
18:15	--	24	4	3	31	--	1	44	75	36	156	--	--	6	5	16	27	--	--	11	60	6	77	2	291	2
18:30	--	24	9	15	48	--	--	30	82	40	152	--	--	6	6	22	34	--	--	10	48	7	65	--	299	--
18:45	--	26	7	10	43	--	1	31	49	27	108	--	--	4	3	17	24	--	--	3	54	1	58	--	233	--
Hour Total	--	95	24	36	155	--	3	129	264	143	539	--	--	18	23	81	122	--	--	30	229	19	278	2	1094	2
Grand Total	--	432	116	123	671	1	11	615	1676	533	2835	--	--	121	91	554	766	1	--	81	1602	114	1797	11	6069	13
% of App.	0.0%	64.4%	17.3%	18.3%			0.4%	21.7%	59.1%	18.8%			0.0%	15.8%	11.9%	72.3%			0.0%	4.5%	89.1%	6.3%				
% of Total	0.0%	7.1%	1.9%	2.0%	11.1%	7.7%	0.2%	10.1%	27.6%	8.8%	46.7%	0.0%	0.0%	2.0%	1.5%	9.1%	12.6%	7.7%	0.0%	1.3%	26.4%	1.9%	29.6%	84.6%		
Cars Total	--	431	116	123	670	--	11	613	1657	531	2812	--	--	121	91	552	764	--	--	81	1578	114	1773	4	6019	4
Cars % of Movement	0.0%	99.8%	100%	100%	99.9%	0.0%	100%	99.7%	98.9%	99.6%	99.2%	0.0%	0.0%	100%	100%	99.6%	99.7%	0.0%	0.0%	100%	98.5%	100%	98.7%	####	99.2%	
Trucks Total	--	1	--	--	1	1	--	2	19	2	23	--	--	--	--	2	2	1	--	--	24	--	24	7	50	9
Trucks % of Movement	0.0%	0.2%	0.0%	0.0%	0.1%	11.1%	0.0%	0.3%	1.1%	0.4%	0.8%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	11.1%	0.0%	0.0%	1.5%	0.0%	1.3%	77.8%	0.8%	

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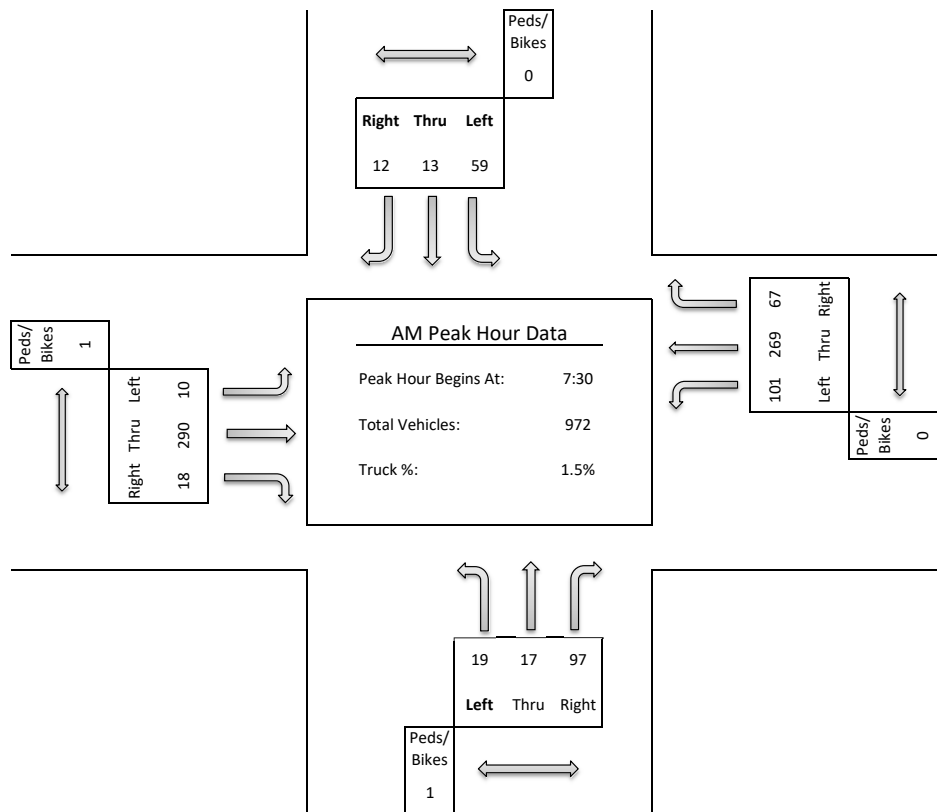
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: CSAH 46 (162nd St SW) & Buck Hill Rd
Date: 8/23/2023
Duration: 6:00-9:00, 16:00-19:00

Site Code: 361
Ref Pt: N/A
Page No: 2 of 3

All Vehicles (Cars & Trucks) Printed

Start Time	Buck Hill Rd Southbound						CSAH 46 (162nd St SW) Westbound						Kenyon Ave Northbound						CSAH 46 (162nd St SW) Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
7:30	--	20	1	2	23	--	1	19	61	9	90	--	--	8	4	38	50	1	--	2	66	4	72	1	235	2
7:45	--	15	4	2	21	--	--	22	95	31	148	--	--	6	6	20	32	--	--	2	87	4	93	--	294	--
8:00	--	11	7	3	21	--	--	24	56	9	89	--	--	4	5	21	30	--	--	3	78	5	86	--	226	--
8:15	--	13	1	5	19	--	--	35	57	18	110	--	--	1	2	18	21	--	--	3	59	5	67	--	217	--
Hour Total	--	59	13	12	84	--	1	100	269	67	437	--	--	19	17	97	133	1	--	10	290	18	318	1	972	2
% of App.	0.0%	70.2%	15.5%	14.3%			0.2%	22.9%	61.6%	15.3%			0.0%	14.3%	12.8%	72.9%			0.0%	3.1%	91.2%	5.7%				
% of Total	0.0%	6.1%	1.3%	1.2%	8.6%	0.0%	0.1%	10.3%	27.7%	6.9%	45.0%	0.0%	0.0%	2.0%	1.7%	10.0%	13.7%	50.0%	0.0%	1.0%	29.8%	1.9%	32.7%	50.0%		
Cars Total	--	58	13	12	83	--	1	100	264	67	432	--	--	19	17	97	133	--	--	10	281	18	309	--	957	--
Cars % of Movement	0.0%	98.3%	100%	100%	98.8%	--	100%	100%	98.1%	100%	98.9%	--	0.0%	100%	100%	100%	100%	--	0.0%	100%	96.9%	100%	97.2%	--	98.5%	
Trucks Total	--	1	--	--	1	--	--	--	5	--	5	--	--	--	--	--	0	1	--	--	9	--	9	1	15	2
Trucks % of Movement	0.0%	1.7%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	1.9%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	3.1%	0.0%	2.8%	50.0%	1.5%	



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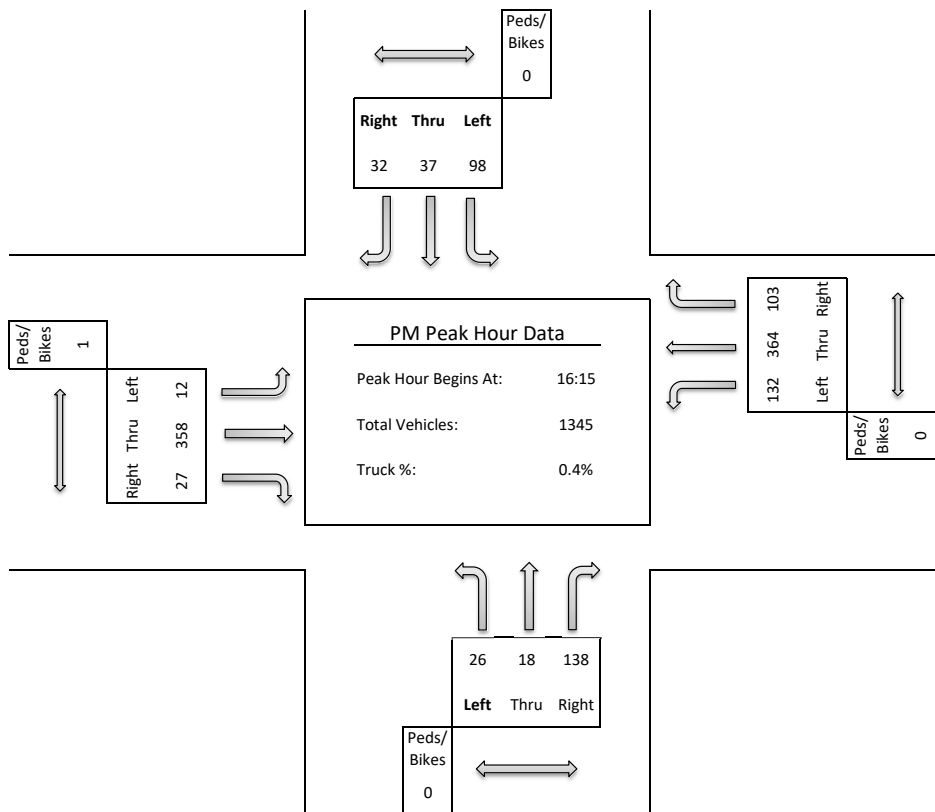
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: CSAH 46 (162nd St SW) & Buck Hill Rd
Date: 8/23/2023
Duration: 6:00-9:00, 16:00-19:00

Site Code: 361
Ref Pt: N/A
Page No: 3 of 3

All Vehicles (Cars & Trucks) Printed

	Buck Hill Rd Southbound						CSAH 46 (162nd St SW) Westbound						Kenyon Ave Northbound						CSAH 46 (162nd St SW) Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
Start Time	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
16:15	--	26	11	10	47	--	3	30	99	22	154	--	--	8	2	27	37	--	--	2	92	7	101	--	339	--
16:30	--	16	10	9	35	--	1	30	92	23	146	--	--	8	4	44	56	--	--	6	85	5	96	--	333	--
16:45	--	30	6	3	39	--	--	37	76	28	141	--	--	5	6	28	39	--	--	3	93	10	106	1	325	1
17:00	--	26	10	10	46	--	1	30	97	30	158	--	--	5	6	39	50	--	--	1	88	5	94	--	348	--
Hour Total	--	98	37	32	167	--	5	127	364	103	599	--	--	26	18	138	182	--	--	12	358	27	397	1	1345	1
% of App.	0.0%	58.7%	22.2%	19.2%			0.8%	21.2%	60.8%	17.2%			0.0%	14.3%	9.9%	75.8%			0.0%	3.0%	90.2%	6.8%				
% of Total	0.0%	7.3%	2.8%	2.4%	12.4%	0.0%	0.4%	9.4%	27.1%	7.7%	44.5%	0.0%	0.0%	1.9%	1.3%	10.3%	13.5%	0.0%	0.0%	0.9%	26.6%	2.0%	####	#####		
Cars Total	--	98	37	32	167	--	5	126	360	103	594	--	--	26	18	138	182	--	--	12	357	27	396	1	1339	1
Cars % of Movement	0.0%	100%	100%	100%	100%	0.0%	100%	99.2%	98.9%	100%	99.2%	0.0%	0.0%	100%	100%	100%	100%	0.0%	0.0%	100%	99.7%	100%	####	#####	99.6%	
Trucks Total	--	--	--	--	0	--	--	1	4	--	5	--	--	--	--	--	0	--	--	--	1	--	1	--	6	--
Trucks % of Movement	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.8%	1.1%	0.0%	0.8%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.0%	0.3%	0.0%	0.3%	--	0.4%	



Appendix B – Detailed Operations and Queuing Analysis

Existing Conditions - AM Peak Hour

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	CSAH 46 & Kendale Drive	Movement Delay (sec/veh)	0.9	0.4	0.5	2.0	0.9	0.7	0.0	0.0	2.6	7.0	6.6	3.5	1.2
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	3	0	0	9	0	0	0	0	29	45	45	8	
		Approach Delay (sec/veh)	0.4			0.9			2.6			6.8			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Signal	CSAH 46 & Buck Hill Road	Movement Delay (sec/veh)	5.2	4.3	0.7	8.2	4.1	2.3	29.1	22.4	3.9	30.8	25.7	2.9	7.2
		Movement LOS	A	A	A	A	A	A	C	C	A	C	C	A	A
		Movement 95th Queue (ft)	16	55	9	47	32	13	39	36	48	79	30	25	
		Approach Delay (sec/veh)	4.1			4.6			10.4			25.5			
		Approach LOS	A			A			B			C			

Existing Conditions - PM Peak Hour

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	CSAH 46 & Kendale Drive	Movement Delay (sec/veh)	2.5	0.4	0.2	2.9	1.2	1.2	0.0	0.0	2.5	10.0	0.0	3.2	1.2
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	9	0	0	25	0	2	0	0	24	35	35	10	
		Approach Delay (sec/veh)	0.4			1.3			2.5			9.4			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Signal	CSAH 46 & Buck Hill Road	Movement Delay (sec/veh)	11.9	7.7	1.3	9.4	4.5	2.2	23.8	22.1	4.3	27.0	20.5	3.7	8.3
		Movement LOS	B	A	A	A	A	A	C	C	A	C	C	A	A
		Movement 95th Queue (ft)	24	76	18	68	45	24	50	31	50	101	48	33	
		Approach Delay (sec/veh)	7.4			5.1			9.0			21.0			
		Approach LOS	A			A			A			C			

Year 2025 Conditions - AM Peak Hour

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	CSAH 46 & Kendale Drive	Movement Delay (sec/veh)	1.4	0.3	0.6	2.0	0.9	0.6	0.0	0.0	2.4	0.0	0.2	2.8	0.8
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	13	0	0	11	0	0	0	0	31	0	0	29	
		Approach Delay (sec/veh)	0.4			0.9			2.4			2.7			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Signal	CSAH 46 & Buck Hill Road	Movement Delay (sec/veh)	7.0	4.7	0.9	7.2	4.3	2.5	26.1	26.2	3.7	31.8	24.1	2.3	9.6
		Movement LOS	A	A	A	A	A	A	C	C	A	C	C	A	A
		Movement 95th Queue (ft)	18	51	13	40	36	20	37	36	43	149	32	17	
		Approach Delay (sec/veh)	4.6			4.4			9.9			29.0			
		Approach LOS	A			A			A			C			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Buck Hill Road & East Access	Movement Delay (sec/veh)	5.6	0.0	3.3	0.0	0.0	0.0	2.4	1.1	0.0	0.0	0.3	0.1	1.9
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	63	0	63	0	0	0	17	17	0	0	0	0	
		Approach Delay (sec/veh)	3.4			0.0			1.4			0.3			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & West Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.5	0.0	2.6	0.0	0.2	0.1	1.8	0.7	0.0	1.8
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	38	0	38	0	0	0	11	11	0	
		Approach Delay (sec/veh)	0.0			4.2			0.2			1.7			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & Single-Family Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.3
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	20	0	20	0	0	0	0	0	0	
		Approach Delay (sec/veh)	0.0			4.4			0.1			0.0			
		Approach LOS	A			A			A			A			

Year 2025 Conditions - PM Peak Hour

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	CSAH 46 & Kendale Drive	Movement Delay (sec/veh)	1.9	0.4	0.3	2.8	1.3	1.8	0.0	0.0	2.2	0.0	0.5	3.3	1.1
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	22	0	0	26	0	0	0	0	26	7	7	31	
		Approach Delay (sec/veh)	0.5			1.4			2.2			3.0			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Signal	CSAH 46 & Buck Hill Road	Movement Delay (sec/veh)	12.9	9.7	1.6	10.8	5.3	3.0	23.6	22.6	4.3	28.6	16.8	3.1	10.3
		Movement LOS	B	A	A	B	A	A	C	C	A	C	B	A	B
		Movement 95th Queue (ft)	22	86	18	74	49	42	47	42	51	168	50	29	
		Approach Delay (sec/veh)	9.3			5.7			9.2			23.7			
		Approach LOS	A			A			A			C			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Buck Hill Road & East Access	Movement Delay (sec/veh)	6.8	0.0	3.6	0.0	0.0	0.0	3.0	1.6	0.0	0.0	0.5	0.0	1.9
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	57	0	57	0	0	0	48	48	0	0	0	0	
		Approach Delay (sec/veh)	3.8			0.0			2.2			0.5			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & West Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.8	0.0	2.8	0.0	0.2	0.1	2.1	0.3	0.0	1.4
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	45	0	45	0	0	0	20	20	0	
		Approach Delay (sec/veh)	0.0			4.3			0.2			1.9			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & Single-Family Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	18	0	18	0	0	0	0	0	0	
		Approach Delay (sec/veh)	0.0			4.1			0.1			0.0			
		Approach LOS	A			A			A			A			

Year 2045 Conditions - AM Peak Hour

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	CSAH 46 & Kendale Drive	Movement Delay (sec/veh)	1.5	0.3	0.8	1.9	1.0	0.8	0.0	0.0	2.4	0.0	0.4	3.0	0.8
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	15	0	0	11	0	0	0	0	33	0	0	29	
		Approach Delay (sec/veh)	0.4			1.0			2.4			2.7			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Signal	CSAH 46 & Buck Hill Road	Movement Delay (sec/veh)	10.1	5.8	0.9	10.4	4.7	2.9	24.3	23.2	4.2	35.5	17.5	2.6	10.8
		Movement LOS	B	A	A	B	A	A	C	C	A	D	B	A	B
		Movement 95th Queue (ft)	22	71	19	70	39	22	40	40	52	166	38	20	
		Approach Delay (sec/veh)	5.7			5.4			9.7			31.1			
		Approach LOS	A			A			A			C			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Buck Hill Road & East Access	Movement Delay (sec/veh)	5.6	0.0	3.4	0.0	0.0	0.0	2.7	1.2	0.0	0.0	0.5	0.0	1.9
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	58	0	58	0	0	0	19	19	0	0	0	0	
		Approach Delay (sec/veh)	3.6			0.0			1.5			0.5			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & West Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.8	0.0	2.5	0.0	0.3	0.1	2.0	0.2	0.0	1.9
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	41	0	41	0	0	0	17	17	0	
		Approach Delay (sec/veh)	0.0			4.2			0.2			1.9			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & Single-Family Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.3
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	23	0	23	0	0	0	0	0	0	
		Approach Delay (sec/veh)	0.0			4.7			0.2			0.0			
		Approach LOS	A			A			A			A			

Year 2045 Conditions - PM Peak Hour

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	CSAH 46 & Kendale Drive	Movement Delay (sec/veh)	3.5	0.4	0.0	3.6	1.4	1.6	0.0	0.0	2.5	0.0	0.5	31.7	2.0
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	D	A
		Movement 95th Queue (ft)	29	0	0	32	0	3	0	0	25	37	37	39	
		Approach Delay (sec/veh)	0.6			1.5			2.5			28.8			
		Approach LOS	A			A			A			D			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Signal	CSAH 46 & Buck Hill Road	Movement Delay (sec/veh)	12.8	12.0	1.7	14.3	6.3	3.7	21.7	17.5	5.0	30.1	18.7	4.2	11.4
		Movement LOS	B	B	A	B	A	A	C	B	A	C	B	A	B
		Movement 95th Queue (ft)	27	111	17	97	56	47	53	44	65	183	63	36	
		Approach Delay (sec/veh)	11.3			7.2			8.9			24.7			
		Approach LOS	B			A			A			C			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Buck Hill Road & East Access	Movement Delay (sec/veh)	8.5	0.0	3.8	0.0	0.0	0.0	3.2	1.7	0.0	0.0	0.5	0.2	2.0
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	59	0	59	0	0	0	48	48	0	0	4	4	
		Approach Delay (sec/veh)	4.2			0.0			2.2			0.5			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & West Access	Movement Delay (sec/veh)	0.0	0.0	0.0	23.4	0.0	2.5	0.0	0.3	0.2	2.2	0.6	0.0	4.0
		Movement LOS	A	A	A	C	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	57	0	57	0	0	0	23	23	0	
		Approach Delay (sec/veh)	0.0			19.2			0.3			2.0			
		Approach LOS	A			C			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & Single-Family Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	20	0	20	0	0	0	0	0	0	
		Approach Delay (sec/veh)	0.0			4.3			0.1			0.0			
		Approach LOS	A			A			A			A			

**CITY OF LAKEVILLE
DAKOTA COUNTY, MINNESOTA**

**TIMBERLAND PARTNERS, INC.
CONDITIONAL USE PERMIT**

FINDINGS OF FACT AND RECOMMENDATION

On July 18, 2024 the Lakeville Planning Commission met at its regularly scheduled meeting to consider the application of Timberland Partners, Inc. for a conditional use permit to allow multiple family townhome and recreational buildings on a single parcel in the M-1, Mixed Use I-35 Corridor District. The Planning Commission conducted a public hearing on the proposed conditional use permit preceded by published and mailed notice. The applicant was present and the Planning Commission heard testimony from all interested persons wishing to speak.

FINDINGS OF FACT

1. The property is located in Planning District No. 1 of the 2040 Comprehensive Land Use Plan, which guides the property for corridor mixed use, which includes multi-family residential.
2. The property is zoned M-1, Mixed Use I-35 Corridor District.
3. The legal description of the property is:

See Exhibit A

4. Section 11-4-3E of the City of Lakeville Zoning Ordinance provides that a conditional use permit may not be issued unless certain criteria are satisfied. The criteria and our findings regarding them are:
 - a. **The proposed action has been considered in relation to the specific policies and provisions of and has been found to be consistent with the official City Comprehensive Plan.**

Finding: The multi-family townhomes and recreation building use of the property is consistent with the 2040 Comprehensive Land Use Plan and District 1 recommendations of the Comprehensive Plan.

- b. **The proposed use is or will be compatible with present and future land uses of the area.**

Finding: The multi-family townhomes and recreation building on a single parcel is compatible with existing land uses in the area given compliance with the stipulations listed in the July 12, 2024 planning report.

- c. **The proposed use conforms with all performance standards contained in the Zoning Ordinance.**

Finding: Provided compliance with stipulations of the conditional use permit, the multi-family townhomes and recreation building on a single parcel will conform to all performance standards contained in the Zoning Ordinance.

- d. **The proposed use can be accommodated with existing public services and will not overburden the City's service capacity.**

Finding: The subject property is within the existing MUSA. The property is served with city sanitary sewer and water. The multi-family townhomes and recreation building will not have a negative impact on the City's service capacity.

- e. **Traffic generation by the proposed use is within capabilities of streets serving the property.**

Finding: The multi-family townhomes and recreation building use on a single parcel will not overburden the streets serving the property.

5. The planning report dated July 12, 2024 prepared by Frank Dempsey, AICP, Associate Planner is incorporated herein.

RECOMMENDATION

The Planning Commission recommends that the City Council approve the conditional use permit conditioned upon compliance with the planning report prepared by Frank Dempsey, AICP, Associate Planner dated July 12, 2024.

DATED: July 18, 2024

LAKEVILLE PLANNING COMMISSION

BY: _____
Jenna Majorowicz, Chair

EXHIBIT A

Legal Description

That part of the West 722.00 feet of the Northeast Quarter of the Northwest Quarter of Section 1, Township 114, Range 21, Dakota County, Minnesota, lying Northerly of Dakota County Right of Way Map no. 145, according to the recorded map thereof, Dakota County, Minnesota except that part lying Westerly, Southwesterly and Westerly of the following described line:

Commencing at the Northeast corner of said Northeast Quarter of the Northwest Quarter; thence North 89 degrees 45 minutes 28 seconds West, an assumed bearing along the North line of the Northeast Quarter of the Northwest Quarter of said Section 1, a distance of 1064.56 feet to the point of beginning of the line to be described; thence South 00 degrees 45 minutes 50 seconds West, a distance of 385.50 feet; thence Southeasterly along a non-tangential curve concave to the Southwest, having a radius of 140.00 feet, a included angle of 75 degrees 03 minutes 19 seconds, an arc length of 183.39 feet and a chord bearing of South 36 degrees 12 minutes 31 seconds East; thence South 01 degrees 19 minutes 08 seconds West, tangent to last described curve, a distance of 307.15 feet to the Northerly line of said Dakota County Right of Way Map No. 145 and there terminating.

AND

That part of the Northeast Quarter of the Northwest Quarter of Section 1, Township 114, Range 21, Dakota County, Minnesota lying Northerly and Northwesterly of Dakota County Right of Way Map No. 145, according to the recorded map thereof, Dakota County, Minnesota, and Easterly of the West 722.00 feet of said Northeast Quarter of the Northwest Quarter, according to the United States Government Survey thereof and situate in Dakota County, Minnesota.



Memorandum

To: Frank Dempsey, Associate Planner
From: Jon Nelson, Assistant City Engineer
McKenzie L. Cafferty, Environmental Resources Manager
Joe Masiarchin, Parks and Recreation Director
Copy: Zach Johnson, City Engineer
Julie Stahl, Finance Director
Dave Mathews, Building Official
Tina Goodroad, Community Development Director
Date: July 8, 2024
Subject: Sundance Lakeville Second Addition

- Preliminary Plat Review
- Preliminary Grading and Erosion Control Plan Review
- Preliminary Tree Preservation Review
- Preliminary Utility Plan Review

BACKGROUND

Timberland Partners, LLC has submitted preliminary plat applications for a development to be known as Sundance Lakeville Second Addition. The proposed subdivision is located north of and adjacent to 162nd Street West (CSAH 46), west of and adjacent to Buck Hill Road, and including and adjacent to Kendale Drive. The parent parcels consist of one metes and bounds parcel (PID No. 220011037020) zoned RM-1, Medium Density Residential District, RST-2-, Single- and Two-Family Residential District, and C-3, General Commercial District.

The preliminary plat consists of nine (9) single family lots, thirteen (13) attached townhome lots, and one (1) clubhouse lot within one (1) block, and one (1) outlot on 14.74 acres. The Developer is dedicating 0.50 acres as Kenyon Court right-of-way.

The outlots created with the preliminary plat shall have the following use:

Outlot A: Stormwater Management Basin; to be deeded to the City (0.22 acres)

The proposed development will be completed by:

Developer:	Timberland Partners, LLC
Engineer/Surveyor:	Alliant Engineering

SITE CONDITIONS

The Sundance Lakeville Second Addition site consists of undeveloped agricultural land and wooded areas generally draining north to south. There are two barns and a property access on the south end of the site. There is an overhead utility line on the north end of the site.

EASEMENTS

There are no existing easements on the parent parcel that will be vacated with the preliminary plat.

STREET AND SUBDIVISION LAYOUT

162nd Street West (CSAH 46)

Sundance Lakeville Second Addition is located north of and adjacent to 162nd Street West, a minor arterial roadway, as identified in the City's Transportation Plan. 162nd Street West is constructed as a four-lane divided urban roadway adjacent to the preliminary plat. The existing right-of-way is a total of 150-ft as shown on the preliminary plat. No additional right-of-way is required. Site access shall be modified at the intersection of Kendale Drive and 162nd Street West in accordance with the requirements set forth by the Dakota County Plat Commission.

Buck Hill Road

Sundance Lakeville Second Addition is located west of and adjacent to Buck Hill Road, a local roadway. Access for the development is proposed at Buck Hill Road. Buck Hill Road is designated as a 60-foot-wide urban road with a sidewalk along one side, within a varying width right-of-way. The Developer shall construct improvements along Buck Hill Road as determined with the first phase final plat.

Kendale Drive

Sundance Lakeville Second Addition is located adjacent to and including Kendale Drive, a local roadway. Kendale Drive is designated as a 32-foot-wide rural roadway. The Developer shall improve Kendale Drive as an urban roadway section on the east side. Kendale Drive was dedicated 60-feet of right-of-way to the City with the Sundance Lakeville final plat. The Sundance Lakeville Second Addition final plat shall show Outlot A, Sundance Lakeville as right-of-way dedicated to the City. Site access shall be modified at the intersection of Kendale Drive and 162nd Street West in accordance with the requirements set forth by the Dakota County Plat Commission.

Kenyon Avenue

Development of Sundance Lakeville Second Addition includes the construction of Kenyon Court, a local roadway. Kenyon Court is designed as a 32-foot-wide urban roadway terminating in a cul-de-sac. The Developer is dedicating the necessary right-of-way.

Private Drives

Development of Sundance Lakeville Second Addition includes the construction of a privately owned and maintained roadway network providing driveway access to the attached townhome units. The private roadway network is designed as 24-foot-wide urban roadway, with the exception of a 32-foot-wide urban roadway connecting Buck Hill Road and Kendale Drive. The Developer shall dedicate a drainage and utility easement over the private roadway. The City shall not be responsible for any repairs (including cost) to the private roadway due to maintenance within the easement area.

CONSTRUCTION ACCESS

Construction traffic access and egress for grading, utility and street construction will be determined with each phase of construction.

PARKS, TRAILS, AND SIDEWALKS

Development of Sundance Lakeville Second Addition includes the construction of public sidewalks. Five-foot-wide concrete sidewalks, with pedestrian curb ramps, will be installed along one side of Kendale Drive from 162nd Street West to Dupont Avenue. The Developer will be credited for sidewalk installed between the western plat boundary and Dupont Avenue.

The City's Parks, Trails and Open Space Plan does not designate a future neighborhood park within Sundance Residential. The Park Dedication requirement has not been collected on the parent parcels and shall be satisfied through a cash contribution with the final plat. Only area outside of wetlands, wetland buffers and stormwater basins is to be credited or compensated for park dedication purposes.

UTILITIES

SANITARY SEWER

Sundance Lakeville Second Addition is located within subdistricts CL-41200 of the Crystal Lake sanitary sewer district, as identified in the City's Comprehensive Sewer Plan. Wastewater will be conveyed through sanitary sewer to the northern trunk monitored by meter M630 and continue to the Seneca Wastewater Treatment Facility.

Sundance Lakeville Second Addition includes the extension of public sanitary sewer. 8-inch sanitary sewer will be extended from Kendale Drive through Kenyon Court. City sanitary sewer lift station No. 26 is under construction in conjunction with Sundance Residential. The Developer shall pay a cash fee for construction of sanitary sewer lift station No. 26. The fee shall be calculated based on the development impact to the overall sanitary flow to the lift station.

The Sanitary Sewer Availability Charge has not been collected on the parent parcels and will be required with the final plat. The fee will be based on the current rate in effect at the time of final plat approval.

WATERMAIN

Development of Sundance Lakeville Second Addition includes the extension of public watermain. 8-inch watermain will be extended within the subdivision from 8-inch watermain extended onto a private drive constructed with the Sundance Lakeville development. The 8-inch watermain extends to the subdivision from Buck Hill Road. 8-inch watermain shall be extended along Kendale Drive from 162nd Street West to Dupont Avenue. The 8-inch watermain installed along Kendale Drive shall extend through Kenyon Court to the northern terminus of the cul-de-sac. The Developer will be credited for watermain installed between the western plat boundary and Dupont Avenue. The City's Comprehensive Water Plan does not identify any trunk watermain improvements within the proposed plat.

OVERHEAD LINES

An overhead electric transmission line and poles are located along the north side of the parent parcel. The transmission line is a high voltage line and is therefore not required to be buried, consistent with the City's Public Ways and Property Ordinance.

DRAINAGE AND GRADING

Sundance Lakeville Second Addition is located within subdistricts CL-007, CL-009, and CL-010 of the Crystal Lake stormwater district, as identified in the City's Water Resources Management Plan.

Development of Sundance Lakeville Second Addition includes the construction of one publicly owned and maintained stormwater management basin and three privately-owned and maintained stormwater management basins to collect and treat the stormwater runoff generated from the site. Three of the basins will ultimately outlet to the storm sewer along Kendale Drive to the west. One basin will outlet to the storm sewer along 162nd Street West to the south. The Developer shall enter into a maintenance agreement and grant an easement to the City over the private stormwater improvements. The public stormwater management basin will be located within Outlot A which will be deeded to the City with the final plat. The stormwater management design is consistent with City ordinance requirements.

The temporary basin constructed with Sundance Lakeville shall be removed and restored in accordance with the National Pollution Discharge Elimination System General Stormwater Permit requirements.

The final grading plan shall identify all fill lots in which the building footings will be placed on fill material. The grading specifications shall also indicate that all embankments meet FHA/HUD 79G specifications. The Developer shall certify to the City that all lots with footings

placed on fill material are appropriately constructed. Building permits will not be issued until a soils report and an as-built certified grading plan have been submitted and approved by City staff.

Sundance Lakeville Second Addition contains more than one acre of site disturbance. A National Pollution Discharge Elimination System General Stormwater Permit for construction activity is required from the Minnesota Pollution Control Agency for areas exceeding one acre being disturbed by grading. A copy of the Notice of Stormwater Permit Coverage must be submitted to the City upon receipt from the MPCA.

STORM SEWER

Development of Sundance Lakeville Second Addition includes the construction of public and private sewer systems. Public storm sewer will be installed within the subdivision to collect and convey stormwater runoff generated from within the public right-of-way and lots to the public stormwater management basin located within Outlot A.

Draintile construction is required in areas of non-granular soils within Sundance Lakeville Second Addition for the street sub-cuts and lots. Any additional draintile construction, including perimeter draintile required for building footings, which is deemed necessary during construction shall be the developer's responsibility to install and finance.

The Storm Sewer Charge has not been collected on the parent parcels and must be collected with the Sundance Residential final plat.

Final locations and sizes of all storm sewer facilities will be reviewed by City staff with the final construction plans.

FEMA FLOODPLAIN ANALYSIS

Sundance Lakeville Second Addition is shown on the Flood Insurance Rate Map (FIRM) as Zone X by the Federal Emergency Management Agency (FEMA). Based on this designation, there are no areas in the plat located within a Special Flood Hazard Area (SFHA), as determined by FEMA.

WETLANDS

A wetland delineation was completed and reviewed by City Staff. No wetlands were identified on the site.

TREE PRESERVATION

A tree preservation plan was submitted by the developer for the entirety of the Sundance subdivision. There are 783 significant trees located within the preliminary plat boundaries. The tree preservation plan proposes to save 643 of the significant trees on site. A tree preservation plan for Sundance Lakeville Second Addition shall be submitted prior to

issuance of a city grading permit. Significant trees, as identified in the Lakeville Subdivision Ordinance, shall be protected and preserved through termination of all grading and construction activities.

EROSION CONTROL

The Developer is responsible for obtaining a MPCA Construction Permit for the site as well as developing a SWPPP for the site prior to construction. The permit requires that all erosion and sediment BMPS be clearly outlined in a site's SWPPP. Changes made throughout construction must be documented in the SWPPP.

Additional erosion control measures may be required during construction as deemed necessary by City staff. Any additional measures required shall be installed and maintained by the developer.

RECOMMENDATION

Engineering recommends approval of the preliminary plat, grading and erosion control plan, tree preservation, and utility plan for Sundance Lakeville Second Addition, subject to the requirements and stipulations within this report.

Sundance Lakeville Traffic Impact Study

Lakeville, MN

Prepared For:

Timberland Partners, Inc.
8500 Normandale Lake Blvd.
Suite 700
Minneapolis, MN 55437



Prepared By:

Nick Grage, PE, PTOE, RSP₁

Alliant Engineering, Inc.
733 Marquette Ave, Suite 700
Minneapolis, MN 55402



ALLIANT

**Final Report
May 23, 2024**

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1.0 Introduction

Alliant Engineering has completed a traffic impact study for the proposed Sundance Lakeville residential development located in the northwest quadrant of the County State Aid Highway 46 (CSAH 46) & Buck Hill Road intersection in Lakeville, MN (see **Figure 1**). The main objectives of this study are to evaluate existing traffic operations within the study area, identify potential traffic impacts to the adjacent roadway network due to development generated trips, and recommend improvements to address identified issues. The assumptions, analysis, and study conclusions/recommendations offered for consideration are as follows.

2.0 Existing Conditions

The existing conditions were reviewed to establish a baseline for identifying any future impacts associated with the proposed development. The evaluation of existing conditions includes intersection turning movement counts, field observations, and an intersection operations analysis.

2.1 Study Area Intersections

In consultation with City of Lakeville staff, the following study intersections were identified:

- CSAH 46 (162nd Street W) & Kendale Drive
- CSAH 46 & Buck Hill Road

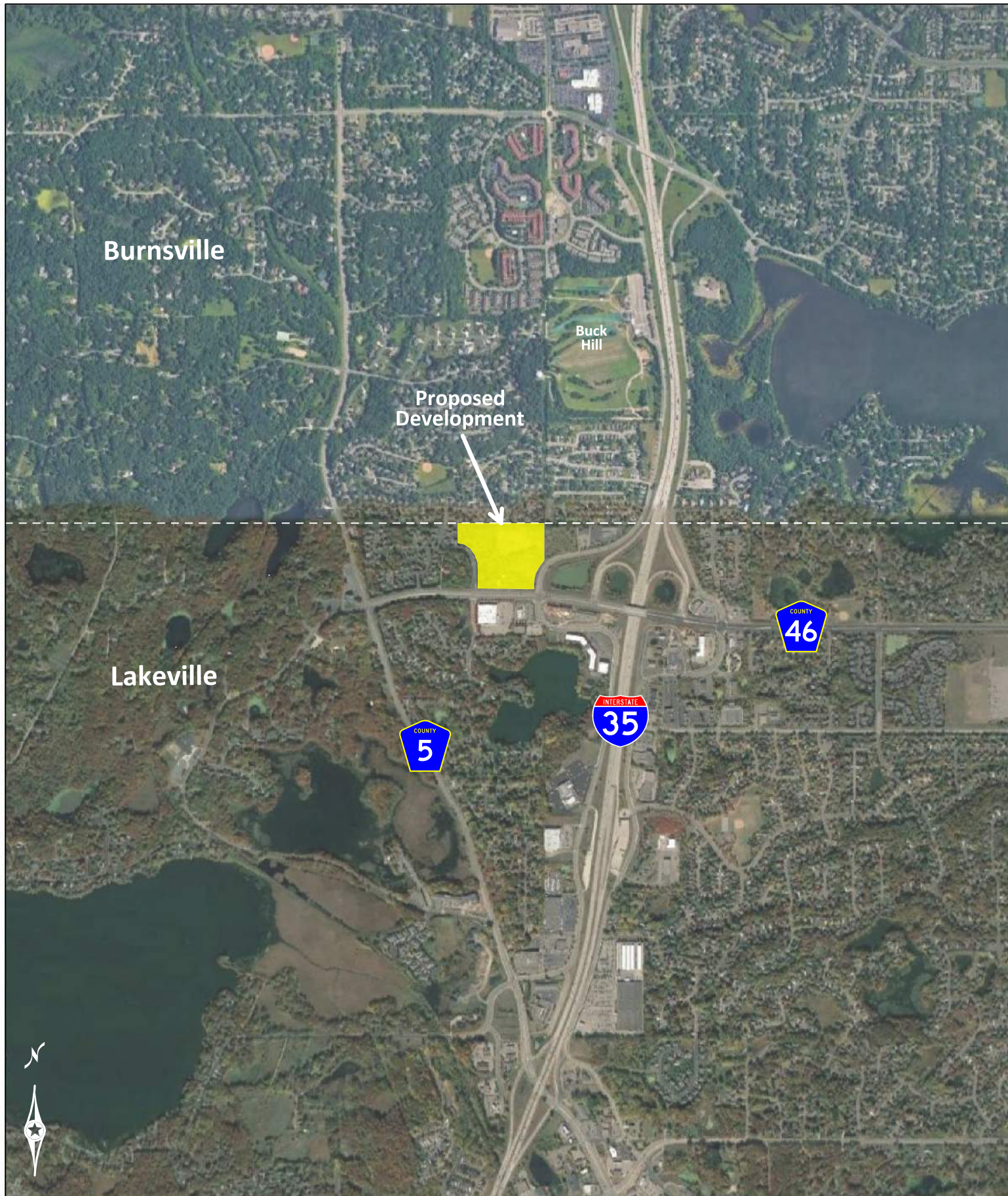
2.2 Data Collection

2.2.1 Traffic Volumes

To document existing conditions, weekday turning movement counts were collected at the study intersections by Alliant Engineering in August 2023 over the following time periods:

- AM Peak Period: 6:00-9:00 a.m.
- PM Peak Period: 4:00-7:00 p.m.

The existing peak hour traffic volumes at the study intersections are shown in **Figure 2**. Collected turning movement counts are included in **Appendix A**. Previously collected 2017 and 2021 turning movement counts, including applied adjustments to 2021 counts to account for any lingering impacts from the COVID-19 pandemic, were no longer considered as traffic volumes are considered to have normalized throughout the greater Twin Cities area.

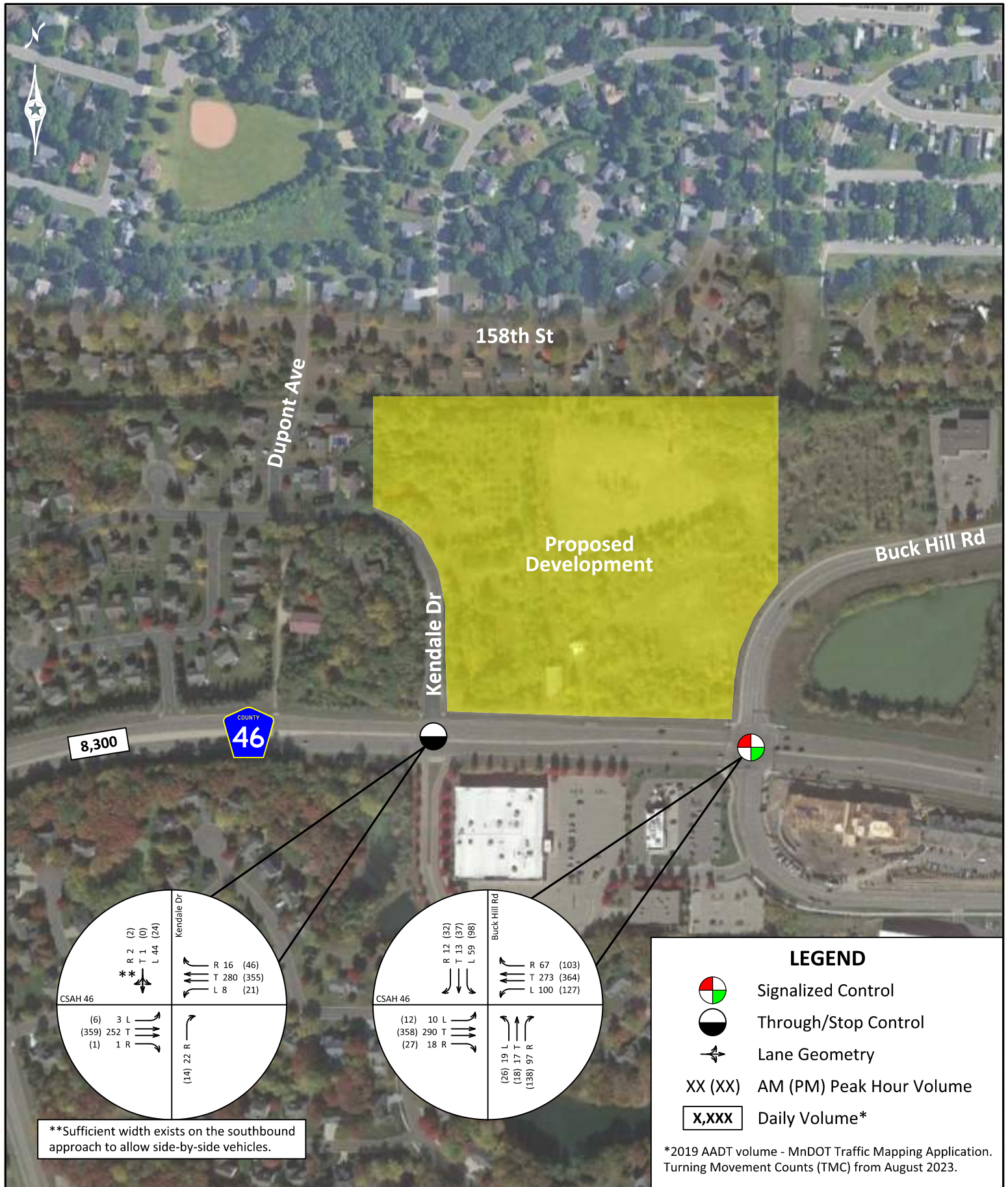


Sundance Lakeville TIS

Figure 1
Project Location



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Sundance Lakeville TIS



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Figure 2
Existing Conditions

2.2.2 Roadway/Intersection Characteristics

Field observations were completed to identify roadway and intersection characteristics within the study area (i.e., geometry, posted speed limits, and traffic controls), which are summarized in **Table 1** and **Table 2**.

Table 1 – Roadway Characteristics

Roadway	Cross-Section	Speed Limit	Functional Classification
CSAH 46	4-Lane Divided	45 mph	Minor Arterial
Kendale Drive	2-Lane Undivided	30 mph	Local
Buck Hill Road	3-Lane Undivided	40 mph	Collector

Table 2 – Intersection Characteristics

Intersection	Traffic Control	Lane Designations by Approach ⁽¹⁾			
		NB	SB	EB	WB
CSAH 46 & Kendale Drive	Through/Stop	R	LTR ⁽²⁾	L/T/T/R	L/T/T/R
CSAH 46 & Buck Hill Road	Traffic Signal	L/T/R	L/T/R	L/T/T/R	L/T/T/R

(1) L=Left-Turn, T=Through, R=Right-Turn

(2) Dakota County plans to restrict Kendale Drive to a three-quarter access, eliminating SB left-turn and through movements

2.2.3 Pedestrian/Bicycle Accommodations

Existing pedestrian/bicycle accommodations within the study area were also documented:

- Mixed-use trails run along both the north and south sides of CSAH 46
- A sidewalk runs along the west side of Buck Hill Road

2.3 Traffic Operations Analysis

An existing conditions traffic operations analysis was completed using Synchro/SimTraffic software to establish a baseline condition to which future traffic operations could be compared. Operations analysis results identify a Level of Service (LOS) which indicates the quality of traffic flow through an intersection. The LOS results are based on average delay per vehicle, which correspond to the delay threshold values presented in **Table 3**. Intersections are given a ranking from LOS A through LOS F. LOS A indicates the best traffic operation, with vehicles experiencing minimal delays. LOS F indicates an intersection where demand exceeds capacity, or a breakdown of traffic flow. The LOS D/E threshold for overall intersection operations is often used as the indicator of congestion in an urban area. For side-street stop-controlled intersections, a key measure of operational effectiveness is the side-street LOS. Long delays and poor LOS can occur on side-street approaches even if the overall intersection is functioning well, making side-street LOS a valuable design criterion.

Table 3 – Level of Service Criteria

Level of Service	Description	Delay per Vehicle (seconds)	
		Signalized Intersection	Unsignalized Intersection
A	Free Flow: Low volumes and no delays.	0 - 10	0 - 10
B	Stable Flow: Speeds restricted by travel conditions, minor delays.	> 10 - 20	> 10 - 15
C	Stable Flow: Speeds and maneuverability closely controlled due to higher volumes.	> 20 - 35	> 15 - 25
D	Stable Flow: Speeds considerably affected by change in operating conditions. High density traffic restricts maneuverability, volume near capacity.	> 35 - 55	> 25 - 35
E	Unstable Flow: Low speeds, considerable delay, volume at or slightly over capacity.	> 55 - 80	> 35 - 50
F	Forced Flow: Very low speeds, volume exceed capacity, long delays with stop and go traffic.	> 80	> 50

Source: Highway Capacity Manual, 6th Edition, Transportation Research Board, Exhibits 19-8, 20-2, 21-8, 22-8.

After LOS, the second component of the traffic operations analysis is a study of vehicular queuing, or the lineup of vehicles waiting to pass through an intersection. An intersection can operate with an acceptable LOS, but if queues from the intersection block entrances to turn lanes or adjacent driveways, unsafe operating conditions could result. The 95th percentile queue, or the length of queue with only a five percent probability of being exceeded during an analysis period, is considered the standard for design purposes.

The existing traffic operations analysis was performed at the study intersections for the volume adjusted a.m. and p.m. peak hours. Results of the existing traffic operations analysis, presented in **Table 4**, indicate that each study intersection currently operates at overall LOS A during the a.m. and p.m. peak hours. In addition, no significant side-street delay or queuing issues were observed in the field or traffic simulations. Detailed operations and queuing analysis results are presented in **Appendix B**.

Table 4 – Existing Traffic Operations Analysis

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 46 & Kendale Drive	A / A	1.2 / 6.8	A / A	1.2 / 9.4
CSAH 46 & Buck Hill Road	A / C	7.2 / 25.5	A / C	8.3 / 21.0

LOS Results: Overall Intersection / Worst Approach

Delay Results: Overall Intersection / Worst

3.0 Proposed Development

The proposed Sundance Lakeville development, shown in **Figure 3**, is expected to provide nine (9) single-family detached homes and 167 multi-family townhomes in the northwest quadrant of the CSAH 46/Buck Hill Road intersection in Lakeville. In addition, the development will include two single-story retail centers, covering about 26,500 sq. ft. combined, on the south side of the developed area. While the proposed development construction timeframe is currently unknown, a year 2025 completion was assumed for the purpose of this study. Access to the development is proposed at the following locations:

- Along Buck Hill Road approximately 250 feet north of CSAH 46 (East Access)
 - The outbound (eastbound) approach is expected to be stop controlled and consist of a single shared left-turn/right-turn lane
- Along Kendale Drive approximately 200 feet north of CSAH 46 (West Access)
 - The outbound (westbound) approach is expected to be stop controlled and consist of a single shared left-turn/right-turn lane
- Along Kendale Drive approximately 500 feet north of CSAH 46 (Single-Family Access)
 - The outbound (westbound) approach is expected to be stop controlled and consist of a single shared left-turn/right-turn lane

3.1 Trip Generation

Trip generation estimates for the proposed Sundance Lakeville development were completed for the weekday a.m. and p.m. peak hours as well as on a daily basis by utilizing the *Institute of Transportation Engineers Trip Generation Manual, 10th Edition (ITE TGM)*. Results of the trip generation estimates, shown in **Table 5**, indicate the proposed development is expected to generate approximately 136 a.m. peak hour trips, 268 p.m. peak hour trips, and 2,656 daily trips. The distribution of development generated trips, shown in **Figure 4**, was estimated based on a review of existing traffic volumes/patterns and by engineering judgement. This trip distribution was then applied to the estimated proposed development generated trips in the future conditions analysis years.

Table 5 – Trip Generation Estimates – Sundance Lakeville

Land Use (ITE Code)	Units	Size	AM Peak Hour Trips ⁽¹⁾			PM Peak Hour Trips ⁽¹⁾			Daily Trips
			Trips In	Trips Out	Total Trips	Trips In	Trips Out	Total Trips	
Single-Family Detached Housing (210)	Dwellings	9	2	4	6	5	3	8	86
Multifamily Housing (220)	Dwellings	167	16	51	67	54	31	85	1,126
Strip Retail Plaza [<40k sq ft] (822)	1000 sq ft.	26.5	38	25	63	87	88	175	1,444
Total Development Trips			56	80	136	146	122	268	2,656

Source: Institute of Transportation Engineers Trip Generation Manual, 11th Edition

Setting Assumption: General urban/suburban setting

(1) Peak hour of the adjacent roadway network



Sundance Lakeville TIS

Figure 3
Proposed Site Plan



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Sundance Lakeville TIS



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Figure 4
Trip Directional Distribution

4.0 Future Conditions

To determine potential traffic impacts associated with the proposed development, future conditions were evaluated using Synchro/SimTraffic software. The future conditions evaluated in this study were the year 2025 (i.e., one year after assumed development completion) and the year 2045 (20-year horizon).

4.1 Planned Developments and Infrastructure Improvements

Planned developments and infrastructure improvements that may influence future traffic volumes within the study area were reviewed.

4.1.1 *Planned Developments*

The Moments memory care senior living facility opened in December of 2018 in the southeast quadrant of the CSAH 46/Buck Hill Road intersection. A second phase of the Moments was expected to open later in year 2021 with 60 new memory care senior living units. Given the updated turning movement counts collected in August 2023 it is assumed that trips related to The Moments Phase II development are included in the analysis. It should be noted that a general background traffic growth rate was applied in the future conditions analysis and is expected to account for any variations in the limited trips added by The Moments Phase II development. No other planned developments within the study area are known at this time.

4.1.2 *Planned Infrastructure Improvements*

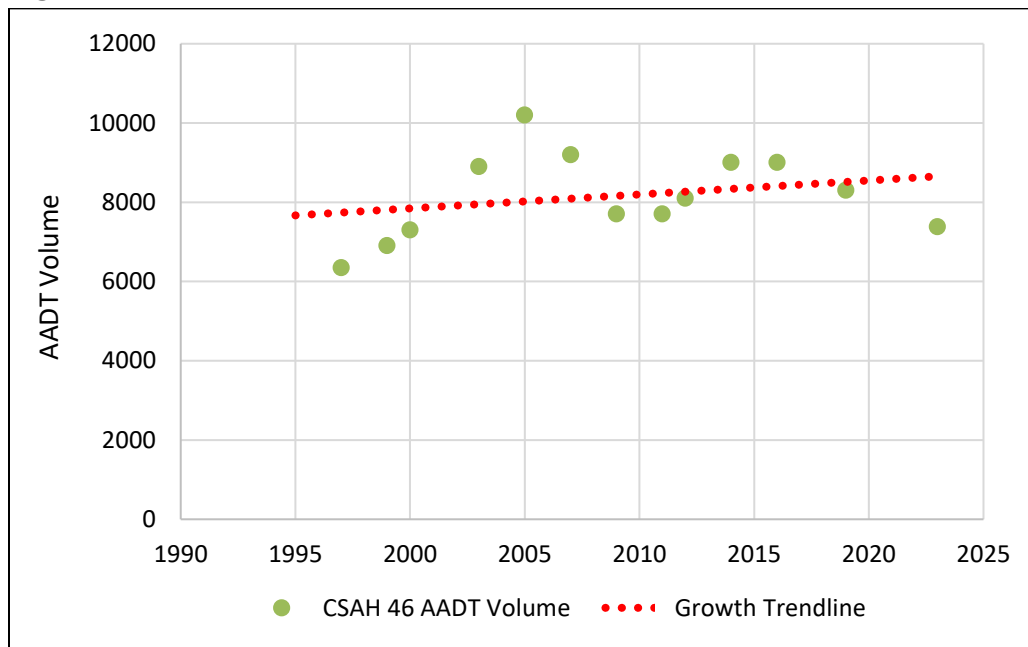
The existing configuration of the CSAH 46/Kendale Drive intersection restricts the northbound approach to a three-quarter access preventing northbound left-turn and through movements. This design was intentional, as Dakota County plans to also restrict the northbound approach to a three-quarter access as well, eliminating southbound left-turn and through movements. Once these movements are restricted, motorists destined for CSAH 46 eastbound and/or I-35 will likely utilize the proposed roadway internal to the development site to access CSAH 46 via Buck Hill Road. To account for this change in traffic patterns, volumes associated with the restricted movements were redistributed to the CSAH 46/Buck Hill Road intersection to evaluate 2025 and 2045 conditions.

According to information presented in the *Lakeville 2040 Comprehensive Plan*, no other significant roadway improvements are planned within the study area through the year 2040.

4.2 Background Traffic Growth

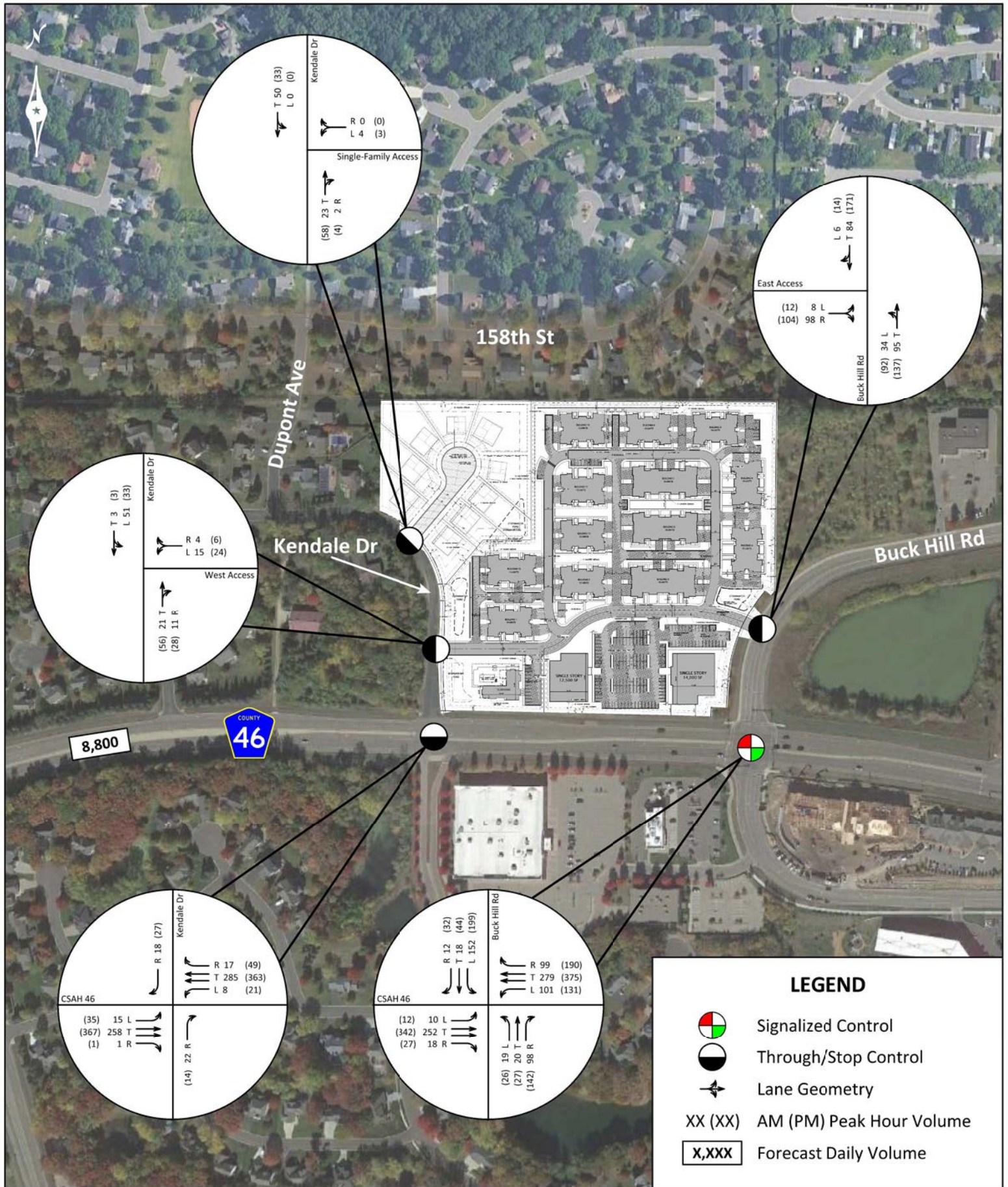
Historical annual average daily traffic (AADT) volumes along CSAH 46 were provided by the Minnesota Department of Transportation (MnDOT) via its online *Traffic Mapping Application*. The historical AADT data was reviewed to determine growth trends within the study area. The CSAH 46 AADT volume data, shown in **Figure 5**, indicates a slight growth trend over a 20+ year period. Based on this data, and traffic forecasts in the *Lakeville 2040 Comprehensive Plan*, a conservative annual growth rate of one percent was applied to existing traffic volumes to provide an estimate of future background traffic growth. The resultant year 2025 conditions and year 2045 conditions, a combination of background traffic volumes, redistributed trips, and trips generated by the proposed development, are shown in **Figure 6** and **Figure 7**, respectively.

Figure 5 – CSAH 46 Historical AADT Volume



Per Dakota County comments received on May 10th, 2024, historical AADT volumes were once again reviewed and compared to projections from the Dakota County 2040 Transportation Plan which suggests the study segment of CSAH 46 between CSAH 5 to I-35 West Ramp would reach 11,800 AADT in 2040. The most recent draft AADT available – 7,384 in 2023 – supports 2019 AADT volumes which show traffic volumes along CSAH 46 decreasing rather than increasing.

When 2040 AADT estimates were developed using the Dakota County Travel Demand Model the 2019 AADT of 8,300 along this segment of CSAH 46 was not utilized – instead the 2016 AADT of 9,000 was included, resulting in a higher projection for 2040. Applying an annual growth rate of one percent, as noted above, is still expected to be a conservative estimate of future traffic volumes which, based on 2019 and 2023 AADTs, is not expected to reach 11,800 per the Dakota County 2040 Transportation Plan.

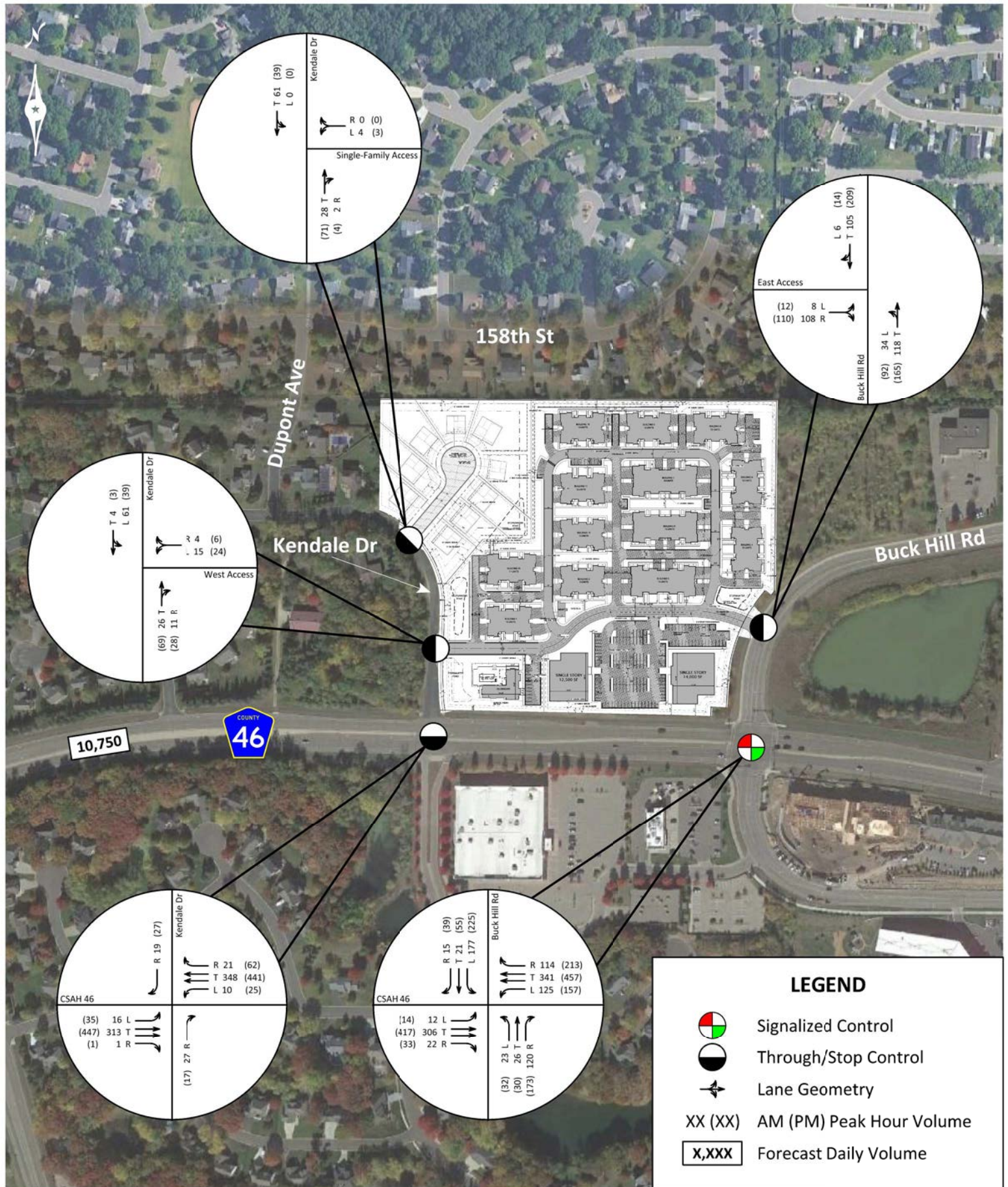


Sundance Lakeville TIS

Figure 6
Year 2025 Conditions



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Sundance Lakeville TIS

Figure 7
Year 2045 Conditions



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4.3 Traffic Operations Analysis

Future conditions traffic operations analyses were completed using Synchro/SimTraffic software to determine potential traffic impacts associated with the proposed development.

4.3.1 Year 2025 Conditions

Results of the year 2025 traffic operations analysis, presented in **Table 6**, indicate that all study intersections and proposed access locations are expected to operate at overall LOS B during the a.m. and p.m. peak hours. In addition, no significant side-street delay or queuing issues were observed in the traffic simulations. Detailed operations and queuing analysis results are presented in **Appendix B**.

Table 6 – Year 2025 Traffic Operations Analysis

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 46 & Kendale Drive	A / A	0.8 / 2.7	A / A	1.1 / 3.0
CSAH 46 & Buck Hill Road	A / C	9.6 / 29.0	B / C	10.3 / 23.7
Buck Hill Road & East Access	A / A	1.9 / 3.4	A / A	1.9 / 3.8
Kendale Drive & West Access	A / A	1.8 / 4.2	A / A	1.4 / 4.3
Kendale Drive & Single-Family Access	A / A	0.3 / 4.4	A / A	0.2 / 4.1

LOS Results: Overall Intersection / Worst Approach Delay Results: Overall Intersection / Worst Approach

4.3.2 Year 2045 Conditions

Results of the year 2045 traffic operations analysis, presented in **Table 7**, indicate that all study intersections and proposed access locations are expected to operate at overall LOS B or better during the a.m. and p.m. peak hours. In addition, no significant side-street delay or queuing issues were observed in the traffic simulations. Detailed operations and queuing analysis results are presented in **Appendix B**.

Table 7 – Year 2045 Traffic Operations Analysis

Intersection	AM Peak Hour		PM Peak Hour	
	LOS	Delay (s)	LOS	Delay (s)
CSAH 46 & Kendale Drive	A / A	0.8 / 2.7	A / D	2.0 / 28.8
CSAH 46 & Buck Hill Road	B / C	10.8 / 31.1	B / C	11.4 / 24.7
Buck Hill Road & East Access	A / A	1.9 / 3.6	A / A	2.0 / 4.2
Kendale Drive & West Access	A / A	1.9 / 4.2	A / C	4.0 / 19.2
Kendale Drive & Single-Family Access	A / A	0.3 / 4.7	A / A	0.2 / 4.3

LOS Results: Overall Intersection / Worst Approach Delay Results: Overall Intersection / Worst Approach

Generally, the proposed development is expected to have minimal impact on study area traffic operations even with the redistributed Kendale Drive southbound volumes. Therefore, no geometric or traffic control improvements are required from an operations perspective.

4.4 Additional Considerations

Additional considerations related to the proposed development include the following:

4.4.1 Development Site Through Traffic

The East Access and West Access of the proposed development will be linked by an east/west roadway running parallel to CSAH 46. In addition to proposed development trips, this new roadway will facilitate southbound Kendale Drive movements restricted by the planned conversion of the CSAH 46/Kendal Drive intersection to a three-quarter access by Dakota County. As a public road rather than a private road, traffic along Buck Hill Road destined for Kendale Drive may also utilize this new roadway but the impact is expected to be negligible.

4.4.2 Residential Neighborhood Through Traffic

For access to and from CSAH 5 west of the Sundance Lakeville site, a limited number of motorists associated with the proposed development, particularly those originating from and destined to the Single-Family Access, may choose to route through the adjacent residential neighborhood via Kendale Drive, Dupont Avenue, and 158th Street. However, the narrow, winding, and low-speed nature of these roadways is expected to make this route less attractive than CSAH 46 to the majority of residents associated with the proposed development. Consequently, less than 150 daily trips associated with the proposed Sundance Lakeville development would be expected to utilize the Kendale Drive, Dupont Avenue, and 158th Street residential neighborhood route.

5.0 Site Plan/Access Review

A review of the proposed site plan was completed to identify any issues and recommended potential improvements regarding vehicle ingress/egress, internal traffic circulation, and pedestrian/bicycle connectivity. The following key points are offered for consideration:

- The proposed East Access along Buck Hill Road is expected to provide approximately 250 feet of effective southbound vehicle storage between the driveway and CSAH 46. This distance is expected to accommodate the southbound forecast 95th percentile peak period queues at the CSAH 46/Buck Hill Road intersection through the year 2045.
 - Note: 95th percentile queues are defined as the queue length that only has a five-percent probability of being exceeded. Average queues are expected to be much shorter, and typically there is not a need to design turn lanes beyond this metric.
- The proposed internal roadways appear to adequately accommodate typical passenger vehicles. However, turning movements should be reviewed to ensure design vehicles such as garbage/recycling trucks have adequate accommodations to negotiate internal roadways.
- Establish appropriate traffic control (e.g., through/stop control) at internal roadway intersections to minimize driver confusion and the potential for conflicts.
- Sidewalks and/or trails within the proposed development should be extended to meet the existing sidewalk along Buck Hill Road and the existing trail along CSAH 46.

5.1 Sight Line Analysis

Alliant conducted a sight line analysis for the proposed accesses along both Kendale Drive and Buck Hill Road based on the current site plan and aerial imagery. Approximate sight distances measured for both accesses, looking to the northwest and northeast, are shown below in **Table 8**.

Table 8 – Sight Line Analysis

Access	Distance from Intersection	Speed Limit	Design Sight Distance	Measured Sight Distance
Kendale Drive & West Access	200 feet	30 mph	335 feet	310 feet
Buck Hill Road & East Access	250 feet	40 mph	445 feet	450 feet

All sight distances were conservatively compared to Table 9-7, Design Intersection Sight Distance for Case B1, Left Turn from Stop from the *AASHTO Policy on Geometric Design of Highways and Streets*, 7th Edition which assumes a passenger car as the design vehicle.

- Kendale Drive & West Access: The required intersection sight distance for a 30-mph roadway is 335 feet. Comparing the required distance to the approximate sight distances measured (310 feet), the sight distance to the northwest is not meeting by 25 feet. However, if the curvature of the roadway reduces approaching vehicle speeds to 25 mph the required distance would only be 280 feet and the approximate sight distance would be adequate. Furthermore, the proximity of the West Access to the stop-controlled intersection of CSAH 46/Kendale Drive would also reduce approaching vehicle speeds.
- Buck Hill Road & East Access: The required intersection sight distance for a 40-mph roadway is 445 feet. Comparing the required distance to the approximate sight distances measured, the sight distance to the northeast (450 feet) would be adequate.
 - The removal of scrub trees along the east side of Buck Hill Road may provide additional visibility for both eastbound motorists and northbound left-turning motorists if sight lines remain a concern.

Existing foliage, time of day (sunrise, sunset), seasonal variations, and stop bar placement may impact the actual site distances for stopped vehicles exiting either development access. Despite the Kendale Drive & West Access approximate sight distance being slightly below the required distance neither access is expected to pose a safety risk due to sight lines.

6.0 Conclusions and Recommendations

The following study conclusions and recommendations are offered for consideration:

- Results of the existing traffic operations analysis indicate that all study intersections currently operate at overall LOS A during the a.m. and p.m. peak hours. In addition, no significant side-street delay or queuing issues were observed in the field or traffic simulations.
- The proposed Sundance Lakeville development is expected to provide nine (9) single-family detached homes and 167 multi-family townhomes in the northwest quadrant of the CSAH 46/Buck Hill Road intersection in Lakeville. In addition, the development will include two single-story retail centers, covering about 26,500 sq. ft. combined, on the south side of the developed area. While the proposed development construction timeframe is currently unknown, a year 2025 completion was assumed for the purpose of this study.
 - The proposed development is expected to generate approximately 136 a.m. peak hour trips, 268 p.m. peak hour trips, and 2,656 daily trips.
- Results of the year 2025 traffic operations analysis indicate that all study intersections and proposed access locations are expected to operate at overall LOS B during the a.m. and p.m. peak hours with all study intersections and proposed access locations expected to operate at overall LOS B or better during the year 2045 a.m. and p.m. peak hours. In addition, no significant side-street delay or queuing issues were observed in the traffic simulations.
 - Generally, the proposed development is expected to have minimal impact on study area traffic operations even with the redistributed Kendale Drive southbound volumes. Therefore, no geometric improvements are required from an operations perspective.
- Additional considerations related to the proposed development include the following:
 - The new east/west roadway will facilitate southbound Kendale Drive movements restricted by the planned conversion of the CSAH 46/Kendal Drive intersection to a three-quarter access by Dakota County. As a public road rather than a private road, traffic along Buck Hill Road destined for Kendale Drive may also utilize this new roadway but the impact is expected to be negligible.
 - For access to and from CSAH 5 west of the Sundance Lakeville site, a limited number of motorists associated with the proposed development, particularly those originating from and destined to the Single-Family Access, may choose to route through the adjacent residential neighborhood via Kendale Drive, Dupont Avenue, and 158th Street. However, the narrow, winding, and low-speed nature of these roadways is expected to make this route less attractive than CSAH 46 to the majority of residents associated with the proposed development. Consequently, less than 150 daily trips associated with the proposed development would be expected to utilize the Kendale Drive, Dupont Avenue, and 158th Street residential neighborhood route.
- A review of the proposed site plan was completed to identify any issues and recommended potential improvements regarding vehicle ingress/egress, internal traffic circulation, and pedestrian/bicycle connectivity and is documented in **Section 5.0: Site Plan/Access Review**.

Appendix A – Collected Turning Movement Counts

ALLIANT ENGINEERING, INC.

733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: CSAH 46 (162nd St SW) & Kendale Dr
Date: 6/3/2021
Duration: 6:00-9:00, 16:00-19:00

Site Code: 360
Ref Pt: N/A
Page No: 1 of 3

All Vehicles (Cars & Trucks) Printed

Start Time	Kendale Dr Southbound						CSAH 46 (162nd St SW) Westbound						Kendale Dr Northbound						CSAH 46 (162nd St SW) Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
6:00	--	12	--	--	12	1	--	1	26	1	28	--	--	--	--	1	1	1	--	--	24	--	24	--	65	2
6:15	--	7	--	--	7	--	--	--	43	1	44	--	--	--	--	3	3	--	--	--	27	2	29	--	83	--
6:30	--	10	--	--	10	--	--	--	60	1	61	--	--	--	--	6	6	--	--	--	46	--	46	--	123	--
6:45	--	16	--	--	16	--	--	--	64	3	67	--	--	--	--	3	3	--	1	--	52	--	53	--	139	--
Hour Total	--	45	--	--	45	1	--	1	193	6	200	--	--	--	--	13	13	1	1	--	149	2	152	--	410	2
7:00	--	10	--	--	10	--	--	1	62	1	64	--	--	--	--	3	3	--	--	--	37	--	37	--	114	--
7:15	--	7	1	1	9	--	--	2	66	6	74	--	--	1	--	3	4	--	--	1	53	--	54	--	141	--
7:30	--	10	--	1	11	--	--	1	66	1	68	--	--	--	--	6	6	1	--	--	56	--	56	--	141	1
7:45	--	13	--	--	13	--	--	1	93	6	100	--	--	--	--	9	9	--	--	1	70	1	72	--	194	--
Hour Total	--	40	1	2	43	--	--	5	287	14	306	--	--	1	--	21	22	1	--	2	216	1	219	--	590	1
8:00	--	14	--	--	14	--	--	4	55	3	62	--	--	--	--	4	4	--	--	1	67	--	68	--	148	--
8:15	--	11	--	--	11	1	1	1	57	2	61	--	--	--	--	2	2	--	--	--	54	--	54	--	128	1
8:30	--	8	--	--	8	--	--	1	63	6	70	--	--	--	--	3	3	1	--	--	46	--	46	--	127	1
8:45	--	16	--	--	16	--	--	4	60	5	69	--	--	--	--	1	1	--	--	--	41	--	41	--	127	--
Hour Total	--	49	--	--	49	1	1	10	235	16	262	--	--	--	--	10	10	1	--	1	208	--	209	--	530	2
16:00	--	5	--	--	5	--	--	2	79	12	93	--	--	--	--	2	2	--	--	--	86	--	86	--	186	--
16:15	--	9	--	1	10	--	1	5	95	18	119	--	--	--	--	3	3	2	1	2	95	1	99	--	231	2
16:30	--	7	--	1	8	--	--	5	95	7	107	--	--	--	--	4	4	--	--	1	84	--	85	--	204	--
16:45	--	3	--	--	3	1	--	6	70	8	84	--	--	--	--	2	2	--	--	1	96	--	97	--	186	1
Hour Total	--	24	--	2	26	1	1	18	339	45	403	--	--	--	--	11	11	2	1	4	361	1	367	--	807	3
17:00	--	5	--	--	5	--	--	5	94	13	112	--	--	--	--	5	5	1	1	2	79	--	82	--	204	1
17:15	--	10	1	--	11	--	--	8	82	12	102	--	--	--	--	1	1	--	--	--	92	1	93	--	207	--
17:30	1	8	--	1	10	1	1	4	88	14	107	--	--	--	--	2	2	--	--	--	78	2	80	--	199	1
17:45	--	7	--	--	7	1	--	3	79	5	87	--	--	--	--	1	1	1	--	2	68	--	70	--	165	2
Hour Total	1	30	1	1	33	2	1	20	343	44	408	--	--	--	--	9	9	2	1	4	317	3	325	--	775	4
18:00	--	7	--	--	7	--	--	1	53	12	66	--	--	--	--	5	5	--	--	--	64	--	64	--	142	--
18:15	--	11	1	1	13	--	1	6	67	9	83	--	--	--	--	6	6	--	--	--	60	--	60	--	162	--
18:30	--	5	--	--	5	--	1	9	87	7	104	--	--	--	--	1	1	1	--	--	58	--	58	--	168	1
18:45	--	7	--	--	7	--	--	2	50	13	65	--	--	--	--	--	0	--	--	1	48	1	50	--	122	--
Hour Total	--	30	1	1	32	--	2	18	257	41	318	--	--	--	--	12	12	1	--	1	230	1	232	--	594	1
Grand Total	1	218	3	6	228	5	5	72	1654	166	1897	--	--	1	--	76	77	8	3	12	1481	8	1504	--	3706	13
% of App.	0.4%	95.6%	1.3%	2.6%			0.3%	3.8%	87.2%	8.8%			0.0%	1.3%	0.0%	98.7%			0.2%	0.8%	98.5%	0.5%				
% of Total	0.0%	5.9%	0.1%	0.2%	6.2%	38.5%	0.1%	1.9%	44.6%	4.5%	51.2%	0.0%	0.0%	0.0%	0.0%	2.1%	2.1%	61.5%	0.1%	0.3%	40.0%	0.2%	40.6%	0.0%		
Cars Total	1	217	3	6	227	5	5	71	1638	165	1879	--	--	--	--	75	75	6	3	11	1459	8	1481	--	3662	11
Cars % of Movement	100%	99.5%	100%	100%	99.6%	45.5%	100%	98.6%	99.0%	99.4%	99.1%	0.0%	0.0%	0.0%	0.0%	98.7%	97.4%	54.5%	100%	91.7%	98.5%	100%	98.5%	0.0%	98.8%	
Trucks Total	--	1	--	--	1	--	--	1	16	1	18	--	--	1	--	1	2	2	--	1	22	--	23	--	44	2
Trucks % of Movement	0.0%	0.5%	0.0%	0.0%	0.4%	0.0%	0.0%	1.4%	1.0%	0.6%	0.9%	0.0%	0.0%	100%	0.0%	1.3%	2.6%	#####	0.0%	8.3%	1.5%	0.0%	1.5%	0.0%	1.2%	

ALLIANT ENGINEERING, INC.

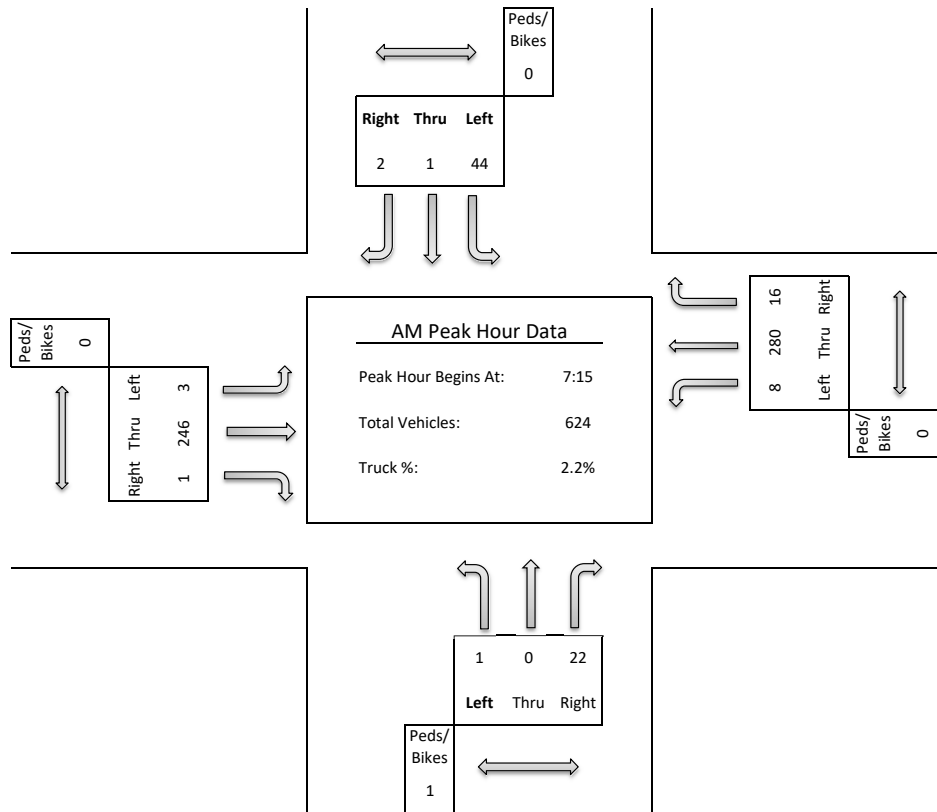
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Ref Pt: N/A
Page No: 2 of 3

All Vehicles (Cars & Trucks) Printed

Start Time	Kendale Dr Southbound						CSAH 46 (162nd St SW) Westbound						Kendale Dr Northbound						CSAH 46 (162nd St SW) Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
7:15	--	7	1	1	9	--	--	2	66	6	74	--	--	1	--	3	4	--	--	1	53	--	54	--	141	--
7:30	--	10	--	1	11	--	--	1	66	1	68	--	--	--	--	6	6	1	--	--	56	--	56	--	141	1
7:45	--	13	--	--	13	--	--	1	93	6	100	--	--	--	--	9	9	--	--	1	70	1	72	--	194	--
8:00	--	14	--	--	14	--	--	4	55	3	62	--	--	--	--	4	4	--	--	1	67	--	68	--	148	--
Hour Total	--	44	1	2	47	--	--	8	280	16	304	--	--	1	--	22	23	1	--	3	246	1	250	--	624	1
% of App.	0.0%	93.6%	2.1%	4.3%			0.0%	2.6%	92.1%	5.3%			0.0%	4.3%	0.0%	95.7%			0.0%	1.2%	98.4%	0.4%				
% of Total	0.0%	7.1%	0.2%	0.3%	7.5%	0.0%	0.0%	1.3%	44.9%	2.6%	48.7%	0.0%	0.0%	0.2%	0.0%	3.5%	3.7%	#####	0.0%	0.5%	39.4%	0.2%	40.1%	0.0%		
Cars Total	--	44	1	2	47	--	--	8	275	15	298	--	--	--	--	22	22	1	--	2	240	1	243	--	610	1
Cars % of Movement	0.0%	100%	100%	100%	100%	0.0%	0.0%	100%	98.2%	93.8%	98.0%	0.0%	0.0%	0.0%	100%	95.7%	#####		0.0%	66.7%	97.6%	100%	97.2%	0.0%	97.8%	
Trucks Total	--	--	--	--	0	--	--	--	5	1	6	--	--	1	--	--	1	--	--	1	6	--	7	--	14	--
Trucks % of Movement	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.0%	1.8%	6.3%	2.0%	--	0.0%	100%	0.0%	0.0%	4.3%	--	0.0%	33.3%	2.4%	0.0%	2.8%	--	2.2%	



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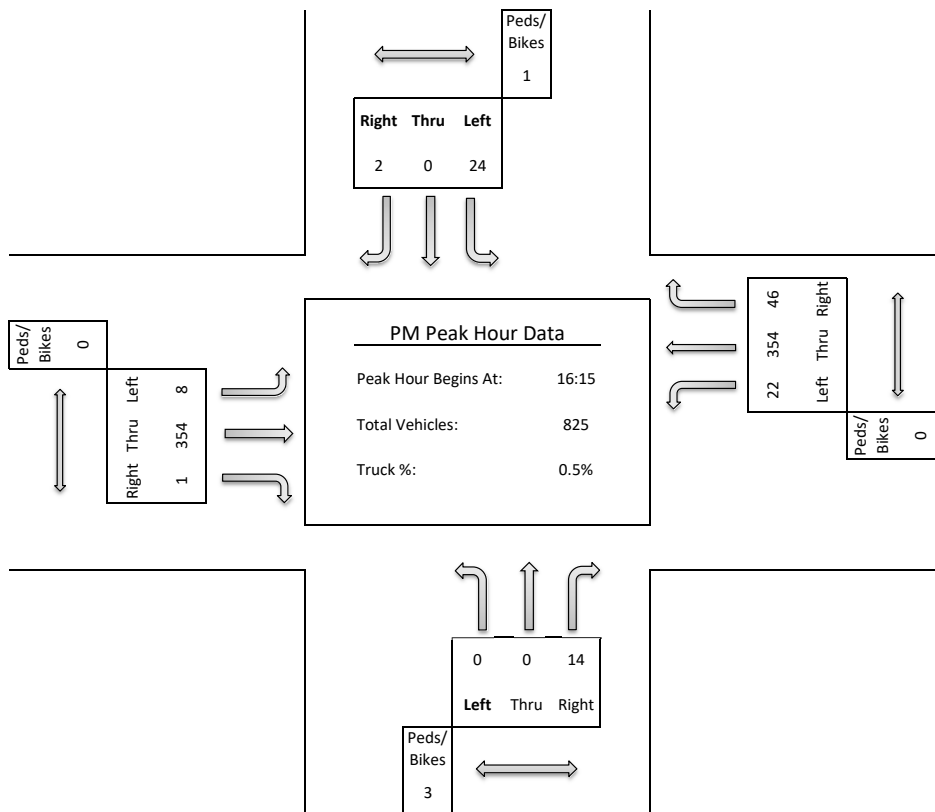
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: CSAH 46 (162nd St SW) & Kendale Dr
Date: 6/3/2021
Duration: 6:00-9:00, 16:00-19:00

Site Code: 360
Ref Pt: N/A
Page No: 3 of 3

All Vehicles (Cars & Trucks) Printed

Start Time	Kendale Dr Southbound						CSAH 46 (162nd St SW) Westbound						Kendale Dr Northbound						CSAH 46 (162nd St SW) Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
16:15	--	9	--	1	10	--	1	5	95	18	119	--	--	--	--	3	3	2	1	2	95	1	99	--	231	2
16:30	--	7	--	1	8	--	--	5	95	7	107	--	--	--	--	4	4	--	--	1	84	--	85	--	204	--
16:45	--	3	--	--	3	1	--	6	70	8	84	--	--	--	--	2	2	--	--	1	96	--	97	--	186	1
17:00	--	5	--	--	5	--	--	5	94	13	112	--	--	--	--	5	5	1	1	2	79	--	82	--	204	1
Hour Total	--	24	--	2	26	1	1	21	354	46	422	--	--	--	--	14	14	3	2	6	354	1	363	--	825	4
% of App.	0.0%	92.3%	0.0%	7.7%			0.2%	5.0%	83.9%	10.9%			0.0%	0.0%	0.0%	100%			0.6%	1.7%	97.5%	0.3%				
% of Total	0.0%	2.9%	0.0%	0.2%	3.2%	25.0%	0.1%	2.5%	42.9%	5.6%	51.2%	0.0%	0.0%	0.0%	0.0%	1.7%	1.7%	75.0%	0.2%	0.7%	42.9%	0.1%	####	0.0%		
Cars Total	--	24	--	2	26	1	1	21	351	46	419	--	--	--	--	13	13	3	2	6	354	1	363	--	821	4
Cars % of Movement	0.0%	100%	0.0%	100%	100%	25.0%	100%	100%	99.2%	100%	99.3%	0.0%	0.0%	0.0%	0.0%	92.9%	92.9%	75.0%	100%	100%	100%	100%	100%	0.0%	99.5%	
Trucks Total	--	--	--	--	0	--	--	--	3	--	3	--	--	--	--	1	1	--	--	--	--	--	0	--	4	--
Trucks % of Movement	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.0%	0.8%	0.0%	0.7%	--	0.0%	0.0%	0.0%	7.1%	7.1%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.5%	



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733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: CSAH 46 (162nd St SW) & Buck Hill Rd
Date: 8/23/2023
Duration: 6:00-9:00, 16:00-19:00

Site Code: 361
Ref Pt: N/A
Page No: 1 of 3

All Vehicles (Cars & Trucks) Printed

Start Time	Buck Hill Rd Southbound						CSAH 46 (162nd St SW) Westbound						Kenyon Ave Northbound						CSAH 46 (162nd St SW) Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
6:00	--	3	--	1	4	--	--	4	29	3	36	--	--	1	--	8	9	--	--	--	34	2	36	--	85	--
6:15	--	5	--	--	5	--	--	17	42	7	66	--	--	2	--	8	10	--	--	1	35	3	39	1	120	1
6:30	--	9	4	--	13	--	--	14	63	9	86	--	--	4	1	17	22	--	--	1	57	5	63	--	184	--
6:45	--	15	2	1	18	--	--	18	58	15	91	--	--	6	2	19	27	--	--	2	67	4	73	--	209	--
Hour Total	--	32	6	2	40	--	--	53	192	34	279	--	--	13	3	52	68	--	--	4	193	14	211	1	598	1
7:00	--	14	4	1	19	--	--	21	63	11	95	--	--	1	2	10	13	--	--	1	48	1	50	--	177	--
7:15	--	9	3	3	15	--	--	21	69	15	105	--	--	2	2	21	25	--	--	2	62	4	68	--	213	--
7:30	--	20	1	2	23	--	1	19	61	9	90	--	--	8	4	38	50	1	--	2	66	4	72	1	235	2
7:45	--	15	4	2	21	--	--	22	95	31	148	--	--	6	6	20	32	--	--	2	87	4	93	--	294	--
Hour Total	--	58	12	8	78	--	1	83	288	66	438	--	--	17	14	89	120	1	--	7	263	13	283	1	919	2
8:00	--	11	7	3	21	--	--	24	56	9	89	--	--	4	5	21	30	--	--	3	78	5	86	--	226	--
8:15	--	13	1	5	19	--	--	35	57	18	110	--	--	1	2	18	21	--	--	3	59	5	67	--	217	--
8:30	--	14	1	5	20	1	1	36	64	14	115	--	--	3	4	31	38	--	--	--	50	4	54	1	227	2
8:45	--	11	1	1	13	--	--	25	65	19	109	--	--	7	3	22	32	--	--	3	54	5	62	--	216	--
Hour Total	--	49	10	14	73	1	1	120	242	60	423	--	--	15	14	92	121	--	--	9	241	19	269	1	886	2
16:00	--	20	8	9	37	--	--	26	72	25	123	--	--	8	3	27	38	--	--	4	86	7	97	2	295	2
16:15	--	26	11	10	47	--	3	30	99	22	154	--	--	8	2	27	37	--	--	2	92	7	101	--	339	--
16:30	--	16	10	9	35	--	1	30	92	23	146	--	--	8	4	44	56	--	--	6	85	5	96	--	333	--
16:45	--	30	6	3	39	--	--	37	76	28	141	--	--	5	6	28	39	--	--	3	93	10	106	1	325	1
Hour Total	--	92	35	31	158	--	4	123	339	98	564	--	--	29	15	126	170	--	--	15	356	29	400	3	1292	3
17:00	--	26	10	10	46	--	1	30	97	30	158	--	--	5	6	39	50	--	--	1	88	5	94	--	348	--
17:15	--	25	9	8	42	--	--	24	93	40	157	--	--	8	3	21	32	--	--	6	91	3	100	--	331	--
17:30	--	28	6	3	37	--	--	29	96	28	153	--	--	9	6	33	48	--	--	5	77	6	88	--	326	--
17:45	--	27	4	11	42	--	1	24	65	34	124	--	--	7	7	21	35	--	--	4	64	6	74	3	275	3
Hour Total	--	106	29	32	167	--	2	107	351	132	592	--	--	29	22	114	165	--	--	16	320	20	356	3	1280	3
18:00	--	21	4	8	33	--	1	24	58	40	123	--	--	2	9	26	37	--	--	6	67	5	78	--	271	--
18:15	--	24	4	3	31	--	1	44	75	36	156	--	--	6	5	16	27	--	--	11	60	6	77	2	291	2
18:30	--	24	9	15	48	--	--	30	82	40	152	--	--	6	6	22	34	--	--	10	48	7	65	--	299	--
18:45	--	26	7	10	43	--	1	31	49	27	108	--	--	4	3	17	24	--	--	3	54	1	58	--	233	--
Hour Total	--	95	24	36	155	--	3	129	264	143	539	--	--	18	23	81	122	--	--	30	229	19	278	2	1094	2
Grand Total	--	432	116	123	671	1	11	615	1676	533	2835	--	--	121	91	554	766	1	--	81	1602	114	1797	11	6069	13
% of App.	0.0%	64.4%	17.3%	18.3%			0.4%	21.7%	59.1%	18.8%			0.0%	15.8%	11.9%	72.3%			0.0%	4.5%	89.1%	6.3%				
% of Total	0.0%	7.1%	1.9%	2.0%	11.1%	7.7%	0.2%	10.1%	27.6%	8.8%	46.7%	0.0%	0.0%	2.0%	1.5%	9.1%	12.6%	7.7%	0.0%	1.3%	26.4%	1.9%	29.6%	84.6%		
Cars Total	--	431	116	123	670	--	11	613	1657	531	2812	--	--	121	91	552	764	--	--	81	1578	114	1773	4	6019	4
Cars % of Movement	0.0%	99.8%	100%	100%	99.9%	0.0%	100%	99.7%	98.9%	99.6%	99.2%	0.0%	0.0%	100%	100%	99.6%	99.7%	0.0%	0.0%	100%	98.5%	100%	98.7%	#####	99.2%	
Trucks Total	--	1	--	--	1	1	--	2	19	2	23	--	--	--	--	2	2	1	--	--	24	--	24	7	50	9
Trucks % of Movement	0.0%	0.2%	0.0%	0.0%	0.1%	11.1%	0.0%	0.3%	1.1%	0.4%	0.8%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%	11.1%	0.0%	0.0%	1.5%	0.0%	1.3%	77.8%	0.8%	

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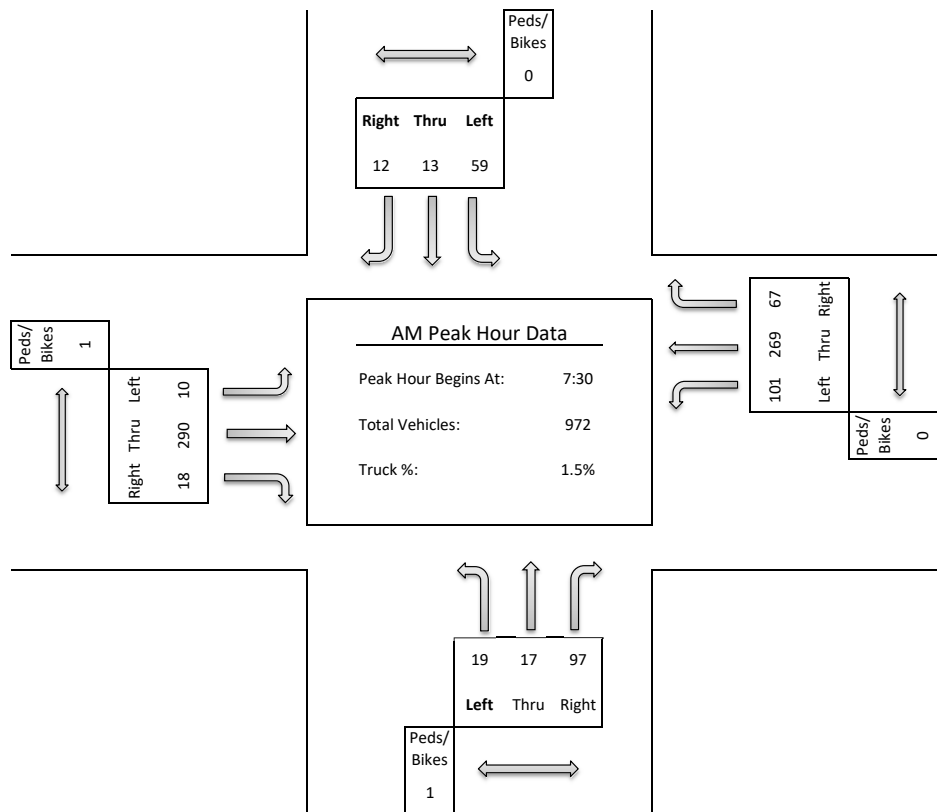
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: CSAH 46 (162nd St SW) & Buck Hill Rd
Date: 8/23/2023
Duration: 6:00-9:00, 16:00-19:00

Site Code: 361
Ref Pt: N/A
Page No: 2 of 3

All Vehicles (Cars & Trucks) Printed

Start Time	Buck Hill Rd Southbound						CSAH 46 (162nd St SW) Westbound						Kenyon Ave Northbound						CSAH 46 (162nd St SW) Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
7:30	--	20	1	2	23	--	1	19	61	9	90	--	--	8	4	38	50	1	--	2	66	4	72	1	235	2
7:45	--	15	4	2	21	--	--	22	95	31	148	--	--	6	6	20	32	--	--	2	87	4	93	--	294	--
8:00	--	11	7	3	21	--	--	24	56	9	89	--	--	4	5	21	30	--	--	3	78	5	86	--	226	--
8:15	--	13	1	5	19	--	--	35	57	18	110	--	--	1	2	18	21	--	--	3	59	5	67	--	217	--
Hour Total	--	59	13	12	84	--	1	100	269	67	437	--	--	19	17	97	133	1	--	10	290	18	318	1	972	2
% of App.	0.0%	70.2%	15.5%	14.3%			0.2%	22.9%	61.6%	15.3%			0.0%	14.3%	12.8%	72.9%			0.0%	3.1%	91.2%	5.7%				
% of Total	0.0%	6.1%	1.3%	1.2%	8.6%	0.0%	0.1%	10.3%	27.7%	6.9%	45.0%	0.0%	0.0%	2.0%	1.7%	10.0%	13.7%	50.0%	0.0%	1.0%	29.8%	1.9%	32.7%	50.0%		
Cars Total	--	58	13	12	83	--	1	100	264	67	432	--	--	19	17	97	133	--	--	10	281	18	309	--	957	--
Cars % of Movement	0.0%	98.3%	100%	100%	98.8%	--	100%	100%	98.1%	100%	98.9%	--	0.0%	100%	100%	100%	100%	--	0.0%	100%	96.9%	100%	97.2%	--	98.5%	
Trucks Total	--	1	--	--	1	--	--	--	5	--	5	--	--	--	--	--	0	1	--	--	9	--	9	1	15	2
Trucks % of Movement	0.0%	1.7%	0.0%	0.0%	1.2%	0.0%	0.0%	0.0%	1.9%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	0.0%	0.0%	3.1%	0.0%	2.8%	50.0%	1.5%	



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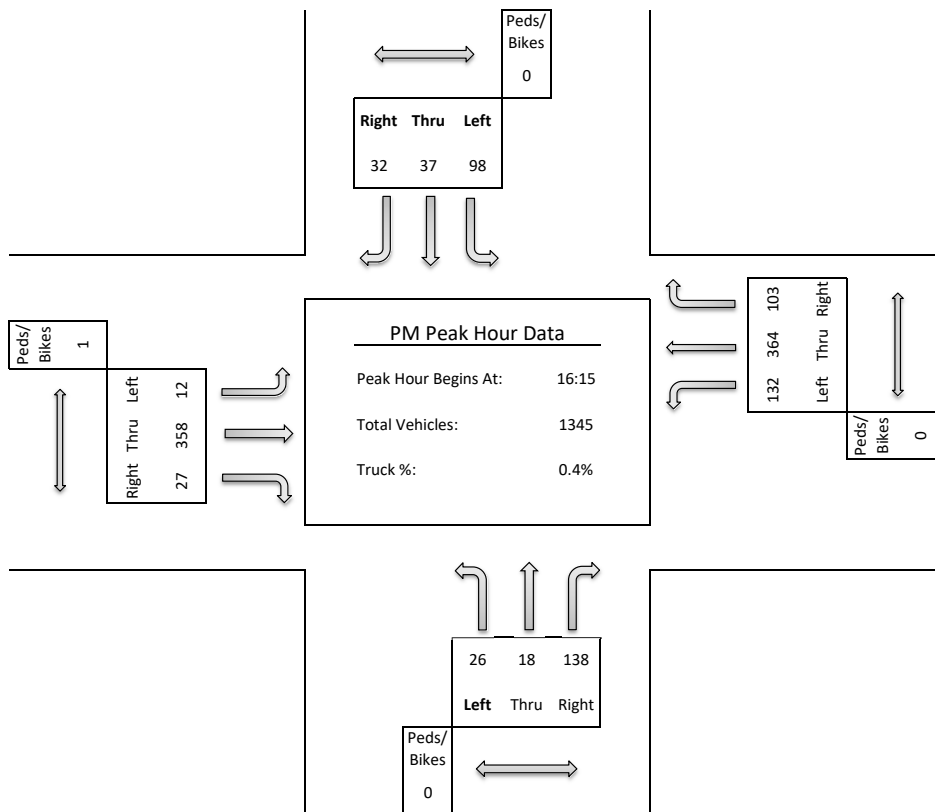
733 S Marquette Ave #700, Minneapolis, MN 55402

Intersection: CSAH 46 (162nd St SW) & Buck Hill Rd
Date: 8/23/2023
Duration: 6:00-9:00, 16:00-19:00

Site Code: 361
Ref Pt: N/A
Page No: 3 of 3

All Vehicles (Cars & Trucks) Printed

Start Time	Buck Hill Rd Southbound						CSAH 46 (162nd St SW) Westbound						Kenyon Ave Northbound						CSAH 46 (162nd St SW) Eastbound						Int. Veh. Total	Int. Ped/ Bike Total
	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes	U-Turn	Left	Thru	Right	App. Total	Peds/ Bikes		
16:15	--	26	11	10	47	--	3	30	99	22	154	--	--	8	2	27	37	--	--	2	92	7	101	--	339	--
16:30	--	16	10	9	35	--	1	30	92	23	146	--	--	8	4	44	56	--	--	6	85	5	96	--	333	--
16:45	--	30	6	3	39	--	--	37	76	28	141	--	--	5	6	28	39	--	--	3	93	10	106	1	325	1
17:00	--	26	10	10	46	--	1	30	97	30	158	--	--	5	6	39	50	--	--	1	88	5	94	--	348	--
Hour Total	--	98	37	32	167	--	5	127	364	103	599	--	--	26	18	138	182	--	--	12	358	27	397	1	1345	1
% of App.	0.0%	58.7%	22.2%	19.2%			0.8%	21.2%	60.8%	17.2%			0.0%	14.3%	9.9%	75.8%			0.0%	3.0%	90.2%	6.8%				
% of Total	0.0%	7.3%	2.8%	2.4%	12.4%	0.0%	0.4%	9.4%	27.1%	7.7%	44.5%	0.0%	0.0%	1.9%	1.3%	10.3%	13.5%	0.0%	0.0%	0.9%	26.6%	2.0%	####	#####		
Cars Total	--	98	37	32	167	--	5	126	360	103	594	--	--	26	18	138	182	--	--	12	357	27	396	1	1339	1
Cars % of Movement	0.0%	100%	100%	100%	100%	0.0%	100%	99.2%	98.9%	100%	99.2%	0.0%	0.0%	100%	100%	100%	100%	0.0%	0.0%	100%	99.7%	100%	####	#####	99.6%	
Trucks Total	--	--	--	--	0	--	--	1	4	--	5	--	--	--	--	--	0	--	--	--	1	--	1	--	6	--
Trucks % of Movement	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.8%	1.1%	0.0%	0.8%	--	0.0%	0.0%	0.0%	0.0%	0.0%	--	0.0%	0.0%	0.3%	0.0%	0.3%	--	0.4%	



Appendix B – Detailed Operations and Queuing Analysis

Existing Conditions - AM Peak Hour

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	CSAH 46 & Kendale Drive	Movement Delay (sec/veh)	0.9	0.4	0.5	2.0	0.9	0.7	0.0	0.0	2.6	7.0	6.6	3.5	1.2
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	3	0	0	9	0	0	0	0	29	45	45	8	
		Approach Delay (sec/veh)	0.4			0.9			2.6			6.8			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Signal	CSAH 46 & Buck Hill Road	Movement Delay (sec/veh)	5.2	4.3	0.7	8.2	4.1	2.3	29.1	22.4	3.9	30.8	25.7	2.9	7.2
		Movement LOS	A	A	A	A	A	A	C	C	A	C	C	A	A
		Movement 95th Queue (ft)	16	55	9	47	32	13	39	36	48	79	30	25	
		Approach Delay (sec/veh)	4.1			4.6			10.4			25.5			
		Approach LOS	A			A			B			C			

Existing Conditions - PM Peak Hour

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	CSAH 46 & Kendale Drive	Movement Delay (sec/veh)	2.5	0.4	0.2	2.9	1.2	1.2	0.0	0.0	2.5	10.0	0.0	3.2	1.2
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	9	0	0	25	0	2	0	0	24	35	35	10	
		Approach Delay (sec/veh)	0.4			1.3			2.5			9.4			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Signal	CSAH 46 & Buck Hill Road	Movement Delay (sec/veh)	11.9	7.7	1.3	9.4	4.5	2.2	23.8	22.1	4.3	27.0	20.5	3.7	8.3
		Movement LOS	B	A	A	A	A	A	C	C	A	C	C	A	A
		Movement 95th Queue (ft)	24	76	18	68	45	24	50	31	50	101	48	33	
		Approach Delay (sec/veh)	7.4			5.1			9.0			21.0			
		Approach LOS	A			A			A			C			

Year 2025 Conditions - AM Peak Hour

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	CSAH 46 & Kendale Drive	Movement Delay (sec/veh)	1.4	0.3	0.6	2.0	0.9	0.6	0.0	0.0	2.4	0.0	0.2	2.8	0.8
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	13	0	0	11	0	0	0	0	31	0	0	29	
		Approach Delay (sec/veh)	0.4			0.9			2.4			2.7			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Signal	CSAH 46 & Buck Hill Road	Movement Delay (sec/veh)	7.0	4.7	0.9	7.2	4.3	2.5	26.1	26.2	3.7	31.8	24.1	2.3	9.6
		Movement LOS	A	A	A	A	A	A	C	C	A	C	C	A	A
		Movement 95th Queue (ft)	18	51	13	40	36	20	37	36	43	149	32	17	
		Approach Delay (sec/veh)	4.6			4.4			9.9			29.0			
		Approach LOS	A			A			A			C			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Buck Hill Road & East Access	Movement Delay (sec/veh)	5.6	0.0	3.3	0.0	0.0	0.0	2.4	1.1	0.0	0.0	0.3	0.1	1.9
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	63	0	63	0	0	0	17	17	0	0	0	0	
		Approach Delay (sec/veh)	3.4			0.0			1.4			0.3			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & West Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.5	0.0	2.6	0.0	0.2	0.1	1.8	0.7	0.0	1.8
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	38	0	38	0	0	0	11	11	0	
		Approach Delay (sec/veh)	0.0			4.2			0.2			1.7			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & Single-Family Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.4	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.3
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	20	0	20	0	0	0	0	0	0	
		Approach Delay (sec/veh)	0.0			4.4			0.1			0.0			
		Approach LOS	A			A			A			A			

Year 2025 Conditions - PM Peak Hour

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	CSAH 46 & Kendale Drive	Movement Delay (sec/veh)	1.9	0.4	0.3	2.8	1.3	1.8	0.0	0.0	2.2	0.0	0.5	3.3	1.1
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	22	0	0	26	0	0	0	0	26	7	7	31	
		Approach Delay (sec/veh)	0.5			1.4			2.2			3.0			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Signal	CSAH 46 & Buck Hill Road	Movement Delay (sec/veh)	12.9	9.7	1.6	10.8	5.3	3.0	23.6	22.6	4.3	28.6	16.8	3.1	10.3
		Movement LOS	B	A	A	B	A	A	C	C	A	C	B	A	B
		Movement 95th Queue (ft)	22	86	18	74	49	42	47	42	51	168	50	29	
		Approach Delay (sec/veh)	9.3			5.7			9.2			23.7			
		Approach LOS	A			A			A			C			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Buck Hill Road & East Access	Movement Delay (sec/veh)	6.8	0.0	3.6	0.0	0.0	0.0	3.0	1.6	0.0	0.0	0.5	0.0	1.9
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	57	0	57	0	0	0	48	48	0	0	0	0	
		Approach Delay (sec/veh)	3.8			0.0			2.2			0.5			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & West Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.8	0.0	2.8	0.0	0.2	0.1	2.1	0.3	0.0	1.4
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	45	0	45	0	0	0	20	20	0	
		Approach Delay (sec/veh)	0.0			4.3			0.2			1.9			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & Single-Family Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	18	0	18	0	0	0	0	0	0	
		Approach Delay (sec/veh)	0.0			4.1			0.1			0.0			
		Approach LOS	A			A			A			A			

Year 2045 Conditions - AM Peak Hour

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	CSAH 46 & Kendale Drive	Movement Delay (sec/veh)	1.5	0.3	0.8	1.9	1.0	0.8	0.0	0.0	2.4	0.0	0.4	3.0	0.8
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	15	0	0	11	0	0	0	0	33	0	0	29	
		Approach Delay (sec/veh)	0.4			1.0			2.4			2.7			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Signal	CSAH 46 & Buck Hill Road	Movement Delay (sec/veh)	10.1	5.8	0.9	10.4	4.7	2.9	24.3	23.2	4.2	35.5	17.5	2.6	10.8
		Movement LOS	B	A	A	B	A	A	C	C	A	D	B	A	B
		Movement 95th Queue (ft)	22	71	19	70	39	22	40	40	52	166	38	20	
		Approach Delay (sec/veh)	5.7			5.4			9.7			31.1			
		Approach LOS	A			A			A			C			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Buck Hill Road & East Access	Movement Delay (sec/veh)	5.6	0.0	3.4	0.0	0.0	0.0	2.7	1.2	0.0	0.0	0.5	0.0	1.9
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	58	0	58	0	0	0	19	19	0	0	0	0	
		Approach Delay (sec/veh)	3.6			0.0			1.5			0.5			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & West Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.8	0.0	2.5	0.0	0.3	0.1	2.0	0.2	0.0	1.9
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	41	0	41	0	0	0	17	17	0	
		Approach Delay (sec/veh)	0.0			4.2			0.2			1.9			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & Single-Family Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.7	0.0	0.0	0.0	0.2	0.1	0.0	0.0	0.0	0.3
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	23	0	23	0	0	0	0	0	0	
		Approach Delay (sec/veh)	0.0			4.7			0.2			0.0			
		Approach LOS	A			A			A			A			

Year 2045 Conditions - PM Peak Hour

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	CSAH 46 & Kendale Drive	Movement Delay (sec/veh)	3.5	0.4	0.0	3.6	1.4	1.6	0.0	0.0	2.5	0.0	0.5	31.7	2.0
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	D	A
		Movement 95th Queue (ft)	29	0	0	32	0	3	0	0	25	37	37	39	
		Approach Delay (sec/veh)	0.6			1.5			2.5			28.8			
		Approach LOS	A			A			A			D			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Traffic Signal	CSAH 46 & Buck Hill Road	Movement Delay (sec/veh)	12.8	12.0	1.7	14.3	6.3	3.7	21.7	17.5	5.0	30.1	18.7	4.2	11.4
		Movement LOS	B	B	A	B	A	A	C	B	A	C	B	A	B
		Movement 95th Queue (ft)	27	111	17	97	56	47	53	44	65	183	63	36	
		Approach Delay (sec/veh)	11.3			7.2			8.9			24.7			
		Approach LOS	B			A			A			C			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Buck Hill Road & East Access	Movement Delay (sec/veh)	8.5	0.0	3.8	0.0	0.0	0.0	3.2	1.7	0.0	0.0	0.5	0.2	2.0
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	59	0	59	0	0	0	48	48	0	0	4	4	
		Approach Delay (sec/veh)	4.2			0.0			2.2			0.5			
		Approach LOS	A			A			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & West Access	Movement Delay (sec/veh)	0.0	0.0	0.0	23.4	0.0	2.5	0.0	0.3	0.2	2.2	0.6	0.0	4.0
		Movement LOS	A	A	A	C	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	57	0	57	0	0	0	23	23	0	
		Approach Delay (sec/veh)	0.0			19.2			0.3			2.0			
		Approach LOS	A			C			A			A			

Traffic Control	Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Through/Stop	Kendale Drive & Single-Family Access	Movement Delay (sec/veh)	0.0	0.0	0.0	4.3	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.2
		Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
		Movement 95th Queue (ft)	0	0	0	20	0	20	0	0	0	0	0	0	
		Approach Delay (sec/veh)	0.0			4.3			0.1			0.0			
		Approach LOS	A			A			A			A			