PLANNING COMMISSION MEETING
Tuesday, June 12, 2018, 6:30 PM
Council Chambers, 2nd Floor City Hall
1300 NE Village Street

MEETING AGENDA

1. **CALL TO ORDER:** 6:30 p.m.

2. **CITIZENS WISHING TO SPEAK ON NON-AGENDA ITEMS**

3. **ELECTION OF PLANNING COMMISSION CHAIR AND VICE CHAIR**

4. **REVIEW AND ADOPT MINUTES:** December 17, 2017 and May 22, 2018

5. **PUBLIC HEARING**

TYPE III QUASI –JUDICIAL

File Number 2018-15-DR

Summary: The applicant is requesting Site Design Review approval for a mixed-use development of five buildings with a total of 200 multi-family residential units and four live-work units. Primary access to the site is proposed from 223rd Avenue.

The applicant is also requesting a variance to Multnomah County Road Rules standards to allow a secondary access from Sandy Blvd., which would be limited to right-in, right-out turns. Multnomah County Transportation is reviewing this request in parallel with the land use review.

Applicable Fairview Municipal Code Criteria:

FMC 19.400	Administration of Land Use and Development Review
FMC 19.412	Description of Permit Procedures
FMC 19.413	Procedures
FMC 19.424	Site Design Review – Application Review Procedure
FMC 19.425	Site Design Review – Application Submission Requirements
FMC 19.426	Site Design Review – Approval Criteria
FMC 19.70	Corridor Commercial District
FMC 19.162	Access and Circulation
FMC 19.163	Landscaping, Street Trees, Fences and Walls
FMC 19.164	Vehicle and Bicycle Parking
FMC 19.165	Public Facilities Standards
FMC 19.170	Sign Regulations

4. **WORK SESSION**

Review and provide feedback on draft code amendments for accessory dwelling units, proposed for compliance with new State requirements. Identify information or changes for inclusion in the public hearing draft.

5. **COMMISSION UPDATES**

6. **STAFF UPDATES**

7. **TENTATIVE AGENDA**

8. **ADJOURNMENT**

NEXT PLANNING COMMISSION MEETING: TUESDAY, JULY 10, 2018

Planning Commission hearings are broadcast live on Comcast Cable Channel 22 and Frontier Cable Channel 33. Replays of the hearing are shown on Comcast Channel 22 and Frontier Channel 33 Saturday at 12:00pm and Monday at 2:00pm, and Comcast Channel 30 and Frontier Channel 39 Wednesday at 7:00pm. Further information is available on our web page at www.fairvieworegon.gov or by calling Devree Leymaster, City Recorder, 503-674-6224.

The meeting location is wheelchair accessible. A request for an interpreter for the hearing impaired or for other accommodations for person with disabilities should be made at least 48 hours before the meeting to: Devree Leymaster, 503-674-6224.

MINUTES
PLANNING COMMISSION MEETING
1300 NE Village Street
Fairview, OR 97024
Tuesday, December 12, 2017

PRESENT: Ed Jones, Chair
Russell Williams, Vice Chair
Hollie Holcombe
Steven Hook
Steve Kaufman

ABSENT: Les Bick

STAFF: Sarah Selden, Senior Planner
Eric Rutledge, Associate Planner
Allan Berry, Public Works Director
Devree Leymaster, City Recorder

1. CALL TO ORDER

Chair Jones called the meeting to order at 6:30 PM.

2. CITIZENS WISHING TO SPEAK ON NON-AGENDA ITEMS

Chair Jones inquired if any person would like to speak on a non-agenda item, hearing none moved to approval minutes.

3. REVIEW AND ADOPT MINUTES

Commissioner Hook requested the minutes clarify the application was not continued. Commissioner Williams moved to approve the August 29, 2017 minutes with the clarification and Commissioner Holcombe seconded. The motion passed unanimously.

4. WORK SESSION

Associate Planner Rutledge briefed the Commission on current billboard sign regulations and potential amendments for Commission discussion. AP Rutledge noted the discussion item and proposal is at the request of Meadow Outdoor Advertising.

Brian Cassidy, Meadow Outdoor Advertising, The Dalles, OR spoke about the billboard sign that has been located in Fairview since 1981. They would like to rebuild the sign, but the current regulations only allow repairs. He presented his proposal to allow reconstruction of existing billboards. *(Exhibit A)*

Vice Chair Williams commented the current regulations are designed to phase out all billboard signs and summarized the proposal would raise the height from 25 feet to 40 feet; advertising would be permissible on both sides; all three existing billboards could be reconstructed; there is no sunset date; and no new billboards would be allowed.

Commissioner Hook remarked he understands the economic benefit for businesses; but billboards are unsightly and there is no guarantee that it will always be a Fairview businesses advertising on the billboard(s).

Vice Chair Williams asked if they proposed to reposition the sign. Mr. Cassidy replied probably not, but they would request a "V" build to allow each side to be oriented for better viewing from the freeway.

Commissioner Kaufman commented the goal was to eliminate billboards in Fairview. He questioned if the visual clutter is worth the benefit to economic development.

Chair Jones indicated he would support a modification for existing billboard signs.

Commissioner Hook noted he would like to see an incentive to encourage Fairview businesses to advertise on Fairview billboard signs.

The Commission clarified cell equipment is not currently on the signs and they would not support their use for cell equipment in the future.

Overall the Commission indicated they would support and consider a code change, with the exception of Commission Kaufman, who stated he would not support a change.

Senior Planner Selden commented staff is not requesting a change at this time; but if Meadow Outdoor Advertising wanted to proceed a proposed amendment will require a Type IV application, and public hearings and approvals of Planning Commission and City Council.

5. COMMISSION UPDATES

Commissioner Jones commented on small (tiny) homes and their increasing popularity for transitional housing. He proposed the Commission be proactive and define what they are/under what conditions (permanent housing hooked up to full utilities or temporary/recreational vehicle, as they have wheels), zoning, purpose, etc.

6. STAFF UPDATES

SP Planner Selden shared the Main Streets on Halsey project is moving forward. They were awarded a grant to assist in identifying optimal business types/activities along the corridor, to assist with marketing/branding, and to evaluate development codes.

SP Planner Selden commented on an inquiry, no formal application, to develop a mini storage facility on the corner of 223rd/Sandy Blvd. The property is in corridor commercial and this type of use is currently not permitted. She asked if the Commission would consider allowing a mini storage development in corridor commercial.

Chair Jones remarked he would need more information. He would be concerned they would be giving away prime commercial space. Commissioners Kaufman, Williams, and Dennerline agreed; they would not be supportive based on the face of it.

7. TENTATIVE AGENDA

- Development Incentive Program
- Renewal of the (3 cities) Enterprise Zone

8. ADJOURNMENT

Meeting adjourned by consensus at 7:32PM.

Devree A. Leymaster City Recorder	Ed Jones Chair
	Date

Exhibit A

A Code Amendment to Allow Reconstruction of Existing Billboards

Meadow Outdoor Advertising at 21414 NE Sandy Blvd. 560 sq ft single-sided sign. 25-foot overall height

History of Fairview's 3 Billboards:
There are currently three billboards in the city of Fairview.

Meadow's billboard was built in 1975. Fairview's two other billboards were also built in the 1970s and were both subsequently rebuilt in the 1990s. Sometime between 1997 and 2001 Fairview's zoning ordinance was adjusted to prohibit the construction of new billboards in the city but allowed for existing billboards to be maintained and operated. The code change did not allow for the replacement of existing billboard structures.

I am requesting a small adjustment to Fairview's sign regulations which will allow the replacement of an existing billboard structure with a new structure on the same site in order to improve the safety and aesthetics of the sign and the economic opportunities afforded by the sign. I believe making this change will benefit the sign companies and the City of Fairview's businesses and residents. The code amendment I propose is:

19.170.050 Signing of nonconforming uses.
F. Billboard Signs. Billboard signs existing at the effective date of the ordinance adopted July 10, 2010, shall be permitted to remain and be maintained in reasonable repair, but may not be ~~replaced,~~ relocated, enlarged~~, or otherwise structurally modified~~. However, existing billboard signs may be rebuilt on the same property and the structures may be modified to improve the structural or aesthetic nature of the signs, including altering the height to be not more than 40 feet above the adjacent roadway. Changes in message shall not affect nonconforming status. (Ord. 2-2013 § 1 (Att. 1); Ord. 4-2012 § 1 (Att. 1); Ord. 2-2010 § 1 (Att. 1); Ord. 6-2001 § 1. Formerly 19.170.060)

Meadow's Billboard at 21414 NE Sandy Blvd.

As outlined in the Staff Report, an amendment to Fairview's zoning ordinance "will need to show compliance with (1) the City's Comprehensive Plan and with (2) the approval criteria in FMC 19.205 "Amendments."

1. <u>Compliance of the Proposed Amendment with Fairview's Comprehensive Plan:</u>

Promoting commercial/business services and opportunities in Fairview is a principal component of Fairview's Comprehensive Plan. It is mentioned 8 time in the Plan's introduction of the six important development areas within Fairview (Comp. Plan p.4). Additionally, one of the Community Goals outlined in Fairview's Visioning Document 2022, which is the primary guiding document of the Comprehensive Plan, is to attract industries and businesses to Fairview. (Vision, p.4)

- The coming of Action Motor Sports to Fairview is cited in the Plan as an illustration of positive economic growth in Fairview. (Comp. Plan p.74) Action Motor Sports advertises on Meadow's billboard, illustrating the benefit of the billboard to Fairview's business community.

The Comprehensive Plan identifies the importance of I-84, and especially the 207th interchange, in maximizing the development of Fairview's commercial services, fostering new and existing businesses and encouraging tourism and tourist oriented businesses in the city (Comp. Plan p. 4 & 77) and the *Vision* highlights the importance of capitalizing on the city's freeway access as a way to encourage the growth of businesses in Fairview. (*Vision p.15).*

- A billboard situated on I-84 and just east ("before") the 207th interchange provides a tool for businesses working to achieve the Comprehensive Plan's goal of fostering economic opportunity in the area.

In the *Vision's* final section, Public Involvement is How to Implement our Vision," engaging the community in the promotion of economic development is highlighted (p.25) and one of the ways suggested to accomplish this is by "install[ing] more billboards and kiosks." (p.26)

- The proposed ordinance amendment is in keeping with the City of Fairview's Comprehensive Plan and Visioning Document 2022 as it allows for the replacement of an old single-sided sign with a modern structure that is safe, more aesthetically pleasing and provides better advertising opportunities on the City of Fairview.

2. Compliance of the Proposed Amendment with the approval criteria:

The amendment will not interfere with the livability, development or value of other land in the vicinity of site-specific proposals when weighed against the public interest in granting the proposed amendment.

- The subject property is in Sandy Boulevard's Corridor Commercial zone. The sign is in the far southeast corner of the subject property, abutting I-84 to the south and ODOT's water-catchment area to the east. As such there is no developable land in the immediate vicinity of the sign that would be impacted by the proposed amendment. The two other billboards in Fairview similarly abut I-84 and are on commercial and industrially zoned land.

The amendment will not be detrimental to the general interests of the community.

- As illustrated by compliance with the Comprehensive Plan, the proposed amendment will not be detrimental to the general interests of the community and will in fact assist in promoting the goals of the Comprehensive Plan, especially those related to the encouragement of economic development.

The amendment will not violate the land use designations established by the Comprehensive Plan and map or related text.

- The subject property is designated as Corridor Commercial in the 2004 Comprehensive Plan. The proposed amendment does not contemplate a change to the use or the land use designation of the underlying property and is compatible with the property's commercial designation.

The amendment will place all property similarly situated in the same area in the same zoning designation or in appropriate complementary designations without creating inappropriate "spot zoning."

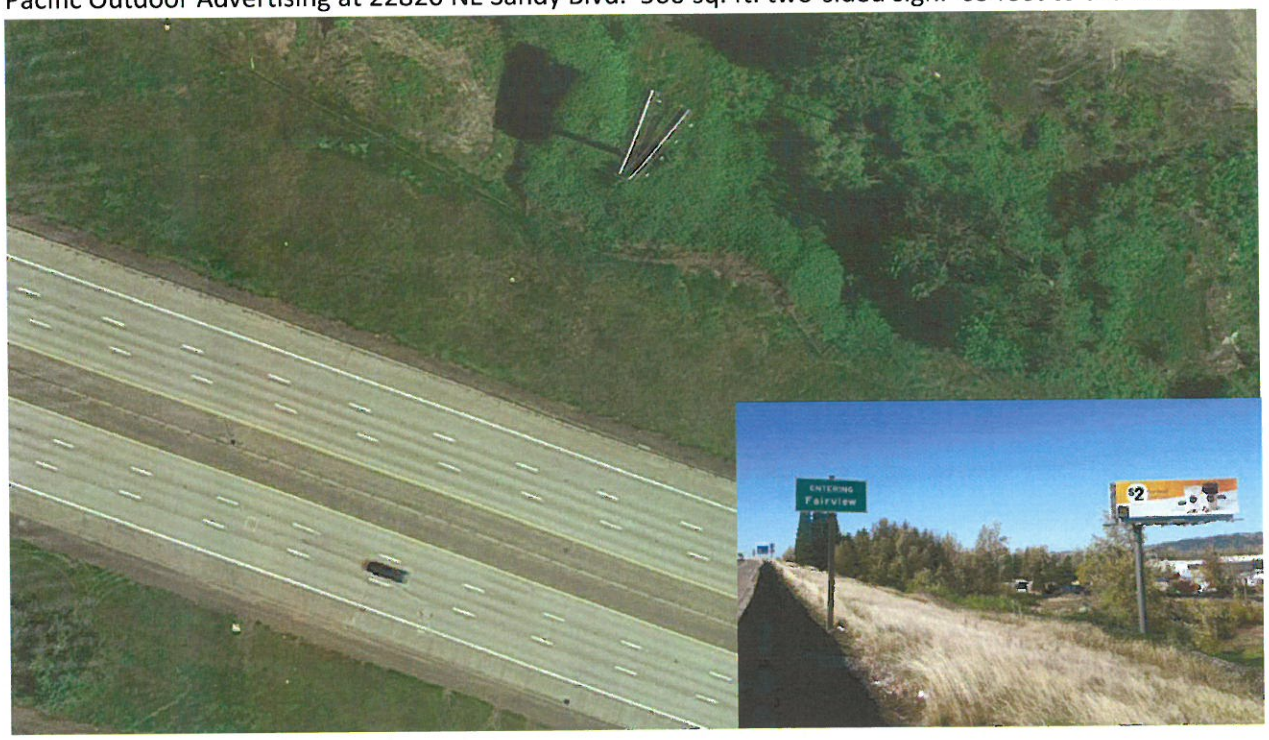
- The proposed amendment will impact all three existing billboards in the City of Fairview, which are all located along the north side of I-84 on commercial or industrial property and so will not create "spot zoning."

Blue Lake Park
Chinook Landing
exit 14
YAMAHA

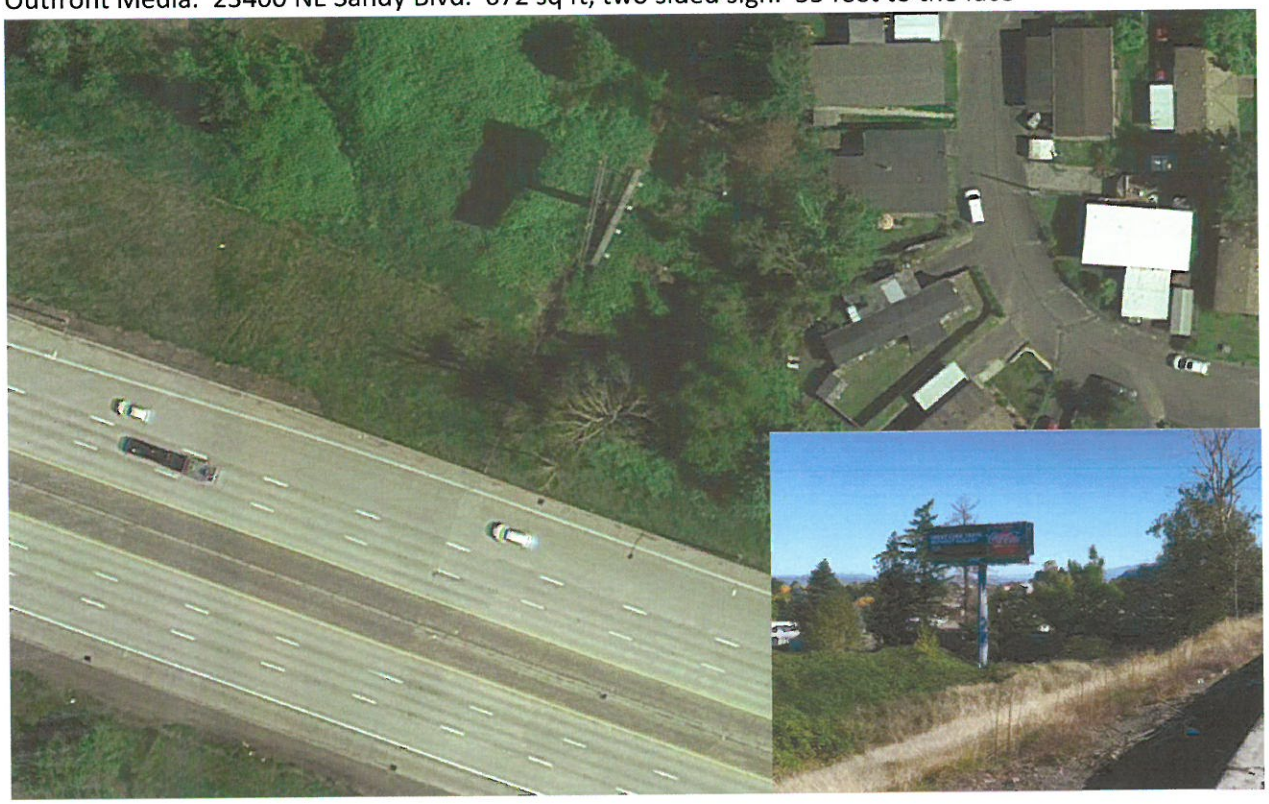
YAMAHA

The two other billboards in Fairview

Pacific Outdoor Advertising at 22820 NE Sandy Blvd. 560 sq. ft. two-sided sign. 63 feet to the face



Outfront Media. 23400 NE Sandy Blvd. 672 sq ft, two sided sign. 55 feet to the face



Oregon
Kate Brown, Governor

Department of Transportation
Right of Way Section
4040 Fairview Industrial Drive SE – MS2
Salem, OR 97302
503-986-3600
Fax 503-986-3625
www.oregon.gov/odot/hwy/row

August 23, 2017

Brian Casady
Via email – bcasady@meadowoutdoor.com

RE: Revised - Conforming Status of OAS location
Multnomah County, North side, Hwy 002, MP 14.8

Dear Brian:

You requested a letter that provided status information for permitted outdoor advertising sign #6H0224, in Fairview, Oregon.

This is sign a currently permitted, conforming outdoor advertising sign, under Oregon Statute.

The sign was originally permitted in 1975, and is a conforming, single faced sign, visible to Interstate 84, hwy 002. As we discussed over the phone last week, the sign is located near a highway beautification purchase site, but it does have the required 500 foot spacing from that location.

The sign is located at a site that is zoned "Industrial" according to the Departments records, and it maintains the required spacing from other outdoor advertising signs.

If a complete application was received, including the approval of the local jurisdictional authority, Oregon Statute would allow the sign to be reconstructed at its current location, or relocated to another legal location.

Under Oregon Revised Statute (ORS) 377.710(23), a reconstruction of an outdoor advertising sign could include: "…replacing a sign totally or partially destroyed, changing its overall height or performing any work, except maintenance work, that alters or changes a sign that lawfully exists under ORS 377.700 to 377.844."

Additionally, ORS 277.725(8) allows the reconstruction of a conforming outdoor advertising sign to add another display surface on the opposite side of an existing sign that is no larger than the existing display surface.

If you have any additional questions, or need any further information, please let me know.

Sincerely,

Jill Hendrickson
Outdoor Advertising Signs
Program Coordinator

MINUTES
PLANNING COMMISSION MEETING
1300 NE Village Street
Fairview, OR 97024
Tuesday, May 22, 2018

PRESENT: Ed Jones, Chair
Russell Williams, Vice Chair
Hollie Holcombe – 6:37 PM
Steven Hook
Les Bick

ABSENT: Jeff Dennerline

STAFF: Sarah Selden, Senior Planner
Eric Rutledge, Associate Planner
Allan Berry, Public Works Director
Devree Leymaster, City Recorder

1. CALL TO ORDER

Chair Jones called the meeting to order at 6:30 PM.

2. CITIZENS WISHING TO SPEAK ON NON-AGENDA ITEMS

Chair Jones inquired if any person would like to speak on a non-agenda item, hearing none moved to approval minutes.

3. PUBLIC HEARING

a. Application 2018-22-DR: Proposed Mixed-Use Development Village Street/Market Drive

Chair Jones read the Open Hearing Statement for a Quasi-Judicial Hearing and Senior Planner Selden sited the applicable criteria.

SP Selden reviewed the staff report as reflected in the presentation. *(Exhibit A)* In summary, the proposal is for two buildings, a mixed-use commercial/residential development with 6,476 sq. ft. ground floor commercial, 71 residential units, and 107 on-site parking spaces. The building design style is typical to other developments in the Village, buildings have the required pitched roofs, exceeds blank wall standards, meets height requirements, complies with the "four corner' requirement, exceeds landscaping requirements, and meets parking requirements.

SP Selden reported staff recommends approval of the application subject to conditions listed and described in the staff report.

Commissioner Bick requested zoning clarification applicable to the development. SP Selden replied the property is within the VMU zone with a "four corner" designated overlay. The development within the "four corner" overlay meets the commercial ground floor requirement.

Applicant Representative Liz Edmonds, West Linn, OR and Doug Circosta, Beaverton, OR addressed the Commission and inquired if there were any questions.

Commissioner Bick asked about ingress and egress. Mr. Circosta answered there are two project entries: one by the VA on to Village Street and one by the Post Office on to Market Drive.

Vice Chair Williams inquired about the number of retail spaces and if the applicant had a plan to fill the spaces. Mr. Circosta replied depending on the businesses there could be between five and ten. Ms. Edmonds commented the spaces are not preleased.

Commissioner Hook asked about parking for the commercial spaces. Mr. Circosta remarked there are seventeen on-street spaces based on code requirements for anticipated uses.

Commissioner Holcombe commented about landscaping and not providing the break between the seventeen spaces. The code requires a break at twelve, and she believes a landscape strip could be provided between nine and ten with slight adjustments.

Chair Jones asked if the applicant had any questions about the conditions of approval. Mr. Circosta requested the Commission allow the areas on the site plan in which the pedestrian pathways are four and a half feet wide and not the required minimum of five feet; and adjust the bicycle standards to accommodate the proposed hanging bicycle parking.

Chair Jones asked if any person would like to speak in favor, opposition or neutrally regarding the application.

Steve Prom, Fairview, OR, President of the Marketplace Live/Work Rowhouse Association, read the written testimony *(Exhibit B)* in opposition of the application. The primary objections were lack of sufficient parking, traffic impacts, and ingress/egress.

Mr. Circosta remarked the two way drive aisle by the Post Office is large enough to meet the requirements for two way traffic. The corner will be opened up and constructed to meet all standards. Access will not alter traffic flow to the Post Office. He noted the current Post Office exit is on their property. They negotiated with the Post Office to provide them an easement. Mr. Circosta reiterated the proposed parking plan meets all code requirements.

Hearing no more requests to speak, Chair Jones moved to close the public hearing. Vice Chair Williams seconded. The public hearing was closed by consensus.

The Commission discussed the applicants request to have less than the five feet width minimum pathways in areas indicated on the site plan and the concerns expressed regarding parking. Following discussion, the Commission supported the Condition of Approval to provide pedestrian pathways that are a minimum of five feet in width. They agreed to allow the seventeen contiguous parking spaces and not require the landscape break.

Commissioner Hook addressed Mr. Prom's concerns about insufficient parking. He noted the parking standards for the Village differ, and supersede, city wide parking standards and SP Selden confirmed. Though the Commission understood the concerns about parking, the proposed parking plan does meet code requirements.

Chair Jones summarized the proposed motion will be to approve the application with conditions of approval as written; striking item D.1. (landscape islands…no more than 12 continuous parking spaces).

Commissioner Hook moved to approve application 2018-22-DR with conditions of approval as written; with the exception of striking item D.1. (12 space parking break) and Commissioner Holcombe seconded. The motion passed by majority.

AYES: 4
NOES: 1 - Commissioner Williams
ABSTAINED: 0

SP Selden commented she will prepare the final notice of decision with the findings as written except for item D1.

4. WORK SESSION

a. Accessory Dwelling Unit (ADU) Amendment Concepts – State Requirements

Associate Planner Rutledge reviewed proposed ADU code updates and requested Commission direction. *(Exhibit C)* He noted this review is in response to Senate Bill 1051 to support the creation of needed housing. The review looks at the development code to address housing issues and the application review process – to stream line where needed.

Following the presentation, the Commission worked through Exhibit A in the staff report evaluating Fairview's ADU code with guidance from SB1051. Below is a summary of the proposed code amendments supported by the Commission.

- Update existing definition to better match state requirements.
- Update code to allow one unit per single-family detached residence, remove ADU limits per block, and update to allow in any location subject to setback and lot coverage requirements.
- Update buffering standard to apply under clear and objective conditions (look at other cities for examples).
- Clarify how to count which spaces on a property apply towards off-street parking.

Amendments the Commission would consider with additional information.

- Owner-occupancy requirements.
- Allowing two ADU's per single family detached residence if one of the ADU's is entirely within the original foundation of the single family residence.

Additional items discussed included:

- Require dedicated parking space for an ADU if there are less than four off-street parking spaces for the primary residence. (Consider future property transfers).
- Consider stormwater runoff impacts.

AP Rutledge commented he will draft code language based on the Commission's feedback for review at their June 12 work session.

5. COMMISSION UPDATES

Commissioner Bick updated the Commission on the Halsey Corridor Committee and their recent bus tour. The bus tour was well attended and the hope is Oregon Solutions will aide in advancing the Halsey project.

6. STAFF UPDATES

City Recorder Leymaster reported the Council requested the Commission forward a recommendation for a Commissioner appointment to the Urban Renewal Planning Committee.

Commissioner Holcombe expressed interest. The Commission supported her for appointment consideration by the Council.

SP Selden shared the Commission needs to provide their annual report to Council.

7. TENTATIVE AGENDA

- Nominate & elect chair & vice chair.
- Public Hearing: mixed-use development Sandy Blvd.
- Work Session: review draft ADU code language.

8. ADJOURNMENT

Meeting adjourned by consensus at 9:10 PM.

Devree A. Leymaster City Recorder	Ed Jones Chair
	Date

FAIRVIEW PLANNING COMMISSION PUBLIC HEARING

2018-22-DR

Village Place Mixed-Use

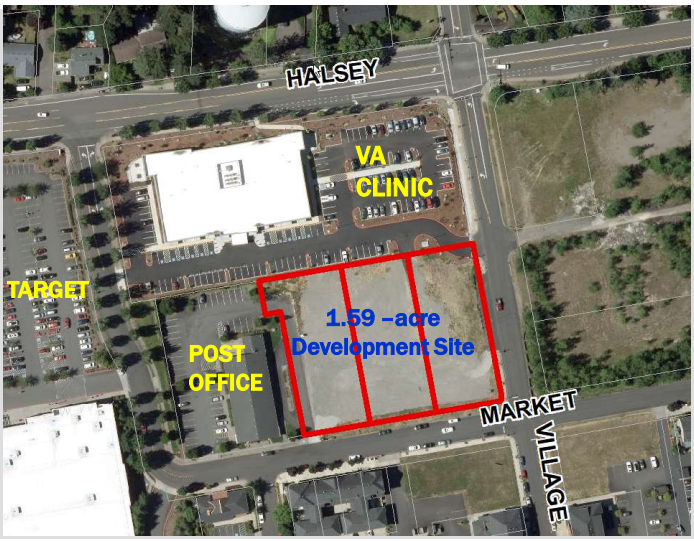
May 22, 2018

APPLICATION

Site Design Review Approval for new mixed-use commercial/residential development

- 2 buildings:
  - Corner building along Village and Market has ground floor commercial and 3 stories of residential above
  - Interior building has three stories of residential units
- 6,476 sq. ft. of ground floor commercial
- 71 residential units
- 107 on-site parking spaces

SITE LOCATION



SITE LOCATION

NOTICES/REFERRALS/TESTIMONY

Notice of Public Hearing

- May 2: Mailed to property owners within 250 ft. of the site.
- May 11: Published in the Gresham Outlook
- May 11: Sign was posted on the site

Referrals

- Application routed to Gresham Fire and Fairview Public Works

Written Testimony

- By noon on the hearing day, no written testimony has been submitted

APPLICABLE CRITERIA

Application Review Procedures

- 19.400 Administration of Land Use and Development Review
- 19.412 Description of Permit Procedures
- 19.413 Procedures
- 19.420 Development Review and Site Design Review
- 19.422 Applicability
- 19.424 Site Design Review – Application Review Procedure
- 19.425 Site Design Review – Application Submission Requirements
- 19.426 Site Design Review – Approval Criteria

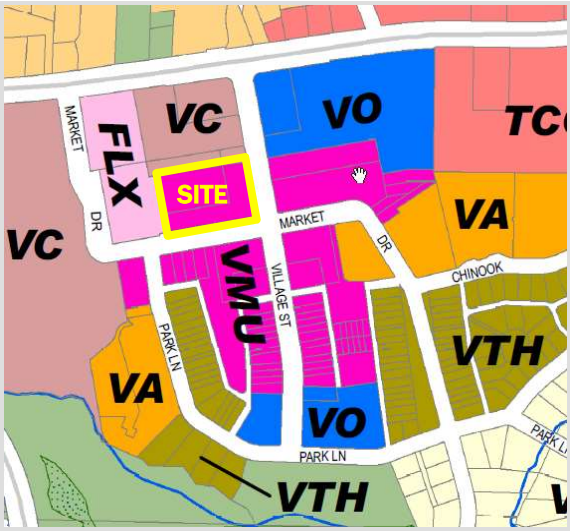
Land Use Districts

- 19.110 Village General Provisions
- 19.135 Village Commercial (VC) and Mixed Use (VMU)
- 19.140 Village General Standards
- 19.150 Special Development Standards – VO, VC and VMU Zones

Design Standards

- 19.162 Access and Circulation
- 19.163 Landscaping, Street Trees, Fences and Walls
- 19.164 Vehicle and Bicycle Parking
- 19.165 Public Facilities Standards
- 19.170 Sign Regulations

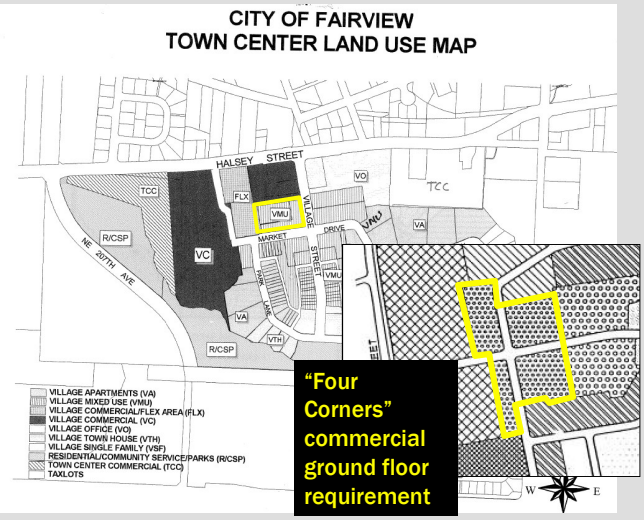
VILLAGE MIXED-USE (VMU) ZONING



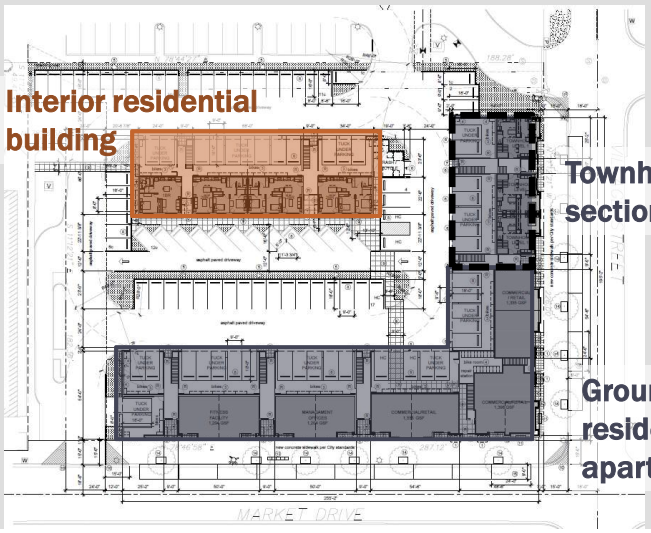
ALLOWED USES

- Broad range of commercial, including retail, office, restaurant, medical, personal services.
- Residential/multifamily dwelling units in conjunction with permitted uses when developed in accordance with the VMU design standards.
  - Limited to upper stories along Market Drive and portion of Village Street ("Four Corners" area).

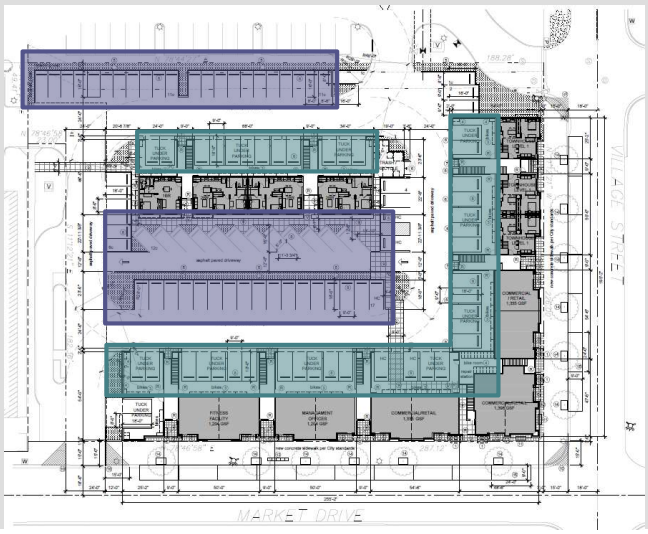
"FOUR CORNERS" REQUIREMENTS



SITE PLAN



SITE PLAN



Surface parking

Tuck under parking

BUILDING DESIGN

BUILDING DESIGN

BUILDING DESIGN

Maximum Height

45 ft. measured to midpoint of peaked roof

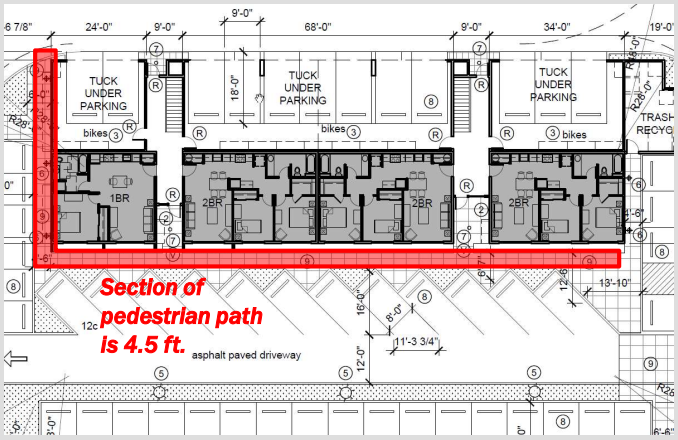
Up to 60 ft. allowed for tower features

ACCESS AND CIRCULATION

Access is existing/ shared with abutting properties

On-site pedestrian connectivity required

Paths must be 5 ft. min width



PARKING

Type of Use	Parking Ratio	Proposed Number of Units / Square Footage	Minimum Number of Required Parking Stalls
4+ Attached dwellings, including above commercial	1.5 spaces per unit	71 units	107 (106.5 rounded up)
Retail Trade General Office	1 space/500 sq. ft. of floor area	6,476 sq. ft.	13
		Total number of required stalls	120 stalls
		Total number of proposed stalls	107 on-site + 17 on-street **124 total**

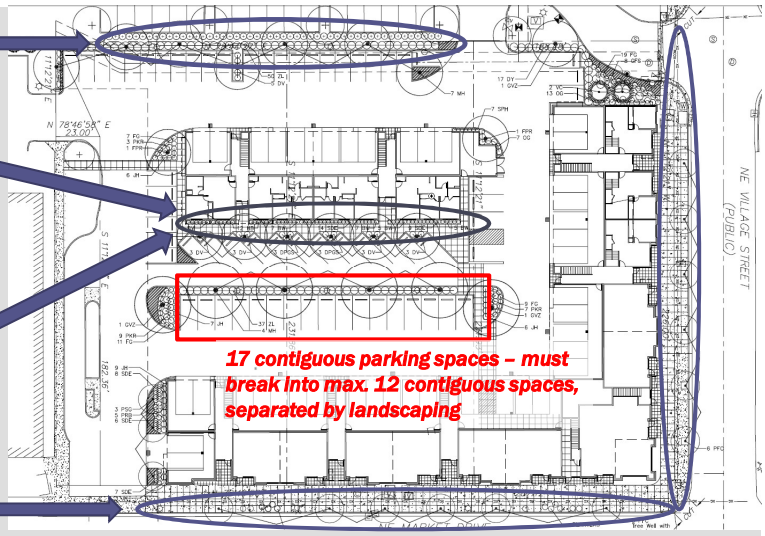
LANDSCAPING

Trees + shrubs along VA parking lot

Buffering parking spaces from pathway

Shrubs lining building facade with ground floor residential

12 Pink Flair Cherry trees along Village and Market



PUBLIC FACILITIES

- Existing stormwater, water and sewer lines serve eventual buildout of Fairview Village
- Traffic study shows no decreased level of service
- Improvements to Village Street and Market Drive
  - Completion of 15 ft. wide sidewalks
  - ADA ramps at intersection
  - Tree wells with metal grates around flowering Pink Flair Cheery trees

KEY CONDITIONS OF APPROVAL

- All pedestrian pathways shall be a minimum of 5 feet in width.
- Break up surface parking into rows of not more than 12 contiguous parking spaces.
- Provide calculations on stormwater discharge, for verification with Fairview Village Stormwater Master Plan.

STAFF RECOMMENDATION

Staff finds that the proposed application will meet the requirements of the City Code as conditioned, and recommends approval of the site design review subject to conditions listed and described in the Staff Report.

PLANNING COMMISSION ALTERNATIVES

- Approve the application based on the findings of compliance with City regulations and conditions of approval.
- Modify the findings, reasons, or conditions, and approve the request as modified.
- Deny the application based on the Commission's findings.
- Continue the Public Hearing to a date certain if more information is needed.

Exhibit B

Parker Development rebuttal

Good evening, Steven Prom, President of the Marketplace Live/work Rowhouse association.

We are not opposed to development, but **we are opposed to development that lacks sufficient parking.** This proposal tonight will significantly contribute to the parking problem in the area and will damage the potential businesses that already exist on Market drive.

Recently I sent a picture to the mayor and Nolan Young, City Manager of 10 cars parked in the gravel lot, being used as overflow parking for the VA clinic. When Nolan Young investigated he found 13 vehicles parked there and all of the 118 parking spots in the VA lot occupied except for 1 handicappled spot.

Village street is also overflowing with parking onto Market drive. (I noted 5 cars from Village street on Market today).
Fairview village Apartments on Park lane has **62 apartments** and **91** parking spots- 22 of them covered, and yet **Park lane** is lined with the apartment dwellers cars, work trucks and trailers.

First Community Credit Union has **12** parking spots, yet 3 out of their seven employees typically park on **Park Lane.**
The Post Office has **46** parking spots, yet a customer's first choice is usually on **Market Drive,** even if the parking lot is empty**.**

Marketplace live/work rowhouse association, which I represent**, has 8 residential units and 5 businesses,** prohibits, by HOA rule, parking on Market drive during business hours. We will be unable to enforce this rule from tenants of other developments.

Other problems: When I first moved here in 2005, the planning department told me that whatever was going to be built in that property at some point in the distant future would only have access on Village Street. **There is no access on Village street, and everything empties onto Market, which is also going to cause noise and congestion at all hours of the night.**

When the semi-truck mail trucks deliver to the post office, several times during the day and night they come from the West, on Market drive. They can't make the turn by Target without running over the curb, so they go in the parking lot EXIT instead, and drive around to the building. Now you have cars backing out onto this exit zone.

Calculate parking based on Fairview Municipal code.
FMC19.164.030 states you can't count street parking. (very important)
Minimum vehicle parking standards Table 19.164.030.A

32 1BR apartments x 1.25 parking spots = 40 spots
39 2BR apartments x 1.5 parking spots = 58.5 spots
4058 sq. ft. general business x 4.1 spots = 16.6 spots
1204 sq. ft. Management office x 2.7 spots = 3.25
TOTAL = 119 spots (118.35) ***That's 13 parking spots short, per code.***

Even by following the minimal parking space requirements in the FMC, this development still comes up 13 spots short. You can't assume the residential spots will be available during the day for the businesses. **Using the FMC code, you must reject approval of this development.** Thank you.

Exhibit C

PLANNING COMMISSION WORK SESSION

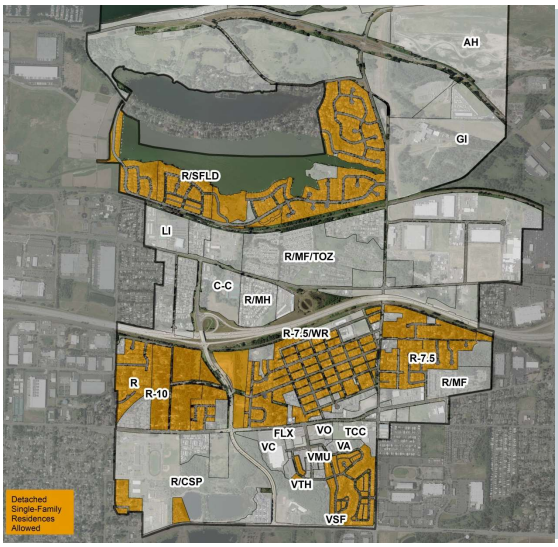
Accessory Dwelling Unit Code Amendments

May 22, 2018

SENATE BILL 1051

- Support the creation of needed housing
- Applies to cities with a population over 2,500 and counties over 15,000
- Effective July 1, 2018

ZONING DISTRICTS ALLOWING SINGLE-FAMILY DETACHED



- Residential (R)
- Residential 7.5
- Residential 10
- Res/South Fairview Lake
- Village Single-Family
- Village Townhouse

FMC 19.30.110(B) ACCESSORY DWELLING

FMC 19.30 Residential District

↓

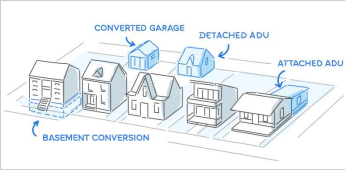
FMC 19.30.110 Special Standards for Certain Uses

↓

FMC 19.30.11(B) Accessory Dwelling

FMC 19.30.110(B) ACCESSORY DWELLING

- Attached, detached, above garage
- **Maximum one ADU per lot**
- Primary residence or ADU must be owner-occupied
- Maximum area - 800 SF
- Maximum height – 20 feet
- **Buffering/screening may be required**
- **Any given block – maximum 50% of lots entitled to ADU**
- If less than 4 existing parking spaces, one additional required
- Maximum 70% lot coverage (impermeable surfaces)

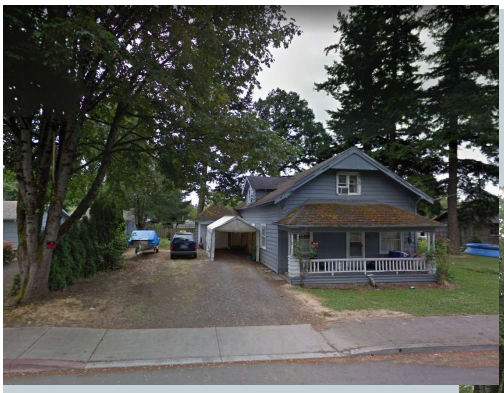


FAIRVIEW ADU'S

Historic Fairview

Detached ADU above garage

FAIRVIEW ADU'S



Historic
Fairview

Detached ADU
above garage

2011

2018

FAIRVIEW ADU'S

Historic
Fairview

Detached ADU in
backyard, accessed
by side street

FAIRVIEW ADU'S

The Village

Detached ADU above garage, oriented towards alley

REQUIRED CODE AMENDMENTS

- State requirements:
  - **Clearly define ADU**
  - Allow ADU's in all zones that allow detached single-family residences
  - **Allow one ADU per single-family dwelling**
  - **Apply clear and objective standards for ADU design, if any**
  - Apply reasonable siting standards

RECOMMENDED CODE AMENDMENTS

- State recommendations:
  - **No-owner occupancy requirement**
  - Type I application review
  - **No additional off-street parking requirements**
  - **Flexible size requirements to allow for entire floor ADU's**
  - Apply the same or less restrictive standards to ADU's as those for accessory structures
  - **Consider two ADU's per dwelling**
  - **Consider SDC methodology to scale with ADU impacts, or waiver**

State Guidance	Fairview Code	Amendment Needed?	Code Amendment Proposed
SB 1051 Requirements			
Definition of ADU is "An interior, attached, or detached residential structure that is used in connection with, or that is accessory to, a single-family dwelling.	"Accessory Dwelling. An "accessory dwelling" is a small, secondary housing unit on a single-family lot, usually the size of a studio apartment."	**YES**	*1. Adopt state definition* *2. Update existing definition to better match new state requirements*
Allow at least one ADU for each detached single-family dwelling (rather than 1 per lot)	"One Unit. A maximum of one accessory dwelling unit is allowed per lot" "Units per Block. The number of accessory dwelling units is not to exceed 50 percent of the lots within any block" In VSF zone, only ADUs above detached garages are permitted.	**YES**	*1. Update the one unit requirement to apply per single-family detached residence and;* *remove the limit on ADUs per block and;* *update the VSF chapter to allow ADUs in any location, subject to setback and lot coverage requirements*
ADUs permitted in all zones where single-family detached dwellings are permitted	Allows ADUs in all zones where single-family detached dwellings are permitted (R, R7.5, R10, R/TOZ, R/SFLD, VSF, VTH)	**NO**	*N/A*
"Clear and objective" standards for design, if any design standards used	"Buffering. A minimum four-foot hedge or sight-obscuring fence may be required to buffer a detached accessory dwelling from dwellings on adjacent lots, when buffering is necessary for the privacy and enjoyment of yard areas by either the occupants or adjacent residents"	**YES**	*1. Update the buffering standard to apply to all detached ADU's* *2. Update the buffering standard to apply to no ADU's* *3. Update the buffering standard to apply under certain clear and objective conditions*
"Reasonable siting and design standards"	Height Max: 20 ft. Area Max: 800 SF ADUs subject to the same setback requirements as the primary residence.	**NO**	*1. No change* *2. Create additional siting and design standards*

State Guidance	Fairview Code	Amendment Needed?	Code Amendment Proposed
State Recommendations			
No owner-occupancy standards	The primary residence or accessory dwelling shall be owner-occupied. Alternatively, the owner may appoint a family member as a resident caretaker of the principal house or of the accessory dwelling	NO	*1. No change* *2. Remove owner-occupancy requirements*
Type I review, or combined with building permit	Type 1 review with building permit	NO	*1. No change*
Don't require additional off-street parking, or provide generous supporting provisions like on-street parking credit,tandem parking, combined access, no more than two total required spaces	The development of the accessory dwelling shall provide an additional on-site parking space if the primary dwelling has less than four on-site spaces available before construction of the accessory unit	NO	*1. Do no require additional off-street parking with ADU construction* *2. Require a new, lower minimum number of off-street spaces (e.g. at least one per dwelling unit)* *3. No change to the parking space requirements* **Staff recommends clarifying which spaces on a property can count towards off-street parking (e.g. garage, driveway, other paved surface, etc.)*
Allow flexibility in square footage for entire floor ADUs	800 SF maximum	NO	*1. Retain 800 SF maximum, with exception that existing interior spaces that occupy an entire floor and are greater than 800 SF can be converted to an ADU (e.g. 900 SF existing basement or 1000 SF top floor)* *2. No change* *3. Change maximum square footage requirement*
Apply same or less restrictive standards to ADUs as those for other accessory buildings	There are more standards for accessory structures than accessory dwellings. Should they be different?	NO	*1. No change*
Consider two ADUs per dwelling, possibly one attached and one detached.	One ADU allowed per lot. Can be attached, detached, or above garage.	NO	*1. No change* *2. Allow two ADU's per single family-detached residence*
Consider SDC methodology to scale SDCs to ADU impacts or consider a fee waiver.	Historically, SDCs have not been assessed to ADUs	NO	*SDC's not determined by development code.*

PLANNING COMMISSION STAFF REPORT – TYPE III SITE DESIGN REVIEW FINDINGS AND RECOMMENDATION

Date of Report:	June 5, 2018
Public Hearing Date:	June 12, 2018
Staff Contact:	Sarah Selden, Senior Planner Phone: 503-674-6242 E-mail: seldens@ci.fairview.or.us
Application Number:	2018-15-DR
Property Owner & Applicant:	West Coast Real Estate Holdings, LLC
Site Address:	NW Corner of Sandy Blvd. and 223rd Avenue
Parcel Number/Tax ID:	Tax Map & Lot: 1N3E28AD -05300
Proposal:	200 multi-family residential units and four live-work units.
Recommendation:	**Approval of 2018-15-DR with conditions**
Exhibits:	**A. Applicant's Narrative and Written Materials** 1. Applicant's Narrative (44 pages) 2. Transportation Impact Analysis (48 pages) 3. Preliminary Storm Water Report (268 pages) 4. Geotechnical Engineering Report (41 pages) **B. Plans/Drawings** 1. Cover Sheet 2. Site Photos 3. Site Plan 4. Lighting/Circulation Plan

5. Typical Building Floor Plans
6. Elevations
7. Landscape Plan
8. Civil Cover Sheet
9. Site Analysis Map
10. Proposed Site Plan - Civil
11. Preliminary Grading and Erosion Control Plan
12. Proposed Utility Plan
13. Sandy Blvd. Improvements
14. 223rd Avenue Improvements
15. Fire Access Turn Analysis
16. Lighting Plan – Sandy Blvd.
17. Storm Water Basin Plan
18. Erosion Control Plan

C. Department Referral Comments

1. Multnomah County Transportation Comments
2. Fire Marshal Comments
3. Fairview Public Works Comments

D. Written Testimony

1. E-mail from Curtis

I. BACKGROUND & EXISTING CONDITIONS

Address/Location:	The site is located just northwest of the intersection of Sandy Blvd. and 223rd Avenue.
Acreage:	4.8 acres
Comprehensive Plan:	Residential Medium Density
Zoning Designation:	Corridor Commercial (CC)
Zoning Overlays:	None
Surround Land Use/ Zoning:	North: Heron Pointe residential subdivision/Residential Multi-Family Townhouse Overlay Zone South: Vacant ODOT property/Corridor Commercial Zone East: Fairview Marine Supply/Corridor Commercial Zone West: Fairview Terrace residential subdivision/ Residential Multi-Family Townhouse Overlay Zone

Streets/Classification:	Sandy Blvd. is a Minor Arterial and 223rd is a Major Collector.
Existing Site Conditions:	The site is currently vacant, and vegetated primarily with invasive plants. Trees are located along the north edge of the site. Significant variations in topography are present across the site, with a 50 ft. range in original grade and several areas with slopes exceeding 25%.

II. NOTICES & REFERRALS

Application Date:	February 27, 2018
Application Deemed Complete:	April 25, 2018
Public Notice Date/Type:	A public hearing notice was mailed on May 23, 2018 to property owners within 250 ft. of the site, and a newspaper notice was published in the Gresham Outlook on June 8, 2018. A sign was posted on the site on May 31, 2018.
Referrals:	This application was routed to Gresham Fire Fairview Public Works. Comments are included as Exhibit C.

III. APPLICABLE CRITERIA

This Type III application process requires a Planning Commission decision subject to the following requirements of the Fairview Municipal Code (FMC) Title 19:

A) Application Review Procedures

19.400	Administration of Land Use and Development Review
19.412	Description of Permit Procedures
19.424	Site Design Review – Application Review Procedure
19.425	Site Design Review – Application Submission Requirements
19.426	Site Design Review – Approval Criteria

B) Land Use Districts

19.70 Corridor Commercial (CC)

C) Design Standards

19.162 Access and Circulation
19.163 Landscaping, Street Trees, Fences and Walls
19.164 Vehicle and Bicycle Parking
19.165 Public Facilities Standards
19.170 Sign Regulations

IV. APPLICATION REVIEW PROCEDURE FINDINGS

19.400 Administration of Land Use and Development Review

This article specifies that land use approval expires two years from the date of decision application.

FINDINGS: If approved, this Site Design Review decision shall expire two (2) years from the date of final decision.

Condition of Approval: This approval for application 2018-15-DR shall become null and void after two (2) years if construction activities have not commenced.

19.412 Description of Permit Procedures

19.412.010 Preapplication conferences: establishes that a preapplication conference is required for Type II, III, and IV applications.

FINDINGS: A pre-application conference was held for this application on January 19, 2016. A follow-up meeting was held on January 29, 2018. This standard is met.

19.412.020 Forms, applications, and filing fees: specifies what information must be included in applications and requests for action.

FINDINGS: The application met all of the specified submission requirements. This standard is met.

19.412.030: Concurrent review of multiple applications: states that applications for more than one land use review on the same property may be processed in a single hearing.

FINDINGS: This standard does not apply. The request involves a single land use application.

19.412.040 Consistency with state statutes: applies ORS 22.178 the 120 day timeline for final action to Fairview land use applications.

FINDINGS: This application is being processes in accordance with the required statutory procedures. This standard is met.

FMC 19.412.050 Determination of completeness: Requires that land use applications be reviewed for consistency with the submission requirements, and that notice of completeness or incompleteness be given to the applicant within 30 days of application receipt.

FINDINGS: The land use application was submitted on February 27, 2018. A notice of incompleteness was sent on March 21, 2018. Incomplete items were then submitted and a notice of completeness was sent to the applicant on April 25, 2018. This standard is met.

19.413 Procedures

19.413.030 Type III procedure (quasi-judicial): Establishes the planning commission as the decision maker and outlines the procedures for a public hearing, notice of public hearing, and notice of decision.

FINDINGS: This application will be reviewed and a decision rendered by the Planning Commission following the procedures outlined in the code.

19.424 Site Design Review – Application Review Procedure

FMC 19.424.010: Procedure and FMC 19.424.020: Determination of Type II and Type III applications: Establish that Commercial, industrial, public/semi-public, and institutional buildings with greater than 5,000 square feet of gross floor area and developments with more than one building, shall be reviewed as a Type III application.

FINDINGS: This application is for a development with over 5,000 sq. ft. of gross floor area and includes five buildings, which requires a Type III procedure. This standard is met.

19.425 Site Design Review – Application Submission Requirements

This article lists the information required to be submitted as part of a site design review application, with specific requirements to be included on a site analysis map, proposed site plan, architectural drawings, preliminary grading plan, and landscape plan.

> **FINDINGS:** All of the required information was submitted to be deemed a complete application. This standard is met.

19.426 Site Design Review – Approval Criteria

FMC 19.426.001: Site design review approval criteria
The review authority shall make written findings with respect to all of the following criteria when approving, approving with conditions, or denying an application.

FMC 19.426.010: Complete application
The application must be complete, as determined in accordance with FMC 19.412.050, on types of applications, and Chapter 19.425FMC.

FMC 19.426.020: Compliance with land use district provisions
The application complies with all of the applicable provisions of the underlying land use district, including: building and yard setbacks, lot area and dimensions, density and floor area, lot coverage, building height, building orientation, architecture, and other special standards as may be required for certain land uses.

FMC 19.426.040: Compliance with design standards
The application complies with the design standards contained in Article III of this title. All of the following standards shall be met:

> *A. Chapter 19.162 FMC – Access and Circulation;*
>
> *B. Chapter 19.163 FMC – Landscaping, Street Trees, Fences and Walls;*
>
> *C. Chapter 19.164 FMC – Automobile and Bicycle Parking;*
>
> *D. Chapter 19.165 FMC – Public Facilities Standards;*
>
> *E. Other standards (telecommunications facilities, solid waste storage, environmental performance, signs), as applicable.*

FMC 19.426.050: Conditions
All conditions required as part of an approval shall be met.

FMC 19.426.060: Exceptions
Exceptions to criteria in FMC 19.426.040(A) through (E) may be granted only when approved as a variance.

FINDINGS: This application was determined to be complete on April 25, 2018. Per FMC 19.426.020 and 19.426.40, compliance with the underlying land use district and the design standards in FMC Article III are analyzed below. All conditions required as part of this approval must be met.

V. LAND USE DISTRICT FINDINGS

19.70 Corridor Commercial (CC) District

19.70.010 Purpose.
The corridor commercial district is intended to allow auto-accommodating commercial development while encouraging walking, bicycling, and transit….The district's development standards promote attractive development, an open and pleasant street appearance and compatibility with adjacent residential areas. Development is intended to be aesthetically pleasing for motorists, transit users, pedestrians, and the businesses themselves.

19.70.020 Permitted land uses.
Table 19.70.020.A lists permitted land uses in the zone, which include "e. Mixed use development (housing and other permitted use)" and a range of commercial uses including office, personal and professional services, and retail trade and services.

FINDINGS: The proposed development is a mix-use development consisting of 200 multi-family units and 4 live-work units. At the request of staff, the Planning Commission held a work session on February 23, 2016, to provide direction on the amount of residential vs. commercial use envisioned for the permitted "mixed-use development" use allowed in the Corridor Commercial zone. The Commission considered the Comprehensive Plan direction for the zoning district, which calls for land uses west of 223rd to be "predominantly residential with some neighborhood-oriented service commercial, incubator office, and light industrial…" whereas east of the intersection industrial uses should dominate. The Commission opined that inclusion of some live-work units on the east end of the site's Sandy Blvd. frontage provided the appropriate transition from residential to commercial commercial, and that a predominantly residential development was consistent with the Comprehensive Plan vision for west of 223rd. This standard is met.

19.70.030 Corridor commercial setback standards.

A. Building Setbacks. In the corridor commercial district, setback standards are flexible to allow parking to be located near the entrance of new commercial development. Building setbacks are measured from the wall or facade to the respective property line. The

setback standards apply to primary structures as well as accessory structures. The standards may be modified only by approval of a variance.

Setback	Min. Required	Proposed
Front	0 ft.	31-37 ft.
Rear	0 ft., except when abutting residential district, 15 ft. min. is required	62-74 ft.
Side	0 ft.	14-27 ft.

4. Setback Exceptions.

a. Architectural Features. Eaves, chimneys, bay windows, overhangs, cornices, awnings, canopies, porches, decks, pergolas, and similar architectural features may encroach into setbacks by no more than four feet, subject to compliance with applicable standards of the Uniform Building Code and Uniform Fire Code. Walls and fences may be placed on the property line, subject to the requirements of Chapter 19.163FMC, Landscaping, Street Trees, Fences and Walls.

FINDINGS: The proposed setbacks far exceed the minimums, where required, and no architectural exceptions are needed. Retaining walls are proposed along the north and west property lines, as shown on the Preliminary Grading and Erosion Control Plan.

Condition of Approval: Where required by building code, provide fencing on top of all retaining walls when the top of the wall is located at-grade with the development site. Compliance must be demonstrated prior to issuance of building permits.

19.70.040 Lot coverage and floor area ratio.
There are no maximum lot coverage or floor area ratio requirements, except that compliance with other sections of this code may preclude full (100 percent) lot coverage for some land uses.

FINDINGS: There are no requirements to comply with.

19.70.050 Site layout and building orientation.
This section is intended to encourage the efficient use of space, and connectivity to parking areas. The standards, as listed on the following page and illustrated above, complement the front setback standards in FMC 19.70.030.

A. Applicability. This section applies to all new land divisions, site design review, and conditional use applications.

Compliance with all of the provisions of subsections B through E of this section is required. As an alternative to meeting the requirements of subsections B through E, the applicant may propose alternative design solutions that satisfy the criteria in subsection F.

B. Pedestrian Access Standard. New land divisions and developments, which are subject to site design review or conditional use permits, shall provide pedestrian pathways as necessary to ensure reasonably safe, direct, and convenient access to building entrances and off-street parking.

> *1. From adjoining street right-of-way to building entrances and off-street parking these pathways shall be provided with an average maximum interval of 100 feet along the street right-of-way.*
>
> *2. Between adjoining developments where practical.*
>
> *3. In conformity with applicable requirements in Chapter 19.162 FMC, Access and Circulation.*
>
> **FINDINGS:** The site has 478 feet of frontage along Sandy Blvd. Along Sandy, there will be a continuous sidewalk, with two walkways connecting to parking areas on the interior of the site, a sidewalk connecting to the Building 2 entrance, and sidewalks connecting to each of the four live/work units. Spacing for the seven sidewalks connecting the site and buildings to the Sandy Blvd. frontage ranges from 15-150 ft. This provides an average maximum interval of under 100 ft. The 223rd Street frontage is approximately 140 ft. A continuous sidewalk will be provided along the site's 223rd frontage, with one pedestrian pathway connecting to 223rd to the site along the north side of Building 5. Access to abutting development is not practical due to the grade change and gated nature of the residential development to the west. This standard is met.

C. Building Orientation Standard. All of the developments listed in subsection A of this section are encouraged to be oriented to a street. The building orientation standard is met when all of the following criteria are met:

> *1. Buildings shall have their primary entrance(s) oriented to (facing) the street with a direct pedestrian walkway connecting with the adjoining street right-of-way. Building entrances may include entrances to individual units, lobby entrances, entrances oriented to pedestrian plazas, or breezeway/courtyard entrances (i.e., to a cluster of units or commercial spaces). Alternatively, a building may have its entrance facing a side when a direct pedestrian walkway not exceeding 30 feet in length is provided between the building entrance and the street right-of-way.*

FINDINGS: The site includes Buildings 1-5. Buildings 1 and 4 are located in the interior of the site and are not subject to this standard. Buildings 2 and 5 are located along the Sandy Blvd. frontage and have their primary entrances facing the street. This includes the four live-work units in Building 3. Building 5 has a side wall facing 223rd Avenue and has three entrances located on the north side of the building, which is oriented to a parking lot along the rear of the site. As an alternative to providing the main entrance along the street (223rd for Building 5), a direct pedestrian pathway not exceeding 30 ft. in length may connect the entrance to the street. On Building 5, the entrance closest to 223rd is connected via an 80 ft. long pathway. This standard "encourages" buildings to be oriented to the street but does not explicitly require it to be met. With the exception of Building 5, the proposed development meets the criteria for street orientation.

2. Off-street parking, driveways or other vehicular circulation should not be placed between a building and the street. On corner lots, buildings and their entrances should be oriented to the street corner. Parking, driveways and other vehicle areas shall not be permitted adjacent to street corners.

FINDINGS: None of the parking is located between the buildings and the street. Along Sandy Blvd., all parking is located behind Buildings 2 and 3, and along 223rd, parking is located next to Building 5. This standard is met.

19.70.060 Building height.

All buildings in the corridor commercial district shall comply with the following building height standards. The standards are intended to allow for development of appropriately scaled buildings.

A. Maximum Height. Buildings shall be no more than 45 feet in height.

B. Method of Measurement. "Building height" is measured as the vertical distance above a reference datum measured to the highest point of the coping of a flat roof or to the deck line of a mansard roof or to the average height of the highest gable of a pitched or hipped roof. The reference datum shall be selected by either of the following, whichever yields a greater height of building:

1. The elevation of the highest adjoining sidewalk or ground surface within a five-foot horizontal distance of an exterior wall of the building when such sidewalk or ground surface is not more than 10 feet above the lowest grade;

2. An elevation 10 feet higher than the lowest grade when the sidewalk or ground surface described in subsection (B)(1) of this section is more than 10 feet above the lowest grade. The height of a stepped or terraced building is the maximum height of any segment of the building. Not included in the maximum height are: chimneys, bell towers, steeples, roof equipment, flag poles, and similar features which are not for human occupancy.

FINDINGS: At this site, there is more than a 10 ft. difference in grade when measured at the sidewalk or ground surface next to the building. The 2nd methodology therefore applies to the height measurement. The methodology provides 10 additional feet in flexibility to address the grade change across the building's footprint. The height of proposed buildings are:

34 ft. 6"	Building 4 (2 stories)
40 ft.	Building 5 (2 stories on south and 3 stories on north) and Building 3 (2 stories on south – Sandy Frontage – and 3 stories on north)
43 ft.	Building 1 (3 stories on south, and 4 stories including ground floor parking garage on north)
45 ft.	Building 2 (3 stories on south – Sandy Frontage – and 4 stories including ground floor parking garage on north)

This standard is met.

C. Performance Option. The allowable building height may be increased to 55 feet, when approved as part of a conditional use permit

FINDINGS: Standard not applicable to proposal.

19.70.070 Architectural guidelines and standards.

A. Purpose and Applicability. The corridor commercial district architectural guidelines are intended to provide detailed, human-scale design, while affording flexibility to use a variety of building styles. This section applies to all development applications that are subject to site plan review or conditional use permits.

B. Guidelines and Standards. Each of the following standards shall be met. An architectural feature [may be] used to comply with more than one standard in this title.

1. Pedestrian-Oriented Design. All buildings shall contribute to the desired pedestrian-friendly character of corridor commercial district buildings. This criterion shall be met by providing all of the architectural features listed in subsections (B)(1)(a) through (d) of this section, along the front building elevation (i.e., facing the street), as applicable.

a. Corner building entrances on corner lots. Alternatively, a building entrance may be located away from the corner when the building corner is beveled or incorporates other detailing to reduce the angular appearance of the building at the street corner.

FINDINGS: The site is not a corner lot. This standard does not apply.

b. Regularly spaced and similar-shaped windows with window hoods or trim (all building stories).

FINDINGS: Street-facing elevations are located on Buildings 2 and 3 along Sandy Blvd., and on Building 5 along 223rd Ave.

Sandy frontage / Buildings 2 and 3: As shown on Exhibit B-6, both building elevations have regularly spaced windows of similar proportions. Residential Building 2 has vertically-oriented widows with a residential character, and Live-Work Building 3 has ground-floor windows with a storefront character. All windows have trim. This standard is met.

223rd frontage / Building 5: The east elevation of Building 5 faces 223rd Ave. As shown on Exhibit B-6, the east elevation has four total windows. While they are symmetrically placed and of the same shape, they are not regularly spaced along the elevation.

Condition of Approval: Prior to issuance of building permits, revise the East Elevation of Building 5 to add additional windows at regular spacing across the building wall.

c. Large display windows on the ground floor. Bulkheads, piers and a storefront cornice (i.e., separates ground floor from second story) shall frame display windows.

FINDINGS: This standard applies to the Live-Work Building 3, located along Sandy Blvd. The street-facing elevation has large storefront windows including transom windows along the ground floor, with awnings covering all windows and doorways. The ground floor is visually distinguished from the second story by a grey belly band to provide a cornice line. Bulkheads are provided at the base of each ground floor window, and vertical piers with brick bases provide separation between the windows. This standard is met.

d. Decorative cornice at the top of a building (flat roof); or eaves provided with pitched roof.

FINDINGS: All buildings have pitched roofs, and eaves.

2. Design of Large-Scale Buildings and Developments. The standards in subsection (B)(2)(c) of this section shall apply to large-scale buildings and developments, as defined in subsections (B)(2) (a) and (b) of this section:

a. Buildings with greater than 20,000 square feet of enclosed ground-floor space (i.e., "large-scale"). Multitenant buildings shall be counted as the sum of all tenant spaces within the same building shell;

FINDINGS: No individual building has more than 20,000 sq. ft. of enclosed ground floor space. This standard does not apply.

b. Multiple-building developments with a combined ground-floor space (enclosed) greater than 40,000 square feet (i.e., shopping centers, public/institutional campuses, and similar developments);

FINDINGS: The proposal includes multiple buildings with a total of 60,700 sq. ft. of enclosed ground floor building area. This development is subject to these standards.

c. All large-scale buildings and developments, as defined in subsections (B)(2)(a) and (b) of this section, shall provide human-scale design by conforming to all of the following criteria:

i. Incorporate changes in building direction (i.e., articulation), and divide large masses into varying heights and sizes, as shown above. Such changes may include building offsets; projections; changes in elevation or horizontal direction; sheltering roofs; terraces; a distinct pattern of divisions in surface materials; and use of windows, screening trees; small-scale lighting (i.e., wall-mounted lighting, or up-lighting); and similar features.

FINDINGS: All buildings include projections, offsets, and recesses spaced at regular intervals across all stories. The roofline on Buildings 1 and 2 are divided with a break and change in roof pitch over the main entrance. Building heights vary across the site, with lower heights for Buildings 3 and 4 at the southeast corner of the site. The design features a variety of building materials and colors, many windows, and alternating horizontal and vertical wall patterns to help break up the wall surfaces. This standard is met.

ii. Every building elevation adjacent to a street with a horizontal dimension of more than 100 feet, as measured from end-wall to end-wall, shall have a building entrance, which is open during business hours. Pathways shall connect all entrances to the street right-of-way, in conformance with Chapter 19.162 FMC, Access and Circulation, unless waived by the approval authority…

FINDINGS: Pathways connect all entrances to the public right-of-way. Only one building has commercial uses, the Live/Work building 4. This building has public entrances along the ground floor meeting the spacing requirement.

19.70.080 Pedestrian and transit amenities.
A. Purpose and Applicability. This section is intended to complement the building orientation standards in FMC 19.70.050, and the street standards in Chapter 19.165 FMC, by providing pedestrian spaces within the corridor center commercial district. This section applies to all development applications that are subject to site design review or conditional use permits.

B. Guidelines and Standards. Every development shall provide at least one of the "pedestrian amenities" listed in subsections (B)(1) through (4) of this section. Pedestrian amenities may be provided within a public right-of-way when approved by the applicable jurisdiction.

1. A plaza, courtyard, square or extra-wide sidewalk next to the building entrance (minimum width of eight feet);

2. Sitting space (i.e., dining area, benches or ledges between the building entrance and sidewalk (minimum of 16 inches in height and 30 inches in width);

3. Building canopy, awning, pergola, or similar weather protection (minimum projection of four feet over a sidewalk or other pedestrian space);

4. Public art which incorporates seating (e.g., fountain, sculpture, etc.).

FINDINGS: Along the Sandy Blvd. frontage, a courtyard area is provided in front of the main entrance to Building 1. Live/Work Building 3 is set back from the street to provide an extra wide sidewalk and lawn area in front of the ground floor commercial spaces. This standard is met.

C. Transit Amenities. Development on sites that are adjacent to or incorporate transit streets shall provide improvements as described in this section at any existing or planned transit stop located along the site's frontage, unless waived by the community development director.

FINDINGS: TriMet line 21-Sandy Blvd/223rd travels along the site. Stop ID 9776 is located on Sandy Blvd. just outside of the subject property.

19.70.090 Special standards for certain uses.
This section provides additional standards for accessory uses and structures, automobile-oriented uses and facilities, sidewalk displays, and light industrial uses.

FINDINGS: None of the above uses are proposed with this development. This standard does not apply.

VI. DESIGN STANDARDS FINDINGS

19.162: Access and Circulation

19.162.020 Vehicular access and circulation

A. Intent and Purpose. The intent of this section is to manage vehicle access to development through a connected street system, while preserving the flow of traffic in terms of safety, roadway capacity, and efficiency. …

B. Applicability. This section shall apply to all public streets within the city and to all properties that abut these streets.

C. Access Permit Required. Access to a public street requires an access permit in accordance with the following procedures:

> *1. Permits for access to city streets shall be subject to review and approval by the city engineer…*
> *2. Permits for access to state highways …*
> *3. Permits for access to county highways shall be subject to review and approval by Multnomah County, except where the county has delegated this responsibility to the city, in which case the city shall determine whether access is granted based on adopted county standards.*
>
> **FINDINGS:** Both Sandy Blvd. and 223rd Ave. are under Multnomah County's jurisdiction, and responsibility has not been delegated to the City of Fairview. The standards in 19.162.020.D-I address access in circulation in relation to the public right-of-way, and therefore the development proposal is subject to Multnomah County Road Rules in lieu of the standards in this section.

J. Figure 19.162.020.J provides examples of street layout and connectivity.
K. Street Connectivity and Formation of Blocks Required. In order to promote efficient vehicular and pedestrian circulation throughout the city, land divisions and large site developments shall produce complete blocks bounded by a connecting network of public and/or private streets, in accordance with the following standards:

> *1. Mixed-use and residential development proposed on sites five acres or greater must submit a site plan that identifies conceptual street connections that are consistent with the transportation system plan.*
>
> **FINDINGS**: The subject site is 4.8 acres in size, and therefore is not subject to this standard 19.162.020.K.

L. Driveway Openings.

FINDINGS: This standard does not apply. Multnomah County standards apply to the driveways on this site, which are located in the Multnomah County right-of-way.

M. Fire Access and Parking Area Turnarounds. A fire equipment access drive shall be provided for any portion of an exterior wall of the first story of a building that is located more than 150 feet from an existing public street or approved fire equipment access drive. Parking areas shall provide adequate aisles or turnaround areas for service and delivery vehicles so that all vehicles may enter the street in a forward manner. For requirements related to cul-de-sacs, please refer to Chapter 19.165 FMC.

N. Vertical Clearances. Driveways, private streets, aisles, turnaround areas and ramps shall have a minimum vertical clearance of 13 feet 6 inches for their entire length and width.

FINDINGS: All portions of both buildings are within 150 ft. of a public street or private access drive that meets fire access requirements. The on-site parking areas are served by driveways that provide circulation through the site, and provide access between Sandy Blvd. and 223rd. The private access drives meet fire requirements with a 24 ft. width, 28 ft. inside turning radii and 48 ft. outside turning radii. None of the vehicle circulation areas have vertical obstructions. This standard is met.

Condition of Approval: Prior to the issuance of building permits the applicant shall prepare a final Fire Access and Water Supply Plans to be reviewed and approved by Gresham Fire. The Plans shall address all of the Oregon Fire Code standards as stated in the Gresham Fire comments in Exhibit C.

O. Vision Clearance.

FINDINGS: The site is subject to Multnomah County requirement for vision clearance from 223rd and Sandy Blvd. See comments in Exhibit C-1.

P. Construction. The following development and maintenance standards shall apply to all driveways and private streets, except that the standards do not apply to driveways serving one single-family detached dwelling:

1. Surface Options. Driveways, parking areas, aisles, and turnarounds may be paved with asphalt, concrete or comparable surfacing, or a durable nonpaving material may be used to reduce surface water runoff and protect water quality. Paving surfaces shall be subject to review and approval by the city engineer.

2. Surface Water Management. When a paved surface is used, all driveways, parking areas, aisles and turnarounds shall have on-site collection or infiltration of surface waters to eliminate sheet flow of such waters onto public rights-of-way and abutting property. Surface water facilities shall be constructed in conformance with city standards.

3. Driveway Aprons. When driveway approaches or "aprons" are required to connect driveways to the public right-of-way, they shall be paved with concrete surfacing (see also subsection L of this section).

Findings: Proposed plans call for concrete walkways and asphalt surfaces. See findings and conditions under Public Facilities code section.

19.162.030 Pedestrian access and circulation.

The standards presented in this code provide standards for safe, connected and user-friendly pedestrian connections and pathways that join neighborhoods and buildings within a development.

A. Pedestrian Access and Circulation. To ensure safe, direct and convenient pedestrian circulation, all developments, except single-family detached housing (i.e., on individual lots), shall provide a continuous pedestrian and/or multi-use pathway system. (Pathways only provide for pedestrian circulation. Multi-use pathways accommodate pedestrians and bicycles.) The system of pathways shall be designed based on the standards in subsections (A)(1) through (5) of this section:

1. Continuous Pathways. The pathway system shall extend throughout the development site, and connect to all future phases of development, adjacent trails, public parks and open space areas whenever possible. The developer may also be required to connect or stub pathway(s) to adjacent streets and private property, in accordance with the provisions of FMC 19.162.020, Vehicular access and circulation, and the transportation standards in Chapter 19.165 FMC.

FINDINGS: Pedestrian connectivity is provided through the site as shown on Exhibit B-4. There are no future phases or abutting parcels with feasible connectivity. This standard is met.

2. Safe, Direct, and Convenient Pathways. Pathways within developments shall provide safe, reasonably direct and convenient connections between primary building entrances and all adjacent streets, based on the following definitions:

a. "Reasonably direct" means a route that does not deviate unnecessarily from a straight line or a route that does not involve a significant amount of out-of-direction travel for likely users.

b. "Safe and convenient" means bicycle and pedestrian routes that are reasonably free from hazards and provide a reasonably direct route of travel between destinations.

c. For commercial, industrial, mixed use, public, and institutional buildings, the "primary entrance" is the main public entrance to the building. In the case where no public entrance exists, street connections shall be provided to the main employee entrance.

d. For residential buildings the "primary entrance" is the front door (i.e., facing the street). For multifamily buildings in which each unit does not have its own exterior entrance, the "primary entrance" may be a lobby, courtyard or breezeway, which serves as a common entrance for more than one dwelling.

FINDINGS: Pedestrian pathways connect all building entrances, and provide access from Sandy Blvd. and 223rd Ave. to the interior of the site and to all entrances. This standard is met.

3. Connections within Development. For all developments subject to site design review, pathways shall connect all building entrances to one another. In addition, pathways shall connect all parking areas, storage areas, recreational facilities and common areas (as applicable), and adjacent developments to the site, as applicable.

FINDINGS: A continuous pathway is provided through the site from the SW corner to the NE corner of the property. This connects the entrances of buildings 2,3, 4 and 5. A pathway also loops around Building 1 in the NW section of the site, which includes a trash and mail enclosure and a recreational area. This pathway crosses a parking aisle and connects to the main pathway crossing the site. This standard is met.

4. Street Connectivity. Pathways (for pedestrians and bicycles) shall be provided at or near midblock where the block length exceeds the length required by FMC 19.162.020. Pathways shall also be provided where cul-de-sacs or dead-end streets are planned, to connect the ends of the streets together, to other streets, and/or to other developments, as applicable. Pathways used to comply with these standards shall conform to all of the following criteria:…

///

e. The hearings body or planning director may determine, based upon facts in the record, that a pathway is impracticable due to: physical or topographic conditions (e.g., freeways, railroads, extremely steep slopes, sensitive lands, and similar physical constraints); buildings or other existing development on

adjacent properties that physically prevent a connection now or in the future, considering the potential for redevelopment; and sites where the provisions of recorded leases, easements, covenants, restrictions, or other agreements recorded as of the effective date of this code prohibit the pathway connection.

5. Connections to Other Facilities. Proposed pathways shall be located to provide access to existing or planned commercial services and other neighborhood facilities, such as schools, shopping areas and park and transit facilities. To the greatest extent possible, access shall be reasonably direct, providing a route or routes that do not deviate unnecessarily from a straight line or that do not involve a significant amount of out-of-direction travel.

FINDINGS: Pathways connecting the site to abutting development is impractical due to steep slopes and existing single family development to the north, and due to the gated community to the west. Along the Sandy Blvd. frontage, the break between Building 2 and Building 3 provides for pedestrian connectivity through the site.

B. Design and Construction. Pathways shall conform to all of the standards in subsections (B)(1) through (B)(5) of this section:

1. Vehicle/Pathway Separation. Where pathways are parallel and adjacent to a driveway or street (public or private), they shall be raised six inches and curbed, or separated from the driveway/street by a five-foot minimum strip with bollards, a landscape buffer, or other physical barrier. If a raised path is used, the ends of the raised portions must be equipped with curb ramps.

FINDINGS: Proposed internal pathways are separated from parking lot circulation areas by a curb, as shown in Exhibit B-10. This standard is met.

2. Housing/Pathway Separation. Pedestrian pathways shall be separated a minimum of five feet from all residential living areas on the ground floor, except at building entrances. Separation is measured as measured from the pathway edge to the closest dwelling unit. The separation area shall be landscaped in conformance with the provisions of Chapter 19.163 FMC, Landscaping, Street Trees, Fences and Walls. No pathway/building separation is required for commercial, industrial, public, or institutional uses.

FINDINGS: Internal pathways are located along ground floor living spaces on the south side of Building 1, south side of Building 2 (Sandy Blvd. sidewalk), west side of Building 4, and north side of Building 5. The proposed site plan shows at least a 5 ft. separation between ground floor living areas and sidewalks on all but Building 1, which measures slightly less. The separation from the Sandy Blvd. sidewalk is a minimum of 20 ft.

Condition of Approval: Provide a minimum of 5 ft. separation between all sidewalks and ground floor living spaces.

3. Crosswalks. Where pathways cross a parking area, driveway, or street ("crosswalk"), they shall be clearly marked with contrasting paving materials, humps/raised crossings.

FINDINGS: Pedestrians pathways cross the parking lot in two locations, and cross parking garage entries in two locations. All crossings are provided as a continuation of the concrete sidewalk to contrast with the asphalt parking area. This standard is met.

4. Pathway Surface. Pathway surfaces shall be concrete, asphalt, brick/masonry pavers, or other durable surface, at least six feet wide, and shall conform to ADA requirements. Multi-use paths (i.e., for bicycles and pedestrians) shall be the same materials, at least 10 feet wide. (See also Chapter 19.165 FMC, Transportation Standards for public, multi-use pathway standard.)

FINDINGS: Pathways are proposed to be constructed of concrete. The proposed site plan (Exhibit X, sheet C 2.0) shows pathways at 5 ft. in width, which does not meet the minimum 6 ft. requirement.

Condition of Approval: Prior to issuance of building permits, revise the site plan to provide minimum 6 ft. wide sidewalks throughout the site.

5. Accessible Routes. Pathways shall comply with the Americans with Disabilities Act, which requires accessible routes of travel.

Condition of Approval: Prior to issuance of building permits, site development plans must comply with applicable ADA requirements.

19.163 – Landscaping, Street Trees, Fences and Walls

19.163.020: Landscape conservation
19.163.025: Existing landscaping

FINDINGS: The applicant's site survey did not identify any trees greater than 3" DBH, nor any other significant landscaping that must be conserved.

19.163.030: New landscaping

A. Applicability. This section shall apply to all developments requiring site design review, and other developments with required landscaping.

B. Landscaping Plan Required. A landscape plan is required at the time of design review or other pertinent applications. All landscape plans shall conform to the requirements in FMC 19.420.020 (E), Landscape plans.

FINDINGS: A landscape plan was submitted with the Site Design Review application, and can be found as Exhibit B-7. This standard is met.

C. Landscape Area Standards. The minimum percentage of required landscaping equals:

///

5. Corridor commercial district: five percent of the site.

///

FINDINGS: 21% of the site area is proposed to be landscaped. This standard is met.

D. Landscape Materials. This section provides guidelines that ensure significant vegetation growth and establishment using a variety of size specifications and coverage recommendations.

Landscape materials include trees, shrubs, ground cover plants, nonplant ground covers, and outdoor hardscape features, as described below:

1. Native Vegetation. Native vegetation shall be preserved or planted where practicable.

2. Plant Selection. A combination of deciduous and evergreen trees, shrubs and ground covers shall be used for all planted areas, the selection of which shall be based on local climate, exposure, water availability, and drainage conditions. As necessary, soils shall be amended to allow for healthy plant growth.

3. Non-native, invasive plants, as per FMC 19.164.020(B), shall be prohibited.

4. Hardscape features (i.e., patios, decks, plazas, etc.) may cover up to 15 percent of the required landscape area. Swimming pools, sports courts and similar active recreation facilities may not be counted toward fulfilling the landscape requirement.

5. Nonplant Ground Covers. Bark dust, chips, aggregate or other nonplant ground covers may be used, but shall cover no more than five percent of the area to be landscaped. "Coverage" is measured based on the size of plants at maturity or after five years of growth, whichever comes sooner.

6. Tree Size. Trees shall have a minimum caliper size of 1.5 inches or greater, or be six feet or taller, at time of planting.

7. Shrub Size. Shrubs shall be planted from one-gallon containers or larger.

8. Ground Cover Size. Ground cover plants shall be sized and spaced so that they grow together to cover a minimum of 80 percent of the underlying soil within three years.

9. Significant Vegetation. Significant vegetation preserved in accordance with FMC 19.163.020 may be credited toward meeting the minimum landscape area standards. Credit shall be granted on a per square foot basis. The street tree standards of FMC 19.163.040 may be waived when trees preserved within the front yard provide the same or better shading and visual quality as would otherwise be provided by street trees.

10. Stormwater Facilities. Stormwater facilities (e.g., detention/retention ponds and swales) shall be landscaped with water tolerant, native plants.

FINDINGS: The landscape plan (Exhibit B-7) proposes a mix of deciduous and evergreen trees, and a variety of shrubs and groundcovers, selected by a registered landscape architect. No non-plant material (e.g. mulch) is proposed, and all plants are proposed to meet the minimum size at planting. One 800-sq. ft. hardscape area with benches is proposed as a common area for residents, located next to Building 1. This area is 2% of the overall landscaping. These standards are met.

E. Landscape Design Standards. The landscape design standards provide guidelines within setback areas, parking areas, etc.

All yards, parking lots and required street tree planter strips shall be landscaped in accordance with the provisions of this chapter. Landscaping shall be installed with development to provide erosion control, visual interest, buffering, privacy, open space and pathway identification, shading and wind buffering, based on the following standards:

1. Yard Setback Landscaping. Landscaping shall satisfy the following criteria:

a. Provide visual screening and privacy within side and rear yards; while leaving front yards and building entrances mostly visible for security purposes;

FINDINGS: Screening and privacy are needed at the west side and rear of the property where the development will abut existing residential neighborhoods. The front yard of the site is located on Sandy Blvd. Along this frontage Columnar Red Maple street trees provide a buffer to the street and shading over the sidewalk. The landscape plan has an open character in the front yard, with a mix of shrubs and groundcover against the building and lawn next to the sidewalk. The front corners of the site and the main walkways are anchored by Little Leaf Linden trees, which will grow to 50-60 ft. in height.

The west side of the site has a narrow planting strip adjacent to the parking lot drive aisle. It is planted with a continuous row of dwarf Laurel shrubs (Otto Luyken), with Crimson Spire Oak trees planted approximately 30 ft. on center along the property edge.

Along the rear of the site, a 10 ft. wide planting strip separates the Heron Point subdivision and row of surface parking. This is also proposed to be planted with a continuous row of dwarf Laurel shrubs (Otto Luyken), and a bed of groundcover (Emerald Carpet and Spring Heather). Proposed trees are Blue Atlantic Cedar, a slow-growing evergreen tree reaching 40-60 ft. in heght and 30-40 ft. in width. The landscape plan proposes these trees to be planted at approximately 75 ft. on center.

The trees will serve as the primary screen between the lower-density and residential neighborhoods, that also have shorter building heights and are located at a lower grade than the proposed development. The proposed spacing of trees, combined with the low growing shrubs and deciduous trees on the west side are not sufficient to provide visual screening and privacy.

Retaining walls are also proposed along the north and west property lines, abutting existing residential developments that are sited at lower grades than the development site. As part of the overall landscaping, these walls must comply with requirements to provide visual interest and buffering.

Condition of Approval: Prior to issuance of building permits, revise the landscape plan to provide a more continuous year-around screen along the west and north property lines.

Condition of Approval: Prior to issuance of building permits, submit to the City of Fairview Public Works Department a detailed design proposal for the retaining walls for review and approval. The retaining wall shall be designed to provide visual interest to abutting residential properties on the north and west sides of the walls.

b. Use shrubs and trees as windbreaks, as appropriate;

FINDINGS: The property lines abutting the corner site are planted with continuous rows of Arborvitae, and there are a number of evergreen trees including cypress, that will help to provide a wind break. Providing additional tall evergreen vegetation along the north property line will help to provide additional windbreak. This standard is met.

c. Retain natural vegetation, as practicable;

FINDINGS: As noted earlier, there is no significant vegetation to preserve.

d. Define pedestrian pathways and open space areas with landscape materials;

e. Provide focal points within a development, such as signature trees (i.e., large or unique trees), hedges and flowering plants;

f. Use trees to provide summer shading within common open space areas, and within front yards when street trees cannot be provided;

g. Use a combination of plants for year-long color and interest;

h. Use landscaping to screen outdoor storage and mechanical equipment areas, and to enhance graded areas such as berms, swales and detention/retention ponds.

FINDINGS: A wide variety of plant types including a number of flowering shrub and trees species are proposed in the landscape plan, which will provide visual year-around interest. As noted under section 1 (a), trees in the front yard provide focal points. All pedestrian paths are bordered by landscape beds that include a mix of plant types. The planting plan for the small open space next to Building 1 includes two small flowering Japanese Snowbell trees. No outdoor storage or equipment is proposed, and no above-ground stormwater detention is provided. This standard is met.

2. Parking Areas. A minimum of five percent of the combined area of all parking areas, as measured around the perimeter of all parking spaces and maneuvering areas, shall be landscaped. Such landscaping shall consist of an evenly distributed mix of shade trees with shrubs and/or ground cover plants. "Evenly distributed" means that the trees and other plants are distributed around the parking lot perimeter and between parking bays to provide a partial canopy. At a minimum, one tree per five parking spaces total shall be planted to create a partial tree canopy over and around the parking area. All parking areas with more than 20 spaces shall include landscape islands with trees to break up the parking area into rows of not more than 12 contiguous parking spaces. All landscaped areas shall have minimum dimensions of four feet by four feet to ensure adequate soil, water, and space for healthy plant growth.

FINDINGS: There are 248 outdoor surface parking spaces proposed on the site. One tree per five spaces requires a minimum of 50 parking lot trees. The code specified that these trees must be shade trees and be evenly spaced along with other parking lot plants. The 12 Green Vase Zelkova trees proposed for the main parking area at the center of the lot are shade trees and meet this standard. The remaining trees are small, columnar or lack a shade tree canopy.

The landscape plan provides an even distribution of plants, located between rows, along the perimeter, and in landscape islands. The islands are broken into rows not exceeding 12 spaces, interspersed with landscape islands that meet the minimum dimensions.

Condition of Approval: Prior to issuance of building permits, revise the landscape plan to provide shade tree species for the 50 required parking area

trees. The City of Gresham Parking Lot Tree List is a recommended source for a menu of tree options.

3. Buffering and Screening Required. Buffering and screening are required under the following conditions:

a. Parking/Maneuvering Area Adjacent to Streets and Drives. Where a parking or maneuvering area is adjacent and parallel to a street or driveway...

FINDINGS: The proposed site plan does not include any parking or maneuvering areas adjacent and parallel to streets or driveways. This standard does not apply.

b. Parking/Maneuvering Area Adjacent to Building. Where a parking or maneuvering area, or driveway, is adjacent to a building, the area shall be separated from the building by a raised pathway, plaza, or landscaped buffer no less than four feet in width. Raised curbs, bollards, wheel stops, or other design features shall be used to protect buildings from being damaged by vehicles. When parking areas are located adjacent to residential ground-floor living space, a landscape buffer is required to fulfill this requirement.

FINDINGS: Landscape beds measuring at least 4 ft. in width are proposed along the perimeter of all buildings, some of which include ground floor living space. Where parking spaces are located along the buildings (along the south side of Building 1 and north side of Building 5) they are separated from the buildings by a 5 ft. wide curbed sidewalk that is raised 6 inches from the parking lot surface. This standard is met.

c. Screening of Mechanical Equipment, Outdoor Storage, Service and Delivery Areas, and Automobile-Oriented Uses. All mechanical equipment, outdoor storage and manufacturing, and service and delivery areas, shall be screened from view from all public streets and residential districts. Screening shall be provided by one or more of the following: decorative wall (i.e., masonry or similar quality material), evergreen hedge, non-see-through fence, or a similar feature that provides a non-see-through barrier. Walls, fences, and hedges shall comply with the vision clearance requirements and provide for pedestrian circulation, in accordance with Chapter 19.162 FMC, Access and Circulation.

FINDINGS: The applicant has stated that no significant mechanical equipment is proposed, and no outdoor storage, service or delivery areas are proposed.

Condition of Approval: Any mechanical equipment must be screened from view in compliance with the screening requirements in FMC 16.163.030.E.3.c.

19.163.040 Street trees

FINDINGS: A total of 14 trees are proposed to be planted along Sandy Blvd., and 4 along 223rd Avenue. Street tree requirements for these roads are under Multnomah County's jurisdiction. See comments in Exhibit C-1.

19.163.050 Fences and walls.

The fences and walls section provides height limits for construction of new walls. The guidelines prevent walls that reduce pedestrian connectivity and sight clearance. The standards also provide guidelines relating to maintenance.

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B. Dimensions.

1. The maximum allowable height of fences and walls is six feet, as measured from the lowest grade at the base of the wall or fence, except that retaining walls and terraced walls may exceed six feet when permitted as part of a site development approval, or as necessary to construct streets and sidewalks. A building permit is required for walls exceeding six feet in height, in conformance with the Uniform Building Code.

FINDING: Retaining walls are used throughout the site do to its topography.

Condition of Approval: Prior to issuance of building permits, submit to the City of Fairview Public Works Department a detailed design proposal for the retaining walls for review and approval.

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<u>19.164: Vehicle and Bicycle Parking</u>

19.164.030 Vehicle parking standards.

A. The minimum number of required off-street vehicle parking spaces (i.e., parking that is located in parking lots and garages and not in the street right-of-way) shall be determined based on the standards in Table 19.164.030.A.

Type of Use	Parking Ratio (Min. Required)	Proposed Number of Units / Square Footage	Minimum Number of Required Parking Stalls
Studio less than 500 sq. ft.	1 space per unit	46 units	46 spaces
One-bedroom (greater than 500 sq. ft.)	1.25 spaces/unit	71 units	89 spaces *(88.75 rounded up)*
Two-bedroom	1.5 spaces/unit	79 units	119 spaces (*118.5 rounded up)*
Live-Work: "Work" component (Business, General Retail, Personal Services. General)	4.1 spaces/1,000 sq. ft. of gross floor area.	4 units, each with 360 sq. ft. of ground floor work space (1,440 sq. ft. total)	6 spaces *(5.9 rounded up)*
		Total number of required stalls	***260 stalls***
		Total number of proposed stalls	***292 stalls***

FINDINGS: Based on the parking requirements outlined above, a minimum of 260 stalls are required and 292 stalls are proposed. This standard is met.

B. Credit for On-Street Parking.

FINDINGS: No on-street parking is available or proposed to meet the parking requirements for this development.

C. Parking Location and Shared Parking.

1. Location. Vehicle parking is allowed only on approved parking shoulders (streets), within garages, carports and other structures, or on driveways or parking lots that have been developed in conformance with this code. Specific locations for parking are indicated in Article II of this title for some land uses (e.g., the requirement that parking be located to side or rear of buildings, with access from alleys, for some uses). (See also Chapter 19.162 FMC, Access and Circulation.)

2. Off-Site Parking. Except for single-family dwellings, the vehicle parking spaces required by this chapter may be located on another parcel of land…

FINDINGS: All parking is shown in surface parking lots and within the first floor of the buildings. No required parking will be located off-site. This standard is met.

3. Mixed Uses. If more than one type of land use occupies a single structure or parcel of land, the total requirements for off-street vehicle parking shall be the sum of the requirements for all uses, unless it can be shown that the peak parking demands are actually less (i.e., the uses operate on different days or at different times of the day). In that case, the total requirements shall be reduced accordingly.

4. Shared Parking. Required parking facilities for two or more uses, structures, or parcels of land may be satisfied by the same parking facilities used jointly, to the extent that the owners or operators show that the need for parking facilities does not materially overlap (e.g., uses primarily of a daytime versus nighttime nature), and provided that the right of joint use is evidenced by a recorded deed, lease, contract, or similar written instrument establishing the joint use.

FINDINGS: Residents of the live/work units may not need additional parking for the work component of the use and floor area and may use the residential space to satisfy live and work needs. The proposal, however, provides a sufficient number of parking spaces to provide additional parking for the ground floor work uses. This provides flexibility to meet the business needs of future tenants. This standard is met.

5. Availability of Facilities. Owners of off-street parking facilities may post a sign indicating that all parking on the site is available only for residents, customers and/or employees, as applicable. Signs shall conform to the standards of Chapter 19.170 FMC, Sign Regulations.

FINDINGS: No parking space signage is proposed.

E. Parking Management. The planning director may require a parking management plan for development of any use that requires more than 10 parking spaces based on the minimum parking spaces provided in Table 19.164.030.A.

FINDINGS: The development consists almost entirely of multi-family development, and staff does not anticipate parking management challenges. No plan is being required.

F. Parking Stall Standard Dimensions and Compact Parking Spaces. All off-street parking stalls shall be improved to conform to city standards for surfacing, stormwater management and striping, and provide dimensions in accordance with the following table. Disabled person parking shall conform to the standards and dimensions of this chapter. The number of compact parking spaces shall not exceed 40 percent of all parking spaces provided on site.

FINDINGS: A maximum of 117 compact spaces (40%) are allowed, and 98 are proposed. All standard and compact space dimensions conform to the code requirements. This standard is met.

G. Variances.

FINDINGS: No variances are requested.

H. Disabled Person Parking Spaces. The following parking shall be provided for disabled persons, in conformance with the Americans with Disabilities Act (Figure 19.164.030.H):

FINDINGS: Figure 19.164.030 establishes the minimum number of ADA accessible parking spaces. 292 total spaces require a minimum of 7 ADA accessible parking spaces, including one that is van accessible. The proposal meets this standard with two stalls in the Building 1 garage, two stalls on the south side of Building 1 adjacent to the main entrance, and three stalls in the Building 2 garage including the van space. This standard is met.

I. In parking lots three acres and larger intended for use by the general public…

FINDINGS: This standard does not apply.

2. Parking Stall and Aisle Dimensions.

a. Parking lot aisles shall have a minimum width of 24 feet.
b. Standard parking lot stalls shall have a minimum width of nine feet and a minimum depth of 18 feet.
c. Compact-vehicle parking stalls shall have a minimum width of eight feet and a minimum depth of 16 feet.

FINDINGS: All parking lot aisles are at least 24 ft. wide, and stall dimensions comply with the requirements. This standard is met.

19.164.040 Bicycle parking standards.
All uses which are subject to site design review shall provide bicycle parking, in conformance with the following standards, which are evaluated during site design review:

Type of Use	Bike Parking Ratio	Proposed Number of Units / Commercial Vehicle Spaces	Minimum Number of Required Bike Parking Stalls
Multifamily	1 space per unit	200 units	200
Commercial	5% of required vehicle parking spaces	6 vehicle parking spaces required. 6 x 5% = < 1	1
		Total number of required bike spaces	***201***
		Total number of proposed bike spaces	***200***

FINDINGS: The work component of the Live/Work space requires 6 parking spaces to account for a flexible range of commercial uses. This requires dedication of one bike parking space, which is not included in the proposal. All other residential bike parking requirements are met.

Condition of Approval: Provide one parking space near the entrances to the Building 3 to serve customers of the Live/Work building.

<u>19.165: Public Facilities Standards</u>

19.165.010: Purpose and applicability

A. Purpose. The purpose of this chapter is to provide planning and design standards for public and private transportation facilities and utilities. Streets are the most common public spaces, touching virtually every parcel of land….

B. When Standards Apply. Unless otherwise provided, the standard specifications for construction, reconstruction or repair of transportation facilities, utilities and other public improvements within the city shall occur in accordance with the standards of this chapter….

C. Standard Specifications. The city engineer shall establish standard construction specifications …

D. Conditions of Development Approval No development may occur unless required public facilities are in place or guaranteed, in conformance with the provisions of this code. Improvements required as a condition of development approval that require a dedication of property for a public use, when not voluntarily accepted by the applicant, shall be roughly proportional.

FINDINGS: The applicant must comply with all City of Fairview requirements for utilities, and all Multnomah County requirements for the public ROW.

E. Rough Proportionality Report. Where the applicant objects to the imposition of any applicable development standard…

FINDINGS: All public improvement requirements will come from Multnomah County.

19.165.025 Transportation improvements.

Findings: Standards A-J address public streets, which are under Multnomah County's jurisdiction. The proposal shall comply with all Multnomah County requirements for the

design and construction of improvements in the 223rd Avenue and Sandy Blvd. rights-of-way. See Multnomah County comments as Exhibit C-1.

///

K. Internal Pathways. Pathways shall be at least five feet in unobstructed width and shall be constructed to sidewalk standards found in Standard Specifications for Public Works Construction, or according to Multnomah County or ODOT standards as applicable. The property owner shall keep a minimum of five feet of the pathway width clear of both permanent and temporary obstructions (e.g., utility poles, sandwich signs). Maintenance of internal pathways is the continuing obligation of the property owner or adjacent property owner. All work must comply with the city of Fairview public works construction standards.

> **FINDINGS:** Proposed pathways are five feet in width.
>
> **Condition of Approval:** Concrete curbs, curb cuts, wheelchair, bicycle ramps and driveway approaches within the Multnomah County right-of-way shall be constructed in accordance with their standards. These facilities constructed onsite shall meet the standards specified in FMC Chapter 19.162 FMC, Access and Circulation.

Standards L-O, and Q-W and Z:

> **FINDINGS:** These standards do not apply. They address the creation of new streets and alleys, none of which are proposed.

P. Curbs, Curb Cuts, Ramps, and Driveway Approaches. Concrete curbs, curb cuts, wheelchair, bicycle ramps and driveway approaches shall be constructed in accordance with standards specified in Chapter 19.162 FMC, Access and Circulation.

> **Condition of Approval:** Facilities within the Multnomah County right-of-way shall be constructed in accordance with County standards. Facilities constructed onsite shall meet the standards specified in FMC Chapter 19.162 FMC, Access and Circulation.

X. Mail Boxes. Plans for mail boxes to be used shall be approved by the United States Postal Service.

> **Condition of Approval:** Prior to final occupancy all mail boxes shall be installed in accordance with approved plan from USPS.

Y. Streetlight Standards. Streetlights shall be installed in accordance with city standards.

Condition of Approval: Exhibit B-4 provides a lighting plan for Sandy Blvd. The applicant shall contact the Mid-County Lighting District to determine the required fixtures, which shall be shown on the ROW improvement plan.

19.165.030 Public use areas.
Public use areas implement Comprehensive Plan policies that may require a developer to reserve a piece of land for future park and open space to serve the residents of the new development…

FINDINGS: This section does not apply. No public park or open space land is required of this development.

19.165.040 Sanitary sewer and water service improvements.
The sanitary sewer and water service improvements ensure adequate sanitary sewer services to new developments.

FINDINGS (water): Access of water service line connections are available to this site from 2 existing locations: an existing 10" PVC main located at the south property line (Sandy Blvd.) and an existing 10" DI main located at the west property line (NE 223rd Ave.).

Condition of Approval: Per the City of Fairview Standard Details, all public water systems must be located within public rights of way.

Condition of Approval: Prior to receiving a building permit the applicant shall submit a water connection application and pay all applicable fees.

Condition of Approval: Prior to receiving a building permit the development will need to meet fire flow verification standards set by Gresham Fire and Emergency Services.

Condition of Approval: Public Works shall approve backflow assembly devices to be installed at appropriate service locations.

FINDINGS (sewer): Access of sanitary sewer lateral connection is available to this site from an existing 21" diameter Concrete Sewer Pipe (CSP), City sanitary sewer main located at the south property line of the applicant's address (Sandy Blvd.) and an existing 8" diameter PVC Pipe, City sanitary sewer main located at the east property line of the applicant's address (NE 223rd Ave.).

Condition of Approval: The applicant shall provide sanitary sewer capacity (in gpd) in writing to determine capacity accommodation with the City's existing sanitary sewer system designed capacity.

Condition of Approval: If there is an existing private wastewater disposal system on site it shall be abandoned in accordance with the regulations of the Oregon Department of Environmental Quality.

Condition of Approval: Per the City of Fairview Standard Details, all public sewer systems must be located within public rights of way.

19.165.050 Storm drainage. *The storm drainage section requires developers to accommodate and treat stormwater runoff from buildings and parking lots.*

FINDINGS: There is no existing City stormwater system available to accommodate the property location. The development's stormwater collection, conveyance, detention, treatment and disposal shall have an on-site total infiltration system to be designed by a competent engineer and subject for review during the development review process. Refer to the City of Portland's 2014 Stormwater Management Manual under Stormwater Infiltration and Discharge Hierarchy. The proposed development of the property address is in close proximity to the Fairview Tributary Creek; therefore, applicable Best Management Practices should be implemented during the construction phase.

For stormwater quality management implementation address best management practices from point of collection, conveyance, detention, treatment and to the point of on-site ground infiltration discharge. The goal is to protect underground infiltration of hazardous and pollutant sources under the Columbia South Shore Well Filed Area (CSSWFA) protection program through Inter-Governmental Agency agreement with the City of Portland and Gresham. It is also to enhance water quality management by preventing discharge of sediments and pollutants from construction sources via stormwater to adjacent receiving water bodies specially the property location is in close proximity to the Fairview Creek.

The applicant provided a Preliminary Storm Drainage Report (Exhibit X), which outlines an underground infiltration system. Stormwater is proposed to be treated with cartridge-style catch basin filters, and then drained into a series of 20 ft. deep drywells designed to accommodate runoff from a 100-year storm event.

This standard is met.

Condition of Approval: Prior to the issuance of building permits the applicant shall provide the city with a final stormwater management plan and demonstrate the need to move away from Category 1 Total Infiltration in the stormwater management hierarchy.

Condition of Approval: The proposed development site area to be disturbed is 4.80 acres. The site is required to obtain a DEQ issued 1200-C SW General Construction Permit (typically one acre or larger or as determined by DEQ).

19.165.060 Utilities.
The utilities section provides standards regarding electric lines and cable. Many types of utilities now must be installed underground for safety and aesthetic purposes.

A. Underground Utilities. All utility lines including, but not limited to, those required for electric, communication, lighting and cable television services and related facilities shall be placed underground, except for surface-mounted transformers, surface-mounted connection boxes and meter cabinets which may be placed above ground, temporary utility service facilities during construction, and high capacity electric lines operating at 50,000 volts or above.

FINDINGS: All utilities are proposed to be placed underground. This standard is met.

19.165.070 Easements.
The easements section provisions reserve adequate space for utilities.

Easements for sewers, storm drainage and water quality facilities, water mains, electric lines or other public utilities shall be dedicated on a final plat, or provided for in the deed restrictions.

FINDINGS: See comments from Multnomah County, Exhibit C-1.

19.165.080 Construction plan approval and assurances.
The construction plan approval portion ensures the completion of a development by a builder.

No public improvements, including sanitary sewers, storm sewers, streets, sidewalks, curbs, lighting, parks, or other requirements, shall be undertaken except after the plans have been approved by the city, permit fee paid, and permit issued…

Condition of Approval: Prior to beginning construction, all construction plans must be approved by the City, development permit fees paid, and permits issued.

19.165.090 Installation.
A. Conformance Required. Improvements installed by the developer either as a requirement of these regulations or at his/her own option, shall conform to the requirements of this chapter, approved construction plans, and to improvement standards and specifications adopted by the city.

B. Adopted Installation Standards. The Standard Specifications for Public Works Construction, Oregon Chapter APWA shall be a part of the city's adopted installation standard(s); other standards may also be required upon recommendation of the city engineer.

C. Commencement. Work shall not begin until the city has been notified in advance.

D. Resumption. If work is discontinued for more than one month, it shall not be resumed until the city is notified.

E. City Inspection. Improvements shall be constructed under the inspection and to the satisfaction of the city. The city may require minor changes in typical sections and details if unusual conditions arising during construction warrant such changes in the public interest. Modifications requested by the developer shall be subject to land use review under Chapter 19.415 FMC, Modifications to Approved Plans and Conditions of Approval. Any monuments that are disturbed before all improvements are completed by the subdivider shall be replaced prior to final acceptance of the improvements.

F. Engineer's Certification and As-Built Plans. A registered civil engineer shall provide written certification in a form required by the city that all improvements, workmanship and materials are in accord with current and standard engineering and construction practices, conform to approved plans and conditions of approval, and are of high grade, prior to city acceptance of the public improvements, or any portion thereof, for operation and maintenance. The developer's engineer shall also provide three sets (one mylar, one electronic, one paper copy) of "as-built" plans, in conformance with the city engineer's specifications, for permanent filing with the city.

> **Condition of Approval:** The applicant agrees to comply with all regulations and requirements of the Fairview City Code which are current on this date, except where variance or deviation from such regulation and requirements have been specifically approved by formal Planning Commission action as documented by the records of this decision and/or the associated Conditions of Approval.

FMC 19.170 – Sign Regulations

Per FMC 19.11.035, all signs in Fairview Village shall be in conformance with sign regulations in Chapter 19.170.

> **Condition of Approval:** Any signs on the site, including monument signs for the development and building signs for the live/work commercial uses, must comply with FMC 19.170. The applicant shall apply for a permit prior to installation of signs.

VII. CONCLUSION AND RECOMMENDATIONS

PLANNING COMMISSION ALTERNATIVES

1. Approve the application based on the findings of compliance with City regulations and conditions of approval.
2. Modify the findings, reasons, or conditions, and approve the request as modified.
3. Deny the application based on the Commission's findings
4. Continue the Public Hearing to a date certain if more information is needed.

STAFF RECOMMENDATION

Staff finds that the proposed application will meet the requirements of the City Code as conditioned, and recommends approval of the site design review subject to the following:

CONDITIONS OF APPROVAL

The application, as presented, meets or can meet applicable City codes and requirements, provided that the following conditions of approval are met. The site shall be developed in accordance with the applicant's approved plans, as attached and modified below.

A. General Requirements

1. The applicant agrees to comply with all regulations and requirements of the Fairview City Code which are current on this date, except where variance or deviation from such regulation and requirements have been specifically approved by formal Planning Commission action as documented by the records of this decision and/or the associated Conditions of Approval.

2. Any modifications to the approved plans or changes of use, except those changes relating to the Building Codes, will require approval by the Planning Director or Planning Commission.

3. Regardless of the content of material presented for this Planning Commission, including application text and exhibits, staff reports, testimony and/or discussions, the applicant agrees to comply with all regulations and requirements of the Fairview City Code which are current on this date, EXCEPT where variance or deviation from such regulation and requirements have been specifically approved by formal Planning Commission action as documented by the records of this decision and/or the associated Conditions of Approval.

4. This approval for application 2018-15 DR shall become null and void after two (2) years if construction activities has not commenced.

5. Prior to receiving permits all plans must be approved by the City, applicable fees paid, and permits issued.

6. Any signs on the site, including monument signs for the development and building signs for the live/work commercial uses, must comply with FMC 19.170. The applicant shall apply for a permit prior to installation of signs.

B. Prior to grading/site disturbance

1. Prior to the issuance of any development permit or construction activity on the site, the applicant shall submit a construction management plan for review and approval by the Public Works Department. The plan shall include but is not limited to, a tentative development timeline, any significant impacts (noise/vibrations, street closures, etc.), a construction vehicle parking plan, names of persons who can be contacted to correct problems, hours of construction activity, and any work that may occur within a public right-of-way.

2. The applicant shall obtain a DEQ 1200-C permit as a prerequisite to obtaining a grading and erosion control permit from the Fairview Public Works Department. The City of Fairview permit shall be obtained no more than 30 days before grading is commenced on site.

3. Prior to the submittal for development permits (grading, erosion, building, etc.) the applicant shall submit all necessary information to the City's building official to be reviewed for compliance with FMC Chapter 16.05.

C. Plan Check Review/Prior to Construction

1. Prior to issuance of building permits, submit to the City of Fairview Public Works Department a detailed design proposal for the retaining walls for review and approval. The retaining wall shall be designed to provide visual interest to abutting residential properties on the north and west sides of the walls.

2. Where required by building code, provide fencing on top of all retaining walls when the top of the wall is located at-grade with the development site. Compliance must be demonstrated prior to issuance of building permits.

3. Prior to issuance of building permits, revise the East Elevation of Building 5 to add additional windows at regular spacing across the building wall.

4. Provide a minimum of 5 ft. separation between all sidewalks and ground floor living spaces.

5. Concrete curbs, curb cuts, wheelchair, bicycle ramps and driveway approaches within the Multnomah County right-of-way shall be constructed in accordance with their standards. These facilities constructed onsite shall meet the standards specified in FMC Chapter 19.162 FMC, Access and Circulation.

6. All onsite external lighting shall be designed and installed to have no off-site glare.

7. Prior to the issuance of building permits the applicant shall prepare a final Fire Access and Water Supply Plans to be reviewed and approved by Gresham Fire. The Plans shall address all of the Oregon Fire Code standards as stated in the Gresham Fire comments in Exhibit C.

8. Prior to issuance of building permits, submit to the City of Fairview Public Works Department a detailed design proposal for the retaining walls for review and approval. The retaining wall shall be designed to provide visual interest to abutting residential properties on the north and west sides of the walls.

9. Public Works shall approve backflow assembly devices to be installed at appropriate service locations.

10. The applicant shall provide sanitary sewer capacity (in gpd) in writing to determine capacity accommodation with the City's existing sanitary sewer system designed capacity.

11. Per the City of Fairview Standard Details, all public sewer systems must be located within public rights of way.

12. Prior to the issuance of building permits the applicant shall provide the city with a final stormwater management plan and demonstrate the need to move away from Category 1 Total Infiltration in the stormwater management hierarchy.

D. Landscaping/Street Trees

1. Prior to issuance of building permits, revise the landscape plan to provide shade tree species for the 50 required parking area trees. The City of

Gresham Parking Lot Tree List is a recommended source for a menu of tree options.

2. Prior to issuance of building permits, revise the landscape plan to provide a more continuous year-around screen along the west and north property lines.

3. Prior to final occupancy, all vegetation shall be planted in the quantities, location, and sizes as shown on the Landscape Plan.

4. The property owner shall maintain all landscaped areas in perpetuity upon completion and they shall be kept free from weeds and debris and maintained in a healthy, growing condition and shall receive regular pruning, fertilizing, mowing and trimming. Any damaged, dead, diseased, or decaying plant material shall be replaced within 30 days.

E. Vehicle/Bike Parking and Pedestrian Access

1. Provide one parking space near the entrances to the Building 3 to serve customers of the Live/Work building.

2. Seven (7) ADA parking spaces shall be marked and signed, per FMC 19.164.030.H.

3. Prior to issuance of building permits, revise the site plan to provide minimum 6 ft. wide sidewalks throughout the site.

4. Prior to issuance of building permits, site development plans must comply with applicable ADA requirements.

F. Prior to Final Occupancy

1. Copies of any applicable CC&R's and Operations and Maintenance Agreements must be recorded and provided to the city.

2. All mail boxes shall be installed in accordance with approved plan from USPS.

3. Public Works shall approve backflow assembly devices to be installed at appropriate service locations.

4. Any mechanical equipment must be screened from view in compliance with the screening requirements in FMC 16.163.030.E.3.c.

G. Multnomah County Transportation Conditions:

1. Prior to issuance of the Certificate of Occupancy, dedicate 20 feet of right-of-way along the site's Sandy Boulevard frontage to Multnomah County for road purposes.

2. Prior to issuance of the Certificate of Occupancy, dedicate 10 feet of right-of-way along the site's 223rd Avenue frontage to Multnomah County for road purposes.

3. Prior to issuance of the Certificate of Occupancy, work with Multnomah County to dedicate roadway slope easement to be used to maintain an earth cut/fill slope (slope) supporting adjacent street improvements located along the site's 223rd Avenue frontage to Multnomah County.

4. Prior to issuance of the Certificate of Occupancy, construct half-street improvements to Multnomah County standards along the site's Sandy Blvd and 223rd frontage and obtain a Construction Permit from Multnomah County for all improvements within the County right of way. Half street improvements include: Grade/rock/pave to commercial depth between existing pavement and new curb; Construct bicycle lanes as required; Furnish street trees as required; Furnish street lighting facilities as required; Construct Multnomah County standard concrete curb and 6-foot wide concrete sidewalk in compliance with ADA specifications; Install underground traffic control devices conduit and related equipment as required; Construct storm drainage facilities as required.

5. Maintain sight distance at all access points on Sandy and 223rd serving the property consistent with AASHTO requirements.

6. Any work in the right of way, including the removal of trees, or any increase in storm-water drainage from the site to the right of way will require review and a permit from Multnomah County.

7. The project is responsible for all access intersections and levels of service designed by the project as submitted in the Traffic Study for the project.

8. Prior to issuance of the Certificate of Occupancy, acquire driveway permits for the sites access to NE Sandy Blvd and NE 223rd.

9. The access point on NE Sandy Blvd shall be limited to a right turn in and right turn out only.

EXHIBIT A-1

West Coast Real Estate Holdings, LLC

Fairview Apartments

February 27, 2018

APPLICANT: **West Coast Real Estate Holdings, LLC**
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APPLICATION:	**Type III Site Design Review**
PROPOSAL:	**Mixed-use project containing five buildings with a range of 19 to 60 dwelling units each. The proposal includes four live-work units with storefronts facing the north side of Sandy Boulevard, with parking areas in the center of the site. Access/egress to the site is proposed on NE Sandy and on 223rd.**
LOCATION:	**NWC / 223rd & NE Sandy Blvd**
TAX LOT ID:	**TL# 1N3E28AD -05300, R649730340**
ZONING:	**Corridor Commercial (CC)**
DATE:	**February 27, 2018**

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Exhibit B: Planning Commission Meeting Minutes (February 23, 2016)
Exhibit C: Neighborhood Meeting Notes
Exhibit D: Multnomah County Road Rules Variance Request

Nature of the Application

The proposal is to construct a mixed-use project containing five buildings with a total of 200 dwelling units. The proposed development includes 4 live-work units with storefronts along the north side of Sandy Boulevard, with parking areas in the center of the site and beneath two of the proposed buildings.

Primary access/egress to the site is proposed from NE 223rd Avenue with limited access (right-in, right-out) from NE Sandy Boulevard. Exhibit A to this application (the Transportation Impact Study shows that the limited Sandy Boulevard access will provide safe and convenient access for apartment dwellers and visitors while decreasing vehicle miles traveled. The TIS supports includes a Multnomah County "Road Rules Variance" (Exhibit D) to allow such limited access.

The site is zoned Corridor Commercial (CC).The proposal is mixed-use, and predominantly multi-family, consistent with Comprehensive Plan Goal 8 – Sandy Boulevard (p.23), and the Sandy Boulevard Refinement Plan Vision (pp. 4-5):

> ***"The N.E. 223rd Avenue intersection should be used as a dividing line for land uses within the corridor. To the west of the intersection, land uses should be predominately residential with some neighborhood-oriented service commercial, incubator office, and light industrial. To the east of the intersection, industrial uses should dominate with some destination retail commercial near the intersection of N.E. 238th Avenue to serve nearby residents as well as the region."***

The Planning Commission, at a February 23, 2016 work session, confirmed the proposed development (mixed-use and predominantly multi-family) as consistent with the transitional approach of the comprehensive plan and refinement plan; the lot at the corner of NE Sandy and NE 223rd is more suitable for higher density commercial development (see Exhibit C).

Site Description

The 4.8 acre site is pan-shaped, with frontage on NE Sandy Boulevard to the south, and NE 223rd Avenue to the east. The site borders a one-acre lot on the corner of NE Sandy and 223rd, which is currently used as a marine supply shop. The subject site is undeveloped and covered by scrub brush and blackberries. The site slopes downward from NE Sandy Boulevard to the northern property line, and moderately downward from NE 223rd Avenue to the western property line..

Adjacent Properties

- **North**: To the north lies the Heron Pointe community – a single-family residential subdivision.
- **West**: To the west is Fairview Terrace, a gated-access single-family residential subdivision.
- **South**: Adjacent to the south is Sandy Boulevard and a slope leading up to I-84.
- **East**: Fairview Marine Supply is adjacent to the east of the site, on the corner of NE Sandy and NE 223rd. Across 223rd to the east lies Pettijohn City Park.

Code Compliance

Site Design Review Requirements

19.426.001 Site design review approval criteria.

The review authority shall make written findings with respect to all of the following criteria when approving, approving with conditions, or denying an application. (Ord. 6-2001 § 1)

Response: This application narrative addresses all applicable criteria.

19.426.010 Complete application.

The application must be complete, as determined in accordance with FMC 19.412.050, on types of applications, and Chapter 19.425 FMC. (Ord. 6-2009 § 4; Ord. 6-2001 § 1)

Response: This application was prepared based on close coordination with City Staff, as well as strict review of applicable code standards, with the objective of submitting a complete application.

19.426.020 Compliance with land use district provisions.

The application complies with all of the applicable provisions of the underlying land use district, including: building and yard setbacks, lot area and dimensions, density and floor area, lot coverage, building height, building orientation, architecture, and other special standards as may be required for certain land uses. (Ord. 6-2001 § 1)

Response: Please see narrative responses to development code requirements below.

19.426.030 Upgrade existing development.

The applicant shall be required to upgrade any existing development that does not comply with the applicable land use district standards, in conformance with Chapter 19.530 FMC, Nonconforming Uses and Development. (Ord. 6-2001 § 1)

Response: The site is currently vacant; therefore this requirement is not applicable.

19.426.040 Compliance with design standards.

The application complies with the design standards contained in Article III of this title. All of the following standards shall be met:

A. Chapter 19.162 FMC – Access and Circulation;
B. Chapter 19.163 FMC – Landscaping, Street Trees, Fences and Walls;
C. Chapter 19.164 FMC – Automobile and Bicycle Parking;
D. Chapter 19.165 FMC – Public Facilities Standards;
E. Other standards (telecommunications facilities, solid waste storage, environmental performance, signs), as applicable. (Ord. 6-2001 § 1)

Response: The application narrative addresses all of these chapters in findings below.

19.426.050 Conditions.

All conditions required as part of an approval shall be met. (Ord. 6-2001 § 1)

Response: Applicant understands this requirement.

19.426.060 Exceptions.

Exceptions to criteria in FMC 19.426.040(A) through (E) may be granted only when approved as a variance. (Ord. 6-2001 § 1)

Response: No exceptions to code requirements are requested in this application. However, the applicant requests a Road Rules Variance from Multnomah County to accommodate limited access (right-in, right-out) traffic entering and exiting the site from a secondary access on NE Sandy Boulevard.

Corridor Commercial Requirements

19.70.010 Purpose.

The corridor commercial district is intended to allow auto-accommodating commercial development while encouraging walking, bicycling, and transit. The district allows a full range of retail and service businesses with a local or regional market. Industrial uses are allowed but are limited in size to avoid adverse effects and ensure that they do not dominate the character of the commercial area. The district's development standards promote attractive development, an open and pleasant street appearance and compatibility with adjacent residential areas. Development is intended to be aesthetically pleasing for motorists, transit users, pedestrians, and the businesses themselves. (Ord. 6-2001 § 1)

Response: Consistent with Comprehensive Plan Goal 8 – Sandy Boulevard (p.23), and the Sandy Boulevard Refinement Plan Vision (pp. 4-5), the proposed mixed-use development will provide four live-work commercial opportunities on the east side of the site, along NE Sandy Boulevard, and predominantly residential development that serves as a transition to residential subdivisions to the north and west. The proposed dedication, improvements, and building arrangement provide for an attractive bicycle and pedestrian-oriented façade, while ample parking in the interior of the site is consistent with motorist expectations of this zone.

19.70.020 Permitted land uses.

A. Permitted Uses. The land uses listed in Table 19.70.020.A are permitted in the corridor commercial district, subject to the provisions of this chapter. Only land uses that are specifically listed in Table 19.70.020.A, and land uses that are approved as "similar" to those in Table 19.70.020.A, may be permitted. The land uses identified with a "CU" in Table 19.70.020.A require conditional use permit approval prior to development or a change in use.
B. Determination of Similar Land Use. Similar use determinations shall be made in conformance with the procedures in Chapter 19.480 FMC, Code Interpretations.

Table 19.70.020.A Land Uses and Building Types Permitted in the Corridor Commercial District

e. Mixed use development (housing and other permitted use)

Response: The proposed mixed-use development is permitted outright in the Corridor Commercial zone, as shown in Table 19.70.020.A. No code interpretation is required or requested.

19.60.030 Building Setbacks

Setback Type	Minimum	Maximum	Proposed
Front	None	None	31-37 Feet
Rear	15 Feet	None	62-74 Feet
Side	None	None	14-27 Feet

Response: The Corridor Commercial zone contains only one required building setback – a rear setback of 15'. As shown on Sheet A102 (Site Plan), proposed buildings are set back at least 62' from the northern (rear) property line to reduce potential impacts on neighboring properties to the north of the site..

19.70.050 Site layout and building orientation.

This section is intended to encourage the efficient use of space, and connectivity to parking areas. The standards, as listed on the following page and illustrated above, complement the front setback standards in FMC 19.70.030.

B. Pedestrian Access Standard. New land divisions and developments, which are subject to site design review or conditional use permits, shall provide pedestrian pathways as necessary to ensure reasonably safe, direct, and convenient access to building entrances and off-street parking.

Response: As shown on Sheet A102 (Architectural Site Plan), pedestrian pathways and accesses are provided between all street frontages, building entrances and parking areas.

1. From adjoining street right-of-way to building entrances and off-street parking these pathways shall be provided with an average maximum interval of 100 feet along the street right-of-way.

Response: Please see Sheet A102 (Site Plan). The proposed site includes seven pathways north from Sandy Boulevard right-of-way: five to building entrances, and two down to the parking area and lower entrances on the north side of the buildings. The site contains 478' of frontage; therefore, average pathway intervals are 68', meeting this standard.

2. Between adjoining developments where practical.

Response: It is neither practical nor desirable to provide internal access to the residential communities to the west and north. The Fairview Terrace subdivision to the west is a gated community, and specifically did not want pedestrian access from the subject site (as expressed in a neighborhood meeting on June 1, 2017). The

Heron Point subdivision to the north of the site is separated from the site by an approximate 20-foot retaining wall, limiting pedestrian access. However, pedestrian access to the west and north is provided via sidewalk improvements along the south side of NE Sandy Boulevard and the west side of NE 223rd Avenue.

3. In conformity with applicable requirements in Chapter 19.162 FMC, Access and Circulation.

Response: Please see Chapter 19.162 Access and Circulation findings.

C. Building Orientation Standard. All of the developments listed in subsection A of this section are encouraged to be oriented to a street. The building orientation standard is met when all of the following criteria are met:

1. Buildings shall have their primary entrance(s) oriented to (facing) the street with a direct pedestrian walkway connecting with the adjoining street right-of-way. Building entrances may include entrances to individual units, lobby entrances, entrances oriented to pedestrian plazas, or breezeway/courtyard entrances (i.e., to a cluster of units or commercial spaces). Alternatively, a building may have its entrance facing a side when a direct pedestrian walkway not exceeding 30 feet in length is provided between the building entrance and the street right-of-way.

Response: As shown on Sheet A102 (Architectural Site Plan), both buildings along Sandy Boulevard (Buildings 2 and 3) have main entrances and direct access to NE Sandy Boulevard right-of-way as encouraged by this standard.

2. Off-street parking, driveways or other vehicular circulation should not be placed between a building and the street. On corner lots, buildings and their entrances should be oriented to the street corner. Parking, driveways and other vehicle areas shall not be permitted adjacent to street corners. (Ord. 6-2001 § 1)

Response: As shown on Sheet A102 (Architectural Site Plan), parking is proposed on the interior of the site, consistent with this standard. No parking is proposed between buildings and streets.

19.70.060 Building height.

All buildings in the corridor commercial district shall comply with the following building height standards. The standards are intended to allow for development of appropriately scaled buildings.
Maximum Height. Buildings shall be no more than 45 feet in height.
Method of Measurement. “Building height” is measured as the vertical distance above a reference datum measured to the highest point of the coping of a flat roof or to the deck

line of a mansard roof or to the average height of the highest gable of a pitched or hipped roof. The reference datum shall be selected by either of the following, whichever yields a greater height of building:

1. The elevation of the highest adjoining sidewalk or ground surface within a five-foot horizontal distance of an exterior wall of the building when such sidewalk or ground surface is not more than 10 feet above the lowest grade;
2. An elevation 10 feet higher than the lowest grade when the sidewalk or ground surface described in subsection (B)(1) of this section is more than 10 feet above the lowest grade. The height of a stepped or terraced building is the maximum height of any segment of the building. Not included in the maximum height are: chimneys, bell towers, steeples, roof equipment, flag poles, and similar features which are not for human occupancy.

Response: Due to the site slope, methodology #2 was used to determine height. Building heights are shown on Sheets A105-A109 (Elevations) and are as follows:
Building 1: 43'
Building 2: 45'
Building 3: 40'
Building 4: 34-6"
Building 5: 40'

All proposed buildings are 45' or less in height, meeting the height standard.

C. Performance Option. The allowable building height may be increased to 55 feet, when approved as part of a conditional use permit. The development approval may require additional setbacks, stepping-down of building elevations, visual buffering, screening, and/or other appropriate measures to provide a height transition between the development and adjacent development. Roof equipment and other similar features, which are necessary to a commercial or industrial operation shall be screened, and may not exceed eight feet in height without approval of a conditional use permit. (Ord. 6-2001 § 1)

Response: This is not a conditional use application. Proposed buildings do not exceed 45' in height; therefore, the performance option is not applicable.

19.70.070 Architectural guidelines and standards.

A. Purpose and Applicability. The corridor commercial district architectural guidelines are intended to provide detailed, human-scale design, while affording flexibility to use a variety of building styles. This section applies to all development applications that are subject to site plan review or conditional use permits.

B. Guidelines and Standards. Each of the following standards shall be met. An architectural feature may used to comply with more than one standard in this title.

1. Pedestrian-Oriented Design. All buildings shall contribute to the desired pedestrian friendly character of corridor commercial district buildings. This criterion shall be met by providing all of the architectural features listed in subsections (B)(1)(a) through (d) of this section, along the front building elevation (i.e., facing the street), as applicable.

Response: Buildings 2 and 3 along NE Sandy Boulevard orient toward the street and provide a welcoming pedestrian experience. Please see Sheets A106 and A107 (Elevations, Buildings 2 and 3), South Elevations. Sheet A110 (Elevations Details) also provides details of the Building 2 main entrance area on NE Sandy Boulevard.

a. Corner building entrances on corner lots. Alternatively, a building entrance may be located away from the corner when the building corner is beveled or incorporates other detailing to reduce the angular appearance of the building at the street corner.

Response: The site is not a corner lot; this criterion does not apply.

b. Regularly spaced and similar-shaped windows with window hoods or trim (all building stories).

Response: As shown on Sheets A106 and A107, windows are regularly-spaced with trim and similarly-shaped on all stories.

c. Large display windows on the ground floor. Bulkheads, piers and a storefront cornice (i.e., separates ground floor from second story) shall frame display windows.

Response: As shown on Sheet A107, the live-work units contain large display windows on the ground floor facing Sandy Boulevard, with architectural features clearly delineating ground floor from second story.

d. Decorative cornice at the top of a building (flat roof); or eaves provided with pitched roof.

Response: As shown on Sheets A106 and A107, all building frontage along NE Sandy Boulevard have roofs with eaves.

Access and Circulation Requirements (19.162)

19.162.020 Vehicular access and circulation.

A. Intent and Purpose. The intent of this section is to manage vehicle access to development through a connected street system, while preserving the flow of traffic in

terms of safety, roadway capacity, and efficiency. Access shall be managed to maintain an adequate "level of service" and to maintain the "functional classification" of roadways as required by the city's transportation system plan. Major roadways, including highways, arterials, and collectors, serve as the primary system for moving people and goods. "Access management" is a primary concern on these roads. Local streets and alleys provide access to individual properties. If vehicular access and circulation are not properly designed, these roadways will be unable to accommodate the needs of development and serve their transportation function. This section attempts to balance the right of reasonable access to private property with the right of the citizens of the city and the state of Oregon to safe and efficient travel. It also requires all developments to construct planned streets (arterials and collectors) and to extend local streets.
To achieve this policy intent, state and local roadways have been categorized in the transportation system plan by function and classified for access purposes based upon their level of importance and function (see Chapter 19.165 FMC). Regulations have been applied to these roadways for the purpose of reducing traffic accidents, personal injury, and property damage attributable to access systems, and to thereby improve the safety and operation of the roadway network. This will protect the substantial public investment in the existing transportation system and reduce the need for expensive remedial measures. These regulations also further the orderly layout and use of land, protect community character, and conserve natural resources by promoting well-designed road and access systems and discouraging the unplanned subdivision of land.

B. Applicability. This section shall apply to all public streets within the city and to all properties that abut these streets.

Response: The site abuts two public streets – NE Sandy Boulevard and NE 223rd Avenue, therefore these standards apply.

C. Access Permit Required. Access to a public street requires an access permit in accordance with the following procedures:

1. Permits for access to city streets shall be subject to review and approval by the city engineer based on the standards contained in this chapter, and the provisions of the transportation standards. An access permit may be in the form of a letter to the applicant, or it may be attached to a land use decision notice as a condition of approval.
In either case, an access permit will be reviewed consistent with the procedures required for the complementary development permit. If no development permit is requested, the access permit shall be reviewed consistent with a Type III process.

2. Permits for access to state highways shall be subject to review and approval by the Oregon Department of Transportation (ODOT), except when ODOT has delegated this responsibility to the city or Multnomah County. In that case, the city or county shall determine whether access is granted based on its adopted standards.

3. Permits for access to county highways shall be subject to review and approval by Multnomah County, except where the county has delegated this responsibility to the city, in which case the city shall determine whether access is granted based on adopted county standards.

Response: NE Sandy Boulevard and NE 223rd are both under jurisdiction of Multnomah County at this location. Primary access is proposed from NE 223rd Avenue, which is classified as a collector street. Limited (right-in, right-out) access is proposed from the western end of the site to NE Sandy Boulevard which is classified as an arterial street. We have applied for a Road Rules Variance to access NE Sandy Boulevard (see Exhibit D). In Exhibit A, Lancaster Engineering has determined that the right-in, right-out configuration will not cause safety problems and is consistent with driveway separation requirements.

D. Traffic Study Requirements. The city may require a traffic study prepared by a qualified professional to determine access, circulation and other transportation requirements. A traffic study must be provided for any proposed development that includes more than 10 dwellings or generates at least 100 vehicle trips per day. The traffic study shall include those adjacent intersections that will receive more than 50 vehicle trips per day. A freight network impact statement is to be included in all traffic studies for proposed developments on properties identified as industrial lands in Title 4 of the Metro Urban Growth Management Functional Plan. The purpose of this statement is to analyze potential adverse effects of the proposed development on the regional freight system as identified in the regional transportation plan (RTP) and the Fairview transportation system plan. Freight routes located in Fairview include Interstate 84, Marine Drive, 223rd Avenue, Fairview Parkway, Sandy Boulevard, and Glisan Street.

Response: A traffic study is provided as Exhibit A to these findings. No significant impacts to transportation facilities were identified.

E. Conditions of Approval. The city may require the closing or consolidation of existing curb cuts or other vehicle access points, recording of reciprocal access easements (i.e., for shared driveways), development of a frontage street, installation of traffic control devices, and/or other mitigation as a condition of granting an access permit, to ensure the safe and efficient operation of the street. When obtaining access to off-street parking areas (both to and from), backing onto a public street shall not be permitted, except for single-family dwellings.

Response: Please see Exhibit A (TIS). Two driveways are required for fire safety, and two are proposed. These driveways and related development do not result in significant traffic impacts or safety concerns.

F. Access Options. When vehicle access is required for development (i.e., for off-street parking, delivery, service, drive-through facilities, etc.), access shall be provided by one of the following methods. These methods are "options" to the developer/subdivider, unless one method is specifically required by "Special Standards for Certain Uses." A minimum of 10 feet per lane is required.

1. Option 1. Access is from an existing or proposed alley or mid-block lane. If a property has access to an alley or lane, direct access to a public street is not permitted.
2. Option 2. Access is from a private street or driveway connected to an adjoining property that has direct access to a public street (i.e., "shared driveway"). A public access easement covering the driveway shall be recorded in this case to assure access to the closest public street for all users of the private street/drive.
3. Option 3. Access is from a public street adjacent to the development parcel. If practicable, the owner/developer may be required to close or consolidate an existing access point as a condition of approving a new access. Street accesses shall comply with the access spacing.

Response: As shown on Sheet A102, the proposed development includes access points along NE Sandy Boulevard and NE 223rd Avenue. Access spacing requirements are met. The TIS (Exhibit A) demonstrates that limited access from Sandy Boulevard will be safe and efficient.

4. Subdivisions Fronting onto an Arterial Street. New residential subdivisions fronting onto an arterial street shall be required to provide alleys or secondary (local or collector) streets for access to individual lots. When alleys or secondary streets cannot be constructed due to topographic or other physical constraints, access may be provided by consolidating driveways for clusters of two or more lots (e.g., includes flag lots and mid-block lanes).

Response: No subdivision is proposed.

5. Double-Frontage Lots. When a lot has frontage onto two or more streets, access shall be provided first from the street with the lowest classification. For example, access shall be provided from a local street before a collector or arterial street. Except for corner lots, the creation of new double-frontage lots shall be prohibited in the residential district, unless topographic or physical constraints require the formation of such lots. When double-frontage lots are permitted in the residential district, a landscape buffer with trees and/or shrubs and ground cover not less than 20 feet wide shall be provided between the back yard fence/wall and the sidewalk or street; maintenance shall be assured by the owner (i.e., through homeowners association, etc.). *Important cross-references to other code sections:* Provisions in Articles II and III of this title may require buildings placed at or near the front property line and driveways and parking areas oriented to the side or rear yard. The city may require the dedication of public right-of-way and construction of

a street (e.g., frontage road, alley or other street) when the development impact is proportionate to the need for such a street, and the street is identified by the Comprehensive Plan or an adopted local streets plan. (Please refer to the transportation standards in Chapter 19.165 FMC.)

Response: No double-frontage lots are proposed. Although residential development is encouraged in the Corridor Commercial District, the site is not in a residential district. Primary vehicular access to the proposed mixed-use development is from NE 223rd Avenue with limited secondary access from NE Sandy Boulevard

G. Access Spacing. Access spacing ensures safe connections to local and arterial streets. Driveway accesses shall be separated from other driveways and street intersections in accordance with the following standards and procedures:
1. Local Streets. A minimum of 50 feet separation (as measured from the sides of the driveway/street) shall be required on local streets (i.e., streets not designated as collectors or arterials), except as provided in subsection (G)(3) of this section.
2. Arterial and Collector Streets. Access spacing on collector and arterial streets, and at controlled intersections (i.e., with four-way stop sign or traffic signal) shall be determined based on the policies and standards contained in the city's transportation system plan. Access to Interstate 84 is subject to the jurisdiction of ODOT.
3. Special Provisions for All Streets. Direct street access may be restricted for some land uses, in conformance with the provisions of Chapters 19.20 through 19.155 – Land Use Districts. For example, access consolidation, shared access, and/or access separation greater than that specified by subsections (G)(1) and (G)(2) of this section may be required by the city, county or ODOT for the purpose of protecting the function, safety and operation of the street for all users. (See subsection I of this section.)
Where no other alternatives exist, the permitting agency may allow construction of an access connection along the property line farthest from an intersection. In such cases, directional connections (i.e., right in/out, right in only, or right out only) may be required.

Response: Access drives are located at the farthest north and farthest west locations possible on site, to achieve maximum distance from the NE Sandy and NE 223rd intersection. These access drives are consistent with the direction of the TIS, as shown in Exhibit A.

H. Number of Access Points. Reducing the number of access points on a street provides pedestrians fewer obstructions, fewer points at which automobile traffic crosses the sidewalk, and fewer opportunities for conflicts between through traffic and vehicles using access points. For single-family (detached and attached), two-family, and three-family housing types, one street access point is permitted per lot, when alley access cannot otherwise be provided; except that two access points may be permitted for two-family and three-family housing on corner lots (i.e., no more than one access per street), subject to the access spacing standards in subsection G of this section. The number of street

access points for multiple family, commercial, industrial, and public/institutional developments shall be minimized to protect the function, safety and operation of the street(s) and sidewalk(s) for all users. Shared access may be required, in conformance with subsection I of this section in order to maintain the required access spacing, and minimize the number of access points.

Response: Despite having 142 linear feet of frontage along NE 223rd and 478 linear feet of frontage along NE Sandy Boulevard, only two access points are proposed to accommodate this mixed residential-commercial development. Two access ponts are needed to comply with fire safety requirements and to provide convenient access to Sandy Boulevard for those living in and visiting the apartment complex in this auto-oriented (Corridor Commercial) area The pedestrian experience will be improved by orienting commercial live-work units to Sandy Boulevard. The primary access is located on NE 223rd Avenue, and a secondary (right-in, right-out) access is located on NE Sandy Boulevard.

I. Shared Driveways. Shared driveways serve to reduce impermeable surfaces, reduce visual blight associated with large expanses of pavement, and provide more linear curb space for on-street parking. The number of driveway and private street intersections with public streets shall be minimized by the use of shared driveways with adjoining lots where feasible. The city shall require shared driveways as a condition of land division or site design review, as applicable, for traffic safety and access management purposes in accordance with the following standards:

1. Shared driveways and frontage streets may be required to consolidate access onto a collector or arterial street. When shared driveways or frontage streets are required, they shall be stubbed to adjacent developable parcels to indicate future extension.
"Stub" means that a driveway or street temporarily ends at the property line, but may be extended in the future as the adjacent parcel develops. "Developable" means that a parcel is either vacant or it is likely to receive additional development (i.e., due to infill or redevelopment potential).
2. Access easements (i.e., for the benefit of affected properties) shall be recorded for all shared driveways, including pathways, at the time of final plat approval or as a condition of site development approval.
3. Exception. Shared driveways are not required when existing development patterns or physical constraints (e.g., topography, parcel configuration, and similar conditions) prevent extending the street/driveway in the future.

Response: Shared driveways with adjoining lots are not practicable for this site, as adjoining lots have existing access points that are not adjacent to the site.

M. Fire Access and Parking Area Turn-arounds. A fire equipment access drive shall be provided for any portion of an exterior wall of the first story of a building that is located

more than 150 feet from an existing public street or approved fire equipment access drive. Parking areas shall provide adequate aisles or turn-around areas for service and delivery vehicles so that all vehicles may enter the street in a forward manner. For requirements related to cul-de-sacs, please refer to Chapter 19.165 FMC.

Response: Applicant has worked closely with Gresham Fire Department to provide sufficient fire access for all buildings on site.

N. Vertical Clearances. Driveways, private streets, aisles, turn-around areas and ramps shall have a minimum vertical clearance of 13 feet 6 inches for their entire length and width.

Response: No vertical constraints are proposed above on-site circulation areas.

O. Vision Clearance. No signs, structures or vegetation in excess of three feet in height shall be placed in "vision clearance areas," as shown above. The city engineer upon finding that more sight distance is required may increase the minimum vision clearance area (i.e., due to traffic speeds, roadway alignment, etc.).

Response: As shown on Sheets A102 (Architectural Site Plan) and L1 (Landscape Plan), no signs, structures or vegetation in excess of 3' in height is proposed in "vision clearance areas".

P. Construction. The following development and maintenance standards shall apply to all driveways and private streets, except that the standards do not apply to driveways serving one single-family detached dwelling:
1. Surface Options. Driveways, parking areas, aisles, and turn-arounds may be paved with asphalt, concrete or comparable surfacing, or a durable nonpaving material may be used to reduce surface water runoff and protect water quality. Paving surfaces shall be subject to review and approval by the city engineer.

Response: As shown on Sheet C2.0 (Proposed Site Plan, Civil). proposed driveway and circulation areas will be paved with asphalt and sidewalks will be paved with concrete.

2. Surface Water Management. When a paved surface is used, all driveways, parking areas, aisles and turn-arounds shall have on-site collection or infiltration of surface waters to eliminate sheet flow of such waters onto public rights-of-way and abutting property. Surface water facilities shall be constructed in conformance with city standards.

Response: Please see Sheet C9.0 (Stormwater Plan). Surface water runoff is managed through a series of catch basins and drywells.

3. Driveway Aprons. When driveway approaches or "aprons" are required to connect driveways to the public right-of-way, they shall be paved with concrete surfacing (see also subsection L of this section). (Ord. 5-2009 § 2 (Att. 1); Ord. 6-2001 § 1)

Response: Proposed driveway aprons will be paved with concrete surfacing, as shown on Sheet C2.0 (Proposed Site Plan, Civil).

19.162.030 Pedestrian access and circulation.

The standards presented in this code provide standards for safe, connected and user friendly pedestrian connections and pathways that join neighborhoods and buildings within a development.

A. Pedestrian Access and Circulation. To ensure safe, direct and convenient pedestrian circulation, all developments, except single-family detached housing (i.e., on individual lots), shall provide a continuous pedestrian and/or multi-use pathway system. (Pathways only provide for pedestrian circulation. Multi-use pathways accommodate pedestrians and bicycles.) The system of pathways shall be designed based on the standards in subsections (A)(1) through (A)(3) of this section:

1. Continuous Pathways. The pathway system shall extend throughout the development site, and connect to all future phases of development, adjacent trails, public parks and open space areas whenever possible. The developer may also be required to connect or stub pathway(s) to adjacent streets and private property, in accordance with the provisions of FMC 19.162.020, Vehicular access and circulation, and the transportation standards in Chapter 19.165 FMC.

Response: As shown on Sheet A102 (Architectural Site Plan), pedestrian pathways on site connect all buildings, parking areas, and adjacent rights-of-way.

2. Safe, Direct, and Convenient Pathways. Pathways within developments shall provide safe, reasonably direct and convenient connections between primary building entrances and all adjacent streets, based on the following definitions:

a. "Reasonably direct" means a route that does not deviate unnecessarily from a straight line or a route that does not involve a significant amount of out-of-direction travel for likely users.
b. "Safe and convenient" means bicycle and pedestrian routes that are reasonably free from hazards and provide a reasonably direct route of travel between destinations.
c. For commercial, industrial, mixed use, public, and institutional buildings, the "primary entrance" is the main public entrance to the building. In the case where no public entrance exists, street connections shall be provided to the main employee entrance.

d. For residential buildings the "primary entrance" is the front door (i.e., facing the street). For multifamily buildings in which each unit does not have its own exterior entrance, the "primary entrance" may be a lobby, courtyard or breezeway, which serves as a common entrance for more than one dwelling.

Response: As shown on Sheet A102 (Architectural Site Plan), direct street connections are provided from NE Sandy Boulevard to Buildings 2 and 3, and pedestrian accessways are provided from all building entrances to adjacent rights-of-way via the shortest possible routes.

3. Connections within Development. For all developments subject to site design review, pathways shall connect all building entrances to one another. In addition, pathways shall connect all parking areas, storage areas, recreational facilities and common areas (as applicable), and adjacent developments to the site, as applicable.

Response: As shown on Sheet A102, pathways connect all buildings and parking areas on site.

4. Street Connectivity. Pathways (for pedestrians and bicycles) shall be provided at or near midblock where the block length exceeds the length required by FMC 19.162.020. Pathways shall also be provided where cul-de-sacs or dead-end streets are planned, to connect the ends of the streets together, to other streets, and/or to other developments, as applicable. Pathways used to comply with these standards shall conform to all of the following criteria:

a. Multi-use pathways (i.e., for pedestrians and bicyclists) are no less than 10 feet wide and located within a 20-foot-wide right-of-way or easement that allows access for emergency vehicles.
b. If the streets within the subdivision or neighborhood are lighted, the pathways shall also be lighted.
c. Stairs or switchback paths using a narrower right-of-way/easement may be required in lieu of a multi-use pathway where grades are steep.
d. The city may require landscaping within the pathway easement/right-of-way for screening and the privacy of adjoining properties.
e. The hearings body or planning director may determine, based upon facts in the record, that a pathway is impracticable due to: physical or topographic conditions (e.g., freeways, railroads, extremely steep slopes, sensitive lands, and similar physical constraints); buildings or other existing development on adjacent properties that physically prevent a connection now or in the future, considering the potential for redevelopment; and sites where the provisions of recorded leases, easements, covenants, restrictions, or other agreements recorded as of the effective date of this code prohibit the pathway connection.

Response: Multi-use pathways intended to provide connectivity through and beyond the site are impracticable in this location due to a developed gated community to the west and the grade separation / large retaining wall and existing developed subdivision to the north.

B. Design and Construction. Pathways shall conform to all of the standards in subsections (B)(1) through (B)(5) of this section:

1. Vehicle/Pathway Separation. Where pathways are parallel and adjacent to a driveway or street (public or private), they shall be raised six inches and curbed, or separated from the driveway/street by a five-foot minimum strip with bollards, a landscape buffer, or other physical barrier. If a raised path is used, the ends of the raised portions must be equipped with curb ramps.

Response: As shown on Sheet C2.0 (Proposed Site Plan, Civil), pathways are proposed to be raised six inches and curbed as required by this section.

2. Housing/Pathway Separation. Pedestrian pathways shall be separated a minimum of five feet from all residential living areas on the ground floor, except at building entrances. Separation is measured as measured from the pathway edge to the closest dwelling unit. The separation area shall be landscaped in conformance with the provisions of Chapter 19.163 FMC, Landscaping, Street Trees, Fences and Walls. No pathway/building separation is required for commercial, industrial, public, or institutional uses.

Response: As shown on Sheet A102, all pathways will be at least five feet from ground floor residential living areas.

3. Crosswalks. Where pathways cross a parking area, driveway, or street ("crosswalk"), they shall be clearly marked with contrasting paving materials, humps/raised crossings.

Response: As shown on Sheet C2.0, pathways crossing parking areas will have paving material that contrasts with the asphalt concrete of the driving areas.

4. Pathway Surface. Pathway surfaces shall be concrete, asphalt, brick/masonry pavers, or other durable surface, at least six feet wide, and shall conform to ADA requirements. Multi-use paths (i.e., for bicycles and pedestrians) shall be the same materials, at least 10 feet wide. (See also Chapter 19.165 FMC, Transportation Standards for public, multi-use pathway standard.)

Response: As shown on Sheet C2.0, pathways are proposed to be developed with concrete.

5. Accessible Routes. Pathways shall comply with the Americans with Disabilities Act, which requires accessible routes of travel.

Response: All pathways and buildings on the site are proposed to comply with ADA requirements.

Landscaping Requirements (19.163)

19.163.020 Landscape conservation.

A. Applicability. All development sites containing significant vegetation, as defined below, shall comply with the standards of this section. The purpose of this section is to incorporate significant native vegetation into the landscapes of development and protect vegetation that is subject to requirements of the significant environmental concern and riparian buffer overlay zones, Chapter 19.106 FMC. The use of mature, native vegetation within developments is a preferred alternative to removal of vegetation and re-planting. Mature landscaping provides summer shade and wind breaks, and allows for water conservation due to larger plants having established root systems.
B. Significant Vegetation. "Significant vegetation" means:

1. Significant Trees and Shrubs. Individual trees and shrubs with a trunk diameter of six inches or greater, as measured four feet above the ground (DBH), and all plants within the drip line of such trees and shrubs, shall be protected.

Response: No trees with diameter greater than 3" DBH were identified on the site survey, therefore no significant trees exist on site.

2. Sensitive Lands. Trees and shrubs on sites that have been designated as "sensitive lands," in accordance with Chapter 19.106 FMC, Natural Resource Regulations, and Chapter 19.105 FMC, Floodplain Overlay (e.g., due to slope, natural resource areas, wildlife habitat, etc.) shall be protected.

Response: As shown on the City of Fairview Natural Resources Map, no mapped natural resources exist on the site.

3. Exception. Protection shall not be required for plants listed as non-native, invasive plants by the Oregon State University Extension Service in the applicable OSU bulletins for Multnomah County.

Response: No exception is required, as no significant trees or sensitive lands appear on the site.

C. Mapping and Protection Required. Significant vegetation shall be mapped as required by this code. Significant trees shall be mapped individually and identified by species and size (diameter at four feet above grade, or "DBH"). A "protection" area shall be defined around the edge of all branches (drip-line) of each tree (drip lines may overlap between trees). The city also may require an inventory, survey, or assessment prepared by a qualified professional when necessary to determine vegetation boundaries, building setbacks, and other protection or mitigation requirements.
D. Protection Standards. All of the following protection standards shall apply to significant vegetation areas: […]

Response: No mapping or protection is required, as no significant vegetation or natural resources appear on the site.

19.163.030 New landscaping.

A. Applicability. This section shall apply to all developments requiring site design review, and other developments with required landscaping.

Response: This application is for site design review; therefore this section is applicable.

B. Landscaping Plan Required. A landscape plan is required at the time of design review or other pertinent applications. All landscape plans shall conform to the requirements in FMC 19.420.020 (E), Landscape plans.

Response: Please see Sheet A111 (Landscape Plan), prepared by Darrell Mulch, registered landscape architect.

C. Landscape Area Standards. The minimum percentage of required landscaping equals:

1. Residential districts: 20 percent of the site.
2. Town center commercial district: five percent of the site.
3. General industrial district: 10 percent of the site.
4. Light industrial district: 10 percent of the site.
5. Corridor commercial district: five percent of the site.
6. Neighborhood commercial district: 10 percent of the site.

Response: The site is within the Corridor Commercial district. Landscaping is required on f5% of the site. Please see Sheet A100 for area calculations and Sheet A111 (Landscape Plan). These sheets show that 44,200 square feet of landscaping is proposed on a total site area of 208,700 square feet. Therefore, 21% of the site is proposed to be landscaped, well exceeding the minimum landscaping requirement.

D. Landscape Materials. This section provides guidelines that ensure significant vegetation growth and establishment using a variety of size specifications and coverage recommendations. Landscape materials include trees, shrubs, ground cover plants, non-plant ground covers, and outdoor hardscape features, as described below:

1. Native Vegetation. Native vegetation shall be preserved or planted where practicable.

Response: The site is currently overgrown with blackberries and assorted weeds/shrubs. Site survey indicated no trees with DBH over 3". None of the vegetation on site was considered worth trying to integrate into landscaping by the landscape architect.

2. Plant Selection. A combination of deciduous and evergreen trees, shrubs and ground covers shall be used for all planted areas, the selection of which shall be based on local climate, exposure, water availability, and drainage conditions. As necessary, soils shall be amended to allow for healthy plant growth.

Response: Please see Sheet A111 (Landscape Plan). All plants and trees appearing on Sheet A111 were selected by a registered landscape architect to be compatible with the site topography and climate.

3. Non-native, invasive plants, as per FMC 19.164.020(B), shall be prohibited.

Response: Please see Sheet A111. No invasive species are included in the Landscape Plan.

4. Hardscape features (i.e., patios, decks, plazas, etc.) may cover up to 15 percent of the required landscape area. Swimming pools, sports courts and similar active recreation facilities may not be counted toward fulfilling the landscape requirement.

Response: An approximately 800 square foot common area with benches is proposed adjacent to Building 1, as shown on Sheet A111. This is approximately 2% of proposed landscaping area.

5. Non-plant Ground Covers. Bark dust, chips, aggregate or other nonplant ground covers may be used, but shall cover no more than five percent of the area to be landscaped. "Coverage" is measured based on the size of plants at maturity or after five years of growth, whichever comes sooner.

Response: As shown on Sheet A111, only plants are proposed as ground cover.

6. Tree Size. Trees shall have a minimum caliper size of 1.5 inches or greater, or be six feet or taller, at time of planting.

Response: Tree sizes are shown on the "Plant Legend" of Sheet A111. All proposed trees are 1.5" caliper (Columnar Red Maple, Crimson Spire Oak, Japanese Snowbell, and Little Leaf Linden) or at least 6' in height (Blue Atlantic Cedar, Leyland Cypress, Weeping Alaskan Cedar, Slender Hinoki Cypress) when planted.

7. Shrub Size. Shrubs shall be planted from one-gallon containers or larger.

Response: As shown on the "Plant Legend" of Sheet A111, all shrubs are proposed in one-gallon or larger sizes.

8. Ground Cover Size. Ground cover plants shall be sized and spaced so that they grow together to cover a minimum of 80 percent of the underlying soil within three years.

Response: As shown on the "Plant Legend" of Sheet A111, ground covers are proposed at 4" in 24" on-center configuration, which will result in at least 80% ground coverage per the landscape architect.

9. Significant Vegetation. Significant vegetation preserved in accordance with FMC 19.163.020 may be credited toward meeting the minimum landscape area standards. Credit shall be granted on a per square foot basis. The street tree standards of FMC 19.163.040 may be waived when trees preserved within the front yard provide the same or better shading and visual quality as would otherwise be provided by street trees.

Response: No vegetation is proposed for preservation on site because there is no significant vegetation.

10. Stormwater Facilities. Stormwater facilities (e.g., detention/retention ponds and swales) shall be landscaped with water tolerant, native plants.

Response: No detention ponds or swales are proposed as stormwater facilities; therefore this standard does not apply.

E. Landscape Design Standards. The landscape design standards provide guidelines within setback areas, parking areas, etc. All yards, parking lots and required street tree planter strips shall be landscaped in accordance with the provisions of this chapter. Landscaping shall be installed with development to provide erosion control, visual interest, buffering, privacy, open space and pathway identification, shading and wind buffering, based on the following standards:
1. Yard Setback Landscaping. Landscaping shall satisfy the following criteria:
a. Provide visual screening and privacy within side and rear yards; while leaving front yards and building entrances mostly visible for security purposes;

Response: Please see Sheet A111 (Landscape Plan). The only required setback in the Corridor Commercial zone is the rear setback. Landscaping (trees and screening shrubs) is proposed along the entire rear property line, providing visual screening and privacy. Landscaping is proposed along the NE Sandy Boulevard frontage; this landscaping is proposed to frame entryways, retaining visibility while providing an attractive pedestrian experience. While no side setback is required, landscaping is proposed along the entire west and east property lines, providing screening and privacy in those directions as well.

b. Use shrubs and trees as windbreaks, as appropriate;

Response: As shown on Sheet A111, trees and screening shrubs are located on every side of the site, providing windbreaks as well as shade and screening.

c. Retain natural vegetation, as practicable;

Response: As discussed above, preserving existing vegetation on site (primarily invasive species) was not recommended by the landscape architect, and is not practicable.

d. Define pedestrian pathways and open space areas with landscape materials;

Response: As shown on Sheet A111, the site contains extensive landscaping, defining and framing pedestrian areas on site.

e. Provide focal points within a development, such as signature trees (i.e., large or unique trees), hedges and flowering plants;

Response: Please see Sheet A111 (Landscape Plan). The plan includes extensive trees, hedges, and flowering plants. Focal points include framed entryways, a lush accessway extending north from NE Sandy Boulevard, and two large landscaped areas near Building 1, containing a variety of ground covers and shrubs, as well as a small plaza with benches.

f. Use trees to provide summer shading within common open space areas, and within front yards when street trees cannot be provided;

Response: As shown on Sheet A111, trees are proposed all over the site (street trees, parking area trees, trees screening east and west property lines), providing extensive summer shading opportunities.

g. Use a combination of plants for year-long color and interest;

Response: Please see Sheet A111 (Landscape Plan). Forty-seven different species of plants and trees are proposed on site, providing year-round color and variety.

h. Use landscaping to screen outdoor storage and mechanical equipment areas, and to enhance graded areas such as berms, swales and detention/retention ponds.

Response: No outdoor storage or mechanical equipment areas are proposed. As shown on Sheet A111, dense vertical screening is proposed around trash enclosures.

2. Parking Areas. A minimum of five percent of the combined area of all parking areas, as measured around the perimeter of all parking spaces and maneuvering areas, shall be landscaped. Such landscaping shall consist of an evenly distributed mix of shade trees with shrubs and/or ground cover plants. "Evenly distributed" means that the trees and other plants are distributed around the parking lot perimeter and between parking bays to provide a partial canopy. At a minimum, one tree per five parking spaces total shall be planted to create a partial tree canopy over and around the parking area. All parking areas with more than 20 spaces shall include landscape islands with trees to break up the parking area into rows of not more than 12 contiguous parking spaces. All landscaped areas shall have minimum dimensions of four feet by four feet to ensure adequate soil, water, and space for healthy plant growth.

Response: Standards relating to trees and landscaping in parking areas would logically apply to the outdoor surface parking areas, as opposed to the parking areas located under Buildings 1 and 2. There are 44 parking spaces located under Buildings 1 and 2, and 248 outdoor parking spaces. For 248 spaces, 50 trees are required. As shown on Sheet A111, 54 trees are proposed adjacent to parking and maneuvering areas. Landscape islands with trees are provided throughout the outdoor parking area. No outdoor parking areas have more than 12 contiguous parking spaces.

3. Buffering and Screening Required. Buffering and screening are required under the following conditions:
a. Parking/Maneuvering Area Adjacent to Streets and Drives. Where a parking or maneuvering area is adjacent and parallel to a street or driveway, a decorative wall (masonry or similar quality material), arcade, trellis, evergreen hedge, or similar screen shall be established parallel to the street or driveway. The required wall or screening shall provide breaks, as necessary, to allow for access to the site and sidewalk by pedestrians via pathways. The design of the wall or screening shall also allow for visual surveillance of the site for security. Evergreen hedges used to comply with this standard shall be a minimum of 36 inches in height at maturity, and shall be of such species, number and spacing to provide the required screening within one year after planting. Any areas between the wall/hedge and the street/driveway line shall be landscaped with plants or

other ground cover. All walls shall be maintained in good condition, or otherwise replaced by the owner.

Response: This standard applies to parking or maneuvering areas that are "adjacent and parallel to a street or driveway". As shown on Sheet A102 (Architectural Site Plan), accesses are proposed perpendicular to both NE Sandy Boulevard and NE 223rd Avenue. Parking areas extend to the interior to the site, not parallel to streets, therefore no screening is required under this standard.

b. Parking/Maneuvering Area Adjacent to Building. Where a parking or maneuvering area, or driveway, is adjacent to a building, the area shall be separated from the building by a raised pathway, plaza, or landscaped buffer no less than four feet in width. Raised curbs, bollards, wheel stops, or other design features shall be used to protect buildings from being damaged by vehicles. When parking areas are located adjacent to residential ground-floor living space, a landscape buffer is required to fulfill this requirement.

Response: As shown on Sheet A111 (Landscape Plan), buildings are screened from parking/maneuvering areas by both pathways and a landscape buffer. The curbs and pathways are raised six inches from driving surfaces. Proposed pathways are five feet wide, and proposed landscape areas are at least four feet wide, meeting this requirement.

c. Screening of Mechanical Equipment, Outdoor Storage, Service and Delivery Areas, and Automobile-Oriented Uses. All mechanical equipment, outdoor storage and manufacturing, and service and delivery areas, shall be screened from view from all public streets and residential districts. Screening shall be provided by one or more of the following: decorative wall (i.e., masonry or similar quality material), evergreen hedge, non-see-through fence, or a similar feature that provides a nonsee-through barrier. Walls, fences, and hedges shall comply with the vision clearance requirements and provide for pedestrian circulation, in accordance with Chapter 19.162 FMC, Access and Circulation. (Ord. 6-2001 § 1)

Response: No significant mechanical equipment is proposed. No outdoor storage, service or delivery areas are proposed. This standard is not applicable.

19.163.040 Street trees.

The guidelines provided in this section promote healthy street trees and adequate canopy cover to provide shade, reduce stormwater runoff, and improve the appearance of a development. […]

Response: Please see Sheet A111 (Landscape Plan). Street trees are proposed 30' on center along NE Sandy Boulevard and NE 223rd Avenue. This results in 14 street trees along NE Sandy, and 4 street trees along NE 223rd.

19.163.050 Fences and walls.

The fences and walls section provides height limits for construction of new walls. The guidelines prevent walls that reduce pedestrian connectivity and sight clearance. The standards also provide guidelines relating to maintenance. […]

Response: Due to site topography, retaining walls are proposed to the west, south, and east of the site. Extensive landscaping provides screening to the north and west. However, no walls rising above ground level are proposed.

Parking Requirements (19.164)

19.164.030 Vehicle parking standards.

A. The minimum number of required off-street vehicle parking spaces (i.e., parking that is located in parking lots and garages and not in the street right-of-way) shall be determined based on the standards in Table 19.164.030.A.

Multifamily and Single-Family Attached Housing.
a. Studio units or 1-bedroom units less than 500 sq. ft. – 1 space.
b. 1-bedroom units 500 sq. ft. or larger – 1.25 spaces.
c. 2-bedroom units – 1.50 spaces.
d. 3-bedroom or greater units – 1.75 spaces.

Response: The proposal is to construct:

- **46 studio units (46 parking spaces required);**
- **71 one-bedroom units (88.75 parking spaces required);**
- **4 live-work units (6 parking spaces required); and**
- **79 two-bedroom units (118.5 spaces required).**

The proposed 200 units require a total of 259 parking spaces. This proposal includes 292 parking spaces, meeting the minimum parking requirement.

Business, General Retail, Personal Services. General – 4.1 per 1,000 square feet of gross floor area.
Offices. Medical and dental offices – 3.9 spaces per 1,000 square feet of gross leasable area; general offices – 2.7 spaces per 1,000 square feet of gross leasable area.
Restaurants, Bars, Ice Cream Parlors and Similar Uses. 15.3 spaces per 1,000 sq. ft. of gross leasable floor area.

Response: The four live-work units are accounted in the residential parking requirement. We believe this is sufficient to calculate need, as many residents are anticipated to leave the complex during working hours. However, should additional parking be required, we provide the following calculation.

Each unit contains approximately 360 square feet of ground floor work space. These spaces could be personal services, medical, or general office uses. Applying the highest applicable standard (4.1 spaces per 1,000 square feet) results in a total additional parking need for 6 spaces – raising total needed parking to 265 spaces. The proposal includes 292 spaces, which meets minimum parking requirements for proposed residential and live-work units.

B. Credit for On-Street Parking […]

Response: No on-street parking is proposed or needed to meet parking requirements.

C. Parking Location and Shared Parking.
1. Location. Vehicle parking is allowed only on approved parking shoulders (streets), within garages, carports and other structures, or on driveways or parking lots that have been developed in conformance with this code. Specific locations for parking are indicated in Article II of this title for some land uses (e.g., the requirement that parking be located to side or rear of buildings, with access from alleys, for some uses). (See also Chapter 19.162 FMC, Access and Circulation.)

Response: Parking is shown on Sheet A102 (Architectural Site Plan). Parking is located behind the proposed buildings, in the center of the site, consistent with requirements for the Corridor Commercial district.

2. Off-Site Parking. […].

Response: No off-site parking is proposed.

3. Mixed Uses. If more than one type of land use occupies a single structure or parcel of land, the total requirements for off-street vehicle parking shall be the sum of the requirements for all uses, unless it can be shown that the peak parking demands are actually less (i.e., the uses operate on different days or at different times of the day). In that case, the total requirements shall be reduced accordingly.

Response: Please see discussion under 19.164.030(A), above.

4. Shared Parking. […].

Response: No shared parking is proposed.

5. Availability of Facilities. Owners of off-street parking facilities may post a sign indicating that all parking on the site is available only for residents, customers and/or employees, as applicable. Signs shall conform to the standards of Chapter 19.170 FMC, Signage.

Response: No parking signage is currently proposed.

D. Maximum Number of Parking Spaces. The number of parking spaces provided shall not exceed the standards in the following table:

Response: Multi-family development has no maximum parking standard.

E. Parking Management. The planning director may require a parking management plan for development of any use that requires more than 10 parking spaces based on the minimum parking spaces provided in Table 19.164.030.A. The parking management plan shall be prepared by a qualified parking or traffic consultant or certified engineer and should include the following:

Response: No parking management plan was indicated as required for this development in the pre-application conference or follow-up meetings with Planning Commission and planning staff. The proposal includes sufficient parking, as discussed above. Exhibit A (Transportation Impact Study) also discusses parking.

F. Parking Stall Standard Dimensions and Compact Parking Spaces. All off-street parking stalls shall be improved to conform to city standards for surfacing, stormwater management and striping, and provide dimensions in accordance with the following table. Disabled person parking shall conform to the standards and dimensions of this chapter. The number of compact parking spaces shall not exceed 40 percent of all parking spaces provided on site.

Response: Parking stall dimensions are shown on Sheet C2.0 (Proposed Site Plan, Civil). Standard spaces are 19' long by 9' wide. Compact spaces are 15' long by 7.5' wide. The proposal includes 98 compact parking stalls, which is 34% of the total 292 stalls, meeting this standard.

G. Variances. Developments may request exceptions to the parking standards, see FMC 19.520.030(A)(4).

Response: No variance to parking standards is proposed or required.

H. Disabled Person Parking Spaces. The following parking shall be provided for disabled persons, in conformance with the Americans with Disabilities Act (Figure 19.164.030.H):

Figure 19.164.030.H – Disabled Person Parking Spaces

Minimum Number of Accessible Parking Spaces
ADA Standards for Accessible Design 4.1.2 (5)

Total Number of Parking spaces Provided (per lot)	Total Minimum Number of Accessible Parking Spaces (60" & 96" aisles)	Van Accessible Parking Spaces with min. 96" wide access aisle	Accessible Parking Spaces with min. 60" wide access aisle
	Column A		
1 to 25	1	1	0
26 to 50	2	1	1
51 to 75	3	1	2
76 to 100	4	1	3
101 to 150	5	1	4
151 to 200	6	1	5
201 to 300	7	1	6
301 to 400	8	1	7
401 to 500	9	2	7
501 to 1000	2% of total parking provided in each lot	1/8 of Column A*	7/8 of Column A**
1001 and over	20 plus 1 for each 100 over 1000	1/8 of Column A*	7/8 of Column A**

* one out of every 8 accessible spaces ** 7 out of every 8 accessible parking spaces

Response: The proposal includes seven ADA spaces. Building 1 will have two ADA stalls in the garage area under the building, and two ADA stalls adjacent to the south. Building 2 will have three ADA stalls, including one van-accessible space, in the garage area under the building.

19.164.040 Bicycle parking standards.

All uses which are subject to site design review shall provide bicycle parking, in conformance with the following standards, which are evaluated during site design review:

A. Number of Bicycle Parking Spaces. A minimum of two bicycle parking spaces per use is required for all uses with greater than 10 vehicle parking spaces. The following additional standards apply to specific types of development:

1. Multifamily Residences. Every residential use of four or more dwelling units provides at least one sheltered bicycle parking space for each dwelling unit. Sheltered bicycle parking spaces may be located within a garage, storage shed, basement, utility room or

similar area. In those instances in which the residential complex has no garage or other easily accessible storage unit, the bicycle parking spaces may be sheltered from sun and precipitation under an eave, overhang, an independent structure, or similar cover.

Response: As shown on Sheet A104, every unit will include an indoor bike storage area with a mounted bicycle rack.

2. Parking Lots. All public and commercial parking lots and parking structures provide a minimum of one bicycle parking space for every 10 motor vehicle parking spaces.
[…]

Response: No public or commercial parking lots or structures are proposed.

6. Multiple Uses. For buildings with multiple uses (such as a commercial or mixed use center), bicycle parking standards shall be calculated by using the total number of motor vehicle parking spaces required for the entire development. A minimum of one bicycle parking space for every 10 motor vehicle parking spaces is required.

Response: 29 bicycle parking spaces are required for the proposed 292 motor vehicle spaces. As shown on Sheet A102, 15 bicycle racks are provided near the entrances of Buildings 1, 2, 3, and 5. Each rack provides two spaces, for a total of 30 bicycle spaces, meeting this requirement.

C. Location and Design. Bicycle parking shall be conveniently located with respect to both the street right-of-way and at least one building entrance (e.g., no farther away than the closest parking space). It should be incorporated whenever possible into building design and coordinated with the design of street furniture when it is provided. Street furniture includes benches, streetlights, planters and other pedestrian amenities.

Response: As shown on Sheet A102, common bicycle parking spaces are conveniently located immediately adjacent to building entrances.

D. Visibility and Security. Bicycle parking should be visible to cyclists from street sidewalks or building entrances, so that it provides sufficient security from theft and damage.

Response: As shown on Sheet A102, proposed parking areas are immediately adjacent to building entrances, providing high visibility for bicycle parking.

E. Options for Storage. Bicycle parking requirements for long-term and employee parking can be met by providing a bicycle storage room, bicycle lockers, racks, or other secure storage space inside or outside of the building.

Response: As shown on Sheet A104, secure indoor bicycle storage is provided in every unit via a mounted bicycle rack.

F. Lighting. Bicycle parking shall be at least as well lit as vehicle parking for security.

Response: Common bicycle parking areas are located at building entrances. As shown on Sheet A103 (Lighting/Circulation Plan), all building entrance areas contain lighting fixtures. These lighting fixtures shine directly onto bicycle parking areas.

G. Reserved Areas. Areas set aside for bicycle parking shall be clearly marked and reserved for bicycle parking only.

Response: Bicycle parking areas contain bicycle racks, which clearly mark and reserve these areas for bicycle parking.

H. Hazards. Bicycle parking shall not impede or create a hazard to pedestrians. Parking areas shall be located so as to not conflict with vision clearance standards (Chapter 19.162 FMC, Access and Circulation). (Ord. 6-2001 § 1)

Response: As shown on Sheet A102, bicycle parking areas are located adjacent to building entrances. The proposed arrangement allows unimpeded pedestrian access to the building, and no bicycle parking areas are adjacent to areas requiring vision clearance.

Public Facilities Requirements (19.165)

19.165.020 Transportation standards.

Transportation standards are necessary so that the Fairview street system remains intact and well connected. Streets are critical to the connection of neighborhoods, businesses, schools, etc. It is important to regulate roadway sizes, locations and right-of-way dimensions. The street standards are based directly on the Fairview transportation system plan. Traffic calming measures are addressed in the adopted transportation system plan. The city of Fairview has no formalized traffic-calming plan, but has recently adopted a speed hump management program. The street alignment illustrations used in the proposed code are taken directly from the transportation system plan. (Ord. 6-2001 § 1)

Response: This proposal includes a Transportation Impact Study (Exhibit A); proposed dedication and improvements were coordinated closely with both Multnomah County and Fairview public works.

19.165.025 Transportation improvements.

A. Development Standards. No development shall occur unless the development has frontage or approved access to a public street, in conformance with the provisions of Chapter 19.162 FMC, Access and Circulation, and the following standards are met:

1. Streets within or adjacent to a development shall be improved in accordance with the transportation system plan and the provisions of this chapter;
2. Development of new streets, and additional street width or improvements planned as a portion of an existing street, shall be improved in accordance with this section, and public streets shall be dedicated to the applicable city, county or state jurisdiction;

Response: Please see Sheets C5.0 (Sandy Boulevard Improvements) and C6.0 (223rd Avenue Improvements), showing dedication and improvements consistent with County requirements.

3. New streets and drives connected to a collector or arterial street shall be paved; and

Response: No new streets are proposed.

4. The city may accept a future improvement guarantee (e.g., owner agrees not to remonstrate (object) against the formation of a local improvement district in the future) in lieu of street improvements if one or more of the following conditions exist:

a. A partial improvement may create a potential safety hazard to motorists or pedestrians;
b. Due to the developed condition of adjacent properties it is unlikely that street improvements would be extended in the foreseeable future and the improvement associated with the project under review does not, by itself, provide increased street safety or capacity, or improved pedestrian circulation;
c. The improvement would be in conflict with an adopted capital improvement plan; or
d. The improvement is associated with an approved land partition on property zoned residential and the proposed land partition does not create any new streets.

Response: The proposal includes dedication and improvement consistent with County requirements for both NE Sandy Boulevard and NE 223rd Avenue.

B. Variances. Variances to the transportation design standards in this section may be granted by means of a Class B variance, as governed by Article V of this title, Variances. A variance may be granted under this provision only if a required improvement is not feasible due to topographic constraints or constraints posed by sensitive lands Chapter 19.106 FMC.

Response: No variance is requested to transportation design standards in the city code. However, a Multnomah County Road Rules Variance Request is justified in Exhibit D to this application.

C. Creation of Rights-of-Way for Streets and Related Purposes. Streets shall be created through the approval and recording of a final subdivision or partition plat; except the city may approve the creation of a street by acceptance of a deed, provided that the street is deemed essential by the city council for the purpose of implementing the transportation system plan, and the deeded right-of-way conforms to the standards of this code. All deeds of dedication shall be in a form prescribed by the city engineer and shall name "the public," as grantee.
D. Creation of Access Easements. The city may approve an access easement established by deed when the easement is necessary to provide for access and circulation in conformance with Chapter 19.162 FMC, Access and Circulation. Setback standards do not permit conflicting structures to be built in public easements.

Response: Applicant will work with the city engineer to provide the required documentation for street dedication and easements.

E. Street Location, Width and Grade. Except as noted below, the location, width and grade of all streets shall conform to the transportation system plan, and an approved street plan or subdivision plat. Street location, width and grade shall be determined in relation to existing and planned streets, topographic conditions, public convenience and safety, and in appropriate relation to the proposed use of the land to be served by such streets:
1. Street grades shall be approved by the city engineer in accordance with the design standards in subsection N of this section; and

Response: Please see Sheets C5.0 (Sandy Boulevard Improvements) and C6.0 (223rd Avenue Improvements), showing location, width, dedication and improvements consistent with County requirements.

2. Where the location of a street is not shown in an existing street plan (see subsection H of this section), the location of streets in a development shall either: […]

Response: This standard is not applicable.

F. Minimum Rights-of-Way and Street Sections. Street rights-of-way and improvements shall be the widths as shown in Figures 19.165.025 (F)(1) to (6). […]

Response: NE Sandy Boulevard is classified by the City of Fairview as an Arterial Street; NE 223rd Avenue is classified by the City of Fairview as a Collector Street. Proposed dedications and improvements to meet right-of-way standards are shown on Sheets C5.0, C6.0, and L1 (Landscape Plan).

G. Traffic Signals and Traffic Calming Features.

1. Traffic-calming features, such as traffic circles, curb extensions, narrow residential streets, and special paving may be used to slow traffic in neighborhoods and areas with high pedestrian traffic.
2. Traffic signals shall be required with development when traffic signal warrants are met, in conformance with the Highway Capacity Manual, and Manual of Uniform Traffic Control Devices. The location of traffic signals shall be noted on approved street plans. Where a proposed street intersection will result in an immediate need for a traffic signal, a signal meeting approved specifications shall be installed. The developer's cost and the timing of improvements shall be included as a condition of development approval.
Figure 19.165.025(G) – Traffic Calming Features

Response: Please see Exhibit A (TIS). No traffic calming features are recommended and no signal warrants are met.

H. Future Street Plan and Extension of Streets. [NA subdivisions only]
I. Street Alignment and Connections.

Response: No additional streets are proposed, no existing or planned streets intersect with the site, and existing development to the north and west of the site precludes street extension through the site. These standards are not applicable.

J. Sidewalks, Planter Strips, Bicycle Lanes. Sidewalks, planter strips, and bicycle lanes shall be installed in conformance with the standards in Figures 19.165.025(F)(1) to (6), applicable provisions of the transportation system plan, the Comprehensive Plan, and adopted street plans. Maintenance of sidewalks, curbs, and planter strips is the continuing obligation of the adjacent property owner. All work must comply with the city of Fairview public works construction standards.

Response: Proposed dedications and improvements to meet right-of-way standards are shown on Sheets C5.0, C6.0, and L1 (Landscape Plan).

K. Intersection Angles. Streets shall be laid out so as to intersect at an angle as near to a right angle as practicable, except where topography requires a lesser angle or where a reduced angle is necessary to provide an open space, pocket park, common area or similar neighborhood amenity. In addition, the following standards shall apply:

Response: No new streets are proposed.

L. Existing Rights-of-Way. Whenever existing rights-of-way adjacent to or within a tract are of less than standard width, additional rights-of-way shall be provided at the time of subdivision or development, subject to the provision of FMC 19.165.025 (C).

Response: Please see Sheets C5.0 and C6.0 for proposed street dedication along NE Sandy Boulevard and NE 223rd Avenue.

M. Cul-de-Sacs. […]:

Response: No cul-de-sacs are proposed.

2. Streets intersecting with a minor collector or greater functional classification street, or streets intended to be posted with a stop sign or signalization, shall provide a landing averaging five percent or less. Landings are that portion of the street within 20 feet of the edge of the intersecting street at full improvement.

Response: No new streets are proposed.

O. Curbs, Curb Cuts, Ramps, and Driveway Approaches. Concrete curbs, curb cuts, wheelchair, bicycle ramps and driveway approaches shall be constructed in accordance with standards specified in Chapter 19.162 FMC, Access and Circulation.

Response: Please see findings under 19.162, earlier in this application narrative.

P. Streets Adjacent to Railroad Right-of-Way. [NA]

Response: The site is not adjacent to railroad right-of-way. This standard is not applicable.

Q. Development Adjoining Arterial Streets. Where a development adjoins or is crossed by an existing or proposed arterial street, the development design shall separate residential access and through traffic, and shall minimize traffic conflicts. The design shall include one or more of the following:
1. A parallel access street along the arterial with a landscape buffer separating the two streets;
2. Deep lots abutting the arterial or major collector to provide adequate buffering with frontage along another street. Double-frontage lots shall conform to the buffering standards in FMC 19.163.030;
3. Screen planting at the rear or side property line to be contained in a non-access reservation (e.g., public easement or tract) along the arterial;
4. Other treatment suitable to meet the objectives of this subsection; or
5. If a lot has access to two streets with different classifications, primary access shall be from the lower classification street, in conformance with Chapter 19.162 FMC.

Response: The site is adjacent to NE Sandy Boulevard, an arterial street, and NE 223rd Avenue, a collector street. As shown on Sheet A102, primary access to the site is located on NE 223rd Avenue, the lower classification street. This standard is met.

R. Alleys, Public or Private. Alleys shall conform to the standards in Figure 19.165.025(F)(2). While alley intersections and sharp changes in alignment shall be avoided, the corners of necessary alley intersections shall have a radius of not less than 12 feet.

Response: No alleys are proposed.

S. Private Streets. Private streets shall not be used to avoid connections with public streets. Gated communities (i.e., where a gate limits access to a development from a public street) are prohibited. Design standards for private streets shall conform to the provisions of Figures 19.165.025(F)(1) to (6).

Response: No private streets are proposed.

T. Street Names. No street name shall be used which will duplicate or be confused with the names of existing streets in Multnomah County, except for extensions of existing streets. Street names, signs and numbers shall conform to the established pattern in the surrounding area, except as requested by emergency service providers.

Response: No new street names are proposed.

U. Survey Monuments. Upon completion of a street improvement and prior to acceptance by the city, it shall be the responsibility of the developer's registered professional land surveyor to provide certification to the city that all boundary and interior monuments shall be reestablished and protected.

Response: Applicant expects a condition of approval to meet this standard.

V. Street Signs. The city, county or state with jurisdiction shall install all signs for traffic control and street names. The cost of signs required for new development shall be the responsibility of the developer. Street name signs shall be installed at all street intersections. Stop signs and other signs may be required.

Response: The site is not adjacent to a corner. No street signs are proposed.

W. Mail Boxes. Plans for mail boxes to be used shall be approved by the United States Postal Service.

Response: Applicant expects a condition of approval to meet this standard.

X. Streetlight Standards. Streetlights shall be installed in accordance with city standards.

Response: Please see Sheet C8.0 (Lighting Plan), showing proposed street lights along NE Sandy Boulevard.

Y. Street Cross-Sections. All street cross-sections must comply with the Standard Specifications for Public Works Construction pages 40-51. The final lift of asphalt or concrete pavement shall be placed on all new constructed public roadways prior to final city acceptance of the roadway and within one year of the conditional acceptance of the roadway unless otherwise approved by the city engineer. The final lift shall also be placed no later than when 90 percent of the structures in the new development are completed or one year from the commencement of initial construction of the development, whichever is less. All work must comply with public works construction standards.

Response: Applicant expects a condition of approval to meet this standard on final construction documents.

19.165.030 Public use areas.

Public use areas implement Comprehensive Plan policies that may require a developer to reserve a piece of land for future park and open space to serve the residents of the new development. Specific issues to consider include the amount of time the city has to purchase parkland and whether dedication of park land should count as a credit towards SDCs.

Response: No public park or open space areas are identified on City planning documents for the site. No park or open space dedication was proposed in meetings with planning staff or the Planning Commission. No public park or open space areas are proposed.

19.165.040 Sanitary sewer and water service improvements.

The sanitary sewer and water service improvements ensure adequate sanitary sewer services to new developments.

A. Sewers and Water Mains Required. Sanitary sewers and water mains shall be installed to serve each new development and to connect developments to existing mains in accordance with the city's construction specifications and the applicable Comprehensive Plan policies.

Response: Please see Sheet C4.0 (Proposed Utilities), showing proposed water and sewer service for the site.

B. Sewer and Water Plan Approval. Development permits for sewer and water improvements shall not be issued until the city engineer has approved all sanitary sewer and water plans in conformance with city standards.

Response: Applicant expects a condition of approval to meet this standard.

C. Oversizing. Proposed sewer and water systems shall be sized to accommodate additional development within the area as projected by the Comprehensive Plan. The developer shall be entitled to system development charge credits for the oversizing.

Response: City public works staff has not identified oversizing needs for this site. No oversizing is proposed.

D. Permits Denied. Development permits may be restricted by the city where a deficiency exists in the existing water or sewer system which cannot be rectified by the development and which if not rectified will result in a threat to public health or safety, surcharging of existing mains, or violations of state or federal standards pertaining to operation of domestic water and sewerage treatment systems. Building moratoriums shall conform to the criteria and procedures contained in ORS 197.505 to 197.520. (Ord. 6-2001 § 1)

Response: No deficiencies that cannot be rectified were identified by City public works staff for this site.

19.165.050 Storm drainage.

The storm drainage section requires developers to accommodate and treat stormwater runoff from buildings and parking lots.
A. General Provisions. The city shall issue a development permit only where adequate provisions for stormwater and flood water runoff have been made.
B. Accommodation of Upstream Drainage. Culverts and other drainage facilities shall be large enough to accommodate potential runoff from the entire upstream drainage area, whether inside or outside the development. Such facilities shall be subject to review and approval by the city engineer.

Response: Please see Sheet C9.0 (Storm Water Plan), describing proposed storm drainage for the site.

C. Effect on Downstream Drainage. Where it is anticipated by the city engineer that the additional runoff resulting from the development will overload an existing drainage facility, the city may deny approval of the development permit unless provisions have

been made for improvement of the potential condition or until provisions have been made for storage of additional runoff caused by the development in accordance with city standards.

Response: Proposed stormwater solution are shown on Sheet C9.0 (Stormwater Plan). Additional description is provided by the civil engineer (Bogdan Popescu) as follows:

> **"We are collecting the runoff generated by the storm water basins (see basin map, in plan set) from roof areas, and parking / impervious surfaces, into catch basins. The catch basins are the Contech type; they provide water quality as well. Each basin is designed to have its own infiltration system. We proposed a series of 20 feet deep dry wells. The geotechnical report shows an infiltration rate of 8 in/hr (field value). We are using a factor of safety of 4, hence a design value of 2 in/hr. The storm infiltration design was prepared for 100 year event.**
>
> **All runoff up to and including a 100 year event is proposed to be infiltrated in these drywells.**
>
> **For higher events we are proposing an emergency overflow located at the NW corner of the property. The overflow consists of a 12" pipe running from the top of the drywell located in the lowest point of the site, to the north, to the existing culverts in Tract A on the north side of our project. These culverts were installed in Tract A at the time they built the subdivision to the north with the intention to provide drainage for our property under undeveloped conditions. They were installed at the low point of the site."**

D. Easements. Where a development is traversed by a watercourse, drainage way, channel or stream, there shall be provided a stormwater easement or drainage right-of-way conforming substantially with the lines of such watercourse and such further width as will be adequate for conveyance and maintenance. (Ord. 6-2001 § 1)

Response: No watercourse or feature crosses the development, therefore no easement is proposed for such.

19.165.060 Utilities.

The utilities section provides standards regarding electric lines and cable. Many types of utilities now must be installed underground for safety and aesthetic purposes.

A. Underground Utilities. All utility lines including, but not limited to, those required for electric, communication, lighting and cable television services and related facilities shall be placed underground, except for surface-mounted transformers, surface-mounted

connection boxes and meter cabinets which may be placed above ground, temporary utility service facilities during construction, and high capacity electric lines operating at 50,000 volts or above. The following additional standards apply to all new subdivisions, in order to facilitate underground placement of utilities:

1. The developer shall make all necessary arrangements with the serving utility to provide the underground services. Care shall be taken to ensure that all above ground equipment does not obstruct vision clearance areas for vehicular traffic;

Response: Please see Sheet C4.0 (Utility Plan). All utilities are proposed to be located underground.

2. The city reserves the right to approve the location of all surface-mounted facilities;
3. All underground utilities, including sanitary sewers and storm drains installed in streets by the developer, shall be constructed prior to the surfacing of the streets; and
4. Stubs for service connections shall be long enough to avoid disturbing the street improvements when service connections are made.

Response: Applicant expects a condition of approval to meet these standards on final construction documents.

B. Easements. Easements shall be provided for all underground utility facilities.

Response: Applicant expects a condition of approval to meet this standard where required by the City.

19.165.070 Easements.

The easements section provisions reserve adequate space for utilities.
Easements for sewers, storm drainage and water quality facilities, water mains, electric lines or other public utilities shall be dedicated on a final plat, or provided for in the deed restrictions. See also, Chapter 19.420 FMC, Development Review and Site Design Review and Chapter 19.430, Land Divisions and Lot Line Adjustments. The developer or applicant shall make arrangements with the city, the applicable district and each utility franchise for the provision and dedication of utility easements necessary to provide full services to the development. The city's standard width for public main line utility easements shall be 20 feet unless otherwise specified by the utility company, applicable district, or city engineer. (Ord. 6-2001 § 1)

Response: Applicant expects a condition of approval to meet this standard where reasonably required by the City.

EXHIBIT A-2

Fairview Apartments

Transportation Impact Analysis

Fairview, Oregon

Date:
March 5, 2018

Prepared for:
Eugene Labunsky

Prepared by:
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Miranda Wells
OREGON
JUNE 2016
MIRANDA WELLS

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Executive Summary

1. A 200-unit apartment complex is proposed for a site located in the northwest corner of the intersection of NE Sandy Boulevard at NE 223rd Avenue in Fairview, Oregon.
2. Trip generation calculations show that the proposed development is expected to generate 125 trips during the morning peak hour, with 31 entering and 94 exiting, and 133 trips during the evening peak hour, with 85 entering and 48 exiting.
3. Capacity analyses show that the study intersections currently operate within the City of Fairview and Multnomah County's level of service standards. Each intersection is projected to continue to operate acceptably following the addition of background growth and site trips from the proposed development.
4. A safety analysis was conducted and found that crash rates at all study intersections were below 1.0 crashes-per-million entering vehicles (CMEV).
5. Sight distance was evaluated at both site accesses. Intersection sight distance requirements are met at the access along NE Sandy Boulevard. Intersection sight distance is met for the site access along NE 223rd Avenue if the site access is at least 100 feet north of the property line.
6. Based on the review of crash data, sight distance, and site circulation, no safety mitigation is necessary or recommended.

Introduction

A 200-unit apartment complex is proposed in Fairview, Oregon. To quantify the impacts of the proposed apartment complex on the nearby transportation system, this report includes operational and safety analysis for the following intersections, as discussed with Multnomah County:

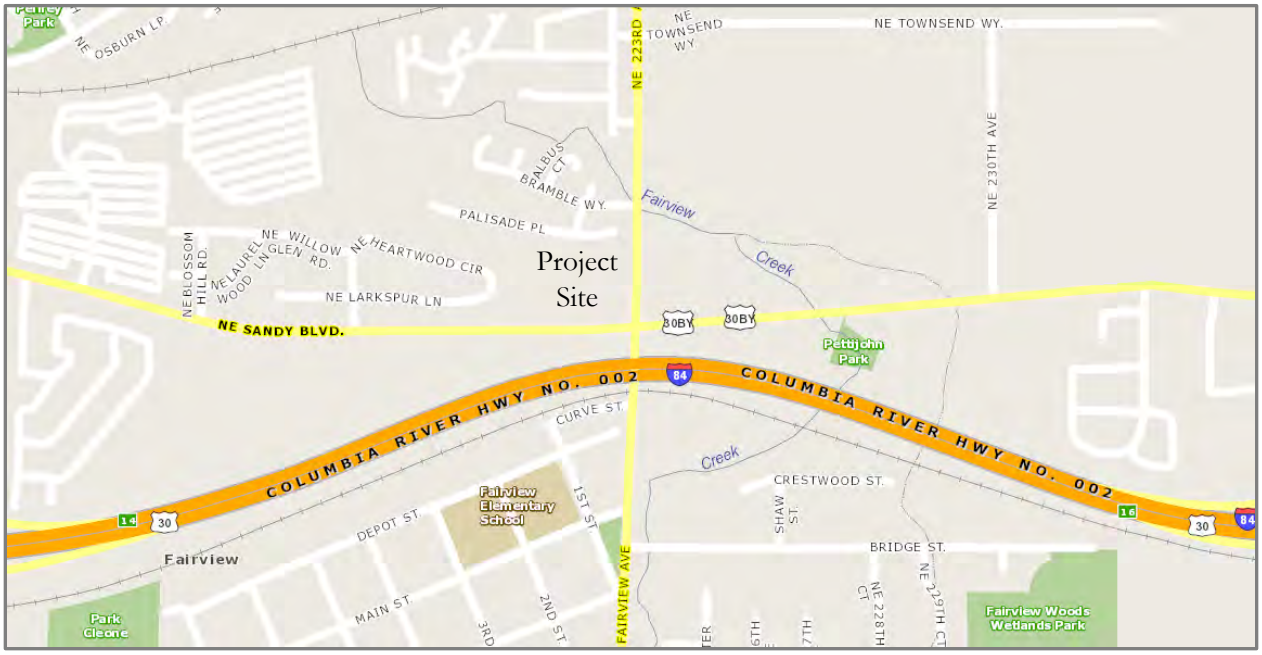
- NE Sandy Boulevard at NE 207th Avenue
- NE Sandy Boulevard at NE 223rd Avenue
- NE Sandy Boulevard at NE 238th Drive
- NE 223rd Avenue at NE Townsend Way

Supporting data and detailed calculations are included in the appendix to this report.

Project Location

The project site is located in the northwest corner of the intersection of NE Sandy Boulevard at NE 223rd Avenue (see Figure 1). The site is classified as medium density residential in the City of Fairview's comprehensive plan. The surrounding area is predominately residential with several retail and office uses along NE Sandy Boulevard.

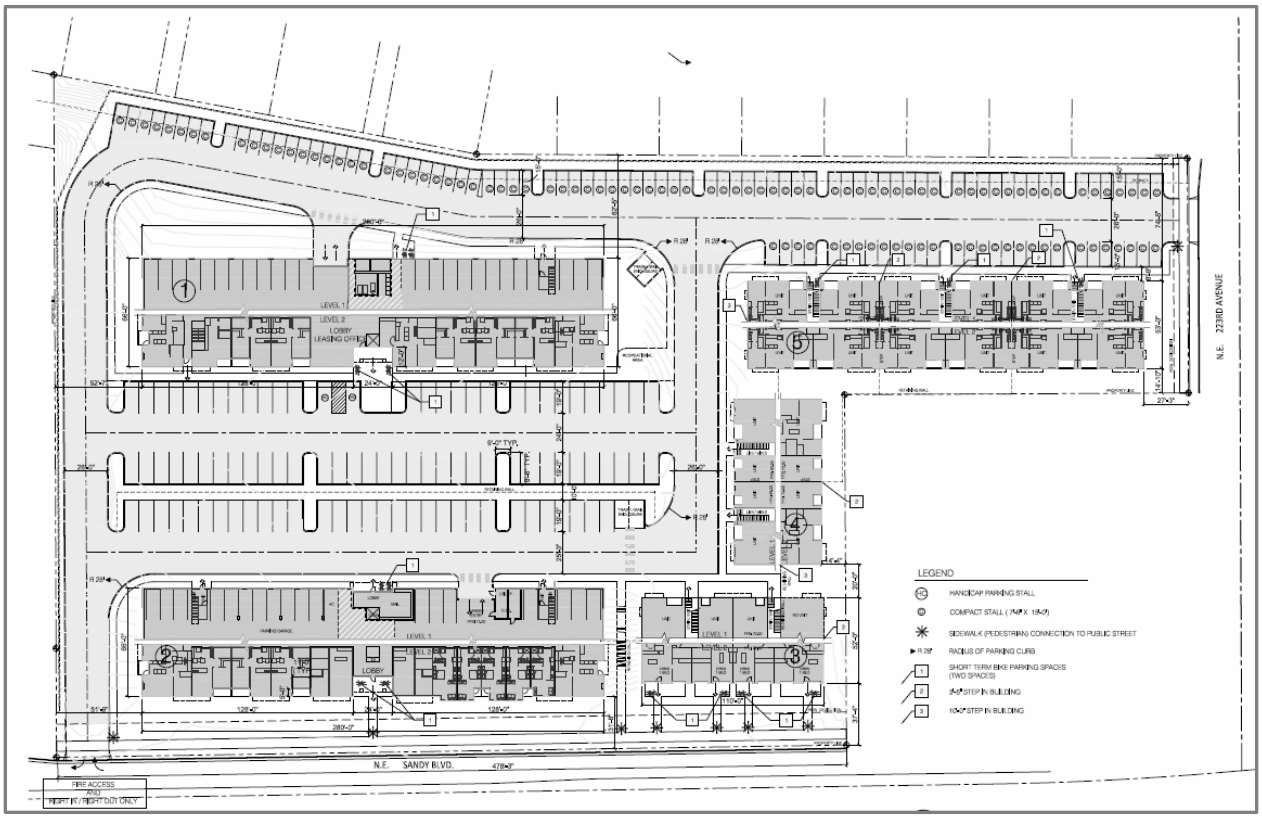
Figure 1 – Project Site Location



Access to Interstate-84 is available west of the site, off of NE 207th Avenue, and east of the site, off of NE 238th Drive. NE 223rd Avenue is the primary north-south roadway connection within the City of Fairview.

The site will have two accesses, one located along NE Sandy Boulevard that will feature a right-turn in/right-turn out configuration for residents/visitors, and one resident/visitor access along NE 223rd Avenue (see Figure 2).

Figure 2 – Proposed Site Plan



Vicinity Streets

NE Sandy Boulevard is classified by the City of Fairview as an Arterial. The roadway generally has a two-lane cross-section with one travel lane in each direction, however, turn lanes are provided at major intersections. It has a posted speed limit of 40 mph. Sidewalks are intermittently provided on either side of the roadway.

NE 207th Avenue/Fairview Parkway is classified by the City of Fairview as an Arterial. The roadway generally has a four-lane cross-section with two travel lanes in each direction. Additional turn lanes are provided at major intersections. Within the site vicinity, the roadway has a three-lane cross-section with one travel lane in

each direction and a left-turn lane provided at the intersection with NE Sandy Boulevard. It has a posted speed limit of 40 mph. Bicycle lanes and sidewalks are provided on both sides of the roadway.

NE 223rd Avenue is classified by the City of Fairview as a Collector. Within the site vicinity, the roadway generally has a two-lane cross-section with one travel lane in each direction, however, turn lanes are provided at major intersections. It has a posted speed limit of 35 mph. Bicycle lanes and sidewalks are provided intermittently on either side of the roadway.

NE 238th Drive is classified by the City of Fairview as an Arterial. North of Ash Avenue, the roadway generally has a four-lane cross-section with two travel lanes in each direction. Turn lanes are provided at major intersections. It has a posted speed limit of 30 mph. Within the site vicinity, sidewalks and bicycle lanes are provided on both sides of the roadway.

NE Townsend Way is classified by the City of Fairview as a local road. The roadway has a three-lane cross-section with one travel lane in each direction and a center two-way left-turn lane. It has a posted speed limit of 35 mph. Sidewalks are provided intermittently on either side of the roadway.

Study Intersections

The intersection of NE Sandy Boulevard at NE 207th Avenue is a three-legged intersection that is controlled by a traffic signal. The northbound approach has one left-turn lane and one right-turn lane. The westbound approach has one left-turn lane and one through lane. The eastbound approach has one through lane and one right-turn lane. Crosswalks are marked across the eastern and southern legs of the intersection.

The intersection of NE Sandy Boulevard at NE 223rd Avenue is a four-legged intersection that is controlled by a traffic signal. The northbound and eastbound approaches each have one left-turn lane, one through lane, and one right-turn lane. The southbound and westbound approaches each have one left-turn lane and one shared through/right-turn lane. Crosswalks are marked across all intersection legs.

The intersection of NE Sandy Boulevard at NE 238th Drive is a four-legged intersection that is controlled by a traffic signal. The northbound and southbound approaches each have one left-turn lane and one shared through/right-turn lane. The westbound approach has one left-turn lane and one shared through/right-turn lane. The eastbound approach has one left-turn lane, one through lane, and one channelized right-turn lane. Crosswalks are marked across all intersection legs.

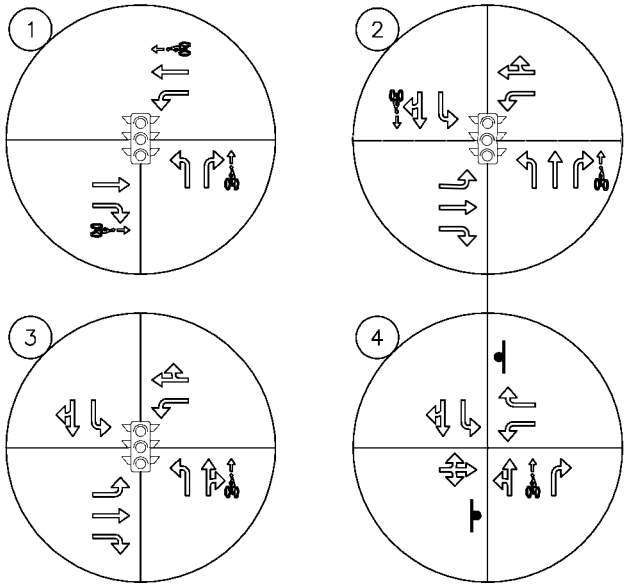
The intersection of NE 223rd Avenue at NE Townsend Way is a four-legged intersection that is stop-controlled for the westbound and eastbound approaches. The northbound approach has one shared through/left-turn lane and one right-turn lane. The southbound approach has one left-turn lane and one shared through/right-turn lane. The westbound approach has one shared lane for all turning movements. The eastbound approach has one left-turn lane and one right-turn lane. Crosswalks are marked across the eastern leg of the intersection.

Upon build-out of the proposed development, the site will have two accesses. One driveway will have access to NE 223rd Avenue via a right or left-turn, and one driveway will have access to NE Sandy Boulevard via a right-turn only. The NE Sandy Boulevard access is a right-turn in /right-turn out access.

A map displaying the project site, roadway configuration, and vicinity is shown in Figure 3 on page 6.

LEGEND

- STUDY INTERSECTION (EXISTING)
- STOP SIGN
- TRAFFIC SIGNAL
- BIKE LANE
- PROJECT SITE
- ARTERIAL ROADWAY
- COLLECTOR ROADWAY
- LOCAL ROADWAY
- FREEWAY



VICINITY MAP

no scale

FIGURE 3

Trip Generation

To estimate the number of trips that will be generated by the proposed development, trip rates from the *Trip Generation Manual*[1] were used. Data from land-use code 220, *Apartments*, was used to estimate the proposed development's trip generation based on the number of dwelling units. Since there are four live/work units, trip generation for the store fronts need to be added for the total trip generation of the proposed development. Data from land use code 826, *Specialty Retail*, was used to estimate the trip generation of the stores based on square footage. Conservatively, the AM peak of the generator was used to estimate the morning peak hour. The trip generation estimates are summarized below in Table 1. Detailed trip generation calculations are included in the appendix to this report.

Table 1 - Trip Generation Summary

		Morning Peak Hour			Evening Peak Hour			Weekday
Land Use Code - Type	**Size**	**In**	**Out**	**Total**	**In**	**Out**	**Total**	**Total**
#220 – Apartments	200 units	20	82	102	81	43	124	1,330
#826 – Specialty Retail	3,400 sq. ft.	11	12	23	4	5	9	150
Total		31	94	125	85	48	133	1,480

Trip Distribution & Assignment

A directional distribution of site trips to and from the proposed development was estimated based on the location of where trips would most likely be coming to and from. Based on the local destinations and the proximity to major transportation facilities, the trip distribution is as follows:

- 20 percent of site trips travel to/from the west along NE Sandy Boulevard,
- 15 percent of site trips travel to/from the south along NE 207th Avenue,
- 25 percent of site trips travel to/from the south along NE 223rd Avenue,
- 20 percent of site trips travel to/from the north along NE 223rd Avenue, and
- 20 percent of site trips travel to/from the south along NE 238th Drive.

The site trip assignment and distribution for the proposed development is shown in Figure 4 on page 8.

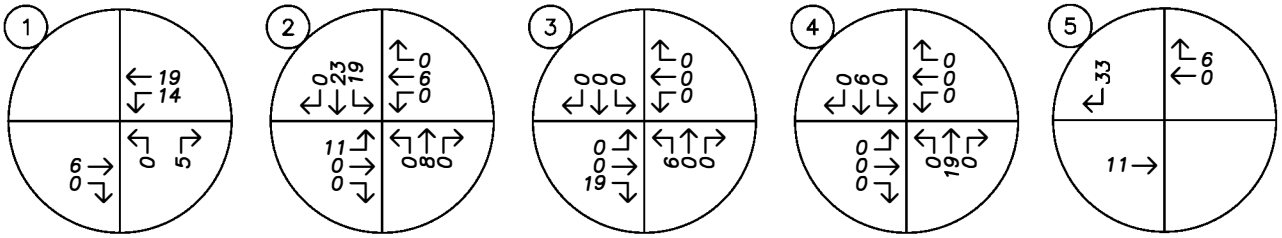
[1] *TRIP GENERATION MANUAL*, 9th Edition, published by the Institute of Transportation Engineering (ITE)

LEGEND

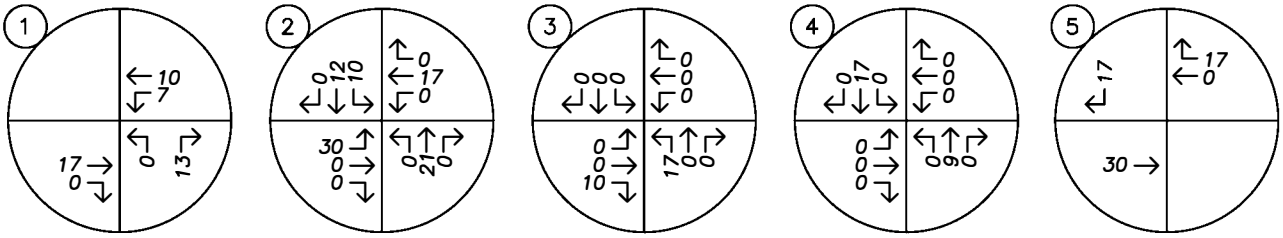
XX% PERCENT OF PROJECT TRIPS

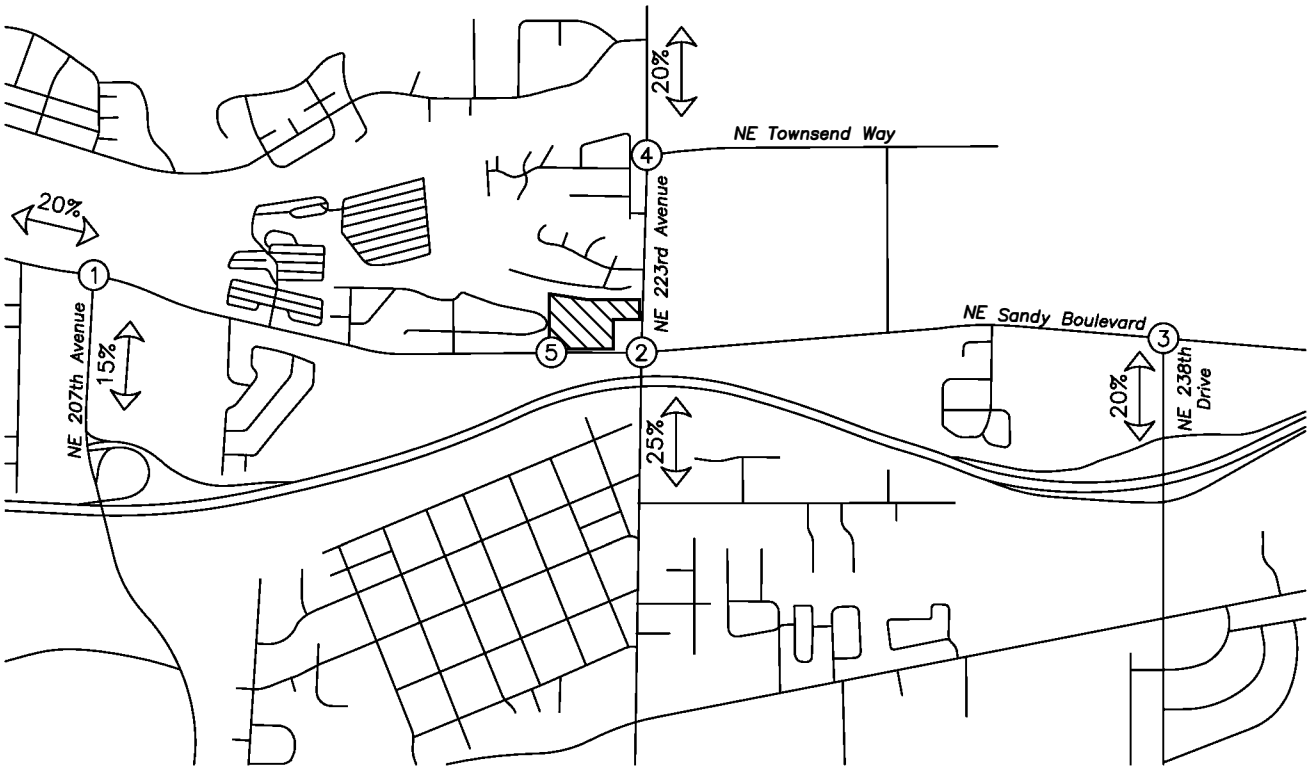
TRIP GENERATION			
	IN	OUT	TOTAL
AM	31	94	125
PM	85	48	133

AM PEAK HOUR



PM PEAK HOUR





TRIP ASSIGNMENT & DISTRIBUTION
Proposed Development Plan – Site Trips
AM & PM Peak Hours

no scale

FIGURE 4

1e

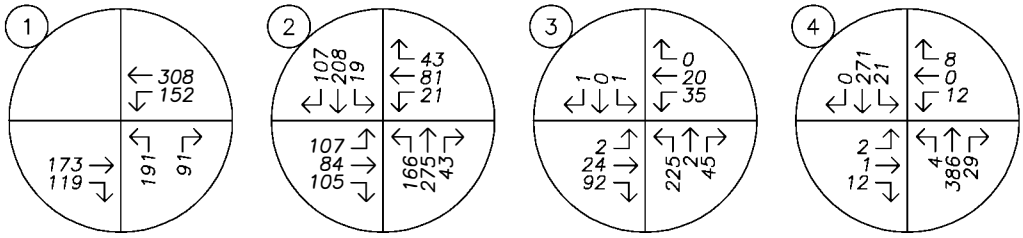
Traffic Volumes

To determine existing traffic volumes at the study intersections, traffic counts were conducted on Tuesday, February 28th, 2017 from 4:00 PM to 6:00 PM to obtain data for the evening peak hour, and on Wednesday, March 1st, 2017 from 7:00 AM to 9:00 AM to obtain data for the morning peak hour. Data from each intersection's peak hour was used for analysis. The existing traffic volumes are shown in Figure 5 on page 10. The raw data is provided in the technical appendix.

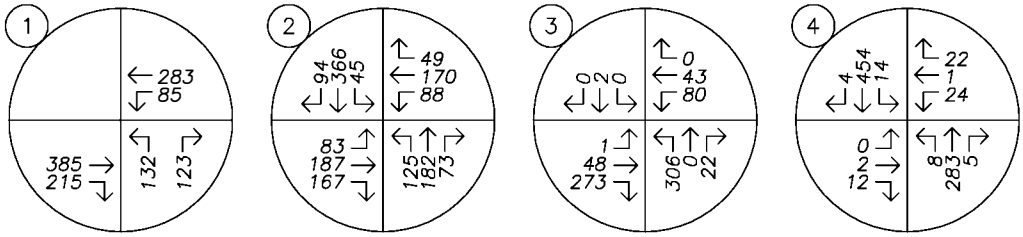
Background Traffic Volumes

To gauge the effect on the proposed project relative to a no-build scenario, background volumes were calculated assuming a two-year build-out period and 2 percent per-year growth in traffic volumes. The year 2019 background volumes are shown in Figure 6 on page 11. The year 2019 background volumes plus site trips generated from the proposed development are shown in Figure 7 on page 12.

AM PEAK HOUR



PM PEAK HOUR

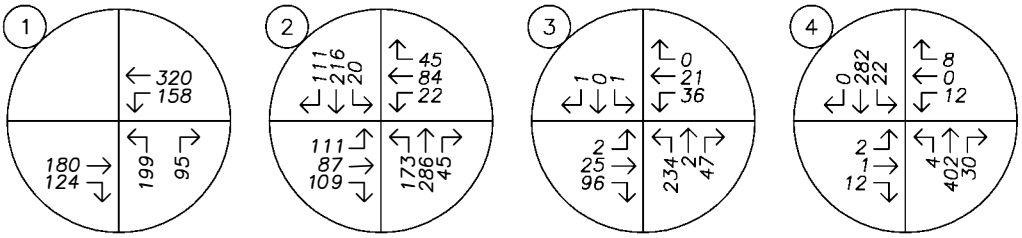


TRAFFIC VOLUMES
Existing Conditions
AM & PM Peak Hours

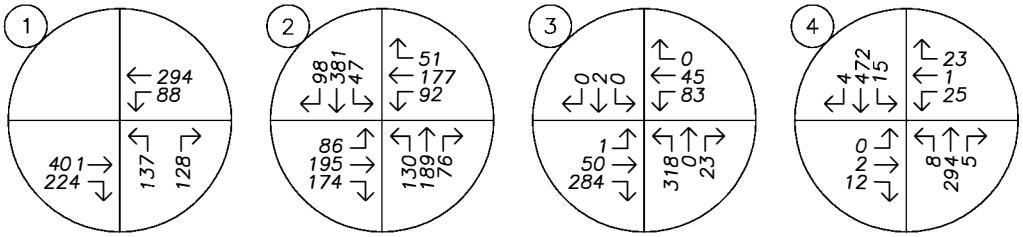
no scale

FIGURE 5

AM PEAK HOUR



PM PEAK HOUR

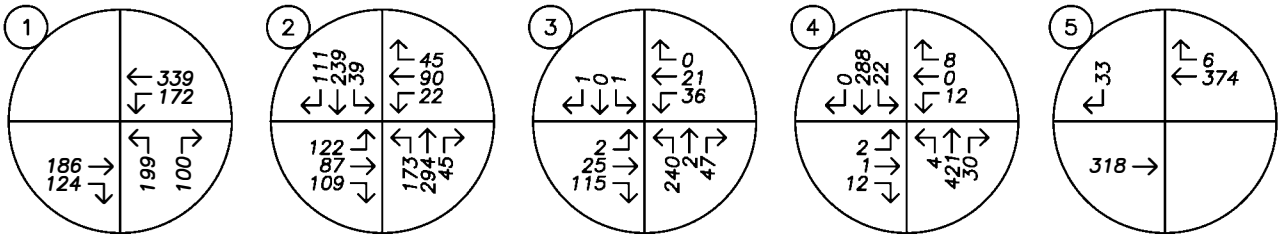


TRAFFIC VOLUMES
Year 2019 Background Conditions
AM & PM Peak Hours

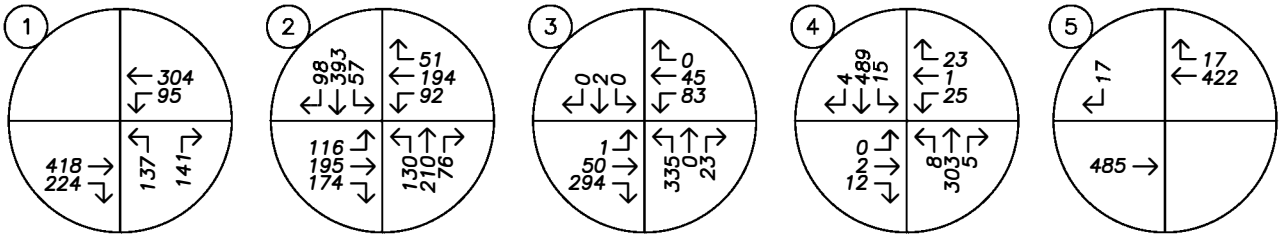
no scale

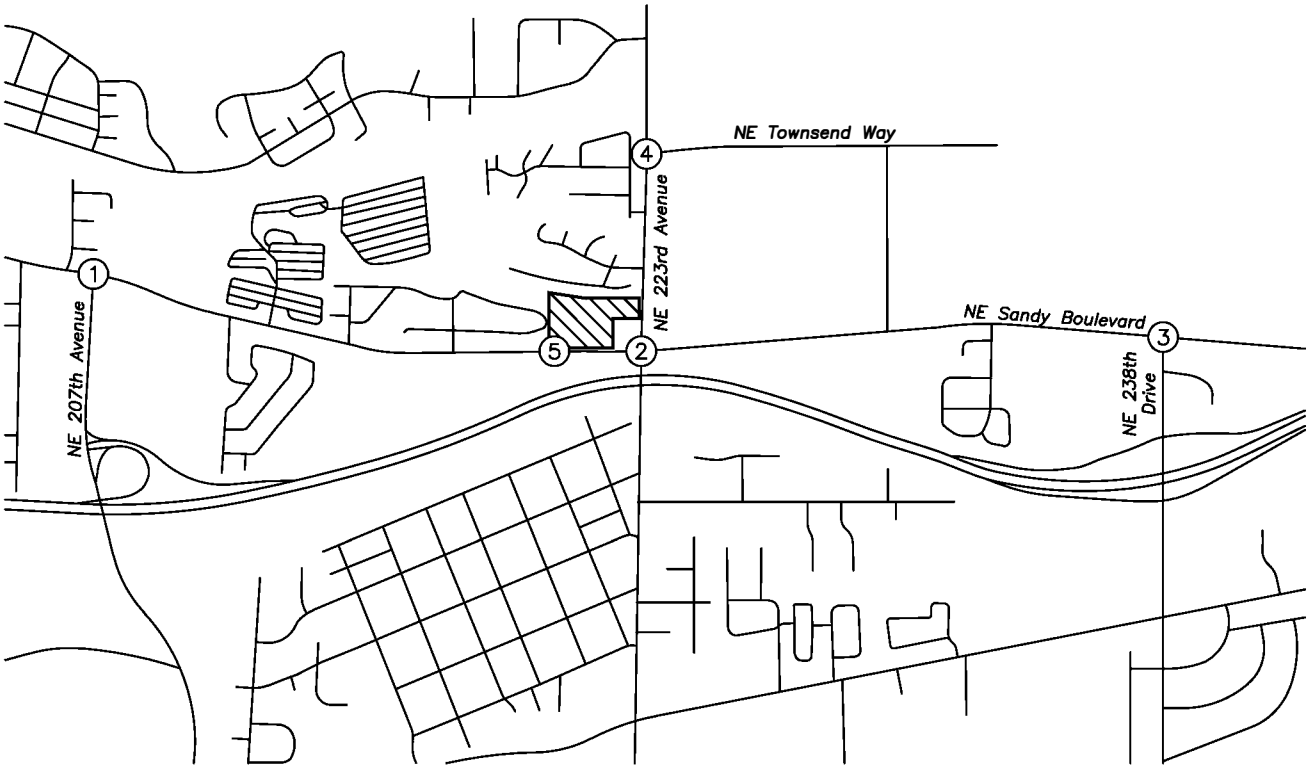
FIGURE 6

AM PEAK HOUR



PM PEAK HOUR





TRAFFIC VOLUMES
Year 2019 Background plus Site Trips
AM & PM Peak Hours

no scale

FIGURE 7

1e

Operational Analysis

To determine the capacity and level-of-service at the study intersection, a capacity analysis was conducted. The analysis was conducted using the intersection analysis methodologies in the *Highway Capacity Manual (HCM)*[2]. Level-of-service (LOS) can range from A, which indicates little or no delay, to F, which indicates a significant amount of congestion and delay. The City of Fairview applies LOS D as the minimum performance standard for roadway intersection traffic operations on roadways under city jurisdiction. A volume to capacity (v/c) ratio of less than 1.0 indicates that the intersection is operating within capacity.

The intersection of NE 207th Avenue at NE Sandy Boulevard currently operates at LOS A during both the morning and evening peak hours, with v/c ratios of 0.48 and 0.58, respectively. Under year 2019 background conditions, the intersection is projected to continue to operate at LOS A with v/c ratios of 0.49 and 0.60 during the morning and evening peak hours, respectively. With the addition of site trips from the proposed development, the intersection is projected to continue to operate at LOS A with v/c ratios of 0.51 and 0.56.

The intersection of NE 223rd Avenue at NE Sandy Boulevard currently operates at LOS B during both the morning and evening peak hour with v/c ratios of 0.54 and 0.65, respectively. Under year 2019 background conditions, the intersection is projected to continue to operate at LOS B with v/c ratios of 0.56 and 0.67 during the morning and evening peak hours, respectively. With the addition of site trips from the proposed development, the intersection is projected to operate at LOS B during the morning peak hour with a v/c ratio of 0.60 and at LOS C during the evening peak hour with a v/c ratio of 0.71.

The intersection of NE 238th Drive at NE Sandy Boulevard currently operates at LOS A during the morning peak hour with a v/c ratio of 0.36, and at LOS B during the evening peak hour with a v/c ratio of 0.45. Under year 2019 background conditions, the intersection is projected to continue to operate at LOS A during the morning peak hour and LOS B during the evening peak hour, with v/c ratios of 0.37 and 0.46, respectively. With the addition of site trips from the proposed development, the intersection is projected to continue to operate at LOS A during the morning peak hour and LOS B during the evening peak hour, with v/c ratios of 0.38 and 0.47, respectively.

The intersection of NE 223rd Avenue at NE Townsend Way currently operates at LOS C during both the morning and evening peak hours, with v/c ratios of 0.05 and 0.12 during the morning and evening peak hour, respectively. Under year 2019 background conditions, the intersection is projected to continue to operate at LOS C with v/c ratios of 0.05 and 0.13 during the morning and evening peak hours, respectively. With the addition of site trips from the proposed development, the intersection is projected to continue to operate at LOS C with v/c ratios of 0.05 and 0.14 during the morning and evening peak hours, respectively.

The intersection of NE Sandy Boulevard and the project site driveway access will be a new intersection created to allow vehicles access into and out of the apartment complex. The driveway will feature a right-turn in/right-turn out configuration. Vehicles will only be able to access the apartment complex via a right-turn when traveling westbound on NE Sandy Boulevard. Vehicles will only be able to exit the apartment complex via a right-turn onto NE Sandy Boulevard, and then travel westbound. As the driveway access does not

[2] Transportation Research Board, *Highway Capacity Manual,* 5th Edition, 2010.

currently exist, LOS and capacity were not calculated for existing conditions and for year 2019 background conditions. With the addition of site trips from the proposed development, the intersection is projected to operate at LOS A with v/c ratios of 0.24 and 0.31 during the morning and evening peak hours, respectively.

The table below summarizes the level of service, delay, and capacity of the study intersections. Detailed worksheets are provided in the appendix.

Table 2 - Intersection Capacity Analysis Summary

	Morning Peak Hour			Evening Peak Hour		
	LOS	Delay	V/C	LOS	Delay	V/C
NE 207th Ave at NE Sandy Blvd						
Existing	A	9	0.48	A	9	0.58
Background	A	9	0.49	A	10	0.60
Background + Site	A	9	0.51	A	9	0.56
NE 223rd Ave at NE Sandy Blvd						
Existing	B	14	0.54	B	19	0.65
Background	B	15	0.56	B	20	0.67
Background + Site	B	15	0.60	C	20	0.71
NE 238th Dr at NE Sandy Blvd						
Existing	A	9	0.36	B	11	0.45
Background	A	9	0.37	B	11	0.46
Background + Site	A	9	0.38	B	11	0.47
NE 223rd Ave at NE Townsend Way						
Existing	C	19	0.05	C	22	0.12
Background	C	20	0.05	C	24	0.13
Background + Site	C	21	0.05	C	25	0.14
NE Sandy Blvd at Driveway Access						
Background + Site	A	0	0.24	A	0	0.31

On-site Circulation

The site is planned to have good connectivity for pedestrians, bicycles, and motor vehicles throughout the site as shown in Figure 1. The connections provide separation of modes and various paths to get to and from NE 223rd Avenue as well as throughout the site. This section outlines additional crash, sight distance, and ADA compliance for the site access and surrounding areas.

1e

Crash Analysis

Using data obtained from ODOT's Crash Analysis and Reporting Unit, a review of the most recent available five years of crash history (2011-2015) at the study intersections was performed. Crash rates were calculated under the common assumption that traffic counted during the evening peak period represents 10% of annual average daily traffic (AADT) at the intersection. Crashes are categorized in terms of severity based upon the most severe injury sustained in the crash. Crash rates greater than 1.0 CMEV are generally indicative of a need for further investigation and possible mitigation.

The intersection of NE Sandy Boulevard at NE 207th Avenue had five reported crashes during the analysis period. The crashes consisted of four rear-end collisions and one collision involving a pedestrian. The rear-end collisions resulted in property damage only. The collision with the pedestrian occurred when a right-turning vehicle failed to yield to pedestrian right of way. The pedestrian suffered a non-incapacitating injury, while the passenger of the car suffered a possible injury. The crash rate at the intersection was calculated to be 0.22 CMEV.

The intersection of NE Sandy Boulevard at NE 223rd Avenue had thirteen reported crashes during the analysis period. The crashes consisted of eight rear-end collisions, two turning movement collisions, one angle-type collision, one backing movement collision, and one parking maneuver collision. The crashes resulted in six possible injuries and one non-incapacitating injury. The crash rate at the intersection was calculated to be 0.44 CMEV.

The intersection of NE Sandy Boulevard at NE 238th Avenue had eleven reported crashes during the analysis period. The crashes consisted of nine turning movement collisions, one angle-type collision, and one rear-end collision. The crashes resulted in eight possible injuries and one non-incapacitating injury. It should be noted that eight of the nine turning movement collisions occurred between a left-turning vehicle and eastbound through traffic. The left-turn signal for westbound left-turn lanes is currently permissive, with a "left turn yield to oncoming traffic" sign. The crash rate for the intersection was calculated to be 0.78 CMEV.

No crash information was available for the intersection of NE 223rd Avenue at NE Townsend Way during the analysis period.

Sight Distance Evaluation

Intersection sight distance was measured and evaluated in accordance with the standards established in *A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS*[3]. According to AASHTO, the driver's eye is assumed to be 15 feet from the near edge of the nearest travel lane of the intersecting street and at a height of 3.5 feet above the approach street pavement. Vehicle/object height is assumed to be 3.5 feet above the cross-street pavement. Using a vehicle/object height equal to the driver's eye height makes intersection sight distances reciprocal (if one driver can see another vehicle, then the driver of that vehicle can also see the first vehicle). Multnomah County standards require intersection sight distance.

[3] American Association of State Highway and Transportation Officials (AASHTO), *A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS*, 6th Edition, 2011.

Based on the posted speed limit of 40 mph along NE Sandy Boulevard, the minimum required intersection sight distance is 400 feet. Sight distance was measured to be in excess of 600 feet to the west and, upon clearance of on-site vegetation, 400 feet to the east. Intersection sight distance is met in both directions.

Based on the posted speed limit of 35 mph along NE 223rd Avenue, the minimum required intersection sight distance is 350 feet. A driveway located at 100 feet north of the property line has a measured sight distance in excess of 650 feet to the north and 350 feet to the south. Intersection sight distance is met at this location. A driveway located at 25 feet north of the property line has a measured sight distance in excess of 600 feet to the north and 255 feet to the south. The required stopping sight distance along a 35 mph roadway is 250 feet. Although intersection sight distance is not met, stopping sight distance is met for this location along NE 223rd Avenue.

ADA Compliance

The closest signalized intersection to the site, NE Sandy Boulevard at NE 223rd Avenue, provides ramps and pedestrian push buttons at all corners of the intersection.

The site will have approximately 292 total parking spaces available. ADA Accessibility Guidelines[4] require at least seven accessible parking spaces when total parking available is between 201 and 300 spaces. Sidewalks are provided along the parking lot edge, with access to/from each apartment building. The sidewalks also connect to each live/work unit's site frontage. Accessible ramps and crossings over each site access should be provided within the complex.

Impacts to Neighboring Developments

The proposed NE Sandy Boulevard access is located between an access to a residential neighborhood to the west and an access to a private business to the east. The 2016 Fairview Transportation System Plan: Volume 1[5] lists minimum private driveway access spacing standards for Multnomah County. NE Sandy Boulevard is classified as a Minor Arterial, and the minimum driveway spacing is 295 feet.

According to Google Maps, the distance to the access to the residential property west of the project site is in excess of 700 feet. In addition, the distance to the access to the private business east of the project site is in excess of 450 feet. Both access points meet the minimum driveway spacing requirements. There are no anticipated adverse impacts to the neighboring developments.

Conclusions

Capacity analyses show that the study intersections currently operate within the City of Fairview and Multnomah County's level of service standards. Each intersection is projected to continue to operate acceptably following the addition of background growth and site trips from the proposed development.

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[4] https://www.access-board.gov/guidelines-and-standards/buildings-and-sites/about-the-ada-standards/background/adaag
[5] https://fairvieworegon.gov/index.aspx?nid=448

1e

A safety analysis was conducted and found that crash rates at all study intersections were below 1.0 crashes-per-million entering vehicles (CMEV).

Sight distance was evaluated at both site accesses. Intersection sight distance requirements are met at the access along NE Sandy Boulevard. Intersection sight distance is met for the site access along NE 223rd Avenue if the site access is at least 100 feet north of the property line.

Based on the review of crash data, sight distance, and site circulation, no safety mitigation is necessary or recommended.

1e

Appendix

EXHIBIT A-2

TRIP GENERATION CALCULATIONS

Land Use: Apartment
Land Use Code: 220
Variable: Dwelling Units
Variable Value: 200

AM PEAK HOUR

Trip Rate: 0.51

	Enter	Exit	Total
Directional Distribution	20%	80%	
Trip Ends	**20**	**82**	**102**

PM PEAK HOUR

Trip Rate: 0.62

	Enter	Exit	Total
Directional Distribution	65%	35%	
Trip Ends	**81**	**43**	**124**

WEEKDAY

Trip Rate: 6.65

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**665**	**665**	**1,330**

SATURDAY

Trip Rate: 6.39

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**639**	**639**	**1,278**

Source: TRIP GENERATION, Ninth Edition

EXHIBIT A-2

TRIP GENERATION CALCULATIONS

Land Use: Specialty Retail Center
Land Use Code: 826
Variable: 1000 Sq Ft Gross Leasable Area
Variable Value: 3.400

AM PEAK HOUR OF GENERATOR

Trip Rate: 6.84

	Enter	Exit	Total
Directional Distribution	48%	52%	
Trip Ends	**11**	**12**	**23**

PM PEAK HOUR

Trip Rate: 2.71

	Enter	Exit	Total
Directional Distribution	44%	56%	
Trip Ends	**4**	**5**	**9**

WEEKDAY

Trip Rate: 44.32

	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**75**	**75**	**150**

SATURDAY

Trip Rate: 42.04

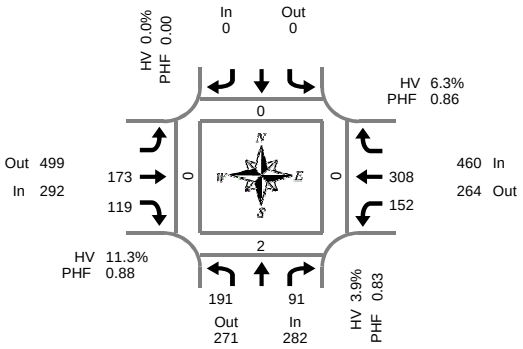
	Enter	Exit	Total
Directional Distribution	50%	50%	
Trip Ends	**71**	**71**	**142**

Source: TRIP GENERATION, Ninth Edition

EXHIBIT A-2

Total Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
7:05 AM to 8:05 AM

NE 207th Ave & NE Sandy Blvd

Wednesday, March 01, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes		T	R	Bikes	L	T		Bikes		North	South	East	West
7:00 AM	14		8	0				0		16	4	0	12	17		0	71	0	0	0	0
7:05 AM	12		8	0				0		12	11	0	20	25		0	88	0	0	0	0
7:10 AM	15		5	0				0		12	4	0	8	24		0	68	0	0	0	0
7:15 AM	16		10	0				0		11	13	0	16	40		0	106	0	1	0	0
7:20 AM	27		5	0				0		16	9	0	15	21		0	93	0	1	0	0
7:25 AM	18		9	0				0		12	9	0	12	22		0	82	0	0	0	0
7:30 AM	9		8	0				0		17	6	0	15	28		0	83	0	0	0	0
7:35 AM	15		8	0				0		12	9	1	14	24		0	82	0	0	0	0
7:40 AM	11		8	0				0		20	16	0	10	30		0	95	0	0	0	0
7:45 AM	17		6	0				0		14	10	0	12	17		0	76	0	0	0	0
7:50 AM	20		12	0				0		15	8	0	7	39		0	101	0	0	0	0
7:55 AM	22		8	0				0		17	7	0	16	18		0	88	0	0	0	0
8:00 AM	9		4	0				0		15	17	0	7	20		0	72	0	0	0	0
8:05 AM	12		9	0				0		14	13	0	9	17		0	74	0	0	0	0
8:10 AM	4		5	0				0		14	6	0	8	25		0	62	0	0	0	0
8:15 AM	9		7	0				0		11	7	0	6	24		0	64	0	2	0	0
8:20 AM	11		5	0				0		15	13	0	9	19		0	72	0	2	0	0
8:25 AM	6		8	0				0		12	11	0	8	15		0	60	0	0	0	0
8:30 AM	10		9	0				0		4	7	0	12	17		0	59	0	0	1	0
8:35 AM	11		3	0				0		14	11	0	5	8		0	52	0	0	1	0
8:40 AM	5		6	0				0		10	10	0	6	18		0	55	0	0	0	0
8:45 AM	6		2	0				0		14	6	0	2	14		0	44	0	0	0	0
8:50 AM	10		8	0				0		12	7	0	4	11		0	52	0	0	0	0
8:55 AM	4		8	0				0		11	8	0	8	16		0	55	0	0	0	0
Total Survey	293		169	0				0		320	222	1	241	509		0	1,754	0	6	2	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes		T	R	Bikes	L	T		Bikes		North	South	East	West
7:00 AM	41		21	0				0		40	19	0	40	66		0	227	0	0	0	0
7:15 AM	61		24	0				0		39	31	0	43	83		0	281	0	2	0	0
7:30 AM	35		24	0				0		49	31	1	39	82		0	260	0	0	0	0
7:45 AM	59		26	0				0		46	25	0	35	74		0	265	0	0	0	0
8:00 AM	25		18	0				0		43	36	0	24	62		0	208	0	0	0	0
8:15 AM	26		20	0				0		38	31	0	23	58		0	196	0	4	0	0
8:30 AM	26		18	0				0		28	28	0	23	43		0	166	0	0	2	0
8:45 AM	20		18	0				0		37	21	0	14	41		0	151	0	0	0	0
Total Survey	293		169	0				0		320	222	1	241	509		0	1,754	0	6	2	0

Peak Hour Summary
7:05 AM to 8:05 AM

By Approach	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	282	271	553	0	0	0	0	0	292	499	791	1	460	264	724	0	1,034
%HV	3.9%				0.0%				11.3%				6.3%				7.1%
PHF	0.83				0.00				0.88				0.86				0.92

Pedestrians Crosswalk			
North	South	East	West
0	2	0	0

By Movement	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	L		R	Total				Total		T	R	Total	L	T		Total	
Volume	191		91	282				0		173	119	292	152	308		460	1,034
%HV	3.7%	NA	4.4%	3.9%	NA	NA	NA	0.0%	NA	11.6%	10.9%	11.3%	6.6%	6.2%	NA	6.3%	7.1%
PHF	0.78		0.88	0.83				0.00		0.88	0.85	0.88	0.86	0.87		0.86	0.92

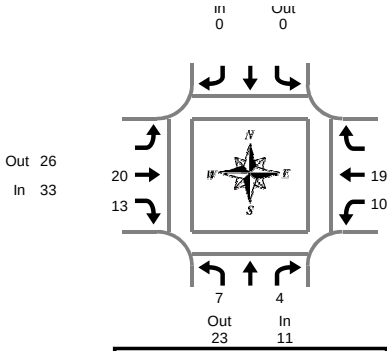
Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes		T	R	Bikes	L	T		Bikes		North	South	East	West
7:00 AM	196		95	0				0		174	106	1	157	305		0	1,033	0	2	0	0
7:15 AM	180		92	0				0		177	123	1	141	301		0	1,014	0	2	0	0
7:30 AM	145		88	0				0		176	123	1	121	276		0	929	0	4	0	0
7:45 AM	136		82	0				0		155	120	0	105	237		0	835	0	4	2	0
8:00 AM	97		74	0				0		146	116	0	84	204		0	721	0	4	2	0

EXHIBIT A-2

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:05 AM to 8:05 AM

NE 207th Ave & NE Sandy Blvd

Wednesday, March 01, 2017
7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L		R	Total				Total		T	R	Total	L	T		Total	
7:00 AM	1		0	1				0		3	1	4	1	3		4	9
7:05 AM	1		0	1				0		2	1	3	1	1		2	6
7:10 AM	1		1	2				0		2	0	2	0	1		1	5
7:15 AM	0		0	0				0		2	1	3	1	0		1	4
7:20 AM	1		0	1				0		1	0	1	0	1		1	3
7:25 AM	1		1	2				0		2	1	3	0	1		1	6
7:30 AM	0		2	2				0		1	1	2	1	1		2	6
7:35 AM	1		0	1				0		0	3	3	1	3		4	8
7:40 AM	1		0	1				0		4	0	4	2	2		4	9
7:45 AM	0		0	0				0		1	2	3	1	0		1	4
7:50 AM	0		0	0				0		2	2	4	0	5		5	9
7:55 AM	0		0	0				0		2	0	2	2	3		5	7
8:00 AM	1		0	1				0		1	2	3	1	1		2	6
8:05 AM	1		1	2				0		1	1	2	0	2		2	6
8:10 AM	0		0	0				0		2	2	4	0	3		3	7
8:15 AM	0		0	0				0		1	1	2	1	1		2	4
8:20 AM	1		0	1				0		4	1	5	0	2		2	8
8:25 AM	2		1	3				0		2	1	3	0	0		0	6
8:30 AM	0		1	1				0		1	0	1	3	3		6	8
8:35 AM	1		0	1				0		1	0	1	0	1		1	3
8:40 AM	1		1	2				0		0	1	1	1	0		1	4
8:45 AM	2		1	3				0		1	1	2	0	0		0	5
8:50 AM	1		4	5				0		2	1	3	0	1		1	9
8:55 AM	0		0	0				0		1	1	2	1	1		2	4
Total Survey	17		13	30				0		39	24	63	17	36		53	146

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L		R	Total				Total		T	R	Total	L	T		Total	
7:00 AM	3		1	4				0		7	2	9	2	5		7	20
7:15 AM	2		1	3				0		5	2	7	1	2		3	13
7:30 AM	2		2	4				0		5	4	9	4	6		10	23
7:45 AM	0		0	0				0		5	4	9	3	8		11	20
8:00 AM	2		1	3				0		4	5	9	1	6		7	19
8:15 AM	3		1	4				0		7	3	10	1	3		4	18
8:30 AM	2		2	4				0		2	1	3	4	4		8	15
8:45 AM	3		5	8				0		4	3	7	1	2		3	18
Total Survey	17		13	30				0		39	24	63	17	36		53	146

Heavy Vehicle Peak Hour Summary
7:05 AM to 8:05 AM

By Approach	Northbound NE 207th Ave			Southbound NE 207th Ave			Eastbound NE Sandy Blvd			Westbound NE Sandy Blvd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	11	23	34	0	0	0	33	26	59	29	24	53	73
PHF	0.55			0.00			0.75			0.60			0.79

By Movement	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	L		R	Total				Total		T	R	Total	L	T		Total	
Volume	7		4	11				0		20	13	33	10	19		29	73
PHF	0.88		0.33	0.55				0.00		0.71	0.65	0.75	0.63	0.53		0.60	0.79

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

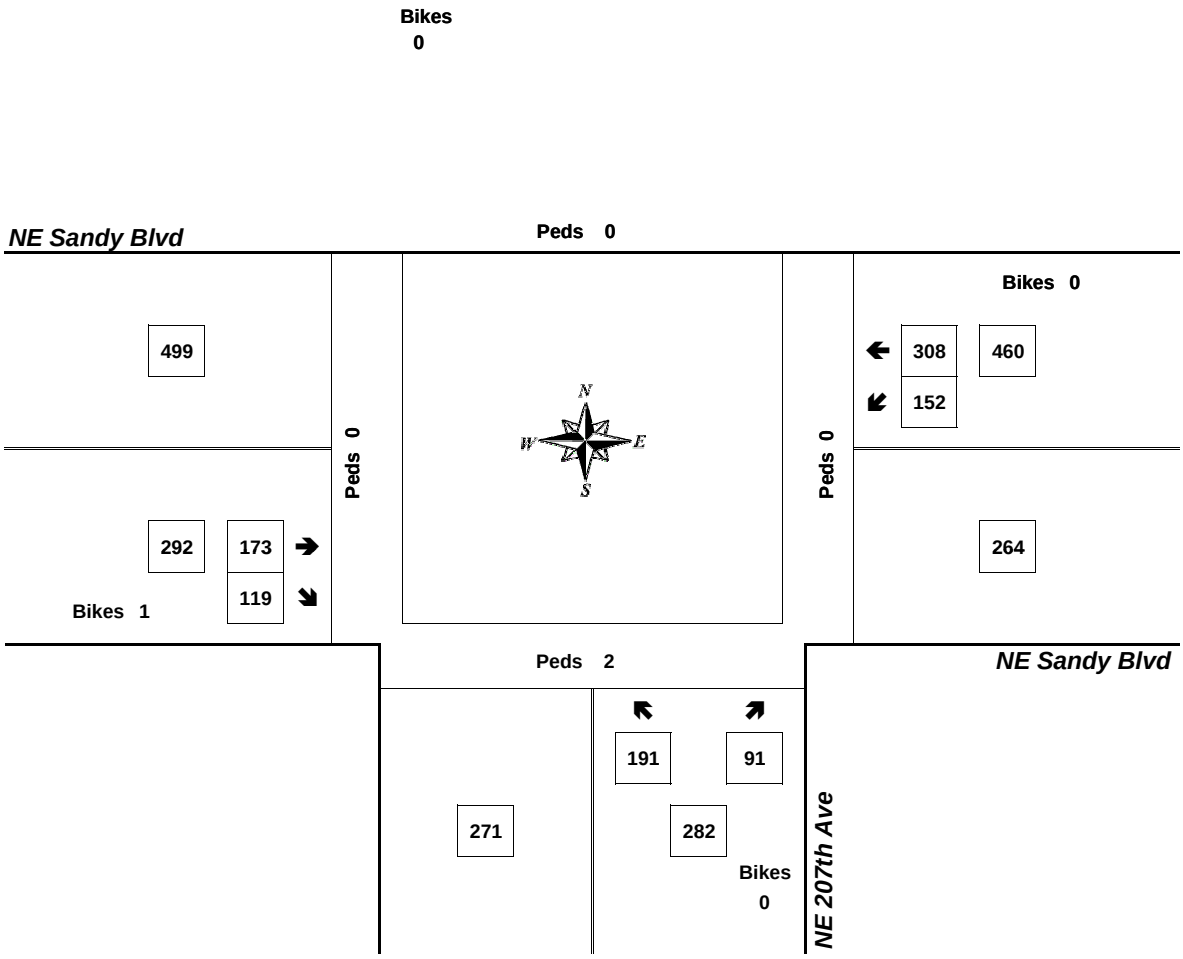
Interval Start Time	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L		R	Total				Total		T	R	Total	L	T		Total	
7:00 AM	7		4	11				0		22	12	34	10	21		31	76
7:15 AM	6		4	10				0		19	15	34	9	22		31	75
7:30 AM	7		4	11				0		21	16	37	9	23		32	80
7:45 AM	7		4	11				0		18	13	31	9	21		30	72
8:00 AM	10		9	19				0		17	12	29	7	15		22	70

Peak Hour Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740

NE 207th Ave & NE Sandy Blvd

7:05 AM to 8:05 AM
Wednesday, March 01, 2017



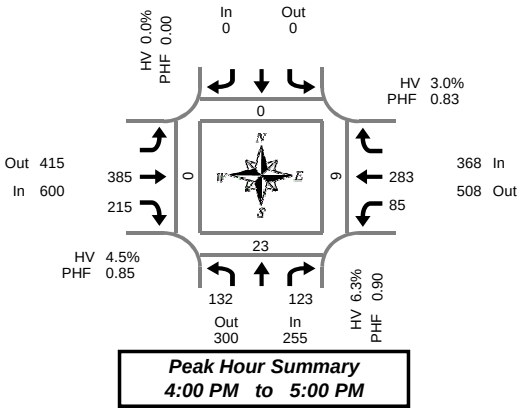
Approach	PHF	HV%	Volume
EB	0.88	11.3%	292
WB	0.86	6.3%	460
NB	0.83	3.9%	282
SB	0.00	0.0%	0
Intersection	0.92	7.1%	1,034

Count Period: 7:00 AM to 9:00 AM

EXHIBIT A-2

Total Vehicle Summary

Clay Carney
(503) 833-2740



NE 207th Ave & NE Sandy Blvd

Tuesday, February 28, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes		T	R	Bikes	L	T		Bikes		North	South	East	West
4:00 PM	8		9	0				0		34	14	0	4	23		0	92	0	4	0	0
4:05 PM	11		9	0				0		36	28	0	11	17		0	112	0	2	1	0
4:10 PM	8		4	0				0		32	15	0	11	34		0	104	0	0	0	0
4:15 PM	12		9	0				0		38	14	0	8	23		0	104	0	1	0	0
4:20 PM	11		14	0				0		21	14	0	9	26		0	95	0	1	2	0
4:25 PM	14		8	0				0		37	8	0	6	22		0	95	0	1	2	0
4:30 PM	9		14	0				0		24	21	0	3	21		0	92	0	1	2	0
4:35 PM	11		10	0				0		28	22	0	7	25		0	103	0	0	0	0
4:40 PM	12		11	0				0		36	28	0	3	23		0	113	0	2	0	0
4:45 PM	9		14	0				0		35	21	0	10	15		0	104	0	5	0	0
4:50 PM	14		9	0				0		40	17	0	6	34		1	120	0	3	1	0
4:55 PM	13		12	0				0		24	13	0	7	20		0	89	0	3	1	0
5:00 PM	8		2	0				0		25	12	0	5	29		0	81	0	1	1	0
5:05 PM	9		12	0				0		26	18	0	12	25		0	102	0	0	1	0
5:10 PM	11		9	0				0		33	22	0	7	18		0	100	0	0	1	0
5:15 PM	8		6	0				0		36	19	0	2	18		0	89	0	1	1	0
5:20 PM	9		10	0				0		21	9	0	8	21		0	78	0	1	0	0
5:25 PM	10		12	0				0		17	17	0	9	17		0	82	0	2	0	0
5:30 PM	13		14	0				0		22	18	0	12	25		0	104	0	0	0	0
5:35 PM	9		9	0				0		27	12	0	4	20		0	81	0	1	0	0
5:40 PM	10		6	0				0		28	15	0	2	19		0	80	0	3	0	0
5:45 PM	9		9	0				0		20	8	0	10	20		0	76	0	3	0	0
5:50 PM	9		10	0				0		37	9	0	3	21		0	89	0	2	0	0
5:55 PM	13		9	0				0		15	18	0	5	25		0	85	0	0	0	0
Total Survey	250		231	0				0		692	392	0	164	541		1	2,270	0	37	13	0

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes		T	R	Bikes	L	T		Bikes		North	South	East	West
4:00 PM	27		22	0				0		102	57	0	26	74		0	308	0	6	1	0
4:15 PM	37		31	0				0		96	36	0	23	71		0	294	0	3	4	0
4:30 PM	32		35	0				0		88	71	0	13	69		0	308	0	3	2	0
4:45 PM	36		35	0				0		99	51	0	23	69		1	313	0	11	2	0
5:00 PM	28		23	0				0		84	52	0	24	72		0	283	0	1	3	0
5:15 PM	27		28	0				0		74	45	0	19	56		0	249	0	4	1	0
5:30 PM	32		29	0				0		77	45	0	18	64		0	265	0	4	0	0
5:45 PM	31		28	0				0		72	35	0	18	66		0	250	0	5	0	0
Total Survey	250		231	0				0		692	392	0	164	541		1	2,270	0	37	13	0

Peak Hour Summary
4:00 PM to 5:00 PM

By Approach	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	255	300	555	0	0	0	0	0	600	415	1,015	0	368	508	876	1	1,223
%HV	6.3%				0.0%				4.5%				3.0%				4.4%
PHF	0.90				0.00				0.85				0.83				0.91

Pedestrians Crosswalk			
North	South	East	West
0	23	9	0

By Movement	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	L		R	Total				Total		T	R	Total	L	T		Total	
Volume	132		123	255				0		385	215	600	85	283		368	1,223
%HV	7.6%	NA	4.9%	6.3%	NA	NA	NA	0.0%	NA	4.7%	4.2%	4.5%	1.2%	3.5%	NA	3.0%	4.4%
PHF	0.89		0.85	0.90				0.00		0.87	0.76	0.85	0.71	0.85		0.83	0.91

Rolling Hour Summary
4:00 PM to 6:00 PM

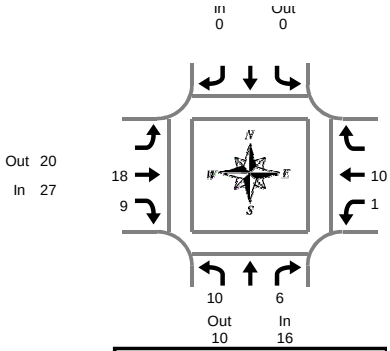
Interval Start Time	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L		R	Bikes				Bikes		T	R	Bikes	L	T		Bikes		North	South	East	West
4:00 PM	132		123	0				0		385	215	0	85	283		1	1,223	0	23	9	0
4:15 PM	133		124	0				0		367	210	0	83	281		1	1,198	0	18	11	0
4:30 PM	123		121	0				0		345	219	0	79	266		1	1,153	0	19	8	0
4:45 PM	123		115	0				0		334	193	0	84	261		1	1,110	0	20	6	0
5:00 PM	118		108	0				0		307	177	0	79	258		0	1,047	0	14	4	0

EXHIBIT A-2

Heavy Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740



Peak Hour Summary
4:00 PM to 5:00 PM

NE 207th Ave & NE Sandy Blvd

Tuesday, February 28, 2017
4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L		R	Total				Total		T	R	Total	L	T		Total	
4:00 PM	1		1	2				0		2	1	3	0	0		0	5
4:05 PM	0		0	0				0		5	0	5	0	1		1	6
4:10 PM	0		0	0				0		1	1	2	0	2		2	4
4:15 PM	1		0	1				0		2	4	6	0	0		0	7
4:20 PM	1		0	1				0		1	0	1	0	0		0	2
4:25 PM	2		0	2				0		0	0	0	0	3		3	5
4:30 PM	1		2	3				0		1	2	3	0	0		0	6
4:35 PM	2		1	3				0		0	0	0	0	1		1	4
4:40 PM	0		1	1				0		2	1	3	0	1		1	5
4:45 PM	1		1	2				0		0	0	0	1	0		1	3
4:50 PM	1		0	1				0		1	0	1	0	1		1	3
4:55 PM	0		0	0				0		3	0	3	0	1		1	4
5:00 PM	1		0	1				0		2	1	3	0	0		0	4
5:05 PM	1		0	1				0		1	0	1	0	1		1	3
5:10 PM	0		1	1				0		0	0	0	0	0		0	1
5:15 PM	0		0	0				0		1	3	4	0	0		0	4
5:20 PM	0		0	0				0		1	0	1	0	0		0	1
5:25 PM	0		1	1				0		0	0	0	1	1		2	3
5:30 PM	1		0	1				0		1	0	1	0	3		3	5
5:35 PM	0		0	0				0		0	0	0	0	1		1	1
5:40 PM	0		0	0				0		1	1	2	0	0		0	2
5:45 PM	1		0	1				0		2	0	2	0	1		1	4
5:50 PM	1		0	1				0		0	0	0	0	2		2	3
5:55 PM	1		0	1				0		1	0	1	0	0		0	2
Total Survey	16		8	24				0		28	14	42	2	19		21	87

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L		R	Total				Total		T	R	Total	L	T		Total	
4:00 PM	1		1	2				0		8	2	10	0	3		3	15
4:15 PM	4		0	4				0		3	4	7	0	3		3	14
4:30 PM	3		4	7				0		3	3	6	0	2		2	15
4:45 PM	2		1	3				0		4	0	4	1	2		3	10
5:00 PM	2		1	3				0		3	1	4	0	1		1	8
5:15 PM	0		1	1				0		2	3	5	1	1		2	8
5:30 PM	1		0	1				0		2	1	3	0	4		4	8
5:45 PM	3		0	3				0		3	0	3	0	3		3	9
Total Survey	16		8	24				0		28	14	42	2	19		21	87

Heavy Vehicle Peak Hour Summary
4:00 PM to 5:00 PM

By Approach	Northbound NE 207th Ave			Southbound NE 207th Ave			Eastbound NE Sandy Blvd			Westbound NE Sandy Blvd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	16	10	26	0	0	0	27	20	47	11	24	35	54
PHF	0.50			0.00			0.52			0.69			0.79

By Movement	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	L		R	Total				Total		T	R	Total	L	T		Total	
Volume	10		6	16				0		18	9	27	1	10		11	54
PHF	0.50		0.38	0.50				0.00		0.56	0.45	0.52	0.25	0.63		0.69	0.79

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

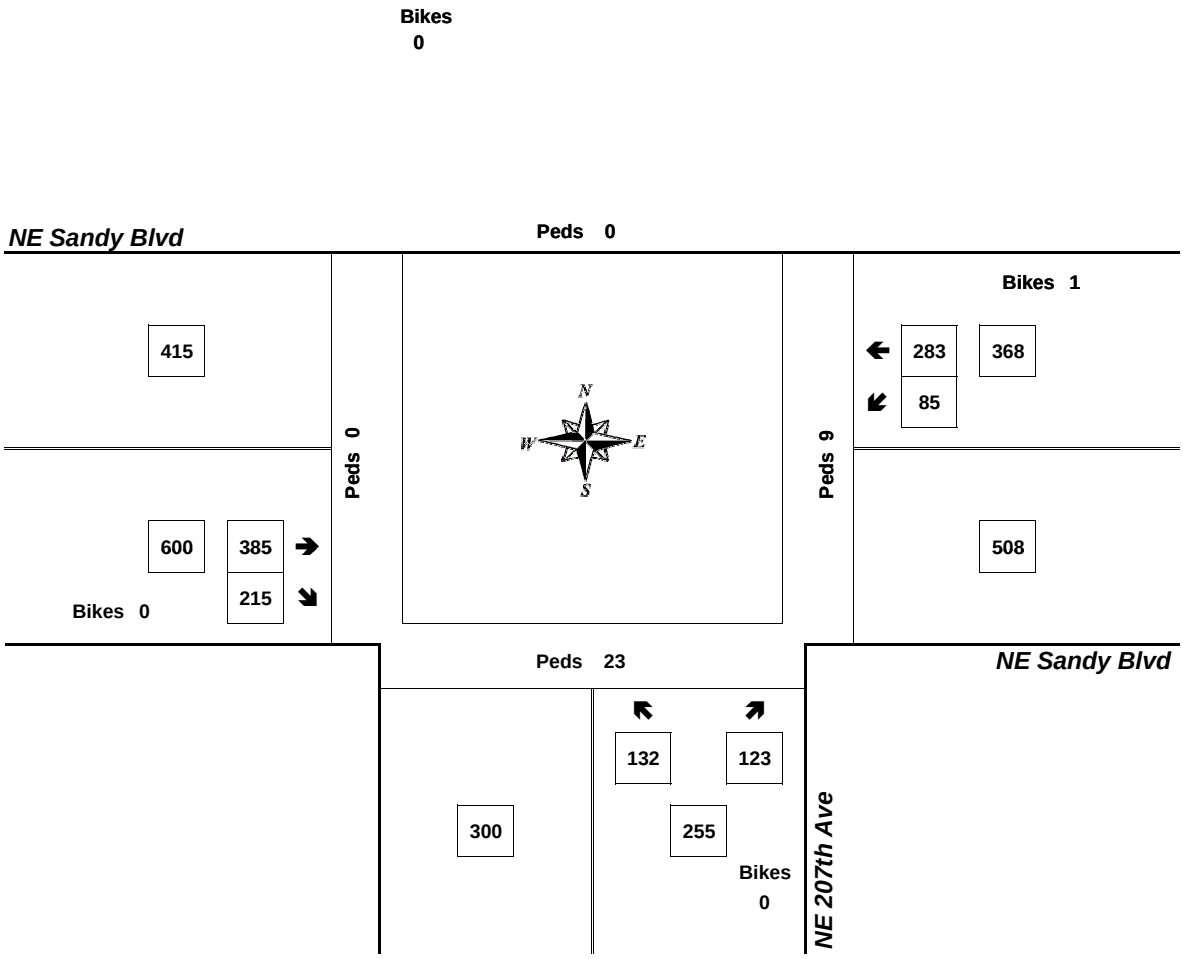
Interval Start Time	Northbound NE 207th Ave				Southbound NE 207th Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L		R	Total				Total		T	R	Total	L	T		Total	
4:00 PM	10		6	16				0		18	9	27	1	10		11	54
4:15 PM	11		6	17				0		13	8	21	1	8		9	47
4:30 PM	7		7	14				0		12	7	19	2	6		8	41
4:45 PM	5		3	8				0		11	5	16	2	8		10	34
5:00 PM	6		2	8				0		10	5	15	1	9		10	33

Peak Hour Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740

NE 207th Ave & NE Sandy Blvd

4:00 PM to 5:00 PM
Tuesday, February 28, 2017



Approach	PHF	HV%	Volume
EB	0.85	4.5%	600
WB	0.83	3.0%	368
NB	0.90	6.3%	255
SB	0.00	0.0%	0
Intersection	0.91	4.4%	1,223

Count Period: 4:00 PM to 6:00 PM

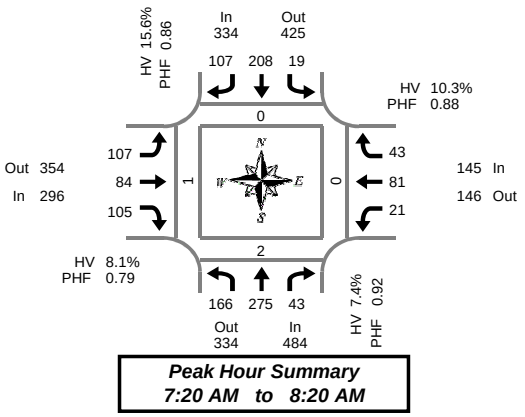
EXHIBIT A-2

Total Vehicle Summary

Clay Carney
(503) 833-2740

NE 223rd Ave & NE Sandy Blvd

Wednesday, March 01, 2017
7:00 AM to 9:00 AM



5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	6	24	2	0	0	16	9	0	7	12	4	0	0	5	2	0	87	0	0	0	0
7:05 AM	13	23	1	0	1	16	17	0	9	4	4	0	3	6	3	0	100	0	0	0	0
7:10 AM	8	23	3	0	2	11	11	0	10	6	3	0	2	9	1	0	89	0	0	0	0
7:15 AM	18	17	3	0	1	14	10	0	5	2	5	0	1	18	4	0	98	0	0	0	0
7:20 AM	14	30	5	0	2	21	11	0	18	7	5	0	0	7	2	0	122	0	0	0	0
7:25 AM	13	16	3	0	1	13	8	0	7	3	10	0	3	3	1	0	81	0	0	0	0
7:30 AM	11	20	1	0	5	18	16	0	9	2	3	0	2	6	2	0	95	0	0	0	0
7:35 AM	17	32	3	0	3	23	10	0	10	11	19	0	0	6	3	0	137	0	0	0	0
7:40 AM	17	20	4	0	0	15	7	0	11	6	10	0	1	9	5	0	105	0	0	0	0
7:45 AM	10	24	2	0	1	24	8	0	8	13	6	0	3	7	5	0	111	0	0	0	0
7:50 AM	21	25	7	0	2	14	11	0	4	5	4	0	1	8	2	0	104	0	1	0	1
7:55 AM	8	17	6	0	1	18	12	0	12	7	12	0	5	4	5	0	107	0	1	0	0
8:00 AM	14	31	3	0	1	11	6	0	9	8	8	0	1	9	6	0	107	0	0	0	0
8:05 AM	13	18	4	0	1	24	5	0	4	8	11	0	1	6	1	0	96	0	0	0	0
8:10 AM	12	17	2	0	1	16	5	0	8	8	8	0	1	6	4	0	88	0	0	0	0
8:15 AM	16	25	3	0	1	11	8	0	7	6	9	0	3	10	7	0	106	0	0	0	0
8:20 AM	13	16	4	0	1	16	7	0	7	1	4	0	2	3	3	0	77	0	0	0	0
8:25 AM	4	8	2	0	2	11	8	0	6	14	5	0	2	9	4	0	75	0	0	0	0
8:30 AM	10	19	2	0	3	18	4	0	5	9	3	0	1	8	5	0	87	0	0	0	0
8:35 AM	5	21	6	0	2	18	2	0	5	6	6	0	0	4	6	0	81	0	0	0	0
8:40 AM	9	19	1	0	2	25	5	0	5	6	9	0	2	6	3	0	92	0	0	0	0
8:45 AM	7	12	2	0	1	9	3	0	1	5	7	0	3	6	1	0	57	1	0	0	0
8:50 AM	6	21	3	0	3	7	5	0	3	13	7	0	1	3	3	0	75	0	0	1	0
8:55 AM	8	23	4	0	2	17	7	0	12	2	6	0	0	6	4	0	91	0	0	0	0
Total Survey	273	501	76	0	39	386	195	0	182	164	168	0	38	164	82	0	2,268	1	2	1	1

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	27	70	6	0	3	43	37	0	26	22	11	0	5	20	6	0	276	0	0	0	0
7:15 AM	45	63	11	0	4	48	29	0	30	12	20	0	4	28	7	0	301	0	0	0	0
7:30 AM	45	72	8	0	8	56	33	0	30	19	32	0	3	21	10	0	337	0	0	0	0
7:45 AM	39	66	15	0	4	56	31	0	24	25	22	0	9	19	12	0	322	0	2	0	1
8:00 AM	39	66	9	0	3	51	16	0	21	24	27	0	3	21	11	0	291	0	0	0	0
8:15 AM	33	49	9	0	4	38	23	0	20	21	18	0	7	22	14	0	258	0	0	0	0
8:30 AM	24	59	9	0	7	61	11	0	15	21	18	0	3	18	14	0	260	0	0	0	0
8:45 AM	21	56	9	0	6	33	15	0	16	20	20	0	4	15	8	0	223	1	0	1	0
Total Survey	273	501	76	0	39	386	195	0	182	164	168	0	38	164	82	0	2,268	1	2	1	1

Peak Hour Summary
7:20 AM to 8:20 AM

By Approach	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	484	334	818	0	334	425	759	0	296	354	650	0	145	146	291	0	1,259
%HV	7.4%				15.6%				8.1%				10.3%				10.1%
PHF	0.92				0.86				0.79				0.88				0.89

Pedestrians Crosswalk			
North	South	East	West
0	2	0	1

By Movement	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	166	275	43	484	19	203	107	334	107	84	105	296	21	81	43	145	1,259
%HV	4.8%	9.8%	2.3%	7.4%	15.8%	18.3%	10.3%	15.6%	13.1%	7.1%	3.8%	8.1%	9.5%	12.3%	7.0%	10.3%	10.1%
PHF	0.86	0.90	0.67	0.92	0.53	0.84	0.76	0.86	0.79	0.70	0.75	0.79	0.58	0.84	0.83	0.88	0.89

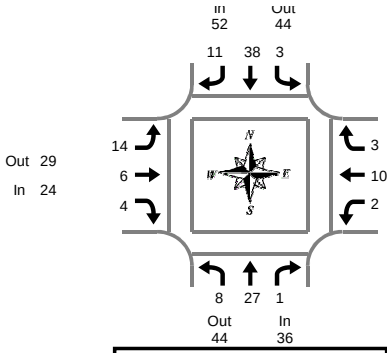
Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	156	271	40	0	19	203	130	0	110	78	85	0	21	88	35	0	1,236	0	2	0	1
7:15 AM	168	267	43	0	19	211	109	0	105	80	101	0	19	89	40	0	1,251	0	2	0	1
7:30 AM	156	253	41	0	19	201	103	0	95	89	99	0	22	83	47	0	1,208	0	2	0	1
7:45 AM	135	240	42	0	18	206	81	0	80	91	85	0	22	80	51	0	1,131	0	2	0	1
8:00 AM	117	230	36	0	20	183	65	0	72	86	83	0	17	76	47	0	1,032	1	0	1	0

EXHIBIT A-2

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:20 AM to 8:20 AM

NE 223rd Ave & NE Sandy Blvd

Wednesday, March 01, 2017
7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	1	2	0	3	0	3	1	4	1	1	0	2	0	2	0	2	11
7:05 AM	0	1	0	1	0	2	2	4	0	1	0	1	0	0	0	0	6
7:10 AM	1	2	0	3	1	3	0	4	2	0	0	2	0	0	0	0	9
7:15 AM	0	0	0	0	0	2	0	2	1	1	1	3	0	1	0	1	6
7:20 AM	0	3	0	3	0	1	0	1	2	0	0	2	0	2	0	2	8
7:25 AM	0	0	0	0	0	4	0	4	1	0	0	1	1	0	0	1	6
7:30 AM	0	4	0	4	0	5	2	7	2	0	1	3	0	1	0	1	15
7:35 AM	3	4	0	7	1	4	2	7	0	1	0	1	0	0	0	0	15
7:40 AM	2	0	0	2	0	0	1	1	0	0	2	2	0	0	0	0	5
7:45 AM	0	2	0	2	1	7	0	8	2	2	0	4	0	3	0	3	17
7:50 AM	0	3	0	3	0	0	3	3	0	0	0	0	0	0	0	0	6
7:55 AM	1	1	0	2	1	3	2	6	0	1	0	1	1	1	1	3	12
8:00 AM	0	1	0	1	0	3	1	4	2	1	0	3	0	1	1	2	10
8:05 AM	1	4	1	6	0	7	0	7	0	0	0	0	0	0	0	0	13
8:10 AM	0	2	0	2	0	2	0	2	1	1	0	2	0	1	0	1	7
8:15 AM	1	3	0	4	0	2	0	2	4	0	1	5	0	1	1	2	13
8:20 AM	1	2	0	3	1	5	1	7	0	0	0	0	0	1	0	1	11
8:25 AM	0	1	0	1	0	1	1	2	2	3	0	5	0	1	1	2	10
8:30 AM	0	4	1	5	1	1	0	2	2	1	1	4	0	2	1	3	14
8:35 AM	1	5	0	6	0	2	0	2	1	0	0	1	0	1	1	2	11
8:40 AM	0	4	0	4	0	3	1	4	1	1	0	2	0	1	0	1	11
8:45 AM	0	2	0	2	0	3	0	3	1	0	0	1	0	0	0	0	6
8:50 AM	0	6	0	6	0	1	0	1	0	3	0	3	0	0	2	2	12
8:55 AM	0	3	0	3	0	8	3	11	4	0	0	4	0	1	0	1	19
Total Survey	12	59	2	73	6	72	20	98	29	17	6	52	2	20	8	30	253

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	2	5	0	7	1	8	3	12	3	2	0	5	0	2	0	2	26
7:15 AM	0	3	0	3	0	7	0	7	4	1	1	6	1	3	0	4	20
7:30 AM	5	8	0	13	1	9	5	15	2	1	3	6	0	1	0	1	35
7:45 AM	1	6	0	7	2	10	5	17	2	3	0	5	1	4	1	6	35
8:00 AM	1	7	1	9	0	12	1	13	3	2	0	5	0	2	1	3	30
8:15 AM	2	6	0	8	1	8	2	11	6	3	1	10	0	3	2	5	34
8:30 AM	1	13	1	15	1	6	1	8	4	2	1	7	0	4	2	6	36
8:45 AM	0	11	0	11	0	12	3	15	5	3	0	8	0	1	2	3	37
Total Survey	12	59	2	73	6	72	20	98	29	17	6	52	2	20	8	30	253

Heavy Vehicle Peak Hour Summary
7:20 AM to 8:20 AM

By Approach	Northbound NE 223rd Ave			Southbound NE 223rd Ave			Eastbound NE Sandy Blvd			Westbound NE Sandy Blvd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	36	44	80	52	44	96	24	29	53	15	10	25	127
PHF	0.69			0.72			0.86			0.63			0.86

By Movement	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	8	27	1	36	3	38	11	52	14	6	4	24	2	10	3	15	127
PHF	0.40	0.75	0.25	0.69	0.38	0.73	0.46	0.72	0.70	0.50	0.33	0.86	0.50	0.63	0.38	0.63	0.86

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

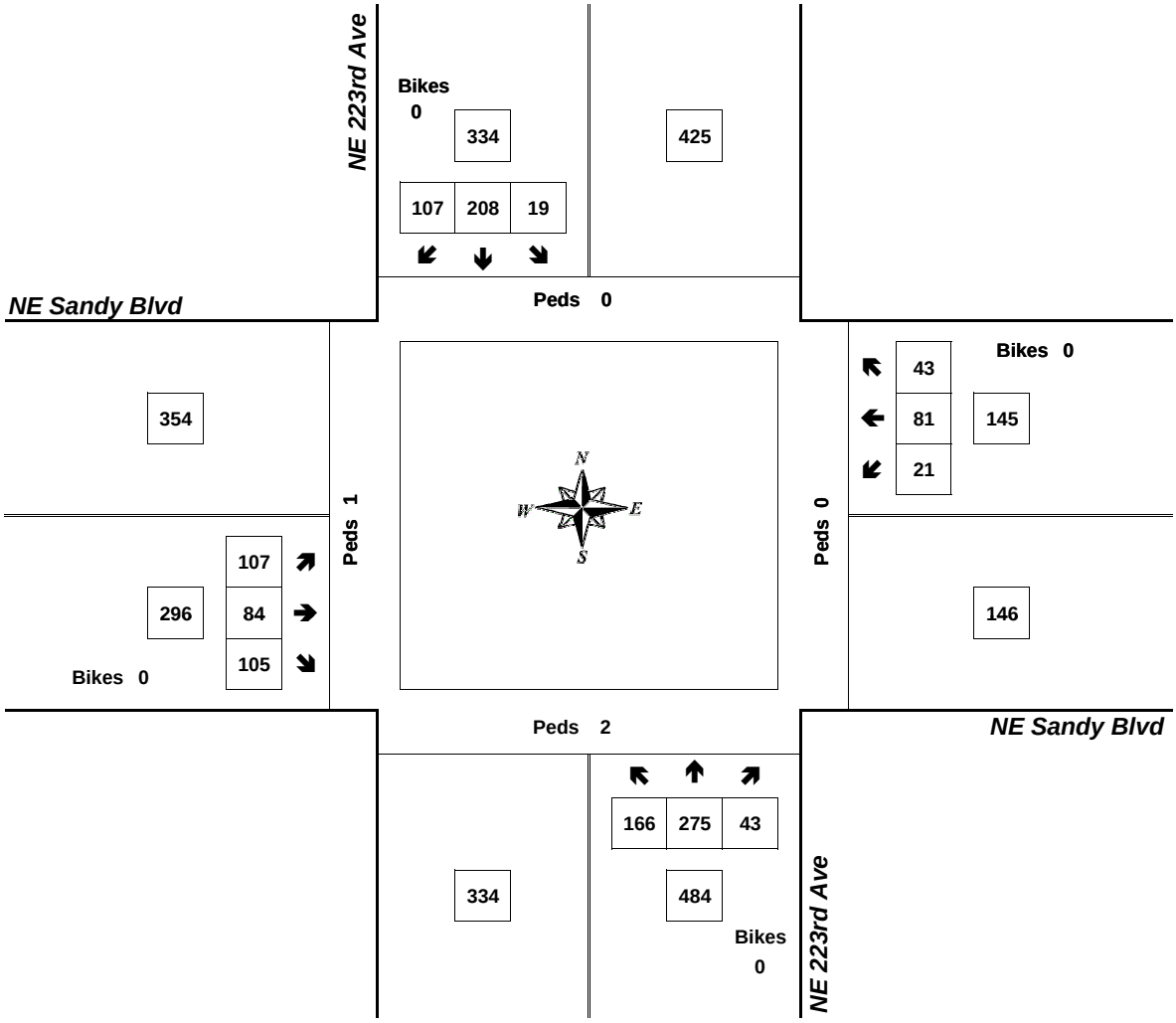
Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	8	22	0	30	4	34	13	51	11	7	4	22	2	10	1	13	116
7:15 AM	7	24	1	32	3	38	11	52	11	7	4	22	2	10	2	14	120
7:30 AM	9	27	1	37	4	39	13	56	13	9	4	26	1	10	4	15	134
7:45 AM	5	32	2	39	4	36	9	49	15	10	2	27	1	13	6	20	135
8:00 AM	4	37	2	43	2	38	7	47	18	10	2	30	0	10	7	17	137

Peak Hour Summary

Clay Carney
(503) 833-2740

NE 223rd Ave & NE Sandy Blvd

7:20 AM to 8:20 AM
Wednesday, March 01, 2017



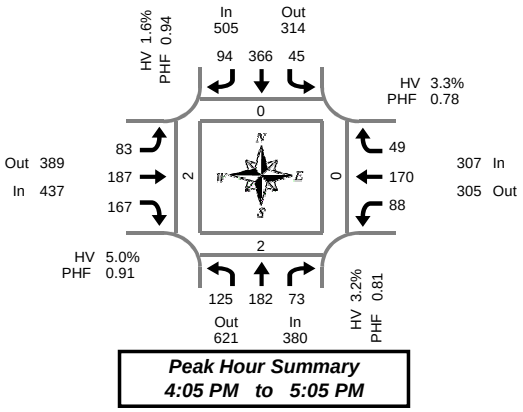
Approach	PHF	HV%	Volume
EB	0.79	8.1%	296
WB	0.88	10.3%	145
NB	0.92	7.4%	484
SB	0.86	15.6%	334
Intersection	0.89	10.1%	1,259

Count Period: 7:00 AM to 9:00 AM

EXHIBIT A-2

Total Vehicle Summary

Clay Carney
(503) 833-2740



NE 223rd Ave & NE Sandy Blvd

Tuesday, February 28, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	7	11	5	0	6	31	7	0	5	17	10	0	6	11	4	0	120	0	0	0	0
4:05 PM	10	12	4	0	3	31	14	0	7	15	14	0	5	20	3	0	138	0	0	0	2
4:10 PM	15	21	7	0	1	40	8	0	5	21	9	0	10	13	8	0	158	0	1	0	0
4:15 PM	11	20	5	0	2	27	8	0	6	18	15	0	6	13	5	0	136	0	0	0	0
4:20 PM	11	24	3	0	6	30	12	0	5	12	14	0	3	15	8	0	143	0	0	0	0
4:25 PM	11	14	4	0	5	37	2	0	9	14	16	0	4	11	2	0	129	0	0	0	0
4:30 PM	12	14	9	0	1	19	5	0	9	14	19	1	6	11	3	0	122	0	1	0	0
4:35 PM	11	13	3	0	4	29	11	0	11	14	14	0	4	12	1	0	127	0	0	0	0
4:40 PM	3	16	5	0	5	38	8	0	8	14	13	0	15	9	5	0	139	0	0	0	0
4:45 PM	12	16	6	0	6	28	4	1	5	16	15	0	6	9	2	0	125	0	0	0	0
4:50 PM	10	11	9	0	7	29	4	0	7	19	15	0	13	29	2	0	155	0	0	0	0
4:55 PM	6	9	7	0	0	29	9	0	9	15	11	0	7	9	5	0	116	0	0	0	0
5:00 PM	13	12	11	0	5	29	9	0	2	15	12	0	9	19	5	0	141	0	0	0	0
5:05 PM	12	13	6	0	3	22	12	0	14	9	9	0	10	13	4	0	127	0	0	0	0
5:10 PM	6	17	9	0	2	45	8	0	7	14	15	0	1	9	8	0	141	0	0	0	0
5:15 PM	12	20	4	0	2	30	4	0	7	20	15	0	6	15	4	0	139	0	0	0	0
5:20 PM	16	19	7	0	5	40	6	0	4	11	13	0	3	14	5	0	143	0	0	0	0
5:25 PM	11	15	4	0	3	32	8	0	6	13	15	0	9	8	5	0	129	0	0	0	0
5:30 PM	8	15	5	0	1	30	10	0	4	5	15	0	2	13	3	0	111	0	0	1	0
5:35 PM	8	12	4	0	2	32	11	0	5	16	14	0	5	16	5	0	130	0	0	0	0
5:40 PM	8	20	6	0	4	27	6	0	4	11	15	0	4	5	6	0	116	0	0	0	2
5:45 PM	14	17	3	0	3	23	6	0	6	6	11	0	6	14	1	0	110	0	0	0	0
5:50 PM	16	14	4	0	5	24	5	0	6	15	10	0	9	9	4	0	121	0	0	0	0
5:55 PM	13	15	3	0	2	20	5	0	8	15	8	0	1	10	1	0	101	0	0	0	1
Total Survey	256	370	133	0	83	722	182	1	159	339	317	1	150	307	99	0	3,117	0	2	1	5

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	32	44	16	0	10	102	29	0	17	53	33	0	21	44	15	0	416	0	1	0	2
4:15 PM	33	58	12	0	13	94	22	0	20	44	45	0	13	39	15	0	408	0	0	0	0
4:30 PM	26	43	17	0	10	86	24	0	28	42	46	1	25	32	9	0	388	0	1	0	0
4:45 PM	28	36	22	0	13	86	17	1	21	50	41	0	26	47	9	0	396	0	0	0	0
5:00 PM	31	42	26	0	10	96	29	0	23	38	36	0	20	41	17	0	409	0	0	0	0
5:15 PM	39	54	15	0	10	102	18	0	17	44	43	0	18	37	14	0	411	0	0	0	0
5:30 PM	24	47	15	0	7	89	27	0	13	32	44	0	11	34	14	0	357	0	0	1	2
5:45 PM	43	46	10	0	10	67	16	0	20	36	29	0	16	33	6	0	332	0	0	0	1
Total Survey	256	370	133	0	83	722	182	1	159	339	317	1	150	307	99	0	3,117	0	2	1	5

Peak Hour Summary
4:05 PM to 5:05 PM

By Approach	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	380	621	1,001	0	505	314	819	1	437	389	826	1	307	305	612	0	1,629
%HV	3.2%				1.6%				5.0%				3.3%				3.2%
PHF	0.81				0.94				0.91				0.78				0.93

Pedestrians Crosswalk			
North	South	East	West
0	2	0	2

By Movement	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	125	182	73	380	45	366	94	505	83	187	167	437	88	170	49	307	1,629
%HV	2.4%	3.8%	2.7%	3.2%	2.2%	1.1%	3.2%	1.6%	14.5%	4.8%	0.6%	5.0%	1.1%	2.9%	8.2%	3.3%	3.2%
PHF	0.84	0.70	0.68	0.81	0.63	0.93	0.78	0.94	0.72	0.87	0.85	0.91	0.65	0.75	0.58	0.78	0.93

Rolling Hour Summary
4:00 PM to 6:00 PM

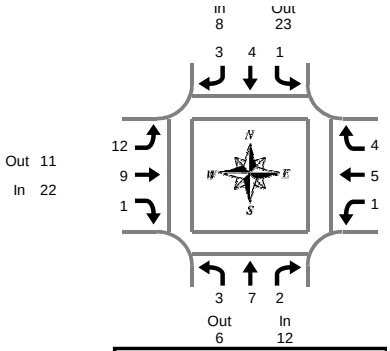
Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	119	181	67	0	46	368	92	1	86	189	165	1	85	162	48	0	1,608	0	2	0	2
4:15 PM	118	179	77	0	46	362	92	1	92	174	168	1	84	159	50	0	1,601	0	1	0	0
4:30 PM	124	175	80	0	43	370	88	1	89	174	166	1	89	157	49	0	1,604	0	1	0	0
4:45 PM	122	179	78	0	40	373	91	1	74	164	164	0	75	159	54	0	1,573	0	0	1	2
5:00 PM	137	189	66	0	37	354	90	0	73	150	152	0	65	145	51	0	1,509	0	0	1	3

EXHIBIT A-2

Heavy Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740



Peak Hour Summary
4:05 PM to 5:05 PM

NE 223rd Ave & NE Sandy Blvd

Tuesday, February 28, 2017
4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	1	0	0	1	2
4:05 PM	0	1	0	1	0	0	1	1	4	1	0	5	0	1	0	1	8
4:10 PM	1	4	0	5	0	1	0	1	1	3	1	5	0	0	1	1	12
4:15 PM	0	0	0	0	0	1	0	1	1	0	0	1	0	0	1	1	3
4:20 PM	0	0	0	0	1	0	0	1	1	1	0	2	1	0	0	1	4
4:25 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	2	0	2	3
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
4:35 PM	0	1	1	2	0	0	1	1	2	1	0	3	0	0	1	1	7
4:40 PM	0	0	0	0	0	1	1	2	0	1	0	1	0	0	0	0	3
4:45 PM	1	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	2
4:50 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
4:55 PM	0	0	0	0	0	1	0	1	2	1	0	3	0	1	0	1	5
5:00 PM	0	1	1	2	0	0	0	0	0	0	0	0	0	0	1	1	3
5:05 PM	0	0	0	0	0	0	1	1	2	0	0	2	0	0	0	0	3
5:10 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	1	0	0	1	0	2	0	2	1	2	0	3	0	0	0	0	6
5:20 PM	0	0	0	0	0	1	0	1	0	1	0	1	0	1	0	1	3
5:25 PM	0	0	0	0	0	0	1	1	0	1	0	1	0	0	1	1	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
5:35 PM	0	0	0	0	0	1	0	1	0	1	0	1	0	0	0	0	2
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	1	0	0	1	1	0	0	1	1	1	0	2	0	1	0	1	5
5:50 PM	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	4
5:55 PM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
Total Survey	5	9	3	17	2	10	5	17	16	17	1	34	2	10	5	17	85

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	5	0	6	0	2	1	3	5	4	1	10	1	1	1	3	22
4:15 PM	1	0	0	1	1	1	0	2	2	1	0	3	1	2	1	4	10
4:30 PM	0	1	1	2	0	1	2	3	2	3	0	5	0	0	1	1	11
4:45 PM	1	0	0	1	0	1	0	1	3	1	0	4	0	2	0	2	8
5:00 PM	0	2	1	3	0	0	1	1	2	0	0	2	0	0	1	1	7
5:15 PM	1	0	0	1	0	3	1	4	1	4	0	5	0	1	1	2	12
5:30 PM	0	0	0	0	0	1	0	1	0	1	0	1	0	2	0	2	4
5:45 PM	1	1	1	3	1	1	0	2	1	3	0	4	0	2	0	2	11
Total Survey	5	9	3	17	2	10	5	17	16	17	1	34	2	10	5	17	85

Heavy Vehicle Peak Hour Summary
4:05 PM to 5:05 PM

By Approach	Northbound NE 223rd Ave			Southbound NE 223rd Ave			Eastbound NE Sandy Blvd			Westbound NE Sandy Blvd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	12	6	18	8	23	31	22	11	33	10	12	22	52
PHF	0.50			0.67			0.50			0.63			0.57

By Movement	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	3	7	2	12	1	4	3	8	12	9	1	22	1	5	4	10	52
PHF	0.75	0.35	0.50	0.50	0.25	0.50	0.38	0.67	0.50	0.56	0.25	0.50	0.25	0.63	0.50	0.63	0.57

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

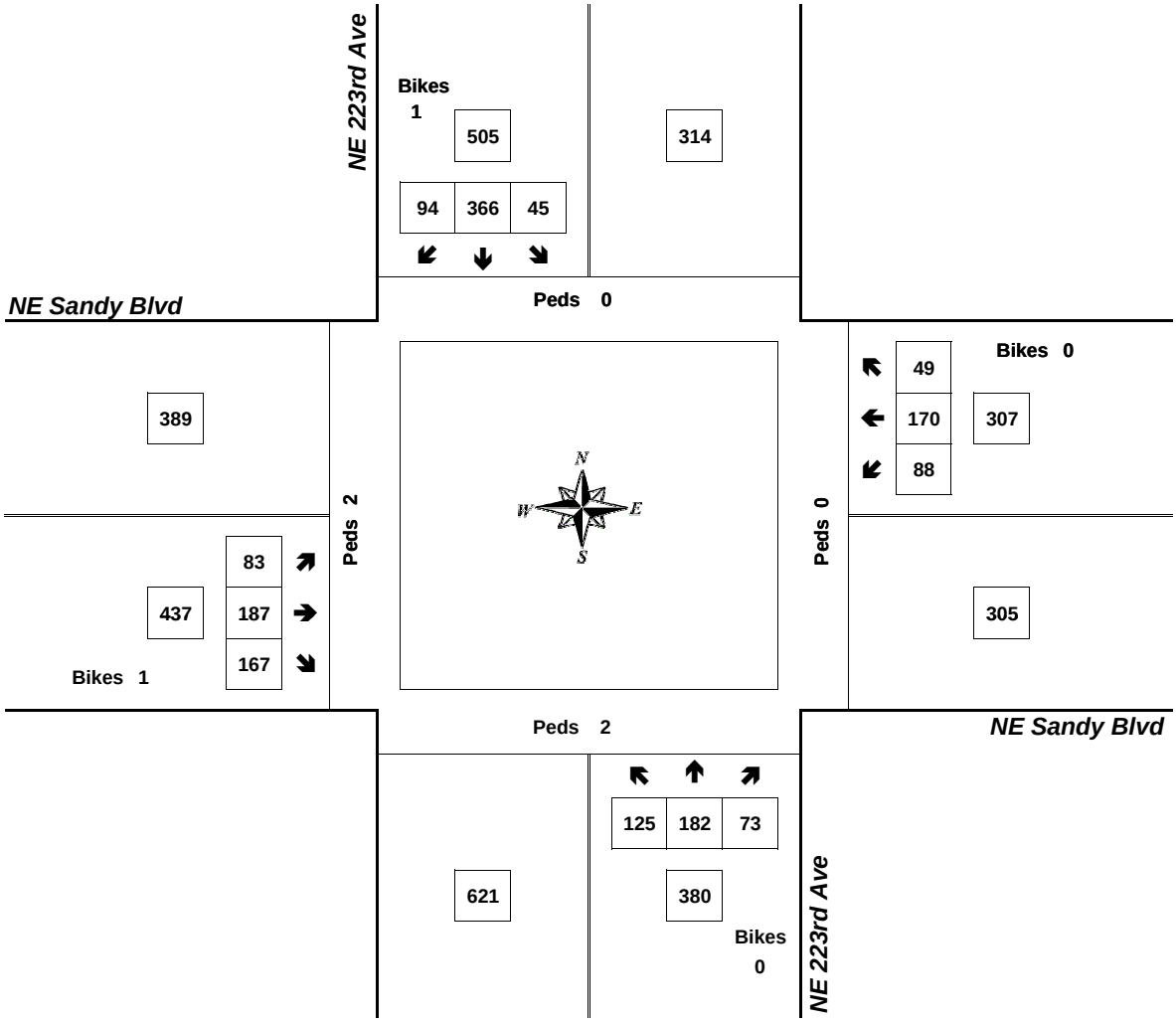
Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	3	6	1	10	1	5	3	9	12	9	1	22	2	5	3	10	51
4:15 PM	2	3	2	7	1	3	3	7	9	5	0	14	1	4	3	8	36
4:30 PM	2	3	2	7	0	5	4	9	8	8	0	16	0	3	3	6	38
4:45 PM	2	2	1	5	0	5	2	7	6	6	0	12	0	5	2	7	31
5:00 PM	2	3	2	7	1	5	2	8	4	8	0	12	0	5	2	7	34

Peak Hour Summary

Clay Carney
(503) 833-2740

NE 223rd Ave & NE Sandy Blvd

4:05 PM to 5:05 PM
Tuesday, February 28, 2017



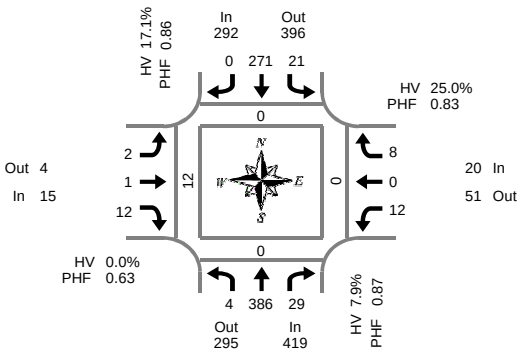
Approach	PHF	HV%	Volume
EB	0.91	5.0%	437
WB	0.78	3.3%	307
NB	0.81	3.2%	380
SB	0.94	1.6%	505
Intersection	0.93	3.2%	1,629

Count Period: 4:00 PM to 6:00 PM

EXHIBIT A-2

Total Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
7:05 AM to 8:05 AM

NE 223rd Ave & NE Townsend Way

Wednesday, March 01, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	0	28	2	0	0	23	1	0	0	0	3	0	2	0	1	0	60	0	0	0	0
7:05 AM	1	32	3	0	0	20	0	0	0	0	0	0	4	0	1	0	61	0	0	0	0
7:10 AM	0	30	3	0	0	18	0	0	0	1	1	0	1	0	0	0	54	0	0	0	0
7:15 AM	1	23	3	0	3	29	0	0	0	0	2	0	0	0	0	0	61	0	0	0	1
7:20 AM	1	42	4	0	2	26	0	0	0	0	2	0	0	0	1	0	78	0	0	0	2
7:25 AM	0	26	2	0	3	22	0	0	0	0	0	0	0	0	0	0	53	0	0	0	5
7:30 AM	0	23	2	0	2	25	0	0	0	0	2	0	2	0	1	0	57	0	0	0	2
7:35 AM	0	44	3	1	1	21	0	0	0	0	2	0	1	0	0	0	72	0	0	0	1
7:40 AM	0	30	3	0	2	25	0	0	0	0	1	0	1	0	0	0	62	0	0	0	1
7:45 AM	1	39	1	0	4	24	0	0	1	0	1	0	0	0	3	0	74	0	0	0	0
7:50 AM	0	27	3	0	0	18	0	0	0	0	1	0	0	0	1	0	50	0	0	0	0
7:55 AM	0	29	1	0	2	26	0	0	0	0	0	0	0	0	0	0	58	0	0	0	0
8:00 AM	0	41	1	0	2	17	0	0	1	0	0	0	3	0	1	0	66	0	0	0	0
8:05 AM	0	19	3	0	0	21	0	0	0	0	0	0	0	0	0	0	43	0	0	0	0
8:10 AM	1	30	0	0	3	22	0	0	0	0	0	0	0	0	1	0	57	0	0	0	0
8:15 AM	1	36	0	0	1	17	0	1	0	0	2	0	1	0	0	0	58	0	0	0	0
8:20 AM	0	28	0	0	0	23	0	0	0	0	1	0	0	0	0	0	52	0	0	0	0
8:25 AM	1	17	1	0	0	14	0	0	1	2	0	0	0	0	0	0	36	0	0	0	0
8:30 AM	0	29	0	0	2	21	0	0	0	0	2	0	0	0	1	0	55	0	0	0	0
8:35 AM	0	28	0	0	0	31	0	0	0	0	0	0	0	0	2	0	61	0	0	0	0
8:40 AM	1	25	0	0	0	20	0	0	0	1	0	0	0	0	2	0	49	0	0	0	0
8:45 AM	0	20	1	0	2	12	0	0	0	0	0	0	0	0	0	0	35	0	0	0	0
8:50 AM	1	17	3	0	0	17	0	0	0	0	1	0	0	0	2	0	41	0	0	0	0
8:55 AM	1	31	4	0	0	21	0	0	1	0	0	0	3	0	0	0	61	0	0	0	0
Total Survey	10	694	43	1	29	513	1	1	4	4	21	0	18	0	17	0	1,354	0	0	0	12

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	1	90	8	0	0	61	1	0	0	1	4	0	7	0	2	0	175	0	0	0	0
7:15 AM	2	91	9	0	8	77	0	0	0	0	4	0	0	0	1	0	192	0	0	0	8
7:30 AM	0	97	8	1	5	71	0	0	0	0	5	0	4	0	1	0	191	0	0	0	4
7:45 AM	1	95	5	0	6	68	0	0	1	0	2	0	0	0	4	0	182	0	0	0	0
8:00 AM	1	90	4	0	5	60	0	0	1	0	0	0	3	0	2	0	166	0	0	0	0
8:15 AM	2	81	1	0	1	54	0	1	1	2	3	0	1	0	0	0	146	0	0	0	0
8:30 AM	1	82	0	0	2	72	0	0	0	1	2	0	0	0	5	0	165	0	0	0	0
8:45 AM	2	68	8	0	2	50	0	0	1	0	1	0	3	0	2	0	137	0	0	0	0
Total Survey	10	694	43	1	29	513	1	1	4	4	21	0	18	0	17	0	1,354	0	0	0	12

Peak Hour Summary
7:05 AM to 8:05 AM

By Approach	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	419	295	714	1	292	396	688	0	15	4	19	0	20	51	71	0	746
%HV	7.9%				17.1%				0.0%				25.0%				11.8%
PHF	0.87				0.86				0.63				0.83				0.90

Pedestrians Crosswalk			
North	South	East	West
0	0	0	12

By Movement	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	4	386	29	419	21	271	0	292	2	1	12	15	12	0	8	20	746
%HV	0.0%	8.3%	3.4%	7.9%	28.6%	16.2%	0.0%	17.1%	0.0%	0.0%	0.0%	0.0%	33.3%	0.0%	12.5%	25.0%	11.8%
PHF	0.50	0.85	0.73	0.87	0.66	0.88	0.00	0.86	0.50	0.25	0.60	0.63	0.60	0.00	0.50	0.83	0.90

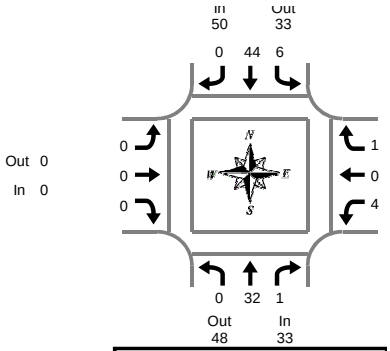
Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	4	373	30	1	19	277	1	0	1	1	15	0	11	0	8	0	740	0	0	0	12
7:15 AM	4	373	26	1	24	276	0	0	2	0	11	0	7	0	8	0	731	0	0	0	12
7:30 AM	4	363	18	1	17	253	0	1	3	2	10	0	8	0	7	0	685	0	0	0	4
7:45 AM	5	348	10	0	14	254	0	1	3	3	7	0	4	0	11	0	659	0	0	0	0
8:00 AM	6	321	13	0	10	236	0	1	3	3	6	0	7	0	9	0	614	0	0	0	0

EXHIBIT A-2

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:05 AM to 8:05 AM

NE 223rd Ave & NE Townsend Way

Wednesday, March 01, 2017
7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	3	0	3	0	5	0	5	0	0	0	0	1	0	0	1	9
7:05 AM	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	3
7:10 AM	0	6	0	6	0	1	0	1	0	0	0	0	1	0	0	1	8
7:15 AM	0	0	1	1	0	5	0	5	0	0	0	0	0	0	0	0	6
7:20 AM	0	4	0	4	0	3	0	3	0	0	0	0	0	0	0	0	7
7:25 AM	0	1	0	1	1	5	0	6	0	0	0	0	0	0	0	0	7
7:30 AM	0	5	0	5	0	6	0	6	0	0	0	0	1	0	1	2	13
7:35 AM	0	3	0	3	1	3	0	4	0	0	0	0	1	0	0	1	8
7:40 AM	0	1	0	1	1	3	0	4	0	0	0	0	0	0	0	0	5
7:45 AM	0	3	0	3	0	5	0	5	0	0	0	0	0	0	0	0	8
7:50 AM	0	3	0	3	0	1	0	1	0	0	0	0	0	0	0	0	4
7:55 AM	0	2	0	2	1	7	0	8	0	0	0	0	0	0	0	0	10
8:00 AM	0	3	0	3	2	3	0	5	0	0	0	0	1	0	0	1	9
8:05 AM	0	4	0	4	0	5	0	5	0	0	0	0	0	0	0	0	9
8:10 AM	0	3	0	3	1	4	0	5	0	0	0	0	0	0	1	1	9
8:15 AM	0	7	0	7	1	3	0	4	0	0	0	0	0	0	0	0	11
8:20 AM	0	3	0	3	0	5	0	5	0	0	0	0	0	0	0	0	8
8:25 AM	0	4	1	5	0	3	0	3	0	0	0	0	0	0	0	0	8
8:30 AM	0	7	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
8:35 AM	0	7	0	7	0	5	0	5	0	0	0	0	0	0	1	1	13
8:40 AM	0	5	0	5	0	1	0	1	0	0	0	0	0	0	1	1	7
8:45 AM	0	5	1	6	1	3	0	4	0	0	0	0	0	0	0	0	10
8:50 AM	0	6	0	6	0	8	0	8	0	0	0	0	0	0	2	2	16
8:55 AM	0	6	1	7	0	4	0	4	0	0	0	0	3	0	0	3	14
Total Survey	0	92	4	96	9	90	0	99	0	0	0	0	8	0	6	14	209

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	10	0	10	0	8	0	8	0	0	0	0	2	0	0	2	20
7:15 AM	0	5	1	6	1	13	0	14	0	0	0	0	0	0	0	0	20
7:30 AM	0	9	0	9	2	12	0	14	0	0	0	0	2	0	1	3	26
7:45 AM	0	8	0	8	1	13	0	14	0	0	0	0	0	0	0	0	22
8:00 AM	0	10	0	10	3	12	0	15	0	0	0	0	1	0	1	2	27
8:15 AM	0	14	1	15	1	11	0	12	0	0	0	0	0	0	0	0	27
8:30 AM	0	19	0	19	0	6	0	6	0	0	0	0	0	0	2	2	27
8:45 AM	0	17	2	19	1	15	0	16	0	0	0	0	3	0	2	5	40
Total Survey	0	92	4	96	9	90	0	99	0	0	0	0	8	0	6	14	209

Heavy Vehicle Peak Hour Summary
7:05 AM to 8:05 AM

By Approach	Northbound NE 223rd Ave			Southbound NE 223rd Ave			Eastbound NE Townsend Way			Westbound NE Townsend Way			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	33	48	81	50	33	83	0	0	0	5	7	12	88
PHF	0.75			0.78			0.00			0.42			0.79

By Movement	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	32	1	33	6	44	0	50	0	0	0	0	4	0	1	5	88
PHF	0.00	0.80	0.25	0.75	0.50	0.79	0.00	0.78	0.00	0.00	0.00	0.00	0.50	0.00	0.25	0.42	0.79

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

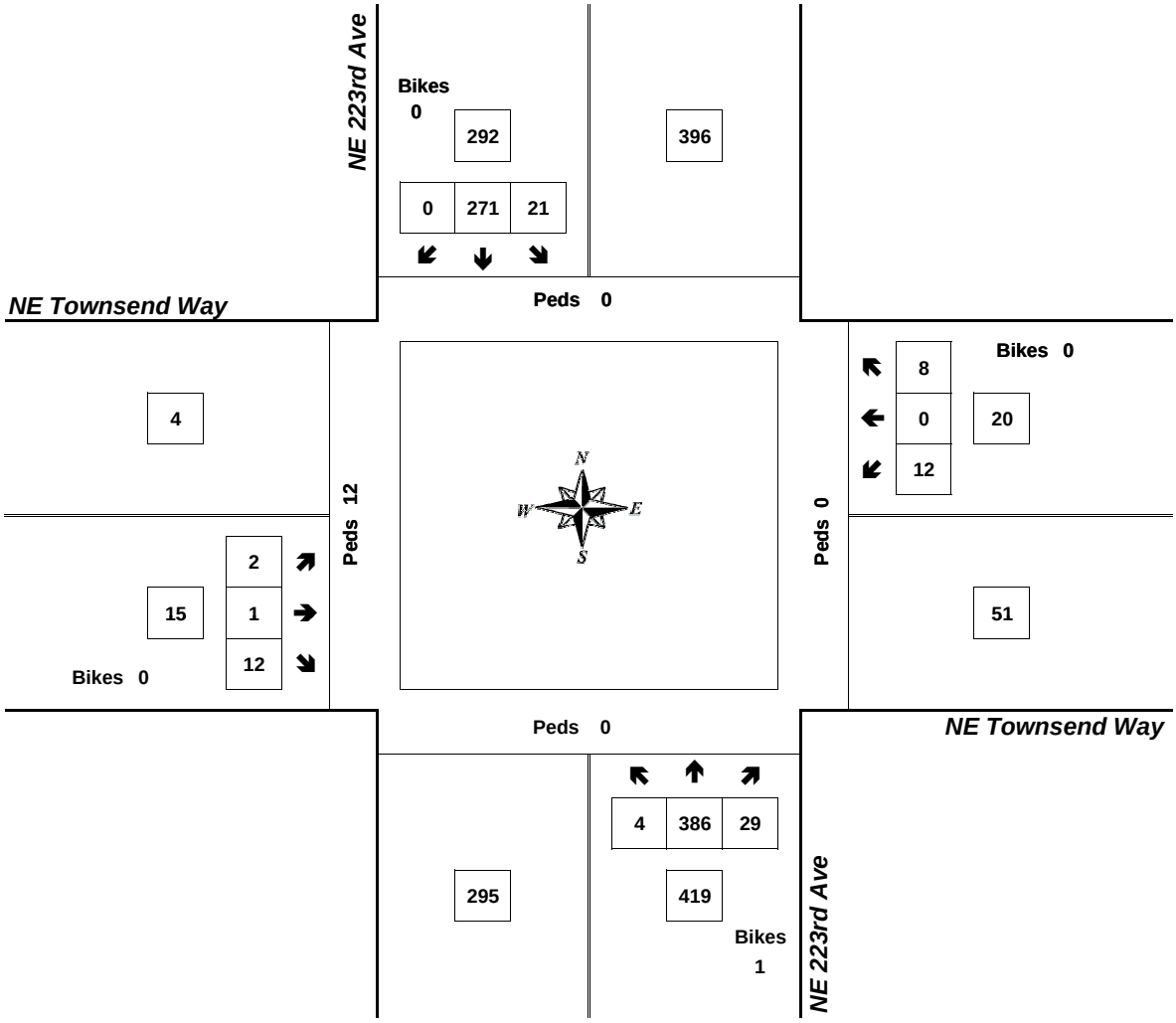
Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	0	32	1	33	4	46	0	50	0	0	0	0	4	0	1	5	88
7:15 AM	0	32	1	33	7	50	0	57	0	0	0	0	3	0	2	5	95
7:30 AM	0	41	1	42	7	48	0	55	0	0	0	0	3	0	2	5	102
7:45 AM	0	51	1	52	5	42	0	47	0	0	0	0	1	0	3	4	103
8:00 AM	0	60	3	63	5	44	0	49	0	0	0	0	4	0	5	9	121

Peak Hour Summary

Clay Carney
(503) 833-2740

NE 223rd Ave & NE Townsend Way

7:05 AM to 8:05 AM
Wednesday, March 01, 2017



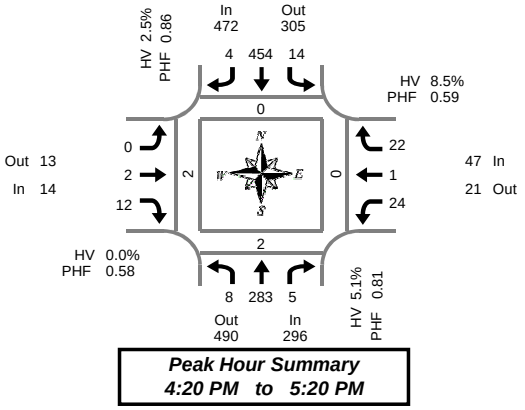
Approach	PHF	HV%	Volume
EB	0.63	0.0%	15
WB	0.83	25.0%	20
NB	0.87	7.9%	419
SB	0.86	17.1%	292
Intersection	0.90	11.8%	746

Count Period: 7:00 AM to 9:00 AM

EXHIBIT A-2

Total Vehicle Summary

Clay Carney
(503) 833-2740



NE 223rd Ave & NE Townsend Way

Tuesday, February 28, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	1	20	0	0	2	49	0	0	0	0	1	0	6	0	3	0	82	0	0	0	0
4:05 PM	0	23	1	0	5	41	0	0	0	0	2	0	5	1	2	0	80	0	0	0	0
4:10 PM	2	23	1	0	0	31	1	0	0	0	0	0	1	0	5	0	64	0	0	0	0
4:15 PM	1	30	1	0	3	39	0	0	0	0	0	0	1	0	3	0	78	0	0	0	0
4:20 PM	0	32	2	0	0	44	2	0	0	0	1	0	0	1	1	0	83	0	0	0	0
4:25 PM	0	20	0	0	0	30	0	0	0	0	4	0	2	0	3	0	59	0	0	0	0
4:30 PM	0	28	0	0	2	24	0	0	0	0	0	0	3	0	3	0	60	0	0	0	1
4:35 PM	0	20	0	1	0	48	0	0	0	1	1	0	2	0	0	0	72	0	0	0	0
4:40 PM	1	28	0	0	1	48	1	0	0	0	1	0	3	0	3	0	86	0	0	0	0
4:45 PM	0	16	0	0	0	39	0	1	0	0	0	0	0	0	0	0	55	0	0	0	0
4:50 PM	0	17	0	0	2	29	0	0	0	0	1	0	2	0	1	0	52	0	0	0	0
4:55 PM	2	16	2	0	2	23	0	0	0	0	1	0	6	0	5	0	57	0	0	0	1
5:00 PM	0	20	1	0	2	38	0	0	0	0	1	0	3	0	2	0	67	0	0	0	0
5:05 PM	0	27	0	0	0	42	1	0	0	0	1	0	2	0	2	0	75	0	0	0	0
5:10 PM	3	31	0	0	4	44	0	0	0	1	1	0	0	0	0	0	84	0	0	0	0
5:15 PM	2	28	0	0	1	45	0	0	0	0	0	0	1	0	2	0	79	0	2	0	0
5:20 PM	0	24	0	0	1	37	1	0	0	0	0	0	1	0	2	0	66	0	0	0	0
5:25 PM	1	18	0	0	0	42	0	0	0	0	0	0	3	0	1	0	65	0	0	0	0
5:30 PM	0	20	2	0	1	29	0	0	0	0	0	0	3	0	0	0	55	0	0	0	0
5:35 PM	1	18	1	0	2	42	0	0	0	0	1	0	3	0	1	0	69	0	0	0	0
5:40 PM	1	25	0	0	0	23	0	0	0	0	0	0	2	0	1	0	52	0	0	0	1
5:45 PM	0	22	0	0	0	34	0	0	0	0	0	0	4	0	0	0	60	0	0	0	0
5:50 PM	1	21	0	0	0	26	0	0	0	0	0	0	0	0	3	0	51	0	0	0	0
5:55 PM	2	21	0	0	0	30	0	0	0	0	1	0	0	0	0	0	54	0	0	0	0
Total Survey	18	548	11	1	28	877	6	1	0	2	17	0	53	2	43	0	1,605	0	2	0	3

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	3	66	2	0	7	121	1	0	0	0	3	0	12	1	10	0	226	0	0	0	0
4:15 PM	1	82	3	0	3	113	2	0	0	0	5	0	3	1	7	0	220	0	0	0	0
4:30 PM	1	76	0	1	3	120	1	0	0	1	2	0	8	0	6	0	218	0	0	0	1
4:45 PM	2	49	2	0	4	91	0	1	0	0	2	0	8	0	6	0	164	0	0	0	1
5:00 PM	3	78	1	0	6	124	1	0	0	1	3	0	5	0	4	0	226	0	0	0	0
5:15 PM	3	70	0	0	2	124	1	0	0	0	0	0	5	0	5	0	210	0	2	0	0
5:30 PM	2	63	3	0	3	94	0	0	0	0	1	0	8	0	2	0	176	0	0	0	1
5:45 PM	3	64	0	0	0	90	0	0	0	0	1	0	4	0	3	0	165	0	0	0	0
Total Survey	18	548	11	1	28	877	6	1	0	2	17	0	53	2	43	0	1,605	0	2	0	3

Peak Hour Summary
4:20 PM to 5:20 PM

By Approach	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	296	490	786	1	472	305	777	1	14	13	27	0	47	21	68	0	829
%HV	5.1%				2.5%				0.0%				8.5%				3.7%
PHF	0.81				0.86				0.58				0.59				0.87

Pedestrians Crosswalk			
North	South	East	West
0	2	0	2

By Movement	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	8	283	5	296	14	454	4	472	0	2	12	14	24	1	22	47	829
%HV	0.0%	4.6%	40.0%	5.1%	14.3%	2.2%	0.0%	2.5%	0.0%	0.0%	0.0%	0.0%	4.2%	0.0%	13.6%	8.5%	3.7%
PHF	0.40	0.82	0.42	0.81	0.58	0.84	0.50	0.86	0.00	0.50	0.60	0.58	0.55	0.25	0.61	0.59	0.87

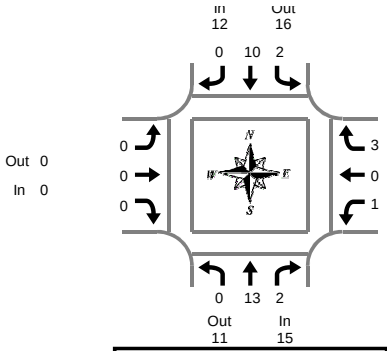
Rolling Hour Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	7	273	7	1	17	445	4	1	0	1	12	0	31	2	29	0	828	0	0	0	2
4:15 PM	7	285	6	1	16	448	4	1	0	2	12	0	24	1	23	0	828	0	0	0	2
4:30 PM	9	273	3	1	15	459	3	1	0	2	7	0	26	0	21	0	818	0	2	0	2
4:45 PM	10	260	6	0	15	433	2	1	0	1	6	0	26	0	17	0	776	0	2	0	2
5:00 PM	11	275	4	0	11	432	2	0	0	1	5	0	22	0	14	0	777	0	2	0	1

EXHIBIT A-2

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
4:20 PM to 5:20 PM

NE 223rd Ave & NE Townsend Way

Tuesday, February 28, 2017
4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
4:05 PM	0	4	1	5	0	1	0	1	0	0	0	0	1	0	0	1	7
4:10 PM	0	2	1	3	0	0	0	0	0	0	0	0	0	0	1	1	4
4:15 PM	0	1	0	1	1	2	0	3	0	0	0	0	0	0	0	0	4
4:20 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:25 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	2	0	2	0	1	0	1	0	0	0	0	1	0	1	2	5
4:35 PM	0	2	0	2	0	2	0	2	0	0	0	0	0	0	0	0	4
4:40 PM	0	0	0	0	1	2	0	3	0	0	0	0	0	0	1	1	4
4:45 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
4:50 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
4:55 PM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	2	0	2	0	1	0	1	0	0	0	0	0	0	0	0	3
5:05 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	1	1	3
5:10 PM	0	1	0	1	1	2	0	3	0	0	0	0	0	0	0	0	4
5:15 PM	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	2
5:20 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:25 PM	0	1	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:35 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
5:40 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	1	0	1	0	2	0	2	0	0	0	0	0	0	0	0	3
5:50 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
5:55 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Survey	0	24	4	28	3	17	0	20	0	0	0	0	3	0	4	7	55

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	6	2	8	0	2	0	2	0	0	0	0	1	0	1	2	12
4:15 PM	0	2	0	2	1	2	0	3	0	0	0	0	0	0	0	0	5
4:30 PM	0	4	0	4	1	5	0	6	0	0	0	0	1	0	2	3	13
4:45 PM	0	2	2	4	0	1	0	1	0	0	0	0	0	0	0	0	5
5:00 PM	0	5	0	5	1	3	0	4	0	0	0	0	0	0	1	1	10
5:15 PM	0	2	0	2	0	1	0	1	0	0	0	0	1	0	0	1	4
5:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
5:45 PM	0	3	0	3	0	2	0	2	0	0	0	0	0	0	0	0	5
Total Survey	0	24	4	28	3	17	0	20	0	0	0	0	3	0	4	7	55

Heavy Vehicle Peak Hour Summary
4:20 PM to 5:20 PM

By Approach	Northbound NE 223rd Ave			Southbound NE 223rd Ave			Eastbound NE Townsend Way			Westbound NE Townsend Way			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	15	11	26	12	16	28	0	0	0	4	4	8	31
PHF	0.63			0.50			0.00			0.33			0.60

By Movement	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	0	13	2	15	2	10	0	12	0	0	0	0	1	0	3	4	31
PHF	0.00	0.65	0.25	0.63	0.50	0.50	0.00	0.50	0.00	0.00	0.00	0.00	0.25	0.00	0.38	0.33	0.60

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

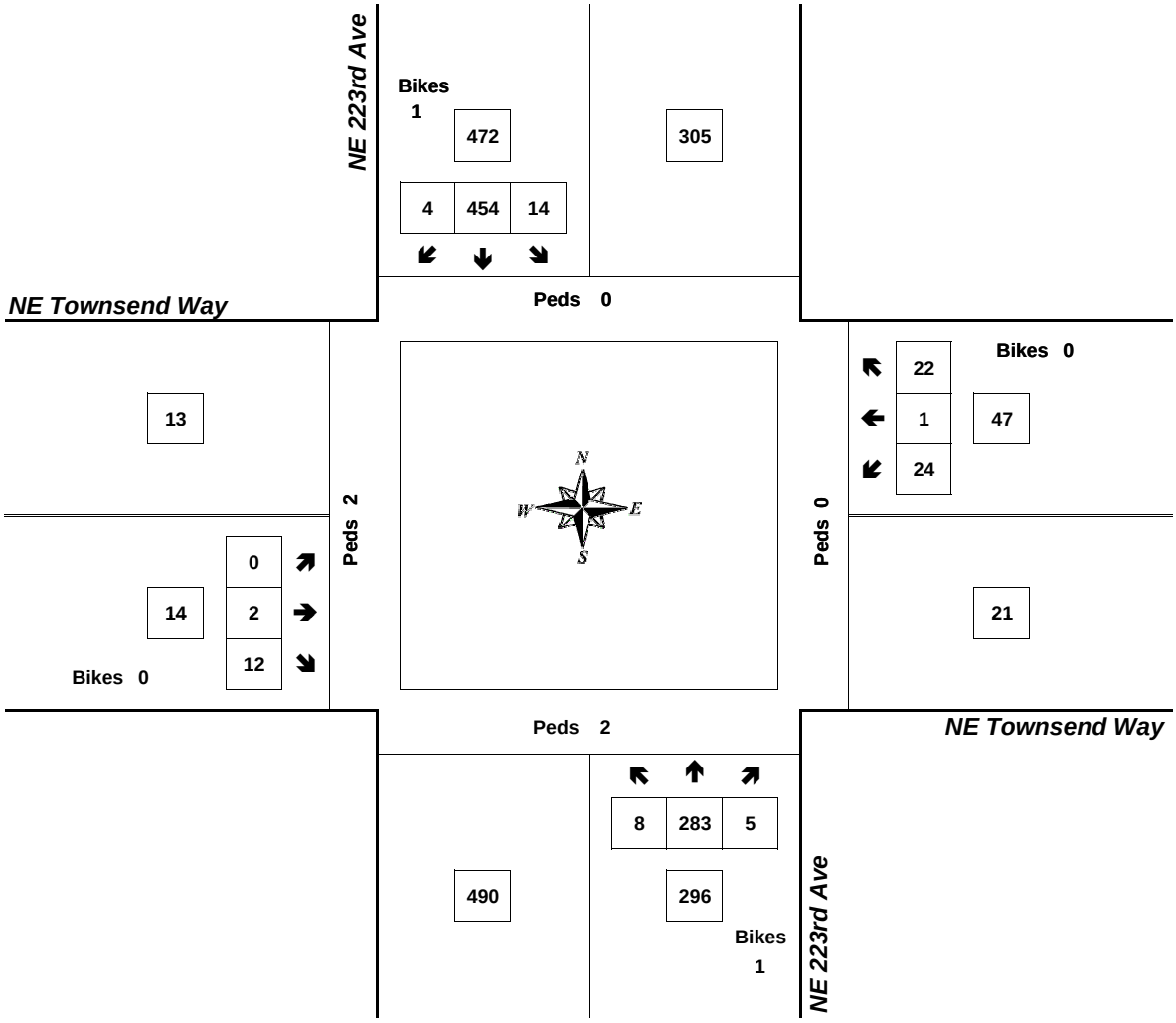
Interval Start Time	Northbound NE 223rd Ave				Southbound NE 223rd Ave				Eastbound NE Townsend Way				Westbound NE Townsend Way				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	0	14	4	18	2	10	0	12	0	0	0	0	2	0	3	5	35
4:15 PM	0	13	2	15	3	11	0	14	0	0	0	0	1	0	3	4	33
4:30 PM	0	13	2	15	2	10	0	12	0	0	0	0	2	0	3	5	32
4:45 PM	0	9	2	11	1	6	0	7	0	0	0	0	1	0	1	2	20
5:00 PM	0	10	0	10	1	7	0	8	0	0	0	0	1	0	1	2	20

Peak Hour Summary

Clay Carney
(503) 833-2740

NE 223rd Ave & NE Townsend Way

4:20 PM to 5:20 PM
Tuesday, February 28, 2017



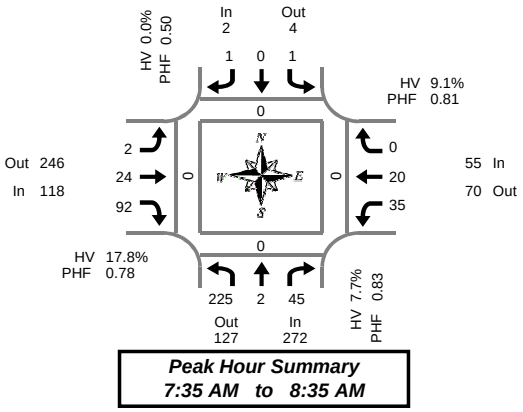
Approach	PHF	HV%	Volume
EB	0.58	0.0%	14
WB	0.59	8.5%	47
NB	0.81	5.1%	296
SB	0.86	2.5%	472
Intersection	0.87	3.7%	829

Count Period: 4:00 PM to 6:00 PM

EXHIBIT A-2

Total Vehicle Summary

Clay Carney
(503) 833-2740



NE 238th Dr & NE Sandy Blvd

Wednesday, March 01, 2017
7:00 AM to 9:00 AM

5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	22	0	2	0	0	2	0	0	1	3	11	0	3	0	0	0	44	0	0	0	0
7:05 AM	15	0	0	0	0	0	0	0	0	2	6	0	7	0	0	0	30	0	0	0	0
7:10 AM	21	0	1	0	0	0	1	0	0	1	6	0	5	0	0	0	35	0	0	0	0
7:15 AM	18	0	6	0	0	1	0	0	0	1	4	0	2	3	0	0	35	0	0	0	0
7:20 AM	13	0	2	0	0	0	0	0	0	5	7	0	4	2	0	0	33	0	0	0	0
7:25 AM	9	1	2	0	0	0	0	0	0	2	4	0	1	1	0	0	20	0	0	0	0
7:30 AM	12	0	2	0	0	0	0	0	0	1	10	0	6	2	0	0	33	0	0	0	0
7:35 AM	24	0	3	0	0	0	0	0	1	2	9	0	1	1	0	0	41	0	0	0	0
7:40 AM	20	1	4	0	0	0	0	0	1	2	11	0	5	1	0	0	45	0	0	0	0
7:45 AM	18	0	8	0	0	0	1	0	0	2	7	0	0	4	0	0	40	0	0	0	0
7:50 AM	25	0	6	0	0	0	0	0	0	6	9	0	4	0	0	0	50	0	0	0	0
7:55 AM	16	0	7	0	0	0	0	0	0	2	6	0	5	1	0	0	37	0	0	0	0
8:00 AM	21	0	2	0	0	0	0	0	0	0	5	0	2	0	0	0	30	0	0	0	0
8:05 AM	21	1	3	0	0	0	0	0	0	1	6	0	6	1	0	0	39	0	0	0	0
8:10 AM	18	0	4	0	0	0	0	0	0	4	7	0	3	1	0	0	37	0	0	0	0
8:15 AM	14	0	2	0	1	0	0	0	0	1	5	0	3	3	0	0	29	0	0	0	0
8:20 AM	14	0	0	0	0	0	0	0	0	0	2	0	1	1	0	0	18	0	0	0	0
8:25 AM	19	0	4	0	0	0	0	0	0	1	10	0	2	3	0	0	39	0	0	0	0
8:30 AM	15	0	2	0	0	0	0	0	0	3	15	0	3	4	0	0	42	0	0	0	0
8:35 AM	16	0	1	0	0	0	0	0	0	1	5	0	3	2	0	0	28	0	0	0	0
8:40 AM	16	0	2	0	0	0	0	0	0	5	4	0	2	1	0	0	30	0	1	0	0
8:45 AM	17	0	2	0	0	0	0	0	0	3	6	0	3	3	0	0	34	0	0	0	0
8:50 AM	19	0	2	0	0	0	0	0	0	2	8	0	3	3	0	0	37	0	0	0	0
8:55 AM	22	0	0	0	0	1	0	0	0	2	5	0	6	2	0	0	38	0	1	0	0
Total Survey	425	3	67	0	1	4	2	0	3	52	168	0	80	39	0	0	844	0	2	0	0

15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	58	0	3	0	0	2	1	0	1	6	23	0	15	0	0	0	109	0	0	0	0
7:15 AM	40	1	10	0	0	1	0	0	0	8	15	0	7	6	0	0	88	0	0	0	0
7:30 AM	56	1	9	0	0	0	0	0	2	5	30	0	12	4	0	0	119	0	0	0	0
7:45 AM	59	0	21	0	0	0	1	0	0	10	22	0	9	5	0	0	127	0	0	0	0
8:00 AM	60	1	9	0	0	0	0	0	0	5	18	0	11	2	0	0	106	0	0	0	0
8:15 AM	47	0	6	0	1	0	0	0	0	2	17	0	6	7	0	0	86	0	0	0	0
8:30 AM	47	0	5	0	0	0	0	0	0	9	24	0	8	7	0	0	100	0	1	0	0
8:45 AM	58	0	4	0	0	1	0	0	0	7	19	0	12	8	0	0	109	0	1	0	0
Total Survey	425	3	67	0	1	4	2	0	3	52	168	0	80	39	0	0	844	0	2	0	0

Peak Hour Summary
7:35 AM to 8:35 AM

By Approach	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	272	127	399	0	2	4	6	0	118	246	364	0	55	70	125	0	447
%HV	7.7%				0.0%				17.8%				9.1%				10.5%
PHF	0.83				0.50				0.78				0.81				0.83

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0

By Movement	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	225	2	45	272	1	0	1	2	2	24	92	118	35	20	0	55	447
%HV	8.0%	0.0%	6.7%	7.7%	0.0%	0.0%	0.0%	0.0%	0.0%	16.7%	18.5%	17.8%	11.4%	5.0%	0.0%	9.1%	10.5%
PHF	0.89	0.50	0.54	0.83	0.25	0.00	0.25	0.50	0.25	0.60	0.85	0.78	0.67	0.63	0.00	0.81	0.83

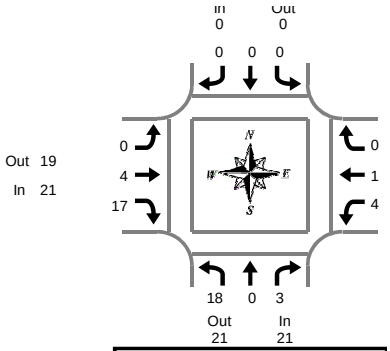
Rolling Hour Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
7:00 AM	213	2	43	0	0	3	2	0	3	29	90	0	43	15	0	0	443	0	0	0	0
7:15 AM	215	3	49	0	0	1	1	0	2	28	85	0	39	17	0	0	440	0	0	0	0
7:30 AM	222	2	45	0	1	0	1	0	2	22	87	0	38	18	0	0	438	0	0	0	0
7:45 AM	213	1	41	0	1	0	1	0	0	26	81	0	34	21	0	0	419	0	1	0	0
8:00 AM	212	1	24	0	1	1	0	0	0	23	78	0	37	24	0	0	401	0	2	0	0

EXHIBIT A-2

Heavy Vehicle Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740



Peak Hour Summary
7:35 AM to 8:35 AM

NE 238th Dr & NE Sandy Blvd

Wednesday, March 01, 2017
7:00 AM to 9:00 AM

Heavy Vehicle 5-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	1	0	1	2	0	1	0	1	0	0	4	4	1	0	0	1	8
7:05 AM	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
7:10 AM	0	0	0	0	0	0	0	0	0	0	1	1	3	0	0	3	4
7:15 AM	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	2
7:20 AM	2	0	0	2	0	0	0	0	0	0	1	1	0	0	0	0	3
7:25 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
7:35 AM	2	0	0	2	0	0	0	0	0	0	2	2	0	0	0	0	4
7:40 AM	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	3
7:45 AM	0	0	1	1	0	0	0	0	0	1	1	2	0	1	0	1	4
7:50 AM	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
7:55 AM	3	0	0	3	0	0	0	0	0	0	1	1	0	0	0	0	4
8:00 AM	2	0	1	3	0	0	0	0	0	0	3	3	1	0	0	1	7
8:05 AM	1	0	0	1	0	0	0	0	0	0	0	0	2	0	0	2	3
8:10 AM	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
8:15 AM	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
8:20 AM	2	0	0	2	0	0	0	0	0	0	2	2	0	0	0	0	4
8:25 AM	3	0	0	3	0	0	0	0	0	1	1	2	0	0	0	0	5
8:30 AM	2	0	0	2	0	0	0	0	0	1	3	4	1	0	0	1	7
8:35 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	2
8:40 AM	1	0	1	2	0	0	0	0	0	0	1	1	0	0	0	0	3
8:45 AM	3	0	0	3	0	0	0	0	0	0	1	1	0	0	0	0	4
8:50 AM	3	0	0	3	0	0	0	0	0	1	1	2	0	1	0	1	6
8:55 AM	1	0	0	1	0	0	0	0	0	0	1	1	2	0	0	2	4
Total Survey	32	0	7	39	0	1	0	1	0	5	28	33	10	4	0	14	87

Heavy Vehicle 15-Minute Interval Summary
7:00 AM to 9:00 AM

Interval Start Time	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	4	0	1	5	0	1	0	1	0	0	5	5	4	0	0	4	15
7:15 AM	2	0	2	4	0	0	0	0	0	0	1	1	0	0	0	0	5
7:30 AM	2	0	0	2	0	0	0	0	0	0	5	5	0	1	0	1	8
7:45 AM	5	0	1	6	0	0	0	0	0	1	2	3	0	1	0	1	10
8:00 AM	3	0	2	5	0	0	0	0	0	1	3	4	3	0	0	3	12
8:15 AM	6	0	0	6	0	0	0	0	0	1	4	5	0	0	0	0	11
8:30 AM	3	0	1	4	0	0	0	0	0	1	5	6	1	1	0	2	12
8:45 AM	7	0	0	7	0	0	0	0	0	1	3	4	2	1	0	3	14
Total Survey	32	0	7	39	0	1	0	1	0	5	28	33	10	4	0	14	87

Heavy Vehicle Peak Hour Summary
7:35 AM to 8:35 AM

By Approach	Northbound NE 238th Dr			Southbound NE 238th Dr			Eastbound NE Sandy Blvd			Westbound NE Sandy Blvd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	21	21	42	0	0	0	21	19	40	5	7	12	47
PHF	0.66			0.00			0.66			0.42			0.73

By Movement	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	18	0	3	21	0	0	0	0	0	4	17	21	4	1	0	5	47
PHF	0.64	0.00	0.38	0.66	0.00	0.00	0.00	0.00	0.00	0.50	0.71	0.66	0.33	0.25	0.00	0.42	0.73

Heavy Vehicle Rolling Hour Summary
7:00 AM to 9:00 AM

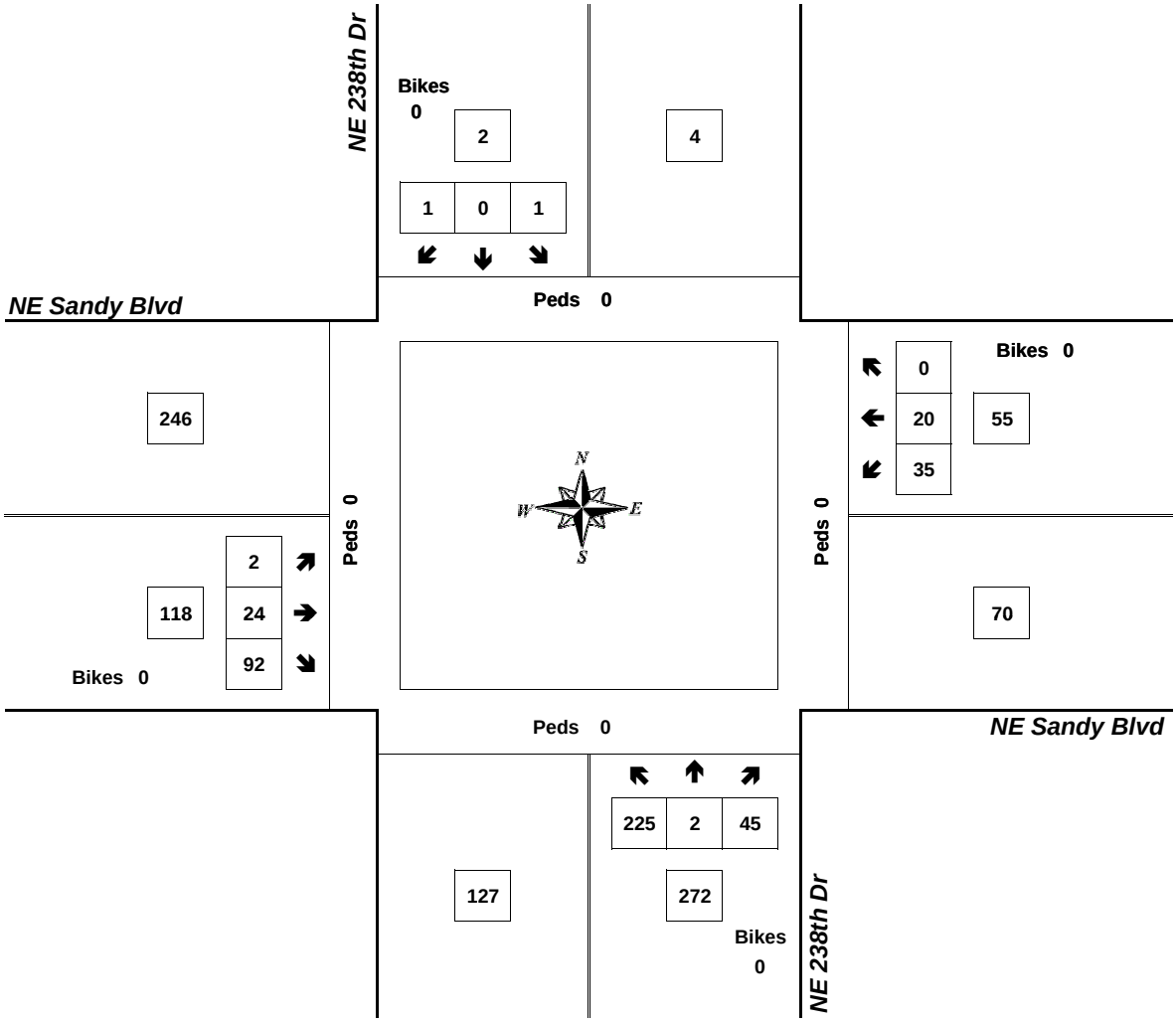
Interval Start Time	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
7:00 AM	13	0	4	17	0	1	0	1	0	1	13	14	4	2	0	6	38
7:15 AM	12	0	5	17	0	0	0	0	0	2	11	13	3	2	0	5	35
7:30 AM	16	0	3	19	0	0	0	0	0	3	14	17	3	2	0	5	41
7:45 AM	17	0	4	21	0	0	0	0	0	4	14	18	4	2	0	6	45
8:00 AM	19	0	3	22	0	0	0	0	0	4	15	19	6	2	0	8	49

Peak Hour Summary

Clay Carney
(503) 833-2740

NE 238th Dr & NE Sandy Blvd

7:35 AM to 8:35 AM
Wednesday, March 01, 2017



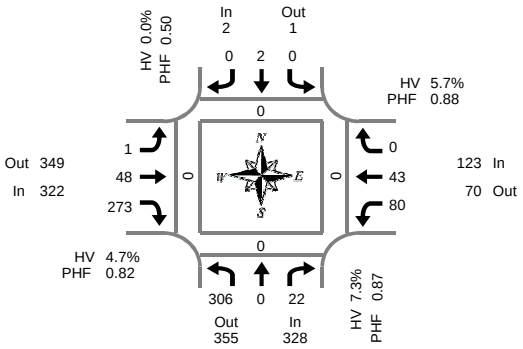
Approach	PHF	HV%	Volume
EB	0.78	17.8%	118
WB	0.81	9.1%	55
NB	0.83	7.7%	272
SB	0.50	0.0%	2
Intersection	0.83	10.5%	447

Count Period: 7:00 AM to 9:00 AM

EXHIBIT A-2

Total Vehicle Summary

Clay Carney
(503) 833-2740



Peak Hour Summary
4:00 PM to 5:00 PM

NE 238th Dr & NE Sandy Blvd

Tuesday, February 28, 2017
4:00 PM to 6:00 PM

5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	25	0	3	0	0	0	0	0	0	11	28	0	12	1	0	0	80	0	0	0	0
4:05 PM	25	0	3	0	0	0	0	0	0	3	28	0	5	8	0	0	72	0	0	0	0
4:10 PM	28	0	1	0	0	0	0	0	0	5	23	0	5	4	0	0	66	0	0	0	0
4:15 PM	34	0	1	0	0	0	0	0	0	7	25	0	8	3	0	0	78	0	0	0	0
4:20 PM	25	0	2	0	0	1	0	0	0	3	29	0	7	6	0	0	73	0	0	0	0
4:25 PM	28	0	4	0	0	0	0	0	0	5	19	0	7	3	0	0	66	0	0	0	0
4:30 PM	32	0	1	0	0	0	0	0	0	0	23	0	3	1	0	0	60	0	0	0	0
4:35 PM	18	0	1	0	0	1	0	0	0	4	18	0	6	4	0	0	52	0	0	0	0
4:40 PM	26	0	1	0	0	0	0	0	0	3	12	0	11	1	0	0	54	0	0	0	0
4:45 PM	15	0	1	0	0	0	0	0	0	1	21	0	7	5	0	0	50	0	0	0	0
4:50 PM	32	0	1	0	0	0	0	0	1	2	28	0	4	1	0	0	69	0	0	0	0
4:55 PM	18	0	3	0	0	0	0	0	0	4	19	0	5	6	0	0	55	0	0	0	0
5:00 PM	27	1	2	0	0	2	0	0	0	3	17	0	3	10	0	0	65	0	0	0	0
5:05 PM	23	0	1	0	0	0	0	0	0	3	21	0	14	5	0	0	67	0	0	0	1
5:10 PM	23	0	3	0	0	0	0	0	0	0	35	0	9	5	0	0	75	0	0	0	0
5:15 PM	27	0	1	0	0	0	0	0	0	5	25	0	6	5	0	0	69	0	0	0	0
5:20 PM	23	0	1	0	0	0	0	0	0	5	29	0	6	4	0	0	68	0	0	0	1
5:25 PM	17	0	1	0	0	0	0	0	0	0	13	0	8	2	0	0	41	0	0	0	0
5:30 PM	21	0	1	0	0	0	0	0	0	0	15	0	6	1	0	0	44	0	0	0	0
5:35 PM	18	0	1	0	0	0	0	0	0	2	20	0	4	3	0	0	48	0	1	0	0
5:40 PM	25	0	1	0	0	0	0	0	0	5	24	0	5	2	0	0	62	0	0	0	0
5:45 PM	26	0	3	0	0	1	0	0	0	0	16	0	5	3	0	0	54	0	0	0	0
5:50 PM	19	0	1	0	0	0	0	0	0	2	9	0	9	1	2	0	43	0	1	0	0
5:55 PM	18	0	1	0	0	0	0	0	1	5	18	0	2	1	0	0	46	0	0	0	0
Total Survey	573	1	39	0	0	5	0	0	2	78	515	0	157	85	2	0	1,457	0	2	0	2

15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	78	0	7	0	0	0	0	0	0	19	79	0	22	13	0	0	218	0	0	0	0
4:15 PM	87	0	7	0	0	1	0	0	0	15	73	0	22	12	0	0	217	0	0	0	0
4:30 PM	76	0	3	0	0	1	0	0	0	7	53	0	20	6	0	0	166	0	0	0	0
4:45 PM	65	0	5	0	0	0	0	0	1	7	68	0	16	12	0	0	174	0	0	0	0
5:00 PM	73	1	6	0	0	2	0	0	0	6	73	0	26	20	0	0	207	0	0	0	1
5:15 PM	67	0	3	0	0	0	0	0	0	10	67	0	20	11	0	0	178	0	0	0	1
5:30 PM	64	0	3	0	0	0	0	0	0	7	59	0	15	6	0	0	154	0	1	0	0
5:45 PM	63	0	5	0	0	1	0	0	1	7	43	0	16	5	2	0	143	0	1	0	0
Total Survey	573	1	39	0	0	5	0	0	2	78	515	0	157	85	2	0	1,457	0	2	0	2

Peak Hour Summary
4:00 PM to 5:00 PM

By Approach	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	In	Out	Total	Bikes	
Volume	328	355	683	0	2	1	3	0	322	349	671	0	123	70	193	0	775
%HV	7.3%				0.0%				4.7%				5.7%				5.9%
PHF	0.87				0.50				0.82				0.88				0.89

Pedestrians Crosswalk			
North	South	East	West
0	0	0	0

By Movement	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	306	0	22	328	0	2	0	2	1	48	273	322	80	43	0	123	775
%HV	5.2%	0.0%	36.4%	7.3%	0.0%	0.0%	0.0%	0.0%	0.0%	8.3%	4.0%	4.7%	3.8%	9.3%	0.0%	5.7%	5.9%
PHF	0.88	0.00	0.79	0.87	0.00	0.50	0.00	0.50	0.25	0.63	0.86	0.82	0.83	0.72	0.00	0.88	0.89

Rolling Hour Summary
4:00 PM to 6:00 PM

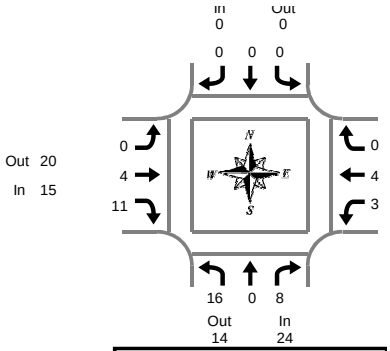
Interval Start Time	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total	Pedestrians Crosswalk			
	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes	L	T	R	Bikes		North	South	East	West
4:00 PM	306	0	22	0	0	2	0	0	1	48	273	0	80	43	0	0	775	0	0	0	0
4:15 PM	301	1	21	0	0	4	0	0	1	35	267	0	84	50	0	0	764	0	0	0	1
4:30 PM	281	1	17	0	0	3	0	0	1	30	261	0	82	49	0	0	725	0	0	0	2
4:45 PM	269	1	17	0	0	2	0	0	1	30	267	0	77	49	0	0	713	0	1	0	2
5:00 PM	267	1	17	0	0	3	0	0	1	30	242	0	77	42	2	0	682	0	2	0	2

EXHIBIT A-2

Heavy Vehicle Summary

All Traffic Data Services Inc.

Clay Carney
(503) 833-2740



Peak Hour Summary
4:00 PM to 5:00 PM

NE 238th Dr & NE Sandy Blvd

Tuesday, February 28, 2017
4:00 PM to 6:00 PM

Heavy Vehicle 5-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
4:05 PM	2	0	2	4	0	0	0	0	0	1	3	4	0	0	0	0	8
4:10 PM	3	0	1	4	0	0	0	0	0	2	1	3	1	1	0	2	9
4:15 PM	2	0	1	3	0	0	0	0	0	0	1	1	0	0	0	0	4
4:20 PM	2	0	2	4	0	0	0	0	0	1	0	1	0	3	0	3	8
4:25 PM	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	1	2
4:30 PM	1	0	0	1	0	0	0	0	0	0	2	2	0	0	0	0	3
4:35 PM	1	0	0	1	0	0	0	0	0	0	2	2	0	0	0	0	3
4:40 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	1
4:45 PM	1	0	0	1	0	0	0	0	0	0	1	1	0	0	0	0	2
4:50 PM	2	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	3
4:55 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	1	0	1	2	0	0	0	0	0	0	3	3	0	2	0	2	7
5:05 PM	2	0	1	3	0	0	0	0	0	0	1	1	0	0	0	0	4
5:10 PM	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
5:20 PM	2	0	1	3	0	0	0	0	0	0	3	3	1	0	0	1	7
5:25 PM	2	0	1	3	0	0	0	0	0	0	3	3	0	0	0	0	6
5:30 PM	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:35 PM	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	2
5:40 PM	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	2	3
5:45 PM	2	0	1	3	0	0	0	0	0	0	1	1	0	0	0	0	4
5:50 PM	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	2	3
5:55 PM	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0	2
Total Survey	26	0	16	42	0	0	0	0	0	5	26	31	7	7	0	14	87

Heavy Vehicle 15-Minute Interval Summary
4:00 PM to 6:00 PM

Interval Start Time	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	6	0	3	9	0	0	0	0	0	3	4	7	2	1	0	3	19
4:15 PM	5	0	3	8	0	0	0	0	0	1	1	2	1	3	0	4	14
4:30 PM	2	0	0	2	0	0	0	0	0	0	5	5	0	0	0	0	7
4:45 PM	3	0	2	5	0	0	0	0	0	0	1	1	0	0	0	0	6
5:00 PM	4	0	2	6	0	0	0	0	0	0	4	4	0	2	0	2	12
5:15 PM	4	0	2	6	0	0	0	0	0	1	6	7	1	0	0	1	14
5:30 PM	0	0	2	2	0	0	0	0	0	0	2	2	1	1	0	2	6
5:45 PM	2	0	2	4	0	0	0	0	0	0	3	3	2	0	0	2	9
Total Survey	26	0	16	42	0	0	0	0	0	5	26	31	7	7	0	14	87

Heavy Vehicle Peak Hour Summary
4:00 PM to 5:00 PM

By Approach	Northbound NE 238th Dr			Southbound NE 238th Dr			Eastbound NE Sandy Blvd			Westbound NE Sandy Blvd			Total
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	
Volume	24	14	38	0	0	0	15	20	35	7	12	19	46
PHF	0.55			0.00			0.47			0.35			0.55

By Movement	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
Volume	16	0	8	24	0	0	0	0	0	4	11	15	3	4	0	7	46
PHF	0.57	0.00	0.50	0.55	0.00	0.00	0.00	0.00	0.00	0.33	0.55	0.47	0.38	0.25	0.00	0.35	0.55

Heavy Vehicle Rolling Hour Summary
4:00 PM to 6:00 PM

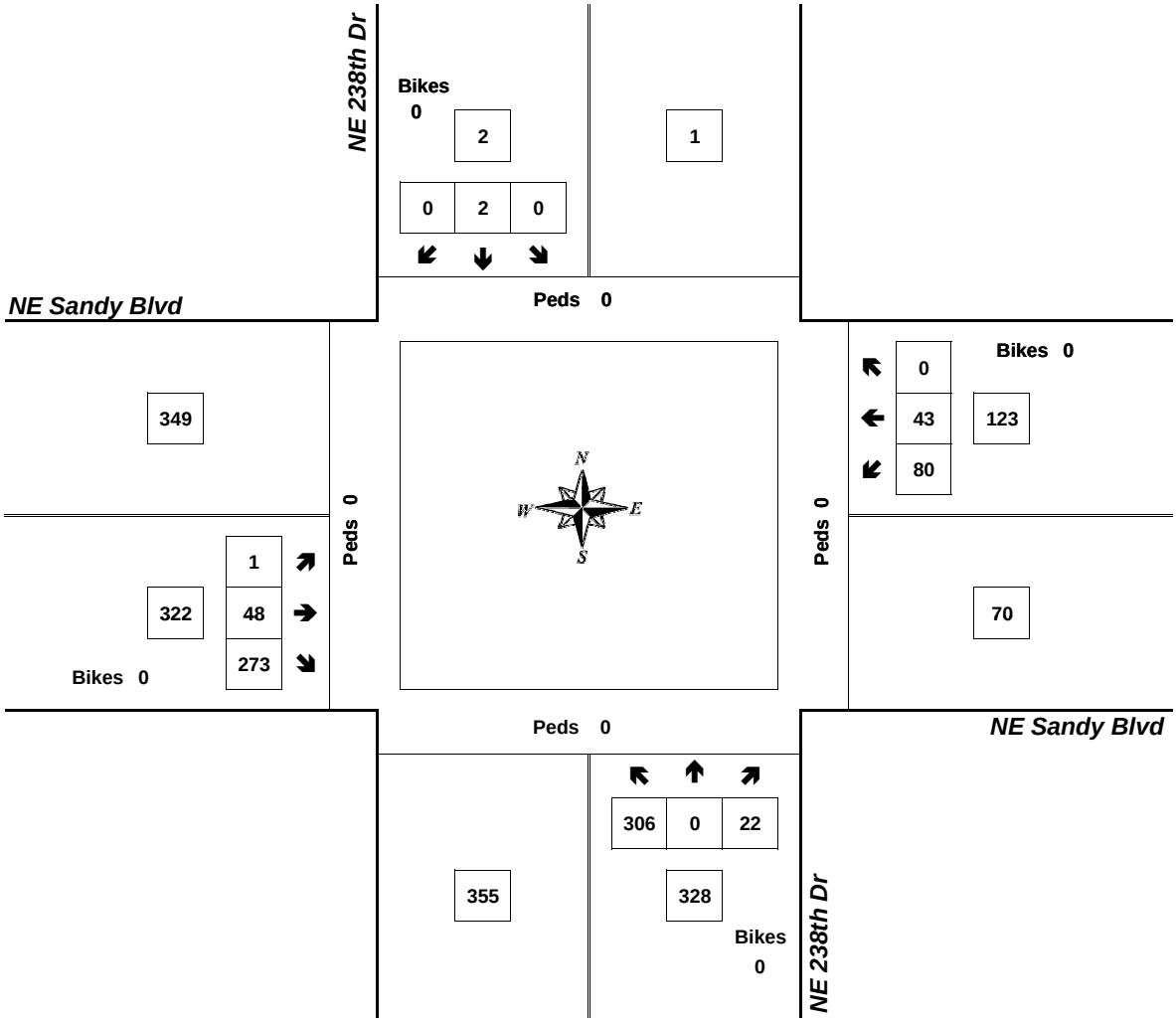
Interval Start Time	Northbound NE 238th Dr				Southbound NE 238th Dr				Eastbound NE Sandy Blvd				Westbound NE Sandy Blvd				Interval Total
	L	T	R	Total	L	T	R	Total	L	T	R	Total	L	T	R	Total	
4:00 PM	16	0	8	24	0	0	0	0	0	4	11	15	3	4	0	7	46
4:15 PM	14	0	7	21	0	0	0	0	0	1	11	12	1	5	0	6	39
4:30 PM	13	0	6	19	0	0	0	0	0	1	16	17	1	2	0	3	39
4:45 PM	11	0	8	19	0	0	0	0	0	1	13	14	2	3	0	5	38
5:00 PM	10	0	8	18	0	0	0	0	0	1	15	16	4	3	0	7	41

Peak Hour Summary

All Traffic Data Services Inc.
Clay Carney
(503) 833-2740

NE 238th Dr & NE Sandy Blvd

4:00 PM to 5:00 PM
Tuesday, February 28, 2017



Approach	PHF	HV%	Volume
EB	0.82	4.7%	322
WB	0.88	5.7%	123
NB	0.87	7.3%	328
SB	0.50	0.0%	2
Intersection	0.89	5.9%	775

Count Period: 4:00 PM to 6:00 PM

EXHIBIT A-2

LEGEND

(HC)	HANDICAP PARKING STALL
©	COMPACT STALL (7'-6" X 15'-0")
✳	SIDEWALK (PEDESTRIAN) CONNECTION TO PUBLIC STREET
► R 28'	RADIUS OF PARKING CURB
1	SHORT TERM BIKE PARKING SPACES (TWO SPACES)
2	3'-6" STEP IN BUILDING
3	10'-0" STEP IN BUILDING

0 20' 40' 80'

ARCHITECTURAL SITE PLAN

SCALE: 1"=20'

Leeb Architects L.L.C. 308 SW First Avenue
Suite 200
Portland, Or 97204
Phone 503.228.2840
Fax 503.228.2907
leebarc.com

Project Title:
FAIRVIEW APARTMENTS
NEW MULTI-FAMILY DEVELOPMENT
NE Sandy Boulevard and NE 223rd

West Coast Real Estate Holdings, LLC
P.O. BOX 1969 Lake Oswego, OR 97035

Drawing Title:
ARCHITECTURAL SITE PLAN

Date: 02/16/2018
Scale: -
Drawn By: S. Sandstrom
Project No.:
Revision:

A
100

EXHIBIT A-3

Preliminary Storm Water Report

Fairview Apartments

Prepared for:

WEST COAST HOME SOLUTIONS, LLC
Eugene Labunsky
P.O. BOX 1969
Lake Oswego, OR 97035
(503) 989-1613

Prepared by:

BMP Design, LLC.
Bogdan Popescu, PE, PLS
12214 SE Mill Plain Blvd., Suite 203
Vancouver, WA 98684
360-433-9860

02/20/2018

BMP Design LLC # 15118

REVISION	REVIEW NO.	DATE	BY	COMMENTS

TABLE of CONTENTS

1. Report Maps
2. Basin / Development Plan
3. Narrative
4. Downstream Analysis
5. Quantity Control Analysis and Design
6. Conveyance Systems Analysis and Design
7. Soil Survey
8. List of Technical Appendices

1. REPORT MAPS

a. SITE VICINITY MAP – see Appendix 1

b. SITE PLAN - see Appendix 2

c. SOILS MAP - see Appendix 3

d. FLOOD PLAIN MAP – Appendix 4

2. BASIN / DEVELOPMENT PLAN – see Appendix 5

3. NARRATIVE

The 4.79 acre project site is adjacent to NE 223rd Avenue to the east and NE Sandy Boulevard to the south. West of the site is the Terrace View residential community and north of the site is Heron Pointe.

Existing Conditions

The site is currently undeveloped and is covered by grasses and shrubs. The topography slopes generally south to north with gradients as high as 25%. There are no structures on the property.

Proposed Conditions

The project will create five buildings with a total of 200 mixed use residential and commercial apartments. The site will be accessed from NE 223rd Avenue on the east and from NE Sandy Boulevard from the south. Storm water will be managed by a series of drywells and water quality catch basins. Run-off will be completely contained on-site. An emergency overflow will carry water to the wetlands north of the site in the event the 100-year storm is exceeded. We are proposing a public sanitary and public water main to extend into the site and provide services to each individual building.

Design Frequency

The storm system will be designed to handle a 100 year, 24 hour rain event with 4.4 inches per hour.

Design References

United States Department of Agriculture, Soil Conservation Service, Engineering Division, "Technical Release 55: Urban Hydrology for Small Watersheds, 2nd Ed.," Washington, D.C., 1986.

United States Department of Transportation, Federal Highway Administration, "Hydraulic Engineering Circular No. 12: Drainage of Highway Pavements," Springfield, VA, 1984.

United States Department of Transportation, Federal Highway Administration, "Hydraulic Engineering Circular No. 15: Design of Roadside Channels with Flexible Linings," Springfield, VA, 1984.

City of Portland, "2016 Stormwater Management Manual", Portland, OR, 2016

City of Fairview, "Stormwater Management Plan", City of Fairview, OR 2011

4. DOWNSTREAM ANALYSIS

There is no proposed downstream system, after treatment, all runoff will be infiltrated on site.

5. QUANTITY CONTROL ANALYSIS AND DESIGN

Hydrologic Analysis

(a) Design Criteria

The storm water plan has been designed in accordance with the *2016 Stormwater Management Manual* from the city of Portland, and the City of Fairview Stormwater Management Plan.

A hydrologic analysis was performed for the area contributing runoff to the project in order to size the stormwater facilities.

The drainage basins boundaries are based on contour maps, field investigations and proposed improvement plans. The drainage boundaries were used to generate flow rates to size the stormwater facility.

(b) Assumptions

No notable assumptions.

(c) Calculations

Refer to Appendixes for all pertinent calculations. See the attached Geotechnical Report for the base infiltration rate. A factor of safety of 4 was used to size the facilities.

(d) Detailed Hydrologic Analysis

Stormwater runoff rates and volumes were computed using Santa Barbara Urban Hydrograph (SBUH) program. These flow rates were determined for the water quality, 100-year storm.

The runoff curve number's (RCN's) were determined for the pervious and impervious areas in each basin based on the hydrologic soil group and the groundcover. For developed conditions, a RCN of 80 was used for pervious surfaces and 98 for all impervious surfaces since the soils in the project area are in Hydrologic Soil Group B. A minimum time of concentration of five minutes was used for each basin in order to size the stormwater facilities.

A. PARKING LOT + ROOFS + LANDSCAPE

After treatment via a Contech cartridge style catch basin storm filters, the runoff coming from all catch basins and roof drains will inject into a series of 20' deep drywells. These drywells were designed to accommodate run-off from the 100-year storm event. Details of each of the drywells can be found in Appendix 6.

(b) Reference Calculations and Design Aides

Please refer to Appendix 6 for all quantity control calculations.

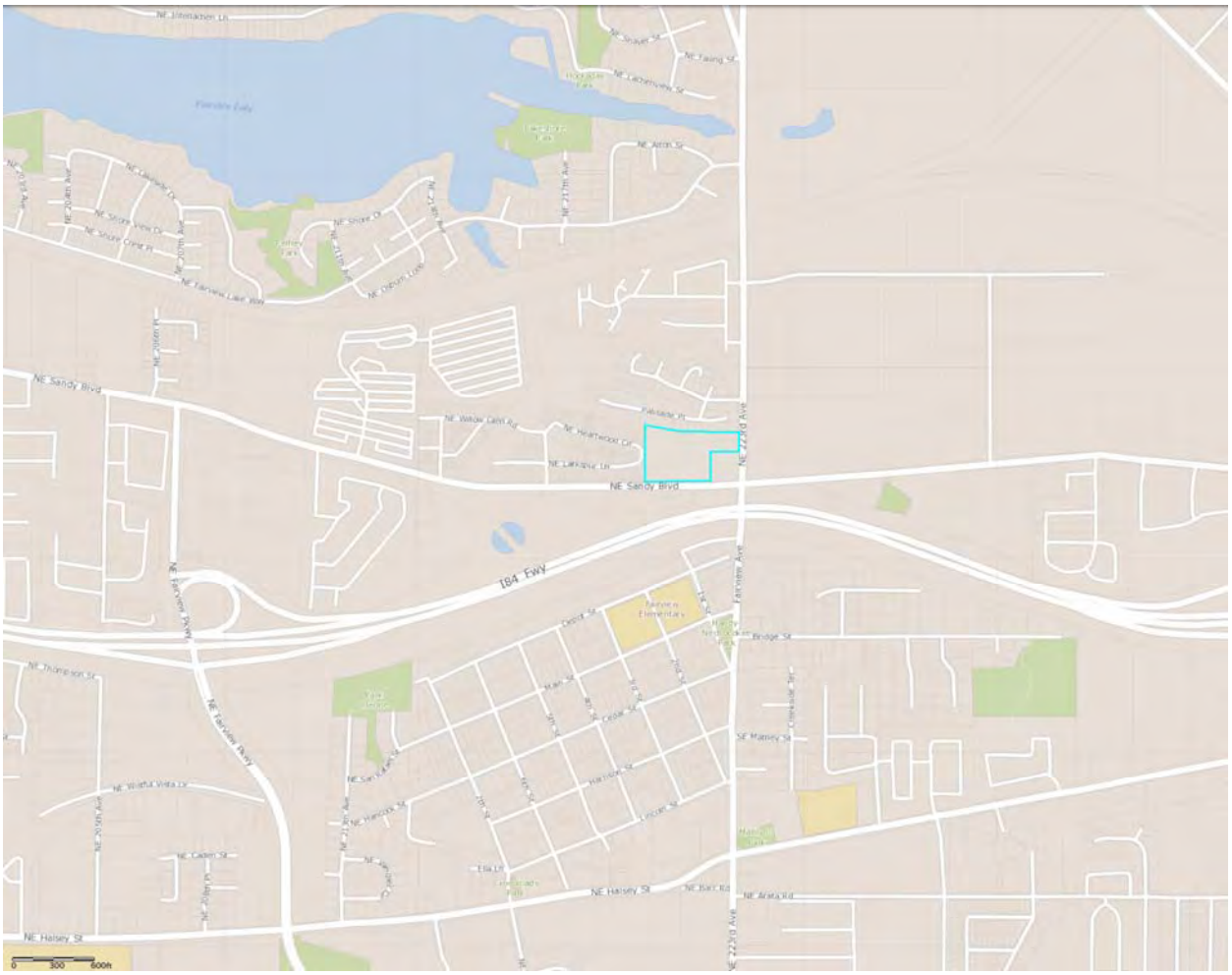
6. CONVEYANCE SYSTEMS ANALYSIS AND DESIGN

The system has been sized to convey the flow from the 10-year storm. There will be no surcharging of the system in the 10-year storm event. The only piped systems are those which run from the roof drains to the drywells for each building. The grading for the site was designed to avoid any ponding.

Design Criteria

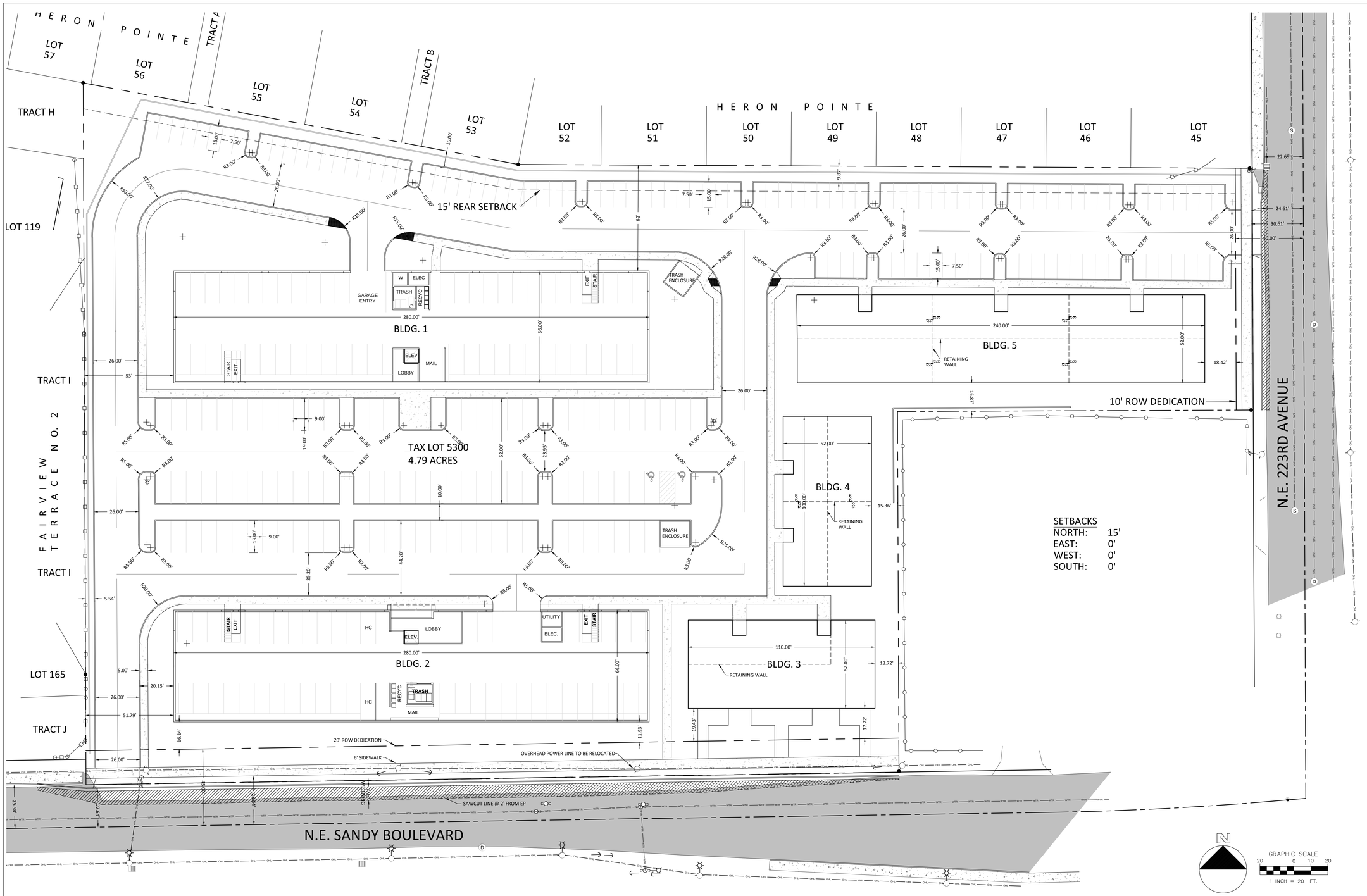
The "n" value of all pipes used in this analysis was 0.013.

VICINITY MAP

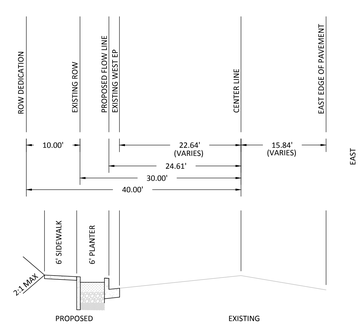


Northwest Corner of NE Sandy Boulevard and NE 223rd Avenue, Fairview OR
(PARTITION PLAT 1993-9, LOT 2 TL 5300)

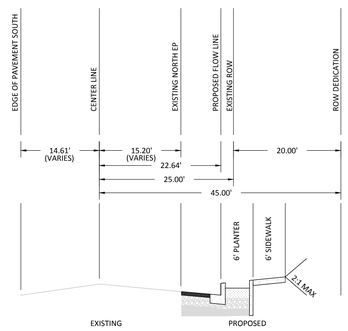
EXHIBIT A-3



223RD AVENUE SECTION (TYP.)



SANDY BLVD. SECTION (TYP.)



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Civil Engineering & Land Surveying
12214 SE 93rd Pl, Ste. 202, Vancouver, WA 98664
Ph: 360.828.0900 Fax: 360.828.0904
www.bmpdesign.us

2/20/2018

REGISTERED PROFESSIONAL ENGINEER 40911 STATE OF OREGON JAMES M. POPESCU
PRELIMINARY
EXPIRATION DATE 12/31/18

PROJECT NAME: FAIRVIEW APARTMENTS

PROPOSED SITE PLAN

NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

REVISION/DATE	DESCRIPTION	DRAFT BY	DESIGN BY	CHECK BY

PRELIMINARY, SUBJECT TO REVIEWS AND REVISIONS, NOT FOR CONSTRUCTION

SHEET C 2.0

15118

P:_PROJECTS\15118-FAIRVIEW-EUGENE\DWG\SHEETS\15118 020 PROPOSED SITE PLAN.DWG

EXHIBIT A-3

Soil Map—Multnomah County Area, Oregon

Map Scale: 1:1,530 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Multnomah County Area, Oregon
Survey Area Data: Version 15, Sep 19, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jul 26, 2014—Sep 5, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
26A	Latourell-Urban land complex, 0 to 3 percent slopes	0.1	1.1%
36C	Quafeno loam, 8 to 15 percent slopes	6.1	49.0%
37C	Quatama loam, 8 to 15 percent slopes	4.6	37.0%
40	Rafton silt loam, protected	1.1	8.9%
57	Wollent silt loam	0.5	4.0%
Totals for Area of Interest		**12.4**	**100.0%**

EXHIBIT A-3

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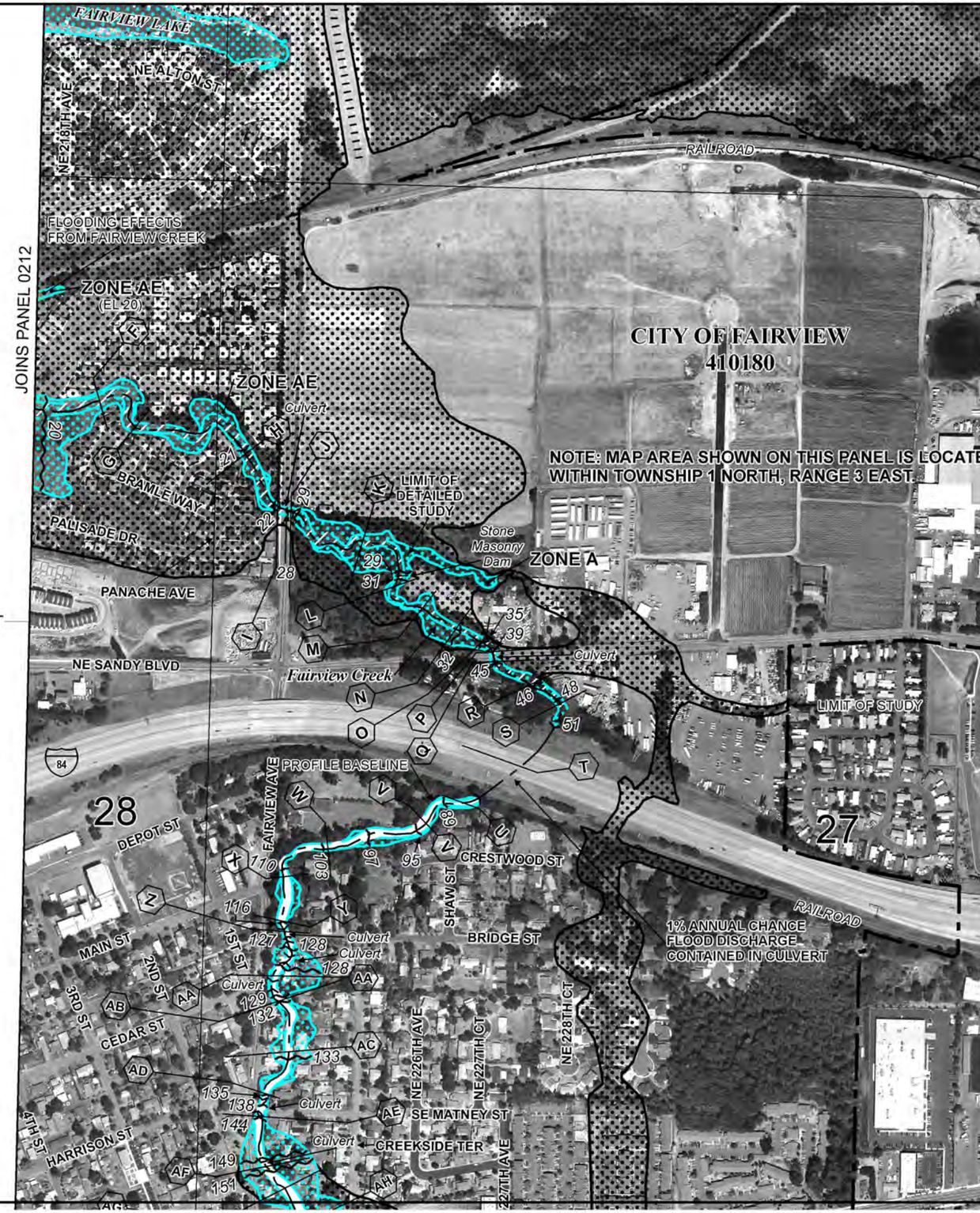


MAP SCALE 1" = 500'

250 0 500 1000 FEET

METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0216H

FIRM

FLOOD INSURANCE RATE MAP

MULTNOMAH COUNTY, OREGON

AND INCORPORATED AREAS

PANEL 216 OF 550

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
FAIRVIEW, CITY OF	410180	0216	H
MULTNOMAH COUNTY	410179	0216	H
TROUTDALE, CITY OF	410184	0216	H
WOOD VILLAGE, CITY OF	410185	0216	H

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

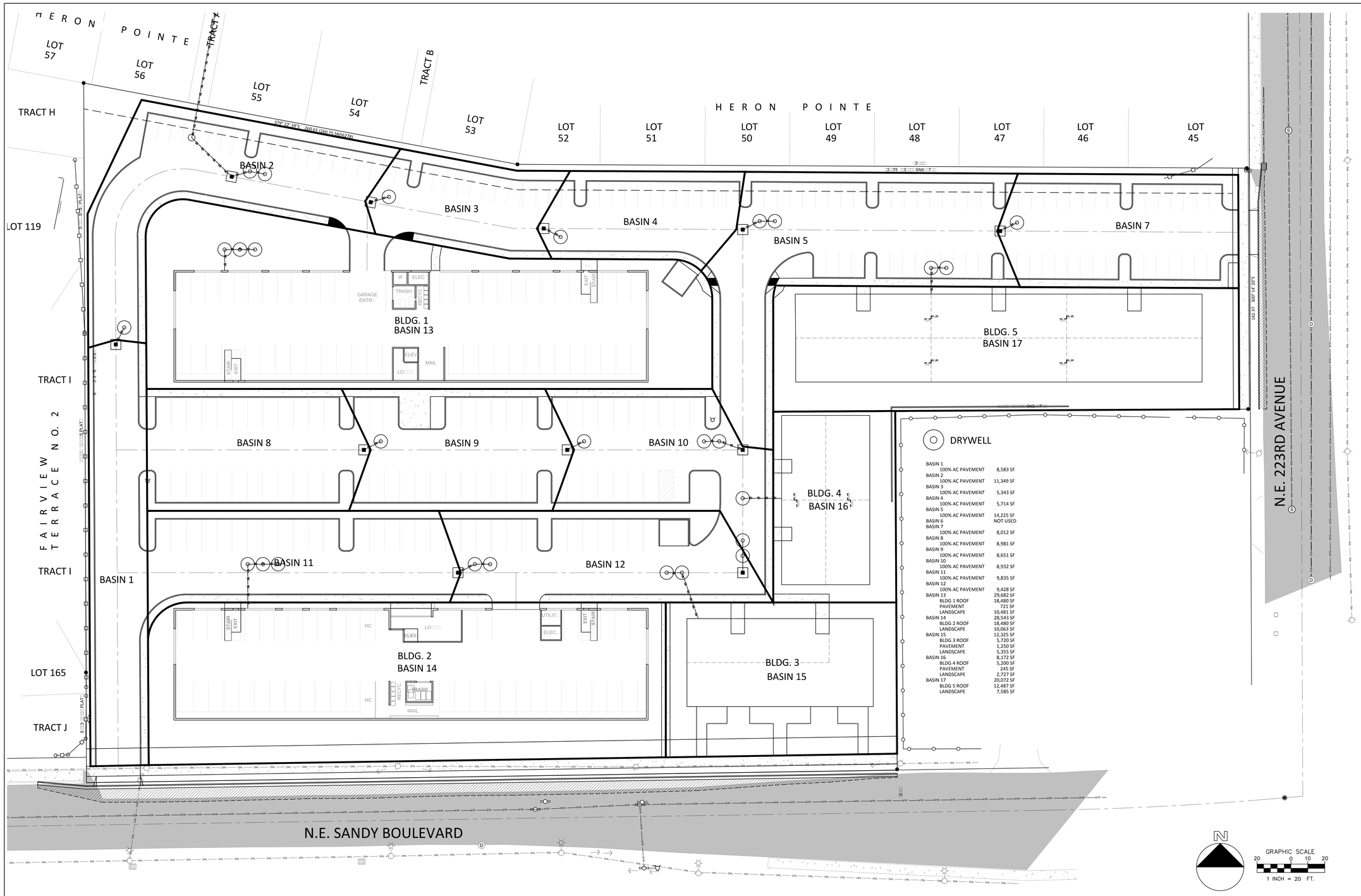
MAP NUMBER
41051C0216H

EFFECTIVE DATE
DECEMBER 18, 2009

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

EXHIBIT A-3



DRYWELL

BASIN 1	
100% AC PAVEMENT	8,583 SF
BASIN 2	
100% AC PAVEMENT	11,349 SF
BASIN 3	
100% AC PAVEMENT	5,343 SF
BASIN 4	
100% AC PAVEMENT	5,714 SF
BASIN 5	
100% AC PAVEMENT	14,225 SF
BASIN 6	NOT USED
BASIN 7	
100% AC PAVEMENT	8,012 SF
BASIN 8	
100% AC PAVEMENT	8,981 SF
BASIN 9	
100% AC PAVEMENT	8,651 SF
BASIN 10	
100% AC PAVEMENT	8,932 SF
BASIN 11	
100% AC PAVEMENT	9,835 SF
BASIN 12	
100% AC PAVEMENT	9,428 SF
BASIN 13	29,682 SF
BLDG 1 ROOF	18,480 SF
PAVEMENT	721 SF
LANDSCAPE	10,481 SF
BASIN 14	28,543 SF
BLDG 2 ROOF	18,480 SF
LANDSCAPE	10,063 SF
BASIN 15	12,325 SF
BLDG 3 ROOF	5,720 SF
PAVEMENT	1,250 SF
LANDSCAPE	5,355 SF
BASIN 16	8,172 SF
BLDG 4 ROOF	5,200 SF
PAVEMENT	245 SF
LANDSCAPE	2,727 SF
BASIN 17	20,072 SF
BLDG 5 ROOF	12,687 SF
LANDSCAPE	7,585 SF

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BMP DESIGN LLC
Civil Engineering & Land Surveying
7214 N. St. Johns Blvd. / 205 Jenniston
Portland, OR 97203 / Vancouver, WA 98664
www.bmpdesign.us

2/20/2018

REGISTERED PROFESSIONAL ENGINEER
49713
OREGON
BRIAN M. POPESCU
PRELIMINARY
EXPIRATION DATE 12/31/18

PRELIMINARY, SUBJECT TO REVIEWS AND REVISIONS, NOT FOR CONSTRUCTION

PROJECT NAME: FAIRVIEW APARTMENTS

BASIN PLAN

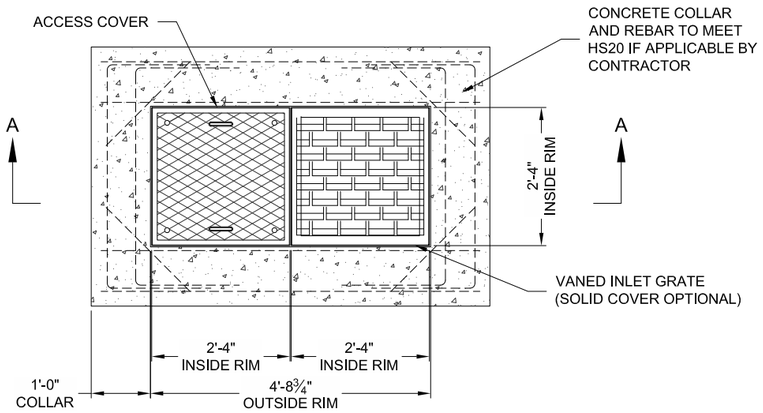
NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

REVISION/DATE	DESCRIPTION	DRAFT BY	DESIGN BY	CHECK BY

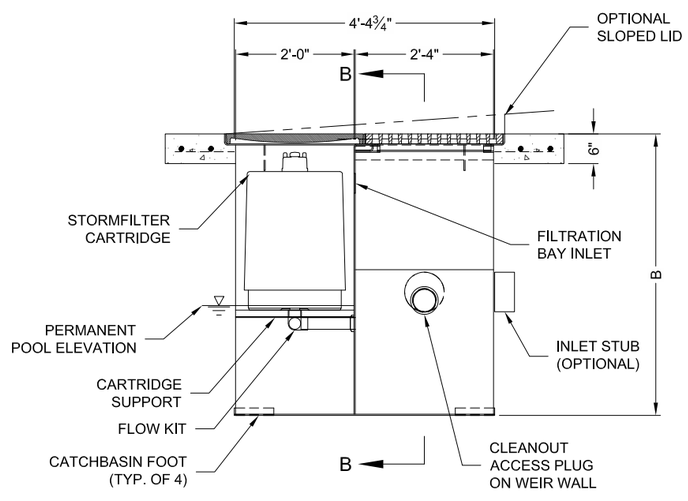
SHEET
C 9.0
15118

P:_PROJECTS\15118-FAIRVIEW-EUGENE\DWG\SHEETS\15118 090 STORMWATER PLAN.DWG

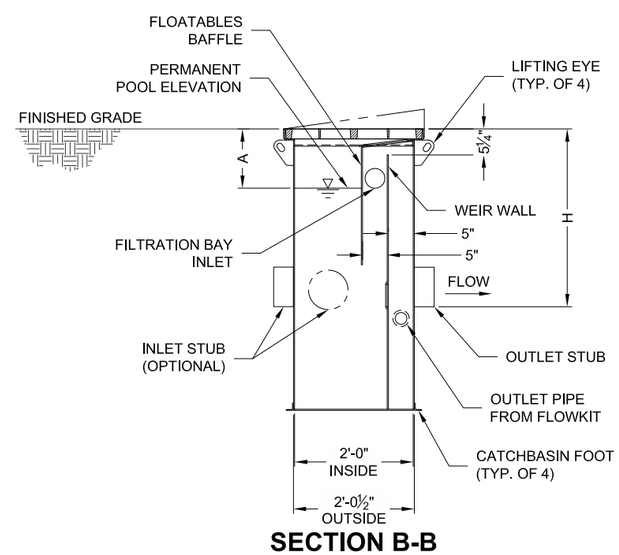
EXHIBIT A-3



PLAN VIEW



SECTION A-A



SECTION B-B

STORMFILTER STEEL CATCHBASIN DESIGN NOTES

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. 1 CARTRIDGE CATCHBASIN HAS A MAXIMUM OF ONE CARTRIDGE. SYSTEM IS SHOWN WITH A 27" CARTRIDGE, AND IS ALSO AVAILABLE WITH AN 18" CARTRIDGE. STORMFILTER CATCHBASIN CONFIGURATIONS ARE AVAILABLE WITH A DRY INLET BAY FOR VECTOR CONTROL.
PEAK HYDRAULIC CAPACITY PER TABLE BELOW. IF THE SITE CONDITIONS EXCEED PEAK HYDRAULIC CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION

CARTRIDGE HEIGHT	27"			18"			18" DEEP		
RECOMMENDED HYDRAULIC DROP (H)	3.05'			2.3'			3.3'		
SPECIFIC FLOW RATE (gpm/sf)	2 gpm/sf	1.67* gpm/sf	1 gpm/sf	2 gpm/sf	1.67* gpm/sf	1 gpm/sf	2 gpm/sf	1.67* gpm/sf	1 gpm/sf
CARTRIDGE FLOW RATE (gpm)	22.5	18.79	11.25	15	12.53	7.5	15	12.53	7.5
PEAK HYDRAULIC CAPACITY	1.0			1.0			1.8		
INLET PERMANENT POOL LEVEL (A)	1'-0"			1'-0"			2'-0"		
OVERALL STRUCTURE HEIGHT (B)	4'-9"			3'-9"			4'-9"		

* 1.67 gpm/sf SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STORMFILTER CATCHBASIN STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
3. STORMFILTER CATCHBASIN WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
4. INLET SHOULD NOT BE LOWER THAN OUTLET. INLET (IF APPLICABLE) AND OUTLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR.
5. MANUFACTURER TO APPLY A SURFACE BEAD WELD IN THE SHAPE OF THE LETTER "O" ABOVE THE OUTLET PIPE STUB ON THE EXTERIOR SURFACE OF THE STEEL SFCB.
6. STORMFILTER CATCHBASIN EQUIPPED WITH 4 INCH (APPROXIMATE) LONG STUBS FOR INLET (IF APPLICABLE) AND OUTLET PIPING. STANDARD OUTLET STUB IS 8 INCHES IN DIAMETER. MAXIMUM OUTLET STUB IS 15 INCHES IN DIAMETER. CONNECTION TO COLLECTION PIPING CAN BE MADE USING FLEXIBLE COUPLING BY CONTRACTOR.
7. STEEL STRUCTURE TO BE MANUFACTURED OF 1/4 INCH STEEL PLATE. CASTINGS SHALL MEET AASHTO M306 LOAD RATING. TO MEET HS20 LOAD RATING ON STRUCTURE, A CONCRETE COLLAR IS REQUIRED. WHEN REQUIRED, CONCRETE COLLAR WITH #4 REINFORCING BARS TO BE PROVIDED BY CONTRACTOR.
8. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 38 SECONDS.
9. SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (gpm) DIVIDED BY THE FILTER CONTACT SURFACE AREA (sq ft).

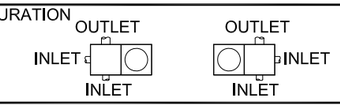
INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CATCHBASIN (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.

1-CARTRIDGE CATCHBASIN STORMFILTER DATA

STRUCTURE ID	XXX
WATER QUALITY FLOW RATE (cfs)	X.XX
PEAK FLOW RATE (<1 cfs)	X.XX
RETURN PERIOD OF PEAK FLOW (yrs)	XXX
CARTRIDGE HEIGHT (27", 18", 18" DEEP)	XX
CARTRIDGE FLOW RATE (gpm)	XX
MEDIA TYPE (PERLITE, ZPG, PSORB)	XXXXX
RIM ELEVATION	XXX.XX'

PIPE DATA:	I.E.	DIAMETER
INLET STUB	XXX.XX'	XX"
OUTLET STUB	XXX.XX'	XX"

CONFIGURATION



SLOPED LID	YES\NO
SOLID COVER	YES\NO
NOTES/SPECIAL REQUIREMENTS:	

The Stormwater Management StormFilter®
THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING: U.S. PATENTS: 5,322,629; 5,324,070; 5,707,527; 5,965,157; 6,027,636; 6,040,040; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CONTECH® ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-526-3999 513-645-7000 513-645-7993 FAX

1 CARTRIDGE CATCHBASIN STORMFILTER STANDARD DETAIL

I:\COMMON\CAD\TREATMENT\10 STORMFILTER\40 STANDARD DRAWINGS\SFCB\SFCB-S\DWG\SFCB1-DTL.DWG 7/8/2016 2:42 PM

Technical Appendices to Preliminary Storm Water Report

Pages 14-268

AVAILABLE UPON REQUEST

EXHIBIT A-4

REDMOND GEOTECHNICAL SERVICES

Geotechnical Investigation and Consultation Services

Proposed Fairview Apartments Site

Tax Lot No. 5300

NE Sandy Blvd and NE 223rd Avenue

Fairview (Multnomah County), Oregon

for

Mr. Eugene Labunsky

Project No. 1622.001.G
September 15, 2017

EXHIBIT A-4

REDMOND GEOTECHNICAL SERVICES

September 15, 2017

Mr. Eugene Labunsky
c/o BMP Design, LLC
12214 SE Mill Plain Blvd., Suite 203
Vancouver, Washington 98684

Dear Mr. Labunsky:

Re: Geotechnical Investigation and Consultation Services, Proposed Fairview Apartments Site, Tax Lot No. 5300, NE Sandy Blvd and NE 223rd Avenue, Fairview (Multnomah County), Oregon

Submitted herewith is our report entitled "Geotechnical Investigation and Consultation Services, Proposed Fairview Apartments Site, Tax Lot No. 5300, NE Sandy Blvd and NE 223rd Avenue, Fairview (Multnomah County), Oregon". The scope of our services was outlined in our formal proposal to Mr. Eugene Labunsky dated May 15, 2017. Written authorization of our services was provided by Mr. Eugene Labunsky on May 25, 2017.

During the course of our investigation, we have kept you and/or others advised of our schedule and preliminary findings. We appreciate the opportunity to assist you with this phase of the project. Should you have any questions regarding this report, please do not hesitate to call.

Sincerely,

Daniel M. Redmond, P.E., G.E.
President/Principal Engineer

REGISTERED PROFESSIONAL ENGINEER 12,309 OREGON July 15, 1983 DANIEL M. REDMOND

Exp. 12-31-18

Cc: Mr. Bogdan Popescu, P.E.
BMP Design, LLC

PO Box 20547 • Portland, Oregon 97294 • Fax 503/286-7176 • Phone 503/285-0598

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Figure No. 1 - Site Vicinity Map
Figure No. 2 - Site Exploration Plan
Figure No. 3 - Typical Fill Slope Detail
Figure No. 4 - Perimeter Footing/Retaining Wall Drain Detail

APPENDIX

Test Pit Logs and Laboratory Data

GEOTECHNICAL INVESTIGATION AND CONSULTATION SERVICES
PROPOSED FAIRVIEW APARTMENTS SITE
TAX LOT NO. 5300
NE SANDY BLVD AND NE 223rd AVENUE
FAIRVIEW (MULTNOMAH COUNTY), OREGON

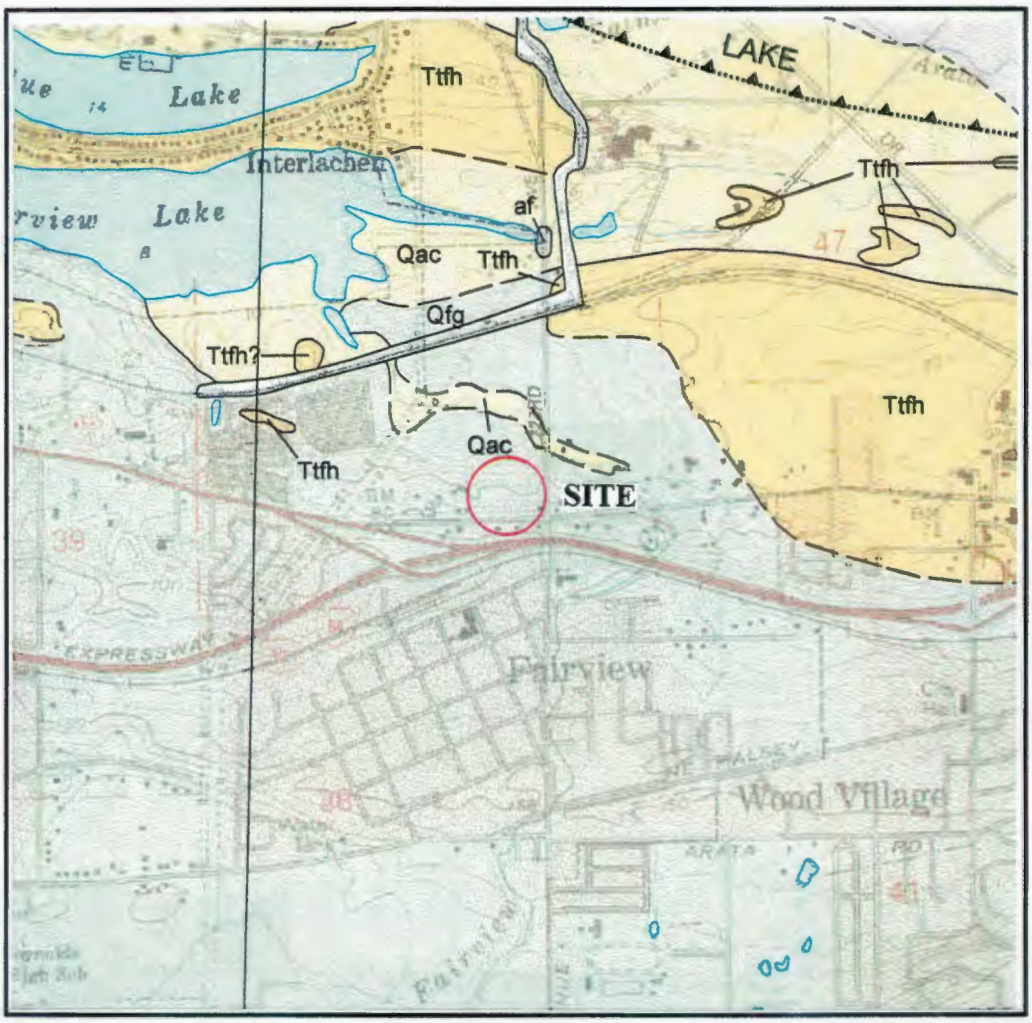
INTRODUCTION

Redmond Geotechnical Services, LLC is please to submit to you the results of our Geotechnical Investigation and Consultation Services at the site of the proposed new multi-family apartment development located to the west of NE 223rd Avenue and to the north of NE Sandy Blvd in Fairview (Multnomah County), Oregon. The general location of the subject site is shown on the Site Vicinity Map, Figure No. 1. The purpose of our geotechnical investigation and consultation services at this time was to explore the existing subsurface soils and/or groundwater conditions across the subject site and to evaluate any potential concerns with regard to development at the site as well as to develop and/or provide appropriate geotechnical design and construction recommendations for the proposed new multi-family apartment development project.

PROJECT DESCRIPTION

We understand that present plans are to develop the subject property into new multi-family apartment development. Based on a review of the proposed site development plan(s), we understand that the proposed new apartment development will consist of the construction of five (5) new multi-family apartment buildings. Reportedly, the new apartment structures are anticipated to be three- and/or four-story structures constructed with wood framing and a concrete slab-on-grade floor which will range in size from approximately 5,000 to 15,000 square feet. Support of the new apartment structures is anticipated to consist primarily of conventional shallow strip (continuous) footings although some individual (spread) column-type footings may also be required. Structural loading information, although unavailable at this time, is anticipated to be fairly typical and light for this type of wood-frame three-story apartment structure and is expected to result in maximum dead plus live continuous (strip) and individual (column) footing loads on the order of about 2.0 to 3.5 kips per lineal foot (klf) and 25 to 75 kips, respectively.

Earthwork and grading operations for the project are not available at this time. However, based on the existing sloping site conditions, we anticipate that some cuts and/or fills in the range of five (5) to ten (10) will likely be required for the project.



CAMAS QUADRANGLE
WASHINGTON—OREGON
7.5 MINUTE SERIES (TOPOGRAPHIC)
SW/4 CAMAS 15' QUADRANGLE

SCALE 1:24 000

1 ½ 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929
DEPTH CURVES AND SOUNDINGS IN FEET—COLUMBIA RIVER DATUM

SITE VICINITY AND GEOLOGIC MAP

Project No. 1622.001.G	**FAIRVIEW APARTMENTS SITE**	Figure No. 1

Other associated site improvements for the project will include construction of new paved parking and drive areas. Additionally, the project will include the construction of new underground utility services as well as possible new concrete curbs and sidewalks. Further, we understand that storm water from impervious (roofs) and/or paved site improvement areas of the project site will be collected for treatment and/or possible disposal within an on-site storm water management facility.

SCOPE OF WORK

The purpose of our geotechnical studies was to evaluate the overall subsurface soil and/or groundwater conditions underlying the subject site with regard to the proposed new multi-family apartment development and construction at the site and any associated impacts or concerns with respect to proposed new development at the site as well as provide appropriate geotechnical design and construction recommendations for the project. Specifically, our geotechnical investigation and consultation services included the following scope of work items:

1. Review of available and relevant geologic and/or geotechnical investigation reports for the subject site and/or area.

2. A detailed field reconnaissance and subsurface exploration program of the soil and ground water conditions underlying the site by means of ten (10) exploratory test pit excavations. The exploratory test pits were excavated to depths ranging from about five (5) to ten (10) feet beneath existing site grades at the approximate locations as shown on the Site Exploration Plan, Figure No. 2. Additionally, field infiltration testing was also performed within three (3) of the exploratory test pit excavations (TH-#5, TH-#6 and TH-#7) in general conformance with the EPA Falling Head and/or City of Fairview Public Works Standards.

3. Laboratory testing to evaluate and identify pertinent physical and engineering properties of the subsurface soils encountered relative to the planned site development and construction at the site. The laboratory testing program included tests to help evaluate the natural (field) moisture content and dry density, maximum dry density and optimum moisture content, gradational characteristics, Atterberg Limits and (remolded) direct shear strength tests as well as "R"-value tests.

4. A literature review and engineering evaluation and assessment of the regional seismicity to evaluate the potential ground motion hazard(s) at the subject site. The evaluation and assessment included a review of the regional earthquake history and sources such as potential seismic sources, maximum credible earthquakes, and reoccurrence intervals as well as a discussion of the possible ground response to the selected design earthquake(s), fault rupture, landsliding, liquefaction, and tsunami and seiche flooding.

5. Engineering analyses utilizing the field and laboratory data as a basis for furnishing recommendations for foundation support of the proposed new multi-family apartment structures. Recommendations include maximum design allowable contact bearing pressure(s), depth of footing embedment, estimates of foundation settlement, lateral soil resistance, and foundation subgrade preparation. Additionally, construction and/or permanent subsurface water drainage considerations have also been prepared. Further, our report includes recommendations regarding site preparation, placement and compaction of structural fill materials, suitability of the on-site soils for use as structural fill, criteria for import fill materials, and preparation of foundation, pavement and/or floor slab subgrades.

6. Flexible pavement design and construction recommendations for the proposed new paved parking and drive area improvements.

SITE CONDITIONS

Site Geology

The subject site and/or area is underlain by alluvial deposits (Qal) of the Columbia River floodpalin of Holocene and Pleistocene age. Characteristics include poorly to moderately indurated silt, sand, and conglomerate that comprise older alluvial terrace/fan deposits along major streams. In the Columbia River basin below Elevation 300 feet includes late Pleistocene poorly indurated glaciofluvial clays and silts deposited by catastrophic Missoula floods. Unit ranges from 0 to 30 meters thick.

Surface Conditions

The subject proposed new multi-family apartment development property consists of one (1) irregular shaped tax lot (TL 5300) which encompass a plan area of approximately 5.0 acres. The proposed multi-family apartment development property is roughly located to the west of NE 223rd Avenue and to the north of NE Sandy Blvd. The subject proposed multi-family apartment development site (TL 5300) is presently unimproved and void of any existing structures and/or site improvements. Surface vegetation across the site generally consists of a moderate to heavy growth of grass, weeds and brush as well as numerous small to medium sized trees.

Topographically, the site is characterized as gently to moderately sloping terrain (i.e., 10 to 20 percent) descending downward towards the north with overall topographic relief estimated at about fifty (50) feet and is estimated to lie between about Elevation 31 feet and Elevation 81 feet.

Subsurface Soil Conditions

Our understanding of the subsurface soil conditions underlying the site was developed by means of ten (10) exploratory test pits excavated to depths ranging from about five (5) to ten (10) feet beneath existing site grades on June 9, 2017 with portable excavation equipment.

The location of the exploratory test pits were located in the field by marking off distances from existing and/or known site features and are shown in relation to the existing site improvements and/or features on the Site Exploration Plan, Figure No. 2. Detailed logs of the test pit explorations, presenting conditions encountered at each location explored, are presented in the Appendix, Figure No's. A-4 through A-8 .

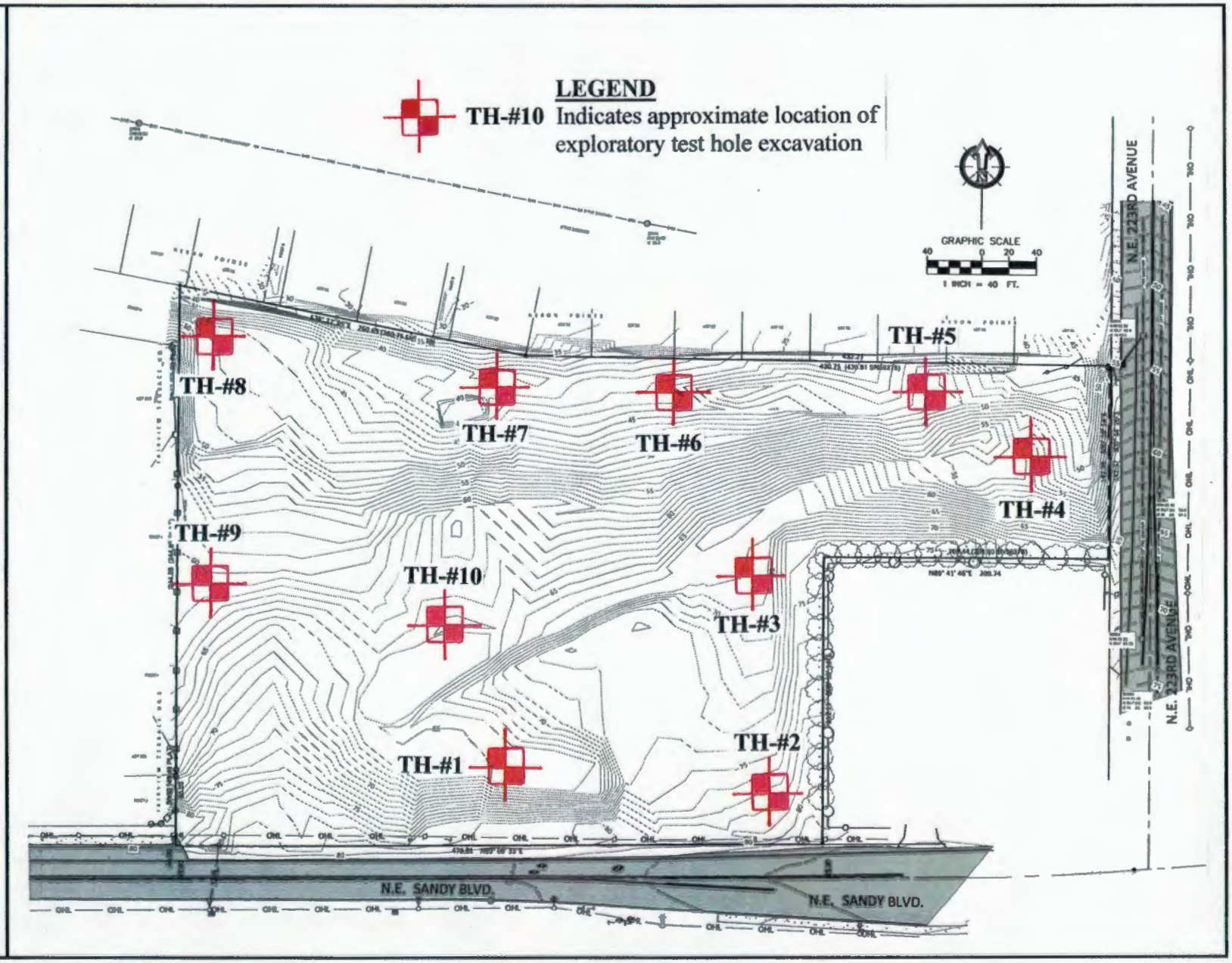
The exploratory test pit excavations were observed by staff from Redmond Geotechnical Services, LLC who logged each of the test pit explorations and obtained representative samples of the subsurface soils encountered across the site. Additionally, the elevation of the exploratory test pit excavations were referenced from the proposed Site Development Plan prepared by Project Delivery Group. and should be considered as approximate. All subsurface soils encountered at the site and/or within the exploratory test pit excavations were logged and classified in general conformance with the Unified Soil Classification System (USCS) which is outlined on Figure No. A-3.

The test pit explorations revealed that the subject site is underlain by an upper unit of fill soils and at depth by native alluvial soil deposits. Specifically, the test pit excavations encountered approximately one (1.0) to ten (10.0) feet of fill soils composed of medium brown and gray-brown, very moist to wet, poorly to moderately compacted, clayey, silty sand and sandy silt with gravel, organics and construction debris including concrete rubble, brick, tile and plywood. The existing fill materials, are best characterized by relatively low to moderate strength and moderate compressibility. The fill soils were inturn underlain by native soil deposits composed of an upper layer of old topsoil remnants consisting of comprised of an approximate 12-inch layer of dark brown, very moist to wet, soft to medium stiff, clayey, sandy silt to silty sand with traces of organics. These old topsoil remnants were inturn underlain by medium to olive-brown, very moist, medium stiff to medium dense, clayey, sandy silt to silty sand to a depth of about 5.0 to 9.0 feet beneath the existing site and/or surface grades. This layer of clayey, sandy silt to silty sand subgrade soil is best characterized by relatively low to moderate strength and moderate compressibility. All soils were found to be underlain by light to orangish- brown, very moist, medium dense to dense, slightly clayey, silty, sandy gravel with cobbles to the maximum depth explored of about ten (10) feet beneath the existing site and/or surface grades. These slightly clayey, silty, sandy gravel with cobbles subgrade soils are best characterized by relatively moderate to high strength and low compressibility.

Groundwater

Groundwater was generally not encountered within any of the exploratory test pit explorations (TH-#1 through TH-#10) at the time of excavation to depths of at least ten (10) feet beneath existing surface grades. However, some minor seepage was observed within two (2) or more of the test hole excavations. Additionally, ponding of surface water was also present at various locations across the site at the time of our field work. In this regard, groundwater elevations at the site may fluctuate seasonally in accordance with rainfall conditions as well as changes in site utilization. However, we are generally of the opinion that the natural static water levels and/or surface water ponding observed during our recent field exploration work generally reflect a seasonal groundwater level(s) at and/or beneath the site of at least ten (10) feet or more.

EXHIBIT A-4



SITE EXPLORATION PLAN

FAIRVIEW APARTMENTS SITE

Project No. 1622.001.G

Figure No. 2

INFILTRATION TESTING

Three (3) field infiltration tests were performed at the site on June 9, 2017. The infiltration tests were performed in test pit TH-#5, TH-#6 and TH-#7 at depths of about seven (7.0) to nine (9.0) feet beneath existing site grades. The subgrade soils in TH-#5, TH-#6 and TH-#7 consisted of slightly clayey, silty sand to sandy gravel.

The field infiltration testing was performed in general conformance with the EPA Falling Head Method and/or City of Fairview Department of Public Works. Specifically, water was discharged into the test hole excavation and allowed to penetrate the exposed subgrade soils at depth within the test hole excavation. The water level was adjusted over a two (2) hour period and allowed to achieve a saturated subgrade soil condition consistent with the bottom twelve (12) inches of the surrounding test pit excavation. Following the required saturation period, water was again added into the test hole and the time and/or rate at which the water level dropped was monitored and recorded. The water level drop was recorded until a consistent infiltration rate was observed and/or repeated.

Based on the results of the field infiltration testing, we have found that the underlying slightly clayey, silty sand to sandy gravel subgrade soil deposits possess an ultimate infiltration rate of about 16 to 20 inches per hour (in/hr). As such, the infiltration of storm water at the site will provide relatively good infiltration for the disposal of storm water.

LABORATORY TESTING

Representative samples of the on-site subsurface soils were collected at selected depths and intervals from various test pit excavations and returned to our laboratory for further examination and testing and/or to aid in the classification of the subsurface soils as well as to help evaluate and identify their engineering strength and compressibility characteristics. The laboratory testing consisted of visual and textural sample inspection, moisture content and dry density determinations, maximum dry density and optimum moisture content, gradation analyses and Atterberg Limits as well as (remolded) direct shear strength and "R"-value tests. Results of the various laboratory tests are presented in the Appendix, Figure No's. A-9 through A-13.

SEISMICITY AND EARTHQUAKE SOURCES

The seismicity of the southwest Washington and northwest Oregon area, and hence the potential for ground shaking, is controlled by three separate fault mechanisms. These include the Cascadia Subduction Zone (CSZ), the mid-depth intraplate zone, and the relatively shallow crustal zone. Descriptions of these potential earthquake sources are presented below.

The CSZ is located offshore and extends from northern California to British Columbia. Within this zone, the oceanic Juan de Fuca Plate is being subducted beneath the continental North American Plate to the east. The interface between these two plates is located at a depth of approximately 15 to 20 kilometers (km). The seismicity of the CSZ is subject to several uncertainties, including the maximum earthquake magnitude and the recurrence intervals associated with various magnitude earthquakes. Anecdotal evidence of previous CSZ earthquakes has been observed within coastal marshes along the Washington and Oregon coastlines. Sequences of interlayered peat and sands have been interpreted to be the result of large Subduction zone earthquakes occurring at intervals on the order of 300 to 500 years, with the most recent event taking place approximately 300 years ago. A study by Geomatrix (1995) and/or USGS (2008) suggests that the maximum earthquake associated with the CSZ is moment magnitude (Mw) 8 to 9. This is based on an empirical expression relating moment magnitude to the area of fault rupture derived from earthquakes that have occurred within Subduction zones in other parts of the world. An Mw 9 earthquake would involve a rupture of the entire CSZ. As discussed by Geomatrix (1995) this has not occurred in other subduction zones that have exhibited much higher levels of historical seismicity than the CSZ. However, the 2008 USGS report has assigned a probability of 0.67 for a Mw 9 earthquake and a probability of 0.33 for a Mw 8.3 earthquake. For the purpose of this study an earthquake of Mw 9.0 was assumed to occur within the CSZ.

The intraplate zone encompasses the portion of the subducting Juan de Fuca Plate located at a depth of approximately 30 to 50 km below western Washington and western Oregon. Very low levels of seismicity have been observed within the intraplate zone in western Oregon and western Washington. However, much higher levels of seismicity within this zone have been recorded in Washington and California. Several reasons for this seismic quiescence were suggested in the Geomatrix (1995) study and include changes in the direction of Subduction between Oregon, Washington, and British Columbia as well as the effects of volcanic activity along the Cascade Range. Historical activity associated with the intraplate zone includes the 1949 Olympia magnitude 7.1 and the 1965 Puget Sound magnitude 6.5 earthquakes. Based on the data presented within the Geomatrix (1995) report, an earthquake of magnitude 7.25 has been chosen to represent the seismic potential of the intraplate zone.

The third source of seismicity that can result in ground shaking within the Vancouver and southwest Washington area is near-surface crustal earthquakes occurring within the North American Plate. The historical seismicity of crustal earthquakes in this area is higher than the seismicity associated with the CSZ and the intraplate zone. The 1993 Scotts Mills (magnitude 5.6) and Klamath Falls (magnitude 6.0), Oregon earthquakes were crustal earthquakes.

Liquefaction

Seismic induced soil liquefaction is a phenomenon in which lose, granular soils and some silty soils, located below the water table, develop high pore water pressures and lose strength due to ground vibrations induced by earthquakes. Soil liquefaction can result in lateral flow of material into river channels, ground settlements and increased lateral and uplift pressures on underground structures. Buildings supported on soils that have liquefied often settle and tilt and may displace laterally. Soils located above the ground water table cannot liquefy, but granular soils located above the water table may settle during the earthquake shaking.

Our review of the subsurface soil test pit logs from our exploratory field explorations (TH-#1 through TH-#10) and laboratory test results indicate that the site is generally underlain at depth by native soil deposits comprised of medium stiff to medium dense, clayey, sandy silt to sandy silt soils and/or medium dense to dense, slightly clayey, silty sand to sandy gravel deposits to depths of at least 10.0 feet beneath existing site grades. Additionally, groundwater was generally not encountered within any of the exploratory test pit excavations (TH-#1 through TH-#10) at the site during our field exploration work to depths of at least 10.0 feet. As such, due to the medium stiff and cohesive nature of the clayey, sandy silt to silty sand and/or medium dense to dense, slightly clayey, silty sand to sandy gravel subgrade soils beneath the site, it is our opinion that the native subgrade soil deposits located beneath the subject site have a low potential for liquefaction during the design earthquake motions previously described.

Landslides

No ancient and/or active landslides were observed or are known to be present on the subject site. Additionally, although the site is generally characterized as gently to moderately sloping terrain, a review of the DOGAMI landslide inventory mapping shows no existing and/or active landslides in the area of the subject site. As such, development of the subject site into the planned multi-family apartments site does not appear to present a potential geologic and/or landslide hazard provided that the site grading and development activities conform with the recommendations presented within this report.

Surface Rupture

Although the site is generally located within a region of the country known for seismic activity, no known faults exist on and/or immediately adjacent to the subject site. As such, the risk of surface rupture due to faulting is considered negligible.

Tsunami and Seiche

A tsunami, or seismic sea wave, is produced when a major fault under the ocean floor moves vertically and shifts the water column above it. A seiche is a periodic oscillation of a body of water resulting in changing water levels, sometimes caused by an earthquake. Tsunami and seiche are not considered a potential hazard at this site because the site is not near to the coast and/or there are no adjacent significant bodies of water.

Flooding and Erosion

Stream flooding is a potential hazard that should be considered in lowland areas of Multnomah County and Fairview. The FEMA (Federal Emergency Management Agency) flood maps should be reviewed as part of the design for the proposed new residential structures and site improvements. Elevations of structures on the site should be designed based upon consultants reports, FEMA (Federal Emergency Management Agency), and Multnomah County requirements for the 100-year flood levels of any nearby creeks, streams and/or drainage basins.

CONCLUSIONS AND RECOMMENDATIONS

General

Based on the results of our field explorations, laboratory testing, and engineering analyses, it is our opinion that the site is generally suitable for the proposed new Fairview Apartments development and its associated site improvements provided that the recommendations contained within this report are properly incorporated into the design and construction of the project.

The primary features of concern at the site are 1) the presence of the existing fill materials across the site, and 2) the gently to moderately sloping site grades.

With regard to the presence of the existing fill materials across the site, the fill materials appear to have been present at the site for several years. However, we are not aware of any records and/or documents describing the proper placement and compaction of the existing fill materials. Additionally, the existing fill materials were found to contain some organics as well as various construction debris including concrete rubble, brick, tile and plywood. Further, while compaction testing of the existing fill materials was not possible during our field work due to the overall variability and composition of the existing fill materials, our professional opinion is that portions of the existing fill materials are poorly compacted. In this regard, we are generally of the opinion that the existing fill materials should not be used in their present condition(s) for direct support of the planned new multi-family apartment structures and/or associated site improvements due to the apparent risk associated with post-construction settlements. As such, we are generally of the opinion that the existing fill materials should be removed in their entirety down to an approved native subgrade soil following which they may placed and re-compacted to the requirements of structural fill provided they do not contain significant amounts of organics and/or deleterious materials.

In regards to the gently to moderately sloping site grades, we are generally of the opinion that all site grading associated with the planned development of the site will likely require the use of benching and keying of structural fills.

The following sections of this report provide specific recommendations regarding subgrade preparation and grading as well as foundation and floor slab design and construction for the new Fairview Apartments development project.

Site Preparation

As an initial step in site preparation, we recommend that the proposed new multi-family apartment site as well as its associated structural and/or site improvement area(s) be stripped and cleared of all existing improvements, any existing unsuitable and/or undocumented fill materials, surface debris, existing vegetation, topsoil materials, and/or any other deleterious materials present at the time of construction. In general, we envision that the site stripping to remove existing surface vegetation and topsoil materials will generally be about 6 to 12 inches. However, areas requiring deeper removals, such as existing undocumented and/or unsuitable fill materials as well as tree stumps, will be encountered and should be evaluated at the time of construction by the Geotechnical Engineer. The stripped and cleared materials should be properly disposed of as they are generally considered unsuitable for use/reuse as fill materials.

Following the completion of the site stripping and clearing work and prior to the placement of any required structural fill materials and/or structural improvements, the exposed subgrade soils within the planned structural improvement area(s) should be inspected and approved by the Geotechnical Engineer and possibly proof-rolled with a half and/or fully loaded dump truck. Areas found to be soft or otherwise unsuitable should be over-excavated and removed or scarified and recompacted as structural fill. During wet and/or inclement weather conditions, proof rolling and/or scarification and recompaction as noted above may not be appropriate.

The on-site native clayey, sandy silt and/or silty sand as well as the sandy gravel subgrade soil materials are generally considered suitable for use/reuse as structural fill materials provided that they are free of organic materials, debris, and rock fragments in excess of about 6 inches in dimension. However, if site grading is performed during wet or inclement weather conditions, the use of some of the on-site native soil materials which contain significant silt and clay sized particles will be difficult at best. In this regard, during wet or inclement weather conditions, we recommend that an import structural fill material be utilized which should consist of a free-draining (clean) granular fill (sand & gravel) containing no more than about 5 percent fines. Representative samples of the materials which are to be used as structural fill materials should be submitted to the Geotechnical Engineer and/or laboratory for approval and determination of the maximum dry density and optimum moisture content for compaction.

In general, all site earthwork and grading activities should be scheduled for the drier summer months (June through September) if possible. However, if wet weather site preparation and grading is required, it is generally recommended that the stripping of topsoil materials be accomplished with a tracked excavator utilizing a large smooth-toothed bucket working from areas yet to be excavated. Additionally, the loading of strippings into trucks and/or protection of moisture sensitive subgrade soils will also be required during wet weather grading and construction. In this regard, we recommend that areas in which construction equipment will be traveling be protected by covering the exposed subgrade soils with a woven geotextile fabric such as Mirafi FW404 followed by at least 12 inches or more of crushed aggregate base rock. Further, the geotextile fabric should have a minimum Mullen burst strength of at least 250 pounds per square inch for puncture resistance and an apparent opening size (AOS) between the U.S. Standard No. 70 and No. 100 sieves.

All structural fill materials placed within the new building and/or pavement areas should be moistened or dried as necessary to near (within 3 percent) optimum moisture conditions and compacted by mechanical means to a minimum of 92 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Structural fill materials should be placed in lifts (layers) such that when compacted do not exceed about 8 inches. Additionally, all fill materials placed within five (5) lineal feet of the perimeter (limits) of the proposed new multi-family apartment structure(s0 and/or pavements should be considered structural fill. Further, due to the gently to moderately sloping site grades, we anticipate that benching and keying of structural fills will be required. A typical fill slope detail is presented on Figure No. 3.

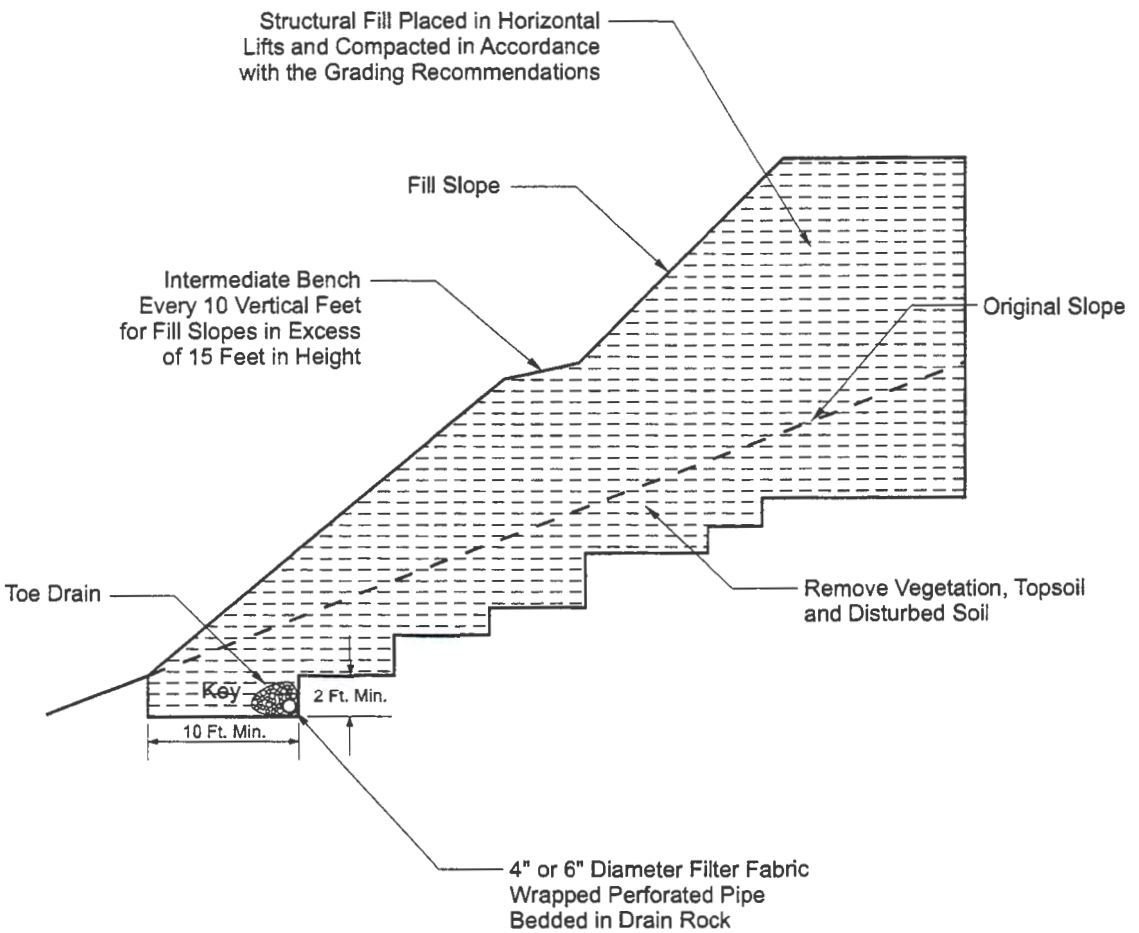
Foundation Support

Based on the results of our investigation, it is our opinion that the site of the proposed new multi-family apartment development is generally suitable for support of the three- and/or four-story wood-frame structures provided that the following foundation design recommendations are followed. However, as previously noted, the site contains existing fill materials which are believed to be undocumented. Additionally, the existing fill materials contain various amounts of organics as well as construction debris including concrete rubble, bricks, tile and plywood. Further, portions of the existing fill materials are considered to be poorly compacted. In this regard, it is our professional opinion that the existing fill materials should not be used in their present condition(s) for direct support of the planned new apartment structures due to the risk associated with post construction settlements.

The following sections of this report present specific foundation design and construction recommendations for the planned new multi-family apartment structures.

Shallow Foundations

In general, conventional shallow continuous (strip) footings and individual (spread) column footings may be supported by approved native (untreated) subgrade soils based on an allowable contact bearing pressure of about 2,000 pounds per square foot (psf).



TYPICAL FILL SLOPE DETAIL

Project No. 1622.001.G	FAIRVIEW APARTMENTS SITE	Figure No. 3

However, where conventional shallow foundations are supported by at least 12 inches or more of properly placed and compacted structural fill materials, an allowable contact bearing pressure of up to 2,500 psf may be used for design. These recommended allowable contact bearing pressures are intended for dead loads and sustained live loads and may be increased by one-third for the total of all loads including short-term wind or seismic loads. In general, continuous strip footings should have a minimum width of at least 16 inches and be embedded at least 18 inches below the lowest adjacent finish grade (includes frost protection). Individual column footings (where required) should be embedded at least 18 inches below grade and have a minimum width of at least 24 inches. Additionally, if foundation excavation and construction work is planned to be performed during wet and/or inclement weather conditions, we recommend that a 3- to 4-inch layer of compacted crushed rock be used to help protect the exposed foundation bearing surfaces until the placement of concrete.

Total and differential settlements of foundations constructed as recommended above and supported by approved native subgrade soils or by properly compacted structural fill materials are expected to be well within the tolerable limits for this type of wood-frame structure and should generally be less than about 1-inch and 1/2-inch, respectively.

Allowable lateral frictional resistance between the base of the footing element and the supporting subgrade bearing soil can be expressed as the applied vertical load multiplied by a coefficient of friction of 0.30 and 0.45 for native subgrade soils and/or import gravel fill materials, respectively. In addition, lateral loads may be resisted by passive earth pressures on footings poured "neat" against in-situ (native) subgrade soils or properly backfilled with structural fill materials based on an equivalent fluid density of 250 pounds per cubic foot (pcf). This recommended value includes a factor of safety of approximately 1.5 which is appropriate due to the amount of movement required to develop full passive resistance.

Floor Slab Support

In order to provide uniform subgrade reaction beneath concrete slab-on-grade floors, we recommend that the floor slab area be underlain by a minimum of 6 inches of free-draining (less than 5 percent passing the No. 200 sieve), well-graded, crushed rock. The crushed rock should help provide a capillary break to prevent migration of moisture through the slab. However, additional moisture protection can be provided by using a 10-mil polyolefin geo-membrane sheet such as StegoWrap.

The base course materials should be compacted to at least 95 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Where floor slab subgrade materials are undisturbed, firm and stable and where the underslab aggregate base rock section has been prepared and compacted as recommended above, we recommend that a modulus of subgrade reaction of 150 pci be used for design.

Retaining/Below Grade Walls

Retaining and/or below grade walls should be designed to resist lateral earth pressures imposed by native soils or granular backfill materials as well as any adjacent surcharge loads. For walls which are unrestrained at the top and free to rotate about their base, we recommend that active earth pressures be computed on the basis of the following equivalent fluid densities:

Non-Restrained Retaining Wall Pressure Design Recommendations

Slope Backfill (Horizontal/Vertical)	Equivalent Fluid Density/Sand (pcf)	Equivalent Fluid Density/Gravel (pcf)
Level	35	30
3H:1V	60	50
2H:1V	90	80

For walls which are fully restrained at the top and prevented from rotation about their base, we recommend that at-rest earth pressures be computed on the basis of the following equivalent fluid densities:

Restrained Retaining Wall Pressure Design Recommendations

Slope Backfill (Horizontal/Vertical)	Equivalent Fluid Density/Sand (pcf)	Equivalent Fluid Density/Gravel (pcf)
Level	45	35
3H:1V	65	60
2H:1V	95	90

The above recommended values assume that the walls will be adequately drained to prevent the buildup of hydrostatic pressures. Where wall drainage will not be present and/or if adjacent surcharge loading is present, the above recommended values will be significantly higher.
Backfill materials behind walls should be compacted to 90 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. Special care should be taken to avoid over-compaction near the walls which could result in higher lateral earth pressures than those indicated herein. In areas within three (3) to five (5) feet behind walls, we recommend the use of hand-operated compaction equipment.

Pavements

Flexible pavement design for the project was determined on the basis of projected (anticipated) traffic volume and loading conditions relative to laboratory subgrade soil strength characteristics. Based on a laboratory subgrade "R"-value of 34 (Resilient Modulus = 7,459 psi) and utilizing the American Association of State Highway and Transportation Official (AASHTO) Design of Flexible Pavement Structures manual dated 1993, we have developed the following pavement section(s) for the project:

	Asphaltic Concrete Thickness (inches)	Crushed Base Rock Thickness (inches)
Automobile Parking Areas	3.0	8.0
Automobile Drive Areas	3.5	9.0

Note: Where heavy vehicle traffic is anticipated such as those required for fire and/or garbage trucks, we recommend that the automobile drive area pavement section be increased to 4.0 inches of asphaltic concrete over 12.0 inches of crushed aggregate base rock. Additionally, for wet weather construction, we recommend a minimum crushed aggregate base rock section in all areas of at least 12.0 inches. Further, the above recommended flexible pavement section(s) assumes a design life of about 20 years.

Pavement Subgrade, Base Course & Asphaltic Concrete Paving Materials

The above recommended flexible pavement section(s) were based on the design assumptions listed herein and on the assumption that construction of the new private pavement section(s) will be completed during an extended period of reasonably dry weather. All thicknesses given are intended to be the minimum acceptable. Increased base rock sections and the use of a geotextile fabric may be required during wet and/or inclement weather conditions and/or in order to adequately support construction traffic and protect the subgrade during construction. Additionally, the above recommended pavement section(s) assume that the subgrade will be prepared as recommended herein, that the exposed subgrade soils will be properly protected from rain and construction traffic, and that the subgrade is firm and unyielding at the time of paving. Further, it assumes that the subgrade is graded to prevent the ponding of water which may tend to accumulate in the base course.

Pavement base course materials should consist of well-graded 1-1/2 inch and/or 3/4-inch minus crushed aggregate base rock having less than 5 percent fine materials passing the No. 200 sieve. The base course and asphaltic concrete paving materials should conform to the requirements set forth in the latest edition of the Oregon Department of Transportation, Standard Specifications for Highway Construction. The base course materials should be compacted to at least 95 percent of the maximum dry density as determined by the ASTM D-1557 (AASHTO T-180) test procedures. The asphaltic concrete paving materials should be compacted to at least 92 percent of the theoretical maximum density as determined by the ASTM D-2041 (Rice Gravity) test method.

Wet Weather Grading and Soft Spot Mitigation

Construction of the proposed new private site improvements is generally recommended during dry weather. However, during wet weather grading and construction, excavation to subgrade can proceed during periods of light to moderate rainfall provided that the subgrade remains covered with aggregate. A total aggregate thickness of 8-inches may be necessary to protect the subgrade soils from heavy construction traffic.

Construction traffic should not be allowed directly on the exposed subgrade but only atop a sufficient compacted base rock thickness to help mitigate subgrade pumping. If the subgrade becomes wet and pumps, no construction traffic shall be allowed on the road alignment. Positive site drainage away from the street shall be maintained if site paving will not occur before the on-set of the wet season.

Depending on the timing for the project, any soft subgrade found during proof-rolling or by visual observations can either be removed and replaced with properly dried and compacted fill soils or removed and replaced with compacted crushed aggregate. However, and where approved by the Geotechnical Engineer, the soft area may be covered with a bi-axial geogrid and covered with compacted crushed aggregate.

Soil Shrink-Swell and Frost Heave

The results of the laboratory "R"-value testing indicate that the native subgrade soils possess a low expansion potential. As such, the exposed subgrade soils should not be allowed to completely dry and should be moistened to near optimum moisture content (plus or minus 3 percent) at the time of the placement of the crushed aggregate base rock materials. Additionally, exposure of the subgrade soils to freezing weather may result in frost heave and softening of the subgrade. As such, all subgrade soils exposed to freezing weather should be evaluated and approved by the Geotechnical Engineer prior to the placement of the crushed aggregate base rock materials.

Excavation/Slopes

Temporary excavations of up to about four (4) feet in depth may be constructed with near vertical inclinations. Temporary excavations greater than about four (4) feet but less than eight (8) feet should be excavated with inclinations of at least 1 to 1 (horizontal to vertical) or properly braced/shored. Where excavations are planned to exceed about eight (8) feet, this office should be consulted.

All shoring systems and/or temporary excavation bracing for the project should be the responsibility of the excavation contractor. Permanent slopes should be constructed no steeper than about 2H to 1V unless approved by the Geotechnical Engineer.

Depending on the time of year in which trench excavations occur, trench dewatering may be required in order to maintain dry working conditions if the invert elevations of the proposed utilities are located at and/or below the groundwater level. If groundwater is encountered during utility excavation work, we recommend placing trench stabilization materials along the base of the excavation.

Trench stabilization materials should consist of 1-foot of well-graded gravel, crushed gravel, or crushed rock with a maximum particle size of 4 inches and less than 5 percent fines passing the No. 200 sieve. The material should be free of organic matter and other deleterious material and placed in a single lift and compacted until well keyed.

Surface Drainage/Groundwater

We recommend that positive measures be taken to properly finish grade the site so that drainage waters from the apartment structures and landscaping areas as well as adjacent properties or buildings are directed away from the new multi-family apartment structures foundations and/or floor slabs. All roof drainage should be directed into conduits that carry runoff water away from the apartment structures to a suitable outfall. Roof downspouts should not be connected to foundation drains. A minimum ground slope of about 2 percent is generally recommended in unpaved areas around the proposed new apartment structures.

Groundwater was generally not encountered at the site in any of the exploratory test pits (TH-#1 through TH-#10) at the time of excavation to depths of at least 10.0 feet beneath existing site grades. However, seepage was observed within two (2) or more of the test hole excavations at the time of our field work. Additionally,, surface water ponding was also observed at the site during our field exploration work. In this regard, groundwater elevations in the area and/or across the subject property may fluctuate seasonally and may temporarily pond/perch near the ground surface during periods of prolonged rainfall.

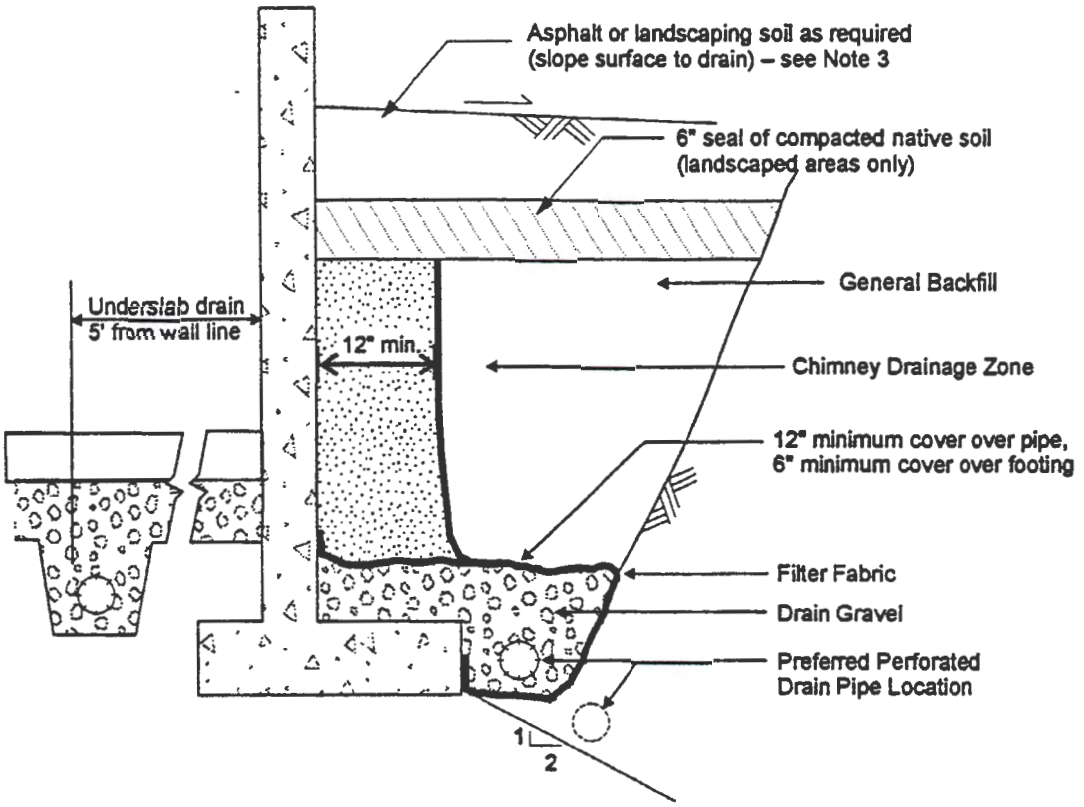
As such, based on our current understand that site grading required to bring the subject site and/or building pad grade to finish design grade(s), we are of the opinion that an underslab drainage system is likely required for the proposed apartment structures. However, a perimeter foundation drain is recommended for any perimeter footings and/or below grade retaining walls. A typical recommended perimeter footing/retaining wall drain detail is shown on Figure No. 4.

Design Infiltration Rates

In general, infiltration into the gravel subgrade soils was found to be good. Based on the results of our field infiltration testing, we recommend using the following infiltration rates to design a storm water infiltration and/or disposal system for the project:

Subgrade Soil Type	Recommended Infiltration Rate
silty SAND to sandy gravel (SM/GM)	8.0 to 10.0 inches per hour (in/hr)

Note: A safety factor of two (2) was used to calculate the above recommended design infiltration rate. Additionally, given the gradational variability of the subgrade soils beneath the site, it is generally recommended that field testing be performed during and/or following construction of the on-site storm water infiltration system in order to confirm that the above recommended design infiltration rates are appropriate.



SCHEMATIC - NOT TO SCALE

NOTES:

1. Filter Fabric to be non-woven geotextile (Amoco 4545, Mirafi 140N, or equivalent)
2. Lay perforated drain pipe on minimum 0.5% gradient, widening excavation as required. Maintain pipe above 2:1 slope, as shown.
3. All-granular backfill is recommended for support of slabs, pavements, etc. (see text for structural fill).
4. Drain gravel to be clean, washed ¾" to 1½" gravel.
5. General backfill to be on-site gravels, or ¾"-0 or 1½"-0 crushed rock compacted to 92% Modified Proctor (AASHTO T-180).
6. Chimney drainage zone to be 12" wide (minimum) zone of clean washed, medium to coarse sand or drain gravel if protected with filter fabric. Alternatively, prefabricated drainage structures (Miradrain 6000 or similar) may be used.

PERIMETER FOOTING/RETAINING WALL DRAIN DETAIL

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Seismic Design Considerations

Structures at the site should be designed to resist earthquake loading in accordance with the methodology described in the latest edition (2014) of the State of Oregon Structural Specialty Code (OSSC) and/or Amendments to the 2015 International Building Code (IBC). The maximum considered earthquake ground motion for short period and 1.0 period spectral response may be determined from the Oregon Structural Specialty Code and/or from the National Earthquake Hazard Reduction Program (NEHRP) "Recommended Provisions for Seismic Regulations for New Buildings and Other Structures" published by the Building Seismic Safety Council. We recommend Site Class "D" be used for design. Using this information, the structural engineer can select the appropriate site coefficient values (F_a and F_v) from the 2015 IBC to determine the maximum considered earthquake spectral response acceleration for the project. However, we have assumed the following response spectrum for the project:

Table 1. Recommended Seismic Design Parameters

Site Class	S_S	S_1	F_a	F_v	S_{MS}	S_{M1}	S_{DS}	S_{D1}
D	0.954	0.391	1.118	1.618	1.067	0.633	0.711	0.422

Notes: 1. S_S and S_1 were established based on the USGS 2015 mapped maximum considered earthquake spectral acceleration maps for 2% probability of exceedence in 50 years.

2. F_a and F_v were established based on IBC 2015 tables using the selected S_S and S_1 values.

CONSTRUCTION MONITORING AND TESTING

We recommend that **Redmond Geotechnical Services, LLC** be retained to provide construction monitoring and testing services during all earthwork operations for the proposed new Fairview Apartments development. The purpose of our monitoring services would be to confirm that the site conditions reported herein are as anticipated, provide field recommendations as required based on the actual conditions encountered, document the activities of the grading contractor and assess his/her compliance with the project specifications and recommendations. It is important that our representative meet with the contractor prior to any site grading to help establish a plan that will minimize costly over-excavation and site preparation work. Of primary importance will be observations made during site preparation and stripping, structural fill placement, footing excavations and construction as well as retaining wall backfill.

CLOSURE AND LIMITATIONS

This report is intended for the exclusive use of the addressee and/or their representative(s) to use to design and construct the proposed new multi-family apartment structures and their associated site improvements described herein as well as to prepare any related construction documents. The conclusions and recommendations contained in this report are based on site conditions as they presently exist and assume that the explorations are representative of the subsurface conditions between the explorations and/or at other locations across the study area. The data, analyses, and recommendations herein may not be appropriate for other structures and/or purposes. We recommend that parties contemplating other structures and/or purposes contact our office. In the absence of our written approval, we make no representation and assume no responsibility to other parties regarding this report. Additionally, the above recommendations are contingent on Redmond Geotechnical Services, LLC being retained to provide all site inspections and constriction monitoring services for this project. Redmond Geotechnical Services, LLC will not assume any responsibility and/or liability for any engineering judgment, inspection and/or testing services performed by others.

It is the owners/developers responsibility for insuring that the project designers and/or contractors involved with this project implement our recommendations into the final design plans, specifications and/or construction activities for the project. Further, in order to avoid delays during construction, we recommend that the final design plans and specifications for the project be reviewed by our office to evaluate as to whether our recommendations have been properly interpreted and incorporated into the project.

If during any future site grading and construction, subsurface conditions different from those encountered in the explorations are observed or appear to be present beneath excavations, we should be advised immediately so that we may review these conditions and evaluate whether modifications of the design criteria are required. We also should be advised if significant modifications of the proposed site development are anticipated so that we may review our conclusions and recommendations.

LEVEL OF CARE

The services performed by the Geotechnical Engineer for this project have been conducted with that level of care and skill ordinarily exercised by members of the profession currently practicing in the area under similar budget and time restraints. No warranty or other conditions, either expressed or implied, is made.

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Appendix "A"

Test Pit Logs and Laboratory Test Data

APPENDIX

FIELD EXPLORATIONS AND LABORATORY TESTING

FIELD EXPLORATION

Subsurface conditions at the site were explored by excavating ten (10) exploratory test pits (TH-#1 through TH-#10) on June 9, 2017. The approximate location of the test pit explorations are shown in relation to the site conditions and/or topographic features on the Site Exploration Plan, Figure No. 2.

The test pits were excavated using tracked excavating equipment in general conformance with ASTM Methods in Vol. 4.08, D-1586-94 and D-1587-83. The test pits were excavated to depths ranging from about 5.0 to 10.0 feet beneath existing site grades. Detailed logs of the test pits are presented on the Log of Test Pits, Figure No's. A-4 through A-8. The soils were classified in accordance with the Unified Soil Classification System (USCS), which is outlined on Figure No. A-3. Additionally, three (3) field infiltration tests were performed at the site in test holes TH-#5, TH-#6 and TH-#7.

The exploration program was coordinated by a field engineer who monitored the excavating and exploration activity, obtained representative samples of the subsurface soils encountered, classified the soils by visual and textural examination, and maintained continuous logs of the subsurface conditions. Disturbed and/or undisturbed samples of the subsurface soils were obtained at appropriate depths and/or intervals and placed in plastic bags and/or with a thin walled ring sample.

Groundwater was generally not encountered in any of the exploratory test pits (TH-#1 through TH-#10) at the time of excavating to depths of at ten (10.0) feet beneath existing surface grades. However, minor seepage was observed within two (2) or more of the test hole excavations.

LABORATORY TESTING

Pertinent physical and engineering characteristics of the soils encountered during our subsurface investigation were evaluated by a laboratory testing program to be used as a basis for selection of soil design parameters and for correlation purposes. Selected tests were conducted on representative soil samples. The program consisted of tests to evaluate the existing (in-situ) moisture-density, maximum dry density and optimum moisture content, gradational characteristics, and Atterberg Limits as well as direct shear strength and "R"-value tests.

Dry Density and Moisture Content Determinations

Density and moisture content determinations were performed on both disturbed and relatively undisturbed samples from the test pit explorations in general conformance with ASTM Vol. 4.08 Part D-216. The results of these tests were used to calculate existing overburden pressures and to correlate strength and compressibility characteristics of the soils. Test results are shown on the test pit logs at the appropriate sample depths.

Maximum Dry Density

One (1) Maximum Dry Density and Optimum Moisture Content test was performed on a representative sample of the on-site clayey, sandy silt to silty sand subgrade soils in accordance with ASTM Vol. 4.08 Part D-1557. This test was conducted to help establish various engineering properties for use as structural fill. The test results are presented on Figure No. A-7.

Atterberg Limits

One (1) Liquid Limit (LL) and Plastic Limit (PL) test was performed on a representative samples of the clayey, sandy silt to silty sand subgrade soils in accordance with ASTM Vol. 4.08 Part D-4318-85. These tests were conducted to facilitate classification of the soils and for correlation purposes. The test results appear on Figure No. A-8.

Gradation Analysis

Two (2) Gradation analyses were performed on representative samples of the subsurface soils in accordance with ASTM Vol. 4.08 Part D-422. The test results were used to classify the soil in accordance with the Unified Soil Classification System (USCS). The test results are shown graphically on Figure No. A-9.

Direct Shear Strength Test

One (1) Direct Shear Strength test was performed on a remolded sample of the near surface subgrade soils at a continuous rate of shearing deflection (0.02 inches per minute) in accordance with ASTM Vol. 4.08 Part D-3080-79. The test results were used to determine engineering strength properties and are shown graphically on Figure No. A-10.

"R"-Value Tests

One (1) "R"-value test was performed on a remolded subgrade soil sample in accordance with ASTM Vol. 4.08 Part D-2844. The test results were used to help evaluate the subgrade soils supporting and performance capabilities when subjected to traffic loading. The test results are shown on Figure No. A-11.

The following figures are attached and complete the Appendix:

Figure No. A-3	Key To Exploratory Test Pit Logs
Figure No's. A-4 through A-8	Log of Test Pits
Figure No. A-9	Maximum Dry Density
Figure No. A-10	Atterberg Limits Test Results
Figure No. A-11	Gradation Test Results
Figure No. A-12	Direct Shear Strength Test Results
Figure No. A-13	Results of "R"-Value Tests

EXHIBIT A-4

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVELS MORE THAN HALF OF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GRAVEL WITH FINES	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN NO. 4 SIEVE	CLEAN SANDS (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines.
			SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES	SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS LIQUID LIMIT IS LESS THAN 50%		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			CH	Inorganic clays of high plasticity, fat clays.
			OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			Pt	Peat and other highly organic soils.

DEFINITION OF TERMS

U.S. STANDARD SERIES SIEVE: 200, 40, 10, 4

CLEAR SQUARE SIEVE OPENINGS: 3/4", 3", 12"

SILTS AND CLAYS	SAND			GRAVEL		COBBLES	BOULDERS
	FINE	MEDIUM	COARSE	FINE	COARSE		

GRAIN SIZES

SANDS, GRAVELS AND NON-PLASTIC SILTS	BLOWS/FOOT†
VERY LOOSE	0 - 4
LOOSE	4 - 10
MEDIUM DENSE	10 - 30
DENSE	30 - 50
VERY DENSE	OVER 50

RELATIVE DENSITY

CLAYS AND PLASTIC SILTS	STRENGTH‡	BLOWS/FOOT†
VERY SOFT	0 - 1/4	0 - 2
SOFT	1/4 - 1/2	2 - 4
FIRM	1/2 - 1	4 - 8
STIFF	1 - 2	8 - 16
VERY STIFF	2 - 4	16 - 32
HARD	OVER 4	OVER 32

CONSISTENCY

†Number of blows of 140 pound hammer falling 30 inches to drive a 2 inch O.D. (1-3/8 inch I.D.) split spoon (ASTM D-1586).

‡Unconfined compressive strength in tons/sq. ft. as determined by laboratory testing or approximated by the standard penetration test (ASTM D-1586), pocket penetrometer, torvane, or visual observation.

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KEY TO EXPLORATORY TEST PIT LOGS
Unified Soil Classification System (ASTM D-2487)

FAIRVIEW APARTMENTS SITE
Fairview, Oregon

PROJECT NO.	DATE	
1622.001.G	9/15/17	Figure A-3

EXHIBIT A-4

BACKHOE COMPANY: Jim Smith Excavating BUCKET SIZE: 24 inches DATE: 6/09/17

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#1 ELEVATION 65'±
0					ML	Dark brown, wet to saturated, very soft, organic, clayey, sandy SILT (Topsoil)
	X			22.8	ML/SM	Medium to olive-brown, with gray mottling, very moist to wet, medium stiff to medium dense, clayey, sandy SILT to silty SAND
5						Total Depth = 5.0 feet Seepage encountered at a depth of 2 feet at time of exploration
10						
15						
						TEST PIT NO. TH-#2 ELEVATION 77'±
0					SM/ML	FILL: Medium brown, moist to very moist, moderately compacted, clayey, silty SAND to sandy SILT with gravel and construction debris (i.e., brick & concrete rubble)
5					ML/Sm	FILL: Dark gray-brown, very moist to wet, moderately compacted, clayey, sandy SILT to silty SAND with organics
	X			20.9	ML	NATIVE GROUND: Dark gray to olive-gray, very moist to wet, medium stiff, clayey, sandy SILT (Old Topsoil Zone)
10					SM/GM	Medium to orangish-brown, very moist, medium dense, slightly clayey, silty, sandy GRAVEL to gravelly SAND with cobbles
						Total Depth = 10.0 feet No groundwater encountered at time of exploration
15						

LOG OF TEST PITS

PROJECT NO. 1622.001.G | FAIRVIEW APARTMENTS SITE | FIGURE NO. A-4

EXHIBIT A-4

BACKHOE COMPANY: Jim Smith Excavating BUCKET SIZE: 24 inches DATE: 6/09/17

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#3 ELEVATION 69'±
0					SM/ ML	FILL: Medium brown, moist to very moist, moderately compacted, clayey, silty SAND to sandy SILT with gravel and construction debris (i.e., brick and concrete rubble)
5					ML/ SM	FILL: Dark gray-brown, very moist to wet, moderately compacted, clayey, sandy SILT to silty SAND with organics
					ML	NATIVE GROUND: Dark gray to olive-gray, very moist to wet, medium stiff, clayey, sandy SILT (Old Topsoil Zone)
10					SM/ GM	Medium to orangish-brown, very moist, medium dense, slightly clayey, silty, sandy GRAVEL to gravelly SAND with cobbles
15						Total Depth = 9.0 feet No groundwater encountered at time of exploration
						TEST PIT NO. TH-#4 ELEVATION 55'±
0					SM	FILL: Medium brown, very moist, moderately compacted, clayey, silty SAND with gravel and boulders
					ML/ SM	NATIVE GROUND: Dark gray-brown, moist to very moist, medium stiff to medium dense, clayey, sandy SILT to silty SAND
5	X			19.5	GM	Medium to olive-brown, wet to saturated, medium dense, slightly clayey, silty, sandy GRAVEL with cobbles
10						Total Depth = 7.0 feet Seepage encountered at a depth of 5.0 feet at time of exploration
15						

LOG OF TEST PITS

PROJECT NO. 1622.001.G | FAIRVIEW APARTMENTS SITE | FIGURE NO. A-5

EXHIBIT A-4

BACKHOE COMPANY: Jim Smith Excavating BUCKET SIZE: 24 inches DATE: 6/09/17

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#5 ELEVATION 49'±
0					SM	FILL: Medium brown, very moist, moderately compacted, clayey, silty SAND with cobbles and boulders
5					ML	NATIVE GROUND: Dark gray-brown, very moist to wet, medium stiff, clayey, sandy SILT with traces of organics (Old Topsoil Zone)
					SM	Medium to orangish-brown, moist to very moist, loose to medium dense, slightly clayey, silty SAND
10						Total Depth = 10.0 feet No groundwater encountered at time of exploration
15						
						TEST PIT NO. TH-#6 ELEVATION 45'±
0					ML	Dark gray-brown, very moist, soft, organic, clayey, sandy SILT (Topsoil)
	X			24.4	ML/ SM	Medium brown, very moist, medium stiff to medium dense, clayey, sandy SILT to silty SAND with boulders
5	X			26.1		
					GM	Medium to orangish-brown, very moist, medium dense, slightly clayey, silty, sandy GRAVEL with cobbles
10						Total Depth = 8.0 feet No groundwater encountered at time of exploration
15						

LOG OF TEST PITS

PROJECT NO. 1622.001.G | FAIRVIEW APARTMENTS SITE | FIGURE NO. A-6

EXHIBIT A-4

BACKHOE COMPANY: Jim Smith Excavating BUCKET SIZE: 24 inches DATE: 6/09/17

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#7 ELEVATION 39'±
0					SM ML	FILL: Medium brown, very moist to wet, poorly compacted, clayey, silty SAND to sandy SILT with organics
					ML	NATIVE GROUND: Dark gray-brown, very moist to wet, soft, clayey, sandy SILT with organics (Old Topsoil Zone)
5					SM	Orangish-brown with gray mottling, very moist to wet, loose to medium dense, slightly clayey, silty SAND
10						Total Depth = 9.0 feet No groundwater encountered at time of exploration
15						
						TEST PIT NO. TH-#8 ELEVATION 47'±
0					ML/ SM	FILL: Medium brown, very moist, moderately compacted, clayey, sandy SILT to silty SAND
5					SM	FILL: Gray-brown, very moist, poorly to moderately compacted, clayey, silty SAND with gravel and debris (i.e., brick, tile, concrete and plywood)
10						Total Depth = 10.0 feet No groundwater encountered at time of exploration
15						

LOG OF TEST PITS

PROJECT NO. 1622.001.G | FAIRVIEW APARTMENTS SITE | FIGURE NO. A-7

EXHIBIT A-4

BACKHOE COMPANY: Jim Smith Excavating BUCKET SIZE: 24 inches DATE: 6/09/17

DEPTH (FEET)	BAG SAMPLE	DENSITY TEST	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	SOIL CLASS. (U.S.C.S.)	SOIL DESCRIPTION
						TEST PIT NO. TH-#9 ELEVATION 62'±
0					SM	FILL: Medium brown, very moist, poorly to moderately compacted, clayey, silty SAND with gravel and construction debris (i.e., concrete rubble and brick)
5					SM	FILL: Dark gray, very moist, poorly to moderately compacted, clayey, silty SAND with organics and construction debris (i.e., concrete rubble and bricks)
					SM	NATIVE GROUND: Medium to light brown with orangish mottling, very moist, medium dense, clayey, silty SAND
10						Total Depth = 8.0 feet No groundwater encountered at time of exploration
15						
						TEST PIT NO. TH-#10 ELEVATION 65'±
0					SM	FILL: Dark brown to dark gray-brown, moist, poorly to moderately compacted, clayey, silty SAND with gravels
5	X			23.5	SM	NATIVE GROUND: Light to orangish-brown, very moist, medium dense, clayey, silty SAND
	X			18.2	GM	Orangish-brown, very moist, medium dense to dense, slightly clayey, silty, sandy GRAVEL with cobbles
10						Total Depth = 9.0 feet No groundwater encountered at time of exploration
15						

LOG OF TEST PITS

PROJECT NO. 1622.001.G | FAIRVIEW APARTMENTS SITE | FIGURE NO. A-8

EXHIBIT A-4

MAXIMUM DENSITY TEST RESULTS

SAMPLE LOCATION	SOIL DESCRIPTION	MAXIMUM DRY DENSITY (pcf)	OPTIMUM MOISTURE CONTENT (%)
TH-#1 @ 2.0'	Medium to olive-brown, clayey, sandy SILT to silty SAND (ML/SM)	110.0	15.0
TH-#6 @ 2.5'	Medium brown, clayey, sandy SILT to silty SAND (ML/SM)	107.0	16.0

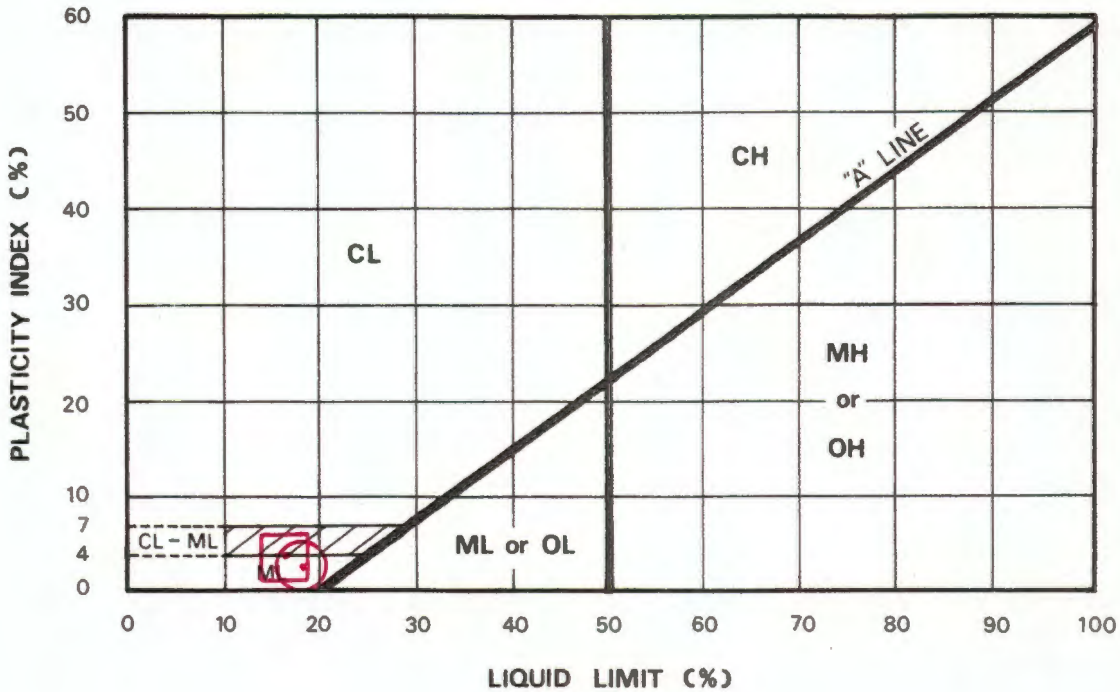
EXPANSION INDEX TEST RESULTS

SAMPLE LOCATION	INITIAL MOISTURE (%)	COMPACTED DRY DENSITY (pcf)	FINAL MOISTURE (%)	VOLUMETRIC SWELL (%)	EXPANSION INDEX	EXPANSIVE CLASS.

MAXIMUM DENSITY & EXPANSION INDEX TEST RESULTS

PROJECT NO.: 1622.001.G	FAIRVIEW APARTMENTS SITE	FIGURE NO.: A-9

EXHIBIT A-4



KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	NATURAL WATER CONTENT %	LIQUID LIMIT %	PLASTICITY INDEX %	PASSING NO. 200 SIEVE %	LIQUIDITY INDEX	UNIFIED SOIL CLASSIFICATION SYMBOL
⊙	TH-#1	2.0	22.8	19.1	3.1	47.1		ML/SM
⊡	TH-#6	2.5	24.4	19.2	3.9	---		ML/SM

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PLASTICITY CHART AND DATA

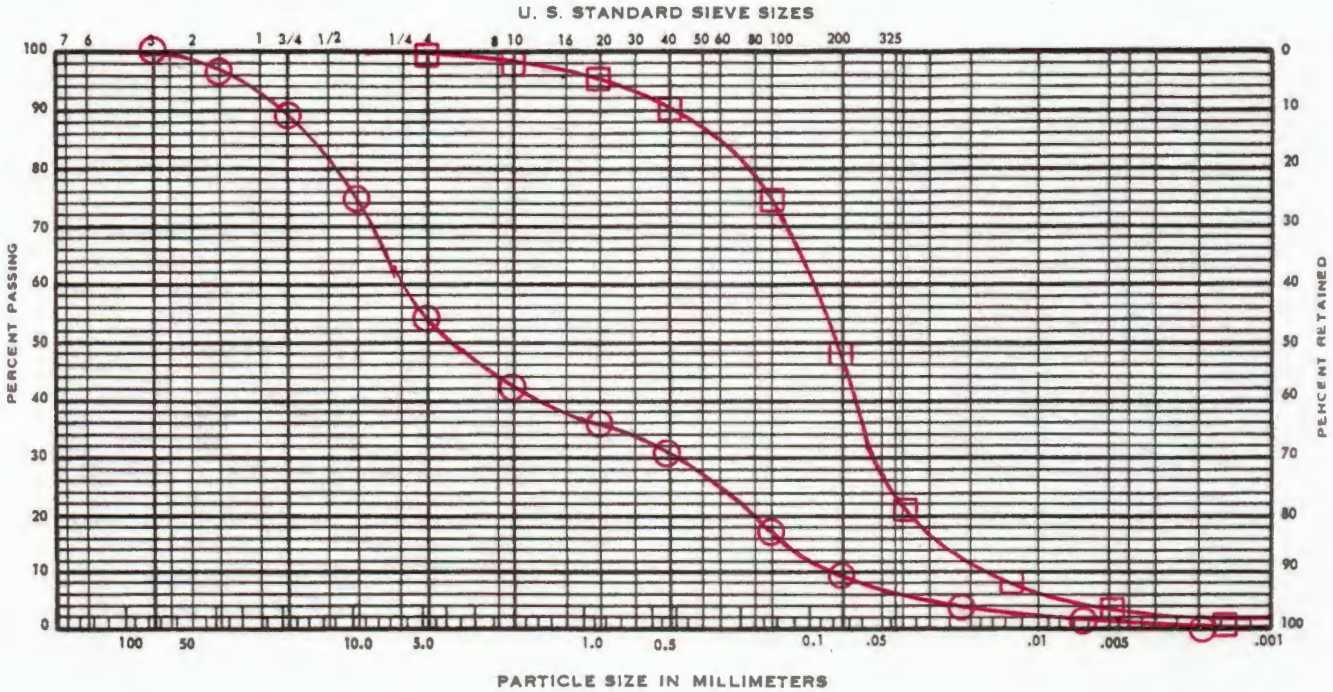
FAIRVIEW APARTMENTS SITE
Fairview, Oregon

PROJECT NO.	DATE	
1622.001.G	9/15/17	Figure A-10

EXHIBIT A-4

UNIFIED SOIL CLASSIFICATION SYSTEM

(ASTM D 422-72)



COBBLES	GRAVEL		SAND			SILT AND CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

KEY SYMBOL	BORING NO.	SAMPLE DEPTH (feet)	ELEV. (feet)	UNIFIED SOIL CLASSIFICATION SYMBOL	SAMPLE DESCRIPTION
⊟	TH-#1	2.0		ML/SM	Medium to olive-brown, clayey, sandy SILT to silty SAND
⊖	TH-#4	5.0		GM	Medium to olive-brown, slightly clayey, silty, sandy GRAVEL

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GRADATION TEST DATA

FAIRVIEW APARTMENTS SITE
Fairview, Oregon

PROJECT NO.	DATE	FIGURE
1622.001.G	9/15/17	A-11

EXHIBIT A-4

SAMPLE DATA	
DESCRIPTION: Medium to olive-brown, clayey, sandy SILT to silty SAND (ML/SM)	
BORING NO.: TH-#	
DEPTH (ft.): 2.0	ELEVATION (ft):
TEST RESULTS	
APPARENT COHESION (C): 100 psf	
APPARENT ANGLE OF INTERNAL FRICTION (Φ): 28°	

TEST DATA				
TEST NUMBER	1	2	3	4
NORMAL PRESSURE (KSF)	0.5	1.5	2.5	
SHEAR STRENGTH (KSF)	0.3	1.0	1.5	
INITIAL H_2O CONTENT (%)	16.0	16.0	16.0	
FINAL H_2O CONTENT (%)	16.4	12.1	8.7	
INITIAL DRY DENSITY (PCF)	98.0	98.0	98.0	
FINAL DRY DENSITY (PCF)	98.7	102.2	104.6	
STRAIN RATE: 0.02 inches per minute				

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DIRECT SHEAR TEST DATA

FAIRVIEW APARTMENTS SITE
Fairview, Oregon

PROJECT NO.	DATE	
1622.001.G	9/15/17	Figure A-12

RESULTS OF R (RESISTANCE) VALUE TESTS

SAMPLE LOCATION: TH-#1

SAMPLE DEPTH: 2.0 feet bgs

Specimen	A	B	C
Exudation Pressure (psi)	219	329	431
Expansion Dial (o.ooo1")	0	1	2
Expansion Pressure (psf)	0	3	8
Moisture Content (%)	17.6	14.4	11.1
Dry Density (pcf)	93.4	98.2	102.6
Resistance Value, "R"	21	35	43
"R"-Value at 300 psi Exudation Pressure = 34			

SAMPLE LOCATION:

SAMPLE DEPTH:

Specimen	A	B	C
Exudation Pressure (psi)			
Expansion Dial (0.0001")			
Expansion Pressure (psf)			
Moisture Content (%)			
Dry Density (pcf)			
Resistance Value "R"			
"R"-Value at 300 psi Exudation Pressure =			

EXHIBIT B-1

FAIRVIEW APARTMENTS

02/26/2018

Project Information:

Site Data:

Building Structures:	60,700 SF
Hardscape Parking Areas:	78,000 SF
Hardscape Sidewalks Areas:	25,800 SF
Landscaping:	44,200 SF
Total Buildable Site Area:	208,700 SF

Building Data: (Gross Square Footage)

Total Residential :	170,000 SF
Total Coverd Parking:	37,000 SF
Total	207,000 SF

Unit Matrix

Studio	46 units
1 Bedroom	71 units
Live/Work	4 units
2 Bedroom	79 units
	200 Total Units

Parking:

Required 259 Stalls (Code section: 19.164.030)

Provided

Standard:	194 Stalls
Compact:	98 Stalls (117 Max. Allowed)
Total:	292 Stalls (Includes ADA stalls)

ADA Stalls Provided: 7 stalls (Includes Van Spaces)

Bike Spaces (short term):

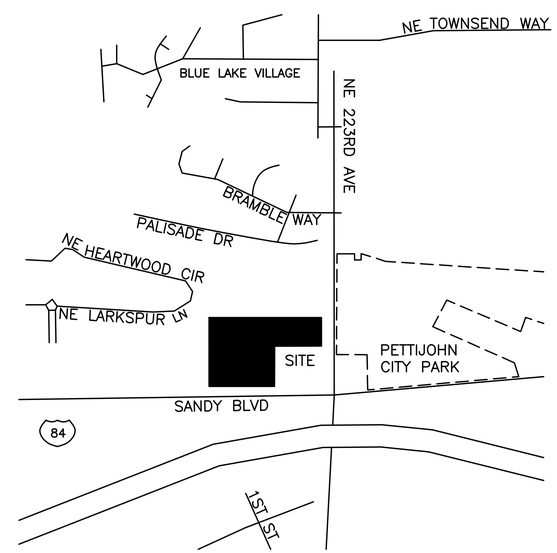
Required 30 Bike Spaces
Provided 30 Bike Spaces (See site plan for location)

Bike Spaces (Long term):

Required 200 Bike Spaces
Provided 200 Bike Spaces
(See sheet A104 for bike rack for storage. Provided one in every unit)

Index:

A100	COVER SHEET
A101	SITE PHOTOS
A102	ARCHITECTURAL SITE PLAN
A103	CIRCULATION & LIGHTING PLAN
A104	TYPICAL FLOOR PLANS
A105	ELEVATIONS - BUILDING 1
A106	ELEVATIONS - BUILDING 2
A107	ELEVATIONS - BUILDING 3
A108	ELEVATIONS - BUILDING 4
A109	EELEVATIONS - BUILDING 5
A110	ELEVATIONS - DETAILS
A111	LANDSCAPE PLAN



Vicinity Map

APPLICATION FOR SITE DESIGN REVIEW
CITY OF FAIRVIEW, OREGON
DATE: 26 February 2018

Sheet Title:
COVER SHEET

Project Title:
FAIRVIEW APARTMENTS
RESIDENTIAL DEVELOPMENT, CITY OF FAIRVIEW, OR
WEST COAST HOME SOLUTIONS, LLC

Leeb Architects LLC
71 SW Oak Street
Portland Or 97204
Phone 503.228.2840
Fax 503.228.2907
leebarc.com

A100

EXHIBIT B-2

1 View from South

2 View from Sandy Blvd.

APPLICATION FOR SITE DESIGN REVIEW
CITY OF FAIRVIEW, OREGON
DATE: 26 February 2018

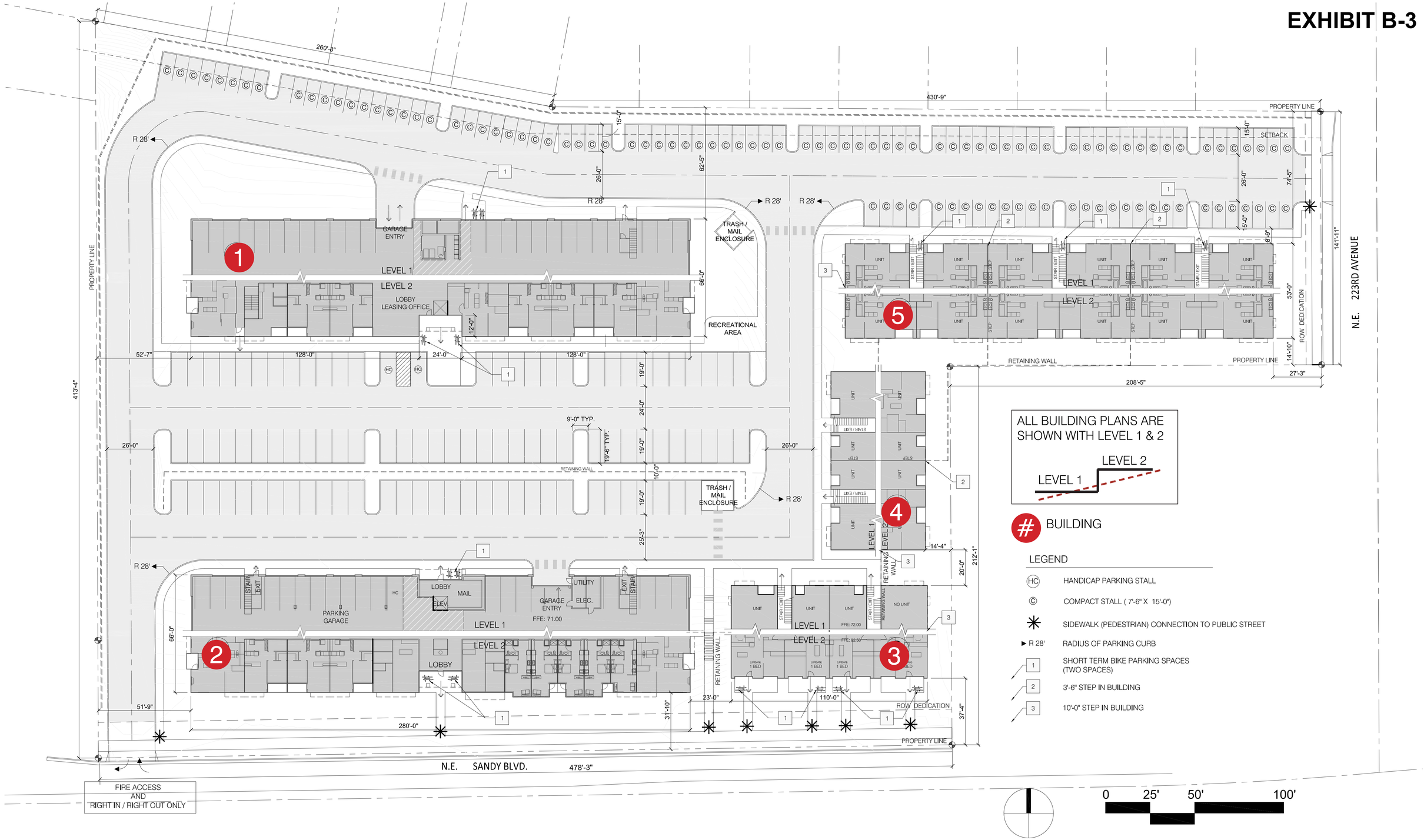
Sheet Title:
SITE PHOTOS

Project Title:
FAIRVIEW APARTMENTS
RESIDENTIAL DEVELOPMENT, CITY OF FAIRVIEW, OR
WEST COAST HOME SOLUTIONS, LLC

Leeb Architects LLC
71 SW Oak Street
Portland Or 97204
Phone 503.228.2840
Fax 503.228.2907
leebarc.com

A101

EXHIBIT B-3



APPLICATION FOR SITE DESIGN REVIEW
CITY OF FAIRVIEW, OREGON
DATE: 26 February 2018

Sheet Title:
SITE PLAN

Project Title:
FAIRVIEW APARTMENTS
RESIDENTIAL DEVELOPMENT, CITY OF FAIRVIEW, OR
WEST COAST HOME SOLUTIONS, LLC

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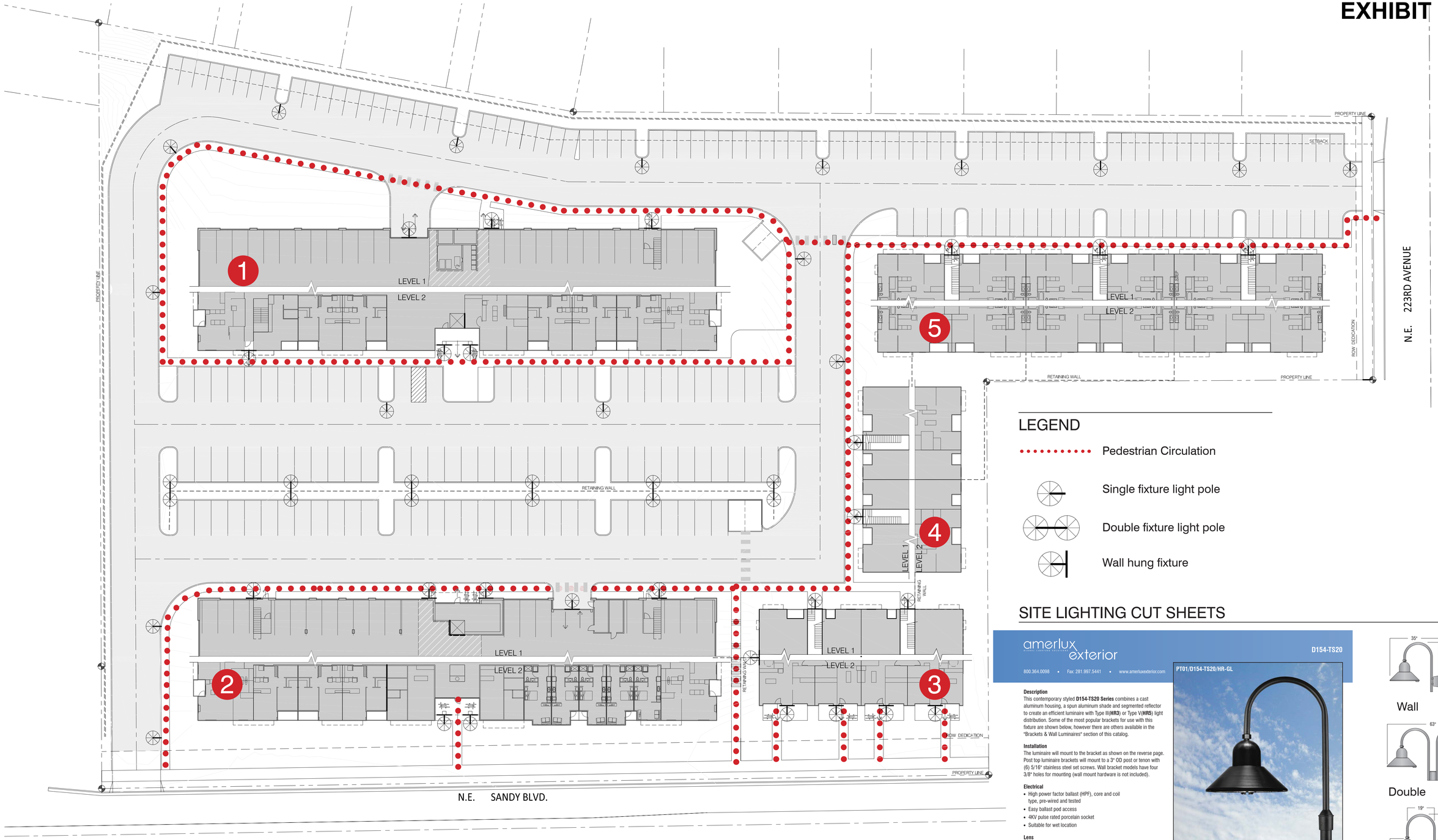
Fax 503.228.2907
leebarc.com

A102

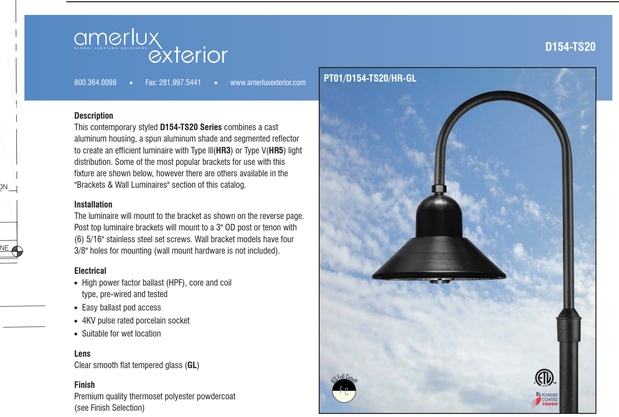
EXHIBIT B-4



LEGEND

- Pedestrian Circulation
- Single fixture light pole
- Double fixture light pole
- Wall hung fixture

SITE LIGHTING CUT SHEETS



amerlux exterior

D154-TS20

800.364.0098 • Fax: 281.997.5441 • www.amerluxexterior.com

PT01/D154-TS20/HR-GL

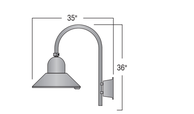
Description
This contemporary styled **D154-TS20 Series** combines a cast aluminum housing, a spun aluminum shade and segmented reflector to create an efficient luminaire with Type III(**HR3**) or Type V(**HR5**) light distribution. Some of the most popular brackets for use with this fixture are shown below, however there are others available in the "Brackets & Wall Luminaires" section of this catalog.

Installation
The luminaire will mount to the bracket as shown on the reverse page. Post top luminaire brackets will mount to a 3" OD post or tenon with (6) 5/16" stainless steel set screws. Wall bracket models have four 3/8" holes for mounting (wall mount hardware is not included).

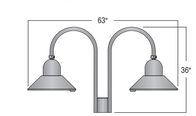
Electrical
- High power factor ballast (HPF), core and coil type, pre-wired and tested
- Easy ballast pod access
- 4KV pulse rated porcelain socket
- Suitable for wet location

Lens
Clear smooth flat tempered glass (**GL**)

Finish
Premium quality thermoset polyester powdercoat (see Finish Selection)



Wall



Double

Single

APPLICATION FOR SITE DESIGN REVIEW
CITY OF FAIRVIEW, OREGON
DATE: 26 February 2018

Sheet Title:
LIGHTING / CIRCULATION PLAN

Project Title:
FAIRVIEW APARTMENTS
RESIDENTIAL DEVELOPMENT, CITY OF FAIRVIEW, OR
WEST COAST HOME SOLUTIONS, LLC

Leeb Architects LLC
71 SW Oak Street
Portland Or 97204
Phone 503.228.2840
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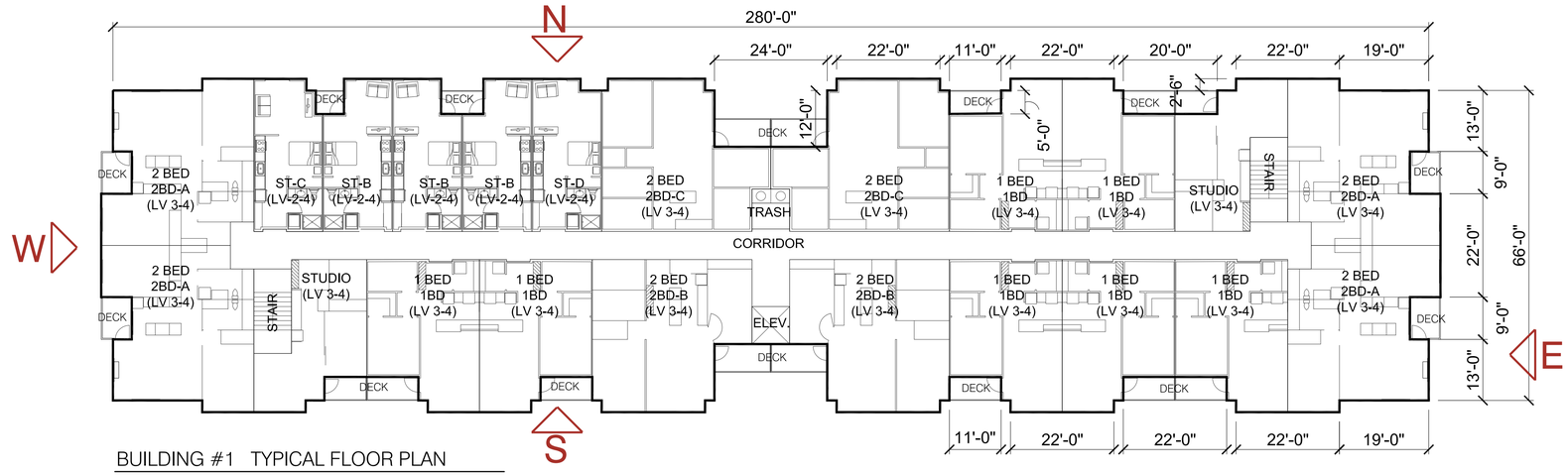
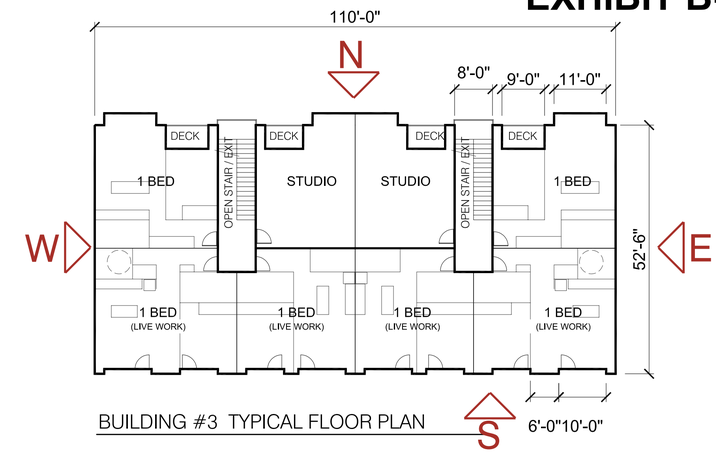
leebarc.com

A103

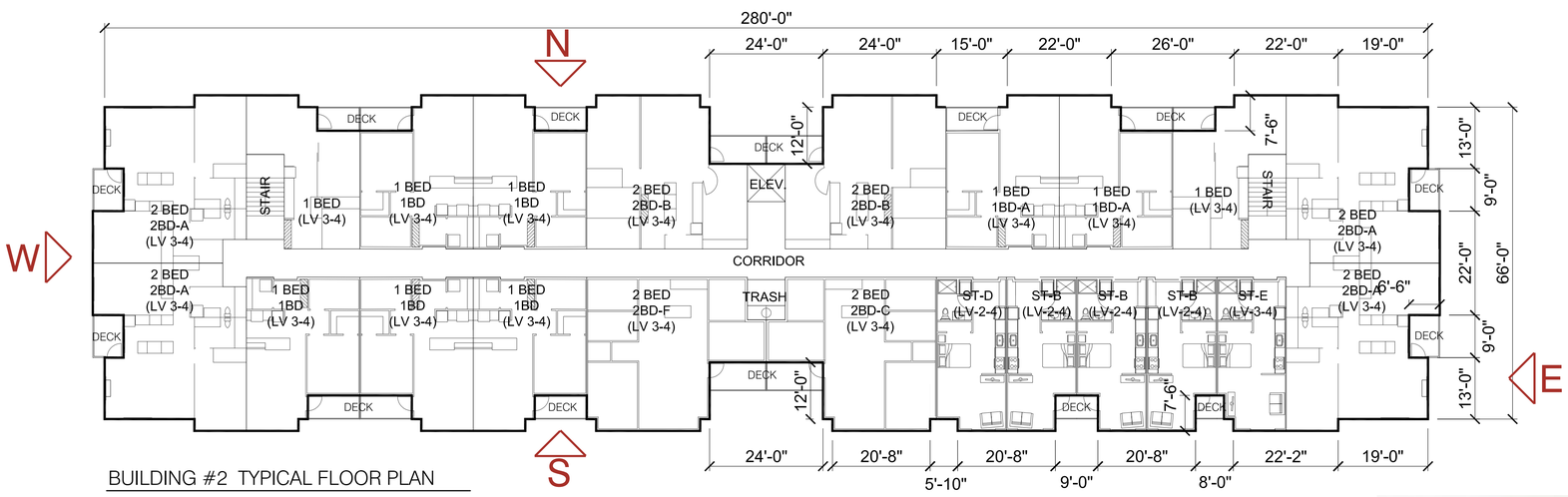
EXHIBIT B-5



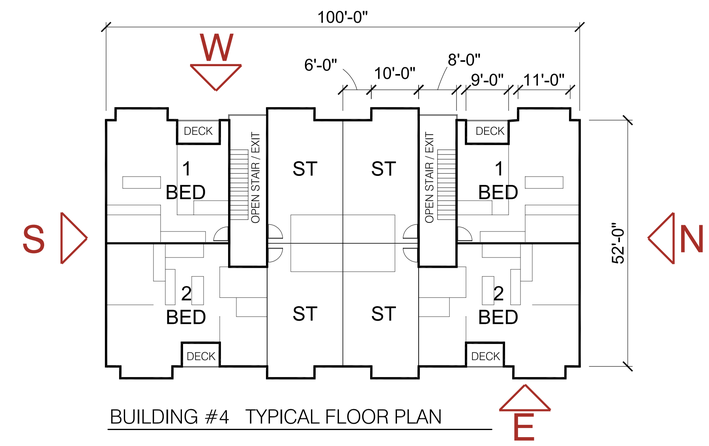
BUILDING #1 TYPICAL FLOOR PLAN



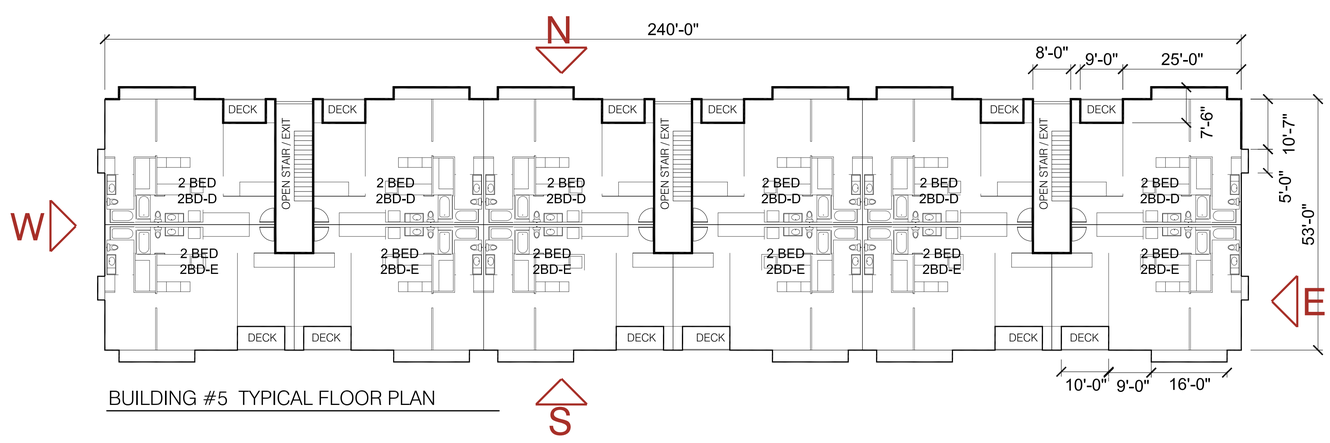
BUILDING #3 TYPICAL FLOOR PLAN



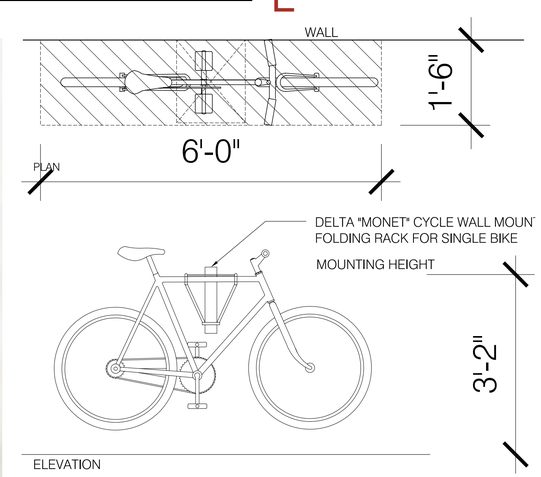
BUILDING #2 TYPICAL FLOOR PLAN



BUILDING #4 TYPICAL FLOOR PLAN



BUILDING #5 TYPICAL FLOOR PLAN



UNIT BIKE RACK

(LOCATION IN UNIT PLANS WILL VARY)

APPLICATION FOR SITE DESIGN REVIEW
CITY OF FAIRVIEW, OREGON
DATE: 26 February 2018

Sheet Title:
TYPICAL BUILDING FLOOR PLANS
ELEVATION FACE A105 - A109

Project Title:
FAIRVIEW APARTMENTS
RESIDENTIAL DEVELOPMENT, CITY OF FAIRVIEW, OR
WEST COAST HOME SOLUTIONS, LLC

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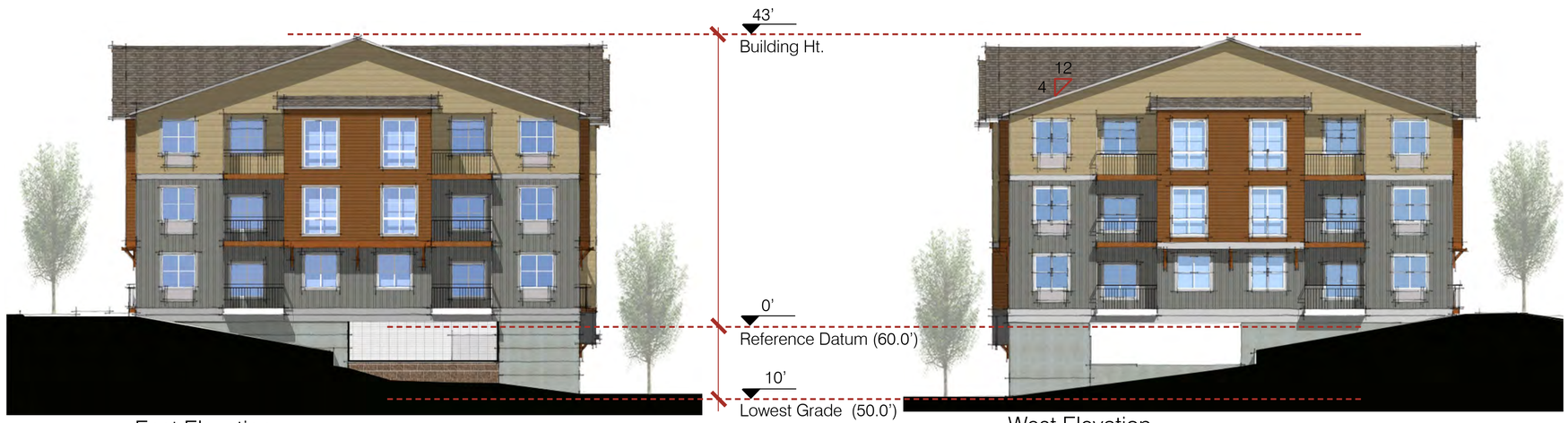
Phone 503.228.2840
Fax 503.228.2907
leebarc.com

A104

EXHIBIT B-6

North Elevation



East Elevation

West Elevation

South Elevation

scale: 0 5' 10'

APPLICATION FOR SITE DESIGN REVIEW
CITY OF FAIRVIEW, OREGON
DATE: 26 February 2018

Sheet Title:
ELEVATIONS - BUILDING 1

Project Title:
FAIRVIEW APARTMENTS
RESIDENTIAL DEVELOPMENT, CITY OF FAIRVIEW, OR
WEST COAST HOME SOLUTIONS, LLC

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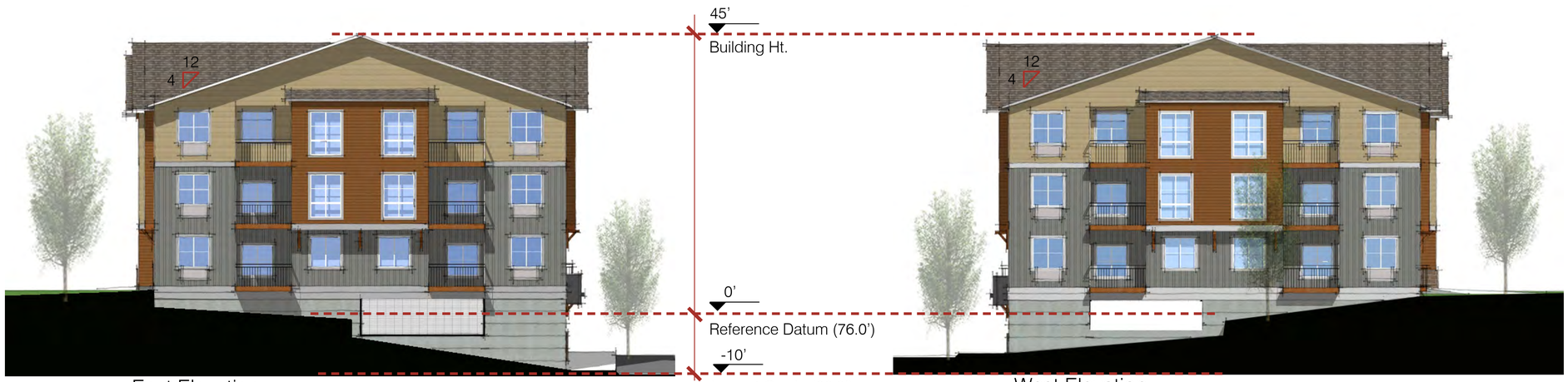
A105

EXHIBIT B-6

North Elevation



East Elevation

West Elevation

South Elevation

D1 / A110 Detail Elevation

scale: 0 5' 10'

APPLICATION FOR SITE DESIGN REVIEW
CITY OF FAIRVIEW, OREGON
DATE: 26 February 2018

Sheet Title:
ELEVATIONS - BUILDING 2

Project Title:
FAIRVIEW APARTMENTS
RESIDENTIAL DEVELOPMENT, CITY OF FAIRVIEW, OR
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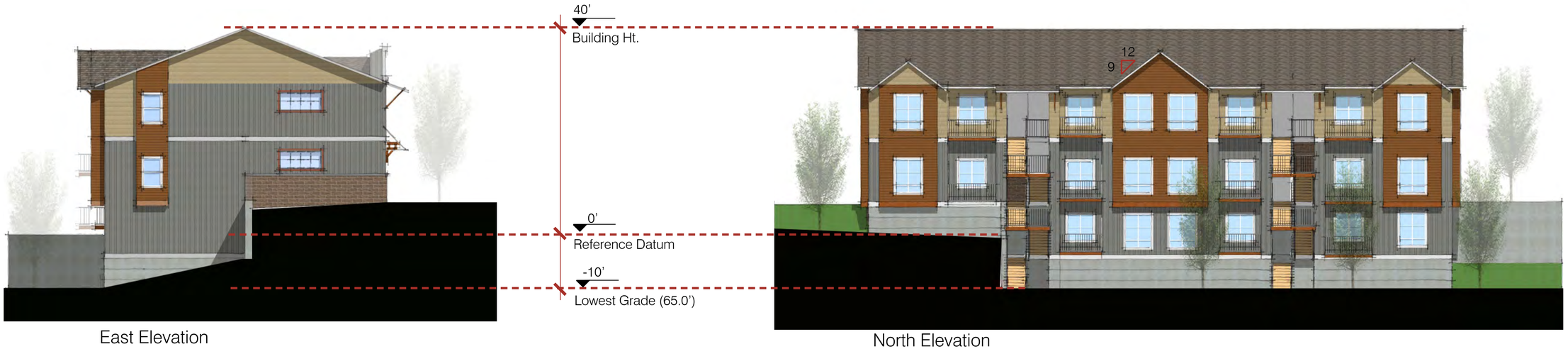
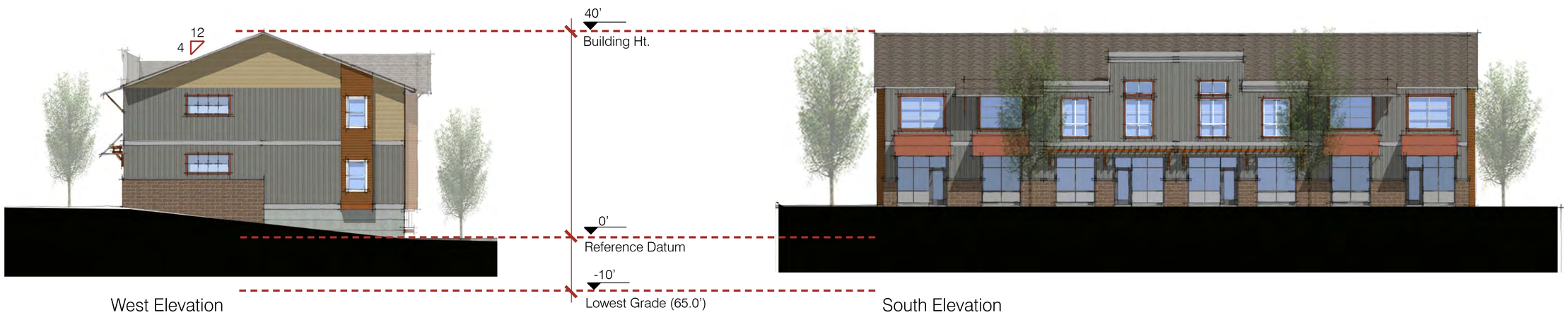
A106

EXHIBIT B-6



East Elevation

North Elevation



West Elevation

South Elevation

scale: 0 5' 10'

APPLICATION FOR SITE DESIGN REVIEW
CITY OF FAIRVIEW, OREGON
DATE: 26 February 2018

Sheet Title:
ELEVATIONS - BUILDING 3

Project Title:
FAIRVIEW APARTMENTS
RESIDENTIAL DEVELOPMENT, CITY OF FAIRVIEW, OR
WEST COAST HOME SOLUTIONS, LLC

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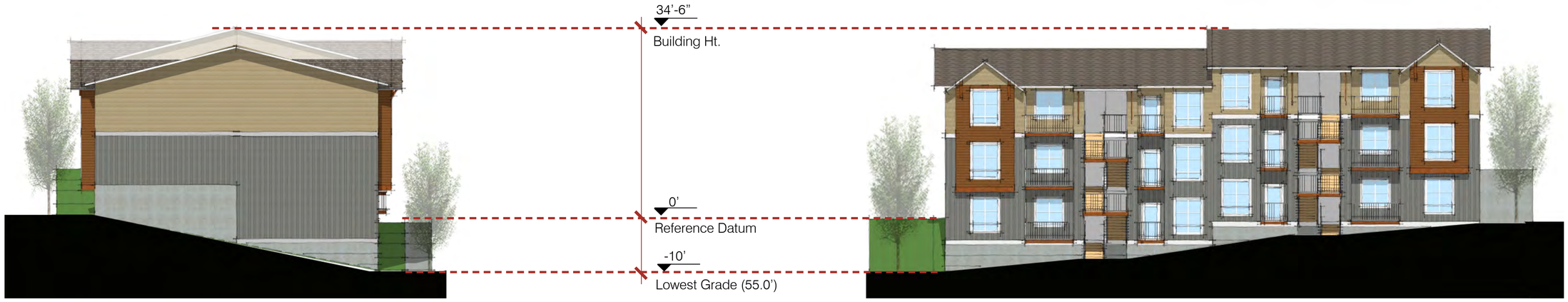
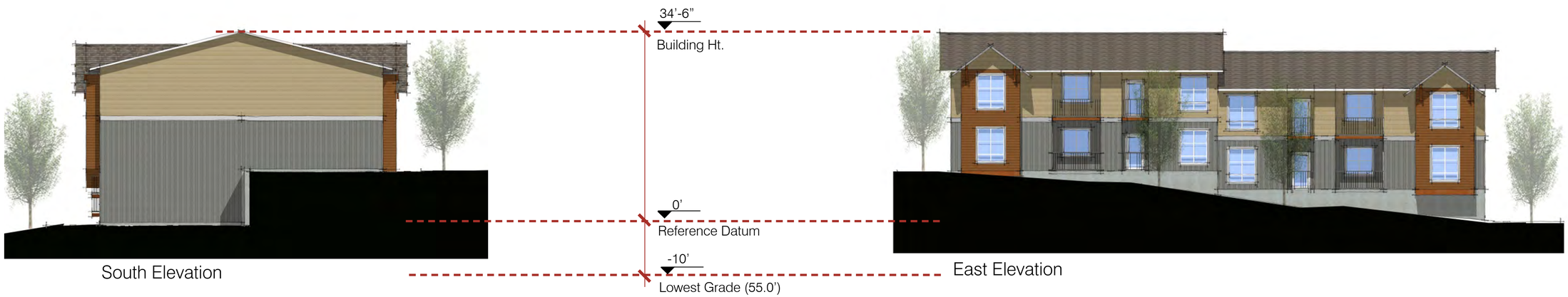
A107

EXHIBIT B-6



North Elevation

West Elevation



South Elevation

East Elevation

scale: 0 5' 10'

APPLICATION FOR SITE DESIGN REVIEW
CITY OF FAIRVIEW, OREGON
DATE: 26 February 2018

Sheet Title:
ELEVATIONS - BUILDING 4

Project Title:
FAIRVIEW APARTMENTS
RESIDENTIAL DEVELOPMENT, CITY OF FAIRVIEW, OR
WEST COAST HOME SOLUTIONS, LLC

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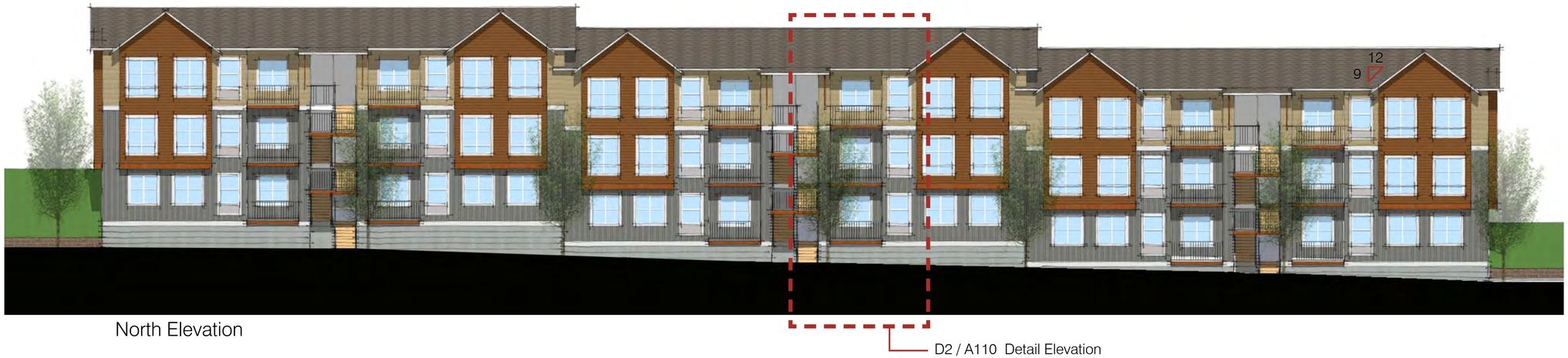
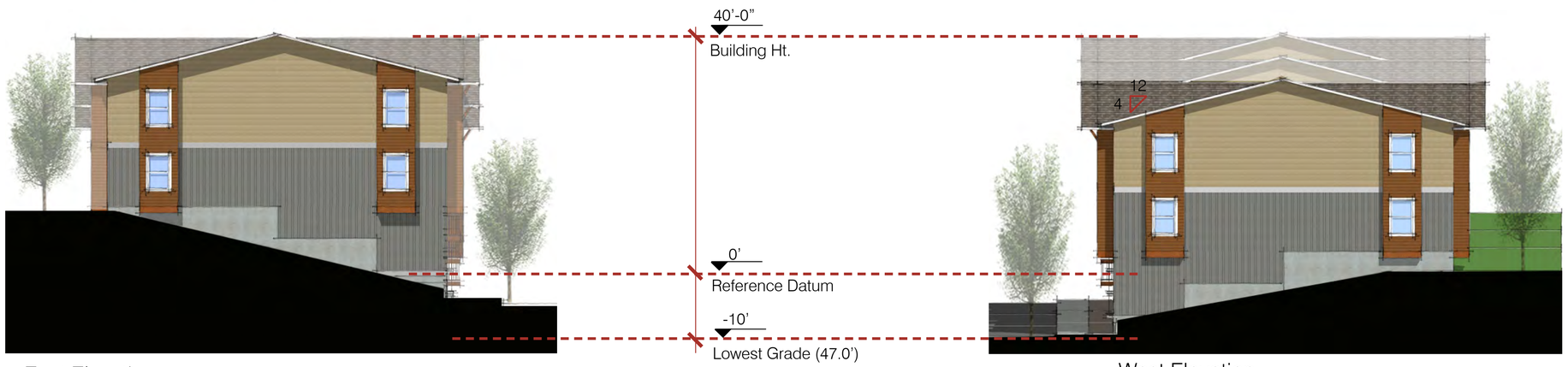
A108

EXHIBIT B-6



North Elevation



East Elevation

West Elevation

South Elevation

scale: 0 5' 10'

APPLICATION FOR SITE DESIGN REVIEW
CITY OF FAIRVIEW, OREGON
DATE: 26 February 2018

Sheet Title:
ELEVATIONS - BUILDING 5

Project Title:
FAIRVIEW APARTMENTS
RESIDENTIAL DEVELOPMENT, CITY OF FAIRVIEW, OR
WEST COAST HOME SOLUTIONS, LLC

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A109

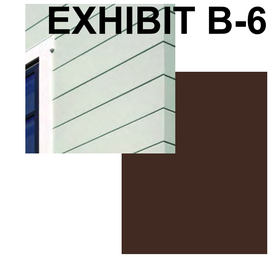
EXHIBIT B-6

MATERIAL-1
Fiber Cement
Horizontal Lap Siding

MATERIAL-2
Fiber cement
Straight Edge Shake

MATERIAL-3
Fiber Cement
Board & Batt Siding

MATERIAL-4
Manufactured Masonry
CMU



MATERIAL-5
Fiber Cement
V-Groove Siding

D1 Detail Elevation (Building #2)

Composite Roof Shingles

MATERIAL-5
Fiber Cement V-Groove Siding

Wood support brackets (Non-Structural)

MATERIAL-2
Fiber Cement Straight edge shake

Vinyl Windows with Trim

Wood Railing and Exposed Timber Framing

Metal guardrail

Fiber Cement Belly Band

MATERIAL-1
Fiber cement, Horizontal Lap Siding

MATERIAL-3
Fiber cement, Board and Batt Siding

MATERIAL-4 Manufactured masonry. CMU

Smooth Finish Exposed Concrete
With Reveals

D2 Detail Elevation (Building #5)

APPLICATION FOR SITE DESIGN REVIEW
CITY OF FAIRVIEW, OREGON
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Sheet Title:
ELEVATIONS - DETAILS

Project Title:
FAIRVIEW APARTMENTS
RESIDENTIAL DEVELOPMENT, CITY OF FAIRVIEW, OR
WEST COAST HOME SOLUTIONS, LLC

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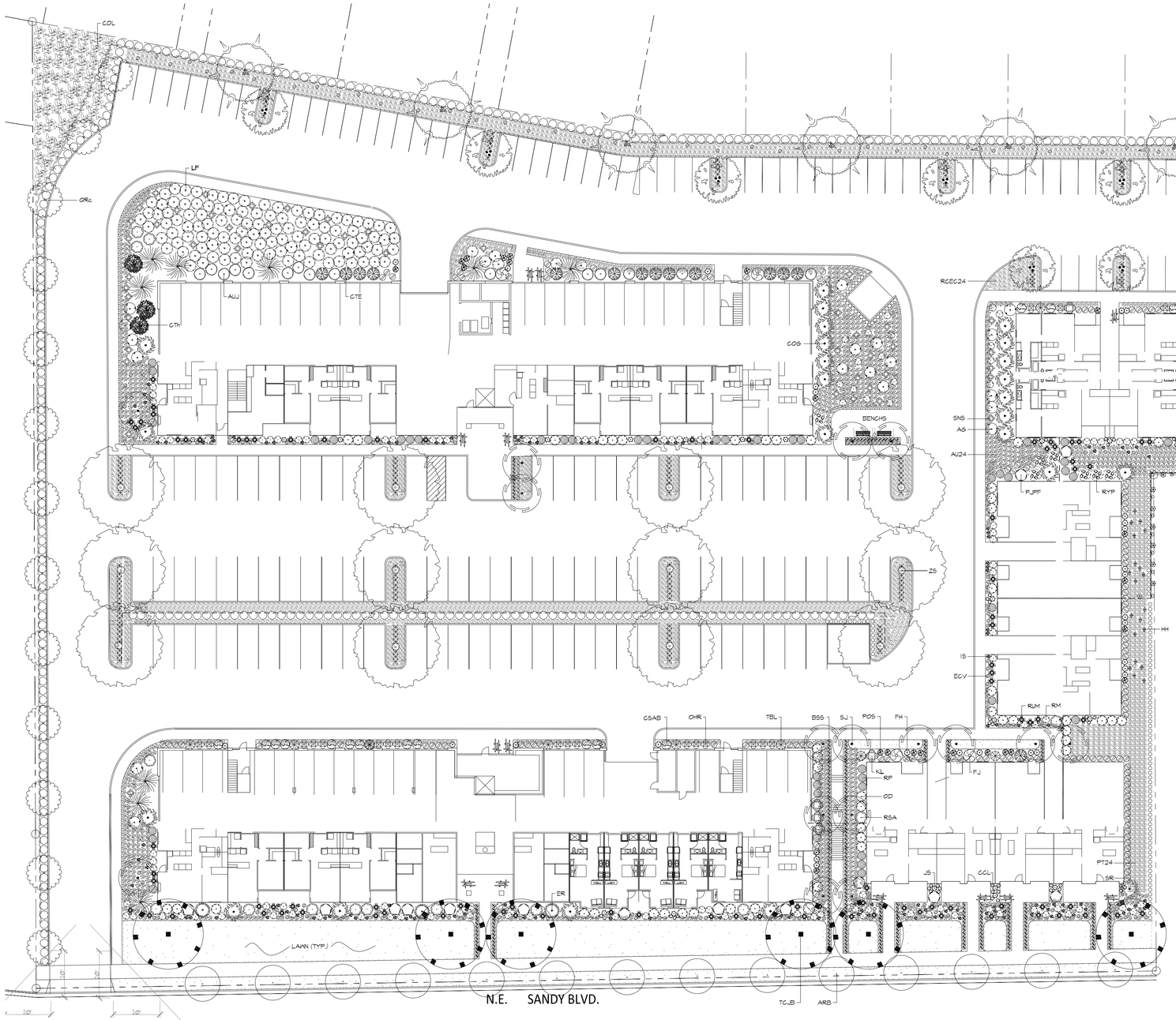
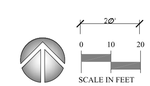
EXHIBIT B-7





PLANT LEGEND "VERIFY ALL QUANTITIES"

SYM	#	BOTANICAL	COMMON	SIZE
AG	28	ABELIA GRANDIFLORA	GLOSSY ABELIA	5 GAL
ARB	18	ACER RUBRUM 'BOWHALL'	COLUMNAR RED MAPLE	1-1/2 IN CAL
AU24	1555	ARCTOSTAPHYLOS UVAURSI-24IN-O.C.	NATIVE KINNIKKINNICK	4 IN 24" O.C.
AUJ	15	AUCUBA JAPONICA	AUCUBA	5 GAL
BI	22	PARTHENOCISSUS TRICUSPIDATA 'GREEN SHOWERS'	BOSTON IVY	1 GAL W/STAKE
BSS	248	BUXUS S. "SUFFRUTICOSA"	DWARF ENGLISH BOXWOOD	12 IN - 15 IN
CA	22	CLEMATIS ARMANDII	EVERGREEN CLEMATIS	1 GAL W/STAKE
CAS	8	CEDRUS ATLANTICA GLAUCA	BLUE ATLANTIC CEDAR	6 FT - 8 FT
CCL	73	CROCOSMIA CURTONIS. "LUCIFER"	CROCOSMIA	1 GAL
CDL	51	COTONEASTER D. LOWFAST	LOWFAST COTONEASTER	1 GAL
CL	6	CUPRESSOCYPARIS LEYLANDII	LEYLAND CYPRESS	6 FT - 8 FT
CNP	14	CHAMAECYPARIS N. "PENDULA"	WEEPING ALASKAN CEDAR	6 FT - 8 FT
COS	24	CHAMAECYPARIS OBTUSA "GRACILIS"	SLENDER HINOKI CYPRESS	6 FT - 8 FT
CSAB	23	CAMELIA S. APPLE BLOSSOM	APPLE BLOSSOM CAMELIA	5 GAL
CTE	15	CHOISYA TERNATA	MEXICAN ORANGE	5 GAL
CTh	3	CEANOTHUS THYSIFLORUS SKYLARK	SKYLARK CEANOTHUS	5 GAL
ECV	233	ERICA CARNEA "VIVELLII"	SPRING HEATHER	1 GAL
ER	7	ESCALLONIA RUBRA	RED ESCALLONIA	5 GAL
FH	32	FUSCHIA H. "SANTA CLAUS"	EVERGREEN FUSCHIA	2 GAL
FJ	4	FATSIA JAPONICA	JAPANESE ARALIA	5 GAL
HH	20	HOSTA HONEYBELLS	FRAGRANT HOSTA	1 GAL
IS	143	IBERIS SEMPERVIRONS	CANDYTUFF	1 GAL
JS	30	JUNIPERUS C. "SKYROCKET"	SKYROCKET JUNIPER	5FT - 6FT
KL	7	KALMIA LATIFOLIA "Heart of Fire"	Heart of Fire MOUNTAIN LAUREL	5 GAL
LF	108	LEUCOTHOE FONTANESIANA	DROOPING LEUCOTHOE	1 GAL
LI	12	LAGERSTROEMIA INDICA PURPLE MAGIC	PURPLE MAGICCRAPE MYRTLE	5 GAL
NDH	162	NANDINA DOMESTICA 'HARBOUR DWARF'	HARBOUR NANDINA	2 GAL
OD	53	OSMANTHUS DELAVAYI	DELAVAY OSMANTHUS	2 GAL
OHR	32	OSMANTHUS H. ROTUNDIFOLIUS	ROUNDLEAF OSMANTHUS	5 GAL
P_JFF	15	PIERIS JAPONICA 'PINK FLAMINGO'	ANDROMEDA	5 GAL
PLO	343	PRUNUS L. "OTTO-LUYKEN"	OTTO-LUYKEN LAUREL	15-18 IN
POS	25	POLYSTICHUM SETIFERUM	ALASKA LACE FERN	15AL
PT24	156	PACHYSANDRA TERMINALIS	PACHYSANDRA	4 IN 24" O.C.
QR6	QR6	QUERCUS ROBUR CRIMSCHMIDT	CRIMSON SPIRE OAK	1-1/2 IN CAL
RCEC24	2194	RUBUS CALYCINOIDES "EMERALD CARPET"	EMERALD CARPET	4 IN 24 "O.C.
RM	124	ROSA MEIDILAND "SCARLET"	SCARLET MEIDILAND ROSE	2 GAL
RP	44	RHODODENDRON "P.J.M."	P.J.M. RHODY	2 GAL
RSA	15	RIBES SANGUINUM	NATIVE CURRANT	5 GAL
RUM	101	RHAPHIOLEPIS U. MINOR 'GULF GREEN	DWARF YEDDO HAWTHORN	2 GAL
RYP	10	RHODODENDRON YAKU PRINCESS	YAKU RHODY	5 GAL
SJ	16	STYRAX JAPONICA	JAPANESE SNOWBELL	1-1/2 IN CAL
SNS	47	SPIRAEA NIPPONICA SNOWMOUND	SNOWMOUND SPIRAEA	2 GAL
SR	149	SARCOCOCCA RUSCIFOLIA	TALL SARCOCOCCA	2 GAL
TBL	13	TAXUS B. LAVIGATA	IRISH YEW	4-5
TC_JB	7	TILIA CORDATA "JUNE BRIDE"	LITTLE LEAF LINDEN	1-1/2 IN CAL
TOEG	148	THUJA O. 'EMERALD GREEN'	EMERALD GREEN ARBORVITAE	4 FT - 5 FT
ZS	12	ZELKOVA SERRATA GREEN VASE	GREEN VASE ZELKOVA	

MULCH
DARRELL MULCH
LANDSCAPE ARCHITECTURE
1907 N.E. 66TH AVENUE #168
PORTLAND, OREGON 97213
(503) 222-7416 TEL

REGISTERED 315 Darrell Mulch OREGON 10-18-93 LANDSCAPE ARCHITECT

FAIRVIEW APARTMENTS
NEW MULTI-FAMILY DEVELOPMENT
NE Sandy Boulevard and NE 223rd

West Coast Real Estate Holdings, LLC
P.O. BOX 1989 Lake Oswego, OR 97035

APPLICATION FOR SITE DESIGN REVIEW
CITY OF FAIRVIEW, OREGON
DATE: 26 February 2018

Sheet Title:
LANDSCAPE PLAN

Project Title:
FAIRVIEW APARTMENTS
RESIDENTIAL DEVELOPMENT, CITY OF FAIRVIEW, OR
WEST COAST HOME SOLUTIONS, LLC

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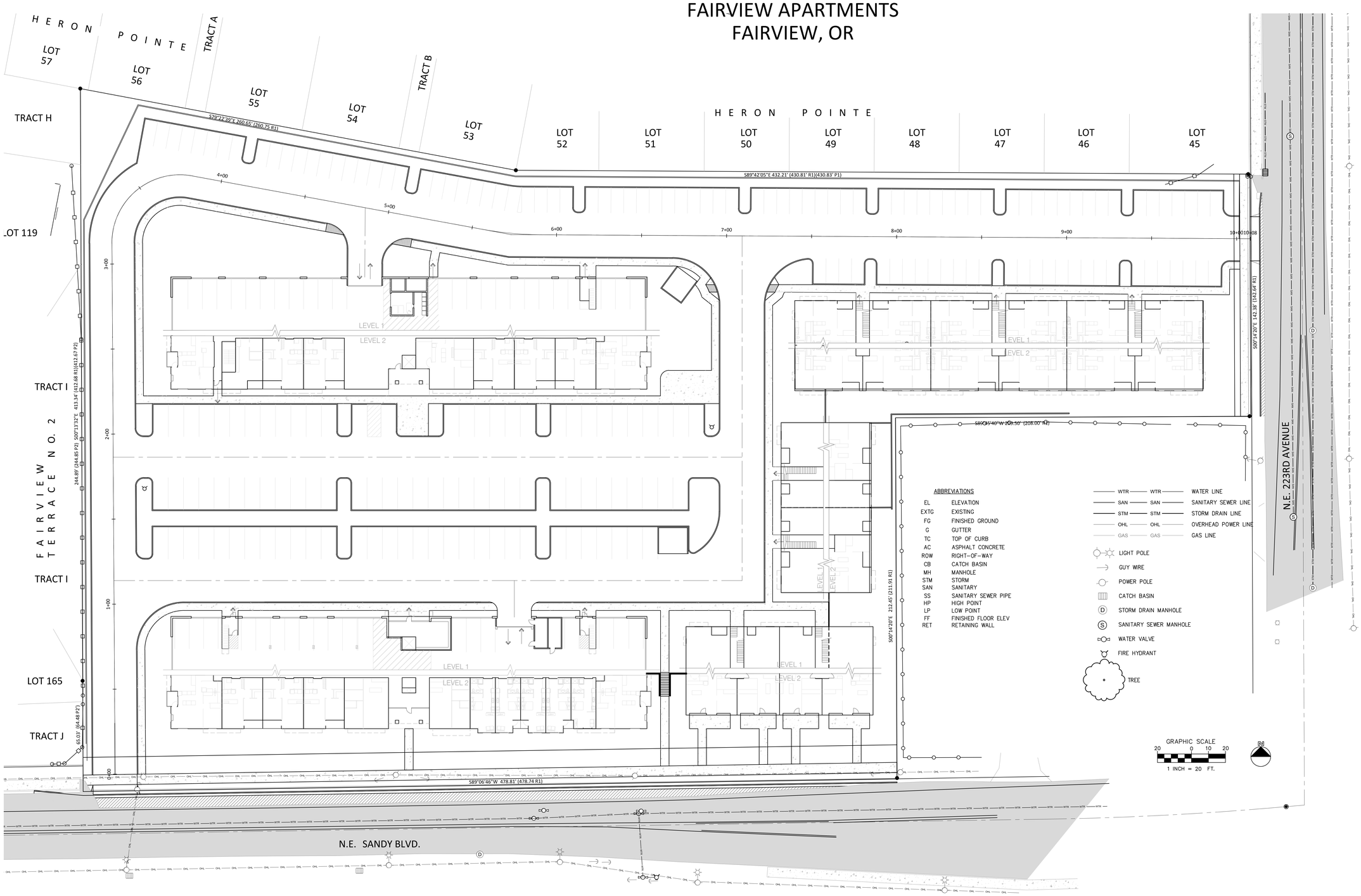
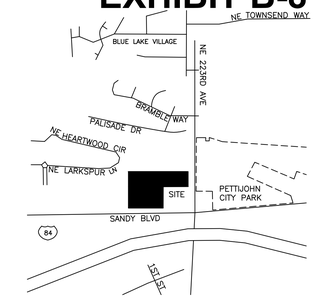
A111

FAIRVIEW APARTMENTS
FAIRVIEW, OR

EXHIBIT B-8





ABBREVIATIONS

EL	ELEVATION
EXTG	EXISTING
FG	FINISHED GROUND
G	GUTTER
TC	TOP OF CURB
AC	ASPHALT CONCRETE
ROW	RIGHT-OF-WAY
CB	CATCH BASIN
MH	MANHOLE
STM	STORM
SAN	SANITARY
SS	SANITARY SEWER PIPE
HP	HIGH POINT
LP	LOW POINT
FF	FINISHED FLOOR ELEV
RET	RETAINING WALL

WTR — WTR	WATER LINE
SAN — SAN	SANITARY SEWER LINE
STM — STM	STORM DRAIN LINE
OHL — OHL	OVERHEAD POWER LINE
GAS — GAS	GAS LINE
	LIGHT POLE
	GUY WIRE
	POWER POLE
	CATCH BASIN
	STORM DRAIN MANHOLE
	SANITARY SEWER MANHOLE
	WATER VALVE
	FIRE HYDRANT
	TREE

OWNER

WEST COAST HOME SOLUTIONS, LLC
P.O. BOX 1969
LAKE OSWEGO, OR 97035
ATTN: EUGENE LABUNSKY
(503) 989-1613

CIVIL ENGINEERING & SURVEYING

BMP DESIGN
12214 SE MILL PLAIN BLVD. #203
VANCOUVER, WA 98684
ATTN: BOGDAN POPESCU, P.E., P.L.S.
360-936-8426

ARCHITECTS

LEEB ARCHITECTS
308 SW FIRST AVENUE #200
PORTLAND, OR 970204
ATTN: ROBERT LEEB
(503) 228-2840

PLANNER

WINTERBROOK PLANNING
310 SW 4TH AVENUE, SUITE 1100
PORTLAND, OR 97204
ATTN: JESSE WINTEROWD, AICP
(503) 827-4422

SHEET INDEX

C 0.0	**COVER SHEET**
C 1.0	**SITE ANALYSIS MAP**
C 2.0	**PROPOSED SITE PLAN**
C 3.0	**PRELIMINARY GRADING PLAN**
C4.0	**PROPOSED UTILITIES**
C5.0	**SANDY BLVD. IMPROVEMENTS**
C6.0	**223RD AVE. IMPROVEMENTS**
C7.0	**TURN ANALYSIS**
C8.0	**LIGHTING PLAN**
C9.0	**STORM WATER PLAN**
C10.0	**EROSION CONTROL PLAN**
A100	Architectural Site Plan
L1	Landscape Planting Plan

THESE DRAWINGS ARE THE PROPERTY OF BMP DESIGN LLC. NO REPRODUCTION IS ALLOWED IN ANY MANNER EXCEPT WITH THE WRITTEN PERMISSION OF BMP DESIGN LLC.

BMP DESIGN LLC
Civil Engineering & Land Surveying
12214 SE Mill Plain Blvd. # 203, Vancouver, WA 98684
Ph: 360-936-8426 Fax: 360-936-0354
www.bmpdesignllc.com

2/22/2018

REGISTERED PROFESSIONAL ENGINEER 40715PE OREGON BOGDAN M. POPESCU
PRELIMINARY
EXPIRATION DATE 12/31/18

PROJECT NAME: FAIRVIEW APARTMENTS

COVER SHEET

NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

REVISION/DATE	DESCRIPTION	DRAFT BY	DESIGN BY	CHECK BY

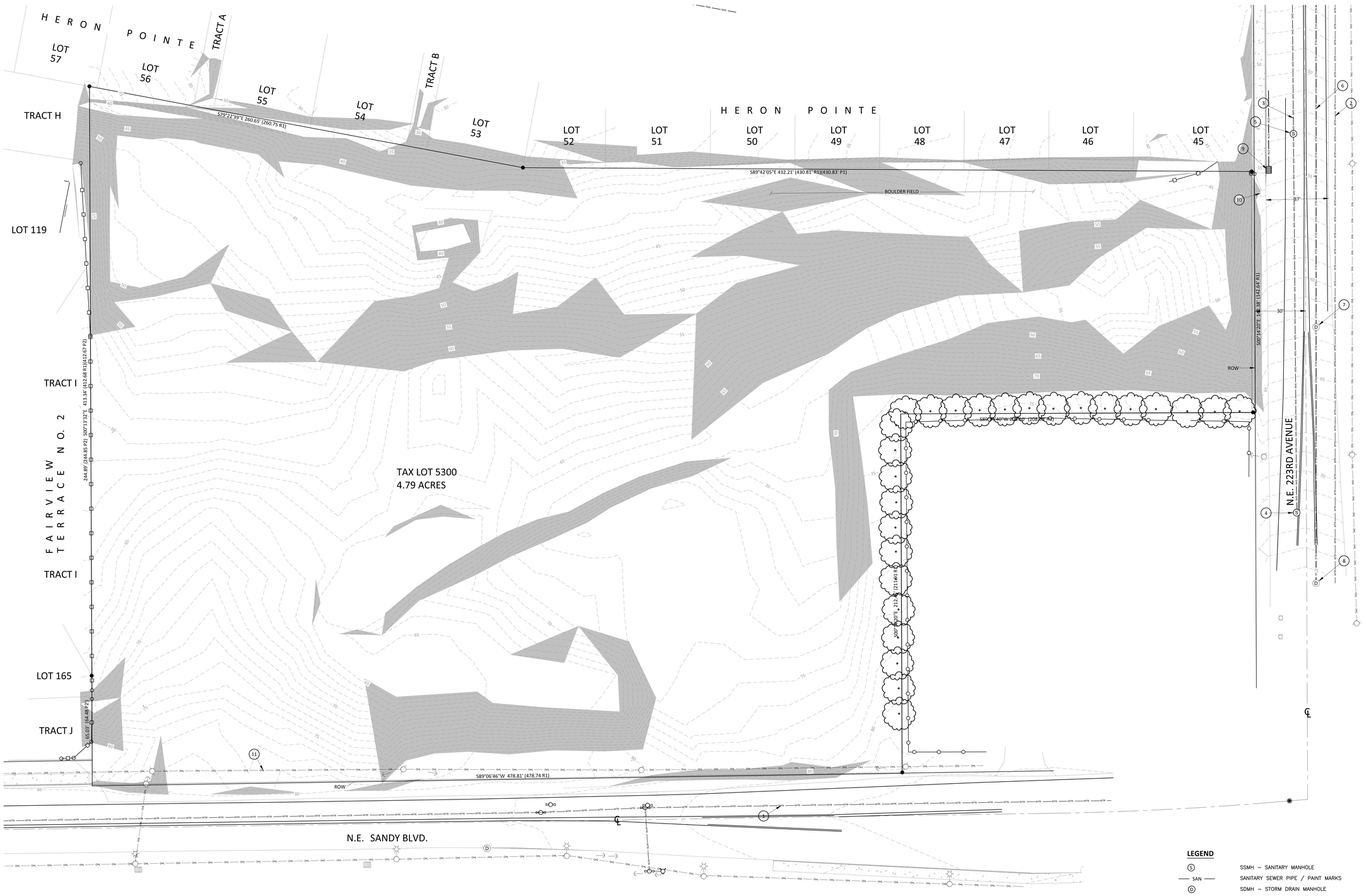
PRELIMINARY, SUBJECT TO REVIEWS AND REVISIONS, NOT FOR CONSTRUCTION

SHEET
C 0.0

15118

P:\PROJECTS\15\FAIRVIEW-EUGENE\DWG\SHEETS\15 COVER SHEET.DWG

Exhibit B-9



KEY NOTES

1. SANDY BLVD. 10" PVC WATER LINE.
2. 223RD AVENUE 10" CI WATER LINE.
3. 223RD AVENUE 8" PVC SEWER LINE
4. 223RD AVENUE MH#1 RIM: 72.20, IE OUT (N): 65.70
5. 223RD AVENUE MH#2 RIM: 52.92, IE OUT (N): 42.9, IE IN (S): 43.0
6. 223RD AVENUE 24" CPP STORM DRAIN
7. 223RD AVENUE SDMH#1 RIM: 62.40, IE OUT (N): 53.0, IE IN(S): 53.1
8. 223RD AVENUE SDMH#1 RIM: 75.78, IE OUT (N): 63.9, IE IN(S): 66.5
9. STORM DRAIN CATCH BASIN RIM: 54.09, IE OUT 50.13
10. EXISTING VAULT TO BE RELOCATED
11. EXISTING OVERHEAD POWER LINE TO BE RELOCATED

SLOPE > 25%

LEGEND

(S)	SSMH – SANITARY MANHOLE
— SAN —	SANITARY SEWER PIPE / PAINT MARKS
(D)	SDMH – STORM DRAIN MANHOLE
▥	CB – CATCH BASIN
— STM —	STORM DRAIN PIPE / PAINT MARKS
	WV – WATER VALVE
	FH – FIRE HYDRANT
— WTR —	WATER LINE /PAINT MARKS
	GV – GAS VALVE
— GAS —	NATURAL GAS LINE /PAINT MARKS
	PP – POWER POLE
	PPL – POWER POLE W/ LIGHT
— OHL —	OVERHEAD WIRES
	DECIDUOUS TREE
●	FOUND BOUNDARY MONUMENT

N

GRAPHIC SCALE
20 0 10 20
1 INCH = 20 FT.

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2/22/2018

REGISTERED PROFESSIONAL ENGINEER
49715
STATE OF WASHINGTON
JOHN M. POPESCU
PRELIMINARY
EXPIRATION DATE 12/31/18

PRELIMINARY, SUBJECT TO REVIEWS AND REVISIONS, NOT FOR CONSTRUCTION

PROJECT NAME: FAIRVIEW APARTMENTS

SITE ANALYSIS MAP

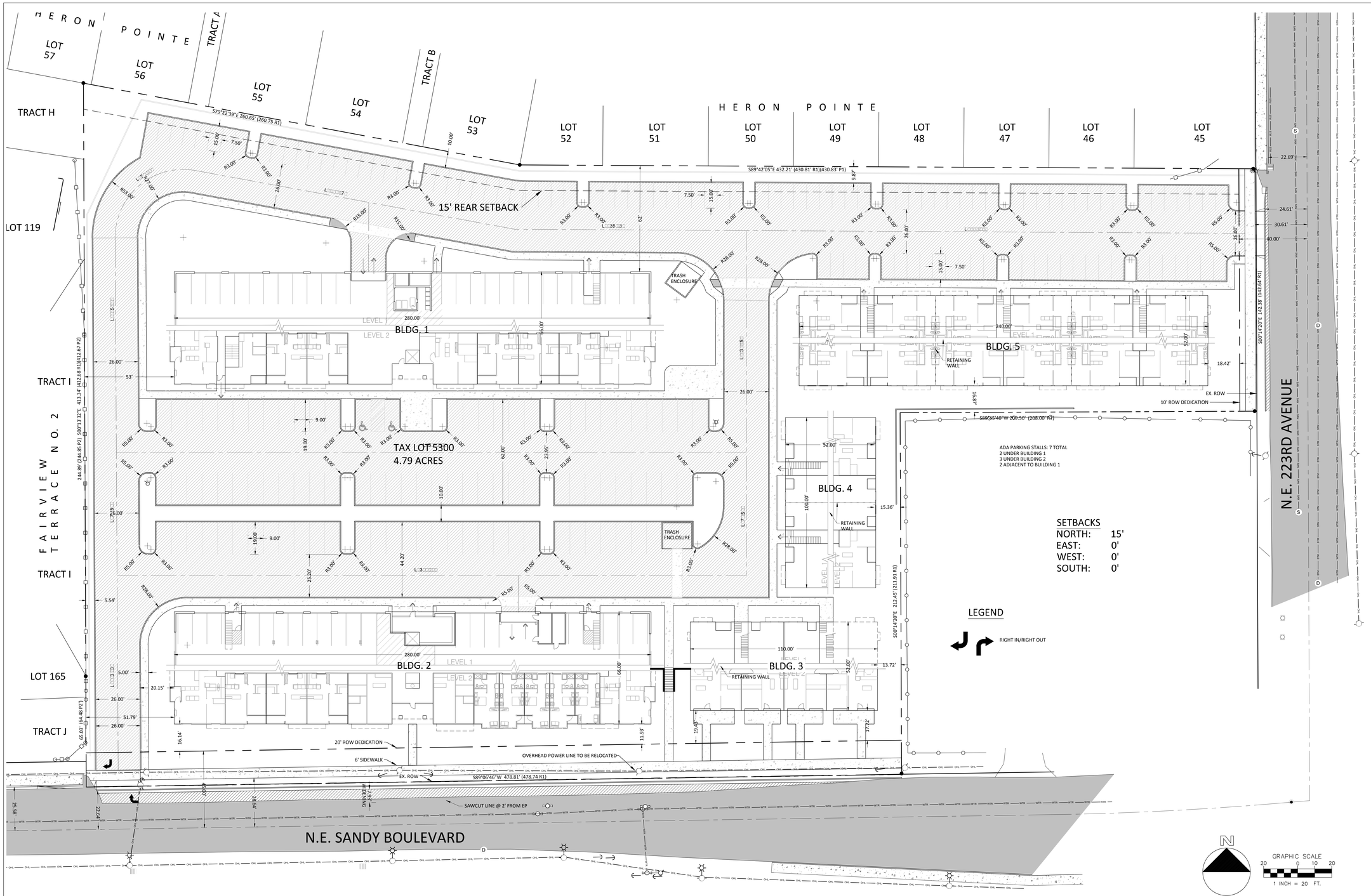
NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

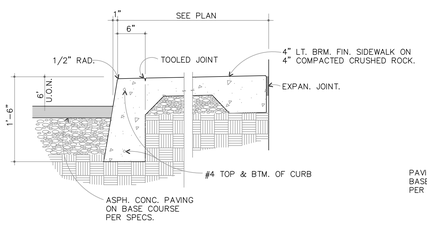
REVISION/DATE DESCRIPTION	DRAFT BY:	DESIGN BY:	CHECK BY:

SHEET
C 1.0
15118

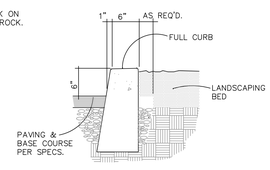
P:_PROJECTS\15118-FAIRVIEW-EUGENE\DWG\SHEETS\15118 010 SITE ANALYSIS MAP.DWG

EXHIBIT B-10

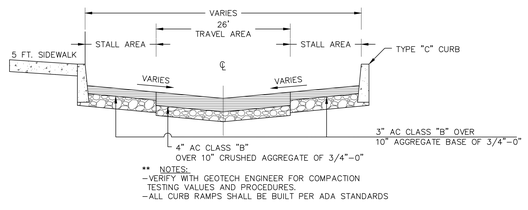




CONC. CURB & SIDEWALK
SCALE: NTS



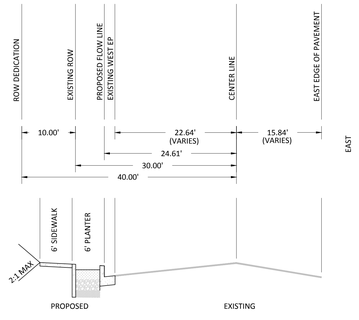
FULL HEIGHT CURB
SCALE: NTS



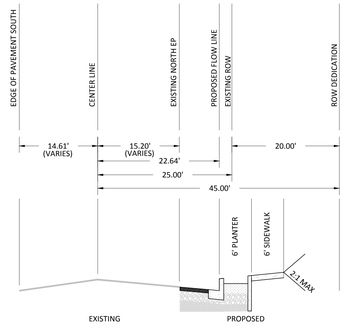
** NOTES:
-VERIFY WITH GEOTECH ENGINEER FOR COMPACTION TESTING VALUES AND PROCEDURES.
-ALL CURB RAMPS SHALL BE BUILT PER ADA STANDARDS

TYPICAL CROSS SECTION – PARKING
N.T.S.

223RD AVENUE SECTION (TYP.)



SANDY BLVD. SECTION (TYP.)



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2/26/2018

REGISTERED PROFESSIONAL ENGINEER
VIRGINIA
49711
BRIAN M. POPESCU
PRELIMINARY
EXPIRATION DATE 12/31/18

PROJECT NAME: FAIRVIEW APARTMENTS
PROPOSED SITE PLAN
NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

REVISION/DATE DESCRIPTION	DRAFT BY	DESIGN BY	CHECK BY

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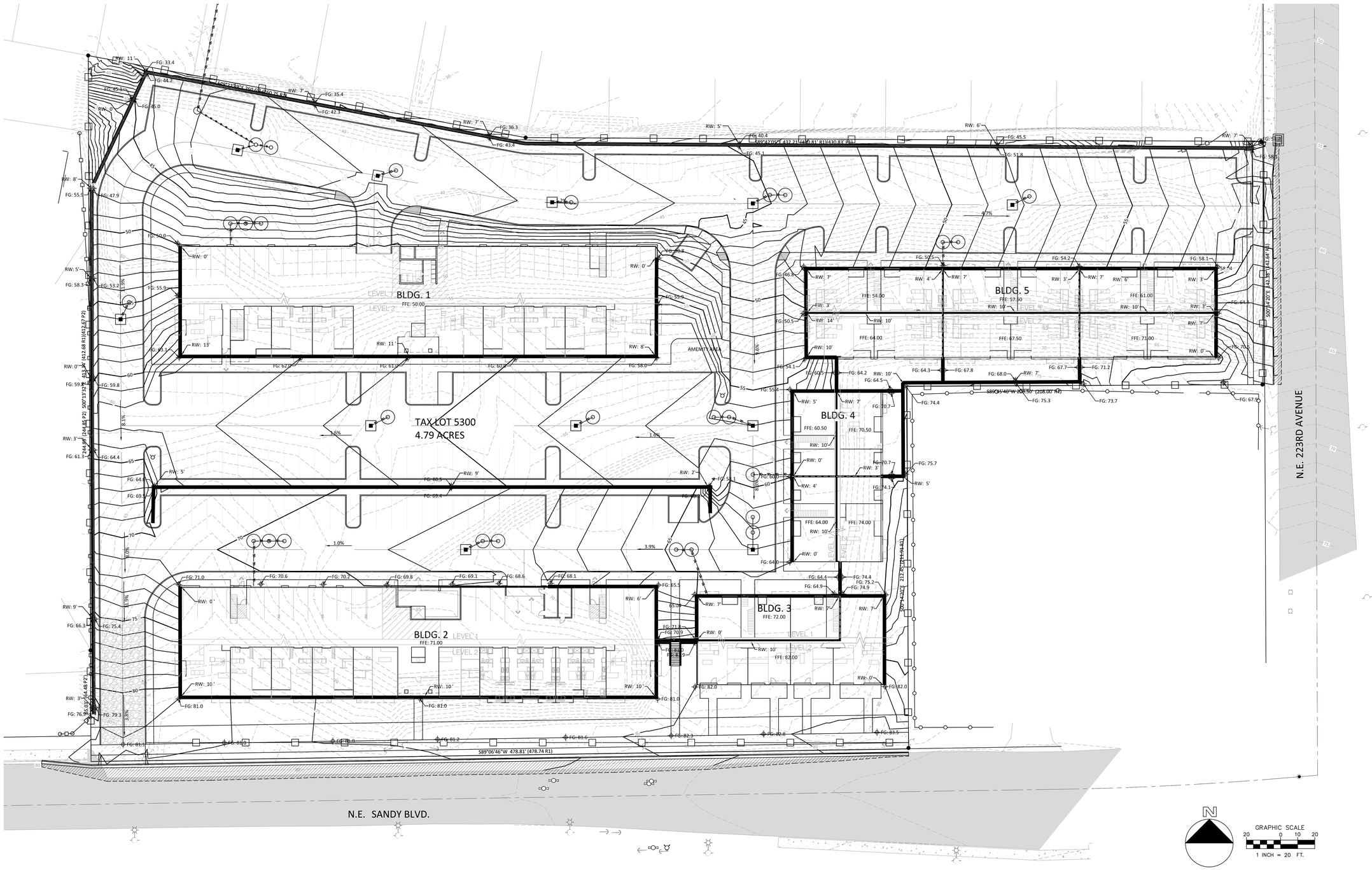
EXHIBIT B-11



GRADING NOTES

1. ALL SURFACES SHALL HAVE A MINIMUM 2% SLOPE UNLESS OTHERWISE NOTED ON PLANS. ALL SURFACES SHALL ALL SURFACES SHALL MEET EXISTING GRADES SMOOTHLY AND EVENLY AND MAINTAIN CONSTANT SLOPES UNLESS OTHERWISE SPECIFIED ON PLANS.
2. CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EXISTING SITE DRAINAGE PATTERNS AND PROTECTION OF EXISTING ENGINEERED DRAINAGE FACILITIES.
3. CONTRACTOR SHALL EXERCISE GREAT CARE IN ALL OPERATIONS TO PROTECT EXISTING UNDERGROUND UTILITIES. ANY DAMAGE RESULTING FROM THIS WORK MUST BE RESTORED AT CONTRACTOR'S EXPENSE TO THE APPROVAL OF THE OWNER'S REPRESENTATIVE.
4. CONTRACTOR SHALL REPLACE AND RESTORE PROJECT AREAS NOT SCHEDULED FOR CONSTRUCTION TO THEIR ORIGINAL CONDITION AND TO THE APPROVAL OF TEH OWNER'S REPRESENTATIVE.
5. CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN AREAS ADJACENT TO EXISTING TREES IN ORDER TO MINIMIZE DISTURBANCE TO THE TREES' ROOTS. CONTRACTOR SHALL INSTALL TREE PROTECTION FENCING AS INDICATED ON PLANS OR AT DRIP LINE OF EXISTING TREES. VEHICLES ARE NOT ALLOWED TO PARK UNDER TREES.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR DEMOLITION AND DISPOSAL OF THE EXISTING ASPHALT, CURBS, SIDEWALKS, AND OTHER SITE ELEMENTS WITHIN THE PROJECT AREA. DISPOSAL OF THE DEMOLITION ITEMS SHALL BE AT THE JURISDICTIONAL AGENCY APPROVED DISPOSAL SITE.
7. ADJUST ALL MANHOLES, VALVES, LIDS, BOXES TO FINISHED GRADE.

RETAINING WALL

75 PROPSED CONTOUR

75 EXISTING CONTOUR

INLET PROTECTION

CONSTRUCTION ENTRANCE

SILT FENCE

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2/24/2018

REGISTERED PROFESSIONAL ENGINEER
BOGDAN M. POPESCU
PRELIMINARY
EXPIRATION DATE 12/31/18

PROJECT NAME: FAIRVIEW APARTMENTS

PRELIMINARY GRADING AND EROSION CONTROL PLAN

NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

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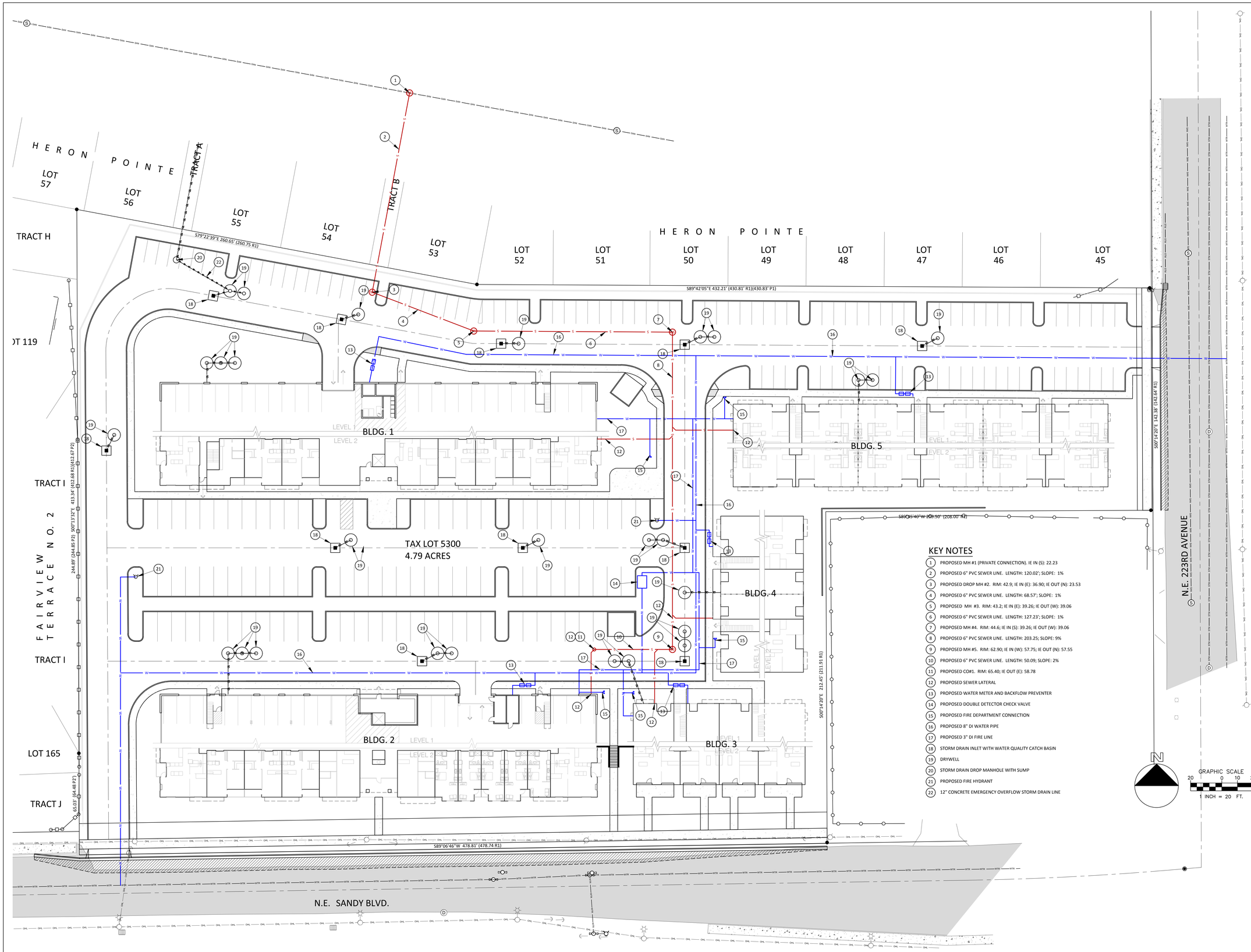
EXHIBIT B-12



KEY NOTES

1. PROPOSED MH #1 (PRIVATE CONNECTION). IE IN (S): 22.23
2. PROPOSED 6" PVC SEWER LINE. LENGTH: 120.02'; SLOPE: 1%
3. PROPOSED DROP MH #2. RIM: 42.9; IE IN (E): 36.90; IE OUT (N): 23.53
4. PROPOSED 6" PVC SEWER LINE. LENGTH: 68.57'; SLOPE: 1%
5. PROPOSED MH #3. RIM: 43.2; IE IN (E): 39.26; IE OUT (W): 39.06
6. PROPOSED 6" PVC SEWER LINE. LENGTH: 127.23'; SLOPE: 1%
7. PROPOSED MH #4. RIM: 44.6; IE IN (S): 39.26; IE OUT (W): 39.06
8. PROPOSED 6" PVC SEWER LINE. LENGTH: 203.25; SLOPE: 9%
9. PROPOSED MH #5. RIM: 62.90; IE IN (W): 57.75; IE OUT (N): 57.55
10. PROPOSED 6" PVC SEWER LINE. LENGTH: 50.09; SLOPE: 2%
11. PROPOSED CO#1. RIM: 65.40; IE OUT (E): 58.78
12. PROPOSED SEWER LATERAL
13. PROPOSED WATER METER AND BACKFLOW PREVENTER
14. PROPOSED DOUBLE DETECTOR CHECK VALVE
15. PROPOSED FIRE DEPARTMENT CONNECTION
16. PROPOSED 8" DI WATER PIPE
17. PROPOSED 3" DI FIRE LINE
18. STORM DRAIN INLET WITH WATER QUALITY CATCH BASIN
19. DRYWELL
20. STORM DRAIN DROP MANHOLE WITH SUMP
21. PROPOSED FIRE HYDRANT
22. 12" CONCRETE EMERGENCY OVERFLOW STORM DRAIN LINE

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2/24/2018

REGISTERED PROFESSIONAL ENGINEER
BOGDAN M. POPESCU
PRELIMINARY

EXPIRATION DATE 12/31/18

PROJECT NAME: FAIRVIEW APARTMENTS

PROPOSED UTILITY PLAN

NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

REVISION/DATE DESCRIPTION	DRAWN BY	DESIGN BY	CHECK BY

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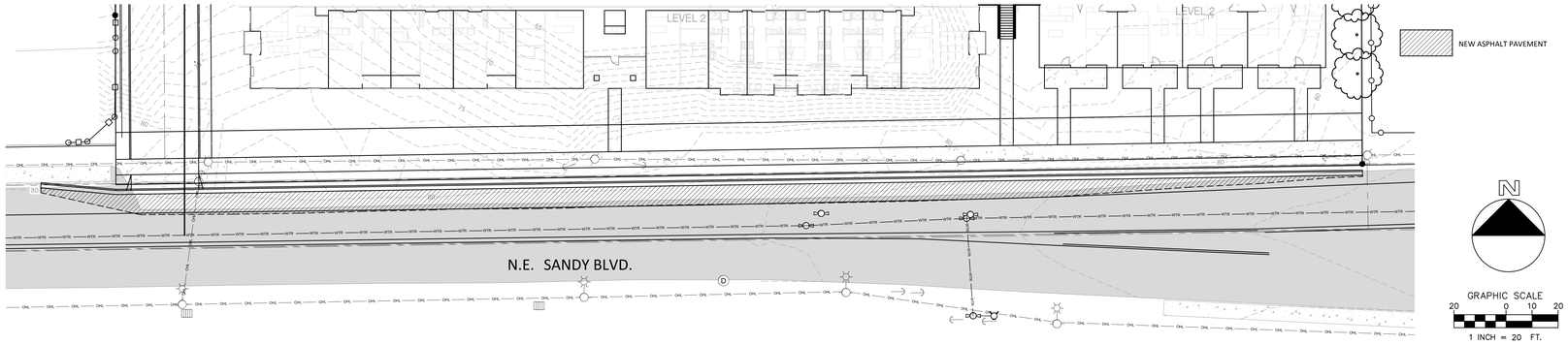
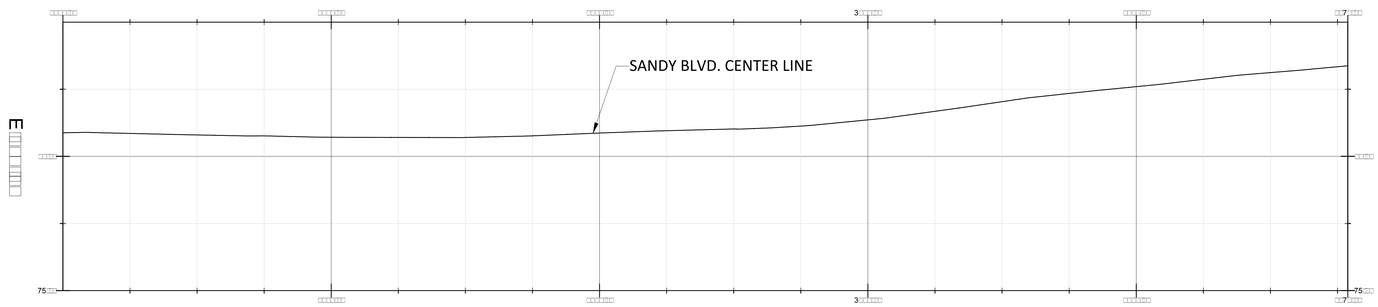
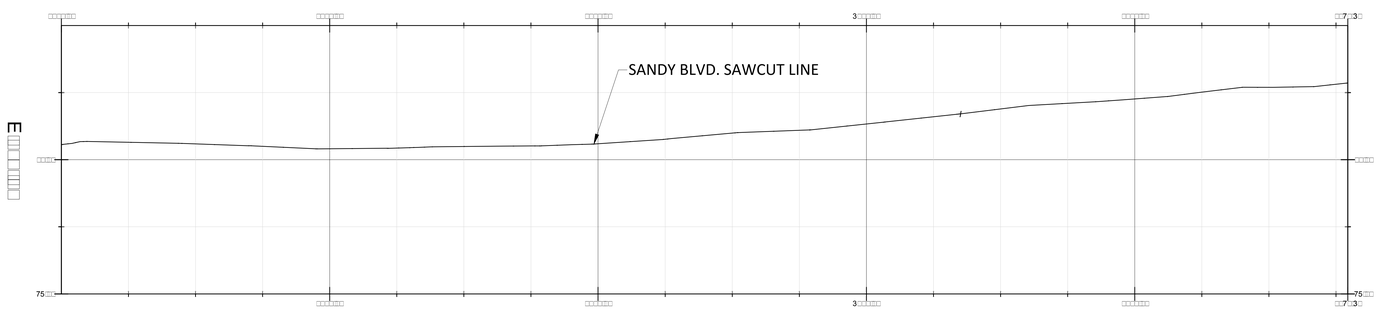
EXHIBIT B-13







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2/22/2018

REGISTERED PROFESSIONAL ENGINEER
STEVEN M. POPESCU
PRELIMINARY
EXPIRATION DATE 12/31/18

PROJECT NAME: FAIRVIEW APARTMENTS

SANDY BLVD. IMPROVEMENTS

NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

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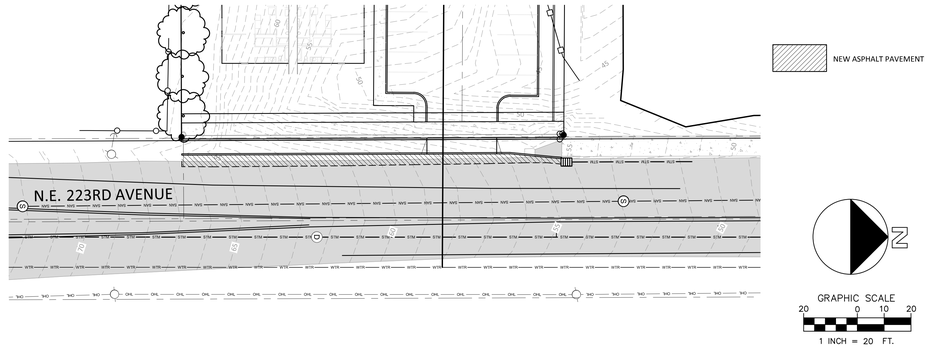
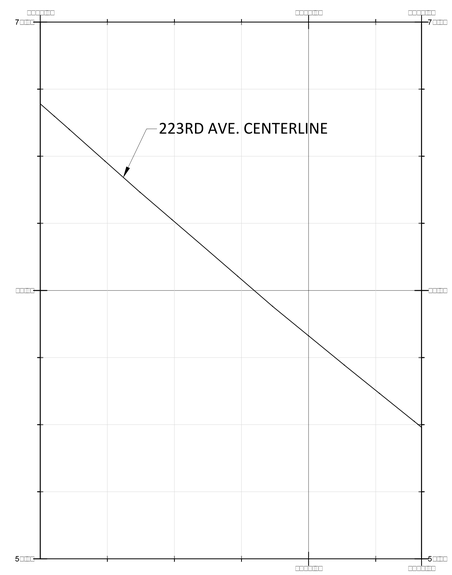
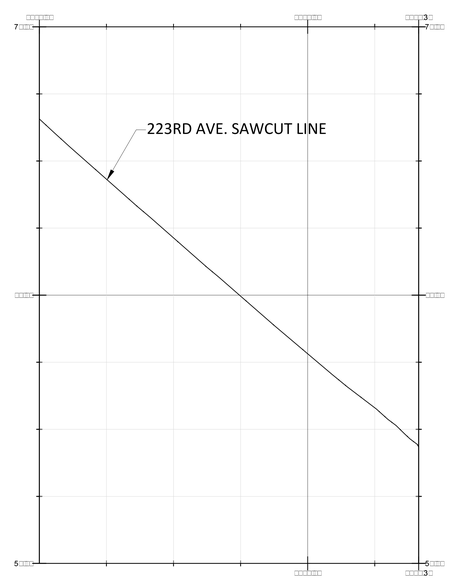
EXHIBIT B-14







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2/22/2018

REGISTERED PROFESSIONAL ENGINEER 40713 OREGON BOGDAN M. POPESCU
PRELIMINARY
EXPIRATION DATE 12/31/18

PRELIMINARY; SUBJECT TO REVIEWS AND REVISIONS, NOT FOR CONSTRUCTION

PROJECT NAME: FAIRVIEW APARTMENTS

223RD AVE. IMPROVEMENTS

NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

REVISION/DATE	DESCRIPTION	DRAFT BY	DESIGN BY	CHECK BY

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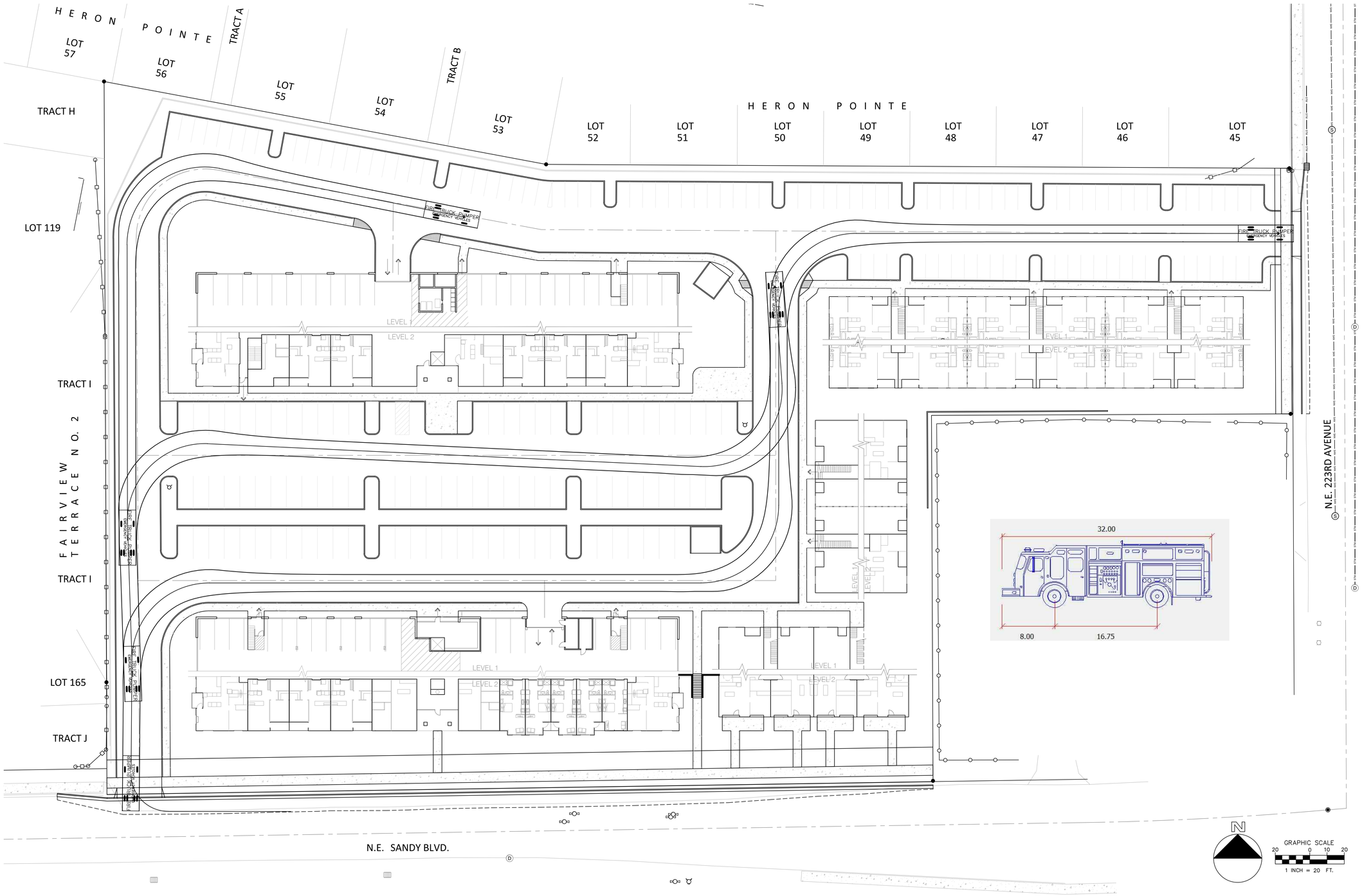
EXHIBIT B-15



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2/22/2018

REGISTERED PROFESSIONAL ENGINEER
49715
STATE OF WASHINGTON
BRIAN M. POPESCU
PRELIMINARY
EXPIRATION DATE 12/31/18

PROJECT NAME: FAIRVIEW APARTMENTS

TURN ANALYSIS

NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

REVISION/DATE	DESCRIPTION	DRAFT BY:	DESIGN BY:	CHECK BY:

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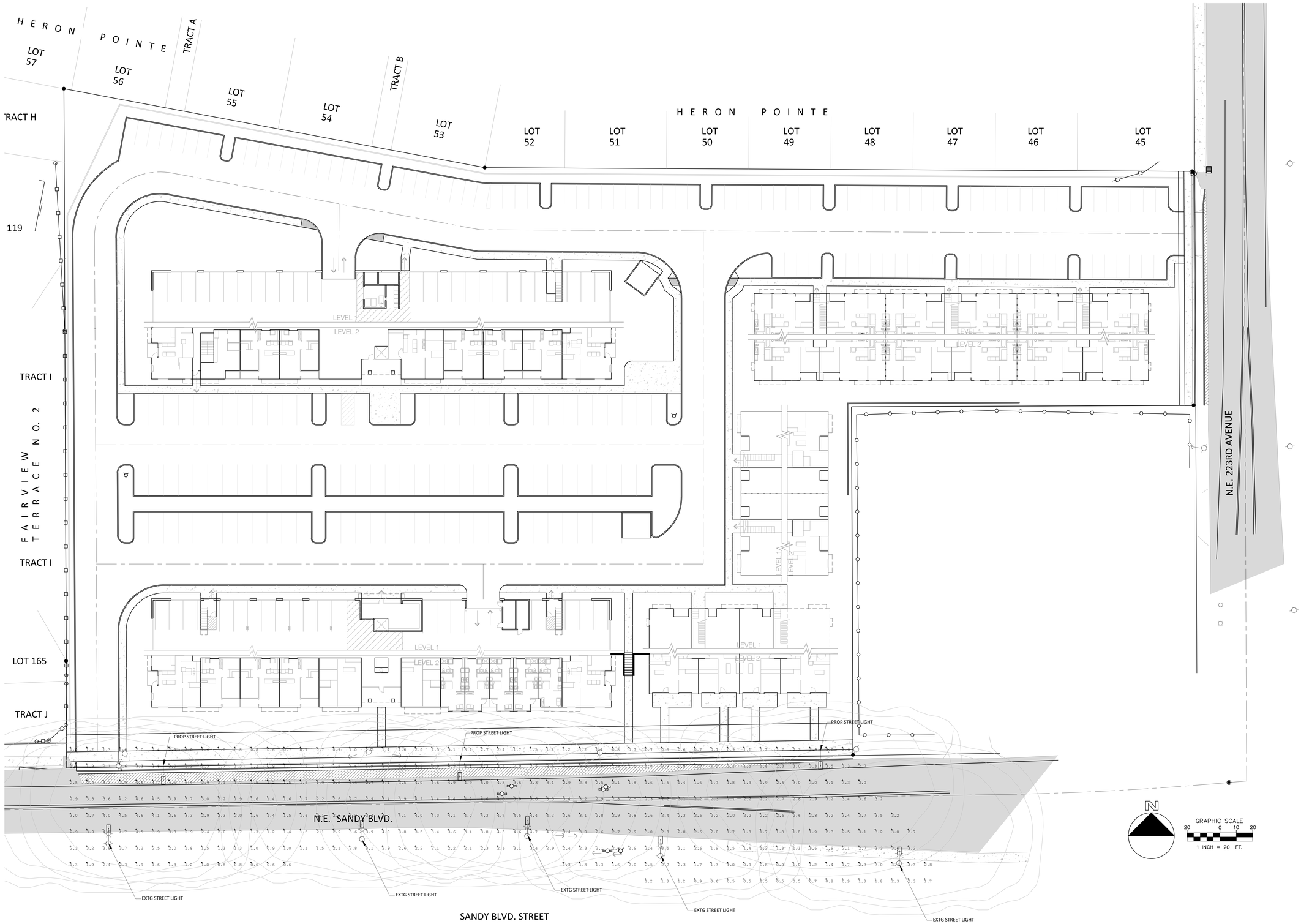
EXHIBIT B-16



SANDY BLVD. STREET LIGHTING
Illuminance (Fc)
Average=2.43
Maximum=5.0
Minimum=0.5
Avg/Min=4.86
Max/Min=10.00

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2/22/2018

REGISTERED PROFESSIONAL ENGINEER
ARTHUR M. POPESCU
PRELIMINARY
EXPIRATION DATE 12/31/18

PROJECT NAME: FAIRVIEW APARTMENTS

LIGHTING PLAN SANDY BLVD.

NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

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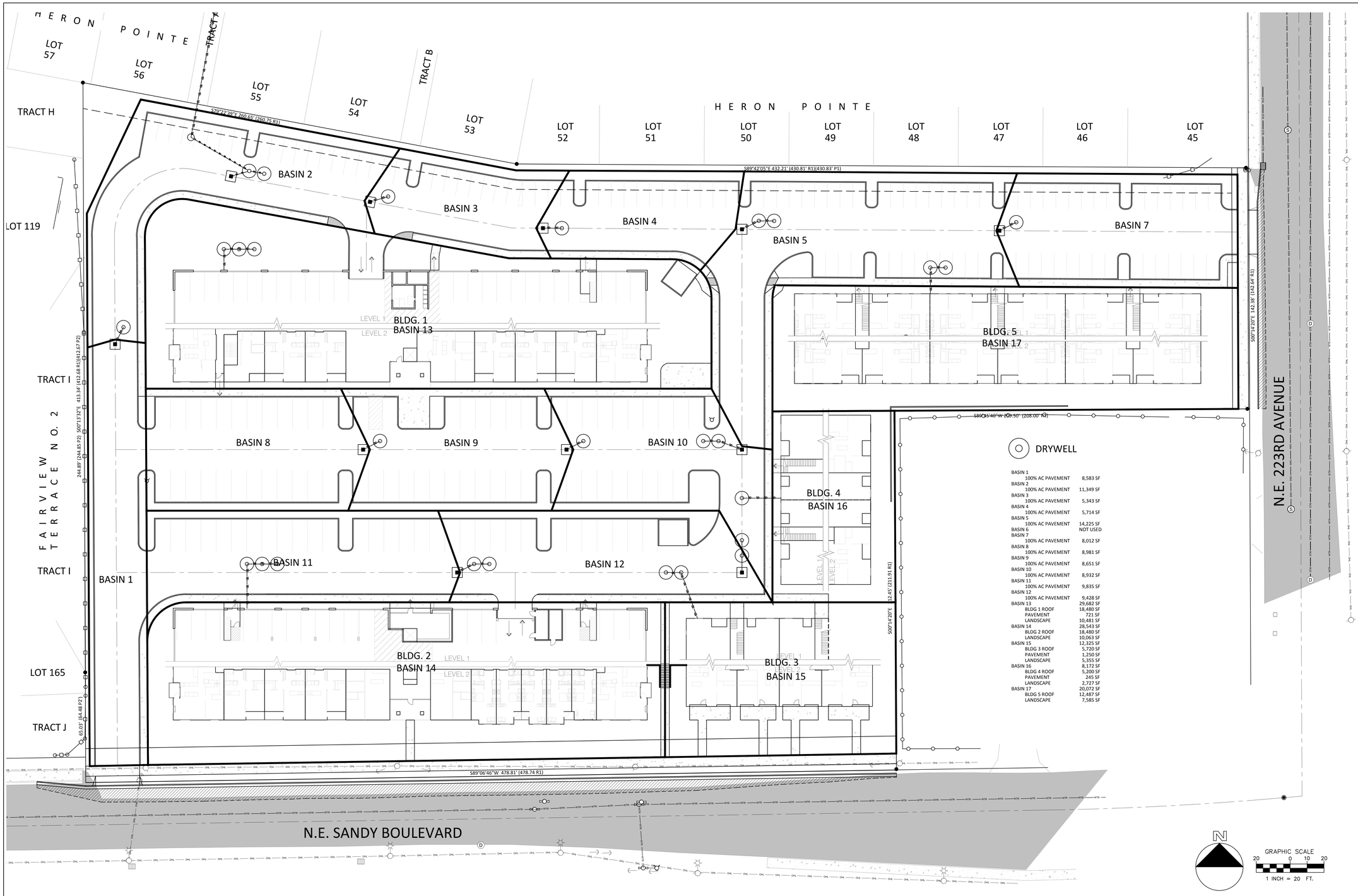

BASIN 1		
	100% AC PAVEMENT	8,583 SF
BASIN 2		
	100% AC PAVEMENT	11,349 SF
BASIN 3		
	100% AC PAVEMENT	5,343 SF
BASIN 4		
	100% AC PAVEMENT	5,714 SF
BASIN 5		
	100% AC PAVEMENT	14,225 SF
BASIN 6		NOT USED
BASIN 7		
	100% AC PAVEMENT	8,012 SF
BASIN 8		
	100% AC PAVEMENT	8,981 SF
BASIN 9		
	100% AC PAVEMENT	8,651 SF
BASIN 10		
	100% AC PAVEMENT	8,932 SF
BASIN 11		
	100% AC PAVEMENT	9,835 SF
BASIN 12		
	100% AC PAVEMENT	9,428 SF
BASIN 13		29,682 SF
	BLDG 1 ROOF	18,480 SF
	PAVEMENT	721 SF
	LANDSCAPE	10,481 SF
BASIN 14		28,543 SF
	BLDG 2 ROOF	18,480 SF
	LANDSCAPE	10,063 SF
BASIN 15		12,325 SF
	BLDG 3 ROOF	5,720 SF
	PAVEMENT	1,250 SF
	LANDSCAPE	5,355 SF
BASIN 16		8,172 SF
	BLDG 4 ROOF	5,200 SF
	PAVEMENT	245 SF
	LANDSCAPE	2,727 SF
BASIN 17		20,072 SF
	BLDG 5 ROOF	12,487 SF
	LANDSCAPE	7,585 SF

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2/24/2018

REGISTERED PROFESSIONAL ENGINEER 40713 PE WASHINGTON BRADSHAW M. POPESCU

PRELIMINARY

EXPIRATION DATE 12/31/18

PRELIMINARY, SUBJECT TO REVIEWS AND REVISIONS, NOT FOR CONSTRUCTION

PROJECT NAME: FAIRVIEW APARTMENTS

BASIN PLAN

NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

REVISION/DATE	DESCRIPTION	DRAWN BY	DESIGN BY	CHECK BY

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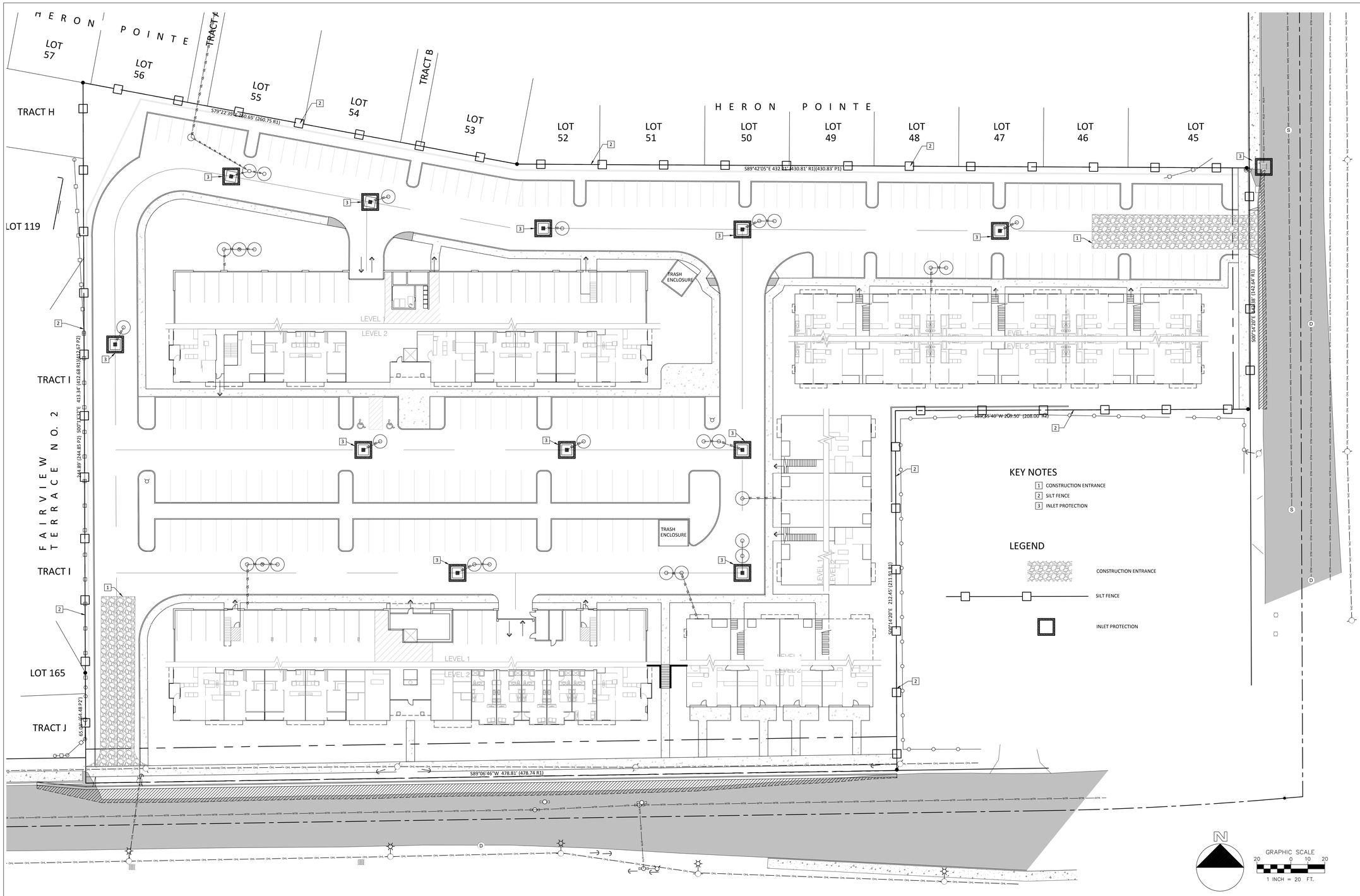
P:_PROJECTS\15118-FAIRVIEW-EUGENE\DWG\SHEETS\15118 090 STORMWATER PLAN.DWG

EXHIBIT B-18



EROSION CONTROL NOTES

A. APPROVAL OF THIS EROSION, SEDIMENT AND POLLUTION CONTROL PLAN (ESPCP) DOES NOT CONSTITUTE AN APPROVAL OF PERMANENT ROAD OR DRAINAGE DESIGN (E.G., SIZE AND LOCATION OF ROADS, PIPES, RESTRICTORS, CHANNELS, RETENTION FACILITIES, UTILITIES, ETC.)

B. THE IMPLEMENTATION OF THIS ESPCP AND THE CONSTRUCTION, MAINTENANCE, REPLACEMENT, AND UPGRADING OF THESE ESPCP FACILITIES IS THE RESPONSIBILITY OF THE APPLICANT/CONTRACTOR UNTIL ALL CONSTRUCTION IS COMPLETED AND APPROVED AND VEGETATION/LANDSCAPING IS ESTABLISHED.

C. THE BOUNDARIES OF THE CLEARING LIMITS SHOWN ON THIS PLAN SHALL BE CLEARLY FLAGGED IN THE FIELD PRIOR TO CONSTRUCTION. DURING THE CONSTRUCTION PERIOD, NO DISTURBANCE BEYOND THE FLAGGED CLEARING LIMITS SHALL BE PERMITTED. THE FLAGGING SHALL BE MAINTAINED BY THE APPLICANT/CONTRACTOR FOR THE DURATION OF CONSTRUCTION.

D. THE ESPCP FACILITIES SHOWN ON THIS PLAN MUST BE CONSTRUCTED IN CONJUNCTION WITH ALL CLEARING AND GRADING ACTIVITIES, AND IN SUCH A MANNER AS TO INSURE THAT SEDIMENT AND SEDIMENT LADEN WATER DO NOT ENTER THE DRAINAGE SYSTEM, ROADWAYS, OR VIOLATE APPLICABLE WATER STANDARDS.

E. THE ESPCP FACILITIES SHOWN ON THIS PLAN ARE THE MINIMUM REQUIREMENTS FOR ANTICIPATED SITE CONDITIONS. DURING THE CONSTRUCTION PERIOD, THESE ESPCP FACILITIES SHALL BE UPGRADED AS NEEDED FOR UNEXPECTED STORM EVENTS AND TO ENSURE THAT SEDIMENT AND SEDIMENT-LADEN WATER DO NOT LEAVE THE SITE.

F. THE ESPCP FACILITIES SHALL BE INSPECTED DAILY BY THE APPLICANT/CONTRACTOR AND MAINTAINED AS NECESSARY TO ENSURE THEIR CONTINUED FUNCTIONING.

G. THE ESPCP FACILITIES ON INACTIVE SITES SHALL BE INSPECTED AND MAINTAINED A MINIMUM OF ONCE A MONTH OR WITHIN THE 24 HOURS FOLLOWING A STORM EVENT.

H. STABILIZED CONSTRUCTION ENTRANCES SHALL BE INSTALLED AT THE BEGINNING OF CONSTRUCTION AND MAINTAINED FOR THE DURATION OF THE PROJECT. ADDITIONAL MEASURES MAY BE REQUIRED TO INSURE THAT ALL PAVED AREAS ARE KEPT CLEAN FOR THE DURATION OF THE PROJECT.

SILT FENCE NOTES

1. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6-INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST, OR OVERLAP 2 INCH X 2 INCH POSTS AND ATTACH AS SHOWN ON DETAIL SHEET 4-2A.
2. THE FILTER FABRIC FENCE SHALL BE INSTALLED TO FOLLOW THE CONTOURS WHERE FEASIBLE. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 24 INCHES.
3. THE FILTER FABRIC SHALL HAVE A MINIMUM VERTICAL BURIAL OF 6 INCHES. ALL EXCAVATED MATERIAL FROM FILTER FABRIC FENCE INSTALLATION, SHALL BE BACKFILLED AND COMPACTED, ALONG THE ENTIRE DISTURBED AREA.
4. STANDARD OR HEAVY DUTY FILTER FABRIC FENCE SHALL HAVE MANUFACTURED STITCHED LOOPS FOR 2 INCH X 2 INCH POST INSTALLATION. STITCHED LOOPS SHALL BE INSTALLED ON THE UP HILL SIDE OF THE SLOPED AREA.
5. FILTER FABRIC FENCES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY PROTECTED AND STABILIZED.
6. FILTER FABRIC FENCES SHALL BE INSPECTED BY APPLICANT/CONTRACTOR IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.

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www.bmpdesign.us

2/24/2018

REGISTERED PROFESSIONAL ENGINEER 40711 BOGDAN M. POPESCU
PRELIMINARY
EXPIRATION DATE 12/31/18

PROJECT NAME: FAIRVIEW APARTMENTS

EROSION CONTROL PLAN

NORTHWEST CORNER OF SANDY BLVD. AND 223RD AVENUE

REVISION/DATE	DESCRIPTION	DRAFT BY	DESIGN BY	CHECK BY

PRELIMINARY, SUBJECT TO REVIEWS AND REVISIONS, NOT FOR CONSTRUCTION

SHEET
C 10.0
15118

C:\USERS\BOGDAN\DOCUMENTS\WORK\15118 100 PRELIMINARY EROSION CONTROL PLAN.DWG

Exhibit C-1

Department of Community Services
Transportation Division
http://multco.us/transportation-planning

Multnomah County

1620 SE 190th Avenue, Portland Oregon 97233-5910 • PH. (503) 988-5050 • Fax (503) 988-3321

MEMORANDUM

TO: Sarah Selden, Senior Planner, City of Fairview

FROM: Joanna Valencia, AICP, Transportation Planning and Development Manager

DATE: June 5, 2018

SUBJECT: 2018-15-DR / 223rd & Sandy Apartments (County File No: EP-2016-4703)

The Multnomah County Transportation Program has reviewed the proposed:

- Site Design Review approval for development of five buildings with a total of 200 multi-family residential units and four live-work units. Primary access to the site is proposed from 223rd Avenue.
- The applicant is also requesting a variance to Multnomah County Road Rules standards to allow a secondary access from Sandy Blvd., which would be limited to right-in, right-out turns.

The comments provided in this memorandum are based on the information provided in the application packet. Additionally this memo reflects the county's approval of the road rules variance request and required conditions.

Sandy Boulevard is a Minor Arterial and 223rd is a Major Collector and are facilities under county jurisdiction.

Conditions of Approval:

1. **Prior to issuance of the Certificate of Occupancy, dedicate 20 feet of right-of-way along the site's Sandy Boulevard frontage to Multnomah County for road purposes.**

2. **Prior to issuance of the Certificate of Occupancy, dedicate 10 feet of right-of-way along the site's 223rd Avenue frontage to Multnomah County for road purposes.**

3. **Prior to issuance of the Certificate of Occupancy, work with Multnomah County to dedicate roadway slope easement to be used to maintain an earth cut/fill slope (slope) supporting adjacent street improvements located along the site's 223rd Avenue frontage to Multnomah County.**

4. **Prior to issuance of the Certificate of Occupancy, construct half-street improvements to**

Multnomah County standards along the site's Sandy Blvd and 223rd frontage and obtain a Construction Permit from Multnomah County for all improvements within the County right of way. Half street improvements include: Grade/rock/pave to commercial depth between existing pavement and new curb; Construct bicycle lanes as required; Furnish street trees as required; Furnish street lighting facilities as required; Construct Multnomah County standard concrete curb and 6-foot wide concrete sidewalk in compliance with ADA specifications; Install underground traffic control devices conduit and related equipment as required; Construct storm drainage facilities as required.

5. **Maintain sight distance at all access points on Sandy and 223rd serving the property consistent with AASHTO requirements.**

6. **Any work in the right of way, including the removal of trees, or any increase in storm-water drainage from the site to the right of way will require review and a permit from Multnomah County.**

7. **The project is responsible for all access intersections and levels of service designed by the project as submitted in the Traffic Study for the project.**

8. **Prior to issuance of the Certificate of Occupancy, acquire driveway permits for the sites access to NE Sandy Blvd and NE 223rd.**

9. **The access point on NE Sandy Blvd shall be limited to a right turn in and right turn out only.**

Findings:

In order to be granted a variance, the applicant must demonstrate that the following Multnomah County Road Rules (MCRR) standards are met. Below are responses supporting approval of the variance. As conditioned, the roads rules criteria are met.

16.100 Variance Requirements:

A. Multnomah County Code 29.507 provides for a variance by the County Engineer from County standards and requirements when written documentation substantiates that the requested variance is in keeping with the intent and purpose of County Code and adopted rules, and the requested variance will not adversely affect the intended function of the County road system or related facilities. A variance approval may include mitigation measures as conditions of approval.

> Response: In a pre-application conference held on February 23, 2016, the project team learned that: Gresham Fire Department requires two access points to the property (Duston Yacapin, Gresham Fire); and Multnomah County Road Rules standards allow one access per property (Jessica Berry, Multnomah County Transportation Planner).
>
> As the secondary access requirement was discussed in the Pre-Application conference but not explicitly written in Gresham Fire comments for the Pre-Application Conference, please see email correspondence from Shawn Durham, Gresham Fire & Emergency Services Captain, confirming fire safety requirement for a secondary access to support this variance request.

The proposed solution was to apply for a Road Rules Variance. A Transportation Impact Study evaluating the proposed access arrangement (right-in/right-out secondary access on NE Sandy Boulevard) is attached, and indicates the proposed access arrangement will not adversely affect the intended function of the County road system, related facilities, or neighboring properties.

MCRR 16.200 General Variance Criteria:

A. Special circumstances or conditions apply to the property or intended use that do not apply to other property in the same area. The circumstances or conditions may relate to the size, shape, natural features and topography of the property or the location or size of physical improvements on the site or the nature of the use compared to surrounding uses;

Response: The proposed mixed-use development (including multi-family residential units) requires multiple access points for fire safety. This is a special circumstance specific to the proposed use. The property is also large (approximately 4 acres in size, with 478' of frontage on Sandy) and has an irregular shape including 142' of frontage on 223rd. The site also has a special circumstance of frontage on two County roads despite being located within the City of Fairview. Sandy Boulevard is a Minor Arterial and 223rd is a Major Collector and are facilities under county jurisdiction. County code requires access to be taken from the lower classification street, which is 223rd. The full access driveway is proposed on 223rd and a right turn in/right turn out driveway is proposed on Sandy.

B. The variance is necessary for the preservation and enjoyment of a substantial property right of the applicant and extraordinary hardship would result from strict compliance with the standards;

Response: Multiple accesses are required and typical for the proposed use for fire safety. The proposed use is allowed outright in the Corridor Commercial zone, which is specifically located on NE Sandy Boulevard. Multi-family uses are also encouraged in the Sandy Boulevard Refinement Plan. Strict compliance with a standard of one access point would result in extraordinary hardship, as it would render the property non-viable for a use that is both permitted outright in the zone, and anticipated by a specific plan for this street. Fire requirements have identified the need for a second access point.

C. The authorization of the variance will not be materially detrimental to the public welfare or injurious to other property in the vicinity, or adversely affect the appropriate development of adjoining properties;

Response: See the Traffic Study. The proposed right-in/right-out access onto NE Sandy Boulevard has no adverse effect on the transportation system. Due to the size of the site (4.8 acres), the proposed right-in/right-out access on NE Sandy Boulevard represents a slight increase in local connectivity, as well as a slight reduction in impacts on the NE Sandy / NE 223rd intersection (when compared to a single access on 223rd). Adjacent properties are already developed and have established access; as indicated in the TIS, no injury or adverse impact on adjoining properties would result from an additional right-in/right-out access point in this location.

D. The circumstances of any hardship are not of the applicant's making.

Response: The interaction of multi-family fire safety standards, permitted uses in the Corridor Commercial zone, and planned uses in the Sandy Boulevard Refinement Plan are not related to any actions of the applicant. The property size and location (bordered by two County roads), and zoning allowing the proposed use as a property right, are unrelated to actions of the applicant – meeting the standard required by variance criterion D.

Regarding impacts, the updated TIS indicates no negative impacts on neighbors or to roadway/intersection functionality from the proposed secondary access on Sandy. The site is large, and accesses are placed to allow for sufficient sight distance at both access points. As noted on Figure 2 (p. 14), the only change in LOS from the entire project is to the intersection of 223rd and Sandy (from B to C). The proposed secondary right-in/right-out access on Sandy *reduces* the trip impact of the proposed development through that intersection. As shown on Figure 4 (p. 8), right-in/right-out trips allocated to intersection "5" (secondary access) would instead proceed through Intersection "2" (223rd and Sandy) without the secondary right-in/right-out access. In this way, the right-in/right-out proposal reduces impacts on the intersection of most concern.

In general, a secondary access is required for fire safety, and (as shown in the TIS) a right-in/right-out configuration also represents a minor improvement in the 223rd and Sandy intersection functionality, with no negative impacts to safety or operation of County intersections or roadways.

MCRR 16.225 Access Variance Standards:

Exceptions to access standards may be made by the County Engineer when spacing or other safety considerations make non-standard access acceptable. In addition to the variance requirements of Section 16.200 of these Rules, the applicant will be required to demonstrate that the proposed variance will not negatively impact the safety or capacity of the transportation system for a variance to be granted. The following are examples of variances that may be considered along with specific criteria that must be addressed before such a variance can be granted.

A. Multiple Access Points: The County Engineer may allow multiple access points when all spacing standards can be met, or when the additional access(es) will not negatively impact the safety or functionality of the transportation system and a single access point cannot reasonably serve a site. Movement restrictions, such as right-in, right-out, may be placed on accesses to protect the safety and/or functionality of the transportation system.

Response: Please see attached TIS, indicating no negative impact on safety or functionality of the transportation system for the proposed right-in/right-out access on NE Sandy Boulevard. Multnomah County Transportation Planner Jessica Berry indicated that the location of the proposed access on NE Sandy Boulevard should be at least 148' from the end of the radius at the intersection of Sandy Boulevard and 223rd Avenue. The proposed access is over 500' from this intersection. To reduce potential impacts, the proposal is for a right-in/right-out access. Spacing standards and driveway width standards are met.

EXHIBIT C-2

Fairview File #: 15-62
Fairview Apartments / 223rd & Sandy Blvd
FROM: Duston Yacapin, Gresham Fire (Duston.Yacapin@GreshamOregon.gov)
FIRE COMMENTS:

NOTE: All of the following will need to be provided on a separate FIRE ACCESS and WATER SUPPLY page with the building permit plans.

1. Provide fire flow per Oregon Fire Code Appendix B. Fire flow for apartment buildings varies based on construction and square footage. ***OFC App B Table B105.1.***

2. A temporary address of 6" shall be provided at each construction entrance prior to the arrival of materials or workers. ***OFC 505 & 3301***

3. The site addressing shall meet the Gresham Fire Addressing Policy. Each entrance shall be a monument sign with a minimum 6" address numbers. After pulling in the driveway, each entrance shall have a monument sign with a site plan of the complex on the right side (provide a copy with the building permit plans for our review). Each building shall have a sign placard with a minimum 10" address letters and 6" unit numbers. Each individual apartment shall have a minimum 4" address numbers and commercial tenant spaces a minimum 6" numbers. ***OFC 505.1***

4. Public fire hydrant locations must be shown. A public hydrant may be required to be added near the entrance off Sandy Blvd and/or 223rd ave. All fire hydrants shall have STORZ quick adapters on the large port. The model required is Harrington HPHA50-45NHWCAP. ***OFC 507***

5. A fire hydrant shall be within 50 feet of the fire sprinkler system "FDC's". ***OFC Appendix C 102.2 & NFPA 13E***

6. Fire hydrant locations shall be identified by the installation of reflective markers. The markers shall be BLUE. They shall be located adjacent and to the side of the centerline of the access road way that the fire hydrant is located on. In case that there is no center line, then assume a centerline, and place the marker accordingly. ***OFC 508.5.4***

7. Prior to applying for a building permit provide a fire flow test and report. The fire flow report will verify that the correct fire flow is available and will be required to have been conducted within the last 12 months. ***OFC 507.3 & B-101.1***

8. All Fire Dept. Access Roads shall be drawn to scale and shown clearly on plans. The access roads shall be constructed and maintained prior to and during construction. The minimum width is 26' wide to provide access for aerial ladder trucks. ***OFC 1410, 503.2.1 & D103.1***

9. Required Fire Dept. Access Roads on site shall be designed to support an apparatus weighing 75,000 lb. gross vehicle weight. Provide an engineer's letter stating the access road meets those requirements at time of building permit submittal. ***OFC, Appendix D, Section D102.1***

10. No Parking Fire Lane signage or curb marking will be required. Fire access roads 20' – 26' wide do not allow parking on either side within that space. Parking spaces outside that space are acceptable. Indicate signage or curb marking on the building permit plans. I can email you our policy. ***OFC D 103.6***

11. Each building is required to be provided with fire sprinklers. This includes balconies, decks and ground floor patios. ***903, 903.3.1.2***

12. A fire alarm system will be required. ***OFC 903.4 and 907***

EXHIBIT C-3

City of Fairview

A Community of History and Vision

MEMORANDUM

TO: Sarah Selden

FROM: Jeremy Hanson (Public Works, Engineering)

DATE: May 30th, 2018

RE: **Engineering Comments for 2018-15-DR (IN3E28AD -05300)**

Comply with the following components of the City of Fairview Municipal Code (FMC), 1200-C General Construction Permit, Erosion Prevention and Sediment Control (EPSC) Manual, adopted standards with the City of Portland's Stormwater Quality Management and Design Standards and the Columbia South Shore Wellfield Protection Program (CSSWFPP).

- **1200-C Stormwater General Construction Permit** – The proposed development site area to be disturbed is **4.80 acres**. The site is required to obtain a DEQ issued 1200-C SW General Construction Permit (typically one acre or larger or as determined by DEQ).

- **WATER:**
  1. Water supply distribution is served by the City of Fairview. The applicant shall meet all City of Fairview conditions as part of this project.
  2. Access of water service line connections are available to this site from **2 existing locations:** an existing **10" PVC main located at the south property line (Sandy Blvd.) and an existing 10" DI main located at the west property line (NE 223rd Ave.).**
  3. Water meter shall be located in the city's Right-Of-Way.
  4. If applicable, "Residential Fire-Flow Verification" for one-and two-family dwellings (all floor levels within the exterior walls and under horizontal projections of the roof, including garage) must meet minimum fire flow requirements. GIS shows nearest location of existing fire hydrant at the NE corner of NE 223rd and NE Sandy Blvd. (SW of the proposed development).
     - If City of Fairview is the water provider for the property, obtain the **"Residential Fire-Flow Verification"** form from the City of Fairview to be submitted with the building permit application. If Rockwood Public Utility District provides the water, please take the form to them to verify actual available on-site fire flow. Once RWPUD completes the lower portion of the form, include it with your building permit application.
  5. **On-site fire hydrant(s)** if applicable shall be private, submit plans to Public Works Engineering for review and approval.
  6. An approved **backflow assembly, if applicable** shall be installed at service connections.

- **SANITARY SEWER:**

1. The applicant shall provide sanitary sewer capacity (in gpd) in writing to determine capacity accommodation with the City's existing sanitary sewer system designed capacity.
2. Access of sanitary sewer lateral connection is available to this site from an **existing 21" diameter Concrete Sewer Pipe (CSP), City sanitary sewer main located at the south property line of the applicant's address (Sandy Blvd.) and an existing 8" diameter PVC Pipe, City sanitary sewer main located at the east property line of the applicant's address (NE 223rd Ave.).**
3. If there is an existing private wastewater disposal system on site it shall be abandoned in accordance with the regulations of the Oregon Department of Environmental Quality.

- **STORMWATER:**

Note: There is no existing City's stormwater system available to accommodate the property location. The development's stormwater collection, conveyance, detention, treatment and disposal shall have an on-site total infiltration system to be designed by a competent engineer and subject for review during the development review process. Refer to the City of Portland's 2014 Stormwater Management Manual under Stormwater Infiltration and Discharge Hierarchy. The proposed development of the property address is in close proximity to the Fairview Tributary Creek; therefore, applicable Best Management Practices should be implemented during the construction phase.

For stormwater quality management implementation address best management practices from point of collection, conveyance, detention, treatment and to the point of on-site ground infiltration discharge. The goal is to protect underground infiltration of hazardous and pollutant sources under the Columbia South Shore Well Filed Area (CSSWFA) protection program through Inter-Governmental Agency agreement with the City of Portland and Gresham. It is also to enhance water quality management by preventing discharge of sediments and pollutants from construction sources via stormwater to adjacent receiving water bodies specially the property location is in close proximity to the Fairview Creek.

- **SIDEWALK: Multnomah County jurisdiction** - Sidewalk In-fill along Sandy Blvd., from the east property line to the curb return at west property line. Also at NE 223rd, Sidewalk In-fill at the west property line is Multnomah County's jurisdiction.

- **WELL HEAD PROTECTION:**

1. **The proposed location of the development is located in Zone 1 of the Columbia South Shore Well Field Wellhead Protection Area (CSSWHPA).** Any Hazardous Materials identified for usage, storage and transport during construction, operation and maintenance of the facility shall be submitted with the building permit submittal.
2. Storage and construction sites shall meet all applicable requirements based on the results of the identified hazardous materials if applicable and refer to the CSSWPP Reference Manual.
3. Under any consideration of possible contaminated soils, there shall be no infiltration of stormwater runoff.

- **EROSION PREVENTION & SEDIMENT CONTROL (EPSC) MANUAL and APPENDICES (A & B):**

Developers, builders and contractors shall ensure prevention of discharging sediment and pollutants from construction sites via stormwater or other construction related discharges. Refer to the City of Fairview's adopted Erosion Prevention and Sediment Control (EPSC) manual and technical information about EPSC best management practices (BMP's).

The following Best Management Practices (BMPs) must be implemented for compliance:

- Stormwater run-off shall be managed on-site. Plans shall be submitted to review and approval with the building permit.
- Keep and contain sediments on site. ***Never flush sediments into Drainage System.***
- All construction debris and other pollutants are kept out of stormwater storm drains, streams, and any stormwater treatment facilities. No construction debris and other potential stormwater pollutants are permitted to leave the construction site.
- Provide and maintain storm drain inlet protection *(onsite/off-site).* Use Pre-fabricated filter Insert or Silt sacks for storm drain inlet protection. Maintain and clean sediments if it reaches 1/3 the exposed height of the storage depth.
    - It is recommended by DEQ not to use bio-bags on streets or other paved areas due to high maintenance and potential for damage and displacement. Make sure that they are not made of dense material for enough designed flow-through.
- Provide construction entrance/exit tracking controls. Ensure that gravel construction site entrances and exits are installed and maintain. Top dress with additional gravel as the condition demands. If the construction entrance/exit is paved or impervious then ensure that any tracked sediment is swept or vacuumed daily. Street washing is prohibited.
- Provide stockpile management for both soil and non-soil stockpiles.
- Provide temporary ground cover (such as straw mulch) during Oct. 31st to May 31st or until wet weather subsides.
- Provided daily inspection and maintenance when work is ongoing, or as needed during wet weather.
- Ensure entire site, including finished slopes, are fully stabilized prior to final EPSC inspection approval.
- Require additional BMP's, if necessary to protect adjacent property or downstream water quality.
- Remove temporary erosion controls once construction is completed and the site is stabilized.

~ END ~

EXHIBIT D-1

Sarah Selden

From: [redacted]@frontier.com
Sent: Saturday, May 26, 2018 3:23 AM
To: Sarah Selden
Subject: Land use hearing for 223rd/Sandy

Dear Sarah Selden,

My name is Curtis and I live at 21880 Palisade Place in the Heron Pointe neighborhood. My home borders the northwest corner of lot 1N3E28AD-05300.

I feel I should weigh in on a few of the proposed features of this land use plan. First off, I cannot think of a worse place to put access to a 200-unit property than between the Heron Pointe entrance and Sandy Blvd. The area is often horribly congested as it is and potentially adding 200+ vehicles to that mix would be nothing short of miserable. A satellite view of the area will show you that 223rd is three lanes near the top of the hill at Sandy Blvd but it reduces to two lanes past Heron Pointe and then it opens up to three lanes again toward the bottom of the hill near the General Pacific building. The existing bottleneck has created numerous close calls and accidents where people must stop northbound traffic to enter Heron Pointe. Several people have been rear-ended there as they wait for oncoming traffic to pass so they can turn in to the neighborhood. There is very little space between the Heron Pointe entrance and the Sandy Blvd. intersection now, I can only imagine stuffing access for 200 more vehicles into that area as well as all the construction traffic in the meantime. The lines and waits to get through the intersection will be horrendous.

There should already be three lanes all the way down 223rd from Sandy to the Union Pacific railroad bridge. This is an existing design flaw that will only get worse if 223rd becomes that neighborhood's main access point. The main access point should be on Sandy Blvd as there is much more room there. The frontage of that side of the property is easily three times wider than the side that runs parallel to 223rd. Sandy Blvd. should also be widened to a three-lane road with the ability for right/left entrances and exits.

Another question I have is in regards to the footprints of the five buildings that would be going in and their proximity to the houses along Palisade Place. My neighbors to the west already have three-story apartments looming over them in their back yards, like serfs in the shadows of the king's palace. I wonder if the rest of us will be getting the same daunting view once these units are built I can imagine how some of the neighbors must feel in their fishbowl homes below, especially in the winter when all the leaves are off the trees and there's a direct line of sight.

Thanks for your time,
Curtis

MEMORANDUM

DATE: June 5, 2018 **MEETING DATE:** June 12, 2018

TO: Planning Commission

FROM: Eric Rutledge, Associate Planner

SUBJECT: Draft Code Language for Amendments to FMC 19.30.110.B Accessory Dwelling

ISSUE

In August 2017 the Oregon legislature passed SB 1051, requiring cities and counties of certain populations to allow Accessory Dwelling Unit's (ADU's) in area zoned for detached single-family residences. At the May 22, 2018 Planning Commission Work Session, staff received general feedback from the commission on the required and recommended changes under SB 1051. Based on this input, draft code language has been developed for review.

BACKGROUND

Existing ADU Regulations & Trends

Fairview's development code allows ADU's in all zones that allow single-family detached residences. This includes the R, R7.5, R10, R/TOZ, R/SFLD, VSF, and VTH zones. The code provides special standards for accessory dwellings in FMC 19.30.110 Residential (R) District, Special Standards for Certain Uses. The special standards are intended to control the size and number of ADU's on individual lots and promote compatibility with adjacent land uses. Special standards apply to ADU height, size, parking, owner occupancy, and more.

Since 2000, approximately 5 ADUs have been permitted in Fairview. Three have been constructed in the Historic Fairview neighborhood, and two in the Village. This construction rate is relatively low compared to cities with greater population growth and demand for affordable housing. On average, planning staff receives one inquiry per month from property owners interested in developing an ADU on their property. Interest in ADU development is expected to grow, as family sizes decrease and development pressure from Portland moves east.

DRAFT CODE LANGUAGE

At the May 22, 2018 Planning Commission Work Session, staff received general feedback from the commission on the required and recommended changes under SB 1051. This information has been

developed into draft code language for review. The draft code language and discussion on the proposed changes are included in Exhibit A. The development code sections impacted by the changes are:

- FMC 19.13 Definitions
- FMC 19.30 Residential (R) District
- FMC 19.115 Village Single-Family

QUESTIONS FOR THE COMMISSION

- Are any changes suggested to the draft code revisions before forwarding for public hearing?
- Should the hearing draft include both alternatives on any of the amendments?
- Is any additional information needed as part of the public hearing staff report?

NEXT STEPS

The planning commission is scheduled to hold a public hearing on July 24, 2018 to accept public testimony on the proposed code amendments. The proposal will be forwarded to City Council for review and adoption through a legislative process during mid-late summer.

EXHIBITS

A. Draft Code Language & Discussion

EXHIBIT A

Note: *Added text is underlined.* ~~*Deleted text is struckthrough.*~~

DEFINITION & INTRODUCTION

FMC 19.13 DEFINITIONS

19.13.010 "A" definitions.

Accessory Dwelling~~. An "accessory dwelling" is a small, secondary housing unit on a single-family lot, usually the size of a studio apartment.~~ An interior, attached, or detached residential structure that is used in connection with, or that is accessory to, a single-family dwelling.

FMC 19.30 RESIDENTIAL (R) DISTRICT

19.30.110 Special standards for certain uses.

B. Accessory Dwelling ~~(Attached, Separate Cottage, or Above Detached Garage)~~. ~~An accessory dwelling is a small, secondary housing unit on a single-family lot, usually the size of a studio apartment~~. ~~The additional unit can be a detached cottage, a unit attached to a garage, or in a portion of an existing house~~. An accessory dwelling is an interior, attached, or detached residential structure that is used in connection with, or that is accessory to, a single-family dwelling. The housing density standard of the residential district does not apply to accessory dwellings, due to the small size and low occupancy level of the use. The following standards are intended to control the size and number of accessory dwellings on individual lots, to promote compatibility with adjacent land uses. Accessory dwellings shall comply with all of the following standards:

Discussion: The new definition matches recommended state definition and clarifies that an ADU is associated with a single-family dwelling rather than a single-family lot.

FMC 19.30.110.B(1) OREGON STRUCTURAL SPECIALTY CODE

Alternative 1 (existing):

1. Oregon Structural Specialty Code. The structure complies with the Oregon Structural Specialty Code;

Discussion: No proposed change

FMC 19.30.110.B(2) OWNER OCCUPANCY

Alternative 1 (existing):
2. Owner-Occupied. The primary residence or accessory dwelling shall be owner-occupied. Alternatively, the owner may appoint a family member as a resident caretaker of the principal house or of the accessory dwelling;

Alternative 2 (remove standard):
~~*2. Owner-Occupied. The primary residence or accessory dwelling shall be owner-occupied. Alternatively, the owner may appoint a family member as a resident caretaker of the principal house or of the accessory dwelling;*~~

Discussion: The commission requested additional information on this standard during the last work session. Currently, about half of the cities and counties in the region have owner-occupancy requirements.

SB 1051 recommends removing the owner occupancy standard in order to remove barriers to ADU construction. Under the current code, property owners who rent their home could not build an ADU on the property without moving into the primary residence or accessory dwelling. By removing the owner occupancy standard, property owners who do not currently live on-site may be encouraged to build an ADU for additional investment income. There are no owner occupancy requirements for any other residential uses in the Fairview code.

FMC 19.30.110.B(3) NUMBER OF UNITS

Alternative 1 (minor change):
3. One Unit. A maximum of one accessory dwelling unit is allowed per ~~lot~~ single-family detached dwelling;

Alternative 2 (allow two units):
3. ~~One Unit~~ Two Units. A maximum of ~~one~~ two accessory dwelling units is allowed per ~~lot~~ single-family detached dwelling. To maintain the single-family residential character, where two ADUs accompany a primary residence, one ADU must be detached and the other built within the existing footprint of the primary residence. The ADU built within the existing footprint of the primary residence can be a conversion of existing living space or a new vertical addition.

Alternative 3 (allow two units):
3. ~~One Unit~~ Two Units. A maximum of ~~one~~ two accessory dwelling units is allowed per ~~lot~~ single-family detached dwelling. To maintain the single-family residential character, where two ADUs accompany a primary residence, one ADU must be attached to the primary residence and one must be detached. The attached ADU can be a conversion of existing space or a new vertical or horizontal addition.

Discussion: Earlier feedback from the commission indicated two ADUs may be favorable in order to accommodate a variety of users on a single site. For example, an aging parent in one ADU and a caretaker in another. The commission expressed some concern over the visual impact and physical presence of two detached ADUs accompanying a single-family home. In an effort to achieve both goals, Alternatives 2 & 3 would allow one detached and one attached ADU under different siting requirements. While Alternative 3 would allow the attached ADU to be a new vertical or horizontal addition, other standards in the residential zone such as lot coverage, setbacks, and building height will control physical and visual impacts of the new development. In both alternatives, conversion of an existing space would include an attached garage, lower level/basement conversion, or other portion of the existing building. The detached ADU could be a new backyard cottage, detached garage conversion, or unit built above a garage.

FMC 19.30.110.B(4) SIZE / FLOOR AREA

Alternative 1 (increased flexibility):

4. Floor Area. The total square footage of the accessory dwelling shall not exceed 800 square feet, <u>except when the entire floor of an existing space is converted to an accessory dwelling. When the entire floor an existing space such as a basement is converted to an accessory dwelling, there is no maximum floor area.</u> ~~On a lot less than one acre, an accessory dwelling unit may be constructed above a detached garage. However, the floor area of the accessory dwelling unit cannot exceed 800 square feet and the floor area of the detached garage, excluding the accessory dwelling unit, cannot exceed 1,000 square feet;~~

Alternative 2 (existing):

4. Floor Area. The total square footage of the accessory dwelling shall not exceed 800 square feet. ~~On a lot less than one acre, an accessory dwelling unit may be constructed above a detached garage. However, the floor area of the accessory dwelling unit cannot exceed 800 square feet and the floor area of the detached garage, excluding the accessory dwelling unit, cannot exceed 1,000 square feet;~~

Discussion: SB 1051 recommends creating flexibility in size requirements to remove barriers to ADU production. In particular, homeowners wishing to convert an existing portion of their home to an ADU may be prohibited due to size limits. For example, a homeowner may wish to convert an entire upper floor that is over 800 SF. The creation of this ADU would not result in an increase in building height, lot coverage, etc. Based on feedback from the commission, allowing flexibility for existing structures while maintaining the 800 SF limit for detached ADUs and additions is desirable (Alternative 1).

The standard restricting the area of a detached garage in association with an ADU has been removed from both alternatives. This standard would prohibit property owners with large garages/workshops over 1,000 SF from adding an ADU to the secondary building.

FMC 19.30.110.B(5) BUILDING HEIGHT

Alternative 1 (existing):

5. Building Height. The building height of detached accessory dwellings (i.e., separate cottages) shall not exceed 20 feet, as measured in accordance with FMC 19.30.080;

Discussion: No change is proposed to the building height requirement. ADUs attached to the primary residence are subject to building height requirements in the underlying zone.

FMC 19.30.110.B(6) BUFFERING

Alternative 1 (remove standard):
~~*6. Buffering. A minimum four-foot hedge or sight-obscuring fence may be required to buffer a detached accessory dwelling from dwellings on adjacent lots, when buffering is necessary for the privacy and enjoyment of yard areas by either the occupants or adjacent residents;*~~

Alternative 2 (clear/objective standard):
6. Buffering. A minimum four-foot hedge or sight-obscuring fence ~~may be~~ is required to buffer a detached accessory dwelling from dwellings on adjacent lots when a detached ADU has a wall within 20' of a side or rear lot line. ~~*when buffering is necessary for the privacy and enjoyment of yard areas by either the occupants or adjacent residents;*~~

Discussion: Buffering or screening requirements for ADU's are very uncommon in the development code of local jurisdictions. The City of Milwaukie is the only city in the region with a buffering standard, which requires ADUs with a wall within 20' and at 45 degree angle or less to the property line to provide a vegetation or wall screen. The Fairview Development code does not require buffering for single-family detached homes. The need for a fence, wall, or hedge is determined by the property owner.

FMC 19.30.110.B(7) UNITS PER BLOCK

Alternative 1 (remove standard):
~~*7. Units per Block. The number of accessory dwelling units is not to exceed 50 percent of the lots within any block;*~~

Discussion: SB 1051 requires local jurisdictions to allow one ADU per single-family dwelling. The "units per block" standard does not comply with SB 1051 and must be removed.

FMC 19.30.110.B(8) PARKING

Alternative 1 (clarified, 1 space per ADU):
8. Parking. ~~The development of the accessory dwelling shall provide an additional on-site parking space if the primary dwelling has less than four on-site spaces available before construction of the accessory unit~~; At least one on-site parking space is required for each accessory dwelling. The parking space(s) for the accessory dwelling shall be independently accessible from the parking space(s) for the primary dwelling. Tandem and shared parking are not allowed.

Alternative 2 (clarified, 1 space per residential unit):
8. Parking. ~~The development of the accessory dwelling shall provide an additional on-site parking space if the primary dwelling has less than four on-site spaces available before construction of the accessory unit~~; At least one on-site parking space is required for each residential unit. The parking space(s) for the accessory dwelling shall be independently accessible from the parking space(s) for the primary dwelling. Tandem and shared parking are not allowed.

Alternative 3 (clarified, 4 spaces):
8. Parking. The development of the accessory dwelling(s) shall provide an additional on-site parking space for each accessory dwelling if the primary dwelling has less than four on-site spaces available before construction of the accessory unit(s). The parking space(s) for the accessory dwelling shall be independently accessible from the parking space(s) for the primary dwelling. Tandem and shared parking are not allowed.

Discussion: Fairview's existing requirement of at least 4 on-site spaces is high compared to other local jurisdictions. About half of the local jurisdictions in the region require one parking space for the primary dwelling and one space for the ADU. Other jurisdictions base parking requirements on considerations such as the presence of on-street spaces, street width, proximity to transit, and ADU size.

The commission expressed a desire to clarify how on-site spaces are counted. For example, clarifying whether or not tandem parking such as a long driveway or garage/driveway combination can count as

FMC 19.30.110.B(9) LOT COVERAGE

Alternative 1 (clarified):

9. Lot Coverage. The accessory dwelling and all other buildings and impermeable surfaces shall not exceed the ~~70 percent~~ lot coverage requirements in FMC 19.30.070.

Discussion: No substantial changes are proposed to the lot coverage standard. The reference to the 70% lot coverage requirement is removed because single-family developments only allow up to 65% lot coverage. The new language eliminates any specific percentage references and ties the lot coverage allowance to the underlying zone. If lot coverage standards are changed in the future, this section will not need to be updated.

FMC 19.115 VILLAGE SINGLE-FAMILY

FMC 19.115.020 PERMITTED USES

Alternative 1 (updated):

The following uses and their accessory uses are permitted in the VSF zone:

H. A maximum of one accessory dwelling unit is allowed per ~~lot~~ single-family residence. ~~Accessory dwelling units shall be constructed only over the garage – see FMC 19.30.110(B).~~ Accessory dwellings are subject to the special standards for certain uses in FMC 19.30.110.B.

Discussion: The existing village single-family code restricts ADUs to one per lot and to properties with garages. To reach compliance with SB 1051, this language must be removed to allow one ADU per single-family dwelling.

Planning Commission 2018 Meeting Schedule

Meetings are held the 2nd & 4th Tuesday of the month at 6:30 p.m.

Note: This schedule is subject to change. The Commission will receive updated schedules with meeting packets, and will be notified separately about any meeting cancelation due to lack of agenda items.

JUNE 12	
Hearings	**2018-15-DR** Fairview Heights Apartments 223rd Avenue & NE Sandy Blvd
Work Sessions	**Accessory Dwelling Unit Code Amendments** Work Session 2 – Draft Code Language
JUNE 26 – TENTATIVELY CANCELED. NO AGENDA ITEMS CURRENTLY IDENTIFIED.	
Hearings	None
Work Sessions	None

JULY 10	
Hearings	**2018-21-DR-CUP** Fairview Villa Apartments 20922 NE Sandy Blvd.
Work Sessions	
July 24	
Hearings	Accessory Dwelling Unit Code Amendments
Work Sessions	

AUGUST 14	
Hearings	
Work Sessions	
AUGUST 28	
Hearings	
Work Sessions	

UPDATED June 5, 2018

Additional Meeting dates through end of 2018:

September 11
September 25
October 9
October 23
November 13
November 27
December 11
~~December 25~~ *No meeting due to holiday *

Future 2018 items to be scheduled:

Development Review – Type III Land Use Hearings

Site Design Review Applications (Pending Completeness):

2018-14-DR	22820 NE Sandy Blvd. Environmental Works, metal industrial building for office, storage and maintenance (General Industrial zone)
2018-37-DR	22800 NE Marine Dr. – Allwood Recycling facility

Conditional Use Applications (Pending Completeness):

2018-40-CU	202nd and Oregon/Esther Estates subdivision – Two duplexes on individual lots in the Residential (R) zone

Pre-Application Conferences Held/Expected to Submit Land Use Applications:

2017-11-PreApp	20925/20929 NE Halsey – Rowhouse/duplex/commercial
2018-19-PreApp	Meadow Outdoor Advertising – Sign Code Amendment
2018-20-Pre-App	North side of Sandy Blvd., E and W side of 230th – Light industrial development on two parcels
2018-24-PreApp	22001 NE Halsey St. – Mixed-use apartment and commercial
2018-30-Pre-App	East side of 223rd, between Sandy Blvd. and Townsend Way – Light industrial development

Legislative Amendments (Code, Comp Plan, Map) & Planning Projects

- Code improvement amendments (corrections, clarifications, organization)
- Halsey Corridor code amendment concepts (from DLCD grant work)
- Items that City Council may wish to add to Planning Commission's work plan