

AGENDA CANBY PLANNING COMMISSION

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**Monday, April 12, 2021
7:00 PM (Virtual Zoom Meeting)**

(Commissioner John Savory (Chair))

Commissioner Larry Boatright (Vice Chair)

Commissioner Jennifer Trundy

Commissioner Jeff Mills

Commissioner Michael Hutchinson

Commissioner Jason Padden

Commissioner James Hieb

1. CALL TO ORDER

- a. Invocation
- b. Pledge of Allegiance

2. CITIZEN INPUT ON NON-AGENDA ITEMS

This is an opportunity for audience members to address the Planning Commission on items not on the agenda. Each person will be given 3 minutes to speak. Staff and the Planning Commission will make every effort to respond to questions raised during citizens input before the meeting ends or as quickly as possible thereafter. ***If you would like to speak on non-agenda items, please email or call the Recording Secretary no later than 3 pm on the meeting date and provide your name, the topic you'd like to speak on, and your email address. Email: fousel@canbyoregon.gov or call: 503-266-0685. Once your information is received, you will be sent instructions for signing into Zoom. Commissioners and Staff will be attending this meeting virtually.

3. MINUTES – Planning Commission Minutes are delayed because of secretary absence. Staff will have these complete as soon as we are able.

4. NEW BUSINESS – None

5. PUBLIC HEARING To testify, please email or call the Recording Secretary no later than 3 pm on the meeting date and provide your name and email address. Email: fousel@canbyoregon.gov or Call: 503-266-0685. Once your information is received, you will be sent instructions for signing into Zoom. Commissioners and Staff will be attending this meeting virtually.

- a. The proposal is a request for Conditional Use and Design Review approval for a Senior Living and Memory Care Facility with 102 beds and four independent living duplexes, with associated parking and site improvements. **DR 20-03 and CUP 20-02 (Memory Care Facility).**

6. FINAL DECISIONS –

- a. DR 20-03 and CUP 20-02 (Memory Care Facility)

7. ITEMS OF INTEREST/REPORT FROM PLANNING STAFF–

- a. Next regularly scheduled Planning Commission meeting – Monday, April 26, 2021.

8. ITEMS OF INTEREST/GUIDANCE FROM PLANNING COMMISSION

9. ADJOURNMENT

The meeting location is accessible to persons with disabilities. 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 at 503-266-7001. A copy of this agenda can be found on the City's web page www.canbyoregon.gov. City Council and Planning Commission Meetings are broadcast live and can be viewed on CTV Channel 5. For a schedule of the playback times, please call 503-263-6287.

PLANNING COMISSION
APRIL 12, 2021 MEETING

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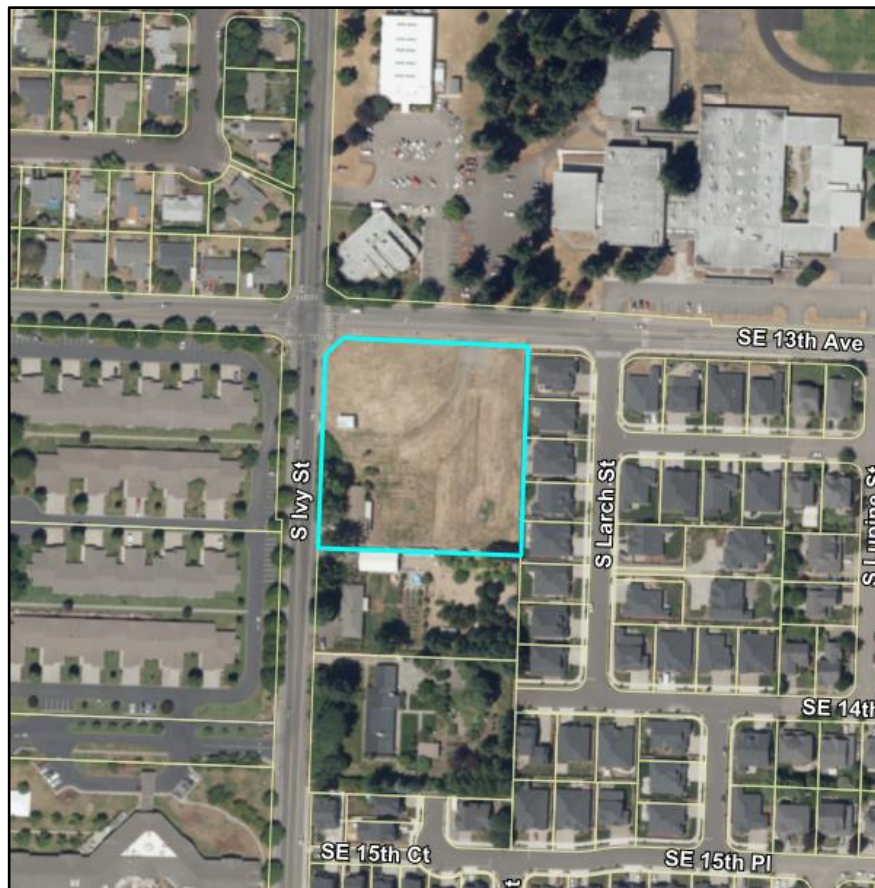


City of Canby

STAFF REPORT CONDITIONAL USE AND DESIGN REVIEW FILE NUMBERS DR20-03 & CUP20-02

HEARING DATE: April 12, 2021
STAFF REPORT DATE: April 2, 2021
TO: Planning Commission
STAFF: Brianna Addotta, Associate Planner

Request for Conditional Use and Design Review approval for a Senior Living and Memory Care Facility with 102 beds and four independent living duplexes, with associated parking and site improvements.



Property/Owner Information

Location:	1300 S. Ivy St.
Tax Lots:	41E04DA04800
Property Size:	2.6 acres
Comprehensive Plan:	LDR Low Density Residential
Current Zoning:	R-1 Low Density Residential Zone
Owner:	Asteria Senior Living
Applicant:	EPR Design
Application Type:	Site and Design Review, Conditional Use (Type III)
City File Numbers:	DR20-03 & CUP20-02

Existing Conditions

The 2.6 acre parcel is located at the southeastern corner of S Ivy St. and SE 13th Ave and is zoned R-1, Low Density Residential. It is currently developed with a single family home fronting Ivy Street. The lot is otherwise clear, without significant landscaping, tree coverage, or slopes. Neither frontage has been improved with public facilities. Surrounding the property are parcels zoned R-1 Low Density Residential and R-1.5 Medium Density Residential, and are developed with single family homes to the south and east, Canby Adult Center and Swim Center to the north, and Hope Village Senior Living Community to the west.

Project Overview

The proposal is a request seeking to build a two-story assisted living facility building with a memory care endorsement, and eight 700 SF cottages for Independent Living. 31% landscaping is proposed. A parking plan specific to the use of Memory Care has been provided to address a lower parking ratio than the Nursing Home standard set by the Municipal Code, 60 parking spaces are proposed.

Staff Recommendation

Based on the applications submitted and the facts, findings, and conclusions of this report, staff recommends **Approval** of DR 20-03 & CUP20-02 pursuant to the **conditions of approval** identified at the end of this Staff Report.

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Traffic Scoping Memo	Attachment B
Transportation Executive Summary	Attachment C
Revised Preliminary Review from City Engineering Consultant	Attachment D

STAFF FINDINGS

Applicable Code Sections

Applicable criteria used in evaluating this application are listed in the following sections of the City of Canby's *Land Development and Planning Ordinance*:

- 16.08: General Provisions
- 16.10: Off-street Parking and Loading
- 16.16: R-1 Low Density Residential Zone
- 16.42: Signs
- 16.43: Outdoor Lighting Standards
- 16.46: Access Limitations on Project Density
- 16.49: Site and Design Review
- 16.50: Conditional Uses

The following analysis evaluates the proposed project's conformance with applicable approval criteria and other municipal code sections, as listed above in Section I and in the order that they appear in the Canby Municipal Code.

16.08 General Provisions

16.08.090 Sidewalks required

The Planning Commission may impose appropriate sidewalk and curbing requirements as a condition of approving any discretionary application it reviews.

The applicant has stated they will be installing public facilities to the recommendation of the City's consulting Engineer and in accordance with the standard configurations appropriate to S Ivy Street and SE 13th Avenue.

Finding: Staff refer to the memo submitted by Hassan Ibrahim, P.E. on January 27, 2021 in which he outlines the requirements for both frontages. Staff recommend a condition of approval requiring improvements be installed to the standards provided therein.

16.08.150 Traffic impact study (TIS)

Based on information provided by the applicant about the proposed development, the city will determine when a TIS is required.

16.08.160 Safety and functionality standards

The City will not issue any development permits unless the proposed development complies with the city's basic transportation safety and functionality standards, the purpose of which is to ensure that development does not occur in areas where the surrounding public facilities are inadequate. Upon submission of a development permit application, an

applicant shall demonstrate that the development property has or will have the following:

- A. Adequate street drainage, as determined by the city.
- B. Safe access and clear vision at intersections, as determined by the city.
- C. Adequate public utilities, as determined by the city.
- D. Access onto a public street with the minimum paved widths as stated in Subsection E.
- E. Adequate frontage improvements as follows:
 - 1. Local streets and neighborhood connectors, a minimum paved width of 16 feet along the site's frontage.
 - 2. Collector and arterial streets, a minimum paved width of 20 feet along the site's frontage.
 - 3. For all streets, a minimum horizontal right-of-way clearance of 20 feet along the site's frontage.
- F. Compliance with mobility standards identified in the TSP. If a mobility deficiency already exists, the development shall not create further deficiencies. (Ord 1340, 2011)

Findings: City transportation consultant Kevin Chewuk of DKS provided a scope for the required traffic study (Attachment B). The applicant retained Gary Spanovich of Charbonneau Engineering LLC to complete the study. The full study is included in the applicant materials (Attachment A). Staff has worked with DKS to review the study and have determined the applicant has provided sufficient information to address the scope and have shown the proposal to meet minimum safety and functionality standards, and refers to the executive summary provided by Kevin Chewuk of DKS for details (Attachment C).

16.10 Off Street Parking

16.10.010 Exceptions. At the time of establishment of a new structure or use, change in use, or change in use of an existing structure, within any planning district of the city, off-street parking spaces and off-street loading berths shall be as provided in this and following sections. A lesser number of spaces may be permitted by the Planning Commission based on clear and objective findings that a lesser number of parking spaces will be sufficient to carry out the objective of this section.

16.10.050 Parking standards designated

Nursing Home: *1.00 spaces per 2 beds for patients plus 1.00 space per employee.*

Findings: The applicant has applied for an exception to the designated parking standards for the nursing home land use. The development would consist of 102 memory care patient beds and 8 senior living units. The standard parking requirement for an institutional nursing home is 1 space per 2 resident beds plus 1 space per full time employee. The applicant provided us with staffing numbers for the proposed facility, which will have around the clock staff in day, night, and swing shifts. Specific staffing numbers can be found in the applicant materials, a memo titled Addendum for Parking Demand dated February 4, 2021.

Based on the numbers provided, a maximum of 33 employees would be working during the day shift. Staff notes outside providers and swing employees should also be accounted for; meaning an additional 7 parking spaces. The facility is expected to bring a maximum of 5 visitors a day, which is considered average in the industry. The applicant has provided a letter from a comparable facility in support of this figure. This provides a conservative estimate of 47 required parking spaces for staff and visitors of the facility. Eight senior living units require an additional 8 parking spaces, bringing the requirement to 55 spaces. In addition, 102 resident beds would require 51 parking spaces. Therefore, 106 parking spaces would be required following the parking standards in CMC 16.10.050.

The applicant is proposing a total of 60 parking spaces. The basis for the reduction request lies in the particular type of resident that will be living there, particularly in the 102 resident beds inside the primary building. The applicant states residents of this building will all be patients with established memory care requirements. They do not drive and will not need to utilize any parking for themselves. Removing the need for 51 patient parking spaces leaves 55 parking spaces required. The applicant has provided an additional 5 parking spaces beyond this requirement, although staff note 6 of the parking spaces are driveways for the independent living duplexes and won't be available for staff of the facility and would most likely only be used by residents of the duplexes, their healthcare providers and their guests.

Staff finds the proposal reasonable and specific enough to address the unique circumstances of this use. Staff recommend a condition of approval to install visitor parking signage in front of the five designated parking spaces for visitors.

Parking Designated	Required	Proposed
Memory Care Facility Residents	51 (nursing home standard)	0
Independent Senior Duplexes	8	16
Staff	33	33
Outside Providers & Swing Employees	7	7
Visitors	5 (no code standard, based on industry information)	10
Total	106	60
Total without Memory Care Resident Parking	55	60

16.10.070 Parking lots and access

Parking Lots

A. Parking stall dimensions shall meet the standards found in Table 16.10.070 of the Canby Municipal Code.

B. Areas for standing or maneuvering of vehicles shall have paved asphalt, concrete, solid concrete paver surfaces, or paved tire track strips maintained adequately for all weather use and so drained as to avoid the flow of water across sidewalks or into public streets. The full width of driveways must be paved.

C. Groups of more than four (4) parking spaces shall be so located and served by driveways that their use will require no backing movements or other maneuvering within a street right-of-way other than an alley.

D. Parking bumpers or wheel stops shall be provided to prevent cars from encroaching on the street right-of-way, adjacent landscaped areas, or adjacent pedestrian walkways.

E. Accessible parking shall be provided, constructed, striped, signed and maintained as required by ORS 447.233 and all Oregon Structural Specialty Code requirements.

Findings: The applicant has provided a site plan that shows compliance with the parking lot standards.

Access and Driveways

A. Driveways shall be limited to one per property except for... property with a frontage of over 250 feet. Double frontage lots and corner lots may be limited to access from a single street, usually the lower classification street.

B. If additional driveways are approved by the City Administrator or designee, a finding shall be made that no eminent traffic hazard would result and impacts on through traffic would be minimal.

C. Driveway widths shall be as follows: 12 foot minimum, 36 foot maximum

D. Driveway spacing shall be as follows for an Arterial: Intersection 330', Driveway 330'.

E. For roads with a classification of Collector and above, driveways adjacent to street intersections shall be located beyond the required queue length for traffic movements at the intersections.

F. The Public Works Supervisor may approve the location of a driveway closer than fifty (50) feet from the intersection of collector or arterial streets.

Findings: The applicant has requested an exception to the intersection spacing standards in order to accommodate two driveways on this corner lot. Both driveways are approximately 200' away from the intersection, where the standard spacing required is 330'. The nature of the use as a memory care and senior living facility requires ease of access for emergency and first responder vehicles. Two driveways will allow these vehicles to circulate the property without excessive backing movements. The Department of Health Services and Facilities Planning and Safety in OAR 411-054-0200 (2)(h) states that "Facilities must have an entry and exit drive to and from the main building entrance that will allow for picking up and

dropping off residents and for mail deliveries without the need for vehicles to back up.” The traffic report provided by the applicant and confirmed by transportation engineering partner DKS states the site distance from the driveways is considered safe. Because the traffic counts are so low for the use, with 24 a.m. peak hour trips and 29 p.m. peak hour trips, a second driveway would not be required or encouraged under another use not regulated by state statute. Therefore, staff recommends a condition of approval that the Ivy St. driveway be restricted to right-in right-out turning movements through the installation of a ‘porkchop’ driveway divider as well as appropriate signage. This provides the required circulation for emergency vehicles and will facilitate traffic flow moving through the intersection.

16.10.080 Street tree plan

A street tree plan may be provided in lieu of meeting the requirement of planting a tree every 30 lineal feet of street frontage. The street tree plan can compensate for driveways, utilities, or other obstructions that inhibit the 30 foot spacing standard requirement.

The applicant has provided a landscaping plan which includes street trees along both Ivy Street and 13th Avenue.

Findings: Staff find the proposal meets requirements for a street tree plan. Staff recommend a condition of approval requiring inspection after installation before certificate of occupancy.

16.10.100 Bicycle Parking Standards

Nursing Home: *1.00 spaces per 5 beds for patients or residents.*

Bicycle parking dimensions must be 6’ deep, 2’ wide, with 7’ of overhead clearance. A 5’ isle shall remain clear for safe maneuvering and a 2’ buffer shall be left clear around each space. Bicycle parking shall be located in well-lit secure locations within 50 feet of the main entrance to the building.

Findings: The independent living units each have a one car garage as well as a one car driveway where bicycles can be stored. Regarding the primary facility, 102 beds requires 20 bicycle parking spaces. The applicant’s site plan shows a total of 6 bicycle parking spaces. The applicant has stated 20 bicycle parking spaces shall be provided adjacent to the northwestern entrance to the facility, but has not submitted a revised site plan detail to support this. Staff recognizes there is ample open space near the northwestern entrance to accommodate the required 20 spaces. Staff recommends a condition of approval requiring a type one site plan application be submitted with bicycle parking details before certificate of occupancy.

16.16 R-1 Low Density Residential Zone

16.16.020 Conditional Uses

E. Nursing Homes are a conditional use in the R-1 zone.

16.16.030 Development Standards

The Conditional Use section of the Municipal Code states

16.50.060 A conditional use shall comply with the standards of the zone, except as specifically modified in granting the conditional use permit and as specified:

Building height. A height maximum of 75 feet; provided that each yard is increased by the addition of five feet over the requirement for every five feet or fraction thereof of additional height over the maximum allowed by the zone.

Signs. Signs may be permitted for a conditional use in keeping with the nature of the use. Signs proposed at the time of conditional use review shall be reviewed by the Planning Commission regarding size, height, and location.

The applicant has provided a site plan and narrative to show compliance with these standards.

Findings: A summary of the development standards of the R-1 zone as applicable to this project is provided along with a discussion regarding building height allowances. Signs will be discussed in the following section.

Standard Minimum Yard Requirements (R1)		Standard Lot Coverage Standards (R1)	
Street side with driveway	20 feet	Max impervious surface	60%
Corner lot rear yard (1 story/2 story)	10/15 feet	Min. landscaping	30%

The standard maximum height allowed in the R-1 zone is 35 feet. The proposed two story memory care facility is 37 feet tall, while the independent living duplexes are one story under the standard maximum height. Give the rule outlined in 16.50.060, the two additional feet proposed in height requires an additional 5 feet applied to each setback. Because this is a corner lot, it has two front yards and two back yards. This means the setbacks applicable to this project are a 20 foot rear setback to the south, and a 15 foot rear setback to the east. The front setbacks to the north and west are handily met due to the configuration of the parking lot.

The standard maximum impervious surface allowed in the R-1 zone is 60%. The applicant has proposed 32,588 square feet of building coverage and 34,951 square feet of impervious surface on an 111,973 square foot lot. That is 67,539 square feet of total impervious surface, which is 60.3% coverage on the lot. This meets the maximum standard for the R-1 zone. Staff recommend a condition of approval that no additional impervious surfacing may be installed without additional review. The minimum landscaping required for the site is exceeded, 44,434 square feet of landscaping is proposed with 39% total site coverage.

16.42 Signs

16.42.020 Administration and permit requirements

Signs proposed at the time of conditional use or site and design review application shall be reviewed by the Planning Commission regarding size, height, location concurrent to conditional use review.

The applicant has provided details and rendering of two proposed signs for their facility, included in the applicant plan set. The first sign is a freestanding monument sign with 10.5 square foot wooden face supported by a decorated 6 foot tall monument 48 square feet in size and crafted with a stone base and timber posts. The second sign is a wall sign located on the breezeway entrance of the building, facing the intersection of Ivy St. and 13th Ave. Exact dimensions and materials have not been provided but the sign is shown in a rendering provided by the applicant.

Findings: The development code does not provide specific signage standards for memory care facilities. Staff compare the proposed signage to the signage standards for a multi-family development because the nature of the use and proposed design are similar. If those rules were applied to this property they would be allowed one monument sign along each frontage, sized 16 square feet per face with a maximum height of 7 feet. They would also be allowed one wall sign per building frontage with a maximum size of 60 square feet on the primary frontage and 30 square feet on a secondary frontage.

The signage proposed would be approvable under these standards. Staff find the signage proposed is generally appropriate for the use and recommend Planning Commission approve the signage plan with a condition that sign permits be required for each sign to verify compliance before final approval.

16.43 Outdoor Lighting Standards**16.43.110 Lighting Plan Required**

This property is residentially zoned and therefore requires an L1 lighting standard. The L1 standard requires low ambient lighting. In residential zones outdoor lighting for conditional uses shall be minimized, especially near property lines, to avoid light trespass into homes.

Findings: The applicant has provided a lighting plan showing minimal light trespass onto adjacent residential properties; the maximum trespass is calculated at approximately 5 lumens. The configuration of the site is as such that the bulk of the vehicle circulation and therefore required lighting is oriented away from the residential development to the south and east and instead orients towards the center of the site and out towards the intersection.

16.46 Access Limitations on Project Density

16.46.020 Ingress and Egress

A. Vision Clearance distance shall be ten feet from a street to an alley or a street to a driveway and thirty feet from a street to any other street.

16.46.030 Access Connection: Spacing on City Streets

Street Facility	Max. spacing between roadways	Min. spacing between roadways	Min. spacing roadway to driveway	Min. spacing between driveways
Arterial	1,000 feet	660 feet	330 feet	330 feet

Private access to arterial roadways shall only be granted through a requested variance of access spacing policies when access to a lower classification facility is not feasible.

Findings: The site is located at the southwest corner of S Ivy Street and SE 13th Avenue, both of which are classified as arterial streets. The applicant has asked for an exception of access spacing standards in order to accommodate two accesses as is required for the proposed use. Staff finds the applicant has provided sufficient information in the Traffic Report to determine the safety of the proposed driveways and refers to the executive summary provided by Kevin Chewuk of DKS for details. The site has been designed to place the driveways as far away from the intersection as is feasible while accommodating required parking, a ten foot landscape buffer from the single family homes to the south, and the required five foot distance from property lines. Staff has recommended a condition of approval to restrict access of one of the driveways to right-in right-out only, reducing the impact of allowing a second driveway required for the use.

16.49.040 Site and Design Review - Criteria and Standards

- A. In review of a Type III Site and Design Review Application, the Board shall, in exercising or performing its powers, duties or functions, determine whether there is compliance with the following:
1. The proposed site development, including the site plan, architecture, landscaping and graphic design, is in conformance with the standards of this and other applicable city ordinances insofar as the location, height and appearance of the proposed development are involved; and
 2. The proposed design of the development is compatible with the design of other developments in the same general vicinity; and
 3. The location, design, size, color and materials of the exterior of all structures and signs are compatible with the proposed development and appropriate to the design character of other structures in the same vicinity.

4. The proposed development incorporates the use of Low Impact Development (LID) best management practices whenever feasible based on site and soil conditions. LID best management practices include, but are not limited to, minimizing impervious surfaces, designing on-site LID storm water management facilities, and retaining native vegetation.

5. The Board shall, in making its determination of compliance with this Ordinances, shall use the matrix in Table 16.49.040 to determine compatibility unless this matrix is superseded by another matrix applicable to a specific zone or zones under this title. An application is considered to be compatible with the standards of Table 16.49.040 if the following conditions are met:

- a. The development accumulates a minimum of 60 percent of the total possible number of points from the list of design criteria in Table 16.49.040; and
- b. At least 10 percent of the points used to comply with (a) above must be from the list of LID Elements in Table 16.49.040. (Ord. 1338, 2010).

- D. In review of a Type III Site and Design Review Application, the Board shall, in exercising or performing its powers, duties or functions, determine whether there is compliance with the INTENT of the design review standards set forth in this ordinance.

The applicant states that the design of the building is modeled to blend with the various recently built development in the area and reflects a NW style of finishes and materials. The building has been limited to 2-story with the building articulation designed so that the building is broken into 2 main building volumes and the smaller duplex structures designed similar to surrounding single-family homes. The larger portion of the buildings have been set towards the streets with large setbacks that incorporate landscaping and parking areas (similar to the development across S. Ivy St. and SE 13th Ave). The smaller structures have been placed on the east side of the site where the single-family homes are located on the neighboring properties. This provides a buffer from the large building by placing the single-family homes (proposed duplexes) between the neighboring homes and the larger proposed memory care building on the site.

Findings: The applicant filed a Type III application, and provided a detailed response to Table 16.35.040 to demonstrate the project earns 69% of total points, 18% of which are LID specific. Staff refers to pages 6 through 10 of the Site and Design Review application form as well as the narrative provided by the applicant to view these materials.

16.49.065 Bicycle and pedestrian facilities

The internal walkway system shall be extended to the boundaries of the property. On-site facilities shall be provided to accommodate safe and convenient pedestrian and bicycle access, connecting to adjacent residential areas and neighborhood activity centers.

Findings: Staff concludes that the applicant adequately addressed this criterion through installation of public improvements along the entirety of the property frontage, as well as several delineated pedestrian crossings across the parking lot to the buildings. Bicycle parking is directly accessible from the northwestern corner of the site via an eight foot wide paved path.

16.49.080 General provisions for landscaping

The minimum area requirement for landscaping for developments coming under design review shall be 30% for all residential zones. Parking lot landscaping shall be included in total landscaping calculations.

16.49.120 Parking lot landscaping standards

Landscaping Within a Parking Lot

A. Area within a parking lot shall include the paved parking and maneuvering area, as well as any area within ten (10) feet of any exterior face of curb surrounding the paved parking and maneuvering area.

B. Each interior landscaped area shall be a minimum of six (6) feet wide, unless the area is added to the required perimeter landscaping.

C. The use of LID best management practices in parking lots is encouraged whenever site and soil conditions make it feasible. Such practices include, but are not limited to, permeable surfacing materials, and integrating LID stormwater management facilities into the required landscaping areas.

D. Minimum 15% area required to be landscaped within a residentially zoned parking lot.

E. All parking areas with more than 16 spaces shall include landscape islands to break up the parking area into rows of not more than 8 contiguous parking spaces.

F. Landscape islands shall have a minimum area of 48 square feet and a minimum width of six (6) feet.

G. Landscape islands shall contain at least one tree.

Findings: The applicant provided scaled landscape plans and comments to address planting and landscape provisions listed in this section. The information contained specifics on LID storm water management, controls during construction, specification of tree and plant materials and other information required in this section and contained in the landscape calculation form provided with the application. After a review of all information provided, staff concluded that the project meets these standards.

16.50 Conditional Uses**16.50.010 Authorization to grant or deny conditional uses.**

A conditional use listed in this title shall be permitted, altered, or denied in accordance with the standards and procedures of this chapter. In the case of a use existing prior to the effective date of the ordinance codified in this title as a conditional use, a change in the use, or reduction in lot area, or an alteration of the structure, shall require the prior issuance of a conditional use permit. In judging whether or not a conditional use permit shall be approved or denied, the Planning Commission shall weigh the proposal's positive and negative features that would result from authorizing the particular development at the location proposed and to approve such use, shall find that the following criteria are either met, can be met by observance of conditions, or are not applicable.

- A. The proposal will be consistent with the policies of the Comprehensive Plan and the requirements of this title and other applicable policies of the city;
- B. The characteristics of the site are suitable for the proposed use considering size, shape, design, location, topography, existence of improvements and natural features;
- C. All required public facilities and services exist to adequately meet the needs of the proposed development;
- D. The proposed use will not alter the character of the surrounding areas in a manner which substantially limits, or precludes the use of surrounding properties for the uses listed as permitted in the zone. (Ord. 740 section 10.3.75 (A), 1984)

16.50.040 Placing conditions on a permit.

In permitting a new conditional use, the Planning Commission may impose conditions which it finds necessary to avoid a detrimental impact and to otherwise protect the best interests of the surrounding area or the community as a whole. These conditions may include the following:

- A. Limiting the manner in which the use is conducted, including restricting the time an activity may take place, and restraints to minimize such environmental effects as noise, vibration, air pollution, glare and odor;
- B. Establishing a special yard, other open space or lot area or dimensions;
- C. Limiting the height, size or location of a building or other structure;
- D. Designating the size, number, location, and nature of vehicle access points;
- E. Improving the street and/or expanding the rights-of-way;
- F. Designating the size, location, screening, drainage, surfacing or other improvement of a parking area or truck loading area;

G. Limiting or otherwise designating the number, size, location, height and lighting signs;

H. Limiting the location and intensity of outdoor lighting and requiring its shielding;

I. Requiring diking, screening, landscaping or other facility to protect adjacent or nearby property and designating standards for its installation and maintenance;

J. Designating the size, height, location and materials for a fence;

K. Protecting and preserving existing trees, vegetation, water, resources, wildlife habitat or other significant natural or open space areas;

L. Limiting the number, location, and design of street accesses and requiring shared access when appropriate.

Findings: In addition to the criteria listed in Section 16.35.040 for conditional uses in the R-1 zone, the above criteria should also be addressed to assure consistency of the use within the zone. Staff has reviewed the proposed use and the criteria in 16.35.040 that resulted in the necessity for a Conditional Use Application against the above criteria. Staff determined that there are no policies in the Canby Comprehensive Plan or other policies that would be inconsistent with the applicant's proposed use or request for an exception to the minimum parking requirements.

The site is suitable for the proposed use which will offer around the clock memory care to seniors in a two story residential facility and four duplexes intended to provide more independent senior living. The buildings will have a residential design with a classic northwestern design, with muted colors and textures similar to other buildings in the area.

Based on comments from City agencies at the Pre-Application Conference, all public utilities are available and adequate to serve this proposed use on this site. Staff refers to the utility site plans included in the applicant materials.

Conditions of Approval have been called out throughout this Staff Report as appropriate to the use and anticipated impacts of the proposed development.

PUBLIC COMMENTS:

Comment received January 22, 2021 from Donald Chambers, resident at 164 SW 13th Avenue:
It would be a bad choice to build this on 1300 S Ivy lot as Ivy & 13th is a very busy intersection and to get on to Ivy or 13th from this site would be very dangerous as I know I live on the 13th close to this intersection.

Staff Response: We understand as the southern part of Canby develops intersections will see increased use, and because this proposal is on a corner lot where two arterials intersect, traffic function and flow are under particular scrutiny. Staff worked closely with both the applicant and Transportation Engineer Kevin Chewuk to ensure the intersection will remain both safe and functional. The executive summary provided by Mr. Chewuk details how the demands of this proposal will not cause the intersection or surrounding system to fail. The nature of the use as a memory care facility necessitates a second driveway; staff has required the driveway on Ivy St. have access restricted to right-in right-out to reduce impact on traffic flow.

Comment received January 26, 2021 from Zach Fogg, VP of Operations for Marquis Companies:
To Whom It May Concern:

Marquis at Hope Village has been an assisted living, skilled nursing and more recently, a memory care partner with the Hope Village Independent senior living campus for many years. As you are aware, the Hope Village campus is located adjacent to the above proposed new memory care facility and as such, if approved, this development will have a significant negative impact on the existing Marquis and Hope Village operations. Marquis and Hope Village have been premier community partners with the city and neighborhood and have provided much needed senior services to Canby and the surrounding area for many, many years. In addition, Hope Village is planning major expansion of its services on property it owns to the south of the campus to further its commitment to the seniors of Canby.

We are very skeptical that an adequate market need exists at this location for additional units. Marquis has operated senior service facilities in the state for over 30 years and our experience tells us that approving this new facility will burden the viability and success of both Hope Village and this new facility. In fact, we would argue that no industry expert/market study analysis would show the need for, or viability of, a new facility at this location with the addition of Marquis' RCF Memory care and Hope Village's Independent living expansion.

Please consider the needs of the seniors in the community and not approve this development. One strong and viable senior housing community with experienced operators is what this community continues to need. We do not need the addition of an inexperienced operator and additional units that only detract from the excellent services Canby seniors continue to receive at Hope Village. Thank you and should you have any questions or want further input, let me know.

Staff Response: Planning Commission and City of Canby Planning staff have a limited scope for land use and development review. In this case, market factors such as demand for a particular use cannot be considered when reviewing a land use application. Chapter 16 of the Canby Municipal Code contains the breadth of our purview, and all applicable standards found in that chapter have been addressed by the applicant.

AGENCY COMMENTS:

City Engineer provided comments in a memo dated January 28, 2021 (Attachment D).

STAFF CONCLUSION/RECOMMENDATION:

Staff concludes that the use is in conformance with the City's Comprehensive Plan and the Zoning Ordinance. Additionally, the relevant site and design standards and minimum acceptable compatibility scores are met, and the site can accommodate the proposed use. The public service and utility provision to the site is available. Staff recommends **approval** of DR 20-03/CUP 20-02 subject to meeting the **conditions of approval** listed below.

Approval of this application is based on submitted application materials. Approval is strictly limited to the submitted proposal and is not extended to any other development of the property. Any modification of development plans not in conformance with the approval of application DR 20-03/CUP 20-02, including all conditions of approval, shall first require an approved modification in conformance with the relevant sections of the Canby Municipal Code.

CONDITIONS OF APPROVAL:

1. The applicant shall file a sign permit for signage as shown in the applicant materials and as described in this staff report. The proposed signs must also secure a building permit from Clackamas County Building Inspection prior to their installation. (B. Addotta)
2. The applicant shall designate the five visitor parking spaces with signage and inform residents and their families where they are. (B. Addotta)
3. The project must be in conformance with the applicable findings and recommendations outlined by the City Engineer in his memorandum dated January 28, 2021. (H. Ibrahim)
4. The design engineer shall submit to the City of Canby for review and approval a revised site plan of the driveway providing access onto S. Ivy Street to accommodate a right-in right-out porkchop and associated signage. Revised plans shall be provided and approved before site work commences. (B. Addotta)

Prior to Issuance of a Building Permit the following must be completed:

5. The design engineer shall submit to the City of Canby for review and approval at the time of final construction plan approval a storm drainage analysis and report applicable to the defined development area detailing how storm water disposal from both the building and the parking areas is being handled. Any drainage plan shall conform to an acceptable methodology for meeting adopted storm drainage design standards as indicated in the Public Works design standards. (J. Nelzen)
6. A Sediment and Erosion Control Permit will be required from the City prior to commencing site work. (H. Ibrahim)
7. Prior to the issuance of a building permit, the installation of public or private utilities, or any other site work other than rough site grading, construction plans must be approved and signed by the City and all other utility/service providers. A Pre-Construction Conference

with sign-off on all final construction plans is required. The design, location, and planned installation of all roadway improvements and utilities including but not limited to water, electric, sanitary sewer, natural gas, telephone, storm water, cable television, and emergency service provisions is subject to approval by the appropriate utility/service provider. The City of Canby's preconstruction process procedures shall be followed. (J. Nelzen)

8. Construction plans shall be designed and stamped by a Professional Engineer registered in the State of Oregon. (H. Ibrahim)
9. The project applicant shall apply for Clackamas County Building permits and a City of Canby Erosion Control Permit from the Canby Public Works Department. (B. Addotta)
10. Clackamas County Building Codes Division will provide structural, electrical, plumbing, and mechanical plan review and inspection services for construction of the project. (B. Addotta)
11. The applicant shall provide a bicycle parking detail showing compliance with the dimensional standards of bicycle parking as explained in CMC 16.49.065. (B. Addotta)

Prior to Occupancy:

12. Prior to occupancy of the facility, all landscaping plant material indicated on the submitted landscape plan shall either be installed and irrigated as proposed, or sufficient security (bonding, escrow, etc.) shall be provided pursuant to the provisions of CMC 16.49.100 (B). The applicant should be aware that the City street tree fee is now \$250 per tree if planted by the City, and the City recommends submittal of a separate Street Tree Plan to assist in the location, species, and total tree count. (B. Addotta)
13. City inspection of driveways and sidewalks for overall condition and for ADA compliance is required. (H. Ibrahim)



City of Canby
Planning Department
222 NE 2nd Avenue
P.O. Box 930
Canby, OR 97013
Ph: 503-266-7001
Fax: 503-266-1574

LAND USE APPLICATION

Conditional Use Process Type III

APPLICANT INFORMATION: *(Check ONE box below for designated contact person regarding this application)*

Applicant Name: _____ Phone: _____
Address: _____ Email: _____
City/State: _____ Zip: _____

Representative Name: _____ Phone: _____
Address: _____ Email: _____
City/State: _____ Zip: _____

Property Owner Name: _____ Phone: _____
Signature: _____
Address: _____ Email: _____
City/State: _____ Zip: _____

Property Owner Name: _____ Phone: _____
Signature: _____
Address: _____ Email: _____
City/State: _____ Zip: _____

NOTE: Property owners or contract purchasers are required to authorize the filing of this application and must sign above

- ① All property owners represent they have full legal capacity to and hereby do authorize the filing of this application and certify that the information and exhibits herewith submitted are true and correct.
- ② All property owners understand that they must meet all applicable Canby Municipal Code (CMC) regulations, including but not limited to CMC Chapter 16.49 Site and Design Review standards.
- ③ All property owners hereby grant consent to the City of Canby and its officers, agents, employees, and/or independent contractors to enter the property identified herein to conduct any and all inspections that are considered appropriate by the City to process this application.

PROPERTY & PROJECT INFORMATION:

Street Address or Location of Subject Property Total Size of Property Assessor Tax Lot Numbers

Existing Use, Structures, Other Improvements on Site Zoning Comp Plan Designation

Describe the Proposed Development or Use of Subject Property

STAFF USE ONLY				
FILE #	DATE RECEIVED	RECEIVED BY	RECEIPT #	DATE APP COMPLETE



City of Canby
 Planning Department
 222 NE 2nd Avenue
 PO Box 930
 Canby, OR 97013
 (503) 266-7001

CHECKLIST

Conditional Use Process Type III

All required application submittals detailed below must also be submitted in electronic format on a CD, flash drive or via email to: PlanningApps@canbyoregon.gov

Applicant City
 Check Check

- One (1) copy of this application packet. The City may request further information at any time before deeming the application complete.

- Payment of appropriate fees – cash or check only. Refer to the city’s Master Fee Schedule for current fees. Checks should be made out to the *City of Canby*.

- Please submit one (1) electronic copy of mailing addresses in either an EXCEL SPREADSHEET or WORD DOCUMENT** for all property owners and all residents within 500 feet of the subject property. **If the address of a property owner is different from the address of a site, an address for each unit on the site must also be included and addressed to “Occupant.”** A list of property owners may be obtained from a title insurance company or from the County Assessor’s office.

- One (1) copy of a written statement describing the Conditional Use Permit request, and detailing how your request meets the approval criteria. **Ask staff for applicable Municipal Code chapters and approval criteria.** Applicable Code Criteria for this application includes:

- One copy of either the recorded plat or the recorded deeds or land sales contracts that demonstrates how and when legal property lines were established and where the boundaries of the legal lot(s) of record are located. If the property is a lot or parcel created by plat, a copy of the recorded plat may be obtained from the Clackamas County Surveyor’s office. If the property is a legal lot of record created by recorded deed or land sales contract at a time when it was legal to configure property lines by deed or contract, then those recorded deeds may be obtained from the Clackamas County Office of the Clerk, or a Title Company can also assist you in researching and obtaining deeds.

- N/A If the development is located in a Hazard (“H”) Overlay Zone, submit one (1) copy of an affidavit signed by a licensed professional engineer that the proposed development will not result in significant impacts to fish, wildlife and open space resources of the community. If major site grading is proposed, or removal of any trees having trunks greater than six inches in diameter is proposed, then submit one (1) copy of a grading plan and/or tree-cutting plan.

- Two (2) 11” x 17” paper copies** of the proposed plans, printed to scale no smaller than 1”=50’. The plans shall include the following information:
 - Vicinity Map.**
 - Vicinity map at a scale of 1”=400’ showing the relationship of the project site to the existing street or road pattern.
 - Site Plan**-the following general information shall be included on the site plan:
 - Date, north arrow, and scale of drawing;

- Name and address of the developer, engineer, architect, or other individual(s) who prepared the site plan;
- Property lines (legal lot of record boundaries);
- Location, width, and names of all existing or planned streets, other public ways, and easements within or adjacent to the property, and other important features;
- Location of all jurisdictional wetlands or watercourses on or abutting the property;

- Finished grading contour lines of site and abutting public ways;
- Location of all existing structures, and whether or not they are to be retained with the proposed development;
- Layout of all proposed structures, such as buildings, fences, signs, solid waste collection containers, mailboxes, exterior storage areas, and exterior mechanical and utility equipment;
- Location of all proposed hardscape, including driveways, parking lots, compact cars and handicapped spaces, loading areas, bicycle paths, bicycle parking, sidewalks, and pedestrian ways;
- Callouts to identify dimensions and distances between structures and other significant features, including property lines, yards and setbacks, building area, building height, lot area, impervious surface area, lot densities and parking areas;
- Location of vision clearance areas at all proposed driveways and streets.

- Landscape Plan**
The following general information shall be included on the landscape plan:
 - Layout and dimensions of all proposed areas of landscaping;
 - Proposed irrigation system;
 - Types, sizes, and location of all plants to be used in the landscaping (can be a “palette” of possible plants to be used in specific areas for landscaping);
 - Identification of any non-vegetative ground cover proposed, and dimensions of non-vegetative landscaped areas;
 - Location and description of all existing trees on-site, and identification of each tree proposed for preservation and each tree proposed for removal;
 - Location and description of all existing street trees in the street right-of-way abutting the property, and identification of each street tree proposed for preservation and each tree proposed for removal.
- Elevations Plan** - The following general information shall be included on the elevations plan:
 - Profile elevations of all buildings and other proposed structures;
 - Profile of proposed screening for garbage containers and exterior storage areas;
 - Profile of proposed fencing.
- Sign Plan.**
 - Location and profile drawings of all proposed exterior signage.
- Color and Materials Plan.**
 - Colors and materials proposed for all buildings and other significant structures.

CONDITIONAL USE – TYPE III: APPLICATION PROCESS

1. Prior to submitting an application, all applicants are encouraged to request a pre-application meeting with the City, or the City Planner may determine that a pre-application meeting is necessary after an application has been discussed or upon receipt of an application by the City. To schedule a pre-application meeting, an applicant must submit a completed pre-application form and set of preliminary plans to the Planning Department.

2. At the time an application is submitted to the City, payment of all required application processing fees is required. An application will not be accepted without payment of fees. City Staff can provide you with information concerning application fees.
3. Staff will check the application, making sure that it is complete and all fees are paid. Copies of the application materials are also routed to various City/State/County departments, as applicable, for their comments. The City Planner will accept or return the application with a written list of omissions within thirty (30) calendar days of the submittal.
4. Staff investigates the application, writes a staff report, issues public notice, notifies surrounding property owners, and makes all facts relating to the request available to the Planning Commission and all interested parties.
5. Prior to the public hearing, the City will prepare notice materials for posting on the subject property. Staff will post this material at least ten (10) days before the public hearing.
6. The staff report will be available to all interested parties at least seven (7) days prior to the hearing.
7. The Planning Commission holds a public hearing. The staff report is presented to the Commission. Testimony is presented by the applicant, proponents and opponents, followed by rebuttal from the applicant.
8. The Commission then issues findings of fact which support approval, approval with conditions, or denial of the application. A decision may be appealed to the City Council.
9. If the Planning Commission decision is appealed, City Council holds a public hearing. The staff report is presented and testimony taken, as at the original hearing(s). Unless the City Council decides to hear the appeal de novo, only testimony regarding items already in the record is permitted, and no new information may be entered. In the case of an appeal, the Council may affirm, revise, or reverse the decision of the Planning Commission in all or in part. The Council may also remand the matter back to the hearing body for further consideration.

CONDITIONAL USE PERMIT – TYPE III: STANDARDS AND CRITERIA

Under Section 16.50.010 of the Canby Municipal Code, an application for CONDITIONAL USE PERMIT approval shall be evaluated based on the following standards and criteria:

- A. The proposal will be consistent with the policies of the Comprehensive Plan and the requirements of this title and other applicable policies of the city; and
- B. The characteristics of the site are suitable for the proposed use considering size, shape, design, location, topography, existence of improvements and natural features; and
- C. All required public facilities and services exist to adequately meet the needs of the proposed development; and
- D. The proposed use will not alter the character of the surrounding areas in a manner which substantially limits, or precludes the use of surrounding properties for the uses listed as permitted in the zone.



City of Canby
 Planning Department
 222 NE 2nd Avenue
 PO Box 930
 Canby, OR 97013
 (503) 266-7001

LAND USE APPLICATION

SITE AND DESIGN REVIEW General Type III

APPLICANT INFORMATION: *(Check ONE box below for designated contact person regarding this application)*

Applicant Name: _____ Phone: _____
 Address: _____ Email: _____
 City/State: _____ Zip: _____

Representative Name: _____ Phone: _____
 Address: _____ Email: _____
 City/State: _____ Zip: _____

Property Owner Name: _____ Phone: _____
 Signature: _____
 Address: _____ Email: _____
 City/State: _____ Zip: _____

Property Owner Name: _____ Phone: _____
 Signature: _____
 Address: _____ Email: _____
 City/State: _____ Zip: _____

NOTE: Property owners or contract purchasers are required to authorize the filing of this application and must sign above

- ❶ All property owners represent they have full legal capacity to and hereby do authorize the filing of this application and certify that the information and exhibits herewith submitted are true and correct.
- ❷ All property owners understand that they must meet all applicable Canby Municipal Code (CMC) regulations, including but not limited to CMC Chapter 16.49 Site and Design Review standards.
- ❸ All property owners hereby grant consent to the City of Canby and its officers, agents, employees, and/or independent contractors to enter the property identified herein to conduct any and all inspections that are considered appropriate by the City to process this application.

PROPERTY & PROJECT INFORMATION:

 Street Address or Location of Subject Property Total Size of Property Assessor Tax Lot Numbers

 Existing Use, Structures, Other Improvements on Site Zoning Comp Plan Designation

 Describe the Proposed Development or Use of Subject Property

STAFF USE ONLY				
FILE #	DATE RECEIVED	RECEIVED BY	RECEIPT #	DATE APP COMPLETE

SITE AND DESIGN REVIEW APPLICATION – TYPE III–INSTRUCTIONS

All required application submittals detailed below must also be submitted in electronic format on a CD, flash drive or via email. Required application submittals include the following:

Applicant City
Check Check

- One (1) copy of this application packet. The City may request further information at any time before deeming the application complete.
- Payment of appropriate fees – cash or check only. Refer to the city’s Master Fee Schedule for current fees. Checks should be made out to the *City of Canby*.
- Please submit one (1) electronic copy of mailing addresses in either an EXCEL SPREADSHEET or WORD DOCUMENT** for all property owners and all residents within 500 feet of the subject property. **If the address of a property owner is different from the address of a site, an address for each unit on the site must also be included and addressed to “Occupant.”** A list of property owners may be obtained from a title insurance company or from the County Assessor’s office.
- One (1) copy of a written, narrative statement describing the proposed development and detailing how it conforms with the Municipal Code and to the approval criteria, including the applicable Design Review Matrix, and availability and adequacy of public facilities and services. **Ask staff for applicable Municipal Code chapters and approval criteria.**
Applicable Code Criteria for this application includes:

- Three (3) copies of a Traffic Impact Study (TIS), conducted or reviewed by a traffic engineer that is contracted by the City and paid for by the applicant (payment must be received by the City before the traffic engineer will conduct or review a traffic impact study.
Ask staff to determine if a TIS is required.
N/A
- One (1) copy in written format of the minutes of the neighborhood meeting as required by Municipal Code 16.89.020 and 16.89.070. The minutes shall include the date of the meeting and a list of attendees.
- One (1) copy in written format of the minutes of the pre-application meeting
- One copy of either the recorded plat or the recorded deeds or land sales contracts that demonstrates how and when legal property lines were established and where the boundaries of the legal lot(s) of record are located. If the property is a lot or parcel created by plat, a copy of the recorded plat may be obtained from the Clackamas County Surveyor’s office. If the property is a legal lot of record created by recorded deed or land sales contract at a time when it was legal to configure property lines by deed or contract, then those recorded deeds may be obtained from the Clackamas County Office of the Clerk, or a Title Company can also assist you in researching and obtaining deeds.
- If the development is located in a Hazard (“H”) Overlay Zone, submit one (1) copy of an affidavit signed by a licensed professional engineer that the proposed development will not result in
N/A

significant impacts to fish, wildlife and open space resources of the community. If major site grading is proposed, or removal of any trees having trunks greater than six inches in diameter is proposed, then submit one (1) copy of a grading plan and/or tree-cutting plan.

Applicant City
Check Check

Two (2) 11" x 17" paper copies of the proposed plans, printed to scale no smaller than 1"=50'. The plans shall include the following information:

- Vicinity Map. Vicinity map at a scale of 1"=400' showing the relationship of the project site to the existing street or road pattern.
- Site Plan-the following general information shall be included on the site plan:
 - Date, north arrow, and scale of drawing;
 - Name and address of the developer, engineer, architect, or other individual(s) who prepared the site plan;
 - Property lines (legal lot of record boundaries);
 - Location, width, and names of all existing or planned streets, other public ways, and easements within or adjacent to the property, and other important features;
 - Location of all jurisdictional wetlands or watercourses on or abutting the property;
 - Finished grading contour lines of site and abutting public ways;
 - Location of all existing structures, and whether or not they are to be retained with the proposed development;
 - Layout of all proposed structures, such as buildings, fences, signs, solid waste collection containers, mailboxes, exterior storage areas, and exterior mechanical and utility equipment;
 - Location of all proposed hardscape, including driveways, parking lots, compact cars and handicapped spaces, loading areas, bicycle paths, bicycle parking, sidewalks, and pedestrian ways;
 - Callouts to identify dimensions and distances between structures and other significant features, including property lines, yards and setbacks, building area, building height, lot area, impervious surface area, lot densities and parking areas;
 - Location of vision clearance areas at all proposed driveways and streets.
- Landscape Plan, with the following general information:
 - Layout and dimensions of all proposed areas of landscaping;
 - Proposed irrigation system;
 - Types, sizes, and location of all plants to be used in the landscaping (can be a "palette" of possible plants to be used in specific areas for landscaping);
 - Identification of any non-vegetative ground cover proposed, and dimensions of non-vegetative landscaped areas;
 - Location and description of all existing trees on-site, and identification of each tree proposed for preservation and each tree proposed for removal;
 - Location and description of all existing street trees in the street right-of-way abutting the property, and identification of each street tree proposed for preservation and each tree proposed for removal.
 - Elevations Plan
 - The following general information shall be included on the elevations plan:
 - Profile elevations of all buildings and other proposed structures;
 - Profile of proposed screening for garbage containers and exterior storage areas;
 - Profile of proposed fencing.

- Sign Plan.
 - Location and profile drawings of all proposed exterior signage.
 - Color and Materials Plan.
 - Colors and materials proposed for all buildings and other significant structures.
- One (1) copy of a completed landscaping calculation form (see page 5)
- One (1) copy of a completed Design Review Matrix (see page 6)

SITE AND DESIGN REVIEW APPLICATION: LANDSCAPING CALCULATION FORM

Site Areas

1. Building area		- Square footage of building footprints
2. Parking/hardscape		- Square footage of all sidewalks, parking, & maneuvering areas
3. Landscaped area		- Square footage of all landscaped areas
4. Total developed area		- Add lines 1, 2 and 3
5. Undeveloped area		- Square footage of any part of the site to be left undeveloped.
6. Total site area		- Total square footage of site

Required Site Landscaping (Code 16.49.080)

7. Percent of landscaping required in Zoning District		- Fill in the Appropriate Percentage: R-1, R-1.5, R-2 Zones: 30%; C-2, C-M, C-R, M-1, M-2 Zones: 15%; C-1 Zone: 7.5%
8. Required minimum square footage of landscaping		- Multiply line 4 and line 7
9. Proposed square footage of landscaping		- Fill in value from line 3

Required Landscaping within a Parking Lot (Code 16.49.120(4))

Note: This section and the next apply only to projects with more than 10 parking spaces or 3,500 square feet of parking area

10. Zone		- Fill in the Appropriate Zone and Percentage: C-1 Zone: 5%; Core Commercial sub-area of the Downtown Canby Overlay: 10%, except for parking lots with 10 or more spaces and two or more drive aisles: 50 square feet per parking space; All other zones: 15%.
11. Percent of required landscaping		
12. Area of parking lot & hardscape		- Fill in area of parking and maneuvering areas plus all paved surface within ten (10) feet of those areas.
13. Number of vehicle parking spaces		- For Core Commercial sub-area in the Downtown Canby Overlay only, fill in the total # of parking spaces on-site.
14. Required square footage of landscaping within 10 feet of parking lot		- Multiply area of parking lot (line 12) by percent of required landscaping (line 11) -OR- for the CC sub-area in the Downtown Canby Overlay multiply line 13 by 50 square feet.
15. Proposed square footage of Landscaping within 10 feet of parking lot		- Calculate the amount of landscaping proposed within 10 feet of all parking and maneuvering areas.

Parking Lot Tree Calculation

16. Number of parking spaces		- Total number of vehicle parking spaces
17. Area of parking lot & hardscape		- Area from line 12
18. Number of parking spaces (line 16) divided by 8		- Round up to the nearest whole number
19. Area of parking lot area (line 17) divided by 2,800		- Round up to the nearest whole number
20. Number of required trees in parking lot		- Fill in the larger of row 18 and row 19
21. Number of trees provided within 10 feet of parking lot		- Fill in the number of proposed trees within 10 feet of parking and maneuvering areas.

SITE AND DESIGN REVIEW APPLICATION: DESIGN REVIEW MATRIX

Applicants: Please circle the applicable point column to your project and compute the total and percentages at the end of the table.

Table 16.49.040 Site Design Review Menu

As part of Site and Design Review, the following menu shall be used as part of the review. In order to “pass” this table 60% of total possible points shall be earned, 10% of the total possible points must be from LID elements

Design Criteria	Possible Points				
Parking	0	1	2	3	4
Screening of parking and/or loading facilities from public right-of-way	Not screened	Partially screened	Fully screened	-	-
Parking lot lighting provided	No	Yes	-	-	-
Parking location (behind building is best)	Front	Side	Behind	-	-
Number of parking spaces provided (% of minimum required)	>120%	101-120%	100%	-	-
Screening of Storage Areas and Utility Boxes	0	1	2	3	4
Trash storage is screened from view by solid wood fence, masonry wall or landscaping.	No	Yes	-	-	-
Trash storage is located away from adjacent property lines.	0 - 10 feet from adjacent property	11 - 25 feet from adjacent property	>25 feet from adjacent property	-	-
Utility equipment, including rooftop equipment, is screened from view.	Not screened	Partially screened	Fully screened	-	-
Access	0	1	2	3	4
Distance of access to nearest intersection.	≤70 feet	71 - 100 feet	>100 feet	-	-
Pedestrian walkways from public street/sidewalks to building entrances.	One entrance connected.	-	Walkways connecting all public streets/sidewalks to building entrances.	-	-
Pedestrian walkways from parking lot to building entrance.	No walkways	Walkway next to building only	Walkways connecting all parking areas to building entrances	-	-

Tree Retention	0	1	2	3	4
Design Criteria	Possible Points				
Percentage of trees retained	<10%	10-50%	51-75%	>75%	NO EXISTING TREES
Replacement of trees removed	<50%	≥50%	-	-	NO EXISTING TREES
Signs	0	1	2	3	4
Dimensional size of sign (% of maximum permitted)	>75%	50-75%	<50%	-	-
Similarity of sign color to building color	Not similar	Somewhat similar	Similar	-	-
Pole sign used	Yes	No	-	-	-
Building Appearance	0	1	2	3	4
Style (similar to surroundings)	Not similar	Somewhat similar (1 or 2 points possible depending on level of similarity)		-	-
Color (subdued and similar to surroundings is better)	Neither	Similar or subdued	Both	-	-
Material (concrete, wood and brick are best)	Either 1 or 2 points may assigned at the discretion of the Site and Design Review Board				
Size of building (smaller is better)	>20,000 square feet	≤20,000 square feet	-	-	-
Provision of public art (i.e. murals, statues, fountains, decorative bike racks, etc.)	No	-	-	-	Yes
Landscaping	0	1	2	3	4
Number of non-required trees provided	-	At least one tree per 500 square feet of landscaping	-	-	-
Amount of grass (less grass is better) (% of total landscaped area)	>50%	25-50%	<25%	-	-
Low Impact Development (LID)	0	1	2	3	4
Use of pervious paving materials (% of total paved area)	<10%	-	10-50%	51-75%	>75%
Provision of park or open space area	None	-	Open space (Generally not for public use)	-	Park (public or privately owned for public use)

Design Criteria	Possible Points				
Use of drought tolerant species in landscaping (% of total plants)	<25% drought tolerant	-	25-50% drought tolerant	51-75% drought tolerant	>75% drought tolerant
Provision of additional interior parking lot landscaping (% of minimum required)	100%	101-110%	111-120%	>120%	-
Provision of an eco-roof or rooftop garden (% of total roof area)	<10%	-	-	10-50%	>50%
Parking integrated within building footprint (below-grade, structured parking, or tuck-under parking) (% of total on-site parking)	<10%	-	-	10-50%	>50%
Disconnecting downspouts from city stormwater facilities	None	Some downspouts disconnected	All downspouts disconnected	-	-
Shared parking with adjacent uses or public parking structure (% of total required parking spaces)	None	<50%	≥50%	-	-
Provision of rain gardens/bioretention areas for stormwater runoff (% of total landscaped area)	None	-	10-50%	51-75%	>75%
Total Possible Points = 71, 60%=42.6 points, 10%=7.1 points					

Total Points Earned: _____ (42.6 points required for 60%)

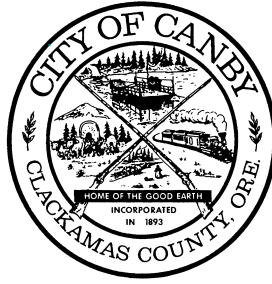
Total LID Points Earned: _____ (7.1 required for 10%)

SITE AND DESIGN REVIEW – TYPE III: APPLICATION PROCESS

1. Prior to submitting an application, all applicants are encouraged to request a pre-application meeting with the City -or- the Planning Director may determine that a pre-application meeting is required prior to submitting an application. To schedule a pre-application meeting, an applicant must submit a completed pre-application form and set of preliminary plans to the City Planner, and after receiving the Planner's initials, must then make and take (3) copies of the pre-application materials to the Canby Public Works Department to schedule the pre-application meeting. The amount of the fee for a pre-application meeting is based on whether the application involves a public hearing or not.
2. Prior to submitting an application, applicants may be required to hold a neighborhood meeting with surrounding property owners and any recognized neighborhood association representative, pursuant to the procedures described in Canby Municipal Code Section 16.89.070. In certain situations, the Planning Director may waive the neighborhood meeting requirement.
3. At the time an application is submitted to the City, payment of all required application processing fees is required. An application will not be accepted without payment of fees. City Staff can provide you with information concerning application fees.
4. Staff will check the application, making sure that it is complete and all fees are paid. Copies of the application materials are routed to various City/State/County departments, as applicable, for their comments. The application is reviewed for completeness; the City Planner will accept or return the application with a written list of omissions within thirty (30) calendar days of the submittal.
5. Staff investigates the application, writes a staff report, issues public notice, notifies surrounding property owners, and makes all facts relating to the request available to the Planning Commission and all interested parties.
6. Prior to the public hearing, the City will prepare notice materials for posting on the subject property. Staff will post this material at least ten (10) days before the public hearing.
7. The staff report will be available to all interested parties seven (7) days prior to the hearing.
8. The Planning Commission holds a public hearing. The staff report is presented to the Commission. Testimony is presented by the applicant, proponents and opponents, followed by rebuttal from the applicant.
9. The Commission then issues findings of fact which support approval, modification, or denial of the application. A decision may be appealed to the City Council.
10. If an approval or a denial is appealed, City Council holds a public hearing. The staff report is presented and testimony taken, as at the original hearing(s). Unless the City Council decides to hear the appeal de novo, only testimony regarding items already in the record is permitted, and no new information may be entered. In the case of an appeal, the Council may affirm, revise or reverse the action of the Planning Commission in all or in part. The Council may also remand the matter back to the hearing body for further consideration.
11. Prior to construction of the project, a preconstruction meeting is held with the City and all applicable utility and service providers. If required, this meeting must be held and approval of Plan set by all agencies, and payment of Canby System Development Charge (SDC) and construction excise tax to the City before issuance of any building permits for the project(s) by Clackamas County.

SITE AND DESIGN REVIEW – TYPE III: REVIEW CRITERIA (*Code 16.49.040*)

1. The Planning Commission shall, in exercising or performing its powers, duties or functions, determine whether there is compliance with the following A through D, and with Criteria 4, 5, and 6 below:
 - A. The proposed site development, including the site plan, architecture, landscaping and graphic design, is in conformance with the standards of this and other applicable City ordinances insofar as the location, height and appearance of the proposed development are involved; and
 - B. The proposed design of the development is compatible with the design of other developments in the same general vicinity; and
 - C. The location, design, size, color and materials of the exterior of all structures and signs are compatible with the proposed development and appropriate to the design character of other structures in the same vicinity; and
 - D. The Planning Commission shall, in making its determination of compliance with subsections B and C above, use the applicable matrix [*pages 8-12*] to determine “compatibility”.
2. The Planning Commission shall, in making its determination of compliance with the above requirements, be guided by the objectives and standards set forth in this section. It must be demonstrated that all required public facilities and services are available, or will become available through the development, to adequately meet the needs of the proposed development. If the site and design review plan includes utility facilities or public utility facility, then the City Planner shall determine whether those aspects of the proposed plan comply with applicable standards.
3. The Planning Commission shall, in making its determination of compliance with the requirements set forth, consider the effect of its action on the availability and cost of needed housing. The Planning Commission shall not use the requirements of this section to exclude needed housing types. However, consideration of these factors shall not prevent the Planning Commission from imposing conditions of approval necessary to meet the requirements of this section. The costs of such conditions shall not unduly increase the cost of housing beyond the minimum necessary to achieve the purposes of this ordinance.
4. As part of the site and design review, the property owner may apply for approval to cut trees in addition to those allowed in Chapter 12.32, the City Tree Ordinance. The granting or denial of said application will be based on the criteria in Chapter 12.32. The cutting of trees does not in and of itself constitute change in the appearance of the property which would necessitate application for site and design review.



Pre-application Meeting

**1300 S Ivy Street – Memory Care Facility
May 22, 2019**

Attended by:

Richard S Georgescu, RSG Engineering Co, 503-380-6179
Edward Radulescu, EPR Design/NW Arch & Design, 503-679-2493
Doniel Donovan, Owner, 503-928-9970
Hassan Ibrahim, Curran-McLeod Engineering, 503-684-3478
Daryll Hughes, Wastewater Treatment, 503-266-0647
Veronica Wilson, Owner, 503-740-5023

Doug Erkson, Canby Utility, 503-263-4331
Petronella Donovan, Owner, 503-810-9045
Ryan Potter, Planning, 503-266-0712
Jerry Nelzen, Public Works, 503-266-0759
Sandy Freund, Planning, 503-266-0775
Juliano Wilson, Owner, 503-969-3432

This document is for preliminary use only and is not a contractual document.

OWNER, Petronell Donovan

- We do senior housing and we want to do assisted living/indoor memory care facility and also have some independent living cottages/houses.

CURRAN-MCLEOD ENGINEERING, Hassan Ibrahim

- SE 13th Avenue is an arterial street and you will need to dedicate 10 ft the right-of-way (ROW) to match what is existing on the east side.
- You will need to build half street improvements on SE 13th Avenue including curb, sidewalks, planter strip and street lighting. The curb will be located based on what is matching to the east, which is 22 ft from the center line. The sidewalk needs to be 6 ft wide and the planter strip is a minimum of 4-1/2 ft wide.
- You do not meet the required access spacing for an arterial street of 330 ft from the nearest intersection of SE 13th Avenue and S Ivy Street. What needs to happen is a design exception by your engineer and we will certainly validate it because your hands are tied here, but we need something documented on why you cannot meet the access spacing other than where the location of the driveway is located.
- South Ivy Street is a county roadway and Jerry said we have a signed intergovernmental agreement (IGA) with the county and when all improvements have been completed the City of Canby will be taking over the responsibility of S Ivy Street. When you are ready to start the frontage improvements for S Ivy Street you will be building them to our standards and we will have a letter of understanding between the city and county in regards to the improvements. Petronella said we need to show the city codes and Jerry said yes because I will have a letter stating any improvements on S Ivy Street will be built to city standards, but until then you will still need to work with the county as far as permits. Hassan said S Ivy Street is an arterial street and what are your plans for this access, will it be for emergencies only and Edward said we are proposing access on SE 13th Avenue as far from the intersection

as possible and the other access will be for emergencies only and Hassan said it will not be a primary access correct. Edward said what we would like to have is have one of them be an exit only just for the flow of dropping off residents or emergency vehicles to come in and leave without having to back up anywhere on site. The reason for that is for licensing they prefer we have a drop off area for residents and emergency vehicles where they do not have to back up on site to get out and I am wondering if something like that can be allowed. Hassan said at this time, unfortunately, it is still a county road and it is their call on whether you can have that type of access. You will need to discuss this access option with Clackamas County Department of Transportation and Development (DTD). Petronella asked if in the future this will be a city street and right now we have to deal with the county, but if it comes in the future can we not have the city and Jerry said it depends on how fast the county will get back to me, but at this point you will have to follow the county standards on the driveway and as of right now it is a county decision. Edward said if the county is okay with it, would you support it and Hassan said there will be a traffic study and someone will figure out what the impact will be on the arterial street, will it be acceptable or will it cause delays, etc. Similarly, you will have to do half street improvements along S Ivy Street and I believe the face of curb is 23 ft from the centerline and I want to draw your attention to the curb placement it needs to line up with the curb line south of you at SE 16th Avenue. There will be a 6 ft curb tight sidewalk and I do not believe it is a 60 ft ROW, so no ROW dedication required on S Ivy Street.

- The driveway approaches will be private and built to commercial standards with a minimum 6 inch thick concrete with reinforcements.
- You will need to contact Matt English, Fire Marshall, Canby Fire Department, (503) 266-5851 for all the safety needs.
- We have sewer and water available on both streets and Doug said Canby Utility Water Department has a 14 inch water main on SE 13th Avenue and a 10 inch water main on S Ivy Street. Jerry said for the sewer you will want to go into SE 13th Avenue because of the utility conflicts on S Ivy Street and you would have to go through all the utilities and into Hope Village's green space. Hassan said when you make the connection to the sanitary sewer you need to be mindful of the detector/induction loops for the signal and they may be in the vicinity and if they get disrupted they have to be reinstated. You will be required to have a sampling manhole on the sewer line located at the public ROW and after the public ROW into the site will be your responsibility. Daryll said if they are set up like any other memory care facility I do not foresee any sampling taking place and if you agree this will not be upgraded to any type of industrial situation, this is my biggest concern because if someone comes in after you and would be a manufacturing type business, we do not have any way of sampling. Sandy asked if the single cottages would be sufficient for a 6 inch lateral and Jerry said one 6 inch lateral will be sufficient, but we only allow one 6 inch lateral per address and Edward said it will be only one address for the site.
- Hassan said we will need a cleanout to separate what the city maintains and what is your responsibility and it will be located at ROW. Jerry said it will be a Romac saddle at the connection and we will go over all of that with your contractor.
- Once your engineer designs the storm we will review it. All the stormwater created on site stays on site it does not go into a public street. Richard asked about the street improvements,

curb and sidewalk who is doing the storm and Hassan said you will have to put in a drywell. Edward said what about what is outside of our property line, the public stormwater goes into our site and Hassan said no. Edward asked if you wanted the drywell under the sidewalk and Jerry said you will put one in the street and Hassan said the public stormwater will be going into a catch basin, to a sedimentation manhole then to the drywell. On the private side if you do a drywell you will have to have it rule-authorized by Oregon DEQ, for the public we are covered under a citywide WPCF permit. Richard said if we do surface infiltration we do not have to go to DEQ and Hassan said correct if it is not an underground injection control (UIC) you do not. Edward asked if the soil conditions were different in Canby than in Oregon City and Jerry said it is a great area for infiltration if you get down to the cobble. Hassan said we will need a drainage report and percolation testing result sent to us to determine what the percolation rate will take the flow. Richard asked if we needed the water quality for the roof and Hassan said it is up to DEQ on what they require on private stormwater. Hassan said you need to be mindful if you do an on-site drywell it has to be 267 ft radius away from all water drinking wells. Your engineer has to demonstrate if any UIC whether public or private is 267 ft radius away from a drinking water well. Richard said if we do surface infiltration we do not have to do this and Hassan said correct.

WASTEWATER TREATMENT, Daryll Hughes

- Will you have a main kitchen on site and Petronella said yes. Daryll said requirements by the city is if any facility serving multiple people you will need a grease trap and you have that planned and the answer was yes. I will come out to the site and assess the impact of the grease trap and set a frequency of how often it gets cleaned, just like everyone else in town.
- Daryll handed the owners an environmental survey. Fill it out and send it back to me. I am required by the State of Oregon to give you the Resource Conservation and Recovery Act (RCRA) form.
- I am getting in touch with all companies in Canby that use disposable wipes coming to the wastewater treatment plant. I will be starting a process through education to prevent the disposable wipes from getting to the wastewater treatment plant because it causes issues. If there is any way we can go through this with any forethought of being able to not flush the wipes it would be fantastic for us. Petronella said I know it happened to us at our other facility as well. Daryll said in Canby I would like to try to initiate something like this to get the program going and if folks like you can be on board it would be a great partnership.

CANBY UTILITY, WATER AND ELECTRIC, Doug Erkson

- I will be discussing the water and electric today. The water can be fed from either side of your property and the sanitary sewer has to be 10 ft away from our water main. The electric will be feeding off of SE 13th Avenue, do you have a spot where the electric will be and Edward said it will be where our main trash area, loading/unloading area, kitchen or electric room will be on this side as long as it is not on the street frontage. Doug said for the water, the main to meter is all on the developer for the construction and on the electric side all trenching, backfill, staking and grades is also on the developer and we will do all of our conduit and set is up. At this time I do not know what the design will look like yet, I do not know if our design guy has looked at your design yet, but we will do that after we get all of

this pre-stuff approved. Do you have any questions for me and Edward said do you want a site plan with its design and Richard asked if you are putting the electric underground? Doug stated all the electric is underground and Hassan said the street light layout will be determine by Canby Utility and they will install them. Richard asked about the signal light and Jerry said there will be changes to the signal and from what I understand they will need to move it because of a proposed turn lane. Edward said in the past the county determines by a certain amount of parking spaces and it triggers the signal and I do not know if they still have the same rule. Jerry said he remembered this part of the signal had to be moved and Hassan said it is in the wrong spot. Petronella asked if it was city or county and the answer was county. Edward asked if there was 3-phase power available and Doug said yes and if you stated your power will be coming into your site here, we would place our transformer here, but depending on your load, which you will have to provide to us we will determine if we need a vault there or not. Richard asked if we had any as built for the underground utilities on the existing streets and the answer was for Richard to be directed to the City of Canby website's electronic records management system to find our as-built plans for this area. Hassan said yes, between the city and Canby Utility they will, but you will still need to do surveying.

- Doug said even though the developer does the construction and installs the water line one of our water department guys will need to be out there as the inspector during all construction for the water. All material needs to be American made for the domestic water and we will inspect all the material before they go into the ground. Richard asked who does the tapping of the water main and Doug said you will do the tap unless you want us to do the tap it is up to you. A and A Drilling usually does the tap for developers and usually, it is upon the developer to do the tap, we will set the meter after the installation is complete. Richard asked about what the fire department needs and he knows they will need a double check device after the meter for the domestic water and can we only do one tap for the domestic and fire and Doug said we can discuss this. Edward asked if there was a fire hydrant located nearby and Doug stated he did not check, but I am sure there are a few around because of the school. Richard asked how far apart do the fire hydrants need to be away and Edward stated a 150 ft from the fire department connection (FDC). Doug said the fire department will determine where the fire hydrants need to be placed and how many.
- Edward asked if Doug had the flow rates for the area and Doug said no, but we can open a hydrant and verify it for you just give me a call.

PUBLIC WORKS DEPARTMENT, Jerry Nelzen

- When do you plan on starting and Edward said if everything went smooth, two years. Jerry said we are leaving a section of overlay out because of this project and they section of SE 13th Avenue is going bad and we did not want you to cut a brand new street. Edward asked when are you planning on doing the overlay and Jerry said when will you be done with your frontage improvements. Discussion ensued. Juliano said what if we do all the street work there should not be any problems because we will be out of the ROW even though it would take us two years. Jerry asked when would you have all the street work completed and Edward said if we get everything approved and started we would prioritize the street work. Jerry said before this time next year you could be done with the street work and Edward said no not before this time we would probably just be starting the construction around this time.

Jerry said there is nothing we can do about that and Hassan said we will have to see how things go here. Jerry wanted to clarify that the city is leaving this portion of SE 13th Avenue out of our yearly paving maintenance and coordinating a half street improvement with a temporary overlay because the road is falling apart, but if you have all the frontage improvements completed by July 1, 2020 we can put it back in the yearly schedule. Richard said if it is possible to get the approval to do the sewer and water work and bring them out of the roadway and we build the curb and sidewalk later you should be able to do the road. Hassan said what we are trying to accomplish is to consolidate both projects ours and yours and when we overlay we want to match your top lift elevation that is what we are trying to accomplish. We do not want to end up with a joint, a cut or paste. Jerry said we will work together and Petronella stated they appreciated us working with them.

- Will the 6 inch sewer lateral be enough for your entire facility and Richard said yes it will be enough, especially at 2% can take a town. Jerry said I understand and I realize it is private and Hassan said it is private and the more slope they put on it the more capacity it will take. Jerry said when you connect to our sewer main you will need to have a traffic control plan and I will need to see it beforehand. You will need to work with the school district and the adult center because this is a very busy road and we just put in a new sewer main through there and it is approximately 8 ft off the north curb line on SE 13th Avenue. We will want a “T” cut, Romac saddle and no insert-a-t’s and we want the cleanout with a sanitary “Y” sloping towards the main away from yours in some hardscape area like a sidewalk and behind the cleanout will be inspected by Clackamas County. We work together with the county inspector and you will need to work out some plan for the air test for the entire line. Edward said for the traffic control plan we have used D & H Flagging in the past and they know all of your requirements and Jerry said that would be great.
- We would like you to follow the existing street tree design from Dinsmore Estates to the east of you and I believe S Ivy Street will be curb tight sidewalks and you will need to match the design they have at SE 16th Avenue. If you can put together a street tree plan with your design and if you do not the planning department will have a calculation of what you will pay if the city plants the street trees and the city will maintain the trees for two years and from that point it will be your responsibility. We do have a street tree list on our website and you can determine which tree fits the planter strip requirements.
- Jerry asked if they ever thought of making this road a public road and Petronella said no because of the safety of our residents. Jerry said the reason I ask is we were hoping to connect all the roadways from the other subdivisions in the future. Discussion ensued on the neighboring properties and Petronella said she had heard about the different types of proposed uses for this site and do you see our plans for senior housing having any issues with the site. Jerry said described what some issues with the neighboring property for sewer needs. Petronella said she will talk to all the neighbors and let them know what we have planned for this site.

CITY OF CANBY, PLANNING DEPARTMENT, Ryan Potter

- The land use applications will be a Site and Design Type 3 review process, but it will also require a conditional use permit and it would be another application to be processed at the same time. It will be based on the zone and Petronella asked what is it zoned right now and

Ryan said R-1. Edward asked if the Site and Design Type 3 review was a planning commission and Ryan said yes and you will have to have a neighborhood meeting also. You will have to send out notifications to all the neighbors in a 500 ft radius of the site.

- Do you know approximately how many beds will be in the main facility and Petronella said it will be at least 100, I do not have an exact count yet. Ryan said that count will drive on how much parking we will require. Edward asked what the minimum parking ratio for this type of use and Ryan said there is not a use that exactly fits what it is, for retirement assisted living is one space per unit for a convalescent home, nursing home or sanitarium it is one space per two beds plus one space per employee. Petronella said the residents will not be driving at all and they do not need any parking and Ryan said we will need to talk to the planning director on how he will interrupt it. Sandy said Ryan will send you all the notes and criteria for the applications and the process.
- The max height of the building will be 35 ft.
- The duplex units along the back, we consider these rear yards and they will have to be 15 ft not the 10 ft you show.
- We talked about the access and the driveway spacing.
- There will be landscaping requirements for the site and in the parking lot also.
- You will need to screen the trash enclosures. Edward asked who was in charge of reviewing access for the garbage trucks and Sandy said we will send a copy of the application to Canby Disposal and see what their comments will be and if they have conditions or comments it will be in the staff report. Edward said we wanted to see how much room they needed for backing up and Richard asked if they needed a sanitary lateral for the garbage enclosure. Daryll asked if you wanted some sort of drainage for the garbage area, will it be covered and Edward said we are thinking to incorporate it into the building so it will not be outside like a trash enclosure. Daryll said if you can isolate the intrusion and it would be best not to have any sort of drain. Richard asked if it was inside the building can we have a sanitary sewer lateral and Edward said our thoughts are to have a rollup door in a big room and where the garbage truck pulls up to it. Daryll asked why you would need a drain to the sanitary sewer, could you just wipe up any messes and Richard said they would be using a hose to clean up any messes. Petronella said not that type of garbage and Jerry said you will need to submit your plans to us for this trash enclosure for review. Daryll asked what type of waste are we talking about and Richard said diapers and such and Edward said it will be in a sealed dumpster and should not leak and it will not be raining on top of it. Daryll said the drain will not be used as a primary discharge and the answer was no.

5.22.19 – 10:30AM

1300 S. Ivy St. Canby, Oregon RCF + Memory Care

Pre-Application Conference

Meeting Notes

- See notes provided by the departments
- 10' dedication of R.O.W. and improvements required along S. 13th St.
- Ivy St. is a county road and county makes the call on whether an access will be allowed on to Ivy St. Traffic study will be required
- R.O.W. improvements are required along S Ivy St. No dedication required
- Design exception required for access spacing for the driveway entrances
- Contact the Canby Fire Marshal for access and other requirements they might have
- Sewer and Water available on both streets. Sewer should be taken from 13th.
- Need to be 267' feet away from any water well for the storm water facility.
- Storm water required for ROW and Onsite. Drywells can be used if infiltration allows and must have DEQ approval
- Grease trap required for the Commercial Kitchen
- 10' lateral separation. Can be reduced for vertical separation as well.
- Need to hire someone to get the water flow rates for Fire Sprinkler and Hydrant
- Type III Site and Design Review and a Conditional Use Application Required for zone R-1. Neighborhood meeting and notification required to property owners within a 500' radius.
- Planning Commission
- 15' setbacks required at the back of the duplexes
- Min. parking to be determined by the planning director based on this type of use.
- Review required for drain in the garbage enclosure if we provide one
- Street trees required and street lighting
- Look into an 8" sewer lateral instead of a 6"

End of Meeting



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1300 S. Ivy St. Canby, Oregon
Asteria Senior Living
102 Assisted Living, RCF, and Memory Care Units
8 Independent Senior Living Duplex Units

Conditional Use Approval Criteria

16.50.010

1. The proposal will be consistent with the policies of the Comprehensive Plan and the requirements of this title and other applicable policies of the city;

Response: The development meets the requirements of the R-1 base zone standards as well as the requirements for landscaping, parking, screening, and the requirements set forth by the Site Plan and Design Review.

2. The characteristics of the site are suitable for the proposed use considering size, shape, design, location, topography, existence of improvements and natural features;

Response: The site is suitable for this type of development because it is a large site located at the street corner of S. Ivy St. and SE 13th Ave. The two streets provide for easy access of visitors, staff, residence, and support vehicles (deliveries, emergency vehicles, trash collection, etc.) The site is flat and can accommodate for handicap accessibility that is required for this type of use as well as the necessary parking and landscaping. The proposed use (nursing care) is allowed in the R-1 zone with the approval of a Conditional Use application. Although it is a commercial use, it is very residential by nature as well. The site will be used as the permanent living quarters of the residents that will reside in the assisted living facility as well as the duplexes. Its proximity to other non-residential uses (Canby Adult Center, Canby Swim Center, Canby School District, and the Hope Village Senior Living Community makes this development a good fit for this neighborhood.

3. All required public facilities and services exist to adequately meet the needs of the proposed development;

Response: The surrounding streets (SE 13th and S Ivy) provide adequate services for this development including: traffic circulation, access to the site for support services such as garbage, deliveries, and emergency vehicles. The site is well served by public water and sewer as well as gas (NW Natural) and electric (PGE). The development proposes the use of porous pavement and infiltration planters for storm water management on site. The overflow will be directed to an existing catch basin on SE 13th Ave.



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4. The proposed use will not alter the character of the surrounding areas in a manner which substantially limits, or precludes the use of surrounding properties for the uses listed as permitted in the zone.

Response: The surrounding area includes both residential and commercial uses. The proposed development is a commercial use but residential in nature. S. Ivy St. and SE 13th Ave. are streets that provide adequate traffic flow and circulation to support this use. The residents of the assisted living facility will not own cars or drive to and from the site. They are residents that require 24-hour care for daily needs such as eating, bathing, medication administration, etc. due to disabilities which come with advanced age. These residents will not be driving. This portion of the site use will have traffic generated only by the staff, visitors, and support services; making it a low traffic use compared to an apartment building or other commercial use. The proposed 8 duplex units will be independent living and those residents will be driving. However, by providing only 8 units for independent living the level of traffic will be no different that if this site was development with single family homes. The duplex units will be rented to seniors only (65 and older). Because the proposed use will be licensed by the State of Oregon for 24-hour care, the site will be constantly monitored, maintained, and kept orderly. This is not a rehab, drug, or other addiction or parole facility; making it a quiet and clean use that will not disturb nearby existing development.



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Asteria Senior Living
102 Assisted Living, RCF, and Memory Care Units
8 Independent Senior Living Duplex Units

Site Plan and Design Review Approval Criteria
16.49.040

1. The proposed site development, including the site plan, architecture, landscaping and graphic design, is in conformance with the standards of this and other applicable City ordinances insofar as the location, height and appearance of the proposed development are involved;

Response: The proposed development is designed to meet all the applicable base zone standards outlined in the R-1 zone. The minimum landscaped area (15%) is met by providing a total of 44,434 SF of landscaped area (39.7%) and the minimum parking lot landscaping and tree requirements are also met or exceeded. The design of the building incorporates only materials that are approved for use as well as design elements required for building articulation, glazing, screening of garbage and mechanical equipment; while blending in with similar developments in the area.

2. The proposed design of the development is compatible with the design of other developments in the same general vicinity;

Response: The design of the building is modeled to blend with the various recently built development in the area and reflects a NW style of finishes and materials.

3. The location, design, size, color and materials of the exterior of all structures and signs are compatible with the proposed development and appropriate to the design character of other structures in the same vicinity;

Response: The design of the building is modeled to blend with the various recently built development in the area and reflects a NW style of finishes and materials. Although it is a large building, the building has been limited to 2-story with the building articulation designed so that the building is broken into 2 main building volumes and the smaller duplex structures designed similar to surrounding single-family homes. The larger portion of the buildings have been set towards the streets with large setbacks that incorporate landscaping and parking areas (similar to the development across S. Ivy St. and SE 13th Ave). The smaller structures have been placed on the east side of the site where the single-family homes are located on the neighboring properties. This provides a buffer from the large building by placing the single-family homes (proposed duplex's) between the neighboring homes and the larger proposed Assisted Living development on the site.



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4. The Planning Commission shall, in making its determination of compliance with subsections B and C above, use the applicable matrix [pages 8-12] to determine “compatibility”.

Response: See Matrix on the Land Use Application. 49 total points with 13 LID points.

2.4.21

1300 S. Ivy St. Canby, Oregon

RE: Conditional Use and Design Review Applications DR 20-03 & CUP 20-02

Addendum for Parking Demand

Parking available for the 8 Duplex Units: 16

Parking available for the Care Facility: 44

Total Proposed Number of Parking Spaces on Site: 60

Care Facility Parking Demand:

The parking demand is based on the total number of employees and visitors that will be coming to and from the site. The proposed development includes only resident units and beds licensed for advanced 24-hour care and dementia and Alzheimer's residents. Due to the condition of the residents, they will not own cars that will be parked at the site and they will not be driving to and from the site either. The following information outlines vehicle usage to and from the site:

- Day shift employees per day: 30 + 3 outside providers
- Swing shift employees per day: 12
- Night shift employees per day: 8
- Number of anticipated visitors per day: 5

Based on these numbers, the highest period of usage during any given day will be during the day shift. During this shift a total of 33 employees and 5 visitors may be present at the site. If all employees and visitors were to drive in their vehicle, a total of 38 parking spaces would be occupied. The total proposed number off-street parking spaces for the care facility is 44. This would allow an excess of 6 parking spaces that could be utilized for additional visitors.

Duplex Parking Demand:

The total number of proposed dwelling units within duplex structures is 8 units. A parking space on the driveway and a parking space within each unit's garage is provided; for a total of 2 parking space per dwelling unit (16 parking spaces total). These units will be single family dwelling units and require 2 parking space per dwelling. The proposed number of parking spaces for each dwelling unit proposed meets code criteria at a ratio of 2:1.

February 8, 2021

Canby Senior Housing
1300 S. Ivy St
Canby, OR
RE: Parking

To Whom it May Concern:

This letter is to clarify the number of parking spaces needed for Canby Senior Housing care community. This community will consist of Assisted Living and Memory Care. Based on the number of purposed units taking account for Residents, Staff, Outside Care Partners and Visitors of residents the following will justify 44 Parking Spaces supporting this need.

Shifts are as follows with Maximum Number of Staff on each shift:

6am to 2:30pm – 16 Staff Members
8:30am to 5pm – 12 Staff Members
2pm to 10:30pm – 12 Staff Members
10pm to 6:30am – 8 Staff Members

Outside Providers come in throughout the day typically between the hours of 7am and 6 pm. Each outside provider typically will stay in the community 1 hour on average. Given the number of proposed residents at peak times we will have an average of 3 outside providers utilizing parking spaces at any given time.

Visitors coming into to visit their loved ones will typically visit between the hours of 9am and 7pm and stay for an average of 2 hours. We have averaged on the high side that there may be up to 5 visitors in the community during these times.

Given this formula our peak times for parking spaces are between the times of 9am and 2:30pm. At this time if all Staff, outside providers and visitors were in the community driving singular vehicles, which would be rare, we will have a total of 36 parking spaces utilized. Which will allow for 8 additional spaces for any other visitors.

Please let me know if you have any further questions.

Respectfully,



Tammy Thwaite
Principal
Avant Senior Housing Managers and Consultants, LLC

CANBY SENIOR LIVING
1300 S IVY RD, CANBY OR

DRAINAGE ANALYSIS REPORT

BY:
RSG ENGINEERING CO.



A 6/30/21

NARRATIVE FOR 1300 S IVY RD, CANBY OR

GENERAL

On the existing lot, is an existing house which will be demolish. We are proposing to build senior living buildings, a parking lot and 4 duplexes for independent living.

SANITARY SEWER

On SE 13th St., it is and existing sanitary line. We are proposing a private 6" main sanitary line, which will connect sanitary laterals from all buildings, and connect with existing sanitary line.

Water

It is and existing water line on SE 13th st. We are proposing to connect a fire vault, a domestic water meter and an irrigation meter.

STORMWATER

For the parking lot, will be 4" porous asphalt over 1' of rock. Best of my calculations, is more than what we need, but will be only structural, to support a fire truck.

All roofs will be drained into infiltration planters, which will have a 1" c900 overflow pipe, connected to the existing catch basin on SE 13th St.

Figure E-3: Infiltration Test Data Table

Location: 1300 S IVY RD		Date: 7/17/20	Test Hole Number: 1		
Depth to bottom of hole: 36"		Diameter of hole: 6"	Test Method: OPEN PIT		
Tester's Name: RICHARD S. GEORGE SCV P.E					
Tester's Company: RSG ENGINEERING CO Tester's Contact Number: 503-380-6179					
Depth, feet			Soil Texture		
0 - 0.5			TOP SOIL		
0.5' - 3'			GRAY CLAY w/ COBBLES		
Time	Time interval, minutes	Measurement, feet	Drop in water level, feet	Percolation rate, inches per hour	Remarks
NOON	0	0.5	-	-	FILL w/WATER
12:15	15	0.42	0.08	3.84	
12:30	15	0.35	0.07	3.36	
12:45	15	0.30	0.05	2.4	
1 PM	15	0.26	0.04	1.92	
1:05	0	0.5	-	-	FILL w/WATER
1:20	15	0.465	0.035	1.68	
1:35	15	0.43	0.035	1.68	
1:50	15	0.395	0.035	1.68	

2:05 15 0.36 0.035 1.68

STABILIZED FOR NEXT HOUR

$$1.68 \text{ in/hr} \rightarrow \text{TAKE } 1.5 \text{ in/hr} \times 0.5 = \underline{\underline{0.75 \text{ in/hr}}}$$

$$0.75 \text{ in/hr} = \frac{60}{0.75} = \underline{\underline{80 \text{ min/inch}}}$$

Figure E-3: Infiltration Test Data Table

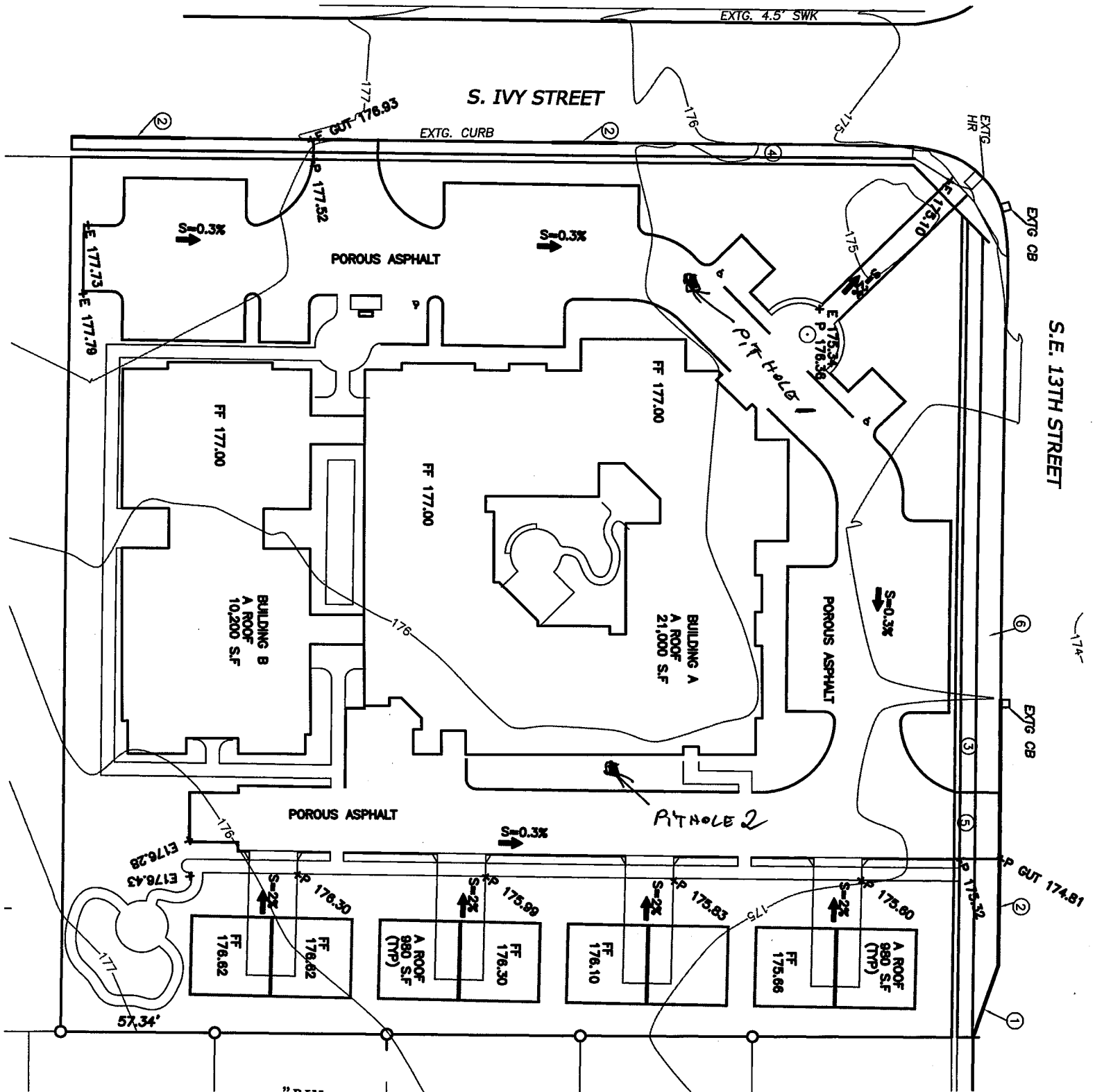
Location: 1300 SIVY RD		Date: 7/17/20	Test Hole Number: 2		
Depth to bottom of hole: 36"		Diameter of hole: 6"	Test Method: OPEN PIT		
Tester's Name: RICHARD S. GEORGE SCVP, P.E.					
Tester's Company: RSG ENGINEERING CO Tester's Contact Number: 503-380-6179					
Depth, feet			Soil Texture		
0-0.5'			TOP SOIL		
0.5'-3'			GRAY CLAY w/ COBBLES		
Time	Time interval, minutes	Measurement, feet	Drop in water level, feet	Percolation rate, inches per hour	Remarks
3:30	0	0.5	—	—	FILL w/WATER
3:45	15	0.46	0.04	1.92	
4PM	15	0.42	0.04	1.92	
4:15	15	0.36	0.04	1.92	
4:30	15	0.32	0.04	1.92	
4:35	0	0.5	—	—	FILL w/WATER
4:50	15	0.465	0.035	1.68	
5:05	15	0.43	0.035	1.68	
5:20	15	0.395	0.035	1.68	

5:35 15 0.36 0.035 1.68

STABILIZED FOR NEXT HOUR

TAKE 1.5 in/HR $\times 0.5 = \underline{0.75 \text{ in/HR}} = \underline{80 \text{ MIN/INCH}}$

BY WELL LOG "CLAC 52004", GROUNDWATER IS 48' DEEP AT GROUND EL = 175'



BUILDING A

$$21,000 \text{ SF} = 0.48 \text{ AC}$$

 ***** S.C.S. TYPE-1A DISTRIBUTION *****
 ***** 25-YEAR 24-HOUR STORM **** 3.00" TOTAL PRECIP. *****

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS		IMPERVIOUS		TC(MINUTES)
	A	CN	A	CN	
.5	.0	86.0	.5	98.0	5.0
PEAK-Q(CFS)	T-PEAK(HRS)		VOL(CU-FT)		
.37	7.67		4823		

SUMMARY OF INPUT ITEMS

- 1) TYPE OF FACILITY: GRAVEL TRENCH/BED
- 2) STORAGE DEPTH(ft): 1.00
- 3) VERTICAL PERMEABILITY(min/in): 80.00
- 4) PRIMARY DESIGN HYDROGRAPH FILENAME: ivya
- 5) PRIMARY RELEASE RATE(cfs): .00
- 6) NUMBER OF TEST HYDROGRAPHS: 1
 TEST HYD 1 FILENAME: ivya TARGET RELEASE(cfs): .00
- 7) NUMBER-OF-ORIFICES, RISER-HEAD(ft), RISER-DIAM(in): 0, 1.00, 12

PERFORMANCE:	INFLOW	TARGET-OUTFLOW	ACTUAL-OUTFLOW	PK-STAGE	STORAGE
DESIGN HYD:	.37	.00	.00	1.00	<u>1091</u>
TEST HYD 1:	.37	.00	.00	.90	1090

BUILDING A HAS $21,000 \text{ SF} \times 0.06 = 1,260 \text{ SF}$ FOR WATER QUALITY
 WE HAVE $625 + 861 = 1,486 \text{ S.F} > 1,260 \text{ SF}$ OK!

WE HAVE TO STORE 1,091 cu ft OF STORM WATER

$V_{\text{ROCK}} = 1,486 \text{ SF} \times \underline{3 \text{ feet deep}} \times 0.25 \text{ VOL OF VOIDS} = 1,114 \text{ cu ft}$
 $1,114 \text{ cu ft} > 1,091 \text{ cu ft}$ NEED IT OK!

BUILDING B 10,200 SF ROOF = 0.23 AC

***** S.C.S. TYPE-1A DISTRIBUTION *****
 ***** 25-YEAR 24-HOUR STORM **** 3.00" TOTAL PRECIP. *****

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS		IMPERVIOUS		TC(MINUTES)
	A	CN	A	CN	
.23	.0	86.0	.23	98.0	5.0
PEAK-Q(CFS)	T-PEAK(HRS)		VOL(CU-FT)		
.18	7.67		2311		

SUMMARY OF INPUT ITEMS

- 1) TYPE OF FACILITY: GRAVEL TRENCH/BED
- 2) STORAGE DEPTH(ft): 1.00
- 3) VERTICAL PERMEABILITY(min/in): 80.00
- 4) PRIMARY DESIGN HYDROGRAPH FILENAME: ivyb
- 5) PRIMARY RELEASE RATE(cfs): .00
- 6) NUMBER OF TEST HYDROGRAPHS: 1
 TEST HYD 1 FILENAME: ivyb TARGET RELEASE(cfs): .00
- 7) NUMBER-OF-ORIFICES, RISER-HEAD(ft), RISER-DIAM(in): 0, 1.00, 12

PERFORMANCE:	INFLOW	TARGET-OUTFLOW	ACTUAL-OUTFLOW	PK-STAGE	STORAGE
DESIGN HYD:	.18	.00	.00	1.00	<u>533</u>
TEST HYD 1:	.18	.00	.00	.90	530

BUILDING B HAS $10,200 \text{ SF} \times 0.06 = \underline{612 \text{ SF}}$ FOR WATER QUALITY
 WE HAVE $\underline{628 \text{ SF}} > 612 \text{ SF}$ NEED OK!

WE HAVE TO STOR $\underline{533 \text{ cu ft}}$ OF STORM WATER

$\checkmark_{\text{ROCK}} = 628 \text{ SF} \times 3.5' \text{ deep} \times 0.25 \text{ VOL OF VOIDS} = 549 \text{ cu ft}$
 $\underline{549 \text{ cu ft}} > \underline{533 \text{ cu ft}}$ NEED OK!

DUPLEXES

7,840 SF ROOF = 0.18 AC

 ***** S.C.S. TYPE-1A DISTRIBUTION *****
 ***** 25-YEAR 24-HOUR STORM **** 3.00" TOTAL PRECIP. *****

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS		IMPERVIOUS		TC(MINUTES)
	A	CN	A	CN	
.2	.0	86.0	.2	98.0	5.0
PEAK-Q(CFS)	T-PEAK(HRS)		VOL(CU-FT)		
.14	7.67		1808		

SUMMARY OF INPUT ITEMS

- 1) TYPE OF FACILITY: GRAVEL TRENCH/BED
- 2) STORAGE DEPTH(ft): 1.00
- 3) VERTICAL PERMEABILITY(min/in): 80.00
- 4) PRIMARY DESIGN HYDROGRAPH FILENAME: ivyd
- 5) PRIMARY RELEASE RATE(cfs): .00
- 6) NUMBER OF TEST HYDROGRAPHS: 1
TEST HYD 1 FILENAME: ivyd TARGET RELEASE(cfs): .00
- 7) NUMBER-OF-ORIFICES, RISER-HEAD(ft), RISER-DIAM(in): 0, 1.00, 12

INITIAL STORAGE VALUE FOR ITERATION PURPOSES: 1746 CU-FT

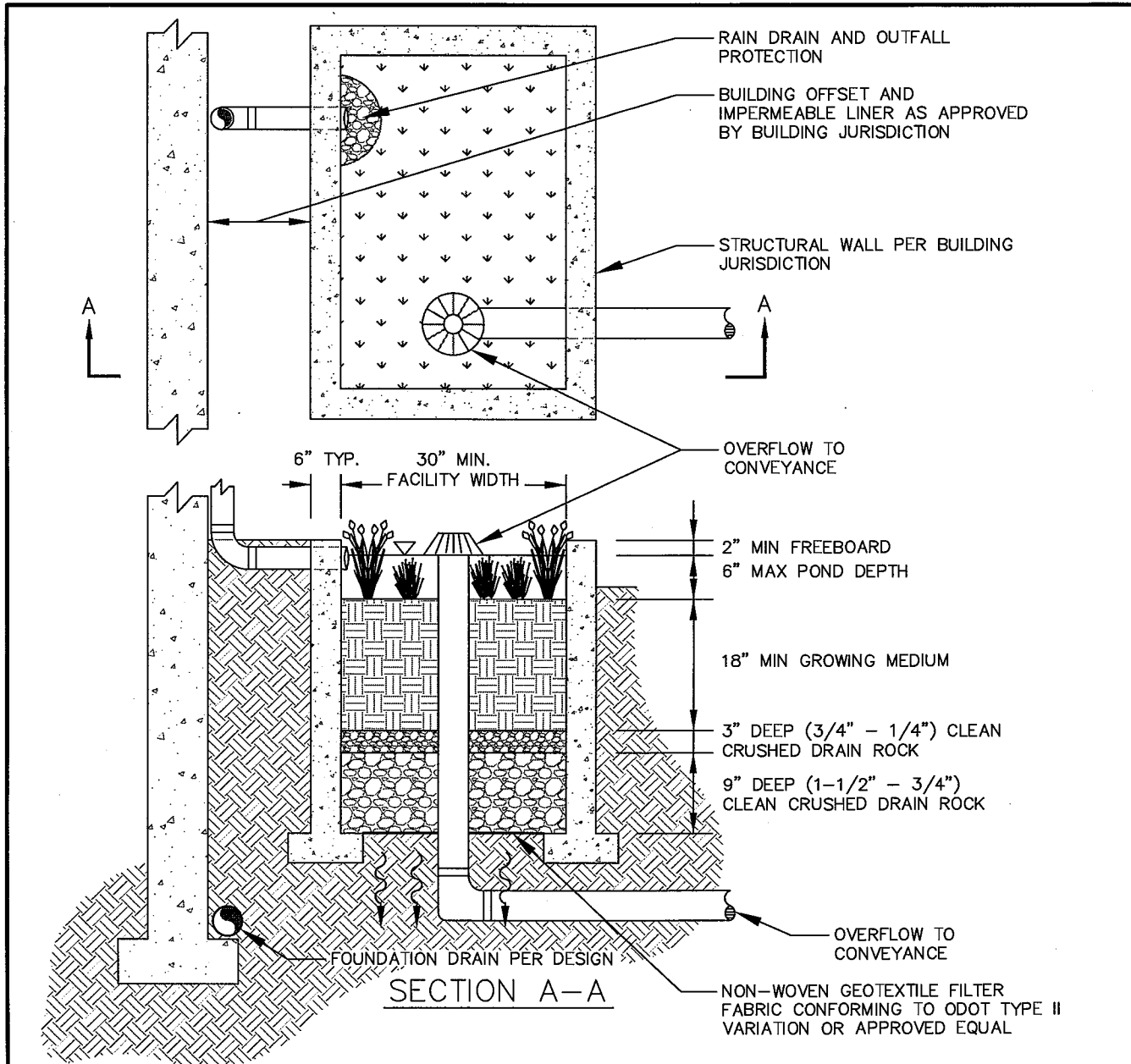
PERFORMANCE:	INFLOW	TARGET-OUTFLOW	ACTUAL-OUTFLOW	PK-STAGE	STORAGE
DESIGN HYD:	.14	.00	.00	1.00	<u>410</u>
TEST HYD 1:	.14	.00	.00	.90	410

DUPLEXES : 980 SF ROOF EACH UNIT X 8 = 7,840 SF
 7,840 SF X 0.06 = 471 SF FOR WATER QUALITY

WE HAVE TO STORE 410 cu ft OF STORMWATER

$V_{ROCK} = 471 \text{ SF} \times 3.5' \text{ DEEP} \times 0.25 \text{ VOL OF VOIDS} = \underline{412 \text{ cu ft}}$

412 cu ft > 410 NEEDED OK!



SECTION A-A

NOTES:

1. PRIVATE WATER QUALITY TREATMENT
2. 30" MIN WIDTH - FACILITY LENGTH TO BE CALCULATED BASED ON INCOMING FLOWS.
3. VEGETATION: SEE PLANT LIST IN LIDA HANDBOOK.
4. NO TREES OR DEEP ROOTED VEGETATION OVER PIPING.
5. RAIN DRAINS AND OVERFLOW TO MAINTAIN MAXIMUM LINEAR SEPARATION.
6. OUTFALL PROTECTION SIZED PER FLOW CALCULATIONS.
7. BUILDING JURISDICTION APPROVAL REQUIRED WHEN DEPTH OF FACILITY IS BELOW BUILDING FOOTING.

LOT# _____
 BOX SIZE (SF.) _____
 # OF PLANTS _____
 TYPE OF PLANTS _____

 SIZE OF PLANTS _____

INFILTRATION PLANTER

LIDA
 HANDBOOK



DRAWING NO. 793

REVISED 03-16

PARKING

$28,500 SF = 0.65 AC$

 ***** S.C.S. TYPE-1A DISTRIBUTION *****
 ***** 25-YEAR 24-HOUR STORM **** 3.00" TOTAL PRECIP. *****

DATA PRINT-OUT:

AREA(ACRES)	PERVIOUS	IMPERVIOUS	TC(MINUTES)
	A CN	A CN	
.65	.0 86.0	.65 98.0	5.0
PEAK-Q(CFS)	T-PEAK(HRS)	VOL(CU-FT)	
.51	7.67	6531	

SUMMARY OF INPUT ITEMS

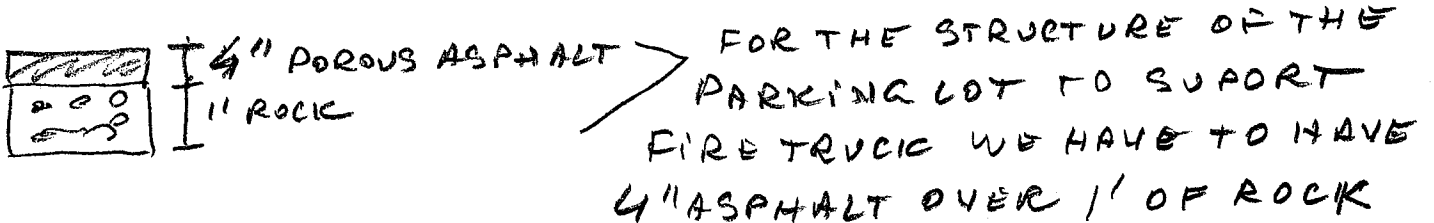
- 1) TYPE OF FACILITY: GRAVEL TRENCH/BED
- 2) STORAGE DEPTH(ft): 1.00
- 3) VERTICAL PERMEABILITY(min/in): 80.00
- 4) PRIMARY DESIGN HYDROGRAPH FILENAME: ivyp
- 5) PRIMARY RELEASE RATE(cfs): .00
- 6) NUMBER OF TEST HYDROGRAPHS: 1
 TEST HYD 1 FILENAME: ivyp TARGET RELEASE(cfs): .00
- 7) NUMBER-OF-ORIFICES, RISER-HEAD(ft), RISER-DIAM(in): 0, 1.00, 12

INITIAL STORAGE VALUE FOR ITERATION PURPOSES: 6612 CU-FT

PERFORMANCE:	INFLOW	TARGET-OUTFLOW	ACTUAL-OUTFLOW	PK-STAGE	STORAGE
DESIGN HYD:	.51	.00	.00	1.00	1462
TEST HYD 1:	.51	.00	.00	.90	1460

WE HAVE TO STORE 1462 cu ft OF STORM WATER.

$V_{ROCK} = 1,462 \text{ cu ft} \times 1' \text{ DEEP} \times 0.25 \text{ VOL OF VOID} = \underline{7,125 \text{ cu ft}}$
 $7,125 \text{ cu ft} > 1,462 \text{ cu ft}$ NEED OK!





Traffic Impact Study

**Senior Living
South Ivy Street & SE 13th Avenue
Canby, Oregon**

DR 20-03 & CUP 20-02

By

**Charbonneau Engineering
10211 SW Barbur Blvd, Suite 210A
Portland, OR 97219**

**Gary Spanovich, Transportation Planner, Report Author
Mary Kate Otto, EIT, Analysis
Frank Charbonneau, PE, Supervising Traffic Engineer**



TRAFFIC IMPACT STUDY

November 23, 2020

FOR

**102 Bed Assisted Living Center & 8 Dwelling Units
Located at South Ivy Street & SE 13th Avenue
Canby, Oregon**

DR 20-03 & CUP 20-02

By

Charbonneau Engineering

**Gary Spanovich, Transportation Planner
Frank Charbonneau, PE, PTOE, Traffic Engineer
Mary Kate Otto, EIT**

**If you should have any questions, please contact Gary Spanovich at 503.314.5955
(email garyalanspanovich@gmail.com) or Frank Charbonneau, PE, PTOE at
503.293.1118 (Frank@CharbonneauEngineer.com)**



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APPENDICES

- Appendix 1 – Maps & Site Plans
- Appendix 2 – Trip Generation
- Appendix 3 – AM & PM Peak Hour Counts & LOS Analysis
 - Historical – Collected October, 2019
 - Actual – Collected October, 2020
- Appendix 4 – In Process & Modeled Traffic
- Appendix 5 – Trip Distribution & Assignment Diagrams
 - AM & PM Peak Hour Turning Movements For: Assumed 2020; 2022 – Assumes Growth Factor & In Process Traffic; Development Traffic – Build Out Assumed 2022; 2022 – Growth + In Process + Development Traffic
- Appendix 6 – Level of Service Analysis & Queuing Analysis: Turning Movements For 2022 – Assumes Growth Factor & In Process Traffic; Development Traffic – Build Out Assumed 2022; 2022 – Growth + In Process + Development Traffic
- Appendix 7 – Accident Data

Overview

Charbonneau Engineering performed this Traffic Impact Study (TIS) and Frank Charbonneau, PE, Traffic Engineer; and Gary Spanovich, Transportation Planner. The TIS was scoped by Amanda Addotta, Associate Planner at the City of Canby. Also involved was the City of Canby's contract traffic engineer: Kevin Chewuk, PTP of DKS.

Local Knowledge of Gary Spanovich

Gary Spanovich, transportation planner for Charbonneau Engineering is very familiar with the area; having lived in Canby for 14 year from 1996-2010 and he was the City of Canby Planning Director for about a year circa 1995. He also used the facilities in the immediate area over the 14 year period: work with the Canby School District office; with Lee Elementary; With Ackerman Middle School; Canby Swim Center, etc.

The City of Canby approved a Hope Village campus, to the south of the project site comprising: 138 Garden Homes and Cottages; two 50 unit affordable apartments; community center; wellness center; 80 unit assisted living facility and a 50 bed post-acute care facility. The proposed site is adjacent to the Hope Village campus and next to the Canby Senior Center. It is an excellent place for this facility.

EXISTING CONDITIONS ANALYSIS

The existing conditions analysis documents the existing transportation conditions within the project study area. A description of the surrounding transportation network will be provided including functional classification of roadways, roadway cross-sections, posted speed limits, parking, and pedestrian/bicycle/transit facilities.

Location of the 102 Bed Assisted Living Center & 8 Senior Attached Units

The facility is located at **South Ivy Street & SE 13th Avenue in Canby, Oregon**. The facility will consist of a bed for sleeping and a half bath, generally these type of residential facilities generate much less traffic than say a single or multi family dwelling unit. **Appendix 1 contains maps of the development & location.**

Proposed Development

The proposed "Canby Senior Living" development is to be on a 2.57 acre plot of land (111,973 square feet) with a building coverage area of 37,588 square feet. There will be 52 parking spaces of which 2 will be handicapped spaces; there will be 6 bicycle spaces. It is an independent living, residential care, and memory care facility. The development plot is designated commercial-residential (CR) in the Canby zoning map and it is adjacent to the Canby Senior Center and the Canby Swim Center and near the Hope Village campus. The development fronts on both **South Ivy Street & SE 13th Avenue.**

They are both classified as arterial streets in the Canby Functional Classification plan in the City's TSP. Ivy has sidewalks on both sides; 13th has a sidewalk on the east leg and a trail on the west leg. Bike lanes are available on all sides. Ivy turns into Hwy 170 south of this area and is posted at 30 mph and Ivy is posted at 25 mph. A truck lane is designated for Ivy and also for the west leg of 13th. All four legs of the intersection have left turn pockets. Site Plan is on following page.

MAP 1 AREA LOCATION OF SITE



MAP 2 SPECIFIC LOCATION OF SITE



Existing Traffic Volumes & Peak Hour Conditions

The City of Canby has asked that one intersection be evaluated for capacity analysis - South Ivy Street & SE 13th Avenue. Preliminary trip generation and distribution estimates indicate that trip levels would not trigger analysis to be conducted at any other intersections.

ADT – Historical Growth

Historical ADT data was also found from the Clackamas County Webpage as follows: Source: (Clackamas County DTD Webpage)

13TH AVE EAST OF IVY

Position: N 45 15.128 W 122 41.063

Average Daily Traffic 2018: 6180 (6.4% increase per year since 2011)

Average Daily Traffic 2011: 4260

Average Daily Traffic 2008: 4100

Average Daily Traffic 2005: 2500

Average Daily Traffic 2002: 3000

Average Daily Traffic 2000: 1800

(IVY) CANBYMARQUAM HWY SOUTH OF 13TH

Position: N 45 14.988 W 122 41.223

Average Daily Traffic 2018: 7660 (3.4% increase per year since 2011)

Average Daily Traffic 2011: 6160

Average Daily Traffic 2008: 5450

Average Daily Traffic 2005: 5650

Average Daily Traffic 2002: 7200

Average Daily Traffic 2000: 6750

The data indicates that on Ivy there has been an average growth rate of 3.4% from 2011 to 2018; and that on 13th (east of Ivy) there has been a 6.4% increase from 2011 to 2018. The difference in the percentage increases has to do with the residential development to the east of Ivy which 13th funnels into town. Most likely these percentages would mirror future years, other than the fact of the Pandemic. Because of the Pandemic and the impact it has had on 2020 traffic volumes it is difficult to predict the future, even for the near term years, 2021 and 2022. It is expected that the Senior Living Facility will be fully built out in 2022.

It is anyone's guess whether and when traffic patterns as we knew them pre-Covid will return; so assumptions have to be made for different scenario futures.

Peak Hour Data

All study area intersections currently operate within City mobility standards during the peak hour. All turn lanes have adequate storage with no anticipated queue spillover into adjacent lanes.

The study intersections were reviewed to determine the existing geometry, traffic control, and operations during the peak hours. Existing intersection operating conditions were analyzed to establish the current peak hour performance. The critical peak periods for this evaluation were the weekday morning (7:00 to 9:00 am) and evening (4:00 to 6:00 pm). This is the time during a typical weekday when the study area street system would be expected to experience the highest vehicle volume and the site would generate significant traffic. Historical count data was obtained and utilized. A growth rate will be applied to the older count data to reflect 2022 build out volumes

Your consultant has contracted with the firm Quality Counts and collected actual data. Tuesday, October 20, 2020 for both the AM peak hour and the PM peak hour. This information represents traffic data after the Covid-19 pandemic started. We were also able to find historical data for the intersection, from a peak hour count from Tuesday October 29, 2019 for both the AM and PM peak hour. It was a clear day when the counts were taken and Appendix A contains both the 2020 actual counts and the 2019 historical data.

Pre Covid-19 versus Post Covid-19 Traffic Volumes

In order to compare pre and post Covid-19 traffic patterns a capacity analysis was performed for a count taken on Tuesday, October 29, 2019 for the AM and PM peak hours at **South Ivy Street & SE 13th Avenue**. The results are below:

October 20, 2020: All Vehicles – Refer to Appendix 3

- **AM Peak: Total Vehicles – 760 vehicles**
- **PM Peak: Total Vehicles – 1260 vehicles**

October 29, 2019: All Vehicles – Refer to Appendix 3

- **AM Peak: Total Vehicles – 1236 vehicles**
- **PM Peak: Total Vehicles – 1208 vehicles**

Under the orders of Governor Kate Brown, **Canby School District** is not permitted to hold in-person classes at this time. Students will engage in one of two learning models to begin the 2020-21 **School Year**: Connected At-Home Learning or the **Canby Online**

Learning Academy. There are 2 schools nearby on Ivy and on 13th. Since there is no in class learning, we can assume the AM peak hour will be affected most.

Pre Covid-19 Intersection Volumes versus Post Covid-19 Volumes

Comparing historical records with recent counts we find:

- 2019 - Pre Covid-19: AM Peak: Total Vehicles – 1236 vehicles
- 2020 - Post Covid-19: AM Peak: Total Vehicles – 760 vehicles (38.5% decrease)
- 2019 - Pre Covid-19: PM Peak: Total Vehicles – 1208 vehicles
- 2020 - Post Covid-19: PM Peak: Total Vehicles – 1260 vehicles (virtually identical)

Because schools in the nearby do not have in person classes, there is a 38.5% decrease in AM peak hour traffic volumes, in 2020 compared to 2019 for the intersection. Because 2019 versus 2020 intersection volumes are virtually the same (1208 versus 1260) we can assume that afternoon volumes have more or less recovered.

Appendix 3 contains the Level of Service calculation sheets for the 2019 & 2020 AM and PM volumes and they are summarized below:

Table 1 Summary of capacity analysis for study intersection.

Intersection	Type of Control	Peak Hour	Traffic Scenario			
			2019 Existing			
			Crit. Mov't	LOS	Delay	v/c
SE 13th Avenue and S Ivy Street	Signal	AM	-	B	15.8	0.31
		PM	-	B	14.6	0.29

Notes: 2010 Highway Capacity Manual methodology used in analysis, Synchro v9.

Table 2 Summary of capacity analysis for study intersection.

Intersection	Type of Control	Peak Hour	Traffic Scenario			
			2020 Existing			
			Crit. Mov't	LOS	Delay	v/c
SE 13th Avenue and S Ivy Street	Signal	AM	-	B	11.2	0.18
		PM	-	B	14.6	0.30

Notes: 2010 Highway Capacity Manual methodology used in analysis, Synchro v9.

The intersection functioned at a Level of Service B during the AM and PM peak hours in October 2019; and the same in October 2020. Based on this there would be no need for further improvements at this point.

Crash Analysis & Collision Records

Collision records at the study intersection over the previous three years (ODOT was able to provide January 1, 2016 to December 31 2018 data – there most recent years of data available) were reviewed and summarized in a table to determine if there are any safety related concerns within the project area. The data was provided by Jonathan Rico; ODOT Crash Analysis and Reporting Unit; ODOT Policy, Data & Analysis Division (formerly TDD); their web page is at: [Crash Analysis and Reporting Unit web page](#).

Appendix 7 contains the accident data for the intersection.

There were 7 crashes over the three year period. Of the 7 crashes the following were the causes:

- **Made an improper turn**
- **Disregarded traffic signal**
- **Did not yield right of way**
- **Physical illness/ Drove left of center**
- **Driving in excess of posted speed/ Disregarded traffic signal**
- **Disregarded traffic signal/ Made improper turn**
- **Disregarded traffic signal**

It appears that the majority of accidents disregarded the traffic signal, most likely rushing to get through it before the cycle changed or trying to turn before the cycle changed.

PROJECT TRIP GENERATION/ TRIP DISTRIBUTION

The amount of new vehicle trips generated by the proposed development was estimated using trip generation estimates published in the ITE Trip Generation Manual for similar land use types. All vehicle trips associated with the proposed project were treated as new vehicle trips to the existing transportation network. Trip generation estimates for the proposed development are provided for the AM and PM peak hours, as well as daily trips.

Trip Generation

Appendix 2 contains the results of the Trip Generation for the 102 bed senior attached living units and the 8 assisted attached duplex units. Based on the Institute of Transportation Engineers Trip Generation Manual 10th Edition.

The Assisted Living Center of 102 beds (based on ITE Land Use Code 254) and the 8 senior attached duplex units (based on ITE Land Use Code 252) are expected to generate the following trips:

TABLE 3 – Results of Trip Generation

- **Average Weekday**
 - **Total: 295 trips**
 - **Enter: 148 Trips**
 - **Exit: 147 Trips**
- **Weekday AM Peak Hour**
 - **Total: 21 trips**
 - **Enter: 13 Trips**
 - **Exit: 8 Trips**
- **Weekday PM Peak Hour**
 - **Total: 29 trips**
 - **Enter: 11 Trips**
 - **Exit: 18 Trips**

Background Traffic Assumption

Previously we discussed the 2019 and 2020 actual peak hour counts:

October 20, 2020: All Vehicles – Refer to Appendix A

- **AM Peak: Total Vehicles – 760 vehicles**
- **PM Peak: Total Vehicles – 1260 vehicles**

October 29, 2019: All Vehicles – Refer to Appendix A

- **AM Peak: Total Vehicles – 1236 vehicles**
- **PM Peak: Total Vehicles – 1208 vehicles**

The 2019 and the 2020 PM peak hour counts are virtually identical; so the traffic impact of the Covid-19 has more or less dissipated during that time. However the 2019 and the 2020 AM peak hour counts are very different – there is a 38% decrease in 2020 AM peak hour traffic over 2019; due to Covid-19 which significantly has affected school traffic (there are three schools nearby to the development). Because of this reason and because it is hard to predict the long term impact of the Covid-19 on overall traffic patterns.

Your consultant will use the 2019 peak hour counts as our baseline for 2020, as follows:

Intersection Peak Hour Assumptions for October, 2020

- **AM Peak: Total Vehicles – 1236 vehicles**
- **PM Peak: Total Vehicles – 1208 vehicles**

In Process Modeled Traffic

Appendix 4 contains in process modeled traffic provided by the City of Canby and includes traffic generated by Tofte Farms, Phase 6 and S Hope Village expansion. Approved trips remaining were: 45 trips in the AM and 59 trips in the PM. The Canby long range model predicted a total of 131 trips “in” for TAZ 156 and 66 trips “out”.

Previously we reported that there were historical increases as follows for the two main streets – Ivy and 13th; based on ADT in the area and was noted to be:

13th: (6.4% yearly increase per year; or 6%)

Ivy: (3.4% yearly increase per year; or 3%)

Assuming the in process traffic, it seems more prudent to assume a background increase of 2% for the 2020 to 2022 time period. Previous traffic studies submitted to the City of Canby assumed a yearly background traffic increase of 1% per year.

Again these are assumptions as we simply cannot predict the long term impact of Covid-19 and school closures, especially. These assumptions though are conservative and conceivably will not be any worse for background network conditions.

Trip Distribution

The distribution of site vehicle traffic was based on the City of Canby Travel Forecast Tool. The project trip distribution was shown on a study area figure. **Appendix 4** contains all the results of the Trip Distribution and Trip Distribution.

Appendix 4 also contains the 2030 PM Peak Hour Link Volumes for Transportation Analysis Zone 156 (the zone where the proposed development will be located). This select zone analysis was used to develop the distribution; TAZ 156, has 131 trips in and 66 trips out.

Refer To Appendix 5 for Trip Assignment Diagrams

The diagrams display:

- **AM & PM Peak Hour Turning Movements For:**
 - **Assumed 2020**
 - **2022 – Assumes Growth Factor & In Process Traffic**
 - **Development Traffic – Build Out Assumed 2022**
 - **2022 – Growth + In Process + Development Traffic**

For more information on “in process” traffic please refer to Appendix 4. This contains the “in process” traffic the City of Canby asked to be included in the overall analysis. This traffic was from two nearby proposed developments.

Appendix 4 contains in process modeled traffic provided by the City of Canby and includes traffic generated by Tofte Farms, Phase 6 and S Hope Village expansion. Approved trips remaining were: 45 trips in the AM and 59 trips in the PM. The Canby long range model predicted a total of 131 trips “in” for TAZ 156 and 66 trips “out”.

Capacity Analysis & Level of Service (LOS) Calculations

Capacity analyses were performed to determine the levels of service for the weekday peak hours. Synchro software (Version 9.0) was used to determine the level of service for each scenario considered. The program is based on the 2010 Highway Capacity Manual methodology. Table 2 below summarizes the analysis results. Copies of the capacity analysis calculations are included in the appendix.

Appendix 6 contains the Level of Service calculations sheets for the intersection and the queuing analysis.

Table 3 indicates that the study intersection will continue to operate at level of service “B” or better through the two-year buildout period and that the additional traffic from the development will have no impact on the street system. This intersection operation exceeds the City’s level of service standard for signalized intersections and, thus intersection improvements are not necessary.

Table 4 Summary of capacity analysis for study intersection.

Intersection	Type of Control	Peak Hour	Traffic Scenario											
			Assumed 2020				2022 Background Without Site -				2022 Background - With Site -			
			Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c
SE 13th Avenue and S Ivy Street	Signal	AM	-	B	15.8	0.31	-	B	16.4	0.34	-	B	17.5	0.34
		PM	-	B	14.6	0.29	-	B	17.0	0.32	-	B	17.1	0.32

Notes: 2010 Highway Capacity Manual methodology used in analysis, Synchro v9.

Appendix 6 contains the storage calculations - Queue lengths were taken from the Synchro analysis reports. Copies of the reports are included in **Appendix 6**.

Summary of the Traffic Study

This Traffic Report analyzed traffic patterns and impacts for the proposed 102 bed residential care facility proposed at South Ivy Street & SE 13th Avenue in Canby, Oregon. There will be a common kitchen and common dining room; with 102 small bedrooms with a half bath; and 8 duplex dwelling units.

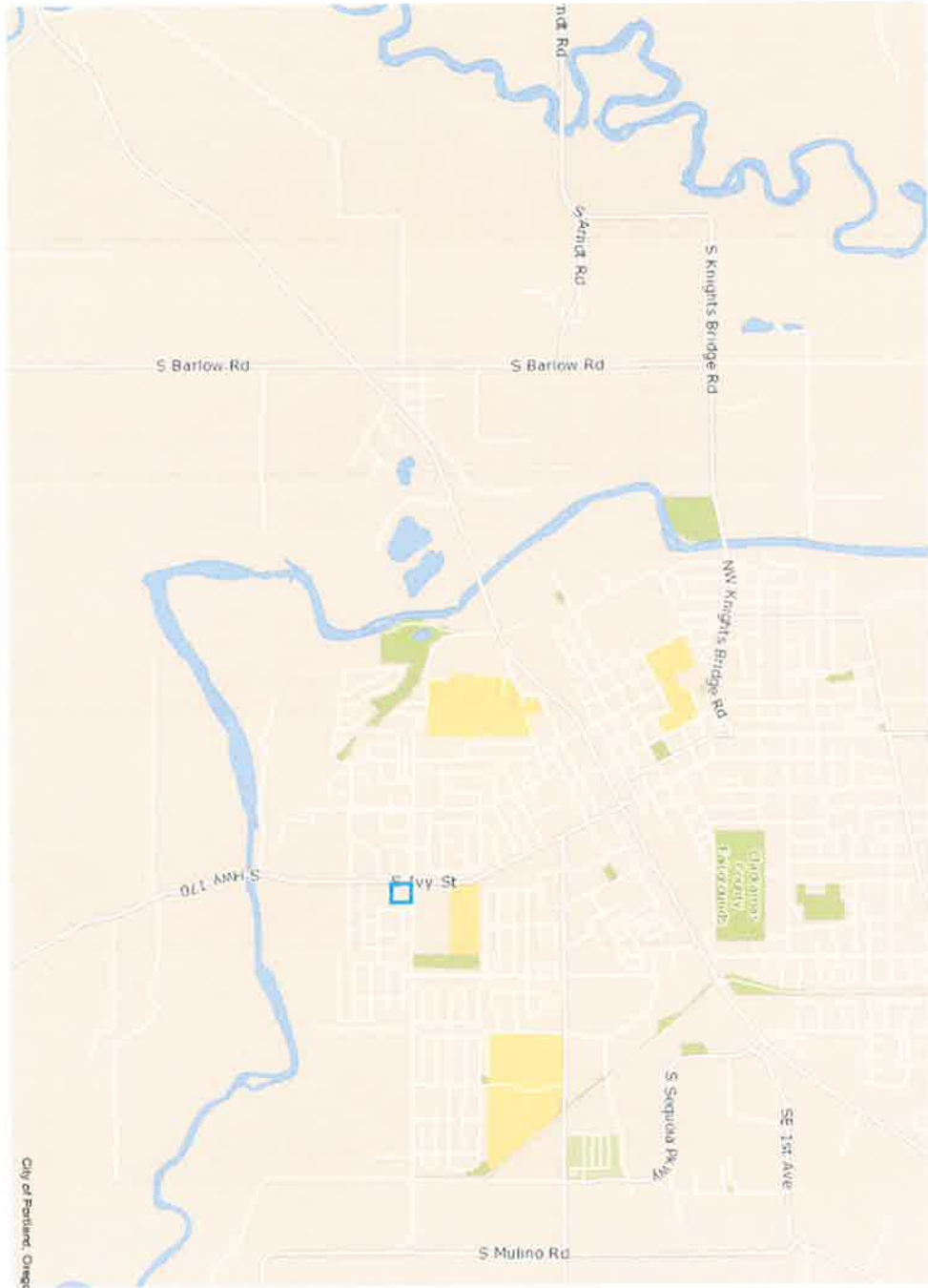
The proposed "Canby Senior Living" development is to be on a 2.57 acre plot of land (111,973 square feet) with a building coverage area of 37,588 square feet. There will be 52 parking spaces of which 2 will be handicapped spaces; there will be 6 bicycle spaces. It is an independent living, residential care, and memory care facility. The development plot is designated commercial-residential (CR) in the Canby zoning map

The facility will generate a small number of AM and PM peak trips and with the facility and including in process trips along with growth, the intersection will operate at Level of Service B or better for build out in 2022.

The crash analysis indicates that there are no significant safety problems within the study area.

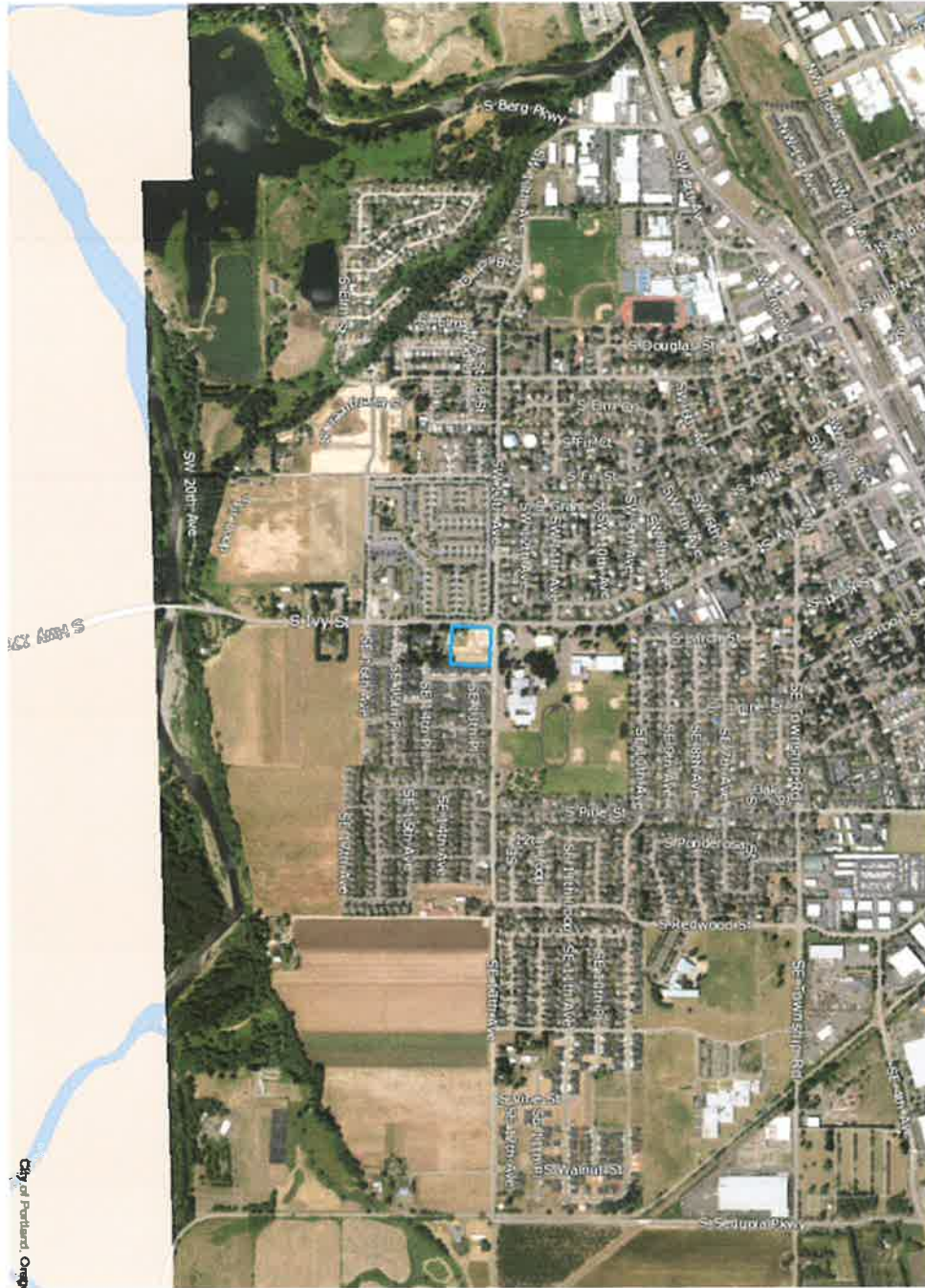
APPENDICES

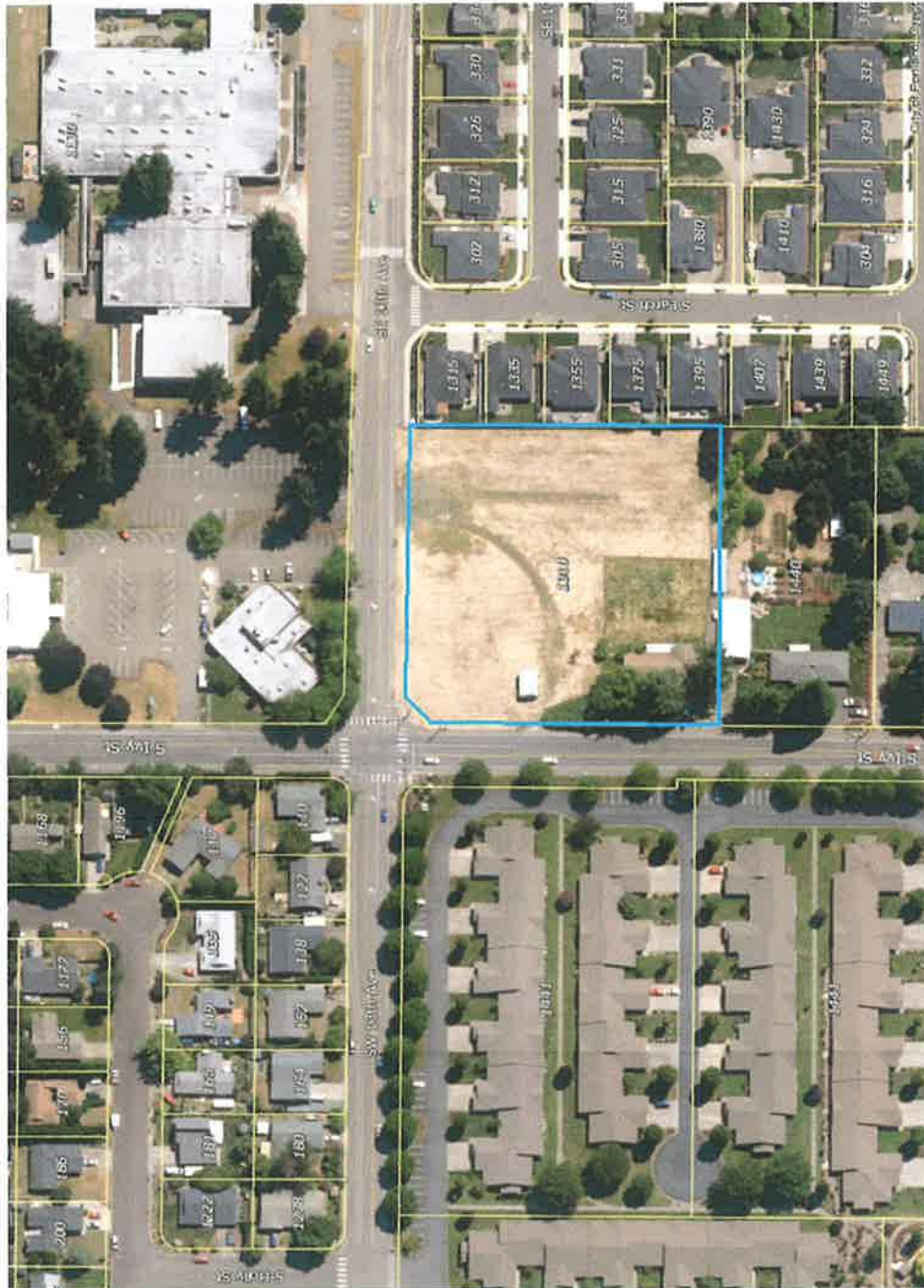
Appendix 1 – Maps & Site Plans











Appendix 2 – Trip Generation

Trip Generation Summary

Alternative: Alternative 1

Phase:

Open Date: 10/15/2020

Project: New Project

Analysis Date: 10/15/2020

ITE	Land Use	Weekday Average Daily Trips			Weekday AM Peak Hour of Adjacent Street Traffic			Weekday PM Peak Hour of Adjacent Street Traffic		
		* Enter	Exit	Total	* Enter	Exit	Total	* Enter	Exit	Total
252	SENIORATTACHED 1 8 Dwelling Units	15	15	30	1	1	2	1	1	2
254	ASSISTLIVE 1 102 Beds	133	132	265	12	7	19	10	17	27
	Unadjusted Volume	148	147	295	13	8	21	11	18	29
	Internal Capture Trips	0	0	0	0	0	0	0	0	0
	Pass-By Trips	0	0	0	0	0	0	0	0	0
	Volume Added to Adjacent Streets	148	147	295	13	8	21	11	18	29

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

Appendix 3 – AM & PM Peak Hour Counts & LOS Analysis

- **Historical – Collected October, 2019**
- **Actual – Collected October, 2020**

Table S1. Summary of capacity analysis for study intersection.

Intersection	Type of Control	Peak Hour	Traffic Scenario			
			2019 Existing			
			Crit. Mov't	LOS	Delay	v/c
SE 13th Avenue and S Ivy Street	Signal	AM	-	B	15.8	0.31
		PM	-	B	14.6	0.29

Notes: 2010 Highway Capacity Manual methodology used in analysis, Synchro v9.

Table S2. Summary of capacity analysis for study intersection.

Intersection	Type of Control	Peak Hour	Traffic Scenario			
			2020 Existing			
			Crit. Mov't	LOS	Delay	v/c
SE 13th Avenue and S Ivy Street	Signal	AM	-	B	11.2	0.18
		PM	-	B	14.6	0.30

Notes: 2010 Highway Capacity Manual methodology used in analysis, Synchro v9.

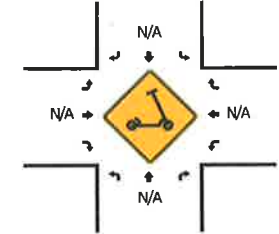
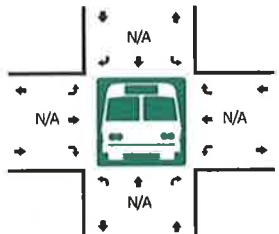
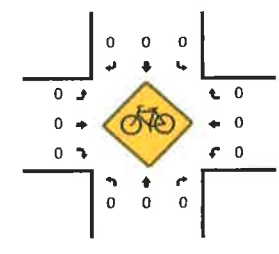
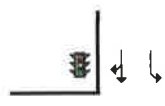
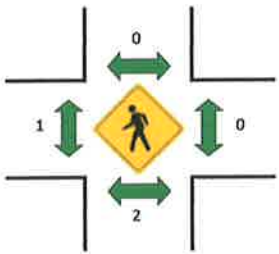
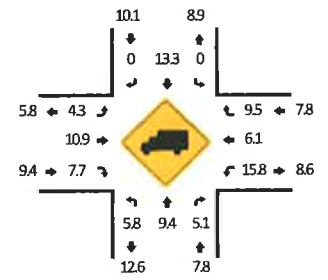
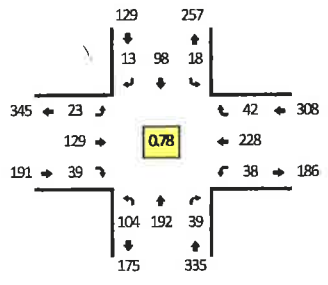
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: S Ivy St -- SE 13th Ave
CITY/STATE: Canby, OR

QC JOB #: 15109103
DATE: Tue, Oct 29 2019

Peak-Hour: 7:00 AM – 8:00 AM
Peak 15-Min: 7:15 AM – 7:30 AM



5-Min Count Period Beginning At	S Ivy St (Northbound)				S Ivy St (Southbound)				SE 13th Ave (Eastbound)				SE 13th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	8	19	7	0	0	5	1	0	3	6	2	0	3	14	1	0	69	
7:05 AM	5	7	3	0	1	6	0	0	2	9	2	0	4	15	3	0	57	
7:10 AM	10	13	0	0	1	6	2	0	2	7	4	0	2	25	0	0	72	
7:15 AM	6	11	4	0	3	15	1	0	1	10	3	0	2	23	5	0	84	
7:20 AM	16	21	3	0	1	8	1	0	0	16	6	0	2	39	7	0	120	
7:25 AM	13	15	3	0	1	7	2	0	1	24	5	0	6	26	2	0	105	
7:30 AM	7	16	2	0	3	4	0	0	2	8	6	0	3	27	2	0	80	
7:35 AM	10	16	4	0	2	8	1	0	0	14	3	0	3	17	5	0	83	
7:40 AM	3	17	3	0	1	12	0	0	3	12	2	0	3	10	3	0	69	
7:45 AM	12	21	7	0	1	6	1	0	3	9	2	0	2	18	6	0	88	
7:50 AM	5	23	2	0	2	14	2	0	5	8	3	0	7	8	3	0	82	
7:55 AM	9	13	1	0	2	7	2	0	1	6	1	0	1	6	5	0	54	963
8:00 AM	4	18	3	0	1	8	2	0	3	6	4	0	5	11	2	0	67	961
8:05 AM	4	11	1	0	3	9	1	0	3	3	1	0	2	6	2	0	46	950
8:10 AM	4	14	2	0	3	3	1	0	0	7	3	0	0	9	5	0	51	929
8:15 AM	4	9	1	0	0	11	1	0	2	6	1	0	1	13	3	0	52	897
8:20 AM	4	12	4	0	3	12	3	0	2	8	4	0	0	8	5	0	65	842
8:25 AM	4	18	4	0	2	7	0	0	0	6	3	0	1	7	0	0	52	789
8:30 AM	7	22	2	0	2	12	0	0	5	5	2	0	2	12	6	0	77	786
8:35 AM	7	15	4	0	4	9	2	0	5	5	0	0	2	10	11	0	74	777
8:40 AM	5	9	2	0	8	10	2	0	9	16	2	0	3	11	13	0	90	798
8:45 AM	5	19	5	0	6	12	4	0	8	9	0	0	3	9	12	0	92	802
8:50 AM	2	19	1	0	2	13	0	0	5	13	3	0	5	12	22	0	97	817
8:55 AM	7	19	4	0	7	8	2	0	4	12	2	0	0	11	6	0	82	845
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	140	188	40	0	20	120	16	0	8	200	56	0	40	352	56	0	1236	
Heavy Trucks	8	24	4		0	20	0		0	32	0		0	24	8		120	
Buses																	8	
Pedestrians		8				0				0				0			8	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																		

Comments:

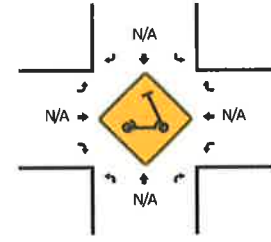
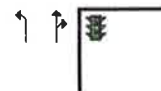
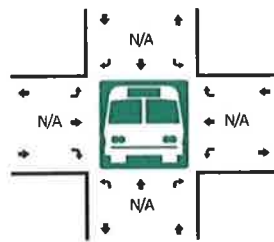
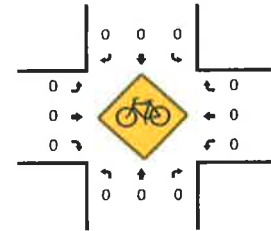
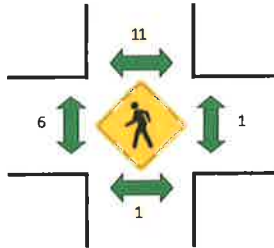
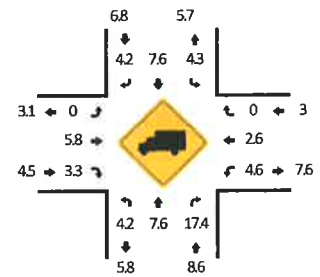
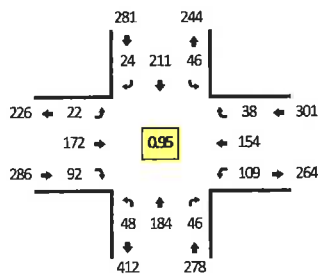
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: S Ivy St -- SE 13th Ave
CITY/STATE: Canby, OR

QC JOB #: 15109104
DATE: Tue, Oct 29 2019

Peak-Hour: 4:00 PM – 5:00 PM
Peak 15-Min: 4:30 PM – 4:45 PM



5-Min Count Period Beginning At	S Ivy St (Northbound)				S Ivy St (Southbound)				SE 13th Ave (Eastbound)				SE 13th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	6	12	2	0	3	17	1	0	2	16	14	0	6	8	3	0	90	
4:05 PM	1	16	7	0	5	20	1	0	2	13	14	0	12	9	6	0	106	
4:10 PM	4	15	1	0	9	15	2	0	4	12	11	0	8	17	2	0	100	
4:15 PM	5	16	5	0	6	18	1	0	2	12	6	0	9	7	4	0	91	
4:20 PM	6	18	4	0	1	17	5	0	2	13	7	0	7	23	1	0	104	
4:25 PM	2	14	3	0	4	14	2	0	2	14	13	0	3	12	2	0	85	
4:30 PM	8	21	2	0	2	18	4	0	1	14	5	0	9	18	4	0	106	
4:35 PM	0	12	1	0	5	14	5	0	4	17	7	0	9	12	3	0	89	
4:40 PM	4	22	9	0	7	14	0	0	1	20	5	0	8	10	7	0	107	
4:45 PM	6	12	4	0	1	19	0	0	1	15	4	0	15	17	3	0	97	
4:50 PM	3	13	5	0	1	19	2	0	1	15	2	0	13	12	2	0	88	
4:55 PM	3	13	3	0	2	26	1	0	0	11	4	0	10	9	1	0	83	1146
5:00 PM	4	11	3	0	5	18	2	0	3	16	3	0	9	8	0	0	82	1138
5:05 PM	8	16	6	0	6	24	1	0	1	11	7	0	8	12	3	0	103	1135
5:10 PM	3	19	3	0	6	24	2	0	2	11	12	0	6	11	2	0	101	1136
5:15 PM	4	19	3	0	0	14	1	0	2	16	4	0	5	15	6	0	89	1134
5:20 PM	3	12	5	0	4	16	2	0	2	11	7	0	12	25	2	0	101	1131
5:25 PM	3	16	4	0	5	14	2	0	2	9	8	0	10	13	4	0	90	1136
5:30 PM	3	18	7	0	2	18	1	0	1	12	4	0	6	12	1	0	85	1115
5:35 PM	5	16	3	0	4	16	2	0	1	13	7	0	10	12	4	0	93	1119
5:40 PM	7	12	5	0	3	23	0	0	4	19	6	0	9	9	1	0	98	1110
5:45 PM	6	11	5	0	4	17	4	0	2	20	8	0	15	17	5	0	114	1127
5:50 PM	2	9	4	0	4	18	1	0	2	11	10	0	4	14	2	0	81	1120
5:55 PM	5	22	4	0	4	23	0	0	2	15	5	0	6	16	4	0	106	1143
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	48	220	48	0	56	184	36	0	24	204	68	0	104	160	56	0	1208	
Heavy Trucks	0	20	4	0	0	4	0	0	0	16	0	0	0	0	0	0	44	
Buses																		
Pedestrians	0	0	0	0	8	0	0	0	4	0	0	0	0	0	0	0	12	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Scoters																		

Comments:

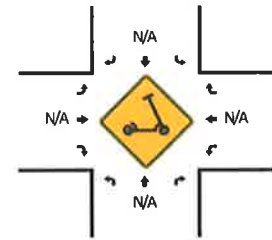
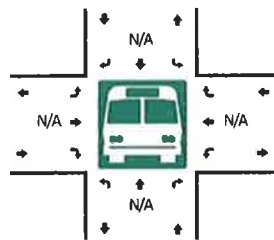
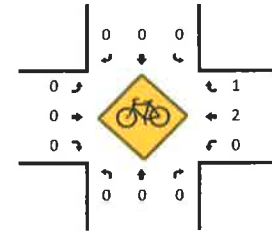
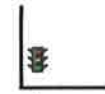
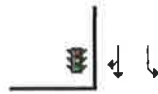
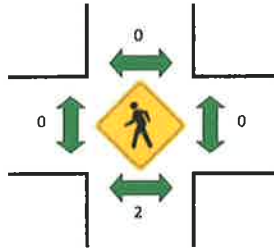
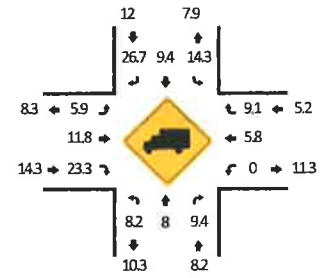
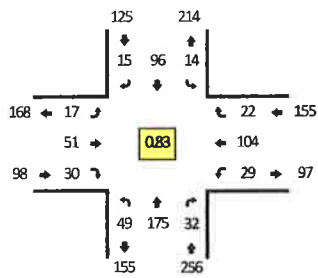
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: S Ivy St -- SE 13th Ave
CITY/STATE: Canby, OR

QC JOB #: 15304801
DATE: Tue, Oct 20 2020

Peak-Hour: 7:15 AM – 8:15 AM
Peak 15-Min: 7:35 AM -- 7:50 AM



5-Min Count Period Beginning At	S Ivy St (Northbound)				S Ivy St (Southbound)				SE 13th Ave (Eastbound)				SE 13th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	12	4	0	0	5	0	0	0	1	3	0	2	7	1	0	38	
7:05 AM	3	8	2	0	1	7	0	0	0	7	2	0	2	12	1	0	45	
7:10 AM	2	7	2	0	1	4	1	0	1	4	0	0	3	5	0	0	30	
7:15 AM	8	13	2	0	0	10	0	0	2	6	2	0	1	9	0	0	53	
7:20 AM	2	10	5	0	2	3	1	0	1	3	1	0	3	12	1	0	44	
7:25 AM	1	11	3	0	0	6	2	0	0	7	3	0	0	8	3	0	44	
7:30 AM	4	12	4	0	3	8	2	0	1	2	6	0	4	5	3	0	54	
7:35 AM	4	19	4	0	1	13	2	0	1	5	2	0	1	16	3	0	71	
7:40 AM	5	15	1	0	1	11	2	0	1	3	3	0	0	10	1	0	53	
7:45 AM	7	21	3	0	2	7	1	0	4	2	5	0	4	7	3	0	66	
7:50 AM	5	21	1	0	0	7	2	0	2	6	3	0	3	9	2	0	61	612
7:55 AM	2	21	0	0	2	5	1	0	1	6	2	0	3	6	4	0	53	621
8:00 AM	5	6	4	0	1	10	1	0	1	7	3	0	5	4	0	0	47	619
8:05 AM	3	10	4	0	1	7	1	0	3	3	0	0	4	6	1	0	43	634
8:10 AM	3	16	1	0	1	9	0	0	0	1	0	0	1	12	1	0	45	625
8:15 AM	5	6	1	0	1	6	1	0	2	7	4	0	3	7	1	0	44	628
8:20 AM	6	19	0	0	0	3	3	0	1	2	0	0	1	11	1	0	47	631
8:25 AM	2	11	2	0	0	6	1	0	2	3	4	0	5	9	2	0	47	624
8:30 AM	1	8	1	0	1	5	4	0	0	4	4	0	2	13	4	0	47	600
8:35 AM	8	13	3	0	1	3	2	0	0	5	1	0	2	6	3	0	47	626
8:40 AM	8	19	6	0	3	7	2	0	2	11	5	0	3	9	4	0	79	620
8:45 AM	5	18	3	0	3	3	3	0	1	4	2	0	3	12	3	0	60	614
8:50 AM	3	16	5	0	2	5	2	0	2	4	3	0	3	8	2	0	55	617
8:55 AM	1	12	4	0	1	13	1	0	2	9	4	0	3	4	2	0	56	
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
All Vehicles	64	220	32	0	16	124	20	0	24	40	40	0	20	132	28	0	760	
Heavy Trucks	0	16	8		0	8	8		0	0	0		0	4	0		44	
Buses																	0	
Pedestrians		0				0				0				0			0	
Bicycles	0	0	0		0	0	0		0	0	0		0	8	0		8	
Scoters																		

Comments:

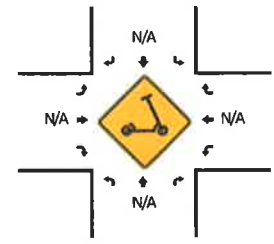
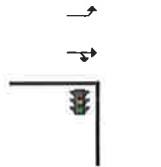
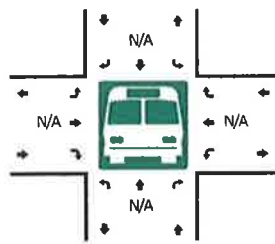
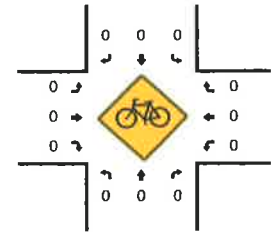
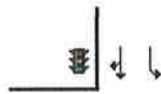
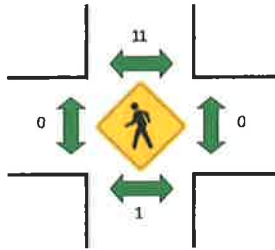
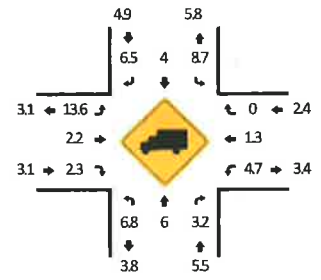
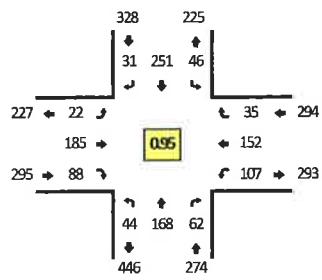
Type of peak hour being reported: Intersection Peak

Method for determining peak hour: Total Entering Volume

LOCATION: S Ivy St -- SE 13th Ave
CITY/STATE: Canby, OR

QC JOB #: 15304802
DATE: Tue, Oct 20 2020

Peak-Hour: 4:40 PM – 5:40 PM
Peak 15-Min: 4:55 PM – 5:10 PM



5-Min Count Period Beginning At	S Ivy St (Northbound)				S Ivy St (Southbound)				SE 13th Ave (Eastbound)				SE 13th Ave (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	3	11	7	0	4	19	2	0	3	14	2	0	5	7	4	0	81	
4:05 PM	3	16	7	0	8	18	1	0	2	14	7	0	4	13	5	0	98	
4:10 PM	5	12	4	0	5	20	6	0	3	10	10	0	7	11	2	0	95	
4:15 PM	5	13	5	0	5	16	3	0	3	16	8	0	4	12	6	0	96	
4:20 PM	3	14	7	0	1	18	2	0	3	22	12	0	9	5	4	0	100	
4:25 PM	6	21	3	0	3	15	2	0	5	15	8	0	9	10	5	0	102	
4:30 PM	5	14	4	0	2	20	2	0	1	16	5	0	7	18	2	0	96	
4:35 PM	5	16	1	0	1	14	1	0	0	17	7	0	13	10	5	0	90	
4:40 PM	5	26	6	0	4	18	2	0	1	12	7	0	12	14	0	0	107	
4:45 PM	4	12	8	0	2	17	1	0	0	14	5	0	8	11	5	0	87	
4:50 PM	5	13	5	0	4	20	3	0	6	9	7	0	7	12	1	0	92	
4:55 PM	7	19	5	0	5	23	6	0	0	14	11	0	4	11	2	0	107	1151
5:00 PM	4	8	5	0	3	27	3	0	1	17	9	0	11	16	4	0	108	1178
5:05 PM	4	15	4	0	1	25	3	0	3	17	10	0	11	7	0	0	100	1180
5:10 PM	3	15	5	0	3	19	2	0	1	15	5	0	6	18	4	0	96	1181
5:15 PM	0	17	6	0	9	19	1	0	2	16	8	0	12	9	4	0	103	1188
5:20 PM	5	10	7	0	3	16	4	0	0	17	9	0	6	14	2	0	93	1181
5:25 PM	2	11	3	0	5	16	3	0	4	22	4	0	15	12	7	0	104	1183
5:30 PM	3	11	5	0	4	22	1	0	2	13	7	0	7	14	1	0	90	1177
5:35 PM	2	11	3	0	3	29	2	0	2	19	6	0	8	14	5	0	104	1191
5:40 PM	2	10	7	0	5	15	2	0	3	16	9	0	5	14	4	0	92	1176
5:45 PM	1	13	2	0	6	23	4	0	3	10	7	0	9	13	1	0	92	1181
5:50 PM	7	11	6	0	3	6	0	0	1	21	5	0	7	12	3	0	82	1171
5:55 PM	3	9	4	0	4	15	1	0	0	16	6	0	7	11	6	0	82	1146
Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total	
All Vehicles	60	168	56	0	36	300	48	0	16	192	120	0	104	136	24	0	1260	
Heavy Trucks	8	8	4		0	12	0		0	8	8		8	0	0		56	
Buses																	0	
Pedestrians	0	0	0		0	0	0		0	0	0		0	0	0		0	
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0	
Scoters																	0	

Comments:

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2019 Existing Traffic, AM Peak Hour
11/16/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	129	39	38	228	42	104	192	39	18	98	13
Future Volume (vph)	23	129	39	38	228	42	104	192	39	18	98	13
Confl. Peds. (#/hr)			2	2			1					1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	9%	9%	9%	8%	8%	8%	8%	8%	8%	10%	10%	10%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	25.4	25.4		25.4	25.4		10.6	25.0		9.6	24.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%		17.7%	41.7%		16.0%	40.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effect Green (s)	15.0	15.0		15.0	15.0		27.6	26.6		24.1	20.3	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.53	0.51		0.46	0.39	
v/c Ratio	0.16	0.43		0.17	0.69		0.22	0.34		0.04	0.22	
Control Delay	16.5	16.3		15.7	23.9		8.2	10.8		7.6	13.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.5	16.3		15.7	23.9		8.2	10.8		7.6	13.9	
LOS	B	B		B	C		A	B		A	B	
Approach Delay		16.3			22.8			10.0			13.0	
Approach LOS		B			C			B			B	

Intersection Summary





















Cycle Length: 60
 Actuated Cycle Length: 52.5
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 15.8
 Intersection Capacity Utilization 45.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 2010 Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue

2019 Existing Traffic, AM Peak Hour
11/16/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	129	39	38	228	42	104	192	39	18	98	13
Future Volume (veh/h)	23	129	39	38	228	42	104	192	39	18	98	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1743	1743	1900	1759	1759	1900	1759	1759	1900	1727	1727	1900
Adj Flow Rate, veh/h	29	165	50	49	292	54	133	246	50	23	126	17
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	9	9	9	8	8	8	8	8	8	10	10	10
Cap, veh/h	246	377	114	344	424	78	637	601	122	484	551	74
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.08	0.42	0.42	0.03	0.37	0.37
Sat Flow, veh/h	963	1284	389	1095	1444	267	1675	1419	289	1645	1490	201
Grp Volume(v), veh/h	29	0	215	49	0	346	133	0	296	23	0	143
Grp Sat Flow(s),veh/h/ln	963	0	1673	1095	0	1711	1675	0	1708	1645	0	1691
Q Serve(g_s), s	1.5	0.0	5.5	2.0	0.0	9.5	2.5	0.0	6.4	0.5	0.0	3.1
Cycle Q Clear(g_c), s	10.9	0.0	5.5	7.5	0.0	9.5	2.5	0.0	6.4	0.5	0.0	3.1
Prop In Lane	1.00		0.23	1.00		0.16	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	246	0	491	344	0	502	637	0	724	484	0	625
V/C Ratio(X)	0.12	0.00	0.44	0.14	0.00	0.69	0.21	0.00	0.41	0.05	0.00	0.23
Avail Cap(c_a), veh/h	345	0	663	456	0	678	694	0	724	598	0	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	15.1	18.2	0.0	16.5	8.6	0.0	10.6	9.9	0.0	11.5
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.2	0.0	1.8	0.2	0.0	1.7	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.6	0.6	0.0	4.7	1.1	0.0	3.3	0.2	0.0	1.6
LnGrp Delay(d),s/veh	21.6	0.0	15.7	18.3	0.0	18.3	8.7	0.0	12.3	9.9	0.0	12.3
LnGrp LOS	C		B	B		B	A		B	A		B
Approach Vol, veh/h		244			395			429				166
Approach Delay, s/veh		16.4			18.3			11.2				12.0
Approach LOS		B			B			B				B
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	26.9		20.0	8.8	24.0		20.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	20.5		20.9	6.1	19.5		20.9				
Max Q Clear Time (g_c+I1), s	2.5	8.4		12.9	4.5	5.1		11.5				
Green Ext Time (p_c), s	0.0	1.9		2.5	0.0	2.1		2.8				
Intersection Summary												
HCM 2010 Ctrl Delay			14.6									
HCM 2010 LOS			B									

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2019 Existing Traffic, PM Peak Hour

11/16/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	172	92	109	154	38	48	184	46	46	211	24
Future Volume (vph)	22	172	92	109	154	38	48	184	46	46	211	24
Confl. Peds. (#/hr)	11		1	1		11	6		1	1		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	9%	9%	9%	7%	7%	7%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	26.0		10.0	26.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		16.7%	43.3%		16.7%	43.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	12.2	12.2		12.2	12.2		24.1	22.3		24.1	22.3	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.51	0.47		0.51	0.47	
v/c Ratio	0.08	0.59		0.51	0.43		0.08	0.30		0.08	0.30	
Control Delay	14.8	18.4		24.5	16.3		6.6	10.9		6.6	11.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.8	18.4		24.5	16.3		6.6	10.9		6.6	11.3	
LOS	B	B		C	B		A	B		A	B	
Approach Delay		18.1			19.3			10.2			10.5	
Approach LOS		B			B			B			B	

Intersection Summary





















Cycle Length: 60
 Actuated Cycle Length: 47
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 14.6
 Intersection Capacity Utilization 54.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 2010 Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue

2019 Existing Traffic, PM Peak Hour
11/16/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	172	92	109	154	38	48	184	46	46	211	24
Future Volume (veh/h)	22	172	92	109	154	38	48	184	46	46	211	24
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1845	1845	1900	1743	1743	1900	1776	1776	1900
Adj Flow Rate, veh/h	23	181	97	115	162	40	51	194	48	48	222	25
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	9	9	9	7	7	7
Cap, veh/h	378	337	181	315	436	108	526	536	133	532	620	70
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.05	0.40	0.40	0.05	0.40	0.40
Sat Flow, veh/h	1129	1102	591	1076	1424	351	1660	1348	333	1691	1567	176
Grp Volume(v), veh/h	23	0	278	115	0	202	51	0	242	48	0	247
Grp Sat Flow(s),veh/h/ln	1129	0	1693	1076	0	1775	1660	0	1681	1691	0	1743
Q Serve(g_s), s	0.9	0.0	7.4	5.4	0.0	4.8	1.0	0.0	5.5	0.9	0.0	5.4
Cycle Q Clear(g_c), s	5.7	0.0	7.4	12.8	0.0	4.8	1.0	0.0	5.5	0.9	0.0	5.4
Prop In Lane	1.00		0.35	1.00		0.20	1.00		0.20	1.00		0.10
Lane Grp Cap(c), veh/h	378	0	518	315	0	544	526	0	669	532	0	690
V/C Ratio(X)	0.06	0.00	0.54	0.36	0.00	0.37	0.10	0.00	0.36	0.09	0.00	0.36
Avail Cap(c_a), veh/h	437	0	608	372	0	637	612	0	669	623	0	690
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	15.6	21.0	0.0	14.8	8.9	0.0	11.5	8.9	0.0	11.6
Incr Delay (d2), s/veh	0.1	0.0	0.9	0.7	0.0	0.4	0.1	0.0	1.5	0.1	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	3.5	1.7	0.0	2.4	0.4	0.0	2.8	0.4	0.0	2.9
LnGrp Delay(d),s/veh	17.1	0.0	16.5	21.7	0.0	15.2	9.0	0.0	13.0	9.0	0.0	13.0
LnGrp LOS	B		B	C		B	A		B	A		B
Approach Vol, veh/h		301			317			293			295	
Approach Delay, s/veh		16.5			17.5			12.3			12.4	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	26.1		21.1	7.2	26.0		21.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	21.5		19.5	5.5	21.5		19.5				
Max Q Clear Time (g_c+I1), s	2.9	7.5		9.4	3.0	7.4		14.8				
Green Ext Time (p_c), s	0.0	2.3		2.7	0.0	2.3		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			14.8									
HCM 2010 LOS			B									

Queues

2019 Existing Traffic, AM Peak Hour

1: Ivy Street & SE 13th Avenue

11/16/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	215	49	346	133	296	23	143
v/c Ratio	0.16	0.43	0.17	0.69	0.22	0.34	0.04	0.22
Control Delay	16.5	16.3	15.7	23.9	8.2	10.8	7.6	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.5	16.3	15.7	23.9	8.2	10.8	7.6	13.9
Queue Length 50th (ft)	7	49	12	94	19	42	3	29
Queue Length 95th (ft)	20	80	28	136	42	116	11	60
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	256	700	415	712	609	877	523	661
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.31	0.12	0.49	0.22	0.34	0.04	0.22

Intersection Summary

Queues

2019 Existing Traffic, PM Peak Hour

1: Ivy Street & SE 13th Avenue

11/16/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	278	115	202	51	242	48	247
v/c Ratio	0.08	0.59	0.51	0.43	0.08	0.30	0.08	0.30
Control Delay	14.8	18.4	24.5	16.3	6.6	10.9	6.6	11.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	18.4	24.5	16.3	6.6	10.9	6.6	11.3
Queue Length 50th (ft)	4	45	23	34	6	27	5	29
Queue Length 95th (ft)	20	125	74	95	22	109	21	114
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	473	758	374	775	610	809	625	831
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.37	0.31	0.26	0.08	0.30	0.08	0.30

Intersection Summary

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2020 Existing Traffic, AM Peak Hour
11/16/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	51	30	29	104	22	49	175	32	14	96	15
Future Volume (vph)	17	51	30	29	104	22	49	175	32	14	96	15
Confl. Peds. (#/hr)			2	2								
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Heavy Vehicles (%)	14%	14%	14%	5%	5%	5%	8%	8%	8%	12%	12%	12%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	26.0		10.0	26.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		16.7%	43.3%		16.7%	43.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	8.8	8.8		8.9	8.9		30.0	30.0		28.3	26.3	
Actuated g/C Ratio	0.19	0.19		0.19	0.19		0.65	0.65		0.61	0.57	
v/c Ratio	0.10	0.30		0.15	0.43		0.08	0.22		0.02	0.14	
Control Delay	17.5	14.3		18.0	19.4		4.5	6.9		4.4	8.8	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.5	14.3		18.0	19.4		4.5	6.9		4.4	8.8	
LOS	B	B		B	B		A	A		A	A	
Approach Delay		14.9			19.1			6.4			8.3	
Approach LOS		B			B			A			A	

Intersection Summary






















Cycle Length: 60
 Actuated Cycle Length: 46.5
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.43
 Intersection Signal Delay: 11.2
 Intersection Capacity Utilization 33.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 2010 Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue

2020 Existing Traffic, AM Peak Hour
11/16/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	51	30	29	104	22	49	175	32	14	96	15
Future Volume (veh/h)	17	51	30	29	104	22	49	175	32	14	96	15
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1667	1667	1900	1810	1810	1900	1759	1759	1900	1696	1696	1900
Adj Flow Rate, veh/h	20	61	36	35	125	27	59	211	39	17	116	18
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83
Percent Heavy Veh, %	14	14	14	5	5	5	8	8	8	12	12	12
Cap, veh/h	261	169	100	305	248	54	759	737	136	629	679	105
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.06	0.51	0.51	0.02	0.47	0.47
Sat Flow, veh/h	1097	981	579	1251	1441	311	1675	1445	267	1616	1435	223
Grp Volume(v), veh/h	20	0	97	35	0	152	59	0	250	17	0	134
Grp Sat Flow(s),veh/h/ln	1097	0	1560	1251	0	1752	1675	0	1712	1616	0	1657
Q Serve(g_s), s	0.8	0.0	2.5	1.2	0.0	3.6	0.8	0.0	3.8	0.2	0.0	2.1
Cycle Q Clear(g_c), s	4.3	0.0	2.5	3.6	0.0	3.6	0.8	0.0	3.8	0.2	0.0	2.1
Prop In Lane	1.00		0.37	1.00		0.18	1.00		0.16	1.00		0.13
Lane Grp Cap(c), veh/h	261	0	268	305	0	301	759	0	873	629	0	784
V/C Ratio(X)	0.08	0.00	0.36	0.11	0.00	0.50	0.08	0.00	0.29	0.03	0.00	0.17
Avail Cap(c_a), veh/h	543	0	670	627	0	752	865	0	873	790	0	784
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	0.0	16.6	18.2	0.0	17.1	5.2	0.0	6.4	5.9	0.0	6.9
Incr Delay (d2), s/veh	0.1	0.0	0.8	0.2	0.0	1.3	0.0	0.0	0.8	0.0	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	1.1	0.4	0.0	1.8	0.4	0.0	1.9	0.1	0.0	1.1
LnGrp Delay(d),s/veh	19.1	0.0	17.4	18.4	0.0	18.4	5.3	0.0	7.2	5.9	0.0	7.3
LnGrp LOS	B		B	B		B	A		A	A		A
Approach Vol, veh/h		117			187			309			151	
Approach Delay, s/veh		17.7			18.4			6.8			7.2	
Approach LOS		B			B			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	27.7		12.3	7.1	26.0		12.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	21.5		19.5	5.5	21.5		19.5				
Max Q Clear Time (g_c+I1), s	2.2	5.8		6.3	2.8	4.1		5.6				
Green Ext Time (p_c), s	0.0	1.8		1.4	0.0	1.9		1.4				
Intersection Summary												
HCM 2010 Ctrl Delay			11.4									
HCM 2010 LOS			B									

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2020 Existing Traffic, PM Peak Hour
11/16/2020



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	185	88	107	152	35	44	168	62	46	251	31
Future Volume (vph)	22	185	88	107	152	35	44	168	62	46	251	31
Confl. Peds. (#/hr)	11		1	1		11						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	6%	6%	6%	5%	5%	5%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	26.0		10.0	26.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		16.7%	43.3%		16.7%	43.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	12.4	12.4		12.4	12.4		24.0	22.2		24.0	22.2	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.51	0.47		0.51	0.47	
v/c Ratio	0.08	0.59		0.51	0.40		0.08	0.29		0.08	0.35	
Control Delay	14.7	18.8		24.4	16.0		6.7	10.4		6.6	11.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.7	18.8		24.4	16.0		6.7	10.4		6.6	11.9	
LOS	B	B		C	B		A	B		A	B	
Approach Delay		18.5			19.0			9.8			11.1	
Approach LOS		B			B			A			B	

Intersection Summary






















Cycle Length: 60
 Actuated Cycle Length: 47.2
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 14.6
 Intersection Capacity Utilization 55.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 2010 Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue

2020 Existing Traffic, PM Peak Hour
11/16/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	185	88	107	152	35	44	168	62	46	251	31
Future Volume (veh/h)	22	185	88	107	152	35	44	168	62	46	251	31
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1845	1845	1900	1863	1863	1900	1792	1792	1900	1810	1810	1900
Adj Flow Rate, veh/h	23	195	93	113	160	37	46	177	65	48	264	33
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	2	2	2	6	6	6	5	5	5
Cap, veh/h	388	360	172	314	447	103	499	497	182	542	628	79
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.05	0.40	0.40	0.05	0.40	0.40
Sat Flow, veh/h	1156	1174	560	1077	1459	337	1707	1252	460	1723	1578	197
Grp Volume(v), veh/h	23	0	288	113	0	197	46	0	242	48	0	297
Grp Sat Flow(s),veh/h/ln	1156	0	1734	1077	0	1796	1707	0	1711	1723	0	1775
Q Serve(g_s), s	0.9	0.0	7.5	5.3	0.0	4.6	0.8	0.0	5.4	0.9	0.0	6.6
Cycle Q Clear(g_c), s	5.5	0.0	7.5	12.8	0.0	4.6	0.8	0.0	5.4	0.9	0.0	6.6
Prop In Lane	1.00		0.32	1.00		0.19	1.00		0.27	1.00		0.11
Lane Grp Cap(c), veh/h	388	0	532	314	0	551	499	0	679	542	0	707
V/C Ratio(X)	0.06	0.00	0.54	0.36	0.00	0.36	0.09	0.00	0.36	0.09	0.00	0.42
Avail Cap(c_a), veh/h	450	0	624	372	0	646	594	0	679	635	0	707
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.8	0.0	15.6	20.9	0.0	14.6	9.0	0.0	11.5	8.9	0.0	11.8
Incr Delay (d2), s/veh	0.1	0.0	0.9	0.7	0.0	0.4	0.1	0.0	1.5	0.1	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	3.6	1.6	0.0	2.4	0.4	0.0	2.8	0.4	0.0	3.6
LnGrp Delay(d),s/veh	16.8	0.0	16.5	21.6	0.0	15.0	9.1	0.0	12.9	9.0	0.0	13.6
LnGrp LOS	B		B	C		B	A		B	A		B
Approach Vol, veh/h		311			310			288			345	
Approach Delay, s/veh		16.5			17.4			12.3			13.0	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	26.0		21.1	7.0	26.1		21.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	21.5		19.5	5.5	21.5		19.5				
Max Q Clear Time (g_c+I1), s	2.9	7.4		9.5	2.8	8.6		14.8				
Green Ext Time (p_c), s	0.0	2.6		2.7	0.0	2.5		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay			14.8									
HCM 2010 LOS			B									

Queues
1: Ivy Street & SE 13th Avenue

2020 Existing Traffic, AM Peak Hour
11/16/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	20	97	35	152	59	250	17	134
v/c Ratio	0.10	0.30	0.15	0.43	0.08	0.22	0.02	0.14
Control Delay	17.5	14.3	18.0	19.4	4.5	6.9	4.4	8.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.5	14.3	18.0	19.4	4.5	6.9	4.4	8.8
Queue Length 50th (ft)	5	15	9	35	5	23	1	20
Queue Length 95th (ft)	17	41	25	69	16	84	7	47
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	470	687	535	763	777	1116	694	948
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	0.14	0.07	0.20	0.08	0.22	0.02	0.14

Intersection Summary

Queues

2020 Existing Traffic, PM Peak Hour

1: Ivy Street & SE 13th Avenue

11/16/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	288	113	197	46	242	48	297
v/c Ratio	0.08	0.59	0.51	0.40	0.08	0.29	0.08	0.35
Control Delay	14.7	18.8	24.4	16.0	6.7	10.4	6.6	11.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.7	18.8	24.4	16.0	6.7	10.4	6.6	11.9
Queue Length 50th (ft)	4	49	22	33	5	26	5	37
Queue Length 95th (ft)	20	131	72	92	20	104	21	138
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	488	769	364	780	590	828	634	844
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.37	0.31	0.25	0.08	0.29	0.08	0.35

Intersection Summary

Appendix 4 – In Process Modeled Traffic

- **Provided by the City of Canby**
- **Growth Factor Assumptions**



Gary Spanovich <garyalanspanovich@gmail.com>

CAN YOU SEND THE FOLLOWING TO ME BY TOMORROW FRIDAY OR MONDAY EARLY?

3 messages

Gary Spanovich <garyalanspanovich@gmail.com>
 To: Kevin Chewuk <kmc@dksassociates.com>, Brianna Addotta <addottab@canbyoregon.gov>
 Cc: Gary Spanovich <garyalanspanovich@gmail.com>

Thu, Oct 22, 2020 at 12:30 PM

Hi my client wants me to submit the traffic study to the city by Friday, October 30th. Brianna can you work with your colleague (Eric?) and send me the following.

Regarding the historical count data, I believe the city (Erik) is still working on updating the occupancy numbers of these approved developments. You will need to include trips from the following:

1. S Hope Village Expansion
2. Tofte Farms Phase 6
3. A 1% compound annual growth rate to cover other projects currently in the planning stage

I will follow up with the occupancy of these sites once I have that confirmed.

Thanks,
 Kevin

Gary Alan Spanovich

garyalanspanovich@gmail.com

Phone: 503-314-5955 Mailing Address: P.O. Box 597 West Linn, Oregon 97068

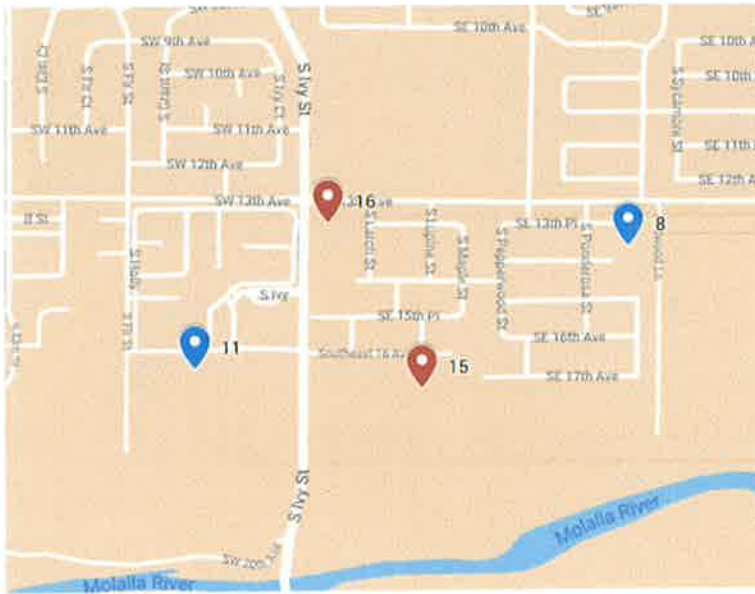
Kevin Chewuk <kmc@dksassociates.com>
 To: Gary Spanovich <garyalanspanovich@gmail.com>
 Cc: Brianna Addotta <addottab@canbyoregon.gov>

Thu, Oct 22, 2020 at 12:46 PM

Gary-
 Those TIA's are attached. You can also find a summary of the trips below and a map indicating the approximate location. If you use the historical count data, you should assume they are at 0%. However, if the new count data is deemed acceptable for the analysis, the occupancy matters, although it still may be at 0%.

ID	Project Name	% Occupied	Approved Trips						Approved Trips Remaining							
			A.M. Peak			P.M. Peak			Daily Trips	A.M. Peak			P.M. Peak			Daily Trips
			In	Out	Total	In	Out	Total		In	Out	Total	In	Out	Total	
8	Tofte Farms Phase 6		3	9	12	10	6	16	151	3	9	12	10	6	16	151
11	S Hope Village Expansion		12	21	33	24	19	43	606	12	21	33	24	19	43	606





Kevin Chewuk, PTP | Project Manager / Senior Transportation Planner
 Direct: 503.972.1216 | kmc@dksassociates.com



720 SW Washington St., Suite 500 | Portland, OR 97205 | 503.243.3500
dksassociates.com

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[Quoted text hidden]

2 attachments

- S Hope Village TIS Final 2.11.2020.pdf**
1036K
- Stamped Canby Tofte Farms Phase 6 Traffic Study.pdf**
403K

Kevin Chewuk <kmc@dksassociates.com>
 To: Gary Spanovich <garyalanspanovich@gmail.com>
 Cc: Brianna Addotta <addottab@canbyoregon.gov>

Thu, Oct 22, 2020 at 1:36 PM

Gary-
 Both of these sites are still at 0%, so include all the trips we provided.

Thanks,
 Kevin

Kevin Chewuk, PTP | Project Manager / Senior Transportation Planner
 Direct: 503.972.1216 | kmc@dksassociates.com

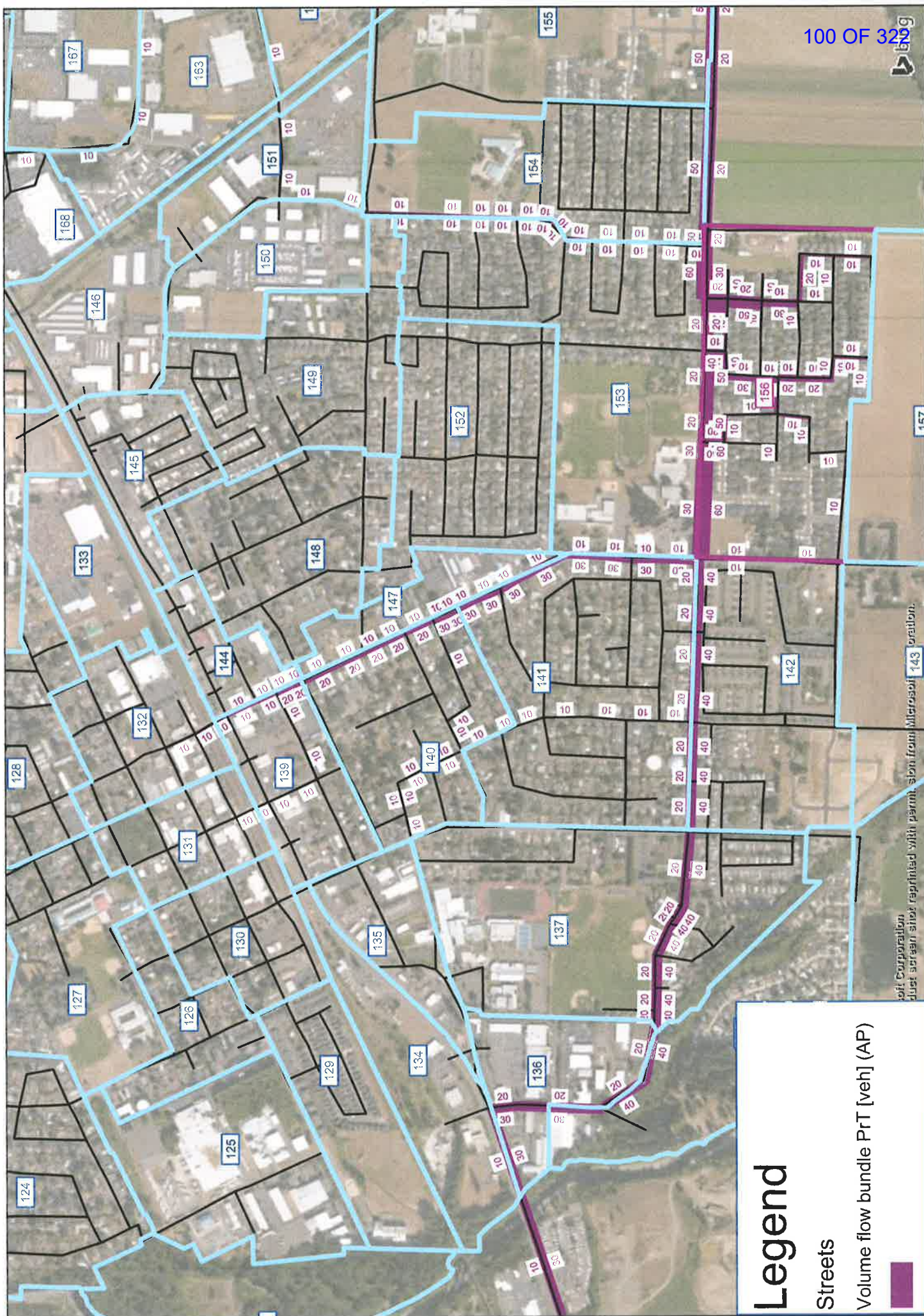


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Legend

Streets

Volume flow bundle PrT [veh] (AP)



Created on: 26.10.2020

SR_Canby2030_FC_otto_walnut_v2.ver

DKS Associates

Canby Senior Living Facility Trip Distr 2030 PM Peak Hour Link Volumes for TAZ 156

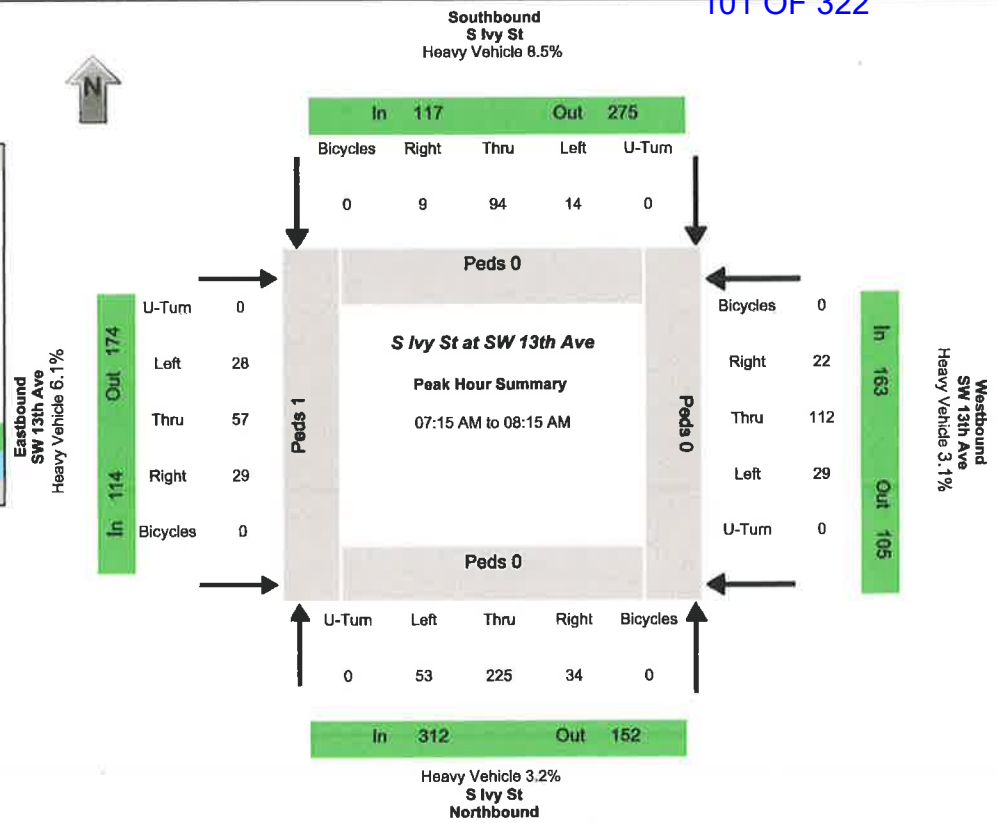
1:11426

Interposol Corporation
 Just screen shot reprinted with perm. from Interposol 143 location.

KEY DATA NETWORK

Data Provided by K-D-N.com 503-594-4224

N/S street	S Ivy St
E/W street	SW 13th Ave
City, State	Canby OR
Site Notes	
Location	45.252157 - -122.686946
Start Date	Tuesday, July 11, 2017
Start Time	07:00:00 AM
Weather	
Study ID #	
Peak Hour Start	07:15:00 AM
Peak 15 Min Start	07:45:00 AM
PHF (15-Min Int)	0.90



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	NB	SB	EB	WB	NB	SB	EB	WB
53	225	34	0	14	94	9	0	28	57	29	0	29	112	22	0	312	117	114	163	152	275	174	105
Percent Heavy Vehicles																							
0.0%	4.0%	2.9%	0.0%	7.1%	9.6%	0.0%	0.0%	0.0%	10.5%	3.4%	0.0%	0.0%	4.5%	0.0%	0.0%	3.2%	8.5%	6.1%	3.1%	6.6%	3.3%	2.9%	7.6%

PHV - Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				Sum	in Crosswalk				
Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		NB	SB	EB	WB	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1

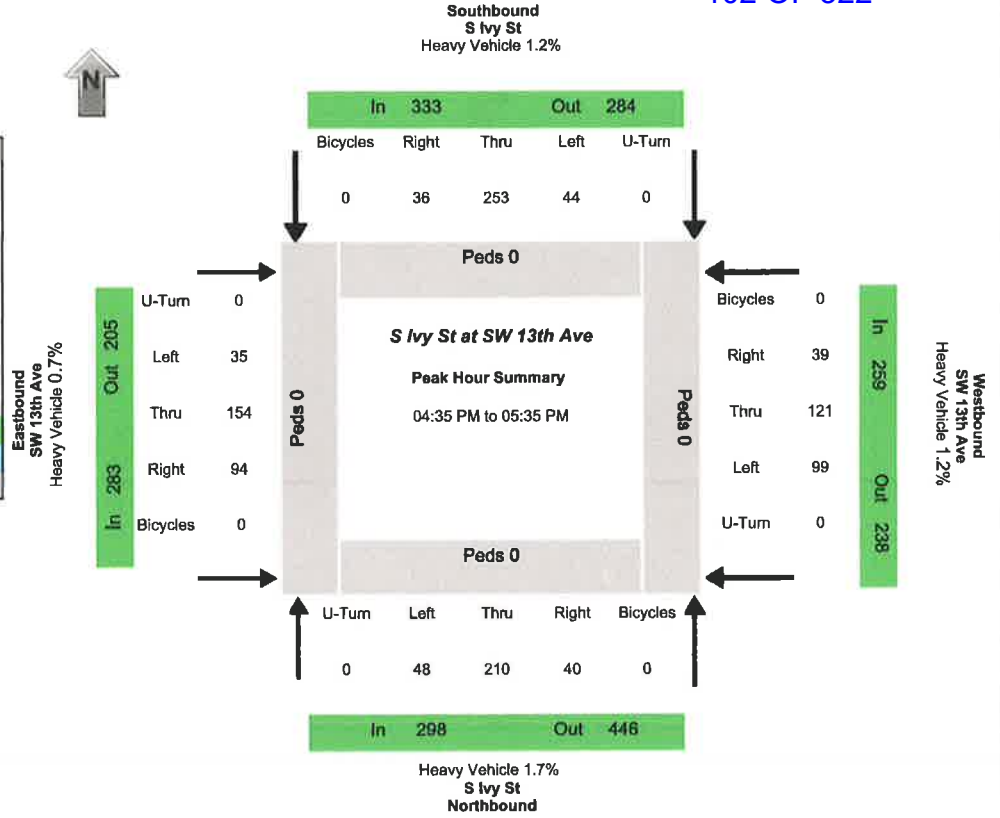
Time	Northbound S Ivy St				Southbound S Ivy St				Eastbound SW 13th Ave				Westbound SW 13th Ave				15 Min Sum	1 HR Sum
	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn	Left	Thru	Right	Uturn		
07:00:00 AM	0	17	2	0	0	11	0	0	1	0	1	2	7	3				
07:05:00 AM	1	20	4	0	2	7	0	0	3	6	1	6	8	3				
07:10:00 AM	6	7	2	0	0	4	0	0	0	1	0	0	9	0	134			
07:15:00 AM	5	18	2	0	0	5	1	0	0	8	0	2	12	1	144			
07:20:00 AM	7	19	3	0	0	7	0	0	0	4	7	4	13	3	150			
07:25:00 AM	3	16	3	0	1	3	0	0	2	6	3	4	5	1	168			
07:30:00 AM	1	22	4	0	2	12	1	0	2	4	5	1	15	1	184			
07:35:00 AM	1	15	3	0	0	9	0	0	4	4	2	3	10	1	169			
07:40:00 AM	4	18	1	0	1	5	1	0	4	1	0	0	15	2	174			
07:45:00 AM	9	29	3	0	0	8	1	0	2	5	1	3	6	1	172			
07:50:00 AM	8	18	3	0	2	11	2	0	6	5	1	1	5	2	184			
07:55:00 AM	1	22	1	0	2	9	2	0	3	5	1	5	10	3	196	672		
08:00:00 AM	4	18	1	0	1	7	1	0	1	8	3	3	12	3	190	690		
08:05:00 AM	6	18	5	0	3	7	0	0	2	3	0	2	4	2	178	681		
08:10:00 AM	4	12	5	0	2	11	0	0	2	4	6	1	5	2	168	706		
08:15:00 AM	5	5	2	0	0	6	0	0	0	4	2	2	2	2	136	682		
08:20:00 AM	2	12	7	0	2	10	0	0	2	4	1	4	8	2	138	669		
08:25:00 AM	5	13	2	0	2	8	1	0	2	1	4	3	8	2	135	673		
08:30:00 AM	4	17	3	0	1	11	1	0	3	4	2	2	4	3	160	658		
08:35:00 AM	3	14	2	0	1	9	0	0	2	1	0	3	6	2	149	649		
08:40:00 AM	3	13	3	0	0	4	0	0	4	6	3	4	11	3	152	651		
08:45:00 AM	6	13	4	0	2	15	0	0	3	5	5	2	13	2	167	653		
08:50:00 AM	5	17	3	0	0	6	1	0	1	7	4	2	7	1	178	643		
08:55:00 AM	3	19	1	0	4	12	2	0	0	6	3	2	9	3	188	643		



KEY DATA NETWORK

Data Provided by K-D-N.com 603-594-4224

N/S street	S Ivy St
E/W street	SW 13th Ave
City, State	Canby OR
Site Notes	
Location	45.252157 - -122.686946
Start Date	Tuesday, July 11, 2017
Start Time	04:00:00 PM
Weather	
Study ID #	
Peak Hour Start	04:35:00 PM
Peak 15 Min Start	04:55:00 PM
PHF (15-Min Int)	0.96



Peak-Hour Volumes (PHV)																							
Northbound				Southbound				Eastbound				Westbound				Entering				Leaving			
Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	NB	SB	EB	WB	NB	SB	EB	WB
48	210	40	0	44	253	36	0	35	154	94	0	99	121	39	0	298	333	283	259	446	284	205	238
Percent Heavy Vehicles																							
0.0%	2.4%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	1.3%	0.0%	0.0%	2.0%	0.8%	0.0%	0.0%	1.7%	1.2%	0.7%	1.2%	1.3%	1.8%	0.5%	0.8%

PHV - Bicycles														PHV - Pedestrians							
Northbound				Southbound				Eastbound				Westbound				in Crosswalk					
Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Sum	NB	SB	EB	WB	Sum
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Time	Northbound S Ivy St				Southbound S Ivy St				Eastbound SW 13th Ave				Westbound SW 13th Ave				15 Min Sum	1 HR Sum
	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum	Left	Thru	Right	Utum		
04:00:00 PM	6	17	3	0	0	15	7	0	3	12	6	0	8	11	6			
04:05:00 PM	9	23	7	0	4	18	4	0	2	13	11	0	12	12	5			
04:10:00 PM	1	12	5	0	0	11	1	0	1	10	5	0	8	15	2	285		
04:15:00 PM	7	25	4	0	3	13	2	0	2	21	8	0	8	11	3	298		
04:20:00 PM	4	28	6	0	6	18	3	0	0	16	5	0	8	10	1	283		
04:25:00 PM	5	20	5	0	0	22	3	0	1	10	2	0	12	10	2	304		
04:30:00 PM	1	18	4	0	0	18	1	0	0	13	2	0	12	5	3	274		
04:35:00 PM	1	17	3	0	0	21	5	0	0	18	7	0	9	13	7	270		
04:40:00 PM	2	15	1	0	3	17	3	0	1	9	9	0	6	8	1	253		
04:45:00 PM	9	16	7	0	3	31	2	0	6	13	5	0	6	10	3	287		
04:50:00 PM	3	19	2	0	4	20	3	0	5	13	5	0	11	8	4	283		
04:55:00 PM	4	18	4	0	4	25	2	0	2	10	3	0	12	6	4	300	1142	
05:00:00 PM	8	18	5	0	6	25	3	0	6	12	6	0	12	7	6	302	1161	
05:05:00 PM	6	17	4	0	5	20	2	0	4	12	11	0	10	9	2	307	1143	
05:10:00 PM	2	23	3	0	6	13	1	0	2	11	10	0	9	8	2	305	1162	
05:15:00 PM	3	20	4	0	4	18	5	0	3	11	11	0	6	20	1	298	1181	
05:20:00 PM	5	14	2	0	4	19	6	0	3	22	10	0	8	10	1	298	1158	
05:25:00 PM	1	21	3	0	3	22	2	0	1	11	8	0	4	12	4	300	1158	
05:30:00 PM	4	14	2	0	3	22	2	0	2	12	9	0	8	10	4	288	1173	
05:35:00 PM	4	17	4	0	5	14	2	0	3	10	9	0	12	9	3	276	1164	
05:40:00 PM	5	9	3	0	1	17	3	0	6	9	5	0	10	11	4	267	1172	
05:45:00 PM	4	16	5	0	5	16	0	0	2	10	6	0	10	12	3	264	1150	
05:50:00 PM	0	14	7	0	9	15	0	0	4	21	9	0	10	11	2	274	1155	
05:55:00 PM	3	12	4	0	2	13	1	0	0	8	8	0	4	12	2	260	1132	

Appendix 5 – Trip Distribution & Assignment Diagrams For:

**102 Bed Assisted Living Center & 8 Dwelling Units
Located at South Ivy Street & SE 13th Avenue
Canby, Oregon**

- **Based on the Canby Model**
 - **AM & PM Peak Hour Turning Movements For:**
 - **Assumed 2020**
 - **2022 – Assumes Growth Factor & In Process Traffic**
 - **Development Traffic – Build Out Assumed 2022**
 - **2022 – Growth + In Process + Development Traffic**

Figure D-1
AM Peak Hour
2020 Assumed Traffic
7:00 AM - 8:00 AM

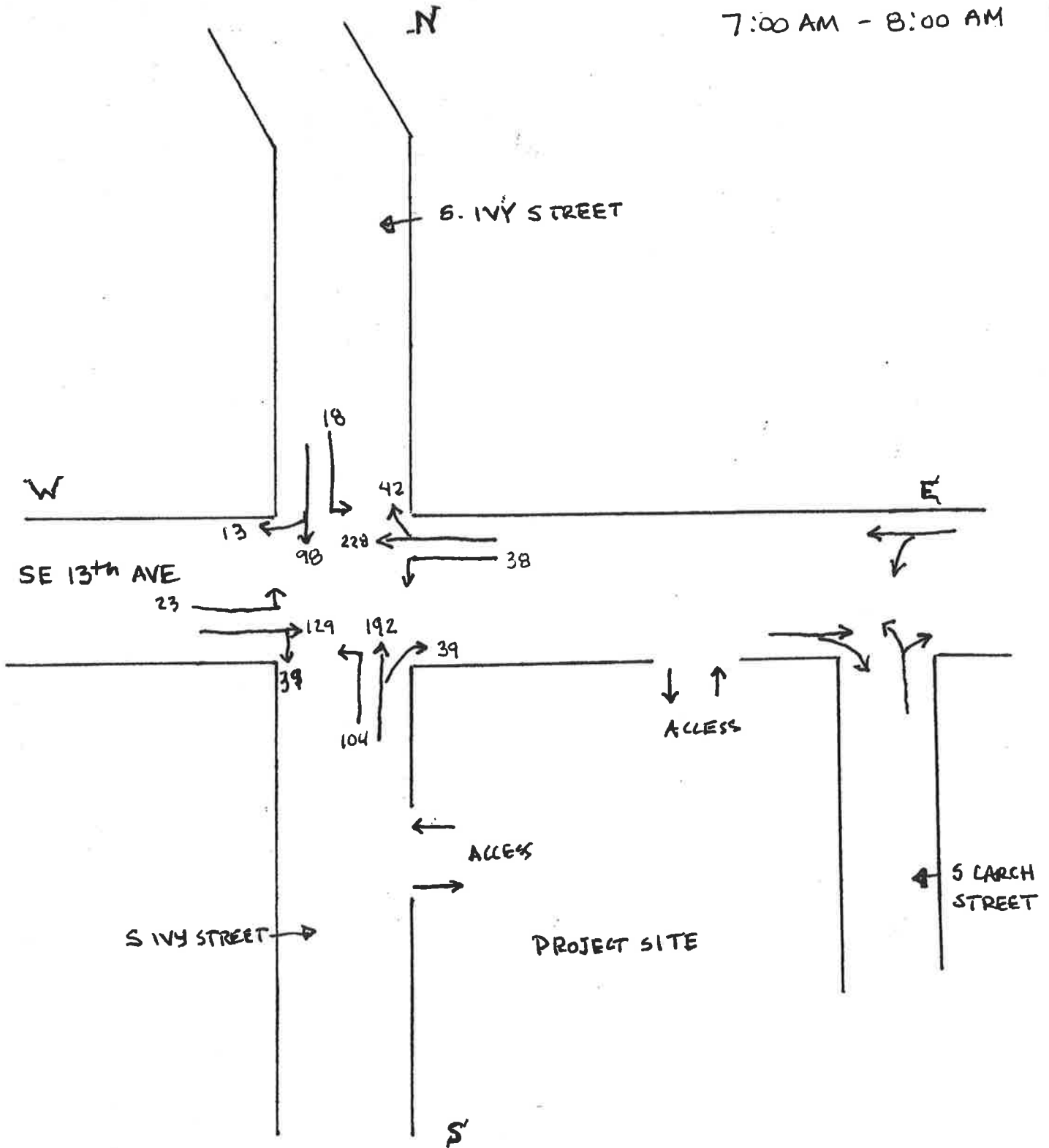


Figure D-2
PM Peak Hour
2020 Assumed Traffic
4:00PM - 5:00PM

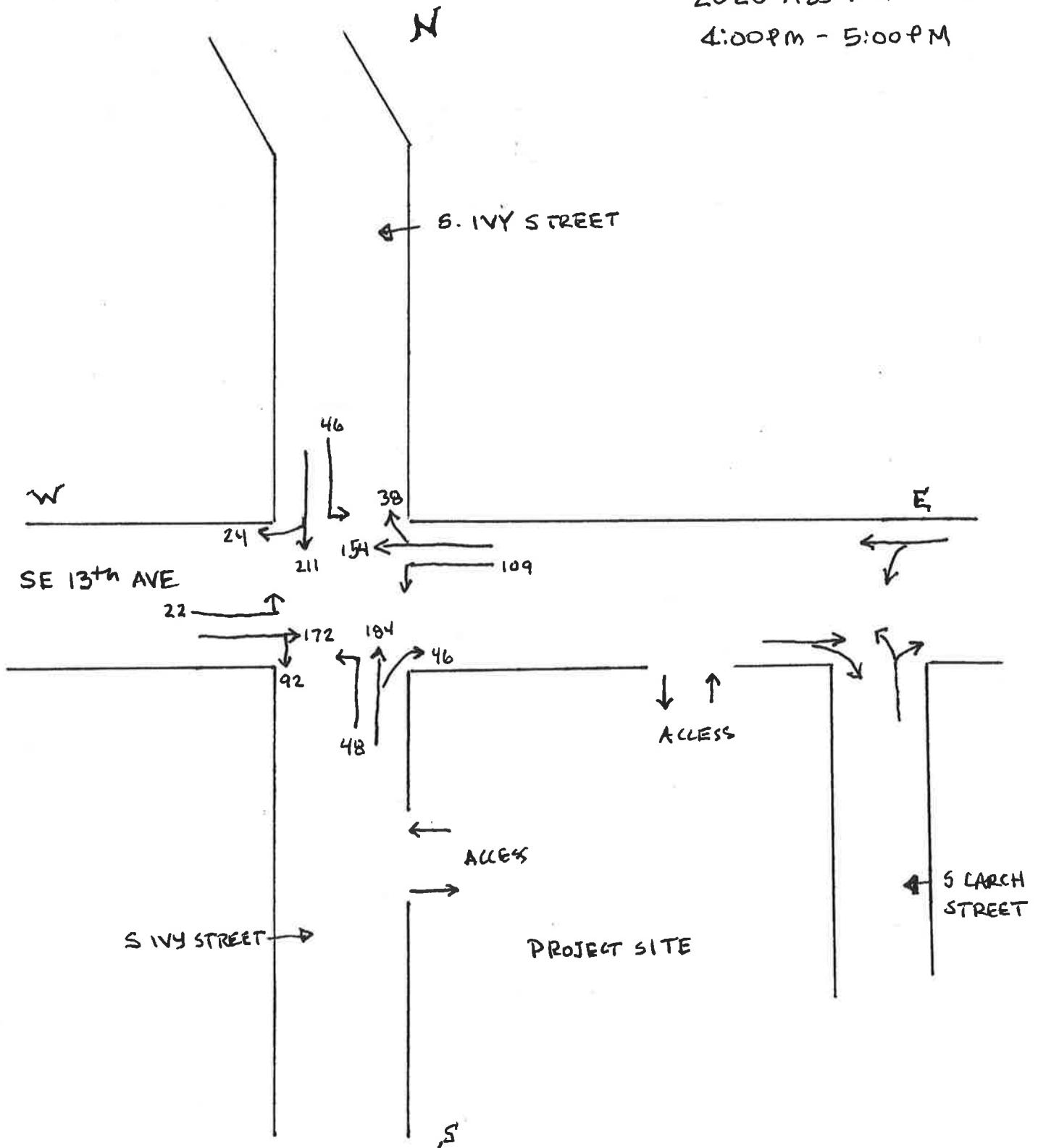


Figure D-3

2030 PM Peak Hour
Distribution from Canby Model
% Traffic

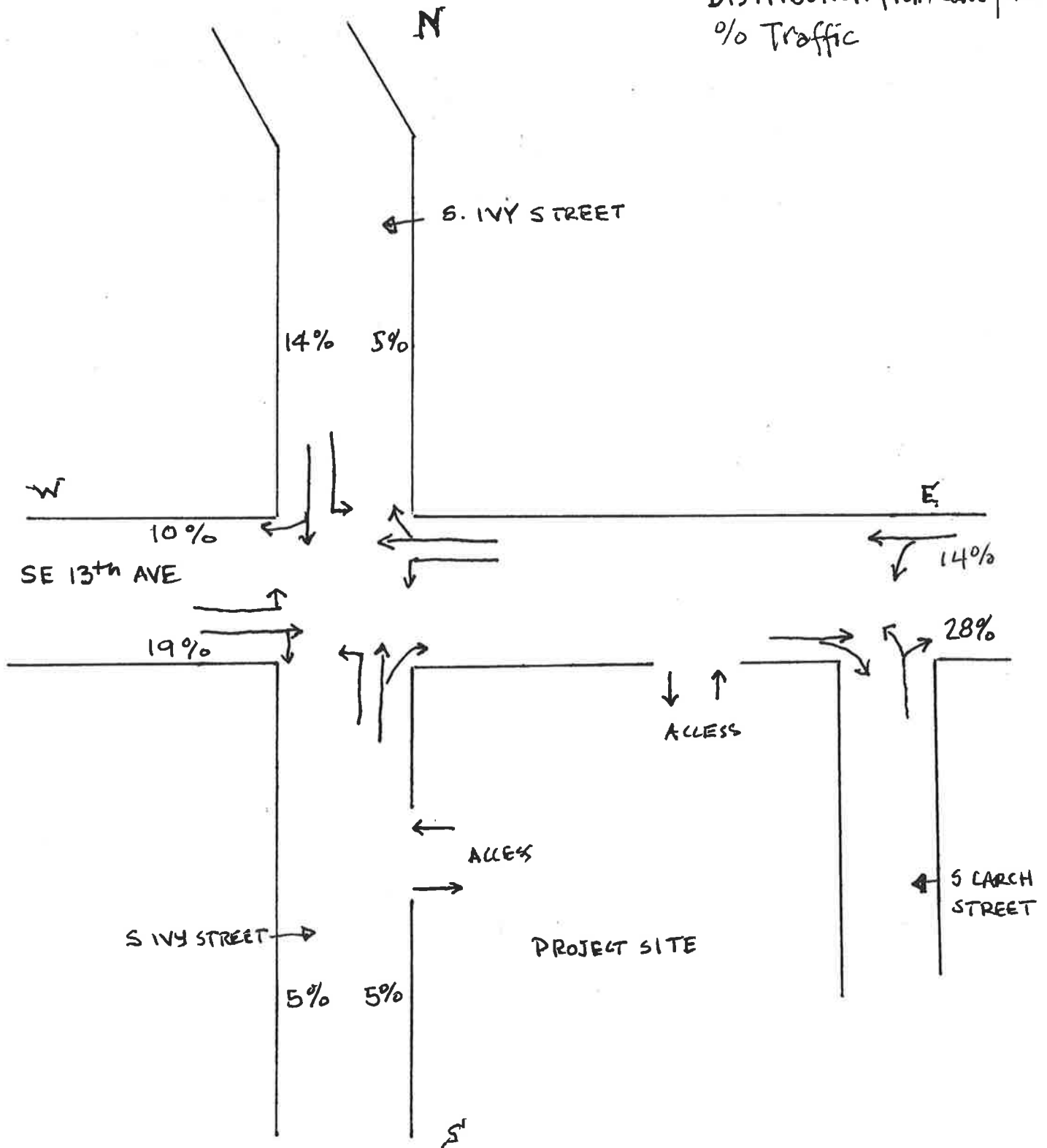


Figure D-4
2022 PM Peak
Site Generated Traffic

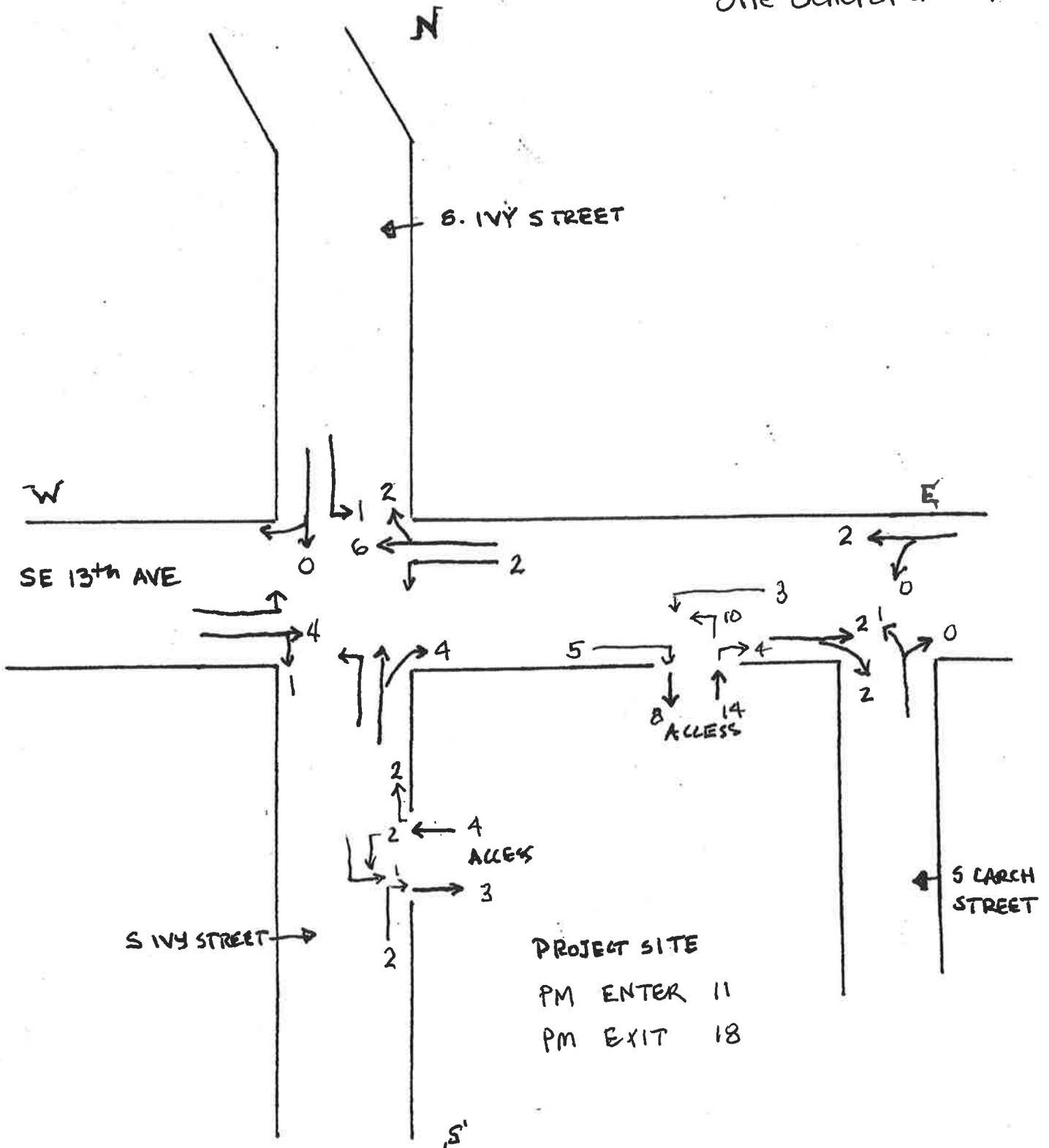


Figure D-5
2022 AM Peak
Site Generated Traffic

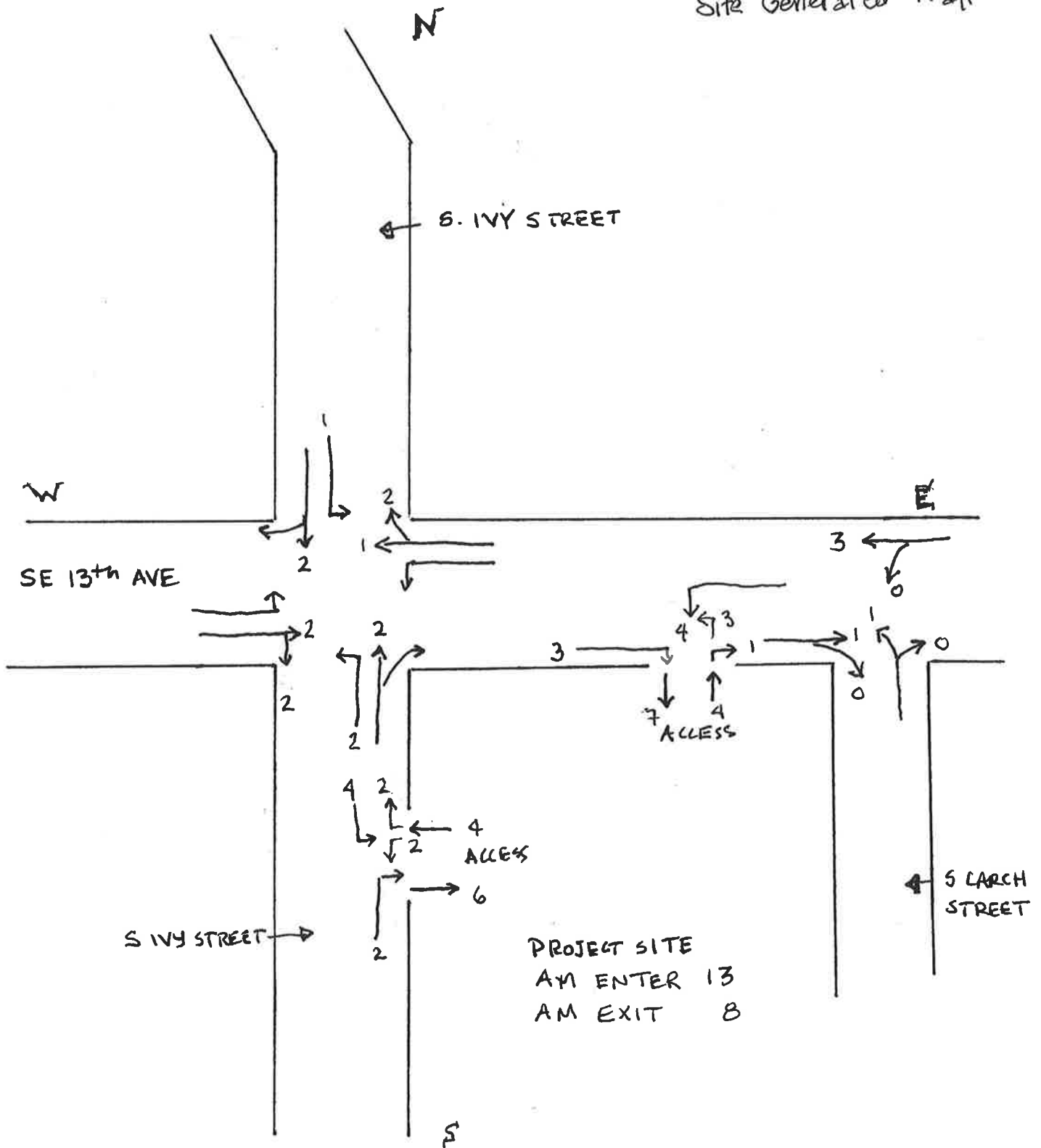


Figure D-7
PM Peak Hour
2022 Background
Traffic

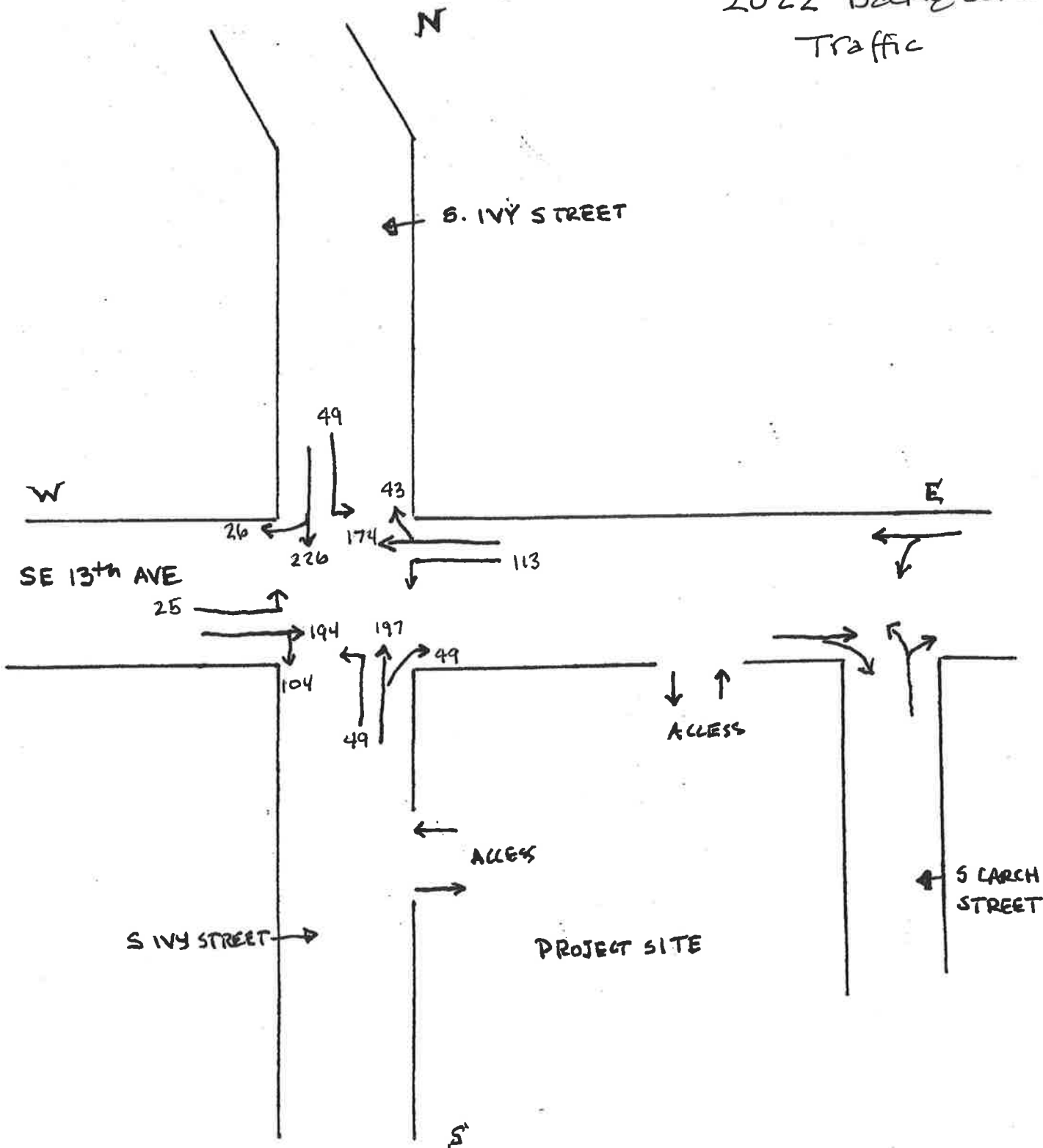


Figure D-8

AM Peak Hour
2022 Site Generated
Traffic & Background
Traffic

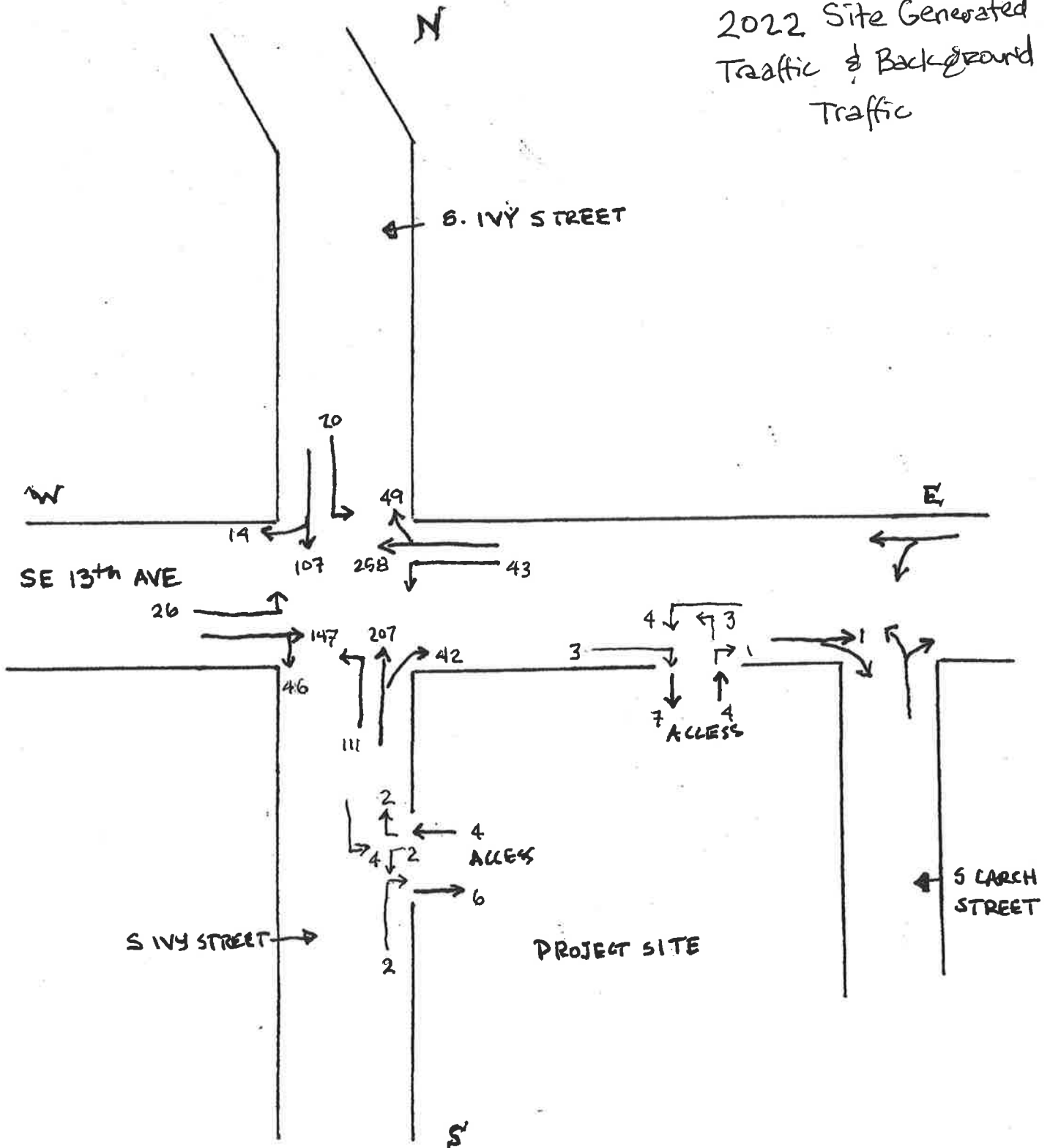
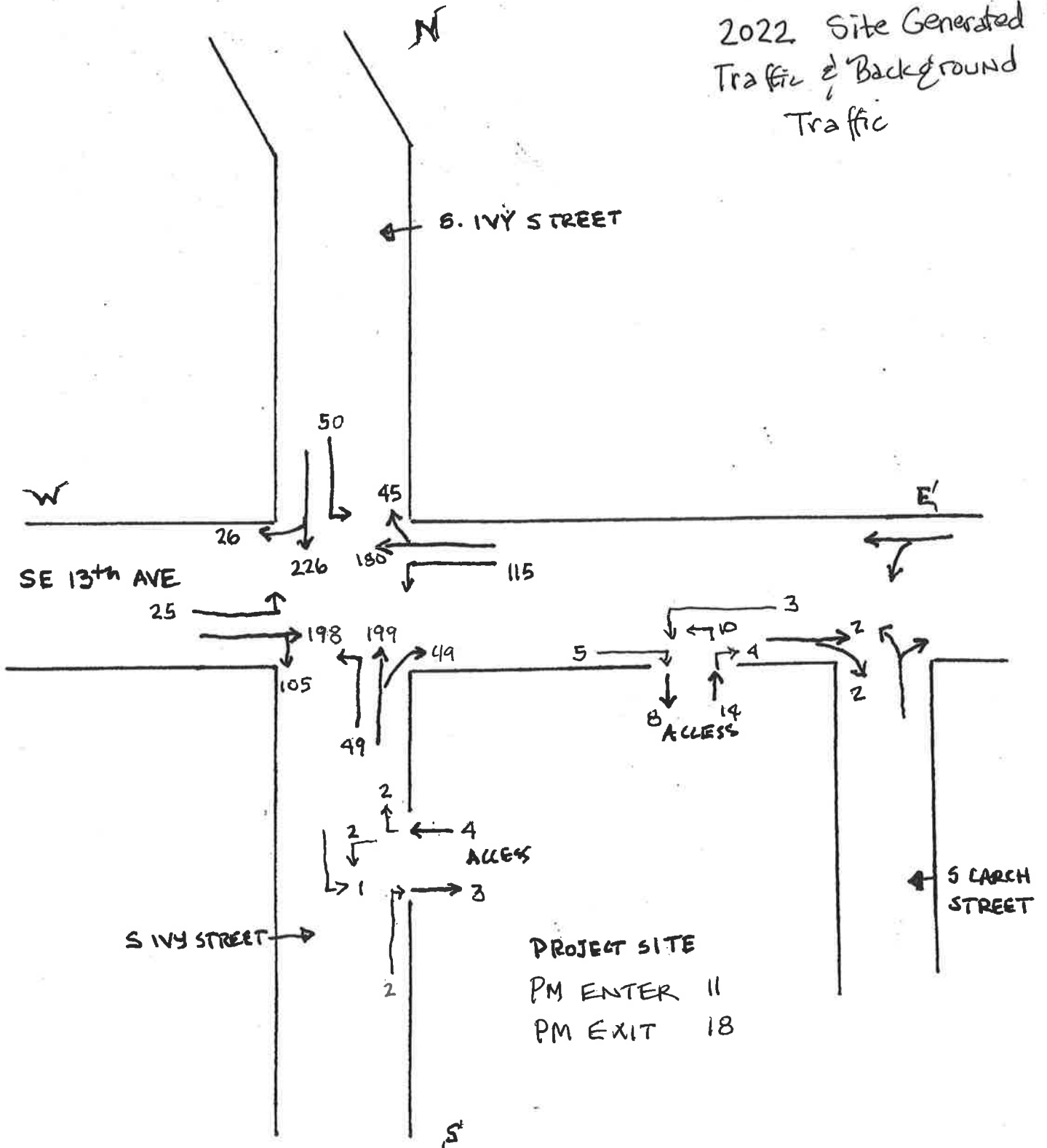


Figure D-9
PM Peak Hour
2022 Site Generated
Traffic & Background
Traffic



Appendix 6 – Level of Service Analysis & Queuing Analysis

- **AM & PM Peak Hour Turning Movements For**
- **2022 – Assumes Growth Factor & In Process Traffic**
 - **Development Traffic – Build Out Assumed 2022**
 - **2022 – Growth + In Process + Development Traffic**

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

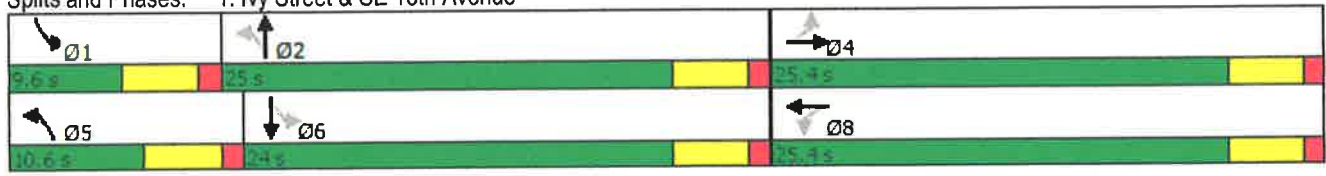
Assumed 2020 Traffic, AM Peak Hour
11/13/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	129	39	38	228	42	104	192	39	18	98	13
Future Volume (vph)	23	129	39	38	228	42	104	192	39	18	98	13
Confl. Peds. (#/hr)			2	2			1					1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	9%	9%	9%	8%	8%	8%	8%	8%	8%	10%	10%	10%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	25.4	25.4		25.4	25.4		10.6	25.0		9.6	24.0	
Total Split (%)	42.3%	42.3%		42.3%	42.3%		17.7%	41.7%		16.0%	40.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	15.0	15.0		15.0	15.0		27.6	26.6		24.1	20.3	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.53	0.51		0.46	0.39	
v/c Ratio	0.16	0.43		0.17	0.69		0.22	0.34		0.04	0.22	
Control Delay	16.5	16.3		15.7	23.9		8.2	10.8		7.6	13.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.5	16.3		15.7	23.9		8.2	10.8		7.6	13.9	
LOS	B	B		B	C		A	B		A	B	
Approach Delay		16.3			22.8			10.0			13.0	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 52.5
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.69
 Intersection Signal Delay: 15.8
 Intersection Capacity Utilization 45.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 2010 Signalized Intersection Summary
 1: Ivy Street & SE 13th Avenue

Assumed 2020 Traffic, AM Peak Hour
 11/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	129	39	38	228	42	104	192	39	18	98	13
Future Volume (veh/h)	23	129	39	38	228	42	104	192	39	18	98	13
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1743	1743	1900	1759	1759	1900	1759	1759	1900	1727	1727	1900
Adj Flow Rate, veh/h	29	165	50	49	292	54	133	246	50	23	126	17
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	9	9	9	8	8	8	8	8	8	10	10	10
Cap, veh/h	246	377	114	344	424	78	637	601	122	484	551	74
Arrive On Green	0.29	0.29	0.29	0.29	0.29	0.29	0.08	0.42	0.42	0.03	0.37	0.37
Sat Flow, veh/h	963	1284	389	1095	1444	267	1675	1419	289	1645	1490	201
Grp Volume(v), veh/h	29	0	215	49	0	346	133	0	296	23	0	143
Grp Sat Flow(s),veh/h/ln	963	0	1673	1095	0	1711	1675	0	1708	1645	0	1691
Q Serve(g_s), s	1.5	0.0	5.5	2.0	0.0	9.5	2.5	0.0	6.4	0.5	0.0	3.1
Cycle Q Clear(g_c), s	10.9	0.0	5.5	7.5	0.0	9.5	2.5	0.0	6.4	0.5	0.0	3.1
Prop In Lane	1.00		0.23	1.00		0.16	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	246	0	491	344	0	502	637	0	724	484	0	625
V/C Ratio(X)	0.12	0.00	0.44	0.14	0.00	0.69	0.21	0.00	0.41	0.05	0.00	0.23
Avail Cap(c_a), veh/h	345	0	663	456	0	678	694	0	724	598	0	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.3	0.0	15.1	18.2	0.0	16.5	8.6	0.0	10.6	9.9	0.0	11.5
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.2	0.0	1.8	0.2	0.0	1.7	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.6	0.6	0.0	4.7	1.1	0.0	3.3	0.2	0.0	1.6
LnGrp Delay(d),s/veh	21.6	0.0	15.7	18.3	0.0	18.3	8.7	0.0	12.3	9.9	0.0	12.3
LnGrp LOS	C		B	B		B	A		B	A		B
Approach Vol, veh/h		244			395			429			166	
Approach Delay, s/veh		16.4			18.3			11.2			12.0	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	26.9		20.0	8.8	24.0		20.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	20.5		20.9	6.1	19.5		20.9				
Max Q Clear Time (g_c+I1), s	2.5	8.4		12.9	4.5	5.1		11.5				
Green Ext Time (p_c), s	0.0	1.9		2.5	0.0	2.1		2.8				
Intersection Summary												
HCM 2010 Ctrl Delay			14.6									
HCM 2010 LOS			B									

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

Assumed 2020 Traffic, PM Peak Hour
11/13/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	172	92	109	154	38	48	184	46	46	211	24
Future Volume (vph)	22	172	92	109	154	38	48	184	46	46	211	24
Confl. Peds. (#/hr)	11		1	1		11	6		1	1		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	9%	9%	9%	7%	7%	7%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	26.0		10.0	26.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		16.7%	43.3%		16.7%	43.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	12.2	12.2		12.2	12.2		24.1	22.3		24.1	22.3	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.51	0.47		0.51	0.47	
v/c Ratio	0.08	0.59		0.51	0.43		0.08	0.30		0.08	0.30	
Control Delay	14.8	18.4		24.5	16.3		6.6	10.9		6.6	11.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.8	18.4		24.5	16.3		6.6	10.9		6.6	11.3	
LOS	B	B		C	B		A	B		A	B	
Approach Delay		18.1			19.3			10.2			10.5	
Approach LOS		B			B			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 47
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.59
 Intersection Signal Delay: 14.6
 Intersection Capacity Utilization 54.9%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 2010 Signalized Intersection Summary
 1: Ivy Street & SE 13th Avenue

Assumed 2020 Traffic, PM Peak Hour
 11/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	172	92	109	154	38	48	184	46	46	211	24
Future Volume (veh/h)	22	172	92	109	154	38	48	184	46	46	211	24
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1845	1845	1900	1743	1743	1900	1776	1776	1900
Adj Flow Rate, veh/h	23	181	97	115	162	40	51	194	48	48	222	25
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	9	9	9	7	7	7
Cap, veh/h	378	337	181	315	436	108	526	536	133	532	620	70
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.05	0.40	0.40	0.05	0.40	0.40
Sat Flow, veh/h	1129	1102	591	1076	1424	351	1660	1348	333	1691	1567	176
Grp Volume(v), veh/h	23	0	278	115	0	202	51	0	242	48	0	247
Grp Sat Flow(s),veh/h/ln	1129	0	1693	1076	0	1775	1660	0	1681	1691	0	1743
Q Serve(g_s), s	0.9	0.0	7.4	5.4	0.0	4.8	1.0	0.0	5.5	0.9	0.0	5.4
Cycle Q Clear(g_c), s	5.7	0.0	7.4	12.8	0.0	4.8	1.0	0.0	5.5	0.9	0.0	5.4
Prop In Lane	1.00		0.35	1.00		0.20	1.00		0.20	1.00		0.10
Lane Grp Cap(c), veh/h	378	0	518	315	0	544	526	0	669	532	0	690
V/C Ratio(X)	0.06	0.00	0.54	0.36	0.00	0.37	0.10	0.00	0.36	0.09	0.00	0.36
Avail Cap(c_a), veh/h	437	0	608	372	0	637	612	0	669	623	0	690
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.0	0.0	15.6	21.0	0.0	14.8	8.9	0.0	11.5	8.9	0.0	11.6
Incr Delay (d2), s/veh	0.1	0.0	0.9	0.7	0.0	0.4	0.1	0.0	1.5	0.1	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	3.5	1.7	0.0	2.4	0.4	0.0	2.8	0.4	0.0	2.9
LnGrp Delay(d),s/veh	17.1	0.0	16.5	21.7	0.0	15.2	9.0	0.0	13.0	9.0	0.0	13.0
LnGrp LOS	B		B	C		B	A		B	A		B
Approach Vol, veh/h		301			317			293			295	
Approach Delay, s/veh		16.5			17.5			12.3			12.4	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	26.1		21.1	7.2	26.0		21.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	21.5		19.5	5.5	21.5		19.5				
Max Q Clear Time (g_c+I1), s	2.9	7.5		9.4	3.0	7.4		14.8				
Green Ext Time (p_c), s	0.0	2.3		2.7	0.0	2.3		1.6				
Intersection Summary												
HCM 2010 Ctrl Delay				14.8								
HCM 2010 LOS				B								

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

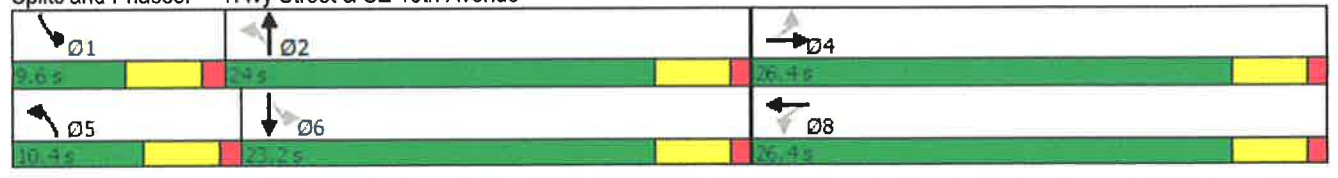
2022 Background Traffic, AM Peak Hour
11/13/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	145	44	43	257	47	111	205	42	19	105	14
Future Volume (vph)	26	145	44	43	257	47	111	205	42	19	105	14
Confl. Peds. (#/hr)			2	2			1					1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	9%	9%	9%	8%	8%	8%	8%	8%	8%	10%	10%	10%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	26.4	26.4		26.4	26.4		10.4	24.0		9.6	23.2	
Total Split (%)	44.0%	44.0%		44.0%	44.0%		17.3%	40.0%		16.0%	38.7%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	16.4	16.4		16.4	16.4		26.6	25.6		23.3	19.5	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.50	0.48		0.44	0.37	
v/c Ratio	0.19	0.45		0.19	0.72		0.25	0.38		0.05	0.24	
Control Delay	16.5	16.0		15.2	23.9		9.2	12.1		8.3	15.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.5	16.0		15.2	23.9		9.2	12.1		8.3	15.0	
LOS	B	B		B	C		A	B		A	B	
Approach Delay		16.1			22.8			11.2			14.1	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 52.9
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.72
 Intersection Signal Delay: 16.4
 Intersection Capacity Utilization 47.6%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 2010 Signalized Intersection Summary
 1: Ivy Street & SE 13th Avenue

2022 Background Traffic, AM Peak Hour
 11/13/2020

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	145	44	43	257	47	111	205	42	19	105	14
Future Volume (veh/h)	26	145	44	43	257	47	111	205	42	19	105	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1743	1743	1900	1759	1759	1900	1759	1759	1900	1727	1727	1900
Adj Flow Rate, veh/h	33	186	56	55	329	60	142	263	54	24	135	18
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	9	9	9	8	8	8	8	8	8	10	10	10
Cap, veh/h	245	412	124	353	463	85	598	568	117	439	519	69
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.08	0.40	0.40	0.03	0.35	0.35
Sat Flow, veh/h	926	1286	387	1068	1448	264	1675	1417	291	1645	1493	199
Grp Volume(v), veh/h	33	0	242	55	0	389	142	0	317	24	0	153
Grp Sat Flow(s),veh/h/ln	926	0	1673	1068	0	1712	1675	0	1708	1645	0	1692
Q Serve(g_s), s	1.8	0.0	6.2	2.3	0.0	10.8	2.8	0.0	7.4	0.5	0.0	3.5
Cycle Q Clear(g_c), s	12.5	0.0	6.2	8.5	0.0	10.8	2.8	0.0	7.4	0.5	0.0	3.5
Prop In Lane	1.00		0.23	1.00		0.15	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	245	0	536	353	0	548	598	0	685	439	0	588
V/C Ratio(X)	0.13	0.00	0.45	0.16	0.00	0.71	0.24	0.00	0.46	0.05	0.00	0.26
Avail Cap(c_a), veh/h	325	0	681	446	0	696	645	0	685	549	0	588
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.6	0.0	14.5	17.9	0.0	16.1	9.5	0.0	11.9	10.8	0.0	12.6
Incr Delay (d2), s/veh	0.2	0.0	0.6	0.2	0.0	2.4	0.2	0.0	2.2	0.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	2.9	0.7	0.0	5.4	1.3	0.0	3.9	0.2	0.0	1.8
LnGrp Delay(d),s/veh	21.9	0.0	15.1	18.1	0.0	18.5	9.7	0.0	14.1	10.9	0.0	13.7
LnGrp LOS	C		B	B		B	A		B	B		B
Approach Vol, veh/h		275			444			459			177	
Approach Delay, s/veh		15.9			18.5			12.7			13.3	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	26.1		21.7	8.9	23.2		21.7				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	19.5		21.9	5.9	18.7		21.9				
Max Q Clear Time (g_c+I1), s	2.5	9.4		14.5	4.8	5.5		12.8				
Green Ext Time (p_c), s	0.0	1.9		2.7	0.0	2.2		3.1				
Intersection Summary												
HCM 2010 Ctrl Delay			15.3									
HCM 2010 LOS			B									

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2022 Background Traffic, PM Peak Hour
11/13/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	194	104	113	174	43	49	197	49	49	226	26
Future Volume (vph)	25	194	104	113	174	43	49	197	49	49	226	26
Confl. Peds. (#/hr)	11		1	1		11	6		1	1		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	9%	9%	9%	7%	7%	7%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	26.0		10.0	26.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		16.7%	43.3%		16.7%	43.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	13.1	13.1		13.1	13.1		25.2	22.3		25.2	22.3	
Actuated g/C Ratio	0.26	0.26		0.26	0.26		0.51	0.45		0.51	0.45	
v/c Ratio	0.10	0.65		0.60	0.47		0.09	0.34		0.09	0.34	
Control Delay	15.7	21.3		30.8	18.0		6.8	12.6		6.8	13.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.7	21.3		30.8	18.0		6.8	12.6		6.8	13.0	
LOS	B	C		C	B		A	B		A	B	
Approach Delay		20.9			22.4			11.6			12.0	
Approach LOS		C			C			B			B	

Intersection Summary





















Cycle Length: 60
 Actuated Cycle Length: 49.9
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.65
 Intersection Signal Delay: 17.0
 Intersection Capacity Utilization 57.0%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 2010 Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue

2022 Background Traffic, PM Peak Hour
11/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	194	104	113	174	43	49	197	49	49	226	26
Future Volume (veh/h)	25	194	104	113	174	43	49	197	49	49	226	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1845	1845	1900	1743	1743	1900	1776	1776	1900
Adj Flow Rate, veh/h	26	204	109	119	183	45	52	207	52	52	238	27
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	9	9	9	7	7	7
Cap, veh/h	372	353	189	303	456	112	499	520	131	505	606	69
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.05	0.39	0.39	0.05	0.39	0.39
Sat Flow, veh/h	1103	1104	590	1043	1425	350	1660	1343	337	1691	1565	178
Grp Volume(v), veh/h	26	0	313	119	0	228	52	0	259	52	0	265
Grp Sat Flow(s),veh/h/ln	1103	0	1693	1043	0	1776	1660	0	1680	1691	0	1743
Q Serve(g_s), s	1.0	0.0	8.6	6.0	0.0	5.6	1.0	0.0	6.2	1.0	0.0	6.1
Cycle Q Clear(g_c), s	6.6	0.0	8.6	14.5	0.0	5.6	1.0	0.0	6.2	1.0	0.0	6.1
Prop In Lane	1.00		0.35	1.00		0.20	1.00		0.20	1.00		0.10
Lane Grp Cap(c), veh/h	372	0	542	303	0	568	499	0	651	505	0	675
V/C Ratio(X)	0.07	0.00	0.58	0.39	0.00	0.40	0.10	0.00	0.40	0.10	0.00	0.39
Avail Cap(c_a), veh/h	407	0	595	335	0	623	581	0	651	589	0	675
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	15.7	21.8	0.0	14.7	9.4	0.0	12.3	9.5	0.0	12.3
Incr Delay (d2), s/veh	0.1	0.0	1.2	0.8	0.0	0.5	0.1	0.0	1.8	0.1	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	4.2	1.8	0.0	2.8	0.5	0.0	3.2	0.5	0.0	3.3
LnGrp Delay(d),s/veh	17.4	0.0	16.9	22.6	0.0	15.2	9.5	0.0	14.2	9.5	0.0	14.0
LnGrp LOS	B		B	C		B	A		B	A		B
Approach Vol, veh/h		339			347			311				317
Approach Delay, s/veh		16.9			17.7			13.4				13.3
Approach LOS		B			B			B				B
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	26.0		22.3	7.3	26.0		22.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	21.5		19.5	5.5	21.5		19.5				
Max Q Clear Time (g_c+l1), s	3.0	8.2		10.6	3.0	8.1		16.5				
Green Ext Time (p_c), s	0.0	2.5		2.8	0.0	2.5		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			15.4									
HCM 2010 LOS			B									

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2022 Background With Site, AM Peak Hour
11/13/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	147	46	43	258	49	111	207	42	20	107	14
Future Volume (vph)	26	147	46	43	258	49	111	207	42	20	107	14
Confl. Peds. (#/hr)			2	2			1					1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	9%	9%	9%	8%	8%	8%	8%	8%	8%	10%	10%	10%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	25.4		9.6	25.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		16.7%	42.3%		16.0%	41.7%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	16.3	16.3		16.3	16.3		27.2	25.2		25.0	21.2	
Actuated g/C Ratio	0.30	0.30		0.30	0.30		0.50	0.46		0.46	0.39	
v/c Ratio	0.21	0.47		0.20	0.75		0.24	0.40		0.05	0.23	
Control Delay	17.9	17.1		16.2	26.3		8.8	13.4		7.7	14.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	17.9	17.1		16.2	26.3		8.8	13.4		7.7	14.0	
LOS	B	B		B	C		A	B		A	B	
Approach Delay		17.2			25.1			12.0			13.1	
Approach LOS		B			C			B			B	

Intersection Summary





















Cycle Length: 60
 Actuated Cycle Length: 54.2
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.75
 Intersection Signal Delay: 17.5
 Intersection LOS: B
 Intersection Capacity Utilization 56.9%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 2010 Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue

2022 Background With Site, AM Peak Hour
11/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	147	46	43	258	49	111	207	42	20	107	14
Future Volume (veh/h)	26	147	46	43	258	49	111	207	42	20	107	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1743	1743	1900	1759	1759	1900	1759	1759	1900	1727	1727	1900
Adj Flow Rate, veh/h	33	188	59	55	331	63	142	265	54	26	137	18
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	9	9	9	8	8	8	8	8	8	10	10	10
Cap, veh/h	227	397	125	334	449	85	613	591	120	454	548	72
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.08	0.42	0.42	0.03	0.37	0.37
Sat Flow, veh/h	922	1272	399	1064	1437	273	1675	1419	289	1645	1496	197
Grp Volume(v), veh/h	33	0	247	55	0	394	142	0	319	26	0	155
Grp Sat Flow(s),veh/h/ln	922	0	1671	1064	0	1710	1675	0	1708	1645	0	1692
Q Serve(g_s), s	1.9	0.0	6.7	2.5	0.0	11.5	2.8	0.0	7.5	0.5	0.0	3.6
Cycle Q Clear(g_c), s	13.4	0.0	6.7	9.1	0.0	11.5	2.8	0.0	7.5	0.5	0.0	3.6
Prop In Lane	1.00		0.24	1.00		0.16	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	227	0	522	334	0	534	613	0	711	454	0	620
V/C Ratio(X)	0.15	0.00	0.47	0.16	0.00	0.74	0.23	0.00	0.45	0.06	0.00	0.25
Avail Cap(c_a), veh/h	277	0	613	392	0	627	644	0	711	555	0	620
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.1	0.0	15.5	19.2	0.0	17.2	9.3	0.0	11.7	10.6	0.0	12.3
Incr Delay (d2), s/veh	0.3	0.0	0.7	0.2	0.0	3.8	0.2	0.0	2.0	0.1	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.2	0.7	0.0	5.9	1.3	0.0	3.9	0.2	0.0	1.8
LnGrp Delay(d),s/veh	23.4	0.0	16.2	19.4	0.0	21.0	9.5	0.0	13.7	10.6	0.0	13.3
LnGrp LOS	C		B	B		C	A		B	B		B
Approach Vol, veh/h		280			449			461			181	
Approach Delay, s/veh		17.0			20.8			12.5			12.9	
Approach LOS		B			C			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	27.8		22.0	8.9	25.0		22.0				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	20.9		20.5	5.5	20.5		20.5				
Max Q Clear Time (g_c+l1), s	2.5	9.5		15.4	4.8	5.6		13.5				
Green Ext Time (p_c), s	0.0	2.0		2.1	0.0	2.3		2.6				
Intersection Summary												
HCM 2010 Ctrl Delay			16.2									
HCM 2010 LOS			B									

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2022 Background With Site, PM Peak Hour
11/13/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	198	105	115	180	45	49	199	49	50	226	26
Future Volume (vph)	25	198	105	115	180	45	49	199	49	50	226	26
Confl. Peds. (#/hr)	11		1	1		11	6		1	1		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	9%	9%	9%	7%	7%	7%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	24.1	24.1		24.1	24.1		10.0	25.9		10.0	25.9	
Total Split (%)	40.2%	40.2%		40.2%	40.2%		16.7%	43.2%		16.7%	43.2%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	13.3	13.3		13.3	13.3		25.1	22.2		25.1	22.2	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.50	0.44		0.50	0.44	
v/c Ratio	0.10	0.66		0.61	0.48		0.09	0.34		0.09	0.34	
Control Delay	15.6	21.2		31.4	18.1		7.0	12.8		6.9	13.2	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.6	21.2		31.4	18.1		7.0	12.8		6.9	13.2	
LOS	B	C		C	B		A	B		A	B	
Approach Delay		20.8			22.6			11.8			12.2	
Approach LOS		C			C			B			B	

Intersection Summary






















Cycle Length: 60
 Actuated Cycle Length: 50.1
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.66
 Intersection Signal Delay: 17.1
 Intersection Capacity Utilization 57.4%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 2010 Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue

2022 Background With Site, PM Peak Hour
11/13/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	198	105	115	180	45	49	199	49	50	226	26
Future Volume (veh/h)	25	198	105	115	180	45	49	199	49	50	226	26
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1810	1810	1900	1845	1845	1900	1743	1743	1900	1776	1776	1900
Adj Flow Rate, veh/h	26	208	111	121	189	47	52	209	52	53	238	27
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	9	9	9	7	7	7
Cap, veh/h	370	357	191	302	460	114	495	517	129	500	602	68
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.05	0.38	0.38	0.05	0.38	0.38
Sat Flow, veh/h	1096	1104	589	1037	1422	354	1660	1346	335	1691	1565	178
Grp Volume(v), veh/h	26	0	319	121	0	236	52	0	261	53	0	265
Grp Sat Flow(s),veh/h/ln	1096	0	1694	1037	0	1775	1660	0	1681	1691	0	1743
Q Serve(g_s), s	1.1	0.0	8.7	6.1	0.0	5.8	1.0	0.0	6.3	1.0	0.0	6.2
Cycle Q Clear(g_c), s	6.8	0.0	8.7	14.9	0.0	5.8	1.0	0.0	6.3	1.0	0.0	6.2
Prop In Lane	1.00		0.35	1.00		0.20	1.00		0.20	1.00		0.10
Lane Grp Cap(c), veh/h	370	0	548	302	0	574	495	0	645	500	0	670
V/C Ratio(X)	0.07	0.00	0.58	0.40	0.00	0.41	0.11	0.00	0.40	0.11	0.00	0.40
Avail Cap(c_a), veh/h	401	0	596	331	0	624	577	0	645	582	0	670
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(l)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.4	0.0	15.7	21.9	0.0	14.7	9.6	0.0	12.5	9.6	0.0	12.4
Incr Delay (d2), s/veh	0.1	0.0	1.2	0.9	0.0	0.5	0.1	0.0	1.9	0.1	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	4.3	1.8	0.0	2.9	0.5	0.0	3.2	0.5	0.0	3.3
LnGrp Delay(d),s/veh	17.5	0.0	16.9	22.8	0.0	15.2	9.7	0.0	14.4	9.7	0.0	14.2
LnGrp LOS	B		B	C		B	A		B	A		B
Approach Vol, veh/h		345			357			313				318
Approach Delay, s/veh		17.0			17.8			13.6				13.4
Approach LOS		B			B			B				B
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	25.9		22.5	7.3	25.9		22.5				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	21.4		19.6	5.5	21.4		19.6				
Max Q Clear Time (g_c+I1), s	3.0	8.3		10.7	3.0	8.2		16.9				
Green Ext Time (p_c), s	0.0	2.4		2.9	0.0	2.5		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			15.6									
HCM 2010 LOS			B									

Queues

Year 2020 Traffic, AM Peak Hour

1: Ivy Street & SE 13th Avenue

11/12/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	25	182	41	294	113	251	20	121
v/c Ratio	0.14	0.40	0.14	0.64	0.16	0.25	0.03	0.15
Control Delay	17.8	17.5	17.2	24.4	6.5	8.4	6.1	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.8	17.5	17.2	24.4	6.5	8.4	6.1	10.7
Queue Length 50th (ft)	6	43	11	82	14	30	2	21
Queue Length 95th (ft)	22	88	31	148	37	106	11	54
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	259	640	401	641	708	1008	645	824
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.28	0.10	0.46	0.16	0.25	0.03	0.15

Intersection Summary

Queues

1: Ivy Street & SE 13th Avenue

11/12/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	24	287	118	208	52	250	50	255
v/c Ratio	0.08	0.58	0.53	0.43	0.08	0.29	0.08	0.29
Control Delay	14.8	18.2	25.6	16.4	6.6	10.7	6.5	11.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	18.2	25.6	16.4	6.6	10.7	6.5	11.2
Queue Length 50th (ft)	4	47	23	35	6	28	6	30
Queue Length 95th (ft)	20	128	76	98	22	110	21	116
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	484	785	366	788	650	867	653	874
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.37	0.32	0.26	0.08	0.29	0.08	0.29

Intersection Summary

Queues

2022 Background Traffic, AM Peak Hour

1: Ivy Street & SE 13th Avenue

11/12/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	28	206	47	330	121	269	21	129
v/c Ratio	0.15	0.41	0.16	0.66	0.18	0.28	0.03	0.17
Control Delay	17.2	16.8	16.4	23.8	7.3	9.6	6.8	12.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	16.8	16.4	23.8	7.3	9.6	6.8	12.2
Queue Length 50th (ft)	7	48	12	91	16	35	3	24
Queue Length 95th (ft)	24	95	33	161	42	121	12	61
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	256	695	412	697	674	961	614	764
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.30	0.11	0.47	0.18	0.28	0.03	0.17

Intersection Summary

Queues

2022 Background Traffic, PM Peak Hour

1: Ivy Street & SE 13th Avenue

11/12/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	324	123	236	53	267	53	274
v/c Ratio	0.10	0.64	0.61	0.47	0.09	0.34	0.09	0.34
Control Delay	15.0	19.9	30.6	17.3	7.1	12.8	7.1	13.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	19.9	30.6	17.3	7.1	12.8	7.1	13.4
Queue Length 50th (ft)	6	76	34	56	6	52	6	57
Queue Length 95th (ft)	21	143	81	107	23	122	23	130
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	450	794	326	797	604	797	609	802
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.41	0.38	0.30	0.09	0.34	0.09	0.34

Intersection Summary

Queues
1: Ivy Street & SE 13th Avenue

2022 Background With Site, PM Peak Hour
11/12/2020



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	27	329	125	245	53	269	54	274
v/c Ratio	0.10	0.64	0.62	0.48	0.09	0.34	0.09	0.34
Control Delay	15.0	20.1	31.6	17.5	7.1	12.9	7.1	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	20.1	31.6	17.5	7.1	12.9	7.1	13.5
Queue Length 50th (ft)	6	78	35	59	6	53	6	57
Queue Length 95th (ft)	21	146	83	111	23	123	23	130
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	436	791	319	795	602	794	606	799
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.42	0.39	0.31	0.09	0.34	0.09	0.34

Intersection Summary

Appendix 7 – Accident Data

Intersectional Crashes at SE/SW 13th Ave & S Ivy St
 January 1, 2016 through December 31, 2018

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION RELATED	OFF- ROAD
YEAR: 2017													
ANGLE	0	0	2	2	0	0	0	2	0	2	0	2	0
2017 TOTAL	0	0	2	2	0	0	0	2	0	2	0	2	0
YEAR: 2016													
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0
SIDESWIPE - MEETING	0	0	1	1	0	0	0	1	0	1	0	1	0
TURNING MOVEMENTS	0	1	2	3	0	2	0	2	1	1	2	3	0
2016 TOTAL	0	2	3	5	0	3	0	4	1	3	2	5	0
FINAL TOTAL	0	2	5	7	0	3	0	6	1	5	2	7	0

Disclaimers: Effective 2016, collection of "Property Damage Only" (PDO) crash data elements was reduced for vehicles and participants. Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.

A higher number of crashes may be reported as of 2011 compared to prior years. This does not necessarily reflect an increase in annual crashes. The higher numbers may result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics. For all disclaimers, see https://www.oregon.gov/ODOT/Data/documents/Crash_Data_Disclaimers.pdf.

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF CAMBY, CLACKAMAS COUNTY

Intersectional Crashes at SE/SW 13th Ave & S Ivy St
January 1, 2016 through December 31, 2018

SER#	UNLOC?	P E L D C	U A / M C J	S C O H R L K	W DATE DAY/TIME LAB/LONG	CITY STREET FIRST STREET SECOND STREET INTERSECTION SEQ #	RD CHAR DIRECT LOCTN	INT-TYP (MEDIAN) LEGS (#LANES)	INT-REL TRAF-CONTL	OFF-ROAD RNDET DEVRTY	WTHR SURE LIGHT	CRASH COLL SVRTY	SPCL USE TRLR QTY V# OWNER	MOVE FROM TO	P#	INJ SVRTY	A G E X RES	FED LOC	ERROR	ACTN EVENT	CAUSE	
05882	N N N	N N N	12/14/2016	16	Wed 3P 0	S IVY ST SE 13TH AVE	INTER E	CROSS 0	TRF SIGNAL	N SNOW	N ICE	TURN	01 NONE	9 TURN-R	01	DRVR NONE	00 U UNK	000	000	000	08	
							06	0					01 PSNGR CAR	S E	01	DRVR NONE	00 U UNK	000	000	000	00	
													02 NONE	9 STOP								00
													N/A	E W								00
													PSNGR CAR		01	DRVR NONE	00 U UNK	000	000	000	00	
05453	N N N	N N N	12/20/2017	16	Wed 11A 0	S IVY ST SE 13TH AVE	INTER CN	CROSS 0	TRF SIGNAL	N CLD	N DRY	ANGL	01 NONE	9 STRGHT								04
							01	0					N/A	N S	01	DRVR NONE	00 U UNK	000	000	000	00	
													PSNGR CAR		01	DRVR NONE	00 U UNK	000	000	000	00	
													02 NONE	9 STRGHT								00
													N/A	E W								00
													PSNGR CAR		01	DRVR NONE	00 U UNK	000	000	000	00	
04416	N N N	N N N	09/25/2016	16	Sun 8P 0	S IVY ST SE 13TH AVE	INTER CN	CROSS 0	TRF SIGNAL	N CLR	N DRY	TURN	01 NONE	0 STRGHT								02,08
							03	0					PRVTE	W E	01	DRVR INJC	46 F OR-Y	028,004	000	000	00	
													PSNGR CAR		01	DRVR INJC	46 F OR-Y	028,004	000	000	02,08	
													02 NONE	0 TURN-L								00
													PRVTE	E S								00
													PSNGR CAR		01	DRVR INJC	38 M NONE	000	000	000	00	
													01 NONE	9 STRGHT								17,05
													N/A	N S								00
													PSNGR CAR		01	DRVR NONE	00 U UNK	000	000	000	00	
													02 NONE	9 STRGHT								00
													N/A	S N								00
													PSNGR CAR		01	DRVR NONE	00 U UNK	000	000	000	00	
04418	Y Y N	N N N	09/25/2016	16	Sun 6P 0	S IVY ST SW 13TH AVE	INTER CN	CROSS 0	TRF SIGNAL	N CLR	N DRY	ANGL-OTH	01 NONE	0 STRGHT								30,04
							03	0					PRVTE	N S	01	DRVR INJC	20 F OR-Y	050,020	000	000	00	
													PSNGR CAR		01	DRVR INJC	20 F OR-Y	050,020	000	000	30,04	
													02 NONE	0 STRGHT								00
													PRVTE	W E								00
													PSNGR CAR		01	DRVR NONE	25 F OR-Y	000	000	000	00	
													01 NONE	0 STRGHT								00

CITY OF CANBY, CLACKAMAS COUNTY

Intersectional Crashes at SE/SW 13th Ave & S Ivy St
January 1, 2016 through December 31, 2018

SER#	INVEST	UNLOC?	D C J L K	DATE	DAY/TIME	FC	DISTNC	CITY STREET	FIRST STREET	SECOND STREET	INT-TYP	INT-REL	OFF-RD	WTHR	CRASH TYP	CRASH COLL TYP	TRAF-CONTL	DRVWY	DRVWY LIGHT SVRTY	SPCL USE	TRLR QTY	MOVE FROM TO	PRTC INJ TYPE SVRTY	F#	A S G E LICNS X RES	LOC ERROR	ACTN EVENT	CAUSE							
05026	N N N N	N	N	10/31/2016	16	0		S IVY ST			CROSS	N	N	CLK	O-1 L-TURN	O1	NONE	9	STRGHT	N/A	N	S	01	DRVR	NONE	00	U	UNK	UNK	00	00	00	04,08		
				Mon	5p	0		SW 13TH AVE			0			N DRY	TURN	PDO	PSNGR CAR										000	000	000	000	000	000	00		
				7.77	-122 41 13.03	1								N DUSK	PDO		02	NONE	9	TURN-L	N/A	S	W	01	DRVR	NONE	00	U	UNK	UNK	00	00	00	00	
														N DRY	ANGL-OTH	ANGL	PSNGR CAR										000	000	000	000	000	000	000	00	
05548	N N N N	N	N	12/23/2017	16	0		S IVY ST			CROSS	N	N	CLD	ANGL-OTH	O1	NONE	9	STRGHT	N/A	N	S	01	DRVR	NONE	00	U	UNK	UNK	00	00	00	00	00	
				Sat	2p	0		SW 13TH AVE			0			N DRY	ANGL	PDO	PSNGR CAR										000	000	000	000	000	000	000	00	
				7.77	-122 41 13.03	1								N DAY	PDO		02	NONE	9	STRGHT	N/A	W	E	01	DRVR	NONE	00	U	UNK	UNK	00	00	00	00	
														N DRY	ANGL	PDO	PSNGR CAR										000	000	000	000	000	000	000	00	
														N DAY	PDO		02	NONE	9	STRGHT	N/A	W	E	01	DRVR	NONE	00	U	UNK	UNK	00	00	00	00	00
														N DAY	PDO		02	NONE	9	STRGHT	N/A	W	E	01	DRVR	NONE	00	U	UNK	UNK	00	00	00	00	00

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANUEVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSuing OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRCT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	FUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
055	SPRAY	BLINDED BY WATER SPRAY
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO.
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PRNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSHT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
8	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
8	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-ITURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN, ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DISTANCE FROM HOME
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED
4	EXP	EXPIRED
8	N-VAL	OTHER NON-VALID LICENSE
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TCO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRECT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRECT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
027	LOAD SHFT	LOST LOAD, LOAD MOVED OR SHIFTED
028	TIREFAIL	TIRE FAILURE
029	PET	PET: CAT, DOG AND SIMILAR
030	LIVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
031	HORSE	HORSE, MULE, OR DONKEY
032	HRSE&RID	HORSE AND RIDER
033	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
034	DEER ELK	DEER OR ELK, WAITI
035	ANML VEH	ANIMAL-DRAWN VEHICLE
036	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
037	ATENUATN	IMPACT ATTENUATOR
038	PK METER	PARKING METER
039	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
040	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
041	GDRL END	LEADING EDGE OF GUARDRAIL
042	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
043	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
044	WALL	RETAINING WALL OR TUNNEL WALL
045	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
046	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
047	BR COLUMN	BRIDGE PILLAR OR COLUMN
048	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
049	ISLAND	TRAFFIC RAISED ISLAND
050	GORE	GORE
051	POLE UNK	POLE - TYPE UNKNOWN
052	POLE UTIL	POLE - POWER OR TELEPHONE
053	ST LIGHT	POLE - STREET LIGHT ONLY
054	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
055	SGN BRDG	POLE - SIGN BRIDGE
056	STOPSIGN	STOP OR YIELD SIGN
057		

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRREGl PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	MIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUFET EDGE
099	CELL WTNMSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE"; PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)
135	RAIL OCC	INJURED OCCUPANT OF RAILWAY TRAIN, LIGHT RAIL, STREET CAR OR CABLE CAR

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUPLLET
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

SHORT CODE	DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY (K)
2	IN7A	SUSPECTED SERIOUS INJURY (A)
3	IN7B	SUSPECTED MINOR INJURY (B)
4	IN7C	POSSIBLE INJURY (C)
5	PR1	DIED PRIOR TO CRASH
7	NO<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	NO APPARENT INJURY (0)

LIGHT CONDITION CODE TRANSLATION LIST

SHORT CODE	DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

SHORT CODE	DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY
9	PARKNG	PARKING MANEUVER

NON-MOTORIST LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNOWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BROW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	OTHR	OTHER TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHBN-R	FLASHING BEACON - RED (STOP)
003	FLASHBN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD SIGN	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFGR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVERHD SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILLUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
039	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
040	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
041	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
042	ACCEL LANE	ACCELERATION OR DECELERATION LANES
043	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING
044	BUS STPSGN	BUS STOP SIGN AND RED LIGHTS
045	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

Crashes on SE / SW 13th Ave between S Fir St to S Pine St, excludes crashes at ending intersections.
 January 1, 2016 through December 31, 2018

CLACKAMAS COUNTY

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	T O S U R F	V H	VEHICLE #1 #2	I I L L	A A E E	P P	PEOPLE	
05149	11/07/2016	11A	MO	Canby	SW 13TH AVE 50 FT W OF S IVY ST	REAR		29	026	DRY	2	011	011	0	1	N	N
05453	12/20/2017	11A	WE	Canby	S IVY ST AT SE 13TH AVE	ANGL		04		DRY	2	010	010	0	0	N	N
03421	07/28/2016	5P	TH	Canby	S IVY ST AT SE 13TH AVE	SS-M		17,05		DRY	2	010	010	0	0	N	N
04416	09/25/2016	8P	SU	Canby	S IVY ST AT SE 13TH AVE	TURN		02,08	028,004	DRY	2	011	011	0	2	N	N
05882	12/14/2016	3P	WE	Canby	S IVY ST AT SE 13TH AVE	TURN		08		ICE	2	010	010	0	0	N	N
04418	09/25/2016	6P	SU	Canby	S IVY ST AT SW 13TH AVE	ANGL		30,04	050,020	DRY	2	011	011	0	1	Y	Y
05548	12/23/2017	2P	SA	Canby	S IVY ST AT SW 13TH AVE	ANGL		04		DRY	2	010	010	0	0	N	N
05026	10/31/2016	5P	MO	Canby	S IVY ST AT SW 13TH AVE	TURN		04,08		DRY	2	010	010	0	0	N	N

VEHICLE OWNERSHIP CODES

Code	Short Description	Long Description
0	N/A	Not collected for PDO Crashes
1	PRVTE	Private
2	GOVMT	Government
3	PUBLIC	Public
4	RENTL	Rental vehicle
5	STOLN	Stolen vehicle
9	UNKN	Unknown ownership

VEHICLE TYPE CODES

Code	Short Description	Long Description
00	PDO	Not collected for PDO Crashes
01	PSNGR CAR	Passenger car, pickup, light delivery, etc.
02	BOBTAIL	Truck tractor with no trailers (bobtail)
03	FARM TRCTR	Farm tractor or self-propelled farm equipment
04	SEMI TOW	Truck Tractor with trailer/mobile home in tow
05	TRUCK	Truck with non-detachable bed, panel, etc.
06	MOPED	Moped, minibike, seated motor scooter, motor bike
07	SCHL BUS	School bus (includes van)
08	OTH BUS	Other bus
09	MTRCYCLE	Motorcycle, dirt bike
10	OTHER	Other: forklift, backhoe, etc.
11	MOTRHOME	Motorhome
12	TROLLEY	Motorized Street Car/Trolley (no rails/wires)
13	ATV	ATV
14	MTRSCTR	Motorized scooter (standing)
15	SNOWMOBILE	Snowmobile
99	UNKNOWN	Unknown vehicle type

CAUSE CODES

Code	Short Description	Medium Description	Long Description	Code Termination Date
00	NO CODE	NO CODE APPLICABLE	No cause associated at this level	
01	TOO-FAST	TOO FAST FOR COND	Too fast for conditions (not exceed posted speed)	
02	NO-YIELD	FAILED YIELD ROW	Did not yield right-of-way	
03	PAS-STOP	PASSED STOP SIGN	Passed stop sign or red flasher	
04	DIS SIG	DISREGRD TRAF SIGNAL	Disregarded traffic signal	
05	LEFT-CTR	LEFT OF CTR/STRADDLE	Drove left of center on two-way road; straddling	
06	IMP-OVER	IMPROPER PASSING	Improper overtaking	
07	TOO-CLOS	FOLLOW TOO CLOSE	Followed too closely	
08	IMP-TURN	IMPROPER TURN	Made improper turn	
09	DRINKING	ALC OR DRUGS	Alcohol or Drug involved	12/31/2002
10	OTHR-IMP	OTHER DRIVE ERR	Other improper driving	
11	MECH-DEF	MECH DEFECT	Mechanical defect	
12	OTHER	OTHER	Other (not improper driving)	
13	IMP LN C	IMP LANE CHANGE	Improper change of traffic lanes	
14	DIS TCD	DISRG OTHR TCD	Disregarded other traffic control device	
15	WRNG WAY	WRONG WAY / 1-WAY RD	Wrong way on one-way road; wrong side divided road	
16	FATIGUE	DRIVER FATIGUED	Driver drowsy/fatigued/sleepy	
17	ILLNESS	PHYSICAL ILLNESS	Physical illness	
18	IN RDWY	ILLEGALLY IN RDWY	Non-motorist illegally in roadway	
19	NT VISBL	NOT VISIBLE	Non-motorist not visible; non-reflective clothing	
20	IMP PKNG	IMPROPER PARKING	Vehicle improperly parked	
21	DEF STER	DEFECTIVE STEERING	Defective steering mechanism	
22	DEF BRKE	DEFECTIVE BRAKES	Inadequate or no brakes	
24	LOADSHT	LOAD SHIFTED	Vehicle lost load or load shifted	
25	TIREFAIL	TIRE FAILURE	Tire Failure	
26	PHANTOM	PHANTOM VEHICLE	Phantom / Non-contact Vehicle	
27	INATTENT	INATTENTION	Inattention	
28	NM INATT	NON-MTRST INATTENT	Non-Motorist Inattention	
29	F AVOID	FAIL AVOID VEH AHEAD	Failed to avoid vehicle ahead	
30	SPEED	EXCED POSTED SPEED	Driving in excess of posted speed	
31	RACING	SPEED RACING	Speed Racing (per PAR)	
32	CARELESS	CARELESS DRIVING	Careless Driving (per PAR)	
33	RECKLESS	RECKLESS DRIVING	Reckless Driving (per PAR)	
34	AGGRESV	AGGRESSIVE DRIVING	Aggressive Driving (per PAR)	
35	RD RAGE	ROAD RAGE	Road Rage (per PAR)	
40	VIEW OBS	VIEW OBSCURED	View obscured	
50	USED MDN	IMP USE MEDIAN/SHLDR	Improper use of median or shoulder	12/31/2015
51	FAIL LN	F MAINT LANE	Failed to maintain lane	12/31/2015
52	OFF RD	RAN OFF RD	Ran off road	

ERR CODES

Code	Short Description	Medium Description	Long Description
000	NONE	NO ERROR	No error
001	WIDE TRN	WIDE TURN	Wide turn
002	CUT CORN	CUT CORNER	Cut corner on turn
003	FAIL TRN	F OBEY TRN	Failed to obey mandatory traffic turn signal, sign or lane markings
004	L IN TRF	L TRN FNT TRAF	Left turn in front of oncoming traffic
005	L PROHIB	L TRN PROHIB	Left turn where prohibited
006	FRM WRNG	T FRM WRNG LN	Turned from wrong lane
007	TO WRONG	T TO WRONG LN	Turned into wrong lane
008	ILLEG U	ILLEG U-TURN	U-turned illegally
009	IMP STOP	IMP STOP	Improperly stopped in traffic lane
010	IMP SIG	IMP/FAIL SIG	Improper signal or failure to signal
011	IMP BACK	IMP BACKING	Backing improperly (not parking)
012	IMP PARK	IMP PARKED	Improperly parked
013	UNPARK	IMP STRT PARK	Improper start leaving parked position
014	IMP STRT	IMP STRT STOP	Improper start from stopped position
015	IMP LGHT	IMP/NO LIGHTS	Improper or no lights (vehicle in traffic)
016	INATTENT	INATTENTION	Inattention (Failure to Dim Lights prior to 4/1/97)
017	UNSF VEH	DR UNSAFE VEH	Driving unsafe vehicle (no other error apparent)
018	OTH PARK	PRK MAN N/CLR	Entering/exiting parked position w/ insufficient clearance; other improper parking maneuver
019	DIS DRIV	DISRG DR SIG	Disregarded other driver's signal
020	DIS SGNL	DISRG TRF SIG	Disregarded traffic signal
021	RAN STOP	DISRG STP SGN	Disregarded stop sign or flashing red
022	DIS SIGN	DISRG WRN SGN	Disregarded warning sign, flares or flashing amber
023	DIS OFCR	DISRG POL/FLG	Disregarded police officer or flagman
024	DIS EMER	DISRG SIR/EMR	Disregarded siren or warning of emergency vehicle
025	DIS RR	DISRG RR SIG	Disregarded RR signal, RR sign, or RR flagman
026	REAR-END	F AVOID STP V	Failed to avoid stopped or parked vehicle ahead other than school bus
027	BIKE ROW	FYLD ROW BIK	Did not have right-of-way over pedalcyclist
028	NO ROW	NO R-O-W	Did not have right-of-way
029	PED ROW	FYLD ROW PED	Failed to yield right-of-way to pedestrian
030	PAS CURV	PASS ON CURVE	Passing on a curve
031	PAS WRNG	PASS WRNG SID	Passing on the wrong side
032	PAS TANG	PASS TANGENT	Passing on straight road under unsafe conditions
033	PAS X-WK	PASS STP4PED	Passed vehicle stopped at crosswalk for pedestrian
034	PAS INTR	PASS AT INTER	Passing at intersection
035	PAS HILL	PASS ON HILL	Passing on crest of hill
036	N/PAS ZN	PASS N/PASSNG	Passing in "No Passing" zone
037	PAS TRAF	PASS ONC TRAF	Passing in front of oncoming traffic
038	CUT-IN	CUTTING IN	Cutting in (two lanes - two way only)
039	WRNGSIDE	DR WRONG SIDE	Driving on wrong side of the road (2-way undivided roadways)
040	THRU MED	DR THRU MEDN	Driving through safety zone or over island
041	F/ST BUS	F/STP SCHLBUS	Failed to stop for school bus
042	F/SLO MV	F/SLO SLO VEH	Failed to decrease speed for slower moving vehicle
043	TOO CLOSE	FOLLOW TO CLOS	Following too closely (must be on officer's report)

ERR CODES

Code	Short Description	Medium Description	Long Description
044	STRDL LN	STRD/DR WRNG	Straddling or driving on wrong lanes
045	IMP CHG	IMP LANE CHG	Improper change of traffic lanes
046	WRNG WAY	WRNG WY/1 WAY	Wrong way on one-way roadway; wrong side divided road
047	BASCRULE	V BASIC RULE	Driving too fast for conditions (not exceeding posted speed)
048	OPN DOOR	OPN DOOR TRAF	Opened door into adjacent traffic lane
049	IMPEDING	IMPEDING TRAF	Impeding Traffic
050	SPEED	SPEED	Driving in excess of posted speed
051	RECKLESS	RECKLESS DRVNG	Reckless driving (per PAR)
052	CARELESS	CARELESS DRVNG	Careless driving (per PAR)
053	RACING	RACING	Speed Racing (per PAR)
054	X N/SGNL	X-INT NO SGNL	Crossing at intersection, no traffic signal present
055	X W/SGNL	X-INT W/SGNL	Crossing at intersection, traffic signal present
056	DIAGONAL	X-INT DIAGNL	Crossing at intersection - diagonally
057	BTWN INT	X-BTWN INTER	Crossing between intersections
059	W/TRAF-S	W SHLD W/TRAF	Walking, running, riding, etc., on shoulder WITH traffic
060	A/TRAF-S	W SHLD A/TRAF	Walking, running, riding, etc., on shoulder FACING traffic
061	W/TRAF-P	W PAVE W/TRAF	Walking, running, riding, etc., on pavement WITH traffic
062	A/TRAF-P	W PAVE A/TRAF	Walking, running, riding, etc., on pavement FACING traffic
063	PLAYINRD	PLAY IN RDWY	Playing in street or road
064	PUSH MV	PUSH MV IN RD	Pushing or working on vehicle in road or on shoulder
065	WORK IN RD	WORK IN RD	Working in roadway or along shoulder
070	LAY ON RD	LYING IN RD	Standing or lying in roadway
071	NM IMP USE	N-M IMP USE	Improper use of traffic lane by non-motorist
073	ELUDING	ELUDING	Eluding / Attempt to elude
079	F NEG CURV	FAIL NEG CURV	Failed to negotiate a curve
080	FAIL LN	F MAINT LANE	Failed to maintain lane
081	OFF RD	RAN OFF RD	Ran off road
082	NO CLEAR	MISJUDGE CLR	Driver misjudged clearance
083	OVRSTEER	OVERSTEER	Over-correcting
084	NOT USED	NOT USED	Code not in use
085	OVRLOAD	OVERLOAD	Overloading or improper loading of vehicle with cargo or passengers
097	UNA DIS TC	UNA DISRG TCD	Unable to determine which driver disregarded traffic control device

EVENT CODES

Code	Short Description	Medium Description	Long Description
001	FEL/JUMP	FEL/JUMPED MV	Occupant fell, jumped or was ejected from moving vehicle
002	INTERFER	PSNGR INTERFERED	Passenger interfered with driver
003	BUG INTF	ANML INTERFERED	Animal or insect in vehicle interfered with driver
004	INDRCT PED	PED INDRCTLY INVLV	Pedestrian indirectly involved (not struck)
005	SUB-PED	SUBSEQUENT PED	"Sub-Ped"; pedestrian injured subsequent to collision, etc.
006	INDRCT BIK	BIKE INDRCTLY INVLV	Pedalcyclist indirectly involved (not struck)
007	HIT-CHIKR	HIT-CHIKER	Hitchhiker (soliciting a ride)
008	PSNGR TOW	PSNGR TOWED	Passenger or non-motorist being towed or pushed on conveyance
009	ON/OFF V	ON/OFF STOP VEH	Getting on/off stopped/parked vehicle (occupants only; must have physical contact w/ vehicle)
010	SUB OTRN	SUBSEQ OVERTURN	Overtuned after first harmful event
011	MV PUSHD	VEH BEING PUSHED	Vehicle being pushed
012	MV TOWED	VEH TOWED/TOWING	Vehicle towed or had been towing another vehicle
013	FORCED	FORCED BY IMPACT	Vehicle forced by impact into another vehicle, pedalcyclist or pedestrian
014	SET MOTN	MV SET IN MOTION	Vehicle set in motion by non-driver (child released brakes, etc.)
015	RR ROW	RAILROAD ROW	At or on railroad right-of-way (not Light Rail)
016	LT RL ROW	LIGHT RAIL ROW	At or on Light-Rail right-of-way
017	RR HIT V	TRAIN HIT VEH	Train struck vehicle
018	V HIT RR	VEH HIT TRAIN	Vehicle struck train
019	HIT RR CAR	VEH HIT RR CAR	Vehicle struck railroad car on roadway
020	JACKNIFE	JACKKNIFE	Jackknife; trailer or towed vehicle struck towing vehicle
021	TRL OTRN	TRAILER OTURN	Trailer or towed vehicle overturned
022	CN BROKE	TRLR CONN BROKE	Trailer connection broke
023	DETACH TRL	DETCHD TRLR STRKNG	Detached trailing object struck other vehicle, non-motorist, or object
024	V DOOR OPN	V DOOR OPN IN TRAF	Vehicle door opened into adjacent traffic lane
025	WHEELOFF	WHEEL CAME OFF	Wheel came off
026	HOOD UP	HOOD FLEW UP	Hood flew up
028	LOAD SHIFT	LOAD SHIFTED	Lost load, load moved or shifted
029	TIREFAIL	TIRE FAILURE	Tire failure
030	PET	PET	Pet: cat, dog and similar
031	LVSTOCK	LIVESTOCK	Stock: cow, calf, bull, steer, sheep, etc.
032	HORSE	HORSE	Horse, mule, or donkey
033	HRSE&RID	HORSE & RIDER	Horse and rider
034	GAME	GAME NO DEER/ELK	Wild animal, game (includes birds; not deer or elk)
035	DEER ELK	DEER OR ELK	Deer or elk, wapiti
036	ANML VEH	ANIMAL-DRAWN VEH	Animal-drawn vehicle
037	CULVERT	CULVERT/MANHOLE	Culvert, open low or high manhole
038	ATENUATN	IMPACT CUSHION	Impact attenuator
039	PK METER	PARKING METER	Parking meter
040	CURB	CURB	Curb (also narrow sidewalks on bridges)
041	JIGGLE	JIGGLE BAR N/MED	Jiggle bar or traffic snake for channelization

EVENT CODES

Code	Short Description	Medium Description	Long Description
042	GDRL END	GUARDRAIL END	Leading edge of guardrail
043	GARDRAIL	GUARDRAIL	Guard rail (not metal median barrier)
044	BARRIER	MEDIAN BARRIER	Median barrier (raised or metal)
045	WALL	WALL	Retaining wall or tunnel wall
046	BR RAIL	BRIDGE RAIL	Bridge railing or parapet (on bridge or approach)
047	BR ABUTMNT	BRIDGE ABUTMENT	Bridge abutment (included "approach end" thru 2013)
048	BR COLMN	BRIDGE COLUMN	Bridge pillar or column
049	BR GIRDR	BRIDGE GIRDER	Bridge girder (horizontal bridge structure overhead)
050	ISLAND	TRAFFIC ISLAND	Traffic raised island
051	GORE	GORE	Gore
052	POLE UNK	POLE-UNKNOWN	Pole - type unknown
053	POLE UTL	POLE-UTILITY	Pole - power or telephone
054	ST LIGHT	POLE-ST LIGHT	Pole - street light only
055	TRF SGNL	POLE-TRAF SIGNAL	Pole - traffic signal and ped signal only
056	SGN BRDG	POLE-SIGN BRIDGE	Pole - sign bridge
057	STOPSIGN	STOP/YIELD SIGN	Stop or yield sign
058	OTH SIGN	OTHER SIGN	Other sign, including street signs
059	HYDRANT	HYDRANT	Hydrant
060	MARKER	DELINEATOR	Delineator or marker (reflector posts)
061	MAILBOX	MAILBOX	Mailbox
062	TREE	TREE/STUMP	Tree, stump or shrubs
063	VEG OHED	VEGTN OVER RDWY	Tree branch or other vegetation overhead, etc.
064	WIRE/CBL	CABLE ACROSS RD	Wire or cable across or over the road
065	TEMP SGN	TEMP SIGN/BARR	Temporary sign or barricade in road, etc.
066	PERM SGN	PERM SIGN/BARR	Permanent sign or barricade in/off road
067	SLIDE	SLIDE/ROCKS	Slides, fallen or falling rocks
068	FRGN OBJ	FOREIGN OBJECT	Foreign obstruction/debris in road (not gravel)
069	EQP WORK	EQUIP WORKING	Equipment working in/off road
070	OTH EQP	OTHER EQUIPMENT	Other equipment in or off road (includes parked trailer, boat)
071	MAIN EQP	MAINTNCE EQUIP	Wrecker, street sweeper, snow plow or sanding equipment
072	OTHER WALL	OTHER WALL	Rock, brick or other solid wall
073	IRREG PVMT	IRREGULAR PAVEMENT	Other bump (not speed bump), pothole or pavement irregularity (per PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJ	Other overhead object (highway sign, signal head, etc.); not bridge
075	CAVE IN	CAVE IN	Bridge or road cave in
076	HI WATER	HIGH WATER	High Water
077	SNO BANK	SNOW BANK	Snow Bank
078	LO-HI EDGE	LOW-HIGH PVMNT EDGE	Low or high shoulder at pavement edge
079	DITCH	CUT SLOPE/DITCH	Cut slope or ditch embankment
080	OBJ FRM MV	OBJ FRM OTHR VEH	Struck by rock or other object set in motion by other vehicle (incl. lost loads)
081	FLY-OBJ	OTHER MOVING OBJ	Struck by rock or other moving or flying object (not set in motion by vehicle)
082	VEH HID	VEH OBSCURE VIEW	Vehicle obscured view
083	VEG HID	VEG OBSCURE VIEW	Vegetation obscured view

EVENT CODES

Code	Short Description	Medium Description	Long Description
084	BLDG HID	BLD OBSCURE VIEW	View obscured by fence, sign, phone booth, etc.
085	WIND GUST	WIND GUST	Wind Gust
086	IMMERSED	IMMERSION	Vehicle immersed in body of water
087	FIRE/EXP	FIRE/EXPLOSION	Fire or explosion
088	FENC/BLD	FENCE/BUILDING	Fence or building, etc.
089	OTHR CRASH	REFER OTHR CRASH	Crash related to another separate crash
090	TO 1 SIDE	TWO WAY ONE SIDE	Two-way traffic on divided roadway all routed to one side
091	BUILDING	BUILDING	Building or other structure
092	PHANTOM	PHANTOM VEH	Other (phantom) non-contact vehicle
093	CELL PHONE	CELL PHONE PER PAR	Cell phone (on PAR or driver in use)
094	VIOL GDL	VIOL GRAD DR LIC	Teenage driver in violation of graduated license pgm
095	GUY WIRE	GUY WIRE	Guy wire
096	BERM	BERM	Berm (earthen or gravel mound)
097	GRAVEL	GRAVEL IN RDWY	Gravel in roadway
098	ABR EDGE	ABRUPT EDGE	Abrupt edge
099	CELL WTNSD	CELL PHONE WITNESSED	Cell phone use witnessed by other participant
100	UNK FIXD	UNK FIX OBJ	Fixed object, unknown type.
101	OTHER OBJ	OTHER OBJ NOT FIXED	Non-fixed object, other or unknown type
102	TEXTING	TEXTING	Texting
103	WZ WORKER	WZ WORKER	Work Zone Worker
104	ON VEHICLE	RIDE ON VEH EXTERIOR	Passenger riding on vehicle exterior
105	PEDAL PSGR	PSNGR ON PEDALCYCLE	Passenger riding on pedalcycle
106	MAN WHLCHR	NONMOTOR WHEELCHAIR	Pedestrian in non-motorized wheelchair
107	MTR WHLCHR	MOTORIZED WHEELCHAIR	Pedestrian in motorized wheelchair
108	OFFICER	POLICE OFFICER	Law Enforcement / Police Officer
109	SUB-BIKE	SUBSEQUENT BICYCLIST	"Sub-Bike": pedalcyclist injured subsequent to collision, etc.
110	N-MTR	NM STR VEH	Non-motorist struck vehicle
111	S CAR VS V	ST CAR STRUCK VEH	Street Car/Trolley (on rails or overhead wire system) struck vehicle
112	V VS S CAR	VEH STRUCK ST CAR	Vehicle struck Street Car/Trolley (on rails or overhead wire system)
113	S CAR ROW	STREET CAR ROW	At or on street car or trolley right-of-way
114	RR EQUIP	VEH STRUCK RR EQUIP	Vehicle struck railroad equipment (not train) on tracks
115	DSTRCT GPS	DISTRCT GPS DEVICE	Distracted by navigation system or GPS device
116	DSTRCT OTH	DISTRCT OTHR DEVICE	Distracted by other electronic device
117	RR GATE	RR DROP-ARM GATE	Rail crossing drop-arm gate
118	EXPNSN JNT	EXPANSION JOINT	Expansion joint
119	JERSEY BAR	JERSEY BARRIER	Jersey barrier
120	WIRE BAR	WIRE BARRIER	Wire or cable median barrier
121	FENCE	FENCE	Fence
123	OBJ IN VEH	LOOSE OBJ IN VEHICLE	Loose object in vehicle struck occupant
124	SLIPPERY	SLIPPERY SURFACE	Sliding or swerving due to wet, icy, slippery or loose surface (not gravel)
125	SHLDR	SHLDR GAVE	Shoulder gave way
126	BOULDER	ROCKS / BOULDER	Rock(s), boulder (not gravel; not rock slide)

EVENT CODES

Code	Short Description	Medium Description	Long Description
127	LAND SLIDE	ROCK OR LAND SLIDE	Rock slide or land slide
128	CURVE INV	CURVE PRESENT	Curve present at crash location
129	HILL INV	HILL PRESENT	Vertical grade / hill present at crash location
130	CURVE HID	CURVE OBSCURED VIEW	View obscured by curve
131	HILL HID	HILL OBSCURED VIEW	View obscured by vertical grade / hill
132	WINDOW HID	WINDOW VIEW OBSCURED	View obscured by vehicle window conditions
133	SPRAY HID	SPRAY OBSCURED VIEW	View obscured by water spray
134	TORRENTIAL	TORRENTIAL RAIN	Torrential Rain (exceptionally heavy rain)
135	RAIL OCC	RAIL/CABLE CAR OCC	Injured occupant of railway train, light rail, street car or cable car

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF CANNY, CLACKAMAS COUNTY
Crashes on SE / SW 13th Ave between S Fir St to S Pine St, excludes crashes at ending intersections.
January 1, 2016 through December 31, 2018

SER#	INVEST	UNLOC?	DISTNC	CITY STREET	INT-TYP	RD CHAR	INT-REL	OFF-RD	WHRR	CRASH TYP	SPLC	MOVE	FROM	TO	TRIP QTY	A S	PRTC	INJ	LOC	FED	ACTN	EVENT	CAUSE
No	45 15	7.77	-122 41 13.03	S IVY ST SE 13TH AVE	CROSS	INTER	TRF SIGNAL	N SNOW	N ICE	ANGL-STP	01 NONE	TURN-R	S E	01	DRVR	NONE	00	U	UNK	000	000	00	00
No	45 15	7.77	-122 41 13.03	S IVY ST SE 13TH AVE	CROSS	INTER	TRF SIGNAL	N CLD	N DRY	ANGL-OTH	01 NONE	9 STRGHT	N S	01	DRVR	NONE	00	U	UNK	000	012	00	00
No	45 15	7.77	-122 41 13.03	S IVY ST SE 13TH AVE	CROSS	INTER	TRF SIGNAL	N DUSK	N INJ	0-1 L-TURN	01 NONE	0 STRGHT	W E	01	DRVR	INJC	46	F	OR-Y	028,004	000	02,08	00
No	45 15	7.77	-122 41 13.03	S IVY ST SE 13TH AVE	CROSS	INTER	TRF SIGNAL	N DAY	N INJ	0-1 L-TURN	01 NONE	9 STRGHT	W E	01	DRVR	INJC	38	M	NONE	000	000	00	00
No	45 15	7.77	-122 41 13.03	S IVY ST SE 13TH AVE	CROSS	INTER	TRF SIGNAL	N DAY	N INJ	0-1 L-TURN	01 NONE	9 STRGHT	W E	01	DRVR	INJC	20	F	OR-Y	050,020	000	30,04	00
No	45 15	7.77	-122 41 13.03	S IVY ST SE 13TH AVE	CROSS	INTER	TRF SIGNAL	N DAY	N INJ	0-1 L-TURN	01 NONE	9 STRGHT	W E	01	DRVR	INJC	25	F	OR-Y	000	000	00	00

CITY OF CANBY, CLACKAMAS COUNTY

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 URBAN NON-SYSTEM CRASH LISTING

Crashes on SE / SW 13th Ave between S Fir St to S Pine St, excludes crashes at ending intersections.
 January 1, 2016 through December 31, 2018

SER#	INVEST UNLOC?	P	E	A	L	M	H	R	D	A	T	TIME	FC	DISTNC	CITY STREET	INT-TYP	INT-REL	OFF-RD	WTHR	CRASH TYP	CRASH COLL	SVRY	V#	OWNER	TRLR QTY	MOVE FROM TO	P#	INJ SVRITY	A G E LICNS	FED LOC	ERROR	ACTN EVENT	CAUSE		
NO																																			
05026	N	N	N	N	N	N	N	N	N	N	N	10/31/2016	16	0	S IVY ST SW 13TH AVE	CROSS	N	TRF SIGNAL	N	CLR	O-1 L-TURN	01	NONE	9	STRGHT	NONE	01	DRVR	NONE	00	U	UNK	000	00	04,08
		45	15	7.77	-122	41	13.03	1																											
05548	N	N	N	N	N	N	N	N	N	N	12/23/2017	16	0	S IVY ST SW 13TH AVE	CROSS	N	TRF SIGNAL	N	CLD	ANGL-OTH	01	NONE	9	STRGHT	NONE	01	DRVR	NONE	00	U	UNK	000	00	04	
		45	15	7.77	-122	41	13.03	1																											
05149	N	N	N	N	N	N	N	N	N	N	11/07/2016	16	50	SW 13TH AVE S IVY ST	STRGHT	Y	UNKNOWN	N	CLR	S-1STOP	01	NONE	0	STRGHT	NONE	01	DRVR	NONE	43	M	OR-Y	000	00	29	
		45	15	7.78	-122	41	14.15	1																											

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLIGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSuing OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PROFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRCT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
055	SPRAY	BLINDED BY WATER SPRAY
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO.
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRKE	INADEQUATE OR NO BRAKES
24	LOADSFT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
4	OTH	MISCELLANEOUS
-	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANEUVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
4	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-1TURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN, ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DIST
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED
4	EXP	EXPIRED
8	N-VAL	OTHER NON-VALID LICENSE
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VER	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS STGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS 2N	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STRDL LN	STRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DTS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTR	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRACT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRACT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PSNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANT'S ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHICLE)
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV FUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT RR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
027	LOAD SHFT	LOST LOAD, LOAD MOVED OR SHIFTED
028	LOAD SHFT	LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LIVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSEGRID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATTENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELLIZATION
042	GDRL END	LEADING EDGE OF GUARDRAIL
043	GDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAFET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLUMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTIL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSIGN	STOP OR YIELD SIGN

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRGL PVMT	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HT WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNMSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WHLCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WHLCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE
118	EXPASN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)
135	RAIL OCC	INJURED OCCUPANT OF RAILWAY TRAIN, LIGHT RAIL, STREET CAR OR CABLE CAR

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUplet
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

LIGHT CONDITION CODE TRANSLATION LIST

SHORT CODE	DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

INJURY SEVERITY CODE TRANSLATION LIST

SHORT CODE	DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY (K)
2	INJA	SUSPECTED SERIOUS INJURY (A)
3	INJB	SUSPECTED MINOR INJURY (B)
4	INJC	POSSIBLE INJURY (C)
5	PRI	DIED PRIOR TO CRASH
7	NC<5	NO INJURY - 0 TO 4 YEARS OF AGE
9	NONE	NO APPARENT INJURY (0)

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SFUR
Z	OVERLAPPING

MEDIAN TYPE CODE TRANSLATION LIST

SHORT CODE	DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIWMD	EARTH, GRASS OR PAVED MEDIAN

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRAIGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PKD-P	PARKED - PROPERLY
8	PKD-I	PARKED - IMPROPERLY
9	PARKNG	PARKING MANEUVER

NON-MOTORIST LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNOWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT-AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRAIGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYER
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	OTHER	OTHER TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHEC-R	FLASHING BEACON - RED (STOP)
003	FLASHEC-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFGR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRDG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRED SGNL	SUPPLEMENTAL OVERHEAD SIGNAL (RR XING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILLUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING
095	BUS STEGNG	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SET	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH

Crashes on S Ivy St between SW 8th Ave to SE 16th Ave, excludes crashes at ending intersections.
 January 1, 2016 through December 31, 2018

CLACKAMAS COUNTY

SERIAL NO	DATE	TIME	DAY	*COUNTY OR CITY NAME	CRASH LOCATION	COLL TYPE	EVENT	CAUSE	ERROR	F H #1	VEHICLE TYP/OWN #2	I I A E L N L E	K P S	PEOPLE	
05453	12/20/2017	11A	WE	Canby	S IVY ST AT SE 13TH AVE	ANGL		04		2	010 010	0	0	0	N N N
03421	07/28/2016	5P	TH	Canby	S IVY ST AT SE 13TH AVE	SS-M		17,05		2	010 010	0	0	0	N N N
04416	09/25/2016	8P	SU	Canby	S IVY ST AT SE 13TH AVE	TURN		02,08	028,004	2	011 011	0	0	2	N N N
05882	12/14/2016	3P	WE	Canby	S IVY ST AT SE 13TH AVE	TURN		08		2	010 010	0	0	0	N N N
02381	05/27/2016	3P	FR	Canby	S IVY ST 70 FT N OF SW 11TH AVE	REAR		29	026	2	011 011	0	0	2	N N N
04418	09/25/2016	6P	SU	Canby	S IVY ST AT SW 13TH AVE	ANGL		30,04	050,020	2	011 011	0	1	1	Y Y
05548	12/23/2017	2P	SA	Canby	S IVY ST AT SW 13TH AVE	ANGL		04		2	010 010	0	0	0	N N N
05026	10/31/2016	5P	MO	Canby	S IVY ST AT SW 13TH AVE	TURN		04,08		2	010 010	0	0	0	N N N
00725	02/24/2017	7A	FR	Canby	S IVY ST AT SW 8TH AVE	REAR	004	27,29	026	2	011 011	0	1	1	N N N
03558	08/06/2016	6A	SA	Canby	S IVY ST 500 FT SE OF SW 8TH AVE	FIX	053	16	081	1	011	0	1	1	N N N

VEHICLE OWNERSHIP CODES

Code	Short Description	Long Description
0	N/A	Not collected for PDO Crashes
1	PRVTE	Private
2	GOVMT	Government
3	PUBLIC	Public
4	RENTL	Rental vehicle
5	STOLN	Stolen vehicle
9	UNKN	Unknown ownership

VEHICLE TYPE CODES

Code	Short Description	Long Description
00	PDO	Not collected for PDO Crashes
01	PSNGR CAR	Passenger car, pickup, light delivery, etc.
02	BOBTAIL	Truck tractor with no trailers (bobtail)
03	FARM TRCTR	Farm tractor or self-propelled farm equipment
04	SEMI TOW	Truck Tractor with trailer/mobile home in tow
05	TRUCK	Truck with non-detachable bed, panel, etc.
06	MOPED	Moped, minibike, seated motor scooter, motor bike
07	SCHL BUS	School bus (includes van)
08	OTH BUS	Other bus
09	MTRCYCLE	Motorcycle, dirt bike
10	OTHER	Other: forklift, backhoe, etc.
11	MOTRHOME	Motorhome
12	TROLLEY	Motorized Street Car/Trolley (no rails/wires)
13	ATV	ATV
14	MTRSCCTR	Motorized scooter (standing)
15	SNOWMOBILE	Snowmobile
99	UNKNOWN	Unknown vehicle type

CAUSE CODES

Code	Short Description	Medium Description	Long Description	Code Termination Date
00	NO CODE	NO CODE APPLICABLE	No cause associated at this level	
01	TOO-FAST	TOO FAST FOR COND	Too fast for conditions (not exceed posted speed)	
02	NO-YIELD	FAILED YIELD ROW	Did not yield right-of-way	
03	PAS-STOP	PASSED STOP SIGN	Passed stop sign or red flasher	
04	DIS SIG	DISREGRD TRAF SIGNAL	Disregarded traffic signal	
05	LEFT-CTR	LEFT OF CTR/STRADDLE	Drove left of center on two-way road; straddling	
06	IMP-OVER	IMPROPER PASSING	Improper overtaking	
07	TOO-CLOS	FOLLOW TOO CLOSE	Followed too closely	
08	IMP-TURN	IMPROPER TURN	Made improper turn	
09	DRINKING	ALC OR DRUGS	Alcohol or Drug Involved	
10	OTHR-IMP	OTHER DRIVE ERR	Other improper driving	12/31/2002
11	MECH-DEF	MECH DEFECT	Mechanical defect	
12	OTHER	OTHER	Other (not improper driving)	
13	IMP LN C	IMP LANE CHANGE	Improper change of traffic lanes	
14	DIS TCD	DISRG OTHR TCD	Disregarded other traffic control device	
15	WRNG WAY	WRONG WAY / 1-WAY RD	Wrong way on one-way road; wrong side divided road	
16	FATIGUE	DRIVER FATIGUED	Driver drowsy/fatigued/sleepy	
17	ILLNESS	PHYSICAL ILLNESS	Physical illness	
18	IN RDWY	ILLEGALLY IN RDWY	Non-motorist illegally in roadway	
19	NT VISBL	NOT VISIBLE	Non-motorist not visible; non-reflective clothing	
20	IMP PKNG	IMPROPER PARKING	Vehicle improperly parked	
21	DEF STER	DEFECTIVE STEERING	Defective steering mechanism	
22	DEF BRKE	DEFECTIVE BRAKES	Inadequate or no brakes	
24	LOADSHFT	LOAD SHIFTED	Vehicle lost load or load shifted	
25	TIREFAIL	TIRE FAILURE	Tire Failure	
26	PHANTOM	PHANTOM VEHICLE	Phantom / Non-contact Vehicle	
27	INATTENT	INATTENTION	Inattention	
28	NM INATT	NON-MTRST INATTENT	Non-Motorist Inattention	
29	F AVOID	FAIL AVOID VEH AHEAD	Failed to avoid vehicle ahead	
30	SPEED	EXCED POSTED SPEED	Driving in excess of posted speed	
31	RACING	SPEED RACING	Speed Racing (per PAR)	
32	CARELESS	CARELESS DRIVING	Careless Driving (per PAR)	
33	RECKLESS	RECKLESS DRIVING	Reckless Driving (per PAR)	
34	AGGRESV	AGGRESSIVE DRIVING	Aggressive Driving (per PAR)	
35	RD RAGE	ROAD RAGE	Road Rage (per PAR)	
40	VIEW OBS	VIEW OBSCURED	View obscured	
50	USED MDN	IMP USE MEDIUM/SHLDR	Improper use of median or shoulder	
51	FAIL LN	F MAINT LANE	Failed to maintain lane	12/31/2015
52	OFF RD	RAN OFF RD	Ran off road	12/31/2015

ERR CODES

Code	Short Description	Medium Description	Long Description
000	NONE	NO ERROR	No error
001	WIDE TRN	WIDE TURN	Wide turn
002	CUT CORN	CUT CORNER	Cut corner on turn
003	FAIL TRN	F OBEY TRN	Failed to obey mandatory traffic turn signal, sign or lane markings
004	L IN TRF	L TRN FNT TRAF	Left turn in front of oncoming traffic
005	L PROHIB	L TRN PROHIB	Left turn where prohibited
006	FRM WRNG	T FRM WRNG LN	Turned from wrong lane
007	TO WRONG	T TO WRONG LN	Turned into wrong lane
008	ILLEG U	ILLEG U-TURN	U-turned illegally
009	IMP STOP	IMP STOP	Improperly stopped in traffic lane
010	IMP SIG	IMP/FAIL SIG	Improper signal or failure to signal
011	IMP BACK	IMP BACKING	Backing improperly (not parking)
012	IMP PARK	IMP PARKED	Improperly parked
013	UNPARK	IMP STRT PARK	Improper start leaving parked position
014	IMP STRT	IMP STRT STOP	Improper start from stopped position
015	IMP LGHT	IMP/NO LIGHTS	Improper or no lights (vehicle in traffic)
016	INATTENT	INATTENTION	Inattention (Failure to Dim Lights prior to 4/1/97)
017	UNSF VEH	DR UNSAFE VEH	Driving unsafe vehicle (no other error apparent)
018	OTH PARK	PRK MAN N/CLR	Entering/exiting parked position w/ insufficient clearance; other improper parking maneuver
019	DIS DRIV	DISRG DR SIG	Disregarded other driver's signal
020	DIS SGNL	DISRG TRF SIG	Disregarded traffic signal
021	RAN STOP	DISRG STP SGN	Disregarded stop sign or flashing red
022	DIS SIGN	DISRG WRN SGN	Disregarded warning sign, flares or flashing amber
023	DIS OFCR	DISRG POL/FLG	Disregarded police officer or flagman
024	DIS EMER	DISRG SIR/EMR	Disregarded siren or warning of emergency vehicle
025	DIS RR	DISRG RR SIG	Disregarded RR signal, RR sign, or RR flagman
026	REAR-END	F AVOID STP V	Failed to avoid stopped or parked vehicle ahead other than school bus
027	BIKE ROW	F/YLD ROW BIK	Did not have right-of-way over pedalcyclist
028	NO ROW	NO R-O-W	Did not have right-of-way
029	PED ROW	F/YLD ROW PED	Failed to yield right-of-way to pedestrian
030	PAS CURV	PASS ON CURVE	Passing on a curve
031	PAS WRNG	PASS WRNG SID	Passing on the wrong side
032	PAS TANG	PASS TANGENT	Passing on straight road under unsafe conditions
033	PAS X-WK	PASS STP4PED	Passed vehicle stopped at crosswalk for pedestrian
034	PAS INTR	PASS AT INTER	Passing at intersection
035	PAS HILL	PASS ON HILL	Passing on crest of hill
036	N/PAS ZN	PASS N/PASSNG	Passing in "No Passing" zone
037	PAS TRAF	PASS ONC TRAF	Passing in front of oncoming traffic
038	CUT-IN	CUTTING IN	Cutting in (two lanes - two way only)
039	WRNGSIDE	DR WRONG SIDE	Driving on wrong side of the road (2-way undivided roadways)
040	THRU MED	DR THRU MEDN	Driving through safety zone or over island
041	F/ST BUS	F/STP SCHLBUS	Failed to stop for school bus
042	F/SLO MV	F/SLO SLO VEH	Failed to decrease speed for slower moving vehicle
043	TOO CLOSE	FOLLOW TO CLOS	Following too closely (must be on officer's report)

ERR CODES

Code	Short Description	Medium Description	Long Description
044	STRDL LN	STRD/DR WRNG	Straddling or driving on wrong lanes
045	IMP CHG	IMP LANE CHG	Improper change of traffic lanes
046	WRNG WAY	WRNG WY/1 WAY	Wrong way on one-way roadway; wrong side divided road
047	BASCRULE	V BASIC RULE	Driving too fast for conditions (not exceeding posted speed)
048	OPN DOOR	OPN DOOR TRAF	Opened door into adjacent traffic lane
049	IMPEDING	IMPEDING TRAF	Impeding Traffic
050	SPEED	SPEED	Driving in excess of posted speed
051	RECKLESS	RECKLESS DRVNG	Reckless driving (per PAR)
052	CARELESS	CARELESS DRVNG	Careless driving (per PAR)
053	RACING	RACING	Speed Racing (per PAR)
054	X N/SGNL	X-INT NO SGNL	Crossing at intersection, no traffic signal present
055	X W/SGNL	X-INT W/ SGNL	Crossing at intersection, traffic signal present
056	DIAGONAL	X-INT DIAGNL	Crossing at intersection - diagonally
057	BTWN INT	X-BTWN INTER	Crossing between intersections
059	W/TRAF-S	W SHLD W/TRAF	Walking, running, riding, etc., on shoulder WITH traffic
060	A/TRAF-S	W SHLD A/TRAF	Walking, running, riding, etc., on shoulder FACING traffic
061	W/TRAF-P	W PAVE W/TRAF	Walking, running, riding, etc., on pavement WITH traffic
062	A/TRAF-P	W PAVE A/TRAF	Walking, running, riding, etc., on pavement FACING traffic
063	PLAYNRD	PLAY IN RDWY	Playing in street or road
064	PUSH MV	PUSH MV IN RD	Pushing or working on vehicle in road or on shoulder
065	WORK IN RD	WORK IN RD	Working in roadway or along shoulder
070	LAY ON RD	LYING IN RD	Standing or lying in roadway
071	NM IMP USE	N-M IMP USE	Improper use of traffic lane by non-motorist
073	ELUDING	ELUDING	Eluding / Attempt to elude
079	F NEG CURV	FAIL NEG CURV	Failed to negotiate a curve
080	FAIL LN	F MAINT LANE	Failed to maintain lane
081	OFF RD	RAN OFF RD	Ran off road
082	NO CLEAR	MISJUDGE CLR	Driver misjudged clearance
083	OVRSTEER	OVRSTEER	Over-correcting
084	NOT USED	NOT USED	Code not in use
085	OVRLOAD	OVRLOAD	Overloading or improper loading of vehicle with cargo or passengers
097	UNA DIS TC	UNA DISRG TCD	Unable to determine which driver disregarded traffic control device

EVENT CODES

Code	Short Description	Medium Description	Long Description
001	FEL/JUMP	FELL/JUMPED MV	Occupant fell, jumped or was ejected from moving vehicle
002	INTERFER	PSNGR INTERFERED	Passenger interfered with driver
003	BUG INTF	ANML INTERFERED	Animal or insect in vehicle interfered with driver
004	INDRCT PED	PED INDRCTLY INVLV	Pedestrian indirectly involved (not struck)
005	SUB-PED	SUBSEQUENT PED	"Sub-Ped": pedestrian injured subsequent to collision, etc.
006	INDRCT BIK	BIKE INDRCTLY INVLV	Pedalcyclist indirectly involved (not struck)
007	HITCHIKR	HITCHHIKER	Hitchhiker (soliciting a ride)
008	PSNGR TOW	PSNGR TOWED	Passenger or non-motorist being towed or pushed on conveyance
009	ON/OFF V	ON/OFF STOP VEH	Getting on/off stopped/parked vehicle (occupants only; must have physical contact w/ vehicle)
010	SUB OTRN	SUBSEQ OVERTURN	Overtuned after first harmful event
011	MV PUSHD	VEH BEING PUSHED	Vehicle being pushed
012	MV TOWED	VEH TOWED/TOWING	Vehicle towed or had been towing another vehicle
013	FORCED	FORCED BY IMPACT	Vehicle forced by impact into another vehicle, pedalcyclist or pedestrian
014	SET MOTN	MV SET IN MOTION	Vehicle set in motion by non-driver (child released brakes, etc.)
015	RR ROW	RAILROAD ROW	At or on railroad right-of-way (not Light Rail)
016	LT RL ROW	LIGHT RAIL ROW	At or on Light-Rail right-of-way
017	RR HIT V	TRAIN HIT VEH	Train struck vehicle
018	V HIT RR	VEH HIT TRAIN	Vehicle struck train
019	HIT RR CAR	VEH HIT RR CAR	Vehicle struck railroad car on roadway
020	JACKNIFE	JACKKNIFE	Jackknife; trailer or towed vehicle struck towing vehicle
021	TRL OTRN	TRAILER O'TURN	Trailer or towed vehicle overturned
022	CN BROKE	TRLR CONN BROKE	Trailer connection broke
023	DETACH TRL	DETCHD TRLR STRKNG	Detached trailing object struck other vehicle, non-motorist, or object
024	V DOOR OPN	V DOOR OPN IN TRAF	Vehicle door opened into adjacent traffic lane
025	WHEELOFF	WHEEL CAME OFF	Wheel came off
026	HOOD UP	HOOD FLEW UP	Hood flew up
028	LOAD SHIFT	LOAD SHIFTED	Lost load, load moved or shifted
029	TIRE FAIL	TIRE FAILURE	Tire failure
030	PET	PET	Pet: cat, dog and similar
031	LVSTOCK	LIVESTOCK	Stock: cow, calf, bull, steer, sheep, etc.
032	HORSE	HORSE	Horse, mule, or donkey
033	HRSE&RID	HORSE & RIDER	Horse and rider
034	GAME	GAME NO DEER/ELK	Wild animal, game (includes birds; not deer or elk)
035	DEER ELK	DEER OR ELK	Deer or elk, wapiti
036	ANML VEH	ANIMAL-DRAWN VEH	Animal-drawn vehicle
037	CULVERT	CULVERT/MANHOLE	Culvert, open low or high manhole
038	ATENUATN	IMPACT CUSHION	Impact attenuator
039	PK METER	PARKING METER	Parking meter
040	CURB	CURB	Curb (also narrow sidewalks on bridges)
041	JIGGLE	JIGGLE BAR N/MED	Jiggle bar or traffic snake for channelization

EVENT CODES

Code	Short Description	Medium Description	Long Description
042	GDRL END	GUARDRAIL END	Leading edge of guardrail
043	GARDRAIL	GUARDRAIL	Guard rail (not metal median barrier)
044	BARRIER	MEDIAN BARRIER	Median barrier (raised or metal)
045	WALL	WALL	Retaining wall or tunnel wall
046	BR RAIL	BRIDGE RAIL	Bridge railing or parapet (on bridge or approach)
047	BR ABUTMNT	BRIDGE ABUTMENT	Bridge abutment (included "approach end" thru 2013)
048	BR COLMN	BRIDGE COLUMN	Bridge pillar or column
049	BR GIRDR	BRIDGE GIRDER	Bridge girder (horizontal bridge structure overhead)
050	ISLAND	TRAFFIC ISLAND	Traffic raised island
051	GORE	GORE	Gore
052	POLE UNK	POLE-UNKNOWN	Pole - type unknown
053	POLE UTL	POLE-UTILITY	Pole - power or telephone
054	ST LIGHT	POLE-ST LIGHT	Pole - street light only
055	TRF SGNL	POLE-TRAF SIGNAL	Pole - traffic signal and ped signal only
056	SGN BRDG	POLE-SIGN BRIDGE	Pole - sign bridge
057	STOPSIGN	STOP/YIELD SIGN	Stop or yield sign
058	OTH SIGN	OTHER SIGN	Other sign, including street signs
059	HYDRANT	HYDRANT	Hydrant
060	MARKER	DELINEATOR	Delineator or marker (reflector posts)
061	MAILBOX	MAILBOX	Mailbox
062	TREE	TREE/STUMP	Tree, stump or shrubs
063	VEG OHED	VEGTN OVER RDWY	Tree branch or other vegetation overhead, etc.
064	WIRE/CBL	CABLE ACROSS RD	Wire or cable across or over the road
065	TEMP SGN	TEMP SIGN/BARR	Temporary sign or barricade in road, etc.
066	PERM SGN	PERM SIGN/BARR	Permanent sign or barricade in/off road
067	SLIDE	SLIDE/ROCKS	Slides, fallen or falling rocks
068	FRGN OBJ	FOREIGN OBJECT	Foreign obstruction/debris in road (not gravel)
069	EQP WORK	EQUIP WORKING	Equipment working in/off road
070	OTH EQP	OTHER EQUIPMENT	Other equipment in or off road (includes parked trailer, boat)
071	MAIN EQP	MAINTNCE EQUIP	Wrecker, street sweeper, snow plow or sanding equipment
072	OTHER WALL	OTHER WALL	Rock, brick or other solid wall
073	IRREG PVMT	IRREGULAR PAVEMENT	Other bump (not speed bump), pothole or pavement irregularity (per PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJ	Other overhead object (highway sign, signal head, etc.); not bridge
075	CAVE IN	CAVE IN	Bridge or road cave in
076	HI WATER	HIGH WATER	High Water
077	SNO BANK	SNOW BANK	Snow Bank
078	LO-HI EDGE	LOW-HIGH PVMNT EDGE	Low or high shoulder at pavement edge
079	DITCH	CUT SLOPE/DITCH	Cut slope or ditch embankment
080	OBJ FRM MV	OBJ FRM OTHR VEH	Struck by rock or other object set in motion by other vehicle (incl. lost loads)
081	FLY-OBJ	OTHER MOVING OBJ	Struck by rock or other moving or flying object (not set in motion by vehicle)
082	VEH HID	VEH OBSCURE VIEW	Vehicle obscured view
083	VEG HID	VEG OBSCURE VIEW	Vegetation obscured view

EVENT CODES

Code	Short Description	Medium Description	Long Description
084	BLDG HID	BLD OBSCURE VIEW	View obscured by fence, sign, phone booth, etc.
085	WIND GUST	WIND GUST	Wind Gust
086	IMMERSED	IMMERSION	Vehicle immersed in body of water
087	FIRE/EXP	FIRE/EXPLOSION	Fire or explosion
088	FENC/BLD	FENCE/BUILDING	Fence or building, etc.
089	OTHR CRASH	REFER OTHR CRASH	Crash related to another separate crash
090	TO 1 SIDE	TWO WAY ONE SIDE	Two-way traffic on divided roadway all routed to one side
091	BUILDING	BUILDING	Building or other structure
092	PHANTOM	PHANTOM VEH	Other (phantom) non-contact vehicle
093	CELL PHONE	CELL PHONE PER PAR	Cell phone (on PAR or driver in use)
094	VIOL GDL	VIOL GRAD DR LIC	Teenage driver in violation of graduated license pgm
095	GUY WIRE	GUY WIRE	Guy wire
096	BERM	BERM	Berm (earthen or gravel mound)
097	GRAVEL	GRAVEL IN RDWY	Gravel in roadway
098	ABR EDGE	ABRUPT EDGE	Abrupt edge
099	CELL WTNSD	CELL PHONE WITNESSED	Cell phone use witnessed by other participant
100	UNK FIXD	UNK FIX OBJ	Fixed object, unknown type.
101	OTHER OBJ	OTHER OBJ NOT FIXED	Non-fixed object, other or unknown type
102	TEXTING	TEXTING	Texting
103	WZ WORKER	WZ WORKER	Work Zone Worker
104	ON VEHICLE	RIDE ON VEH EXTERIOR	Passenger riding on vehicle exterior
105	PEDAL PSGR	PSNGR ON PEDALCYCLE	Passenger riding on pedalcycle
106	MAN WHLCHR	NONMOTOR WHEELCHAIR	Pedestrian in non-motorized wheelchair
107	MTR WHLCHR	MOTORIZED WHEELCHAIR	Pedestrian in motorized wheelchair
108	OFFICER	POLICE OFFICER	Law Enforcement / Police Officer
109	SUB-BIKE	SUBSEQUENT BICYCLIST	"Sub-Bike": pedalcyclist injured subsequent to collision, etc.
110	N-MTR	NM STR VEH	Non-motorist struck vehicle
111	S CAR VS V	ST CAR STRUCK VEH	Street Car/Trolley (on rails or overhead wire system) struck vehicle
112	V VS S CAR	VEH STRUCK ST CAR	Vehicle struck Street Car/Trolley (on rails or overhead wire system)
113	S CAR ROW	STREET CAR ROW	At or on street car or trolley right-of-way
114	RR EQUIP	VEH STRUCK RR EQUIP	Vehicle struck railroad equipment (not train) on tracks
115	DSTRCT GPS	DISTRCT GPS DEVICE	Distracted by navigation system or GPS device
116	DSTRCT OTH	DISTRCT OTHR DEVICE	Distracted by other electronic device
117	RR GATE	RR DROP-ARM GATE	Rail crossing drop-arm gate
118	EXPNSN JNT	EXPANSION JOINT	Expansion joint
119	JERSEY BAR	JERSEY BARRIER	Jersey barrier
120	WIRE BAR	WIRE BARRIER	Wire or cable median barrier
121	FENCE	FENCE	Fence
123	OBJ IN VEH	LOOSE OBJ IN VEHICLE	Loose object in vehicle struck occupant
124	SLIPPERY	SLIPPERY SURFACE	Sliding or swerving due to wet, icy, slippery or loose surface (not gravel)
125	SHLDR	SHLDR GAVE	Shoulder gave way
126	BOULDER	ROCKS / BOULDER	Rock(s), boulder (not gravel; not rock slide)

EVENT CODES

Code	Short Description	Medium Description	Long Description
127	LAND SLIDE	ROCK OR LAND SLIDE	Rock slide or land slide
128	CURVE INV	CURVE PRESENT	Curve present at crash location
129	HILL INV	HILL PRESENT	Vertical grade / hill present at crash location
130	CURVE HID	CURVE OBSCURED VIEW	View obscured by curve
131	HILL HID	HILL OBSCURED VIEW	View obscured by vertical grade / hill
132	WINDOW HID	WINDOW VIEW OBSCURED	View obscured by vehicle window conditions
133	SPRAY HID	SPRAY OBSCURED VIEW	View obscured by water spray
134	TORRENTIAL	TORRENTIAL RAIN	Torrential Rain (exceptionally heavy rain)
135	RAIL OCC	RAIL/CABLE CAR OCC	Injured occupant of railway train, light rail, street car or cable car

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
 TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
 CRASH SUMMARIES BY YEAR BY COLLISION TYPE

Crashes on S Ivy St between SW 8th Ave to SE 16th Ave, excludes crashes at ending intersections.
 January 1, 2016 through December 31, 2018

COLLISION TYPE	FATAL CRASHES	NON- FATAL CRASHES	PROPERTY DAMAGE ONLY	TOTAL CRASHES	TOTAL PEOPLE KILLED	TOTAL PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER- SECTION	INTER- SECTION RELATED	OFF- ROAD
ANGLE	0	0	2	2	0	0	0	2	0	2	0	2	0	0
REAR-END	0	1	0	1	0	1	0	1	0	1	0	1	0	0
2017 TOTAL	0	1	2	3	0	1	0	3	0	3	0	3	0	0
YEAR: 2016														
ANGLE	0	1	0	1	0	1	0	1	0	1	0	1	0	0
FIXED / OTHER OBJECT	0	1	0	1	0	1	0	1	0	0	1	0	0	1
REAR-END	0	1	0	1	0	2	0	1	0	1	0	0	1	0
SIDESWIPE - MEETING	0	0	1	1	0	0	0	1	0	1	0	1	0	0
TURNING MOVEMENTS	0	1	2	3	0	2	0	2	1	1	2	3	0	0
2016 TOTAL	0	4	3	7	0	6	0	6	1	4	3	5	1	1
FINAL TOTAL	0	5	5	10	0	7	0	9	1	7	3	8	1	1

Disclaimers: Effective 2016, collection of "Property Damage Only" (PDO) crash data elements was reduced for vehicles and participants. Age, Gender, License, Error and other elements are no longer available for PDO crash reporting. Please keep this in mind when comparing 2016 PDO crash data to prior years.

A higher number of crashes may be reported as of 2011 compared to prior years. This does not necessarily reflect an increase in annual crashes. The higher numbers may result from a change to an internal departmental process that allows the Crash Analysis and Reporting Unit to add previously unavailable, non-fatal crash reports to the annual data file. Please be aware of this change when comparing pre-2011 crash statistics. For all disclaimers, see https://www.oregon.gov/ODOT/Data/documents/Crash_Data_Disclaimers.pdf.

OREGON DEPARTMENT OF TRANSPORTATION - POLICY, DATA AND ANALYSIS DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CRASH LISTING

CITY OF CANBY, CLACKAMAS COUNTY

Crashes on S Ivy St between SW 8th Ave to SE 16th Ave, excludes crashes at ending intersections.
January 1, 2016 through December 31, 2018

SR	Y	M	D	H	M	S	DATE	TIME	FC	DISTNC	INTERSECTION SEQ #	CITY STREET	FIRST STREET	SECOND STREET	INT-TYP (MEDIAN)	INT-REL	OFF-ROAD	WTHR	CRASH TYP	SPCL USE	MOVE	TRLR QTY	FROM	TO	P#	TYPE	SVRTY	E	X	RES	FED	LOC	ERROR	ACTN	EVENT	CAUSE			
04418	Y	Y	N	N	N	N	09/25/2016	16	16			S IVY ST			CROSS	N	CLR	ANGI-OTH	01	NONE	0	STRGHT	N	S													30,04		
							Sun 6P	0				SW 13TH AVE																									00		
No	45	15	7.77	-122	41	13.03					1																										30,04		
05026	N	N	N	N	N	N	10/31/2016	16	16			S IVY ST			CROSS	N	CLR	O-1 L-TURN	01	NONE	9	STRGHT	N	S														04,08	
							Mon 5P	0				SW 13TH AVE																									00		
No	45	15	7.77	-122	41	13.03					1																										00		
05548	N	N	N	N	N	N	12/23/2017	16	16			S IVY ST			CROSS	N	CLD	ANGI-OTH	01	NONE	9	STRGHT	N	S															04
							Sat 2P	0				SW 13TH AVE																									00		
No	45	15	7.77	-122	41	13.03					1																										00		
00725	N	N	N	N	N	N	02/24/2017	16	16			S IVY ST			3-LEG	N	CLR	S-1STOP	01	NONE	0	STRGHT	N	S														27,29	
							Fri 7A	0				SW 8TH AVE																									00		
No	45	15	23.14	-122	41	16.61					1																									27,29			
03558	N	N	N	N	N	N	06/06/2016	16	16			S IVY ST			(NONE)	NONE	Y	CLR	FIX OBJ	01	NONE	0	STRGHT	N	S													16	
							Sat 6A	500				SW 8TH AVE																									00		
No	45	15	18.78	-122	41	13.52					1																									16			

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
000	NONE	NO ACTION OR NON-WARRANTED
001	SKIDDED	SKIDDED
002	ON/OFF V	GETTING ON OR OFF STOPPED OR PARKED VEHICLE
003	LOAD OVR	OVERHANGING LOAD STRUCK ANOTHER VEHICLE, ETC.
006	SLOW DN	SLOWED DOWN
007	AVOIDING	AVOIDING MANEUVER
008	PAR PARK	PARALLEL PARKING
009	ANG PARK	ANGLE PARKING
010	INTERFERE	PASSENGER INTERFERING WITH DRIVER
011	STOPPED	STOPPED IN TRAFFIC NOT WAITING TO MAKE A LEFT TURN
012	STP/L TRN	STOPPED BECAUSE OF LEFT TURN SIGNAL OR WAITING, ETC.
013	STP TURN	STOPPED WHILE EXECUTING A TURN
014	EMR V PKD	EMERGENCY VEHICLE LEGALLY PARKED IN THE ROADWAY
015	GO A/STOP	PROCEED AFTER STOPPING FOR A STOP SIGN/FLASHING RED.
016	TRN A/RED	TURNED ON RED AFTER STOPPING
017	LOSTCTRL	LOST CONTROL OF VEHICLE
018	EXIT DWY	ENTERING STREET OR HIGHWAY FROM ALLEY OR DRIVEWAY
019	ENTR DWY	ENTERING ALLEY OR DRIVEWAY FROM STREET OR HIGHWAY
020	STR ENTR	BEFORE ENTERING ROADWAY, STRUCK PEDESTRIAN, ETC. ON SIDEWALK OR SHOULDER
021	NO DRVR	CAR RAN AWAY - NO DRIVER
022	PREV COL	STRUCK, OR WAS STRUCK BY, VEHICLE OR PEDESTRIAN IN PRIOR COLLISION BEFORE ACC. STABILIZED
023	STALLED	VEHICLE STALLED OR DISABLED
024	DRVR DEAD	DEAD BY UNASSOCIATED CAUSE
025	FATIGUE	FATIGUED, SLEEPY, ASLEEP
026	SUN	DRIVER BLINDED BY SUN
027	HDLGHTS	DRIVER BLINDED BY HEADLIGHTS
028	ILLNESS	PHYSICALLY ILL
029	THRU MED	VEHICLE CROSSED, PLUNGED OVER, OR THROUGH MEDIAN BARRIER
030	PURSUIT	PURSUIT OR ATTEMPTING TO STOP A VEHICLE
031	PASSING	PASSING SITUATION
032	PKOFFRD	VEHICLE PARKED BEYOND CURB OR SHOULDER
033	CROS MED	VEHICLE CROSSED EARTH OR GRASS MEDIAN
034	X N/SGNL	CROSSING AT INTERSECTION - NO TRAFFIC SIGNAL PRESENT
035	X W/SGNL	CROSSING AT INTERSECTION - TRAFFIC SIGNAL PRESENT
036	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
037	BTWN INT	CROSSING BETWEEN INTERSECTIONS
038	DISTRCT	DRIVER'S ATTENTION DISTRACTED
039	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
040	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
041	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
042	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
043	PLAYINRD	PLAYING IN STREET OR ROAD
044	PUSH WV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
045	WORK ON	WORKING IN ROADWAY OR ALONG SHOULDER
046	W/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. WITH TRAFFIC
047	A/ TRAFIC	NON-MOTORIST WALKING, RUNNING, RIDING, ETC. FACING TRAFFIC
050	LAY ON RD	STANDING OR LYING IN ROADWAY
051	ENT OFFRD	ENTERING / STARTING IN TRAFFIC LANE FROM OFF ROAD
052	MERGING	MERGING

ACTION CODE TRANSLATION LIST

ACTION CODE	SHORT DESCRIPTION	LONG DESCRIPTION
055	SPRAY	BLINDED BY WATER SPRAY
088	OTHER	OTHER ACTION
099	UNK	UNKNOWN ACTION

CAUSE CODE TRANSLATION LIST

CAUSE CODE	SHORT DESCRIPTION	LONG DESCRIPTION
00	NO CODE	NO CAUSE ASSOCIATED AT THIS LEVEL
01	TOO-FAST	TOO FAST FOR CONDITIONS (NOT EXCEED POSTED SPEED
02	NO-YIELD	DID NOT YIELD RIGHT-OF-WAY
03	PAS-STOP	PASSED STOP SIGN OR RED FLASHER
04	DIS SIG	DISREGARDED TRAFFIC SIGNAL
05	LEFT-CTR	DROVE LEFT OF CENTER ON TWO-WAY ROAD; STRADDLING
06	IMP-OVER	IMPROPER OVERTAKING
07	TOO-CLOS	FOLLOWED TOO CLOSELY
08	IMP-TURN	MADE IMPROPER TURN
09	DRINKING	ALCOHOL OR DRUG INVOLVED
10	OTHR-IMP	OTHER IMPROPER DRIVING
11	MECH-DEF	MECHANICAL DEFECT
12	OTHER	OTHER (NOT IMPROPER DRIVING)
13	IMP LN C	IMPROPER CHANGE OF TRAFFIC LANES
14	DIS TCD	DISREGARDED OTHER TRAFFIC CONTROL DEVICE
15	WRNG WAY	WRONG WAY ON ONE-WAY ROAD; WRONG SIDE DIVIDED RO.
16	FATIGUE	DRIVER DROWSY/FATIGUED/SLEEPY
17	ILLNESS	PHYSICAL ILLNESS
18	IN RDWY	NON-MOTORIST ILLEGALLY IN ROADWAY
19	NT VISBL	NON-MOTORIST NOT VISIBLE; NON-REFLECTIVE CLOTHIN
20	IMP PKNG	VEHICLE IMPROPERLY PARKED
21	DEF STER	DEFECTIVE STEERING MECHANISM
22	DEF BRAKE	INADEQUATE OR NO BRAKES
24	LOADSHT	VEHICLE LOST LOAD OR LOAD SHIFTED
25	TIREFAIL	TIRE FAILURE
26	PHANTOM	PHANTOM / NON-CONTACT VEHICLE
27	INATTENT	INATTENTION
28	NM INATT	NON-MOTORIST INATTENTION
29	F AVOID	FAILED TO AVOID VEHICLE AHEAD
30	SPEED	DRIVING IN EXCESS OF POSTED SPEED
31	RACING	SPEED RACING (PER PAR)
32	CARELESS	CARELESS DRIVING (PER PAR)
33	RECKLESS	RECKLESS DRIVING (PER PAR)
34	AGGRESV	AGGRESSIVE DRIVING (PER PAR)
35	RD RAGE	ROAD RAGE (PER PAR)
40	VIEW OBS	VIEW OBSCURED
50	USED MDN	IMPROPER USE OF MEDIAN OR SHOULDER
51	FAIL LN	FAILED TO MAINTAIN LANE
52	OFF RD	RAN OFF ROAD

COLLISION TYPE CODE TRANSLATION LIST

COLL CODE	SHORT DESCRIPTION	LONG DESCRIPTION
6	OTH	MISCELLANEOUS
7	BACK	BACKING
0	PED	PEDESTRIAN
1	ANGL	ANGLE
2	HEAD	HEAD-ON
3	REAR	REAR-END
4	SS-M	SIDESWIPE - MEETING
5	SS-O	SIDESWIPE - OVERTAKING
6	TURN	TURNING MOVEMENT
7	PARK	PARKING MANUEVER
8	NCOL	NON-COLLISION
9	FIX	FIXED OBJECT OR OTHER OBJECT

CRASH TYPE CODE TRANSLATION LIST

CRASH TYPE	SHORT DESCRIPTION	LONG DESCRIPTION
6	OVERTURN	OVERTURNED
0	NON-COLL	OTHER NON-COLLISION
1	OTH RDWY	MOTOR VEHICLE ON OTHER ROADWAY
2	PRKD MV	PARKED MOTOR VEHICLE
3	PED	PEDESTRIAN
4	TRAIN	RAILWAY TRAIN
6	BIKE	PEDALCYCLIST
7	ANIMAL	ANIMAL
8	FIX OBJ	FIXED OBJECT
9	OTH OBJ	OTHER OBJECT
A	ANGL-STP	ENTERING AT ANGLE - ONE VEHICLE STOPPED
B	ANGL-OTH	ENTERING AT ANGLE - ALL OTHERS
C	S-STRGHT	FROM SAME DIRECTION - BOTH GOING STRAIGHT
D	S-ITURN	FROM SAME DIRECTION - ONE TURN, ONE STRAIGHT
E	S-1STOP	FROM SAME DIRECTION - ONE STOPPED
F	S-OTHER	FROM SAME DIRECTION-ALL OTHERS, INCLUDING PARKING
G	O-STRGHT	FROM OPPOSITE DIRECTION - BOTH GOING STRAIGHT
H	O-1 L-TURN	FROM OPPOSITE DIRECTION-ONE LEFT TURN, ONE STRAIGHT
I	O-1STOP	FROM OPPOSITE DIRECTION - ONE STOPPED
J	O-OTHER	FROM OPPOSITE DIRECTION-ALL OTHERS INCL. PARKING

DRIVER RESIDENCE CODE TRANSLATION LIST

RES CODE	SHORT DESC	LONG DESCRIPTION
1	OR<25	OREGON RESIDENT WITHIN 25 MILE OF HOME
2	OR>25	OREGON RESIDENT 25 OR MORE MILES FROM HOME
3	OR-?	OREGON RESIDENT - UNKNOWN DIST
4	N-RES	NON-RESIDENT
9	UNK	UNKNOWN IF OREGON RESIDENT

DRIVER LICENSE CODE TRANSLATION LIST

LIC CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NOT LICENSED (HAD NEVER BEEN LICENSED)
1	OR-Y	VALID OREGON LICENSE
2	OTH-Y	VALID LICENSE, OTHER STATE OR COUNTRY
3	SUSP	SUSPENDED/REVOKED
4	EXP	EXPIRED
8	N-VAL	OTHER NON-VALID LICENSE
9	UNK	UNKNOWN IF DRIVER WAS LICENSED AT TIME OF CRASH

ERROR CODE TRANSLATION LIST

ERROR CODE	SHORT DESCRIPTION	FULL DESCRIPTION
000	NONE	NO ERROR
001	WIDE TRN	WIDE TURN
002	CUT CORN	CUT CORNER ON TURN
003	FAIL TRN	FAILED TO OBEY MANDATORY TRAFFIC TURN SIGNAL, SIGN OR LANE MARKINGS
004	L IN TRF	LEFT TURN IN FRONT OF ONCOMING TRAFFIC
005	L PROHIB	LEFT TURN WHERE PROHIBITED
006	FRM WRNG	TURNED FROM WRONG LANE
007	TO WRONG	TURNED INTO WRONG LANE
008	ILLEG U	U-TURNED ILLEGALLY
009	IMP STOP	IMPROPERLY STOPPED IN TRAFFIC LANE
010	IMP SIG	IMPROPER SIGNAL OR FAILURE TO SIGNAL
011	IMP BACK	BACKING IMPROPERLY (NOT PARKING)
012	IMP PARK	IMPROPERLY PARKED
013	UNPARK	IMPROPER START LEAVING PARKED POSITION
014	IMP STRT	IMPROPER START FROM STOPPED POSITION
015	IMP LGHT	IMPROPER OR NO LIGHTS (VEHICLE IN TRAFFIC)
016	INATTENT	INATTENTION (FAILURE TO DIM LIGHTS PRIOR TO 4/1/97)
017	UNSF VEH	DRIVING UNSAFE VEHICLE (NO OTHER ERROR APPARENT)
018	OTH PARK	ENTERING/EXITING PARKED POSITION W/ INSUFFICIENT CLEARANCE; OTHER IMPROPER PARKING MANEUVER
019	DIS DRIV	DISREGARDED OTHER DRIVER'S SIGNAL
020	DIS SGNL	DISREGARDED TRAFFIC SIGNAL
021	RAN STOP	DISREGARDED STOP SIGN OR FLASHING RED
022	DIS SIGN	DISREGARDED WARNING SIGN, FLARES OR FLASHING AMBER
023	DIS OFCR	DISREGARDED POLICE OFFICER OR FLAGMAN
024	DIS EMER	DISREGARDED SIREN OR WARNING OF EMERGENCY VEHICLE
025	DIS RR	DISREGARDED RR SIGNAL, RR SIGN, OR RR FLAGMAN
026	REAR-END	FAILED TO AVOID STOPPED OR PARKED VEHICLE AHEAD OTHER THAN SCHOOL BUS
027	BIKE ROW	DID NOT HAVE RIGHT-OF-WAY OVER PEDALCYCLIST
028	NO ROW	DID NOT HAVE RIGHT-OF-WAY TO PEDESTRIAN
029	PED ROW	FAILED TO YIELD RIGHT-OF-WAY TO PEDESTRIAN
030	PAS CURV	PASSING ON A CURVE
031	PAS WRNG	PASSING ON THE WRONG SIDE
032	PAS TANG	PASSING ON STRAIGHT ROAD UNDER UNSAFE CONDITIONS
033	PAS X-WK	PASSED VEHICLE STOPPED AT CROSSWALK FOR PEDESTRIAN
034	PAS INTR	PASSING AT INTERSECTION
035	PAS HILL	PASSING ON CREST OF HILL
036	N/PAS ZN	PASSING IN "NO PASSING" ZONE
037	PAS TRAF	PASSING IN FRONT OF ONCOMING TRAFFIC
038	CUT-IN	CUTTING IN (TWO LANES - TWO WAY ONLY)
039	WRNGSIDE	DRIVING ON WRONG SIDE OF THE ROAD (2-WAY UNDIVIDED ROADWAYS)

ERROR CODE TRANSLATION LIST

ERROR CODE	DESCRIPTION	FULL DESCRIPTION
040	THRU MED	DRIVING THROUGH SAFETY ZONE OR OVER ISLAND
041	F/ST BUS	FAILED TO STOP FOR SCHOOL BUS
042	F/SLO MV	FAILED TO DECREASE SPEED FOR SLOWER MOVING VEHICLE
043	TOO CLOSE	FOLLOWING TOO CLOSELY (MUST BE ON OFFICER'S REPORT)
044	STPDL LN	SPRADDLING OR DRIVING ON WRONG LANES
045	IMP CHG	IMPROPER CHANGE OF TRAFFIC LANES
046	WRNG WAY	WRONG WAY ON ONE-WAY ROADWAY; WRONG SIDE DIVIDED ROAD
047	BASCRULE	DRIVING TOO FAST FOR CONDITIONS (NOT EXCEEDING POSTED SPEED)
048	OPN DOOR	OPENED DOOR INTO ADJACENT TRAFFIC LANE
049	IMPEDING	IMPEDING TRAFFIC
050	SPEED	DRIVING IN EXCESS OF POSTED SPEED
051	RECKLESS	RECKLESS DRIVING (PER PAR)
052	CARELESS	CARELESS DRIVING (PER PAR)
053	RACING	SPEED RACING (PER PAR)
054	X N/SGNL	CROSSING AT INTERSECTION, NO TRAFFIC SIGNAL PRESENT
055	X W/SGNL	CROSSING AT INTERSECTION, TRAFFIC SIGNAL PRESENT
056	DIAGONAL	CROSSING AT INTERSECTION - DIAGONALLY
057	BTWN INT	CROSSING BETWEEN INTERSECTIONS
059	W/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER WITH TRAFFIC
060	A/TRAF-S	WALKING, RUNNING, RIDING, ETC., ON SHOULDER FACING TRAFFIC
061	W/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT WITH TRAFFIC
062	A/TRAF-P	WALKING, RUNNING, RIDING, ETC., ON PAVEMENT FACING TRAFFIC
063	PLAYINRD	PLAYING IN STREET OR ROAD
064	PUSH MV	PUSHING OR WORKING ON VEHICLE IN ROAD OR ON SHOULDER
065	WORK IN RD	WORKING IN ROADWAY OR ALONG SHOULDER
070	LAY ON RD	STANDING OR LYING IN ROADWAY
071	NM IMP USE	IMPROPER USE OF TRAFFIC LANE BY NON-MOTORIST
073	ELUDING	ELUDING / ATTEMPT TO ELUDE
079	F NEG CURV	FAILED TO NEGOTIATE A CURVE
080	FAIL LN	FAILED TO MAINTAIN LANE
081	OFF RD	RAN OFF ROAD
082	NO CLEAR	DRIVER MISJUDGED CLEARANCE
083	OVRSTEER	OVER-CORRECTING
084	NOT USED	CODE NOT IN USE
085	OVRLOAD	OVERLOADING OR IMPROPER LOADING OF VEHICLE WITH CARGO OR PASSENGERS
097	UNA DIS TC	UNABLE TO DETERMINE WHICH DRIVER DISREGARDED TRAFFIC CONTROL DEVICE

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
001	FEL/JUMP	OCCUPANT FELL, JUMPED OR WAS EJECTED FROM MOVING VEHICLE
002	INTERFER	PASSENGER INTERFERED WITH DRIVER
003	BUG INTF	ANIMAL OR INSECT IN VEHICLE INTERFERED WITH DRIVER
004	INDRCT PED	PEDESTRIAN INDIRECTLY INVOLVED (NOT STRUCK)
005	SUB-PED	"SUB-PED": PEDESTRIAN INJURED SUBSEQUENT TO COLLISION, ETC.
006	INDRCT BIK	PEDALCYCLIST INDIRECTLY INVOLVED (NOT STRUCK)
007	HITCHIKR	HITCHHIKER (SOLICITING A RIDE)
008	PNGR TOW	PASSENGER OR NON-MOTORIST BEING TOWED OR PUSHED ON CONVEYANCE
009	ON/OFF V	GETTING ON/OFF STOPPED/PARKED VEHICLE (OCCUPANTS ONLY; MUST HAVE PHYSICAL CONTACT W/ VEHIC
010	SUB OTRN	OVERTURNED AFTER FIRST HARMFUL EVENT
011	MV PUSHD	VEHICLE BEING PUSHED
012	MV TOWED	VEHICLE TOWED OR HAD BEEN TOWING ANOTHER VEHICLE
013	FORCED	VEHICLE FORCED BY IMPACT INTO ANOTHER VEHICLE, PEDALCYCLIST OR PEDESTRIAN
014	SET MOTN	VEHICLE SET IN MOTION BY NON-DRIVER (CHILD RELEASED BRAKES, ETC.)
015	RR ROW	AT OR ON RAILROAD RIGHT-OF-WAY (NOT LIGHT RAIL)
016	LT RL ROW	AT OR ON LIGHT-RAIL RIGHT-OF-WAY
017	RR HIT V	TRAIN STRUCK VEHICLE
018	V HIT RR	VEHICLE STRUCK TRAIN
019	HIT BR CAR	VEHICLE STRUCK RAILROAD CAR ON ROADWAY
020	JACKKNIFE	JACKKNIFE; TRAILER OR TOWED VEHICLE STRUCK TOWING VEHICLE
021	TRL OTRN	TRAILER OR TOWED VEHICLE OVERTURNED
022	CN BROKE	TRAILER CONNECTION BROKE
023	DETACH TRL	DETACHED TRAILING OBJECT STRUCK OTHER VEHICLE, NON-MOTORIST, OR OBJECT
024	V DOOR OPN	VEHICLE DOOR OPENED INTO ADJACENT TRAFFIC LANE
025	WHEELOFF	WHEEL CAME OFF
026	HOOD UP	HOOD FLEW UP
028	LOAD SHIFT	LOST LOAD, LOAD MOVED OR SHIFTED
029	TIREFAIL	TIRE FAILURE
030	PET	PET: CAT, DOG AND SIMILAR
031	LVSTOCK	STOCK: COW, CALF, BULL, STEER, SHEEP, ETC.
032	HORSE	HORSE, MULE, OR DONKEY
033	HRSE&RID	HORSE AND RIDER
034	GAME	WILD ANIMAL, GAME (INCLUDES BIRDS; NOT DEER OR ELK)
035	DEER ELK	DEER OR ELK, WAPITI
036	ANML VEH	ANIMAL-DRAWN VEHICLE
037	CULVERT	CULVERT, OPEN LOW OR HIGH MANHOLE
038	ATENUATN	IMPACT ATTENUATOR
039	PK METER	PARKING METER
040	CURB	CURB (ALSO NARROW SIDEWALKS ON BRIDGES)
041	JIGGLE	JIGGLE BAR OR TRAFFIC SNAKE FOR CHANNELIZATION
042	GPL END	LEADING EDGE OF GUARDRAIL
043	GARDRAIL	GUARD RAIL (NOT METAL MEDIAN BARRIER)
044	BARRIER	MEDIAN BARRIER (RAISED OR METAL)
045	WALL	RETAINING WALL OR TUNNEL WALL
046	BR RAIL	BRIDGE RAILING OR PARAPET (ON BRIDGE OR APPROACH)
047	BR ABUTMNT	BRIDGE ABUTMENT (INCLUDED "APPROACH END" THRU 2013)
048	BR COLMN	BRIDGE PILLAR OR COLUMN
049	BR GIRDR	BRIDGE GIRDER (HORIZONTAL BRIDGE STRUCTURE OVERHEAD)
050	ISLAND	TRAFFIC RAISED ISLAND
051	GORE	GORE
052	POLE UNK	POLE - TYPE UNKNOWN
053	POLE UTL	POLE - POWER OR TELEPHONE
054	ST LIGHT	POLE - STREET LIGHT ONLY
055	TRF SGNL	POLE - TRAFFIC SIGNAL AND PED SIGNAL ONLY
056	SGN BRDG	POLE - SIGN BRIDGE
057	STOPSGN	STOP OR YIELD SIGN

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
058	OTH SIGN	OTHER SIGN, INCLUDING STREET SIGNS
059	HYDRANT	HYDRANT
060	MARKER	DELINEATOR OR MARKER (REFLECTOR POSTS)
061	MAILBOX	MAILBOX
062	TREE	TREE, STUMP OR SHRUBS
063	VEG OHED	TREE BRANCH OR OTHER VEGETATION OVERHEAD, ETC.
064	WIRE/CBL	WIRE OR CABLE ACROSS OR OVER THE ROAD
065	TEMP SGN	TEMPORARY SIGN OR BARRICADE IN ROAD, ETC.
066	PERM SGN	PERMANENT SIGN OR BARRICADE IN/OFF ROAD
067	SLIDE	SLIDES, FALLEN OR FALLING ROCKS
068	FRGN OBJ	FOREIGN OBSTRUCTION/DEBRIS IN ROAD (NOT GRAVEL)
069	EQP WORK	EQUIPMENT WORKING IN/OFF ROAD
070	OTH EQP	OTHER EQUIPMENT IN OR OFF ROAD (INCLUDES PARKED TRAILER, BOAT)
071	MAIN EQP	WRECKER, STREET SWEEPER, SNOW PLOW OR SANDING EQUIPMENT
072	OTHER WALL	ROCK, BRICK OR OTHER SOLID WALL
073	IRREG PVTM	OTHER BUMP (NOT SPEED BUMP), POTHOLE OR PAVEMENT IRREGULARITY (PER PAR)
074	OVERHD OBJ	OTHER OVERHEAD OBJECT (HIGHWAY SIGN, SIGNAL HEAD, ETC.); NOT BRIDGE
075	CAVE IN	BRIDGE OR ROAD CAVE IN
076	HI WATER	HIGH WATER
077	SNO BANK	SNOW BANK
078	LO-HI EDGE	LOW OR HIGH SHOULDER AT PAVEMENT EDGE
079	DITCH	CUT SLOPE OR DITCH EMBANKMENT
080	OBJ FRM MV	STRUCK BY ROCK OR OTHER OBJECT SET IN MOTION BY OTHER VEHICLE (INCL. LOST LOADS)
081	FLY-OBJ	STRUCK BY ROCK OR OTHER MOVING OR FLYING OBJECT (NOT SET IN MOTION BY VEHICLE)
082	VEH HID	VEHICLE OBSCURED VIEW
083	VEG HID	VEGETATION OBSCURED VIEW
084	BLDG HID	VIEW OBSCURED BY FENCE, SIGN, PHONE BOOTH, ETC.
085	WIND GUST	WIND GUST
086	IMMERSED	VEHICLE IMMERSED IN BODY OF WATER
087	FIRE/EXP	FIRE OR EXPLOSION
088	FENC/BLD	FENCE OR BUILDING, ETC.
089	OTHR CRASH	CRASH RELATED TO ANOTHER SEPARATE CRASH
090	TO 1 SIDE	TWO-WAY TRAFFIC ON DIVIDED ROADWAY ALL ROUTED TO ONE SIDE
091	BUILDING	BUILDING OR OTHER STRUCTURE
092	PHANTOM	OTHER (PHANTOM) NON-CONTACT VEHICLE
093	CELL PHONE	CELL PHONE (ON PAR OR DRIVER IN USE)
094	VIOL GDL	TEENAGE DRIVER IN VIOLATION OF GRADUATED LICENSE PGM
095	GUY WIRE	GUY WIRE
096	BERM	BERM (EARTHEN OR GRAVEL MOUND)
097	GRAVEL	GRAVEL IN ROADWAY
098	ABR EDGE	ABRUPT EDGE
099	CELL WTNSD	CELL PHONE USE WITNESSED BY OTHER PARTICIPANT
100	UNK FIXD	FIXED OBJECT, UNKNOWN TYPE.
101	OTHER OBJ	NON-FIXED OBJECT, OTHER OR UNKNOWN TYPE
102	TEXTING	TEXTING
103	WZ WORKER	WORK ZONE WORKER
104	ON VEHICLE	PASSENGER RIDING ON VEHICLE EXTERIOR
105	PEDAL PSGR	PASSENGER RIDING ON PEDALCYCLE
106	MAN WILCHR	PEDESTRIAN IN NON-MOTORIZED WHEELCHAIR
107	MTR WILCHR	PEDESTRIAN IN MOTORIZED WHEELCHAIR
108	OFFICER	LAW ENFORCEMENT / POLICE OFFICER
109	SUB-BIKE	"SUB-BIKE": PEDALCYCLIST INJURED SUBSEQUENT TO COLLISION, ETC.
110	N-MTR	NON-MOTORIST STRUCK VEHICLE
111	S CAR VS V	STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM) STRUCK VEHICLE
112	V VS S CAR	VEHICLE STRUCK STREET CAR/TROLLEY (ON RAILS OR OVERHEAD WIRE SYSTEM)
113	S CAR ROW	AT OR ON STREET CAR OR TROLLEY RIGHT-OF-WAY

EVENT CODE TRANSLATION LIST

EVENT CODE	SHORT DESCRIPTION	LONG DESCRIPTION
114	RR EQUIP	VEHICLE STRUCK RAILROAD EQUIPMENT (NOT TRAIN) ON TRACKS
115	DSTRCT GPS	DISTRACTED BY NAVIGATION SYSTEM OR GPS DEVICE
116	DSTRCT OTH	DISTRACTED BY OTHER ELECTRONIC DEVICE
117	RR GATE	RAIL CROSSING DROP-ARM GATE
118	EXPNSN JNT	EXPANSION JOINT
119	JERSEY BAR	JERSEY BARRIER
120	WIRE BAR	WIRE OR CABLE MEDIAN BARRIER
121	FENCE	FENCE
123	OBJ IN VEH	LOOSE OBJECT IN VEHICLE STRUCK OCCUPANT
124	SLIPPERY	SLIDING OR SWERVING DUE TO WET, ICY, SLIPPERY OR LOOSE SURFACE (NOT GRAVEL)
125	SHLDR	SHOULDER GAVE WAY
126	BOULDER	ROCK(S), BOULDER (NOT GRAVEL; NOT ROCK SLIDE)
127	LAND SLIDE	ROCK SLIDE OR LAND SLIDE
128	CURVE INV	CURVE PRESENT AT CRASH LOCATION
129	HILL INV	VERTICAL GRADE / HILL PRESENT AT CRASH LOCATION
130	CURVE HID	VIEW OBSCURED BY CURVE
131	HILL HID	VIEW OBSCURED BY VERTICAL GRADE / HILL
132	WINDOW HID	VIEW OBSCURED BY VEHICLE WINDOW CONDITIONS
133	SPRAY HID	VIEW OBSCURED BY WATER SPRAY
134	TORRENTIAL	TORRENTIAL RAIN (EXCEPTIONALLY HEAVY RAIN)
135	RAIL OCC	INJURED OCCUPANT OF RAILWAY TRAIN, LIGHT RAIL, STREET CAR OR CABLE CAR

FUNCTIONAL CLASSIFICATION TRANSLATION LIST

FUNC CLASS	DESCRIPTION
01	RURAL PRINCIPAL ARTERIAL - INTERSTATE
02	RURAL PRINCIPAL ARTERIAL - OTHER
06	RURAL MINOR ARTERIAL
07	RURAL MAJOR COLLECTOR
08	RURAL MINOR COLLECTOR
09	RURAL LOCAL
11	URBAN PRINCIPAL ARTERIAL - INTERSTATE
12	URBAN PRINCIPAL ARTERIAL - OTHER FREEWAYS AND EXP
14	URBAN PRINCIPAL ARTERIAL - OTHER
16	URBAN MINOR ARTERIAL
17	URBAN MAJOR COLLECTOR
18	URBAN MINOR COLLECTOR
19	URBAN LOCAL
78	UNKNOWN RURAL SYSTEM
79	UNKNOWN RURAL NON-SYSTEM
98	UNKNOWN URBAN SYSTEM
99	UNKNOWN URBAN NON-SYSTEM

HIGHWAY COMPONENT TRANSLATION LIST

CODE	DESCRIPTION
0	MAINLINE STATE HIGHWAY
1	COUplet
3	FRONTAGE ROAD
6	CONNECTION
8	HIGHWAY - OTHER

INJURY SEVERITY CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
1	KILL	FATAL INJURY (K)
2	INJA	SUSPECTED SERIOUS INJURY (A)
3	INJB	SUSPECTED MINOR INJURY (B)
4	INJC	POSSIBLE INJURY (C)
5	PRI	DIED PRIOR TO CRASH
7	NO<5	NO INJURY 0 TO 4 YEARS OF AGE
9	NONE	NO APPARENT INJURY (O)

LIGHT CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	DAY	DAYLIGHT
2	DLIT	DARKNESS - WITH STREET LIGHTS
3	DARK	DARKNESS - NO STREET LIGHTS
4	DAWN	DAWN (TWILIGHT)
5	DUSK	DUSK (TWILIGHT)

MEDIAN TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	NONE	NO MEDIAN
1	RSDMD	SOLID MEDIAN BARRIER
2	DIVMD	EARTH, GRASS OR PAVED MEDIAN

MILEAGE TYPE CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
0	REGULAR MILEAGE
T	TEMPORARY
Y	SPUR
Z	OVERLAPPING

MOVEMENT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	STRGHT	STRAIGHT AHEAD
2	TURN-R	TURNING RIGHT
3	TURN-L	TURNING LEFT
4	U-TURN	MAKING A U-TURN
5	BACK	BACKING
6	STOP	STOPPED IN TRAFFIC
7	PRKD-P	PARKED - PROPERLY
8	PRKD-I	PARKED - IMPROPERLY
9	PARKNG	PARKING MANEUVER

NON-MOTORIST LOCATION CODE TRANSLATION LIST

CODE	LONG DESCRIPTION
00	AT INTERSECTION - NOT IN ROADWAY
01	AT INTERSECTION - INSIDE CROSSWALK
02	AT INTERSECTION - IN ROADWAY, OUTSIDE CROSSWALK
03	AT INTERSECTION - IN ROADWAY, XWALK AVAIL UNKNWN
04	NOT AT INTERSECTION - IN ROADWAY
05	NOT AT INTERSECTION - ON SHOULDER
06	NOT AT INTERSECTION - ON MEDIAN
07	NOT AT INTERSECTION - WITHIN TRAFFIC RIGHT-OF-WAY
08	NOT AT INTERSECTION - IN BIKE PATH OR PARKING LANE
09	NOT AT INTERSECTION - ON SIDEWALK
10	OUTSIDE TRAFFICWAY BOUNDARIES
13	AT INTERSECTION - IN BIKE LANE
14	NOT AT INTERSECTION - IN BIKE LANE
15	NOT AT INTERSECTION - INSIDE MID-BLOCK CROSSWALK
16	NOT AT INTERSECTION - IN PARKING LANE
18	OTHER, NOT IN ROADWAY
99	UNKNOWN LOCATION

ROAD CHARACTER CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	INTER	INTERSECTION
2	ALLEY	DRIVEWAY OR ALLEY
3	STRGHT	STRAIGHT ROADWAY
4	TRANS	TRANSITION
5	CURVE	CURVE (HORIZONTAL CURVE)
6	OPENAC	OPEN ACCESS OR TURNOUT
7	GRADE	GRADE (VERTICAL CURVE)
8	BRIDGE	BRIDGE STRUCTURE
9	TUNNEL	TUNNEL

PARTICIPANT TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	OCC	UNKNOWN OCCUPANT TYPE
1	DRVR	DRIVER
2	PSNG	PASSENGER
3	PED	PEDESTRIAN
4	CONV	PEDESTRIAN USING A PEDESTRIAN CONVEYA
5	PTOW	PEDESTRIAN TOWING OR TRAILERING AN OB
6	BIKE	PEDALCYCLIST
7	BTOW	PEDALCYCLIST TOWING OR TRAILERING AN
8	PRKD	OCCUPANT OF A PARKED MOTOR VEHICLE
9	OTHR	OTHER TYPE OF NON-MOTORIST

TRAFFIC CONTROL DEVICE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
000	NONE	NO CONTROL
001	TRF SIGNAL	TRAFFIC SIGNALS
002	FLASHECN-R	FLASHING BEACON - RED (STOP)
003	FLASHECN-A	FLASHING BEACON - AMBER (SLOW)
004	STOP SIGN	STOP SIGN
005	SLOW SIGN	SLOW SIGN
006	REG-SIGN	REGULATORY SIGN
007	YIELD	YIELD SIGN
008	WARNING	WARNING SIGN
009	CURVE	CURVE SIGN
010	SCHL X-ING	SCHOOL CROSSING SIGN OR SPECIAL SIGNAL
011	OFCR/FLAG	POLICE OFFICER, FLAGMAN - SCHOOL PATROL
012	BRG-GATE	BRIDGE GATE - BARRIER
013	TEMP-BARR	TEMPORARY BARRIER
014	NO-PASS-ZN	NO PASSING ZONE
015	ONE-WAY	ONE-WAY STREET
016	CHANNEL	CHANNELIZATION
017	MEDIAN BAR	MEDIAN BARRIER
018	PILOT CAR	PILOT CAR
019	SP PED SIG	SPECIAL PEDESTRIAN SIGNAL
020	X-BUCK	CROSSBUCK
021	THR-GN-SIG	THROUGH GREEN ARROW OR SIGNAL
022	L-GRN-SIG	LEFT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
023	R-GRN-SIG	RIGHT TURN GREEN ARROW, LANE MARKINGS, OR SIGNAL
024	WIGWAG	WIGWAG OR FLASHING LIGHTS W/O DROP-ARM GATE
025	X-BUCK WRN	CROSSBUCK AND ADVANCE WARNING
026	WW W/ GATE	FLASHING LIGHTS WITH DROP-ARM GATES
027	OVRRD SGML	SUPPLEMENTAL OVERHEAD SIGNAL (RR KING ONLY)
028	SP RR STOP	SPECIAL RR STOP SIGN
029	ILLUM GRD X	ILLUMINATED GRADE CROSSING
037	RAMP METER	METERED RAMPS
038	RUMBLE STR	RUMBLE STRIP
090	L-TURN REF	LEFT TURN REFUGE (WHEN REFUGE IS INVOLVED)
091	R-TURN ALL	RIGHT TURN AT ALL TIMES SIGN, ETC.
092	EMR SGN/FL	EMERGENCY SIGNS OR FLARES
093	ACCEL LANE	ACCELERATION OR DECELERATION LANES
094	R-TURN PRO	RIGHT TURN PROHIBITED ON RED AFTER STOPPING
095	BUS STP SGN	BUS STOP SIGN AND RED LIGHTS
099	UNKNOWN	UNKNOWN OR NOT DEFINITE

VEHICLE TYPE CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
00	PDO	NOT COLLECTED FOR PDO CRASHES
01	PSNGR CAR	PASSENGER CAR, PICKUP, LIGHT DELIVERY, ETC.
02	BOBTAIL	TRUCK TRACTOR WITH NO TRAILERS (BOBTAIL)
03	FARM TRCTR	FARM TRACTOR OR SELF-PROPELLED FARM EQUIPMENT
04	SEMI TOW	TRUCK TRACTOR WITH TRAILER/MOBILE HOME IN TOW
05	TRUCK	TRUCK WITH NON-DETACHABLE BED, PANEL, ETC.
06	MOPED	MOPED, MINIBIKE, SEATED MOTOR SCOOTER, MOTOR BIKE
07	SCHL BUS	SCHOOL BUS (INCLUDES VAN)
08	OTH BUS	OTHER BUS
09	MTRCYCLE	MOTORCYCLE, DIRT BIKE
10	OTHER	OTHER: FORKLIFT, BACKHOE, ETC.
11	MOTRHOME	MOTORHOME
12	TROLLEY	MOTORIZED STREET CAR/TROLLEY (NO RAILS/WIRES)
13	ATV	ATV
14	MTRSCTR	MOTORIZED SCOOTER (STANDING)
15	SNOWMOBILE	SNOWMOBILE
99	UNKNOWN	UNKNOWN VEHICLE TYPE

WEATHER CONDITION CODE TRANSLATION LIST

CODE	SHORT DESC	LONG DESCRIPTION
0	UNK	UNKNOWN
1	CLR	CLEAR
2	CLD	CLOUDY
3	RAIN	RAIN
4	SLT	SLEET
5	FOG	FOG
6	SNOW	SNOW
7	DUST	DUST
8	SMOK	SMOKE
9	ASH	ASH



Traffic Impact Study February 22nd Supplemental Report

**Senior Living
South Ivy Street & SE 13th Avenue
Canby, Oregon**

DR 20-03 & CUP 20-02

By

**Charbonneau Engineering
10211 SW Barbur Blvd, Suite 210A
Portland, OR 97219**



**Gary Spanovich, Transportation Planner
Mary Kate Otto, EIT, Traffic Analysis
Frank Charbonneau, PE, Supervising Traffic Engineer**

Overview

The facility will consist of a **102 Bed Assisted Living Center & eight (8) Senior Attached Units**. Each unit will consist of a bed for sleeping and a half bath. Generally these types of residential facilities generate much less traffic than say a single or multi family dwelling unit. The proposed “Canby Senior Living” development is to be on a 2.57 acre plot of land (111,973 square feet) with a building coverage area of 37,588 square feet. There will be 52 parking spaces of which two (2) will be handicapped spaces; there will be six (6) bicycle spaces. It is an independent living, residential care, and memory care facility. The development plot is designated commercial-residential (CR) in the Canby zoning map and it is adjacent to the Canby Senior Center and the Canby Swim Center and near the Hope Village campus. The development fronts on both **South Ivy Street & SE 13th Avenue**.

The City of Canby approved a Hope Village campus, to the south of the project site comprising of 138 Garden Homes and Cottages; two 50-unit affordable apartment buildings; community center; wellness center; 80 unit assisted living facility and a 50-bed post-acute care facility. The proposed site is adjacent to the Hope Village campus and next to the Canby Senior Center.

South Ivy Street and SE 13th Avenue are both classified as arterial streets in the Canby Functional Classification plan in the City’s TSP. Ivy has sidewalks on both sides; 13th has a sidewalk on the east leg and a trail on the west leg. Bike lanes are available on all sides. Ivy turns into Hwy 170 south of this area and is posted at 30 mph and Ivy is posted at 25 mph. A truck lane is designated for Ivy and also for the west leg of 13th. All four legs of the intersection have left turn pockets. The Site Plan is on the following page. The Appendix contains all the analysis sheets.

MAP 1 AREA LOCATION OF SITE



This memorandum has been prepared to address the proposed Canby Senior Living access spacing and the intersection queuing concerns identified by the City of Canby staff and DKS Associates, the City's Engineer. The site's location and its limited frontages prevent the site from meeting the City's access spacing standard and, thus a deviation from the standard is required.

Prior to this report the following traffic reports were forwarded to the City of Canby:

1. **Traffic Impact Study; November 23, 2020; Includes Technical Appendix**
2. **Traffic - February 5th Supplemental Report; Includes Technical Appendix**

Site Description

The Canby Senior Living site is proposed at 1300 S. Ivy Street, on the southeast corner of the S. Ivy Street/SE 13th Avenue intersection. The site's frontage is limited to 350 feet on S. Ivy Street and 335 feet on SE 13th Avenue.

Development of the site proposes construction of two full-movement accesses which will serve to reduce the amount of traffic traveling through the S. Ivy Street/SE 13th Avenue intersection (compared to the impacts if only one access were permitted) and will facilitate the movement of emergency and service vehicles through the site (entering at one access and exiting at the other access).

The first access, on S. Ivy Street, is proposed approximately 265 feet south of SE 13th Avenue. The second access, on SE 13th Avenue, is proposed approximately 252 feet east of S. Ivy Street. (The distances referenced were measured between centerlines of the roadways and the accesses.)

As identified in the Canby Senior Living Traffic Impact Study (dated November 23rd, 2020) the site is expected to generate 295 weekday daily trips, 21 weekday AM peak hour trips, and 29 weekday PM peak hour trips.

Access Spacing

Clackamas County staff have identified that the permitting authority on Ivy Street (south of SE 13th Avenue) was transferred to the City of Canby, though the S. Ivy Street/SE 13th Avenue intersection remains under the County's jurisdiction. SE 13th Avenue is under the City of Canby's jurisdiction. A recent email documented this:

February 19, 2021

To: Gary Spanovich; From: Rick Nys, PE - Clackamas County

“Permitting authority was transferred to Canby on Ivy south of 13th. 13th is entirely Canby's. We may have traffic study comments and I believe the Ivy/13th intersection remains our permitting authority, but we don't have authority over the access points.”

Section 16.46 of the Canby Municipal Code was reviewed to identify the access spacing requirements based on roadway classification. Both S. Ivy Street and SE 13th Avenue are classified as arterials. Table 16.46.030 identifies that on an arterial, the minimum spacing between a roadway and a driveway is 330 feet, measured between centerlines. While the proposed access locations do not meet the City of Canby's minimum access spacing standard, the site accesses are proposed at the best possible location considering the site's location and its limited frontages.

The S. Ivy Street access is proposed 265 feet south of SE 13th Street. The access' location was chosen in order to **maximize the separation between the access and the S. Ivy Street/SE 13th Avenue intersection while also providing a reasonable separation between the access and the existing residential driveway (located approximately 120 feet to the south).** Moving the proposed S. Ivy Street access further to the south is not recommended.

The SE 13th Avenue access is proposed 252 feet east of S. Ivy Street. The access' location was chosen to **maximize the separation between the access and the S. Ivy Street/SE 13th Avenue intersection (to the west) and the Larch Street/SE 13th Avenue intersection (~240 feet to the east).** Moving the proposed SE 13th Avenue access further to the east is not recommended.

The queuing calculations (presented on Page 5) verify that **the proposed access locations are outside of the influence area of the S. Ivy Street/SE 13th Avenue intersection.**

Capacity Analysis

In the Supplemental Transportation Report (dated February 4, 2021), the capacity analysis identified that with development of the Canby Senior Living site, the S. Ivy Street/SE 13th Avenue intersection and both full-movement accesses will operate at level of service "B" or better and the volume-to-capacity ratio (v/c) will not exceed 0.36. The table below summarizes the analysis results. **This intersection operation exceeds ODOT's operational standards and, thus intersection improvements are not necessary.** Copies of the capacity analysis reports *are attached*.

Intersection	Type of Control	Peak Hour	Traffic Scenario												
			Assumed 2020				2022 Background - Without Site -				2022 Background - With Site -				
			Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c	
SE 13 th Avenue and S Ivy Street	Signal	AM	-	B	16.9	0.32	-	B	17.5	0.36	-	B	18.9	0.36	
		PM	-	B	15.4	0.30	-	B	17.5	0.34	-	B	17.6	0.34	
Proposed Access and SE 13 th Avenue	Two-way Stop	AM	-	-	-	-	-	-	-	-	-	NB	B	12.4	0.01
		PM	-	-	-	-	-	-	-	-	-	NB	B	13.1	0.03
Proposed Access and S Ivy Street	Two-way Stop	AM	-	-	-	-	-	-	-	-	-	WB	B	11.8	0.01
		PM	-	-	-	-	-	-	-	-	-	WB	B	12.9	0.01

Notes: 2016 Highway Capacity Manual methodology used in analysis, Synchro v11.

Queuing Analysis

The S. Ivy Street/SE 13th Avenue intersection currently operates with a separate left turn lane and shared through-right lane on each approach. The available left turn storage distances measure 130 feet on the north and east approaches, 115 feet on the south approach, and 125 feet on the west approach.

Development of the Canby Senior Living site is not expected to increase the S. Ivy Street/SE 13th Avenue intersection turn lane queuing. After site development, the westbound left turn lane queue will not exceed 100 feet (81' calculated); the northbound through-right lane queue will not exceed 150 feet (132' calculated).

Based on the queue lengths calculated and the location of the proposed access locations, the site's traffic can be accommodated. **Further, the sight lines for maneuvers out of both proposed driveway locations will not be impacted by the resulting S. Ivy Street/SE 13th Avenue queues.** Copies of the queuing reports *are attached*.

Turn Lane Warrants

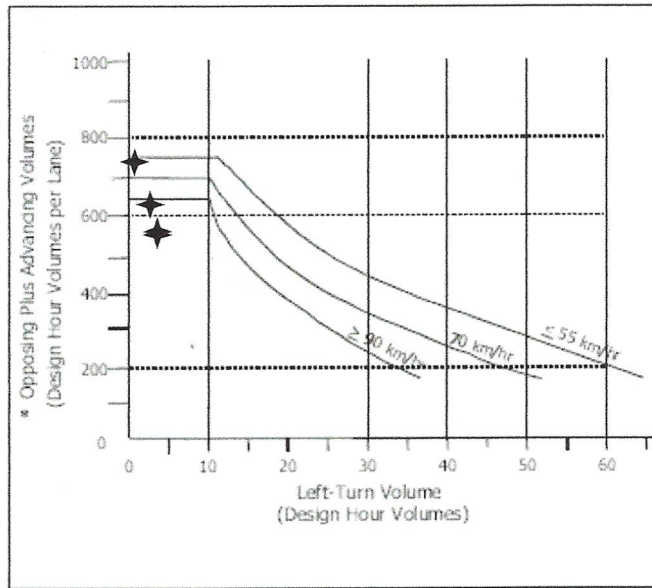
The Oregon Department of Transportation (ODOT) turn lane criteria were reviewed at the proposed site access on S. Ivy Street and at the proposed site access on SE 13th Avenue. The analysis indicates that separate left and right turn lanes are not warranted at either access location. The turn lane warrant nomographs are presented below.

Oregon Department of Transportation - Left Turn Lane Criteria

I. Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of intersecting traffic is the principal reason for considering installation of a left turn lane. The volume criteria is determined by the Texas Transportation Institute (TTI) curves in Figure 1.

The criteria is not met from zero to ten left turn vehicles per hour, but indicates that careful consideration be given to installing a left turn lane due to the increased potential for accidents in the through lanes. While the turn volumes are low, the adverse safety and operations impacts may require installation of a left turn lane. The final determination will be based on a field study.



* ((Advancing volume/number of advancing through lanes) + (opposing volume/ number of opposing through lanes))

FIGURE 1

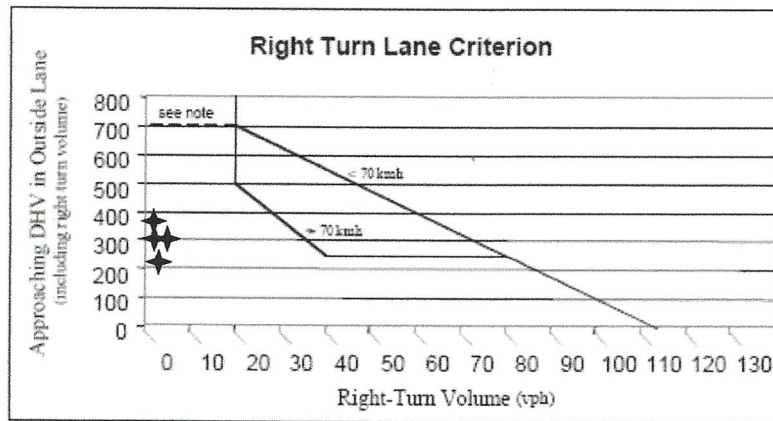
Oregon Department of Transportation - Left Turn Warrant Summary.

Intersection	Mov't	Analysis Period	Speed	Opposing plus Advancing Volume (vph per lane)	Left Turns in Advancing Volume (vph)	Storage Req'd?
Proposed Access & S. Ivy Street	SB LT	2022 Bkgd with Site, AM Peak	35 mph	556	4	No
		2022 Bkgd with Site, PM Peak	(56 kmh)	741	1	No
Proposed Access & SE 13th Avenue	WB LT	2022 Bkgd with Site, AM Peak	25 mph	560	4	No
		2022 Bkgd with Site, PM Peak	(40 kmh)	630	3	No

Oregon Department of Transportation - Right Turn Lane Criteria

I. Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of the intersection traffic is the principal reason for considering installation of a right turn lane. The vehicular volume criteria is determined using the curve in Figure 1.



Note: If there is no right turn lane, a shoulder needs to be provided.
If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

Figure 1

Oregon Department of Transportation - Right Turn Warrant Summary.

Intersection	Mov't	Analysis Period	Speed	Advancing Volume (vph)	Right Turns in Advancing Volume (vph)	Storage Req'd (ft)
Proposed Access & S. Ivy Street	NB RT	2022 Bkgd with Site, AM Peak	35 mph	360	2	None
		2022 Bkgd with Site, PM Peak	(56 kmh)	297	2	None
Proposed Access & SE 13th Avenue	EB RT	2022 Bkgd with Site, AM Peak	25 mph	209	3	None
		2022 Bkgd with Site, PM Peak	(40 kmh)	297	5	None

Summary and Recommendations

The Canby Senior Living site proposed at 1300 S. Ivy Street has frontages to S. Ivy Street and to SE 13th Avenue which measure 350 feet and 335 feet, respectively. Based on the site's limited frontage, the City of Canby's access spacing standard of 330 feet (between a roadway and a driveway) cannot be met.

The site is expected to generate 295 weekday daily trips, 21 weekday AM peak hour trips, and 29 weekday PM peak hour trips. **The site's trip generation is considerably lower than other land uses that have been proposed (by others) on this property previously.**

The site's development proposes full movement accesses on both S. Ivy Street and SE 13th Avenue. While the proposed access locations do not meet the City of Canby's minimum access spacing standard, the accesses are proposed at the best possible locations considering the site's location and its limited frontages. **The access locations are located outside of the influence area of the S. Ivy Street/SE 13th Avenue**

intersection.

Separate turn lanes on S. Ivy Street and SE 13th Avenue are not warranted or recommended at either site access.

Development of the Canby Senior Living site is not expected to increase the S. Ivy Street/ SE 13th Avenue intersection turn lane queue lengths. The traffic generated by the Canby Senior Living site can be accommodated without adversely impacting queues at the S. Ivy Street/SE 13th Avenue intersection. **Based on the excellent operational standards and the separation distance between the influence area of the S. Ivy Street/SE 13th Avenue intersection and the access locations, both full-movement accesses should be allowed with site development.**

Based on the findings in this report and the site's low trip generation, it is recommended that City of Canby staff support and approve the proposed site design and the development application.

APPENDIX

- **Capacity Analysis Reports**
- **Queuing Analysis Reports**
- **ODOT Turn Lane Nomographs**



Traffic Impact Study February 22nd Supplemental Report

**Senior Living
South Ivy Street & SE 13th Avenue
Canby, Oregon**

DR 20-03 & CUP 20-02

By

**Charbonneau Engineering
10211 SW Barbur Blvd, Suite 210A
Portland, OR 97219**



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Overview

The facility will consist of a **102 Bed Assisted Living Center & eight (8) Senior Attached Units**. Each unit will consist of a bed for sleeping and a half bath. Generally these types of residential facilities generate much less traffic than say a single or multi family dwelling unit. The proposed “Canby Senior Living” development is to be on a 2.57 acre plot of land (111,973 square feet) with a building coverage area of 37,588 square feet. There will be 52 parking spaces of which two (2) will be handicapped spaces; there will be six (6) bicycle spaces. It is an independent living, residential care, and memory care facility. The development plot is designated commercial-residential (CR) in the Canby zoning map and it is adjacent to the Canby Senior Center and the Canby Swim Center and near the Hope Village campus. The development fronts on both **South Ivy Street & SE 13th Avenue**.

The City of Canby approved a Hope Village campus, to the south of the project site comprising of 138 Garden Homes and Cottages; two 50-unit affordable apartment buildings; community center; wellness center; 80 unit assisted living facility and a 50-bed post-acute care facility. The proposed site is adjacent to the Hope Village campus and next to the Canby Senior Center.

South Ivy Street and SE 13th Avenue are both classified as arterial streets in the Canby Functional Classification plan in the City’s TSP. Ivy has sidewalks on both sides; 13th has a sidewalk on the east leg and a trail on the west leg. Bike lanes are available on all sides. Ivy turns into Hwy 170 south of this area and is posted at 30 mph and Ivy is posted at 25 mph. A truck lane is designated for Ivy and also for the west leg of 13th. All four legs of the intersection have left turn pockets. The Site Plan is on the following page. The Appendix contains all the analysis sheets.

MAP 1 AREA LOCATION OF SITE



This memorandum has been prepared to address the proposed Canby Senior Living access spacing and the intersection queuing concerns identified by the City of Canby staff and DKS Associates, the City's Engineer. The site's location and its limited frontages prevent the site from meeting the City's access spacing standard and, thus a deviation from the standard is required.

Prior to this report the following traffic reports were forwarded to the City of Canby:

1. **Traffic Impact Study; November 23, 2020; Includes Technical Appendix**
2. **Traffic - February 5th Supplemental Report; Includes Technical Appendix**

Site Description

The Canby Senior Living site is proposed at 1300 S. Ivy Street, on the southeast corner of the S. Ivy Street/SE 13th Avenue intersection. The site's frontage is limited to 350 feet on S. Ivy Street and 335 feet on SE 13th Avenue.

Development of the site proposes construction of two full-movement accesses which will serve to reduce the amount of traffic traveling through the S. Ivy Street/SE 13th Avenue intersection (compared to the impacts if only one access were permitted) and will facilitate the movement of emergency and service vehicles through the site (entering at one access and exiting at the other access).

The first access, on S. Ivy Street, is proposed approximately 265 feet south of SE 13th Avenue. The second access, on SE 13th Avenue, is proposed approximately 252 feet east of S. Ivy Street. (The distances referenced were measured between centerlines of the roadways and the accesses.)

As identified in the Canby Senior Living Traffic Impact Study (dated November 23rd, 2020) the site is expected to generate 295 weekday daily trips, 21 weekday AM peak hour trips, and 29 weekday PM peak hour trips.

Access Spacing

Clackamas County staff have identified that the permitting authority on Ivy Street (south of SE 13th Avenue) was transferred to the City of Canby, though the S. Ivy Street/SE 13th Avenue intersection remains under the County's jurisdiction. SE 13th Avenue is under the City of Canby's jurisdiction. A recent email documented this:

February 19, 2021

To: Gary Spanovich; From: Rick Nys, PE - Clackamas County

“Permitting authority was transferred to Canby on Ivy south of 13th. 13th is entirely Canby's. We may have traffic study comments and I believe the Ivy/13th intersection remains our permitting authority, but we don't have authority over the access points.”

Section 16.46 of the Canby Municipal Code was reviewed to identify the access spacing requirements based on roadway classification. Both S. Ivy Street and SE 13th Avenue are classified as arterials. Table 16.46.030 identifies that on an arterial, the minimum spacing between a roadway and a driveway is 330 feet, measured between centerlines.

While the proposed access locations do not meet the City of Canby's minimum access spacing standard, the site accesses are proposed at the best possible location considering the site's location and its limited frontages.

The S. Ivy Street access is proposed 265 feet south of SE 13th Street. The access' location was chosen in order to **maximize the separation between the access and the S. Ivy Street/SE 13th Avenue intersection while also providing a reasonable separation between the access and the existing residential driveway (located approximately 120 feet to the south).** Moving the proposed S. Ivy Street access further to the south is not recommended.

The SE 13th Avenue access is proposed 252 feet east of S. Ivy Street. The access' location was chosen to **maximize the separation between the access and the S. Ivy Street/SE 13th Avenue intersection (to the west) and the Larch Street/SE 13th Avenue intersection (~240 feet to the east).** Moving the proposed SE 13th Avenue access further to the east is not recommended.

The queuing calculations (presented on Page 5) verify that **the proposed access locations are outside of the influence area of the S. Ivy Street/SE 13th Avenue intersection.**

Capacity Analysis

In the Supplemental Transportation Report (dated February 4, 2021), the capacity analysis identified that with development of the Canby Senior Living site, the S. Ivy Street/SE 13th Avenue intersection and both full-movement accesses will operate at level of service "B" or better and the volume-to-capacity ratio (v/c) will not exceed 0.36. The table below summarizes the analysis results. **This intersection operation exceeds ODOT's operational standards and, thus intersection improvements are not necessary.** Copies of the capacity analysis reports *are attached.*

Intersection	Type of Control	Peak Hour	Traffic Scenario												
			Assumed 2020				2022 Background - Without Site -				2022 Background - With Site -				
			Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c	
SE 13th Avenue and S Ivy Street	Signal	AM	-	B	16.9	0.32	-	B	17.5	0.36	-	B	18.9	0.36	
		PM	-	B	15.4	0.30	-	B	17.5	0.34	-	B	17.6	0.34	
Proposed Access and SE 13th Avenue	Two-way Stop	AM	-	-	-	-	-	-	-	-	-	NB	B	12.4	0.01
		PM	-	-	-	-	-	-	-	-	-	NB	B	13.1	0.03
Proposed Access and S Ivy Street	Two-way Stop	AM	-	-	-	-	-	-	-	-	-	WB	B	11.8	0.01
		PM	-	-	-	-	-	-	-	-	-	WB	B	12.9	0.01

Notes: 2016 Highway Capacity Manual methodology used in analysis, Synchro v11.

Queuing Analysis

The S. Ivy Street/SE 13th Avenue intersection currently operates with a separate left turn lane and shared through-right lane on each approach. The available left turn storage distances measure 130 feet on the north and east approaches, 115 feet on the south approach, and 125 feet on the west approach.

Development of the Canby Senior Living site is not expected to increase the S. Ivy Street/SE 13th Avenue intersection turn lane queuing. After site development, the westbound left turn lane queue will not exceed 100 feet (81' calculated); the northbound through-right lane queue will not exceed 150 feet (132' calculated).

Based on the queue lengths calculated and the location of the proposed access locations, the site's traffic can be accommodated. **Further, the sight lines for maneuvers out of both proposed driveway locations will not be impacted by the resulting S. Ivy Street/SE 13th Avenue queues.** Copies of the queuing reports *are attached*.

Turn Lane Warrants

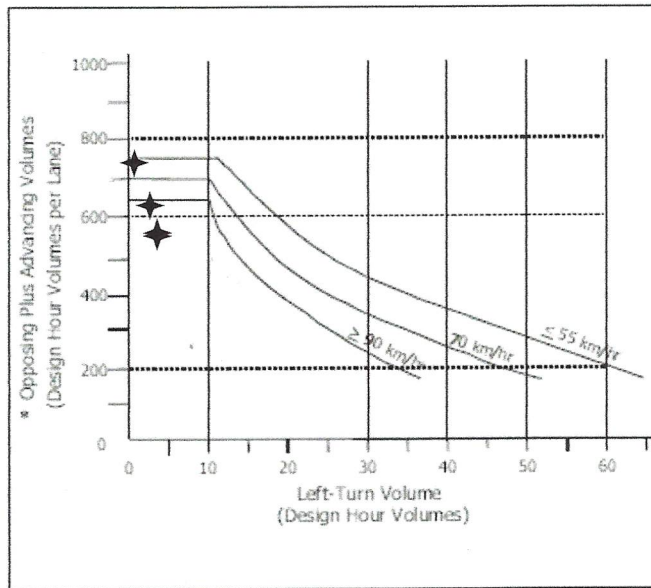
The Oregon Department of Transportation (ODOT) turn lane criteria were reviewed at the proposed site access on S. Ivy Street and at the proposed site access on SE 13th Avenue. The analysis indicates that separate left and right turn lanes are not warranted at either access location. The turn lane warrant nomographs are presented below.

Oregon Department of Transportation - Left Turn Lane Criteria

I. Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of intersecting traffic is the principal reason for considering installation of a left turn lane. The volume criteria is determined by the Texas Transportation Institute (TTI) curves in Figure 1.

The criteria is not met from zero to ten left turn vehicles per hour, but indicates that careful consideration be given to installing a left turn lane due to the increased potential for accidents in the through lanes. While the turn volumes are low, the adverse safety and operations impacts may require installation of a left turn lane. The final determination will be based on a field study.



* ((Advancing volume/number of advancing through lanes) + (opposing volume/ number of opposing through lanes))

FIGURE 1

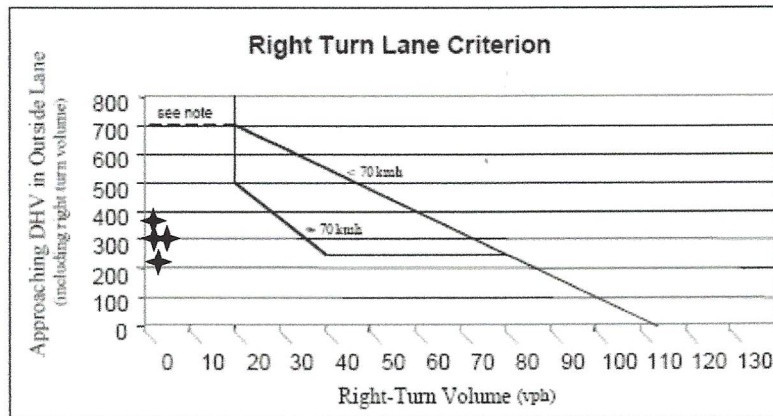
Oregon Department of Transportation - Left Turn Warrant Summary.

Intersection	Mov't	Analysis Period	Speed	Opposing plus Advancing Volume (vph per lane)	Left Turns in Advancing Volume (vph)	Storage Req'd?
Proposed Access & S. Ivy Street	SB LT	2022 Bkgd with Site, AM Peak	35 mph	556	4	No
		2022 Bkgd with Site, PM Peak	(56 kmh)	741	1	No
Proposed Access & SE 13th Avenue	WB LT	2022 Bkgd with Site, AM Peak	25 mph	560	4	No
		2022 Bkgd with Site, PM Peak	(40 kmh)	630	3	No

Oregon Department of Transportation - Right Turn Lane Criteria

I. Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of the intersection traffic is the principal reason for considering installation of a right turn lane. The vehicular volume criteria is determined using the curve in Figure 1.



Note: If there is no right turn lane, a shoulder needs to be provided.
If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

Figure 1

Oregon Department of Transportation - Right Turn Warrant Summary.

Intersection	Mov't	Analysis Period	Speed	Advancing Volume (vph)	Right Turns in Advancing Volume (vph)	Storage Req'd (ft)
Proposed Access & S. Ivy Street	NB RT	2022 Bkgd with Site, AM Peak	35 mph	360	2	None
		2022 Bkgd with Site, PM Peak	(56 kmh)	297	2	None
Proposed Access & SE 13th Avenue	EB RT	2022 Bkgd with Site, AM Peak	25 mph	209	3	None
		2022 Bkgd with Site, PM Peak	(40 kmh)	297	5	None

Summary and Recommendations

The Canby Senior Living site proposed at 1300 S. Ivy Street has frontages to S. Ivy Street and to SE 13th Avenue which measure 350 feet and 335 feet, respectively. Based on the site's limited frontage, the City of Canby's access spacing standard of 330 feet (between a roadway and a driveway) cannot be met.

The site is expected to generate 295 weekday daily trips, 21 weekday AM peak hour trips, and 29 weekday PM peak hour trips. **The site's trip generation is considerably lower than other land uses that have been proposed (by others) on this property previously.**

The site's development proposes full movement accesses on both S. Ivy Street and SE 13th Avenue. While the proposed access locations do not meet the City of Canby's minimum access spacing standard, the accesses are proposed at the best possible locations considering the site's location and its limited frontages. **The access locations are located outside of the influence area of the S. Ivy Street/SE 13th Avenue**

intersection.

Separate turn lanes on S. Ivy Street and SE 13th Avenue are not warranted or recommended at either site access.

Development of the Canby Senior Living site is not expected to increase the S. Ivy Street/ SE 13th Avenue intersection turn lane queue lengths. The traffic generated by the Canby Senior Living site can be accommodated without adversely impacting queues at the S. Ivy Street/SE 13th Avenue intersection. **Based on the excellent operational standards and the separation distance between the influence area of the S. Ivy Street/SE 13th Avenue intersection and the access locations, both full-movement accesses should be allowed with site development.**

Based on the findings in this report and the site's low trip generation, it is recommended that City of Canby staff support and approve the proposed site design and the development application.

APPENDIX

- Capacity Analysis Reports
- Queuing Analysis Reports
- ODOT Turn Lane Nomographs

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

Assumed 2020 Traffic, AM Peak Hour
02/01/2021

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	129	39	38	228	42	104	192	39	18	98	13
Future Volume (vph)	23	129	39	38	228	42	104	192	39	18	98	13
Confl. Peds. (#/hr)			2	2			1					1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	9%	9%	9%	8%	8%	8%	8%	8%	8%	10%	10%	10%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	25.4		9.6	25.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		16.7%	42.3%		16.0%	41.7%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	15.6	15.6		15.6	15.6		27.9	26.9		25.0	21.2	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.52	0.50		0.47	0.40	
v/c Ratio	0.17	0.46		0.18	0.73		0.24	0.37		0.05	0.23	
Control Delay	16.9	17.1		16.1	26.4		8.7	11.5		7.6	13.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.9	17.1		16.1	26.4		8.7	11.5		7.6	13.9	
LOS	B	B		B	C		A	B		A	B	
Approach Delay		17.1			25.1			10.6			13.0	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 53.5
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 16.9
 Intersection Capacity Utilization 47.5%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 6th Signalized Intersection Summary
 1: Ivy Street & SE 13th Avenue

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 Assumed 2020 Traffic, AM Peak Hour
 02/01/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	129	39	38	228	42	104	192	39	18	98	13
Future Volume (veh/h)	23	129	39	38	228	42	104	192	39	18	98	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1627	1627	1627	1641	1641	1641	1641	1641	1641	1614	1614	1614
Adj Flow Rate, veh/h	29	165	50	49	292	54	133	246	50	23	126	17
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	9	9	9	8	8	8	8	8	8	10	10	10
Cap, veh/h	214	336	102	318	377	70	646	581	118	492	536	72
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.08	0.44	0.44	0.03	0.39	0.39
Sat Flow, veh/h	976	1197	363	1109	1346	249	1563	1323	269	1537	1392	188
Grp Volume(v), veh/h	29	0	215	49	0	346	133	0	296	23	0	143
Grp Sat Flow(s),veh/h/ln	976	0	1560	1109	0	1595	1563	0	1592	1537	0	1579
Q Serve(g_s), s	1.5	0.0	6.1	2.1	0.0	10.6	2.6	0.0	6.8	0.5	0.0	3.3
Cycle Q Clear(g_c), s	12.1	0.0	6.1	8.2	0.0	10.6	2.6	0.0	6.8	0.5	0.0	3.3
Prop In Lane	1.00		0.23	1.00		0.16	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	214	0	437	318	0	447	646	0	699	492	0	608
V/C Ratio(X)	0.14	0.00	0.49	0.15	0.00	0.77	0.21	0.00	0.42	0.05	0.00	0.24
Avail Cap(c_a), veh/h	317	0	601	435	0	614	681	0	699	598	0	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	16.0	19.4	0.0	17.6	8.2	0.0	10.3	9.5	0.0	11.1
Incr Delay (d2), s/veh	0.3	0.0	0.9	0.2	0.0	4.2	0.2	0.0	1.9	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.1	0.5	0.0	4.0	0.7	0.0	2.2	0.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	0.0	16.8	19.6	0.0	21.8	8.4	0.0	12.2	9.5	0.0	12.0
LnGrp LOS	C	A	B	B	A	C	A	A	B	A	A	B
Approach Vol, veh/h		244			395			429				166
Approach Delay, s/veh		17.6			21.5			11.0				11.6
Approach LOS		B			C			B				B
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	27.9		19.4	8.8	25.0		19.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	20.9		20.5	5.5	20.5		20.5				
Max Q Clear Time (g_c+I1), s	2.5	8.8		14.1	4.6	5.3		12.6				
Green Ext Time (p_c), s	0.0	1.2		0.7	0.0	0.6		1.5				

Intersection Summary

HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

Assumed 2020 Traffic, PM Peak Hour
02/01/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	172	92	109	154	38	48	184	46	46	211	24
Future Volume (vph)	22	172	92	109	154	38	48	184	46	46	211	24
Confl. Peds. (#/hr)	11		1	1		11	6		1	1		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	9%	9%	9%	7%	7%	7%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	26.0		10.0	26.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		16.7%	43.3%		16.7%	43.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	12.6	12.6		12.6	12.6		24.1	22.3		24.1	22.3	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.51	0.47		0.51	0.47	
v/c Ratio	0.09	0.62		0.53	0.45		0.09	0.33		0.08	0.33	
Control Delay	14.8	19.5		25.8	16.8		6.9	11.5		6.8	12.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.8	19.5		25.8	16.8		6.9	11.5		6.8	12.0	
LOS	B	B		C	B		A	B		A	B	
Approach Delay		19.2			20.1			10.7			11.1	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 47.5
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 15.4
 Intersection Capacity Utilization 56.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 6th Signalized Intersection Summary
 1: Ivy Street & SE 13th Avenue

Assumed 2020 Traffic, PM Peak Hour
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 02/01/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	172	92	109	154	38	48	184	46	46	211	24
Future Volume (veh/h)	22	172	92	109	154	38	48	184	46	46	211	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1682	1682	1682	1709	1709	1709	1627	1627	1627	1654	1654	1654
Adj Flow Rate, veh/h	23	181	97	115	162	40	51	194	48	48	222	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	9	9	9	7	7	7
Cap, veh/h	368	311	167	300	400	99	518	502	124	523	580	65
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.05	0.40	0.40	0.05	0.40	0.40
Sat Flow, veh/h	1139	1023	548	1082	1318	325	1550	1257	311	1576	1459	164
Grp Volume(v), veh/h	23	0	278	115	0	202	51	0	242	48	0	247
Grp Sat Flow(s),veh/h/ln	1139	0	1571	1082	0	1643	1550	0	1568	1576	0	1623
Q Serve(g_s), s	0.9	0.0	8.1	5.4	0.0	5.3	1.0	0.0	5.9	0.9	0.0	5.9
Cycle Q Clear(g_c), s	6.2	0.0	8.1	13.5	0.0	5.3	1.0	0.0	5.9	0.9	0.0	5.9
Prop In Lane	1.00		0.35	1.00		0.20	1.00		0.20	1.00		0.10
Lane Grp Cap(c), veh/h	368	0	477	300	0	499	518	0	626	523	0	645
V/C Ratio(X)	0.06	0.00	0.58	0.38	0.00	0.40	0.10	0.00	0.39	0.09	0.00	0.38
Avail Cap(c_a), veh/h	432	0	566	361	0	592	599	0	626	608	0	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.4	0.0	15.9	21.7	0.0	15.0	8.9	0.0	11.5	8.9	0.0	11.6
Incr Delay (d2), s/veh	0.1	0.0	1.1	0.8	0.0	0.5	0.1	0.0	1.8	0.1	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.8	1.4	0.0	1.9	0.3	0.0	2.0	0.3	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	0.0	17.1	22.5	0.0	15.5	9.0	0.0	13.3	9.0	0.0	13.3
LnGrp LOS	B	A	B	C	A	B	A	A	B	A	A	B
Approach Vol, veh/h		301			317			293			295	
Approach Delay, s/veh		17.1			18.0			12.6			12.6	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	26.1		20.9	7.2	26.0		20.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	21.5		19.5	5.5	21.5		19.5				
Max Q Clear Time (g_c+I1), s	2.9	7.9		10.1	3.0	7.9		15.5				
Green Ext Time (p_c), s	0.0	1.1		1.2	0.0	1.0		0.6				

Intersection Summary

HCM 6th Ctrl Delay	15.1
HCM 6th LOS	B

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2022 Background Traffic, AM Peak Hour

02/01/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	145	44	43	257	47	111	205	42	19	105	14
Future Volume (vph)	26	145	44	43	257	47	111	205	42	19	105	14
Confl. Peds. (#/hr)			2	2			1					1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	9%	9%	9%	8%	8%	8%	8%	8%	8%	10%	10%	10%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	26.4	26.4		26.4	26.4		10.4	24.0		9.6	23.2	
Total Split (%)	44.0%	44.0%		44.0%	44.0%		17.3%	40.0%		16.0%	38.7%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	17.1	17.1		17.1	17.1		26.6	25.5		23.3	19.5	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.50	0.48		0.43	0.36	
v/c Ratio	0.20	0.48		0.20	0.76		0.27	0.42		0.05	0.27	
Control Delay	16.6	16.5		15.3	26.2		9.9	13.1		8.5	15.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.6	16.5		15.3	26.2		9.9	13.1		8.5	15.6	
LOS	B	B		B	C		A	B		A	B	
Approach Delay		16.5			24.9			12.1			14.7	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 53.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 17.5
 Intersection Capacity Utilization 50.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 2010 Signalized Intersection Summary
 1: Ivy Street & SE 13th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	145	44	43	257	47	111	205	42	19	105	14
Future Volume (veh/h)	26	145	44	43	257	47	111	205	42	19	105	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1606	1606	1750	1620	1620	1750	1620	1620	1750	1591	1591	1750
Adj Flow Rate, veh/h	33	186	56	55	329	60	142	263	54	24	135	18
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	9	9	9	8	8	8	8	8	8	10	10	10
Cap, veh/h	216	370	111	332	417	76	589	530	109	429	483	64
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.08	0.41	0.41	0.03	0.35	0.35
Sat Flow, veh/h	926	1185	357	1068	1333	243	1543	1305	268	1515	1375	183
Grp Volume(v), veh/h	33	0	242	55	0	389	142	0	317	24	0	153
Grp Sat Flow(s),veh/h/ln	926	0	1541	1068	0	1577	1543	0	1573	1515	0	1558
Q Serve(g_s), s	1.8	0.0	6.8	2.4	0.0	12.0	3.0	0.0	8.0	0.5	0.0	3.8
Cycle Q Clear(g_c), s	13.8	0.0	6.8	9.2	0.0	12.0	3.0	0.0	8.0	0.5	0.0	3.8
Prop In Lane	1.00		0.23	1.00		0.15	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	216	0	482	332	0	493	589	0	639	429	0	547
V/C Ratio(X)	0.15	0.00	0.50	0.17	0.00	0.79	0.24	0.00	0.50	0.06	0.00	0.28
Avail Cap(c_a), veh/h	307	0	634	438	0	648	631	0	639	531	0	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.0	0.0	14.9	18.7	0.0	16.7	9.3	0.0	11.8	10.7	0.0	12.4
Incr Delay (d2), s/veh	0.3	0.0	0.8	0.2	0.0	4.9	0.2	0.0	2.7	0.1	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.0	0.7	0.0	5.9	1.3	0.0	3.9	0.2	0.0	1.8
LnGrp Delay(d),s/veh	23.3	0.0	15.7	18.9	0.0	21.6	9.5	0.0	14.5	10.7	0.0	13.7
LnGrp LOS	C		B	B		C	A		B	B		B
Approach Vol, veh/h		275			444			459				177
Approach Delay, s/veh		16.7			21.3			13.0				13.3
Approach LOS		B			C			B				B
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	26.1		21.1	8.9	23.2		21.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	19.5		21.9	5.9	18.7		21.9				
Max Q Clear Time (g_c+I1), s	2.5	10.0		15.8	5.0	5.8		14.0				
Green Ext Time (p_c), s	0.0	1.2		0.8	0.0	0.5		1.7				
Intersection Summary												
HCM 2010 Ctrl Delay			16.5									
HCM 2010 LOS			B									

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2022 Background Traffic, PM Peak Hour
02/01/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	194	104	113	174	43	49	197	49	49	226	26
Future Volume (vph)	25	194	104	113	174	43	49	197	49	49	226	26
Confl. Peds. (#/hr)	11		1	1		11	6		1	1		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	9%	9%	9%	7%	7%	7%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	25.0	25.0		25.0	25.0		9.6	25.4		9.6	25.4	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		16.0%	42.3%		16.0%	42.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	13.5	13.5		13.5	13.5		24.4	21.7		24.4	21.7	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.49	0.44		0.49	0.44	
v/c Ratio	0.10	0.68		0.61	0.49		0.10	0.37		0.10	0.37	
Control Delay	15.1	21.9		30.9	18.0		7.3	13.5		7.3	14.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.1	21.9		30.9	18.0		7.3	13.5		7.3	14.0	
LOS	B	C		C	B		A	B		A	B	
Approach Delay		21.4			22.4			12.4			12.9	
Approach LOS		C			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 49.6
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 17.5
 Intersection LOS: B
 Intersection Capacity Utilization 59.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 6th Signalized Intersection Summary

1: Ivy Street & SE 13th Avenue

2022 Background Traffic, PM Peak Hour
02/01/2021

221 OF 322



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	194	104	113	174	43	49	197	49	49	226	26
Future Volume (veh/h)	25	194	104	113	174	43	49	197	49	49	226	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1682	1682	1682	1709	1709	1709	1627	1627	1627	1654	1654	1654
Adj Flow Rate, veh/h	26	204	109	119	183	45	52	207	52	52	238	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	9	9	9	7	7	7
Cap, veh/h	371	332	177	295	428	105	480	477	120	486	554	63
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.05	0.38	0.38	0.05	0.38	0.38
Sat Flow, veh/h	1114	1025	547	1049	1320	324	1550	1253	315	1576	1458	165
Grp Volume(v), veh/h	26	0	313	119	0	228	52	0	259	52	0	265
Grp Sat Flow(s),veh/h/ln	1114	0	1572	1049	0	1644	1550	0	1568	1576	0	1623
Q Serve(g_s), s	1.0	0.0	9.2	5.9	0.0	6.0	1.1	0.0	6.7	1.1	0.0	6.6
Cycle Q Clear(g_c), s	7.0	0.0	9.2	15.2	0.0	6.0	1.1	0.0	6.7	1.1	0.0	6.6
Prop In Lane	1.00		0.35	1.00		0.20	1.00		0.20	1.00		0.10
Lane Grp Cap(c), veh/h	371	0	509	295	0	533	480	0	596	486	0	617
V/C Ratio(X)	0.07	0.00	0.61	0.40	0.00	0.43	0.11	0.00	0.43	0.11	0.00	0.43
Avail Cap(c_a), veh/h	425	0	587	346	0	613	547	0	596	553	0	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	15.7	22.1	0.0	14.6	9.7	0.0	12.6	9.7	0.0	12.6
Incr Delay (d2), s/veh	0.1	0.0	1.5	0.9	0.0	0.5	0.1	0.0	2.3	0.1	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	3.2	1.4	0.0	2.1	0.3	0.0	2.4	0.3	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	0.0	17.2	23.0	0.0	15.1	9.7	0.0	14.9	9.8	0.0	14.8
LnGrp LOS	B	A	B	C	A	B	A	A	B	A	A	B
Approach Vol, veh/h		339			347			311			317	
Approach Delay, s/veh		17.2			17.8			14.1			14.0	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	25.4		22.3	7.2	25.4		22.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	20.9		20.5	5.1	20.9		20.5				
Max Q Clear Time (g_c+I1), s	3.1	8.7		11.2	3.1	8.6		17.2				
Green Ext Time (p_c), s	0.0	1.1		1.4	0.0	1.1		0.6				

Intersection Summary

HCM 6th Ctrl Delay	15.8
HCM 6th LOS	B

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2022 Background With Site, AM Peak Hour
02/01/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	147	46	43	258	49	111	207	42	20	107	14
Future Volume (vph)	26	147	46	43	258	49	111	207	42	20	107	14
Confl. Peds. (#/hr)			2	2			1					1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	9%	9%	9%	8%	8%	8%	8%	8%	8%	10%	10%	10%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	25.4		9.6	25.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		16.7%	42.3%		16.0%	41.7%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	17.2	17.2		17.2	17.2		27.1	25.1		24.9	21.1	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.49	0.46		0.45	0.38	
v/c Ratio	0.21	0.49		0.20	0.78		0.26	0.44		0.06	0.26	
Control Delay	18.0	17.6		16.4	29.4		9.5	14.4		7.9	14.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.0	17.6		16.4	29.4		9.5	14.4		7.9	14.6	
LOS	B	B		B	C		A	B		A	B	
Approach Delay		17.7			27.8			12.9			13.7	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 55
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 18.9
 Intersection LOS: B
 Intersection Capacity Utilization 58.8%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 6th Signalized Intersection Summary

1: Ivy Street & SE 13th Avenue

2022 Background With Site, AM Peak Hour
02/01/2021

223 OF 322



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	147	46	43	258	49	111	207	42	20	107	14
Future Volume (veh/h)	26	147	46	43	258	49	111	207	42	20	107	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1627	1627	1627	1641	1641	1641	1641	1641	1641	1614	1614	1614
Adj Flow Rate, veh/h	33	188	59	55	331	63	142	265	54	26	137	18
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	9	9	9	8	8	8	8	8	8	10	10	10
Cap, veh/h	205	365	115	321	412	78	607	555	113	447	515	68
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.08	0.42	0.42	0.03	0.37	0.37
Sat Flow, veh/h	934	1186	372	1077	1339	255	1563	1322	269	1537	1397	184
Grp Volume(v), veh/h	33	0	247	55	0	394	142	0	319	26	0	155
Grp Sat Flow(s),veh/h/ln	934	0	1559	1077	0	1594	1563	0	1592	1537	0	1580
Q Serve(g_s), s	1.9	0.0	7.2	2.5	0.0	12.6	3.0	0.0	8.1	0.6	0.0	3.8
Cycle Q Clear(g_c), s	14.5	0.0	7.2	9.7	0.0	12.6	3.0	0.0	8.1	0.6	0.0	3.8
Prop In Lane	1.00		0.24	1.00		0.16	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	205	0	480	321	0	491	607	0	668	447	0	583
V/C Ratio(X)	0.16	0.00	0.51	0.17	0.00	0.80	0.23	0.00	0.48	0.06	0.00	0.27
Avail Cap(c_a), veh/h	262	0	575	386	0	588	636	0	668	542	0	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	15.8	19.8	0.0	17.7	9.3	0.0	11.7	10.5	0.0	12.3
Incr Delay (d2), s/veh	0.4	0.0	0.9	0.3	0.0	6.7	0.2	0.0	2.4	0.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.5	0.6	0.0	5.1	0.9	0.0	2.8	0.2	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	0.0	16.7	20.1	0.0	24.4	9.4	0.0	14.2	10.5	0.0	13.4
LnGrp LOS	C	A	B	C	A	C	A	A	B	B	A	B
Approach Vol, veh/h		280			449			461			181	
Approach Delay, s/veh		17.6			23.9			12.7			13.0	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	27.8		21.6	9.0	25.0		21.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	20.9		20.5	5.5	20.5		20.5				
Max Q Clear Time (g_c+I1), s	2.6	10.1		16.5	5.0	5.8		14.6				
Green Ext Time (p_c), s	0.0	1.3		0.6	0.0	0.6		1.4				

Intersection Summary

HCM 6th Ctrl Delay	17.4
HCM 6th LOS	B

Lanes, Volumes, Timings
 2: Proposed Access & SE 13th Avenue

2022 Background With Site, AM Peak Hour
 02/01/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Volume (vph)	208	3	4	347	3	1
Future Volume (vph)	208	3	4	347	3	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	9%	9%	2%	2%	8%	8%
Shared Lane Traffic (%)						
Sign Control	Free		Free		Stop	

Intersection Summary

Control Type: Unsignalized
 Intersection Capacity Utilization 33.3% ICU Level of Service A
 Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↶			↷	↶	↷
Traffic Vol, veh/h	208	3	4	347	3	1
Future Vol, veh/h	208	3	4	347	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	9	9	2	2	8	8
Mvmt Flow	231	3	4	386	3	1

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	234	0	627
Stage 1	-	-	-	-	233
Stage 2	-	-	-	-	394
Critical Hdwy	-	-	4.12	-	6.48
Critical Hdwy Stg 1	-	-	-	-	5.48
Critical Hdwy Stg 2	-	-	-	-	5.48
Follow-up Hdwy	-	-	2.218	-	3.572
Pot Cap-1 Maneuver	-	-	1333	-	438
Stage 1	-	-	-	-	792
Stage 2	-	-	-	-	668
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1333	-	436
Mov Cap-2 Maneuver	-	-	-	-	436
Stage 1	-	-	-	-	792
Stage 2	-	-	-	-	665

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	491	-	-	1333	-
HCM Lane V/C Ratio	0.009	-	-	0.003	-
HCM Control Delay (s)	12.4	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Lanes, Volumes, Timings
 3: S. Ivy Street & Proposed Access

2022 Background With Site, AM Peak Hour
 02/01/2021



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	2	358	2	4	192
Future Volume (vph)	2	2	358	2	4	192
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	8%	8%	10%	10%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized
 Intersection Capacity Utilization 30.6% ICU Level of Service A
 Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	2	2	358	2	4	192
Future Vol, veh/h	2	2	358	2	4	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	8	8	10	10
Mvmt Flow	2	2	398	2	4	213

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	620	399	0	0	400	0
Stage 1	399	-	-	-	-	-
Stage 2	221	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	452	651	-	-	1117	-
Stage 1	678	-	-	-	-	-
Stage 2	816	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	450	651	-	-	1117	-
Mov Cap-2 Maneuver	450	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	813	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.8	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	532	1117
HCM Lane V/C Ratio	-	-	0.008	0.004
HCM Control Delay (s)	-	-	11.8	8.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2022 Background With Site, PM Peak Hour
02/01/2021

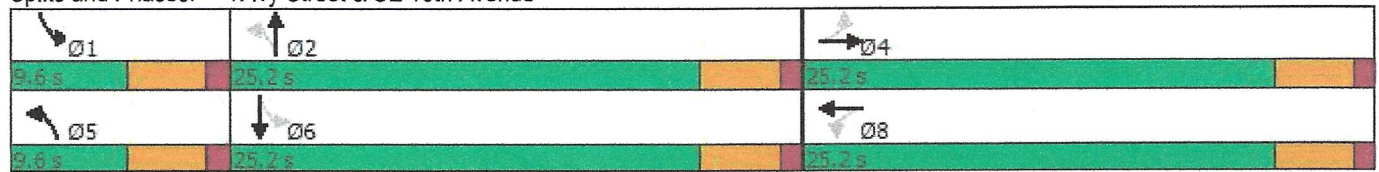


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	198	105	115	180	45	49	199	49	50	226	26
Future Volume (vph)	25	198	105	115	180	45	49	199	49	50	226	26
Confl. Peds. (#/hr)	11		1	1		11	6		1	1		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	9%	9%	9%	7%	7%	7%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	25.2	25.2		25.2	25.2		9.6	25.2		9.6	25.2	
Total Split (%)	42.0%	42.0%		42.0%	42.0%		16.0%	42.0%		16.0%	42.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	13.9	13.9		13.9	13.9		24.2	21.5		24.2	21.5	
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.49	0.43		0.49	0.43	
v/c Ratio	0.10	0.68		0.61	0.50		0.10	0.38		0.10	0.38	
Control Delay	14.9	21.6		30.7	17.9		7.6	13.8		7.5	14.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.9	21.6		30.7	17.9		7.6	13.8		7.5	14.3	
LOS	B	C		C	B		A	B		A	B	
Approach Delay		21.1			22.2			12.8			13.2	
Approach LOS		C			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 49.8
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 17.6
 Intersection LOS: B
 Intersection Capacity Utilization 59.4%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 6th Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	198	105	115	180	45	49	199	49	50	226	26
Future Volume (veh/h)	25	198	105	115	180	45	49	199	49	50	226	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1682	1682	1682	1709	1709	1709	1627	1627	1627	1654	1654	1654
Adj Flow Rate, veh/h	26	208	111	121	189	47	52	209	52	53	238	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	9	9	9	7	7	7
Cap, veh/h	370	337	180	295	433	108	475	472	117	479	549	62
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.05	0.38	0.38	0.05	0.38	0.38
Sat Flow, veh/h	1106	1025	547	1044	1316	327	1550	1256	312	1576	1458	165
Grp Volume(v), veh/h	26	0	319	121	0	236	52	0	261	53	0	265
Grp Sat Flow(s),veh/h/ln	1106	0	1572	1044	0	1644	1550	0	1568	1576	0	1623
Q Serve(g_s), s	1.0	0.0	9.4	6.1	0.0	6.2	1.1	0.0	6.9	1.1	0.0	6.7
Cycle Q Clear(g_c), s	7.2	0.0	9.4	15.5	0.0	6.2	1.1	0.0	6.9	1.1	0.0	6.7
Prop In Lane	1.00		0.35	1.00		0.20	1.00		0.20	1.00		0.10
Lane Grp Cap(c), veh/h	370	0	517	295	0	540	475	0	589	479	0	611
V/C Ratio(X)	0.07	0.00	0.62	0.41	0.00	0.44	0.11	0.00	0.44	0.11	0.00	0.43
Avail Cap(c_a), veh/h	422	0	591	345	0	618	541	0	589	545	0	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	15.6	22.1	0.0	14.5	9.8	0.0	12.9	9.8	0.0	12.8
Incr Delay (d2), s/veh	0.1	0.0	1.6	0.9	0.0	0.6	0.1	0.0	2.4	0.1	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	3.3	1.5	0.0	2.2	0.3	0.0	2.4	0.3	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	0.0	17.1	23.0	0.0	15.1	9.9	0.0	15.3	9.9	0.0	15.0
LnGrp LOS	B	A	B	C	A	B	A	A	B	A	A	B
Approach Vol, veh/h		345			357			313			318	
Approach Delay, s/veh		17.1			17.7			14.4			14.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	25.2		22.6	7.2	25.2		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	20.7		20.7	5.1	20.7		20.7				
Max Q Clear Time (g_c+I1), s	3.1	8.9		11.4	3.1	8.7		17.5				
Green Ext Time (p_c), s	0.0	1.1		1.5	0.0	1.1		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			16.0									
HCM 6th LOS			B									

Lanes, Volumes, Timings
 2: Proposed Access & SE 13th Avenue

2022 Background With Site, PM Peak Hour
 02/01/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	292	5	3	330	10	4
Future Volume (vph)	292	5	3	330	10	4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	3%	3%	2%	2%
Shared Lane Traffic (%)						
Sign Control	Free		Free		Stop	

Intersection Summary

Control Type: Unsignalized
 Intersection Capacity Utilization 31.5% ICU Level of Service A
 Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	1P			1P	1P	
Traffic Vol, veh/h	292	5	3	330	10	4
Future Vol, veh/h	292	5	3	330	10	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	324	6	3	367	11	4

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	330	0	700
Stage 1	-	-	-	-	327
Stage 2	-	-	-	-	373
Critical Hdwy	-	-	4.13	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.227	-	3.518
Pot Cap-1 Maneuver	-	-	1224	-	405
Stage 1	-	-	-	-	731
Stage 2	-	-	-	-	696
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1224	-	404
Mov Cap-2 Maneuver	-	-	-	-	404
Stage 1	-	-	-	-	731
Stage 2	-	-	-	-	694

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	461	-	-	1224	-
HCM Lane V/C Ratio	0.034	-	-	0.003	-
HCM Control Delay (s)	13.1	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Lanes, Volumes, Timings
 3: S. Ivy Street & Proposed Access



Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	2	295	2	1	443
Future Volume (vph)	2	2	295	2	1	443
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	9%	9%	7%	7%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized
 Intersection Capacity Utilization 36.2% ICU Level of Service A
 Analysis Period (min) 15

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	FF		FF			FF
Traffic Vol, veh/h	2	2	295	2	1	443
Future Vol, veh/h	2	2	295	2	1	443
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	7	7
Mvmt Flow	2	2	328	2	1	492

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	823	329	0	0	330	0
Stage 1	329	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.17	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.263	-
Pot Cap-1 Maneuver	343	712	-	-	1202	-
Stage 1	729	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	343	712	-	-	1202	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	612	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	463	1202
HCM Lane V/C Ratio	-	-	0.01	0.001
HCM Control Delay (s)	-	-	12.9	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0	0

Queues

Assumed 2020 Traffic, AM Peak Hour

1: Ivy Street & SE 13th Avenue

02/01/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	215	49	346	133	296	23	143
v/c Ratio	0.17	0.46	0.18	0.73	0.24	0.37	0.05	0.23
Control Delay	16.9	17.1	16.1	26.4	8.7	11.5	7.6	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	17.1	16.1	26.4	8.7	11.5	7.6	13.9
Queue Length 50th (ft)	7	50	12	97	20	46	3	29
Queue Length 95th (ft)	20	82	28	142	41	117	11	59
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	229	622	368	633	557	804	487	623
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.35	0.13	0.55	0.24	0.37	0.05	0.23

Intersection Summary

Queues
1: Ivy Street & SE 13th Avenue

Assumed 2020 Traffic, PM Peak Hour
02/01/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	278	115	202	51	242	48	247
v/c Ratio	0.09	0.62	0.53	0.45	0.09	0.33	0.08	0.33
Control Delay	14.8	19.5	25.8	16.8	6.9	11.5	6.8	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	19.5	25.8	16.8	6.9	11.5	6.8	12.0
Queue Length 50th (ft)	4	46	23	34	6	29	6	31
Queue Length 95th (ft)	20	128	76	97	22	112	21	117
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	432	694	345	708	556	740	571	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.40	0.33	0.29	0.09	0.33	0.08	0.33

Intersection Summary

Queues
1: Ivy Street & SE 13th Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	242	55	389	142	317	24	153
v/c Ratio	0.20	0.48	0.20	0.76	0.27	0.42	0.05	0.27
Control Delay	16.6	16.5	15.3	26.2	9.9	13.1	8.5	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	16.5	15.3	26.2	9.9	13.1	8.5	15.6
Queue Length 50th (ft)	8	55	13	109	24	57	4	35
Queue Length 95th (ft)	22	89	30	156	47	132	12	67
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	223	665	372	676	527	761	452	574
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.36	0.15	0.58	0.27	0.42	0.05	0.27

Intersection Summary

Queues
1: Ivy Street & SE 13th Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	313	119	228	52	259	52	265
v/c Ratio	0.10	0.68	0.61	0.49	0.10	0.37	0.10	0.37
Control Delay	15.1	21.9	30.9	18.0	7.3	13.5	7.3	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	21.9	30.9	18.0	7.3	13.5	7.3	14.0
Queue Length 50th (ft)	6	74	33	55	7	52	7	57
Queue Length 95th (ft)	21	144	80	107	23	123	23	129
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	402	700	307	714	518	691	533	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.45	0.39	0.32	0.10	0.37	0.10	0.37

Intersection Summary

Queues
1: Ivy Street & SE 13th Avenue



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	247	55	394	142	319	26	155
v/c Ratio	0.21	0.49	0.20	0.78	0.26	0.44	0.06	0.26
Control Delay	18.0	17.6	16.4	29.4	9.5	14.4	7.9	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	17.6	16.4	29.4	9.5	14.4	7.9	14.6
Queue Length 50th (ft)	8	59	14	116	25	60	4	36
Queue Length 95th (ft)	23	95	31	166	44	128	12	64
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	195	605	331	614	538	731	462	606
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.41	0.17	0.64	0.26	0.44	0.06	0.26

Intersection Summary

Queues
1: Ivy Street & SE 13th Avenue



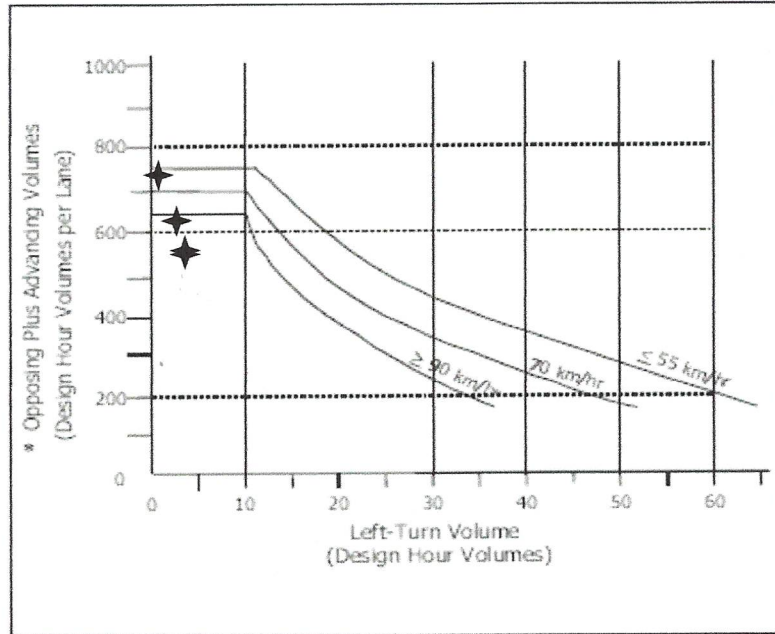
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	319	121	236	52	261	53	265
v/c Ratio	0.10	0.68	0.61	0.50	0.10	0.38	0.10	0.38
Control Delay	14.9	21.6	30.7	17.9	7.6	13.8	7.5	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	21.6	30.7	17.9	7.6	13.8	7.5	14.3
Queue Length 50th (ft)	6	76	34	57	7	53	7	57
Queue Length 95th (ft)	21	146	81	110	23	125	24	130
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	397	705	307	720	510	683	525	699
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.45	0.39	0.33	0.10	0.38	0.10	0.38

Intersection Summary

I. Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of intersecting traffic is the principal reason for considering installation of a left turn lane. The volume criteria is determined by the Texas Transportation Institute (TTI) curves in Figure 1.

The criteria is not met from zero to ten left turn vehicles per hour, but indicates that careful consideration be given to installing a left turn lane due to the increased potential for accidents in the through lanes. While the turn volumes are low, the adverse safety and operations impacts may require installation of a left turn lane. The final determination will be based on a field study.



* ((Advancing volume/number of advancing through lanes) + (opposing volume/ number of opposing through lanes))

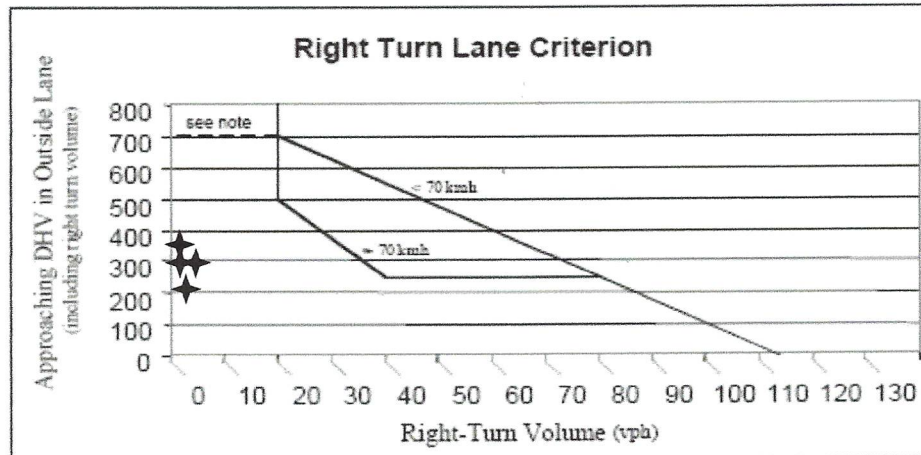
FIGURE 1

Intersection	Mov't	Analysis Period	Speed	Opposing plus Advancing Volume (vph per lane)	Left Turns in Advancing Volume (vph)	Storage Req'd?
Proposed Access & S. Ivy Street	SB LT	2022 Bkgd with Site, AM Peak	35 mph (56 kmh)	556	4	No
		2022 Bkgd with Site, PM Peak		741	1	No
Proposed Access & SE 13th Avenue	WB LT	2022 Bkgd with Site, AM Peak	25 mph (40 kmh)	560	4	No
		2022 Bkgd with Site, PM Peak		630	3	No



I. Criterion 1: Vehicular Volume

The vehicular volume criterion is intended for application where the volume of the intersection traffic is the principal reason for considering installation of a right turn lane. The vehicular volume criteria is determined using the curve in Figure 1.



Note: If there is no right turn lane, a shoulder needs to be provided.
 If this intersection is in a rural area and is a connection to a public street, a right turn lane is needed.

Figure 1

Intersection	Mov't	Analysis Period	Speed	Advancing Volume (vph)	Right Turns in Advancing Volume (vph)	Storage Req'd (ft)
Proposed Access & S. Ivy Street	NB RT	2022 Bkgd with Site, AM Peak	35 mph (56 kmh)	360	2	None
		2022 Bkgd with Site, PM Peak		297	2	None
Proposed Access & SE 13th Avenue	EB RT	2022 Bkgd with Site, AM Peak	25 mph (40 kmh)	209	3	None
		2022 Bkgd with Site, PM Peak		297	5	None





**Traffic Impact Study
SUPPLEMENTAL TRANSPORTATION REPORT
FEBRUARY 4, 2021**

**Senior Living
South Ivy Street & SE 13th Avenue
Canby, Oregon**

DR 20-03 & CUP 20-02

By

**Charbonneau Engineering
10211 SW Barbur Blvd, Suite 210A
Portland, OR 97219**

Gary Spanovich, Transportation Planner, Report Author

Mary Kate Otto, EIT, Analysis

Frank Charbonneau, PE, Supervising Traffic Engineer

EXISTING CONDITIONS ANALYSIS (From TIS)

Location of the 102 Bed Assisted Living Center & 8 Senior Attached Units

The facility is located at **South Ivy Street & SE 13th Avenue in Canby, Oregon**. The facility will consist of a bed for sleeping and a half bath, generally these types of residential facilities generate much less traffic than say a single or multi family dwelling unit. **Appendix 1 contains the City's Review Letter of the development which this supplemental report responds to, the site plan follows on the next page.**

The proposed "Canby Senior Living" development is to be on a 2.57-acre plot of land (111,973 square feet) with a building coverage area of 37,588 square feet. There will be 52 parking spaces of which 2 will be van accessible spaces and 1 handicapped space – they are labeled on the site plan with the wheelchair symbol; there will be 6 bicycle spaces and they are located near the main entrance to the building. It is an independent living, residential care, and memory care facility. The development plot is designated commercial-residential (CR) in the Canby zoning map and it is adjacent to the Canby Senior Center and the Canby Swim Center and near the Hope Village campus. The development fronts on both **South Ivy Street & SE 13th Avenue**.

They are both classified as arterial streets in the Canby Functional Classification plan in the City's TSP. Ivy has sidewalks on both sides; 13th has a sidewalk on the east leg and a trail on the west leg. Bike lanes are available on all sides. Ivy turns into Hwy 170 south of this area and is posted at 30 mph and Ivy is posted at 25 mph. A truck lane is designated for Ivy and also for the west leg of 13th. All four legs of the intersection have left turn pockets. Site Plan is on following page.

MAP 1 AREA LOCATION OF SITE





NW Architecture & Design, PC
 5145 Salem Way, Suite 155
 Portland, Oregon 97228
 503.277.4061
 503.277.4069
 nwarchitecture@gmail.com



epr DESIGN
 919 N.E. 18th Ave. Suite 155
 Portland, Oregon 97232
 503.254.6172
 www.eprdesign.com
 design@eprdesign.com

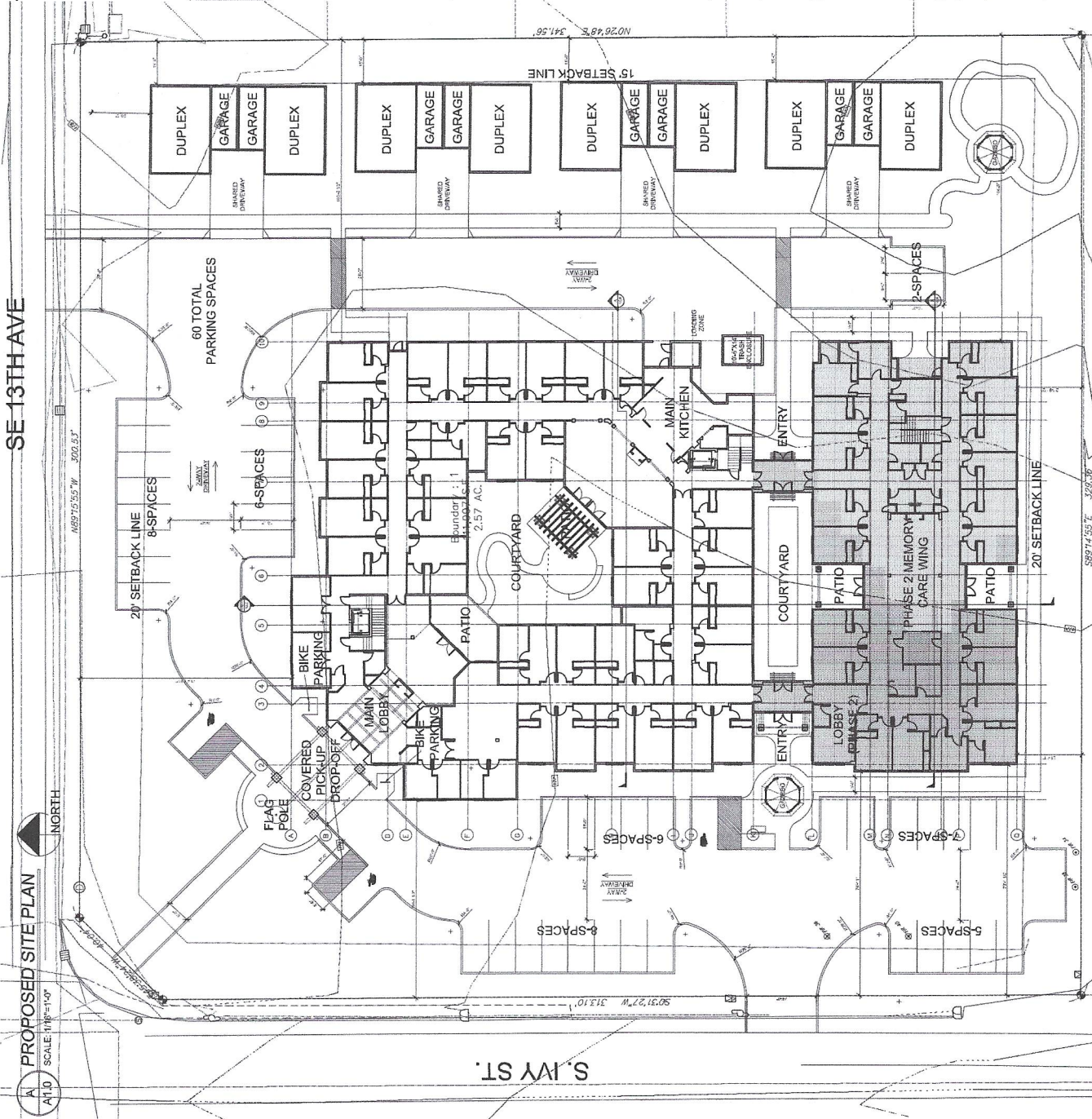


SEASIDE ARCHITECTURE BE VIEWSET
 1300 S IVY ST.
 Canby, Oregon
 An Independent Living, Residential Care, & Memory Care Community
 Waterstone Investments, LLC.

These plans and the design herein are copyrighted under Federal Law by EPR DESIGN, LLC & NW ARCHITECTURE & DESIGN, P.C.

SITE PLAN
 REV. NO. DATE

DATE: 2/2/2021
 DRAWN BY:
 REVIEWED BY:
 STREET: A1.0



SITE DETAILS:
 SITE ADDRESS: 1300 S IVY ST., CANBY, OREGON
 JURISDICTION: CITY OF CANBY
 PROJECT: A1.0 MEMORY RESIDENTIAL CARE FACILITY
 PROPOSED USE: SINGLE-FAMILY RESIDENTIAL USE
 LAND USE PROCESSES REQUIRED: TYPE B SITE PLAN, DESIGN REVIEW, CONCEPTUAL, LINE REVIEW
 TOTAL SITE AREA: 111,993 S.F.
 SITE DENSITY PROPOSED: 102 RESIDENT UNITS
 PROPOSED BUILDING COVERAGE: 23,008 S.F.
 PROPOSED LANDSCAPED AREA: 44,438 S.F.
 TOTAL PARKING SPACES: 60
 24 PARKING SPACES W/2 HANDICAP VAN ACCESSIBLE SPACE AND 1 HANDICAP ACCESSIBLE SPACE
 6 SPACES
 8 SPACES
 6 SPACES
 7 SPACES
 5 SPACES

GENERAL SITE PLAN NOTES:
 1. ALL DIMENSIONS SHALL BE AS SHOWN UNLESS OTHERWISE NOTED.
 2. ALL DIMENSIONS SHALL BE TO THE CENTERLINE OF THE CURB OR TO THE CENTERLINE OF THE ROADWAY UNLESS OTHERWISE NOTED.
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REFER TO APPENDIX A**Canby Response Item #1:**

The most recent five (5) years of crash data reported at the S. Ivy Street and SE 13th Avenue was obtained from the Oregon Department of Transportation (ODOT) website and was reviewed to help identify any traffic safety problems. A copy of the crash data is attached.

The crash rates presented in Table 1 below are based on the number of crashes per million entering vehicles (MEV). Typically, an intersection is not considered unsafe unless its crash rate exceeds the threshold of 1.0 crashes per MEV.

Table 1. Crash rate results.

Intersection	Crash History (Years)	Number of Crashes	Crashes per year	Annual Traffic Entering (veh/yr)	Crash rate per M.E.V.*
S. Ivy Street and SE 13 th Avenue	5	7	1.4	4185650	0.334

* M.E.V. - million entering vehicles.

The study intersection crash rate does not exceed the 1.0 crashes per MEV threshold, and thus mitigation is not necessary.

Canby Response Item #2:

Capacity analyses were performed to determine the levels of service for the weekday peak hours. The capacity analysis has been conducted using the current version of Synchro software (Version 11.0) to determine the level of service for each scenario considered. The program is based on the 2016 Highway Capacity Manual methodology. Table 2 summarizes the analysis results. Copies of the capacity analysis calculations are attached.

In accordance with the ODOT Analysis Procedure Manual – Version 2, the capacity analysis calculation will use an unadjusted saturation flow rate of 1,750 vphpl.

Table 2 indicates that the SE 13th Avenue and S. Ivy Street intersection and the proposed accesses to SE 13th Avenue and S. Ivy Street will operate at level of service “C” or better with a volume-to-capacity ratio (v/c) of 0.36 or less through the one-year buildout period. **This intersection operation exceeds ODOT’s operational standards and, thus intersection improvements are not necessary.**

Table 3. Summary of capacity analysis for study intersection.

Intersection	Type of Control	Peak Hour	Traffic Scenario												
			Assumed 2020				2022 Background Without Site -				2022 Background - With Site -				
			Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c	
SE 13th Avenue and S Ivy Street	Signal	AM	-	B	16.9	0.32	-	B	17.5	0.36	-	B	18.9	0.36	
		PM	-	B	15.4	0.30	-	B	17.5	0.34	-	B	17.6	0.34	
Proposed Access and SE 13th Avenue	Two-way Stop	AM	-	-	-	-	-	-	-	-	-	NB	B	12.4	0.01
		PM	-	-	-	-	-	-	-	-	-	NB	B	13.1	0.03
Proposed Access and S Ivy Street	Two-way Stop	AM	-	-	-	-	-	-	-	-	-	WB	B	11.8	0.01
		PM	-	-	-	-	-	-	-	-	-	WB	B	12.9	0.01

Notes: 2016 Highway Capacity Manual methodology used in analysis, Synchro v11.

Canby Response #3:

Sight distance at the proposed site access locations on SE 13th Avenue and on S. Ivy Street were reviewed in the field in accordance with AASHTO standards. On SE 13th Avenue, which has a posted speed of 25 miles per hour, AASHTO recommends a minimum sight distance of 280 feet should be available from the access (in both directions). On S. Ivy Street, which has a posted speed of 35 miles per hour, AASHTO recommends a minimum sight distance of 335 feet should be available.

Sight distances from the proposed accesses were reviewed in the field. From the proposed SE 13th Avenue access, the SE 13th Avenue and S. Ivy Street traffic signal is visible to the west. The sight distance to the east exceeds 330 feet.

From the proposed S. Ivy Street access, the SE 13th Avenue and S. Ivy Street traffic signal is available to the north. From the proposed access looking south, there is a potential for on-street parking (on the east side of S. Ivy Street) to limit the available sight distances. **Based on this observation, prohibiting on-street parking on the east side of S. Ivy Street is recommended for a minimum distance of 330 feet from the south edge of the proposed driveway (or approximately 260 feet from the south property boundary).**

With development of Canby Senior Living, the site accesses to SE 13th Avenue and S. Ivy Street should be designed such that AASHTO's minimum sight distance recommendation is met or exceeded.

Canby Response #4

The ODOT 2011 Bicycle and Pedestrian Guide was reviewed in relation to the site plan and the circulation patterns for vehicles, bicycles and pedestrians. Specifically, the site plan was checked against the criteria: The overall site plan met all of the following and also all signage met MUTCD standards.

- Safe streets and walking areas
- Convenience
- Nearby places to walk
- Visibility
- Comfort and shelter
- Attractive and clean environment
- Access to transit
- Interesting things to look at while walking
- Social interaction

The focus of this plan is primarily to enhance the viability of bicycling and walking as a form of transportation, and less as a form of recreation. This plan focuses on guidelines for planning bicycle facilities, with some general design information included.

The on-site pedestrian, bicycle, vehicle movements have been designed holistically so that there are transportation choices for both residents and staff, both on site and to access 13th and Ivy Street where there are sidewalks and bicycle lanes, which provide access to nearby activities such as the Senior Center, the Canby Swim Center. Eight bicycle spaces have been planned for use by residents and staff. General transportation benefits of bicycling include a wider range of transportation choices, reduced congestion, decreased need for parking, and the implementation of safety improvements that benefit all roadway users. Biking is among the most efficient modes of transportation in regards to operation, development of facilities, and maintenance.

The site plan and overall campus has been designed for health and fitness: Bicycling and walking are among the best forms of exercise and can therefore effectively enhance the health of individuals and the communities. This campus network stimulates the social interaction of families and community. Trails can help provide a sense of place and a source of community pride. There are no pedestrian, bicycle, vehicle conflicts on the campus and it was well designed. **There is a pedestrian sidewalk around the entire building and connecting all entrances the public right of way. The 6 bicycle parking spaces are all located near the front entrance and are labeled on the site plan. Handicapped spaces are also by the main entrance.**

Canby Response #5

(Please refer to Response #2)

Canby Response #6

The amount of traffic that the proposed site is expected to add to the SE 13th Avenue and S Ivy Street intersection is listed below along with the intersection's estimated ADT, existing weekday peak hour volumes, and the intersection volumes projected in the City's Transportation System Plan (TSP). A comparison of the site's traffic with the existing traffic and with the TSP projected traffic is also presented.

As identified in Table 3, the site is anticipated to impact the existing traffic volumes by less than 2% and will have less than 1% impact on the projected 2030 volumes.

Table 3. Site Traffic Impact Summary.

S Ivy St. and SE 13th Ave. Intersection			
	Weekday		
	ADT	AM Peak Hour	PM Peak Hour
Site Traffic	177 ¹	12	18
Existing Traffic ²	11,460 ³	963	1,146
Future 2030 Baseline ⁴	----	----	1,850
% Impact on Existing Traffic	+1.54%	+1.24%	+1.57%
% Impact on 2030 Baseline	---	----	+0.97%

¹ Estimated with proportion of the site's traffic traveling through the intersection during the PM peak hour.

² Year 2020 Assumed Traffic.

³ Estimated as ten times the PM peak hour volume.

⁴ Source: City of Canby Transportation System Plan, December 2010.

The planned improvements identified in Clackamas County's Capital Improvement Program (CIP) and the City of Canby's TSP were reviewed to identify the long-range transportation solutions to serve growth in the study area.

The Clackamas County CIP identifies Road Safety Audit (RSA) improvements on SE 13th Avenue, though the improvements are not located near the Canby Senior Living site.

The City's TSP identifies that sidewalks will be constructed on S Ivy Street south of SE 13th Avenue. Additionally, non-capacity improvements (related to pedestrians, bicycles, and motor-vehicles (non-capacity)) are planned on SE 13th Avenue between Highway 99E and Molalla Forest /County Logging Road.

Canby Response #7

The Americans with Disabilities Act of 1990 defines the parking needs; As of 2010, the standards are as follows:

Parking Facility

	Minimum Number of Accessible Parking Spaces
1 to 25	1
26 to 50	2

The stie plan meets the ADA requirements and only 2 handicapped parking spaces are required for an overall total of 52 parking spaces. The number of handicapped for only 52 overall parking spots is not low but what is required.

Canby Response #8

This is to confirm that the trip generation table on page 11 of the TIS (previous report) includes trip generation for both: (1) 102 bed assisted living center and (2) 8 senior attached units. The trip generation is a total for both uses.

APPENDICES

- 1. Review Letter from City of Canby**
- 2. CSL Synchro Queuing Reports**
- 3. Revised Intersection LOS output (CSL Synchro LOS reports)**
- 4. Crash Data**

Appendix 1: Review Letter from City of Canby



MEMORANDUM

DATE: January 20, 2021

TO: Brianna Addotta | City of Canby

FROM: Kevin Chewuk, PTP; Kayla Fleskes, EI | DKS Associates

SUBJECT: Canby Senior Living Traffic Impact Study Review

Project # P11010-115

Per your request, we have reviewed the traffic impact study submitted for the proposed Senior Living facility¹ to determine if the study provides adequate information to comply with the required scope². Based upon our review, we find that the study fails to address a few required scope items for the proposed development.

The study should be updated to address the following comments:

- Only 3 years of collision data was reviewed, instead of 5 years.
- No operational analysis at the proposed site driveways is provided.
- No analysis of intersection sight distance or access spacing is included.
- No discussion of on-site circulation for motor vehicles, pedestrian or bicyclists is provided.
- The saturation flow should be 1,750 vphpl for all study intersections, per the ODOT Analysis Procedure Manual Version 2.
- The traffic volumes resulting from the proposed project on S. Ivy Street and SE 13th Avenue need to be compared to existing traffic volumes (daily and peak hour), as well as the projected volumes from the City's Transportation System Plan (TSP) to provide an evaluation of growth on the roadway compared to planned conditions. Planned improvements in the City's CIP and TSP in the area need to be summarized to describe long-range transportation solutions to serve growth in the study area.
- Two handicap parking spots seems low for a senior living facility.
- It should be explicitly stated whether Phase 2 (memory care) impacts are included in the trip generation.

If you have any questions, please feel free to contact me.

¹ Senior Living Traffic Impact Study, Charbonneau Engineering, November 23, 2020

² Scope of Work – Canby Senior Living Traffic Study, September 25, 2020

Appendix 2: CSL Synchro Queuing Reports

Queues
1: Ivy Street & SE 13th Avenue

Assumed 2020 Traffic, AM Peak Hour

02/01/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	29	215	49	346	133	296	23	143
v/c Ratio	0.17	0.46	0.18	0.73	0.24	0.37	0.05	0.23
Control Delay	16.9	17.1	16.1	26.4	8.7	11.5	7.6	13.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.9	17.1	16.1	26.4	8.7	11.5	7.6	13.9
Queue Length 50th (ft)	7	50	12	97	20	46	3	29
Queue Length 95th (ft)	20	82	28	142	41	117	11	59
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	229	622	368	633	557	804	487	623
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.35	0.13	0.55	0.24	0.37	0.05	0.23

Intersection Summary

Queues
1: Ivy Street & SE 13th Avenue

Assumed 2020 Traffic, PM Peak Hour

02/01/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	23	278	115	202	51	242	48	247
v/c Ratio	0.09	0.62	0.53	0.45	0.09	0.33	0.08	0.33
Control Delay	14.8	19.5	25.8	16.8	6.9	11.5	6.8	12.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	19.5	25.8	16.8	6.9	11.5	6.8	12.0
Queue Length 50th (ft)	4	46	23	34	6	29	6	31
Queue Length 95th (ft)	20	128	76	97	22	112	21	117
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	432	694	345	708	556	740	571	759
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.05	0.40	0.33	0.29	0.09	0.33	0.08	0.33

Intersection Summary

Queues
1: Ivy Street & SE 13th Avenue

2022 Background Traffic, AM Peak Hour

02/01/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	242	55	389	142	317	24	153
v/c Ratio	0.20	0.48	0.20	0.76	0.27	0.42	0.05	0.27
Control Delay	16.6	16.5	15.3	26.2	9.9	13.1	8.5	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.6	16.5	15.3	26.2	9.9	13.1	8.5	15.6
Queue Length 50th (ft)	8	55	13	109	24	57	4	35
Queue Length 95th (ft)	22	89	30	156	47	132	12	67
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	223	665	372	676	527	761	452	574
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.36	0.15	0.58	0.27	0.42	0.05	0.27

Intersection Summary

Queues

2022 Background Traffic, PM Peak Hour

1: Ivy Street & SE 13th Avenue

02/01/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	313	119	228	52	259	52	265
v/c Ratio	0.10	0.68	0.61	0.49	0.10	0.37	0.10	0.37
Control Delay	15.1	21.9	30.9	18.0	7.3	13.5	7.3	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	21.9	30.9	18.0	7.3	13.5	7.3	14.0
Queue Length 50th (ft)	6	74	33	55	7	52	7	57
Queue Length 95th (ft)	21	144	80	107	23	123	23	129
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	402	700	307	714	518	691	533	708
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.45	0.39	0.32	0.10	0.37	0.10	0.37

Intersection Summary

Queues
1: Ivy Street & SE 13th Avenue

2022 Background With Site, AM Peak Hour

02/01/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	33	247	55	394	142	319	26	155
v/c Ratio	0.21	0.49	0.20	0.78	0.26	0.44	0.06	0.26
Control Delay	18.0	17.6	16.4	29.4	9.5	14.4	7.9	14.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.0	17.6	16.4	29.4	9.5	14.4	7.9	14.6
Queue Length 50th (ft)	8	59	14	116	25	60	4	36
Queue Length 95th (ft)	23	95	31	166	44	128	12	64
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	195	605	331	614	538	731	462	606
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.17	0.41	0.17	0.64	0.26	0.44	0.06	0.26

Intersection Summary

Queues

2022 Background With Site, PM Peak Hour

1: Ivy Street & SE 13th Avenue

02/01/2021



Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	26	319	121	236	52	261	53	265
v/c Ratio	0.10	0.68	0.61	0.50	0.10	0.38	0.10	0.38
Control Delay	14.9	21.6	30.7	17.9	7.6	13.8	7.5	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.9	21.6	30.7	17.9	7.6	13.8	7.5	14.3
Queue Length 50th (ft)	6	76	34	57	7	53	7	57
Queue Length 95th (ft)	21	146	81	110	23	125	24	130
Internal Link Dist (ft)		428		444		402		423
Turn Bay Length (ft)	125		130		120		130	
Base Capacity (vph)	397	705	307	720	510	683	525	699
Starvation Cap Reductn	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.07	0.45	0.39	0.33	0.10	0.38	0.10	0.38

Intersection Summary

Appendix 3: Revised Intersection LOS output (CSL Synchro LOS reports)

Table 3. Summary of capacity analysis for study intersection.

Intersection	Type of Control	Peak Hour	Traffic Scenario												
			Assumed 2020				2022 Background Without Site -				2022 Background - With Site -				
			Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c	Crit. Mov't	LOS	Delay	v/c	
SE 13th Avenue and S Ivy Street	Signal	AM	-	B	16.9	0.32	-	B	17.5	0.36	-	B	18.9	0.36	
		PM	-	B	15.4	0.30	-	B	17.5	0.34	-	B	17.6	0.34	
Proposed Access and SE 13th Avenue	Two-way Stop	AM	-	-	-	-	-	-	-	-	-	NB	B	12.4	0.01
		PM	-	-	-	-	-	-	-	-	-	NB	B	13.1	0.03
Proposed Access and S Ivy Street	Two-way Stop	AM	-	-	-	-	-	-	-	-	-	WB	B	11.8	0.01
		PM	-	-	-	-	-	-	-	-	-	WB	B	12.9	0.01

Notes: 2016 Highway Capacity Manual methodology used in analysis, Synchro v11.

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

Assumed 2020 Traffic, AM Peak Hour

02/01/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	23	129	39	38	228	42	104	192	39	18	98	13
Future Volume (vph)	23	129	39	38	228	42	104	192	39	18	98	13
Confl. Peds. (#/hr)			2	2			1					1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	9%	9%	9%	8%	8%	8%	8%	8%	8%	10%	10%	10%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	25.4		9.6	25.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		16.7%	42.3%		16.0%	41.7%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	15.6	15.6		15.6	15.6		27.9	26.9		25.0	21.2	
Actuated g/C Ratio	0.29	0.29		0.29	0.29		0.52	0.50		0.47	0.40	
v/c Ratio	0.17	0.46		0.18	0.73		0.24	0.37		0.05	0.23	
Control Delay	16.9	17.1		16.1	26.4		8.7	11.5		7.6	13.9	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.9	17.1		16.1	26.4		8.7	11.5		7.6	13.9	
LOS	B	B		B	C		A	B		A	B	
Approach Delay		17.1			25.1			10.6			13.0	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 53.5
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.73
 Intersection Signal Delay: 16.9
 Intersection LOS: B
 Intersection Capacity Utilization 47.5%
 ICU Level of Service A
 Analysis Period (min) 15

Splits and Phases: 1: Ivy Street & SE 13th Avenue



Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

Assumed 2020 Traffic, PM Peak Hour
02/01/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	22	172	92	109	154	38	48	184	46	46	211	24
Future Volume (vph)	22	172	92	109	154	38	48	184	46	46	211	24
Confl. Peds. (#/hr)	11		1	1		11	6		1	1		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	9%	9%	9%	7%	7%	7%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	24.0	24.0		24.0	24.0		10.0	26.0		10.0	26.0	
Total Split (%)	40.0%	40.0%		40.0%	40.0%		16.7%	43.3%		16.7%	43.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	12.6	12.6		12.6	12.6		24.1	22.3		24.1	22.3	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.51	0.47		0.51	0.47	
v/c Ratio	0.09	0.62		0.53	0.45		0.09	0.33		0.08	0.33	
Control Delay	14.8	19.5		25.8	16.8		6.9	11.5		6.8	12.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.8	19.5		25.8	16.8		6.9	11.5		6.8	12.0	
LOS	B	B		C	B		A	B		A	B	
Approach Delay		19.2			20.1			10.7			11.1	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 47.5
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.62
 Intersection Signal Delay: 15.4
 Intersection Capacity Utilization 56.7%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Ivy Street & SE 13th Avenue
























HCM 6th Signalized Intersection Summary

1: Ivy Street & SE 13th Avenue






















Assumed 2020 Traffic, AM Peak Hour

02/01/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	23	129	39	38	228	42	104	192	39	18	98	13
Future Volume (veh/h)	23	129	39	38	228	42	104	192	39	18	98	13
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1627	1627	1627	1641	1641	1641	1641	1641	1641	1614	1614	1614
Adj Flow Rate, veh/h	29	165	50	49	292	54	133	246	50	23	126	17
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	9	9	9	8	8	8	8	8	8	10	10	10
Cap, veh/h	214	336	102	318	377	70	646	581	118	492	536	72
Arrive On Green	0.28	0.28	0.28	0.28	0.28	0.28	0.08	0.44	0.44	0.03	0.39	0.39
Sat Flow, veh/h	976	1197	363	1109	1346	249	1563	1323	269	1537	1392	188
Grp Volume(v), veh/h	29	0	215	49	0	346	133	0	296	23	0	143
Grp Sat Flow(s),veh/h/ln	976	0	1560	1109	0	1595	1563	0	1592	1537	0	1579
Q Serve(g_s), s	1.5	0.0	6.1	2.1	0.0	10.6	2.6	0.0	6.8	0.5	0.0	3.3
Cycle Q Clear(g_c), s	12.1	0.0	6.1	8.2	0.0	10.6	2.6	0.0	6.8	0.5	0.0	3.3
Prop In Lane	1.00		0.23	1.00		0.16	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	214	0	437	318	0	447	646	0	699	492	0	608
V/C Ratio(X)	0.14	0.00	0.49	0.15	0.00	0.77	0.21	0.00	0.42	0.05	0.00	0.24
Avail Cap(c_a), veh/h	317	0	601	435	0	614	681	0	699	598	0	608
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.2	0.0	16.0	19.4	0.0	17.6	8.2	0.0	10.3	9.5	0.0	11.1
Incr Delay (d2), s/veh	0.3	0.0	0.9	0.2	0.0	4.2	0.2	0.0	1.9	0.0	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	2.1	0.5	0.0	4.0	0.7	0.0	2.2	0.1	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	23.5	0.0	16.8	19.6	0.0	21.8	8.4	0.0	12.2	9.5	0.0	12.0
LnGrp LOS	C	A	B	B	A	C	A	A	B	A	A	B
Approach Vol, veh/h		244			395			429			166	
Approach Delay, s/veh		17.6			21.5			11.0			11.6	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.9	27.9		19.4	8.8	25.0		19.4				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	20.9		20.5	5.5	20.5		20.5				
Max Q Clear Time (g_c+I1), s	2.5	8.8		14.1	4.6	5.3		12.6				
Green Ext Time (p_c), s	0.0	1.2		0.7	0.0	0.6		1.5				
Intersection Summary												
HCM 6th Ctrl Delay				15.8								
HCM 6th LOS				B								

HCM 6th Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue

Assumed 2020 Traffic, PM Peak Hour
02/01/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	172	92	109	154	38	48	184	46	46	211	24
Future Volume (veh/h)	22	172	92	109	154	38	48	184	46	46	211	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1682	1682	1682	1709	1709	1709	1627	1627	1627	1654	1654	1654
Adj Flow Rate, veh/h	23	181	97	115	162	40	51	194	48	48	222	25
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	9	9	9	7	7	7
Cap, veh/h	368	311	167	300	400	99	518	502	124	523	580	65
Arrive On Green	0.30	0.30	0.30	0.30	0.30	0.30	0.05	0.40	0.40	0.05	0.40	0.40
Sat Flow, veh/h	1139	1023	548	1082	1318	325	1550	1257	311	1576	1459	164
Grp Volume(v), veh/h	23	0	278	115	0	202	51	0	242	48	0	247
Grp Sat Flow(s),veh/h/ln	1139	0	1571	1082	0	1643	1550	0	1568	1576	0	1623
Q Serve(g_s), s	0.9	0.0	8.1	5.4	0.0	5.3	1.0	0.0	5.9	0.9	0.0	5.9
Cycle Q Clear(g_c), s	6.2	0.0	8.1	13.5	0.0	5.3	1.0	0.0	5.9	0.9	0.0	5.9
Prop In Lane	1.00		0.35	1.00		0.20	1.00		0.20	1.00		0.10
Lane Grp Cap(c), veh/h	368	0	477	300	0	499	518	0	626	523	0	645
V/C Ratio(X)	0.06	0.00	0.58	0.38	0.00	0.40	0.10	0.00	0.39	0.09	0.00	0.38
Avail Cap(c_a), veh/h	432	0	566	361	0	592	599	0	626	608	0	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.4	0.0	15.9	21.7	0.0	15.0	8.9	0.0	11.5	8.9	0.0	11.6
Incr Delay (d2), s/veh	0.1	0.0	1.1	0.8	0.0	0.5	0.1	0.0	1.8	0.1	0.0	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	2.8	1.4	0.0	1.9	0.3	0.0	2.0	0.3	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.5	0.0	17.1	22.5	0.0	15.5	9.0	0.0	13.3	9.0	0.0	13.3
LnGrp LOS	B	A	B	C	A	B	A	A	B	A	A	B
Approach Vol, veh/h		301			317			293			295	
Approach Delay, s/veh		17.1			18.0			12.6			12.6	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.1	26.1		20.9	7.2	26.0		20.9				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.5	21.5		19.5	5.5	21.5		19.5				
Max Q Clear Time (g_c+I1), s	2.9	7.9		10.1	3.0	7.9		15.5				
Green Ext Time (p_c), s	0.0	1.1		1.2	0.0	1.0		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			15.1									
HCM 6th LOS			B									

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2022 Background Traffic, AM Peak Hour
02/01/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	145	44	43	257	47	111	205	42	19	105	14
Future Volume (vph)	26	145	44	43	257	47	111	205	42	19	105	14
Confl. Peds. (#/hr)			2	2			1					1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	9%	9%	9%	8%	8%	8%	8%	8%	8%	10%	10%	10%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	26.4	26.4		26.4	26.4		10.4	24.0		9.6	23.2	
Total Split (%)	44.0%	44.0%		44.0%	44.0%		17.3%	40.0%		16.0%	38.7%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	17.1	17.1		17.1	17.1		26.6	25.5		23.3	19.5	
Actuated g/C Ratio	0.32	0.32		0.32	0.32		0.50	0.48		0.43	0.36	
v/c Ratio	0.20	0.48		0.20	0.76		0.27	0.42		0.05	0.27	
Control Delay	16.6	16.5		15.3	26.2		9.9	13.1		8.5	15.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	16.6	16.5		15.3	26.2		9.9	13.1		8.5	15.6	
LOS	B	B		B	C		A	B		A	B	
Approach Delay		16.5			24.9			12.1			14.7	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 53.6
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.76
 Intersection Signal Delay: 17.5
 Intersection Capacity Utilization 50.3%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service A

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 2010 Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue

2022 Background Traffic, AM Peak Hour
02/01/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	145	44	43	257	47	111	205	42	19	105	14
Future Volume (veh/h)	26	145	44	43	257	47	111	205	42	19	105	14
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1606	1606	1750	1620	1620	1750	1620	1620	1750	1591	1591	1750
Adj Flow Rate, veh/h	33	186	56	55	329	60	142	263	54	24	135	18
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	9	9	9	8	8	8	8	8	8	10	10	10
Cap, veh/h	216	370	111	332	417	76	589	530	109	429	483	64
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.08	0.41	0.41	0.03	0.35	0.35
Sat Flow, veh/h	926	1185	357	1068	1333	243	1543	1305	268	1515	1375	183
Grp Volume(v), veh/h	33	0	242	55	0	389	142	0	317	24	0	153
Grp Sat Flow(s),veh/h/ln	926	0	1541	1068	0	1577	1543	0	1573	1515	0	1558
Q Serve(g_s), s	1.8	0.0	6.8	2.4	0.0	12.0	3.0	0.0	8.0	0.5	0.0	3.8
Cycle Q Clear(g_c), s	13.8	0.0	6.8	9.2	0.0	12.0	3.0	0.0	8.0	0.5	0.0	3.8
Prop In Lane	1.00		0.23	1.00		0.15	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	216	0	482	332	0	493	589	0	639	429	0	547
V/C Ratio(X)	0.15	0.00	0.50	0.17	0.00	0.79	0.24	0.00	0.50	0.06	0.00	0.28
Avail Cap(c_a), veh/h	307	0	634	438	0	648	631	0	639	531	0	547
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.0	0.0	14.9	18.7	0.0	16.7	9.3	0.0	11.8	10.7	0.0	12.4
Incr Delay (d2), s/veh	0.3	0.0	0.8	0.2	0.0	4.9	0.2	0.0	2.7	0.1	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	3.0	0.7	0.0	5.9	1.3	0.0	3.9	0.2	0.0	1.8
LnGrp Delay(d),s/veh	23.3	0.0	15.7	18.9	0.0	21.6	9.5	0.0	14.5	10.7	0.0	13.7
LnGrp LOS	C		B	B		C	A		B	B		B
Approach Vol, veh/h		275			444			459				177
Approach Delay, s/veh		16.7			21.3			13.0				13.3
Approach LOS		B			C			B				B
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.0	26.1		21.1	8.9	23.2		21.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	19.5		21.9	5.9	18.7		21.9				
Max Q Clear Time (g_c+I1), s	2.5	10.0		15.8	5.0	5.8		14.0				
Green Ext Time (p_c), s	0.0	1.2		0.8	0.0	0.5		1.7				
Intersection Summary												
HCM 2010 Ctrl Delay			16.5									
HCM 2010 LOS			B									

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2022 Background Traffic, PM Peak Hour

02/01/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	194	104	113	174	43	49	197	49	49	226	26
Future Volume (vph)	25	194	104	113	174	43	49	197	49	49	226	26
Confl. Peds. (#/hr)	11		1	1		11	6		1	1		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	9%	9%	9%	7%	7%	7%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	25.0	25.0		25.0	25.0		9.6	25.4		9.6	25.4	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		16.0%	42.3%		16.0%	42.3%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	13.5	13.5		13.5	13.5		24.4	21.7		24.4	21.7	
Actuated g/C Ratio	0.27	0.27		0.27	0.27		0.49	0.44		0.49	0.44	
v/c Ratio	0.10	0.68		0.61	0.49		0.10	0.37		0.10	0.37	
Control Delay	15.1	21.9		30.9	18.0		7.3	13.5		7.3	14.0	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	15.1	21.9		30.9	18.0		7.3	13.5		7.3	14.0	
LOS	B	C		C	B		A	B		A	B	
Approach Delay		21.4			22.4			12.4			12.9	
Approach LOS		C			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 49.6
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 17.5
 Intersection LOS: B
 Intersection Capacity Utilization 59.0%
 ICU Level of Service B
 Analysis Period (min) 15

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 6th Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue

2022 Background Traffic, PM Peak Hour
02/01/2021

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	194	104	113	174	43	49	197	49	49	226	26
Future Volume (veh/h)	25	194	104	113	174	43	49	197	49	49	226	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1682	1682	1682	1709	1709	1709	1627	1627	1627	1654	1654	1654
Adj Flow Rate, veh/h	26	204	109	119	183	45	52	207	52	52	238	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	9	9	9	7	7	7
Cap, veh/h	371	332	177	295	428	105	480	477	120	486	554	63
Arrive On Green	0.32	0.32	0.32	0.32	0.32	0.32	0.05	0.38	0.38	0.05	0.38	0.38
Sat Flow, veh/h	1114	1025	547	1049	1320	324	1550	1253	315	1576	1458	165
Grp Volume(v), veh/h	26	0	313	119	0	228	52	0	259	52	0	265
Grp Sat Flow(s),veh/h/ln	1114	0	1572	1049	0	1644	1550	0	1568	1576	0	1623
Q Serve(g_s), s	1.0	0.0	9.2	5.9	0.0	6.0	1.1	0.0	6.7	1.1	0.0	6.6
Cycle Q Clear(g_c), s	7.0	0.0	9.2	15.2	0.0	6.0	1.1	0.0	6.7	1.1	0.0	6.6
Prop In Lane	1.00		0.35	1.00		0.20	1.00		0.20	1.00		0.10
Lane Grp Cap(c), veh/h	371	0	509	295	0	533	480	0	596	486	0	617
V/C Ratio(X)	0.07	0.00	0.61	0.40	0.00	0.43	0.11	0.00	0.43	0.11	0.00	0.43
Avail Cap(c_a), veh/h	425	0	587	346	0	613	547	0	596	553	0	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	15.7	22.1	0.0	14.6	9.7	0.0	12.6	9.7	0.0	12.6
Incr Delay (d2), s/veh	0.1	0.0	1.5	0.9	0.0	0.5	0.1	0.0	2.3	0.1	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	3.2	1.4	0.0	2.1	0.3	0.0	2.4	0.3	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	0.0	17.2	23.0	0.0	15.1	9.7	0.0	14.9	9.8	0.0	14.8
LnGrp LOS	B	A	B	C	A	B	A	A	B	A	A	B
Approach Vol, veh/h		339			347			311			317	
Approach Delay, s/veh		17.2			17.8			14.1			14.0	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.2	25.4		22.3	7.2	25.4		22.3				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	20.9		20.5	5.1	20.9		20.5				
Max Q Clear Time (g_c+I1), s	3.1	8.7		11.2	3.1	8.6		17.2				
Green Ext Time (p_c), s	0.0	1.1		1.4	0.0	1.1		0.6				
Intersection Summary												
HCM 6th Ctrl Delay			15.8									
HCM 6th LOS			B									

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2022 Background With Site, AM Peak Hour

02/01/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	147	46	43	258	49	111	207	42	20	107	14
Future Volume (vph)	26	147	46	43	258	49	111	207	42	20	107	14
Confl. Peds. (#/hr)			2	2			1					1
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	9%	9%	9%	8%	8%	8%	8%	8%	8%	10%	10%	10%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	25.0	25.0		25.0	25.0		10.0	25.4		9.6	25.0	
Total Split (%)	41.7%	41.7%		41.7%	41.7%		16.7%	42.3%		16.0%	41.7%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effct Green (s)	17.2	17.2		17.2	17.2		27.1	25.1		24.9	21.1	
Actuated g/C Ratio	0.31	0.31		0.31	0.31		0.49	0.46		0.45	0.38	
v/c Ratio	0.21	0.49		0.20	0.78		0.26	0.44		0.06	0.26	
Control Delay	18.0	17.6		16.4	29.4		9.5	14.4		7.9	14.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	18.0	17.6		16.4	29.4		9.5	14.4		7.9	14.6	
LOS	B	B		B	C		A	B		A	B	
Approach Delay		17.7			27.8			12.9			13.7	
Approach LOS		B			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 55
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.78
 Intersection Signal Delay: 18.9
 Intersection Capacity Utilization 58.8%
 Analysis Period (min) 15
 Intersection LOS: B
 ICU Level of Service B






















Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 6th Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue

2022 Background With Site, AM Peak Hour

02/01/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	147	46	43	258	49	111	207	42	20	107	14
Future Volume (veh/h)	26	147	46	43	258	49	111	207	42	20	107	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1627	1627	1627	1641	1641	1641	1641	1641	1641	1614	1614	1614
Adj Flow Rate, veh/h	33	188	59	55	331	63	142	265	54	26	137	18
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Percent Heavy Veh, %	9	9	9	8	8	8	8	8	8	10	10	10
Cap, veh/h	205	365	115	321	412	78	607	555	113	447	515	68
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.08	0.42	0.42	0.03	0.37	0.37
Sat Flow, veh/h	934	1186	372	1077	1339	255	1563	1322	269	1537	1397	184
Grp Volume(v), veh/h	33	0	247	55	0	394	142	0	319	26	0	155
Grp Sat Flow(s),veh/h/ln	934	0	1559	1077	0	1594	1563	0	1592	1537	0	1580
Q Serve(g_s), s	1.9	0.0	7.2	2.5	0.0	12.6	3.0	0.0	8.1	0.6	0.0	3.8
Cycle Q Clear(g_c), s	14.5	0.0	7.2	9.7	0.0	12.6	3.0	0.0	8.1	0.6	0.0	3.8
Prop In Lane	1.00		0.24	1.00		0.16	1.00		0.17	1.00		0.12
Lane Grp Cap(c), veh/h	205	0	480	321	0	491	607	0	668	447	0	583
V/C Ratio(X)	0.16	0.00	0.51	0.17	0.00	0.80	0.23	0.00	0.48	0.06	0.00	0.27
Avail Cap(c_a), veh/h	262	0	575	386	0	588	636	0	668	542	0	583
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	15.8	19.8	0.0	17.7	9.3	0.0	11.7	10.5	0.0	12.3
Incr Delay (d2), s/veh	0.4	0.0	0.9	0.3	0.0	6.7	0.2	0.0	2.4	0.1	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	2.5	0.6	0.0	5.1	0.9	0.0	2.8	0.2	0.0	1.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.7	0.0	16.7	20.1	0.0	24.4	9.4	0.0	14.2	10.5	0.0	13.4
LnGrp LOS	C	A	B	C	A	C	A	A	B	B	A	B
Approach Vol, veh/h		280			449			461			181	
Approach Delay, s/veh		17.6			23.9			12.7			13.0	
Approach LOS		B			C			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.2	27.8		21.6	9.0	25.0		21.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	20.9		20.5	5.5	20.5		20.5				
Max Q Clear Time (g_c+I1), s	2.6	10.1		16.5	5.0	5.8		14.6				
Green Ext Time (p_c), s	0.0	1.3		0.6	0.0	0.6		1.4				
Intersection Summary												
HCM 6th Ctrl Delay				17.4								
HCM 6th LOS				B								

Lanes, Volumes, Timings
2: Proposed Access & SE 13th Avenue

2022 Background With Site, AM Peak Hour

02/01/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	208	3	4	347	3	1
Future Volume (vph)	208	3	4	347	3	1
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	9%	9%	2%	2%	8%	8%
Shared Lane Traffic (%)						
Sign Control	Free			Free	Stop	

Intersection Summary

Control Type: Unsignalized
 Intersection Capacity Utilization 33.3% ICU Level of Service A
 Analysis Period (min) 15

HCM 6th TWSC
2: Proposed Access & SE 13th Avenue










2022 Background With Site, AM Peak Hour

02/01/2021

Intersection						
Int Delay, s/veh	0.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	208	3	4	347	3	1
Future Vol, veh/h	208	3	4	347	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	9	9	2	2	8	8
Mvmt Flow	231	3	4	386	3	1
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	234	0	627	233
Stage 1	-	-	-	-	233	-
Stage 2	-	-	-	-	394	-
Critical Hdwy	-	-	4.12	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.218	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	1333	-	438	791
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	668	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1333	-	436	791
Mov Cap-2 Maneuver	-	-	-	-	436	-
Stage 1	-	-	-	-	792	-
Stage 2	-	-	-	-	665	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.1	12.4			
HCM LOS			B			
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	491	-	-	1333	-	
HCM Lane V/C Ratio	0.009	-	-	0.003	-	
HCM Control Delay (s)	12.4	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

Lanes, Volumes, Timings
 3: S. Ivy Street & Proposed Access

2022 Background With Site, AM Peak Hour
 02/01/2021

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	2	358	2	4	192
Future Volume (vph)	2	2	358	2	4	192
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	8%	8%	10%	10%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized
 Intersection Capacity Utilization 30.6% ICU Level of Service A
 Analysis Period (min) 15

HCM 6th TWSC
3: S. Ivy Street & Proposed Access

2022 Background With Site, AM Peak Hour

02/01/2021

Intersection						
Int Delay, s/veh	0.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	2	2	358	2	4	192
Future Vol, veh/h	2	2	358	2	4	192
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	8	8	10	10
Mvmt Flow	2	2	398	2	4	213
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	620	399	0	0	400	0
Stage 1	399	-	-	-	-	-
Stage 2	221	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.2	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.29	-
Pot Cap-1 Maneuver	452	651	-	-	1117	-
Stage 1	678	-	-	-	-	-
Stage 2	816	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	450	651	-	-	1117	-
Mov Cap-2 Maneuver	450	-	-	-	-	-
Stage 1	678	-	-	-	-	-
Stage 2	813	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.8	0	0.2			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	532	1117	-	
HCM Lane V/C Ratio	-	-	0.008	0.004	-	
HCM Control Delay (s)	-	-	11.8	8.2	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Lanes, Volumes, Timings
1: Ivy Street & SE 13th Avenue

2022 Background With Site, PM Peak Hour

02/01/2021

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	198	105	115	180	45	49	199	49	50	226	26
Future Volume (vph)	25	198	105	115	180	45	49	199	49	50	226	26
Confl. Peds. (#/hr)	11		1	1		11	6		1	1		6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	5%	5%	5%	3%	3%	3%	9%	9%	9%	7%	7%	7%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		pm+pt	NA	
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		5	2		1	6	
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Minimum Split (s)	22.5	22.5		22.5	22.5		9.5	22.5		9.5	22.5	
Total Split (s)	25.2	25.2		25.2	25.2		9.6	25.2		9.6	25.2	
Total Split (%)	42.0%	42.0%		42.0%	42.0%		16.0%	42.0%		16.0%	42.0%	
Yellow Time (s)	3.5	3.5		3.5	3.5		3.5	3.5		3.5	3.5	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	4.5	4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?							Yes	Yes		Yes	Yes	
Recall Mode	None	None		None	None		None	Max		None	Max	
Act Effect Green (s)	13.9	13.9		13.9	13.9		24.2	21.5		24.2	21.5	
Actuated g/C Ratio	0.28	0.28		0.28	0.28		0.49	0.43		0.49	0.43	
v/c Ratio	0.10	0.68		0.61	0.50		0.10	0.38		0.10	0.38	
Control Delay	14.9	21.6		30.7	17.9		7.6	13.8		7.5	14.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	14.9	21.6		30.7	17.9		7.6	13.8		7.5	14.3	
LOS	B	C		C	B		A	B		A	B	
Approach Delay		21.1			22.2			12.8			13.2	
Approach LOS		C			C			B			B	

Intersection Summary

Cycle Length: 60
 Actuated Cycle Length: 49.8
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 0.68
 Intersection Signal Delay: 17.6
 Intersection Capacity Utilization 59.4%
 Analysis Period (min) 15

Intersection LOS: B
 ICU Level of Service B

Splits and Phases: 1: Ivy Street & SE 13th Avenue



HCM 6th Signalized Intersection Summary
1: Ivy Street & SE 13th Avenue

2022 Background With Site, PM Peak Hour

02/01/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	198	105	115	180	45	49	199	49	50	226	26
Future Volume (veh/h)	25	198	105	115	180	45	49	199	49	50	226	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1682	1682	1682	1709	1709	1709	1627	1627	1627	1654	1654	1654
Adj Flow Rate, veh/h	26	208	111	121	189	47	52	209	52	53	238	27
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	5	5	5	3	3	3	9	9	9	7	7	7
Cap, veh/h	370	337	180	295	433	108	475	472	117	479	549	62
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.05	0.38	0.38	0.05	0.38	0.38
Sat Flow, veh/h	1106	1025	547	1044	1316	327	1550	1256	312	1576	1458	165
Grp Volume(v), veh/h	26	0	319	121	0	236	52	0	261	53	0	265
Grp Sat Flow(s),veh/h/ln	1106	0	1572	1044	0	1644	1550	0	1568	1576	0	1623
Q Serve(g_s), s	1.0	0.0	9.4	6.1	0.0	6.2	1.1	0.0	6.9	1.1	0.0	6.7
Cycle Q Clear(g_c), s	7.2	0.0	9.4	15.5	0.0	6.2	1.1	0.0	6.9	1.1	0.0	6.7
Prop In Lane	1.00		0.35	1.00		0.20	1.00		0.20	1.00		0.10
Lane Grp Cap(c), veh/h	370	0	517	295	0	540	475	0	589	479	0	611
V/C Ratio(X)	0.07	0.00	0.62	0.41	0.00	0.44	0.11	0.00	0.44	0.11	0.00	0.43
Avail Cap(c_a), veh/h	422	0	591	345	0	618	541	0	589	545	0	611
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.3	0.0	15.6	22.1	0.0	14.5	9.8	0.0	12.9	9.8	0.0	12.8
Incr Delay (d2), s/veh	0.1	0.0	1.6	0.9	0.0	0.6	0.1	0.0	2.4	0.1	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	3.3	1.5	0.0	2.2	0.3	0.0	2.4	0.3	0.0	2.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	17.4	0.0	17.1	23.0	0.0	15.1	9.9	0.0	15.3	9.9	0.0	15.0
LnGrp LOS	B	A	B	C	A	B	A	A	B	A	A	B
Approach Vol, veh/h		345			357			313			318	
Approach Delay, s/veh		17.1			17.7			14.4			14.2	
Approach LOS		B			B			B			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	25.2		22.6	7.2	25.2		22.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	20.7		20.7	5.1	20.7		20.7				
Max Q Clear Time (g_c+I1), s	3.1	8.9		11.4	3.1	8.7		17.5				
Green Ext Time (p_c), s	0.0	1.1		1.5	0.0	1.1		0.6				

Intersection Summary

HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

Lanes, Volumes, Timings
 2: Proposed Access & SE 13th Avenue

2022 Background With Site, PM Peak Hour

02/01/2021



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	292	5	3	330	10	4
Future Volume (vph)	292	5	3	330	10	4
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	5%	5%	3%	3%	2%	2%
Shared Lane Traffic (%)						
Sign Control	Free		Free		Stop	

Intersection Summary

Control Type: Unsignalized
 Intersection Capacity Utilization 31.5% ICU Level of Service A
 Analysis Period (min) 15

HCM 6th TWSC
2: Proposed Access & SE 13th Avenue










2022 Background With Site, PM Peak Hour
02/01/2021

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	⤴			⤵	⤴	⤵
Traffic Vol, veh/h	292	5	3	330	10	4
Future Vol, veh/h	292	5	3	330	10	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	5	5	3	3	2	2
Mvmt Flow	324	6	3	367	11	4
Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	330	0	700	327
Stage 1	-	-	-	-	327	-
Stage 2	-	-	-	-	373	-
Critical Hdwy	-	-	4.13	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.227	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1224	-	405	714
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	696	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1224	-	404	714
Mov Cap-2 Maneuver	-	-	-	-	404	-
Stage 1	-	-	-	-	731	-
Stage 2	-	-	-	-	694	-
Approach	EB	WB	NB			
HCM Control Delay, s	0	0.1	13.1			
HCM LOS						B
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	461	-	-	1224	-	
HCM Lane V/C Ratio	0.034	-	-	0.003	-	
HCM Control Delay (s)	13.1	-	-	7.9	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

Lanes, Volumes, Timings
 3: S. Ivy Street & Proposed Access

2022 Background With Site, PM Peak Hour

02/01/2021

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	2	2	295	2	1	443
Future Volume (vph)	2	2	295	2	1	443
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Heavy Vehicles (%)	2%	2%	9%	9%	7%	7%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Control Type: Unsignalized
 Intersection Capacity Utilization 36.2% ICU Level of Service A
 Analysis Period (min) 15

HCM 6th TWSC
3: S. Ivy Street & Proposed Access

2022 Background With Site, PM Peak Hour

02/01/2021

Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	T	T
Traffic Vol, veh/h	2	2	295	2	1	443
Future Vol, veh/h	2	2	295	2	1	443
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	9	9	7	7
Mvmt Flow	2	2	328	2	1	492
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	823	329	0	0	330	0
Stage 1	329	-	-	-	-	-
Stage 2	494	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.17	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.263	-
Pot Cap-1 Maneuver	343	712	-	-	1202	-
Stage 1	729	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	343	712	-	-	1202	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	729	-	-	-	-	-
Stage 2	612	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.9	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	463	1202	-	
HCM Lane V/C Ratio	-	-	0.01	0.001	-	
HCM Control Delay (s)	-	-	12.9	8	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Appendix 4: Crash Data

Table 1. Crash rate results.

Intersection	Crash History (Years)	Number of Crashes	Crashes per year	Annual Traffic Entering (veh/yr)	Crash rate per M.E.V.*
S. Ivy Street and SE 13th Avenue	5	7	1.4	4185650	0.334

* M.E.V. - million entering vehicles.

TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT

CRASH SUMMARIES BY YEAR BY COLLISION TYPE

SE 13TH AVE and IVY ST, City of Canby, Clackamas County, 01/01/2014 to 12/31/2018

24 OF 322

COLLISION TYPE	FATAL CRASHES		NON-PROPERTY DAMAGE ONLY		TOTAL CRASHES	PEOPLE KILLED	PEOPLE INJURED	TRUCKS	DRY SURF	WET SURF	DAY	DARK	INTER-SECTION RELATED	OFF-ROAD
	FATAL CRASHES	NON-PROPERTY DAMAGE ONLY												

YEAR: 2017	0	0	1	1	0	0	0	0	1	0	1	0	1	0
ANGLE	0	0	1	1	0	0	0	0	1	0	1	0	1	0
YEAR 2017 TOTAL	0	0	1	1	1	0	0	0	1	0	1	0	1	0

YEAR: 2016	0	0	1	1	0	0	0	0	1	0	1	0	1	0
SIDESWIPE - MEETING	0	0	1	1	0	0	0	0	1	0	1	0	1	0
TURNING MOVEMENTS	0	1	1	2	0	2	0	0	1	1	1	1	2	0
YEAR 2016 TOTAL	0	1	2	3	0	2	0	0	2	1	2	1	3	0

YEAR: 2015	0	2	0	2	0	2	0	0	1	1	0	2	2	0
ANGLE	0	2	0	2	0	2	0	0	1	1	0	2	2	0
REAR-END	0	1	0	1	0	1	0	0	1	0	1	0	0	0
YEAR 2015 TOTAL	0	3	0	3	0	3	0	0	2	1	1	2	2	0

FINAL TOTAL	0	4	3	7	0	5	0	0	5	2	4	3	6	0
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Disclaimer: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submittal of crash report forms is the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirements, effective 01/01/2004, may result in fewer property damage only crashes being eligible for inclusion in the Statewide Crash Data File.

CDS390
01/29/2021

CITY OF CANBY, CLATSOPAS COUNTY

OREGON, DEPARTMENT OF TRANSPORTATION - TRANSPORTATION DEVELOPMENT DIVISION
TRANSPORTATION DATA SECTION - CRASH ANALYSIS AND REPORTING UNIT
URBAN NON-SYSTEM CPASH LISTING
SE 13TH AVE and IYV ST, City of Canby, Clatsopas County, 01/01/2014 to 12/31/2018
6 - 7 of 7 Crash records shown.

SR#	PT	RD	DEPT	DATE	CLASS	CITY STREET	RD CHAR	INT-TYPE	INT-REL	OFFRD	WTHR	CRASH	STCL USE	MOVE	PREC	INJ	G	E	LICNS	PEO	ERRR	ACT	EVENT	CAUSE														
UNLOC	D	C	S	V	L	K	LA#	LOCN	INTR	CROSS	N	TRF SIGNAL	N	DRY	ANGL	N/A	9	STRGHT	N	S	01	DRVR	NONE	00	UNK	UNK	000	00	00	00	00	00						
05461	N	N	N	M	12/18/2015	16	5 IYV ST	STRGHT	N	N	CLR	S-1STOP	01	NONE	0	STRGHT	S	-N	01	DRVR	NONE	38	M	OR-Y	OR-25	026	000	000	00	00	00	00	00	00				

DISCLAIMER: The information contained in this report is compiled from individual driver and police crash reports submitted to the Oregon Department of Transportation as required in ORS 811.720. The Crash Analysis and Reporting Unit is committed to providing the highest quality crash data to customers. However, because submitted crash reports for the responsibility of the individual driver, the Crash Analysis and Reporting Unit can not guarantee that all qualifying crashes are represented nor can assurances be made that all details pertaining to a single crash are accurate. Note: Legislative changes to DMV's vehicle crash reporting requirement, effective 01/01/2004, may result in fewer properly damage only crashes being eligible for inclusion in the Statewide Crash Data File.

RECORDING REQUESTED BY:



Fidelity National Title
Company of Oregon

5400 SW Meadows Road, Suite 100
Lake Oswego, OR 97035

Clackamas County Official Records
Sherry Hall, County Clerk

2019-038716

07/05/2019 11:29:01 AM

D-D Cnt=1 Stn=9 COUNTER1
\$10.00 \$16.00 \$10.00 \$62.00

\$98.00

GRANTOR'S NAME:

Willamette Capital Investments, LLC, an Oregon limited liability company

GRANTEE'S NAME:

Waterstone Investments, LLC

AFTER RECORDING RETURN TO:

Order No.: 45141904124-KL
Veronica Wilson
Waterstone Investments, LLC
10362 SE Isaac Drive
Happy Valley, OR 97086

SEND TAX STATEMENTS TO:

Waterstone Investments, LLC
10362 SE Isaac Drive
Happy Valley, OR 97086

APN: 01002480
Map: 41E04DA/04800
1300 S Ivy Street, Canby, OR 97013

SPACE ABOVE THIS LINE FOR RECORDER'S USE

STATUTORY WARRANTY DEED

Willamette Capital Investments, LLC, an Oregon limited liability company, Grantor, conveys and warrants to Waterstone Investments, LLC, an Oregon limited liability company, Grantee, the following described real property, free and clear of encumbrances except as specifically set forth below, situated in the County of Clackamas, State of Oregon:

A tract of land in the Southwest quarter of the Northwest quarter of Section 4, Township 4 South, Range 1 East, Willamette Meridian, in the City of Canby and County of Clackamas and State of Oregon more particularly described as follows:

Beginning at the Northwest corner of the Northeast quarter of the Southeast quarter of section 4 in Township 4 South, Range 1 East of the Willamette Meridian, running thence East 5.48 chains; thence South 5.48 chains; thence West 5.48 chains; thence North 5.48 chains to the place of beginning.

Excepting therefrom that portion conveyed to Clackamas County for right-of-way by Deed recorded April 2, 1997 at Recording No. 97-023971, Records of Clackamas County, Oregon.

THE TRUE AND ACTUAL CONSIDERATION FOR THIS CONVEYANCE IS SIX HUNDRED FIVE THOUSAND AND NO/100 DOLLARS (**\$605,000.00**). (See ORS 93.030).

Subject to:

Rights of the public to any portion of the Land lying within the area commonly known as Streets, Roads and Highways.
2019-2020 taxes, a lien not yet payable

Easement(s) for the purpose(s) shown below and rights incidental thereto, as granted in a document:

Granted to: Clackamas County
Purpose: Installation and maintenance of storm drainage facilities and appurtenances
Recording Date: April 2, 1997
Recording No.: 97-023968
Affects: Northwest corner

BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON TRANSFERRING FEE TITLE SHOULD INQUIRE ABOUT THE PERSON'S RIGHTS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010. THIS INSTRUMENT DOES NOT ALLOW USE OF THE PROPERTY DESCRIBED IN THIS INSTRUMENT IN VIOLATION OF APPLICABLE LAND USE LAWS AND REGULATIONS. BEFORE SIGNING OR ACCEPTING THIS INSTRUMENT, THE PERSON ACQUIRING FEE TITLE TO THE PROPERTY SHOULD CHECK WITH THE APPROPRIATE CITY OR COUNTY PLANNING DEPARTMENT TO VERIFY THAT THE UNIT OF LAND BEING TRANSFERRED IS A LAWFULLY ESTABLISHED LOT OR PARCEL, AS DEFINED IN ORS 92.010 OR 215.010, TO VERIFY THE APPROVED USES OF THE LOT OR PARCEL, TO DETERMINE ANY LIMITS ON LAWSUITS AGAINST FARMING OR FOREST PRACTICES, AS DEFINED IN ORS 30.930, AND TO INQUIRE ABOUT THE RIGHTS OF NEIGHBORING PROPERTY OWNERS, IF ANY, UNDER ORS 195.300, 195.301 AND 195.305 TO 195.336 AND SECTIONS 5 TO 11, CHAPTER 424, OREGON LAWS 2007, SECTIONS 2 TO 9 AND 17, CHAPTER 855, OREGON LAWS 2009, AND SECTIONS 2 TO 7, CHAPTER 8, OREGON LAWS 2010.

Fidelity National Title of Oregon 45141904124-08

STATUTORY WARRANTY DEED
(continued)

IN WITNESS WHEREOF, the undersigned have executed this document on the date(s) set forth below.

Dated: 5-16-19

Willamette Capital Investments, LLC, an Oregon limited liability company

BY: [Signature]
R. Patrick Hanlin, Trustee of the R. Patrick Hanlin Living Trust dated June 13, 1991, Member

BY: [Signature]
Shelley R. Hanlin, Trustee of the Shelley R. Hanlin Living Trust dated June 13, 1991, Member

BY: [Signature]
Timothy A. Tofte, Member

BY: [Signature]
Lisa J. Tofte, Member

State of Oregon
County of Clackamas

This instrument was acknowledged before me on 5-16-2019 by R. Patrick Hanlin, trustee of the R. Patrick Hanlin Living Trust dated June 13, 1991, as member of Willamette Capital Investments, LLC, an Oregon limited liability company, Shelley R. Hanlin, Trustee of the Shelley R. Hanlin Living Trust dated June 13, 1991, as member of Willamette Capital Investments, LLC, an Oregon limited liability company and Timothy A Tofte and Lisa J. Tofte, members of Willamette Capital Investments, LLC, an Oregon limited liability company.

Kathi Jo Lawrence

Notary Public - State of Oregon
My Commission Expires: 1-19-2020

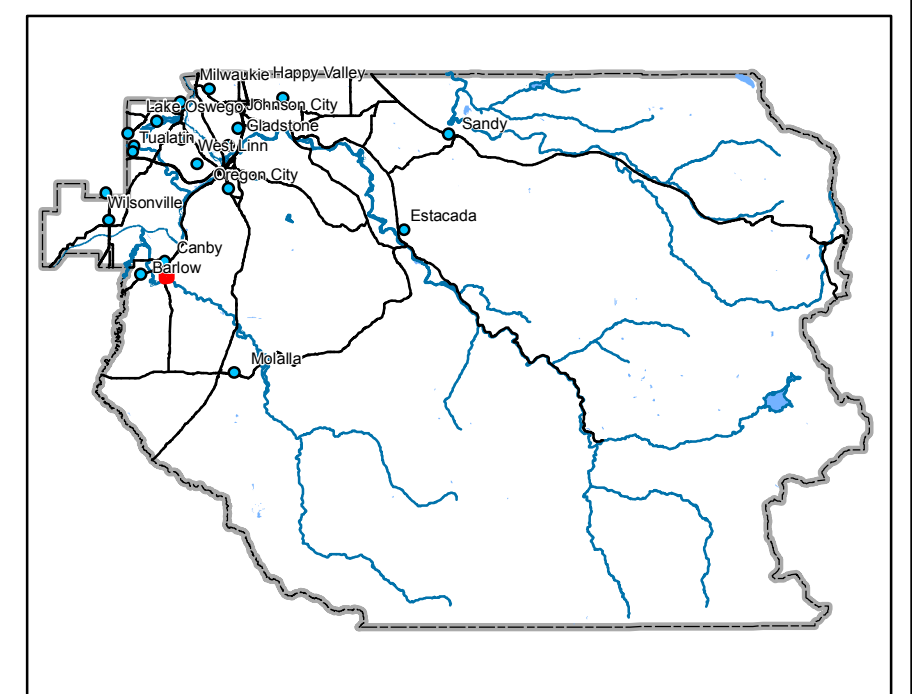


Cancelled Taxlots

- 5202
- 5207
- 5204
- 5223
- 5201
- 5206
- 5203
- 5208
- 5205
- 10700
- 4701
- 5200
- 4700
- 5100
- 5407



- Parcel Boundary
- - - Private Road ROW
- - - Historical Boundary
- - - Railroad Centerline
- TaxCodeLines
- Map Index
- WaterLines
- Land Use Zoning
- Plats
- Water
- Corner
- Section Corner
- 1/16th Line
- Govt Lot Line
- DLC Line
- Meander Line
- PLSS Section Line
- Historic Corridor 40'
- Historic Corridor 20'



THIS MAP IS FOR ASSESSMENT
PURPOSES ONLY



SITE DETAILS:

SITE ADDRESS: 1300 S. IVY ST. CANBY, OREGON

JURISDICTION: CITY OF CANBY

SITE ZONING: R-1; LOW DENSITY RESIDENTIAL

PROPOSED USE: ASSISTED LIVING / NURSING CARE (CONDITIONAL USE); SINGLE FAMILY DUPLEXES FOR SENIOR LIVING

LAND USE PROCESSES REQUIRED: TYPE III SITE PLAN & DESIGN REVIEW
CONDITIONAL USE REVIEW

TOTAL SITE AREA: 111,973 S.F.

SITE DENSITY PROPOSED: 102 RESIDENT BEDS
8 DUPLEX UNITS

PROPOSED BUILDING COVERAGE: 32,588 S.F.
PROPOSED HARDSCAPE AREA: 34,951 S.F.
PROPOSED LANDSCAPED AREA: 44,434 S.F.

TOTAL PARKING SPACES: 52 PARKING SPACES W/ 2 HANDICAP VAN ACCESSIBLE SPACE AND 1 HANDICAP ACCESSIBLE SPACE

TOTAL BICYCLE PARKING: 6 SPACES

GENERAL SITE PLAN NOTES:

SITE FURNISHINGS SUCH AS FENCES, & ANY OTHER FURNISHINGS SHALL BE CONSTRUCTED W/ 20% SUSTAINABLE HARVESTED MATERIALS SUCH AS FORESTRY STEWARDSHIP COUNCIL (FSC)-CERTIFIED WOOD & RECYCLED CONTENT MATERIALS. EXCLUDING PLASTICS. THE INTENT OF THIS STANDARD CAN ALSO BE ACHIEVED THROUGH THE USE OF LOCALLY SOURCED MATERIALS, ORIGINATING WITHIN 500 MILES OF THE SITE

A MIN. OF 20% RECYCLED CONTENT PAVEMENT OR PAVEMENT BASE, SUCH AS CONCRETE GRINDINGS FOR BASE MATERIALS OR BLAST FURNACE SLAB ADDITIVES OR ASPHALT W/ GLASS FOR HARD-SCAPE ELEMENTS SUCH AS STREETS, SIDEWALKS, PATHS, PARKING AREAS & COURTYARDS SHALL BE PROVIDED

REFERENCE LANDSCAPE PLANS FOR LANDSCAPE PLANTING DETAILS

REFERENCE CIVIL SHEETS FOR R.O.W. IMPROVEMENTS, PVIOUS PAVEMENT DETAILS, STORM-WATER MANAGEMENT, ETC.

PROVIDE A LEVEL CEMENT CONCRETE PAD, MIN. 4" THICK @ GROUND ELEVATION. THE PAD SHALL BE DESIGNED TO DISCHARGE SURFACE WATER RUNOFF TO PREVENT STANDING WATER TO DRAIN @ GARBAGE ENCLOSURE

THE VEHICULAR APPROACH AREA & STAGING AREA SHALL NOT HAVE A PERCENT OF GRADE EXCEEDING 3%, SLOPED IN ANY DIRECTION

PROVIDE A CLEAR STAGING AREA IN FRONT OF THE ENCLOSURE W/ A MIN. LENGTH & WIDTH TO ALLOW FOR A 3' PERIMETER AROUND ALL SIDES OF THE CONTAINER WHEN BEING SERVICES OUTSIDE OF THE ENCLOSURE

A MIN. OF 3', INCLUDING PAD AREA, SHALL BE PROVIDED IN FRONT OF EACH CONTAINER FOR MANEUVERABILITY IN DEPOSITING SOLID WASTE OR RECYCLABLE MATERIALS

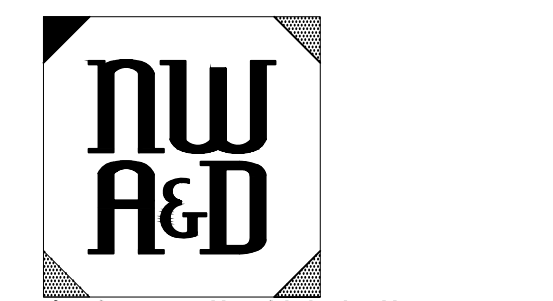
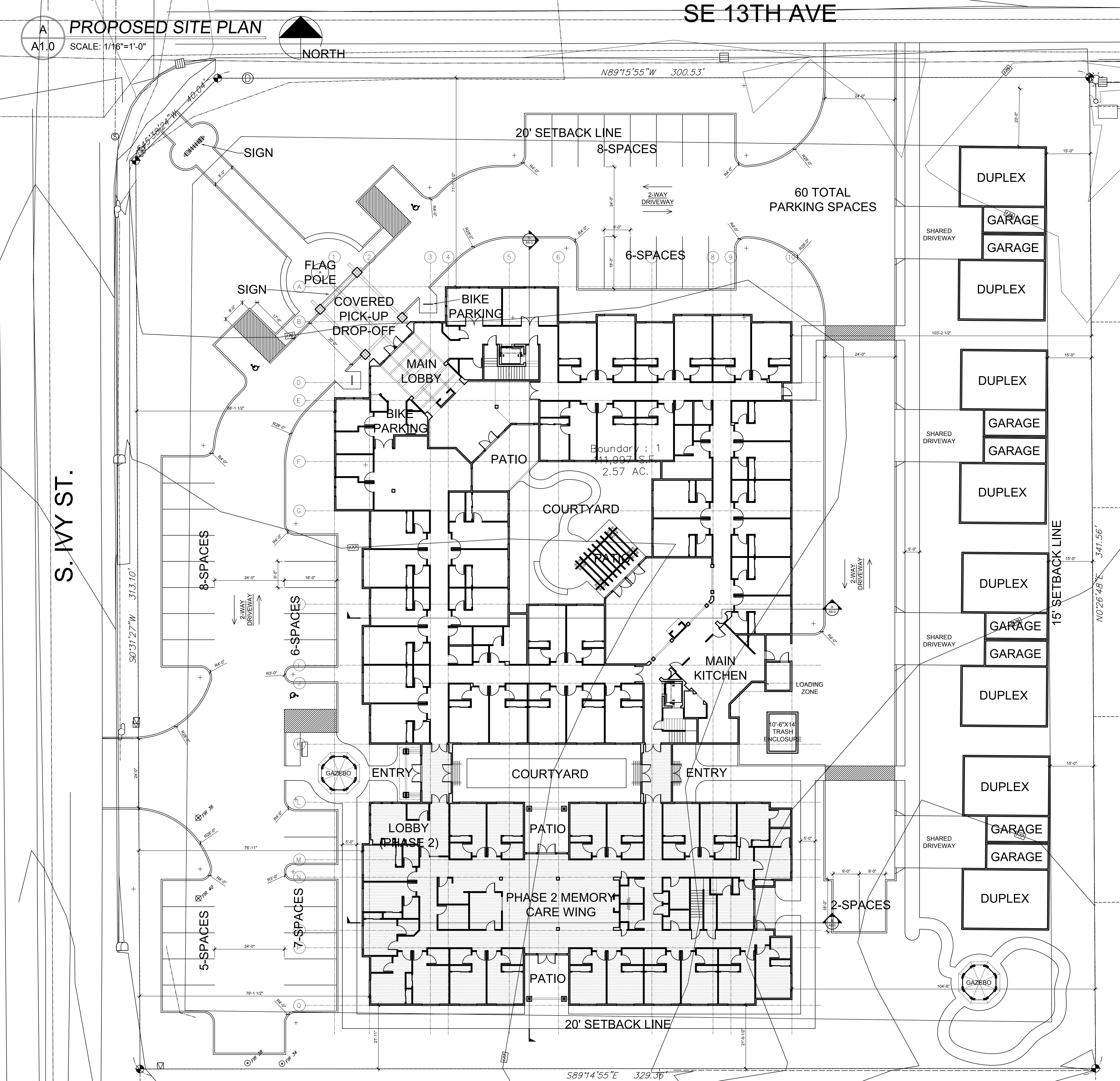
PROVIDE A "NO PARKING" SIGN THAT SHALL BE PAINTED TO ON THE PAVEMENT IN FRONT OF THE GARBAGE AREA TO PROVIDE SAFE & UNOBSTRUCTED ACCESS FOR SERVICING CONTAINERS

GARBAGE & RECYCLING ENCLOSURE GATES SHALL SWING FREE OF OBSTRUCTIONS & HAVE RESTRAINERS IN THE OPEN & CLOSED POSITIONS. THE GATE SWING SHOULD OPEN TO A MIN. OF 120 DEGREES

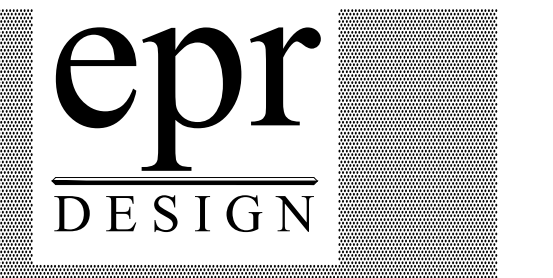
OFF STREET PARKING SHALL BE COMPLETED PRIOR TO ISSUANCE OF CERT. OF OCC. & PROVIDED FOR EMPLOYEES & VISITORS. NO STORAGE OF NON-OPERABLE VEHICLES OR OF MATERIALS PERMITTED

OWNER TO FURNISH ALL OUTDOOR FURNITURE SHOWN ON SITE PLAN

ALL PEDESTRIAN WALKWAYS, BUILDING ENTRANCES AND EXITS, AND OUTDOOR USE AREAS TO HAVE LIGHTING PROVIDING A MIN. OF 5 FOOT CANDLE ILLUMINATION, TYP.



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SITE PLAN

REV. NO. DATE:

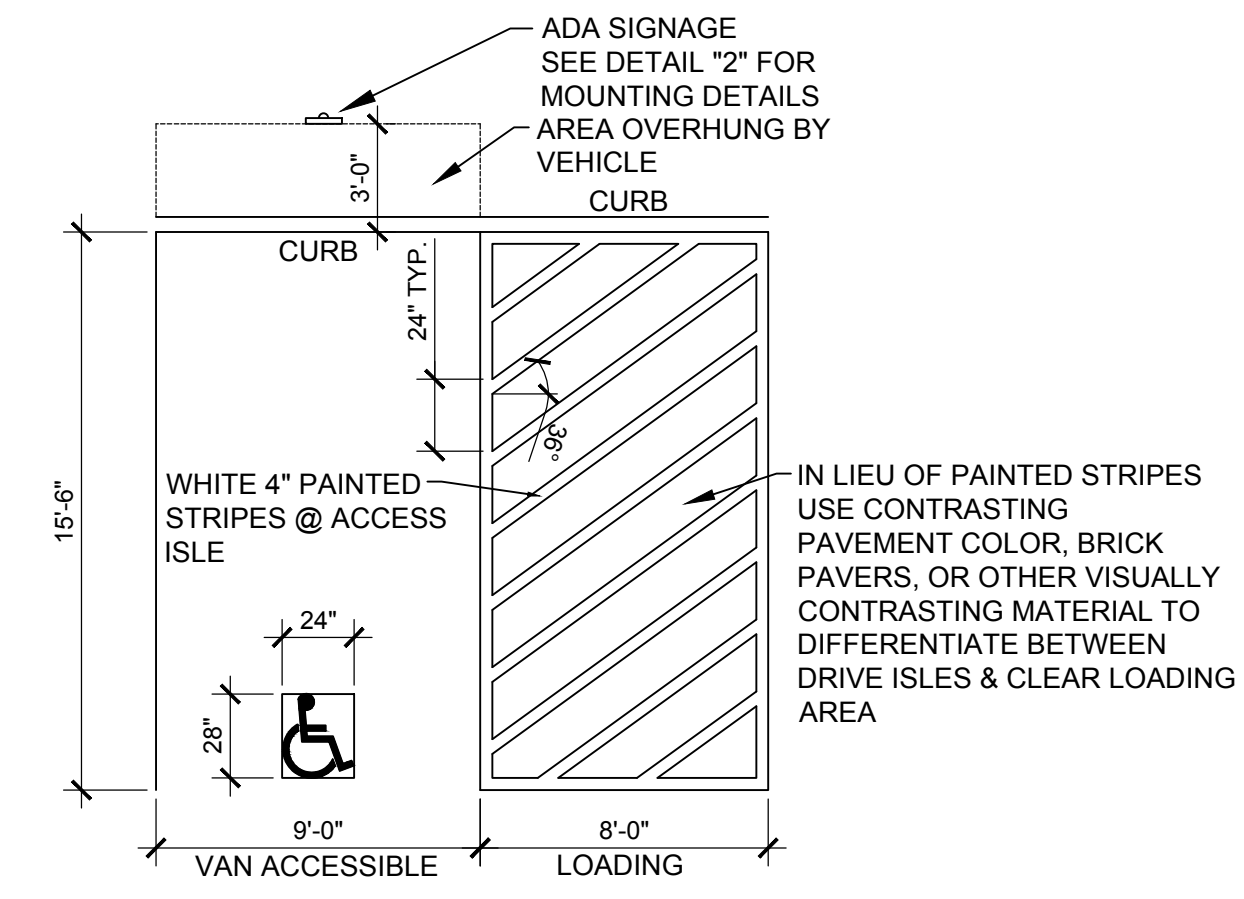
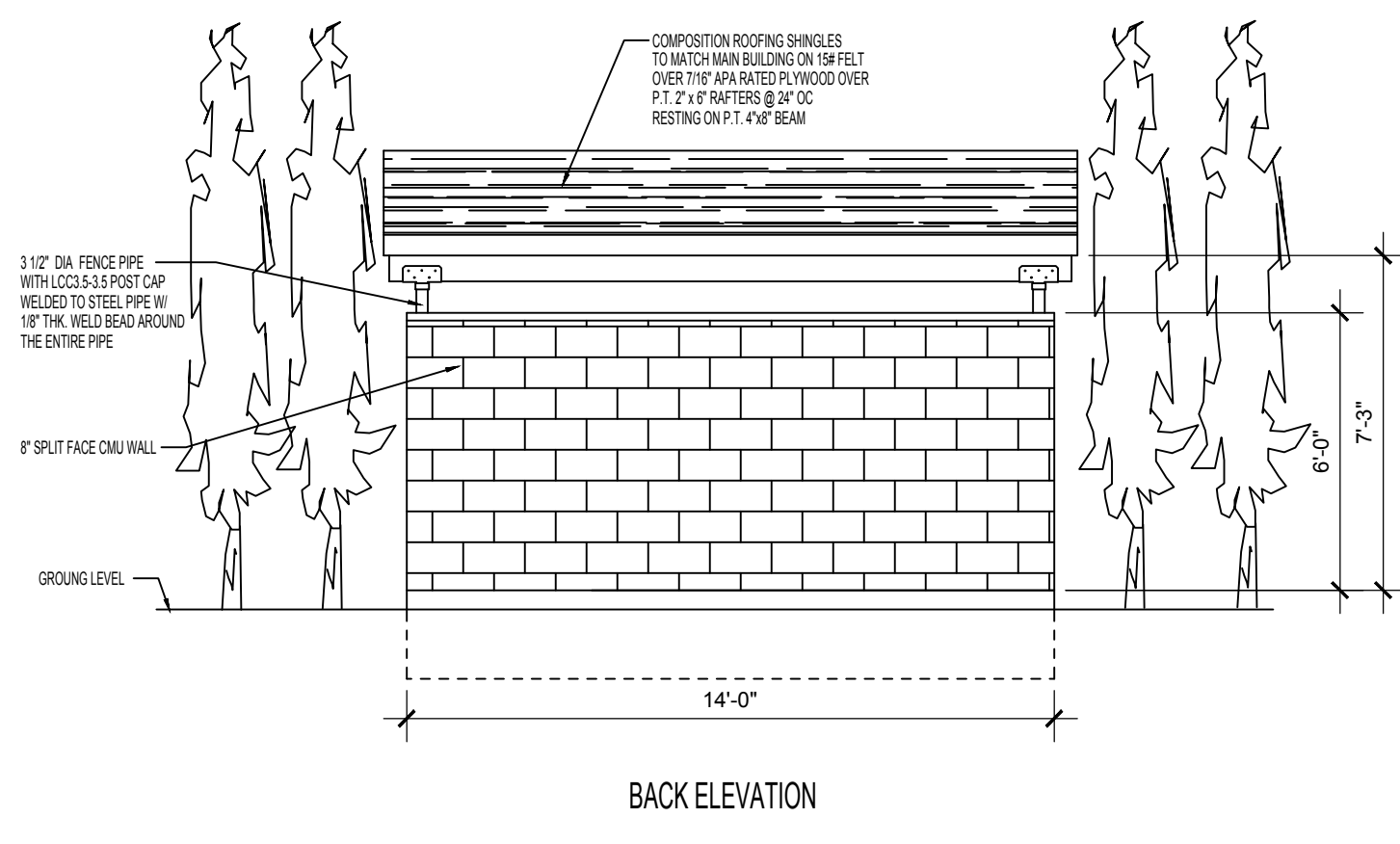
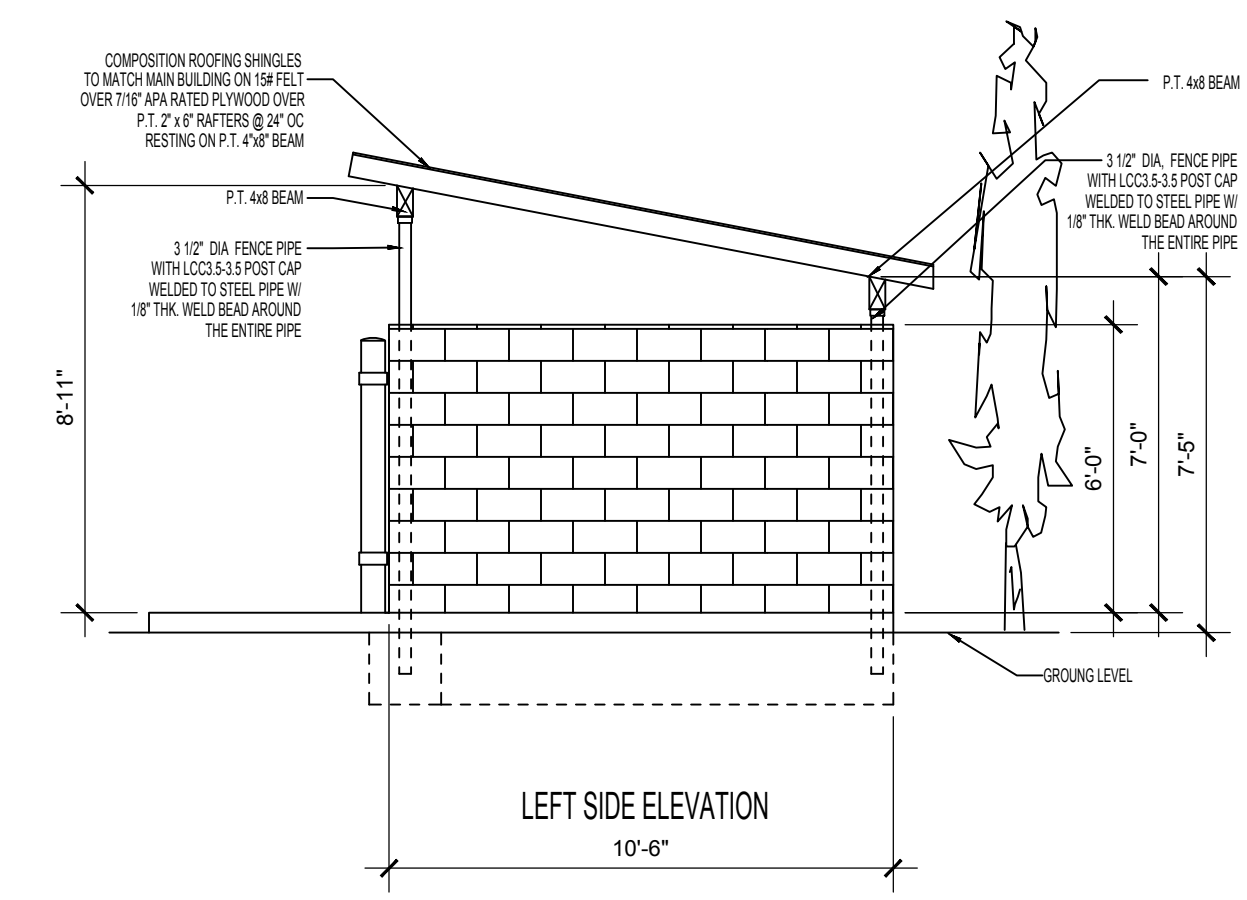
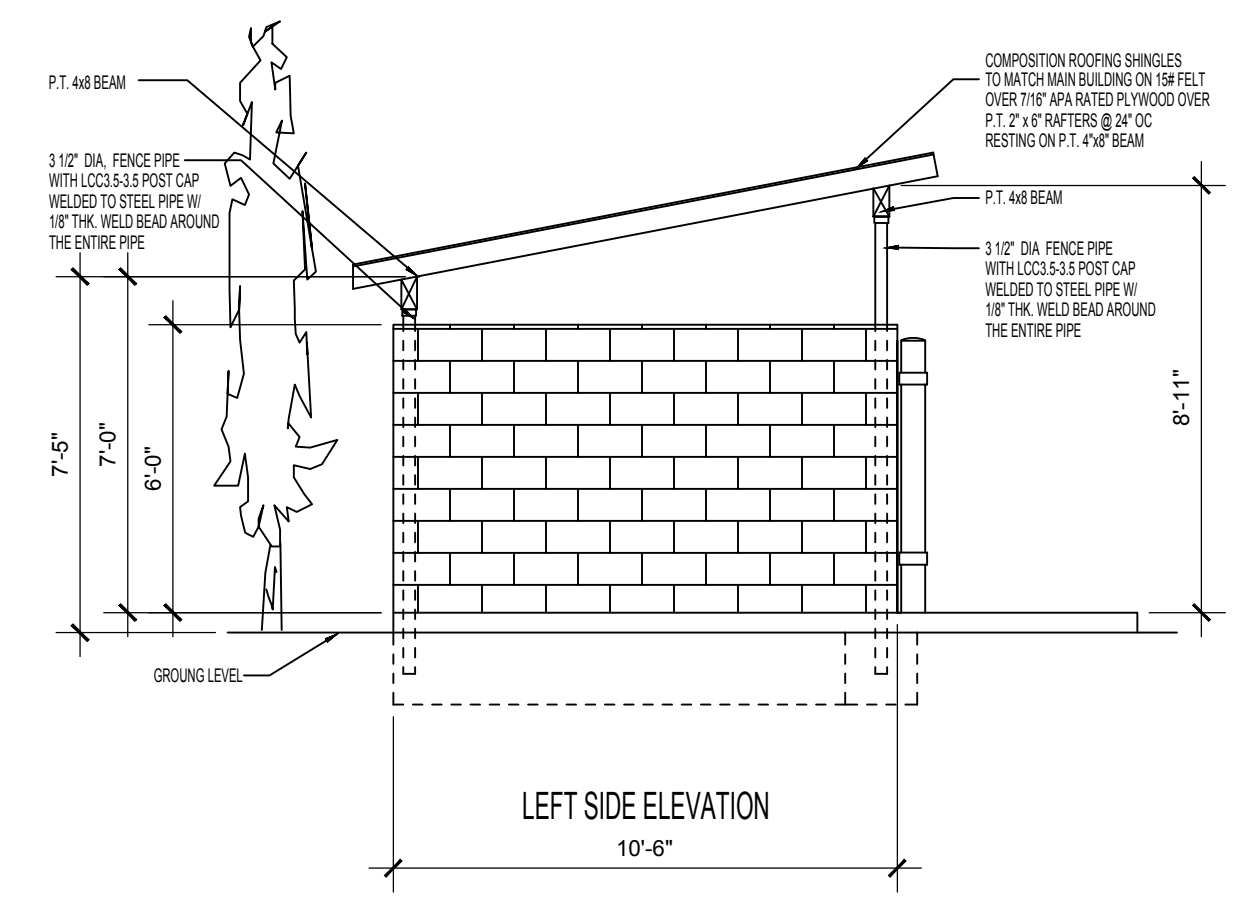
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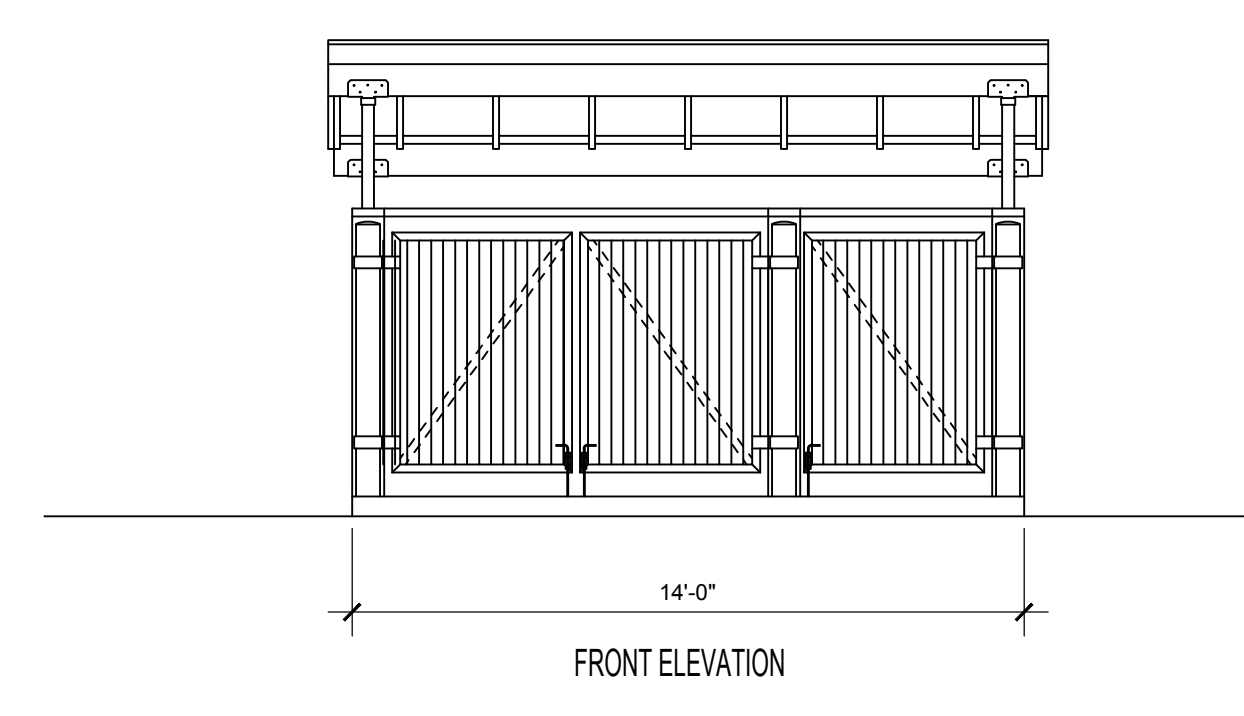
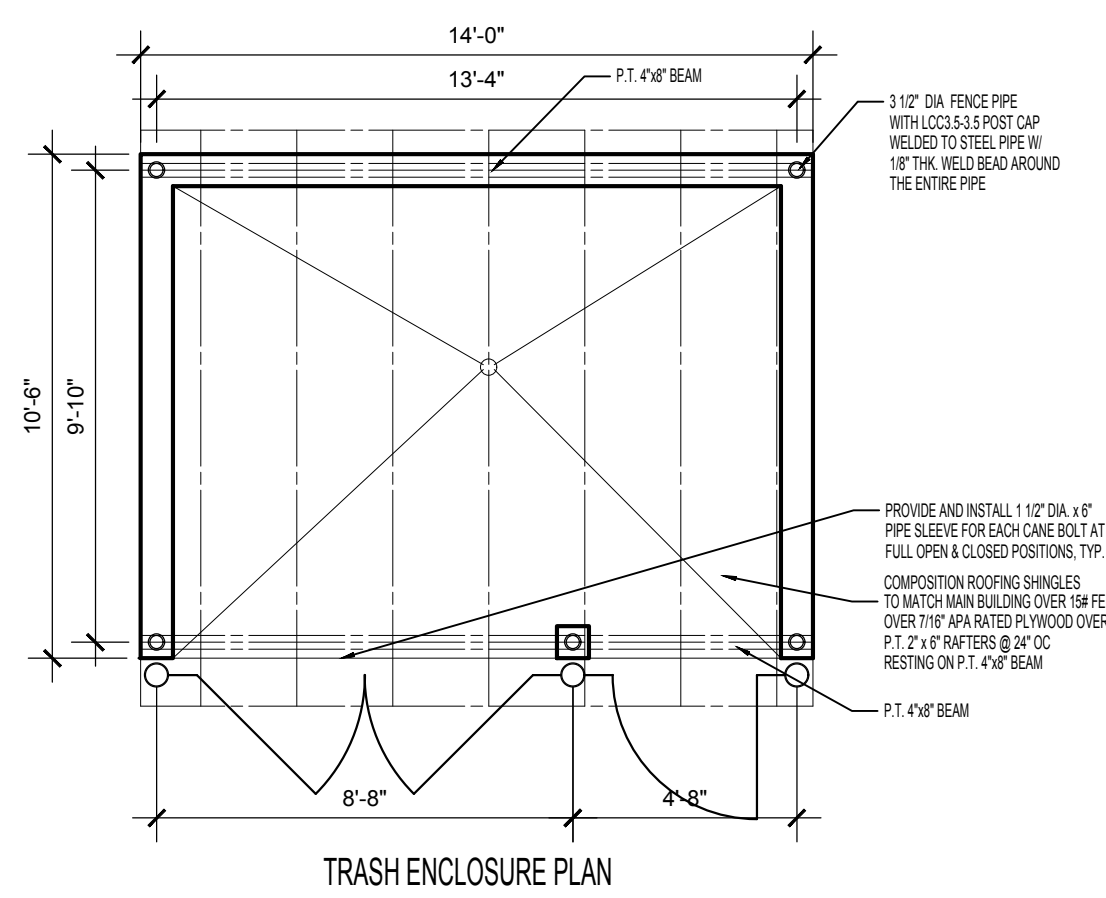
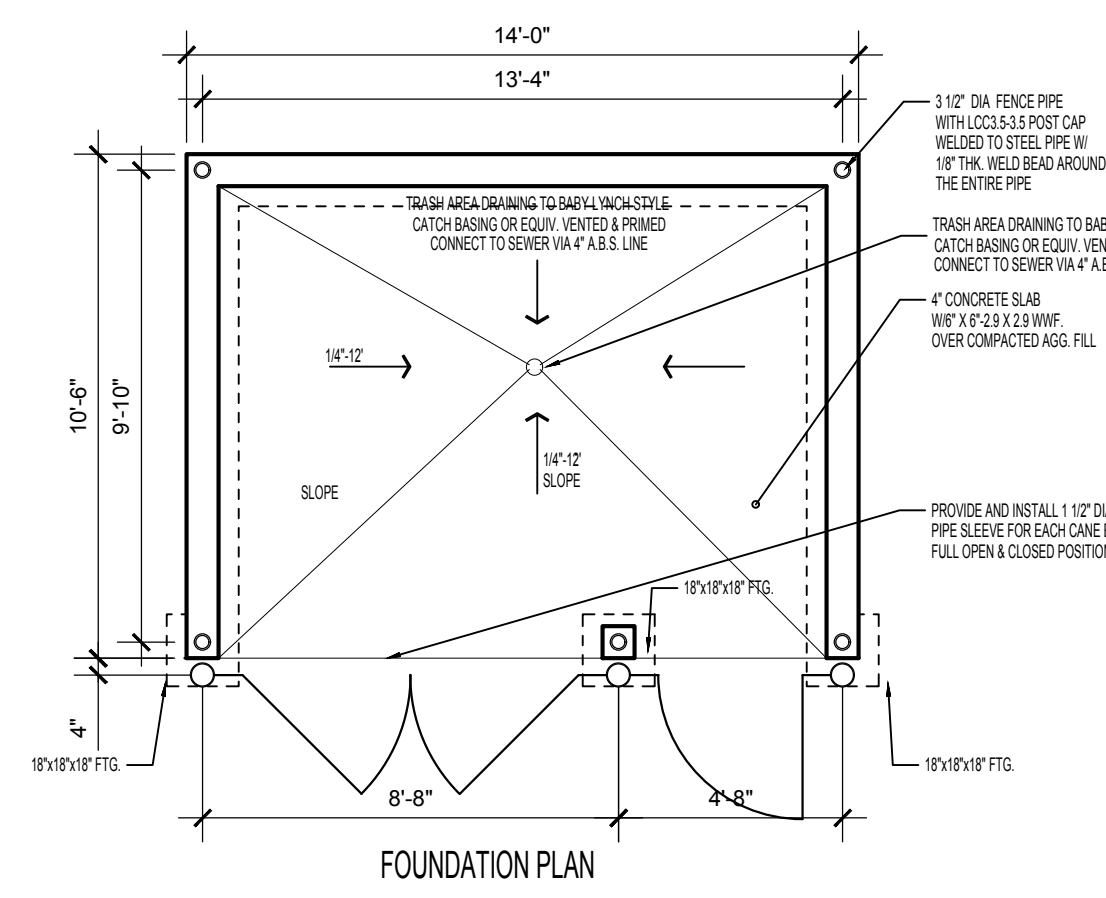
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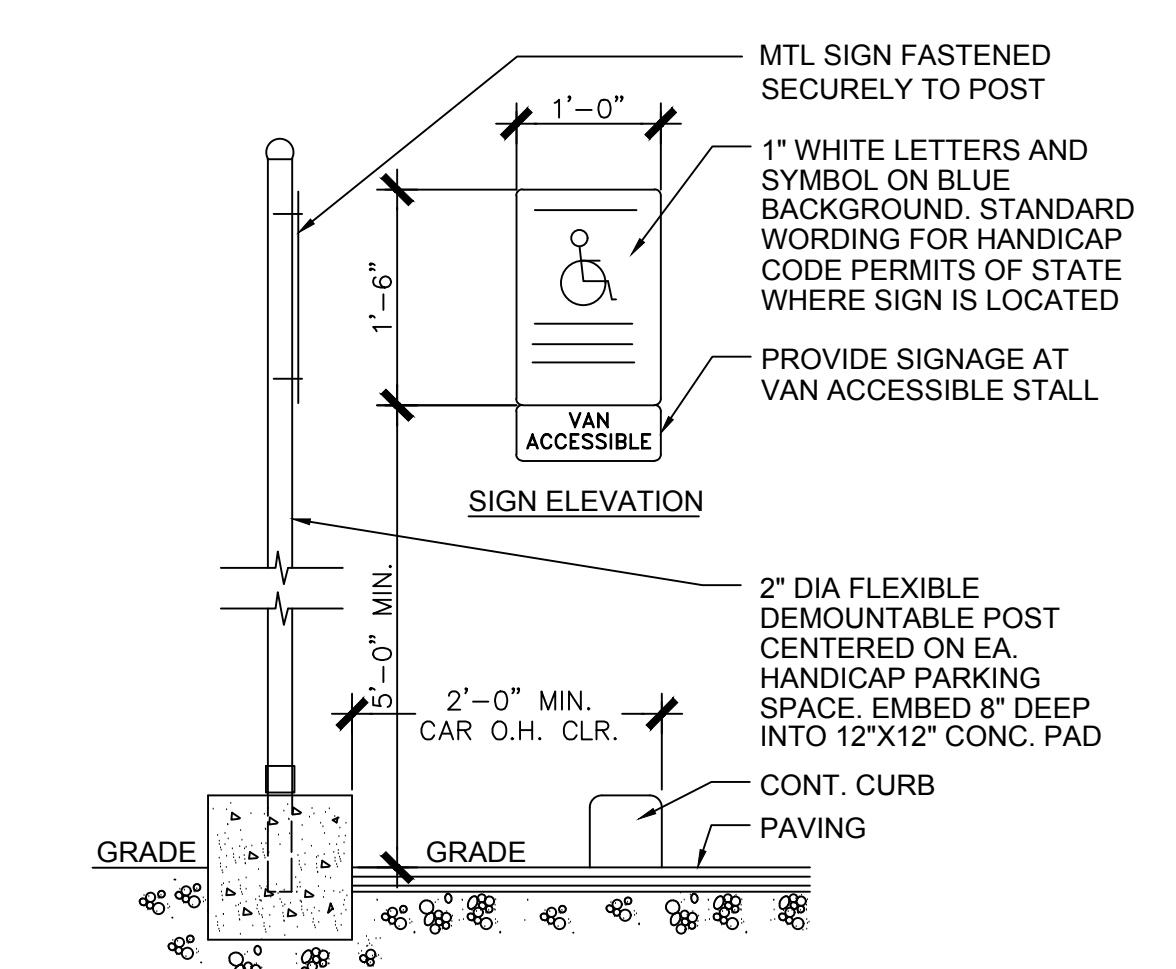
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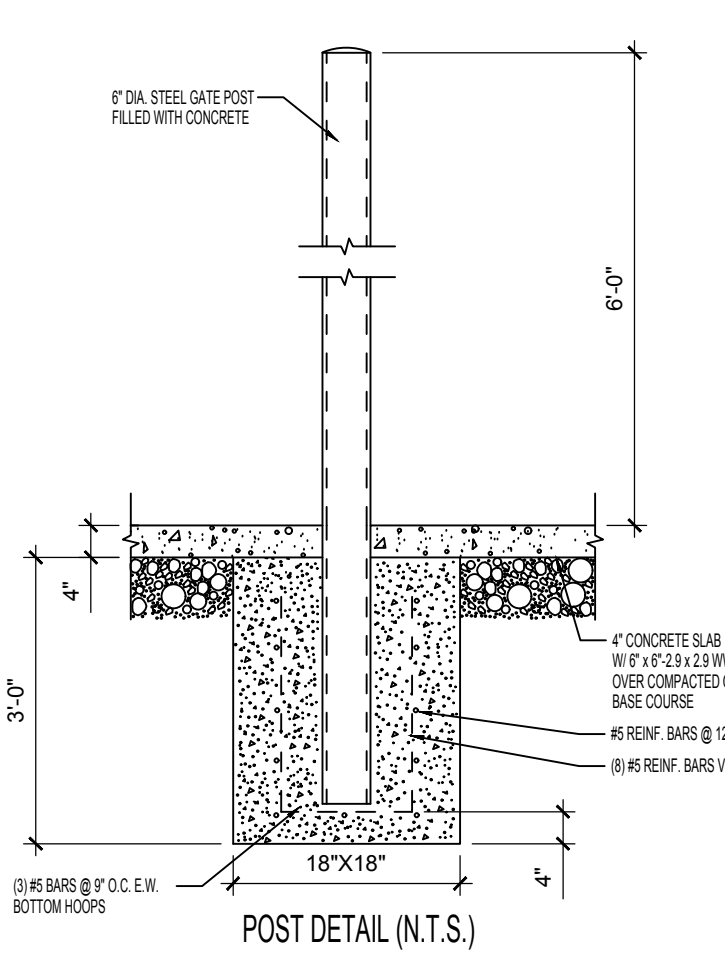
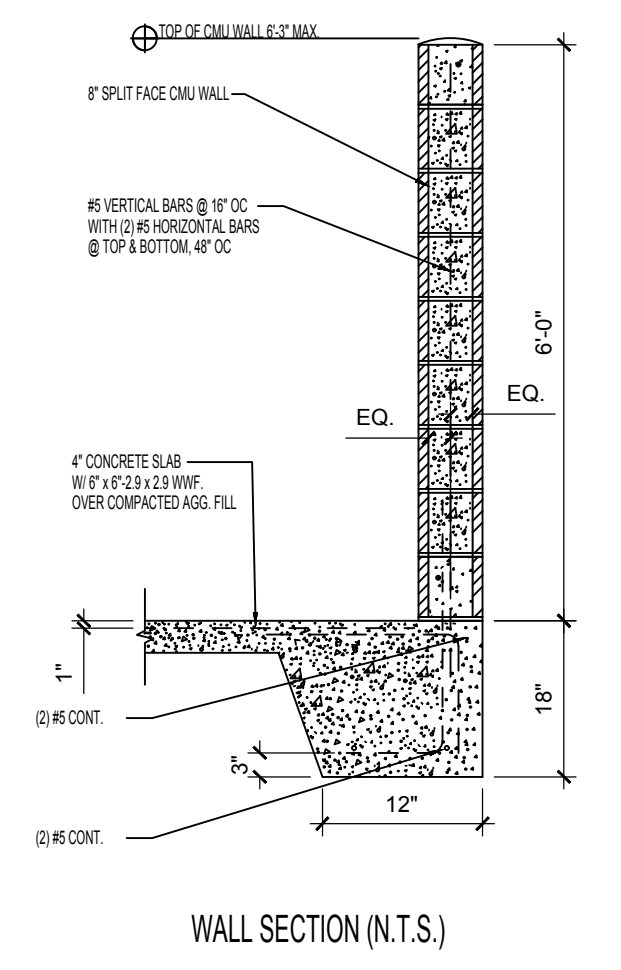
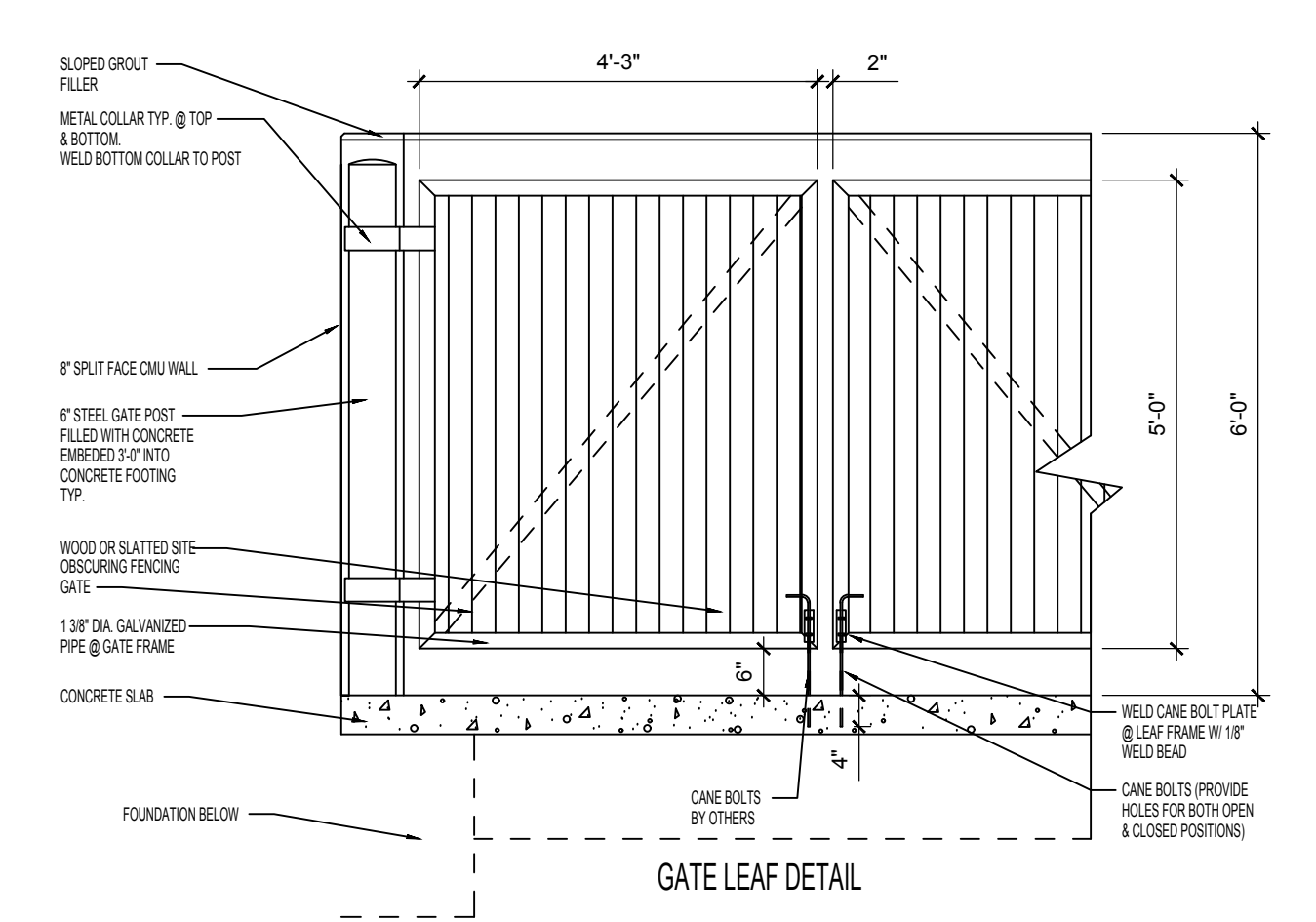
1 VAN ACCESSIBLE PARKING STALL W/ LOADING AREA
SCALE: 3/16" = 1'-0"



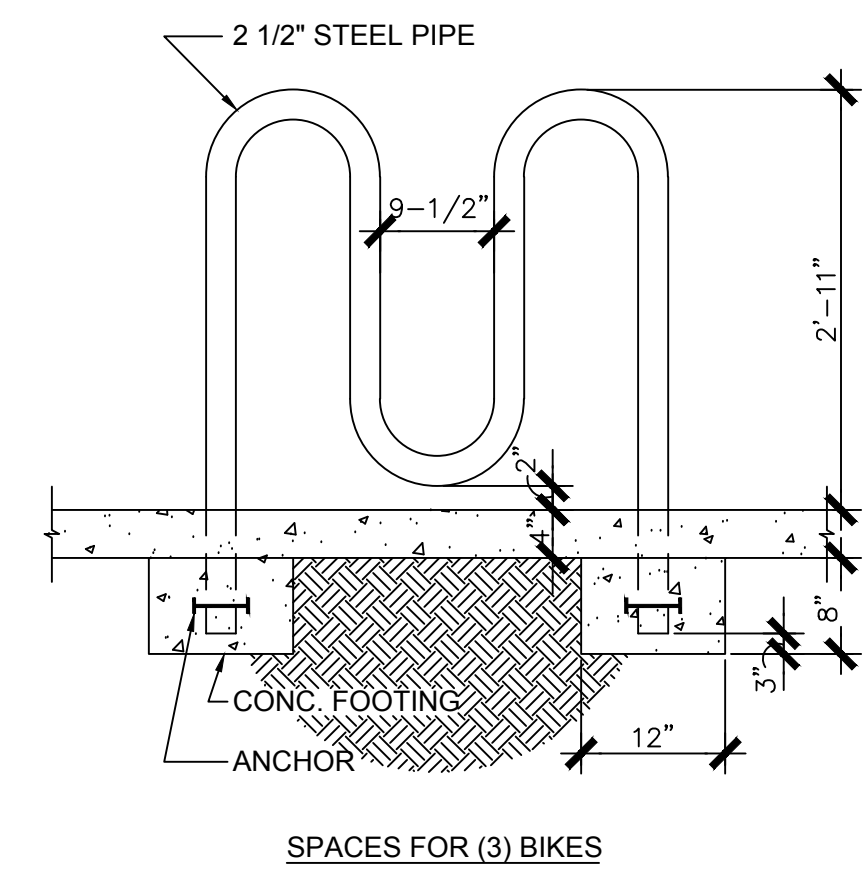
A TRASH ENCLOSURE
SCALE: 1/4" = 1'-0"



2 ACCESSIBILITY SIGNAGE
SCALE: 3/4" = 1'-0"



B TRASH ENCLOSURE DETAIL
SCALE: 1/2" = 1'-0"



3 BICYCLE PARKING
SCALE: 1/2" = 1'-0"

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REGISTERED ARCHITECT
REVIEW SET
PORTLAND, OREGON
STATE OF OREGON
EXPIRES: 12-31-21

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SITE PLAN DETAILS
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1

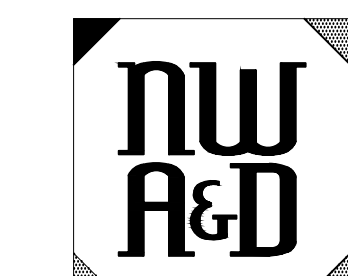
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A1.1



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BUILDING ELEVATIONS

REV. NO. DATE:

1

DATE: 6/5/2020

DRAWN BY:

REVIEWED BY:

SHEET:

A2.0



A FRONT ELEVATION (NORTH)
 A2.0 SCALE: 1/8" = 1'-0"



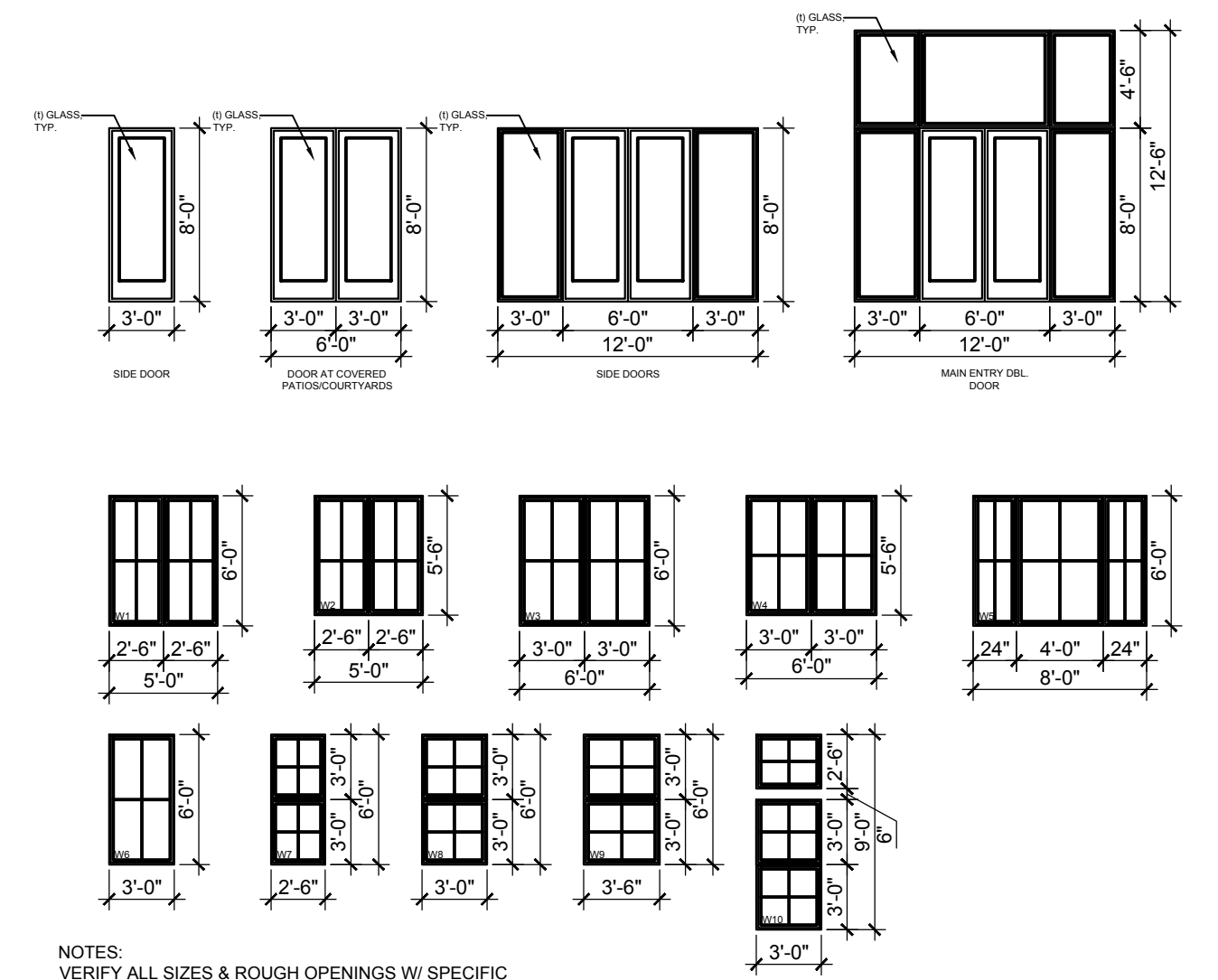
C FRONT ELEVATION (WEST)
 A2.0 SCALE: 1/8" = 1'-0"



C FRONT ELEVATION (WEST)
 A2.0 SCALE: 1/8" = 1'-0"

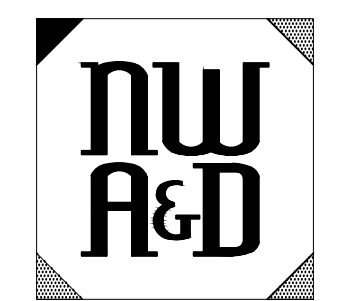


B ELEVATION @ MAIN ENTRY
 A2.0 SCALE: 1/8" = 1'-0"



NOTES:
 VERIFY ALL SIZES & ROUGH OPENINGS W/ SPECIFIC MANUFACTURER FOR ACCURACY OF DIMENSIONS & ACTUAL SIZES / REQUIREMENTS, TYP.
 SEE BUILDING ELEVATIONS FOR ACTUAL OPENING DIRECTIONS OF OPERABLE DOORS & WINDOW PANELS, TYP.
 ALL WINDOWS SHALL HAVE A MIN. 35 STC. RATING
 SEE FLOOR PLAN FOR TEMPERED WINDOW LOCATIONS (I)

1 WINDOW / DOOR DETAILS
 A2.0 SCALE: 1/8" = 1'-0"



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BUILDING ELEVATIONS

REV. NO. DATE:



DATE: 6/5/2020

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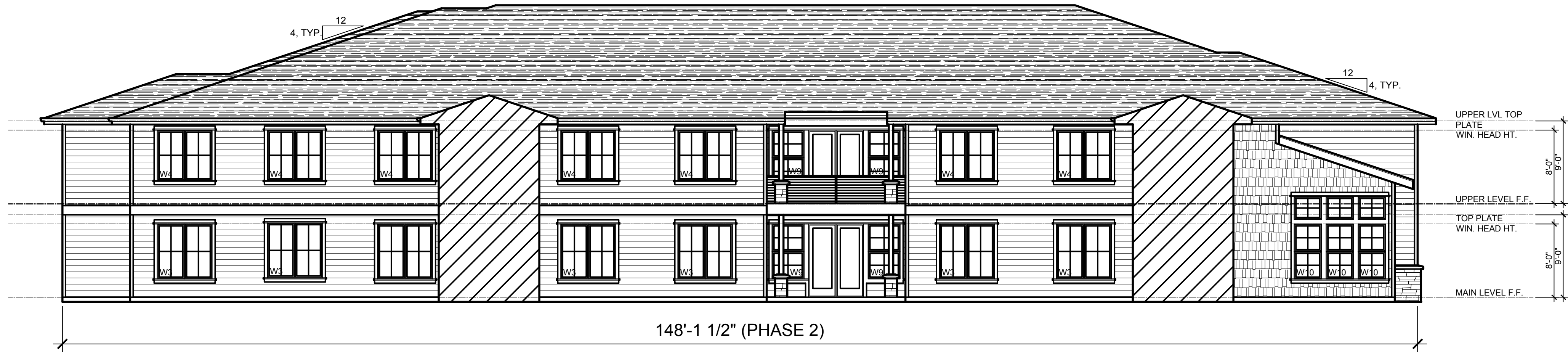
A2.1



D SIDE ELEVATION (SOUTH)
A2.1 SCALE: 1/8" = 1'-0"



E REAR ELEVATION (EAST)
A2.1 SCALE: 1/8" = 1'-0"



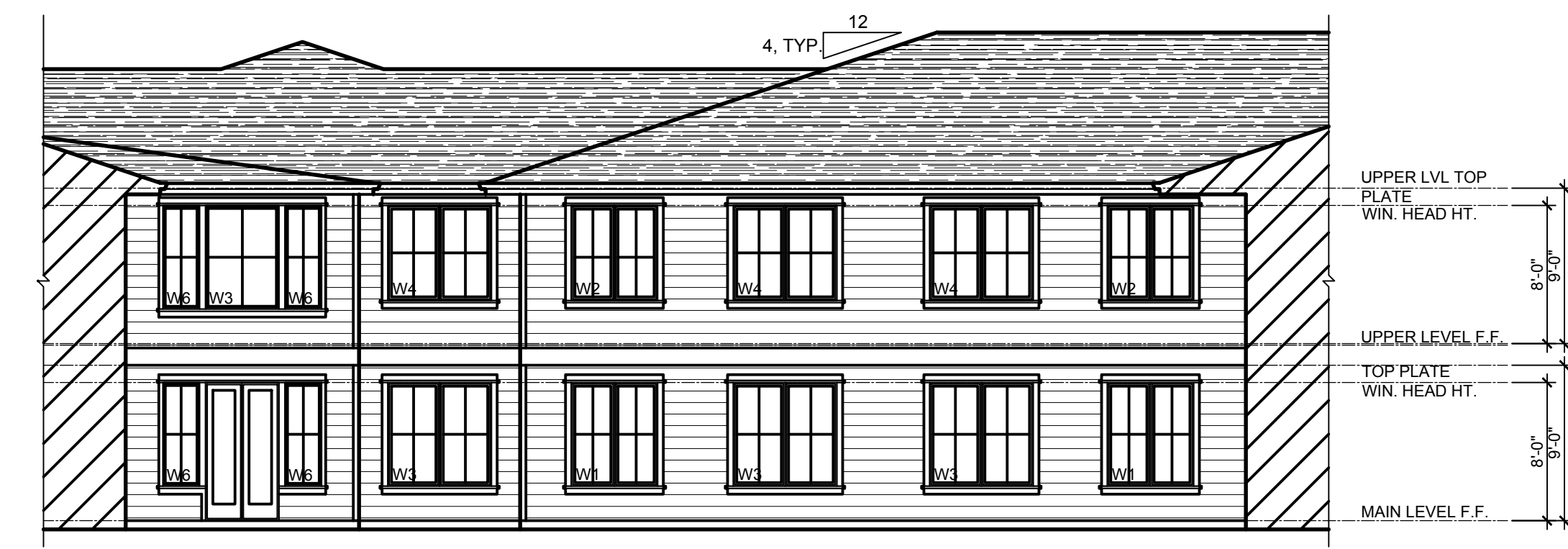
F COURTYARD ELEVATION (NORTH VIEW OF PHASE 2)
A2.1 SCALE: 1/8" = 1'-0"



G COURTYARD ELEVATION (SOUTH VIEW OF PHASE 1)
A2.2 SCALE: 1/8" = 1'-0"



H COURTYARD ELEVATION
A2.2 SCALE: 1/8" = 1'-0"



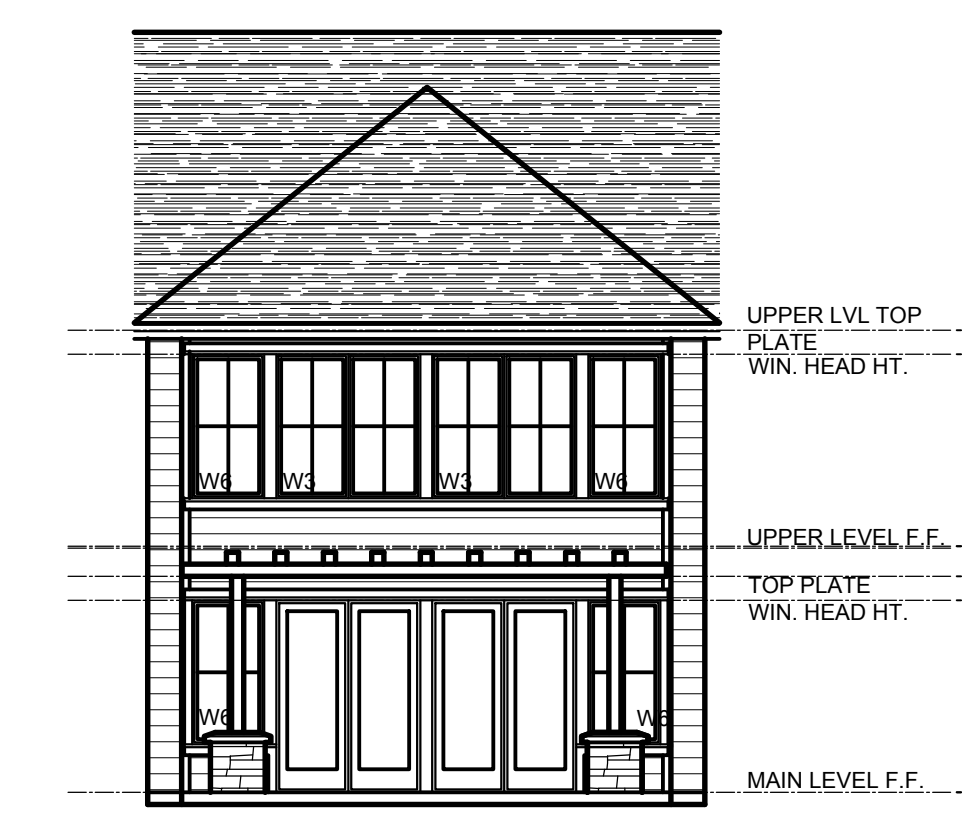
J COURTYARD ELEVATION
A2.2 SCALE: 1/8" = 1'-0"



K COURTYARD ELEVATION
A2.2 SCALE: 1/8" = 1'-0"



L COURTYARD ELEVATION
A2.2 SCALE: 1/8" = 1'-0"



M COURTYARD ELEVATION
A2.2 SCALE: 1/8" = 1'-0"



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BUILDING ELEVATIONS

REV. NO. DATE:

1

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A2.2



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PHASE 1
MAIN LEVEL
FLOOR PLAN

REV. NO. DATE:

1

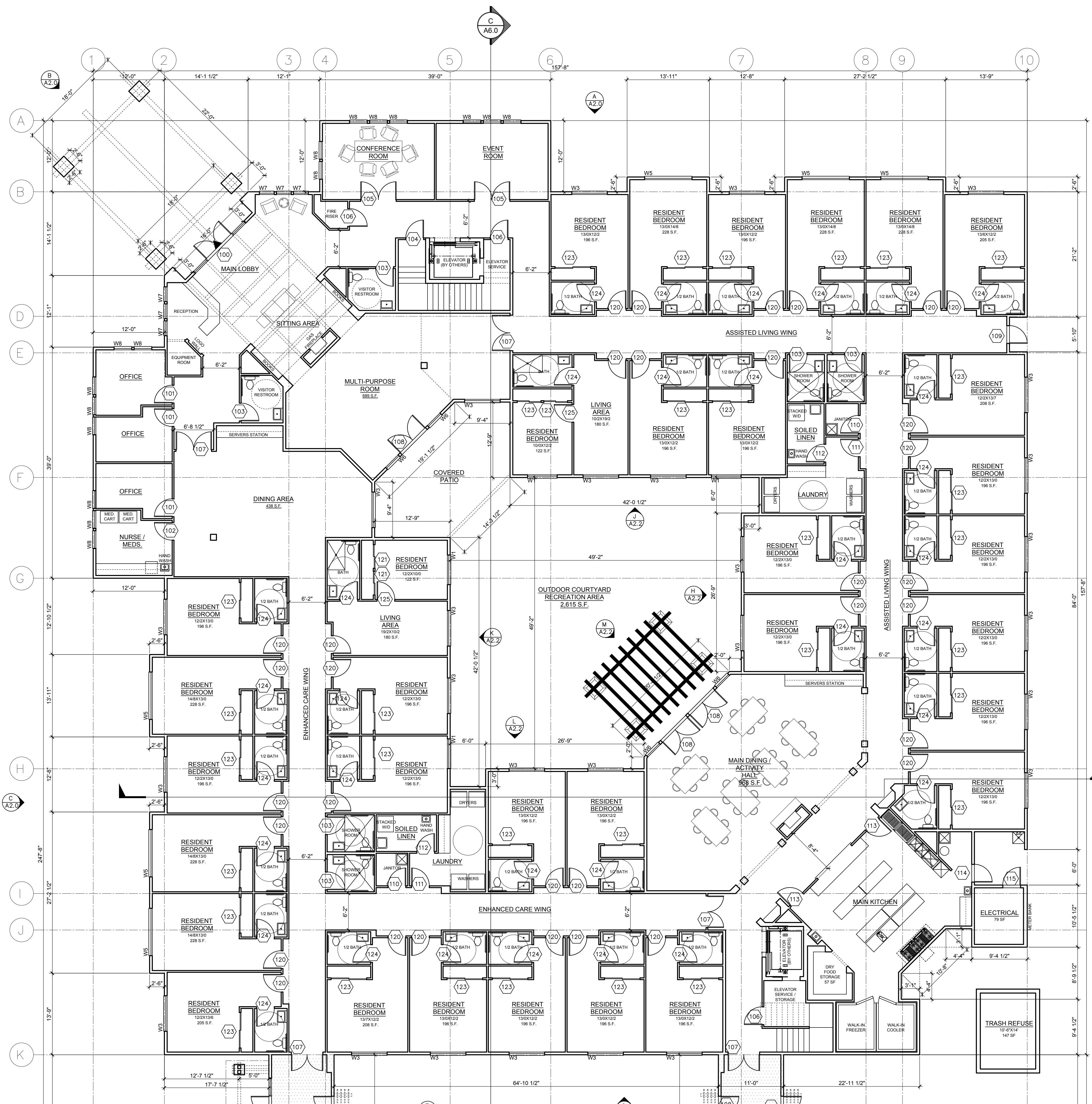
DATE: 6/5/2020

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REVIEWED BY:

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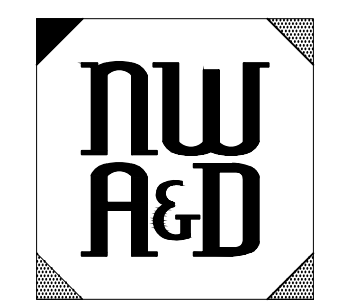
A3.0



A3.0 MAIN LEVEL FLOOR PLAN
SCALE: 1/8" = 1'-0"
PHASE 1: 35 RESIDENT BEDS, FLOOR AREA: 19,129 S.F.
PHASE 2: 22 RESIDENT BEDS, FLOOR AREA: 10,056 S.F.
TOTAL FLOOR AREA (PHASE 1 & 2): 29,185 S.F.
TOTAL BUILDING AREA: 56,480 S.F.



A
A3.0 **MAIN LEVEL FLOOR PLAN**
SCALE: 1/8" = 1'-0"
PHASE 1: 35 RESIDENT BEDS; FLOOR AREA: 19,129 S.F.
PHASE 2: 22 RESIDENT BEDS; FLOOR AREA: 10,056 S.F.
TOTAL FLOOR AREA (PHASE 1 & 2): 29,185 S.F.
TOTAL BUILDING AREA: 56,480 S.F.



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**PHASE 2
 MAIN LEVEL
 FLOOR PLAN**

REV. NO. DATE:



DATE: 6/5/2020

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A3.1



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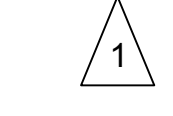
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PHASE 1 UPPER LEVEL FLOOR PLAN

REV. NO. DATE:



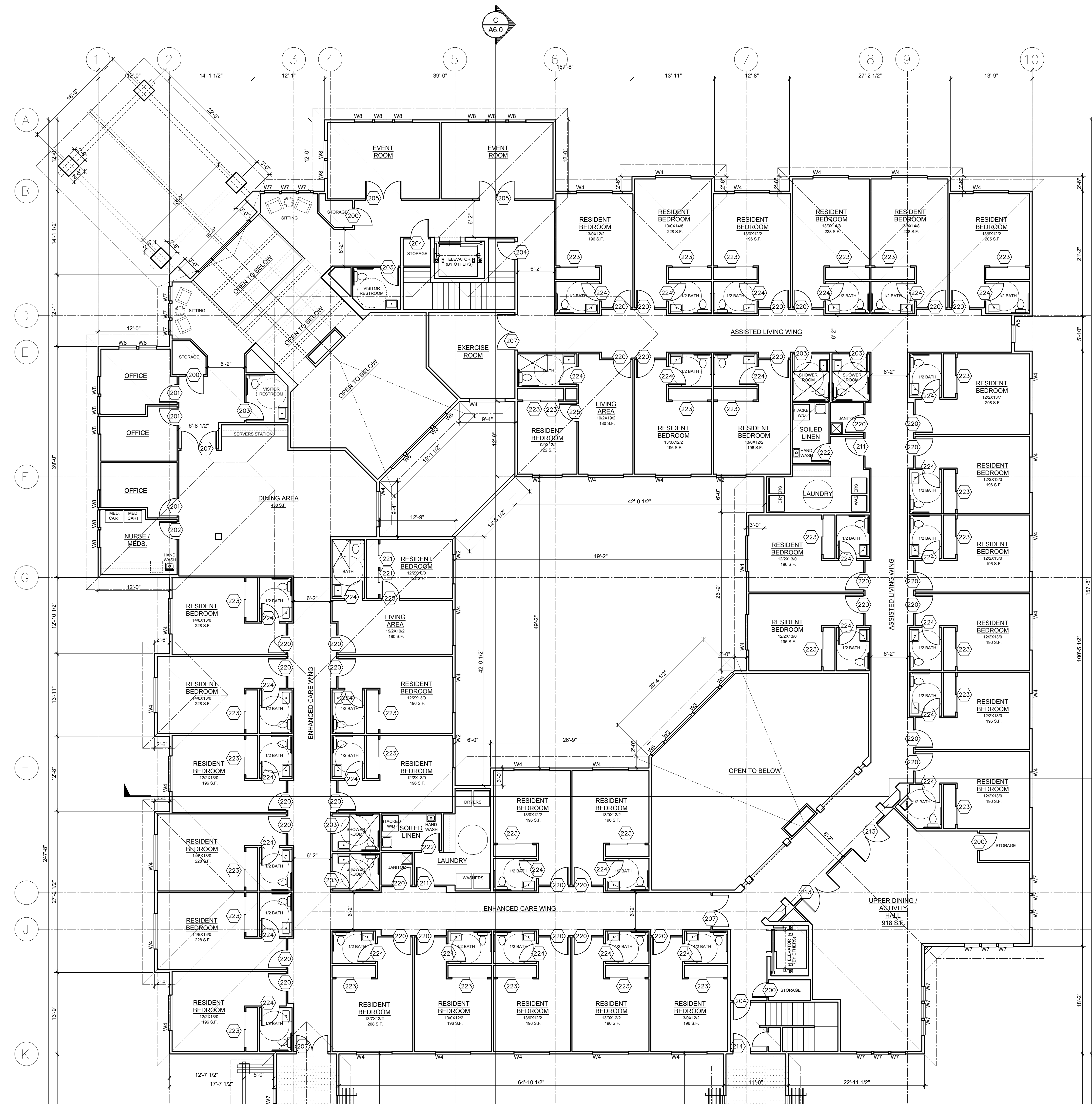
DATE: 6/5/2020

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SHEET:

A3.2



A
A3.2 UPPER LEVEL FLOOR PLAN
SCALE: 1/8" = 1'-0"
PHASE 1: 35 RESIDENT BEDS; FLOOR AREA: 17,422 S.F.
PHASE 2: 22 RESIDENT BEDS; FLOOR AREA: 9,873 S.F.
TOTAL FLOOR AREA (PHASE 1 & 2): 27,295 S.F.
TOTAL BUILDING AREA: 56,480 S.F.



A
A3.2 **UPPER LEVEL FLOOR PLAN**
 SCALE: 1/8" = 1'-0"
 PHASE 1: 35 RESIDENT BEDS; FLOOR AREA: 17,422 S.F.
 PHASE 2: 22 RESIDENT BEDS; FLOOR AREA: 9,873 S.F.
 TOTAL FLOOR AREA (PHASE 1 & 2): 27,295 S.F.
 TOTAL BUILDING AREA: 56,480 S.F.



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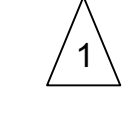


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PHASE 2
UPPER LEVEL
FLOOR PLAN

REV. NO. DATE:



DATE: 6/5/2020

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REVIEWED BY:

SHEET:

A3.3



CANBY SENIOR LIVING
 1300 S Ivy Street
 Canby, Oregon

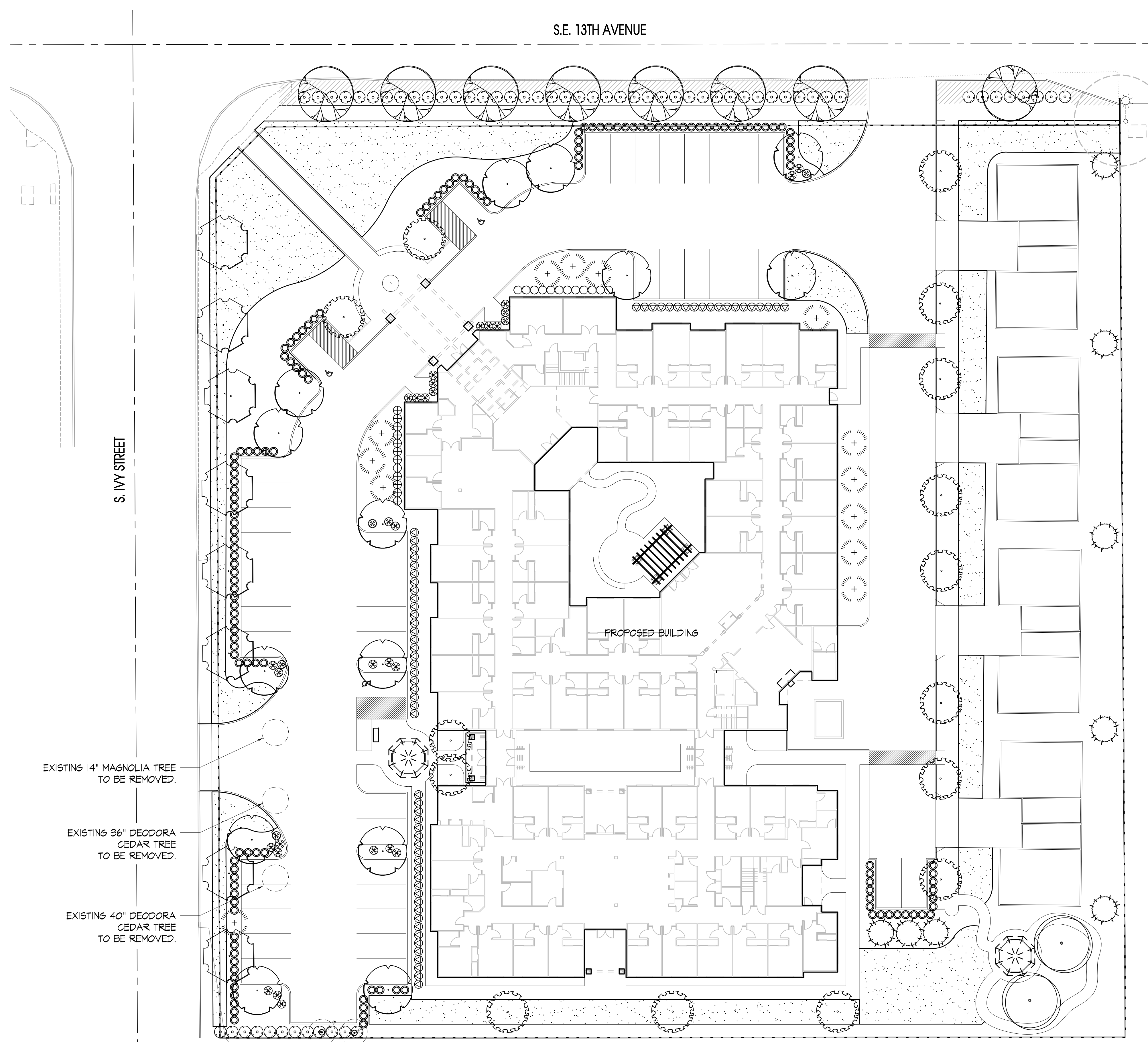
DRAWN: VH	CHECKED: CB
SCALE: 1" = 20'-0"	DATE: 09.25.20
JOB #:	
ISSUED FOR: FLR	
REVISIONS:	
△ City Comments 02-04-21	
△	
△	
△	
△	

SHEET NAME:
LANDSCAPE PLAN

SHEET #:
L1
 SHEET 1 OF 2

S.E. 13TH AVENUE

S. IVY STREET



EXISTING 14" MAGNOLIA TREE TO BE REMOVED.

EXISTING 36" DEODORA CEDAR TREE TO BE REMOVED.

EXISTING 40" DEODORA CEDAR TREE TO BE REMOVED.

EXISTING 38" DOUGLAS FIR TREE TO BE REMOVED.

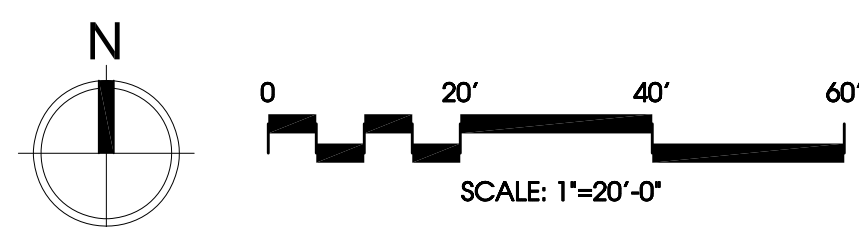
EXISTING 34" DOUGLAS FIR TREE TO BE REMOVED.

PROPOSED BUILDING

LANDSCAPE STATISTICS			
SITE ZONING	RI		
SITE AREA	109,027± SF		
STANDARD	REQUIRED	PROVIDED	NOTES
LANDSCAPE AREA	30% (32,708 SF)	31.7% (34,576 SF)	
PARKING LOT LANDSCAPE	15% (4,333 SF)	28% (8,215 SF)	PARKING LOT # HARDSCAPE AREA = 29,887 SF

PLANT LEGEND			
SYMBOL	BOTANICAL / COMMON NAME	SIZE	QUANTITY
TREES			
	ACER GINALLA 'FLAME' / FLAME AMUR MAPLE	2" cal. min.	8
	CALOCEDRUS DECURRENS / INCENSE CEDAR	5' HT min.	8
	CERCIS CANADENSIS / EASTERN REDBUD	2" cal. min.	2
	CHAMAECYPARIS NOOTKATENSIS 'PENDULA' / PENDULA ALASKAN CEDAR	5' HT min.	13
	PYRUS CALLERYANA 'ARISTOCRAT' / ARISTOCRAT ORNAMENTAL PEAR	2" cal. min.	14
	STEUARTIA PSUEDOCAMELLIA / JAPANESE STEUARTIA STREET TREE	2" cal. min.	8
	QUERCUS ROBUR 'FASTIGIATA' / SKYROCKET OAK	2" cal. min.	15
SHRUBS			
	ILEX X MESERVEAE 'BLUE BOY' / BLUE BOY HOLLY	3 GAL.	66
	MAHONIA AQUIFOLIUM 'COMPACTA' / COMPACT OREGON GRAPE	2 GAL.	60
	NANDINA DOMESTICA 'MOON BAY' / MOON BAY HEAVENLY BAMBOO	3 GAL.	34
	PIERIS JAPONICA 'LITTLE HEATH' / LITTLE HEATH PIERIS	2 GAL.	12
	PRUNUS LAUROCERASUS 'OTTO LUYKEN' / OTTO LUYKEN'S LAUREL	3 GAL.	143
GROUNDCOVER			
	ARCTOSTAPHYLOS UVA URSI 'MASS.' / MASSACHUSETTS KINNICKINICK	1 GAL.	30' O.C.
	TURF, SEED, OR SOD PER OWNER	1 GAL.	30' O.C.
NO SYMBOL	LANDSCAPE PER OWNER - ALL LANDSCAPE BEDS TO RECEIVE MULCH PER NOTES SHEET L2.		

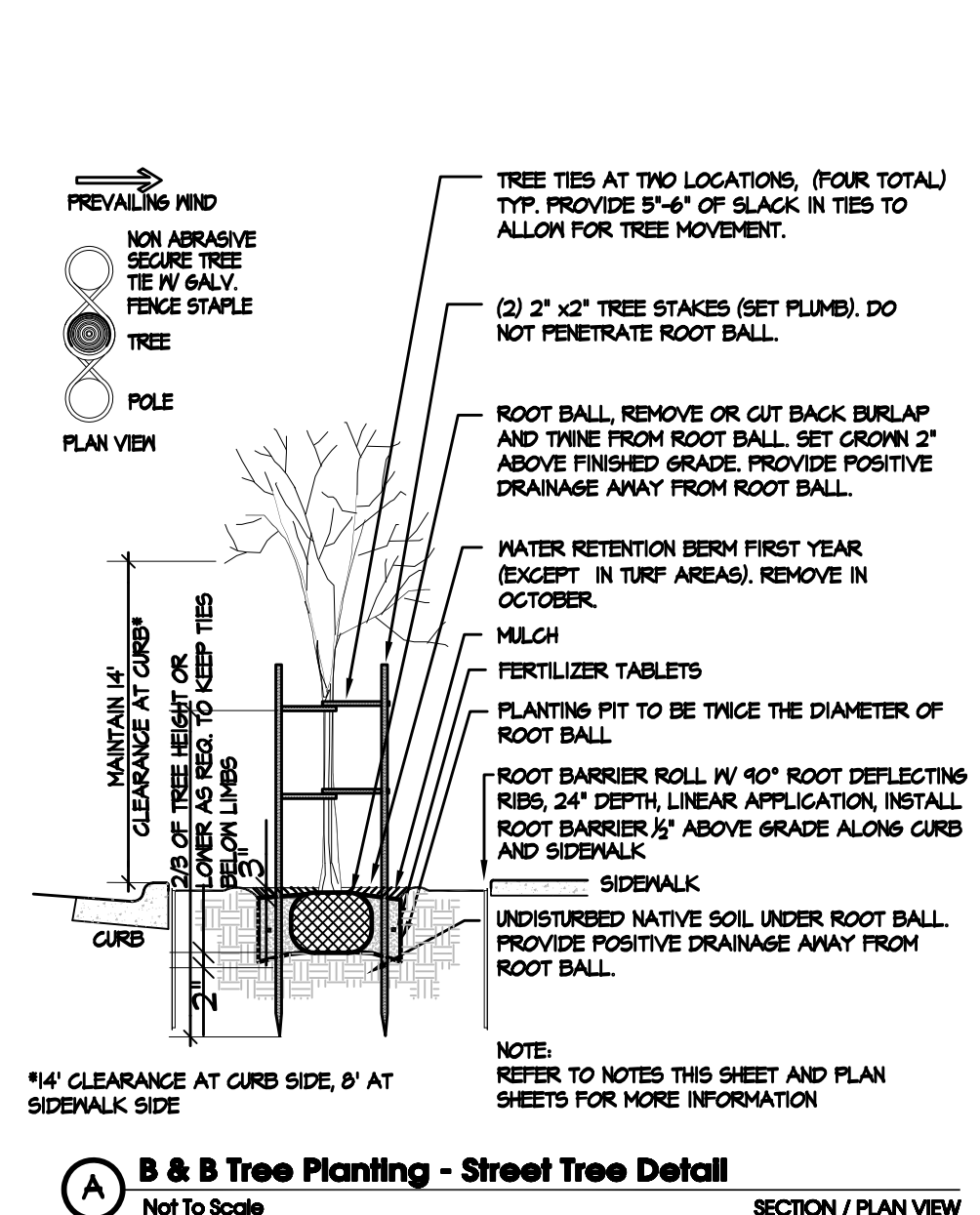
IRRIGATION NOTE
 ALL LANDSCAPE AREAS SHALL BE IRRIGATED WITH A DRIP, SPRAY OR HOSE BIB IRRIGATION SYSTEM. REFER TO CIVIL ENGINEERING PLANS FOR WATER SOURCE.



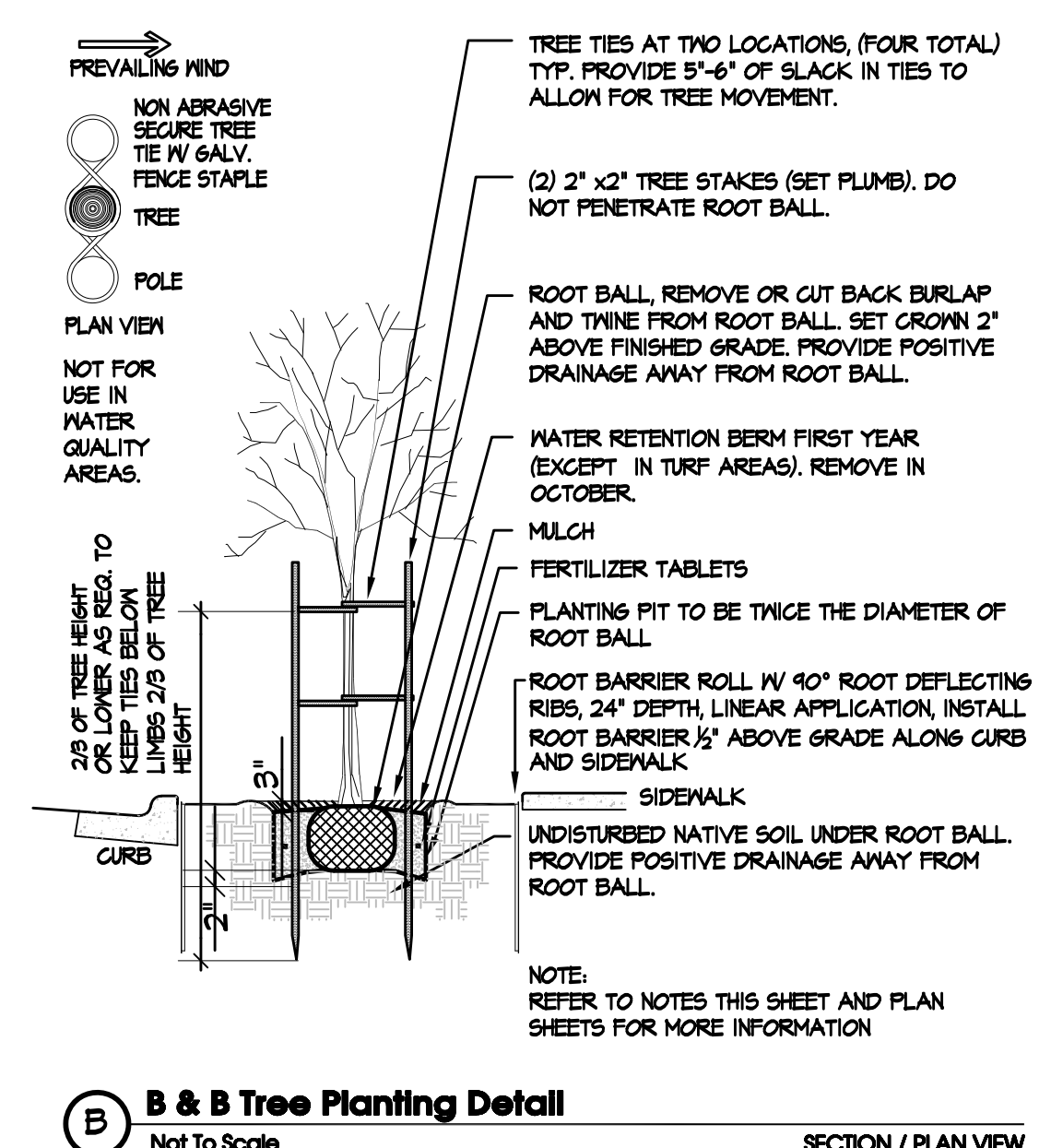
REFER TO SHEET L2 FOR LANDSCAPE NOTES AND DETAILS.

PLANTING NOTES

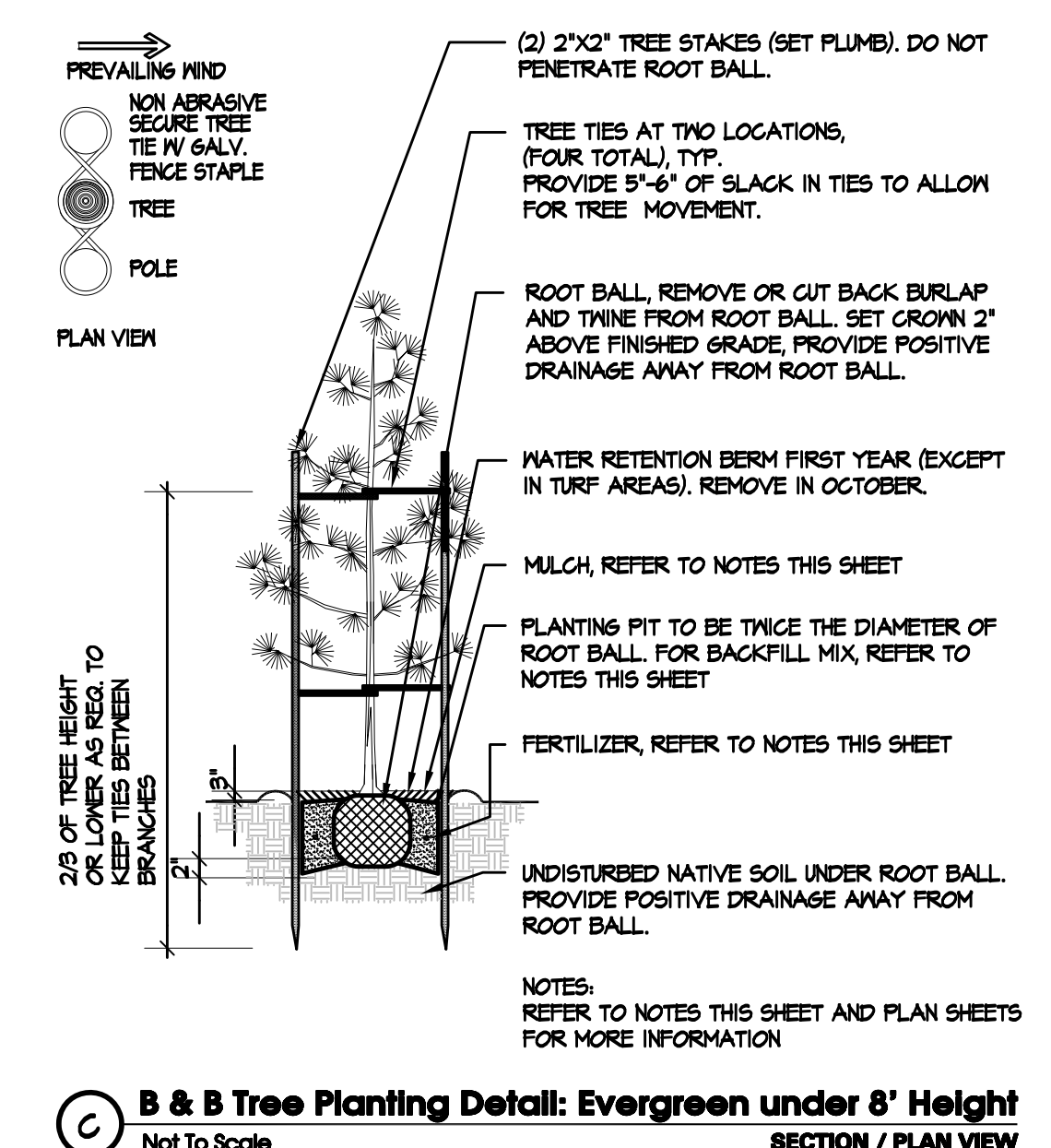
- ALL BOUNDARIES, EASEMENTS, UTILITIES AND LEGAL ENCUMBRANCES TO BE CONFIRMED WITH OWNER PRIOR TO BEGINNING WORK. PROPERTY LINES AND SURVEY INFORMATION PROVIDED BY EPR DESIGN.
- IN NO WAY IS THIS PLAN TO BE INTERPRETED TO EXCEED THE LEGAL BOUNDARIES OF THE OWNER'S REAL PROPERTY.
- THE LANDSCAPE DESIGNER ASSUMES NO RESPONSIBILITY FOR THE LOCATION OF BOUNDARIES, UTILITIES AND METLANDS.
- THIS PLAN SHALL BE INSTALLED TO MEET ALL APPLICABLE CITY, COUNTY, STATE AND FEDERAL CODES.
- THIS PLAN SHALL BE CONSIDERED PRELIMINARY UNTIL APPROVED BY ALL GOVERNING AGENCIES. IMPLEMENTATION OF THIS PLAN SHALL NOT PROCEED UNTIL ISSUANCE OF ALL RELATED PERMITS.
- PLANT QUANTITIES ARE FOR INFORMATION ONLY. IN CASE OF ANY DISCREPANCY, THE PLAN SHALL GOVERN.
- ALL WORK IS TO BE PERFORMED BY LICENSED CONTRACTORS AND EXPERIENCED WORKERS.
- THE CONTRACTOR IS TO VERIFY THE LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES PRIOR TO PERFORMING ANY EXCAVATION. CONTRACTOR SHALL REPAIR ANY DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR'S WORK. AT NO ADDITIONAL COST TO THE OWNER. CONTACT ALL UTILITY PROVIDERS SERVING THE SITE AREA 48 HOURS PRIOR TO ANY EXCAVATION.
- ALL PLANT MATERIALS SHALL MATCH SPECIFICATIONS PER SPECIES AND SHALL COMPLY WITH ANSI Z60.1 STANDARD FOR NURSERY STOCK.
- THE CONTRACTOR SHALL ADHERE TO THE WASHINGTON ASSOCIATION OF NURSERYMEN'S GUIDELINES FOR PLANTING PRACTICES.
- THE CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING ELEMENTS ON AND OFF SITE, RESULTING FROM THE CONTRACTOR'S WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR THE VIABILITY OF ALL PLANT MATERIAL FOR 2 YEARS AFTER THE COMPLETION OF PLANTING. DISEASED, DYING, OR DEAD PLANT MATERIAL SHALL BE REPLACED BY THE CONTRACTOR DURING THE TWO YEAR PERIOD AND MAINTAINED FOR AN ADDITIONAL 2 YEAR PERIOD.
- IMMEDIATELY UPON BID AWARD, CONTRACTOR SHALL SECURE THE PLANT MATERIALS AS SPECIFIED FROM AVAILABLE SOURCES. IN THE EVENT THAT PLANT MATERIALS ARE NOT AVAILABLE, CONTACT LANDSCAPE ARCHITECT FOR APPROVED SUBSTITUTIONS. NO SUBSTITUTION FOR PLANT MATERIAL WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL OF THE LANDSCAPE ARCHITECT.
- TOP DRESS ALL SHRUB AND GROUND COVER AREAS (NOT LAWN) WITH 3" OF FIR BARK MULCH. SUBMIT SAMPLE TO THE LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO CONSTRUCTION.
- TREE LOCATIONS MAY BE ADJUSTED IN THE FIELD TO SUIT SITE REQUIREMENTS AS DIRECTED BY THE LANDSCAPE ARCHITECT.
- THE CONTRACTOR SHALL ENSURE THAT ALL EXCAVATED PLANTING PITS HAVE POSITIVE DRAINAGE. PLANT PITS FULLY FLOODED WITH WATER SHALL DRAIN WITHIN (12) HOURS OF FILLING.
- FINISH GRADE SHALL BE SET TO ALLOW POSITIVE DRAINAGE.
- ROTOILL 2" OF COMPOST INTO ALL PLANTED AREAS.
- INCORPORATE PEAT INTO THE ROOT ZONE OF RHODODENDRONS, AZALEAS AND OTHER ACID LOVING PLANTS.
- INCORPORATE 10-20-20 FERTILIZER INTO THE ROOT ZONE OF ALL NEW PLANTINGS.
- RONSTAR, OR APPROVED EQUAL, PREEMERGENT HERBICIDE TO BE APPLIED TO ALL PLANTED AREAS PER MANUFACTURERS INSTRUCTIONS.
- EXISTING VEGETATION TO BE SPRAYED WITH ROUNDUP, OR APPROVED EQUAL, PER MANUFACTURERS INSTRUCTIONS. SUFFICIENT TIME SHALL BE GIVEN TO ALLOW EXISTING MATERIAL TO DIE. REMOVE EXISTING 21. THE PROPERTY OWNER IS RESPONSIBLE FOR MAINTAINING TURF PLANTED WITHIN THE RIGHT OF WAY.
- GROWN LAWN AREAS AND GRADE TO PROVIDE POSITIVE DRAINAGE.
- ROLL LAWN AREA TO INSURE PROPER COMPACTION TO MINIMIZE SETTLING.
- AMEND SOIL IN LAWN AREAS WITH 80 LBS. OF DOLOMITE LIME AND 40 LBS. OF 10-20-20 SLOW RELEASE FERTILIZER OR EQUIVALENT. PROVIDE A 3" LAYER OF SANDY LOAM TOPSOIL FOR LAWN AND BED AREA.
- SEED LAWN AREAS WITH GRASS SEED MANUFACTURER'S RECOMMENDATIONS. COVER SEED WITH FINE MULCH APPLIED WITH ROLLER OR HYDROSEED.
- THE PROPERTY OWNER IS RESPONSIBLE FOR MAINTAINING TURF PLANTED WITHIN THE RIGHT OF WAY.
- PLANT MATERIAL SHALL BE PLANTED W/ ROOT CROWN 1" ABOVE FINISHED GRADE TO ALLOW POSITIVE DRAINAGE AWAY FROM CROWN.
- STAKE ALL TREES OVER 6 FT. IN HEIGHT PER DETAILS ON THIS SHEET.
- REFER TO DETAILS FOR ADDITIONAL INFORMATION.
- ALL PLANTING SHALL BE IRRIGATED BY AN AUTOMATIC UNDERGROUND SPRINKLER SYSTEM.
- ALL PLANT MATERIALS FURNISHED ARE TO BE HEALTHY, UNIFORMLY BRANCHED AND WITH WELL DEVELOPED FIBROUS ROOT SYSTEMS.
- ALL PLANT MATERIALS FURNISHED ARE TO BE FREE FROM DEAD OR BROKEN BRANCHES, LICHENS, SCARS, BROKEN BARK OR WOUNDS. ALL PLANT MATERIALS WILL BE INSECT, NEEB, AND DISEASE FREE ACCORDING TO THE REQUIREMENTS OF THE OREGON STATE DEPARTMENT OF AGRICULTURE FOR NURSERY PLANT MATERIALS SOLD FOR WHOLESALE OR RETAIL. ALL PRUNING WOUNDS MUST BE WELL HEALED WITH NO EVIDENCE OF DEGRAY.
- FIELD CONFIRM ALL SITE CONDITIONS, AREAS AND SIZES PRIOR TO BIDDING & CONSTRUCTION. DO NOT SCALE FROM PLANS.



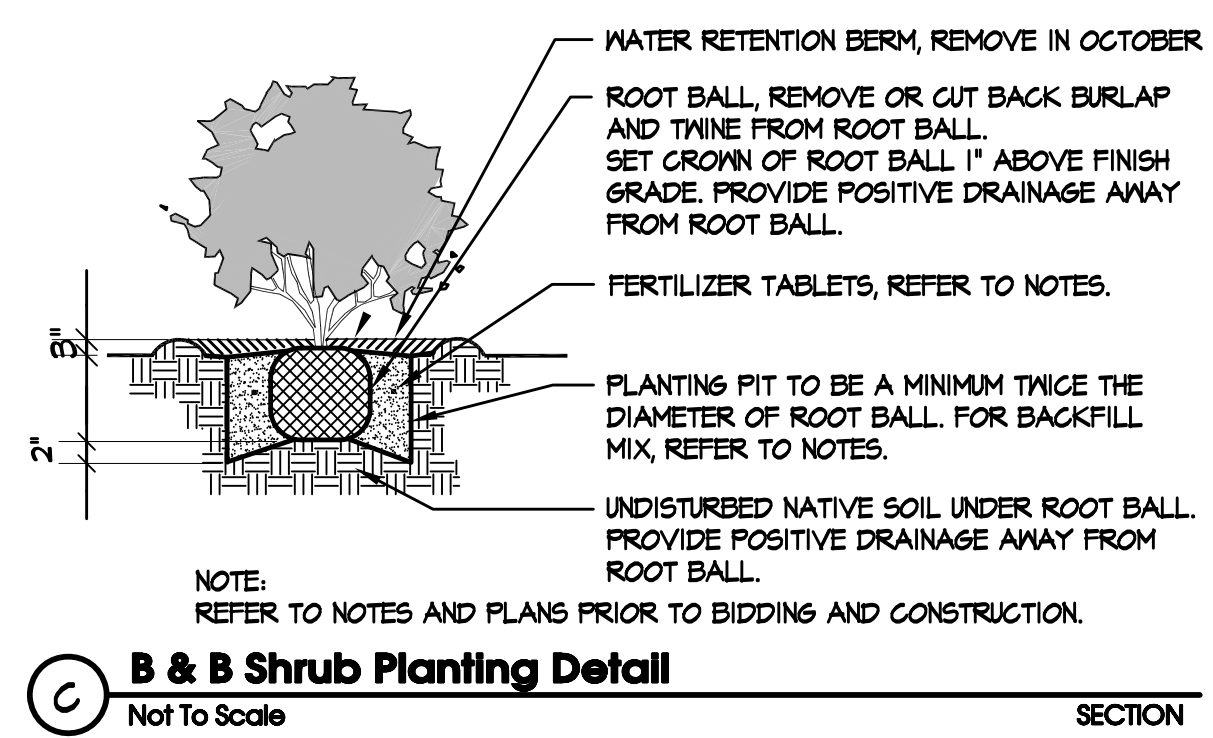
A B & B Tree Planting - Street Tree Detail
Not To Scale SECTION / PLAN VIEW



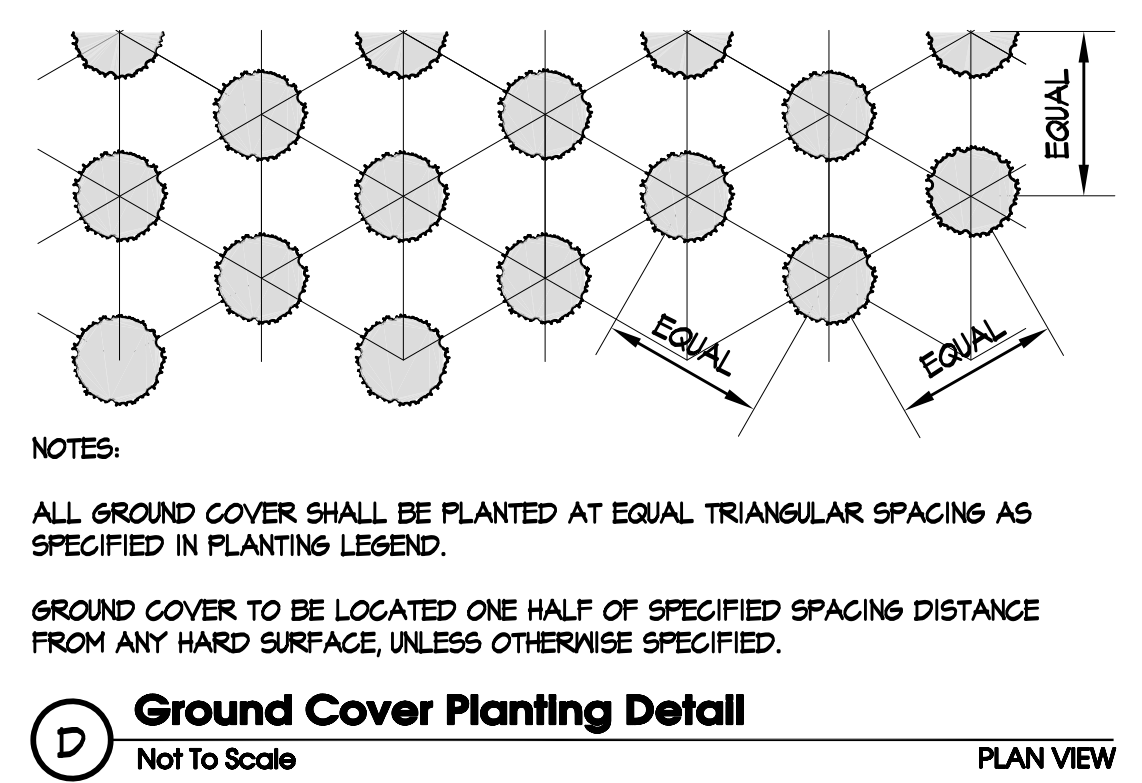
B B & B Tree Planting Detail
Not To Scale SECTION / PLAN VIEW



C B & B Tree Planting Detail: Evergreen under 8' Height
Not To Scale SECTION / PLAN VIEW



D B & B Shrub Planting Detail
Not To Scale SECTION

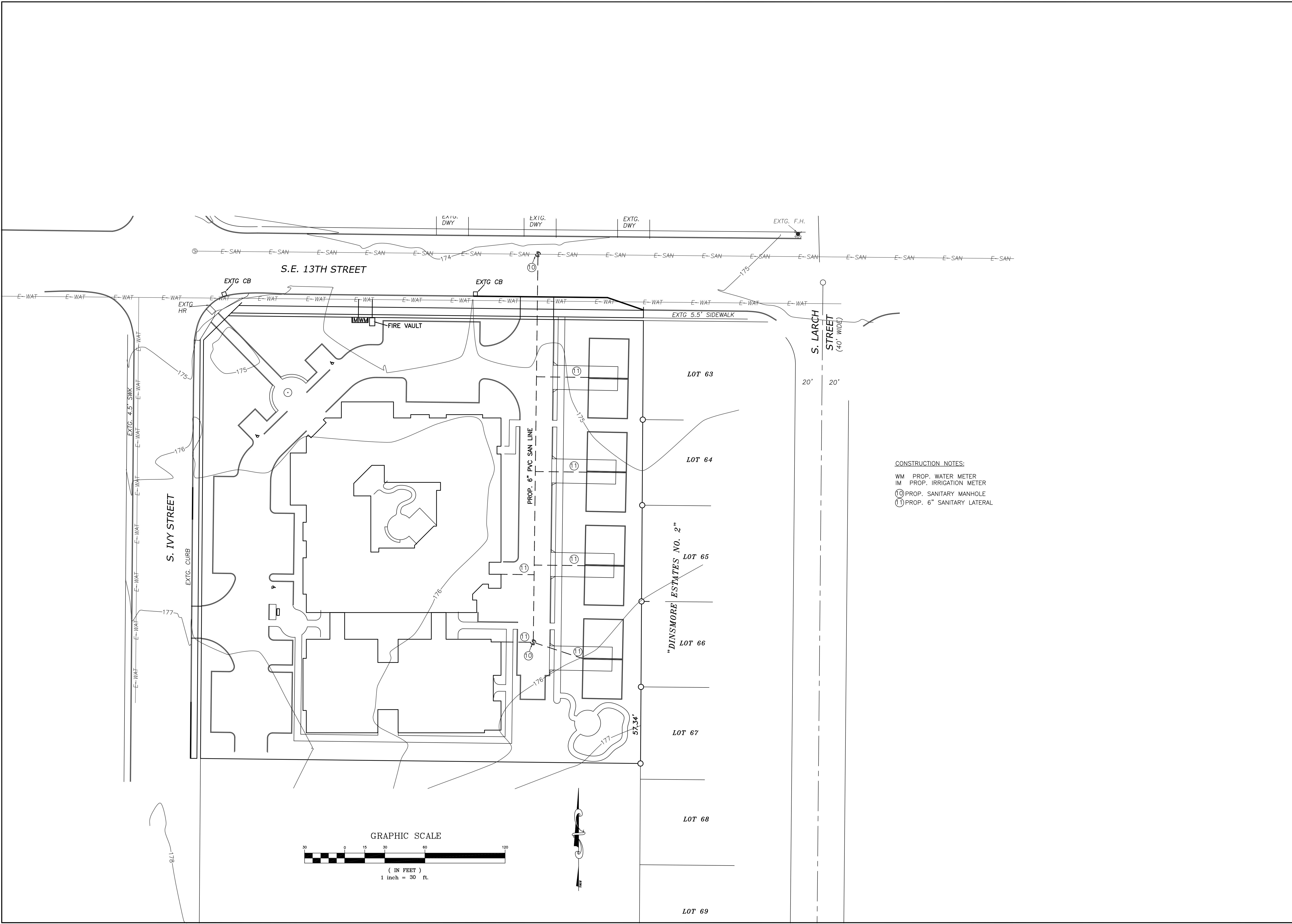


E Ground Cover Planting Detail
Not To Scale PLAN VIEW

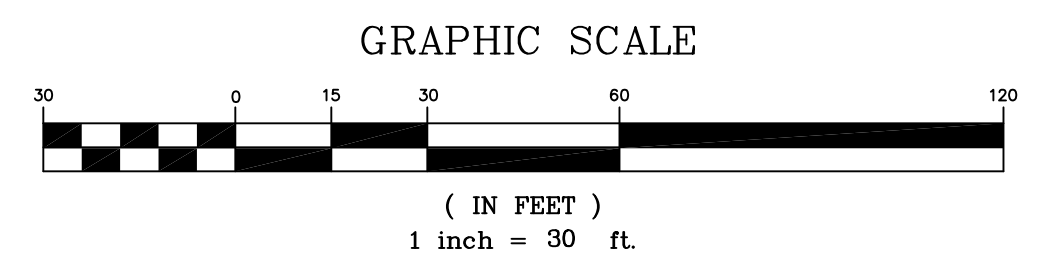
DRAWN: VH	CHECKED: CB
SCALE: AS SHOWN	DATE: 09.25.20
JOB #:	

ISSUED FOR: FLR
REVISIONS:
△ City Comments 02-04-21
△
△
△
△

SHEET NAME:
LANDSCAPE DETAILS

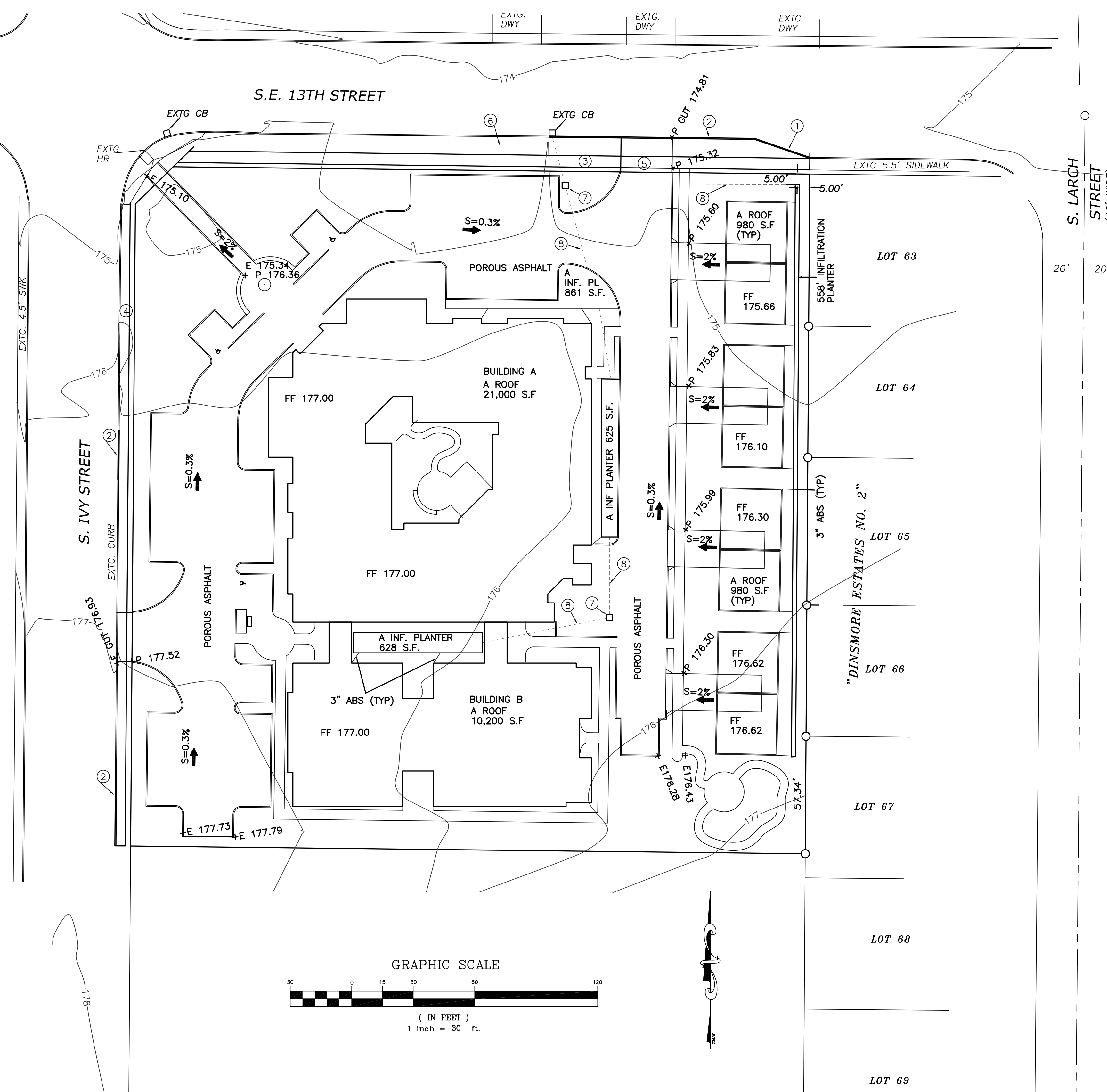


CONSTRUCTION NOTES:
 WM PROP. WATER METER
 IM PROP. IRRIGATION METER
 (10) PROP. SANITARY MANHOLE
 (11) PROP. 6" SANITARY LATERAL



<p>RSG ENGINEERING, CO. CIVIL ENGINEERING / CONSTRUCTION MANAGEMENT 16802 NE 152ND AVE, BRUSH PRAIRIE, WA 98606 PH (503) 380-6179, FAX (360) 891-7945 E-MAIL: RSGENG@COMCAST.NET</p>	<p>PROJECT NAME: CANBY SENIOR LIVING PRELIMINARY UNDERGROUND UTILITY PLAN</p>	<p>SCALE: VERT: 1"=3' HORIZ: 1"=30' DATE: 07-2020 CASE FILE:</p>	<p>DATE: _____ REVISION: _____ BY: _____</p>
	<p>CLIENT: CONTACT NAME EDDIE RADULESCU 503-679-2493</p>	<p>LEGAL RANGE SE 1/4 OF TWP. 4S SECTION 4 4S 1 EAST</p>	<p>DESIGNED: RSG DRAWN: RSG CHECKED: RSG APPROVED: _____</p>

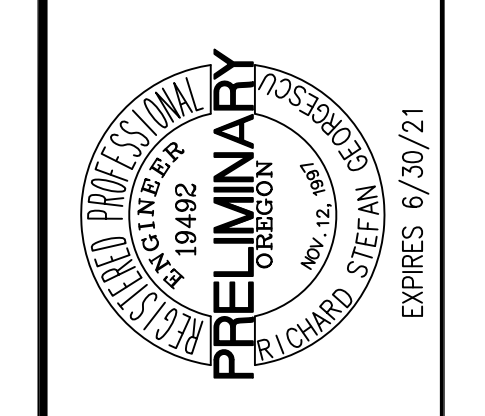
PRELIMINARY
 RICHARD STEFAN
 OREGON
 LICENSE NO. 19409
 EXPIRES 6/30/21



PRELIMINARY CONSTRUCTION NOTES:

- ① PROP. 1:3 CURB TAPPER
- ② PROP. NEW CURB
- ③ PROP. 5.5' SIDEWALK
- ④ PROP. 4.5' SIDEWALK
- ⑤ PROP. DEWEWAY
- ⑥ PROP. 9' PLANTER
- +P 175.60 PROP. ELEVATION
- +E 175.60 EXTG. ELEVATION
- ⑦ PROP. CATCH BASIN WITH SOLID LID
- ⑧ PROP. 1" C900 OVERFLOW PIPE CONNECTED WITH EXTG CB

DATE	REVISION	BY

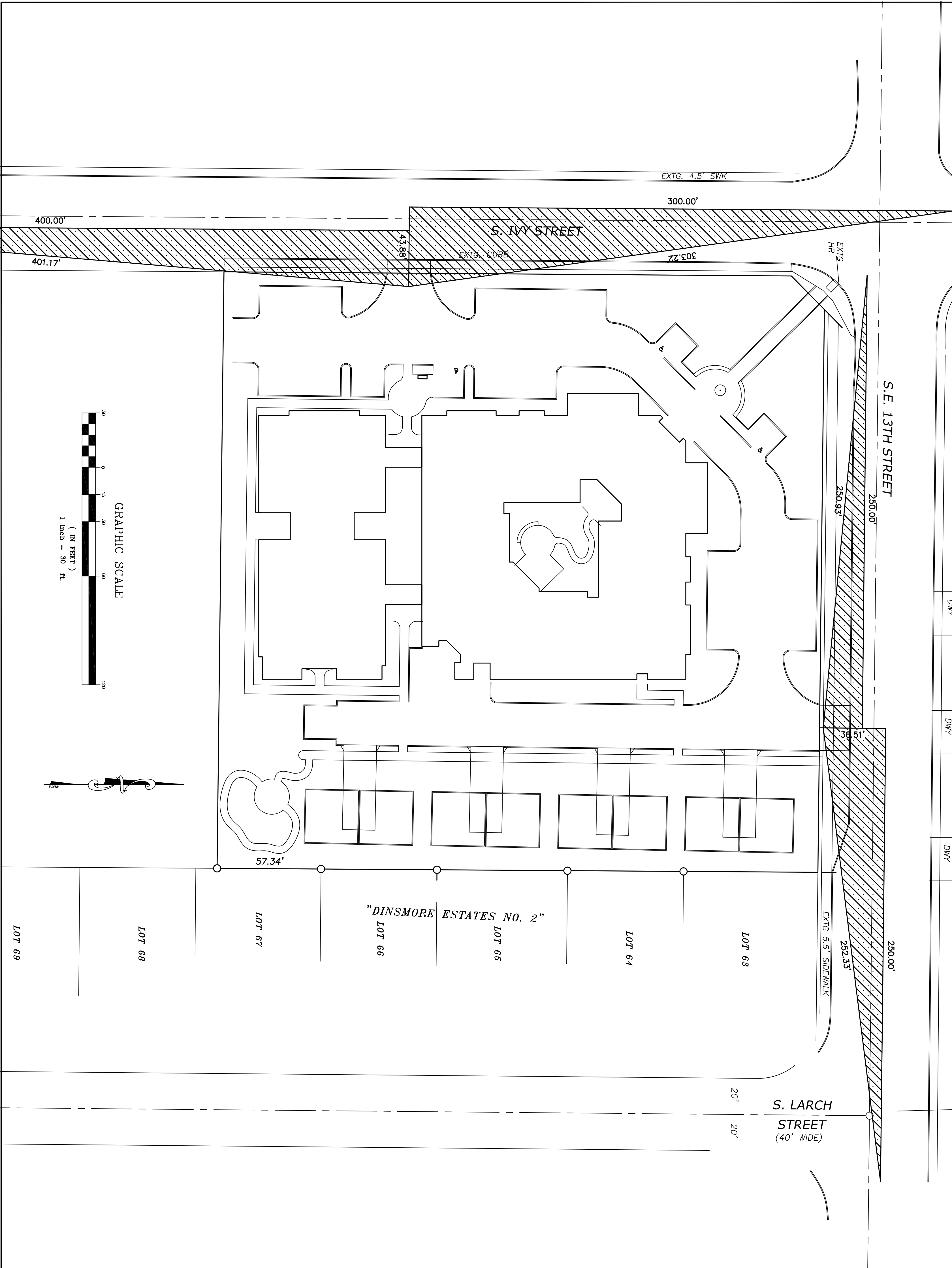


SCALE: VERT: 1"=3'	LEGAL
HORIZ: 1"=30'	SE 1/4 OF TWP. RANGE
DATE: 07-2020	SECTION 4 4S 1 EAST
CASE FILE:	

PROJECT NAME: CANBY SENIOR LIVING
PRELIMINARY SITE, GRADING AND STORMWATER PLAN
 CLIENT: CONTACT NAME EDDIE RADULESCU
 503-679-2493

RSG ENGINEERING, co.
 CIVIL ENGINEERING / CONSTRUCTION MANAGEMENT
 16802 NE 152ND AVE, BRUSH PRAIRIE, WA 98606
 PH (503) 380-6179, FAX (360) 891-7945
 E-MAIL: RSGENG@COMCAST.NET

CANBY SENIOR LIVING - 1300 S IVY RD. CANBY OR - SITE DISTANCE CERTIFICATE



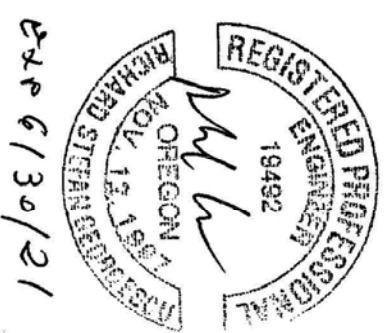
SIGHT DISTANCE CERTIFICATE

FOR 1300 S IVY RD, CANBY OR

Using Focus Spectra robotic station, setting the instrument 15 feet off face of curb on both se 13th st and s Ivy rd., on the center of future driveways, with the height of instrument 3.5 feet, and height of the rod 4.25 feet (per approved Site Distance Calculation), I found:
 On 13th rd, the speed limit is 25 MPH. On each direction, East or West, I didn't find any obstruction for 250 feet or more.
 On Ivy Rd. North bound is 30 MPH, and south bound is 40 MPH. I didn't find any obstruction on each direction for more than 300 feet and 400 feet respectively.

In my professional opinion, the site distance is adequate.

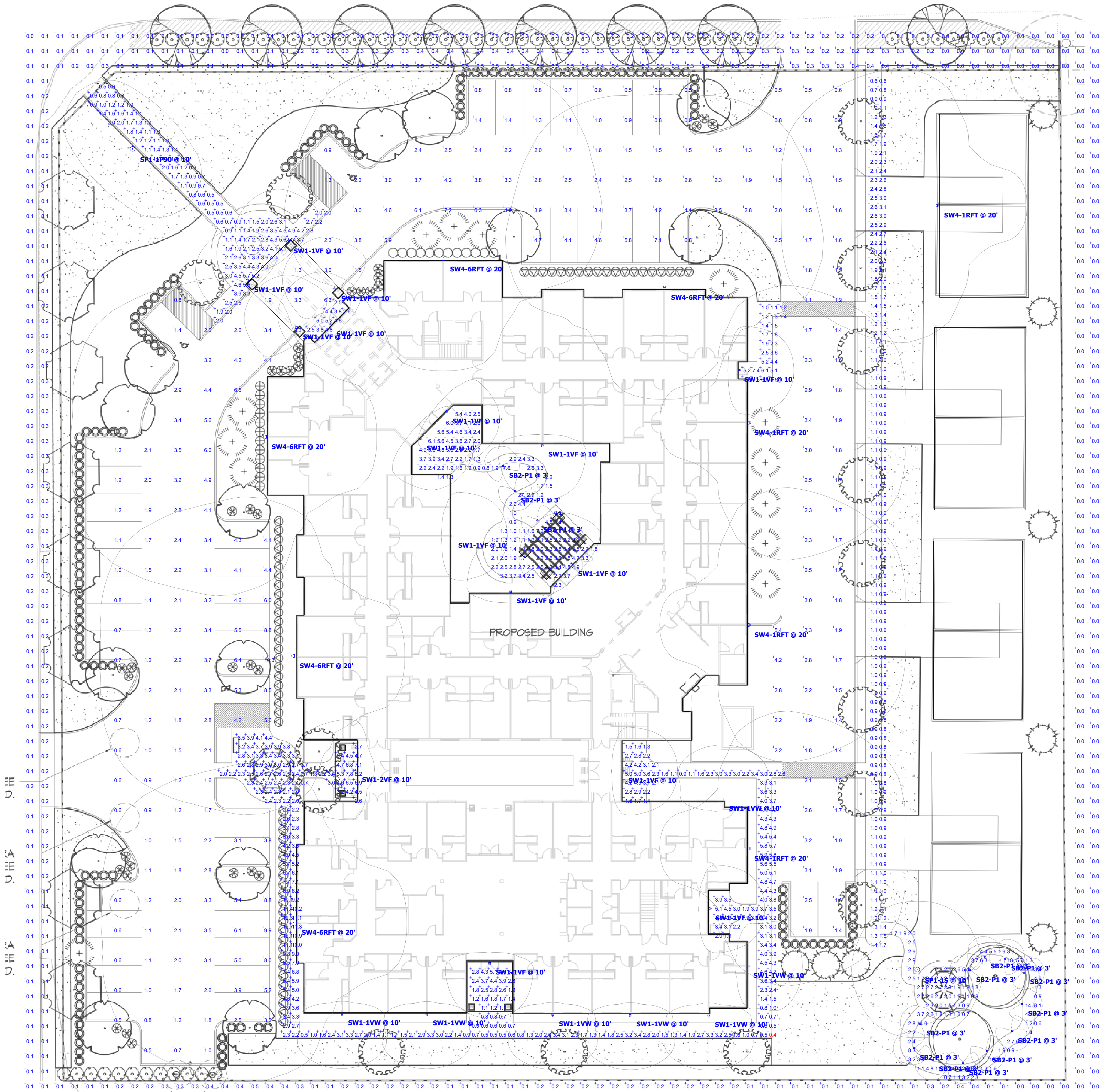
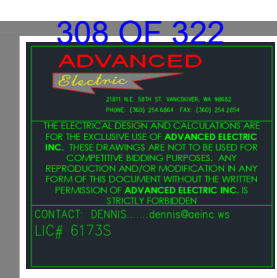
RSG ENGINEERING CO.
 RICHARD S. GEORGESCU P.E.







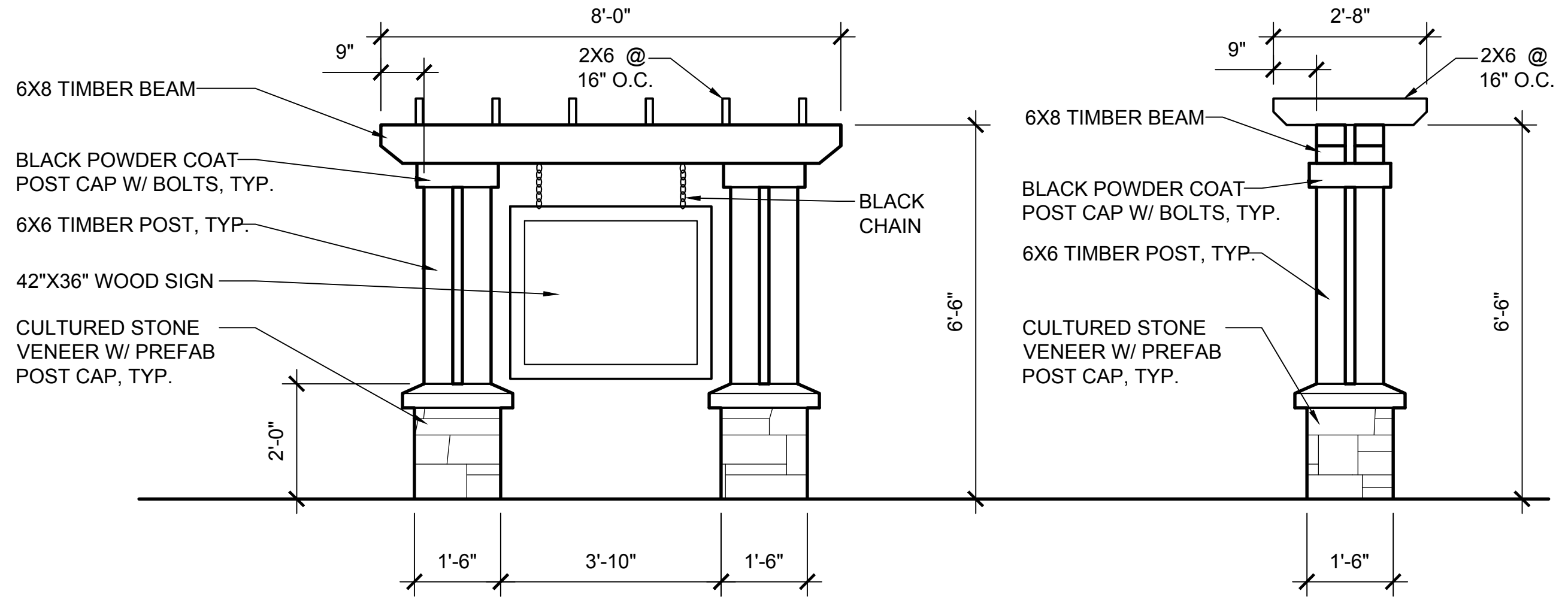




Symbol	Label	QTY	Manufacturer	Catalog Number	Description	LLF	Wattage
⊕	SB2-P1	14	Lithonia Lighting	RADB LED P1 30K ASY DBLXD	RADB LED P1 30K ASY DBLXD	0.95	5.21
⊙	SP1-1P90	1	Lithonia Lighting	RADPT P1 30K PATH R90	RADEAN Post-Top with P1 3000K Pathway distribution with right rotated optics	0.95	25.4134
⊙	SP1-1S	1	Lithonia Lighting	RADPT P1 30K SYM	RADEAN Post-Top with P1 3000K Symmetric distribution	0.95	25.4134
⊔	SW1-1VW	7	Lithonia Lighting	WDGE2 LED P1 30K 80CRI VW	WDGE2 LED WITH P1 - PERFORMANCE PACKAGE, 3000K, 80CRI, VISUAL COMFORT WIDE OPTIC	0.95	9.81
⊔	SW1-2VF	1	Lithonia Lighting	WDGE2 LED P2 30K 80CRI VF	WDGE2 LED WITH P2 - PERFORMANCE PACKAGE, 3000K, 80CRI, VISUAL COMFORT FORWARD OPTIC	0.95	14.53
⊔	SW1-1VF	15	Lithonia Lighting	WDGE2 LED P1 30K 80CRI VF	WDGE2 LED WITH P1 - PERFORMANCE PACKAGE, 3000K, 80CRI, VISUAL COMFORT FORWARD OPTIC	0.95	9.81
⊔	SW4-1RFT	4	Lithonia Lighting	WDGE4 LED P1 70CRI RFT 30K	WDGE4 LED WITH P1 - PERFORMANCE PACKAGE, 3000K, 70CRI, FORWARD THROW OPTIC	0.95	76.21
⊔	SW4-6RFT	5	Lithonia Lighting	WDGE4 LED P6 70CRI RFT 30K	WDGE4 LED WITH P6 - PERFORMANCE PACKAGE, 3000K, 70CRI, FORWARD THROW OPTIC	0.95	185.23

Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
COURTYARD	+	3.1 fc	27.1 fc	0.6 fc	45.2:1	5.2:1
MAIN ENTRY	+	3.8 fc	5.2 fc	2.5 fc	2.1:1	1.5:1
NE SIDEWALK	+	3.4 fc	7.5 fc	1.0 fc	7.5:1	3.4:1
OVERSPILL	+	0.1 fc	0.5 fc	0.0 fc	N/A	N/A
PARKING	+	2.6 fc	10.3 fc	0.5 fc	20.6:1	5.2:1
PATH TO STREET	+	2.1 fc	5.7 fc	0.5 fc	11.4:1	4.2:1
PED SIDEWALK	+	1.3 fc	3.1 fc	0.6 fc	5.2:1	2.2:1
SE SIDEWALK	+	3.4 fc	23.3 fc	0.6 fc	38.8:1	5.7:1
SIDEWALK	+	3.4 fc	12.7 fc	0.4 fc	31.8:1	8.5:1

Canby Senior Living
1300 S Ivy St.
Canby, Oregon



1 SIGN ELEVATIONS
A2.0 SCALE: 1/2" = 1'-0"



Attachment B

SEPTEMBER 25, 2020

Brianna Addotta
City of Canby
222 NE 2nd Ave., PO Box 930
Canby, OR, 97013

SUBJECT: SCOPE OF WORK – CANBY SENIOR LIVING TRAFFIC STUDY

This document outlines the scope of services required to evaluate the transportation impacts associated with the proposed Canby Senior Living development located at the southeast corner of the SE 13th Avenue/S Ivy Street intersection in Canby, Oregon. The proposed site will consist of a 102-bed assisted living facility and 8 duplex units for senior living¹.

TASK 1: EXISTING CONDITIONS ANALYSIS

An existing conditions analysis will document the existing transportation conditions within the project study area. A description of the surrounding transportation network will be provided including functional classification of roadways, roadway cross-sections, posted speed limits, parking, and pedestrian/bicycle/transit facilities.

The study intersections will be reviewed to determine the existing geometry, traffic control, and operations during the peak hours. Existing intersection operating conditions will be analyzed to establish the current peak hour performance. The critical peak periods for this evaluation will be the weekday morning (7:00 to 9:00 am) and evening (4:00 to 6:00 pm). This is the time during a typical weekday when the study area street system would be expected to experience the highest vehicle volume and the site would generate significant traffic. The following intersection will be evaluated:

1. SE 13th Avenue / S. Ivy Street

Historical count data will be obtained and utilized. A growth rate will be applied to the older count data to reflect 2020 volumes.

¹ Canby Senior Living site plan, June 5, 2020, Westlake Consultants.

Preliminary trip generation and distribution estimates indicate that trip levels would not trigger analysis to be conducted at any other intersections.

Collision records at the study intersection over the previous five years will be reviewed and summarized in a table to determine if there are any safety related concerns within the project area.

TASK 2: PROJECT TRIP GENERATION/ TRIP DISTRIBUTION

The amount of new vehicle trips generated by the proposed development will be estimated using trip generation estimates published in the ITE Trip Generation Manual for similar land use type². All vehicle trips associated with the proposed project will be treated as new vehicle trips to the existing transportation network. Trip generation estimates for the proposed development will be provided for the a.m. and p.m. peak hours, as well as daily trips.

The distribution of site vehicle traffic will be based on the City of Canby Travel Forecast Tool. The project trip distribution will be shown on a study area figure.

TASK 3: SITE ACCESS AND CIRCULATION REVIEW

Access to the site is proposed via an approach to S. Ivy Street (classified as an arterial roadway) and SE 13th Avenue (classified as an arterial roadway).

Since, the proposed development is proposing new accesses, intersection sight distance and access spacing will be evaluated. This task will also include a review of on-site circulation for motor vehicles, pedestrians, and bicyclists.

TASK 4: TRANSPORTATION IMPACT ANALYSIS

A transportation impact analysis for the proposed project will be conducted in accordance to the City's requirements³. The new vehicle trips generated by the proposed project will be added onto the existing traffic volumes to identify the expected traffic operating conditions once the project is built and fully operational. The traffic conditions will be evaluated at the same study intersection as was considered in the Existing Conditions Analysis (Task 1), in addition to proposed site driveways to S. Ivy Street and SE 13th Avenue. In addition, any significant approved, but not fully occupied projects in the study area will be added as background traffic (based on information provided by the city). The following scenarios will be evaluated:

- Background Conditions (Year of Opening, without the Project)
- Project Conditions (Year of Opening, with the Project)

Street facilities and intersections that are shown to fall below the minimum acceptable operating thresholds will be identified for possible mitigation measures. Typical mitigation measures can include traffic control strategies, access management plans, widening for turn lanes at intersections

² Trip Generation Manual, Institute of Transportation Engineers, 10th Edition.

³ City of Canby Transportation System Plan, Chapter 10: Implementation Plan, December 2010.

and roadway widening. Transportation performance criteria will consider agency standards where applicable. This task includes coordination with impacted agencies on project issues and solutions.

The traffic volumes resulting from the proposed project on S. Ivy Street and SE 13th Avenue will be compared to existing traffic volumes (daily and peak hour), as well as the projected volumes from the City's Transportation System Plan (TSP) to provide an evaluation of growth on the roadway compared to planned conditions. Planned improvements in the City's CIP and TSP in the area will also be summarized to describe long-range transportation solutions to serve growth in the study area.

TASK 5: DOCUMENTATION

The findings and recommendations of this transportation impact analysis will be presented in a Draft Report that will be submitted to the city (one electronic copy). The report will document data collection, analysis procedure, results, and mitigation measures (if necessary) for the proposed project traffic. A technical appendix that supports calculations will accompany the report. After the agency reviews of the Draft Report are complete and one-set of unified, non-contradictory comments are provided, a Final Report will be prepared and stamped by an Oregon Registered Professional Engineer (one electronic copy).

BUDGET

In consideration of the performance of these services, DKS Associates will be compensated on a time and materials basis in accordance with the hourly billing rates set forth in the attached fee schedule, subject to revision December 31, 2020, for a maximum fee of \$6,500. This fee is based upon the scope of services and level of effort presented above.

If the applicant chooses to utilize another consultant to complete this task, our assistance with trip distribution (using the Canby TSP Travel Forecast Tool) and review with written response of the applicant's submittal would be approximately \$2,500.

If you have any questions, please feel free to call or email.



Attachment C

EXECUTIVE SUMMARY

DATE: March 30, 2021

TO: Brianna Addotta | City of Canby

FROM: Kevin Chewuk and Kamilah Buker | DKS

SUBJECT: Canby Senior Living Traffic Impact Analysis
Executive Summary

Project #11010-115

EXECUTIVE SUMMARY

A summary of key findings from the Canby Senior Living Transportation Impact Analysis is provided below:


- **Three Intersections Analyzed:**
 - SE 13th Avenue / and S Ivy Street
 - Proposed Access / SE 13th Avenue
 - Proposed Access / S Ivy Street
- **Trips generated from the proposed site:**
 - Approximately 21 a.m. peak hour trips, 29 p.m. peak hour trips, and 295 daily trips.
- **Trips from approved but not fully occupied developments were added to area roadways**
 - Trips from approved but not fully occupied developments in Canby were added to study intersections to account for trips that were not counted in the original traffic count data but will be added to area roadways as the individual developments build out.
- **A growth rate was applied to account for other background regional trip growth not related to citywide development**
 - A 2 percent compound annual growth rate was applied to all movements at study intersections to capture other background regional trip growth not related to citywide development.
- **No safety issues were identified.**
 - Crash rates at study intersections indicate the frequency of collisions is typical for the volume of traffic served.
- **No intersection capacity issues were identified.**
 - None of the study intersections were identified as having an impact based on projected growth from the proposed project.

CURRAN-McLEOD, INC.
CONSULTING ENGINEERS
6655 S.W. HAMPTON STREET, SUITE 210
PORTLAND, OREGON 97223

January 27, 2021

MEMORANDUM

TO: Ms. Brianna Addotta
City of Canby

FROM: Hassan Ibrahim, P.E. 
Curran-McLeod, Inc.

RE: **CITY OF CANBY**
13TH AND IVY SENIOR MEMORY CARE
PRELIMINARY REVIEW REVISED

We have reviewed the submitted preliminary plans submitted on this project and have the following comments:

1. S. Ivy Street is a County arterial street, but the City has taken over this street through an Intergovernmental Agreement (IGA). The existing right-of-way width of 60' and is considered adequate for completing the half street improvements along the site frontage. The location of the existing curb needs to be field verified to determine if it can be preserved. The half street improvements shall be built by the developer to include curbs placed at 23 feet from centerline right of way, 6-foot curb tight concrete sidewalks, utilities as required, streetlights design to be provided by the developer and installation by Canby Utility, dual ADA ramps at the intersection with SE 13 the Ave in conformance with section 2.207 of the City of Canby Public Works Design Standards revised in December 2019. A 12-foot public utility easement abutting the right of way will also be required.
2. SE 13th Avenue is a City arterial street, the existing half street right of way along the site frontage is 20 feet. An additional 10 feet of right of way will be required along the entire site frontage. The developer shall construct half street improvements with curbs placed at 22 feet from the centerline of the right of way, 6-foot concrete curb tight sidewalks, with street trees from City approved tree list, utilities as required, streetlights design to be provided by the developer and installation by Canby Utility. The half street improvements shall be built to City Standards to match the east side of the roadway (Dinsmore Estates 2) in conformance with section 2.207 of the City of Canby Public Works Design Standards revised in December 2019. t. A 12-foot public utility easement abutting the right of way will also be required.

3. The extension of the proposed curb lines on S Ivy Street and SE 13th Avenue to their intersection shall be fillet with 40-foot radius as per section 2.205 of the City of Canby Public Works Design Standards revised in December 2019. If this alignment conflicts with the existing traffic signal pole at this location, the signal pole and its components must be relocated. The location and any all the necessary adjustments to the traffic signal must be coordinated with Clackamas County.
4. The access spacing on S Ivy Street and SE 13th Ave shall be 330 feet in conformance with the December 2010 City Transportation System Plan (TSP). The preliminary plans do not appear to meet the criteria, any deviation from this requirement shall be supplemented by a letter from the transportation engineer to assure the access location is safe and functional.
5. Commercial driveway approaches shall be constructed at all access points on S Ivy Street and SE 13th Ave. The driveway approach shall consist of 6" minimum concrete thickness with reinforcements over 4" min of crushed rock base and constructed in conformance with the most current ADA guidelines.
6. Sight distance requirements shall be met at each access point as stated by AASHTO and as determined by the transportation engineer.
7. An erosion control and a grading permit will be required from the City of Canby prior to any on-site disturbance.
8. An 8" public gravity sanitary sewer line shall be extended from SE 13th Ave to serve this development and the property to the south of this development.
9. Any proposed public UIC structures on S Ivy Street and SE 13th Ave shall meet at least one of the two conditions: (1) the vertical separation distance between the UIC and seasonal high groundwater is more than 2.5 feet or (2) the horizontal separation distance between the UIC and any water well is a minimum of 267 feet in accordance of the City of Canby Stormwater Master Plan, Appendix "C", Groundwater Protectiveness Demonstration and Risk Prioritization for Underground Injection Control (UIC) Devices.
10. All private storm drainage shall be disposed on-site. Any drywells or UIC facilities shall be ruled authorized by the Department of Environmental Quality (DEQ). A copy of the registration shall be submitted to the City prior to any storm drainage construction.

11. A final drainage report shall be submitted with the final construction plans meeting Chapter 4 of the City of Canby Public Works Design Standards revised in December 2019.

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

I CERTIFY THAT THIS ORDER approving DR 20-03 and CUP 20-02, was presented to and APPROVED by the Planning Commission of the City of Canby.

DATED this 12th day of April, 2021.

John Savory
Planning Commission Chair

Don Hardy
Planning Director

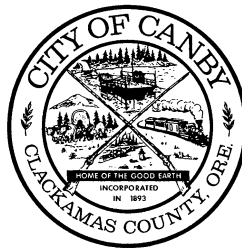
Laney Fouse Lawrence, Attest
Recording Secretary

ORAL DECISION: April 12, 2021

<i>Name</i>	<i>Aye</i>	<i>No</i>	<i>Abstain</i>	<i>Absent</i>
<i>John Savory</i>				
<i>Larry Boatright</i>				
<i>Jennifer Trundy</i>				
<i>Jeff Mills</i>				
<i>Michael Hutchinson</i>				
<i>Jason Padden</i>				
<i>James Hieb</i>				

WRITTEN DECISION: April 12 2021

<i>Name</i>	<i>Aye</i>	<i>No</i>	<i>Abstain</i>	<i>Absent</i>
<i>John Savory</i>				
<i>Larry Boatright</i>				
<i>Jennifer Trundy</i>				
<i>Jeff Mills</i>				
<i>Michael Hutchinson</i>				
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**BEFORE THE PLANNING COMMISSION
OF THE CITY OF CANBY**

**A REQUEST FOR SITE AND DESIGN
REVIEW AND CONDITIONAL USE
APPROVAL FOR A MEMORY CARE
FACILITY**

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FINDINGS, CONCLUSION & FINAL ORDER

**DR 20-03 AND CUP 20-02
MEMORY CARE**

NATURE OF THE APPLICATION

The proposal is a request for Conditional Use and Design Review approval for a Senior Living and Memory Care Facility with 102 beds and four independent living duplexes, with associated parking and site improvements.

The 2.6 acre parcel is located at the southeastern corner of S Ivy St. and SE 13th Ave and is zoned R-1, Low Density Residential. It is currently developed with a single family home fronting Ivy Street. The lot is otherwise clear, without significant landscaping, tree coverage, or slopes. Neither frontage has been improved with public facilities. Surrounding the property are parcels zoned R-1 Low Density Residential and R-1.5 Medium Density Residential, and are developed with single family homes to the south and east, Canby Adult Center and Swim Center to the north, and Hope Village Senior Living Community to the west.

The proposal is a request seeking to build a two-story assisted living facility building with a memory care endorsement, and eight 700 SF cottages for Independent Living. 31% landscaping is proposed. A parking plan specific to the use of Memory Care has been provided to address a lower parking ratio than the Nursing Home standard set by the Municipal Code, 60 parking spaces are proposed.

HEARINGS

The Planning Commission considered applications **DR 20-03 AND CUP 20-02** after the duly noticed hearing on April 12, 2021 during which the Planning Commission approved by a ___/___ vote **Memory Care (City Files # DR 20-03 and CUP 20-02)**. These Findings are entered to document the approval.

CRITERIA AND STANDARDS

In judging whether or not the aforementioned application shall be approved, the Planning

Commission determines whether criteria from the City of Canby Land Development and Planning Ordinance are met, or can be met by observance of conditions. Applicable code criteria and standards were reviewed in the Staff Report dated April 2,, 2021 and presented at the April 12, 2021 meeting of the Canby Planning Commission.

FINDINGS AND REASONS

The Staff Report was presented, and written and oral testimony was received at the public hearing. Staff recommended approval of the Site and Design Review and Partition applications and applied Conditions of Approval in order to ensure that the proposed project will meet all required City of Canby Land Development and Planning Ordinance approval criteria.

CONCLUSION

In summary, the Planning Commission adopted the findings contained in the Staff Report along with the additional findings concluded at the public hearing and noted herein, concluding that the application met all applicable approval criteria to the extent feasible, and recommending that **Memory Care (City Files # DR 20-03 and CUP 20-02)** be approved with the Conditions of Approval reflected in the written Order below.

ORDER

The Planning Commission concludes that, with the following conditions, the application meets the requirements for Site and Design Review and Partition approval. Therefore, IT IS ORDERED BY THE PLANNING COMMISSION of the City of Canby that **Memory Care (City Files # DR 20-03 and CUP 20-02)** is approved, subject to the following conditions:

CONDITIONS OF APPROVAL

1. The applicant shall file a sign permit for signage as shown in the applicant materials and as described in this staff report. The proposed signs must also secure a building permit from Clackamas County Building Inspection prior to their installation. (B. Addotta)
2. The applicant shall designate the five visitor parking spaces with signage and inform residents and their families where they are. (B. Addotta)
3. The project must be in conformance with the applicable findings and recommendations outlined by the City Engineer in his memorandum dated January 28, 2021. (H. Ibrahim)
4. The design engineer shall submit to the City of Canby for review and approval a revised site plan of the driveway providing access onto S. Ivy Street to accommodate a right-in right-out porkchop and associated signage. Revised plans shall be provided and approved before site work commences. (B. Addotta)

Prior to Issuance of a Building Permit the following must be completed:

5. The design engineer shall submit to the City of Canby for review and approval at the time of final construction plan approval a storm drainage analysis and report applicable to the defined development area detailing how storm water disposal from both the building and the parking areas is being handled. Any drainage plan shall conform to an acceptable methodology for meeting adopted storm drainage design standards as indicated in the Public Works design standards. (J. Nelzen)

6. A Sediment and Erosion Control Permit will be required from the City prior to commencing site work. (H. Ibrahim)
7. Prior to the issuance of a building permit, the installation of public or private utilities, or any other site work other than rough site grading, construction plans must be approved and signed by the City and all other utility/service providers. A Pre-Construction Conference with sign-off on all final construction plans is required. The design, location, and planned installation of all roadway improvements and utilities including but not limited to water, electric, sanitary sewer, natural gas, telephone, storm water, cable television, and emergency service provisions is subject to approval by the appropriate utility/service provider. The City of Canby's preconstruction process procedures shall be followed. (J. Nelzen)
8. Construction plans shall be designed and stamped by a Professional Engineer registered in the State of Oregon. (H. Ibrahim)
9. The project applicant shall apply for Clackamas County Building permits and a City of Canby Erosion Control Permit from the Canby Public Works Department. (B. Addotta)
10. Clackamas County Building Codes Division will provide structural, electrical, plumbing, and mechanical plan review and inspection services for construction of the project. (B. Addotta)
11. The applicant shall provide a bicycle parking detail showing compliance with the dimensional standards of bicycle parking as explained in CMC 16.49.065. (B. Addotta)

Prior to Occupancy:

12. Prior to occupancy of the facility, all landscaping plant material indicated on the submitted landscape plan shall either be installed and irrigated as proposed, or sufficient security (bonding, escrow, etc.) shall be provided pursuant to the provisions of CMC 16.49.100 (B). The applicant should be aware that the City street tree fee is now \$250 per tree if planted by the City, and the City recommends submittal of a separate Street Tree Plan to assist in the location, species, and total tree count. (B. Addotta)
13. City inspection of driveways and sidewalks for overall condition and for ADA compliance is required. (H. Ibrahim)