



# DESIGN COMMISSION VIDEO MEETING AGENDA

Wednesday, February 24, 2021

Zoom Virtual Platform  
9611 SE 36th Street | Mercer Island, WA 98040  
Phone: 206.275.7706 | [www.mercerisland.gov](http://www.mercerisland.gov)

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## PLANNING COMMISSIONERS:

**Chair:** Richard Erwin

**Vice Chair:** Colin, Brandt

**Commissioners** Traci Granbois, Claire McPherson, Anthony Perez, Tom Soeprono, Suzanne Zahr

In compliance with the Americans with Disabilities Act, those requiring accommodation for meetings should notify the Staff Liaison at least 24 hours prior to the meeting.

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## VIRTUAL MEETING NOTICE

The Design Commission meeting will be held virtually using video conferencing technology provided by Zoom, and the public will have the opportunity to provide comment during Appearances or during the Public Hearing by either calling in or logging onto the meeting as a Zoom attendee.

**Registering to Speak:** Individuals wishing to speak during live Appearances or wishing to provide comment during the Public Hearing will need to register their request with the Sr. Administrative Assistant at 206.275.7791 or email at [andrea.larson@mercerisland.gov](mailto:andrea.larson@mercerisland.gov) and leave a message before 4pm on the day of the Design Commission meeting. Please reference "Appearances" or "Public Hearing Public Comment". Each speaker will be allowed three (3) minutes to speak.

**Public Comment by Video:** Notify the Sr. Administrative Assistant in advance that you wish to speak on camera and staff will be prepared to permit temporary video access when you enter the live Design Commission meeting. Please remember to activate the video option on your phone or computer, ensure your room is well lit, and kindly ensure that your background is appropriate for all audience ages. Screen sharing will not be permitted, but documents may be emailed to the [Design Commission](#).

**Submitting Written Comments:** The City will also accept written comments until such time that the public hearing is adjourned. Please send written comments to [robin.proebsting@mercerisland.gov](mailto:robin.proebsting@mercerisland.gov).

**Join by Telephone at 7:00 pm:** To listen to the hearing via telephone, please call 253.215.8782 and enter Webinar ID 857 7134 3354 and Passcode 814271 when prompted.

**Join by Internet at 7:00 pm:** To watch the hearing over the internet via your computer microphone/ speakers follow these steps:

1. Click this [Link](#)
2. If the Zoom app is not installed on your computer, you will be prompted to download it.
3. If prompted for Meeting ID, enter 857 7134 3354; Enter Passcode 814271

The City strongly recommends that people attend the meeting by viewing it live on Zoom. Should restrictions on "in-person" meetings be lifted, opportunity to provide comment during either Appearances or the Public Hearing will be available at City Hall, located at 9611 SE 36<sup>th</sup> Street, Mercer Island, WA 98040. Strict social distancing requirements will be required of all in person attendees.

## **CALL TO ORDER & ROLL CALL, 7:00 PM**

### **APPROVAL OF MINUTES**

[\(1\)](#) December 9, 2020 Minutes

### **APPEARANCES**

This is the time set aside for members of the public to speak to the Commission about issues of concern. If you wish to speak, please consider the following points:

1. Speak audibly into the podium microphone.
2. State your name and address for the record.
3. Limit your comments to 3 minutes.

*The Commission may limit the number of speakers and modify the time allotted. Total time for appearances: 15 minutes.*

### **PUBLIC HEARING**

[\(2\)](#) DSR20-001 - Xing Hua Mixed Use Building Public Hearing

### **REGULAR BUSINESS**

- (3) Code of Ethics Discussion
- (4) DSR20-001 - Xing Hua Mixed Use Building  
Review and decision for the Xing Hua Mixed Use Building

### **OTHER BUSINESS**

- (5) Directors Report
- (6) Planned Absences for Future Meetings
- (7) Announcements & Communications
- (8) Next Scheduled Meeting

### **ADJOURN**



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# DESIGN COMMISSION

## MEETING MINUTES

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**Wednesday, December 9, 2020**

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### CALL TO ORDER

Vice Chair Colin Brandt called the virtual meeting meeting to order at 7:03 PM from a remote location.

### ROLL CALL

Vice Chair Colin Brandt, Commissioners, Traci Granbois, Claire McPherson, Tom Soeprono and Suzanne Zahr were present. Chair Richard Erwin and Commissioner Anthony Perez were absent

### STAFF PRESENT

Jeff Thomas, Interim CPD Director, Andrea Larson, Senior Administrative Assistant, Robin Proebsting, Senior Planner and Bio Park, City Attorney were present.

### MEETING MINUTES APPROVAL

The Commission reviewed the minutes from the October 28, 2020

It was moved by Soeprono; seconded by McPherson to:

**Approve the October 28, 2020 minutes**

Passed 5-0

### PUBLIC HEARING

**Agenda Item #1: DSR20-006 – Mercer Park Office Building Renovation - Public Hearing**

Chair Erwin opened the Public Hearing at 7:09pm.

There were no public comments provided to the Commission.

Vice Chair Brandt closed the public hearing at 7:10pm

### REGULAR BUSINESS

**Agenda Item #2: DSR20-006 – Mercer Park Office Building Renovation**

Robin Proebsting, Senior Planner, introduced the Mercer Park office building team.

Mark Gearhart, Ryan Companies the developer for the project, gave a presentation on the project and answered the Commissions questions regarding the project.

Robin Proebsting, Senior Planner, gave a brief staff presentation of the project.

The Commission reviewed and discussed the project.

It was moved by Zahr; seconded by Soeprono to:

Grant Mercer Park South, LLC design review approval for the proposed exterior modifications to the building located at 3003 77th Avenue SE, as shown in Exhibit 2 subject to the following conditions, and further conditioned as follows.

1. All aspects of the proposed development shall be in substantial conformance with the detail information submitted with this application (i.e. elevations, perspective drawings, colors, materials,

font, size of sign lettering and relationship and layout of the approved wording and graphics), as depicted by Exhibit 2.

2. If a building permit is required and the applicant has not submitted a complete application for a building permit within three years from the date of this notice, or within two years from the decision on appeal from the final design review decision, design review approval shall expire.

Passed 5-0

**PLANNED ABSENCES FOR FUTURE MEETINGS**

There were no planned absences.

**OTHER BUSINESS**

Jeff Thomas, Interim CPD Director, gave a brief department update to the Commission. Andrea Larson, Sr. Administrative Assistant, briefly spoke to the Commission regarding the start time of meetings.

**ANNOUNCEMENTS AND COMMUNICATIONS**

The next Design Commission meeting is TBD.

**ADJOURNMENT**

The meeting was adjourned at 8:25PM

# CITY OF MERCER ISLAND

## COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | [www.mercerisland.gov](http://www.mercerisland.gov)



## STAFF REPORT

### DESIGN COMMISSION DESIGN REVIEW

- Project:** DSR20-001 Xing Hua Mixed Use Building
- Description:** A request for design review approval of a new four-story mixed-use building in the Town Center zone.
- Applicant:** Scheer Chan and Lu Zhang of Johnston Architects
- Site Addresses:** 2570 77<sup>th</sup> Ave SE and 2885 78<sup>th</sup> Ave SE Mercer Island, WA 98040; Identified by King County Tax Parcels # 531510-1316 and 531510-1326
- Staff Contact:** Robin Proebsting, Senior Planner
- Zoning District:** Town Center (TC)
- Exhibits:**
1. Development Application, received on January 23, 2020.
  2. Notice of Application, dated January 27, 2020
  3. Plan set prepared by Johnston Architects, dated December 4, 2020
  4. Material Board prepared by Johnson Architects
  5. Landscape Material Board prepared by SiteWorkshop
  6. Mitigated Determination of Nonsignificance was issued by the City of Mercer Island on January 25, 2021
  7. Public Comment
    - a. Atencio
    - b. Bearse
    - c. Crosby
    - d. Department of Archeology & Historic Preservation
    - e. Eanes
    - f. Felker
    - g. Fletcher
    - h. Fletcher 2-16-2020
    - i. Goldbach
    - j. Gregson 2-7-2020
    - k. Gregson 2-12-2021
    - l. Johnson
    - m. Kasper

- n. Lund
  - o. Majewski
  - p. Morgan
  - q. Ong
  - r. Raisys
  - s. Sterling
  - t. Vaggione
8. Arborist Report prepared by American Forest Management, received on January 23, 2020.
  9. Street Improvement Memo prepared by Patrick Yamashita, City of Mercer Island City Engineer, dated August 19, 2020
  10. Transportation Impact Analysis prepared by Transpogroup, dated October 2020.
  11. Memorandum prepared by Michael Swenson and Darwin Li, Transpogroup, dated January 8, 2021
  12. Review memorandum prepared by John Davies, KPG, dated January 15, 2021
  13. Notice of Public Hearing
  14. Draft Declaration of Public Pedestrian Access Easement

## INTRODUCTION

### I. Project Description

The applicant has applied for Design Commission Design Review in order to obtain approval for a new four-story, mixed-use building located in the Town Center zone. The building is proposed to have a building height of 54 feet and will have a total above ground gross floor area of 162,990 sq ft. Parking spaces for 203 vehicles will be located below grade and will be accessed from SE 29<sup>th</sup> St. A service/loading area will be provided and will be accessed from 77<sup>th</sup> Ave SE. Tenant signage is not proposed with this application but a master sign plan for future signage has been provided.

The applicant received Design Commission feedback and guidance at two study sessions, held November 14, 2018 and January 23, 2019. This guidance has been incorporated into the design as shown in the revised plan set.

### II. Site Description and Context

The subject site is located at 2885 78<sup>th</sup> Ave SE and 2750 77<sup>th</sup> Ave SE and is currently development with one one-story and one two-story commercial buildings, plus associated surface parking, which are proposed to be demolished. The subject property is bordered by a fast-food restaurant with a drive-through to the north, 77<sup>th</sup> Ave SE and a grocery store to the west, a gas station to the south, and 78<sup>th</sup> Ave SE, a five-story mixed-use building and a grocery store to the east.

## FINDINGS OF FACT & CONCLUSIONS OF LAW

### III. Application Procedure

1. The application for Design Commission Design Review approval was submitted on January 23, 2020.

2. A notice of application was issued on January 27, 2020 and the 30-day comment period took place between January 27, 2020 and February 26, 2020 (Exhibit 2).
3. 17 public comments were received. Issues raised by the comments included:
  - a. Support for the increased businesses and amenities that are proposed to be offered by the development;
  - b. Concerns about traffic and parking impacts (addressed in items 6 and 7 below);
4. A notice of public hearing was issued on January 25, 2021 (Exhibit 13).
5. MICC 19.15.030 establishes Design Commission Design Review as a Tyle IV land use review, for which the decision authority is the Design Commission.

#### **IV. Public Comment**

6. Traffic impacts have been reviewed and analyzed in the Transportation Impact Analysis provided by the applicant (Exhibit 10, pages 1-21). The analysis reviews the impact by the proposed development on nearby intersections consistent with the methodology prescribed by the Institute of Transportation Engineers Trip Generation Manual. Analysis examining the impact of the proposed development is documented in the Transportation Impact Analysis (Exhibit 10) The analysis reviews the projected effects of the proposed development on nearby intersections and I-90 accesses and concludes that the proposed development would not cause any intersections to fall below the City's adopted levels of service. The analysis and conclusions were reviewed and approved by the City's third-party consultant (Exhibit 12).
7. Parking impacts have also been reviewed and analyzed in the TIA provided by the applicant (Exhibit 12). The TIA demonstrates that the City's minimum parking requirements for each of the proposed uses are met. The analysis in items 60 and 61 below further examines this issue.

#### **V. State Environmental Policy Act (SEPA)**

8. A Mitigated Determination of Nonsignificance was issued by the City of Mercer Island on January 25, 2021.

#### **VI. Consistency with Design Standards**

##### **9. MICC 19.11.010(D) - Design Vision.**

1. *Development and Design Standards. The development and design standards that follow are intended to enhance the Town Center for pedestrians and develop a sense of place. To accomplish this vision, new or redevelopment is encouraged to orient buildings toward the public right-of-way with buildings brought forward to the sidewalk or landscaped edge; parking placed behind buildings and in less visible areas or underground; design structures with varied mass and scale, modulation of heights and wall planes; and pedestrian through-block connections that will break up very large or long blocks for improved pedestrian circulation from one side of the block to the other side.*

**Staff Analysis:** The proposed building faces primarily faces 77th and 78th Aves, but also faces SE 29th St., orienting the building toward the public right-of-way. The building extends to the edge of the sidewalk on all three frontages. The proposal also includes landscaping between the building and the edge of the street. Parking for the building is located underground in the two lower floors of the building. The building also features modulated building heights and wall façades. A through-block connection with landscaping and public spaces is being provided along the northern property line, consistent with this standard.

2. *Function. The design of buildings, structures and streetscapes within the Town Center is intended to support a built environment that is convenient and accessible to pedestrians, motorists, bicyclists and public transit users. Development should enhance the Town Center as a vibrant, healthy, mixed use downtown that serves as the city's retail, business, social, cultural and entertainment center and ensures the commercial and economic vitality of the area. New or redevelopment should increase the attractions and pedestrian amenities that bring residents to the Town Center, including local shopping, services, offices, specialty retail, restaurants, residences, festivals, special events, and entertainment. Outdoor spaces should function as social settings for a variety of experiences, adding to the comfort of life in Mercer Island, while maintaining a human scale and an ability for easy pedestrian circulation.*

**Staff Analysis:** The proposed development is a mixed use building that will contain retail, restaurant and residential uses. The retail and restaurant uses together with the additional foot traffic resulting from the residents living in the new housing provided by this project help to increase the commercial and economic viability of the Town Center. The pedestrian plazas in addition to the through-block connection increase amenities to bring residents to the Town Center while adding to the comfort of life in Mercer Island maintaining a human scale and an ability for easy pedestrian circulation, consistent with this standard

3. *Site Features. New or redevelopment should include public amenities, such as storefronts with canopies, street trees, greenery, seating, fountains or water features, outdoor cafes, sculpture or other forms of art, and places for gathering and lingering. The use of materials, color, texture, form and massing, proportion, public amenities, mitigation of environmental impacts, landscaping and vegetation, and architectural detail should be incorporated in the design of new or redevelopment with the purpose of supporting a human scale, pedestrian-oriented Town Center. New or redevelopment shall be coordinated and consistent with the downtown street standards.*

**Staff Analysis:** The proposed development incorporates storefronts with canopies, street trees along street frontages, and seating, water features, landscaping and vegetation, outdoor art, and gathering places within the public plazas as well as the through-block connection. The project will incorporate various materials, colors textures, and form and massing, consistent with this standard.

4. *Pedestrian Orientation. Pedestrian-oriented and customer intensive retail businesses and offices are encouraged to locate on the street level to promote active use of sidewalks by pedestrians, thus increasing the activity level and economic viability of the Town Center. New or redevelopment should also enhance and support a range of transportation choices and be designed to maximize opportunities for alternative modes of transportation and maintain individual mobility. Even with a healthy variety of development in the Town Center, each*

*individual development or redevelopment project shall favor the pedestrian over the automobile in terms of site design, building placement and parking locations.*

**Staff Analysis:** The retail uses of the proposed building will be located on the street level, directly abutting public sidewalks, and the building's parking is located underground, both of which prioritize pedestrians over automobiles. 7 bike racks providing 14 bike parking spaces will be provided, promoting alternative modes of transportation. Lastly, a light rail station scheduled to open in 2023 will be within walking distance of the project, consistent with this standard.

10. **MICC 19.11.010(E) - Scale.** *The design of all structures shall consider how the structure and site development will be viewed from the street and adjacent properties. Scale is not simply the size of the buildings, it is the proportion of buildings in relationship to each other, to the street and to the pedestrian environment*

**Staff Analysis:** The proposed building is to contain 4 stories above ground and 2 levels of underground parking. The buildings surrounding the subject lot range in height from one story to five stories, and 4-5 story buildings are within sight of the subject property, making the proposed 4-story building proportionate to other Town Center buildings, consistent with this standard.

11. **MICC 19.11.010(F) - Form.** *Building forms shall not present visual mass impacts that are out of proportion to the adjoining structures, or that appear from the street or sidewalk as having unmodulated visual mass. Building additions should complement the original structure in design.*

**Staff Analysis:** The proposed building will be a new building and is proposed to be four stories in height, similar to the five story buildings to the east across 78<sup>th</sup> Ave SE and opposite the corner of SE 28<sup>th</sup> St & 78<sup>th</sup> Ave SE. The buildings mass will be broken up by various material types including wood, brick, and glazing. The building will be modulated horizontally to comply with the daylight plane standards of MICC 19.11.030(A)(7).

The proposed building contains modulations of forms on the horizontal plane. This modulation helps to reduce the impact of the mass of the structure, meeting this criterion.

12. **MICC 19.11.010(G) Style.** *The objectives and standards do not set or encourage a particular style of architecture or design theme. However, building and site design shall be pedestrian in scale and address design features such as sloped roof lines; distinctive building shapes; integration of art, textures, and patterns; treatment of pedestrian and public spaces; interface with the public right-of-way; landscaping; signage and facade treatments.*

**Staff Analysis:** The proposed building is pedestrian in scale and contains distinctive building shapes, textures, and patterns (discussed in items 43-57 of this staff report below). It provides pedestrian plazas and a through-block connection that contain landscaping and amenities including artwork. The building also interfaces with the right-of-way through the use of street trees and other landscaping, consistent with this standard.

13. **MICC 19.11.020(A) Land uses**

1. *Use Table by Subarea. Permitted and conditional uses are allowed in each subarea as shown in the use table below.*

| <b>Use</b>   | <b>TC-5</b> | <b>TC-4<br/>TC-4 Plus</b> | <b>TC-3</b> | <b>TCFM-3</b> | <b>TCMF-4</b> |
|--|-------------|---------------------------|-------------|---------------|---------------|
| <b>Residential dwelling</b>                                | <i>P</i>    | <i>P</i>                  | <i>P</i>    | <i>P</i>      | <i>P</i>      |
| <b>Restaurant</b>  | <i>P</i>    | <i>P</i>                  | <i>P</i>    | <i>P</i>      | <i>P</i>      |
| <b>Retail – small scale</b>                                | <i>P</i>    | <i>P</i>                  | <i>P</i>    | <i>P</i>      | <i>P</i>      |
| <i>C – Conditional Use; P – Permitted; N – Not Allowed</i> |             |                           |             |               |               |

**Staff Analysis:** The proposed mixed-use building is to be constructed within the TC-4 subarea of the Town Center. The building will provide a mix of residential, restaurant and retail uses (Exhibit 3). Residential, restaurant and retail uses are permitted uses pursuant to MICC 19.11.020(A)(1).

14. **MICC 19.11.020(B)(1) Required Ground Floor Uses.** *Retail, restaurant or personal service uses are required along retail street frontages, as shown on Figure 2 of MICC 19.11.020(B). If public parking is provided pursuant to MICC 19.11.130(B)(5), then the following applies:*
- A minimum of 40 percent of the ground floor street frontage shall be occupied by one or more of the following permitted uses: retail, restaurant, and/or personal service use.*
  - A maximum of 60 percent of each ground floor street frontage can be occupied by the following uses: hotel/motel, personal service, public facility, or office.*
  - Driveways, service and truck loading areas, parking garage entrances and lobbies shall not be included in calculating the required percentages of ground floor use.*

**Staff Analysis:** The ground floors along 77<sup>th</sup> Ave SE, 78<sup>th</sup> Ave SE, and SE 29<sup>th</sup> Street are subject to this requirement shown in Figure 2. Public parking is being provided, so the street frontages along the ground floors on 77<sup>th</sup> and 78<sup>th</sup> must contain a minimum of 40% retail, restaurant and/or personal service and a maximum 60% of hotel/motel, personal service, public facility, or office. The applicant is not proposing hotel/motel, personal service, public facility, or office uses. The ground floors along 77<sup>th</sup> Ave SE and 78<sup>th</sup> Ave SE are proposed to be 100% restaurant or retail use. The street frontage on SE 29<sup>th</sup> St is 41.8% retail use (Exhibit 3, sheet G005). This criterion is met.

15. **MICC 19.11.020(B)(3):** *No use shall occupy a continuous linear street frontage exceeding 60 feet in length.*

**Staff Analysis:** Retail frontage are proposed to vary in length between 27-feet and 48-feet wide, consistent with this standard (Exhibit 3, sheet G005).



16. **MICC 19.11.020(B)(4):** *The minimum required depth of storefronts along retail street frontages is 16 feet.*

**Staff Analysis:** The proposed depth of the commercial spaces will be a minimum of 26 ft 4 inches, consistent with this standard.

17. **MICC 19.11.020(D) - Accessory Uses.**

1. *Outdoor Storage and Display of Merchandise. The total area allowed for outdoor storage and/or merchandise display shall be less than five percent of the total gross square footage of the use; provided, however, that such area may exceed five percent if it is fenced, screened, and located in a manner that is acceptable to the design commission. This standard does not apply to temporary uses such as material storage during construction or street vendors.*
2. *Commerce on Public Property. Commerce on public property may be allowed pursuant to MICC 19.06.050.*
3. *Transit Facilities. Bus parking/loading space, and shelters and facilities for transit users should be integrated in the design of major new construction. Plans should be coordinated with transit providers to maximize the interface with community-wide and regional transit systems.*
4. *Bicycle Facilities. Parking and facilities that support bicycle use, including racks, covered and secured bike-storage areas, and in the case of office buildings, lockers and showers, should be included in the design of major new construction*
5. *Utility and Equipment Cabinets. Existing or proposed utility and equipment cabinets or boxes, including wireless communication facilities, shall be placed inside a building or placed underground, if physically feasible. In the event the city determines such location is not physically feasible, the utility and equipment cabinets must be screened by fencing, landscaping and/or stealth screening technologies so that they are not visible.*

**Staff Analysis:** The current proposal is not proposing outdoor storage and display merchandise or commerce on public property. Transit is not proposed in the immediate area of the subject property. A park and ride and bus stops and the future light rail station will be within walking distance of the property. 7 bicycle racks providing 14 bicycle parking space will be provided for the public (Exhibit 3, sheet L100). Utility and equipment cabinets, including two reduced pressure backflow devices, will be located inside the building, consistent with this standard (Exhibit 3, sheet A201). A recommended condition of approval has been added to this staff report, requiring that design details for utilities be provided for review at building permit review.

16. **MICC 19.11.020(E) - Objectionable or Hazardous Uses.** *No use shall be allowed which produces excessive odor, dust, smoke, cinders, gas, fumes, noise, vibration, refuse matter or water-carried waste. The standard for "excessive" shall be based on the average or normal production of these items by adjoining uses permitted in the vicinity of the proposed new use. A use is excessive if it is likely to unreasonably interfere with the ability of the adjoining*

property owners to utilize their property for working or living activities or if it is likely to unreasonably interfere with the ability of pedestrians and residents to remain in or enjoy the area.

**Staff Analysis:** The proposed building is to house residential, restaurant, and retail uses. The proposed use will not produce excessive odor, dust, smoke, cinders, gas, fumes, noise, vibration, refuse or water-carried waste. This criterion is met.

17. **MICC 19.11.030(A)(1) Bulk Regulations.** *The bulk regulations for properties in the Town Center are as follows.*

|  | TC-5  | TC-4<br>TC-4 Plus                   | TC-3    | TCMF-3  | TCMF-4  |
|--|---|-------------------------------------|---------|---------|---------|
| <b>Base Building Height Allowed</b>                          | 27 feet   | 27 feet                             | 27 feet | 27 feet | 27 feet |
| <b>Base Building Stories Allowed</b>                         | 2   | 2                                   | 2       | 2       | 2       |
| <b>Maximum Allowable Building Height</b>                     | 63 feet   | TC-4: 51 feet<br>TC-4 Plus: 63 feet | 39 feet | 39 feet | 51 feet |
|  | Up to 5 additional feet allowed for parapet and/or sloped roof.   |                                     |         |         |         |
| <b>Maximum Allowable Building Stories</b>                    | 5   | TC-4: 4<br>TC-4 Plus: 5             | 3       | 3       | 4       |
| <b>Ground Floor Height Adjacent to Streets</b>               | 15 feet minimum, 27 feet maximum  |                                     |         | n/a     | n/a     |
| <b>Setback from Property Lines</b>                           | No minimum <a href="#">setback</a> required except where necessary to provide <a href="#">landscaping</a> , <a href="#">facade</a> modulation, through-block connection or an <a href="#">easement</a> for required sidewalk width. |                                     |         |         |         |
| <b>Required Upper Story Setback (Average Daylight Plane)</b> | All <a href="#">street</a> frontages are subject to the average <a href="#">daylight plane</a> standards described in subsection <a href="#">(A)(7)</a> of this section.  |                                     |         |         |         |

**Staff Analysis:** The proposed building qualifies for the maximum allowable building height by providing affordable housing, green building features, stepping back of upper stories, providing open space, and providing a through-block pedestrian connection, pursuant to MICC 19.11.010(B). Since the subject site is located within the TC-4 subarea and proposes to utilize parapet walls and sloped roofs, the maximum allowable building height is 56 feet (51 feet allowed by zone, plus 5 feet for the use of parapet and/or sloped roofs). The proposed

building meets the height standard, as shown in the analysis in item 18, below. The building will be set back for landscaping, façade modulation, and a through-block connection.

**18. MICC 19.11.030(A)(3) - Calculation of Building Height.**

1. *The intent of the building height calculation in this section is to limit the visual mass of a building so that it does not appear to exceed the maximum height limit in subsection (A)(1) of this section.*
2. *The maximum allowable building height in subsection (A)(1) of this section shall be calculated as the vertical distance measured from the base of a building facade to the highest point of the roof structure excluding appurtenances. The base of the building facade shall be measured from the adjacent public sidewalk if applicable, or from the lower of existing or finished grade along building facades that are not adjacent to a public sidewalk.*
3. *If the bases of the opposite building facades are at approximately the same elevation, then the building height at any point between the facades can never exceed the maximum permitted building height. If the bases of the opposite building facades are not at approximately the same elevation, then the building must be configured to go down in height as between the higher and lower facades in a manner similar to Figure 4 or in an equivalent manner such that the average of the building heights calculated between the facades is approximately equal to or less than the maximum permitted building height.*

**Staff Analysis:** The proposed building includes parapet walls on the western and northern sides of the building (shown in the blue, orange, and purple portions of the diagram 2 on sheet G005 of Exhibit 3), and a sloped roof on the eastern and southern sides of the building, shown in the same diagram. The vertical distance measured from the base of the building facade to the highest point of the roof structure excluding appurtenances ranges from 49 feet to 54 feet, below the maximum allowable building height of 56 feet, consistent with this standard (Exhibit 3, sheet G005).

**19. MICC 19.11.030(A)(4) - Mezzanines.** *A mezzanine shall not be counted as a story for determining the allowable number of stories when constructed in accordance with the requirements of the construction codes set forth in MICC Title 17.*

**Staff Analysis:** The proposed building contains two mezzanines (Exhibit 3, sheets A201M and A204M). Excluding the mezzanines, the proposed building will have four stories. Four stories are allowed for buildings in the TC-4 subarea, therefore this criterion is met.

**20. MICC 19.11.030(A)(5) - Rooftop Appurtenances.** *Rooftop appurtenances are discouraged. If necessary, rooftop appurtenances may extend up to 10 feet above the maximum building height allowed, provided there is a functional need for the appurtenance and that functional need cannot be met with an appurtenance of a lesser height. This provision shall not be construed to allow building height in excess of the maximum limit. Rooftop appurtenances should be located at least 10 feet from the exterior edge of any building, and together with the screening provided for below, shall not cover more than 20 percent of the rooftop area.*

**Staff Analysis:** Rooftop appurtenances for the proposed building include an elevator shaft and air conditioning condensers, which will be at least 10 feet from the exterior edge of any building (Exhibit 3, sheet A205) and will be 10 feet or less above the maximum allowed building height (Exhibit 3, sheets A300 and A301), meeting this standard.

**21. MICC 19.11.030(A)(6) - Setbacks.**

- a. *78<sup>th</sup> Ave SE. All structures shall be set back so that space is provided for at least 15 feet of sidewalk between the structure and the face of the street curb, excluding locations where the curblineline is interrupted by parking pockets. Additional setbacks are encouraged to provide space for more pedestrian-oriented activities and to accommodate street trees and parking pockets.*
- b. *All Other Public Rights-of-Way. All structures shall be set back so that space is provided for at least 12 feet of sidewalk between the structure and the face of the street curb, excluding locations where the curblineline is interrupted by parking pockets. Additional setbacks along SE 32nd Street are encouraged to provide space for more pedestrian-oriented activities and to accommodate street trees and parking pockets.*

**Staff Analysis:** A 15-foot wide sidewalk is provided along the 78<sup>th</sup> Ave SE building frontage, except for locations where parking pockets are provided. A 12-foot wide sidewalk is provided along 77<sup>th</sup> Ave SE and a 13-foot wide sidewalk is provided along SE 29<sup>th</sup> St (Exhibit 3, sheets G005, C201, and C202), consistent with this standard.

**22. MICC 19.11.030(A)(7) - Average Daylight Plane.**

- a. *Block frontages must integrate average minimum upper level building setbacks to:*
  - i. *Reduce the perceived scale of building façades along streets;*
  - ii. *Increase the amount of light and are to adjacent streets;*
  - iii. *Promote modulation of building facades along streets that adds variety and provides visual interest;*
  - iv. *Encourage the integration of courtyards and open space along block frontages; and*
  - v. *Allow for flexibility in the design of block frontages along streets.*
- b. *The average minimum upper-level building setbacks shall comply with the following:*
  - i. *From a height of 25 feet at the front property line, buildings shall step back at a 45-degree angle up to the maximum height limit.*
  - ii. *Calculations for determining compliance with the average daylight plane standards shall utilize cubic volume (cubic feet) and shall consider only the first 30 feet of depth along block frontages.*
  - iii. *Only the development site's applicable block frontage may be used to determine compliance with the provisions herein.*

- iv. *Since the daylight plane standards above apply a minimum average, portions of block frontages may project beyond the daylight plane concept described in subsection (A)(7)(a) of this section, provided the applicable block frontage as a whole complies with the minimum average. Figure 5 illustrates the concept.*
- v. *For each cubic foot that part of a building protrudes beyond the daylight plane ("debit"), the project must include an equivalent cubic footage of open space ("credit") either on the ground floor adjacent to the street (such as a public open space, courtyard or through-block connection), and/or by setting portions of the building facade farther back beneath the daylight plane. For the purposes of this section, the cubic feet of a portion of a building is measured from floor to the top of the roof, and along the outside of exterior walls. The cubic feet of open or credit volume is measured from finished ground level or top of roof to an imaginary line representing the daylight plane as defined in subsection (A)(7)(b)(i) of this section. The intent is that the required open space or credit volume be open to the sky; however, the design commission has discretion to allow eaves, pedestrian weather protection and landscaping within the required open space as long as the objectives in subsection (A)(7)(a) of this section are met.*
- vi. *Daylight plane debits and credits shall be applied on the same block frontage and cannot be transferred to other block frontages.*

**Staff Analysis:** The applicant has correctly applied the method for determining upper-level stepbacks, beginning at 25 feet in height and stepping back at a 45-degree angle. The applicant has also correctly used cubic volume within the first 30 feet of depth along building frontages (Exhibit 3, sheet G006). Using these measurements, the applicant has demonstrated that the volume of the "credit" areas (187,051 sq ft) are greater than the volume of the "debit areas" (107,814 sq ft), meeting the Average Daylight Plane standard.

The proposed credit volume is within pedestrian plazas, a service road and under pedestrian weather protected areas. The expressed intent of the code is for the open space volume credited to the daylight plane calculations to be open to the sky. However, some of the credited area is proposed to be partially landscaped (Exhibit 3, sheet G006) and will provide weather protection to pedestrians and visitors to the building. The Design Commission has the discretion to allow pedestrian weather protection and landscaping within the open space as long as the objectives in subsection (A)(7)(a) are met.

The proposed design addresses the objectives in (A)(7)(a) by adding modulation and texture to the first story, breaking up the tall façade at ground level. Along SE 29<sup>th</sup> St, the weather protection will also provide flexibility in the block frontage by creating a main entrance framed by the overhead eave.

23. **MICC 19.11.040(B) - Affordable Housing Ratio.** *In order to qualify as significant affordable housing and in order to qualify for bonus building height over two stories, a development that contains dwelling units must provide affordable housing units equal to at least 10 percent of the total units in the development. The number of required affordable units shall be rounded up to the nearest whole number.*

**Staff Analysis:** The proposed building will contain 159 residential units. 10 percent of the total units, rounded up to the nearest whole number, is 16 units. 17 units are proposed to be affordable, exceeding the minimum of 10% (Exhibit 3, sheet G013). Therefore, this criterion is met.

24. **MICC 19.11.040(C) Affordability Level.** *For a three-story building the required affordable housing units must be affordable at the 70 percent of median income level for rental housing or 90 percent of median income level for ownership housing. For four- and five-story buildings, the required affordable housing units must be affordable at the 60 percent of median income level for rental housing or 90 percent of median income level for ownership housing.*

**Staff Analysis:** The applicant proposes to provide 17 residential units affordable at the 60 percent of median income level, exceeding this standard. A recommended condition of approval has been added to this staff report, requiring documentation that the proposed affordable units and affordability level be maintained.

25. **MICC 19.11.040(D) - Design Elements.**

1. *The affordable housing units shall generally be intermingled with all other dwelling units in the development and are not required to be located on the top story or bonus story.*
2. *The tenure (owner- or renter-occupied) of the affordable housing units shall be the same as the tenure of the rest of the dwelling units in the development.*
3. *The affordable housing units shall consist of a mix of the unit types (by number of bedrooms) that is generally proportionate to the mix of units in the overall development.*
4. *Affordable units may not be smaller than other units with the same number of bedrooms in the development, unless the code official determines that rooms within the affordable units provide adequate space for their intended use. In no case shall the affordable units be more than 10 percent smaller than the market-rate units having the same number of bedrooms in the development, or less than 500 sq ft if a studio unit, 600 sq ft if a one-bedroom unit, 800 sq ft if a two-bedroom unit, 1,000 sq ft if a three-bedroom unit, or 1,200 sq ft if a four-bedroom unit; whichever is less.*
5. *The exteriors of the affordable housing units must be compatible with and comparable in quality to the rest of the dwelling units in the development and shall comply with any design standards for the underlying zoning district. The interior finish of the affordable units shall, at a minimum, be comparable to entry level rental or ownership housing in the development.*

**Staff Analysis:** The affordable housing units will be intermingled with all other dwelling units and will be renter occupied like the other units, and the average size of the units designated as affordable is roughly the same as the units not designated as affordable. Roughly 10% of each unit type (by number of bedrooms) is proposed to be affordable (Exhibit 3, sheet G013). A recommended condition of approval has been added to this staff report, requiring that the exterior and interior finishes of the affordable units be the same as the other units. As conditioned, these criteria are met.

26. **MICC 19.11.040(E)** *The affordable housing units shall be available for occupancy in a time frame comparable to the availability of the rest of the dwelling units in the development.*

**Staff Analysis:** All of the units in the development will be available at the same time, as the affordable units are interspersed with the other units. This criterion is met.

27. **MICC 19.11.040(F)** *Prior to issuance of a building permit, an agreement in form and substance acceptable to the city attorney shall be executed providing price restrictions, homebuyer or tenant qualifications and long-term affordability. The agreement shall be recorded with King County department of records and elections and shall constitute a covenant running with the land. Affordable housing units shall remain as affordable housing for a minimum of 50 years from the date of initial owner occupancy for owner affordable units and for the life of the project for rental affordable housing units. At the sole discretion of the code official, the city may approve a shorter affordability time period for owner-occupied affordable housing, not to be less than 30 years, in order to meet federal financial underwriting guidelines.*

1. *The agreement shall provide the city sole discretion to establish monitoring fees for the affordable units, which fees may be adjusted over time to account for inflation. The purpose of any monitoring fee is for the review and processing of documents to maintain compliance with income and affordability restrictions of the affordability agreement.*
2. *The city may agree, at its sole discretion, to subordinate any affordable housing regulatory agreement for affordable ownership units for the purpose of enabling the owner to obtain financing for development of the property.*

**Staff Analysis:** The submittal of this agreement is a condition of approval. It will be required before issuance of the building permit. This criterion is met.

28. **MICC 19.11.050 Green building standards.** *Any major new construction shall meet the LEED Gold standard. Projects that are primarily residential (at least 50 percent of the gross floor area is composed of residential uses) may instead meet the Built Green 4 Star standard. The applicant shall provide proof of LEED or Built Green certification within 180 days of issuance of a final certificate of occupancy, or such later date as may be allowed by the code official for good cause, by submitting a report analyzing the extent credits were earned toward such rating. Failure to submit a timely report regarding LEED or Built Green ratings by the date required is a violation of this code.*

**Staff Analysis:** The applicant proposes to meet the standards of the Built Green 4 Star standard and has engaged a third party to verify that the finished building will meet this standard (Exhibit 3, sheet G007). This staff report contains a recommended condition of approval requiring that proof of Built Green certification be provided to the City as specified in this criterion.

29. **MICC 19.11.060(A) Minor Site Features.** *All major new construction regardless of its height shall have at least three minor site features that contribute to a well-balanced mix of features in that subarea as determined by the design commission. Minor site features may include, but are not limited to, the following:*

1. *Decorative Landmarks. Imaginative features that complement the building design and create visual focal points that give identity to an area, such as decorative clocks, special paving in pedestrian areas, art features, water features, drinking fountains, or creative designs for necessary building features or functions. Art should be integrated with the public street improvements. Examples include sculpture, murals, inlays, mosaics, friezes or bas-reliefs. The location of art shall provide for public view but not hinder pedestrian traffic.*
2. *Kiosks. Community-oriented kiosks, which may include bulletin boards and newsstands or racks, creatively designed and consolidated and placed in areas where large numbers of people gather, and which complement the site design and streetscape and reduces visual clutter.*
3. *Additional Sidewalk Setback. At least five feet of sidewalk width, in addition to the minimum sidewalk setback provided for in MICC 19.11.030(A)(6), may be provided along 78th Ave SE, along the entire street frontage of the development site. Such additional sidewalk should be designed to provide additional pedestrian access where parking pockets narrow the sidewalk, to accommodate street trees and benches, or to create spaces for more pedestrian-oriented activities such as outdoor dining or seating.*
4. *Impact on Public Open Spaces. Minor site features may not occupy space in a public open space to the extent that doing so reduces the actual space that is usable by the public below the minimum required area.*

**Staff Analysis:** Four minor site features are proposed by the design: 1) picnic tables open to public, 2) seating stones, 3) special paving, 4) catenary lights (Exhibit 3, sheets L100 and L101). The minor site features do not reduce the space that is usable by the public below the minimum required area; the proposed through-block connection is the proposed major site feature, and [this is proposed to have the full required 20-foot width]. The proposed minor site features contribute both aesthetic and utilitarian enhancement to the TC-4 subarea, and provide amenities that activate the through-block connection area.

30. **MICC 19.11.060(B) Major Site Features.** *Any major new construction in the TC-5, TC-4, TC-4 Plus or TC-3 subarea which exceeds the two-story base height and that includes or abuts a preferred through-block connection location shown on Figure 7 shall include a through-block connection subject to design commission determination that such connection is feasible and achievable. Any major new construction exceeding three stories in height in the TC-5, TC-4 or TC-4 Plus subarea shall include at least one of the following major site features, subject to design commission determination that such choices contribute to a well-balanced mix of features in that subarea:*
  1. *Through-block connection: Through-block pedestrian connections will qualify as a major site feature upon satisfaction of the development and design standards set forth in subsection E of this section. If the on-site area of the through block connection does not equal or exceed three percent of the gross floor area of the development, then public open space shall also be provided so that the total area of the through-block connection and public open space equals or exceeds three percent of the gross floor area of the development.*



2. *Public Open Space. Public open spaces will qualify as a major site feature upon satisfaction of the development and design standards set forth in subsection D of this section.*

**Staff Analysis:** The proposed building will exceed the two-story base height by being 4 stories in height with two mezzanines. The building site abuts a through-block connection location as shown on Figure 7. A through-block connection is being provided to meet the major site feature requirement. Public open space is not required to meet the major site feature requirement because the requirement is being met with the provision of a through-block connection. The through-block connection will be 5,722 sq ft which is larger than 3 percent of the 162,990 sq ft gross floor area of the proposed development, consistent with this standard (Exhibit 3, sheet G008).

31. **MICC 19.11.060(C) Other Site Features.** *The Design Commission may approve other major or minor site features in place of those listed in MICC 19.11.060(B) consistent with the provision of Chapter 19.11 MICC.*

1. *Major Site Features. Site features other than listed in subsection B of this section will only be considered as a major site feature if it is of equal or greater public benefit than one or more of the major site features listed in subsection B of this section. Underground or structured parking that supports park and ride use may be considered a major site feature. The amount of park and ride parking qualifying as a major site feature shall be determined by the design commission.*
2. *Minor Site Features. Examples of other minor site features include contribution to a public art or design project within close proximity to the new construction, such as the city's I-90 Artway; and/or transit-oriented development (TOD) amenities, such as facilities that support bicycle use.*

**Staff Analysis:** As discussed above, the proposed development provides a through-block connection that fulfills the requirement for a major site feature. Other site features are not required. This standard does not apply.

32. **MICC 19.11.060(E)(1) Through-Block Pedestrian Connections.** *Through-block connections are intended to provide convenient and safe public pedestrian routes through city blocks. Connections shall be located on the lots eligible for through-block pedestrian connections as shown on Figure 7 and in other locations based on the following criteria. The actual location of the pedestrian connection on the lot shall be determined by the design commission based upon the following criteria: (a) the connection will connect with existing or future rights-of-way, other pedestrian connections and/or public open spaces; (b) the connection has the effect of dividing a large city block approximately in the middle of such block in approximately the preferred locations shown on Figure 7; and (c) it is likely that the remainder of the subject connection will be developed in the future based upon development conditions on surrounding lots.*

**Staff Analysis:** The proposed through-block connection is located adjacent to an area shown on Figure 7 and connects the existing 77<sup>th</sup> Ave SE and 78<sup>th</sup> Ave SE rights-of-way. The connection divides the block almost halfway between SE 27<sup>th</sup> Street and SE 29<sup>th</sup> Street 29<sup>th</sup>.

The entirety of the through-block connection is being developed with this project. This standard is met.

**33. MICC 19.11.060(E)(2) Design Elements**

- a. The connection shall be the length necessary to provide access between existing right-of-way; provided, however, that if an applicant does not own all property necessary to make the connection. The connection shall be a minimum of 20 feet wide unless the design commission approves a lesser width because the applicant provides other site features equal or greater public benefit as determined by the design commission. The area devoted to a connection shall be in addition to the area devoted to any other minor site feature required pursuant to subsection A of this section. The primary purposes of the connection shall be as a means for pedestrian access between rights-of-way and secondarily as a public gathering place. Other uses, including pedestrian access to parking areas, lobby entrances, and stairs, must be secondary to and not conflict with the connection purpose and areas required for such uses shall not be included in calculating the minimum size.*
- b. The connection shall be at the same level as the public sidewalk and incorporate sufficient pedestrian amenities such as seating areas. Landscaping, art features, water features, weather protection and pedestrian scale lighting, as determined by the design commission.*
- c. The connection should use special paving, such as decorative colored concrete, concrete unit brick or stone pavers and coordinated design features such as uniform treatment of signing, landscaping and lighting over the entire length of the connection. Pervious paving is encouraged.*
- d. At least 50 percent of the ground level building frontage shall be designed and constructed to provide occupancy by active residential or nonresidential uses.*
- e. Where ground level residential uses front onto the through-block connection the building must feature at least one of the public/private space transition elements described below:*
  - i. Raised Deck or Porch Option. Provide at least a 60-square foot porch or deck raised at least one foot above grade. The porch or deck must be at least six feet wide, measured perpendicular to the building face. A low fence, rail or planting, which is two feet to four feet high, is encouraged between the through-block connection and the deck or porch. A porch roof or weather protection is encouraged. The design should consider accessibility.*
- f. Where ground level nonresidential uses front onto the through-block connection the building must feature:*
  - i. Transparent windows along 50 percent of the ground floor façade between 30 inches and 10 feet above the through-block connection.*
  - ii. Entrances facing the through-block connection are required for each tenant adjacent to the through-block connection.*

- g. No more than 50 percent of through-block connection ground level frontages may be occupied by vehicle parking areas. Where surface level parking areas are adjacent to the through-block connections, landscaping and building design features shall be included to added visual interest and screen vehicles while designing for safety of pedestrians along the connection.*
- h. The through-block connection may not be covered by a roof or story; provided portions of the public open space may be covered for weather protection, but not enclosed, and skybridges connecting two buildings are allowed if the skybridge is less than 20 feet wide and less than 14 feet in height.*
- i. All city approvals or permits for any structure shall be reviewed for compatibility with the alignment of any existing or approved through-block connection.*
- j. The connection shall be for exclusive pedestrian use any may not be used by vehicles except as necessary for maintenance or emergency purposes. Dumpsters and other service areas shall not be located within a through-block connection, but may be totally enclosed within a building adjacent to the through-block connection.*
- k. The design commission may approve a connection that is not in a straight line.*

**Staff Analysis:** The entirety of the through-block connection is being developed with this project, connecting the existing 77<sup>th</sup> Ave SE and 78<sup>th</sup> Ave SE rights-of-way. The through-block connection contains picnic tables and seating rocks, which are minor site features, however, the through-block connection meets the minimum area requirements even with the minor site features subtracted from the area (Exhibit 3, sheet L101). The through-block connection will be at the same level as adjacent public sidewalk (Exhibit 3, sheet L200) and will incorporate lighting and seating areas and special decorative paving (Exhibit 3, sheet L101). The entirety of the connection is fronted by residential and retail uses (Exhibit 3, sheet A301.1). The residential uses adjacent to the through-block connection are provided with raised porches that are more than 6-feet wide and at least 60 sq ft (Exhibit 3, sheet G008). 50 percent transparency of the ground floor façade between 30 inches and 10 feet above the connection has been provided (sheet G006 of Exhibit 3, sheet G006). The connection will not be used by vehicles, will not be covered, and will not provide access to dumpsters or other service areas.

#### 34. MICC 19.11.060(E)(3) – (4)

- 3. Connection Plan.** The applicant shall submit a plan with a minimum scale of one quarter inch equals one foot for the connection, which shall include a description of all of the following elements: landscaping; lighting; street furniture; color and materials; relationship to building frontage; specific locations of the connection and the relationship to and coordination with any public open space.
- 4. Public Access.** The entire connection should be open to the public 24 hours per day. Temporary closures will be allowed as necessary for maintenance purposes. Upon city approval, portions of the connection may be separated, as required by the State of

Washington Liquor and Cannabis Board or its successor agency, in order to allow outdoor seating for restaurant purposes.

**Staff Analysis:** The applicant has submitted a connection plan a ¼" = 1'0" scale showing landscaping, lighting, street furniture, color and materials, and relationship to building frontage (Exhibit 3, sheet L110). The entire connection will be open to the public 24 hours a day. If a future tenant wishes to separate a portion of the through-block connection pursuant to the Liquor and Cannabis Board regulations, that tenant must seek approval from the appropriate agencies. These standards are met.

35. **MICC 19.11.060(F) Legal Agreements Required for Public Open Space and Through-Block Pedestrian Connections.** *The owners of property to be used for public open space or through-block pedestrian connections shall retain fee ownership of that property and shall execute a legal agreement providing that such property is subject to a right of pedestrian use and access by the public. The agreement shall be in form and substance acceptable to the city attorney and be recorded with the King County recorder's office and the city clerk. The obligations under the agreement shall run with the land and shall terminate upon demolition of the structure for which the through-block connection or public open space was provided. No modifications to wither a public open space or through-block pedestrian connection shall be made without approval of the city other than ordinary repairs and maintenance.*

**Staff Analysis:** The applicant has provided a draft legal agreement that guarantees the right of pedestrian use and access by the public (Exhibit 14). This agreement has been preliminarily reviewed by and is acceptable to the city attorney. A recommended condition of approval has been added to this staff report, requiring that the final agreement be recorded prior to the issuance of certificate of occupancy for the building. This standard is met.

36. **MICC 19.11.070(B)(1) Development and Design Standards.**

1. *Landscaped Area Requirement. Landscaped surfaces equal to 25 percent of the development site shall be provided. All required plantings and landscaping shall be installed according to sound horticultural practices in a manner designed to encourage quick establishment and healthy plant growth, based on local and regional best landscaping practices. The following landscaped types and credits may be used to meet the standards:*
  - a. *Ground level planting beds qualify as landscaped surfaces at a 100 percent rate. Ground level planting area that supports trees (which will require deeper soil depths) may qualify for bonus credit. Specifically, planting areas that support a large tree (height greater than 30 feet at maturity) may be counted at a 200 percent rate (includes planting area under projected dripline at maturity) and planting areas that support a medium sized tree (height greater than 15 feet at maturity) may be counted at 150 percent rate. Terraced or other raised planting surfaces qualify as landscaped surfaces at the same rates as ground level planting beds depending on the soil depth (shallow soil depths capable of supporting only ground cover plants qualify at a 50 percent rate).*

- b. *Green Roof. Green roofs qualify as a landscaped surface at a 50 percent rate (i.e., two sq ft of green roof qualifies as one square foot of landscaped area). Green roof areas supporting large shrubs and trees may qualify for bonus credit (up to a 100 percent rate) as determined by the design commission depending on the planting's visibility.*
- c. *Green Walls/Trellises/Arbors.*
  - i. *Artistic green walls adjacent to ground level publicly accessible space with decorative patterns qualify as a landscaped surface at a 125 percent rate.*
  - ii. *Standard green walls qualify as landscaped surfaces at a 75 percent rate.*
  - iii. *Vine trellis/arbors/walls qualify as landscaped surfaces at a 50 percent rate. Planter areas must feature minimum soil depth necessary to maintain healthy vine growing conditions as determined by regional best landscaping practices.*

**Staff Analysis:** The site has an area of 63,780 sq ft, establishing a landscaped surface area requirement of 15,945 sq ft. The proposed design exceeds this standard by providing 19,446 sq ft of landscaping, using the methodology prescribed by this code subsection (Exhibit 3, sheet L501).

### 37. MICC 19.11.070(B)(2) Landscaping Standards.

- a. *Suitable Plant Species. Plant materials for required landscape surfaces shall be selected from a city approved palette of species and minimum size at time of planting. Plant materials should be native or adaptive drought-tolerant species.*
- b. *Trees and Ground Cover.*
  - i. *Prominent trees should be preserved to the extent feasible.*
  - ii. *Trees planted within five feet of public curbs or in paved areas shall be installed with root guards and grates to prevent physical damage to sidewalks, curbs, gutters, pavement and other public or private improvements.*
  - iii. *Ground cover shall be planted to have 100 percent ground cover in two years.*
  - iv. *Any tree cutting or pruning shall be consistent with Chapter 19.10 MICC.*
- c. *Soil Quality, Depth, and Volume. Applicants for new projects in Town Center must include the relevant provisions in construction details, based on regional best landscaping practices, including:*
  - i. *In planting beds: place three inches of compost and till to a minimum depth of eight inches.*
  - ii. *In turf areas: place one and three-quarters inches of compost and till to a minimum depth of eight inches.*

- iii. *Scarify (loosen) subsoil four inches below amended layer to produce a minimum soil depth of 12 inches of uncompacted soil.*
  - iv. *After planting: apply two to four inches of arborist wood chip mulch to planting beds. Coarse bark mulch may be used but has fewer benefits to plants and soil.*
- d. *Irrigation. All landscaped areas shall be provided with an approved automatic irrigation system consisting of waterlines, sprinklers designed to provide head to head coverage and to minimize overspray onto structures, walks and windows. Water conserving types of irrigation systems should be used.*
- e. *Maintenance. All landscaping shall be maintained in good condition. Maintenance shall include regular watering, mowing, pruning, clearance of debris and weeds, removal and replacement of dead plants and the repair and replacement of irrigation systems.*

**Staff Analysis:** A variety of native plant species are proposed to be used, as shown on the plant schedules on sheets L5.11-L5.14 of the plan set (Exhibit 3). Existing trees along the through-block connection are proposed to be retained (Exhibit 8). Street trees along 78th Ave SE are proposed for removal, consistent with guidance provided by the Design Commission at its Jan. 22, 2019 study session (Exhibit 3, sheet L001). Trees along 77th Ave SE, 78th Ave SE, and SE 29th St, where trees are within five feet of sidewalk, are proposed to be installed with root barriers (Exhibit 3, sheet L520) and protected with grates (Exhibit 3, sheet L101). Planting installation details are provided in Exhibit 3, sheet L520. Irrigation covering all landscaped areas is proposed in Exhibit 3, sheet L411. A recommended condition of approval has been added to this staff report, requiring the property owner to maintain the landscaping in good condition.

38. **MICC 19.11.070(B)(5) Building Entries.** *Building entries should be emphasized with special landscaping and/or paving in combination with lighting.*

**Staff Analysis:** The entrance at the corner of SE 29<sup>th</sup> St and 78<sup>th</sup> Ave SE will be emphasized with specialty concrete pavement, trees in decorative grates and will be bordered by planting areas. The entrance on 77<sup>th</sup> Ave SE next to the through-block connection will be emphasized with trees, a planting bed, and overhead catenary lighting, consistent with this standard (Exhibit 3, sheet L101).

39. **MICC 19.11.070(B)(6) Building Façades.** *Building Façade modulation and setbacks should include features such as courtyards, fountains and/or landscaping.*

**Staff Analysis:** The building modulation on 78<sup>th</sup> Ave SE includes an area with a tree, planting bed, and decorative concrete, and the building modulation at 77<sup>th</sup> Ave at the entrance to the through block connection provides a courtyard and landscaping, consistent with this standard (Exhibit 3, sheet L101).

40. **MICC 19.11.070(B)(7) Continuity.** *Landscaping should provide design continuity between the neighboring properties.*

**Staff Analysis:** The proposed landscaping is consistent with that of the neighboring properties, which also contain deciduous trees and planting beds.

**41. MICC 19.11.080(B) Development and Design Standards.**

1. *On-Site Service Areas. All on-site service areas, loading zones, outdoor storage areas, garbage collection and recycling areas and similar activities should be located in an area not visible from public streets. Consideration should be given to developing common service courts at the interior of blocks. Service areas should accommodate loading, trash bins, recycling facilities, food scrap composting areas, storage areas, utility cabinets, utility meters, transformers, etc. Service areas should be located and designed for easy access by service vehicles and for convenient access by each tenant. Any emissions of noise, vapor, heat or fumes should be mitigated. Loading activities should generally be concentrated and located where they will not create a nuisance for adjacent uses.*
2. *Garbage, Recycling Collection, Composting and Utility Areas. Garbage, recycling collection, food scrap composting and utility areas shall be enclosed and screened around their perimeter by a wall or fence at least seven feet high, concealed on the top and must have self-closing doors. If the area is adjacent to a public street or pedestrian alley, a landscaped planting strip, minimum three feet wide, shall be located on three sides of such facility. Any emissions of noise, vapor, heat or fumes should be mitigated.*
3. *Meters and Mechanical Units. Water meters, gas meters, electric meters, ground-mounted mechanical units and any other similar structures should be hidden from public view or screened.*
4. *Fences. Fences should be made of masonry, ornamental metal or wood, or some combination of the three. The use of chain link, plastic or wire fencing is prohibited.*

**Staff Analysis:** The proposed service areas, including loading, garbage, and recycling services, are located in an area perpendicular to 77th Ave. Garbage collection is proposed to be located indoors, connected to the loading zone, where they will not be visible from the street. Electrical meters will be located indoors (Exhibit 3, sheet A200P1). Air conditioning condensers will be located on the building roof and will be screened (Exhibit 3, sheet A205). No fencing is proposed.

**42. MICC 19.11.090(B) Lighting**

1. *Pedestrian-Scale Light Fixtures. Pedestrian-scale light fixtures should be incorporated into the site design to give visual variety from one building to the next and should blend with the architectural style.*
2. *Light Type. Lighting should use LED or similar minimum wattage light sources, which give more "natural" light. Non-color corrected low-pressure sodium and mercury vapor light sources are prohibited.*
3. *Building Entrances. All building entrances should be well lit to provide inviting access and safety.*

4. *Building-Mounted and Display Window Lights.* Building-mounted lights and display window lights should contribute to lighting of walkways in pedestrian areas.
5. *Parking Areas.* Parking area light fixtures should be designed to confine emitted light to the parking area. The height of the light fixtures should not exceed 16 feet. The design commission shall review and determine the adequacy of lighting in parking areas based on best practices.
6. *Neon Lighting.* Neon lighting may be used as a lighting element; provided, that the tubes are concealed and are an integral part of the building design. Neon tubes used to outline the building are prohibited.
7. *Shielding.* All lighting fixtures should be shielded or located to confine light spread within the site boundaries, to the extent possible, especially when adjacent to residential uses.

**Staff Analysis:** The proposed lighting fixtures include streetlights, wall mounted lights, catenary lights, and bollards. The proposed street lights will be shielded, and fixtures will be installed at heights that provide pedestrian scale lighting. LED and energy-saving light sources are proposed to be used (Exhibit 3, sheet L101, EP101). Building entry plazas will be well lit through a variety of measures including catenary lighting, wall mounted fixtures and LED integrated furnishings, and will have light levels between 1-4 foot candles, a typical level for outdoor security lighting (Exhibit 3, sheet EP100). Parking is proposed to be entirely underground, which will contain visible light. Neon lighting is not proposed. Lighting fixtures will be shielded (Exhibit 3, EP101).

#### 43. **MICC 19.11.100(B)(1) Building Design Development and Design Standard: Fenestration**

1. *Transparent Facades.* Articulated, transparent facades should be created along pedestrian rights-of-way. Highly tinted or mirrored glass windows shall not be allowed. Shades, blinds or screens that prevent pedestrian view into building spaces shall not be allowed, except where required or desired for privacy in dwelling units, hotel rooms and similar residential uses.
2. *Ground Floor Windows and Doors.* Major new construction along 77<sup>th</sup> Ave SE, 78<sup>th</sup> Ave SE and SE 27<sup>th</sup> Street, within tC-5, TC-4 and TC-4 Plus subareas, shall have at least 75 percent of the length of the ground floor façade between the height of two feet and seven feet devoted to windows and doors affording views into retail, office, or lobby space.
3. *Upper Story Facades.* Upper stories of buildings above two stories should maintain an expression line along the facade such as a setback, change of material, or a projection to reduce the perceived building mass. Upper story windows should be divided into individual units and not consist of a "ribbon" of glass. Upper story features such as balconies, roof decks, bay windows or upper story commercial activities should be used to visually connect upper story activity with the street.

**Staff Analysis:** The proposed building has been designed to create visual interest through the use of façade modulation, fenestration, and materials on all sides of the building (Exhibit 3, sheets 301.1 and 302.1). At least 75% transparency is provided on the ground floor facade



between 2 and 7 feet (Exhibit 3, sheet G006). Upper story facades will be distinguished through use of contrasting materials and colors as well as through distinct fenestration patterns. Upper stories will also have balconies (Exhibit 3, sheets 301.1 and 302.1), consistent with this code standard.

**44. MICC 19.11.100(B)(2) Street-Facing Façade Elements.** *All major new construction shall include at least seven of the following elements on the street-facing facades, both on the ground floor level and on other levels, as may be deemed desirable by the design commission taking into account the nature of the development and the site.*

- a. *Window and door treatments which embellish the façade.*
- b. *Decorative light fixtures.*
- c. *Unique façade treatment, such as decorative materials and design elements.*
- d. *Decorative painting.*
- e. *Trellises, railings, grates, grill work, or unique landscaping.*
- f. *Flower baskets supported by ornamental brackets.*
- g. *Recessed entrances.*
- h. *Balconies.*
- i. *Medallions.*
- j. *Belt courses.*
- k. *Decorative masonry and/or tilework.*
- l. *Unique, handcrafted pedestrian-scaled designs.*
- m. *Planter boxes with seasonal color.*
- n. *Projecting metal and glass canopy.*
- o. *Clerestories over storefront windows.*
- p. *Other elements as approved by the design commission.*

**Staff Analysis:** The proposed design includes the following seven façade elements, summarized below:

| <b>Façade Element</b>              | <b>Use in proposed design</b>  |
|------------------------------------|--|
| Window and door treatments         | The windows utilize asymmetrical divided lites, and the doors will include a transom window, accentuated by contrasting trim (Exhibit 3, sheets A301.1 and A302.1)                       |
| Decorative light fixtures          | Catenary lights will be incorporated into the through-block connection (Exhibit 3, sheet L100)   |
| Façade treatment                   | The façade will incorporate brick, metal panel and cement panels, wood siding, and concrete (Exhibit 3, sheets A301.1 and A302.1)  |
| Decorative paving                  | Decorative paving is proposed to be incorporated into the through-block connection, the 78 <sup>th</sup> Ave SE plaza, and the recessed residential lobby entry (Exhibit 3, sheet L101). |
| Recessed entrances                 | The residential lobby entry is recessed at SE 29 <sup>th</sup> St (Exhibit 3, sheet A201).   |
| Balconies on street-facing facades | Balconies are proposed along SE 29 <sup>th</sup> St, 77 <sup>th</sup> Ave SE   |

|  |   |
|--|---|
|  | and 78 <sup>th</sup> Ave SE (Exhibit 3, sheets A301.1 and A302.1).  |
| Unique handcrafted pedestrian-scaled designs | The streetscape will include decorative tree grates salvaged from the site (Exhibit 3, L101), as well as weather protection approximately 9-10 feet above grade, providing a sheltered pedestrian environment (Exhibit 3, sheets A301.1 and A302.1). A seating nook will be provided in the through-block connection (Exhibit 3, L101). |

45. **MICC 19.11.100(B)(3) Major Façade Modulation.** *Block frontages shall include at least one of the following features (subsection (B)(3)(a), (b) or (c) of this section) at intervals no greater than 120 feet to break up the massing of the block and add visual interest. The design commission may approve modifications or alternatives to the following features if the proposed modulation is at least as aesthetically acceptable as one of the following features:*

- a. *Vertical building modulation at least 20 feet deep and 30 feet wide. See example on Figure 10. For multi-story buildings, the modulation must extend through more than one-half of the building stories.*
- b. *Use of a significant contrasting vertical modulated design component featuring all of the following:*
  - i. *An extension through all stories above the first story fronting on the street. Exception: upper stories that are set back more than 10 feet horizontally from the facade are exempt.*
  - ii. *A change in building materials that effectively contrast from the rest of the façade.*
  - iii. *A modulation horizontally from the rest of the façade by an average of 24 inches.*
  - iv. *A design to provide roofline modulation.*
- c. *Building walls with contrasting articulation and roofline modulation that make it appear like two or more distinct buildings. See examples on Figure 11. To qualify for this option, these contrasting facades shall employ all of the following:*
  - i. *Different building materials and/or configuration of building materials; and*
  - ii. *Contrasting window design (sizes or configurations).*

**Staff Analysis:** The proposed design incorporates all three features described in this section. The building uses vertical building modulation in the form of recessed modulations that are 20 feet deep and 30 feet wide are provided along SE 29th Street and 78th Ave, the facades exceeding 120 feet. The portion of building along 77th Ave SE is 81 feet 2 inches long. Subsection (3)(b) is met by a strong saw-tooth modulation along 78th Ave, connecting to a series of sloped roofs that create a modulated roofline(Exhibit 3, sheet A303). The facade along 78th Ave SE is articulated to create a plaza, creating the appearance of two buildings, consistent with subsection (3)(c).

46. **MICC 19.11.100(B)(4) Minor Façade Modulation.** *All buildings shall include articulation features to reduce the perceived scale of large buildings and add visual interest to facades. See examples on Figure 13. At least three of the following features shall be employed at intervals*

no greater than 50 feet subject to design commission approval taking into account the nature of the development and the site:

- a. Window fenestration patterns and/or entries;
- b. Use of vertical piers/columns;
- c. Change in roofline;
- d. Change in building material or siding style;
- e. Vertical elements such as a trellis with plants, green wall, art element;
- f. Vertical building modulation of at least 12 inches in depth if tied to a change in roofline modulation or a change in building material, siding style, or color; or
- g. Other design techniques approved by the design commission that reinforce a pattern of small storefronts (or residences, if residential uses are used).

**Staff Analysis:** The proposed design incorporates changes in roofline, 12-inch vertical modulation throughout, and fenestration patterns both on the ground-floor commercial area, as well as the upper-floor residential area (Exhibit 3, sheets A301.1, A302.1, A303, and A304).

47. **MICC 19.11.100(B)(5) Walls.** *Untreated blank walls are prohibited. A blank wall is a wall (including building facades and retaining walls) over six feet in height, with a horizontal length greater than 15 feet that does not include a transparent window or door. Methods to treat blank walls can include but are not limited to:*

- a. *Display windows at least 16 inches of depth to allow for changeable displays. Tack on display cases shall not qualify as a blank wall treatment.*
- b. *A landscape planting bed at least five feet wide or a raised planter bed at least two feet high and three feet wide in front of the wall with planting materials that are sufficient to obscure or screen at least 60 percent of the wall's surface within three years.*
- c. *A vertical trellis in front of the wall with climbing vines or plant materials.*
- d. *A mural as approved by the design commission.*
- e. *Special building detailing that adds visual interest at a pedestrian scale as approved by the design commission. Such detailing must use a variety of surfaces; monotonous designs will not meet the purpose of the standards.*

**Staff Analysis:** No portions of walls will be blank and untreated for more than a 15-ft wide by 6-ft high space, consistent with this criterion (Exhibit 3, sheets A300.1 and A301.1).

48. **MICC 19.11.100(B)(6) Entrances.** *Building entrances should concentrate along the sidewalk and should be physically and visually inviting. Entrance doors shall be recessed from the facade surface to emphasize the entrance and provide a sheltered transition to the interior of the building. Special paving treatments and/or landscaping should be used to enhance the entrance. Pedestrian walkways with wheelchair ramps at least eight feet wide should be constructed between the sidewalk and building entrances.*

**Staff Analysis:** Entrances are provided for each of the commercial spaces, at the residential lobby on SE 29th St, and on the north east of the building along the through-block connection. Residential units along the through-block connection also have entrances along the through-block connection. Entrances are recessed from the building facade on the east side through the use of the vertical sawtooth modulation, on the north and south by being set behind lobby/courtyard areas, and on the west by being recessed under cantilevered upper stories (Exhibit 3, sheets G005 and A304). Special paving treatments are provided along the north and south entrances (Exhibit 3, sheet L101).

49. **MICC 19.11.100(B)(7) Roofs.** *Roofs shall relate to the building facade articulations. A variety of roof types and configurations should be used to add interest and reduce the perceived building mass. Varied parapet height or roofline is encouraged. Sloping roofs are also encouraged.*

**Staff Analysis:** A variety of sloping roofs in various configurations have been provided to reduce perceived building mass. The east façade proposes a vertically modulating façade that corresponds to an articulated roof line. Other portions of the building will use sloping roofs (Exhibit 3, sheets A303 and A304).

50. **MICC 19.11.100(B)(8) Residential Uses on Ground Floor.** *Where permitted, residential uses on the ground floor shall comply with the standards in MICC 19.11.060(E)(2)(e).*

**Staff Analysis:** The residential uses are provided with raised porches that are more than 6-feet wide and at least 60 sq ft (Exhibit 3, sheet G008).

51. **MICC 19.11.100(B)(9) Identity Emphasis.** *Public buildings, unique community structures and corner structures should have a prominent scale, emphasizing their identity.*

**Staff Analysis:** The proposed building is located on the corner of 78<sup>th</sup> Ave and SE 29<sup>th</sup> Street. This corner space establishes its identity by providing a courtyard framed by street trees, landscaped beds, and seating. A cantilevered portion of the second story, together with a canopy also emphasizes and distinguishes the corner.

52. **MICC 19.11.100(B)(10) Corner Lots.** *Buildings on corner lots should be oriented to the corner. Corner entries and/or architectural treatment should be used to emphasize the corner.*

**Staff Analysis:** The subject site contains a corner at the intersection of SE 29<sup>th</sup> St and 78<sup>th</sup> Ave SE, and the proposed building orients one of the residential lobby entrances toward the corner. This corner contains a courtyard with landscaping, seating, and public art. A second-floor cantilever also helps emphasize the corner, consistent with this standard.

53. **MICC 19.11.100(B)(11) Franchise Design.** *Prototype design for franchises should use customized components consistent with the design requirements for the Town Center that achieve the purpose, intent and vision set forth in MICC 19.11.010.*

**Staff Analysis:** The proposed building is not being constructed for a franchise. This criterion does not apply.

54. **MICC 19.11.100(B)(12) Harmony.** *The elements of a building should relate logically to each other, as well as to the surrounding buildings. A single building or complex should be stylistically consistent; architectural style, materials, colors and forms should all work together.*

**Staff Analysis:** The architectural style is consistently modern throughout all portions of the building, and the proposed materials are utilized to distinguish different portions of the development, breaking up monotony, while complementing each other across the development (Exhibit 3, sheets A303-309).

55. **MICC 19.11.100(B)(13) Weather Protection.** *Specially designed all-weather features that integrate weather protection systems at the sidewalk level of buildings to protect pedestrians from the effects of rain, wind, glare, shadow, reflection and sunlight and to make spending time outdoors feasible in all seasons. All major new construction shall have awnings, canopies, trellises, pergolas, covered arcades or all-weather features along 80 percent of a building's frontage along the retail frontages shown on Figure 2.*

- a. Any canopy or awning over a public sidewalk should be a permanent architectural element.
- b. Any canopy or awning over a public sidewalk should project out from the building facade a minimum horizontal width of six feet and be between eight to 12 feet above grade.
- c. Architectural details should not be concealed by awnings or canopies.
- d. Awning shapes should relate to the shape of the façade's architectural elements. The use of traditionally shaped awnings is encouraged.
- e. Vinyl or plastic awnings or canopies are prohibited.
- f. All awnings or canopies shall function to protect pedestrians from rain and other weather conditions.

**Staff Analysis:** The proposed building includes six-foot wide weather protection along 100 percent of the building's frontage, which is proposed to be a permanent architectural element (Exhibit 3, sheets A100.1, A303, and A304). The weather protection is proposed to be 10 feet above grade, consistent with this standard (Exhibit 3, sheet A400).

56. **MICC 19.11.100(B)(14) Courtyards.** *Courtyards are an outdoor covered or uncovered area easily accessible to the public at the same level as the public sidewalk or pedestrian connections. If a courtyard is being provided for purposes of meeting the public open space requirement in MICC 19.11.060(B), then the courtyard shall comply with the design standards for public open space in MICC 19.11.060(D). Other courtyards should:*

- a. *Be at least 10 feet in width, with a building façade on at least one side;*
- b. *Be covered with trees, ground cover, or other landscaping over at least 50 percent of its area;*
- c. *Including seating, special paving material, pedestrian-scale lighting and other pedestrian furnishings;*

- d. *Manage runoff from courtyard pavement with low impact development techniques when allowed by the code official; and*
- e. *Not be covered by a roof, story or skybridge; except that portions of the courtyard may be covered for weather protection, but not enclosed*

**Staff Analysis:** The proposed design does not contain public open space as described in MICC 19.11.060(B), because a through-block connection is being proposed to meet the Major Site Feature requirement instead of public open space. However, courtyards are proposed as part of the building design, located along 78th Ave SE (the "mid-block plaza") and the southeast corner of the building. The proposed courtyards exceed 10 feet in width and have a building facade on at least one side. Approximately 50% of the courtyard area is landscaped and special paving is proposed in these areas (Exhibit 3, sheet L101). Seating is proposed and neither courtyard will be enclosed (Exhibit 3, sheets A305 and A306).

**57. MICC 19.11.110(B) Materials and Colors.**

1. *Building Exteriors. Building exteriors should be constructed from high quality and durable materials. It is important that the materials and colors weather well and that building exteriors need minimal maintenance.*
2. *Regional Focus. Materials and colors should reflect the city's regional setting.*
3. *Attention to All Sides. Materials and colors should be used with cohesiveness and compatibility on all sides of a building.*
4. *Concrete Walls. Concrete walls should be architecturally treated. The treatment may include textured concrete such as exposed aggregate, sand blasting, stamping or color coating.*
5. *Harmonious Range of Colors. A harmonious range of colors should be used within the Town Center. Neon or very bright colors, which have the effect of unreasonably setting the building apart from other adjacent buildings on the street, should not be used.*
6. *Bright Colors. Bright colors should be used only for trim and accents if the use is consistent with the building design and other design requirements.*
7. *Undesired Materials. Beveled metal siding, mirrored glass, and vinyl siding should not be used. EIFS, stucco and similar materials should be limited to use as a minor building facade element.*
8. *Variation of Materials. A variation of building materials should be used to assist in the creation of a visually interesting experience.*

**Staff Analysis:** The proposed building is to be constructed of brick, wood siding, metal panel and cement panels, and wood cladding. Mesh screen metal panels will be used on the roof for screening (Exhibit 3, sheets A301.1 and A302.1). These materials are high quality and durable and are consistent with a Pacific Northwest look and feel. A consistent, harmonious materials palette is used on all side of the building, and different combinations of materials are used on

different facade, providing variation in materials while maintaining a coherent overall design (Exhibit 3, sheets A303 through A309). The material color palette includes white, black, red brick, and wood colored. These colors are consistent with other buildings within the Town Center. No neon nor bright colors are proposed for this project. None of the materials listed as undesired are proposed for this project.

58. **MICC 19.11.120 Street Standards.** *All major new construction abutting 77th Ave SE or 78th Ave SE shall improve the right-of-way adjacent to the property as required in Figure 14. Major new construction abutting all other streets shall improve the right-of-way adjacent to the property as required by the Mercer Island Town Center Streetscape Manual. The design commission may require or grant a modification to the nature or extent of any required street improvement for any of the following reasons upon recommendation by the city engineer:*
- A. *If unusual topographic or physical conditions preclude the construction of the improvements as required; or*
  - B. *If the required improvement is part of a larger project that has been scheduled for implementation in the city's six-year capital improvement program; or*
  - C. *If angled parking is required but parallel parking would enhance pedestrian, vehicle or bicycle safety, or result in a more desirable pedestrian environment; or*
  - D. *If other unusual circumstances preclude the construction of the improvements as required.*
59. **Staff Analysis:** A modification to the 77<sup>th</sup> Ave SE standard is recommended by the staff, pursuant to MICC 19.11.120(B) (Exhibit 9). The City Council added a project to the six-year Capital Improvement Program (CIP) to restripe and channelize 77th Ave SE between SE 32nd St and N Mercer Way, which will create on-street parking to comply with the street standard in MICC 19.11.120. Since street improvements for 77th Ave SE are already planned, and since a piecemeal restriping would create awkward transitions between the existing lane configuration and the configuration shown in this code section, staff recommend that the Design Commission require the developer to pay a fee in lieu of constructing the actual street improvement. The amount would be determined by the City Engineer based on a proportionate share of the corridor-wide improvements. Payment would be due prior to the issuance of the certificate of occupancy. A recommended condition of approval, reflecting these requirements, has been added to this staff report.

The proposed frontage improvements along 78<sup>th</sup> Ave SE provide a 15-foot sidewalk and 7-foot parking pocket, consistent with this standard, and existing travel lanes and median strip already meet this standard (Exhibit 3, sheets C200 and C201).

60. **MICC 19.11.130(B)(1) – (4) Parking, Vehicular and Pedestrian Circulation.**

| Retail<br>(Stalls per square foot) |                             |  | Office<br>(Stalls per gross square foot) |                      |                             | Residential<br>(Stalls per unit)  |                   |
|------------------------------------|-----------------------------|--|--|----------------------|-----------------------------|---|-------------------|
| General Retail                     | Restaurant/Deli/Bakery/Food | Hotel  | Financial Services                       | Health/Barber/Beauty | Other Professional Services |   | Senior            |
| 2 to 3 per 1,000                   | 5 to 10 per 1,000           | 1 per guest room plus 2/3 per emp. on shift, plus 5 per 1,000 sq ft of retail/office | 3 to 5 per 1,000                         | 4 to 5 per 1,000     | 3 to 5 per 1,000            | 1 to 1.4 per unit. Site specific deviations to allow less than 1 stall per unit may be allowed based on a detailed parking analysis and with approval of the code official. | 0.3 to 1 per unit |

- a. *Minimum Number of Parking Stalls Required. All new development and remodels greater than 10 percent of the existing gross floor area shall provide at least the number of parking stalls set forth in the following table:*
- b. *Determination within Range. The code official shall have the final authority to determine the number of parking stalls required within the ranges above to accommodate typical daily peak parking demand based upon the applicant's submittal of a completed site plan and detailed parking analysis.*
- c. *Underground or Structured Parking Required. If the applicant for a mixed use project or for a residential project provides more parking than one and one-quarter spaces per dwelling unit for any part of a project consisting of residential units or two and one-half spaces per 1,000 sq ft for any part of a project that is not used for residential units, then all such additional parking shall either be underground or on the second or higher story of structured parking. This subsection shall not apply to additional parking spaces that may be required pursuant to MICC 19.01.050.*
- d. *Parking Lot Configuration. Parking lot design shall conform to the standard stall diagrams set out in Appendix A to this title, unless alternative design standards are approved by the design commission and the city engineer. No more than 50 percent of the required off-street parking spaces for office and residential uses may be designed for accommodating compact vehicles. No more than 25 percent of the required off-street parking spaces for all other uses may be designed for accommodating compact vehicles. Such parking spaces must be clearly designated as compact stalls.*
- e. *Shared Parking.*



- i. *The amount of off-street parking required in subsection (B)(1)(a) of this section may be reduced by no more than 50 percent, as determined by the code official upon approval by the city engineer (and design commission for major new construction), when shared off-street parking facilities for two or more uses are proposed. A parking demand study shall be prepared by a professional traffic engineer and submitted by the applicant that documents parking demand for all land uses shall not significantly overlap and that uses will be served by adequate parking if shared parking reductions are authorized.*
- ii. *The determination whether shared parking will be allowed shall occur at the time the shared parking is proposed and when a change of use occurs.*
- iii. *If shared parking is requested, the parking facilities for the multiple uses shall be designed and developed as a single on-site common parking facility, or as a system of on-site and off-site facilities. If off-site facilities are used, all facilities shall be connected with improved pedestrian facilities and no building or use should be more than 1,320 feet walking distance from the most remote shared parking facility.*
- iv. *If the shared parking is on one or more different properties, a covenant or other contract for shared parking between the cooperating property owners must be approved by the code official. This covenant or contract shall be recorded with the King County department of records and elections division as a deed restriction on all properties and cannot be modified or revoked without the consent of the code official.*
- v. *If requirements for shared parking are violated, or the parking demand for shared parking exceeds the shared parking supply, the affected property owners shall provide a remedy satisfactory to the code official or provide the full amount of required off-street parking for each use, in accordance with the requirements of this chapter.*

**Staff Analysis:** Parking amounts, matching those required in the table are provided consistent with the City's code (Exhibit 10, page 26). While the minimum required number of parking spaces for each land use are provided and therefore no reduction in parking spaces is proposed, shared parking is also proposed in the form of "flex spaces", which can be used for either commercial or residential parking between 11am and 9pm (Exhibit 10, page 27, transpo memo). The City's contracted transportation engineer reviewed and agreed with the analysis provided by the applicant (Exhibit 12). The underground parking area is consistent with the standards in Appendix A (Exhibit 3, sheets A200P1 and A200P2). All parking will be in an underground parking garage, and no surface parking is proposed.

#### 61. MICC 19.11.130(B)(1)(i) Design of Structured Parking

- i. *Relationship to Main Building. Parking structures should be architecturally integrated or designed with an architectural theme similar to the main building.*
- ii. *Screening. A floor of a parking structure should not face the street. If the design commission determines that there is no feasible alternative to a street-facing floor of a parking structure, then the perimeter of the floor of a parking structure facing the street should have a screening mechanism designed to shield vehicles and any mechanical appurtenances from public views.*

- iii. *Street Side Edges. An architectural treatment, landscaping and/or space for pedestrian-oriented businesses along the street-side edges of the parking structure shall be provided.*
- iv. *Pedestrian Access. Where possible, pedestrian elevators and stairwells serving structured parking shall be located in a public lobby space or out onto an active public street.*

**Staff Analysis:** The parking structure is integrated into the proposed building by occupying the same footprint as the commercial and residential floor below ground. The parking areas are proposed to be entirely underground with an entrance ramp located on SE 29th St, effectively screening the parking. Stairs and elevators up to 78th Ave SE and the residential lobby at the corner of SE 29th St and 78th Ave SE are provided (Exhibit 3, sheets A200P1, A200P2, and A201).

62. **MICC 19.11.130(B)(2) Signs and Wayfinding.** *Signs indicating the location of parking available to the public shall be installed as approved by the design commission and city engineer. Such signs shall be installed at the entrance to the parking lot/garage along the street and within the parking lot/garage and shall comply with parking signage standards for the Town Center approved by the design commission and city engineer.*

**Staff Analysis:** An illuminated blade sign, identifying the parking garage entrance on SE 29<sup>th</sup> St, is proposed (Exhibit 3, sheet A100.1).

63. **MICC 19.11.130(B)(3) Loading Space.** *Off-street loading space with access to a public street shall be required adjacent to or within or underneath each building. Such loading space shall be of adequate size to accommodate the maximum number and size of vehicles simultaneously loaded or unloaded in connection with the business or businesses conducted in the building. No part of the vehicle or vehicles using the loading space may protrude into the public right-of-way.*

**Staff Analysis:** The applicants are providing an off-street loading space for the proposed building, located adjacent to the southern edge of the retail spaces along 77<sup>th</sup> Ave SE. Immediately adjacent to the loading space is the driveway to the refuse collection/ loading area. This area will be completely screened from the street.

64. **MICC 19.11.130(B)(5) Public Parking.** *On-site public parking consistent with and complying with the requirements of this section shall be provided in any existing development desiring to provide public parking consistent with the requirements of this section and in any new mixed use or nonresidential development. Nothing contained in this section shall be deemed to prevent a building owner from designating parking spaces as being available to the public exclusively for electric vehicle charging or as being available exclusively to an operator of a car sharing service that makes vehicles available for public use. Further, this section shall be interpreted and enforced in such manner as to avoid conflict with the shared parking section in subsection (B)(1)(e) of this section.*
- a. *All parking stalls provided for nonresidential uses, or if the primary use in the building is office then for nonoffice uses, or if the primary use of the building is hotel/motel then for non-hotel/motel uses, shall be available for public parking; provided, however,*

*parking stalls that the code official concludes were required to be dedicated for the use of a specific tenant in accordance with a written lease provision in effect as of January 12, 2013, and which were specifically signed for that purpose on January 12, 2013, may be excluded from this requirement until the earlier of the expiration, termination, modification or amendment of the lease.*

- b. Public parking stalls shall be available to motorists for such maximum time period as is determined by the owner, which shall not be less than two hours.*
- c. An owner may require that the motorist patronize at least one business in the development but otherwise the motorist will be entitled to leave the development without moving the parked vehicle, subject to the maximum time period specified by the owner as provided in subsection (B)(5)(b) of this section.*
- d. Once public parking is provided under this provision, it may not thereafter be eliminated unless the development changes use that does not require public parking.*
- e. Public parking under this provision shall not be required for a new mixed use or nonresidential development that is: (i) two stories or less, and (ii) no greater than 10 percent of the total gross floor area of all existing structures on the parcel as of October 30, 2015.*

**Staff Analysis:** All parking stalls provided for nonresidential uses are available for public parking (Exhibit 3, sheet A200P1). Parking time limits for commercial and flexible (i.e. the nonresidential spaces) are recommended to be addressed as part of the parking management plan (Exhibit 12) and a recommended condition of approval has been added to this staff report, requiring that the time limit for public parking spaces be specified in the parking management plan.

65. **MICC 19.11.140(B)(12) Master Sign Plan.** *When multiple signs for individual businesses are contemplated for a major construction project, a master sign plan stipulating the location and size of future signs will be required.*

**Staff Analysis:** A master sign plan, showing the proposed locations and types of signs, has been provided (Exhibit 3, sheet A100.1). The design is capable of meeting the standards in this section. For example, sufficient overhead clearance has been provided under the proposed weather protection to allow for projecting signs for future retail and restaurant tenants. None of the prohibited sign types are proposed.

66. **MICC 19.15.150(A):** *Land use review approvals shall expire three years from the date of notice of decision if the development proposal authorized by the land use review is not commenced. For the purposes of this section, the development proposal shall be considered established if construction or substantial progress toward construction of a development proposal for which a land use review approval has been granted must be undertaken within two years of the date of notice of decision of the land use review. Where no construction activities are involved, the use or activity shall be commenced within three years of the date of the notice of decision of the land use review.*

**Staff Analysis:** As conditioned, this criterion is met.

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### 3. RECOMMENDATION

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Based on the analysis and findings included herein, staff recommends to the Planning Commission the following:

**Recommended Motion:** Move to grant Johnston Architects design approval for the construction of a new mixed use building in the Town Center located at 2570 77<sup>th</sup> Ave SE and 2885 78<sup>th</sup> Ave SE, as shown in Exhibit 1, subject to the following conditions.

**Alternative Recommended Motion:** Move to grant Johnston Architects design approval for the construction of a new mixed use building in the Town Center located at 2570 77<sup>th</sup> Ave SE and 2885 78<sup>th</sup> Ave SE, as shown in Exhibit 1, subject to the following conditions and further conditioned as follows [specify conditions].

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#### 4. RECOMMENDED CONDITIONS OF APPROVAL

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1. All aspects of the proposed development shall be in substantial conformance with the detail information submitted with this application (i.e. elevations, perspective drawings, colors, materials, font, size of sign lettering and relationship and layout of the approved wording and graphics), as depicted by Exhibit 1.
2. If a building permit is required and the applicant has not submitted a complete application for a building permit within three years from the date of this notice, or within two years from the decision on appeal from the final design review decision, design review approval shall expire.
3. Prior to building permit issuance, the applicant shall provide documentation in a form acceptable to the City that the proposed affordable units and affordability level will be maintained, consistent with the requirements of MICC 19.11.040(C).
4. Prior to building permit issuance, the applicant shall provide documentation that the exterior and interior finishes of the affordable units will be the same as the other units as required by MICC 19.11.040(D)(5).
5. Prior to building permit issuance, the applicant shall submit an affordable housing agreement as required by MICC 19.11.040(F).
6. The applicant shall provide proof of Built Green 4 Star certification within 180 days of issuance of a final certificate of occupancy, or such later date as may be allowed by the code official for good cause, by submitting a report analyzing the extent credits were earned toward such rating.
7. Prior to the issuance of certificate of occupancy, an agreement providing the right of pedestrian use of the through-block connection in a form and substance acceptable to the city attorney shall be recorded with King County.
8. Prior to building permit issuance, the applicant shall provide a landscaping maintenance plan, documenting how all landscaping on the subject property will 1) be maintained in good condition by

the property owner, in a manner consistent with MICC 19.11.070(B)(2)(e), and 2) provide 100% cover of groundcover plants within two years, consistent with MICC 19.11.070(B)(2)(b)(iii).

9. Prior to the issuance of the certificate of occupancy, the applicant shall pay a fee in lieu of constructing street improvements on 77<sup>th</sup> Ave SE, pursuant to MICC 19.11.120(B). The amount shall be determined by the City Engineer based on a proportionate share of the corridor-wide improvements.
10. Prior to building permit issuance, a landscape plan showing branching height for all street trees on city property shall be provided.
11. Prior to building permit issuance, an updated parking management plan, specifying the proposed time limits for public parking spaces, shall be submitted. The time limits shall be consistent with MICC 19.11.130(B)(5)(b).
12. Prior to building permit issuance, all detail design for the utilities, including water, sewer and storm systems, and all design detail for frontage work in the public right of way and the private property shall be provided for review.

# CITY OF MERCER ISLAND

## COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | [www.mercergov.org](http://www.mercergov.org)



**CITY USE ONLY Exhibit 1**

Item (2)

PROJECT#

RECEIPT #

FEE

Date Received:

Received By:

### DEVELOPMENT APPLICATION

|   |  |  |
|---|--|--|
| STREET ADDRESS/LOCATION<br>2750 77TH AVE SE & 2885 78TH AVE SE MERCER ISLAND, 98040 |  | ZONE<br>TC-4   |
| COUNTY ASSESSOR PARCEL #'S<br>No. 7710250620  |  | PARCEL SIZE (SQ. FT.)<br>63,780  |
| PROPERTY OWNER (required)<br>Xing Hua Group Ltd.                                    | ADDRESS (required)<br>6770 Churchill St, Vancouver BC, V6P5B, Canada | CELL/OFFICE (required)<br>778-682-2826 / 778-999-9806<br>E-MAIL (required)<br>siyuxd150@gmail.com / tinalu0309@gmail.com |
| PROJECT CONTACT NAME<br>Scheer Chan / Lu Zhang                                      | ADDRESS<br>100 NE Northgate Way, Suite 200, Seattle, WA 98105        | CELL/OFFICE<br>206.523.6150<br>E-MAIL<br>Schan@johnstonarchitects.com / lzhang@johnstonarchitects.com                    |
| TENANT NAME   | ADDRESS  | CELL PHONE<br><br>E-MAIL   |

**DECLARATION:** I HEREBY STATE THAT I AM THE OWNER OF THE SUBJECT PROPERTY OR I HAVE BEEN AUTHORIZED BY THE OWNER(S) OF THE SUBJECT PROPERTY TO REPRESENT THIS APPLICATION, AND THAT THE INFORMATION FURNISHED BY ME IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

SIGNATURE

12/30/2019

DATE

**PROPOSED APPLICATION(S) AND CLEAR DESCRIPTION OF PROPOSAL** (PLEASE USE ADDITIONAL PAPER IF NEEDED):

**See the attached Project Narrative.**

ATTACH RESPONSE TO DECISION CRITERIA IF APPLICABLE

**CHECK TYPE OF LAND USE APPROVAL REQUESTED:**

| APPEALS  | DEVIATIONS   | SUBDIVISION SHORT PLAT  |
|--|--|---|
| <input type="checkbox"/> Building  | <input type="checkbox"/> Changes to Antenna requirements           | <input type="checkbox"/> Short Plat- Two Lots   |
| <input type="checkbox"/> Code Interpretation                                   | <input type="checkbox"/> Changes to Open Space                     | <input type="checkbox"/> Short Plat- Three Lots   |
| <input type="checkbox"/> Land use  | <input type="checkbox"/> Shoreline                                 | <input type="checkbox"/> Short Plat- Four Lots  |
| <input type="checkbox"/> Right-of-Way Use                                      | <input type="checkbox"/> Seasonal Development Limitation Waiver    | <input type="checkbox"/> Short Plat- Deviation of Acreage Limitation                    |
| CRITICAL AREAS   | ENVIRONMENTAL REVIEW (SEPA)  | OTHER LAND USE  |
| <input type="checkbox"/> Critical Area Review 1 (Hourly Rate 2hr Min)          | <input type="checkbox"/> SEPA Review (checklist)- Minor            | <input type="checkbox"/> Short Plat- Amendment  |
| <input type="checkbox"/> Critical Area Review 2 (Determination)                | <input checked="" type="checkbox"/> SEPA review (checklist)- Major | <input type="checkbox"/> Short Plat- Final Plat   |
| <input type="checkbox"/> Reasonable Use Exception                              | <input type="checkbox"/> Environmental Impact Statement            | OTHER LAND USE  |
| DESIGN REVIEW  | SHORELINE MANAGEMENT   | <input type="checkbox"/> Accessory Dwelling Unit  |
| <input type="checkbox"/> Pre Design Meeting                                    | <input type="checkbox"/> Exemption                                 | <input type="checkbox"/> Code Interpretation Request                                    |
| <input type="checkbox"/> Design Review (Code Official)                         | <input type="checkbox"/> Permit Revision                           | <input type="checkbox"/> Comprehensive Plan Amendment (CPA)                             |
| <input type="checkbox"/> Design Commission Study Session                       | <input type="checkbox"/> Shoreline Variance                        | <input type="checkbox"/> Conditional Use (CUP)  |
| <input type="checkbox"/> Design Review- Design Commission- Exterior Alteration | <input type="checkbox"/> Shoreline Conditional Use Permit          | <input type="checkbox"/> Lot Line Revision  |
| <input type="checkbox"/> Design Review- Design Commission- New Building        | <input type="checkbox"/> Substantial Development Permit            | <input type="checkbox"/> Noise Exception  |
| WIRELESS COMMUNICATION FACILITIES  | SUBDIVISION LONG PLAT  | <input type="checkbox"/> Reclassification of Property (Rezoning)                        |
| <input type="checkbox"/> Wireless Communications Facilities- 6409 Exemption    | <input type="checkbox"/> Long Plat- Preliminary                    | <input type="checkbox"/> Transportation Concurrency (see supplemental application form) |
| <input type="checkbox"/> New Wireless Communication Facility                   | <input type="checkbox"/> Long Plat- Alteration                     | <input type="checkbox"/> Planning Services (not associated with a permit or review)     |
|  | <input type="checkbox"/> Long Plat- Final Plat                     | <input type="checkbox"/> Zoning Code Text Amendment                                     |
|  | VARIANCES (Plus Hearing Examiner Fee)                              | <input type="checkbox"/> Request for letter   |
|  | <input type="checkbox"/> Variance                                  |   |



## Land Use Application

Project: 2885 Mercer Island Multi-family Project

### PROJECT NARRATIVE

This project adheres to the town center guidelines, ensuring continuity with neighboring properties. We are proposing a 164-unit mixed-use apartment building with 17 affordable housing units in the center of the Mercer Island retail core. The lot size is 63,780 sf. with two existing retail buildings on site. Covering most of an entire city block, the project is located between the QFC and Future Metropolitan Market, approximately 3 blocks south of interstate 90.

The proposed 4-story building (above grade) with a 51-foot maximum building height. The building façades are fully articulated to meet the daylight plane requirements and provide a pleasant pedestrian experience along 29<sup>th</sup> St. SE and 78<sup>th</sup> Ave. SE. The building entries are emphasized by plaza spaces which have both special paving and lighting. Four landscaped public plazas and one 20-foot wide through-block connection are proposed to enhance the street vibrancy.

The building provides parking area for both residential and retail uses. It would include two-level of below grade parking (201 stalls) with 168 residential stalls and 35 retail stalls. The parking entry is located at the SW corner along the 29<sup>th</sup> St. SE. The total compact stalls are 49 out of 201, which is less than 25% of the total. Please see the transportation Impact Analysis for more details.

We are proposing approximately 10,742 sf of retail space with more 75% façade transparency along the 77<sup>th</sup> Ave. SE and 78<sup>th</sup> Ave. SE. The majority of the retail is located on the east side of the site (facing QFC). The retail spaces are designed with a generous depth (>16 feet) to accommodate various retail uses.

In addition to all the street-facing amenity spaces, a private courtyard is proposed to further increase the future tenants' desire of green space and human interactions. A service loading zone is located at the alley side (77<sup>th</sup> Ave. SE) to ensure tenants move-in, food delivery and trash collection purposes.

Thank you,

Scheer Chan

[schan@johnstonarchitects.com](mailto:schan@johnstonarchitects.com)

# CITY OF MERCER ISLAND

## COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | [www.mercergov.org](http://www.mercergov.org)



## PUBLIC NOTICE OF APPLICATION

NOTICE IS HEREBY GIVEN for the application described below:

**File Nos.:** DSR20-001 (SEP20-002)

**Permit Type:** Type IV

**Description of Request:** A request for Design Review with SEPA review to construct a new mixed use building including 164 apartment units and retail space. The building will be 4 stories above grade with two levels of below ground parking.

**Applicant/ Owner:** Scheer Chan and Lu Zhang (Johnston Architects) / Xing Hua Group Ltd.

**Location of Property:** 2750 77<sup>th</sup> Ave SE and 2885 78<sup>th</sup> Ave SE Mercer Island WA 98040  
Identified by King County Assessor tax parcel numbers: 531510-1316 and 531510-1326

**SEPA Compliance:** Following review of the submitted State Environmental Policy Act (SEPA) checklist, an initial evaluation of the proposed project for probable significant adverse environmental impacts has been conducted. The City expects to issue a SEPA Determination of Non-Significance (DNS) for this project. The optional DNS process, as specified in Washington Administrative Code (WAC) 197-11-355, is being used. This may be your only opportunity to comment on the environmental impacts of the proposal. The proposal may include mitigation measures under applicable codes, and the project review process may incorporate or require mitigation measures regardless of whether an Environmental Impact Statement (EIS) is prepared. A copy of the subsequent threshold determination for this specific proposal may be obtained upon request.

**Project Documents:** Please follow this file path to access the associated documents for this project:  
<https://mieplan.mercergov.org/public/DSR20-001 & SEP20-002/>

**Written Comments:** **This may be the only opportunity to comment on the environmental impacts of the proposal.** Written comments on this proposal may be submitted to the City of Mercer Island either by email, in person, or by mail to the City of Mercer Island, 9611 SE 36th Street, Mercer Island, WA 98040-3732. Anyone may comment on the application, receive notice, and request a copy of the decision once made. Only those persons who submit written comments or participate at the public hearing (if a hearing is required) will be parties of record; and only parties of record will have the right to appeal.

**Public Hearing and Public Meeting:** Pursuant to MICC 19.15.030 Table A and B a public hearing is required for Type IV permits. A public hearing is not yet scheduled.

**Applicable Development Regulations:** Applications for Design Review are required to be processed as a Type IV land use reviews pursuant to Mercer Island City Code (MICC) 19.15.030. Processing requirements for Type IV land use reviews are further detailed in MICC 19.15.030. Design Review requirements are contained in MICC 19.11 and SEPA requirements are contained in MICC 19.21



**Other Associated Permits:**

SEP20-002 and a future building permit is anticipated.

**Environmental Documents:**

Copies of all studies and / or environmental documents are available through the above project documents link.

**Application Process Information:**

Date of Application: January 23, 2020  
 Determined to Be Complete: January 27, 2020  
 Bulletin Notice: January 27, 2020  
 Date Mailed: January 27, 2020  
 Date Posted on Site: January 27, 2020  
 Comment Period Ends: 5:00PM on February 26, 2020

The project is available for review at the City of Mercer Island, Community & Planning Development, 9611 SE 36<sup>th</sup> Street, Mercer Island, Washington.

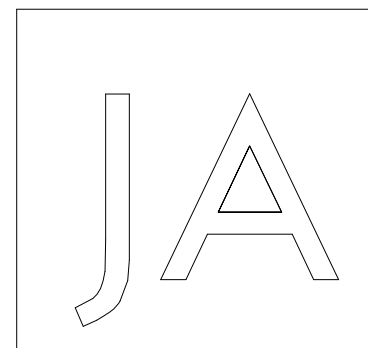
Project Contact:

Nicole Gaudette/ Senior Planner  
 Community Planning & Development  
 City of Mercer Island  
 9611 SE 36<sup>th</sup> Street  
 Mercer Island, WA 98040  
 (206) 275-7719

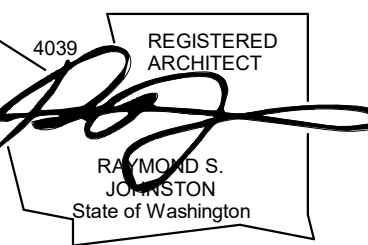
[nicole.gaudette@mercergov.org](mailto:nicole.gaudette@mercergov.org)







Johnston Architects, LLC  
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Suite 200  
Seattle, WA 98105  
t 206.523.9150  
f 206.523.9382



# MERCER ISLAND MIXED USE LAND USE APPLICATION



MERCER ISLAND  
MIXED USE  
3345 30TH AVE. SE  
MERCER ISLAND, WA 98040

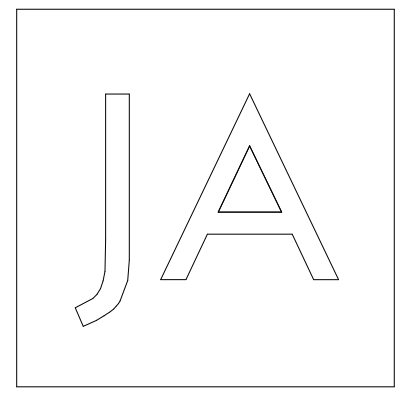
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|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

SHEET TITLE  
**COVER SHEET**

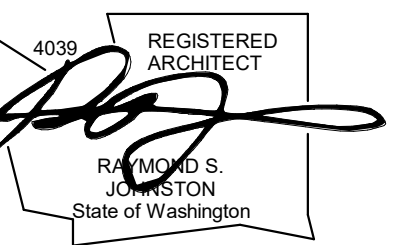
SHEET NO.  
**G001**

Drawn  
Checked





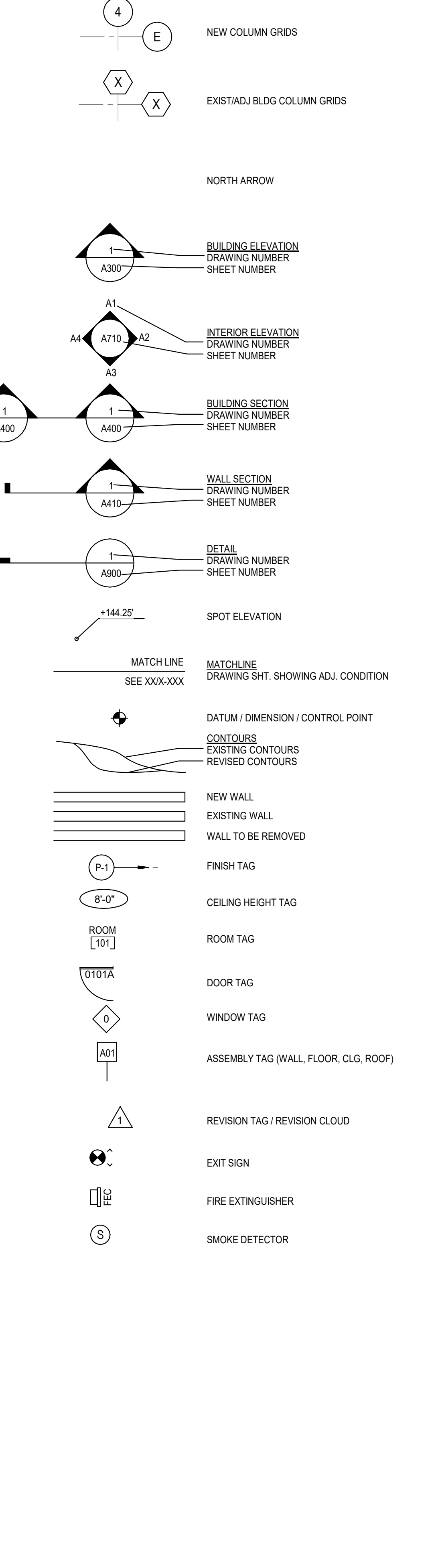
Johnston Architects, LLC  
100 NE Northlake Way,  
Suite 200  
Seattle, WA 98105  
1 206.523.6150  
1 206.523.9382



ABBREVIATIONS

Table of abbreviations and their corresponding full names, including terms like ANCHOR BOLT, ADDITIONAL, ADJUSTABLE, etc.

SYMBOL LEGEND



PROJECT INFORMATION

PROJECT ADDRESS: 2750 77TH AVE SE & 2885 78TH AVE SE  
MERCER ISLAND, 98040  
RELATED PERMITS: DESIGN REVIEW PERMIT - # DSR20-001  
SEPA PERMIT - #SRP20-022  
LOT LINE REVISION PERMIT - #SLB19-004  
BUILDING PERMIT - N/A

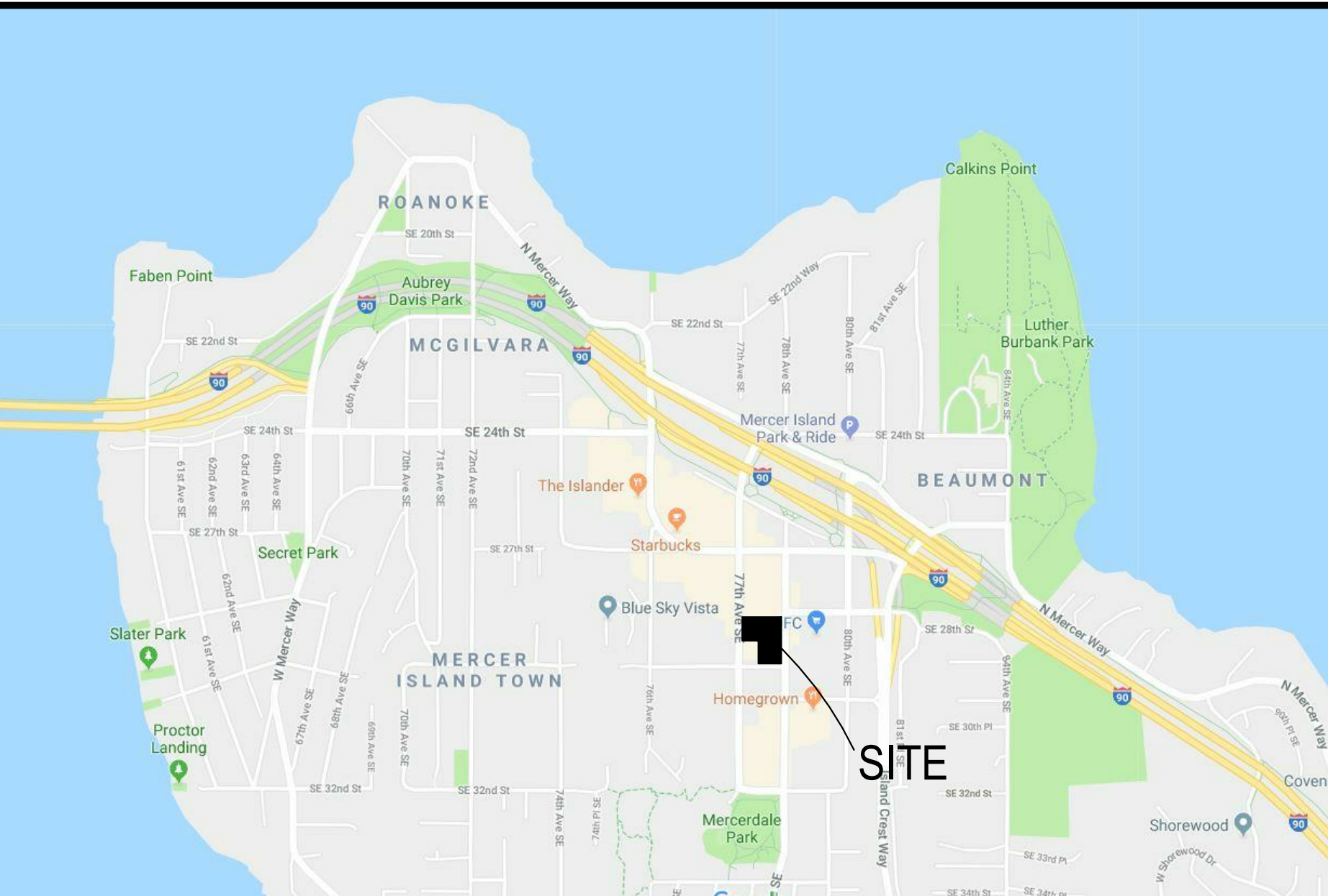
PROJECT DIRECTORY

- OWNER: Xing Hua Group Ltd.
ARCHITECT: Johnston Architects LLC
CIVIL: KPE Consulting Engineers
STRUCTURAL: PCS Structural Solutions
SURVEY: Bush, Reed & Hitzings, Inc.
TRANSPORTATION: Trianglo Group
ENVELOPE: BEE Consulting LLC
SHORING: Ground Support PLLC
ARCHAEOLOGY: Wilmette Cultural Resources Associates, Ltd.

DRAWING INDEX

Table listing drawing sheets and their descriptions, including 01-GENERAL INFORMATION, 02-SURVEY, 04-CIVIL, 06-LANDSCAPE, 08-ARCHITECTURAL, and 09-CONSTRUCTION GENERAL CONTRACTOR.

VICINITY MAP

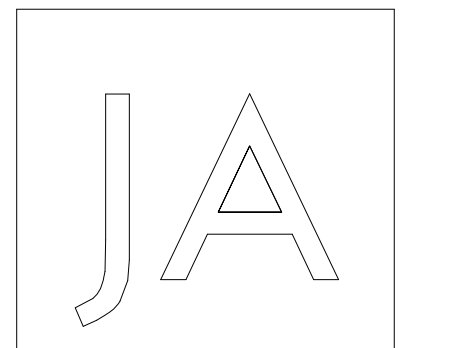


MERCER ISLAND  
MIXED USE  
2885 78TH AVE SE  
MERCER ISLAND, WA 98040

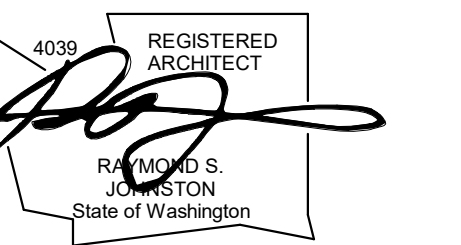
Table with columns for Date and Description, showing drawing issue dates and descriptions.

SHEET TITLE  
PROJECT INFORMATION  
SHEET NO.  
G002  
Drawn  
Checked





Johnston Architects, LLC
100 NE Northlake Way, Suite 200
Seattle, WA 98105
1 206.523.6150
1 206.523.9382



PROJECT INFORMATION

SITE ADDRESS
2885 78TH AVE SE, MERCER ISLAND, WA 98040
2770 77TH AVE SE, MERCER ISLAND, WA 98040
LOT SIZE
43,705 SF AND 20,075 SF
CODE
MERCER ISLAND CITY CODE
TITLE 19 UNIFIED LAND DEVELOPMENT CODE
ZONING
TC 4 (TOWN CENTER)

CITY STAFF DIRECTORY

PLANNING CONTACT
Robin Probsting
robin.probsting@mercergov.org
206-275-7717
BUILDING CONTACT
Don Cole
Don.Cole@mercergov.org
206-275-7701
CIVIL ENGINEERING
Rui Ding
Rui.Ding@mercergov.org
206-275-7703
ARBORIST
John Kenney
John.Kenney@mercergov.org
206-275-7713
FIRE
Jeremy Hicks
jeremy.hicks@mercergov.org
206-275-7607

PROJECT NARRATIVE

This project adheres to the town center guidelines, ensuring continuity with neighboring properties. We are proposing a 159-unit mixed-use apartment building with 16 affordable housing units in the heart of the Mercer Island Town Center core. The lot size is 63,780 sf, with two existing retail buildings on site. Covering most of an entire city block, the project is located between the QFC and future Metropolitan Market, approximately 3 blocks south of Interstate 90. The proposed 234,000 square foot 4-story building (above grade) has a 51-foot maximum building height. The building facades are fully articulated to meet the daylight plane requirements and provide a pleasant pedestrian experience along 29th St. SE and 78th Ave. SE. The building entries are emphasized by plaza spaces which have both special paving and lighting. Four landscaped public plazas and one 20-foot wide through-block connection are proposed to enhance the street vibrancy. The building provides parking area for both residential and retail uses. It includes two-level of below grade parking (201 stalls) with 157 residential stalls and 46 retail stalls. The parking entry is located at the SW corner along the 29th St. SE. The total compact stalls are 49 out of 201, which is less than 25% of the total. Please see the transportation Impact Analysis for more details. We are proposing approximately 10,742 sf of retail space with more 75% facade transparency along the 77th Ave. SE and 78th Ave. SE. The majority of the retail is located on the east side of the site (facing QFC). The retail spaces are designed with a generous depth (>16 feet) to accommodate various retail uses. In addition to all the street-facing amenity spaces, a private courtyard is proposed as an amenity to residents, to provide green space, and promote interaction. A service loading zone is located at the alley side (77th Ave. SE) for tenant move-in, food delivery and trash collection purposes.

MERCER ISLAND MIXED USE
2885 78TH AVE SE
MERCER ISLAND, WA 98040

Table with 2 columns: Date, Description. Rows for 12/24/2019, 06/26/2020, 12/04/2020.

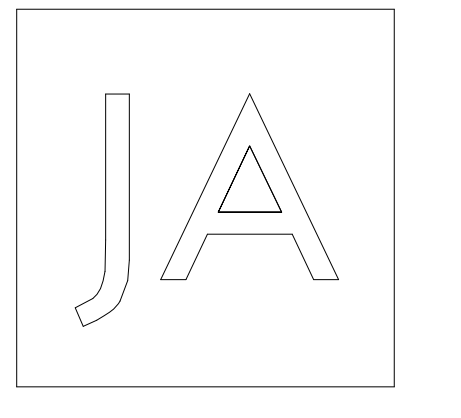
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ZONING CODE SUMMARY

SHEET NO.
G004
Drawn
Checked

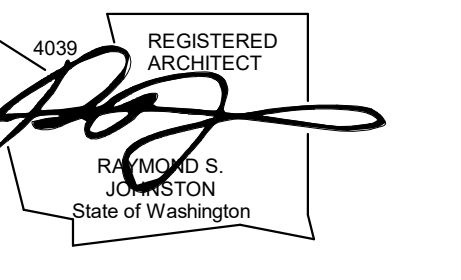
MICC TITLE 19 UNIFIED LAND DEVELOPMENT CODE table with columns: MICC, ZONING DESIGNATION, PERMITTED USES, REQUIRED GROUND FLOOR USES, ACCESSORY USES, BULK REGULATIONS, AFFORDABLE HOUSING, GREEN BUILDING STANDARDS, SITE DESIGN, GREENERY AND OUTDOOR SPACES, SCREENING, LIGHTING.

MICC TITLE 19 UNIFIED LAND DEVELOPMENT CODE table with columns: BUILDING DESIGN, MATERIALS AND COLOR, STREET STANDARDS, PARKING, VEHICULAR AND PEDESTRIAN CIRCULATION, SIGNS.





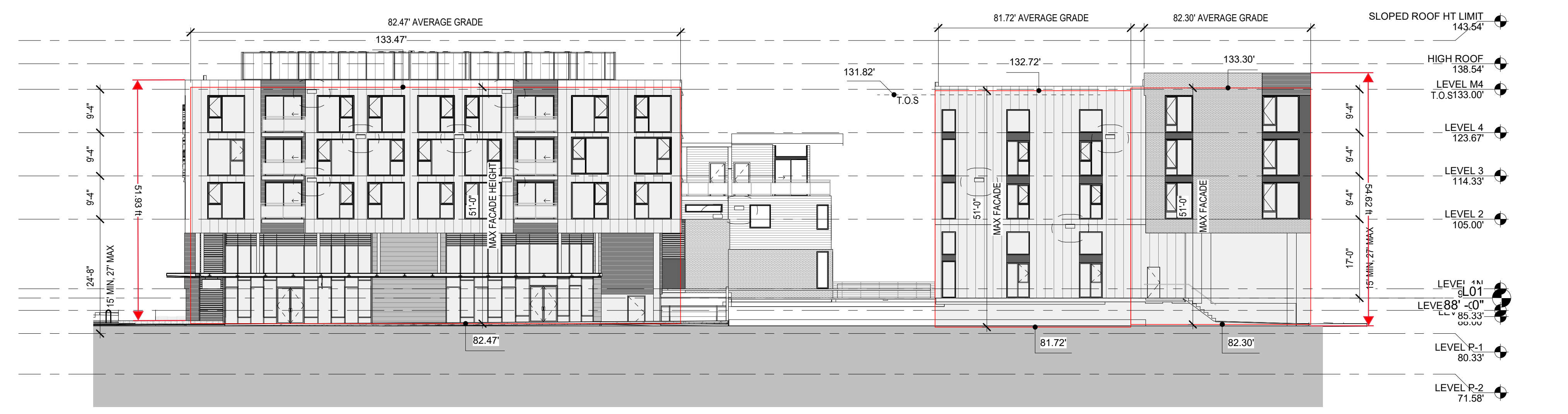
Johnston Architects, LLC  
100 NE Northlake Way,  
Suite 200  
Seattle, WA 98105  
1 206.523.6150  
1 206.523.6362



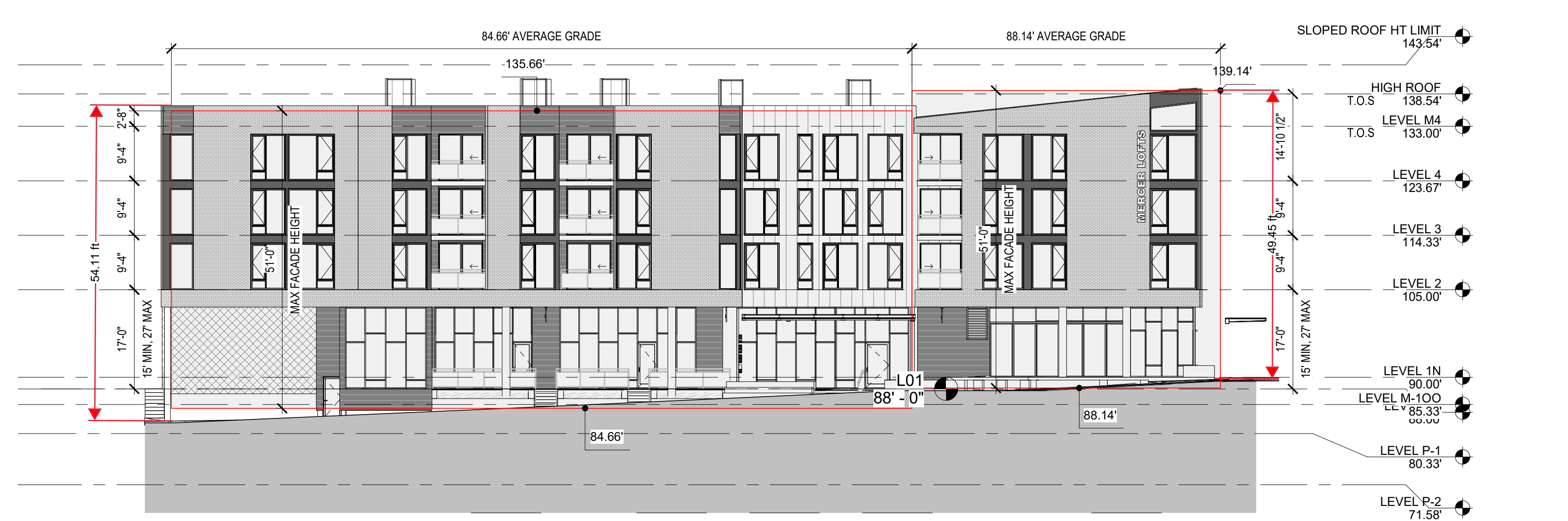
3 EAST ELEVATION (78TH AVE SE)  
HEIGHT LIMIT DIAGRAM  
1/16" = 1'-0"



4 NORTH ELEVATION  
(THROUGH-BLOCK CONNECTION)  
HEIGHT LIMIT DIAGRAM  
1/16" = 1'-0"



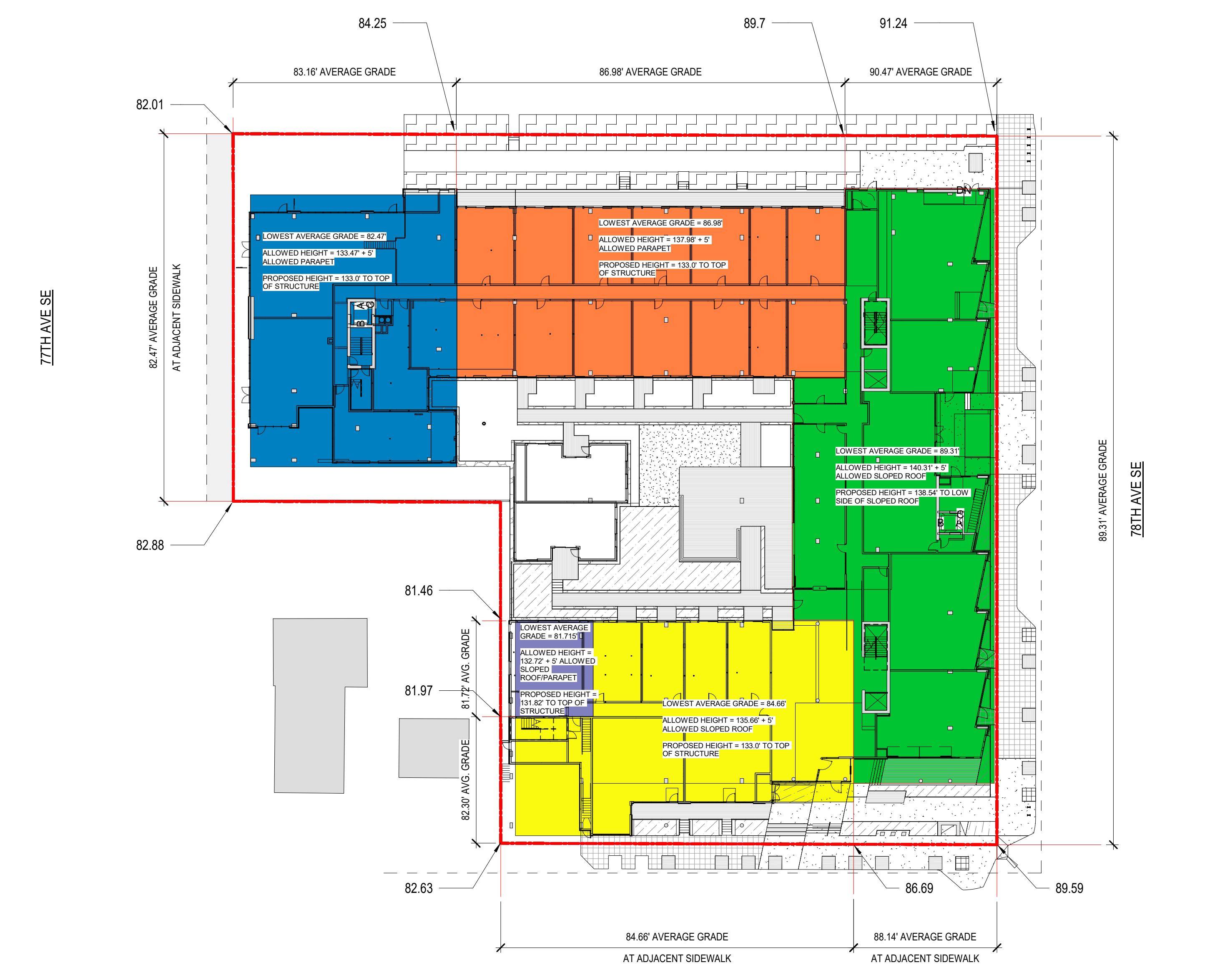
5 WEST ELEVATION (77TH AVE SE)  
HEIGHT LIMIT DIAGRAM  
1/16" = 1'-0"



6 SOUTH ELEVATION (SE 29TH ST)  
HEIGHT LIMIT DIAGRAM  
1/16" = 1'-0"



1 SITE PLAN - GROUND FLOOR  
USES  
1" = 30'-0"



2 SITE PLAN - AVERAGE GRADE  
DIAGRAM  
1" = 30'-0"

MICC 19.11.030.A.3.5 THE MAX ALLOWABLE BUILDING HEIGHT SHALL BE CALCULATED AS THE VERTICAL DISTANCE MEASURED FROM THE BASE OF THE A BUILDING FACADE TO THE HIGHEST POINT OF THE ROOF STRUCTURE EXCLUDING APPURTENANCES.  
THE BASE OF THE BUILDING FACADE SHALL BE MEASURED FROM THE ADJACENT PUBLIC SIDEWALK, OR FROM THE LOWER OF EXISTING OR FINISHED GRADE ALONG BUILDING FACADES THAT ARE NOT ADJACENT TO A PUBLIC SIDEWALK.

MERCER ISLAND  
MIXED USE

2945 29TH AVE SE  
MERCER ISLAND, WA 98040

| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

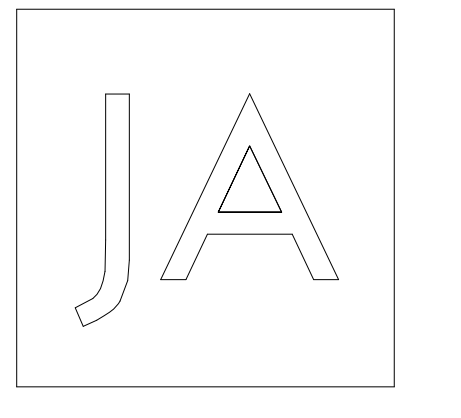
ZONING - CODE  
COMPLIANCE  
DIAGRAM

SHEET NO.

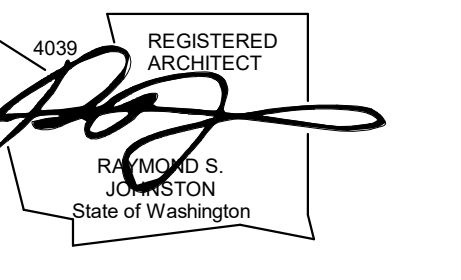
G005

Drawn Checked Author Checker





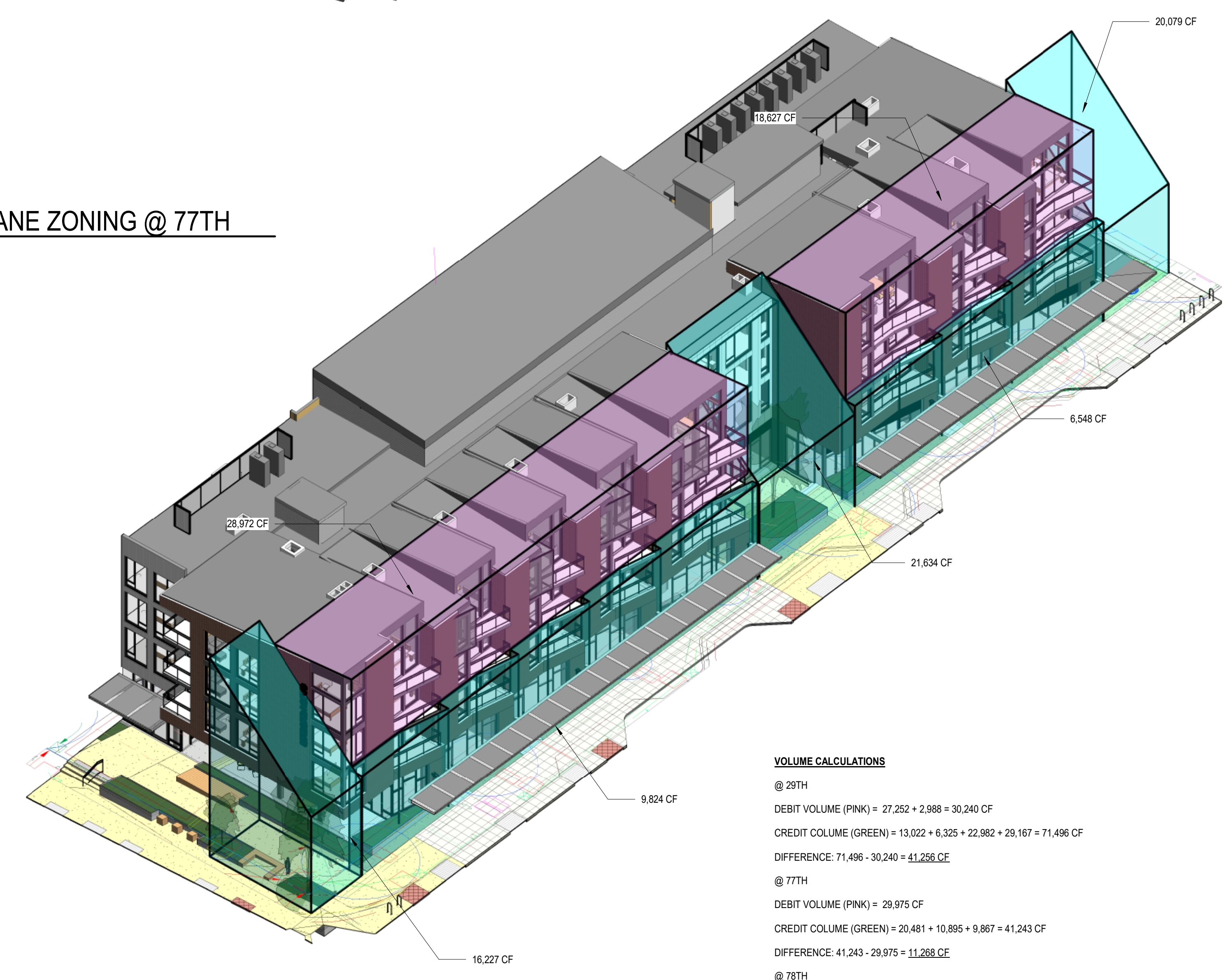
Johnston Architects, LLC  
 100 NE Northlake Way,  
 Suite 200  
 Seattle, WA 98105  
 t 206.523.9150  
 f 206.523.9382



5 DAYLIGHT PLANE ZONING @ 29TH



6 DAYLIGHT PLANE ZONING @ 77TH



8 DAYLIGHT PLANE ZONING @ 78TH

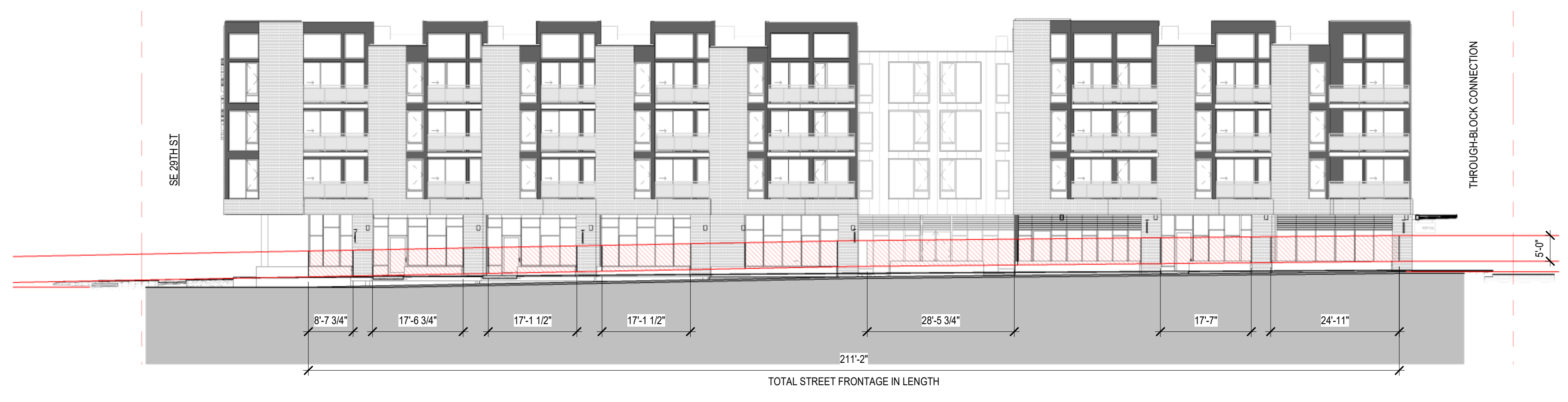
**VOLUME CALCULATIONS**

@ 29TH  
 DEBIT VOLUME (PINK) = 27,252 + 2,888 = 30,240 CF  
 CREDIT VOLUME (GREEN) = 13,022 + 6,325 + 22,992 + 29,167 = 71,496 CF  
 DIFFERENCE: 71,496 - 30,240 = 41,256 CF

@ 77TH  
 DEBIT VOLUME (PINK) = 20,481 CF  
 CREDIT VOLUME (GREEN) = 20,481 + 10,895 + 9,867 + 41,243 CF  
 DIFFERENCE: 41,243 - 20,481 = 20,762 CF

@ 78TH  
 DEBIT VOLUME (PINK) = 20,972 + 18,827 = 47,599 CF  
 CREDIT VOLUME (GREEN) = 16,227 + 9,824 + 21,834 + 6,548 + 20,079 = 74,312 CF  
 DIFFERENCE: 74,312 - 47,599 = 26,713 CF

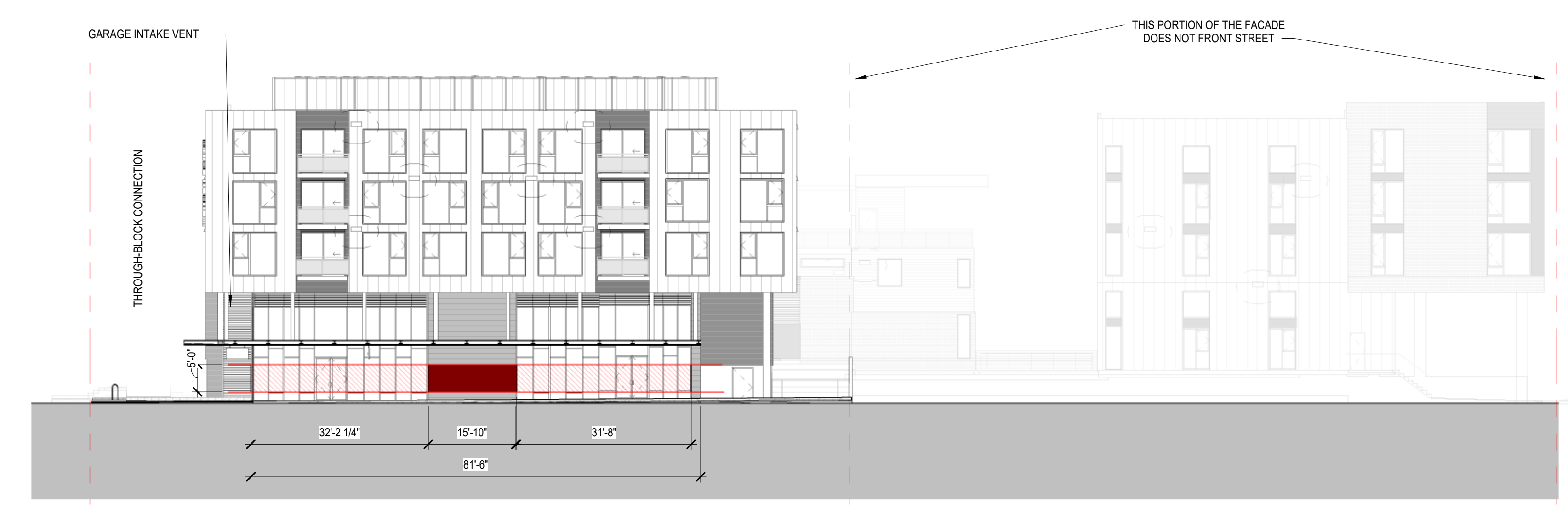
**TOTAL CREDIT VOLUME = 79,212 CF**



1 EAST ELEVATION (78TH AVE SE) - TRANSPARENCY  
 1/16" = 1'-0"



2 SOUTH ELEVATION (SE 29TH ST) - TRANSPARENCY  
 1/16" = 1'-0"



3 WEST ELEVATION (77TH AVE SE) - TRANSPARENCY  
 1/16" = 1'-0"



4 NORTH ELEVATION (THROUGH-BLOCK CONNECTION) - TRANSPARENCY  
 1/16" = 1'-0"

**MERCER ISLAND MIXED USE**  
 2685 97TH AVE SE  
 MERCER ISLAND, WA 98040

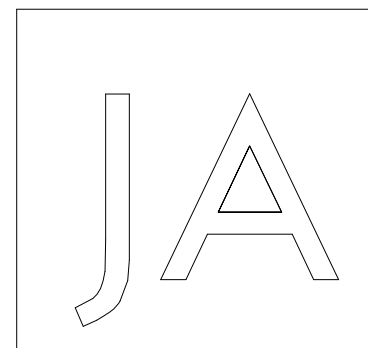
| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

SHEET TITLE  
**ZONING - CODE COMPLIANCE DIAGRAM**

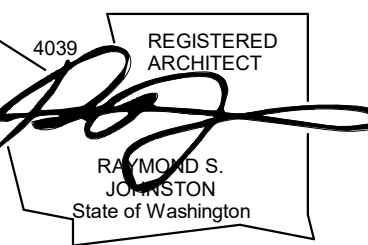
SHEET NO.  
**G006**

Drawn  
 Checked





Johnston Architects, LLC  
 100 NE Northlake Way,  
 Suite 200  
 Seattle, WA 98105  
 T 206.523.6150  
 F 206.523.6382



### Green Building Commitment



**Evergreen Certified, LLC**  
 Lisa Henry, Verifier/Builder Support Manager  
 502 Rainier Ave South, Suite 206  
 Seattle WA 98144  
 C: 219-877-8964 F: 206-428-7126  
[Lisa@evergreencertified.com](mailto:Lisa@evergreencertified.com)  
[www.evergreencertified.com](http://www.evergreencertified.com)

April 3, 2020

City of Mercer Island  
 Development Services  
 9611 SE 36<sup>th</sup> St  
 Mercer Island, WA 98040

|                     |   |
|---------------------|---|
| Project Address     | 2885 78th Ave SE                          |
| Developer           | Xing Hua Group, LTD                       |
| Unit(s) Type        | 138 units – studios, 1- 2- & 3 - bedrooms |
| Unit Floor Area     | 382 – 1228 sf                             |
| Energy Modeling     | 20% better than 2015 WSEC code            |
| Built Green Credits | 476                                       |

In reference to the above proposed project, Evergreen Certified LLC has contracted with the developer to provide consultation and verification services for a Built Green 4-star or better rating from the Master Builders Association of King and Snohomish Counties.

As a Built Green and NW Energy Star Third Party Verifier, Evergreen Certified will inspect the project at framing, insulation, and finish stages. As part of the Built Green verification process, we will confirm all credits claimed by the builder on the Built Green checklist and review the energy model to assure alignment with actual systems installed. Evergreen Certified will perform required plumbing fixture flow and ventilation fan flow testing as required by the Built Green program. Upon project completion, we will prepare and submit a final report to the Built Green program for review and certification.

To meet the proposed 20% better performance that energy code requirement for Built Green, we propose doing the following:

- U-0.30 windows, R-21 walls, R-38 ceiling
- Ductless mini-split space heating/cooling with zoned programmable thermostats
- Centralized HE gas tank water heating
- Energy Star appliances
- Panasonic exhaust fans
- High efficacy lighting
- WaterSense Certified - 1.75GPM showerheads, 1.5GPM lavatory faucets, 1.28GPF toilets

I am verifying this project to meet or exceed Built Green 4 Star. The preliminary Built Green checklist is attached for your reference. If you have any questions or suggestions, please call or e-mail me anytime.

Thank you,

Lisa Henry, Built Green Verifier/Builder Support Manager

**MERCER ISLAND  
 MIXED USE**  
 2885 78TH AVE SE  
 MERCER ISLAND, WA 98040

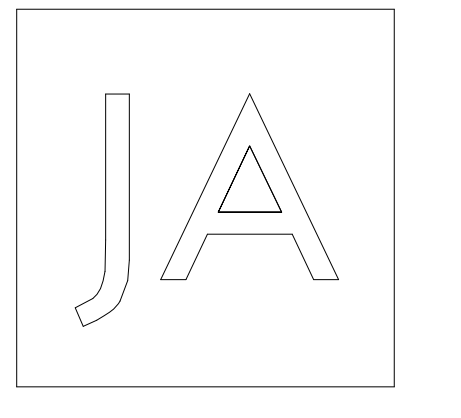
| DRAWING ISSUE |                     |
|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

SHEET TITLE  
**BUILT GREEN  
 COMMITMENT**

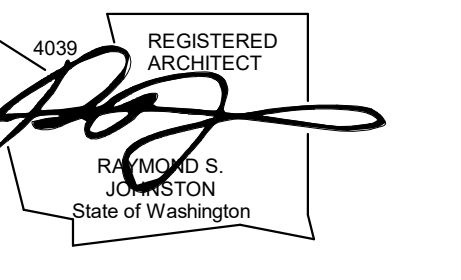
SHEET NO.  
**G007**

Drawn \_\_\_\_\_ Author \_\_\_\_\_  
 Checked \_\_\_\_\_ Checker \_\_\_\_\_





Johnston Architects, LLC  
 100 NE Northlake Way,  
 Suite 200  
 Seattle, WA 98105  
 t 206.523.6150  
 f 206.523.9382



**MERCER ISLAND  
 MIXED USE**  
 2845 90TH AVE SE  
 MERCER ISLAND, WA 98040

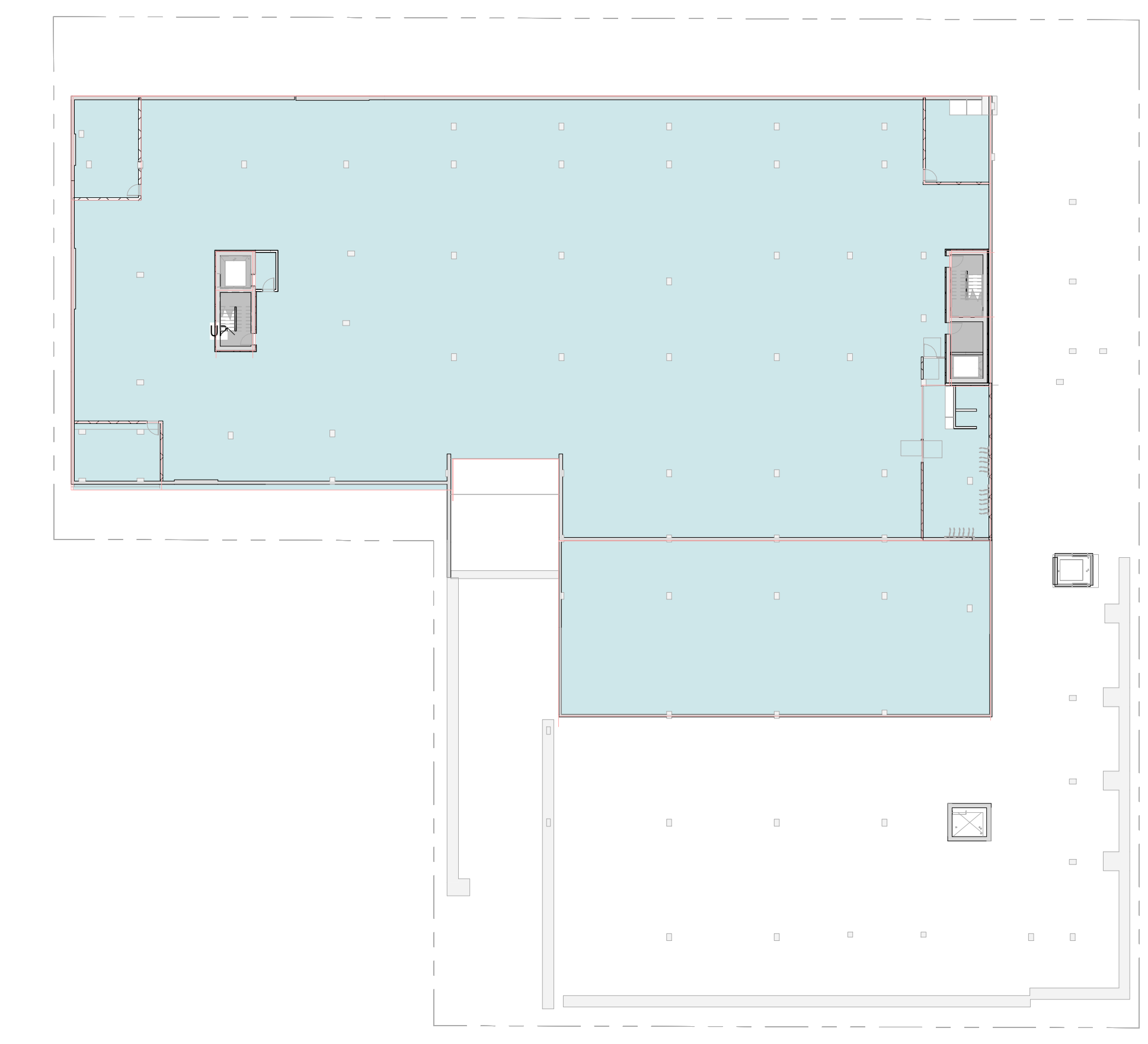
DRAWING ISSUE

| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

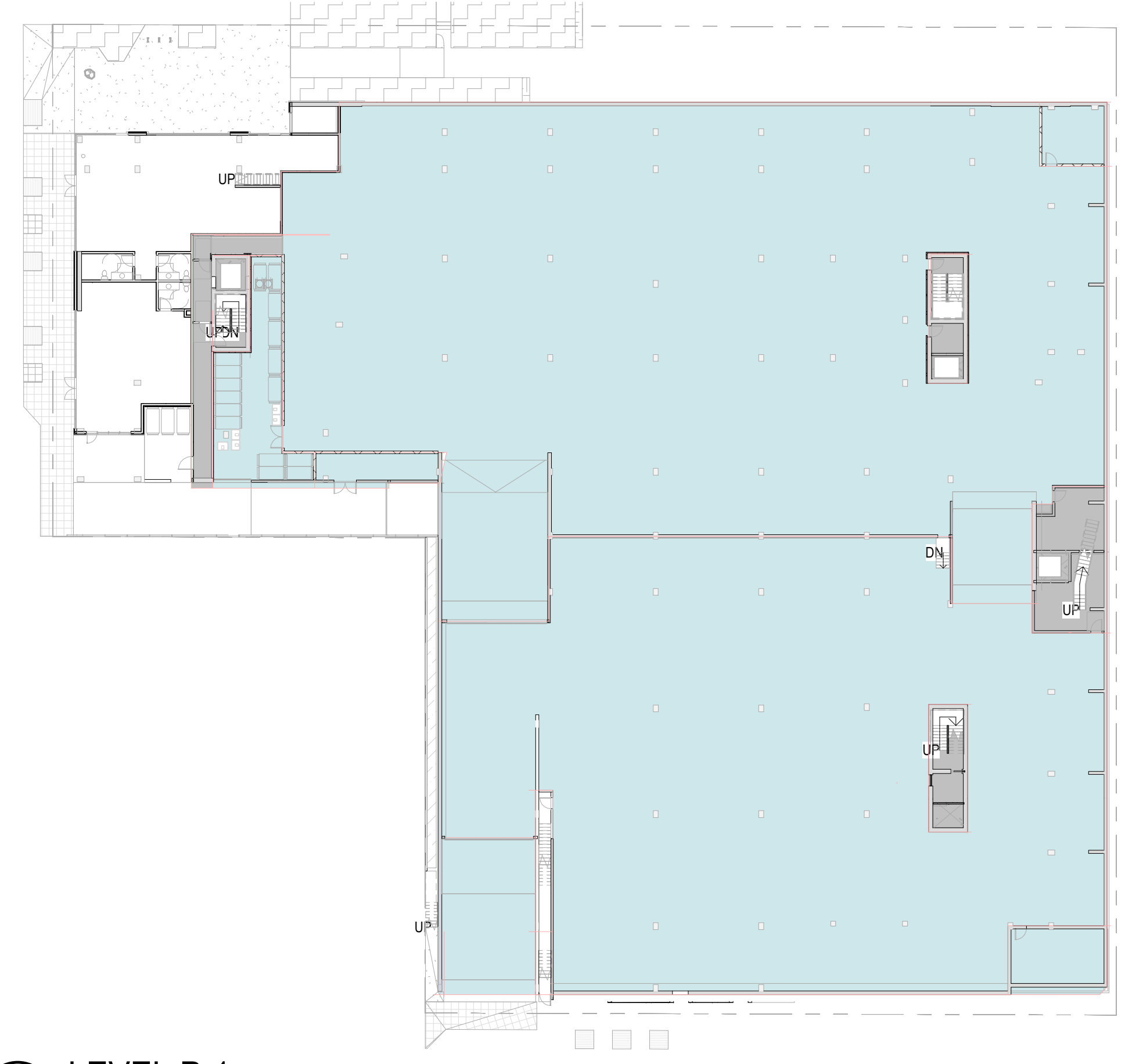
SHEET TITLE  
**AREA CALCULATION**  
 SHEET NO.

**G008**

Drawn: \_\_\_\_\_ Author: \_\_\_\_\_  
 Checked: \_\_\_\_\_ Checker: \_\_\_\_\_



2 LEVEL P-2  
 1" = 30'-0"



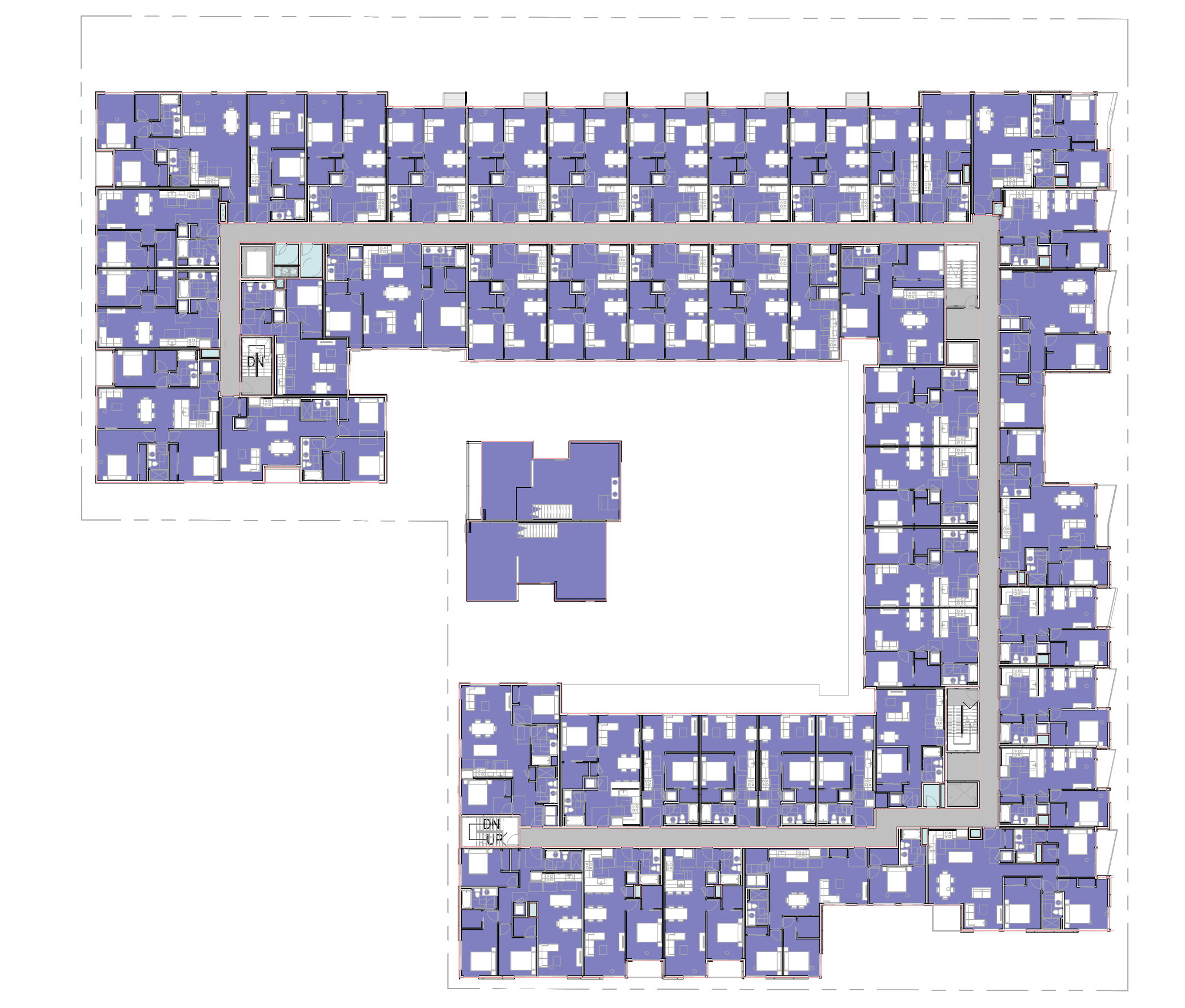
1 LEVEL P-1  
 1" = 30'-0"



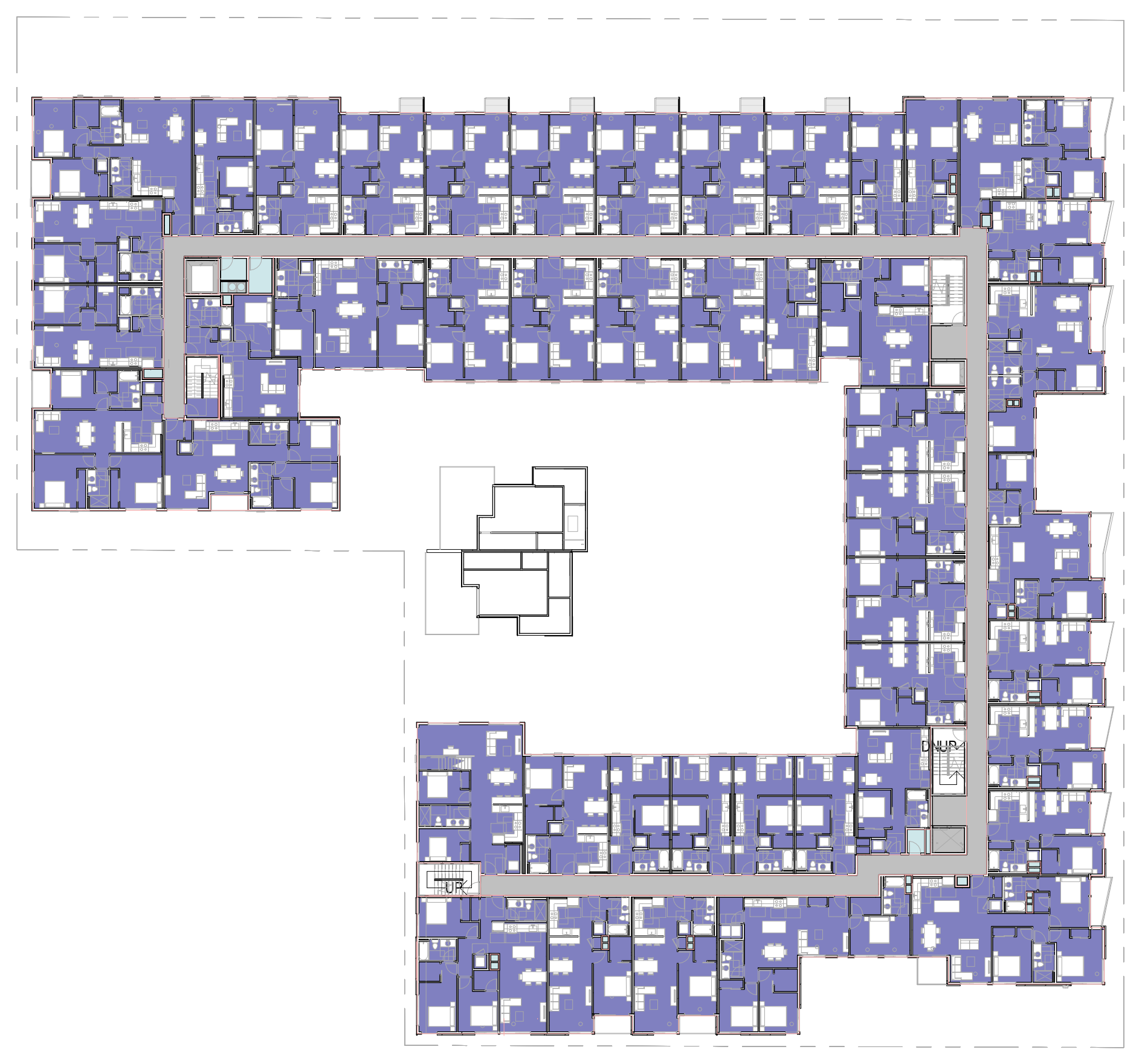
3 LEVEL 1S  
 1" = 30'-0"



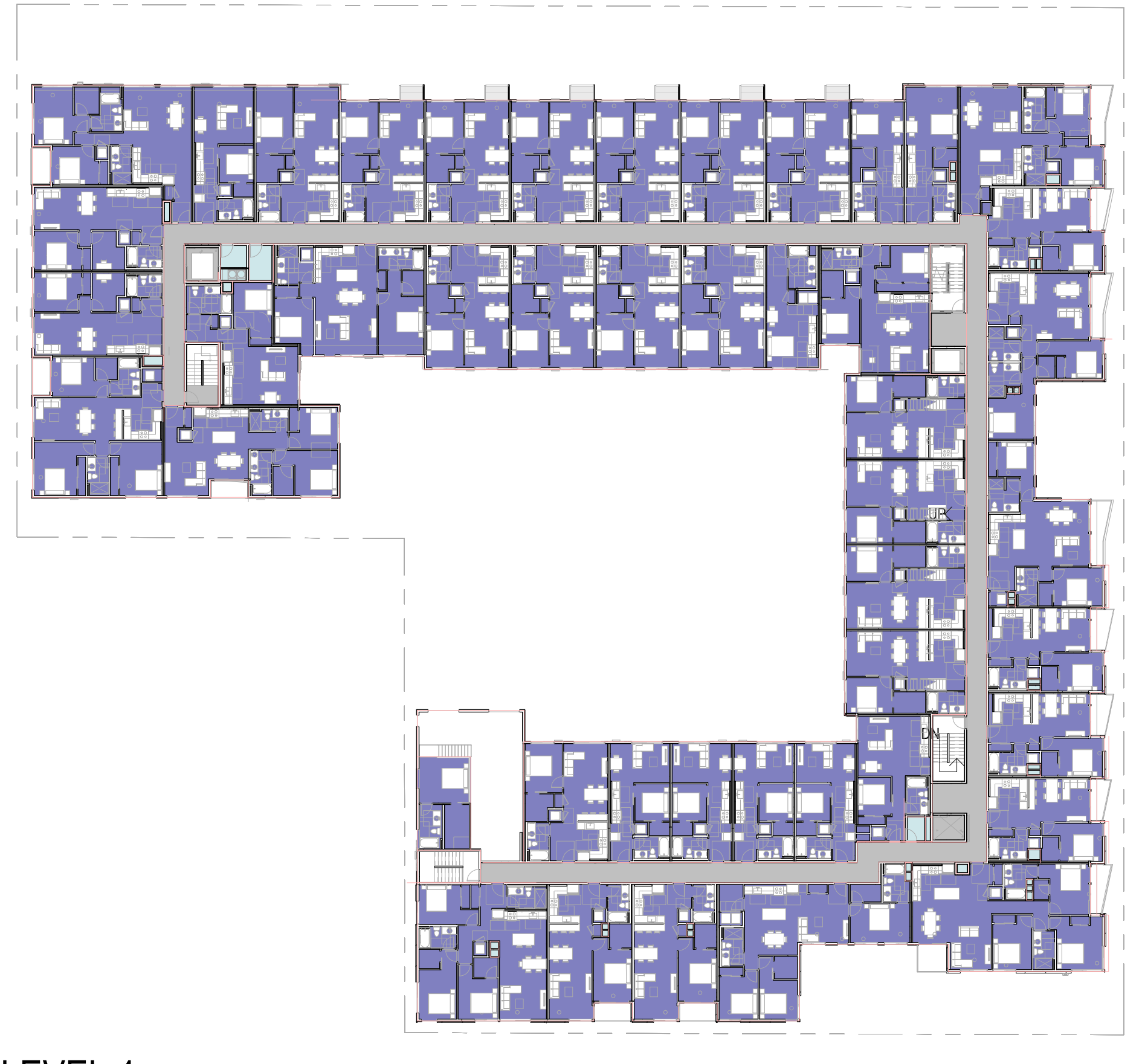
8 LEVEL M-1S  
 1" = 30'-0"



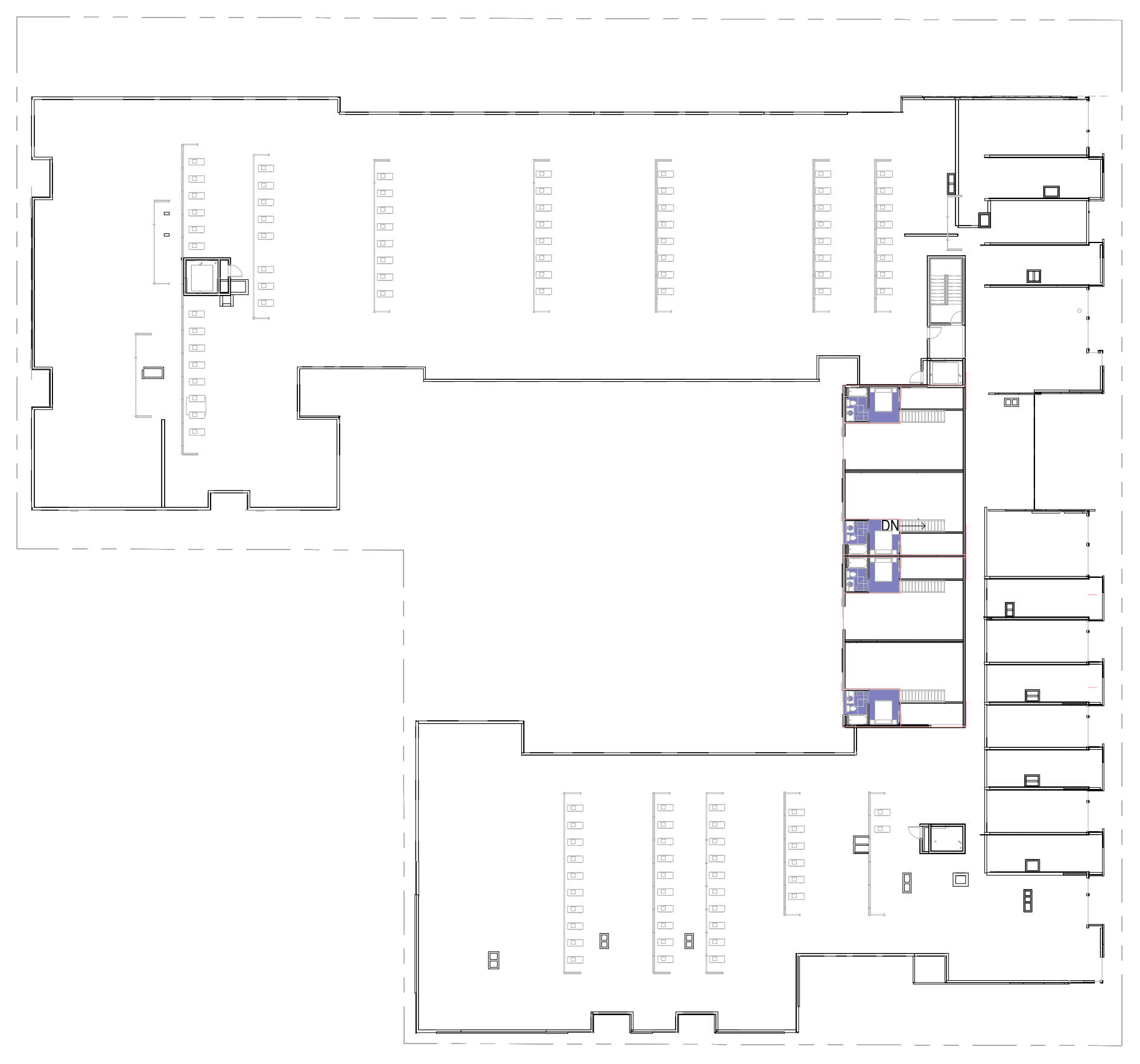
4 LEVEL 2  
 1" = 30'-0"



5 LEVEL 3  
 1" = 30'-0"



6 LEVEL 4  
 1" = 30'-0"



7 LEVEL M4  
 1" = 30'-0"

| GROSS BUILDING AREA |          |           | GROSS FLOOR AREA |          |  | NET SALEABLE / LEASABLE AREA (RESIDENTIAL) |           | NET SALEABLE / LEASABLE AREA (COMMERCIAL) |          |
|---------------------|----------|-----------|------------------|----------|--|--|-----------|---|----------|
| Level               | Area     | Comments  | Level            | Area     |  | Level                                      | Area      | Level                                     | Area     |
| LEVEL P-2           | 31818 SF | PARKING   | LEVEL 1S         | 40971 SF |  | LEVEL 1S                                   | 31248 SF  | A-RESTAURANT                              | 1201 SF  |
| LEVEL P-1           | 48337 SF | PARKING   | LEVEL M-1S       | 3289 SF  |  | LEVEL M-1S                                 | 3289 SF   | B-RETAIL                                  | 1514 SF  |
| LEVEL 1S            | 40971 SF |           | LEVEL 2          | 40732 SF |  | LEVEL 2                                    | 38736 SF  | C-RETAIL                                  | 1626 SF  |
| LEVEL M-1S          | 7394 SF  |           | LEVEL 3          | 39183 SF |  | LEVEL 3                                    | 35195 SF  | D-RETAIL                                  | 775 SF   |
| LEVEL 2             | 40732 SF |           | LEVEL 4          | 38468 SF |  | LEVEL 4                                    | 34489 SF  | E-RESTAURANT                              | 1891 SF  |
| LEVEL 3             | 39183 SF |           | LEVEL M4         | 567 SF   |  | LEVEL M4                                   | 567 SF    | F-RESTAURANT                              | 2667 SF  |
| LEVEL 4             | 38468 SF |           | LEVEL M4         | 16290 SF |  | LEVEL 4                                    | 38468 SF  | G-RETAIL                                  | 1186 SF  |
| LEVEL M4            | 567 SF   | MEZZANINE |                  |          |  | M-RETAIL                                   | 1281 SF   | H-RETAIL                                  | 971 SF   |
|                     | 24740 SF |           |                  |          |  |  | 141303 SF | I-RETAIL                                  | 1300 SF  |
|                     |          |           |                  |          |  |  |           | Grand total                               | 13000 SF |

\*PARKING AND STORAGE MEZZANINE AREA ARE EXCLUDED FROM GROSS FLOOR AREA

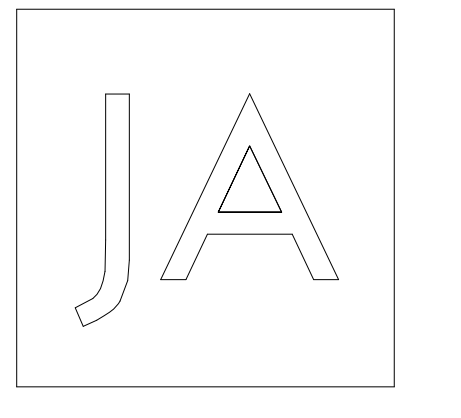
GROSS FLOOR AREA x 3% = 162,990 SF x 3% = 4,889.7 SF

THROUGH-BLOCK AREA = 5,722 SF > 4,889.7 SF

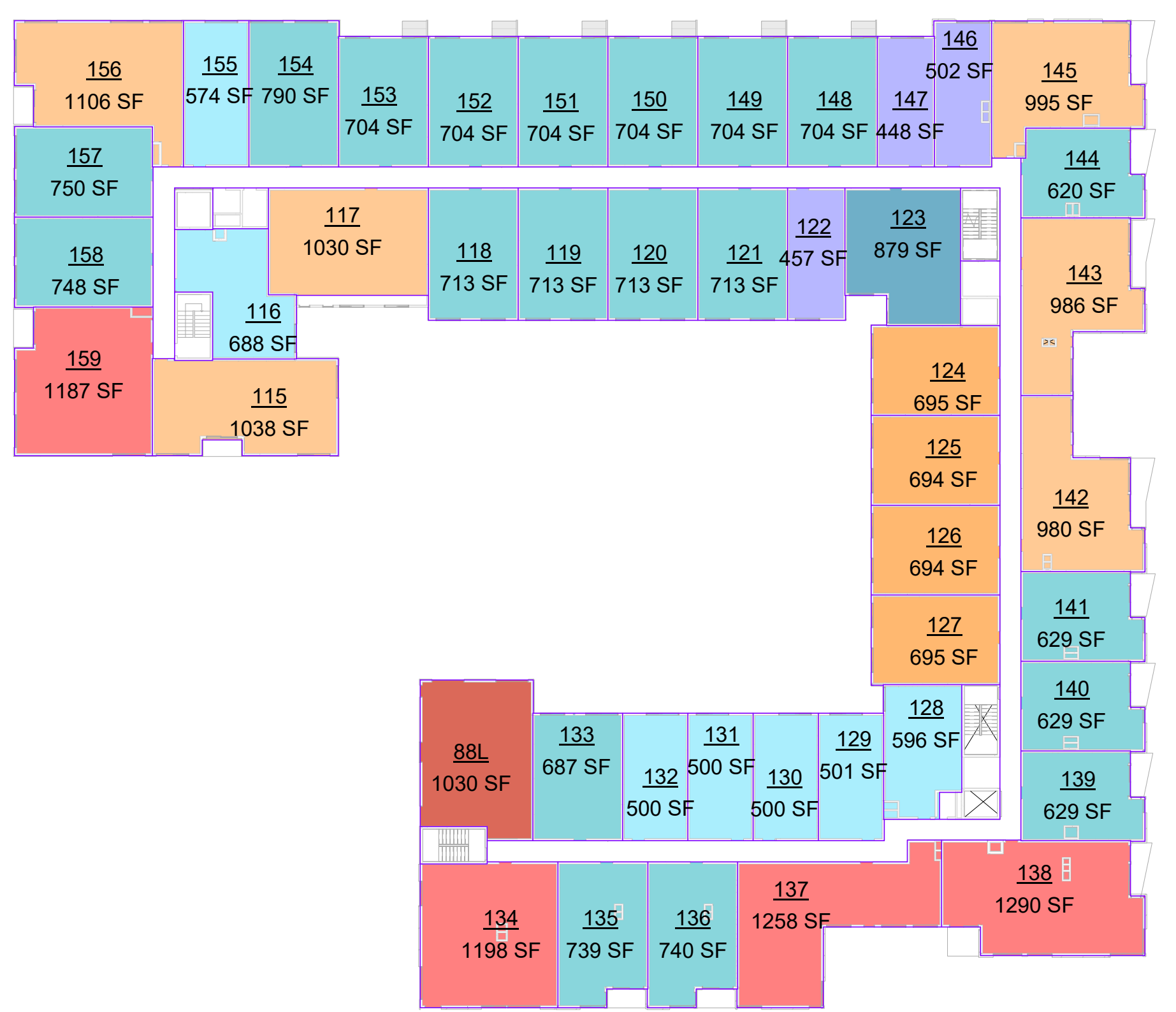
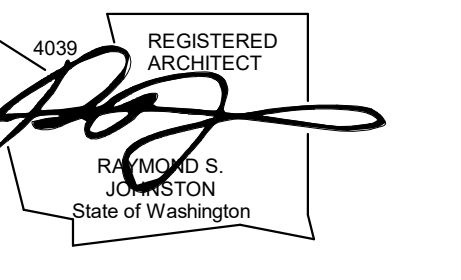
\*STORAGE MEZZANINE AREA ARE EXCLUDED FROM NET SALEABLE / LEASABLE AREA

TOTAL RESIDENTIAL AND COMMERCIAL SALEABLE / LEASABLE AREA = 141,303 SF + 13,000 = 154,303 SF

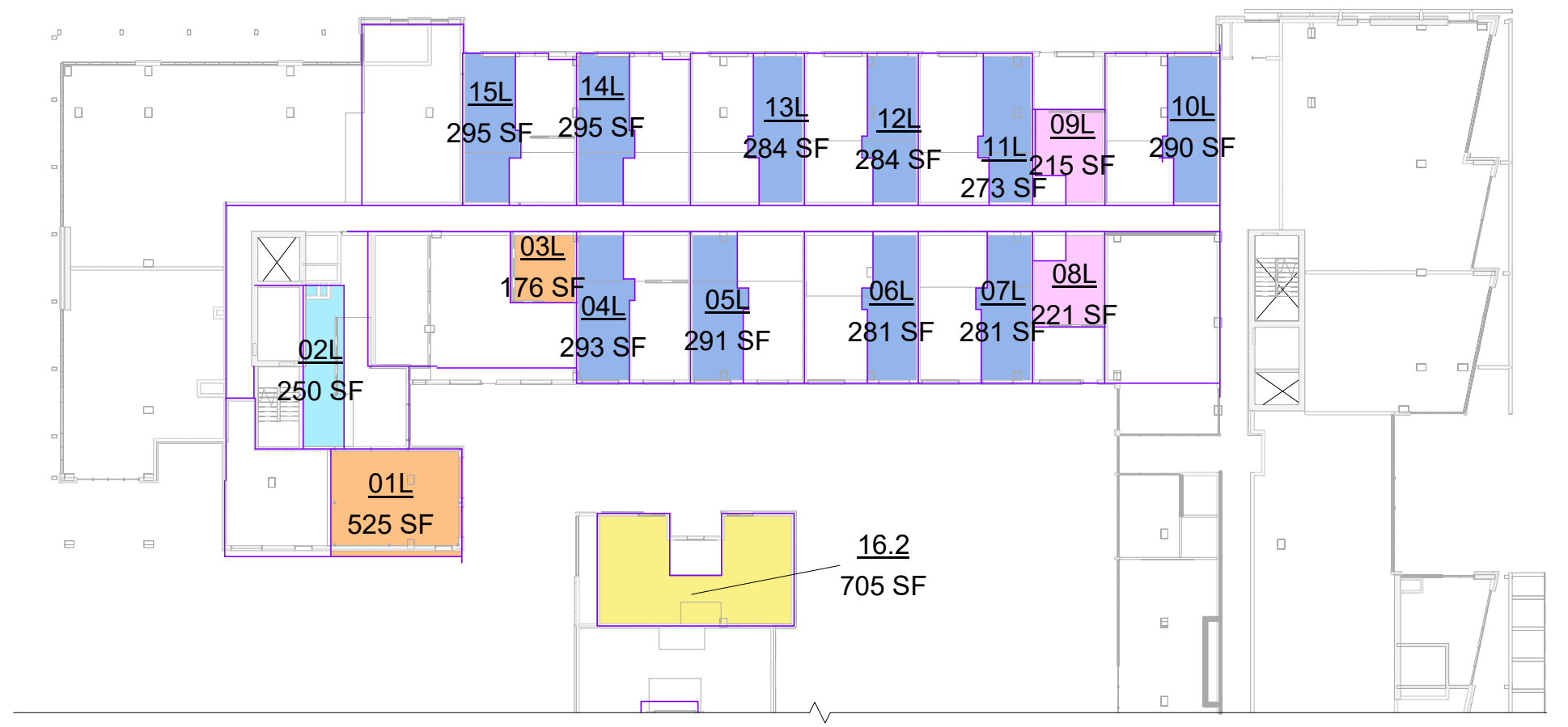




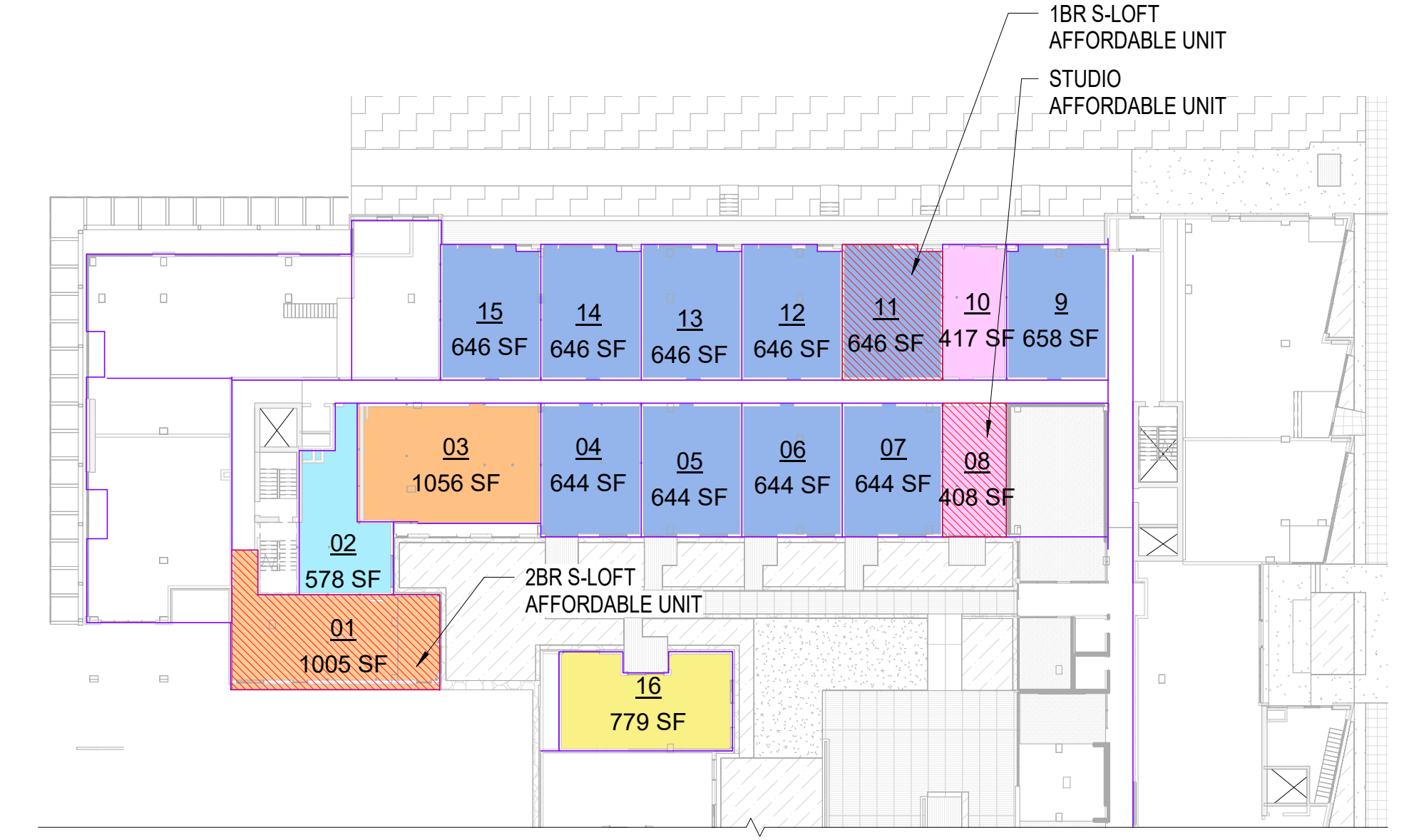
Johnston Architects, LLC  
100 NE Northlake Way,  
Suite 200  
Seattle, WA 98105  
t 206.523.6150  
f 206.523.6362



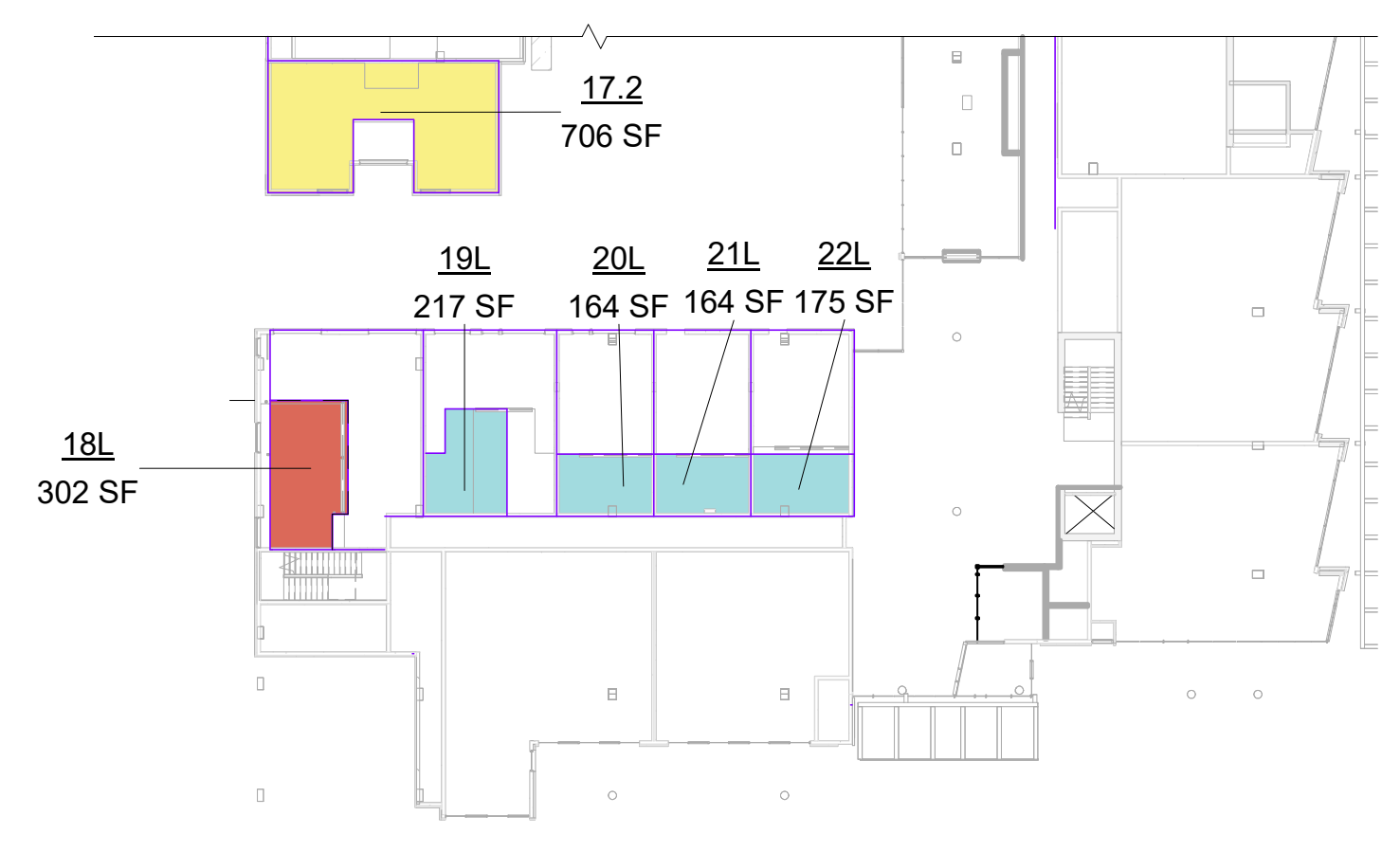
7 UNIT AREA PLAN - L4  
1" = 30'-0"



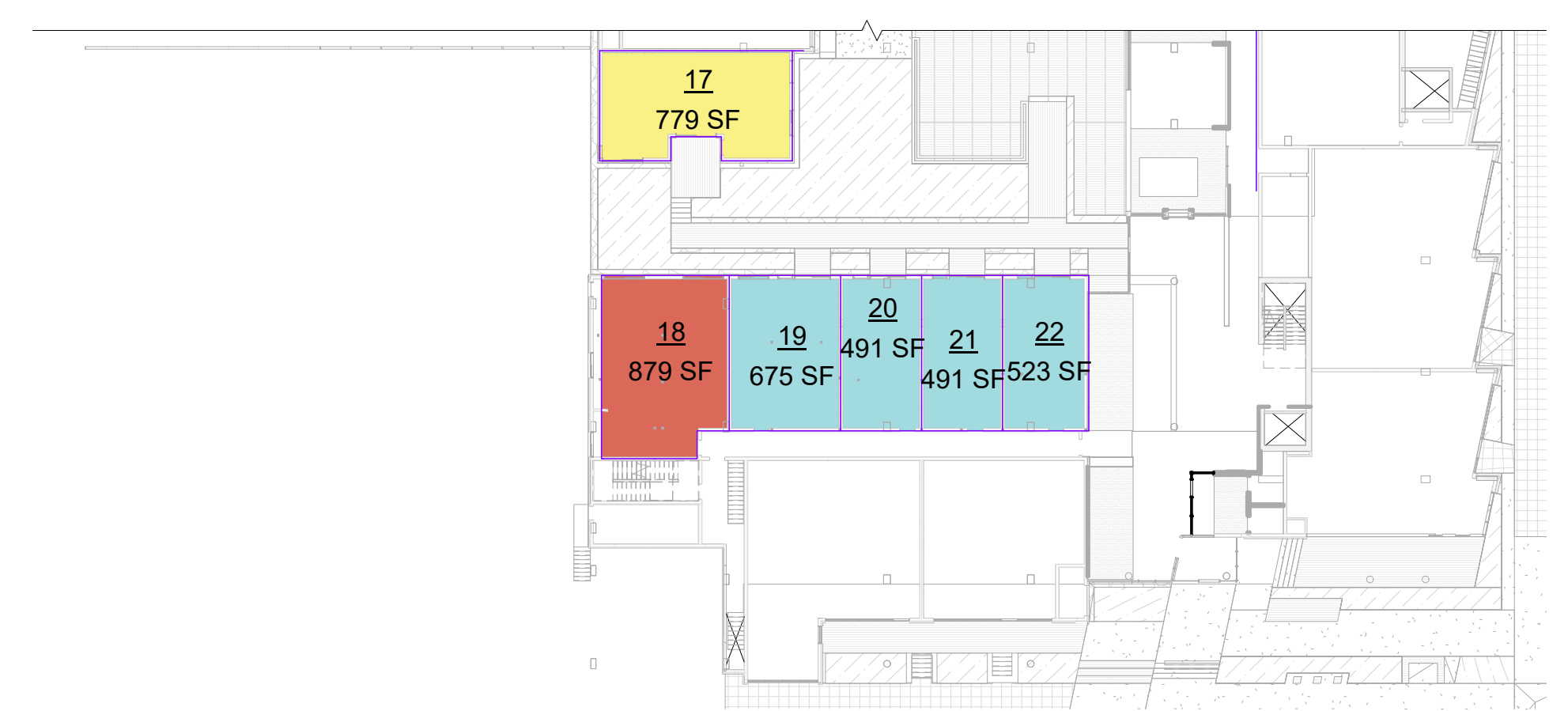
4 UNIT AREA PLAN - MEZZ 1N  
1" = 30'-0"



2 UNIT AREA PLAN - L1N  
1" = 30'-0"



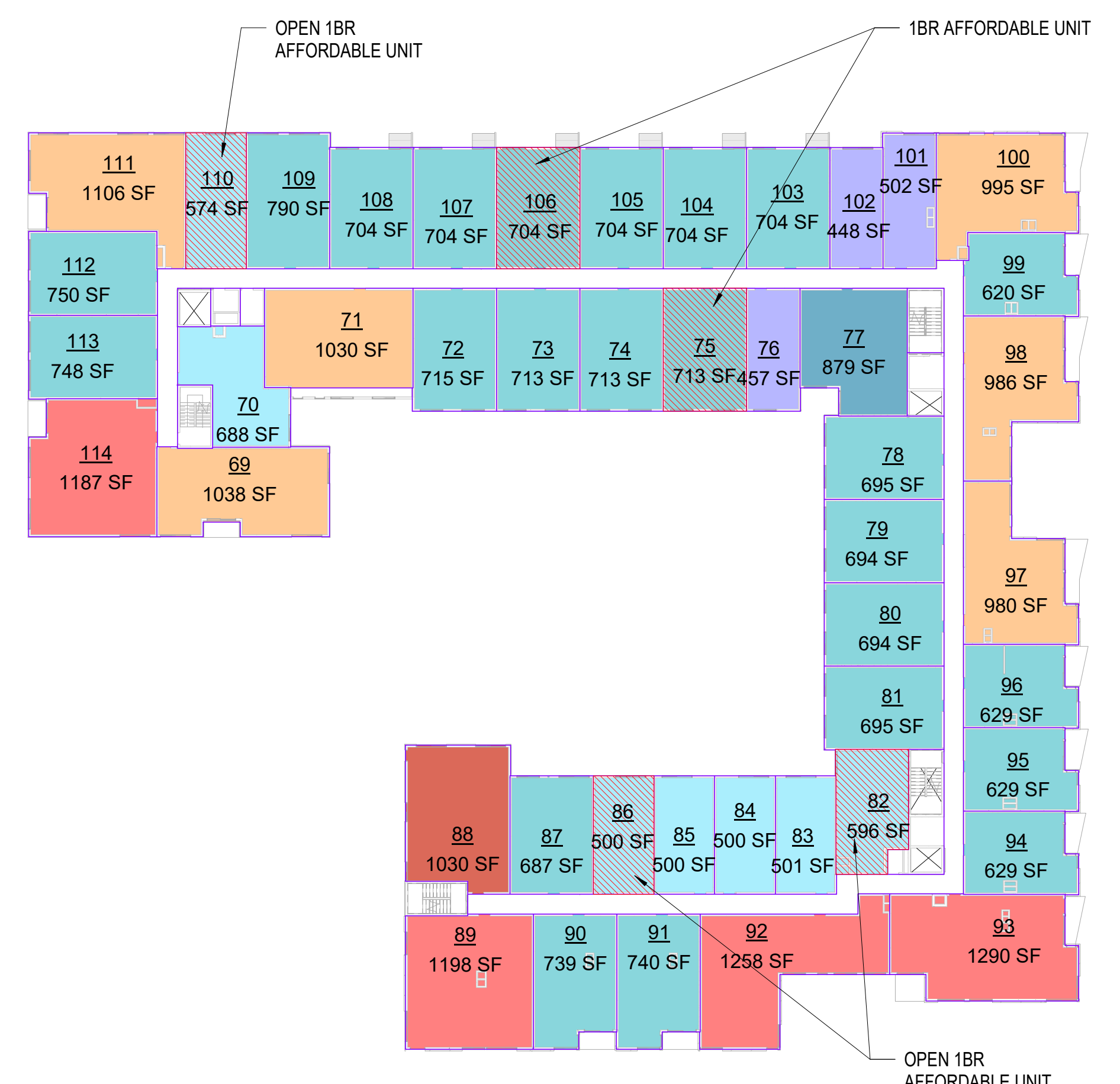
3 UNIT AREA PLAN - MEZZ 1S  
1" = 30'-0"



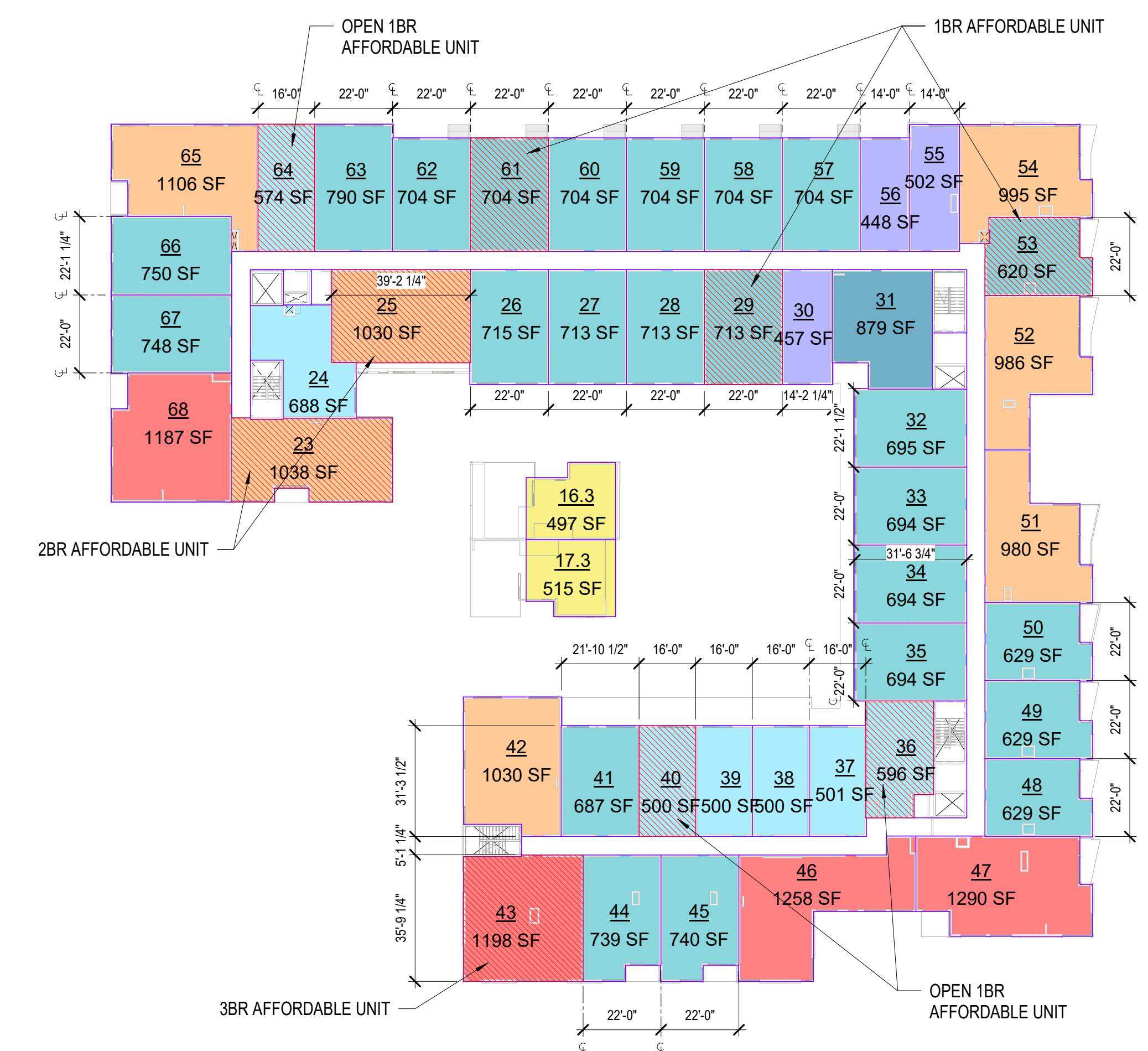
1 UNIT AREA PLAN - L1S  
1" = 30'-0"



8 UNIT AREA PLAN - L4M  
1" = 30'-0"



6 UNIT AREA PLAN - L3  
1" = 30'-0"



5 UNIT AREA PLAN - L2  
1" = 30'-0"

| Area Schedule (Unit Cross) - UNIT MIX | Unit Type | Count |
|---------------------------------------|-----------|-------|
| 1BR                                   | 68        |       |
| 1BR S-LOFT                            | 10        |       |
| 1BR+DEN                               | 3         |       |
| 1BR+LOFT                              | 4         |       |
| 2BR                                   | 22        |       |
| 2BR S-LOFT                            | 1         |       |
| 2BR+LOFT                              | 4         |       |
| 3BR                                   | 11        |       |
| 3BR+LOFT                              | 1         |       |
| OPEN 1BR                              | 22        |       |
| STUDIO                                | 9         |       |
| STUDIO S-LOFT                         | 2         |       |
| TOWNHOUSE                             | 2         |       |
| Grand Total                           | 159       | 159   |

- 1BR
- 1BR+D
- 1BR-L
- 1BR-O
- 1BR-SL
- 2BR
- 2BR-L
- 2BR-L+D
- 2BR-SL
- 3BR
- 3BR-L
- LEASING
- RETAIL
- STD
- STD-SL
- TH

MERCER ISLAND  
MIXED USE  
2685 10TH AVE SE  
MERCER ISLAND, WA 98040

| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

SHEET TITLE  
**UNIT AREA PLANS**  
SHEET NO.  
**G013**  
Drawn: \_\_\_\_\_ Author: \_\_\_\_\_  
Checked: \_\_\_\_\_ Checker: \_\_\_\_\_

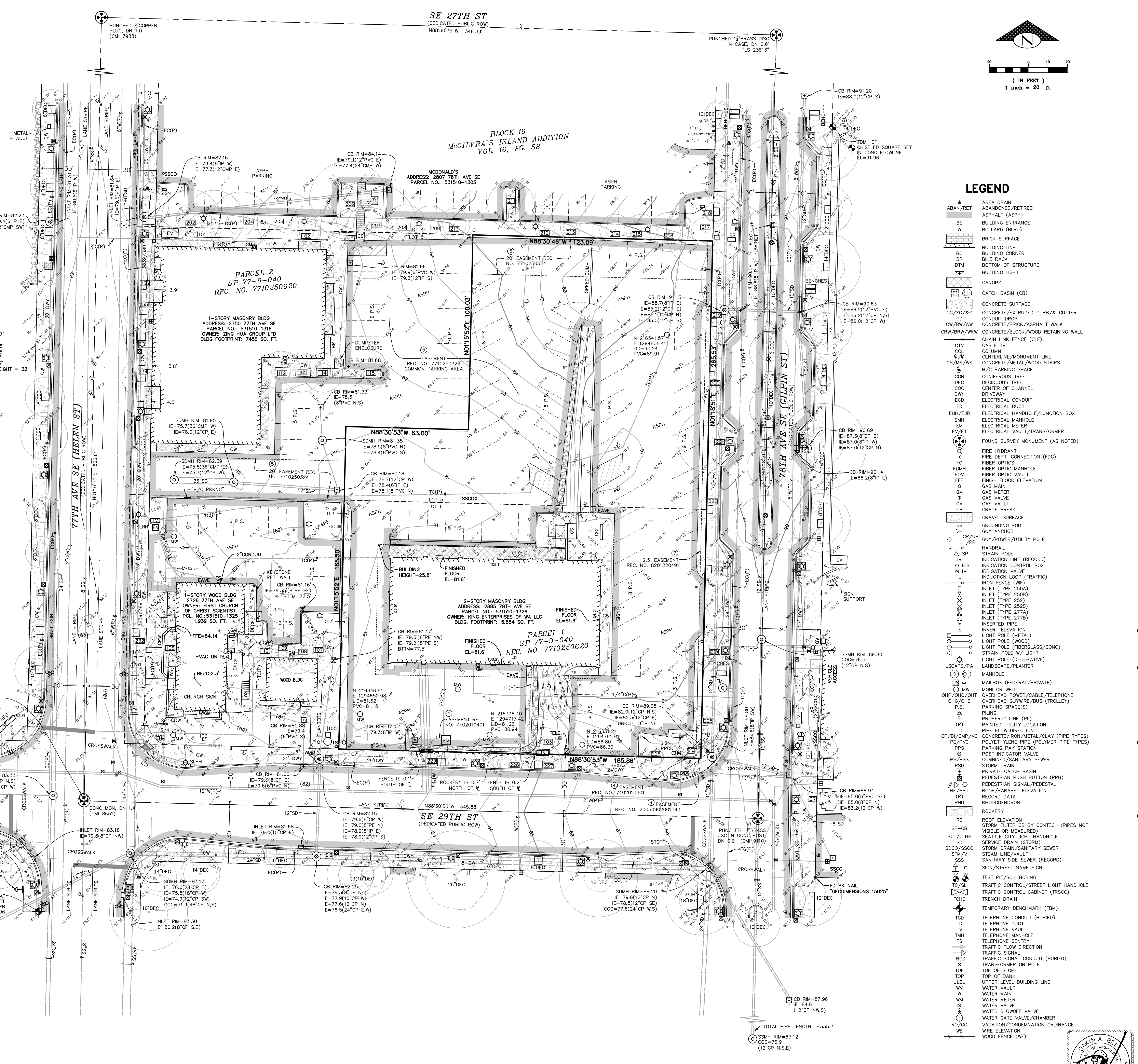


**UTILITY PROVIDERS:**

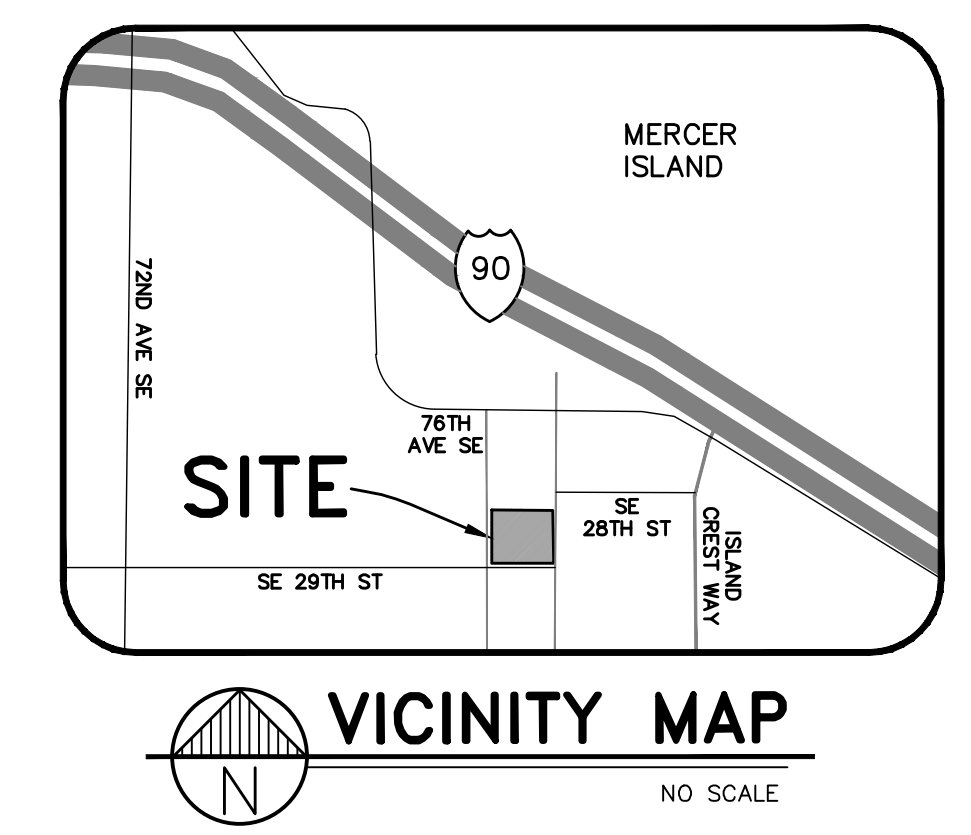
**SANITARY SEWERS, WATER, STORM DRAINAGE**  
 CITY OF MERCER ISLAND  
 DEVELOPMENT SERVICES  
 9611 SE 36TH STREET  
 MERCER ISLAND, WA 98040  
 (206) 275-7600  
 FAX (206) 275-7726

**POWER AND NATURAL GAS**  
 PUGET SOUND ENERGY  
 355 110TH AVENUE NE  
 BELLEVUE, WA 98004  
 (206) 425-2000  
 (888) 225-5773

**TELEPHONE**  
 CENTURY LINK  
 1600 7TH AVENUE  
 SEATTLE, WA 98191  
 (800) 244-1111



- TREE LEGEND**
- 101: 8" PRUNUS SP.
  - 102: 7" PRUNUS SP.
  - 103: 7" FLOWERING CHERRY
  - 104: 9" FLOWERING CHERRY
  - 105: 21" WESTERN RED CEDAR - HEIGHT = 47'
  - 106: 9" SHORE PINE - HEIGHT = 24'
  - 107: 12" WESTERN RED CEDAR - HEIGHT = 36'
  - 108: 10" WESTERN RED CEDAR - HEIGHT = 35'
  - 109: 9" WESTERN RED CEDAR - HEIGHT = 35'
  - 110: 15" WESTERN RED CEDAR - HEIGHT = 37'
  - 111: 1-1/4" & 1-5/8" WHITE OAK PLANTED - HEIGHT = 32'
  - 112: 7" PRUNUS SP.
  - 113: 7" PRUNUS SP.
  - 114: 9" PRUNUS SP.
  - 115: 6" PRUNUS SP.
  - 201: 12" PRUNUS SP.
  - 202: 12" ARMSTRONG MAPLE
  - 203: 11" ARMSTRONG MAPLE
  - 204: 1-1/2", 1-7/8" & 2-1/4" ARMSTRONG MAPLE
  - 205: 11" ARMSTRONG MAPLE
  - 206: 10" RED MAPLE
  - 207: 21" LONDON PLANE
  - 208: 8" ARMSTRONG MAPLE
  - 209: 8" ARMSTRONG MAPLE
  - 210: 11" ARMSTRONG MAPLE
  - 211: 8" RED MAPLE
  - 212: 8" ARMSTRONG MAPLE
  - 213: 8" ARMSTRONG MAPLE
  - 214: 8" ARMSTRONG MAPLE
  - 215: 2-6" ARMSTRONG MAPLE
  - 216: 10" ARMSTRONG MAPLE
  - 217: 13" LONDON PLANE
  - 218: 7" COLUMNAR NORWAY MAPLE
  - 219: 10" ARMSTRONG MAPLE
  - 220: 10" ARMSTRONG MAPLE
  - 221: 11" ARMSTRONG MAPLE
  - 222: 9" COLUMNAR NORWAY MAPLE
  - 223: 9" COLUMNAR NORWAY MAPLE
  - 224: 11" COLUMNAR NORWAY MAPLE
  - 225: 12" COLUMNAR NORWAY MAPLE
  - 226: 6" COLUMNAR NORWAY MAPLE
  - 227: 5" PRUNUS SP.
  - 228: 5" PRUNUS SP.
  - 229: 5" PRUNUS SP.
  - 230: 24" RED MAPLE
  - 231: 9" PRUNUS SP.
  - 232: 4" & 5" PRUNUS SP.
  - 233: 10" PRUNUS SP.
  - 234: 9" PRUNUS SP.
  - 235: 8" PRUNUS SP.
  - 236: 8" PRUNUS SP.



**LEGEND**

- ABAN/RET ABANDONED/RETIRED
- ASPH ASPHALT (ASPH)
- BE BUILDING ENTRANCE
- BOLLARD (BLRD)
- BRICK SURFACE
- BC BUILDING CORNER
- BR BIKE RACK
- BTM BOTTOM OF STRUCTURE
- BLDG LIGHT BUILDING LIGHT
- CANOPY
- CB CATCH BASIN (CB)
- CONCRETE SURFACE
- CC/XC/K/CB CONCRETE/EXTRUDED CURB & GUTTER
- CONDUIT DROP
- CW/BW/AW CONCRETE/BRICK/ASPHALT WALK
- CRW/BRW/RW CONCRETE/BLOCK/ASPH WALK
- CHAIN LINK FENCE (CLF)
- CTV CABLE TV
- COL COLUMN
- CS/MS/WIS CONCRETE/METAL/WOOD STAIRS
- N/C PARKING SPACE
- CONFEROUS TREE
- DEC DEODOUOUS TREE
- COC CENTER OF CHANNEL
- DRIVEWAY
- EDC ELECTRICAL CONDUIT
- EHM/ELB ELECTRICAL HANDHOLE/JUNCTION BOX
- EMV ELECTRICAL MANHOLE
- EV/ET ELECTRICAL VALVE/TRANSFORMER
- FOUND SURVEY MONUMENT (AS NOTED)
- FIRE HYDRANT
- FD FIRE DETECTION CONNECTION (FDC)
- FO FIRE OPTICS
- FMH FIRE OPTIC MANHOLE
- FIBER OPTIC VAULT
- FINISH FLOOR ELEVATION
- FM FINISH FLOOR ELEVATION
- GA GAS METER
- GM GAS METER
- GV GAS VALVE
- GR GRADE BREAK
- GRV GRAVEL SURFACE
- GRNDING ROD
- GUY ANCHOR
- GP/UP GUY/POWER/UTILITY POLE
- HANDBAIL
- STRAIN POLE
- IRRIGATION LINE (RECORD)
- IRRIGATION CONTROL BOX
- IRRIGATION VALVE
- INDUCTION LOOP (TRAFFIC)
- IRON FENCE (W/ID)
- INLET (TYPE 250A)
- INLET (TYPE 250B)
- INLET (TYPE 252)
- INLET (TYPE 252S)
- INLET (TYPE 277A)
- INLET (TYPE 277B)
- INSERTED PIPE
- INVERT ELEVATION
- MONITOR WELL
- OVERHEAD POWER/CABLE/TELEPHONE
- OVERHEAD GUYWIRE/BUS (TROLLEY)
- F.S. FENCE SPACE(S)
- FLNG FILING
- PROPERTY LINE (PL)
- PAINTED UTILITY LOCATION
- PIPE FLOW DIRECTION
- CONCRETE/IRON/METAL/CLAY (PIPE TYPES)
- POLYETHYLENE PIPE (POLYMER PIPE TYPES)
- PARKING PAY STATION
- POST INDICATOR VALVE
- COMBINED/SANITARY SEWER
- STORM DRAIN
- PRIVATE CATCH BASIN
- PEDESTRIAN PUSH BUTTON (PPB)
- PEDESTRIAN SIGNAL/PEDESTAL
- ROOF/PARAPET ELEVATION
- RECORD DATA
- RHOODENSUR
- ROCKERY
- ROOF ELEVATION
- STORM FILTER CB BY CONTECH (PIPES NOT VISIBLE OR MEASURED)
- SEATTLE CITY LIGHT HANDHOLE
- SERVICE DRAIN (STORM)
- STORM DRAIN/SANITARY SEWER
- STEAM LINE/VAULT
- SANITARY SIDE SEWER (RECORD)
- SIGN/STREET NAME SIGN
- TEST PIT/SOIL BORING
- TRAFFIC CONTROL/STREET LIGHT HANDHOLE
- TRAFFIC CONTROL CABINET (TRCC)
- TRENCH DRAIN
- TEMPORARY BENCHMARK (TBM)
- TELEPHONE CONDUIT (BURIED)
- TELEPHONE DUCT
- TELEPHONE VAULT
- TELEPHONE MANHOLE
- TELEPHONE SENTRY
- TRAFFIC FLOW DIRECTION
- TRAFFIC SIGNAL
- TRAFFIC SIGNAL CONDUIT (BURIED)
- TRANSFORMER ON POLE
- TOE OF SLOPE
- TOP OF BANK
- U/LB UPPER LEVEL BUILDING LINE
- WATER VAULT
- WATER MAIN
- WATER METER
- WATER VALVE
- WATER BLOWOFF VALVE
- WATER GATE VALVE/CHAMBER
- VACATION/CONDENATION ORDINANCE
- WIRE ELEVATION
- WOOD FENCE (WF)

**SITE NOTES**

**SITE ADDRESS:** 2855 78TH AVE SE, MERCER ISLAND, WA 98040

**TAX ACCOUNT NO.:** 531510-1326-02

**ZONING:** TC (TOWN CENTER)

**ZONING AGENCY:** CITY OF MERCER ISLAND DEVELOPMENT SERVICES, 9611 SE 36TH STREET, MERCER ISLAND, WA 98040, (206) 275-7600, FAX (206) 275-7726

**SETBACKS:** CURRENT SETBACK REQUIREMENTS SUBJECT TO SITE PLAN REVIEW. CURRENT SETBACKS MAY DIFFER FROM THOSE IN EFFECT DURING DESIGN/CONSTRUCTION OF EXISTING IMPROVEMENTS.

**THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY BY THE GOVERNING JURISDICTION INDICATES THAT STRUCTURES ON THIS PROPERTY COMPLIED WITH MINIMUM SETBACK AND HEIGHT REQUIREMENTS FOLLOWING CONSTRUCTION.**

**FLOOD ZONE:** THIS SITE APPEARS ON NATIONAL FLOOD INSURANCE RATE MAP INDEX, DATED DECEMBER 6, 2001, COMMUNITY PANEL NO. 530330000, AND IS SITUATED IN ZONE "X". AREA DETERMINED TO BE OUTSIDE 500 YEAR FLOOD PLAN.

**HORIZONTAL DATUM:** NAD 83/91

**VERTICAL DATUM:** NAVD 88

**ORIGINATING BENCHMARK:** MERCER ISLAND 2" BRASS CAP DESIGNATED 9110 (STAMPED LS 23613 1995) IN CONC POST, DN 0.9', LOCATED AT THE INTERSECTION OF SE 29TH ST & 78TH AVE SE. EL=88.42'

**AREA:** SITE AS SHOWN CONTAINS 43,079 SQUARE FEET OR 0.9890 ACRES, MORE OR LESS.

**PARKING SPACE COUNT:** PARKING SPACES TOTAL 73, INCLUDING 4 DISABLED PARKING SPACES.

**SUBSTRUCTURES:** BURIED UTILITIES ARE SHOWN AS INDICATED ON RECORDS MAPS FURNISHED BY OTHERS AND VERIFIED WHERE POSSIBLE BY FEATURES LOCATED IN THE FIELD. WE ASSUME NO LIABILITY FOR THE ACCURACY OF THOSE RECORDS. FOR THE FINAL LOCATION OF EXISTING UTILITIES IN AREAS CRITICAL TO DESIGN CONTACT THE UTILITY OWNER/AGENCY.

**TELECOMMUNICATIONS/FIBER OPTIC CABLE:** RECORDS OF UNDERGROUND TELECOMMUNICATIONS AND/OR FIBER OPTIC LINES ARE NOT ALWAYS AVAILABLE TO THE PUBLIC. BRN HAS NOT CONTACTED EACH OF THE MANY COMPANIES, IN THE COURSE OF THIS SURVEY, WHICH COULD HAVE UNDERGROUND LINES WITHIN ADJACENT RIGHTS-OF-WAY. WHERE BRN DOES NOT ACCEPT RESPONSIBILITY FOR THE EXISTENCE OF UNDERGROUND TELECOMMUNICATIONS/FIBER OPTIC LINES WHICH ARE NOT MADE PUBLIC RECORDS WITH THE LOCAL JURISDICTION. AS ALWAYS, CALL 1-800-424-5555 BEFORE CONSTRUCTION.

**DESCRIPTION:** PARCEL 1 OF MERCER ISLAND SHORT PLAT NUMBER 77-9-040, RECORDED OCTOBER 25, 1977 UNDER RECORDING NUMBER 7710250620, IN KING COUNTY, WASHINGTON.

**TITLE REFERENCE:** THIS SURVEY WAS CONDUCTED ACCORDING TO THE DESCRIPTION FURNISHED BY FIRST AMERICAN TITLE INSURANCE COMPANY, FILE NO. MCS-875007-WA, DATED FEBRUARY 8, 2018. THE EASEMENTS SHOWN OR NOTED HEREON RELATE TO THIS COMMITMENT.

**NOTE:** EASEMENTS CREATED OR RESIGNED AFTER THIS DATE ARE NOT SHOWN OR NOTED HEREON.

**TITLE REPORT SCHEDULE B EXCEPTIONS:** ITEMS CIRCLED ARE SHOWN ON MAP.

① EASEMENT, INCLUDING THE TERMS AND PROVISIONS CONTAINED THEREIN: RECORDING INFORMATION: RECORDING NO. 740201401  
 IN FAVOR OF: PUGET SOUND POWER & LIGHT CO.  
 ELECTRIC TRANSMISSION AND/OR DISTRIBUTION SYSTEM

② EASEMENT, INCLUDING THE TERMS AND PROVISIONS CONTAINED THEREIN: RECORDING INFORMATION: OCTOBER 25, 1977 UNDER RECORDING NO. 7710250620  
 IN FAVOR OF: COMMON PARKING AS DESCRIBED WITHIN

③ RESTRICTIONS, CONDITIONS, DEDICATIONS, NOTES, EASEMENTS AND PROVISIONS, IF ANY, AS CONTAINED AND/OR DEDICATED ON THE FACE OF THE MERCER ISLAND SHORT PLAT NUMBER 77-9-040 RECORDED OCTOBER 25, 1977 AS ADDITIONAL TO 7710250620, IN KING COUNTY, WASHINGTON.  
 SURVEYOR'S NOTE: NOTHING ADDITIONAL TO PLOT, SHOWS EASEMENTS FROM REC. NO. 7710250620 ON FACE OF PLAT (PLOTTED).

④ EASEMENT, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN: RECORDING INFORMATION: JANUARY 22, 1982 UNDER RECORDING NO. 820122491  
 IN FAVOR OF: CITY OF MERCER ISLAND  
 PLANTING AND LANDSCAPING

⑤ EASEMENT, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN: RECORDING INFORMATION: NOVEMBER 22, 1994 UNDER RECORDING NO. 8112154  
 IN FAVOR OF: CITY OF MERCER ISLAND  
 SURVEYOR'S NOTE: LEGAL DESCRIPTION DOES NOT CLOSE. APPEARS TO BE CORRECTED BY REC. NO. 2005090201543.

⑥ EASEMENT, INCLUDING TERMS AND PROVISIONS CONTAINED THEREIN: RECORDING INFORMATION: SEPTEMBER 2, 2005 UNDER RECORDING NO. 2005090201543  
 IN FAVOR OF: CITY OF MERCER ISLAND  
 PUBLIC SIDEWALK

**CERTIFICATION:**

**SURVEY IDENTIFICATION NO.:** 2013130.07

**REGISTERED LAND SURVEYOR NO.:** 37546

**SURVEYOR'S ADDRESS & COMPANY:** BUSH, ROED & HITCHINGS, INC., 2009 MINOR AVENUE EAST, SEATTLE, WA 98102-3513

**TELEPHONE:** (206) 323-4144

**TO ALLIANCE REALTY PARTNERS, LLC, A DELAWARE LIMITED LIABILITY COMPANY, KING ENTERPRISES OF WASHINGTON, LLC, A WASHINGTON LIMITED LIABILITY COMPANY AND FIRST AMERICAN TITLE INSURANCE COMPANY:**

**THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 6A, 7A, 7B, 7C, 8, 9, 11, 13, 14, 16, 18 AND 20 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON NOVEMBER 21, 2018.**

**DATE OF PLAT OR MAP:** 11/27/18

**THE ABOVE CERTIFICATE IS BASED UPON WORK PREPARED IN ACCORDANCE WITH GENERALLY ACCEPTED PROFESSIONAL SURVEY PRACTICE. WE MAKE NO OTHER WARRANTY, EITHER EXPRESSED OR IMPLIED.**

**DAKIN A. BELL, P.L.S. NO. 37546**

**ALTA CERTIFICATION NOTES:**

16. AT THE TIME OF THIS SURVEY, THERE WAS NO EVIDENCE OF RECENT EARTH MOVING WORK, BUILDING CONSTRUCTION, OR BUILDING ADDITIONS OBSERVED IN THE PROCESS OF CONDUCTING THE FIELDWORK.

18. AT THE TIME OF THIS SURVEY, NO WETLANDS OR WETLAND MARKERS WERE OBSERVED.

**BUSH, ROED & HITCHINGS, INC.**  
 LAND SURVEYORS & CIVIL ENGINEERS  
 (206) 323-4144  
 2009 MINOR AVENUE EAST  
 SEATTLE, WASHINGTON  
 98102-3513  
 FAX# (206) 323-7135

**BOUNDARY AND TOPOGRAPHIC SURVEY**  
 78TH AVENUE SE & SE 29TH STREET  
 XING HOA GROUP  
 KING COUNTY  
 WASHINGTON

**DATE:** 11/27/18  
**SCALE:** 1" = 20'  
**JOB NO.:** 2013130.07  
**SHEET:** 1 OF 1

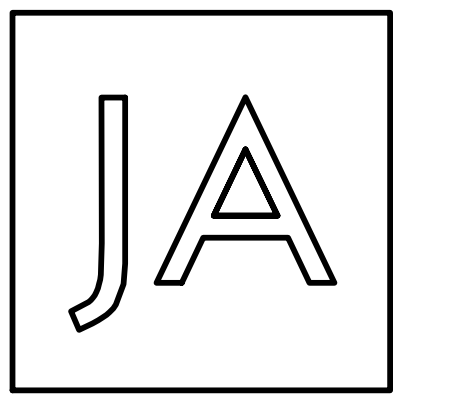
**drawn by:** ABW/IGM  
**checked by:** DAB

**DATE:** 11/27/18

**JOB NO.:** 2013130.07

**SHEET:** 1 OF 1





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t 206.523.6150  
f 206.523.9392



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Seattle, WA 98101  
206.622.5822  
www.kpf.com

**MERCER ISLAND  
MIXED USE**  
2885 78TH AVE SE  
MERCER ISLAND, WA 98040

| Date       | Description            |
|------------|------------------------|
| 12/24/2019 | LAND USE SET           |
| 03/31/2020 | 50% CD                 |
| 06/26/2020 | LAND USE SET REV #1    |
| 11/12/2020 | BUILDING PERMIT 75% CD |
| 12/04/2020 | LAND USE SET REV #2    |

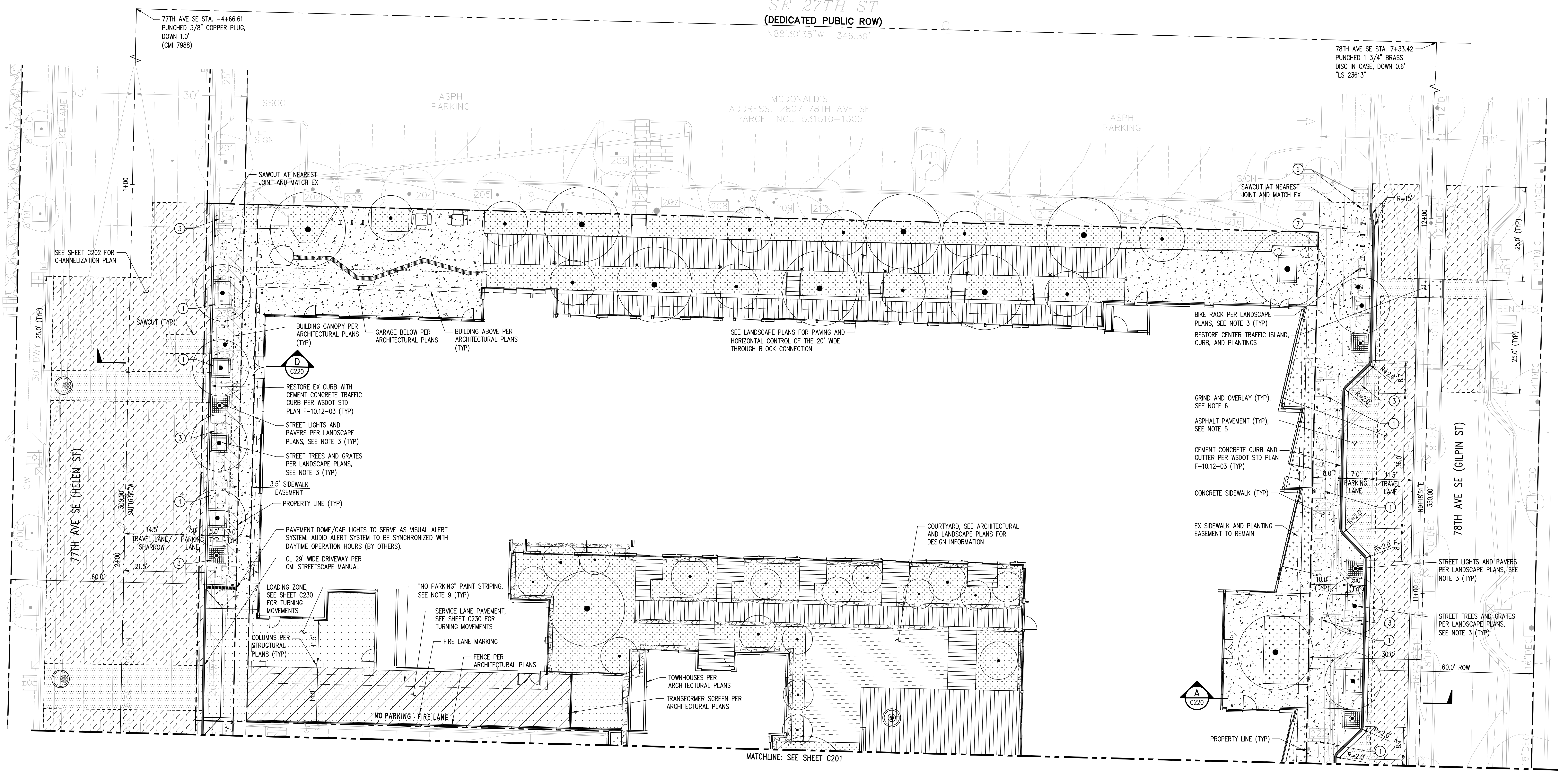
SHEET TITLE  
**PAVING AND  
HORIZONTAL CONTROL  
PLAN - NORTH**

SHEET NO.  
**C200**  
Drawn TNF/KWP  
Checked ATT

SE 27TH ST  
(DEDICATED PUBLIC ROW)  
N88°30'35"W 346.39'

MCDONALD'S  
ADDRESS: 2807 78TH AVE SE  
PARCEL NO.: 531510-1305

78TH AVE SE STA. 7+33.42  
PUNCHED 1 3/4" BRASS  
DISC IN CASE, DOWN 0.6'  
'LS 23613"

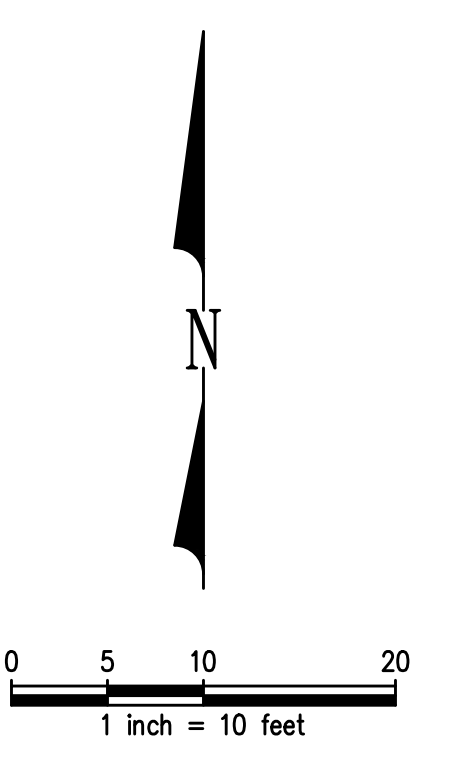


**CONSTRUCTION NOTES:**

- EXISTING TREE GRATE TO BE SALVAGED AND REUSED. EXISTING TREE GRATE HALVES SHALL BE REUSED IN PAIRS TO FORM RECTANGULAR TREE GRATES. SEE LANDSCAPE PLANS FOR DETAILS.
- EXISTING TREE GRATE TO BE REMOVED.
- EXISTING STREET LIGHTS AND JUNCTION BOXES ALONG THE PROJECT FRONTAGE SHALL BE REMOVED AND REPLACED WITH CITY STANDARD DECORATIVE STREET LIGHTS. SEE LIGHTING PLANS FOR DETAILS.
- EXISTING BENCH TO BE REMOVED.
- EXISTING BRONZE INLAYED STREET NAME IN THE CORNER OF 78TH AVE SE AND SE 29TH ST SHALL BE PROTECTED AND RESTORED DURING CONSTRUCTION. RELOCATE BRONZE INLAYED STREET NAME ALONG THE INSIDE EDGE OF THE NEW CURB RAMP CROSSING 78TH AVE SE.
- PROTECT EX STREET LIGHT AND JUNCTION BOX.
- EXISTING BIKE RACK TO BE REMOVED.

**PAVING AND HORIZONTAL CONTROL NOTES:**

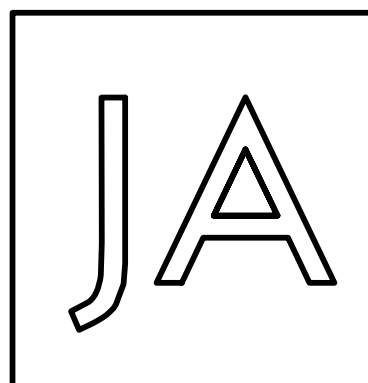
- SEE SHEET C000 FOR LEGEND AND ABBREVIATIONS.
- SEE ARCHITECTURAL PLANS FOR HORIZONTAL CONTROL OF THE BUILDING.
- SEE LANDSCAPE PLANS FOR ON-STREET PEDESTRIAN PAVING, SIDEWALK JOINING AND SCORING, FURNISHINGS, PLANTINGS, AND HORIZONTAL CONTROL OF STREET TREES, TREE GRATES, PLANTING STRIPS, AND STREET LIGHTS.
- THE QUANTITY OF ON-STREET PARKING STALLS PROPOSED ON 78TH AVENUE SE MATCH EXISTING CONDITIONS.
- FULL DEPTH ASPHALT PAVEMENT PATCH SHALL EXTEND TO MINIMUM 1 FOOT BEYOND EXCAVATION.
- GRIND AND OVERLAY SHALL EXTEND TO MINIMUM 25 FEET BEYOND EDGE OF TRENCH EXCAVATION AND TO THE FULL LANE WIDTH FOR EACH LANE DISTURBED.
- UNLESS OTHERWISE NOTED, DIMENSIONS ARE GIVEN TO: ROADWAY CENTERLINE, FACE OF CURB, CENTER OF STRUCTURE, EDGE OF PAVEMENT/LANDSCAPE.
- EXISTING CURB ON 77TH AVE SE TO REMAIN, UNLESS OTHERWISE NOTED.
- "NO PARKING" PAINT STRIPING SHALL CONSIST OF 4" SOLID WHITE 45° DIAGONAL PAINT STRIPES SPACED 2' ON CENTER.











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f 206.523.9392



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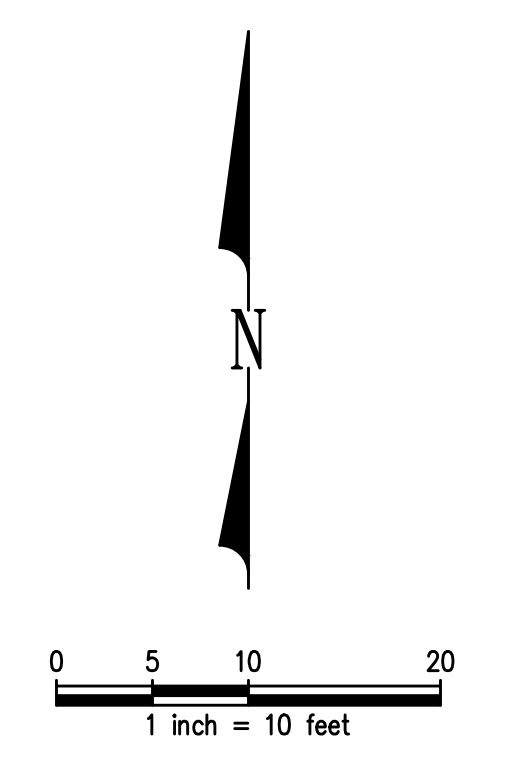
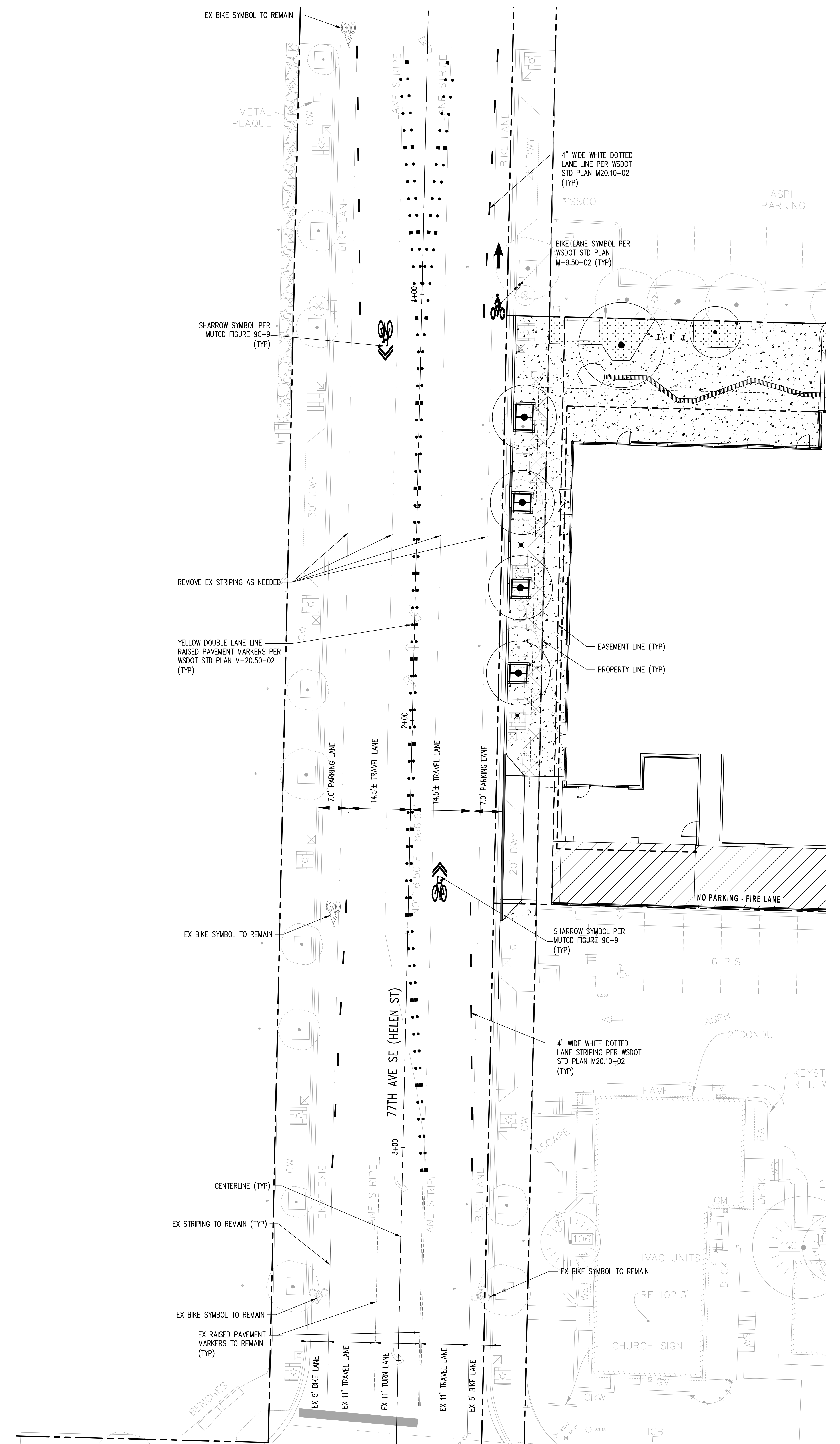
**MERCER ISLAND  
MIXED USE**  
2805 77TH AVE SE  
MERCER ISLAND, WA 98040

| Date       | Description            |
|------------|------------------------|
| 12/24/2019 | LAND USE SET           |
| 03/31/2020 | 50% CD                 |
| 06/26/2020 | LAND USE SET REV #1    |
| 11/12/2020 | BUILDING PERMIT 75% CD |
| 12/04/2020 | LAND USE SET REV #2    |

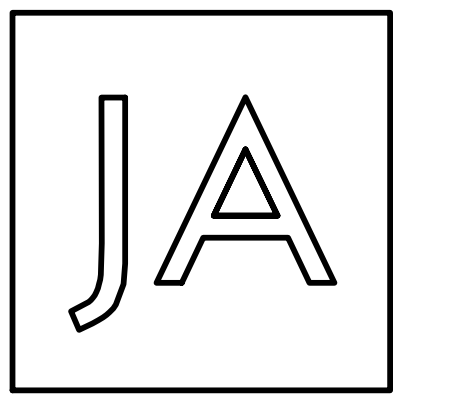
SHEET TITLE  
**CHANNELIZATION PLAN  
AND DETAILS - 77TH  
AVE SE**

SHEET NO.  
**C202**

Drawn: TNFKWP  
Checked: ATT





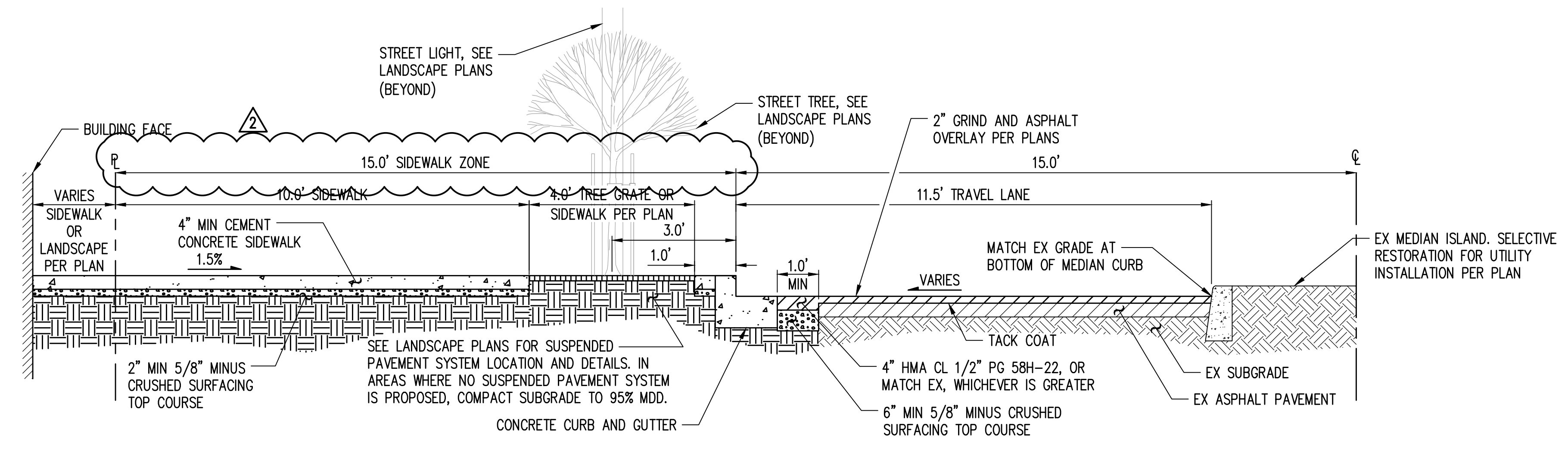


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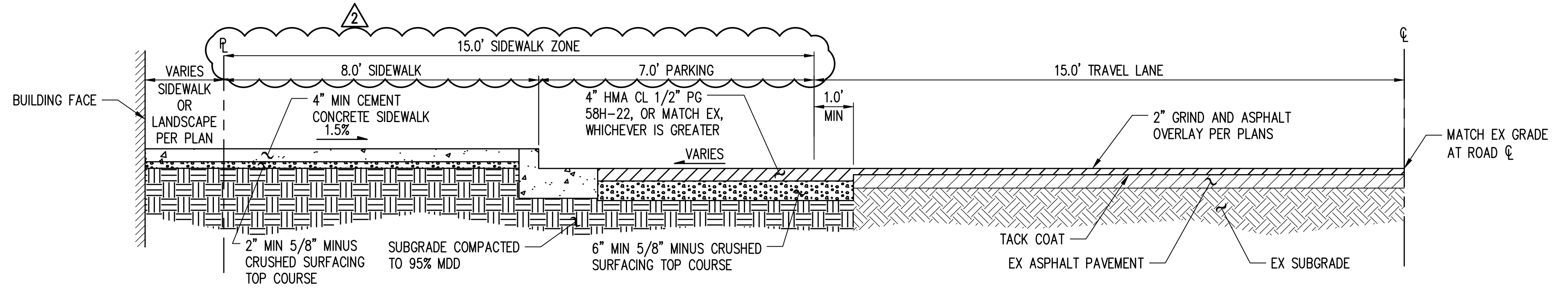


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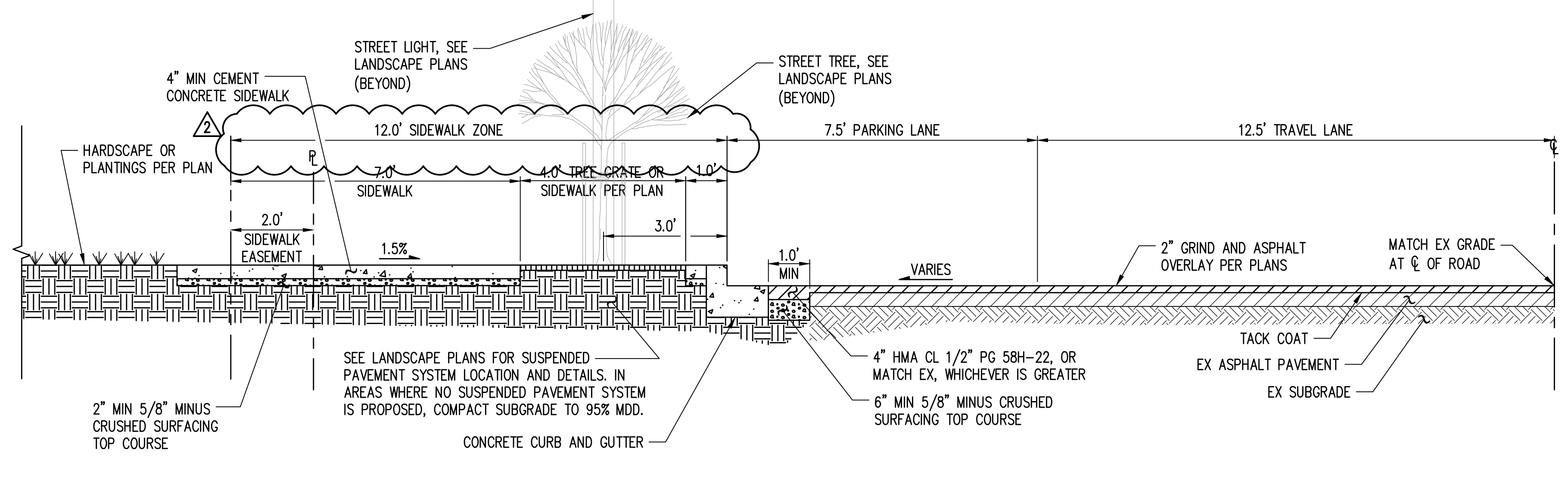
**MERCER ISLAND  
MIXED USE**  
2908 78TH AVE SE  
MERCER ISLAND, WA 98040



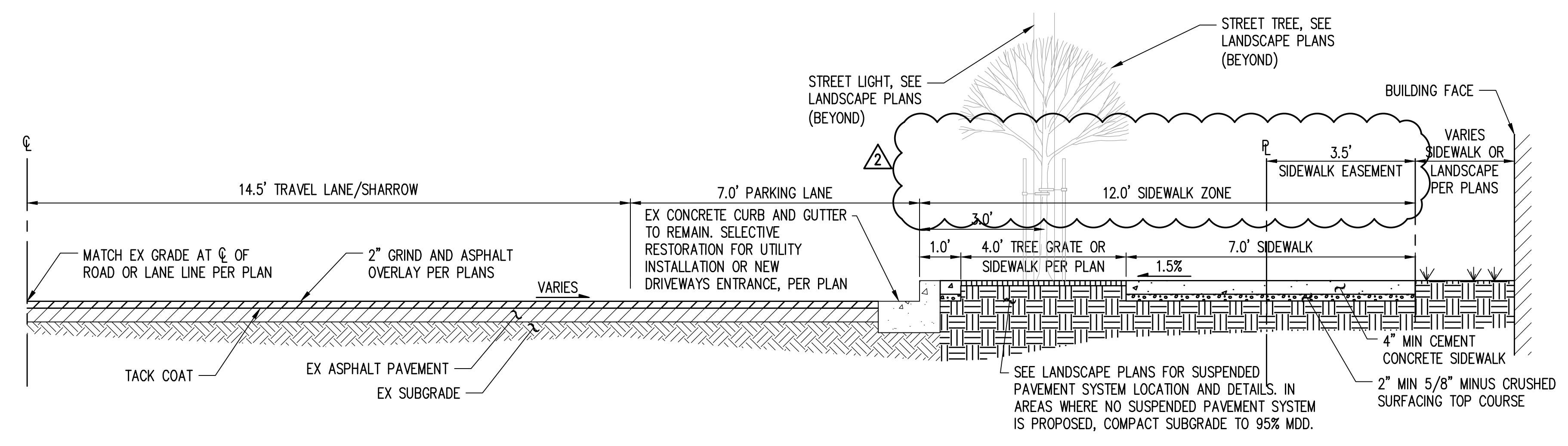
TYPICAL STREET SECTION - 78TH AVENUE SE  
SCALE: 1"=2'  
A  
C200



TYPICAL STREET SECTION - 78TH AVENUE SE  
SCALE: 1"=2'  
B  
C200



TYPICAL STREET SECTION - SE 29TH ST  
SCALE: 1"=2'  
C  
C200



TYPICAL STREET SECTION - 77TH AVENUE SE  
SCALE: 1"=2'  
D  
C200

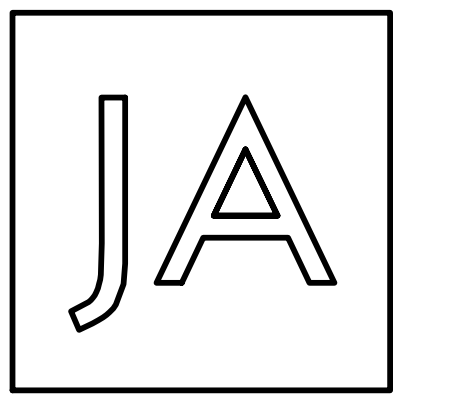
| Date       | Description             |
|------------|-------------------------|
| 12/24/2019 | LAND USE SET            |
| 03/31/2020 | 50% CD                  |
| 06/26/2020 | LAND USE SET REV #1     |
| 11/12/2020 | BUILDING PERMIT, 75% CD |
| 12/04/2020 | LAND USE SET REV #2     |

SHEET TITLE  
**PAVING SECTIONS**

SHEET NO.  
**C220**

Drawn: TNFKWP  
Checked: ATT

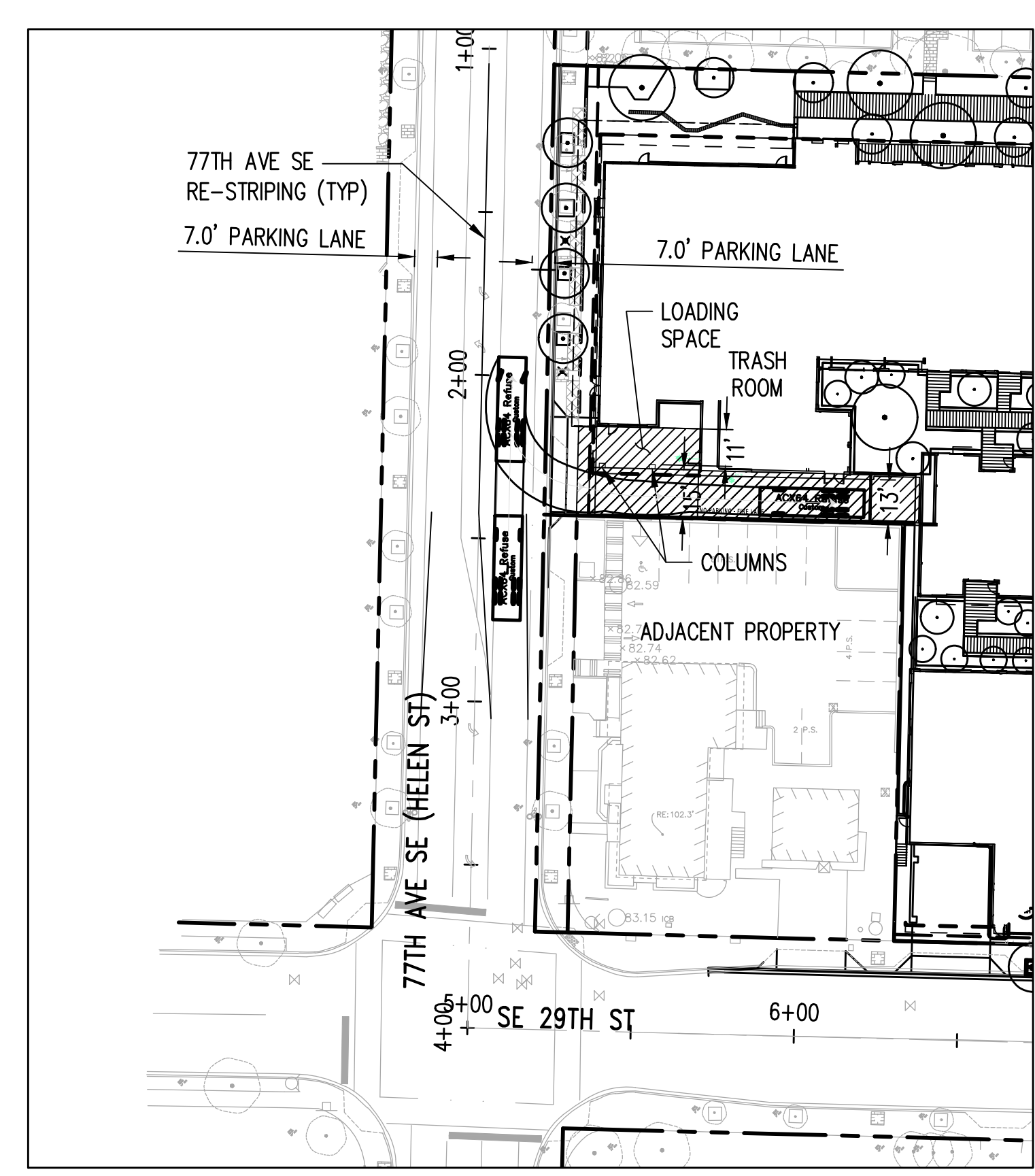




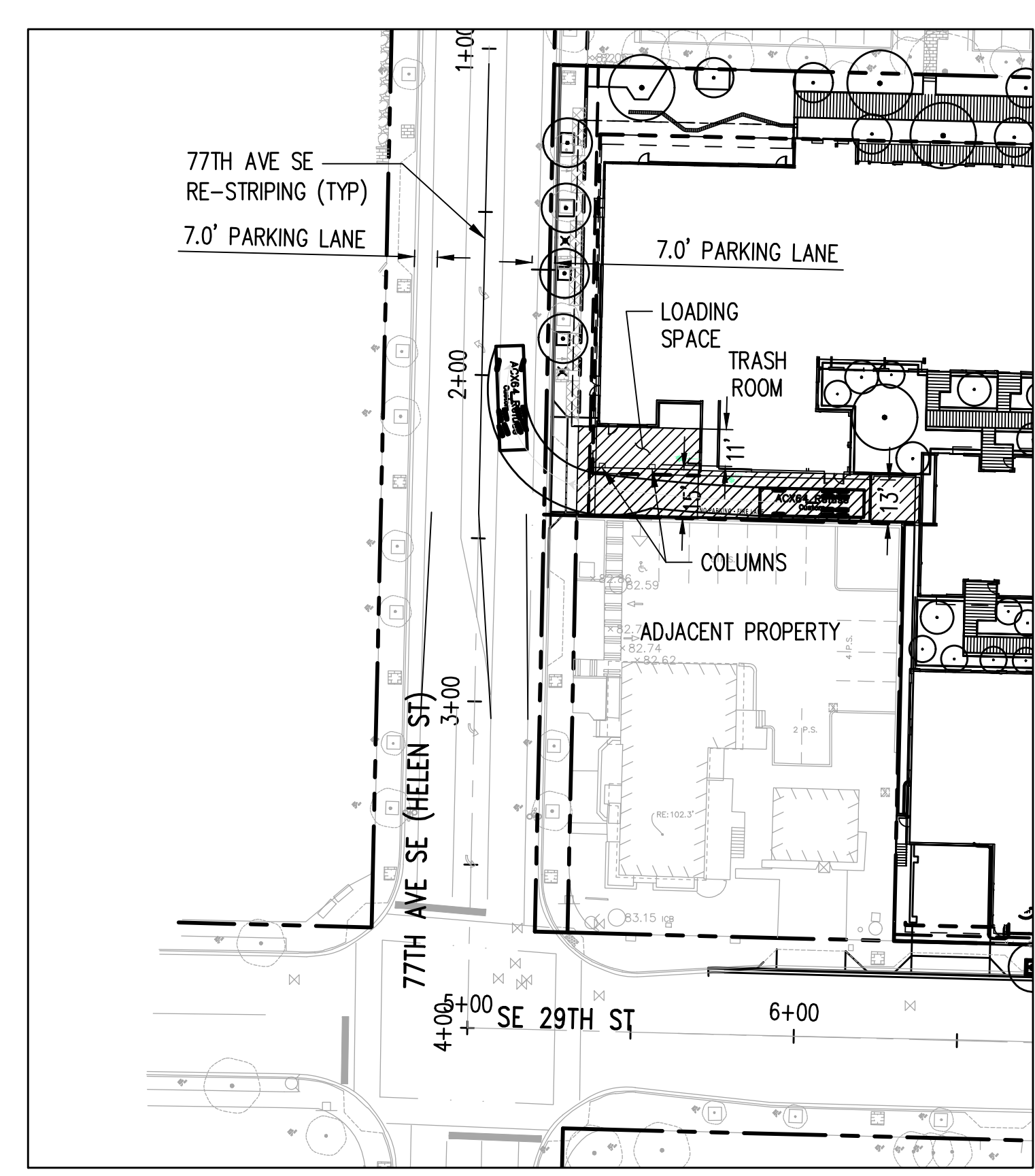
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Suite 200  
Seattle, WA 98105  
1 206.523.6150  
1 206.523.9392



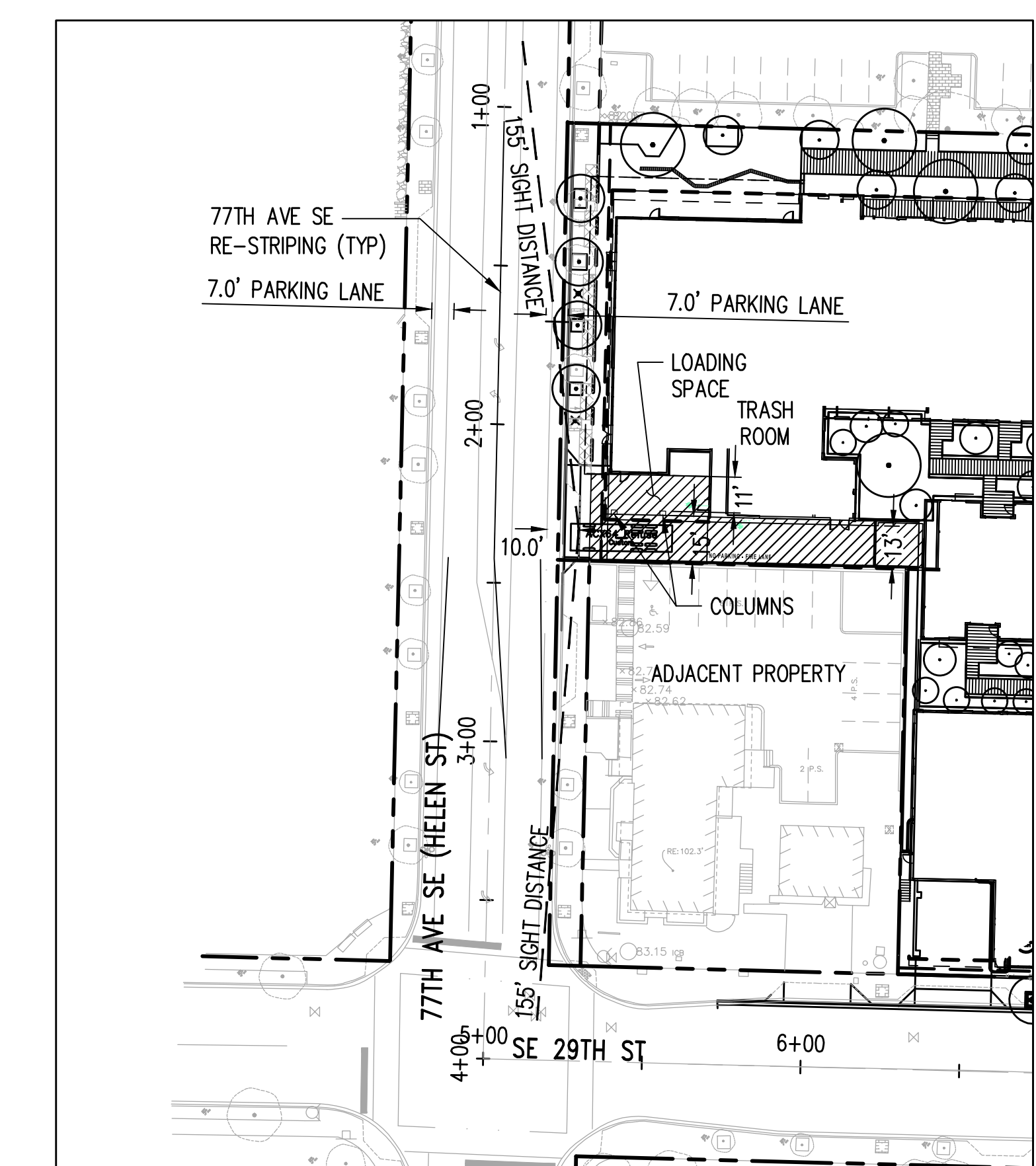
**kpff**  
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Seattle, WA 98101  
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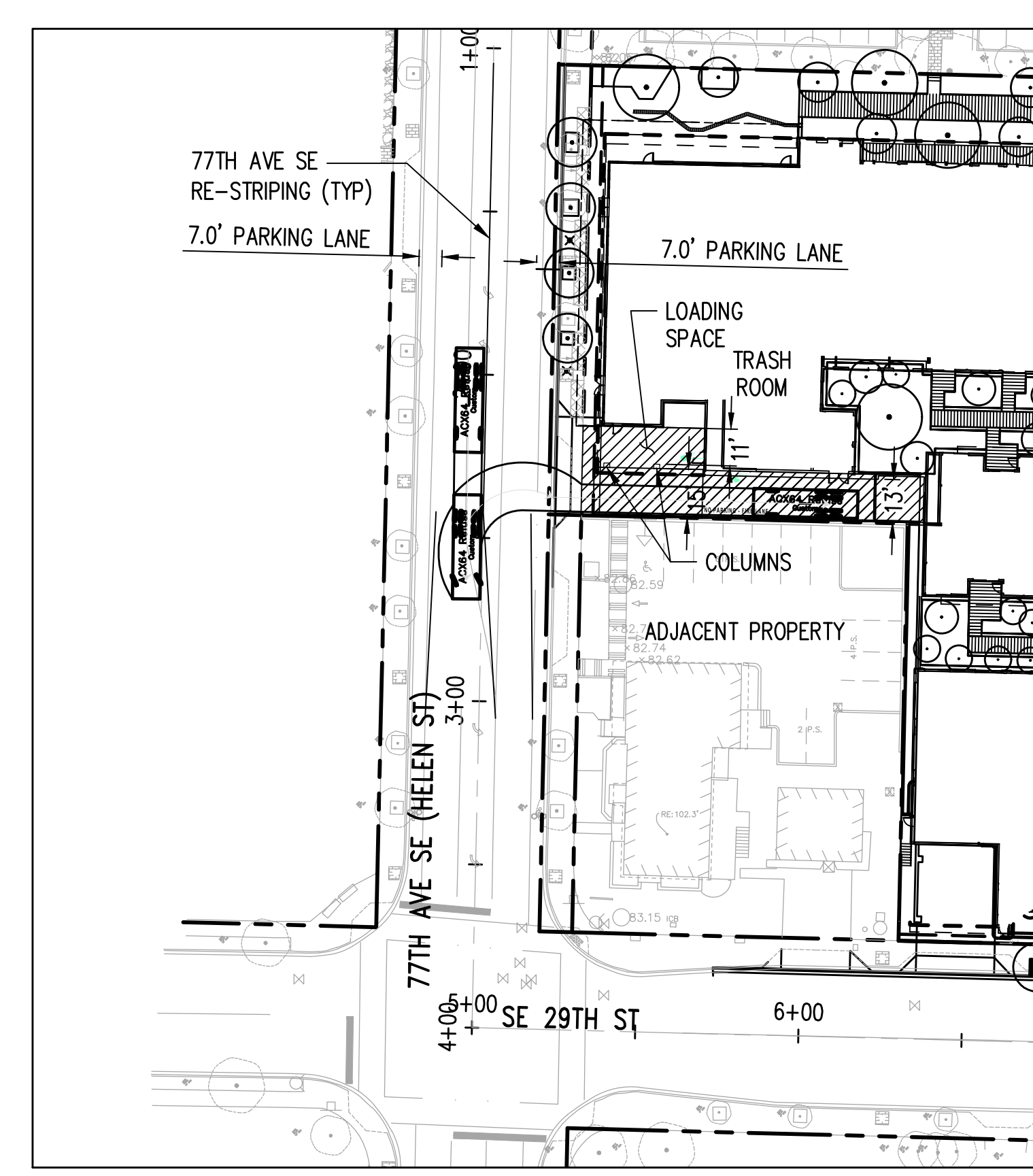
REFUSE TRUCK NB INGRESS  
SCALE: 1"=40'



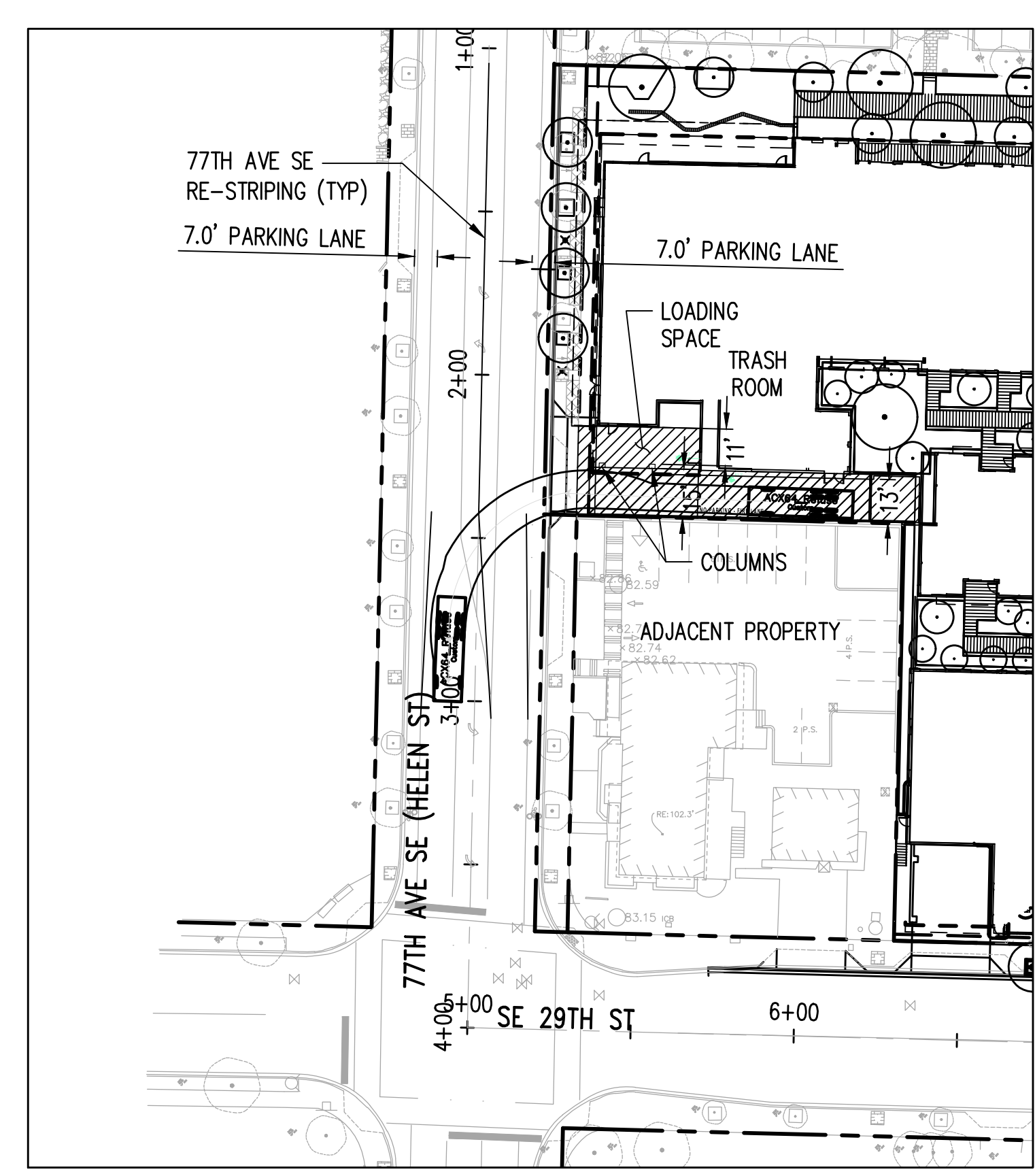
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SCALE: 1"=40'



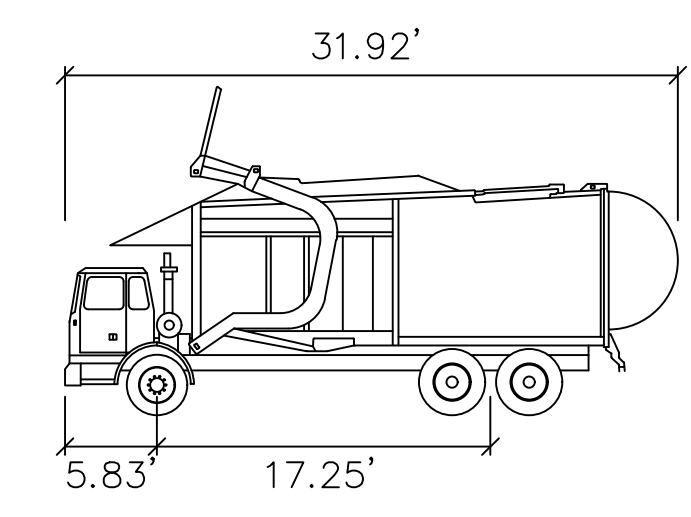
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SCALE: 1"=40'



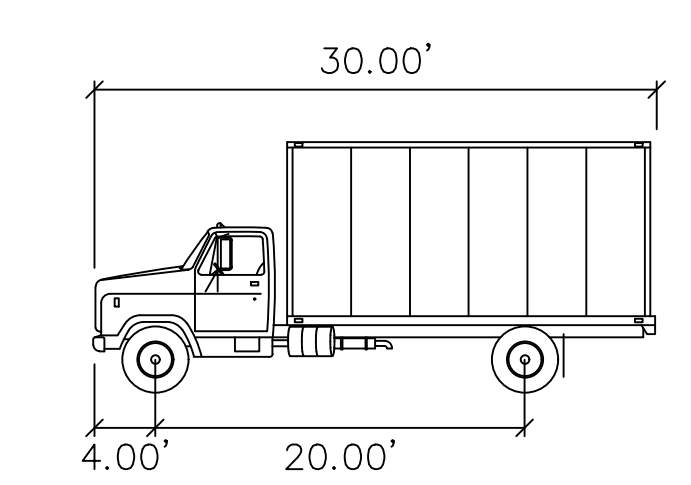
REFUSE TRUCK SB INGRESS  
SCALE: 1"=40'



REFUSE TRUCK SB EGRESS  
SCALE: 1"=40'



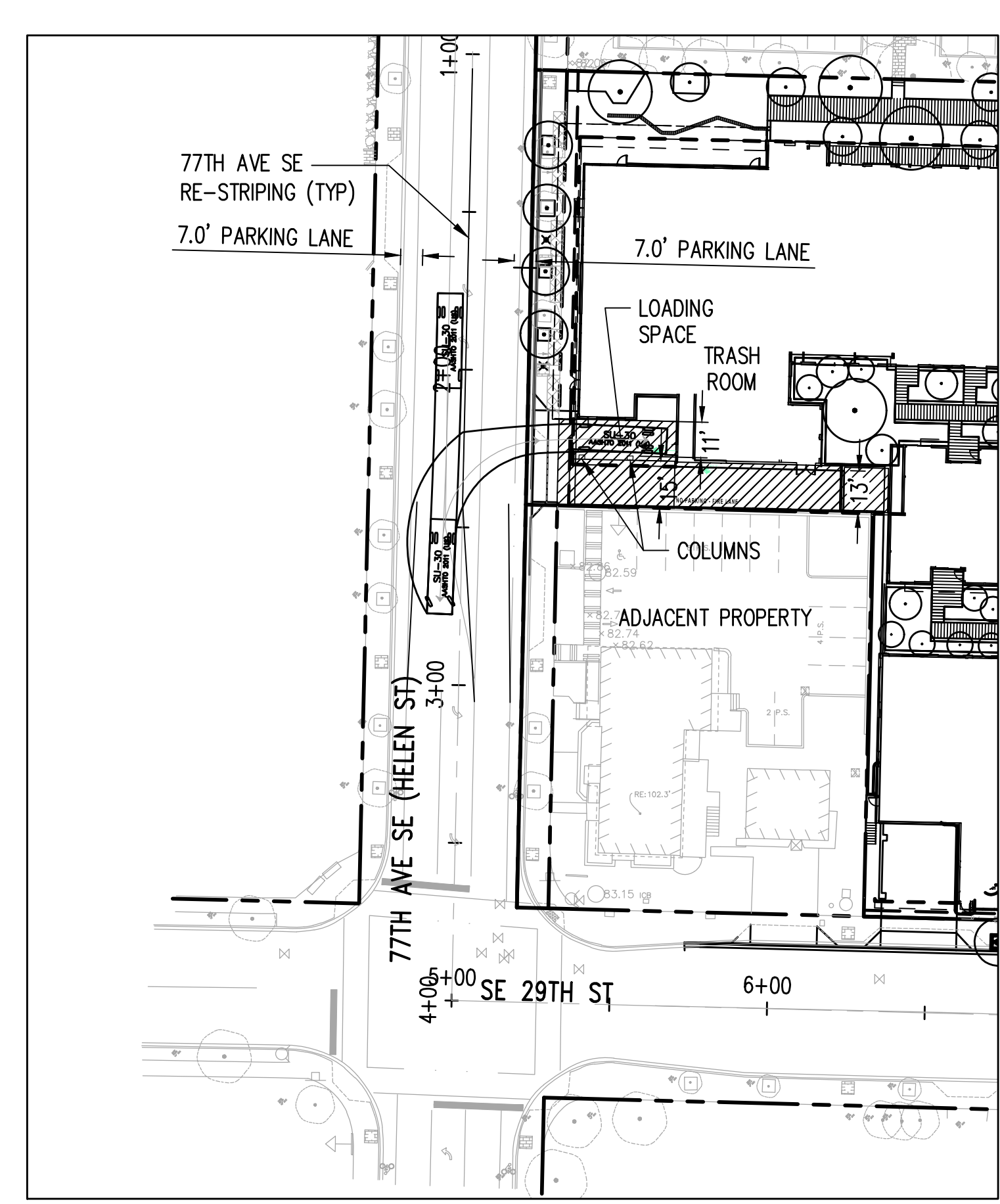
ACX64 REFUSE  
FEET  
WIDTH : 8.42  
TRACK : 8.37  
LOCK TO LOCK TIME : 6.0  
STEERING ANGLE : 35.1



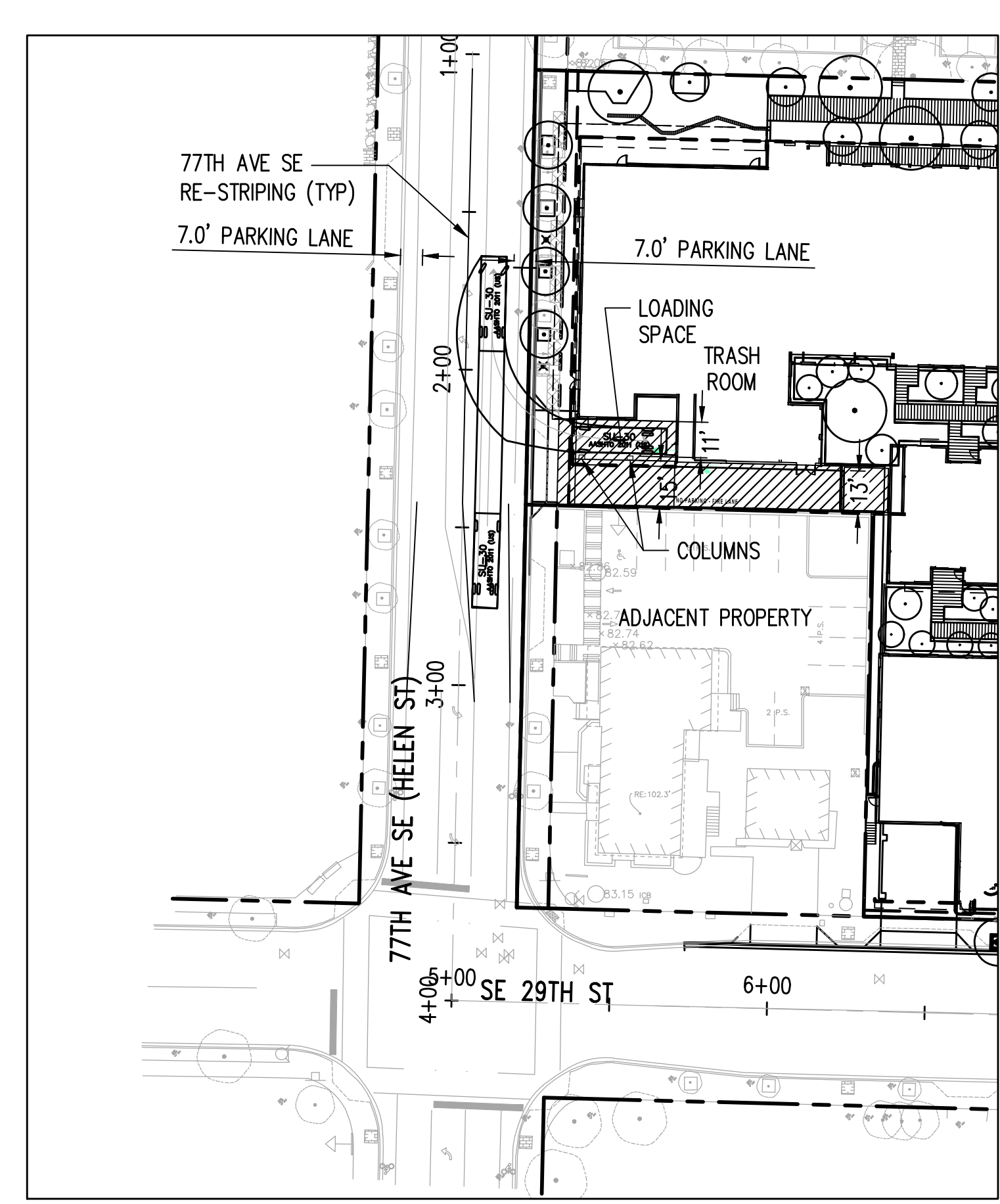
SU-30  
FEET  
WIDTH : 8.00  
TRACK : 8.00  
LOCK TO LOCK TIME : 6.0  
STEERING ANGLE : 31.8

REFUSE TRUCK DETAIL  
NTS

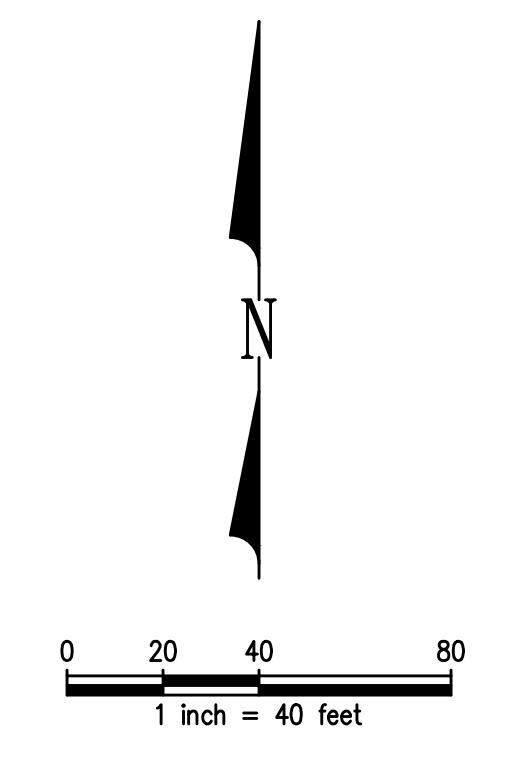
SU-30 DETAIL  
NTS



SU-30 SB INGRESS  
SCALE: 1"=40'



SU-30 NB INGRESS  
SCALE: 1"=40'



MERCER ISLAND  
MIXED USE  
2905 29TH AVE SE  
MERCER ISLAND, WA 98040

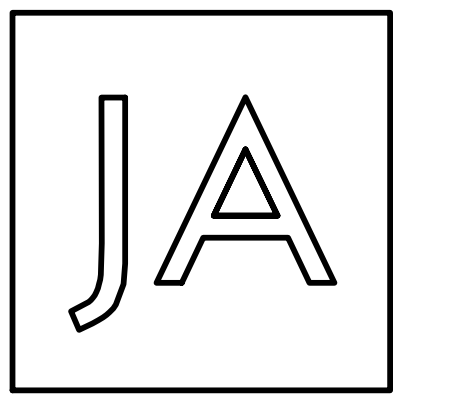
DRAWING ISSUE

| Date       | Description             |
|------------|-------------------------|
| 12/24/2019 | LAND USE SET            |
| 03/31/2020 | 50% CD                  |
| 06/26/2020 | LAND USE SET REV #1     |
| 11/12/2020 | BUILDING PERMITS 75% CD |
| 12/04/2020 | LAND USE SET REV #2     |

SHEET TITLE  
TRUCK TURNING  
MOVEMENTS

SHEET NO.  
**C230**  
Drawn: TNF/KWP  
Checked: ATT





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**MERCER ISLAND  
MIXED USE**  
2905 80TH AVE SE  
MERCER ISLAND, WA 98040

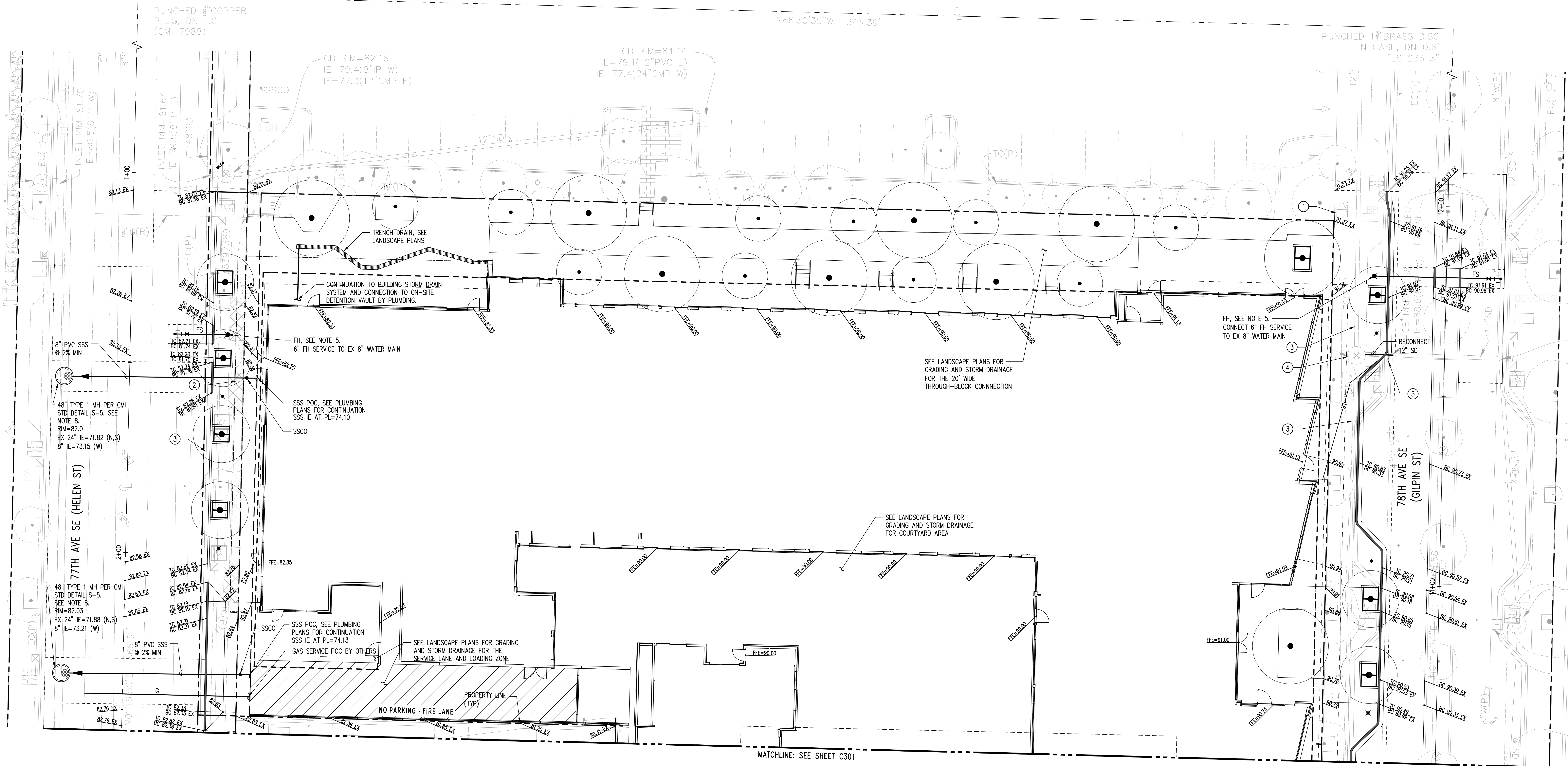
| Date       | Description             |
|------------|-------------------------|
| 12/24/2019 | LAND USE SET            |
| 03/31/2020 | 50% CD                  |
| 06/26/2020 | LAND USE SET REV #1     |
| 11/12/2020 | BUILDING PERMIT, 75% CD |
| 12/04/2020 | LAND USE SET REV #2     |

SHEET TITLE  
**GRADING, STORM DRAINAGE, AND UTILITY PLAN - NORTH**

SHEET NO.

**C300**

Drawn: TNFKWP  
Checked: ATT

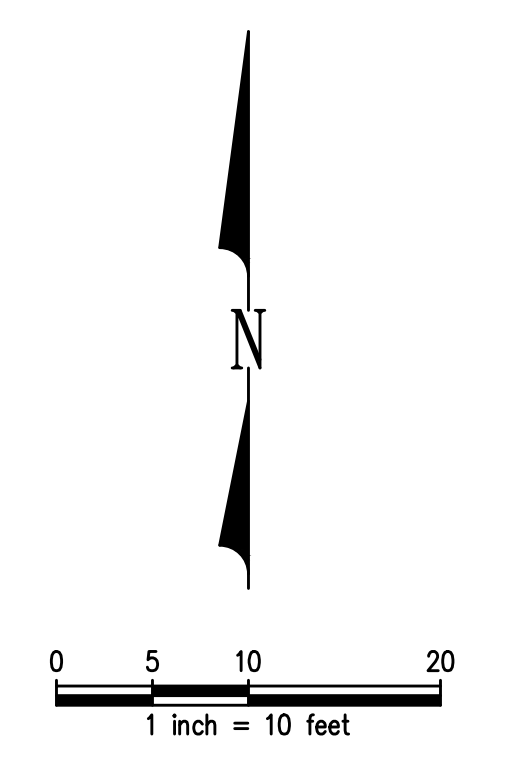


**GRADING, STORM DRAINAGE, AND UTILITY NOTES:**

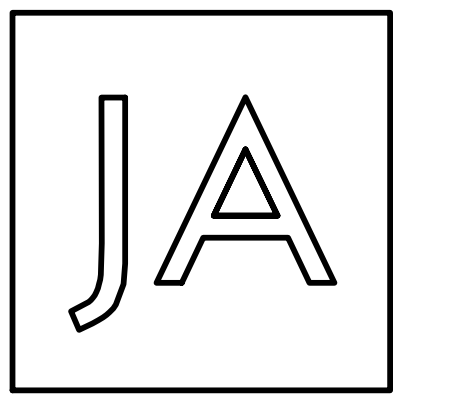
1. DISCONNECT EXISTING SANITARY SIDE SEWERS SERVING THE SITE AT THE MAIN PER CMI STANDARD DETAIL S-22A.
2. TRENCHING AND BEDDING FOR SANITARY SIDE SEWER SHALL BE PER CMI STANDARD DETAIL S-3 AND S-4.
3. SEWER CLEANOUT SHALL BE PER CMI STANDARD DETAIL S-19.
4. TRENCHING AND BEDDING FOR DOMESTIC WATER AND FIRE SERVICE LINES SHALL BE PER CMI STANDARD DETAIL W-3.
5. FIRE HYDRANT ASSEMBLIES SHALL BE PER CMI STANDARD DETAIL W-24 AND W-24A.
6. ADJUST ALL UTILITY LIDS TO FINISH GRADE.
7. DOMESTIC WATER METER AND VAULT SHALL BE INSTALLED PER CMI STANDARD DETAIL W-15. CONTRACTOR TO COORDINATE EXACT LOCATION OF THE NEW WATER METER WITH THE CITY WATER DEPARTMENT DURING CONSTRUCTION.
8. INSTALL SANITARY SEWER MANHOLE PER CMI STD DETAIL S-15. INSTALL CONCRETE BRICKS OR PRE-CAST CONCRETE ADJUSTMENT RINGS PER CMI STD DETAIL S-9 TO PROVIDE CLEARANCE BETWEEN MANHOLE AND EXISTING ELECTRICAL LINE. CONTRACTOR TO POT-HOLE PRIOR TO CONSTRUCTION AND COORDINATE WITH ELECTRICAL UTILITY PROVIDER.
9. DOUBLE CHECK VALVE ASSEMBLY AND VAULT SHALL BE INSTALLED PER CMI STANDARD DETAIL W-19A.

**CONSTRUCTION NOTES:**

- 1 EX TELECOMM VAULT/MH TO BE PROTECTED.
- 2 EX WATER METER TO BE REMOVED. CAP EX WATER SERVICE AT THE MAIN.
- 3 EX STORM MAIN TO BE PROTECTED.
- 4 EX SDMH TO REMAIN, ADJUST RIM TO GRADE.
- 5 EX CB/INLET TO BE REMOVED.







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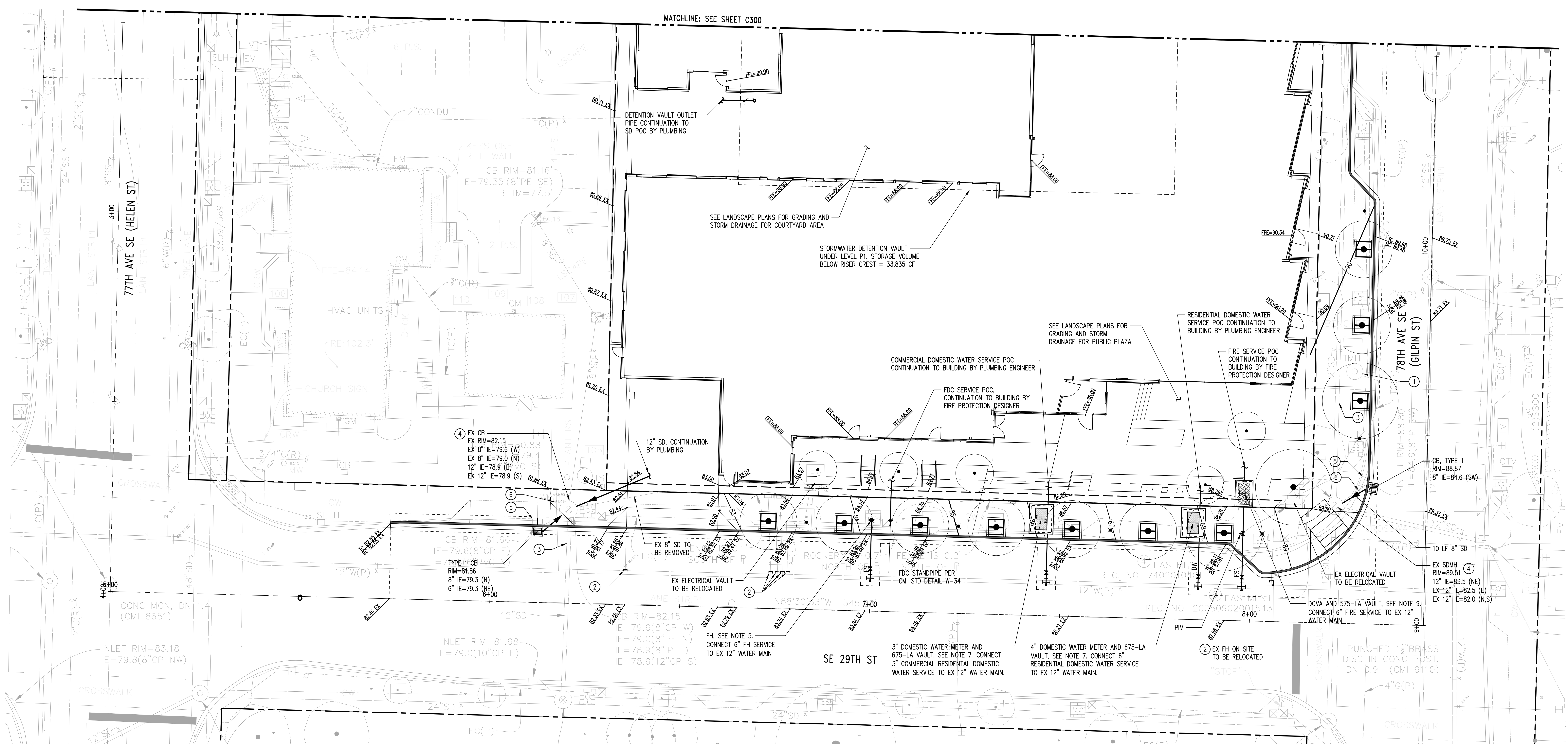
**MERCER ISLAND  
MIXED USE**  
2905 29TH AVE SE  
MERCER ISLAND, WA 98040

| Date       | Description            |
|------------|------------------------|
| 12/24/2019 | LAND USE SET           |
| 03/31/2020 | 50% CD                 |
| 06/26/2020 | LAND USE SET REV #1    |
| 11/12/2020 | BUILDING PERMIT 75% CD |
| 12/04/2020 | LAND USE SET REV #2    |

SHEET TITLE  
**GRADING, STORM  
DRAINAGE, AND  
UTILITY PLAN - SOUTH**

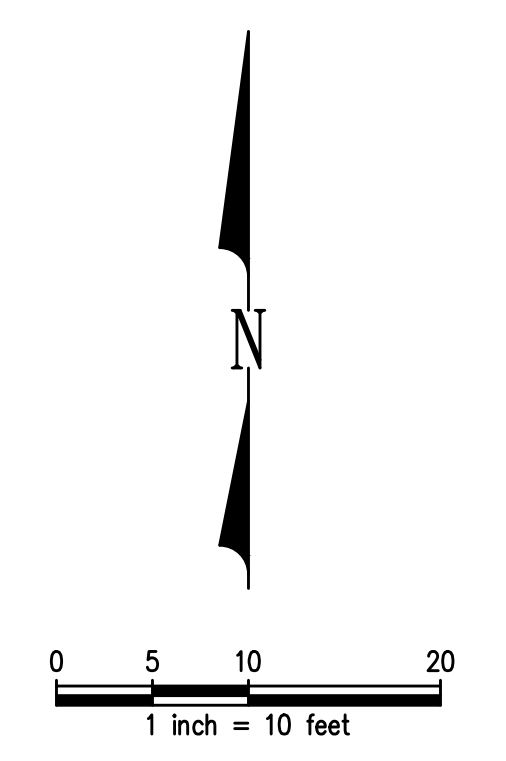
SHEET NO.  
**C301**

Drawn TNFKWP  
Checked ATT



- GRADING, STORM DRAINAGE, AND UTILITY NOTES:**
- DISCONNECT EXISTING SANITARY SIDE SEWERS SERVING THE SITE AT THE MAIN PER CMI STANDARD DETAIL S-22A.
  - TRENCHING AND BEDDING FOR SANITARY SIDE SEWER SHALL BE PER CMI STANDARD DETAIL S-3 AND S-4.
  - SEWER CLEANOUT SHALL BE PER CMI STANDARD DETAIL S-19.
  - TRENCHING AND BEDDING FOR DOMESTIC WATER AND FIRE SERVICE LINES SHALL BE PER CMI STANDARD DETAIL W-3.
  - FIRE HYDRANT ASSEMBLIES SHALL BE PER CMI STANDARD DETAIL W-24 AND W-24A.
  - ADJUST ALL UTILITY LIDS TO FINISH GRADE.
  - DOMESTIC WATER METER AND VAULT SHALL BE INSTALLED PER CMI STANDARD DETAIL W-15. CONTRACTOR TO COORDINATE EXACT LOCATION OF THE NEW WATER METER WITH THE CITY WATER DEPARTMENT DURING CONSTRUCTION.
  - INSTALL SANITARY SEWER MANHOLE PER CMI STD DETAIL S-15. INSTALL CONCRETE BRICKS OR PRE-CAST CONCRETE ADJUSTMENT RINGS PER CMI STD DETAIL S-9 TO PROVIDE CLEARANCE BETWEEN MANHOLE AND EXISTING ELECTRICAL LINE. CONTRACTOR TO POT-HOLE PRIOR TO CONSTRUCTION AND COORDINATE WITH ELECTRICAL UTILITY PROVIDER.
  - DOUBLE CHECK VALVE ASSEMBLY AND VAULT SHALL BE INSTALLED PER CMI STANDARD DETAIL W-19A.

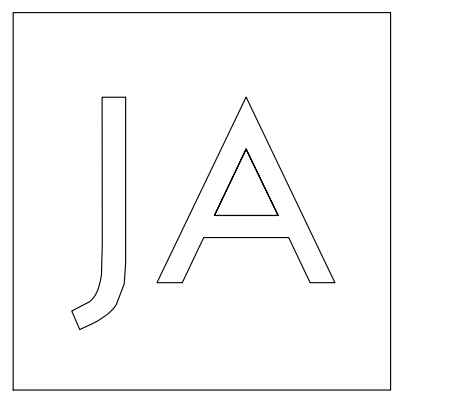
- CONSTRUCTION NOTES:**
- EX TELECOMM VAULT/MH TO BE PROTECTED.
  - EX WATER METER TO BE REMOVED. CAP EX WATER SERVICE AT THE MAIN.
  - EX STORM MAIN TO BE PROTECTED.
  - EX SDMH TO REMAIN, ADJUST RIM TO GRADE.
  - EX CB/INLET TO BE REMOVED.
  - EX SD TO BE REMOVED.
  - PROTECT EX WATER METER.











SiteWorkshop  
Landscape Architects  
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Suite 200  
Seattle, WA 98103  
1.206.285.3026



NOT FOR CONSTRUCTION

MERCER ISLAND  
MIXED USE  
2805 80TH AVE SE  
MERCER ISLAND, WA 98040

| DRAWING ISSUE |                          |
|---------------|--------------------------|
| Date          | Description              |
| 12/24/2019    | LAND USE SET             |
| 03/31/2020    | 50% CD                   |
| 06/26/2020    | LAND USE SET REV #1      |
| 11/12/2020    | BUILDING PERMIT / 75% CD |
| 12/04/2020    | LAND USE SET REV #2      |

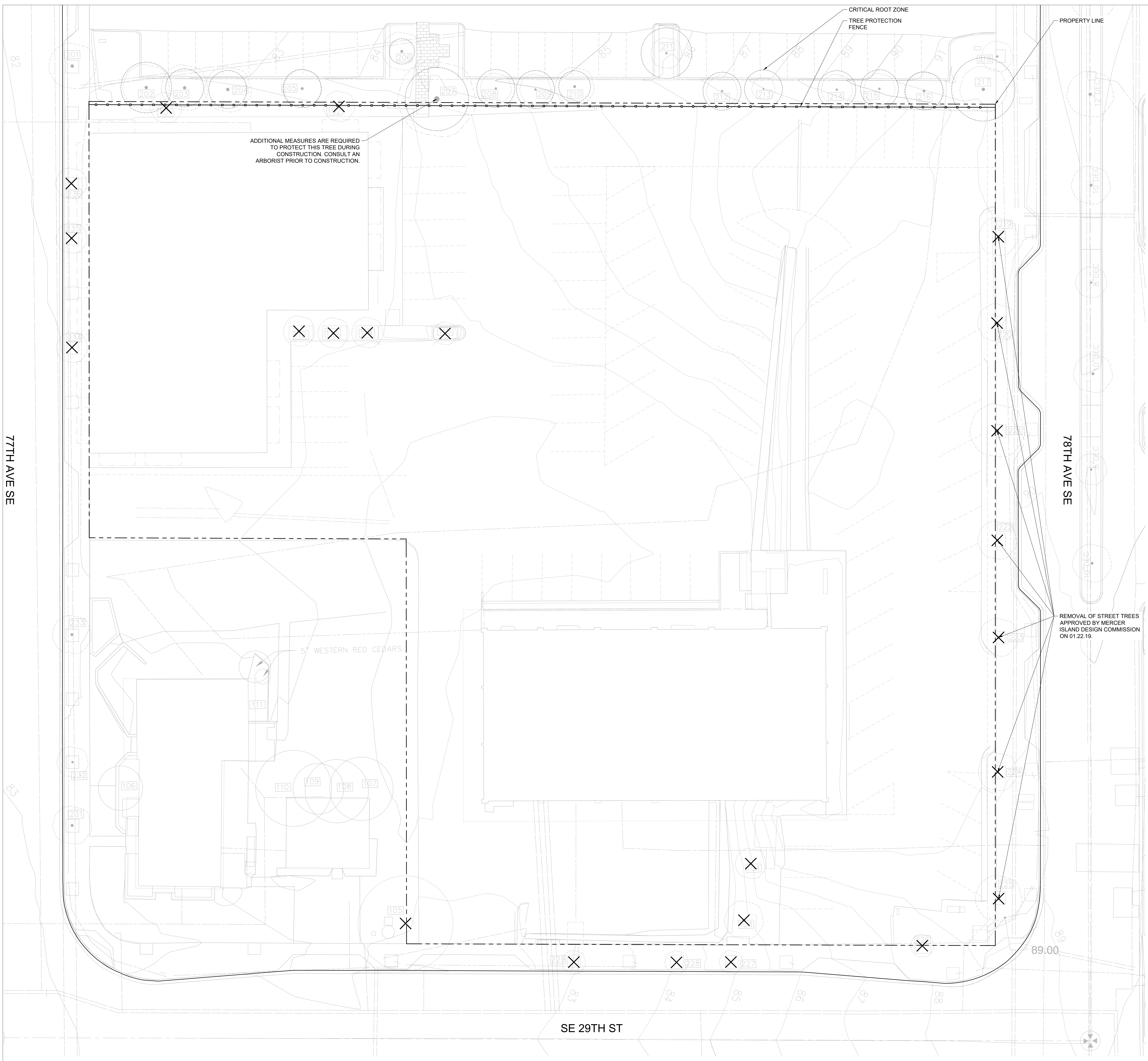
SHEET TITLE  
EXISTING TREE PLAN

SHEET NO.  
**L001**  
Drawn SB  
Checked CB, PK

**TREE PROTECTION LEGEND**

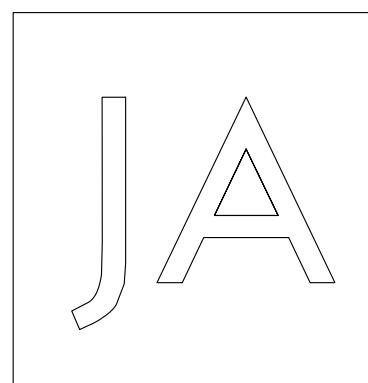
- PROPERTY LINE
- - - CRITICAL ROOT ZONE
- TREE PROTECTION FENCE
- (E) TREE - PROTECT IN PLACE
- ✕ (E) TREE - TO BE REMOVED

REF. L002 FOR EXISTING TREE INVENTORY AND TREE PROTECTION STANDARDS.



1 EXISTING TREE PLAN  
SCALE: 1" = 10'





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Seattle, WA 98103  
1.206.285.3026



NOT FOR CONSTRUCTION

TREE PROTECTION STANDARDS

- PER MICC 19.10.080 CONSTRUCTION ACTIVITIES SHALL COMPLY WITH THE BEST MANAGEMENT PRACTICES (BMP) - MANAGING TREES DURING CONSTRUCTION, PUBLISHED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE.
- PER MICC 19.10.100, PERMIT TO BE OBTAINED FOR REMOVAL OF TREES IN R.O.W.
- TREE PROTECTION FENCING SHALL BE ERRECTED AT PRESCRIBED DISTANCE PER ARBORIST REPORT. FENCES SHALL BE CONSTRUCTED OF CHAIN LINK AND BE AT LEAST 4 FEET HIGH.
- TREE PROTECTION FENCING SHALL BE ERRECTED PRIOR TO MOVING ANY HEAVY EQUIPMENT ON SITE. DOING THIS WILL SET CLEARING LIMITS AND AVOID COMPACTION OF SOILS WITHIN ROOT ZONES OF RETAINED TREES.
- INSTALL HIGHLY VISIBLE SIGNS OF PROTECTION FENCING SPACED NO FURTHER THAN 15 FEET APART. SIGNS SHALL STATE "TREE PROTECTION AREA - ENTRANCE PROHIBITED," AND "CITY OF MERCER ISLAND" CODE ENFORCEMENT PHONE NUMBER.
- NO WORK SHALL BE PERFORMED WITHIN PROTECTION FENCING UNLESS APPROVED BY PLANNING OFFICIAL. IN SUCH CASES, ACTIVITIES WILL BE APPROVED AND SUPERVISED BY A "QUALIFIED TREE PROFESSIONAL".
- THE ORIGINAL GRADE SHALL NOT BE ELEVATED OR REDUCED WITHIN PROTECTION FENCING WITHOUT THE PLANNING OFFICIAL AUTHORIZATION BASED ON RECOMMENDATIONS FROM A QUALIFIED PROFESSIONAL.
- NO BUILDING MATERIALS, SPOILS, CHEMICALS OR SUBSTANCES OF ANY KIND WILL BE PERMITTED WITHIN PROTECTION FENCING.
- EXCAVATIONS WITHIN THE DRIP LINES OF RETAINED TREES SHALL BE MONITORED BY A QUALIFIED TREE PROFESSIONAL SO NECESSARY PRECAUTIONS CAN BE TAKEN TO MINIMIZE IMPACTS TO TREES. A QUALIFIED TREE PROFESSIONAL SHALL MONITOR THE EXCAVATIONS WHEN WORK IS REQUIRED AND ALLOWED UP TO THE LIMITS OF DISTURBANCE.
- TO ESTABLISH SUB GRADE FOR FOUNDATIONS, CURBS AND PAVEMENT SECTIONS NEAR TREES, SOIL SHOULD BE REMOVED PARALLEL TO THE ROOTS AND NOT AT 90 DEGREE ANGLES TO AVOID BREAKING AND TEARING ROOTS THAT LEAD BACK TO THE TRUNK WITHIN THE DRIP LINE. ANY ROOTS DAMAGED DURING THESE EXCAVATIONS SHOULD BE EXPOSED TO SOUND TISSUE AND CUT CLEANLY WITH A SAW. CUTTING TOOLS SHOULD BE STERILIZED.
- AREAS EXCAVATED WITHIN THE DRIP LINE OF RETAINED TREES SHOULD BE THOROUGHLY IRRIGATED WEEKLY DURING DRY PERIODS.
- PROTECTION FENCING SHALL BE MAINTAINED UNTIL THE PLANNING OFFICIAL AUTHORIZES ITS REMOVAL.
- ENSURE THAT ANY APPROVED LANDSCAPING WITHIN THE PROTECTED ZONE SUBSEQUENT TO THE APPROVED REMOVAL OF PROTECTION FENCING BE PERFORMED WITH HAND LABOR.

TREE INVENTORY

| TAG #                      | COMMON NAME        | SPECIES                 | DBH (INCHES) | REMOVAL | EXCEPTIONAL | REQUIRED REPLACEMENT | HEALTH / CONDITION | NOTES  |
|----------------------------|--------------------|-------------------------|--------------|---------|-------------|----------------------|--------------------|--|
| 101                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 9.6          | X       |             | 1                    | FAIR               | LEANS WEST. GIRDLING ROOT, POOR PLANTING                                 |
| 102                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 7            | X       |             | 1                    | GOOD               |  |
| 103                        | FLOWERING CHERRY   | PRUNUS SP.              | 10           | X       |             | 2                    | FAIR               | FAIR-POOR CONDITION, SURROUNDED BY INVASIVE SPECIES                      |
| 104                        | FLOWERING CHERRY   | PRUNUS SP.              | 7            | X       |             | 1                    | FAIR               | DEAD BRANCHES IN CANOPY  |
| 105                        | WESTERN RED CEDAR  | THUJA PLICATA           | 22           | X       |             | 2                    | GOOD               |  |
| 112                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 7            | X       |             | 1                    | GOOD               |  |
| 113                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 7            | X       |             | 1                    | GOOD               |  |
| 114                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 8            | X       |             | 1                    | GOOD               |  |
| 115                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 6            | X       |             | 1                    | GOOD               |  |
| NEIGHBORING / STREET TREES |                    |                         |              |         |             |                      |                    |  |
| 201                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 13           |         |             |                      | FAIR               | 77TH AVE SE STREET TREE; THIN CANOPY                                     |
| 202                        | EUROPEAN HORNBEAM  | CARPINUS BETULUS        | 13.1         |         |             |                      | GOOD               |  |
| 203                        | EUROPEAN HORNBEAM  | CARPINUS BETULUS        | 13           |         |             |                      | GOOD               |  |
| 204                        | EUROPEAN HORNBEAM  | CARPINUS BETULUS        | 17.1         |         | YES         |                      | GOOD               |  |
| 205                        | EUROPEAN HORNBEAM  | CARPINUS BETULUS        | 12.5         |         |             |                      | GOOD               |  |
| 206                        | RED MAPLE          | ACER RUBRUM             | 11.6         |         |             |                      | GOOD               |  |
| 207                        | LONDON PLANE       | PLATANUS X. ACERIFOLIA  | 23.1         |         |             |                      | GOOD               | 4' FROM CURB   |
| 208                        | EUROPEAN HORNBEAM  | CARPINUS BETULUS        | 8.6          |         |             |                      | GOOD               |  |
| 209                        | EUROPEAN HORNBEAM  | CARPINUS BETULUS        | 9.6          |         |             |                      | GOOD               |  |
| 210                        | EUROPEAN HORNBEAM  | CARPINUS BETULUS        | 11           |         |             |                      | GOOD               |  |
| 211                        | RED MAPLE          | ACER RUBRUM             | 9            |         |             |                      | GOOD               |  |
| 212                        | EUROPEAN HORNBEAM  | CARPINUS BETULUS        | 9.2          |         |             |                      | GOOD               |  |
| 213                        | EUROPEAN HORNBEAM  | CARPINUS BETULUS        | 5.1          |         |             |                      | GOOD               |  |
| 214                        | EUROPEAN HORNBEAM  | CARPINUS BETULUS        | 7.8          |         |             |                      | GOOD               |  |
| 215                        | EUROPEAN HORNBEAM  | CARPINUS BETULUS        | 8.5          |         |             |                      | GOOD               |  |
| 216                        | EUROPEAN HORNBEAM  | CARPINUS BETULUS        | 11           |         |             |                      | GOOD               |  |
| 217                        | LONDON PLANE       | PLATANUS X. ACERIFOLIA  | 14           |         |             |                      | GOOD               |  |
| 218                        | COLUMNAR RED MAPLE | ACER RUBRUM 'ARMSTRONG' | 8            |         |             |                      | GOOD               |  |
| 219                        | RED MAPLE          | ACER RUBRUM             | 10.6         | X       |             | 2                    | GOOD               | R.O.W. TREE, REMOVAL APPROVED BY DESIGN COMMISSION 01.22.19              |
| 220                        | RED MAPLE          | ACER RUBRUM             | 10.2         | X       |             | 2                    | GOOD               | R.O.W. TREE, REMOVAL APPROVED BY DESIGN COMMISSION 01.22.19              |
| 221                        | RED MAPLE          | ACER RUBRUM             | 14.7         | X       |             | 2                    | GOOD               | R.O.W. TREE, REMOVAL APPROVED BY DESIGN COMMISSION 01.22.19              |
| 222                        | COLUMNAR RED MAPLE | ACER RUBRUM 'ARMSTRONG' | 10           | X       |             | 2                    | GOOD               | R.O.W. TREE, REMOVAL APPROVED BY DESIGN COMMISSION 01.22.19              |
| 223                        | COLUMNAR RED MAPLE | ACER RUBRUM 'ARMSTRONG' | 9.6          | X       |             | 1                    | GOOD               | R.O.W. TREE, REMOVAL APPROVED BY DESIGN COMMISSION 01.22.19, NARROW FORM |
| 224                        | RED MAPLE          | ACER RUBRUM             | 11.5         | X       |             | 2                    | GOOD               | R.O.W. TREE, REMOVAL APPROVED BY DESIGN COMMISSION 01.22.19              |
| 225                        | RED MAPLE          | ACER RUBRUM             | 12.8         | X       |             | 2                    | GOOD               | R.O.W. TREE, REMOVAL APPROVED BY DESIGN COMMISSION 01.22.19              |
| 226                        | COLUMNAR RED MAPLE | ACER RUBRUM 'ARMSTRONG' | 7            | X       |             | 1                    | GOOD               |  |
| 227                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 5            | X       |             | 1                    | GOOD               | R.O.W. TREE  |
| 228                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 5.5          | X       |             | 1                    | FAIR               | R.O.W. TREE  |
| 229                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 6.2          | X       |             | 1                    | FAIR               | R.O.W. TREE  |
| 234                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 10           | X       |             | 2                    | FAIR               | R.O.W. TREE  |
| 235                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 9            | X       |             | 1                    | FAIR               | R.O.W. TREE  |
| 236                        | FLOWERING PEAR     | PYRUS CALLERYANA        | 8            | X       |             | 1                    | FAIR               | R.O.W. TREE  |

REQUIRED REPLACEMENT PER MICC 19.10.070: 32 TREES

REPLACEMENT TREES PROVIDED: 78 TREES, REF. L510 - PLANTING SCHEDULE

MERCER ISLAND  
MIXED USE  
2805 80TH AVE SE  
MERCER ISLAND, WA 98040

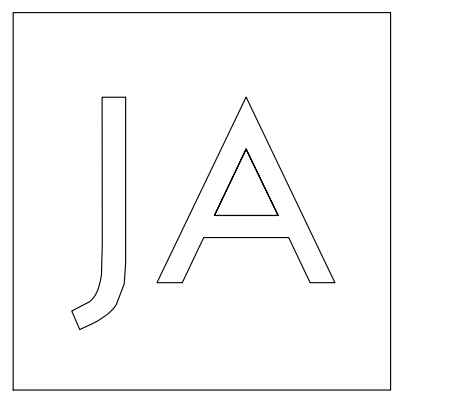
| Date       | Description              |
|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 06/26/2020 | LAND USE SET REV #1      |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
EXISTING TREE INVENTORY

SHEET NO.  
**L002**

Drawn SB  
Checked CB, PK

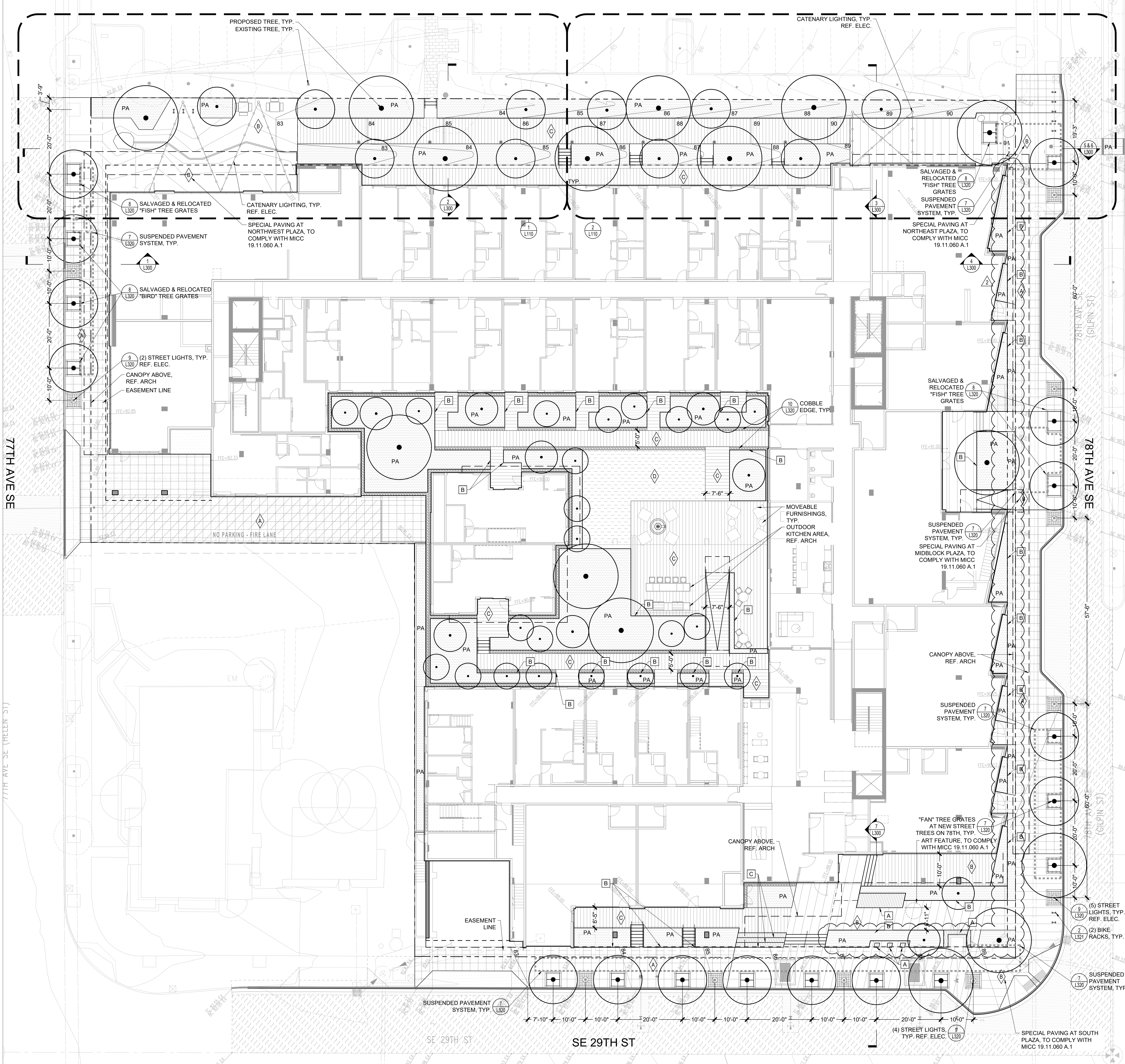




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**ABBREVIATIONS**

|        |                          |
|--------|--------------------------|
| ARCH   | ARCHITECTURE             |
| BLDG   | BUILDING                 |
| CIP    | CAST IN PLACE            |
| CONC   | CONCRETE                 |
| DK     | DARK                     |
| EXIST  | EXISTING                 |
| FFE    | FINISHED FLOOR ELEVATION |
| LT     | LIGHT                    |
| MED    | MEDIUM                   |
| NIC    | NOT IN CONTRACT          |
| PVMT   | PAVEMENT                 |
| REF    | REFERENCE                |
| R.O.W. | RIGHT OF WAY             |
| SIM    | SIMILAR                  |
| TYP    | TYPICAL                  |

**LEGEND**

| SYMBOL | ITEM  |
|--------|---|
|        | EXISTING TREE TO REMAIN, PROTECT IN PLACE, REF. L001 - EXISTING TREE PLAN |
|        | PROPOSED TREES, REF. L510 - PLANTING SCHEDULE                             |
|        | PROPERTY LINE   |

**SURFACING SCHEDULE**

| SYMBOL TYPE | FINISH/COLOR/NOTES   | DETAIL                        |
|-------------|--|-------------------------------|
|             | CIP CONC. PVMT. PER TOWN CENTER STANDARD   | 1<br>L320                     |
|             | SPECIALTY CIP CONC. PVMT.  | 1<br>L320 2<br>L320           |
|             | PRECAST UNIT PAVERS  | 3<br>L320 4<br>L320           |
|             | SYNTHETIC TURF   | 6<br>L320                     |
|             | SUSPENDED PAVEMENT SYSTEM WITH LID AND GEOTEXTILE SEPARATOR AT TOP. DEEPROOF SILVA CELL OR APPROVED EQUAL. REF. L500 FOR LAYOUT. | 7<br>L320                     |
|             | COBBLE EDGE  | 10<br>L320                    |
|             | TRENCH DRAIN   | 5<br>L320                     |
|             | PLANTING AREA  | REF. L510 - PLANTING SCHEDULE |

**SITE FURNISHINGS**

| SYMBOL TYPE | FINISH/COLOR/NOTES | DETAIL   |
|-------------|--------------------|--|
|             | SEAT STONES        | SOMA STONES, AS AVAILABLE FROM CONCRETEWORKS. REF. SPECS   |
|             | BOULDERS           | "IGNEOUS RIVER BOULDERS" AS AVAILABLE FROM MARENAKOS ROCK CENTER                                       |
|             | BIKE RACKS         | WESTPORT NO SCRATCH INVERTED-U BIKE RACK AS AVAILABLE FROM SPORTWORKS NORTHWEST. REF. SPECS            |
|             | PICNIC TABLES      | MT-1200-4848 FIXED SQUARE TABLE (ADA STYLE) AS AVAILABLE FROM FAIRWEATHER SITE FURNISHINGS. REF. SPECS |
|             | BENCHES            | COLOSSUS BIG TIMBER SEAT AS AVAILABLE FROM COLUMBIA CASCADE. REF. SPECS                                |
|             | STREET LIGHTS      | REF. ELECTRICAL FOR FIXTURE. UNIT PAVERS TO BE INSTALLED AT BASE PER CITY STANDARD.                    |
|             | CATENARY LIGHTS    | REF. ELECTRICAL  |
|             | BOLLARD LIGHTS     | REF. ELECTRICAL  |

**WALL SCHEDULE**

| SYMBOL TYPE | FINISH/COLOR/NOTES | DETAIL   |
|-------------|--------------------|--|
|             | WALL TYPE A        | 18"-24" SEAT WALL, STEEL FRAME WITH WOOD TOP                     |
|             | WALL TYPE B        | WEATHERED STEEL PLANTER WALL, 3/8" THICK, 18" TALL MIN, 30" MAX. |
|             | WALL TYPE C        | 18"-24" SEAT STEPS, CONCRETE FRAME WITH WOOD TOP                 |

**MERCER ISLAND MIXED USE**  
2808 80TH AVE SE  
MERCER ISLAND, WA 98040

**DRAWING ISSUE**

| Date       | Description             |
|------------|-------------------------|
| 12/24/2019 | LAND USE SET            |
| 03/31/2020 | 50% CD                  |
| 06/26/2020 | LAND USE SET REV #1     |
| 11/12/2020 | BUILDING PERMIT, 75% CD |
| 12/04/2020 | LAND USE SET REV #2     |

SHEET TITLE  
**LANDSCAPE SITE PLAN**

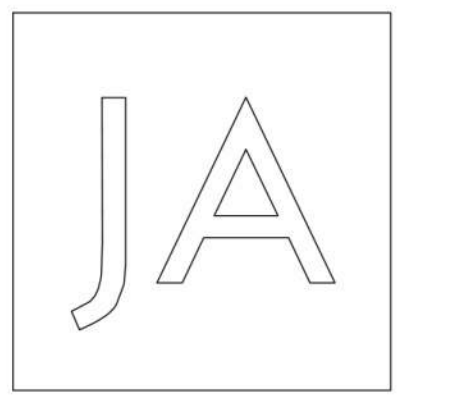
SHEET NO.  
**L100**

Drawn SB  
Checked CB, PK

**1 LANDSCAPE SITE PLAN**  
SCALE: 1" = 10'



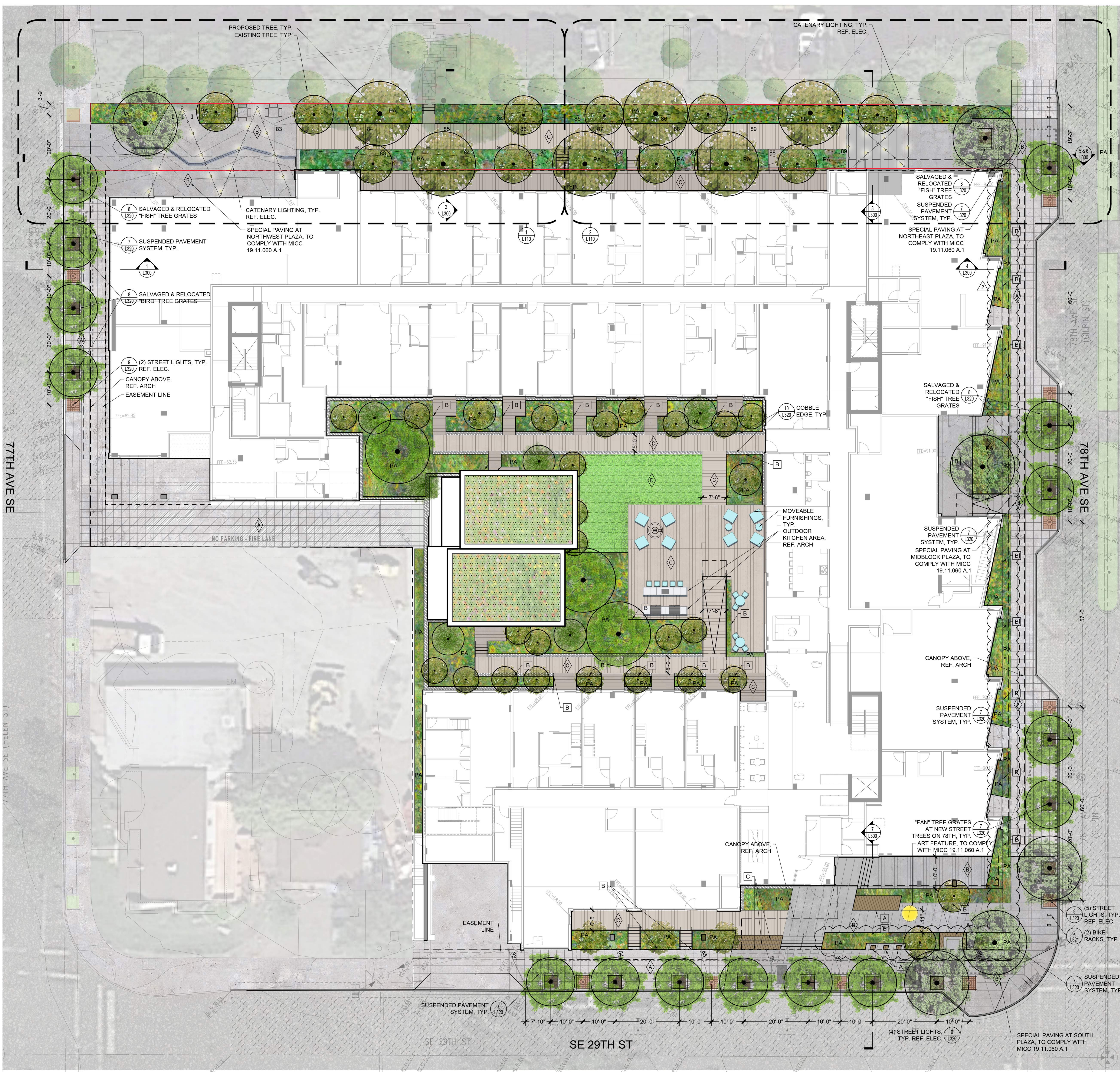




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**ABBREVIATIONS**

|        |                          |
|--------|--------------------------|
| ARCH   | ARCHITECTURE             |
| BLDG   | BUILDING                 |
| CIP    | CAST IN PLACE            |
| CONC   | CONCRETE                 |
| DK     | DARK                     |
| EXIST  | EXISTING                 |
| FFE    | FINISHED FLOOR ELEVATION |
| LT     | LIGHT                    |
| MED    | MEDIUM                   |
| NIC    | NOT IN CONTRACT          |
| PVMT   | PAVEMENT                 |
| REF    | REFERENCE                |
| R.O.W. | RIGHT OF WAY             |
| SIM    | SIMILAR                  |
| TYP    | TYPICAL                  |

**LEGEND**

| SYMBOL    | ITEM  |
|-----------|---|
|           | EXISTING TREE TO REMAIN, PROTECT IN PLACE, REF. L001 - EXISTING TREE PLAN |
|           | PROPOSED TREES, REF. L510 - PLANTING SCHEDULE                             |
| - - - - - | PROPERTY LINE   |

**SURFACING SCHEDULE**

| SYMBOL | TYPE                                     | FINISH/COLOR/NOTES   | DETAIL            |
|--------|--|--|-------------------|
|        | CIP CONC. PVMT. PER TOWN CENTER STANDARD | CIP CONCRETE PAVEMENT, 30" X 30" TOOLED OR SAWCUT JOINTS, LT. BROOM FINISH PERPENDICULAR TO CURB WITH MIN. THICKNESS OF 4".      | 1 (L320)          |
|        | SPECIALTY CIP CONC. PVMT.                | CIP CONCRETE PAVEMENT, SAWCUT JOINTS, SCORING PER PLANS, LT. BROOM FINISH  | 1 (L320) 2 (L320) |
|        | PRECAST UNIT PAVERS                      | 12" X 60" ARCHITECTURAL PRECAST PAVERS, AS AVAILABLE FROM STEPSTONE.   | 3 (L320) 4 (L320) |
|        | SYNTHETIC TURF                           | SYNLAWN ROOFDECK PREMIUM SYSTEM  | 6 (L320)          |
|        | SUSPENDED PAVEMENT SYSTEM                | SUSPENDED PAVEMENT SYSTEM WITH LID AND GEOTEXTILE SEPARATOR AT TOP, DEEPROOF SILVA CELL OR APPROVED EQUAL. REF. L500 FOR LAYOUT. | 7 (L320)          |
|        | COBBLE EDGE                              |  | 10 (L320)         |
|        | TRENCH DRAIN                             | TRENCH DRAIN WITH DECORATIVE GRATE   | 5 (L320)          |
|        | PLANTING AREA                            | REF. L510 - PLANTING SCHEDULE  |                   |

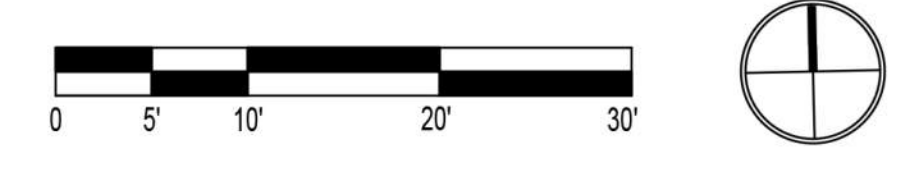
**SITE FURNISHINGS**

| SYMBOL | TYPE            | FINISH/COLOR/NOTES   | DETAIL     |
|--------|-----------------|--|------------|
|        | SEAT STONES     | SOMA STONES, AS AVAILABLE FROM CONCRETEWORKS.  | REF. SPECS |
|        | BOULDERS        | "IGNEOUS RIVER BOULDERS" AS AVAILABLE FROM MARENAKOS ROCK CENTER                                       | 1 (L321)   |
|        | BIKE RACKS      | WESTPORT NO SCRATCH INVERTED-U BIKE RACK AS AVAILABLE FROM SPORTWORKS NORTHWEST; REF. SPECS            | 2 (L321)   |
|        | PICNIC TABLES   | MT-1200-4848 FIXED SQUARE TABLE (ADA STYLE) AS AVAILABLE FROM FAIRWEATHER SITE FURNISHINGS; REF. SPECS | 4 (L321)   |
|        | BENCHES         | COLOSSUS BIG TIMBER SEAT AS AVAILABLE FROM COLUMBIA CASCADE; REF. SPECS                                | 3 (L321)   |
|        | STREET LIGHTS   | REF. ELECTRICAL FOR FIXTURE. UNIT PAVERS TO BE INSTALLED AT BASE PER CITY STANDARD.                    | 9 (L320)   |
|        | CATENERY LIGHTS | REF. ELECTRICAL  |            |
|        | BOLLARD LIGHTS  | REF. ELECTRICAL  |            |

**WALL SCHEDULE**

| SYMBOL | TYPE        | FINISH/COLOR/NOTES   | DETAIL   |
|--------|-------------|--|----------|
|        | WALL TYPE A | 18"-24" SEAT WALL, STEEL FRAME WITH WOOD TOP                     | 7 (L321) |
|        | WALL TYPE B | WEATHERED STEEL PLANTER WALL, 3/8" THICK, 18" TALL MIN, 30" MAX. | 5 (L321) |
|        | WALL TYPE C | 18"-24" SEAT STEPS, CONCRETE FRAME WITH WOOD TOP                 | 6 (L321) |

1 LANDSCAPE COLOR SITE PLAN  
SCALE: 1" = 10'



MERCER ISLAND MIXED USE  
2908 98TH AVE SE  
MERCER ISLAND, WA 98040

DRAWING ISSUE

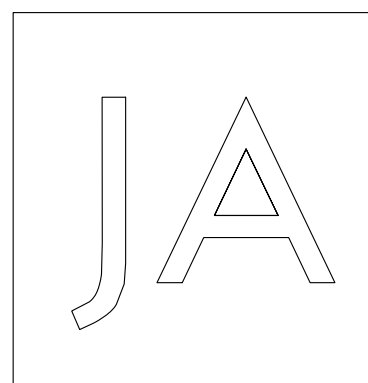
| Date       | Description              |
|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 06/26/2020 | LAND USE SET REV #1      |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
LANDSCAPE COLOR SITE PLAN  
SHEET NO.

**L101**

Drawn: SB  
Checked: CB, PK





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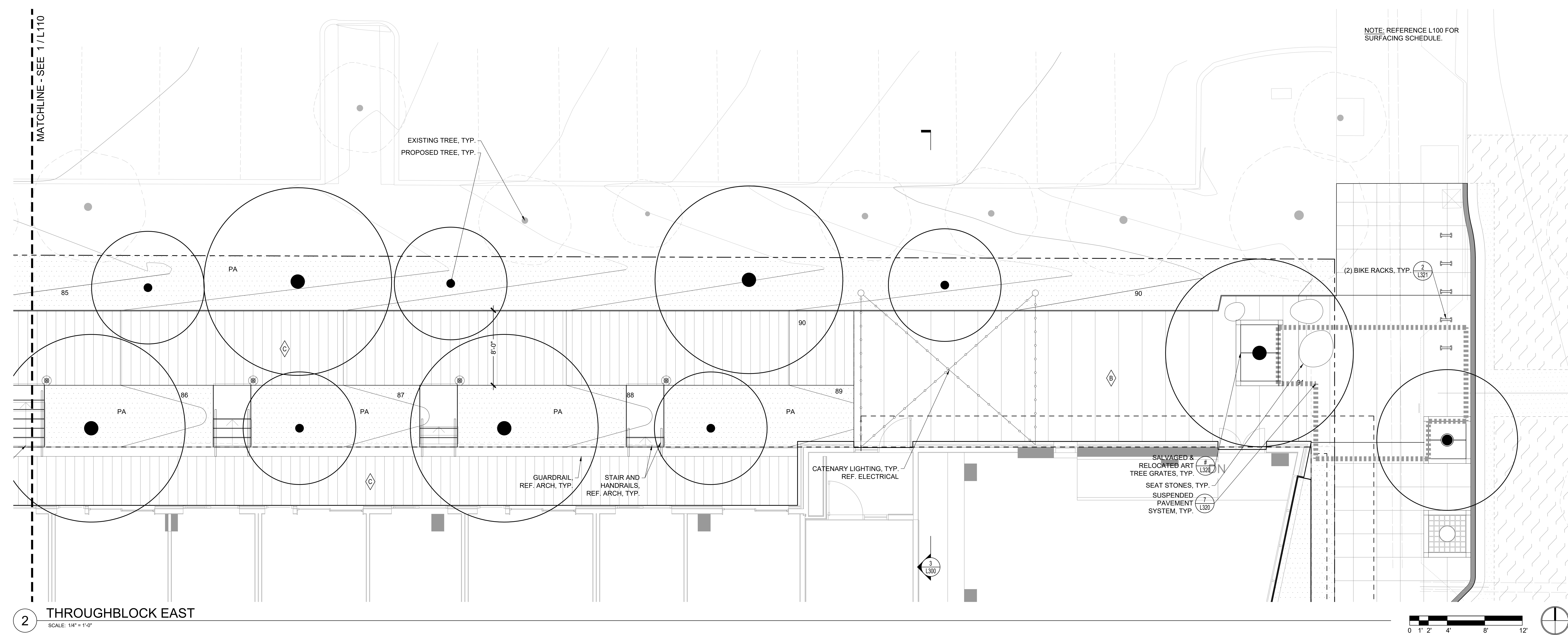
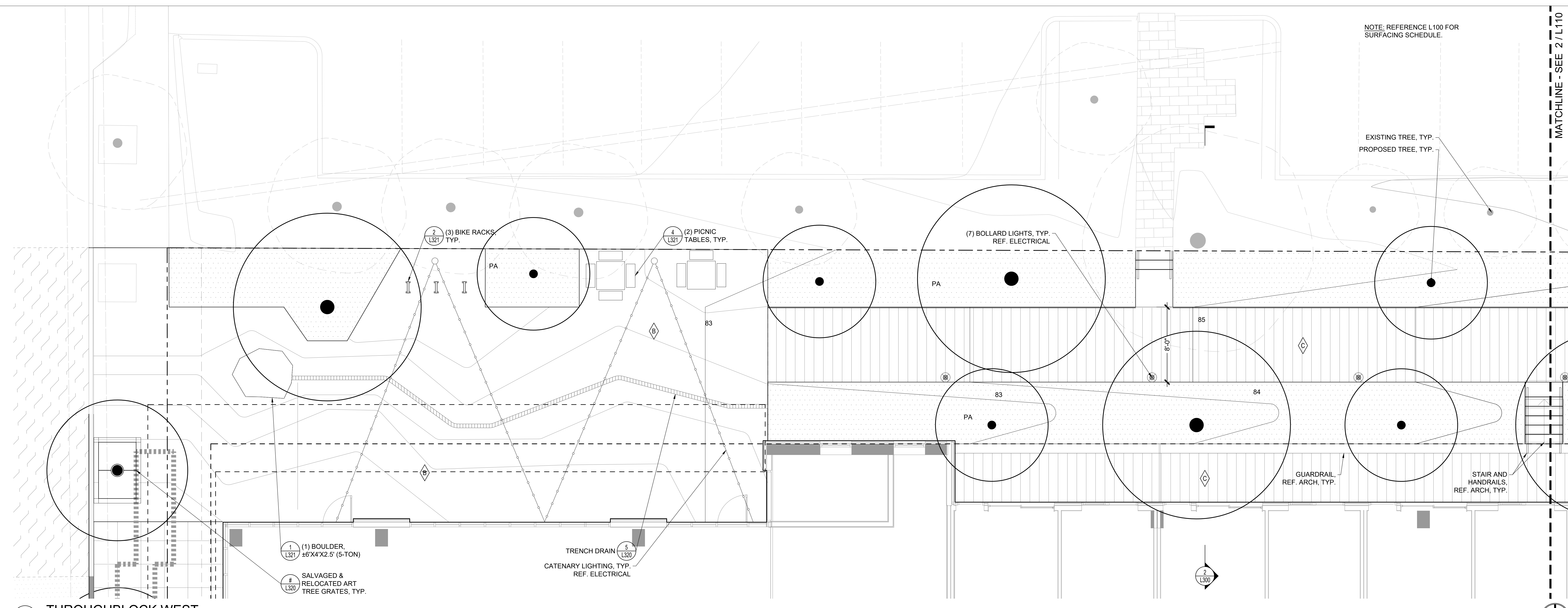
MERCER ISLAND  
MIXED USE  
2835 90TH AVE SE  
MERCER ISLAND, WA 98940

| Date       | Description              |
|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 06/26/2020 | LAND USE SET REV #1      |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
ENLARGEMENT PLAN

SHEET NO.  
L110

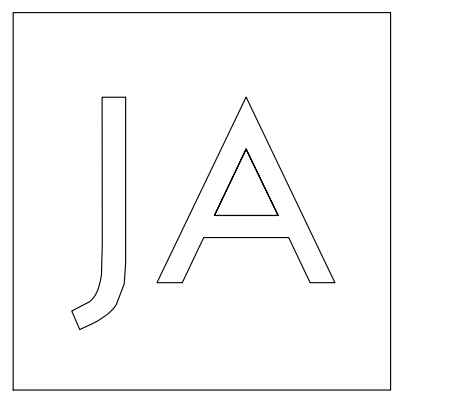
Drawn SB  
Checked CB, PK



MATCHLINE - SEE 2 / L110

MATCHLINE - SEE 1 / L110





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MERCER ISLAND  
MIXED USE  
2835 78TH AVE SE  
MERCER ISLAND, WA 98040

| Date       | Description              |
|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 06/26/2020 | LAND USE SET REV #1      |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

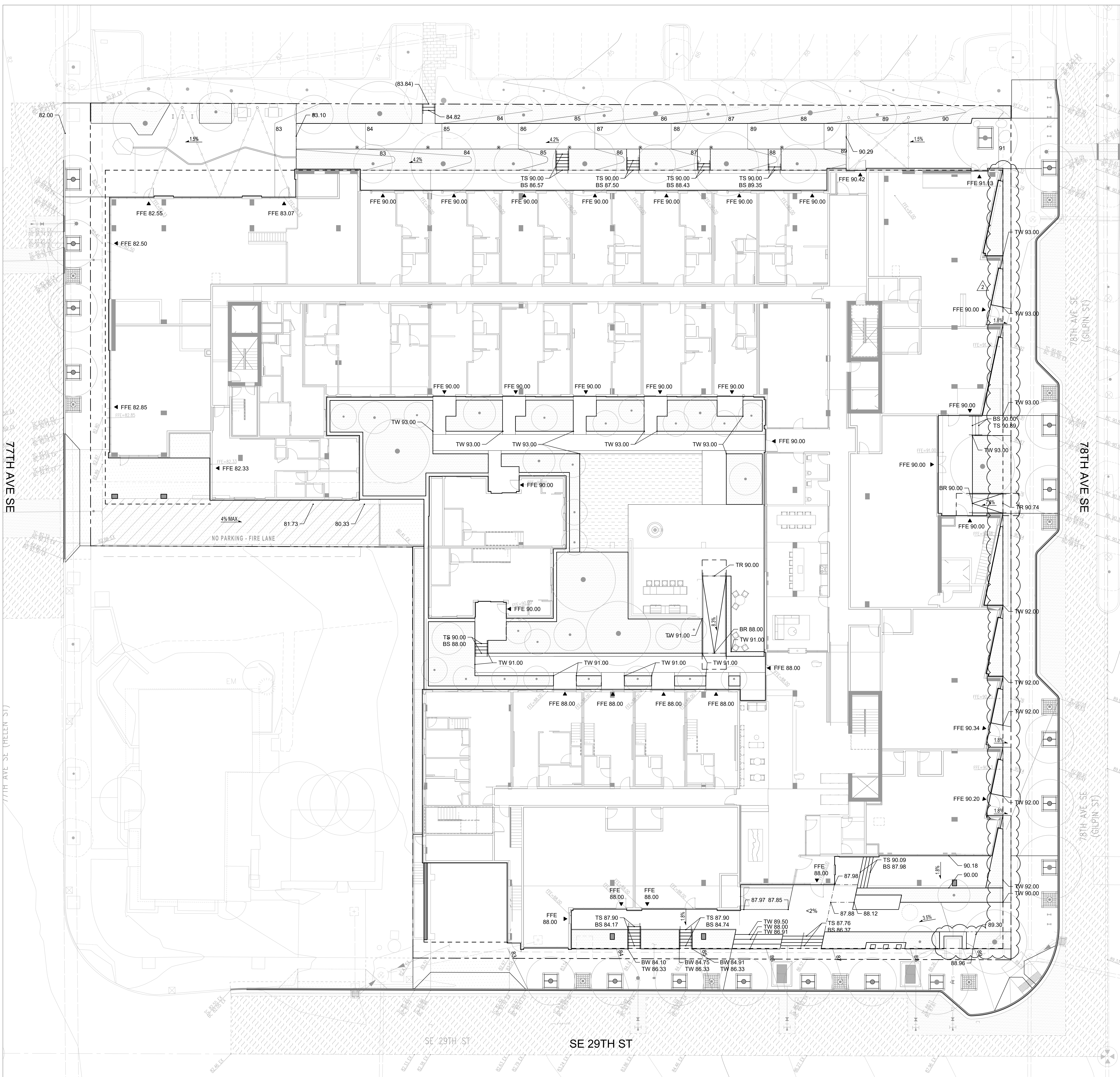
SHEET TITLE  
GRADING PLAN

SHEET NO.  
**L200**

Drawn SB  
Checked CB, PK

- GRADING LEGEND**
- EXISTING TREES TO REMAIN, PROTECT IN PLACE
  - PROPOSED TREES, REF. L5.00
  - PROPERTY LINE
  - LIMIT OF WORK
  - EXISTING CONTOURS
  - PROPOSED CONTOURS
  - GRADE BREAK
  - FINISHED FLOOR ELEVATION
  - BOTTOM / TOP OF STAIR
  - BOTTOM / TOP OF WALL
  - WEIR ELEVATION
  - SPOT ELEVATION
  - ROW SPOT ELEVATION, REF. CIVIL
  - SLOPE

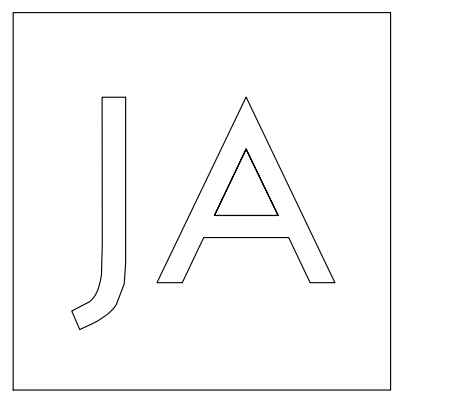
- GRADING NOTES**
- ALL EXISTING GRADES TO BE FIELD VERIFIED.
  - REFER TO CIVIL FOR GRADING IN ROW.
  - CROSS SLOPES ON ALL PATHWAYS NOT TO EXCEED 2% SLOPE.
  - PLANTING AREA SUBGRADES DETERMINED BY SOIL DEPTHS AND SPECIFICATIONS.



**1 GRADING PLAN**  
SCALE: 1" = 10'



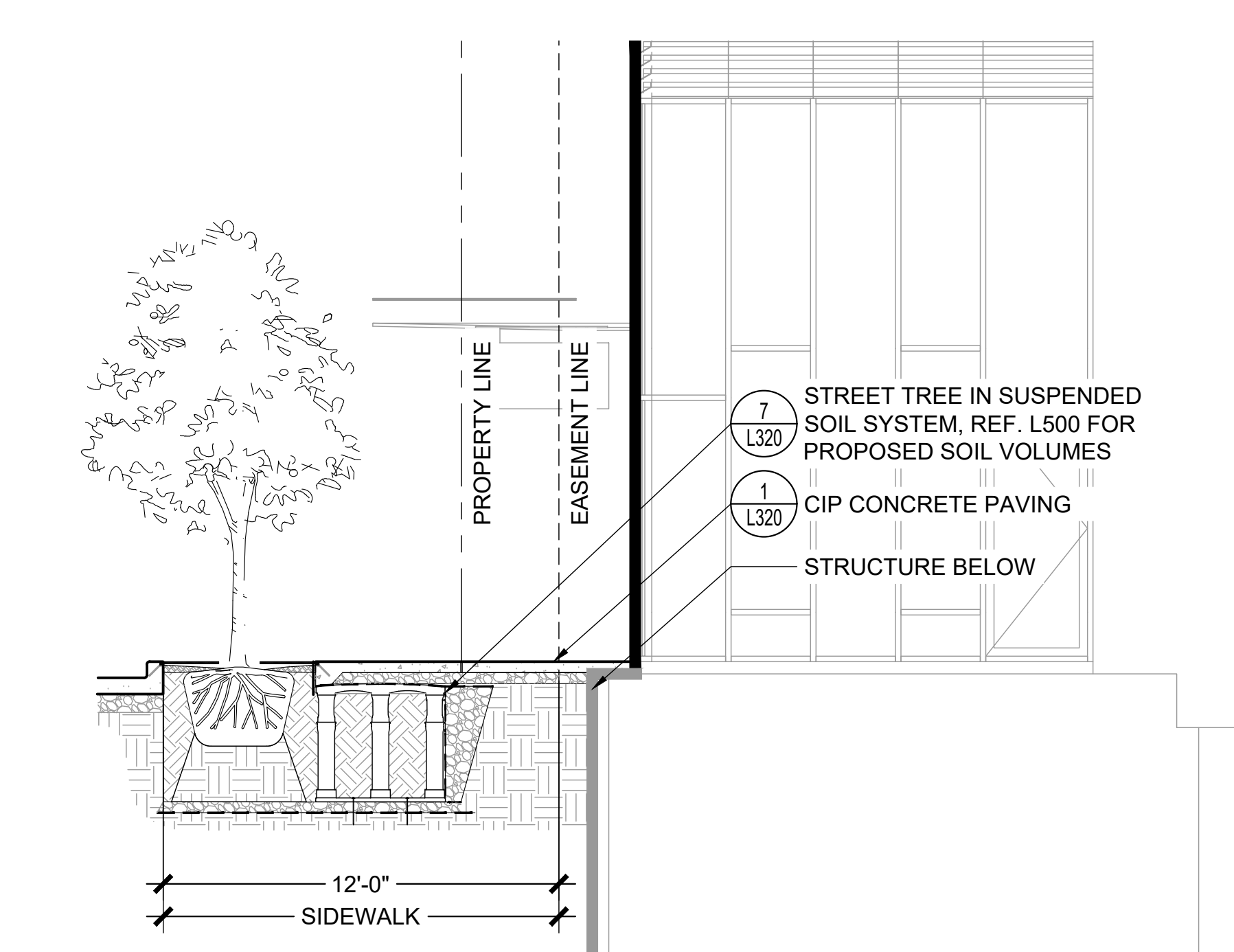




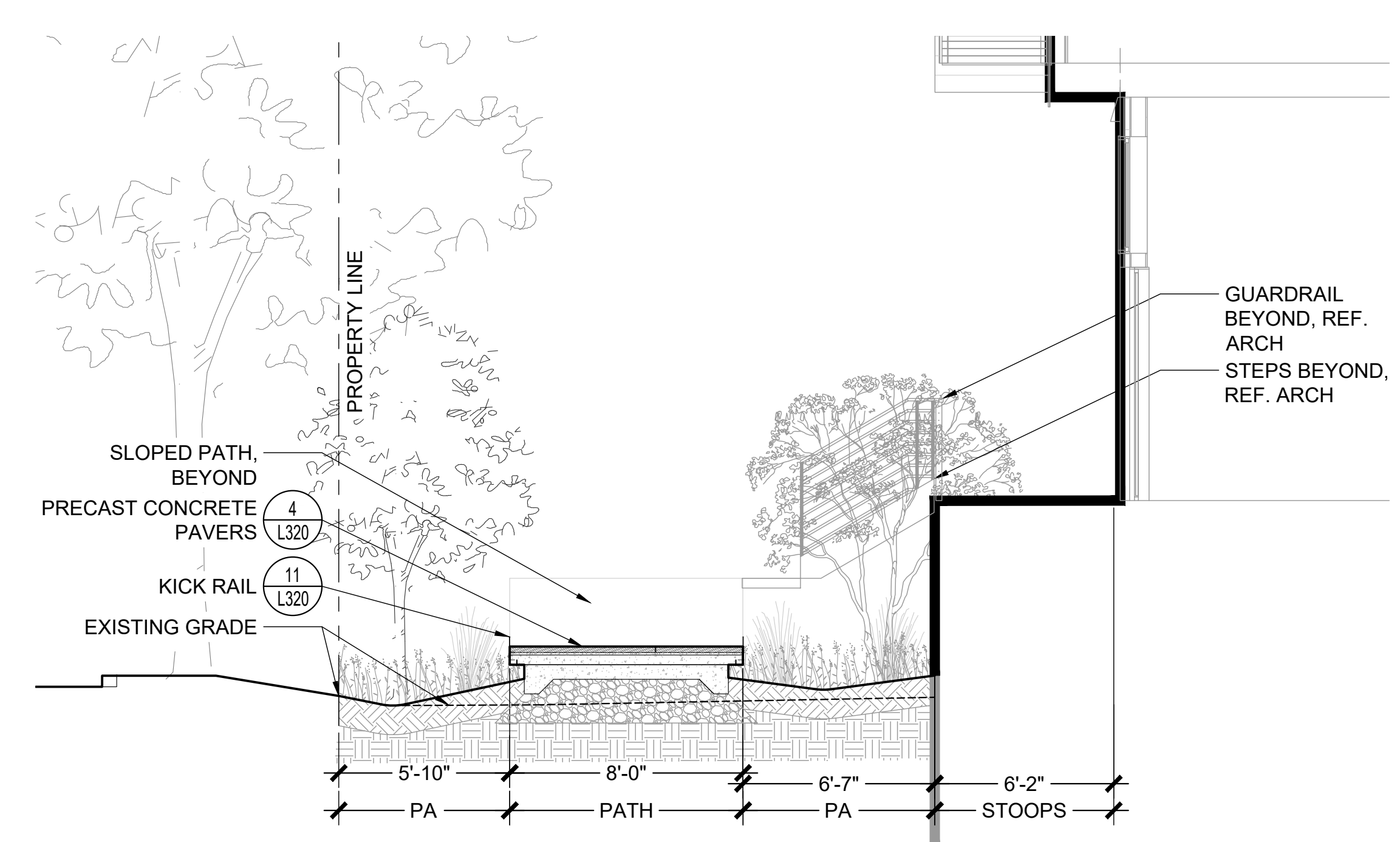
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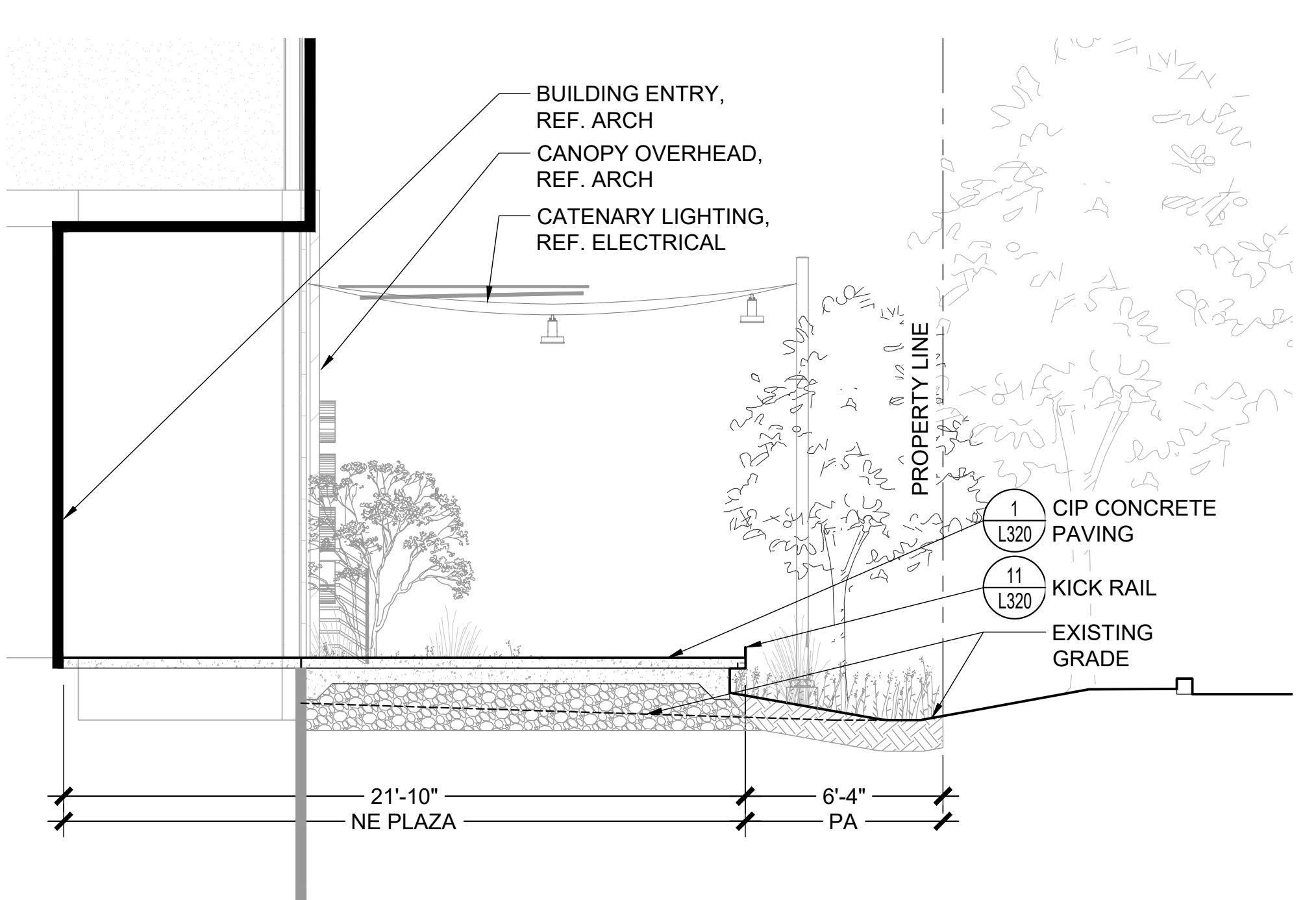
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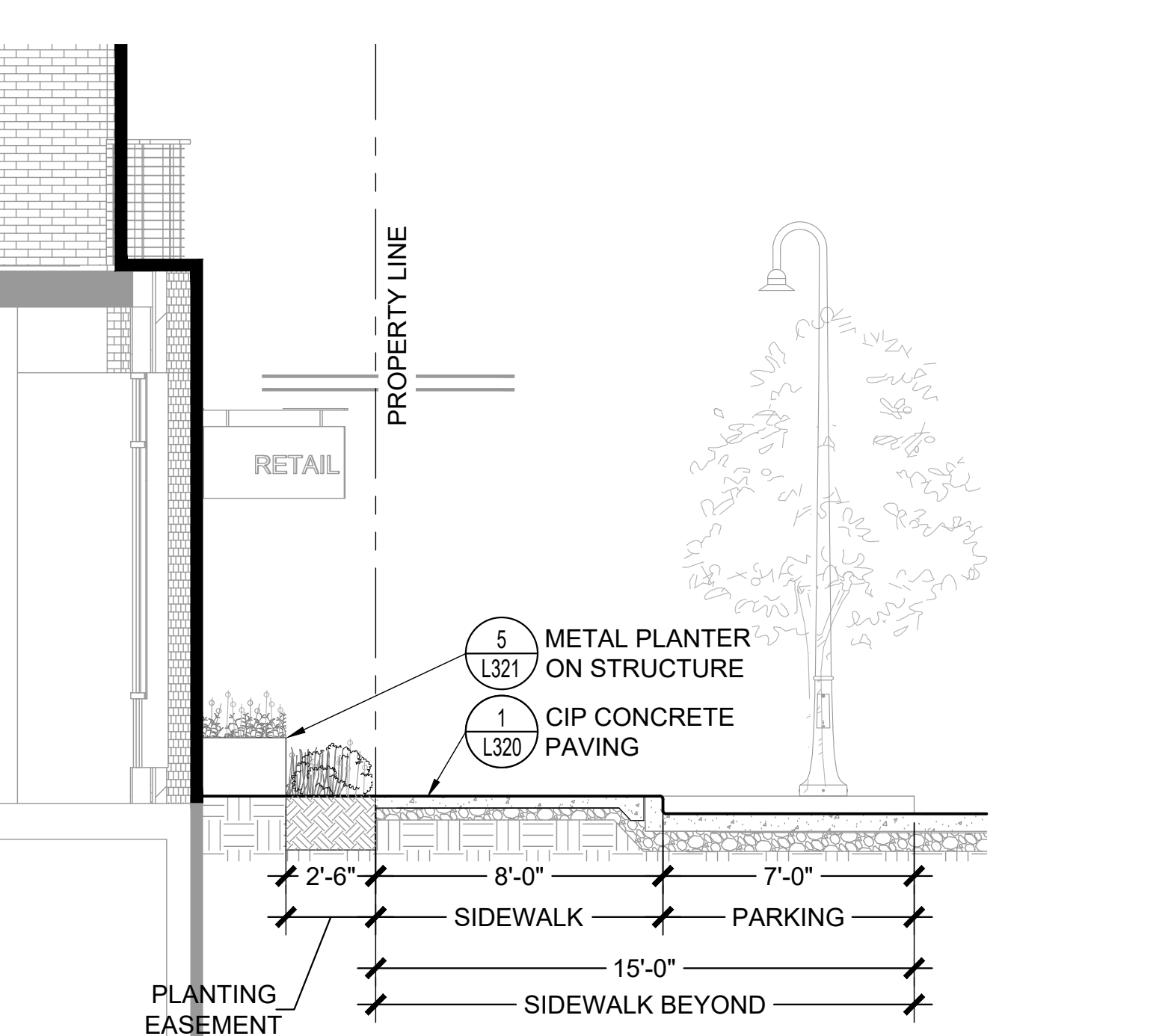
1 SECTION AT 77TH  
SCALE: 1/4" = 1'-0"



2 SECTION AT MID THROUGH BLOCK  
SCALE: 1/4" = 1'-0"



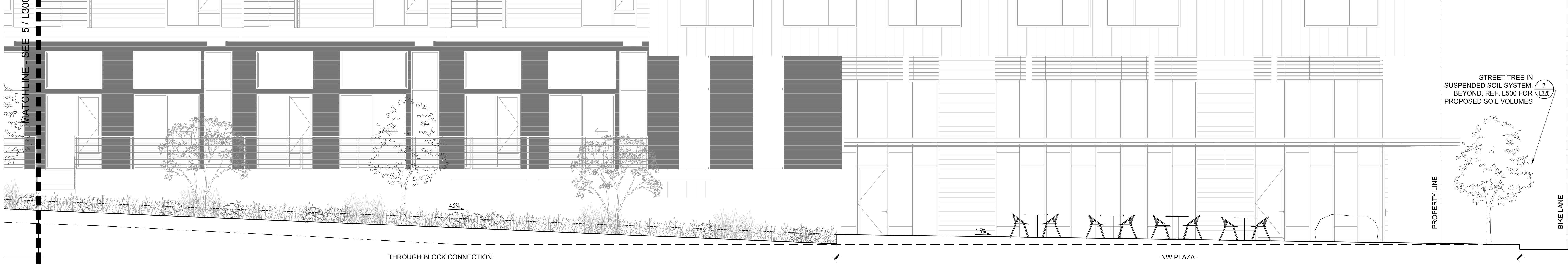
3 SECTION AT THROUGH BLOCK EAST  
SCALE: 1/4" = 1'-0"



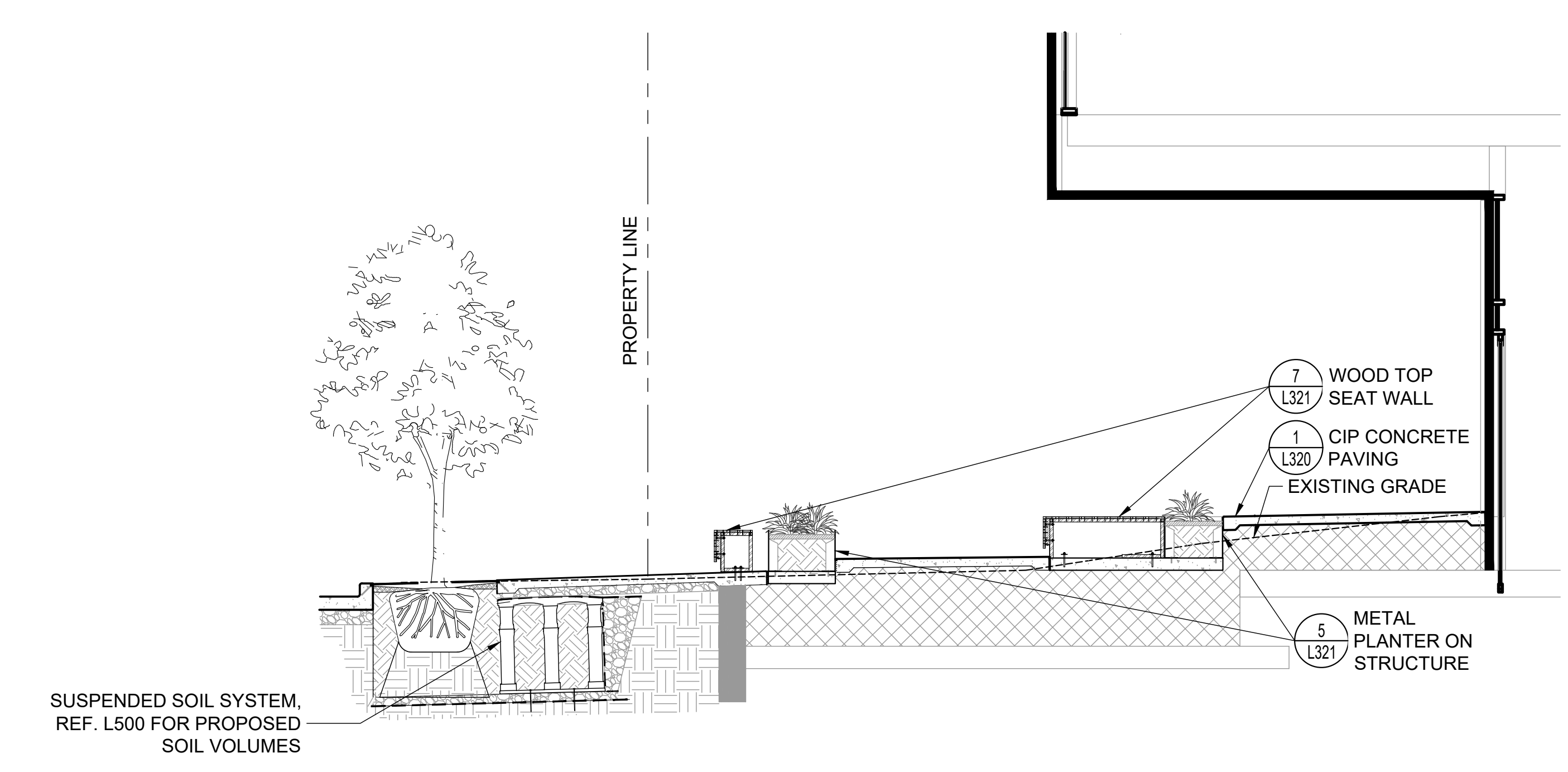
4 SECTION AT 78TH LOOKING NORTH  
SCALE: 1/4" = 1'-0"



5 NORTH ELEVATION - NE PLAZA AND THROUGH BLOCK  
SCALE: 1" = 4'



6 NORTH ELEVATION - THROUGH BLOCK AND NW PLAZA  
SCALE: 1/4" = 1'-0"



7 SECTION THROUGH SOUTH PLAZA  
SCALE: 1/4" = 1'-0"

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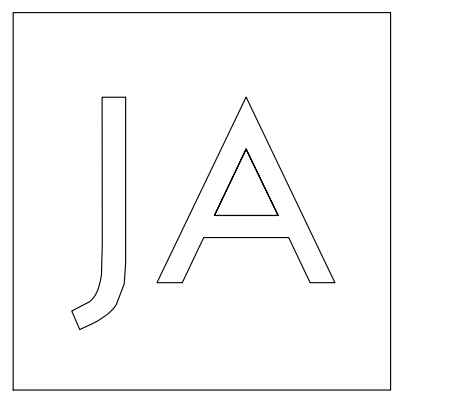
| Date       | Description              |
|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 06/26/2020 | LAND USE SET REV #1      |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
SITE SECTIONS

SHEET NO.  
**L300**

Drawn SB  
Checked CB, PK

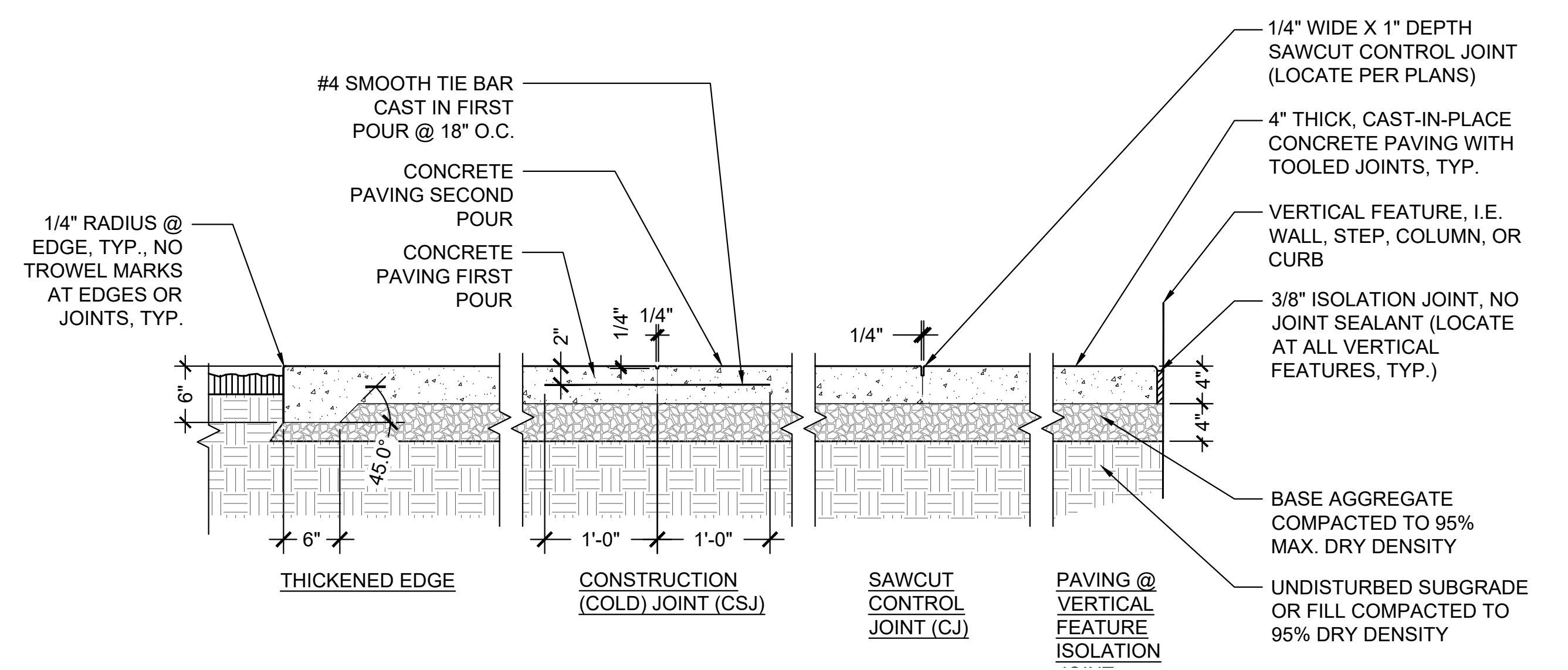




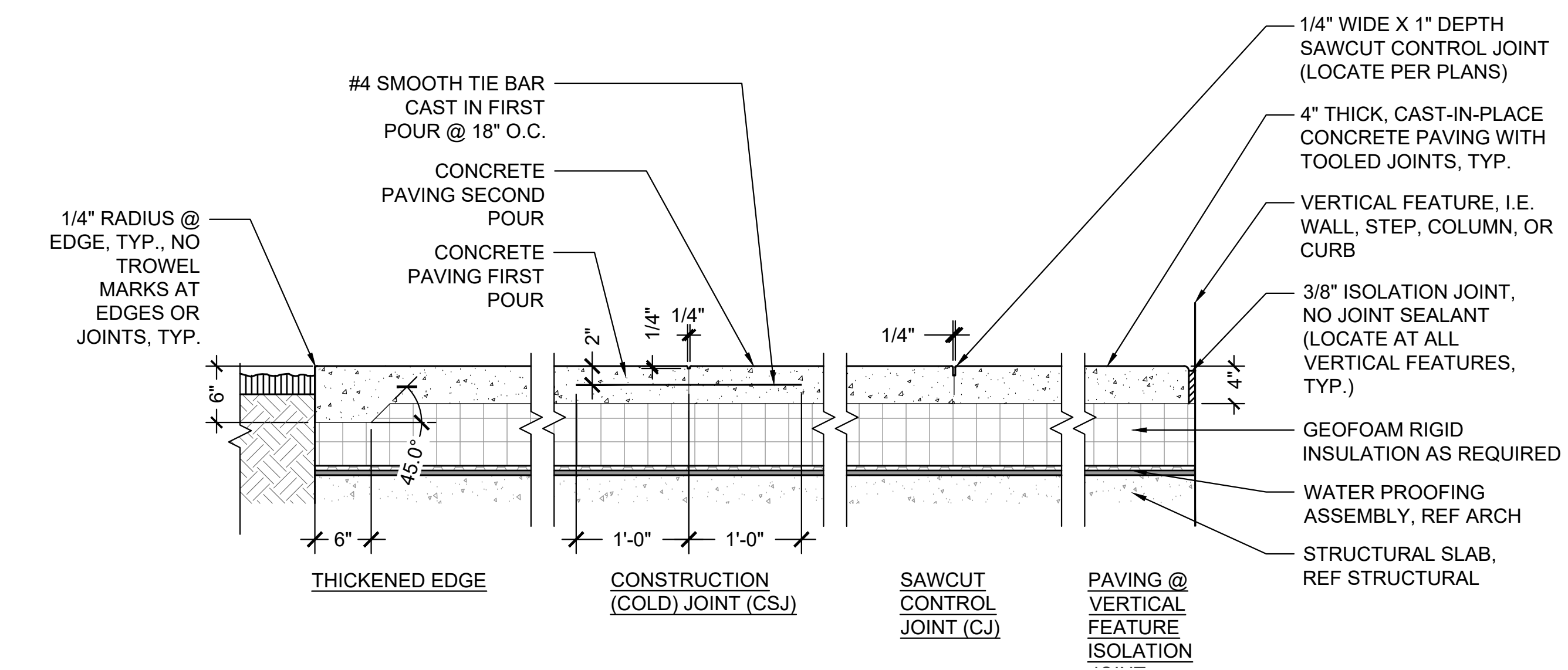
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Landscape Architects  
3800 Woodland Park Ave N  
Suite 200  
Seattle, WA 98103  
1.206.285.3026



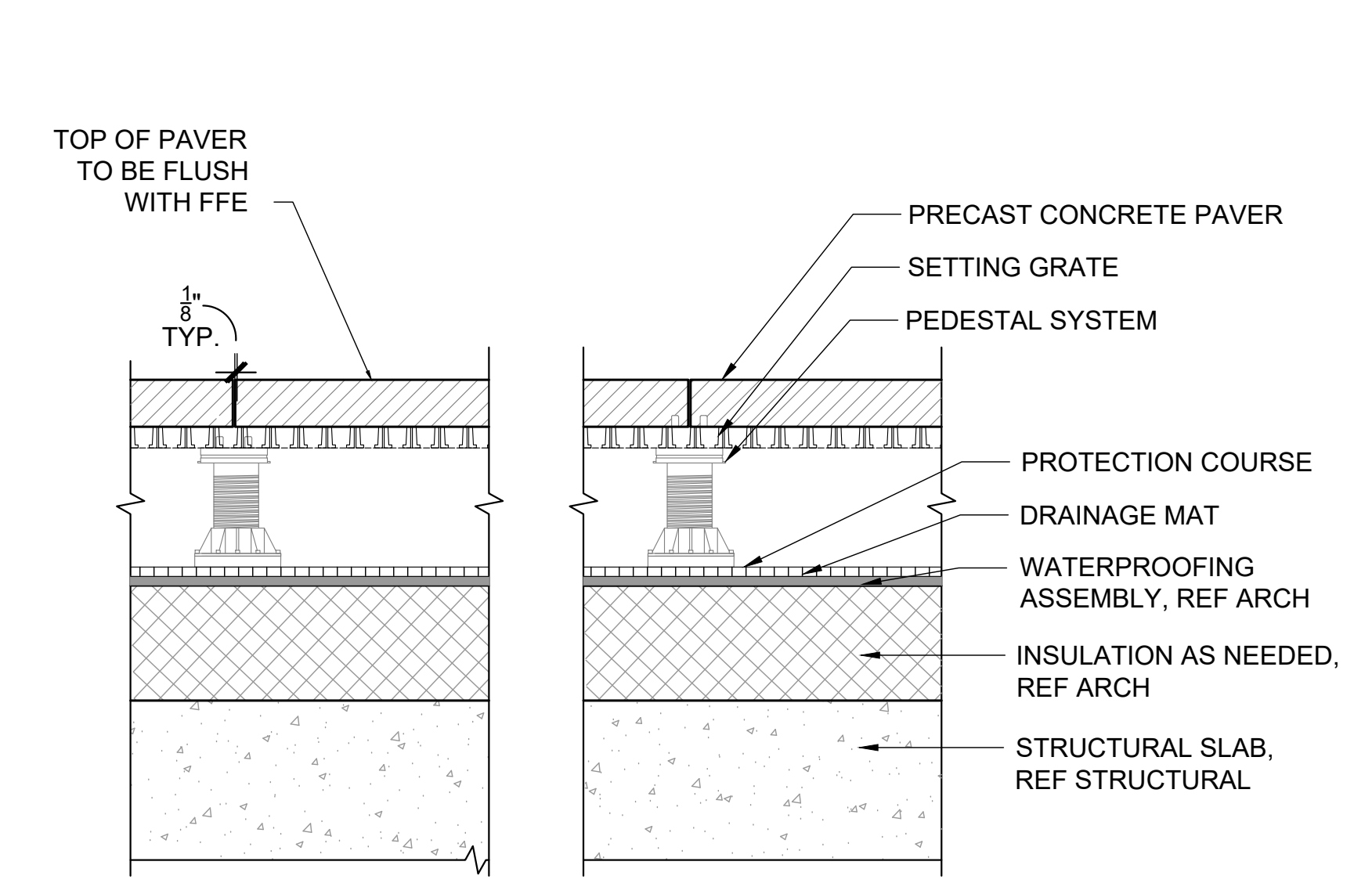
NOT FOR CONSTRUCTION



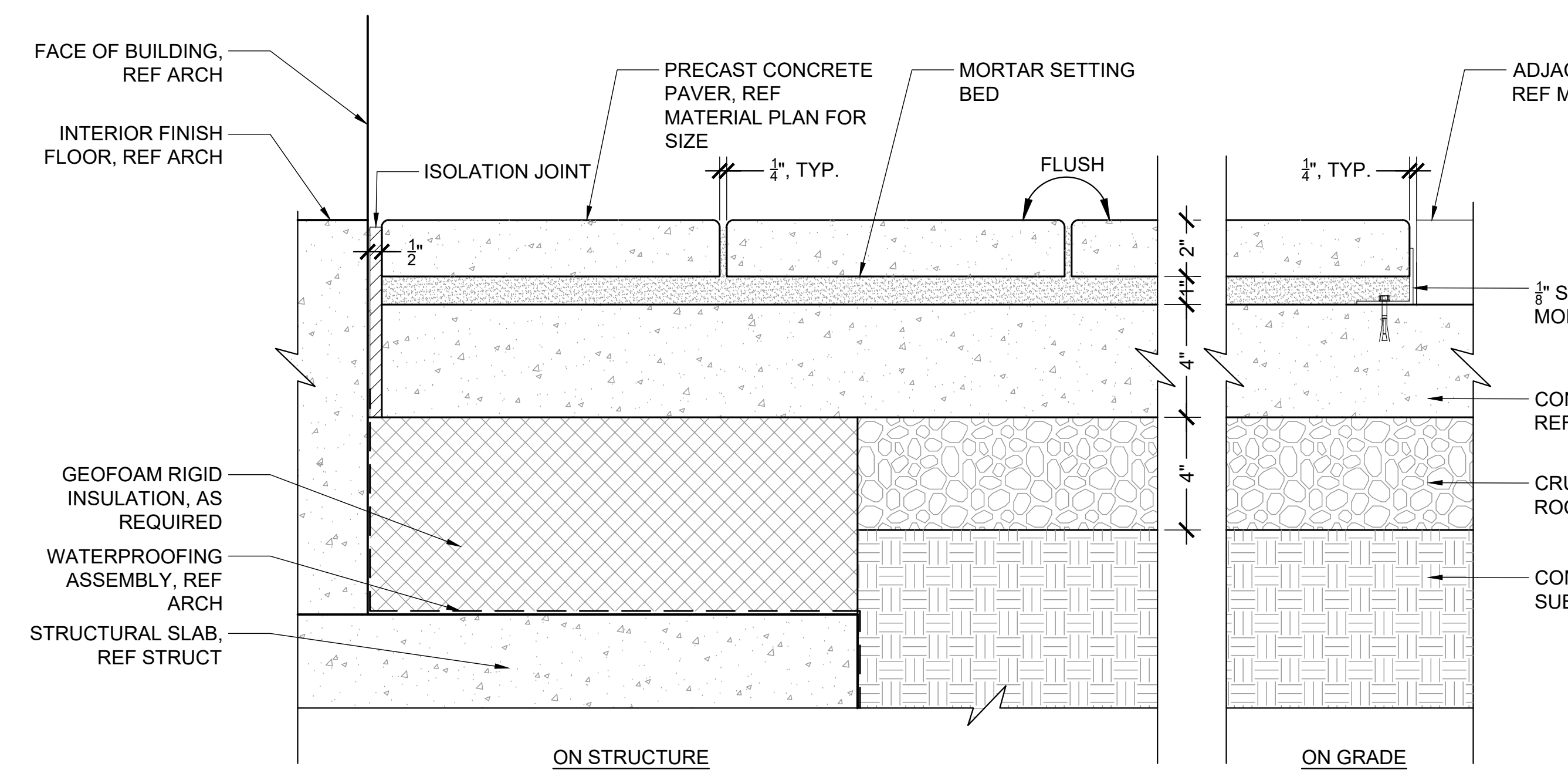
1 CONCRETE PAVING ON GRADE  
SCALE: 1" = 1'-0"



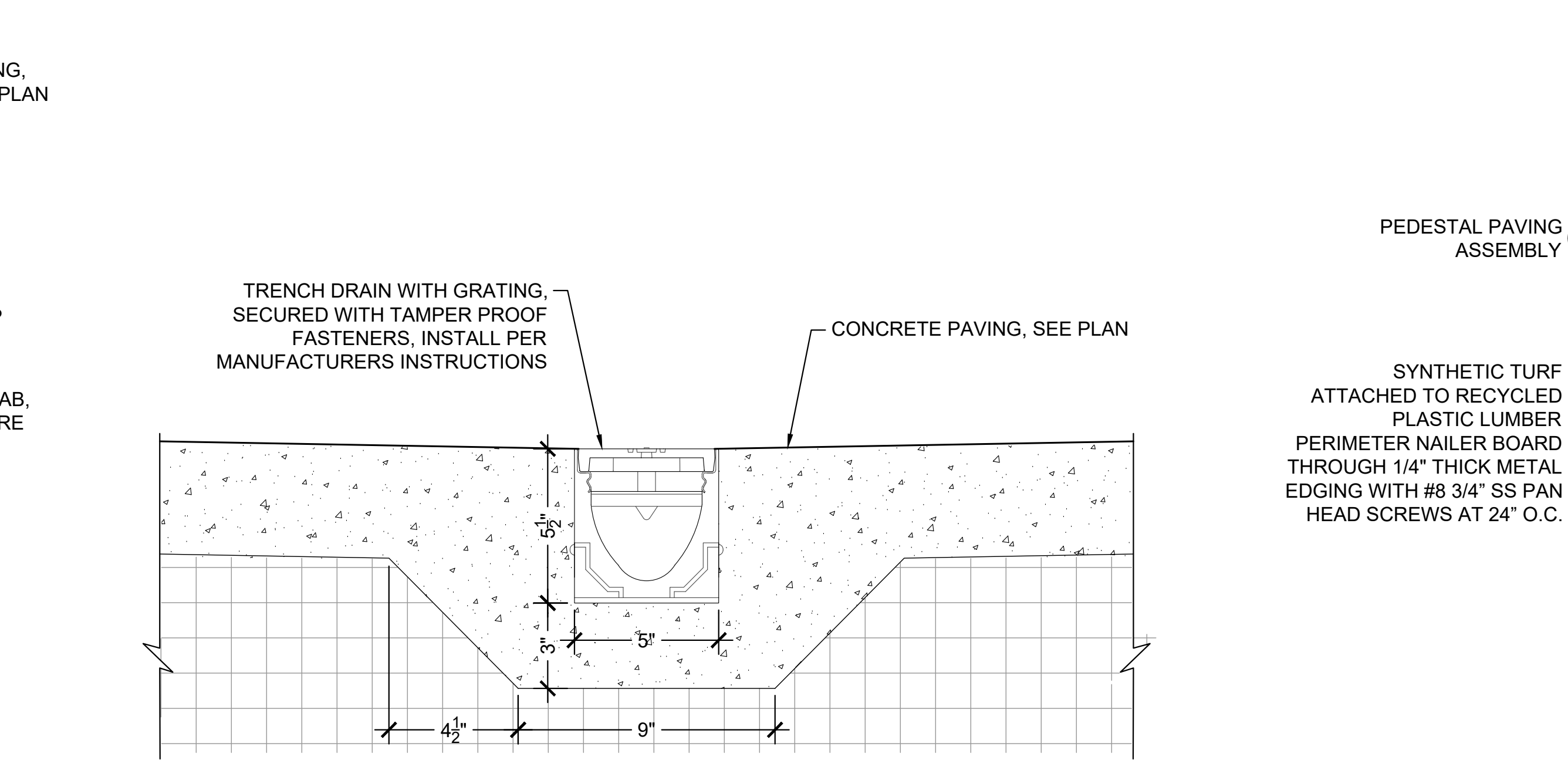
2 CONCRETE PAVING ON STRUCTURE  
SCALE: 1" = 1'-0"



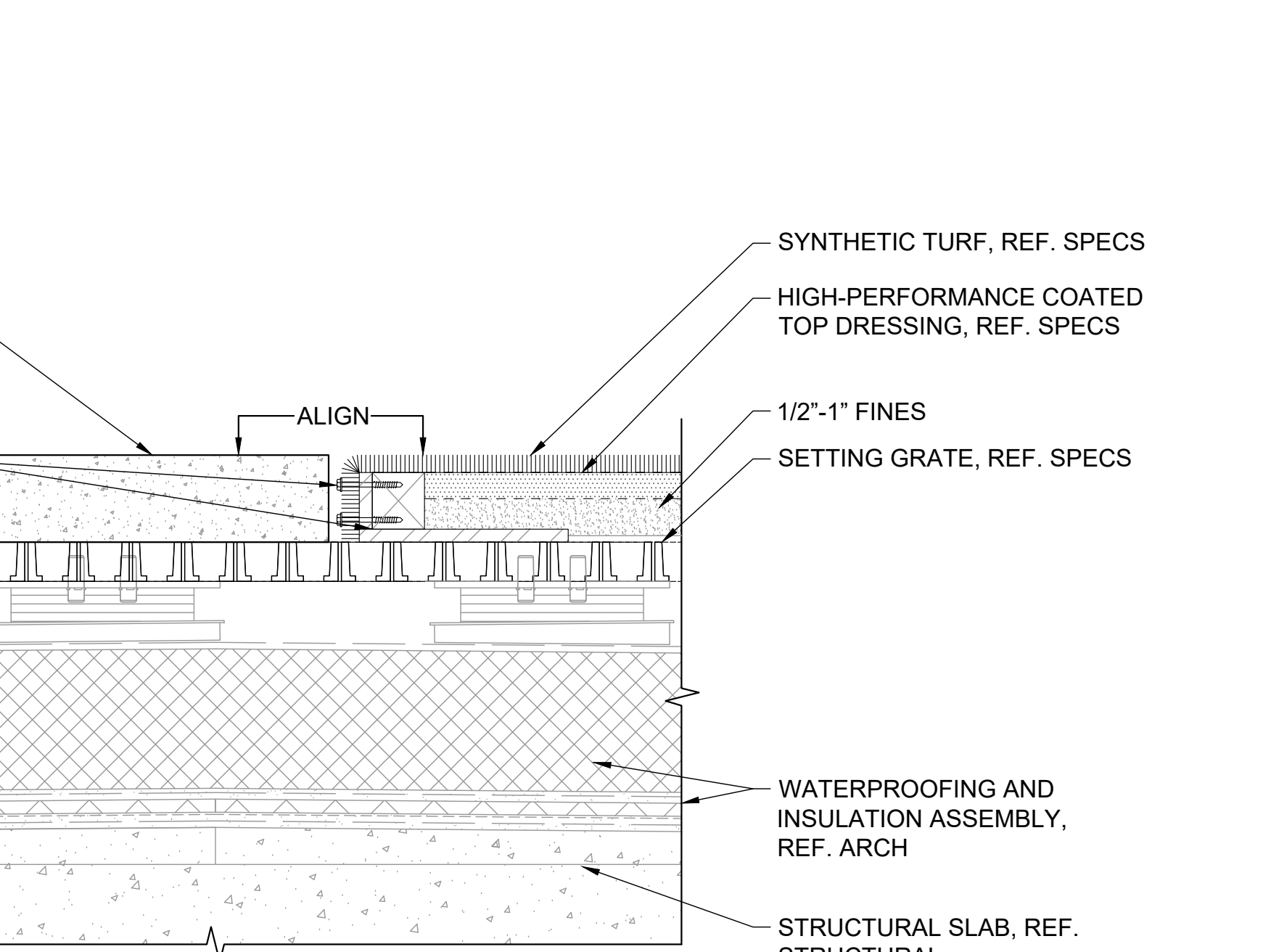
3 PEDESTAL PAVERS  
SCALE: 1 1/2" = 1'-0"



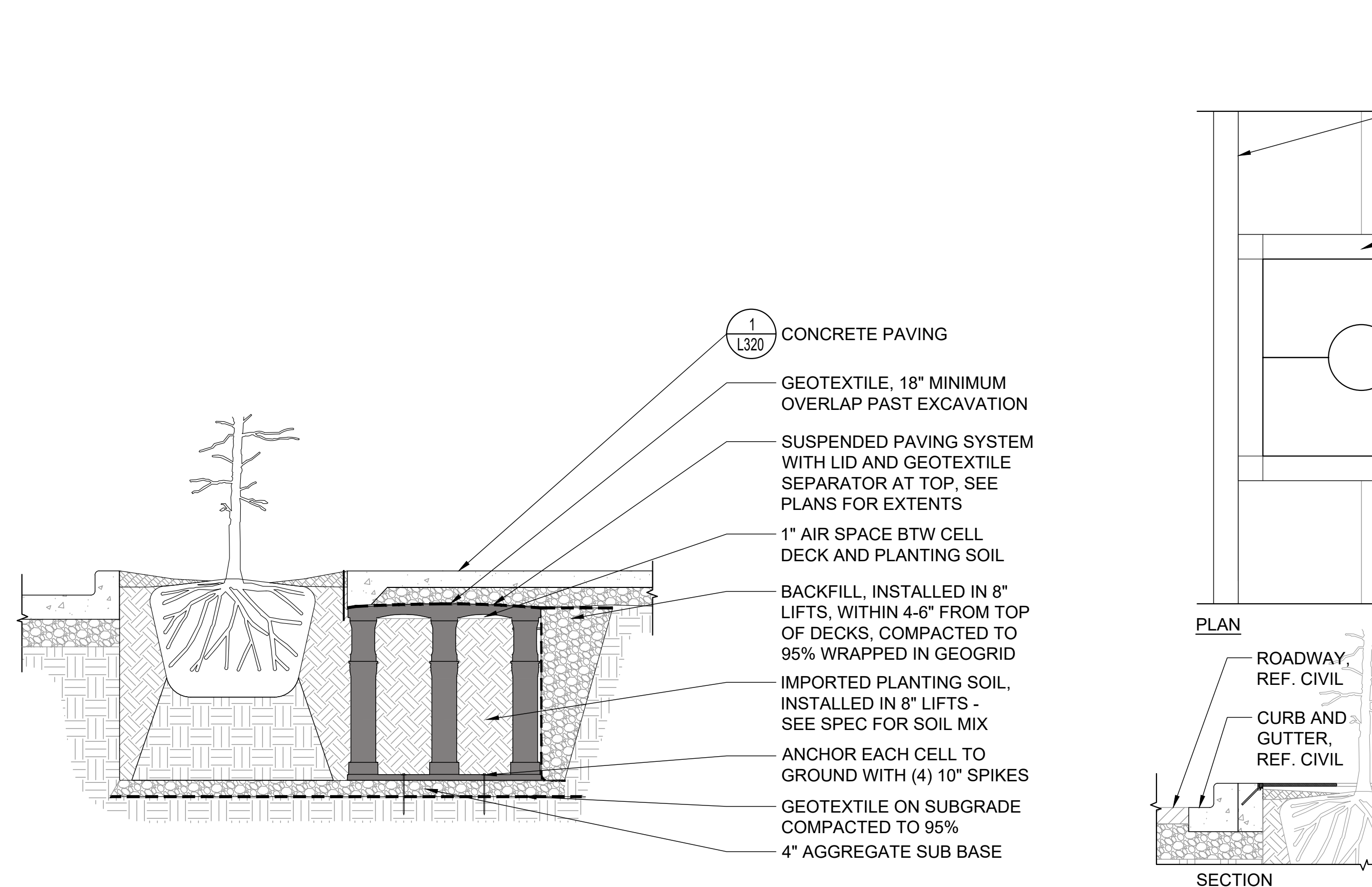
4 PRECAST CONCRETE PAVERS - MORTAR SET  
SCALE: 3" = 1'-0"



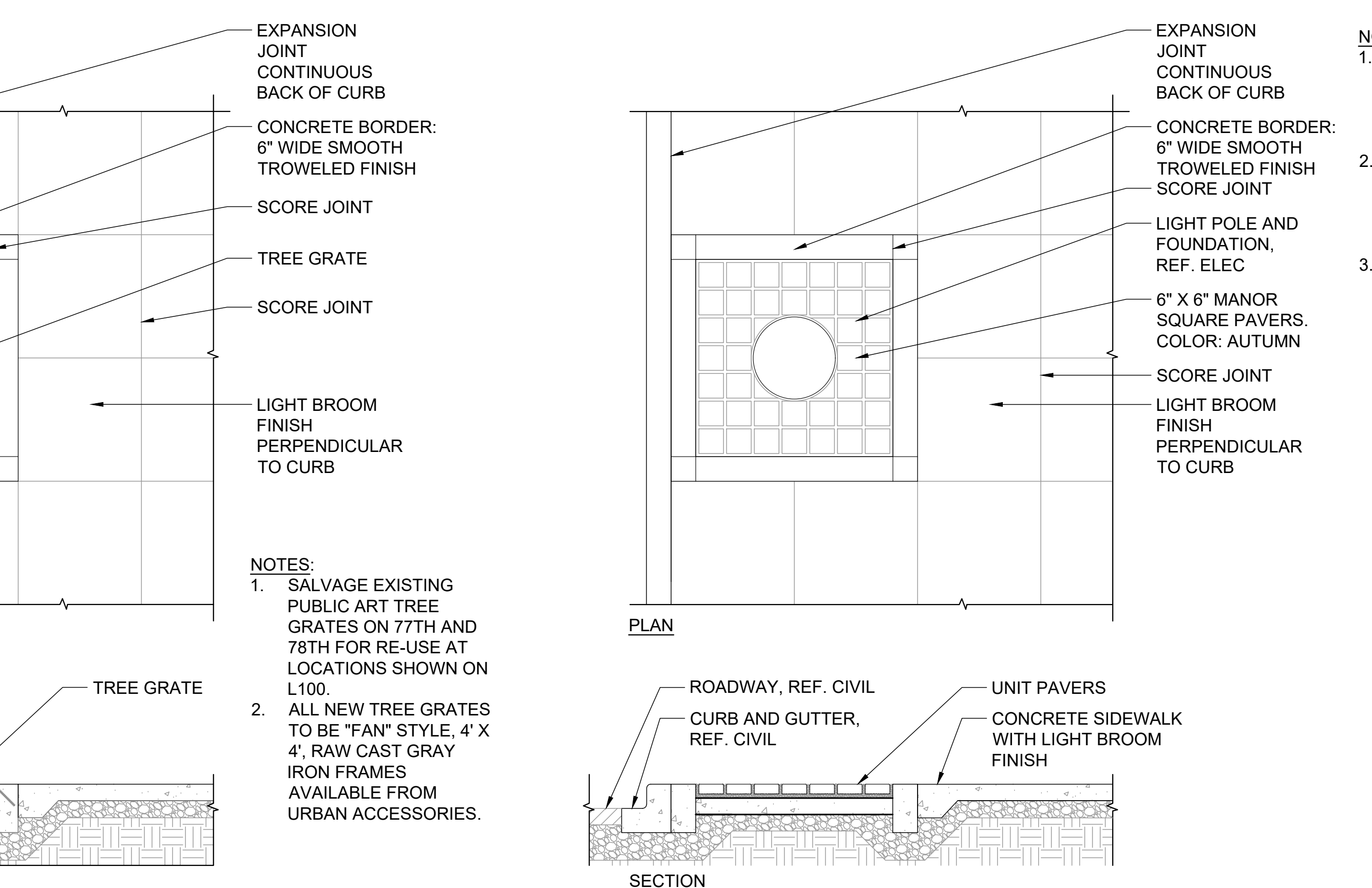
5 TRENCH DRAIN  
SCALE: 3" = 1'-0"



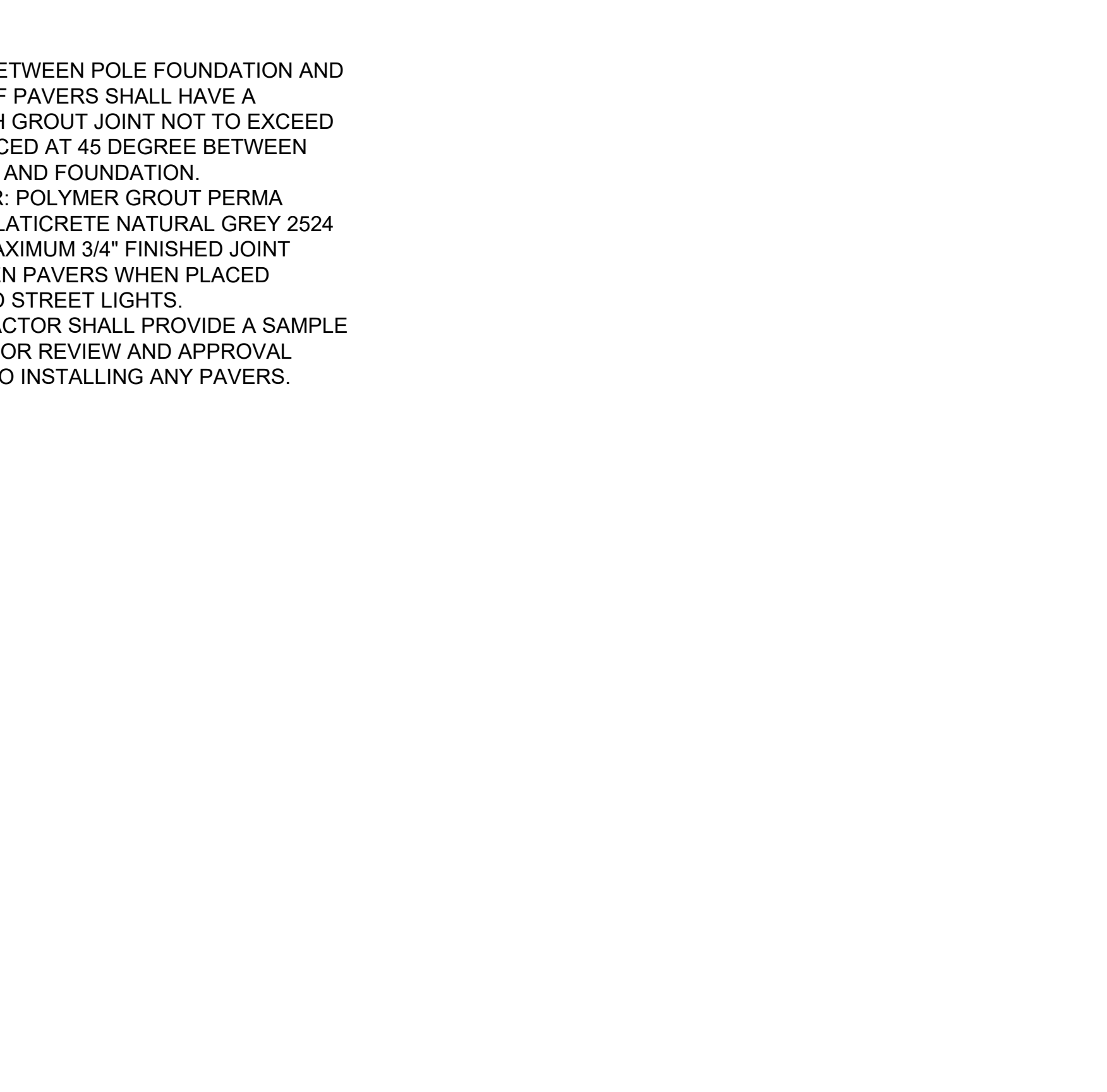
6 SYNTHETIC TURF ON STRUCTURE  
SCALE: 3" = 1'-0"



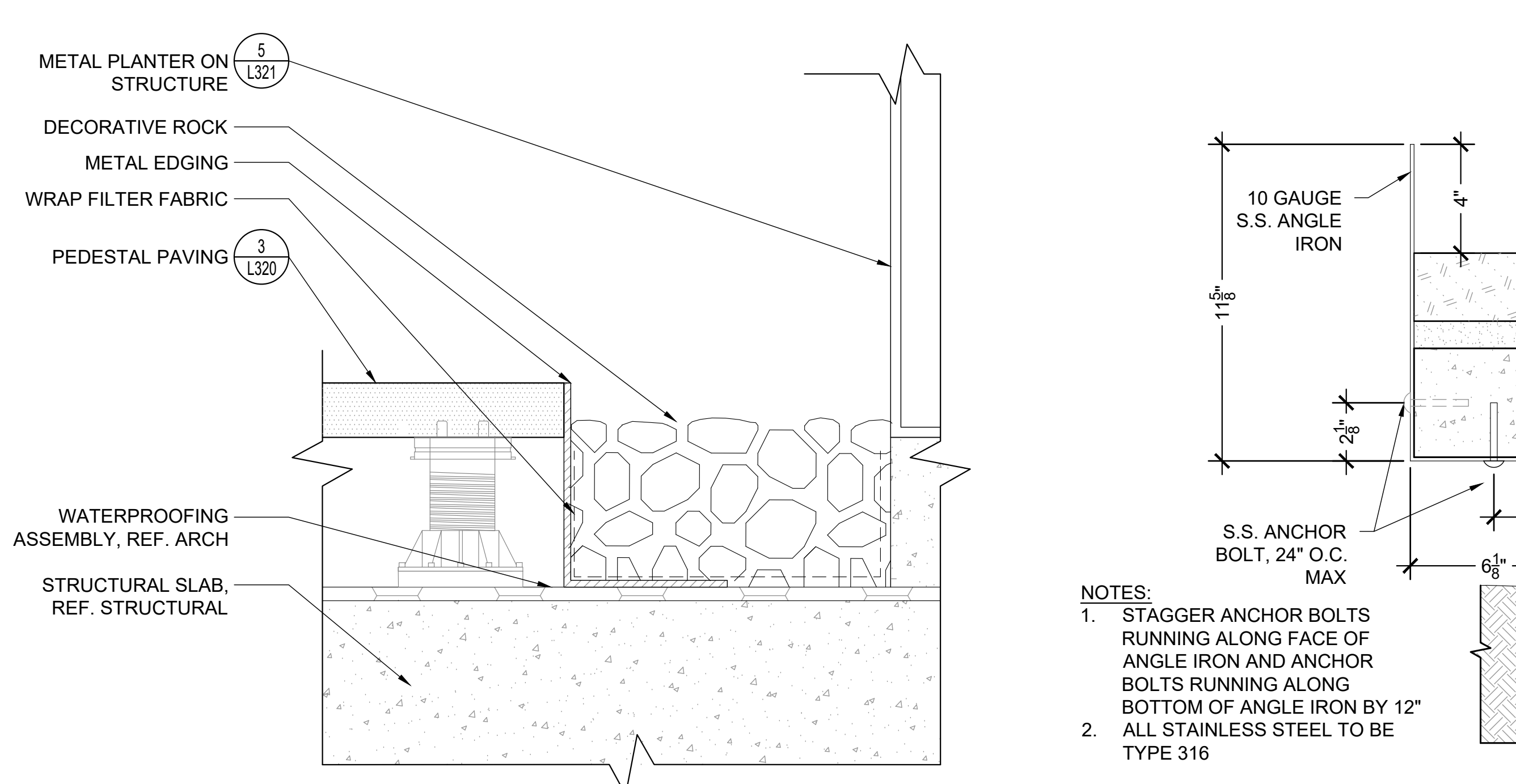
7 SUSPENDED PAVING SYSTEM  
SCALE: 1/2" = 1'-0"



8 TREE GRATE  
SCALE: 1/2" = 1'-0"



9 UNIT PAVERS AT STREET LIGHT  
SCALE: 1/2" = 1'-0"



10 COBBLE EDGE  
SCALE: 3" = 1'-0"



11 KICK RAIL  
SCALE: 3" = 1'-0"

68

NOTES:  
1. JOINT BETWEEN POLE FOUNDATION AND EDGE OF PAVERS SHALL HAVE A SMOOTH GROUT JOINT NOT TO EXCEED 1/2" PLACED AT 45 DEGREE BETWEEN PAVERS AND FOUNDATION.  
2. MORTAR: POLYMER GROUT PERMA COLOR LATIOTRETE NATURAL GREY 2524 WITH MAXIMUM 3/4" FINISHED JOINT BETWEEN PAVERS WHEN PLACED AROUND STREET LIGHTS.  
3. CONTRACTOR SHALL PROVIDE A SAMPLE PANEL FOR REVIEW AND APPROVAL PRIOR TO INSTALLING ANY PAVERS.

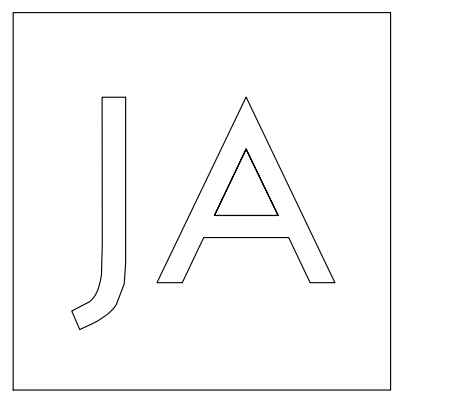
MERCER ISLAND MIXED USE  
2805 107th AVE SE  
MERCER ISLAND, WA 98040

DRAWING ISSUE

| Date       | Description              |
|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 06/26/2020 | LAND USE SET REV #1      |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
LANDSCAPE DETAILS  
SHEET NO.  
L320  
Drawn SB  
Checked CB, PK



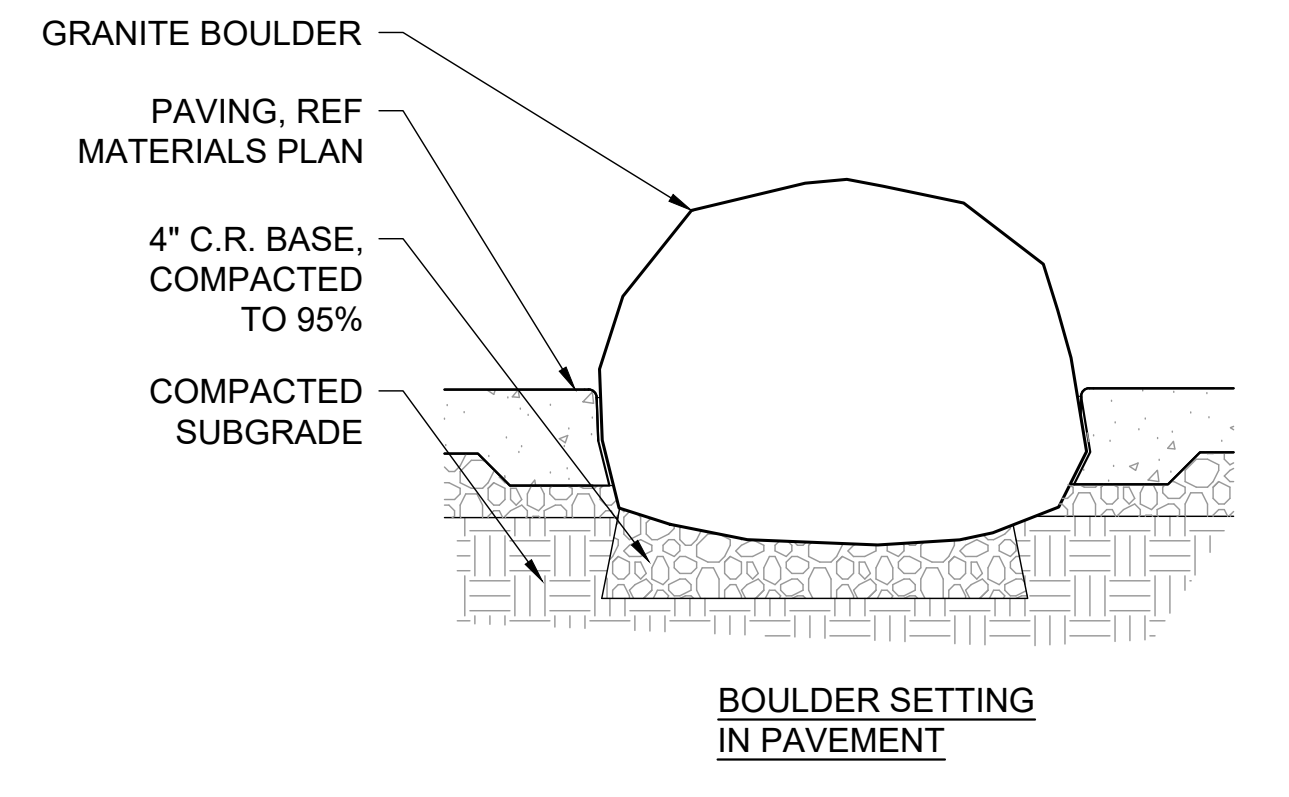


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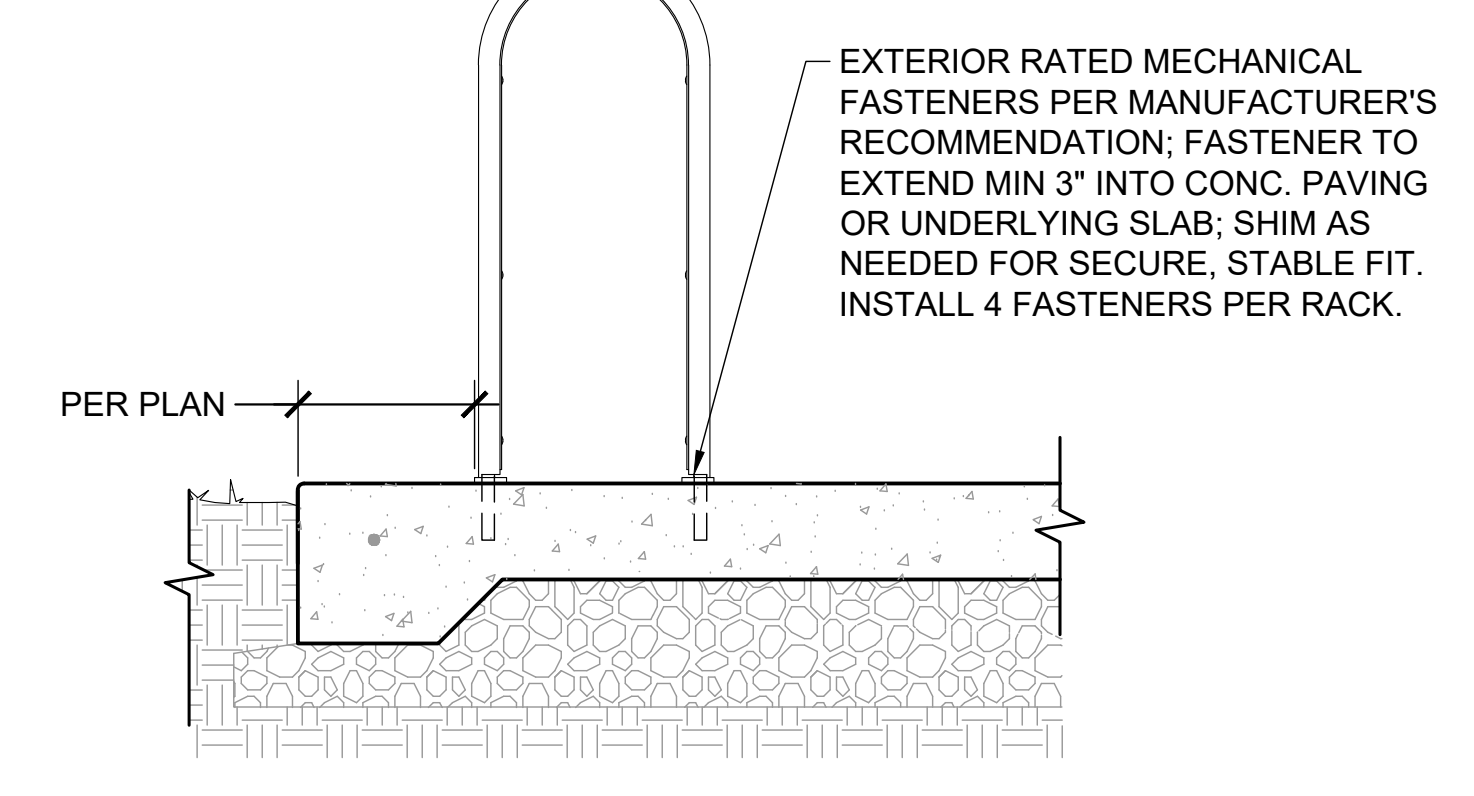
NOT FOR CONSTRUCTION

NOTE:  
1. BOULDER LOCATION TO BE COORDINATED IN FIELD BY LANDSCAPE ARCHITECT.  
2. SET BOULDERS FIRST & CAST CONCRETE STAIRS/WALLS AROUND STONE.  
3. BOULDERS TO BE 2-MAN, "IGNEOUS RIVER ROCK" AS AVAILABLE FR MARENAKOS ROCK CENTER, (425) 392-3313.

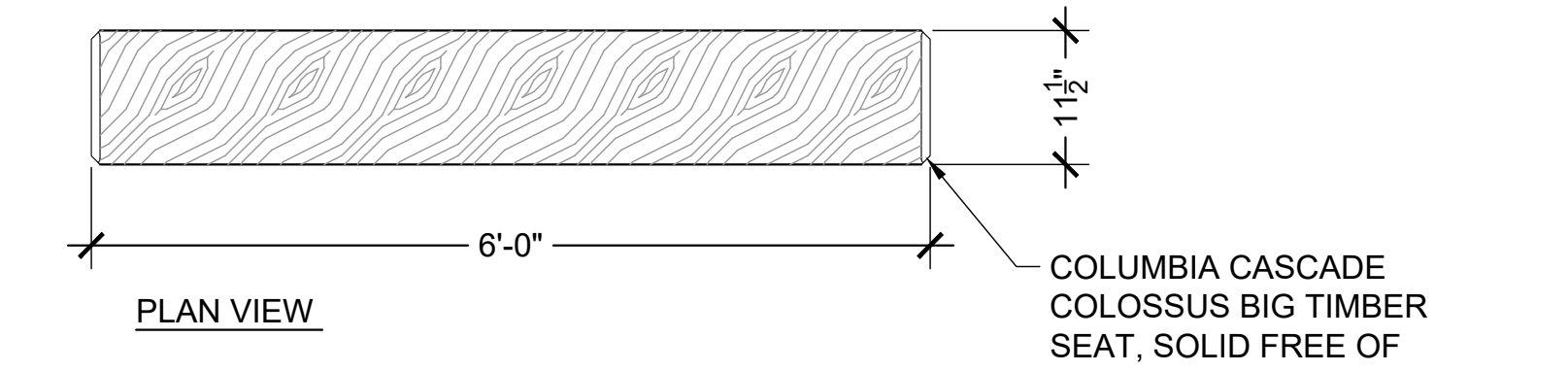


1 BOULDER SETTING  
SCALE: 1" = 1'-0"

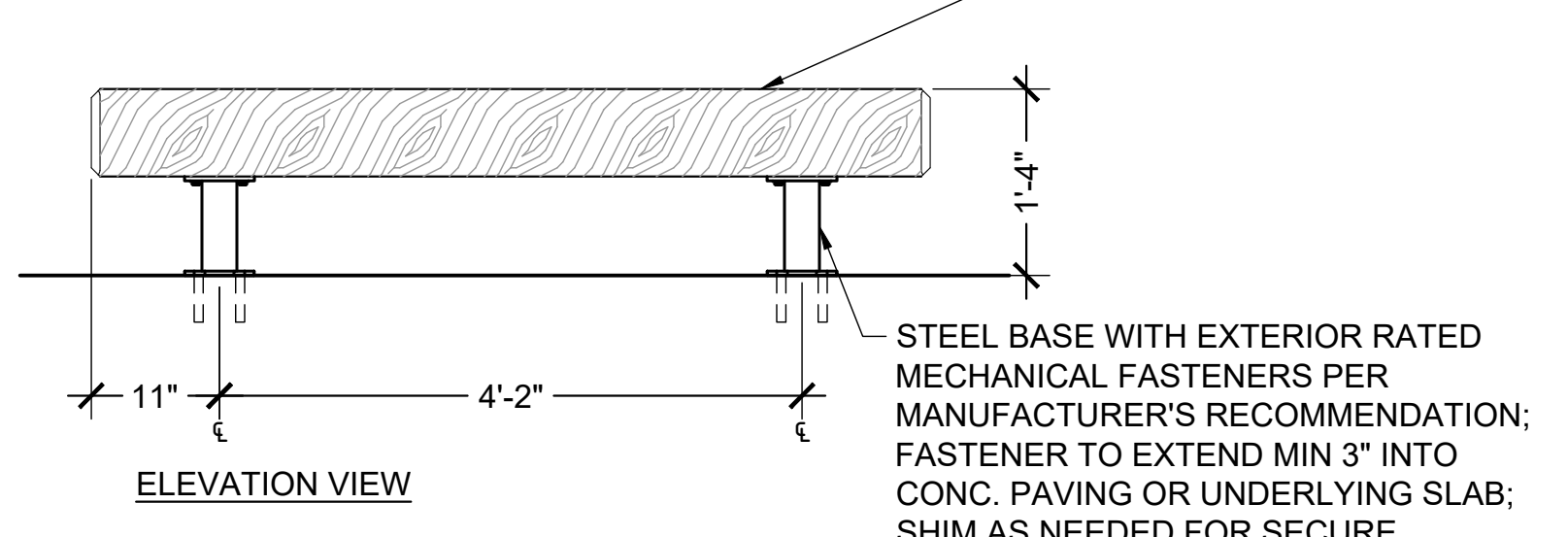
SPORTWORKS WESTPORT NO SCRATCH® BIKE RACK, REF. SPECS, SET TOP LEVEL



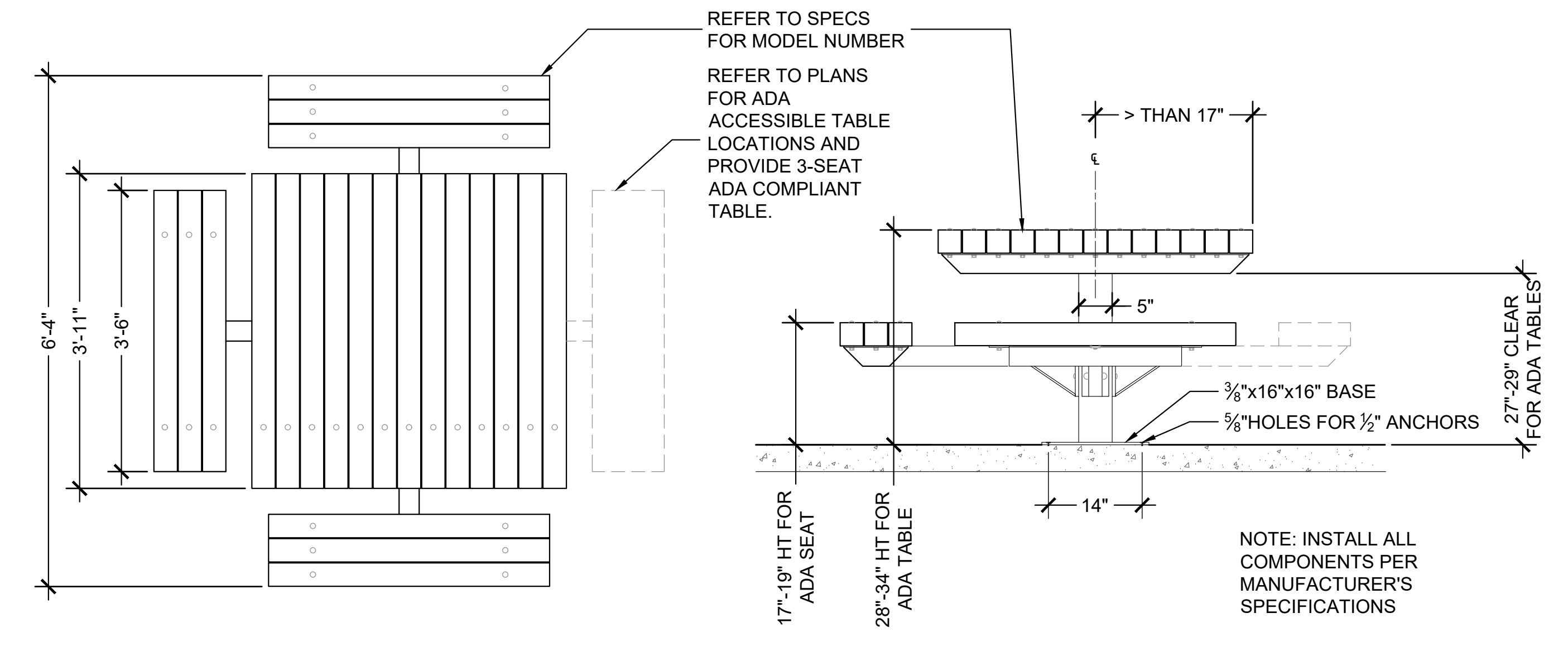
2 BIKE RACK  
SCALE: 1" = 1'-0"



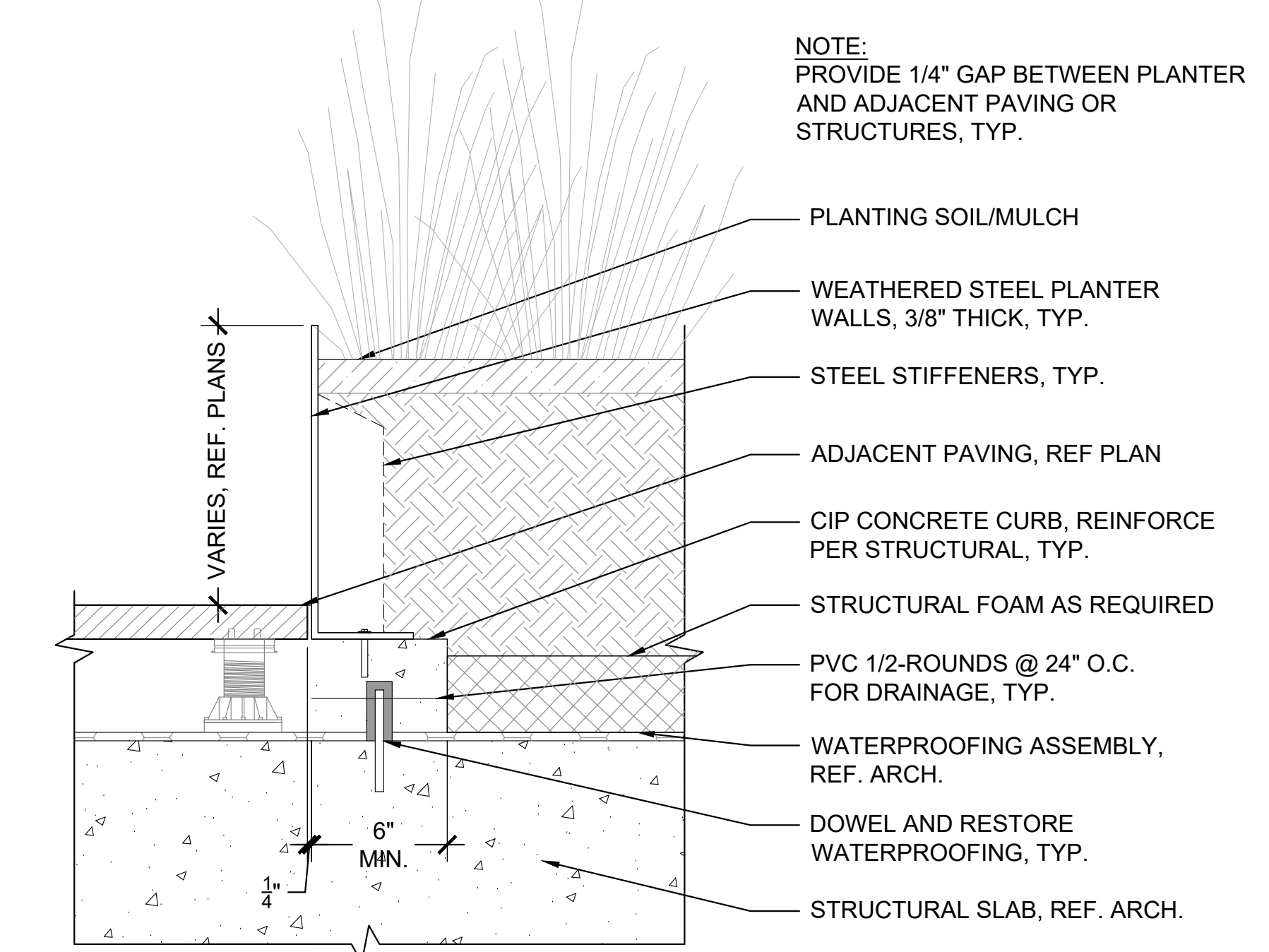
COLUMBIA CASCADE COLOSSUS BIG TIMBER SEAT, SOLID FREE OF HEART CENTER PREMIUM DOUGLAS FIR TIMBER



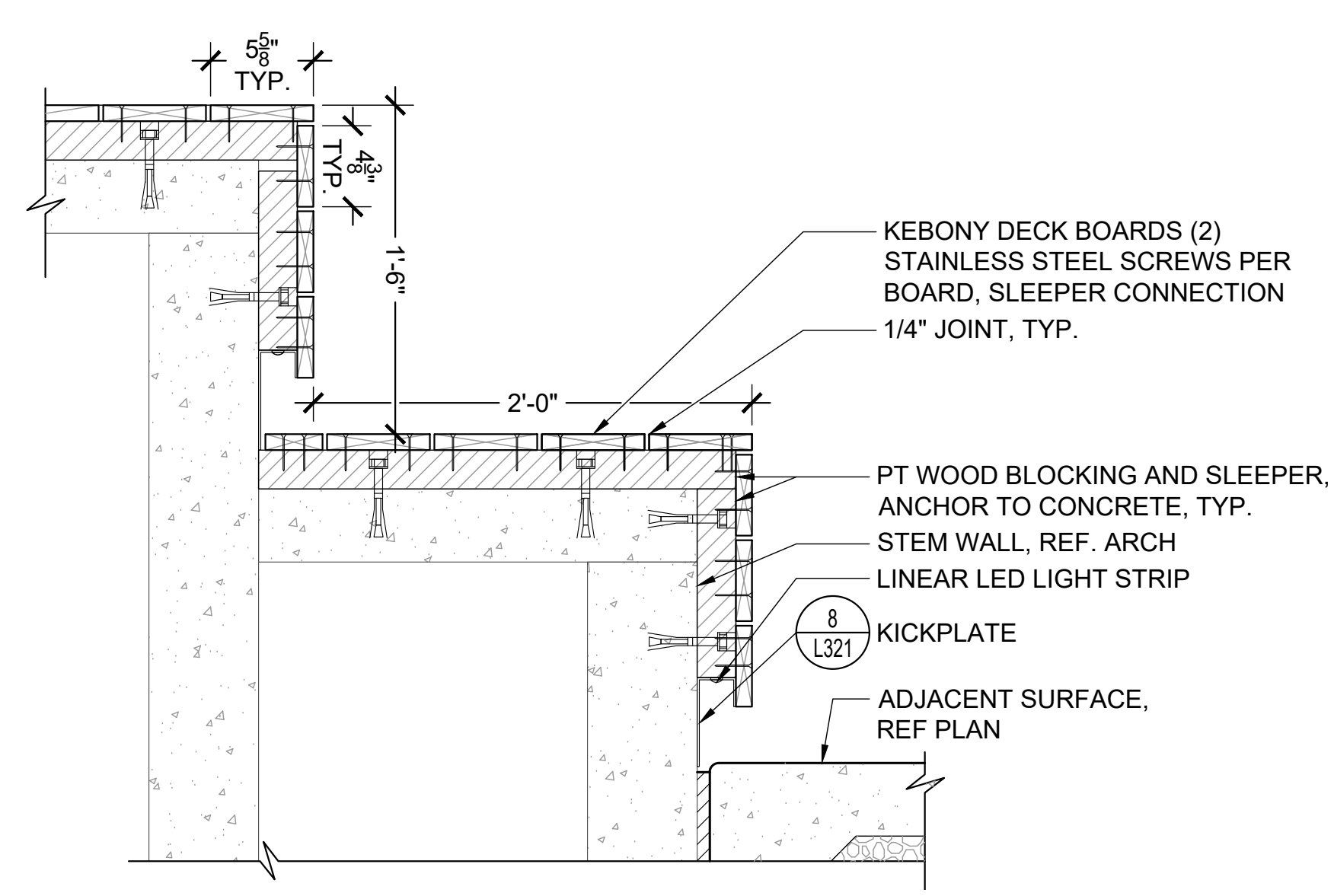
3 TIMBER BENCH  
SCALE: 3/4" = 1'-0"



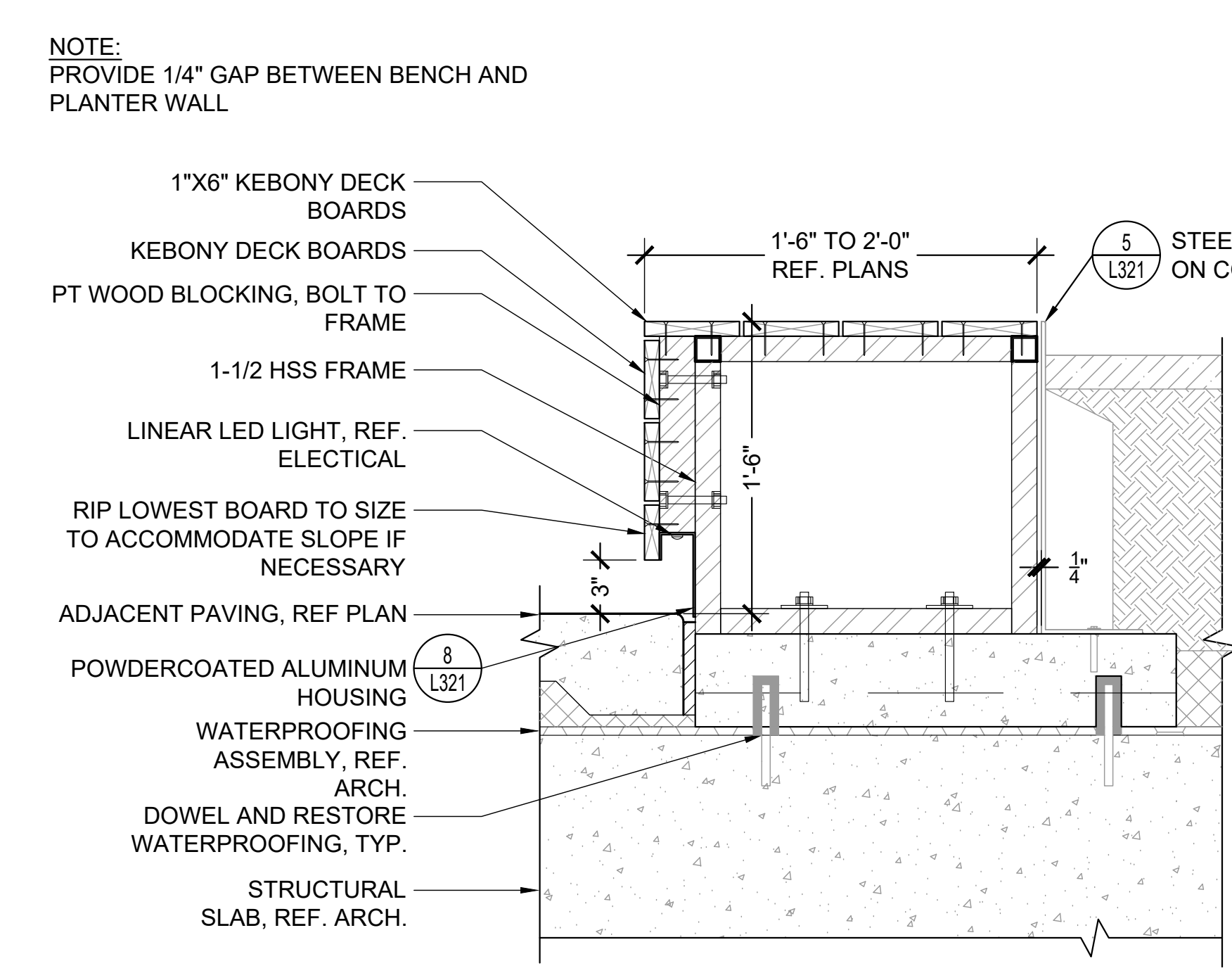
4 PICNIC TABLE  
SCALE: 3/4" = 1'-0"



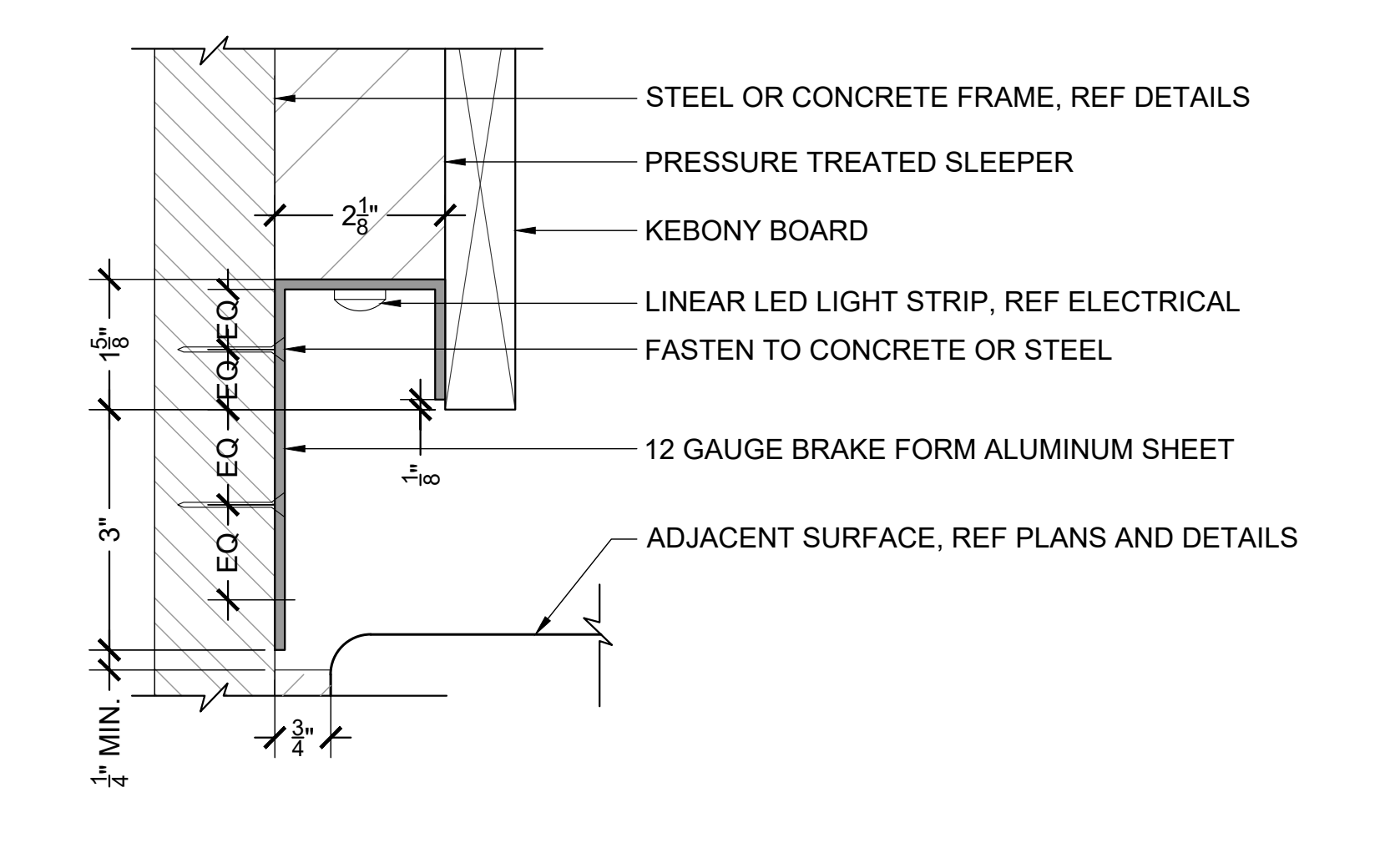
5 METAL PLANTER ON STRUCTURE  
SCALE: 1 1/2" = 1'-0"



6 WOOD TOP SEAT STEPS  
SCALE: 1 1/2" = 1'-0"



7 WOOD TOP SEAT WALL  
SCALE: 1 1/2" = 1'-0"



8 BENCH KICKPLATE  
SCALE: 6" = 1'-0"

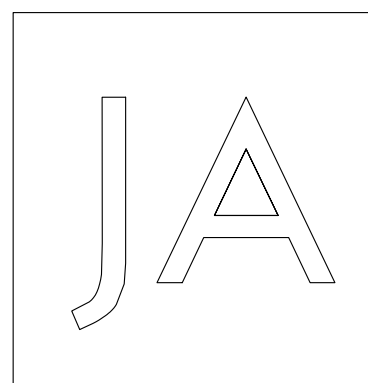
MERCER ISLAND MIXED USE  
2805 107TH AVE SE  
MERCER ISLAND, WA 98040

| Date       | Description              |
|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
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| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
LANDSCAPE DETAILS

SHEET NO.  
L321

Drawn SB  
Checked CB, PK



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Seattle, WA 98103  
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**MERCER ISLAND MIXED USE**  
2805 10TH AVE SE  
MERCER ISLAND, WA 98040

| Date       | Description              |
|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
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| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
**IRRIGATION SCHEDULE**

SHEET NO.  
**L410**

Drawn SB  
Checked CB, PK

**IRRIGATION SCHEDULE**

| SYMBOL | MANUFACTURER/MODEL/DESCRIPTION   | PSI |
|--------|--|-----|
|        | RAIN BIRD 1806 5 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2" NPT FEMALE THREADED INLET.  | 30  |
|        | RAIN BIRD 1806 8 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2" NPT FEMALE THREADED INLET.  | 30  |
|        | RAIN BIRD 1806 10 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2" NPT FEMALE THREADED INLET. | 30  |
|        | RAIN BIRD 1806 12 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2" NPT FEMALE THREADED INLET. | 30  |
|        | RAIN BIRD 1806 15 SERIES MPR SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2" NPT FEMALE THREADED INLET. | 30  |
|        | RAIN BIRD 1806 ADJ SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2" NPT FEMALE THREADED INLET.           | 30  |
|        | RAIN BIRD 1806 HE-VAN SERIES SHRUB SPRAY 6.0" POP-UP SPRINKLER WITH CO-MOLDED WIPER SEAL. SIDE AND BOTTOM INLET. 1/2" NPT FEMALE THREADED INLET. | 30  |

| SYMBOL | MANUFACTURER/MODEL/DESCRIPTION  |
|--------|---|
|        | RAIN BIRD XFCV-06-12 XFCV ON-SURFACE LANDSCAPE DRIPLINE WITH A HEAVY-DUTY 3.5 PSI CHECK VALVE. 0.6 GPH EMITTERS AT 12" O.C. GREAT FOR ELEVATION CHANGE. SPECIFY XF INSERT FITTINGS. |

| SYMBOL | MANUFACTURER/MODEL/DESCRIPTION  | DETAIL |
|--------|---|--------|
|        | RAIN BIRD PEB 1" 1-1/2" 2" PLASTIC INDUSTRIAL VALVES. LOW FLOW OPERATING CAPABILITY, GLOBE CONFIGURATION.               |        |
|        | FEBCO 825Y 3/4" REDUCED PRESSURE BACKFLOW PREVENTER   |        |
|        | HUNTER ACC-1800 18 STATION OUTDOOR MODULAR CONTROLLER. WITH ONE ACM-600 MODULE. HIGH-END COMMERCIAL USE. METAL CABINET. |        |
|        | HUNTER HFS-200 FLOW SENSOR FOR USE WITH ACC CONTROLLER. 2" SCHEDULE 40 SENSOR BODY. 24 VAC, 2 AMP.                      |        |
|        | IRRIGATION LATERAL LINE: PVC SCHEDULE 40  |        |
|        | IRRIGATION LATERAL LINE: TYPE K COPPER PIPE   |        |
|        | IRRIGATION MAINLINE: TYPE K COPPER PIPE   |        |
|        | PIPE SLEEVE: DUCTILE IRON PIPE- CLASS 350   |        |
|        | Valve Callout   |        |
|        | Valve Number  |        |
|        | Valve Flow  |        |
|        | Valve Size  |        |

**VALVE SCHEDULE**

| NUMBER | MODEL         | SIZE   | TYPE        | GPM   | HEADS      | PIPE  | WIRE | PSI   | PSI @ POC | PRECIP    |
|--------|---------------|--------|-------------|-------|------------|-------|------|-------|-----------|-----------|
| 1      | RAIN BIRD PEB | 1-1/2" | SHRUB SPRAY | 41.18 | 100        | 695.7 | 17.9 | 39.38 | 54.98     | 2.51 in/h |
| 2      | RAIN BIRD PEB | 1-1/2" | SHRUB SPRAY | 25.84 | 72         | 600.8 | 20.6 | 39.31 | 53.06     | 2.47 in/h |
| 3      | RAIN BIRD PEB | 1-1/2" | DRIPLINE    | 19.79 | 487.0 L.F. | 836.7 | 23.3 | 39.08 | 52.26     | 1.53 in/h |
| 4      | RAIN BIRD PEB | 1-1/2" | SHRUB SPRAY | 26.21 | 308.0 L.F. | 1,094 | 26.1 | 39.49 | 53.37     | 2.05 in/h |
| 5      | RAIN BIRD PEB | 1-1/2" | SHRUB SPRAY | 37.73 | 56         | 769.2 | 28.8 | 38.47 | 54.20     | 1.91 in/h |
| 6      | RAIN BIRD PEB | 1-1/2" |             | 36.80 |            | 144.4 | 31.5 | 38.03 | 53.77     | 1.90 in/h |
| 7      | RAIN BIRD PEB | 1-1/2" | DRIPLINE    | 1.41  | 115.2 L.F. | 50.1  | 34.4 | 34.52 |           | 1.20 in/h |
|        | Common Wire   |        |             |       |            |       | 48.1 |       |           |           |

**CRITICAL ANALYSIS**

Generated: 2020-09-0214:45

P.O.C. NUMBER: 01  
Water Source Information:

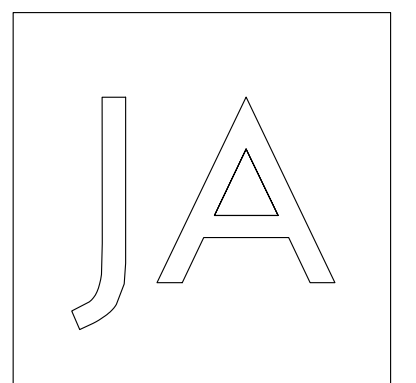
FLOW AVAILABLE  
Point of Connection Size: 1-1/2"  
Flow Available: 47.66 gpm

PRESSURE AVAILABLE  
Static Pressure at POC: 82.00 psi  
Pressure Available: 82.00 psi

DESIGN ANALYSIS  
Maximum Station Flow: 41.18 gpm  
Flow Available at POC: 47.66 gpm  
Residual Flow Available: 6.48 gpm

Critical Station: 1  
Design Pressure: 30.00 psi  
Friction Loss: 5.33 psi  
Fittings Loss: 0.53 psi  
Elevation Loss: 0.00 psi  
Loss through Valve: 3.51 psi  
Pressure Req. at Critical Station: 39.37 psi  
Loss for Fittings: 0.07 psi  
Loss for Main Line: 0.85 psi  
Loss for POC to Valve Elevation: 0.00 psi  
Loss for Backflow: 15.00 psi  
Critical Station Pressure at POC: 55.09 psi  
Pressure Available: 82.00 psi  
Residual Pressure Available: 26.91 psi

NOTES:  
1. REFER TO L400 FOR DETAILED VALVE AND IRRIGATION SCHEDULES.



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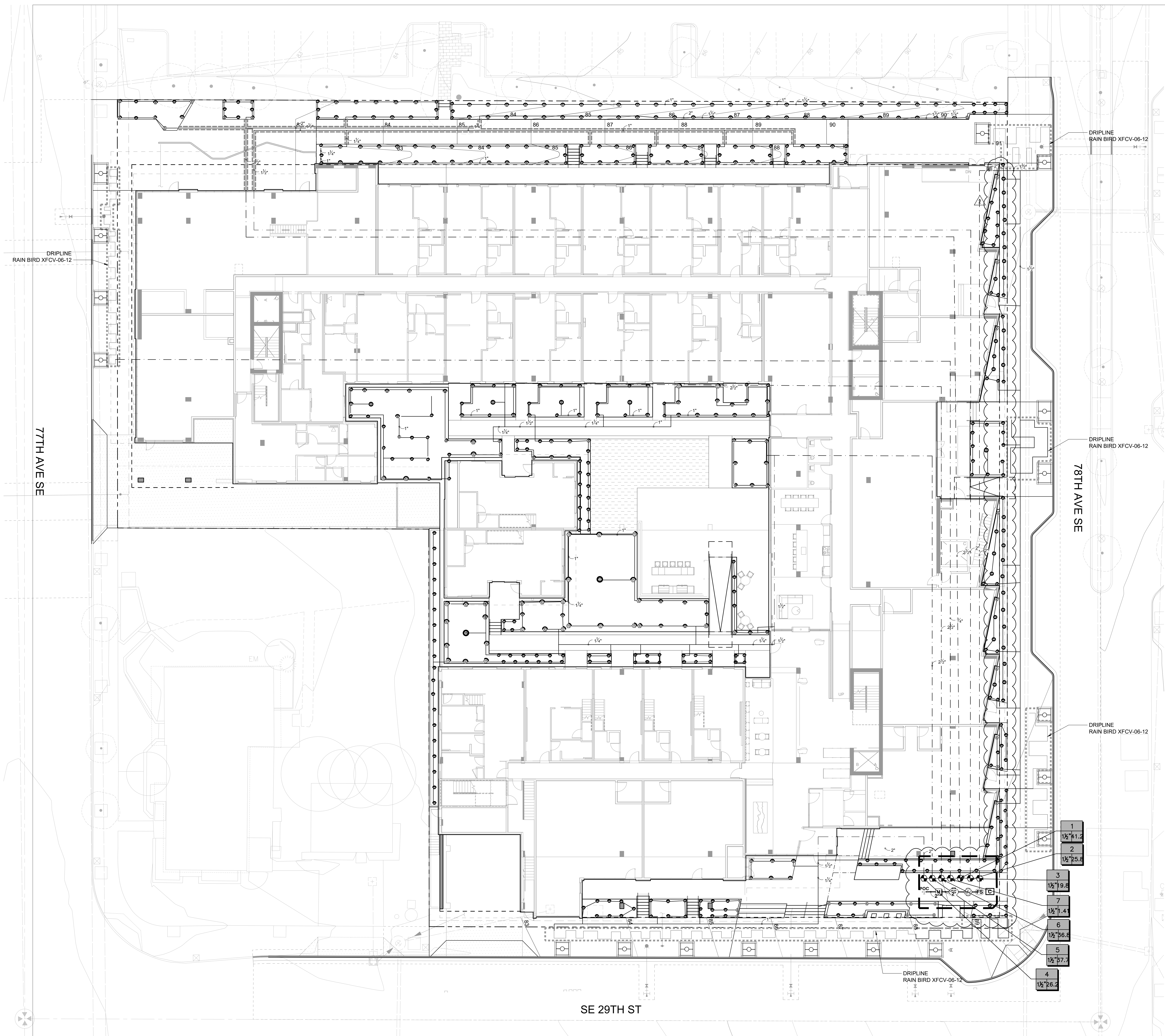
MERCER ISLAND  
MIXED USE  
2835 80TH AVE SE  
MERCER ISLAND, WA 98040

| Date       | Description              |
|------------|--------------------------|
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| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
IRRIGATION PLAN

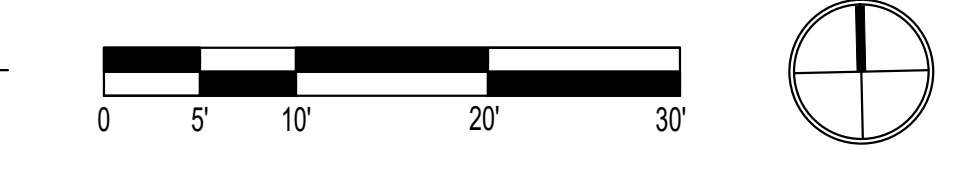
SHEET NO.  
**L411**

Drawn SB  
Checked CB, PK

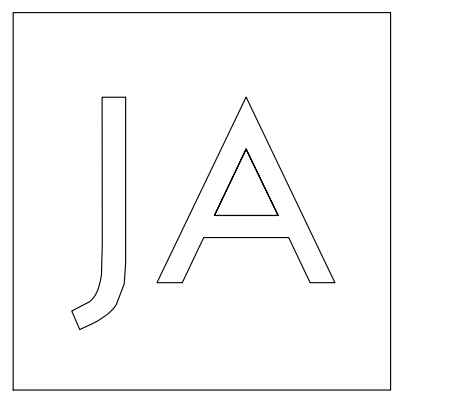


- 1 1/2" #1.2
- 2 1/2" #5.6
- 3 1/2" #9.8
- 7 1/2" #1.4
- 6 1/2" #6.6
- 5 1/2" #7.7
- 4 1/2" #6.2

1 IRRIGATION PLAN  
SCALE: 1" = 10'



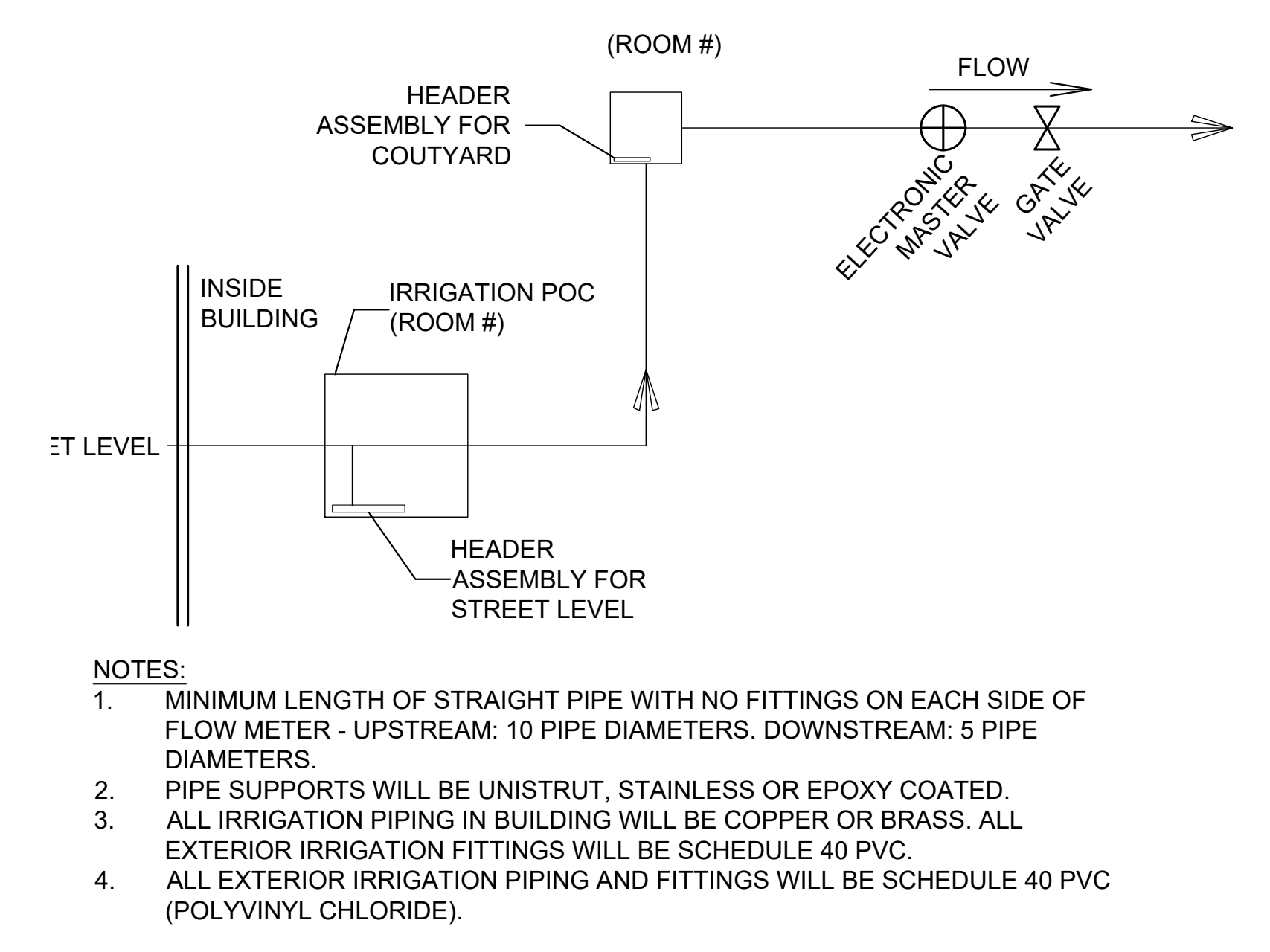




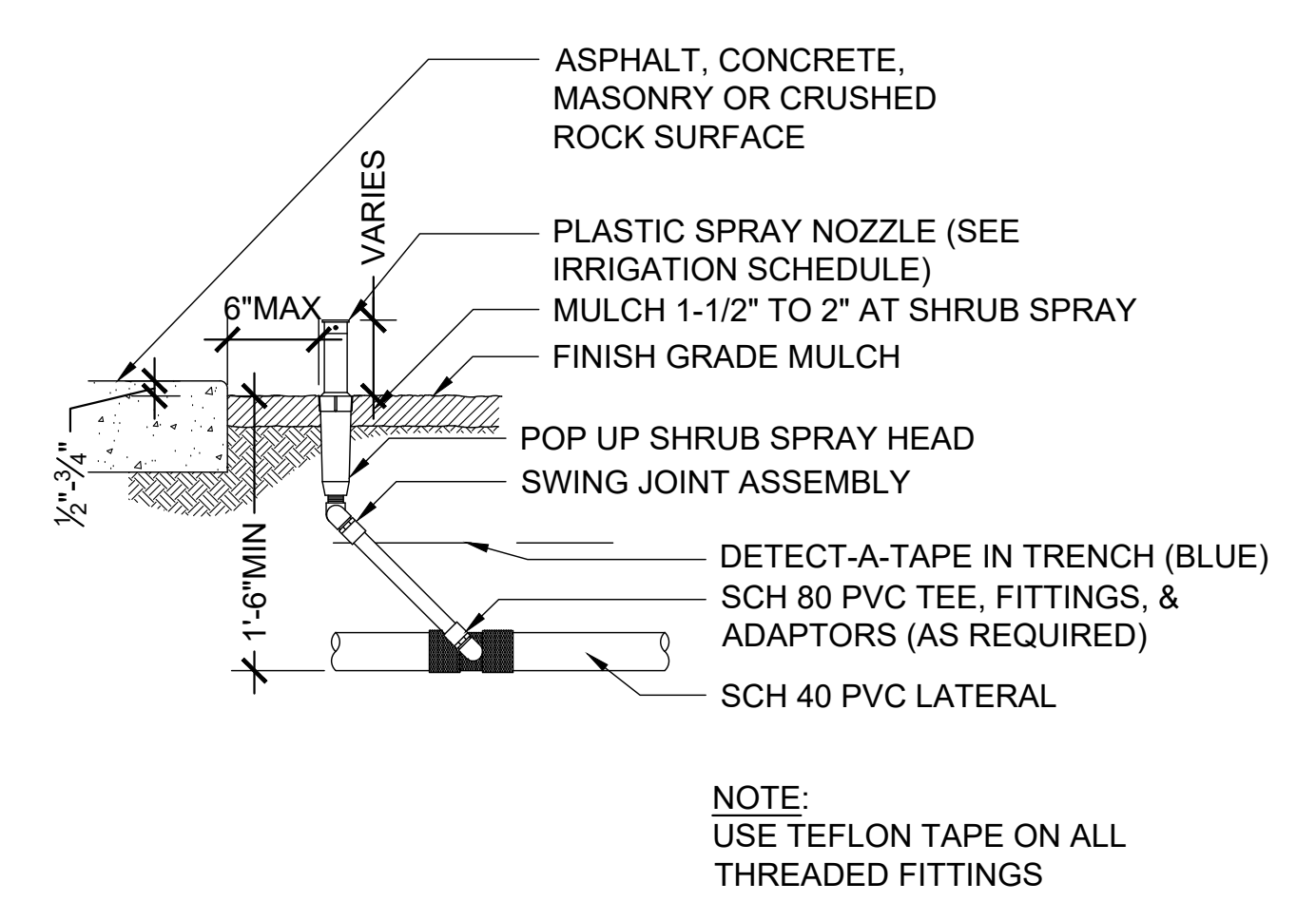
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Suite 200  
Seattle, WA 98103  
1.206.285.3026



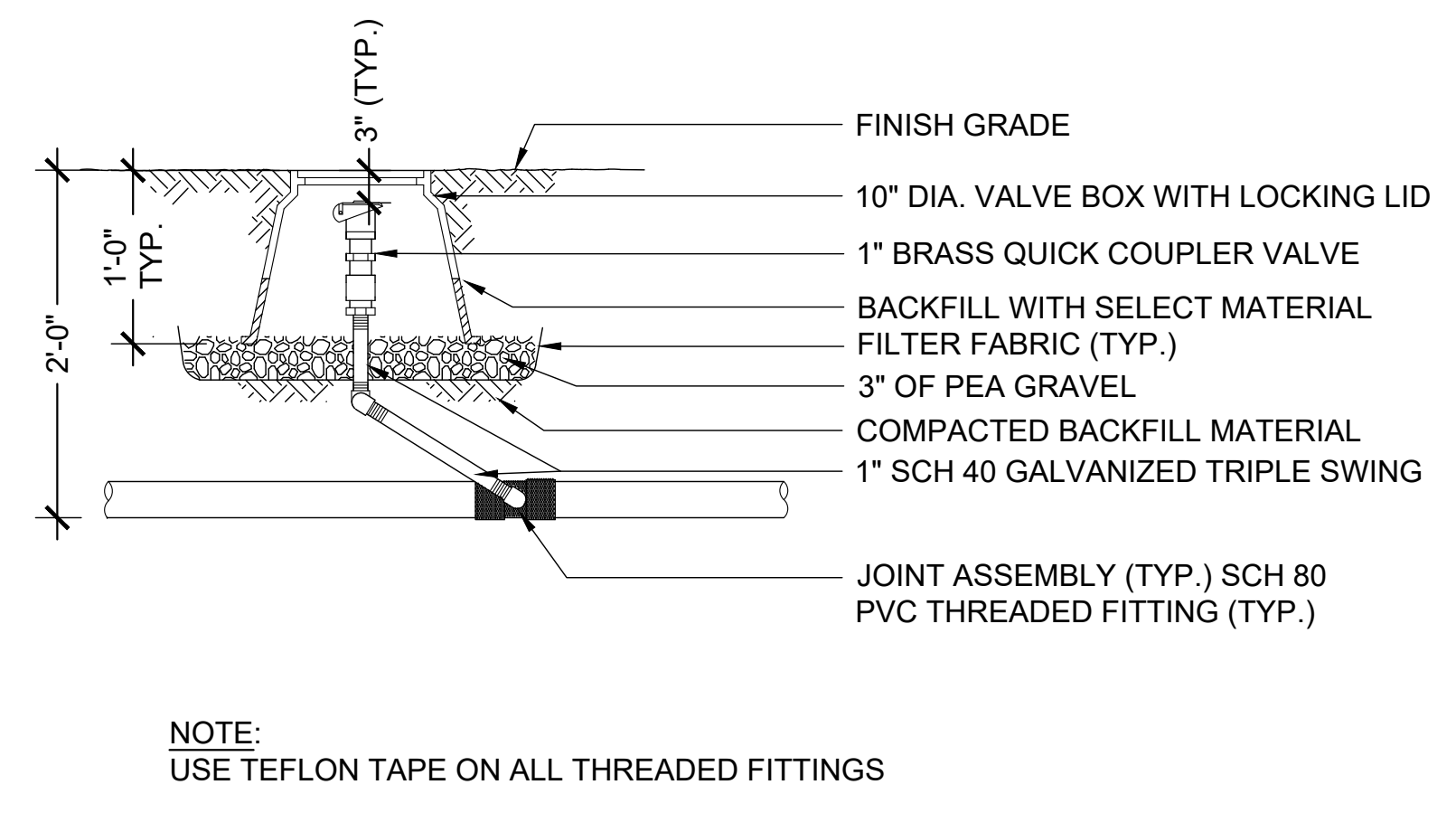
NOT FOR CONSTRUCTION



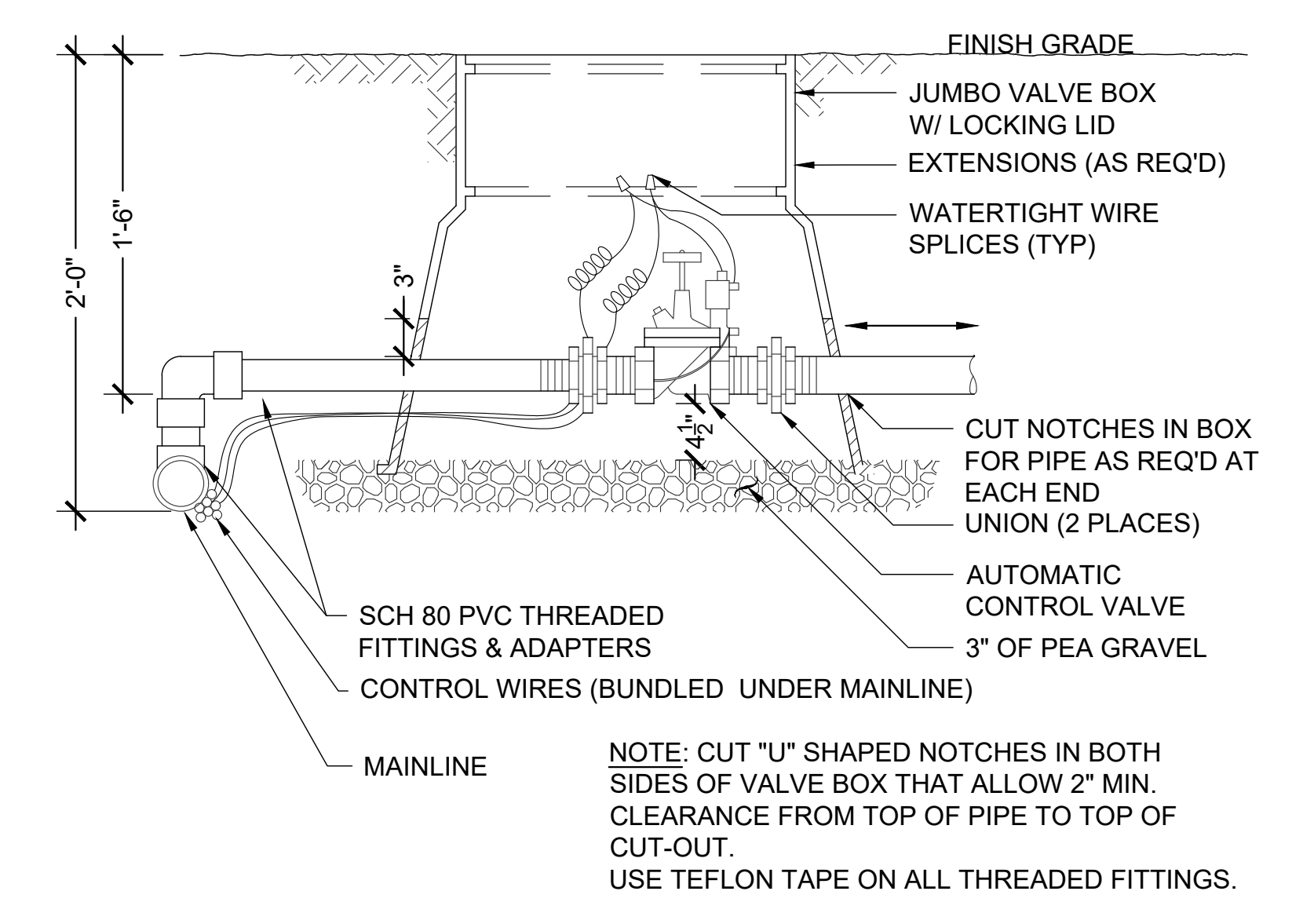
1 POINT OF CONNECTION ASSEMBLY  
SCALE: 3" = 1'-0"



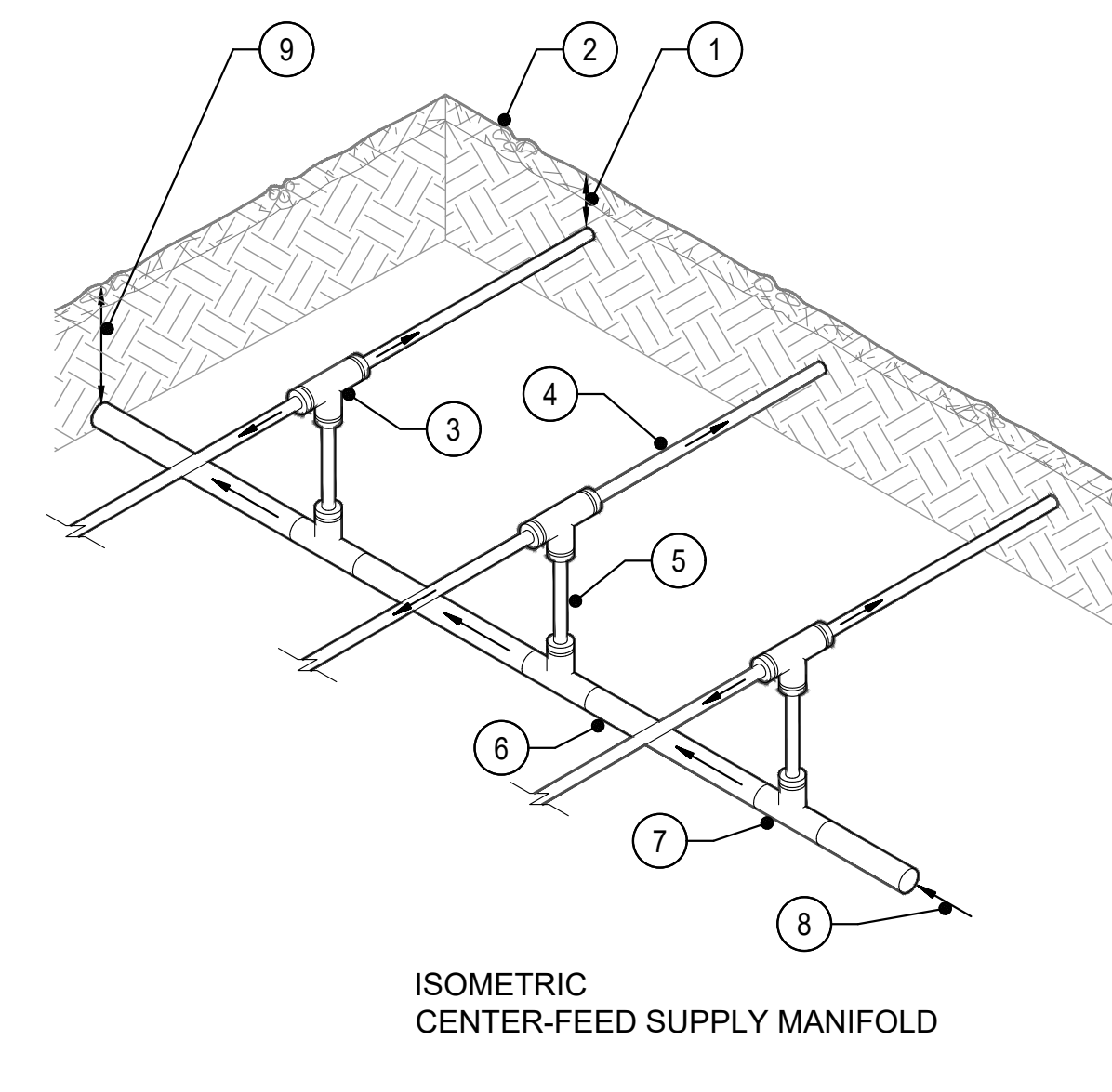
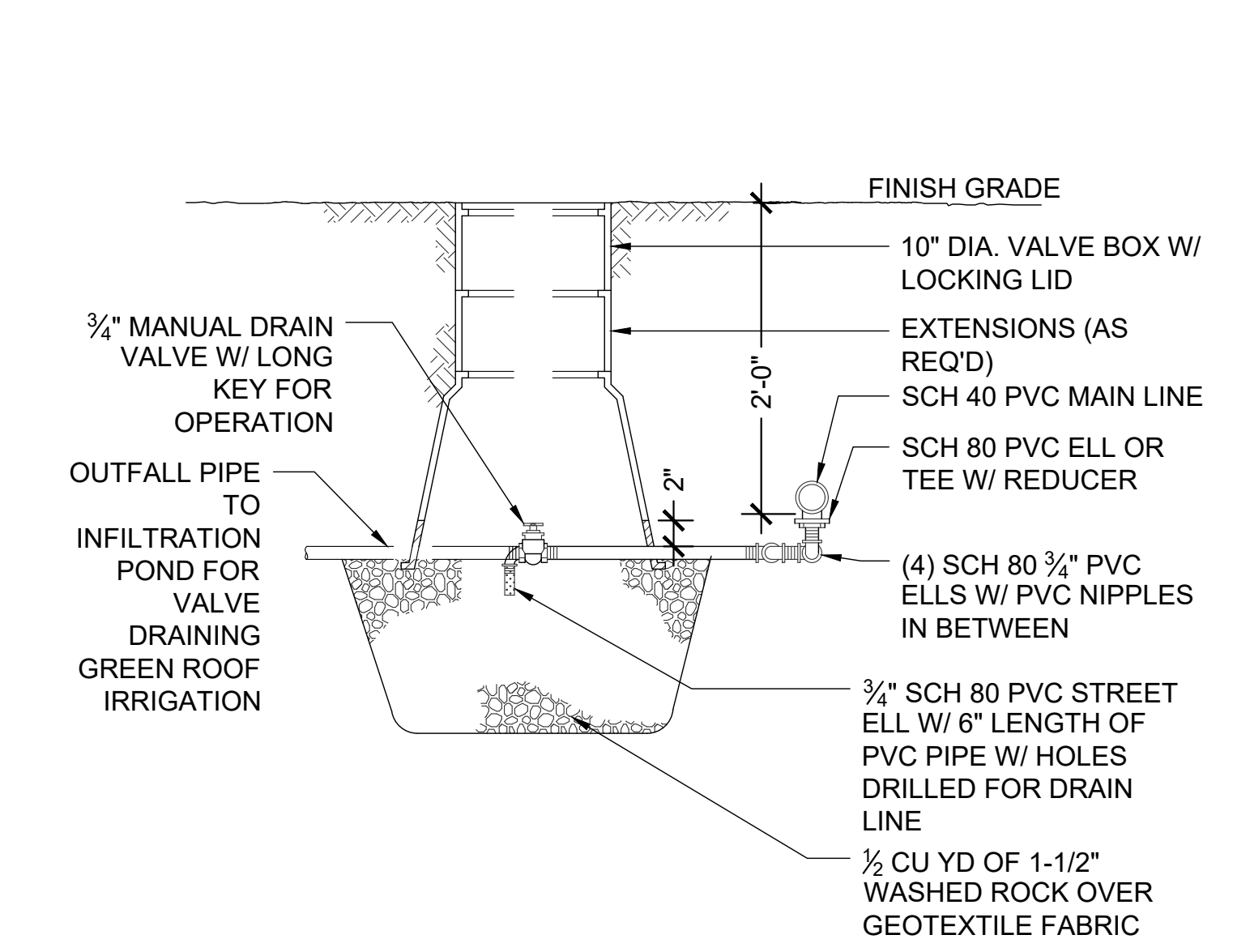
2 POP UP SPRAY HEAD  
SCALE: 1" = 1'-0"



3 QUICK COUPLER VALVE  
SCALE: 1" = 1'-0"

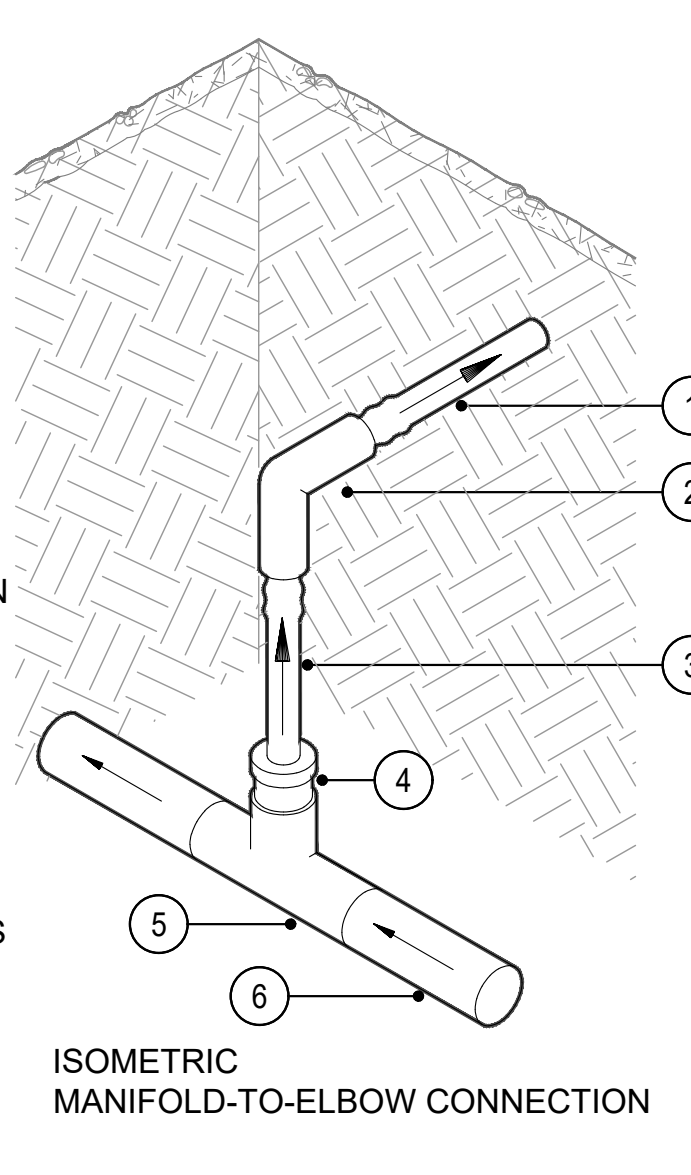


4 AUTOMATIC CONTROL VALVE  
SCALE: 1" = 1'-0"



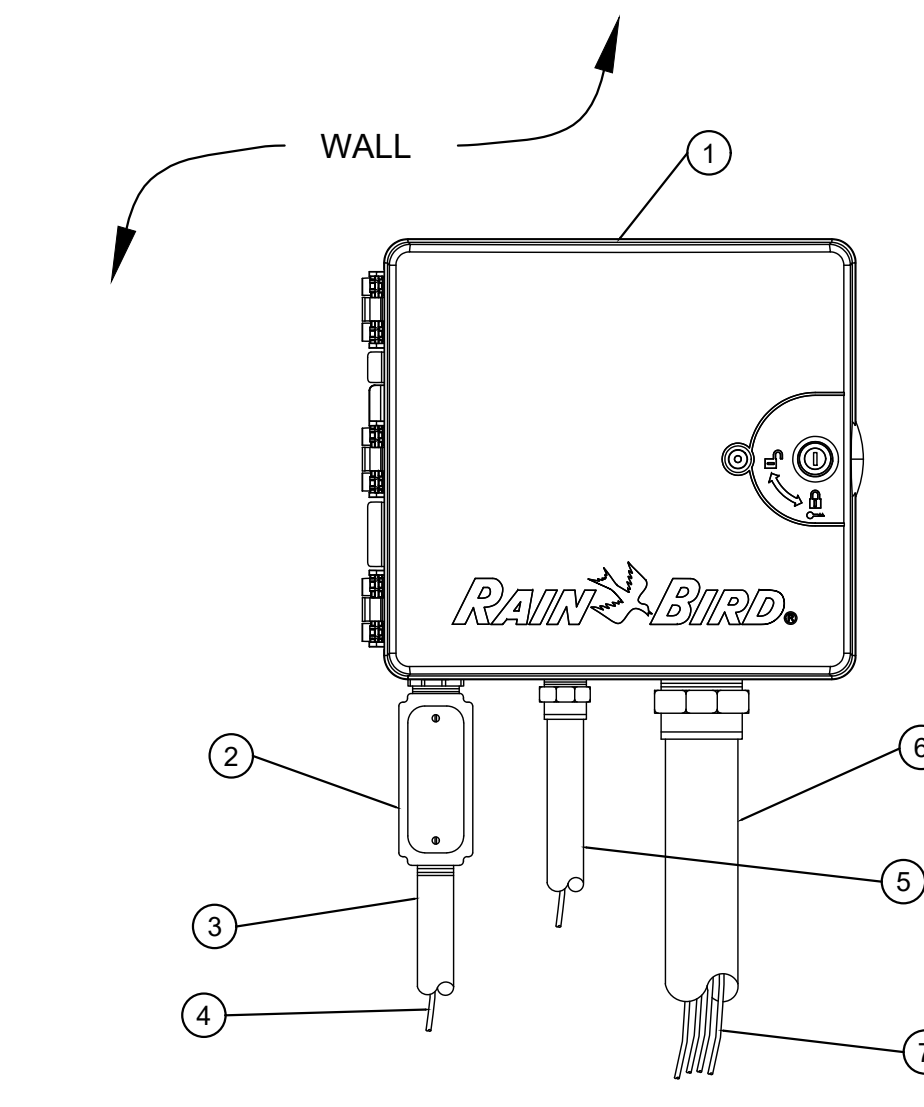
KEYS:  
1 3" + MULCH  
2 FINISHED GRADE  
3 TEE, TYP  
4 DRIPLINE, TYP  
5 BLANK TUBING, TYP  
6 PVC SUPPLY MANIFOLD  
7 PVC TEE TO COMPRESSION ADAPTERS, TYP  
8 FLOW FROM VALVE  
9 12" OF COVER

NOTES:  
1. SEE PLANS, LEGEND & SPECS FOR ALL DIMENSIONS AND LATERAL SPACING.  
2. RATIO OF LATERALS TO START MAY VARY PER HYDRAULIC DEMAND AT THE START CONNECTION, SEE



KEYS:  
1 DRIPLINE  
2 ELBOW  
3 BLANK TUBING  
4 COMPRESSION ADAPTER  
5 PVC TEE (SxSxS)  
6 PVC PIPE

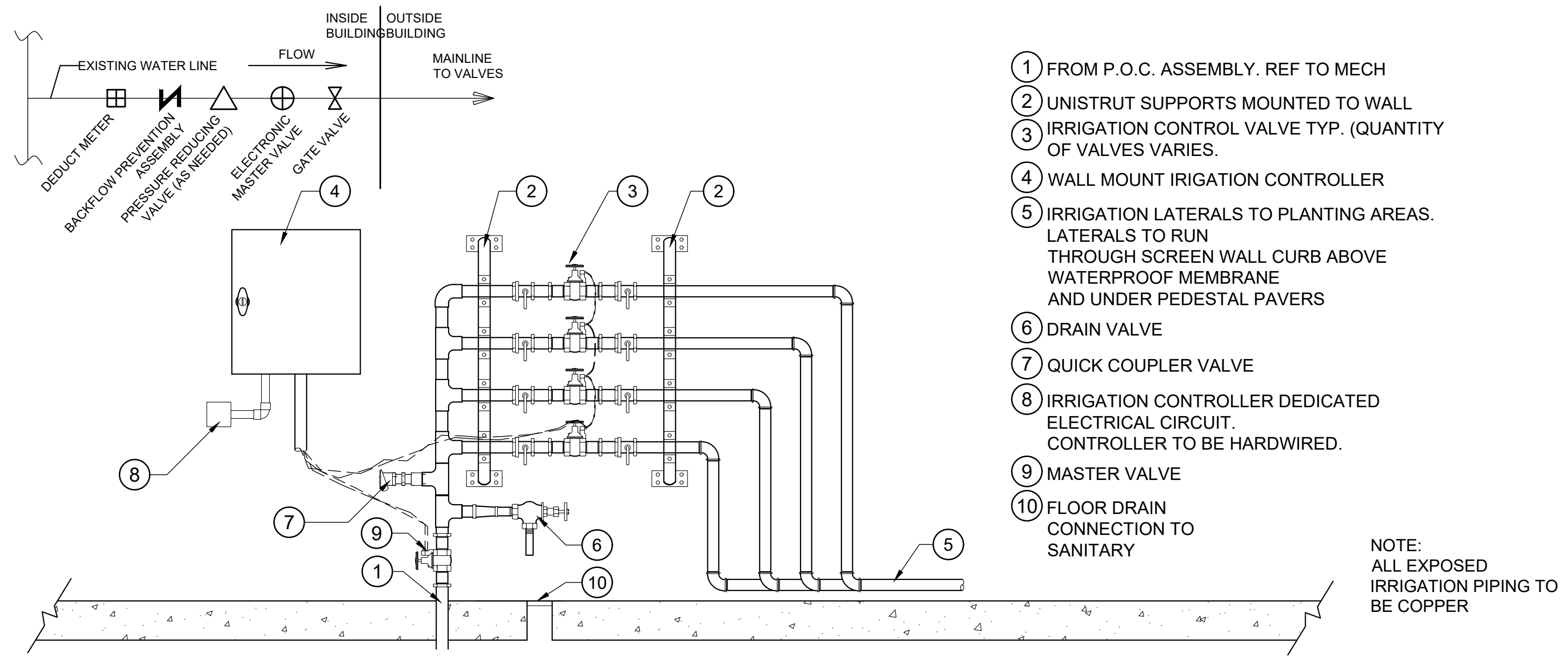
KEYS:  
1 DRIPLINE  
2 TEE  
3 BLANK TUBING  
4 COMPRESSION ADAPTER  
5 PVC PIPE  
6 PVC TEE (SxSxS)



- 1 IRRIGATION CONTROLLER
- 2 JUNCTION BOX
- 3 1-INCH CONDUIT AND FITTINGS TO POWER SUPPLY
- 4 POWER SUPPLY WIRE
- 5 1-INCH CONDUIT AND FITTINGS FOR RS232 SERIAL CABLE TO IQ CENTRAL CONTROL COMPUTER
- 6 2-INCH CONDUIT AND FITTINGS FOR STATION WIRES
- 7 WIRES TO REMOTE CONTROL VALVES

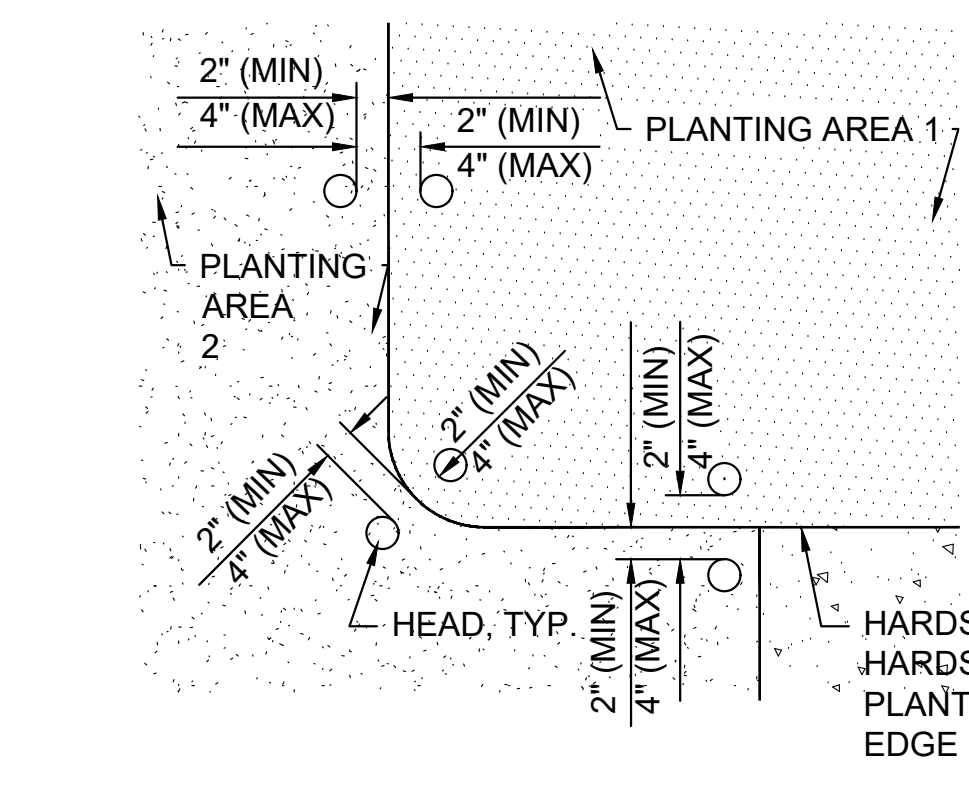
NOTES:  
1. FOR EASE OF INSTALLATION INTO A CONTROLLER WITH MORE THAN 24 STATIONS, INSTALL A JUNCTION BOX AT THE BASE OF CONTROLLER AND TRANSITION LARGER VALVE AND COMMON WIRES FROM FIELD TO 18 AWG MULTI CONDUCTOR WIRE TO BE USED IN CONTROLLER.  
2. USE STEEL CONDUIT FOR ABOVE GRADE AND SCH 40 PVC CONDUIT FOR BELOW GRADE CONDITIONS.  
3. PROVIDE PROPER GROUNDING COMPONENTS TO ACHIEVE GROUND RESISTANCE OF 10 OHMS OR LESS.

7 IRRIGATION CONTROLLER  
SCALE: 1" = 1'-0"

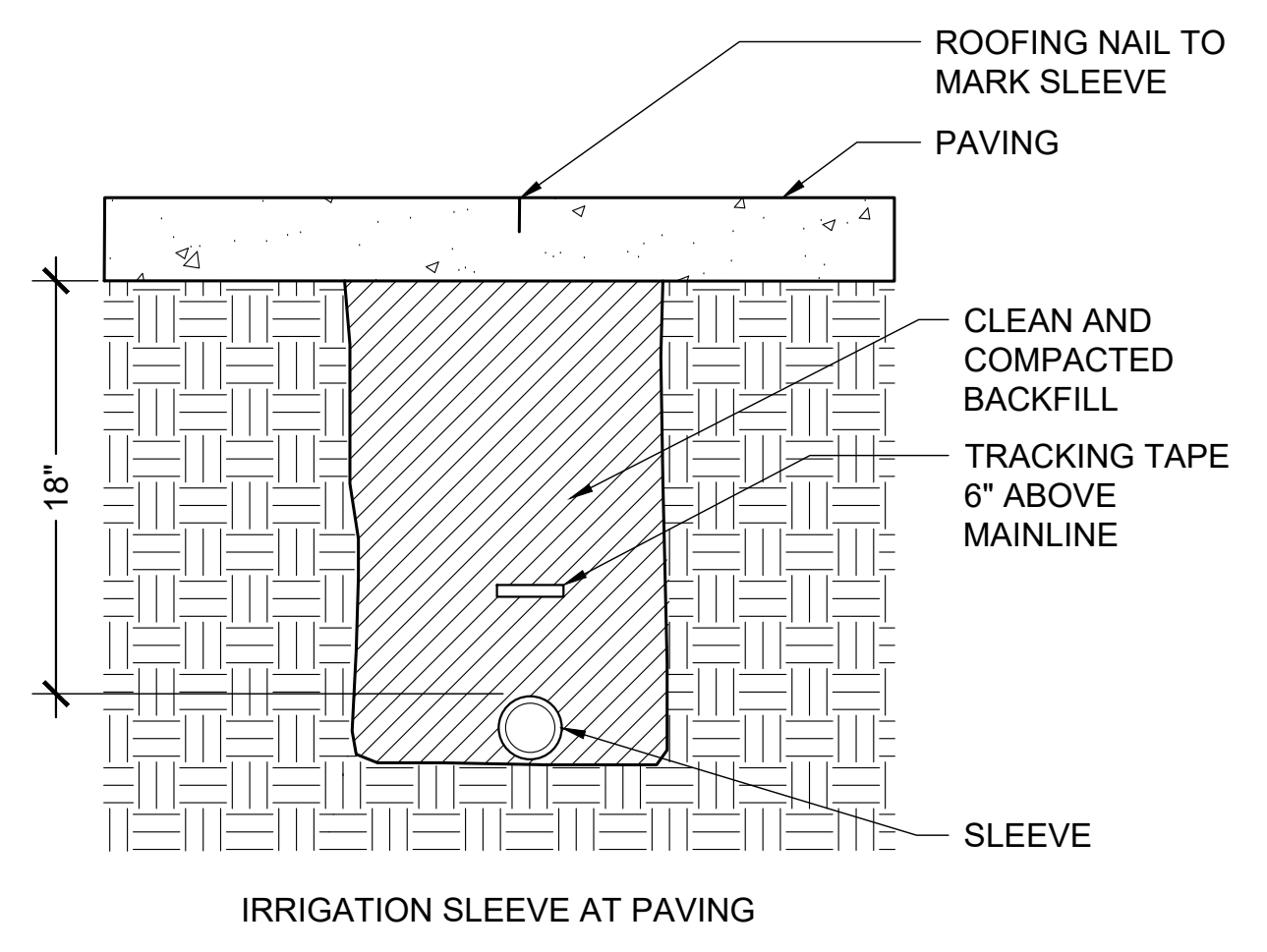


- 1 FROM P.O.C. ASSEMBLY, REF TO MECH
  - 2 UNISTRUT SUPPORTS MOUNTED TO WALL
  - 3 IRRIGATION CONTROL VALVE TYP. (QUANTITY OF VALVES VARIES)
  - 4 WALL MOUNT IRRIGATION CONTROLLER
  - 5 IRRIGATION LATERALS TO PLANTING AREAS. LATERALS TO RUN THROUGH SCREEN WALL CURB ABOVE WATERPROOF MEMBRANE AND UNDER PEDESTAL PAVERS
  - 6 DRAIN VALVE
  - 7 QUICK COUPLER VALVE
  - 8 IRRIGATION CONTROLLER DEDICATED ELECTRICAL CIRCUIT. CONTROLLER TO BE HARDWIRED.
  - 9 MASTER VALVE
  - 10 FLOOR DRAIN CONNECTION TO SANITARY
- NOTE: ALL EXPOSED IRRIGATION PIPING TO BE COPPER

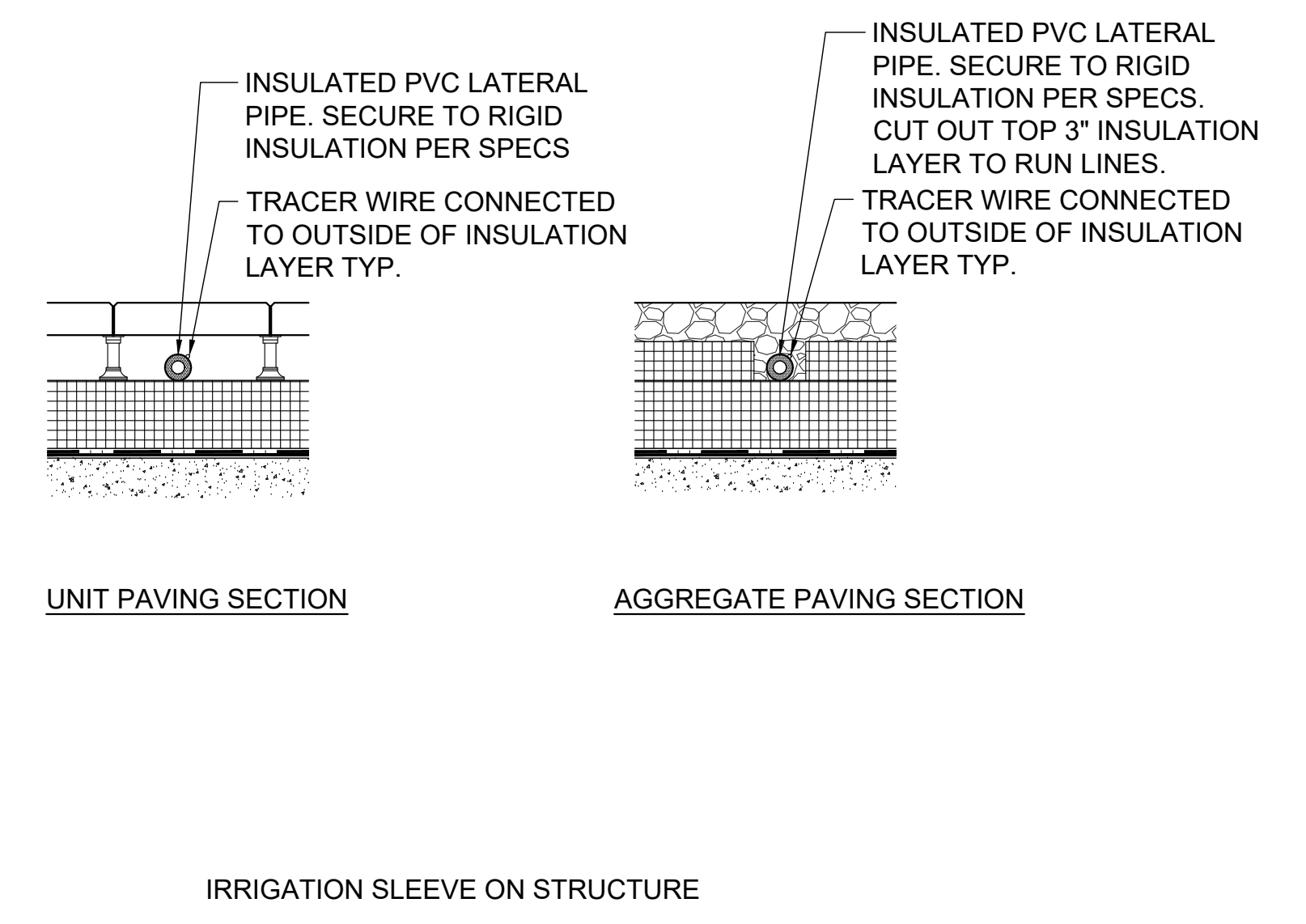
8 IRRIGATION CONTROL VALVE HEADER - TYPICAL CONFIGURATION  
SCALE: 3/4" = 1'-0"



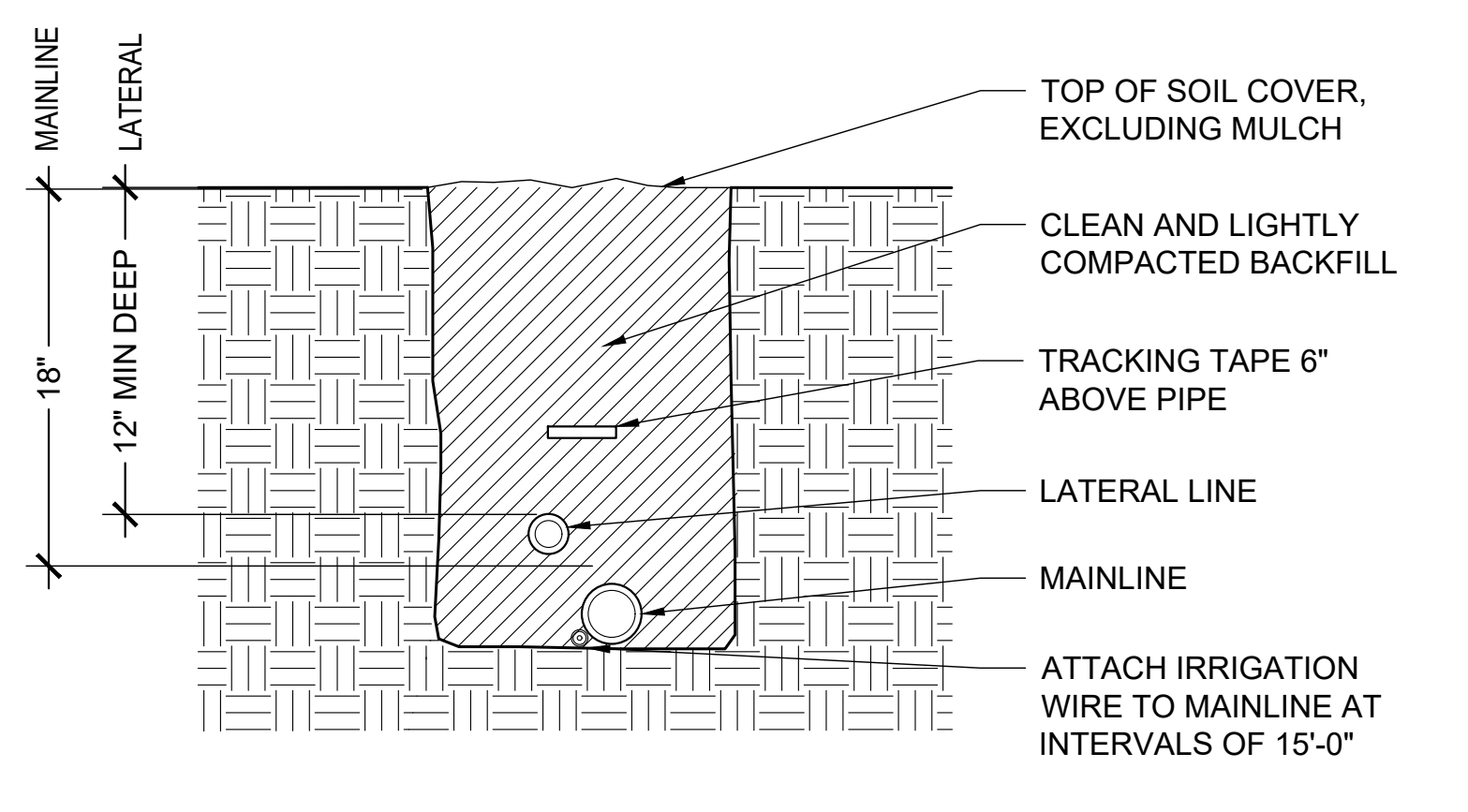
9 HEAD SETBACK AND LOCATION  
SCALE: 1" = 1'-0"



10 IRRIGATION SLEEVE  
SCALE: 1" = 1'-0"



IRRIGATION SLEEVE ON STRUCTURE



11 IRRIGATION TRENCH  
SCALE: 1" = 1'-0"

MERCER ISLAND MIXED USE  
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MERCER ISLAND, WA 98040

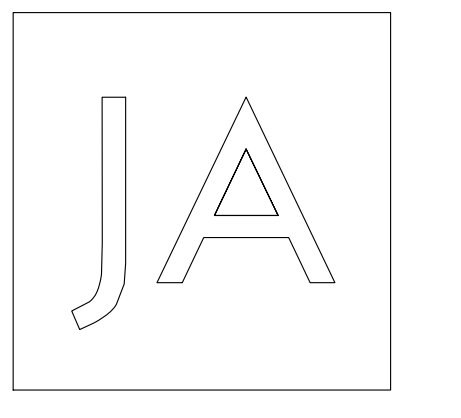
| Date       | Description              |
|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 06/26/2020 | LAND USE SET REV #1      |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
IRRIGATION DETAILS

SHEET NO.

L420

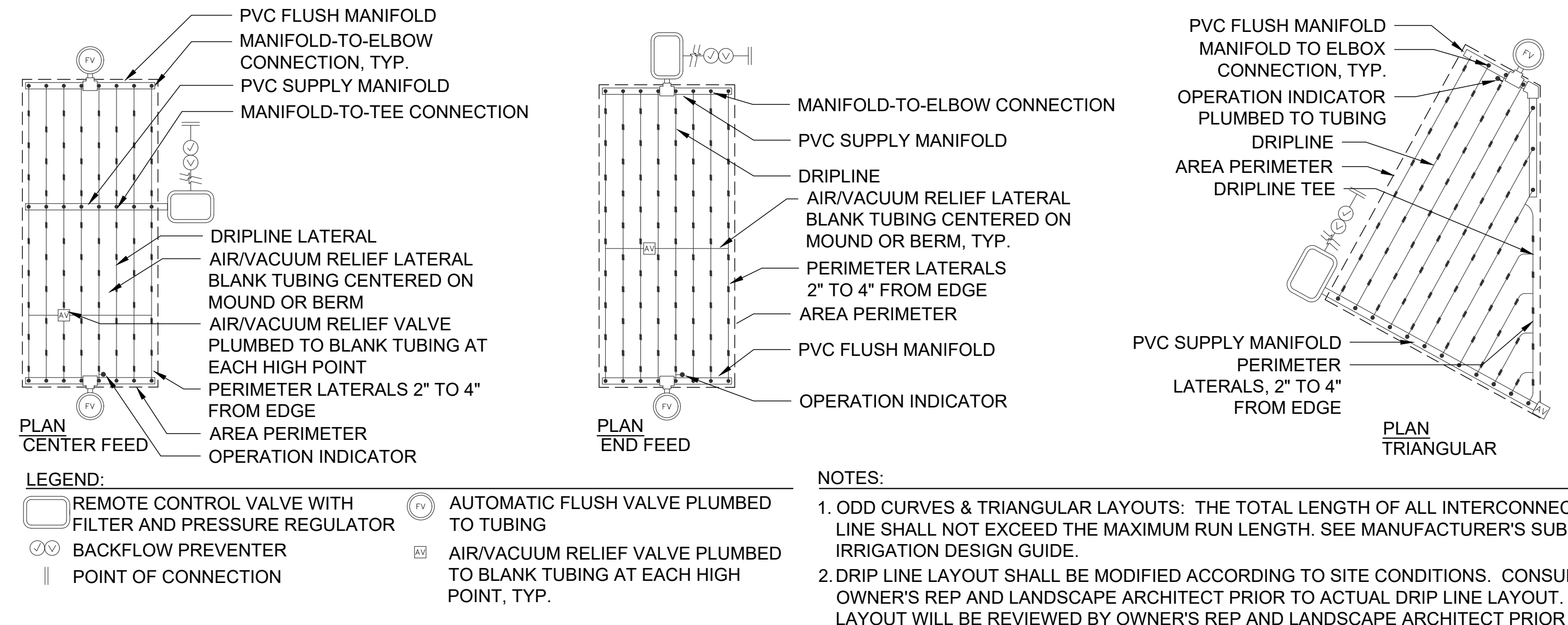
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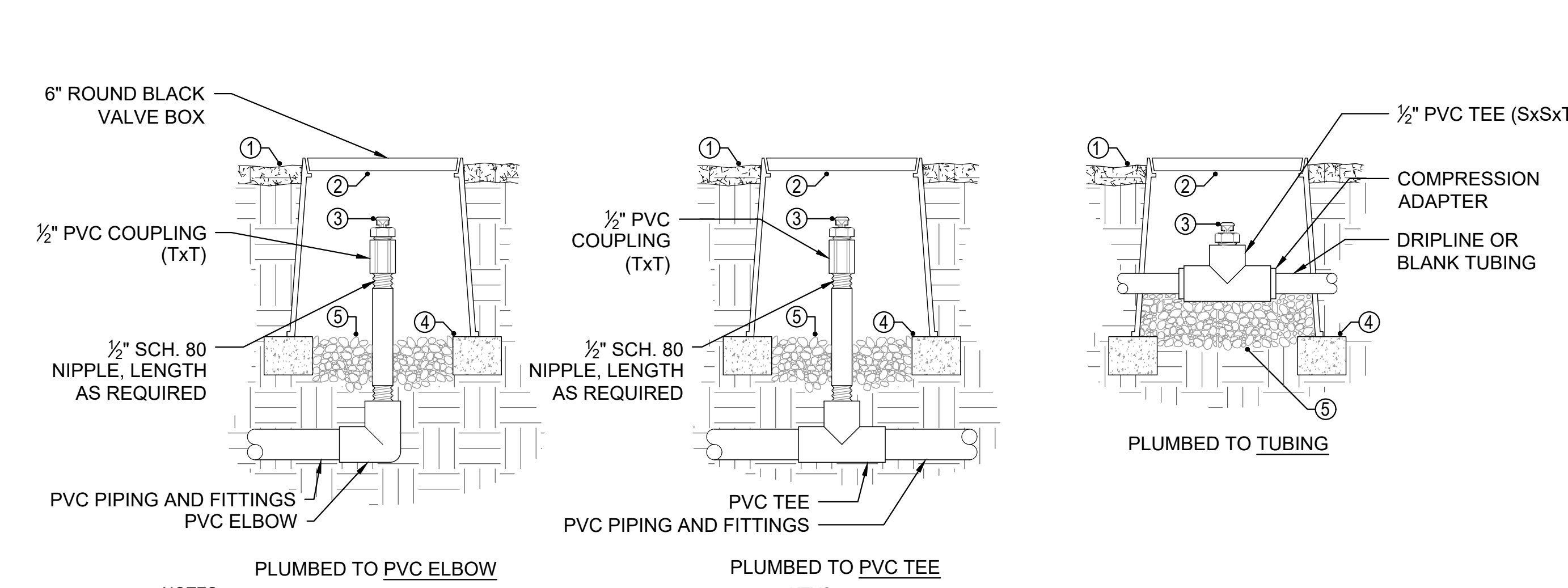
NOT FOR CONSTRUCTION



**1** TYPICAL DRIPLINE LAYOUT  
SCALE: 1" = 1'-0"

**LEGEND:**  
 □ REMOTE CONTROL VALVE WITH FILTER AND PRESSURE REGULATOR  
 ○ BACKFLOW PREVENTER  
 | POINT OF CONNECTION  
 ○ AUTOMATIC FLUSH VALVE PLUMBED TO TUBING  
 □ AIR/VACUUM RELIEF VALVE PLUMBED TO BLANK TUBING AT EACH HIGH POINT, TYP.

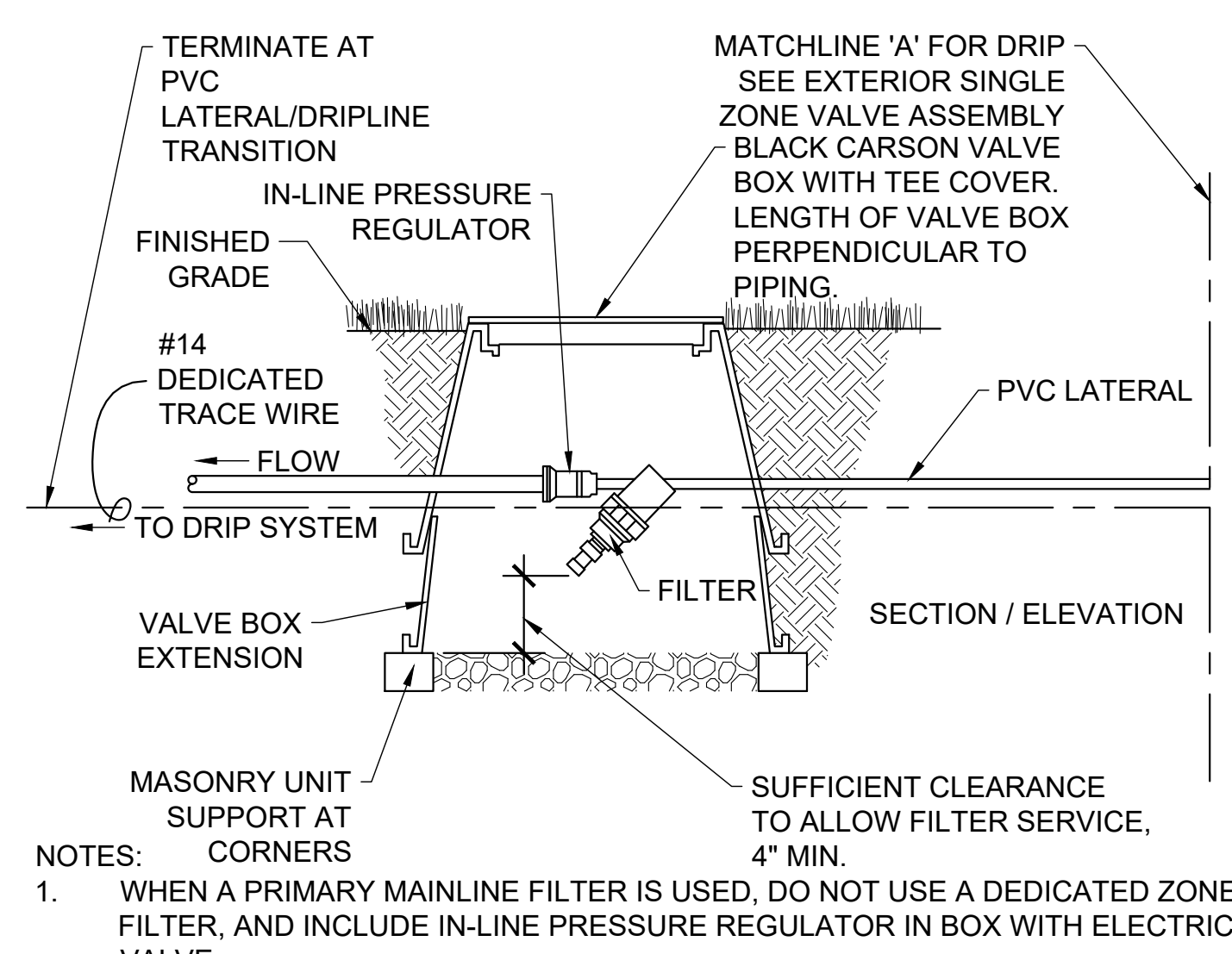
**NOTES:**  
 1. ODD CURVES & TRIANGULAR LAYOUTS: THE TOTAL LENGTH OF ALL INTERCONNECTED DRIP LINE SHALL NOT EXCEED THE MAXIMUM RUN LENGTH. SEE MANUFACTURER'S SUBSURFACE IRRIGATION DESIGN GUIDE.  
 2. DRIP LINE LAYOUT SHALL BE MODIFIED ACCORDING TO SITE CONDITIONS. CONSULT WITH OWNER'S REP AND LANDSCAPE ARCHITECT PRIOR TO ACTUAL DRIP LINE LAYOUT. DRIP LINE LAYOUT WILL BE REVIEWED BY OWNER'S REP AND LANDSCAPE ARCHITECT PRIOR TO BACKFILLING.  
 3. SEE ALSO MANUFACTURER'S DESIGN GUIDE FOR OTHER LAYOUT TYPES.



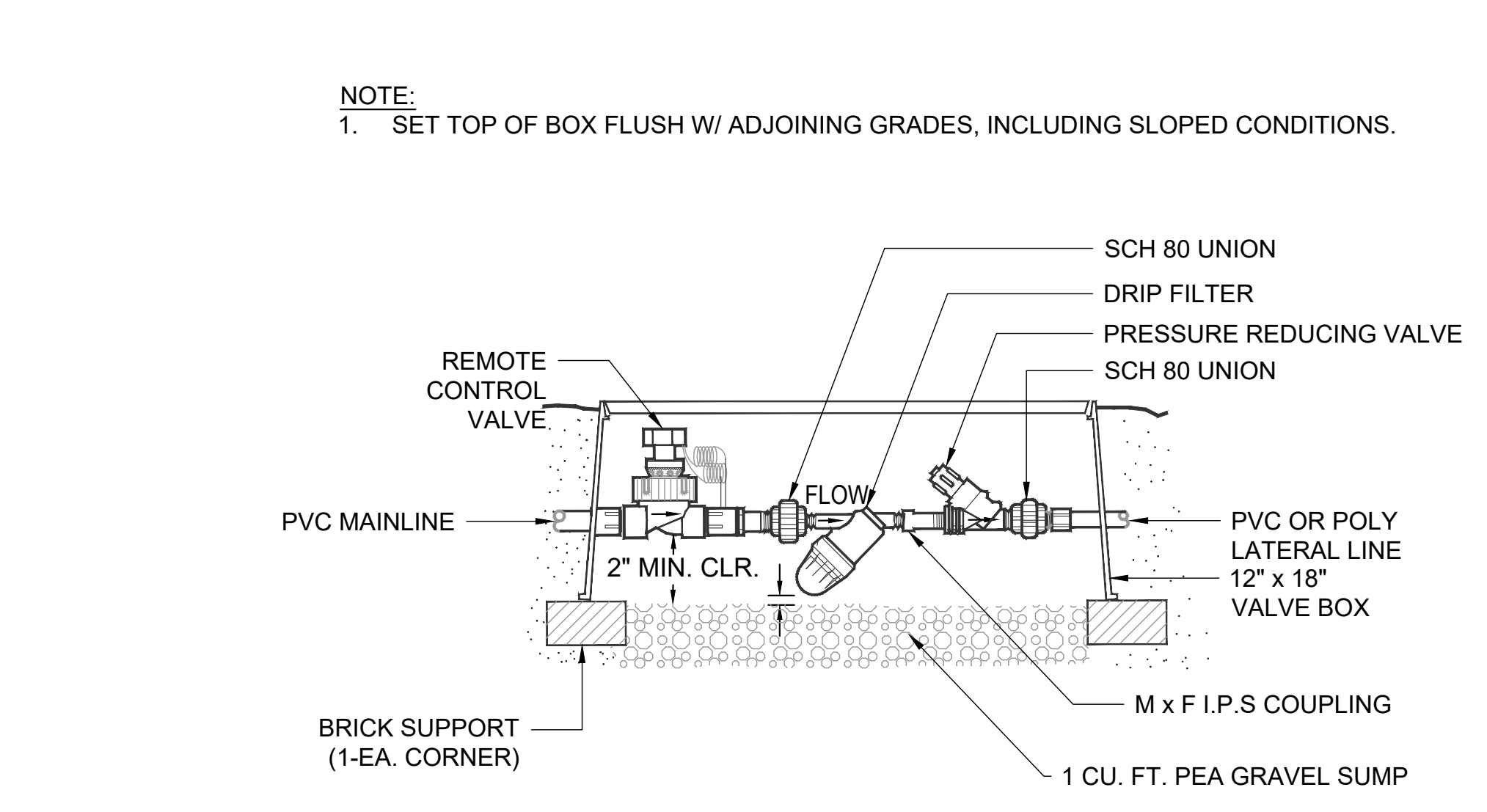
**2** AIR VACUUM RELIEF VALVE FOR DRIPLINE  
SCALE: 1" = 1'-0"

**NOTES:**  
 1. AIR/VACUUM RELIEF VALVE CANNOT BE CONNECTED LOWER THAN DRIPLINE LATERALS.  
 2. USE ONE FOR EACH INCREMENT OF 7 GPM.

**KEYS:**  
 ① FINISHED GRADE  
 ② 6" ROUND VALVE BOX  
 ③ AIR/VACUUM RELIEF VALVE  
 ④ BRICK SUPPORTS  
 ⑤ PEA GRAVEL SUMP (6")

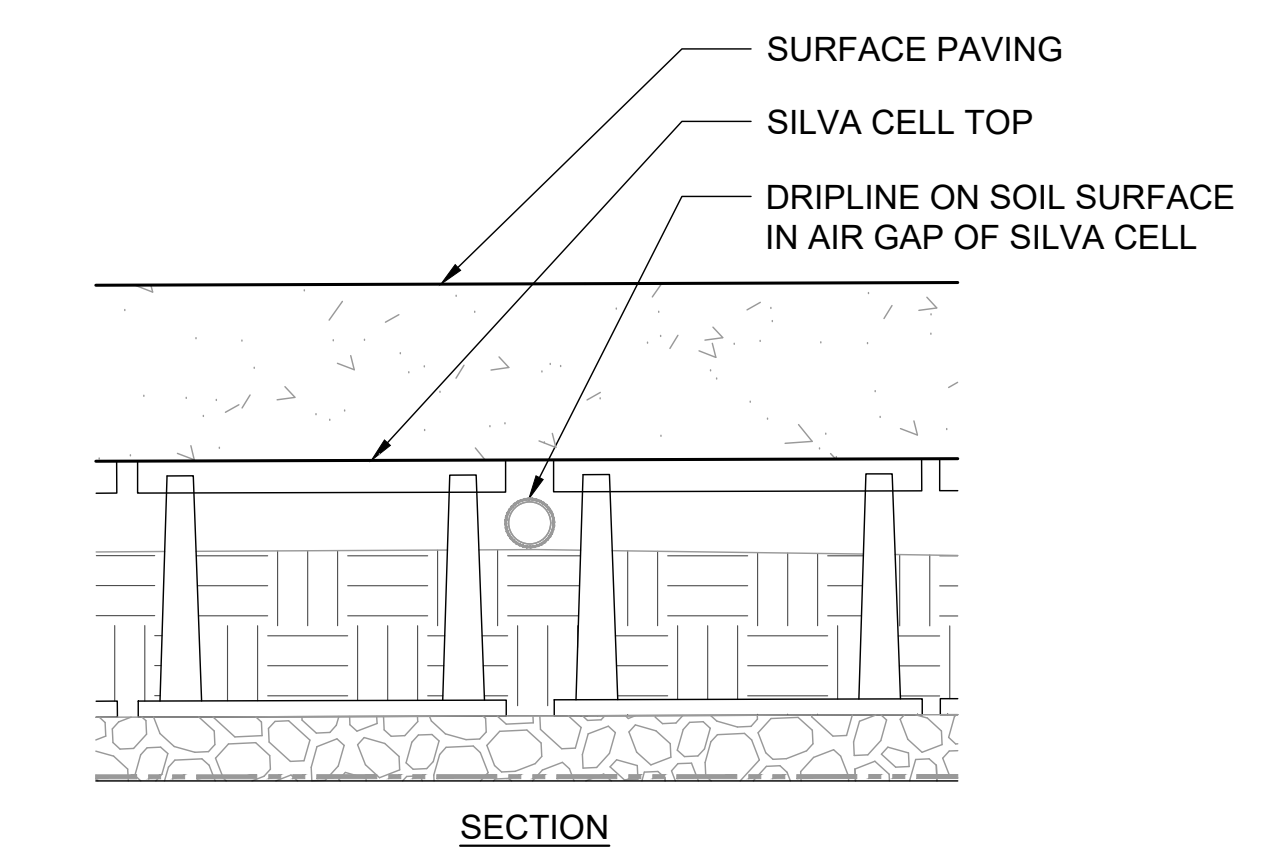


**3** DRIP FILTER AND PRV ASSEMBLY  
SCALE: 1" = 1'-0"



**4** REMOTE CONTROL VALVE WITH PRESSURE VALVE AND DRIP FILTER  
SCALE: 1" = 1'-0"

**NOTE:**  
 1. SET TOP OF BOX FLUSH W/ ADJOINING GRADES, INCLUDING SLOPED CONDITIONS.



**5** DRIPLINE TRENCH  
SCALE: 1" = 1'-0"

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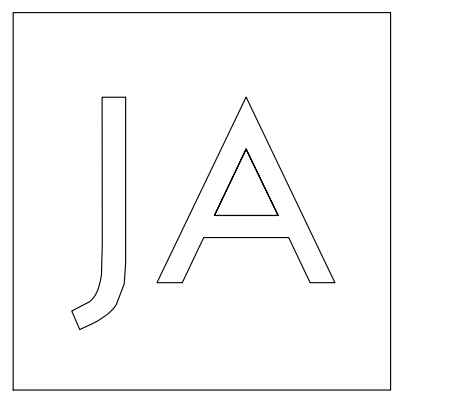
| Date       | Description              |
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| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 06/26/2020 | LAND USE SET REV #1      |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
**IRRIGATION DETAILS**

SHEET NO.  
**L421**

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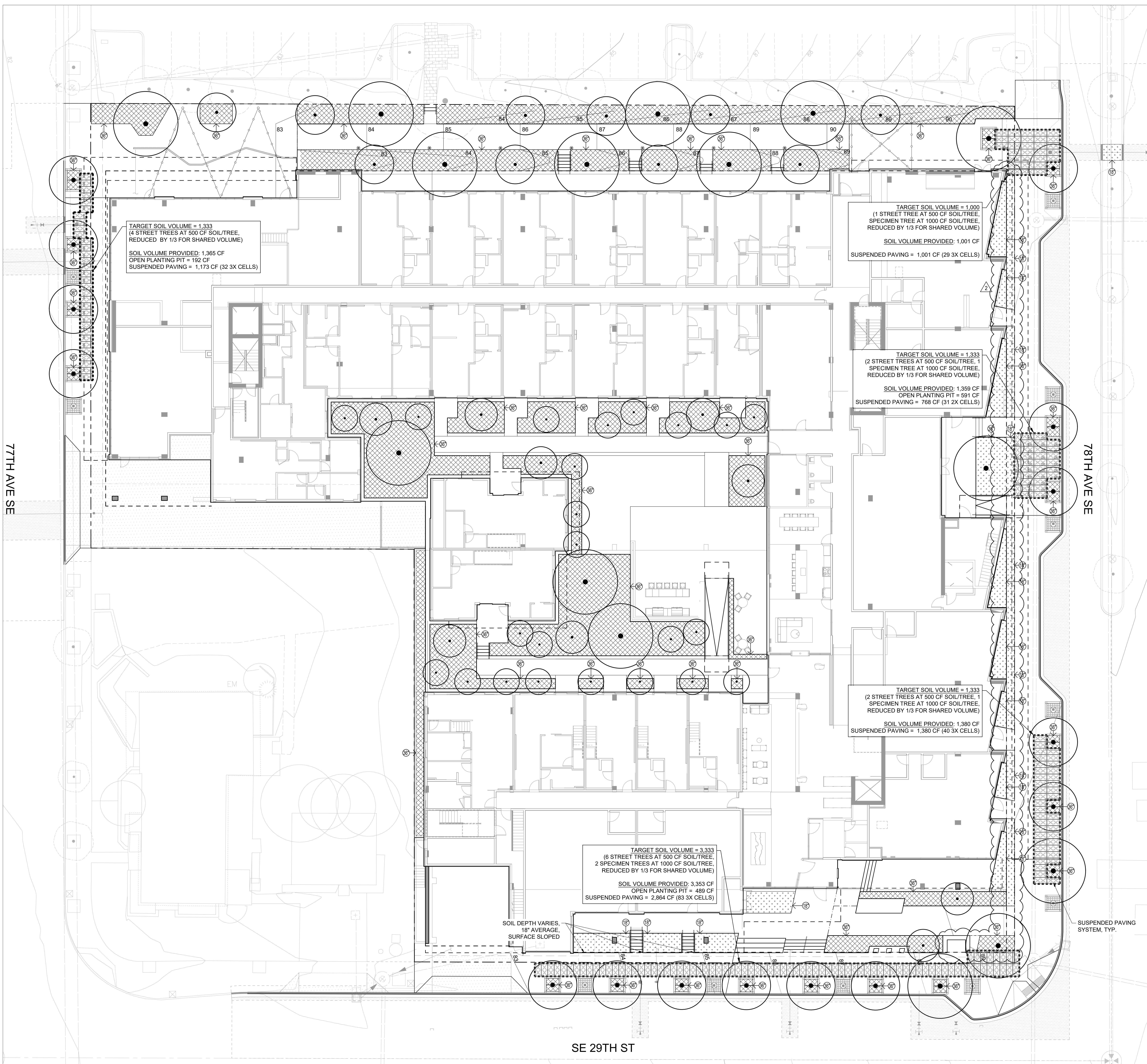


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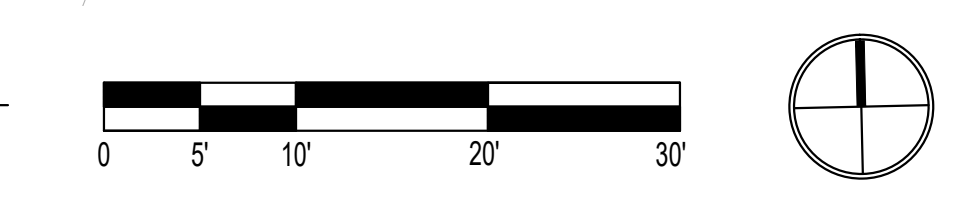
**SOILS SCHEDULE**  
**SYMBOL DESCRIPTION**

|  |  |
|--|--|
|  | 36" SOIL DEPTH FOR TREES   |
|  | 6-18" SOIL DEPTH FOR PERENNIALS AND VINES  |
|  | LIMIT OF SUSPENDED PAVING. SUSPENDED PAVEMENT SYSTEM WITH LID AND GEOTEXTILE SEPARATOR AT TOP. DEEP ROOT SILVA CELL OR APPROVED EQUAL. REF. DETAILS 7 ON L320. |

- NOTES:**
- ALL R.O.W. TREES TO INCLUDE A MINIMUM VOLUME OF 500 CF (CUBIC FEET) OF SOIL PER TREE
  - ALL SPECIMEN TREES TO INCLUDE A MINIMUM VOLUME OF 1000 CF OF SOIL PER TREE
  - WHERE TREE VOLUMES ARE SHARED, IT IS ASSUMED THAT THE TARGET SOIL VOLUME CAN BE REDUCED BY 1/3.
  - SUSPENDED PAVING SYSTEM (SILVA CELL OR APPROVED EQUAL) INCLUDED TO FACILITATE SOIL VOLUME IN CONSTRAINED R.O.W. CONDITIONS. SILVA CELLS ARE ASSUMED TO HAVE THE FOLLOWING SOIL VOLUME: 1X = 13.23 CF, 2X = 24.76 CF, 3X = 34.50 CF.
  - ASSUME FULL WEIGHT SOIL (MIN. SDI 120 PSF/PCF)



**1 SOILS PLAN**  
SCALE: 1" = 10'



**MERCER ISLAND MIXED USE**  
2805 90TH AVE SE  
MERCER ISLAND, WA 98040

**DRAWING ISSUE**

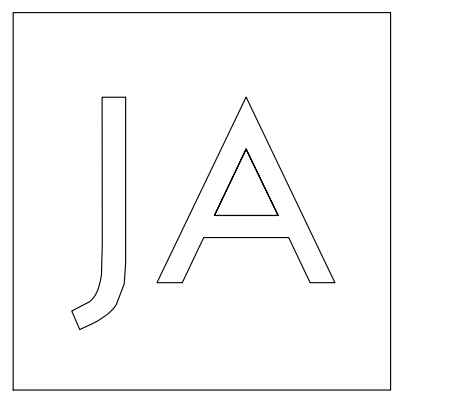
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| 03/31/2020 | 50% CD                   |
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SHEET TITLE  
**SOILS PLAN**

SHEET NO.  
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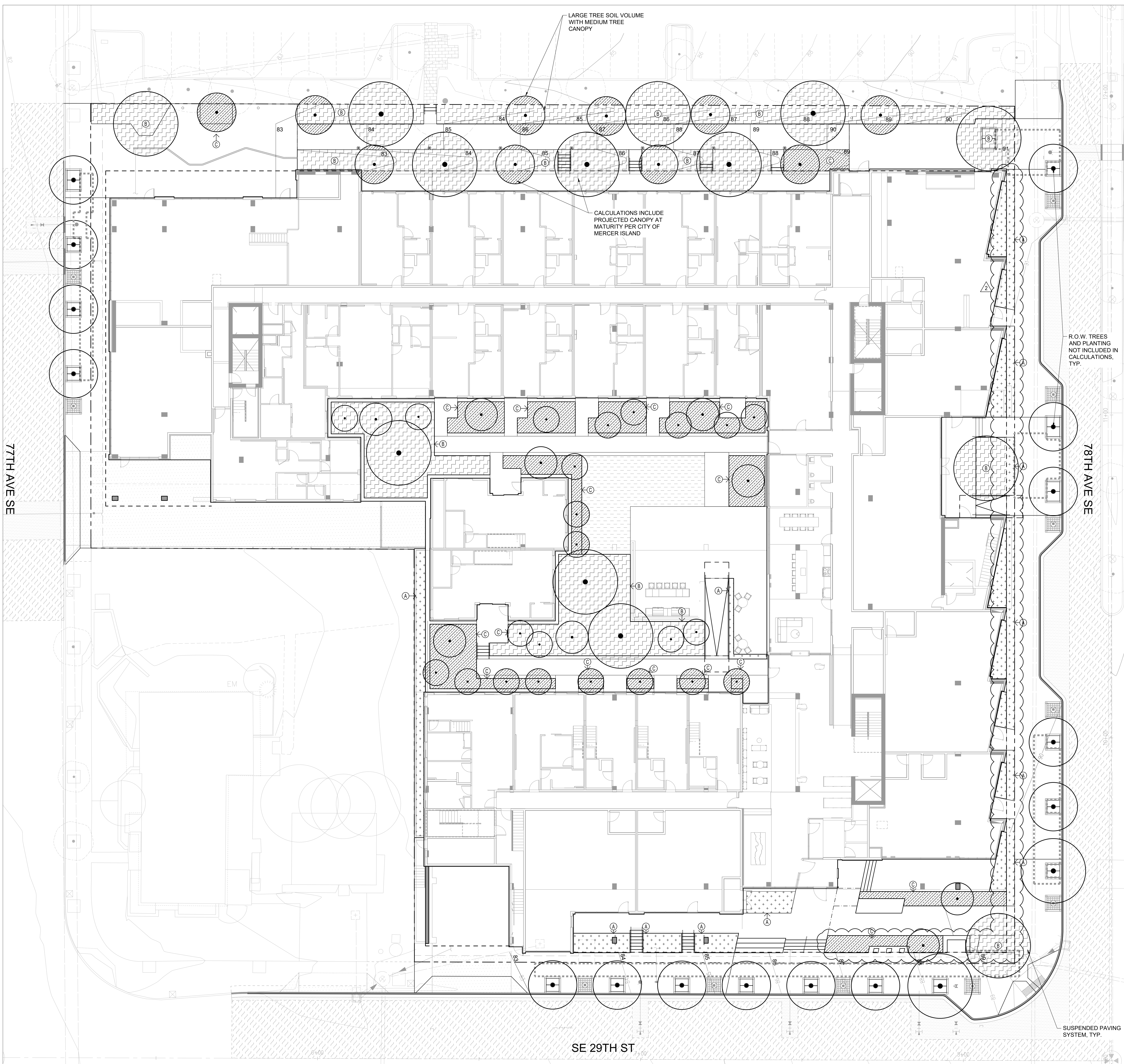
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**LANDSCAPED AREA REQUIREMENT**

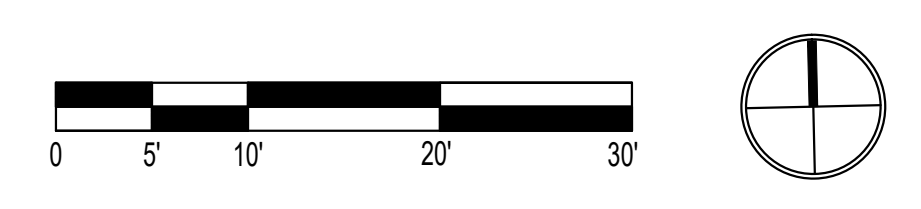
| KEY                      | DESCRIPTION   | AREA  | CREDIT | TOTAL AREA |
|--------------------------|---|-------|--------|------------|
| (Pattern 1)              | GROUND LEVEL PLANTING BEDS  | 1,598 | 100%   | 1,598      |
| (Pattern 2)              | PLANTING AREAS SUPPORTING LARGE TREES (HEIGHT > 30' AT MATURITY)  | 6,515 | 200%   | 13,030     |
| (Pattern 3)              | PLANTING AREAS SUPPORTING MEDIUM TREES (HEIGHT > 15' AT MATURITY) | 2,739 | 150%   | 4,108      |
| REF L502                 | GREEN ROOFS   | 1,420 | 50%    | 710        |
| LANDSCAPED AREA PROVIDED |   |       |        | 19,446     |

PER MICC 19.11.070:  
SITE AREA: 63,780 SF  
REQUIRED LANDSCAPED AREA (25%): 15,945 SF  
LANDSCAPED AREA PROVIDED: 19,446 SF

- NOTES:
- ALL R.O.W. TREES TO INCLUDE A MINIMUM OF VOLUME OF 500 CF (CUBIC FEET) OF SOIL PER TREE.
  - SUSPENDED PAVING SYSTEM (SILVA CELL OR APPROVED EQUAL) INCLUDED TO FACILITATE SOIL VOLUME IN CONSTRAINED R.O.W. CONDITIONS. REFERENCE L500 - SOILS PLAN FOR PROJECTED VOLUME AND LAYOUT.
  - CALCULATIONS INCLUDE PROJECTED CANOPY AT MATURITY PER CITY OF MERCER ISLAND.



1 LANDSCAPED AREA DIAGRAM  
SCALE: 1" = 10'



**MERCER ISLAND MIXED USE**  
2935 80TH AVE SE  
MERCER ISLAND, WA 98940

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| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
**LANDSCAPED AREA DIAGRAM**

SHEET NO.  
**L501**

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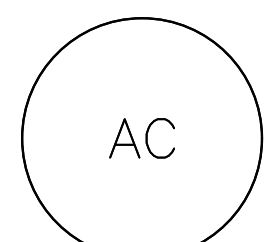
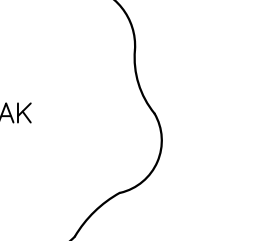
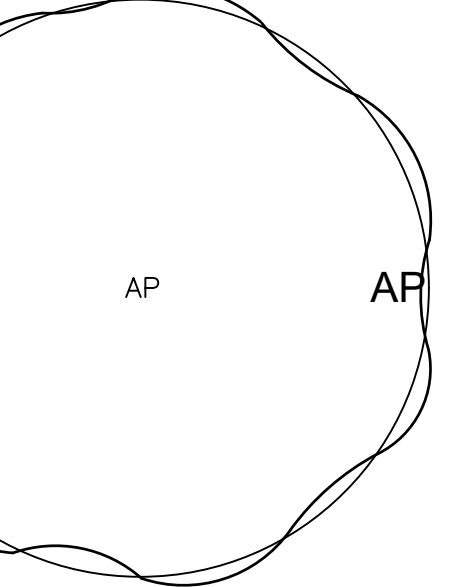
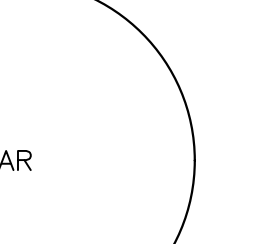
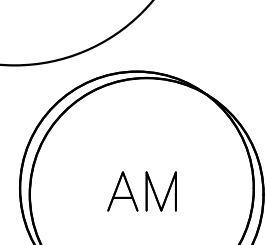
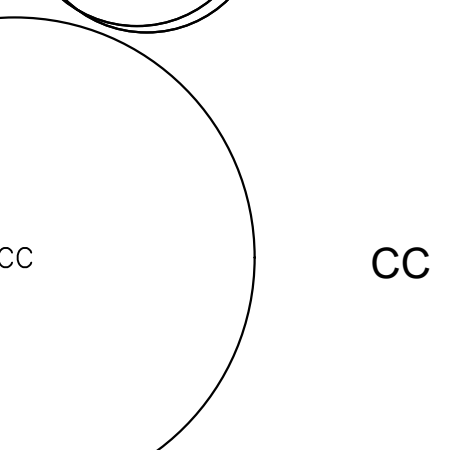
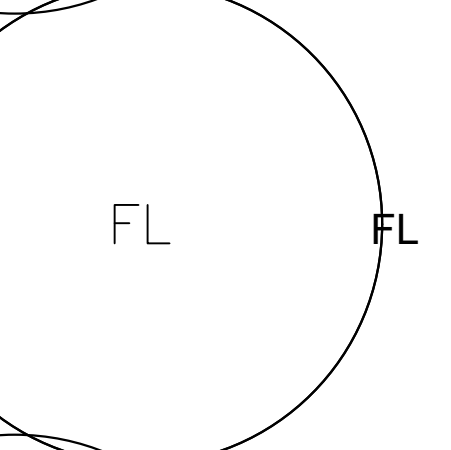


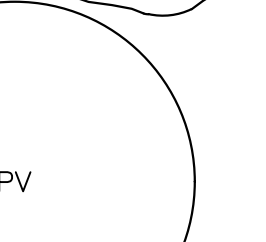
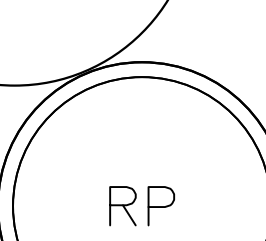


LANDSCAPE - CODE SUMMARY




| ITEM                  | SUMMARY OF MINIMUM REQUIREMENTS  |
|-----------------------|--|
| SOILS                 | ADD 3" COMPOST INTO TOP 8" AND FINISH WITH 2-4" MULCH.   |
| IRRIGATION / DRAINAGE | PROVIDE FOR PLANTING IN CONTAINED PLANTERS   |
| DROUGHT TOLERANCE     | PROVIDE NATIVE, CLIMATE ADAPTED AND DROUGHT TOLERANT PLANT MATERIAL  |
| TREES                 | MIN. 1.5" CALIPER FOR NEW DECIDUOUS TREES ON PRIVATE PROPERTY<br>MIN. 2" - 3" CALIPER FOR NEW DECIDUOUS TREES. BRANCHING HEIGHT FOR ALL STREET TREES TO BE 5' MIN.<br>MIN. 6' HEIGHT FOR NEW CONIFEROUS TREES.<br>SPACING: MIN. 20' - 40' SPACING ON CENTER<br>DISTANCE TO STREET LIGHT: MIN. 10'<br>TO BE PLANTED IN SILVA CELL (OR APPROVED EQUAL) WITH A MINIMUM SOIL VOLUME OF 500 CF. |
| SHRUBS                | MIN 12" SOIL DEPTH FOR SHRUBS IN CONTAINERS<br>MIN 9" HT AT INSTALLATION<br>MIN 30" HT FOR SHRUBS INSTALLED FOR REQUIRED SCREENING<br>MIN 18" O.C. SPACING BETWEEN SHRUBS  |
| GROUNDCOVERS          | MIN 4" POTS AT MAX 12" O.C., OR<br>MIN 1 GAL CONTAINERS AT MAX 24" O.C.  |

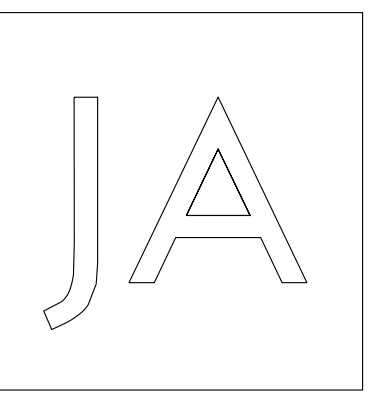
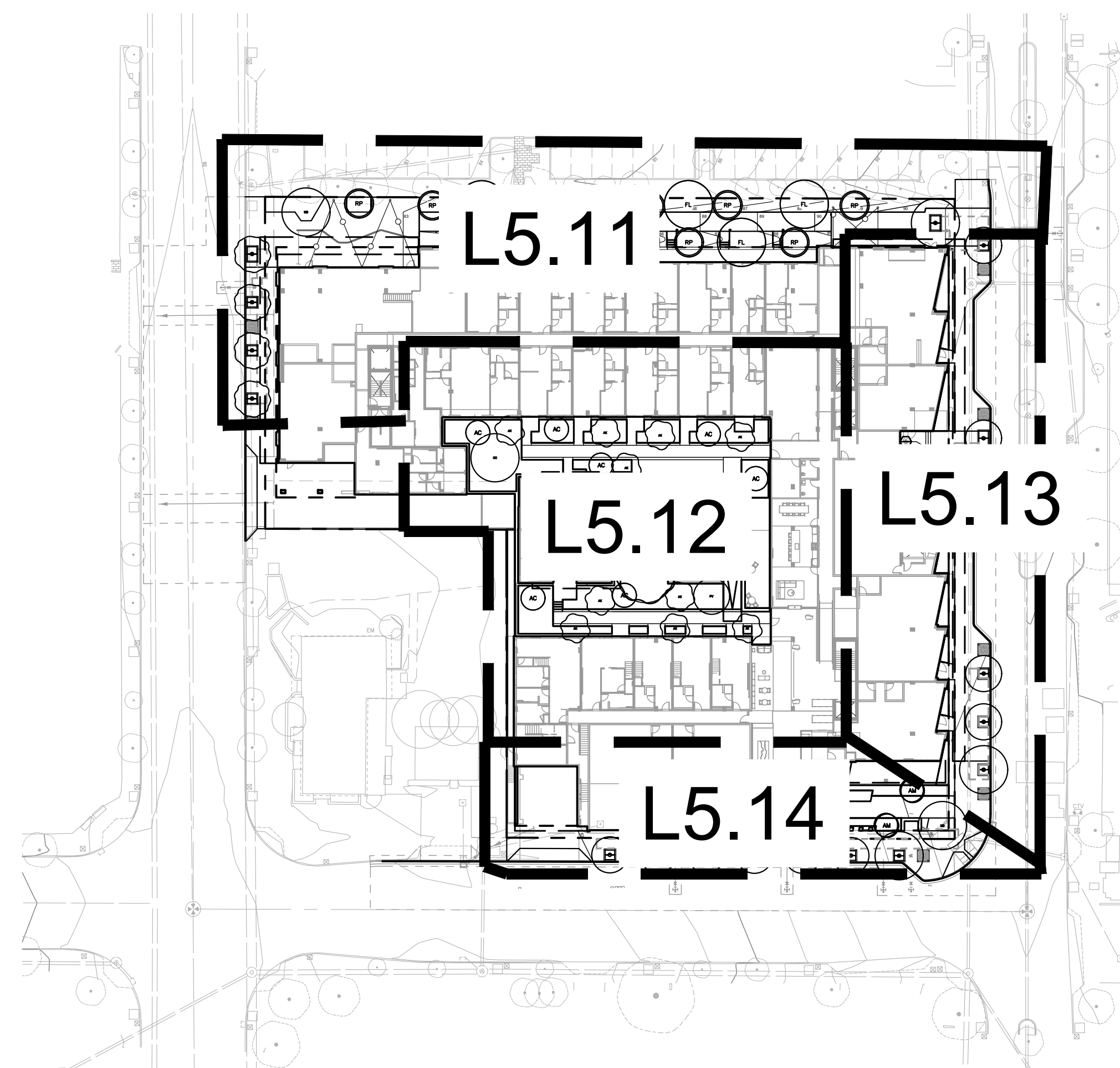
- NOTES:  
 1. FINAL PLANS AND SPECIFICATIONS WILL MEET ALL MINIMUM REQUIREMENTS.  
 2. IMPROVEMENTS IN THE R.O.W. ARE SHOWN FOR GENERAL INFORMATION ONLY. FINAL DESIGN AND QUANTITIES WILL BE DETERMINED.  
 3. REFER TO L001 FOR EXISTING TREE PLAN.  
 4. REFER TO L503 FOR LANDSCAPED AREA CALCULATIONS.

TREE SCHEDULE

| TREES   | CODE | BOTANICAL NAME                  | COMMON NAME                | COND                  | SIZE      | QTY |
|---|------|---------------------------------|----------------------------|-----------------------|-----------|-----|
|    | AC   | ACER CIRCINATUM                 | VINE MAPLE                 | MULTISTEM,3 STEM, B&B | 8'-10' HT | 7   |
|    | AK   | ACER PALMATUM 'KATSURA'         | KATSURA JAPANESE MAPLE     | MULTISTEM,3 STEM, B&B | 8'-10' HT | 11  |
|    | AP   | ACER PSEUDOSIEBOLDIANUM         | MAPLE                      | MULTISTEM,3 STEM, B&B | 8'-10' HT | 1   |
|    | AR   | ACER RUBRUM 'FRANK JR.' TM      | REDPOINTE RED MAPLE        | 2.5" CAL.             |           | 5   |
|    | AM   | AZARA MICROPHYLLA               | BOX LEAF AZARA             | MULTISTEM,3 STEM, B&B | 8'-10' HT | 2   |
|    | CC   | CARPINUS CAROLINIANA 'PALISADE' | PALISADE AMERICAN HORNBEAM | 2.5" CAL.             |           | 1   |
|    | FL   | FRAXINUS LATIFOLIA              | OREGON ASH                 | 2.5" CAL.             |           | 6   |
|   | MD   | MAGNOLIA DENUDATA               | YULAN MAGNOLIA             | 4" CAL.               |           | 6   |
|  | NA   | NYSSA SYLVATICA 'AFTERBURNER'   | SOUR GUM                   | 2.5" CAL.             |           | 4   |
|  | PV   | PARROTIA PERSICA 'VANESSA'      | PERSIAN PARROTIA           | 2.5" CAL.             |           | 7   |
|  | RP   | RHAMNUS PURSHIANA               | CASCARA                    | 2.5" CAL.             |           | 10  |

CONTAINER PLANTING SCHEDULE

| 78TH AVE  | CODE | QTY | BOTANICAL NAME                      | COMMON NAME                  | CONT  |
|---|------|-----|-------------------------------------|------------------------------|-------|
|    | AC2  | 48  | ASARUM CAUDATUM                     | BRITISH COLUMBIA WILD GINGER | #2    |
|    | AT2  | 21  | ASPLENIUM TRICHOMANES               | MAIDENHAIR SPLEENWORT        | #2    |
|    | GC   | 117 | GERANIUM X CANTABRIGIENSE 'ST. OLA' | ST. OLA HARDY GERANIUM       | #5    |
|    | MN2  | 4   | MAHONIA NERVOSA                     | OREGON GRAPE                 | #2    |
|    | P    | 121 | PHYGELIUS CAPENSIS                  | CAPE FUCHSIA                 | #1    |
|    | PD   | 6   | POLYSTICHUM SETIFERUM 'DIVISILOBUM' | DIVIDED SOFT SHIELD FERN     | #2    |
|    | S    | 104 | SEDUM SPECTABILE 'AUTUMN FIRE'      | SHOWY STONECROP              | #1    |
| COURTYARD   | CODE | QTY | BOTANICAL NAME                      | COMMON NAME                  | CONT  |
|    | A    | 150 | AQUILEGIA FORMOSA                   | WESTERN COLUMBINE            | #1    |
|    | G    | 56  | ASARUM CAUDATUM                     | BRITISH COLUMBIA WILD GINGER | #1    |
|    | AT   | 200 | ASPLENIUM TRICHOMANES               | MAIDENHAIR SPLEENWORT        | #1    |
|    | B    | 122 | BLECHNUM SPICANT                    | DEER FERN                    | #5    |
|    | DB   | 37  | DISPOROPSIS PERNYI 'BILL BAKER'     | EVERGREEN SOLOMON'S SEAL     | #5    |
|    | DE   | 87  | DRYOPTERIS ERYTHROSORA              | AUTUMN FERN                  | #5    |
|    | MN   | 41  | MAHONIA NERVOSA                     | OREGON GRAPE                 | #5    |
|    | O    | 500 | OXALIS OREGANA                      | REDWOOD SORREL               | #1    |
|    | PM   | 45  | POLYSTICHUM MUNITUM                 | WESTERN SWORD FERN           | #5    |
|    | PN   | 62  | POLYSTICHUM NEOLOBATUM              | ASIAN SABER FERN             | #5    |
|    | PS   | 97  | POLYSTICHUM SETIFERUM 'DIVISILOBUM' | DIVIDED SOFT SHIELD FERN     | #5    |
| SCREENING   | CODE | QTY | BOTANICAL NAME                      | COMMON NAME                  | CONT  |
|    | MC   | 7   | MYRICA CERIFERA                     | WAX MYRTLE                   | #10   |
|  | RI   | 5   | RIBES INDECORUM                     | WHITE FLOWERED CURRANT       | #5    |
|  | RS   | 6   | RIBES SANGUINEUM                    | RED FLOWERING CURRANT        | #5    |
| SOUTH PLAZA   | CODE | QTY | BOTANICAL NAME                      | COMMON NAME                  | CONT  |
|  | BD   | 99  | BALSAMORHIZA DELTOIDEA              | DELTOID BALSAMROOT           | #1    |
|  | CM   | 79  | CASTILLEJA MINIATA                  | INDIAN PAINTBRUSH            | #1    |
|  | FM   | 39  | FESTUCA MAIREI                      | ATLAS FESCUE                 | #5    |
|  | PR   | 44  | PENSTEMON RYDBERGII                 | RYDBERG'S PENTEMON           | #1    |
|  | SV   | 67  | SIDALCEA MALVIFLORA SSP. VIRGATA    | VIRGATE CHECKERBLOOM         | #1    |
| THROUGH BLOCK N   | CODE | QTY | BOTANICAL NAME                      | COMMON NAME                  | CONT  |
|  | CR   | 100 | CAMPANULA ROTUNDIFOLIA              | COMMON HAREBELL              | #1    |
|  | CT   | 58  | CAREX TUMULICOLA                    | FOOTHILLS SEDGE              | #5    |
|  | E    | 79  | ERIOPHYLLUM LANATUM                 | WOOLLY SUNFLOWER             | #1    |
|  | GS   | 23  | GAULTHERIA SHALLON                  | SALAL                        | #5    |
|  | VO   | 10  | VACCINIUM OVATUM                    | EVERGREEN HUCKLEBERRY        | #10   |
| THROUGH BLOCK S   | CODE | QTY | BOTANICAL NAME                      | COMMON NAME                  | CONT  |
|  | AF   | 29  | ATHYRIUM FILIX-FEMINA               | COMMON LADY FERN             | #5    |
|  | CD   | 95  | CAREX DEWEYANA                      | DEWEY'S SEDGE                | #2    |
|  | LC   | 150 | LILIUM COLUMBIANUM                  | TIGER LILY                   | #1    |
|  | PO   | 132 | POLYGONATUM ODORATUM 'VARIEGATUM'   | VARIEGATED SOLOMON'S-SEAL    | #1    |
|  | WT   | 244 | WALDSTEINIA TERNATA                 | SIBERIAN BARREN STRAWBERRY   | 4"POT |



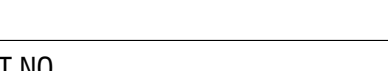
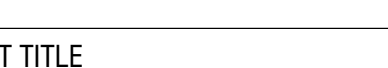
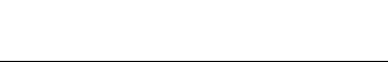
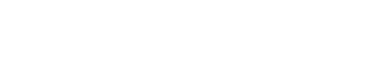
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 MIXED USE  
 2805 80TH AVE SE  
 MERCER ISLAND, WA 98040

| Date       | Description              |
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| 12/04/2020 | LAND USE SET REV #2      |



SHEET TITLE

PLANTING SCHEDULE

SHEET NO.

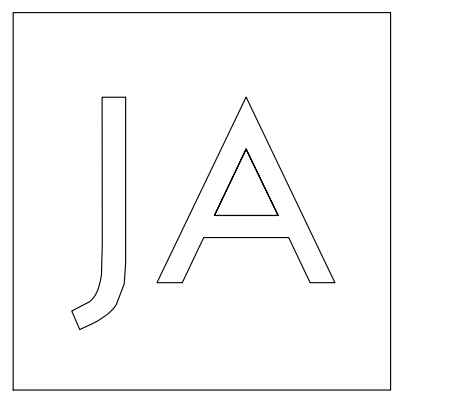
L510

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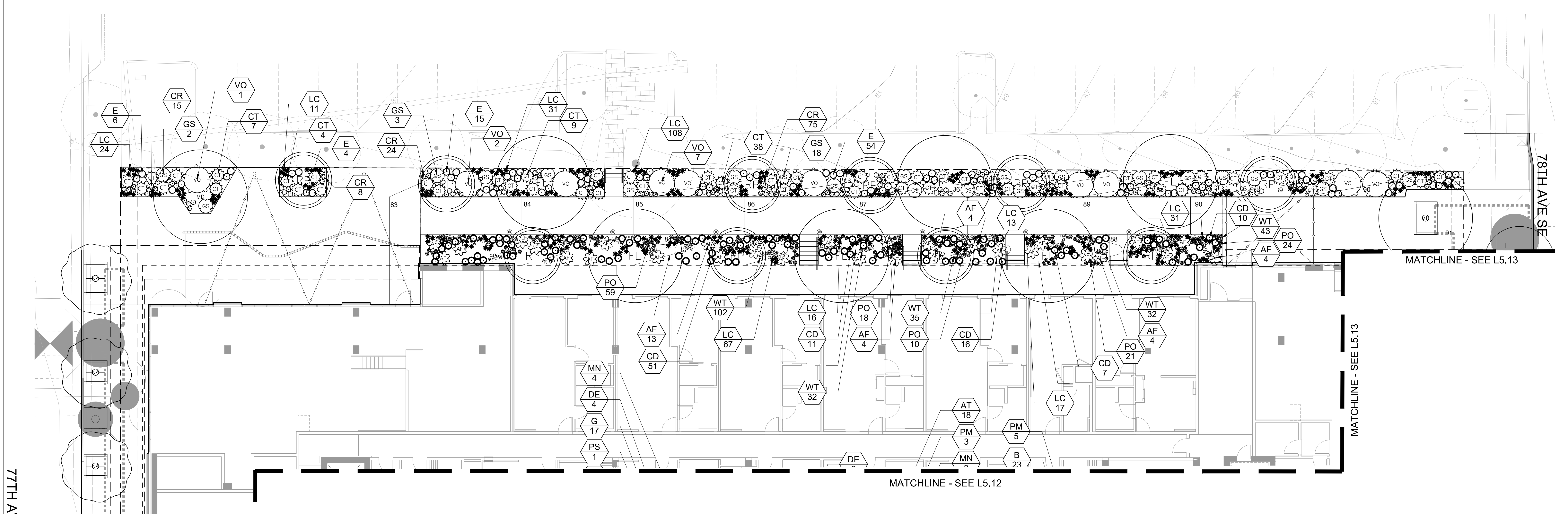


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NOTE:  
1. REFER TO L510 FOR PLANTING NOTES AND DETAILED TREE AND CONTAINER PLANTING SCHEDULES.



**PLANT SCHEDULE THROUGH BLOCK AND 77TH AVE**

| TREES           | CODE | BOTANICAL NAME                    | COMMON NAME                | COND      | QTY |
|-----------------|------|-----------------------------------|----------------------------|-----------|-----|
|                 | FL   | FRAXINUS LATIFOLIA                | OREGON ASH                 | 2.5" CAL. | 6   |
|                 | MD   | MAGNOLIA DENUDATA                 | YULAN MAGNOLIA             | 4" CAL.   | 2   |
|                 | NA   | NYSSA SYLVATICA 'AFTERBURNER'     | SOUR GUM                   | 2.5" CAL. | 4   |
|                 | RP   | RHAMNUS PURSHIANA                 | CASCARA                    | 2.5" CAL. | 10  |
| THROUGH BLOCK N | CODE | BOTANICAL NAME                    | COMMON NAME                | CONT      | QTY |
|                 | CR   | CAMPANULA ROTUNDIFOLIA            | COMMON HAREBELL            | #1        | 100 |
|                 | CT   | CAREX TUMULICOLA                  | FOOTHILLS SEDGE            | #5        | 58  |
|                 | E    | ERIOPHYLLUM LANATUM               | WOOLLY SUNFLOWER           | #1        | 79  |
|                 | GS   | GAULTHERIA SHALLON                | SALAL                      | #5        | 23  |
|                 | VO   | VACCINIUM OVATUM                  | EVERGREEN HUCKLEBERRY      | #10       | 10  |
| THROUGH BLOCK S | CODE | BOTANICAL NAME                    | COMMON NAME                | CONT      | QTY |
|                 | AF   | ATHYRIUM FILIX-FEMINA             | COMMON LADY FERN           | #5        | 29  |
|                 | CD   | CAREX DEWEYANA                    | DEWEY'S SEDGE              | #2        | 95  |
|                 | LC   | LILIUM COLUMBIANUM                | TIGER LILY                 | #1        | 150 |
|                 | PO   | POLYGONATUM ODORATUM 'VARIEGATUM' | VARIEGATED SOLOMON'S-SEAL  | #1        | 132 |
|                 | WT   | WALDSTEINIA TERNATA               | SIBERIAN BARREN STRAWBERRY | 4"POT     | 244 |

1 PLANTING PLAN  
SCALE: 1/8"=1'-0"



MERCER ISLAND  
MIXED USE  
2835 77TH AVE SE  
MERCER ISLAND, WA 98040

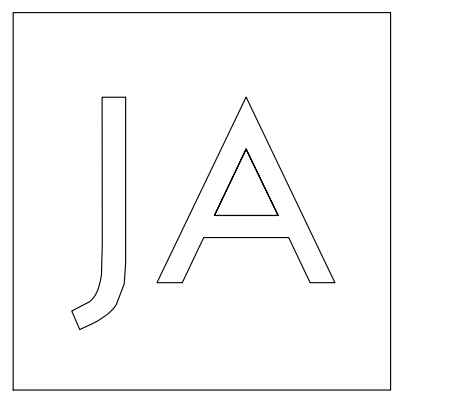
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| 12/24/2019 | LAND USE SET            |
| 03/31/2020 | 50% CD                  |
| 06/26/2020 | LAND USE SET REV #1     |
| 11/12/2020 | BUILDING PERMIT, 75% CD |
| 12/04/2020 | LAND USE SET REV #2     |

SHEET TITLE  
**PLANTING PLAN**

SHEET NO.  
**L5.11**

Drawn SB  
Checked CB, PK



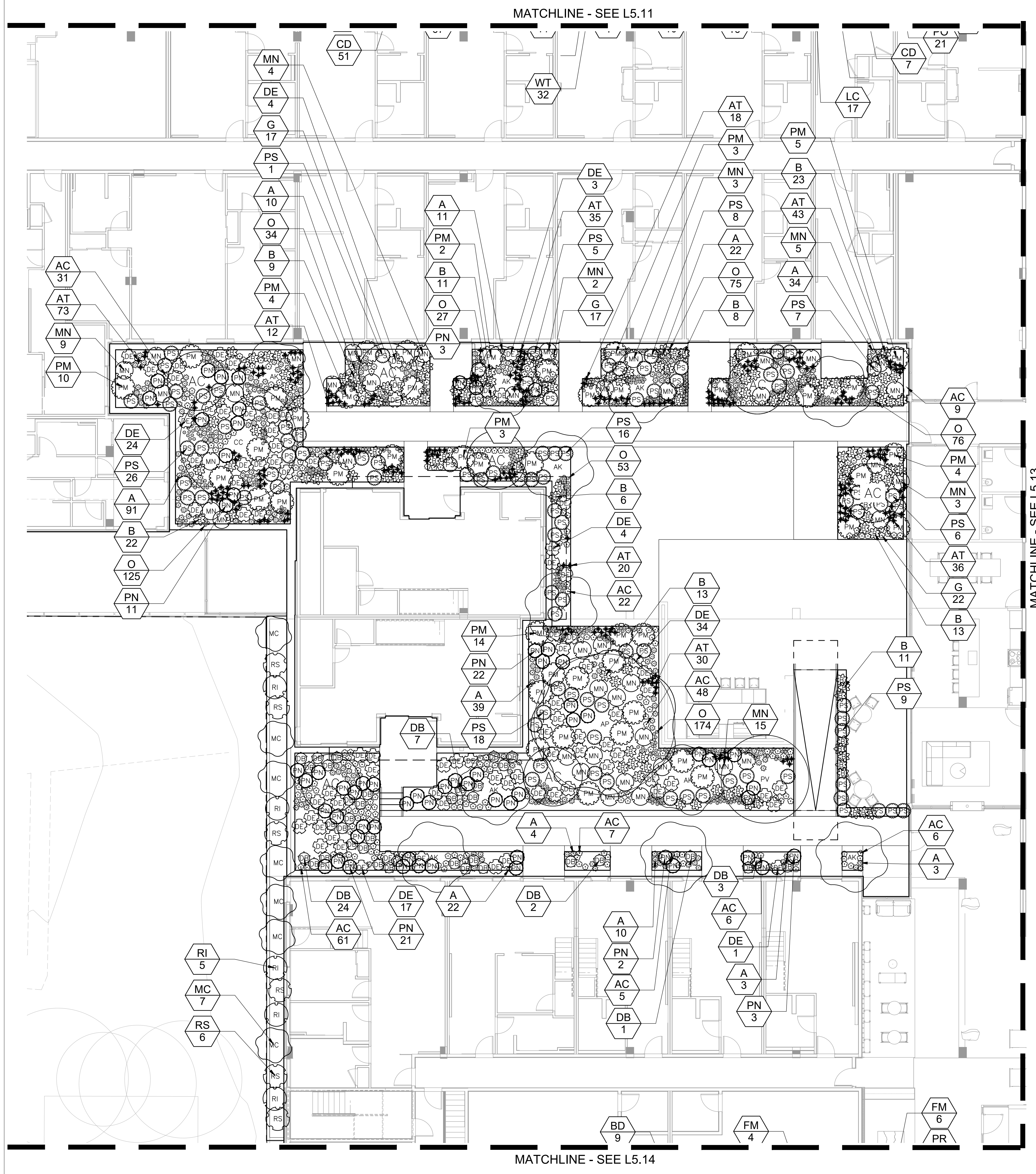


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Suite 200  
Seattle, WA 98103  
1.206.285.3029



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NOTE:  
1. REFER TO L510 FOR PLANTING NOTES AND DETAILED TREE AND CONTAINER PLANTING SCHEDULES.



### PLANTING SCHEDULE\_COURTYARD AND SCREENING

| TREES | CODE | BOTANICAL NAME                  | COMMON NAME                | COND                  | SIZE      | QTY |
|-------|------|---------------------------------|----------------------------|-----------------------|-----------|-----|
|       | AC   | ACER CIRCINATUM                 | VINE MAPLE                 | MULTISTEM,3 STEM, B&B | 8'-10' HT | 7   |
|       | AK   | ACER PALMATUM 'KATSURA'         | KATSURA JAPANESE MAPLE     | MULTISTEM,3 STEM, B&B | 8'-10' HT | 11  |
|       | AP   | ACER PSEUDOSIEBOLDIANUM         | MAPLE                      | MULTISTEM,3 STEM, B&B | 8'-10' HT | 1   |
|       | CC   | CARPINUS CAROLINIANA 'PALISADE' | PALISADE AMERICAN HORNBEAM | 2.5" CAL.             |           | 1   |
|       | PV   | PARROTIA PERSICA 'VANESSA'      | PERSIAN PARROTIA           | 2.5" CAL.             |           | 1   |

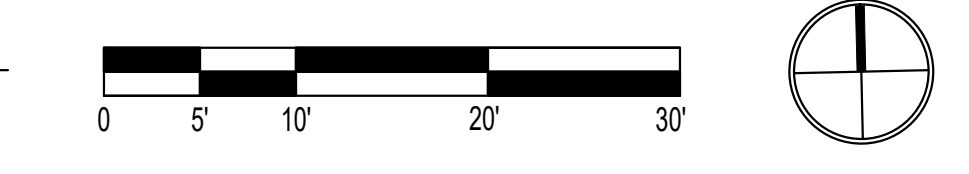
  

| COURTYARD | CODE | BOTANICAL NAME                     | COMMON NAME                  | CONT | QTY |
|-----------|------|------------------------------------|------------------------------|------|-----|
|           | A    | AQUILEGIA FORMOSA                  | WESTERN COLUMBINE            | #1   | 150 |
|           | G    | ASARUM CAUDATUM                    | BRITISH COLUMBIA WILD GINGER | #1   | 150 |
|           | AT   | ASPLENIUM TRICHOMANES              | MAIDENHAIR SPLEENWORT        | #1   | 267 |
|           | B    | BLECHNUM SPICANT                   | DEER FERN                    | #5   | 122 |
|           | DB   | DISPOROPSIS PERNYI 'BILL BAKER'    | EVERGREEN SOLOMON'S SEAL     | #5   | 37  |
|           | DE   | DRYOPTERIS ERYTHROSORA             | AUTUMN FERN                  | #5   | 87  |
|           | MN   | MAHONIA NERVOSA                    | OREGON GRAPE                 | #5   | 41  |
|           | O    | OXALIS OREGANA                     | REDWOOD SORREL               | #1   | 564 |
|           | PM   | POLYSTICHUM MUNITUM                | WESTERN SWORD FERN           | #5   | 45  |
|           | PN   | POLYSTICHUM NEOLOBATUM             | ASIAN SABER FERN             | #5   | 62  |
|           | PS   | POLYSTICHUM SETIFERUM 'DIVISIOBUM' | DIVIDED SOFT SHIELD FERN     | #5   | 97  |

| SCREENING | CODE | BOTANICAL NAME   | COMMON NAME            | CONT | QTY |
|-----------|------|------------------|------------------------|------|-----|
|           | MC   | MYRICA CERIFERA  | WAX MYRTLE             | #10  | 7   |
|           | RI   | RIBES INDECORUM  | WHITE FLOWERED CURRANT | #5   | 5   |
|           | RS   | RIBES SANGUINEUM | RED FLOWERING CURRANT  | #5   | 6   |

1 PLANTING PLAN  
SCALE: 1/8"=1'-0"



MERCER ISLAND  
MIXED USE  
2805 10TH AVE SE  
MERCER ISLAND, WA 98040

DRAWING ISSUE

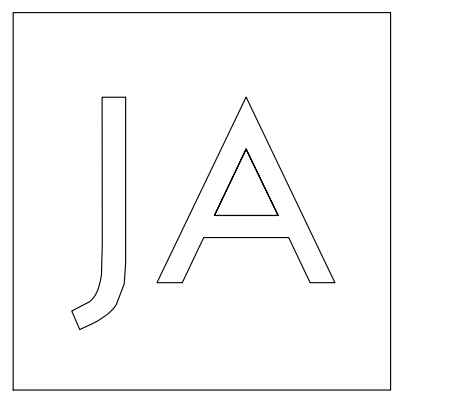
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|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 06/26/2020 | LAND USE SET REV #1      |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
**PLANTING PLAN**

SHEET NO.  
**L5.12**

Drawn SB  
Checked CB, PK





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Seattle, WA 98103  
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**MERCER ISLAND MIXED USE**  
2835 78TH AVE SE  
MERCER ISLAND, WA 98040

| Date       | Description              |
|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 06/26/2020 | LAND USE SET REV #1      |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
**PLANTING PLAN**

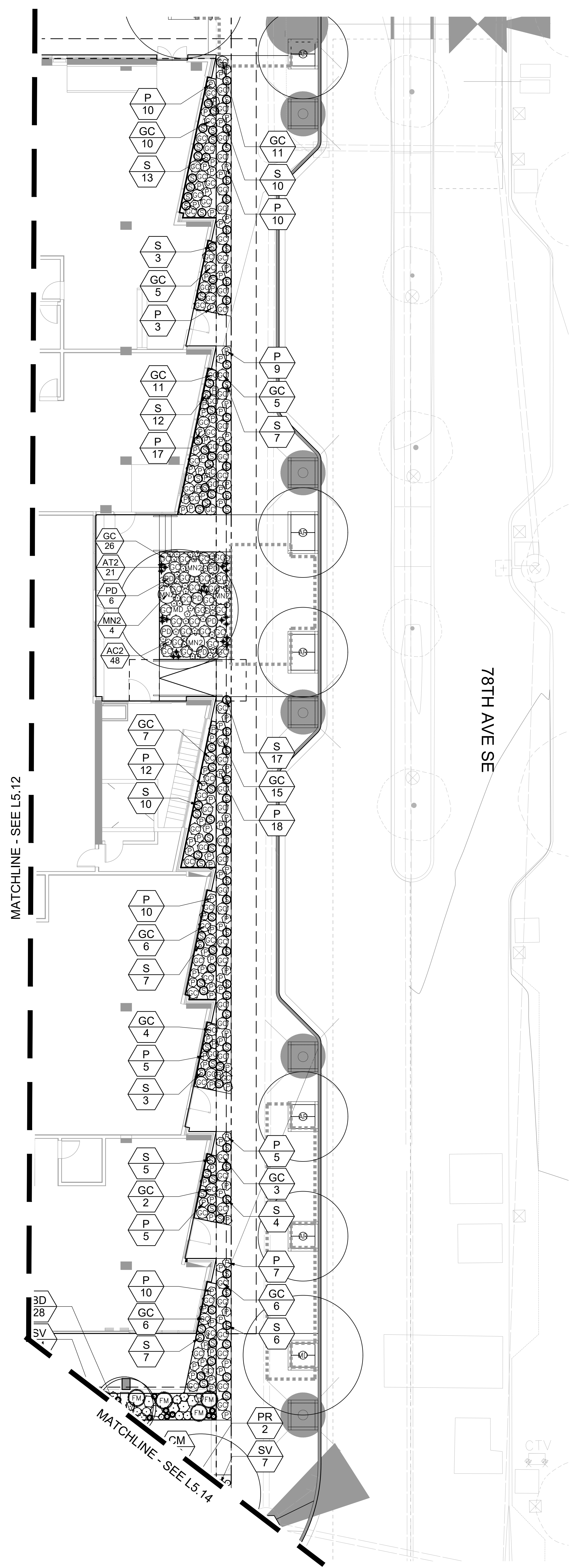
SHEET NO.  
**L5.13**

Drawn SB  
Checked CB, PK

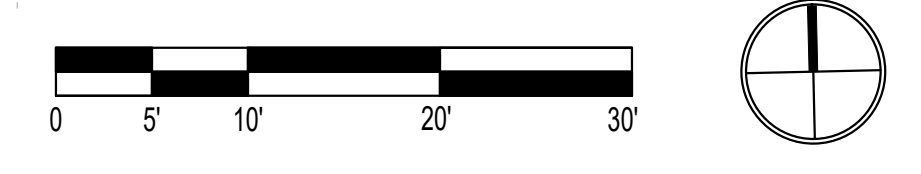
NOTE:  
1. REFER TO L510 FOR PLANTING NOTES AND DETAILED TREE AND CONTAINER PLANTING SCHEDULES.

PLANT SCHEDULE 78TH AVE

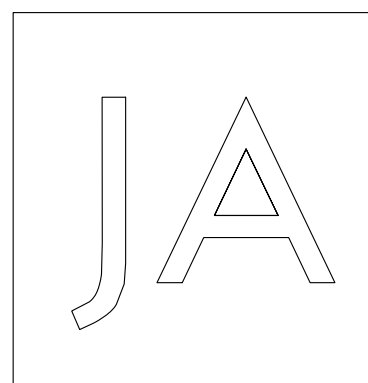
| TREES    | CODE | BOTANICAL NAME                      | COMMON NAME                  | COND      | QTY |
|----------|------|-------------------------------------|------------------------------|-----------|-----|
|          | AR   | ACER RUBRUM 'FRANK JR.' TM          | REDPOINTE RED MAPLE          | 2.5" CAL. | 5   |
|          | MD   | MAGNOLIA DENUDATA                   | YULAN MAGNOLIA               | 4" CAL.   | 2   |
| 78TH AVE |      |                                     |                              |           |     |
|          | AC2  | ASARUM CAUDATUM                     | BRITISH COLUMBIA WILD GINGER | #2        | 48  |
|          | AT2  | ASPLENIUM TRICHOMANES               | MAIDENHAIR SPLEENWORT        | #2        | 21  |
|          | GC   | GERANIUM X CANTABRIGIENSE 'ST. OLA' | ST. OLA HARDY GERANIUM       | #5        | 117 |
|          | MN2  | MAHONIA NERVOSA                     | OREGON GRAPE                 | #2        | 4   |
|          | P    | PHYGELIUS CAPENSIS                  | CAPE FUCHSIA                 | #1        | 121 |
|          | PD   | POLYSTICHUM SETIFERUM 'DIVISIOBUM'  | DIVIDED SOFT SHIELD FERN     | #2        | 6   |
|          | S    | SEDUM SPECTABILE 'AUTUMN FIRE'      | SHOWY STONECROP              | #1        | 104 |



1 PLANTING PLAN  
SCALE: 1/8"=1'-0"







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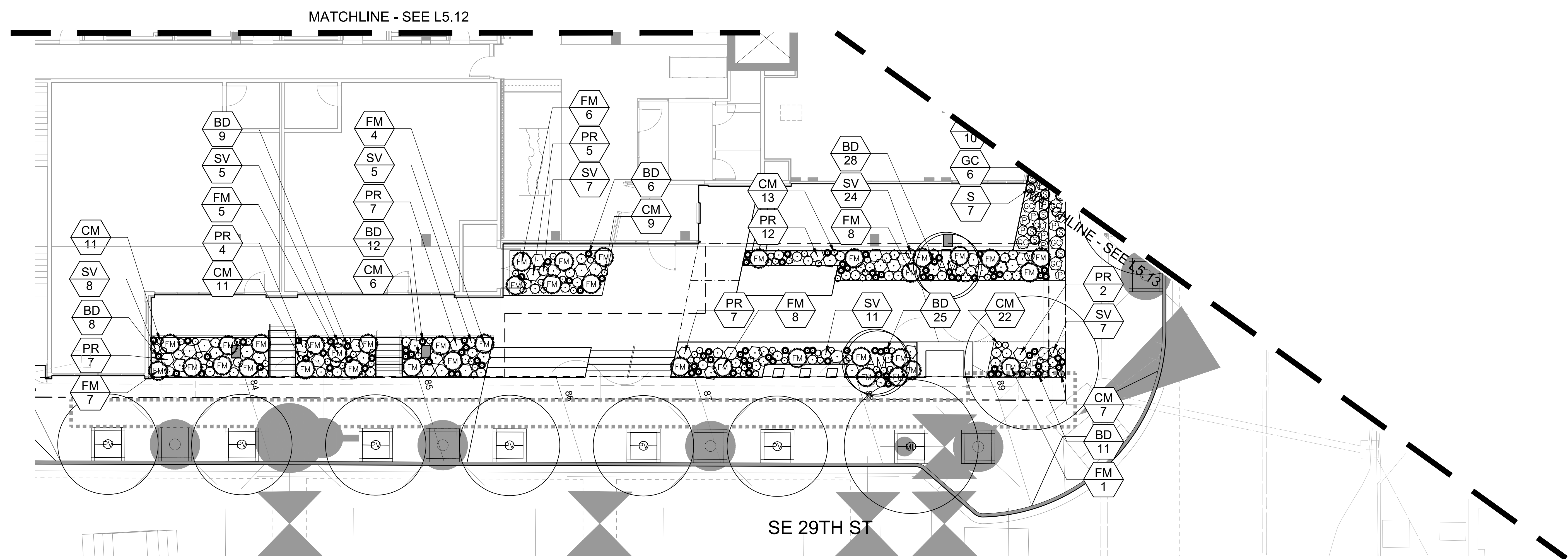
NOTE:  
1. REFER TO L510 FOR PLANTING NOTES AND DETAILED TREE AND CONTAINER PLANTING SCHEDULES.

PLANT SCHEDULE SOUTH PLAZA

| TREES | CODE | BOTANICAL NAME             | COMMON NAME      | COND                   | SIZE      | QTY |
|-------|------|----------------------------|------------------|------------------------|-----------|-----|
|       | AM   | AZARA MICROPHYLLA          | BOX LEAF AZARA   | MULTISTEM, 3 STEM, B&B | 8'-10' HT | 2   |
|       | MD   | MAGNOLIA DENUDATA          | YULAN MAGNOLIA   | 4" CAL.                |           | 2   |
|       | PV   | PARROTIA PERSICA 'VANESSA' | PERSIAN PARROTIA | 2.5" CAL.              |           | 6   |

| SOUTH PLAZA | CODE | BOTANICAL NAME                   | COMMON NAME          | CONT | QTY |
|-------------|------|----------------------------------|----------------------|------|-----|
|             | BD   | BALSAMORHIZA DELTOIDEA           | DELTOID BALSAMROOT   | #1   | 99  |
|             | CM   | CASTILLEJA MINIATA               | INDIAN PAINTBRUSH    | #1   | 79  |
|             | FM   | FESTUCA MAIREI                   | ATLAS FESCUE         | #5   | 39  |
|             | PR   | PENSTEMON RYDBERGII              | RYDBERG'S PENTEMON   | #1   | 44  |
|             | SV   | SIDALCEA MALVIFLORA SSP. VIRGATA | VIRGATE CHECKERBLOOM | #1   | 67  |



1 PLANTING PLAN  
SCALE: 1/8"=1'-0"



MERCER ISLAND  
MIXED USE  
2835 29TH AVE, SE  
MERCER ISLAND, WA 98040

DRAWING ISSUE

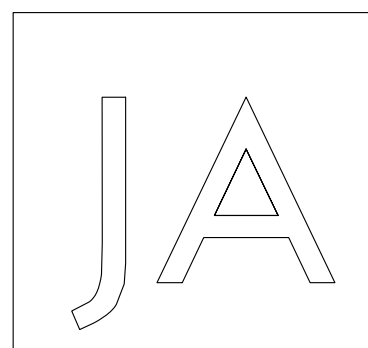
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| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 06/26/2020 | LAND USE SET REV #1      |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
PLANTING PLAN

SHEET NO.  
**L5.14**

Drawn SB  
Checked CB, PK





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**MERCER ISLAND  
MIXED USE**  
2835 78TH AVE SE  
MERCER ISLAND, WA 98040

| DRAWING ISSUE |                          |
|---------------|--------------------------|
| Date          | Description              |
| 12/24/2019    | LAND USE SET             |
| 03/31/2020    | 50% CD                   |
| 06/26/2020    | LAND USE SET REV #1      |
| 11/12/2020    | BUILDING PERMIT / 75% CD |
| 12/04/2020    | LAND USE SET REV #2      |

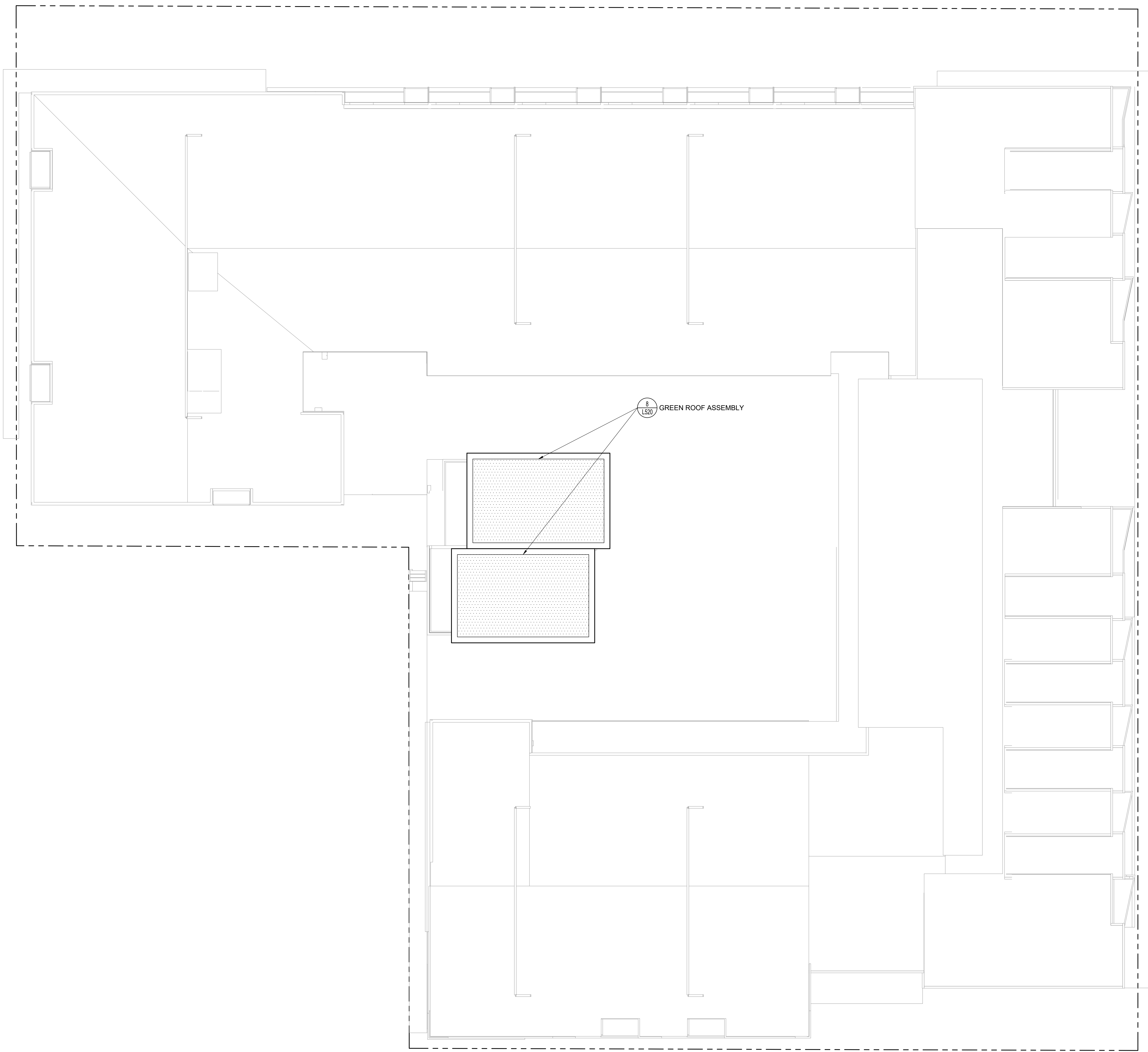
SHEET TITLE  
**PLANTNG PLAN -  
LEVEL 3**

SHEET NO.  
**L515**  
Drawn SB  
Checked CB, PK

77TH AVE SE

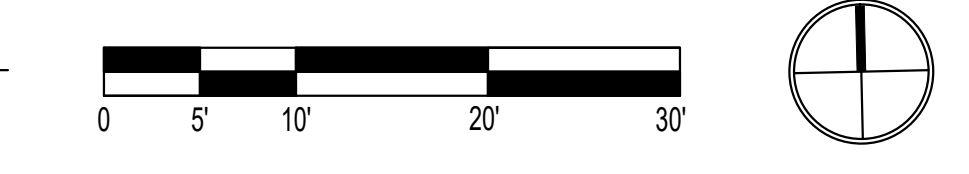
78TH AVE SE

SE 29TH ST

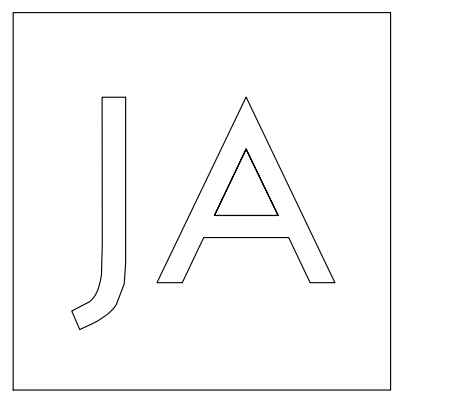


GREEN ROOF SCHEDULE  
GREEN ROOFS 1,420 SF  
SEMPERGREEN SEDUM MIX BLANKET

1 PLANTNG PLAN - LEVEL 3  
SCALE: 1" = 10'



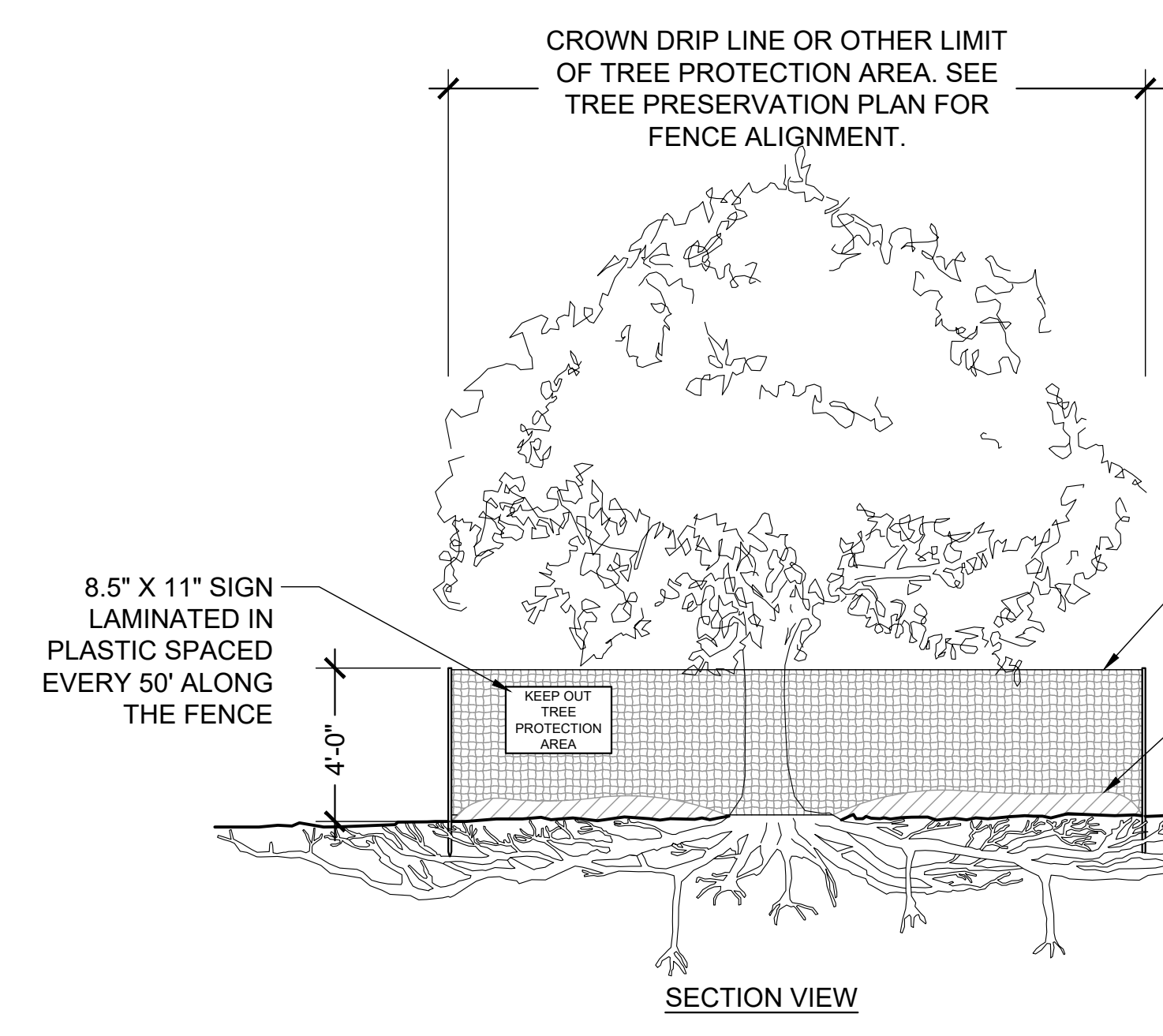




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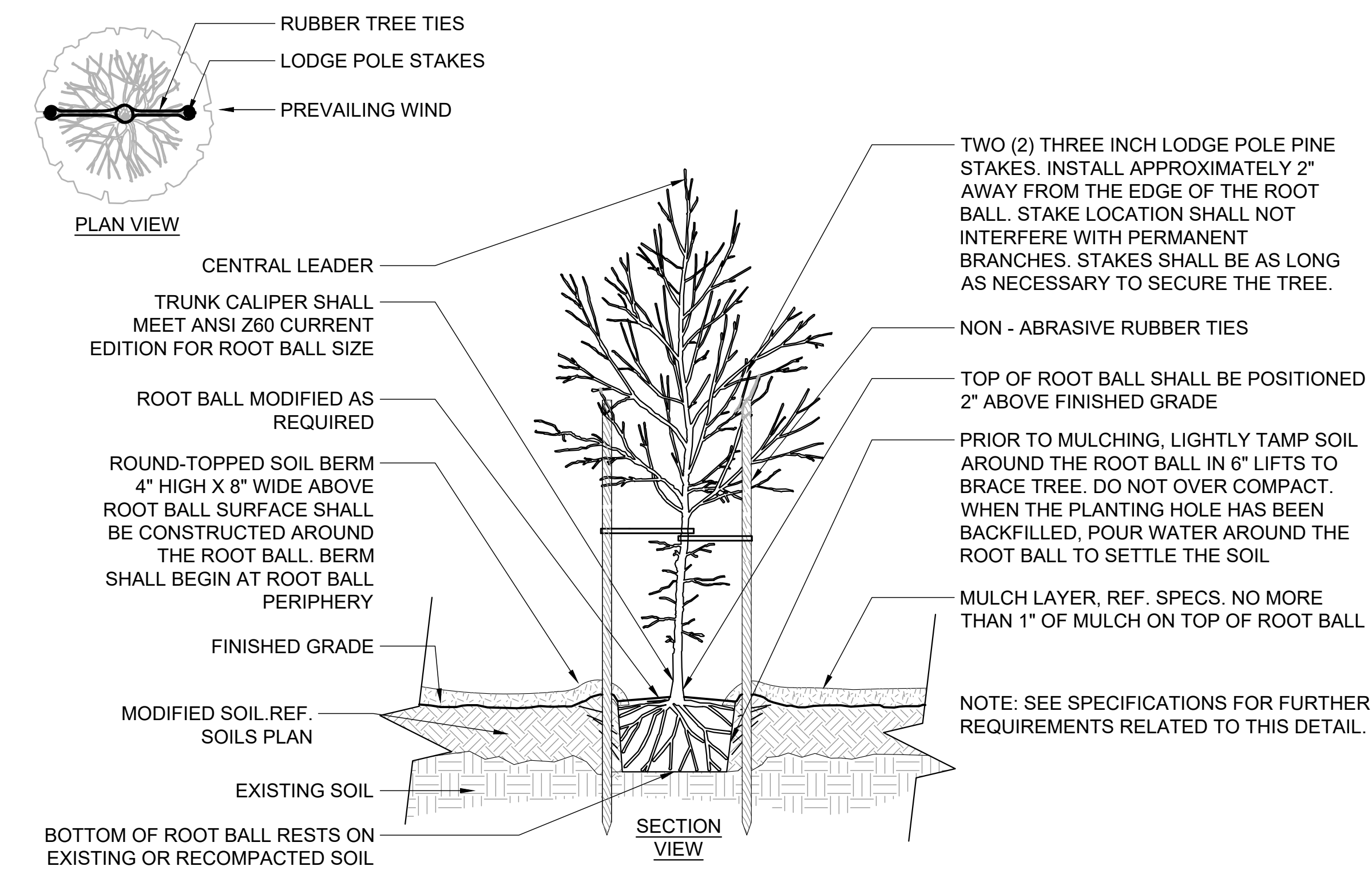


NOT FOR CONSTRUCTION

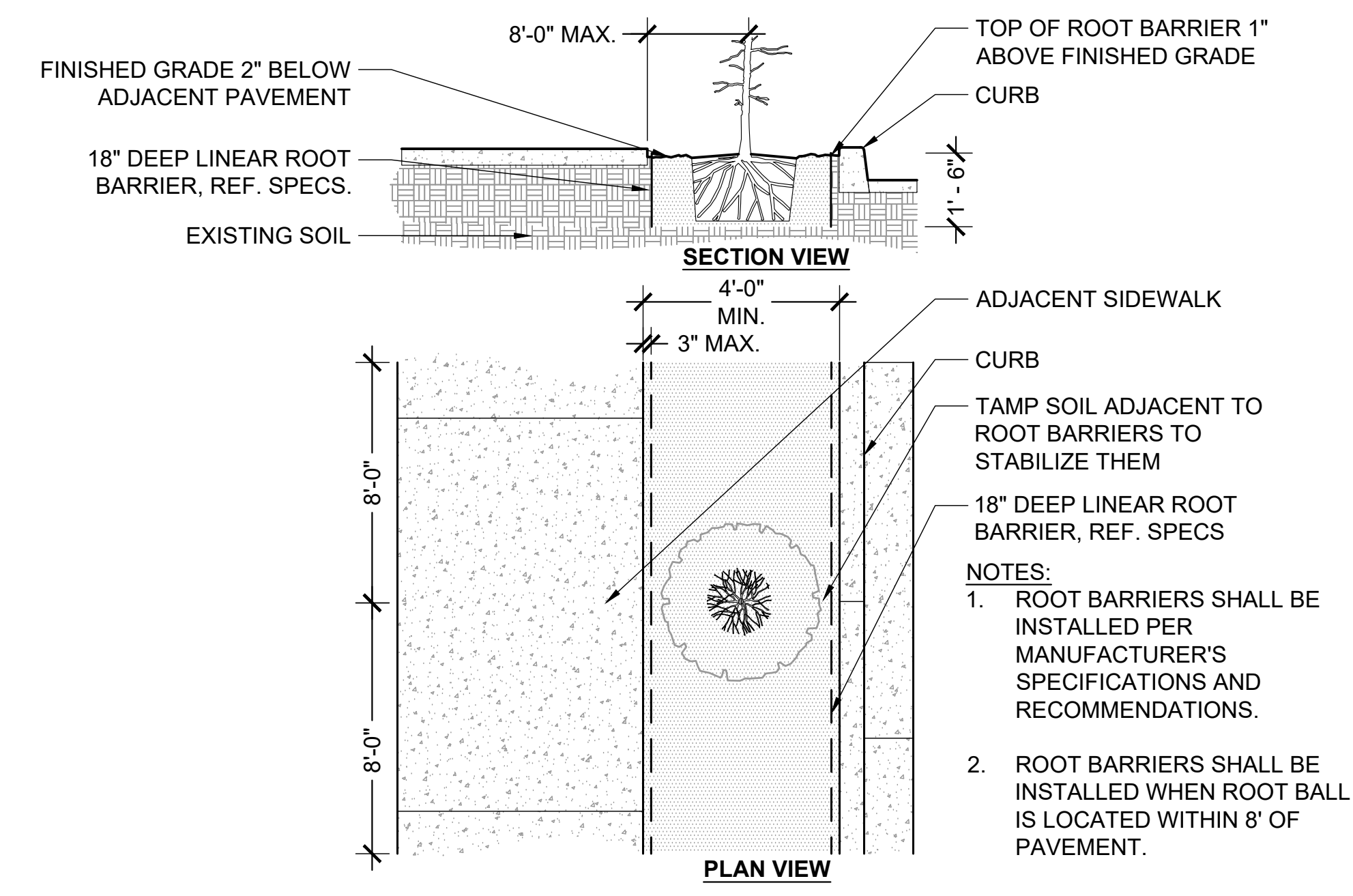


- NOTES:
- SEE SPECIFICATIONS FOR ADDITIONAL TREE PROTECTION REQUIREMENTS. NO PRUNING SHALL BE PERFORMED UNLESS UNDER THE DIRECTION OF AN ARBORIST.
  - NO EQUIPMENT SHALL BE STORED OR OPERATED INSIDE THE PROTECTIVE FENCING INCLUDING DURING FENCE INSTALLATION AND REMOVAL.
  - NO STORAGE OF MATERIALS SHALL OCCUR INSIDE THE PROTECTIVE FENCING. REFER TO SITE UTILITY PLAN FOR ALLOWABLE MODIFICATIONS TO THE TREE PROTECTION AREA.
  - UNAUTHORIZED ACTIVITIES IN TREE PROTECTION AREA MAY REQUIRE EVALUATION BY PRIVATE ARBORIST TO IDENTIFY IMPACTS AND MITIGATION REQUIRED.
  - EXPOSED ROOTS: FOR ROOTS >1" DAMAGED DURING CONSTRUCTION, MAKE A CLEAN STRAIGHT CUT TO REMOVE DAMAGED PORTION AND INFORM CITY ARBORIST.

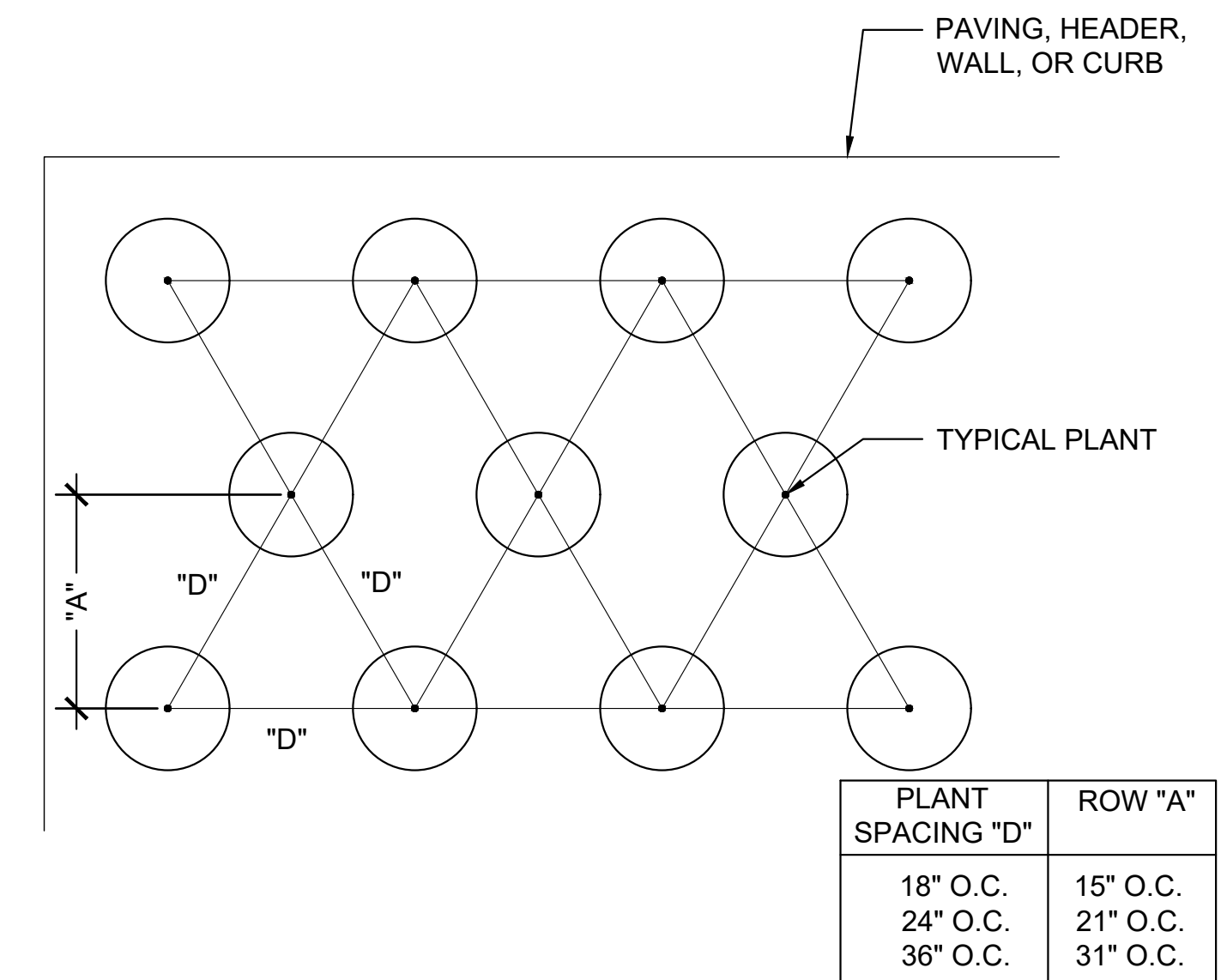
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SCALE: 1/4" = 1'-0"



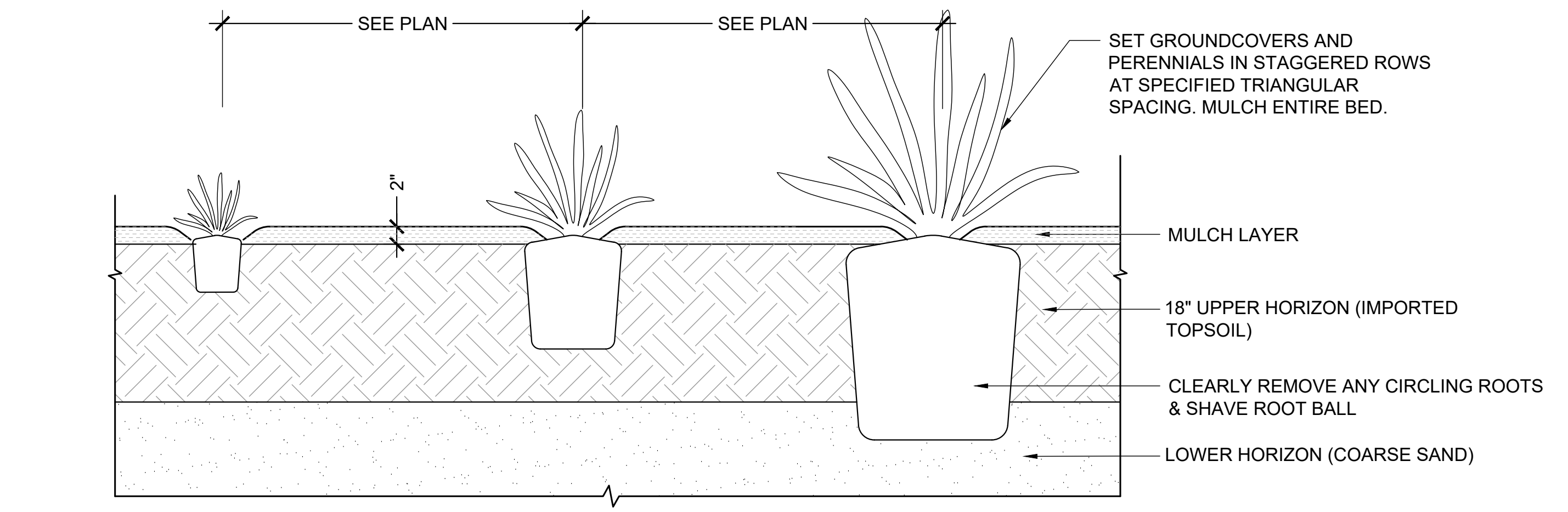
2 TREE PLANTING  
SCALE: 1/2" = 1'-0"



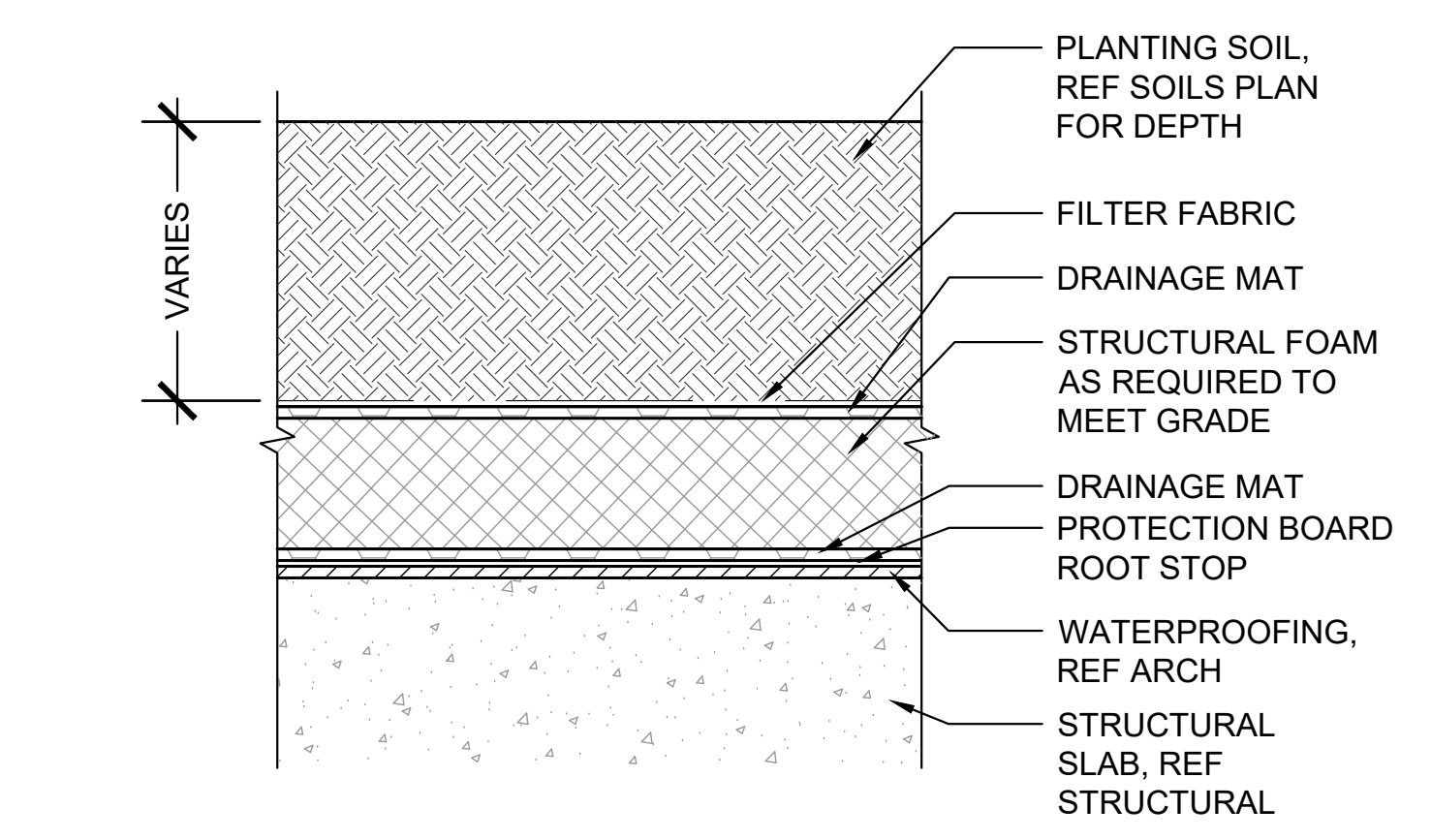
3 LINEAR ROOT BARRIER  
SCALE: 3/8" = 1'-0"



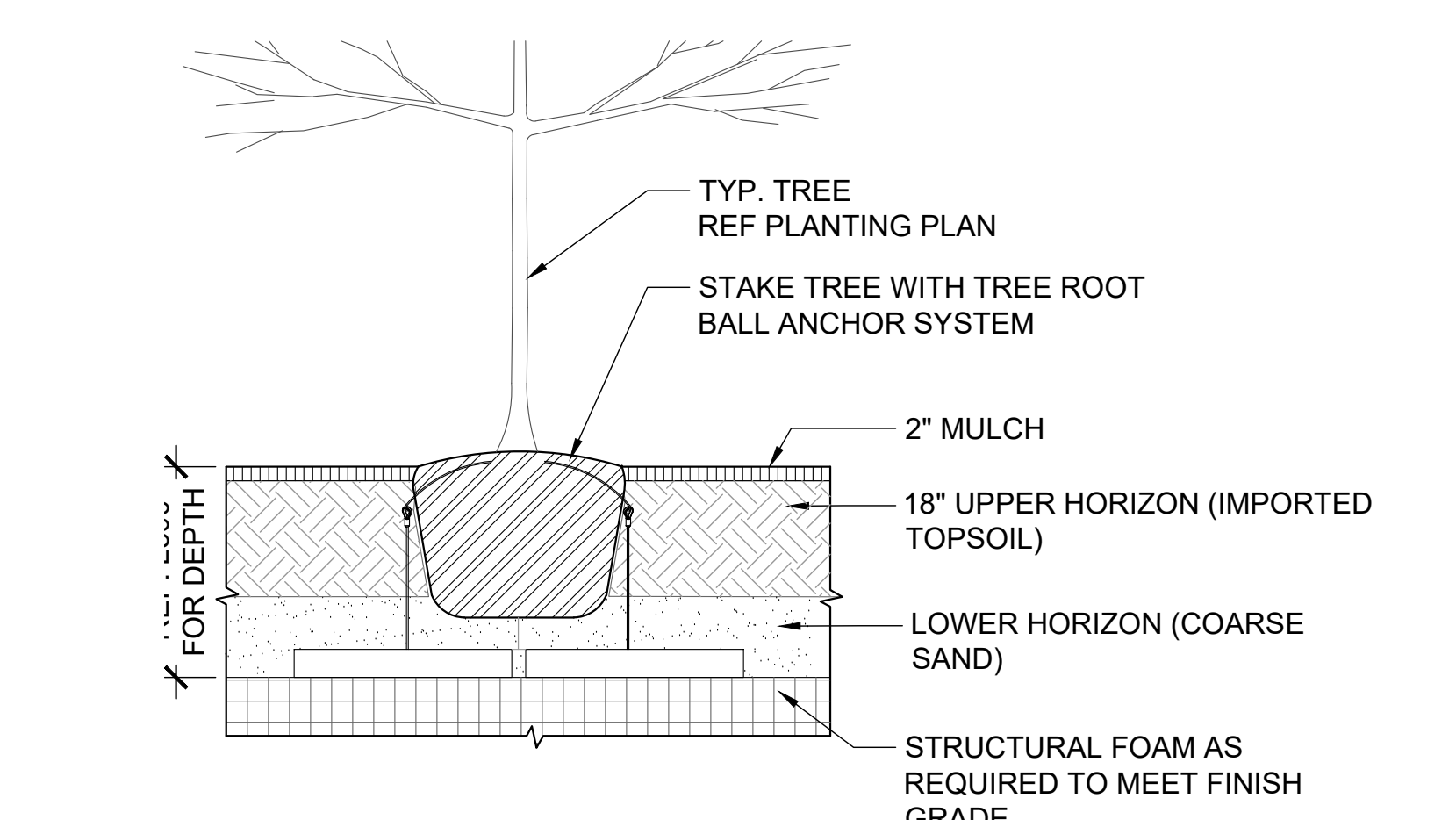
4 PLANT SPACING  
SCALE: 1/4" = 1'-0"



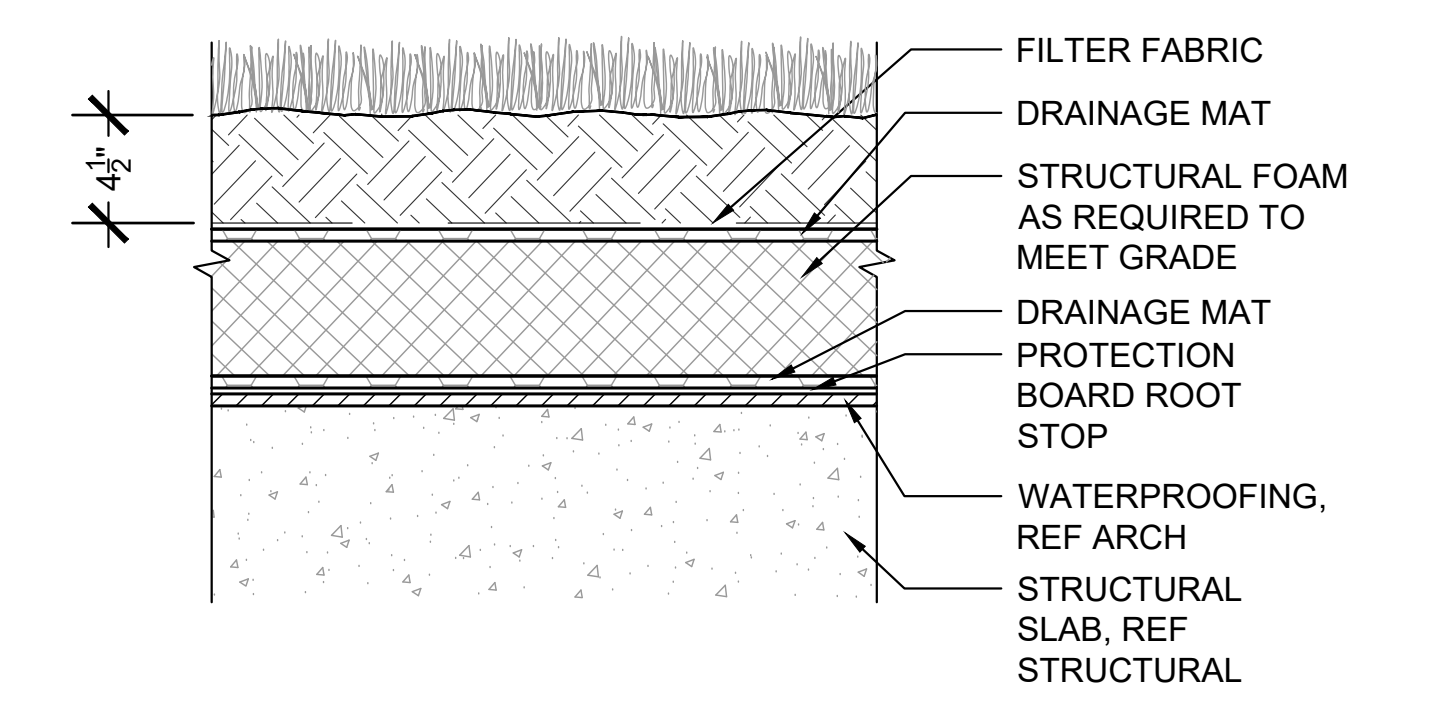
5 SHRUB PLANTING IN PLANTER  
SCALE: 1" = 1'-0"



6 ON STRUCTURE PLANTER ASSEMBLY  
SCALE: 1 1/2" = 1'-0"



7 TYPICAL TREE PLANTING ON STRUCTURE  
SCALE: 1/2" = 1'-0"



8 GREEN ROOF ASSEMBLY  
SCALE: 1 1/2" = 1'-0"

MERCER ISLAND MIXED USE  
2805 107th Ave NE  
MERCER ISLAND, WA 98040

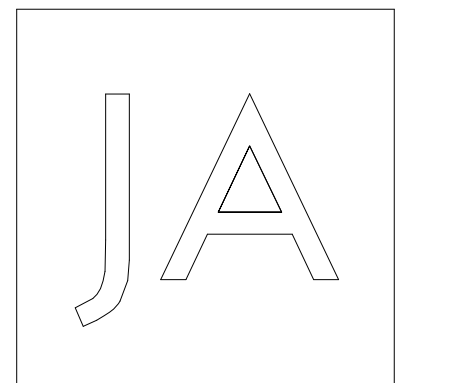
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|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 06/26/2020 | LAND USE SET REV #1      |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 12/04/2020 | LAND USE SET REV #2      |

SHEET TITLE  
PLANTING DETAILS

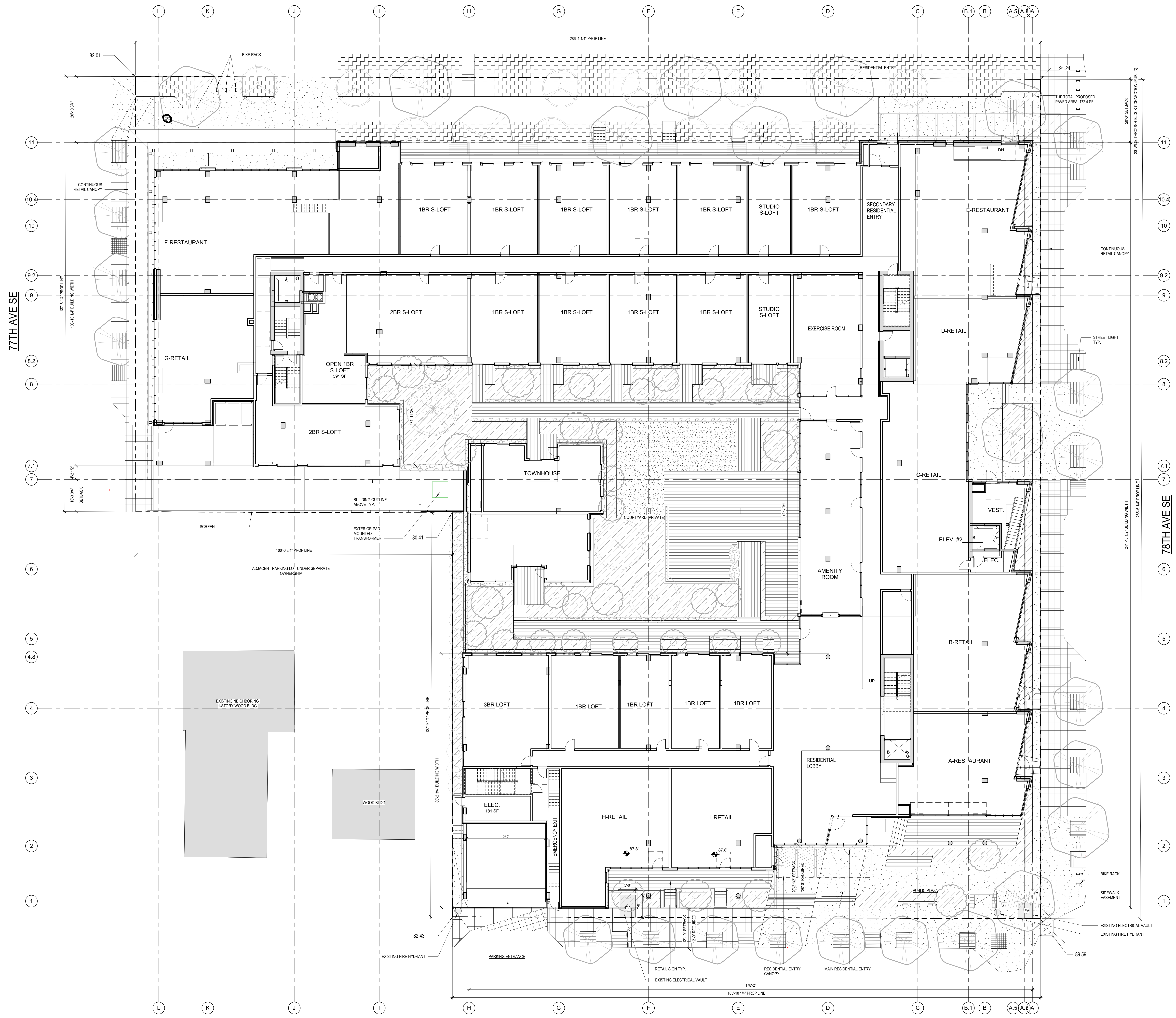
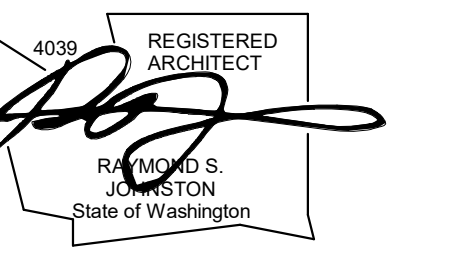
SHEET NO.  
L520

Drawn SB  
Checked CB, PK





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100 NE Northlake Way,  
Suite 200  
Seattle, WA 98105  
1 206.523.6150  
1 206.523.8382

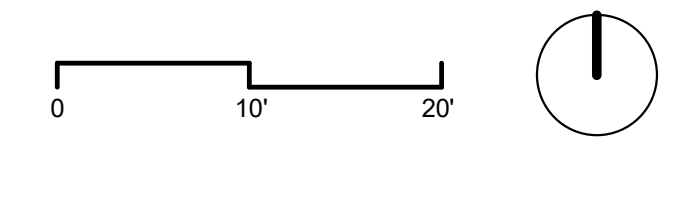


1 SITE PLAN  
1" = 10'-0"

MERCER ISLAND  
MIXED USE  
2845 80TH AVE SE  
MERCER ISLAND, WA 98040

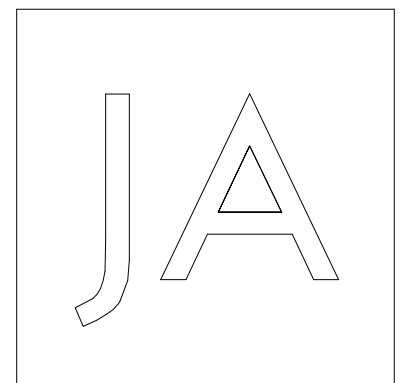
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| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

SHEET TITLE  
SITE PLAN  
SHEET NO.  
**A100**  
Drawn  
Checked

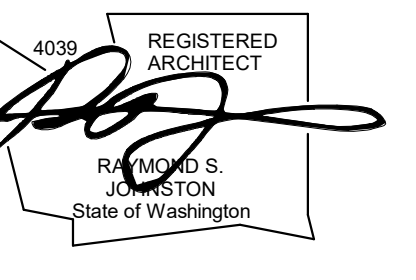


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 100 NE Northlake Way,  
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 1 206.523.6150  
 1 206.523.8382



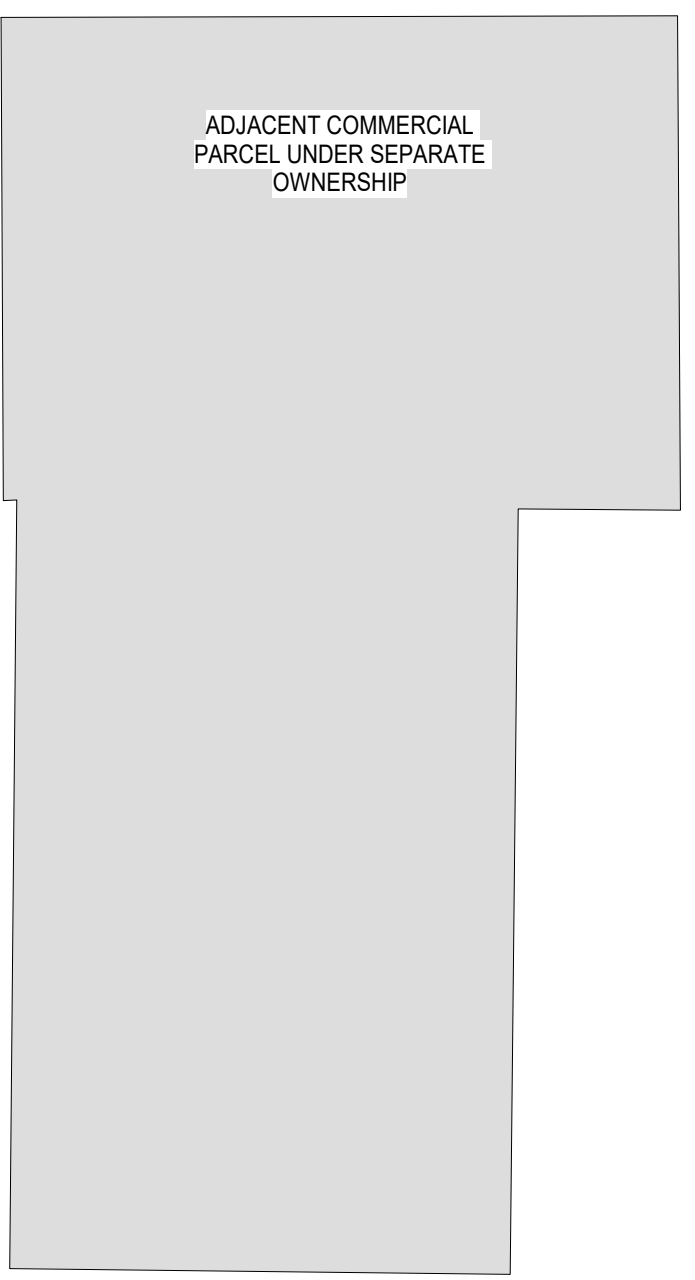
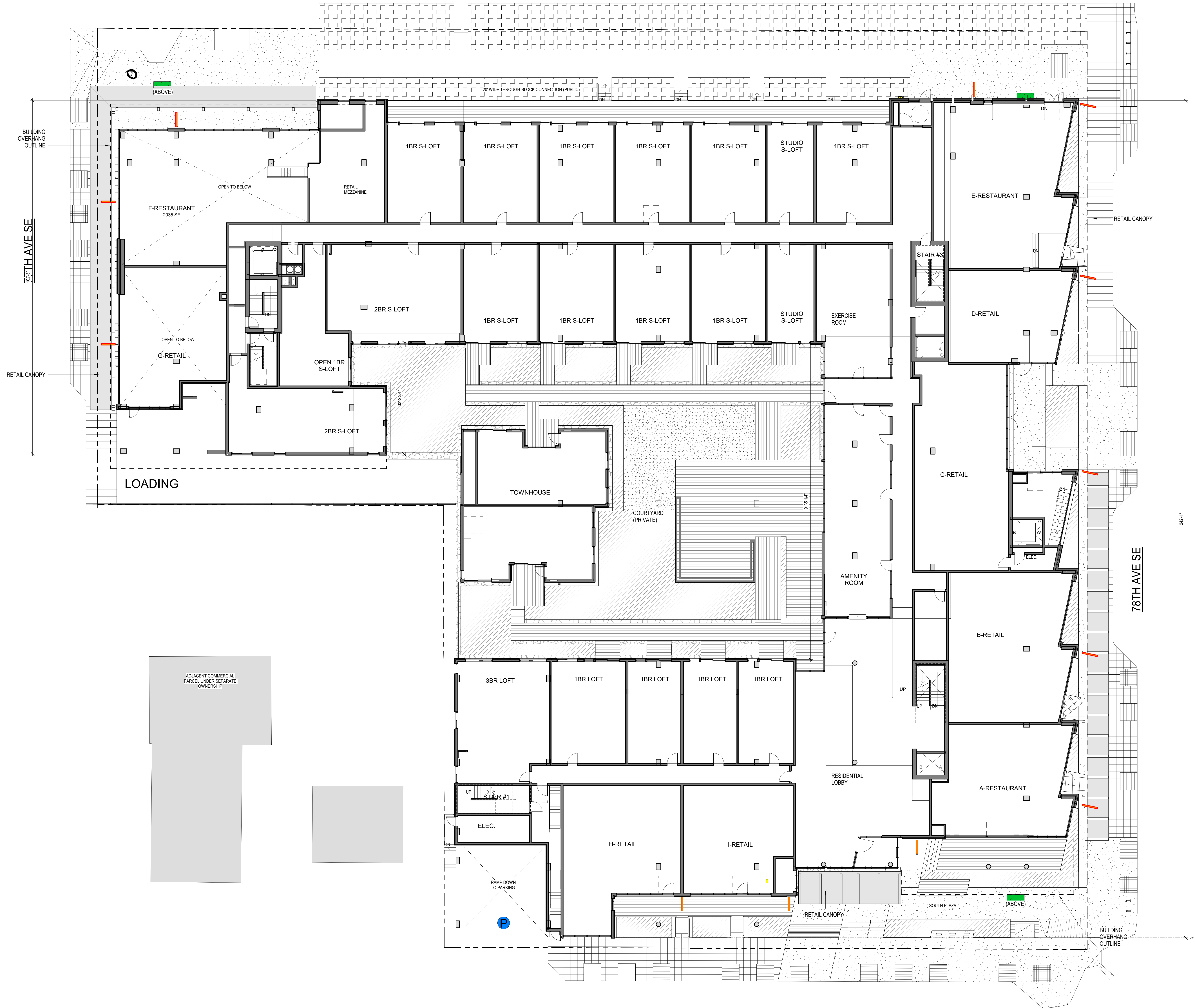
ILLUMINATED BLADE SIGN



WALL SIGN



ILLUMINATED PARKING SIGN



- LEGEND**
- ILLUMINATED UNDER-CANOPY SIGN - RETAIL (FUTURE)
  - ILLUMINATED WALL SIGN - RESIDENTIAL
  - P ILLUMINATED BLADE SIGN - PARKING
  - WALL SIGN - BUILDING ADDRESS

**MERCER ISLAND  
 MIXED USE**

2885 80TH AVE USE  
 MERCER ISLAND, WA 98040

DRAWING ISSUE

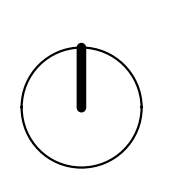
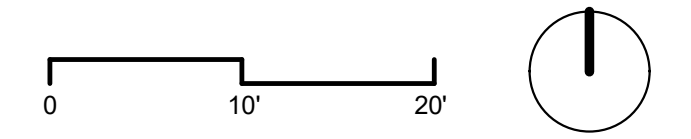
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| 12/24/2019 | LAND USE SET        |
| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

SHEET TITLE  
**MASTER SIGN PLAN**

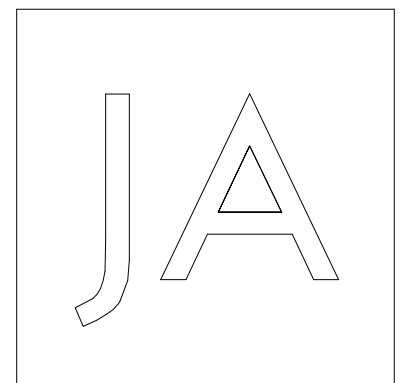
SHEET NO.  
**A100.1**

Drawn: \_\_\_\_\_  
 Checked: \_\_\_\_\_  
 Author: \_\_\_\_\_  
 Checker: \_\_\_\_\_

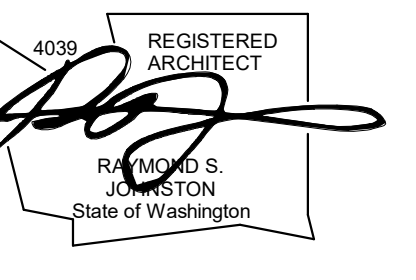
**1 LEVEL 1 MASTER SIGN PLAN**  
 1" = 10'-0"







Johnston Architects, LLC  
100 NE Northlake Way,  
Suite 200  
Seattle, WA 98105  
t 206.523.9150  
f 206.523.9382



MCDONALD'S  
ADDRESS: 2807 78TH AVE SE  
PCL NO.531510-1305

1-STORY MASONRY BLDG.  
ADDRESS: 2700 77TH AVE SE  
PCL NO. 531510-1316

EXISTING BUILDING  
TO BE DEMOLISHED

IMPERVIOUS SURFACE  
TO BE DEMOLISHED

2-STORY MASONRY BLDG.  
ADDRESS 2805 78TH AVE SE  
PCL NO. 771025-0600

EXISTING BUILDING  
TO BE DEMOLISHED

EXISTING NEIGHBORING  
1-STORY WOOD BLDG  
2726 77TH AVE SE  
OWNER: FIRST CHURCH  
OF CHRIST SCIENTIST  
PCL NO.531510-1325

WOOD BLDG

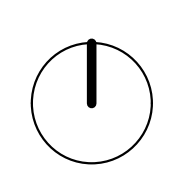
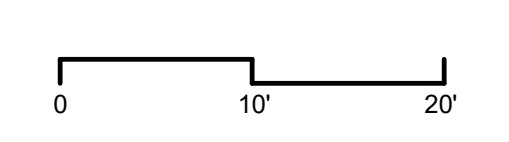
77TH AVE SE

78TH AVE SE

SE 29TH ST

Printed: 12/24/2020 10:01:38 PM

1 DEMO PLAN  
1" = 10'-0"



MERCER ISLAND  
MIXED USE  
2805 78TH AVE SE  
MERCER ISLAND, WA 98040

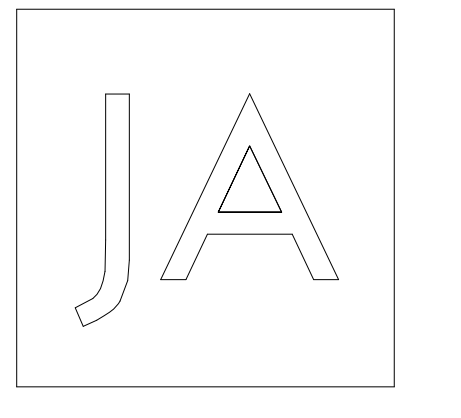
| DRAWING ISSUE |                     |
|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 03/31/2020    | 50% CD              |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

SHEET TITLE  
DEMO PLAN  
SHEET NO.

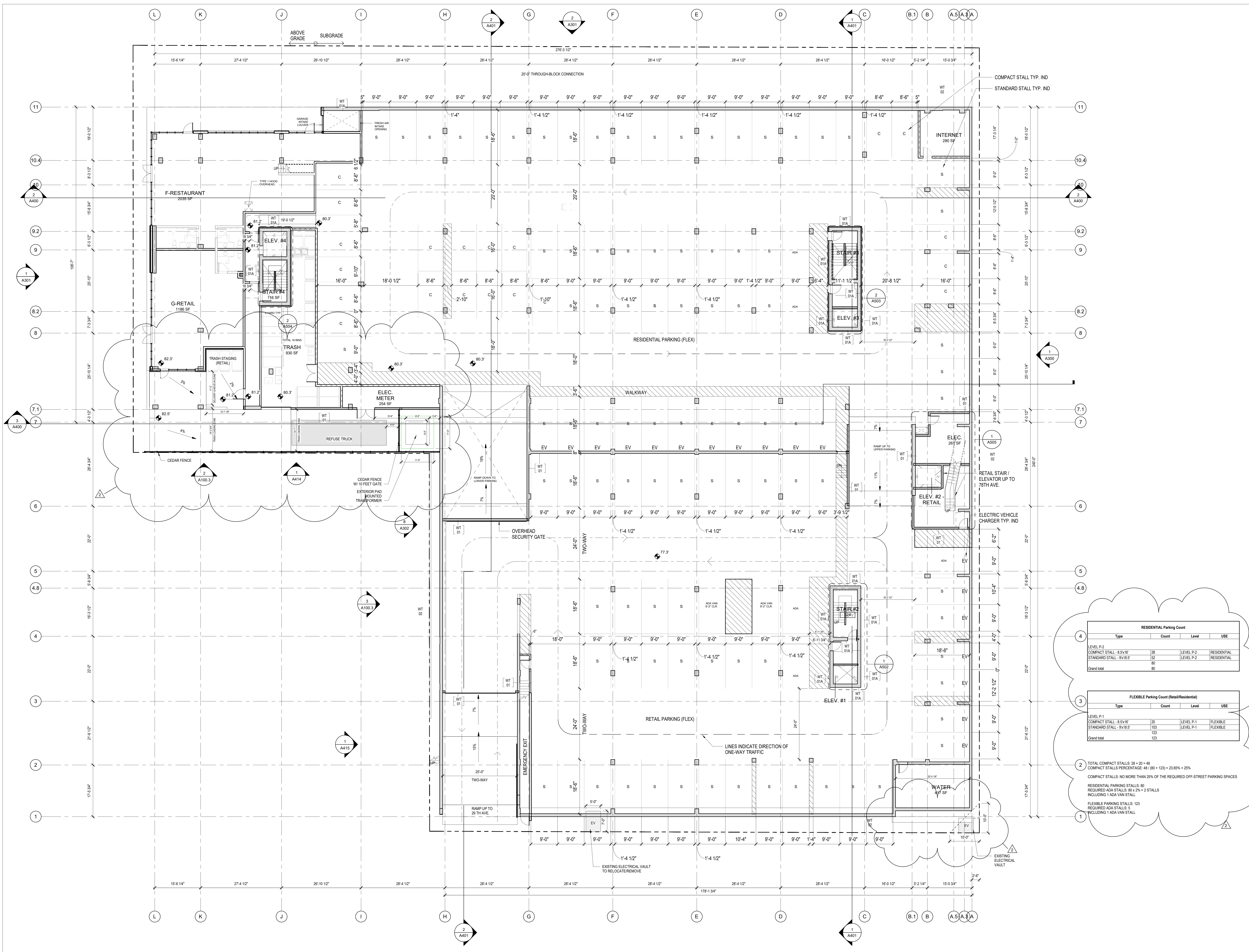
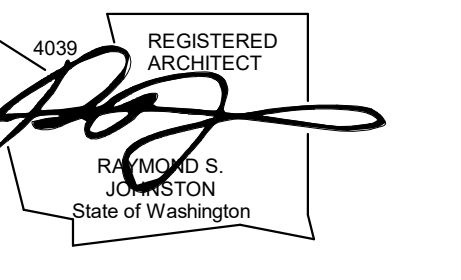
**A101**

Drawn Checked Author Checker





Johnston Architects, LLC  
100 NE Northlake Way,  
Suite 200  
Seattle, WA 98105  
1 206.523.6150  
1 206.523.9382



| Type                      | Count | Level     | USE         |
|---------------------------|-------|-----------|-------------|
| LEVEL P-2                 |       |           |             |
| COMPACT STALL - 8'x16'    | 26    | LEVEL P-2 | RESIDENTIAL |
| STANDARD STALL - 9'x18.5' | 80    | LEVEL P-2 | RESIDENTIAL |
| Grand total               | 106   |           |             |

| Type                      | Count | Level     | USE      |
|---------------------------|-------|-----------|----------|
| LEVEL P-1                 |       |           |          |
| COMPACT STALL - 8'x16'    | 20    | LEVEL P-1 | FLEXIBLE |
| STANDARD STALL - 9'x18.5' | 103   | LEVEL P-1 | FLEXIBLE |
| Grand total               | 123   |           |          |

2 TOTAL COMPACT STALLS: 26 + 20 = 46  
 COMPACT STALLS PERCENTAGE: 46 / (80 + 123) = 23.65% < 25%  
 COMPACT STALLS: NO MORE THAN 25% OF THE REQUIRED OFF-STREET PARKING SPACES  
 RESIDENTIAL PARKING STALLS: 80  
 REQUIRED ADA STALLS: 80 x 2% = 2 STALLS  
 INCLUDING 1 ADA VAN STALL  
 FLEXIBLE PARKING STALLS: 123  
 REQUIRED ADA STALLS: 5  
 INCLUDING 1 ADA VAN STALL

**MERCER ISLAND  
MIXED USE**

2845 29TH AVE SE  
MERCER ISLAND, WA 98040

DRAWING ISSUE

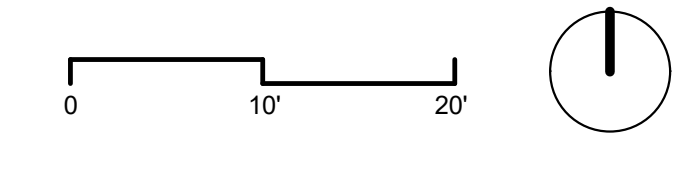
| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

SHEET TITLE  
**LEVEL P1 FLOOR PLAN**  
SHEET NO.

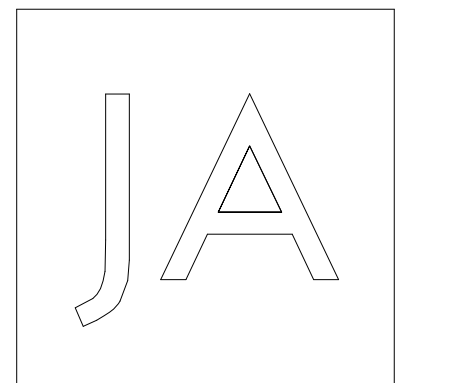
**A200P1**

Drawn: \_\_\_\_\_ Author: \_\_\_\_\_  
 Checked: \_\_\_\_\_ Checker: \_\_\_\_\_

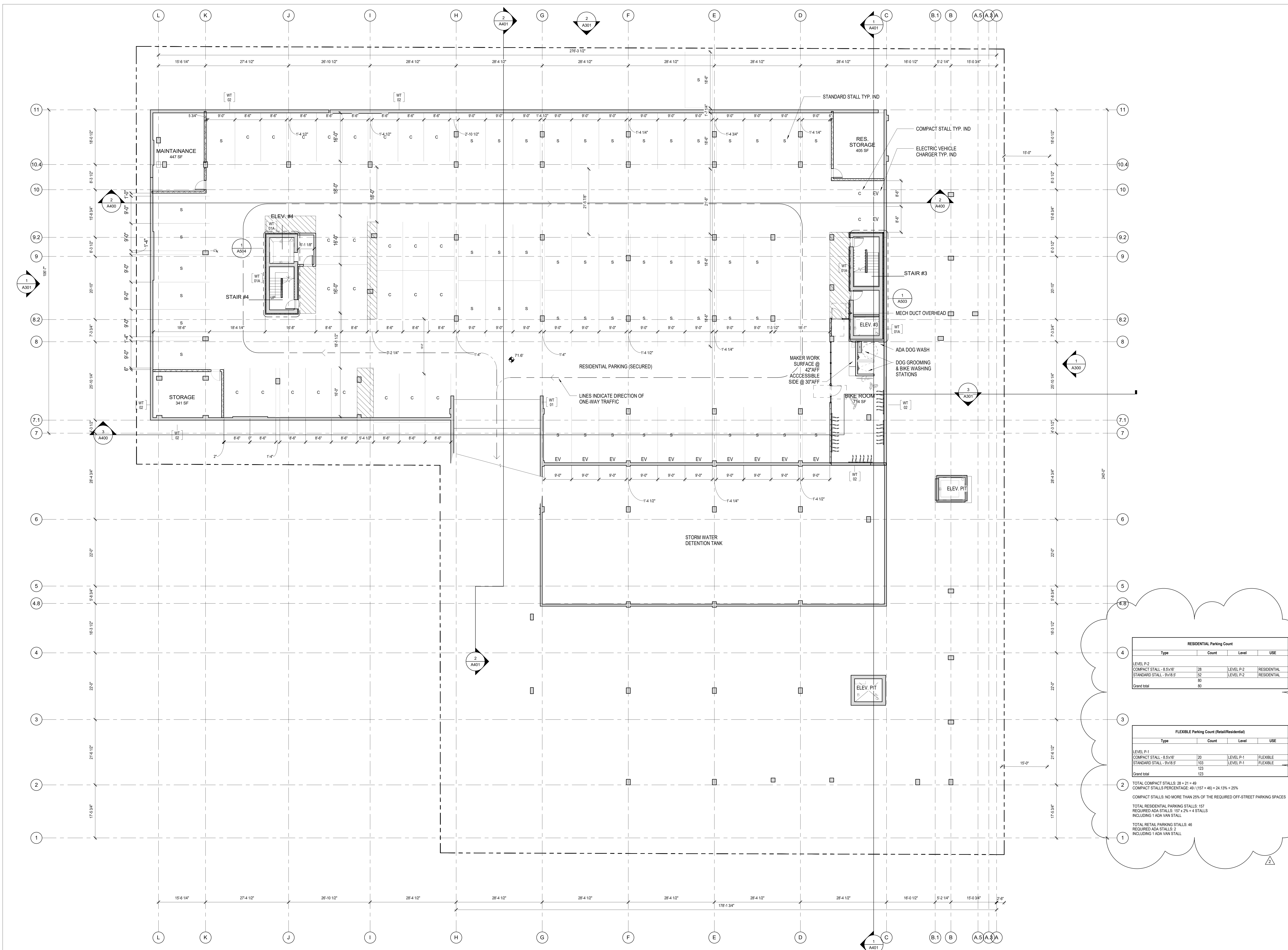
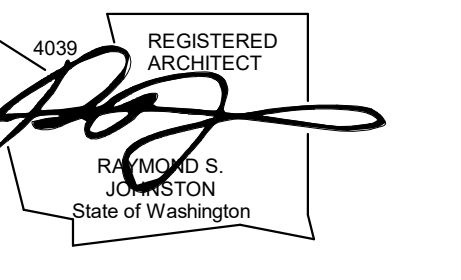
1 LEVEL P-1  
1" = 10'-0"







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1 206.523.6150  
1 206.523.6362



| RESIDENTIAL Parking Count |       |           |             |
|---------------------------|-------|-----------|-------------|
| Type                      | Count | Level     | USE         |
| LEVEL P-2                 |       |           |             |
| COMPACT STALL - 8.0x10'   | 28    | LEVEL P-2 | RESIDENTIAL |
| STANDARD STALL - 9x18.5'  | 82    | LEVEL P-2 | RESIDENTIAL |
| Grand total               | 110   |           |             |

| FLEXIBLE Parking Count (Retail/Residential) |       |           |          |
|---|-------|-----------|----------|
| Type  | Count | Level     | USE      |
| LEVEL P-1                                   |       |           |          |
| COMPACT STALL - 8.0x10'                     | 20    | LEVEL P-1 | FLEXIBLE |
| STANDARD STALL - 9x18.5'                    | 103   | LEVEL P-1 | FLEXIBLE |
| Grand total                                 | 123   |           |          |

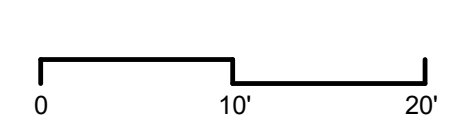
TOTAL COMPACT STALLS: 28 + 21 = 49  
 COMPACT STALLS PERCENTAGE: 49 / (117 + 46) = 24.13% < 25%  
 COMPACT STALLS: NO MORE THAN 25% OF THE REQUIRED OFF-STREET PARKING SPACES  
 TOTAL RESIDENTIAL PARKING STALLS: 157  
 REQUIRED ADA STALLS: 157 x 2% = 4 STALLS  
 INCLUDING 1 ADA VAN STALL  
 TOTAL RETAIL PARKING STALLS: 46  
 REQUIRED ADA STALLS: 2  
 INCLUDING 1 ADA VAN STALL

**MERCER ISLAND  
MIXED USE**

2845 10TH AVE SE  
MERCER ISLAND, WA 98040

| DRAWING ISSUE |                     |  |
|---------------|---------------------|--|
| Date          | Description         |  |
| 12/24/2019    | LAND USE SET        |  |
| 02/11/2020    | 50% CD              |  |
| 06/26/2020    | LAND USE SET REV #1 |  |
| 12/04/2020    | LAND USE SET REV #2 |  |

1 LEVEL P-2  
1" = 10'-0"

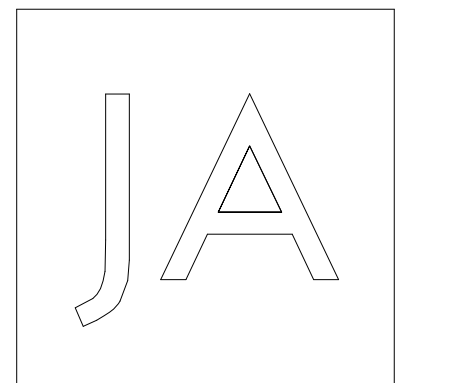


SHEET TITLE  
LEVEL P2 FLOOR PLAN  
SHEET NO.

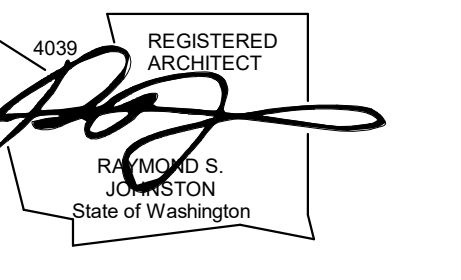
**A200P2**

Drawn  
Checked



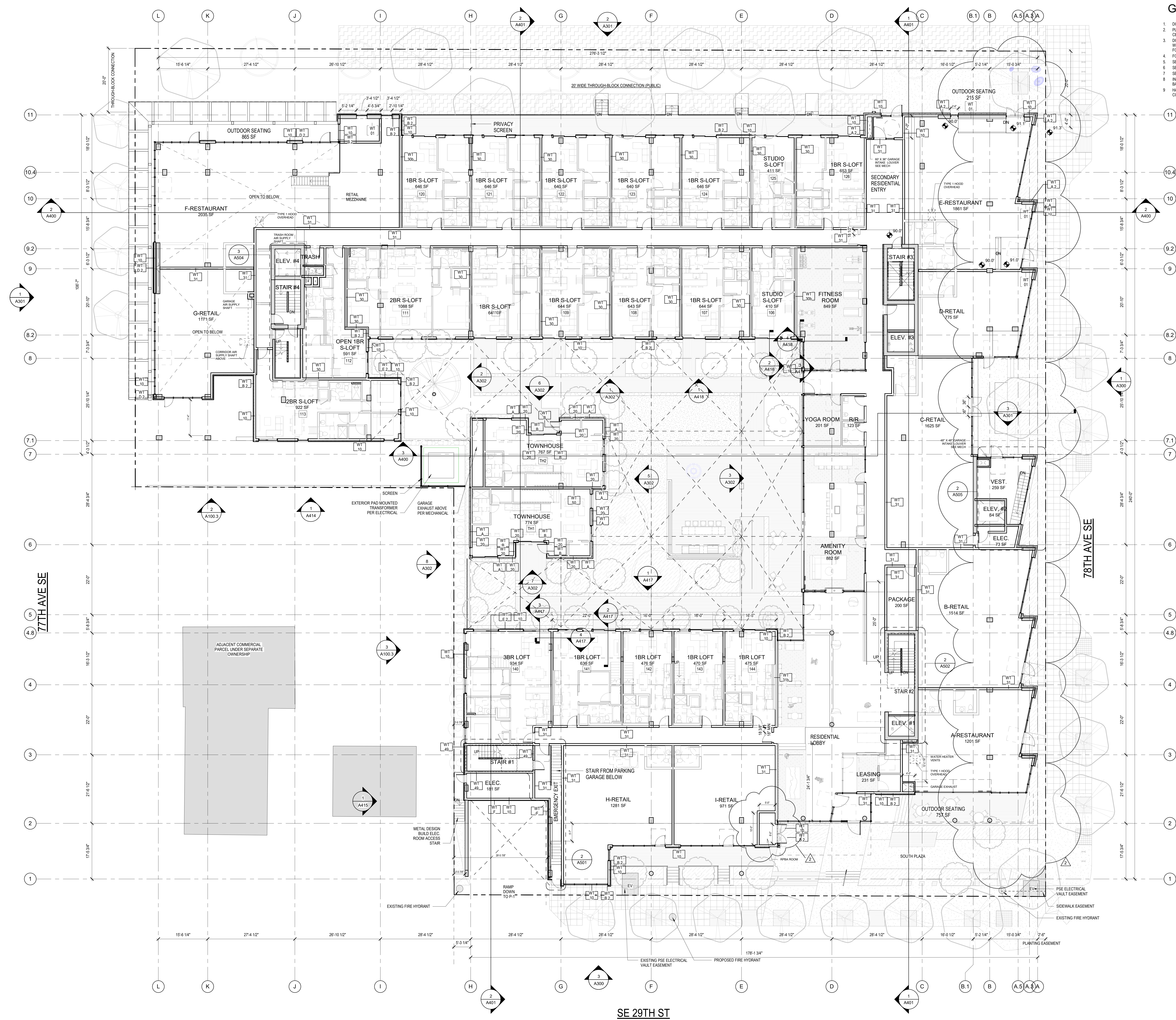


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Seattle, WA 98105  
1 206.523.6150  
1 206.523.9382



GENERAL - FLOOR PLAN NOTES

1. DO NOT SCALE DRAWINGS.
2. PLAN DIMENSIONS ARE TO FACE OF STUD. FACE OF CONCRETE WALL, CENTERLINE OF COLUMN, OR CENTERLINE OF ROUGH OPENINGS. UON CONTACT ARCHITECT FOR CLARIFICATIONS.
3. DOORS AND GASED OPENINGS INDICATED ADJACENT TO WALL INTERSECTIONS SHALL BE LOCATED WITH THE EDGE OF FINISH OPENING SIX INCHES FROM THE ADJACENT WALL AT THE EXTERIOR AND FOUR INCHES FROM THE ADJACENT WALL.
4. FOR KITCHEN (BATV) WASHER-DRYER FAN LOCATION, SEE MECHANICAL DWGS.
5. SEE SHEET A800 & A801 FOR WINDOW SCHEDULE AND DETAILS.
6. SEE SHEET A802, A803 & A804 FOR DOOR SCHEDULE AND DETAILS.
7. SEE SHEET A810 - A813 FOR WALL ASSEMBLIES.
8. INSTALL BLOCKING FOR GRAB BARS IN ALL BATHROOM WALLS SURROUNDING WATER CLOSET, BATHTUB AND SHOWER. REF: A3XX.
9. HANDRAILS SHALL RETURN TO A WALL, GUARD OR THE WALKING SURFACE OR SHALL BE CONTINUOUS TO THE HANDRAIL OF AN ADJACENT STAIR FLIGHT OR RAMP RUN - PER IBC 1012.5



| Retail Schedule |       |          |             |             |  |
|-----------------|-------|----------|-------------|-------------|--|
| Name            | Count | Area     | MIN PARKING | MAX PARKING |  |
| LEVEL P-1       |       |          |             |             |  |
| G-RETAIL        | 1     | 11186 SF | 2           | 4           |  |
| LEVEL IS        |       |          |             |             |  |
| B-RETAIL        | 1     | 1514 SF  | 3           | 5           |  |
| C-RETAIL        | 1     | 1625 SF  | 3           | 5           |  |
| D-RETAIL        | 1     | 775 SF   | 2           | 2           |  |
| H-RETAIL        | 1     | 1281 SF  | 3           | 4           |  |
| I-RETAIL        | 1     | 971 SF   | 2           | 3           |  |
| Grand total     | 6     | 7561 SF  | 15          | 23          |  |

| Restaurant Schedule |       |         |             |             |  |
|---------------------|-------|---------|-------------|-------------|--|
| Name                | Count | Area    | MIN PARKING | MAX PARKING |  |
| LEVEL P-1           |       |         |             |             |  |
| F-RESTAURANT        | 1     | 2035 SF | 10          | 20          |  |
| LEVEL IS            |       |         |             |             |  |
| A-RESTAURANT        | 1     | 1201 SF | 6           | 12          |  |
| C-RESTAURANT        | 1     | 1661 SF | 9           | 15          |  |
| LEVEL M-IS          |       |         |             |             |  |
| F-RESTAURANT        | 1     | 1632 SF | 3           | 6           |  |
| Grand total         | 4     | 5729 SF | 28          | 57          |  |

TOTAL RETAIL + RESTAURANT PARKING STALLS PROVIDED: 45 PARKING STALLS  
REFERENCE SHEET A201.1 AND A202.2 FOR PARKING PLANS AND CALCULATIONS

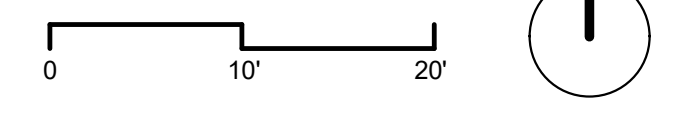
**MERCER ISLAND MIXED USE**  
2885 97TH AVE SE  
MERCER ISLAND, WA 98040

| DRAWING ISSUE |                     |
|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 03/31/2020    | 50% CD              |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

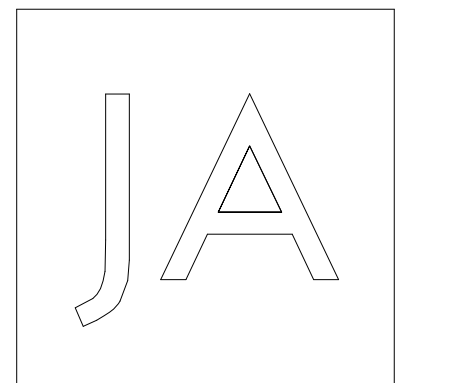
SHEET TITLE  
**LEVEL 1 FLOOR PLAN**

SHEET NO.  
**A201**

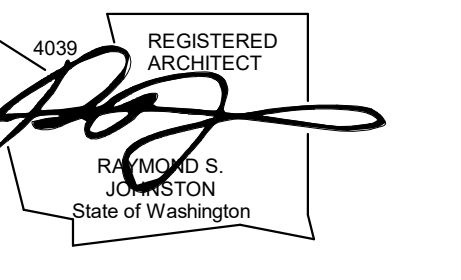
Drawn  
Checked







Johnston Architects, LLC  
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t 206.523.9150  
f 206.523.9382



**MERCER ISLAND  
MIXED USE**  
2845 10TH AVE SE  
MERCER ISLAND, WA 98040

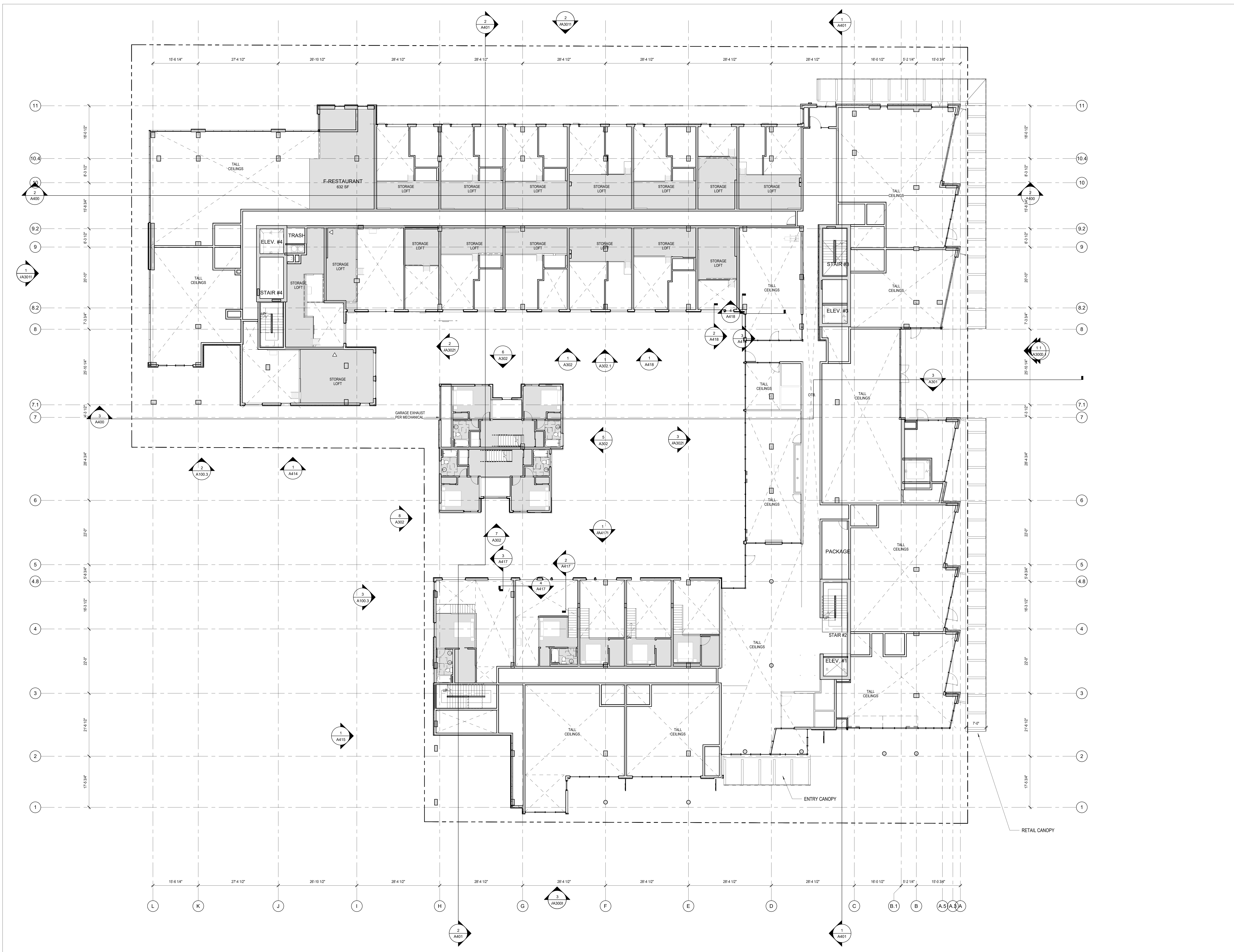
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| 12/24/2019 | LAND USE SET        |
| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

SHEET TITLE  
**LEVEL 1M FLOOR PLAN**

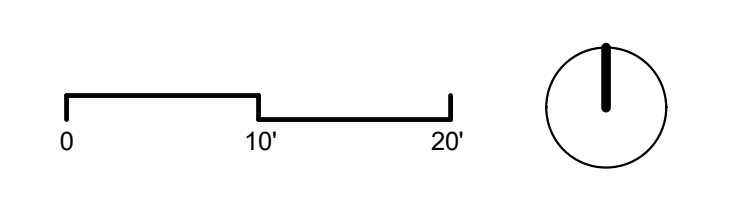
SHEET NO.  
**A201M**

Drawn  
Checked

Author  
Checker



1 LEVEL M-1S  
1" = 10'-0"



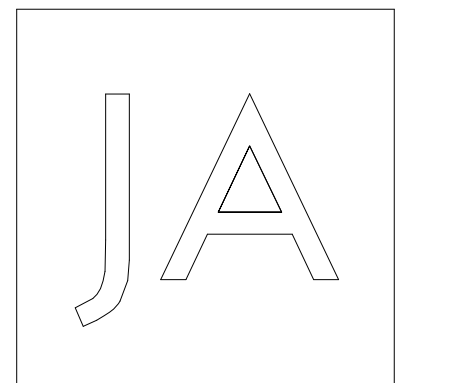




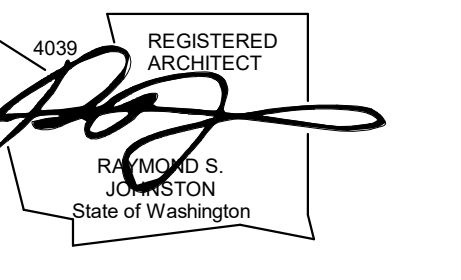






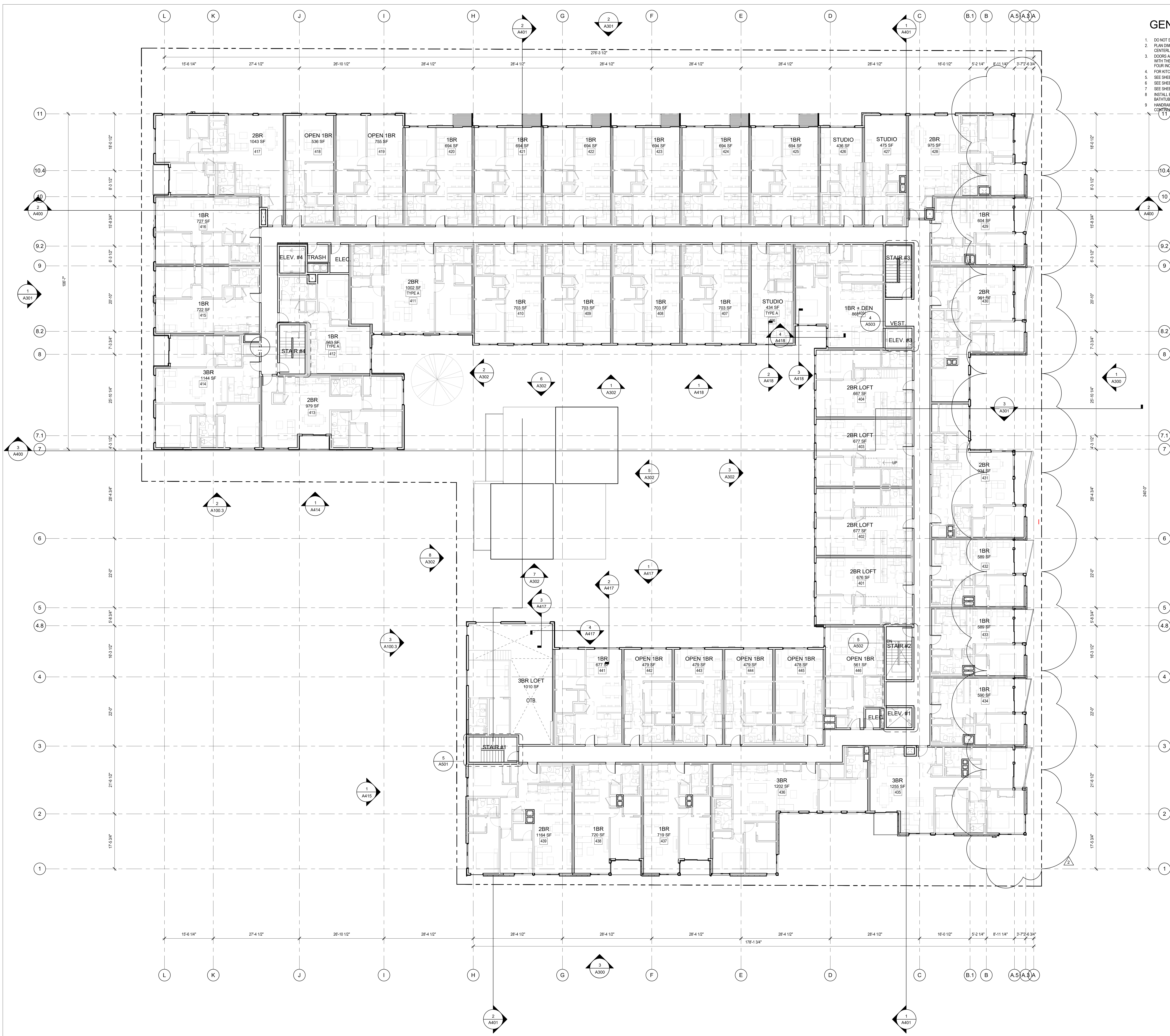


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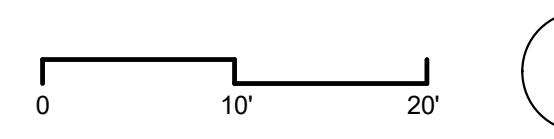


GENERAL - FLOOR PLAN NOTES

- DO NOT SCALE DRAWINGS.
- PLAN DIMENSIONS ARE TO FACE OF STUD. FACE OF CONCRETE WALL, CENTERLINE OF COLUMN, OR CENTERLINE OF ROUGH OPENINGS. FOR CLARIFICATIONS CONTACT ARCHITECT FOR CLARIFICATIONS.
- DOORS AND CASED OPENINGS INDICATED ADJACENT TO WALL INTERSECTIONS SHALL BE LOCATED WITH THE EDGE OF FINISH OPENING SIX INCHES FROM THE ADJACENT WALL AT THE EXTERIOR AND FOUR INCHES FROM THE ADJACENT WALL.
- FOR KITCHEN / BATH / WASHER DRYER FAN LOCATIONS, SEE MECHANICAL DWGS.
- SEE SHEET A-800 & A-801 FOR WINDOW SCHEDULE AND DETAILS.
- SEE SHEET A-802, A-803 & A-804 FOR DOOR SCHEDULE AND DETAILS.
- SEE SHEET A-810 - A-812 FOR WALL ASSEMBLIES.
- INSTALL BLOCKING FOR GRAB BARS IN ALL BATHROOM WALLS SURROUNDING WATER CLOSET, BATH TUB AND SHOWER. REF. A-1000.
- HANDRAILS SHALL RETURN TO A WALL, GUARD OR THE WALKING SURFACE OR SHALL BE CONTIGUOUS TO THE HANDRAIL OF AN ADJACENT STAIR FLIGHT OR RAMP RUN - PER IBC 1012.5



1 LEVEL 4  
1" = 10'-0"



MERCER ISLAND  
MIXED USE  
2845 90TH AVE SE  
MERCER ISLAND, WA 98040

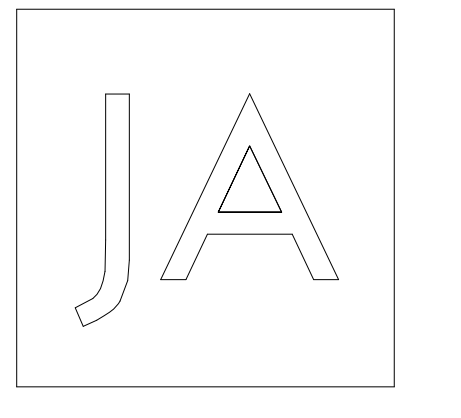
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| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

SHEET TITLE  
LEVEL 4 FLOOR PLAN

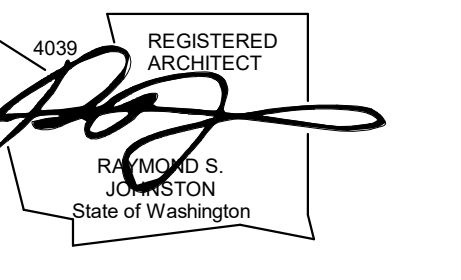
SHEET NO.  
A204

Drawn  
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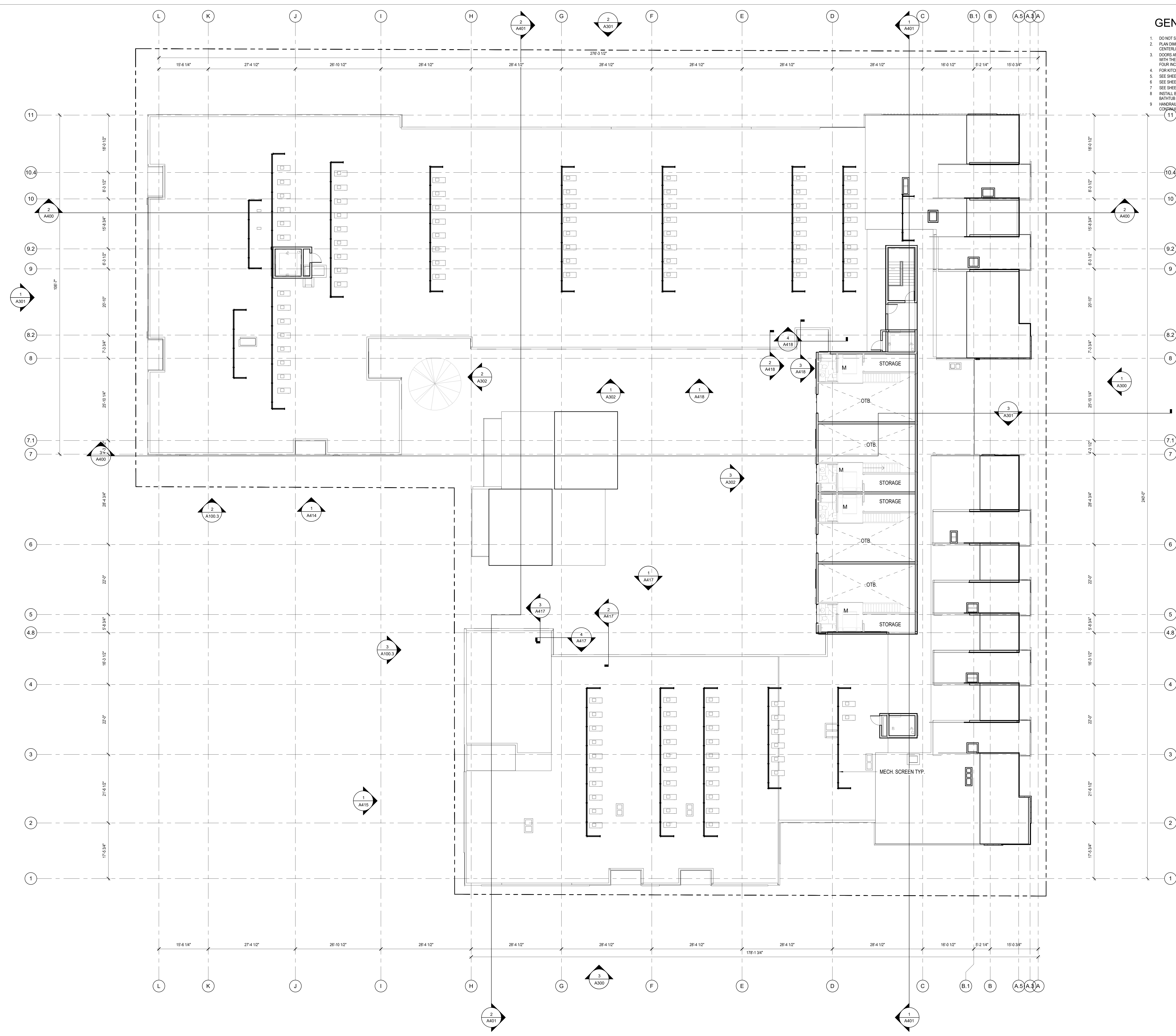


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 1 206.523.6362

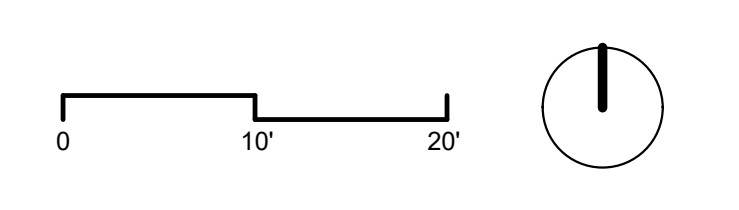


**GENERAL - FLOOR PLAN NOTES**

1. DO NOT SCALE DRAWINGS.
2. PLAN DIMENSIONS ARE TO FACE OF STUD, FACE OF CONCRETE WALL, CENTERLINE OF COLUMN, OR CENTERLINE OF ROOF OPENINGS, UNLESS CONTACT ARCHITECT FOR CLARIFICATIONS.
3. DOORS AND CASED OPENINGS INDICATED ADJACENT TO WALL INTERSECTIONS SHALL BE LOCATED WITH THE EDGE OF FINISH OPENING SIX INCHES FROM THE ADJACENT WALL AT THE EXTERIOR AND FOUR INCHES FROM THE ADJACENT WALL.
4. FOR KITCHEN / BATH / WASHER-DRYER FAN LOCATIONS, SEE MECHANICAL DWGS.
5. SEE SHEET A-800 & A-801 FOR WINDOW SCHEDULE AND DETAILS.
6. SEE SHEET A-802, A-831 & A-880 FOR DOOR SCHEDULE AND DETAILS.
7. SEE SHEET A-810, A-812 FOR WALL ASSEMBLIES.
8. INSTALL BLOCKING FOR GRAB BARS IN ALL BATHROOM WALLS SURROUNDING WATER CLOSET, BATHUB AND SHOWER. REF. A-XXX.
9. HANDRAILS SHALL RETURN TO A WALL, GUARD OR THE WALKING SURFACE OR SHALL BE COMPARED TO THE HANDRAIL OF AN ADJACENT STAIR FLIGHT OR RAMP FLIGHT. REF. 012.5.



**1 LEVEL 4M**  
 1" = 10'-0"



**MERCER ISLAND  
 MIXED USE**  
 2845 10TH AVE SE  
 MERCER ISLAND, WA 98040

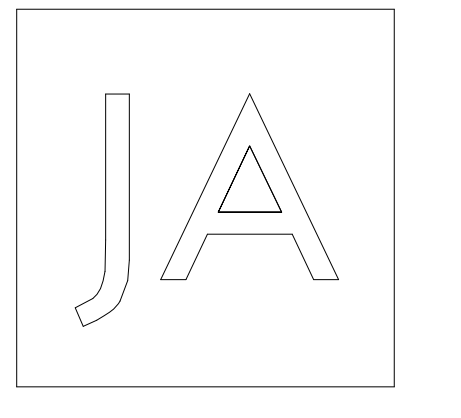
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|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 03/31/2020    | 50% CD              |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

SHEET TITLE  
**LEVEL 4M FLOOR PLAN**

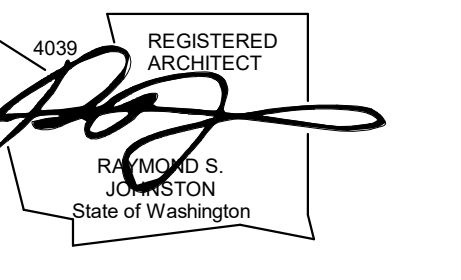
SHEET NO.  
**A204M**

Drawn  
 Checked



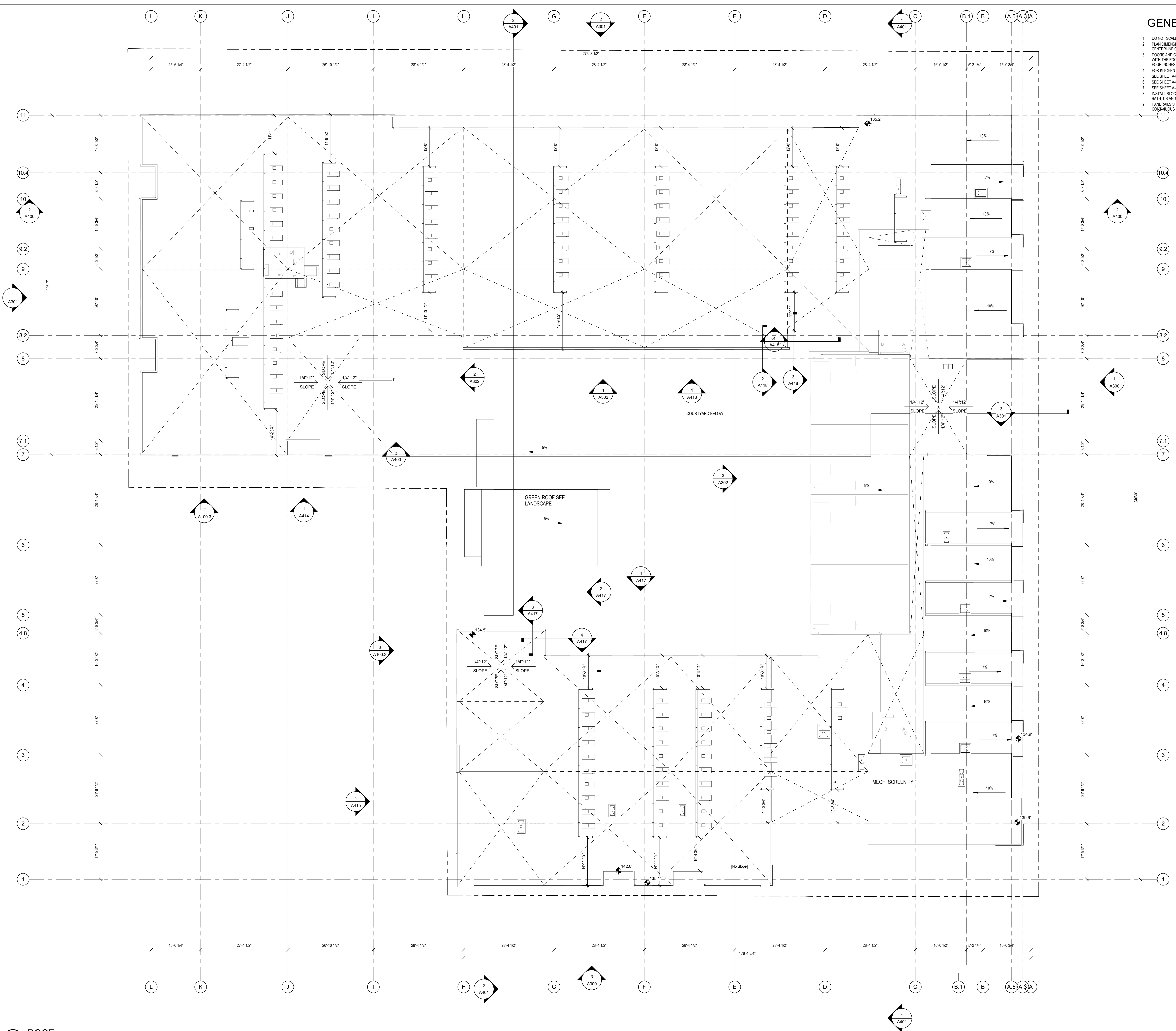


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1 206.523.6150  
1 206.523.9382

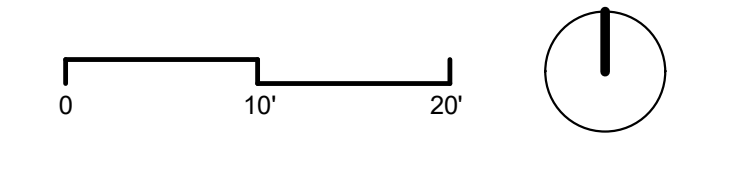


### GENERAL - FLOOR PLAN NOTES

- DO NOT SCALE DRAWINGS.
- PLAN DIMENSIONS ARE TO FACE OF STUD. FACE OF CONCRETE WALL, CENTERLINE OF COLUMN, OR CENTERLINE OF ROOF OPENINGS, UNLESS CONTACT ARCHITECT FOR CLARIFICATIONS.
- DOORS AND CASED OPENINGS INDICATED ADJACENT TO WALL INTERSECTIONS SHALL BE LOCATED WITH THE EDGE OF FINISH OPENING SIX INCHES FROM THE ADJACENT WALL AT THE EXTERIOR AND FOUR INCHES FROM THE ADJACENT WALL.
- FOR KITCHEN/ BATH/ WASHER DRYER FAN LOCATIONS, SEE MECHANICAL DWGS.
- SEE SHEET A-800 & A-811 FOR WINDOW SCHEDULE AND DETAILS.
- SEE SHEET A-802, A-831 & A-880 FOR DOOR SCHEDULE AND DETAILS.
- SEE SHEET A-810, A-812 FOR WALL ASSEMBLIES.
- INSTALL BLOCKING FOR GRAB BARS IN ALL BATHROOM WALLS SURROUNDING WATER CLOSET, BATH TUB AND SHOWER. REF. A-XXX.
- HANDRAILS SHALL RETURN TO A WALL, GUARD OR THE WALKING SURFACE OR SHALL BE CONTIGUOUS TO THE HANDRAIL OF AN ADJACENT STAIR FLIGHT OR RAMP FLIGHT. REF. 1012.5.



**1 ROOF**  
1" = 10'-0"



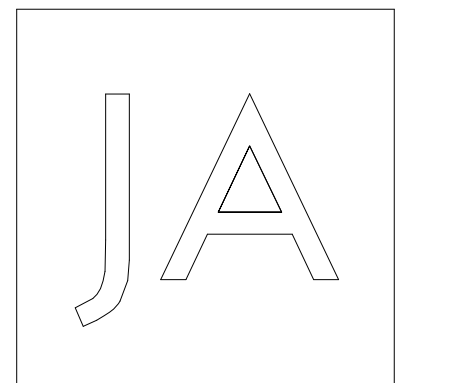
**MERCER ISLAND  
MIXED USE**  
2845 30TH AVE. SE  
MERCER ISLAND, WA 98040

| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

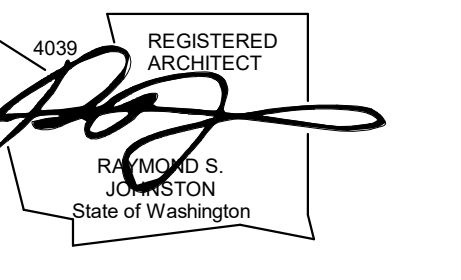
SHEET TITLE  
**ROOF PLAN**  
SHEET NO.  
**A205**

Drawn: \_\_\_\_\_ Author: \_\_\_\_\_  
Checked: \_\_\_\_\_ Checker: \_\_\_\_\_





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Seattle, WA 98105  
1 206.523.6150  
1 206.523.8382



2 EAST ELEVATION @GIRD D  
1/8" = 1'-0"

1 EAST ELEVATION (78TH AVE SE)  
1/8" = 1'-0"



3 SOUTH ELEVATION (SE 29TH ST)  
1/8" = 1'-0"

MERCER ISLAND  
MIXED USE  
2885 97TH AVE SE  
MERCER ISLAND, WA 98040

DRAWING ISSUE

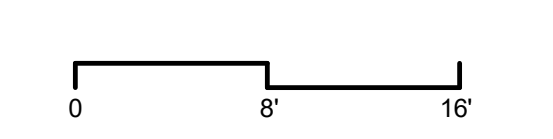
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| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

SHEET TITLE  
OVERALL ELEVATIONS E AND S

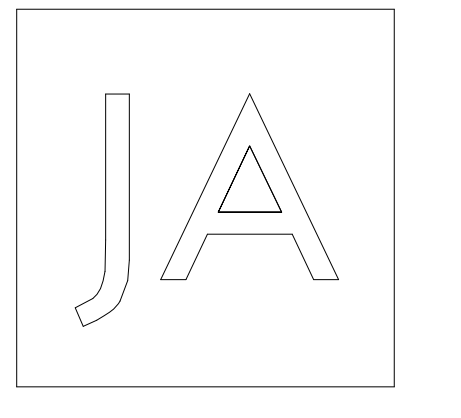
SHEET NO.  
**A300**

Drawn  
Checked

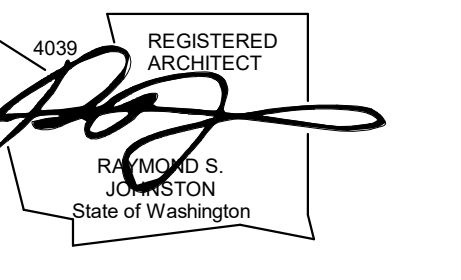
Author  
Checker







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 100 NE Northlake Way,  
 Suite 200  
 Seattle, WA 98105  
 t 206.523.6150  
 f 206.523.8382



1 EAST ELEVATION (78TH AVE SE) COLOR  
 1/8" = 1'-0"



2 SOUTH ELEVATION (SE 29TH ST) COLOR  
 1/8" = 1'-0"

MERCER ISLAND MIXED USE  
 2845 29TH AVE SE  
 MERCER ISLAND, WA 98040

DRAWING ISSUE

| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

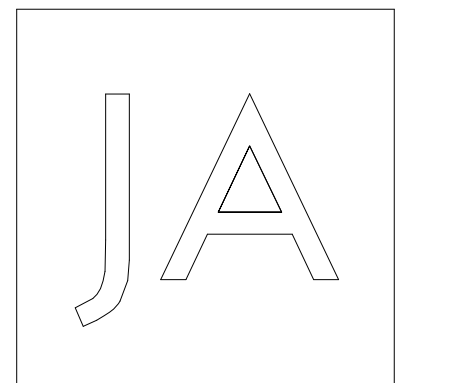
SHEET TITLE  
 OVERALL ELEVATIONS E AND S\_COLOR

SHEET NO.

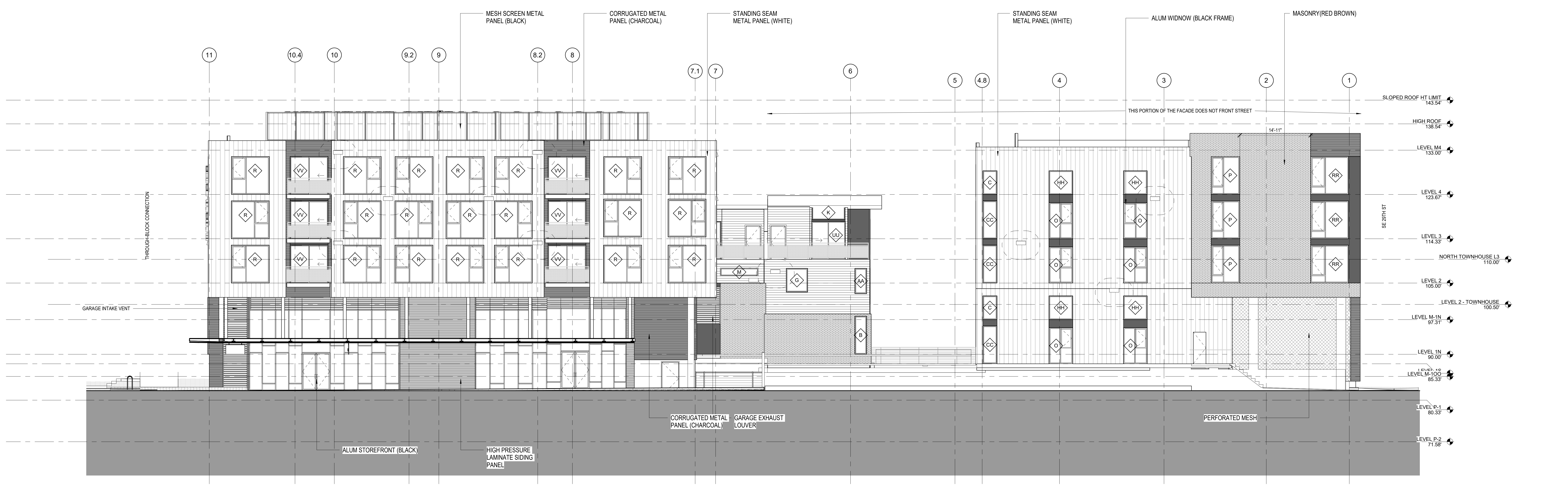
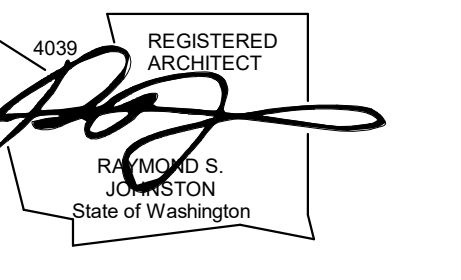
**A300.1**

Drawn  
 Checked





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 1 206.523.6382



1 WEST ELEVATION (77TH AVE SE)  
 1/8" = 1'-0"



3 NORTH ELEVATION @ GRID 7  
 1/8" = 1'-0"

2 NORTH ELEVATION (THROUGH-BLOCK CONNECTION)  
 1/8" = 1'-0"

MERCER ISLAND  
 MIXED USE  
 2885 87TH AVE SE  
 MERCER ISLAND, WA 98040

DRAWING ISSUE

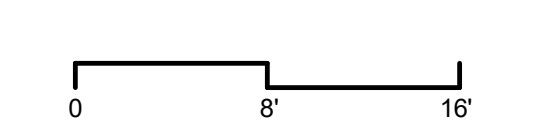
| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

SHEET TITLE  
 OVERALL ELEVATIONS W AND N

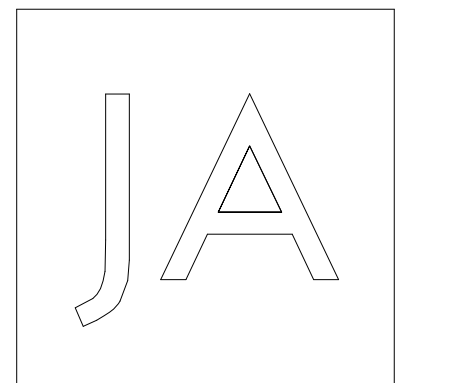
SHEET NO.

**A301**

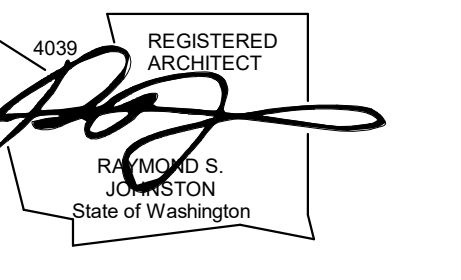
Drawn: \_\_\_\_\_ Author: \_\_\_\_\_  
 Checked: \_\_\_\_\_ Checker: \_\_\_\_\_







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1 WEST ELEVATION (77TH AVE SE) COLOR  
 1/8" = 1'-0"



2 NORTH ELEVATION (THROUGH-BLOCK CONNECTION) COLOR  
 1/8" = 1'-0"

MERCER ISLAND  
 MIXED USE  
 2845 87TH AVE SE  
 MERCER ISLAND, WA 98040

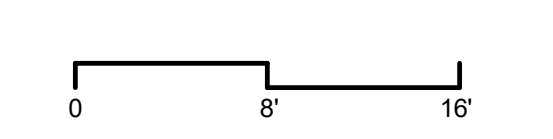
DRAWING ISSUE

| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

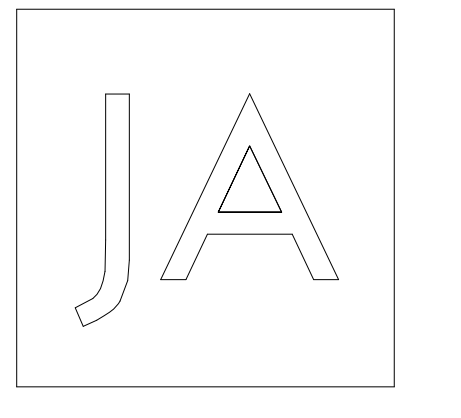
SHEET TITLE  
 OVERALL ELEVATIONS W AND N\_COLOR

SHEET NO.  
**A301.1**

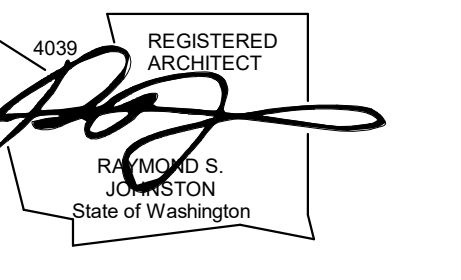
Drawn  
 Checked







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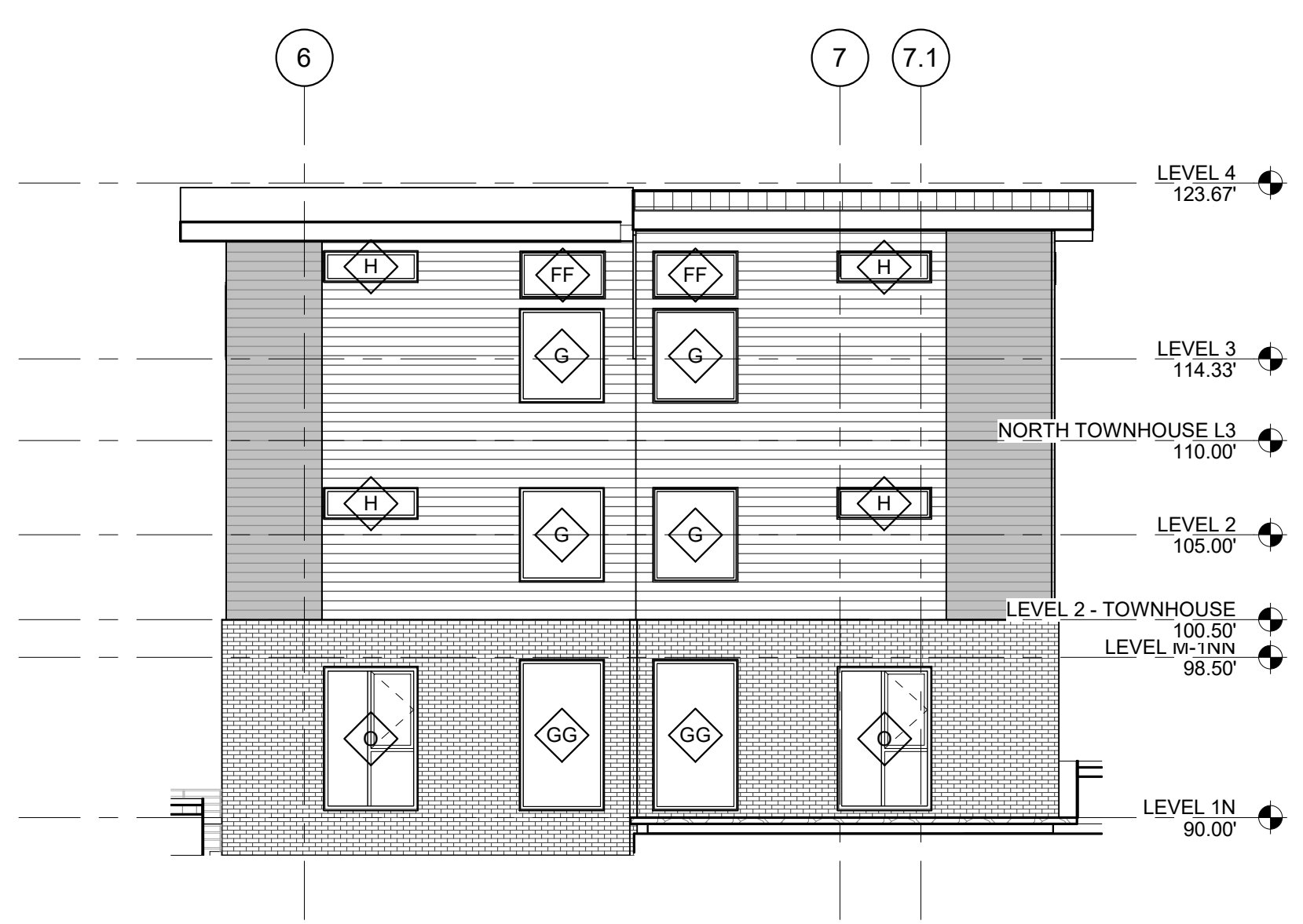
**MERCER ISLAND  
 MIXED USE**  
 2885 80TH AVE SE  
 MERCER ISLAND, WA 98040

| DRAWING ISSUE |                     |
|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 03/31/2020    | 50% CD              |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

SHEET TITLE  
**ELEVATIONS  
 COURTYARD**  
 SHEET NO.

**A302**

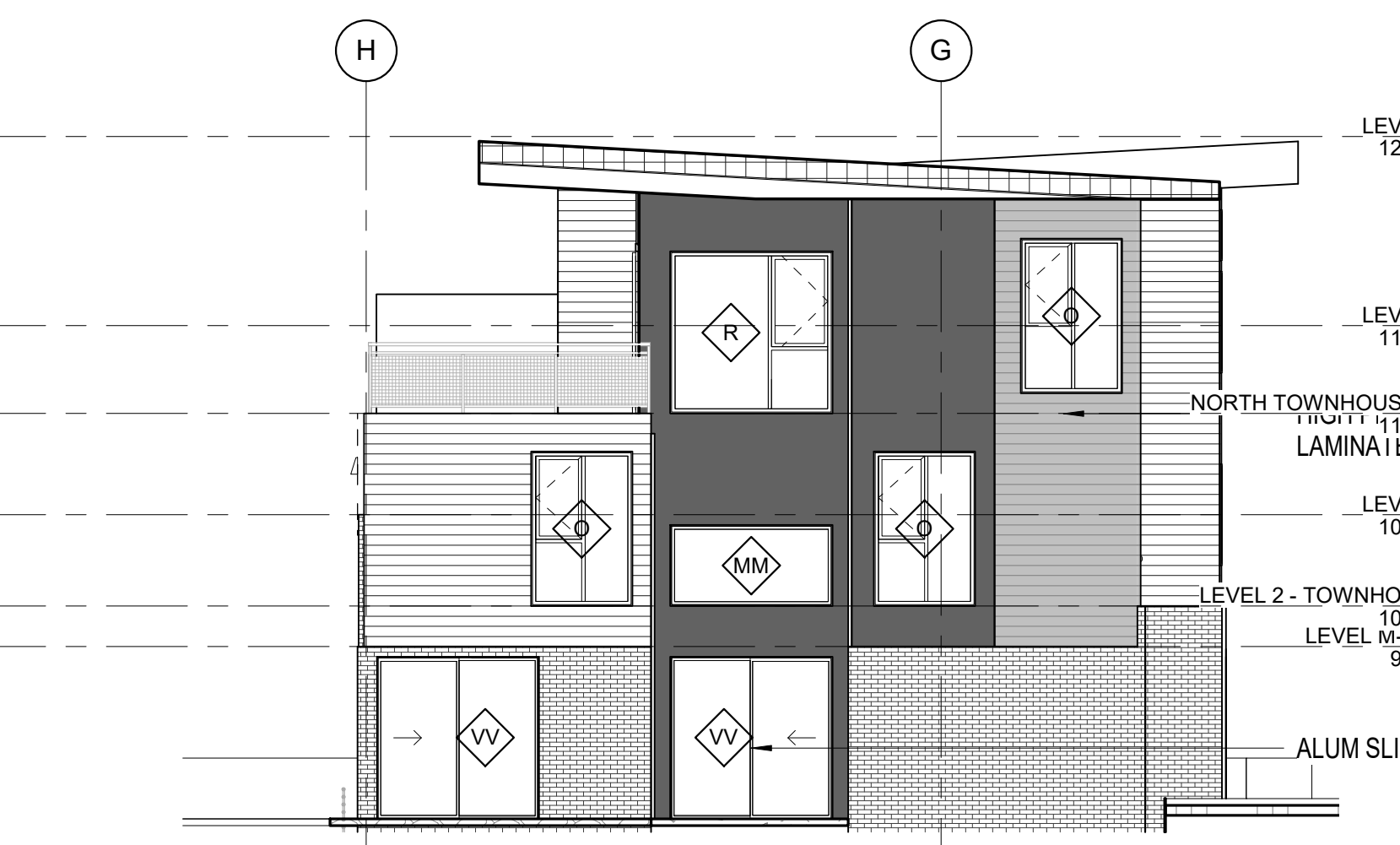
Drawn Checked Author Checker



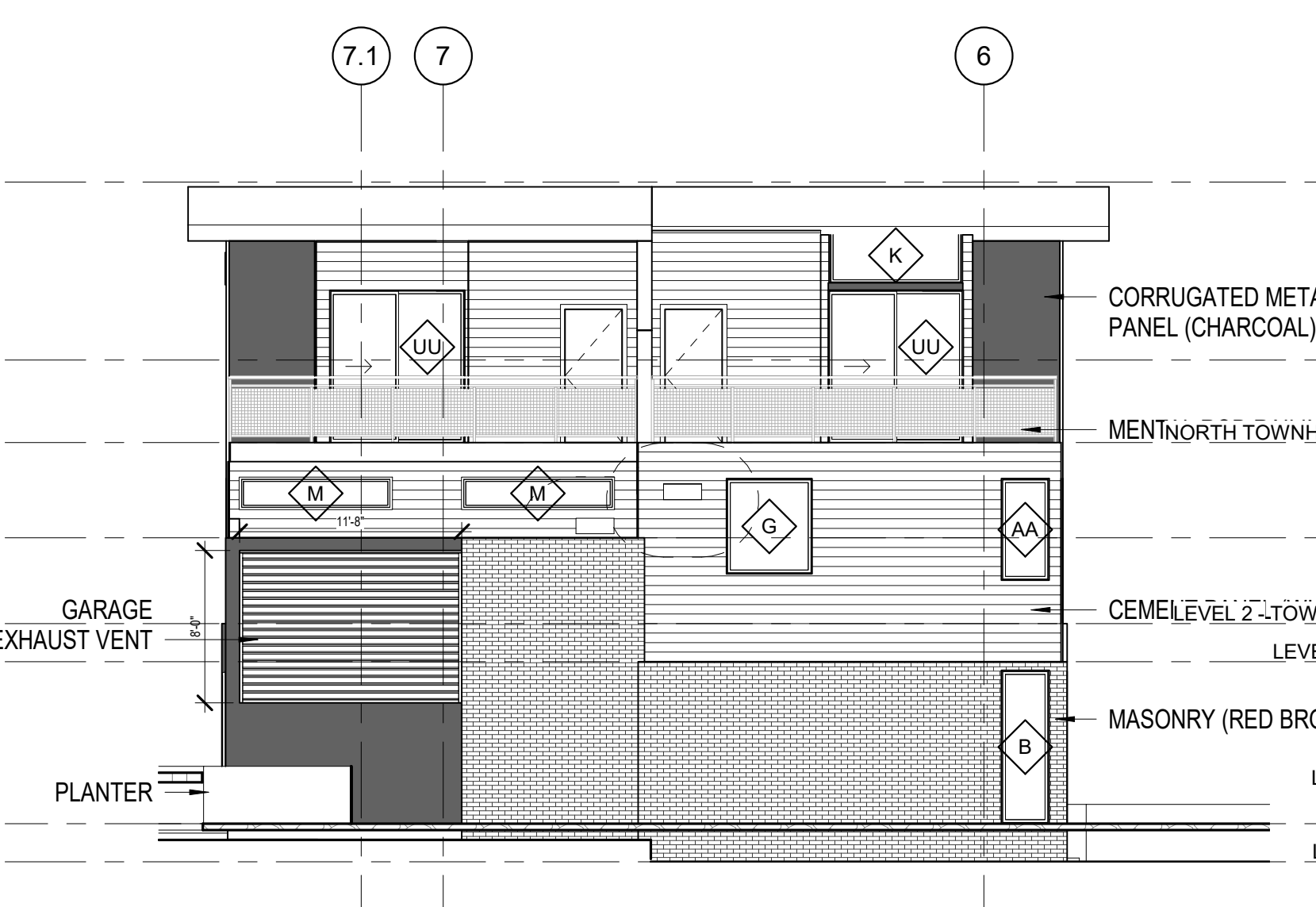
5 TOWNHOUSE - EAST  
 1/8" = 1'-0"



6 TOWNHOUSE - NORTH  
 1/8" = 1'-0"



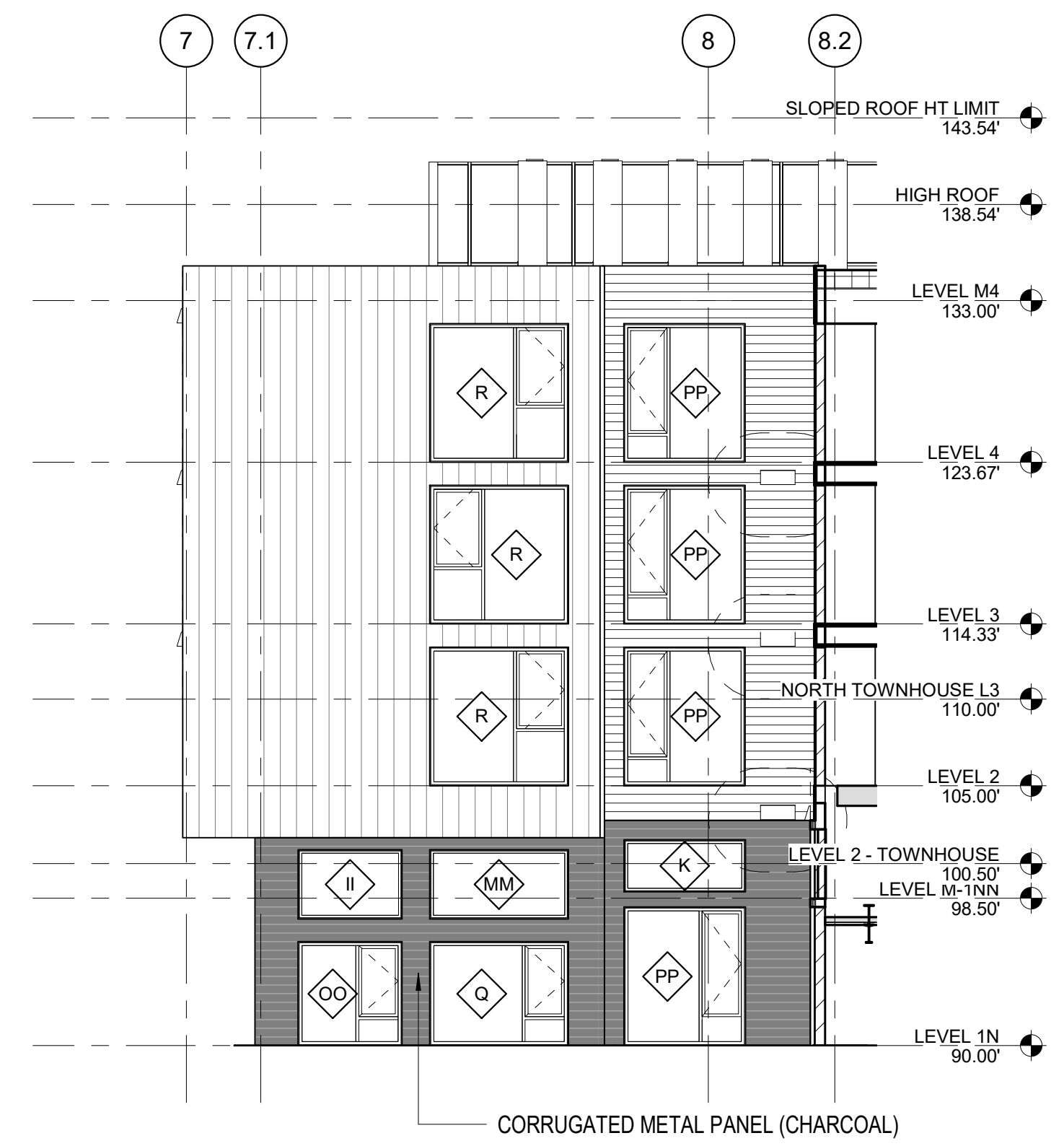
7 TOWNHOUSE - SOUTH  
 1/8" = 1'-0"



8 TOWNHOUSE - WEST  
 1/8" = 1'-0"



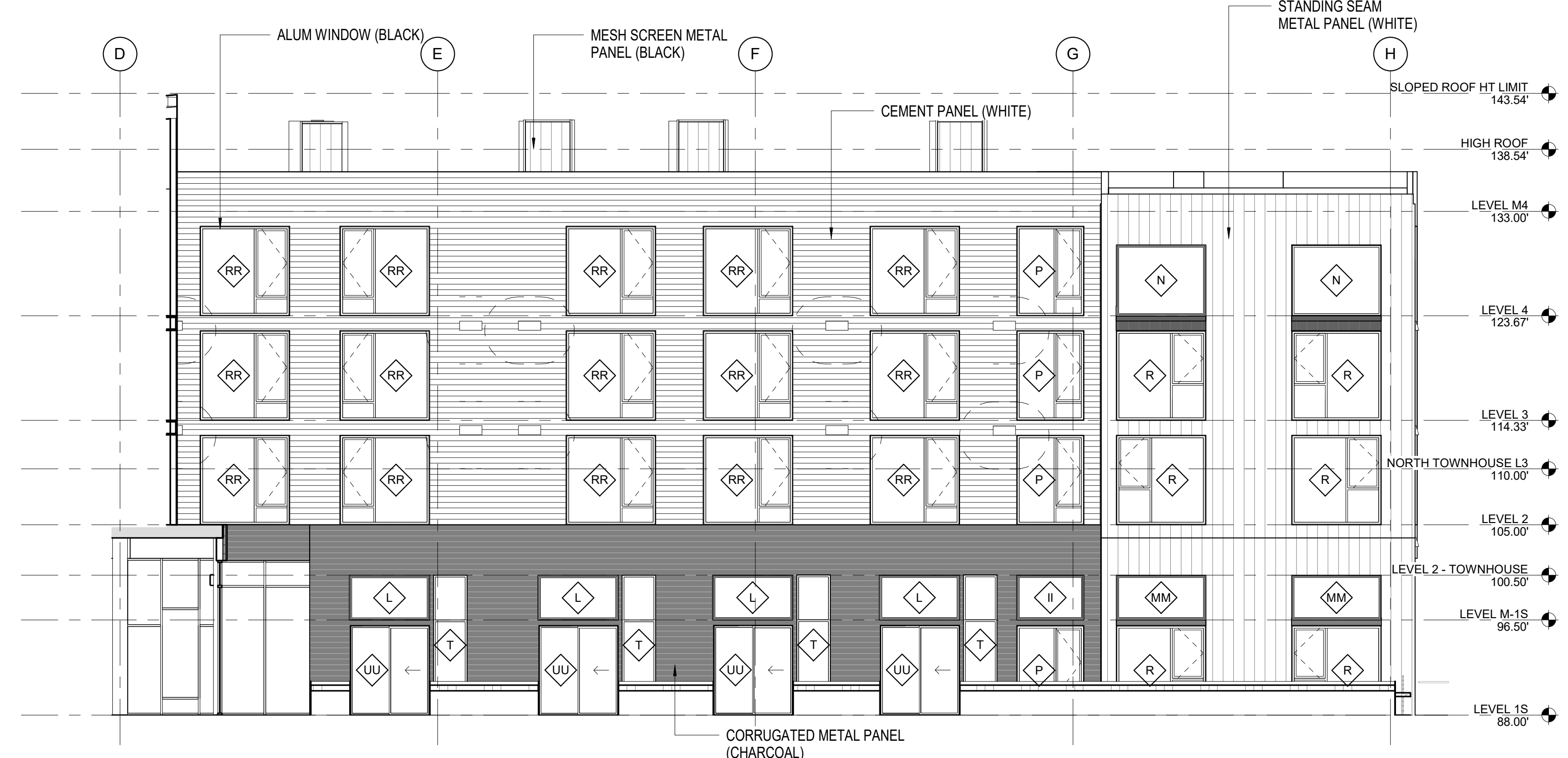
1 COURTYARD ELEVATION - NORTH  
 1/8" = 1'-0"



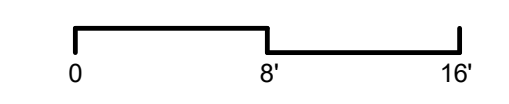
2 COURTYARD ELEVATION - WEST  
 1/8" = 1'-0"



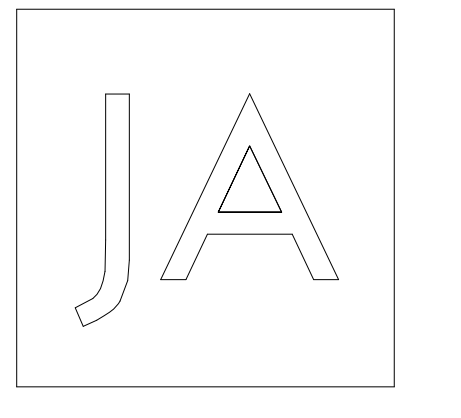
3 COURTYARD ELEVATION - EAST  
 1/8" = 1'-0"



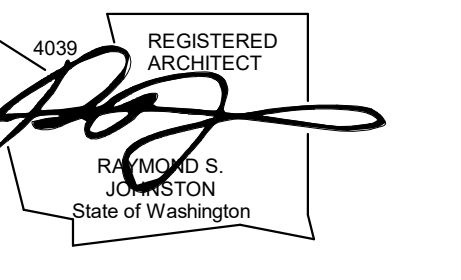
4 COURTYARD ELEVATION - SOUTH  
 1/8" = 1'-0"







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5 TOWNHOUSE - EAST COLOR  
 1/8" = 1'-0"



6 TOWNHOUSE - NORTH COLOR  
 1/8" = 1'-0"



7 TOWNHOUSE - SOUTH COLOR  
 1/8" = 1'-0"



8 TOWNHOUSE - WEST COLOR  
 1/8" = 1'-0"



1 COURTYARD ELEVATION - NORTH COLOR  
 1/8" = 1'-0"



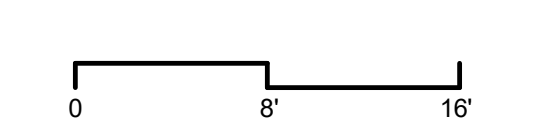
4 COURTYARD ELEVATION - WEST COLOR  
 1/8" = 1'-0"



2 COURTYARD ELEVATION - EAST COLOR  
 1/8" = 1'-0"



3 COURTYARD ELEVATION - SOUTH COLOR  
 1/8" = 1'-0"



MERCER ISLAND  
 MIXED USE  
 2845 WEST AVE USE  
 MERCER ISLAND, WA 98040

| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

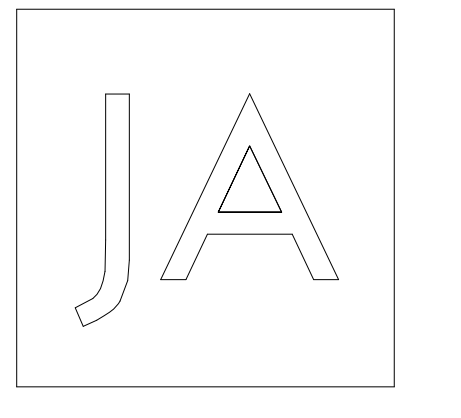
SHEET TITLE  
 ELEVATIONS  
 COURTYARD\_COLOR

SHEET NO.

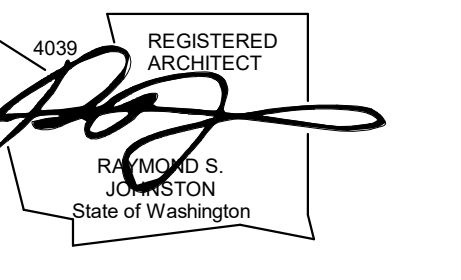
**A302.1**

Drawn \_\_\_\_\_ Author \_\_\_\_\_  
 Checked \_\_\_\_\_ Checker \_\_\_\_\_





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77TH AVE. NE

78TH AVE. NE

SE 29TH ST.

**MERCER ISLAND  
MIXED USE**  
2925 78TH AVE. SE  
MERCER ISLAND, WA 98040

| DRAWING ISSUE |                     |
|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 03/31/2020    | 50% CD              |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

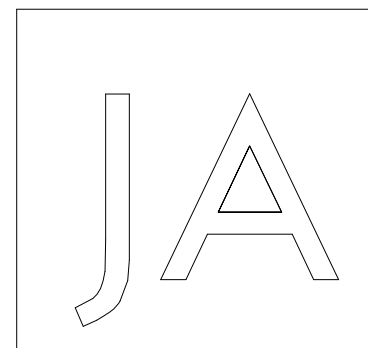
SHEET TITLE  
**AXON SE CORNER**

SHEET NO.  
**A303**

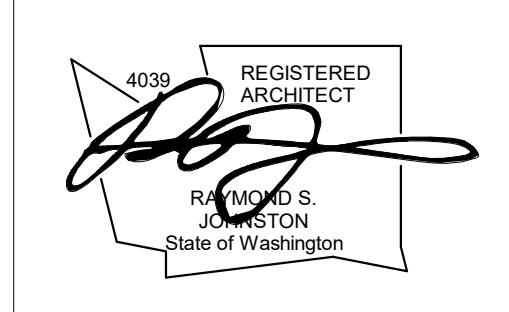
Drawn  
Checked

Author  
Checker





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78TH AVE. NE

SE 29TH ST.

77TH AVE. NE

**MERCER ISLAND  
MIXED USE**  
2925 29TH AVE. SE  
MERCER ISLAND, WA 98040

| DRAWING ISSUE |                     |
|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

SHEET TITLE

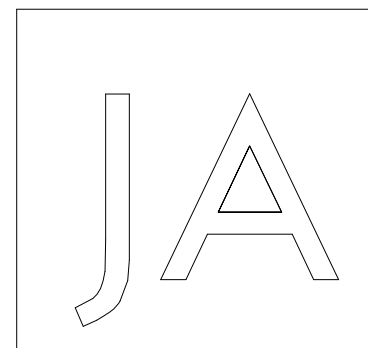
AXON NW CORNER

SHEET NO.

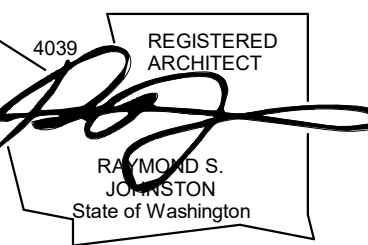
**A304**

Drawn Checked Author Checker





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**MERCER ISLAND  
MIXED USE**  
2845 87TH AVE SE  
MERCER ISLAND, WA 98040

| DRAWING ISSUE |                     |
|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

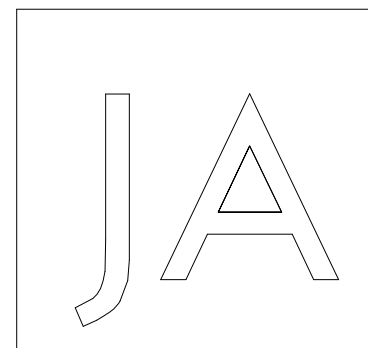
SHEET TITLE  
**RENDERING - SE  
PLAZA**

SHEET NO.  
**A305**

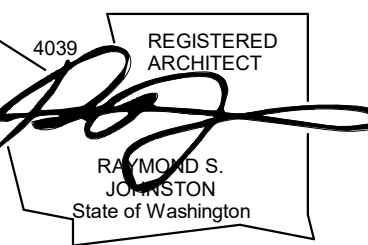
Drawn  
Checked

Author  
Checker





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**MERCER ISLAND  
MIXED USE**  
2845 87TH AVE USE  
MERCER ISLAND, WA 98040

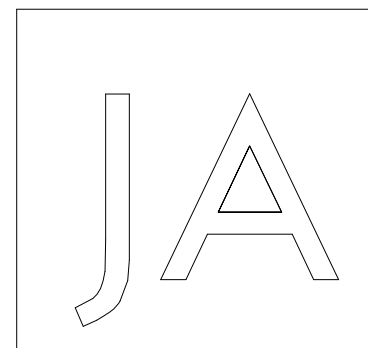
| DRAWING ISSUE |                     |
|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

SHEET TITLE  
**RENDERING - MID  
BLCOK PLAZA**

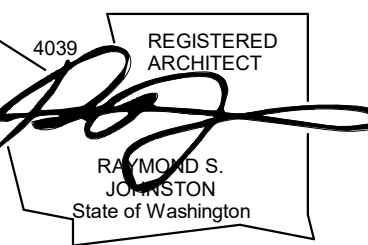
SHEET NO.  
**A306**

|         |         |
|---------|---------|
| Drawn   | Author  |
| Checked | Checker |





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**MERCER ISLAND  
 MIXED USE**  
 2245 57TH AVE SE  
 MERCER ISLAND, WA 98040

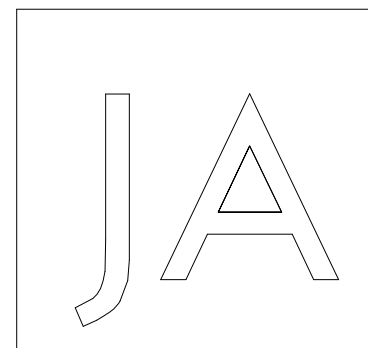
| DRAWING ISSUE |                     |
|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

SHEET TITLE  
**RENDERING - NE  
 CORNER**

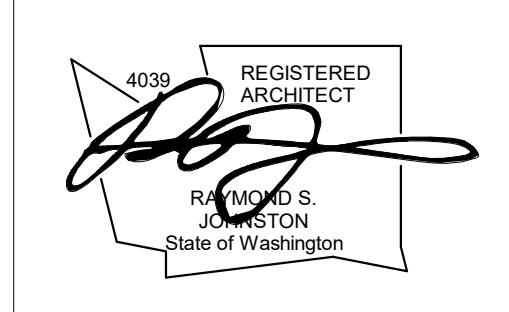
SHEET NO.  
**A307**

|         |         |
|---------|---------|
| Drawn   | Author  |
| Checked | Checker |





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**MERCER ISLAND  
MIXED USE**  
2845 30TH AVE USE  
MERCER ISLAND, WA 98040

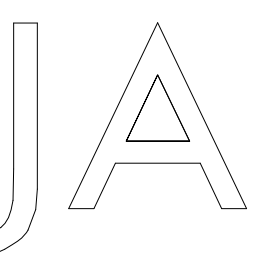
| DRAWING ISSUE |                     |
|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

SHEET TITLE  
**RENDERING - NW  
CORNER**

SHEET NO.  
**A308**

Drawn \_\_\_\_\_ Author \_\_\_\_\_  
Checked \_\_\_\_\_ Checker \_\_\_\_\_





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**MERCER ISLAND  
MIXED USE**  
3245 30TH AVE USE  
MERCER ISLAND, WA 98040

| DRAWING ISSUE |                     |
|---------------|---------------------|
| Date          | Description         |
| 12/24/2019    | LAND USE SET        |
| 06/26/2020    | LAND USE SET REV #1 |
| 12/04/2020    | LAND USE SET REV #2 |

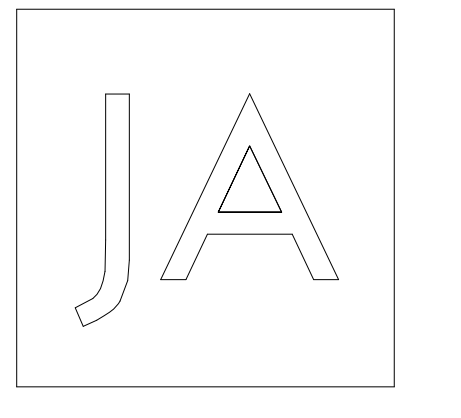
SHEET TITLE  
**RENDERING - NW  
PLAZA**

SHEET NO.  
**A309**

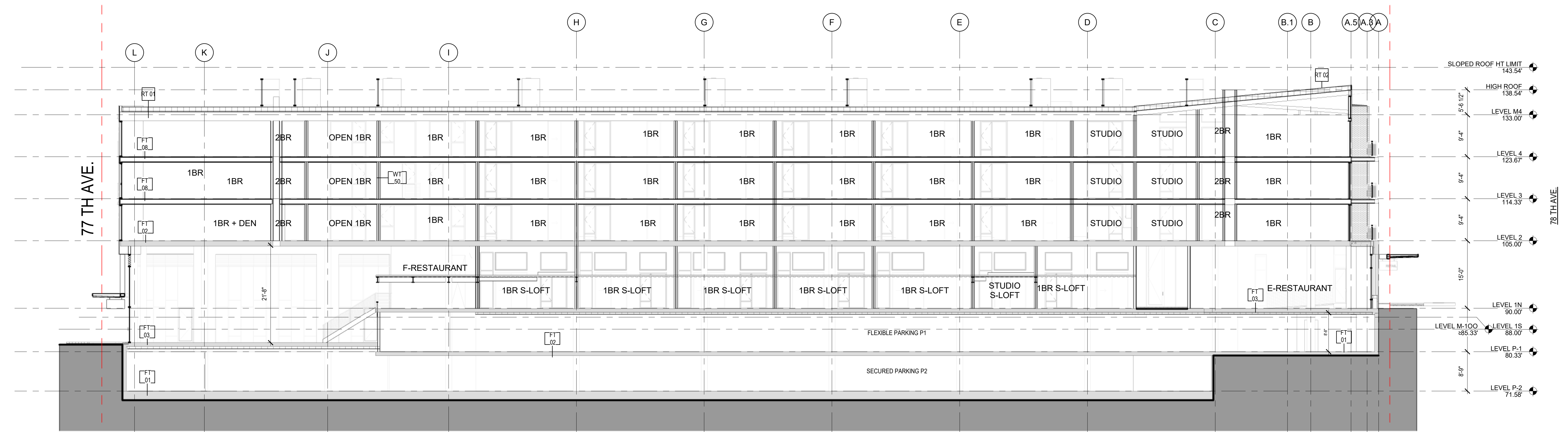
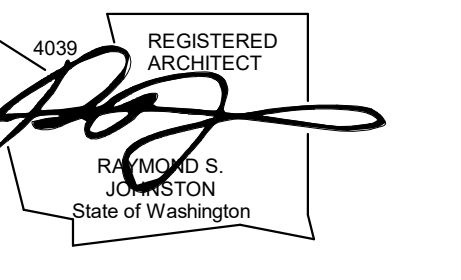
Drawn  
Checked

Author  
Checker

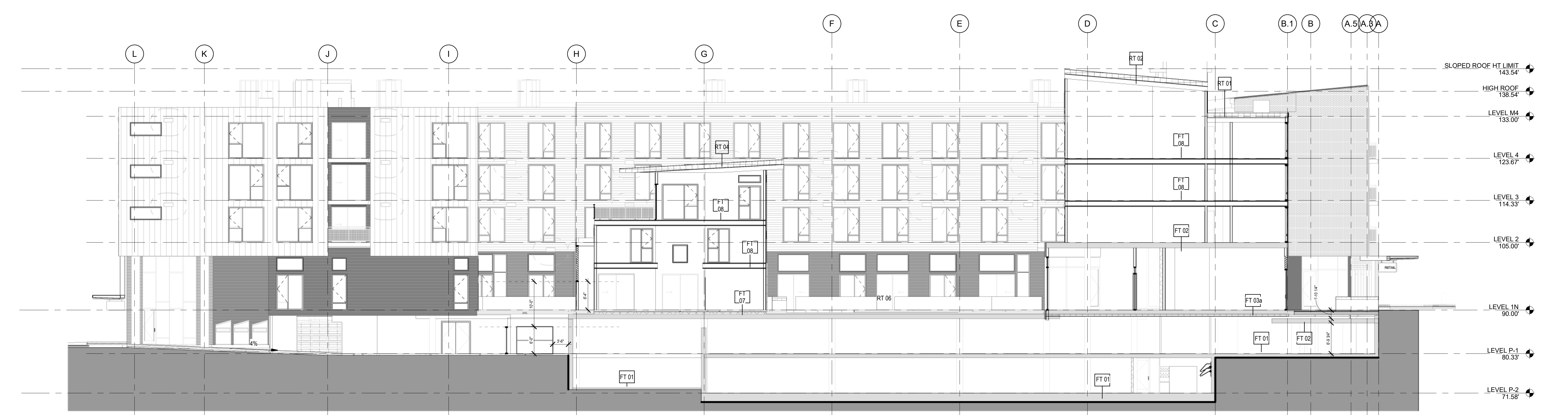




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2 E-W SECTION THRU RETAIL PARKING1  
 3/32" = 1'-0"



3 E-W SECTION THRU ALLEY  
 3/32" = 1'-0"

MERCER ISLAND  
 MIXED USE  
 2845 90TH AVE SE  
 MERCER ISLAND, WA 98040

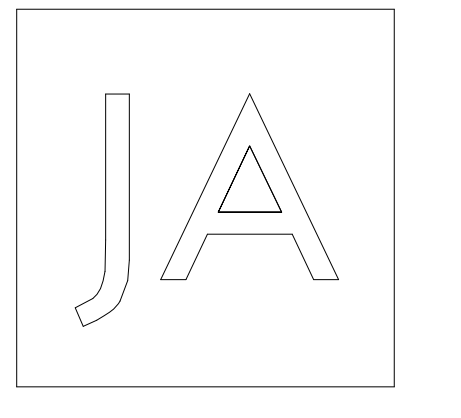
| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

SHEET TITLE  
 BUILDING SECTIONS - EAST-WEST

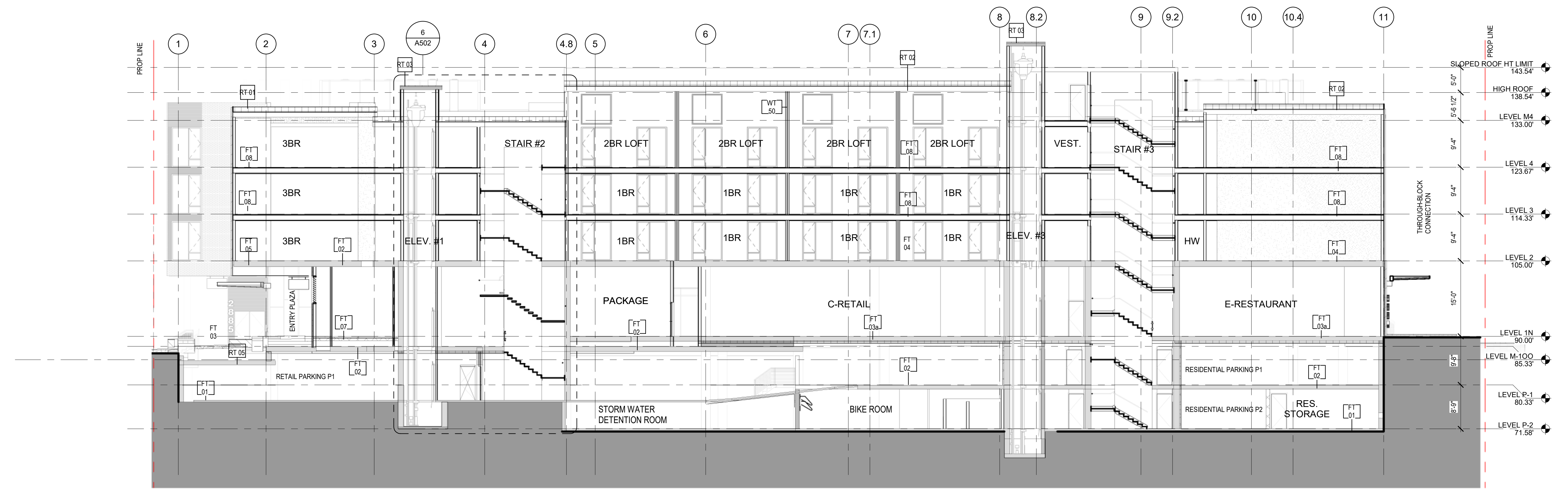
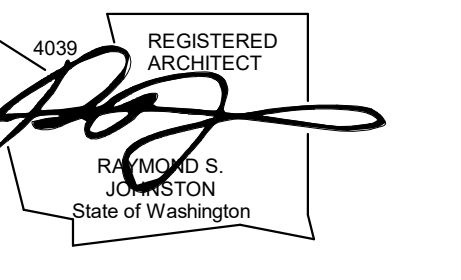
SHEET NO.  
**A400**

Drawn  
 Checked

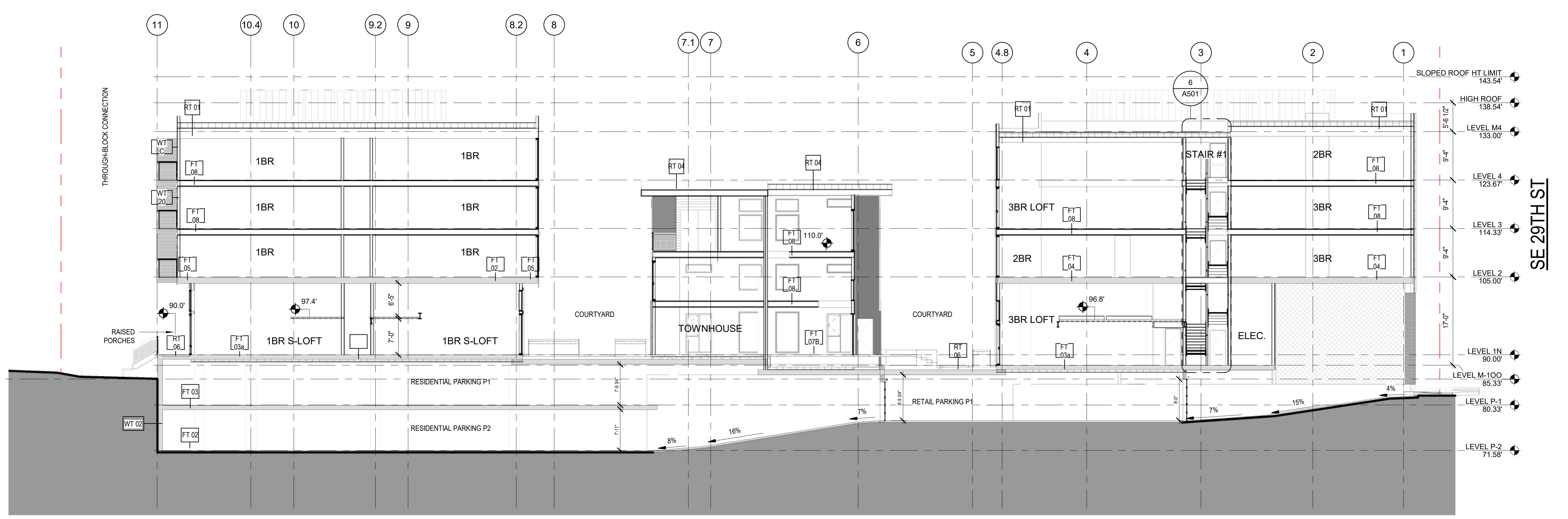




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 f 206.523.6362



1 N-S SECTION THRU EAST PORTION  
 3/32" = 1'-0"



2 N-S SECTION THRU PARKING RAMP  
 3/32" = 1'-0"

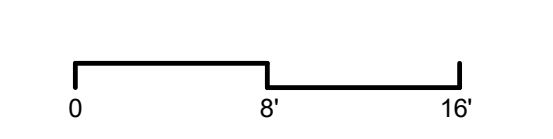
**MERCER ISLAND MIXED USE**  
 2845 29TH AVE USE  
 MERCER ISLAND, WA 98040

| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 03/31/2020 | 50% CD              |
| 06/26/2020 | LAND USE SET REV #1 |
| 12/04/2020 | LAND USE SET REV #2 |

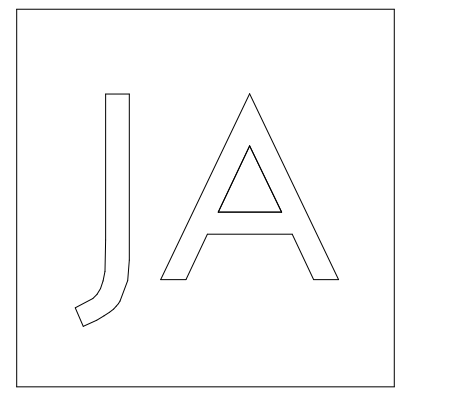
SHEET TITLE  
**BUILDING SECTIONS - NORTH-SOUTH**

SHEET NO.  
**A401**

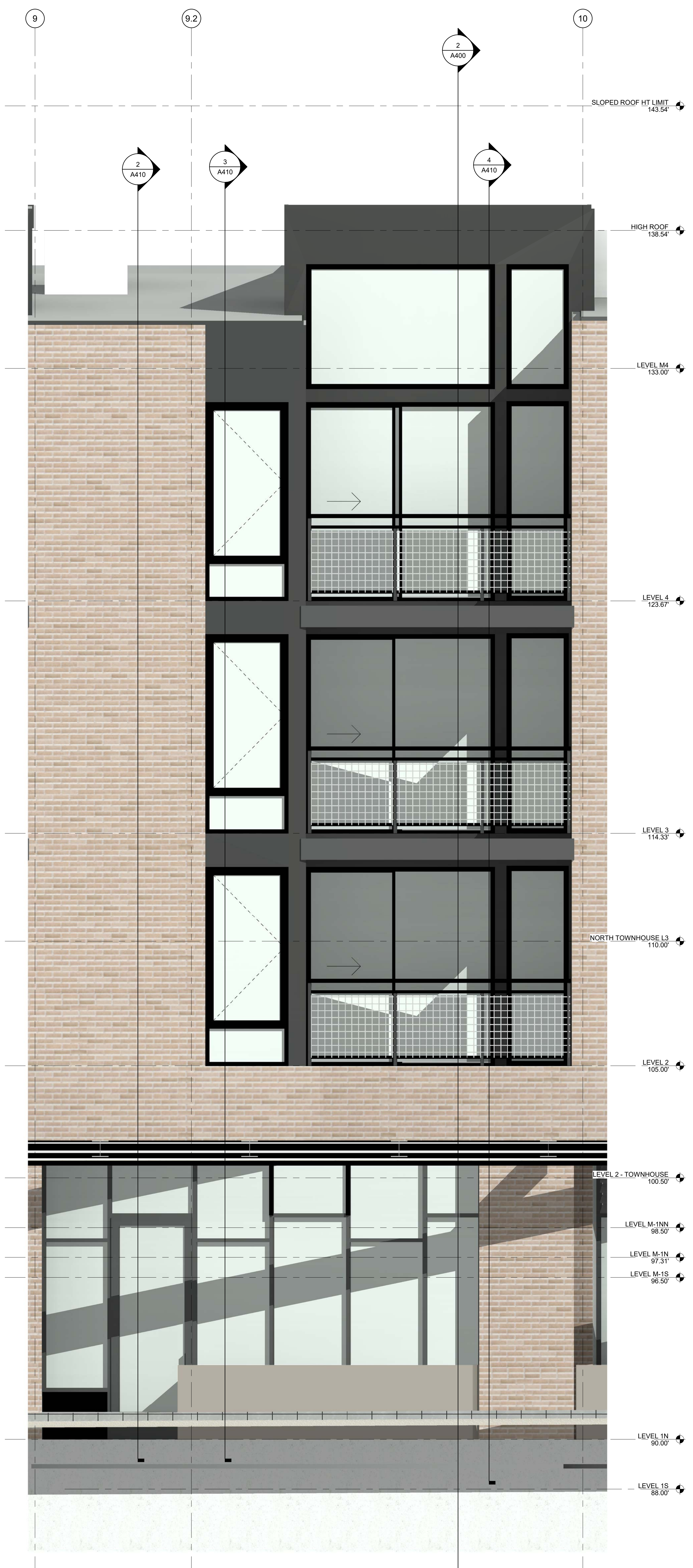
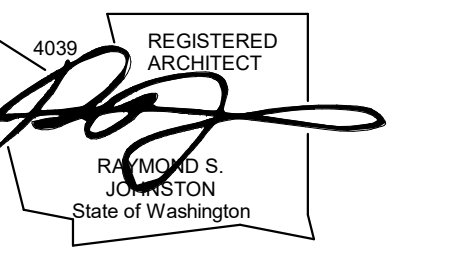
Drawn  
 Checked



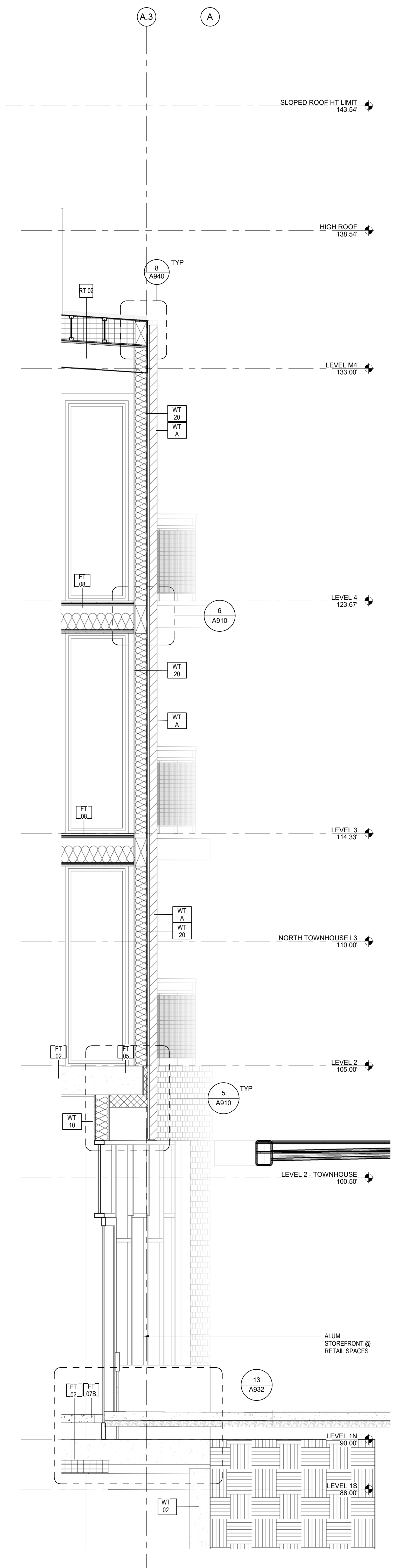




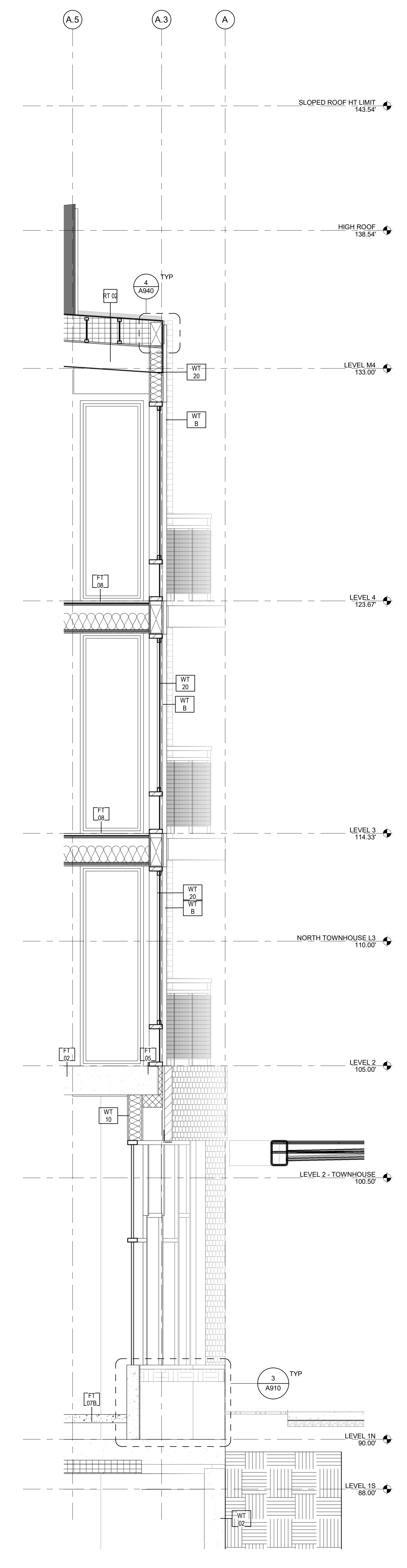
Johnston Architects, LLC  
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 Suite 200  
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 1 206.523.6150  
 1 206.523.8382



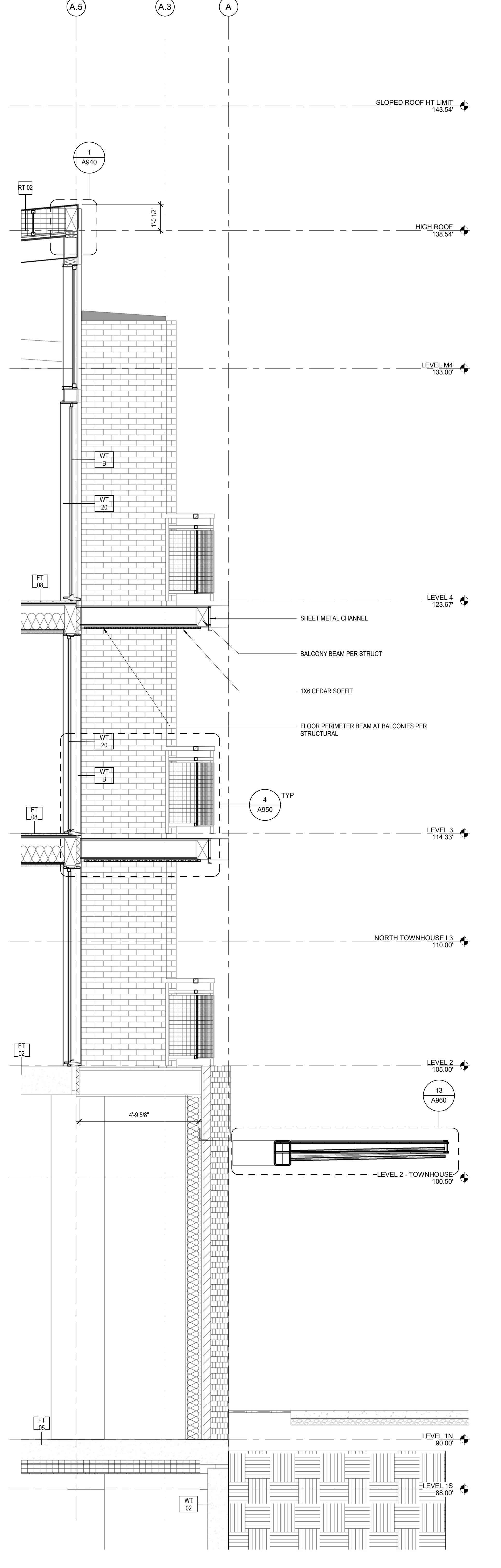
1 TYPICAL BAY - 78TH STREET  
 1/2" = 1'-0"



2 WS - 78TH ST @ BRICK  
 1/2" = 1'-0"



3 WS - 78TH ST @ WINDOW  
 1/2" = 1'-0"



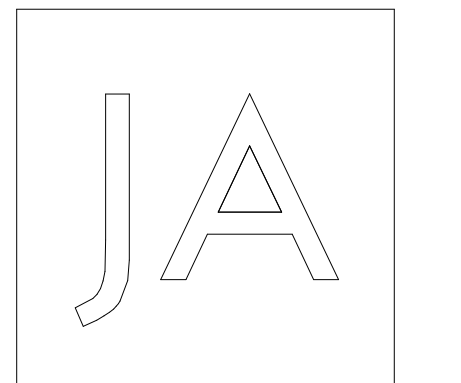
4 WS - 78TH ST @ BALCONIES  
 1/2" = 1'-0"

MERCER ISLAND  
 MIXED USE  
 2345 78TH AVE SE  
 MERCER ISLAND, WA 98040

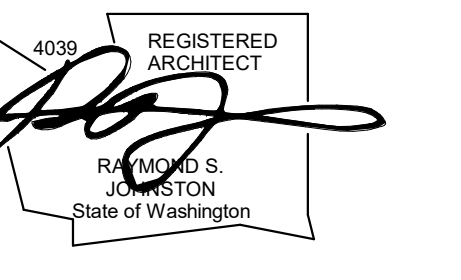
| DRAWING ISSUE |                          |
|---------------|--------------------------|
| Date          | Description              |
| 03/31/2020    | 50% CD                   |
| 01/25/2021    | BUILDING PERMIT / 90% CD |

SHEET TITLE  
 78TH ST WALL SECTIONS  
 SHEET NO.  
**A410**  
 Drawn \_\_\_\_\_ Author \_\_\_\_\_  
 Checked \_\_\_\_\_ Checker \_\_\_\_\_





Johnston Architects, LLC  
100 NE Northlake Way,  
Suite 200  
Seattle, WA 98105  
1 206.523.6150  
1 206.523.6362



**MERCER ISLAND  
MIXED USE**  
2845 29TH AVE SE  
MERCER ISLAND, WA 98040

| DRAWING ISSUE |                          |
|---------------|--------------------------|
| Date          | Description              |
| 03/31/2020    | 50% CD                   |
| 01/25/2021    | BUILDING PERMIT / 90% CD |

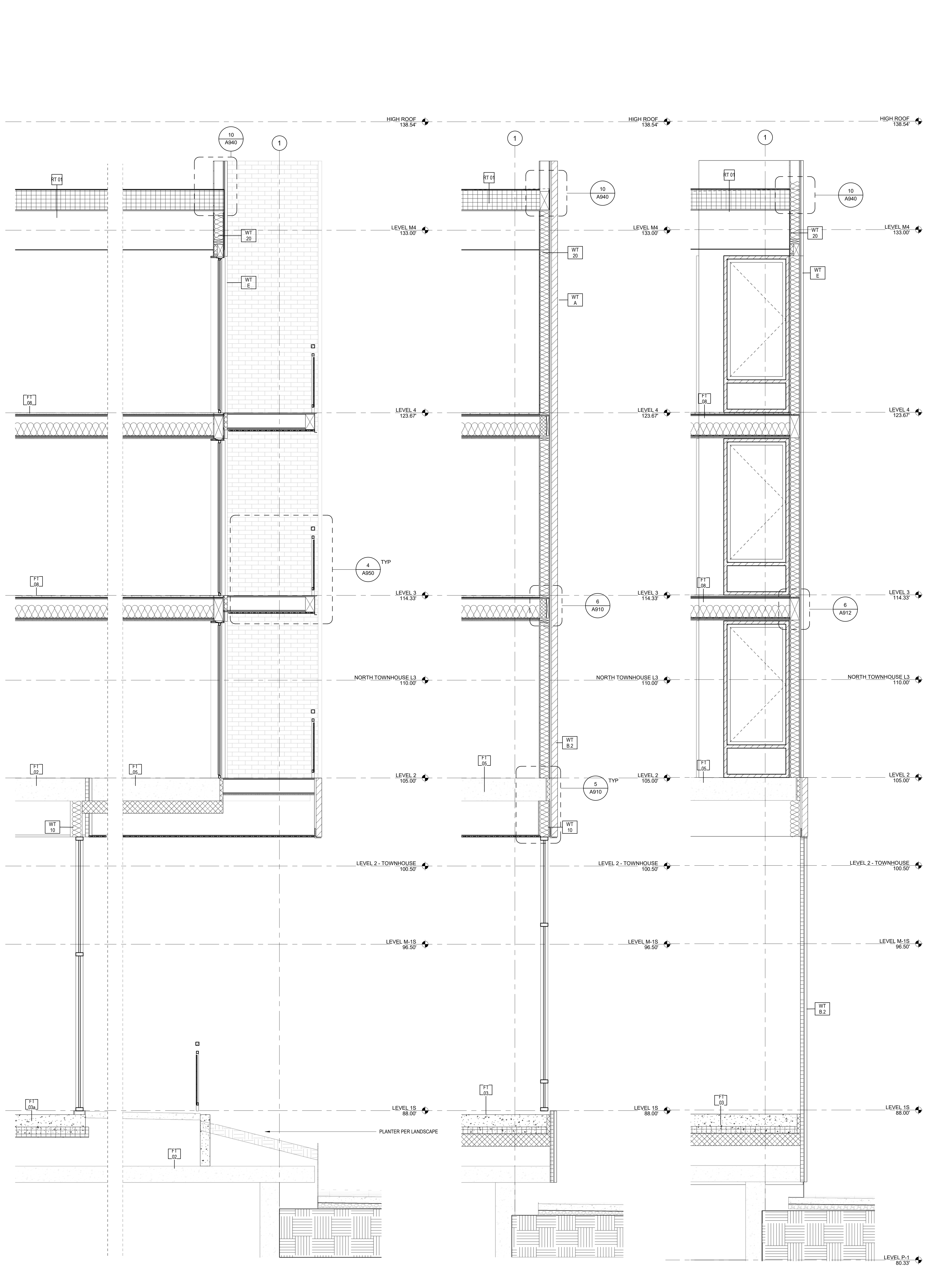
SHEET TITLE  
**SE 29TH ST WALL SECTIONS**

SHEET NO.  
**A411**

Drawn: [ ]  
Checked: [ ]  
Author: [ ]  
Checker: [ ]



**1** TYPICAL BAY - 29TH ST  
1/2" = 1'-0"

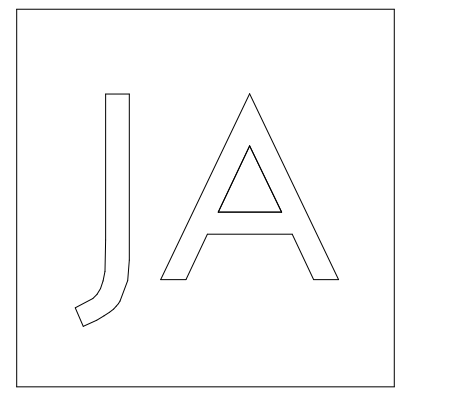


**2** WALL SECTION - 29TH ST @ BALCONY  
1/2" = 1'-0"

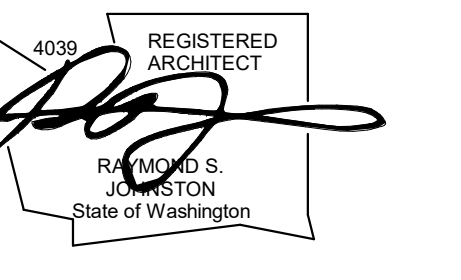
**3** WS-29TH @ WINDOW  
1/2" = 1'-0"

**4** WS-29TH @ BRICK  
1/2" = 1'-0"

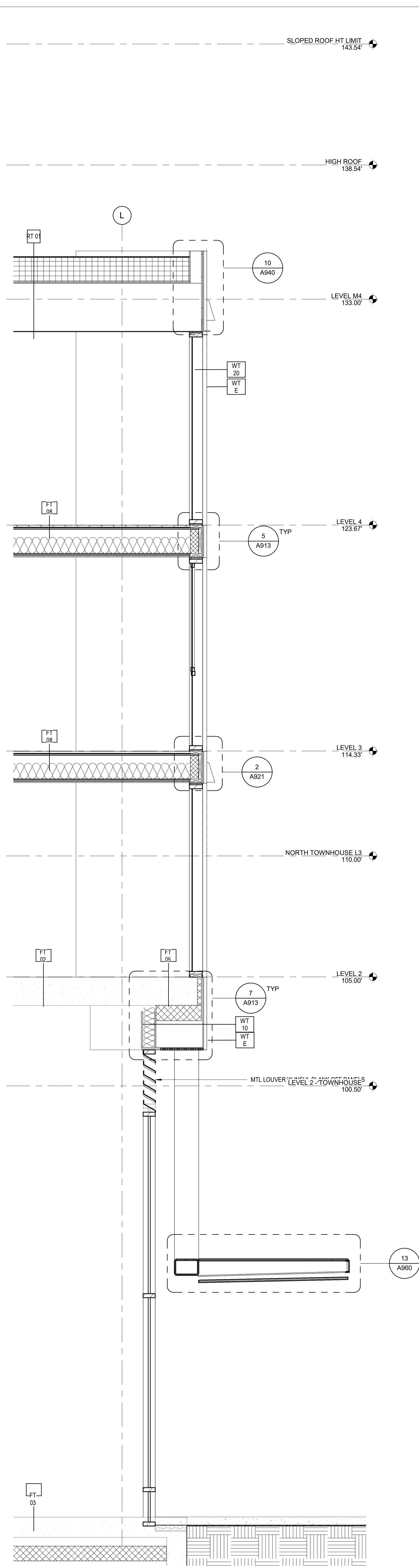




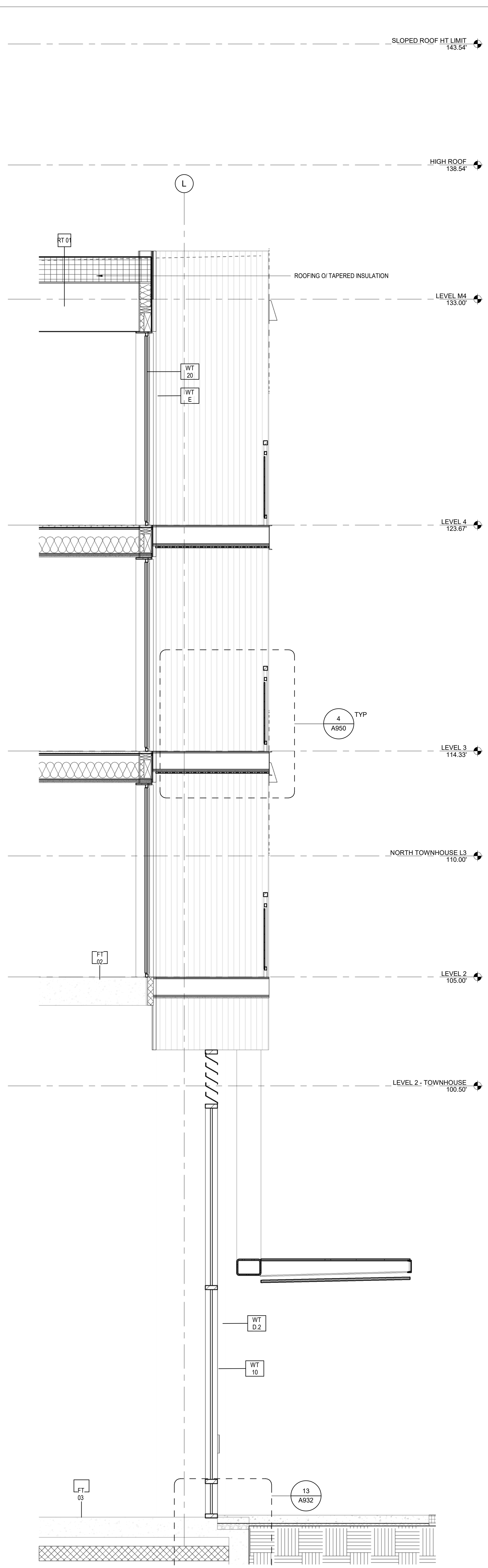
Johnston Architects, LLC  
 100 NE Northlake Way,  
 Suite 200  
 Seattle, WA 98105  
 1 206.523.9150  
 1 206.523.9382



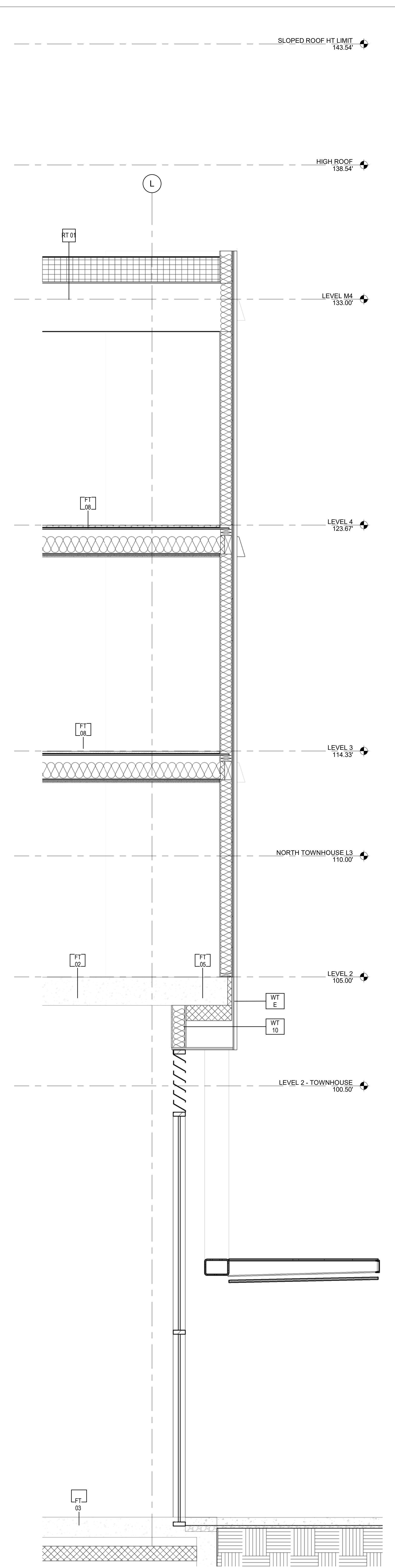
1 TYPICAL BAY - 77TH AVE  
 1/2" = 1'-0"



2 WS-77TH @ PROJ. BALCONY  
 1/2" = 1'-0"



3 WS-77TH @ INSET BALCONY  
 1/2" = 1'-0"



4 WS-77TH @ BRICK  
 1/2" = 1'-0"

MERCER ISLAND  
 MIXED USE  
 2845 77TH AVE USE  
 MERCER ISLAND, WA 98040

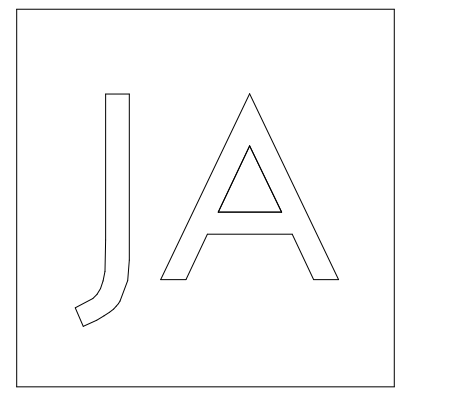
| Date       | Description              |
|------------|--------------------------|
| 12/24/2019 | LAND USE SET             |
| 03/31/2020 | 50% CD                   |
| 11/12/2020 | BUILDING PERMIT / 75% CD |
| 01/25/2021 | BUILDING PERMIT / 90% CD |

SHEET TITLE  
 77TH ST SE WALL  
 SECTIONS

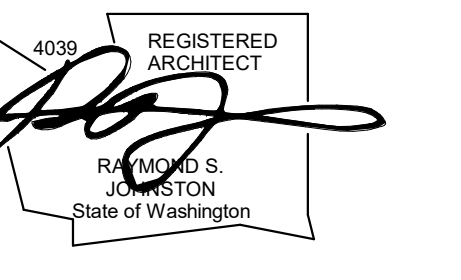
SHEET NO.  
**A412**

Drawn: \_\_\_\_\_  
 Checked: \_\_\_\_\_  
 Author: \_\_\_\_\_  
 Checker: \_\_\_\_\_

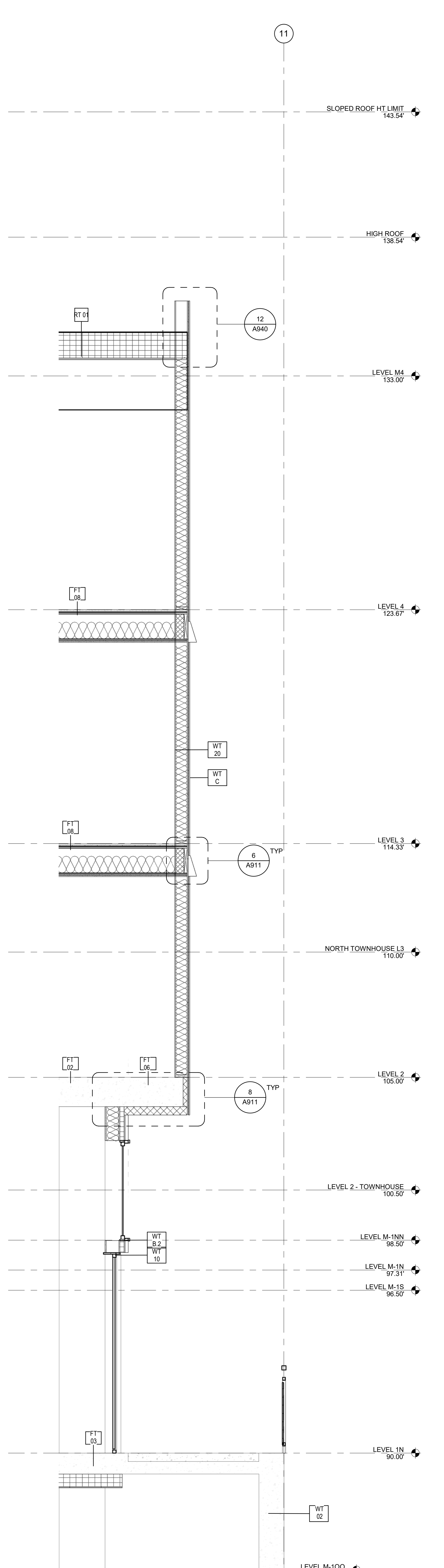




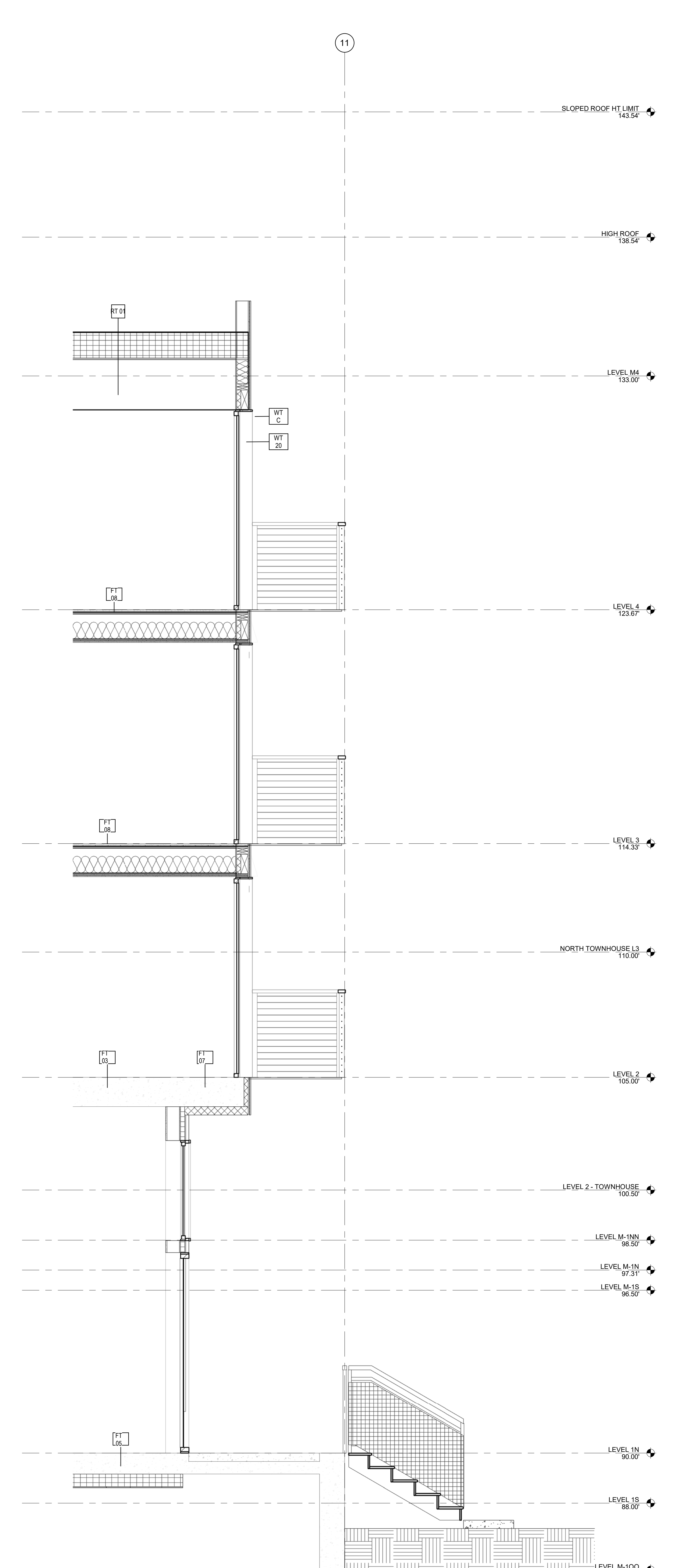
Johnston Architects, LLC  
 100 NE Northlake Way,  
 Suite 200  
 Seattle, WA 98105  
 t 206.523.6150  
 f 206.523.8382



1 TYPICAL BAY - THROUGH-BLOCK CONNECTION  
 1/2" = 1'-0"



2 WALL SECTION - THRU BLOCK  
 1/2" = 1'-0"



3 WALL SECTION - BALCONY  
 1/2" = 1'-0"

MERCER ISLAND  
 MIXED USE  
 2045 10TH AVE USE  
 MERCER ISLAND, WA 98040

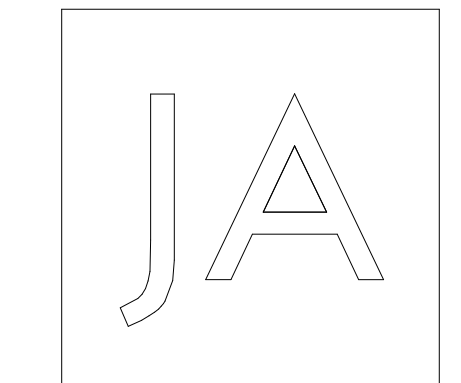
| DRAWING ISSUE |                          |
|---------------|--------------------------|
| Date          | Description              |
| 12/24/2019    | LAND USE SET             |
| 06/26/2020    | LAND USE SET REV #1      |
| 01/25/2021    | BUILDING PERMIT / 90% CD |

SHEET TITLE  
 THROUGH-BLOCK  
 WALL SECTIONS

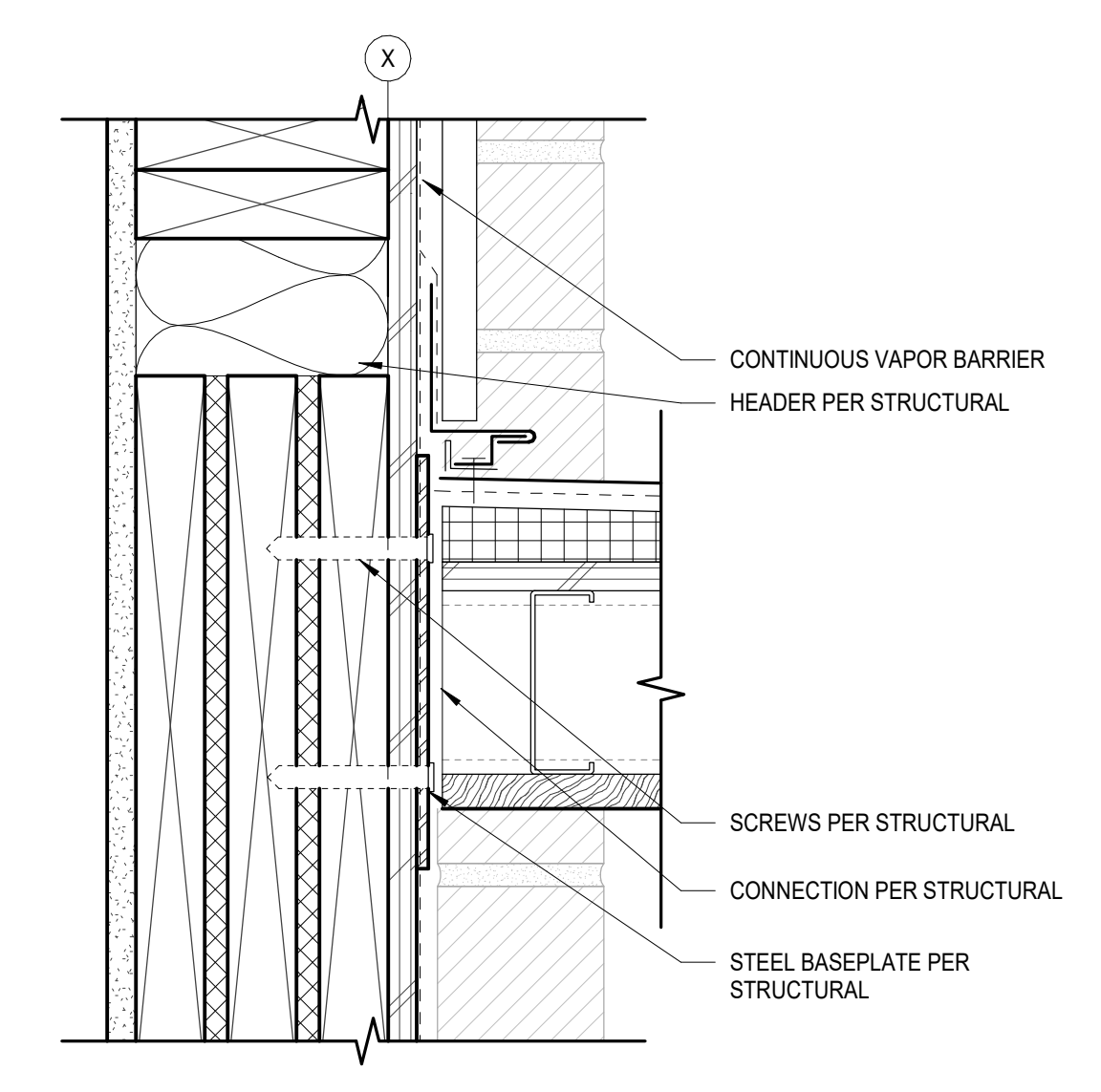
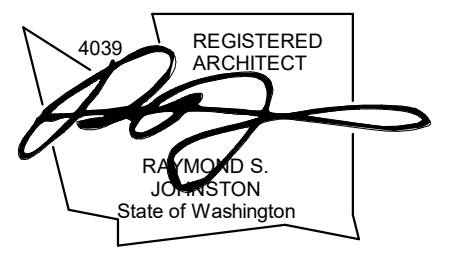
SHEET NO.  
**A413**

Drawn \_\_\_\_\_ Author  
 Checked \_\_\_\_\_ Checker

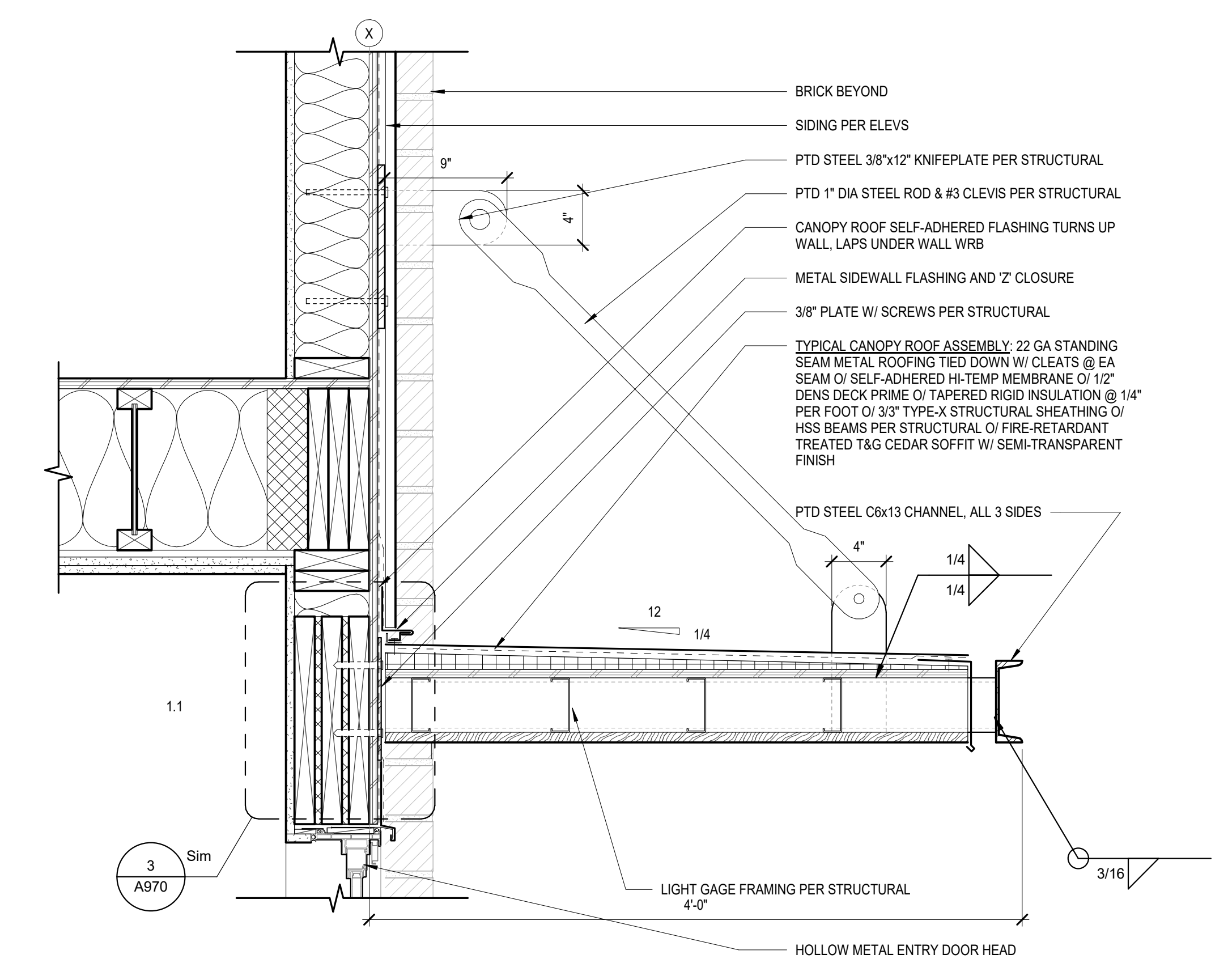




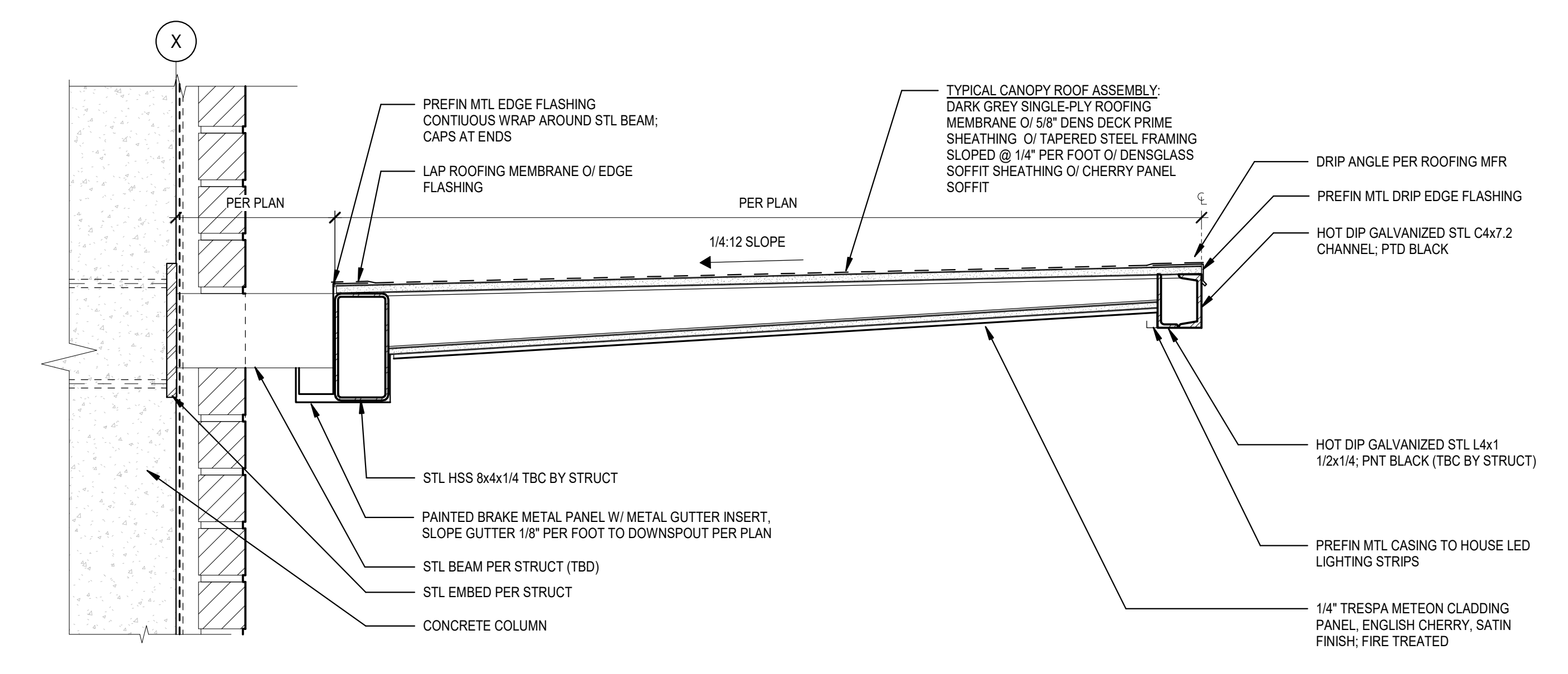
Johnston Architects, LLC  
 100 NE Northlake Way,  
 Suite 200  
 Seattle, WA 98105  
 t 206.523.6150  
 f 206.523.6362



**3 CANOPY CONNECTION**  
 3/8" = 1'-0"



**2 ENTRY CANOPY**  
 1 1/2" = 1'-0"



**1 CANOPY SECTION DETAIL 1**  
 1 1/2" = 1'-0"

**MERCER ISLAND MIXED USE**  
 2845 30TH AVE SE  
 MERCER ISLAND, WA 98040

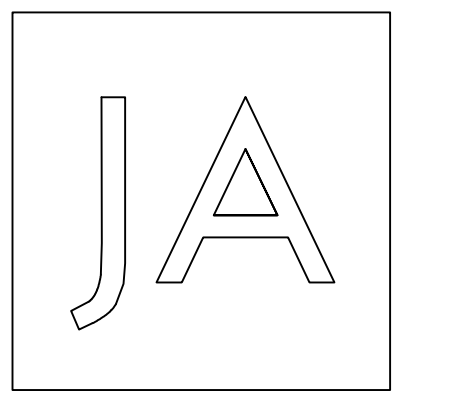
| Date       | Description         |
|------------|---------------------|
| 12/24/2019 | LAND USE SET        |
| 06/26/2020 | LAND USE SET REV #1 |

SHEET TITLE  
**MISC - CANOPY DETAILS**

SHEET NO.  
**A970**

Drawn Checked Author Checker





Johnston Architects, PLLC  
100 NE Northlake Way,  
Suite 200  
Seattle, WA 98105  
1 206.263.6150  
1 206.263.8382



Electrical Consultants, Inc.  
1901 S 36th Avenue West, Suite E  
Lynnwood, Washington 98036  
Phone (425) 775-1799 FAX (425) 774-9870

**DETAIL NOTES**

SEE POLE BASE DETAIL THIS SHEET.

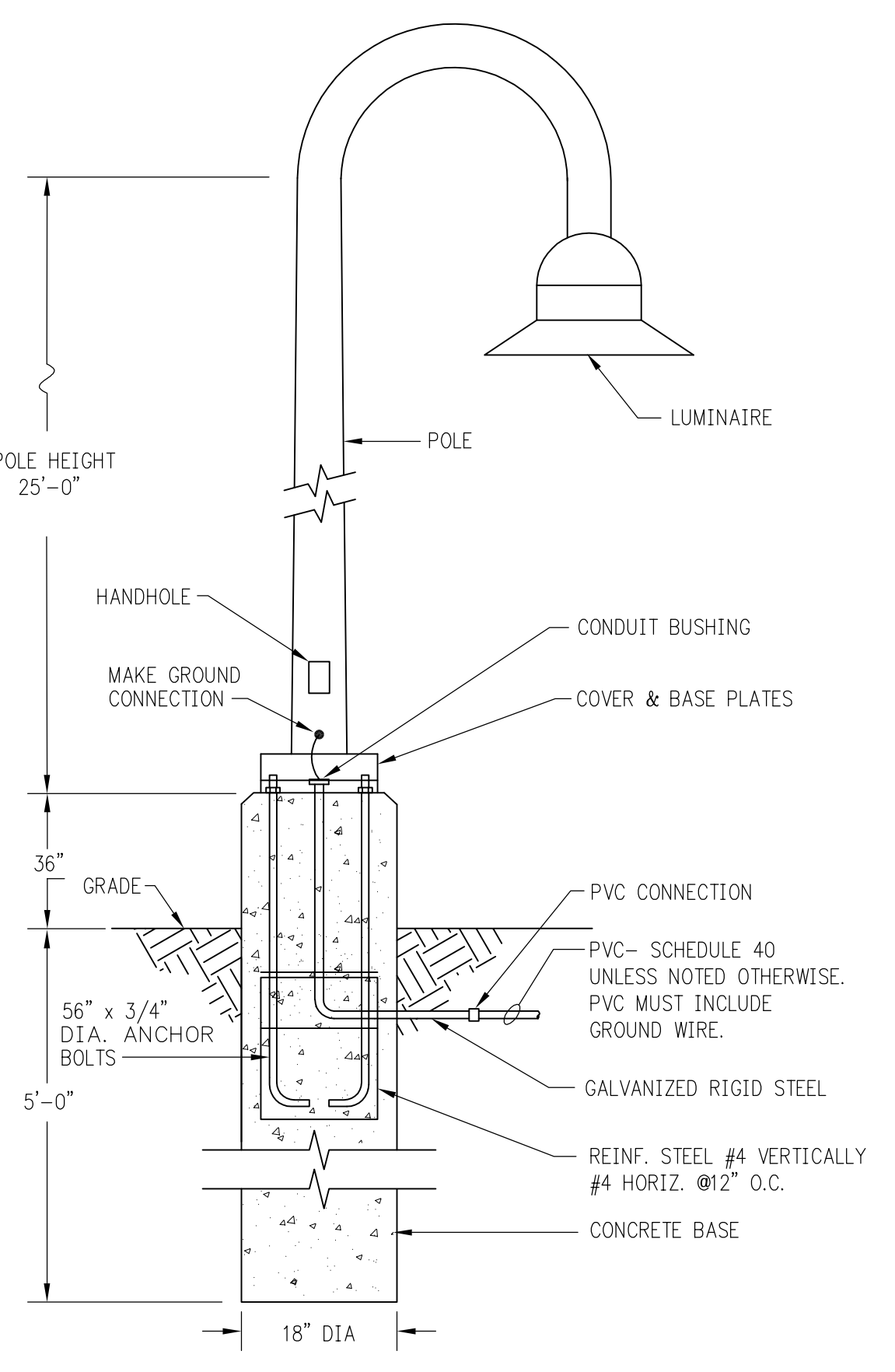
**LIGHTING FIXTURE SCHEDULE**

| TYPE           | DESCRIPTION   | LAMPS     | MOUNTING                 | MANUFACTURER                      | VA   |
|----------------|---|-----------|--------------------------|-----------------------------------|------|
| <b>OUTDOOR</b> |   |           |                          |                                   |      |
| S1             | CATENARY SYSTEM INCLUDING FIXTURES, TURNBUCKLE, SUSPENSION CABLE, POWER CABLE FOR OUTDOOR OR INDOOR ILLUMINATION. OUTDOORS WET LOCATION LISTED WITH CORROSION RESISTANT ALUMINUM. | 4000K LED | CATENARY                 | HK LIGHTING ZXL11-CAT-12-7W-30-48 | 7.8  |
| S2             | LED ALUMINUM ALLOY POLE TOP LUMINAIRE   | 4000K LED | POLE 12'-2"              | SEGA 773910K3                     | 19   |
| S3             | 6" STAINLESS STEEL BOLLARD WITH SATIN FINISH  | 4000K LED | SURFACE MOUNT WITH BOLTS | FORMAS-SURFACES LCO-604-LED-NS    | 19.2 |

- NOTES:**
- LIGHTING FIXTURE FINISHES SHALL BE CONFIRMED WITH ARCHITECT DURING SUBMITTALS.
  - SUBSTITUTIONS:** SUBSTITUTIONS ARE ALLOWED, UNLESS NOTED OTHERWISE. PRIOR APPROVALS DURING BID WILL NOT BE REVIEWED. THE CONTRACTOR & LIGHTING SUPPLIER SHALL BE RESPONSIBLE TO PROVIDE EQUAL PRODUCTS (QUALITY, APPEARANCE, WARRANTY, AND EQUAL TO THE SPECIFIED MANUFACTURER). THE SUBSTITUTED FIXTURES WILL BE REVIEWED DURING SUBMITTALS, AND IS UP TO THE ENGINEER/ARCHITECT TO DETERMINE THE EQUALITY. IF DISAPPROVED, THE CONTRACTOR IS RESPONSIBLE TO PROVIDE THE SPECIFIED PRODUCT (OR OTHER APPROVED EQUAL) AT NO ADDITIONAL COST.
  - FINISHES ARE TO BE SELECTED BY ARCHITECT.

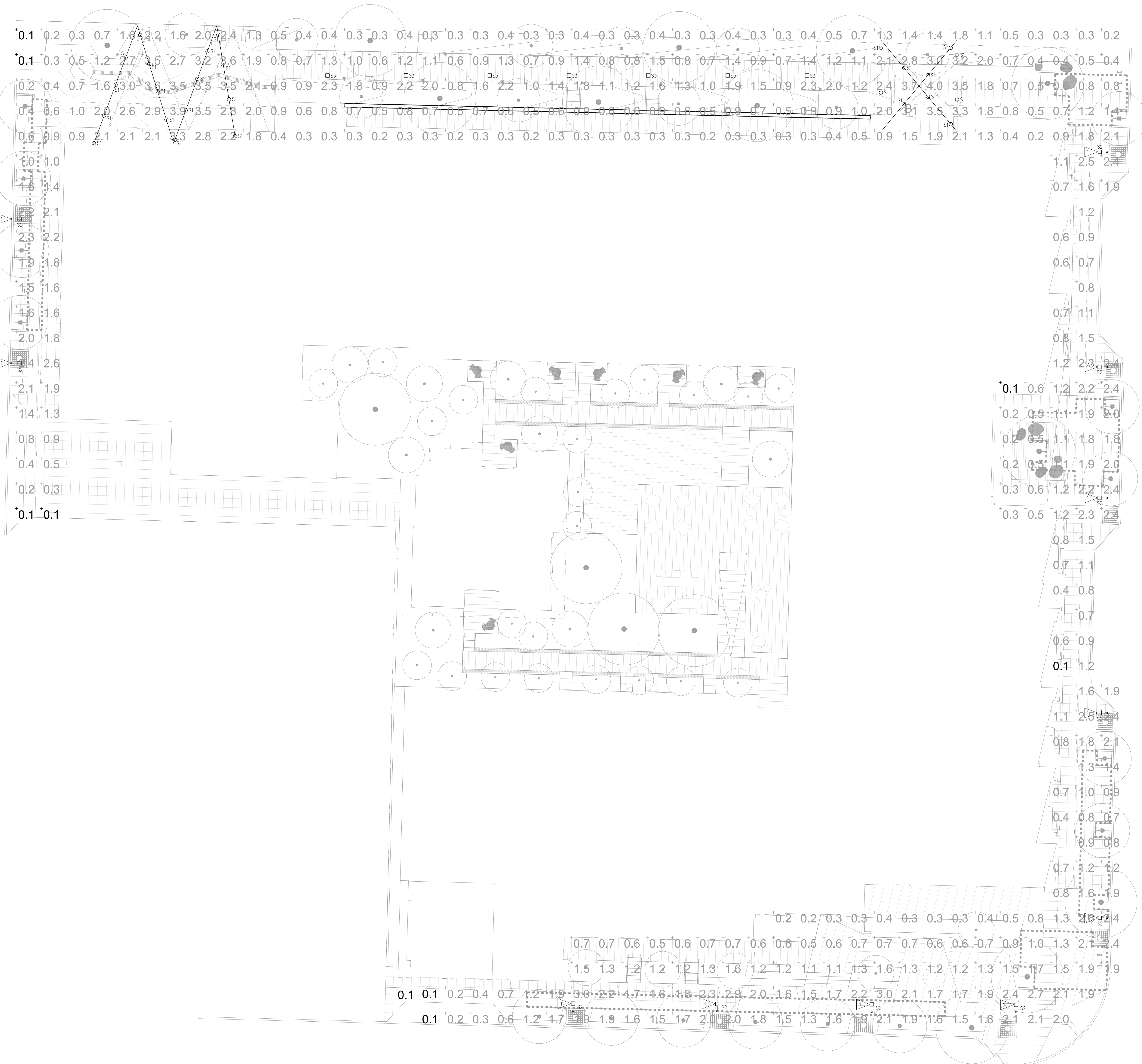
**STATISTICS**

| SYMBOL | AVG    | MAX.   | MIN.   | AVG/MIN | MAX/MIN |
|--------|--------|--------|--------|---------|---------|
| +      | 1.2 FC | 4.0 FC | 0.1 FC | 40:0:1  | 12:0:1  |



**POLE BASE DETAIL**

SCALE: NOT TO SCALE



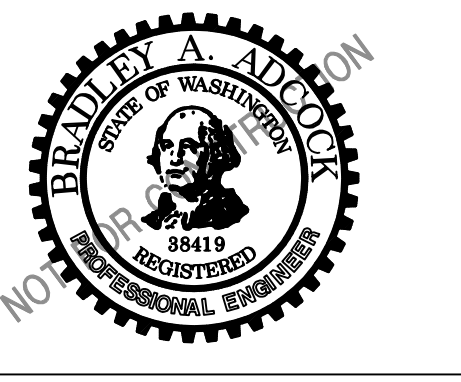
**SITE LIGHTING PHOTOMETRICS**

SCALE: 1" = 10'-0"

**MERCER ISLAND MIXED USE**  
2805 10TH AVE SE  
MERCER ISLAND, WA 98040

**DRAWING ISSUE**

| Date       | Description        |
|------------|--------------------|
| 12/24/2019 | LAND USE SET       |
| 03/13/2020 | PROGRESS SET       |
| 03/31/2020 | 50% CD             |
| 04/30/2020 | LAND USE SET REV 1 |
| 06/26/2020 | PROGRESS SET       |



SHEET TITLE  
**SITE LIGHTING PHOTOMETRICS**

SHEET NO.  
**EP100**

Drawn  
Checked

3/31/2020 - 50% CD SET

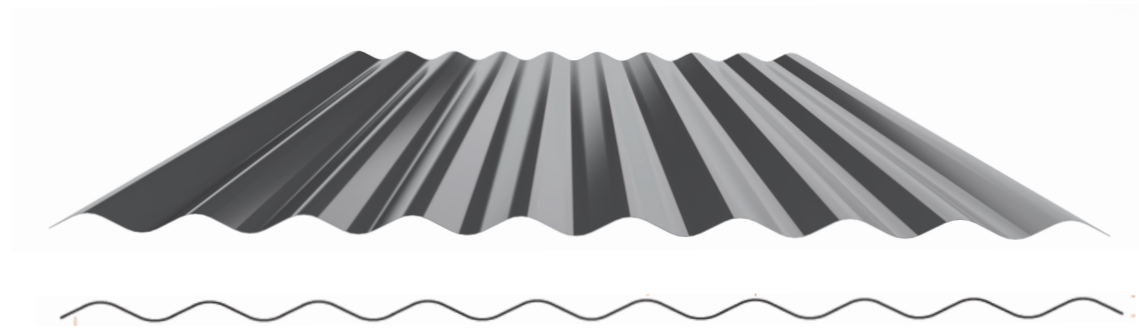




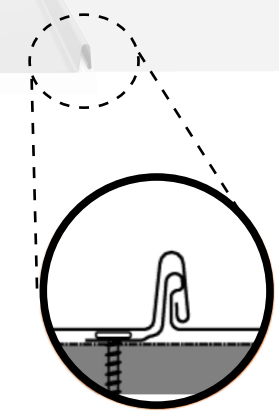
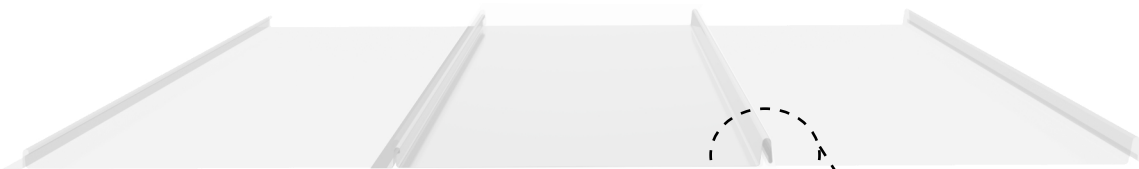


### METAL SIDING

CORRUGATED METAL PANEL- CHARCOAL



STANDING SEAM METAL - WHITE



ENLARGED SEAM PROFILE

### MASONRY

RED/BROWN



### WOOD

HIGH PRESSURED LAMINATE PANEL



### COMPOSITE

CEMENT PANEL- WHITE

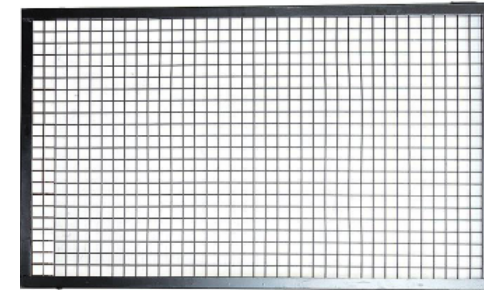


### DETAIL METAL ELEMENTS

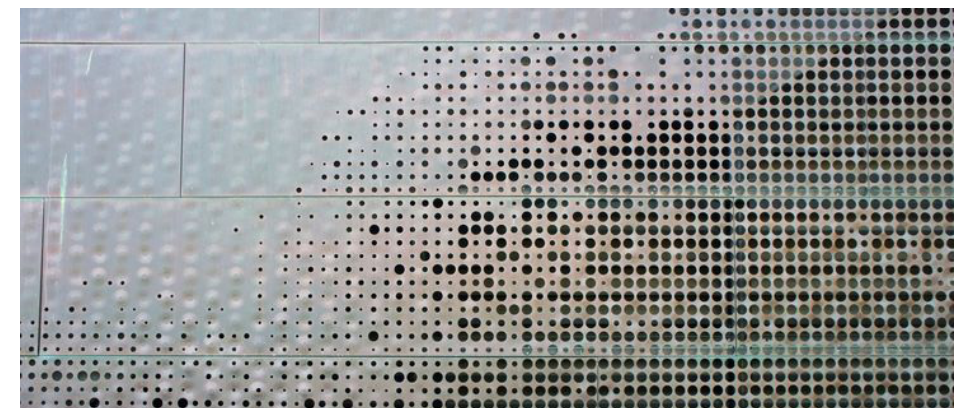
FLAT METAL PANEL- BLACK



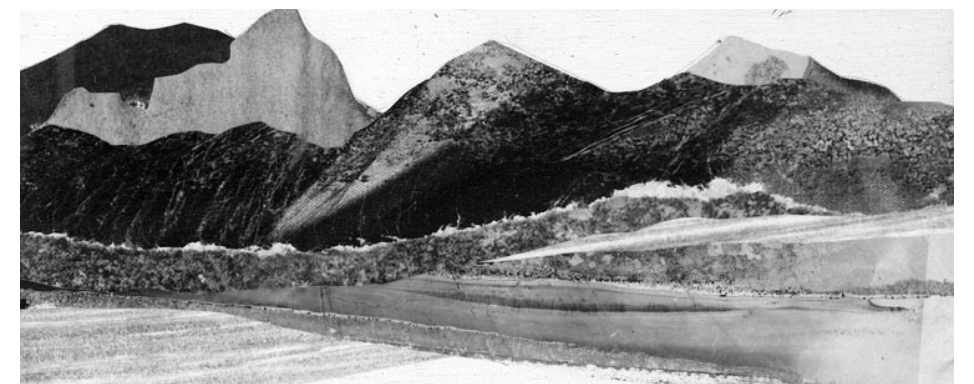
METAL ROD RAILING- BLACK



PERFORATED METAL- CHARCOAL



PERFORATED METAL- INSPIRATION IMAGE





# SITE FURNISHINGS

## SEAT STEPS AND PLINTHS



## BIKE RACKS

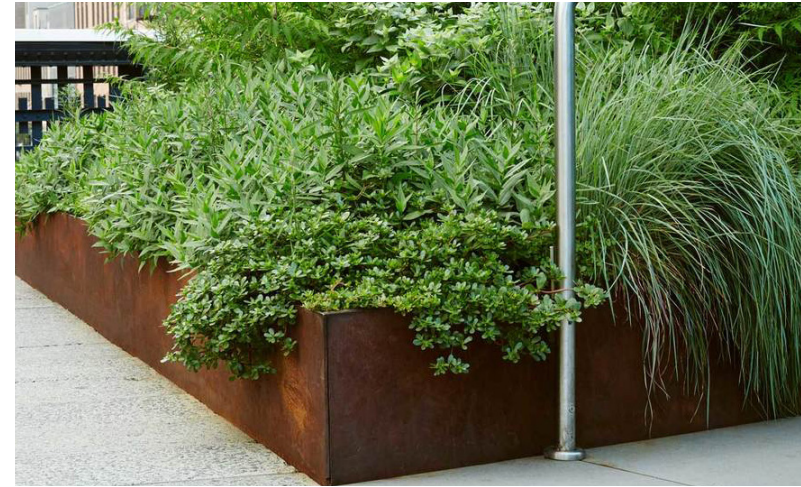


## PICNIC TABLE



# PLANTERS

## PLANTING CHARACTER



# PAVING

## CONCRETE - CUSTOM JOINTS



## CONCRETE - STANDARD



## CONCRETE PAVERS





# SITE TREES

ACER RUBRUM



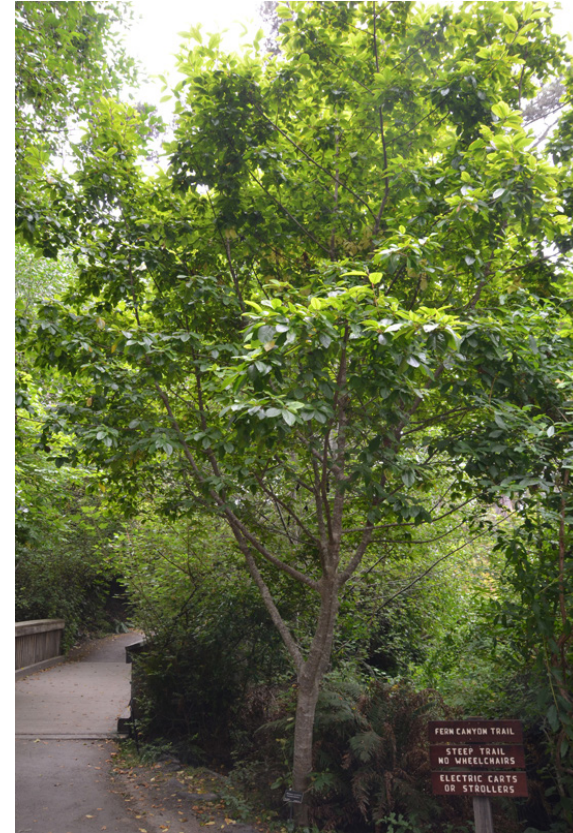
NYSSA SYLVATICA



MAGNOLIA DENUDATA



RHAMNUS PURSHIANA



FRAXINUS LATIFOLIA



PARROTIA PERSICA 'VANESSA'





# CITY OF MERCER ISLAND

## COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | [www.mercerisland.gov](http://www.mercerisland.gov)



## MITIGATED DETERMINATION OF NON-SIGNIFICANCE (MDNS)

|                          |  |
|--------------------------|--|
| Application No:          | <b>SEP20-002 (DSR20-001)</b>   |
| Description of proposal: | <b>A State Environmental Policy Act (SEPA) review and environmental determination associated with the design review of major new construction consisting of one new four-story mixed-use building with two underground levels of parking. The proposed scope of work includes demolition of an existing one-story commercial building.</b> |
| Proponent:               | <b>Scheer Chan and Lu Zhang of Johnston Architects on behalf of Xing Hua Group Ltd.</b>  |
| Location of proposal:    | <b>2750 77th Ave SE &amp; 2885 78th Ave SE / Mercer Island, 98040</b>  |
| Lead agency:             | <b>City of Mercer Island</b>   |
| Project Documents:       | <b>Please follow this file path to access the associated documents for this project: <a href="https://mieplan.mercergov.org/public/DSR20-001">https://mieplan.mercergov.org/public/DSR20-001</a> &amp; <a href="https://mieplan.mercergov.org/public/SEP20-002">SEP20-002</a></b>  |

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). The decision was made after review of a completed environmental checklist; a transportation impact analysis prepared by Transpogroup, dated October 2020; a stormwater detention memo prepared by KPFF, dated December 17, 2019; and an Arborist Report prepared by American Forest Management, dated January 16, 2020. This information is available to the public online via <https://mieplan.mercergov.org/public/DSR20-001> & [SEP20-002](https://mieplan.mercergov.org/public/SEP20-002).

- \_\_\_\_\_ There is no comment period for this MDNS.
- ✓ \_\_\_\_\_ This MDNS is issued after using the optional DNS process in WAC 197-11-355. There is no further comment period on the DNS.
- \_\_\_\_\_ This DNS is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by N/A at 5:00 pm.

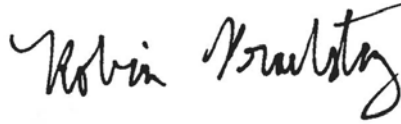
Responsible Official: Robin Proebsting, Senior Planner  
 City of Mercer Island  
 9611 SE 36<sup>th</sup> Street  
 Mercer Island, WA 98040  
 Phone: (206) 275-7717



Email: [robin.proebsting@mercerisland.gov](mailto:robin.proebsting@mercerisland.gov)

Date: **January 25, 2021**

Signature:



### **APPEAL INFORMATION**

This decision to issue a Mitigated Determination of Non-significance (MDNS) rather than to require an EIS may be appealed pursuant to Section 19.21 of the Mercer Island Unified Land Development Code, Environmental procedures.

- X** Any party of record may appeal this determination to the City Clerk at 9611 SE 36<sup>th</sup> Street Mercer Island, WA 98040 no later than **5pm on February 8, 2021** by filing a timely and complete appeal application and paying the appeal fee. You should be prepared to make specific factual objections. Contact the City Clerk to read or ask about the procedures for SEPA appeals. To reverse, modify or remand this decision, the appeal hearing body must find that there has been substantial error, the proceedings were materially affected by irregularities in procedure, the decision was unsupported by material and substantial evidence in view of the entire record, or the decision is in conflict with the city's applicable decision criteria.

     There is no agency appeal.

### **MITIGATION CONDITIONS**

The following conditions are required pursuant to RCW 43.21C.060 and WAC 197-11-350 to mitigate probable and unavoidable impacts identified for this proposal. All conditions of mitigation must be completed prior to building permit final approval.

1. Prior to building permit approval for the above-described project, the applicant shall submit a Monitoring & Inadvertent Discovery Plan prepared by a professional archeologist. The MIDP should outline what areas of the project, and at what depths the project should be directly monitored by a professional archaeologist.



## Robin Proebsting

---

**From:** Mitchell Atencio <matencio@soundpublishing.com>  
**Sent:** Tuesday, February 4, 2020 2:31 PM  
**To:** Nicole Gaudette  
**Subject:** Xing Hua Mixed-Use Development

Hi Nicole,

My name is Mitchell Atencio. I'm a new reporter with the Mercer Island Reporter. I am going to be writing a quick brief about the Xing Hua Mixed-Use Development proposal. I found a link from the [mercergov.org](http://mercergov.org) on the Let's Talk page, it seems like there's plenty of info for me there, but I wanted to reach out and see if there were any quotes, or people you'd recommend I reach out to for an interview.

I would also love to be kept in the loop on the date of the public hearing, if possible!

Thanks so much,

--

**Mitchell Atencio**  
Reporter (he/him/his)  
Direct: 425-242-4361  
Internal: 55236  
Fax: 206-232-1284  
11630 Slater Avenue NE, Ste 9, Kirkland, WA 98034



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**Robin Proebsting**

---

**From:** Aurora Bearse <aurora.bearse@gmail.com>  
**Sent:** Thursday, February 6, 2020 12:41 PM  
**To:** Nicole Gaudette  
**Subject:** Re: 2750 77th Ave SE Property

I am neither an architect nor a planner, so I can't provide guidance on public space best practices. All I can say is our current development-created public spaces don't add any value.

A quick google search, though, shows that resources are available for designing useful plazas and public spaces. For example:

<https://www.pps.org/article/the-power-of-10>

<https://www.pps.org/article/you-asked-we-answered-6-examples-of-what-makes-a-great-public-space>

[https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1251&context=masters\\_theses\\_2](https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1251&context=masters_theses_2)

<https://www1.nyc.gov/site/planning/plans/pops/pops.page>

Again, personally I'd give up a plaza with a forlorn bench or dirty fountain in exchange for a larger building footprint with more affordable housing units, but that's just my personal preference.

Thanks for considering my comments.

On Thu, Feb 6, 2020 at 12:06 PM Nicole Gaudette <[nicole.gaudette@mercergov.org](mailto:nicole.gaudette@mercergov.org)> wrote:

Thank you so much for your thoughtful comments. These comments are great input for a possible future code update for the city's Town Center standards. I am interested if you have some thoughts about what a "best practice for the outdoor spaces would be. I would be happy to pass along the ideas to the applicant. 10% of the housing units must be affordable housing units. The affordable housing unit mix must be in ratio to the non-affordable units. This would result in a mix of affordable studios, 1 bedrooms, 2 bedrooms, and 3 bedrooms.

**Nicole Gaudette**

Senior Planner

City of Mercer Island – Community Planning & Development

206-275-7719 | [mercergov.org/CPD](http://mercergov.org/CPD)

*Notice: Emails and attachments may be subject to disclosure pursuant to the Public Records Act (chapter 42.56 RCW).*

**From:** Aurora Bearse <[aurora.bearse@gmail.com](mailto:aurora.bearse@gmail.com)>

**Sent:** Thursday, February 6, 2020 11:36 AM



To: Nicole Gaudette <[nicole.gaudette@mercergov.org](mailto:nicole.gaudette@mercergov.org)>

Subject: [2750 77th Ave SE](#) Property

Please accept this as a comment on the proposed development.

--

I am completely in favor of mixed use high-density development in the MI town center within walking distance to public transportation. We are desperately in need of a vibrant town center. I, therefore, support this proposed development.

I am adding a few issues that I'd like to see the city and developer take into account when finalizing the building plans. Some are specific to this plan, others are comments that should be taken into account for this and any future similar development:

- 1) "Public spaces" like plazas often become unused dead spaces. Just look at the current "public spaces" with little light, dirty or dead fountains, etc., that already populate our town center. Has the developer or the city looked into best practices for these spaces and ensured that this proposal makes the most of any public space?
- 2) There is a perception that we have no public parking downtown. As someone who regularly uses the downtown core, I don't think this is true, but the issue should be addressed. It might be worth adding some on-street parking pullouts around the building for people running errands. If this isn't done, access to public under-building or underground parking needs to be a) very well marked; b) very well lit (seen as safe); c) of an appropriate size (have you tried to fit in the spaces at Tabit Square, for example?) and d) allow for at least some walk-off spaces. There should also be electric car chargers available for public use.
- 3) I cannot tell from the plans, but has there been any discussion of adding some below-market/affordable housing apartments? I'd prioritize this public benefit wayyy above a public plaza.
- 4) Has the city considered amending its retail code to ensure that any new ground floor/street facing establishments will contribute to the vitality of the town center. In my opinion, doctor/therapist offices, banks, and other similar facilities that are only open 9-5 M-F make a town center feel like a dead space on evenings and weekends. They should not be in storefront properties. In contrast, retail stores, restaurants, gyms, coffee shops. etc., add to the town center's vibrancy.

Thanks for listening.

--



-Aurora R. Barse  
[aurora.barse@gmail.com](mailto:aurora.barse@gmail.com)

--  
-Aurora R. Barse  
[aurora.barse@gmail.com](mailto:aurora.barse@gmail.com)



**Robin Proebsting**

---

**From:** Ian Crosby <ibcrosby@gmail.com>  
**Sent:** Saturday, February 8, 2020 1:01 PM  
**To:** Nicole Gaudette  
**Subject:** 2750 77th Ave SE & 2885 78th Ave SE

Just want to register my voice in support of this project. This lot is an eyesore and it's a tragedy that it was not redeveloped long ago. Creating increased density around our new transit infrastructure is not just the only way to attract more businesses and amenities to our downtown and mitigate the effects of growth on traffic in the I-90 corridor for the benefit of Mercer Islanders. It is also the single biggest contribution we can make to the environment and the region. Please don't let the stridency of the small but vocal "build nothing" crowd cause us to miss another opportunity to fill this hole in our town center.

—Ian Crosby, First Hill





Allyson Brooks Ph.D., Director  
State Historic Preservation Officer

February 10, 2020

Ms. Nicole Gaudette  
Senior Planner  
City of Mercer Island

In future correspondence please refer to:  
Project Tracking Code: 2020-02-01166  
Property: City of Mercer Island New Mixed Use Building DSR20-001  
Re: Archaeology Desktop Review & Monitoring and Inadvertent Discovery Plan Requested

Dear Ms. Gaudette:

Thank you for contacting the Washington State Historic Preservation Officer (SHPO) and Department of Archaeology and Historic Preservation (DAHP) and providing documentation regarding the above referenced project. As a result of our review, our professional opinion is that the project area has the potential to contain archaeological resources.

The project area has been determined to be at very high risk of containing archaeological resources according to the DAHP predictive model. As the SEPA checklist indicates, the site has likely been overlain by layers of fill and it is possible that the historic and precontact land surfaces, and associated archaeology, may be intact below this fill layer. Because this project proposes the construction of basement levels it is likely that the scale of the proposed ground disturbing actions would destroy any archaeological resources present. Although an archaeological survey prior to ground disturbance would be the preferred method, the fact that the majority of the property is hardscaped and may contain thick fill deposits would render a survey ineffectual. Therefore, the DAHP recommends that a professional archaeologist conduct background research in order to develop a site specific Monitoring & Inadvertent Discovery Plan (MIDP). The MIDP will outline what areas of the project, and at what depths the project should be directly monitored by a professional archaeologist, and if any portions of the project should move forward following only the IDP. The DAHP also requests the opportunity to review and approve the resulting Desktop Survey & MIDP prior to the initiation of ground disturbing activities.

We also recommend consultation with the concerned Tribes' cultural committees and staff regarding cultural resource issues.

These comments are based on the information available at the time of this review and on behalf of the SHPO in conformance with Washington State law. Should additional information become available, our assessment may be revised.

Thank you for the opportunity to comment on this project and we look forward to receiving the Desktop Survey report and MIDP. Please ensure that the DAHP Project Number (a.k.a. Project Tracking Code) is shared with any hired cultural resource consultants and is attached to any communications or submitted reports. Should you have any questions, please feel free to contact me.





Sincerely,



Stephanie Jolivette  
Local Governments Archaeologist  
(360) 586-3088  
Stephanie.Jolivette@dahp.wa.gov





**Robin Proebsting**

---

**From:** Jim Eanes <eanes.jim@gmail.com>  
**Sent:** Wednesday, February 5, 2020 9:37 PM  
**To:** Nicole Gaudette  
**Subject:** Xing Hua Mixed-Use Development

Hi Nicole -

Can you assist me a bit with reading the design drawings for this project? The Development and Design Guidelines require that the project have retail on **at least three sides**, 77th Avenue SE, SE 29th Street and 78th Avenue SE. It was not easy for me to tell if they have the required retail offering on all three sides. **Can you tell me if this is the case?**

It also would be nice if we could get retail on the walk through side. I'm not sure if this has been raised with the Developer or not. My thought here is that maybe they would give that to us in trade for something else. **This I can ask at the Design Review.**

My concern is that we are in desperate need for more retail space in Town Center. We have businesses that would like to come to Town Center and we have no place to put them. I personally would like to see at least ten more restaurants in Town Center to give us a proper Retail Mix to meet resident demands. How we are going to do this I have no idea without a miracle. To this of course we have to be able to add other retail as well.

The other issue that has confronted us is that current retail space like at the Hadley was improperly vented to restrict restaurant from easily going in there as well as the ability to size the retail spaces correctly to allow retail of various spaces. **Is there a way for me to tell from the drawings if the retail offered is properly vented for restaurants and if the retail walls can be changed to accommodate retail of different needs?**

To give you an example of where all has been done correctly, see the Boyd Building (La Fete, Sano Cafe, Barrels, Island Treats, Clarke & Clarke, Home Collaborative,...) With retail spaces like at the Boyd Building it allows to create a proper retail mix to draw residents back to Town Center. Thus, this is the gold standard that hopefully other projects will follow.

**Any assist you can give me would be much appreciated.** I will attend the Design Review but want to make sure I'm prepared so I'm not having to speak to designs I haven't properly reviewed. As you can expect many retail owners are asking me questions about the designs for this project and so far I have been just saying, I don't know yet.

Thanks so much,  
Jim

Jim Eanes  
2930 76th Avenue SE, A401  
Mercer Island, WA 98040-2794



**Robin Proebsting**

---

**From:** Lara Felker <felkerl23@gmail.com>  
**Sent:** Friday, February 7, 2020 9:40 PM  
**To:** Nicole Gaudette  
**Subject:** Mud Bay/CrossFit development

Hello Nicole

I am writing to you regarding the proposed development that would replace Mud Bay.

I very strongly oppose this development. It is too large, lacks enough parking and will put further strain on the town center traffic.

I grew up on Mercer Island and currently live on the island. I am all for change and development as the needs of the region change. However this building will have a significant negative impact on MI. It needs more parking and needs to be significantly reduced in size and scope.

I strongly urge that this building design and proposal be reviewed and adjusted.

I am pleading that something be done to limit this building/development.

Please keep me updated on this development.

Thank you

Lara Felker



**Robin Proebsting**

---

**From:** Evan Maxim  
**Sent:** Friday, February 7, 2020 8:29 AM  
**To:** Sarah Fletcher  
**Cc:** Nicole Gaudette  
**Subject:** RE: Mud Bay and Tully's Project - Parking up to the Code Official - You

Good Morning Sarah,

I am copying Nicole Gaudette, who is managing this project review, to ensure you are included as a party of record on the Xing Hua project.

For the Xing Hua project (Mud Bay property), the determination within the range will be based on the review of the parking analysis, which we have not yet completed. We may also have a consultant "peer review" the parking analysis. I do not believe the Xing Hua project has asked for a modification to the parking requirements – I believe they are proposing parking within the code established range.

The Tully's project has not requested a code modification for less than one parking stall per unit. The current information from Mainstreet is that they may provide between 1.1 stalls and 2 stalls per unit, which is within the code established range. This is a preliminary discussion however, and I do not believe they have completed a parking analysis for the project. It is likely that this project will continue to evolve.

My intent for both projects (and any Town Center review) is to ensure that the project complies with the Town Center code adopted by the community. Where there is flexibility in the code – for example the range in parking and the allowance for modification requests – we will ensure that the decision is based upon actual technical information describing project needs.

There is a public hearing before the Design Commission, who will issue the final decision on the project. I will give some thought as to whether an additional community meeting would be appropriate. As you suggest I want to avoid wasting everyone's time, but there may be enough interest to warrant a community meeting.

Regards,

**Evan Maxim**  
Director  
City of Mercer Island - Community Planning & Development  
Office: 206.275.7732 | Cell: 206.640.6928  
[mercergov.org/CPD](http://mercergov.org/CPD) | **LET'S TALK**  
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**From:** Sarah Fletcher <fletchsa1@gmail.com>  
**Sent:** Thursday, February 6, 2020 4:34 PM  
**To:** Evan Maxim <evan.maxim@mercergov.org>  
**Subject:** Mud Bay and Tully's Project - Parking up to the Code Official - You

Hello Evan, how is this going to work exactly? For parking, it has that the "Code Official shall have the final authority" and I was told you were the "Code Official."

<https://mercerisland.municipal.codes/MICC/19.11.130>

"b. Determination within Range. The code official shall have the final authority to determine the number of parking



stalls required within the ranges above to accommodate typical daily peak parking demand based upon the applicant's submittal of a completed site plan and detailed parking analysis." The Mud Bay project is proposing the bare minimum for parking requirements under the Code and the Tully's project is requesting a code modification for less than one parking stall per unit. So, as you are no doubt aware of these requests, how are you going to go about making your decision as to the parking requirement? The way I look at it is, is that 2 years was spent on this Town City Code and it should be what it is. None of this business of asking for modifications, etc. If they can't fit their project in with the parking requirement, then they should either go back to the drawing board and make it so that it fits with the Code, or the project should be shelved, but please don't tell me that you are going to allow the modifications in parking requirements. And I hope this is not going to waste all of our time. And do you think you could have a community meeting so that we can see what the plans are? I don't know what the pressures on you will be or where your loyalties lie. Thanks. Sarah Fletcher



**Robin Proebsting**

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**From:** Sarah Fletcher <fletchsa1@gmail.com>  
**Sent:** Sunday, February 16, 2020 1:40 PM  
**To:** Nicole Gaudette  
**Cc:** Council; Planning Commission  
**Subject:** Re: DSR20-001 (SEP20-002) Mud Bay - Against Design

Hello Evan, that is a relief to hear. Why did someone say that Mainstreet were allowed to have 108 parking stalls for 120 rental units? And that the City is going to give away part of the Sculpture Park for 120 residential units. And this business of the Code Official allowed to grant a "modification of the parking requirements in the Town Center without the formal notice requirements for a variance, whose idea was that?

I also do not want to hear that they can modify this and modify that in that that is like the accountants coming up with the Tax Code and then finding loopholes for their clients to avoid paying the taxes. And once you allow one modification, then all others could ask for the same modifications, etc.

RE the Mud Bay:

Are the applicants aware that citizens are not in favor of their design for a multi-family building in the Town Core? And on the Design Commission's website, it specifically says that the primary focus, not secondary focus is on **commercial uses, not on residential:** "the **primary focus of commercial uses** is intended to be in the **core of the Town Center,**" and if that is the case, then why did they allow this design of what looks like just a lot of residential units for the poor. And what I don't see are any playgrounds and the shop retail space is not obvious. And will the neighbors being so close to each other be smelling the food that the neighbor cooks, hearing their conversations and be overlooking the neighbors as that is what it looks like is going to happen. There is no privacy.

The buildings are ugly, do not enhance the Town Center, do nothing for retail, as someone on Nextdoor says: "it looks like every other current TC project, along with too much massing at the street level, a loss of mature trees for saplings, inadequate parking that affects nearby businesses, retail space that is too expensive, little affordable housing, and an uninspiring design."

I find it interesting that King County had the population goal for Mercer Island for 2020 as being **24,053, for 2030, 24,355 and for 2040, a slight decrease of 24,194.**

Yet, at the last count we are just shy of **26,000** (25,976 to be precise).

And the new additional housing units from 2006 to 2031, they want MI to add between 1,800 and 2,000. How many new housing units have been added since 2006?

So as far as I am concerned, Mercer Island has met the King County goal, we should not have to have hundreds of micro-apartments added.

<https://mymercerisland.com/hines-project-mercer-island/>

And what about the pilot program - "78th Avenue Sidewalk (SE 32nd - SE 34th) Pilot project - develop new standard for Town Center sidewalk replacements at a cost of \$500,000? Is that going to be different to what we have now? And if it looks like it does now, then you will have to keep the trees will you not? **And since when can the Mercer Island Design Commission APPROVE tree removal on just about EVERY SIDE of the property????**

This is what it says: "Trees #219-229, 234, 235, and 236 along the right of way (ROW) on the **west, south, and east sides of the subject parcel have been approved for removal by Mercer Island Design Commission on January 22nd 2019.** These trees would be in the middle of the sidewalk in the proposed condition, in conflict with current town center streetscape standards." Have they not seen the tree designs for the Town Center??? It even says that "prominent trees should be preserved to the extent feasible."

Did they not read the Proclamation of Preserving Trees?

These are the standards. Did they say exactly which part is in conflict? They even have the design for the trees on 77th Ave SE and 78th Ave SE on Table 14. They show the either two lanes of vehicles and the sidewalk with the trees and then pedestrians, what is the new standard going to be exactly?

<https://mercerisland.municipal.codes/MIC...>

The Design Commission are not paid employees of the City, nor are they accountable to the City in any way, and



are any of the people certified arborists? Since when does the Design Commission trump the City arborist? Why did the City arborist say about the trees?"

"2. **Applicant's Responsibility. It is the responsibility of the applicant to design a project in compliance with the objectives and development and design standards of this chapter.**"

b. Ground Floor Windows and Doors. Major new construction along 77th Avenue SE, 78th Avenue SE and SE 27th Street, within the TC-5, TC-4 and TC-4 Plus subareas, shall have at least 75 percent of the length of the ground floor facade between the height of two feet and seven feet devoted to windows and doors affording views into retail, office, or lobby space.

Did it look like each building had the two feet and seven feet devoted to windows and doors affording views into retail, office or lobby space? It wasn't obvious from what I was looking at. It looked like I would be looking into everyone's apartments, not only from each unit, but from the roadway as well. I

A proposed loading dock and service area for tenants, to facilitate move-in, food delivery, refuse and recycling collection, etc., would be accessed via a driveway on 77th Avenue SE. Into an underground or surface level? And would the apartment dwellers smell the trash and hear the noise from all the deliveries?

And what I don't understand is in the Town Center Code, it says a two-story height limit applies THROUGHOUT the Town Center, then how can they be asking for four storeys, how much was their "affordable housing," and where was the "green building features, the planning, public open space to gather?:"

B. User Guide. The Town Center is divided into subareas mostly for the purpose of regulating maximum height limits. A two-story height limit applies throughout the Town Center. Only by providing certain benefits to the community can a development project add additional stories up to the maximum height allowed in the particular subarea. These community benefits include affordable housing; green building features; stepping back of upper stories to reduce building mass and maintain light and air; provision of public open spaces as gathering places; and provision of through-block pedestrian connections to break up larger blocks and enhance pedestrian access.

I would like to know how they think they can build so many units when it has it for multi-family:

"Multi-Family, Limited MF-2L The maximum allowed density is 26 units per acre.

19.03 Multi-Family MF-2 The maximum allowed density is 38 units per acre.

19.03 Multi-Family MF-3 The maximum allowed density is 26 units per acre.

They want to put 185 units in just over 1.25 acres which is five times as much as the Code permits. It is too much, it is not needed and it is micro-housing which we don't want and especially in our Town Center core which should be majority retail, not majority residential. How big is each unit going to be? A two-bedroom where I live is about 925sq ft as a comparison. I, for the life of me, do not have a clue as to how the Design Group gave this design the okay. And as they are only wanting to build 27 two-bedroom units, it doesn't exactly feel like they want children in their multi-family and did they happen to say what amenities they would offer and what is there for children? And as far as the affordability goes, how much did they say they would charge for each residential retail and retail space?

<http://www.mercergov.org/Page.asp?NavID=368>

I sincerely hope the applicants go back to the drawing board and come up with a better design for our town centre.

Thank you.

Sarah Fletcher

On Fri, Feb 7, 2020 at 8:29 AM Evan Maxim <[evan.maxim@mercergov.org](mailto:evan.maxim@mercergov.org)> wrote:

Good Morning Sarah,

I am copying Nicole Gaudette, who is managing this project review, to ensure you are included as a party of record on the Xing Hua project.



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Regards,

**Evan Maxim**  
Director  
City of Mercer Island - Community Planning & Development  
Office: 206.275.7732 | Cell: 206.640.6928

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**From:** Sarah Fletcher <[fletchsa1@gmail.com](mailto:fletchsa1@gmail.com)>  
**Sent:** Thursday, February 6, 2020 4:34 PM  
**To:** Evan Maxim <[evan.maxim@mercergov.org](mailto:evan.maxim@mercergov.org)>  
**Subject:** Mud Bay and Tully's Project - Parking up to the Code Official - You



Hello Evan, how is this going to work exactly? For parking, it has that the "Code Official shall have the final authority" and I was told you were the "Code Official."

<https://mercerisland.municipal.codes/MICC/19.11.130>

"b. Determination within Range. The code official shall have the final authority to determine the number of parking stalls required within the ranges above to accommodate typical daily peak parking demand based upon the applicant's submittal of a completed site plan and detailed parking analysis." The Mud Bay project is proposing the bare minimum for parking requirements under the Code and the Tully's project is requesting a code modification for less than one parking stall per unit. So, as you are no doubt aware of these requests, how are you going to go about making your decision as to the parking requirement? The way I look at it is, is that 2 years was spent on this Town City Code and it should be what it is. None of this business of asking for modifications, etc. If they can't fit their project in with the parking requirement, then they should either go back to the drawing board and make it so that it fits with the Code, or the project should be shelved, but please don't tell me that you are going to allow the modifications in parking requirements. And I hope this is not going to waste all of our time. And do you think you could have a community meeting so that we can see what the plans are? I don't know what the pressures on you will be or where your loyalties lie. Thanks. Sarah Fletcher



**Robin Proebsting**

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**From:** Matt Goldbach <matt@bitmax.net>  
**Sent:** Saturday, February 8, 2020 12:18 PM  
**To:** Nicole Gaudette; Evan Maxim; Jessi Bon; Council  
**Cc:** Max Goldbach  
**Subject:** "Ref DSR20-001 (SEP20-002) Scheer Chan and Lu Zhang/Xing Hua Group Ltd Project"

Dear Madame/Sir

I'm writing to be on record against the subject development.

This project is not in the best interests of the Mercer Island community and will further damage our already struggling Town Center.

It is truly time for a PAUSE. Its time for our elected leaders to act in the interests of the citizens that elected them. This project means less parking, but more cars. Less on island retail, thus a greater requirement for cars and driving to off island shopping and entertainment.

Respectfully

Matthew Goldbach  
Mercer Island Resident



**Robin Proebsting**

---

**From:** Jim Gregson <jcgregson@psfinc.com>  
**Sent:** Friday, February 7, 2020 2:00 PM  
**To:** Nicole Gaudette  
**Cc:** cecelia gregson  
**Subject:** Next Door Neighbor

I saw this and could not agree more!

Ms. Gaudette,

Over the past three years, I have become painfully aware of the consequences of my previous dereliction of duty as an MI citizen. I had no idea what the power people at City Hall were up to, and I'm sorry I was not a better citizen paying tireless close attention to city government and its commissions. I didn't realize how hard we had to work to have protected ourselves from our previous elected officials and their appointees. Frankly, we should never have to work that hard then or now to protect ourselves from City Hall. Now, I am paying attention. I am not alone. There are many hundreds of us who are now paying attention, and we are raising our voices before it's too late to stop the City from ruining our Town Center permanently.

We want retail. We want parking enough for all of us to use Town Center. Our Island bus system is useless to most of us. We do not want be forced to leave the Island to go to a drugstore, a book store, a restaurant or to use UPS. We fight terrible traffic to get home; we do not want to have to fight more horrid traffic to do our daily shopping because Town Center got ruined and we didn't stand up to stop it.

Bassett, Bertlin, Grauz and Julie Underwood may have had good intentions with color crayons on napkins, but it is time to listen to the professionals. They are your neighbors and they are offering professional help free of charge! They know other professionals; they are all bringing you educated advice which I urge you to heed. Ray Akers, Jim Eanes, Doug Cargill and several other professionals are stepping forward to help Evan Maxim, you and our Commissions get a very clear picture of the unintended consequences which will result from further residential development of town center. We need our city Planning employees to be operating in our best interest above all else. We need your help to be sure that is the case.

Please, hit the pause button until you understand the full implications and consequences of choosing housing over retail in the town center. The professionals are telling you that mixed residential and retail is a tested and failed model. Please, heed what they are telling you. If you choose to ignore the clarion call about mixed residential and retail, and if the professionals are right about it costing us our retail core, you will have done us all a tremendous disservice by ruining our Town Center forever. The era of color crayons and amateur hour needs to end. We are not Ballard. We don't desire to be Ballard. Please, hit pause now.

Mercer Island is an independent city in a large and growing metropolis. We should have decision making authority about our city. We want to protect our city and community from urban growth, that is why we moved here. Do not represent the intentions of the county over the will of the residents.

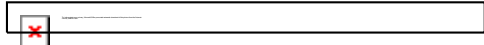
Best regards,

Jim Gregson

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**James C. Gregson, CEBS**  
Principal, Account Executive



Direct: 425-709-3744 | Cell: 206-446-8739

Toll Free: 800-457-0220 | Fax: 425-709-7460

e: [jcgregson@psfinc.com](mailto:jcgregson@psfinc.com)

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**From:** [Andrea Larson](#)  
**To:** "Jim Gregson"  
**Cc:** [Salim Nice](#); [Jake Jacobson](#); [Robin Proebsting](#)  
**Subject:** RE: Town Center  
**Date:** Friday, February 12, 2021 4:03:00 PM  
**Attachments:** [image001.png](#)

---

Thank you Mr. Gregson. This has been received. Staff will included written comments as part of the staff report and transmitted to the Design Commission that way.

Kind Regards,

[Andrea Larson](#)  
Senior Administrative Assistant  
City of Mercer Island – Community Planning & Development  
206.275.7791 | [mercerisland.gov/cpd](http://mercerisland.gov/cpd)

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**From:** Jim Gregson <jcgregson@psfinc.com>  
**Sent:** Friday, February 12, 2021 3:55 PM  
**To:** Andrea Larson <Andrea.Larson@mercergov.org>  
**Cc:** Salim Nice <salim.nice@mercergov.org>; Jake Jacobson <jake.jacobson@mercergov.org>  
**Subject:** Town Center

Andrea,

I will now be out of town on the 24<sup>th</sup> so am unable to attend the Town Center meeting. Is it possible to have something read on the record?

If so, please include the following in the record:

My family and I have lived on the island for 12 years. We have two children in the public school system. We are committed to the community.

We have multiple thoughts regarding the redevelopment of the downtown.

1. Mixed residential and commercial does not work. Favorite spots on MI included the old True Value, the old Tullys, the old Freshy’s market, Island Books, Robertos, Baskin and Robbins. In fact Freshy’s and The Islander are two good examples of popular spots that moved to mixed



use and saw their business change overnight. Mio Posto is successful in spite of their terrible parking garage, due to the fact that finding parking for a two hour stay seems worth it, but not to pop in for a piece of fish for dinner. People still drive, people still need to park cars, and people don't frequent small retail if it is inconvenient. We cannot expect small businesses to thrive here if people cannot find reasonable parking. I am not sad to lose Menchies, as parking across the street at Walgreens was a lousy but the easiest option. I am expressing this in very specific examples because this is the everyday impact- it doesn't fit into a spreadsheet.

2. While there is agreement that King Insurance is an eyesore, and should be re-developed, the owner, as he attested at a council meeting 3 or 4 years ago, is looking to maximize his investment. That is a reasonable position for him to take, but investing in real estate comes with risks. Cities have every right to change development rules, for any number of reasons including economic impact, environmental impact, public opinion even. The rules change over time, and sitting on a derelict property in order to hit a home run is risky. In this case, the public does not want another mega block project, with a failed "mixed use" concept.
3. The argument that small businesses can't afford rent on MI is directly related to speculators buying or holding property in hopes of developing or selling at the peak of the market. If developers are expecting to build 4 or 5 story apartments and condos, the property gains enormous value. If the city elects to keep the downtown core restricted in size and scope of projects, the property value will reflect that, which in turn will be reflected in rents. Put differently, as a homeowner, my property value is directly impacted by what I can and cannot do on my property. We cannot subdivide and build two houses on our lot, even though it would result in a financial windfall for us. Taking this argument a step further, if the city determined that we had environmental, steep slope, hydrology, or other issues that made changing the footprint in any way, a problem, we would not be allowed to make changes to the property at all, even though we could have when we bought the property. This is the risk of speculative development. If the investors were unable to build 4 and 5 story buildings, the property value would decrease, and the rents would reflect that.
4. There are many other issues with increased density- schools, traffic, utilities, parking- that others will I am sure address. Those are concerns of ours as well.

Please prevent the massive redevelopment of the mega block, and restrict the developers in size and scope of the project. If completed, it would be generations before it could be undone. Look no further than the Farmers Life Insurance building to see what experimental development looks like and the long term consequences of buildings that don't fit.

Thank you.

Jim

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**James C. Gregson, CEBS**

Principal, Account Executive

**PARKER, SMITH & FEEK**



Direct: 425-709-3744 | Cell: 206-446-8739

Toll Free: 800-457-0220 | Fax: 425-709-7460

e: [jcgregson@psfinc.com](mailto:jcgregson@psfinc.com)

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**Robin Proebsting**

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**From:** A. J. <aj@fastmail.org>  
**Sent:** Monday, February 10, 2020 9:58 AM  
**To:** Nicole Gaudette  
**Subject:** 2750 77th Ave SE & 2885 78th Ave SE

Hi Nicole,

I am adamantly opposed to allowing this T 2750 77th Ave SE & 2885 78th Ave SE to proceed as is. While the retail/office space might be acceptable the # of planned residences is ludicrous. I oppose allowing this development to proceed for the following reasons:

1) Impact to the water and sewer plant-

How can the water and sewer infrastructure cope with 164 new homes? Each with maybe 2 occupants? I see no mention in the plans of a large impact fee or improvements in the water & sewer on Mercer Island to accommodate this expansion. And it is doubtful any such assessment would be sufficient to increase capacity enough to offset the added residents.

2) Impact to the Fire department-

MIFD is already stretched thin and it is highly dubious the tax revenue from this project will be enough to pay for personnel and equipment. The same applies for police and other emergency services.

3) Impact to the culture of Mercer Island-

One of the things we love most about Mercer Island is the small town feeling of community. People tend to live here for a long time and we plan to do the same. Apartments and condos tend to be occupied by more short term residents. While I am supportive of some level of apartments/condos on the island there are enough options available already. There are almost 100 available units on craigslist already

- [https://seattle.craigslist.org/search/apa?availabilityMode=0&housing\\_type=1&housing\\_type=2&sale\\_date=all+dates](https://seattle.craigslist.org/search/apa?availabilityMode=0&housing_type=1&housing_type=2&sale_date=all+dates)

Do we really need to double that number?

I would like to ensure my opinion is taken seriously. Please do let me know if there is anything I can do to be more effective.

Thanks,

Andy Johnson  
8201 SE 62nd St



**Robin Proebsting**

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**From:** scott kasper <scottalan54@gmail.com>  
**Sent:** Friday, February 7, 2020 11:35 AM  
**To:** Nicole Gaudette  
**Subject:** town center

i back susan lund. MI resident since 73" and have seen imo a downhill, speeding spiral of detrimental decision making based on self gain. i gave up on the the process years ago and really see very little hope for a City that won't listen to it's constituents and believes to know better , and is really just basing their decisions to further their career elsewhere. I hope this trend changes.



**Robin Proebsting**

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**From:** Susan Lund < srlund@aol.com >  
**Sent:** Friday, February 7, 2020 7:40 AM  
**To:** Nicole Gaudette  
**Cc:** Salim Nice; Benson Wong; Lisa Anderl; Jake Jacobson; Jessi Bon  
**Subject:** Re: File No. DSR20-001 (SEP20-002) It's time to listen to the professionals.

Ms. Gaudette, Ms. Bon and Members of the City Council:

Over the past three years, I have become painfully aware of the consequences of my previous dereliction of duty as an MI citizen. I had no idea what the power people at City Hall were up to, and I'm sorry I was not a better citizen paying tireless close attention to city government and its commissions. I didn't realize how hard we had to work to have protected ourselves from our previous elected officials and their appointees. Frankly, we should never have to work that hard then or now to protect ourselves from City Hall.

Now, I am paying attention. I am not alone. There are many hundreds of us who are now paying attention, and we are raising our voices before it's too late to stop the City from ruining our Town Center permanently. We want retail. We want parking enough for all of us to use Town Center. Our Island bus system is useless to most of us. We do not want be forced to leave the Island to go to a drugstore, a book store, a restaurant or to use UPS. We fight terrible traffic to get home; we do not want to have to fight more horrid traffic to do our daily shopping because Town Center got ruined and we didn't stand up to stop it.

Bassett, Bertlin, Grauz and Julie Underwood may have had good intentions with color crayons on napkins, but it is time to **listen to the professionals. They are your neighbors and they are offering professional help free of charge! They know other professionals; they are all bringing you educated advice which I urge you to heed.**

Ray Akers, Jim Eanes, Doug Cargill and several other professionals are stepping forward to help Evan Maxim, you and our Commissions get a very clear picture of the unintended consequences which will result from further residential development of town center. We need our city Planning employees to be operating in *our* best interest above all else. We need your help to be sure that is the case.

Please, hit the pause button until you understand the full implications and consequences of choosing housing over retail in the town center. The professionals are telling you that mixed residential and retail is a tested and failed model. Please, heed what they are telling you.

If you choose to ignore the clarion call about mixed residential and retail, and if the professionals are right about it costing us our retail core, you will have done us all a tremendous disservice by ruining our Town Center forever. The era of color crayons and amateur hour needs to end.

We are not Ballard. We don't desire to be Ballard. Please, hit pause now.

Best regards,

Susan Lund

PS We do not want to be the main bus depot for I-90, either!



**Robin Proebsting**

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**From:** Steve Majewski <hoveringuy@yahoo.com>  
**Sent:** Thursday, February 6, 2020 6:36 PM  
**To:** Nicole Gaudette  
**Subject:** 2750 77th

Nicole,

I like the concept, it is a significant improvement over the current conditions.

I believe the the plans show the 2 bike racks not under cover, I would prefer them to be under shelter.



**Robin Proebsting**

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**From:** Betty Morgan <bettymmorgan@hotmail.com>  
**Sent:** Wednesday, February 5, 2020 5:59 PM  
**To:** Nicole Gaudette  
**Subject:** "MI Weekly" article today, 2/5/20

Please explain this information that was published today that seems to refer to 10,742 of something, but doesn't explain to what that number concerns. Might it be square footage of retail space? This is my guess, but it would be nice to know exactly what is meant.

"The City's [Community Planning and Development Department](#) is reviewing an application for a new mixed-use building located at **2750 77th Avenue SE and 2885 78th Avenue SE** in Town Center.

"The proposed building would be four stories above grade with 164 apartments units and **10,742 of ground-level** retail space, and two levels of underground residential and retail parking."

Thank you,  
Betty Morgan  
4316 Island Crest Way



**Robin Proebsting**

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**From:** jeremynjessie ong <jeremynjessieong@yahoo.com>  
**Sent:** Tuesday, February 25, 2020 1:00 PM  
**To:** Nicole Gaudette  
**Subject:** Questions -Town Center Mixed Use project

Nicole,

I am a Mercer Island resident for almost 20 years and have a few quick questions regarding this project that is in design review:

1. Is the developer building the 164 units going to be apartments for lease or condos for sale ?
2. What is the estimated number of residential and retail garage parking spaces that is being proposed ?

Thanks

Jeremy Ong



## Robin Proebsting

---

**From:** Evan Maxim  
**Sent:** Friday, February 7, 2020 12:53 PM  
**To:** Nicole Gaudette  
**Cc:** Mona Davis; Alison Van Gorp  
**Subject:** FW: Xing Hua development (formerly King property)

FYI –

Regards,

### Evan Maxim

Director

City of Mercer Island - Community Planning & Development

Office: 206.275.7732 | Cell: 206.640.6928

[mercergov.org/CPD](http://mercergov.org/CPD) | **LET'S TALK**

If you would like a public record, please fill out a public records request at <https://mercerisland.nextrequest.com/>.

*Notice: Emails and attachments may be subject to disclosure pursuant to the Public Records Act (chapter 42.56 RCW).*

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**From:** Ali Spietz <Ali.Spietz@mercergov.org>  
**Sent:** Friday, February 7, 2020 11:17 AM  
**To:** Jessi Bon <jessi.bon@mercergov.org>; Evan Maxim <evan.maxim@mercergov.org>  
**Subject:** FW: Xing Hua development (formerly King property)

FYI

### Allison (Ali) Spietz

Chief of Administration

City of Mercer Island

206-275-7667 | [mercergov.org](http://mercergov.org)

*Notice: Emails and attachments may be subject to disclosure pursuant to the Public Records Act (chapter 42.56 RCW).*

**From:** Victor Raisys <[victor@mercerislandbooks.com](mailto:victor@mercerislandbooks.com)>  
**Sent:** Friday, February 7, 2020 10:29 AM  
**To:** Council <[council@mercergov.org](mailto:council@mercergov.org)>; Lisa Anderl <[lisa.anderl@mercergov.org](mailto:lisa.anderl@mercergov.org)>; Jake Jacobson <[jake.jacobson@mercergov.org](mailto:jake.jacobson@mercergov.org)>; Salim Nice <[salim.nice@mercergov.org](mailto:salim.nice@mercergov.org)>; Craig Reynolds <[craig.reynolds@mercergov.org](mailto:craig.reynolds@mercergov.org)>; David Rosenbaum <[david.rosenbaum@mercergov.org](mailto:david.rosenbaum@mercergov.org)>; Wendy Weiker <[Wendy.Weiker@mercergov.org](mailto:Wendy.Weiker@mercergov.org)>; Benson Wong <[Benson.Wong@mercergov.org](mailto:Benson.Wong@mercergov.org)>  
**Cc:** Laurie Raisys <[laurie@mercerislandbooks.com](mailto:laurie@mercerislandbooks.com)>  
**Subject:** Xing Hua development (formerly King property)

Mercer Island City Council -

I'm extremely disappointed in the plans for the Xing Hua development. I'm disappointed not only in the plans themselves (which I will detail below) but also in the way this has been rolled out by the city.

Nearly two weeks ago, I sat through the Saturday session of your annual planning meeting. I left the meeting hopeful that the city was finally on the right track. You prioritized a review of town center codes, a review of town center parking, development of an economic development plan and an economic development resource - this was all great



news albeit very short lived. Shortly after this meeting, the city rolled out plans for the Xing Hua development which exacerbate our Town Center parking issue and further minimizes the already diminished retail space in the Town Center. To call this move by the city tone deaf is a massive understatement. A few months ago, our interim city manager told the previous city council the city/city council have a trust issue. With proposals like this one, the city's trust issue is about to get a whole lot worse.

Overall, one of the more stunning things that I found as I reviewed the proposal was there were two separate documents devoted exclusively to trees (Arborist Report, 17 pages and Mercer Island Tree Inventory, 2 pages) and the impact of the development project on trees. There was no analysis done on the impact of the development project to retail or the retail vibrancy of the Town Center. There was a single page devoted to parking in the traffic impact analysis (basically a description of how the parking was calculated). So, 19 pages of analysis on trees, 1 page of analysis on parking and 0 pages of analysis on retail, retail vibrancy and economic impact.

I'm aware that there will be a public input process and I will provide the input below at the appropriate time (and I will make sure others do as well - see my trust comments above). However, my question to you is how was this even submitted for public review when the plans don't follow what has been laid out in the current comp plan (as flawed as that may be). This is not a design commission issue - this is a city council issue. There is a disconnect between the actions of the city council and the actions of the city staff. Additionally, city staff doesn't seem to be following the guidelines set in the current comp plan. This is an extremely broken process and this needs to be fixed by the city manager with strong guidance from the city council.

Here are the issues:

- Issue #1 - retail frontage: I'm sure that all of you are familiar with the map of the redrawn retail core (the crayon/colored marker map) that is in the current comp plan amendment. This development falls within the redrawn retail core. The redrawn retail core map calls for retail frontage on 78th, 77th and 29th. This development seems to have most of the retail frontage on 78th. Where is the retail frontage on 29th and 77th? As a reminder, the redrawn retail core map calls for retail frontage on all three street facing sides of this development. It does not call for a smattering of retail around the building
- Issue #2 - retail space: The Xing Hua development is replacing 19,136 square feet of current retail space (Mud Bay + former King property/Looks pharmacy) with 10,742 square feet of retail space, a 43% reduction of retail space. Mic drop #1. Let me put that into perspective for you, 10,742 square feet of retail space is approximately 2.5 Island Books. So, in an already reduced retail core, we are reducing retail even further. So, in a mega-block development in one of the largest parcels in Town Center, which runs from the Jackson Shell to the McDonalds and runs street to street from QFC to New Seasons, we will have retail space that is equivalent to 2.5 Island Books. Mic drop #2. But wait! It gets worse (much worse). Keep in mind that the previous city council drew 69,048 square feet of retail space out of the town center. Where will all this retail relocate to? Certainly not the Xing Hua development. So with the elimination of another 8394 square feet of retail, the total retail square footage lost on your watch and the previous council's watch is 77,442 square feet - that is your legacy.
- Issue #3 - parking: we currently have a major parking issue in the Town Center. It is unclear to me why, in that environment, the city would put forth a development proposal with inadequate parking. The development call for 201 parking spaces, 166 or 168 (the documents are inconsistent in what the actual number is) parking spaces for residential, and 35 parking spaces for retail. According to the current comp plan, the requirement for residential parking is 1 - 1.4 parking spaces per unit. So, in a Town Center plagued with parking issues, the bare minimum is being proposed for residential parking for this development. According to the comp plan, the requirement for retail parking is 2-3 per 1000 square feet of retail so it would appear that there is adequate retail parking. HOWEVER, see my comments above regarding inadequate retail space. ALSO, there is enough parking for retail only if the space is occupied strictly by retail. If you look at other properties in the Town Center, all spaces (without exception) have some sort of food establishment (requirement in the comp plan is 5-10 spots per 1000 square feet for restaurant/deli/bakery) and in fact three food establishments are being displaced with this development. In addition, most properties in the Town Center also include some sort of services in their mix (requirement in the comp plan is 3-5 spots per 1000 square feet for financial, services,



health). Therefore parking even with the reduced retail footprint being proposed is woefully inadequate development

So, diminished retail in an already diminished retail core combined with an exacerbated parking problem in the Town Center. What could possibly go wrong?

Victor Raisys  
co-owner, Island Books



**Robin Proebsting**

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**From:** Kelly and Eileen Sterling <kesterling@msn.com>  
**Sent:** Monday, February 17, 2020 2:15 PM  
**To:** Nicole Gaudette  
**Subject:** XING HUA..

Nicole...

My husband and I saw the notice in the MI Reporter last week for the Xing Hua..proposed development across from the QFC downtown MI.

We have many concerns re: this project....

Is the Developer a US citizen? I looked up and see that he is from Vancouver BC?  
We have had some. good friends that worked in real estate in the Vancouver BC area. The influx of the Chinese Nationals...literally ruined the real estate market.. inflated values, vacant units, and an influx of Chinese nationals.

Mercer Island is a small community , here in the Pacific Northwest.  
This Chinese building, does not belong in our community..as is inconsistent with our small, close knit community. This poses a potential for some of the same issues that impacted Vancouver BC....and which had a very negative. impact on that beautiful city!!

What does Xing Hua mean? It mentions that this building will provide affordable housing downtown MI? Is this what Mercer Islanders want in our downtown?

I believe that this building, project would be better suited in Seattle, near Jackson, in the International district...

Look forward to your response to my concerns...  
Thank you,  
Eileen Sterling

Sent from my iPad



**Robin Proebsting**

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**From:** Matthew Vaggione <mmvaggione@gmail.com>  
**Sent:** Friday, February 14, 2020 10:05 AM  
**To:** Nicole Gaudette  
**Subject:** DSR20-001 / SEP20-002 Public Comment

Hi Nicole,

I saw the public notice for application of file number DSR20-001 / SEP20-002 on my walk to work. I wasn't sure the format for sending written public comment so hopefully you can send me in the write direction if you are not the correct person to send it to.

I have a few comments on this application for the planning department's consideration:

- As a resident of Mercer Island that lives less than a block from this property, I am excited about the prospect of improving this site and increasing density in the downtown core area of Mercer Island.
- As this development borders both 29th and 77th, one concern I have is that there is a plan in place for traffic control to ensure that access is maintained at all times for pedestrian and vehicle traffic to/from the freeway and park and ride for the homes that are up the hill (along 29th and/or 76th).
- One thing I would like to see more of in the downtown core is commercial opportunities for businesses and offices. Since the structures that are being demolished for this development were office and commercial buildings, I would love to see more space dedicated to those uses in this proposed mixed use building. Having sufficient space for the restaurant, gym, and stores being replaced as well as offices would help to keep the building activated throughout the day. Having more office space would mean that there are more people around during the day to support local businesses, which is usually the slowest period for businesses in the town center.
- Opportunities for increased space could be from using the frontage along 29th for commercial purposes rather than residential units.
- Another opportunity for additional footprint would be to have the central courtyard be elevated. This idea would mean that the central area is one story high (similar to the townhouses) and the public amenities in the courtyard would be placed on that 1st floor roof in the middle. The first floor of that central area could be utilized to increase the footprint available to accommodate businesses and/or residents. While this would add the challenge of providing natural light, I think that there are numerous creative ways that this can be overcome. In addition to more space, this provides the public amenities for the building in a secure area. As currently designed this inner courtyard may need to be secured regardless, otherwise it would present a CPTED hazard since it would have poor visibility to the street.

Thanks for your time and consideration.

-Matt Vaggione



**ARBORIST REPORT  
2885 78th Ave SE.  
Mercer Island, WA**



**January 16<sup>th</sup>, 2020**



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Appendix

Tree Locator Map – attached

Tree Summary Table - attached



2885 78th Ave SE

**1. Introduction**

American Forest Management, Inc. was contacted by Lu Zhang, Associate at Johnston Architects and asked to compile an arborist report for a parcel located in the City of Mercer Island, WA proposed for re-development by Xing Hua Group LTD. Our assignment is to prepare a written report on present tree conditions, and the potential impacts to existing trees related to development of the 43,705 square foot property, parcel #531510-1326.

This report encompasses all of the criteria set forth under the City of Mercer Island’s tree regulations (Chapter 19.10 of the Mercer Island City Code).

Date of Field Examination: **January 8th, 2020**

**2. Description**

Two ‘large’ trees were located on the property, defined by the City of Mercer Island as "any tree with a diameter of 10 inches or more, or any tree that meets the definition of an exceptional tree". The landscape on the subject property consists mostly of ornamental trees and shrubs planted in a parking area.

Additionally, 32 neighboring trees overhang the subject property lines, 17 of which are above 10 inches in diameter. Each tree has been identified on the attached tree condition summary table and site survey.

The recommended Limits of Disturbance (LOD) measurement can be found on the tree summary table and delineated on the site plan. The LOD measurements are based on species, size, age, condition, drip-line or crown spread and prior improvements.

**3. Methodology**

The subject tree’s diameters were measured by diameter tape. Their total overall height was measured using a digital clinometer, and they were visually examined for defects and vigor. The tree assessment procedure involves the examination of many factors:

- The crown of each tree is examined for current vigor. This is comprised of inspecting the crown (foliage, buds, and branches) for color, density, form, and annual shoot growth, limb dieback and disease. The percentage of live crown is estimated for coniferous species only and scored appropriately.
- The bole or main stem of the tree is inspected for decay, which includes cavities, wounds, fruiting bodies of decay (conks or mushrooms), seams, insects, bleeding, callus development, broken or dead tops, structural defects and unnatural leans. Structural defects include crooks, forks with V-shaped crotches, multiple attachments, and excessive sweep.
- The root collar and roots are inspected for the presence of decay, insects and/or damage, as well as if they have been injured, undermined or exposed, or original grade has been altered.

The four condition categories are described below:

Excellent – free of structural defects, no disease or pest problems, no root issues, excellent structure/form with uniform crown or canopy, foliage of normal color and density, above average vigor, it will be wind firm if isolated, suitable for its location

Good – free of significant structural defects, no disease concerns, minor pest issues, no significant root issues, good structure/form with uniform crown or canopy, foliage of normal color and density, average or normal vigor, will be wind firm if isolated or left as part of a grouping or grove of trees, suitable for its location



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Fair – minor to moderate structural defects not expected to contribute to a failure in near future, no disease concerns, moderate pest issues, no significant root issues, asymmetric or unbalanced crown or canopy, average or normal vigor, foliage of normal color, moderate foliage density, will be wind firm if left as part of a grouping or grove of trees, cannot be isolated, suitable for its location.

Poor – major structural defects expected to cause fail in near future, disease or significant pest concerns, decline due to old age, significant root issues, asymmetric or unbalanced crown or canopy, sparse or abnormally small foliage, poor vigor, not suitable for its location

The attached Tree Summary Table provides specific information on tree sizes and drip-line measurements.

#### 4. Observations

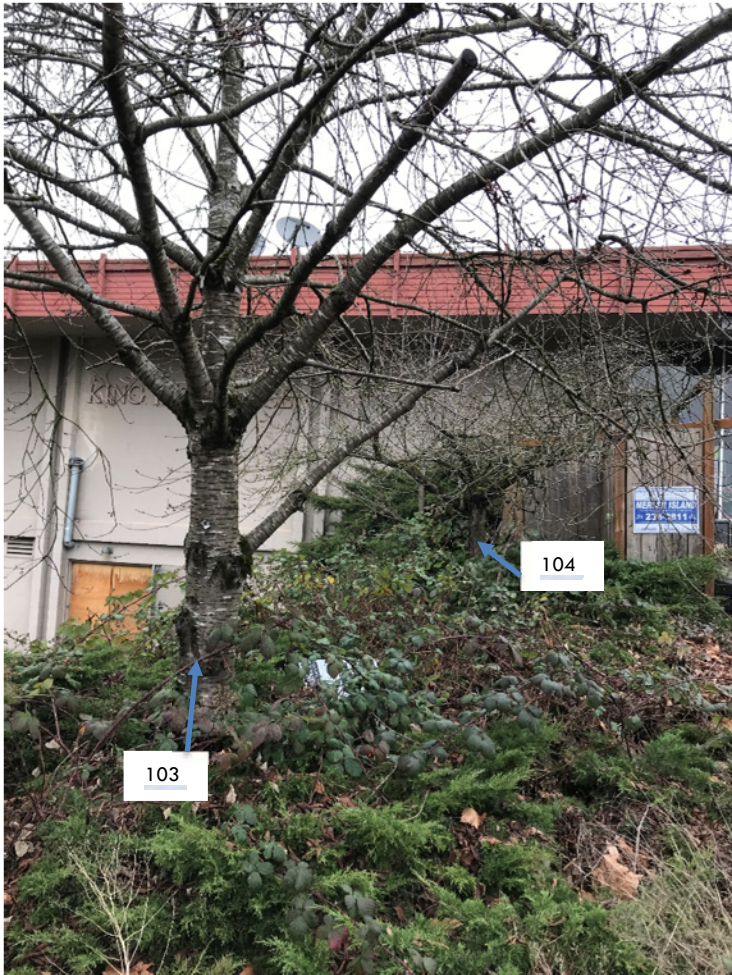
##### ON-SITE TREES

Trees #101, 102, 112, 113, 114, and 115 are flowering pears (*Pyrus caleriana*) planted in the northwest portion of the property as perimeter trees around the building at 2750 SE 77th St. These range in size from 6 - 9.6 inches in diameter at 4.5 feet above grade (DBH). None of these are considered 'Large' trees by the City of Mercer Island.





2885 78th Ave SE



Trees #103 and 104 are flowering cherries (*Prunus* sp.) with DBHs of 10 and 7 inches respectively. These trees have been apparently neglected as they are in declining condition with dead material in their canopies and are surrounded by invasive blackberry and ivy. #103 is considered a 'Large' tree by The City.



Tree #105 is a western red cedar with a DBH of 22 inches growing near the southwest edge of the subject property bordering what is identified as the Bitney Parcel. This tree is in good condition, but shows some stress in the canopy with somewhat thin foliage.



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NEIGHBORING OR RIGHT OF WAY (ROW) TREES

Trees #219-229, 234, 235, and 236 along the right of way (ROW) on the west, south, and east sides of the subject parcel have been approved for removal by Mercer Island Design Commission on January 22nd 2019. These trees would be in the middle of the sidewalk in the proposed condition, in conflict with current town center streetscape standards.



Neighboring trees #201-218 are found to the north of the subject property and are intended to be retained. Tree #201 is a flowering pear street tree near 77<sup>th</sup> Ave SE. This tree is far enough away from the proposed development to remain unaffected.

Trees #206, 211, and 218 are red maples (*Acer rubrum*) found further north in the McDonald's parking lot. The proposed development is south of their critical root zones and will not negatively impact their structure or viability. Of these only #206 is considered 'Large' with a DBH of 11.6 inches.





2885 78th Ave SE

Trees #207 and 217 are 'Large' London planes (*Platanus x. acerifolia*) growing near the north property line. The critical root zone of #217 (14 inch DBH) extends approximately two feet into an area planned for a 'suspended' concrete pavement system. #207 (23.1 inch DBH) is located near, or possibly on the property line and has large surface roots which are disrupting the walkway and steps immediately to its west.



The remainder of the trees north of the subject property are European hornbeam (*Carpinus betulus*). This species is commonly planted in urban settings as it is fairly tolerant of development pressures. These trees are in good condition and are unlikely to have significant roots which extend to into the development area to the south.

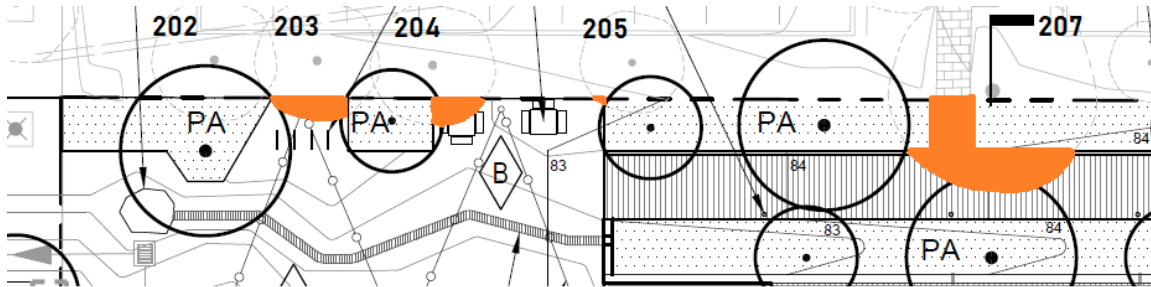




2885 78th Ave SE

**5. Discussion / Recommendations**

The proposed re-development is extensive and will not allow for tree retention within the subject property lines. The right of ways on the west, south, and east perimeters will be redesigned and the street trees will be replaced per current Town Center Streetscape standards. The priority for tree retention are the trees north of the subject property. A six foot wide planting area is proposed along the majority of this property line. Ground disturbance in this area including any trenching for utilities, or compaction caused by heavy equipment traffic or materials storage shall be prohibited in this area. Pavement installation is proposed within the critical root zones of trees #203, 204, and 207 as shown in orange on the diagram below.



Expanding the adjacent planting areas around #203 and 204 and avoiding soil disturbance in this area will minimize the impacts to these trees. The concrete steps joining the brick path to the north will likely need to be replaced, and a new concrete path is proposed within the critical root zone of #207. There are large structural roots in the area of the steps. A diagram showing removal and replacement of these steps should be developed to instruct crews of the process for completing this work without damaging the structural roots.





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Recommendations

- Obtain all necessary permits from the City of Mercer Island prior to commencing development work that will impact the off site trees.
- Concrete or pavement to be removed from within the driplines of retained trees shall be broken into manageable pieces and removed by hand. Resurfacing existing pavement is preferable to removal and replacement.
- Any roots of trees to be retained which are exposed during demolition or construction should be regularly irrigated to prevent them from drying out until they can be recovered with soil.
- Create a site plan showing all proposed improvements near retained trees, and follow all tree protection measures outlined below.

Per MICC 19.10:

B. Commercial or Multifamily Zoning Designations – Tree Removal.

1. In the PI, B, C-O, PBZ, TC, MF-2, MF-2L, and MF-3 zoning designations a tree permit is required and will be granted if it meets any of the following criteria:

- a. It is necessary for public safety, removal of hazardous trees, or removal of diseased or dead trees;
- b. It is necessary to enable construction work on the property to proceed and the owner has used reasonable best efforts to design and locate any improvements and perform the construction work in a manner consistent with the purposes set forth in MICC 19.10.005;
- c. It is necessary to enable any person to satisfy the terms and conditions of any covenant, condition, view easement or other easement, or other restriction encumbering the lot that was recorded on or before July 31, 2001; and subject to MICC 19.10.090(B);
- d. It is part of the city’s forest management program or regular tree maintenance program and the city is the applicant;
- e. It is desirable for the enhancement of the ecosystem or slope stability based upon professional reports in form and content acceptable to the city arborist.

2. Design Commission Review Required in Commercial Zones. A tree permit for a development proposal, resulting in regulated improvements located in a commercial zone, that has previously received design commission approval must first be reviewed and approved by the city’s design commission prior to permit issuance by the city. (Ord. 18C-05 § 1 (Att. A); Ord. 17C-15 § 1 (Att. A)).

**6. Tree Protection Measures**

The following general guidelines are recommended to ensure that the designated areas set aside for the preserved trees are protected and construction impacts are kept to a minimum. Tree protection should adhere to best management practices for tree and soil protection during development activity.

- 1. Tree protection fencing shall be erected around retained trees and positioned as shown on the attached map prior to moving any heavy equipment on site. Doing this will set clearing limits and avoid compaction of soils within root zones of retained trees.
- 2. Any existing improvements to be removed within the drip-lines or tree protection zones shall be removed by hand or utilizing a tracked mini-excavator.
- 3. Excavation limits should be laid out in paint on the ground to avoid over excavating.



2885 78th Ave SE

4. Excavations within the drip-lines shall be monitored by a qualified tree professional so necessary precautions can be taken to decrease impacts to tree parts. A qualified tree professional shall monitor excavations when work is required and allowed within the “limits of disturbance”.
5. To establish sub grade for foundations, curbs and pavement sections near the trees, soil should be removed parallel to the roots and not at 90 degree angles to avoid breaking and tearing roots that lead back to the trunk within the drip-line. Any roots damaged during these excavations should be exposed to sound tissue and cut cleanly with a saw. Cutting tools should be sterilized with alcohol.
6. Areas excavated within the drip-line of retained trees should be thoroughly irrigated daily during dry periods.
7. Preparations for final landscaping shall be accomplished by hand within the drip-lines of retained trees. Large equipment shall be kept outside of the tree protection zones at all times. Simply finish landscape within 10’ of retained trees with a 2” to 4” layer of organic mulch.

**7. Tree Replacement Requirement**

Any tree removed will need to be replaced per MICC 19.10.070 Tree replacement. Replacement tree specifications are as follows:

**1. Location.**

Replacement trees shall be located in the following order of priority from most important to least important:

- On-site replacement adjacent to or within critical tree areas as defined in Chapter 19.16 MICC;
- On-site replacement outside of critical tree areas adjacent to other retained trees making up a grove or stand of trees;
- c. On-site replacement outside of critical tree areas; and
- d. Off-site in adjacent public right-of-way where explicitly authorized by the city.

**2. Species.**

Replacement trees shall primarily be those species native to the Pacific Northwest. In making a determination regarding the species of replacement trees, the city arborist shall defer to the species selected by the property owner unless the city arborist determines that the species selected is unlikely to survive for a period of at least 10 years, represents a danger or nuisance, would threaten overhead or underground utilities or would fail to provide adequate protection to any critical tree area.

**3. Size.**

- a. Coniferous trees shall be at least six feet tall; and
- b. Deciduous trees shall be at least one and one-half inches in caliper.



2885 78th Ave SE

*There is no warranty suggested for any of the trees subject to this report. Weather, latent tree conditions, and future man-caused activities could cause physiologic changes and deteriorating tree condition. Over time, deteriorating tree conditions may appear and there may be conditions, which are not now visible which, could cause tree failure. This report or the verbal comments made at the site in no way warrant the structural stability or long term condition of any tree, but represent my opinion based on the observations made.*

*Nearly all trees in any condition standing within reach of improvements or human use areas represent hazards that could lead to damage or injury.*

Please call if you have any questions or I can be of further assistance.

Sincerely,



Benjamin Mark  
ISA Certified Arborist #PN-6976A  
Tree Risk Assessment Qualified (TRAQ)



**Tree Summary Table**  
 For: Xing Hua Parcel #531510-1326  
 Group Ltd.

American Forest Management, Inc.  
 Date: 1/8/2020  
 Inspector: Mark

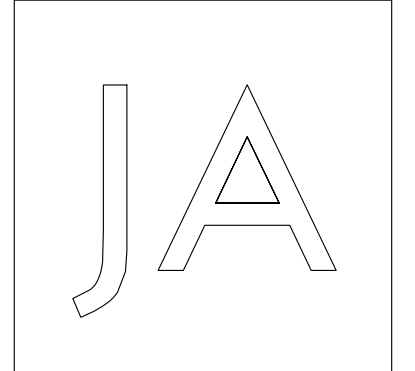
| Tree/<br>Tag# | Exceptional Tree  |                         | To Be Removed |        | Drip-Line (feet) .... Limit of Disturbance (feet) |   |   |   | Condition | Viable? | Removal? | Required Replacement | Comments  |
|---------------|-------------------|-------------------------|---------------|--------|---|---|---|---|-----------|---------|----------|----------------------|---|
|               | Common            | Genus                   | DBH           | Height | N   | S | E | W |           |         |          |                      |   |
|               |                   |                         |               |        |   |   |   |   |           |         |          |                      |   |
| 101           | Flowering pear    | <i>Pyrus calleryana</i> | 9.6           |        | x   | x | x | x | Fair      | Yes     | YES      | 1                    | Leans west. Girdling root, poor planting            |
| 102           | Flowering pear    | <i>Pyrus calleryana</i> | 7             |        | x   | x | x | x | Good      | Yes     | YES      | 1                    |   |
| 103           | Flowering cherry  | <i>Prunus sp.</i>       | 10            |        | x   | x | x | x | Fair      | Yes     | YES      | 1                    | Fair-poor condition, surrounded by invasive species |
| 104           | Flowering cherry  | <i>Prunus sp.</i>       | 7             |        | x   | x | x | x | Fair      | Yes     | YES      | 1                    | Dead branches in canopy                             |
| 105           | Western red cedar | <i>Thuja plicata</i>    | 22            |        | x   | x | x | x | Good      | Yes     | YES      | 2                    |   |
| 112           | Flowering pear    | <i>Pyrus calleryana</i> | 7             |        | x   | x | x | x | Good      | Yes     | YES      | 1                    |   |
| 113           | Flowering pear    | <i>Pyrus calleryana</i> | 7             |        | x   | x | x | x | Good      | Yes     | YES      | 1                    |   |
| 114           | Flowering pear    | <i>Pyrus calleryana</i> | 8             |        | x   | x | x | x | Good      | Yes     | YES      | 1                    |   |
| 115           | Flowering pear    | <i>Pyrus calleryana</i> | 6             |        | x   | x | x | x | Good      | Yes     | YES      | 1                    |   |

| Neighboring / Street Trees |                    |                                |      |        |    |         |       |         |           |         |          |                      |                                      |
|----------------------------|--------------------|--------------------------------|------|--------|----|---------|-------|---------|-----------|---------|----------|----------------------|--------------------------------------|
| Tag#                       | Common             | Genus                          | DBH  | Height | N  | S       | E     | W       | Condition | Viable? | Removal? | Required Replacement | Comments                             |
| 201                        | Flowering pear     | <i>Pyrus calleryana</i>        | 13   | 48     | 12 | 10      | 8...4 | 10      | Fair      | Yes     | NO       |                      | 77th Ave SE Street tree. Thin canopy |
| 202                        | European hornbeam  | <i>Carpinus betulus</i>        | 13.1 | 58     |    | 9...8   |       |         | Good      | Yes     | NO       |                      |                                      |
| 203                        | European hornbeam  | <i>Carpinus betulus</i>        | 13   | 56     |    | 8...6   |       |         | Good      | Yes     | NO       |                      |                                      |
| 204                        | European hornbeam  | <i>Carpinus betulus</i>        | 17.1 | 58     |    | 8...6   |       |         | Good      | Yes     | NO       |                      |                                      |
| 205                        | European hornbeam  | <i>Carpinus betulus</i>        | 12.5 | 52     |    | 8...6   |       |         | Good      | Yes     | NO       |                      |                                      |
| 206                        | Red maple          | <i>Acer rubrum</i>             | 11.6 | 35     |    | 4...6   |       |         | Good      | Yes     | NO       |                      |                                      |
| 207                        | London Plane       | <i>Platanus x. acerifolia</i>  | 23.1 | 74     |    | 22...10 |       |         | Good      | Yes     | NO       |                      | 4' from curb                         |
| 208                        | European hornbeam  | <i>Carpinus betulus</i>        | 8.6  | 30     |    | 9...6   |       |         | Good      | Yes     | NO       |                      |                                      |
| 209                        | European hornbeam  | <i>Carpinus betulus</i>        | 9.6  | 31     |    | 8...6   |       |         | Good      | Yes     | NO       |                      |                                      |
| 210                        | European hornbeam  | <i>Carpinus betulus</i>        | 11   | 30     |    | 5...6   |       |         | Good      | Yes     | NO       |                      |                                      |
| 211                        | Red maple          | <i>Acer rubrum</i>             | 9    | 28     |    | 13...8  |       |         | Good      | Yes     | NO       |                      |                                      |
| 212                        | European hornbeam  | <i>Carpinus betulus</i>        | 9.2  | 29     |    | 8...6   |       |         | Good      | Yes     | NO       |                      |                                      |
| 213                        | European hornbeam  | <i>Carpinus betulus</i>        | 5.1  | 29     |    | 4...6   |       |         | Good      | Yes     | NO       |                      |                                      |
| 214                        | European hornbeam  | <i>Carpinus betulus</i>        | 7.8  | 30     |    | 6...6   |       |         | Good      | Yes     | NO       |                      |                                      |
| 215                        | European hornbeam  | <i>Carpinus betulus</i>        | 8.5  | 30     |    | 5...6   |       |         | Good      | Yes     | NO       |                      |                                      |
| 216                        | European hornbeam  | <i>Carpinus betulus</i>        | 11   | 34     |    | 8...6   |       |         | Good      | Yes     | NO       |                      |                                      |
| 217                        | London Plane       | <i>Platanus x. acerifolia</i>  | 14   | 61     |    | 22...10 |       | 17...10 | Good      | Yes     | NO       |                      |                                      |
| 218                        | Columnar red maple | <i>Acer rubrum 'Armstrong'</i> | 8    | 44     | 5  | 6...12  | 6     | 5       | Good      | Yes     | NO       |                      |                                      |
| 219                        | Red maple          | <i>Acer rubrum</i>             | 10.6 | 34     | x  | x       | x     | x       | Good      | Yes     | YES      | 2                    |                                      |
| 220                        | Red maple          | <i>Acer rubrum</i>             | 10.2 | 38     | x  | x       | x     | x       | Good      | Yes     | YES      | 2                    |                                      |
| 221                        | Red maple          | <i>Acer rubrum</i>             | 14.7 | 40     | x  | x       | x     | x       | Good      | Yes     | YES      | 2                    |                                      |
| 222                        | Columnar red maple | <i>Acer rubrum 'Armstrong'</i> | 10   | 39     | x  | x       | x     | x       | Good      | Yes     | YES      | 1                    |                                      |
| 223                        | Columnar red maple | <i>Acer rubrum 'Armstrong'</i> | 9.6  | 37     | x  | x       | x     | x       | Good      | Yes     | YES      | 1                    | Narrow form.                         |
| 224                        | Red maple          | <i>Acer rubrum</i>             | 11.5 | 39     | x  | x       | x     | x       | Good      | Yes     | YES      | 2                    |                                      |
| 225                        | Red maple          | <i>Acer rubrum</i>             | 12.8 | 40     | x  | x       | x     | x       | Good      | Yes     | YES      | 2                    |                                      |
| 226                        | Columnar red maple | <i>Acer rubrum 'Armstrong'</i> | 7    | 34     | x  | x       | x     | x       | Good      | Yes     | YES      | 1                    |                                      |
| 227                        | Flowering pear     | <i>Pyrus calleryana</i>        | 5    | 25     | x  | x       | x     | x       | Good      | Yes     | YES      | 1                    |                                      |
| 228                        | Flowering pear     | <i>Pyrus calleryana</i>        | 5.5  | 21     | x  | x       | x     | x       | Fair      | Yes     | YES      | 1                    |                                      |
| 229                        | Flowering pear     | <i>Pyrus calleryana</i>        | 6.2  | 21     | x  | x       | x     | x       | Fair      | Yes     | YES      | 1                    |                                      |
| 234                        | Flowering pear     | <i>Pyrus calleryana</i>        | 10   | 34     | x  | x       | x     | x       | Fair      | Yes     | YES      | 1                    |                                      |
| 235                        | Flowering pear     | <i>Pyrus calleryana</i>        | 9    | 34     | x  | x       | x     | x       | Fair      | Yes     | YES      | 1                    |                                      |
| 236                        | Flowering pear     | <i>Pyrus calleryana</i>        | 8    | 38     | x  | x       | x     | x       | Fair      | Yes     | YES      | 1                    |                                      |
| 32                         |                    |                                |      |        |    |         |       |         |           |         |          |                      |                                      |

Drip-Line and Limits of Disturbance measurements from face of trunk

Trees on neighboring properties - Drip-line and Limits of Disturbance measurements from property lines





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Landscape Architects  
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Suite 200  
Seattle, WA 98103  
t 206.285.3026



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MIXED USE**

XING HUA GROUP LTD.  
2885 78TH AVE SE  
MERCER ISLAND, WA

DRAWING ISSUE

| Date     | Description     |
|----------|-----------------|
| 12.24.19 | LAND USE PERMIT |

SHEET TITLE

EXISTING TREE PLAN

SHEET NO.

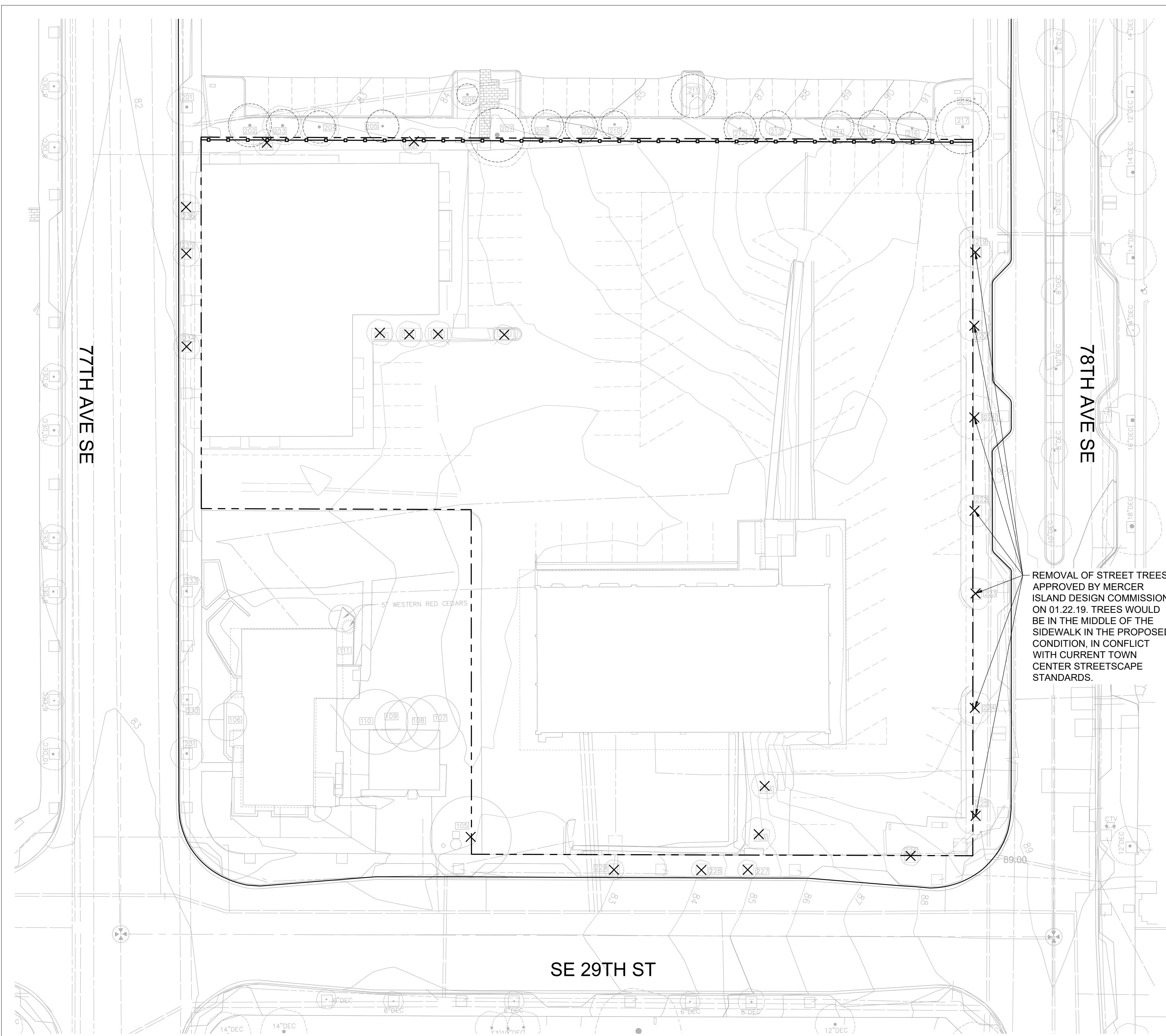
**L001**

Drawn SB  
Checked CB

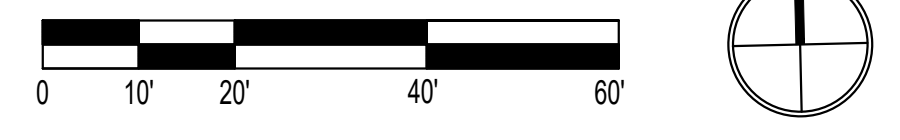
- TREE PROTECTION LEGEND**
- PROPERTY LINE
  - - - - - CRITICAL ROOT ZONE
  - TREE PROTECTION FENCE
  - (E) TREE - PROTECT IN PLACE
  - ⊗ (E) TREE - TO BE REMOVED

REF. L002 FOR EXISTING TREE INVENTORY AND TREE PROTECTION STANDARDS.

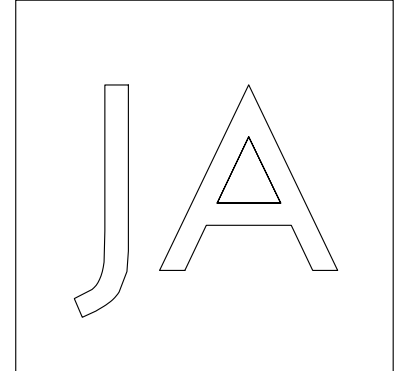
REMOVAL OF STREET TREES APPROVED BY MERCER ISLAND DESIGN COMMISSION ON 01.22.19. TREES WOULD BE IN THE MIDDLE OF THE SIDEWALK IN THE PROPOSED CONDITION, IN CONFLICT WITH CURRENT TOWN CENTER STREETScape STANDARDS.



**1 EXISTING TREE PLAN**  
SCALE: 1" = 20'







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DRAWING ISSUE

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|----------|-----------------|
| 12.24.19 | LAND USE PERMIT |

SHEET TITLE

LANDSCAPE SITE PLAN

SHEET NO.

**L101**

Drawn SB  
Checked CB

**ABBREVIATIONS**

|        |                          |
|--------|--------------------------|
| ARCH   | ARCHITECTURE             |
| BLDG   | BUILDING                 |
| CIP    | CAST IN PLACE            |
| CONC   | CONCRETE                 |
| DK     | DARK                     |
| EXIST  | EXISTING                 |
| FFE    | FINISHED FLOOR ELEVATION |
| LT     | LIGHT                    |
| MED    | MEDIUM                   |
| NIC    | NOT IN CONTRACT          |
| PVMT   | PAVEMENT                 |
| REF    | REFERENCE                |
| R.O.W. | RIGHT OF WAY             |
| SIM    | SIMILAR                  |
| TYP    | TYPICAL                  |

**LEGEND**

| SYMBOL | ITEM  |
|--------|---|
|        | EXISTING TREE TO REMAIN, PROTECT IN PLACE, REF. L001 - EXISTING TREE PLAN |
|        | PROPOSED TREES, REF. L501 - LANDSCAPE PLANTING PLAN                       |
|        | PROPERTY LINE   |

**SURFACING SCHEDULE**

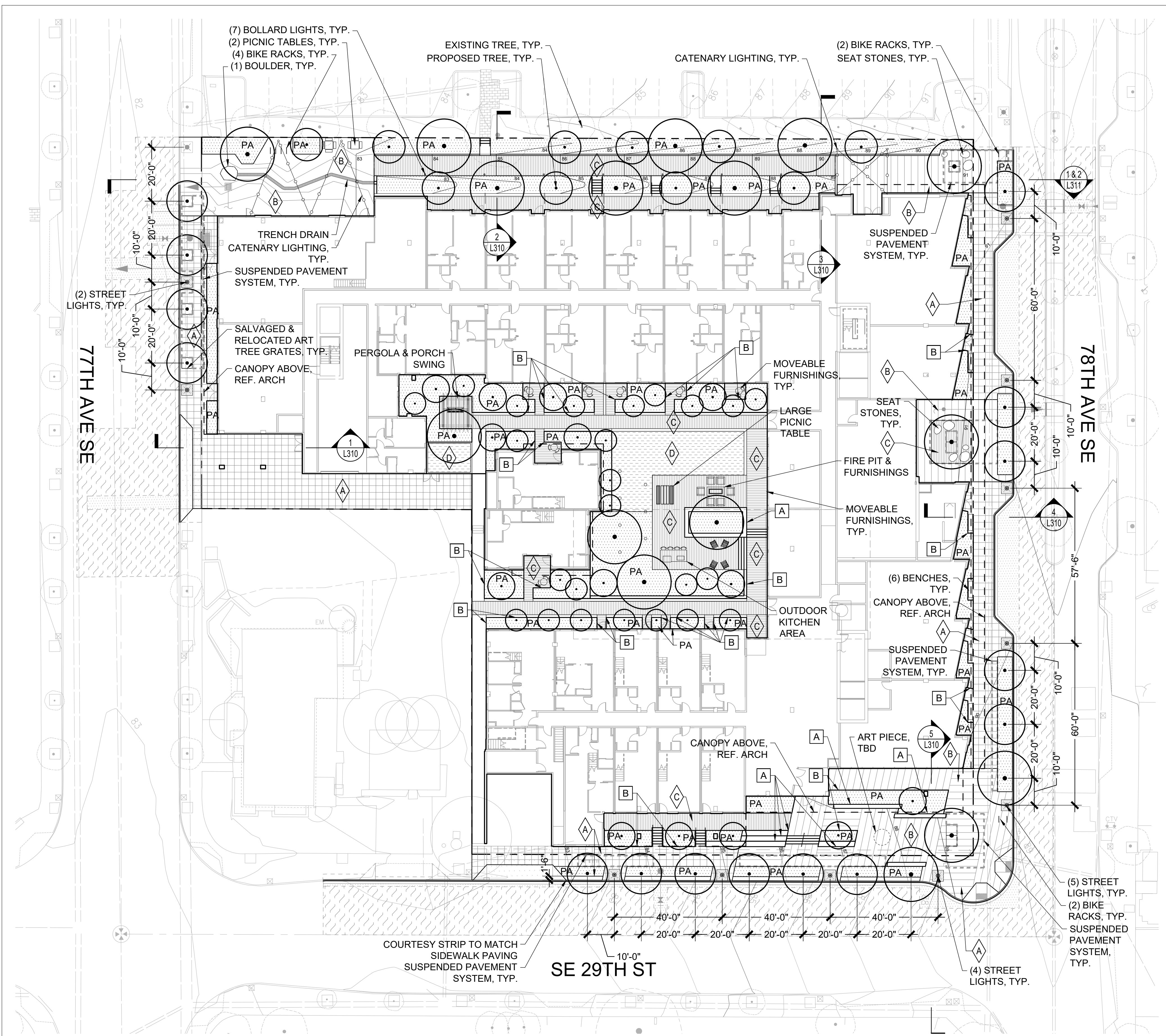
| SYMBOL | TYPE                                     | FINISH / COLOR / NOTES  |
|--------|--|---|
|        | CIP CONC. PVMT. PER TOWN CENTER STANDARD | CIP CONCRETE PAVEMENT, 30" X 30" TOOLED OR SAWCUT JOINTS, LT. BROOM FINISH PERPENDICULAR TO CURB WITH MIN. THICKNESS OF 4". |
|        | SPECIALTY CIP CONC. PVMT.                | CIP CONCRETE PAVEMENT, SAWCUT JOINTS, SCORING PER PLANS, LT. BROOM FINISH   |
|        | PRECAST UNIT PAVERS                      | 12" X 60" ARCHITECTURAL PRECAST PAVERS, AS AVAILABLE FROM STEPSTONE.  |
|        | SYNTHETIC TURF                           | SYNLAWN ROOFDECK PREMIUM SYSTEM   |
|        | SUSPENDED PAVEMENT SYSTEM                | SUSPENDED PAVEMENT SYSTEM WITH LID AND GEOTEXTILE SEPARATOR AT TOP. DEEP ROOT SILVA CELL OR APPROVED EQUAL.                 |
|        | TRENCH DRAIN                             | TRENCH DRAIN WITH DECORATIVE GRATE  |
|        | PLANTING AREA                            | REF. L501 - LANDSCAPE PLANTING PLAN   |

**SITE FURNISHINGS**

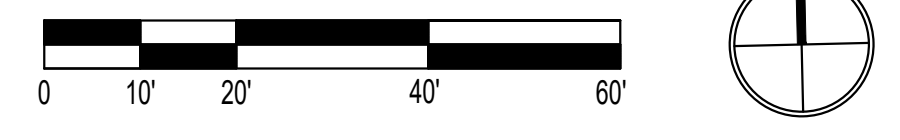
| SYMBOL | TYPE            | FINISH/COLOR/NOTES  |
|--------|-----------------|---|
|        | SEAT STONES     | SOMA STONES, AS AVAILABLE FROM CONCRETEWORKS.   |
|        | BOULDERS        | GRANITE BOULDERS, "HIGH CASCADE, WEATHERED", AS AVAILABLE FROM MARENAKOS ROCK CENTER            |
|        | BIKE RACKS      | SPORTWORKS NORTHWEST - WESTPORT INVERTED-U BIKE RACK  |
|        | PICNIC TABLES   | TBD   |
|        | BENCHES         | TBD   |
|        | STREET LIGHTS   | POLE: BEGA 927/GFCI, PANTONE GREEN. FIXTURE: BEGA 77910, PANTONE GREEN PER TOWN CENTER STANDARD |
|        | CATENARY LIGHTS | TBD   |
|        | BOLLARD LIGHTS  | TBD   |

**WALL SCHEDULE**

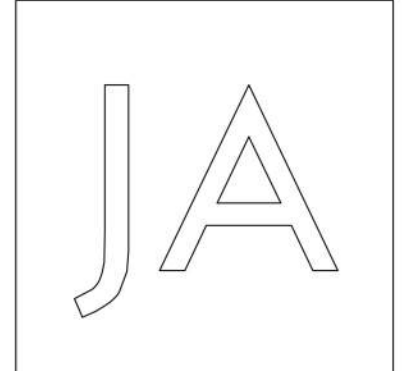
| KEY | TYPE        | FINISH/COLOR/NOTES  |
|-----|-------------|---|
|     | WALL TYPE A | 18"-24" SEAT WALL, STEEL FRAME WITH WOOD TOP (BACKED AND BACKLESS). |
|     | WALL TYPE B | WEATHERED STEEL PLANTER WALL, 1/4" THICK, 18" TALL MIN, 30" MAX.    |



**1 LANDSCAPE SITE PLAN**  
SCALE: 1" = 20'







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MERCER ISLAND, WA

| Date     | Description     |
|----------|-----------------|
| 12.24.19 | LAND USE PERMIT |

DRAWING ISSUE

SHEET TITLE  
**LANDSCAPE COLOR SITE PLAN**

SHEET NO.  
**L102**

Drawn SB  
Checked CB

**ABBREVIATIONS**

|        |                          |
|--------|--------------------------|
| ARCH   | ARCHITECTURE             |
| BLDG   | BUILDING                 |
| CIP    | CAST IN PLACE            |
| CONC   | CONCRETE                 |
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|        | PROPERTY LINE   |

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|        | PLANTING AREA                            | REF. L501 - LANDSCAPE PLANTING PLAN   |

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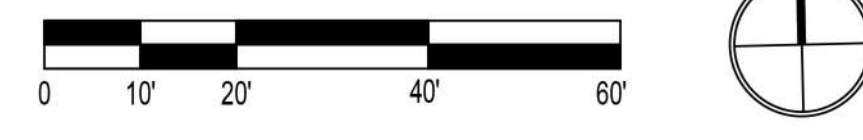
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**1 LANDSCAPE COLOR SITE PLAN**  
SCALE: 1" = 20'







# Memorandum

*City Engineer Patrick Yamashita*

**To:** Robin Proebsting, Senior Planner  
**From:** Patrick Yamashita, City Engineer  
**Subject:** DSR20-001 (Xing Hua Project, 2885 78<sup>th</sup> Ave. SE) Street Standards  
**Date:** August 19, 2020

I have reviewed the subject project and have concerns regarding potential unintended consequences of the project complying with the street standards identified in MICC 19.11.120 along their 77<sup>th</sup> Ave. SE frontage. The standards require conversion of the existing 77<sup>th</sup> Ave. SE roadway frontage from the existing five lane configuration (one lane in each direction with bike lanes plus center left turn lane) into a four lane configuration (on-street parking and sharrowed lanes (lanes shared between cars and bicycles) in both directions). The code section is provided below for your information:

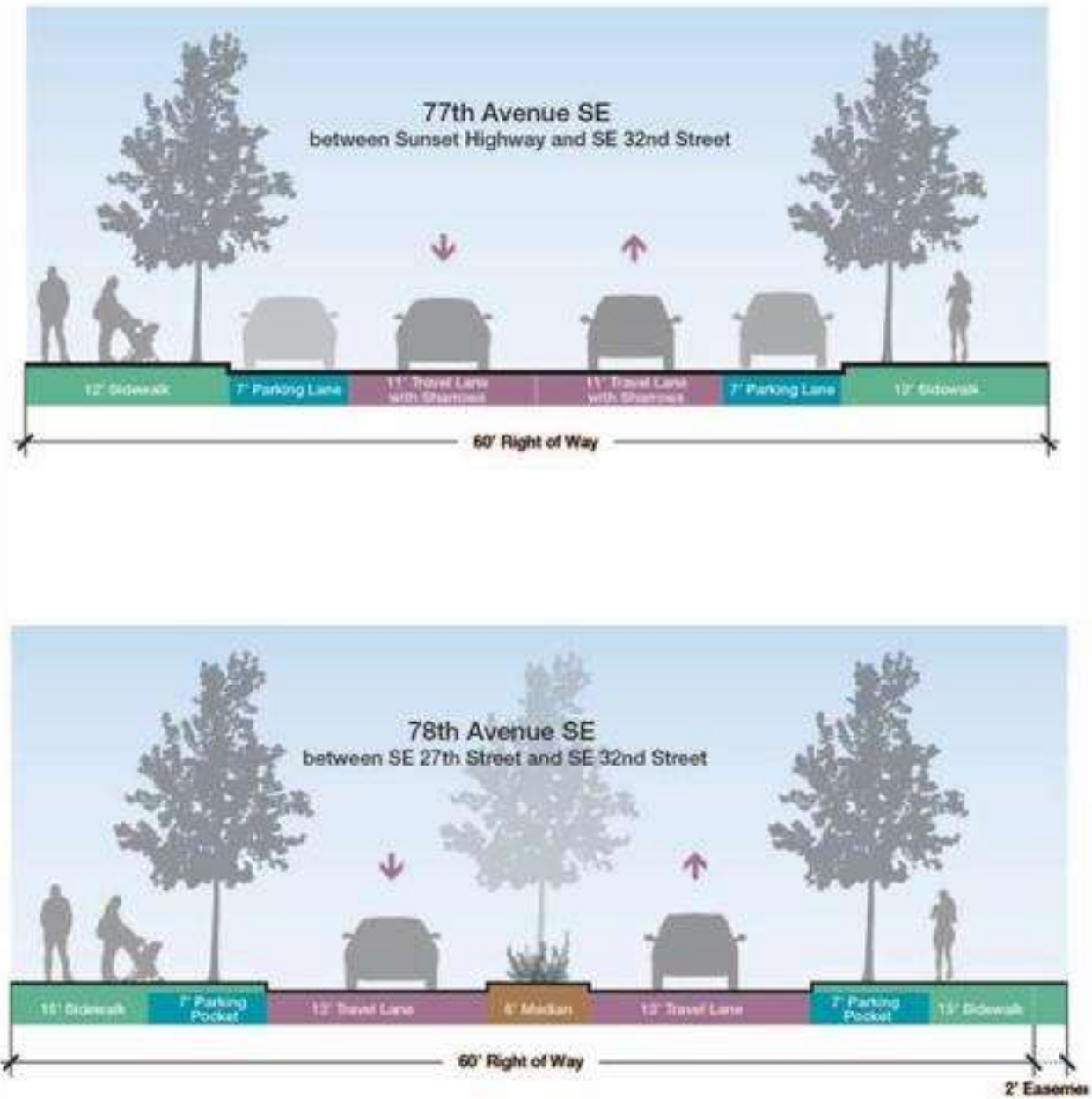
**MICC 19.11.120 Street standards**

*All major new construction abutting 77th Avenue SE or 78th Avenue SE shall improve the right-of-way adjacent to the property as required in Figure 14. Major new construction abutting all other streets shall improve the right-of-way adjacent to the property as required by the Mercer Island Town Center Streetscape Manual. The design commission may require or grant a modification to the nature or extent of any required street improvement for any of the following reasons upon recommendation by the city engineer:*

- A. If unusual topographic or physical conditions preclude the construction of the improvements as required; or*
- B. If the required improvement is part of a larger project that has been scheduled for implementation in the city’s six-year capital improvement program; or*
- C. If angled parking is required but parallel parking would enhance pedestrian, vehicle or bicycle safety, or result in a more desirable pedestrian environment; or*
- D. If other unusual circumstances preclude the construction of the improvements as required.*

Figure 14 – Town Center Street Standards





Xing Hua could meet the street standards through restriping the existing roadway. Their preliminary plans depict such an improvement. However, it makes more sense to improve the entire 77<sup>th</sup> Ave. SE corridor all at once to provide a consistent treatment rather than a patchwork created by frontage by frontage improvements over time. If Xing Hua builds the street improvements along their short frontage, it will create awkward transitions between existing/new street cross-sections, a piecemeal appearance, impacts to cyclists transitioning into/out of bike lane to sharrow to bike lane, restrict left turning vehicles and yield only a few on-street parking spaces. The City Council adopted a project in the City’s Six Year Transportation Improvement Program in June 2020 to make the street improvements along the 77th Ave. SE corridor from North Mercer Way to SE 32nd Street. It is currently programmed for 2026 at an estimated cost of \$58,000. The photo below shows the current configuration of 77<sup>th</sup> Ave. SE.





77<sup>th</sup> Ave. SE with Xing Hua site to the right

Recommendation

I recommend that the Design Commission require payment from Xing Hua to the City their fair share of the future corridor wide street improvements in accordance with the provisions in MICC 19.11.120B and D. The payment would be considered a fee-in-lieu-of constructing the street improvements required by MICC 19.11.120. The amount will be determined by the City Engineer based on a proportionate share of the corridor wide improvements. Payment would be due prior to certificate of occupancy.

Patrick Yamashita, PE  
City Engineer/Interim CPD Director



# Transportation Impact Analysis

## MERCER ISLAND MIXED USE

Prepared for:  
Johnston Architects LLC

October 2020

Prepared by:



12131 113<sup>th</sup> Avenue NE, Suite 203  
Kirkland, WA 98034-7120  
Phone: 425-821-3665  
[www.transpogroup.com](http://www.transpogroup.com)

1.18352.00

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# Introduction

This transportation impact analysis (TIA) identifies potential traffic-related impacts associated with the proposed mixed-use development in Mercer Island. As necessary, mitigation measures are identified that would offset or reduce significant impacts.

## Project Description

The proposed project is located at 2885 78th Avenue SE, north of SE 29th Street between 77th Avenue SE and 78th Avenue SE in Mercer Island and is shown on Figure 1. The proposed project includes a mixed-use building providing approximately 7,930 square feet of general retail space, 5,417 square feet of restaurant and up to 160 multifamily units. 10 percent of the units would be designated as affordable housing. The residential unit mix would consist of 12 studios, 107 one-bedrooms, 27 two-bedrooms, 12 3-bedrooms, and 2 townhouses. The overview of the proposed site plan is shown in Figure 2. The project would replace approximately 19,136 square feet of various retail and commercial uses. It is anticipated that the proposed development would be completed and occupied in 2022.

Below grade parking is proposed on-site with up to 203 total parking stalls<sup>1</sup>. 160 stalls for the residential use and 43 commercial stalls. The 43 general retail stalls would be located on the P1 floor of the parking structure. A single berth loading area serving the commercial uses, as well as serving as the move-in/move-out loading, would be located along 77th Avenue SE. A shared parking management plan would be implemented to accommodate commercial and parking demand by time of day, more details are provided in the Parking section of the TIA. Vehicular access to the project site would be provided via SE 29th Street. A summary of the parking by floor and access driveway is provided in Table 1.

**Table 1. Parking Summary by Level and Use**

| Parking Level                            | Public Commercial | Residential | Total Parking |
|--|-------------------|-------------|---------------|
| <b><u>Access from SE 29th Avenue</u></b> |                   |             |               |
| P1                                       | 43                | 80          | 123           |
| P2                                       | 0                 | 80          | 80            |
| <b>Total Parking</b>                     | <b>43</b>         | <b>160</b>  | <b>203</b>    |

Figure 3 and Figure 4 show the preliminary site plan for each parking level that provide access via SE 29th Street.

## Study Area and Approach

The study area and approach were reviewed and approved by City staff through a scoping process. The analysis focused on the weekday AM and PM peak periods (7:00 to 9:00 a.m. and 4:00 to 6:00 p.m.) when roadway network volumes are typically greatest. Intersections impacted by 10 or more trips were identified as study intersections. Due to the different trip generation in the AM and PM peak periods, this meant that slightly different intersections were studied for each time-period. The study intersections include (see also Figure 1):

1. N Mercer Way/76th Avenue SE (AM Peak Only)
2. N Mercer Way/77th Avenue SE (AM Peak Only)
3. I-90 EB Off-ramp/77th Avenue SE (AM and PM Peak)
4. 77th Avenue SE/SE 27th Street (AM and PM Peak)

<sup>1</sup> One loading area would be provided in addition to the 203 stalls outside the parking structure.





5. Island Crest Way/SE 27th Street (AM and PM Peak)
6. SE 28th Street/78th Avenue SE (AM and PM Peak)
7. SE 28th Street/80th Avenue SE (AM and PM Peak)
8. SE 28th Street/Island Crest Way (AM and PM Peak)
9. SE 29th Street/77th Avenue SE (AM and PM Peak)
10. SE 29th Street/78th Avenue SE (AM and PM Peak)
11. Island Crest Way/SE 40th Street (AM and PM Peak)
12. Project Driveway/SE 29th Street (AM and PM Peak)

The TIA includes a review of the background conditions in the site vicinity including the roadway network, existing and future (2022) weekday PM peak hour traffic volumes, traffic operations, traffic safety, non-motorized facilities, and transit. Future conditions, which assumed the proposed project is constructed and occupied were evaluated by adding site-generated traffic to future baseline traffic volumes. Analysis of future conditions addresses cumulative impacts of the proposed project and traffic growth in the study area. Site-generated impacts are identified based on differences in transportation conditions between future with and without project conditions.





**LEGEND**

- X = STUDY INTERSECTION (AM+PM)
- X = STUDY INTERSECTION (AM ONLY)

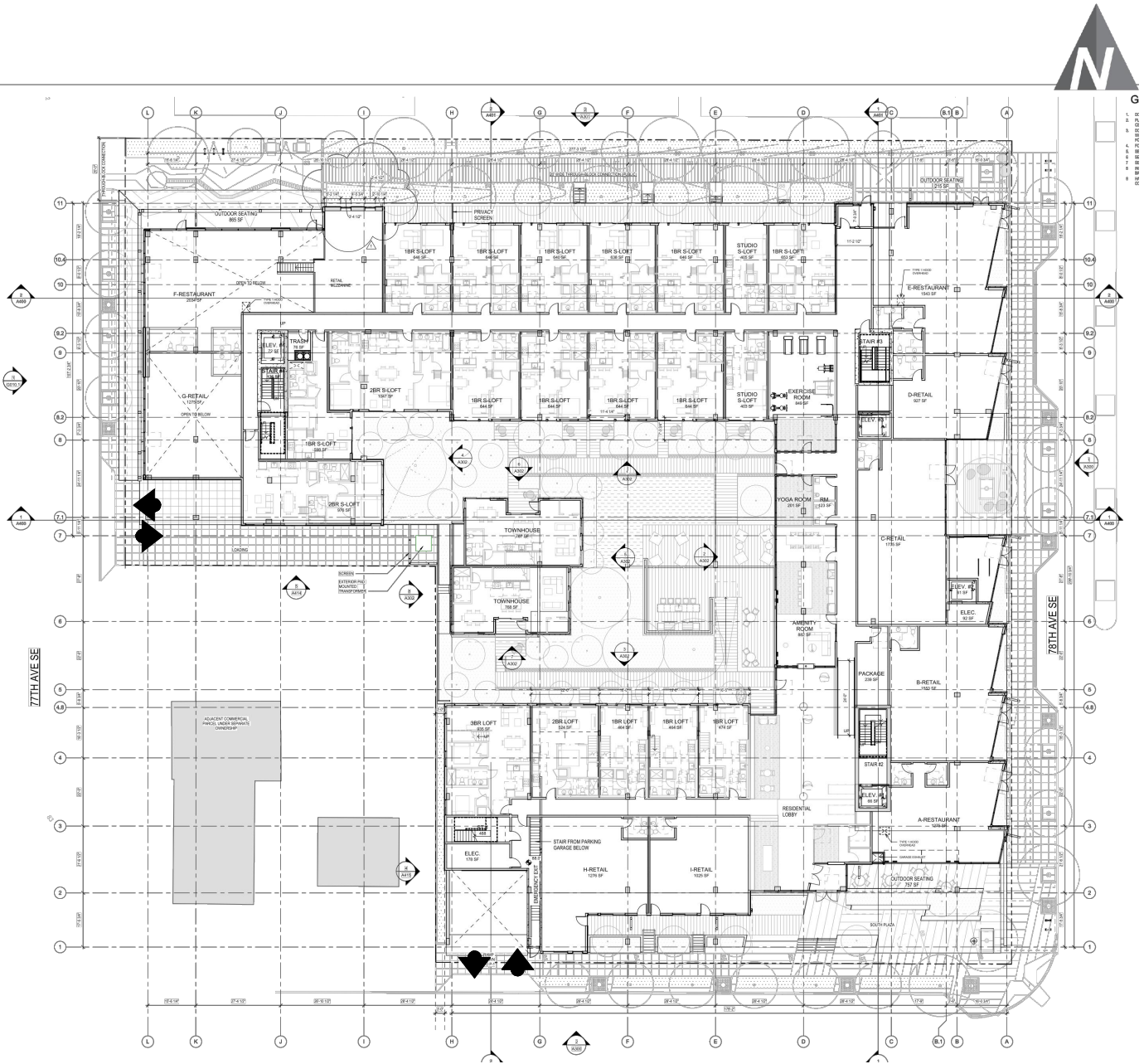
# Site Vicinity and Study Intersections

Figure

Mercer Island Residential

1



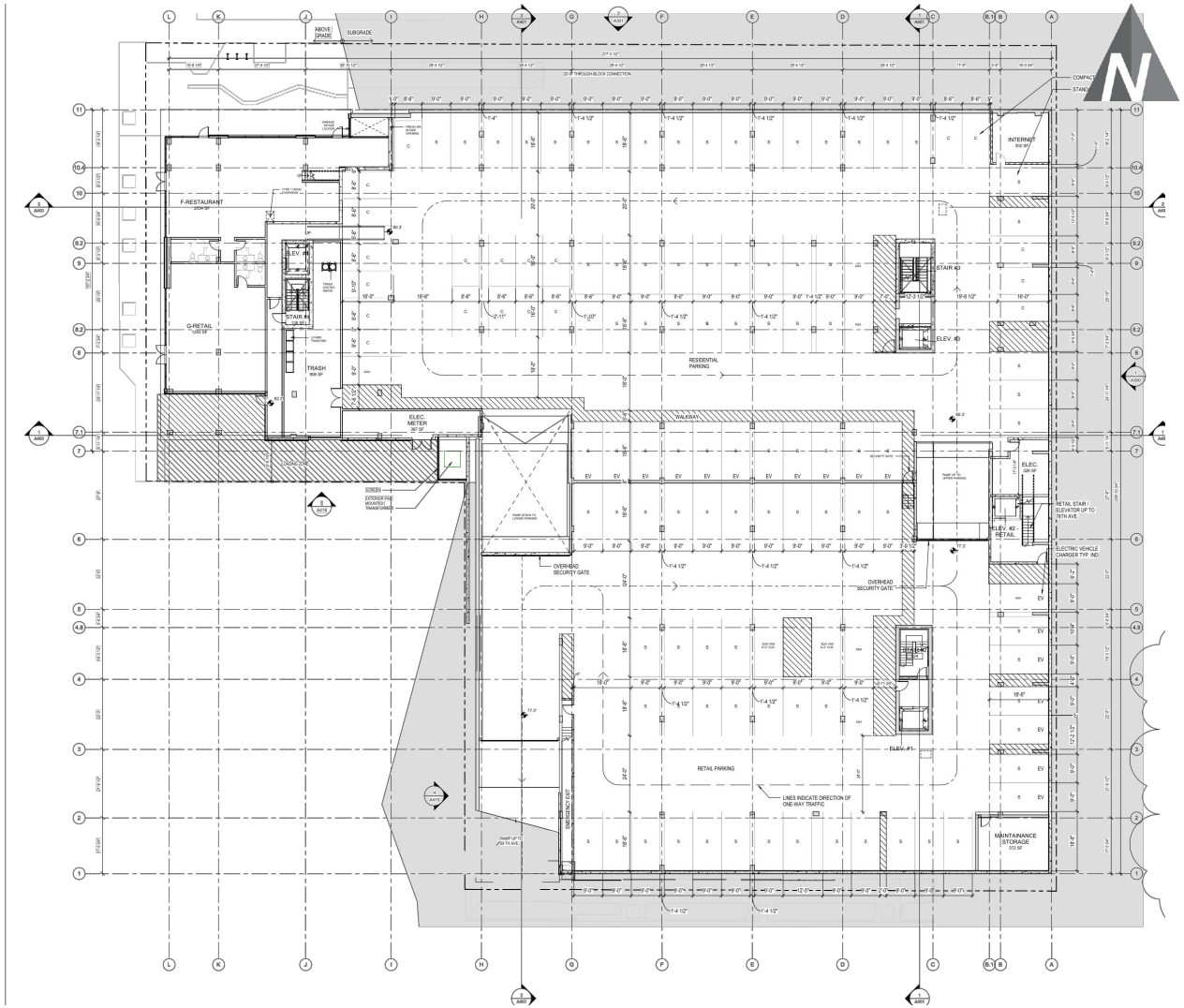


# Preliminary Site Plan

FIGURE

2



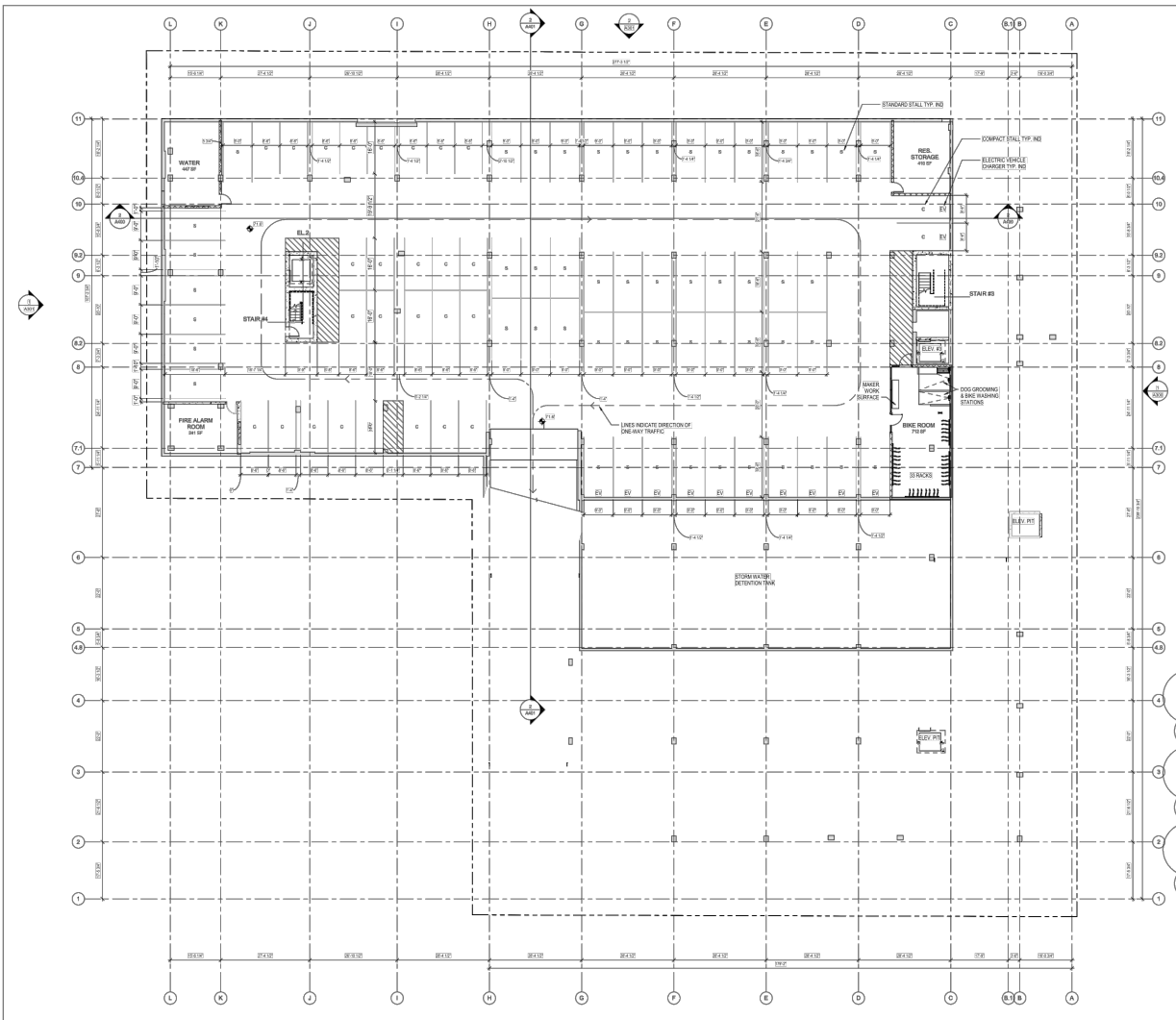


Preliminary Site Plan (Level P1)

FIGURE

3





Preliminary Site Plan (Level P2)

FIGURE

4



## Existing & Future Without-Project Conditions

This section describes existing and future conditions within the identified study area without construction of the project. Characteristics are provided for the roadway network, planned roadway improvements, non-motorized facilities, transit service, existing and future without-project traffic volumes, traffic operations, and traffic safety.

### Roadway Network

The existing roadway characteristics in the proposed project vicinity are summarized in Table 2.

**Table 2. Study Area Existing Roadway Network Summary**

| Roadway          | Arterial Classification | Posted Speed Limit | Number of Travel Lanes | Parking? | Sidewalks? |
|------------------|-------------------------|--------------------|------------------------|----------|------------|
| N Mercer Way     | Collector Arterial      | 25 mph             | 3                      | No       | Yes        |
| 76th Avenue SE   | Collector Arterial      | 25 mph             | 3                      | No       | Yes        |
| 77th Avenue SE   | Secondary Arterial      | 25 mph             | 3                      | No       | Yes        |
| 78th Avenue SE   | Collector Arterial      | 25 mph             | 2                      | Yes      | Yes        |
| 80th Avenue SE   | Secondary Arterial      | 25 mph             | 2                      | Yes      | Yes        |
| SE 27th Street   | Secondary Arterial      | 25 mph             | 3                      | No       | Yes        |
| SE 28th Street   | Collector Arterial      | 25 mph             | 2                      | Yes      | Yes        |
| SE 29th Street   | Collector Arterial      | 25 mph             | 2                      | Yes      | Yes        |
| SE 40th Street   | Secondary Arterial      | 30 mph             | 2                      | No       | Yes        |
| Island Crest Way | Primary Arterial        | 35 mph             | 4                      | No       | Yes        |

### Planned Roadway Improvements

Based on a review of the City’s 2021-2026 Six-Year Transportation Improvement Program (TIP) there is one planned improvement along 77th Avenue between SE 32nd Street and North Mercer Way that would modify channelization in relation to on-street parking and shared bike sharrows. This project is expected to begin in 2026.

### Non-Motorized Facilities

The project site is easily accessed by pedestrians and bicyclists. Pedestrian facilities consist primarily of sidewalks along both sides of 77th Avenue SE, 78th Avenue SE, and SE 29th Street near the project site. Crosswalks are located on most legs of both signalized and unsignalized intersections within the vicinity of the project from SE 27th Street to SE 29th Street and from 77th Avenue SE and Island Crest Way.

In addition to these dedicated pedestrian facilities, shared use paths accommodating both bicycle and pedestrian travel are parallel to and across I-90. Within the vicinity of the project site, bicycle lanes are provided along both sides of 77th Avenue SE between SE 27th Street and SE 32nd Street.

### Transit Service

King County Metro Transit (Metro) provides transit service in the study area. The site is well served by transit and the nearest bus stop is located on 78th Avenue SE at SE 28th Street, located east of the site. Metro Transit Routes 201 and 204 serve this bus stop. Also, the Mercer Island Park-and-Ride and transit center is located approximately 1/3 mile north of the site and a bus stop along Island Crest Way at SE 32nd Street approximately 0.4 miles away.



Several routes serve the proposed site, including Routes 201 and 204. Additional detail for Routes 201 and 204 that operate nearest the project site are provided below.

**Route 201** provides on-island service on weekdays during the AM peak hour with 40-minute headways. This route provides northbound service from the South Mercer Island Village Center to Island Crest Way and the Park-and-Ride. The nearest stop to the project site is located along 78th Avenue SE at SE 28th Street.

**Route 204** provides on-island service on weekdays with 30-minute headways during the AM and PM peaks. This route provides southbound service from the Mercer Island Park-and-Ride to Island Crest Way and the South Mercer Island Village Center. The nearest stop to the project site is located along 78th Avenue SE at SE 28th Street.

**Route 630** provides on-island community shuttle during weekday AM and PM peaks with 30-minute headways. This route provides service from the Mercer Island Park-and-Ride to Downtown Seattle. The nearest stop to the project site is located along Island Crest Way at SE 32nd Street.

In addition to bus service, Sound Transit plans to construct East Link light rail that will stop approximately ¼ mile north of the project site on I-90. Pedestrian access to the light rail station will be provided from 77th Avenue SE and 80th Avenue SE. East Link light rail service is anticipated to begin in 2023.

## Traffic Volumes

The following sections summarize the traffic volumes for existing and future without-project conditions.

### *Existing Traffic Volumes*

Existing weekday AM and PM peak hour traffic counts were based on traffic counts collected March 2017 and 2018<sup>2</sup>. The 2017 and 2018 counts were grown to existing 2020 conditions by applying an annual 1.5 percent growth rate as coordinated with City staff. Figure 5 illustrates the existing weekday AM and PM peak hour traffic volumes at the study intersections, rounded to the nearest 5 vehicles to account for daily fluctuations in traffic. Detailed traffic volumes are provided in Appendix A.

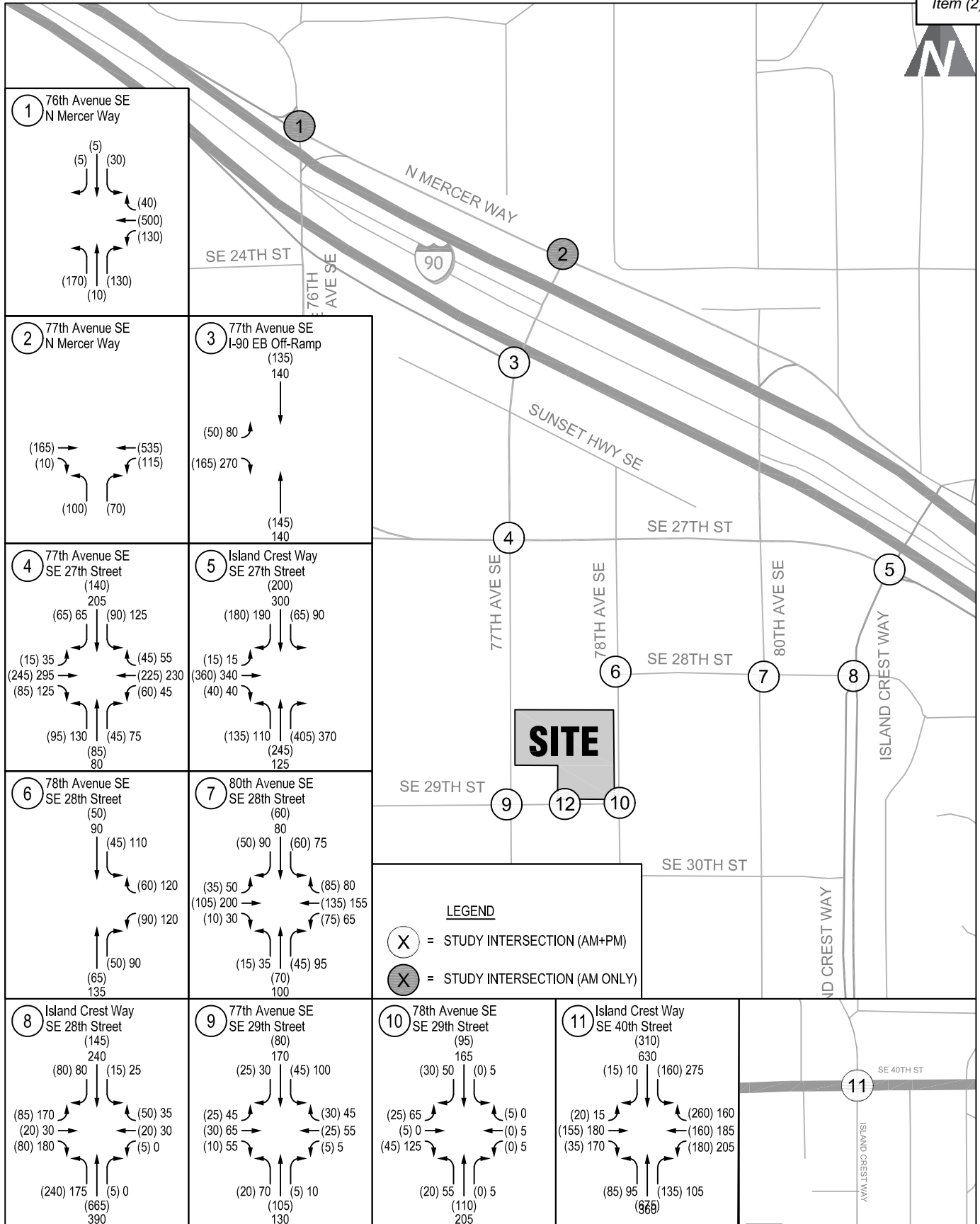
### *Future Without-Project Traffic Volumes*

Future (2022) without-project traffic volumes were forecasted by applying an annual growth rate to existing traffic volumes and adding traffic from “pipeline” development projects that would also contribute traffic to study intersections. An annual growth rate of 1.5 percent per year was applied to the existing AM and PM peak hour traffic volumes at each study intersection. Based on coordination with city staff, there were no pipeline development projects that would impact study intersections.

Figure 6 illustrates the resulting 2022 without-project AM and PM peak hour traffic volumes at the study intersections.

<sup>2</sup> New traffic counts are not currently feasible due to abnormal traffic conditions due to the 2020 coronavirus outbreak and associated Washington State Governor’s executive order and Public Health recommendations. Therefore, existing traffic volumes are based on previously collected traffic counts from 2017/2018 in the vicinity of the project.

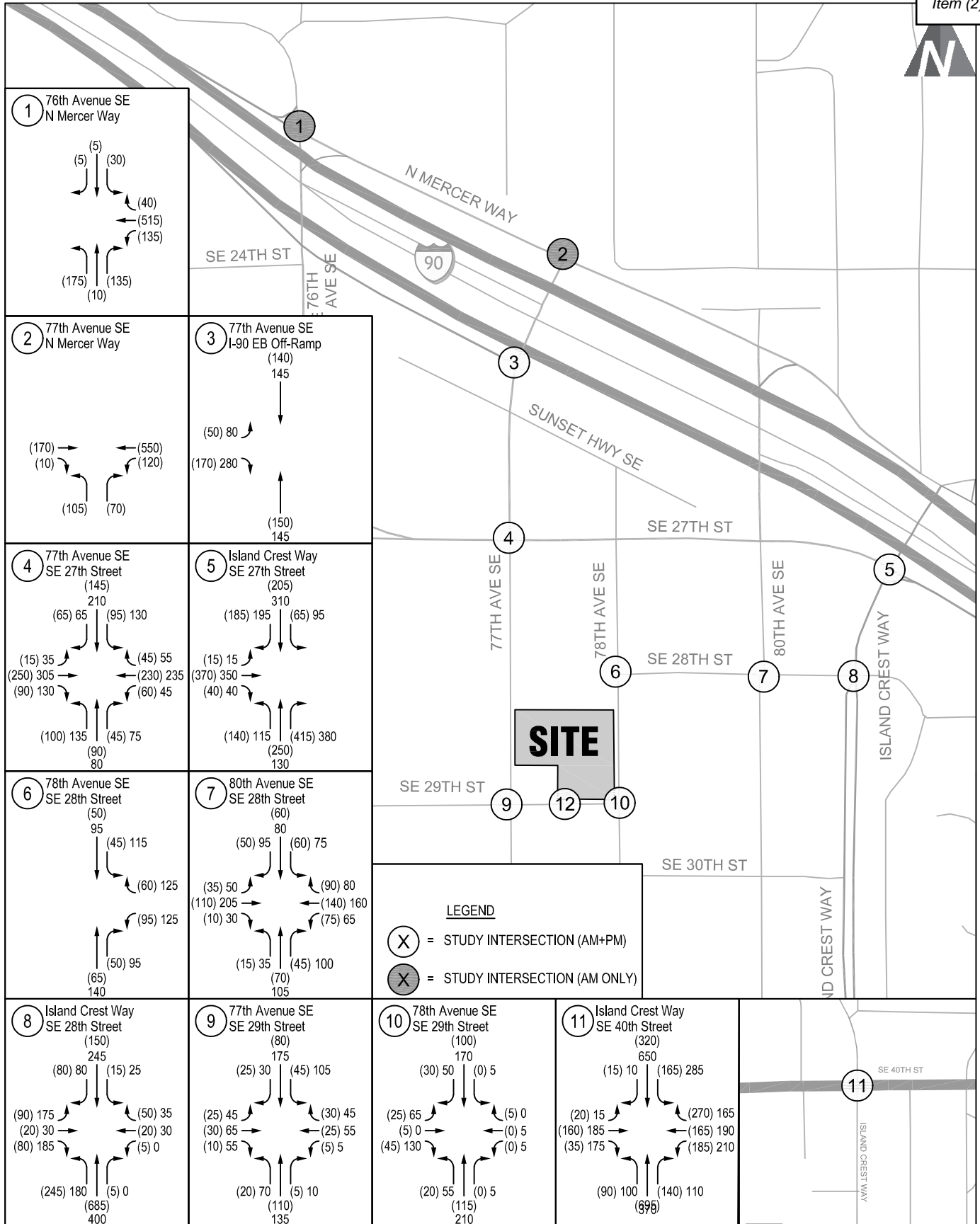




Existing (2020) Weekday AM & PM Peak Hour Traffic Volumes FIGURE

Mercer Island Mixed Use





Future (2022) Without-Project Weekday AM and PM Peak Hour Traffic Volumes

FIGURE

Mercer Island Mixed Use





## Traffic Operations

The operational characteristics of an intersection are evaluated by determining the intersection's level of service (LOS). The intersection as a whole, and its individual turning movements, can be described alphabetically with a range of levels of service (LOS A to F). LOS A indicates free-flow traffic and LOS F indicates extreme congestion and long vehicle delays. LOS is measured in average control delay per vehicle and is typically reported for the intersection as a whole at signalized and all-way stop intersections. Control delay is defined as the combination of initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. At two-way stop-controlled intersections, LOS is measured in average stopped delay per vehicle for the worst movement of the intersection. A more detailed explanation of LOS is provided in Appendix B.

Existing and future without-project LOS and delays were calculated at study intersections based on the methodologies contained in the *Highway Capacity Manual* (HCM, 6th Edition). The software program Synchro 10 was used to evaluate intersection operations using HCM methodologies. The HCM methodology takes into consideration intersection characteristics including peak hour traffic volumes, peak hour factor, heavy vehicles, traffic control and lane configuration. The following describes the analysis assumptions related to the key traffic operations inputs:

- **Traffic Volumes:** The previous section discusses the intersection traffic volumes.
- **Signal Timing:** Existing weekday AM and PM peak hour signal timing and Synchro networks for the study intersections was obtained from the City of Mercer Island. For the future 2022 analysis, signal timing was assumed to remain the same as existing conditions. This provides a conservative estimate of future operations given that agency staff periodically adjust timing settings.
- **Peak Hour Factors:** The peak hour factor (PHF) assumed for the analysis is based on the existing intersection traffic counts. PHF is a measure of traffic demand fluctuation within the peak hour and a single value was the intersection as a whole.
- **Heavy Vehicles:** The traffic counts for the study intersections included a count of heavy vehicles (vehicles with more than four tires on the roadway surface). Heavy vehicles can impact intersection operations; therefore, the analysis includes the percent of heavy vehicles on each approach as indicated by the traffic counts.

Table 3 and Table 4 shows the results of the weekday AM and PM peak hour level of service calculations for existing and without project conditions. Detailed intersection levels of service worksheets are contained in Appendix C. The City of Mercer Island has an adopted standard of LOS C at intersections of two arterial streets within and adjacent to the Town Center and LOS D elsewhere. The WSDOT has set a LOS D standard for the I-90 ramps.



**Table 3. Existing Weekday AM/PM Peak Hour Intersection Level of Service**

| Intersection                                    | Traffic Control  | AM               |                    |                 | PM               |       |    |
|---|------------------|------------------|--------------------|-----------------|------------------|-------|----|
|   |                  | LOS <sup>1</sup> | Delay <sup>2</sup> | WM <sup>3</sup> | LOS              | Delay | WM |
| 1. 76th Ave SE / N Mercer Way                   | Signal           | A                | 8                  | -               | AM Analysis Only |       |    |
| 2. 77th Ave SE / N Mercer Way                   | Signal           | A                | 6                  | -               | AM Analysis Only |       |    |
| 3. 77th Ave SE / I-90 EB Off-Ramp               | Side-Street Stop | B                | 11                 | EB              | B                | 11    | EB |
| 4. 77th Ave SE / SE 27th St                     | Signal           | B                | 13                 | -               | B                | 15    | -  |
| 5. Island Crest Way / SE 27th St / I-90 On-Ramp | Signal           | B                | 14                 | -               | B                | 13    | -  |
| 6. 78th Ave SE / SE 28th St                     | All-Way Stop     | A                | 9                  | -               | A                | 10    | -  |
| 7. 80th Ave SE / SE 28th St                     | All-Way Stop     | B                | 10                 | -               | B                | 14    | -  |
| 8. Island Crest Way / SE 28th St                | Signal           | B                | 14                 | -               | B                | 17    | -  |
| 9. 77th Ave SE / SE 29th St                     | All-Way Stop     | A                | 9                  | -               | B                | 10    | -  |
| 10. 78th Ave SE / SE 29th St                    | Side-Street Stop | B                | 10                 | EB              | B                | 14    | EB |
| 11. Island Crest Way / SE 40th St               | Signal           | D                | 45                 | -               | C                | 25    | -  |

1. Level of Service (A – F) as defined by the *Highway Capacity Manual* (HCM 6th Ed), Transportation Research Board.
2. Average delay per vehicle in seconds.
3. Worst movement reported for unsignalized intersections.

**Table 4. Future Without-Project Weekday AM/PM Peak Hour Intersection Level of Service**

| Intersection                                    | Traffic Control  | AM               |                    |                 | PM               |       |    |
|---|------------------|------------------|--------------------|-----------------|------------------|-------|----|
|   |                  | LOS <sup>1</sup> | Delay <sup>2</sup> | WM <sup>3</sup> | LOS              | Delay | WM |
| 1. 76th Ave SE / N Mercer Way                   | Signal           | A                | 8                  | -               | AM Analysis Only |       |    |
| 2. 77th Ave SE / N Mercer Way                   | Signal           | A                | 6                  | -               | AM Analysis Only |       |    |
| 3. 77th Ave SE / I-90 EB Off-Ramp               | Side-Street Stop | B                | 11                 | EB              | B                | 11    | EB |
| 4. 77th Ave SE / SE 27th St                     | Signal           | B                | 13                 | -               | B                | 15    | -  |
| 5. Island Crest Way / SE 27th St / I-90 On-Ramp | Signal           | B                | 13                 | -               | B                | 14    | -  |
| 6. 78th Ave SE / SE 28th St                     | All-Way Stop     | A                | 9                  | -               | A                | 10    | -  |
| 7. 80th Ave SE / SE 28th St                     | All-Way Stop     | B                | 10                 | -               | B                | 14    | -  |
| 8. Island Crest Way / SE 28th St                | Signal           | B                | 15                 | -               | B                | 17    | -  |
| 9. 77th Ave SE / SE 29th St                     | All-Way Stop     | A                | 9                  | -               | B                | 10    | -  |
| 10. 78th Ave SE / SE 29th St                    | Side-Street Stop | B                | 10                 | EB              | B                | 14    | EB |
| 11. Island Crest Way / SE 40th St               | Signal           | D                | 46                 | -               | C                | 26    | -  |

1. Level of Service (A – F) as defined by the *Highway Capacity Manual* (HCM 6th Ed), Transportation Research Board.
2. Average delay per vehicle in seconds.
3. Worst movement reported for unsignalized intersections.

As shown in Table 3, all study intersections currently operate at LOS D or better and meet the City's and WSDOT's LOS standards.

As shown in Table 4, under the future 2022 without-project conditions all study intersections are forecast to continue to meet the adopted LOS standards. Overall, the experience of driving in and around the Mercer Island Town Center in the future is expected to be similar to current conditions with no significant increases in delay.

## Traffic Safety

Records of reported accidents at study intersections were reviewed to help identify potential safety concerns. The most recent three-year summary of accident data provided by the WSDOT is for the period between January 1, 2017 and December 31, 2019. A historical review of the frequency of accidents was conducted at all study intersections. A summary of the total and average annual number of reported accidents at each study intersection is provided in Table 5.





**Table 5. Study Area Collision Data Summary**

| Intersection                                    | Year |      |      | Total | Annual Average | Collisions per MEV <sup>1</sup> |
|---|------|------|------|-------|----------------|---------------------------------|
|   | 2017 | 2018 | 2019 |       |                |                                 |
| 1. 76th Ave SE / N Mercer Way                   | 0    | 3    | 0    | 3     | 1.0            | 0.27                            |
| 2. 77th Ave SE / N Mercer Way                   | 1    | 2    | 2    | 5     | 1.7            | 0.46                            |
| 3. 77th Ave SE / I-90 EB Off-Ramp               | 1    | 1    | 0    | 2     | 0.7            | 0.29                            |
| 4. 77th Ave SE / SE 27th St                     | 4    | 1    | 0    | 5     | 1.7            | 0.31                            |
| 5. Island Crest Way / SE 27th St / I-90 On-Ramp | 6    | 4    | 3    | 13    | 4.3            | 0.75                            |
| 6. 78th Ave SE / SE 28th St                     | 0    | 1    | 0    | 1     | 0.3            | 0.14                            |
| 7. 80th Ave SE / SE 28th St                     | 0    | 0    | 1    | 1     | 0.3            | 0.09                            |
| 8. Island Crest Way / SE 28th St                | 3    | 0    | 0    | 3     | 1.0            | 0.20                            |
| 9. 77th Ave SE / SE 29th St                     | 0    | 0    | 1    | 1     | 0.3            | 0.12                            |
| 10. 78th Ave SE / SE 29th St                    | 1    | 1    | 0    | 2     | 0.7            | 0.27                            |
| 11. Island Crest Way / SE 40th St               | 5    | 0    | 2    | 7     | 2.3            | 0.27                            |

1. MEV = Million entering vehicles.  
*Under 23 U.S. Code § 148 and 23 U.S. Code § 409, safety data, reports, surveys, schedules, lists compiled or collected for the purpose of identifying, evaluating, or planning the safety enhancement of potential crash sites, hazardous roadway conditions, or railway-highway crossings are not subject to discovery or admitted into evidence in a Federal or State court proceeding or considered for other purposes in any action for damages arising from any occurrence at a location mentioned or addressed in such reports, surveys, schedules, lists, or data.*

Overall, there were 13 or fewer total collisions in the last three years at each intersection. Approach turn and angle collisions were the most common collision types. 20 of the 43 total collisions resulted in injury. An intersection with a collision rate greater than 1.00 collisions per million entering vehicles (MEV) typically indicates that further investigation is necessary to determine whether an adverse condition exists. As shown, no intersection has a collision rate above 1.00 collisions per MEV within the study area. None of the reported collisions during the three-year period resulted in a fatality. There were 4 reported pedestrian collisions and 2 reported bicyclist collisions. The pedestrian collisions occurred at N Mercer Way/77th Avenue SE, 77th Avenue SE/SE 27th Street and Island Crest Way/SE 27th Street intersections. The bicyclist collisions occurred at N Mercer Way/76th Avenue SE and N Mercer Way/77th Avenue SE intersections.

Traffic generated by the proposed development would likely result in a proportionate increase in the probability of traffic accidents. It is unlikely, however, that this traffic would create a safety hazard or significantly increase the number of reported accidents at the locations within the project vicinity, based on the minimal increase in overall traffic volumes and the impacts to intersection operations.





## Project Impacts

This section of the report documents potential impacts generated by the proposed project on the surrounding street network and at study intersections. First, estimated net new traffic volumes generated by the proposed site are estimated, and then distributed and assigned to adjacent streets and intersections within the study area. Next, project trips are added to future without-project traffic volumes and forecast impacts to traffic operations, safety, non-motorized facilities, and transit are identified. Site specific items are also discussed such as the operation of the site's access driveway, loading activity, and estimated on-site parking demand of the proposed project's land uses.

### Trip Generation

This section describes the estimated new vehicular trips that would be added to the local street system as a result of the project. Since the site is currently developed, trips associated with the current use of the site were observed and then subtracted from the future development trip generation to arrive at an estimate of net new traffic.

#### *Existing Site*

The proposed project would redevelop the existing uses north of SE 29th Street and between 77th Avenue SE and 78th Avenue SE. The existing buildings total approximately 19,136 square-feet with a mix of commercial uses including a pet store, a restaurant, and other small retail shops. The church on the southwest corner of the site would remain. Traffic counts were collected at the existing site access driveways in November 2018 to identify the trip generation and travel patterns of the existing uses. The data shows that the current uses generate approximately gross 19 trips during the weekday AM peak hour and approximately gross 65 trips during the weekday PM peak hour. A detailed summary of the existing counts is provided in Appendix A, along with the detailed traffic count worksheets.

#### *Proposed Project*

The proposed project includes 7,930 square feet of retail, 5,417 square feet of restaurant, and up to 160 apartments units. Weekday AM and PM peak hour trip generation for the proposed development was estimated based on the land use size and trip rates from the Institute of Transportation Engineers' (ITE) *Trip Generation*, 10th Edition for Shopping Center (LU #820), High-Turnover (Sit-Down) Restaurant (LU #932) and Mid-Rise Multifamily Housing (LU #221). The trip generation was adjusted for pass-by and internal trips to account for the localized nature of the commercial uses. Pass-by trips reflect traffic already on streets in the vicinity of the project site that would visit the commercial component of the project. Based on ITE *Trip Generation Handbook* (2017 3rd Edition), a 34 percent pass-by adjustment was made for the retail uses during the PM peak period and a 43 percent pass-by adjustment was made for the restaurant uses. Internal trips were calculated based on the method presented in the *Trip Generation Handbook*.

To calculate the anticipated net new project generated traffic and account for existing site traffic, the trip generation was adjusted for traffic generated by the existing on-site uses. The result is the weekday net new off-site vehicle trips generated by the proposed project shown in Table 6 below. Detailed trip generation calculations are provided in Appendix D.



**Table 6. Estimated Weekday Project Trip Generation**

| Land Use                                   | Size      | Trip Rate <sup>1</sup> | Unadjusted Trips | Internal Trips <sup>2</sup> | Pass-by Trips <sup>3</sup> | Total Trips |           |           |
|--|-----------|------------------------|------------------|-----------------------------|----------------------------|-------------|-----------|-----------|
|  |           |                        |                  |                             |                            | Total       | In        | Out       |
| <b><i>AM Peak Hour</i></b>                 |           |                        |                  |                             |                            |             |           |           |
| <i>Proposed</i>                            |           |                        |                  |                             |                            |             |           |           |
| Shopping Center (#820)                     | 7,930 sf  | 0.94                   | 7                | 0                           | 0                          | 7           | 4         | 3         |
| High-Turnover (Sit-Down) Restaurant (#932) | 5,417 sf  | 9.94                   | 54               | 7                           | 0                          | 47          | 24        | 23        |
| Mid-Rise Multifamily Housing (#221)        | 160 DU    | 0.36                   | 58               | 7                           | 0                          | 51          | 14        | 37        |
| <i>Sub-total</i>                           |           |                        | 119              | 14                          | 0                          | 105         | 42        | 63        |
| <i>Existing<sup>4</sup></i>                |           |                        |                  |                             |                            |             |           |           |
| Various Uses                               | 19,136 sf | -                      | 19               | -                           | 0                          | 19          | 10        | 9         |
| <b>Net New Trips</b>                       |           |                        | <b>100</b>       | <b>14</b>                   | <b>0</b>                   | <b>86</b>   | <b>32</b> | <b>54</b> |
| <b><i>PM Peak Hour</i></b>                 |           |                        |                  |                             |                            |             |           |           |
| <i>Proposed</i>                            |           |                        |                  |                             |                            |             |           |           |
| Shopping Center (#820)                     | 7,930 sf  | EQN                    | 83               | 33                          | 18                         | 32          | 19        | 13        |
| High-Turnover (Sit-Down) Restaurant (#932) | 5,417 sf  | EQN                    | 53               | 27                          | 12                         | 14          | 12        | 2         |
| Mid-Rise Multifamily Housing (#221)        | 160 DU    | 0.44                   | 70               | 24                          | 0                          | 46          | 28        | 18        |
| <i>Sub-total</i>                           |           |                        | 206              | 84                          | 30                         | 92          | 59        | 33        |
| <i>Existing<sup>4</sup></i>                |           |                        |                  |                             |                            |             |           |           |
| Various Uses                               | 19,136 sf | -                      | 97               | -                           | 32                         | 65          | 33        | 32        |
| <b>Net New Trips</b>                       |           |                        | <b>109</b>       | <b>84</b>                   | <b>-2</b>                  | <b>27</b>   | <b>26</b> | <b>1</b>  |

Notes: sf = square-feet, du = dwelling units

1. Average trip rates & regression equation from ITE Trip Generation Manual, 10th Edition (2017). Rate or equation used consistent with ITE Trip Generation Handbook, 3rd Edition (2017) methodologies.
2. Internal Capture methodology consistent with ITE Trip Generation Handbook, 3rd Edition (2017).
3. Pass-by rates based on ITE Trip Generation Handbook, 3rd Edition (2017).
4. Existing trips based on counts collected on November 2018.

Table 6 summarizes the resulting weekday AM and PM peak hour trip generation estimated for the proposed project. As shown, the project would generate approximately 105 weekday AM peak hour trips; however, subtracting trips from the current site results in 86 net new vehicle trips. Similarly, the project would generate approximately 92 weekday PM peak hour trips; however, subtracting trips from the current site results in 27 net new vehicle trips during the PM peak hour.

## Trip Distribution and Assignment

Vehicular trip distribution for this project is based on existing travel patterns in the site vicinity and coordination with the City's on-call consultant (KPG). Existing I-90 ramp counts were collected in November 2018 to determine the distribution to/from Bellevue and Seattle. The project trip distribution is provided in Figure 7 and Figure 8. The residential and commercial trip distribution is summarized below:

- Residential: 80 percent of trips would be headed off-island (50 percent to/from Bellevue and 30 percent to/from Seattle) and the remaining 20 percent would be local within Mercer Island.
- Commercial: 80 percent of trips assumed local within Mercer Island and 20 percent headed off-island (12 percent to/from Bellevue and 8 percent to/from Seattle)

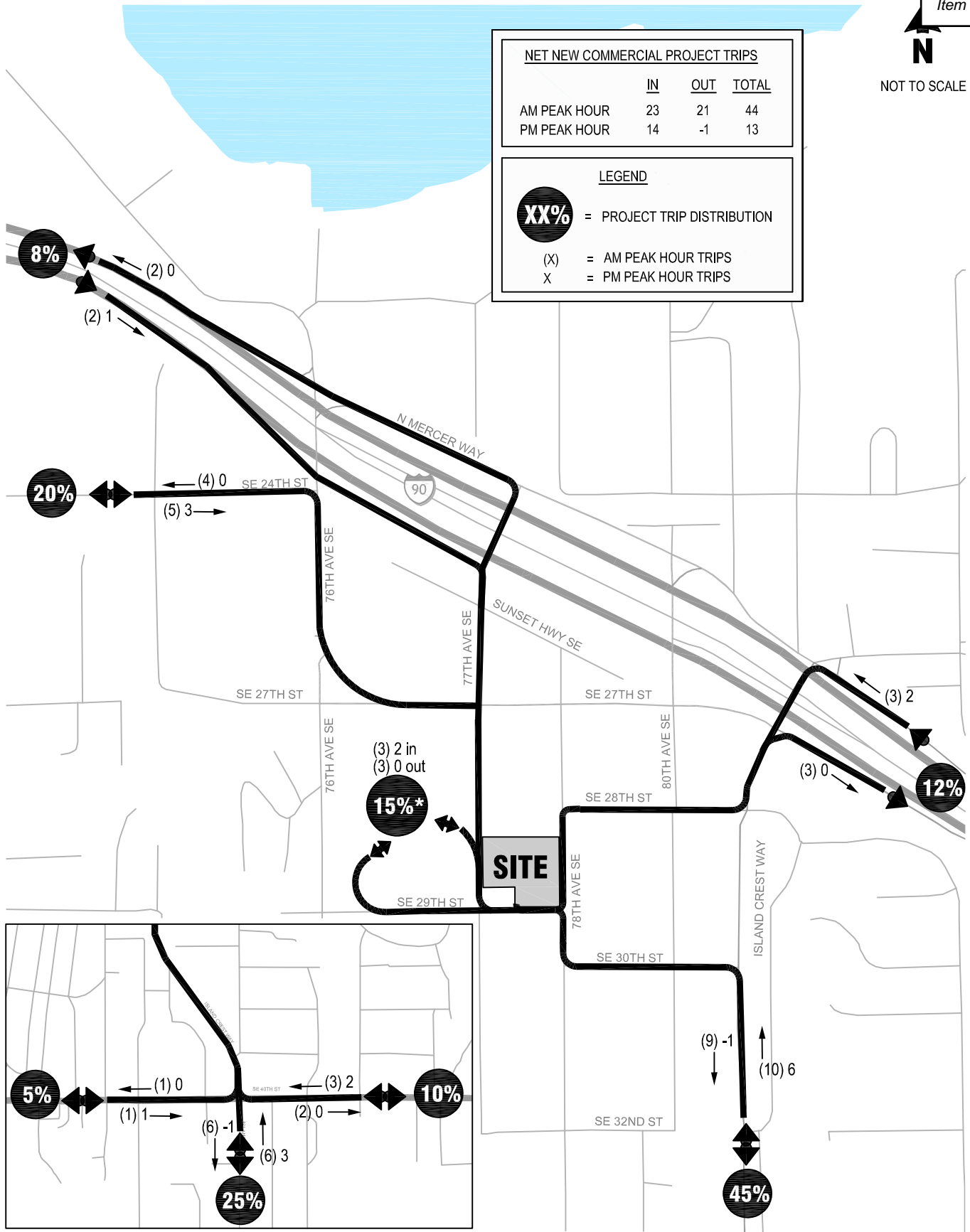


Net new project trips for both residential and commercial uses were assigned throughout the network based on these general travel patterns. Total trips (Gross trips less internal trips) were assigned to the driveway.





NOT TO SCALE



\*Denotes 15% of commercial trips would be to/from the general Mercer Island Town Center Area.

Commercial Trip Distribution and Assignment (AM and PM Peak Hour) Figure



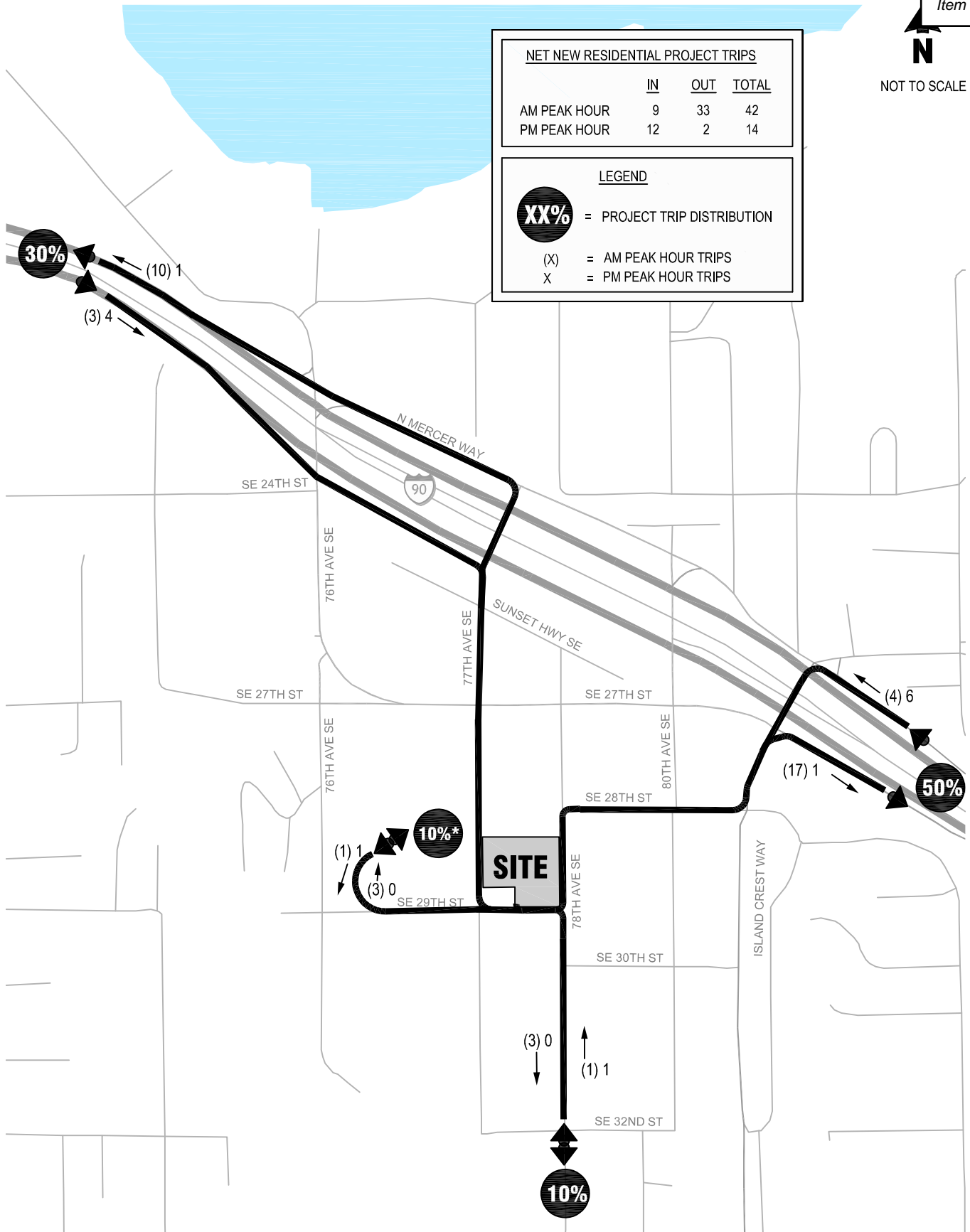


NOT TO SCALE

| NET NEW RESIDENTIAL PROJECT TRIPS |    |     |       |
|-----------------------------------|----|-----|-------|
|                                   | IN | OUT | TOTAL |
| AM PEAK HOUR                      | 9  | 33  | 42    |
| PM PEAK HOUR                      | 12 | 2   | 14    |

| LEGEND     |                             |
|------------|-----------------------------|
| <b>XX%</b> | = PROJECT TRIP DISTRIBUTION |
| (X)        | = AM PEAK HOUR TRIPS        |
| X          | = PM PEAK HOUR TRIPS        |



\*Denotes 10% of commercial trips would be to/from the general Mercer Island Town Center Area.

Residential Trip Distribution and Assignment (AM and PM Peak Hour)

Figure



## Traffic Volumes

Site-generated weekday AM and PM peak hour traffic volumes assigned to the roadway network were added to the future without-project traffic volumes at the off-site study intersections. The resulting future (2022) with-project peak hour traffic volumes are illustrated in Figure 9. Table 7 and Table 8 summarize the anticipated increase in total entering traffic at the study intersections in the AM and PM peak hours, as well, the percent of future with-project traffic volumes attributable to the proposed project.

**Table 7. Weekday AM Peak Hour Project Traffic Volumes Impacts**

| Intersection                                    | Net New Project Trips | 2022 Future With-Project | Percent Attributable to Project |
|---|-----------------------|--------------------------|---------------------------------|
| 1. 76th Ave SE / N Mercer Way                   | 12                    | 1,062                    | 1.1%                            |
| 2. 77th Ave SE / N Mercer Way                   | 12                    | 1,037                    | 1.2%                            |
| 3. 77th Ave SE / I-90 EB Off-Ramp               | 17                    | 527                      | 3.2%                            |
| 4. 77th Ave SE / SE 27th St                     | 26                    | 1,256                    | 2.1%                            |
| 5. Island Crest Way / SE 27th St / I-90 On-Ramp | 27                    | 1,712                    | 1.6%                            |
| 6. 78th Ave SE / SE 28th St                     | 27                    | 392                      | 6.9%                            |
| 7. 80th Ave SE / SE 28th St                     | 27                    | 787                      | 3.4%                            |
| 8. Island Crest Way / SE 28th St                | 27                    | 1,462                    | 1.8%                            |
| 9. 77th Ave SE / SE 29th St                     | 36                    | 446                      | 8.1%                            |
| 10. 78th Ave SE / SE 29th St                    | 50                    | 395                      | 12.7%                           |
| 11. Island Crest Way / SE 40th St               | 22                    | 2,282                    | 1.0%                            |
| 12. Site Driveway / SE 29th St                  | 105                   | 230                      | 45.7%                           |

Source: Transpo Group, 2020.

1. Total number of vehicles entering the intersection.

**Table 8. Weekday PM Peak Hour Project Traffic Volumes Impacts**

| Intersection                                    | Net New Project Trips | 2022 Future With-Project | Percent Attributable to Project |
|---|-----------------------|--------------------------|---------------------------------|
| 1. 76th Ave SE / N Mercer Way                   |                       | AM Analysis Only         |                                 |
| 2. 77th Ave SE / N Mercer Way                   |                       | AM Analysis Only         |                                 |
| 3. 77th Ave SE / I-90 EB Off-Ramp               | 6                     | 656                      | 0.9%                            |
| 4. 77th Ave SE / SE 27th St                     | 9                     | 1,509                    | 0.6%                            |
| 5. Island Crest Way / SE 27th St / I-90 On-Ramp | 9                     | 1,639                    | 0.6%                            |
| 6. 78th Ave SE / SE 28th St                     | 9                     | 704                      | 1.3%                            |
| 7. 80th Ave SE / SE 28th St                     | 9                     | 1,089                    | 0.8%                            |
| 8. Island Crest Way / SE 28th St                | 9                     | 1,394                    | 0.6%                            |
| 9. 77th Ave SE / SE 29th St                     | 12                    | 807                      | 1.5%                            |
| 10. 78th Ave SE / SE 29th St                    | 15                    | 715                      | 2.1%                            |
| 11. Island Crest Way / SE 40th St               | 6                     | 2,471                    | 0.2%                            |
| 12. Site Driveway / SE 29th St                  | 107                   | 402                      | 36.3%                           |

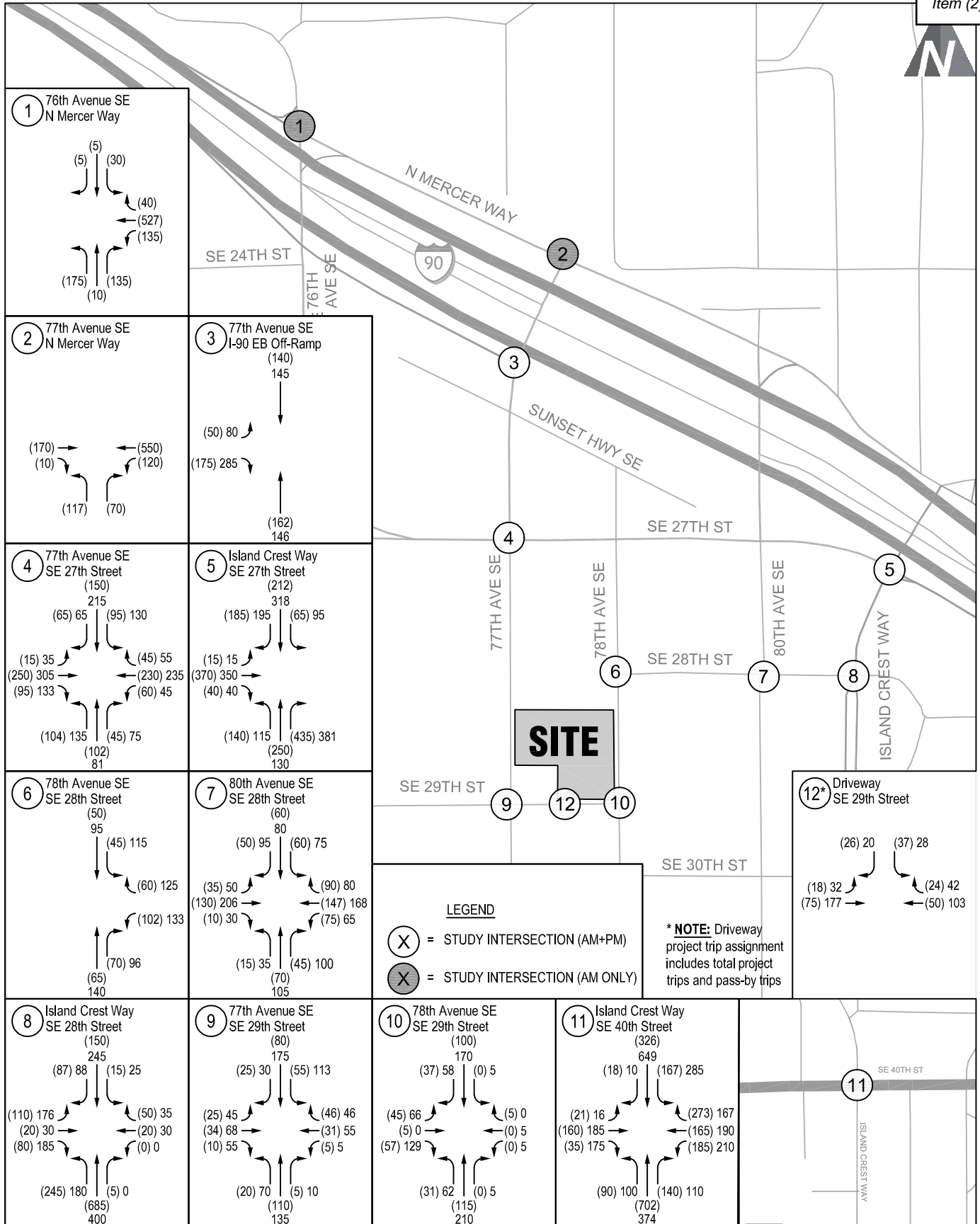
Source: Transpo Group, 2020.

1. Total number of vehicles entering the intersection.

Table 7 and Table 8 shows that the addition of project traffic to the background traffic volumes results in typical volume variation of less than 13 percent, except at the site access. Greater proportional growth is forecast where lesser background volumes are shown, specifically near/adjacent to the project site (study intersections #9, #10 and #12).







Future (2022) With-Project Weekday AM and PM Peak Hour Traffic Volumes

FIGURE

Mercer Island Mixed Use





## Traffic Operations

Intersection operations analyses were conducted in the study area to evaluate the future 2022 conditions with the proposed project. Intersection LOS was calculated using the methodology described previously. The signal timing parameters used in the 2022 without-project analyses were held constant for the with-project analysis. For comparison purposes, the calculated intersection operations for the 2022 without-project scenario are shown with the 2022 with-project conditions in Table 9 and Table 10. LOS worksheets for the analysis are included in Appendix C.

**Table 9. Future Without-Project Weekday AM Peak Hour Intersection Level of Service**

| Intersection                                    | Traffic Control  | 2022 AM Without-Project |                    |                 | 2022 AM With-Project |       |    |
|---|------------------|-------------------------|--------------------|-----------------|----------------------|-------|----|
|   |                  | LOS <sup>1</sup>        | Delay <sup>2</sup> | WM <sup>3</sup> | LOS                  | Delay | WM |
| 1. 76th Ave SE / N Mercer Way                   | Signal           | A                       | 8                  | -               | A                    | 9     | -  |
| 2. 77th Ave SE / N Mercer Way                   | Signal           | A                       | 6                  | -               | A                    | 6     | -  |
| 3. 77th Ave SE / I-90 EB Off-Ramp               | Side-Street Stop | B                       | 11                 | EB              | B                    | 11    | EB |
| 4. 77th Ave SE / SE 27th St                     | Signal           | B                       | 13                 | -               | B                    | 13    | -  |
| 5. Island Crest Way / SE 27th St / I-90 On-Ramp | Signal           | B                       | 13                 | -               | B                    | 13    | -  |
| 6. 78th Ave SE / SE 28th St                     | All-Way Stop     | A                       | 9                  | -               | A                    | 9     | -  |
| 7. 80th Ave SE / SE 28th St                     | All-Way Stop     | B                       | 10                 | -               | B                    | 11    | -  |
| 8. Island Crest Way / SE 28th St                | Signal           | B                       | 15                 | -               | B                    | 15    | -  |
| 9. 77th Ave SE / SE 29th St                     | All-Way Stop     | A                       | 9                  | -               | A                    | 9     | -  |
| 10. 78th Ave SE / SE 29th St                    | Side-Street Stop | B                       | 10                 | EB              | B                    | 11    | EB |
| 11. Island Crest Way / SE 40th St               | Signal           | D                       | 46                 | -               | D                    | 46    | -  |

1. Level of Service (A – F) as defined by the *Highway Capacity Manual* (HCM 6th Ed), Transportation Research Board.  
 2. Average delay per vehicle in seconds.  
 3. Worst movement reported for unsignalized intersections.

**Table 10. Future With-Project Weekday PM Peak Hour Intersection Level of Service**

| Intersection                                    | Traffic Control  | 2022 PM Without-Project |                    |                 | 2022 PM With-Project |       |    |
|---|------------------|-------------------------|--------------------|-----------------|----------------------|-------|----|
|   |                  | LOS <sup>1</sup>        | Delay <sup>2</sup> | WM <sup>3</sup> | LOS                  | Delay | WM |
| 1. 76th Ave SE / N Mercer Way                   | Signal           | AM Analysis Only        |                    |                 | AM Analysis Only     |       |    |
| 2. 77th Ave SE / N Mercer Way                   | Signal           | AM Analysis Only        |                    |                 | AM Analysis Only     |       |    |
| 3. 77th Ave SE / I-90 EB Off-Ramp               | Side-Street Stop | B                       | 11                 | EB              | B                    | 12    | EB |
| 4. 77th Ave SE / SE 27th St                     | Signal           | B                       | 15                 | -               | B                    | 15    | -  |
| 5. Island Crest Way / SE 27th St / I-90 On-Ramp | Signal           | B                       | 14                 | -               | B                    | 14    | -  |
| 6. 78th Ave SE / SE 28th St                     | All-Way Stop     | A                       | 10                 | -               | B                    | 10    | -  |
| 7. 80th Ave SE / SE 28th St                     | All-Way Stop     | B                       | 14                 | -               | B                    | 14    | -  |
| 8. Island Crest Way / SE 28th St                | Signal           | B                       | 17                 | -               | B                    | 18    | -  |
| 9. 77th Ave SE / SE 29th St                     | All-Way Stop     | B                       | 10                 | -               | B                    | 11    | -  |
| 10. 78th Ave SE / SE 29th St                    | Side-Street Stop | B                       | 14                 | EB              | B                    | 14    | EB |
| 11. Island Crest Way / SE 40th St               | Signal           | C                       | 26                 | -               | C                    | 26    | -  |

1. Level of Service (A – F) as defined by the *Highway Capacity Manual* (HCM 6th Ed), Transportation Research Board.  
 2. Average delay per vehicle in seconds.  
 3. Worst movement reported for unsignalized intersections.

Based on the analysis summarized in Table 9 and Table 10, all intersections are forecast to continue meeting the adopted LOS standards. No significant impact to traffic operations would occur due to the project.





## Site Access Evaluation

The site access driveway is located along SE 29th Street. As previously discussed, the site access provides access to both the commercial and residential parking. The parking is summarized by level and use in Table 1 that is repeated below from the project description section.

**Table 1. (Repeated) Parking Summary by Level and Use**

| Parking Level                     | Public Commercial | Residential <sup>1</sup> | Total Parking |
|-----------------------------------|-------------------|--------------------------|---------------|
| <b>Access from SE 29th Avenue</b> |                   |                          |               |
| P1                                | 43                | 80                       | 123           |
| P2                                | 0                 | 80                       | 80            |
| <b>Total Parking</b>              | <b>43</b>         | <b>160</b>               | <b>203</b>    |

### Driveway Operations

At the driveway, one inbound and one outbound travel lane are proposed. Existing traffic volumes along SE 29th Street were grown at an annual rate of 1.5 percent per year to 2022 conditions.

LOS at the site driveway was calculated using the methodology described previously for all other study intersections. The analysis assumes a single outbound lane. Traffic operation results for 2022 with-project conditions at the site access driveways are summarized in Table 11.

**Table 11. 2022 Site Access Weekday Peak Hour Level of Service**

| Location                                       | LOS <sup>1</sup> | Delay <sup>2</sup> | WM <sup>3</sup> |
|--|------------------|--------------------|-----------------|
| <b>AM Peak Hour:</b> Driveway / SE 29th Street | A                | 10                 | SB              |
| <b>PM Peak Hour:</b> Driveway / SE 29th Street | B                | 11                 | SB              |

1. Level of service (LOS), based on Highway Capacity Manual 6th Edition methodology.
2. Average delay in seconds per vehicle.
3. Worst movement (WM) reported for side street stop-controlled intersections. EB = eastbound approach, WB = eastbound approach.

As shown in Table 11, both site access driveways are anticipated to operate at LOS B or better.

### Sight Distance

Sight distance was calculated in accordance with AASHTO's *A Policy on Geometric Design of Highways and Streets*, 2011. Figure 10 shows the entering sight triangles that should be maintained to ensure clear sight lines to and from the two driveways. As shown in the figure, AASHTO recommends 335 feet of clearance for a 25-mph design speed or to the adjacent intersection. In this case, sight distance both to the east and west are measured to the all-way stop intersection to the west and the side-street stop intersection to the east. Stopping sight distance recommendations for a design speed of 25 mph is 155 feet and is met along both SE 29th Street as both roads are flat and straight. This is displayed in Figure 11.











### Truck and Delivery Access

A single-berth loading area serving both retail and residential move-in/move-out uses would be located along 77th Avenue SE. Commercial vehicles would access the site by backing into the loading berth from 11th Avenue SE and then pulling out onto 77th Avenue SE to exit. It is expected that a person with the delivery driver or an employee at the commercial use will be assisting in these maneuvers as a means of traffic control. Sight distance exhibits for the loading area access is provided in Appendix F. An Autoturn drawing of a refuse truck and a SU-30 accessing the site loading area is also shown in Appendix F. As materials are unloaded from commercial and moving resident vehicles, they typically walk materials across the entry drive aisle to access retail spaces or residential elevators. To increase driver awareness of this activity and to encourage greater concentration of loading pedestrian activity at a single location, crosswalk pavement markings could be installed across the parking garage access drive aisle.

### Parking

The following sections describe the proposed parking supply, code requirements for parking, and peak estimated parking demand.

#### Proposed Supply

As previously described, a total of 203 parking stalls are proposed (see Table 1 above): 160 stalls reserved for residential use, 43 reserved for retail and restaurant use.

#### Code Requirement

The project is located in the Town Center area and the minimum required parking spaces for this zone are identified in the City of Mercer Island Municipal Code. The project site is zoned Town Center. Table 12 summarizes the parking code requirement for the project which is given as a range.

| Proposed Land Use                 | Size <sup>1</sup> | Proposed Parking Supply   |                       | Required Parking Stalls <sup>2</sup> |  |
|-----------------------------------|-------------------|---------------------------|-----------------------|--------------------------------------|--|
|                                   |                   | Spaces                    | Rate                  | Required                             |  |
| <b><u>Residential Parking</u></b> |                   |                           |                       |                                      |  |
| Apartments (LU #221)              | 160 units         | 160                       | 1 to 1.4 per unit     | 160 to 224                           |  |
| <b><u>Retail Parking</u></b>      |                   |                           |                       |                                      |  |
| Shopping Center (LU #820)         | 7,930 gsf         | 43 shared with restaurant | 2 to 3 per 1,000 gsf  | 16 to 24                             |  |
| Restaurant (LU #932)              | 5,417 gsf         | 43 shared with retail     | 5 to 10 per 1,000 gsf | 27 to 54                             |  |
| <b><u>Total Parking</u></b>       |                   |                           |                       | <b>203 to 302</b>                    |  |

1. du = dwelling unit, gsf = gross square-feet, sf = square-feet  
 2. Mercer Island City Code 19.11.130 B.1

As shown in Table 12, 203 to 302 parking stalls would be required based on City Municipal Code. The proposed parking supply would meet the minimum requirements for parking supply for both the residential and commercial uses.





***Demand***

The parking demand associated with the residential use of the proposed project was calculated using the King County Right Size Parking calculator<sup>3</sup>. The King County Right Size Parking calculator is an online tool developed by King County that estimates parking/unit ratios for multifamily developments throughout urban areas of King County. The Right Size Parking calculator relies on the unit mix of the proposed development and the development location to estimate a parking demand ratio. Based on the calculator and unit mix, an average parking rate of 0.83 per unit was assumed. Parking spaces are not expected to be bundled and an estimated monthly charge of \$200 per parking stall.

For the retail use, the parking rate used to estimate the peak parking demand was based on the ITE Parking Generation rates. The ITE Parking Generation land use assumed for the analysis included Shopping Center (LU #820) and High Turnover Sit Down Restaurant (LU #932). The number of required parking spaces consistent with City code, estimated peak parking demand, and proposed parking supply are summarized in Table 13. Detailed parking demand calculations can be found in Appendix E.

**Table 13. Parking Demand**

| Proposed Land Use                 | Size <sup>1</sup> | Required Parking Stalls <sup>2</sup> | Peak Parking Demand | Proposed Parking Supply |
|-----------------------------------|-------------------|--------------------------------------|---------------------|-------------------------|
| <b><u>Residential Parking</u></b> |                   |                                      |                     |                         |
| Apartments (LU #221)              | 160 units         | 160 to 224                           | 131 vehicles        | 160 stalls              |
| <b><u>Retail Parking</u></b>      |                   |                                      |                     |                         |
| Shopping Center (LU #820)         | 7,930 gsf         | 16 to 24                             | 15 vehicles         | 43 Stalls               |
| Restaurant (LU #932)              | 5,417 gsf         | 27 to 54                             | 51 vehicles         |                         |
| <b><u>Total Parking</u></b>       |                   | 203 to 302                           | 198 stalls          | 203 stalls              |

1. du = dwelling unit, sf = square-feet  
 2. Mercer Island City Code 19.11.110 B.1

As shown in Table 13, the proposed commercial parking supply matches the minimum required number of parking spaces but does not accommodate the estimated peak parking demand for each commercial land use. The proposed residential parking supply matches the required parking stalls for residential uses but does accommodate the residential peak parking demand.

A shared parking analysis was conducted which involves time of day distributions applied to each individual land use’s peak parking demand to find overall peak demand per hour of day. Appendix E contains a shared parking demand analysis. As shown in Appendix E, the overall peak parking demand for the development is expected to occur at 8 p.m. on a typical weekday with a peak demand of 149 vehicles, considerably less than the supply of 203 spaces. However, the peak commercial demand of 66 vehicles (15 for retail and 51 for restaurant) would occur at 12 p.m. while the residential demand is expected to be just 66 vehicles out of a 160-parking space supply on a typical weekday. Thus, the commercial parking supply would not be able to accommodate the peak commercial demand at certain times the day. This shortage in commercial parking would justify the need of a shared parking plan on-site and is explained further in the following section.

<sup>3</sup> www.rightsizeparking.org





### *Shared Parking Management*

The applicant proposes to create a shared parking management plan to accommodate the site's residential and commercial parking demands.

To address the shortage in commercial parking spaces, the applicant proposes to allocate **at minimum** 23 of the 160 residential spaces as "flex spaces", which are designated to be residential only during 9 PM – 11 AM but available for retail/restaurant use between 11 AM – 9 PM. Mercer Island prefers a 10 percent additional parking supply availability, which would suggest approximately 30 total spaces needed as flex spaces. These flex spaces would help accommodate the excess commercial demand. These flex spaces would generally cost less monthly than residential 24-hour spaces.

Similarly, a portion of the 43 commercial spaces can also be designated as flex spaces in order to meet any additional potential residential demand outside of commercial demand hours (9 PM – 11 AM). The final amount of these flex spaces would be dependent on residential tenant parking demand once occupancy has begun. Details regarding parking enforcement and signage would be provided later throughout the permitting process.

### **Mitigation**

The project will be constructing frontage improvements along 78th Avenue, SE 29th Street and 77th Avenue which will include improvements to the pedestrian facilities, improving the walkability in and around the site limits.

### **Traffic Impact Fees**

Traffic impact fees are collected by the City of Mercer Island to fund transportation improvements, accommodating anticipated growth in the City. This project will be subject to paying these fees, contributing to the overall mitigation of the project.

Based on MICC 19.19, the city of Mercer Island charges the following impact fees:

- \$2,561.46 per multi-family unit
- Restaurant and Retail uses are exempt.

For up to 160 multifamily units, the traffic impact fees are expected to be \$409,833.60. Because the retail and restaurant uses are exempt, no credit is calculated for the existing uses. The City will finalize the impact fee calculations at building permit issuance.



## Findings and Recommendations

As shown in the previous sections, no significant adverse impacts to traffic or parking are anticipated with the proposed project. The following summarizes findings and recommendations for project implementation.

- **Project Description.** The project would construct a mixed-use building providing approximately 7,930 square feet of general retail space, 5,417 square feet of restaurant and 160 multifamily units.
- **Trip Generation.** The project is anticipated to generate 86 net new AM peak hour trips, and 27 net new PM peak hour trips.
- **Traffic Operations.** All study intersections and the project driveway are anticipated to operate at LOS D or better, which meets the respective LOS Standards.
- **Parking.** The project proposes a total of 203 parking stalls which is anticipated to meet the projected parking demand for the project when shared parking is implemented.







| Existing On-Site Peak Hour Trips |          |    |     |    |     |    |     |    |     |    |     |       |     |           |     |       |    |    |    |
|----------------------------------|----------|----|-----|----|-----|----|-----|----|-----|----|-----|-------|-----|-----------|-----|-------|----|----|----|
|                                  | Driveway | 1  |     | 2  |     | 3  |     | 4  |     | 5  |     | TOTAL |     | PEAK HOUR |     |       |    |    |    |
|                                  | Time     | in | out | in | out | in | out | in | out | in | out | in    | out | in        | out | total |    |    |    |
| AM Peak<br>Hour                  | 7:00     | 2  | 1   | 1  | 3   | 0  | 0   | 0  | 0   | 1  | 1   | 4     | 5   |           |     |       |    |    |    |
|                                  | 7:15     | 0  | 0   | 0  | 0   | 0  | 1   | 1  | 1   | 2  | 0   | 3     | 2   |           |     |       |    |    |    |
|                                  | 7:30     | 0  | 0   | 0  | 0   | 0  | 0   | 0  | 0   | 0  | 0   | 0     | 0   |           |     |       |    |    |    |
|                                  | 7:45     | 0  | 1   | 0  | 0   | 0  | 0   | 0  | 0   | 2  | 0   | 2     | 1   |           |     |       | 9  | 8  | 17 |
|                                  | 8:00     | 0  | 1   | 0  | 1   | 0  | 0   | 0  | 0   | 2  | 0   | 2     | 2   |           |     |       | 7  | 5  | 12 |
|                                  | 8:15     | 2  | 4   | 0  | 1   | 0  | 0   | 1  | 0   | 0  | 0   | 3     | 5   |           |     |       | 7  | 8  | 15 |
|                                  | 8:30     | 2  | 1   | 0  | 0   | 0  | 0   | 0  | 0   | 1  | 0   | 3     | 1   |           |     |       | 10 | 9  | 19 |
|                                  | 8:45     | 0  | 0   | 0  | 0   | 0  | 0   | 0  | 0   | 1  | 0   | 1     | 0   |           |     |       | 9  | 8  | 17 |
| PM Peak<br>Hour                  | Site     | 1  |     | 2  |     | 3  |     | 4  |     | 5  |     | TOTAL |     | PEAK HOUR |     |       |    |    |    |
|                                  | 16:00    | 2  | 5   | 0  | 3   | 0  | 0   | 1  | 2   | 4  | 1   | 7     | 11  |           |     |       |    |    |    |
|                                  | 16:15    | 5  | 3   | 0  | 3   | 0  | 0   | 0  | 2   | 4  | 1   | 9     | 9   |           |     |       |    |    |    |
|                                  | 16:30    | 3  | 6   | 1  | 1   | 1  | 1   | 1  | 1   | 2  | 0   | 8     | 9   |           |     |       |    |    |    |
|                                  | 16:45    | 8  | 11  | 0  | 3   | 2  | 1   | 1  | 1   | 8  | 4   | 19    | 20  |           |     |       | 43 | 49 | 92 |
|                                  | 17:00    | 2  | 5   | 2  | 2   | 2  | 0   | 1  | 2   | 3  | 0   | 10    | 9   |           |     |       | 46 | 47 | 93 |
|                                  | 17:15    | 3  | 4   | 0  | 0   | 1  | 2   | 1  | 0   | 4  | 2   | 9     | 8   |           |     |       | 46 | 46 | 92 |
|                                  | 17:30    | 2  | 5   | 1  | 0   | 0  | 2   | 4  | 3   | 4  | 1   | 11    | 11  |           |     |       | 49 | 48 | 97 |
| 17:45                            | 11       | 6  | 0   | 0  | 1   | 1  | 1   | 1  | 10  | 1  | 23  | 9     | 53  |           |     |       | 37 | 90 |    |



**Mercer Island - Driveway Counts**  
**Thursday, November 15, 2018**  
**SITE 1**



| SITE 1 (AM)  |          |          |
|--------------|----------|----------|
| TIME         | IN       | OUT      |
| 7:00         | 2        | 1        |
| 7:15         | 0        | 0        |
| 7:30         | 0        | 0        |
| 7:45         | 0        | 1        |
| 8:00         | 0        | 1        |
| 8:15         | 2        | 4        |
| 8:30         | 2        | 1        |
| 8:45         | 0        | 0        |
| <b>TOTAL</b> | <b>6</b> | <b>8</b> |

| Site 1 (PM)  |           |           |
|--------------|-----------|-----------|
| TIME         | IN        | OUT       |
| 16:00        | 2         | 5         |
| 16:15        | 5         | 3         |
| 16:30        | 3         | 6         |
| 16:45        | 8         | 11        |
| 17:00        | 2         | 5         |
| 17:15        | 3         | 4         |
| 17:30        | 2         | 5         |
| 17:45        | 11        | 6         |
| <b>TOTAL</b> | <b>36</b> | <b>45</b> |



**Mercer Island - Driveway Counts**  
**Thursday, November 15, 2018**  
**SITE 2**



| SITE 2 (AM)  |          |          |
|--------------|----------|----------|
| TIME         | IN       | OUT      |
| 7:00         | 1        | 3        |
| 7:15         | 0        | 0        |
| 7:30         | 0        | 0        |
| 7:45         | 0        | 0        |
| 8:00         | 0        | 1        |
| 8:15         | 0        | 1        |
| 8:30         | 0        | 0        |
| 8:45         | 0        | 0        |
| <b>TOTAL</b> | <b>1</b> | <b>5</b> |

| Site 2 (PM)  |          |           |
|--------------|----------|-----------|
| TIME         | IN       | OUT       |
| 16:00        | 0        | 3         |
| 16:15        | 0        | 3         |
| 16:30        | 1        | 1         |
| 16:45        | 0        | 3         |
| 17:00        | 2        | 2         |
| 17:15        | 0        | 0         |
| 17:30        | 1        | 0         |
| 17:45        | 0        | 0         |
| <b>TOTAL</b> | <b>4</b> | <b>12</b> |



**Mercer Island - Driveway Counts**  
**Thursday, November 15, 2018**  
**SITE 3**



| SITE 3 (AM)  |          |          |
|--------------|----------|----------|
| TIME         | IN       | OUT      |
| 7:00         | 0        | 0        |
| 7:15         | 0        | 1        |
| 7:30         | 0        | 0        |
| 7:45         | 0        | 0        |
| 8:00         | 0        | 0        |
| 8:15         | 0        | 0        |
| 8:30         | 0        | 0        |
| 8:45         | 0        | 0        |
| <b>TOTAL</b> | <b>0</b> | <b>1</b> |

| Site 3 (PM)  |          |          |
|--------------|----------|----------|
| TIME         | IN       | OUT      |
| 16:00        | 0        | 0        |
| 16:15        | 0        | 0        |
| 16:30        | 1        | 1        |
| 16:45        | 2        | 1        |
| 17:00        | 2        | 0        |
| 17:15        | 1        | 2        |
| 17:30        | 0        | 2        |
| 17:45        | 1        | 1        |
| <b>TOTAL</b> | <b>7</b> | <b>7</b> |



**Mercer Island - Driveway Counts**  
**Thursday, November 15, 2018**  
**SITE 4**



| SITE 4 (AM)  |          |          |
|--------------|----------|----------|
| TIME         | IN       | OUT      |
| 7:00         | 0        | 0        |
| 7:15         | 1        | 1        |
| 7:30         | 0        | 0        |
| 7:45         | 0        | 0        |
| 8:00         | 0        | 0        |
| 8:15         | 1        | 0        |
| 8:30         | 0        | 0        |
| 8:45         | 0        | 0        |
| <b>TOTAL</b> | <b>2</b> | <b>1</b> |

| Site 4 (PM)  |           |           |
|--------------|-----------|-----------|
| TIME         | IN        | OUT       |
| 16:00        | 1         | 2         |
| 16:15        | 0         | 2         |
| 16:30        | 1         | 1         |
| 16:45        | 1         | 1         |
| 17:00        | 1         | 2         |
| 17:15        | 1         | 0         |
| 17:30        | 4         | 3         |
| 17:45        | 1         | 1         |
| <b>TOTAL</b> | <b>10</b> | <b>12</b> |



**Mercer Island - Driveway Counts**  
**Thursday, November 15, 2018**  
**SITE 5**



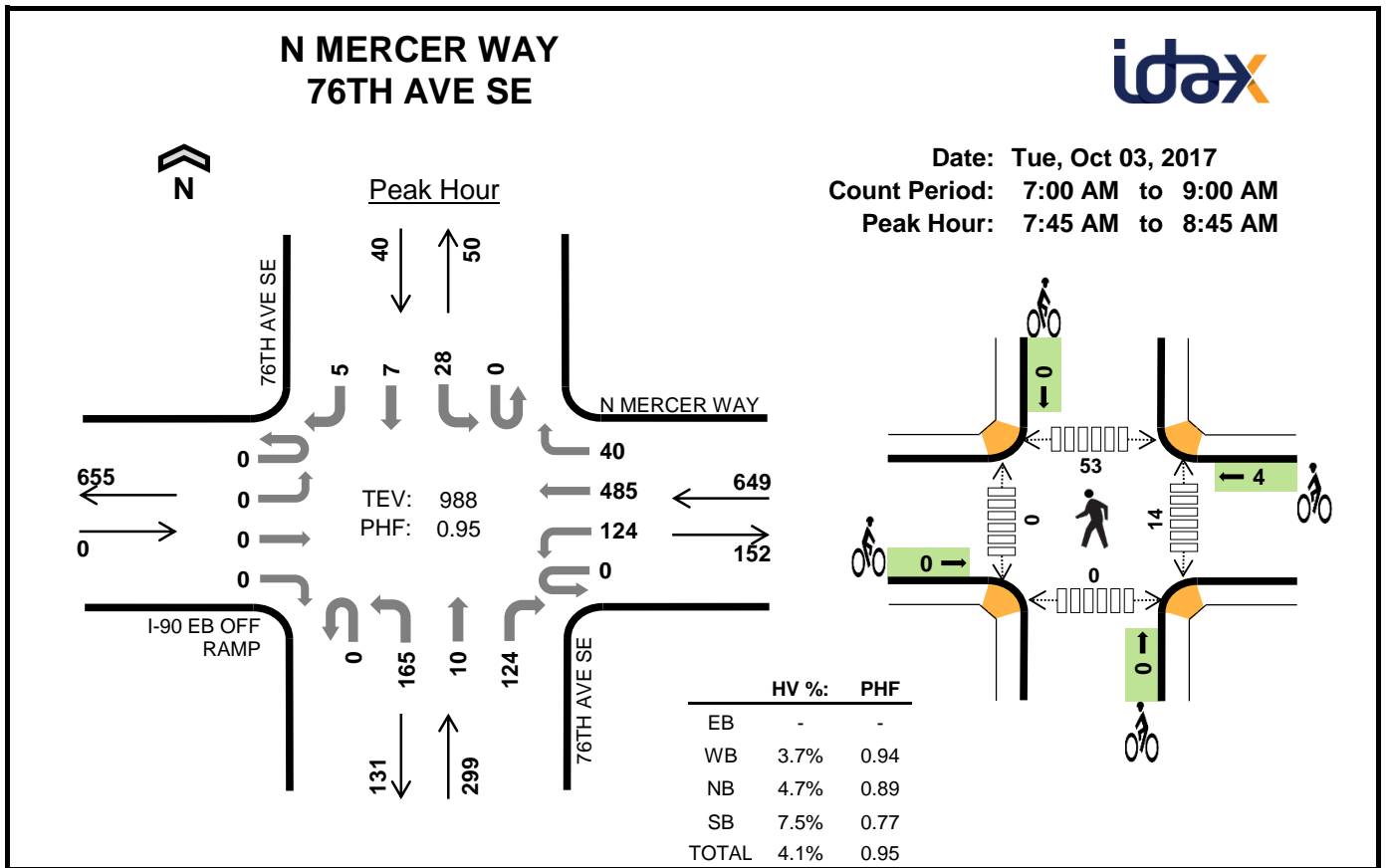
| SITE 5 (AM)  |          |          |
|--------------|----------|----------|
| TIME         | IN       | OUT      |
| 7:00         | 1        | 1        |
| 7:15         | 2        | 0        |
| 7:30         | 0        | 0        |
| 7:45         | 2        | 0        |
| 8:00         | 2        | 0        |
| 8:15         | 0        | 0        |
| 8:30         | 1        | 0        |
| 8:45         | 1        | 0        |
| <b>TOTAL</b> | <b>9</b> | <b>1</b> |

| Site 5 (PM)  |           |           |
|--------------|-----------|-----------|
| TIME         | IN        | OUT       |
| 16:00        | 4         | 1         |
| 16:15        | 4         | 1         |
| 16:30        | 2         | 0         |
| 16:45        | 8         | 4         |
| 17:00        | 3         | 0         |
| 17:15        | 4         | 2         |
| 17:30        | 4         | 1         |
| 17:45        | 10        | 1         |
| <b>TOTAL</b> | <b>39</b> | <b>10</b> |









**Two-Hour Count Summaries**

| Interval Start   | I-90 EB OFF RAMP |          |          |          | N MERCER WAY |            |            |           | 76TH AVE SE |            |           |            | 76TH AVE SE |           |          |          | 15-min Total | Rolling One Hour |
|------------------|------------------|----------|----------|----------|--------------|------------|------------|-----------|-------------|------------|-----------|------------|-------------|-----------|----------|----------|--------------|------------------|
|                  | Eastbound        |          |          |          | Westbound    |            |            |           | Northbound  |            |           |            | Southbound  |           |          |          |              |                  |
|                  | UT               | LT       | TH       | RT       | UT           | LT         | TH         | RT        | UT          | LT         | TH        | RT         | UT          | LT        | TH       | RT       |              |                  |
| 7:00 AM          | 0                | 0        | 0        | 0        | 0            | 18         | 104        | 3         | 0           | 41         | 0         | 21         | 0           | 2         | 1        | 1        | 191          | 0                |
| 7:15 AM          | 0                | 0        | 0        | 0        | 0            | 35         | 115        | 7         | 0           | 35         | 3         | 16         | 0           | 5         | 1        | 5        | 222          | 0                |
| 7:30 AM          | 0                | 0        | 0        | 0        | 0            | 28         | 113        | 16        | 0           | 40         | 3         | 27         | 0           | 7         | 7        | 4        | 245          | 0                |
| <b>7:45 AM</b>   | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>     | <b>28</b>  | <b>113</b> | <b>8</b>  | <b>0</b>    | <b>36</b>  | <b>0</b>  | <b>39</b>  | <b>0</b>    | <b>10</b> | <b>2</b> | <b>1</b> | <b>237</b>   | <b>895</b>       |
| <b>8:00 AM</b>   | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>     | <b>31</b>  | <b>126</b> | <b>10</b> | <b>0</b>    | <b>47</b>  | <b>1</b>  | <b>36</b>  | <b>0</b>    | <b>7</b>  | <b>2</b> | <b>1</b> | <b>261</b>   | <b>965</b>       |
| 8:15 AM          | 0                | 0        | 0        | 0        | 0            | 21         | 132        | 8         | 0           | 41         | 5         | 24         | 0           | 8         | 0        | 1        | 240          | 983              |
| 8:30 AM          | 0                | 0        | 0        | 0        | 0            | 44         | 114        | 14        | 0           | 41         | 4         | 25         | 0           | 3         | 3        | 2        | 250          | 988              |
| 8:45 AM          | 0                | 0        | 0        | 0        | 0            | 42         | 71         | 18        | 0           | 26         | 4         | 42         | 0           | 12        | 7        | 3        | 225          | 976              |
| Count Total      | 0                | 0        | 0        | 0        | 0            | 247        | 888        | 84        | 0           | 307        | 20        | 230        | 0           | 54        | 23       | 18       | 1,871        | 0                |
| <b>Peak Hour</b> | <b>0</b>         | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>     | <b>124</b> | <b>485</b> | <b>40</b> | <b>0</b>    | <b>165</b> | <b>10</b> | <b>124</b> | <b>0</b>    | <b>28</b> | <b>7</b> | <b>5</b> | <b>988</b>   | <b>0</b>         |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start   | Heavy Vehicle Totals |           |           |          |           | Bicycles |          |          |          |          | Pedestrians (Crossing Leg) |          |           |          |           |
|------------------|----------------------|-----------|-----------|----------|-----------|----------|----------|----------|----------|----------|----------------------------|----------|-----------|----------|-----------|
|                  | EB                   | WB        | NB        | SB       | Total     | EB       | WB       | NB       | SB       | Total    | East                       | West     | North     | South    | Total     |
| 7:00 AM          | 0                    | 5         | 3         | 0        | 8         | 0        | 0        | 0        | 0        | 0        | 4                          | 0        | 4         | 0        | 8         |
| 7:15 AM          | 0                    | 6         | 5         | 0        | 11        | 0        | 2        | 0        | 0        | 2        | 4                          | 0        | 6         | 0        | 10        |
| 7:30 AM          | 0                    | 10        | 1         | 1        | 12        | 0        | 1        | 2        | 0        | 3        | 0                          | 0        | 14        | 0        | 14        |
| 7:45 AM          | 0                    | 8         | 3         | 1        | 12        | 0        | 3        | 0        | 0        | 3        | 3                          | 0        | 10        | 0        | 13        |
| <b>8:00 AM</b>   | <b>0</b>             | <b>6</b>  | <b>3</b>  | <b>1</b> | <b>10</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>2</b>                   | <b>0</b> | <b>12</b> | <b>0</b> | <b>14</b> |
| 8:15 AM          | 0                    | 4         | 5         | 0        | 9         | 0        | 0        | 0        | 0        | 0        | 7                          | 0        | 11        | 0        | 18        |
| 8:30 AM          | 0                    | 6         | 3         | 1        | 10        | 0        | 0        | 0        | 0        | 0        | 2                          | 0        | 20        | 0        | 22        |
| 8:45 AM          | 0                    | 10        | 4         | 1        | 15        | 0        | 1        | 1        | 0        | 2        | 2                          | 0        | 8         | 0        | 10        |
| Count Total      | 0                    | 55        | 27        | 5        | 87        | 0        | 8        | 3        | 0        | 11       | 24                         | 0        | 85        | 0        | 109       |
| <b>Peak Hour</b> | <b>0</b>             | <b>24</b> | <b>14</b> | <b>3</b> | <b>41</b> | <b>0</b> | <b>4</b> | <b>0</b> | <b>0</b> | <b>4</b> | <b>14</b>                  | <b>0</b> | <b>53</b> | <b>0</b> | <b>67</b> |

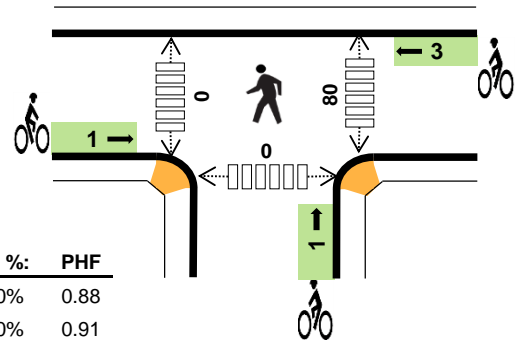
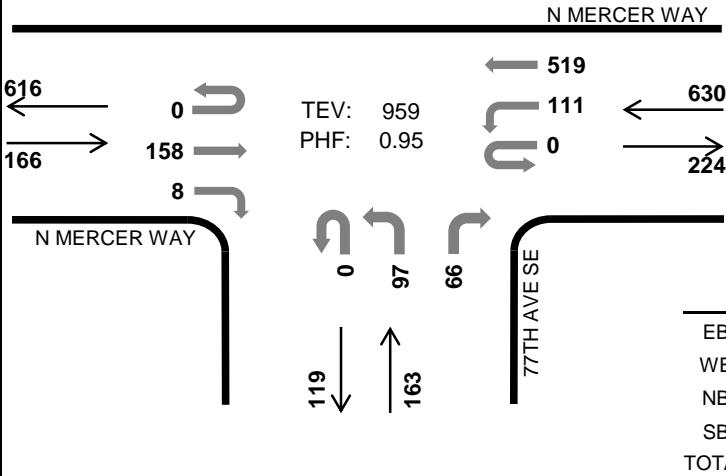


## 77TH AVE SE N MERCER WAY



Peak Hour

Date: Tue, Oct 10, 2017  
Count Period: 7:00 AM to 9:00 AM  
Peak Hour: 7:30 AM to 8:30 AM



|       | HV %: | PHF  |
|-------|-------|------|
| EB    | 9.0%  | 0.88 |
| WB    | 7.0%  | 0.91 |
| NB    | 9.2%  | 0.95 |
| SB    | -     | -    |
| TOTAL | 7.7%  | 0.95 |

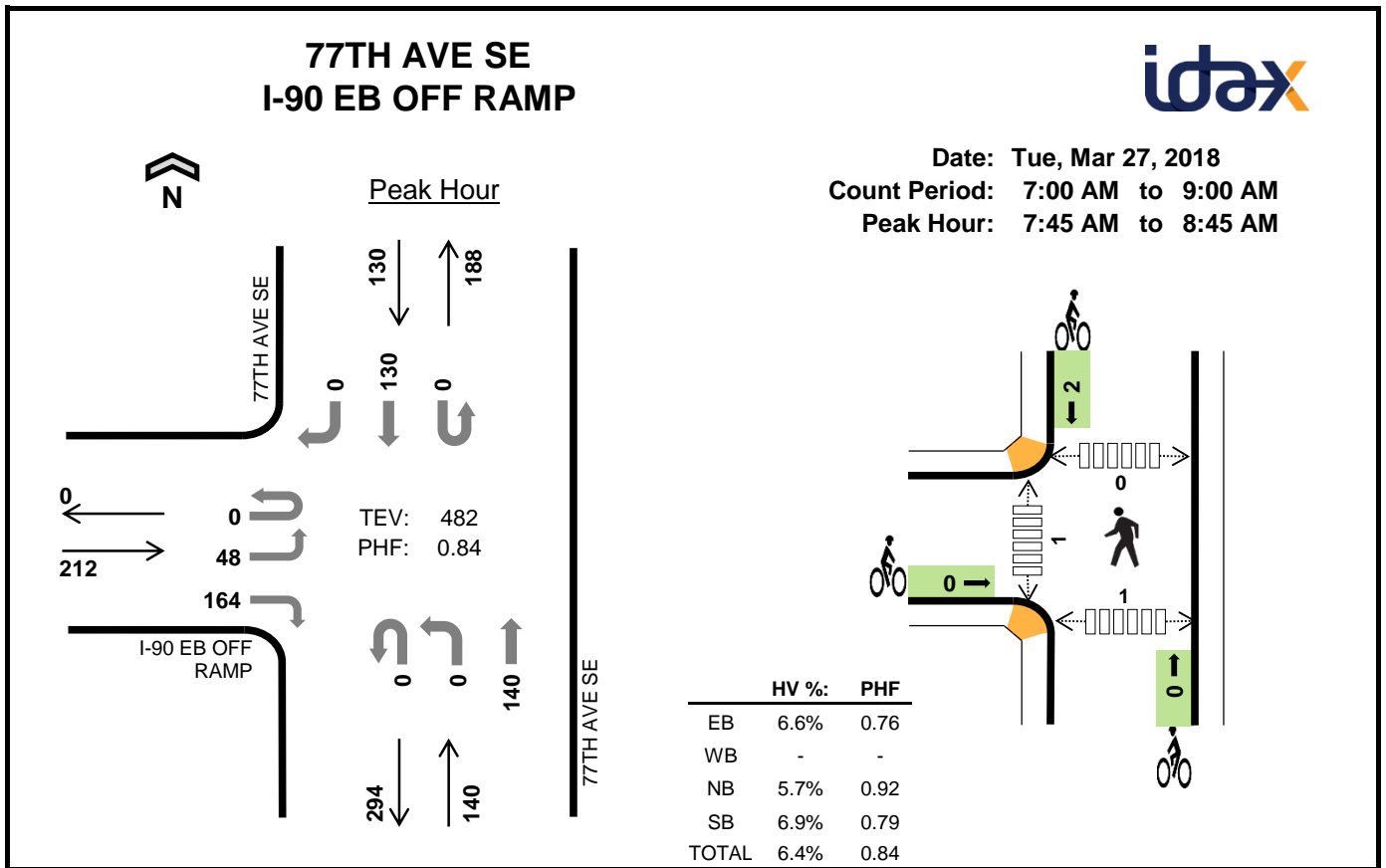
### Two-Hour Count Summaries

| Interval Start | N MERCER WAY Eastbound |    |     |    | N MERCER WAY Westbound |     |     |    | 77TH AVE SE Northbound |     |    |     | 0 Southbound |    |    |    | 15-min Total | Rolling One Hour |
|----------------|------------------------|----|-----|----|------------------------|-----|-----|----|------------------------|-----|----|-----|--------------|----|----|----|--------------|------------------|
|                | UT                     | LT | TH  | RT | UT                     | LT  | TH  | RT | UT                     | LT  | TH | RT  | UT           | LT | TH | RT |              |                  |
| 7:00 AM        | 0                      | 0  | 26  | 1  | 1                      | 36  | 108 | 0  | 0                      | 14  | 0  | 14  | 0            | 0  | 0  | 0  | 200          | 0                |
| 7:15 AM        | 0                      | 0  | 20  | 3  | 0                      | 18  | 121 | 0  | 0                      | 22  | 0  | 16  | 0            | 0  | 0  | 0  | 200          | 0                |
| 7:30 AM        | 0                      | 0  | 43  | 4  | 0                      | 30  | 119 | 0  | 0                      | 28  | 0  | 14  | 0            | 0  | 0  | 0  | 238          | 0                |
| 7:45 AM        | 0                      | 0  | 37  | 3  | 0                      | 26  | 148 | 0  | 0                      | 24  | 0  | 14  | 0            | 0  | 0  | 0  | 252          | 890              |
| 8:00 AM        | 0                      | 0  | 39  | 0  | 0                      | 30  | 127 | 0  | 0                      | 24  | 0  | 16  | 0            | 0  | 0  | 0  | 236          | 926              |
| 8:15 AM        | 0                      | 0  | 39  | 1  | 0                      | 25  | 125 | 0  | 0                      | 21  | 0  | 22  | 0            | 0  | 0  | 0  | 233          | 959              |
| 8:30 AM        | 0                      | 0  | 40  | 2  | 0                      | 28  | 131 | 0  | 0                      | 23  | 0  | 9   | 0            | 0  | 0  | 0  | 233          | 954              |
| 8:45 AM        | 0                      | 0  | 45  | 3  | 0                      | 23  | 115 | 0  | 0                      | 25  | 0  | 16  | 0            | 0  | 0  | 0  | 227          | 929              |
| Count Total    | 0                      | 0  | 289 | 17 | 1                      | 216 | 994 | 0  | 0                      | 181 | 0  | 121 | 0            | 0  | 0  | 0  | 1,819        | 0                |
| Peak Hour      | 0                      | 0  | 158 | 8  | 0                      | 111 | 519 | 0  | 0                      | 97  | 0  | 66  | 0            | 0  | 0  | 0  | 959          | 0                |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals |    |    |    |       | Bicycles |    |    |    |       | Pedestrians (Crossing Leg) |      |       |       |       |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
|                | EB                   | WB | NB | SB | Total | EB       | WB | NB | SB | Total | East                       | West | North | South | Total |
| 7:00 AM        | 2                    | 8  | 2  | 0  | 12    | 1        | 1  | 0  | 0  | 2     | 13                         | 0    | 0     | 0     | 13    |
| 7:15 AM        | 4                    | 8  | 2  | 0  | 14    | 0        | 2  | 0  | 0  | 2     | 20                         | 0    | 0     | 0     | 20    |
| 7:30 AM        | 3                    | 11 | 5  | 0  | 19    | 1        | 2  | 0  | 0  | 3     | 11                         | 0    | 0     | 0     | 11    |
| 7:45 AM        | 6                    | 12 | 4  | 0  | 22    | 0        | 0  | 0  | 0  | 0     | 25                         | 0    | 0     | 0     | 25    |
| 8:00 AM        | 3                    | 12 | 1  | 0  | 16    | 0        | 1  | 1  | 0  | 2     | 21                         | 0    | 0     | 0     | 21    |
| 8:15 AM        | 3                    | 9  | 5  | 0  | 17    | 0        | 0  | 0  | 0  | 0     | 23                         | 0    | 0     | 0     | 23    |
| 8:30 AM        | 0                    | 9  | 1  | 0  | 10    | 0        | 1  | 0  | 0  | 1     | 6                          | 0    | 0     | 1     | 7     |
| 8:45 AM        | 6                    | 12 | 2  | 0  | 20    | 0        | 1  | 0  | 0  | 1     | 8                          | 0    | 0     | 0     | 8     |
| Count Total    | 27                   | 81 | 22 | 0  | 130   | 2        | 8  | 1  | 0  | 11    | 127                        | 0    | 0     | 1     | 128   |
| Peak Hr        | 15                   | 44 | 15 | 0  | 74    | 1        | 3  | 1  | 0  | 5     | 80                         | 0    | 0     | 0     | 80    |





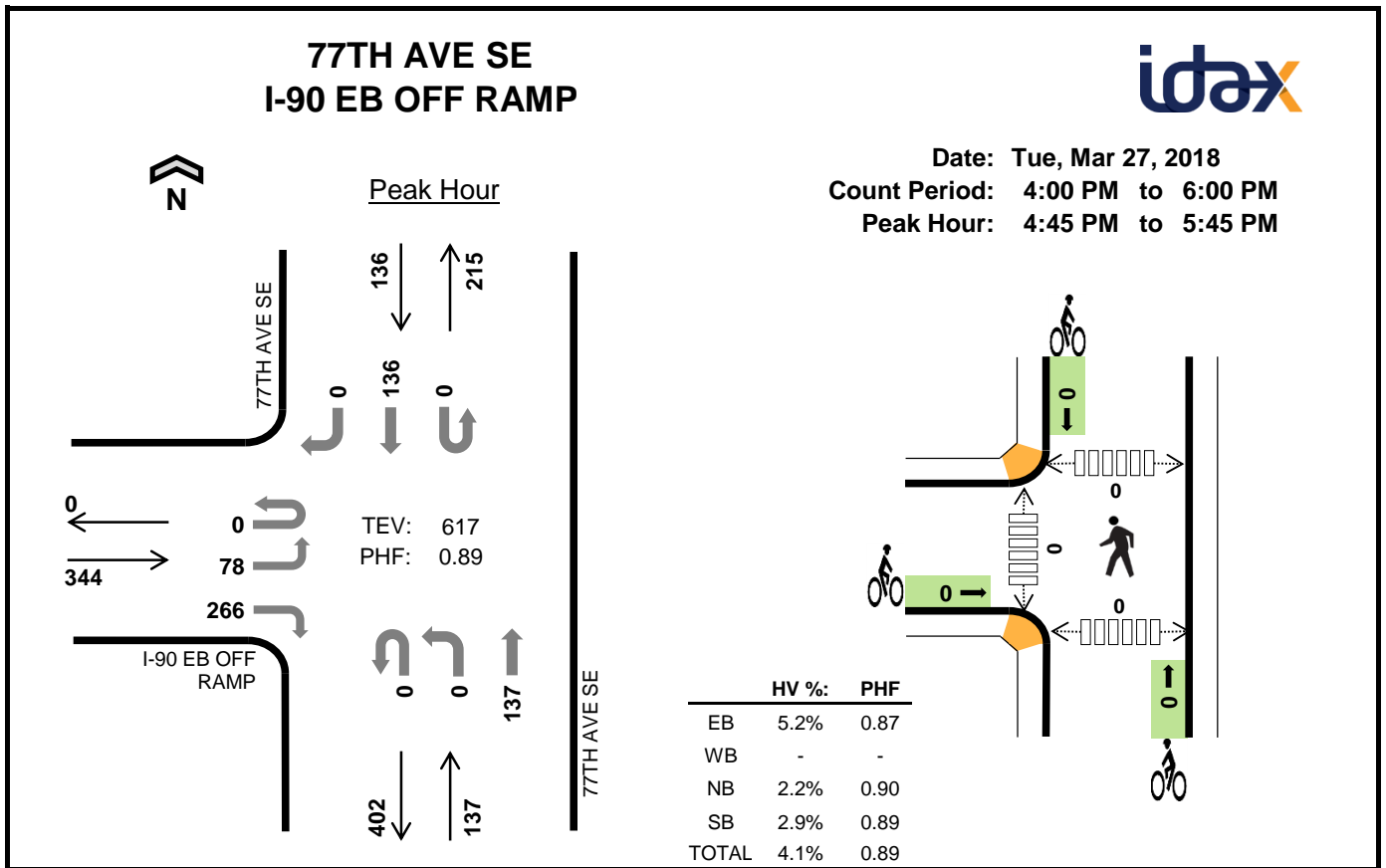
**Two-Hour Count Summaries**

| Interval Start   | I-90 EB OFF RAMP |           |          |            | 0         |          |          |          | 77TH AVE SE |          |            |          | 77TH AVE SE |          |            |          | 15-min Total | Rolling One Hour |
|------------------|------------------|-----------|----------|------------|-----------|----------|----------|----------|-------------|----------|------------|----------|-------------|----------|------------|----------|--------------|------------------|
|                  | Eastbound        |           |          |            | Westbound |          |          |          | Northbound  |          |            |          | Southbound  |          |            |          |              |                  |
|                  | UT               | LT        | TH       | RT         | UT        | LT       | TH       | RT       | UT          | LT       | TH         | RT       | UT          | LT       | TH         | RT       |              |                  |
| 7:00 AM          | 0                | 6         | 0        | 29         | 0         | 0        | 0        | 0        | 0           | 0        | 21         | 0        | 0           | 0        | 28         | 0        | 84           | 0                |
| 7:15 AM          | 0                | 8         | 0        | 41         | 0         | 0        | 0        | 0        | 0           | 0        | 26         | 0        | 0           | 0        | 21         | 0        | 96           | 0                |
| 7:30 AM          | 0                | 13        | 0        | 37         | 0         | 0        | 0        | 0        | 0           | 0        | 25         | 0        | 0           | 0        | 27         | 0        | 102          | 0                |
| <b>7:45 AM</b>   | <b>0</b>         | <b>19</b> | <b>0</b> | <b>51</b>  | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>    | <b>0</b> | <b>33</b>  | <b>0</b> | <b>0</b>    | <b>0</b> | <b>41</b>  | <b>0</b> | <b>144</b>   | <b>426</b>       |
| 8:00 AM          | 0                | 9         | 0        | 34         | 0         | 0        | 0        | 0        | 0           | 0        | 34         | 0        | 0           | 0        | 27         | 0        | 104          | 446              |
| 8:15 AM          | 0                | 8         | 0        | 34         | 0         | 0        | 0        | 0        | 0           | 0        | 35         | 0        | 0           | 0        | 22         | 0        | 99           | 449              |
| 8:30 AM          | 0                | 12        | 0        | 45         | 0         | 0        | 0        | 0        | 0           | 0        | 38         | 0        | 0           | 0        | 40         | 0        | 135          | 482              |
| 8:45 AM          | 0                | 8         | 0        | 48         | 0         | 0        | 0        | 0        | 0           | 0        | 19         | 0        | 0           | 0        | 34         | 0        | 109          | 447              |
| Count Total      | 0                | 83        | 0        | 319        | 0         | 0        | 0        | 0        | 0           | 0        | 231        | 0        | 0           | 0        | 240        | 0        | 873          | 0                |
| <b>Peak Hour</b> | <b>0</b>         | <b>48</b> | <b>0</b> | <b>164</b> | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>    | <b>0</b> | <b>140</b> | <b>0</b> | <b>0</b>    | <b>0</b> | <b>130</b> | <b>0</b> | <b>482</b>   | <b>0</b>         |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals |          |          |          |           | Bicycles |          |          |          |          | Pedestrians (Crossing Leg) |          |          |          |          |
|----------------|----------------------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------------------------|----------|----------|----------|----------|
|                | EB                   | WB       | NB       | SB       | Total     | EB       | WB       | NB       | SB       | Total    | East                       | West     | North    | South    | Total    |
| 7:00 AM        | 2                    | 0        | 1        | 2        | 5         | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 0        | 0        | 0        |
| 7:15 AM        | 5                    | 0        | 1        | 1        | 7         | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 0        | 0        | 0        |
| 7:30 AM        | 2                    | 0        | 3        | 2        | 7         | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 0        | 0        | 0        |
| <b>7:45 AM</b> | <b>6</b>             | <b>0</b> | <b>1</b> | <b>3</b> | <b>10</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>                   | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| 8:00 AM        | 1                    | 0        | 1        | 4        | 6         | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 0        | 1        | 1        |
| 8:15 AM        | 4                    | 0        | 3        | 0        | 7         | 0        | 0        | 0        | 0        | 0        | 0                          | 1        | 0        | 0        | 1        |
| 8:30 AM        | 3                    | 0        | 3        | 2        | 8         | 0        | 0        | 0        | 2        | 2        | 0                          | 0        | 0        | 0        | 0        |
| 8:45 AM        | 3                    | 0        | 0        | 0        | 3         | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 0        | 0        | 0        |
| Count Total    | 26                   | 0        | 13       | 14       | 53        | 0        | 0        | 0        | 2        | 2        | 0                          | 1        | 0        | 1        | 2        |
| <b>Peak Hr</b> | <b>14</b>            | <b>0</b> | <b>8</b> | <b>9</b> | <b>31</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>2</b> | <b>2</b> | <b>0</b>                   | <b>1</b> | <b>0</b> | <b>1</b> | <b>2</b> |





**Two-Hour Count Summaries**

| Interval Start   | I-90 EB OFF RAMP |           |          |            | 0         |          |          |          | 77TH AVE SE |          |            |          | 77TH AVE SE |          |            |          | 15-min Total | Rolling One Hour |
|------------------|------------------|-----------|----------|------------|-----------|----------|----------|----------|-------------|----------|------------|----------|-------------|----------|------------|----------|--------------|------------------|
|                  | Eastbound        |           |          |            | Westbound |          |          |          | Northbound  |          |            |          | Southbound  |          |            |          |              |                  |
|                  | UT               | LT        | TH       | RT         | UT        | LT       | TH       | RT       | UT          | LT       | TH         | RT       | UT          | LT       | TH         | RT       |              |                  |
| 4:00 PM          | 0                | 14        | 0        | 47         | 0         | 0        | 0        | 0        | 0           | 0        | 39         | 0        | 0           | 0        | 42         | 0        | 142          | 0                |
| 4:15 PM          | 0                | 21        | 0        | 58         | 0         | 0        | 0        | 0        | 0           | 0        | 22         | 0        | 0           | 0        | 35         | 0        | 136          | 0                |
| 4:30 PM          | 0                | 22        | 0        | 62         | 0         | 0        | 0        | 0        | 0           | 0        | 31         | 0        | 0           | 0        | 27         | 0        | 142          | 0                |
| <b>4:45 PM</b>   | <b>0</b>         | <b>18</b> | <b>0</b> | <b>68</b>  | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>    | <b>0</b> | <b>35</b>  | <b>0</b> | <b>0</b>    | <b>0</b> | <b>29</b>  | <b>0</b> | <b>150</b>   | 570              |
| <b>5:00 PM</b>   | <b>0</b>         | <b>16</b> | <b>0</b> | <b>58</b>  | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>    | <b>0</b> | <b>31</b>  | <b>0</b> | <b>0</b>    | <b>0</b> | <b>38</b>  | <b>0</b> | <b>143</b>   | 571              |
| <b>5:15 PM</b>   | <b>0</b>         | <b>28</b> | <b>0</b> | <b>71</b>  | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>    | <b>0</b> | <b>38</b>  | <b>0</b> | <b>0</b>    | <b>0</b> | <b>36</b>  | <b>0</b> | <b>173</b>   | 608              |
| <b>5:30 PM</b>   | <b>0</b>         | <b>16</b> | <b>0</b> | <b>69</b>  | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>    | <b>0</b> | <b>33</b>  | <b>0</b> | <b>0</b>    | <b>0</b> | <b>33</b>  | <b>0</b> | <b>151</b>   | <b>617</b>       |
| 5:45 PM          | 0                | 19        | 0        | 61         | 0         | 0        | 0        | 0        | 0           | 0        | 25         | 0        | 0           | 0        | 40         | 0        | 145          | 612              |
| Count Total      | 0                | 154       | 0        | 494        | 0         | 0        | 0        | 0        | 0           | 0        | 254        | 0        | 0           | 0        | 280        | 0        | 1,182        | 0                |
| <b>Peak Hour</b> | <b>0</b>         | <b>78</b> | <b>0</b> | <b>266</b> | <b>0</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>    | <b>0</b> | <b>137</b> | <b>0</b> | <b>0</b>    | <b>0</b> | <b>136</b> | <b>0</b> | <b>617</b>   | <b>0</b>         |

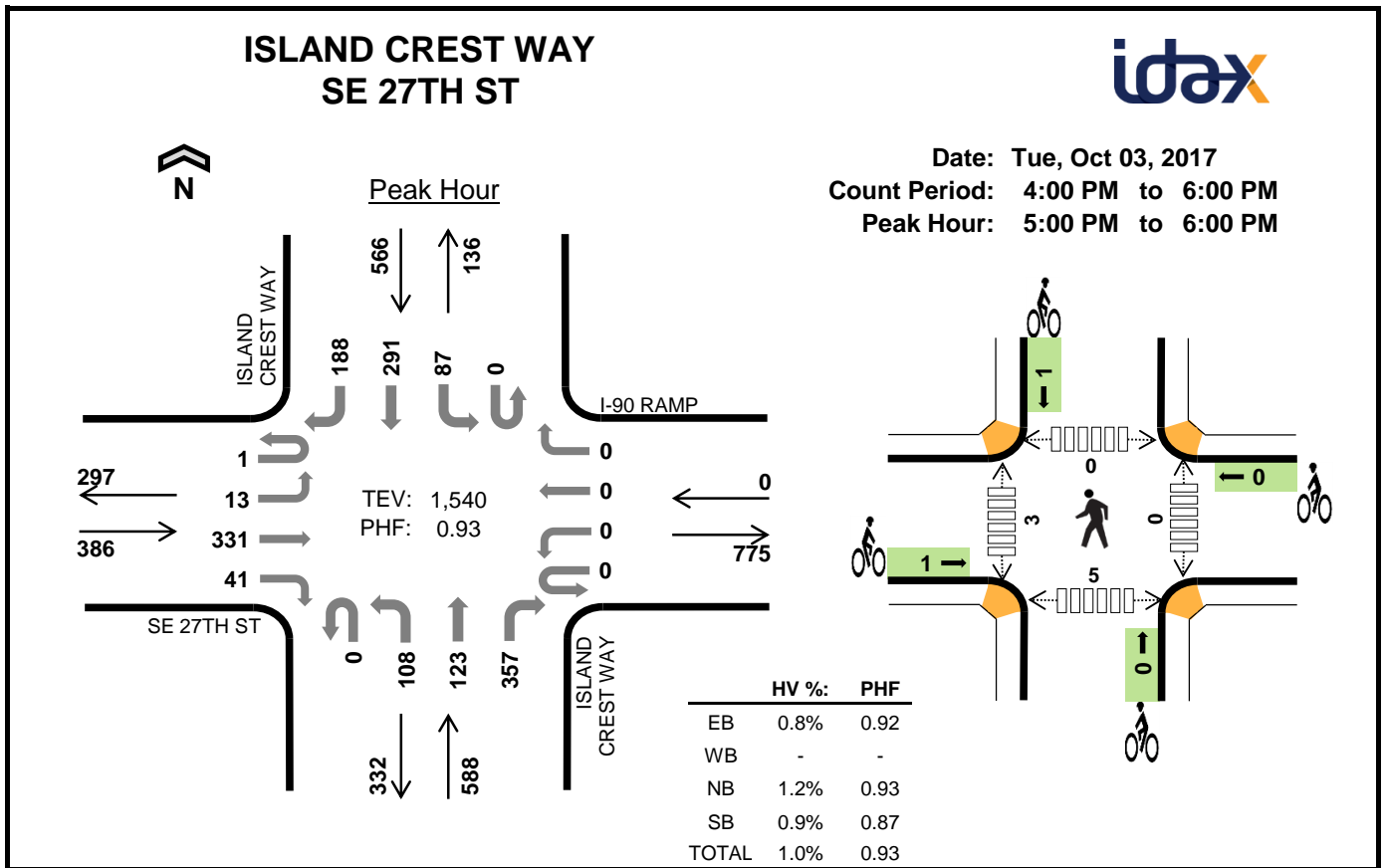
Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals |          |          |          |           | Bicycles |          |          |          |          | Pedestrians (Crossing Leg) |          |          |          |          |
|----------------|----------------------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------------------------|----------|----------|----------|----------|
|                | EB                   | WB       | NB       | SB       | Total     | EB       | WB       | NB       | SB       | Total    | East                       | West     | North    | South    | Total    |
| 4:00 PM        | 5                    | 0        | 1        | 3        | 9         | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 0        | 0        | 0        |
| 4:15 PM        | 3                    | 0        | 1        | 1        | 5         | 0        | 0        | 0        | 1        | 1        | 0                          | 0        | 0        | 0        | 0        |
| 4:30 PM        | 6                    | 0        | 1        | 1        | 8         | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 0        | 0        | 0        |
| <b>4:45 PM</b> | <b>3</b>             | <b>0</b> | <b>1</b> | <b>2</b> | <b>6</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>                   | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>5:00 PM</b> | <b>4</b>             | <b>0</b> | <b>1</b> | <b>2</b> | <b>7</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>                   | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>5:15 PM</b> | <b>5</b>             | <b>0</b> | <b>1</b> | <b>0</b> | <b>6</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>                   | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| <b>5:30 PM</b> | <b>6</b>             | <b>0</b> | <b>0</b> | <b>0</b> | <b>6</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>                   | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |
| 5:45 PM        | 8                    | 0        | 1        | 1        | 10        | 0        | 0        | 0        | 1        | 1        | 0                          | 0        | 0        | 0        | 0        |
| Count Total    | 40                   | 0        | 7        | 10       | 57        | 0        | 0        | 0        | 2        | 2        | 0                          | 0        | 0        | 0        | 0        |
| <b>Peak Hr</b> | <b>18</b>            | <b>0</b> | <b>3</b> | <b>4</b> | <b>25</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>                   | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> |









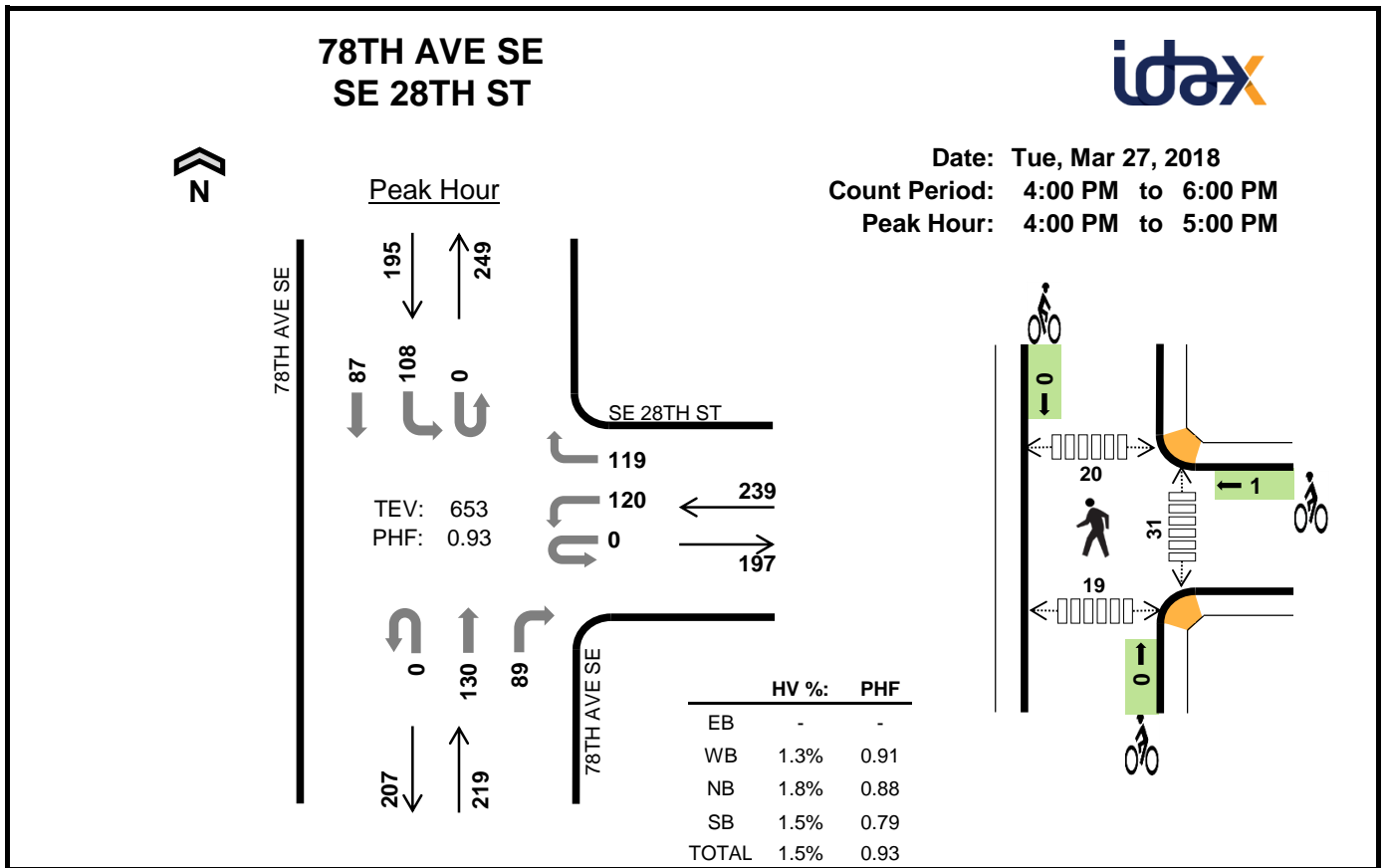
**Two-Hour Count Summaries**

| Interval Start   | SE 27TH ST |           |            |           | I-90 RAMP |          |            |          | ISLAND CREST WAY |            |            |            | ISLAND CREST WAY |           |            |            | 15-min Total | Rolling One Hour |
|------------------|------------|-----------|------------|-----------|-----------|----------|------------|----------|------------------|------------|------------|------------|------------------|-----------|------------|------------|--------------|------------------|
|                  | Eastbound  |           | Westbound  |           | Westbound |          | Northbound |          | Southbound       |            | Southbound |            | Northbound       |           |            |            |              |                  |
|                  | UT         | LT        | TH         | RT        | UT        | LT       | TH         | RT       | UT               | LT         | TH         | RT         | UT               | LT        | TH         | RT         |              |                  |
| 4:00 PM          | 0          | 4         | 98         | 3         | 0         | 0        | 0          | 0        | 1                | 22         | 34         | 100        | 0                | 23        | 73         | 44         | 402          | 0                |
| 4:15 PM          | 0          | 4         | 73         | 8         | 0         | 0        | 0          | 0        | 0                | 23         | 34         | 103        | 0                | 33        | 64         | 48         | 390          | 0                |
| 4:30 PM          | 0          | 5         | 85         | 16        | 0         | 0        | 0          | 0        | 0                | 19         | 33         | 77         | 0                | 30        | 61         | 59         | 385          | 0                |
| 4:45 PM          | 0          | 9         | 92         | 8         | 0         | 0        | 0          | 0        | 0                | 26         | 33         | 77         | 0                | 15        | 74         | 24         | 358          | 1,535            |
| <b>5:00 PM</b>   | <b>0</b>   | <b>5</b>  | <b>90</b>  | <b>6</b>  | <b>0</b>  | <b>0</b> | <b>0</b>   | <b>0</b> | <b>0</b>         | <b>22</b>  | <b>35</b>  | <b>97</b>  | <b>0</b>         | <b>23</b> | <b>58</b>  | <b>34</b>  | <b>370</b>   | 1,503            |
| <b>5:15 PM</b>   | <b>0</b>   | <b>2</b>  | <b>93</b>  | <b>10</b> | <b>0</b>  | <b>0</b> | <b>0</b>   | <b>0</b> | <b>0</b>         | <b>32</b>  | <b>33</b>  | <b>93</b>  | <b>0</b>         | <b>22</b> | <b>77</b>  | <b>54</b>  | <b>416</b>   | 1,529            |
| 5:30 PM          | 1          | 4         | 70         | 13        | 0         | 0        | 0          | 0        | 0                | 30         | 34         | 92         | 0                | 15        | 77         | 43         | 379          | 1,523            |
| 5:45 PM          | 0          | 2         | 78         | 12        | 0         | 0        | 0          | 0        | 0                | 24         | 21         | 75         | 0                | 27        | 79         | 57         | 375          | 1,540            |
| Count Total      | 1          | 35        | 679        | 76        | 0         | 0        | 0          | 0        | 1                | 198        | 257        | 714        | 0                | 188       | 563        | 363        | 3,075        | 0                |
| <b>Peak Hour</b> | <b>1</b>   | <b>13</b> | <b>331</b> | <b>41</b> | <b>0</b>  | <b>0</b> | <b>0</b>   | <b>0</b> | <b>0</b>         | <b>108</b> | <b>123</b> | <b>357</b> | <b>0</b>         | <b>87</b> | <b>291</b> | <b>188</b> | <b>1,540</b> | <b>0</b>         |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start   | Heavy Vehicle Totals |          |          |          |           | Bicycles |          |          |          |          | Pedestrians (Crossing Leg) |          |          |          |          |
|------------------|----------------------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------------------------|----------|----------|----------|----------|
|                  | EB                   | WB       | NB       | SB       | Total     | EB       | WB       | NB       | SB       | Total    | East                       | West     | North    | South    | Total    |
| 4:00 PM          | 2                    | 0        | 4        | 6        | 12        | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 0        | 1        | 1        |
| 4:15 PM          | 1                    | 0        | 0        | 2        | 3         | 0        | 0        | 0        | 0        | 0        | 0                          | 1        | 0        | 0        | 1        |
| 4:30 PM          | 0                    | 0        | 2        | 2        | 4         | 0        | 0        | 1        | 0        | 1        | 0                          | 0        | 0        | 0        | 0        |
| 4:45 PM          | 0                    | 0        | 1        | 2        | 3         | 0        | 0        | 0        | 0        | 0        | 0                          | 1        | 0        | 4        | 5        |
| <b>5:00 PM</b>   | <b>1</b>             | <b>0</b> | <b>1</b> | <b>0</b> | <b>2</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>                   | <b>1</b> | <b>0</b> | <b>1</b> | <b>2</b> |
| <b>5:15 PM</b>   | <b>0</b>             | <b>0</b> | <b>3</b> | <b>1</b> | <b>4</b>  | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b>                   | <b>1</b> | <b>0</b> | <b>2</b> | <b>3</b> |
| 5:30 PM          | 1                    | 0        | 1        | 3        | 5         | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 0        | 1        | 1        |
| 5:45 PM          | 1                    | 0        | 2        | 1        | 4         | 0        | 0        | 0        | 1        | 1        | 0                          | 1        | 0        | 1        | 2        |
| Count Total      | 6                    | 0        | 14       | 17       | 37        | 1        | 0        | 1        | 1        | 3        | 0                          | 5        | 0        | 10       | 15       |
| <b>Peak Hour</b> | <b>3</b>             | <b>0</b> | <b>7</b> | <b>5</b> | <b>15</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>2</b> | <b>0</b>                   | <b>3</b> | <b>0</b> | <b>5</b> | <b>8</b> |





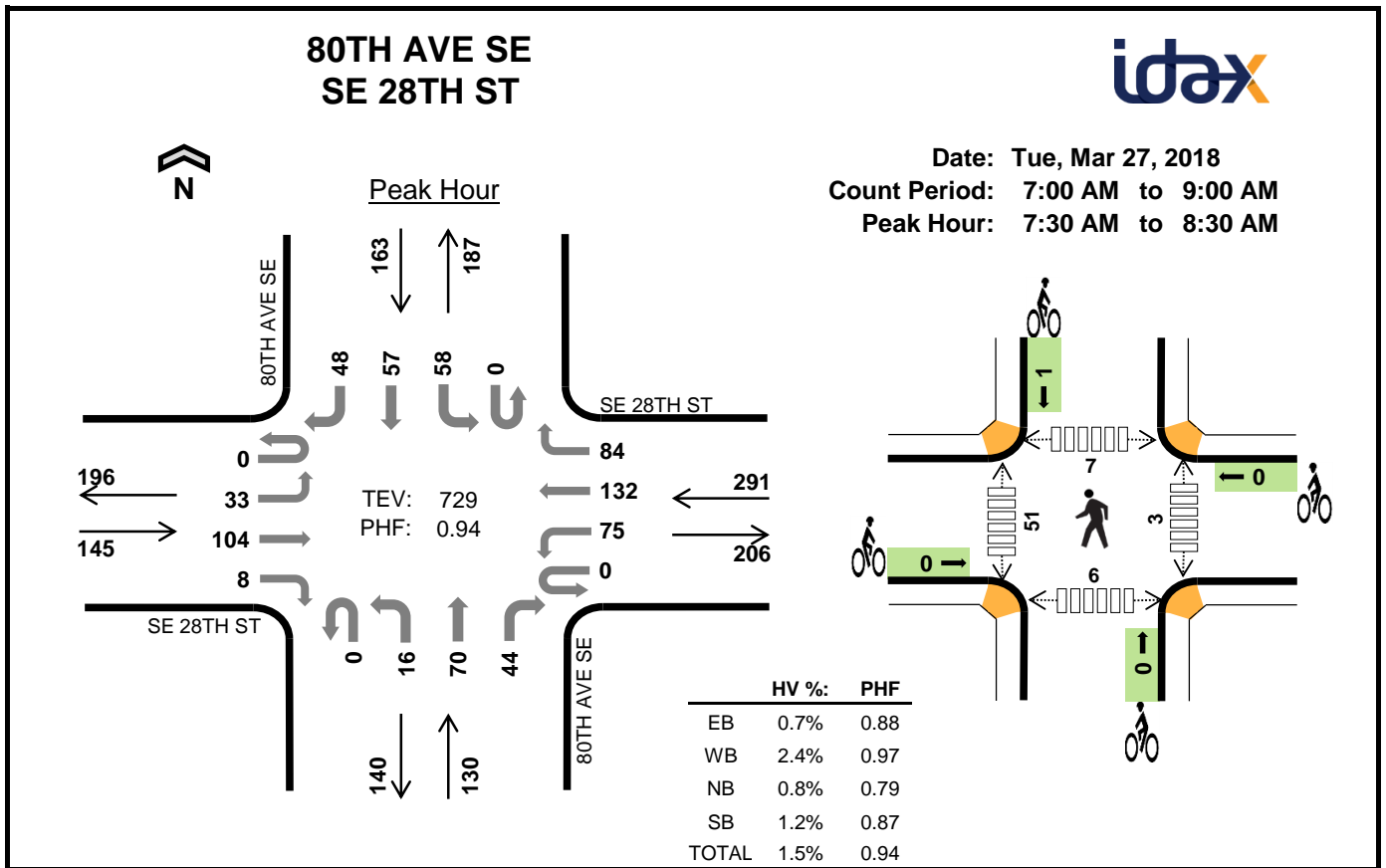
**Two-Hour Count Summaries**

| Interval Start | 0         |    |    |    | SE 28TH ST |     |    |     | 78TH AVE SE |    |     |     | 78TH AVE SE |     |     |    | 15-min Total | Rolling One Hour |
|----------------|-----------|----|----|----|------------|-----|----|-----|-------------|----|-----|-----|-------------|-----|-----|----|--------------|------------------|
|                | Eastbound |    |    |    | Westbound  |     |    |     | Northbound  |    |     |     | Southbound  |     |     |    |              |                  |
|                | UT        | LT | TH | RT | UT         | LT  | TH | RT  | UT          | LT | TH  | RT  | UT          | LT  | TH  | RT |              |                  |
| 4:00 PM        | 0         | 0  | 0  | 0  | 0          | 28  | 0  | 38  | 0           | 0  | 26  | 24  | 0           | 21  | 21  | 0  | 158          | 0                |
| 4:15 PM        | 0         | 0  | 0  | 0  | 0          | 33  | 0  | 28  | 0           | 0  | 32  | 18  | 0           | 22  | 15  | 0  | 148          | 0                |
| 4:30 PM        | 0         | 0  | 0  | 0  | 0          | 31  | 0  | 22  | 0           | 0  | 40  | 17  | 0           | 37  | 25  | 0  | 172          | 0                |
| 4:45 PM        | 0         | 0  | 0  | 0  | 0          | 28  | 0  | 31  | 0           | 0  | 32  | 30  | 0           | 28  | 26  | 0  | 175          | 653              |
| 5:00 PM        | 0         | 0  | 0  | 0  | 0          | 24  | 0  | 17  | 0           | 0  | 25  | 33  | 0           | 22  | 28  | 0  | 149          | 644              |
| 5:15 PM        | 0         | 0  | 0  | 0  | 0          | 24  | 0  | 22  | 0           | 0  | 27  | 29  | 0           | 30  | 10  | 0  | 142          | 638              |
| 5:30 PM        | 0         | 0  | 0  | 0  | 0          | 22  | 0  | 31  | 0           | 0  | 24  | 13  | 0           | 31  | 18  | 0  | 139          | 605              |
| 5:45 PM        | 0         | 0  | 0  | 0  | 0          | 24  | 0  | 28  | 0           | 0  | 32  | 17  | 0           | 24  | 26  | 0  | 151          | 581              |
| Count Total    | 0         | 0  | 0  | 0  | 0          | 214 | 0  | 217 | 0           | 0  | 238 | 181 | 0           | 215 | 169 | 0  | 1,234        | 0                |
| Peak Hour      | 0         | 0  | 0  | 0  | 0          | 120 | 0  | 119 | 0           | 0  | 130 | 89  | 0           | 108 | 87  | 0  | 653          | 0                |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals |    |    |    |       | Bicycles |    |    |    |       | Pedestrians (Crossing Leg) |      |       |       |       |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
|                | EB                   | WB | NB | SB | Total | EB       | WB | NB | SB | Total | East                       | West | North | South | Total |
| 4:00 PM        | 0                    | 1  | 1  | 2  | 4     | 0        | 0  | 0  | 0  | 0     | 7                          | 0    | 6     | 1     | 14    |
| 4:15 PM        | 0                    | 0  | 2  | 1  | 3     | 0        | 0  | 0  | 0  | 0     | 6                          | 0    | 5     | 4     | 15    |
| 4:30 PM        | 0                    | 0  | 1  | 0  | 1     | 0        | 1  | 0  | 0  | 1     | 6                          | 0    | 4     | 6     | 16    |
| 4:45 PM        | 0                    | 2  | 0  | 0  | 2     | 0        | 0  | 0  | 0  | 0     | 12                         | 0    | 5     | 8     | 25    |
| 5:00 PM        | 0                    | 0  | 1  | 1  | 2     | 0        | 0  | 0  | 0  | 0     | 3                          | 0    | 2     | 2     | 7     |
| 5:15 PM        | 0                    | 0  | 0  | 0  | 0     | 0        | 0  | 0  | 0  | 0     | 6                          | 0    | 4     | 1     | 11    |
| 5:30 PM        | 0                    | 0  | 1  | 1  | 2     | 0        | 0  | 0  | 0  | 0     | 9                          | 0    | 6     | 10    | 25    |
| 5:45 PM        | 0                    | 1  | 0  | 0  | 1     | 0        | 0  | 0  | 0  | 0     | 6                          | 0    | 7     | 7     | 20    |
| Count Total    | 0                    | 4  | 6  | 5  | 15    | 0        | 1  | 0  | 0  | 1     | 55                         | 0    | 39    | 39    | 133   |
| Peak Hr        | 0                    | 3  | 4  | 3  | 10    | 0        | 1  | 0  | 0  | 1     | 31                         | 0    | 20    | 19    | 70    |





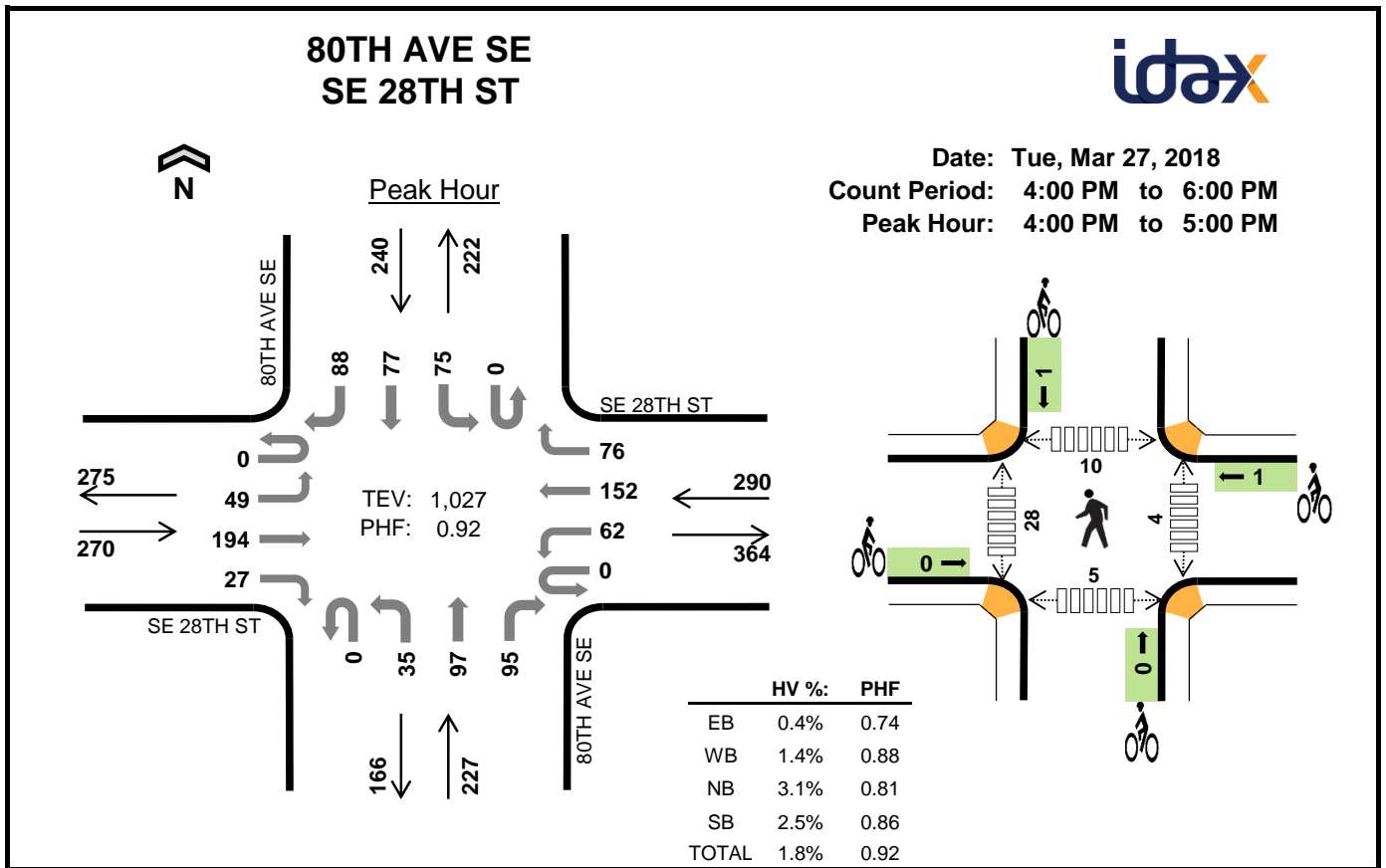
**Two-Hour Count Summaries**

| Interval Start   | SE 28TH ST Eastbound |           |            |          | SE 28TH ST Westbound |           |            |           | 80TH AVE SE Northbound |           |           |           | 80TH AVE SE Southbound |           |           |           | 15-min Total | Rolling One Hour |
|------------------|----------------------|-----------|------------|----------|----------------------|-----------|------------|-----------|------------------------|-----------|-----------|-----------|------------------------|-----------|-----------|-----------|--------------|------------------|
|                  | UT                   | LT        | TH         | RT       | UT                   | LT        | TH         | RT        | UT                     | LT        | TH        | RT        | UT                     | LT        | TH        | RT        |              |                  |
| 7:00 AM          | 0                    | 10        | 14         | 2        | 0                    | 10        | 28         | 17        | 0                      | 1         | 14        | 5         | 0                      | 12        | 15        | 14        | 142          | 0                |
| 7:15 AM          | 0                    | 9         | 25         | 3        | 0                    | 16        | 25         | 17        | 0                      | 5         | 6         | 4         | 0                      | 13        | 10        | 11        | 144          | 0                |
| <b>7:30 AM</b>   | <b>0</b>             | <b>7</b>  | <b>33</b>  | <b>1</b> | <b>0</b>             | <b>18</b> | <b>32</b>  | <b>24</b> | <b>0</b>               | <b>2</b>  | <b>16</b> | <b>11</b> | <b>0</b>               | <b>17</b> | <b>12</b> | <b>7</b>  | <b>180</b>   | <b>0</b>         |
| 7:45 AM          | 0                    | 7         | 28         | 1        | 0                    | 23        | 31         | 18        | 0                      | 7         | 20        | 8         | 0                      | 14        | 19        | 14        | 190          | 656              |
| 8:00 AM          | 0                    | 2         | 22         | 3        | 0                    | 14        | 33         | 23        | 0                      | 4         | 11        | 10        | 0                      | 16        | 12        | 15        | 165          | 679              |
| <b>8:15 AM</b>   | <b>0</b>             | <b>17</b> | <b>21</b>  | <b>3</b> | <b>0</b>             | <b>20</b> | <b>36</b>  | <b>19</b> | <b>0</b>               | <b>3</b>  | <b>23</b> | <b>15</b> | <b>0</b>               | <b>11</b> | <b>14</b> | <b>12</b> | <b>194</b>   | <b>729</b>       |
| 8:30 AM          | 0                    | 7         | 22         | 7        | 0                    | 18        | 37         | 22        | 0                      | 5         | 17        | 8         | 0                      | 9         | 13        | 8         | 173          | 722              |
| 8:45 AM          | 0                    | 13        | 20         | 3        | 0                    | 23        | 37         | 18        | 0                      | 4         | 19        | 10        | 0                      | 6         | 19        | 10        | 182          | 714              |
| Count Total      | 0                    | 72        | 185        | 23       | 0                    | 142       | 259        | 158       | 0                      | 31        | 126       | 71        | 0                      | 98        | 114       | 91        | 1,370        | 0                |
| <b>Peak Hour</b> | <b>0</b>             | <b>33</b> | <b>104</b> | <b>8</b> | <b>0</b>             | <b>75</b> | <b>132</b> | <b>84</b> | <b>0</b>               | <b>16</b> | <b>70</b> | <b>44</b> | <b>0</b>               | <b>58</b> | <b>57</b> | <b>48</b> | <b>729</b>   | <b>0</b>         |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start   | Heavy Vehicle Totals |          |          |          |           | Bicycles |          |          |          |          | Pedestrians (Crossing Leg) |           |          |          |           |
|------------------|----------------------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------------------------|-----------|----------|----------|-----------|
|                  | EB                   | WB       | NB       | SB       | Total     | EB       | WB       | NB       | SB       | Total    | East                       | West      | North    | South    | Total     |
| 7:00 AM          | 1                    | 1        | 0        | 0        | 2         | 0        | 0        | 0        | 0        | 0        | 0                          | 5         | 0        | 1        | 6         |
| 7:15 AM          | 0                    | 1        | 0        | 2        | 3         | 0        | 1        | 0        | 0        | 1        | 0                          | 15        | 0        | 0        | 15        |
| <b>7:30 AM</b>   | <b>1</b>             | <b>3</b> | <b>1</b> | <b>0</b> | <b>5</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>1</b> | <b>0</b>                   | <b>8</b>  | <b>1</b> | <b>1</b> | <b>10</b> |
| 7:45 AM          | 0                    | 1        | 0        | 2        | 3         | 0        | 0        | 0        | 0        | 0        | 0                          | 13        | 1        | 2        | 16        |
| 8:00 AM          | 0                    | 1        | 0        | 0        | 1         | 0        | 0        | 0        | 0        | 0        | 3                          | 15        | 3        | 3        | 24        |
| <b>8:15 AM</b>   | <b>0</b>             | <b>2</b> | <b>0</b> | <b>0</b> | <b>2</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>                   | <b>15</b> | <b>2</b> | <b>0</b> | <b>17</b> |
| 8:30 AM          | 3                    | 1        | 0        | 0        | 4         | 0        | 0        | 0        | 0        | 0        | 1                          | 9         | 0        | 4        | 14        |
| 8:45 AM          | 1                    | 5        | 1        | 1        | 8         | 0        | 0        | 0        | 0        | 0        | 1                          | 11        | 3        | 2        | 17        |
| Count Total      | 6                    | 15       | 2        | 5        | 28        | 0        | 1        | 0        | 1        | 2        | 5                          | 91        | 10       | 13       | 119       |
| <b>Peak Hour</b> | <b>1</b>             | <b>7</b> | <b>1</b> | <b>2</b> | <b>11</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>1</b> | <b>3</b>                   | <b>51</b> | <b>7</b> | <b>6</b> | <b>67</b> |





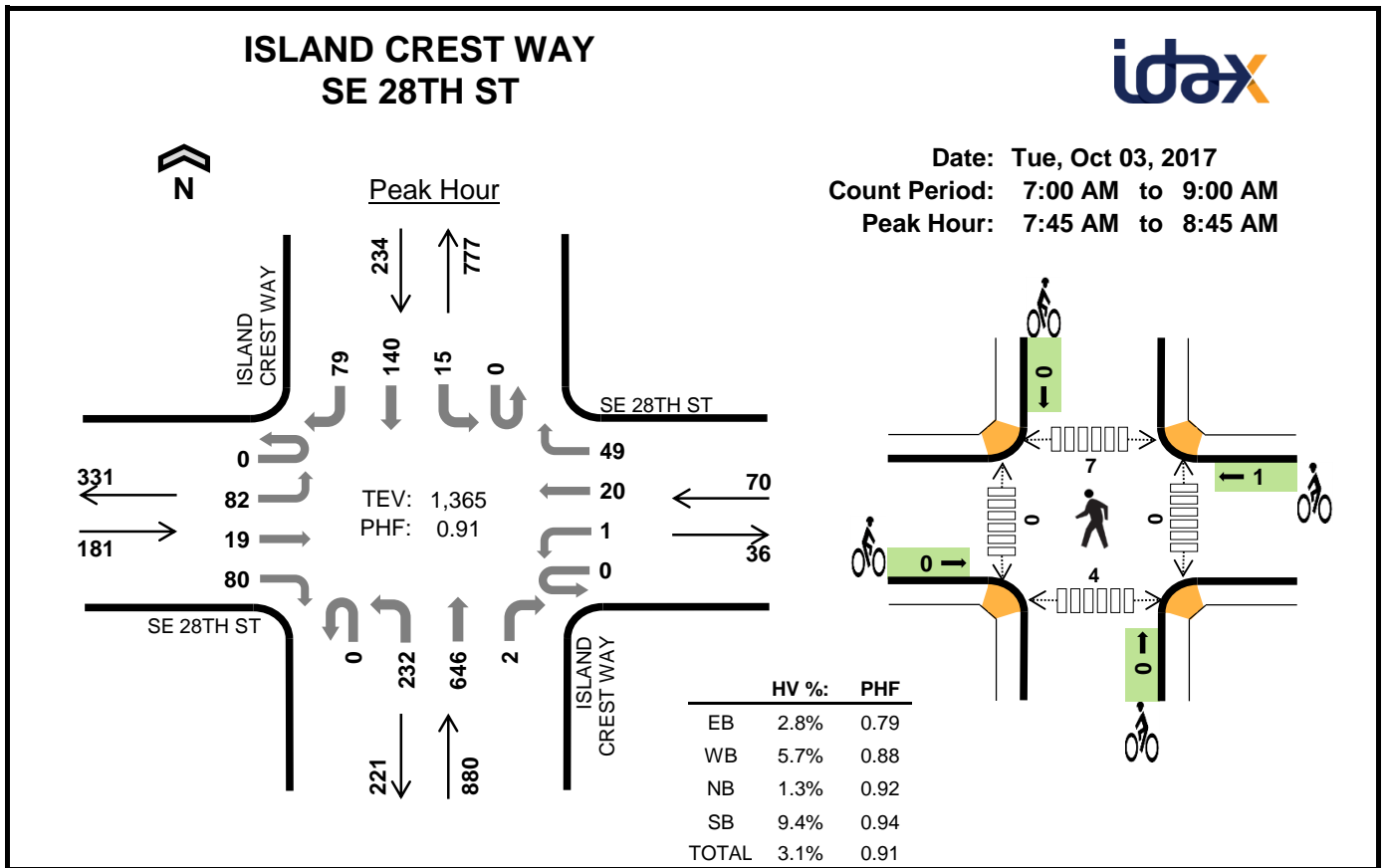
**Two-Hour Count Summaries**

| Interval Start   | SE 28TH ST Eastbound |           |            |           | SE 28TH ST Westbound |           |            |           | 80TH AVE SE Northbound |           |           |           | 80TH AVE SE Southbound |           |           |           | 15-min Total | Rolling One Hour |
|------------------|----------------------|-----------|------------|-----------|----------------------|-----------|------------|-----------|------------------------|-----------|-----------|-----------|------------------------|-----------|-----------|-----------|--------------|------------------|
|                  | UT                   | LT        | TH         | RT        | UT                   | LT        | TH         | RT        | UT                     | LT        | TH        | RT        | UT                     | LT        | TH        | RT        |              |                  |
| 4:00 PM          | 0                    | 11        | 53         | 3         | 0                    | 14        | 43         | 25        | 0                      | 12        | 23        | 27        | 0                      | 23        | 27        | 17        | 278          | 0                |
| 4:15 PM          | 0                    | 11        | 35         | 5         | 0                    | 23        | 35         | 19        | 0                      | 6         | 21        | 26        | 0                      | 24        | 18        | 28        | 251          | 0                |
| 4:30 PM          | 0                    | 10        | 43         | 8         | 0                    | 11        | 39         | 13        | 0                      | 13        | 35        | 22        | 0                      | 14        | 19        | 25        | 252          | 0                |
| 4:45 PM          | 0                    | 17        | 63         | 11        | 0                    | 14        | 35         | 19        | 0                      | 4         | 18        | 20        | 0                      | 14        | 13        | 18        | 246          | 1,027            |
| 5:00 PM          | 0                    | 12        | 48         | 3         | 0                    | 14        | 32         | 16        | 0                      | 4         | 27        | 33        | 0                      | 19        | 24        | 17        | 249          | 998              |
| 5:15 PM          | 0                    | 13        | 61         | 6         | 0                    | 17        | 32         | 24        | 0                      | 7         | 31        | 17        | 0                      | 19        | 13        | 14        | 254          | 1,001            |
| 5:30 PM          | 0                    | 13        | 37         | 1         | 0                    | 16        | 41         | 15        | 1                      | 8         | 17        | 22        | 0                      | 26        | 21        | 15        | 233          | 982              |
| 5:45 PM          | 0                    | 9         | 38         | 3         | 0                    | 9         | 37         | 6         | 0                      | 7         | 16        | 21        | 0                      | 23        | 12        | 23        | 204          | 940              |
| Count Total      | 0                    | 96        | 378        | 40        | 0                    | 118       | 294        | 137       | 1                      | 61        | 188       | 188       | 0                      | 162       | 147       | 157       | 1,967        | 0                |
| <b>Peak Hour</b> | <b>0</b>             | <b>49</b> | <b>194</b> | <b>27</b> | <b>0</b>             | <b>62</b> | <b>152</b> | <b>76</b> | <b>0</b>               | <b>35</b> | <b>97</b> | <b>95</b> | <b>0</b>               | <b>75</b> | <b>77</b> | <b>88</b> | <b>1,027</b> | <b>0</b>         |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start   | Heavy Vehicle Totals |          |          |          |           | Bicycles |          |          |          |          | Pedestrians (Crossing Leg) |           |           |          |           |
|------------------|----------------------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------------------------|-----------|-----------|----------|-----------|
|                  | EB                   | WB       | NB       | SB       | Total     | EB       | WB       | NB       | SB       | Total    | East                       | West      | North     | South    | Total     |
| 4:00 PM          | 1                    | 4        | 3        | 3        | 11        | 0        | 0        | 0        | 0        | 0        | 2                          | 10        | 4         | 2        | 18        |
| 4:15 PM          | 0                    | 0        | 2        | 1        | 3         | 0        | 0        | 0        | 1        | 1        | 0                          | 11        | 4         | 2        | 17        |
| 4:30 PM          | 0                    | 0        | 1        | 0        | 1         | 0        | 1        | 0        | 0        | 1        | 1                          | 4         | 2         | 0        | 7         |
| 4:45 PM          | 0                    | 0        | 1        | 2        | 3         | 0        | 0        | 0        | 0        | 0        | 1                          | 3         | 0         | 1        | 5         |
| 5:00 PM          | 0                    | 0        | 0        | 1        | 1         | 0        | 0        | 0        | 0        | 0        | 0                          | 9         | 4         | 0        | 13        |
| 5:15 PM          | 0                    | 0        | 0        | 0        | 0         | 0        | 0        | 0        | 0        | 0        | 0                          | 7         | 1         | 3        | 11        |
| 5:30 PM          | 0                    | 2        | 0        | 0        | 2         | 0        | 0        | 0        | 0        | 0        | 0                          | 10        | 0         | 6        | 16        |
| 5:45 PM          | 0                    | 2        | 0        | 0        | 2         | 0        | 0        | 0        | 0        | 0        | 0                          | 11        | 1         | 3        | 15        |
| Count Total      | 1                    | 8        | 7        | 7        | 23        | 0        | 1        | 0        | 1        | 2        | 4                          | 65        | 16        | 17       | 102       |
| <b>Peak Hour</b> | <b>1</b>             | <b>4</b> | <b>7</b> | <b>6</b> | <b>18</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>1</b> | <b>2</b> | <b>4</b>                   | <b>28</b> | <b>10</b> | <b>5</b> | <b>47</b> |





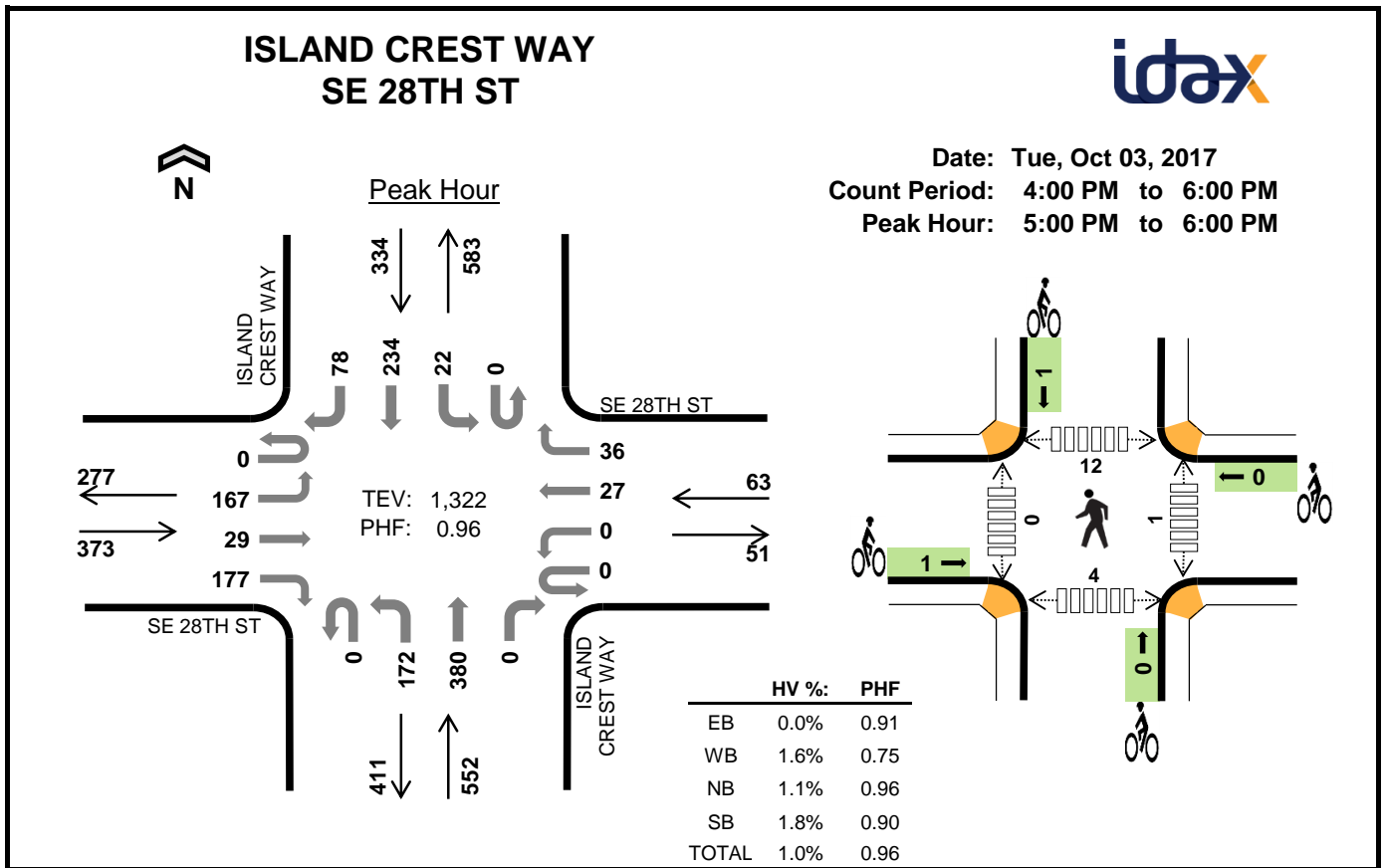
**Two-Hour Count Summaries**

| Interval Start   | SE 28TH ST Eastbound |           |           |           | SE 28TH ST Westbound |          |           |           | ISLAND CREST WAY Northbound |            |            |          | ISLAND CREST WAY Southbound |           |            |           | 15-min Total | Rolling One Hour |
|------------------|----------------------|-----------|-----------|-----------|----------------------|----------|-----------|-----------|-----------------------------|------------|------------|----------|-----------------------------|-----------|------------|-----------|--------------|------------------|
|                  | UT                   | LT        | TH        | RT        | UT                   | LT       | TH        | RT        | UT                          | LT         | TH         | RT       | UT                          | LT        | TH         | RT        |              |                  |
| 7:00 AM          | 0                    | 11        | 3         | 22        | 0                    | 0        | 7         | 4         | 0                           | 34         | 118        | 1        | 0                           | 2         | 24         | 13        | 239          | 0                |
| 7:15 AM          | 0                    | 14        | 4         | 14        | 0                    | 0        | 7         | 6         | 0                           | 35         | 142        | 0        | 0                           | 3         | 23         | 19        | 267          | 0                |
| 7:30 AM          | 0                    | 21        | 3         | 23        | 0                    | 0        | 4         | 10        | 0                           | 42         | 137        | 0        | 0                           | 7         | 42         | 23        | 312          | 0                |
| <b>7:45 AM</b>   | <b>0</b>             | <b>13</b> | <b>3</b>  | <b>27</b> | <b>0</b>             | <b>1</b> | <b>3</b>  | <b>10</b> | <b>0</b>                    | <b>63</b>  | <b>170</b> | <b>1</b> | <b>0</b>                    | <b>3</b>  | <b>39</b>  | <b>20</b> | <b>353</b>   | 1,171            |
| <b>8:00 AM</b>   | <b>0</b>             | <b>26</b> | <b>5</b>  | <b>26</b> | <b>0</b>             | <b>0</b> | <b>5</b>  | <b>15</b> | <b>0</b>                    | <b>69</b>  | <b>171</b> | <b>0</b> | <b>0</b>                    | <b>2</b>  | <b>38</b>  | <b>19</b> | <b>376</b>   | 1,308            |
| 8:15 AM          | 0                    | 21        | 3         | 12        | 0                    | 0        | 6         | 11        | 0                           | 50         | 165        | 1        | 0                           | 4         | 25         | 25        | 323          | 1,364            |
| 8:30 AM          | 0                    | 22        | 8         | 15        | 0                    | 0        | 6         | 13        | 0                           | 50         | 140        | 0        | 0                           | 6         | 38         | 15        | 313          | 1,365            |
| 8:45 AM          | 0                    | 20        | 11        | 26        | 0                    | 0        | 7         | 10        | 0                           | 47         | 115        | 1        | 0                           | 9         | 53         | 17        | 316          | 1,328            |
| Count Total      | 0                    | 148       | 40        | 165       | 0                    | 1        | 45        | 79        | 0                           | 390        | 1,158      | 4        | 0                           | 36        | 282        | 151       | 2,499        | 0                |
| <b>Peak Hour</b> | <b>0</b>             | <b>82</b> | <b>19</b> | <b>80</b> | <b>0</b>             | <b>1</b> | <b>20</b> | <b>49</b> | <b>0</b>                    | <b>232</b> | <b>646</b> | <b>2</b> | <b>0</b>                    | <b>15</b> | <b>140</b> | <b>79</b> | <b>1,365</b> | <b>0</b>         |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start   | Heavy Vehicle Totals |          |           |           |           | Bicycles |          |          |          |          | Pedestrians (Crossing Leg) |          |          |          |           |
|------------------|----------------------|----------|-----------|-----------|-----------|----------|----------|----------|----------|----------|----------------------------|----------|----------|----------|-----------|
|                  | EB                   | WB       | NB        | SB        | Total     | EB       | WB       | NB       | SB       | Total    | East                       | West     | North    | South    | Total     |
| 7:00 AM          | 0                    | 0        | 3         | 2         | 5         | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 2        | 0        | 2         |
| 7:15 AM          | 1                    | 0        | 3         | 3         | 7         | 0        | 1        | 0        | 0        | 1        | 0                          | 0        | 1        | 1        | 2         |
| 7:30 AM          | 0                    | 0        | 4         | 3         | 7         | 0        | 0        | 0        | 0        | 0        | 1                          | 0        | 0        | 1        | 2         |
| 7:45 AM          | 1                    | 1        | 4         | 5         | 11        | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 0        | 4        | 4         |
| <b>8:00 AM</b>   | <b>1</b>             | <b>2</b> | <b>1</b>  | <b>6</b>  | <b>10</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>                   | <b>0</b> | <b>2</b> | <b>0</b> | <b>2</b>  |
| 8:15 AM          | 1                    | 1        | 3         | 4         | 9         | 0        | 1        | 0        | 0        | 1        | 0                          | 0        | 4        | 0        | 4         |
| 8:30 AM          | 2                    | 0        | 3         | 7         | 12        | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 1        | 0        | 1         |
| 8:45 AM          | 0                    | 0        | 6         | 3         | 9         | 0        | 1        | 0        | 0        | 1        | 0                          | 0        | 1        | 0        | 1         |
| Count Total      | 6                    | 4        | 27        | 33        | 70        | 0        | 3        | 0        | 0        | 3        | 1                          | 0        | 11       | 6        | 18        |
| <b>Peak Hour</b> | <b>5</b>             | <b>4</b> | <b>11</b> | <b>22</b> | <b>42</b> | <b>0</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b>                   | <b>0</b> | <b>7</b> | <b>4</b> | <b>11</b> |





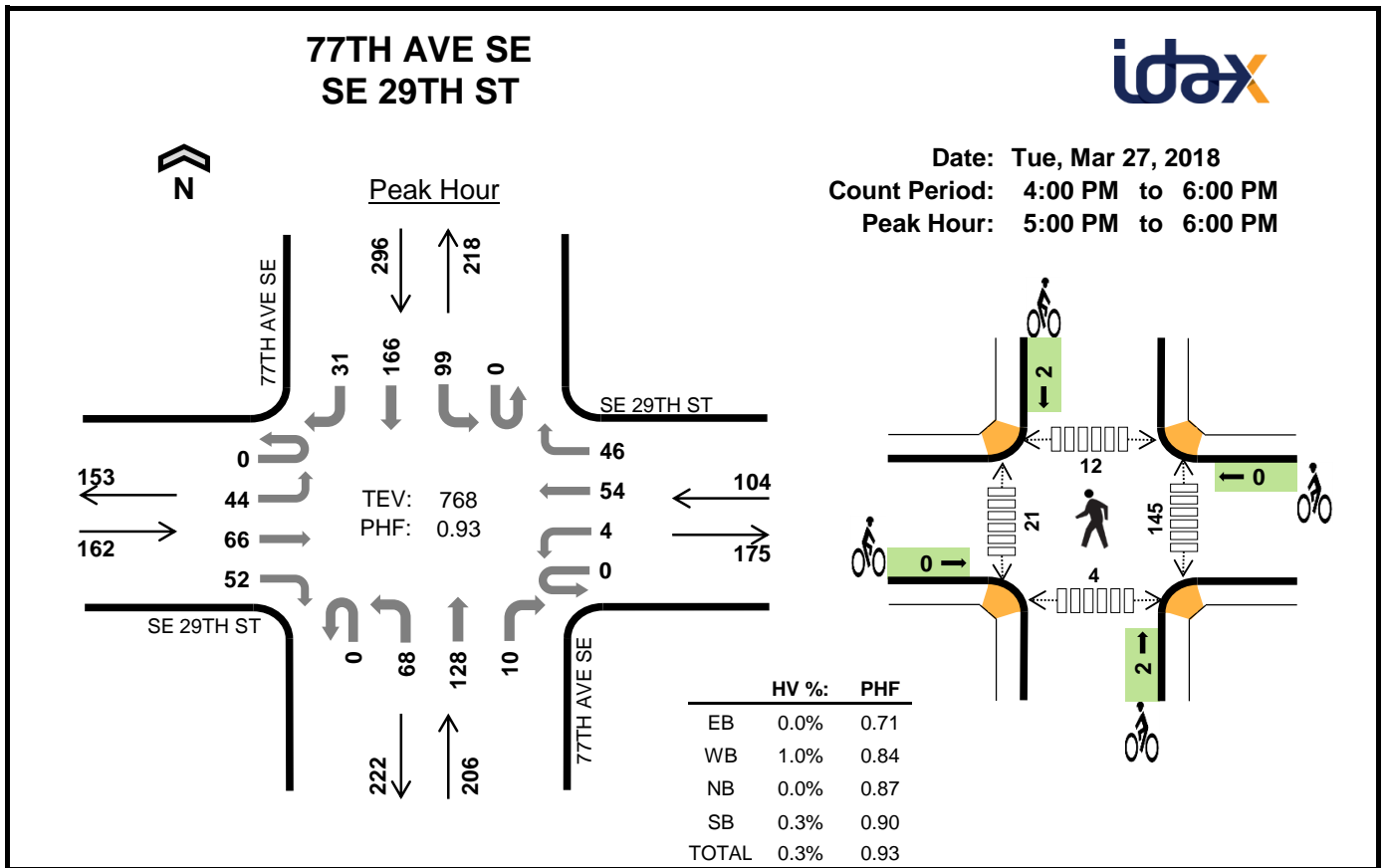
**Two-Hour Count Summaries**

| Interval Start   | SE 28TH ST Eastbound |            |           |            | SE 28TH ST Westbound |          |           |           | ISLAND CREST WAY Northbound |            |            |          | ISLAND CREST WAY Southbound |           |            |           | 15-min Total | Rolling One Hour |
|------------------|----------------------|------------|-----------|------------|----------------------|----------|-----------|-----------|-----------------------------|------------|------------|----------|-----------------------------|-----------|------------|-----------|--------------|------------------|
|                  | UT                   | LT         | TH        | RT         | UT                   | LT       | TH        | RT        | UT                          | LT         | TH         | RT       | UT                          | LT        | TH         | RT        |              |                  |
| 4:00 PM          | 0                    | 61         | 3         | 36         | 0                    | 0        | 9         | 14        | 0                           | 49         | 87         | 1        | 0                           | 4         | 48         | 20        | 332          | 0                |
| 4:15 PM          | 0                    | 61         | 9         | 43         | 0                    | 0        | 9         | 12        | 0                           | 65         | 86         | 1        | 0                           | 2         | 61         | 16        | 365          | 0                |
| 4:30 PM          | 0                    | 37         | 6         | 47         | 0                    | 0        | 3         | 5         | 0                           | 41         | 86         | 1        | 0                           | 9         | 54         | 17        | 306          | 0                |
| 4:45 PM          | 0                    | 49         | 5         | 37         | 0                    | 1        | 5         | 5         | 0                           | 28         | 81         | 0        | 0                           | 4         | 46         | 27        | 288          | 1,291            |
| <b>5:00 PM</b>   | <b>0</b>             | <b>52</b>  | <b>7</b>  | <b>43</b>  | <b>0</b>             | <b>0</b> | <b>12</b> | <b>9</b>  | <b>0</b>                    | <b>40</b>  | <b>103</b> | <b>0</b> | <b>0</b>                    | <b>5</b>  | <b>46</b>  | <b>16</b> | <b>333</b>   | <b>1,292</b>     |
| 5:15 PM          | 0                    | 47         | 4         | 42         | 0                    | 0        | 1         | 9         | 0                           | 43         | 88         | 0        | 0                           | 5         | 61         | 21        | 321          | 1,248            |
| <b>5:30 PM</b>   | <b>0</b>             | <b>40</b>  | <b>9</b>  | <b>49</b>  | <b>0</b>             | <b>0</b> | <b>6</b>  | <b>11</b> | <b>0</b>                    | <b>39</b>  | <b>105</b> | <b>0</b> | <b>0</b>                    | <b>4</b>  | <b>63</b>  | <b>20</b> | <b>346</b>   | <b>1,288</b>     |
| 5:45 PM          | 0                    | 28         | 9         | 43         | 0                    | 0        | 8         | 7         | 0                           | 50         | 84         | 0        | 0                           | 8         | 64         | 21        | 322          | 1,322            |
| Count Total      | 0                    | 375        | 52        | 340        | 0                    | 1        | 53        | 72        | 0                           | 355        | 720        | 3        | 0                           | 41        | 443        | 158       | 2,613        | 0                |
| <b>Peak Hour</b> | <b>0</b>             | <b>167</b> | <b>29</b> | <b>177</b> | <b>0</b>             | <b>0</b> | <b>27</b> | <b>36</b> | <b>0</b>                    | <b>172</b> | <b>380</b> | <b>0</b> | <b>0</b>                    | <b>22</b> | <b>234</b> | <b>78</b> | <b>1,322</b> | <b>0</b>         |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start   | Heavy Vehicle Totals |          |          |          |           | Bicycles |          |          |          |          | Pedestrians (Crossing Leg) |          |           |          |           |
|------------------|----------------------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------------------------|----------|-----------|----------|-----------|
|                  | EB                   | WB       | NB       | SB       | Total     | EB       | WB       | NB       | SB       | Total    | East                       | West     | North     | South    | Total     |
| 4:00 PM          | 2                    | 1        | 3        | 2        | 8         | 0        | 0        | 0        | 0        | 0        | 0                          | 2        | 2         | 2        | 6         |
| 4:15 PM          | 2                    | 0        | 0        | 3        | 5         | 0        | 0        | 0        | 0        | 0        | 1                          | 1        | 3         | 1        | 6         |
| 4:30 PM          | 0                    | 0        | 2        | 2        | 4         | 0        | 0        | 1        | 0        | 1        | 0                          | 0        | 1         | 3        | 4         |
| 4:45 PM          | 0                    | 0        | 1        | 0        | 1         | 0        | 1        | 0        | 0        | 1        | 1                          | 0        | 7         | 1        | 9         |
| <b>5:00 PM</b>   | <b>0</b>             | <b>0</b> | <b>1</b> | <b>1</b> | <b>2</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>                   | <b>0</b> | <b>0</b>  | <b>2</b> | <b>2</b>  |
| 5:15 PM          | 0                    | 0        | 3        | 1        | 4         | 1        | 0        | 0        | 1        | 2        | 0                          | 0        | 0         | 2        | 2         |
| <b>5:30 PM</b>   | <b>0</b>             | <b>1</b> | <b>0</b> | <b>3</b> | <b>4</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>                   | <b>0</b> | <b>3</b>  | <b>0</b> | <b>3</b>  |
| 5:45 PM          | 0                    | 0        | 2        | 1        | 3         | 0        | 0        | 0        | 0        | 0        | 1                          | 0        | 9         | 0        | 10        |
| Count Total      | 4                    | 2        | 12       | 13       | 31        | 1        | 1        | 1        | 1        | 4        | 3                          | 3        | 25        | 11       | 42        |
| <b>Peak Hour</b> | <b>0</b>             | <b>1</b> | <b>6</b> | <b>6</b> | <b>13</b> | <b>1</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>2</b> | <b>1</b>                   | <b>0</b> | <b>12</b> | <b>4</b> | <b>17</b> |





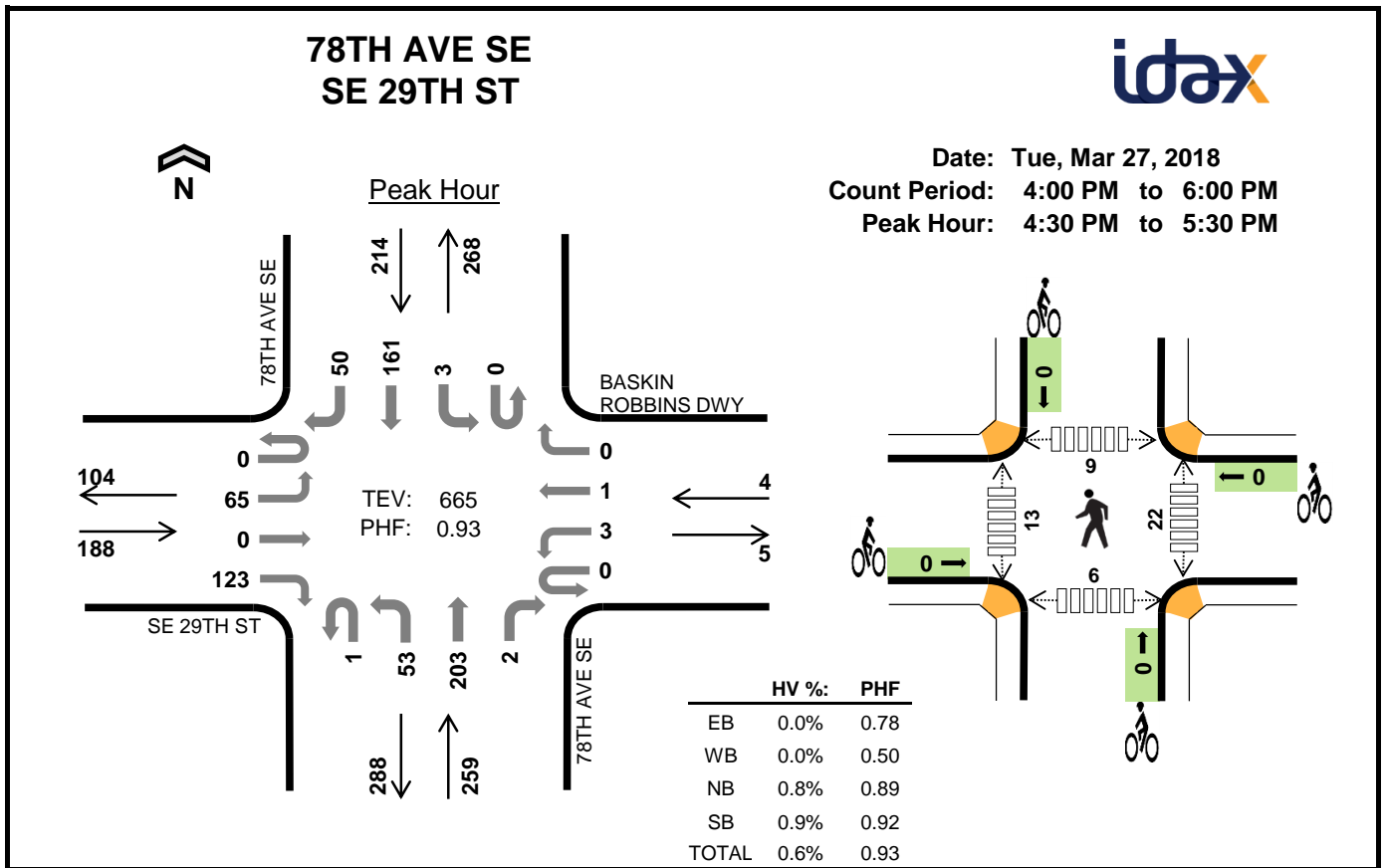
**Two-Hour Count Summaries**

| Interval Start   | SE 29TH ST Eastbound |           |           |           | SE 29TH ST Westbound |          |           |           | 77TH AVE SE Northbound |           |            |           | 77TH AVE SE Southbound |           |            |           | 15-min Total | Rolling One Hour |
|------------------|----------------------|-----------|-----------|-----------|----------------------|----------|-----------|-----------|------------------------|-----------|------------|-----------|------------------------|-----------|------------|-----------|--------------|------------------|
|                  | UT                   | LT        | TH        | RT        | UT                   | LT       | TH        | RT        | UT                     | LT        | TH         | RT        | UT                     | LT        | TH         | RT        |              |                  |
| 4:00 PM          | 0                    | 11        | 15        | 9         | 0                    | 2        | 12        | 18        | 0                      | 17        | 39         | 4         | 0                      | 18        | 40         | 8         | 193          | 0                |
| 4:15 PM          | 0                    | 12        | 9         | 11        | 0                    | 0        | 11        | 7         | 0                      | 13        | 34         | 1         | 0                      | 22        | 44         | 15        | 179          | 0                |
| 4:30 PM          | 0                    | 7         | 18        | 10        | 0                    | 0        | 9         | 12        | 0                      | 11        | 24         | 1         | 0                      | 26        | 44         | 8         | 170          | 0                |
| 4:45 PM          | 0                    | 10        | 19        | 11        | 0                    | 4        | 9         | 14        | 0                      | 8         | 32         | 3         | 0                      | 22        | 31         | 10        | 173          | 715              |
| <b>5:00 PM</b>   | <b>0</b>             | <b>21</b> | <b>25</b> | <b>11</b> | <b>0</b>             | <b>1</b> | <b>10</b> | <b>10</b> | <b>0</b>               | <b>24</b> | <b>31</b>  | <b>4</b>  | <b>0</b>               | <b>26</b> | <b>36</b>  | <b>7</b>  | <b>206</b>   | <b>728</b>       |
| 5:15 PM          | 0                    | 6         | 15        | 12        | 0                    | 2        | 14        | 12        | 0                      | 16        | 37         | 2         | 0                      | 27        | 42         | 2         | 187          | 736              |
| 5:30 PM          | 0                    | 6         | 14        | 17        | 0                    | 1        | 17        | 13        | 0                      | 17        | 28         | 0         | 0                      | 26        | 43         | 13        | 195          | 761              |
| 5:45 PM          | 0                    | 11        | 12        | 12        | 0                    | 0        | 13        | 11        | 0                      | 11        | 32         | 4         | 0                      | 20        | 45         | 9         | 180          | 768              |
| Count Total      | 0                    | 84        | 127       | 93        | 0                    | 10       | 95        | 97        | 0                      | 117       | 257        | 19        | 0                      | 187       | 325        | 72        | 1,483        | 0                |
| <b>Peak Hour</b> | <b>0</b>             | <b>44</b> | <b>66</b> | <b>52</b> | <b>0</b>             | <b>4</b> | <b>54</b> | <b>46</b> | <b>0</b>               | <b>68</b> | <b>128</b> | <b>10</b> | <b>0</b>               | <b>99</b> | <b>166</b> | <b>31</b> | <b>768</b>   | <b>0</b>         |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start   | Heavy Vehicle Totals |          |          |          |          | Bicycles |          |          |          |          | Pedestrians (Crossing Leg) |           |           |          |            |
|------------------|----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------------------------|-----------|-----------|----------|------------|
|                  | EB                   | WB       | NB       | SB       | Total    | EB       | WB       | NB       | SB       | Total    | East                       | West      | North     | South    | Total      |
| 4:00 PM          | 0                    | 0        | 2        | 2        | 4        | 0        | 0        | 0        | 1        | 1        | 1                          | 2         | 6         | 2        | 11         |
| 4:15 PM          | 0                    | 0        | 0        | 3        | 3        | 0        | 0        | 0        | 0        | 0        | 0                          | 3         | 1         | 1        | 5          |
| 4:30 PM          | 0                    | 0        | 0        | 1        | 1        | 0        | 0        | 0        | 0        | 0        | 3                          | 5         | 4         | 0        | 12         |
| 4:45 PM          | 1                    | 0        | 0        | 0        | 1        | 0        | 0        | 0        | 0        | 0        | 10                         | 9         | 11        | 5        | 35         |
| <b>5:00 PM</b>   | <b>0</b>             | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>2</b> | <b>3</b> | <b>4</b>                   | <b>8</b>  | <b>4</b>  | <b>1</b> | <b>17</b>  |
| 5:15 PM          | 0                    | 0        | 0        | 0        | 0        | 0        | 0        | 1        | 0        | 1        | 54                         | 6         | 1         | 1        | 62         |
| 5:30 PM          | 0                    | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 78                         | 5         | 6         | 2        | 91         |
| 5:45 PM          | 0                    | 1        | 0        | 1        | 2        | 0        | 0        | 0        | 0        | 0        | 9                          | 2         | 1         | 0        | 12         |
| Count Total      | 1                    | 1        | 2        | 7        | 11       | 0        | 0        | 2        | 3        | 5        | 159                        | 40        | 34        | 12       | 245        |
| <b>Peak Hour</b> | <b>0</b>             | <b>1</b> | <b>0</b> | <b>1</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>2</b> | <b>2</b> | <b>4</b> | <b>145</b>                 | <b>21</b> | <b>12</b> | <b>4</b> | <b>182</b> |





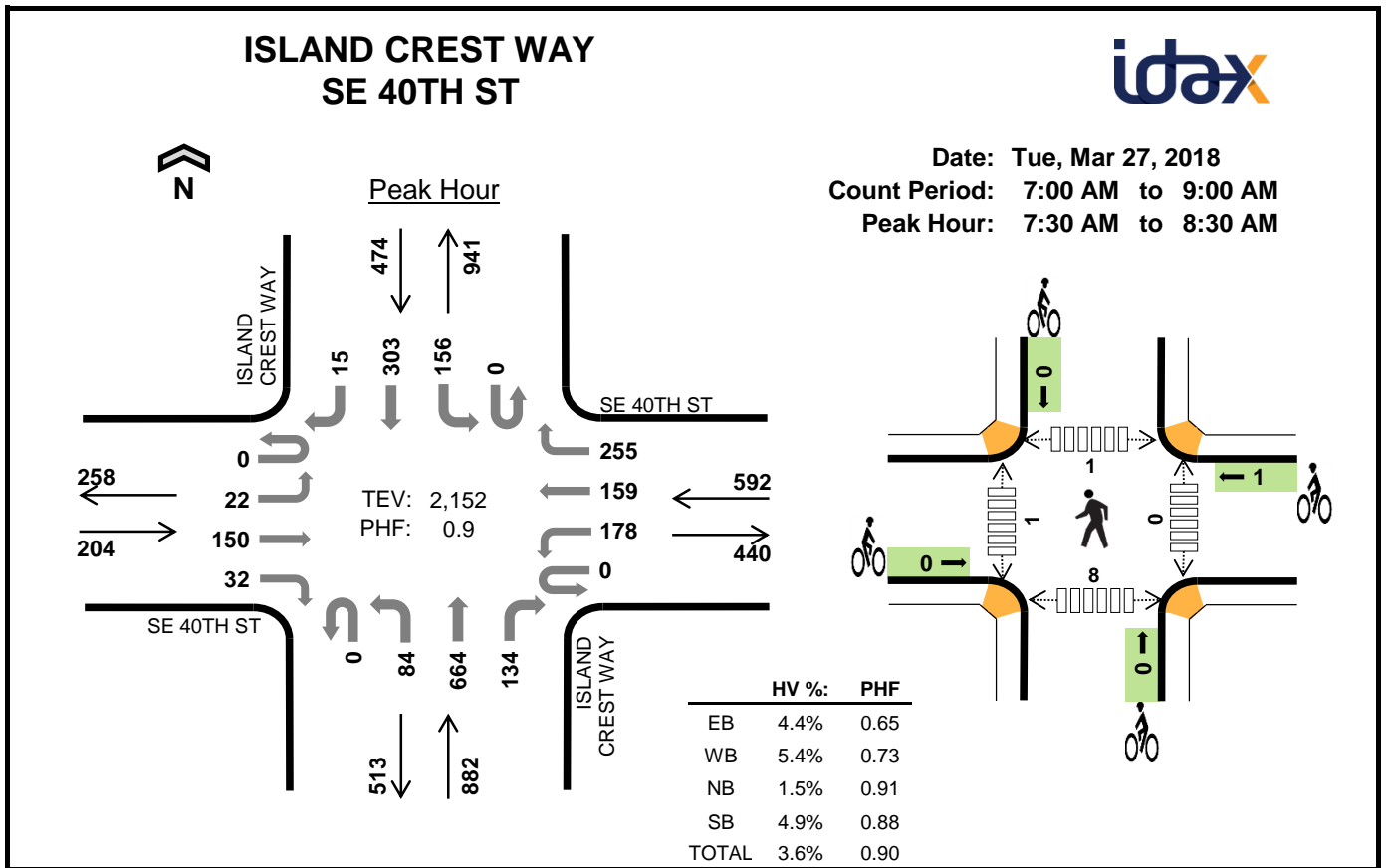
**Two-Hour Count Summaries**

| Interval Start   | SE 29TH ST |           |          |            | BASKIN ROBBINS DWY |          |          |          | 78TH AVE SE |           |            |          | 78TH AVE SE |          |            |           | 15-min Total | Rolling One Hour |
|------------------|------------|-----------|----------|------------|--------------------|----------|----------|----------|-------------|-----------|------------|----------|-------------|----------|------------|-----------|--------------|------------------|
|                  | Eastbound  |           |          |            | Westbound          |          |          |          | Northbound  |           |            |          | Southbound  |          |            |           |              |                  |
|                  | UT         | LT        | TH       | RT         | UT                 | LT       | TH       | RT       | UT          | LT        | TH         | RT       | UT          | LT       | TH         | RT        |              |                  |
| 4:00 PM          | 0          | 9         | 0        | 23         | 0                  | 0        | 0        | 1        | 0           | 12        | 50         | 0        | 0           | 0        | 33         | 19        | 147          | 0                |
| 4:15 PM          | 0          | 17        | 0        | 13         | 0                  | 0        | 0        | 0        | 0           | 5         | 44         | 0        | 0           | 0        | 46         | 12        | 137          | 0                |
| <b>4:30 PM</b>   | <b>0</b>   | <b>7</b>  | <b>0</b> | <b>37</b>  | <b>0</b>           | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b>    | <b>13</b> | <b>56</b>  | <b>0</b> | <b>0</b>    | <b>0</b> | <b>48</b>  | <b>9</b>  | <b>171</b>   | <b>0</b>         |
| 4:45 PM          | 0          | 13        | 0        | 30         | 0                  | 1        | 0        | 0        | 0           | 14        | 59         | 0        | 0           | 1        | 39         | 15        | 172          | 627              |
| <b>5:00 PM</b>   | <b>0</b>   | <b>26</b> | <b>0</b> | <b>34</b>  | <b>0</b>           | <b>1</b> | <b>1</b> | <b>0</b> | <b>0</b>    | <b>13</b> | <b>44</b>  | <b>1</b> | <b>0</b>    | <b>1</b> | <b>43</b>  | <b>14</b> | <b>178</b>   | <b>658</b>       |
| 5:15 PM          | 0          | 19        | 0        | 22         | 0                  | 1        | 0        | 0        | 0           | 13        | 44         | 1        | 0           | 1        | 31         | 12        | 144          | 665              |
| 5:30 PM          | 0          | 14        | 0        | 23         | 0                  | 0        | 2        | 0        | 0           | 17        | 37         | 0        | 0           | 0        | 33         | 12        | 138          | 632              |
| 5:45 PM          | 0          | 14        | 0        | 22         | 0                  | 0        | 0        | 0        | 0           | 20        | 45         | 0        | 0           | 3        | 44         | 7         | 155          | 615              |
| Count Total      | 0          | 119       | 0        | 204        | 0                  | 3        | 3        | 1        | 1           | 107       | 379        | 2        | 0           | 6        | 317        | 100       | 1,242        | 0                |
| <b>Peak Hour</b> | <b>0</b>   | <b>65</b> | <b>0</b> | <b>123</b> | <b>0</b>           | <b>3</b> | <b>1</b> | <b>0</b> | <b>1</b>    | <b>53</b> | <b>203</b> | <b>2</b> | <b>0</b>    | <b>3</b> | <b>161</b> | <b>50</b> | <b>665</b>   | <b>0</b>         |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start   | Heavy Vehicle Totals |          |          |          |          | Bicycles |          |          |          |          | Pedestrians (Crossing Leg) |           |          |          |           |
|------------------|----------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------------------------|-----------|----------|----------|-----------|
|                  | EB                   | WB       | NB       | SB       | Total    | EB       | WB       | NB       | SB       | Total    | East                       | West      | North    | South    | Total     |
| 4:00 PM          | 1                    | 0        | 1        | 1        | 3        | 0        | 0        | 0        | 0        | 0        | 5                          | 5         | 6        | 0        | 16        |
| 4:15 PM          | 0                    | 0        | 2        | 1        | 3        | 0        | 0        | 0        | 0        | 0        | 5                          | 4         | 3        | 1        | 13        |
| 4:30 PM          | 0                    | 0        | 1        | 1        | 2        | 0        | 0        | 0        | 0        | 0        | 11                         | 1         | 2        | 1        | 15        |
| 4:45 PM          | 0                    | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 5                          | 2         | 6        | 1        | 14        |
| <b>5:00 PM</b>   | <b>0</b>             | <b>0</b> | <b>1</b> | <b>1</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b>                   | <b>4</b>  | <b>1</b> | <b>4</b> | <b>10</b> |
| 5:15 PM          | 0                    | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 0        | 5                          | 6         | 0        | 0        | 11        |
| 5:30 PM          | 0                    | 0        | 1        | 1        | 2        | 0        | 0        | 0        | 0        | 0        | 10                         | 6         | 4        | 3        | 23        |
| 5:45 PM          | 0                    | 0        | 0        | 1        | 1        | 0        | 0        | 0        | 0        | 0        | 6                          | 10        | 3        | 1        | 20        |
| Count Total      | 1                    | 0        | 6        | 6        | 13       | 0        | 0        | 0        | 0        | 0        | 48                         | 38        | 25       | 11       | 122       |
| <b>Peak Hour</b> | <b>0</b>             | <b>0</b> | <b>2</b> | <b>2</b> | <b>4</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>22</b>                  | <b>13</b> | <b>9</b> | <b>6</b> | <b>50</b> |





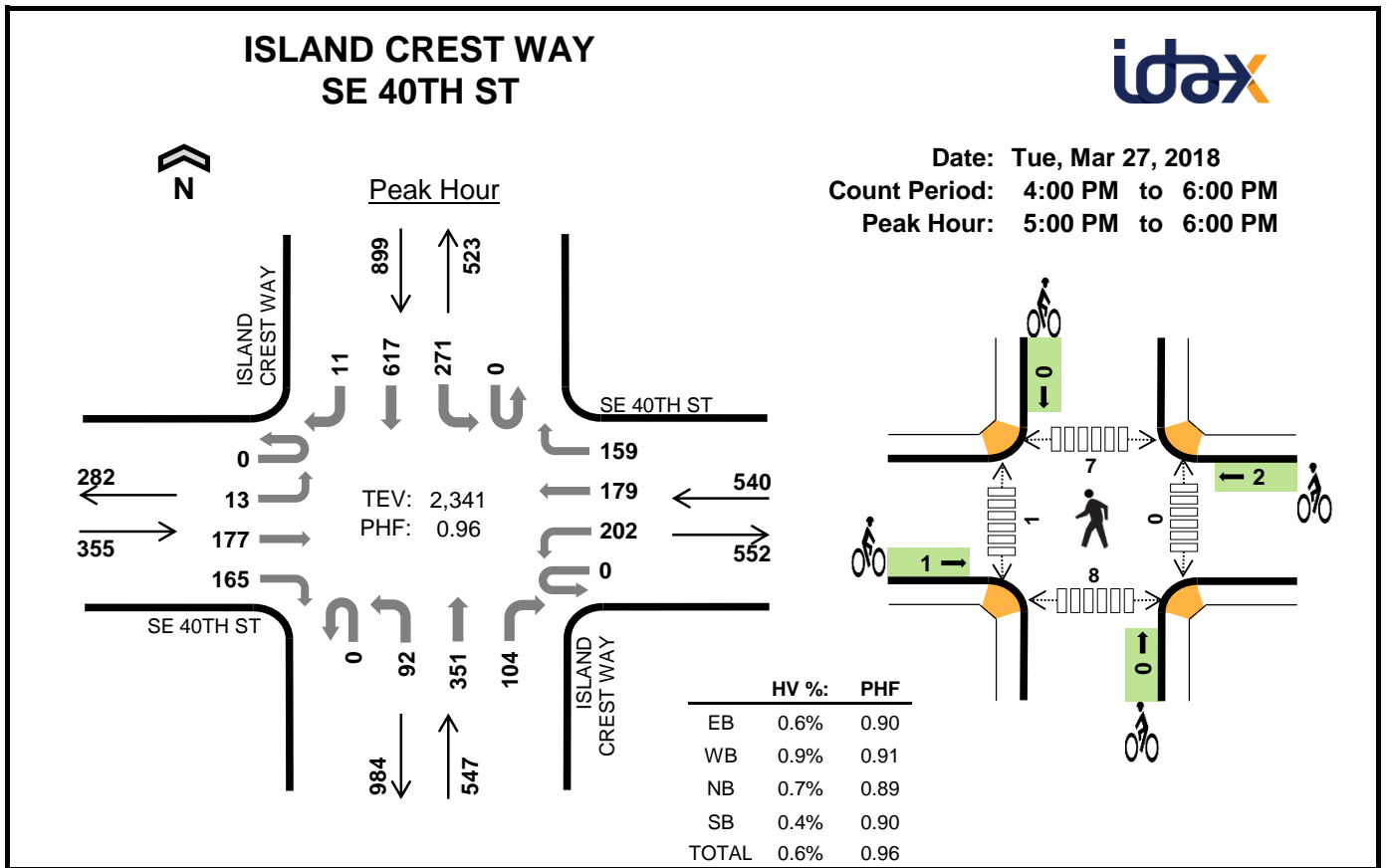
### Two-Hour Count Summaries

| Interval Start | SE 40TH ST Eastbound |    |     |    | SE 40TH ST Westbound |     |     |     | ISLAND CREST WAY Northbound |     |       |     | ISLAND CREST WAY Southbound |     |     |    | 15-min Total | Rolling One Hour |
|----------------|----------------------|----|-----|----|----------------------|-----|-----|-----|-----------------------------|-----|-------|-----|-----------------------------|-----|-----|----|--------------|------------------|
|                | UT                   | LT | TH  | RT | UT                   | LT  | TH  | RT  | UT                          | LT  | TH    | RT  | UT                          | LT  | TH  | RT |              |                  |
| 7:00 AM        | 0                    | 1  | 11  | 6  | 0                    | 27  | 19  | 33  | 0                           | 13  | 116   | 12  | 0                           | 22  | 67  | 6  | 333          | 0                |
| 7:15 AM        | 0                    | 6  | 19  | 4  | 0                    | 32  | 16  | 35  | 0                           | 16  | 162   | 19  | 0                           | 32  | 65  | 1  | 407          | 0                |
| 7:30 AM        | 0                    | 1  | 55  | 4  | 0                    | 29  | 30  | 50  | 0                           | 13  | 188   | 40  | 0                           | 65  | 59  | 2  | 536          | 0                |
| 7:45 AM        | 0                    | 10 | 59  | 9  | 0                    | 59  | 44  | 60  | 0                           | 14  | 135   | 25  | 0                           | 44  | 87  | 3  | 549          | 1,825            |
| 8:00 AM        | 0                    | 4  | 20  | 14 | 0                    | 61  | 55  | 87  | 0                           | 34  | 157   | 37  | 0                           | 30  | 92  | 5  | 596          | 2,088            |
| 8:15 AM        | 0                    | 7  | 16  | 5  | 0                    | 29  | 30  | 58  | 0                           | 23  | 184   | 32  | 0                           | 17  | 65  | 5  | 471          | 2,152            |
| 8:30 AM        | 0                    | 4  | 19  | 9  | 0                    | 36  | 35  | 49  | 0                           | 18  | 154   | 23  | 0                           | 30  | 55  | 1  | 433          | 2,049            |
| 8:45 AM        | 0                    | 11 | 30  | 12 | 0                    | 43  | 32  | 59  | 0                           | 22  | 134   | 32  | 0                           | 25  | 68  | 5  | 473          | 1,973            |
| Count Total    | 0                    | 44 | 229 | 63 | 0                    | 316 | 261 | 431 | 0                           | 153 | 1,230 | 220 | 0                           | 265 | 558 | 28 | 3,798        | 0                |
| Peak Hour      | 0                    | 22 | 150 | 32 | 0                    | 178 | 159 | 255 | 0                           | 84  | 664   | 134 | 0                           | 156 | 303 | 15 | 2,152        | 0                |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start | Heavy Vehicle Totals |    |    |    |       | Bicycles |    |    |    |       | Pedestrians (Crossing Leg) |      |       |       |       |
|----------------|----------------------|----|----|----|-------|----------|----|----|----|-------|----------------------------|------|-------|-------|-------|
|                | EB                   | WB | NB | SB | Total | EB       | WB | NB | SB | Total | East                       | West | North | South | Total |
| 7:00 AM        | 1                    | 12 | 1  | 3  | 17    | 0        | 0  | 0  | 0  | 0     | 0                          | 0    | 0     | 1     | 1     |
| 7:15 AM        | 0                    | 3  | 5  | 5  | 13    | 0        | 1  | 0  | 0  | 1     | 0                          | 0    | 0     | 0     | 0     |
| 7:30 AM        | 2                    | 10 | 2  | 4  | 18    | 0        | 0  | 0  | 0  | 0     | 0                          | 0    | 0     | 2     | 2     |
| 7:45 AM        | 2                    | 8  | 2  | 7  | 19    | 0        | 1  | 0  | 0  | 1     | 0                          | 0    | 0     | 6     | 6     |
| 8:00 AM        | 5                    | 9  | 3  | 7  | 24    | 0        | 0  | 0  | 0  | 0     | 0                          | 0    | 1     | 0     | 1     |
| 8:15 AM        | 0                    | 5  | 6  | 5  | 16    | 0        | 0  | 0  | 0  | 0     | 0                          | 1    | 0     | 0     | 1     |
| 8:30 AM        | 3                    | 12 | 6  | 6  | 27    | 0        | 0  | 0  | 0  | 0     | 0                          | 0    | 0     | 4     | 4     |
| 8:45 AM        | 2                    | 8  | 2  | 6  | 18    | 0        | 0  | 0  | 0  | 0     | 0                          | 0    | 0     | 5     | 5     |
| Count Total    | 15                   | 67 | 27 | 43 | 152   | 0        | 2  | 0  | 0  | 2     | 0                          | 1    | 1     | 18    | 20    |
| Peak Hour      | 9                    | 32 | 13 | 23 | 77    | 0        | 1  | 0  | 0  | 1     | 0                          | 1    | 1     | 8     | 10    |





### Two-Hour Count Summaries

| Interval Start   | SE 40TH ST Eastbound |           |            |            | SE 40TH ST Westbound |            |            |            | ISLAND CREST WAY Northbound |           |            |            | ISLAND CREST WAY Southbound |            |            |           | 15-min Total | Rolling One Hour |
|------------------|----------------------|-----------|------------|------------|----------------------|------------|------------|------------|-----------------------------|-----------|------------|------------|-----------------------------|------------|------------|-----------|--------------|------------------|
|                  | UT                   | LT        | TH         | RT         | UT                   | LT         | TH         | RT         | UT                          | LT        | TH         | RT         | UT                          | LT         | TH         | RT        |              |                  |
| 4:00 PM          | 0                    | 10        | 40         | 31         | 0                    | 43         | 34         | 51         | 0                           | 25        | 143        | 33         | 0                           | 47         | 140        | 2         | 599          | 0                |
| 4:15 PM          | 0                    | 6         | 27         | 35         | 0                    | 36         | 34         | 37         | 0                           | 28        | 112        | 31         | 0                           | 61         | 138        | 1         | 546          | 0                |
| 4:30 PM          | 0                    | 3         | 38         | 35         | 0                    | 63         | 43         | 43         | 0                           | 27        | 104        | 27         | 0                           | 46         | 116        | 1         | 546          | 0                |
| 4:45 PM          | 0                    | 4         | 31         | 38         | 0                    | 47         | 40         | 22         | 0                           | 30        | 94         | 13         | 0                           | 66         | 148        | 4         | 537          | 2,228            |
| <b>5:00 PM</b>   | <b>0</b>             | <b>2</b>  | <b>48</b>  | <b>49</b>  | <b>0</b>             | <b>45</b>  | <b>43</b>  | <b>35</b>  | <b>0</b>                    | <b>22</b> | <b>103</b> | <b>28</b>  | <b>0</b>                    | <b>59</b>  | <b>129</b> | <b>4</b>  | <b>567</b>   | <b>2,196</b>     |
| 5:15 PM          | 0                    | 8         | 49         | 37         | 0                    | 50         | 50         | 36         | 0                           | 21        | 91         | 33         | 0                           | 67         | 154        | 2         | 598          | 2,248            |
| <b>5:30 PM</b>   | <b>0</b>             | <b>2</b>  | <b>43</b>  | <b>48</b>  | <b>0</b>             | <b>51</b>  | <b>46</b>  | <b>51</b>  | <b>0</b>                    | <b>20</b> | <b>91</b>  | <b>22</b>  | <b>0</b>                    | <b>73</b>  | <b>158</b> | <b>2</b>  | <b>607</b>   | <b>2,309</b>     |
| 5:45 PM          | 0                    | 1         | 37         | 31         | 0                    | 56         | 40         | 37         | 0                           | 29        | 66         | 21         | 0                           | 72         | 176        | 3         | 569          | 2,341            |
| Count Total      | 0                    | 36        | 313        | 304        | 0                    | 391        | 330        | 312        | 0                           | 202       | 804        | 208        | 0                           | 491        | 1,159      | 19        | 4,569        | 0                |
| <b>Peak Hour</b> | <b>0</b>             | <b>13</b> | <b>177</b> | <b>165</b> | <b>0</b>             | <b>202</b> | <b>179</b> | <b>159</b> | <b>0</b>                    | <b>92</b> | <b>351</b> | <b>104</b> | <b>0</b>                    | <b>271</b> | <b>617</b> | <b>11</b> | <b>2,341</b> | <b>0</b>         |

Note: Two-hour count summary volumes include heavy vehicles but exclude bicycles in overall count.

| Interval Start   | Heavy Vehicle Totals |          |          |          |           | Bicycles |          |          |          |          | Pedestrians (Crossing Leg) |          |          |          |           |
|------------------|----------------------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|----------------------------|----------|----------|----------|-----------|
|                  | EB                   | WB       | NB       | SB       | Total     | EB       | WB       | NB       | SB       | Total    | East                       | West     | North    | South    | Total     |
| 4:00 PM          | 0                    | 3        | 5        | 5        | 13        | 1        | 0        | 0        | 0        | 1        | 0                          | 0        | 1        | 3        | 4         |
| 4:15 PM          | 1                    | 1        | 4        | 7        | 13        | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 1        | 4        | 5         |
| 4:30 PM          | 2                    | 3        | 1        | 3        | 9         | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 0        | 4        | 4         |
| 4:45 PM          | 1                    | 0        | 1        | 3        | 5         | 0        | 0        | 0        | 0        | 0        | 1                          | 0        | 0        | 0        | 1         |
| <b>5:00 PM</b>   | <b>1</b>             | <b>2</b> | <b>2</b> | <b>0</b> | <b>5</b>  | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>0</b>                   | <b>0</b> | <b>2</b> | <b>0</b> | <b>2</b>  |
| 5:15 PM          | 0                    | 0        | 0        | 2        | 2         | 0        | 0        | 0        | 0        | 0        | 0                          | 0        | 3        | 2        | 5         |
| <b>5:30 PM</b>   | <b>1</b>             | <b>2</b> | <b>2</b> | <b>0</b> | <b>5</b>  | <b>1</b> | <b>0</b> | <b>0</b> | <b>0</b> | <b>1</b> | <b>0</b>                   | <b>0</b> | <b>1</b> | <b>1</b> | <b>2</b>  |
| 5:45 PM          | 0                    | 1        | 0        | 2        | 3         | 0        | 2        | 0        | 0        | 2        | 0                          | 1        | 1        | 5        | 7         |
| Count Total      | 6                    | 12       | 15       | 22       | 55        | 2        | 2        | 0        | 0        | 4        | 1                          | 1        | 9        | 19       | 30        |
| <b>Peak Hour</b> | <b>2</b>             | <b>5</b> | <b>4</b> | <b>4</b> | <b>15</b> | <b>1</b> | <b>2</b> | <b>0</b> | <b>0</b> | <b>3</b> | <b>0</b>                   | <b>1</b> | <b>7</b> | <b>8</b> | <b>16</b> |



## Appendix B:LOS Definitions



## Highway Capacity Manual 2010/6th Edition

**Signalized intersection** level of service (LOS) is defined in terms of a weighted average control delay for the entire intersection. Control delay quantifies the increase in travel time that a vehicle experiences due to the traffic signal control as well as provides a surrogate measure for driver discomfort and fuel consumption. Signalized intersection LOS is stated in terms of average control delay per vehicle (in seconds) during a specified time period (e.g., weekday PM peak hour). Control delay is a complex measure based on many variables, including signal phasing and coordination (i.e., progression of movements through the intersection and along the corridor), signal cycle length, and traffic volumes with respect to intersection capacity and resulting queues. Table 1 summarizes the LOS criteria for signalized intersections, as described in the *Highway Capacity Manual 2010* and 6th Edition (Transportation Research Board, 2010 and 2016, respectively).

**Table 1. Level of Service Criteria for Signalized Intersections**

| Level of Service | Average Control Delay (seconds/vehicle) | General Description   |
|------------------|---|---|
| A                | ≤10                                     | Free Flow   |
| B                | >10 – 20                                | Stable Flow (slight delays)   |
| C                | >20 – 35                                | Stable flow (acceptable delays)   |
| D                | >35 – 55                                | Approaching unstable flow (tolerable delay, occasionally wait through more than one signal cycle before proceeding) |
| E                | >55 – 80                                | Unstable flow (intolerable delay)   |
| F <sup>1</sup>   | >80                                     | Forced flow (congested and queues fail to clear)  |

Source: *Highway Capacity Manual 2010 and 6th Edition*, Transportation Research Board, 2010 and 2016, respectively.

1. If the volume-to-capacity (v/c) ratio for a lane group exceeds 1.0 LOS F is assigned to the individual lane group. LOS for overall approach or intersection is determined solely by the control delay.

**Unsignalized intersection** LOS criteria can be further reduced into two intersection types: all-way stop and two-way stop control. All-way stop control intersection LOS is expressed in terms of the weighted average control delay of the overall intersection or by approach. Two-way stop-controlled intersection LOS is defined in terms of the average control delay for each minor-street movement (or shared movement) as well as major-street left-turns. This approach is because major-street through vehicles are assumed to experience zero delay, a weighted average of all movements results in very low overall average delay, and this calculated low delay could mask deficiencies of minor movements. Table 2 shows LOS criteria for unsignalized intersections.

**Table 2. Level of Service Criteria for Unsignalized Intersections**

| Level of Service | Average Control Delay (seconds/vehicle) |
|------------------|---|
| A                | 0 – 10                                  |
| B                | >10 – 15                                |
| C                | >15 – 25                                |
| D                | >25 – 35                                |
| E                | >35 – 50                                |
| F <sup>1</sup>   | >50                                     |

Source: *Highway Capacity Manual 2010 and 6th Edition*, Transportation Research Board, 2010 and 2016, respectively.

1. If the volume-to-capacity (v/c) ratio exceeds 1.0, LOS F is assigned an individual lane group for all unsignalized intersections, or minor street approach at two-way stop-controlled intersections. Overall intersection LOS is determined solely by control delay.







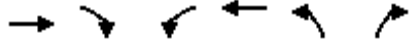
HCM 6th Signalized Intersection Summary  
1: 76th Avenue SE & N Mercer Way



| Movement   | EBL | EBT  | EBR | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--|-----|------|-----|------|------|------|------|------|------|------|------|------|
| Lane Configurations  |     |      |     |      | ↕    | ↕    | ↕    | ↕    |      | ↕    | ↕    |      |
| Traffic Volume (veh/h)   | 0   | 0    | 0   | 130  | 500  | 40   | 170  | 10   | 130  | 30   | 5    | 5    |
| Future Volume (veh/h)  | 0   | 0    | 0   | 130  | 500  | 40   | 170  | 10   | 130  | 30   | 5    | 5    |
| Initial Q (Qb), veh  |     |      |     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)  |     |      |     | 1.00 |      | 1.00 | 0.99 |      | 1.00 | 0.99 |      | 0.99 |
| Parking Bus, Adj   |     |      |     | 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   |      | No   |
| Adj Sat Flow, veh/h/ln   |     |      |     | 1841 | 1841 | 1841 | 1826 | 1826 | 1826 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h   |     |      |     | 137  | 526  | 42   | 179  | 11   | 0    | 32   | 5    | 5    |
| Peak Hour Factor   |     |      |     | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, %   |     |      |     | 4    | 4    | 4    | 5    | 5    | 5    | 8    | 8    | 8    |
| Cap, veh/h   |     |      |     | 196  | 752  | 808  | 492  | 381  |      | 486  | 169  | 169  |
| Arrive On Green  |     |      |     | 0.52 | 0.52 | 0.52 | 0.21 | 0.21 | 0.00 | 0.21 | 0.21 | 0.21 |
| Sat Flow, veh/h  |     |      |     | 376  | 1445 | 1554 | 1352 | 1826 | 0    | 1318 | 811  | 811  |
| Grp Volume(v), veh/h   |     |      |     | 663  | 0    | 42   | 179  | 11   | 0    | 32   | 0    | 10   |
| Grp Sat Flow(s),veh/h/ln   |     |      |     | 1822 | 0    | 1554 | 1352 | 1826 | 0    | 1318 | 0    | 1622 |
| Q Serve(g_s), s  |     |      |     | 9.1  | 0.0  | 0.4  | 4.0  | 0.2  | 0.0  | 0.7  | 0.0  | 0.2  |
| Cycle Q Clear(g_c), s  |     |      |     | 9.1  | 0.0  | 0.4  | 4.2  | 0.2  | 0.0  | 0.8  | 0.0  | 0.2  |
| Prop In Lane   |     |      |     | 0.21 |      | 1.00 | 1.00 |      | 0.00 | 1.00 |      | 0.50 |
| Lane Grp Cap(c), veh/h   |     |      |     | 948  | 0    | 808  | 492  | 381  |      | 486  | 0    | 338  |
| V/C Ratio(X)   |     |      |     | 0.70 | 0.00 | 0.05 | 0.36 | 0.03 |      | 0.07 | 0.00 | 0.03 |
| Avail Cap(c_a), veh/h  |     |      |     | 3101 | 0    | 2645 | 1208 | 1348 |      | 1183 | 0    | 1197 |
| HCM Platoon Ratio  |     |      |     | 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 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh   |     |      |     | 6.0  | 0.0  | 3.9  | 12.1 | 10.5 | 0.0  | 10.8 | 0.0  | 10.5 |
| Incr Delay (d2), s/veh   |     |      |     | 0.9  | 0.0  | 0.0  | 0.5  | 0.0  | 0.0  | 0.1  | 0.0  | 0.0  |
| Initial Q Delay(d3),s/veh  |     |      |     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln   |     |      |     | 2.1  | 0.0  | 0.1  | 1.0  | 0.1  | 0.0  | 0.2  | 0.0  | 0.0  |
| Unsig. Movement Delay, s/veh   |     |      |     |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh   |     |      |     | 7.0  | 0.0  | 4.0  | 12.6 | 10.5 | 0.0  | 10.8 | 0.0  | 10.5 |
| LnGrp LOS  |     |      |     | A    | A    | A    | B    | B    |      | B    | A    | B    |
| Approach Vol, veh/h  |     |      |     |      | 705  |      |      | 190  | A    |      | 42   |      |
| Approach Delay, s/veh  |     |      |     |      | 6.8  |      |      | 12.5 |      |      | 10.8 |      |
| Approach LOS   |     |      |     |      | A    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs   |     | 2    |     |      |      | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s   |     | 11.4 |     |      |      | 11.4 |      | 21.8 |      |      |      |      |
| Change Period (Y+Rc), s  |     | 4.5  |     |      |      | 4.5  |      | 4.5  |      |      |      |      |
| Max Green Setting (Gmax), s  |     | 24.5 |     |      |      | 24.5 |      | 56.5 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s   |     | 6.2  |     |      |      | 2.8  |      | 11.1 |      |      |      |      |
| Green Ext Time (p_c), s  |     | 0.5  |     |      |      | 0.1  |      | 6.0  |      |      |      |      |
| <b>Intersection Summary</b>  |     |      |     |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay   |     |      |     | 8.1  |      |      |      |      |      |      |      |      |
| HCM 6th LOS  |     |      |     | A    |      |      |      |      |      |      |      |      |
| <b>Notes</b>   |     |      |     |      |      |      |      |      |      |      |      |      |
| Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay. |     |      |     |      |      |      |      |      |      |      |      |      |



HCM 6th Signalized Intersection Summary  
 2: 77th Avenue SE & N Mercer Way



| Movement                     | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 165  | 10   | 115  | 535  | 100  | 70   |
| Future Volume (veh/h)        | 165  | 10   | 115  | 535  | 100  | 70   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        | No   |      |      | No   | No   |      |
| Adj Sat Flow, veh/h/ln       | 1761 | 1761 | 1834 | 1834 | 1804 | 1804 |
| Adj Flow Rate, veh/h         | 174  | 11   | 121  | 563  | 105  | 74   |
| Peak Hour Factor             | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, %         | 9    | 9    | 7    | 7    | 9    | 9    |
| Cap, veh/h                   | 833  | 53   | 829  | 932  | 200  | 178  |
| Arrive On Green              | 0.51 | 0.51 | 0.51 | 0.51 | 0.12 | 0.12 |
| Sat Flow, veh/h              | 1639 | 104  | 1176 | 1834 | 1718 | 1529 |
| Grp Volume(v), veh/h         | 0    | 185  | 121  | 563  | 105  | 74   |
| Grp Sat Flow(s),veh/h/ln     | 0    | 1742 | 1176 | 1834 | 1718 | 1529 |
| Q Serve(g_s), s              | 0.0  | 1.4  | 1.5  | 5.2  | 1.4  | 1.1  |
| Cycle Q Clear(g_c), s        | 0.0  | 1.4  | 2.9  | 5.2  | 1.4  | 1.1  |
| Prop In Lane                 |      | 0.06 | 1.00 |      | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h       | 0    | 885  | 829  | 932  | 200  | 178  |
| V/C Ratio(X)                 | 0.00 | 0.21 | 0.15 | 0.60 | 0.53 | 0.42 |
| Avail Cap(c_a), veh/h        | 0    | 2944 | 2218 | 3100 | 1828 | 1627 |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 0.0  | 3.2  | 4.0  | 4.2  | 10.0 | 9.8  |
| Incr Delay (d2), s/veh       | 0.0  | 0.1  | 0.1  | 0.6  | 2.1  | 1.6  |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 0.0  | 0.2  | 0.2  | 0.6  | 0.5  | 0.3  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 0.0  | 3.4  | 4.1  | 4.8  | 12.1 | 11.4 |
| LnGrp LOS                    | A    | A    | A    | A    | B    | B    |
| Approach Vol, veh/h          | 185  |      |      | 684  | 179  |      |
| Approach Delay, s/veh        | 3.4  |      |      | 4.7  | 11.8 |      |
| Approach LOS                 | A    |      |      | A    | B    |      |
| Timer - Assigned Phs         |      | 2    |      | 4    |      | 8    |
| Phs Duration (G+Y+Rc), s     |      | 7.3  |      | 16.7 |      | 16.7 |
| Change Period (Y+Rc), s      |      | 4.5  |      | 4.5  |      | 4.5  |
| Max Green Setting (Gmax), s  |      | 25.5 |      | 40.5 |      | 40.5 |
| Max Q Clear Time (g_c+I1), s |      | 3.4  |      | 3.4  |      | 7.2  |
| Green Ext Time (p_c), s      |      | 0.5  |      | 1.2  |      | 5.0  |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      | 5.7  |      |      |      |
| HCM 6th LOS                  |      |      | A    |      |      |      |



**Intersection**

Int Delay, s/veh 4.5

**Movement** EBL EBR NBL NBT SBT SBR

|                          |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      |      |      |      |      |      |
| Traffic Vol, veh/h       | 50   | 165  | 0    | 145  | 135  | 0    |
| Future Vol, veh/h        | 50   | 165  | 0    | 145  | 135  | 0    |
| Conflicting Peds, #/hr   | 0    | 1    | 1    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | 0    | 150  | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 84   | 84   | 84   | 84   | 84   | 84   |
| Heavy Vehicles, %        | 7    | 7    | 6    | 6    | 7    | 7    |
| Mvmt Flow                | 60   | 196  | 0    | 173  | 161  | 0    |

**Major/Minor** Minor2 Major1 Major2

|                      |       |       |   |   |   |   |
|----------------------|-------|-------|---|---|---|---|
| Conflicting Flow All | 334   | 162   | - | 0 | - | 0 |
| Stage 1              | 161   | -     | - | - | - | - |
| Stage 2              | 173   | -     | - | - | - | - |
| Critical Hdwy        | 6.47  | 6.27  | - | - | - | - |
| Critical Hdwy Stg 1  | 5.47  | -     | - | - | - | - |
| Critical Hdwy Stg 2  | 5.47  | -     | - | - | - | - |
| Follow-up Hdwy       | 3.563 | 3.363 | - | - | - | - |
| Pot Cap-1 Maneuver   | 651   | 870   | 0 | - | - | 0 |
| Stage 1              | 856   | -     | 0 | - | - | 0 |
| Stage 2              | 845   | -     | 0 | - | - | 0 |
| Platoon blocked, %   |       |       |   | - | - |   |
| Mov Cap-1 Maneuver   | 651   | 869   | - | - | - | - |
| Mov Cap-2 Maneuver   | 685   | -     | - | - | - | - |
| Stage 1              | 856   | -     | - | - | - | - |
| Stage 2              | 845   | -     | - | - | - | - |

**Approach** EB NB SB

|                      |      |   |   |
|----------------------|------|---|---|
| HCM Control Delay, s | 10.4 | 0 | 0 |
| HCM LOS              | B    |   |   |

**Minor Lane/Major Mvmt** NBT EBLn1 EBLn2 SBT

|                       |   |       |       |   |
|-----------------------|---|-------|-------|---|
| Capacity (veh/h)      | - | 685   | 869   | - |
| HCM Lane V/C Ratio    | - | 0.087 | 0.226 | - |
| HCM Control Delay (s) | - | 10.8  | 10.3  | - |
| HCM Lane LOS          | - | B     | B     | - |
| HCM 95th %tile Q(veh) | - | 0.3   | 0.9   | - |



HCM 6th Signalized Intersection Summary  
4: 77th Avenue SE & SE 27th St



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 15   | 245  | 85   | 60   | 225  | 45   | 95   | 85   | 45   | 90   | 140  | 65   |
| Future Volume (veh/h)        | 15   | 245  | 85   | 60   | 225  | 45   | 95   | 85   | 45   | 90   | 140  | 65   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 0.99 |      | 0.95 | 0.99 |      | 0.97 | 0.97 |      | 0.94 | 0.96 |      | 0.94 |
| 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       | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1841 | 1841 | 1841 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h         | 16   | 258  | 89   | 63   | 237  | 47   | 100  | 89   | 47   | 95   | 147  | 68   |
| 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, %         | 2    | 2    | 2    | 2    | 2    | 2    | 4    | 4    | 4    | 5    | 5    | 5    |
| Cap, veh/h                   | 394  | 429  | 148  | 342  | 493  | 98   | 433  | 271  | 143  | 490  | 279  | 129  |
| Arrive On Green              | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.06 | 0.24 | 0.24 | 0.06 | 0.24 | 0.24 |
| Sat Flow, veh/h              | 1080 | 1311 | 452  | 1021 | 1508 | 299  | 1753 | 1108 | 585  | 1739 | 1156 | 535  |
| Grp Volume(v), veh/h         | 16   | 0    | 347  | 63   | 0    | 284  | 100  | 0    | 136  | 95   | 0    | 215  |
| Grp Sat Flow(s),veh/h/ln     | 1080 | 0    | 1763 | 1021 | 0    | 1807 | 1753 | 0    | 1693 | 1739 | 0    | 1691 |
| Q Serve(g_s), s              | 0.5  | 0.0  | 6.7  | 2.2  | 0.0  | 5.1  | 1.7  | 0.0  | 2.7  | 1.6  | 0.0  | 4.5  |
| Cycle Q Clear(g_c), s        | 5.6  | 0.0  | 6.7  | 9.0  | 0.0  | 5.1  | 1.7  | 0.0  | 2.7  | 1.6  | 0.0  | 4.5  |
| Prop In Lane                 | 1.00 |      | 0.26 | 1.00 |      | 0.17 | 1.00 |      | 0.35 | 1.00 |      | 0.32 |
| Lane Grp Cap(c), veh/h       | 394  | 0    | 576  | 342  | 0    | 591  | 433  | 0    | 414  | 490  | 0    | 409  |
| V/C Ratio(X)                 | 0.04 | 0.00 | 0.60 | 0.18 | 0.00 | 0.48 | 0.23 | 0.00 | 0.33 | 0.19 | 0.00 | 0.53 |
| Avail Cap(c_a), veh/h        | 917  | 0    | 1430 | 837  | 0    | 1465 | 624  | 0    | 832  | 685  | 0    | 831  |
| 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     | 13.2 | 0.0  | 11.5 | 15.2 | 0.0  | 10.9 | 10.7 | 0.0  | 12.6 | 10.6 | 0.0  | 13.4 |
| Incr Delay (d2), s/veh       | 0.0  | 0.0  | 1.0  | 0.3  | 0.0  | 0.6  | 0.3  | 0.0  | 0.5  | 0.2  | 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     | 0.1  | 0.0  | 2.3  | 0.5  | 0.0  | 1.8  | 0.6  | 0.0  | 0.9  | 0.5  | 0.0  | 1.6  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 13.2 | 0.0  | 12.5 | 15.5 | 0.0  | 11.5 | 11.0 | 0.0  | 13.1 | 10.8 | 0.0  | 14.5 |
| LnGrp LOS                    | B    | A    | B    | B    | A    | B    | B    | A    | B    | B    | A    | B    |
| Approach Vol, veh/h          |      | 363  |      |      | 347  |      |      | 236  |      |      | 310  |      |
| Approach Delay, s/veh        |      | 12.5 |      |      | 12.3 |      |      | 12.2 |      |      | 13.3 |      |
| Approach LOS                 |      | B    |      |      | B    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs         |      | 2    | 3    | 4    |      | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |      | 18.3 | 7.6  | 14.8 |      | 18.3 | 7.4  | 15.0 |      |      |      |      |
| Change Period (Y+Rc), s      |      | 5.0  | 5.0  | 5.0  |      | 5.0  | 5.0  | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  |      | 33.0 | 7.0  | 20.0 |      | 33.0 | 7.0  | 20.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |      | 8.7  | 3.7  | 6.5  |      | 11.0 | 3.6  | 4.7  |      |      |      |      |
| Green Ext Time (p_c), s      |      | 2.4  | 0.1  | 1.0  |      | 2.1  | 0.1  | 0.6  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      |      | 12.6 |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |      |      |      | B    |      |      |      |      |      |      |      |      |



HCM 6th Signalized Intersection Summary  
 5: Island Crest Way/Island Crest & SE 27th St/I-90 On-ramps



| Movement   | EBL  | EBT  | EBR  | WBL  | WBT | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--|------|------|------|------|-----|------|------|------|------|------|------|------|
| Lane Configurations  |      |      |      |      |     |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)   | 15   | 360  | 40   | 0    | 0   | 0    | 135  | 245  | 405  | 65   | 200  | 180  |
| Future Volume (veh/h)  | 15   | 360  | 40   | 0    | 0   | 0    | 135  | 245  | 405  | 65   | 200  | 180  |
| Initial Q (Qb), veh  | 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 |
| Parking Bus, Adj   | 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   |      |      |
| Adj Sat Flow, veh/h/ln   | 1879 | 1879 | 1879 |      |     |      | 1949 | 1949 | 1949 | 1790 | 1790 | 1790 |
| Adj Flow Rate, veh/h   | 15   | 367  | 41   |      |     |      | 138  | 250  | 0    | 66   | 204  | 184  |
| Peak Hour Factor   | 0.98 | 0.98 | 0.98 |      |     |      | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, %   | 4    | 4    | 4    |      |     |      | 2    | 2    | 2    | 7    | 7    | 7    |
| Cap, veh/h   | 572  | 531  | 59   |      |     |      | 456  | 485  |      | 410  | 364  | 308  |
| Arrive On Green  | 0.32 | 0.32 | 0.32 |      |     |      | 0.09 | 0.25 | 0.00 | 0.04 | 0.20 | 0.20 |
| Sat Flow, veh/h  | 1790 | 1659 | 185  |      |     |      | 1856 | 1949 | 1651 | 1705 | 1790 | 1517 |
| Grp Volume(v), veh/h   | 15   | 0    | 408  |      |     |      | 138  | 250  | 0    | 66   | 204  | 184  |
| Grp Sat Flow(s),veh/h/ln   | 1790 | 0    | 1845 |      |     |      | 1856 | 1949 | 1651 | 1705 | 1790 | 1517 |
| Q Serve(g_s), s  | 0.2  | 0.0  | 7.3  |      |     |      | 2.2  | 4.2  | 0.0  | 1.1  | 3.9  | 4.2  |
| Cycle Q Clear(g_c), s  | 0.2  | 0.0  | 7.3  |      |     |      | 2.2  | 4.2  | 0.0  | 1.1  | 3.9  | 4.2  |
| Prop In Lane   | 1.00 |      | 0.10 |      |     |      | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h   | 572  | 0    | 590  |      |     |      | 456  | 485  |      | 410  | 364  | 308  |
| V/C Ratio(X)   | 0.03 | 0.00 | 0.69 |      |     |      | 0.30 | 0.52 |      | 0.16 | 0.56 | 0.60 |
| Avail Cap(c_a), veh/h  | 1622 | 0    | 1672 |      |     |      | 1292 | 2074 |      | 1256 | 1906 | 1615 |
| HCM Platoon Ratio  | 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 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh   | 8.9  | 0.0  | 11.3 |      |     |      | 10.6 | 12.3 | 0.0  | 10.2 | 13.6 | 13.7 |
| Incr Delay (d2), s/veh   | 0.0  | 0.0  | 1.5  |      |     |      | 0.1  | 0.6  | 0.0  | 0.1  | 1.0  | 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  |
| %ile BackOfQ(50%),veh/ln   | 0.1  | 0.0  | 2.6  |      |     |      | 0.7  | 1.5  | 0.0  | 0.3  | 1.4  | 1.3  |
| Unsig. Movement Delay, s/veh   |      |      |      |      |     |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh   | 8.9  | 0.0  | 12.7 |      |     |      | 10.7 | 12.9 | 0.0  | 10.3 | 14.6 | 15.1 |
| LnGrp LOS  | A    | A    | B    |      |     |      | B    | B    |      | B    | B    | B    |
| Approach Vol, veh/h  |      | 423  |      |      |     |      |      | 388  | A    |      | 454  |      |
| Approach Delay, s/veh  |      | 12.6 |      |      |     |      |      | 12.1 |      |      | 14.2 |      |
| Approach LOS   |      | B    |      |      |     |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs   |      |      | 3    | 4    |     | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s   |      |      | 6.2  | 14.0 |     | 17.7 | 7.9  | 12.3 |      |      |      |      |
| Change Period (Y+Rc), s  |      |      | 4.6  | 4.6  |     | 5.6  | 4.6  | 4.6  |      |      |      |      |
| Max Green Setting (Gmax), s  |      |      | 20.4 | 40.4 |     | 34.4 | 20.4 | 40.4 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s   |      |      | 3.1  | 6.2  |     | 9.3  | 4.2  | 6.2  |      |      |      |      |
| Green Ext Time (p_c), s  |      |      | 0.1  | 1.2  |     | 2.9  | 0.1  | 1.5  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |     |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay   |      |      | 13.0 |      |     |      |      |      |      |      |      |      |
| HCM 6th LOS  |      |      | B    |      |     |      |      |      |      |      |      |      |
| <b>Notes</b>   |      |      |      |      |     |      |      |      |      |      |      |      |
| Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay. |      |      |      |      |     |      |      |      |      |      |      |      |



**Intersection**

|                           |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 8.5 |
| Intersection LOS          | A   |

| Movement            | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
|---------------------|------|------|------|------|------|------|
| Lane Configurations |      |      |      |      |      |      |
| Traffic Vol, veh/h  | 90   | 60   | 65   | 50   | 45   | 50   |
| Future Vol, veh/h   | 90   | 60   | 65   | 50   | 45   | 50   |
| Peak Hour Factor    | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| Heavy Vehicles, %   | 1    | 1    | 8    | 8    | 3    | 3    |
| Mvmt Flow           | 108  | 72   | 78   | 60   | 54   | 60   |
| Number of Lanes     | 1    | 1    | 1    | 0    | 0    | 1    |

| Approach                   | WB  | NB  | SB  |
|----------------------------|-----|-----|-----|
| Opposing Approach          |     | SB  | NB  |
| Opposing Lanes             | 0   | 1   | 1   |
| Conflicting Approach Left  | NB  |     | WB  |
| Conflicting Lanes Left     | 1   | 0   | 2   |
| Conflicting Approach Right | SB  | WB  |     |
| Conflicting Lanes Right    | 1   | 2   | 0   |
| HCM Control Delay          | 8.7 | 8.3 | 8.5 |
| HCM LOS                    | A   | A   | A   |

| Lane                   | NBLn1 | WBLn1 | WBLn2 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 0%    | 100%  | 0%    | 47%   |
| Vol Thru, %            | 57%   | 0%    | 0%    | 53%   |
| Vol Right, %           | 43%   | 0%    | 100%  | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 115   | 90    | 60    | 95    |
| LT Vol                 | 0     | 90    | 0     | 45    |
| Through Vol            | 65    | 0     | 0     | 50    |
| RT Vol                 | 50    | 0     | 60    | 0     |
| Lane Flow Rate         | 139   | 108   | 72    | 114   |
| Geometry Grp           | 2     | 7     | 7     | 2     |
| Degree of Util (X)     | 0.168 | 0.169 | 0.088 | 0.148 |
| Departure Headway (Hd) | 4.366 | 5.597 | 4.391 | 4.655 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 823   | 642   | 816   | 771   |
| Service Time           | 2.385 | 3.323 | 2.117 | 2.676 |
| HCM Lane V/C Ratio     | 0.169 | 0.168 | 0.088 | 0.148 |
| HCM Control Delay      | 8.3   | 9.5   | 7.5   | 8.5   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.6   | 0.6   | 0.3   | 0.5   |



**Intersection**

Intersection Delay, s/veh 10.3

Intersection LOS B

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Vol, veh/h  | 35   | 105  | 10   | 75   | 135  | 85   | 15   | 70   | 45   | 60   | 60   | 50   |
| Future Vol, veh/h   | 35   | 105  | 10   | 75   | 135  | 85   | 15   | 70   | 45   | 60   | 60   | 50   |
| Peak Hour Factor    | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, %   | 1    | 1    | 1    | 2    | 2    | 2    | 1    | 1    | 1    | 1    | 1    | 1    |
| Mvmt Flow           | 37   | 112  | 11   | 80   | 144  | 90   | 16   | 74   | 48   | 64   | 64   | 53   |
| Number of Lanes     | 1    | 1    | 0    | 0    | 1    | 1    | 1    | 1    | 0    | 1    | 1    | 0    |

| Approach                   | EB  | WB   | NB  | SB  |
|----------------------------|-----|------|-----|-----|
| Opposing Approach          | WB  | EB   | SB  | NB  |
| Opposing Lanes             | 2   | 2    | 2   | 2   |
| Conflicting Approach Left  | SB  | NB   | EB  | WB  |
| Conflicting Lanes Left     | 2   | 2    | 2   | 2   |
| Conflicting Approach Right | NB  | SB   | WB  | EB  |
| Conflicting Lanes Right    | 2   | 2    | 2   | 2   |
| HCM Control Delay          | 9.9 | 10.9 | 9.9 | 9.8 |
| HCM LOS                    | A   | B    | A   | A   |

| Lane                   | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, %            | 100%  | 0%    | 100%  | 0%    | 36%   | 0%    | 100%  | 0%    |
| Vol Thru, %            | 0%    | 61%   | 0%    | 91%   | 64%   | 0%    | 0%    | 55%   |
| Vol Right, %           | 0%    | 39%   | 0%    | 9%    | 0%    | 100%  | 0%    | 45%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 15    | 115   | 35    | 115   | 210   | 85    | 60    | 110   |
| LT Vol                 | 15    | 0     | 35    | 0     | 75    | 0     | 60    | 0     |
| Through Vol            | 0     | 70    | 0     | 105   | 135   | 0     | 0     | 60    |
| RT Vol                 | 0     | 45    | 0     | 10    | 0     | 85    | 0     | 50    |
| Lane Flow Rate         | 16    | 122   | 37    | 122   | 223   | 90    | 64    | 117   |
| Geometry Grp           | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     |
| Degree of Util (X)     | 0.029 | 0.198 | 0.066 | 0.198 | 0.365 | 0.125 | 0.116 | 0.186 |
| Departure Headway (Hd) | 6.607 | 5.823 | 6.379 | 5.812 | 5.874 | 4.988 | 6.536 | 5.708 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 543   | 617   | 563   | 618   | 614   | 720   | 549   | 630   |
| Service Time           | 4.338 | 3.554 | 4.107 | 3.539 | 3.598 | 2.711 | 4.266 | 3.438 |
| HCM Lane V/C Ratio     | 0.029 | 0.198 | 0.066 | 0.197 | 0.363 | 0.125 | 0.117 | 0.186 |
| HCM Control Delay      | 9.5   | 10    | 9.6   | 10    | 11.9  | 8.4   | 10.1  | 9.7   |
| HCM Lane LOS           | A     | A     | A     | A     | B     | A     | B     | A     |
| HCM 95th-tile Q        | 0.1   | 0.7   | 0.2   | 0.7   | 1.7   | 0.4   | 0.4   | 0.7   |



HCM 6th Signalized Intersection Summary  
8: Island Crest Way & SE 28th St



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      | ↕    | ↗    |      | ↕    |      | ↗    | ↕    | ↗    | ↗    | ↕    | ↗    |
| Traffic Volume (veh/h)       | 85   | 20   | 80   | 5    | 20   | 50   | 240  | 665  | 5    | 15   | 145  | 80   |
| Future Volume (veh/h)        | 85   | 20   | 80   | 5    | 20   | 50   | 240  | 665  | 5    | 15   | 145  | 80   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 0.97 | 1.00 |      | 0.96 | 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       | 1803 | 1803 | 1803 | 1967 | 1967 | 1967 | 1964 | 1964 | 1964 | 1761 | 1761 | 1761 |
| Adj Flow Rate, veh/h         | 93   | 22   | 88   | 5    | 22   | 55   | 264  | 731  | 5    | 16   | 159  | 88   |
| Peak Hour Factor             | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, %         | 3    | 3    | 3    | 6    | 6    | 6    | 1    | 1    | 1    | 9    | 9    | 9    |
| Cap, veh/h                   | 185  | 44   | 196  | 9    | 39   | 97   | 531  | 1322 | 9    | 316  | 223  | 124  |
| Arrive On Green              | 0.13 | 0.13 | 0.13 | 0.08 | 0.08 | 0.08 | 0.15 | 0.35 | 0.35 | 0.01 | 0.21 | 0.21 |
| Sat Flow, veh/h              | 1401 | 331  | 1487 | 104  | 457  | 1142 | 1870 | 3798 | 26   | 1677 | 1065 | 590  |
| Grp Volume(v), veh/h         | 115  | 0    | 88   | 82   | 0    | 0    | 264  | 359  | 377  | 16   | 0    | 247  |
| Grp Sat Flow(s),veh/h/ln     | 1732 | 0    | 1487 | 1702 | 0    | 0    | 1870 | 1865 | 1959 | 1677 | 0    | 1655 |
| Q Serve(g_s), s              | 2.7  | 0.0  | 2.4  | 2.0  | 0.0  | 0.0  | 4.6  | 6.8  | 6.8  | 0.3  | 0.0  | 6.1  |
| Cycle Q Clear(g_c), s        | 2.7  | 0.0  | 2.4  | 2.0  | 0.0  | 0.0  | 4.6  | 6.8  | 6.8  | 0.3  | 0.0  | 6.1  |
| Prop In Lane                 | 0.81 |      | 1.00 | 0.06 |      | 0.67 | 1.00 |      | 0.01 | 1.00 |      | 0.36 |
| Lane Grp Cap(c), veh/h       | 228  | 0    | 196  | 145  | 0    | 0    | 531  | 649  | 682  | 316  | 0    | 347  |
| V/C Ratio(X)                 | 0.50 | 0.00 | 0.45 | 0.57 | 0.00 | 0.00 | 0.50 | 0.55 | 0.55 | 0.05 | 0.00 | 0.71 |
| Avail Cap(c_a), veh/h        | 1209 | 0    | 1037 | 993  | 0    | 0    | 912  | 2134 | 2241 | 890  | 0    | 1892 |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh     | 17.6 | 0.0  | 17.5 | 19.2 | 0.0  | 0.0  | 11.0 | 11.5 | 11.5 | 9.6  | 0.0  | 16.1 |
| Incr Delay (d2), s/veh       | 1.3  | 0.0  | 1.2  | 2.6  | 0.0  | 0.0  | 0.3  | 0.7  | 0.7  | 0.0  | 0.0  | 2.7  |
| 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     | 1.1  | 0.0  | 0.8  | 0.8  | 0.0  | 0.0  | 1.5  | 2.3  | 2.4  | 0.1  | 0.0  | 2.1  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 18.9 | 0.0  | 18.7 | 21.8 | 0.0  | 0.0  | 11.2 | 12.2 | 12.2 | 9.6  | 0.0  | 18.8 |
| LnGrp LOS                    | B    | A    | B    | C    | A    | A    | B    | B    | B    | A    | A    | B    |
| Approach Vol, veh/h          |      | 203  |      |      | 82   |      |      | 1000 |      |      | 263  |      |
| Approach Delay, s/veh        |      | 18.8 |      |      | 21.8 |      |      | 12.0 |      |      | 18.2 |      |
| Approach LOS                 |      | B    |      |      | C    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs         |      | 2    | 3    | 4    |      | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |      | 8.2  | 5.0  | 20.2 |      | 10.3 | 11.1 | 14.2 |      |      |      |      |
| Change Period (Y+Rc), s      |      | 4.5  | 4.5  | 5.0  |      | 4.5  | 4.5  | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  |      | 25.5 | 15.5 | 50.0 |      | 30.5 | 15.5 | 50.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |      | 4.0  | 2.3  | 8.8  |      | 4.7  | 6.6  | 8.1  |      |      |      |      |
| Green Ext Time (p_c), s      |      | 0.3  | 0.0  | 5.0  |      | 0.8  | 0.3  | 1.6  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      | 14.4 |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |      |      | B    |      |      |      |      |      |      |      |      |      |



**Intersection**

|                           |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 8.7 |
| Intersection LOS          | A   |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      | ↕    | ↕    |      |
| Traffic Vol, veh/h  | 25   | 30   | 10   | 5    | 25   | 30   | 20   | 105  | 5    | 45   | 80   | 25   |
| Future Vol, veh/h   | 25   | 30   | 10   | 5    | 25   | 30   | 20   | 105  | 5    | 45   | 80   | 25   |
| Peak Hour Factor    | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| Heavy Vehicles, %   | 4    | 4    | 4    | 4    | 4    | 4    | 0    | 0    | 0    | 5    | 5    | 5    |
| Mvmt Flow           | 32   | 38   | 13   | 6    | 32   | 38   | 25   | 133  | 6    | 57   | 101  | 32   |
| Number of Lanes     | 0    | 1    | 0    | 0    | 1    | 0    | 1    | 1    | 0    | 1    | 1    | 0    |

| Approach                   | EB  | WB  | NB  | SB  |
|----------------------------|-----|-----|-----|-----|
| Opposing Approach          | WB  | EB  | SB  | NB  |
| Opposing Lanes             | 1   | 1   | 2   | 2   |
| Conflicting Approach Left  | SB  | NB  | EB  | WB  |
| Conflicting Lanes Left     | 2   | 2   | 1   | 1   |
| Conflicting Approach Right | NB  | SB  | WB  | EB  |
| Conflicting Lanes Right    | 2   | 2   | 1   | 1   |
| HCM Control Delay          | 8.6 | 8.2 | 8.9 | 8.8 |
| HCM LOS                    | A   | A   | A   | A   |

| Lane                   | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|
| Vol Left, %            | 100%  | 0%    | 38%   | 8%    | 100%  | 0%    |
| Vol Thru, %            | 0%    | 95%   | 46%   | 42%   | 0%    | 76%   |
| Vol Right, %           | 0%    | 5%    | 15%   | 50%   | 0%    | 24%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 20    | 110   | 65    | 60    | 45    | 105   |
| LT Vol                 | 20    | 0     | 25    | 5     | 45    | 0     |
| Through Vol            | 0     | 105   | 30    | 25    | 0     | 80    |
| RT Vol                 | 0     | 5     | 10    | 30    | 0     | 25    |
| Lane Flow Rate         | 25    | 139   | 82    | 76    | 57    | 133   |
| Geometry Grp           | 7     | 7     | 2     | 2     | 7     | 7     |
| Degree of Util (X)     | 0.039 | 0.195 | 0.112 | 0.098 | 0.089 | 0.183 |
| Departure Headway (Hd) | 5.567 | 5.032 | 4.912 | 4.657 | 5.625 | 4.955 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 643   | 713   | 729   | 768   | 637   | 723   |
| Service Time           | 3.303 | 2.768 | 2.948 | 2.694 | 3.36  | 2.689 |
| HCM Lane V/C Ratio     | 0.039 | 0.195 | 0.112 | 0.099 | 0.089 | 0.184 |
| HCM Control Delay      | 8.5   | 9     | 8.6   | 8.2   | 8.9   | 8.8   |
| HCM Lane LOS           | A     | A     | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.1   | 0.7   | 0.4   | 0.3   | 0.3   | 0.7   |



**Intersection**

Int Delay, s/veh 2.7

**Movement** EBL EBR NBL NBT SBT SBR

|                          |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      |      |      |      |      |      |
| Traffic Vol, veh/h       | 25   | 45   | 20   | 110  | 95   | 30   |
| Future Vol, veh/h        | 25   | 45   | 20   | 110  | 95   | 30   |
| Conflicting Peds, #/hr   | 6    | 6    | 6    | 0    | 0    | 6    |
| 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         | 75   | 75   | 75   | 75   | 75   | 75   |
| Heavy Vehicles, %        | 2    | 2    | 7    | 7    | 4    | 4    |
| Mvmt Flow                | 33   | 60   | 27   | 147  | 127  | 40   |

**Major/Minor** Minor2 Major1 Major2

|                      |       |       |       |   |   |   |
|----------------------|-------|-------|-------|---|---|---|
| Conflicting Flow All | 360   | 159   | 173   | 0 | - | 0 |
| Stage 1              | 153   | -     | -     | - | - | - |
| Stage 2              | 207   | -     | -     | - | - | - |
| 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   | 639   | 886   | 1374  | - | - | - |
| Stage 1              | 875   | -     | -     | - | - | - |
| Stage 2              | 828   | -     | -     | - | - | - |
| Platoon blocked, %   |       |       |       | - | - | - |
| Mov Cap-1 Maneuver   | 619   | 877   | 1367  | - | - | - |
| Mov Cap-2 Maneuver   | 619   | -     | -     | - | - | - |
| Stage 1              | 851   | -     | -     | - | - | - |
| Stage 2              | 824   | -     | -     | - | - | - |

**Approach** EB NB SB

HCM Control Delay, s 10.4 1.2 0  
HCM LOS B

**Minor Lane/Major Mvmt** NBL NBT EBLn1 SBT SBR

|                       |      |   |       |   |   |
|-----------------------|------|---|-------|---|---|
| Capacity (veh/h)      | 1367 | - | 763   | - | - |
| HCM Lane V/C Ratio    | 0.02 | - | 0.122 | - | - |
| HCM Control Delay (s) | 7.7  | 0 | 10.4  | - | - |
| HCM Lane LOS          | A    | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0.1  | - | 0.4   | - | - |



HCM 6th Signalized Intersection Summary  
11: Island Crest Way & SE 40th Street



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 20   | 155  | 35   | 180  | 160  | 260  | 85   | 675  | 135  | 160  | 310  | 15   |
| Future Volume (veh/h)        | 20   | 155  | 35   | 180  | 160  | 260  | 85   | 675  | 135  | 160  | 310  | 15   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 0.98 | 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 |
| Work Zone On Approach        |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln       | 1841 | 1841 | 1841 | 1826 | 1826 | 1826 | 1870 | 1870 | 1870 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h         | 22   | 172  | 39   | 189  | 193  | 289  | 94   | 750  | 150  | 178  | 344  | 17   |
| Peak Hour Factor             | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, %         | 4    | 4    | 4    | 5    | 5    | 5    | 2    | 2    | 2    | 5    | 5    | 5    |
| Cap, veh/h                   | 212  | 223  | 287  | 321  | 337  | 461  | 116  | 1285 | 257  | 201  | 1636 | 81   |
| Arrive On Green              | 0.12 | 0.12 | 0.12 | 0.06 | 0.06 | 0.06 | 0.06 | 0.44 | 0.44 | 0.12 | 0.49 | 0.49 |
| Sat Flow, veh/h              | 1753 | 1841 | 1529 | 1739 | 1826 | 1527 | 1781 | 2950 | 590  | 1739 | 3365 | 166  |
| Grp Volume(v), veh/h         | 22   | 172  | 39   | 189  | 193  | 289  | 94   | 452  | 448  | 178  | 177  | 184  |
| Grp Sat Flow(s),veh/h/ln     | 1753 | 1841 | 1529 | 1739 | 1826 | 1527 | 1781 | 1777 | 1763 | 1739 | 1735 | 1796 |
| Q Serve(g_s), s              | 1.6  | 12.7 | 3.0  | 14.8 | 14.4 | 22.8 | 7.3  | 26.9 | 26.9 | 14.1 | 8.2  | 8.2  |
| Cycle Q Clear(g_c), s        | 1.6  | 12.7 | 3.0  | 14.8 | 14.4 | 22.8 | 7.3  | 26.9 | 26.9 | 14.1 | 8.2  | 8.2  |
| Prop In Lane                 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.33 | 1.00 |      | 0.09 |
| Lane Grp Cap(c), veh/h       | 212  | 223  | 287  | 321  | 337  | 461  | 116  | 774  | 768  | 201  | 844  | 873  |
| V/C Ratio(X)                 | 0.10 | 0.77 | 0.14 | 0.59 | 0.57 | 0.63 | 0.81 | 0.58 | 0.58 | 0.89 | 0.21 | 0.21 |
| Avail Cap(c_a), veh/h        | 351  | 368  | 407  | 373  | 391  | 506  | 191  | 774  | 768  | 248  | 844  | 873  |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00 | 1.00 | 1.00 | 0.92 | 0.92 | 0.92 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 54.7 | 59.6 | 47.6 | 60.6 | 60.4 | 48.6 | 64.6 | 29.9 | 29.9 | 61.0 | 20.6 | 20.6 |
| Incr Delay (d2), s/veh       | 0.1  | 2.1  | 0.1  | 0.7  | 0.5  | 1.3  | 5.1  | 3.2  | 3.2  | 22.9 | 0.6  | 0.6  |
| 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     | 0.7  | 6.1  | 1.2  | 7.0  | 7.2  | 9.5  | 3.5  | 12.1 | 12.0 | 7.5  | 3.5  | 3.6  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 54.8 | 61.8 | 47.7 | 61.2 | 60.9 | 49.9 | 69.7 | 33.1 | 33.1 | 83.9 | 21.1 | 21.1 |
| LnGrp LOS                    | D    | E    | D    | E    | E    | D    | E    | C    | C    | F    | C    | C    |
| Approach Vol, veh/h          |      | 233  |      |      | 671  |      |      | 994  |      |      | 539  |      |
| Approach Delay, s/veh        |      | 58.8 |      |      | 56.3 |      |      | 36.6 |      |      | 41.9 |      |
| Approach LOS                 |      | E    |      |      | E    |      |      | D    |      |      | D    |      |
| Timer - Assigned Phs         | 1    | 2    |      | 4    | 5    | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 21.2 | 66.0 |      | 30.9 | 14.1 | 73.1 |      | 22.0 |      |      |      |      |
| Change Period (Y+Rc), s      | 5.0  | 5.0  |      | 5.0  | 5.0  | 5.0  |      | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  | 20.0 | 42.0 |      | 30.0 | 15.0 | 47.0 |      | 28.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 16.1 | 28.9 |      | 24.8 | 9.3  | 10.2 |      | 14.7 |      |      |      |      |
| Green Ext Time (p_c), s      | 0.1  | 3.2  |      | 0.9  | 0.0  | 1.3  |      | 0.6  |      |      |      |      |

Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 45.3 |
| HCM 6th LOS        | D    |

Notes

User approved volume balancing among the lanes for turning movement.



| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 6.2  |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      |      |      |      |      |      |
| Traffic Vol, veh/h       | 80   | 270  | 0    | 140  | 140  | 0    |
| Future Vol, veh/h        | 80   | 270  | 0    | 140  | 140  | 0    |
| 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    | 150  | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 89   | 89   | 89   | 89   | 89   | 89   |
| Heavy Vehicles, %        | 5    | 5    | 2    | 2    | 3    | 3    |
| Mvmt Flow                | 90   | 303  | 0    | 157  | 157  | 0    |

| Major/Minor          | Minor2 | Major1 | Major2 |   |   |   |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 314    | 157    | -      | 0 | - | 0 |
| Stage 1              | 157    | -      | -      | - | - | - |
| Stage 2              | 157    | -      | -      | - | - | - |
| Critical Hdwy        | 6.45   | 6.25   | -      | - | - | - |
| Critical Hdwy Stg 1  | 5.45   | -      | -      | - | - | - |
| Critical Hdwy Stg 2  | 5.45   | -      | -      | - | - | - |
| Follow-up Hdwy       | 3.545  | 3.345  | -      | - | - | - |
| Pot Cap-1 Maneuver   | 673    | 881    | 0      | - | - | 0 |
| Stage 1              | 864    | -      | 0      | - | - | 0 |
| Stage 2              | 864    | -      | 0      | - | - | 0 |
| Platoon blocked, %   |        |        |        | - | - |   |
| Mov Cap-1 Maneuver   | 673    | 881    | -      | - | - | - |
| Mov Cap-2 Maneuver   | 701    | -      | -      | - | - | - |
| Stage 1              | 864    | -      | -      | - | - | - |
| Stage 2              | 864    | -      | -      | - | - | - |

| Approach             | EB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 11.1 | 0  | 0  |
| HCM LOS              | B    |    |    |

| Minor Lane/Major Mvmt | NBT | EBLn1 | EBLn2 | SBT |
|-----------------------|-----|-------|-------|-----|
| Capacity (veh/h)      | -   | 701   | 881   | -   |
| HCM Lane V/C Ratio    | -   | 0.128 | 0.344 | -   |
| HCM Control Delay (s) | -   | 10.9  | 11.2  | -   |
| HCM Lane LOS          | -   | B     | B     | -   |
| HCM 95th %tile Q(veh) | -   | 0.4   | 1.5   | -   |



HCM 6th Signalized Intersection Summary  
4: 77th Avenue SE & SE 27th St



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 35   | 295  | 125  | 45   | 230  | 55   | 130  | 80   | 75   | 125  | 205  | 65   |
| Future Volume (veh/h)        | 35   | 295  | 125  | 45   | 230  | 55   | 130  | 80   | 75   | 125  | 205  | 65   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 0.98 |      | 0.96 | 0.99 |      | 0.96 | 0.98 |      | 0.97 | 0.98 |      | 0.97 |
| 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       | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 |
| Adj Flow Rate, veh/h         | 38   | 321  | 136  | 49   | 250  | 60   | 141  | 87   | 82   | 136  | 223  | 71   |
| Peak Hour Factor             | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, %         | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1    | 1    |
| Cap, veh/h                   | 390  | 445  | 189  | 277  | 523  | 125  | 405  | 215  | 203  | 494  | 330  | 105  |
| Arrive On Green              | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.09 | 0.25 | 0.25 | 0.08 | 0.24 | 0.24 |
| Sat Flow, veh/h              | 1062 | 1247 | 528  | 936  | 1465 | 352  | 1795 | 876  | 826  | 1795 | 1357 | 432  |
| Grp Volume(v), veh/h         | 38   | 0    | 457  | 49   | 0    | 310  | 141  | 0    | 169  | 136  | 0    | 294  |
| Grp Sat Flow(s),veh/h/ln     | 1062 | 0    | 1776 | 936  | 0    | 1817 | 1795 | 0    | 1702 | 1795 | 0    | 1789 |
| Q Serve(g_s), s              | 1.4  | 0.0  | 10.6 | 2.3  | 0.0  | 6.3  | 2.7  | 0.0  | 4.0  | 2.6  | 0.0  | 7.1  |
| Cycle Q Clear(g_c), s        | 7.7  | 0.0  | 10.6 | 12.9 | 0.0  | 6.3  | 2.7  | 0.0  | 4.0  | 2.6  | 0.0  | 7.1  |
| Prop In Lane                 | 1.00 |      | 0.30 | 1.00 |      | 0.19 | 1.00 |      | 0.49 | 1.00 |      | 0.24 |
| Lane Grp Cap(c), veh/h       | 390  | 0    | 634  | 277  | 0    | 648  | 405  | 0    | 418  | 494  | 0    | 435  |
| V/C Ratio(X)                 | 0.10 | 0.00 | 0.72 | 0.18 | 0.00 | 0.48 | 0.35 | 0.00 | 0.40 | 0.28 | 0.00 | 0.68 |
| Avail Cap(c_a), veh/h        | 747  | 0    | 1231 | 591  | 0    | 1260 | 516  | 0    | 715  | 610  | 0    | 752  |
| 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     | 14.8 | 0.0  | 13.3 | 18.8 | 0.0  | 11.9 | 12.3 | 0.0  | 15.0 | 11.9 | 0.0  | 16.3 |
| Incr Delay (d2), s/veh       | 0.1  | 0.0  | 1.6  | 0.3  | 0.0  | 0.5  | 0.5  | 0.0  | 0.6  | 0.3  | 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  | 3.9  | 0.5  | 0.0  | 2.3  | 1.0  | 0.0  | 1.4  | 1.0  | 0.0  | 2.8  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 15.0 | 0.0  | 14.8 | 19.1 | 0.0  | 12.4 | 12.8 | 0.0  | 15.7 | 12.2 | 0.0  | 18.2 |
| LnGrp LOS                    | B    | A    | B    | B    | A    | B    | B    | A    | B    | B    | A    | B    |
| Approach Vol, veh/h          |      | 495  |      |      | 359  |      |      | 310  |      |      | 430  |      |
| Approach Delay, s/veh        |      | 14.8 |      |      | 13.3 |      |      | 14.4 |      |      | 16.3 |      |
| Approach LOS                 |      | B    |      |      | B    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs         |      | 2    | 3    | 4    |      | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |      | 22.0 | 9.1  | 16.6 |      | 22.0 | 8.9  | 16.7 |      |      |      |      |
| Change Period (Y+Rc), s      |      | 5.0  | 5.0  | 5.0  |      | 5.0  | 5.0  | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  |      | 33.0 | 7.0  | 20.0 |      | 33.0 | 7.0  | 20.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |      | 12.6 | 4.7  | 9.1  |      | 14.9 | 4.6  | 6.0  |      |      |      |      |
| Green Ext Time (p_c), s      |      | 3.3  | 0.1  | 1.3  |      | 2.1  | 0.1  | 0.8  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      | 14.8 |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |      |      | B    |      |      |      |      |      |      |      |      |      |



HCM 6th Signalized Intersection Summary  
 5: Island Crest Way/Island Crest & SE 27th St/I-90 On-ramps



| Movement   | EBL  | EBT  | EBR  | WBL  | WBT | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--|------|------|------|------|-----|------|------|------|------|------|------|------|
| Lane Configurations  |      |      |      |      |     |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)   | 15   | 340  | 40   | 0    | 0   | 0    | 110  | 125  | 370  | 90   | 300  | 190  |
| Future Volume (veh/h)  | 15   | 340  | 40   | 0    | 0   | 0    | 110  | 125  | 370  | 90   | 300  | 190  |
| Initial Q (Qb), veh  | 0    | 0    | 0    |      |     |      | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)  | 1.00 |      | 0.97 |      |     |      | 1.00 |      | 1.00 | 1.00 |      | 0.97 |
| Parking Bus, Adj   | 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   |      |      |
| Adj Sat Flow, veh/h/ln   | 1924 | 1924 | 1924 |      |     |      | 1964 | 1964 | 1964 | 1879 | 1879 | 1879 |
| Adj Flow Rate, veh/h   | 16   | 366  | 43   |      |     |      | 118  | 134  | 0    | 97   | 323  | 204  |
| Peak Hour Factor   | 0.93 | 0.93 | 0.93 |      |     |      | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, %   | 1    | 1    | 1    |      |     |      | 1    | 1    | 1    | 1    | 1    | 1    |
| Cap, veh/h   | 557  | 512  | 60   |      |     |      | 412  | 544  |      | 563  | 498  | 411  |
| Arrive On Green  | 0.30 | 0.30 | 0.30 |      |     |      | 0.07 | 0.28 | 0.00 | 0.06 | 0.27 | 0.27 |
| Sat Flow, veh/h  | 1833 | 1684 | 198  |      |     |      | 1870 | 1964 | 1664 | 1790 | 1879 | 1550 |
| Grp Volume(v), veh/h   | 16   | 0    | 409  |      |     |      | 118  | 134  | 0    | 97   | 323  | 204  |
| Grp Sat Flow(s),veh/h/ln   | 1833 | 0    | 1882 |      |     |      | 1870 | 1964 | 1664 | 1790 | 1879 | 1550 |
| Q Serve(g_s), s  | 0.3  | 0.0  | 8.0  |      |     |      | 1.8  | 2.2  | 0.0  | 1.6  | 6.3  | 4.6  |
| Cycle Q Clear(g_c), s  | 0.3  | 0.0  | 8.0  |      |     |      | 1.8  | 2.2  | 0.0  | 1.6  | 6.3  | 4.6  |
| Prop In Lane   | 1.00 |      | 0.11 |      |     |      | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h   | 557  | 0    | 572  |      |     |      | 412  | 544  |      | 563  | 498  | 411  |
| V/C Ratio(X)   | 0.03 | 0.00 | 0.72 |      |     |      | 0.29 | 0.25 |      | 0.17 | 0.65 | 0.50 |
| Avail Cap(c_a), veh/h  | 1176 | 0    | 1207 |      |     |      | 1115 | 1451 |      | 1257 | 1388 | 1145 |
| HCM Platoon Ratio  | 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 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh   | 10.1 | 0.0  | 12.7 |      |     |      | 10.2 | 11.5 | 0.0  | 9.6  | 13.4 | 12.8 |
| Incr Delay (d2), s/veh   | 0.0  | 0.0  | 1.7  |      |     |      | 0.1  | 0.2  | 0.0  | 0.1  | 1.1  | 0.7  |
| Initial Q Delay(d3),s/veh  | 0.0  | 0.0  | 0.0  |      |     |      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln   | 0.1  | 0.0  | 3.0  |      |     |      | 0.6  | 0.8  | 0.0  | 0.5  | 2.4  | 1.4  |
| Unsig. Movement Delay, s/veh   |      |      |      |      |     |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh   | 10.1 | 0.0  | 14.4 |      |     |      | 10.4 | 11.7 | 0.0  | 9.7  | 14.5 | 13.5 |
| LnGrp LOS  | B    | A    | B    |      |     |      | B    | B    |      | A    | B    | B    |
| Approach Vol, veh/h  |      | 425  |      |      |     |      |      | 252  | A    |      | 624  |      |
| Approach Delay, s/veh  |      | 14.3 |      |      |     |      |      | 11.1 |      |      | 13.4 |      |
| Approach LOS   |      | B    |      |      |     |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs   |      |      | 3    | 4    |     | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s   |      |      | 7.1  | 16.0 |     | 18.1 | 7.5  | 15.5 |      |      |      |      |
| Change Period (Y+Rc), s  |      |      | 4.6  | 4.6  |     | 5.6  | 4.6  | 4.6  |      |      |      |      |
| Max Green Setting (Gmax), s  |      |      | 18.4 | 30.4 |     | 26.4 | 18.4 | 30.4 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s   |      |      | 3.6  | 4.2  |     | 10.0 | 3.8  | 8.3  |      |      |      |      |
| Green Ext Time (p_c), s  |      |      | 0.1  | 0.6  |     | 2.5  | 0.1  | 2.2  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |     |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay   |      |      | 13.2 |      |     |      |      |      |      |      |      |      |
| HCM 6th LOS  |      |      | B    |      |     |      |      |      |      |      |      |      |
| <b>Notes</b>   |      |      |      |      |     |      |      |      |      |      |      |      |
| Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay. |      |      |      |      |     |      |      |      |      |      |      |      |



**Intersection**

|                           |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 9.8 |
| Intersection LOS          | A   |

| Movement            | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
|---------------------|------|------|------|------|------|------|
| Lane Configurations |      |      |      |      |      |      |
| Traffic Vol, veh/h  | 120  | 120  | 135  | 90   | 110  | 90   |
| Future Vol, veh/h   | 120  | 120  | 135  | 90   | 110  | 90   |
| Peak Hour Factor    | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, %   | 1    | 1    | 2    | 2    | 2    | 2    |
| Mvmt Flow           | 129  | 129  | 145  | 97   | 118  | 97   |
| Number of Lanes     | 1    | 1    | 1    | 0    | 0    | 1    |

| Approach                   | WB  | NB  | SB   |
|----------------------------|-----|-----|------|
| Opposing Approach          |     | SB  | NB   |
| Opposing Lanes             | 0   | 1   | 1    |
| Conflicting Approach Left  | NB  |     | WB   |
| Conflicting Lanes Left     | 1   | 0   | 2    |
| Conflicting Approach Right | SB  | WB  |      |
| Conflicting Lanes Right    | 1   | 2   | 0    |
| HCM Control Delay          | 9.6 | 9.8 | 10.2 |
| HCM LOS                    | A   | A   | B    |

| Lane                   | NBLn1 | WBLn1 | WBLn2 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 0%    | 100%  | 0%    | 55%   |
| Vol Thru, %            | 60%   | 0%    | 0%    | 45%   |
| Vol Right, %           | 40%   | 0%    | 100%  | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 225   | 120   | 120   | 200   |
| LT Vol                 | 0     | 120   | 0     | 110   |
| Through Vol            | 135   | 0     | 0     | 90    |
| RT Vol                 | 90    | 0     | 120   | 0     |
| Lane Flow Rate         | 242   | 129   | 129   | 215   |
| Geometry Grp           | 2     | 7     | 7     | 2     |
| Degree of Util (X)     | 0.311 | 0.218 | 0.175 | 0.298 |
| Departure Headway (Hd) | 4.624 | 6.081 | 4.871 | 4.986 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 774   | 587   | 730   | 716   |
| Service Time           | 2.679 | 3.854 | 2.642 | 3.045 |
| HCM Lane V/C Ratio     | 0.313 | 0.22  | 0.177 | 0.3   |
| HCM Control Delay      | 9.8   | 10.6  | 8.7   | 10.2  |
| HCM Lane LOS           | A     | B     | A     | B     |
| HCM 95th-tile Q        | 1.3   | 0.8   | 0.6   | 1.2   |



**Intersection**

Intersection Delay, s/veh 13.7

Intersection LOS B

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Vol, veh/h  | 50   | 200  | 30   | 65   | 155  | 80   | 35   | 100  | 95   | 75   | 80   | 90   |
| Future Vol, veh/h   | 50   | 200  | 30   | 65   | 155  | 80   | 35   | 100  | 95   | 75   | 80   | 90   |
| Peak Hour Factor    | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, %   | 0    | 0    | 0    | 1    | 1    | 1    | 3    | 3    | 3    | 3    | 3    | 3    |
| Mvmt Flow           | 54   | 217  | 33   | 71   | 168  | 87   | 38   | 109  | 103  | 82   | 87   | 98   |
| Number of Lanes     | 1    | 1    | 0    | 0    | 1    | 1    | 1    | 1    | 0    | 1    | 1    | 0    |

| Approach                   | EB   | WB | NB   | SB   |
|----------------------------|------|----|------|------|
| Opposing Approach          | WB   | EB | SB   | NB   |
| Opposing Lanes             | 2    | 2  | 2    | 2    |
| Conflicting Approach Left  | SB   | NB | EB   | WB   |
| Conflicting Lanes Left     | 2    | 2  | 2    | 2    |
| Conflicting Approach Right | NB   | SB | WB   | EB   |
| Conflicting Lanes Right    | 2    | 2  | 2    | 2    |
| HCM Control Delay          | 14.5 | 14 | 13.5 | 12.6 |
| HCM LOS                    | B    | B  | B    | B    |

| Lane                   | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, %            | 100%  | 0%    | 100%  | 0%    | 30%   | 0%    | 100%  | 0%    |
| Vol Thru, %            | 0%    | 51%   | 0%    | 87%   | 70%   | 0%    | 0%    | 47%   |
| Vol Right, %           | 0%    | 49%   | 0%    | 13%   | 0%    | 100%  | 0%    | 53%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 35    | 195   | 50    | 230   | 220   | 80    | 75    | 170   |
| LT Vol                 | 35    | 0     | 50    | 0     | 65    | 0     | 75    | 0     |
| Through Vol            | 0     | 100   | 0     | 200   | 155   | 0     | 0     | 80    |
| RT Vol                 | 0     | 95    | 0     | 30    | 0     | 80    | 0     | 90    |
| Lane Flow Rate         | 38    | 212   | 54    | 250   | 239   | 87    | 82    | 185   |
| Geometry Grp           | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     |
| Degree of Util (X)     | 0.08  | 0.397 | 0.111 | 0.466 | 0.462 | 0.147 | 0.171 | 0.343 |
| Departure Headway (Hd) | 7.597 | 6.737 | 7.32  | 6.716 | 6.951 | 6.086 | 7.571 | 6.681 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 472   | 534   | 490   | 537   | 519   | 590   | 474   | 538   |
| Service Time           | 5.337 | 4.477 | 5.059 | 4.455 | 4.689 | 3.823 | 5.312 | 4.421 |
| HCM Lane V/C Ratio     | 0.081 | 0.397 | 0.11  | 0.466 | 0.461 | 0.147 | 0.173 | 0.344 |
| HCM Control Delay      | 11    | 13.9  | 11    | 15.2  | 15.5  | 9.9   | 11.9  | 12.9  |
| HCM Lane LOS           | B     | B     | B     | C     | C     | A     | B     | B     |
| HCM 95th-tile Q        | 0.3   | 1.9   | 0.4   | 2.4   | 2.4   | 0.5   | 0.6   | 1.5   |



HCM 6th Signalized Intersection Summary  
8: Island Crest Way & SE 28th St



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      | ↕    | ↗    |      | ↕    |      | ↗    | ↕    |      | ↗    | ↕    |      |
| Traffic Volume (veh/h)       | 170  | 30   | 180  | 0    | 30   | 35   | 175  | 390  | 0    | 25   | 240  | 80   |
| Future Volume (veh/h)        | 170  | 30   | 180  | 0    | 30   | 35   | 175  | 390  | 0    | 25   | 240  | 80   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 0.97 | 1.00 |      | 0.96 | 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       | 1847 | 1847 | 1847 | 2027 | 2027 | 2027 | 1964 | 1964 | 1964 | 1864 | 1864 | 1864 |
| Adj Flow Rate, veh/h         | 177  | 31   | 188  | 0    | 31   | 36   | 182  | 406  | 0    | 26   | 250  | 83   |
| Peak Hour Factor             | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, %         | 0    | 0    | 0    | 2    | 2    | 2    | 1    | 1    | 1    | 2    | 2    | 2    |
| Cap, veh/h                   | 306  | 54   | 308  | 0    | 70   | 81   | 420  | 1254 | 0    | 421  | 335  | 111  |
| Arrive On Green              | 0.20 | 0.20 | 0.20 | 0.00 | 0.08 | 0.08 | 0.10 | 0.34 | 0.00 | 0.02 | 0.25 | 0.25 |
| Sat Flow, veh/h              | 1508 | 264  | 1519 | 0    | 834  | 968  | 1870 | 3829 | 0    | 1776 | 1339 | 445  |
| Grp Volume(v), veh/h         | 208  | 0    | 188  | 0    | 0    | 67   | 182  | 406  | 0    | 26   | 0    | 333  |
| Grp Sat Flow(s),veh/h/ln     | 1772 | 0    | 1519 | 0    | 0    | 1802 | 1870 | 1865 | 0    | 1776 | 0    | 1784 |
| Q Serve(g_s), s              | 5.5  | 0.0  | 5.8  | 0.0  | 0.0  | 1.8  | 3.6  | 4.2  | 0.0  | 0.5  | 0.0  | 8.9  |
| Cycle Q Clear(g_c), s        | 5.5  | 0.0  | 5.8  | 0.0  | 0.0  | 1.8  | 3.6  | 4.2  | 0.0  | 0.5  | 0.0  | 8.9  |
| Prop In Lane                 | 0.85 |      | 1.00 | 0.00 |      | 0.54 | 1.00 |      | 0.00 | 1.00 |      | 0.25 |
| Lane Grp Cap(c), veh/h       | 360  | 0    | 308  | 0    | 0    | 151  | 420  | 1254 | 0    | 421  | 0    | 446  |
| V/C Ratio(X)                 | 0.58 | 0.00 | 0.61 | 0.00 | 0.00 | 0.44 | 0.43 | 0.32 | 0.00 | 0.06 | 0.00 | 0.75 |
| Avail Cap(c_a), veh/h        | 1049 | 0    | 900  | 0    | 0    | 892  | 970  | 3260 | 0    | 1095 | 0    | 1559 |
| 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 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh     | 18.5 | 0.0  | 18.7 | 0.0  | 0.0  | 22.5 | 12.8 | 12.7 | 0.0  | 11.1 | 0.0  | 17.8 |
| Incr Delay (d2), s/veh       | 1.1  | 0.0  | 1.5  | 0.0  | 0.0  | 1.5  | 0.3  | 0.1  | 0.0  | 0.0  | 0.0  | 2.5  |
| 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     | 2.2  | 0.0  | 1.9  | 0.0  | 0.0  | 0.8  | 1.3  | 1.5  | 0.0  | 0.2  | 0.0  | 3.4  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 19.6 | 0.0  | 20.1 | 0.0  | 0.0  | 24.0 | 13.1 | 12.9 | 0.0  | 11.1 | 0.0  | 20.3 |
| LnGrp LOS                    | B    | A    | C    | A    | A    | C    | B    | B    | A    | B    | A    | C    |
| Approach Vol, veh/h          |      | 396  |      |      | 67   |      |      | 588  |      |      | 359  |      |
| Approach Delay, s/veh        |      | 19.9 |      |      | 24.0 |      |      | 12.9 |      |      | 19.6 |      |
| Approach LOS                 |      | B    |      |      | C    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs         |      | 2    | 3    | 4    |      | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |      | 8.8  | 5.4  | 22.3 |      | 15.0 | 9.9  | 17.9 |      |      |      |      |
| Change Period (Y+Rc), s      |      | 4.5  | 4.5  | 5.0  |      | 4.5  | 4.5  | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  |      | 25.5 | 20.5 | 45.0 |      | 30.5 | 20.5 | 45.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |      | 3.8  | 2.5  | 6.2  |      | 7.8  | 5.6  | 10.9 |      |      |      |      |
| Green Ext Time (p_c), s      |      | 0.2  | 0.0  | 2.8  |      | 1.5  | 0.2  | 2.1  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      |      | 17.1 |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |      |      |      | B    |      |      |      |      |      |      |      |      |



**Intersection**

Intersection Delay, s/veh 10.3  
Intersection LOS B

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      | ↕    | ↕    |      |
| Traffic Vol, veh/h  | 45   | 65   | 55   | 5    | 55   | 45   | 70   | 130  | 10   | 100  | 170  | 30   |
| Future Vol, veh/h   | 45   | 65   | 55   | 5    | 55   | 45   | 70   | 130  | 10   | 100  | 170  | 30   |
| Peak Hour Factor    | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, %   | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1    | 1    | 0    | 0    | 0    |
| Mvmt Flow           | 48   | 70   | 59   | 5    | 59   | 48   | 75   | 140  | 11   | 108  | 183  | 32   |
| Number of Lanes     | 0    | 1    | 0    | 0    | 1    | 0    | 1    | 1    | 0    | 1    | 1    | 0    |

| Approach                   | EB   | WB  | NB   | SB   |
|----------------------------|------|-----|------|------|
| Opposing Approach          | WB   | EB  | SB   | NB   |
| Opposing Lanes             | 1    | 1   | 2    | 2    |
| Conflicting Approach Left  | SB   | NB  | EB   | WB   |
| Conflicting Lanes Left     | 2    | 2   | 1    | 1    |
| Conflicting Approach Right | NB   | SB  | WB   | EB   |
| Conflicting Lanes Right    | 2    | 2   | 1    | 1    |
| HCM Control Delay          | 10.3 | 9.5 | 10.1 | 10.7 |
| HCM LOS                    | B    | A   | B    | B    |

| Lane                   | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|
| Vol Left, %            | 100%  | 0%    | 27%   | 5%    | 100%  | 0%    |
| Vol Thru, %            | 0%    | 93%   | 39%   | 52%   | 0%    | 85%   |
| Vol Right, %           | 0%    | 7%    | 33%   | 43%   | 0%    | 15%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 70    | 140   | 165   | 105   | 100   | 200   |
| LT Vol                 | 70    | 0     | 45    | 5     | 100   | 0     |
| Through Vol            | 0     | 130   | 65    | 55    | 0     | 170   |
| RT Vol                 | 0     | 10    | 55    | 45    | 0     | 30    |
| Lane Flow Rate         | 75    | 151   | 177   | 113   | 108   | 215   |
| Geometry Grp           | 7     | 7     | 2     | 2     | 7     | 7     |
| Degree of Util (X)     | 0.131 | 0.239 | 0.264 | 0.169 | 0.183 | 0.329 |
| Departure Headway (Hd) | 6.262 | 5.705 | 5.365 | 5.403 | 6.126 | 5.514 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 574   | 631   | 669   | 664   | 587   | 654   |
| Service Time           | 3.988 | 3.431 | 3.397 | 3.438 | 3.85  | 3.238 |
| HCM Lane V/C Ratio     | 0.131 | 0.239 | 0.265 | 0.17  | 0.184 | 0.329 |
| HCM Control Delay      | 9.9   | 10.2  | 10.3  | 9.5   | 10.2  | 10.9  |
| HCM Lane LOS           | A     | B     | B     | A     | B     | B     |
| HCM 95th-tile Q        | 0.4   | 0.9   | 1.1   | 0.6   | 0.7   | 1.4   |



**Intersection**

Int Delay, s/veh 4.6

**Movement** EBL EBR NBL NBT SBT SBR

|                          |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      |      |      |      |      |      |
| Traffic Vol, veh/h       | 65   | 125  | 55   | 205  | 165  | 50   |
| Future Vol, veh/h        | 65   | 125  | 55   | 205  | 165  | 50   |
| Conflicting Peds, #/hr   | 22   | 19   | 19   | 0    | 0    | 22   |
| 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         | 93   | 93   | 93   | 93   | 93   | 93   |
| Heavy Vehicles, %        | 0    | 0    | 1    | 1    | 1    | 1    |
| Mvmt Flow                | 70   | 134  | 59   | 220  | 177  | 54   |

**Major/Minor** Minor2 Major1 Major2

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 586 | 245 | 253   | 0 | - | 0 |
| Stage 1              | 226 | -   | -     | - | - | - |
| Stage 2              | 360 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.11  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.209 | - | - | - |
| Pot Cap-1 Maneuver   | 476 | 799 | 1318  | - | - | - |
| Stage 1              | 816 | -   | -     | - | - | - |
| Stage 2              | 710 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 435 | 772 | 1294  | - | - | - |
| Mov Cap-2 Maneuver   | 435 | -   | -     | - | - | - |
| Stage 1              | 760 | -   | -     | - | - | - |
| Stage 2              | 697 | -   | -     | - | - | - |

**Approach** EB NB SB

HCM Control Delay, s 13.8 1.7 0  
HCM LOS B

**Minor Lane/Major Mvmt** NBL NBT EBLn1 SBT SBR

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1294  | - | 610   | - | - |
| HCM Lane V/C Ratio    | 0.046 | - | 0.335 | - | - |
| HCM Control Delay (s) | 7.9   | 0 | 13.8  | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0.1   | - | 1.5   | - | - |



HCM 6th Signalized Intersection Summary  
11: Island Crest Way & SE 40th Street



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 15   | 180  | 170  | 205  | 185  | 160  | 95   | 360  | 105  | 275  | 630  | 10   |
| Future Volume (veh/h)        | 15   | 180  | 170  | 205  | 185  | 160  | 95   | 360  | 105  | 275  | 630  | 10   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 0.98 | 1.00 |      | 0.97 | 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       | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1900 | 1900 | 1900 |
| Adj Flow Rate, veh/h         | 16   | 188  | 177  | 204  | 208  | 167  | 99   | 375  | 109  | 286  | 656  | 10   |
| Peak Hour Factor             | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, %         | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 0    | 0    | 0    |
| Cap, veh/h                   | 284  | 298  | 383  | 310  | 326  | 566  | 151  | 519  | 149  | 337  | 1061 | 16   |
| Arrive On Green              | 0.16 | 0.16 | 0.16 | 0.17 | 0.17 | 0.17 | 0.08 | 0.19 | 0.19 | 0.19 | 0.29 | 0.29 |
| Sat Flow, veh/h              | 1795 | 1885 | 1573 | 1795 | 1885 | 1553 | 1795 | 2744 | 788  | 1810 | 3639 | 55   |
| Grp Volume(v), veh/h         | 16   | 188  | 177  | 204  | 208  | 167  | 99   | 243  | 241  | 286  | 325  | 341  |
| Grp Sat Flow(s),veh/h/ln     | 1795 | 1885 | 1573 | 1795 | 1885 | 1553 | 1795 | 1791 | 1741 | 1810 | 1805 | 1890 |
| Q Serve(g_s), s              | 0.5  | 6.4  | 6.5  | 7.2  | 7.0  | 5.3  | 3.6  | 8.7  | 8.9  | 10.4 | 10.6 | 10.6 |
| Cycle Q Clear(g_c), s        | 0.5  | 6.4  | 6.5  | 7.2  | 7.0  | 5.3  | 3.6  | 8.7  | 8.9  | 10.4 | 10.6 | 10.6 |
| Prop In Lane                 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.45 | 1.00 |      | 0.03 |
| Lane Grp Cap(c), veh/h       | 284  | 298  | 383  | 310  | 326  | 566  | 151  | 339  | 329  | 337  | 526  | 551  |
| V/C Ratio(X)                 | 0.06 | 0.63 | 0.46 | 0.66 | 0.64 | 0.29 | 0.66 | 0.72 | 0.73 | 0.85 | 0.62 | 0.62 |
| Avail Cap(c_a), veh/h        | 711  | 747  | 757  | 922  | 968  | 1095 | 474  | 946  | 919  | 717  | 1191 | 1247 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 24.4 | 26.8 | 22.1 | 26.3 | 26.2 | 15.7 | 30.3 | 25.9 | 26.0 | 26.8 | 20.9 | 20.9 |
| Incr Delay (d2), s/veh       | 0.0  | 0.8  | 0.3  | 0.9  | 0.8  | 0.1  | 1.8  | 1.1  | 1.2  | 2.3  | 0.4  | 0.4  |
| 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     | 0.2  | 2.8  | 0.0  | 3.0  | 3.1  | 1.7  | 1.6  | 3.5  | 3.5  | 4.4  | 4.2  | 4.4  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 24.4 | 27.6 | 22.4 | 27.2 | 27.0 | 15.8 | 32.1 | 27.0 | 27.2 | 29.1 | 21.3 | 21.3 |
| LnGrp LOS                    | C    | C    | C    | C    | C    | B    | C    | C    | C    | C    | C    | C    |
| Approach Vol, veh/h          |      | 381  |      |      | 579  |      |      | 583  |      |      | 952  |      |
| Approach Delay, s/veh        |      | 25.1 |      |      | 23.8 |      |      | 27.9 |      |      | 23.7 |      |
| Approach LOS                 |      | C    |      |      | C    |      |      | C    |      |      | C    |      |
| Timer - Assigned Phs         | 1    | 2    |      | 4    | 5    | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 17.7 | 17.9 |      | 16.8 | 10.7 | 24.9 |      | 15.8 |      |      |      |      |
| Change Period (Y+Rc), s      | 5.0  | 5.0  |      | 5.0  | 5.0  | 5.0  |      | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  | 27.0 | 36.0 |      | 35.0 | 18.0 | 45.0 |      | 27.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 12.4 | 10.9 |      | 9.2  | 5.6  | 12.6 |      | 8.5  |      |      |      |      |
| Green Ext Time (p_c), s      | 0.3  | 1.8  |      | 1.3  | 0.1  | 2.6  |      | 0.9  |      |      |      |      |

Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 24.9 |
| HCM 6th LOS        | C    |

Notes

User approved volume balancing among the lanes for turning movement.



HCM 6th Signalized Intersection Summary  
1: 76th Avenue SE & N Mercer Way



| Movement                     | EBL | EBT  | EBR | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|-----|------|-----|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |     |      |     |      | ↕    | ↕    | ↕    | ↕    |      | ↕    | ↕    |      |
| Traffic Volume (veh/h)       | 0   | 0    | 0   | 135  | 515  | 40   | 175  | 10   | 135  | 30   | 5    | 5    |
| Future Volume (veh/h)        | 0   | 0    | 0   | 135  | 515  | 40   | 175  | 10   | 135  | 30   | 5    | 5    |
| Initial Q (Qb), veh          |     |      |     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          |     |      |     | 1.00 |      | 1.00 | 0.99 |      | 1.00 | 0.99 |      | 0.99 |
| Parking Bus, Adj             |     |      |     | 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       |     |      |     | 1841 | 1841 | 1841 | 1826 | 1826 | 1826 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h         |     |      |     | 142  | 542  | 42   | 184  | 11   | 0    | 32   | 5    | 5    |
| Peak Hour Factor             |     |      |     | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, %         |     |      |     | 4    | 4    | 4    | 5    | 5    | 5    | 8    | 8    | 8    |
| Cap, veh/h                   |     |      |     | 200  | 762  | 820  | 488  | 387  |      | 481  | 172  | 172  |
| Arrive On Green              |     |      |     | 0.53 | 0.53 | 0.53 | 0.21 | 0.21 | 0.00 | 0.21 | 0.21 | 0.21 |
| Sat Flow, veh/h              |     |      |     | 378  | 1444 | 1554 | 1352 | 1826 | 0    | 1318 | 811  | 811  |
| Grp Volume(v), veh/h         |     |      |     | 684  | 0    | 42   | 184  | 11   | 0    | 32   | 0    | 10   |
| Grp Sat Flow(s),veh/h/ln     |     |      |     | 1822 | 0    | 1554 | 1352 | 1826 | 0    | 1318 | 0    | 1622 |
| Q Serve(g_s), s              |     |      |     | 9.8  | 0.0  | 0.5  | 4.3  | 0.2  | 0.0  | 0.7  | 0.0  | 0.2  |
| Cycle Q Clear(g_c), s        |     |      |     | 9.8  | 0.0  | 0.5  | 4.5  | 0.2  | 0.0  | 0.8  | 0.0  | 0.2  |
| Prop In Lane                 |     |      |     | 0.21 |      | 1.00 | 1.00 |      | 0.00 | 1.00 |      | 0.50 |
| Lane Grp Cap(c), veh/h       |     |      |     | 961  | 0    | 820  | 488  | 387  |      | 481  | 0    | 343  |
| V/C Ratio(X)                 |     |      |     | 0.71 | 0.00 | 0.05 | 0.38 | 0.03 |      | 0.07 | 0.00 | 0.03 |
| Avail Cap(c_a), veh/h        |     |      |     | 2980 | 0    | 2542 | 1161 | 1295 |      | 1137 | 0    | 1150 |
| HCM Platoon Ratio            |     |      |     | 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 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh     |     |      |     | 6.2  | 0.0  | 4.0  | 12.6 | 10.8 | 0.0  | 11.1 | 0.0  | 10.8 |
| Incr Delay (d2), s/veh       |     |      |     | 1.0  | 0.0  | 0.0  | 0.5  | 0.0  | 0.0  | 0.1  | 0.0  | 0.0  |
| Initial Q Delay(d3),s/veh    |     |      |     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     |     |      |     | 2.3  | 0.0  | 0.1  | 1.1  | 0.1  | 0.0  | 0.2  | 0.0  | 0.1  |
| Unsig. Movement Delay, s/veh |     |      |     |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         |     |      |     | 7.2  | 0.0  | 4.0  | 13.1 | 10.8 | 0.0  | 11.2 | 0.0  | 10.8 |
| LnGrp LOS                    |     |      |     | A    | A    | A    | B    | B    |      | B    | A    | B    |
| Approach Vol, veh/h          |     |      |     |      | 726  |      |      | 195  | A    |      | 42   |      |
| Approach Delay, s/veh        |     |      |     |      | 7.0  |      |      | 12.9 |      |      | 11.1 |      |
| Approach LOS                 |     |      |     |      | A    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs         |     | 2    |     |      |      | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |     | 11.8 |     |      |      | 11.8 |      | 22.7 |      |      |      |      |
| Change Period (Y+Rc), s      |     | 4.5  |     |      |      | 4.5  |      | 4.5  |      |      |      |      |
| Max Green Setting (Gmax), s  |     | 24.5 |     |      |      | 24.5 |      | 56.5 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |     | 6.5  |     |      |      | 2.8  |      | 11.8 |      |      |      |      |
| Green Ext Time (p_c), s      |     | 0.5  |     |      |      | 0.1  |      | 6.3  |      |      |      |      |

Intersection Summary

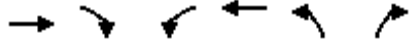
|                    |     |
|--------------------|-----|
| HCM 6th Ctrl Delay | 8.4 |
| HCM 6th LOS        | A   |

Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.



HCM 6th Signalized Intersection Summary  
2: 77th Avenue SE & N Mercer Way



| Movement                     | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------------|------|------|------|------|------|------|
| Lane Configurations          | ↔    |      | ↔    | ↑    | ↔    | ↔    |
| Traffic Volume (veh/h)       | 170  | 10   | 120  | 550  | 105  | 70   |
| Future Volume (veh/h)        | 170  | 10   | 120  | 550  | 105  | 70   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        | No   |      |      | No   | No   |      |
| Adj Sat Flow, veh/h/ln       | 1761 | 1761 | 1834 | 1834 | 1804 | 1804 |
| Adj Flow Rate, veh/h         | 179  | 11   | 126  | 579  | 111  | 74   |
| Peak Hour Factor             | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, %         | 9    | 9    | 7    | 7    | 9    | 9    |
| Cap, veh/h                   | 847  | 52   | 828  | 946  | 202  | 180  |
| Arrive On Green              | 0.52 | 0.52 | 0.52 | 0.52 | 0.12 | 0.12 |
| Sat Flow, veh/h              | 1642 | 101  | 1170 | 1834 | 1718 | 1529 |
| Grp Volume(v), veh/h         | 0    | 190  | 126  | 579  | 111  | 74   |
| Grp Sat Flow(s),veh/h/ln     | 0    | 1743 | 1170 | 1834 | 1718 | 1529 |
| Q Serve(g_s), s              | 0.0  | 1.5  | 1.6  | 5.5  | 1.5  | 1.1  |
| Cycle Q Clear(g_c), s        | 0.0  | 1.5  | 3.1  | 5.5  | 1.5  | 1.1  |
| Prop In Lane                 |      | 0.06 | 1.00 |      | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h       | 0    | 899  | 828  | 946  | 202  | 180  |
| V/C Ratio(X)                 | 0.00 | 0.21 | 0.15 | 0.61 | 0.55 | 0.41 |
| Avail Cap(c_a), veh/h        | 0    | 2877 | 2156 | 3028 | 1786 | 1589 |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 0.0  | 3.2  | 4.1  | 4.2  | 10.2 | 10.0 |
| Incr Delay (d2), s/veh       | 0.0  | 0.1  | 0.1  | 0.6  | 2.3  | 1.5  |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 0.0  | 0.2  | 0.2  | 0.7  | 0.5  | 0.3  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 0.0  | 3.3  | 4.1  | 4.9  | 12.5 | 11.5 |
| LnGrp LOS                    | A    | A    | A    | A    | B    | B    |
| Approach Vol, veh/h          | 190  |      |      | 705  | 185  |      |
| Approach Delay, s/veh        | 3.3  |      |      | 4.7  | 12.1 |      |
| Approach LOS                 | A    |      |      | A    | B    |      |
| Timer - Assigned Phs         |      | 2    |      | 4    |      | 8    |
| Phs Duration (G+Y+Rc), s     |      | 7.4  |      | 17.2 |      | 17.2 |
| Change Period (Y+Rc), s      |      | 4.5  |      | 4.5  |      | 4.5  |
| Max Green Setting (Gmax), s  |      | 25.5 |      | 40.5 |      | 40.5 |
| Max Q Clear Time (g_c+I1), s |      | 3.5  |      | 3.5  |      | 7.5  |
| Green Ext Time (p_c), s      |      | 0.5  |      | 1.2  |      | 5.2  |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      | 5.8  |      |      |      |
| HCM 6th LOS                  |      |      | A    |      |      |      |



| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 4.6  |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      |      |      |      |      |      |
| Traffic Vol, veh/h       | 50   | 170  | 0    | 150  | 140  | 0    |
| Future Vol, veh/h        | 50   | 170  | 0    | 150  | 140  | 0    |
| Conflicting Peds, #/hr   | 0    | 1    | 1    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | 0    | 150  | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 84   | 84   | 84   | 84   | 84   | 84   |
| Heavy Vehicles, %        | 7    | 7    | 6    | 6    | 7    | 7    |
| Mvmt Flow                | 60   | 202  | 0    | 179  | 167  | 0    |

| Major/Minor          | Minor2 | Major1 | Major2 |   |   |   |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 346    | 168    | -      | 0 | - | 0 |
| Stage 1              | 167    | -      | -      | - | - | - |
| Stage 2              | 179    | -      | -      | - | - | - |
| Critical Hdwy        | 6.47   | 6.27   | -      | - | - | - |
| Critical Hdwy Stg 1  | 5.47   | -      | -      | - | - | - |
| Critical Hdwy Stg 2  | 5.47   | -      | -      | - | - | - |
| Follow-up Hdwy       | 3.563  | 3.363  | -      | - | - | - |
| Pot Cap-1 Maneuver   | 641    | 863    | 0      | - | - | 0 |
| Stage 1              | 851    | -      | 0      | - | - | 0 |
| Stage 2              | 840    | -      | 0      | - | - | 0 |
| Platoon blocked, %   |        |        |        | - | - |   |
| Mov Cap-1 Maneuver   | 641    | 862    | -      | - | - | - |
| Mov Cap-2 Maneuver   | 678    | -      | -      | - | - | - |
| Stage 1              | 851    | -      | -      | - | - | - |
| Stage 2              | 840    | -      | -      | - | - | - |

| Approach             | EB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 10.6 | 0  | 0  |
| HCM LOS              | B    |    |    |

| Minor Lane/Major Mvmt | NBT | EBLn1 | EBLn2 | SBT |
|-----------------------|-----|-------|-------|-----|
| Capacity (veh/h)      | -   | 678   | 862   | -   |
| HCM Lane V/C Ratio    | -   | 0.088 | 0.235 | -   |
| HCM Control Delay (s) | -   | 10.8  | 10.5  | -   |
| HCM Lane LOS          | -   | B     | B     | -   |
| HCM 95th %tile Q(veh) | -   | 0.3   | 0.9   | -   |



HCM 6th Signalized Intersection Summary  
4: 77th Avenue SE & SE 27th St



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 15   | 250  | 90   | 60   | 230  | 45   | 100  | 90   | 45   | 95   | 145  | 65   |
| Future Volume (veh/h)        | 15   | 250  | 90   | 60   | 230  | 45   | 100  | 90   | 45   | 95   | 145  | 65   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 0.99 |      | 0.95 | 0.99 |      | 0.97 | 0.97 |      | 0.94 | 0.96 |      | 0.94 |
| 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       | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1841 | 1841 | 1841 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h         | 16   | 263  | 95   | 63   | 242  | 47   | 105  | 95   | 47   | 100  | 153  | 68   |
| 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, %         | 2    | 2    | 2    | 2    | 2    | 2    | 4    | 4    | 4    | 5    | 5    | 5    |
| Cap, veh/h                   | 392  | 428  | 155  | 335  | 501  | 97   | 431  | 279  | 138  | 488  | 284  | 126  |
| Arrive On Green              | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.07 | 0.25 | 0.25 | 0.06 | 0.24 | 0.24 |
| Sat Flow, veh/h              | 1075 | 1293 | 467  | 1012 | 1514 | 294  | 1753 | 1137 | 562  | 1739 | 1173 | 521  |
| Grp Volume(v), veh/h         | 16   | 0    | 358  | 63   | 0    | 289  | 105  | 0    | 142  | 100  | 0    | 221  |
| Grp Sat Flow(s),veh/h/ln     | 1075 | 0    | 1760 | 1012 | 0    | 1808 | 1753 | 0    | 1699 | 1739 | 0    | 1694 |
| Q Serve(g_s), s              | 0.5  | 0.0  | 7.1  | 2.3  | 0.0  | 5.3  | 1.8  | 0.0  | 2.9  | 1.8  | 0.0  | 4.7  |
| Cycle Q Clear(g_c), s        | 5.8  | 0.0  | 7.1  | 9.4  | 0.0  | 5.3  | 1.8  | 0.0  | 2.9  | 1.8  | 0.0  | 4.7  |
| Prop In Lane                 | 1.00 |      | 0.27 | 1.00 |      | 0.16 | 1.00 |      | 0.33 | 1.00 |      | 0.31 |
| Lane Grp Cap(c), veh/h       | 392  | 0    | 582  | 335  | 0    | 599  | 431  | 0    | 416  | 488  | 0    | 410  |
| V/C Ratio(X)                 | 0.04 | 0.00 | 0.61 | 0.19 | 0.00 | 0.48 | 0.24 | 0.00 | 0.34 | 0.20 | 0.00 | 0.54 |
| Avail Cap(c_a), veh/h        | 890  | 0    | 1397 | 804  | 0    | 1436 | 610  | 0    | 818  | 672  | 0    | 815  |
| 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     | 13.4 | 0.0  | 11.7 | 15.6 | 0.0  | 11.1 | 10.9 | 0.0  | 12.9 | 10.7 | 0.0  | 13.7 |
| Incr Delay (d2), s/veh       | 0.0  | 0.0  | 1.1  | 0.3  | 0.0  | 0.6  | 0.3  | 0.0  | 0.5  | 0.2  | 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     | 0.1  | 0.0  | 2.4  | 0.5  | 0.0  | 1.8  | 0.6  | 0.0  | 1.0  | 0.6  | 0.0  | 1.7  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 13.4 | 0.0  | 12.7 | 15.9 | 0.0  | 11.7 | 11.2 | 0.0  | 13.4 | 10.9 | 0.0  | 14.8 |
| LnGrp LOS                    | B    | A    | B    | B    | A    | B    | B    | A    | B    | B    | A    | B    |
| Approach Vol, veh/h          |      | 374  |      |      | 352  |      |      | 247  |      |      | 321  |      |
| Approach Delay, s/veh        |      | 12.8 |      |      | 12.4 |      |      | 12.5 |      |      | 13.6 |      |
| Approach LOS                 |      | B    |      |      | B    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs         |      | 2    | 3    | 4    |      | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |      | 18.8 | 7.7  | 15.1 |      | 18.8 | 7.6  | 15.2 |      |      |      |      |
| Change Period (Y+Rc), s      |      | 5.0  | 5.0  | 5.0  |      | 5.0  | 5.0  | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  |      | 33.0 | 7.0  | 20.0 |      | 33.0 | 7.0  | 20.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |      | 9.1  | 3.8  | 6.7  |      | 11.4 | 3.8  | 4.9  |      |      |      |      |
| Green Ext Time (p_c), s      |      | 2.5  | 0.1  | 1.1  |      | 2.1  | 0.1  | 0.6  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      |      | 12.8 |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |      |      |      | B    |      |      |      |      |      |      |      |      |



HCM 6th Signalized Intersection Summary  
 5: Island Crest Way/Island Crest & SE 27th St/I-90 On-ramps



| Movement   | EBL  | EBT  | EBR  | WBL  | WBT | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--|------|------|------|------|-----|------|------|------|------|------|------|------|
| Lane Configurations  |      |      |      |      |     |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)   | 15   | 370  | 40   | 0    | 0   | 0    | 140  | 250  | 415  | 65   | 205  | 185  |
| Future Volume (veh/h)  | 15   | 370  | 40   | 0    | 0   | 0    | 140  | 250  | 415  | 65   | 205  | 185  |
| Initial Q (Qb), veh  | 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 |
| Parking Bus, Adj   | 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   |      |      |
| Adj Sat Flow, veh/h/ln   | 1879 | 1879 | 1879 |      |     |      | 1949 | 1949 | 1949 | 1790 | 1790 | 1790 |
| Adj Flow Rate, veh/h   | 15   | 378  | 41   |      |     |      | 143  | 255  | 0    | 66   | 209  | 189  |
| Peak Hour Factor   | 0.98 | 0.98 | 0.98 |      |     |      | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, %   | 4    | 4    | 4    |      |     |      | 2    | 2    | 2    | 7    | 7    | 7    |
| Cap, veh/h   | 581  | 540  | 59   |      |     |      | 455  | 494  |      | 408  | 368  | 311  |
| Arrive On Green  | 0.32 | 0.32 | 0.32 |      |     |      | 0.09 | 0.25 | 0.00 | 0.04 | 0.21 | 0.21 |
| Sat Flow, veh/h  | 1790 | 1665 | 181  |      |     |      | 1856 | 1949 | 1651 | 1705 | 1790 | 1517 |
| Grp Volume(v), veh/h   | 15   | 0    | 419  |      |     |      | 143  | 255  | 0    | 66   | 209  | 189  |
| Grp Sat Flow(s),veh/h/ln   | 1790 | 0    | 1846 |      |     |      | 1856 | 1949 | 1651 | 1705 | 1790 | 1517 |
| Q Serve(g_s), s  | 0.2  | 0.0  | 7.7  |      |     |      | 2.3  | 4.4  | 0.0  | 1.1  | 4.1  | 4.4  |
| Cycle Q Clear(g_c), s  | 0.2  | 0.0  | 7.7  |      |     |      | 2.3  | 4.4  | 0.0  | 1.1  | 4.1  | 4.4  |
| Prop In Lane   | 1.00 |      | 0.10 |      |     |      | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h   | 581  | 0    | 599  |      |     |      | 455  | 494  |      | 408  | 368  | 311  |
| V/C Ratio(X)   | 0.03 | 0.00 | 0.70 |      |     |      | 0.31 | 0.52 |      | 0.16 | 0.57 | 0.61 |
| Avail Cap(c_a), veh/h  | 1583 | 0    | 1632 |      |     |      | 1261 | 2024 |      | 1231 | 1859 | 1576 |
| HCM Platoon Ratio  | 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 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh   | 9.0  | 0.0  | 11.5 |      |     |      | 10.7 | 12.5 | 0.0  | 10.3 | 13.9 | 14.0 |
| Incr Delay (d2), s/veh   | 0.0  | 0.0  | 1.5  |      |     |      | 0.1  | 0.6  | 0.0  | 0.1  | 1.0  | 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  |
| %ile BackOfQ(50%),veh/ln   | 0.1  | 0.0  | 2.8  |      |     |      | 0.7  | 1.5  | 0.0  | 0.3  | 1.5  | 1.4  |
| Unsig. Movement Delay, s/veh   |      |      |      |      |     |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh   | 9.0  | 0.0  | 13.0 |      |     |      | 10.9 | 13.1 | 0.0  | 10.4 | 14.9 | 15.5 |
| LnGrp LOS  | A    | A    | B    |      |     |      | B    | B    |      | B    | B    | B    |
| Approach Vol, veh/h  |      | 434  |      |      |     |      |      | 398  | A    |      | 464  |      |
| Approach Delay, s/veh  |      | 12.8 |      |      |     |      |      | 12.3 |      |      | 14.5 |      |
| Approach LOS   |      | B    |      |      |     |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs   |      |      | 3    | 4    |     | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s   |      |      | 6.2  | 14.5 |     | 18.2 | 8.1  | 12.6 |      |      |      |      |
| Change Period (Y+Rc), s  |      |      | 4.6  | 4.6  |     | 5.6  | 4.6  | 4.6  |      |      |      |      |
| Max Green Setting (Gmax), s  |      |      | 20.4 | 40.4 |     | 34.4 | 20.4 | 40.4 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s   |      |      | 3.1  | 6.4  |     | 9.7  | 4.3  | 6.4  |      |      |      |      |
| Green Ext Time (p_c), s  |      |      | 0.1  | 1.2  |     | 2.9  | 0.2  | 1.6  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |     |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay   |      |      | 13.3 |      |     |      |      |      |      |      |      |      |
| HCM 6th LOS  |      |      | B    |      |     |      |      |      |      |      |      |      |
| <b>Notes</b>   |      |      |      |      |     |      |      |      |      |      |      |      |
| Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay. |      |      |      |      |     |      |      |      |      |      |      |      |



**Intersection**

|                           |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 8.5 |
| Intersection LOS          | A   |

| Movement            | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
|---------------------|------|------|------|------|------|------|
| Lane Configurations |      |      |      |      |      |      |
| Traffic Vol, veh/h  | 95   | 60   | 65   | 50   | 45   | 50   |
| Future Vol, veh/h   | 95   | 60   | 65   | 50   | 45   | 50   |
| Peak Hour Factor    | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| Heavy Vehicles, %   | 1    | 1    | 8    | 8    | 3    | 3    |
| Mvmt Flow           | 114  | 72   | 78   | 60   | 54   | 60   |
| Number of Lanes     | 1    | 1    | 1    | 0    | 0    | 1    |

| Approach                   | WB  | NB  | SB  |
|----------------------------|-----|-----|-----|
| Opposing Approach          |     | SB  | NB  |
| Opposing Lanes             | 0   | 1   | 1   |
| Conflicting Approach Left  | NB  |     | WB  |
| Conflicting Lanes Left     | 1   | 0   | 2   |
| Conflicting Approach Right | SB  | WB  |     |
| Conflicting Lanes Right    | 1   | 2   | 0   |
| HCM Control Delay          | 8.7 | 8.3 | 8.5 |
| HCM LOS                    | A   | A   | A   |

| Lane                   | NBLn1 | WBLn1 | WBLn2 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 0%    | 100%  | 0%    | 47%   |
| Vol Thru, %            | 57%   | 0%    | 0%    | 53%   |
| Vol Right, %           | 43%   | 0%    | 100%  | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 115   | 95    | 60    | 95    |
| LT Vol                 | 0     | 95    | 0     | 45    |
| Through Vol            | 65    | 0     | 0     | 50    |
| RT Vol                 | 50    | 0     | 60    | 0     |
| Lane Flow Rate         | 139   | 114   | 72    | 114   |
| Geometry Grp           | 2     | 7     | 7     | 2     |
| Degree of Util (X)     | 0.169 | 0.178 | 0.088 | 0.149 |
| Departure Headway (Hd) | 4.382 | 5.598 | 4.393 | 4.672 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 820   | 642   | 815   | 769   |
| Service Time           | 2.403 | 3.326 | 2.12  | 2.694 |
| HCM Lane V/C Ratio     | 0.17  | 0.178 | 0.088 | 0.148 |
| HCM Control Delay      | 8.3   | 9.5   | 7.5   | 8.5   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.6   | 0.6   | 0.3   | 0.5   |



| Intersection              |      |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------|------|--|--|--|--|--|--|--|--|--|--|--|
| Intersection Delay, s/veh | 10.4 |  |  |  |  |  |  |  |  |  |  |  |
| Intersection LOS          | B    |  |  |  |  |  |  |  |  |  |  |  |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Vol, veh/h  | 35   | 110  | 10   | 75   | 140  | 90   | 15   | 70   | 45   | 60   | 60   | 50   |
| Future Vol, veh/h   | 35   | 110  | 10   | 75   | 140  | 90   | 15   | 70   | 45   | 60   | 60   | 50   |
| Peak Hour Factor    | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, %   | 1    | 1    | 1    | 2    | 2    | 2    | 1    | 1    | 1    | 1    | 1    | 1    |
| Mvmt Flow           | 37   | 117  | 11   | 80   | 149  | 96   | 16   | 74   | 48   | 64   | 64   | 53   |
| Number of Lanes     | 1    | 1    | 0    | 0    | 1    | 1    | 1    | 1    | 0    | 1    | 1    | 0    |

| Approach                   | EB | WB | NB | SB  |
|----------------------------|----|----|----|-----|
| Opposing Approach          | WB | EB | SB | NB  |
| Opposing Lanes             | 2  | 2  | 2  | 2   |
| Conflicting Approach Left  | SB | NB | EB | WB  |
| Conflicting Lanes Left     | 2  | 2  | 2  | 2   |
| Conflicting Approach Right | NB | SB | WB | EB  |
| Conflicting Lanes Right    | 2  | 2  | 2  | 2   |
| HCM Control Delay          | 10 | 11 | 10 | 9.9 |
| HCM LOS                    | A  | B  | A  | A   |

| Lane                   | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, %            | 100%  | 0%    | 100%  | 0%    | 35%   | 0%    | 100%  | 0%    |
| Vol Thru, %            | 0%    | 61%   | 0%    | 92%   | 65%   | 0%    | 0%    | 55%   |
| Vol Right, %           | 0%    | 39%   | 0%    | 8%    | 0%    | 100%  | 0%    | 45%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 15    | 115   | 35    | 120   | 215   | 90    | 60    | 110   |
| LT Vol                 | 15    | 0     | 35    | 0     | 75    | 0     | 60    | 0     |
| Through Vol            | 0     | 70    | 0     | 110   | 140   | 0     | 0     | 60    |
| RT Vol                 | 0     | 45    | 0     | 10    | 0     | 90    | 0     | 50    |
| Lane Flow Rate         | 16    | 122   | 37    | 128   | 229   | 96    | 64    | 117   |
| Geometry Grp           | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     |
| Degree of Util (X)     | 0.029 | 0.199 | 0.066 | 0.207 | 0.374 | 0.133 | 0.117 | 0.187 |
| Departure Headway (Hd) | 6.65  | 5.866 | 6.397 | 5.832 | 5.882 | 4.999 | 6.579 | 5.751 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 539   | 612   | 561   | 617   | 613   | 718   | 546   | 625   |
| Service Time           | 4.384 | 3.6   | 4.127 | 3.562 | 3.607 | 2.724 | 4.31  | 3.481 |
| HCM Lane V/C Ratio     | 0.03  | 0.199 | 0.066 | 0.207 | 0.374 | 0.134 | 0.117 | 0.187 |
| HCM Control Delay      | 9.6   | 10.1  | 9.6   | 10.1  | 12.1  | 8.5   | 10.2  | 9.8   |
| HCM Lane LOS           | A     | B     | A     | B     | B     | A     | B     | A     |
| HCM 95th-tile Q        | 0.1   | 0.7   | 0.2   | 0.8   | 1.7   | 0.5   | 0.4   | 0.7   |



HCM 6th Signalized Intersection Summary  
8: Island Crest Way & SE 28th St



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      | ↕    | ↗    |      | ↕    |      | ↗    | ↕    |      | ↗    | ↕    |      |
| Traffic Volume (veh/h)       | 90   | 20   | 80   | 5    | 20   | 50   | 245  | 685  | 5    | 15   | 150  | 80   |
| Future Volume (veh/h)        | 90   | 20   | 80   | 5    | 20   | 50   | 245  | 685  | 5    | 15   | 150  | 80   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 0.97 | 1.00 |      | 0.96 | 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       | 1803 | 1803 | 1803 | 1967 | 1967 | 1967 | 1964 | 1964 | 1964 | 1761 | 1761 | 1761 |
| Adj Flow Rate, veh/h         | 99   | 22   | 88   | 5    | 22   | 55   | 269  | 753  | 5    | 16   | 165  | 88   |
| Peak Hour Factor             | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, %         | 3    | 3    | 3    | 6    | 6    | 6    | 1    | 1    | 1    | 9    | 9    | 9    |
| Cap, veh/h                   | 192  | 43   | 201  | 9    | 39   | 97   | 530  | 1341 | 9    | 310  | 230  | 123  |
| Arrive On Green              | 0.14 | 0.14 | 0.14 | 0.08 | 0.08 | 0.08 | 0.15 | 0.35 | 0.35 | 0.01 | 0.21 | 0.21 |
| Sat Flow, veh/h              | 1417 | 315  | 1488 | 104  | 457  | 1142 | 1870 | 3799 | 25   | 1677 | 1081 | 576  |
| Grp Volume(v), veh/h         | 121  | 0    | 88   | 82   | 0    | 0    | 269  | 370  | 388  | 16   | 0    | 253  |
| Grp Sat Flow(s),veh/h/ln     | 1732 | 0    | 1488 | 1702 | 0    | 0    | 1870 | 1865 | 1959 | 1677 | 0    | 1657 |
| Q Serve(g_s), s              | 2.9  | 0.0  | 2.4  | 2.1  | 0.0  | 0.0  | 4.8  | 7.1  | 7.1  | 0.3  | 0.0  | 6.3  |
| Cycle Q Clear(g_c), s        | 2.9  | 0.0  | 2.4  | 2.1  | 0.0  | 0.0  | 4.8  | 7.1  | 7.1  | 0.3  | 0.0  | 6.3  |
| Prop In Lane                 | 0.82 |      | 1.00 | 0.06 |      | 0.67 | 1.00 |      | 0.01 | 1.00 |      | 0.35 |
| Lane Grp Cap(c), veh/h       | 234  | 0    | 201  | 145  | 0    | 0    | 530  | 658  | 692  | 310  | 0    | 353  |
| V/C Ratio(X)                 | 0.52 | 0.00 | 0.44 | 0.57 | 0.00 | 0.00 | 0.51 | 0.56 | 0.56 | 0.05 | 0.00 | 0.72 |
| Avail Cap(c_a), veh/h        | 1184 | 0    | 1018 | 973  | 0    | 0    | 896  | 2091 | 2196 | 873  | 0    | 1858 |
| 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 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh     | 17.9 | 0.0  | 17.7 | 19.6 | 0.0  | 0.0  | 11.1 | 11.6 | 11.6 | 9.7  | 0.0  | 16.3 |
| Incr Delay (d2), s/veh       | 1.3  | 0.0  | 1.1  | 2.6  | 0.0  | 0.0  | 0.3  | 0.8  | 0.7  | 0.0  | 0.0  | 2.7  |
| 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     | 1.1  | 0.0  | 0.8  | 0.9  | 0.0  | 0.0  | 1.5  | 2.4  | 2.5  | 0.1  | 0.0  | 2.2  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 19.2 | 0.0  | 18.8 | 22.2 | 0.0  | 0.0  | 11.4 | 12.4 | 12.4 | 9.7  | 0.0  | 19.0 |
| LnGrp LOS                    | B    | A    | B    | C    | A    | A    | B    | B    | B    | A    | A    | B    |
| Approach Vol, veh/h          |      | 209  |      |      | 82   |      |      | 1027 |      |      | 269  |      |
| Approach Delay, s/veh        |      | 19.1 |      |      | 22.2 |      |      | 12.1 |      |      | 18.5 |      |
| Approach LOS                 |      | B    |      |      | C    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs         |      | 2    | 3    | 4    |      | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |      | 8.3  | 5.0  | 20.7 |      | 10.5 | 11.3 | 14.5 |      |      |      |      |
| Change Period (Y+Rc), s      |      | 4.5  | 4.5  | 5.0  |      | 4.5  | 4.5  | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  |      | 25.5 | 15.5 | 50.0 |      | 30.5 | 15.5 | 50.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |      | 4.1  | 2.3  | 9.1  |      | 4.9  | 6.8  | 8.3  |      |      |      |      |
| Green Ext Time (p_c), s      |      | 0.3  | 0.0  | 5.2  |      | 0.8  | 0.3  | 1.6  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      | 14.6 |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |      |      | B    |      |      |      |      |      |      |      |      |      |



| Intersection              |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 8.7 |
| Intersection LOS          | A   |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      | ↕    | ↕    |      |
| Traffic Vol, veh/h  | 25   | 30   | 10   | 5    | 25   | 30   | 20   | 110  | 5    | 45   | 80   | 25   |
| Future Vol, veh/h   | 25   | 30   | 10   | 5    | 25   | 30   | 20   | 110  | 5    | 45   | 80   | 25   |
| Peak Hour Factor    | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| Heavy Vehicles, %   | 4    | 4    | 4    | 4    | 4    | 4    | 0    | 0    | 0    | 5    | 5    | 5    |
| Mvmt Flow           | 32   | 38   | 13   | 6    | 32   | 38   | 25   | 139  | 6    | 57   | 101  | 32   |
| Number of Lanes     | 0    | 1    | 0    | 0    | 1    | 0    | 1    | 1    | 0    | 1    | 1    | 0    |

| Approach                   | EB  | WB  | NB | SB  |
|----------------------------|-----|-----|----|-----|
| Opposing Approach          | WB  | EB  | SB | NB  |
| Opposing Lanes             | 1   | 1   | 2  | 2   |
| Conflicting Approach Left  | SB  | NB  | EB | WB  |
| Conflicting Lanes Left     | 2   | 2   | 1  | 1   |
| Conflicting Approach Right | NB  | SB  | WB | EB  |
| Conflicting Lanes Right    | 2   | 2   | 1  | 1   |
| HCM Control Delay          | 8.6 | 8.2 | 9  | 8.8 |
| HCM LOS                    | A   | A   | A  | A   |

| Lane                   | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|
| Vol Left, %            | 100%  | 0%    | 38%   | 8%    | 100%  | 0%    |
| Vol Thru, %            | 0%    | 96%   | 46%   | 42%   | 0%    | 76%   |
| Vol Right, %           | 0%    | 4%    | 15%   | 50%   | 0%    | 24%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 20    | 115   | 65    | 60    | 45    | 105   |
| LT Vol                 | 20    | 0     | 25    | 5     | 45    | 0     |
| Through Vol            | 0     | 110   | 30    | 25    | 0     | 80    |
| RT Vol                 | 0     | 5     | 10    | 30    | 0     | 25    |
| Lane Flow Rate         | 25    | 146   | 82    | 76    | 57    | 133   |
| Geometry Grp           | 7     | 7     | 2     | 2     | 7     | 7     |
| Degree of Util (X)     | 0.039 | 0.204 | 0.113 | 0.099 | 0.089 | 0.183 |
| Departure Headway (Hd) | 5.57  | 5.036 | 4.927 | 4.671 | 5.633 | 4.962 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 642   | 712   | 727   | 766   | 636   | 722   |
| Service Time           | 3.308 | 2.774 | 2.965 | 2.71  | 3.371 | 2.7   |
| HCM Lane V/C Ratio     | 0.039 | 0.205 | 0.113 | 0.099 | 0.09  | 0.184 |
| HCM Control Delay      | 8.5   | 9.1   | 8.6   | 8.2   | 8.9   | 8.8   |
| HCM Lane LOS           | A     | A     | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.1   | 0.8   | 0.4   | 0.3   | 0.3   | 0.7   |



| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 2.6  |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      |      |      |      |      |      |
| Traffic Vol, veh/h       | 25   | 45   | 20   | 115  | 100  | 30   |
| Future Vol, veh/h        | 25   | 45   | 20   | 115  | 100  | 30   |
| Conflicting Peds, #/hr   | 6    | 6    | 6    | 0    | 0    | 6    |
| 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         | 75   | 75   | 75   | 75   | 75   | 75   |
| Heavy Vehicles, %        | 2    | 2    | 7    | 7    | 4    | 4    |
| Mvmt Flow                | 33   | 60   | 27   | 153  | 133  | 40   |

| Major/Minor          | Minor2 | Major1 |       | Major2 |   |
|----------------------|--------|--------|-------|--------|---|
| Conflicting Flow All | 372    | 165    | 179   | 0      | 0 |
| Stage 1              | 159    | -      | -     | -      | - |
| Stage 2              | 213    | -      | -     | -      | - |
| 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   | 629    | 879    | 1367  | -      | - |
| Stage 1              | 870    | -      | -     | -      | - |
| Stage 2              | 823    | -      | -     | -      | - |
| Platoon blocked, %   |        |        |       | -      | - |
| Mov Cap-1 Maneuver   | 609    | 870    | 1360  | -      | - |
| Mov Cap-2 Maneuver   | 609    | -      | -     | -      | - |
| Stage 1              | 847    | -      | -     | -      | - |
| Stage 2              | 819    | -      | -     | -      | - |

| Approach             | EB   | NB  | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 10.4 | 1.1 | 0  |
| HCM LOS              | B    |     |    |

| Minor Lane/Major Mvmt | NBL  | NBT | EBLn1 | SBT | SBR |
|-----------------------|------|-----|-------|-----|-----|
| Capacity (veh/h)      | 1360 | -   | 755   | -   | -   |
| HCM Lane V/C Ratio    | 0.02 | -   | 0.124 | -   | -   |
| HCM Control Delay (s) | 7.7  | 0   | 10.4  | -   | -   |
| HCM Lane LOS          | A    | A   | B     | -   | -   |
| HCM 95th %tile Q(veh) | 0.1  | -   | 0.4   | -   | -   |



HCM 6th Signalized Intersection Summary  
11: Island Crest Way & SE 40th Street



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 20   | 160  | 35   | 185  | 165  | 270  | 90   | 695  | 140  | 165  | 320  | 15   |
| Future Volume (veh/h)        | 20   | 160  | 35   | 185  | 165  | 270  | 90   | 695  | 140  | 165  | 320  | 15   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 0.98 | 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 |
| Work Zone On Approach        |      | No   |      |      | No   |      |      | No   |      |      | No   |      |
| Adj Sat Flow, veh/h/ln       | 1841 | 1841 | 1841 | 1826 | 1826 | 1826 | 1870 | 1870 | 1870 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h         | 22   | 178  | 39   | 194  | 199  | 300  | 100  | 772  | 156  | 183  | 356  | 17   |
| Peak Hour Factor             | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, %         | 4    | 4    | 4    | 5    | 5    | 5    | 2    | 2    | 2    | 5    | 5    | 5    |
| Cap, veh/h                   | 217  | 228  | 297  | 329  | 345  | 472  | 122  | 1253 | 253  | 206  | 1603 | 76   |
| Arrive On Green              | 0.12 | 0.12 | 0.12 | 0.06 | 0.06 | 0.06 | 0.07 | 0.43 | 0.43 | 0.12 | 0.48 | 0.48 |
| Sat Flow, veh/h              | 1753 | 1841 | 1530 | 1739 | 1826 | 1528 | 1781 | 2944 | 595  | 1739 | 3371 | 160  |
| Grp Volume(v), veh/h         | 22   | 178  | 39   | 194  | 199  | 300  | 100  | 466  | 462  | 183  | 183  | 190  |
| Grp Sat Flow(s),veh/h/ln     | 1753 | 1841 | 1530 | 1739 | 1826 | 1528 | 1781 | 1777 | 1762 | 1739 | 1735 | 1797 |
| Q Serve(g_s), s              | 1.6  | 13.1 | 3.0  | 15.2 | 14.8 | 23.5 | 7.8  | 28.6 | 28.6 | 14.5 | 8.6  | 8.7  |
| Cycle Q Clear(g_c), s        | 1.6  | 13.1 | 3.0  | 15.2 | 14.8 | 23.5 | 7.8  | 28.6 | 28.6 | 14.5 | 8.6  | 8.7  |
| Prop In Lane                 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.34 | 1.00 |      | 0.09 |
| Lane Grp Cap(c), veh/h       | 217  | 228  | 297  | 329  | 345  | 472  | 122  | 756  | 750  | 206  | 825  | 854  |
| V/C Ratio(X)                 | 0.10 | 0.78 | 0.13 | 0.59 | 0.58 | 0.64 | 0.82 | 0.62 | 0.62 | 0.89 | 0.22 | 0.22 |
| Avail Cap(c_a), veh/h        | 351  | 368  | 413  | 373  | 391  | 511  | 191  | 756  | 750  | 248  | 825  | 854  |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00 | 1.00 | 1.00 | 0.92 | 0.92 | 0.92 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 54.4 | 59.5 | 46.8 | 60.4 | 60.2 | 48.2 | 64.3 | 31.3 | 31.3 | 60.8 | 21.5 | 21.5 |
| Incr Delay (d2), s/veh       | 0.1  | 2.2  | 0.1  | 0.9  | 0.6  | 1.5  | 7.6  | 3.7  | 3.8  | 24.2 | 0.6  | 0.6  |
| 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     | 0.7  | 6.3  | 1.1  | 7.2  | 7.4  | 9.9  | 3.8  | 12.9 | 12.8 | 7.8  | 3.7  | 3.8  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 54.5 | 61.7 | 46.9 | 61.2 | 60.8 | 49.7 | 71.9 | 35.0 | 35.1 | 85.0 | 22.1 | 22.1 |
| LnGrp LOS                    | D    | E    | D    | E    | E    | D    | E    | D    | D    | F    | C    | C    |
| Approach Vol, veh/h          |      | 239  |      |      | 693  |      |      | 1028 |      |      |      | 556  |
| Approach Delay, s/veh        |      | 58.6 |      |      | 56.1 |      |      | 38.6 |      |      |      | 42.8 |
| Approach LOS                 |      | E    |      |      | E    |      |      | D    |      |      |      | D    |
| Timer - Assigned Phs         | 1    | 2    |      | 4    | 5    | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 21.6 | 64.6 |      | 31.5 | 14.6 | 71.6 |      | 22.4 |      |      |      |      |
| Change Period (Y+Rc), s      | 5.0  | 5.0  |      | 5.0  | 5.0  | 5.0  |      | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  | 20.0 | 42.0 |      | 30.0 | 15.0 | 47.0 |      | 28.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 16.5 | 30.6 |      | 25.5 | 9.8  | 10.7 |      | 15.1 |      |      |      |      |
| Green Ext Time (p_c), s      | 0.1  | 3.1  |      | 0.8  | 0.0  | 1.4  |      | 0.6  |      |      |      |      |

| Intersection Summary |  |  |  |      |  |  |  |  |  |  |  |  |
|----------------------|--|--|--|------|--|--|--|--|--|--|--|--|
| HCM 6th Ctrl Delay   |  |  |  | 46.3 |  |  |  |  |  |  |  |  |
| HCM 6th LOS          |  |  |  | D    |  |  |  |  |  |  |  |  |

Notes

User approved volume balancing among the lanes for turning movement.



| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 6.3  |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      | ↘    | ↗    |      | ↑    | ↑    |      |
| Traffic Vol, veh/h       | 80   | 280  | 0    | 145  | 145  | 0    |
| Future Vol, veh/h        | 80   | 280  | 0    | 145  | 145  | 0    |
| 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    | 150  | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 89   | 89   | 89   | 89   | 89   | 89   |
| Heavy Vehicles, %        | 5    | 5    | 2    | 2    | 3    | 3    |
| Mvmt Flow                | 90   | 315  | 0    | 163  | 163  | 0    |

| Major/Minor          | Minor2 | Major1 | Major2 |   |   |   |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 326    | 163    | -      | 0 | - | 0 |
| Stage 1              | 163    | -      | -      | - | - | - |
| Stage 2              | 163    | -      | -      | - | - | - |
| Critical Hdwy        | 6.45   | 6.25   | -      | - | - | - |
| Critical Hdwy Stg 1  | 5.45   | -      | -      | - | - | - |
| Critical Hdwy Stg 2  | 5.45   | -      | -      | - | - | - |
| Follow-up Hdwy       | 3.545  | 3.345  | -      | - | - | - |
| Pot Cap-1 Maneuver   | 662    | 874    | 0      | - | - | 0 |
| Stage 1              | 859    | -      | 0      | - | - | 0 |
| Stage 2              | 859    | -      | 0      | - | - | 0 |
| Platoon blocked, %   |        |        |        | - | - |   |
| Mov Cap-1 Maneuver   | 662    | 874    | -      | - | - | - |
| Mov Cap-2 Maneuver   | 694    | -      | -      | - | - | - |
| Stage 1              | 859    | -      | -      | - | - | - |
| Stage 2              | 859    | -      | -      | - | - | - |

| Approach             | EB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 11.3 | 0  | 0  |
| HCM LOS              | B    |    |    |

| Minor Lane/Major Mvmt | NBT | EBLn1 | EBLn2 | SBT |
|-----------------------|-----|-------|-------|-----|
| Capacity (veh/h)      | -   | 694   | 874   | -   |
| HCM Lane V/C Ratio    | -   | 0.13  | 0.36  | -   |
| HCM Control Delay (s) | -   | 11    | 11.4  | -   |
| HCM Lane LOS          | -   | B     | B     | -   |
| HCM 95th %tile Q(veh) | -   | 0.4   | 1.6   | -   |



HCM 6th Signalized Intersection Summary  
4: 77th Avenue SE & SE 27th St



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 35   | 305  | 130  | 45   | 235  | 55   | 135  | 80   | 75   | 130  | 210  | 65   |
| Future Volume (veh/h)        | 35   | 305  | 130  | 45   | 235  | 55   | 135  | 80   | 75   | 130  | 210  | 65   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 0.98 |      | 0.96 | 0.99 |      | 0.96 | 0.98 |      | 0.97 | 0.98 |      | 0.96 |
| 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       | 1900 | 1900 | 1900 | 1900 | 1900 | 1900 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 |
| Adj Flow Rate, veh/h         | 38   | 332  | 141  | 49   | 255  | 60   | 147  | 87   | 82   | 141  | 228  | 71   |
| Peak Hour Factor             | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, %         | 0    | 0    | 0    | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1    | 1    |
| Cap, veh/h                   | 390  | 453  | 192  | 269  | 535  | 126  | 402  | 215  | 203  | 494  | 331  | 103  |
| Arrive On Green              | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.36 | 0.09 | 0.25 | 0.25 | 0.08 | 0.24 | 0.24 |
| Sat Flow, veh/h              | 1059 | 1247 | 529  | 924  | 1472 | 346  | 1795 | 876  | 826  | 1795 | 1365 | 425  |
| Grp Volume(v), veh/h         | 38   | 0    | 473  | 49   | 0    | 315  | 147  | 0    | 169  | 141  | 0    | 299  |
| Grp Sat Flow(s),veh/h/ln     | 1059 | 0    | 1776 | 924  | 0    | 1819 | 1795 | 0    | 1702 | 1795 | 0    | 1790 |
| Q Serve(g_s), s              | 1.4  | 0.0  | 11.3 | 2.4  | 0.0  | 6.5  | 2.9  | 0.0  | 4.1  | 2.8  | 0.0  | 7.4  |
| Cycle Q Clear(g_c), s        | 7.9  | 0.0  | 11.3 | 13.7 | 0.0  | 6.5  | 2.9  | 0.0  | 4.1  | 2.8  | 0.0  | 7.4  |
| Prop In Lane                 | 1.00 |      | 0.30 | 1.00 |      | 0.19 | 1.00 |      | 0.49 | 1.00 |      | 0.24 |
| Lane Grp Cap(c), veh/h       | 390  | 0    | 645  | 269  | 0    | 661  | 402  | 0    | 418  | 494  | 0    | 434  |
| V/C Ratio(X)                 | 0.10 | 0.00 | 0.73 | 0.18 | 0.00 | 0.48 | 0.37 | 0.00 | 0.40 | 0.29 | 0.00 | 0.69 |
| Avail Cap(c_a), veh/h        | 719  | 0    | 1196 | 556  | 0    | 1225 | 500  | 0    | 695  | 598  | 0    | 731  |
| 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     | 15.1 | 0.0  | 13.5 | 19.5 | 0.0  | 12.0 | 12.6 | 0.0  | 15.5 | 12.2 | 0.0  | 16.9 |
| Incr Delay (d2), s/veh       | 0.1  | 0.0  | 1.6  | 0.3  | 0.0  | 0.5  | 0.6  | 0.0  | 0.6  | 0.3  | 0.0  | 2.0  |
| 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     | 0.3  | 0.0  | 4.2  | 0.5  | 0.0  | 2.4  | 1.1  | 0.0  | 1.5  | 1.0  | 0.0  | 3.0  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 15.2 | 0.0  | 15.2 | 19.8 | 0.0  | 12.5 | 13.2 | 0.0  | 16.1 | 12.5 | 0.0  | 18.8 |
| LnGrp LOS                    | B    | A    | B    | B    | A    | B    | B    | A    | B    | B    | A    | B    |
| Approach Vol, veh/h          |      | 511  |      |      | 364  |      |      | 316  |      |      |      | 440  |
| Approach Delay, s/veh        |      | 15.2 |      |      | 13.5 |      |      | 14.7 |      |      |      | 16.8 |
| Approach LOS                 |      | B    |      |      | B    |      |      | B    |      |      |      | B    |
| Timer - Assigned Phs         |      | 2    | 3    | 4    |      | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |      | 22.8 | 9.3  | 16.9 |      | 22.8 | 9.2  | 17.0 |      |      |      |      |
| Change Period (Y+Rc), s      |      | 5.0  | 5.0  | 5.0  |      | 5.0  | 5.0  | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  |      | 33.0 | 7.0  | 20.0 |      | 33.0 | 7.0  | 20.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |      | 13.3 | 4.9  | 9.4  |      | 15.7 | 4.8  | 6.1  |      |      |      |      |
| Green Ext Time (p_c), s      |      | 3.4  | 0.1  | 1.3  |      | 2.1  | 0.1  | 0.8  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      | 15.2 |      |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |      |      | B    |      |      |      |      |      |      |      |      |      |



HCM 6th Signalized Intersection Summary  
 5: Island Crest Way/Island Crest & SE 27th St/I-90 On-ramps



| Movement   | EBL  | EBT  | EBR  | WBL  | WBT | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--|------|------|------|------|-----|------|------|------|------|------|------|------|
| Lane Configurations  |      |      |      |      |     |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)   | 15   | 350  | 40   | 0    | 0   | 0    | 115  | 130  | 380  | 95   | 310  | 195  |
| Future Volume (veh/h)  | 15   | 350  | 40   | 0    | 0   | 0    | 115  | 130  | 380  | 95   | 310  | 195  |
| Initial Q (Qb), veh  | 0    | 0    | 0    |      |     |      | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)  | 1.00 |      | 0.97 |      |     |      | 1.00 |      | 1.00 | 1.00 |      | 0.97 |
| Parking Bus, Adj   | 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   |      |      |
| Adj Sat Flow, veh/h/ln   | 1924 | 1924 | 1924 |      |     |      | 1964 | 1964 | 1964 | 1879 | 1879 | 1879 |
| Adj Flow Rate, veh/h   | 16   | 376  | 43   |      |     |      | 124  | 140  | 0    | 102  | 333  | 210  |
| Peak Hour Factor   | 0.93 | 0.93 | 0.93 |      |     |      | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, %   | 1    | 1    | 1    |      |     |      | 1    | 1    | 1    | 1    | 1    | 1    |
| Cap, veh/h   | 563  | 519  | 59   |      |     |      | 410  | 551  |      | 564  | 505  | 416  |
| Arrive On Green  | 0.31 | 0.31 | 0.31 |      |     |      | 0.07 | 0.28 | 0.00 | 0.06 | 0.27 | 0.27 |
| Sat Flow, veh/h  | 1833 | 1689 | 193  |      |     |      | 1870 | 1964 | 1664 | 1790 | 1879 | 1550 |
| Grp Volume(v), veh/h   | 16   | 0    | 419  |      |     |      | 124  | 140  | 0    | 102  | 333  | 210  |
| Grp Sat Flow(s),veh/h/ln   | 1833 | 0    | 1883 |      |     |      | 1870 | 1964 | 1664 | 1790 | 1879 | 1550 |
| Q Serve(g_s), s  | 0.3  | 0.0  | 8.4  |      |     |      | 2.0  | 2.3  | 0.0  | 1.7  | 6.7  | 4.8  |
| Cycle Q Clear(g_c), s  | 0.3  | 0.0  | 8.4  |      |     |      | 2.0  | 2.3  | 0.0  | 1.7  | 6.7  | 4.8  |
| Prop In Lane   | 1.00 |      | 0.10 |      |     |      | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h   | 563  | 0    | 578  |      |     |      | 410  | 551  |      | 564  | 505  | 416  |
| V/C Ratio(X)   | 0.03 | 0.00 | 0.72 |      |     |      | 0.30 | 0.25 |      | 0.18 | 0.66 | 0.50 |
| Avail Cap(c_a), veh/h  | 1144 | 0    | 1175 |      |     |      | 1084 | 1411 |      | 1230 | 1350 | 1114 |
| HCM Platoon Ratio  | 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 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh   | 10.2 | 0.0  | 13.1 |      |     |      | 10.4 | 11.8 | 0.0  | 9.8  | 13.7 | 13.1 |
| Incr Delay (d2), s/veh   | 0.0  | 0.0  | 1.7  |      |     |      | 0.2  | 0.2  | 0.0  | 0.1  | 1.1  | 0.7  |
| Initial Q Delay(d3),s/veh  | 0.0  | 0.0  | 0.0  |      |     |      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln   | 0.1  | 0.0  | 3.2  |      |     |      | 0.7  | 0.9  | 0.0  | 0.6  | 2.6  | 1.5  |
| Unsig. Movement Delay, s/veh   |      |      |      |      |     |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh   | 10.3 | 0.0  | 14.8 |      |     |      | 10.5 | 12.0 | 0.0  | 9.8  | 14.8 | 13.8 |
| LnGrp LOS  | B    | A    | B    |      |     |      | B    | B    |      | A    | B    | B    |
| Approach Vol, veh/h  |      | 435  |      |      |     |      |      | 264  | A    |      | 645  |      |
| Approach Delay, s/veh  |      | 14.6 |      |      |     |      |      | 11.3 |      |      | 13.7 |      |
| Approach LOS   |      | B    |      |      |     |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs   |      |      | 3    | 4    |     | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s   |      |      | 7.2  | 16.5 |     | 18.6 | 7.7  | 16.0 |      |      |      |      |
| Change Period (Y+Rc), s  |      |      | 4.6  | 4.6  |     | 5.6  | 4.6  | 4.6  |      |      |      |      |
| Max Green Setting (Gmax), s  |      |      | 18.4 | 30.4 |     | 26.4 | 18.4 | 30.4 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s   |      |      | 3.7  | 4.3  |     | 10.4 | 4.0  | 8.7  |      |      |      |      |
| Green Ext Time (p_c), s  |      |      | 0.1  | 0.6  |     | 2.5  | 0.1  | 2.3  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |     |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay   |      |      | 13.5 |      |     |      |      |      |      |      |      |      |
| HCM 6th LOS  |      |      | B    |      |     |      |      |      |      |      |      |      |
| <b>Notes</b>   |      |      |      |      |     |      |      |      |      |      |      |      |
| Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay. |      |      |      |      |     |      |      |      |      |      |      |      |



**Intersection**

|                           |    |
|---------------------------|----|
| Intersection Delay, s/veh | 10 |
| Intersection LOS          | A  |

| Movement            | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
|---------------------|------|------|------|------|------|------|
| Lane Configurations |      |      |      |      |      |      |
| Traffic Vol, veh/h  | 125  | 125  | 140  | 95   | 115  | 95   |
| Future Vol, veh/h   | 125  | 125  | 140  | 95   | 115  | 95   |
| Peak Hour Factor    | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, %   | 1    | 1    | 2    | 2    | 2    | 2    |
| Mvmt Flow           | 134  | 134  | 151  | 102  | 124  | 102  |
| Number of Lanes     | 1    | 1    | 1    | 0    | 0    | 1    |

| Approach                   | WB  | NB | SB   |
|----------------------------|-----|----|------|
| Opposing Approach          |     | SB | NB   |
| Opposing Lanes             | 0   | 1  | 1    |
| Conflicting Approach Left  | NB  |    | WB   |
| Conflicting Lanes Left     | 1   | 0  | 2    |
| Conflicting Approach Right | SB  | WB |      |
| Conflicting Lanes Right    | 1   | 2  | 0    |
| HCM Control Delay          | 9.8 | 10 | 10.4 |
| HCM LOS                    | A   | A  | B    |

| Lane                   | NBLn1 | WBLn1 | WBLn2 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 0%    | 100%  | 0%    | 55%   |
| Vol Thru, %            | 60%   | 0%    | 0%    | 45%   |
| Vol Right, %           | 40%   | 0%    | 100%  | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 235   | 125   | 125   | 210   |
| LT Vol                 | 0     | 125   | 0     | 115   |
| Through Vol            | 140   | 0     | 0     | 95    |
| RT Vol                 | 95    | 0     | 125   | 0     |
| Lane Flow Rate         | 253   | 134   | 134   | 226   |
| Geometry Grp           | 2     | 7     | 7     | 2     |
| Degree of Util (X)     | 0.328 | 0.229 | 0.184 | 0.316 |
| Departure Headway (Hd) | 4.668 | 6.133 | 4.921 | 5.032 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 766   | 581   | 722   | 709   |
| Service Time           | 2.728 | 3.915 | 2.703 | 3.095 |
| HCM Lane V/C Ratio     | 0.33  | 0.231 | 0.186 | 0.319 |
| HCM Control Delay      | 10    | 10.8  | 8.8   | 10.4  |
| HCM Lane LOS           | A     | B     | A     | B     |
| HCM 95th-tile Q        | 1.4   | 0.9   | 0.7   | 1.4   |



**Intersection**

|                           |      |
|---------------------------|------|
| Intersection Delay, s/veh | 14.1 |
| Intersection LOS          | B    |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Vol, veh/h  | 50   | 205  | 30   | 65   | 160  | 80   | 35   | 105  | 100  | 75   | 80   | 95   |
| Future Vol, veh/h   | 50   | 205  | 30   | 65   | 160  | 80   | 35   | 105  | 100  | 75   | 80   | 95   |
| Peak Hour Factor    | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, %   | 0    | 0    | 0    | 1    | 1    | 1    | 3    | 3    | 3    | 3    | 3    | 3    |
| Mvmt Flow           | 54   | 223  | 33   | 71   | 174  | 87   | 38   | 114  | 109  | 82   | 87   | 103  |
| Number of Lanes     | 1    | 1    | 0    | 0    | 1    | 1    | 1    | 1    | 0    | 1    | 1    | 0    |

| Approach                   | EB | WB   | NB | SB   |
|----------------------------|----|------|----|------|
| Opposing Approach          | WB | EB   | SB | NB   |
| Opposing Lanes             | 2  | 2    | 2  | 2    |
| Conflicting Approach Left  | SB | NB   | EB | WB   |
| Conflicting Lanes Left     | 2  | 2    | 2  | 2    |
| Conflicting Approach Right | NB | SB   | WB | EB   |
| Conflicting Lanes Right    | 2  | 2    | 2  | 2    |
| HCM Control Delay          | 15 | 14.5 | 14 | 12.8 |
| HCM LOS                    | B  | B    | B  | B    |

| Lane                   | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, %            | 100%  | 0%    | 100%  | 0%    | 29%   | 0%    | 100%  | 0%    |
| Vol Thru, %            | 0%    | 51%   | 0%    | 87%   | 71%   | 0%    | 0%    | 46%   |
| Vol Right, %           | 0%    | 49%   | 0%    | 13%   | 0%    | 100%  | 0%    | 54%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 35    | 205   | 50    | 235   | 225   | 80    | 75    | 175   |
| LT Vol                 | 35    | 0     | 50    | 0     | 65    | 0     | 75    | 0     |
| Through Vol            | 0     | 105   | 0     | 205   | 160   | 0     | 0     | 80    |
| RT Vol                 | 0     | 100   | 0     | 30    | 0     | 80    | 0     | 95    |
| Lane Flow Rate         | 38    | 223   | 54    | 255   | 245   | 87    | 82    | 190   |
| Geometry Grp           | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     |
| Degree of Util (X)     | 0.081 | 0.422 | 0.112 | 0.483 | 0.478 | 0.149 | 0.173 | 0.357 |
| Departure Headway (Hd) | 7.674 | 6.813 | 7.413 | 6.811 | 7.041 | 6.178 | 7.661 | 6.76  |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 467   | 528   | 484   | 529   | 511   | 580   | 469   | 533   |
| Service Time           | 5.417 | 4.555 | 5.155 | 4.553 | 4.782 | 3.919 | 5.406 | 4.505 |
| HCM Lane V/C Ratio     | 0.081 | 0.422 | 0.112 | 0.482 | 0.479 | 0.15  | 0.175 | 0.356 |
| HCM Control Delay      | 11.1  | 14.5  | 11.1  | 15.8  | 16.1  | 10    | 12    | 13.2  |
| HCM Lane LOS           | B     | B     | B     | C     | C     | A     | B     | B     |
| HCM 95th-tile Q        | 0.3   | 2.1   | 0.4   | 2.6   | 2.6   | 0.5   | 0.6   | 1.6   |



HCM 6th Signalized Intersection Summary  
8: Island Crest Way & SE 28th St



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      | ↕    | ↗    |      | ↕    |      | ↖    | ↕    |      | ↖    | ↗    |      |
| Traffic Volume (veh/h)       | 175  | 30   | 185  | 0    | 30   | 35   | 180  | 400  | 0    | 25   | 245  | 80   |
| Future Volume (veh/h)        | 175  | 30   | 185  | 0    | 30   | 35   | 180  | 400  | 0    | 25   | 245  | 80   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 0.97 | 1.00 |      | 0.96 | 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       | 1847 | 1847 | 1847 | 2027 | 2027 | 2027 | 1964 | 1964 | 1964 | 1864 | 1864 | 1864 |
| Adj Flow Rate, veh/h         | 182  | 31   | 193  | 0    | 31   | 36   | 188  | 417  | 0    | 26   | 255  | 83   |
| Peak Hour Factor             | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, %         | 0    | 0    | 0    | 2    | 2    | 2    | 1    | 1    | 1    | 2    | 2    | 2    |
| Cap, veh/h                   | 310  | 53   | 312  | 0    | 70   | 81   | 421  | 1271 | 0    | 418  | 340  | 111  |
| Arrive On Green              | 0.21 | 0.21 | 0.21 | 0.00 | 0.08 | 0.08 | 0.11 | 0.34 | 0.00 | 0.02 | 0.25 | 0.25 |
| Sat Flow, veh/h              | 1514 | 258  | 1519 | 0    | 834  | 968  | 1870 | 3829 | 0    | 1776 | 1347 | 438  |
| Grp Volume(v), veh/h         | 213  | 0    | 193  | 0    | 0    | 67   | 188  | 417  | 0    | 26   | 0    | 338  |
| Grp Sat Flow(s),veh/h/ln     | 1771 | 0    | 1519 | 0    | 0    | 1802 | 1870 | 1865 | 0    | 1776 | 0    | 1785 |
| Q Serve(g_s), s              | 5.7  | 0.0  | 6.1  | 0.0  | 0.0  | 1.9  | 3.8  | 4.4  | 0.0  | 0.5  | 0.0  | 9.2  |
| Cycle Q Clear(g_c), s        | 5.7  | 0.0  | 6.1  | 0.0  | 0.0  | 1.9  | 3.8  | 4.4  | 0.0  | 0.5  | 0.0  | 9.2  |
| Prop In Lane                 | 0.85 |      | 1.00 | 0.00 |      | 0.54 | 1.00 |      | 0.00 | 1.00 |      | 0.25 |
| Lane Grp Cap(c), veh/h       | 363  | 0    | 312  | 0    | 0    | 151  | 421  | 1271 | 0    | 418  | 0    | 450  |
| V/C Ratio(X)                 | 0.59 | 0.00 | 0.62 | 0.00 | 0.00 | 0.44 | 0.45 | 0.33 | 0.00 | 0.06 | 0.00 | 0.75 |
| Avail Cap(c_a), veh/h        | 1030 | 0    | 883  | 0    | 0    | 876  | 953  | 3201 | 0    | 1080 | 0    | 1531 |
| 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 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh     | 18.8 | 0.0  | 19.0 | 0.0  | 0.0  | 22.9 | 13.0 | 12.8 | 0.0  | 11.1 | 0.0  | 18.1 |
| Incr Delay (d2), s/veh       | 1.1  | 0.0  | 1.5  | 0.0  | 0.0  | 1.5  | 0.3  | 0.1  | 0.0  | 0.0  | 0.0  | 2.5  |
| 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     | 2.3  | 0.0  | 2.0  | 0.0  | 0.0  | 0.8  | 1.3  | 1.5  | 0.0  | 0.2  | 0.0  | 3.6  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 20.0 | 0.0  | 20.5 | 0.0  | 0.0  | 24.4 | 13.2 | 13.0 | 0.0  | 11.2 | 0.0  | 20.6 |
| LnGrp LOS                    | B    | A    | C    | A    | A    | C    | B    | B    | A    | B    | A    | C    |
| Approach Vol, veh/h          |      | 406  |      |      | 67   |      |      | 605  |      |      | 364  |      |
| Approach Delay, s/veh        |      | 20.2 |      |      | 24.4 |      |      | 13.1 |      |      | 20.0 |      |
| Approach LOS                 |      | C    |      |      | C    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs         |      | 2    | 3    | 4    |      | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |      | 8.9  | 5.4  | 22.9 |      | 15.3 | 10.1 | 18.2 |      |      |      |      |
| Change Period (Y+Rc), s      |      | 4.5  | 4.5  | 5.0  |      | 4.5  | 4.5  | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  |      | 25.5 | 20.5 | 45.0 |      | 30.5 | 20.5 | 45.0 |      |      |      |      |
| Max Q Clear Time (g_c+1), s  |      | 3.9  | 2.5  | 6.4  |      | 8.1  | 5.8  | 11.2 |      |      |      |      |
| Green Ext Time (p_c), s      |      | 0.2  | 0.0  | 2.9  |      | 1.6  | 0.2  | 2.2  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      |      |      |      |      |      |      |      |      | 17.3 |      |
| HCM 6th LOS                  |      |      |      |      |      |      |      |      |      |      | B    |      |



**Intersection**

Intersection Delay, s/veh 10.4  
Intersection LOS B

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      | ↕    | ↕    |      |
| Traffic Vol, veh/h  | 45   | 65   | 55   | 5    | 55   | 45   | 70   | 135  | 10   | 105  | 175  | 30   |
| Future Vol, veh/h   | 45   | 65   | 55   | 5    | 55   | 45   | 70   | 135  | 10   | 105  | 175  | 30   |
| Peak Hour Factor    | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, %   | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1    | 1    | 0    | 0    | 0    |
| Mvmt Flow           | 48   | 70   | 59   | 5    | 59   | 48   | 75   | 145  | 11   | 113  | 188  | 32   |
| Number of Lanes     | 0    | 1    | 0    | 0    | 1    | 0    | 1    | 1    | 0    | 1    | 1    | 0    |

| Approach                   | EB   | WB  | NB   | SB   |
|----------------------------|------|-----|------|------|
| Opposing Approach          | WB   | EB  | SB   | NB   |
| Opposing Lanes             | 1    | 1   | 2    | 2    |
| Conflicting Approach Left  | SB   | NB  | EB   | WB   |
| Conflicting Lanes Left     | 2    | 2   | 1    | 1    |
| Conflicting Approach Right | NB   | SB  | WB   | EB   |
| Conflicting Lanes Right    | 2    | 2   | 1    | 1    |
| HCM Control Delay          | 10.4 | 9.6 | 10.2 | 10.8 |
| HCM LOS                    | B    | A   | B    | B    |

| Lane                   | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|
| Vol Left, %            | 100%  | 0%    | 27%   | 5%    | 100%  | 0%    |
| Vol Thru, %            | 0%    | 93%   | 39%   | 52%   | 0%    | 85%   |
| Vol Right, %           | 0%    | 7%    | 33%   | 43%   | 0%    | 15%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 70    | 145   | 165   | 105   | 105   | 205   |
| LT Vol                 | 70    | 0     | 45    | 5     | 105   | 0     |
| Through Vol            | 0     | 135   | 65    | 55    | 0     | 175   |
| RT Vol                 | 0     | 10    | 55    | 45    | 0     | 30    |
| Lane Flow Rate         | 75    | 156   | 177   | 113   | 113   | 220   |
| Geometry Grp           | 7     | 7     | 2     | 2     | 7     | 7     |
| Degree of Util (X)     | 0.131 | 0.248 | 0.266 | 0.171 | 0.193 | 0.339 |
| Departure Headway (Hd) | 6.284 | 5.729 | 5.407 | 5.447 | 6.141 | 5.531 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 571   | 628   | 664   | 658   | 586   | 650   |
| Service Time           | 4.014 | 3.458 | 3.441 | 3.484 | 3.866 | 3.257 |
| HCM Lane V/C Ratio     | 0.131 | 0.248 | 0.267 | 0.172 | 0.193 | 0.338 |
| HCM Control Delay      | 10    | 10.3  | 10.4  | 9.6   | 10.3  | 11.1  |
| HCM Lane LOS           | A     | B     | B     | A     | B     | B     |
| HCM 95th-tile Q        | 0.4   | 1     | 1.1   | 0.6   | 0.7   | 1.5   |



**Intersection**

Int Delay, s/veh 4.7

**Movement** EBL EBR NBL NBT SBT SBR

|                          |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      |      |      |      |      |      |
| Traffic Vol, veh/h       | 65   | 130  | 55   | 210  | 170  | 50   |
| Future Vol, veh/h        | 65   | 130  | 55   | 210  | 170  | 50   |
| Conflicting Peds, #/hr   | 22   | 19   | 19   | 0    | 0    | 22   |
| 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         | 93   | 93   | 93   | 93   | 93   | 93   |
| Heavy Vehicles, %        | 0    | 0    | 1    | 1    | 1    | 1    |
| Mvmt Flow                | 70   | 140  | 59   | 226  | 183  | 54   |

**Major/Minor** Minor2 Major1 Major2

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 598 | 251 | 259   | 0 | - | 0 |
| Stage 1              | 232 | -   | -     | - | - | - |
| Stage 2              | 366 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.11  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.209 | - | - | - |
| Pot Cap-1 Maneuver   | 468 | 793 | 1311  | - | - | - |
| Stage 1              | 811 | -   | -     | - | - | - |
| Stage 2              | 706 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 428 | 766 | 1287  | - | - | - |
| Mov Cap-2 Maneuver   | 428 | -   | -     | - | - | - |
| Stage 1              | 755 | -   | -     | - | - | - |
| Stage 2              | 693 | -   | -     | - | - | - |

**Approach** EB NB SB

HCM Control Delay, s 14.1 1.6 0  
HCM LOS B

**Minor Lane/Major Mvmt** NBL NBT EBLn1 SBT SBR

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1287  | - | 606   | - | - |
| HCM Lane V/C Ratio    | 0.046 | - | 0.346 | - | - |
| HCM Control Delay (s) | 7.9   | 0 | 14.1  | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0.1   | - | 1.5   | - | - |



HCM 6th Signalized Intersection Summary  
11: Island Crest Way & SE 40th Street



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 15   | 185  | 175  | 210  | 190  | 165  | 100  | 370  | 110  | 285  | 650  | 10   |
| Future Volume (veh/h)        | 15   | 185  | 175  | 210  | 190  | 165  | 100  | 370  | 110  | 285  | 650  | 10   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 0.98 | 1.00 |      | 0.97 | 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       | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1900 | 1900 | 1900 |
| Adj Flow Rate, veh/h         | 16   | 193  | 182  | 208  | 213  | 172  | 104  | 385  | 115  | 297  | 677  | 10   |
| Peak Hour Factor             | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, %         | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 0    | 0    | 0    |
| Cap, veh/h                   | 286  | 300  | 388  | 311  | 327  | 575  | 154  | 524  | 155  | 347  | 1086 | 16   |
| Arrive On Green              | 0.16 | 0.16 | 0.16 | 0.17 | 0.17 | 0.17 | 0.09 | 0.19 | 0.19 | 0.19 | 0.30 | 0.30 |
| Sat Flow, veh/h              | 1795 | 1885 | 1574 | 1795 | 1885 | 1553 | 1795 | 2725 | 804  | 1810 | 3641 | 54   |
| Grp Volume(v), veh/h         | 16   | 193  | 182  | 208  | 213  | 172  | 104  | 251  | 249  | 297  | 336  | 351  |
| Grp Sat Flow(s),veh/h/ln     | 1795 | 1885 | 1574 | 1795 | 1885 | 1553 | 1795 | 1791 | 1738 | 1810 | 1805 | 1890 |
| Q Serve(g_s), s              | 0.5  | 6.8  | 7.0  | 7.6  | 7.4  | 5.6  | 4.0  | 9.3  | 9.5  | 11.2 | 11.3 | 11.3 |
| Cycle Q Clear(g_c), s        | 0.5  | 6.8  | 7.0  | 7.6  | 7.4  | 5.6  | 4.0  | 9.3  | 9.5  | 11.2 | 11.3 | 11.3 |
| Prop In Lane                 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.46 | 1.00 |      | 0.03 |
| Lane Grp Cap(c), veh/h       | 286  | 300  | 388  | 311  | 327  | 575  | 154  | 345  | 334  | 347  | 538  | 564  |
| V/C Ratio(X)                 | 0.06 | 0.64 | 0.47 | 0.67 | 0.65 | 0.30 | 0.68 | 0.73 | 0.74 | 0.86 | 0.62 | 0.62 |
| Avail Cap(c_a), veh/h        | 687  | 721  | 739  | 890  | 934  | 1076 | 458  | 913  | 886  | 692  | 1150 | 1205 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 25.2 | 27.8 | 22.8 | 27.3 | 27.2 | 16.0 | 31.3 | 26.8 | 26.9 | 27.6 | 21.4 | 21.4 |
| Incr Delay (d2), s/veh       | 0.0  | 0.9  | 0.3  | 0.9  | 0.8  | 0.1  | 1.9  | 1.1  | 1.2  | 2.4  | 0.4  | 0.4  |
| 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     | 0.2  | 3.0  | 2.5  | 3.2  | 3.3  | 1.9  | 1.7  | 3.8  | 3.8  | 4.8  | 4.5  | 4.7  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 25.2 | 28.7 | 23.1 | 28.2 | 28.0 | 16.1 | 33.3 | 27.9 | 28.1 | 30.0 | 21.8 | 21.8 |
| LnGrp LOS                    | C    | C    | C    | C    | C    | B    | C    | C    | C    | C    | C    | C    |
| Approach Vol, veh/h          |      | 391  |      |      | 593  |      |      | 604  |      |      | 984  |      |
| Approach Delay, s/veh        |      | 25.9 |      |      | 24.6 |      |      | 28.9 |      |      | 24.3 |      |
| Approach LOS                 |      | C    |      |      | C    |      |      | C    |      |      | C    |      |
| Timer - Assigned Phs         | 1    | 2    |      | 4    | 5    | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 18.5 | 18.6 |      | 17.2 | 11.1 | 26.1 |      | 16.3 |      |      |      |      |
| Change Period (Y+Rc), s      | 5.0  | 5.0  |      | 5.0  | 5.0  | 5.0  |      | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  | 27.0 | 36.0 |      | 35.0 | 18.0 | 45.0 |      | 27.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 13.2 | 11.5 |      | 9.6  | 6.0  | 13.3 |      | 9.0  |      |      |      |      |
| Green Ext Time (p_c), s      | 0.4  | 1.9  |      | 1.4  | 0.1  | 2.7  |      | 1.0  |      |      |      |      |

Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 25.7 |
| HCM 6th LOS        | C    |

Notes

User approved volume balancing among the lanes for turning movement.



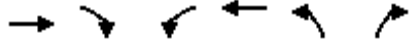
HCM 6th Signalized Intersection Summary  
1: 76th Avenue SE & N Mercer Way



| Movement   | EBL | EBT  | EBR | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--|-----|------|-----|------|------|------|------|------|------|------|------|------|
| Lane Configurations  |     |      |     |      | ↖    | ↗    | ↖    | ↗    |      | ↖    | ↗    |      |
| Traffic Volume (veh/h)   | 0   | 0    | 0   | 135  | 527  | 40   | 175  | 10   | 135  | 30   | 5    | 5    |
| Future Volume (veh/h)  | 0   | 0    | 0   | 135  | 527  | 40   | 175  | 10   | 135  | 30   | 5    | 5    |
| Initial Q (Qb), veh  |     |      |     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)  |     |      |     | 1.00 |      | 1.00 | 0.99 |      | 1.00 | 0.99 |      | 0.99 |
| Parking Bus, Adj   |     |      |     | 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   |      | No   |
| Adj Sat Flow, veh/h/ln   |     |      |     | 1841 | 1841 | 1841 | 1826 | 1826 | 1826 | 1781 | 1781 | 1781 |
| Adj Flow Rate, veh/h   |     |      |     | 142  | 555  | 42   | 184  | 11   | 0    | 32   | 5    | 5    |
| Peak Hour Factor   |     |      |     | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, %   |     |      |     | 4    | 4    | 4    | 5    | 5    | 5    | 8    | 8    | 8    |
| Cap, veh/h   |     |      |     | 198  | 774  | 829  | 484  | 386  |      | 477  | 171  | 171  |
| Arrive On Green  |     |      |     | 0.53 | 0.53 | 0.53 | 0.21 | 0.21 | 0.00 | 0.21 | 0.21 | 0.21 |
| Sat Flow, veh/h  |     |      |     | 371  | 1451 | 1554 | 1352 | 1826 | 0    | 1318 | 811  | 811  |
| Grp Volume(v), veh/h   |     |      |     | 697  | 0    | 42   | 184  | 11   | 0    | 32   | 0    | 10   |
| Grp Sat Flow(s),veh/h/ln   |     |      |     | 1822 | 0    | 1554 | 1352 | 1826 | 0    | 1318 | 0    | 1622 |
| Q Serve(g_s), s  |     |      |     | 10.2 | 0.0  | 0.5  | 4.4  | 0.2  | 0.0  | 0.7  | 0.0  | 0.2  |
| Cycle Q Clear(g_c), s  |     |      |     | 10.2 | 0.0  | 0.5  | 4.6  | 0.2  | 0.0  | 0.9  | 0.0  | 0.2  |
| Prop In Lane   |     |      |     | 0.20 |      | 1.00 | 1.00 |      | 0.00 | 1.00 |      | 0.50 |
| Lane Grp Cap(c), veh/h   |     |      |     | 972  | 0    | 829  | 484  | 386  |      | 477  | 0    | 343  |
| V/C Ratio(X)   |     |      |     | 0.72 | 0.00 | 0.05 | 0.38 | 0.03 |      | 0.07 | 0.00 | 0.03 |
| Avail Cap(c_a), veh/h  |     |      |     | 2924 | 0    | 2494 | 1139 | 1270 |      | 1115 | 0    | 1128 |
| HCM Platoon Ratio  |     |      |     | 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 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh   |     |      |     | 6.2  | 0.0  | 3.9  | 12.8 | 11.0 | 0.0  | 11.4 | 0.0  | 11.0 |
| Incr Delay (d2), s/veh   |     |      |     | 1.0  | 0.0  | 0.0  | 0.5  | 0.0  | 0.0  | 0.1  | 0.0  | 0.0  |
| Initial Q Delay(d3),s/veh  |     |      |     | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln   |     |      |     | 2.4  | 0.0  | 0.1  | 1.1  | 0.1  | 0.0  | 0.2  | 0.0  | 0.1  |
| Unsig. Movement Delay, s/veh   |     |      |     |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh   |     |      |     | 7.2  | 0.0  | 4.0  | 13.3 | 11.0 | 0.0  | 11.4 | 0.0  | 11.1 |
| LnGrp LOS  |     |      |     | A    | A    | A    | B    | B    |      | B    | A    | B    |
| Approach Vol, veh/h  |     |      |     |      | 739  |      |      | 195  | A    |      | 42   |      |
| Approach Delay, s/veh  |     |      |     |      | 7.0  |      |      | 13.2 |      |      | 11.3 |      |
| Approach LOS   |     |      |     |      | A    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs   |     | 2    |     |      |      | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s   |     | 11.9 |     |      |      | 11.9 |      | 23.3 |      |      |      |      |
| Change Period (Y+Rc), s  |     | 4.5  |     |      |      | 4.5  |      | 4.5  |      |      |      |      |
| Max Green Setting (Gmax), s  |     | 24.5 |     |      |      | 24.5 |      | 56.5 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s   |     | 6.6  |     |      |      | 2.9  |      | 12.2 |      |      |      |      |
| Green Ext Time (p_c), s  |     | 0.5  |     |      |      | 0.1  |      | 6.5  |      |      |      |      |
| <b>Intersection Summary</b>  |     |      |     |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay   |     |      |     | 8.5  |      |      |      |      |      |      |      |      |
| HCM 6th LOS  |     |      |     | A    |      |      |      |      |      |      |      |      |
| <b>Notes</b>   |     |      |     |      |      |      |      |      |      |      |      |      |
| Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay. |     |      |     |      |      |      |      |      |      |      |      |      |



HCM 6th Signalized Intersection Summary  
2: 77th Avenue SE & N Mercer Way



| Movement                     | EBT  | EBR  | WBL  | WBT  | NBL  | NBR  |
|------------------------------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 170  | 10   | 120  | 550  | 117  | 70   |
| Future Volume (veh/h)        | 170  | 10   | 120  | 550  | 117  | 70   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          |      | 1.00 | 1.00 |      | 1.00 | 1.00 |
| Parking Bus, Adj             | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach        | No   |      |      | No   | No   |      |
| Adj Sat Flow, veh/h/ln       | 1761 | 1761 | 1834 | 1834 | 1804 | 1804 |
| Adj Flow Rate, veh/h         | 179  | 11   | 126  | 579  | 123  | 74   |
| Peak Hour Factor             | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 | 0.95 |
| Percent Heavy Veh, %         | 9    | 9    | 7    | 7    | 9    | 9    |
| Cap, veh/h                   | 841  | 52   | 819  | 940  | 218  | 194  |
| Arrive On Green              | 0.51 | 0.51 | 0.51 | 0.51 | 0.13 | 0.13 |
| Sat Flow, veh/h              | 1642 | 101  | 1170 | 1834 | 1718 | 1529 |
| Grp Volume(v), veh/h         | 0    | 190  | 126  | 579  | 123  | 74   |
| Grp Sat Flow(s),veh/h/ln     | 0    | 1743 | 1170 | 1834 | 1718 | 1529 |
| Q Serve(g_s), s              | 0.0  | 1.5  | 1.6  | 5.6  | 1.7  | 1.1  |
| Cycle Q Clear(g_c), s        | 0.0  | 1.5  | 3.1  | 5.6  | 1.7  | 1.1  |
| Prop In Lane                 |      | 0.06 | 1.00 |      | 1.00 | 1.00 |
| Lane Grp Cap(c), veh/h       | 0    | 893  | 819  | 940  | 218  | 194  |
| V/C Ratio(X)                 | 0.00 | 0.21 | 0.15 | 0.62 | 0.57 | 0.38 |
| Avail Cap(c_a), veh/h        | 0    | 2830 | 2119 | 2979 | 1757 | 1563 |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 0.0  | 3.3  | 4.2  | 4.3  | 10.2 | 10.0 |
| Incr Delay (d2), s/veh       | 0.0  | 0.1  | 0.1  | 0.7  | 2.3  | 1.2  |
| Initial Q Delay(d3),s/veh    | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln     | 0.0  | 0.2  | 0.2  | 0.8  | 0.6  | 0.3  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 0.0  | 3.4  | 4.3  | 5.0  | 12.5 | 11.2 |
| LnGrp LOS                    | A    | A    | A    | A    | B    | B    |
| Approach Vol, veh/h          | 190  |      |      | 705  | 197  |      |
| Approach Delay, s/veh        | 3.4  |      |      | 4.9  | 12.0 |      |
| Approach LOS                 | A    |      |      | A    | B    |      |
| Timer - Assigned Phs         |      | 2    |      | 4    |      | 8    |
| Phs Duration (G+Y+Rc), s     |      | 7.7  |      | 17.3 |      | 17.3 |
| Change Period (Y+Rc), s      |      | 4.5  |      | 4.5  |      | 4.5  |
| Max Green Setting (Gmax), s  |      | 25.5 |      | 40.5 |      | 40.5 |
| Max Q Clear Time (g_c+I1), s |      | 3.7  |      | 3.5  |      | 7.6  |
| Green Ext Time (p_c), s      |      | 0.6  |      | 1.2  |      | 5.2  |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      | 5.9  |      |      |      |
| HCM 6th LOS                  |      |      | A    |      |      |      |



| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 4.5  |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      |      |      |      |      |      |      |
| Traffic Vol, veh/h       | 50   | 175  | 0    | 162  | 140  | 0    |
| Future Vol, veh/h        | 50   | 175  | 0    | 162  | 140  | 0    |
| Conflicting Peds, #/hr   | 0    | 1    | 1    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | 0    | 150  | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 84   | 84   | 84   | 84   | 84   | 84   |
| Heavy Vehicles, %        | 7    | 7    | 6    | 6    | 7    | 7    |
| Mvmt Flow                | 60   | 208  | 0    | 193  | 167  | 0    |

| Major/Minor          | Minor2 | Major1 | Major2 |   |   |   |
|----------------------|--------|--------|--------|---|---|---|
| Conflicting Flow All | 360    | 168    | -      | 0 | - | 0 |
| Stage 1              | 167    | -      | -      | - | - | - |
| Stage 2              | 193    | -      | -      | - | - | - |
| Critical Hdwy        | 6.47   | 6.27   | -      | - | - | - |
| Critical Hdwy Stg 1  | 5.47   | -      | -      | - | - | - |
| Critical Hdwy Stg 2  | 5.47   | -      | -      | - | - | - |
| Follow-up Hdwy       | 3.563  | 3.363  | -      | - | - | - |
| Pot Cap-1 Maneuver   | 629    | 863    | 0      | - | - | 0 |
| Stage 1              | 851    | -      | 0      | - | - | 0 |
| Stage 2              | 828    | -      | 0      | - | - | 0 |
| Platoon blocked, %   |        |        |        | - | - |   |
| Mov Cap-1 Maneuver   | 629    | 862    | -      | - | - | - |
| Mov Cap-2 Maneuver   | 670    | -      | -      | - | - | - |
| Stage 1              | 851    | -      | -      | - | - | - |
| Stage 2              | 828    | -      | -      | - | - | - |

| Approach             | EB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 10.6 | 0  | 0  |
| HCM LOS              | B    |    |    |

| Minor Lane/Major Mvmt | NBT | EBLn1 | EBLn2 | SBT |
|-----------------------|-----|-------|-------|-----|
| Capacity (veh/h)      | -   | 670   | 862   | -   |
| HCM Lane V/C Ratio    | -   | 0.089 | 0.242 | -   |
| HCM Control Delay (s) | -   | 10.9  | 10.5  | -   |
| HCM Lane LOS          | -   | B     | B     | -   |
| HCM 95th %tile Q(veh) | -   | 0.3   | 0.9   | -   |



HCM 6th Signalized Intersection Summary  
4: 77th Avenue SE & SE 27th St



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 15   | 250  | 95   | 60   | 230  | 45   | 104  | 102  | 45   | 95   | 150  | 65   |
| Future Volume (veh/h)        | 15   | 250  | 95   | 60   | 230  | 45   | 104  | 102  | 45   | 95   | 150  | 65   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 0.99 |      | 0.95 | 0.99 |      | 0.97 | 0.97 |      | 0.94 | 0.96 |      | 0.94 |
| 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       | 1870 | 1870 | 1870 | 1870 | 1870 | 1870 | 1841 | 1841 | 1841 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h         | 16   | 263  | 100  | 63   | 242  | 47   | 109  | 107  | 47   | 100  | 158  | 68   |
| 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, %         | 2    | 2    | 2    | 2    | 2    | 2    | 4    | 4    | 4    | 5    | 5    | 5    |
| Cap, veh/h                   | 392  | 423  | 161  | 331  | 503  | 98   | 430  | 295  | 130  | 481  | 288  | 124  |
| Arrive On Green              | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.33 | 0.07 | 0.25 | 0.25 | 0.06 | 0.24 | 0.24 |
| Sat Flow, veh/h              | 1075 | 1272 | 484  | 1007 | 1514 | 294  | 1753 | 1188 | 522  | 1739 | 1187 | 511  |
| Grp Volume(v), veh/h         | 16   | 0    | 363  | 63   | 0    | 289  | 109  | 0    | 154  | 100  | 0    | 226  |
| Grp Sat Flow(s),veh/h/ln     | 1075 | 0    | 1756 | 1007 | 0    | 1808 | 1753 | 0    | 1710 | 1739 | 0    | 1697 |
| Q Serve(g_s), s              | 0.5  | 0.0  | 7.3  | 2.4  | 0.0  | 5.3  | 1.9  | 0.0  | 3.1  | 1.8  | 0.0  | 4.9  |
| Cycle Q Clear(g_c), s        | 5.9  | 0.0  | 7.3  | 9.7  | 0.0  | 5.3  | 1.9  | 0.0  | 3.1  | 1.8  | 0.0  | 4.9  |
| Prop In Lane                 | 1.00 |      | 0.28 | 1.00 |      | 0.16 | 1.00 |      | 0.31 | 1.00 |      | 0.30 |
| Lane Grp Cap(c), veh/h       | 392  | 0    | 584  | 331  | 0    | 601  | 430  | 0    | 425  | 481  | 0    | 413  |
| V/C Ratio(X)                 | 0.04 | 0.00 | 0.62 | 0.19 | 0.00 | 0.48 | 0.25 | 0.00 | 0.36 | 0.21 | 0.00 | 0.55 |
| Avail Cap(c_a), veh/h        | 877  | 0    | 1376 | 785  | 0    | 1417 | 602  | 0    | 812  | 661  | 0    | 806  |
| 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     | 13.5 | 0.0  | 11.8 | 15.9 | 0.0  | 11.2 | 11.0 | 0.0  | 13.1 | 10.9 | 0.0  | 13.9 |
| Incr Delay (d2), s/veh       | 0.0  | 0.0  | 1.1  | 0.3  | 0.0  | 0.6  | 0.3  | 0.0  | 0.5  | 0.2  | 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     | 0.1  | 0.0  | 2.5  | 0.5  | 0.0  | 1.9  | 0.7  | 0.0  | 1.1  | 0.6  | 0.0  | 1.7  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 13.5 | 0.0  | 12.9 | 16.2 | 0.0  | 11.8 | 11.3 | 0.0  | 13.6 | 11.1 | 0.0  | 15.1 |
| LnGrp LOS                    | B    | A    | B    | B    | A    | B    | B    | A    | B    | B    | A    | B    |
| Approach Vol, veh/h          |      | 379  |      |      | 352  |      |      | 263  |      |      | 326  |      |
| Approach Delay, s/veh        |      | 12.9 |      |      | 12.6 |      |      | 12.6 |      |      | 13.8 |      |
| Approach LOS                 |      | B    |      |      | B    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs         |      | 2    | 3    | 4    |      | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |      | 19.0 | 7.9  | 15.2 |      | 19.0 | 7.6  | 15.5 |      |      |      |      |
| Change Period (Y+Rc), s      |      | 5.0  | 5.0  | 5.0  |      | 5.0  | 5.0  | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  |      | 33.0 | 7.0  | 20.0 |      | 33.0 | 7.0  | 20.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |      | 9.3  | 3.9  | 6.9  |      | 11.7 | 3.8  | 5.1  |      |      |      |      |
| Green Ext Time (p_c), s      |      | 2.5  | 0.1  | 1.1  |      | 2.1  | 0.1  | 0.7  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      |      | 13.0 |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |      |      |      | B    |      |      |      |      |      |      |      |      |



HCM 6th Signalized Intersection Summary  
 5: Island Crest Way/Island Crest & SE 27th St/I-90 On-ramps



| Movement   | EBL  | EBT  | EBR  | WBL  | WBT | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--|------|------|------|------|-----|------|------|------|------|------|------|------|
| Lane Configurations  |      |      |      |      |     |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)   | 15   | 370  | 40   | 0    | 0   | 0    | 140  | 250  | 435  | 65   | 212  | 185  |
| Future Volume (veh/h)  | 15   | 370  | 40   | 0    | 0   | 0    | 140  | 250  | 435  | 65   | 212  | 185  |
| Initial Q (Qb), veh  | 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 |
| Parking Bus, Adj   | 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   |      |      |
| Adj Sat Flow, veh/h/ln   | 1879 | 1879 | 1879 |      |     |      | 1949 | 1949 | 1949 | 1790 | 1790 | 1790 |
| Adj Flow Rate, veh/h   | 15   | 378  | 41   |      |     |      | 143  | 255  | 0    | 66   | 216  | 189  |
| Peak Hour Factor   | 0.98 | 0.98 | 0.98 |      |     |      | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| Percent Heavy Veh, %   | 4    | 4    | 4    |      |     |      | 2    | 2    | 2    | 7    | 7    | 7    |
| Cap, veh/h   | 580  | 540  | 59   |      |     |      | 451  | 496  |      | 408  | 369  | 313  |
| Arrive On Green  | 0.32 | 0.32 | 0.32 |      |     |      | 0.09 | 0.25 | 0.00 | 0.04 | 0.21 | 0.21 |
| Sat Flow, veh/h  | 1790 | 1665 | 181  |      |     |      | 1856 | 1949 | 1651 | 1705 | 1790 | 1517 |
| Grp Volume(v), veh/h   | 15   | 0    | 419  |      |     |      | 143  | 255  | 0    | 66   | 216  | 189  |
| Grp Sat Flow(s),veh/h/ln   | 1790 | 0    | 1846 |      |     |      | 1856 | 1949 | 1651 | 1705 | 1790 | 1517 |
| Q Serve(g_s), s  | 0.2  | 0.0  | 7.7  |      |     |      | 2.3  | 4.4  | 0.0  | 1.1  | 4.2  | 4.4  |
| Cycle Q Clear(g_c), s  | 0.2  | 0.0  | 7.7  |      |     |      | 2.3  | 4.4  | 0.0  | 1.1  | 4.2  | 4.4  |
| Prop In Lane   | 1.00 |      | 0.10 |      |     |      | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h   | 580  | 0    | 599  |      |     |      | 451  | 496  |      | 408  | 369  | 313  |
| V/C Ratio(X)   | 0.03 | 0.00 | 0.70 |      |     |      | 0.32 | 0.51 |      | 0.16 | 0.59 | 0.60 |
| Avail Cap(c_a), veh/h  | 1580 | 0    | 1630 |      |     |      | 1256 | 2020 |      | 1230 | 1856 | 1573 |
| HCM Platoon Ratio  | 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 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh   | 9.0  | 0.0  | 11.5 |      |     |      | 10.7 | 12.5 | 0.0  | 10.3 | 14.0 | 14.0 |
| Incr Delay (d2), s/veh   | 0.0  | 0.0  | 1.5  |      |     |      | 0.1  | 0.6  | 0.0  | 0.1  | 1.1  | 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  |
| %ile BackOfQ(50%),veh/ln   | 0.1  | 0.0  | 2.8  |      |     |      | 0.7  | 1.5  | 0.0  | 0.3  | 1.6  | 1.4  |
| Unsig. Movement Delay, s/veh   |      |      |      |      |     |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh   | 9.0  | 0.0  | 13.0 |      |     |      | 10.9 | 13.1 | 0.0  | 10.4 | 15.1 | 15.4 |
| LnGrp LOS  | A    | A    | B    |      |     |      | B    | B    |      | B    | B    | B    |
| Approach Vol, veh/h  |      | 434  |      |      |     |      |      | 398  | A    |      | 471  |      |
| Approach Delay, s/veh  |      | 12.9 |      |      |     |      |      | 12.3 |      |      | 14.6 |      |
| Approach LOS   |      | B    |      |      |     |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs   |      |      | 3    | 4    |     | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s   |      |      | 6.2  | 14.5 |     | 18.2 | 8.1  | 12.6 |      |      |      |      |
| Change Period (Y+Rc), s  |      |      | 4.6  | 4.6  |     | 5.6  | 4.6  | 4.6  |      |      |      |      |
| Max Green Setting (Gmax), s  |      |      | 20.4 | 40.4 |     | 34.4 | 20.4 | 40.4 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s   |      |      | 3.1  | 6.4  |     | 9.7  | 4.3  | 6.4  |      |      |      |      |
| Green Ext Time (p_c), s  |      |      | 0.1  | 1.2  |     | 2.9  | 0.2  | 1.6  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |     |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay   |      |      | 13.3 |      |     |      |      |      |      |      |      |      |
| HCM 6th LOS  |      |      | B    |      |     |      |      |      |      |      |      |      |
| <b>Notes</b>   |      |      |      |      |     |      |      |      |      |      |      |      |
| Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay. |      |      |      |      |     |      |      |      |      |      |      |      |



**Intersection**

|                           |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 8.7 |
| Intersection LOS          | A   |

| Movement            | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
|---------------------|------|------|------|------|------|------|
| Lane Configurations |      |      |      |      |      |      |
| Traffic Vol, veh/h  | 102  | 60   | 65   | 70   | 45   | 50   |
| Future Vol, veh/h   | 102  | 60   | 65   | 70   | 45   | 50   |
| Peak Hour Factor    | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 | 0.83 |
| Heavy Vehicles, %   | 1    | 1    | 8    | 8    | 3    | 3    |
| Mvmt Flow           | 123  | 72   | 78   | 84   | 54   | 60   |
| Number of Lanes     | 1    | 1    | 1    | 0    | 0    | 1    |

| Approach                   | WB  | NB  | SB  |
|----------------------------|-----|-----|-----|
| Opposing Approach          |     | SB  | NB  |
| Opposing Lanes             | 0   | 1   | 1   |
| Conflicting Approach Left  | NB  |     | WB  |
| Conflicting Lanes Left     | 1   | 0   | 2   |
| Conflicting Approach Right | SB  | WB  |     |
| Conflicting Lanes Right    | 1   | 2   | 0   |
| HCM Control Delay          | 8.9 | 8.5 | 8.6 |
| HCM LOS                    | A   | A   | A   |

| Lane                   | NBLn1 | WBLn1 | WBLn2 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 0%    | 100%  | 0%    | 47%   |
| Vol Thru, %            | 48%   | 0%    | 0%    | 53%   |
| Vol Right, %           | 52%   | 0%    | 100%  | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 135   | 102   | 60    | 95    |
| LT Vol                 | 0     | 102   | 0     | 45    |
| Through Vol            | 65    | 0     | 0     | 50    |
| RT Vol                 | 70    | 0     | 60    | 0     |
| Lane Flow Rate         | 163   | 123   | 72    | 114   |
| Geometry Grp           | 2     | 7     | 7     | 2     |
| Degree of Util (X)     | 0.197 | 0.193 | 0.089 | 0.15  |
| Departure Headway (Hd) | 4.362 | 5.649 | 4.443 | 4.726 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 823   | 635   | 806   | 760   |
| Service Time           | 2.383 | 3.381 | 2.174 | 2.75  |
| HCM Lane V/C Ratio     | 0.198 | 0.194 | 0.089 | 0.15  |
| HCM Control Delay      | 8.5   | 9.7   | 7.6   | 8.6   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.7   | 0.7   | 0.3   | 0.5   |



| Intersection              |      |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------|------|--|--|--|--|--|--|--|--|--|--|--|
| Intersection Delay, s/veh | 10.6 |  |  |  |  |  |  |  |  |  |  |  |
| Intersection LOS          | B    |  |  |  |  |  |  |  |  |  |  |  |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Vol, veh/h  | 35   | 130  | 10   | 75   | 147  | 90   | 15   | 70   | 45   | 60   | 60   | 50   |
| Future Vol, veh/h   | 35   | 130  | 10   | 75   | 147  | 90   | 15   | 70   | 45   | 60   | 60   | 50   |
| Peak Hour Factor    | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 | 0.94 |
| Heavy Vehicles, %   | 1    | 1    | 1    | 2    | 2    | 2    | 1    | 1    | 1    | 1    | 1    | 1    |
| Mvmt Flow           | 37   | 138  | 11   | 80   | 156  | 96   | 16   | 74   | 48   | 64   | 64   | 53   |
| Number of Lanes     | 1    | 1    | 0    | 0    | 1    | 1    | 1    | 1    | 0    | 1    | 1    | 0    |

| Approach                   | EB   | WB   | NB   | SB |
|----------------------------|------|------|------|----|
| Opposing Approach          | WB   | EB   | SB   | NB |
| Opposing Lanes             | 2    | 2    | 2    | 2  |
| Conflicting Approach Left  | SB   | NB   | EB   | WB |
| Conflicting Lanes Left     | 2    | 2    | 2    | 2  |
| Conflicting Approach Right | NB   | SB   | WB   | EB |
| Conflicting Lanes Right    | 2    | 2    | 2    | 2  |
| HCM Control Delay          | 10.3 | 11.3 | 10.1 | 10 |
| HCM LOS                    | B    | B    | B    | A  |

| Lane                   | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, %            | 100%  | 0%    | 100%  | 0%    | 34%   | 0%    | 100%  | 0%    |
| Vol Thru, %            | 0%    | 61%   | 0%    | 93%   | 66%   | 0%    | 0%    | 55%   |
| Vol Right, %           | 0%    | 39%   | 0%    | 7%    | 0%    | 100%  | 0%    | 45%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 15    | 115   | 35    | 140   | 222   | 90    | 60    | 110   |
| LT Vol                 | 15    | 0     | 35    | 0     | 75    | 0     | 60    | 0     |
| Through Vol            | 0     | 70    | 0     | 130   | 147   | 0     | 0     | 60    |
| RT Vol                 | 0     | 45    | 0     | 10    | 0     | 90    | 0     | 50    |
| Lane Flow Rate         | 16    | 122   | 37    | 149   | 236   | 96    | 64    | 117   |
| Geometry Grp           | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     |
| Degree of Util (X)     | 0.03  | 0.202 | 0.066 | 0.243 | 0.388 | 0.134 | 0.118 | 0.19  |
| Departure Headway (Hd) | 6.742 | 5.957 | 6.424 | 5.868 | 5.92  | 5.043 | 6.668 | 5.839 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 531   | 603   | 558   | 612   | 609   | 711   | 538   | 614   |
| Service Time           | 4.477 | 3.692 | 4.156 | 3.599 | 3.649 | 2.771 | 4.402 | 3.572 |
| HCM Lane V/C Ratio     | 0.03  | 0.202 | 0.066 | 0.243 | 0.388 | 0.135 | 0.119 | 0.191 |
| HCM Control Delay      | 9.7   | 10.2  | 9.6   | 10.5  | 12.4  | 8.6   | 10.3  | 9.9   |
| HCM Lane LOS           | A     | B     | A     | B     | B     | A     | B     | A     |
| HCM 95th-tile Q        | 0.1   | 0.8   | 0.2   | 0.9   | 1.8   | 0.5   | 0.4   | 0.7   |



HCM 6th Signalized Intersection Summary  
8: Island Crest Way & SE 28th St



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      | ↕    | ↗    |      | ↕    |      | ↖    | ↕    |      | ↖    | ↗    |      |
| Traffic Volume (veh/h)       | 110  | 20   | 80   | 0    | 20   | 50   | 245  | 685  | 5    | 15   | 150  | 87   |
| Future Volume (veh/h)        | 110  | 20   | 80   | 0    | 20   | 50   | 245  | 685  | 5    | 15   | 150  | 87   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 0.98 | 1.00 |      | 0.96 | 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       | 1803 | 1803 | 1803 | 1967 | 1967 | 1967 | 1964 | 1964 | 1964 | 1761 | 1761 | 1761 |
| Adj Flow Rate, veh/h         | 121  | 22   | 88   | 0    | 22   | 55   | 269  | 753  | 5    | 16   | 165  | 96   |
| Peak Hour Factor             | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 | 0.91 |
| Percent Heavy Veh, %         | 3    | 3    | 3    | 6    | 6    | 6    | 1    | 1    | 1    | 9    | 9    | 9    |
| Cap, veh/h                   | 218  | 40   | 222  | 0    | 39   | 98   | 521  | 1355 | 9    | 308  | 228  | 133  |
| Arrive On Green              | 0.15 | 0.15 | 0.15 | 0.00 | 0.08 | 0.08 | 0.15 | 0.36 | 0.36 | 0.01 | 0.22 | 0.22 |
| Sat Flow, veh/h              | 1463 | 266  | 1492 | 0    | 483  | 1207 | 1870 | 3799 | 25   | 1677 | 1044 | 607  |
| Grp Volume(v), veh/h         | 143  | 0    | 88   | 0    | 0    | 77   | 269  | 370  | 388  | 16   | 0    | 261  |
| Grp Sat Flow(s),veh/h/ln     | 1729 | 0    | 1492 | 0    | 0    | 1690 | 1870 | 1865 | 1959 | 1677 | 0    | 1651 |
| Q Serve(g_s), s              | 3.5  | 0.0  | 2.5  | 0.0  | 0.0  | 2.0  | 4.9  | 7.3  | 7.3  | 0.3  | 0.0  | 6.8  |
| Cycle Q Clear(g_c), s        | 3.5  | 0.0  | 2.5  | 0.0  | 0.0  | 2.0  | 4.9  | 7.3  | 7.3  | 0.3  | 0.0  | 6.8  |
| Prop In Lane                 | 0.85 |      | 1.00 | 0.00 |      | 0.71 | 1.00 |      | 0.01 | 1.00 |      | 0.37 |
| Lane Grp Cap(c), veh/h       | 258  | 0    | 222  | 0    | 0    | 137  | 521  | 665  | 699  | 308  | 0    | 361  |
| V/C Ratio(X)                 | 0.56 | 0.00 | 0.40 | 0.00 | 0.00 | 0.56 | 0.52 | 0.56 | 0.56 | 0.05 | 0.00 | 0.72 |
| Avail Cap(c_a), veh/h        | 1144 | 0    | 987  | 0    | 0    | 935  | 870  | 2024 | 2125 | 852  | 0    | 1791 |
| 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 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh     | 18.2 | 0.0  | 17.7 | 0.0  | 0.0  | 20.4 | 11.4 | 11.9 | 11.9 | 9.9  | 0.0  | 16.7 |
| Incr Delay (d2), s/veh       | 1.4  | 0.0  | 0.8  | 0.0  | 0.0  | 2.7  | 0.3  | 0.7  | 0.7  | 0.0  | 0.0  | 2.8  |
| 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     | 1.4  | 0.0  | 0.8  | 0.0  | 0.0  | 0.8  | 1.6  | 2.5  | 2.6  | 0.1  | 0.0  | 2.4  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 19.6 | 0.0  | 18.6 | 0.0  | 0.0  | 23.1 | 11.7 | 12.6 | 12.6 | 9.9  | 0.0  | 19.5 |
| LnGrp LOS                    | B    | A    | B    | A    | A    | C    | B    | B    | B    | A    | A    | B    |
| Approach Vol, veh/h          |      | 231  |      |      | 77   |      |      | 1027 |      |      | 277  |      |
| Approach Delay, s/veh        |      | 19.2 |      |      | 23.1 |      |      | 12.4 |      |      | 18.9 |      |
| Approach LOS                 |      | B    |      |      | C    |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs         |      | 2    | 3    | 4    |      | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |      | 8.2  | 5.1  | 21.4 |      | 11.4 | 11.4 | 15.1 |      |      |      |      |
| Change Period (Y+Rc), s      |      | 4.5  | 4.5  | 5.0  |      | 4.5  | 4.5  | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  |      | 25.5 | 15.5 | 50.0 |      | 30.5 | 15.5 | 50.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |      | 4.0  | 2.3  | 9.3  |      | 5.5  | 6.9  | 8.8  |      |      |      |      |
| Green Ext Time (p_c), s      |      | 0.3  | 0.0  | 5.2  |      | 0.9  | 0.3  | 1.7  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      |      |      |      |      |      |      |      |      | 15.0 |      |
| HCM 6th LOS                  |      |      |      |      |      |      |      |      |      |      | B    |      |



| Intersection              |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 8.9 |
| Intersection LOS          | A   |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      | ↕    | ↕    |      |
| Traffic Vol, veh/h  | 25   | 34   | 10   | 5    | 31   | 46   | 20   | 110  | 5    | 55   | 80   | 25   |
| Future Vol, veh/h   | 25   | 34   | 10   | 5    | 31   | 46   | 20   | 110  | 5    | 55   | 80   | 25   |
| Peak Hour Factor    | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 | 0.79 |
| Heavy Vehicles, %   | 4    | 4    | 4    | 4    | 4    | 4    | 0    | 0    | 0    | 5    | 5    | 5    |
| Mvmt Flow           | 32   | 43   | 13   | 6    | 39   | 58   | 25   | 139  | 6    | 70   | 101  | 32   |
| Number of Lanes     | 0    | 1    | 0    | 0    | 1    | 0    | 1    | 1    | 0    | 1    | 1    | 0    |

| Approach                   | EB  | WB  | NB  | SB  |
|----------------------------|-----|-----|-----|-----|
| Opposing Approach          | WB  | EB  | SB  | NB  |
| Opposing Lanes             | 1   | 1   | 2   | 2   |
| Conflicting Approach Left  | SB  | NB  | EB  | WB  |
| Conflicting Lanes Left     | 2   | 2   | 1   | 1   |
| Conflicting Approach Right | NB  | SB  | WB  | EB  |
| Conflicting Lanes Right    | 2   | 2   | 1   | 1   |
| HCM Control Delay          | 8.7 | 8.5 | 9.1 | 9.1 |
| HCM LOS                    | A   | A   | A   | A   |

| Lane                   | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|
| Vol Left, %            | 100%  | 0%    | 36%   | 6%    | 100%  | 0%    |
| Vol Thru, %            | 0%    | 96%   | 49%   | 38%   | 0%    | 76%   |
| Vol Right, %           | 0%    | 4%    | 14%   | 56%   | 0%    | 24%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 20    | 115   | 69    | 82    | 55    | 105   |
| LT Vol                 | 20    | 0     | 25    | 5     | 55    | 0     |
| Through Vol            | 0     | 110   | 34    | 31    | 0     | 80    |
| RT Vol                 | 0     | 5     | 10    | 46    | 0     | 25    |
| Lane Flow Rate         | 25    | 146   | 87    | 104   | 70    | 133   |
| Geometry Grp           | 7     | 7     | 2     | 2     | 7     | 7     |
| Degree of Util (X)     | 0.04  | 0.208 | 0.121 | 0.135 | 0.111 | 0.186 |
| Departure Headway (Hd) | 5.673 | 5.139 | 5.005 | 4.679 | 5.721 | 5.05  |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 630   | 696   | 714   | 764   | 625   | 708   |
| Service Time           | 3.419 | 2.885 | 3.053 | 2.725 | 3.466 | 2.795 |
| HCM Lane V/C Ratio     | 0.04  | 0.21  | 0.122 | 0.136 | 0.112 | 0.188 |
| HCM Control Delay      | 8.7   | 9.2   | 8.7   | 8.5   | 9.2   | 9     |
| HCM Lane LOS           | A     | A     | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.1   | 0.8   | 0.4   | 0.5   | 0.4   | 0.7   |



| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 3.6  |      |      |      |      |      |
| Movement                 | EBL  | EBR  | NBL  | NBT  | SBT  | SBR  |
| Lane Configurations      | T    |      |      | T    |      |      |
| Traffic Vol, veh/h       | 45   | 57   | 31   | 115  | 100  | 37   |
| Future Vol, veh/h        | 45   | 57   | 31   | 115  | 100  | 37   |
| Conflicting Peds, #/hr   | 6    | 6    | 6    | 0    | 0    | 6    |
| 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         | 75   | 75   | 75   | 75   | 75   | 75   |
| Heavy Vehicles, %        | 2    | 2    | 7    | 7    | 4    | 4    |
| Mvmt Flow                | 60   | 76   | 41   | 153  | 133  | 49   |

| Major/Minor          | Minor2 | Major1 |       | Major2 |   |
|----------------------|--------|--------|-------|--------|---|
| Conflicting Flow All | 405    | 170    | 188   | 0      | 0 |
| Stage 1              | 164    | -      | -     | -      | - |
| Stage 2              | 241    | -      | -     | -      | - |
| 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   | 602    | 874    | 1357  | -      | - |
| Stage 1              | 865    | -      | -     | -      | - |
| Stage 2              | 799    | -      | -     | -      | - |
| Platoon blocked, %   |        |        |       | -      | - |
| Mov Cap-1 Maneuver   | 576    | 865    | 1350  | -      | - |
| Mov Cap-2 Maneuver   | 576    | -      | -     | -      | - |
| Stage 1              | 832    | -      | -     | -      | - |
| Stage 2              | 795    | -      | -     | -      | - |

| Approach             | EB   | NB  | SB |
|----------------------|------|-----|----|
| HCM Control Delay, s | 11.3 | 1.6 | 0  |
| HCM LOS              | B    |     |    |

| Minor Lane/Major Mvmt | NBL   | NBT | EBLn1 | SBT | SBR |
|-----------------------|-------|-----|-------|-----|-----|
| Capacity (veh/h)      | 1350  | -   | 708   | -   | -   |
| HCM Lane V/C Ratio    | 0.031 | -   | 0.192 | -   | -   |
| HCM Control Delay (s) | 7.8   | 0   | 11.3  | -   | -   |
| HCM Lane LOS          | A     | A   | B     | -   | -   |
| HCM 95th %tile Q(veh) | 0.1   | -   | 0.7   | -   | -   |



HCM 6th Signalized Intersection Summary  
11: Island Crest Way & SE 40th Street



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 21   | 160  | 35   | 185  | 165  | 273  | 90   | 702  | 140  | 167  | 326  | 18   |
| Future Volume (veh/h)        | 21   | 160  | 35   | 185  | 165  | 273  | 90   | 702  | 140  | 167  | 326  | 18   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 0.98 | 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 |
| Work Zone On Approach        |      | No   |      |      | No   |      |      | No   |      |      |      | No   |
| Adj Sat Flow, veh/h/ln       | 1841 | 1841 | 1841 | 1826 | 1826 | 1826 | 1870 | 1870 | 1870 | 1826 | 1826 | 1826 |
| Adj Flow Rate, veh/h         | 23   | 178  | 39   | 194  | 199  | 303  | 100  | 780  | 156  | 186  | 362  | 20   |
| Peak Hour Factor             | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 | 0.90 |
| Percent Heavy Veh, %         | 4    | 4    | 4    | 5    | 5    | 5    | 2    | 2    | 2    | 5    | 5    | 5    |
| Cap, veh/h                   | 217  | 228  | 297  | 330  | 347  | 476  | 122  | 1248 | 250  | 209  | 1587 | 87   |
| Arrive On Green              | 0.12 | 0.12 | 0.12 | 0.06 | 0.06 | 0.06 | 0.07 | 0.42 | 0.42 | 0.12 | 0.47 | 0.47 |
| Sat Flow, veh/h              | 1753 | 1841 | 1530 | 1739 | 1826 | 1528 | 1781 | 2950 | 590  | 1739 | 3343 | 184  |
| Grp Volume(v), veh/h         | 23   | 178  | 39   | 194  | 199  | 303  | 100  | 470  | 466  | 186  | 187  | 195  |
| Grp Sat Flow(s),veh/h/ln     | 1753 | 1841 | 1530 | 1739 | 1826 | 1528 | 1781 | 1777 | 1763 | 1739 | 1735 | 1793 |
| Q Serve(g_s), s              | 1.6  | 13.1 | 3.0  | 15.2 | 14.8 | 23.7 | 7.8  | 29.0 | 29.0 | 14.8 | 8.9  | 9.0  |
| Cycle Q Clear(g_c), s        | 1.6  | 13.1 | 3.0  | 15.2 | 14.8 | 23.7 | 7.8  | 29.0 | 29.0 | 14.8 | 8.9  | 9.0  |
| Prop In Lane                 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.33 | 1.00 |      | 0.10 |
| Lane Grp Cap(c), veh/h       | 217  | 228  | 297  | 330  | 347  | 476  | 122  | 752  | 746  | 209  | 823  | 851  |
| V/C Ratio(X)                 | 0.11 | 0.78 | 0.13 | 0.59 | 0.57 | 0.64 | 0.82 | 0.63 | 0.63 | 0.89 | 0.23 | 0.23 |
| Avail Cap(c_a), veh/h        | 351  | 368  | 413  | 373  | 391  | 513  | 191  | 752  | 746  | 248  | 823  | 851  |
| HCM Platoon Ratio            | 1.00 | 1.00 | 1.00 | 0.33 | 0.33 | 0.33 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)           | 1.00 | 1.00 | 1.00 | 0.92 | 0.92 | 0.92 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 54.4 | 59.5 | 46.8 | 60.3 | 60.1 | 48.0 | 64.3 | 31.7 | 31.7 | 60.7 | 21.7 | 21.7 |
| Incr Delay (d2), s/veh       | 0.1  | 2.2  | 0.1  | 0.8  | 0.6  | 1.5  | 7.6  | 3.9  | 3.9  | 25.0 | 0.6  | 0.6  |
| 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     | 0.7  | 6.3  | 1.1  | 7.2  | 7.4  | 9.9  | 3.8  | 13.2 | 13.1 | 7.9  | 3.8  | 3.9  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 54.5 | 61.7 | 46.9 | 61.1 | 60.7 | 49.5 | 71.9 | 35.6 | 35.6 | 85.6 | 22.3 | 22.3 |
| LnGrp LOS                    | D    | E    | D    | E    | E    | D    | E    | D    | D    | F    | C    | C    |
| Approach Vol, veh/h          |      | 240  |      |      | 696  |      |      | 1036 |      |      | 568  |      |
| Approach Delay, s/veh        |      | 58.6 |      |      | 55.9 |      |      | 39.1 |      |      | 43.0 |      |
| Approach LOS                 |      | E    |      |      | E    |      |      | D    |      |      | D    |      |
| Timer - Assigned Phs         | 1    | 2    |      | 4    | 5    | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 21.8 | 64.2 |      | 31.6 | 14.6 | 71.4 |      | 22.4 |      |      |      |      |
| Change Period (Y+Rc), s      | 5.0  | 5.0  |      | 5.0  | 5.0  | 5.0  |      | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  | 20.0 | 42.0 |      | 30.0 | 15.0 | 47.0 |      | 28.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 16.8 | 31.0 |      | 25.7 | 9.8  | 11.0 |      | 15.1 |      |      |      |      |
| Green Ext Time (p_c), s      | 0.1  | 3.1  |      | 0.8  | 0.0  | 1.4  |      | 0.6  |      |      |      |      |

Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 46.4 |
| HCM 6th LOS        | D    |

Notes

User approved volume balancing among the lanes for turning movement.



| Intersection             |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Int Delay, s/veh         | 3.2  |      |      |      |      |      |
| Movement                 | EBL  | EBT  | WBT  | WBR  | SBL  | SBR  |
| Lane Configurations      |      | ↕    | ↕    |      | ↕    |      |
| Traffic Vol, veh/h       | 18   | 75   | 50   | 24   | 37   | 26   |
| Future Vol, veh/h        | 18   | 75   | 50   | 24   | 37   | 26   |
| 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         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 20   | 82   | 54   | 26   | 40   | 28   |

| Major/Minor          | Major1 | Major2 | Minor2 |   |             |
|----------------------|--------|--------|--------|---|-------------|
| Conflicting Flow All | 80     | 0      | -      | 0 | 189 67      |
| Stage 1              | -      | -      | -      | - | 67 -        |
| Stage 2              | -      | -      | -      | - | 122 -       |
| Critical Hdwy        | 4.12   | -      | -      | - | 6.42 6.22   |
| Critical Hdwy Stg 1  | -      | -      | -      | - | 5.42 -      |
| Critical Hdwy Stg 2  | -      | -      | -      | - | 5.42 -      |
| Follow-up Hdwy       | 2.218  | -      | -      | - | 3.518 3.318 |
| Pot Cap-1 Maneuver   | 1518   | -      | -      | - | 800 997     |
| Stage 1              | -      | -      | -      | - | 956 -       |
| Stage 2              | -      | -      | -      | - | 903 -       |
| Platoon blocked, %   |        | -      | -      | - |             |
| Mov Cap-1 Maneuver   | 1518   | -      | -      | - | 789 997     |
| Mov Cap-2 Maneuver   | -      | -      | -      | - | 789 -       |
| Stage 1              | -      | -      | -      | - | 943 -       |
| Stage 2              | -      | -      | -      | - | 903 -       |

| Approach             | EB  | WB | SB  |
|----------------------|-----|----|-----|
| HCM Control Delay, s | 1.4 | 0  | 9.5 |
| HCM LOS              |     |    | A   |

| Minor Lane/Major Mvmt | EBL   | EBT | WBT | WBR | SBLn1 |
|-----------------------|-------|-----|-----|-----|-------|
| Capacity (veh/h)      | 1518  | -   | -   | -   | 863   |
| HCM Lane V/C Ratio    | 0.013 | -   | -   | -   | 0.079 |
| HCM Control Delay (s) | 7.4   | 0   | -   | -   | 9.5   |
| HCM Lane LOS          | A     | A   | -   | -   | A     |
| HCM 95th %tile Q(veh) | 0     | -   | -   | -   | 0.3   |



**Intersection**

Int Delay, s/veh 6.3

**Movement** EBL EBR NBL NBT SBT SBR

|                          |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↘    | ↗    |      | ↑    | ↑    |      |
| Traffic Vol, veh/h       | 80   | 285  | 0    | 146  | 145  | 0    |
| Future Vol, veh/h        | 80   | 285  | 0    | 146  | 145  | 0    |
| 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    | 150  | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | -    | 0    | 0    | -    |
| Grade, %                 | 0    | -    | -    | 0    | 0    | -    |
| Peak Hour Factor         | 89   | 89   | 89   | 89   | 89   | 89   |
| Heavy Vehicles, %        | 5    | 5    | 2    | 2    | 3    | 3    |
| Mvmt Flow                | 90   | 320  | 0    | 164  | 163  | 0    |

**Major/Minor** Minor2 Major1 Major2

|                      |       |       |   |   |   |   |
|----------------------|-------|-------|---|---|---|---|
| Conflicting Flow All | 327   | 163   | - | 0 | - | 0 |
| Stage 1              | 163   | -     | - | - | - | - |
| Stage 2              | 164   | -     | - | - | - | - |
| Critical Hdwy        | 6.45  | 6.25  | - | - | - | - |
| Critical Hdwy Stg 1  | 5.45  | -     | - | - | - | - |
| Critical Hdwy Stg 2  | 5.45  | -     | - | - | - | - |
| Follow-up Hdwy       | 3.545 | 3.345 | - | - | - | - |
| Pot Cap-1 Maneuver   | 661   | 874   | 0 | - | - | 0 |
| Stage 1              | 859   | -     | 0 | - | - | 0 |
| Stage 2              | 858   | -     | 0 | - | - | 0 |
| Platoon blocked, %   |       |       |   | - | - |   |
| Mov Cap-1 Maneuver   | 661   | 874   | - | - | - | - |
| Mov Cap-2 Maneuver   | 693   | -     | - | - | - | - |
| Stage 1              | 859   | -     | - | - | - | - |
| Stage 2              | 858   | -     | - | - | - | - |

**Approach** EB NB SB

HCM Control Delay, s 11.4 0 0  
HCM LOS B

**Minor Lane/Major Mvmt** NBT EBLn1 EBLn2 SBT

|                       |   |      |       |   |
|-----------------------|---|------|-------|---|
| Capacity (veh/h)      | - | 693  | 874   | - |
| HCM Lane V/C Ratio    | - | 0.13 | 0.366 | - |
| HCM Control Delay (s) | - | 11   | 11.5  | - |
| HCM Lane LOS          | - | B    | B     | - |
| HCM 95th %tile Q(veh) | - | 0.4  | 1.7   | - |



HCM 6th Signalized Intersection Summary  
4: 77th Avenue SE & SE 27th St



| Movement                     | EBL  | EBT      | EBR      | WBL      | WBT  | WBR      | NBL      | NBT      | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|----------|----------|----------|------|----------|----------|----------|------|------|------|------|
| Lane Configurations          |      |          |          |          |      |          |          |          |      |      |      |      |
| Traffic Volume (veh/h)       | 35   | 305      | 133      | 45       | 235  | 55       | 135      | 81       | 75   | 130  | 215  | 65   |
| Future Volume (veh/h)        | 35   | 305      | 133      | 45       | 235  | 55       | 135      | 81       | 75   | 130  | 215  | 65   |
| Initial Q (Qb), veh          | 0    | 0        | 0        | 0        | 0    | 0        | 0        | 0        | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 0.98 |          | 0.96     | 0.99     |      | 0.96     | 0.98     |          | 0.97 | 0.98 |      | 0.97 |
| 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       | 1900 | 1900     | 1900     | 1900     | 1900 | 1900     | 1885     | 1885     | 1885 | 1885 | 1885 | 1885 |
| Adj Flow Rate, veh/h         | 38   | 332      | 145      | 49       | 255  | 60       | 147      | 88       | 82   | 141  | 234  | 71   |
| Peak Hour Factor             | 0.92 | 0.92     | 0.92     | 0.92     | 0.92 | 0.92     | 0.92     | 0.92     | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, %         | 0    | 0        | 0        | 0        | 0    | 0        | 1        | 1        | 1    | 1    | 1    | 1    |
| Cap, veh/h                   | 391  | 451      | 197      | 266      | 537  | 126      | 398      | 218      | 203  | 494  | 336  | 102  |
| Arrive On Green              | 0.36 | 0.36     | 0.36     | 0.36     | 0.36 | 0.36     | 0.09     | 0.25     | 0.25 | 0.08 | 0.24 | 0.24 |
| Sat Flow, veh/h              | 1059 | 1235     | 539      | 922      | 1472 | 346      | 1795     | 881      | 821  | 1795 | 1375 | 417  |
| Grp Volume(v), veh/h         | 38   | 0        | 477      | 49       | 0    | 315      | 147      | 0        | 170  | 141  | 0    | 305  |
| Grp Sat Flow(s),veh/h/ln     | 1059 | 0        | 1774     | 922      | 0    | 1819     | 1795     | 0        | 1703 | 1795 | 0    | 1792 |
| Q Serve(g_s), s              | 1.4  | 0.0      | 11.6     | 2.4      | 0.0  | 6.6      | 2.9      | 0.0      | 4.1  | 2.8  | 0.0  | 7.7  |
| Cycle Q Clear(g_c), s        | 8.0  | 0.0      | 11.6     | 14.0     | 0.0  | 6.6      | 2.9      | 0.0      | 4.1  | 2.8  | 0.0  | 7.7  |
| Prop In Lane                 | 1.00 |          | 0.30     | 1.00     |      | 0.19     | 1.00     |          | 0.48 | 1.00 |      | 0.23 |
| Lane Grp Cap(c), veh/h       | 391  | 0        | 647      | 266      | 0    | 664      | 398      | 0        | 421  | 494  | 0    | 437  |
| V/C Ratio(X)                 | 0.10 | 0.00     | 0.74     | 0.18     | 0.00 | 0.47     | 0.37     | 0.00     | 0.40 | 0.29 | 0.00 | 0.70 |
| Avail Cap(c_a), veh/h        | 711  | 0        | 1183     | 545      | 0    | 1213     | 494      | 0        | 688  | 595  | 0    | 724  |
| 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     | 15.1 | 0.0      | 13.7     | 19.7     | 0.0  | 12.1     | 12.7     | 0.0      | 15.6 | 12.3 | 0.0  | 17.0 |
| Incr Delay (d2), s/veh       | 0.1  | 0.0      | 1.7      | 0.3      | 0.0  | 0.5      | 0.6      | 0.0      | 0.6  | 0.3  | 0.0  | 2.0  |
| 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     | 0.3  | 0.0      | 4.3      | 0.5      | 0.0  | 2.4      | 1.1      | 0.0      | 1.5  | 1.0  | 0.0  | 3.1  |
| Unsig. Movement Delay, s/veh |      |          |          |          |      |          |          |          |      |      |      |      |
| LnGrp Delay(d),s/veh         | 15.3 | 0.0      | 15.3     | 20.1     | 0.0  | 12.6     | 13.3     | 0.0      | 16.2 | 12.6 | 0.0  | 19.1 |
| LnGrp LOS                    | B    | A        | B        | C        | A    | B        | B        | A        | B    | B    | A    | B    |
| Approach Vol, veh/h          |      | 515      |          |          | 364  |          |          | 317      |      |      | 446  |      |
| Approach Delay, s/veh        |      | 15.3     |          |          | 13.6 |          |          | 14.9     |      |      | 17.0 |      |
| Approach LOS                 |      | B        |          |          | B    |          |          | B        |      |      | B    |      |
| <b>Timer - Assigned Phs</b>  |      | <b>2</b> | <b>3</b> | <b>4</b> |      | <b>6</b> | <b>7</b> | <b>8</b> |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |      | 23.1     | 9.4      | 17.1     |      | 23.1     | 9.2      | 17.2     |      |      |      |      |
| Change Period (Y+Rc), s      |      | 5.0      | 5.0      | 5.0      |      | 5.0      | 5.0      | 5.0      |      |      |      |      |
| Max Green Setting (Gmax), s  |      | 33.0     | 7.0      | 20.0     |      | 33.0     | 7.0      | 20.0     |      |      |      |      |
| Max Q Clear Time (g_c+I1), s |      | 13.6     | 4.9      | 9.7      |      | 16.0     | 4.8      | 6.1      |      |      |      |      |
| Green Ext Time (p_c), s      |      | 3.4      | 0.1      | 1.4      |      | 2.1      | 0.1      | 0.8      |      |      |      |      |
| <b>Intersection Summary</b>  |      |          |          |          |      |          |          |          |      |      |      |      |
| HCM 6th Ctrl Delay           |      |          | 15.3     |          |      |          |          |          |      |      |      |      |
| HCM 6th LOS                  |      |          | B        |          |      |          |          |          |      |      |      |      |



HCM 6th Signalized Intersection Summary  
 5: Island Crest Way/Island Crest & SE 27th St/I-90 On-ramps



| Movement   | EBL  | EBT  | EBR  | WBL  | WBT | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|--|------|------|------|------|-----|------|------|------|------|------|------|------|
| Lane Configurations  | ↖    | ↗    |      |      |     |      | ↖    | ↗    | ↗    | ↖    | ↗    | ↗    |
| Traffic Volume (veh/h)   | 15   | 350  | 40   | 0    | 0   | 0    | 115  | 130  | 381  | 95   | 318  | 195  |
| Future Volume (veh/h)  | 15   | 350  | 40   | 0    | 0   | 0    | 115  | 130  | 381  | 95   | 318  | 195  |
| Initial Q (Qb), veh  | 0    | 0    | 0    |      |     |      | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)  | 1.00 |      | 0.97 |      |     |      | 1.00 |      | 1.00 | 1.00 |      | 0.97 |
| Parking Bus, Adj   | 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   |      |      |
| Adj Sat Flow, veh/h/ln   | 1924 | 1924 | 1924 |      |     |      | 1964 | 1964 | 1964 | 1879 | 1879 | 1879 |
| Adj Flow Rate, veh/h   | 16   | 376  | 43   |      |     |      | 124  | 140  | 0    | 102  | 342  | 210  |
| Peak Hour Factor   | 0.93 | 0.93 | 0.93 |      |     |      | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Percent Heavy Veh, %   | 1    | 1    | 1    |      |     |      | 1    | 1    | 1    | 1    | 1    | 1    |
| Cap, veh/h   | 561  | 517  | 59   |      |     |      | 407  | 559  |      | 567  | 513  | 423  |
| Arrive On Green  | 0.31 | 0.31 | 0.31 |      |     |      | 0.07 | 0.28 | 0.00 | 0.06 | 0.27 | 0.27 |
| Sat Flow, veh/h  | 1833 | 1689 | 193  |      |     |      | 1870 | 1964 | 1664 | 1790 | 1879 | 1550 |
| Grp Volume(v), veh/h   | 16   | 0    | 419  |      |     |      | 124  | 140  | 0    | 102  | 342  | 210  |
| Grp Sat Flow(s),veh/h/ln   | 1833 | 0    | 1883 |      |     |      | 1870 | 1964 | 1664 | 1790 | 1879 | 1550 |
| Q Serve(g_s), s  | 0.3  | 0.0  | 8.5  |      |     |      | 2.0  | 2.3  | 0.0  | 1.7  | 6.9  | 4.9  |
| Cycle Q Clear(g_c), s  | 0.3  | 0.0  | 8.5  |      |     |      | 2.0  | 2.3  | 0.0  | 1.7  | 6.9  | 4.9  |
| Prop In Lane   | 1.00 |      | 0.10 |      |     |      | 1.00 |      | 1.00 | 1.00 |      | 1.00 |
| Lane Grp Cap(c), veh/h   | 561  | 0    | 577  |      |     |      | 407  | 559  |      | 567  | 513  | 423  |
| V/C Ratio(X)   | 0.03 | 0.00 | 0.73 |      |     |      | 0.30 | 0.25 |      | 0.18 | 0.67 | 0.50 |
| Avail Cap(c_a), veh/h  | 1133 | 0    | 1164 |      |     |      | 1074 | 1398 |      | 1227 | 1338 | 1104 |
| HCM Platoon Ratio  | 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 | 1.00 | 0.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh   | 10.4 | 0.0  | 13.2 |      |     |      | 10.4 | 11.8 | 0.0  | 9.7  | 13.8 | 13.1 |
| Incr Delay (d2), s/veh   | 0.0  | 0.0  | 1.8  |      |     |      | 0.2  | 0.2  | 0.0  | 0.1  | 1.1  | 0.7  |
| Initial Q Delay(d3),s/veh  | 0.0  | 0.0  | 0.0  |      |     |      | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln   | 0.1  | 0.0  | 3.3  |      |     |      | 0.7  | 0.9  | 0.0  | 0.6  | 2.6  | 1.5  |
| Unsig. Movement Delay, s/veh   |      |      |      |      |     |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh   | 10.4 | 0.0  | 15.0 |      |     |      | 10.5 | 11.9 | 0.0  | 9.8  | 14.9 | 13.7 |
| LnGrp LOS  | B    | A    | B    |      |     |      | B    | B    |      | A    | B    | B    |
| Approach Vol, veh/h  |      | 435  |      |      |     |      |      | 264  | A    |      | 654  |      |
| Approach Delay, s/veh  |      | 14.8 |      |      |     |      |      | 11.3 |      |      | 13.7 |      |
| Approach LOS   |      | B    |      |      |     |      |      | B    |      |      | B    |      |
| Timer - Assigned Phs   |      |      | 3    | 4    |     | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s   |      |      | 7.3  | 16.8 |     | 18.7 | 7.8  | 16.3 |      |      |      |      |
| Change Period (Y+Rc), s  |      |      | 4.6  | 4.6  |     | 5.6  | 4.6  | 4.6  |      |      |      |      |
| Max Green Setting (Gmax), s  |      |      | 18.4 | 30.4 |     | 26.4 | 18.4 | 30.4 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s   |      |      | 3.7  | 4.3  |     | 10.5 | 4.0  | 8.9  |      |      |      |      |
| Green Ext Time (p_c), s  |      |      | 0.1  | 0.6  |     | 2.5  | 0.1  | 2.3  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |     |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay   |      |      | 13.6 |      |     |      |      |      |      |      |      |      |
| HCM 6th LOS  |      |      | B    |      |     |      |      |      |      |      |      |      |
| <b>Notes</b>   |      |      |      |      |     |      |      |      |      |      |      |      |
| Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay. |      |      |      |      |     |      |      |      |      |      |      |      |



**Intersection**

|                           |      |
|---------------------------|------|
| Intersection Delay, s/veh | 10.1 |
| Intersection LOS          | B    |

| Movement            | WBL  | WBR  | NBT  | NBR  | SBL  | SBT  |
|---------------------|------|------|------|------|------|------|
| Lane Configurations |      |      |      |      |      |      |
| Traffic Vol, veh/h  | 133  | 125  | 140  | 96   | 115  | 95   |
| Future Vol, veh/h   | 133  | 125  | 140  | 96   | 115  | 95   |
| Peak Hour Factor    | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, %   | 1    | 1    | 2    | 2    | 2    | 2    |
| Mvmt Flow           | 143  | 134  | 151  | 103  | 124  | 102  |
| Number of Lanes     | 1    | 1    | 1    | 0    | 0    | 1    |

| Approach                   | WB  | NB   | SB   |
|----------------------------|-----|------|------|
| Opposing Approach          |     | SB   | NB   |
| Opposing Lanes             | 0   | 1    | 1    |
| Conflicting Approach Left  | NB  |      | WB   |
| Conflicting Lanes Left     | 1   | 0    | 2    |
| Conflicting Approach Right | SB  | WB   |      |
| Conflicting Lanes Right    | 1   | 2    | 0    |
| HCM Control Delay          | 9.9 | 10.1 | 10.5 |
| HCM LOS                    | A   | B    | B    |

| Lane                   | NBLn1 | WBLn1 | WBLn2 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 0%    | 100%  | 0%    | 55%   |
| Vol Thru, %            | 59%   | 0%    | 0%    | 45%   |
| Vol Right, %           | 41%   | 0%    | 100%  | 0%    |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 236   | 133   | 125   | 210   |
| LT Vol                 | 0     | 133   | 0     | 115   |
| Through Vol            | 140   | 0     | 0     | 95    |
| RT Vol                 | 96    | 0     | 125   | 0     |
| Lane Flow Rate         | 254   | 143   | 134   | 226   |
| Geometry Grp           | 2     | 7     | 7     | 2     |
| Degree of Util (X)     | 0.331 | 0.244 | 0.184 | 0.317 |
| Departure Headway (Hd) | 4.69  | 6.138 | 4.927 | 5.056 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 761   | 581   | 720   | 707   |
| Service Time           | 2.753 | 3.922 | 2.71  | 3.124 |
| HCM Lane V/C Ratio     | 0.334 | 0.246 | 0.186 | 0.32  |
| HCM Control Delay      | 10.1  | 10.9  | 8.8   | 10.5  |
| HCM Lane LOS           | B     | B     | A     | B     |
| HCM 95th-tile Q        | 1.5   | 1     | 0.7   | 1.4   |



**Intersection**

|                           |      |
|---------------------------|------|
| Intersection Delay, s/veh | 14.3 |
| Intersection LOS          | B    |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Vol, veh/h  | 50   | 206  | 30   | 65   | 168  | 80   | 35   | 105  | 100  | 75   | 80   | 95   |
| Future Vol, veh/h   | 50   | 206  | 30   | 65   | 168  | 80   | 35   | 105  | 100  | 75   | 80   | 95   |
| Peak Hour Factor    | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 | 0.92 |
| Heavy Vehicles, %   | 0    | 0    | 0    | 1    | 1    | 1    | 3    | 3    | 3    | 3    | 3    | 3    |
| Mvmt Flow           | 54   | 224  | 33   | 71   | 183  | 87   | 38   | 114  | 109  | 82   | 87   | 103  |
| Number of Lanes     | 1    | 1    | 0    | 0    | 1    | 1    | 1    | 1    | 0    | 1    | 1    | 0    |

| Approach                   | EB   | WB   | NB   | SB |
|----------------------------|------|------|------|----|
| Opposing Approach          | WB   | EB   | SB   | NB |
| Opposing Lanes             | 2    | 2    | 2    | 2  |
| Conflicting Approach Left  | SB   | NB   | EB   | WB |
| Conflicting Lanes Left     | 2    | 2    | 2    | 2  |
| Conflicting Approach Right | NB   | SB   | WB   | EB |
| Conflicting Lanes Right    | 2    | 2    | 2    | 2  |
| HCM Control Delay          | 15.1 | 14.9 | 14.1 | 13 |
| HCM LOS                    | C    | B    | B    | B  |

| Lane                   | NBLn1 | NBLn2 | EBLn1 | EBLn2 | WBLn1 | WBLn2 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vol Left, %            | 100%  | 0%    | 100%  | 0%    | 28%   | 0%    | 100%  | 0%    |
| Vol Thru, %            | 0%    | 51%   | 0%    | 87%   | 72%   | 0%    | 0%    | 46%   |
| Vol Right, %           | 0%    | 49%   | 0%    | 13%   | 0%    | 100%  | 0%    | 54%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 35    | 205   | 50    | 236   | 233   | 80    | 75    | 175   |
| LT Vol                 | 35    | 0     | 50    | 0     | 65    | 0     | 75    | 0     |
| Through Vol            | 0     | 105   | 0     | 206   | 168   | 0     | 0     | 80    |
| RT Vol                 | 0     | 100   | 0     | 30    | 0     | 80    | 0     | 95    |
| Lane Flow Rate         | 38    | 223   | 54    | 257   | 253   | 87    | 82    | 190   |
| Geometry Grp           | 7     | 7     | 7     | 7     | 7     | 7     | 7     | 7     |
| Degree of Util (X)     | 0.082 | 0.424 | 0.112 | 0.488 | 0.496 | 0.15  | 0.174 | 0.36  |
| Departure Headway (Hd) | 7.717 | 6.856 | 7.445 | 6.843 | 7.052 | 6.194 | 7.705 | 6.804 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 465   | 526   | 482   | 526   | 512   | 578   | 465   | 529   |
| Service Time           | 5.462 | 4.6   | 5.188 | 4.586 | 4.794 | 3.936 | 5.45  | 4.549 |
| HCM Lane V/C Ratio     | 0.082 | 0.424 | 0.112 | 0.489 | 0.494 | 0.151 | 0.176 | 0.359 |
| HCM Control Delay      | 11.2  | 14.6  | 11.1  | 16    | 16.6  | 10    | 12.1  | 13.4  |
| HCM Lane LOS           | B     | B     | B     | C     | C     | A     | B     | B     |
| HCM 95th-tile Q        | 0.3   | 2.1   | 0.4   | 2.6   | 2.7   | 0.5   | 0.6   | 1.6   |



HCM 6th Signalized Intersection Summary  
8: Island Crest Way & SE 28th St



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      | ↕    | ↗    |      | ↕    |      | ↗    | ↕↗   |      | ↗    | ↕    |      |
| Traffic Volume (veh/h)       | 176  | 30   | 185  | 0    | 30   | 35   | 180  | 400  | 0    | 25   | 245  | 88   |
| Future Volume (veh/h)        | 176  | 30   | 185  | 0    | 30   | 35   | 180  | 400  | 0    | 25   | 245  | 88   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 0.97 | 1.00 |      | 0.96 | 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   |      | No   |      | No   |
| Adj Sat Flow, veh/h/ln       | 1847 | 1847 | 1847 | 2027 | 2027 | 2027 | 1964 | 1964 | 1964 | 1864 | 1864 | 1864 |
| Adj Flow Rate, veh/h         | 183  | 31   | 193  | 0    | 31   | 36   | 188  | 417  | 0    | 26   | 255  | 92   |
| Peak Hour Factor             | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, %         | 0    | 0    | 0    | 2    | 2    | 2    | 1    | 1    | 1    | 2    | 2    | 2    |
| Cap, veh/h                   | 310  | 52   | 311  | 0    | 70   | 81   | 418  | 1290 | 0    | 422  | 337  | 122  |
| Arrive On Green              | 0.20 | 0.20 | 0.20 | 0.00 | 0.08 | 0.08 | 0.11 | 0.35 | 0.00 | 0.02 | 0.26 | 0.26 |
| Sat Flow, veh/h              | 1515 | 257  | 1519 | 0    | 834  | 968  | 1870 | 3829 | 0    | 1776 | 1307 | 472  |
| Grp Volume(v), veh/h         | 214  | 0    | 193  | 0    | 0    | 67   | 188  | 417  | 0    | 26   | 0    | 347  |
| Grp Sat Flow(s),veh/h/ln     | 1771 | 0    | 1519 | 0    | 0    | 1802 | 1870 | 1865 | 0    | 1776 | 0    | 1779 |
| Q Serve(g_s), s              | 5.8  | 0.0  | 6.1  | 0.0  | 0.0  | 1.9  | 3.8  | 4.4  | 0.0  | 0.5  | 0.0  | 9.5  |
| Cycle Q Clear(g_c), s        | 5.8  | 0.0  | 6.1  | 0.0  | 0.0  | 1.9  | 3.8  | 4.4  | 0.0  | 0.5  | 0.0  | 9.5  |
| Prop In Lane                 | 0.86 |      | 1.00 | 0.00 |      | 0.54 | 1.00 |      | 0.00 | 1.00 |      | 0.27 |
| Lane Grp Cap(c), veh/h       | 362  | 0    | 311  | 0    | 0    | 151  | 418  | 1290 | 0    | 422  | 0    | 459  |
| V/C Ratio(X)                 | 0.59 | 0.00 | 0.62 | 0.00 | 0.00 | 0.44 | 0.45 | 0.32 | 0.00 | 0.06 | 0.00 | 0.76 |
| Avail Cap(c_a), veh/h        | 1017 | 0    | 873  | 0    | 0    | 865  | 942  | 3162 | 0    | 1075 | 0    | 1508 |
| 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 | 0.00 | 0.00 | 1.00 | 1.00 | 1.00 | 0.00 | 1.00 | 0.00 | 1.00 |
| Uniform Delay (d), s/veh     | 19.1 | 0.0  | 19.3 | 0.0  | 0.0  | 23.2 | 13.0 | 12.8 | 0.0  | 11.1 | 0.0  | 18.2 |
| Incr Delay (d2), s/veh       | 1.1  | 0.0  | 1.5  | 0.0  | 0.0  | 1.5  | 0.3  | 0.1  | 0.0  | 0.0  | 0.0  | 2.6  |
| 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     | 2.3  | 0.0  | 2.0  | 0.0  | 0.0  | 0.8  | 1.3  | 1.6  | 0.0  | 0.2  | 0.0  | 3.7  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 20.3 | 0.0  | 20.8 | 0.0  | 0.0  | 24.7 | 13.3 | 12.9 | 0.0  | 11.1 | 0.0  | 20.7 |
| LnGrp LOS                    | C    | A    | C    | A    | A    | C    | B    | B    | A    | B    | A    | C    |
| Approach Vol, veh/h          |      | 407  |      |      | 67   |      |      | 605  |      |      | 373  |      |
| Approach Delay, s/veh        |      | 20.5 |      |      | 24.7 |      |      | 13.0 |      |      | 20.1 |      |
| Approach LOS                 |      | C    |      |      | C    |      |      | B    |      |      | C    |      |
| Timer - Assigned Phs         |      | 2    | 3    | 4    |      | 6    | 7    | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     |      | 8.9  | 5.5  | 23.4 |      | 15.4 | 10.1 | 18.7 |      |      |      |      |
| Change Period (Y+Rc), s      |      | 4.5  | 4.5  | 5.0  |      | 4.5  | 4.5  | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  |      | 25.5 | 20.5 | 45.0 |      | 30.5 | 20.5 | 45.0 |      |      |      |      |
| Max Q Clear Time (g_c+11), s |      | 3.9  | 2.5  | 6.4  |      | 8.1  | 5.8  | 11.5 |      |      |      |      |
| Green Ext Time (p_c), s      |      | 0.2  | 0.0  | 2.9  |      | 1.6  | 0.2  | 2.2  |      |      |      |      |
| <b>Intersection Summary</b>  |      |      |      |      |      |      |      |      |      |      |      |      |
| HCM 6th Ctrl Delay           |      |      |      | 17.5 |      |      |      |      |      |      |      |      |
| HCM 6th LOS                  |      |      |      | B    |      |      |      |      |      |      |      |      |

**Intersection**

Intersection Delay, s/veh 10.5  
Intersection LOS B

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      | ↕    |      |      | ↕    |      | ↕    | ↕    |      | ↕    | ↕    |      |
| Traffic Vol, veh/h  | 45   | 68   | 55   | 5    | 55   | 46   | 70   | 135  | 10   | 113  | 175  | 30   |
| Future Vol, veh/h   | 45   | 68   | 55   | 5    | 55   | 46   | 70   | 135  | 10   | 113  | 175  | 30   |
| Peak Hour Factor    | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 | 0.93 |
| Heavy Vehicles, %   | 0    | 0    | 0    | 1    | 1    | 1    | 1    | 1    | 1    | 0    | 0    | 0    |
| Mvmt Flow           | 48   | 73   | 59   | 5    | 59   | 49   | 75   | 145  | 11   | 122  | 188  | 32   |
| Number of Lanes     | 0    | 1    | 0    | 0    | 1    | 0    | 1    | 1    | 0    | 1    | 1    | 0    |

| Approach                   | EB   | WB  | NB   | SB   |
|----------------------------|------|-----|------|------|
| Opposing Approach          | WB   | EB  | SB   | NB   |
| Opposing Lanes             | 1    | 1   | 2    | 2    |
| Conflicting Approach Left  | SB   | NB  | EB   | WB   |
| Conflicting Lanes Left     | 2    | 2   | 1    | 1    |
| Conflicting Approach Right | NB   | SB  | WB   | EB   |
| Conflicting Lanes Right    | 2    | 2   | 1    | 1    |
| HCM Control Delay          | 10.5 | 9.7 | 10.3 | 10.9 |
| HCM LOS                    | B    | A   | B    | B    |

| Lane                   | NBLn1 | NBLn2 | EBLn1 | WBLn1 | SBLn1 | SBLn2 |
|------------------------|-------|-------|-------|-------|-------|-------|
| Vol Left, %            | 100%  | 0%    | 27%   | 5%    | 100%  | 0%    |
| Vol Thru, %            | 0%    | 93%   | 40%   | 52%   | 0%    | 85%   |
| Vol Right, %           | 0%    | 7%    | 33%   | 43%   | 0%    | 15%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 70    | 145   | 168   | 106   | 113   | 205   |
| LT Vol                 | 70    | 0     | 45    | 5     | 113   | 0     |
| Through Vol            | 0     | 135   | 68    | 55    | 0     | 175   |
| RT Vol                 | 0     | 10    | 55    | 46    | 0     | 30    |
| Lane Flow Rate         | 75    | 156   | 181   | 114   | 122   | 220   |
| Geometry Grp           | 7     | 7     | 2     | 2     | 7     | 7     |
| Degree of Util (X)     | 0.132 | 0.249 | 0.273 | 0.173 | 0.208 | 0.34  |
| Departure Headway (Hd) | 6.315 | 5.759 | 5.435 | 5.476 | 6.159 | 5.549 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 568   | 624   | 661   | 654   | 583   | 648   |
| Service Time           | 4.047 | 3.491 | 3.469 | 3.513 | 3.887 | 3.277 |
| HCM Lane V/C Ratio     | 0.132 | 0.25  | 0.274 | 0.174 | 0.209 | 0.34  |
| HCM Control Delay      | 10    | 10.4  | 10.5  | 9.7   | 10.5  | 11.1  |
| HCM Lane LOS           | A     | B     | B     | A     | B     | B     |
| HCM 95th-tile Q        | 0.5   | 1     | 1.1   | 0.6   | 0.8   | 1.5   |



**Intersection**

Int Delay, s/veh            4.7

**Movement**            EBL    EBR    NBL    NBT    SBT    SBR

|                          |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      | ↙ ↘  |      | ↖ ↗  |      | ↖ ↗  |      |
| Traffic Vol, veh/h       | 66   | 129  | 62   | 210  | 170  | 58   |
| Future Vol, veh/h        | 66   | 129  | 62   | 210  | 170  | 58   |
| Conflicting Peds, #/hr   | 22   | 19   | 19   | 0    | 0    | 22   |
| 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         | 93   | 93   | 93   | 93   | 93   | 93   |
| Heavy Vehicles, %        | 0    | 0    | 1    | 1    | 1    | 1    |
| Mvmt Flow                | 71   | 139  | 67   | 226  | 183  | 62   |

**Major/Minor**            Minor2            Major1            Major2

|                      |     |     |       |   |   |   |
|----------------------|-----|-----|-------|---|---|---|
| Conflicting Flow All | 618 | 255 | 267   | 0 | - | 0 |
| Stage 1              | 236 | -   | -     | - | - | - |
| Stage 2              | 382 | -   | -     | - | - | - |
| Critical Hdwy        | 6.4 | 6.2 | 4.11  | - | - | - |
| Critical Hdwy Stg 1  | 5.4 | -   | -     | - | - | - |
| Critical Hdwy Stg 2  | 5.4 | -   | -     | - | - | - |
| Follow-up Hdwy       | 3.5 | 3.3 | 2.209 | - | - | - |
| Pot Cap-1 Maneuver   | 456 | 789 | 1303  | - | - | - |
| Stage 1              | 808 | -   | -     | - | - | - |
| Stage 2              | 694 | -   | -     | - | - | - |
| Platoon blocked, %   |     |     |       | - | - | - |
| Mov Cap-1 Maneuver   | 413 | 762 | 1279  | - | - | - |
| Mov Cap-2 Maneuver   | 413 | -   | -     | - | - | - |
| Stage 1              | 746 | -   | -     | - | - | - |
| Stage 2              | 682 | -   | -     | - | - | - |

**Approach**            EB            NB            SB

HCM Control Delay, s    14.4            1.8            0  
HCM LOS            B

**Minor Lane/Major Mvmt**            NBL    NBT    EBLn1    SBT    SBR

|                       |       |   |       |   |   |
|-----------------------|-------|---|-------|---|---|
| Capacity (veh/h)      | 1279  | - | 593   | - | - |
| HCM Lane V/C Ratio    | 0.052 | - | 0.354 | - | - |
| HCM Control Delay (s) | 8     | 0 | 14.4  | - | - |
| HCM Lane LOS          | A     | A | B     | - | - |
| HCM 95th %tile Q(veh) | 0.2   | - | 1.6   | - | - |

HCM 6th Signalized Intersection Summary  
11: Island Crest Way & SE 40th Street



| Movement                     | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations          |      |      |      |      |      |      |      |      |      |      |      |      |
| Traffic Volume (veh/h)       | 16   | 185  | 175  | 210  | 190  | 167  | 100  | 374  | 110  | 285  | 649  | 10   |
| Future Volume (veh/h)        | 16   | 185  | 175  | 210  | 190  | 167  | 100  | 374  | 110  | 285  | 649  | 10   |
| Initial Q (Qb), veh          | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)          | 1.00 |      | 0.98 | 1.00 |      | 0.97 | 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       | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1885 | 1900 | 1900 | 1900 |
| Adj Flow Rate, veh/h         | 17   | 193  | 182  | 208  | 213  | 174  | 104  | 390  | 115  | 297  | 676  | 10   |
| Peak Hour Factor             | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 | 0.96 |
| Percent Heavy Veh, %         | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 1    | 0    | 0    | 0    |
| Cap, veh/h                   | 286  | 300  | 387  | 311  | 327  | 575  | 154  | 529  | 154  | 347  | 1091 | 16   |
| Arrive On Green              | 0.16 | 0.16 | 0.16 | 0.17 | 0.17 | 0.17 | 0.09 | 0.19 | 0.19 | 0.19 | 0.30 | 0.30 |
| Sat Flow, veh/h              | 1795 | 1885 | 1574 | 1795 | 1885 | 1553 | 1795 | 2734 | 797  | 1810 | 3641 | 54   |
| Grp Volume(v), veh/h         | 17   | 193  | 182  | 208  | 213  | 174  | 104  | 254  | 251  | 297  | 335  | 351  |
| Grp Sat Flow(s),veh/h/ln     | 1795 | 1885 | 1574 | 1795 | 1885 | 1553 | 1795 | 1791 | 1739 | 1810 | 1805 | 1890 |
| Q Serve(g_s), s              | 0.6  | 6.8  | 7.0  | 7.7  | 7.5  | 5.7  | 4.0  | 9.4  | 9.6  | 11.2 | 11.3 | 11.3 |
| Cycle Q Clear(g_c), s        | 0.6  | 6.8  | 7.0  | 7.7  | 7.5  | 5.7  | 4.0  | 9.4  | 9.6  | 11.2 | 11.3 | 11.3 |
| Prop In Lane                 | 1.00 |      | 1.00 | 1.00 |      | 1.00 | 1.00 |      | 0.46 | 1.00 |      | 0.03 |
| Lane Grp Cap(c), veh/h       | 286  | 300  | 387  | 311  | 327  | 575  | 154  | 347  | 337  | 347  | 541  | 566  |
| V/C Ratio(X)                 | 0.06 | 0.64 | 0.47 | 0.67 | 0.65 | 0.30 | 0.68 | 0.73 | 0.75 | 0.86 | 0.62 | 0.62 |
| Avail Cap(c_a), veh/h        | 684  | 718  | 736  | 887  | 931  | 1073 | 456  | 910  | 884  | 690  | 1146 | 1201 |
| 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 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh     | 25.3 | 27.9 | 22.8 | 27.4 | 27.3 | 16.1 | 31.4 | 26.8 | 26.9 | 27.7 | 21.3 | 21.3 |
| Incr Delay (d2), s/veh       | 0.0  | 0.9  | 0.3  | 0.9  | 0.8  | 0.1  | 1.9  | 1.1  | 1.2  | 2.4  | 0.4  | 0.4  |
| 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     | 0.2  | 3.0  | 2.5  | 3.2  | 3.3  | 1.9  | 1.7  | 3.9  | 3.9  | 4.8  | 4.5  | 4.7  |
| Unsig. Movement Delay, s/veh |      |      |      |      |      |      |      |      |      |      |      |      |
| LnGrp Delay(d),s/veh         | 25.3 | 28.8 | 23.2 | 28.3 | 28.1 | 16.2 | 33.4 | 28.0 | 28.2 | 30.1 | 21.8 | 21.8 |
| LnGrp LOS                    | C    | C    | C    | C    | C    | B    | C    | C    | C    | C    | C    | C    |
| Approach Vol, veh/h          |      | 392  |      |      | 595  |      |      | 609  |      |      | 983  |      |
| Approach Delay, s/veh        |      | 26.0 |      |      | 24.7 |      |      | 29.0 |      |      | 24.3 |      |
| Approach LOS                 |      | C    |      |      | C    |      |      | C    |      |      | C    |      |
| Timer - Assigned Phs         | 1    | 2    |      | 4    | 5    | 6    |      | 8    |      |      |      |      |
| Phs Duration (G+Y+Rc), s     | 18.6 | 18.7 |      | 17.3 | 11.1 | 26.2 |      | 16.3 |      |      |      |      |
| Change Period (Y+Rc), s      | 5.0  | 5.0  |      | 5.0  | 5.0  | 5.0  |      | 5.0  |      |      |      |      |
| Max Green Setting (Gmax), s  | 27.0 | 36.0 |      | 35.0 | 18.0 | 45.0 |      | 27.0 |      |      |      |      |
| Max Q Clear Time (g_c+I1), s | 13.2 | 11.6 |      | 9.7  | 6.0  | 13.3 |      | 9.0  |      |      |      |      |
| Green Ext Time (p_c), s      | 0.4  | 1.9  |      | 1.4  | 0.1  | 2.7  |      | 1.0  |      |      |      |      |

Intersection Summary

|                    |      |
|--------------------|------|
| HCM 6th Ctrl Delay | 25.8 |
| HCM 6th LOS        | C    |

Notes

User approved volume balancing among the lanes for turning movement.



**Intersection**

Int Delay, s/veh 1.9

**Movement** EBL EBT WBT WBR SBL SBR

|                          |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|
| Lane Configurations      |      | ↕    | ↕    |      | ↕    |      |
| Traffic Vol, veh/h       | 32   | 177  | 103  | 42   | 28   | 20   |
| Future Vol, veh/h        | 32   | 177  | 103  | 42   | 28   | 20   |
| 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         | 92   | 92   | 92   | 92   | 92   | 92   |
| Heavy Vehicles, %        | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow                | 35   | 192  | 112  | 46   | 30   | 22   |

**Major/Minor** Major1 Major2 Minor2

|                      |       |   |   |   |       |       |
|----------------------|-------|---|---|---|-------|-------|
| Conflicting Flow All | 158   | 0 | - | 0 | 397   | 135   |
| Stage 1              | -     | - | - | - | 135   | -     |
| Stage 2              | -     | - | - | - | 262   | -     |
| Critical Hdwy        | 4.12  | - | - | - | 6.42  | 6.22  |
| Critical Hdwy Stg 1  | -     | - | - | - | 5.42  | -     |
| Critical Hdwy Stg 2  | -     | - | - | - | 5.42  | -     |
| Follow-up Hdwy       | 2.218 | - | - | - | 3.518 | 3.318 |
| Pot Cap-1 Maneuver   | 1422  | - | - | - | 608   | 914   |
| Stage 1              | -     | - | - | - | 891   | -     |
| Stage 2              | -     | - | - | - | 782   | -     |
| Platoon blocked, %   |       | - | - | - |       |       |
| Mov Cap-1 Maneuver   | 1422  | - | - | - | 591   | 914   |
| Mov Cap-2 Maneuver   | -     | - | - | - | 591   | -     |
| Stage 1              | -     | - | - | - | 866   | -     |
| Stage 2              | -     | - | - | - | 782   | -     |

**Approach** EB WB SB

HCM Control Delay, s 1.2 0 10.6  
HCM LOS B

**Minor Lane/Major Mvmt** EBL EBT WBT WBR SBLn1

|                       |       |   |   |   |       |
|-----------------------|-------|---|---|---|-------|
| Capacity (veh/h)      | 1422  | - | - | - | 693   |
| HCM Lane V/C Ratio    | 0.024 | - | - | - | 0.075 |
| HCM Control Delay (s) | 7.6   | 0 | - | - | 10.6  |
| HCM Lane LOS          | A     | A | - | - | B     |
| HCM 95th %tile Q(veh) | 0.1   | - | - | - | 0.2   |

## Appendix D: Trip Generation



### AM Peak Hour Trip Generation

| Land Use                                  | Size         | Trip Rate <sup>1</sup> | Total Trips |                  |    |     | Internal Trips <sup>3</sup> |     |       | Driveway Trips |     |       | Pass-By Trips             |    |     |       | Primary Trips |           |           |
|---|--------------|------------------------|-------------|------------------|----|-----|-----------------------------|-----|-------|----------------|-----|-------|---------------------------|----|-----|-------|---------------|-----------|-----------|
|   |              |                        | Total       | In% <sup>2</sup> | In | Out | In                          | Out | Total | In             | Out | Total | Pass-By Rate <sup>4</sup> | In | Out | Total | In            | Out       | Total     |
| <b>Proposed</b>                           |              |                        |             |                  |    |     |                             |     |       |                |     |       |                           |    |     |       |               |           |           |
| Shopping Center (820)                     | 7,930 sq ft  | 0.94 per 1000 sq ft    | 7           | 62%              | 4  | 3   | 0                           | 0   | 0     | 4              | 3   | 7     | 0%                        | 0  | 0   | 0     | 4             | 3         | 7         |
| High-Turnover (Sit-Down) Restaurant (932) | 5,417 sq ft  | 9.94 per 1000 sq ft    | 54          | 55%              | 30 | 24  | 6                           | 1   | 7     | 24             | 23  | 47    | 0%                        | 0  | 0   | 0     | 24            | 23        | 47        |
| Multifamily Housing (Mid-Rise) (221)      | 160 units    | 0.36 per unit          | 58          | 26%              | 15 | 43  | 1                           | 6   | 7     | 14             | 37  | 51    | 0%                        | 0  | 0   | 0     | 14            | 37        | 51        |
| <b>Existing<sup>5</sup></b>               |              |                        |             |                  |    |     |                             |     |       |                |     |       |                           |    |     |       |               |           |           |
| Various Uses <sup>5</sup>                 | 19,136 sq ft |                        |             |                  |    |     |                             |     |       |                |     |       | 0%                        | 0  | 0   | 0     | 10            | 9         | 19        |
| <b>Net New</b>                            |              |                        |             |                  |    |     |                             |     |       |                |     |       |                           |    |     |       | <b>32</b>     | <b>54</b> | <b>86</b> |

1. Trip rate from ITE *Trip Generation*, 10th Edition (2017) and methods in *Trip Generation Handbook*, 3rd Edition (2017).  
 2: In/out percentages based on ITE *Trip Generation*, 10th Edition (2017)  
 3: Internal Trips methodology consistent with ITE *Trip Generation Handbook*, 3rd Edition (2017)  
 4: No weekday AM peak hour pass-by rate is given, assumed to be 0% for conservative purposes.  
 5. Existing trip generation based on driveway counts conducted in November 2018.

### PM Peak Hour Trip Generation

| Land Use                                  | Size         | Trip Rate <sup>1</sup>         | Total Trips |                  |    |     | Internal Trips <sup>3</sup> |     |       | Driveway Trips |     |       | Pass-By Trips             |    |     |       | Primary Trips |          |           |
|---|--------------|--------------------------------|-------------|------------------|----|-----|-----------------------------|-----|-------|----------------|-----|-------|---------------------------|----|-----|-------|---------------|----------|-----------|
|   |              |                                | Total       | In% <sup>2</sup> | In | Out | In                          | Out | Total | In             | Out | Total | Pass-By Rate <sup>4</sup> | In | Out | Total | In            | Out      | Total     |
| <b>Proposed</b>                           |              |                                |             |                  |    |     |                             |     |       |                |     |       |                           |    |     |       |               |          |           |
| Shopping Center (820)                     | 7,930 sq ft  | $\ln(T) = .74 * \ln(X) + 2.89$ | 83          | 48%              | 40 | 43  | 12                          | 21  | 33    | 28             | 22  | 50    | 34%                       | 9  | 9   | 18    | 19            | 13       | 32        |
| High-Turnover (Sit-Down) Restaurant (932) | 5,417 sq ft  | 9.77 per 1000 sq ft            | 53          | 62%              | 33 | 20  | 15                          | 12  | 27    | 18             | 8   | 26    | 43%                       | 6  | 6   | 12    | 12            | 2        | 14        |
| Multifamily Housing (Mid-Rise) (221)      | 160 units    | 0.44 per unit                  | 70          | 61%              | 43 | 27  | 15                          | 9   | 24    | 28             | 18  | 46    | 0%                        | 0  | 0   | 0     | 28            | 18       | 46        |
| <b>Existing<sup>5</sup></b>               |              |                                |             |                  |    |     |                             |     |       |                |     |       |                           |    |     |       |               |          |           |
| Various Uses <sup>5</sup>                 | 19,136 sq ft |                                |             |                  |    |     |                             |     |       |                |     |       | 34%                       | 16 | 16  | 32    | 33            | 32       | 65        |
| <b>Net New</b>                            |              |                                |             |                  |    |     |                             |     |       |                |     |       |                           |    |     |       | <b>26</b>     | <b>1</b> | <b>27</b> |

1. Trip rate from ITE *Trip Generation*, 10th Edition (2017) and methods in *Trip Generation Handbook*, 3rd Edition (2017).

2. In/out percentages based on ITE *Trip Generation*, 10th Edition (2017)

3. Internal Trips methodology consistent with ITE *Trip Generation Handbook*, 3rd Edition (2017)

4. Weekday PM peak hour pass-by rate from ITE *Trip Generation Handbook*, 3rd Edition (2017).

5. Existing trip generation based on driveway counts conducted in November 2018.



| NCHRP 684 Internal Trip Capture Estimation Tool |                           |                      |               |
|---|---------------------------|----------------------|---------------|
| <b>Project Name:</b>                            | Mercer Island Residential | <b>Organization:</b> | Transpo Group |
| <b>Project Location:</b>                        | Mercer Island Residential | <b>Performed By:</b> |               |
| <b>Scenario Description:</b>                    |                           | <b>Date:</b>         |               |
| <b>Analysis Year:</b>                           |                           | <b>Checked By:</b>   |               |
| <b>Analysis Period:</b>                         | AM Street Peak Hour       | <b>Date:</b>         |               |

| Land Use                         | Development Data (For Information Only) |          |       | Estimated Vehicle-Trips <sup>3</sup> |          |         |
|----------------------------------|---|----------|-------|--------------------------------------|----------|---------|
|                                  | ITE LUCs <sup>1</sup>                   | Quantity | Units | Total                                | Entering | Exiting |
| Office                           |   |          |       | 0                                    | 0        | 0       |
| Retail                           |   |          |       | 7                                    | 4        | 3       |
| Restaurant                       |   |          |       | 54                                   | 30       | 24      |
| Cinema/Entertainment             |   |          |       | 0                                    | 0        | 0       |
| Residential                      |   |          |       | 58                                   | 15       | 43      |
| Hotel                            |   |          |       | 0                                    | 0        | 0       |
| All Other Land Uses <sup>2</sup> |   |          |       | 0                                    | 0        | 0       |
|                                  |   |          |       | 119                                  | 49       | 70      |

| Land Use                         | Entering Trips         |           |                 | Exiting Trips          |           |                 |
|----------------------------------|------------------------|-----------|-----------------|------------------------|-----------|-----------------|
|                                  | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized |
| Office                           | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |
| Retail                           | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |
| Restaurant                       | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |
| Cinema/Entertainment             | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |
| Residential                      | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |
| Hotel                            | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |
| All Other Land Uses <sup>2</sup> | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |

| Origin (From)        | Destination (To) |        |            |                      |             |       |
|----------------------|------------------|--------|------------|----------------------|-------------|-------|
|                      | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office               |                  |        |            |                      |             |       |
| Retail               |                  |        |            |                      |             |       |
| Restaurant           |                  |        |            |                      |             |       |
| Cinema/Entertainment |                  |        |            |                      |             |       |
| Residential          |                  |        |            |                      |             |       |
| Hotel                |                  |        |            |                      |             |       |

| Origin (From)        | Destination (To) |        |            |                      |             |       |
|----------------------|------------------|--------|------------|----------------------|-------------|-------|
|                      | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office               |                  | 0      | 0          | 0                    | 0           | 0     |
| Retail               | 0                |        | 0          | 0                    | 0           | 0     |
| Restaurant           | 0                | 0      |            | 0                    | 1           | 0     |
| Cinema/Entertainment | 0                | 0      | 0          |                      | 0           | 0     |
| Residential          | 0                | 0      | 6          | 0                    |             | 0     |
| Hotel                | 0                | 0      | 0          | 0                    | 0           |       |

|   | Total | Entering | Exiting |
|---|-------|----------|---------|
| All Person-Trips                          | 119   | 49       | 70      |
| Internal Capture Percentage               | 12%   | 14%      | 10%     |
| External Vehicle-Trips <sup>5</sup>       | 105   | 42       | 63      |
| External Transit-Trips <sup>6</sup>       | 0     | 0        | 0       |
| External Non-Motorized Trips <sup>6</sup> | 0     | 0        | 0       |

| Land Use             | Entering Trips | Exiting Trips |
|----------------------|----------------|---------------|
| Office               | N/A            | N/A           |
| Retail               | 0%             | 0%            |
| Restaurant           | 20%            | 4%            |
| Cinema/Entertainment | N/A            | N/A           |
| Residential          | 7%             | 14%           |
| Hotel                | N/A            | N/A           |

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

<sup>4</sup>Enter vehicle occupancy assumed in Table 1-A vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made to Tables 5-A, 9-A (O and D). Enter transit, non-motorized percentages that will result with proposed mixed-use project complete.

<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A.

<sup>6</sup>Person-Trips

\*Indicates computation that has been rounded to the nearest whole number.

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|                         |                           |
|-------------------------|---------------------------|
| <b>Project Name:</b>    | Mercer Island Residential |
| <b>Analysis Period:</b> | AM Street Peak Hour       |

| Table 7-A: Conversion of Vehicle-Trip Ends to Person-Trip Ends |                               |               |               |                              |               |               |
|--|-------------------------------|---------------|---------------|------------------------------|---------------|---------------|
| Land Use   | Table 7-A (D): Entering Trips |               |               | Table 7-A (O): Exiting Trips |               |               |
|  | Veh. Occ.                     | Vehicle-Trips | Person-Trips* | Veh. Occ.                    | Vehicle-Trips | Person-Trips* |
| Office   | 1.00                          | 0             | 0             | 1.00                         | 0             | 0             |
| Retail   | 1.00                          | 4             | 4             | 1.00                         | 3             | 3             |
| Restaurant   | 1.00                          | 30            | 30            | 1.00                         | 24            | 24            |
| Cinema/Entertainment   | 1.00                          | 0             | 0             | 1.00                         | 0             | 0             |
| Residential  | 1.00                          | 15            | 15            | 1.00                         | 43            | 43            |
| Hotel  | 1.00                          | 0             | 0             | 1.00                         | 0             | 0             |

| Table 8-A (O): Internal Person-Trip Origin-Destination Matrix (Computed at Origin) |                  |        |            |                      |             |       |
|--|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)  | Destination (To) |        |            |                      |             |       |
|  | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office   |                  | 0      | 0          | 0                    | 0           | 0     |
| Retail   | 1                |        | 0          | 0                    | 0           | 0     |
| Restaurant   | 7                | 3      |            | 0                    | 1           | 1     |
| Cinema/Entertainment   | 0                | 0      | 0          |                      | 0           | 0     |
| Residential  | 1                | 0      | 9          | 0                    |             | 0     |
| Hotel  | 0                | 0      | 0          | 0                    | 0           |       |

| Table 8-A (D): Internal Person-Trip Origin-Destination Matrix (Computed at Destination) |                  |        |            |                      |             |       |
|---|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)   | Destination (To) |        |            |                      |             |       |
|   | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office  |                  | 1      | 7          | 0                    | 0           | 0     |
| Retail  | 0                |        | 15         | 0                    | 0           | 0     |
| Restaurant  | 0                | 0      |            | 0                    | 1           | 0     |
| Cinema/Entertainment  | 0                | 0      | 0          |                      | 0           | 0     |
| Residential   | 0                | 1      | 6          | 0                    |             | 0     |
| Hotel   | 0                | 0      | 2          | 0                    | 0           |       |

| Table 9-A (D): Internal and External Trips Summary (Entering Trips) |                       |          |       |                         |                      |                            |
|---|-----------------------|----------|-------|-------------------------|----------------------|----------------------------|
| Destination Land Use  | Person-Trip Estimates |          |       | External Trips by Mode* |                      |                            |
|   | Internal              | External | Total | Vehicles <sup>1</sup>   | Transit <sup>2</sup> | Non-Motorized <sup>2</sup> |
| Office  | 0                     | 0        | 0     | 0                       | 0                    | 0                          |
| Retail  | 0                     | 4        | 4     | 4                       | 0                    | 0                          |
| Restaurant  | 6                     | 24       | 30    | 24                      | 0                    | 0                          |
| Cinema/Entertainment  | 0                     | 0        | 0     | 0                       | 0                    | 0                          |
| Residential   | 1                     | 14       | 15    | 14                      | 0                    | 0                          |
| Hotel   | 0                     | 0        | 0     | 0                       | 0                    | 0                          |
| All Other Land Uses <sup>3</sup>                                    | 0                     | 0        | 0     | 0                       | 0                    | 0                          |

| Table 9-A (O): Internal and External Trips Summary (Exiting Trips) |                       |          |       |                         |                      |                            |
|--|-----------------------|----------|-------|-------------------------|----------------------|----------------------------|
| Origin Land Use  | Person-Trip Estimates |          |       | External Trips by Mode* |                      |                            |
|  | Internal              | External | Total | Vehicles <sup>1</sup>   | Transit <sup>2</sup> | Non-Motorized <sup>2</sup> |
| Office   | 0                     | 0        | 0     | 0                       | 0                    | 0                          |
| Retail   | 0                     | 3        | 3     | 3                       | 0                    | 0                          |
| Restaurant   | 1                     | 23       | 24    | 23                      | 0                    | 0                          |
| Cinema/Entertainment   | 0                     | 0        | 0     | 0                       | 0                    | 0                          |
| Residential  | 6                     | 37       | 43    | 37                      | 0                    | 0                          |
| Hotel  | 0                     | 0        | 0     | 0                       | 0                    | 0                          |
| All Other Land Uses <sup>3</sup>                                   | 0                     | 0        | 0     | 0                       | 0                    | 0                          |

<sup>1</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-A  
<sup>2</sup>Person-Trips  
<sup>3</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator  
\*Indicates computation that has been rounded to the nearest whole number.



| NCHRP 684 Internal Trip Capture Estimation Tool |                           |               |  |
|---|---------------------------|---------------|--|
| Project Name:                                   | Mercer Island Residential | Organization: |  |
| Project Location:                               | Mercer Island Residential | Performed By: |  |
| Scenario Description:                           |                           | Date:         |  |
| Analysis Year:                                  |                           | Checked By:   |  |
| Analysis Period:                                | PM Peak Hour              | Date:         |  |

| Table 1-P: Base Vehicle-Trip Generation Estimates (Single-Use Site Estimate) |   |          |       |                                      |          |         |
|--|---|----------|-------|--------------------------------------|----------|---------|
| Land Use   | Development Data (For Information Only) |          |       | Estimated Vehicle-Trips <sup>3</sup> |          |         |
|  | ITE LUCs <sup>1</sup>                   | Quantity | Units | Total                                | Entering | Exiting |
| Office   |   |          |       | 0                                    | 0        | 0       |
| Retail   |   |          |       | 83                                   | 40       | 43      |
| Restaurant   |   |          |       | 53                                   | 33       | 20      |
| Cinema/Entertainment   |   |          |       | 0                                    | 0        | 0       |
| Residential  |   |          |       | 70                                   | 43       | 27      |
| Hotel  |   |          |       | 0                                    | 0        | 0       |
| All Other Land Uses <sup>2</sup>   |   |          |       | 0                                    | 0        | 0       |
|  |   |          |       | 206                                  | 116      | 90      |

| Table 2-P: Mode Split and Vehicle Occupancy Estimates |                        |           |                 |                        |           |                 |
|---|------------------------|-----------|-----------------|------------------------|-----------|-----------------|
| Land Use  | Entering Trips         |           |                 | Exiting Trips          |           |                 |
|   | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized | Veh. Occ. <sup>4</sup> | % Transit | % Non-Motorized |
| Office  | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |
| Retail  | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |
| Restaurant  | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |
| Cinema/Entertainment                                  | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |
| Residential   | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |
| Hotel   | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |
| All Other Land Uses <sup>2</sup>                      | 1.00                   | 0%        | 0%              | 1.00                   | 0%        | 0%              |

| Table 3-P: Average Land Use Interchange Distances (Feet Walking Distance) |                  |        |            |                      |             |       |
|---|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)   | Destination (To) |        |            |                      |             |       |
|   | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office  |                  |        |            |                      |             |       |
| Retail  |                  |        |            |                      |             |       |
| Restaurant  |                  |        |            |                      |             |       |
| Cinema/Entertainment  |                  |        |            |                      |             |       |
| Residential   |                  |        |            |                      |             |       |
| Hotel   |                  |        |            |                      |             |       |

| Table 4-P: Internal Person-Trip Origin-Destination Matrix* |                  |        |            |                      |             |       |
|--|------------------|--------|------------|----------------------|-------------|-------|
| Origin (From)  | Destination (To) |        |            |                      |             |       |
|  | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office   |                  | 0      | 0          | 0                    | 0           | 0     |
| Retail   | 0                |        | 10         | 0                    | 11          | 0     |
| Restaurant   | 0                | 8      |            | 0                    | 4           | 0     |
| Cinema/Entertainment                                       | 0                | 0      | 0          |                      | 0           | 0     |
| Residential  | 0                | 4      | 5          | 0                    |             | 0     |
| Hotel  | 0                | 0      | 0          | 0                    | 0           |       |

| Table 5-P: Computations Summary           |       |          |         |
|---|-------|----------|---------|
|   | Total | Entering | Exiting |
| All Person-Trips                          | 206   | 116      | 90      |
| Internal Capture Percentage               | 41%   | 36%      | 47%     |
| External Vehicle-Trips <sup>5</sup>       | 122   | 74       | 48      |
| External Transit-Trips <sup>6</sup>       | 0     | 0        | 0       |
| External Non-Motorized Trips <sup>6</sup> | 0     | 0        | 0       |

| Table 6-P: Internal Trip Capture Percentages by Land Use |                |               |
|--|----------------|---------------|
| Land Use   | Entering Trips | Exiting Trips |
| Office   | N/A            | N/A           |
| Retail   | 30%            | 49%           |
| Restaurant   | 45%            | 60%           |
| Cinema/Entertainment                                     | N/A            | N/A           |
| Residential  | 35%            | 33%           |
| Hotel  | N/A            | N/A           |

<sup>1</sup>Land Use Codes (LUCs) from *Trip Generation Manual*, published by the Institute of Transportation Engineers.

<sup>2</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator.

<sup>3</sup>Enter trips assuming no transit or non-motorized trips (as assumed in ITE *Trip Generation Manual*).

<sup>4</sup>Enter vehicle occupancy assumed in Table 1-P vehicle trips. If vehicle occupancy changes for proposed mixed-use project, manual adjustments must be made.

<sup>5</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P.

<sup>6</sup>Person-Trips

\*Indicates computation that has been rounded to the nearest whole number.

Estimation Tool Developed by the Texas A&M Transportation Institute - Version 2013.1

|                         |                           |
|-------------------------|---------------------------|
| <b>Project Name:</b>    | Mercer Island Residential |
| <b>Analysis Period:</b> | PM Street Peak Hour       |

| Land Use             | Table 7-P (D): Entering Trips |               |               | Table 7-P (O): Exiting Trips |               |               |
|----------------------|-------------------------------|---------------|---------------|------------------------------|---------------|---------------|
|                      | Veh. Occ.                     | Vehicle-Trips | Person-Trips* | Veh. Occ.                    | Vehicle-Trips | Person-Trips* |
| Office               | 1.00                          | 0             | 0             | 1.00                         | 0             | 0             |
| Retail               | 1.00                          | 40            | 40            | 1.00                         | 43            | 43            |
| Restaurant           | 1.00                          | 33            | 33            | 1.00                         | 20            | 20            |
| Cinema/Entertainment | 1.00                          | 0             | 0             | 1.00                         | 0             | 0             |
| Residential          | 1.00                          | 43            | 43            | 1.00                         | 27            | 27            |
| Hotel                | 1.00                          | 0             | 0             | 1.00                         | 0             | 0             |

| Origin (From)        | Destination (To) |        |            |                      |             |       |
|----------------------|------------------|--------|------------|----------------------|-------------|-------|
|                      | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office               |                  | 0      | 0          | 0                    | 0           | 0     |
| Retail               | 1                |        | 12         | 2                    | 11          | 2     |
| Restaurant           | 1                | 8      |            | 2                    | 4           | 1     |
| Cinema/Entertainment | 0                | 0      | 0          |                      | 0           | 0     |
| Residential          | 1                | 11     | 6          | 0                    |             | 1     |
| Hotel                | 0                | 0      | 0          | 0                    | 0           |       |

| Origin (From)        | Destination (To) |        |            |                      |             |       |
|----------------------|------------------|--------|------------|----------------------|-------------|-------|
|                      | Office           | Retail | Restaurant | Cinema/Entertainment | Residential | Hotel |
| Office               |                  | 3      | 1          | 0                    | 2           | 0     |
| Retail               | 0                |        | 10         | 0                    | 20          | 0     |
| Restaurant           | 0                | 20     |            | 0                    | 7           | 0     |
| Cinema/Entertainment | 0                | 2      | 1          |                      | 2           | 0     |
| Residential          | 0                | 4      | 5          | 0                    |             | 0     |
| Hotel                | 0                | 1      | 2          | 0                    | 0           |       |

| Destination Land Use             | Person-Trip Estimates |          |       | External Trips by Mode* |                      |                            |
|----------------------------------|-----------------------|----------|-------|-------------------------|----------------------|----------------------------|
|                                  | Internal              | External | Total | Vehicles <sup>1</sup>   | Transit <sup>2</sup> | Non-Motorized <sup>2</sup> |
| Office                           | 0                     | 0        | 0     | 0                       | 0                    | 0                          |
| Retail                           | 12                    | 28       | 40    | 28                      | 0                    | 0                          |
| Restaurant                       | 15                    | 18       | 33    | 18                      | 0                    | 0                          |
| Cinema/Entertainment             | 0                     | 0        | 0     | 0                       | 0                    | 0                          |
| Residential                      | 15                    | 28       | 43    | 28                      | 0                    | 0                          |
| Hotel                            | 0                     | 0        | 0     | 0                       | 0                    | 0                          |
| All Other Land Uses <sup>3</sup> | 0                     | 0        | 0     | 0                       | 0                    | 0                          |

| Origin Land Use                  | Person-Trip Estimates |          |       | External Trips by Mode* |                      |                            |
|----------------------------------|-----------------------|----------|-------|-------------------------|----------------------|----------------------------|
|                                  | Internal              | External | Total | Vehicles <sup>1</sup>   | Transit <sup>2</sup> | Non-Motorized <sup>2</sup> |
| Office                           | 0                     | 0        | 0     | 0                       | 0                    | 0                          |
| Retail                           | 21                    | 22       | 43    | 22                      | 0                    | 0                          |
| Restaurant                       | 12                    | 8        | 20    | 8                       | 0                    | 0                          |
| Cinema/Entertainment             | 0                     | 0        | 0     | 0                       | 0                    | 0                          |
| Residential                      | 9                     | 18       | 27    | 18                      | 0                    | 0                          |
| Hotel                            | 0                     | 0        | 0     | 0                       | 0                    | 0                          |
| All Other Land Uses <sup>3</sup> | 0                     | 0        | 0     | 0                       | 0                    | 0                          |

<sup>1</sup>Vehicle-trips computed using the mode split and vehicle occupancy values provided in Table 2-P  
<sup>2</sup>Person-Trips  
<sup>3</sup>Total estimate for all other land uses at mixed-use development site is not subject to internal trip capture computations in this estimator  
\*Indicates computation that has been rounded to the nearest whole number.



## Appendix E: Parking Information

Right Size Parking
King County Multi-Family Residential Parking Calculator V2.0
TOOLS TO BALANCE SUPPLY

🔍

3 Parcels Selected
Parking/Unit Ratio 👤

Building & Parking Specifications
Location Characteristics
Parking Impacts

The preset values below represent subregional (CBD, Urban and Suburban) average/median values (from field work) for building (with no affordable units) and parking specifications. These represent the default values, as a starting point, for which parking use ratios are estimated. Scroll down to view parking optimization estimates and guidance on unbundled and affordable housing options.

|                          | NUMBER OF UNITS   | AVERAGE RENT (\$)   | RESIDENTIAL AREA (SQ FT)                               |
|--------------------------|---|---|--|
| STUDIOS:                 | <input style="width: 40px;" type="text" value="12"/>    | <input style="width: 60px;" type="text" value="\$1,100"/> | <input style="width: 40px;" type="text" value="500"/>  |
| 1 BEDROOMS:              | <input style="width: 40px;" type="text" value="107"/>   | <input style="width: 60px;" type="text" value="\$1,400"/> | <input style="width: 40px;" type="text" value="650"/>  |
| 2 BEDROOMS:              | <input style="width: 40px;" type="text" value="27"/>    | <input style="width: 60px;" type="text" value="\$1,600"/> | <input style="width: 40px;" type="text" value="900"/>  |
| 3+ BEDROOMS:             | <input style="width: 40px;" type="text" value="14"/>    | <input style="width: 60px;" type="text" value="\$2,000"/> | <input style="width: 40px;" type="text" value="1200"/> |
| <b>TOTAL:</b>            | <b>160</b>  | <b>\$1,464</b>  | <b>116,650</b>   |
| AFFORDABLE UNITS:        | <input style="width: 40px;" type="text" value="0"/>     |   |  |
| <b>PARKING</b>           |   |   |  |
| PARKING STALLS:          | <input style="width: 40px;" type="text" value="160"/>   | ↑ Parking Oversupplied for this price.                    |  |
| PRICE PER STALL (\$/MO): | <input style="width: 40px;" type="text" value="\$200"/> |   |  |

UPDATE
RESET



| <b>Retail Parking Demand Rate Calculation</b> |  |                 |
|---|--|-----------------|
| <b>Project Information</b>                    |  |                 |
| Project:                                      | Mercer Island Mixed Use                      |                 |
| Project No:                                   | 18352.00                                     |                 |
| <b>Retail Size:</b>                           |  |                 |
| <b>Commercial Space</b>                       |  |                 |
| 7,930 sf                                      | Retail                                       |                 |
| <b>Local Mode Split Data<sup>1</sup>:</b>     |  |                 |
| Vehicle                                       | 100%   |                 |
| Walk / Bicycle                                | 0%   |                 |
| Transit                                       | 0%   |                 |
|   | 100%   |                 |
| <b>Parking Demand Rate<sup>2</sup>:</b>       |  |                 |
| 1.95  | stalls / 1,000 sf (ITE Shopping Center #820) |                 |
| <b>Localized Parking Demand Rate:</b>         |  |                 |
| Parking Demand Rate x Vehicle Mode Split      |  |                 |
| 1.95  | vehicles / 1,000 sf                          | Shopping Center |
| <b>Parking Demand:</b>                        |  |                 |
| Retail Size x Localized Parking Demand Rate   |  |                 |
| 15  | vehicles                                     |                 |

Notes:

1 Based on ITE Parking Generation (5th Edition, 2019) shopping center land use 820 for non-Friday weekday, non-December.

| <b>Restaurant Parking Demand Rate Calculation</b> |   |            |
|---|---|------------|
| <b>Project Information</b>                        |   |            |
| Project:  | Mercer Island Mixed Use                               |            |
| Project No:                                       | 18352.00  |            |
| <b>Retail Size:</b>                               |   |            |
| <b>Commercial Space</b>                           |   |            |
| 5,417 sf  | Restaurant  |            |
| <b>Local Mode Split Data<sup>1</sup>:</b>         |   |            |
| Vehicle   | 100%  |            |
| Walk / Bicycle                                    | 0%  |            |
| Transit   | 0%  |            |
|   | 100%  |            |
| <b>Parking Demand Rate<sup>2</sup>:</b>           |   |            |
| 9.44  | stalls / 1,000 sf (High-Turnover Sit Down Restaurant) |            |
| <b>Localized Parking Demand Rate:</b>             |   |            |
| Parking Demand Rate x Vehicle Mode Split          |   |            |
| 9.44  | vehicles / 1,000 sf                                   | Restaurant |
| <b>Parking Demand:</b>                            |   |            |
| Retail Size x Localized Parking Demand Rate       |   |            |
| <b>51</b>   | vehicles  |            |

Notes:

1 Based on ITE Parking Generation (5th Edition, 2019)) High-Turnover Sit Down Restaurant land use 932 on a weekday



**Weekday Shared Parking Demand Estimate**

| Size Rate <sup>1</sup><br>Peak Demand | Retail (LU #820)                             |               | Restaurant (LU #932)                         |               | Residential (LU#221)                      |               | Cumulative Parking Demand |
|---------------------------------------|--|---------------|--|---------------|---|---------------|---------------------------|
|                                       | 7,930 sf<br>1.95 vehicles per 1,000 sf<br>15 |               | 5,417 sf<br>9.44 vehicles per 1,000 sf<br>51 |               | 160 units<br>.83 vehicles per unit<br>131 |               |                           |
| Time of Day <sup>2</sup>              | % Hourly Demand                              | Hourly Demand | % Hourly Demand                              | Hourly Demand | % Hourly Demand                           | Hourly Demand |                           |
| 12-4:00 AM                            | 0%   | 0             | 0%   | 0             | 100%                                      | 131           | 131                       |
| 5:00 AM                               | 0%   | 0             | 0%   | 0             | 94%                                       | 123           | 123                       |
| 6:00 AM                               | 0%   | 0             | 0%   | 0             | 83%                                       | 109           | 109                       |
| 7:00 AM                               | 0%   | 0             | 0%   | 0             | 71%                                       | 93            | 93                        |
| 8:00 AM                               | 15%  | 2             | 0%   | 0             | 61%                                       | 80            | 82                        |
| 9:00 AM                               | 32%  | 5             | 0%   | 0             | 55%                                       | 72            | 77                        |
| 10:00 AM                              | 54%  | 8             | 9%   | 5             | 54%                                       | 71            | 84                        |
| 11:00 AM                              | 71%  | 11            | 15%  | 8             | 53%                                       | 69            | 88                        |
| 12:00 PM                              | 99%  | 15            | 100%   | 51            | 50%                                       | 66            | 132                       |
| 1:00 PM                               | 100%   | 15            | 81%  | 41            | 49%                                       | 64            | 120                       |
| 2:00 PM                               | 90%  | 14            | 54%  | 28            | 49%                                       | 64            | 106                       |
| 3:00 PM                               | 83%  | 13            | 33%  | 17            | 50%                                       | 66            | 96                        |
| 4:00 PM                               | 81%  | 13            | 26%  | 13            | 58%                                       | 76            | 102                       |
| 5:00 PM                               | 84%  | 13            | 29%  | 15            | 64%                                       | 84            | 112                       |
| 6:00 PM                               | 86%  | 13            | 58%  | 30            | 67%                                       | 88            | 131                       |
| 7:00 PM                               | 80%  | 12            | 70%  | 36            | 70%                                       | 92            | 140                       |
| 8:00 PM                               | 63%  | 10            | 77%  | 39            | 76%                                       | 100           | 149                       |
| 9:00 PM                               | 42%  | 6             | 61%  | 31            | 83%                                       | 109           | 146                       |
| 10:00 PM                              | 15%  | 2             | 41%  | 21            | 90%                                       | 118           | 141                       |
| 11:00 PM                              | 0%   | 0             | 0%   | 0             | 93%                                       | 122           | 122                       |
|                                       |  |               |  |               |   |               | 149                       |

Note: sf = square-feet, DU = dwelling units

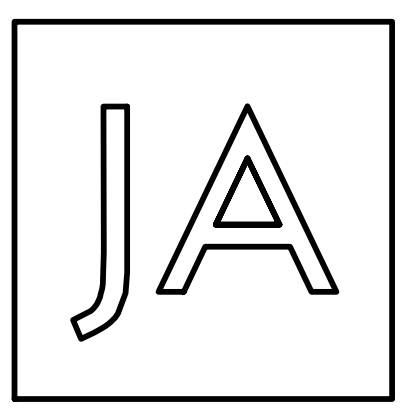
1. Retail and Restaurant Parking demand rate based on the ITE Parking Generation, 5th Edition . Residential parking demand rate based on Right Size parking.

2. Commerical internal capture assumed in analysis consistent with the trip generation analysis.

2. Time of day based on the ITE Parking Generation, 5th Edition.

## Appendix F: Loading Area Sight Distance and Autoturns





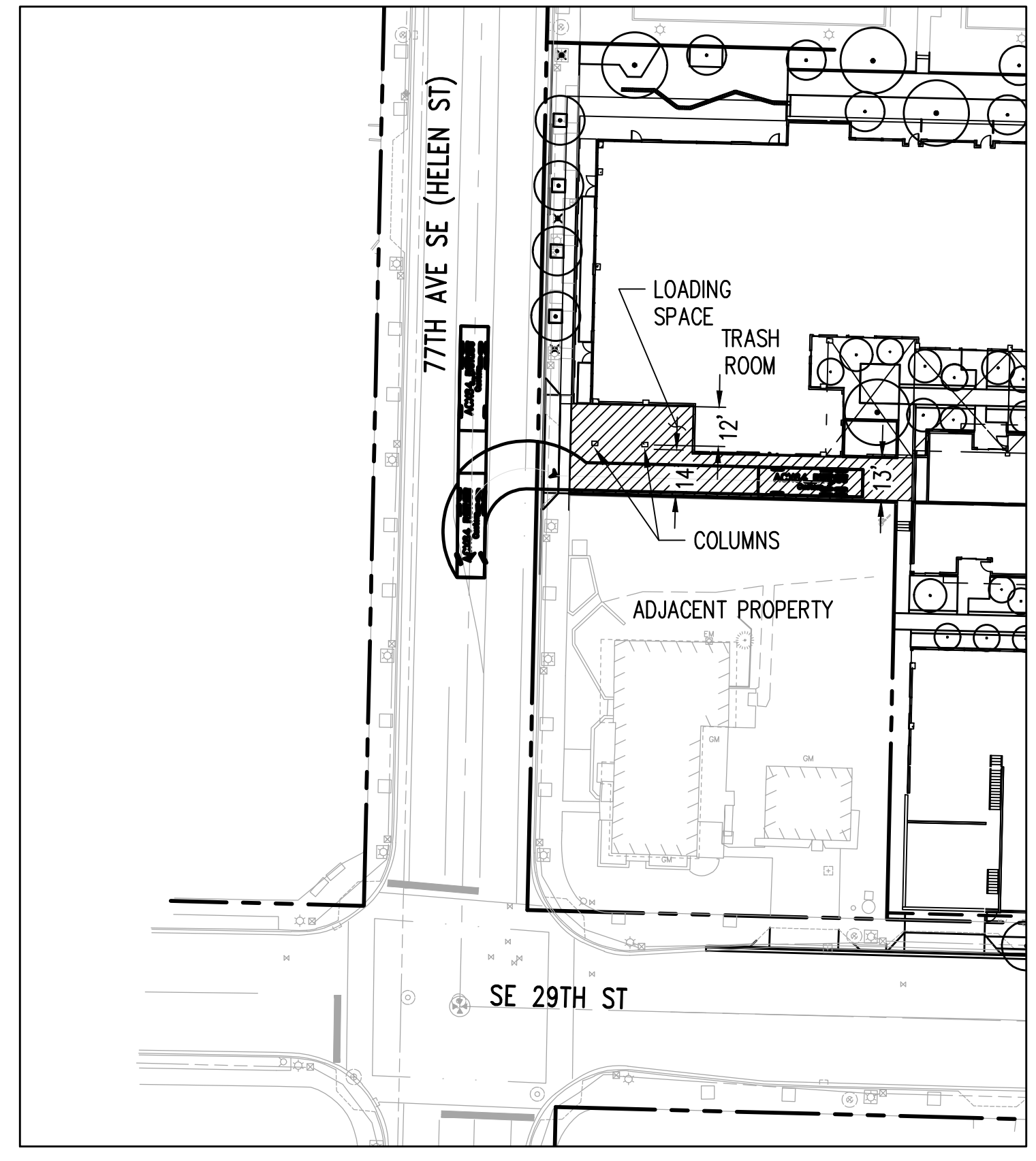
Johnston Architects, LLC  
 100 NE Northlake Way,  
 Suite 200  
 Seattle, WA 98105  
 t 206.523.6150  
 f 206.523.9382

**kpff**  
 1601 5th Avenue, Suite 1600  
 Seattle, WA 98101  
 206.622.5822  
 www.kpff.com

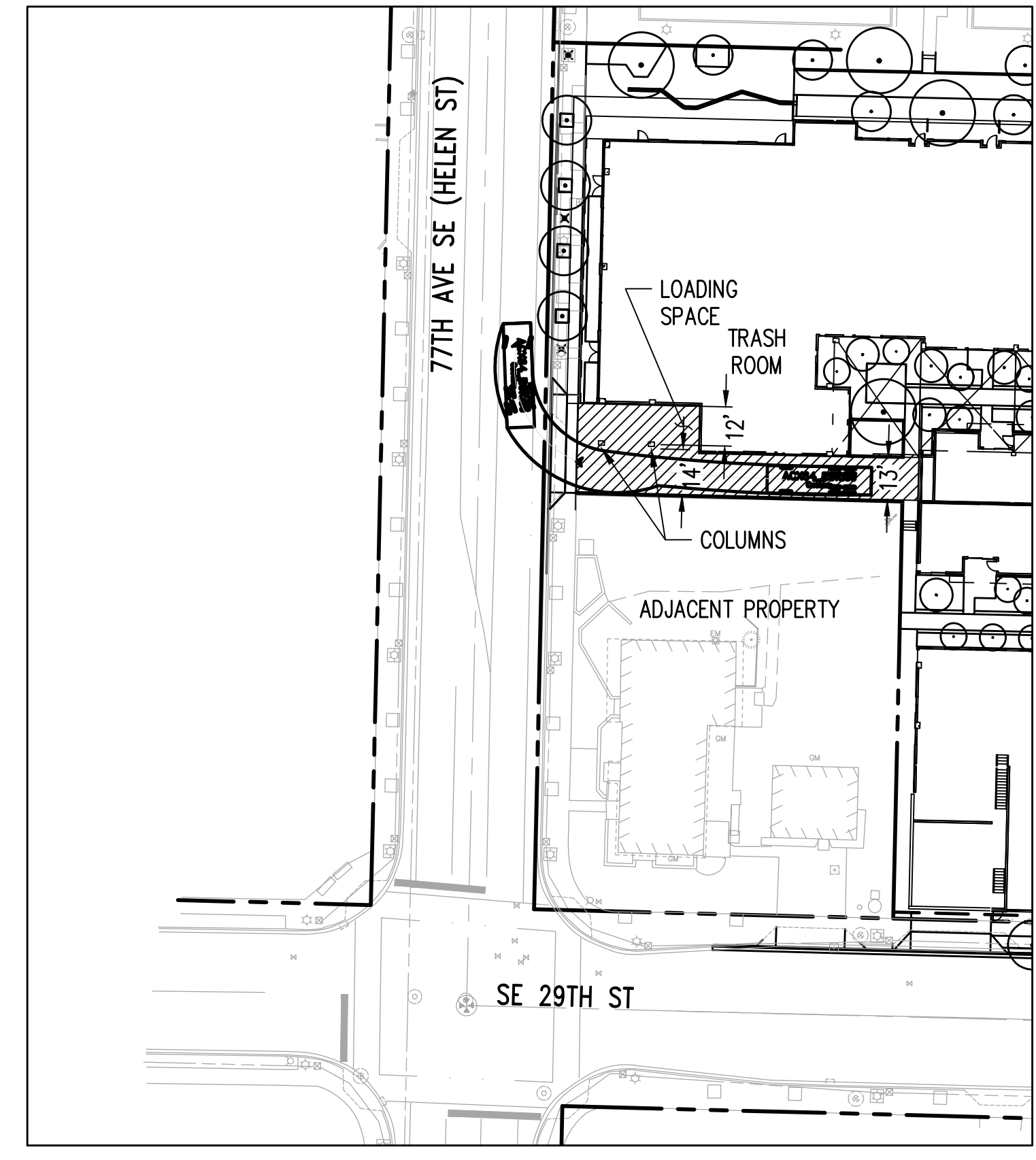
**MERCER ISLAND  
 MIXED USE**  
 XING HUA GROUP LTD.  
 2885 78TH AVE SE  
 MERCER ISLAND, WA

DRAWING ISSUE

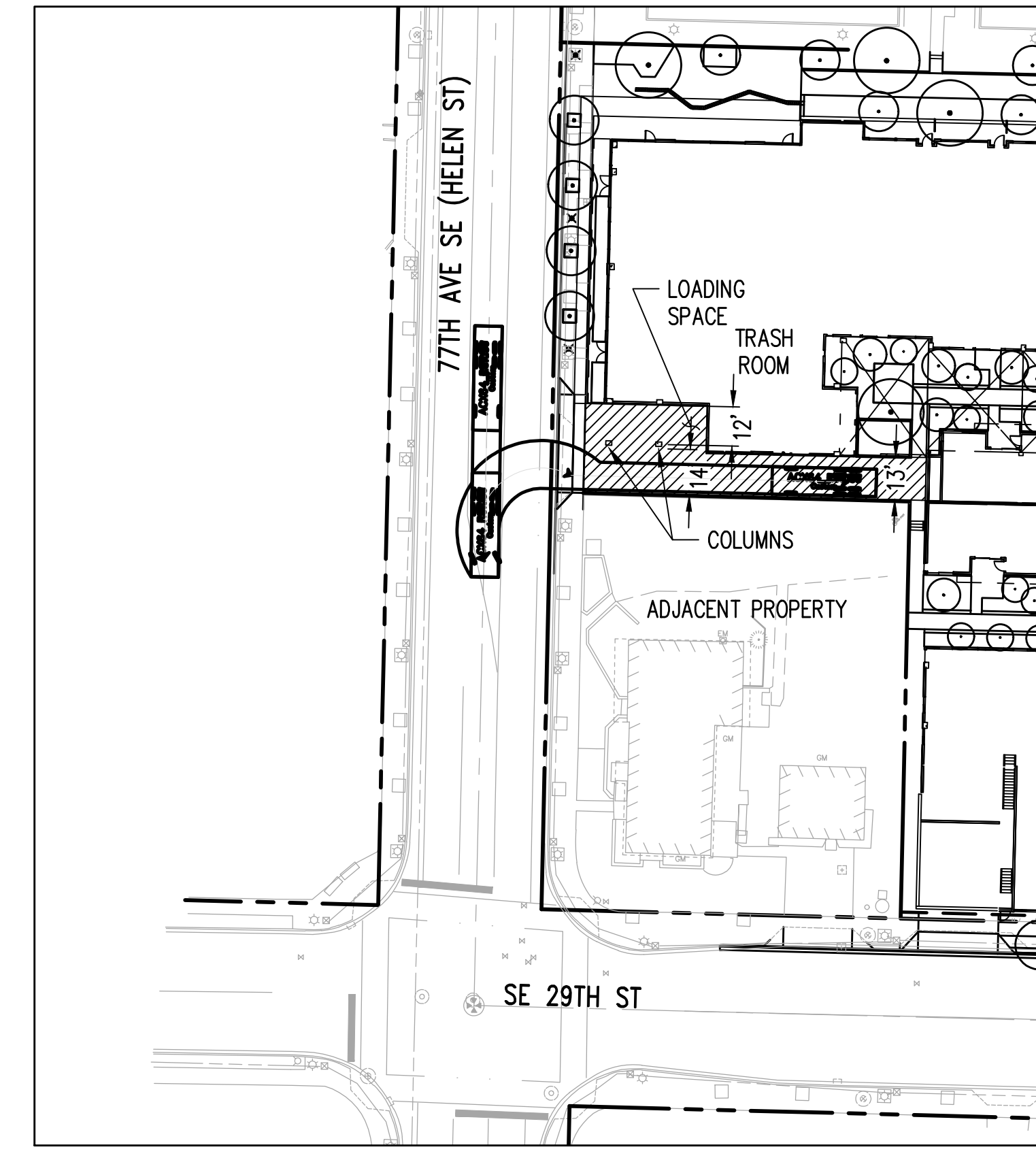
| Date       | Description  |
|------------|--------------|
| 12/24/2019 | LAND USE SET |



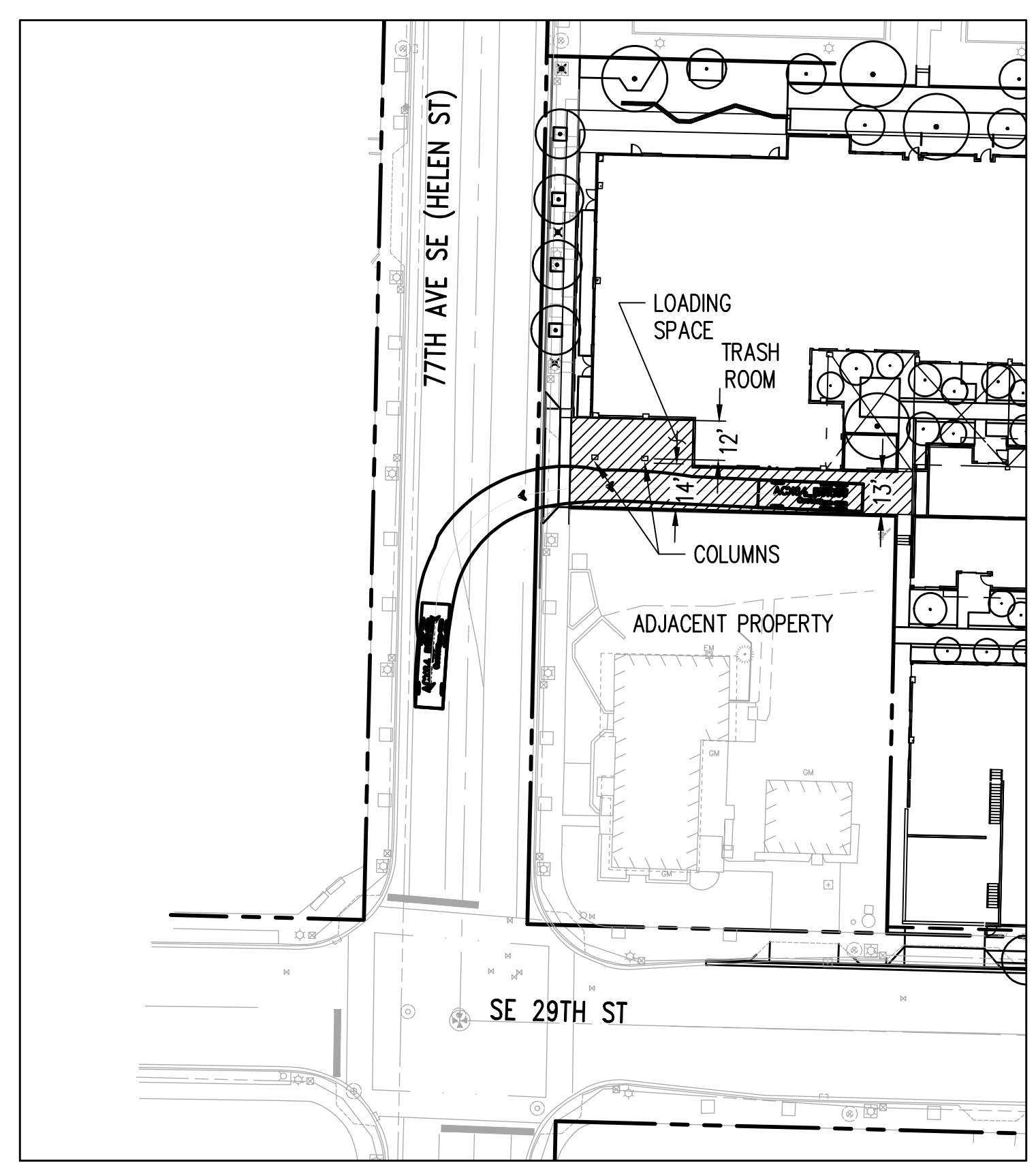
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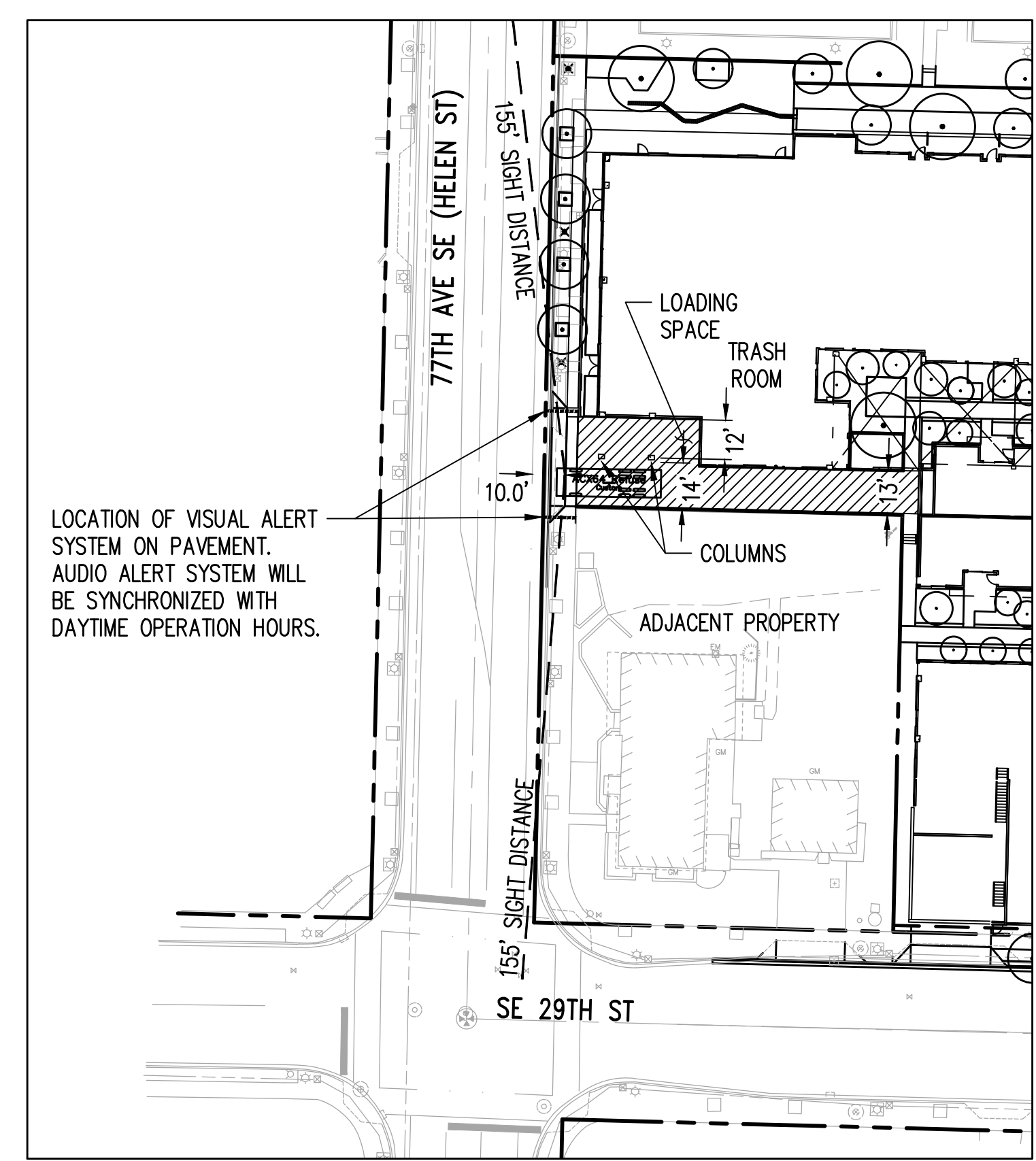
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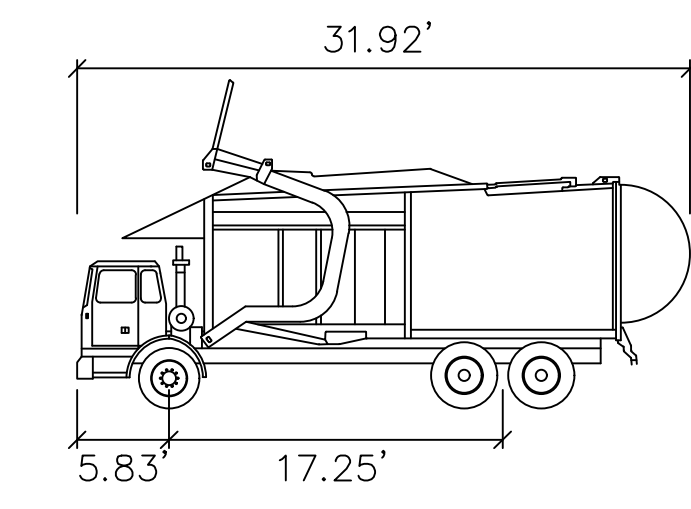
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 SCALE: 1"=40' 3



REFUSE TRUCK SB EGRESS  
 SCALE: 1"=40' 4



REFUSE TRUCK SIGHT DISTANCE  
 SCALE: 1"=40' 5



ACX64 REFUSE

|                   | FEET   |
|-------------------|--------|
| WIDTH             | : 8.42 |
| TRACK             | : 8.37 |
| LOCK TO LOCK TIME | : 6.0  |
| STEERING ANGLE    | : 35.1 |

REFUSE TRUCK DETAIL  
 NTS 5

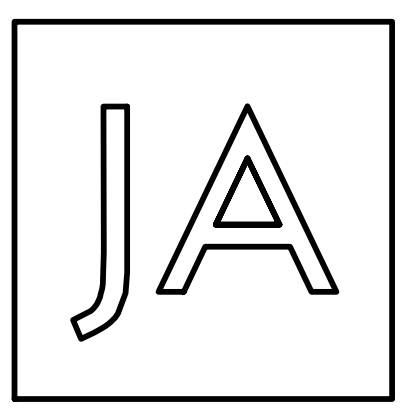
Z:\1800001-1800999\1800999 Mercer Island - 2885 78th Ave SE\CADD\Design\Misc\C300-01.dwg  
 Dec 23, 2019 - 11:24am  
 AdelleT

SHEET TITLE  
**REFUSE TRUCK  
 TURNING  
 MOVEMENTS**

SHEET NO.  
**C303**

Drawn TNF  
 Checked ATT





Johnston Architects, LLC  
 100 NE Northlake Way,  
 Suite 200  
 Seattle, WA 98105  
 t 206.523.6150  
 f 206.523.9382

**kpff**  
 1601 5th Avenue, Suite 1600  
 Seattle, WA 98101  
 206.622.5822  
 www.kpff.com

**MERCER ISLAND  
 MIXED USE**  
 XING HUA GROUP LTD.  
 2885 78TH AVE SE  
 MERCER ISLAND, WA

DRAWING ISSUE

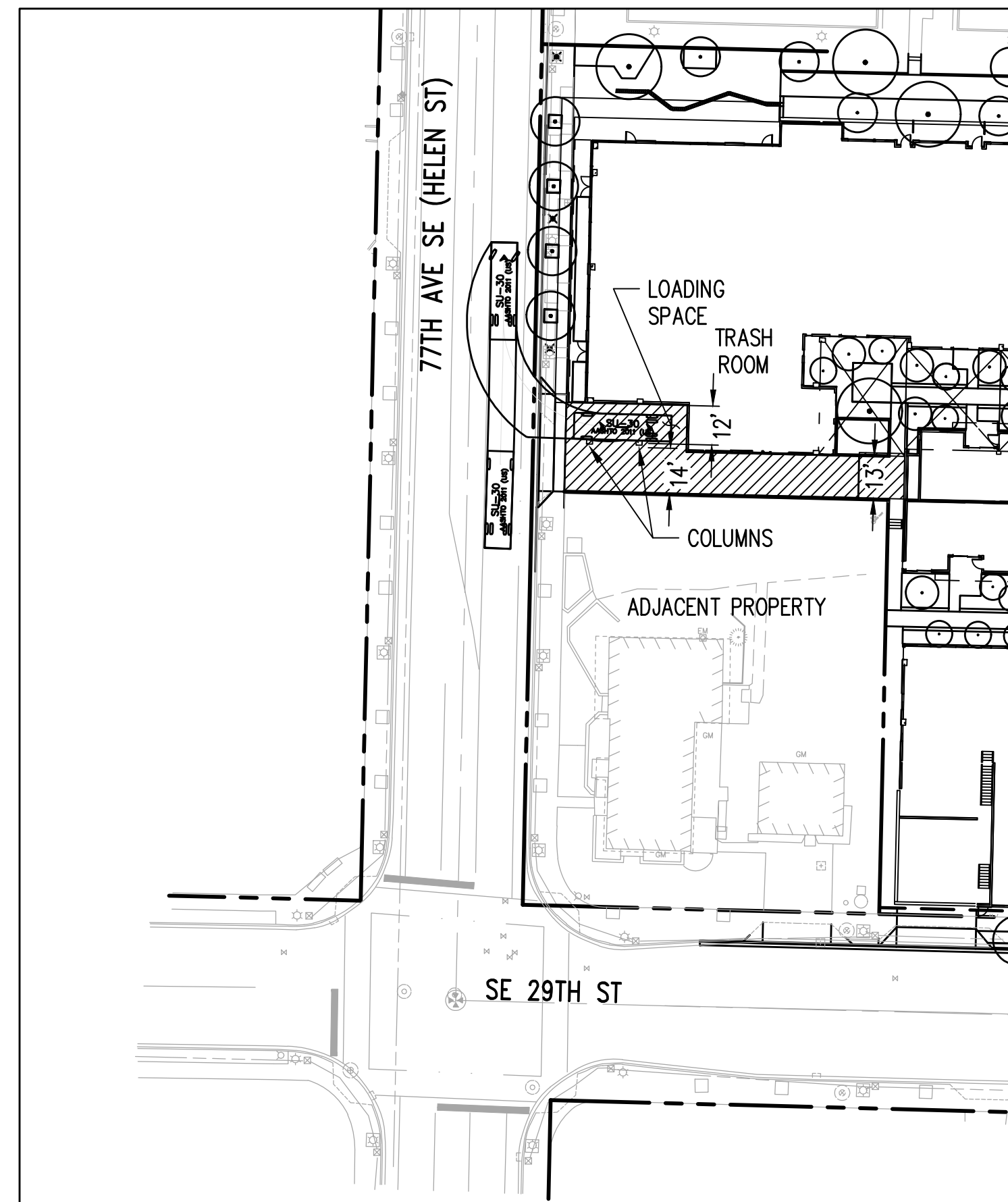
| Date       | Description  |
|------------|--------------|
| 12/24/2019 | LAND USE SET |



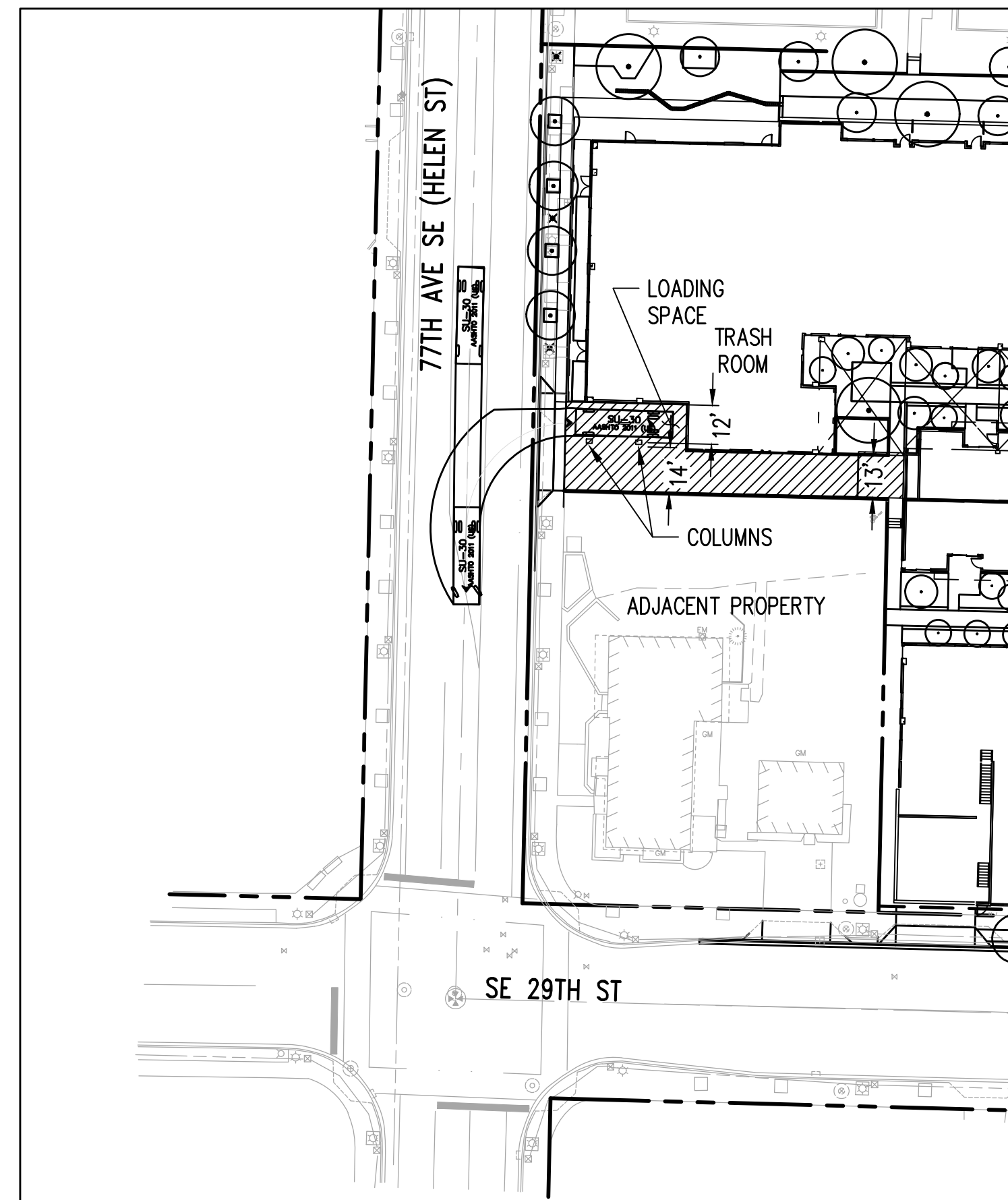
SHEET TITLE  
**SU-30 TURNING  
 MOVEMENTS**

SHEET NO.  
**C304**

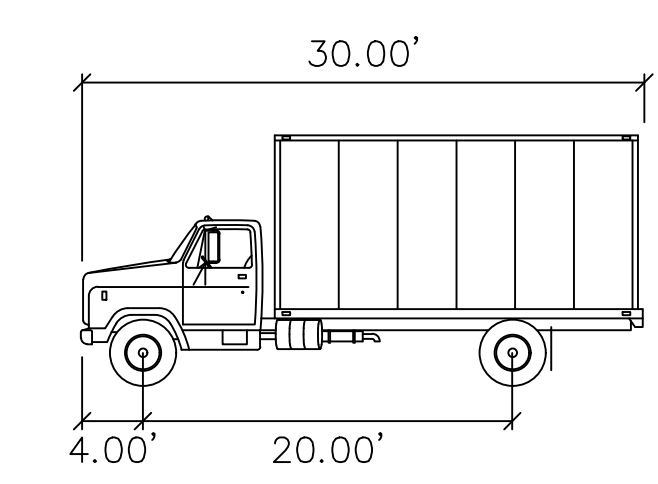
Drawn TNF  
 Checked ATT



**SU-30 NB INGRESS**  
 SCALE: 1"=40' 1



**SU-30 SB INGRESS**  
 SCALE: 1"=40' 2



**SU-30**

|                   | FEET   |
|-------------------|--------|
| WIDTH             | : 8.00 |
| TRACK             | : 8.00 |
| LOCK TO LOCK TIME | : 6.0  |
| STEERING ANGLE    | : 31.8 |

**SU-30 DETAIL**  
 NTS 3



## MEMORANDUM

|                 |  |            |          |
|-----------------|--|------------|----------|
| <b>Date:</b>    | January 8, 2021  | <b>TG:</b> | 18352.00 |
| <b>To:</b>      | John Davies - KPG<br>Patrick Yamashita – City of Mercer Island                                   |            |          |
| <b>From:</b>    | Michael Swenson and Darwin Li – Transpo Group  |            |          |
| <b>Subject:</b> | Response to KPG TIA review comments for 2885 78th Avenue SE (TCC20-002) and Updated Parking Plan |            |          |

This memo provides responses to KPG's TIA review comments dated December 11, 2020 for the *Mercer island Mixed Use TIA* (October 2020) and presents an updated parking plan. Responses and the plan are provided below:

### Comment:

- *Revise analysis to include residential demand for flex parking into the shared parking analysis with the restaurant and retail portions of the daytime parking demand.*
- *Consider providing 10%-20% additional parking to allow for parking turnover.*
- *Include the parking management plan as mitigation for the TIA.*

### Response:

The applicant proposes to create a shared parking management plan to accommodate the site's residential and commercial parking needs.

The updated plan will now reflect a 90% occupancy goal for all shared parking uses to provide turnover as requested by the City. The 90% occupancy (or 10 free spaces) includes both the commercial demand and residential flex space demand during the highest commercial peak demand of 12:00 p.m. – 1 p.m. All other hours of the day will experience 30 – 85% occupancy for these shared spaces.

As a result, 56 total flex spaces are proposed that would allow commercial customers to park in those spaces between business hours of 11 a.m. – 9 p.m. while residential tenants would be able to park in those spaces at any time of the day. In addition, 43 commercial only spaces and 104 residential only spaces will be provided for a grand total of 203 parking spaces on-site. The shared parking management plan will be considered mitigation for the proposed project. Details regarding parking enforcement and signage would be provided during the permitting process.

See the attachment for parking demand calculations, and the hourly breakdown of the shared parking supply and demand per time of day.

| <b>Retail Parking Demand Rate Calculation</b> |  |                 |
|---|--|-----------------|
| <b>Project Information</b>                    |  |                 |
| Project:                                      | Mercer Island Mixed Use                      |                 |
| Project No:                                   | 18352.00                                     |                 |
| <b>Retail Size:</b>                           |  |                 |
| <b>Commercial Space</b>                       |  |                 |
| 7,930 sf                                      | Retail                                       |                 |
| <b>Local Mode Split Data<sup>1</sup>:</b>     |  |                 |
| Vehicle                                       | 100%   |                 |
| Walk / Bicycle                                | 0%   |                 |
| Transit                                       | 0%   |                 |
|   | 100%   |                 |
| <b>Parking Demand Rate<sup>2</sup>:</b>       |  |                 |
| 1.95  | stalls / 1,000 sf (ITE Shopping Center #820) |                 |
| <b>Localized Parking Demand Rate:</b>         |  |                 |
| Parking Demand Rate x Vehicle Mode Split      |  |                 |
| 1.95  | vehicles / 1,000 sf                          | Shopping Center |
| <b>Parking Demand:</b>                        |  |                 |
| Retail Size x Localized Parking Demand Rate   |  |                 |
| 15  | vehicles                                     |                 |

Notes:

1 Based on ITE Parking Generation (5th Edition, 2019) shopping center land use 820 for non-Friday weekday, non-December.



| <b>Restaurant Parking Demand Rate Calculation</b> |   |            |
|---|---|------------|
| <b>Project Information</b>                        |   |            |
| Project:  | Mercer Island Mixed Use                               |            |
| Project No:                                       | 18352.00  |            |
| <b>Retail Size:</b>                               |   |            |
| <b>Commercial Space</b>                           |   |            |
| 5,417 sf  | Restaurant  |            |
| <b>Local Mode Split Data<sup>1</sup>:</b>         |   |            |
| Vehicle   | 100%  |            |
| Walk / Bicycle                                    | 0%  |            |
| Transit   | 0%  |            |
|   | 100%  |            |
| <b>Parking Demand Rate<sup>2</sup>:</b>           |   |            |
| 9.44  | stalls / 1,000 sf (High-Turnover Sit Down Restaurant) |            |
| <b>Localized Parking Demand Rate:</b>             |   |            |
| Parking Demand Rate x Vehicle Mode Split          |   |            |
| 9.44  | vehicles / 1,000 sf                                   | Restaurant |
| <b>Parking Demand:</b>                            |   |            |
| Retail Size x Localized Parking Demand Rate       |   |            |
| 51  | vehicles  |            |

Notes:

1 Based on ITE Parking Generation (5th Edition, 2019)) High-Turnover Sit Down Restaurant land use 932 on a weekday

Right Size Parking
King County Multi-Family Residential Parking Calculator V2.0
TOOLS TO BALANCE SUPPLY

🔍

Parking/Unit Ratio  
>0.50 ■ ■ ■ ■

2 Parcels Selected
0.83

Building & Parking Specifications
Location Characteristics
Parking Impacts

The preset values below represent subregional (CBD, Urban and Suburban) average/median values (from field work) for building (with no affordable units) and parking specifications. These represent the default values, as a starting point, for which parking use ratios are estimated. Scroll down to view parking optimization estimates and guidance on unbundled and affordable housing options.

|               | NUMBER OF UNITS                                       | AVERAGE RENT (\$)   | RESIDENTIAL AREA (SQ FT)                               |
|---------------|---|---|--|
| STUDIOS:      | <input style="width: 40px;" type="text" value="11"/>  | <input style="width: 60px;" type="text" value="\$1,100"/> | <input style="width: 40px;" type="text" value="500"/>  |
| 1 BEDROOMS:   | <input style="width: 40px;" type="text" value="107"/> | <input style="width: 60px;" type="text" value="\$1,400"/> | <input style="width: 40px;" type="text" value="650"/>  |
| 2 BEDROOMS:   | <input style="width: 40px;" type="text" value="27"/>  | <input style="width: 60px;" type="text" value="\$1,600"/> | <input style="width: 40px;" type="text" value="900"/>  |
| 3+ BEDROOMS:  | <input style="width: 40px;" type="text" value="14"/>  | <input style="width: 60px;" type="text" value="\$2,000"/> | <input style="width: 40px;" type="text" value="1200"/> |
| <b>TOTAL:</b> | <b>159</b>  | <b>\$1,466</b>  | <b>116,150</b>   |

AFFORDABLE UNITS:

**PARKING**

PARKING STALLS:  ↑ Parking Oversupplied for this price.

PRICE PER STALL (\$/MO):

UPDATE
RESET



**Weekday Shared Parking Demand Estimate**

| Size Rate <sup>1</sup><br>Peak Demand | Retail (LU #820)                       | Restaurant (LU #932)                   | Residential (LU#221) Dedicated Parking | Residential (LU#221) Flex Parking | Total Commercial & Residential Flex Demand | Total Commercial & Residential Flex Supply | Occupancy (%) of Shared Flex and Commercial Spaces | Cumulative Parking Demand |               |              |                  |               |
|---------------------------------------|--|--|--|-----------------------------------|--|--|--|---------------------------|---------------|--------------|------------------|---------------|
|                                       | 7,930 sf<br>1.95 vehicles per 1,000 sf | 5,417 sf<br>9.44 vehicles per 1,000 sf | 103 du<br>.83 vehicles per unit        | 56 du<br>.83 vehicles per unit    |  |  |  |                           |               |              |                  |               |
| Parking Spaces                        | 43 shared commercial spaces            |  | 104 spaces                             | 56 spaces                         |  |  |  |                           |               |              |                  |               |
| Time of Day <sup>2</sup>              | % Hourly Demand <sup>2</sup>           | Hourly Demand                          | % Hourly Demand <sup>2</sup>           | Hourly Demand                     | % Hourly Demand <sup>2</sup>               | Hourly Demand                              | % Hourly Demand <sup>2</sup>                       | Hourly Demand             | Hourly Demand | Total Spaces | Percent Occupied | Hourly Demand |
| 12-4:00 AM                            | 0%                                     | 0                                      | 0%                                     | 0                                 | 100%                                       | 85   | 100%   | 46                        | 46            | 99           | 46%              | 131           |
| 5:00 AM                               | 0%                                     | 0                                      | 0%                                     | 0                                 | 94%  | 80   | 94%  | 43                        | 43            | 99           | 43%              | 123           |
| 6:00 AM                               | 0%                                     | 0                                      | 0%                                     | 0                                 | 83%  | 71   | 83%  | 38                        | 38            | 99           | 38%              | 109           |
| 7:00 AM                               | 0%                                     | 0                                      | 0%                                     | 0                                 | 71%  | 60   | 71%  | 33                        | 33            | 99           | 33%              | 93            |
| 8:00 AM                               | 15%                                    | 2                                      | 0%                                     | 0                                 | 61%  | 52   | 61%  | 28                        | 30            | 99           | 30%              | 82            |
| 9:00 AM                               | 32%                                    | 5                                      | 0%                                     | 0                                 | 55%  | 47   | 55%  | 25                        | 30            | 99           | 30%              | 77            |
| 10:00 AM                              | 54%                                    | 8                                      | 9%                                     | 5                                 | 54%  | 46   | 54%  | 25                        | 38            | 99           | 38%              | 84            |
| 11:00 AM                              | 71%                                    | 11                                     | 15%                                    | 8                                 | 53%  | 45   | 53%  | 24                        | 43            | 99           | 43%              | 88            |
| 12:00 PM                              | 99%                                    | 15                                     | 100%                                   | 51                                | 50%  | 43   | 50%  | 23                        | <b>89</b>     | <b>99</b>    | <b>90%</b>       | 132           |
| 1:00 PM                               | 100%                                   | 15                                     | 81%                                    | 41                                | 49%  | 42   | 49%  | 23                        | 79            | 99           | 80%              | 121           |
| 2:00 PM                               | 90%                                    | 14                                     | 54%                                    | 28                                | 49%  | 42   | 49%  | 23                        | 65            | 99           | 66%              | 107           |
| 3:00 PM                               | 83%                                    | 13                                     | 33%                                    | 17                                | 50%  | 43   | 50%  | 23                        | 53            | 99           | 54%              | 96            |
| 4:00 PM                               | 81%                                    | 13                                     | 26%                                    | 13                                | 58%  | 49   | 58%  | 27                        | 53            | 99           | 54%              | 102           |
| 5:00 PM                               | 84%                                    | 13                                     | 29%                                    | 15                                | 64%  | 54   | 64%  | 29                        | 57            | 99           | 58%              | 111           |
| 6:00 PM                               | 86%                                    | 13                                     | 58%                                    | 30                                | 67%  | 57   | 67%  | 31                        | 74            | 99           | 75%              | 131           |
| 7:00 PM                               | 80%                                    | 12                                     | 70%                                    | 36                                | 70%  | 60   | 70%  | 32                        | 80            | 99           | 81%              | 140           |
| 8:00 PM                               | 63%                                    | 10                                     | 77%                                    | 39                                | 76%  | 65   | 76%  | 35                        | 84            | 99           | 85%              | 149           |
| 9:00 PM                               | 42%                                    | 6                                      | 61%                                    | 31                                | 83%  | 71   | 83%  | 38                        | 75            | 99           | 76%              | 146           |
| 10:00 PM                              | 15%                                    | 2                                      | 41%                                    | 21                                | 90%  | 77   | 90%  | 41                        | 64            | 99           | 65%              | 141           |
| 11:00 PM                              | 0%                                     | 0                                      | 0%                                     | 0                                 | 93%  | 79   | 93%  | 43                        | 43            | 99           | 43%              | 122           |
|                                       |  |  |  |                                   |  |  |  |                           |               |              |                  | 149           |

Note: sf = square-feet, DU = dwelling units

1. Retail and Restaurant Parking demand rate based on the ITE Parking Generation, 5th Edition . Residential parking demand rate based on Right Size parking.

2. Time of day based on the ITE Parking Generation, 5th Edition.

## Memorandum

**To:** Patrick Yamashita, City of Mercer Island  
**From:** John Davies, KPG  
**Date:** 1/15/2021  
**Re:** Parking Analysis for 2885 78th Avenue SE - 2570 77th Avenue SE Traffic Impact Analysis

---

The City of Mercer Island requested KPG to complete a peer review of the Transportation Impact Analysis (TIA) for the Xing Hua development (TCC20-002), prepared by the Transpo Group. Previous reviews were conducted by KPG of the December 2019 and June 2020 TIA submittals. The Transpo Group provided a memorandum dated January 8, 2021 that included additional analysis to clarify the parking supply and demand for the development. All other review comments were addressed by the October 2020 TIA.

Our review of the January 8, 2021 memorandum found agreement with the analysis and calculation of the peak parking demand and distribution of parking spaces between uses. Of the 203 parking spaces on-site, the applicant proposes:

- 43 reserved commercial spaces
- 56 flex spaces open to commercial use between 11:00 AM and 9:00 PM
- 104 reserved residential spaces

The 203 parking spaces meets the City of Mercer Island minimum code requirement for parking spaces based on MICC 19.11.130. The code provides for a range of required parking spaces based on the land uses of the development and the number of parking spaces required to meet the peak shared parking demand of the development. The January 8, 2021 memorandum identifies a peak parking demand of 99 spaces to meet the shared parking demand, while reserving 104 spaces for dedicated residential parking. Using King County's *Multi-Family Residential Parking Calculator (Version 2.0)*, the parking demand for the development's mix of 159 residential units will be met by the 160 residential parking spaces (104 reserved and 56 flex spaces), or just over 1.0 spaces per unit. This assumes that \$200 per month is charged for parking and that vehicle ownership patterns are consistent with the model. The shared parking analysis is based on the data and procedures from the Institute of Transportation Engineers (ITE) *Parking Generation (5th Edition)*, in order to estimate the peak parking demand for the combination of retail, restaurant and residential uses.

As a mitigation measure or condition of permit approval, a Parking Management Plan needs to be submitted and approved. The following identifies an outline for the elements to be included in the Parking Management Plan:



1. Project summary and description of proposed development and parking facilities.  
Summarize the proposed shared parking plan for the site.
  
2. Parking floor plans showing location of parking spaces for the development. This should include:
  - Location reserved and flexible parking spaces for commercial and residential uses
  - Parking stall locations and dimensions for standard/compact/accessible spaces
  - Drive aisle dimensions
  - Pedestrian wayfinding, access points and walkways
  - Location of vehicle access points and control gates for entry and internal gated areas
  - Pay stations or other parking equipment
  - Location of bicycle parking, electric vehicle parking or other parking garage uses
  - Parking signage and pavement markings to designate reserved and flexible spaces
  
3. Description of parking management procedures (as applicable):
  - Parking permit types and hours of use
  - Employee parking permits
  - Permit issuance process
  - Parking permit fee structure
  - Parking time limits for commercial and flexible spaces
  - Accommodation for ADA compliance
  - Guest/visitor parking
  - Enforcement process and staffing needs

No other mitigation actions are required.

# CITY OF MERCER ISLAND

## COMMUNITY PLANNING & DEVELOPMENT

9611 SE 36TH STREET | MERCER ISLAND, WA 98040

PHONE: 206.275.7605 | [www.mercerisland.gov](http://www.mercerisland.gov)



## PUBLIC NOTICE OF PUBLIC HEARING

**NOTICE IS HEREBY GIVEN** that the City of Mercer Island Design Commission will hold a public hearing at 7:00pm on February 24, 2021 for the design review application described below:

**File No:** DSR20-001

**Permit Type:** Type IV

**Description:** A request for Design Commission Design Review for a proposed new 4-story, mixed-use building with 159 apartment units.

**Representative/ Property Owner:** Scheer Chan and Lu Zhang (Johnston Architects) / Xing Hua Group Ltd.

**Location of Property:** 2750 77<sup>th</sup> Ave SE and 2885 78<sup>th</sup> Ave SE Mercer Island WA 98040  
Identified by King County Assessor tax parcel numbers: 531510-1316 and 531510-1326

**SEPA Compliance:** A SEPA Determination is being issued concurrently with this notice on January 25, 2021.

**Project Documents:** Please follow this file path to access the associated documents for this project:  
[https://mieplan.mercergov.org/public/DSR20-001 & SEP20-002](https://mieplan.mercergov.org/public/DSR20-001&SEP20-002)  
Documents will continually be added to this file as the process moves forward.

**Time, Date and Location of Public Hearing:** Pursuant to MICC 19.15.030(F) Table A, applications for design commission design review are required to be processed as a Type IV action, with the Design Commission as the decision authority. The public hearing is scheduled for February 24, 2021 at 7:00pm.

The Design Commission meeting will be held virtually using video conferencing technology provided by Zoom, and the public will have the opportunity to provide comment during Appearances or during the Public Hearing by either calling in or logging onto the meeting as a Zoom attendee.

**Registering to Speak:** Individuals wishing to speak during live Appearances or wishing to provide comment during the Public Hearing will need to register their request with the Sr. Administrative Assistant at 206-275-7791 or email at [andrea.larson@mercerisland.gov](mailto:andrea.larson@mercerisland.gov) and leave a message before 4pm on the day of the Design Commission meeting. Please reference "Appearances" or "Public Hearing Public Comment". Each speaker will be allowed three (3) minutes to speak.

**Public Comment by Video:** Notify the Sr. Administrative Assistant in advance that you wish to speak on camera and staff will be prepared to permit temporary video access when you enter the live Design Commission meeting. Please remember to activate the



video option on your phone or computer, ensure your room is well lit, and kindly ensure that your background is appropriate for all audience ages. Screen sharing will not be permitted, but documents may be emailed to the [Design Commission](#).

**Submitting Written Comments:** The City will also accept written comments until such time that the public hearing is adjourned. Please send written comments to [robin.proebsting@mercerisland.gov](mailto:robin.proebsting@mercerisland.gov).

To attend the hearing, please use the following Zoom information:

**Join by Telephone at 7:00 pm:** To listen to the hearing via telephone, please call 253-215-8782 and enter Meeting ID 857 7134 3354 and Passcode 814271 when prompted.  
OR

**Join by Internet at 7:00 pm:** To watch the hearing over the internet via your computer microphone/ speakers follow these steps:

1. Click this Link-
2. <https://us02web.zoom.us/j/85771343354?pwd=WlJCb0RseDd6Ykt4Mm5HSUIERHJOQT09>
3. If the Zoom app is not installed on your computer, you will be prompted to download it.
4. If prompted for Meeting ID, enter 857 7134 3354
5. Enter Passcode 814271

**For the safety and wellbeing of the public and staff,** the City strongly recommends that people attend the meeting by viewing it live on Zoom. Should restrictions on “in-person” meetings be lifted, opportunity to provide comment during either Appearances or the Public Hearing will be available at City Hall, located at 9611 SE 36<sup>th</sup> Street, Mercer Island, WA 98040. Strict social distancing requirements will be required of all in person attendees.

**Applicable Development Regulations**

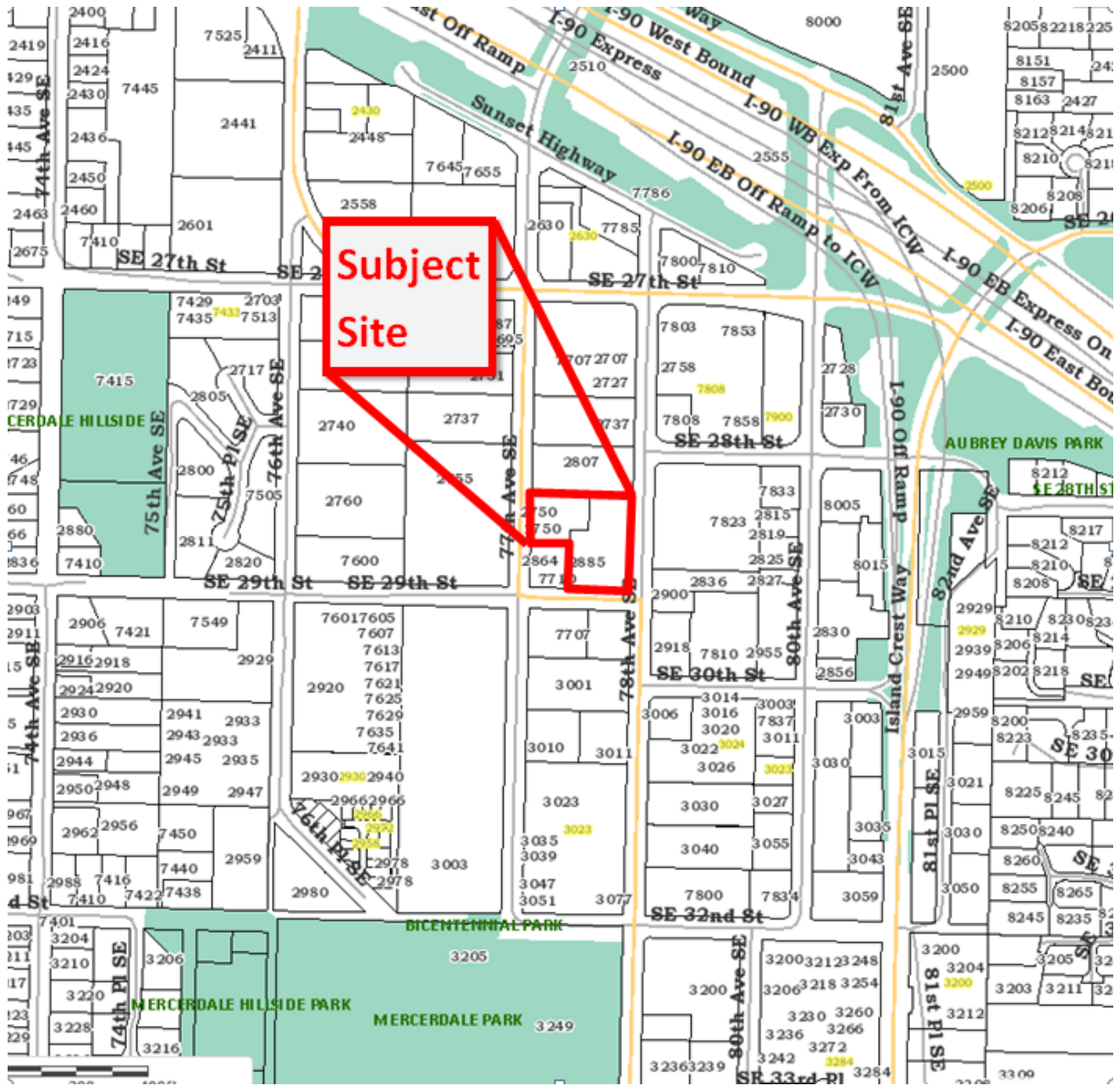
Pursuant to Mercer Island City Code (MICC) 19.15.030(F) Table A, design commission design review applications are required with be processed as a Type IV action, with the Design Commission as the decision authority. The applicable design review standards are located in MICC 19.11 –Town Center Development and Design Standards.

**Other Associated Permits:**

Building permit 2011-119

Written testimony and/or requests for additional information should be referred to:

Project Contact:  
 Robin Proebsting / Senior Planner  
 Community Planning & Development  
 City of Mercer Island  
 9611 SE 36<sup>th</sup> Street  
 Mercer Island, WA 98040  
 (206) 275-7717  
[robin.proebsting@mercerisland.gov](mailto:robin.proebsting@mercerisland.gov)





**Return Address:**  
 THOMAS M. HANSEN  
 OSERAN HAHN P.S.  
 929 108<sup>TH</sup> AVE NE, STE 1200  
 BELLEVUE WA 98004

**KING COUNTY AUDITOR/RECORDER'S INDEXING FORM**

|  |
|--|
| <b>DOCUMENT TITLE(S):</b><br>DECLARATION OF PUBLIC PEDESTRIAN ACCESS EASEMENT  |
| <b>REFERENCE NUMBER(S) OF DOCUMENTS ASSIGNED OR RELEASED:</b><br>N/A   |
| <b>GRANTOR/DECLARANT(S):</b><br>XING HUA GROUP LTD., a Washington corporation  |
| <b>GRANTEE(S):</b><br>THE CITY OF MERCER ISLAND, a municipal corporation   |
| <b>LEGAL DESCRIPTION:</b> (abbreviated i.e. lot, block, plat, section, township, and range)<br>(A) - PTN. OF LOT 5, BLOCK 16, MCGILVRA'S ISLAND ADD, VOL. 16, P. 58<br>(B) - PARCEL 1 OF MERCER ISLAND SP No 77-9-040, REC. No. <a href="#">7710250620</a> , Full legal description is on Exhibit A of document. |
| <b>ASSESSOR'S PROPERTY TAX PARCEL/ACCOUNT NUMBER(S):</b><br>(A) 5315101316<br>(B) 5315101326   |
| The Auditor/Recorder will rely on information provided on the form. The staff will not read the document to verify the accuracy or completeness of the indexing information provided herein.   |

***(This document is a draft only and Grantor reserves the right to make revisions to the easement in its sole discretion.)***

**DECLARATION OF PUBLIC PEDESTRIAN ACCESS EASEMENT**

THIS DECLARATION OF PUBLIC PEDESTRIAN ACCESS EASEMENT ("Declaration") is made and entered into this \_\_\_\_\_ day of April, 2020, by XING HUA GROUP LTD., a Washington corporation ("Grantor/Declarant") for the benefit of THE CITY OF MERCER ISLAND, a municipal corporation and The Public ("Grantee").

**WITNESSETH:**

WHEREAS, Grantor is the owner of that certain real property located at 2750 77<sup>th</sup> Ave SE, Mercer Island, WA 98040, and described in **Exhibit A** attached hereto ("Parcel A"); and

WHEREAS, Grantor is also the owner of that certain real property located at 2750 77<sup>th</sup> Ave SE, Mercer Island, WA 98040, and legally described in **Exhibit A** attached hereto ("Parcel B"); and collectively, Parcel A and Parcel B shall refer herein as "Xing Hua Property", and

WHEREAS, as part of the permitting process to construct a building on the Xing Hua Property the City of Mercer Island has requested a perpetual non-exclusive public pedestrian access easement over the north twenty (20) feet of the Xing Hua Property; and

WHEREAS, Grantor desires to declare and establish a perpetual non-exclusive public pedestrian access easement over the north twenty (20) feet of the Xing Hua Property;

NOW, THEREFORE, Grantor hereby declares that the Xing Hua Property shall be held, sold, used and conveyed subject to the provisions of this Declaration.

1. Grant of Public Pedestrian Access Easement. Grantor hereby grants, conveys and declares for itself and any future owners of the Xing Hua Property a perpetual non-exclusive pedestrian use and public access easement for pedestrian ingress and egress (the "Pedestrian Access Easement") upon, over and across the north twenty feet (20') of the Xing Hua Property legally described on **Exhibit B** attached hereto (the "Public Access Easement Area"), and as depicted on **Exhibit C**. The City of Mercer Island shall provide for the reasonable care and maintenance of the Pedestrian Access Easement, and all costs of maintenance, repair or replacement of the Pedestrian Access Easement, and all improvements benefitting the public therein shall be paid by the City of Mercer Island. No vehicles shall block or be allowed to park in the Pedestrian Access Easement, and the City of Mercer Island shall provide for all temporary bike or mobility device storage in the Pedestrian Access Easement.



2. Easement Termination. The provisions of this Agreement shall run with the Xing Hua Property, bind the land which makes up the Xing Hua Property, and shall remain in effect perpetually to the maximum extent allowed by law, The Easement granted herein shall not be terminated by implication, nonuse or abandonment, and no release of the Easement shall arise by waiver or course of conduct unless such termination or release is evidenced by a recorded agreement to such effect executed by the City of Mercer Island and all of the then owners of Xing Hua Property.

3. Insurance. The Grantee shall provide Grantor with a certificate of insurance for public liability insurance covering injuries or accidents sustained by the public within the Pedestrian Access Easement, and or evidence of self-insurance or risk pool coverage in a form and amount satisfactory to Grantor. **[NOTE – draft provision only. Discuss with the City of Mercer Island.]**

4. Indemnity. Grantee when exercising rights to use the Pedestrian Access Easement under this Agreement shall defend, indemnify and hold the Xing Hua Property owner harmless from and against all liability, loss, damage, expense, actions and claims, including costs and reasonable attorneys' fees incurred by the Grantor in defense thereof, asserted or arising directly or indirectly on account of or out of acts or omissions of the Public and/or Grantee, their tenants, agents and contractors in connection with the exercise of the rights granted herein; provided, however, this paragraph shall not apply to the extent that damages arising out of bodily injury to persons or damage to property caused by or resulting from the negligent or intentional acts or omissions of the Grantor, its tenants, agents or contractors.

5. Binding Effect/Successors and Assigns/Permitted Users. The terms, covenants and conditions contained in this Declaration shall run with the title to the Parcel A and Parcel B of the Xing Hua Property. This Declaration shall be binding on the Xing Hua Property owner and the City of Mercer Island, and their successors and assigns, and shall inure to the benefit of each and every future owner of such property, including their respective tenants, agents, occupants and invitees.

6. Modification. This Declaration may not be modified except in writing signed by the then owners of Xing Hua Property and the City of Mercer Island.

7. Duration. The provisions of this Agreement shall run with the Xing Hua Property, bind the land which makes up the Xing Hua Property, and shall remain in effect perpetually to the maximum extent allowed by law,

8. Entire Agreement. This Declaration constitutes the entire agreement between the parties hereto with respect to the easement and agreements granted herein and may not be modified except through a recorded agreement executed by such parties or their respective successors in interest.

DATED the date first set forth above.

**GRANTOR/DECLARANT:**

XING HUA GROUP LTD.,  
a Washington corporation

By: \_\_\_\_\_  
    Guo Bin Lu  
Its: President

**GRANTEE: [TOM, DO WE NEED TO INCLUDE TRANTEE?]**

CITY OF MERCER ISLAND,  
a municipal corporation

By: \_\_\_\_\_  
[Name] \_\_\_\_\_  
Its: \_\_\_\_\_



STATE OF WASHINGTON )  
 ) ss.  
COUNTY OF KING )

I certify that I know or have satisfactory evidence that Guo Bin Lu is the person who appeared before me, and said person acknowledged that he signed this instrument, on oath stated that he was authorized to execute the instrument and acknowledged it as the President of XING HUA GROUP LTD., a Washington corporation , to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated: \_\_\_\_\_, 2020.

(SEAL/STAMP)

\_\_\_\_\_  
[Print  
Name:] \_\_\_\_\_  
NOTARY PUBLIC for the State of Washington  
Residing at \_\_\_\_\_  
My appointment expires: \_\_\_\_\_

STATE OF WASHINGTON )  
 ) ss.  
COUNTY OF KING )

I certify that I know or have satisfactory evidence that Guo Bin Lu is the person who appeared before me, and said person acknowledged that he signed this instrument, on oath stated that he was authorized to execute the instrument and acknowledged it as the \_\_\_\_\_ of THE City of Mercer Island, a Washington municipal corporation , to be the free and voluntary act of such party for the uses and purposes mentioned in the instrument.

Dated: \_\_\_\_\_, 2020.

(SEAL/STAMP)

\_\_\_\_\_  
[Print  
Name:] \_\_\_\_\_  
NOTARY PUBLIC for the State of Washington  
Residing at \_\_\_\_\_  
My appointment expires: \_\_\_\_\_

**EXHIBIT A**  
**Legal Description of Xing Hua Property**

**Parcel A.**

THAT PORTION OF LOT 5, BLOCK 16, MCGILVRA'S ISLAND ADDITION, ACCORDING TO THE PLAT THEREOF, RECORDED IN VOLUME 16 OF PLATS, PAGE 58, IN KING COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 5;  
THENCE NORTHERLY ALONG THE WEST LINE OF SAID LOT 5 A DISTANCE OF 37.75 FEET TO THE NORTHWEST CORNER OF SAID LOT 5;  
THENCE EASTERLY ALONG THE NORTH LINE OF SAID LOT 5 A DISTANCE OF 73.00 FEET;  
THENCE SOUTHERLY PARALLEL TO THE WEST LINE, 100.00 FEET;  
THENCE WESTERLY PARALLEL TO THE NORTH LINE 63.00 FEET;  
THENCE SOUTHERLY PARALLEL TO THE WEST LINE 37.75 FEET TO THE SOUTH LINE OF SAID LOT 5;  
THENCE WESTERLY ALONG THE SOUTH LINE 110.00 FEET TO THE TRUE POINT OF BEGINNING;

EXCEPT THE WEST 10 FEET THEREOF AS CONVEYED TO KING COUNTY BY DEED RECORDED UNDER RECORDING NUMBER 4955634;

(ALSO KNOWN AS PARCEL 2 OF CITY OF MERCER ISLAND SHORT PLAT NUMBER MI-77-9-040, RECORDED UNDER RECORDING NUMBER 7710250620);

TOGETHER WITH AN EASEMENT FOR INGRESS AND EGRESS FOR MOTOR VEHICLES AND PEDESTRIANS OVER THE NORTH 20 FEET OF PARCEL 1 OF CITY OF MERCER ISLAND SHORT PLAT NUMBER HI-77-9-040, RECORDED UNDER RECORDING NUMBER 7710250620;

TOGETHER WITH THE RIGHT TO USE THE COMMON PARKING AREA ACROSS A NORTHWESTERLY PORTION OF PARCEL 1 OF CITY OF MERCER ISLAND SHORT PLAT NUMBER MI-77-9-040, RECORDED UNDER RECORDING NUMBER 7710250323, AS SET FORTH IN AGREEMENT RECORDED UNDER RECORDING NUMBER 7710250324.

SITUATE IN THE CITY OF MERCER ISLAND, COUNTY OF KING, STATE OF WASHINGTON.

**Parcel B.**

PARCEL 1 OF MERCER ISLAND SHORT PLAT NUMBER 77-9-040, RECORDED OCTOBER 25, 1977 UNDER RECORDING NUMBER [7710250620](#), IN KING COUNTY, WASHINGTON.



**EXHIBIT B**

**LEGAL DESCRIPTION OF PEDESTRIAN ACCESS EASEMENT AREA  
ON XING HUA PROPERTY**  
“Insert legal”

*[SUBSTITUTE WITH COMPLETE LEGAL DESCRIPTION, BUT THE EXHIBIT SHOULD BE “THE NORTH TWENTY (20’) FEET” OF THE REAL PROPERTY DESCRIBED ON EXHIBIT A]*

**EXHIBIT C**

**DEPICTION OF PEDESTRIAN ACCESS EASEMENT AREA**