

July 12, 2024

Ruji Ding
City of Mercer Island
9611 SE 36th Street
Mercer Island, WA 98040



Subject: Covenant Living Lodge Project
Easement Coordination for Site Redevelopment




Dear Ms. Ding:

The purpose of this letter is to request your review and approval of the proposed revisions to existing public utility easements on the Covenant Living Lodge property located at 9150 Fortuna Dr in Mercer Island.

Covenant Living is proposing to redevelop their community center in an effort to modernize their campus and provide additional amenities for residents. This redevelopment will require revisions to existing public utility easements in order to accommodate the proposed site improvements. The easements in question are a storm drain easement under Recording No. 20060809001964 and a water easement under Recording No. 8510300965. Please see below for additional details with our request.




Existing Conditions


The existing storm easement is for an 18-inch crete pipe that conveys stormwater runoff through the property from West  Mercer Way to Lake Washington. See Exhibit  1A for the existing storm easement location on the property.

The existing water easement is for an 8-inch water main that serves the site and its multiple buildings. The water main is located below Fortuna Drive and connects to fire hydrants and water meters throughout the site and is the only water supply for the site. See Exhibit 2A for the existing water easement location on the property.



Proposed Revisions

The project is proposing to relocate the existing stormwater conveyance system around the area of redevelopment and to provide additional capacity by installing a larger  24-inch pipe. The reroute will include approximately 580 feet of 24-inch pipe and six new manhole or catch basin structures. The existing outfall to Lake Washington will be retained and reused in its existing location. The revised storm easement will be 20 feet wide and will follow the service road around the building. There are currently no known drainage concerns regarding the existing system. Pipe capacity calculations are attached to this letter show the new 24-inch pipe will have sufficient capacity to convey the tributary flow. See Exhibit 1B for the proposed storm easement location.




The project is also proposing to replace the existing water meter that currently serves the lodge building with a new meter located within the existing easement. Additionally, the project will relocate the existing meter for Building 8, which is currently located inside the building garage, into the existing easement. See Exhibit 2B for the proposed water easement.

Benefits to the City for Storm Easement Relocation

- Increased access to the storm easement

Currently, the existing storm easement is located over landscaping and lawn areas where maintenance vehicles may have restricted access. The revised dedicated storm easement will locate the storm line below the service road/fire lane, which will provide vehicular access along the entire length of the line.


- Maintaining capacity of existing system



The pipe upstream of the revised storm drainage main is an 18-inch pipe with a 5% slope. Despite adding additional length of pipe, the proposed relocation will allow for pipe capacity to be improved compared to existing conditions. Calculations are provided showing that the full flow in a 24-inch pipe sloping at 1.25% has greater capacity than an 18-inch pipe with a 5% slope.

Benefits to the City for Water Easement Revision

- Increased access to water meters



The existing water meter for Building 8 is located inside the building garage, which does not allow for easy City access to the meter. The project proposes to relocate the water meter outside of the building to provide 24/7 access to the City. Additionally, the new lodge water meter will be located inside the existing easement. The locations for these water meters are schematic and the locations will be finalized as part of the building permit process.

Conclusion

The proposed easement revisions allow for the planned redevelopment of the Covenant Living Lodge property while providing more access to the public storm system and the existing water meter, providing benefit for both the Owner and the City.

Please call me at 425-458-7904 if you have any questions or need any additional information. We look forward to discussing this with you in more detail.

Sincerely,

Navix Engineering, Inc.

A handwritten signature in black ink that reads "Garrett Goudy". The signature is written in a cursive style with a large, sweeping flourish at the end.

Garrett Goudy, P.E.
Project Manager
Ggoudy@navixeng.com

STORM EASEMENT NOTES

- 1) FOLLOWS A MIXTURE OF PUBLIC AND PRIVATE LINES
- 2) DRAINS WATER FROM N MERCER WAY

PRIVATE OUTFALL

PUBLIC OUTFALL

AT GRADE DRAINAGE SWALE FOR PRIVATE SITE DRAINAGE (NO PUBLIC DRAINAGE)

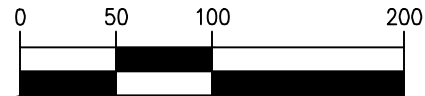
20 ft

20 ft

EXISTING PUBLIC STORMLINE

EXISTING PRIVATE SITE DRAINAGE

EXISTING STORM EASEMENT REC. NO. 20060809001964



SCALE: 1 inch = 100ft.



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**COVENANT LIVING LODGE
MERCER ISLAND, WA
EXISTING STORM EASEMENT**

**EXHIBIT 1A
7/12/2024
SCALE: 1" = 100'**

STORM EASEMENT NOTES

- 1) DRAINAGE EASEMENT CONSOLIDATED INTO SINGLE 20' WIDE DEDICATED EASEMENT
- 2) STORM LINE TO BE UPSIZED FROM 18" TO 24" ALONG REROUTE
- 3) EXISTING PUBLIC OUTFALL TO REMAIN IN USE

CONNECT TO EXISTING 18" CONCRETE PIPE AND REUSE EXISTING OUTFALL

OUTFALL PRIVATE SITE DRAINAGE TO EXISTING VEGETATED SWALE

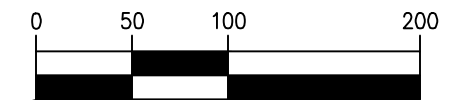
PREVIOUS STORM EASEMENT

PUBLIC OUTFALL

NEW LODGE

PRIVATE SITE DRAINAGE

24" STORM LINE IN MODIFIED STORM EASEMENT SEE NOTE 2



SCALE: 1 inch = 100ft.



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COVENANT LIVING LODGE
MERCER ISLAND, WA
PROPOSED STORM EASEMENT MODIFICATION

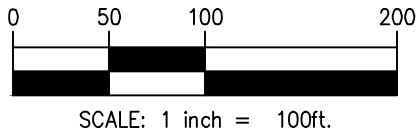
EXHIBIT 1B
7/12/2024
SCALE: 1" = 100'

WATER EASEMENT NOTES

- 1) EXISTING WATER METER FOR BUILDING 8 IS LOCATED INSIDE BUILDING GARAGE
- 2) EXISTING EASEMENT TO BE RELINQUISHED, NEW EASEMENT TO BE RECORDED

EXISTING BUILDING 8 WATER SERVICE LOCATED INSIDE GARAGE, SEE NOTE 1

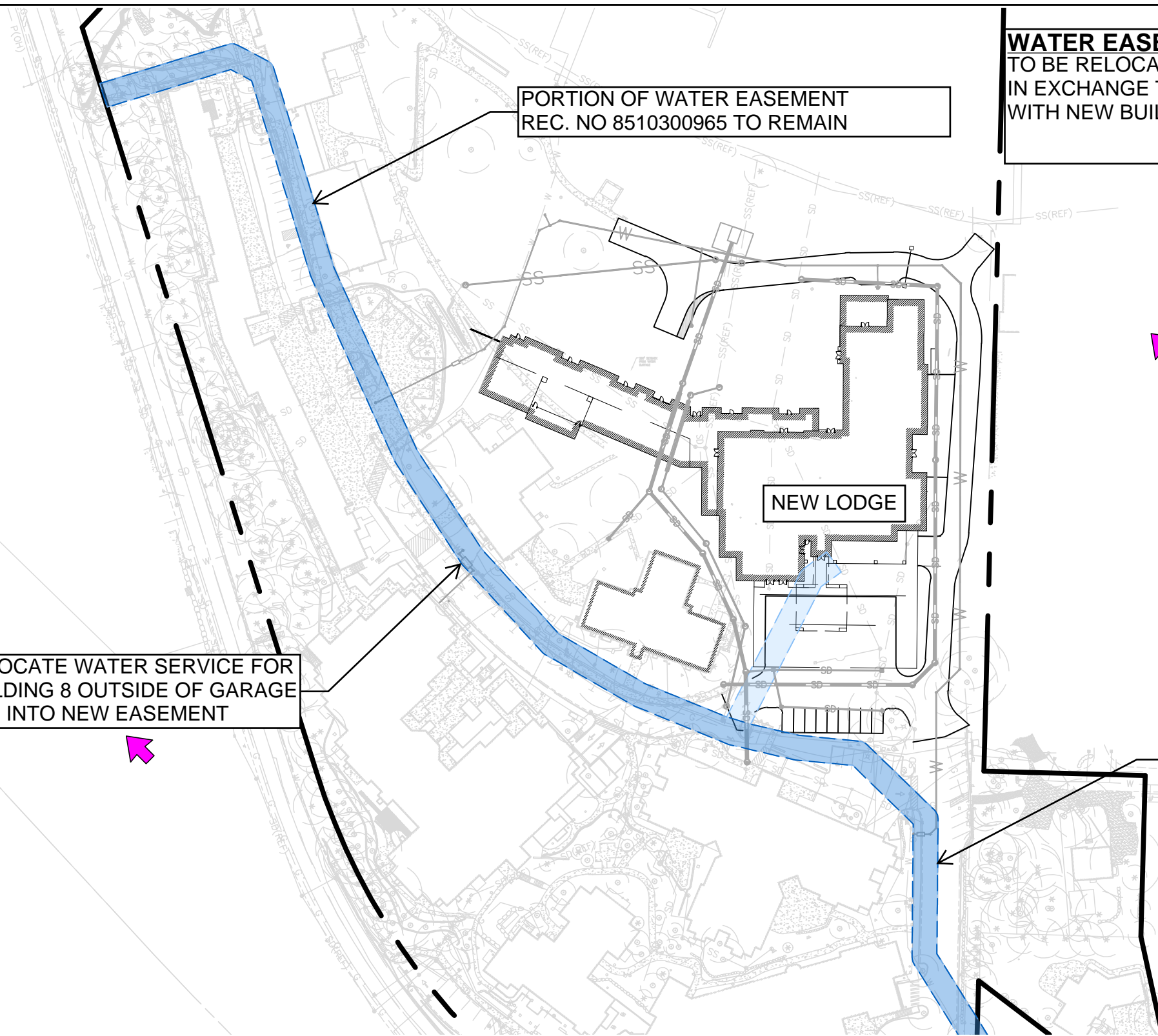
EXISTING WATER EASEMENT REC. NO 8510300965



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**COVENANT LIVING LODGE
MERCER ISLAND, WA
EXISTING WATER EASEMENT**

**EXHIBIT 2A
7/12/2024
SCALE: 1" = 100'**



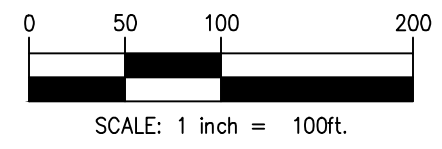
WATER EASEMENT NOTES
 1) EX BUILDING 8 WATER METER TO BE RELOCATED OUTSIDE OF GARAGE FOR EASE OF ACCESS IN EXCHANGE TO EXTINGUISH EASEMENT AREA CONFLICTING WITH NEW BUILDING.
 2) NEW WATER LIN IN NEW EASEMENT

RELOCATE WATER SERVICE FOR BUILDING 8 OUTSIDE OF GARAGE AND INTO NEW EASEMENT

PORTION OF WATER EASEMENT REC. NO 8510300965 TO REMAIN

PORTION OF WATER EASEMENT REC. NO 8510300965 TO REMAIN

NEW LODGE



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**COVENANT LIVING LODGE
 MERCER ISLAND, WA
 PROPOSED WATER EASEMENT**

**EXHIBIT 2B
 7/12/2024
 SCALE: 1" = 100'**

EXISTING PIPE CAPACITY

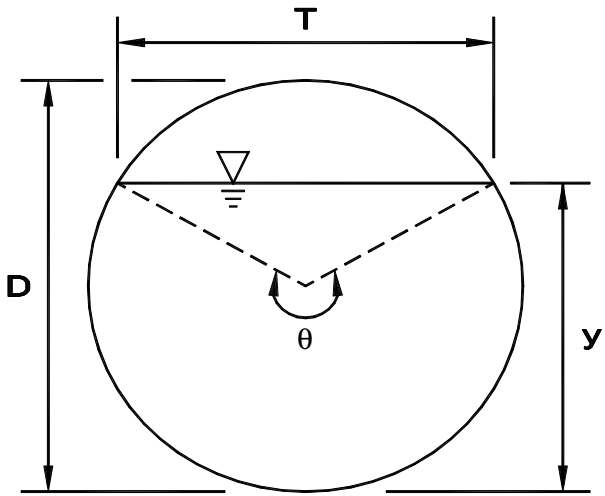


Open Channel Flow Calculator For Circular Pipes	Navix Engineering	
	11235 SE 6th Street, Suite 150 Bellevue, WA 98004	Tel: 425.453.9501 Fax: 425.453.8208

Project Name: Covenant Living
 Description: Pipe Capacity Calculation

Date: 7/12/2024
 Calc. By: GCG

Pipe Diameter (D) = 18 in
 Pipe Slope (S) = 5.00 %
 Flow Depth (y) = 1.50 ft
Flowrate (Q) = 27.83 cfs
 Mannings Coeff. (n) = 0.011
 Theta Angle (u) = 6.28 rad
 Wetted Area (A) = 1.77 ft²
 Wet. Perimeter (P) = 4.71 ft
 Hydraulic Radius (R) = 0.38 ft
 Top Width (T) = 0.00 ft
 Flow Velocity = 15.75 fps



Formulas:

Theta Angle (u): If $y < r$: $\theta = 2\pi - 2a \cos\left(\frac{y-r}{r}\right)$ where: r = Pipe Radius

If $y \geq r$: $\theta = 2a \cos\left(\frac{r-y}{r}\right)$ where: r = Pipe Radius

Wetted Area (A): $A = \frac{1}{8}(\theta - \sin \theta)d^2$

Wetted Perimeter (P): $P = \frac{1}{2}\theta d$

Hydraulic Radius (R): $R = \frac{A}{P}$

Top Width (T): $T = \sin\left(\frac{\theta}{2}\right)d$

PROPOSED PIPE CAPACITY

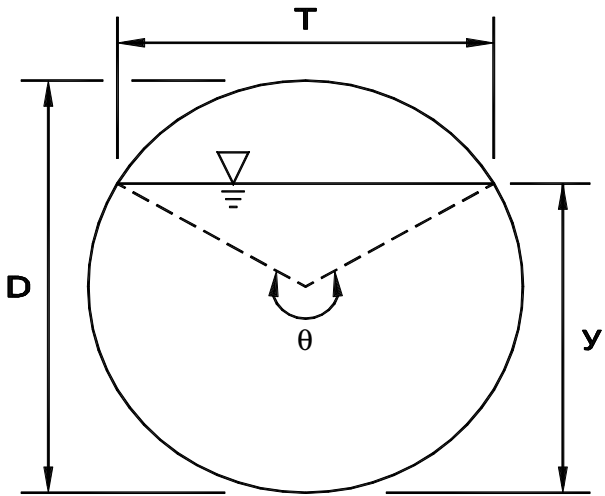


Open Channel Flow Calculator For Circular Pipes	<i>Navix Engineering</i>	
	11235 SE 6th Street, Suite 150 Bellevue, WA 98004	Tel: 425.453.9501 Fax: 425.453.8208

Project Name: Covenant Living
 Description: Pipe Capacity Calculation

Date: 7/12/2024
 Calc. By: GCG

Pipe Diameter (D) = 24 in
 Pipe Slope (S) = 1.25 %
 Flow Depth (y) = 2.00 ft
 Flowrate (Q) = 29.97 cfs
 Mannings Coeff. (n) = 0.011
 Theta Angle (u) = 6.28 rad
 Wetted Area (A) = 3.14 ft²
 Wet. Perimeter (P) = 6.28 ft
 Hydraulic Radius (R) = 0.50 ft
 Top Width (T) = 0.00 ft
 Flow Velocity = 9.54 fps



Formulas:

Theta Angle (u): If $y > r$: $\theta = 2\pi - 2a \cos\left(\frac{y-r}{r}\right)$ where: r = Pipe Radius

 If $y < r$: $\theta = 2a \cos\left(\frac{r-y}{r}\right)$ where: r = Pipe Radius

Wetted Area (A): $A = \frac{1}{8}(\theta - \sin \theta)d^2$

Wetted Perimeter (P): $P = \frac{1}{2}\theta d$

Hydraulic Radius (R): $R = \frac{A}{P}$

Top Width (T): $T = \sin\left(\frac{\theta}{2}\right)d$