112 Second Street
P.O. Box 366
Langley, WA 98260
(360) 221-4246

City of Langley

Krista "Kennedy" Horstman
Mayor
mayor@langleywa.org

April 22, 2024

Christina Congdon
Environmental Works
402 15th Ave East
Seattle, WA 98112
ccongdon@eworks.org

Re: File #SPR-23-001; Assessor's Parcel No's: S7345-00-02020-0, S7345-00-02019-0

Ms. Congdon,

The City of Langley Planning received your application on January 3, 2023 for the proposed Type I Site Plan Review and variance request to construct 14 dwelling units in a three-building affordable housing development under the multifamily infill provisions of LMC 18.13. During the review process, the City of Langley has identified the following additional information that is needed in order to complete review of your permit:

Public Works

- Please see the attached memorandum and edited pages of submittal documents from Pace Engineering, City of Langley Contract Engineer.

Planning

- Please provide an updated site plan illustrating how the proposed buildings meet the width and depth requirements for the main buildings and secondary wings in accordance with LMC 18.13.050, Table 5.
- Please provide an updated site plan which labels the frontage types for the west and northeast buildings in accordance with LMC 18.13.050.F, Table 7.
- Please clarify how the application complies with LMC 18.13.050.H.3:
    - 3. Permeable Open Space. Outdoor shared open space shall only be constructed with a permeable surface to allow groundwater to recharge wherever possible, with the amount and type to be approved by the public works director or designee. It is not the intent to prohibit a use where its impermeability is inherent such as a sidewalk through the space.
- Please provide a narrative that addresses how the requested administrative waiver for lot coverage meets the requirements of LMC 18.13.060F.3:
    - 3. The planning official has the authority to approve or disapprove a request for an administrative waiver. In order to receive approval of an administrative waiver, the applicant must provide evidence that:
        - a. The waiver is consistent with the intent of this chapter;
        - b. The waiver is consistent with the comprehensive plan;

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- c. The waiver will not materially endanger the public health or safety or constitute a public nuisance if developed according to the information submitted;
- d. The waiver will not substantially injure the value of adjoining property, or that the use is a public necessity; and
- e. The location and character of the use will be in harmony with proximate land uses, and consistent with the purposes of this chapter.

- Several comments and questions were submitted during the advertised public comment period. A matrix summarizing the questions and concerns are attached. A full set of the comments can be found on the City's website here. Please provide a response to each of the concerns and questions raised by the public within the attached matrix.

Please provide one hard copy and one electronic copy of the additional information to this office for review. This letter serves as our request for additional or corrected information, as provided in Section 18.36.105.A.2 LMC. As of the date of this letter, the review period stops. It will start again when either you submit the corrected information and the reviewing agencies determine that their requests have been satisfied or 14 days after you provide the information, whichever is sooner.

Please work actively to meet all requirements and submit all the information we requested by June 21, 2024. We set this timeline to ensure each applicant will continue to work actively to complete their application. If you are not able to meet the requirements by June 21, 2024, please contact me in writing to request an extension.

Please call me at 360.221.4219 if you have any further questions or email me at planning@langleywa.org.

Sincerely,

Meredith Penny
Community Planning Director

Attachments:

A. SPR-23-001 Public Comment Matrix April 22, 2024
B. Memorandum - Pace Engineering, City of Langley Public Works Contract Engineer, April 22, 2024
C. Site Plan Comments – Pace Engineering, City of Langley Public Works Contract Engineer, April 22, 2024
D. Stormwater Site Plan Comments - Pace Engineering, City of Langley Public Works Contract Engineer, April 22, 2024

Cc: file#SPR-23-001

Public Comment Matrix SPR-22-001 - Received During the Public Comment Period				
Last Name	**First Name**	**Date**	**Method**	**Summary of Concerns**
Allen	Bruce	3/11/2024	Letter	Concern that the proposed development is very crowded Concern that the proposed development does not blend with the neighborhood Question about how residents will be selected Question about "where are the jobs going to come from?" Comment that the plants on 1st St are not maintained or watered.
Bessesen	Marie Laure	3/11/2024	Letter	Comment that her and her husband have been owners/manager of many rental properties over the past 40 years. Question about the "potential occupancy?" Concern that the proposed lot coverage increase seems out of proportion with the size of the property and location in the village Concern that the proposed 14 parking spaces for 34 bedrooms may "constitute a public nuisance" Concern that there is no street parking and limited parking in the surrounding areas Question about where guests will park, delivery trucks, and emergency vehicles Question about what traffic safety measures will be implemented Question about whether street lighting will be installed by Generations Place Question about whether the proposed entrance on DeBruyn complies with LMC 18.13.050 Comment that 94 trips are estimated. Question about how many cars and people were considered in these trips Request for recent studies on stormwater and sewer Question about whether the sewer is sufficient for this project or whether Generations Place will pay for any necessary improvements Question about how the stormwater will be controlled down DeBruyn and 1st St. Commenter notes that run-off already comes into their front yard and breezeway. Question about what the estimated water usage is for the project Question about what the impact will be on the aquifer Question about what the outside of the building will look like and what materials will be used Question about whether the development will be "cottage style" Concern that the proposed 700sqft of open space for 34 bedrooms seems disproportional with the size of the complex Concern that there are not any one-bedroom apartments included Question about whether a market study has been done to determine the demographics of the likely occupants. Comment that the lack of one-bedroom apartments could be seen as discriminatory against singles and couples Comment that the landscaping should be minimal for low maintenance and water usage Concern that maples are messy around buildings and streets Question about where the dumpsters will be, how large they will be, and whether they will be locked. Question about what the impact will be on the Police Department, Fire Department, School District, and Health Care system Question about whether the Police and Fire Departments and Health Services have had an opportunity to provide input on the proposal Question about what the target ratio of emergency personnel per capita in the City and Island County is Question about whether there is a unit designated for an onsite manager/maintenance person. Question about whether pets will be allowed
Chapin	Ross	3/11/2024	Email	Notes support for intentions behind the project Concern the project will cause adverse impact in the surrounding neighborhood Comment that technically the amount of proposed parking meets the code, but comments that 34 bedrooms with guests will need more than 14 spaces Comment that the on-street spaces are for the public and cannot be reserved for private use, concern that this will exacerbate the pressure on parking. Comment that parking demand from the Machine Shop and the neighboring church will reduce availability of on-street parking for Generations Place residents Concern that cars will be pushed to park in the surrounding neighborhoods. Comment that the approval of the lot coverage waiver should be disapproved because the overflow parking will significantly impact the surrounding neighborhood causing a public nuisance. Notes they want Generations Place to be a success, but express concern that the current proposal has significant flaws. Notes their willingness to participate in a stakeholder discussion

Last Name	First Name	Date	Method	Summary of Concerns
Emerson	Dominique	3/11/2024	Email	Commenter forwards an email from another resident and notes their agreement with concern for parking and impermeable surfaces. Notes they support the project Don't feel that all parking needs to be onsite Comment that homeowners don't own the parking spaces in front of their home Question about whether there is a deal that could be made to use the Catholic Church's parking or other locations
Graham	Elizabeth	3/10/2024	Email	Comment that the density of the Generations Place project will cause significant parking and traffic disruptions to the neighborhood Request that the lot coverage variance application be denied Comment that an affordable housing project for less density and disruption to the neighborhood would be acceptable
Harding Haman	Raymond Lorinda	3/9/2024	Email	Notes that their family has lived in Langley for 51 years and own two homes on DeBruyn Ave and 1st St Disagrees with the SEPA checklist statement that the project will fit in and enhance the eclectic, small time aesthetic of Langley. Concern about lack of parking Comment that lot coverage is too dense for the size of development Concern about the lack of treatment of the water runoff Concern that there is already not enough parking in the area Question about what will happen on Sundays during church service, comment that the road shoulders already get filled with cars Comment that the City is not enforcing existing parking regulations Comment that the stop sign at the top of First St and DeBruyn is hidden by overgrown trees Comment that if the City is going to allow development, the city needs to enforce existing safety and parking laws. Question about what the definition of public nuisance is Comment that when all the side streets, parking spaces, and shoulders of neighboring streets are used for overflow parking for the development, that it will not add to the small town feel of Langley and will crowd out the existing neighbor's open space Question about why the runoff water along second street collected by the proposed infiltration trenches is not treated Commenter notes they are not in favor of approval of the development as it is proposed Commenter notes they know there is a need for affordable housing in the area for workers but should not be at the expense of the existing residents
Koch	Melissa	3/11/2024	Email	Commenter notes they are a local home owner on 1st Street in Langley Commenter expresses support for affordable housing Concern about the size of the proposed development on the site Comment that the proposal does not keep with the spirit of the Town Concern there is no provision for outdoor garden/yard space Concern about the amount of parking for the number of residents Requests reconsideration of the appropriateness of the size of project for the site Comment that smaller bungalows or a less dense development would be a better option Commenter notes that they are an architect and that they would be happy to make their services available to create an alternative sketch design for the project.
Marnay	Chris	3/9/2024	Email	Commenter notes they see developing the subject parcels with affordable housing as an attractive idea for the neighborhood and city. Requests the community consider the possibility of using part of the parcel south of the subject site to provide neighborhood traffic improvements. Commenter notes the corner of DeBruyn Ave and 3rd St is not resident friendly Comment that 3rd St is not a scenic or safe main entrance to the commercial area Comment that reorganization of the block between DeBruyn and Park is needed Suggests the construction of a small roundabout at the corner Suggests making DeBruyn Ave one-way going south Proposes a sidewalk be added along the north side of 3rd St Proposes lights be installed at 3rd St and Park Comment that one-way traffic and sidewalks on the east downhill section to Anthes "would be a dream come true"

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				Comment that pedestrian traffic could be further reduced by development of a walking path east-west along the 4th St right-of-way, then north-south on the developed section of DeBruyn
Marnay	Nyla	3/10/2024	Email	Commenter notes they live in the neighborhood of the proposed development Commenter notes they believe more affordable housing is needed in Langley Commenter notes they do not disagree with the building of a residential building at the subject site Commenter notes they are strongly against allowing the administrative waiver under LMC 18.13.060 for a 20% increase in lot coverage requirements Comment that the lot is not very big and that "cramming it" with more residences than normally would be permitted will be a detriment to the neighborhood and the residents that will live there. Comment that the housing should be affordable but not "cramped" Comment that increasing the number of units will increase the problems with parking, traffic and storm/water systems which are already "problematic" Strongly requests that if construction is approved, it does not include the waiver for lot coverage requirements
Not Provided	Megan	3/4/2024	Email	Commenter notes they live within a short distance of the project Supports the idea of additional housing concentrated in Langley at a lower cost to help fill service industry jobs and needs of lower income families. Oppose the project as submitted with the proposed parking ratios Request the City reject any "conditional uses, variance waivers, and other variances" Commenter notes they often struggle to park their two cars in front of their house during tourist season and find spots for their parents to park when they visit Concern that the proposed parking ratio does not provide sufficient parking for the families renting the units Comment that "the burden of more parking should not be placed upon the already limited street parking on 1st and 2nd streets" Request that a sidewalk connecting this development to downtown Langley be added as a condition of the development Commenter notes that if the parking ratios are 1 per unit and sidewalk issues are addressed, then the project would have their support, but not without these modifications
Moore	Sue	3/10/2024	Letter	Concern about 14 parking spaces for 34 bedrooms Request that the proposed improvements at the machine shop be taken into consideration Concern there is not enough parking for the number of business and living spaces planned Concern that the traffic in and out of the area is "going to be a mess" Question about why the City has ordinances if are going to offer waivers and variances. Question about how the City will manage the stormwater drainage. Commenter notes the City has "extra high cost for sewer and water" Question about whether the sewers will be able to handle the extra load on the system Question about whether the target population for Generation Place be able to afford the cost of sewer and water in Langley Commenter acknowledges the need for workforce housing Commenter thinks Goosefoot is "doing a good thing" Commenter disagrees on the number of units in such a small space and the impact on the neighborhood Requests a redesign of the project to "fit within its space and not affect everyone already here within the neighborhood." Requests the project be half the size of what is proposed
Moore	Tom	3/11/2024	Email	Comment that there are too many questions and problems with the project as proposed "to issue permits and move forward at this time" Comment that the scale of the project and the impact to the surrounding neighborhood is "out of compliance with maintaining the eclectic small town aesthetic of Langley" Comment that the physical size of the units are overwhelming "compared to everything within eyesight" "As large as the church and old lumberyard building" Comment that the change of the parcel from vacant, open space to "80% coverage with 35'-20' tall buildings is too much for the neighborhood" Comment that needing multiple code variances and allowances indicates "how out of scale the project is" Concern about the infrastructure capacities of the sewer and storm drains Comment that "Documentation noted the inability to locate some of the manhole covers and others were overfilled with water and unable to access the conditions" Request that efforts be made to "locate all access points to confirm the locations and functionality prior to this project being approved"

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				Comment that the city must ensure the infrastructure is intact and located as indicated on the survey report, and has the capacity for the proposed increased volumes to ensure there aren't problems downline for existing connections. Comment that the impact on the surrounding neighborhood regarding traffic, noise and aesthetics is more than should be allowed Comment that "the city code is in place to be enforced by the planning dept., not to grant variances whenever requested." Comment that the project is too large and impactful to move forward at this time
Pamuk Lentzner	Elsie Harold	3/11/2024	Email	Commenter notes they own and reside year-round on 2nd St Supports responding to the need for affordable housing on South Whidbey Island Concerns about the proposed development Concern the density "seems at odds" with several city ordinances affecting parking space, open space, and impervious materials, among others Requests to see and have an opportunity to discuss any variance waivers requested for the proposed project
Paulson	Suzanne Bill	3/11/2024	Email	Comment that the proposal is a growing concern to the community Commenter notes they are a 30-year resident of Langley and care about their "lovely village" Comment that the need for affordable housing "is a reality" Comment that the "over-crowded" Generation Place proposal is unrealistic Comment that the proposed project does not meet the lot coverage and is "crowding too much into the designated space" Request that a three-dimensional model of the buildings and open space be made available for public viewing Comment that the information and plans sent by Island Roots was "inadequate and difficult to understand the scope and scale of the project" Concern that parking spaces for 14 vehicles will not be adequate and that there will be overflow of vehicles from families with more than one car and visitors Concern that parking overflow will clog the streets and become a nuisance for residents. Comment that new businesses developing on 2nd St also need parking spaces Comment that adding more vehicles and pedestrians to the area will require more sophisticated traffic safety controls. Question about whether "this is an expense the City is willing to afford?" Question about whether the current sewer system is ready for the increased demand Comment that stormwater runoff is currently an "annoyance" to 2nd St, DeBruyn Ave, and 1st St residents. Comment that "pools, puddles, and muddy debris" collect in many areas. Concern that increased stormwater runoff from Generations Place will worsen the situation. Question about whether the runoff from the project will be filtered or treated "as is required" Comment that water conservation is necessary, especially in summer months. Question whether the fresh water supply be enough to supply the people in 14 units? Question whether there will be a full time property manager to oversee maintenance and enforce house rules? Question about how and who determines the amount of rent collected Question about how workforce housing will affect their property values and taxes Question about what the requirements are to live in workforce housing Question about whether pets will be allowed Question about whether there will be adequate outdoor space for children to play Question about where families will store their "bicycles, basketball hoops, baby strollers etc." Comment that while the neighboring community may be in favor of affordable workforce housing, "it does not want over-stuffed units and traffic congested streets." Concern that the Generation Place project is "trying too hard to squeeze too much into too little" Question about "what good does it do anyone if the housing is not decent and dignified" Comment that "ignoring city codes, overloading existing city infrastructure, clogging our quiet streets, littering them with parked cars, and creating traffic bottlenecks makes Generation Place part of the problem rather than part of the solution." Request that this housing project be made an "affordable size and scale to fit our unique, peaceful community"
Rowan	Nancy	3/10/2024	Email	Commenter notes they are "well aware" of the need for affordable housing in the community and "whole-heartedly support the effort." Comment that places are needed where families can be established and grow in a community that is supportive and inclusive. That "we need neighborhoods that create the community bond that exists in our neighborhood" Commenter objects to the scope of the project as currently proposed.

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				Commenter notes their past support for the zoning change from RS7200 to RS5000 and the subsequent infill code. Comment that "never was a project of this size considered for this location" Comment that the current designers have "taken advantage of every limit, pushed them as far as they can go and now are asking for variances" Comment that "there is nothing about this proposal that meets their stated intent to allow the project to blend into the already built neighborhood" Concern that this is "an effort to build an urban project in a small town community on a rural island" Concern the approach to parking will create a hazard and nuisance. Concern 14 parking spaces is not sufficient for 34 bedrooms. Concern about putting eight of the 14 parking spaces on the street will exacerbate the parking problem Concern that the onsite parking spaces are designated as compact and one of them is an accessible parking space Question regarding where the trucks will park Comment that they have lived here for 20 years and worked in town, and that people do not "walk up and down that hill everyday" Concern about demand on parking by the church, clients of the "Langley building", the new occupants of what used to be Karaman and the increased demand that will result from the 3 residential units being built Question about where guests will park Comment that the south side of 2nd St is designated as no parking and this was not taken into account in the proposal Comment regarding the requested sidewalk variance, that the main entry is on DeBruyn which is where the 20ft setback should be required Concern about the environmental and livability of the requested increase of impermeable space. Comment that "things do not grow the first few years in Langley without additional water." Concern that there are no apparent water faucets on the exterior of the buildings. Question about who is going to keep the landscaping alive and maintain the project. Concern that the design calls for trees very close to the utility easement which can be very damaging to the sewer line and "an expense we all will bear come time for repairs" Comment regarding Ex. L1.01 that the adjoining lot is not “a grassy meadow” Comment that a half basketball court in the parking lot "seems misplaced and asphalt over the easement is just not a practical application" Comment regarding Ex. S-1, commenter expresses concerns about the viability of the sewer system. Concern "the effluent level was to the top when they tried to check the system" and "they could not even find numerous system components." Concern that the sewer system is already stressed and "a lot of our water is going back into the sound" Concern about what added density will do to an "already less than ideal system" Question about whether "damage to the already sliding bluff at the end of DeBruyn" been considered Comment that the ED of the Langley Chamber of Commerce and Police Chief Bob Herzberg made the commenter aware of the importance of street visibility for projects to minimize places for people to "make mischief, to hide and make police patrols easier". Concern that the two west buildings are not designed for this because of the 20-foot walkway between two 2-story buildings. Comment that the design "looks like the WWII barracks structures at Fort Ebey" Comment that the illustrations do not fit with the eclectic, small town aesthetic of Langley Request that the applicants provide detailed illustrations of what these buildings will look like. Comment that the illustrations do not coincide with the verbiage provided Question about what will happen to tourism when "Langley looks just like the places they are trying to escape" Question about what landscape screening is required by the code for the south side of the property, because this is what visitors will see when entering the city Comment that this project "is warehousing people" and is "the antithesis of what we need" Comment that city needs a place "where people can feel a part of their community, where they can become part of a neighborhood, and build a future for themselves and their families" Comment that the city needs "livability" Commenter notes they are not opposed to any project on that site, just the current project as proposed Concern that the density of the project will change the quality of the lives of the neighbors Concern that Goosefoot would put forth this project and that it does not reflect their stated mission

Last Name	First Name	Date	Method	Summary of Concerns
Saunders	John	2/22/2024	Email	Question about whether there are any professional renderings for the proposed project Comment that the applicants state they will be constructing a project to fit in and enhance the eclectic small town aesthetic of Langley. Comment that "it is critical" for this statement to be true. Comment that in order to provide constructive public comment, the public needs to know exactly what the project will look like. Requests a "professional color rendering showing construction design, landscaping, parking, curbs/gutters et al"
Saunders	John	2/22/2024	Email	Question about whether professional renderings are available. Commenter notes they are trying to understand what this project will look like when complete and notes that in their experience, "a review and approval of renderings are a standard in evaluating construction projects like this."
Saunders	John	3/8/2024	Email	Commenter notes they recognize the "critical need" for affordable housing on Whidbey Island and am supportive of efforts to find satisfactory solutions for the community Concerns about the project as currently configured Concern that the developers "have attempted to maximize the density of the project without regard to the negative impact it most certainly will have on the neighborhood and community" Request that the variance be denied because lack of adequate parking and increased traffic will cause a nuisance. Concern the number of parking spaces proposed is inadequate for 34 bedrooms and guests Concern that there is a pedestrian right of way on 2nd St and that the property owners on the north side of 2nd St have development plans that will require parking Comment that the SEPA checklist projects that there will be 94 daily trips by the residents of Generations Place. Concern there will be more trips and that the number does not include guests . Question regarding how many trips are currently generated by residents and businesses on 2nd St and DeBruyn Ave? Question about why 2nd St is identified as the front street and DeBruyn as the side street because the main entrance is on DeBruyn and there does not appear to be access on 2nd St. Concerned that the drawings provided do not adequately portray what the project will really look like when complete Request a rendering "preferably a fly thru" be provided for public comment. Request that the developer articulate the criteria used to define the eclectic, small town aesthetic of Langley and show how they have been incorporated into the project design. Comment that the sewer system in the immediate area seems deficient - Question about whether this will be remedied and if so, at whose expense Question about why stormwater from the street will not be filtered Question about who will be responsible for maintaining the landscaping Question about whether the city will incur any costs as a result of the proposal, specifically "sewer, water, stormwater, power, traffic etc." Question about whether these costs are included in the city budget Commenter notes they are in support of the developers affordable housing initiatives including on the proposed site but has serious concerns about the project as currently configured.
Small	Barbara	3/10/2024	Email	Commenter notes they have been and remain supportive of an affordable housing project at this location. Concern about the variance being requested "due to possible violations of the current form based municipal code" Concern that the proposal does not meet LMC 18.13.050.C table requiring front parking setback of 30 feet. Comment that this appears to be applied to 2nd St when "all entrances to buildings are actually on DeBruyn." Concern that the proposal does not meet LMC 18.13.060.F.3.c because the waiver will constitute a public nuisance. Concern that the scale of the project will not provide enough parking for the project's residents nor the surrounding businesses and neighbors. Concern that there will be an increase in traffic and noise along 2nd St, which will create the possibility of a public nuisance. Concerns about stormwater management and sewer capacity Request for more time before scheduling the public hearing so that members of the community can meet again with stakeholders of Generations Place project to "find a design that can garner community buy in and make the project a success for the Goosefoot mission as well as the community at large."
Smith	Daniel	3/11/2024	Email	Commenter notes they live a block away from the subject site and therefore would be greatly affected Request the application not be approved given what has been submitted Comment that several households have not received the flyer or been contacted in other ways.

Last Name	First Name	Date	Method	Summary of Concerns
				Request that the hearing be delayed until all of the neighbors have been informed Concern there is not a compelling reason for a variance Comment that allowing a variance is a "short cut that violates the agreed-upon standard using a shorter timeline" Question about whether there would be 14 or 15 apartments Question about the number of two bedroom units and the number of three bedroom units Comment that establishing the number of people who will reside in the new development is important to the discussion Request that if the number of each unit type has not been determined the application be resubmitted with this information Request for information on the proposed rental rate. Comment that this information is needed "in order to see whether the rent would indeed supply the need expressed in the conceptual argument presented by the company." Question about whether the rental rate would change if there were only 12 units approved. Concern regarding the applicants statement that the variance for the sidewalk location would "better align this sidewalk with the existing sidewalks." Comment that there is not support for this claim. Question regarding "what is inherently problematic in conforming to the existing code dictating the sidewalk requirements" and "why should others be bound by the code but not this developer?" Concern that the number of parking spaces will not be sufficient for the number of residents with "28-42 vehicles" Comment that it should not be assumed that each person would only own one vehicle Concern that guest parking is not provided Comment that the "flyer graphic makes the footprint look larger than it really is" because "the pavement shown at the bottom is not 3rd St. but a driveway into the church lot, which makes the area twice as dense." Comment that the correct placement is shown on the website. Concern that the amount of new paved areas would affect those living downhill Question about what the runoff would be as a result of the increased paved area Question about whether "the city or builder would assist homeowners affected by increased risk or damage from flooding each year." Comment that the proposal is not ready and that the required notification has not occurred Request that the city ask Island Roots Housing group to revise its proposal to supply the requested information and resubmit the application
Sorensen Hansen	Diane Doug	3/4/2024	Email	Commenter notes they are permanent residents on 3rd Ave and business owners of Alma on Anthes Ave Wants to "register our enthusiastic support" for the Generations Place project. Comment that it "is a thoughtful and much-needed component of an affordable housing solution for Langley" Support the proposed variance for the sidewalk and planting areas.
Soules	Jim	3/7/2024	Email	Commenter notes they own property and are building an MFI three detached home project on the north side of 2nd St about 50 feet east of the subject applications Question regarding how the applicants stormwater from the right of way is treated Comment that the subject project, triggers Minimum Requirements #1 - #5. 1.3.4.5 MR5: On-site Stormwater Management from the WA Dept. of Ecology 2019 Stormwater Management Manual for Western Washington which requires: Compliance Options by Project Type per 1-3.3 Applicability of the Minimum Requirements, requires LID BMP's from List 1 of Table 1- 3.2 (page 120). Comment that "per the table surface type, it appears because there is no public stormwater system, the only likely option is BMP T5.14, Rain Gardens, which was required of my project." Comment that "another option on List 1 is BMP T5.15 Permeable Pavement but the city will likely not allow Permeable Pavement in the ROW." Question regarding how right-of-way stormwater is treated if there are not any raingardens provided Question about how the stormwater is treated from the paved parking area onsite Comment that "the same List Approach is required, and it would appear a solution would be BMP T5-15: Permeable Pavement" Question regarding how onsite pavement stormwater is treated if there is not any permeable pavement provided Comment that "these are state mandated environmental requirements and I believe cannot be waived or modified because the applicant is proposing affordable housing."
Soules	Jim	3/11/2024	Email	Concern that the applicant "is proposing a project that in Lynnwood, and in most other Puget Sound cities would only be allowed in high density zones." Comment that "as an example in Lynnwood, WA, the High-Density Multifamily zone the maximum density is 1DU/1,000 sf site = 43 units per acre. The proposed site is 13,938 sf and with 14 units proposed equals 43 units per acre which barely meets the maximum high density allowed in Lynnwood, WA." Concern that it seems "Langley is going Lynnwood"

Last Name	First Name	Date	Method	Summary of Concerns
				Comment that the applicant is meeting the minimum parking requirements of the multifamily infill code "with only 14 spaces even though there may be more than 30 bedrooms." Concern that this is "considered inadequate in most other cities." Concern that this is "further aggravated with 8 of the 14 required parking spaces proposed in unassigned public street ROW." Concern that parking will overflow onto adjacent right-of-way "most of which has unimproved parallel parking spaces, and conflict with adjacent owners." Comment that "20% of new passenger autos sold in WA now are all electric and it is expected over 50% of new autos by 2030 will be all electric." Question about where the vehicles owned by the residents will charge their vehicles. Request that an electric vehicle charger be located in every parking space. Support under 80% Area Median Income rentals, but concern "this project is too dense and inappropriate for the site."
Soules	Jim	3/11/2024	Email	Commenter notes they own property on the north side of 2nd St about 50 feet east of the subject site Commenter notes they have been through the MFI code approval process and understand "that per C1 numerical metrics take precedence over graphic metrics" Concern the applicants plans do not comply with the metrics of type Multifamily House and Table 2 RS5000 Standards for the following reasons Comment that frontage is determined by where the main entrances face Comment that all entrances face DeBruyn Ave and therefore DeBruyn Ave should be the front Comment that the 10-foot front setback must be from DeBruyn Street Comment that the submitted plans show a 6-foot setback from DeBruyn Street, and therefore is not in compliance Comment that "parking is to be Front setback (10 feet) plus 20 feet minimum from the front street" Comment that DeBruyn Ave is the front street Comment that parking must be 30 feet or more from DeBruyn Ave Comment that the applicant's plan appears to place the parking area 6 feet from DeBruyn Ave Commenter notes that they understand the code was adopted to provide precise non-subjective parameters Request that the above two issues be revised
Soules	Jim	3/12/2024	Email	Procedural questions Question about since the Variance is key to the proposal, whether it needs to be acted upon first. Comment that "I find no reference to Variance in LMC 18.36. They usually go to Council." Comment that "18.36 assumes a public hearing is before a governing body" Question about whether that will be the Planning Official or the Planning Advisory Board Comment that, "After the public hearing it appears you make a recommendation to the HE – not the governing body who held the public hearing." Comment that the Administrative Waiver for Lot Coverage is needed for the proposal. Comment that if the waiver is granted, "it is likely to be appealed to the Hearing Examiner." Question about how such an appeal would fit into the hearing examiner schedule Comment that the project has too many units for the site, and "will create a backlash against future multi-family affordable housing in Langley"
Stevens	Tucker	3/3/2024	Email	Commenter notes they live within a short distance of the project Commenter notes they generally believe it to be a good thing to add both additional housing concentrated in Langley and to provide for lower cost housing options Comment that as submitted with the proposed parking ratios, they are opposed to the project and would like to request that "the planning commission reject any conditional uses, variance waivers, and other variances" Request that "any variances or conditional uses, including the requested waiver for a 20% additional impervious lot coverage should only be granted if sufficient parking is provided on site at a density of at least 1 parking spot on site per unit" Concern that the proposed "5 (+1 ADA) spots per 14 units is not even in the ballpark of what is appropriate" Comment that "typically waiving parking to less than 1 parking spot per unit is restricted to very low income housing; perhaps .5 spots per unit at 30% AMI or less. The developer is building for 80% AMI and less and that suggests a much higher parking ratio." Comment that suggesting that parking needs for the development will be filled by on-street parking "puts the burden and costs of building and maintaining street parking over the long term on the city and its residents" Comment that "the city has a history of requiring on-site parking including for the addition of an ADU to a single family home (which is a low cost housing option). 1 spot is required for the construction of an ADU." Comment that "this developer should not receive extraordinary and special treatment."

Last Name	First Name	Date	Method	Summary of Concerns
				Comment that "there are already cars that regularly park in the location where new non-reserved street parking would be built and at the Generations playground across the street" Concern that once the proposed development is constructed there will be competition for those parking spaces "even without people living in the new units" Concern that the parking issue is compounded "by the fact that Langley does not have clear shoulder parking spaces and residents and guests are confused where it is appropriate to park or walk" Concern that the project proposal will add stress to the existing parking and will create unsafe conditions for pedestrians Commenter notes that their children often walk to the school bus, to the park, or to see friends. Concern that "significantly increasing parking in ill-defined street and shoulder areas at the corner of DeBruyn and 2nd does not feel like a safe scenario." Request that the developer be required to complete street improvements that would include parking spots and a sidewalk to be used by the public. Comment that on-street parking "should not relieve them of their obligation to provide resident parking." Commenter notes that "the proponents of the project have said that they are looking to build for middle to lower income families who want car free living." Concern that that is not realistic "given the rural nature of our community and the lack of robust public transit." Commenter notes they would support the development with "the appropriate parking ratio"

Public Comment Matrix SPR-23-001 - Received After the Public Comment Period				
Last Name	**First Name**	**Date**	**Method**	**Summary of Concerns**
Lumbard	Lynnaea	3/12/2024	Email	Commenter notes her and her husband just moved into their house on 1st St Comment that they had known about the Generations project since before they chose to buy a nearby house Commenter notes they fully support the project Comment that the project serves a critical need in Langley by making housing accessible for local workers and families Commenter notes support for the requested sidewalk variance request given the specific context of the location and because it protects the privacy of the residents and benefits the health of the trees
Mennella	Bobbi	3/12/2024	Email	Commenter notes support for the project from her and her husband Commenter notes that as one of the homes nearest the project, they stand to be the most impacted, but they understand there is a housing crisis "not a parking crisis" Comment that there seems to be plenty of space to develop street parking along DeBruyn, 2nd, and 3rd Streets Commenter encourages the City to do what it can to provide this parking if this is what is holding the project up and that it may result in better pedestrian access Comment that there is often pushback when single family neighborhoods begin to undergo change Commenter notes they believe there need to be more accessibility to housing if Langley is going to "survive as a city and a community" Commenter does not feel they will be personally impacted if there are a few more cars parked on the road because they have enough space for their vehicles. Comment that their neighbors have enough parking for their needs on their own properties Comment that four of the nine homes on their street are empty and four on the block down as well Comment that change has happened to Langley and it is time to respond by adapting spaces to fit the current needs of the community
Saunders	John	3/19/2024	Email	Request for the copies of the public comment for Generations Place

Last Name	First Name	Date	Method	Summary of Concerns
				Question regarding who appoints the hearing examiner and from where they are sourced Question regarding an timeline update
Saunders	John	3/21/2024	Email	Question about whether the Hearing Examiner has a website
Saunders	John	4/1/2024	Letter	Comment that a number of neighbors have a shared concern about the desgin details for the project Comment that the design appears to deviate from their publicly promoted design intent Commenter acknowledges the need for affordable housing Will support the project when it meets the desing criteria and objectives "as represented to the community by Goosefoot" and as required by City code. Concern the project will have negative impacts on the residents, the neighborhood and the community Comment that the three 2-story apartment buildings do not match the scale and historic character of Langley buildings or eclectic small town feel Comment that the proposed density is 36 units per acre, which is high density for most Puget Sound cities. Commenter notes that Saratoga Terrace is 11 units per acre, Creekside Terrace is 12 units per acre, and Third Street Cottages is 12 units per acre. Comment that the proposed design is "what you would expect to see in Lynnwood, not rural small-town Langley" Comment that the lot coverage waiver should be denied because the application "does not meet the conditions required by the code and it is simply inappropriate for an established neighborhood in Langley." Concern the proposed amount of parking is less than the demand the project will generate Concern the overflow will create parking problems for future Generations Place residents, the surrounding neigborhood, and local businesses. Concern that the parking issue will get worse over time as other properties in the vicinity develop Concern that there are not child-friendly or flexible spaces provided Concern the proposed open space will get "little to no direct sunlight"

Last Name	First Name	Date	Method	Summary of Concerns
				Concern the walkway between the buildings will be used "for coming and going, not gathering" Concern that people using the walkway will be near bedroom windows and will impact the resident's privacy Comment "there is no dignity, beauty, or community" in this design Concern that stormwater from the public street pavement will not be treated Request that scaled renderings be provided to "clearly illustrate these issues" Concern that there is not an opportunity for a public eharing unless the application is appealed to the Hearing Examiner Comment that they have engaged in informal discussions with Goosefoot to explore potential compromises Comment that a group of local architects is meeting with the project architects to explore a "win-win scenario" Request that any approved project is code compliant and meets Goosefoot's stated design intent to fit in the neighborhood "while providing affordable homes to future residents with dignity and community"
Small	Barbara	3/15/2024	Email	Clarification that the commenter is not opposed to the variance regarding sidewalks in the application, but that they are opposed to the waiver regarding lot coverage because of "all the other attendant problems of parking, traffic , noise, and possible stormwater problems that will constitute a public nuisance."
Soules	Jim	3/12/2024	Email	Comment that "18.13 does a good job of reducing the community input." Comment that the public hearing is before the hearing examiner and only on the streetscape Variance. Comment that the planning official's Type 1 site plan review "will likely be complete before the HE public hearing, and just information for the HE." Comment that the neighbor group thought the public hearing was before Council and that they would have some opportunity to address their concerns to Council. Commenter notes he will keep the neighborhood group informed. Question about if during staff's review of the Site Plan Review, if an item is not compliant, whether the applicants will be given an opportunity to revise to comply, or if a noncompliant issue is found in the site plan review process, whether the application process starts over.

Last Name	First Name	Date	Method	Summary of Concerns
				Commenter notes they are "fairly confident the lack of Rain Gardens in the ROW is a major issue." Comment that for the administrative waiver for lot coverage, the "Required Finding of less than 80% AMI housing applies but F3 requires applicant must provide the evidence described in a though e." Question about whether that evidence was provided in the application Comment that if the administrative lot coverage waiver is granted "and then timely appealed that produces another timing issue with the HE."
Soules	Jim	3/25/2024	Email	Correction provided to earlier comment. "The correct site size appears to be 16,684 sf. That produces a density of 35 units/acre – still considered “high density” in Puget Sound suburban cities like Lynnwood, WA"
Soules	Jim	3/25/2024	Email	Concern that on the site plans there may be an issue with LMC 15.01.530 Sight Obstruction. Comment that parking spaces each at corner of DeBruyn and 2nd Street are very close to the likely fog line (edge of travel way). Commenter provides an example of when "the white van [was] parked on 3rd Street close to the intersection the sight line for safe turn from DeBruyn onto 3rd Street was seriously impaired and dangerous" Commenter presumes that vehicles parked in the proposed parking spaces could provide the same sight obstruction. Comment that LMC 15.01.530 refers to an exhibit at end of section, but the commenter could not find the exhibit. Comment notes they went to the WSDOT Design Manual and that "Exhibits 1310-3 and -4 provide good detail on the issue. Pages 1310-7,8."
Soules	Jim	4/10/2024	Email	Question regarding how the applicants stormwater from the right-of-way is treated Commenter notes they were required to install rain gardens for right-of-way stormwater treatment at their nearby development Concern there may be a significant error in the Harmsen stormwater report Comment that on page 4, MR 6: Runoff Treatment Requirements the report states: “The total new and replaced impervious that is subject to vehicle traffic is 4,570 sf. With less than 5,000 sf of pollution generating impervious surface the site does not require runoff treatment."

Last Name	First Name	Date	Method	Summary of Concerns
				Comment that the 2019 Stormwater Management Manual, 1-3.4.6 MR6: Runoff Treatment - the “Threshold Discharge Area” (TDA) "includes all runoff proposed to be infiltrated, not just new and replaced impervious. This means the TDA is all the drainage from the existing pavement plus the new. The TDA will likely go to the mid-crown of the streets and perhaps beyond, increasing the TDA to above 5,000 sf and require compliance with MR6" Comment that rain gardens "are the only acceptable MR6 BMP" Request that since the applicant’s computation of pollution generating surface "is so close to the threshold for MR6 requirements, and possibly in error, it would seem prudent to require a precise TDA plan based on actual survey topography to verify compliance"
Smith	David	4/17/2024	Email	Question about whether the applicants had filed an application with the City and whether the application materials were available.

Public Comment Response Matrix				
Broad Category	**Specific Topic**	**Total Number of Comments on Topic**	**Number of Commenters Per Topic**	**Applicant Response**
Parking	Concern that the amount of parking is insufficient	18	16	
	Concern there is limited parking in the surrounding area already	9	7	
	Concern parking will overflow into the surrounding neighborhoods	9	6	
	General concern about parking disruptions	7	7	
	Concern about the on-street parking counting as parking for residents	6	5	
	Concern that nearby proposed developments will also need parking	6	5	
	Concern that the city is not enforcing current parking regulations and that it is confusing where it is appropriate to park or walk	5	3	
	Concern the insufficient parking will cause a "public nuisance"	3	3	
	Question about where guests will park/concern guest parking is not provided	3	3	
	Comment that it should not be assumed that each person would only own one vehicle and that it is unrealistic in a rural community that families could be car free	2	2	
	Question about where delivery trucks will park	2	2	
	Concern that the south side of 2nd St is designated as no parking because it is a pedestrian right-of-way	2	2	
	Question about where emergency vehicles will park	1	1	
	Concern that allowing the on-street parking to count as parking for residents puts the burden and cost of maintaining the parking in the long-term on the city and its residents	1	1	
	Don't feel that all parking needs to be onsite	1	1	
	Comment that homeowners don't own the parking spaces in front of their homes	1	1	
	Question about whether there is a deal that could be made to use the Catholic Church's parking or other locations	1	1	
	Concern that one of the onsite parking spaces is a dedicated accessible parking space and this affects the calculated amount of general available parking	1	1	
	Comment that other developments require onsite parking and that "this developer should not receive special treatment"	1	1	

Broad Category	Specific Topic	Total Number of Comments on Topic	Number of Commenters Per Topic	Applicant Response
	Concern that the onsite parking spaces are designed as compact	1	1	
	Question about where residents will charge electric vehicles/request electric vehicle chargers be available in every parking space	1	1	
Parking Total		**81**	**70**	
Design	Disagree that the project will "fit in and enhance the eclectic, small town aesthetic of Langley", the "spirit" of the Town, or the "peaceful community"	13	8	
	Concern the development is too "crowded" or "cramped" or "warehousing people"	10	5	
	General concern about the size of the development/request it be reduced in size	6	4	
	Request that a three-dimensional model, professional rendering, fly-thru, or more detailed illustrations be made available	5	4	
	Does not "blend" with the neighborhood	3	3	
	Concern there are not one-bedroom units included	2	1	
	Comment that the project is too urban	2	1	
	Concern about general aesthetic impacts	2	2	
	Question about where residents will store large items (bicycles, strollers etc.)	2	2	
	Concern the housing will not be "decent and dignified"	2	2	
	General request for a redesign	2	2	
	Question about what the outside of the building will look like and what materials will be used	1	1	
	Question about whether the development will be "cottage style"	1	1	
	Request the developer articulate the criteria used to define the eclectic, small town aesthetic of Langley and show how they have been incorporated into the project design.	1	1	
	Comment that smaller bungalows would be a better option	1	1	
	Disagreement with the location of the basketball court in the parking lot	1	2	
	Comment that the illustrations do not match the provided verbiage	1	1	
	Concern the illustrations do not reflect what the project will look like when complete	1	1	

Broad Category	Specific Topic	Total Number of Comments on Topic	Number of Commenters Per Topic	Applicant Response
	Concern the project is not designed for visibility from the street for police patrols and crime deterrence because of the 20-foot walkway between the two 2-story buildings	1	1	
Design Total		**57**	**43**	
Traffic & Traffic Safety	General concern about traffic disruptions	10	8	
	Requests the city look into neighborhood traffic improvements.	7	1	**The City will be evaluating traffic improvements as part of the Safe Streets for All Grant and the Comprehensive Plan Update**
	Question about how many cars and people were considered in the 94 trips/concern there will be more trips and guests were not included	2	2	
	Concern about the cost to the city of needed traffic safety improvements	2	2	
	General request the developer provide a sidewalk and specific request that developer provide a sidewalk connecting this development to downtown Langley	2	2	
	Concern the project will impact pedestrian safety	2	1	
	Comment that the stop sign at the top of First St and DeBruyn is hidden by overgrown trees	2	2	**The City is aware of this issue and has contacted the property owner to trim back their trees**
	Question about what traffic safety measures will be implemented	1	1	
	Question about how many trips are currently generated by residents and businesses on 2nd St and DeBruyn Ave	1	1	
	Comment that the corner of DeBruyn Ave and 3rd St is not resident friendly	1	1	
	Comment that 3rd St is not a scenic or safe main entrance to the commercial area	1	1	**The City will be evaluating traffic improvements as part of the Safe Streets for All Grant and the Comprehensive Plan Update**
	Concern that people will not walk from the subject site into downtown	1	1	
Traffic & Traffic Safety Total		**32**	**23**	
General Support/ Opposition	General support for affordable housing but not the proposed design	24	18	**No response needed**
	General support for the project	3	3	**No response needed**
	General opposition to the project	3	2	**No response needed**
General Support/Opposition Total		**30**	**23**	
Stormwater	Concern about lack of treatment of the water runoff	10	6	
	Comment that run-off already comes into their yard	3	3	
	Question about how the stormwater will be managed	2	2	
	Request for study on stormwater	1	1	
	Question about what the amount of runoff will be as a result of the increased paved area	1	1	

Broad Category	Specific Topic	Total Number of Comments on Topic	Number of Commenters Per Topic	Applicant Response
	Concern about capacity of the current stormwater infrastructure	1	1	
	General concern about stormwater management	1	1	
	Question about whether "the city or builder would assist homeowners affected by increased risk or damage from flooding each year."	1	1	
	Comment that the subject project, triggers Minimum Requirements #1 - #5. 1.3.4.5 MR5: On-site Stormwater Management from the WA Dept. of Ecology 2019 Stormwater Management Manual for Western Washington which requires: Compliance Options by Project Type per 1-3.3 Applicability of the Minimum Requirements, requires LID BMP's from List 1 of Table 1- 3.2 (page 120).And that "per the table surface type, it appears because there is no public stormwater system, the only likely option is BMP T5.14, Rain Gardens." Also, that "another option on List 1 is BMP T5.15 Permeable Pavement but the city will likely not allow Permeable Pavement in the ROW."	1	1	
Stormwater Total		**21**	**17**	
Operations	How will residents be selected/ what the requirements are to reside there	4	4	
	Question about whether there is a unit designated for an onsite manager/maintenance person.	3	3	
	Question about whether pets will be allowed	3	3	
	Question about how and who determines the amount of rent collected and what that amount will be	3	3	
	Question about how the development will affect neighboring property values and taxes	2	2	
	"where are the jobs going to come from?"	1	1	
	Question about whether a market study has been done to determine the demographics of the likely occupants.	1	1	
	Question about where the dumpsters will be, how large they will be, and whether they will be locked.	1	1	
	Question about whether the rental rate would be affected if there were less units approved	1	1	
	Question about whether the target population for Generations Place will be able to afford the cost of sewer and water in Langley	1	1	
Operations Total		**20**	**20**	

Broad Category	Specific Topic	Total Number of Comments on Topic	Number of Commenters Per Topic	Applicant Response
Variance Request	Question about why the City has ordinances if they are going to offer waivers and variances.	5	5	**Variances are allowed as a method for addressing instances where specific constraints of the subject site such as topography, parcel size, or critical areas restrict the developer from achieving a level of development that other parcels without such constraints could achieve. Variances must meet the criteria of LMC 18.30 to be approved. Administrative waivers may be granted under Chapter 18.13 when the criteria of LMC 18.13.060.F.3 are met.**
	General request that the City deny any requests for waivers or variances, or that there is not a compelling reason for a variance	4	4	
	Request for opportunity to discuss any variances and waivers proposed	2	2	
	General support for the sidewalk variance request	2	2	**No response needed**
	Concern regarding the applicants statement that the variance for the sidewalk location would "better align this sidewalk with the existing sidewalks." Comment that there is not support for this claim.	1	1	
	Question regarding "what is inherently problematic in conforming to the existing code dictating the sidewalk requirements"	1	1	
	Concern that designers have already pushed the limits, even without the variance	1	1	
	Question regarding "why should others be bound by the code but not this developer"	1	1	
Variance Total		**17**	**17**	
Sewer	Question about whether the sewer is sufficient for this project	9	6	
	Concern the application indicated the inability to locate some of the manhole covers and others were overfilled with water and unable to assess the conditions - request this be addressed	2	2	
	Concern that the sewer system is already stressed/deficient	2	2	
	Question about whether the developer will pay for any necessary improvements	2	2	
	Request for study on sewer	1	1	
Sewer Total		**16**	**13**	
Lot Coverage	Request that the lot coverage waiver be denied	5	4	
	Lot coverage seems out of proportion with the size of the property and location	4	4	
	Concern about amount of impermeable surface	4	4	
	Concern the lot coverage waiver will create a "public nuisance"	1	1	
	Concern the amount of new paved areas will affect those living downhill	1	1	

Broad Category	Specific Topic	Total Number of Comments on Topic	Number of Commenters Per Topic	Applicant Response
Lot Coverage Total		**15**	**14**	
Open Space/ Landscaping	Concern the amount of open space is not sufficient (for children to play or for garden/yard space)	6	6	
	Concern about landscaping maintenance and who is responsible	4	4	
	Question about what landscape screening is required for the south side of the property, because this is what visitors will see when entering the city	1	1	
	Concern that maples are messy around buildings and streets	1	1	
	Concern about the proximity of the proposed trees to the underground utilities	1	1	
	Concern there are not water faucets on the exterior of the buildings for landscape watering	1	1	
Open Space/Landscaping Total		**14**	**14**	
Density	Concern about the number of units for the size of the site	6	6	
	Concern the density of the project will affect quality of life for the neighbors	2	2	
	Concern that the project is more consistent with a project that in Lynnwood, and in most other Puget Sound cities would only be allowed in high density zones	1	1	
	Concern that the number of units for the site will create a backlash against future multifamily affordable housing in Langley	1	1	
Density Total		**10**	**10**	
Application Materials/ Project Scope	Comment that the information and plans made it difficult to understand the scope and scale of the project	3	3	
	Question about how many two bedroom and three bedroom units are proposed	2	1	
	Comment regarding Ex. L1.01 that the adjoining lot is not “a grassy meadow”	1	1	
	Question about whether there are 14 or 15 units proposed	1	1	
	Comment that establishing the number of people who will reside in the new development is important to the discussion	1	1	
Application Materials/Project Scope Total		**8**	**7**	

Broad Category	Specific Topic	Total Number of Comments on Topic	Number of Commenters Per Topic	Applicant Response
Procedural Questions/ Concerns	Request for more time before scheduling the public hearing	2	2	**Staff wait until all corrections have been made and any requests for additional information addressed before scheduling the hearing. A notice of hearing will be mailed and posted 14 days before the hearing.**
	Concern that several households have not received the flyer or been contacted in other ways/the required notification has not occurred	2	1	**Only households within 500ft of the project site are sent mailings. If homeowners do not have their mailing addresses up-to-date with the Island County Treasurer, the mailings may bounce-back. The notice is also posted to the City's bulletin boards, website, on the subject site, and in the local newspaper.**
	Question about whether the variance needs to be acted upon first	1	1	**Yes. Staff will structure their recommendation to the Hearing Exmainer such that if he approves the variance, then the Type I site plan review would also be approved (and vice versa – if the variance is denied, the Type I Site Plan review would be denied).**
	Question about whether the variance will go to the Planning Official, Council, or the Planning Advisory Board for a hearing	1	1	**The Hearing Examiner will hold the public hearing on the variance request**
	Question about whether the body who holds the hearing is different than the body that makes the decision	1	1	**The Hearing Examiner will issue a decision on the variance request within 10 days of the close of the hearing.**
	Question about the process for an appeal of the lot coverage waiver.	1	1	**After the Hearing Examiner issues a decision on the variance and staff issue their decision on the Type I site plan review, the decision on the Type I site plan review could be appealed. This appeal of the Type I site plan review would then be heard by the Hearing Examiner**
Procedural Questions/Concerns Total		**8**	**7**	
Development Standards	Question about whether the proposed entrance on DeBruyn complies with LMC 18.13.050 and therefore whether the 10ft front setback and the 20ft parking setback should be located on DeBruyn because that is the main entry.	5	5	
Development Standards Total		**5**	**5**	
Water	Question about what the impact will be on the aquifer/water supply	3	3	
	Question about what the estimated water usage is for the project	1	1	
Water Total		**4**	**4**	
Public Services Impacts	Question about what the impact will be on the Police Department, Fire Department, School District, and Health Care system and whether they have had a chance to provide input on the proposal	1	1	
	Question about whether the City will incur any costs as a result of the proposal, specifically "sewer, water, stormwater, power, traffic etc." and whether these costs are included in the City budget	1	1	
	Question about what the target ratio of emergency personnel per capita in the City and Island County is	1	1	**The City does not currently have this data available.**
Public Services Impacts Total		**3**	**3**	

Broad Category	Specific Topic	Total Number of Comments on Topic	Number of Commenters Per Topic	Applicant Response
Lighting	Question about whether street lighting will be installed by the developer	1	1	
	Propose lights be installed at 3rd St and Park	1	1	**The City has noted this request.**
Lighting Total		**2**	**2**	
Noise	Concern about impact of noise on surrounding area, including noise from increased traffic creating a "public nuisance"	2	2	
Noise Total		**2**	**2**	
Other	Request for a stakeholder discussion	2	2	
	Question about what the definition of public nuisance is	2	2	**The definition of a public nuisance is outlined in Chapter 8.12 LMC**
	Willingness to offer their services as an architect to create an alternative design	1	1	
	Question about whether "damage to the already sliding bluff at the end of DeBruyn" been considered	1	1	
	Concern that this project does not reflect Goosefoot's stated mission	1	1	
	Comment that city needs a place "where people can feel a part of their community, where they can become part of a neighborhood, and build a future for themselves and their families" and that the City needs "livability"	1	1	
Other Total		**8**	**8**	

City Responses: **Blue**

PACE

WATER | LAND | INFRASTRUCTURE | FACILITIES

April 22, 2024

Elise Miller
Goosefoot Community Fund
PO Box 114
Langley, WA 98260

Subject: ***Generation Apartments-2nd and DeBruyn***
PACE Project No. 23240.04

Dear Ms. Miller,

PACE Engineers has completed the review of the subject project and has determined that additional information is required.

Copies of the plans with additional required information/reports noted below shall be submitted to the City of Langley along with a letter documenting how the following comments were addressed. The applicant shall revise the submitted materials to address the following comments:

SITE PLAN APPLICATION DRAWINGS

1. Per 15.01.445 of the LMC the general guidelines for analyzing the feasibility of infiltration systems shall be the DOE SWMMWW. Per this manual Volume V-5.6 SSC-1infiltration facilities shall be set back from building foundations 20 feet when downslope and 100 feet when upslope. We recognize how restrictive this is and wouldn't be opposed to a variance if there were recommendations that support a reduction from a geotechnical engineer, licensed geologist ect.
2. Please provide elevation information for proposed sewer and storm structures not just existing structures.
3. There appears to be a conflict with underground telecom line and the new catch basin in the frontage along 2nd Street.
4. Add a note to the concrete walkway detail "Concrete shall be 6" minimum depth (4,000 PSI) at driveway locations".
5. The hardscape layout shown on the paving and stormwater sheet for the interior of the lot doesn't match the architectural sheets. Please revise for consistency.
6. Inspection port/risers are required for the infiltration trenches. Please show in detail and in plan view to ensure feasibility with current layout.
7. The City prefers individual sub-meters at the main for each individual unit. However, per LMC 13.01.100.D single service lines may be allowed to a multi-unit structure or multiple structures provided that one owner has agreed in writing to assume and be responsible for and pay the total water bill without any deductions for vacancies or other reasons. This agreement must be in place prior to approval of the construction drawings.
8. See prior comments from South Whidbey Fire on access to the sprinkler rooms.

9. Per LMC 18.22.020.F 2 the applicant must demonstrate that the street tree will not damage infrastructure in the area. With a setback of 3-4 feet and within the critical root zone, it isn't clear that the street tree locations won't damage the proposed infiltration galleries.
10. Existing services (1"- for ¾" main) must be either abandoned or sized appropriately for the new use. Please provide additional information.
11. While the existing hydrant can be relocated, for flushing and operational purposes it must remain connected to the 2nd Street main. Please revise.

PRELIMINARY STORMWATER SITE PLAN

12. The project is not located in the City of Marysville. Please revise all references.
13. The plans show an infiltration trench with a gravel layer of 2 feet not 3 feet as modeled. Please revise for consistency.
14. Based on the mottling encountered and the statement provided that the groundwater conditions encountered may not be indicative of other locations and/or times, is the geotechnical engineer of record comfortable that a test pit dug in late June reflects the seasonal high groundwater level on the site and shall be the basis for all infiltration separation design moving forward? As currently design the project is meeting the requirement of 5' of separation between the bottom of the trench and the groundwater level without much room to spare.

The Applicant shall provide documentation describing how the items in this comment letter have been addressed. If you have any questions or concerns about the comments in this letter, please feel free to contact me at 425.827.2014 or at JohnF@paceengrs.com .

Sincerely,
PACE Engineers, Inc.

John Forba, P.E.
City Engineer
JohnF@paceengrs.com

cc: Meredith Penny, Director of Community Planning– City of Langley
Randi Perry, Director of Public Works– City of Langley

GENERATIONS PLACE

ABBREVIATIONS

<	ANGLE
@	AT
AB	ANCHOR BOLT
ACT	ACOUSTICAL CEILING TILE
ADD.	ADDITIONAL
ADJ.	ADJUSTABLE
AFF	ABOVE FINISH FLOOR
ALT.	ALTERNATE
ALUM.	ALUMINUM
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
AUTO.	AUTOMATIC
BLDG.	BUILDING
BLK.	BLOCK
BLKG.	BLOCKING
BM.	BEAM
BO	BOTTOM OF
BOF	BOTTOM OF FOOTING
BOT	BOTTOM
CAB	CABINET
CB	CATCH BASIN
CFM	CUBIC FEET PER MINUTE
CG	CORNER GUARD
CI	CENTER LINE
CL	CENTERLINE
CLG	CEILING
CLOS	CLOSET
CLR	CLEAR
CMU	CONCRETE MASONRY UNIT
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE
CONST	CONSTRUCTION
CONT	CONTINUOUS
COORD	COORDINATE
CPT	CARPET
CT	CERAMIC TILE
CTR	CENTER
CU	CUBIC
d	PENNY (NAILS)
D.	DRYER OR DEPTH
DBL	DOUBLE
DEMO	DEMOLISH OR DEMOLITION
DEPT	DEPARTMENT
DET, DTL	DETAIL
DF	DOUGLAS FIR
DIA	DIAMETER
DIM	DIMENSION
DIV	DIVISION
DN	DOWN
DR	DOOR
DS	DOWNSPOUT
DW	DISHWASHER
DWG	DRAWING
DWR	DRAWER
(E), EXIST	EXISTING
EA	EACH
EB	EXPANSION BOLT
EJ	EXPANSION JOINT
EL, ELEV	ELEVATION OR ELEVATOR
ELEC	ELECTRICAL
EQ	EQUAL
EQUIP	EQUIPMENT
EW	EACH WAY
EXT	EXTERIOR
FA	FIRE ALARM
FB	FLUSH BEAM
FD	FLOOR DRAIN OR FIRE DEPARTMENT
FDC	FIRE DEPARTMENT CONNECTION
FDN	FOUNDATION
FE	FIRE EXTINGUISHER
FEC	FIRE EXTINGUISHER CABINET
FF&E	FURNITURE, FIXTURES & EQUIPMENT
FIN	FINISH
FIXT	FIXTURE
FL	FLOOR
FO	FACE OF
FOIC	FURNISHED BY OWNER, INSTALLED BY CONTRACTOR
FOS	FACE OF STUD
FRP	FIBERGLASS REINFORCED PLASTIC
FRT	FIRE RETARDANT TREATED
FT	FEET, FOOT
FTG	FOOTING
FURN	FURNITURE
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GFRC	GLASS FIBER REINFORCED CONCRETE
GL	GLASS OR GLAZING
GLB	GLU LAM BEAM
GWB	GYPSUM WALL BOARD
HB	HOSE BIB OR HOSE BIBB
HC	HOLLOW CORE
HDR	HEADER
HDW	HARDWARE
HDWD	HARDWOOD
HM	HOLLOW METAL
HT, HGT	HEIGHT
HTR	HEATER
HVAC	HEATING, VENTILATION & AIR CONDITIONING
HW	HOT WATER/HOT WATER TANK
IBC	INTERNATIONAL BUILDING CODE
ID	INSIDE DIAMETER
IN, "	INCH, INCHES
INFO	INFORMATION
INSUL	INSULATION
INT	INTERIOR
JAN	JANITOR
KIT	KITCHEN
LAM	LAMINATE
LAV	LAVATORY
LB	POUND
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LS	LIGHTSWITCH
LSL	LAMINATED STRAND LUMBER
LT	LIGHT
LVL	LAMINATED VENEER LUMBER
MATL	MATERIAL
MECH	MECHANICAL
MET, MTL	METAL
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MO	MASONRY OPENING
MTD	MOUNTED
MTG	MOUNTING OR MEETING
N	NORTH
NIC	NOT IN CONTRACT
NO, #	NUMBER
NTS	NOT TO SCALE
OA	OVERALL
OC	ON CENTER
OD	OUTSIDE DIAMETER
OFF	OFFICE
OH	OVERHEAD
OPNG	OPENING
OPP	OPPOSITE
OSB	ORIENTED STRAND BOARD
PI.	PLATE
PL	PROPERTY LINE
PLAM	PLASTIC LAMINATE
PLUMB	PLUMBING
PLYWD	PLYWOOD
PR	PAIR
PREFAB	PREFABRICATED
PROJ	PROJECT
PRV	PRESSURE REDUCER VALVE
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PT	POINT, PAINT, PRESSURE TREATED
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
R	RISER
RA	RETURN AIR
RAD	RADIUS
RCP	REFLECTED CEILING PLAN
RD	ROOF DRAIN
REF	REFERENCE
REFR	REFRIGERATOR
REINF	REINFORCEMENT
REM	REMOVABLE
REQ	REQUIREMENTS
REQD	REQUIRED
REV	REVISION/REVISED
RM	ROOM
RO	ROUGH OPENING
S	SOUTH
S&P	SHELF AND POLE
SA	SUPPLY AIR
SAM	SELF ADHERING MEMBRANE
SC	SOLID CORE
SCHED	SCHEDULE
SD	SMOKE DETECTOR
SEC	SEATTLE ENERGY CODE
SECT	SECTION
SF	SQUARE FOOT OR FEET
SGL	SAFETY GLASS
SHT	SHEET
SIM	SIMILAR
SPEC	SPECIFIED OR SPECIFICATION
SQ	SQUARE
SS	STAINLESS STEEL
STC	SOUND TRANSMISSION COEFFICIENT
STD	STANDARD
STL	STEEL
STOR	STORAGE
STRUCT	STRUCTURE OR STRUCTURAL
SUSP	SUSPENDED
SYST	SYSTEM
T	TREAD OR THICKNESS
T&G	TONGUE AND GROOVE
TEMP	TEMPORARY OR TEMPERATURE
TO	TOP OF
TOC	TOP OF CONCRETE
TOW	TOP OF WALL
TS	TUBE STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VCT	VINYL COMPOSITION TILE
VERT	VERTICAL
VEST	VESTIBULE
VG	VERTICAL GRAIN
VIF	VERIFY IN FIELD
VT	VINYL TILE
W	WASHER OR WIDTH
W/	WITH
W/O	WITHOUT
WC	WATER CLOSET
WD	WOOD
WDW, WIN	WINDOW
WR	WATER RESISTANT
WRB	WATER RESISTANT BARRIER
WSEC	WASHINGTON STATE ENERGY CODE
WWF	WELDED WIRE FABRIC

GENERAL NOTES

1. THESE DRAWING ARE INTENDED TO PROVIDE A GENERAL DESCRIPTION OF THE WORK AND MUST BE REVIEWED FOR INTENT AS WELL AS SPECIFIC INFORMATION. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO EXECUTE THE WORK WITH GENERALLY ACCEPTED STANDARDS OF QUALITY CONSTRUCTION TO PROVIDE A COMPLETE WEATHERTIGHT PROJECT FULLY INTENDED FOR ITS PURPOSE.
2. DRAWING OR CONDITION CONFLICT SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE ARCHITECT FOR RESOLUTION PRIOR TO ANY COMMENCEMENT OF THE WORK IF CONFLICT OCCURS AMONG DRAWINGS, THE LARGER SCALE SHALL GOVERN.
3. DO NOT SCALE DRAWINGS
4. THE CONTRACTOR SHALL FIELD VERIFY GRADES, ELEVATIONS, AND DIMENSIONS WITH EXISTING CONDITIONS BEFORE COMMENCING WITH THE WORK. REPORT ANY DISCREPANCIES TO THE IMMEDIATE ATTENTION OF THE ARCHITECT. DO NOT PROCEED WITH THE WORK PRIOR TO ARCHITECT RESOLUTION.

DEFERRED SUBMITTALS

NONE

MOISTURE PROTECTION LAW FOR MULTI-FAMILY RESIDENTIAL BUILDINGS - EHB-1848

BUILDING OWNER HAS RECORDED A SALE PROHIBITION COVENANT EXEMPTING THE PROJECT FROM REQUIREMENTS OF EHB-1418. SEE SHEET T##

PROJECT TEAM

OWNER:
ISLAND ROOTS HOUSING
PO BOX 114
LANGLEY, WA 98260
ROSE HUGHES
206-369-2975
rose@goosefoot.org

ARCHITECT:
ENVIRONMENTAL WORKS
402 15TH AVE. EAST
SEATTLE, WA 98112
CHRISTINA CONGDON
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ccongdon@eworks.org

LANDSCAPE ARCHITECT:
ENVIRONMENTAL WORKS
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NIC MORIN
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STRUCTURAL:
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1801 18TH AVE. SOUTH
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MIKE ANNÉE
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mike@anneestructural.com

CIVIL ENGINEERING:
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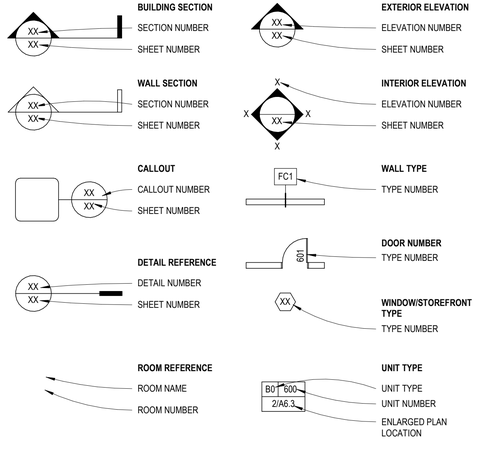
840 SE 8TH AVE, SUITE 102
OAK HARBOR, WA 98277
DAVID HARMSEN
425-252-1884
davidh@harmsenllc.com

MEP:
HUNT ENGINEERING
9560 MORAN RD. NORTHEAST
BAINBRIDGE ISLAND, WA 98110
JOHN HUNT
206-842-6947
johnhunt@hunteng.com

LEGENDS AND SYMBOLS



PROJECT INFORMATION

NAME OF PROJECT:
GENERATIONS PLACE

BUILDING ADDRESS:
SECOND ST. & DE BRUYN AVE.
LANGLEY, WA 98260

APPLICABLE CODES:
2021 WSEC-R
2021 WSEC-C
2021 WSBC
LANGLEY MUNICIPAL CODE TITLE 18 ZONING
2017 ANSI A117.1

TAX I.D./PARCEL NUMBER:
S7345-00-02020-0
S7345-00-02019-0

LEGAL DESCRIPTION:
PER SWD AFN 4542531 DATED 03/31/2022

LOTS 19 & 20, BLOCK 2, REPLAT OF TOWN OF LANGLEY. ACCORDING TO THE PLAT RECORDED IN VOLUME 6 OF PLATS, PAGE 15, RECORDS OF ISLAND COUNTY, WASHINGTON

SITUATE IN ISLAND COUNTY, WASHINGTON

PROJECT DESCRIPTION:
NEW CONSTRUCTION OF A 14 UNIT MULTI-FAMILY HOUSING PROJECT CONSISTING OF 3 BUILDINGS AND ASSOCIATED SITE WORK. EACH BUILDING CONTAINS A MIXTURE OF 2 AND 3 BEDROOM UNITS.

LOT SIZE: 16,988 SF, .39 acres

ZONING: RS5000 RESIDENTIAL

BUILDING AREA = 14,320 S.F.
FIRST FLOOR 7,160 S.F.
SECOND FLOOR 7,160 S.F.

AVERAGE GRADE ELEVATION: 128'-0"
BUILDING HEIGHT: 28'-3"

OCCUPANCY: R-2, APARTMENT HOUSES

CONSTRUCTION TYPE: VB LIGHT WOOD FRAME

INDEX OF DRAWINGS

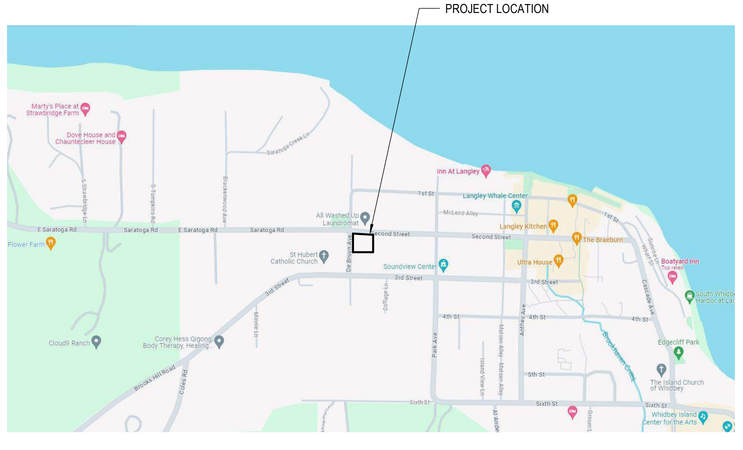
Environmental Works
COMMUNITY DESIGN CENTER
402 15th Avenue East
Seattle, Washington 98112
phone: 206.329.8300
fax: 206.329.5494

GENERATIONS PLACE
Multi-Family Housing
Second Street & De Bruyn Ave
Langley, WA. 98260

COVER SHEET

Issuance
Site Plan Application
Date
12/19/2023
Revisions

#	Date	Description



Key Plan
N.T.S

Drawn By:
EJ
Checked By (P.M.):
CC
Checked By (Q.C.):
CC
Project No.
23012

T1.00

12/20/2023 10:04:51 AM

SITE PHOTOS

AERIAL VIEW OF SITE LOOKING SOUTHEAST

CORNER OF SECOND ST & DE BRUYN LOOKING SOUTHEAST

SOUTHEAST CORNER LOOKING NORTHWEST

LAND USE CODE INFORMATION

LANGLEY MUNICIPAL CODE - TITLE 18 ZONING

PROPERTY ADDRESS: 2ND ST & DEBRUYN AVE, LANGLEY, WA 98260
ZONING: RESIDENTIAL SINGLE FAMILY (5000)
OVERLAY DISTRICT: MULTIFAMILY INFILL FORM-BASED CODE OVERLAY

CHAPTER 18.02 ZONE DISTRICTS

18.02.020 RESIDENTIAL ZONES ESTABLISHED
A. RS5000, RESIDENTIAL, SINGLE-FAMILY

18.02.047 OVERLAY ZONES/DISTRICTS
18.02.060 AREAS DESIGNATED
ALL LAND WITHIN THE CITY SHALL BE INCLUDED IN A ZONE DISTRICT.

CHAPTER 18.06 RS5000 ZONE - RESIDENTIAL
18.06.040 MINIMUM LOT SIZE.
MINIMUM LOT SIZE IN THE RS5000 ZONE IS 5,000 SF
SIZE OF PROPOSED COMBINED LOT IS 16,683.5 SF

CHAPTER 18.09 LAND USES
MULTIFAMILY DWELLINGS IN RS500 ZONE: SEE CHAPTER 18.13 MULTIFAMILY INFILL FORM-BASED CODE OVERLAY

CHAPTER 18.13 MULTIFAMILY INFILL FORM-BASED CODE OVERLAY

18.13.030 APPLICABILITY.
THE PROVISIONS OF THIS CHAPTER SHALL APPLY SOLELY TO THE RS7200, RS5000, RESIDENTIAL MIXED (RM), AND NEIGHBORHOOD BUSINESS (NB) ZONING DISTRICTS FOR THE PURPOSE OF MULTIFAMILY DEVELOPMENT.

A. CRITICAL AREA PROTECTION. MULTIFAMILY INFILL MUST COMPLY WITH ALL REGULATIONS OF CHAPTER 16.20.

B. SEWER. THE MFI-FBC OVERLAY IS ONLY PERMITTED WHERE SEWER IS AVAILABLE.
PUBLIC SEWER IS AVAILABLE ON DEBRUYN AVE AND ON 2ND STREET, AND A SANITARY SEWER LINE IS ALSO AVAILABLE NEAR THE SOUTH PROPERTY LINE

C. RULES OF CONSTRUCTION. THE FOLLOWING GENERAL RULES APPLY TO THE CONSTRUCTION OR INTERPRETATION OF THIS CHAPTER:
1. NUMERICAL METRICS TAKE PRECEDENCE OVER GRAPHIC METRICS; AND
2. THE DIAGRAMS AND ILLUSTRATIONS WITHIN THIS CHAPTER ARE CONSIDERED REGULATORY AND BINDING.

18.13.040 STREETSCAPE STANDARDS
A. SIDEWALKS. PARCELS MUST HAVE A SIDEWALK AT THE STREET LOT LINE, AND IT MUST BE A MINIMUM OF 5FT IN WIDTH. IF A SIDEWALK DOES NOT EXIST, THE APPLICANT MUST CONSTRUCT IT FOR THE LENGTH OF THE FRONT LOT LINE.
NEW 6FT WIDE SIDEWALKS ARE PROPOSED ON BOTH 2ND ST AND DEBRUYN AVE

B. STREET TREES. STREETS MUST HAVE A LANDSCAPED PLANTING STRIP WITH STREET TREES BETWEEN THE SIDEWALK AND THE STREET. THE PLANTING STRIP MUST BE A MINIMUM OF FOUR FEET IN WIDTH. IF THE PLANTING STRIP AND STREET TREES DO NOT EXIST, THE APPLICANT MUST INSTALL THEM.
6FT WIDE PLANTING STRIPS ARE PROVIDED BETWEEN THE STREET AND THE SIDEWALK, PROPOSED PARALLEL PARKING LANE ABUTS THE SIDEWALK DIRECTLY

18.13.050 DEVELOPMENT STANDARDS
A. INTENSITY. THE MFI-FBC OVERLAY DISTRICT IS NOT SUBJECT TO THE DENSITY OR FLOOR AREA RATIO ("FAR") RESTRICTIONS OF THE UNDERLYING ZONING DISTRICT. INTENSITY IS CONTROLLED BY A COMBINATION OF BUILDING HEIGHT, SETBACKS, LOT COVERAGE, AND PARKING REQUIREMENTS.

B. BUILDING PLACEMENT. BUILDING PLACEMENT MUST MEET THE REQUIREMENTS OF TABLE 1 THROUGH TABLE 3 AS FOLLOWS:

1. STRUCTURES MUST BE SET BACK FROM LOT BOUNDARIES AS SPECIFIED IN TABLE 1 THROUGH TABLE 3;
TABLE 2 APPLIES FOR RS5000
BUILDING SETBACKS:
A. FRONT SEBACK: 10FT MIN. ***PROVIDED: 10FT AT NORTH (2ND ST)***
B. SIDE STREET SETBACK: 8FT MIN. ***PROVIDED: 8FT AT WEST (DEBRUYN AVE)***
C. SIDE SETBACK: 5FT MIN. ***PROVIDED: 5FT AT EAST***
D. REAR SETBACK: 5FT MIN. ***PROVIDED: 8FT AT SOUTH***
E. REAR LANE SETBACK: 2FT MIN. ***N/A***
HEIGHT: 2 STORIES MAX. ***PROPOSED: 2 STORIES***

2. BUILDINGS AND COVERED STRUCTURES ARE LIMITED IN THE TOTAL AREA THEY MAY OCCUPY AS A PERCENTAGE OF THE LOT AREA AS SPECIFIED BY LOT COVERAGE IN TABLE 1 THROUGH TABLE 3.
LOT COVERAGE PER TABLE 2: 60% MAX. INCREASED BY 20% WITH REQUESTED RELIEF PER TABLE 9, 18.13.060 FOR TOTAL OF 80% ALLOWABLE COVERAGE
PROPOSED LOT COVERAGE: 78.15% (IMPERVIOUS COVERAGE)
SEE LOT COVERAGE DIAGRAM ON SHEET T1.02

C. PARKING PLACEMENT. PARKING WITHIN THE MFI-FBC OVERLAY DISTRICT MUST BE LOCATED BEHIND OR BESIDE BUILDINGS RELATIVE TO THE STREET AND AS FOLLOWS:

1. PARKING MUST BE SET BACK FROM THE LOT LINES AS REQUIRED IN TABLE 1 THROUGH TABLE 3. ***TABLE 2 APPLIES FOR RS5000***
PARKING SETBACKS:
F. FRONT SETBACK: 30FT MIN. ***NO PARKING PROPOSED AT FRONT OF LOT***
G. SIDE STREET SETBACK: 6FT MIN. ***PROVIDED: 6FT AT WEST (DEBRUYN AVE)***

2. AN ON-STREET PARKING LANE IS PERMITTED.
PARTIAL PARKING LANES ARE PROVIDED ON 2ND ST AND DEBRUYN AVE

D. BUILDING TYPE REQUIREMENTS. SPECIFIC TYPES OF BUILDINGS ARE PERMITTED OR PROHIBITED FROM USE WITHIN THE MFI-FBC OVERLAY DISTRICT.

1. THE NUMBER OF BUILDINGS PER LOT IS LIMITED BY A COMBINATION OF SETBACKS, LOT COVERAGE, AND PARKING REQUIREMENTS AS REGULATED BY TABLE 1, TABLE 2, OR TABLE 3. ***TABLE 2 APPLIES FOR RS5000***

2. BUILDING TYPES ARE PERMITTED PER DISTRICT ACCORDING TO TABLE 4.
PERMITTED IN RS5000: TOWNHOUSE, DUPLEX, TRIPLEX, COTTAGE COURT, MULTIFAMILY HOUSE 4–6 UNITS
PROVIDED: MULTIFAMILY HOUSES 6 UNITS & 4 UNITS

3. MORE THAN ONE BUILDING TYPE IS PERMITTED PER LOT.
THREE BUILDINGS ARE PROPOSED

5. BUILDING TYPES MUST MEET THE STANDARDS OF TABLE 5
MULTIFAMILY HOUSE (4–6 UNITS):

A. MAIN BUILDING WIDTH: 48FT MAX.
B. MAIN BUILDING DEPTH: 48FT MAX.
C. SECONDARY WING WIDTH & DEPTH: 36FT MAX.
D. MAIN ENTRANCE: FACING PRIMARY FRONTAGE
PRIVATE OPEN SPACE: NONE REQUIRED
SHARED OPEN SPACE: 50SQ FT / UNIT (700SQ FT TOTAL)

E. BUILDING HEIGHT. BUILDING HEIGHT IS LIMITED ACCORDING TO TABLE 1 THROUGH TABLE 3 MEASURED AS FOLLOWS:
TABLE 2 APPLIES FOR RS5000: 2 STORY LIMIT, 2 STORIES PROPOSED

1. BUILDING HEIGHT MAY BE INCREASED BY ONE STORY IF THE FOLLOWING REQUIREMENTS ARE MET…

F. FRONTAGE REQUIREMENTS. FRONTAGE REQUIREMENTS REGULATE BUILDING FACADES FACING STREETS.

1. A FRONTAGE TYPE MUST BE SPECIFIED ACCORDING TO TABLE 7.

A. MULTIPLE FRONTAGE TYPES MAY BE COMBINED ALONG A FACADE.

PROVIDED:
WEST BUILDING: COMMON ENTRY FACING DEBRUYN AVE
NORTH-EAST BUILDING: PORCH FACING 2ND ST
SOUTH-EAST BUILDING: COMMON ENTRY FACING DEBRUYN AVE, SECONDARY: PORCH FACING 2ND ST

2. FRONTAGES MUST MEET THE STANDARDS OF TABLE 7 AND TABLE 8.

3. THE PRIMARY BUILDING ENTRY MUST FACE A STREET.

A. UNITS MUST HAVE DIRECT ACCESS FROM THE STREET WHEN THEY ARE ADJACENT TO THE STREET. INTERIOR UNITS ARE NOT REQUIRED TO HAVE AN ENTRY FACING THE STREET.

4. FACADES MUST HAVE 15 PERCENT MINIMUM CLEAR GLASS ON THE FIRST STORY OF EVERY FACADE FACING A STREET AS FOLLOWS:

A. GLASS PERCENTAGE IS CALCULATED INDIVIDUALLY FOR EACH FACADE AND IS MEASURED BETWEEN TWO AND 10 FEET IN HEIGHT ABOVE GRADE ALONG THE LENGTH OF THE FACADE.

B. THE ENTIRE FRAME AND STRUCTURE OF DOORS, WINDOWS, AND STOREFRONT SYSTEMS ARE CONSIDERED GLASS FOR THIS CALCULATION.

C. TINTED, MIRRORED AND REFLECTIVE GLASS, AND GLASS COVERED BY SCREENING SHEETS, OR WHITE, OR UV PROTECTION FILM ARE PROHIBITED.

1ST FLOOR GLAZING TO WALL PERCENTAGE PROVIDED:
2ND ST: 18.7%
DEBRUYN AVE: 26.5%
SEE GLAZING CALCULATIONS ON SHEET T1.02

5. BLANK WALLS VISIBLE FROM THE PUBLIC SIDEWALK MUST NOT EXCEED 50 LINEAR FEET. WALLS ALONG INTERIOR SIDE LOT LINES ARE EXEMPT FROM THIS REQUIREMENT.
NO BLANK WALLS OF 50FT OR MORE ARE PROPOSED

6. ALL OUTDOOR ELECTRICAL, PLUMBING, AND MECHANICAL EQUIPMENT MUST BE LOCATED BEHIND THE FRONT FACADE OR CONCEALED FROM STREET VIEW WITH A SCREEN OR WALL. THESE FACILITIES MAY NOT ENCROACH INTO ANY SETBACK. EQUIPMENT LOCATED ON A ROOF MUST BE SCREENED FROM VIEW OF THE STREET.

7. ENCROACHMENTS. ENCROACHMENTS ARE PERMITTED AS FOLLOWS AND AS SET FORTH IN SECTION 18.22.255 FOR GREEN BUILDING STRUCTURES AND EQUIPMENT:

A. MINOR FACADE ELEMENTS MAY ENCROACH INTO SETBACKS AS FOLLOWS:

(1) ROOF OVERHANGS, CORNICES, WINDOW AND DOOR SURROUNDS, AND OTHER FACADE DECORATIONS MAY ENCROACH INTO SETBACKS UP TO 2FT BEYOND THE STRUCTURE TO WHICH THEY ARE ATTACHED; AND ***PROPOSED ROOF OVERHANGS ENCROACH 2FT AT NORTH & WEST SETBACKS***

(2) MINOR FACADE ELEMENTS MUST NOT ENCROACH INTO RIGHTS-OF-WAY.

B. MAJOR FACADE ELEMENTS MAY ENCROACH INTO SETBACKS AS FOLLOWS:

(1) MAJOR FACADE ELEMENTS MAY ENCROACH ACCORDING TO FRONTAGE TYPE AS SPECIFIED IN TABLE 7; AND

(2) MAJOR FACADE ELEMENTS INCLUDE BAY WINDOWS, BOW WINDOWS, BALCONIES, STOOPS, PORCHES, AND TERRACES. ELEMENTS MAY ENCROACH INTO SETBACKS ACCORDING TO TABLE 6.

8. COMMON ENTRY FRONTAGES MAY INCLUDE AN OPTIONAL PLANTER WITHIN THE FRONT SETBACK.

A. PLANTER HEIGHT MAY NOT EXCEED 24IN.

G. USE: PER TABLE 4, MULTIFAMILY HOUSES WITH 4-6 UNITS ARE PERMITTED IN RS5000 ZONES. PER SECION 18.09.010 THESE ARE REQUIRED TO CONFORM TO CHAPER 18.13
PROPOSED: THREE MULTIFAMILY HOUSES WITH 6, 4, AND 4 UNITS

H. OPEN SPACE REQUIREMENTS – TOTAL REQUIRED OPEN SPACE.
OPEN SPACE DIMENSIONS AND AREA MUST MEET THE REQUIREMENTS OF TABLE 5. TOTAL USABLE OPEN SPACE ON A SITE HAVING THREE OR MORE NEW DWELLING UNITS SHALL BE AT LEAST 400SF PER DWELLING UNIT, AND PROVIDED IN ONE OR MORE OF THE FOLLOWING WAYS:

1. PRIVATE OPEN SPACE. PRIVATE OPEN SPACE SHALL BE IN YARDS, PATIOS, TERRACES, OR BALCONIES IMMEDIATELY ADJACENT AND ACCESSIBLE TO INDIVIDUAL RESIDENTIAL UNITS WITH NO DIMENSION LESS THAN FIVE FEET. PRIVATE OPEN SPACE SHALL MAKE UP NO MORE THAN 50 PERCENT OF THE TOTAL REQUIRED OPEN SPACE.

A. THE DUPLEX BUILDING TYPE IS EXEMPT FROM THE PRIVATE OPEN SPACE MAXIMUM AREA. ONE HUNDRED PERCENT OF REQUIRED OPEN SPACE MAY BE PRIVATE FOR THE DUPLEX.

2. SHARED OPEN SPACE. SHARED OPEN SPACE SHALL BE ACCESSIBLE TO ALL RESIDENTS OF THE LOT AND SHALL NOT INCLUDE DRIVEWAYS OR PARKING AREAS.

A. OUTDOOR SHARED OPEN SPACE SHALL BE PROVIDED IN THE FORM OF PATIOS, TERRACES, COURTYARDS, PLAZAS, ROOFTOP DECKS, LAWNS AND GARDENS, CHILDREN'S PLAY AREAS, PICNIC AND BARBEQUE AREAS, AND OUTDOOR SPORTS EQUIPMENT AND FACILITIES. OUTDOOR SHARED OPEN SPACE MAY BE LOCATED WITHIN REQUIRED YARD SETBACKS.

3. PERMEABLE OPEN SPACE. OUTDOOR SHARED OPEN SPACE SHALL ONLY BE CONSTRUCTED WITH A PERMEABLE SURFACE TO ALLOW GROUNDWATER TO RECHARGE WHEREVER POSSIBLE, WITH THE AMOUNT AND TYPE TO BE APPROVED BY THE PUBLIC WORKS DIRECTOR OR DESIGNEE. IT IS NOT THE INTENT TO PROHIBIT A USE WHERE ITS IMPERMEABILITY IS INHERENT SUCH AS A SIDEWALK THROUGH THE SPACE.

14 DWELLING UNITS PROPOSED: 14DU X 400SF/DU = 5,600SF MIN. REQUIRED
PROVIDED: 7,250SF SHARED OPEN SPACE (NO PRIVATE OPEN SPACE)
SEE OPEN SPACE DIAGRAM

I. LIGHTING. MFI-FBC OVERLAY DISTRICT LIGHTING MUST MEET THE FOLLOWING STANDARDS:

1. ALL LIGHT SOURCES SHALL BE DIRECTED DOWNWARD AND FOCUSED ON THE SUBJECT SO THAT NO LIGHT SPILLAGE RESULTS;

2. GLARE SHALL BE PREVENTED BY USING SHIELDED AND FOCUSED LIGHT SOURCES;

3. ALL LIGHT SOURCES SHALL BE CONCEALED FROM ADJOINING PROPERTIES;

4. ENERGY EFFICIENT LIGHT SOURCES ARE REQUIRED; AND

5. UPLIGHTING OF BUILDING FACES OR OUTLINING THE FRAME OF A BUILDING IS PROHIBITED.

J. PARKING STANDARDS. WITH THE GOAL OF INCREASING HOUSING AFFORDABILITY, THE MFI-FBC APPLICATIONS ARE NOT SUBJECT TO THE PARKING REQUIREMENTS OF SECTION 18.22.130 AND ARE REGULATED AS FOLLOWS:

1. ONE AUTOMOBILE PARKING SPACE IS REQUIRED PER DWELLING UNIT;
PROVIDED: 14 SPACES TOTAL (1 PER DWELLING UNIT)

2. REQUIRED PARKING MAY BE FULFILLED IN THE FOLLOWING LOCATIONS:

A. WITHIN THE SAME LOT;
PROVIDED: 6 SPACES AT SOUTH-WEST CORNER OF SITE

B. WITHIN AN ADJACENT SHARED PARKING LOT; AND

C. ON-STREET PARKING SPACES LOCATED ALONG LOT LINES. ON-STREET PARKING SPACES ARE AVAILABLE FOR THE PUBLIC AND NOT RESERVED FOR THE PARCEL.
PROVIDED: 4 SPACES ALONG 2ND ST AND 4 SPACES ALONG DEBRUYN AVE

3. OFF-STREET AUTOMOBILE PARKING DESIGN.

A. OFF-STREET PARKING MUST MEET AASHTO SIZE AND CONFIGURATION STANDARDS AND THE CONSTRUCTION REQUIREMENTS OF SECTION 18.22.140;
PROVIDED: OFF-STREET COMPACT SPACES (90°) AT 8FT WIDE x 18FT LONG, 20FT TWO-WAY DRIVE AISLE

B. PARKING MUST BE LOCATED ACCORDING TO TABLE 1 THROUGH TABLE 3 AND IN COMPLIANCE WITH SUBSECTION (J)(2) OF THIS SECTION;
PROVIDED: 6FT SETBACK AT SIDE STREET (DEBRUYN AVE)

C. OFF-STREET PARKING MUST BE ACCESSED BY REAR LANES WHERE AVAILABLE; NO REAR LANE AVAILABLE

D. WHERE REAR LANES ARE NOT AVAILABLE, OFF-STREET PARKING MAY BE ACCESSED FROM THE FOLLOWING LOCATIONS:

(1) FROM SIDE STREETS FOR CORNER LOTS; DRIVEWAYS MUST BE LOCATED NEAR THE REAR LOT LINE; AND
PROVIDED: 20FT TWO-WAY DRIVEWAY AT DEBRUYN AVE, ADJACENT TO REAR (SOUTH) PROPERTY LINE

(2) FOR MID-BLOCK LOTS, PARKING MAY BE ACCESSED FROM THE PRIMARY FRONTAGE;

E. FRONT AND SIDE ACCESS DRIVEWAYS PROVIDING ACCESS TO OFF-STREET PARKING ARE LIMITED TO 10 FEET IN WIDTH 3FOR ONE-WAY EGRESS, AND 20 FEET IN WIDTH FOR TWO-WAY EGRESS; AND
PROVIDED: 20FT TWO-WAY DRIVEWAY AT DEBRUYN AVE, ADJACENT TO REAR (SOUTH) PROPERTY LINE

F. PARKING LOTS MUST BE SCREENED ALONG FRONT AND SIDE STREET LOT LINES BY A WOOD FENCE OR A HEDGE NO LESS THAN FOUR FEET IN HEIGHT TO SCREEN THE VIEW OF THE PARKING LOT.
PROVIDED: LANDSCAPE SCREENING AT DEBRUYN AVE WITH HEDGES AT LEAST 4FT IN HEIGHT

18.13.060 PROCESS AND ADMINISTRATION

F. DEVIATIONS. TWO PROCESSES EXIST TO APPLY FOR DEVIATION FROM THE REQUIREMENTS OF THIS CHAPTER: ADMINISTRATIVE WAIVERS AND VARIANCES. THE VARIANCE PROCESS IN CHAPTER 18.30 SHALL BE USED FOR A VARIANCE APPLICATION.

TABLE 9: 20% LOT COVERAGE INCREASE REQUESTED FOR TOTAL OF 80% ALLOWABLE LOT COVERAGE
PROVIDED: ALL DWELLING UNITS WILL BE AFFORDABLE AT 80% AMI, SEE INCLUDED STATE FUNDING APPLICATION LETTER

Environmental Works
COMMUNITY DESIGN CENTER

402 15th Avenue East
Seattle, Washington 98112
phone: 206.329.8300
fax: 206.329.5494

GENERATIONS PLACE
Multi-Family Housing

Second Street & De Bruyn Ave
Langley, WA. 98260

LAND USE NOTES & PHOTOS

Issuance
Site Plan Application

Date
12/19/2023

Revisions

#	Date	Description

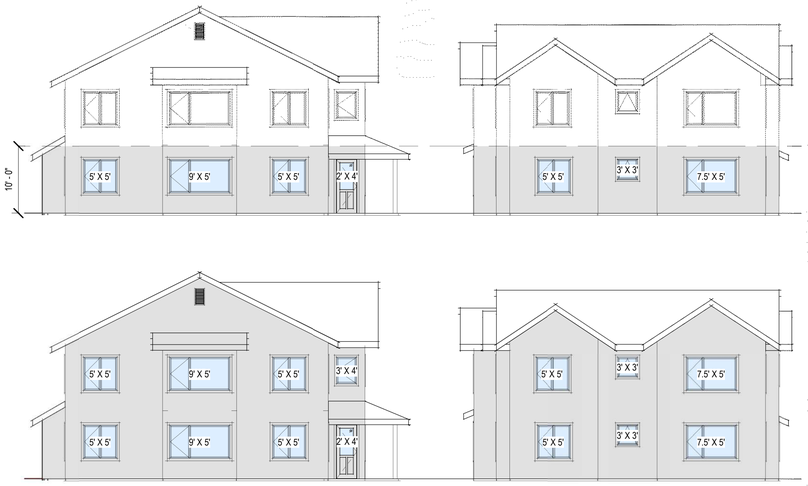
Drawn By:
EJ, MB

Checked By (P.M.):
MB

Checked By (Q.C.):
CC

Project No.
23012

12/20/2023 11:55:49 AM



SECOND STREET GLAZING CALCULATIONS

FIRST FLOOR

FACADE AREA = **935 SQFT**

WINDOW AREA = **174.5 SQFT**
(1) 9' X 5' = 45 SQFT
(1) 7.5' X 5' = 37.5 SQFT
(3) 5' X 5' = 75 SQFT
(1) 3' X 3' = 9 SQFT
(1) 2' X 4' = 8 SQFT
(DOOR GLAZING)

GLAZING: 211.5 / 798 = **18.7%**
15% MINIMUM GLAZING REQUIRED PER 18.13.050.F.4

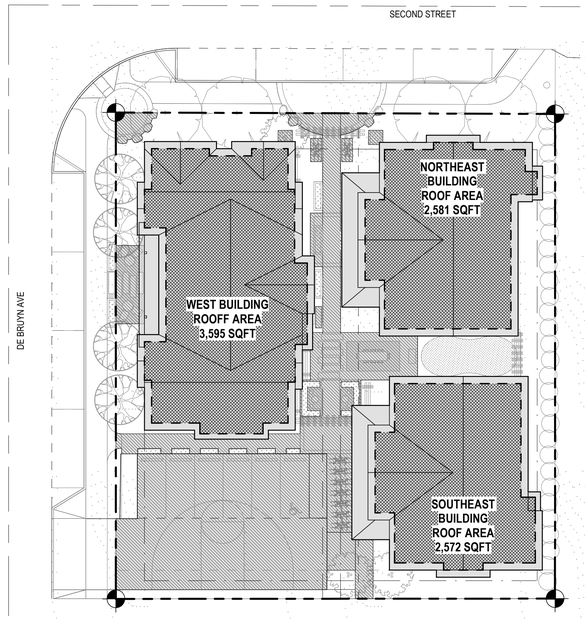
WHOLE FACADE

FACADE AREA = **2,111 SQFT**

WINDOW AREA = **348 SQFT**
(2) 9' X 5' = 90 SQFT
(2) 7.5' X 5' = 70 SQFT
(6) 5' X 5' = 150 SQFT
(1) 3' X 4' = 12 SQFT
(2) 3' X 3' = 18 SQFT
(1) 2' X 4' = 8 SQFT
(DOOR GLAZING)

GLAZING: 386 / 1,718 = **16.5%**

4 Second Street Elevation
3/32" = 1'-0"



LOT COVERAGE AND IMPERVIOUS COVERAGE CALCULATIONS

LOT AREA = 16,684 SQFT

WEST BUILDING FOOTPRINT = 3,066 SQFT
NORTHEAST BUILDING FOOTPRINT = 1,990 SQFT
SOUTHEAST BUILDING FOOTPRINT = 1,992 SQFT

TOTAL LOT COVERAGE = 7,048 SQFT

7,048/16,684 = **42.19% LOT COVERAGE (BUILDING)**

WEST BUILDING ROOF AREA = 3,761 SQFT
NORTHEAST BUILDING ROOF AREA = 2,618 SQFT
SOUTHEAST BUILDING ROOF AREA = 2,609 SQFT
LANDSCAPE IMPERVIOUS COVER = 4,052 SQFT

TOTAL IMPERVIOUS COVER = 13,040 SQFT

13,040/16,684 = **78.15% LOT COVERAGE (IMPERVIOUS)**

2 Lot Coverage Diagram
/1" = 20'-0"

Environmental Works
COMMUNITY DESIGN CENTER
402 15th Avenue East
Seattle, Washington 98112
phone: 206.329.8300
fax: 206.329.5494

GENERATIONS PLACE
Multi-Family Housing
Second Street & De Bruyn Ave
Langley, WA. 98260

CODE DIAGRAMS

DE BRUYN GLAZING CALCULATIONS

FIRST FLOOR

FACADE AREA = **798 SQFT**

WINDOW AREA = **211.5 SQFT**
(3) 7.5' X 5' = 112.5 SQFT
(3) 5' X 5' = 75 SQFT
(3) 2' X 4' = 24 SQFT (DOOR GLAZING)

GLAZING: 211.5 / 798 = **26.5%**
15% MINIMUM GLAZING REQUIRED PER 18.13.050.F.4

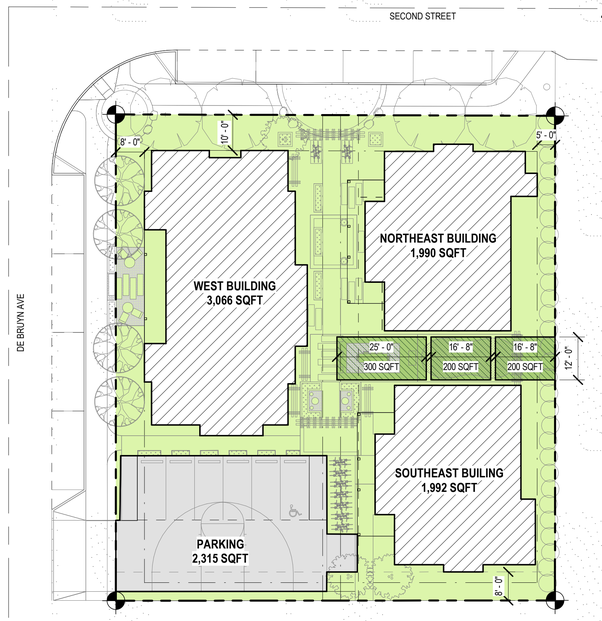
WHOLE FACADE

FACADE AREA = **1,718 SQFT**

WINDOW AREA = **386 SQFT**
(6) 7.5' X 5' = 225 SQFT
(1) 7.5' X 4' = 30 SQFT
(3) 5' X 5' = 75 SQFT
(2) 4' X 4' = 32 SQFT
(3) 2' X 4' = 24 SQFT (DOOR GLAZING)

GLAZING: 386 / 1,718 = **22.5%**

3 De Bruyn Ave Street Elevation
3/32" = 1'-0"



OPEN SPACE CALCULATIONS

WEST BUILDING = 3,066 SQFT
NORTHEAST BUILDING = 1,990 SQFT
SOUTHEAST BUILDING = 1,992 SQFT
PARKING LOT= 2,397 SQFT
SHARED OPEN SPACE PER 18.13.050.D TABLE 5
SHARED OPEN SPACE BETWEEN BUILDINGS & IN SETBACK = 6,626 SQFT

SHARED OPEN SPACE =
700 SQFT / (14) UNITS IN DUPLEX =
50 SQFT SHARED OPEN SPACE PER UNIT
PER 18.13.050.D TABLE 5 MULTIFAMILY HOUSE
SHARED OPEN SPACE REQUIREMENTS

TOTAL SHARED OPEN SPACE =
700 SQFT + 6,620 SQFT = 7,320 SQFT
7,240 SQFT / (14) UNITS =
522 SQFT SHARED OPEN SPACE PER UNIT

REQUIRED PER 18.13.050.H = 400 SQFT PER UNIT = 5,600 SQFT

1 Open Space Diagram
/1" = 20'-0"

Issuance
Site Plan Application
Date
12/19/2023
Revisions

#	Date	Description

Drawn By:
EJ
Checked By (P.M.):
CC
Checked By (Q.C.):
CC
Project No.
23012

12/19/2023 1:43:33 PM

TOPOGRAPHIC SURVEY IN A PORTION OF THE W 1/2, OF SECTION 34, T 30N, R 3E, W.M.
LANGLEY, ISLAND COUNTY, WASHINGTON

SANITARY SEWER DATA

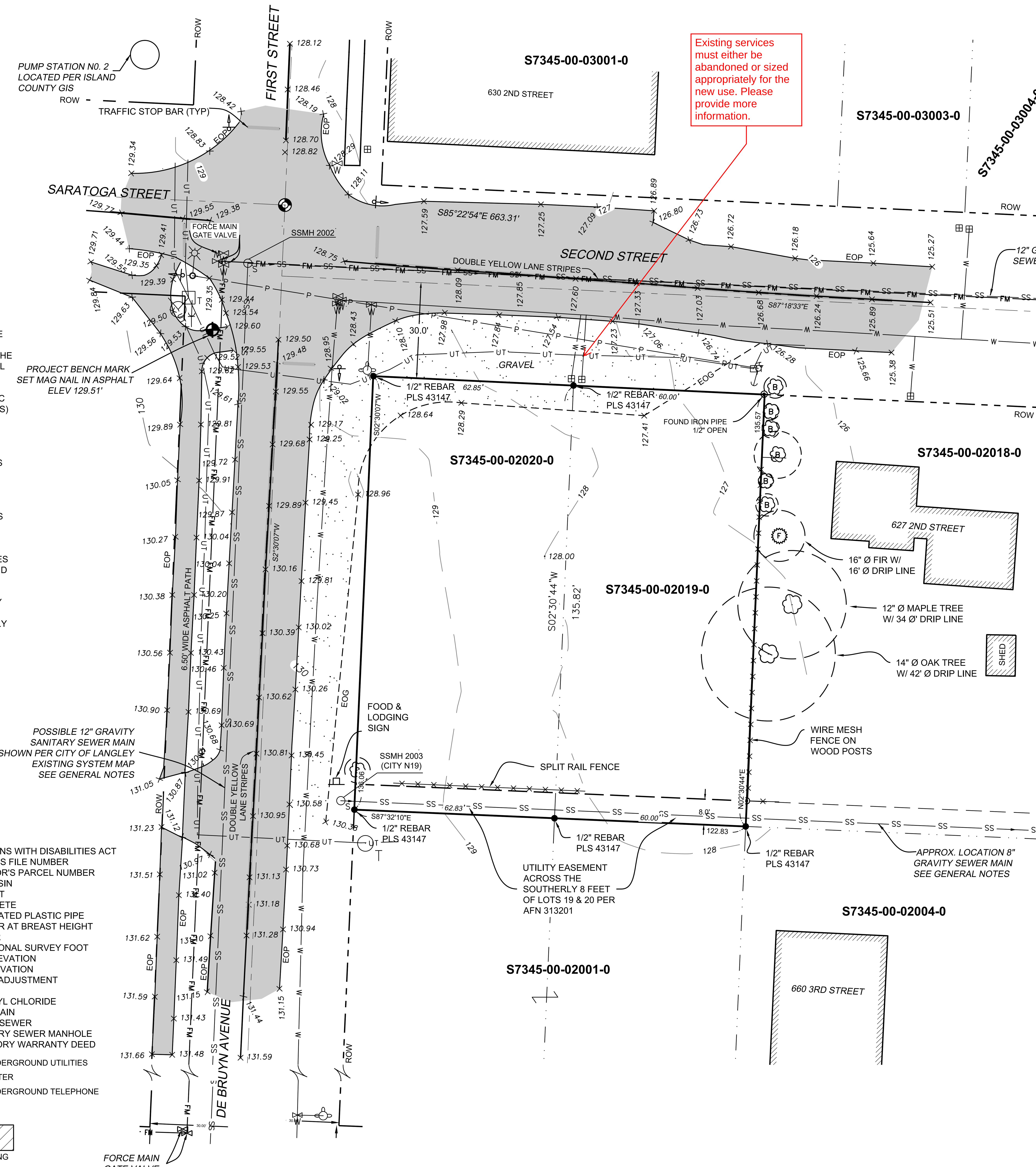
STRUCTURE ID	G.E	I.E.	PIPE DIA.	PIPE TYPE.	DIRECTION
SSMH 2002	129.24'		12"	CONC	EAST
SSMH 2003	130.16'	124.29'	8"	PVC	EAST
SSMH 2264	120.77'	115.61'	12"	CONC	WEST

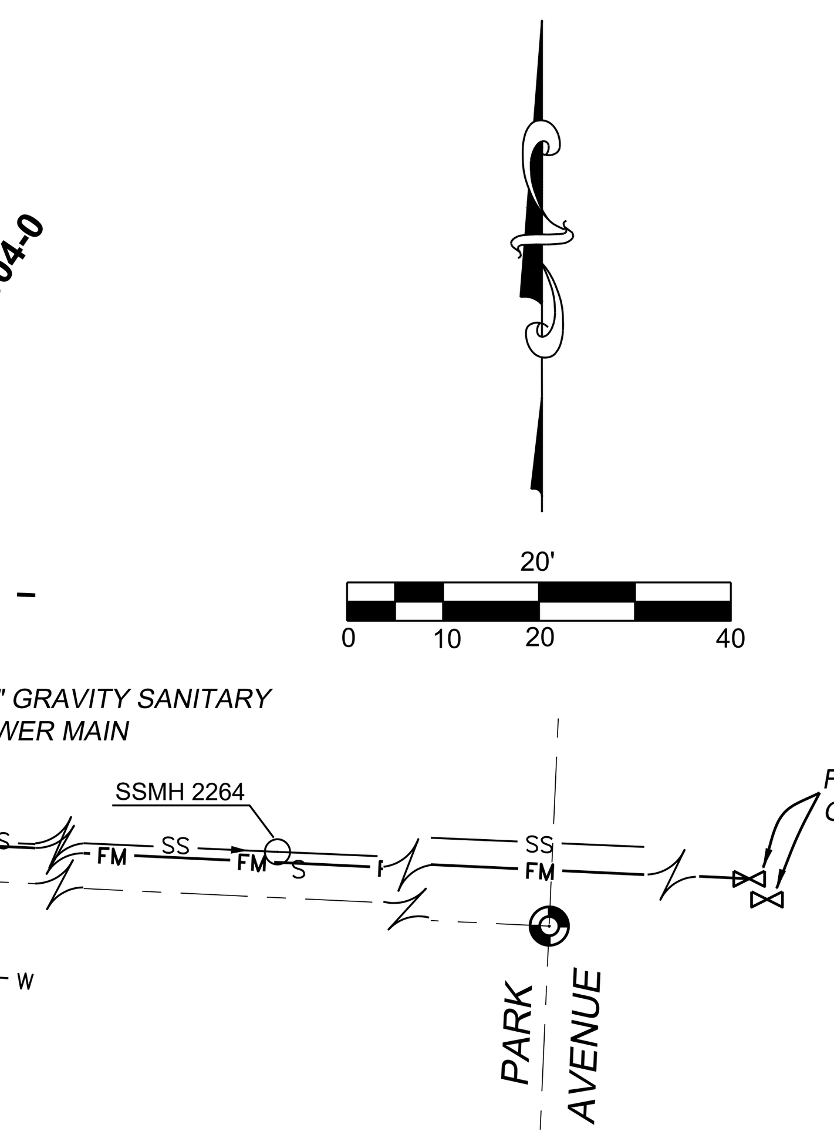
SURVEY NOTES

1. THE BASIS OF BEARINGS IS SOUTH 2°30'44" WEST ALONG THE WEST PROPERTY LINE BETWEEN PROPERTY CORNERS AS SHOWN.
2. THE VERTICAL DATUM FOR THIS SURVEY IS NAVD88 BY GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) OBSERVATIONS, CONFIRMED ON WSDOT MONUMENT GP15020-46. ELEVATIONS REPORTED WITHIN THE AREA OF FIELD TOPOGRAPHIC SURVEY EXCEED THE NATIONAL MAPPING STANDARDS ACCURACY OF ONE HALF OF THE CONTOUR INTERVAL OF ONE FOOT AS SHOWN HEREON.
3. THIS SURVEY WAS ACCOMPLISHED BY FIELD TRAVERSE WITH A 3-SECOND ELECTRONIC DIGITAL TOTAL STATION AND REAL-TIME KINEMATIC GLOBAL POSITIONING SYSTEM (GPS) DATA OBTAINED WITH THE WASHINGTON STATE REFERENCE NETWORK; ALL CONTROL TRAVERSE ANGLES AND DISTANCES DOUBLE MEASURED; MEETS OR EXCEEDS THE STANDARDS CONTAINED IN WAC 322-130-090.
4. ALL CONTROLLING MONUMENTS SHOWN ARE OF RECORD, ARE LOCALLY ACCEPTED AS REPRESENTATIVE OF THEIR PURPORTED POSITIONS AND WERE VISITED DURING THE COURSE OF THIS SURVEY UNLESS OTHERWISE NOTED.
5. OCCUPATIONAL INDICATORS ARE SHOWN ON THIS SURVEY PER WASHINGTON ADMINISTRATIVE CODE CHAPTER 332.130. LINES OF OCCUPATION MAY INDICATE AREAS OF UNWRITTEN OWNERSHIP WHICH ARE NOT RESOLVED BY THIS SURVEY.

ALL UNDERGROUND UTILITY LOCATIONS ARE BASED ON STRUCTURES LOCATED BY FIELD MEASUREMENTS AND BY UTILITY LOCATE PAINT MARKS PROVIDED BY CLEARMARK LOCATES AT TIME OF THE SURVEY. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION PROVIDED. ALL EXISTING UTILITIES SHOWN ON PLANS ARE TO BE VERIFIED HORIZONTALLY AND VERTICALLY PRIOR TO ANY CONSTRUCTION.

6. DISTANCES ARE IN U.S. SURVEY FEET AND DECIMALS THEREOF.
7. THE PURPOSE OF THIS SURVEY IS FOR SITE PLANNING AND DESIGN.





LEGAL DESCRIPTION

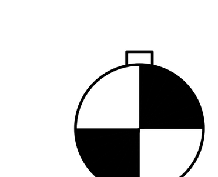
PER SWD AFN 4542531 DATED 03/31/2022

LOTS 19 & 20, BLOCK 2, REPLAT OF TOWN OF LANGLEY, ACCORDING TO THE PLAT RECORDED IN VOLUME 6 OF PLATS, PAGE 33, BEING A REPLAT OF VOLUME 2 OF PLATS, PAGE 15, RECORDS OF ISLAND COUNTY, WASHINGTON

SITUATE IN ISLAND COUNTY, WASHINGTON

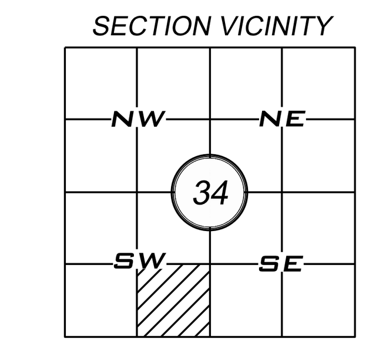
GENERAL NOTES

1. SANITARY SEWER MANHOLE #2002 (INTERSECTION OF SARATOGA & DEBRUYN) WAS FILLED TO THE RIM WITH EFFLUENT ON MULTIPLE VISITS TO THE SITE & MEASURE-DOWNS COULD NOT BE OBTAINED. THE CITY MAP OF THE EXISTING SEWER INDICATES A SEWER MANHOLE SOUTH OF THIS MANHOLE AT THE INTERSECTION OF 3RD STREET & DEBRUYN, WHICH WAS NOT ABLE TO BE FOUND.
2. SANITARY SEWER MANHOLE #2003(CITY DESIGNATION N-19 - AT THE WEST END OF EASEMENT ALONG THE SOUTH LINE OF PROPERTY) IS THE BEGINNING OF THE CITY DESIGNATED "N" GRAVITY SANITARY SEWER LINE. CITY-DESIGNATED SANITARY SEWER MANHOLE N-18 WAS NOT ABLE TO BE FOUND.
3. TWO SANITARY SEWER MANHOLE LOCATIONS, ONE DESIGNATED BY THE CITY AS "N18" AND ONE AT THE INTERSECTION OF 3RD & DEBRUYN WILL REQUIRE CITY ASSISTANCE TO LOCATE. A THIRD SANITARY SEWER MANHOLE LOCATION AT THE INTERSECTION OF 2ND & DEBRUYN WILL ALSO REQUIRE CITY ASSISTANCE TO EVACUATE EFFLUENT IN ORDER TO OBTAIN MEASURE-DOWNS AND DETERMINE SEWER MAIN GRADE RUNS.
4. A WATER MAIN PRESSURE OF 60.27 PSI IS REPORTED AT THE INTERSECTION OF DEBRUYN AVENUE AND SECOND STREET, ALTHOUGH WATER MAIN SIZE WAS NOT LOCATED.
5. AN INQUIRY HAS BEEN MADE AT THE CITY TO OBTAIN THE MISSING DATA INDICATED ABOVE WHICH REQUIRES CONTACT WITH THE DIRECTOR OF PUBLIC WORKS, RANDI PERRY (360) 221-4246. RANDI WILL BE OUT OF THE OFFICE UNTIL THURSDAY, AUGUST 24,2023.



VERTICAL DATUM
NAVD 88 GEOID 12A
ESTABLISHED BY GPS

SECTION VICINITY



T30N-R3E.W.M

LEGEND AND ABBREVIATIONS

- SPOT ELEVATION
- FOUND REBAR AS DESCRIBED
- FOUND IRON PIPE AS DESCRIBED
- FOUND PLAT MONUMENT AS DESCRIBED
- TEMPORARY VERTICAL BENCHMARK
- CALCULATED POSITION
- CULVERT PIPE
- LUMINAIRE
- POWER VAULT
- POWER METER
- POWER POLE
- POWER POLE WITH DROP
- POLE ANCHOR
- MAIL BOX
- FLOW ARROW
- GAS METER/MANIFOLD
- STORM DRAIN CATCH BASIN
- SANITARY SEWER CLEANOUT
- SANITARY SEWER MANHOLE
- SEPTIC TANK LID
- TELEPHONE MANHOLE
- TELEPHONE PEDESTAL
- WATER FAUCET
- WATER METER
- WATER VALVE
- FIRE HYDRANT
- SIGN POST
- FIR TREE
- DECIDUOUS TREE
- BUSH
- WETLAND FLAG

ADA - AMERICANS WITH DISABILITIES ACT
AFN - AUDITOR'S FILE NUMBER
APN - ASSESSOR'S PARCEL NUMBER
CB - CATCH BASIN
CO - CLEAN OUT
CONC - CONCRETE
CPP - CORRUGATED PLASTIC PIPE
DBH - DIAMETER AT BREAST HEIGHT
DIA - DIAMETER
FT - INTERNATIONAL SURVEY FOOT
GE - GRATE ELEVATION
IE - INVERT ELEVATION
LLA - LOT LINE ADJUSTMENT
MB - MAILBOX
PVC - POLYVINYL CHLORIDE
SD - STORM DRAIN
SS - SANITARY SEWER
SSMH - SANITARY SEWER MANHOLE
SWD - STATUTORY WARRANTY DEED

- FENCE (AS NOTED)
- CENTERLINE
- EDGE OF PAVEMENT
- FM — FORCE MAIN
- EDGE OF GRAVEL
- SS — SANITARY SEWER
- OP — OVERHEAD UTILITIES
- UP — UNDERGROUND UTILITIES
- W — WATER
- UT — UNDERGROUND TELEPHONE

PAVEMENT | GRAVEL | CONCRETE | BUILDING

P:\WORK\PROJECTS\2023\23-240 ENVIRONMENTAL WORKS\LS\DWG\23-240 ENVIRONMENTAL TOPO.DWG 08/24/2023

2023 08 23 - STREET CENTERLINE & PROP LINE CORRECTIONS - TJP

REVISIONS

HARMSEN ENGINEERS SURVEYORS
840 SE 8th AVENUE, SUITE 102
OAK HARBOR, WA 98277
(360) 675-5973
(360) 794-7811
FAX: (360) 675-7255

TODD JAY POCOCK, STATE OF WASHINGTON, PROFESSIONAL LAND SURVEYOR, 43147

ENVIRONMENTAL WORKS
TOPOGRAPHIC SURVEY
SECOND STREET
LANGLEY, WA

DWN. BY:	KML
CHK. BY:	TJP
DATE:	08/23/23
JOB #:	23-240
SCALE:	1"=20'

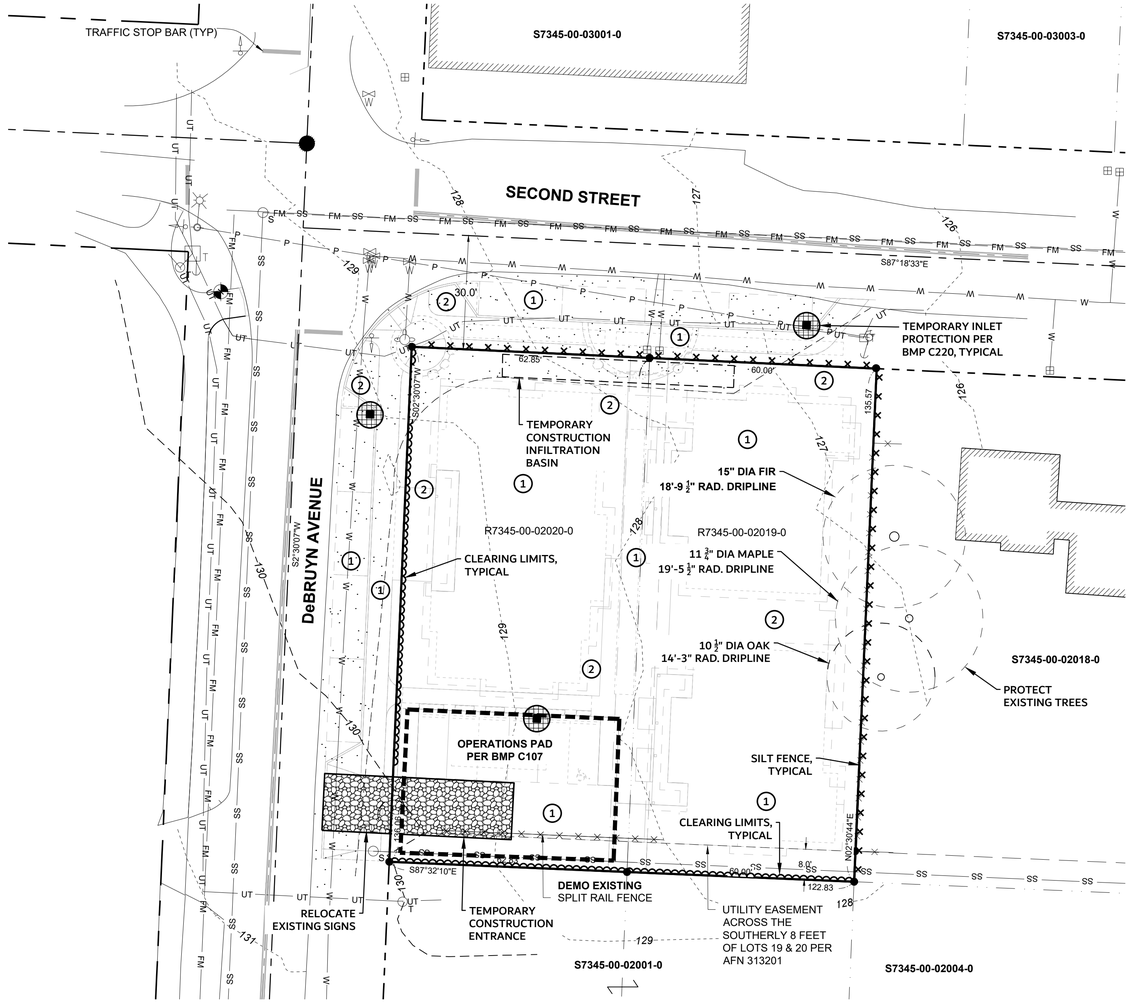
811 Know what's below. Call before you dig.

S-1

SECTION 34, TOWNSHIP 30 NORTH, RANGE 3 EAST, W.M.

GENERATIONS PLACE

LANGLEY, WA



1 DEMOLITION & STORMWATER POLLUTION PREVENTION PLAN

SCALE: 1" = 20'

0 20 40 Feet

VERTICAL DATUM
NAVD 88
ESTABLISHED BY GPS

SEE ARCHITECTURAL PLAN FOR SITE LAYOUT DIMENSIONS

SITE DATA

SITE ADDRESS:	2ND & DeBRUYN AVE LANGLEY WA, 98260
TAX PARCEL NOS:	S7345-00-02019-0 S7345-00-02020-0
GROSS SITE AREA:	16,679 SF (0.383 ACRES)

LEGAL DESCRIPTION

PER SWD AFN 4542531 DATED 03/31/2022

LOTS 19 & 20, BLOCK 2, REPLAT OF TOWN OF LANGLEY. ACCORDING TO THE PLAT RECORDED IN VOLUME 6 OF PLATS, PAGE 33, BEING A REPLAT OF VOLUME 2 OF PLATS, PAGE 15, RECORDS OF ISLAND COUNTY, WASHINGTON

SITUATE IN ISLAND COUNTY, WASHINGTON

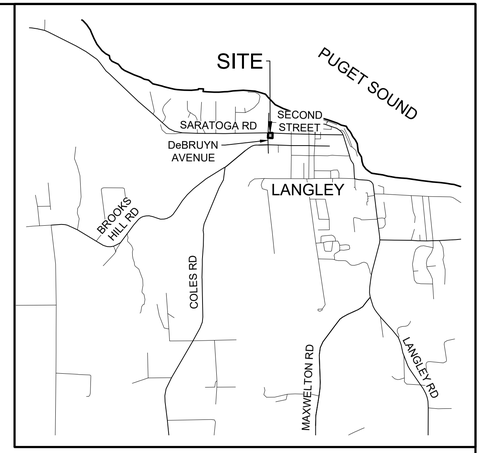
STABILIZATION NOTES

TEMPORARY

1. STABILIZE FUTURE PAVED AREAS WITH CRUSHED ROCK PER PAVING SECTION
2. STABILIZE ALL FUTURE LANDSCAPE AREAS WITH SEEDING & 4" STRAW MULCH. TEMPORARY SEED MIX: ANNUAL RYEGRASS, (LOLIUM MULTIFLORUM) APPLICATION RATE: 7-10 LBS PER 1000 SQ FT OR 300 LBS PER ACRE

PERMANENT

1. STABILIZE PAVED AREAS WITH ASPHALT PAVING PER PAVING SECTION
2. STABILIZE PERVIOUS AREAS WITH LANDSCAPING AND/OR HYDROSEED PER 2019 SWMMWW BMP T.5.13



VICINITY MAP

SCALE: 1" = 2000'

ARCHITECT/CONTACT

CHRISTINA CONGDON
ENVIRONMENTAL WORKS
402 15TH AVENUE EAST
SEATTLE, WA 98112
(206) 787-1369
ccongdon@eworks.org

CIVIL ENGINEER

DAVID HARMSEN, PE
HARMSEN, LLC
2822 COLBY AVE., SUITE 300
EVERETT, WA 98201
(425) 252-1884
davidh@harmsenllc.com

LAND SURVEYOR

TODD POCOCK
HARMSEN, LLC
2822 COLBY AVE., SUITE 300
EVERETT, WA 98201
(425) 252-1884
toddp@harmsenllc.com

LEGEND

PROJECT BENCH MARK	PROPERTY LINE
MONUMENT IN CASE	RIGHT-OF-WAY
PROPERTY CORNER PER ROS AFN 4480228	CENTERLINE OF R/W
WATER METER	CENTERLINE STRIPING
FIRE HYDRANT	EASEMENT
STREET LIGHT	EDGE OF PAVEMENT
STOP SIGN	ADJOINING PROPERTY LINE
TELEPHONE	FENCE (AS NOTED)
SEWER MAN HOLE	PLATTED LOT LINE
GUY WIRE	EDGE OF GRAVEL
WATER VALVE	EXISTING POWER
UTILITY PLUG	FORCE MAIN
STREET SIGN	SANITARY SEWER
TELEPHONE HAND HOLE	OVERHEAD UTILITIES
TELEPHONE MANHOLE	UNDERGROUND UTILITIES
GAS METER/MANIFOLD	WATER
STORM DRAIN CATCH BASIN	UNDERGROUND TELEPHONE
SANITARY SEWER CLEANOUT	CLEARING LIMITS (BMP C101 & C103)
SANITARY SEWER MANHOLE	FILTER FABRIC FENCE (BMP C233)
FIR TREE	TEMPORARY INLET PROTECTION (BMP C220)
DECIDUOUS TREE	
BUSH	

REVISIONS

HARMSEN ENGINEERS SURVEYORS
(425) 252-1884
(206) 343-5903
2822 COLBY AVE., SUITE 300
EVERETT, WA 98201

DAVID M HARMSEN
STATE OF WASHINGTON
33745
REGISTERED PROFESSIONAL ENGINEER
12/19/23

GENERATIONS PLACE
2ND & DEBRUYN
LANGLEY, WA 98260

PRELIMINARY
DEMOLITION & STORMWATER POLLUTION & PREVENTION PLAN

DATE: 12/19/23

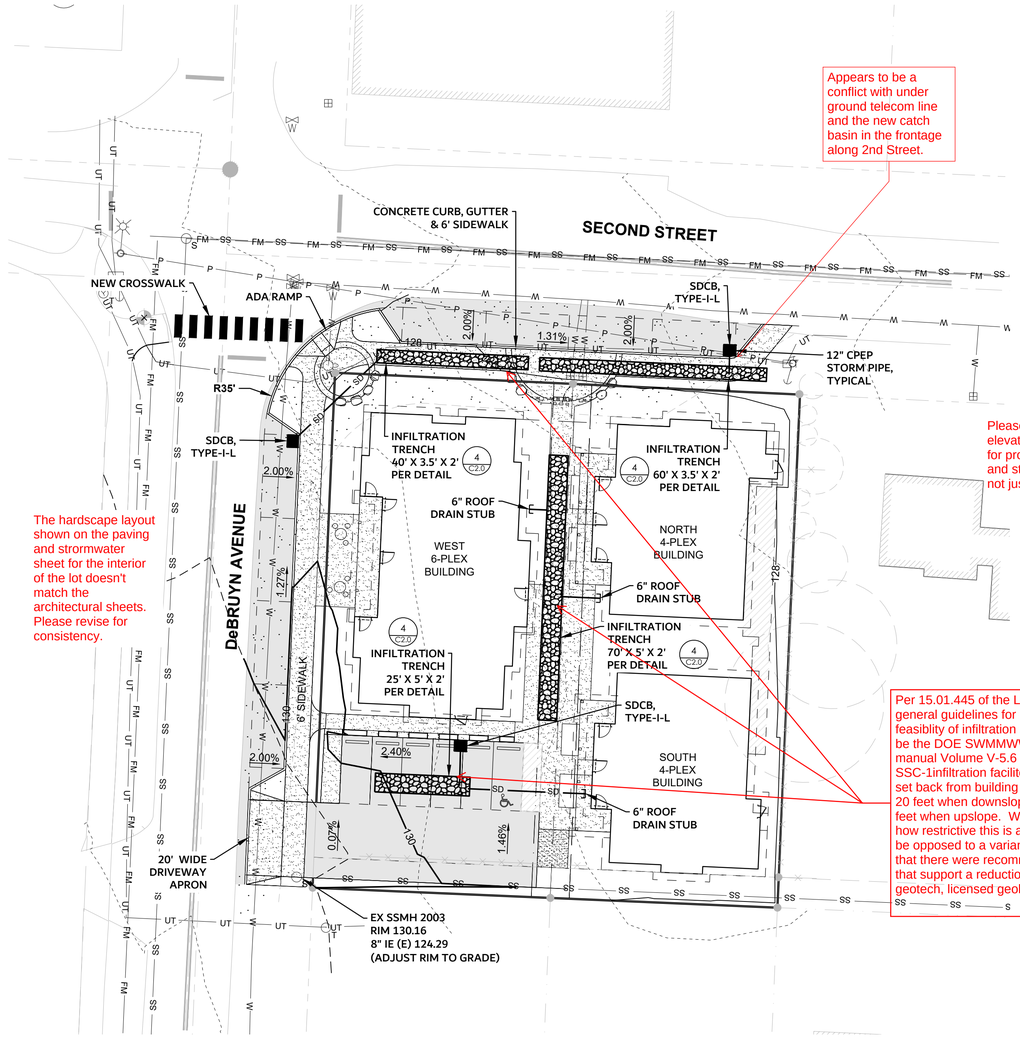
JOB #: 23-260

811 Know what's below. Call before you dig.

C1.0

P:\WORK\PROJECTS\2023\23-260 ENV WORKS-GOOSEFOOT\CE\DWG\SHEETS\C1.0 DEMO SWPPP.DWG 12/20/2023

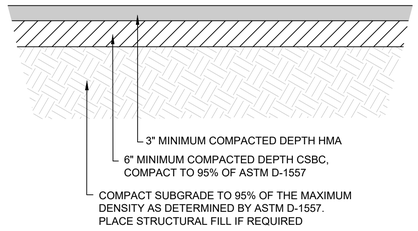
SECTION 34, TOWNSHIP 30 NORTH, RANGE 3 EAST, W.M.



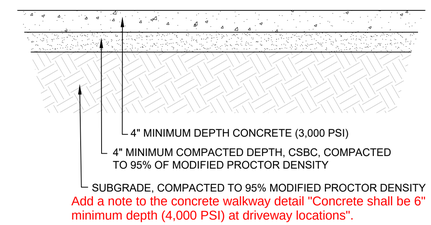
1 PAVING & STORM DRAINAGE PLAN
SCALE: 1" = 20'

STORM NOTES
1. ALL TYPE 1-L CATCH BASINS WILL HAVE TURN DOWNS FOR OIL AND FLOATABLE SEPARATION.
2. YARD DRAINS WILL BE PLACED IN PLANTERS AND CONNECTED TO ROOF COLLECTORS. THESE ARE NOT SHOWN AT THIS TIME.
3. ROOF DRAINS WILL BE CONNECTED TO THE CENTRAL INFILTRATION TRENCH USING 6" PVC PIPE WITH CLEANOUTS AT BENDS AND ENDS.
4. FOOTING DRAINS WILL CONNECT TO THE INFILTRATION SYSTEM SEPARATELY FROM ROOF DRAINS.

0 20 40 Feet

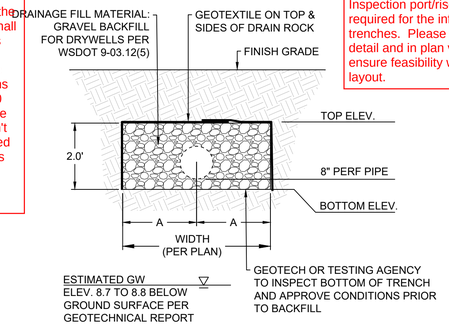


2 ASPHALT PAVING
SCALE: NONE



Add a note to the concrete walkway detail "Concrete shall be 6" minimum depth (4,000 PSI) at driveway locations".

3 CONCRETE WALKWAY
SCALE: NONE



Inspection port/risers are required for the infiltration trenches. Please show in detail and in plan view to ensure feasibility with current layout.

INFILTRATION TRENCH DESIGN DATA

NORTHEAST TRENCH BOTTOM ELEVATION: 123.5' TOP ELEVATION: 125.5' 8" PERF. PIPE IE: 124.0'	COURTYARD TRENCH BOTTOM ELEVATION: 126.3' TOP ELEVATION: 128.3' 8" PERF. PIPE IE: 126.8'
NORTHWEST TRENCH BOTTOM ELEVATION: 124.4' TOP ELEVATION: 126.4' 8" PERF. PIPE IE: 124.9'	PARKING TRENCH BOTTOM ELEVATION: 126.3 TOP ELEVATION: 128.3' 8" PERF. PIPE IE: 126.8'

4 INFILTRATION TRENCH
SCALE: NONE

HARMSEN ENGINEERS SURVEYORS
(425) 252-1884
(206) 343-5903
2822 COLBY AVE., SUITE 300
EVERETT, WA 98201

REVISIONS

GENERATIONS PLACE
2ND & DEBRUYN
LANGLEY, WA 98260

PRELIMINARY
PAVING & STORM DRAINAGE PLAN

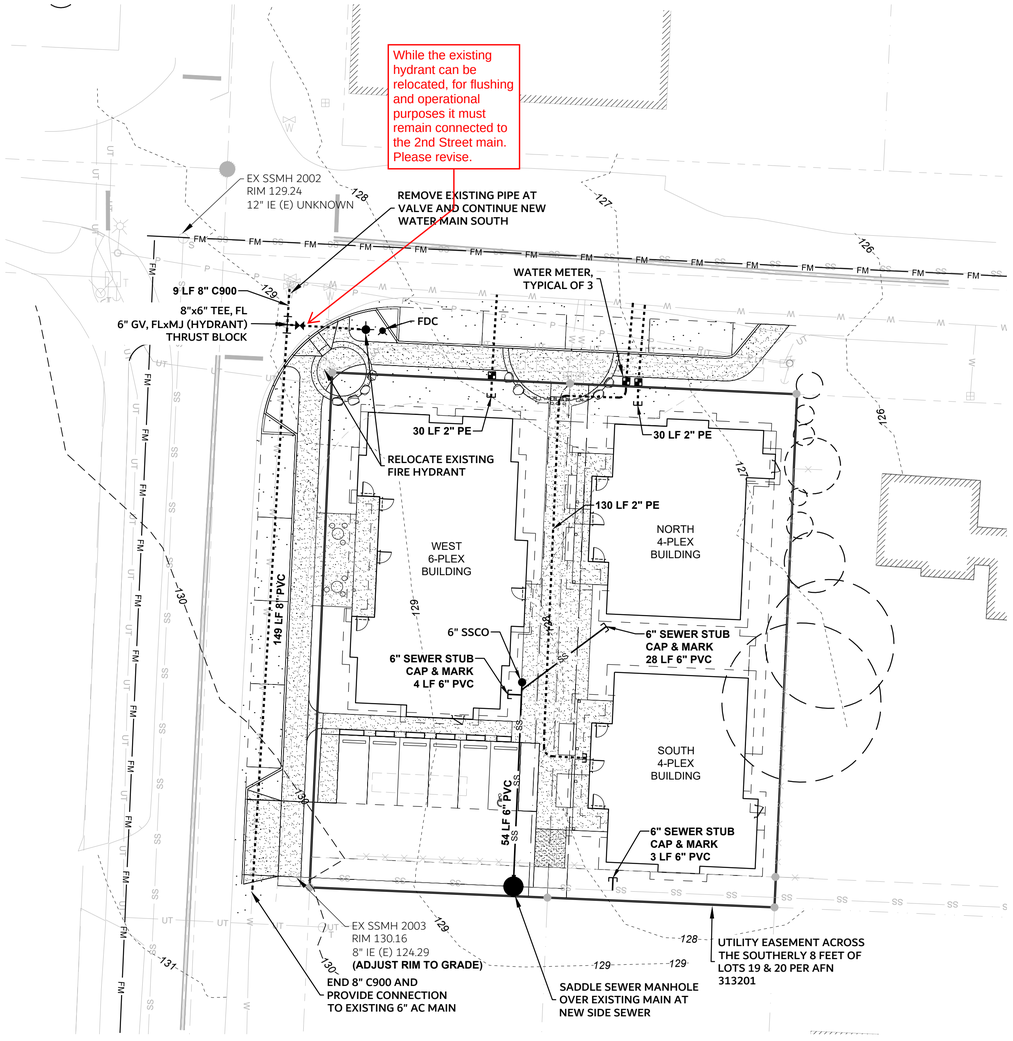
DATE: 12/19/23

JOB #: 23-260

Know what's below. Call before you dig.

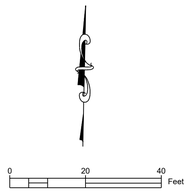
C2.0

SECTION 34, TOWNSHIP 30 NORTH, RANGE 3 EAST, W.M.



1 **SEWER & WATER PLAN**
SCALE: 1" = 20'

The City prefers individual sub-meters at the main for each individual unit. However per LMC 13.01.100.D single service lines may be allowed to a multi-unit structure or multiple structures provided that one owner has agreed in writing to assume and be responsible for and pay the total water bill without any deductions for vacancies or other reasons. This agreement must be in place prior to approval of the construction drawings.



WATER NOTES

1. WATER METER AND FIRE SPRINKER SYSTEMS HAVE NOT YET BEEN SIZED.
2. FIRE SPRINKLER SYSTEMS WILL BE SEPARATE FROM THE METER SYSTEM AND CONTAIN BACKFLOW PREVENTION.

REVISIONS

HARMSEN ENGINEERS SURVEYORS
(425) 252-1884
(206) 343-5903
2822 COLBY AVE., SUITE 300
EVERETT, WA 98201

DAVID W. HARMSEN
STATE OF WASHINGTON
33745
REGISTERED PROFESSIONAL ENGINEER
12/19/23

GENERATIONS PLACE
2ND & DEBRUYN
LANGLEY, WA 98260

PRELIMINARY
SEWER & WATER PLAN

DATE: 12/19/23

JOB #: 23-260

811 Know what's below. Call before you dig.

C3.0

SECOND ST

DEBRUYN AVE

Arbor w/ Screening Trellis, Typ.

Shared Porch

Seating, Typ.

Entry Arbor

Gathering/Entry Plaza

Street Tree, Typ.

Transition to Pedestrian Lane

Gathering/Entry Plaza

Entry Arbor

Tree Planter Box, Typ.

Bike Rack, Typ.

Planter Pot, Typ.

Raised Beds, Typ.

Central Gathering Area

Evergreen Landscape Screening

Outdoor Seating Area

Barbeque Grill

Lawn

Arbor

See prior comments from South Whidbey Fire on access to the sprinkler rooms.

Driveway

Parking Lot

Path to Grassy Meadow

Covered Bike Parking

LEGEND

- Property Line
- Limit of Work
- Concrete Paving
- Concrete Accent Paving
- Asphalt Paving
- Concrete "Porch" (Stamped)
- Gravel Area
- Lawn Area
- Shrub Planting Area
- Lawn Area
- Raised Beds
- Boulders
- Furniture
- Trees

0' 5' 10' 20'

Scale: 1" = 10'-0"
24" x 36" sheet)

Environmental Works
COMMUNITY DESIGN CENTER
402 15th Avenue East
Seattle, Washington 98112
206.329.8300
206.329.5494 fax

Generations Place
Second St & DeBruyn Ave
Langley, WA 98260

STEVEN NICOLAS HEIKKINEN REGISTERED LANDSCAPE ARCHITECT CERTIFICATE NO. 978

NOT FOR CONSTRUCTION

Landscape Site Plan

Date
December 19, 2023
Site Plan Application

Revisions

Drawn by:
BG, NM
Checked by (P.M.):
NM
Checked by (Q.C.):
NM
Project No.
Proj. No. 23-012

L1.01

Per LMC 18.22.020.F 2 the applicant must demonstrate that the street tree will not damage infrastructure in the area. With a setback of 3-4 feet and within the critical root zone, it isn't clear that the street tree locations won't damage the proposed infiltration galleries.

1 L3.01 DECIDUOUS TREE PLANTING

SECOND ST

Tree Planter Box, Typ.

Planter Pot, Typ.

Raised Beds, Typ.

Arbor w/ Screening Trellis, Typ.

Evergreen Landscape Screening

Lawn

Arbor

4 L3.01 PLANTING SOIL PROFILE - 18" DEPTH

2 L3.01 SHRUB PLANTING

3 L3.01 GROUND COVER SPACING

Street Tree, Typ.

DEBRUYN AVE

Driveway

Parking Lot

Path to Grassy Meadow

128.00

127.62

PLANTING NOTES

1. See L2.02 for plant schedule.
2. All plantings are calculated at a 24-36" triangular O.C. spacing.
3. Contractor shall be responsible for familiarizing themselves with all other site improvements and conditions prior to starting any landscape work.
4. Contractor shall use caution while excavating to avoid disturbing any utilities encountered. Contractor is to promptly advise owner of any disturbed utilities.
5. Contractor to water all plant material to ensure plant survival after delivery, during installation, and up until acceptance by owner.
6. Contractor shall be responsible for computing specific quantities of ground covers and plant materials utilizing on-center spacing for plants as stated on the landscape plan and minimum planting distances as specified in these notes.
7. All planting areas to be cleared of all construction materials and rocks and sticks larger than 2" diameter.
8. See specs for soil amendment installation for landscape areas.
9. Landscaping shall be provided in accordance with local landscape code.
10. Plants shall be selected and sited to produce a hardy and drought-resistant landscape area. Selection shall consider soil type and depth, the amount of maintenance required, spacing, exposure to sun and wind, and the proposed slope and contours of the site.
11. All plant material shall conform to ANSI standards for nursery stock, latest edition. Any replacements to be made at once.
    A. General: All plant material furnished shall be healthy representatives, typical of their species of variety and shall have a normal growth habit. They shall be full, well-branched, well-proportioned, and have a vigorous, well-developed root system. All plants shall be hardy under climatic conditions similar to those in the locality of the project.
    B. Trees, shrubs, and ground cover: Quantities, species, and varieties, sizes and conditions as shown on the planting plan. Plants to be healthy, vigorous, well-foliated when in leaf. Free of disease, injury, insects, decay, harmful defects, and all weeds. No substitutions shall be made without written approval from owner and landscape architect.

LEGEND

- Property Line
- Limit of Work
- Lawn Area
- General Landscaping / Common Area
- Right-of-Way Planting Area
- Raised Beds
- Boulders
- Furniture
- Trees

0' 5' 10' 20'

Scale: 1" = 10'-0"
24" x 36" sheet)

Environmental Works
COMMUNITY DESIGN CENTER
402 15th Avenue East
Seattle, Washington 98112
206.329.8300
206.329.5494 fax

Generations Place
Second St & DeBruyn Ave
Langley, WA 98260

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT NICOLAS HIDEKI MORIN CERTIFICATE NO. 978

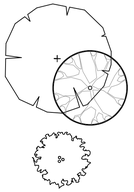
NOT FOR CONSTRUCTION

Planting Plan

Date
December 19, 2023
Site Plan Application
Revisions

Drawn by:
BG, NM
Checked by (P.M.):
NM
Checked by (Q.C.):
NM
Project No.
Proj. No. 23-012

PLANT SCHEDULE

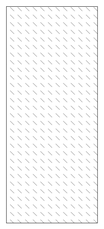


RIGHT-OF-WAY TREES
Acer griseum / Paperbark Maple

ENTRY PLAZA TREES
Malus x 'Adirondack' / Adirondack Crabapple

EVERGREEN SCREENING
Ceanothus x 'Victoria' / Victoria Wild Lilac
Juniperus chinensis 'Hetzii Columnaris' / Hetzi Column Juniper
Juniperus scopulorum 'Medora' / Medora Juniper

RIGHT-OF-WAY
Arctostaphylos uva-ursi / Kinnikinnick
Calamagrostis x acutiflora 'Karl Foerster' / Karl Foerster Feather Reed Grass
Daphne odora 'Aureomarginata' / Gold-edged Winter Daphne
Epimedium grandiflorum / Barrenwort
Euphorbia characias wulfenii / Evergreen Spurge
Festuca glauca 'Elijah Blue' / Elijah Blue Fescue
Hakonechloa macra 'All Gold' / All Gold Japanese Forest Grass
Hydrangea quercifolia 'Ruby Slippers' / Ruby Slippers Oakleaf Hydrangea
Lavandula x intermedia 'Niko' / Phenomenal® French Lavender
Nandina domestica 'Gulf Stream' / Gulf Stream Heavenly Bamboo
Polystichum munitum / Western Sword Fern
Ribes sanguineum / Red Flowering Currant
Rudbeckia hirta / Black-eyed Susan
Spiraea japonica 'Walbuma' / Magic Carpet Japanese Spirea



GENERAL LANDSCAPE & COMMON AREA
Arctostaphylos uva-ursi / Kinnikinnick
Athyrium niponicum / Japanese Painted Fern
Blechnum spicant / Deer Fern
Carex morrowii 'Variegata' / Variegated Japanese Sedge
Epimedium grandiflorum / Barrenwort
Geranium x cantabrigiense 'Biokovo' / Biokovo Cranesbill
Hakonechloa macra 'All Gold' / All Gold Japanese Forest Grass
Helleborus foetidus / Bearsfoot Hellebore
Hydrangea quercifolia 'Ruby Slippers' / Ruby Slippers Oakleaf Hydrangea
Mahonia nervosa / Dull Oregon Grape
Polystichum munitum / Western Sword Fern
Sarcococca hookeriana humilis / Trailing Sweetbox

Environmental Works
COMMUNITY DESIGN CENTER
402 15th Avenue East
Seattle, Washington 98112
206.329.8300
206.329.5494 fax

Generations
Place
Second St & DeBruyn Ave
Langley, WA 98260

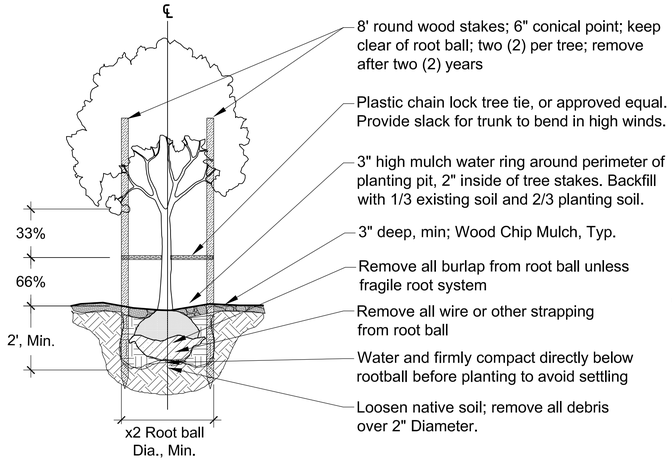
STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT
NICOLAS HEIDEMORN
CERTIFICATE NO. 978
NOT FOR CONSTRUCTION

Planting Schedule

Date
December 19, 2023
Site Plan Application
Revisions

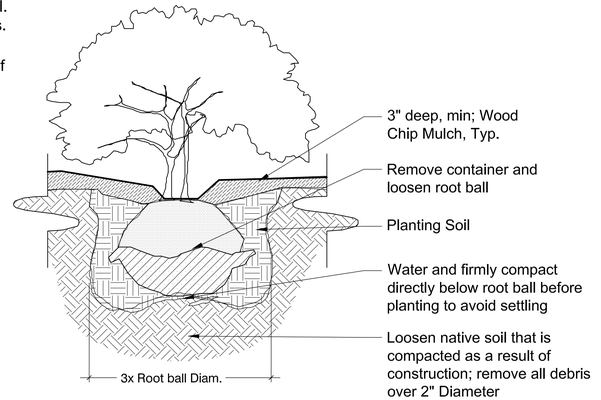
Drawn by:
BG, NM
Checked by (P.M.):
NM
Checked by (Q.C.):
NM
Project No.
Proj. No. 23-012

L2.02

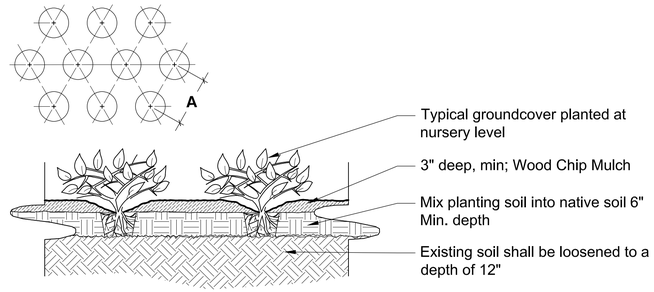


NOTES:
1. Remove all nursery tree stakes & supports prior to planting.

1 DECIDUOUS TREE PLANTING
NTS EW-320000-329000-01



2 SHRUB PLANTING
NTS EW-320000-329000-03



NOTES:
1. All groundcover shall be planted at equal triangular spacing or on center spacing as specified on planting plan
2. See plant schedule for "A" spacing
3. Locate groundcover one half of specified spacing distance "A" from any curb, sidewalk, or other hard surface, unless otherwise specified
4. Till 6" imported Cedar Grove 2-Way Topsoil or approved equal into native soil.

3 GROUND COVER SPACING
NTS EW-320000-329000-04

NOTES:
1. Depths are minimums. Contractor is responsible for accommodating any settling or fluff factor.

4 PLANTING SOIL PROFILE - 18" DEPTH
1"= 1'-0" EW-320000-329113-04

Environmental Works
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Generations Place
Second St & DeBruyn Ave
Langley, WA 98260

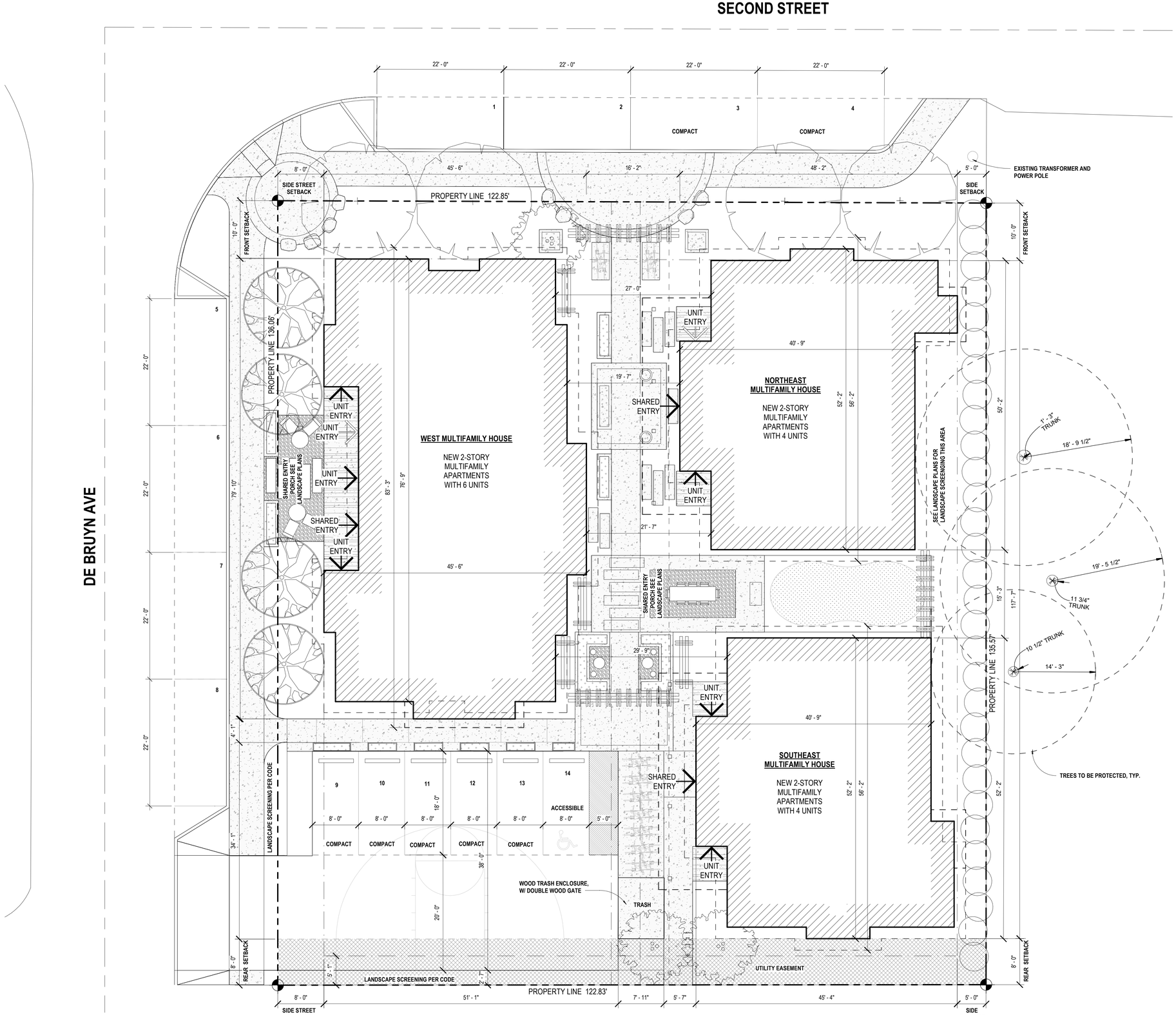
STATE OF WASHINGTON
REGISTERED LANDSCAPE ARCHITECT
NICHOLAS HEISHMORN
CERTIFICATE NO. 978
NOT FOR CONSTRUCTION

Landscape Details

Date
December 19, 2023
Site Plan Application
Revisions

Drawn by:
BG, NM
Checked by (P.M.):
NM
Checked by (Q.C.):
NM
Project No.
Proj. No. 23-012

L3.01



1 Site Plan
1/8" = 1'-0"

Environmental Works
COMMUNITY DESIGN CENTER

402 15th Avenue East
Seattle, Washington 98112
phone: 206.329.8300
fax: 206.329.5494

GENERATIONS PLACE
Multi-Family Housing
Second Street & De Bruyn Ave
Langley, WA. 98260

SITE PLAN

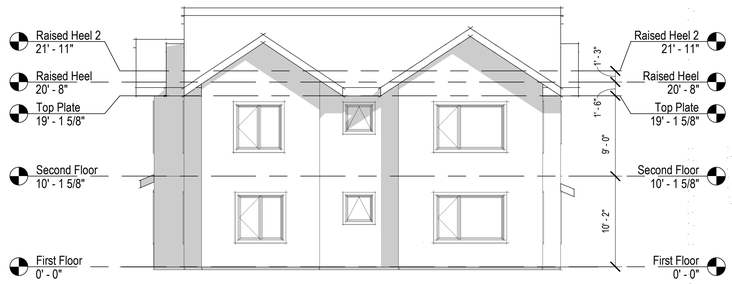
Issuance
Site Plan Application
Date
12/19/2023
Revisions

#	Date	Description

Drawn By:
EJ, CC
Checked By (P.M.):
CC
Checked By (Q.C.):
CC
Project No.
23012

4 6-Plex South Elevation

1/8" = 1'-0"

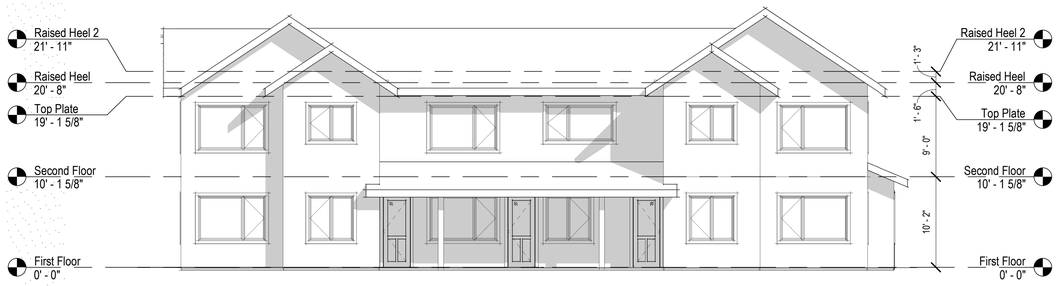


3 6-Plex North Elevation

1/8" = 1'-0"

2 6-Plex East Elevation

1/8" = 1'-0"



1 6-Plex West Elevation

1/8" = 1'-0"

Environmental Works
COMMUNITY DESIGN CENTER

402 15th Avenue East
Seattle, Washington 98112
phone: 206.329.8300
fax: 206.329.5494

GENERATIONS PLACE
Multi-Family Housing

Second Street & De Bruyn Ave
Langley, WA. 98260

6-PLEX ELEVATIONS

Issuance
Site Plan Application

Date
12/19/2023

Revisions

#	Date	Description

Drawn By:
EJ

Checked By (P.M.):
CC

Checked By (Q.C.):
CC

Project No.
23012

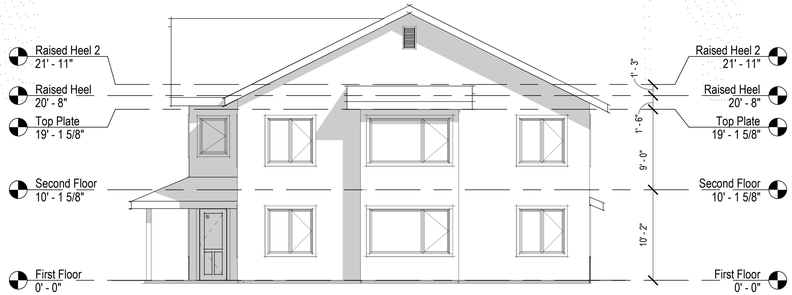
A3.01

12/8/2023 3:11:02 PM

4 South 4-Plex West Elevation

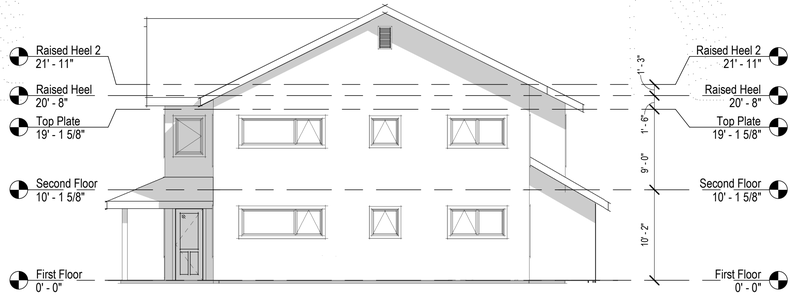
1/8" = 1'-0"

NOTE: WEST ELEVATION MIRRORED AT NORTH DUPLEX



3 South 4-Plex South Elevation

1/8" = 1'-0"



7 North 4-Plex South Elevation

1/8" = 1'-0"

6 North 4-Plex East Elevation

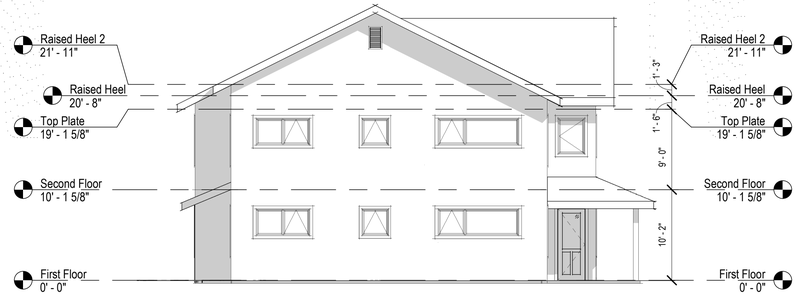
1/8" = 1'-0"

2 South 4-Plex East Elevation

1/8" = 1'-0"

5 North 4-Plex North Elevation

1/8" = 1'-0"



1 South 4-Plex North Elevation

1/8" = 1'-0"

Environmental Works
COMMUNITY DESIGN CENTER

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Seattle, Washington 98112
phone: 206.329.8300
fax: 206.329.5494

GENERATIONS PLACE
Multi-Family Housing
Second Street & De Bruyn Ave
Langley, WA. 98260

4-PLEX BUILDING ELEVATIONS

Issuance
Site Plan Application
Date
12/19/2023
Revisions

#	Date	Description

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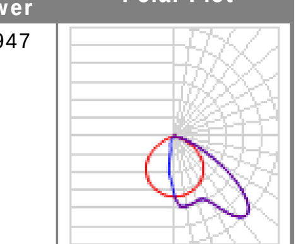
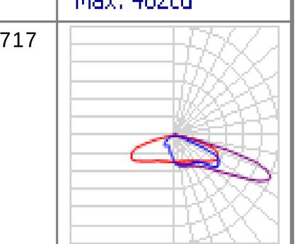
Checked By (P.M.):
CC
Checked By (Q.C.):
CC
Project No.
23012

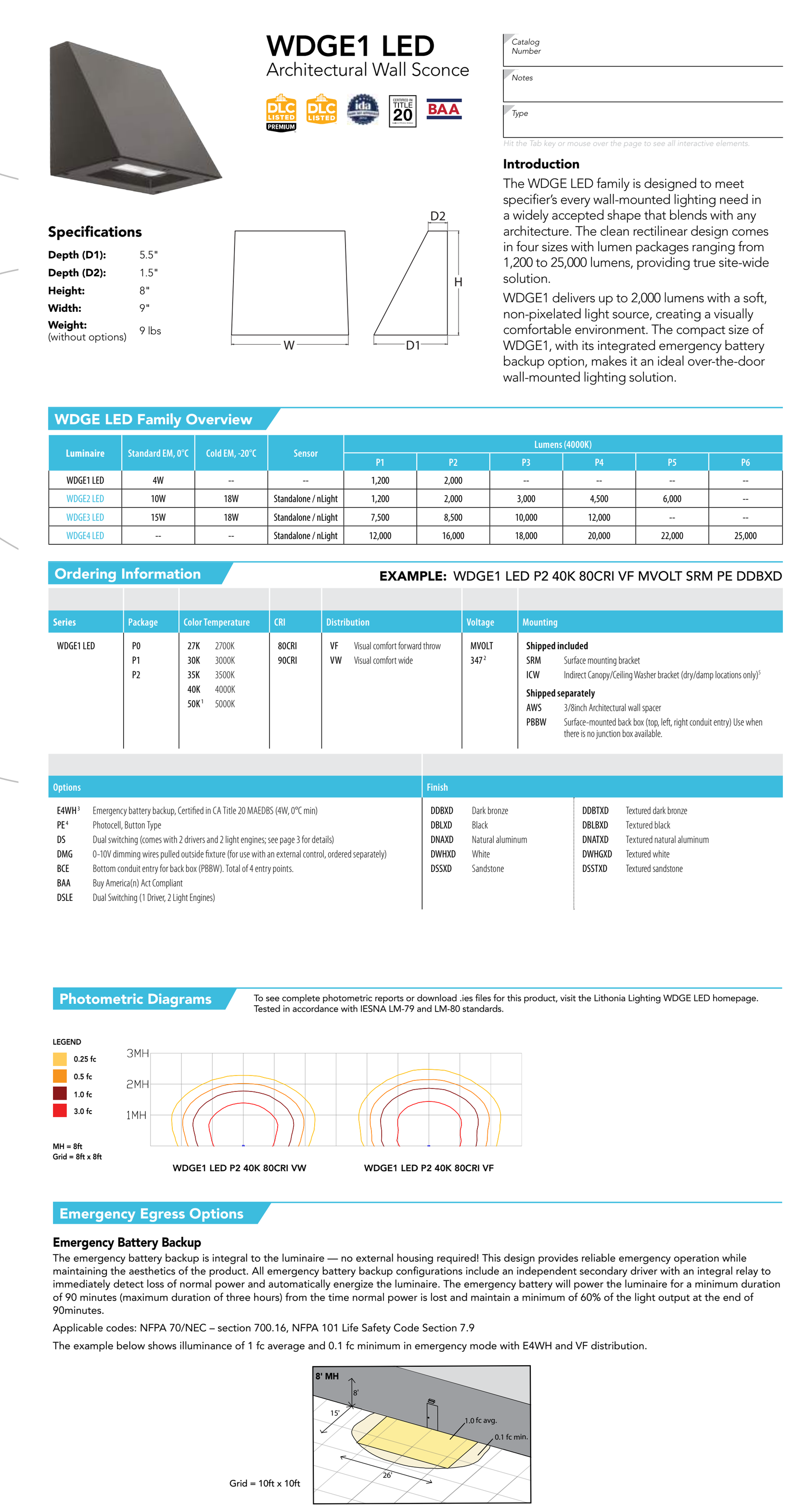
12/19/2023 1:12:41 PM

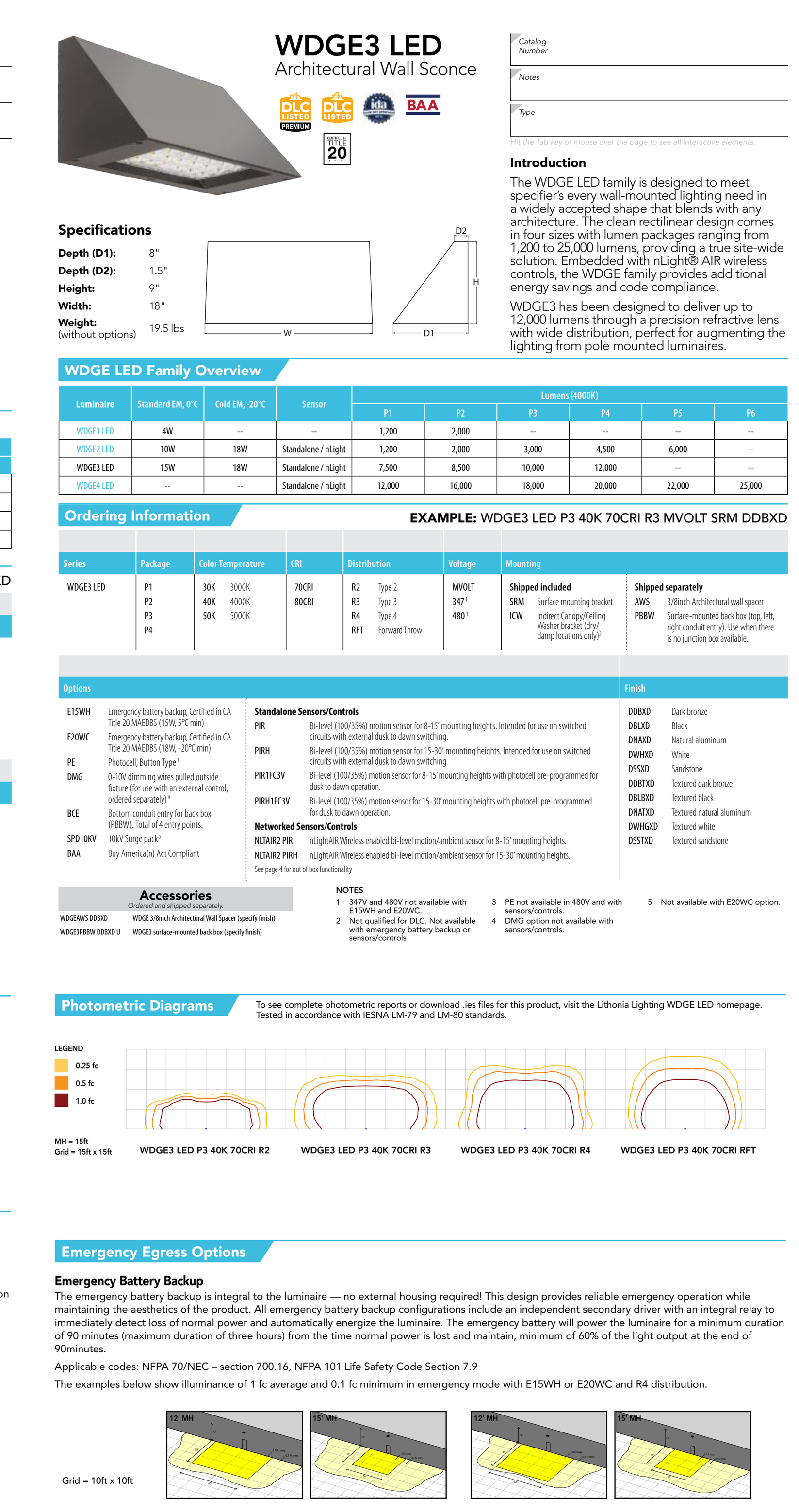
A3.02

LIGHTING PLAN

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

Schedule											
Symbol	Label	Image	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	QTY	Input Power	Polar Plot
	F		Lithonia Lighting	WDGE1 LED P0 27K 80CRI VF	WDGE1 LED WITH P0 - PERFORMANCE PACKAGE, 2700K, 80CRI, VISUAL COMFORT FORWARD OPTIC	1	693	1	10	6.7947	 Max: 482cd
	G		Lithonia Lighting	WDGE3 LED P1 70CRI R3 30K	WDGE3 LED WITH P1 - PERFORMANCE PACKAGE, 3000K, 70CRI, TYPE 3 OPTIC	1	6933	1	7	51.1717	 Max: 4809cd





HUNT Engineering Services Inc.
9560 Moran Road NE Bainbridge Is, WA 98110
Phone: 206.842.6947 Website: www.HuntEng.com

Environmental Works
COMMUNITY DESIGN CENTER
402 15th Avenue East
Seattle, Washington 98112
phone: 206.329.8300
fax: 206.329.5494

Island Roots Housing-Generations Place

2nd St & De Bruyn Ave.
Langley, WA

LIGHTING PLAN AND SCHEDULE

Date
December 19, 2023

Revisions

Drawn by:
IK
Checked by (P.M.):
JH
Checked by (Q.C.):
JH
Project No.

E-1

X:\Shared\2023 Jobs\Island Roots Housing\CAD\E-3.dwg, 12/18/2023 4:11:30 PM

STORMWATER SITE PLAN
FOR

GENERATIONS PLACE
MULTI-FAMILY PROJECT

LANGLEY, WASHINGTON

DECEMBER 18, 2023

HARMSEN

SNOHOMISH COUNTY
2822 Colby Ave, Suite 300
Everett, Washington 98201
tel: 425-252-1884 | fax: 360.805.9732

ISLAND COUNTY
840 SE 8th Avenue, Suite 102
Oak Harbor, Washington 98277
tel: 360. 675.5973 | fax: 360.675.7255

SKAGIT COUNTY
603 South First Street
Mount Vernon, Washington 98273
tel: 360. 336.9199 | fax: 360.982.2637

www.HarmsenLLC.com

MR 1: PREPARATION OF STORMWATER SITE PLANS

DRAINAGE PLAN DESCRIPTION

This Preliminary Stormwater Site Plan has been prepared for the proposed Generations Place multi-family development by Island Roots Housing in Langley Washington. The project involves the construction of 1-6 plex and 2-4 plex structures with associated parking, utilities, and frontage improvements. Figure 1: Vicinity Map depicts the location of the project.

The property as depicted on the survey consists of two tax parcels (S7345-00-02019-0 & S7345-00-02020-0) located at the southeast quadrant of 2nd Street and DeBruyn Ave and totaling 0.383 acres. The site is currently vacant and left as maintained pasture with some gravel parking to the north. Access to the property will be from DeBruyn at the southwest of the lot with a small parking lot placed there. See Figure 3: Developed Conditions for the layout.

The topographic map of the site indicates the property descends from a high of 130 feet in the southwest corner to a low of 126.5 at the northeast corner with site slopes generally ranging between 1 and 4%. See Figure 2: Existing Conditions for a graphic depiction of the current site conditions.

METHODOLOGY

The 2019 Department of Ecology Stormwater Manual as adopted by the City of Langley was used as the basis of design. The site has the following characteristics:

- The project will result in approximately 17,510 sf (0.40 ac) of new impervious area.

This requires the drainage system to meet Minimum Requirements 1-9.

SOILS DESCRIPTION

According to the geotechnical report prepared by Geotest Services, Inc, titled *Sunnyside Plat - Geotechnical Investigation* dated May 24, 2019; the soil profile generally consists of 1 foot of topsoil over weathered and then unweathered Glaciomarine Deltaic Outwash deposits consisting of silty gravely to very gravely sands.

Groundwater was encountered in some of the test pits ranging from 8.7 to 8.8 feet below surface grade. It was determined to be perched water on a layer of denser soils at depth.

Geotest determined a design infiltration rate of 8.5 in/hr based on grain size analysis.

DOWNSTREAM ANALYSIS

There are no nearby storm systems or channels. Given the nature of the soils, it is expected that most if not all of the runoff from the site is infiltrated. The proposal is to infiltrate developed runoff. As such, there is no off-site flows or analysis.

CRITICAL AREAS

There are no critical areas on or near the site.

Saratoga Creek which lies approximately 680 feet to the northwest is listed by the WA Department of Ecology on their 303d list of impaired waters. It has a Category 5 listing for Bacteria, fecal coliform.

EXISTING BASINS

The existing basin is defined by the impacts of the proposed development and existing features. Since infiltration is the proposed method of handling stormwater increases, the existing runoff rates are not used in the design but are provided here for reference. See Figure 2: Existing Conditions for a graphical delineation of the boundary which includes 2nd St and DeBruyn Ave to their centerlines as they will flow onto the site.

BASIN

In the existing conditions the 0.55 acre basin has the following characteristics:

Forest A	0.46 ac	
Impervious Road	0.09 ac	(existing impervious to center of roadway, collected by new curb)

The existing site flow frequency runoff rates for this basin are:

2 year	0.03 cfs
10 year	0.05 cfs
50 year	0.07 cfs

DEVELOPED BASINS

The developed basin is divided into several sub-basins, each tributary to an individual infiltration trench See Figure 3: Developed Conditions for a graphic delineation of the boundary. Also see WWHM2012 report in Appendix B.

West Frontage

In the developed conditions the 0.10 acre basin has the following characteristics:

Lawn A	0.01 ac
Roadway	0.09 ac

Runoff from the basin is collected in a catch basin and discharged to an infiltration trench, see MR 7 for stormwater detention sizing.

North Frontage

In the developed conditions the 0.14 acre basin has the following characteristics:

Lawn A	0.03 ac
Roadway	0.11 ac

Runoff from the basin is collected in a catch basin and discharged to an infiltration trench, see MR 7 for stormwater detention sizing.

Parking Basin
In the developed conditions the 0.07 acre basin has the following characteristics:

Roadway	0.07 ac

Runoff from the basin is collected in a catch basin and discharged to an infiltration trench, see MR 7 for stormwater detention sizing.

Roofs & Courtyard
In the developed conditions the 0.0.24 acre basin has the following characteristics:

Lawn A	0.02 ac
Roofs/Imp	0.22 ac

Runoff from the basin is collected in roof drains and yard drains and discharged to an infiltration trench, see MR 7 for stormwater detention sizing.

MR 2: SWPPP NARRATIVE

With less than 1 acre of disturbance, a Department of Ecology Construction Stormwater Permit is not required. For permit review, the DOE Template for SWPPP Narrative will be used.

SWPPP systems will follow typical measures including bot not limited to:

- Clearing Limits
- Silt Fence
- Stabilized Construction Entrance
- Construction Parking Area Stabilation
- Temporary Infiltration Basins
- Inlet Protection
- Cover Practices for bare ground and stockpiles

MR 3: WATER POLLUTION SOURCE CONTROL

Source control will consist of both construction BMP's and long term source controls. The temporary measures are included in the SWPPP. Permanent Source Control will be as follows:

- BMP S454 Preventative Maintenance/Good Housekeeping
- BMP S457 Inspections
- BMP S417 Maintenance of Stormwater Drainage and Treatment Systems
- BMP S411 Landscaping and Lawn/Vegetation Management
- BMP S435 Pesticides and an Integrated Pest Management Program
- BMP S450 Irrigation

MR 4: PRESERVATION OF NATURAL DRAINAGE

The site generally sheetflows to the northeast. The soils are relatively free draining and there is little existing runoff. There are no storm systems or other defined drainage paths in the area.

In the developed condition, the stormwater of the development will be infiltrated based on the rates described in the geotechnical report.

The projet will have no impact on Saratoga Creek's Cat 5 listing of Bacterial – Fecal Coliform. The site is not a producer, infiltration will be used, and the surface flow away from the creek.

The project is not located in the City of Marysville. Please revise all references as such.

MR 5: ON-SITE STORMWATER MANAGEMENT

As the site is located in the City of Marysville and will be required to meet MR #1-9, it can achieve MR 5 requirement either through the use of List #2 or by meeting the Low Impact Development Performance Standard. The Low Impact Development Performance Standard will be met through infiltration. Those systems are detailed in MR 7 Flow Control. The site landscaped areas will also need to meet BMP T5.13 detailed below.

LAWN AND LANDSCAPED AREAS:

BMP T5.13 Post Construction Soil Quality and Depth will be implemented on disturbed and landscaped areas. It is expected that most disturbed soil will be covered with new impervious. Select site topsoil will be used for those small areas where pervious surfaced need restoration.

MR 6: RUNOFF TREATMENT REQUIREMENTS

The total new and replaced impervious that is subject to vehicle traffic is 4,570 sf. With less than 5,000 sf of pollution generating impervious surface the site does not require runoff treatment.

Turndown elbows will be used in the collecting catchbasins in taffic areas to separate out oils and collect debris.

MR 7: FLOW CONTROL

The project is required to provide flow control to mitigate the increases in stormwater runoff. The site is condusive to infiltration based on the geotechnical report which gives design infiltration rates of 8.5 in/hr.

West Frontage

The following data summarizes the sizing of the infiltration trench:

Trench Width	3.5 feet
Trench Length	40 feet
Trench Depth	2.0 feet

Percentage Infiltrated	99.99%

The trench will be located under the sidewalk along the north frontage improvements.

North Frontage
The following data summarizes the sizing of the infiltration trench:

Trench Width	3.5 feet
Trench Length	60 feet
Trench Depth	2.0 feet
Percentage Infiltrated	100%

The trench will be located under the sidewalk along the north frontage improvements to the east of the West Frontage Trench.

Parking Lot
The following data summarizes the sizing of the infiltration trench:

Trench Width	5 feet
Trench Length	25 feet
Trench Depth	2.0 feet
Percentage Infiltrated	100%

The trench will be located under the parking lot.

Roof and Courtyard
The following data summarizes the sizing of the infiltration trench:

Trench Width	5 feet
Trench Length	70 feet
Trench Depth	2.0 feet
Percentage Infiltrated	100%

The trench will be located under the sidewalk in the central courtyard.

All trenches were limited to 2 foot in depth to keep the systems shallow. With 1.5 foot of cover, the bottom of the trenches will be established at 3.5 feet below the surface.

For additional information see WWHM output in Appendix B.

MR 8: WETLANDS PROTECTION

There are no critical areas on or near the site.

MR 9: OPERATION AND MAINTENANCE MANUAL

An Operations and Maintenance Manual will be prepared with the final construction permit documents.

FIGURES

FIGURE 1 - VICINITY MAP

SCALE: 1" = 2000'

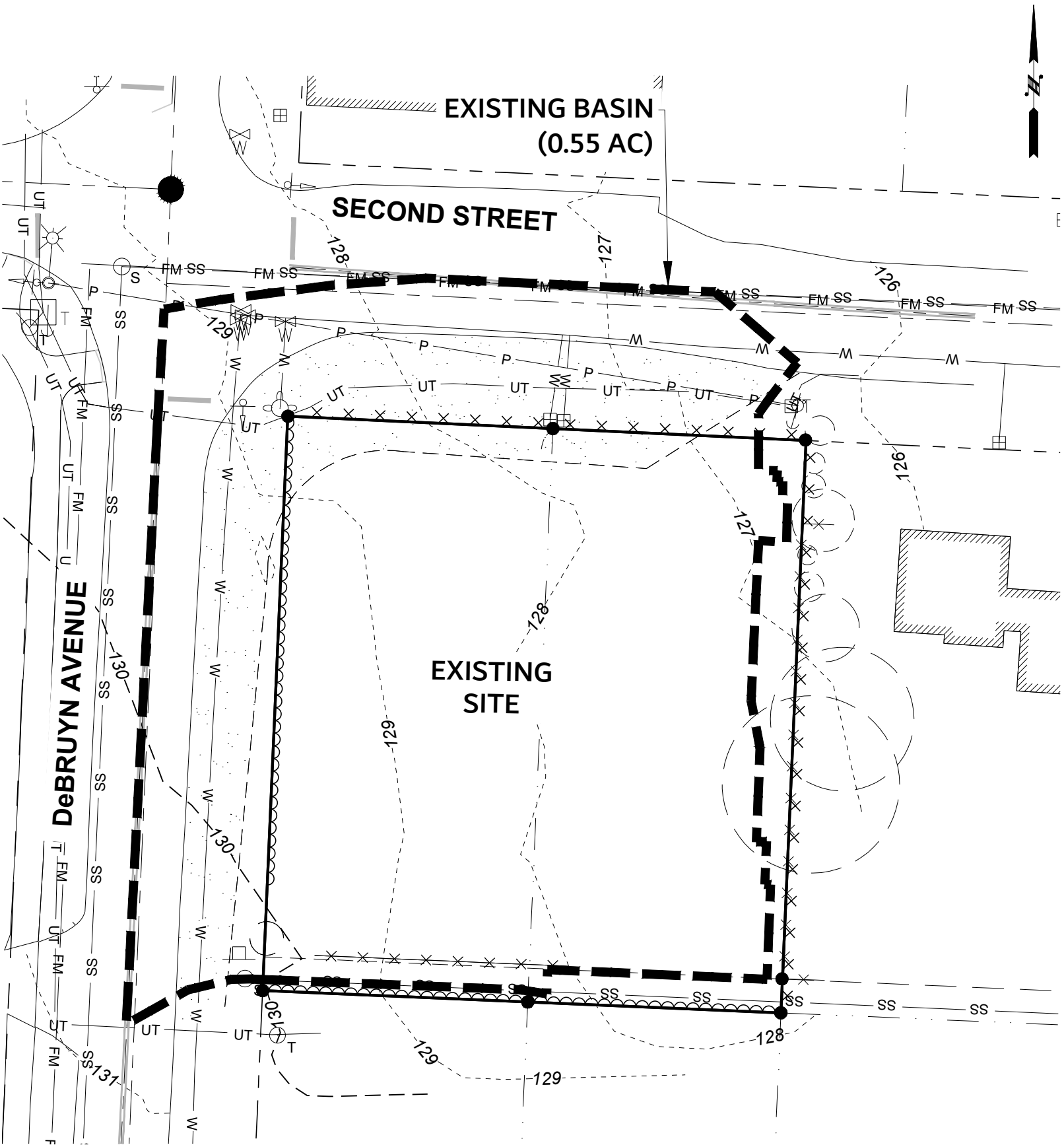


FIGURE 2 - EXISTING CONDITIONS

SCALE: 1" = 30'

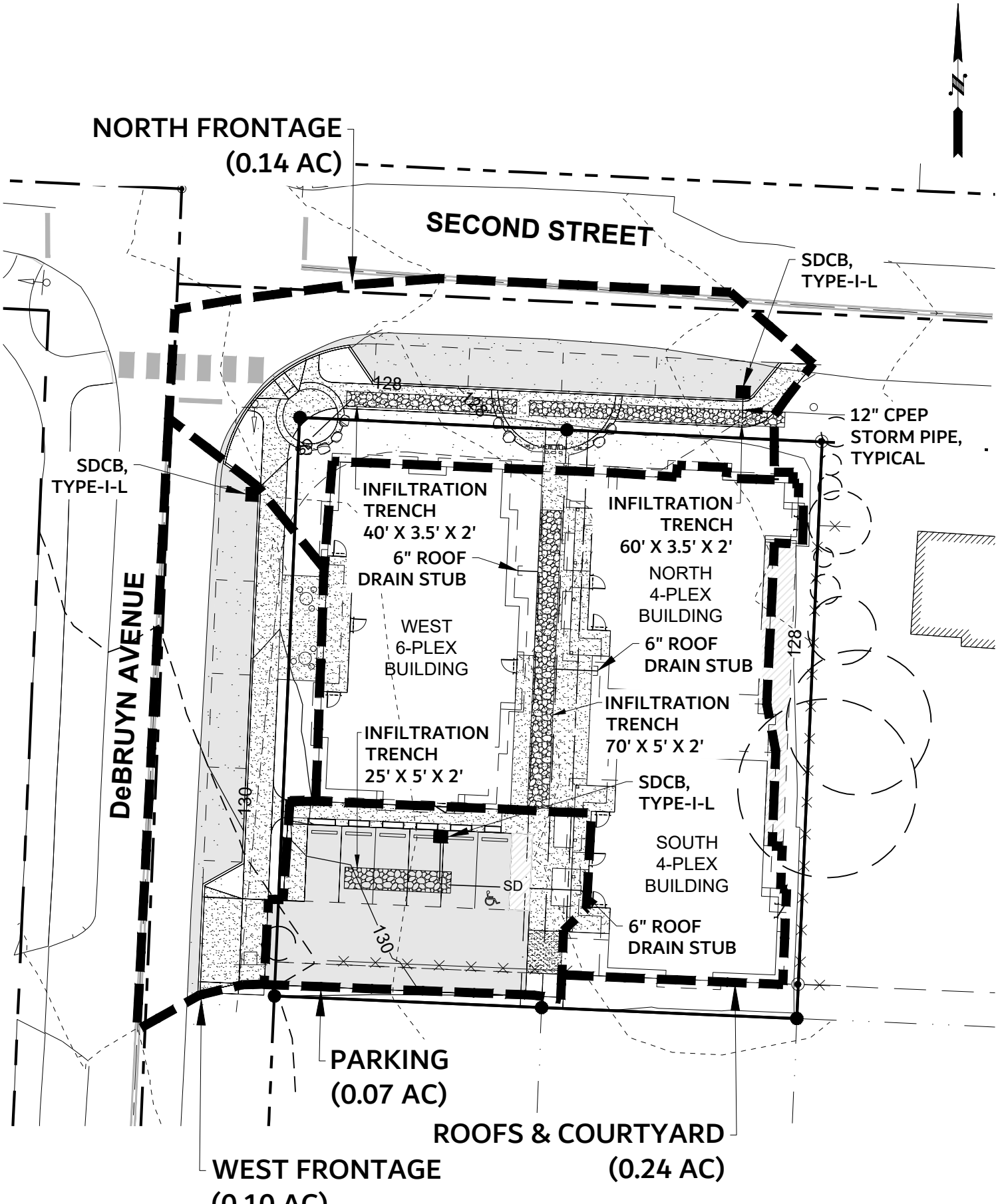


FIGURE 3 - DEVELOPED CONDITIONS

SCALE: 1" = 30'

WWHM CALCULATIONS

WWHM2012
PROJECT REPORT

Project Name: Goosefoot Roof Infiltration
Site Name: Goosefoot
Site Address:
City :
Report Date: 12/13/2023
Gage : Everett
Data Start : 1948/10/01
Data End : 2009/09/30
Precip Scale: 0.80
Version Date: 2021/08/18
Version : 4.2.18

Low Flow Threshold for POC 1 : 50 Percent of the 2 Year

High Flow Threshold for POC 1: 50 year

PREDEVELOPED LAND USE

Name : Basin 1
Bypass: No

GroundWater: No

Pervious Land Use	acre
A B, Forest, Flat	.46
Pervious Total	**0.46**

Impervious Land Use	acre
ROADS FLAT	0.09
Impervious Total	**0.09**
Basin Total	**0.55**

Element Flows To:

Surface	Interflow	Groundwater

MITIGATED LAND USE

Name : West Frontage
Bypass: No

GroundWater: No

Pervious Land Use	acre
A B, Lawn, Flat	.01
Pervious Total	0.01

Impervious Land Use	acre
ROADS FLAT	0.09
Impervious Total	0.09
Basin Total	0.1

Element Flows To:

Surface	Interflow	Groundwater
Gravel Trench Bed 1	Gravel Trench Bed 1	

Name : Gravel Trench Bed 1
Bottom Length: 40.00 ft.
Bottom Width: 3.50 ft.
Trench bottom slope 1: 0 To 1
Trench Left side slope 0: 0 To 1
Trench right side slope 2: 0 To 1
Material thickness of first layer: 3
Pour Space of material for first layer: 0.35
Material thickness of second layer: 0
Pour Space of material for second layer: 0
Material thickness of third layer: 0
Pour Space of material for third layer: 0
Infiltration On
Infiltration rate: 8.5
Infiltration safety factor: 1
Total Volume Infiltrated (ac-ft.): 10.194
Total Volume Through Riser (ac-ft.): 0.001
Total Volume Through Facility (ac-ft.): 10.195
Percent Infiltrated: 99.99
Total Precip Applied to Facility: 0
Total Evap From Facility: 0
Discharge Structure
Riser Height: 2 ft.
Riser Diameter: 8 in.

The plans show an infiltration trench with a gravel layer of 2 feet not 3 feet as modeled. Please revise for consistency.

Element Flows To:

Outlet 1	Outlet 2

Gravel Trench Bed Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.003	0.000	0.000	0.000

0.0333	0.003	0.000	0.000	0.027
0.0667	0.003	0.000	0.000	0.027
0.1000	0.003	0.000	0.000	0.027
0.1333	0.003	0.000	0.000	0.027
0.1667	0.003	0.000	0.000	0.027
0.2000	0.003	0.000	0.000	0.027
0.2333	0.003	0.000	0.000	0.027
0.2667	0.003	0.000	0.000	0.027
0.3000	0.003	0.000	0.000	0.027
0.3333	0.003	0.000	0.000	0.027
0.3667	0.003	0.000	0.000	0.027
0.4000	0.003	0.000	0.000	0.027
0.4333	0.003	0.000	0.000	0.027
0.4667	0.003	0.000	0.000	0.027
0.5000	0.003	0.000	0.000	0.027
0.5333	0.003	0.000	0.000	0.027
0.5667	0.003	0.000	0.000	0.027
0.6000	0.003	0.000	0.000	0.027
0.6333	0.003	0.000	0.000	0.027
0.6667	0.003	0.000	0.000	0.027
0.7000	0.003	0.000	0.000	0.027
0.7333	0.003	0.000	0.000	0.027
0.7667	0.003	0.000	0.000	0.027
0.8000	0.003	0.000	0.000	0.027
0.8333	0.003	0.000	0.000	0.027
0.8667	0.003	0.001	0.000	0.027
0.9000	0.003	0.001	0.000	0.027
0.9333	0.003	0.001	0.000	0.027
0.9667	0.003	0.001	0.000	0.027
1.0000	0.003	0.001	0.000	0.027
1.0333	0.003	0.001	0.000	0.027
1.0667	0.003	0.001	0.000	0.027
1.1000	0.003	0.001	0.000	0.027
1.1333	0.003	0.001	0.000	0.027
1.1667	0.003	0.001	0.000	0.027
1.2000	0.003	0.001	0.000	0.027
1.2333	0.003	0.001	0.000	0.027
1.2667	0.003	0.001	0.000	0.027
1.3000	0.003	0.001	0.000	0.027
1.3333	0.003	0.001	0.000	0.027
1.3667	0.003	0.001	0.000	0.027
1.4000	0.003	0.001	0.000	0.027
1.4333	0.003	0.001	0.000	0.027
1.4667	0.003	0.001	0.000	0.027
1.5000	0.003	0.001	0.000	0.027
1.5333	0.003	0.001	0.000	0.027
1.5667	0.003	0.001	0.000	0.027
1.6000	0.003	0.001	0.000	0.027
1.6333	0.003	0.001	0.000	0.027
1.6667	0.003	0.001	0.000	0.027
1.7000	0.003	0.001	0.000	0.027
1.7333	0.003	0.001	0.000	0.027
1.7667	0.003	0.002	0.000	0.027
1.8000	0.003	0.002	0.000	0.027
1.8333	0.003	0.002	0.000	0.027
1.8667	0.003	0.002	0.000	0.027
1.9000	0.003	0.002	0.000	0.027

1.9333	0.003	0.002	0.000	0.027
1.9667	0.003	0.002	0.000	0.027
2.0000	0.003	0.002	0.000	0.027
2.0333	0.003	0.002	0.043	0.027
2.0667	0.003	0.002	0.121	0.027
2.1000	0.003	0.002	0.219	0.027
2.1333	0.003	0.002	0.329	0.027
2.1667	0.003	0.002	0.441	0.027
2.2000	0.003	0.002	0.547	0.027
2.2333	0.003	0.002	0.639	0.027
2.2667	0.003	0.002	0.711	0.027
2.3000	0.003	0.002	0.762	0.027
2.3333	0.003	0.002	0.808	0.027
2.3667	0.003	0.002	0.847	0.027
2.4000	0.003	0.002	0.885	0.027
2.4333	0.003	0.002	0.921	0.027
2.4667	0.003	0.002	0.956	0.027
2.5000	0.003	0.002	0.989	0.027
2.5333	0.003	0.002	1.022	0.027
2.5667	0.003	0.002	1.053	0.027
2.6000	0.003	0.002	1.084	0.027
2.6333	0.003	0.003	1.114	0.027
2.6667	0.003	0.003	1.143	0.027
2.7000	0.003	0.003	1.171	0.027
2.7333	0.003	0.003	1.198	0.027
2.7667	0.003	0.003	1.225	0.027
2.8000	0.003	0.003	1.252	0.027
2.8333	0.003	0.003	1.277	0.027
2.8667	0.003	0.003	1.303	0.027
2.9000	0.003	0.003	1.328	0.027
2.9333	0.003	0.003	1.352	0.027
2.9667	0.003	0.003	1.376	0.027
3.0000	0.003	0.003	1.399	0.027

Name : North Frontage
Bypass: No

GroundWater: No

Pervious Land Use	**acre**
A B, Lawn, Flat	**.03**
Pervious Total	**0.03**

Impervious Land Use	**acre**
ROADS FLAT	**0.11**
Impervious Total	**0.11**
Basin Total	**0.14**

Element Flows To:

Surface	**Interflow**	**Groundwater**

Name : Gravel Trench Bed 2
Bottom Length: 60.00 ft.
Bottom Width: 3.50 ft.
Trench bottom slope 1: 0 To 1
Trench Left side slope 0: 0 To 1
Trench right side slope 2: 0 To 1
Material thickness of first layer: 3
Pour Space of material for first layer: 0.35
Material thickness of second layer: 0
Pour Space of material for second layer: 0
Material thickness of third layer: 0
Pour Space of material for third layer: 0
Infiltration On
Infiltration rate: 8.5
Infiltration safety factor: 1
Total Volume Infiltrated (ac-ft.): 12.534
Total Volume Through Riser (ac-ft.): 0
Total Volume Through Facility (ac-ft.): 12.534
Percent Infiltrated: 100
Total Precip Applied to Facility: 0
Total Evap From Facility: 0
Discharge Structure
Riser Height: 2 ft.
Riser Diameter: 8 in.

Element Flows To:
Outlet 1 **Outlet 2**

Gravel Trench Bed Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.004	0.000	0.000	0.000
0.0333	0.004	0.000	0.000	0.041
0.0667	0.004	0.000	0.000	0.041
0.1000	0.004	0.000	0.000	0.041
0.1333	0.004	0.000	0.000	0.041
0.1667	0.004	0.000	0.000	0.041
0.2000	0.004	0.000	0.000	0.041
0.2333	0.004	0.000	0.000	0.041
0.2667	0.004	0.000	0.000	0.041
0.3000	0.004	0.000	0.000	0.041
0.3333	0.004	0.000	0.000	0.041
0.3667	0.004	0.000	0.000	0.041
0.4000	0.004	0.000	0.000	0.041
0.4333	0.004	0.000	0.000	0.041
0.4667	0.004	0.000	0.000	0.041
0.5000	0.004	0.000	0.000	0.041
0.5333	0.004	0.000	0.000	0.041
0.5667	0.004	0.001	0.000	0.041
0.6000	0.004	0.001	0.000	0.041

0.6333	0.004	0.001	0.000	0.041
0.6667	0.004	0.001	0.000	0.041
0.7000	0.004	0.001	0.000	0.041
0.7333	0.004	0.001	0.000	0.041
0.7667	0.004	0.001	0.000	0.041
0.8000	0.004	0.001	0.000	0.041
0.8333	0.004	0.001	0.000	0.041
0.8667	0.004	0.001	0.000	0.041
0.9000	0.004	0.001	0.000	0.041
0.9333	0.004	0.001	0.000	0.041
0.9667	0.004	0.001	0.000	0.041
1.0000	0.004	0.001	0.000	0.041
1.0333	0.004	0.001	0.000	0.041
1.0667	0.004	0.001	0.000	0.041
1.1000	0.004	0.001	0.000	0.041
1.1333	0.004	0.001	0.000	0.041
1.1667	0.004	0.002	0.000	0.041
1.2000	0.004	0.002	0.000	0.041
1.2333	0.004	0.002	0.000	0.041
1.2667	0.004	0.002	0.000	0.041
1.3000	0.004	0.002	0.000	0.041
1.3333	0.004	0.002	0.000	0.041
1.3667	0.004	0.002	0.000	0.041
1.4000	0.004	0.002	0.000	0.041
1.4333	0.004	0.002	0.000	0.041
1.4667	0.004	0.002	0.000	0.041
1.5000	0.004	0.002	0.000	0.041
1.5333	0.004	0.002	0.000	0.041
1.5667	0.004	0.002	0.000	0.041
1.6000	0.004	0.002	0.000	0.041
1.6333	0.004	0.002	0.000	0.041
1.6667	0.004	0.002	0.000	0.041
1.7000	0.004	0.002	0.000	0.041
1.7333	0.004	0.002	0.000	0.041
1.7667	0.004	0.003	0.000	0.041
1.8000	0.004	0.003	0.000	0.041
1.8333	0.004	0.003	0.000	0.041
1.8667	0.004	0.003	0.000	0.041
1.9000	0.004	0.003	0.000	0.041
1.9333	0.004	0.003	0.000	0.041
1.9667	0.004	0.003	0.000	0.041
2.0000	0.004	0.003	0.000	0.041
2.0333	0.004	0.003	0.043	0.041
2.0667	0.004	0.003	0.121	0.041
2.1000	0.004	0.003	0.219	0.041
2.1333	0.004	0.003	0.329	0.041
2.1667	0.004	0.003	0.441	0.041
2.2000	0.004	0.003	0.547	0.041
2.2333	0.004	0.003	0.639	0.041
2.2667	0.004	0.003	0.711	0.041
2.3000	0.004	0.003	0.762	0.041
2.3333	0.004	0.003	0.808	0.041
2.3667	0.004	0.004	0.847	0.041
2.4000	0.004	0.004	0.885	0.041
2.4333	0.004	0.004	0.921	0.041
2.4667	0.004	0.004	0.956	0.041
2.5000	0.004	0.004	0.989	0.041

2.5333	0.004	0.004	1.022	0.041
2.5667	0.004	0.004	1.053	0.041
2.6000	0.004	0.004	1.084	0.041
2.6333	0.004	0.004	1.114	0.041
2.6667	0.004	0.004	1.143	0.041
2.7000	0.004	0.004	1.171	0.041
2.7333	0.004	0.004	1.198	0.041
2.7667	0.004	0.004	1.225	0.041
2.8000	0.004	0.004	1.252	0.041
2.8333	0.004	0.004	1.277	0.041
2.8667	0.004	0.004	1.303	0.041
2.9000	0.004	0.004	1.328	0.041
2.9333	0.004	0.004	1.352	0.041
2.9667	0.004	0.005	1.376	0.041
3.0000	0.004	0.005	1.399	0.041

Name : Parking
Bypass: No

GroundWater: No

Pervious Land Use	**acre**
Pervious Total	**0**

Impervious Land Use	**acre**
ROADS FLAT	**0.07**
Impervious Total	**0.07**
Basin Total	**0.07**

Element Flows To:

Surface	**Interflow**	**Groundwater**
Gravel Trench Bed 3	Gravel Trench Bed 3	

Name : Gravel Trench Bed 3
Bottom Length: 25.00 ft.
Bottom Width: 5.00 ft.
Trench bottom slope 1: 0 To 1
Trench Left side slope 0: 0 To 1
Trench right side slope 2: 0 To 1
Material thickness of first layer: 3
Pour Space of material for first layer: 0.35
Material thickness of second layer: 0
Pour Space of material for second layer: 0
Material thickness of third layer: 0
Pour Space of material for third layer: 0
Infiltration On
Infiltration rate: 8.5
Infiltration safety factor: 1

Total Volume Infiltrated (ac-ft.): 7.861
Total Volume Through Riser (ac-ft.): 0
Total Volume Through Facility (ac-ft.): 7.861
Percent Infiltrated: 100
Total Precip Applied to Facility: 0
Total Evap From Facility: 0
Discharge Structure
Riser Height: 2 ft.
Riser Diameter: 8 in.

Element Flows To:
Outlet 1 **Outlet 2**

Gravel Trench Bed Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.002	0.000	0.000	0.000
0.0333	0.002	0.000	0.000	0.024
0.0667	0.002	0.000	0.000	0.024
0.1000	0.002	0.000	0.000	0.024
0.1333	0.002	0.000	0.000	0.024
0.1667	0.002	0.000	0.000	0.024
0.2000	0.002	0.000	0.000	0.024
0.2333	0.002	0.000	0.000	0.024
0.2667	0.002	0.000	0.000	0.024
0.3000	0.002	0.000	0.000	0.024
0.3333	0.002	0.000	0.000	0.024
0.3667	0.002	0.000	0.000	0.024
0.4000	0.002	0.000	0.000	0.024
0.4333	0.002	0.000	0.000	0.024
0.4667	0.002	0.000	0.000	0.024
0.5000	0.002	0.000	0.000	0.024
0.5333	0.002	0.000	0.000	0.024
0.5667	0.002	0.000	0.000	0.024
0.6000	0.002	0.000	0.000	0.024
0.6333	0.002	0.000	0.000	0.024
0.6667	0.002	0.000	0.000	0.024
0.7000	0.002	0.000	0.000	0.024
0.7333	0.002	0.000	0.000	0.024
0.7667	0.002	0.000	0.000	0.024
0.8000	0.002	0.000	0.000	0.024
0.8333	0.002	0.000	0.000	0.024
0.8667	0.002	0.000	0.000	0.024
0.9000	0.002	0.000	0.000	0.024
0.9333	0.002	0.000	0.000	0.024
0.9667	0.002	0.001	0.000	0.024
1.0000	0.002	0.001	0.000	0.024
1.0333	0.002	0.001	0.000	0.024
1.0667	0.002	0.001	0.000	0.024
1.1000	0.002	0.001	0.000	0.024
1.1333	0.002	0.001	0.000	0.024
1.1667	0.002	0.001	0.000	0.024
1.2000	0.002	0.001	0.000	0.024
1.2333	0.002	0.001	0.000	0.024

1.2667	0.002	0.001	0.000	0.024
1.3000	0.002	0.001	0.000	0.024
1.3333	0.002	0.001	0.000	0.024
1.3667	0.002	0.001	0.000	0.024
1.4000	0.002	0.001	0.000	0.024
1.4333	0.002	0.001	0.000	0.024
1.4667	0.002	0.001	0.000	0.024
1.5000	0.002	0.001	0.000	0.024
1.5333	0.002	0.001	0.000	0.024
1.5667	0.002	0.001	0.000	0.024
1.6000	0.002	0.001	0.000	0.024
1.6333	0.002	0.001	0.000	0.024
1.6667	0.002	0.001	0.000	0.024
1.7000	0.002	0.001	0.000	0.024
1.7333	0.002	0.001	0.000	0.024
1.7667	0.002	0.001	0.000	0.024
1.8000	0.002	0.001	0.000	0.024
1.8333	0.002	0.001	0.000	0.024
1.8667	0.002	0.001	0.000	0.024
1.9000	0.002	0.001	0.000	0.024
1.9333	0.002	0.001	0.000	0.024
1.9667	0.002	0.002	0.000	0.024
2.0000	0.002	0.002	0.000	0.024
2.0333	0.002	0.002	0.043	0.024
2.0667	0.002	0.002	0.121	0.024
2.1000	0.002	0.002	0.219	0.024
2.1333	0.002	0.002	0.329	0.024
2.1667	0.002	0.002	0.441	0.024
2.2000	0.002	0.002	0.547	0.024
2.2333	0.002	0.002	0.639	0.024
2.2667	0.002	0.002	0.711	0.024
2.3000	0.002	0.002	0.762	0.024
2.3333	0.002	0.002	0.808	0.024
2.3667	0.002	0.002	0.847	0.024
2.4000	0.002	0.002	0.885	0.024
2.4333	0.002	0.002	0.921	0.024
2.4667	0.002	0.002	0.956	0.024
2.5000	0.002	0.002	0.989	0.024
2.5333	0.002	0.002	1.022	0.024
2.5667	0.002	0.002	1.053	0.024
2.6000	0.002	0.002	1.084	0.024
2.6333	0.002	0.002	1.114	0.024
2.6667	0.002	0.002	1.143	0.024
2.7000	0.002	0.002	1.171	0.024
2.7333	0.002	0.002	1.198	0.024
2.7667	0.002	0.002	1.225	0.024
2.8000	0.002	0.002	1.252	0.024
2.8333	0.002	0.002	1.277	0.024
2.8667	0.002	0.002	1.303	0.024
2.9000	0.002	0.002	1.328	0.024
2.9333	0.002	0.002	1.352	0.024
2.9667	0.002	0.003	1.376	0.024
3.0000	0.002	0.003	1.399	0.024

Name : Roofs
Bypass: No

GroundWater: No

Pervious Land Use	acre
A B, Lawn, Flat	.02
Pervious Total	0.02

Impervious Land Use	acre
ROOF TOPS FLAT	0.22
Impervious Total	0.22
Basin Total	0.24

Element Flows To:

Surface	Interflow	Groundwater
Gravel Trench Bed 4	Gravel Trench Bed 4	

Name : Gravel Trench Bed 4
Bottom Length: 70.00 ft.
Bottom Width: 5.00 ft.
Trench bottom slope 1: 0 To 1
Trench Left side slope 0: 0 To 1
Trench right side slope 2: 0 To 1
Material thickness of first layer: 3
Pour Space of material for first layer: 0.35
Material thickness of second layer: 0
Pour Space of material for second layer: 0
Material thickness of third layer: 0
Pour Space of material for third layer: 0
Infiltration On
Infiltration rate: 8.5
Infiltration safety factor: 1
Total Volume Infiltrated (ac-ft.): 25.378
Total Volume Through Riser (ac-ft.): 0.001
Total Volume Through Facility (ac-ft.): 25.379
Percent Infiltrated: 100
Total Precip Applied to Facility: 0
Total Evap From Facility: 0
Discharge Structure
Riser Height: 2 ft.
Riser Diameter: 8 in.

Element Flows To:

Outlet 1	Outlet 2

Gravel Trench Bed Hydraulic Table

Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.008	0.000	0.000	0.000
0.0333	0.008	0.000	0.000	0.068
0.0667	0.008	0.000	0.000	0.068
0.1000	0.008	0.000	0.000	0.068
0.1333	0.008	0.000	0.000	0.068
0.1667	0.008	0.000	0.000	0.068
0.2000	0.008	0.000	0.000	0.068
0.2333	0.008	0.000	0.000	0.068
0.2667	0.008	0.000	0.000	0.068
0.3000	0.008	0.000	0.000	0.068
0.3333	0.008	0.000	0.000	0.068
0.3667	0.008	0.001	0.000	0.068
0.4000	0.008	0.001	0.000	0.068
0.4333	0.008	0.001	0.000	0.068
0.4667	0.008	0.001	0.000	0.068
0.5000	0.008	0.001	0.000	0.068
0.5333	0.008	0.001	0.000	0.068
0.5667	0.008	0.001	0.000	0.068
0.6000	0.008	0.001	0.000	0.068
0.6333	0.008	0.001	0.000	0.068
0.6667	0.008	0.001	0.000	0.068
0.7000	0.008	0.002	0.000	0.068
0.7333	0.008	0.002	0.000	0.068
0.7667	0.008	0.002	0.000	0.068
0.8000	0.008	0.002	0.000	0.068
0.8333	0.008	0.002	0.000	0.068
0.8667	0.008	0.002	0.000	0.068
0.9000	0.008	0.002	0.000	0.068
0.9333	0.008	0.002	0.000	0.068
0.9667	0.008	0.002	0.000	0.068
1.0000	0.008	0.002	0.000	0.068
1.0333	0.008	0.002	0.000	0.068
1.0667	0.008	0.003	0.000	0.068
1.1000	0.008	0.003	0.000	0.068
1.1333	0.008	0.003	0.000	0.068
1.1667	0.008	0.003	0.000	0.068
1.2000	0.008	0.003	0.000	0.068
1.2333	0.008	0.003	0.000	0.068
1.2667	0.008	0.003	0.000	0.068
1.3000	0.008	0.003	0.000	0.068
1.3333	0.008	0.003	0.000	0.068
1.3667	0.008	0.003	0.000	0.068
1.4000	0.008	0.003	0.000	0.068
1.4333	0.008	0.004	0.000	0.068
1.4667	0.008	0.004	0.000	0.068
1.5000	0.008	0.004	0.000	0.068
1.5333	0.008	0.004	0.000	0.068
1.5667	0.008	0.004	0.000	0.068
1.6000	0.008	0.004	0.000	0.068
1.6333	0.008	0.004	0.000	0.068
1.6667	0.008	0.004	0.000	0.068
1.7000	0.008	0.004	0.000	0.068
1.7333	0.008	0.004	0.000	0.068
1.7667	0.008	0.005	0.000	0.068
1.8000	0.008	0.005	0.000	0.068
1.8333	0.008	0.005	0.000	0.068

1.8667	0.008	0.005	0.000	0.068
1.9000	0.008	0.005	0.000	0.068
1.9333	0.008	0.005	0.000	0.068
1.9667	0.008	0.005	0.000	0.068
2.0000	0.008	0.005	0.000	0.068
2.0333	0.008	0.005	0.043	0.068
2.0667	0.008	0.005	0.121	0.068
2.1000	0.008	0.005	0.219	0.068
2.1333	0.008	0.006	0.329	0.068
2.1667	0.008	0.006	0.441	0.068
2.2000	0.008	0.006	0.547	0.068
2.2333	0.008	0.006	0.639	0.068
2.2667	0.008	0.006	0.711	0.068
2.3000	0.008	0.006	0.762	0.068
2.3333	0.008	0.006	0.808	0.068
2.3667	0.008	0.006	0.847	0.068
2.4000	0.008	0.006	0.885	0.068
2.4333	0.008	0.006	0.921	0.068
2.4667	0.008	0.006	0.956	0.068
2.5000	0.008	0.007	0.989	0.068
2.5333	0.008	0.007	1.022	0.068
2.5667	0.008	0.007	1.053	0.068
2.6000	0.008	0.007	1.084	0.068
2.6333	0.008	0.007	1.114	0.068
2.6667	0.008	0.007	1.143	0.068
2.7000	0.008	0.007	1.171	0.068
2.7333	0.008	0.007	1.198	0.068
2.7667	0.008	0.007	1.225	0.068
2.8000	0.008	0.007	1.252	0.068
2.8333	0.008	0.008	1.277	0.068
2.8667	0.008	0.008	1.303	0.068
2.9000	0.008	0.008	1.328	0.068
2.9333	0.008	0.008	1.352	0.068
2.9667	0.008	0.008	1.376	0.068
3.0000	0.008	0.008	1.399	0.068

ANALYSIS RESULTS

Stream Protection Duration

Predeveloped Landuse Totals for POC #1
Total Pervious Area:0.46
Total Impervious Area:0.09

Mitigated Landuse Totals for POC #1
Total Pervious Area:0.06
Total Impervious Area:0.49

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**

2 year	0.02884
5 year	0.039336
10 year	0.04706
25 year	0.057735
50 year	0.066378
100 year	0.075634

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	Flow(cfs)
2 year	0
5 year	0
10 year	0
25 year	0
50 year	0
100 year	0

Stream Protection Duration
Annual Peaks for Predeveloped and Mitigated. POC #1

Year	Predeveloped	Mitigated
1949	0.026	0.000
1950	0.036	0.000
1951	0.031	0.000
1952	0.026	0.000
1953	0.036	0.000
1954	0.045	0.000
1955	0.034	0.000
1956	0.016	0.000
1957	0.027	0.000
1958	0.065	0.000
1959	0.028	0.000
1960	0.024	0.000
1961	0.087	0.043
1962	0.033	0.000
1963	0.039	0.000
1964	0.021	0.000
1965	0.021	0.000
1966	0.021	0.000
1967	0.060	0.000
1968	0.032	0.000
1969	0.057	0.000
1970	0.023	0.000
1971	0.034	0.000
1972	0.043	0.000
1973	0.034	0.000
1974	0.043	0.000
1975	0.033	0.000
1976	0.023	0.000
1977	0.023	0.000
1978	0.018	0.000
1979	0.040	0.000
1980	0.020	0.000
1981	0.023	0.000
1982	0.023	0.000
1983	0.031	0.000
1984	0.027	0.000
1985	0.043	0.000

1986	0.038	0.000
1987	0.034	0.000
1988	0.026	0.000
1989	0.029	0.000
1990	0.020	0.000
1991	0.027	0.000
1992	0.026	0.000
1993	0.020	0.000
1994	0.019	0.000
1995	0.022	0.000
1996	0.028	0.000
1997	0.034	0.000
1998	0.039	0.000
1999	0.018	0.000
2000	0.054	0.000
2001	0.022	0.000
2002	0.020	0.000
2003	0.027	0.000
2004	0.052	0.000
2005	0.025	0.000
2006	0.030	0.000
2007	0.029	0.000
2008	0.024	0.000
2009	0.025	0.000

Stream Protection Duration
Ranked Annual Peaks for Predeveloped and Mitigated. POC #1

Rank	Predeveloped	Mitigated
1	0.0875	0.0428
2	0.0650	0.0000
3	0.0601	0.0000
4	0.0570	0.0000
5	0.0541	0.0000
6	0.0518	0.0000
7	0.0447	0.0000
8	0.0434	0.0000
9	0.0429	0.0000
10	0.0427	0.0000
11	0.0402	0.0000
12	0.0390	0.0000
13	0.0386	0.0000
14	0.0378	0.0000
15	0.0362	0.0000
16	0.0361	0.0000
17	0.0344	0.0000
18	0.0342	0.0000
19	0.0340	0.0000
20	0.0336	0.0000
21	0.0336	0.0000
22	0.0328	0.0000
23	0.0325	0.0000
24	0.0323	0.0000
25	0.0307	0.0000
26	0.0305	0.0000
27	0.0302	0.0000
28	0.0288	0.0000

29	0.0287	0.0000
30	0.0279	0.0000
31	0.0277	0.0000
32	0.0273	0.0000
33	0.0272	0.0000
34	0.0271	0.0000
35	0.0270	0.0000
36	0.0264	0.0000
37	0.0264	0.0000
38	0.0263	0.0000
39	0.0261	0.0000
40	0.0255	0.0000
41	0.0246	0.0000
42	0.0239	0.0000
43	0.0237	0.0000
44	0.0231	0.0000
45	0.0230	0.0000
46	0.0229	0.0000
47	0.0229	0.0000
48	0.0229	0.0000
49	0.0223	0.0000
50	0.0216	0.0000
51	0.0211	0.0000
52	0.0209	0.0000
53	0.0206	0.0000
54	0.0205	0.0000
55	0.0201	0.0000
56	0.0201	0.0000
57	0.0196	0.0000
58	0.0194	0.0000
59	0.0179	0.0000
60	0.0179	0.0000
61	0.0159	0.0000

Stream Protection Duration
POC #1
The Facility PASSED

The Facility PASSED.

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0144	1309	2	0	Pass
0.0149	1156	2	0	Pass
0.0155	1012	2	0	Pass
0.0160	904	2	0	Pass
0.0165	791	2	0	Pass
0.0170	709	2	0	Pass
0.0176	628	2	0	Pass
0.0181	564	2	0	Pass
0.0186	497	2	0	Pass
0.0191	450	2	0	Pass
0.0197	410	2	0	Pass
0.0202	363	2	0	Pass
0.0207	321	2	0	Pass
0.0212	292	2	0	Pass
0.0218	265	2	0	Pass

0.0223	250	2	0	Pass
0.0228	229	2	0	Pass
0.0233	207	2	0	Pass
0.0239	186	2	1	Pass
0.0244	161	2	1	Pass
0.0249	144	2	1	Pass
0.0254	142	2	1	Pass
0.0260	128	2	1	Pass
0.0265	113	2	1	Pass
0.0270	107	2	1	Pass
0.0275	99	2	2	Pass
0.0281	92	2	2	Pass
0.0286	86	2	2	Pass
0.0291	81	2	2	Pass
0.0296	80	2	2	Pass
0.0302	75	2	2	Pass
0.0307	71	2	2	Pass
0.0312	68	2	2	Pass
0.0317	64	2	3	Pass
0.0323	61	2	3	Pass
0.0328	55	2	3	Pass
0.0333	54	2	3	Pass
0.0338	49	2	4	Pass
0.0344	45	2	4	Pass
0.0349	42	2	4	Pass
0.0354	39	2	5	Pass
0.0359	36	2	5	Pass
0.0365	30	2	6	Pass
0.0370	30	2	6	Pass
0.0375	27	2	7	Pass
0.0380	26	2	7	Pass
0.0386	25	2	8	Pass
0.0391	22	2	9	Pass
0.0396	21	2	9	Pass
0.0401	20	2	10	Pass
0.0407	19	2	10	Pass
0.0412	19	1	5	Pass
0.0417	18	1	5	Pass
0.0422	17	1	5	Pass
0.0428	14	0	0	Pass
0.0433	13	0	0	Pass
0.0438	11	0	0	Pass
0.0443	11	0	0	Pass
0.0449	10	0	0	Pass
0.0454	10	0	0	Pass
0.0459	10	0	0	Pass
0.0464	10	0	0	Pass
0.0470	10	0	0	Pass
0.0475	10	0	0	Pass
0.0480	9	0	0	Pass
0.0485	9	0	0	Pass
0.0491	9	0	0	Pass
0.0496	9	0	0	Pass
0.0501	9	0	0	Pass
0.0506	9	0	0	Pass
0.0512	9	0	0	Pass
0.0517	8	0	0	Pass

0.0522	6	0	0	Pass
0.0527	6	0	0	Pass
0.0533	6	0	0	Pass
0.0538	6	0	0	Pass
0.0543	5	0	0	Pass
0.0548	5	0	0	Pass
0.0554	5	0	0	Pass
0.0559	5	0	0	Pass
0.0564	5	0	0	Pass
0.0569	5	0	0	Pass
0.0575	4	0	0	Pass
0.0580	4	0	0	Pass
0.0585	4	0	0	Pass
0.0590	4	0	0	Pass
0.0596	4	0	0	Pass
0.0601	3	0	0	Pass
0.0606	3	0	0	Pass
0.0611	3	0	0	Pass
0.0617	3	0	0	Pass
0.0622	3	0	0	Pass
0.0627	3	0	0	Pass
0.0632	3	0	0	Pass
0.0638	3	0	0	Pass
0.0643	3	0	0	Pass
0.0648	3	0	0	Pass
0.0653	1	0	0	Pass
0.0659	1	0	0	Pass
0.0664	1	0	0	Pass

Water Quality BMP Flow and Volume for POC #1
On-line facility volume: 0 **acre-feet**
On-line facility target flow: 0 **cfs.**
Adjusted for 15 min: 0 **cfs.**
Off-line facility target flow: 0 **cfs.**
Adjusted for 15 min: 0 **cfs.**

LID Report

LID Technique	Used for Treatment?	Total Volume Needs Treatment (ac-ft)	Volume Through Facility (ac-ft)	Infiltration Volume (ac-ft.)	Cumulative Volume Infiltration Credit	Percent Water Quality Treated	Comment
Gravel Trench Bed 1 POC	N	9.28			N	99.99	
Gravel Trench Bed 2 POC	N	11.41			N	100.00	
Gravel Trench Bed 3 POC	N	7.15			N	100.00	
Gravel Trench Bed 4 POC	N	23.10			N	100.00	
Total Volume Infiltrated		50.93	0.00	0.00		100.00	0.00
0%		No Treat. Credit					

Compliance with LID Standard 8
Duration Analysis Result = Passed

Perlnd and Implnd Changes

No changes have been made.

GEOTECHNICAL REPORT

Geotechnical Engineering Report

Goosefoot Housing Project
SE Corner of 2nd Street and De Bruyn Ave
Langley, WA 98260

Prepared For:

Goosefoot Housing Group
Attn.: Mr. Michael Schuerlein
PO Box 14
Langley, WA 98260

GEOTEST
1.888.251.5276
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1.888.251.5276
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www.geotest-inc.com

July 13, 2023
Project No. 23-1892

Goosefoot Housing Group
PO Box 114
Langley, WA 98260

Attention: **Mr. Michael Schuerlein**

Regarding: **Geotechnical Engineering Report**
Goosefoot Housing Project
SE Corner of 2nd Street and De Bruyn Avenue
Langley, WA 98260
(Parcel No. S7345-00-02020-0, S7345-00-02019-0)

Dear Mr. Schuerlein,

As requested, GeoTest Services, Inc. [GeoTest] is pleased to submit the following report summarizing the results of our geotechnical engineering evaluation for the proposed housing project to be constructed on lots located at the southeast corner of 2nd Street and De Bruyn Avenue in Langley, WA (see *Vicinity Map*, Figure 1). This report has been prepared in general accordance with the terms and conditions established in our services agreement dated June 5th, 2023 and authorized by Ms. Elise Miller, Executive Director of the Goosefoot Community Fund.

GeoTest appreciates the opportunity to provide geotechnical services on this project and look forward to assisting you during the construction phase. Should you have any further questions regarding the information contained within the report, or if we may be of service in other regards, please contact the undersigned.

Respectfully,
GeoTest Services, Inc.

EDWARDO A. GARCIA
STATE OF WASHINGTON
40819
REGISTERED
PROFESSIONAL ENGINEER

07-13-23

Gunnar Sterlington, G.I.T.
Staff Geologist

Edwardo Garcia, P.E.
Geotechnical Department Manager

Enclosure: Geotechnical Engineering Report

TABLE OF CONTENTS

PURPOSE AND SCOPE OF SERVICES

The purpose of this evaluation is to establish general subsurface conditions beneath the site from which conclusions and recommendations pertaining to project design can be formulated. Our scope of services includes the following tasks:

- Explore the soil and groundwater conditions underlying the project site by excavating 4 test pits with a track-mounted excavator subcontracted to GeoTest. The test pits were excavated to an approximate depth of 9.5 to 10.2 feet below ground surface (BGS).

- Perform laboratory testing on representative samples to classify and evaluate the engineering characteristics of the soils encountered.

- Provide a written report containing a description of subsurface conditions and exploration logs. The findings and recommendations in this report pertain to site preparation and earthwork, fill and compaction, seismic design, foundation recommendations, concrete slab-on-grade construction, foundation and site drainage, infiltration feasibility, utilities, temporary and permanent slopes, geotechnical consultation, and construction monitoring.

- Assess Geologically Hazardous Areas (if present) per Langley Municipal Code (LMC).

PROJECT DESCRIPTION

The subject property is a vacant, rectangular-shaped property located on the southeast corner of 2nd Street and De Bruyn Avenue in Langley, Washington. The property is composed of three separate parcels, totaling approximately 0.4 acres. GeoTest understands that three new 2- to 3-story buildings will be constructed on the subject property. GeoTest expects that new construction will be wood framed, will utilize shallow conventional foundations, and will have slab-on-grade floors. Structural loads have not been provided but are expected to be relatively light.

GeoTest anticipates the use of infiltration facilities on this project site. The type, location and configuration of these facilities have yet to be determined as of the writing of this report.

SITE CONDITIONS

This section includes a description of the general surface and subsurface conditions observed at the project site during the time of our field investigation. Interpretations of site conditions are based on the results and review of available information, site reconnaissance, subsurface explorations, laboratory testing, and previous experience in the project vicinity.

Surface Conditions

The vacant subject property has no fixed address but is located on the southeast corner at the intersection of 2nd Street and De Bruyn Avenue in Langley, WA. The property is relatively flat, with only a couple of feet of elevation differential across the property. Developments within the vicinity of the property include a single-family residence located to the east and a vacant lot directly south of the property. The property is bordered by DeBruyn Avenue to the west and 2nd Street to the north.

Image 1. Photo of the subject property. Photo taken on 6.14.23 facing southeast.

Subsurface Soil Conditions

Subsurface conditions were explored by advancing four exploratory test pits on June 22, 2023. The explorations were advanced to approximate depths of between 9.2 and 10.5 feet BGS (TP-1 through TP-4) with a tracked excavator subcontracted to GeoTest. The approximate locations of these test pits have been plotted on the *Site and Exploration Plan,* Figure 2). The exploratory test pits advanced during our investigation exhibited similar subsurface soil conditions throughout

most of the project area. GeoTest observed approximately 1 foot of loose topsoil overlying medium dense, reddish brown to gray, damp, slightly silty, gravely to very gravely sand. These soils were interpreted to be weathered Glaciomarine Deltaic Outwash deposits. At approximately 4.0 to 4.5 feet BGS, GeoTest observed slightly mottled medium dense, blue gray, damp to moist, gravelly sands, with trace silts. An increase in the gravel content at depths displayed a fining upwards. These soils are interpreted as unweathered Glaciomarine Deltaic Outwash. More detailed logs of the subsurface conditions encountered within our exploration are presented in the *Test Pit Logs* (Figures 5 and 6) attached to the end of this report.

Image 2. Photo of TP-2 displaying granular soils and the observed perched water at 8.6' BGS. Image taken on 6.22.23

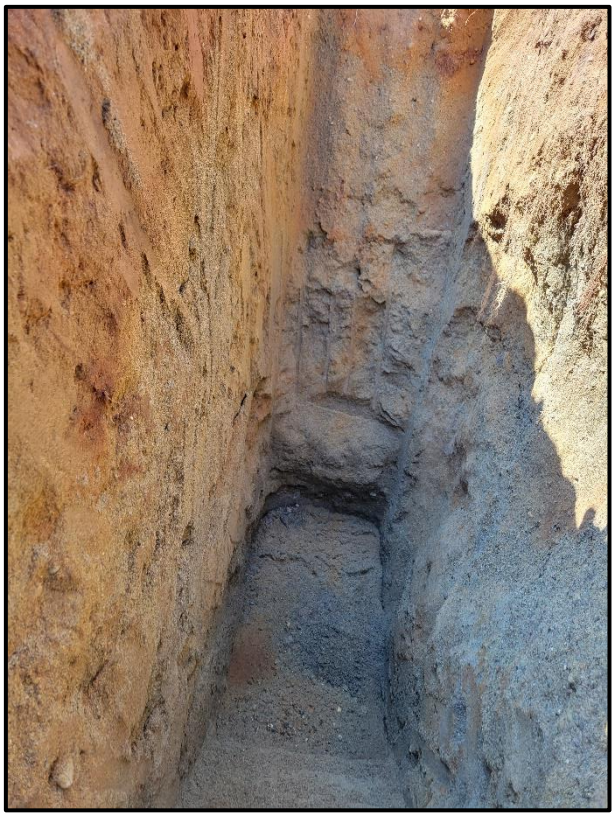

Image 3. Photo of TP-3 displaying poorly graded sands through out the test pit. Image taken on 6.22.23

General Geologic Conditions

Geologic information for the project site was obtained from the *Geologic map of the Langley and western part of Tulalip, 7.5-minute quadrangles, Island County, Washington* (Schasse et al., 2009). According to this publication, geology within the vicinity of the project site consists of Everson Interstade Glaciomarine Deltaic Outwash Deposits (unit $Qgom_e$).

separation design moving forward? As currently design the project is meeting the requirement of 5' of separation between the bottom of the trench and the groundwater level without much room to spare.

The Glaciomarine Deltaic outwash deposits are described as mostly sand, with some sand-gravel mixtures with minor interlayered silt and silty sands. The Glaciomarine Deltaic Outwash is with a generally loose with a maximum clast size limited to pebbles and small cobbles. Our on-site explorations indicate that the encountered subsurface soil conditions were consistent with the mapped geologic information. Schasse also references a possible active fault complex to the southwest of the project site, striking in the northwest and southeast directions (Schasse et al., 2009). This fault is located approximately 1.5 mile southwest of the property. This fault comprises a part of the North Whidbey Fault formation.

Groundwater

At the time of our site visit on June 22, 2023, water seepage was encountered in explorations TP-1 and TP-2 at 8.7 to 8.8 feet BGS. GeoTest reviewed Washington State Department of Ecology well logs in the region and generally found water well depths significantly deeper than the water levels observed on the project site. Thus, the water observed in the test pits is likely representative of a perched water condition. Perched water typically develops when loose or granular soil is underlain by dense or silty soils. Perched groundwater seepage at depth should be anticipated during the wet season or after long periods of precipation.

The groundwater conditions reported on the exploration logs are for the specific locations and dates indicated, and therefore may not be indicative of other locations and/or times. Groundwater levels are variable and groundwater conditions will fluctuate depending on local subsurface conditions, precipitation, and changes in on-site and off-site use.

Web Soil Survey

According to the United States Department of Agriculture (USDA) Natural Resource Conservation Service website, soils within the vicinity of the subject property are classified as Indianola loamy, 0 to 5 percent slopes (see Table 1 below). This soil type typically comprises eskers, kames, and terraces. These soils are derived from a parent material of glacial outwash.

Table 1
USDA Web Soil Survey Soil Classifications

Map Unit Symbol	3021
Map Unit Name	Indianola Loamy sand dry 0 to 5 percent slopes
Soil Description	Slightly decomposed plant material, loamy sand to sand
Landform	Eskers, kames, terraces
Parent Material	Sandy Glacial Outwash
Land Capability Classification	4s
Erosion K Factor, Whole Soil	0.1

The USDA designates these soils with an erosion factor (K) and a land capability classification. Values of K range from 0.02 to 0.69; the higher the value, the more susceptible the soil is to sheet and rill erosion by water. Soils classified as "e" are those soils where erosion is the dominant problem or hazard in their use (USDA, 1961).

According to the Island County soil survey, the soils mapped within the property possess a maximum K value of 0.1, which constitutes a **low** erosion potential.

GEOLOGICALLY HAZARDOUS AREAS

Langley Municipal Code (LMC) classifies Geologically Hazardous Areas as "areas susceptible to erosion, sliding, earthquake or other geological events pose a threat to the health and safety of citizens when incompatible development is sited in areas of significant hazard. Such incompatible development may not only place itself at risk, but also may increase the hazard to surrounding development and use. Areas susceptible to one or more of the following types of hazards shall be designated as a geologically hazardous area: erosion hazards, landslide hazards, seismic hazard, other geological events including tsunamis, debris flow, rock falls, and differential settlement.

Due to the fact that the subject property is relatively flat and is not adjacent to any slopes, the property does not appear to have a risk of a geologic hazard associated with erosion, or landslide conditions. After careful review of publicly available geologic literature pertaining to the area, it should be noted that geologic hazards associated with "other geologic events" such as volcanic, tsunami events, etc., were not found to be applicable to this project due to the location of the proposed additions. Thus, no specific mitigations are needed for landslide, erosion, as these conditions do not exist on site.

An evaluation of potential geologically hazardous areas within the proposed area of site disturbance is presented in the following sections.

Seismic Hazards

Seismic Hazard Areas are discussed in LMC Chapter 16.20.045(3), which states "seismic hazard areas are subject to severe risk of damage as a result of earthquake induced ground shaking, slope failure, settlement or subsidence, soil liquefaction, lateral spreading or surface faulting."

A review of information obtained from the Washington State Department of Natural Resources (DNR) Geologic Information Portal showed that the portion of the subject property to be developed is mapped as having a "low to moderate" liquefaction susceptibility. However, this map only provides an estimate of the likelihood that soils will liquefy as a result of an earthquake and is meant as a general guide to indicate areas potentially susceptible to liquefaction.

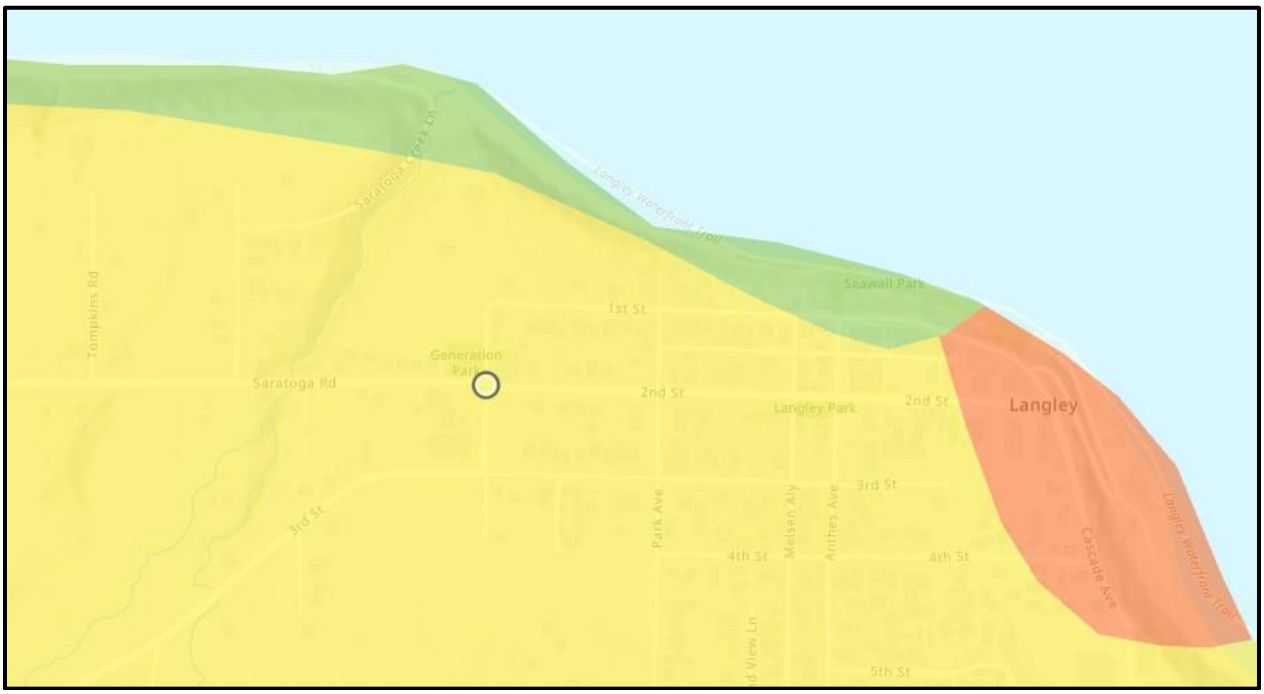

Image 4. Clip from DNR Geologic Information Portal showing liquefaction susceptibility. Yellow is low to moderate, green is very low, and orange is moderate to high. Note the zone boundaries area approximate. Image retrieved on July 6, 2023

Based on a review of geologic mapping and observations from our on-site explorations, it is our opinion that the area of proposed disturbance on the site is in general accordance with the mapped low to moderate liquefaction susceptibility. The medium dense, poorly graded glacial outwash deposit and lack of high groundwater table during our explorations suggest a generally low liquefaction potential. Thus, it is GeoTest's opinion that the site is not located in a Seismic Hazard Area due to the presence of the glacial soils described here. Thus, no mitigation for seismic hazards, aside from complying with applicable building code, is needed for site development.

CONCLUSIONS AND RECOMMENDATIONS

Based on the evaluation of data collected during this investigation, it is our opinion that the subsurface conditions at the site are suitable for the proposed development, provided the recommendations contained herein are incorporated into the project design.

As previously mentioned, the site is underlain by medium dense, gravelly sands representative of weathered and non-weathered Glaciomarine Deltaic Outwash deposits. The weathered Glaciomarine Deltaic Outwash deposits were typically encountered within 1 foot of predeveloped site grades and are suitable for shallow conventional foundation support when recompacted to a firm and unyielding condition. If encountered, existing fill, deleterious materials, organics, and loose/unsuitable portions of native soil (if remedial compaction is

infeasible) should be removed and replaced with suitable Structural Fill. The native Glaciomarine Deltaic Outwash deposits may be suitable for reuse as Structural Fill when placed and compacted as recommended in this report. We recommend the Client plan for a typical stripping depth of 1 to 1.5 feet for building footprints, ancillary driveway, and pavement structures.

Site Preparation and Earthwork

The portions of the site proposed for foundations and floor slabs should be prepared by removing topsoil, loose fill (if present), deleterious material, and significant accumulations of organics. GeoTest anticipates between 1 to 1.5 feet of stripping to expose suitable subgrade soils, depending on location. Prior to placement of any foundation elements or Structural Fill, the exposed subgrade under all areas to be occupied by soil-supported floor slabs, spread, or continuous foundations should be recompacted to a firm and unyielding condition. Verification of compaction should be performed by qualified geotechnical personnel. The purpose of this effort is to identify loose or soft soil deposits so that, if feasible, the soil disturbed during site work can be recompacted.

Proof rolling should be carefully observed by qualified geotechnical personnel. Areas exhibiting significant deflection, pumping, or over-saturation that cannot be readily compacted should be overexcavated to firm soil. Overexcavated areas should be backfilled with compacted granular material placed in accordance with subsequent recommendations for Structural Fill. During periods of wet weather, proof rolling could damage the exposed subgrade. Under these conditions, qualified geotechnical personnel should observe subgrade conditions to determine if proof rolling is feasible.

Fill and Compaction

Structural Fill must be properly placed and compacted. In most cases, suitable, non-organic, predominantly granular soil may be used for fill material provided the material is properly moisture conditioned prior to placement and compaction, and the specified degree of compaction is obtained. Material containing topsoil, wood, trash, organic material, or construction debris is not suitable for reuse as Structural Fill and should be properly disposed off-site or placed in nonstructural areas.

Soils containing more than approximately five percent fines are considered moisture sensitive and are difficult to compact to a firm and unyielding condition when over the optimum moisture content by more than approximately two percent. The optimum moisture content is that which allows the greatest dry density to be achieved at a given level of compactive effort.

Reuse of On-Site Soil

The native Glaciomarine Deltaic Outwash deposits and other on-site soils may be suitable for reuse as Structural Fill when placed at or near optimum moisture contents, as determined by ASTM D1557 and if allowed for in the project plans and specifications. Soils containing elevated silt contents will be very difficult to use during periods of wet weather. The Contractor and Owner should be prepared to manage over-optimum moisture content soils. Moisture content of the site soils may be difficult to control during periods of wet weather.

Imported Structural Fill

GeoTest recommends that imported Structural Fill consist of clean, well-graded sandy gravel, gravelly sand, or other approved naturally occurring granular material (pit run) with at least 30 percent retained on the No. 4 sieve, or a well-graded crushed rock. Structural Fill for dry weather construction may contain up to 10 percent fines (that portion passing the U.S. No. 200 sieve) based on the portion passing the U.S. No. 4 sieve. The use of an imported fill having more than 10 percent fines may be feasible, but the use of these soils should be reviewed by the design team prior to the start of construction.

Imported Structural Fill with less than five percent fines should be used during wet weather conditions. Due to wet site conditions, soil moisture contents could be high enough that it may be difficult to compact even clean imported select granular fill to a firm and unyielding condition. Soils with an over-optimum moisture content should be scarified and dried back to a suitable moisture content during periods of dry weather or removed and replaced with drier Structural Fill.

Backfill and Compaction

Structural Fill should be placed in horizontal lifts. The Structural Fill must measure 8 to 10 inches in loose thickness and be thoroughly compacted. All Structural Fill placed under load bearing areas should be compacted to at least 95 percent of the maximum dry density, as determined using test method ASTM D1557. The top of the compacted Structural Fill should extend outside all foundations and other structural improvements a minimum distance equal to the thickness of the fill. We recommend that compaction be tested after placement of each lift in the fill pad.

Wet Weather Earthwork

Fine-grained native soils are particularly susceptible to degradation during wet weather. As a result, it may be difficult to control the moisture content of site soils during the wet season. If construction takes place during wet weather, GeoTest recommends that Structural Fill consist of imported, clean, well-graded sand, or sand and gravel as described above. If fill is to be placed or earthwork is to be performed in wet conditions, the contractor may reduce soil disturbance by:

- Limiting the size of areas that are stripped of topsoil and left exposed
- Accomplishing earthwork in small sections
- Limiting construction traffic over unprotected soil
- Sloping excavated surfaces to promote runoff
- Limiting the size and type of construction equipment used
- Providing gravel 'working mats' over areas of prepared subgrade
- Removing wet surficial soil prior to commencing fill placement each day
- Sealing the exposed ground surface by rolling with a smooth drum compactor or rubber-tired roller at the end of each working day
- Providing up-gradient perimeter ditches or low earthen berms and using temporary sumps to collect runoff and prevent water from ponding and damaging exposed subgrades

Seismic Design Considerations

The Pacific Northwest is seismically active, and the site could be subject to movement from a moderate or major earthquake. Consequently, moderate levels of seismic shaking should be accounted for during the design life of the project and the proposed structure should be designed to resist earthquake loading using appropriate design methodology.

For structures designed using the seismic design provisions of the 2018 International Building Code, the medium dense to very dense glacial soil underlying the site is classified as Site Class D, according to ASCE 7-16. The structural engineer should select the appropriate design response spectrum based on Site Class D soil and the geographical location of the proposed construction.

Foundation Support

Continuous or isolated spread footings founded on proof-rolled, undisturbed, medium dense to dense native soils or on properly compacted Structural Fill placed directly over firm and unyielding undisturbed native soil can provide foundation support for the proposed improvements. We recommend that qualified geotechnical personnel confirm that suitable bearing conditions have been reached prior to placement of Structural Fill or foundation formwork.

To provide proper support, GeoTest recommends that existing topsoil, existing fill, and/or loose upper portions of the native soil be removed from beneath the building foundation area(s) or be replaced with properly compacted Structural Fill as described in the *Fill and Compaction* section of this report. Medium dense, unweathered soils are unlikely to require much preparation. However, if footings or Structural Fill will be placed atop the native, near-surface weathered Glaciomarine Deltaic Outwash, the surface should be compacted to a firm and unyielding condition with a smooth-drum roller, hoe-pack, or a similar piece of construction equipment. Once suitable bearing conditions have been confirmed, then foundations can bear directly on

firm and unyielding, properly prepared native soils or on Structural Fill overlying firm and unyielding, properly prepared native soil.

Continuous and isolated spread footings should be founded 18 inches (at minimum) below the lowest adjacent final grade for freeze/thaw protection. The footings should be sized in accordance with the structural engineer's prescribed design criteria and seismic considerations.

Allowable Bearing Capacity

Assuming the above foundation support criteria are satisfied, continuous or isolated spread footings founded directly on remedially compacted, firm, and unyielding glacial soils, or on compacted Structural Fill placed directly above these native soils, may be proportioned using a net allowable soil bearing pressure of 2,500 pounds per square foot (psf). The 'net allowable bearing pressure' refers to the pressure that can be imposed on the soil at foundation level. This pressure includes all dead loads, live loads, the weight of the footing, and any backfill placed above the footing. The net allowable bearing pressure may be increased by one-third for transient wind or seismic loads.

Foundation Settlement

Settlement of shallow foundations depends on foundation size and bearing pressure, as well as the strength and compressibility characteristics of the underlying soil. If construction is accomplished as recommended and at the maximum allowable soil bearing pressure, GeoTest estimates the total settlement of building foundations to be less than one inch. Differential settlement between two adjacent load-bearing components supported on competent soil is estimated to be less than one half the total settlement.

Floor Support

Conventional slab-on-grade floor construction is feasible for the planned site improvements. Floor slabs may be supported on properly prepared native subgrade or on properly placed and compacted Structural Fill placed over properly prepared native soil. Prior to placement of the Structural Fill, the native soil should be proof rolled as recommended in the *Site Preparation and Earthwork* section of this report.

GeoTest recommends that interior concrete slab-on-grade floors be underlain with at least 6 inches of clean, compacted, free-draining crushed gravel to serve as a capillary break. This material should be clear, crushed, ¾-inch rock with no fines or similar. The purpose of this gravel layer is to provide uniform support for the slab, provide a capillary break, and act as a drainage layer. To help reduce the potential for water vapor migration through floor slabs, a continuous 10- to 15-mil minimum thick polyethylene sheet with tape-sealed joints should be installed below the slab to serve as an impermeable vapor barrier. The vapor barrier should be installed and

sealed in accordance with the manufacturer's instructions. American Concrete Institute (ACI) guidelines suggest that the slab may be poured directly on the vapor barrier.

Exterior concrete slabs-on-grade, such as for parking and sidewalks, may be supported directly on properly prepared existing site soils. However, long-term performance will be enhanced if exterior slabs are placed on a layer of clean, durable, well-draining granular material above existing site soils.

Foundation and Site Drainage

Positive surface gradients should be provided to direct surface water away from developed area and toward suitable drainage facilities. Roof drainage from residential construction should not be introduced into the perimeter footing drains but should be separately discharged directly to the stormwater collection system or similar municipality-approved outlet. Pavement and sidewalk areas, if present, should be sloped and drainage gradients should be maintained to carry surface water away from the building towards an approved stormwater collection system. Surface water should not be allowed to pond and soak into the ground surface near buildings or paved areas during or after construction. Construction excavations should be sloped to drain to sumps where water from seepage, rainfall, and runoff can be collected and pumped to a suitable discharge facility.

To reduce the potential for groundwater and surface water to seep into interior spaces, GeoTest recommends that an exterior footing drain system be constructed around the perimeter of new building foundations as shown in the *Conceptual Footing and Wall Drain* (Figure 3) of this report. The drain should consist of a perforated pipe measuring 4 inches in diameter at minimum, surrounded by at least 12 inches of filtering media. The pipe should be sloped to carry water to an approved collection system.

The filtering media may consist of open-graded drain rock wrapped in a nonwoven geotextile fabric such as Mirafi 140N (or equivalent) or wrapped with a graded sand and gravel filter. For foundations supporting retaining walls, drainage backfill should be carried up the back of the wall and be at least 12 inches wide. The drainage backfill should extend from the foundation drain to within approximately 1 foot of the finished grade and consist of open-graded drain rock containing less than 3 percent fines by weight passing the U.S. Standard No. 200 sieve (based on a wet sieve analysis of that portion passing the U.S. Standard No. 4 sieve). The invert of the footing drainpipe should be placed at approximately the same elevation as the bottom of the footing or 12 inches below the adjacent floor slab grade (whichever is deeper) so that water will be contained. This process prevents water from seeping through walls or floor slabs. The drain system should include cleanouts to allow for periodic maintenance and inspection.

Please understand that the above recommendations are intended to assist the design engineer and/or architect in development of foundation and site drainage parameters and are based on

our experience with similar projects in the area. The final foundation and site drainage plan that will be incorporated into the project plans is to be determined by the design team.

Resistance to Lateral Loads

The lateral earth pressures that develop against retaining walls will depend on the method of backfill placement, degree of compaction, slope of backfill, type of backfill material, provisions for drainage, magnitude and location of any adjacent surcharge loads, and the degree to which the wall can yield laterally during or after placement of backfill. If the wall is allowed to rotate or yield so the top of the wall moves an amount equal to or greater than about 0.001 to 0.002 times its height (a yielding wall), the soil pressure exerted comprises the active soil pressure. When a wall is restrained against lateral movement or tilting (a nonyielding wall), the soil pressure exerted comprises the at rest soil pressure. Wall restraint may develop if a rigid structural network is constructed prior to backfilling or if the wall is inherently stiff.

GeoTest recommends that yielding walls under drained conditions be designed for an equivalent fluid density of 35 pounds per cubic foot (pcf) for Structural Fill in active soil conditions. Nonyielding walls under drained conditions should be designed for an equivalent fluid density of 55 pcf for Structural Fill in at-rest conditions. Design of walls should include appropriate lateral pressures caused by surcharge loads located within a horizontal distance equal to or less than the height of the wall. For uniform surcharge pressures, a uniformly distributed lateral pressure equal to 35 percent and 50 percent of the vertical surcharge pressure should be added to the lateral soil pressures for yielding and nonyielding walls, respectively.

For structures designed using the seismic design provisions of the International Building Code, GeoTest recommends that retaining walls include a seismic surcharge in addition to the equivalent fluid densities presented above. We recommend that a seismic surcharge of approximately 8H (where H is the height of the wall) be used for design purposes. This surcharge assumes that the wall is allowed to rotate or yield. If the wall is restrained, GeoTest should be contacted so that we can provide a revised seismic surcharge pressure.

Passive earth pressures developed against the sides of building foundations, in conjunction with friction developed between the base of the footings and the supporting subgrade, will resist lateral loads transmitted from the structure to its foundation. For design purposes, the passive resistance of well-compacted fill placed against the sides of foundations is equivalent to a fluid with a density of 325 pcf. The recommended value includes a safety factor of about 1.5 and is based on the assumption that the ground surface adjacent to the structure is level in the direction of movement for a distance equal to or greater than twice the embedment depth. The recommended value also assumes drained conditions that will prevent the buildup of hydrostatic pressure in the compacted fill. Retaining walls should include a drain system constructed in general accordance with the recommendations presented in the *Foundation and Site Drainage* section of this report. In design computations, the upper 12 inches of passive resistance should

be neglected if the soil is not covered by floor slabs or pavement. If future plans call for the removal of the soil providing resistance, the passive resistance should not be considered.

An allowable coefficient of base friction of 0.35, applied to vertical dead loads only, may be used between the underlying imported granular Structural Fill or native soil and the base of the footing. If passive and frictional resistance are considered together, one half the recommended passive soil resistance value should be used since larger strains are required to mobilize the passive soil resistance as compared to frictional resistance. A safety factor of about 1.5 is included in the base friction design value. GeoTest does not recommend increasing the coefficient of friction to resist seismic or wind loads.

Temporary and Permanent Slopes

The contractor is responsible for construction slope configurations and maintaining safe working conditions, including temporary excavation stability. All applicable local, state, and federal safety codes should be followed. All open cuts should be monitored during and after excavation for evidence of instability. If instability is detected, the contractor should flatten the side slopes or install temporary shoring.

Temporary excavations in excess of 4 feet should be shored or sloped in accordance with Safety Standards for Construction Work Part N, WAC 296-155-66403.

Temporary unsupported excavations in medium dense to very dense glacial soil encountered at the project site are classified as a Type B soil according to WAC 296-155-66401 and may be sloped as steep as 1H :1V (Horizontal: Vertical). All soils encountered are classified as Type C soil in the presence of groundwater seepage and may be sloped as steep as 1.5:1. Flatter slopes or temporary shoring may be required in areas where groundwater flow is present and unstable conditions develop.

Temporary slopes and excavations should be protected as soon as possible using appropriate methods to prevent erosion from occurring during periods of wet weather. Permanent cuts or fills used in earth slopes intended to hold water should be 3H: 1V or flatter. All permanent slopes should be vegetated or otherwise protected to limit the potential for erosion as soon as practical after construction.

Utilities

Utility trenches must be properly backfilled and compacted to reduce cracking or localized loss of foundation, slab, or pavement support. Excavations for new shallow underground utilities are expected to be placed within the underlying native glacial soils.

Trench backfill in improved areas (beneath structures, pavements, sidewalks, etc.) should consist of Structural Fill as defined in the *Fill and Compaction* section of this report. Outside of improved areas, trench backfill may consist of reused on-site material provided the backfill can be compacted to the project specifications. If work is to occur outside of the dry season months, trench backfill should consist of imported, granular Structural Fill. The trench backfill should be placed and compacted in general accordance with the recommendations presented in the *Fill and Compaction* section of this report.

Surcharge loads on trench support systems due to construction equipment, stockpiled material, and vehicle traffic should be included in the design of any anticipated shoring system. The contractor should implement measures to prevent surface water runoff from entering trenches and excavations. In addition, vibration as a result of construction activity and traffic may cause caving of the trench walls.

The contractor is responsible for trench configurations. All applicable local, state, and federal safety codes should be followed. All open cuts should be monitored by the contractor during excavation for any evidence of instability. If instability is detected, the contractor should flatten the side slopes or install temporary shoring. If groundwater or groundwater seepage is present, and the trench is not properly dewatered, the soil within the trench zone may be prone to caving, channeling, and running. Trench widths may be substantially wider than under dewatered conditions.

Stormwater Infiltration Potential

From the explorations excavated in the areas of interest, five representative soil samples were selected and mechanically tested for grain size distribution and calculation according to the soil grain size analysis method, Section V-5.4 of the *2019 Stormwater Management Manual for Western Washington* [Manual]. A summary of these results is reproduced in Table 2 below.

It should be noted that the rates presented in Table 2 are representative of loose soil conditions and do not consider a dense or compacted soil condition. In our experience, infiltration rates based on grain size analyses overestimate the actual infiltration rate of the soil. The presented rates also do not consider “mounding” of groundwater due to restriction layers at depth. Thus, it is our opinion that a conservative approach to the design should be considered for any stormwater management plan. For preliminary design purposes, GeoTest recommends that a long-term infiltration rate of 8.5 inches per hour for the design of new infiltration facilities. Because of the perched water condition exposed at depth, GeoTest generally anticipates that infiltration facilities will be shallow in order to maintain adequate amounts of separation between the bottom of the infiltration facilities and water at depth.

Table 2 Preliminary Infiltration Results Based on Grain Size Analysis		
Boring ID & Depth	**Geologic Unit**	**Preliminary, Corrected K_{sat} Infiltration Rate [in/hr]**
TP-1 (3.5 ft)	Weathered Glaciomarine Deltaic Outwash	10*
TP-1 (9.0 ft)	Glaciomarine Deltaic Outwash	10*
TP-2 (4.1 ft)	Weathered Glaciomarine Deltaic Outwash	10*
TP-3 (5.8 ft)	Glaciomarine Deltaic Outwash	10*
TP-4 (8.8 ft)	Glaciomarine Deltaic Outwash	8.5
Notes: - Ksat = Initial Saturated Hydraulic Conductivity - Correction Factors Used: CFv = 0.45, CFt = 0.40, CFm =0.9 - Total Correction Factor = 0.162 - Rates presented are representative of loose conditions and do not consider the relative density of the soil		

Stormwater Treatment

The on-site stormwater facilities may require some form of pollutant pretreatment with an amended soil prior to on-site infiltration or off-site discharge. The reuse of on-site topsoil is often the most sustainable and cost-effective method for pollutant treatment purposes. Cation exchange capacities, organic contents, and pH of site subsurface soils were also tested to determine possible pollutant treatment suitability.

Table 3 Cation Exchange Capacity, Organic Content, and pH Laboratory Test Results					
Test Pit ID	**Sample Depth (ft)**	**Geologic Unit**	**Cation Exchange Capacity (meq/100 grams)**	**Organic Content (%)**	**pH**
TP-1	2.3	Weathered Glaciomarine Deltaic Outwash	10.9	2.95	6.5
TP-2	0.6	Topsoil	17.4	8.34	5.7
TP-4	1.9	Weathered Glaciomarine Deltaic Outwash	4.3	1.35	6.3

Cation exchange capacity, organic content, and pH tests were performed by Northwest Agricultural Consultants on two soil samples collected from the explorations. A summary of the laboratory test results is presented in Table 3 above.

Suitability for on-site pollutant treatment is determined in accordance with SSC-6 of the *SMMWW.* Soils with an organic content greater than or equal to 1 percent and a cation exchange capacity of greater than or equal to 5 meq/100 grams are characterized as suitable soils for stormwater treatment. Based on the results shown in Table 3, the topsoil found on-site is suitable for stormwater treatment purposes. The weathered Glaciomarine Deltaic Outwash deposits had variable suitability for treatment and may need some amendment and/or confirmation testing in order to be used as a treatment soil.

On-site soils can be amended by mixing higher silt content soils or adding mulch (or other admixtures) to elevate the cation exchange capacity and/or organic contents. On-site amended soil requires additional testing to confirm compliance with ecological regulations. GeoTest is available to perform additional laboratory testing as part of an expanded scope of services if the soil is to be amended. Alternatively, the Owner may elect to import amended soils with the desired properties for planned treatment facilities.

Geotechnical Consultation and Construction Monitoring

GeoTest recommends that we be involved in the project design review process. The purpose of the review is to verify that the recommendations presented in this report are understood and incorporated in the design and specifications.

We also recommend that geotechnical construction monitoring services be provided. These services should include observation by GeoTest personnel during foundation preparation, placement of backfill materials and drain pipe, Structural Fill placement, compaction activities, and subgrade preparation operations to confirm that design subgrade conditions are obtained beneath the areas of improvement.

Periodic field density testing should be performed to verify that the appropriate degree of compaction is obtained. The purpose of these services is to observe compliance with the design concepts, specifications, and recommendations of this report. In the event that subsurface conditions differ from those anticipated before the start of construction, GeoTest would be pleased to provide revised recommendations appropriate to the conditions revealed during construction.

GeoTest is available to provide a full range of materials testing and special inspection during construction as required by the local building department and the International Building Code. This may include specific construction inspections on materials such as reinforced concrete,

reinforced masonry, wood framing, and structural steel. These services are supported by our fully accredited materials testing laboratories.

USE OF THIS REPORT

GeoTest Services, Inc. has prepared this report for the exclusive use of Goosefoot Housing Group and its design consultants for specific application to the design of the proposed two to three new buildings at the southeast corner of 2nd Street and De Bruyn Avenue in Langley, WA. Use of this report by others is at the user's sole risk. This report is not applicable to other site locations. Our services are conducted in accordance with accepted practices of the geotechnical engineering profession; no other warranty, express or implied, is made as to the professional advice included in this report.

Our site explorations indicate subsurface conditions at the dates and locations indicated. It is not warranted that these conditions are representative of conditions at other locations and times. The analyses, conclusions, and recommendations contained in this report are based on site conditions to the limited depth and time of our explorations, a geological reconnaissance of the area, and a review of previously published geological information for the site. If variations in subsurface conditions are encountered during construction that differ from those contained within this report, GeoTest should be allowed to review the recommendations and, if necessary, make revisions. If there is a substantial lapse of time between submission of this report and the start of construction, or if conditions change due to construction operations at or adjacent to the project site, we recommend that we review this report to determine the applicability of the conclusions and recommendations contained herein.

The earthwork contractor is responsible to perform all work in conformance with all applicable WISHA/OSHA regulations. GeoTest Services, Inc. is not responsible for job site safety on this project, and this responsibility is specifically disclaimed.

Attachments:	Figure 1	Vicinity Map
	Figure 2	Site and Exploration Plan
	Figure 3	Conceptual Footing and Wall Drain Section
	Figure 4	Soil Classification System and Key
	Figures 5 – 6	Test Pit Logs
	Figures 7 – 8	Grain Size Test Data
	Attached	Northwest Agricultural Consultants Results
	Attached	Report Limitations and Guidelines for Use

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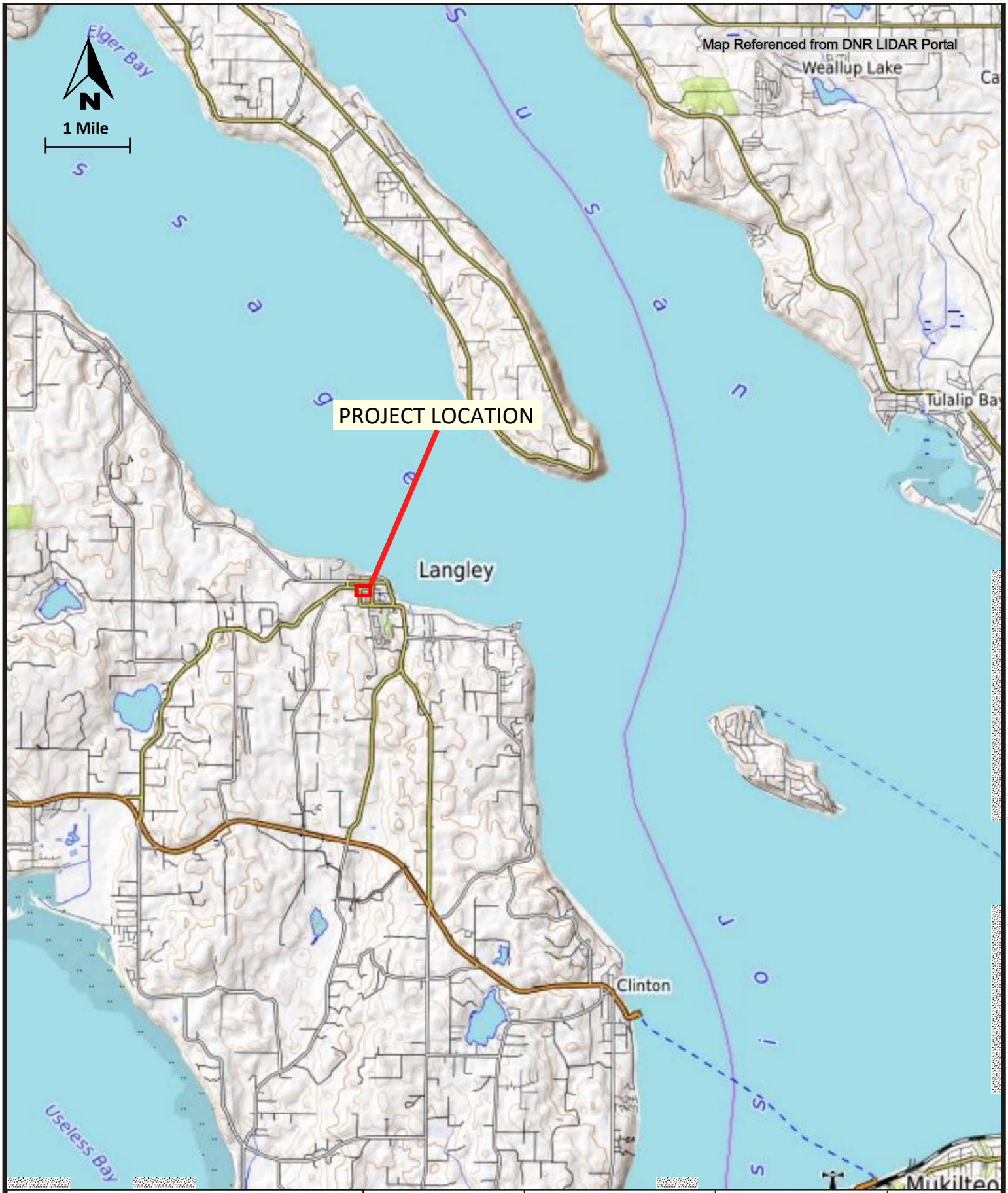


Date: 6-29-23	By: GS	Scale: As Shown	Project 23-1892

VICINITY MAP

GOOSEFOOT HOUSING PROJECT

SEC OF 2ND ST AND DE BRUYN AVE

LANGLEY, WA 98260

Figure 1

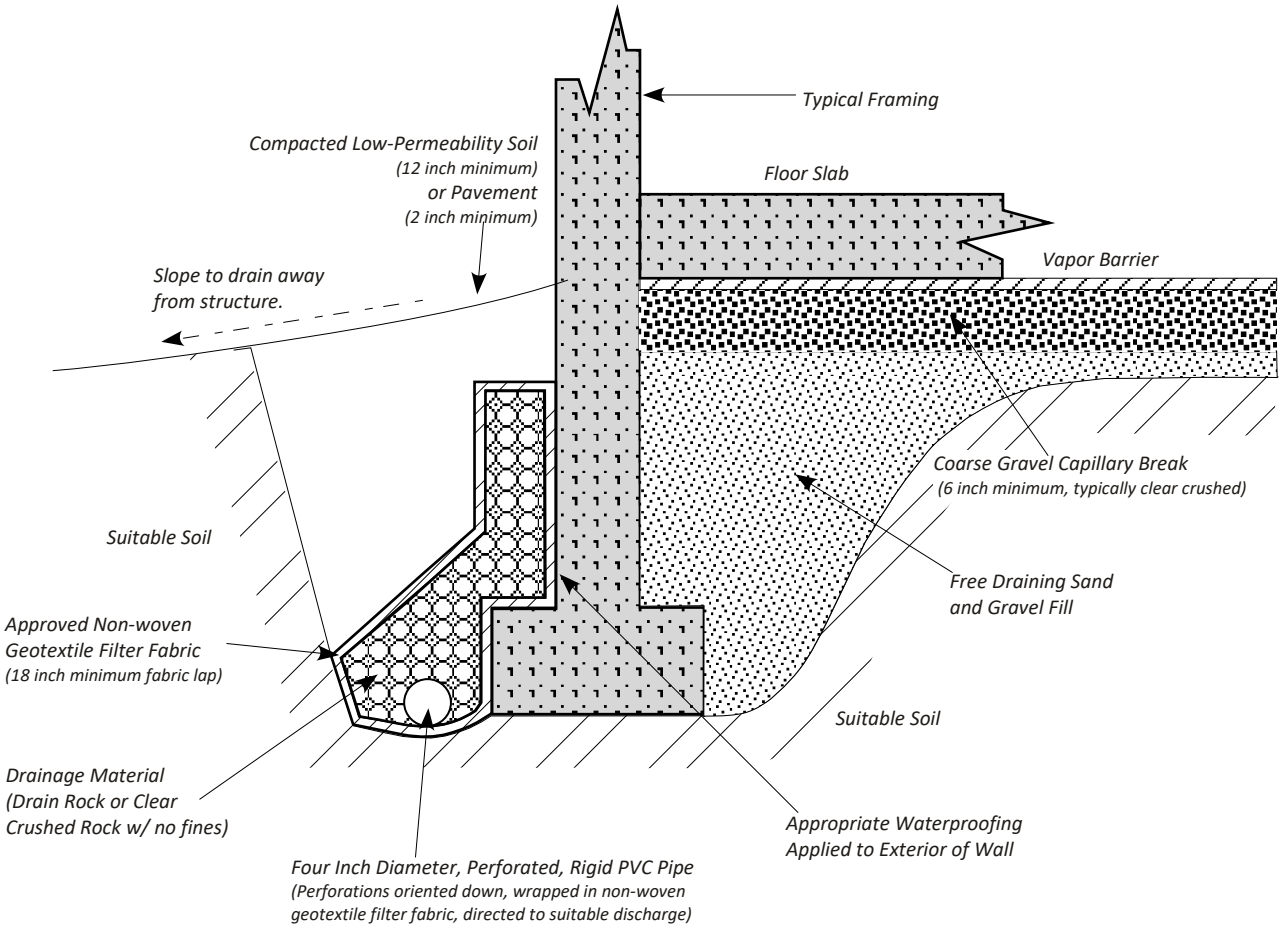
GEOTEST
An RMA Company

Date: 6-29-23	By: GS	Scale: As Shown	Project 23-1892

SITE AND EXPLORATION PLAN
GOOSEFOOT HOUSING PROJECT
SEC OF 2ND ST AND DE BRUYN AVE
LANGLEY, WA 98260

Figure 2

CONCEPTUAL FOOTINGS WITH INTERIOR SLAB-ON-GRADE



Notes:

Footings should be properly buried for frost protection in accordance with International Building Code or local building codes (Typically 18 inches below exterior finished grades).

This figure is not intended to be representative of a design. This figure is intended to present concepts that can be incorporated into a functional foundation drain designed by a Civil Engineer. In all cases, refer to the Civil plan sheet for drain details and elevations.

This footing drain detail may need to be modified from this conceptual drawing to fit the dimensions of the planned footing and slab configuration.

GEOTEST An RMA Company	Date: 7-6-23	By: GS	Scale: None	Project 23-1892
	CONCEPTUAL FOOTING & WALL DRAIN SECTION GOOSEFOOT HOUSING PROJECT SEC OF 2ND ST AND DE BRUYN AVE LANGLEY, WA 98260			Figure 3

Soil Classification System

MAJOR DIVISIONS			GRAPHIC SYMBOL	USCS LETTER SYMBOL	TYPICAL DESCRIPTIONS[1][2]
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well-graded gravel; gravel/sand mixture(s); little or no fines
				GP	Poorly graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GM	Silty gravel; gravel/sand/silt mixture(s)
				GC	Clayey gravel; gravel/sand/clay mixture(s)
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well-graded sand; gravelly sand; little or no fines
				SP	Poorly graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SM	Silty sand; sand/silt mixture(s)
				SC	Clayey sand; sand/clay mixture(s)
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)			ML	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity
				CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
				OL	Organic silt; organic, silty clay of low plasticity
	SILT AND CLAY (Liquid limit greater than 50)			MH	Inorganic silt; micaceous or diatomaceous fine sand
				CH	Inorganic clay of high plasticity; fat clay
				OH	Organic clay of medium to high plasticity; organic silt
	HIGHLY ORGANIC SOIL			PT	Peat; humus; swamp soil with high organic content

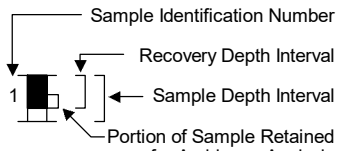
OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		AC or PC	Asphalt concrete pavement or Portland cement pavement
ROCK		RK	Rock (See Rock Classification)
WOOD		WD	Wood, lumber, wood chips
DEBRIS		DB	Construction debris, garbage

Notes:
1. Soil descriptions are based on the general approach presented in the *Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)*, as outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the *Standard Test Method for Classification of Soils for Engineering Purposes*, as outlined in ASTM D 2487.
2. Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:

Primary Constituent: > 50% - "GRAVEL," "SAND," "SILT," "CLAY," etc.
Secondary Constituents: > 30% and ≤ 50% - "very gravelly," "very sandy," "very silty," etc.
> 12% and ≤ 30% - "gravelly," "sandy," "silty," etc.
Additional Constituents: > 5% and ≤ 12% - "slightly gravelly," "slightly sandy," "slightly silty," etc.
≤ 5% - "trace gravel," "trace sand," "trace silt," etc., or not noted.

Drilling and Sampling Key

SAMPLE NUMBER & INTERVAL



SAMPLER TYPE

Code	Description
a	3.25-inch O.D., 2.42-inch I.D. Split Spoon
b	2.00-inch O.D., 1.50-inch I.D. Split Spoon
c	Shelby Tube
d	Grab Sample
e	Other - See text if applicable
1	300-lb Hammer, 30-inch Drop
2	140-lb Hammer, 30-inch Drop
3	Pushed
4	Other - See text if applicable

Groundwater

▽ ATD — Approximate water elevation at time of drilling (ATD) or on date noted. Groundwater levels can fluctuate due to precipitation, seasonal conditions, and other factors.

Field and Lab Test Data

Code	Description
PP = 1.0	Pocket Penetrometer, tsf
TV = 0.5	Torvane, tsf
PID = 100	Photoionization Detector VOC screening, ppm
W = 10	Moisture Content, %
D = 120	Dry Density, pcf
-200 = 60	Material smaller than No. 200 sieve, %
GS	Grain Size - See separate figure for data
AL	Atterberg Limits - See separate figure for data
GT	Other Geotechnical Testing
CA	Chemical Analysis

GEOTEST An RMA Company

Goosefoot Housing Project
SE Corner of 2nd St and De Bruyn Ave
Langley, WA 98260

Soil Classification System and Key

Figure 4

TP-1

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Test Data	Graphic Symbol	USCS Symbol	Excavation Method: Tracked Excavator Ground Elevation (ft): Unknown Excavated By: Cascade Excavation/G.Sterlington	
0					ML/OH	Loose, brown, dry to damp, silty SAND abundant organics (Topsoil)	
1	1	d			SP	Medium dense to dense, brown to reddish brown, dry to damp, gravelly SAND, medium to coarse grained sand, trace silt (Weathered glaciomarine deltaic outwash deposit)	
2	2	d				-Moderate difficulty penetrating sidewall with a piece of #4 rebar and a 5-lb hammer @ 1.8' BGS.	
3	3	d	W = 7 GS		SP	Medium dense to dense, gray blue, dry to damp, gravelly SAND, medium to coarse grained sand, trace silt (Glaciomarine deltaic outwash deposit)	
4						-Increase in moisture at 5.5' BGS.	
6	4	d				-Color grades to Blue @ 6.8' BGS.	
8						-Cave-in @ 7' BGS	▽ Rapid groundwater seepage encountered at 8.8 ft.
10	5	d	W = 16 GS				

Test Pit Completed 06/22/23
Total Depth of Test Pit = 9.5 ft.

TP-2

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Test Data	Graphic Symbol	USCS Symbol	Excavation Method: Tracked Excavator Ground Elevation (ft): Unknown Excavated By: Cascade Excavation/G.Sterlington	
0					ML/OH	Loose, dark brown to brown, dry, silty SAND abundant organics (Topsoil)	
2	6	d			SP	Medium dense to dense, brown to reddish brown, dry to damp, gravelly SAND, medium to coarse grained sand, trace silt (Weathered glaciomarine deltaic outwash deposit)	
4	7	d				-Moderate difficulty penetrating sidewall with a piece of #4 rebar and a 5-lb hammer @ 2.1' BGS.	
6	8	d	W = 7 GS		SP	Medium dense to desne, gray blue, dry to damp, gravelly SAND, medium to coarse grained sand, trace silt (Glaciomarine deltaic outwash deposit)	
8	9	d				-Color grades to Blue @ 6.0' BGS.	
10	10	d				-Increase in moisture at 6.2' BGS.	▽ Rapid groundwater seepage encountered at 8.7 ft.

Test Pit Completed 06/22/23
Total Depth of Test Pit = 9.8 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Goosefoot Housing Project
SE Corner of 2nd St and De Bruyn Ave
Langley, WA 98260

Log of Test Pits

Figure 5

TP-3

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Test Data	Graphic Symbol	USCS Symbol	Excavation Method: Tracked Excavator Ground Elevation (ft): Unknown Excavated By: Cascade Excavation/G.Sterlington	
0	11	d			ML/ OH	Loose, brown, dry to damp, silty SAND abundant organics (Topsoil)	Groundwater not encountered.
2	12	d			SP	Medium dense to dense, gray to brown, dry to damp, gravelly SAND, medium to coarse grained sand, trace silt (Weathered glaciomarine deltaic outwash deposit)	
4	13	d			SP	-Moderate difficulty penetrating sidewall with a piece of #4 rebar and a 5-lb hammer @ 3.1' BGS.	
6	14	d	W = 4 GS			-Cave-in @ 4.0' BGS Medium dense to dense, gray blue, dry to damp, gravelly SAND, medium to coarse grained sand, trace silt (Glaciomarine deltaic outwash deposit)	
8	15	d				-Color grades to Blue @ 4.3' BGS. -Increase in moisture at 5.2' BGS.	
10							
12							

Test Pit Completed 06/22/23
Total Depth of Test Pit = 9.3 ft.

TP-4

SAMPLE DATA			SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Test Data	Graphic Symbol	USCS Symbol	Excavation Method: Tracked Excavator Ground Elevation (ft): Unknown Excavated By: Cascade Excavation/G.Sterlington	
0	16	d			ML/ OH	Loose, brown, dry to damp, silty SAND abundat organics (Topsoil)	Groundwater not encountered.
2	17	d	W = 5 GS		SP	Medium dense to dense, gray to brown, dry to damp, gravelly SAND, medium to coarse grained sand, trace silt (Weathered glaciomarine deltaic outwash deposit)	
4	18	d			SP	-Moderate difficulty penetrating sidewall with a piece of #4 rebar and a 5-lb hammer @ 2.8' BGS.	
6	19	d				-Cave-in @ 3.0' BGS Medium dense to dense, gray blue, dry to damp, gravelly SAND, medium to coarse grained sand, trace silt (Glaciomarine deltaic outwash deposit)	
8						-Increase in moisture at 4.3' BGS.	
10	20	d	W = 6 GS			-Color grades to Blue @ 5.5BGS.	
12	21	d				-Increaes in gravel content at 8.1' BGS.	

Test Pit Completed 06/22/23
Total Depth of Test Pit = 10.2 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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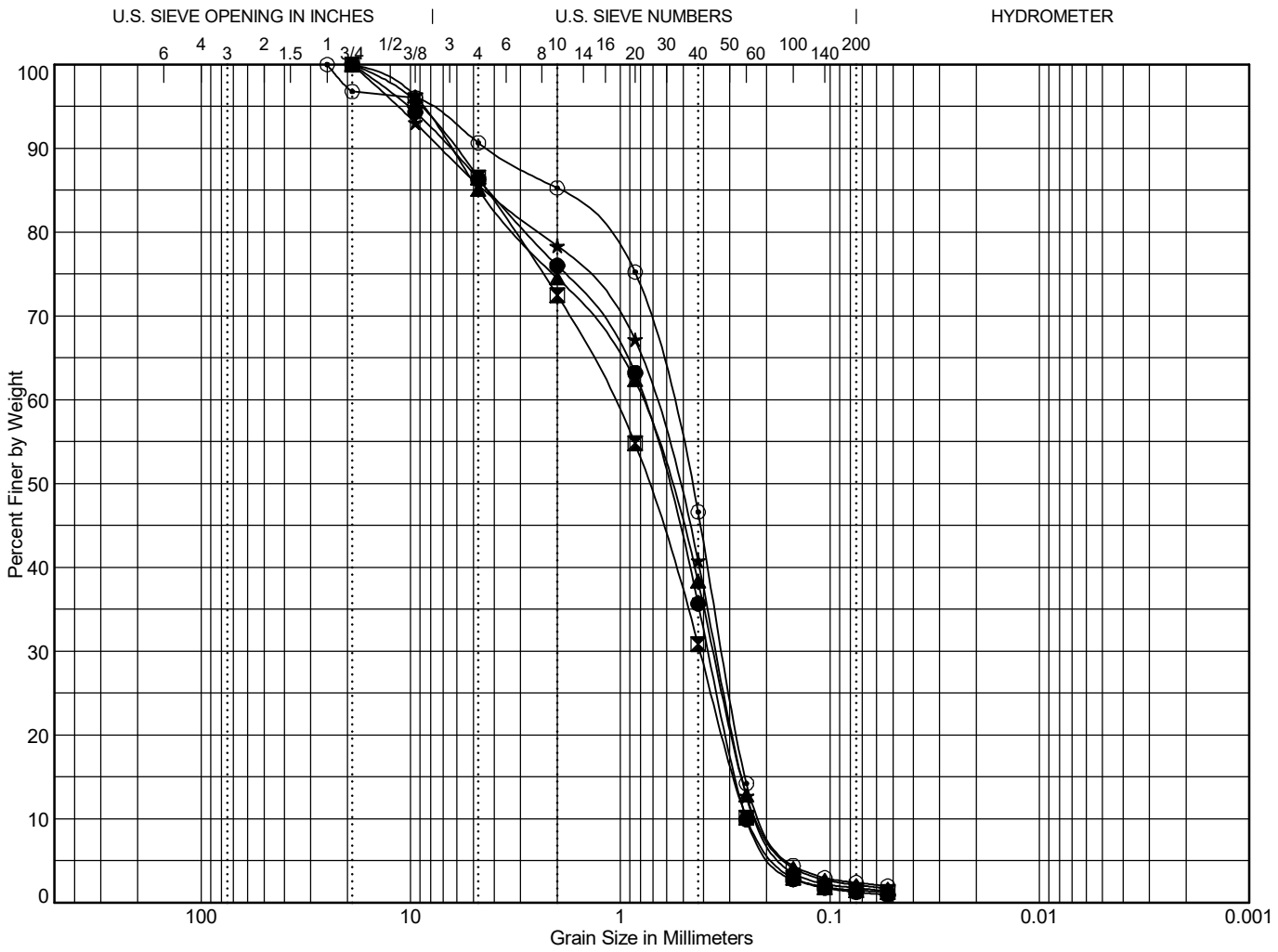
Goosefoot Housing Project
SE Corner of 2nd St and De Bruyn Ave
Langley, WA 98260

Log of Test Pits

Figure 6



Cobbles	Gravel		Sand			Silt or Clay
	coarse	fine	coarse	medium	fine	

Point		Depth	Classification	LL	PL	PI	C_c	C_u
●	TP-1	3.5	POORLY GRADED SAND (SP)				0.73	3.13
⊠	TP-1	9.0	POORLY GRADED SAND (SP)				0.64	4.41
▲	TP-2	4.1	POORLY GRADED SAND (SP)				0.76	3.75
★	TP-3	5.8	POORLY GRADED SAND (SP)				0.79	3.28
⊙	TP-4	1.9	POORLY GRADED SAND (SP)				0.89	2.93

Point		Depth	D_{90}	D_{60}	D_{50}	D_{30}	D_{10}	%Coarse Gravel	% Fine Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Fines
●	TP-1	3.5	6.528	0.784	0.609	0.378	0.25	0.0	13.7	10.3	40.3	34.4	1.3
⊠	TP-1	9.0	6.17	1.093	0.74	0.416	0.248	0.0	13.5	14.0	41.6	29.4	1.5
▲	TP-2	4.1	6.449	0.795	0.595	0.357	0.212	0.0	14.9	10.6	36.2	36.2	2.1
★	TP-3	5.8	7.147	0.704	0.541	0.347	0.215	0.0	14.4	7.3	37.6	39.0	1.8
⊙	TP-4	1.9	4.273	0.588	0.461	0.324	0.201	3.2	6.1	5.4	38.7	44.2	2.4

$C_c = D_{30}^2/(D_{60} * D_{10})$

$C_u = D_{60}/D_{10}$

To be well graded: $1 < C_c < 3$ and $C_u > 4$ for GW or $C_u > 6$ for SW

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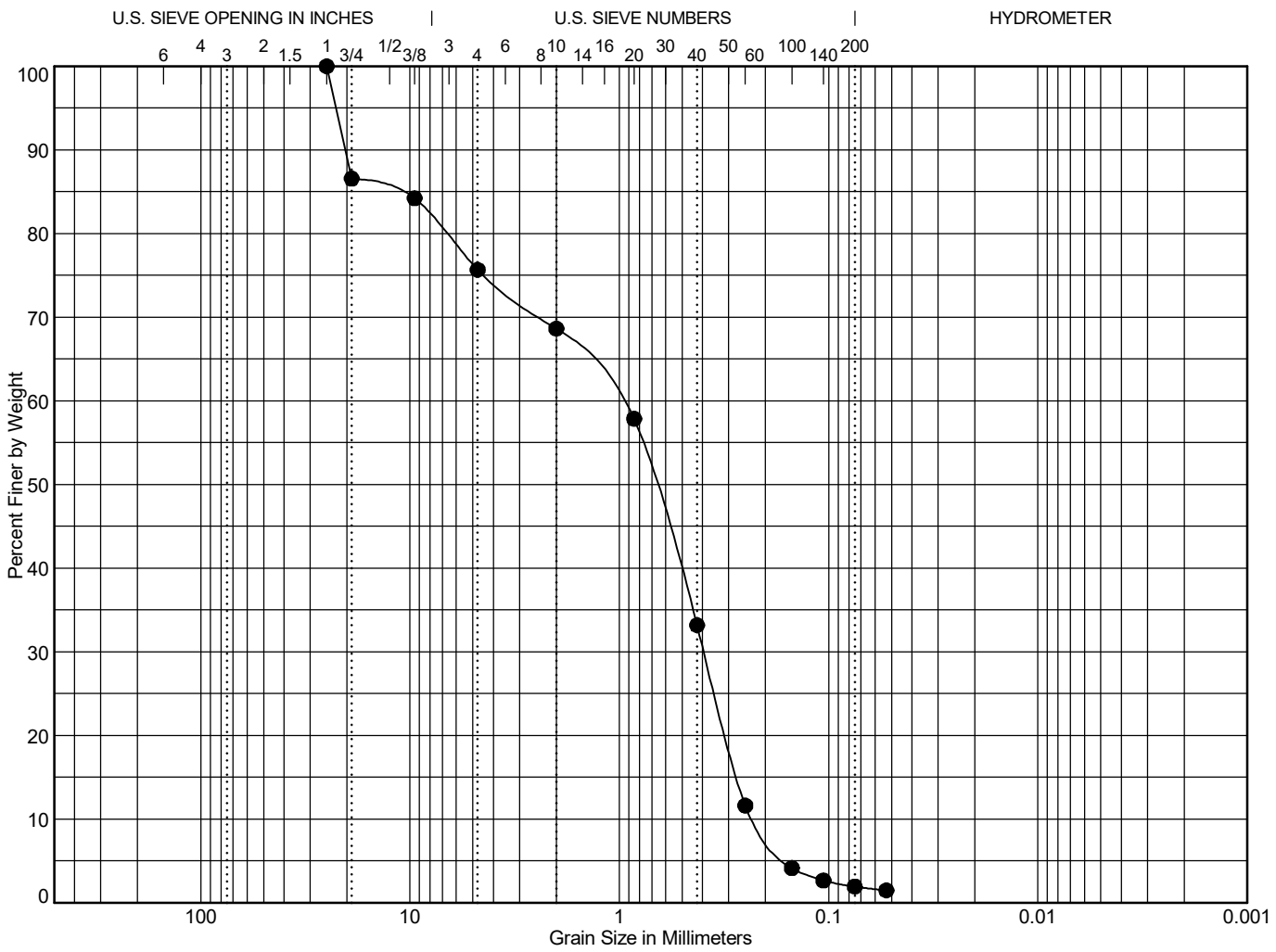
Goosefoot Housing Project
SE Corner of 2nd St and De Bruyn Ave
Langley, WA 98260

Grain Size Test Data

Figure 7



Cobbles	Gravel		Sand			Silt or Clay
	coarse	fine	coarse	medium	fine	

Point	Depth	Classification	LL	PL	PI	C_c	C_u
● TP-4	8.8	POORLY GRADED SAND with GRAVEL (SP)				0.68	4.50

Point	Depth	D_{90}	D_{60}	D_{50}	D_{30}	D_{10}	%Coarse Gravel	% Fine Gravel	% Coarse Sand	% Medium Sand	% Fine Sand	% Fines
● TP-4	8.8	20.379	1.007	0.682	0.393	0.224	13.4	10.9	7.0	35.5	31.2	1.9

$C_c = D_{30}^2/(D_{60} * D_{10})$

$C_u = D_{60}/D_{10}$

To be well graded: $1 < C_c < 3$ and $C_u > 4$ for GW or $C_u > 6$ for SW

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Goosefoot Housing Project
SE Corner of 2nd St and De Bruyn Ave
Langley, WA 98260

Grain Size Test Data

Figure
8

REPORT LIMITATIONS AND GUIDELINES FOR ITS USE[1]

Subsurface issues may cause construction delays, cost overruns, claims, and disputes. While you cannot eliminate all such risks, you can manage them. The following information is provided to help:

Geotechnical Services are Performed for Specific Purposes, Persons, and Projects

At GeoTest our geotechnical engineers and geologists structure their services to meet specific needs of our clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of an owner, a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared solely for the client. No one except you should rely on your geotechnical engineer who prepared it. And no one – not even you – should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report is Based on a Unique Set of Project-Specific Factors

GeoTest's geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the clients goals, objectives, and risk management preferences; the general nature of the structure involved its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless GeoTest, who conducted the study specifically states otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

1Information in this document is based upon material developed by ASFE, Professional Firms Practicing in the Geosciences(asfe.org)

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed, for example, from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed construction,
- alterations in drainage designs; or
- composition of the design team; the passage of time; man-made alterations and construction whether on or adjacent to the site; or by natural alterations and events, such as floods, earthquakes or groundwater fluctuations; or project ownership.

Always inform GeoTest's geotechnical engineer of project changes – even minor ones – and request an assessment of their impact. Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.

Subsurface Conditions Can Change

This geotechnical or geologic report is based on conditions that existed at the time the study was performed. Do not rely on the findings and conclusions of this report, whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. Always contact GeoTest before applying the report to determine if it is still relevant. A minor amount of additional testing or analysis will help determine if the report remains applicable.

Most Geotechnical and Geologic Findings are Professional Opinions

Our site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoTest's engineers and geologists review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in your report. Retaining GeoTest who developed this report to provide construction observation is the most effective method of managing the risks associated with anticipated or unanticipated conditions.

1Information in this document is based upon material developed by ASFE, Professional Firms Practicing in the Geosciences(asfe.org)

A Report's Recommendations are Not Final

Do not over-rely on the construction recommendations included in this report. Those recommendations are not final, because geotechnical engineers or geologists develop them principally from judgment and opinion. GeoTest's geotechnical engineers or geologists can finalize their recommendations only by observing actual subsurface conditions revealed during construction. GeoTest cannot assume responsibility or liability for the report's recommendations if our firm does not perform the construction observation.

A Geotechnical Engineering or Geologic Report may be Subject to Misinterpretation

Misinterpretation of this report by other design team members can result in costly problems. Lower that risk by having GeoTest confer with appropriate members of the design team after submitting the report. Also, we suggest retaining GeoTest to review pertinent elements of the design teams plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having GeoTest participate in pre-bid and preconstruction conferences, and by providing construction observation.

Do not Redraw the Exploration Logs

Our geotechnical engineers and geologists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors of omissions, the logs included in this report should never be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable; but recognizes that separating logs from the report can elevate risk.

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, but preface it with a clearly written letter of transmittal. In that letter, consider advising the contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with GeoTest and/or to conduct additional study to obtain the specific types of information they need or prefer. A pre-bid conference can also be valuable. Be sure contractors have sufficient time to perform additional study. Only then might you be in a position to give contractors the best information available, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

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In addition, it is recommended that a contingency for unanticipated conditions be included in your project budget and schedule.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering or geology is far less exact than other engineering disciplines. This lack of understanding can create unrealistic expectations that can lead to disappointments, claims, and disputes. To help reduce risk, GeoTest includes an explanatory limitations section in our reports. Read these provisions closely. Ask questions and we encourage our clients or their representative to contact our office if you are unclear as to how these provisions apply to your project.

Environmental Concerns Are Not Covered in this Geotechnical or Geologic Report

The equipment, techniques, and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated containments, etc. If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk management guidance. Do not rely on environmental report prepared for some one else.

Obtain Professional Assistance to Deal with Biological Pollutants

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts biological pollutants from growing on indoor surfaces. Biological pollutants includes but is not limited to molds, fungi, spores, bacteria and viruses. To be effective, all such strategies should be devised for the express purpose of prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional biological pollutant prevention consultant. Because just a small amount of water or moisture can lead to the development of severe biological infestations, a number of prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of this study, the geotechnical engineer or geologist in charge of this project is not a biological pollutant prevention consultant; none of the services preformed in connection with this geotechnical engineering or geological study were designed or conducted for the purpose of preventing biological infestations.

1Information in this document is based upon material developed by ASFE, Professional Firms Practicing in the Geosciences(asfe.org)