CITY OF CARNATION

NOTICE OF DECISION
Site Development Application No. SPR-22-0003
Design Review Application DR-22-0004
Sno-Valley Senior Housing

Notice is hereby given that on June 13, 2023, the City of Carnation Hearing Examiner issued a decision of Conditional Approval on the above referenced applications for Site Development Permit and Design Review Permit, which was brought to public hearing on May 31, 2023, at 10:00 AM, conducted in person and remotely from the Council Chambers at the Carnation City Hall. The purpose of the hearing was to evaluate and receive public testimony regarding the following application:

Description of Proposal: A proposed new 3-story affordable senior housing building consisting of 15 one-bedroom residential units with common areas, associated parking for 27 vehicles, and outdoor amenity spaces on 17,800 square feet of property in the Mixed Use (MU) zone. In addition to meeting the requirement for Affordable Housing in Chapter 15.50 CMC this proposal will utilize the density incentives offered in Section 15.50.030 CMC and 15.50.040 CMC.

Project Location: The subject property is located adjacent to the north side of the Snoqualmie Valley Senior Center at the intersection of Stephens Avenue and Commercial Street in Carnation, Washington, and identified as Assessor's Parcels No. 865830-2230 and 865830-2225.

Applicant: Roger Tucker, Environmental Works.
Property Owner: Sno-Valley Senior Center

Decision: The Hearing Examiner issued a decision of APPROVAL for the requested Site Development Review Permit and Design Review Permit to new 3-story affordable senior housing building consisting of 15 one-bedroom residential units as described above subject to conditions as provided in the Decision signed June 13, 2023.

Appeal Procedure: The applicant for a project permit, owner of property to which a project permit decision is directed, and/or any other person aggrieved or adversely affected by the decision of the hearing examiner on a Type III permit application may file an appeal with the city clerk for a closed record appeal hearing before the city council. Said appeal must be filed within fourteen (14) calendar days following the date of issuance of this notice of decision. Appeals and the appeal fee, if applicable, shall be delivered to the planner or city clerk, as prescribed by Section 15.11.010, by mail or personal delivery before 5:00 p.m. on the last business day of the appeal period. A notice of the appeal must be filed with the City of Carnation Planning Department at 4621 Tolt Avenue, Carnation Washington by **5:00 P.M. on June 29, 2023,** and must be accompanied by a filing fee of $780.00. A Statement of Appeal shall identify the decision being appealed, the grounds for appeal and the facts upon which the appeal is based.

Further information: The complete project file is available for review on the City's "Projects" webpage at Sno-Valley Senior Housing - Development Projects - Carnation, WA (carnationwa.gov), or at the Carnation City Hall, 4921 Tolt Avenue, Carnation, WA.

As provided in RCW 36.70B.130, affected property owners may request a change in valuation for property tax purposes notwithstanding any program of revaluation. Any request for a valuation change must be accompanied by sufficient sales information to support the requested change in assessed value. Requests must be made in the office of the King County Assessor.

A copy of the decision is attached and incorporated by reference. For more information, contact Tim Woolett, City Planner, at 425-333-4192 or tim.woolett@carnationwa.gov.

BEFORE THE HEARING EXAMINER
FOR THE CITY OF CARNATION

In the Matter of the Application of	)	NO. SPR22-0003/DR22-0004
	)	
Sno Valley Senior Center	)	
	)	
	)	FINDINGS, CONCLUSIONS,
For Site Development Review and	)	AND DECISIONS
Design Review Approval for Affordable	)	
Senior Housing	)	
	)	

SUMMARY OF DECISION

The request for site development review and design review approval to develop 15 affordable senior housing units using the density incentives of CMC 15.50 is **GRANTED** subject to conditions.

SUMMARY OF RECORD

Request:

Sno Valley Senior Center requested site development review and design review approval to construct affordable senior housing at the southeast corner of West Commercial Street and Stephens Avenue in Carnation, Washington. The project would include 15 housing units and associated common areas within a three-story, 13,000 square foot building, 27 parking spaces, and outdoor amenity spaces. The Applicant proposes to utilize the affordable housing density incentives established in Chapter 15.50 of the Carnation Municipal Code.

Hearing Date:

The Carnation Hearing Examiner conducted an open record hearing on the request on May 31, 2023. The record was held open through June 2, 2023 to allow members of the public who encountered technology issues that prevented them from joining the virtual hearing to submit written comments, with time scheduled for written responses by the parties. No post-hearing comments were received, and the record closed on June 2, 2023.

No in-person site visit was conducted, but the Examiner viewed the property on Google Maps.

Testimony:

At the hearing the following individuals presented testimony under oath:

Tim Woolett, City of Carnation Planner

Lisa Yeager, Director Emeritus, Sno Valley Senior Center

Roger Tucker, Architect

Mary May, GS Consulting

Exhibits:
At the open record hearing, the following exhibits were admitted in the record:

1. Staff Report, dated May 24, 2023
2. Site plan review and design review Master Application, received November 18, 2022
3. Project Plan Set
4. Title Report
5. Geotechnical Report
6. Drainage Report
7. ASM Archaeological Report
8. Certificate of Water Availability
9. Certificate of Sewer Availability
10. Notice of Complete Application, dated December 2, 2022
11. SEPA Threshold Determination, dated March 10, 2023 and modified April 26, 2023
12. Legal Notices/Affidavits; Notice of Application, SEPA Threshold Determination, and Public Hearing (affidavit of mailing and publication confirmation)
13. Agency comments:
    a. City Engineer comments, dated December 12, 2022
    b. SafeBuilt (Building Official) comments, dated April 12, 2022
14. Pre-application meeting summary, dated October 14, 2021
15. Parking Study prepared by Heath & Associates, dated November 10, 2022
16. Supplemental Planning Staff memo regarding satellite parking, offered and admitted during the hearing
17. Applicant PowerPoint presentation

Having considered the testimony and exhibits admitted, the Hearing Examiner enters the following findings and conclusions:

FINDINGS

1. Sno Valley Senior Center (Applicant) requested site development review and design review approval to construct affordable senior housing at the southeast corner of West Commercial Street and Stephens Avenue in Carnation, Washington.[1] The project would include 15 housing units and associated common areas within a three-story, 13,000

[1] The legal description of the subject property is a portion of the Northwest Quarter of the Southeast Quarter of Section 16, Township 25 North, Range 7 East, W.M.; also known as Assessor's Parcel Numbers 865830-2230 and 865830-2225. *Exhibits 1, 2, and 3*.

square foot building, 27 parking spaces, and outdoor amenity spaces. The Applicant proposes to utilize the affordable housing density incentives provided by Chapter 15.50 of the Carnation Municipal Code (CMC). *Exhibits 1, 2, and 3.*

2. The applications were received on November 18, 2022 and determined to be complete as of December 2, 2022. *Exhibits 1 and 10.*

3. Although the site development review and design review permits would normally be subject to an administrative Type II decision process, the subject applications are being processed pursuant to Type III procedures pursuant to CMC 15.50.070.C, which requires a Type III process (including Hearing Examiner decision) for use of affordable housing density incentives. Because the underlying Type II permits do not require a public hearing, the project is also "subject to the decisional criteria for conditional use permits pursuant to CMC Section [15.18.040.A] …." *CMC 15.50.070.C; Exhibit 1, page 6.* The City has interpreted this provision as meaning that the proposal's compliance with the conditional use criteria must be considered by the Hearing Examiner, but that no separate conditional use permit is required. *Exhibit 1; Tim Woolett Testimony.*

4. The subject property consists of two parcels totaling 18,110 square feet in area, which are adjacent to the north side of the existing Snoqualmie Valley Senior Center. The parcels are currently occupied by a parking lot (18 spaces) that serves the senior center and two small sheds. The Applicant proposes to remove the existing parking lot and sheds and combine the parcels for redevelopment of the site. The City Engineer has approved the lot combination, but as of the date of the hearing the lot combination had not been recorded. The lot combination is needed because the proposed building would be constructed over the shared lot line. *Exhibits 1 and 3; Tim Woolett Testimony.*

5. In addition to the senior center to the south of the subject property, surrounding land uses include multifamily residences to the north of the subject property (across West Commercial Street), single-family residences to the west of the subject property (across Stephens Avenue), and commercial uses to the east of the subject property. *Exhibits 3 and 11; Tim Woolett Testimony.*

6. The subject property is generally flat and does not contain any critical areas or floodplain. *Exhibit 1.*

7. The subject property is zoned Mixed Use (MU), which is consistent with its Medium Intensity Commercial Comprehensive Plan designation. The MU zone is designed for a mixture of "certain, limited residential uses, office uses and commercial uses." *CMC 15.36.020.E; Exhibit 1.* The Land Use Element of the Comprehensive Plan states that the purpose of the MU zone is to create a buffer between commercial and residential areas. *Exhibit 1, page 2.* Multifamily residential development, as well as use of density incentives for affordable senior housing, are allowed in the MU zone. All new multifamily developments require design review in the MU zone, and those of five or more units require site development review. *CMC 15.40, Table 2; CMC 15.50.020.B;*

CMC 15.18.160.A.1.C; CMC 15.18.250.

8. The development standards applicable to the MU zone include: minimum residential density of 12 dwelling units per net acre;[2] maximum residential density of 24 dwelling units per net acre; maximum impervious surface coverage of 80%; maximum building height of 35 feet (with a third-floor step back required for properties between 20 and 60 feet from a single-family residential zone); front yard setback of 10 feet, side yard setbacks of five feet, and a rear yard setback of 20 feet (or 20% of lot area, whichever is smaller). *CMC 15.48.080; CMC 15.48.060.G.2.*

9. Chapter 15.50 of the CMC provides a density incentive for affordable senior housing. The maximum density achievable using the density incentive is 150% of the zone's base density. *CMC 15.50.030.A.* For senior rental units in which at least one member of the household is 55 years of age or older, with a combined income no greater than 50% of the median King County family income adjusted for household size, the density bonus is 1.5 units per affordable senior housing unit provided. *CMC 15.50.040.D.*

10. The maximum number of dwelling units that may be developed on the 0.42-acre site is 10 without a density incentive and 15 with a density incentive. Fifteen dwelling units are proposed, all of which would be income restricted. Eight of the units would serve seniors with incomes at or below 30% of the area median income, and seven of the units would serve seniors with incomes at or below 50%of the area median income. Pursuant to CMC 15.50.080, a restrictive covenant ensuring that the affordability requirements are met for at least 50 years is required prior to issuance of a certificate of occupancy. *Exhibits 1 and 17; CMC 15.50.080.*

11. The proposed development would comply with MU bulk and setback standards. The impervious surface coverage would be 75%. Proposed building height is 34.38 feet as measured to the mid-point between the gable roof ridgeline and eaves per CMC 15.48.060.A(1). Because there is single-family residential zoning within 60 feet of the subject property across Stephens Avenue, the third floor would be stepped back on the west side of the building as required by CMC 15.48.060.G.2. The building would be set back 10 feet from the front property line (Stephens Avenue) as measured to the edge of the front porch, or 19.3 feet as measured to the building wall; 9.2 feet from the north side property line (West Commercial Street); 34.7 feet from the south side property line/Alley C, and approximately 56 feet from the rear property line/Alley J. *Exhibits 1 and 3; Roger Tucker Testimony.*

12. For projects comprised entirely of affordable senior housing, the minimum parking requirement is one parking space per dwelling unit. *CMC 15.50.060.* In this case, the parking requirement for the proposed senior housing is considered together with the parking required for the existing senior center because the subject property is currently

[2] Pursuant to CMC 15.48.020.B states that a "net" acre excludes any space that would not be factored into computing minimum lot size, such as right-of-way and open space tracts.

providing parking for the senior center. Fifteen parking spaces are required for the affordable senior housing units and 20 parking spaces are required for the senior center, for a total of 35 required spaces. The Applicant proposes to develop 22 parking spaces on the subject property (along Alleys C and J) and five parking spaces off-site along Alley J within the senior center parcel, for a total of 27 spaces. *Exhibits 1, 3, and 15.* CMC 15.72.080 allows "satellite parking" as long as the spaces are within 1,000 feet of the use served, written permission of the property owner is provided, and the party using the satellite parking signs an acknowledgement that continuing validity of the permit requires providing the requisite number of parking stalls. *CMC 15.72.080.A, -.B and -.C.* City Planning Staff recommended as a condition of approval that both affected entities submit the required permission and acknowledgment (i.e., a reciprocal parking agreement). *Exhibit 16; Tim Woolett Testimony.*

13. With respect to the eight remaining parking spaces required for the two uses, CMC 15.72.020 allows flexibility in administration of the parking standards and, specifically, a deviation from the parking standards when "a residential development is irrevocably oriented toward the elderly or other demographic group which, due to the driving characteristics of the group, requires fewer or more parking stalls than the general populace." *CMC 15.72.020.B.* In this case, the Applicant submitted that the low-income senior demographic served by the project can be expected to own fewer cars. This argument was supported by a parking study indicating parking demand of 0.44 vehicles per unit for senior low-income housing (or seven parking spaces for the proposed 15-unit development). *Exhibit 15.* In addition, there are nine parking spaces located within the Stephens Avenue right-of-way in front of the senior center, which were not included in the parking count. *Exhibit 3; Roger Tucker Testimony; Lisa Yeager Testimony.*

14. During environmental review of the project, the City considered the impact of spillover parking during peak times, which would potentially displace public parking opportunities for the City's pedestrian-oriented downtown district. *Exhibit 1.* The Applicant's parking study indicated that the Senior Center's community lunches, for example, create a parking demand of 29 vehicles. *Exhibit 15.* As mitigation for the impact to public parking resulting from the reduced number of on-site parking spaces, the City required the Applicant to develop five angled on-street parking spaces on the west side of Stephens Avenue from the mid-block alley south to Entwistle Street. *Exhibit 11; Tim Woollett Testimony.*

15. The Applicant submitted a landscape plan depicting compliance with the relevant landscaping standards, including providing a landscape bed containing trees within the parking area along Alley C to divide the spaces into groupings of no more than eight, and providing landscaping and screening fences between the ends of the parking areas and the public streets. Twenty-five trees and 259 shrubs would be installed around the building/site perimeter along with groundcover, within the on-site parking areas, and around the perimeter of the parking area on the senior center site. The recommended conditions of approval require a maintenance assurance device for the landscaping to ensure consistency with CMC 15.76.080. *Exhibits 1 and 3.*

16. City Planning Staff evaluated the project against the City's design standards and concluded that the standards are satisfied. Staff's findings on design (Exhibit 1, pages 14 through 18) are incorporated by reference. The following points demonstrating compliance with the design standards are highlighted:

- The primary entrance to the building would be oriented towards Stephens Avenue, and there would be windows facing all adjacent streets and alleys.
- Rooftop mechanical equipment (at east end of building) would be screened by a parapet wall.
- Open space would be provided in excess of the 1,500 square feet required for compliance with the design standards. The open space would include a back (east-facing) patio, which would be connected to Commercial Avenue and Alley C by paved walkways, and a garden area containing raised planter beds.
- All parking would be located to the rear or side of the building.
- There would be horizontal building modulation and variation in the roofline, and a wrap-around front porch on the west side of the building.
- The architectural features would be consistent with those found in historic Carnation buildings. The details and finishes would be similar to those of the existing Senior Center, which was constructed in 1925.

Exhibits 1 and 3; Roger Tucker Testimony.

17. The proposed development would be connected to the City water and sewer systems, which have capacity to serve the development. *Exhibits 8 and 9.*

18. The subject property has frontage on Stephens Avenue, West Commercial Street, Alley C, and Alley J. Per the comments of the City Engineer, the Applicant is required to install ADA-compliant curb ramps at four locations, replace cracked sidewalk panels along the property frontage, provide a pavement overlay on alleys/streets affected by utility installation, and install street illumination at the alley intersections. In addition, the Applicant is required to submit a traffic impact study and provide mitigation if traffic from the development is expected to cause a reduction in transportation level of service. These requirements were incorporated into Planning Staff's recommended conditions of project approval. *Exhibits 1 and 13.A.*

19. All stormwater runoff would be infiltrated on site. Roof runoff from the new building would be tightlined to an infiltration trench to be located under the parking area adjacent to Alley C. Parking lot runoff would be collected into Contech StormFilter catch basins for treatment prior to discharge into the infiltration trench. Stormwater requirements identified by the City Engineer during his review were incorporated into Planning Staff's recommended conditions of approval. *Exhibits 1, 3, and 6.*

20. As low-income senior housing, the proposal is exempt from park, traffic, and school impact fees. *Exhibit 1; CMC 3.50.050, CMC 3.48.060, and CMC 3.70.050.*

21. The City conducted environmental review of the project under the State Environmental Policy Act (SEPA) and issued a mitigated determination of non-significance (MDNS) on March 10, 2023. In response to Applicant comments, the City issued a Modified MDNS on April 26, 2023. The Modified MDNS contains one mitigation measure requiring the Applicant to develop five on-street parking spaces. *Exhibit 11*.

22. Notice of the open record hearing was mailed to property owners within 300 feet of the subject property on April 28, 2023, published in *Snoqualmie Valley Record* on May 5, 2023, and posted on site on May 12, 2023. There was no public comment on the applications. *Exhibits 1 and 12.*

CONCLUSIONS

Jurisdiction:
The hearing examiner is granted authority to hold a public hearing and make a decision on the subject site plan review and design review applications pursuant to CMC 15.50.070.C, which species a Type III process for projects using affordable housing density incentives.

Criteria for Review:
Affordable Housing Incentives
For projects that would not otherwise require a public hearing, approval of use of affordable housing incentives by the Hearing Examiner requires that the project be consistent with the requirements of CMC 15.50 and the criteria for a conditional use permit (CMC 15.18.040.A). The criteria for a conditional use permit are as follows:

1. The proposed use is consistent with the city of Carnation comprehensive plan and the CMC;
2. The proposed use is designed and constructed, and will be operated and maintained, in a manner that is compatible with the existing or intended character, appearance, quality of development and physical characteristics of both the subject property and the surrounding vicinity;
3. The location, size and height of buildings, structures, walls, fences, and screening vegetation for the conditional or special use will not hinder neighborhood circulation or discourage the permitted development or use of neighboring properties;
4. The type, hours of operation, and appropriateness of the proposed use in relation to adjacent uses will not create unusual hazards or result in adverse impacts; and
5. The proposed use will be served by adequate public facilities and services and will not adversely affect public services to the surrounding area in a manner and/or to a degree that cannot be sufficiently mitigated through the imposition of reasonable conditions of approval.

Site Plan Review
Pursuant to CMC 15.18.220.A, the decision on site plan review shall include any reasonable conditions to ensure consistency with the city's development regulations based upon, but not limited to the following:

1. Conformance of the proposed site development plan with any conditions on a portion of the site, and with any applicable codes and ordinances of the state of Washington and the city;
2. A finding that the site plan makes appropriate provisions for, but not limited to, the public health, safety, and general welfare related to dedication of rights-of-way or recreation space, and tracts, easements, or limitations which may be proposed or required for utilities, access, drainage controls, sanitation and water supply; and
3. A finding that the site plan complies with all applicable provisions of this title, and all other applicable adopted administrative rules and regulations.

Design Review
Pursuant to CMC 15.18.320, the decision on design review shall include any conditions to ensure consistency with the city's development regulations based on, but not limited to, the following:

1. Conformance of the proposed design with an approved site plan, building permit, any conditions on a portion of the site, and with any applicable codes and ordinances of the state of Washington and the city;
2. A finding that the design of new or remodeled buildings and site plan meet the requirements of the design standards; and
3. A finding that the site plan complies with all applicable provisions of this title, and all other applicable administrative rules and regulations.

Conclusions Based on Findings:

Affordable Housing as Conditional Use

1. As conditioned, the proposal is consistent with the affordable housing requirements of CMC 15.50. Specifically, the housing would be located in an authorized zone per CMC 15.50.020, would not exceed the maximum density of CMC 15.50.030, and would be affordable to senior households with a combined income of no greater than 50% of the King County median per CMC 15.50.040. The parking provided on site would exceed one space per unit as required by CMC 15.50.060. However, to accommodate the parking spaces required for the adjacent senior center use, a deviation from the parking standard pursuant to CMC 15.72.020 is required and is approved. The conditions of approval address the restrictive covenant requirement of CMC 15.50.080. *Findings 7, 9, 10, 12, and 13.*

2. As conditioned, the proposal is consistent with the criteria for a conditional use permit, which apply to this project because it uses affordable housing density incentives.

a. As conditioned, the proposed use is consistent with the Comprehensive Plan and the CMC. Consistent with the purpose of the MU zone, the use would provide a transition between lower-density residential development to the west of the property and commercial development to the east of the property. The new building would comply with the bulk and setback standards of the MU zone. The development density would be consistent with MU standards as modified through the affordable housing incentives of CMC 15.50. *Findings 5, 7, 8, 9, 10, and 11.*

b. As conditioned, the use would be designed, constructed, operated, and maintained in a manner that is compatible with the subject property and surrounding properties. There is existing multi-family housing to the north of the subject property. The senior housing use would be compatible with the senior center to the south of the subject property, which would provide services relevant to future residents. The building design, which has been reviewed against the City design guidelines, would be similar to the senior center. Shared off-street parking would be provided for the senior center and senior housing uses, and additional on-street parking would be provided in the vicinity. Off-street parking would be screened with landscaping. *Findings 4, 5, 6, 10, 11, 12, 13, 14, 15, and 16.*

c. As conditioned, the proposed improvements would have no negative effect on circulation in the area and would not discourage development or use of nearby properties. The conditions of approval incorporate the requirements of the City Engineer with respect to preparation of a traffic study and the provision of street/alley improvements. The condition of the Modified MDNS requires the Applicant to mitigate parking impacts by developing five on-street parking spaces. *Findings 14, 18, and 21.*

d. As conditioned, the use would not create unusual hazards or result in adverse impacts. The Applicant has demonstrated that the number of off-street parking spaces proposed, considered together with the on-street parking available at the senior center and the five spaces required by the Modified MDNS, would be adequate for the demographic group served. The conditions of approval incorporate the requirements of the City Engineer with respect to preparation of a traffic study and the provision of street/alley improvements. Stormwater would be infiltrated on site. *Findings 12, 13, 14, 18, 19, and 21.*

e. As conditioned, the proposed use would be served by adequate public facilities and services. The conditions of the City Engineer would ensure that the use does not adversely affect services to the surrounding area. *Findings 17, 18, 19, and 21.*

Site Plan Review

3. There are no environmental features on site that affect site development. As conditioned and with design review approval, the proposal conforms to City ordinances and state law. The City conducted environmental review of the project under SEPA and issued a Modified MDNS. With respect to parking, the requested deviation from the City's off-

street parking requirement pursuant to CMC 15.72.020 is approved. The Applicant has demonstrated that the number of off-street parking spaces proposed, considered together with the on-street parking available at the senior center and the five spaces required by the Modified MDNS, would be adequate for the demographic group served. The proposed building would comply with the bulk and setback standards of the MU zone. Landscaping would be provided, and the conditions of approval require a maintenance assurance device. The requirements of the City Engineer, which address utilities, access, and stormwater, have been incorporated into the conditions of approval. *Findings 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, and 21.*

4. As conditioned, the site plan makes appropriate provision for the public health, safety, and general welfare related to dedication of rights-of-way or recreation space, and tracts, easements, or limitations which may be proposed or required for utilities, access, drainage controls, sanitation, and water supply. The project would be connected to the municipal water and sewer systems, which have sufficient capacity. Landscaped open space would be provided on site. Stormwater would be infiltrated on site. The requirements of the City Engineer, which address utilities, access, and stormwater, have been incorporated into the conditions of approval. *Findings 16, 17, 18, and 19.*

5. As described in the preceding conclusions, the site plan meets all applicable requirements of the CMC and other regulations. Because the building would cross the shared lot line between the lots comprising the subject property, the conditions of approval require the lot combination to be recorded prior to the issuance of further development permits. *Findings 4, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, and 21.*

Design Review

6. The design was submitted with a site plan review application, which is approved as described above. There are no environmental conditions affecting the design. The design conforms with applicable City ordinances, including those relating to building height, setbacks, and impervious surface coverage. *Findings 1, 2, 6, 8, and 11.*

7. The building design and site plan meet the requirements of the City's design standards. The design satisfies requirements for building and roofline modulation, provides parking to the rear and side of the building, and includes usable open space. The finishes would be similar to the existing senior center. *Finding 16.*

8. As described in previous conclusions, the site plan as conditioned complies with all applicable provisions of Title 15. With respect to parking, the requested deviation from the City's off-street parking requirement pursuant to CMC 15.72.020 is approved. The Applicant has demonstrated that the number of off-street parking spaces proposed, considered together with the on-street parking available at the senior center and the five spaces required by the Modified MDNS, would be adequate for the demographic group served. *Findings 8, 9, 10, 11, 12, 13, 14, and 15.*

DECISIONS

Based upon the preceding findings and conclusions, the request for site development review and design review approval to develop 15 affordable senior housing units using the density incentives established in CMC Chapter 15.50 is **GRANTED** subject to the following conditions:

1. The proposed use shall be developed in substantial conformance with the submitted site plans and elevations included with the application for Site Development Review permit as modified through this review process in the record at Exhibit 3.

2. All construction and site development activities related to the site development review are prohibited until the decision becomes effective and until authorized by any subsequent required permits pursuant to CMC 15.18.220.F.

3. Prior to construction activities the Applicant shall obtain an approved building permit application from the City of Carnation.

4. Prior to final certificate of occupancy, the Applicant shall present satisfactory written evidence that the uses for each property have the permission of the owners for the reciprocate use of the satellite parking spaces as described in this development proposal. The parties must also sign an acknowledgment that the continuing validity of these permits and the current level of parking accommodations for the senior center depends upon continuing ability to provide the requisite number of parking spaces collectively provided on both properties. This requirement does not bar the proponents from submitting any other alternative acceptable to the City Attorney that would accomplish the desired outcome of assuring adequate parking for both properties.

DECIDED June 13, 2023.

Sharon A. Rice
Carnation Hearing Examiner

STAFF REPORT TO THE HEARING EXAMINER
SITE DEVELOPMENT REVIEW PERMIT – SPR 22-0003 AND DESIGN REVIEW PERMIT – DR 22-0004
SNO-VALLEY SENIOR HOUSING
Public Hearing Date: May 31, 2022

1. Project Information

A. Property Owner: Sno Valley Senior Center
Applicant: Roger Tucker, Senior Architect
Environmental Works
402 15th Avenue East
Seattle, WA 98112

B. Proposal:

An application for Site Development Review and Design Review permit approval to allow construction of a new 3-story affordable senior housing building consisting of 15 one-bedroom units that are each approximately 500 square feet, with common areas, associated parking for 27 vehicles, and outdoor amenity spaces on 17,800 square feet of property in the Mixed Use (MU) zone. Vehicular access to the property will be from "Alley" J along the property's east boundary, and "Alley C" along the property's south boundary.

The project also provides common outdoor space, offices, sitting room, and laundry rooms on each floor. The total building's heated area is approximately 13,000 square feet with approximately 1,040 square feet of covered porches and the site area is 18,109.88.00 square feet (per applicant's documentation). This is a proposal to provide affordable housing in accordance with the requirements of Chapter 15.50 CMC.

C. Project History/Background:

The applicants submitted a pre-application for review by city staff and received a response in a letter dated October 14, 2021 [*Exhibit 14*].

The applications for Site Development Review and Design Review were submitted on November 18, 2022, and determined complete on December 2, 2022 [*Exhibit 10*].

Public notice was issued by mail to adjacent property owners on December 15, 2022, published in the Snoqualmie Valley Record on December 16, 2022, and a notice of application sign was posted by the property owner at the site on December 19, 2022.

A SEPA Mitigated Determination of Non-Significance was issued on March 10, 2023, with a 14-day comment period that ended on March 24, 2023.

In response to applicant comments, a Modified MDNS was issued on April 26, 2023.

On April 13, 2023, it was discovered that a project seeking the density bonus opportunities for affordable housing proposals in accordance with CMC 15.50 must be reviewed for consistency with the conditional use criteria and as a Type III permit process with a Hearing Examiner's decision following an open record public hearing.

Notice of Public Hearing was published in the Snoqualmie Valley Record on May 5, 2023, mailed to property owners within 300 feet on April 28, 2023, and posted on the site on May 12, 2023.

D. Location: The subject property is located adjacent to the north side of the Snoqualmie Valley Senior Center at the intersection of Stephens Avenue and Commercial Street in Carnation, Washington, and identified as Assessor's Parcels No. 865830-2230 and 865830-2225.

E. Site Description (Size and Condition): The property consists of two assessor's parcels being approximately 17,800 square feet (0.41 acres) in area. The property is situated adjacent to the south side of W Commercial Street and the east side of Stephens Avenue. It is currently occupied by a parking lot area, and two small outbuildings within the southwest, central portions of the site, respectively. Other areas of the site consist of grass lawn areas, landscaping, and gravel surfacing. The topography within the site is generally level to gently sloping.

F. Critical Areas: There are no known or mapped critical areas on the subject property. However, the submitted geotechnical report provides that based on their "observations and the material encountered, we would interpret this site as having a low to moderate erosion hazard where the surficial soils are exposed. It is our opinion that the erosion hazard for site soils should be low in areas where the site is not disturbed." [*ref. Exhibit 5, Geotechnical Engineering Evaluation-Revised; prepared by Nelson Geotechnical Associates, Inc., November 14, 2022*].

G. Zoning/Comprehensive Plan Designation: The subject property is zoned Mixed Use (MU). "*The mixed use district (MU) is designed to accommodate a mixture of certain, limited residential uses, office uses and commercial uses. It is intended that this zoning classification be applied primarily in areas adjacent to the central business district, or as a transition zone between commercial and residential uses*." [CMC 15.36.020.E.]

The Comprehensive Plan's "*Medium Intensity Commercial*" Future Land Use Designation for the site is consistent with the current Mixed Use (MU) zoning designation (reference Comprehensive Plan's Future Land Use Map). The Land Use Element of the Comprehensive Plan provides that the …*Mixed Use zones allow both residential and commercial uses, including office as well as retail. The purpose of the mixed use zone is to create a buffer between the commercial and residential areas*."

H. Flood Zone: The subject property is not within any known or mapped floodway or 100-year floodplain.

2. Agency Comments: A request for comment was distributed to the parties listed below with their accompanying listed comments/conditions.

a. Building Official: The City's Building Official (SafeBuilt) provided comments dated April 12, 2023 (Exhibit 13.b.) are as follows:

1. SAFEBUILT COMMENTS- LOU RE: GEOTECH REPORT REMINDER...
CONCLUSIONS AND RECOMMENDATIONS

General

It is our opinion that the planned development within the site is generally feasible from a geotechnical standpoint. Our explorations indicated that the site was generally underlain by

a relatively thick layer of loose fine-grained alluvial deposits with competent gravelly soils at depths in the range of 13- to 18-feet below the existing ground surface. To reduce the potential for structure settlement or liquefaction hazards in the event of seismic activity, we recommend the new planned structures be supported on 4-inch diameter pipe piles to transfer structure loads to the competent gravelly soils at depth. Any paved parking areas planned as part of the development should be supported on a modified subgrade, as described in the Site Preparation and Grading subsection of this report.

2. *SAFEBUILT SUMMARY COMMENTS LOU AND D.S ARE AS FOLLOWS:*

    1. *Applicant has requested a reduction in the number of city required parking stalls. Once the required number of stalls is determined by the city on the site, the building code related to the required number of ADA parking stalls will be applied to the site and occupancy type(s) as applicable during plan review(s).*

    2. *ADA accessibility will be reviewed and applied as applicable during building plan review(s) based on occupancy type(s).*

    3. *Required setbacks related to fire separation distance based on occupancy and construction type(s) to property lines and/or the public way as applicable to the building code will be reviewed and applied to the building during plan review(s).*

    4. *General building heights and areas based on occupancy and building construction type(s) will be reviewed as applicable during building plan review(s).*

    5. *Fire alarms and/or fire sprinklers/fire flow as applicable will be reviewed based on occupancy and building construction type(s) as applicable during building plan review(s).*
    6. *Buildings shall not be built over property lines. The proposed project structure will span over multiple underling lots. A lot line elimination and/or lot consolidation should happen through the overall planning process to eliminate the underling lot lines for the overall project.*

3. *SAFEBUILT COMMENT - LOU: WATER INTRUSION MITIGATION PER REVISED CODE OF WASHINGTON (RCW).*

    - *RCW 64.55.020 requires that any person applying for a building permit for construction of a multiunit residential building or rehabilitative construction shall submit building enclosure design documents to the appropriate building department prior to the start of construction or rehabilitative construction of the building enclosure.*
    - *Per RCW 64.55.010 (11) Such documents shall be stamped: "Stamped" means bearing the stamp and signature of the responsible licensed architect or engineer on the title page, and on every sheet of the documents, drawings, or specifications, including modifications to the documents, drawings, and specifications that become part of change orders or addenda to alter those documents, drawings, or specifications.*

4. *SAFEBUILT COMMENT - LOU - PARKING PER ADOPTED MUNICIPLE CODE 15.72:*

    15.72.010 NUMBER OF PARKING SPACES REQUIRED.

5. *SAFEBUILT COMMENT LOU RE: FLOOD PLAIN*

VERIFICATION OF FEMA and/or city designated flood zone. The floodplain review and related items would be reviewed as applicable to the project such as elevation

b. Public Works Department: The Public Works Department did not provide comments on the applications.

c. City Engineer: The City Engineer returned comments dated December 13, 2023 [*ref. Exhibit 13.a.*]. The engineer's comments and conditions have been applied as conditions 10 through 10.25.

d. Eastside Fire District 3: Comments from Eastside Fire District 3 are not available at the time of completion of this staff report.

4. **Public Notice**: Public notice was issued by mail to adjacent property owners on December 15, 2022, published in the Snoqualmie Valley Record on December 16, 2022, and a notice of application sign was posted by the property owner at the site on December 19, 2022. A SEPA Mitigated Determination of Non-Significance was issued on March 10, 2023, with a 14-day comment period that ended on March 24, 2023. On April 13, 2023, it was discovered that a project seeking the density bonus opportunities for affordable housing proposals in accordance with CMC 15.50 must be reviewed for consistency with the conditional use criteria and as a Type III permit process, a Hearing Examiner's decision following an open record public hearing. Notice of Public Hearing was published in the Snoqualmie Valley Record on May 5, 2023, mailed to property owners within 300 feet on April 28, 2023, and posted on the site on May 12, 2023.

5. **Public Comments**: There were no public comments received in response to notices of these applications for Site Development Review and Design Review permit.

STAFF FINDINGS, ANALYSIS, AND CONCLUSIONS

Context of Staff Analysis and Recommendation: The City Planner is charged with the duties of upholding and administering the land use ordinances of the City of Carnation and the State of Washington. With the adoption of Carnation's Comprehensive Plan and its most recent update in August, 2015, the Carnation City Council set forth goals and policies designed to provide guidance for orderly development to occur within the City consistent with the Growth Management Act and the desires of area residents. The zoning provisions of the Carnation Municipal Code is one tool developed for the implementation of these policies. Section 15.04.020 A CMC provides that *"This title is adopted pursuant to the authority contained in RCW 35A.63 (Planning and Zoning in Code Cities), RCW 35A.58 (Boundaries and Plats). RCW 36.70A (Growth Management Act), RCW 36.70B (Local Project Review), RCW 86.16 (Flood Prevention), RCW Title 58. (Boundaries and Plats), and any other appropriate state regulations*." RCW 35A.63.105 (*Development regulations—Consistency with comprehensive plan*) provides that "*Beginning July 1, 1992, the development regulations of each code city that does not plan under RCW* 36.70A.040 *shall not be inconsistent with the city's comprehensive plan. For the purposes of this section, "development regulations" has the same meaning as set forth in RCW 36.70A.030*."

The following analysis takes into consideration the standards and requirements in the Carnation Municipal Code in relation to the subject application. As intended by the Carnation City Council and directed by the Municipal Code, this analysis also considers the goals and policies of the Comprehensive Plan as a means of providing additional direction and clarification for the development of a fair and consistent decision. This analysis is recommended by staff based on an

evaluation of the facts of the proposal available at this time. The public hearing process is also required, thereby allowing additional testimony and interpretation of the applicable ordinances, which may have a significant bearing on the record and subsequent decision. There are many Comprehensive Plan and Zoning Code elements that may be applicable. The following are considered by staff to be particularly applicable to the subject proposal.

1. <u>RELATIONSHIP WITH LAND USE REGULATIONS</u>:

A. <u>CRITERIA FOR APPROVAL;</u> Review and City approval for Site Development Review and Design Review requires consistency with the following:

1. *The City of Carnation Comprehensive Plan;*
2. *The City of Carnation Municipal Code, Title 15 CMC;*
3. *Affordable Housing, Chapter 15.50 CMC;*
4. *Conditional Use Decisional Criteria. Section 15.18.040 CMC;*
5. *Site Development Review, Chapter 15.18, Part III CMC;*
6. *Design Review, Chapter 15.18, Part IV/Design Standards and Guidelines;*
7. *The Shoreline Master Program;*
8. *The Floodplain Management Code, Chapter 15.64 CMC;*
9. *The Environmental Policy Code, Chapter 14.04 CMC;*
10. *The Critical Areas Code, Chapter. 15.88 CMC;*
11. *Parks, Schools, and Transportation Impact Fee Program, Title 3 CMC.*

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1. **<u>Conformance with the Comprehensive Plan</u>:** The Comprehensive Plan's "*Medium Intensity Commercial*" Future Land Use Designation for the site is consistent with the current Mixed Use (MU) zoning designation (reference Comprehensive Plan's Future Land Use Map). The Land Use Element of the Comprehensive Plan provides that the …*Mixed Use zones allow both residential and commercial uses, including office as well as retail. The purpose of the mixed use zone is to create a buffer between the commercial and residential areas*." Consistency with the standards for the Mixed Use zoning designation would ensure consistency with the Carnation Comprehensive Plan.

2. **<u>Conformance with Title 15 CMC, the City of Carnation Land Use Code</u>:** Subsection 15.18.160 A.1.c. CMC provides that any multi-family building that will create five or more new dwelling units, regardless of size, shall be subject to site development review. The proposed fifteen (15) affordable senior multifamily/apartment units on property zoned Mixed Use (MU) does require Site Development Review and Design Review permit approval and would need to meet the requirements and standards of the Carnation Municipal Code as provided below. The Design Review process is consolidated with this review/decision. Senior Housing is listed as a permitted use in the Mixed Use (MU) zone under *CMC 15.40.040, Table 2*. The maximum density of 24 units will be increased in conformance with the density bonus provisions for senior affordable housing in Section 15.50.040 CMC as described in the following. The density, dimensional, and site plan requirements of Title 15 CMC will be addressed through review of the proposal's consistency with the Site Development Review and Design Review criteria for approval.

3. **<u>Affordable Housing</u>:**

15.50.070 - Review process.

All proposals utilizing the density incentives authorized by this chapter shall be reviewed concurrently with a primary proposal as follows:

A. *For the purpose of this section, a primary proposal is defined as a proposed subdivision, conditional use permit, site plan or building permit.*
B. *When the primary proposal requires a public hearing, the public hearing on the primary proposal shall serve as the hearing on the use of the requested density incentives, and the reviewing authority shall make a consolidated decision on the proposed development and use of density incentives.*
C. *When the primary proposal does not require a public hearing under this title, the density incentives under this chapter shall, in addition to the requirements of this chapter, be subject to the decisional criteria for conditional use permits pursuant to CMC Section 15.16.130 and the Type III application procedures pursuant to Chapter 15.09 CMC.*
D. *Any required public hearing notice for a project involving the proposed use of density incentives under this chapter shall include the development's requested density and the type and amount of affordable housing proposed.*

Staff Finding: The proposal is to create fifteen (15) affordable senior housing units in a new three-story multi-family (apartment) building. This proposal for a Site Development Review and Design Review permit would normally be reviewed as Type II permits through the consolidated review process. The proposal for fifteen (15) multi-family residential units would exceed the maximum allowable density for this property in the Mixed Use zone which is a minimum of 12 and a maximum of 24 units per net acre which would allow a maximum of ten (10) units for this 17,800 square foot property.

However, under the density bonus provisions for affordable housing, CMC 15.50.040.D. provides that "*Housing units affordable to and reserved for rental occupancy by low-income seniors (i.e., households, at least one member of which is 55 years of age or older, with a combined income no greater than 50% of the median King County family income, adjusted for household size)*." As a requirement of receiving density bonus provisions, CMC 15.50.080 requires that "*Prior to issuance of a certificate of occupancy for any dwelling unit located within a development utilizing the residential density incentives provided under this chapter, the development applicant shall record against the title of the underlying property a covenant, servitude or other instrument ensuring that all future sales and/or rentals of the unit will satisfy the applicable affordability standards of this chapter for at least a fifty-year period. The covenant, servitude or other instrument shall be in a form approved by the city attorney, and shall be recorded against the underlying property title at the development applicant's sole expense*." This requirement is applied as conditions number 13 and 14 of this recommendation to the Hearing Examiner.

To allow a density bonus for affordable senior housing as described in the forgoing, a review of the *conditional use criteria* through the Type III permit process (Public Hearing with the Hearing Examiner) would be required as shown in the following code provision [*CMC 15.50.070 C*.]:

C. *<u>When the primary proposal does not require a public hearing</u> under this title, the density incentives under this chapter <u>shall, in addition</u> to the requirements of this chapter, <u>be subject to the decisional criteria for conditional use permits</u> pursuant to CMC Section 15.16.130 <u>and the Type III application procedures</u> pursuant to Chapter* [*sic*] *15.09 CMC.*

Note: Underline is for emphasis only, and the code reference "Chapter 15.16.030" is an error in the code. "Section" 15.16.130 CMC are the city's subdivision chapter's provisions for appeals of the City Planner's decision on a preliminary short subdivision application. The correct code reference for the decisional criteria of conditional use permits is Subsection 15.18.040.A. CMC.

The Carnation Municipal Code clearly does not require a conditional use permit but is specific in stating that a proposal "*…be subject to the decisional criteria for conditional use permits… and the Type III application procedures pursuant to Chapter 15.09 CMC*." Therefore, these applications for Site Development Review and Design Review are processed through the Type III review process and reviewed for consistency with the decisional criteria for conditional use permits which are addressed in the following.

4. 15.18.040.A - Decisional Criteria for Conditional Use Permits

1. *The proposed use is consistent with the city of Carnation comprehensive plan and the CMC*;

Staff Finding: As provided in the forgoing, the Comprehensive Plan's "*Medium Intensity Commercial*" Future Land Use Designation for the site is consistent with the current Mixed Use (MU) zoning designation (reference Comprehensive Plan's Future Land Use Map). The Land Use Element of the Comprehensive Plan provides that the …*Mixed Use zones allow both residential and commercial uses, including office as well as retail. The purpose of the mixed use zone is to create a buffer between the commercial and residential areas*." Consistency with the standards for the Mixed Use zoning designation would ensure consistency with the Carnation Comprehensive Plan. Therefore, the proposal satisfies this approval criterion for a conditional use.

2. *The proposed use is designed and constructed, and will be operated and maintained, in a manner that is compatible with the existing or intended character, appearance, quality of development and physical characteristics of both the subject property and the surrounding vicin*ity;

Staff Finding: The proposed use is listed as a permitted use in the underlying MU zone which is therefore considered a use that is compatible with the existing and intended character, appearance, and quality of those of the surrounding vicinity. Additionally, consistency with the site plan and design review criteria of the *City of Carnation Design Standards and Guidelines* (2018) will ensure that the proposal is developed in a way that further achieves the community's goals and objectives as set forth therein. Therefore, the proposal satisfies this approval criterion for a conditional use.

3. *The location, size and height of buildings, structures, walls, fences, and screening vegetation for the conditional or special use will not hinder neighborhood circulation or discourage the permitted development or use of neighboring properties*;

Staff Finding: The elements of this proposed development will not hinder neighborhood circulation or discourage any permitted development or use of neighboring properties. Therefore, the proposal satisfies this approval criterion for a conditional use.

4. *The type, hours of operation, and appropriateness of the proposed use in relation to adjacent uses will not create unusual hazards or result in adverse impacts; and*

Staff Finding: The proposed use is associated with the Sno-Valley Senior Center located on the adjacent property to the south and consists of fifteen (15) affordable housing apartment units for seniors (55 years and older). Beyond the construction phase of the development, this use will not create unusual hazards or result in adverse impacts. Best management practices as required for any construction in the city of Carnation will mitigate the potential for hazards or adverse impacts during

the construction phase of the project. Therefore, the proposal satisfies this approval criterion for a conditional use.

5. *The proposed use will be served by adequate public facilities and services and will not adversely affect public services to the surrounding area in a manner and/or to a degree that cannot be sufficiently mitigated through the imposition of reasonable conditions of approval*.

Staff Finding: The proposed project site is abutting two (2) city streets and two (2) city alleys, will be served by available city water and sewer services, and will provide parking that is calculated to serve the proposed fifteen (15) affordable senior housing units and replace the parking that has been displaced to allow construction of the proposed development. Therefore, the proposal satisfies this approval criterion for a conditional use. The proposal will not adversely affect public services to the surrounding area in a manner and/or to a degree that cannot be sufficiently mitigated as conditioned herein. Therefore, the proposal satisfies this approval criterion for a conditional use.

5. Conformance with Site Development Review:

A. CMC 15.18.150 - Purpose. *The purpose of site development review is to establish a permit process to review the conceptual plan for the development of property for residential (other than single detached), recreational/cultural, general services, business services, retail, manufacturing, and regional land uses where a division of property is not proposed under this title. Site development review precedes approval of a building permit or other construction permits, in order to ascertain that the general lay out of the development will conform to the requirements of this title, including but not limited to dimensional standards, streets and sidewalks, parking, landscaping and protection of critical areas.*

Staff Finding: The proposal is to develop a new 3-story affordable senior housing building consisting of fifteen (15) one-bedroom residential units with common areas, associated parking for 27 vehicles, and outdoor amenity spaces on 17,800 square feet of property in the Mixed Use (MU) zone. This site development review will determine that the general layout of all elements of the proposal such as parking, accessory structures, landscaping, streets and sidewalks conform to the standards of Title 15 CMC and the *City of Carnation Design Standards and Guidelines*.

B. 15.18.160 - Applicability.

A. Site Development Review.

1. Applicability: Site development review shall be required for any of the following:

c. Any multi-family building that will create five or more new dwelling units, regardless of size.

2. Site development review permits shall be a Type 2 permit.

Staff Finding: This proposal is to develop fifteen (15) affordable senior housing units in a new 3-story affordable senior housing building. This proposal is being processed as a Type III permit due to the requirement that proposals seeking a density bonus for affordable housing pursuant to Chapter 15.50 CMC must satisfy the decisional criteria for conditional uses through the Type III permit process [*ref. 15.50.070.C. CMC*].

C. CMC 15.18.220.A. Decision. *…The city planner's decision shall include any reasonable conditions to ensure consistency with the city's development regulations based upon, but not limited to, the following:*

1. *Conformance of the proposed site development plan with any conditions on a portion of the site, and with any applicable codes and ordinances of the state of Washington and the city;*

Staff Finding: The applicable codes and ordinances include, but are not limited to, the standards for the MU zone, landscaping (CMC 15.76), streets and sidewalks (CMC 15.56), utilities (CMC 15.60), and parking (CMC 15.72).

The **Mixed Use (MU) zone** allows senior housing as a permitted use. The maximum allowable residential density in the MU zone is twenty-four (24) units per acre. The property is 17,800 square feet (0.41 acres) in area and could have a maximum of ten (10) residential units pursuant to Subsection 15.48.020 CMC. This proposal is for fifteen (15) affordable senior residential units which qualifies for a density bonus of 1.5 pursuant to CMC 15.50.040.

The building setbacks for multi-family apartment development in the MU zone are ten (10) foot front yard, five (5) foot side yard (each side), and twenty-twenty (20) foot rear yard [CMC 15.48.080, Table II]. The site plan shows the proposed new building would meet all building setback requirements with a ten (10) foot front yard (west property line abutting Stephens Avenue), five (5) foot side yard (north abutting Commercial Street), 34.7-foot side yard (south abutting Alley C), and approximately fifty-six (56) foot rear yard (east abutting Alley J at its closest point) setback. The project site is sixty (60) feet from a single family residential zone to the west; therefore, the maximum allowable building height for multi-family apartments as provided in Chapter 15.48 CMC is thirty-five (35) feet with a minimum ten (10) foot stepback having a maximum twenty-five (25) foot building height. Subsection 15.48.060 A.1.CMC provides that "*The height of a building shall be the vertical distance measured from the mean elevation of the finished grade at the front of the building to the mid-point between the ridgeline and the eaves of the building for gable, hip and gambrel roofs; the vertical distance from finished grade to the top of the highest roof beams on a flat or shed roof; and to deck level on a mansard roof*." The building height of the proposed structure is 34.38 feet as measured consistent with CMC 15.48.060 A.1. [*ref. west building elevation, Exhibit 3, page A3.1*]. The west upper story is stepped back 24.3 feet from the front property line abutting Stephens Avenue [*ref. north building elevation, Exhibit 3, page A3.2*]

Landscaping (CMC 15.76) for the project is required under Section 15.76.040 with specific requirements provided in Table 1 of that section. Specifically, side or rear yards of multifamily uses adjacent to nonresidential zones or nonresidential uses require 10 feet with screen fencing. Descriptions of screens and landscape types are provided in Subsection 15.76.030 CMC. This proposal would require Type A or B landscaping as described in Section 15.76.030 CMC.

There are no parking lots adjacent city streets and there are no interior parking lots associated with this proposal. There is proposed parking along each of the abutting alleys, fourteen (14 spaces (2 ADA and 12 standard) along Alley C, and eight (8) spaces along Alley J. The proposed landscape plan shows 5,440 square feet of landscaping around the entire site and 1,312 square feet of Type B landscaping between the parking areas visible from Commercial Street and Stephens Avenue.

Landscape requirements for parking lots are specifically provided in Subsection 15.76.045 CMC as follows:

1. *Internal landscaping for surface parking lots containing ten or more parking spaces shall be provided. Specifically:*
   a. *Canopy trees should be utilized within parking areas.*

b. There shall be no more than eight parking spaces in a row without a landscaping bed containing a tree, shrubs and ground cover.

c. At least one tree for every six parking spaces shall be provided (this excludes trees in the required perimeter areas).

d. Wheel stops, curbs or walkways shall be used to protect landscaping from vehicles.

e. Minimum required internal surface parking lot landscaped areas for parking lots providing 10 to 50 parking spaces is 15 square feet per parking space.

2. *The landscaping requirement for parking lots of ten or more parking spaces shall be in effect even if the parking lot and/or the number of parking spaces is not required by the application of this title.*
3. *Architectural elements used as an alternative for landscaping: Trellises or arbors may be substituted for trees if the city planner finds that these architectural elements will provide adequate screening between a parking lot and a street or between a parking lot and any side or rear lot, or that such elements shall provide adequate shading, screening and visual relief, and to reinforce safe pedestrian access routes within the parking area. To be approved, architectural elements must:*
   a. Be at least five feet above the surrounding grades;
   b. Use horizontal elements to create shade; and
   c. Contain plantings that at maturity will be integrated with the architectural elements (e.g., vines that will grow up a trellis).
4. *Architectural elements that meet the criteria above may be substituted as follows:*
   a. Three hundred square feet of footprint of an architectural element may replace an evergreen tree.
   b. Five hundred square feet of footprint of an architectural element may replace a deciduous tree.

There is one proposed parking area consisting of fourteen spaces (2 ADA and 12 standard spaces) that is not interior to the site; however, it does provide Type B landscaping at each end of the parking area with a landscaping bed containing a tree, shrubs and ground cover dividing the lot into eight (8) and six (6) spaces. The landscape plan shows eight (8) trees around this parking area, two (2) of which are part of the required Type B landscaping requirements. The proposed landscaping plan provides adequate trees to satisfy the one (1) tree per six (6) parking spaces requirement.

Prior to building permit issuance, a final landscape plan must be submitted by the project proponent and approved by the city planner. Prior to building permit certificate of occupancy, the landscaping must be installed as approved. The provisions of Section 15.76.080 CMC, *Irrigation and maintenance*, are intended to provide for the long-term establishment and health of new landscape plantings, to ensure the long-term maintenance and attractiveness of landscape plantings, and to promote drought resistant planting materials.

Where applicable, the standards in Subsection 15.76.080 B. CMC must be fulfilled for projects subject to the landscaping requirements of Chapter 15.76 CMC. These standards require that all areas where new landscaping is being required shall be provided with irrigation systems. The one exception to this requirement is for areas of undisturbed existing vegetation, low areas with existing high soil moisture conditions, or landscape areas consisting of drought-tolerant vegetation shall not require permanent irrigation systems. The site plan does not appear to show any areas where existing vegetation will be undisturbed.

For all projects, the landscape areas shall be maintained by the property owner in accordance with the following standards [*CMC 15.76.080 B.2*.]:

a. *All landscaping shall be maintained with respect to pruning, trimming, mowing, watering, insect control, fertilizing, or other requirements to create a healthy growing condition and attractive appearance and to maintain the purpose of the landscape type.*

b. *Dead, diseased, stolen, vandalized, or damaged plants shall be replaced within three months with the plants indicated on the approved landscape plan.*

c. *All landscaped areas shall be maintained reasonably free of weeds and trash.*

d. *The requirements of this subsection shall be recorded on the landscaped property to apply to all subsequent owners of the property. The covenant shall provide that the city shall be entitled to its costs and attorney fees in any action in which it prevails in enforcing the covenant.*

Additionally, projects must have a maintenance assurance device (MAD) which shall be required by the city to ensure that landscaping will be installed and maintained for two years according to the approved plans and specifications. This could be either a CD (certificate of deposit) in the city's name, a letter of credit from the developer's bank, or cash. The amount required must be ten percent of the total cost of the materials. The MAD would be used by the city to hire a contractor to replace lost material due to non-maintenance.

New developments are encouraged to use planting materials that require only temporary irrigation systems. Such systems are encouraged to be removed after twenty-four months or two growing seasons, whichever occurs first, provided that the plantings are established.

As a condition of this project approval, prior to building permit issuance the maintenance provisions of Section 15.76.080 CMC will need to be satisfied.

Streets and sidewalks (*CMC 15.56*) and Utilities (*CMC 15.16*): The City Engineer has provided comment and conditions in their correspondence dated December 12, 2022 [*Exhibit 13.a*.] that adequately address the street frontage requirements and utility installation in conformance with the City of Carnation Combined Water and Sanitary Sewer Utility Technical Standards [*recommended conditions 10 through 10.25*].

Parking (CMC 15.72): As required in the Carnation Municipal Code [CMC 15.72.130], the off-street parking requirements for senior housing is one (1) space per dwelling unit plus one additional space for every four units in the development. However, this project is submitted as an "affordable" senior housing development and may be considered under the standards of CMC 15.50, Affordable Housing. Subsection 15.05.060 B. CMC provides that "*projects comprised entirely of affordable senior housing shall provide 1.0 parking space(s) per dwelling unit. All other projects shall conform to the parking requirements specified in Chapter 15.72 CMC.*"

Currently, the Senior Center provides eighteen (18) off-street parking spaces that serve the center along with parking opportunities along the abutting public rights-of-way. The new fifteen (15) unit senior housing facility will require an additional fifteen (15) off-street parking spaces (1 per unit). The proposed project will eliminate the existing eighteen (18) off-street parking spaces and provide twenty-seven (27) off-street parking spaces, fifteen of which are dedicated to the proposed senior housing units, resulting in a net loss of nine (9) off-street parking spaces. It should be noted that

there are eight (8) to nine head in parking (9) spaces in front (west) of the Senior Center that are in the public right-of-way of Stephens Avenue which are not considered in calculating off-street parking requirements.

The Carnation Municipal Code [CMC 15.72.020(B)(2)] provides that the city may allow deviations from the parking requirements set forth in Subsection 15.72.010 (e) when it finds that a "*…residential development is irrevocably oriented toward the elderly or other demographic group which, due to the driving characteristics of the group, requires fewer or more parking stalls than the general populace."*

The submitted parking study [*Exhibit 15*] provides numbers from similar facilities in other jurisdictions similar to Carnation that may support a reduction in parking requirements, however, those statistics do no consider growth potential that would be proportionate to their respective community's future growth projections. The parking study does make a case for allowing some relief from the off-street parking requirements for the proposed senior housing. In their environmental review of the proposal and subsequent mitigated determination of non-significance MDNS), the Lead Agency must consider the impacts associated with "spill over" parking during peak times and special events which would result in a higher incidence of on-street parking; thus, displacing public parking opportunities for the city's downtown district.

The City of Carnation's downtown commercial district is a pedestrian oriented district with limited parking in the vicinity of Tolt Avenue which is less than one block from the Senior Center. Given that the provisions for public parking are on the side streets that are parallel and perpendicular to Tolt Avenue, there is the potential for adverse impacts to transportation in the form of reduced public parking opportunities.

The City of Carnation (SEPA Lead Agency) determined that this potential for adverse parking impacts could be mitigated with the provision of additional on-street parking in the immediate vicinity that would compensate for any displaced parking opportunities adjacent to the project site. This could be done by providing up to five (5) angled parking spaces on the west side of Stephens Avenue beginning one half block south of the Senior Center and ending at the Entwistle Street right-of-way. Currently, there are eight (8) angled parking spaces on the west side of Stephens Avenue beginning at the intersection with Bird Street and ending mid-block at the alley. This parking area is made of a gravel surface with wheel stops for each angled parking space, and an infiltration trench at the right-of-way edge to handle stormwater runoff.

As mitigation of the potential for adverse impacts to public parking, the applicants are required provide five (5) angled parking spaces along the west side of Stephens Avenue from the mid-block alley south to Entwistle Street. The parking spaces should be developed to the same standard as the existing eight (8) angled parking spaces beginning at the intersection with Bird Street. The proponent will consult with the City Engineer for details and specifications.
The parking requirements must be satisfied as a condition of site development review approval.

2. *A finding that the site plan makes appropriate provisions for, but not limited to, the public health, safety, and general welfare related to dedication of rights-of-way or recreation space, and tracts, easements, or limitations which may be proposed or required for utilities, access, drainage controls, sanitation and water supply;*

Staff Finding: The conditions of the August 15, 2022, approved Certificate of Water Availability and Certificate of Sewer Availability will ensure appropriate provisions for sanitation and water supply. As provided above, City Engineer has provided comments and conditions in their correspondence

dated December 12, 2022 [*Exhibit 13.a.*] that adequately address the street frontage requirements and utility installation in conformance with the City of Carnation Combined Water and Sanitary Sewer Utility Technical Standards [*recommended conditions 10 through 10.25*].

3. A finding that the site plan complies with all applicable provisions of this title, and all other applicable adopted administrative rules and regulations.

Staff Finding: As provided in the forgoing analysis, the proposed affordable senior housing apartments would satisfy this review criterion as conditioned herein.

6. Conformance with the Carnation Design Standards and Guidelines:

Staff Finding: The proposal is for non-single family residential development and the subject property is within a Mixed Use (MU) zone; therefore, the proposal is subject to the requirement for design review to demonstrate consistency with the Carnation Design Standards and Guidelines. The property does not abut Tolt Avenue, so orientation is not at issue. The proposed site plan satisfies Section 1.1.6 for multi-family residential buildings. The building will front Stephens Avenue and abut W. Commercial Street with parking access along the abutting Allys to the east (Ally J) and south (Alley C).

A. 15.18.240 - Purpose and adoption of design guidelines. *The document entitled Design Standards and Guidelines ("Design Standards") are adopted by reference and incorporated by this reference as if set forth in full. The design standards are intended to provide clear objectives for those embarking on planning and design of commercial and multifamily projects in Carnation, to increase awareness of design considerations among the citizens of Carnation and to maintain and enhance property values within Carnation.*

Staff Finding: This project for a fifteen (15) unit affordable senior housing project is being reviewed as a multi-family development for the purposes of the *City of Carnation Design Standards and Guidelines*.

B. 15.18.250 - Applicability and process.

A. The design standards apply to all non-single-family development in the following zones: central business district, mixed use, service commercial and multifamily residential zones, and in the public use zone where the property abuts Tolt Avenue.

B. Within the zoning districts identified in subsection A of this section, the design standards apply only to the following:

1. New construction, except for single-family detached housing;

2. Major exterior remodels, defined as all remodels within a three-year period whose value exceeds fifty percent of the value of the existing structure, as determined by city of Carnation valuation methods, except as provided in CMC Section 15.18.270

3. Minor exterior remodels, defined as all remodels within a three-year period with value of fifty percent of the valuation or less.

Staff Finding: This proposal to develop fifteen (15) affordable senior housing units in a new 3-story affordable senior housing building is new construction [*CMC 15.18.250 B.1*.]

C. 15.18.320 - Decision.

A. *A written record of decision shall be prepared in each case. The record may be in the form of a staff report or other written document and shall indicate whether the application shall be approved, approved with conditions, or denied. The city planner's decision shall include any conditions to ensure consistency with the city's development regulations based on, but not limited to, the following:*

1. *Conformance of the proposed design with an approved site plan, building permit, any conditions on a portion of the site, and with any applicable codes and ordinances of the state of Washington and the city*;

Staff Finding: A site plan was submitted with the application for Design Review which is subject to this review for consistency with the standards for Design Review and all other applicable codes and ordinances of both the city and state. Any conditions of building permit approval will also be required to maintain consistency with the Carnation Design Standards and Guidelines adopted September 25, 2005 and amended October 2018.

2. *A finding that the design of new or remodeled buildings and site plan meet the requirements of the design standards*;

Staff Finding: The following provisions are the design standards and guidelines for *building location and orientation* elements and *service and storage elements* from Chapter 1, and *open space and recreation for residential uses* elements from Chapter 2, parking layout and design elements from Chapter 3, and architectural style and elements from Chapter 4 of the *Carnation Design Standards and Guidelines* adopted September 25, 2005 and amended October 2018:

1.1 Building Location and Orientation

Intent

- *To create an active and safe pedestrian environment by encouraging development to orient towards the street.*
- *To upgrade Carnation's visual identity.*
- *To reduce the impact of parking lots and blank walls located adjacent to the street.*
- *To reinforce Carnation's pattern of storefronts along Tolt Avenue in the downtown area.*
- *To reinforce the landscaped character of the Tolt Avenue corridor at the southern entrance into Carnation*

Standards

1.1.6 Multi-family *residential buildings must be oriented towards streets, interior private roadways, or common open space and not parking lots or adjacent properties. Specifically:*

- *The primary building entry shall face the street. Alternatively, building entries that face onto a common open space which is oriented towards the street is acceptable.*
- *Buildings with individual ground floor entries should face the street to the extent possible.*
- *Buildings shall also provide windows that face the street to provide "eyes on the street" for safety.*

Staff Finding: The proposed building entry is oriented toward Stephens Avenue. The rear entry is oriented toward the proposed open space and parking areas adjacent to Alley J to the east of the property. The building will provide windows that face Stephens and Commercial Street [*ref. Sheets A3.1 and 3.2. Exhibit 3*] The proposal satisfies this standard for approval.

1.3 Service and Storage Elements

Intent

- *To encourage thoughtful siting of service and storage elements that balances the need for service and storage with the desire to screen its negative impacts.*
- *To screen the negative impacts of service elements.*

Standards

1.3.1 All Sites: *Service areas visible from the street, pathway, pedestrian-oriented space or public parking area (alleys are exempt) shall be enclosed and screened around their perimeter by a wall or fence at least seven feet high, concealed on the top and should have self-closing doors. If the area is adjacent to a public street, sidewalk, or interior pathway, a landscaped planting strip, minimum three feet wide, shall be located on three sides of such facility.*

Guidelines

1.3.2 All Sites: *Service and storage areas should be located to minimize impacts on the pedestrian environment and adjacent uses. Service elements should generally be concentrated and located where they are accessible to service vehicles and convenient for tenant use.*

1.3.3 All Sites: *Service enclosures should be made of masonry, ornamental metal or wood, or some combination of the three.*

1.3.4 All Sites: *Roof-mounted mechanical equipment should be located so as not to be visible from the street, public open space, parking areas, or from the ground level of adjacent properties. Screening features should utilize similar building materials and forms to blend with the architectural character of the building.*

Staff Finding: Service and storage areas are located away from the pedestrian environment and should not impact adjacent uses. All proposed HVAC equipment (primarily heat exchangers for units) will be located on the flat roof at the east end of the proposed building. This area will be screened with a parapet wall of sufficient height to conceal all mechanical equipment. Other equipment will be located in the interior of the building, excepting elements such as transformers and fire department hook ups. The proposal satisfies this standard for approval.

2.4 Open Space and Recreation for Residential Uses

Intent

- To create usable, accessible and inviting open spaces for residents.

Standards

2.4.2 Other multi-family residential uses (not described in Standard 2.4.1) must provide at least 100 square feet of open space per unit. Special requirements and considerations:

- Open space may include courtyards, patio areas, multi-purpose green spaces, and balconies.
- Open space must be large enough to provide functional leisure or recreational activity per the City Planner. For example, long narrow spaces (less then 20 feet wide) rarely, if ever, can function as usable common space.
- Open space must be visible from adjacent units.
- To the extent possible, provide individual entries onto the open space from ground floor residential units. Small, semi-private open spaces for adjacent ground floor

units that maintain visual access to the common area are strongly encouraged to enliven the space.
- The open space must feature paths, seating, lighting and other pedestrian amenities to make the area more functional and enjoyable.
- Open space must be separated from service areas and parking lots with landscaping and/or low-level fencing.
- Open space should be oriented to receive sunlight, facing east, west or (preferably) south, when possible.
- Minimum required setback areas shall not count as open space in calculations unless they are designed in such a way that the area meets the Intent.
- Balconies may account for up to 50 percent of the required open space and must be at least 35 square feet with no dimension less than 4 feet to provide a space usable for human activity.

Staff Finding: The proposed project includes 2,644 square feet of designated open space, exceeding the required 1,500 square feet are required (15 units x 100 square feet). The open space will be large enough to allow for functional leisure or passive recreational use by the residents. The open space will provide pedestrian paths that connect with adjoining sidewalks and city rights-of-way, and will also provide a garden area for the residents. The largest open space area will face east and be separated from the parking lots with landscaping and low-level fencing. The proposed open space areas are designed in such a way that the area meets the Intent of this section; therefore, the proposal satisfies this standard for approval.

3.3 Parking Layout and Design
Intent
- *To minimize negative impacts of parking lots on the streetscape and pedestrian*
- *environment.*
- *To promote shared parking between compatible uses.*

3.3.4 Sites not adjacent to Tolt Avenue: *Off-street parking areas must be located to the rear or side of buildings to the extent reasonably possible.*

Staff Finding: All proposed parking for the residents is at the rear (east abutting Alley J) and side (south abutting Alley C) of the proposed building.

4.1 Historic Properties
Intent
To encourage preservation, rehabilitation, restoration, or reconstruction of historical properties based on appropriate historic information, materials, and methods.

4.2 Architectural Style/Character

Intent
- *To reinforce the unique small town character of Carnation.*
- *To encourage developments to employ desirable architectural features found in historical Carnation buildings without promoting a false sense of historicism.*

Standards
4.2.1 All sites. *Architecture that is defined predominately by corporate identity features (and difficult to adapt to other uses) is prohibited. For example, some fast food*

franchises have very specific architectural features that reinforce their identity. Besides diluting the town's identity with corporate (and therefore generic) identities these buildings are undesirable because they are not adaptable to other uses when the corporate franchises leave.

4.2.2 All sites: *Unusual design themes or architectural styles that have no history with Carnation such as Eclectic Alpine, Southwest, English Tudor, International styles, are prohibited.*

4.3.4 Multi-Family Residential Buildings: *New building facades visible from the public and private streets, common open space, and common parking areas shall be articulated with windows, balconies, bay windows, or other architectural elements. Building articulation shall be accomplished with design elements such as the following, so long as the articulation interval does not exceed 30 feet:*
Horizontal building modulation.
Specifically:

- *The maximum facade width (as measured horizontally along the building exterior) without building modulation shall be 30 feet.*
- *The minimum depth of modulation shall be 12 inches if tied to a change in roofline or a chance in building material, siding style, and/or color*
- *Balconies or bay windows that project from the façade may be used as all or part of the building modulation required above so long as they are tied to changes in the roofline. Individual balconies must have an area of at least 35 square feet to qualify. Basic balconies that are attached onto a building without façade modulation will not qualify.*
- *Changes in color tied with building modulation can help reduce the scale and add visual interest.*

- *Modulated roofline. Roofs are a design element and should relate to the building façade articulations. A variety of roof types and configurations should be used to add interest and reduce the perceived building bulk.*

4.3.5 All Buildings: *Building elevations facing the street or lower intensity zone edge that are wider than 120 feet must include at least one of the following features to break up the massing of the building and add visual interest:*

- *Provide building modulation at least six feet deep and 15 feet wide. For multi-story buildings, the modulation must extend through more at least than one-half of the building floors.*

- *Use of a contrasting vertical modulated design component featuring all of the following:*
  - *Utilizes a change in building materials that effectively contrast from the rest of the façade.*
  - *Component is modulated vertically from the rest of the façade by an average of six inches.*

- *Façade employs building walls with contrasting articulation that make it appear like multiple distinct buildings. To qualify for this option, these contrasting façades must employ all of the following:*
  - *Different building materials and/or configuration of building materials*
  - *Contrasting window design (sizes or configurations).*

- *Alternative designs will be considered provided the design meets the purpose of the standards. Supplemental consideration for approving alternative designs:*
  - *Width of the façade. The larger the façade, the more substantial articulation/modulation features need to be.*
  - *The type of articulation treatment and how effective it is in meeting the purpose given the building's context.*

Staff Finding: The proposed building is enhanced with multiple architectural details and reflect early 20th century architecture. Details and finishes match or are similar to the existing Senior Center, which is a considered a traditional building built in 1925.

4.5 Exterior Building Materials and Color
Intent

- To encourage high quality building materials that will upgrade the character
- and identity of Carnation.
- To discourage poor materials with high life cycle costs.
- To discourage materials and colors that are not compatible with the character
- and scale of Carnation.
- To discourage materials and treatments of buildings that create a false sense of
- historicism in new development.

Standards
4.5.1 All buildings incorporating metal siding*: If metal siding is used on non-residential buildings, it must have visible corner moldings and trim and incorporate masonry, stone, or other durable permanent material near the ground level (first 2 feet above sidewalk or ground level). Metal siding is prohibited on residential buildings.*

4.5.2 All non-residential buildings incorporating concrete block*: When used for the primary façade of any building, concrete blocks must be split or rock-faced and limited to 30 percent of the façade area.*

4.5.3 All buildings incorporating EIFS*: Non-residential building facades incorporating Exterior Insulation and Finish system or "EIFS" must be trimmed in wood or masonry and should be sheltered from extreme weather by roof overhangs or other methods. EIFS is limited to no more than 30 percent of the façade area. Weather exposed horizontal surfaces must be avoided. Masonry, stone, or other durable permanent material is required near the ground level (first 2 feet above sidewalk or ground level). EIFS is not allowed on residential buildings.*

4.5.4 All buildings*: The following materials are prohibited:*

- *Mirror glass*
- *Textured or scored plywood (including T-111 or similar plywood except for board and batten)*

Staff Finding: Proposed building elements are 1.) decorated two color point scheme, with a "belly band" trim and casings in a contrasting color, 2.) A decorative porch/entry wrap around porch with traditional 8x8 inch painted wood columns, and 3) decorative traditional roof brackets at gable roofs to match existing Senior Center and other local traditional buildings. All windows on the building are cased in 4" trim with a color contrasting the façade. [*ref. Sheets A3.1 and 3.2, Exhibit 3*].

3. *A finding that the site plan complies with all applicable provisions of this title, and all other applicable administrative rules and regulations*.

Staff Finding: Provided herein are findings that the proposed development of the site can conditionally comply with all applicable provisions for Design Review.

B. *Additional documents shall be submitted as necessary for review and approval such as a plat certificate, boundary survey, agreements, easements, and covenants*.

Staff Finding: At the time of permit submittal, it was acknowledged that the property was composed of two Assessor's parcels. In order to carry out this development the properties would need to be lawfully combined in accordance with the lot line adjustment requirements of the Carnation Municipal Code. The applicants submitted an application to combine the lots which was approved by the City. At the time of this staff report completion, the recorded copy of the lot combination has not been submitted. Prior to any further permit issuance, a copy of the approved lot combination recorded with the King County Auditor must be submitted to the City. Otherwise, no additional documents are necessary for review and approval of this Design Review application.

Additionally, the applicant must record against the title of the underlying property a covenant, servitude or other instrument ensuring that all future sales and/or rentals of the unit will satisfy the applicable affordability standards of this chapter for at least a fifty-year period. The covenant, servitude or other instrument shall be in a form approved by the city attorney, and shall be recorded against the underlying property title at the development applicant's sole expense [*recommended condition number 14*].

C. *The decision of the city planner shall be final*.

Staff Finding: This decision of the City Hearing Examiner is final unless an appeal is filed under Chapter 15.11 CMC.

D. *The decision shall become effective ten calendar days after the decision has been mailed, or if an appeal is filed under Chapter 15.11 CMC, upon final resolution of the appeal*.

Staff Finding: This decision *should* become effective twenty-one (21) days from the issuance of the notice of decision which is the close of the appeal period. In the case of an appeal pursuant to Chapter 15.11 CMC, the decision shall become effective upon resolution of said appeal.

E. *A design approval automatically expires and is void if the applicant fails to file for a building permit or other necessary development permit and fails to make substantial progress towards completion within twenty-four months of the effective date of the site plan approval. "Substantial progress" includes the following: completion of grading and the installation of major utilities. The city planner may grant a single extension of up to ninety days*.

Staff Finding: The progress of the proposed project as outlined in this decision will be monitored by city staff for conformance with this standard of approval until completion.

F. *All construction and site development activities related to the design review are prohibited until the decision becomes effective and until authorized by any subsequent required permits*.

Staff Finding: No permits will be issued until twenty-one (21) days from the issuance of the notice of decision unless an appeal is otherwise filed in accordance with Chapter 15.11 CMC.

7. **Conformance with the City of Carnation Shoreline Master Program:** The subject property is not within 200 feet of the Snoqualmie River floodplain; therefore, the project is not subject to the requirements of the Carnation Shoreline Master Program.

8. **Conformance with the Environmental Policy Code, Chapter 14.04 CMC and the State Environmental Policy Act (SEPA) Chapter 197-11 WAC:** This proposed Site Development Review permit would allow fifteen (15) multi-family apartments within the Mixed Use (MU) zone. The threshold for exemptions is four (4) units; therefore, a SEPA mitigated determination of non-significance (MDNS) pursuant to WAC 197-11-340(2) and WAC 197-11-350 was issued effective March 10, 2023, with a 14-day comment period ending on March 24, 2023. In response to timely comments a modified MDNS was issued on April 13, 2023.

9. **Conformance with Chapter 15.64 CMC, the Floodplain Management Code:** The subject property is not located within any mapped flood way or 100-year flood zone.

10. **Conformance with the Critical Areas Code, Chapter 15.88 CMC:** The property is not situated within any known or mapped critical areas.

11. **Conformance with Transportation, School, and Park Impact Fee Program**: The proposal is exempt from the requirements for school impact fees pursuant to *CMC 3.48.060 A., Exemptions and credits*. The proposal is exempt from the requirement for traffic impact fees pursuant to *CMC 3.50.050 A.4., Exemptions*. The proposal is exempt from the requirement for parks impact fees pursuant to *CMC 3.70.050 A.4. - Exemptions*.

CONCLUSIONS

1. The proposed use is to establish a fifteen (15) unit affordable senior housing development on property within the underlying Mixed Use (MU) zone. The MU zone is described as a designed to accommodate a mixture of certain, limited residential uses, office uses and commercial uses. It is intended that this zoning classification be applied primarily in areas adjacent to the central business district, or as a transition zone between commercial and residential uses. Senior housing is listed as a permitted use in the MU zone subject to the requirements for an approved Site Development Review and Design Review permit pursuant to CMC 15.18.150 et.seq. and 15.18.240 et.seq.

2. The proposal is to create fifteen (15) affordable senior housing units in a new three-story multi-family (apartment) building. The proposal for fifteen (15) multi-family residential units would exceed the maximum allowable density for this property in the Mixed Use zone which is a minimum of 12 and a maximum of 24 units per net acre which would be a maximum of ten (10) units for this 17,800 square foot property. As an affordable senior housing development it can receive a density bonus of 1.5 units to achieve the fifteen (15) proposed units subject to the requirements of Chapter 15.50 CMC.

3. Applications for Site Development Review would be reviewed concurrent with Major Design Review as a Type II permit in accordance with CMC 15.09.050, CMC 15.18.250(B)(2), CMC 15.18.160(1)(c) and CMC 15.18.270. To allow a density bonus for affordable senior housing as described in the forgoing, a review of the *conditional use criteria* through the Type III permit process (Public Hearing with the Hearing Examiner) would be required pursuant to CMC 15.50.070 C. These applications for

Site Development Review and Design Review have been reviewed through the Type III review process and the decisional criteria for conditional use permits.

4. The proposal has been reviewed for and found to be consistent with the requirements for affordable housing pursuant to Chapter 15.50 CMC.

5. The proposal has been reviewed for and found to be consistent with the decisional criteria for conditional use permits in Subsection 15.18.040.A. CMC.

6. The application for Site Development Review permit has been reviewed under this Type III permit process for consistency and, as conditioned, determined to be in conformance with the determined purpose, applicability, and decisional criteria for site development review approval, including the City of Carnation Comprehensive Plan and Title 15 of the Carnation Municipal Codes.

7. The application for Design Review permit number DR 22-0004 has been reviewed under this Type III permit process for consistency with the Carnation Design Standards and Guidelines and, as conditioned, determined to comply with the intent, standards, and guidelines for multi-family residential uses therein.

8. This proposed Site Development Review permit would allow fifteen (15) multi-family apartments within the Mixed Use (MU) zone. The threshold for exemptions is four (4) units; therefore, a SEPA mitigated determination of non-significance (MDNS) pursuant to WAC 197-11-340(2) and WAC 197-11-350 was issued effective March 10, 2023, with a 14-day comment period ending on March 24, 2023. In response to timely comments a modified MDNS was issued on April 13, 2023.

9. Public Notice of application, SEPA threshold determination of non-significance, and notice of public hearing have been issued in accordance with the notice requirements of Chapter 15.09 CMC.

10. The subject property is not located within any mapped flood way or 100-year flood zone, is not situated within any known or mapped critical areas and is not within 200 feet of the Snoqualmie River floodplain; therefore, the project is not subject to the requirements of the Carnation Shoreline Master Program.

11. As an affordable senior housing development as allowed under Chapter 15.50 CMC and the requirement therein, the proposal is exempt from the requirement for school, transportation, and parks impact fees.

RECOMMENDATION

Based on the foregoing findings, analysis, and staff conclusions, staff recommends that the Hearing Examiner **APPROVE** the subject for Site Development Review application No. SPR 22-0003 and Design Review application No. DR 22-0004 as described in the Findings section of this report, subject to the following conditions:

1. The proposed use shall be developed in substantial conformance with the submitted site plans and elevations included with the application for Site Development Review permit as modified through this review process (*Exhibit 3*).

2. All construction and site development activities related to the site development review are prohibited until the decision becomes effective and until authorized by any subsequent required permits [*CMC 15.18.220.F.*].

3. Prior to construction activities the applicant shall obtain an approved building permit application from the City of Carnation.

4. Prior to building permit issuance, any exterior paint colors shall be verified and approved by the City Planner upon finding they satisfy the Acceptable Building Colors of the Carnation Design Standards and Guidelines.

5. All construction and site development activities related to the site development review are prohibited until the proper construction related permits are approved.

6. Prior to any further permit issuance, a copy of the approved lot combination recorded with the King County Auditor must be submitted to the City.

7. All existing and proposed electric, telephone, cable, and communication lines serving the site shall be placed underground [*CMC 15.18.220.A.2.*].

8. Any proposed non-exempt signage shall require a sign permit and corresponding building permit.

9. The proponent shall comply with the comments and conditions of the Certificate of Water Availability approved on August 15, 2022, and the Certificate of Sewer Availability approved on August 15, 2022.

10. The proponent shall satisfy the requirements of the City Engineer provided in their comments dated December 13, 2022, unless otherwise waived or modified through the development phase of the project. Applicable Construction and Design Standards are listed in Carnation Municipal Code 12.06.010. Design and Construction shall conform by these Standards and other relevant Municipal Code requirements. Additional review comments will be provided after design documents are submitted. The City Engineer's conditions are as follows:

    General:

    10.1. A topographic survey sealed by a licensed professional land surveyor is required. The survey shall include the entire existing parcel and the adjacent streets and alley.

    10.2. All existing and proposed electric, telephone, cable, and communication lines serving the site shall be placed underground [CMC 15.60.350]. Overhead extensions or service lines are not allowed.

    10.3. A geotechnical report is required and shall include recommendations for: pavement section, earthwork, reuse of existing soils, compaction, temporary and permanent slopes, utility construction, stormwater infiltration capabilities, erosion and sediment control, wet weather work, hazardous material studies, and a level of risk for seismic-induced liquefaction. All geotechnical recommendations shall be included as notes in the design drawings

    10.4. A right-of-way permit is required for all work within the city right-of-way [CMC 15.60.030].

    10.5. An application for Clearing, Filling & Grading is required if the total volume of earth moved including cut, fill, and regrading exceeds 50 cubic yards [CMC 15.44.200 and 15.44.210]. A spill prevention and control plan is also required.

10.6. A traffic impact study is required and shall include a trip generation analysis and an assessment of appropriate off-site right-of-way traffic mitigation improvements in cases where a reduction of the Level of Services is anticipated.

Water Connections:

10.7. The proposed lot will be served from an existing eight-inch water main located in Alley "C". The Developer will tap the water main and install a service line from the mainline to a new water meter. The water meter shall be located within the alley right-of-way. The number and size of the service and fire connections will be determined during design review.

10.8. The number and size of the service and fire connections will be determined during design review.

10.9. FDC may be installed on the wall of the structure. Fire Marshal to review FDC with fire sprinkler plans.

Street Reconstruction:

10.10. ADA compliant curb ramps shall be installed at the southeast corner of Stephens Ave and W. Commercial St at the northeast corner of Stephens Ave and Alley "C" and at the NE and NW corners of the W. Bird St and Alley "J" intersection.

10.11. An ADA compliant driveway apron shall be installed across Alley "J" at W. Commercial St.

10.12. Broken or cracked sidewalk panels must be replaced along the Stephens Ave and W. Commercial St. frontage.

10.13. Alley "C" between Alley "J" and Stephens Ave shall be overlayed after utilities are installed.

10.14. Alley "J" must be reconstructed to subgrade from W. Commercial St to W. Bird Street. Alley grading shall avoid standing water.

10.15. Trench patches across streets are not permitted. If trenching across streets, a minimum 30-wide grind and overlay is required. There is a moratorium on cutting across the newly paved sections of Tolt Ave and Bird Street. Cutting of the newly paved streets shall be avoided but may be mitigated per city standards.

10.16. Parking spaces shall conform to city code requirements, 9-ft x 19-ft and up to 20% of stalls at 8-ft x 16-ft.

10.17. If project area includes area south of Alley "C", sidewalk construction along the Stephens Ave frontage is required.

10.18. Street illumination of Alley intersections with West Bird Street, Stephens Ave and Commercial Ave are required.

10.19. Parking stalls within or partially within right-of-way cannot be used to meet minimum parking requirements.

Stormwater:

10.20. A drainage permit is required for the stormwater management systems. [CMC 15.64.230]

10.21. Stormwater quality and flow-control best management practices are required for the proposed redevelopment. A stormwater hydraulic report is required and shall comply with the 2019 DOE Stormwater Manual for Western Washington. Infiltration stormwater facilities shall be provided to control runoff including rooftops, parking areas and driveways.

10.22. Flow Control facilities must be designed to include frontage improvements.

10.23. Temporary Sediment and Erosion Control and grading plans are required, stormwater runoff from impervious surfaces shall not be directed towards City right-of-ways.

Sanitary Sewers:

10.24. Side sewers shall be constructed per City of Carnation Sewer Standards, a side sewer permit is required prior to commencing side sewer construction. [CMC 13.70.040]

10.25. A dual buffer tank is required to serve the proposed facility, must be accessible, not in parking area. The size of the buffer tank will be determined during design review phase.

11. Unless otherwise waived or modified by the Building Official, the proponent shall satisfy their comments, recommendations, and conditions of in their correspondence submitted April 12, 2023, and cited herein [*Exhibit 13.b.*].

12. Prior to issuance of a certificate of occupancy for this development a maintenance assurance device (MAD) shall be received and approved by the city to ensure that landscaping will be installed and maintained for two years according to the approved plans and specifications. This could be either a CD (certificate of deposit) in the city's name, a letter of credit from the developer's bank, or cash. The amount required must be ten percent of the total cost of the materials. The MAD would be used by the city to hire a contractor to replace lost material due to non-maintenance.

13. The proposed housing units shall be affordable to and reserved for rental occupancy by low-income seniors (i.e., households, at least one member of which is 55 years of age or older, with a combined income no greater than 50% of the median King County family income, adjusted for household size).

14. Prior to issuance of a certificate of occupancy for this development utilizing the residential density incentives provided under Chapter 15.50 (Affordable Housing), the development applicant shall record against the title of the underlying property a covenant, servitude or other instrument ensuring that all future sales and/or rentals of the unit will satisfy the applicable affordability standards of this chapter for at least a fifty-year period. The covenant, servitude or other instrument shall be in a form approved by the city attorney and shall be recorded against the underlying property title at the development applicant's sole expense.

15. All construction and site development activities shall comply with all applicable fire codes and regulations.

16. Construction and/or maintenance vehicles, materials, and activities shall not encroach onto adjacent properties without first obtaining a construction easement or other form of legal permission from said adjacent property owner.

17. Where conditions do not specifically address an element of the proposed development, the content of the *findings* and *analysis* in this report shall be used together with the applicable Municipal Code provisions to determine what is required.

18. Adherence to the conditions contained herein do not excuse the proponent from complying with any other applicable local, state and federal ordinances, regulations, or statutes applicable to the proposed development.

19. This site development plan approval automatically expires and is void if the applicant fails to file for a building permit or other necessary development permit and fails to make substantial progress towards completion within twenty-four months of the effective date of the site plan approval. "Substantial progress" includes the following: completion of grading and the installation of major utilities. The city planner may grant a single extension of up to ninety days [*CMC 15.18.220.E.*].

Exhibit 2

CITY OF CARNATION
4621 Tolt Avenue • P. O. Box 1238 • Carnation, WA 98014-1238
(425) 333-4192 phone • (425) 333-4336 fax • www.carnationwa.gov

MASTER APPLICATION FORM, PROJECT PERMITS TYPE II, III, IV, IV-A, V

Permit Review and Approval in the City of Carnation is governed by Title 15 of Carnation Municipal Code. A copy of the Carnation Municipal Code can be found on the City of Carnation website, www.carnationwa.gov. Please use the "Submittal Requirements" for the type of permit you are applying for. The submittal requirements list all of the necessary materials that must accompany this application.

APPLICANT: Please check the box of the permit(s) you are applying for:

Type II	Type III	Type IV	Type IV A	Type V	Misc/Other
☐ Special Use Permit (CMC 15.18.010 et. Seq.)	☐ Conditional Use Permit (CMC 15.17.190 et seq.)	☐ Preliminary Long Plat	☐ Site Specific Rezone – not consolidated with a Comprehensive Plan amendment	☐ Final Plat Approval (CMC 15.16.350) (1)	☐ Development Agreement *
☐ Clear and Grade if Type II (CMC 15.09.050)	☐ Shoreline Conditional Use Permit (CMC 15.92)	☐ Preliminary Long Plat Amendment (CMC 15.16.370)		☐ Site Specific Rezone – Consolidated with a Comprehensive Plan Amendment	
☐ Short Plat (CMC 15.16.010 et. Seq.)	☐ Shoreline Variance (CMC 15.92.120)				
☐ Short Plat Amendment (CMC 15.16.460)	☐ Variance (CMC 15.20.030)				
☐ Binding Site Plan (CMC 15.18.410 et seq.)	☐ Sign Variance (CMC 15.68.120)				
☐ Residential Condominium Binding Site Plan (CMC15.18.520 et seq.)	☐ Critical Areas Reasonable Use Exception (CMC 15.88.050)				
☐ Shoreline Substantial Development (CMC 15.92)					
☒ Site Development Review (CMC 15.16.150 et. Seq.)					
☒ Design Review, Major (CMC 15.18.720)					

** Pursuant to CMC 15.17.050, an application for Development Agreement shall be accompanied by a signed Cost Reimbursement Agreement and Concurrent Permit Processing Waiver and Release Form*

CITY OF CARNATION
4621 Tolt Avenue • P. O. Box 1238 • Carnation, WA 98014-1238
(425) 333-4192 phone • (425) 333-4336 fax • www.carnationwa.gov

MASTER APPLICATION FORM, PROJECT PERMITS TYPE II, III, IV, IV-A, V

APPLICANT: Please complete the following with as much detail as possible.

General Information

Property Owner Name*: Sno-Valley Senior Center	
Property Owner Mailing Address: 4610 Stephens Avenue, Carnation, WA	
Property Owner Phone: (425) 333-4152	Property Owner Fax:
Applicant Name*: Environmental Works, Roger Tucker	Applicant Phone: 206 787-1370
Applicant Mailing Address: 402 15th Avenue East, Seattle, WA 98112	
Applicant Fax:	Applicant Email: rtucker@eworks.org

** A notarized statement of ownership signed by all owners of record must accompany this application. If the owner(s) of record is/are not the applicant, a notarized statement signed by all of the property owners authorizing the applicant to act as a representative for the property owners must accompany this application. All owners of the subject property must sign the notarized statement.*

Project Information:

Project Name: Sno-Valley Senior Housing		
Site Address: 31845 W. Commercial Street, Carnation, WA 98104		
Assessor's PIN: 865830-2225 / 865830-2230	Zone: MU	Total Parcel Area (sf): 17,800 s.f.
Existing Use of Property: Parking		
Proposed Use of Property: Affordable Senior Housing, parking and outdoor common areas		
Total square feet of new construction or expansion, if applicable: 12,927 s.f.		
Number of new lots proposed, if applicable: NA		

Square Footage of Existing Buildings:

_____ Retail _____Residential _____ Storage _____ Industrial _____ Office 0 s.f. **TOTAL**

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MASTER APPLICATION FORM, PROJECT PERMITS TYPE II, III, IV, IV-A, V

Please describe the scope of the proposed project:

The proposed project is a new three story affordable senior housing building with 15 one bedroom units, common areas, associated parking and outdoor amenity spaces.

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MASTER APPLICATION FORM, PROJECT PERMITS TYPE II, III, IV, IV-A, V

Affidavit:

I, the undersigned, hereby declare that the above information is true and complete to the best of my knowledge. It is understood that the City of Carnation may nullify any decision made in reliance upon information given on this application form should there be any willful omission of significant information or any misrepresentation or lack of full disclosure on my part.

Applicant's Signature: *(to be signed in the presence of a Notary Public)*	Date: 11/10/2022

Certificate for An Acknowledgment in an Individual Capacity

STATE OF WASHINGTON)
) ss
COUNTY OF King)

I certify that I know or have satisfactory evidence that Roger G Tucker is the person who appeared before me, and said person acknowledged that (he/she) signed this instrument and acknowledged it to be (his/her) free and voluntary act for the uses and purposes mentioned in the instrument.

Dated 11.10.2022

C L BENDIKSEN
Notary Public
State of Washington
Commission # 13799
My Comm. Expires Jun 13, 2024

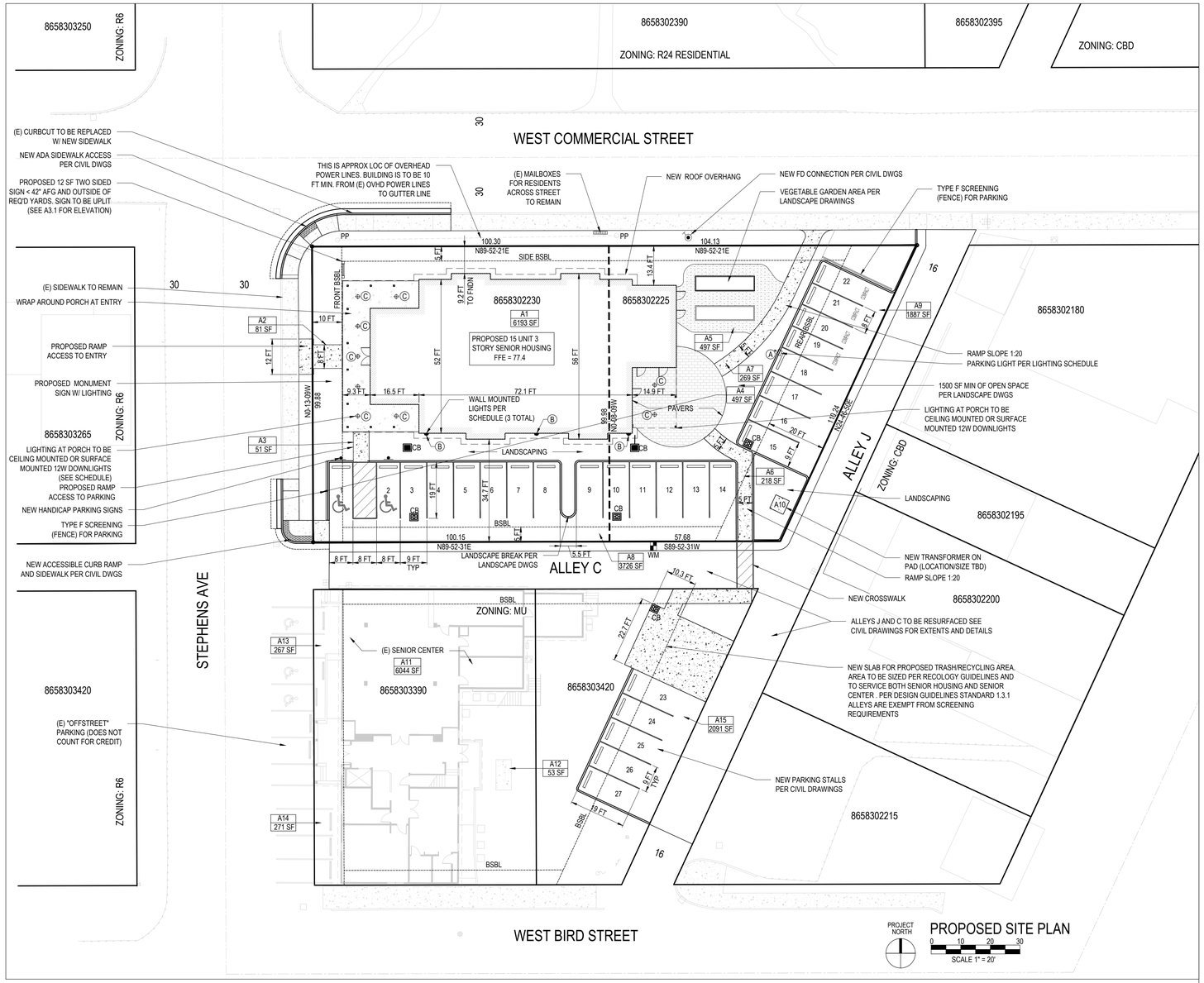
X _____
Notary Public in and for the State of Washington
C-L Bendiksen
Printed Name

Residing at Snohomish

My appointment expires: 6.13.2024

For City use only:

Date Received:	Received By:	
Date of Determination of Complete Application:	Date of Notice of Application:	Date of Notice of Decision
Comments:		



LIGHTING FIXTURE SCHEDULE

MARK	TYPE	MODEL #	WATTAGE	LUMENS	CCT	NOTES
A	CREE 'THE EDGE' SERIES	ARE-EDR-4MB-R3-12-E-UL-BK-350-P	90	8,000	3000K	MOUNT AT 18 FT AFF
B	COOPER LIGHTING 'IMPACT ELITE QUARTER SPHERE'	MODEL# ISS-SA1-1000MA-730-U-T4FT-BK	58	7,000	3000k	FOR EAST PARKING LOT
C	RECESSED OR SURFACE MOUNTED DOWNLIGHT	TBD	12	700	3000K	AT ENTRY AND REAR PORCHES

NOTES:

1.) ALL EXTERIOR LTG FIXTURES SERVING EM EGRESS PATHWAY WILL BE POWER BY AN EM LTG INVERTER LOCATED IN THE MAIN ELECT ROOM. THIS WOULD BE THE TYPE C FIXTURES AND POSSIBLY TYPE B DEPENDING ON THE EGRESS REQ'S.

IMPERVIOUS SURFACE CALCULATIONS

SENIOR HOUSING SITE IMPERVIOUS

MARK	DESCRIPTION	AREA	
A1	ROOF AREA	6193	SF
A2	ENTRY RAMP	81	SF
A3	SOUTH RAMP	51	SF
A4	EAST PATIO	497	SF
A5	GARDEN AREA PAVERS	695	SF
A6	SOUTH EAST PATH	218	SF
A7	NORTH EAST PATH	269	SF
A8	SOUTH PARKING LOT	3726	SF
A9	EAST PARKING LOT	1887	SF
A10	TRANSFORMER BASE	25	SF
	TOTAL IMPERVIOUS	13642	SF

TOTAL LOT SIZE 18,109 SF
PERCENT PROPOSED 75.3%
ALLOWED IMPERVIOUS 80.0%
THEREFORE COMPLIES

SENIOR CENTER SITE IMPERVIOUS

MARK	DESCRIPTION	AREA	
A11	ROOF AREA	6044	SF
A12	SLAB	53	SF
A13	NORTHWEST PARKING	267	SF
A14	SOUTHWEST PARKING	271	SF
A15	EAST PARKING LOT	2091	SF
	TOTAL IMPERVIOUS	8726	SF

TOTAL LOT SIZE 12,695 SF
PERCENT PROPOSED 68.7%
ALLOWED IMPERVIOUS 80.0%
THEREFORE COMPLIES

SQUARE FOOTAGES

TOTAL GROSS FLOOR AREA:
(MEASURED TO OUTSIDE SURFACE OF EXTERIOR WALLS)

MAIN LEVEL	4804 SF
SECOND LEVEL	4390 SF
THIRD LEVEL	3853 SF
TOTAL	13047 SF

ADJUSTED GROSS FLOOR AREA :
(MEASURED TO INSIDE SURFACE OF

MAIN LEVEL	3803 SF
SECOND LEVEL	3990 SF
THIRD LEVEL	3496 SF
TOTAL	11289 SF

ZONING REQUIREMENTS

PROPERTY ZONING DESIGNATION: MU

SETBACKS AND DENSITY REQUIREMENTS:
PER CMC 15.48 "DENSITY AND DIMENSIONAL REGULATIONS" AT ADOPTED BY ORDINANCE 949 ON 04/25/22

MAXIMUM IMPERVIOUS SURFACE: 80%
PROPOSED IMPERVIOUS FOR SENIOR HOUSING SITE IS 75% AND FOR SENIOR CENTER SITE IS xx%. SEE

MINIMUM RESDENTIAL DENSITY: 12 UNITS PER ACRE

MAXIMUM RESIDENTIAL DENSITY: 24 UNITS PER ACRE

AFFORDABLE HOUSING CREDIT: PER CMC 15.50.030 MAX DENSITY ALLOWED TO BE 150% OF BASE

MAXIMUM BUILDING HEIGHT: 35 FT
LOT IS LOCATED 60 FEET EAST OF A SINGLE FAMILY ZONE. PER CMC 15.48.60G 10 FT MIN. DEEP THIRD

REQUIRED YARDS:
FRONT (STREET) YARD, MIN: 10 FT
SIDE (STREET) YARD, MIN.: 5 FT
INTERIOR (SIDE) YARD, MIN.: 5 FT (PARCEL NOT ADJ TO LOWER INTENSITY ZONE AT INTERIOR SIDE YARD)
REAR YARD: 20 FT

PROPOSED PARKING STALLS:

EXISTING SENIOR CENTER PARKING REQUIREMENT : 20 SPACES
LOW INCOME SENIOR HOUSING PER 15.50.060: 15 SPACES
TOTAL: 35 SPACES
25% REDUCTION REQUEST: 26.25 SPACES

APPLICANT REQUESTS A 25% PARKING REDUCTION FOR SHARING PARKING AND LOW INCOME SENIOR PARKING PER 15.72.020 FLEXIBILITY IN ADMINISTRATION PERMITTED.

27 TOTAL STALLS INCLUDING 1 BARRIER FREE STANDARD STALL, 1 BARRIER FREE VAN STALL, 4 COMPACT STALLS (5 ALLOWED), AND 21 STANDARD STALLS. 22 STALLS TO BE ONSITE AND 5 STALLS TO BE CONSTRUCTED AT ADJACENT SENIOR CENTER

DESIGN GUIDELINES COMPLIANCE

THE PROPOSED PROJECT IS TO COMPLY WITH THE OCTOBER 2018 "CARNATION DESIGN STANDARDS AND GUIDELINES". THE FOLLOWING GUIDELINES APPLY TO THIS PROJECT AND MAY BE PARAPHRASED FOR BREVITY.

	GUIDELINE TEXT	COMPLIANCE
1.1.2	UNTREATED BLANK WALLS VISIBLE FROM PUBLIC STREET OR PEDESTRIAN PATHWAY ARE PROHIBITED	NO BLANK WALLS ARE PROPOSED FOR THIS PROJECT. SEE EXTERIOR ELEVATIONS FOR COMPLIANCE.
1.1.6	MULTI-FAMILY RESIDENTIAL BUILDINGS MUST BE ORIENTED TO THE STREET, ROADWAY, OR COMMON OPEN SPACE AND NOT PARKING LOTS OR ADJACENT PROPERTIES. THE PRIMARY BUILDING ENTRY SHALL FACE THE STREET AND THE BUILDING SHALL HAVE WINDOWS THAT FACE THE STREET.	BUILDING ENTRY IS ORIENTED TO THE STEPHENS AVENUE. REAR ENTRY IS ORIENTED TO PROPOSED OPEN SPACE AND PARKING AREAS ARE SCREENED FROM OPEN SPACE. WINDOWS FACE BOTH STEPHENS AVE AND COMMERCIAL STREET.
1.3.1	SERVICE AREAS VISIBLE FROM THE STREET, PATHWAY, PEDESTRIAN ORIENTED SPACE, OR PUBLIC PARKING AREA (ALLEYS ARE EXEMPT) SHALL BE ENCLOSED AND SCREENED	PROPOSED SERVICE AREAS (TRASH/RECYCLING AREA) IS NOT VISIBLE FROM STREET OR PEDESTRIAN ORIENTED SPACE AND IS LOCATED ON AN ALLEY AND IS THEREFORE EXEMPT FROM ENCLOSURE REQUIREMENTS. SEE SITE PLAN THIS SHEET FOR LOCATION.
1.3.2	SERVICE AND STORAGE AREA SHOULD BE LOCATED TO MINIMIZE IMPACTS TO PEDESTRIAN ENVIRONMENT AND ADJACENT USES.	1.3.2 SERVICE AND STORAGE AREAS ARE LOCATD AWAY FROM PEDESTRIAN ENVIRONMENT AND DO NOT IMPACT ADJACENT USES.
1.3.4	ROOF MOUNTED MECHANICAL EQUIPMENT SHALL BE LOCATED TO NOT BE VISIBLE FROM THE STREET.	ALL PROPOSED HVAC EQUIPMENT (PRIMARILY HEAT EXCHANGERS FOR UNITS) ARE TO BE LOCATED ON THE FLAT ROOF AT EAST END OF BUILDING. THIS AREA TO BE SCREENED WITH A PARAPET WALL OF SUFFICIENT HEIGHT TO HIDE ALL MECHANICAL EQUIPMENT. OTHER EQUIPMENT TO BE LOCATED AT THE INTERIOR OF THE BUILDING, EXCEPTING ELEMENTS SUCH AS TRANSFORMERS AND FIRE DEPARTMENT HOOK UPS.
2.1.2	INTERIOR PATHWAYS TO BE A MIN OF 5 FEET IN WIDTH, MEET THE STANDARDS OF CMC 12.06 AND ADA REQUIREMENTS	ALL INTERIOR PATHWAYS ARE 5 FT MIN IN WIDTH, WILL MEET CONSTRUCTION STANDARDS, AND WILL BE ADA COMPLIANT.
2.2.1	ALL BUILDINGS MUST HAVE CLEAR PEDESTRIAN ACCESS TO THE SIDEWALK. IF FRONTING TWO STREETS, ACCESS SHALL BE FROM THE STREET CLOSEST TO THE MAIN ENTRY.	PROPOSED BUILDING MEETS THESE REQUIREMENTS. SEE SITE PLAN THIS SHEET FOR COMPLIANCE.
2.2.5	CROSSWALKS ARE REQUIRED WHEN A WALKWAY CROSSES A PAVED AREA ACCESSIBLE TO VEHICLES	A CROSSWALK AT ALLEY C IS TO BE PROVIDED TO CONNECT PROJECT TO GARBAGE/TRASH FACILITY ON EXISTING SENIOR CENTER PROPERTY.
2.2.7	MULTI-FAMILY RESIDENTIAL COMPLEXES SHOULD NOT BE ISOLATED ENCLAVES SEPARATED BY FENCES. CONNECTIONS TO ADJACENT PROPERTIES ARE IMPORTANT	PROPOSED PROJECT INCLUDES DIRECT CONNECTIONS TO SIDEWALKS AT WEST AND NORTH PROPERTY LINES. PROJECT IS NOT SEPARATED BY FENCING AND CONNECTS TO ADJACENT SENIOR CENTER VIA SIDEWALK.
2.4.2	MULTI-FAMILY RESIDENTIAL USES MUST PROVIDE A MIN. OF 100 SF PER UNIT.	PROJECT INCLUDES 2,644 SF OF DESIGNATED OPEN SPACE. 1500 SF FEET ARE REQUIRED (15 UNITS X 100 SF). SEE SHEET L1 FOR COMPLIANCE.
2.5.1	PRIMARY BUILDING ENTRIES SHALL HAVE A MIN OF 1 1/2 FEET WIDE WEATHER PROTECTION	PROJECT PROVIDES AN 8 FOOT DEEP WRAP AROUND COVERED PORCH AT ENTRY, WHICH PROVIDES WEATHER PROTECTION.
3.3.4	OFF STREET PARKING MUST BE LOCATED TO THE REAR OR SIDE OF BUILDINGS	ALL PARKING IS AT REAR (EAST) OR SIDE (SOUTH) OF BUILDING. SEE SITE PLAN THIS SHEET.
4.3.4	MULTI-FAMILY RESIDENTIAL FACADES SHALL BE ARTICULATED WITH WINDOWS, BALCONIES, BAY WINDOWS, OR OTHER ARCHITECTURAL ELEMENTS. FACADES TO BE ARTICULATED AT NO MORE THAN 30 FOOT INTERVALS AND THE DEPTH OF MODULATION TO BE 12 INCHES MINIMUM. ROOFS SHOULD RELATE TO THE FACADE ARTICULATIONS. A VARIETY OF ROOF TYPES AND CONFIGURATION SHOULD BE USED.	THE LARGEST WIDTH OF MODULATION FOR THE PROPOSED BUILDING IS XX SF (SEE NORTH ELEVATION), AND THEREFORE MEETS 30 FOOT MAX REQUIRMENT. ALL FACADES ARE ARTICULATED WITH WINDOWS AND ARCHITECTURAL ELEMENTS. DEPTH OF MODULATIONS EXCEEDS 12" MIN REQUIRED. ROOFS RELATE DIRECTLY TO FACADE ARTICULATIONS AND INCLUDE BOTH GABLE, HIP, AND LOWER SLOPED SHED ROOFS.
4.4.2	ALL RESIDENTIAL BUILDINGS SHALL BE ENHANCED WITH ARCHITECTURAL DETAILS THAT ADD VISUAL INTEREST AND ARE PROPORTIONED TO HUMAN SCALE. THREE DETAIL ELEMENTS ARE REQUIRED (SEE CODE FOR LIST)	PROPOSED BUILDING IS ENHANCED WITH MULTIPLE ARCHITECTURAL DETAILS, AND REFLECT EARLY 20TH CENTURY ARCHITECTURE. DETAILS AND FINISHES MATCH OR ARE SIMILAR TO THE EXISTING SENIOR CENTER, WHICH IS A TRADITIONAL BUILDING BUILT IN 1925. PROPOSED BUILDING ELEMENTS ARE 1.) A DECORATIVE TWO COLOR PAINT SCHEME, WITH A "BELLY BAND" TRIM AND CASINGS IN A CONTRASTING COLOR, 2.) A DECORATIVE PORCH/ENTRY WRAP AROUND PORCH WITH TRADITIONAL 8X8 PAINTED WOOD COLUMNS, AND 3.) DECORATIVE TRADITIONAL ROOF BRACKETS AT GABLE ROOFS TO MATCH EXISTING SENIOR CENTER AND OTHER LOCAL TRADITIONAL BUILDINGS.
4.4.3	WINDOWS OF RESIDENTIAL BUILDINGS SHALL FEATURE TRIM AT LEAST 4 INCHES IN WIDTH AND WITH COLOR CONTRASTING WITH THE FACADE.	ALL WINDOWS ON BUILDING ARE CASED IN 4" TRIM WITH A COLOR CONTRASTING THE FACADE. SEE A3.1 AND A3.2 FOR COMPLIANCE.

PROJECT INFORMATION

NAME OF PROJECT:
SNO-VALLEY SENIOR HOUSING

PROPERTY TAX ACCOUNT NOS.:
8658302225 AND 8658302230
(PARCELS TO BE COMBINED)
ADDITIONAL PARKING TO BE ADDED TO PARCEL 8658302260

PROPERTY ADDRESS:
31845 W COMMERCIAL STREET
CARNATION, WA 98104

LEGAL DESCRIPTION:
LOTS 10 THROUGH 16, INCLUSIVE, BLOCK 17, TOLT

PROJECT DESCRIPTION
CONSTRUCTION OF A NEW 3 STORY 14,135 SF 15 UNIT AFFORDABLE SENIOR HOUSING APARTMENT BUILDING WITH ASSOCIATED COMMON AREAS, PARKING, OPEN SPACE, AND SITE WORK

LOT SIZE: 18,109 SF / 0.413 ACRES (PER SURVEY)

PROPERTY ZONING DESIGNATION: MU

CONSTRUCTION TYPE: VB

OCCUPANCY TYPE: R-2

PROPOSED DWELLING UNITS: 15

PROJECT CONTACTS

ARCHITECT/ AGENT:
ROGER TUCKER
ENVIRONMENTAL WORKS
402 15TH AVE EAST
SEATTLE, WA 98112
TEL: 206-787-1370
EMAIL: RTUCKER@EWORKS.ORG

CIVIL ENGINEER
CATHERINE MIRKIN
CM DESIGN GROUP
1318 EAST PIKE ST
SEATTLE, WA 98122
TEL: 206-659-0612
EMAIL:CATHERINE@CMDESIGN-SEA.COM

LANDSCAPE ARCHITECT:
SIMONE OLIVER
ALTMANN OLIVER ASSOCIATES, LLC
PO BOX 578
CARNATION, WA 98014
TEL: 425-333-4535
EMAIL: SIMONE@ALTOLIVER.COM

GEOTECH:
NELSON GEOTECHNICAL ASSOCIATES, INC
17311 135TH AVE NE SUITE A-500
WOODINVILLE, WA 98072
TEL: 425-486-1669

SURVEYOR:
CASCADE SURVEYING AND ENGINEERING, INC
PR BOX 326
ARLINGTON, WA 98223
TEL: 360-435-5551

VICINITY MAP

INDEX TO DRAWINGS

Exhibit 3

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

SNO-VALLEY SENIOR CENTER
4610 STEPHENS AVENUE
CARNATION, WA 98014

RECEIVED
CITY OF CARNATION
11/18/2022

SNO-VALLEY SENIOR HOUSING
31845 W Commercial St.
Carnation, WA 98014

6443 REGISTERED ARCHITECT ROGER S. TUCKER STATE OF WASHINGTON

PROPOSED SITE PLAN AND PROJECT INFORMATION

Issuance
SD/DR PERMIT SUBMITTAL
Date
11/10/2022
Revisions

#	Date	Description	Initials

Drawn By:
MW
Checked By (P.M.):
Checked By (Q.C.):
RT
Project No.
20-058

A1.1

NOTE:
UTILITIES SHOWN PER AS-BUILT SURFACE FEATURES AND FIELD TIES TO UNDERGROUND LOCATE MARKINGS PROVIDED BY OTHERS. CASCADE SURVEYING IMPLIES NO WARRANT AS TO THE ACCURACY OF COMPLETENESS OF THESE UTILITIES.

CONTOURS ESTABLISHED FROM FIELD MEASUREMENTS. ACCURACY 1/2 CONTOUR INTERVAL.

LEGAL DESCRIPTION:

LOTS 10 THROUGH 16, INCLUSIVE, BLOCK 17, TOLT TOWNSITE COMPANY PLAT OF TOLT, ACCORDING TO THE PLAT THEREOF RECORDED IN VOLUME 20 OF PLATS, PAGE 43, IN KING COUNTY, WASHINGTON.

DATUM: NAVD 88

GRAPHIC SCALE

20 0 10 20 40

1 inch = 20 ft.

BASIS OF BEARINGS: RECORD PLAT

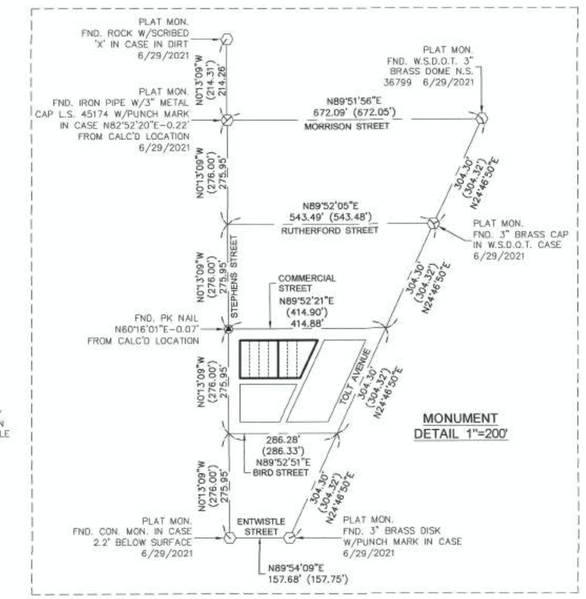
THIS SURVEY DOES NOT PURPORT TO SHOW ALL EASEMENTS OF RECORD OR OTHERWISE.
SURVEY INSTRUMENT USED: SOKKIA SET 5
SURVEY INSTRUMENT USED: TOPCON DS
SURVEY INSTRUMENT USED: TOPCON HIPERSR
SURVEY PROCEDURE: CLOSED TRAVERSE
SURVEY PRECISION: THIS SURVEY EXCEEDS FIELD TRAVERSE REQUIREMENTS OF WAC 332-130-090

LEGEND:

- DENOTES 1/2" X 24" REBAR & CAP L.S. 12716 SET THIS SURVEY UNLESS OTHERWISE NOTED
- DENOTES MAG NAIL & WASHER L.S. 12716 SET THIS SURVEY UNLESS OTHERWISE NOTED
- DENOTES FOUND PLAT MONUMENT
- DENOTES SEWER MANHOLE
- DENOTES CATCH BASIN
- DENOTES POWER POLE
- DENOTES TELEPHONE PEDESTAL
- DENOTES GAS METER
- DENOTES GAS VALVE
- DENOTES HYDRANT
- DENOTES WATER VALVE
- DENOTES WATER METER
- DENOTES BLOW OFF VALVE
- DENOTES MONITOR WELL
- DENOTES CHAIN LINK FENCE
- DENOTES PICKET FENCE
- DENOTES WATER LINE
- DENOTES GAS LINE
- DENOTES POWER LINE
- DENOTES TELEPHONE LINE
- DENOTES EDGE OF ASPHALT
- DENOTES PROPERTY BOUNDARY

NOTE:
DIMENSIONS TO ASBUILT FEATURES ARE PERPENDICULAR TO OR PARALLEL WITH REFERENCED LINES, UNLESS OTHERWISE NOTED

NOTE:
BOUNDARIES ESTABLISHED PER THIS SURVEY MAY NOT CONFORM TO EXISTING LINES OF OCCUPATION AND FENCE LINES AND COULD RESULT IN POSSIBLE BOUNDARY DISPUTES.



MONUMENT DETAIL 1"=200'

PORT'N NW1/4, SE1/4, SEC.16, TWP.25N, RGE.7E, W.M.

CASCADE SURVEYING & ENGINEERING, INC.
Engineers Surveyors Planners
P.O. BOX 326
ARLINGTON, WASHINGTON 98223
WWW.CASCADESURVEYINC.COM
FAX:(360)435-4012
1-800-593-5551
(360) 435-5551

FREDERICK F. POYNER — 12716 — REGISTERED PROFESSIONAL LAND SURVEYOR — STATE OF WASHINGTON
11-15-22

REVISION	DATE	BY

DESIGNED ___ DATE ___
DRAWN LAF DATE 7/21
CHECKED FP DATE ___
FIELD BOOK KING-21

WORKSHEET FOR:
SNO. VALLEY SENIOR CENTER
11/15/22
X:\22883\DWG\22883-SNOVALLEY-PRELIMINARY.DWG (SITE)

A1.2

22883

SOUTH

SCALE: 3/16" = 1'-0"

NOTE THAT LANDSCAPING SHOWN IS FOR SCALE ONLY- SEE LANDSCAPING DRAWINGS FOR PROPOSED PLANTING DENSITY, LOCATIONS, AND SPECIES

Environmental Works
COMMUNITY DESIGN CENTER

402 15th Avenue East
Seattle, Washington 98112

206.329.8300 Office
206.329.5494 Fax

SNO-VALLEY SENIOR CENTER
46105 STEPHENS AVENUE
CARNATION, WA 98014

SNO-VALLEY SENIOR HOUSING
31845 W Commercial St.
Carnation, WA 98014

6443 REGISTERED ARCHITECT ROBB S. WICKS STATE OF WASHINGTON

SOUTH AND WEST ELEVATIONS

Issuance
SD/DR PERMIT SUBMITTAL

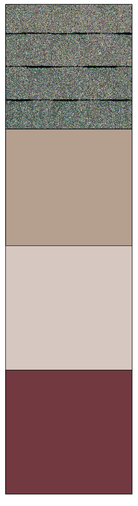
Date
11/10/2022

Revisions

#	Date	Description	Initials

Drawn By: MW
Checked By (P.M.):
Checked By (Q.C.): RT
Project No. 20-058

EXTERIOR COLORS



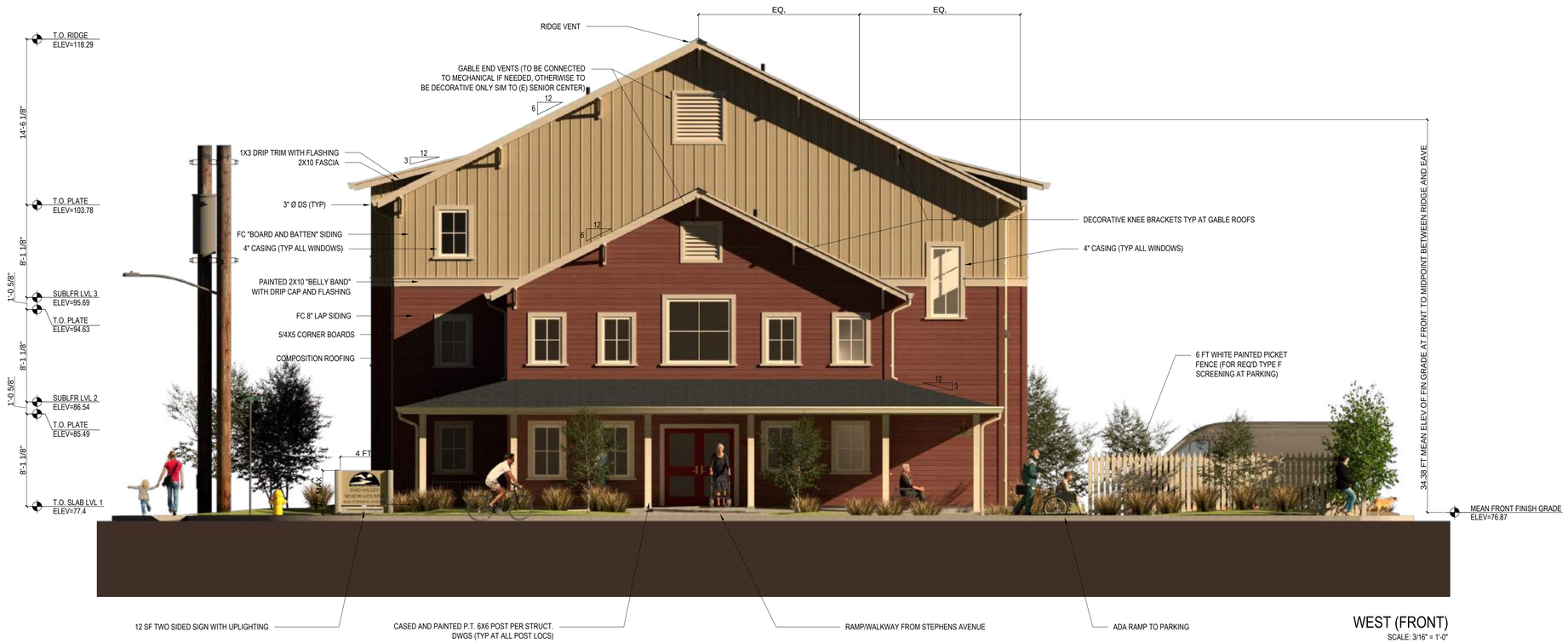
COMPOSITION ROOFING: GAF TIMBERLINE CS SERIES "WEATHERED WOOD" OR EQUIVALENT

UPPER SIDING: SHERWIN-WILLIAMS "TRUSTY TAN" SW 6087

WINDOW AND DOOR TRIM, FASCIA, BELLY BAND, SOFFITS: SHERWIN-WILLIAMS "UNFUSSY BEIGE" SW 6043

LOWER SIDING SHERWIN-WILLIAMS "FINE WINE" SW 6037

EXTERIOR COLOR PALETTE TO MATCH EXISTING SENIOR CENTER BUILDING. COLORS SHOWN ABOVE ARE APPROXIMATE AND TO BE VERIFIED. SEE SPECIFICATIONS FOR FURTHER INFORMATION AND REQUIREMENTS.



WEST (FRONT)

SCALE: 3/16" = 1'-0"

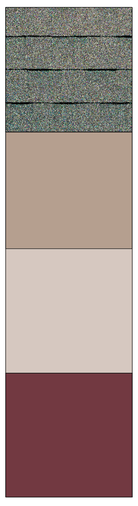
NOTE THAT LANDSCAPING SHOWN IS FOR SCALE ONLY- SEE LANDSCAPING DRAWINGS FOR PROPOSED PLANTING DENSITY, LOCATIONS, AND SPECIES

NORTH

SCALE: 3/16" = 1'-0"

NOTE THAT LANDSCAPING SHOWN IS FOR SCALE ONLY- SEE LANDSCAPING DRAWINGS FOR PROPOSED PLANTING DENSITY, LOCATIONS, AND SPECIES

EXTERIOR COLORS



COMPOSITION ROOFING:
GAF TIMBERLINE CS SERIES "WEATHERED WOOD" OR EQUIVALENT

UPPER SIDING:
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SW 6043

LOWER SIDING
SHERWIN-WILLIAMS "FINE WINE"
SW 6037

EXTERIOR COLOR PALETTE TO MATCH EXISTING SENIOR CENTER BUILDING. COLORS SHOWN ABOVE ARE APPROXIMATE AND TO BE VERIFIED. SEE SPECIFICATIONS FOR FURTHER INFORMATION AND REQUIREMENTS.

EAST

SCALE: 3/16" = 1'-0"

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Environmental Works
COMMUNITY DESIGN CENTER

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206.329.8300 Office
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CARNATION, WA 98014

SNO-VALLEY SENIOR HOUSING
31845 W Commercial St.
Carnation, WA 98014

6443 REGISTERED ARCHITECT ROBB S. WICKER STATE OF WASHINGTON

NORTH AND EAST ELEVATIONS

Issuance
SD/DR PERMIT SUBMITTAL

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11/10/2022

Revisions

#	Date	Description	Initials

Drawn By:
MW

Checked By (P.M.):

Checked By (Q.C.):
RT

Project No.
20-058

A3.2

GENERAL PROJECT NOTES

1. NO WORK REQUIRING CITY OF CARNATION APPROVAL AND/OR PERMITS, OR REQUIRING APPROVALS AND/OR PERMITS ISSUED BY OTHER GOVERNING AGENCIES, SHALL BE PERFORMED UNTIL SUCH APPROVALS/PERMITS HAVE BEEN ISSUED. COPIES OF ALL SUCH APPROVALS AND/OR PERMITS SHALL BE MAINTAINED ON SITE AT ALL TIMES WORK IS IN PROGRESS.
2. NO WORK OR SITE MOBILIZATION SHALL OCCUR UNTIL AFTER A PRE-CONSTRUCTION MEETING BETWEEN THE CITY AND THE PROPERTY OWNER, GEOTECHNICAL ENGINEER, GENERAL CONTRACTOR, AND EARTHWORK CONTRACTOR.
3. UNDERGROUND UTILITIES MAY BE SHOWN GRAPHICALLY IN THESE STANDARDS OR OTHER DOCUMENTS PROVIDED BY THE CITY. ANY REPRESENTATION OF UNDERGROUND UTILITIES IS FOR GENERAL INFORMATIONAL PURPOSES ONLY. THE OWNER OR THEIR AGENTS MAY NOT RELY UPON ANY REPRESENTATIVES OF THE LOCATION OR ABSENCE OF UNDERGROUND UTILITIES IN DOCUMENTS PROVIDED BY THE CITY.
4. THE OWNER AND CONTRACTOR MUST BE AWARE THAT EXCAVATING OR DIGGING FOR ANY REASON ON ANY PUBLIC PROPERTIES, PUBLIC RIGHTS-OF-WAY, OR PRIVATE PROPERTIES REQUIRES NOTIFICATION OF THE UTILITIES UNDERGROUND LOCATION CENTER AT 1-800-424-5555 OR 811 ON LOCAL PHONE NO LESS THAN 48 HOURS AND TWO BUSINESS DAYS PRIOR TO EXCAVATION.
5. THE OWNER AND THEIR CONTRACTOR ARE ADVISED OF THE POSSIBILITY OF ENCOUNTERING BURIED ARTIFACTS OR OTHER CULTURAL RESOURCES DURING THE CONSTRUCTION OF ANY IMPROVEMENTS THAT REQUIRE EXCAVATION. IN THE EVENT AN ARTIFACT OR OTHER POSSIBLE CULTURAL RESOURCE IS DISCOVERED DURING CONSTRUCTION, THE OWNER IS ADVISED TO CONTACT CITY HALL IMMEDIATELY. THE CITY WILL REFER THE OWNER TO THE APPROPRIATE GOVERNMENT AGENCY FOR ADDITIONAL INSTRUCTIONS.
6. THE CONTRACTOR AT ALL TIMES SHALL COMPLY WITH ALL FEDERAL AND STATE LAWS, LOCAL LAWS AND ORDINANCES, AND ANY REGULATIONS WHICH IN ANY MANNER AFFECT THE PROJECT. FAILURE TO COMPLY WITH THE LAWS AND CITY STANDARDS AND PERMIT CONDITIONS MAY RESULT IN DENIAL OF PLAN OR DEVELOPMENT PERMIT APPROVAL, REVOCATION OF PRIOR APPROVALS, LEGAL ACTION FOR FORFEITURE OF BOND, CODE ENFORCEMENT, AND/OR OTHER PENALTIES AS PROVIDED BY LAW.
7. THE CONTRACTOR SHALL RELEASE, INDEMNIFY AND PROMISE TO DEFEND AND SAVE HARMLESS THE CITY, ITS OFFICER, EMPLOYEES AND AGENTS FROM AND AGAINST ANY AND ALL LIABILITY, LOSS, DAMAGE, EXPENSE, ACTIONS AND CLAIMS, INCLUDING COST AND REASONABLE ATTORNEYS FEES INCURRED BY THE CITY IN DEFENSE THEREOF, ASSERTING OR ARISING DIRECTLY OR INDIRECTLY ON REGULATIONS WHETHER SUCH VIOLATIONS ARE BY THE CONTRACTOR, HIS/HER SUBCONTRACTORS, EMPLOYEES, OR AGENTS.
8. THE CONTRACTOR SHALL PROTECT AND PRESERVE FROM DAMAGE, INTERFERENCE AND DESTRUCTION ALL PRIVATE AND PUBLIC PROPERTY ON OR IN THE VICINITY OF THE WORK. IF SUCH PROPERTY IS DAMAGED OR DESTROYED OR ITS USE INTERFERED WITH BY THE CONTRACTOR OR HIS AGENTS, IT SHALL BE RESTORED IMMEDIATELY TO ITS FORMER CONDITION BY THE CONTRACTOR AT HIS EXPENSE AND SUCH INTERFERENCE TERMINATED.
9. WHENEVER CONSTRUCTION WORK UNDER THIS POLICY IS UNDERTAKEN ON EASEMENT, RIGHT-OF-WAY OR FRANCHISE, IT SHALL BE ACCOMPLISHED IN SUCH MANNER AS TO MINIMIZE DISTURBANCE AND DAMAGE.
10. THE CONTRACTOR SHALL NOT REMOVE, EVEN TEMPORARILY, ANY TREES OR SHRUBS WHICH EXIST ON EASEMENTS OR PARKING STRIPS ACROSS OTHER'S PRIVATE OR PUBLIC PROPERTY WITHOUT FIRST OBTAINING APPROVAL FROM THE AFFECTED PROPERTY OWNER AND THE CITY.
11. THE CONTRACTOR SHALL RESTORE ALL EASEMENTS AND RIGHTS-OF-WAY TO A CONDITION EQUAL TO THEIR ORIGINAL CONDITION BEFORE ENTRY, OR TO A CONDITION SATISFACTORY TO THE PROPERTY OWNER, AND/OR OTHER AUTHORITY, AND THE CITY.
12. THE CONTRACTOR SHALL PROTECT FROM DAMAGE PRIVATE AND PUBLIC UTILITIES, INCLUDING TELEPHONE LINES, GAS LINES, POWER LINES, STORM DRAINS, SEWER AND WATER LINES, AND APPURTENANCES, HIGHWAY LIGHTING AND SIGNAL SYSTEMS, AND SIMILAR FACILITIES.
13. THE OWNER IS RESPONSIBLE FOR ALL DAMAGES TO STREETS, ROADS, HIGHWAYS, DITCHES, WALLS, CULVERTS, UTILITIES, BARRICADES, LIGHTS, OR ANY OTHER PROPERTY CAUSED BY THE OWNER OR OWNER'S CONTRACTOR'S WORK, WHETHER SUCH DAMAGE BE AT THE SITE OF THE WORK OR CAUSED BY TRANSPORTING OR HAULING TO OR FROM THE WORK, AND SHALL REPAIR OR REPLACE, OR ARRANGE FOR THE REPAIR OF ALL SUCH DAMAGES TO THE SATISFACTION OF THE CITY AND OF ANY OTHER AUTHORITY OR PERSON HAVING OWNERSHIP OR JURISDICTION OVER THE PLACE OF WORK AND/OR DAMAGE.
14. THE OWNER/CONTRACTOR SHALL BE RESPONSIBLE FOR INTERIM TRAFFIC CONTROL DURING CONSTRUCTION ON OR ALONG TRAVELED ROADWAYS. TRAFFIC CONTROL SHALL FOLLOW THE GUIDELINES OF THE WSDOT STANDARD SPECIFICATIONS. ALL BARRICADES, SIGNS AND FLAGGING SHALL CONFORM TO THE REQUIREMENTS OF THE MUTCD MANUAL. SIGNS MUST BE LEGIBLE AND VISIBLE AND SHOULD BE REMOVED AT THE END OF EACH WORK DAY IF NOT APPLICABLE AFTER CONSTRUCTION HOURS.
15. WHEN ROAD CLOSURES CANNOT BE AVOIDED THE OWNER/CONTRACTOR SHALL POST "TO BE CLOSED" SIGNS PRIOR TO THE CLOSING THE ROAD. THE TYPES AND LOCATION OF THE SIGNS SHALL BE SHOWN ON A DETOUR PLAN. A DETOUR PLAN MUST BE PREPARED AND SUBMITTED TO THE CITY AND APPROVED PRIOR TO CLOSING ANY CITY STREET. IN ADDITION, THE OWNER/CONTRACTOR MUST NOTIFY, IN WRITING, LOCAL FIRE, SCHOOL, LAW ENFORCEMENT AUTHORITIES, ALL TRANSIT, POST OFFICE AND ANY OTHER AFFECTED PERSONS AS DIRECTED BY THE CITY AT LEAST FIVE DAYS PRIOR TO CLOSING UNLESS THE ROAD CLOSURE IS OF AN EMERGENCY NATURE.
16. NOISE FROM CONSTRUCTION ACTIVITIES SHALL NOT BE HEARD ACROSS PROPERTY LINES, OR PUBLIC RIGHTS-OF-WAY BOUNDARIES, EXCEPT DURING THE PERIODS 7:00 AM TO 7:00 PM MONDAYS THROUGH FRIDAYS OR 9:00 AM THROUGH 6:00 PM ON WEEKENDS AND HOLIDAYS.
17. TRUCKS TRAVELLING TO AND FROM THE WORK SITE SHALL DO SO BY THE MOST DIRECT ROUTE FROM THE SITE AND TOLT AVENUE (SR 203). TRUCKS SHALL NOT USE SIDE STREETS TO PARK, STAGE OR TRAVEL.
18. STREET AND SIDEWALK SURFACES SHALL BE CONTINUOUSLY MAINTAINED FREE OF DIRT, DUST, OR MUD. CONTRACTOR SHALL MECHANICALLY SWEEP STREET SURFACES DAILY, OR MORE FREQUENTLY AS REQUIRED, DURING PERIODS OF TRUCKING OPERATIONS OR AS OTHERWISE REQUIRED TO MAINTAIN CLEAN STREET SURFACES. STREET SURFACES SHALL NOT BE WASHED INTO DRAINAGE STRUCTURES OR STORM WATER DITCHES.
19. SANITARY FACILITIES, INCLUDING PORTABLE TOILET FACILITIES, FOR USE BY CONTRACTOR PERSONNEL, MATERIAL SUPPLIERS, AND GOVERNING AGENCY INSPECTORS SHALL BE FURNISHED BY THE CONTRACTOR AND REGULARLY MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION ACTIVITIES.
20. OWNER OR CONTRACTOR SHALL POST AND MAINTAIN SIGNAGE IDENTIFYING OWNER AND CONTRACTOR POINTS OF CONTACT INFORMATION FOR KEY PERSONNEL. SIGN SHALL BE NEAR THE ROW BOUNDARY AND CLEARLY VISIBLE. POINT OF CONTACT INFORMATION SHALL INCLUDE NAMES AND PHONE NUMBERS OF PERSONS IN AUTHORITY. AT LEAST ONE PHONE NUMBER POSTED SHALL OPERATE 24 HOURS/DAY AND 7 DAYS A WEEK.
21. PROTECT EXISTING SURVEY MONUMENTS, INCLUDING PROPERTY CORNERS, FROM DISTURBANCE OR DAMAGE BY CONSTRUCTION ACTIVITIES. ALL EXISTING SURVEY MONUMENTS, INCLUDING PROPERTY CORNERS, SHALL BE PERPETUATED BY LICENSED SURVEYOR IN ACCORDANCE WITH WAC 332-120 AND REQUIRED MONUMENT DESTRUCTION REPORTS FILED WITH THE DEPARTMENT OF NATURAL RESOURCES.
22. CONTRACTOR SHALL MAINTAIN, ON A DAILY BASIS, RECORD DRAWINGS SHOWING ALL DEVIATIONS FROM THE APPROVED PERMIT DRAWINGS. PRIOR TO FINAL APPROVAL, THE DEVELOPER SHALL SUBMIT AUTOCAD RECORD DRAWINGS, TO THE CITY ENGINEER, IN A FORMAT ACCEPTABLE TO THE CITY.

GENERAL ROW CONSTRUCTION NOTES

PUBLIC RIGHTS OF WAY CONSTRUCTION STANDARDS.

1. ALL WORK IN PUBLIC RIGHTS-OF-WAY (ROW) AND ROW DEDICATION AREAS SHALL COMPLY WITH THE 2016 WASHINGTON STATE DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION (WSDOT STD SPECS), EXCEPT AS MODIFIED BY THE CITY OF CARNATION STREET AND STORM SEWER SYSTEM STANDARDS, THE CONDITIONS ANNOTATED ON THE APPROVED PERMIT DRAWINGS, AND THE FOLLOWING CONDITIONS. CONFLICTING STANDARDS SHALL BE RESOLVED BY THE CITY ENGINEER.

COORDINATION WITH CITY.

CITY ENGINEER REPRESENTATIVE: JORGE GARCIA, P.E., LOCHNER, (PH) 425-454-3160; E-MAIL: JGARCIA@HWLOCHNER.COM.

PUBLIC WORKS SUPERINTENDENT: BILL FERRY, CARNATION CITY HALL, (PH) 425-333-4192

2. CITY ENGINEER REPRESENTATIVE MUST OBSERVE AND ACCEPT ALL WORK IN ROW, EXCEPT WATER AND SEWER INSTALLATIONS. COORDINATE WATER AND SEWER INSTALLATION OBSERVATION WITH THE PUBLIC WORKS SUPERINTENDENT.
3. SCHEDULE FOR WORK IN ROW SHALL BE UPDATED WEEKLY BY CONTRACTOR AND A COPY PROVIDED TO CITY ENGINEER REPRESENTATIVE ON A WEEKLY BASIS. CONTRACTOR SHALL COORDINATE CLOSELY WITH CITY ENGINEER REPRESENTATIVE TO KEEP CITY ENGINEER REPRESENTATIVE APPRISED OF WORK PROGRESS/STATUS.
4. CONTRACTOR SHALL NOT BURY PIPE OR STRUCTURES IN ROW UNTIL OBSERVED BY CITY ENGINEER REPRESENTATIVE OR PUBLIC WORKS REPRESENTATIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING AND SCHEDULING SITE OBSERVATION BY CITY REPRESENTATIVE.
5. UNLESS OTHERWISE DIRECTED, CONTRACTOR SHALL COORDINATE DIRECTLY WITH CITY ENGINEER REPRESENTATIVE FOR CONSTRUCTION OBSERVATION OF ALL WORK WITHIN THE ROW, EXCEPT WATER AND SEWER.

TEMPORARY TRAFFIC CONTROL.

6. CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR SELECTING AND IMPLEMENTING PROPER TEMPORARY TRAFFIC CONTROL MEASURES IN ACCORDANCE WITH APPLICABLE REGULATIONS AND INDUSTRY STANDARD PRACTICES.
7. TEMPORARY TRAFFIC CONTROL SHALL BE PROVIDED AT ANY TIME WORK IN ROW MAY INTERFERE WITH NORMAL AND SAFE FLOW OF VEHICULAR AND PEDESTRIAN TRAFFIC. ALL FLAGGERS SHALL HOLD CURRENT CERTIFICATION BY STATE OF WASHINGTON. A MINIMUM OF ONE LANE OF TRAFFIC SHALL BE MAINTAINED ON ALL STREETS AT ALL TIMES, EXCEPT WHEN CITY HAS APPROVED A DETOUR.
8. ALL TRAFFIC CONTROL SIGNAGE SHALL COMPLY WITH THE LATEST VERSION OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

ROAD CLOSURE/DETOUR

9. ROAD CLOSURE/TRAFFIC DETOURS ARE NOT AUTHORIZED FOR THIS PROJECT. A MINIMUM OF ONE LANE OF TRAFFIC SHALL BE OPEN TO VEHICLES AT ALL TIMES.

TRENCH SAFETY

10. CONTRACTOR SHALL SELECT, DESIGN, FURNISH AND PLACE TRENCH SAFETY SYSTEMS TO PROTECT WORKERS IN ACCORDANCE WITH WISHA, CH 49.17 RCW. CONTRACTOR IS SOLELY RESPONSIBLE FOR SELECTION, DESIGN, AND INSTALLATION OF APPROPRIATE TRENCH SAFETY MEASURES.

RESTRICTIONS

11. WORK HOURS SHALL BE LIMITED TO 7:00 AM TO 7:00 PM, WEEKDAYS (M-F) AND 9:00 AM – 6:00 PM WEEKENDS AND HOLIDAYS.
12. WORK REQUIRING OBSERVATION BY CITY STAFF OR CITY ENGINEER SHALL BE RESTRICTED TO WEEKDAYS (M-F), EXCLUDING HOLIDAYS RECOGNIZED BY CITY OF CARNATION, EXCEPT AS OTHERWISE AUTHORIZED BY THE CITY ENGINEER.
13. NO PAVEMENT OR ASSOCIATED BASE COURSE OR SUBGRADE WORK SHALL BE PERFORMED BETWEEN OCTOBER 1ST AND MARCH 31ST WITHOUT CITY ENGINEER APPROVAL

BURIED UTILITIES

14. BURIED UTILITIES SHALL BE LOCATED PRIOR TO START OF EXCAVATION IN ROW. POTENTIAL UTILITY CROSSINGS SHALL BE POTHOLED PRIOR TO EXCAVATION FOR NEW STORM, WATER AND UTILITIES. CONTRACTOR SHALL NOTIFY CARNATION PUBLIC WORKS DIRECTOR AND AFFECTED UTILITY PROVIDER OF ANY UTILITY CONFLICTS. CONTRACTOR SHALL COORDINATE WITH UTILITY PROVIDER FOR RELOCATION OF UTILITIES AND PERFORM WORK NECESSARY TO RELOCATE UTILITIES, AS REQUIRED.

MATERIALS

15. BEFORE INSTALLATION, ALL MATERIALS USED WITHIN THE PUBLIC ROW SHALL BE ACCEPTED BY THE CITY ENGINEER. MATERIAL SUBMITTALS FOR ALL MATERIALS USED IN THE ROW SHALL BE PROVIDED TO THE CITY ENGINEER FOR REVIEW AND ACCEPTANCE.

SUBMITTALS

16. MATERIAL SUBMITTALS SHALL BE FORWARDED TO THE CITY ENGINEER FOR REVIEW AND ACCEPTANCE.
17. MAINTAIN AT LEAST ONE COPY ON SITE OF ALL MATERIAL SUBMITTALS ACCEPTED BY CITY ENGINEER.
18. SUBMIT PORTLAND CEMENT CONCRETE MIX DESIGNS AND ASPHALT CONCRETE AND ASPHALT TREATED BASE (ATB) MIX DESIGNS, FOR CITY APPROVAL, BEFORE INSTALLATION. ATB AND ASPHALT MIX DESIGNS SHALL BE WSDOT APPROVED MIX DESIGNS.
19. SUBMIT PLAN FOR PROTECTING INFILTRATION DRAINAGE SYSTEM FROM CONTAMINATION BY CONSTRUCTION STORMWATER RUNOFF.
20. WITHIN 2 WORK DAYS OF DELIVERY, SUBMIT ONE COPY OF EVERY CONCRETE, ASPHALT AND ATB DELIVERY TRUCK TICKETS, TO CITY ENGINEER, FOR ALL CONCRETE, ASPHALT AND ATB INSTALLED WITHIN THE ROW. DELIVERY TICKETS SHALL INDICATE CLASS OF CONCRETE OR ASPHALT DELIVERED AND THE DATE AND SOURCE.
21. WITHIN 2 WORK DAYS OF TEST, SUBMIT ONE COPY OF EACH COMPACTION TEST OR LABORATORY TEST PERFORMED FOR WORK IN ROW, TO CITY ENGINEER. WITHIN 3 WORKING DAYS OF SITE VISIT, SUBMIT ONE COPY OF EACH OF THE GEOTECHNICAL ENGINEER'S FIELD REPORTS FOR WORK IN ROW, TO CITY ENGINEER.

CONSTRUCTION REQUIREMENTS

22. CITY OF CARNATION PUBLIC WORKS DIRECTOR OR CITY ENGINEER SHALL APPROVE ALL WORK PERFORMED IN ROW.
23. SUBGRADE FOR PAVEMENT AND SIDEWALKS SHALL BE PREPARED IN ACCORDANCE WITH WSDOT STD SPECS SECTIONS 2-03 AND 2-06.
24. GRAVEL BASE FOR PAVEMENT AND SIDEWALKS SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 4-04.
25. ASPHALT TREATED BASE (ATB) SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 4-06.
26. ASPHALT PAVEMENT SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 5-04.
27. STORM DRAINAGE SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT STD SPECS SECTIONS 7-04, 7-05, AND 7-08.
28. CURBS AND GUTTERS SHALL BE CONSTRUCTED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 8-04. SIDEWALKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 8-14.
29. PERMANENT SIGNAGE SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 8-21.
30. PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH WSDOT STD SPECS SECTION 8-22.
31. PROJECT GEOTECHNICAL ENGINEER SHALL OBSERVE, TEST, AND APPROVE SUBGRADE BELOW ALL STREET WIDENING BEFORE AGGREGATE BASE AND ATB ARE INSTALLED AND SHALL PROVIDE WRITTEN ACCEPTANCE TO CITY. PROJECT GEOTECHNICAL ENGINEER SHALL OBSERVE, TEST, AND APPROVE TRENCH BACKFILL AND CRUSHED SURFACING TOP COURSE (CSTC) ROAD BASE BEFORE STREET ASPHALT IS INSTALLED AND SHALL PROVIDE WRITTEN ACCEPTANCE TO CITY. COMPACTION TESTING FOR SUBGRADE AND GRAVEL BASE SHALL COMPLY WITH WSDOT STD SPECS SECTION 2-03.3(14)D. COMPACTION TESTING SHALL BE PERFORMED FOR EVERY 400 SQUARE FEET OF SUBGRADE AND GRAVEL BASE, PER LIFT, EXCEPT MORE FREQUENT TESTING SHALL BE PERFORMED AS DIRECTED BY CITY ENGINEER OR GEOTECHNICAL ENGINEER BASED ON OBSERVABLE SOIL CONDITIONS OR FAILED TESTS. HABITAT FOR HUMANITY SHALL PROVIDE FOR IN-PLACE COMPACTION TESTING AND A COPY OF ALL TEST RESULTS SHALL BE PROVIDED TO CITY ENGINEER. CONTRACTOR SHALL PROOF ROLE ANY AND ALL LOCATIONS DESIGNATED BY PROJECT GEOTECHNICAL ENGINEER OR CITY ENGINEER REPRESENTATIVE.
32. CURB/GUTTER/SIDEWALK GRADES, STREET BASE AND SURFACE GRADES, AND PIPE GRADES SHALL BE MAINTAINED BY USE OF A LASER.
33. TRENCH AND EXCAVATION BACKFILL, PIPE AND DRAINAGE STRUCTURE BEDDING, AND ROAD BASE SHALL BE CRUSHED SURFACING TOP COURSE (CSTC) AND/OR BASE COURSE PER 2012 WSDOT STD SPEC SECTION 9-03.9(3). ASPHALT PAVEMENT SHALL BE CLASS 1/2" PG 64-22; ALL MEET LINES SHALL BE TACKED AND SEALED. TACK COAT SHALL BE CSS-1, EMULSIFIED ASPHALT. ATB SHALL BE PLACED AND COMPACTED IN MAXIMUM 3-INCH THICK LIFTS. HOT MIX ASPHALT (HMA) SHALL BE PLACED AND COMPACTED IN MAXIMUM 2-INCH THICK LIFTS. ALL HMA PATCHES AND HMA SURFACES SHALL BE COMPACTED BY ROLLING FLAT AND SLOPED TO SURFACE DRAIN WITHOUT PUDDLES OR PONDING. ALL VALVE BOXES, GRATES, COVERS, VALVE PITS AND SURFACE UTILITY FEATURES SHALL BE ADJUSTED TO MATCH ASPHALT FINISH GRADE. ATB SHALL NOT BE PLACED UNTIL ALL BURIED UTILITIES HAVE BEEN INSTALLED BENEATH IT.
34. FINISH GRADE INFORMATION SHOWN ON DRAWINGS MAY BE INCOMPLETE OR INSUFFICIENT FOR CONSTRUCTION OF CONCRETE CURB/GUTTER AND ASPHALT STREET SURFACES. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING MISSING INFORMATION AND FOR RESOLVING INCONSISTENCIES SO THAT STREET ASPHALT AND GUTTER SURFACES RESULT IN SURFACE RUNOFF TO CONCRETE GUTTERS, ASPHALT THICKENED EDGES, AND STORM CATCH BASINS – NO PUDDLING/PONDING SHALL RESULT. NEW STREET ASPHALT AND/OR CONCRETE GUTTERS SHALL BE RE-GRADED AS REQUIRED TO ELIMINATE PUDDLES/PONDING.
35. SIDEWALKS IN ROW SHALL BE 3,000 PSI PORTLAND CEMENT CONCRETE, WITH FULL DEPTH EXPANSION JOINTS AT MAXIMUM 15 FEET ON CENTER. APPLY CURING COMPOUND. SIDEWALK AGGREGATE BASE SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY (MDD) PER ASTM D1557 (MODIFIED PROCTOR). CITY ENGINEER SHALL OBSERVE AND ACCEPT SUBGRADE AND AGGREGATE BASE COURSE BEFORE PLACEMENT OF CONCRETE. SIDEWALKS SHALL DRAIN TO SIDES – NO PUDDLES. SIDEWALK REPLACEMENT WORK SHALL BE PLANNED, SEQUENCED, AND PERFORMED IN SUCH MANNER AS TOO MINIMIZE AMOUNT OF TIME, BETWEEN SIDEWALK DEMOLITION AND SIDEWALK REPLACEMENT, TO LEAST AMOUNT NECESSARY TO PERFORM THE WORK. DURING SIDEWALK REPLACEMENT, INSTALL SIGNS AT EACH END NOTIFYING PUBLIC THAT SIDEWALK IS TEMPORARILY CLOSED. PROTECT CONCRETE SURFACES FROM DAMAGE – CRACKED CONCRETE WORK SHALL BE REPLACED.
36. PVC PIPE CONNECTIONS TO CONCRETE STRUCTURES SHALL HAVE SAND COLLARS OR APPROVED EQUAL MEANS OF CONNECTION.

TEMPORARY EROSION AND SEDIMENTATION CONTROL

37. PREVENT SILT-LADEN (TURBID) RUNOFF FROM REACHING PUBLIC STORM DRAINS OR NEW INFILTRATION TRENCH. INFILTRATION TRENCH SHALL NOT BE USED AS A SEDIMENTATION FACILITY. PLUG INLET TO STORMFILTER STRUCTURE UNTIL ALL DRAINAGE BASIN SOILS ARE FINALLY STABILIZED AND STORMFILTER IS INSTALLED AND OPERATIONAL. DO NOT REMOVE PLUG UNTIL APPROVED BY CITY ENGINEER. COVER STORM DRAINS WITH STORM INLET PROTECTION CONFORMING TO WSDOT STD PLAN I-40.20-00, INSPECT DAILY, AND CLEAN INLETS TO PREVENT BYPASS OR OVERTOPPING.
38. STREETS AND SIDEWALKS SHALL BE KEPT FREE OF DUST, DIRT AND MUD AND STREET SHALL BE MECHANICALLY SWEPT DAILY OR AS OTHERWISE NEEDED.
39. BLOWING DUST SHALL BE PREVENTED. IF REQUIRED, A TANKER WATERING TRUCK SHALL BE UTILIZED TO KEEP DUST FROM FORMING.

SURVEY CONTROL

40. SURVEY CONTROL AND LAYOUT STAKING SHALL BE PERFORMED BY LICENSED SURVEYOR AND SHALL CONFORM WITH APPROVED DRAWINGS. AS-BUILT LOCATIONS AND ELEVATIONS SHALL BE SURVEYED AND INCORPORATED INTO CONSTRUCTION AS-BUILT DRAWINGS PROVIDED TO THE CITY. STATIONING SHALL BE FIELD MARKED ON PAVEMENT AND MAINTAINED THROUGHOUT CONSTRUCTION.

RECORD DRAWINGS

41. PROVIDE AS-BUILT DRAWINGS SHOWING LOCATION AND CONFIGURATION OF STREET AND PEDESTRIAN IMPROVEMENTS, UTILITIES, SIGNAGE AND TRAFFIC CONTROL.

CLEANLINESS

42. ALL ROW WORK AREAS SHALL BE KEPT CLEAR OF DEBRIS ON A DAILY BASIS.
43. ALL STORM DRAIN STRUCTURES SHALL BE CLEANED BY VACTOR TRUCK, OR OTHER METHOD APPROVED BY CITY ENGINEER, BEFORE FINAL ACCEPTANCE.

PERMIT SUBMITTAL NOT FOR CONSTRUCTION

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206-659-0612

CATHERINE E. MARTIN — STATE OF WASHINGTON — 21900 — REGISTERED PROFESSIONAL ENGINEER

11/16/2022

REV NO	DATE	DESCRIPTION

PROJECT NUMBER 22008

SUBMITTAL SD/DR PERMIT

SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

GENERAL PROJECT AND ROW NOTES

DESIGN
DRAFT CFG
CHECK CFG
DATE CEM
SCALE 2022-11-10

SHEET C1.0

GENERAL UTILITY PIPE TRENCHING AND TRENCH PATCHING NOTES

1. TRENCHES SHALL BE EXCAVATED TO THE LINE AND DEPTH DESIGNATED BY THE PLANS TO PROVIDE THE COVER OVER THE WATER SYSTEM, SANITARY SEWER SYSTEM, OR STORM WATER SYSTEM AS SPECIFIED BY THE CITY. EXCEPT FOR UNUSUAL CIRCUMSTANCES WHERE APPROVED BY THE CITY, THE TRENCH SIDES SHALL BE EXCAVATED VERTICALLY AND THE TRENCH WIDTH SHALL BE EXCAVATED ONLY TO SUCH WIDTHS AS ARE NECESSARY FOR ADEQUATE WORKING SPACE AS ALLOWED BY THE GOVERNING AGENCY. THE TRENCH SHALL BE KEPT FREE FROM WATER UNTIL PIPE JOINING IS COMPLETE. SURFACE WATER SHALL BE DIVERTED SO AS NOT TO ENTER THE TRENCH. THE CONTRACTOR SHALL MAINTAIN SUFFICIENT PUMPING EQUIPMENT ON THE JOB TO ENSURE THAT THESE PROVISIONS ARE CARRIED OUT.
2. THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND WHATEVER SUBSTANCE ENCOUNTERED AND BOULDERS, ROCKS, ROOTS, AND OTHER OBSTRUCTIONS SHALL BE ENTIRELY REMOVED OR CUT OUT TO THE WIDTHS OF THE TRENCH AND TO A DEPTH 6 INCHES BELOW UTILITY PIPE GRADE. WHERE MATERIALS ARE REMOVED FROM BELOW UTILITY PIPE GRADE, THE TRENCH SHALL BE BACKFILLED TO GRADE WITH FOUNDATION GRAVEL AND THOROUGHLY COMPACTED.
3. TRENCHING AND SHORING OPERATIONS SHALL NOT PROCEED MORE THAN 100 FEET IN ADVANCE OF PIPE LAYING WITHOUT APPROVAL OF THE CITY, AND SHALL BE IN CONFORMANCE WITH WASHINGTON INDUSTRIAL SAFETY AND HEALTH ADMINISTRATION (WISHA) AND OFFICE OF SAFETY AND HEALTH ADMINISTRATION (OSHA) SAFETY STANDARD.
4. MATERIAL EXCAVATED FROM TRENCHES AND PILED ADJACENT TO THE TRENCH, OR IN A ROADWAY OR PUBLIC THOROUGHFARE, SHALL BE PILED AND MAINTAINED SO THAT THE TOE OF THE SLOPE OF THE MATERIAL IS AT LEAST 3 FEET FROM THE EDGE OF THE TRENCH. IT SHALL BE PILED IN SUCH A MANNER AS WILL CAUSE A MINIMUM OF INCONVENIENCE TO PUBLIC TRAVEL, AND PROVISIONS SHALL BE MADE FOR TRAFFIC CONTROL AS NECESSARY. FREE ACCESS SHALL BE PROVIDED TO FIRE HYDRANTS, WATER VALVES, AND METERS, AND CLEARANCE SHALL BE LEFT TO ENABLE FREE FLOW OF STORM WATER IN GUTTERS, OTHER CONDUITS, AND NATURAL WATERCOURSES.
5. OPEN-CUT TRANSVERSE CROSSINGS OF ROADWAYS AFTER FINAL PAVING ARE NOT TO BE PERMITTED UNLESS IT CAN BE SHOWN THAT ALTERNATIVES SUCH AS JACKING, AUGURING OR TUNNELING ARE NOT FEASIBLE OR UNLESS THE UTILITY CAN BE INSTALLED JUST PRIOR TO RECONSTRUCTION OR AN OVERLAY OF THE ROAD. SHOULD AN OPEN CUT BE APPROVED, ALL TRANSVERSE TRENCHES SHALL BE BACKFILLED WITH CRUSHED SURFACING OR CONTROLLED DENSITY FILL.
6. WHERE TRENCH EXCAVATION EQUALS OR EXCEEDS A DEPTH OF 4 FEET, THE DEVELOPER/CONTRACTOR SHALL PROVIDE, CONSTRUCT, MAINTAIN AND REMOVE, AS REQUIRED, SAFETY SYSTEMS THAT MEET THE REQUIREMENTS OF THE WASHINGTON INDUSTRIAL SAFETY AND HEALTH ACT, RCW 49.17, INCLUDING WAC 296-155. THE TRENCH SAFETY SYSTEMS SHALL BE DESIGNED BY A QUALIFIED PERSON, AND MEET ACCEPTED ENGINEERING REQUIREMENTS (SEE WAC 296-155-660).
7. THE CONTRACTOR SHALL ADEQUATELY SHORE TRENCHES TO PROTECT THE WORK, EXISTING PROPERTY, UTILITIES, PAVEMENT, ETC., AND TO PROVIDE SAFE WORKING CONDITIONS IN THE TRENCH. THE METHOD OF SHORING SHALL BE ACCORDING TO THE CONTRACTOR'S DESIGN. THE CONTRACTOR MAY ELECT TO USE A COMBINATION OF SHORING OR OVER BREAK, TUNNELING, BORING, SLIDING TRENCH SHIELDS, OR OTHER METHODS OF ACCOMPLISHING THE WORK, PROVIDED THE METHOD MEETS ALL APPLICABLE LOCAL, STATE, AND FEDERAL SAFETY CODES. DAMAGES RESULTING FROM IMPROPER SHORING OR FROM FAILURE TO SHORE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REMOVAL OF ANY SHORING FROM THE TRENCH SHALL BE ACCOMPLISHED IN SUCH A MANNER AS TO ASSURE THAT NO DAMAGE IS DONE TO THE PIPE OR WORK.
8. WHERE WATER IS ENCOUNTERED IN THE TRENCH, IT SHALL BE REMOVED DURING PIPE-LAYING OPERATIONS AND THE TRENCH SO MAINTAINED UNTIL THE ENDS OF THE PIPE ARE SEALED AND PROVISIONS ARE MADE TO PREVENT FLOATING OF THE PIPE. TRENCH WATER OR OTHER DELETERIOUS MATERIALS SHALL NOT BE ALLOWED TO ENTER THE PIPE AT ANY TIME.
9. THE DEVELOPER/CONTRACTOR SHALL FURNISH, INSTALL, AND OPERATE ALL NECESSARY EQUIPMENT TO KEEP THE TRENCH ABOVE THE FOUNDATION LEVEL FREE FROM WATER DURING CONSTRUCTION, AND SHALL DEWATER AND DISPOSE OF THE WATER SO AS NOT TO CAUSE INJURY TO PUBLIC OR PRIVATE PROPERTY OR NUISANCE TO THE PUBLIC. SUFFICIENT PUMPING EQUIPMENT IN GOOD WORKING CONDITION SHALL BE AVAILABLE AT ALL TIMES FOR ALL EMERGENCIES, INCLUDING POWER OUTAGE, AND SHALL HAVE AVAILABLE AT ALL TIMES COMPETENT WORKERS FOR THE OPERATION OF THE PUMPING EQUIPMENT.
10. WHEN NATIVE MATERIAL AT THE TRENCH BOTTOM IS STONY OR OTHERWISE NON-UNIFORM, THE TRENCH SHALL BE OVER-EXCAVATED A MINIMUM OF 6 INCHES BELOW THE SPECIFIED GRADE AND A LAYER OF PIPE BEDDING MATERIAL SHALL BE FURNISHED AND PLACED BY THE CONTRACTOR TO THE SPECIFIED GRADE. AFTER THE PIPE IS IN PLACE ADDITIONAL HAND SELECTED NATIVE MATERIAL MEETING THE REQUIREMENTS FOR BEDDING MATERIAL SHALL BE PLACED AND TAMPED AROUND THE PIPE FOR A MINIMUM OF 6 INCHES ABOVE THE CROWN OF THE PIPE.
11. IF THE NATIVE MATERIAL AT THE TRENCH BOTTOM IS UNSUITABLE FOR FOUNDATION PURPOSES OR WILL HAVE DIFFICULTY PROVIDING UNIFORM BEARING FOR THE PIPE, SUCH MATERIAL SHALL BE REMOVED AND REPLACED WITH A MINIMUM OF 6 INCHES OF COMPACTED FOUNDATION MATERIAL.
12. BEDDING MATERIAL SHALL BE AS SPECIFIED ON THE APPROVED DRAWINGS OR NOTES. THE BEDDING MATERIAL SHALL BE CARRIED UP EVENLY ON BOTH SIDES OF THE PIPE SIMULTANEOUSLY IN APPROXIMATELY 6-INCH LAYERS AND EACH LAYER THOROUGHLY COMPACTED WITH APPROPRIATE TOOLS IN SUCH MANNER AS TO AVOID INJURING OR DISTURBING THE COMPLETED PIPELINE. ALL BEDDING AND NATIVE MATERIAL SHALL BE STORED AWAY FROM THE EDGES OF EXCAVATION AND OFF THE PAVED ROADWAY AND SHOULDER.
13. ALL TRENCH BACKFILL SHALL BE MECHANICALLY COMPACTED TO 95% OF MAXIMUM DENSITY (ASTM D 1557 MODIFIED PROCTOR TEST) WITHIN THE RIGHT-OF-WAY AND IN ALL AREAS (PAVED AND UNPAVED) WHERE STREETS, ROADWAY SHOULDERS, DRIVEWAYS, SIDEWALKS, OR PARKING LOTS WILL BE CONSTRUCTED OR RECONSTRUCTED OVER THE TRENCH EXCEPT FOR TRENCHES OVER 8 FEET IN DEPTH. WHEN THE TRENCH DEPTH EXCEEDS 8 FEET, TRENCH BACKFILL UP TO 4 FEET FROM THE TOP OF THE TRENCH MAY BE WATER SETTLED OR MECHANICALLY COMPACTED TO 90% OF THE MAXIMUM DENSITY. THE UPPER 4 FEET SHALL BE COMPACTED TO 95% OF THE MAXIMUM DENSITY.
14. BACKFILL SHALL BEGIN IMMEDIATELY AFTER INSPECTION AND APPROVAL OF THE INSTALLATION BY THE CITY. BACKFILL COMPACTION ON PRIVATE PROPERTY IS THE OWNER'S RESPONSIBILITY.
15. THE BOTTOM OF THE TRENCH SHALL BE FINISHED TO GRADE WITH HAND TOOLS IN SUCH A MANNER THAT THE PIPE WILL HAVE BEARING ALONG THE ENTIRE LENGTH OF THE BARREL. THE BELL HOLES SHALL BE EXCAVATED WITH HAND TOOLS TO SUFFICIENT SIZE TO MAKE UP THE JOINT.
16. SUITABLE NATIVE MATERIAL EXCAVATED DURING TRENCHING MAY BE USED FOR TRENCH BACKFILL OUTSIDE OF SIDEWALK AND PAVEMENT AREAS UNLESS NOTIFIED BY THE CITY THAT THE NATIVE MATERIAL IS UNSUITABLE. THE CITY OR REPRESENTATIVE WILL EXAMINE EXCAVATED NATIVE MATERIAL AT THE TIME OF EXCAVATION TO DETERMINE ITS SUITABILITY FOR USE AS BACKFILL. NATIVE MATERIAL WILL BE CONSIDERED SUITABLE FOR TRENCH BACKFILL IF IT IS:
    (A) CAPABLE OF ATTAINING THE DEGREE OF COMPACTION SPECIFIED WITHIN REASONABLE TOLERANCE OF OPTIMUM MOISTURE CONTENT.
    (B) REASONABLY FREE OF ORGANIC MATERIAL, CLAY, FROZEN LUMPS, ROCKS GREATER THAN 2 INCHES, OR OTHER DELETERIOUS MATTER.
17. UNSUITABLE BACKFILL MATERIAL SHALL BE REMOVED FROM THE SITE AND HAULED TO AN APPROVED DISPOSAL SITE. THE CITY SHALL BE PROVIDED WITH THE LOCATION OF ALL DISPOSAL SITES TO BE USED AND ALSO COPIES OF THE PERMITS AND APPROVALS FOR SUCH DISPOSAL SITES.
18. PERPENDICULAR OPEN CUT CROSSINGS OF ANY PUBLIC RIGHT OF WAY SHALL REQUIRE CONTROLLED DENSITY FILL (CDF) OR 100% IMPORT OF CRUSHED SURFACING BASE AND TOP COURSE UNLESS WAIVED BY THE CITY.
19. UNDER SIDEWALK OR PAVEMENT AREAS, IMPORTED MATERIAL SHALL MEET THE REQUIREMENTS OF CRUSHED SURFACING TOP COURSE (CSTC) AS SPECIFIED IN THE WSDOT STD. SPECS SECTION 9-03.9(3). IN OTHER AREAS, IMPORTED MATERIAL SHALL MEET THE REQUIREMENTS OF CSTC OR GRAVEL BORROW AS SPECIFIED IN THE WSDOT STD. SPECS SECTION 9-03.14(1). IN BACKFILLING THE TRENCH, THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE PIPE FROM ANY DAMAGE OR SHIFTING. THE CONTRACTOR SHALL BACKFILL FROM THE SIDE OF THE TRENCH TO A MAXIMUM UNIFORM DEPTH OF 1 FOOT ABOVE THE CROWN OF THE PIPE BEFORE STARTING MECHANICAL COMPACTION.
20. DURING ALL PHASES OF THE BACKFILLING OPERATIONS AND TESTING AS OUTLINED HEREIN, THE CONTRACTOR SHALL PROTECT THE PIPE INSTALLATION, PROVIDE FOR THE MAINTENANCE OF TRAFFIC AS MAY BE NECESSARY, AND PROVIDE FOR THE SAFETY OF PROPERTY AND PERSONS.
21. WHERE GOVERNMENTAL AGENCIES OTHER THAN THE CITY HAVE JURISDICTION OVER ROADWAYS, THE BACKFILL AND COMPACTION SHALL BE DONE TO THE SATISFACTION OF THE AGENCY HAVING JURISDICTION. IF SUITABLE BACKFILL MATERIAL IS NOT AVAILABLE FROM TRENCHING OPERATIONS OR TEMPORARY TRAFFIC CONTROL AND TRAFFIC SAFETY ISSUES EXIST, THE CITY MAY ORDER THE PLACING OF BEDDING AROUND THE WATER MAIN AND GRAVEL BASE OR CONTROLLED DENSITY FILL FOR BACKFILLING THE TRENCH.
22. CONTROLLED DENSITY FILL (CDF, AKA FLOWABLE FILL) SHALL BE A MIXTURE OF PORTLAND CEMENT, FLYASH (OPTIONAL), AGGREGATES, AND WATER. IT SHALL BE PROPORTIONED TO PROVIDE A GROUTY, NON-SEGREGATING, FREE FLOWING, SELF-CONSOLIDATING AND EXCAVATABLE MATERIAL THAT WILL RESULT IN A NON-SETTLING FILL WHICH HAS MEASURABLE UNCONFINED COMPRESSIVE STRENGTH. UNLESS OTHERWISE SPECIFIED, UNIT WEIGHTS SHALL RANGE FROM 125 LBS. PER CUBIC FOOT TO 155 LBS. PER CUBIC FOOT.
23. MATERIALS TESTING SHALL BE WITH UNCONFINED COMPRESSIVE TEST CYLINDERS. TEST DATA MAY BE EITHER LABORATORY TRAIL BATCH DATA OR FIELD TEST DATA.
24. SPECIFIC MIX DESIGNS MAY BE REQUIRED AT THE ENGINEER'S DISCRETION. APPROVED SOURCES ARE STONEWAY AND CADMAN.
25. THE UNCONFINED COMPRESSIVE STRENGTH AT 28 DAYS SHALL BE A MINIMUM OF 50 PSI AND A MAXIMUM OF 100 PSI. MATERIAL SHALL BE A SAND/GROUT SLURRY PROPORTIONED TO BE HAND-EXCAVATABLE AFTER LONG-TERM STRENGTH GAIN.
26. IF CDF IS USED FOR TRENCH BACKFILL ON DUCTILE IRON, STEEL, OR COPPER UTILITY MAINS OR SERVICES, THE MAINS AND SERVICES SHALL BE ENCASED IN POLYETHYLENE WRAP.
27. TRENCH BACKFILL SHALL BE SPREAD IN LAYERS AND BE COMPACTED BY MECHANICAL TAMPERS OF THE IMPACT TYPE APPROVED BY THE ENGINEER. WATER SETTLING WILL NOT BE PERMITTED. AFTER THE INITIAL BACKFILL IS PLACED THE REMAINING BACKFILL MATERIAL SHALL BE PLACED IN SUCCESSIVE LAYERS NOT EXCEEDING 1 FOOT IN LOOSE THICKNESS, AND EACH LAYER SHALL BE COMPACTED TO THE DENSITY SPECIFIED BELOW:
28. IMPROVED AREAS SUCH AS STREET AND SIDEWALK AREAS SHALL BE COMPACTED TO 95% OF MAXIMUM DRY DENSITY (MDD) PER ASTM D-1557 (MODIFIED PROCTOR). UNIMPROVED AREAS OF LANDSCAPE AREAS SHALL BE COMPACTED TO 90% OF MDD PER ASTM D-1557.
29. THE EXISTING ASPHALT SURFACE SHALL BE CUT ON A NEAT LINE BY SAW CUTTING, JACK-HAMMERING OR OTHER APPROVED METHOD PRIOR TO EXCAVATION TO PROVIDE A CONTINUOUS LINE. FOLLOWING PROPER BACKFILL AND COMPACTION OF THE TRENCH, THE EDGES OF THE SURFACING SHALL BE RETRIMMED (SAW CUT) 12 INCHES WIDER THAN THE EXCAVATION WITH STRAIGHT VERTICAL EDGES FREE FROM IRREGULARITIES. CRUSHED SURFACING TOP COURSE SHALL BE PLACED TO A COMPACTED THICKNESS OF 6 INCHES.
30. TEMPORARY RESTORATION OF TRENCHES SHALL BE ACCOMPLISHED BY USING 2-INCH LAYER OF HOT MIX ASPHALT CONCRETE PAVEMENT WHEN AVAILABLE OR 2-INCH LAYER OF MEDIUM-CURING (MC-250) LIQUID ASPHALT (COLD MIX), 2-INCH LAYER OF ASPHALT TREATED BASE (ATB), OR STEEL PLATES.
31. ATB USED FOR TEMPORARY RESTORATION MAY BE DUMPED DIRECTLY INTO THE TRENCH, BLADED AND ROLLED. AFTER ROLLING, THE TRENCH MUST BE FILLED FLUSH WITH THE EXISTING ASPHALT CONCRETE PAVEMENT TO PROVIDE A SMOOTH RIDING SURFACE.
32. ALL TEMPORARY PATCHES SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL SUCH TIME AS THE PERMANENT PAVEMENT PATCH IS IN PLACE. IF THE CONTRACTOR IS UNABLE TO MAINTAIN A PATCH FOR WHATEVER REASON, THE CITY WILL PATCH IT AT ACTUAL COST PLUS OVERHEAD AND MATERIALS.
33. TRENCH RESTORATION SHALL BE EITHER BY A HMA PATCH OR HMA PATCH PLUS OVERLAY AS REQUIRED BY THE CITY.
34. ALL TRENCH AND PAVEMENT CUTS SHALL BE MADE BY SPADE BLADED JACKHAMMER OR SAW CUTS. ALL CUTS SHALL BE A MINIMUM DISTANCE OUTSIDE THE TRENCH WIDTH OF 12 INCHES.
35. REPLACEMENT OF THE ASPHALT CONCRETE OR PORTLAND CONCRETE CEMENT SHALL BE OF EXISTING DEPTH PLUS 1 INCH OR 3 INCHES, WHICHEVER IS GREATER.
36. TACK SHALL BE APPLIED TO THE EXISTING PAVEMENT AND EDGE OF CUT AND SHALL BE EMULSIFIED ASPHALT GRADE CSS-1 AS SPECIFIED IN THE STANDARD SPECIFICATIONS. TACK COAT SHALL BE APPLIED AS SPECIFIED IN THE STANDARD SPECIFICATIONS.
37. HOT MIX ASPHALT SHALL BE PLACED ON THE PREPARED SURFACE BY AN APPROVED PAVING MACHINE AND SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE STANDARD SPECIFICATIONS, EXCEPT THAT LONGITUDINAL JOINTS BETWEEN SUCCESSIVE LAYERS OF ASPHALT CONCRETE SHALL BE DISPLACED LATERALLY A MINIMUM OF 12 INCHES UNLESS OTHERWISE APPROVED BY THE CITY. FINE AND COARSE AGGREGATE SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. ASPHALT CONCRETE OVER 2 INCHES THICK SHALL BE PLACED IN EQUAL LIFTS NOT TO EXCEED 2 INCHES EACH.
38. ALL STREET SURFACES, WALKS OR DRIVEWAYS WITHIN THE STREET TRENCHING AREAS AFFECTED BY THE TRENCHING SHALL BE FEATHERED AND LEVELED TO AN EXTENT THAT PROVIDES A SMOOTH-RIDING CONNECTION AND EXPEDITES DRAINAGE FLOW FOR THE NEWLY PAVED SURFACE. LEVELING AND FEATHERING AS REQUIRED BY THE CITY SHALL BE ACCOMPLISHED BY RAKING OUT THE OVERSIZED AGGREGATES FROM THE HMA AS APPROPRIATE.
39. SURFACE SMOOTHNESS SHALL BE PER THE STANDARD SPECIFICATIONS.
    (A) ALL JOINTS SHALL BE SEALED USING EMULSIFIED ASPHALT.
    (B) WHEN TRENCHING WITHIN THE ROADWAY SHOULDER(S), THE SHOULDER SHALL BE RESTORED TO ITS ORIGINAL OR BETTER CONDITION.
    (C) THE FINAL PATCH SHALL BE COMPLETED AS SOON AS POSSIBLE AND SHALL BE COMPLETED WITHIN 30 DAYS AFTER FIRST OPENING THE TRENCH. THIS TIME FRAME MAY BE ADJUSTED IF DELAYS ARE DUE TO INCLEMENT PAVING WEATHER, OR OTHER ADVERSE CONDITIONS THAT MAY EXIST. HOWEVER, DELAYING OF FINAL PATCH OR OVERLAY WORK IS ALLOWABLE ONLY SUBJECT TO THE CITY'S APPROVAL.

PERMIT SUBMITTAL NOT FOR CONSTRUCTION

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11/16/2022

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PROJECT NUMBER 22008

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SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

GENERAL UTILITY TRENCH NOTES

DESIGN CFG
DRAFT CFG
CHECK CEM
DATE 2022-11-10
SCALE

SHEET C1.1

GENERAL SANITARY SEWER CONSTRUCTION NOTES

1. SEE THE CITY OF CARNATION WATER AND SEWER COMBINED UTILITY STANDARDS (CITY STANDARDS), CURRENT EDITION, FOR FULL REQUIREMENT DETAILS.
2. PRIOR TO ANY PAVEMENT CUTTING OR REMOVAL, OR EXCAVATION FOR PIPE LAYING, THE CONTRACTOR SHALL VERIFY, IN THE PRESENCE OF THE CITY'S INSPECTOR, THE LOCATION AND DEPTH OF THE EXISTING SEWER MAIN AT THE POINT WHERE CONNECTION IS TO BE MADE. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS, TYPE, AND CONDITION OF THE EXISTING SEWER MAIN. IF NECESSARY, THE GRADE SHALL BE ADJUSTED SO NEITHER A HIGH SPOT NOR A LOW SPOT IS CREATED ADJACENT TO THE CONNECTION TO THE EXISTING SEWER MAIN.
3. WATER MAINS, PARALLEL TO A SEWER, SHALL NORMALLY BE ABOVE AND SEPARATED BY A DISTANCE OF AT LEAST TEN FEET HORIZONTALLY. UNDER UNUSUAL CIRCUMSTANCES, THE HORIZONTAL SPACING MAY BE ADJUSTED, SUBJECT TO THE APPROVAL OF THE CITY. WATER MAINS CROSSING SEWERS SHOULD BE NOT LESS THAN 18 INCHES ABOVE THE SEWER. WHERE IT IS NECESSARY FOR A SEWER TO CROSS WITHIN 18 INCHES, OR OVER THE WATER MAIN, PROTECTIVE MEASURES PER THE DOE CRITERIA FOR SEWAGE WORKS DESIGN (ORANGE BOOK) SHALL BE TAKEN.
4. FIELD STAKING FOR SEWER LINE AND GRADE FOR SEWER VACUUM BRANCH MAIN AND VACUUM SEWER LATERALS SHALL BE PERFORMED BY LICENSED SURVEYOR.
5. PIPING, VALVES, VALVE PITS, AND APPURTENANCES SHALL NOT BE BURIED UNTIL OBSERVED AND ACCEPTED BY CITY REPRESENTATIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING AND SCHEDULING TIMELY SITE OBSERVATIONS BY CITY REPRESENTATIVE.
6. TRENCHES SHALL BE EXCAVATED TO THE LINE AND DEPTH DESIGNATED BY THE PLANS TO PROVIDE THE COVER ON THE WATER SYSTEM OR SANITARY SEWER SYSTEM AS SPECIFIED BY THE CITY. PERFORM TRENCHING IN ACCORDANCE WITH THE GENERAL UTILITY PIPE TRENCHING AND TRENCH PATCHING NOTES ON SHEET C-1.1.
7. THE CITY HAS A VACUUM SEWER SYSTEM THAT OPERATES DIFFERENTLY THAN STANDARD GRAVITY SEWER. A BREAK IN THE MAINLINE, OR BETWEEN MAINLINE AND VALVE PITS, WILL SHUTDOWN THE ENTIRE TRUNKLINE, BETWEEN VACUUM STATION AND END USER. THE INSTALLATION OF ALL SANITARY SEWER FACILITIES SHALL BE DONE PER PLANS WHICH HAVE BEEN APPROVED BY THE CITY.
8. BEFORE INSTALLATION, MATERIAL SUBMITTALS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR ACCEPTANCE FOR ALL MATERIALS TO BE INSTALLED. ALL MATERIALS SHALL BE NEW AND UNDAMAGED. ALL MATERIALS NOT SPECIFICALLY REFERENCED SHALL COMPLY WITH APPLICABLE SECTIONS OF ANSI, ASTM, AWWA, AND THE STANDARD SPECIFICATIONS.
9. APPROVED MANUFACTURERS AND MODEL NUMBERS OF VARIOUS MATERIALS ARE LISTED IN APPROVED MATERIALS LIST INCLUDED IN THE CITY STANDARDS. WHEN SPECIFIC MANUFACTURERS OR MODELS ARE LISTED, NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PRIOR APPROVAL BY THE CITY.

PIPE

10. VACUUM SEWER MAIN AND LATERALS SHALL BE CONSTRUCTED OF ASTM 2241 SDR 21 PVC, 200 PSI PRESSURE RATED, UNLESS OTHERWISE APPROVED BY CITY.
11. CONNECTIONS TO EXISTING VACUUM SEWER MAIN SHALL BE MADE WITH ROMAC 501 COUPLINGS OR APPROVED EQUAL.
12. GRAVITY SEWERS AND SERVICES SHALL BE CONSTRUCTED OF ASTM 2241 SDR 21 PVC, ASTM 3034 SDR 35 PVC, OR CLASS 50 DUCTILE IRON PIPE CONFORMING TO SECTION 9-05.12 OF THE STANDARD SPECIFICATIONS UNLESS SHOWN OTHERWISE ON DRAWINGS. PVC GRAVITY SEWER SERVICE PIPE SHALL BE CONSIDERED FLEXIBLE CONDUIT. PVC COMPOUND SHALL MEET THE REQUIREMENTS OF ASTM D 1784 FOR CLASS 12454-B PVC. VENT PIPES SHALL BE PVC SDR 21 OR SCHEDULE 40 PVC WITH SOLVENT WELD JOINTS AS SHOWN ON THE STANDARD DETAIL. INSTALLATION OF TRACER TAPE OR WIRE OVER THE SIDE SEWER IS REQUIRED.
13. DUCTILE IRON PIPE (CLASS 50) MAY BE USED IN LIEU OF PVC PIPE PROVIDED THE DUCTILE IRON PIPE IS LINED WITH PROTECTO 401 CERAMIC-EPOXY OR APPROVED EQUAL. ALL LININGS SHALL BE APPLIED PER THE MANUFACTURER'S RECOMMENDATIONS.
14. THE INTERIOR OF THE PIPE SHALL BE KEPT CLEAN AND FREE FROM DIRT, CEMENT, OR ANY OTHER SUPERFLUOUS, AND EACH JOINT LEFT ENTIRELY FREE FROM ANY PROTRUDING MATERIAL ON THE INSIDE OF THE PIPE JOINT OR PIPE BARREL.

COUPLINGS

15. ONLY ROMAC, FERNCO COUPLINGS OR FORD FLEXIBLE COUPLINGS MAY BE USED. FERNCO COUPLINGS ARE ONLY ALLOWED AT THE BUILDING CONNECTION TO THE SIDE SEWER, NOT AT THE CONNECTION TO THE CITY SIDE SEWER. THEY SHALL BE INSTALLED AS PRESCRIBED BY THE MANUFACTURER OF THE COUPLING, AND IN A MANNER SATISFACTORY TO THE CITY.

WYES, TEES AND CLEANOUTS

16. CLEANOUTS SHALL BE REQUIRED FOR ALL SIDE SEWERS LONGER THAN 100 FEET AS MEASURED FROM THE OWNER'S PROPERTY OR EASEMENT LINE AND THE BUILDING FOUNDATION. CLEANOUTS SHALL BE PROVIDED AT INTERVALS NOT TO EXCEED 100 FEET AND ARE ENCOURAGED AT CHANGES OF PIPE ALIGNMENT
17. WYES AND CLEANOUTS SHALL BE PLACED AT ANY LOCATION OR LOCATIONS WHICH, IN THE CITY'S OPINION, ARE REASONABLY NECESSARY TO ASSURE A PROPER INSTALLATION
18. ALL WYES TO BE INSTALLED FOR USE AS A PERMANENT CLEANOUT, AND ALL TEMPORARY OR FUTURE ENDS OF RUNS SHALL BE PLUGGED WITH A PLUG OF A TYPE SATISFACTORY TO THE CITY AND SHALL BE MADE COMPLETELY WATERTIGHT. IT IS THE INSTALLER'S RESPONSIBILITY TO ASSURE THAT SUCH PLUG WILL NOT BE BLOWN OUT OR MOVED BY THE TESTING PRESSURE IN THE SEWER SYSTEM. ANY SUCH MEANS OF PREVENTION SHALL BE EASILY REMOVABLE WITHOUT DAMAGE TO THE FITTING OR THE PLUG
19. NO SIDE SEWER SHALL BE COVERED OR BACKFILLED PRIOR TO THE FIELD INSPECTION BY THE CITY. ANY PERSON PERFORMING WORK SUBJECT TO THE PROVISIONS OF THIS POLICY SHALL NOTIFY THE CITY AS LEAST FORTY EIGHT (48) HOURS IN ADVANCE OF WHEN THE WORK WILL BE READY FOR INSPECTION AND TESTING, AND AN APPOINTMENT WILL BE ARRANGED FOR THE INSPECTION. THE OWNER OR CONTRACTOR MUST BE PRESENT DURING THE INSPECTION. IF AN APPOINTMENT HAS BEEN SCHEDULED AND THE INSPECTOR ARRIVES AND FINDS THAT, IN FACT, THE SIDE SEWER IS NOT READY FOR TESTING AND INSPECTION, A NEW APPOINTMENT MUST BE MADE AND A CHARGE MADE FOR THE SECOND VISIT AS ESTABLISHED BY THE CITY.

BENDS

20. BENDS USED FOR VACUUM LINE DIRECTIONAL CHANGES, BRANCH TO MAIN CONNECTIONS, AND VALVE PIT TO BRANCH OR MAIN CONNECTIONS MAY NOT EXCEED 45 DEGREES. FITTINGS SHALL BE CONSTRUCTED OF ASTM 2241 SDR21 UNLESS OTHERWISE APPROVED BY CITY.

VALVES

21. GATE VALVES USED FOR VACUUM SEWER SYSTEM SHALL CONFORM TO ANSI/AWWA C509-94, STANDARD FOR RESILIENT SEATED GATE VALVES, AS MANUFACTURED BY MUELLER OR M&H.
22. MECHANICAL JOINT CONNECTIONS WITH TRANSITION TO PVC GASKETS SHALL BE PROVIDED. ALL FLANGE FACES SHALL BE MACHINED AND DRILLED TO STRADDLE THE VERTICAL CENTERLINE
23. BURIED VALVES SHALL BE PROVIDED WITH VALVE BOXES AND THE OPERATING NUT SHALL BE EXTENDED TO WITHIN 9", PLUS OR MINUS 6", OF THE FINISHED GRADE. THE VALVE BOX COVER SHALL HAVE THE WORDS "SEWER" AND "OPEN" WITH A DIRECTIONAL ARROW CAST ON IT. LOCK DOWN SET SCREWS SHALL NOT BE USED ON VALVE OPERATING NUT EXTENSIONS
24. TWO (2) TEE KEYS SHALL BE PROVIDED FOR EACH VALVE SIZE REQUIRED.

VALVE PIT

25. SHALL BE AS MANUFACTURED BY BILFIGER/AIR VAC, MODEL TO BE SPECIFIED ON DRAWINGS.
26. VALVE PIT COVERS SHALL BE_MODEL R5900 BY NEENAH FOUNDRY OR EQUAL, AND SHALL BE DESIGNED FOR H-20 LOADING. CASTINGS SHALL MEET ASTM A-48, CLASS 30 GRAY CAST IRON. COVERS SHALL BEAR THE NAME "AIRVAC SEWER" ON ITS TOP IN 1" TALL RAISED LETTERS, UNLESS OTHERWISE DIRECTED BY CITY. RISER RINGS ARE NOT TO BE USED ON VALVE PITS UNLESS PRIOR APPROVAL IS OBTAINED FROM CITY.
27. VALVE PITS SHALL BE INSTALLED AND TESTED IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTION.
28. AN ELASTOMER SEAL/GROMMET SHALL BE PROVIDED FOR EACH PIPE PASSING THROUGH VALVE PIT, VALVE PIT BOTTOM AND SUMP TO PROVIDE A SEAL AGAINST GROUND WATER WITHOUT THE USE OF THREADED FASTENERS. IF THE VALVE PIT IS PROVIDED WITH AN INTEGRAL PLAIN END PORTION OF PIPE, THE GRAVITY SEWER TO VALVE PIT CONNECTION SHALL BE MADE USING A STANDARD GASKETED BELL END CONNECTION.

VALVE PIT BEDDING & BACKFILL

29. VALVE PITS SHALL BE FOUNDED ON A 3" LAYER OF CRUSHED SURFACING TOP COURSE (CSTC) PER WSDOT STD. SPEC. SECTION 9-03.9(3) AND BACKFILLELD WITH CSTC PER SAME STANDARD OR SAND PER WSDOT STD. SPEC. SECTION 9-03.13(1) OR CSTC. ALL VALVE PITS WITHIN ROW SHALL HAVE TOP 12" BACKFILLED WITH CRUSHED SURFACING BASE COURSE (CSBC) PER WSDOT STD. SPEC. SECTION 9-03.9(3). VALVE PIT BACKFILL SHALL BE MECHANICALLY COMPACTED TO 90% OF MAXIMUM DENSITY (MODIFIED PROCTOR TEST) AND 95% AT THE UPPER 4 FEET WITHIN THE ROW AND ALL AREAS (PAVED AND UNPAVED) WHERE STREETS, ROADWAY SHOULDERS, DRIVEWAYS, SIDEWALKS, OR PARKING LOTS WILL BE CONSTRUCTED OR RECONSTRUCTED. SPECIAL CARE SHALL BE TAKEN IMMEDIATELY ADJACANT TO VALVE PIT STRUCTURES WHILE COMPACTING AND THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE INCURRED TO VALVE PITS DURING COMPACTION. SEE DETAIL FOR VALVE PIT INSTALLATION.

VACUUM SYSTEM AIR INTAKE

30. EACH BUILDING'S GRAVITY SEWER SERVICE SHALL BE FITTED WITH A 4" AIR VENT OR A 6" AIR TERMINAL SHALL BE PROVIDED FOR EACH VALVE PIT, PER CITY STANDARDS.

PIPE BEDDING

31. PIPE BEDDING MATERIAL, SHALL BE CRUSHED SURFACING TOP COURSE (CSTC) PER WSDOT STD. SPEC. SECTION 9-03.9(3). NATIVE MATERIAL MAY BE USED FOR GRAVITY SIDE SEWER PIPE BEDDING IF IT IS SAND OR SMALL GRAVEL MATERIAL WITH STONES NO LARGER THAN 1 ½-INCH DIAMETER, ONLY AS APPROVED IN ADVANCE BY THE CITY.
32. HAND SELECTED AND PLACED NATIVE MATERIAL MAY BE USED ONLY IF IT IS FREE OF STONES LARGER THAN 1 ½ INCHES IN DIAMETER AND IS HAND PLACED AROUND THE PIPE TO AT LEAST 6 INCHES OVER THE TOP OF THE PIPE.
33. IF THE NATIVE MATERIAL IS NOT SUITABLE FOR GRAVITY SEWER PIPE BEDDING, THE IMPORTED PIPE BEDDING SHALL BE 5/8-INCH CRUSHED SURFACING. THE TOP OF THE PIPE AND ALL FITTINGS SHALL REMAIN EXPOSED FOR INSPECTION. THE LOWER PORTION OF THE BEDDING TO THE SPRING LINE SHALL BE COMPLETED BEFORE INSPECTION OR TESTING OF THE SIDE SEWER.
34. WHERE TRENCH BOTTOM IS IN QUICKSAND, MULCH, PEAT OR OTHER UNSTABLE MATERIAL, A STABLE FOUNDATION OF GRAVEL SHALL BE PROVIDED. THE RESPONSIBILITY FOR ADEQUATE PIPE BEDDING WILL REST ENTIRELY WITH THE CONTRACTOR. BEDDING MATERIAL SHALL BE SATISFACTORY TO THE CITY AND SO PLACED AS TO PRECLUDE THE POSSIBILITY OF LARGE ROCKS OR BOULDERS BEARING DIRECTLY AGAINST THE SEWER PIPE.
35. SERVICE CONNECTIONS FROM VALVE PIT TO BRANCH OR MAIN LINES (INCLUDING FLEXIBLE CONNCECTOR PIPE) SHALL BE SET ON A COMPACTED BENCH OF BACKFILL MATERIAL CONSISTANT WITH VALE PIT BACKFILL REQUIREMNTS ABOVE. THIS SHALL ENCOMPASS PARTIALLY BACKFILLING THE VALVE PIT PRIOR TO INSTALLING THE SERVICE CONNECTION.

GRADE AND ALIGNMENT (MINIMUM AND MAXIMUM)

36. ALL SIDE SEWERS SHALL BE LAID TO A MINIMUM GRADE OF ONE AND ONE-HALF (1.5)% AND A MAXIMUM GRADE OF 2 FEET VERTICAL TO 1 FOOT HORIZONTAL (200%), UNLESS OTHERWISE EXPLICITLY AUTHORIZED IN WRITING BY THE CITY. SIDE SEWER GRADES OF 2% MINIMUM ARE RECOMMENDED. SIDE SEWERS SHALL BE CONSTRUCTED WITH A MAXIMUM PIPE DEFLECTION OF NOT MORE THAN 2 INCHES PER FOOT. THE MAXIMUM DEFLECTION PERMISSIBLE AT ANY ONE FITTING SHALL NOT EXCEED 45 DEGREES WITH MINIMUM OF 24 INCHES SEPARATION BETWEEN BENDS.
37. A MINIMUM HORIZONTAL SEPARATION OF 10 FEET AND A MINIMUM VERTICAL SEPARATION OF 18 INCHES BETWEEN ALL SEWER LINES AND WATER LINES MUST BE MAINTAINED, PER WASHINGTON DEPARTMENTS OF ECOLOGY'S ORANGE BOOK (2008, OR LATEST EDITION). ANY UNUSUAL CONDITIONS WHICH PREVENT THESE SEPARATIONS SHALL CONFORM TO ALL GUIDELINES WITHIN THE ORANGE BOOK AND SHALL UTILIZE APPLICABLE MITIGATION TECHNIQUES.

HDPE PIPE AND FITTINGS – FORCE MAINS ONLY

38. HDPE PIPING COMPONENTS SHALL BE MANUFACTURED FROM MATERIALS THAT MEET OR EXCEED THE REQUIREMENTS OF THE PLASTIC PIPING INSTITUTE DESIGNATION PE3408 AND THAT CONFORM TO THE REQUIREMENTS OF ASTM D3350 FOR A CELL CLASSIFICATION OF PE 345434C. PIPE MARKING SHALL CONFORM TO THE REQUIREMENTS OF AWWA C906.
39. BOLTS AND NUTS FOR BURIED MECHANICAL JOINING COMPONENTS SUCH AS FLANGES SHALL BE MADE OF NONCORROSIVE, HIGH-STRENGTH, LOW-ALLOY STEEL HAVING THE CHARACTERISTICS SPECIFIED IN ANSI/AWWA C111/A21, REGARDLESS OF ANY PROTECTIVE COATING.
40. PIPE SHALL HAVE THE NOMINAL DIMENSIONS SHOWN WITH AN IPS OUTSIDE DIAMETER BASIS AND THE DIMENSIONS AND TOLERANCES SPECIFIED IN AWWA C906. DR RATING SHALL BE 26 AND PRESSURE CLASS SHALL BE 64 PSI.
41. FITTINGS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AWWA C906 FOR THE JOINING METHODS SPECIFIED IN THIS SPECIAL PROVISION.
42. FOR PIPE BENDS 14 INCHES AND SMALLER AND WHERE LONG RADIUS BENDS ARE SPECIFIED FOR THE PIPING SYSTEM, PROVIDE ARC^{TM} SWEEP BENDS MANUFACTURED BY PIPESTAR INTERNATIONAL, OR EQUAL. BEND RADIUS SHALL BE THREE TIMES THE PIPE DIAMETER, MEASURED TO THE CENTER LINE OF THE BEND FOR LONG-RADIUS BENDS. FLANGE FITTINGS SHALL BE FLANGE TYPE VR 955.

SIDE SEWER STUB SERVICE (RIGHT-OF-WAY CONSTRUCTION)

NOTE: THE FOLLOWING SPECIFICATIONS ARE IN ADDITION TO THE REQUIREMENT OF ANY STUB SERVICE ROAD CUT PERMIT.

43. LARGER CHANGES IN DIRECTION SHALL BE MADE BY USE OF STANDARD 11-1/4 DEGREE OR 22-1/2 DEGREE BENDS. NO MORE THAN ONE BEND PER STUB SERVICE WILL BE ALLOWED.
44. GRADE AND ALIGNMENT SHALL BE PER OTHER SECTION OF THESE STANDARDS. EACH SIDE SEWER STUB SHALL TERMINATE WITH A 6 INCH CAP WITHIN 1 FOOT OF THE PROPERTY OR PERMANENT EASEMENT LINE.
45. THE CONTRACTOR MAY ELECT TO EXTEND THE SIDE SEWER STUB BY ONE LENGTH OF SIDE SEWER PIPE. ANY SUCH EXTENSION SHALL NOT EXCEED 12 FEET IN LENGTH FROM A TEE INSTALLED AT THE PROPERTY LINE. THE TEE, WITH A PUSH-IN PLUG, SHALL BE LAID IN SUCH A FASHION THAT THE BRANCH IS VERTICAL. SUCH LENGTH OF SIDE SEWER SHALL TERMINATE WITH A CAP, AND SHALL BE TESTED ALONG WITH THE STUB SERVICE.
46. ALL SIDE SEWER STUBS SHALL BE 6-INCH MINIMUM. COMMERCIAL OR MULTIFAMILY UNITS MAY REQUIRE LARGER SIDE SEWER STUBS AND WILL BE REVIEWED BY THE CITY.

DIVISION VALVES & GAUGE TAPS

47. DIVISION VALVE AND GAUGE TAP INSTALLATION SHALL BE CONSTRUCTED PER CITY STANDARD DETAIL. ALL GATE VALVES AND FITTINGS SHALL BE DUCTILE IRON WITH ANSI MECHANCIAL JOINT ENDS. ALL EXISTING VALVES SHALL BE OPERATED BY CITY EMPLOYEES ONLY. THE DESIGN, MATERIALS, AND WORKMANSHIP OF ALL GATE VALVES SHALL CONFORM TO AWWA C515-01 (OR LATEST REVISION). GATE VALVES SHALL BE RESILIENT WEDGE NON-RISING STEM (NRS) WITH TWO INTERNAL O-RING STEM SEALS.

TESTING SPECIFICATIONS

VACUUM SEWER MAINS AND FITTINGS

48. TESTING OF ALL SEWER MAINS AND LATERAL CONNECTIONS SHALL BE PERFORMED DAILY IN ACCORDANCE TO THE FOLLOWING PROCEDURE:
49. PLUG ALL OPEN CONNECTIONS WITH RUBBER STOPPERS OR TEMPORARY CAPS, FITTED TO THE PIPE BY "NO-HUB" COUPLINGS. APPLY A VACUUM TO 22 INCHES HG TO THE PIPES AND ALLOW THE PRESSURE TO STABILIZE FOR 15 MINUTES. THERE SHALL BE NO LOSS OF VACUUM IN EXCESS OF 1% PER HOUR FOR A TWO-HOUR TEST PERIOD. THERE SHALL BE ABSOLUTELY NO WATER ALLOWED TO BE ADMITTED INTO THE PIPING NETWORK DURING THIS TEST. AS PIPE IS LAID THE NEW SECTION SHALL BE TESTED IN ADDITION TO THE PREVIOUSLY LAID PIPE ON THAT MAIN.
50. THE CONTRACTOR SHOULD LEAVE THE SEWER MAIN PIPE JOINTS UNCOVERED UNTIL AFTER THE DAILY VACUUM TEST IS COMPLETE SO THAT ANY LEAKS CAN BE EASILY LOCATED AND REPAIRED.
51. TESTING MODIFICATIONS MAY BE ALLOWED IF DEEMED APPROPRIATE AND SUFFICIENT BY THE CITY. ALL MODIFICATIONS MUST BE APPROVED BY CITY PRIOR TO USE IN THE FORM OF EXPLICIT WRITTEN CONSENT.

VACUUM PIPE FLUSHING

52. AFTER ACCEPTANCE OF VACUUM TESTING, FLUSH LINES TO REMOVE DEBRIS AND FOREIGN MATERIALS THAT ACCUMULATED IN THE LINES DURING CONSTRUCTION.

SIDE SEWER TESTING

53. PRIOR TO BEING CONNECTED TO THE PREMISES ALL SIDE SEWERS SHALL BE TESTED BY ONE OF THE TWO FOLLOWING METHODS:

EXFILTRATION:

THE SIDE SEWER SHALL BE FILLED WITH WATER THROUGH A RISER THAT EXTENDS A MINIMUM OF 5 FEET ABOVE FINISHED GRADE AT THE INSTALLATION. THE RISER SHALL BE FILLED WITH WATER AND NO NOTICEABLE DROP IN THE WATER LEVEL SHALL BE ACCEPTED FOR A PERIOD OF NOT LESS THAN 10 MINUTES OF OBSERVATION. THE RISER MAY DOUBLE AS THE SIDE SEWER VENT PIPE. THE RISER SHALL BE CUT TO THE REQUIRED LENGTH FOR THE VENT PIPE AFTER THE SIDE SEWER PASSES THE EX-FILTRATION TEST.

AIR TEST

ALL EQUIPMENT REQUIRED TO MAKE SUCH TESTS, INCLUDING PLUGS, HOSES, BLOCKING, AIR PUMPS, WATER AND OTHER EQUIPMENT SHALL BE FURNISHED BY THE CONTRACTOR.

AIR TESTING SHALL MEET THE FOLLOWING REQUIREMENTS:

PIPE SIZE	SECONDS PER LINEAL FOOT OF PIPE
4"	1.0
6"	1.5

DECOMPRESSION IS FROM 3.5 PSI TO 3.0 PSI. FOR HIGH GROUNDWATER TABLE CONDITIONS, ADD 0.5 PSI PER FOOT OF GROUND WATER ABOVE THE PIPE.

HDPE FORCE MAIN TESTING (IF APPLICABLE)

54. HDPE FORCE MAIN SHALL BE TESTED AT 60 PSI HYDROSTATIC FOR 3 MINUTES.

SIDE SEWER CONNECTIONS

55. NO MORE THAN ONE BUILDING MAY BE CONNECTED WITH THE SIDE SEWER UNLESS THE CITY ISSUES AN EXEMPTION FOR MULTIPLE CONNECTIONS. AN EXEMPTION WILL BE ISSUED ONLY UPON THE CONDITION THAT THE PERMITTEE HAS NO OTHER FEASIBLE OPTION BASED ON UTILITY CONFLICTS OR SPACE CONSIDERATIONS OR OTHER TECHNICAL ISSUE THAT PREVENTS INSTALLATION OF SEPARATE SIDE SEWERS. THE PERMITTEE SHALL HOLD THE CITY HARMLESS FROM ANY DAMAGES BY REASON OF SUCH INSTALLATION AND SUBJECT TO THE FOLLOWING REGULATIONS:

COMMON SIDE SEWERS

56. TWO HOUSES MAY BE CONNECTED TO A COMMON SIDE SEWER WHEN THE FOLLOWING CONDITIONS ARE MET: (1) AT THE END OF THE COMMON PORTION OF THE JOINT SIDE SEWER A CLEANOUT SHALL BE INSTALLED PER DETAIL FOR JOINT SIDE SEWER CLEANOUT; AND (2) A BACKWATER VALVE SHALL BE INSTALLED ON BOTH HOUSES.

BACKWATER VALVES

57. BACKWATER VALVES SHALL BE INSTALLED ON ALL BUILDINGS EXCEPT WHEN WAIVED BY THE CITY. BACKFLOW VALVES MAY BE USED AS THE CLEANOUT BETWEEN THE HOUSE PLUMBING AND SIDE SEWER AS OTHERWISE REQUIRED BY THESE STANDARDS. BACKFLOW VALVES MAY BE EITHER ALTERNATE NO. 1 OR NO 2 AS SHOWN ON THE STANDARD DETAILS.

REQUIRED SIDE SEWER SIZE

58. SIDE SEWERS SHALL BE 6" UNLESS OTHERWISE APPROVED BY THE CITY.

PERMIT SUBMITTAL NOT FOR CONSTRUCTION

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11/16/2022

REV NO	DATE	DESCRIPTION

PROJECT NUMBER 22008

SUBMITTAL SD/DR PERMIT

SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

GENERAL SEWER NOTES

DESIGN CFG
DRAFT CFG
CHECK CEM
DATE 2022-11-10
SCALE

SHEET C1.2

GENERAL WATER CONSTRUCTION NOTES

1. PRIOR TO ANY PAVEMENT CUTTING OR REMOVAL, OR EXCAVATION FOR PIPE LAYING, THE CONTRACTOR SHALL VERIFY, IN THE PRESENCE OF THE CITY'S INSPECTOR, THE LOCATION AND DEPTH OF THE EXISTING WATER MAINS AT THE POINTS WHERE CONNECTIONS ARE TO BE MADE. THE CONTRACTOR SHALL VERIFY THE DIMENSIONS, TYPE, AND CONDITION OF THE EXISTING WATER MAIN. IF NECESSARY, THE GRADE SHALL BE ADJUSTED SO NEITHER A HIGH SPOT NOR A LOW SPOT IS CREATED ADJACENT TO THE CONNECTION TO THE EXISTING WATER MAINS.
2. WATER MAINS, PARALLEL TO A SEWER, SHALL NORMALLY BE ABOVE AND SEPARATED BY A DISTANCE OF AT LEAST TEN FEET HORIZONTALLY. UNDER UNUSUAL CIRCUMSTANCES, THE HORIZONTAL SPACING MAY BE ADJUSTED, SUBJECT TO THE APPROVAL OF THE CITY. WATER MAINS CROSSING SEWERS SHOULD BE NOT LESS THAN 18 INCHES ABOVE THE SEWER. WHERE IT IS NECESSARY FOR A SEWER TO CROSS WITHIN 18 INCHES, OR OVER THE WATER MAIN, PROTECTIVE MEASURES PER THE DOE CRITERIA FOR SEWAGE WORKS DESIGN (ORANGE BOOK) SHALL BE TAKEN.
3. PIPING, VALVES, AND APPURTENANCES SHALL NOT BE BURIED UNTIL OBSERVED AND ACCEPTED BY CITY REPRESENTATIVE. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING AND SCHEDULING TIMELY SITE OBSERVATIONS BY CITY REPRESENTATIVE.
4. TRENCHES SHALL BE EXCAVATED TO THE LINE AND DEPTH DESIGNATED BY THE PLANS TO PROVIDE THE COVER ON THE WATER SYSTEM OR SANITARY SEWER SYSTEM AS SPECIFIED BY THE CITY. PERFORM TRENCHING IN ACCORDANCE WITH THE GENERAL UTILITY PIPE TRENCHING AND TRENCH PATCHING NOTES ON SHEET C-__.
5. BEFORE INSTALLATION, MATERIAL SUBMITTALS SHALL BE SUBMITTED TO THE CITY ENGINEER FOR ACCEPTANCE FOR ALL MATERIALS TO BE INSTALLED. ALL MATERIALS SHALL BE NEW AND UNDAMAGED. THE SAME MANUFACTURER OF EACH ITEM SHALL BE USED THROUGHOUT THE WORK. ALL MATERIALS NOT SPECIFICALLY REFERENCED SHALL COMPLY WITH APPLICABLE SECTIONS OF ANSI, ASTM, AWWA, AND THE STANDARD SPECIFICATIONS.
6. APPROVED MANUFACTURERS AND MODEL NUMBERS OF VARIOUS MATERIALS ARE LISTED IN APPROVED MATERIALS LIST INCLUDED WITH THESE STANDARDS. WHEN SPECIFIC MANUFACTURERS OR MODELS ARE LISTED, NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PRIOR APPROVAL BY THE CITY.

DUCTILE IRON PIPE

7. DUCTILE IRON PIPE SHALL CONFORM TO ANSI SPECIFICATION A21.51, 1976, AWWA C151-76, OR THE LATEST REVISION THEREOF AND SHALL BE OF THE THICKNESS CLASS 52 FOR PIPE UNLESS OTHERWISE SPECIFIED BY THE CITY. THE PIPE SHALL BE FURNISHED WITH RUBBER GASKETED PUSH-ON TYPE JOINTS EXCEPT WHERE FLANGED OR MECHANICAL JOINTS ARE SPECIFICALLY REQUIRED BY THE CITY. JOINT DETAILS SHALL BE AS SPECIFIED IN ANSI A21.11. PIPE WITH PUSH-ON FITTING JOINTS SHALL BE SUITABLE FOR USE WITH MECHANICAL JOINT FITTINGS. THE PIPES SHALL BE COATED AS SPECIFIED IN ANSI A21.51 AND BE FURNISHED WITH CEMENT MORTAR LINING AS SPECIFIED IN ANSI A21.4. THE CONTRACTOR SHALL FURNISH CERTIFICATION FROM THE MANUFACTURER OF THE PIPE AND GASKET BEING SUPPLIED THAT THE INSPECTION OF ALL THE SPECIFIED TESTS HAVE BEEN MADE AND THE RESULTS THEREOF COMPLY WITH THE REQUIREMENTS OF THE ABOVE-REFERENCED STANDARDS.

FITTINGS

8. ALL FITTINGS FOR DUCTILE IRON PIPE SHALL BE DUCTILE IRON COMPACT (SHORT BODY) FITTINGS CONFORMING TO AWWA C153 OR CLASS 250 GRAY IRON CONFORMING TO AWWA C110 AND C111. ALL FITTINGS SHALL BE CEMENT MORTAR LINED CONFORMING TO AWWA C104. PLAIN END FITTINGS SHALL BE DUCTILE IRON IF MECHANICAL JOINT RETAINER GLANDS ARE INSTALLED ON THE PLAIN ENDS. ALL FITTINGS SHALL BE CONNECTED BY FLANGES OR MECHANICAL JOINTS. FLANGES SHALL BE CLASS 125, DRILLED IN ACCORDANCE WITH ANSI A21.10. GASKET FOR FLANGED FITTINGS SHALL BE NEOPRENE, BUNA N, CHLORINATED BUTYL, CLOTH-INSERTED RUBBER, OR APPROVED EQUAL. GASKETS FOR PUSH-ON TYPE AND MECHANICAL JOINTS SHALL CONFORM TO ANSI A21.11. RUBBER GASKETS FOR PUSH-ON JOINTS OR MECHANICAL JOINT (M.J.) SHALL BE IN ACCORDANCE WITH ANSI A21.11, AWWA C111. GASKET MATERIAL FOR FLANGES SHALL BE NEOPRENE, BUNA N, CHLORINATED BUTYL, OR CLOTH-INSERTED RUBBER.

JOINT RESTRAINT SYSTEMS

9. JOINT RESTRAINT METHODS SHALL BE AS PER THE APPROVED MATERIALS LIST AND/OR THE STANDARD DETAILS. ACCEPTABLE JOINT RESTRAINT SYSTEMS ARE LIMITED TO: EBAA IRON (MEGALUG 1100), GRIFFIN PIPE PRODUCTS COMPANY (SNAP-LOK), ROMAC (GRIP RING), PACIFIC STATES RESTRAINED JOINT, US PIPE (TR FLEX), MUELLER (AQUA GRIP), ONE BOLT, FIELD LOK GASKETS.

POLYETHYLENE ENCASEMENT

10. POLYETHYLENE ENCASEMENT SHALL BE EIGHT MIL. TUBE OR SHEET STOCK AND SHALL BE FURNISHED WHERE THE TRENCH IS BACKFILLED WITH CDF, WHERE SOILS TESTING INDICATES THIS IS OF VALUE OR AS DIRECTED BY THE CITY. MATERIALS SHALL COMPLY WITH AWWA C105.

COUPLINGS

11. FLEXIBLE COUPLINGS AND TRANSITION COUPLING CAST COMPONENTS SHALL BE DUCTILE IRON. CENTER RINGS AND END RINGS SHALL BE DUCTILE IRON IN ACCORDANCE WITH ASTM 536-80, GRADE 65-45-12. GASKET MATERIAL SHALL BE VIRGIN SBR IN ACCORDANCE WITH ASTM D2000 3 BA715. BOLTS SHALL BE HIGH STRENGTH, LOW ALLOY STEEL TRACKHEAD BOLTS WITH NATIONAL COURSE ROLLED THREAD AND HEAVY HEX NUTS. STEEL SHALL MEET AWWA/ANSI C11/A21.11 COMPOSITION SPECIFICATIONS. COUPLINGS SHALL BE MANUFACTURED BY ROMAC OR DRESSER.

ADAPTERS

12. ADAPTERS SHALL BE ROMAC FLANGE COUPLING ADAPTERS.

BOLTS IN PIPING

13. BOLTS SHALL BE MALLEABLE IRON COR-TEN, OR STAINLESS STEEL. T-BOLTS SHALL BE MALLEABLE IRON COR-TEN IN ACCORDANCE WITH AWWA/ANSI C111/A21.11. STAINLESS STEEL BOLTS SHALL MEET THE REQUIREMENTS OF ASTM A-307, GRADE A. SHACKLE RODS, NUTS, AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH AASHTO M232 AND/OR COATED THOROUGHLY WITH COAL-TAR/ASPHALTIC MATERIAL. STAINLESS STEEL NUTS, BOLTS, AND WASHERS SHALL BE TYPE 304.

HYDRANTS

14. HYDRANTS SHALL BE THE "TRAFFIC MODEL" TYPE WITH APPROVED BREAKAWAY FEATURES. ALL HYDRANTS SHALL BE BRASS TO BRASS SUBSEAT, MINIMUM VALVE OPENING OF 5-1/4 INCHES "O" RING STEM SEAL, 6 INCH MECHANICAL SHOE CONNECTION, 1-1/4 INCH PENTAGONAL OPERATING NUT. FIRE HYDRANTS SHALL HAVE TWO, 2-1/2 INCH OUTLETS AND ONE 4-1/2-INCH PUMPER PORT OUTLET. ALL OUTPORT THREADS SHALL BE NATIONAL STANDARD THREAD. THE VALVE OPENING SHALL BE 5-1/4 INCH DIAMETER. THE HYDRANT SHALL HAVE A POSITIVE AND AUTOMATIC BARREL DRAIN. HYDRANT SHALL BE M & H 929 OR APPROVED EQUAL. ALL HYDRANTS SHALL BE BAGGED UNTIL SYSTEM IS APPROVED.
15. THE LEAD FROM THE SERVICE MAIN TO THE FIRE HYDRANT SHALL BE DUCTILE IRON CEMENT MORTAR LINED CLASS 52, NO LESS THAN 6 INCHES IN DIAMETER, WITH A MAXIMUM LENGTH OF 50 FEET. WHERE LEADS REQUIRE MORE THAN ONE LENGTH OF PIPE, FIELD LOK GASKETS ARE REQUIRED.
16. FIRE HYDRANTS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD DETAILS, AT LOCATIONS AS SHOWN ON THE APPROVED PLANS. THEY SHALL BE PAINTED WITH 2 COATS OF HIGH GLOSS CATERPILLAR YELLOW PRESERVATIVE 43-616 TYPE PAINT.
17. ALL HOOK-UPS TO FIRE HYDRANTS FOR TEMPORARY WATER FOR WHATEVER PURPOSE SHALL BE APPROVED BY THE CITY.
18. HYDRANT VALVES INSTALLED IN UNPAVED AREAS SHALL HAVE A 4-INCH THICK, 2-FEET SQUARE ASPHALT CEMENT PAD PLACED AROUND THEM.
19. HYDRANTS SHALL STAND PLUMB, BE SET TO THE FINISHED GRADE PER THE STANDARD DETAIL WITH THE LOWEST OUTLET OF THE HYDRANT NO LESS THAN 18 INCHES ABOVE GRADE AND NO LESS THAN 36 INCHES OF CLEAR AREA ABOUT THE HYDRANT FOR CLEARANCE OF A HYDRANT WRENCH ON ALL OUTLETS AND ON THE CONTROL VALVE. THE PUMPER PORT SHALL FACE THE STREET. WHERE THE STREET CANNOT BE CLEARLY DEFINED OR RECOGNIZED, THE PORT SHALL FACE THE MOST LIKELY ROUTE OF APPROACH AND LOCATION OF THE FIRE TRUCK WHILE PUMPING AS DETERMINED BY THE CITY.

VALVES

20. ALL VALVES AND FITTINGS SHALL BE DUCTILE IRON WITH ANSI FLANGES OR MECHANICAL JOINT ENDS. ALL EXISTING VALVES SHALL BE OPERATED BY CITY EMPLOYEES ONLY.
21. ALL VALVES SHALL BE INSPECTED UPON DELIVERY IN THE FIELD TO ENSURE PROPER WORKING ORDER AND DAMAGE TO PROTECTIVE COATINGS BEFORE INSTALLATION AND SHALL BE FREE OF ALL RUST AND DIRT. THEY SHALL BE SET AND JOINTED TO THE PIPE IN THE MANNER AS SET FORTH IN THE AWWA STANDARDS FOR THE TYPE OF CONNECTING ENDS FURNISHED. NO VALVES SHALL BE LOCATED IN SUCH POSITION AS TO PLACE THE VALVE CHAMBER OR BOX IN ANY ROADSIDE DITCH, DRAINAGE DITCH, OR CHANNEL.
22. GATE VALVES SHALL BE USED ON ALL 4-INCH TO 12-INCH LINES, UNLESS DEPTH RESTRICTIONS NECESSITATE INSTALLATION OF BUTTERFLY VALVE. THE DESIGN, MATERIALS, AND WORKMANSHIP OF ALL GATE VALVES SHALL CONFORM TO EITHER AWWA C509-01 (OR LATEST REVISION) OR AWWA C515-01 (OR LATEST REVISION). GATE VALVES SHALL BE RESILIENT WEDGE NON-RISING STEM (NRS) WITH TWO INTERNAL O-RING STEM SEALS.
23. BUTTERFLY VALVES SHALL BE USED ON ALL LINES 14 INCHES AND LARGER UNLESS DESIGNATED BY THE CITY. BUTTERFLY VALVES SHALL CONFORM TO ANSI/AWWA C504, CLASS 150, WITH CAST IRON SHORT BODY AND "O" RING STEM SEAL. VALVES IN CHAMBERS SHALL HAVE A MANUAL CRANK OPERATION. BURIED VALVES SHALL HAVE A STEM EXTENSION WITH AWWA 2-INCH OPERATING NUT AND SUITABLE VALVE BOX.

VALVE BOXES

24. ALL VALVES SHALL HAVE A STANDARD APWA CAST IRON WATER VALVE BOX SET TO GRADE WITH TWO-PIECE, EXTENSION TYPE CAST IRON RISER FROM VALVE. VALVE BOX SHALL HAVE A LUG TYPE COVER, 18" OR 8" TOP AND 24" BOTTOM PER THE STANDARD DETAIL. VALVE BOX LIDS SHALL HAVE THE WORD "WATER" CAST IN THE UPPER SURFACE AND THE VALVE BOX EARS SHALL BE SET IN DIRECTION OF FLOW.
25. IF VALVES ARE NOT SET IN PAVED AREA, A 2-FOOT BY 2-FOOT BY 4-INCH ASPHALT CONCRETE PAD SHALL BE SET AROUND EACH VALVE BOX AT FINISHED GRADE. IN AREAS WHERE VALVE BOX FALLS IN ROAD SHOULDER, THE DITCH AND SHOULDER SHALL BE GRADED BEFORE PLACING ASPHALT OR CONCRETE PAD. THE VALVE AND VALVE BOX SHALL BE SET PLUMB WITH THE VALVE BOX CENTERED ON THE OPERATOR NUT. VALVE BOXES SHALL BE SET FLUSH IN PAVEMENT OR ROAD SHOULDER. SEE STANDARD DETAILS.
26. OPERATING VALVE NUT EXTENSION. A VALVE STEM EXTENSION SHALL BE INSTALLED WHENEVER THE VALVE OPERATING NUT IS MORE THAN 3 FEET BELOW FINISHED GRADE. EXTENSIONS ARE TO BE A MINIMUM OF 1 FOOT WITH ONLY ONE EXTENSION PER VALVE. THE OPERATOR NUT EXTENSION SHALL EXTEND INTO THE TOP SECTION OF THE VALVE BOX AND SHALL CLEAR THE BOTTOM OF THE LID BY A MINIMUM OF 10 INCHES. SEE STANDARD DETAILS.

CITY'S SERVICE CONNECTIONS

27. ALL SERVICE CONNECTIONS RELATING TO NEW DEVELOPMENT SHALL BE INSTALLED BY THE DEVELOPER AT THE TIME OF MAINLINE CONSTRUCTION. AFTER THE LINES HAVE BEEN CONSTRUCTED, TESTED, APPROVED, AND A LETTER OF ACCEPTANCE HAS BEEN ISSUED, THE OWNER MAY APPLY FOR A WATER METER. THE CITY WILL INSTALL A WATER METER AFTER THE APPLICATION HAS BEEN MADE AND ALL APPLICABLE FEES HAVE BEEN PAID. WATER METERS WILL BE SET ONLY AFTER THE SYSTEM IS INSPECTED AND APPROVED.
28. WHEN WATER IS DESIRED TO A PARCEL FRONTING AN EXISTING MAIN, BUT NOT SERVED BY AN EXISTING METER, AN APPLICATION MUST BE MADE TO THE CITY. UPON APPROVAL OF THE APPLICATION AND PAYMENT OF ALL APPLICABLE FEES, THE CITY WILL ALLOW TAPPING OF THE MAIN, AND INSTALLATION OF THE METER, BOX, AND SETTER.
29. CORPORATION STOP SHALL BE ALL BRONZE ALLOY AND SHALL BE FORD, MUELLER, OR APPROVED EQUAL IN ACCORDANCE WITH AWWA STANDARD C800 WITH IRON PIPE THREAD (IP) THREAD INLET BY COMPRESSION FITTING OUTLET FOR HI-MOL PLASTIC, CL 200 (IPS) .
30. CORPORATION STOPS FOR 1-INCH TAPS SHALL BE BALL VALVE TYPE WITH I.P. INLET AND COMPRESSION OUTLET. CORPORATION STOPS FOR 1-1/2-INCH AND 2-INCH TAPS SHALL BE THE BALL VALVE TYPE WITH I.P. THREAD INLET AND OUTLET.
31. ALL JOINTS WITH PLASTIC PIPE SHALL BE MADE UTILIZING STAINLESS STEEL INSERTS WITH COUPLINGS OR ADAPTERS.
32. SERVICE CONNECTIONS FOR ANY SERVICE SHALL BE INSTALLED WITH ROMAC OR APPROVAL EQUAL PIPE SADDLES. THE MINIMUM ACCEPTABLE TAP SIZE SHALL BE 1 INCH.
33. SERVICE SADDLE SHALL BE ROMAC 202BS, ALL BRONZE WITH STAINLESS STRAPS AND (IP) THREAD OR APPROVED EQUAL. ALL CLAMPS SHALL HAVE RUBBER GASKET AND IRON PIPE THREADED OUTLETS.
34. SERVICE LINES SHALL BE POLYETHYLENE MEETING THE REQUIREMENTS OF AWWA C901, WITH HIGH MOLECULAR MASS WITH AT LEAST 200 PSI RATING, AND HAVE A 16 GAUGE COPPER TRACER WIRE WRAPPED ALONG ITS ENTIRE LENGTH (ONE WRAP PER FOOT).
35. 3/4" AND 1" POLYETHYLENE TUBING SHALL BE IRON PIPE SIZE (IPS) - ID ASTM D2239 - SIDR 7 (PE 3408).
36. METER SETTER. METER SETTERS (1 INCH AND SMALLER) SHALL BE 12 INCHES IN HEIGHT WITH HORIZONTAL INLET AND OUTLET, DOUBLE PURPOSE COUPLINGS, UNLESS OTHERWISE SPECIFIED, ANGLE BALL VALVE WITH DRILLED WINGS FOR PADLOCK, AND ANGLE CHECK VALVE FOR THE SIZE METER TO BE INSTALLED, PER THE STANDARD DETAIL.
37. METER BOX. MID-STATES HDPE METER BOX SHALL BE COMPLETE WITH LID AS SPECIFIED IN THE STANDARD DETAILS.
38. ANY PLUMBING IN A RESIDENTIAL OR NONRESIDENTIAL FACILITY PROVIDING WATER FOR HUMAN CONSUMPTION, WHICH IS CONNECTED TO A PUBLIC WATER SYSTEM, SHALL BE LEAD FREE. WITH RESPECT TO SOLDERS AND FLUX, LEAD FREE SHALL MEAN NO MORE THAN 0.2% LEAD, AND WITH RESPECT TO PIPES AND PIPE FITTINGS NO MORE THAN 8% LEAD.

TURN ON – NEW INSTALLATION FOR OWNER

39. WHEN NEW WATER SERVICE CONNECTIONS ARE INSTALLED BY THE CITY OR DEVELOPER'S CONTRACTOR FOR ANY PREMISES THE VALVE AT THE METER SHALL BE TURNED TO THE "OFF" POSITION AND REMAIN OFF UNTIL A TURN-ON IS APPLIED FOR AND AN ORDER SHALL BE ISSUED BY THE CITY UPON WRITTEN APPLICATION THEREFORE BY THE OWNER OF THE PREMISES TO BE SUPPLIED AFTER INSPECTION AND APPROVAL BY THE CITY, AND AFTER THE CITY PLUMBING INSPECTOR HAS ISSUED A CERTIFICATE THAT ALL PROVISIONS OF THE APPLICABLE PLUMBING CODE HAVE BEEN COMPLIED WITH.

OWNER'S SERVICE PIPE SPECIFICATIONS

40. ALL WATER SERVICE LINE PIPING LEADING FROM THE METER TO THE PREMISES, SHALL BE LAID NOT LESS THAN 18 INCHES BELOW THE SURFACE OF THE GROUND. WATER SERVICE LINE PIPES OR ANY UNDERGROUND WATER PIPES SHALL NOT BE LAID IN THE SAME TRENCH WITH BUILDING SEWER OR DRAINAGE PIPING. WATER SERVICE LINE PIPES, PARALLEL TO BUILDING SEWERS OR DRAINAGE PIPING, SHALL NORMALLY BE ABOVE AND SEPARATED BY A DISTANCE OF AT LEAST TEN FEET HORIZONTALLY, UNLESS OTHERWISE APPROVED BY THE CITY.
41. SHUTOFF VALVES OF APPROVED FULL-FLOW PATTERN WITH KEY OR HAND WHEEL SHALL BE INSTALLED IN THE WATER SERVICE PIPE LEADING FROM THE CITY METER TO THE BUILDING, WITHIN THE PREMISES SERVED, IN ACCORDANCE WITH THE APPLICABLE PLUMBING CODE. SHUTOFF VALVES WHERE BURIED SHALL BE PROPERLY ENCLOSED IN A MINIMUM SIX-INCH DIAMETER PIPE, OR BOX, OF CONCRETE, PLASTIC, OR IRON WITH AN APPROVED COVER, PROTECTED FROM FREEZING AND READILY ACCESSIBLE. VALVES INTERNAL TO THE STRUCTURE ARE RECOMMENDED.
42. CUSTOMER-OWNED VALVES OR EQUIPMENT ARE NOT PERMITTED TO BE INSTALLED WITHIN THE CITY'S METER BOX.
43. SERVICE CONNECTIONS AND EXTENSION PIPES LAID UNDERGROUND SHALL BE SIZED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE IBC AS ADOPTED BY THE CITY.

OWNER'S PLUMBING SPECIFICATIONS

44. ALL PERSONS INSTALLING FIXTURES OR APPLIANCES TO BE SUPPLIED WITH WATER FROM THE CITY SYSTEM SHALL BE SUBJECT TO THE REQUIREMENTS OF THE APPLICABLE PLUMBING CODE OF THE CITY. PERSONS INSTALLING PLUMBING IN NEW BUILDINGS SHALL LEAVE THE VALVE AT THE METER IN THE OFF POSITION UPON COMPLETION OF THEIR WORK. THE CITY SHALL HAVE THE RIGHT TO REFUSE WATER SERVICE OR DISCONTINUE WATER SERVICE IN ANY SITUATION WHERE IT IS DISCOVERED THAT APPLICABLE CITY STANDARDS AND CODES HAVE NOT BEEN COMPLIED WITH IN MAKING THE INSTALLATION.

IRRIGATION SYSTEM SPECIFICATIONS

45. AN IRRIGATION SYSTEM CONNECTED TO A DOMESTIC, OR COMMERCIAL CONNECTION SHALL BE EQUIPPED WITH AN APPROVED BACKFLOW DEVICE PER APPENDIX A AND THE WSDOH LIST OF APPROVED CROSS CONNECTION CONTROL DEVICES. THE APPROVED DEVICE SHALL BE PLACED AT A HEIGHT AS PROVIDED IN THE APPLICABLE PLUMBING CODE

BLOWOFF ASSEMBLY

46. IF A FIRE HYDRANT IS NOT LOCATED AT THE END OF A DEAD END MAIN, A BLOWOFF ASSEMBLY SHALL BE REQUIRED. ON WATER MAINS WHICH WILL BE EXTENDED IN THE FUTURE, PROVIDE TEE AND BLOCKING AS SHOWN ON STANDARD DETAILS.

CONCRETE BEDDING AND BLOCKING

47. BEDDING, BLOCKING, ENCASEMENT, OR SLOPE ANCHOR CONCRETE SHALL BE PREMIXED BAGS OF CONCRETE OR CONCRETE MIXED FROM MATERIALS ACCEPTABLE TO THE ENGINEER AND SHALL HAVE A 30-DAY COMPRESSIVE STRENGTH OF NOT LESS THAN 2,500 PSI. THE MIX SHALL CONTAIN FIVE SACKS OF CEMENT PER CUBIC YARD AND SHALL BE OF SUCH CONSISTENCY THAT THE SLUMP IS BETWEEN 1 INCH AND 5 INCHES. ALL CONCRETE SHALL BE MIXED PRIOR TO INSTALLATION.
48. CONCRETE THRUST BLOCKING, AS INDICATED ON THE STANDARD DETAILS, SHALL BE PLACED AT BENDS, TEES, DEAD ENDS, CROSSES, AND AS DESIGNATED BY THE ENGINEER.
49. LOCATION OF THRUST BLOCKING SHALL BE SHOWN ON PLANS. THRUST BLOCK CONCRETE SHALL BE POURED AGAINST UNDISTURBED EARTH. A PLASTIC BARRIER SHALL BE PLACED BETWEEN ALL THRUST BLOCKS AND FITTINGS. SEE STANDARD DETAILS FOR THRUST BLOCK LOCATIONS AND CALCULATIONS. ALL BLOCKING AS SHOWN ON THE STANDARD DETAILS ARE CONSIDERED AS MINIMUMS, AND CONSIDERATION SHALL BE GIVEN TO UNUSUAL CIRCUMSTANCES SUCH AS UNSTABLE SOIL, ADJACENT PIPE LINES, AND TOPOGRAPHY.

BACKFLOW PREVENTION

50. ALL WATER SYSTEM CONNECTIONS TO SERVE BUILDINGS OR PROPERTIES WITH DOMESTIC POTABLE WATER, FIRE SPRINKLER SYSTEMS, OR IRRIGATION SYSTEMS SHALL COMPLY WITH THE MINIMUM BACKFLOW REQUIREMENTS AS ESTABLISHED BY THE DEPARTMENT OF HEALTH (DOH) AND THE CITY.
51. WHEN UTILITY SERVICES OCCUPY THE SAME SPACE AS THE NEW WATER MAIN, THE CONTRACTOR SHALL DO ALL NECESSARY EXCAVATION TO FULLY EXPOSE SUCH SERVICES. THE CONTRACTOR SHALL PROTECT SAID SERVICES AND WORK AROUND THEM DURING EXCAVATING AND PIPE LAYING OPERATIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DAMAGES TO THE SERVICES DUE TO HIS OPERATION AND SHALL IMMEDIATELY NOTIFY THE CITY AND OTHER UTILITY AND ARRANGE FOR REPLACEMENT OF ALL DAMAGED SERVICES.
52. THE CONTRACTOR SHALL MAINTAIN A MINIMUM OF 18 INCHES OF VERTICAL SEPARATION AND 10 FEET OF HORIZONTAL SEPARATION BETWEEN SANITARY SEWERS AND WATER MAINS. THE MINIMUM COVER FOR WATER MAIN OF 42 INCHES MAY BE REDUCED TO 30 INCHES UPON APPROVAL BY THE CITY TO PROVIDE FOR AS MUCH VERTICAL SEPARATION AS POSSIBLE.
53. THE LONGEST STANDARD LENGTH OF WATER PIPE SHALL BE INSTALLED SO THAT THE JOINTS WILL FALL EQUIDISTANT FROM ANY SEWER CROSSING. IN SOME CASES WHERE MINIMUM SEPARATION CANNOT BE MAINTAINED, IT MAY BE NECESSARY TO ENCASE THE WATER PIPE AND/OR SEWER SERVICE IN A CARRIER PIPE OR CONTROL DENSITY FILL. NO CONCRETE SHALL BE INSTALLED UNLESS SPECIFICALLY DIRECTED BY THE CITY.
54. ALL SURVEYING AND STAKING SHALL BE PERFORMED BY AN ENGINEERING OR SURVEYING FIRM CAPABLE OF PERFORMING SUCH WORK. THE ENGINEER OR SURVEYOR DIRECTING SUCH WORK SHALL BE LICENSED AS A PROFESSIONAL ENGINEER OR PROFESSIONAL LAND SURVEYOR BY THE STATE OF WASHINGTON.
55. A PRECONSTRUCTION MEETING SHALL BE HELD WITH THE CITY PRIOR TO COMMENCING STAKING. ALL CONSTRUCTION STAKING SHALL BE INSPECTED BY THE CITY PRIOR TO CONSTRUCTION.
56. THE MINIMUM STAKING OF WATERLINES SHALL BE AS DIRECTED BY THE CITY OR AS FOLLOWS:
57. STAKE CENTERLINE ALIGNMENT EVERY 50 FEET WITH CUT OR FILL TO INVERT OF PIPE MAINTAINING 42 INCHES OF COVER OVER PIPE. CUTS ARE NORMALLY NOT REQUIRED WHEN ROAD GRADE HAS BEEN BUILT TO SUBGRADE ELEVATION.
58. STAKE ALIGNMENT OF ALL FIRE HYDRANTS, TEES, WATER METERS, SETTERS AND OTHER FIXTURES AND MARK CUT OR FILL TO HYDRANT FLANGE FINISHED GRADE.

MINIMUM COVER

59. MINIMUM COVER FOR ALL WATER MAINS FROM TOP OF PIPE TO FINISH GRADE SHALL BE 36 INCHES FOR ALL PIPES 8 INCHES DIAMETER AND SMALLER, AND 48 INCHES FOR ALL PIPES GREATER THAN 8 INCHES DIAMETER, AND MAXIMUM DEPTH OF 60 INCHES, UNLESS OTHERWISE APPROVED BY THE CITY.
60. THE INSTALLATION OF ALL WATER MAINS AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CONSTRUCTION PLANS AS APPROVED BY THE CITY FOR THE PROJECT. ANY DEVIATION OR CHANGES ARE TO BE APPROVED BY THE CITY BEFORE THE CHANGES ARE INCORPORATED INTO THE WORK.
61. DIRT OR OTHER FOREIGN MATERIAL SHALL BE PREVENTED FROM ENTERING THE PIPE OR PIPE JOINT DURING HANDLING OR LAYING OPERATIONS, AND ANY PIPE OR FITTING THAT HAS BEEN INSTALLED WITH DIRT OR FOREIGN MATERIAL IN IT SHALL BE REMOVED, CLEANED, AND RE-LAID. WHEN PIPE LAYING IS NOT IN PROGRESS, THE OPEN ENDS OF THE PIPE SHALL BE CLOSED BY WATERTIGHT PLUGS OR BY OTHER MEANS APPROVED BY THE CITY.
62. PIPE SHALL BE STACKED IN SUCH A MANNER AS TO PREVENT DAMAGE TO THE PIPE, TO PREVENT DIRT AND DEBRIS FROM ENTERING THE PIPE, AND TO PREVENT ANY MOVEMENT OF THE PIPE. THE BOTTOM TIERS OF THE STACK SHALL BE KEPT OFF THE GROUND ON TIMBERS, OR OTHER SIMILAR SUPPORTS.
63. CUTTING PIPE – WHENEVER IT BECOMES NECESSARY TO CUT A LENGTH OF PIPE, THE CUT SHALL BE MADE BY ABRASIVE SAW OR BY PIPE CUTTER. ALL PIPE ENDS SHALL BE SQUARE WITH THE LONGITUDINAL AXIS OF THE PIPE AND THE OUTSIDE SHALL BE BEVELED AND OTHERWISE SMOOTHED SO THAT GOOD CONNECTIONS CAN BE MADE WITHOUT DAMAGE TO THE GASKET. THREADS SHALL BE CLEANLY CUT. OXYACETYLENE TORCH CUTTING OF DUCTILE IRON WILL NOT BE ALLOWED.

PIPE BEDDING

64. PIPE BEDDING MATERIAL, SHALL BE CRUSHED SURFACING TOP COURSE CSTC PER WSDOT STD. SPEC. SECTION 9-03.9(3). BEDDING IS DEFINED AS 6 INCHES BELOW THE PIPE, AROUND THE PIPE, AND 12 INCHES ABOVE THE PIPE.
65. THE AMOUNT OF DEFLECTION AT EACH PIPE JOINT WHEN PIPE IS LAID ON A HORIZONTAL OR VERTICAL CURVE SHALL NOT EXCEED HALF THE MANUFACTURER'S PRINTED MAXIMUM RECOMMENDED DEFLECTIONS. WHERE FIELD CONDITIONS REQUIRE DEFLECTION OR CURVES NOT ANTICIPATED IN THE DRAWINGS, THE ENGINEER WILL DETERMINE THE METHODS TO BE USED. WHEN RUBBER GASKETED PIPE IS LAID ON A CURVE, THE PIPE SHALL BE JOINTED IN A STRAIGHT ALIGNMENT AND THEN DEFLECTED TO THE CURVED ALIGNMENT. TRENCHES SHALL BE MADE WIDER ON CURVES FOR THIS PURPOSE.

HYDROSTATIC PRESSURE TESTS

66. THE CITY OR ITS REPRESENTATIVE WILL INSPECT AND OBSERVE THE HYDROSTATIC TEST OF THE PIPE WITHIN 48 HOURS AFTER NOTIFICATION BY THE CONTRACTOR THAT A SECTION IS READY FOR INSPECTION AND TEST. THE CONTRACTOR SHALL CONTACT THE CITY AT LEAST 48 HOURS IN ADVANCE OF THE COMPLETION OF STERILIZATION AND FLUSHING AND THE CITY WILL TAKE THE REQUIRED WATER SAMPLES. THE CONTRACTOR SHALL PAY FOR THE COST OF THE WATER QUALITY TESTS.
67. PRIOR TO THE ACCEPTANCE OF THE WORK, THE INSTALLATION SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST AND ANY LEAKS OR IMPERFECTIONS DEVELOPING UNDER SAID PRESSURE SHALL BE REMEDIED BY THE CONTRACTOR BEFORE FINAL ACCEPTANCE OF THE WORK. THE CONTRACTOR SHALL PERFORM A PRELIMINARY TEST TO ASSURE THAT THE EQUIPMENT TO BE USED FOR THE TEST IS ADEQUATE AND IN GOOD OPERATING CONDITION AND THE AIR IN THE LINES HAS BEEN RELEASED BEFORE REQUESTING THE CITY WITNESS THE TEST. THE CITY OR HIS REPRESENTATIVE SHALL WITNESS THE TEST; IF THE TEST DOES NOT PASS INSPECTION FOR ANY REASON, ADDITIONAL TRIPS REQUIRED TO WITNESS THE TEST SHALL BE DONE AT THE CONTRACTOR'S EXPENSE.
68. NO AIR WILL BE ALLOWED IN THE LINES. THE MAINS SHALL BE TESTED BETWEEN VALVES. INSOFAR AS POSSIBLE, NO HYDROSTATIC PRESSURE SHALL BE PLACED AGAINST THE OPPOSITE SIDE OF THE VALVE BEING TESTED. TEST PRESSURE SHALL BE MAINTAINED WHILE THE ENTIRE INSTALLATION BEING TESTED IS INSPECTED. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT AND SHALL PERFORM ALL WORK CONNECTED WITH THE TEST. TESTS SHALL BE MADE BEFORE ALL VALVED CONNECTIONS HAVE BEEN MADE. AT UNVALVED CONNECTION POINTS, A TEMPORARY PLUG (OR 2" BLOW-OFF ASSEMBLY ON LINES WITHOUT HYDRANTS) SHALL BE INSTALLED AT THE END OF THE NEW MAIN. THIS SHALL INCLUDE CONCRETE BLOCKING AND/OR RESTRAINED JOINTS NECESSARY TO WITHSTAND PRESSURES ENCOUNTERED DURING THE HYDROSTATIC TEST.
69. ONCE THE NEW LINE IS SUCCESSFULLY TESTED AND DISINFECTED, THE PLUG (BLOW-OFF) SHALL BE REMOVED AND THE CONNECTION TO THE EXISTING MAIN COMPLETED.
70. THE CONTRACTOR SHALL PROVIDE SPECIAL PLUGS AND BLOCKING NECESSARY IN THOSE LOCATIONS WHERE IT WOULD BE NECESSARY TO TEST AGAINST BUTTERFLY VALVES TO ENSURE THAT THE PRESSURE RATING OF THESE VALVES IS NOT EXCEEDED DURING TESTING.
71. ALL WATER MAINS AND APPURTENANCES SHALL BE HYDROSTATICALLY TESTED AS SPECIFIED IN THE STANDARD SPECIFICATIONS.

STERILIZATION AND FLUSHING OF WATER MAINS

72. STERILIZATION OF WATER MAINS SHALL BE ACCOMPLISHED BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE HEALTH DEPARTMENT AND IN A MANNER SATISFACTORY TO THE CITY. THE SECTION TO BE STERILIZED SHALL BE THOROUGHLY FLUSHED AT MAXIMUM FLOW ESTABLISHED BY THE CITY PRIOR TO CHLORINATION, NO LESS THAN 2.5 FT/S. FLUSHING PERIOD MUST BE APPROVED BY THE CITY. SECTIONS WILL ORDINARILY BE STERILIZED BETWEEN ADJACENT VALVES UNLESS, IN THE OPINION OF THE CITY, A LONGER SECTION MAY BE SATISFACTORILY HANDLED. CHLORINE SHALL BE APPLIED BY SOLUTION FEED AT ONE END OF THE SECTION WITH A VALVE OR HYDRANT AT THE OPPOSITE END OPEN SUFFICIENTLY TO PERMIT A FLOW THROUGH DURING CHLORINE APPLICATION. THE CHLORINE SOLUTION SHALL BE FED INTO THE PIPELINE ALREADY MIXED BY AN AUTOMATICALLY PROPORTIONING APPLICATOR SO AS TO PROVIDE A STEADY APPLICATION RATE OF NOT LESS THAN 50 PPM CHLORINE. HYDRANTS ALONG THE CHLORINATED SECTION SHALL BE OPEN DURING APPLICATION UNTIL THE PRESENCE OF CHLORINE HAS DEFINITELY BEEN DETECTED IN EACH HYDRANT RUN. WHEN A CHLORINE CONCENTRATION OF NOT LESS THAN 50 PPM HAS BEEN ESTABLISHED THROUGHOUT THE LINE, THE VALVES SHALL BE CLOSED AND THE LINE LEFT UNDISTURBED FOR 24 HOURS MINIMUM CONTACT TIME.
73. AS AN ALTERNATIVE, THE CONTRACTOR MAY USE GRANULATED CHLORINE. GRANULATED CHLORINE (DRY CALCIUM HYPOCHLORITE AT 65% – 70% CHLORINE) SHALL BE PLACED IN THE PIPE TO YIELD A DOSAGE OF NOT LESS THAN 50 PPM. THE NUMBER OF OUNCES OF 65% TEST CALCIUM HYPOCHLORITE REQUIRED FOR A 20-FOOT LENGTH OF PIPE EQUALS .00843LD, IN WHICH "D" IS THE DIAMETER IN INCHES. THE LINE SHALL THEN BE THOROUGHLY FLUSHED AND WATER SAMPLES TAKEN FOR APPROVAL BY THE LOCAL HEALTH AGENCY. FLUSHING PERIOD MUST BE APPROVED BY THE CITY. THE CONTRACTOR SHALL EXERCISE SPECIAL CARE IN FLUSHING TO AVOID DAMAGE TO SURROUNDING PROPERTY.
74. SHOULD THE INITIAL TREATMENT RESULT IN AN UNSATISFACTORY BACTERIOLOGICAL TEST, ADDITIONAL CHLORINE USING THE FIRST PROCEDURE SHALL BE REPEATED BY THE CONTRACTOR UNTIL SATISFACTORY RESULTS ARE OBTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF TREATED WATER FLUSHED FROM MAINS AND AT NO TIME SHALL CHLORINATED WATER FROM A NEW MAIN BE FLUSHED INTO A BODY OF FRESH WATER. THIS IS TO INCLUDE LAKES, RIVERS, STREAMS, STORM DRAINAGE SYSTEMS AND ANY AND ALL OTHER WATERS WHERE FISH OR OTHER NATURAL WATER LIFE CAN BE EXPECTED.
75. DECHLORINATION OF THE TREATED WATER THAT IS FLUSHED FROM THE MAIN IS REQUIRED. ALLOWABLE CHEMICALS ARE ASCORBIC ACID OR OTHER CHEMICAL IF APPROVED BY THE CITY.
76. MAIN EXTENSIONS SHALL NOT BE CONNECTED TO THE CITY WATER SYSTEM UNTIL PRESSURE AND BACTERIOLOGICAL TESTS HAVE PASSED ALL REQUIRED STANDARDS.

CHLORINE DOSAGE

77. REFERENCES IN SECTION 7-09.3(24) OF THE WSDOT STANDARD SPECIFICATIONS TO AN INITIAL CHLORINE CONTENT OF THE WATER OF NOT LESS THAN 50 MG/L IS AS FOLLOWS.
78. THE AMOUNTS OF CHLORINE (CL2) REQUIRED TO PROVIDE 50 MG/L FOR 100-FOOT LENGTHS OF VARIOUS DIAMETER OF PIPE ARE:

AMOUNTS OF CHLORINE REQUIRED FOR 50 MG/L DOSAGE

PIPE SIZE (INCHES)	VOLUME OF WATER PER 100 FT. LENGTH (GALLONS)	HOUSEHOLD BLEACH 5-1/4% (GALLONS)	COMMERCIAL BLEACH 12-1/2% (GALLONS)
4	65.3	0.06	0.03
6	146.5	0.14	0.06
8	261.0	0.26	0.11
10	408.0	0.40	0.16
12	588.7	0.60	0.24

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Seattle, WA 98122
206-659-0612

CATHERINE E. MIRKIN
27900
11/16/2022

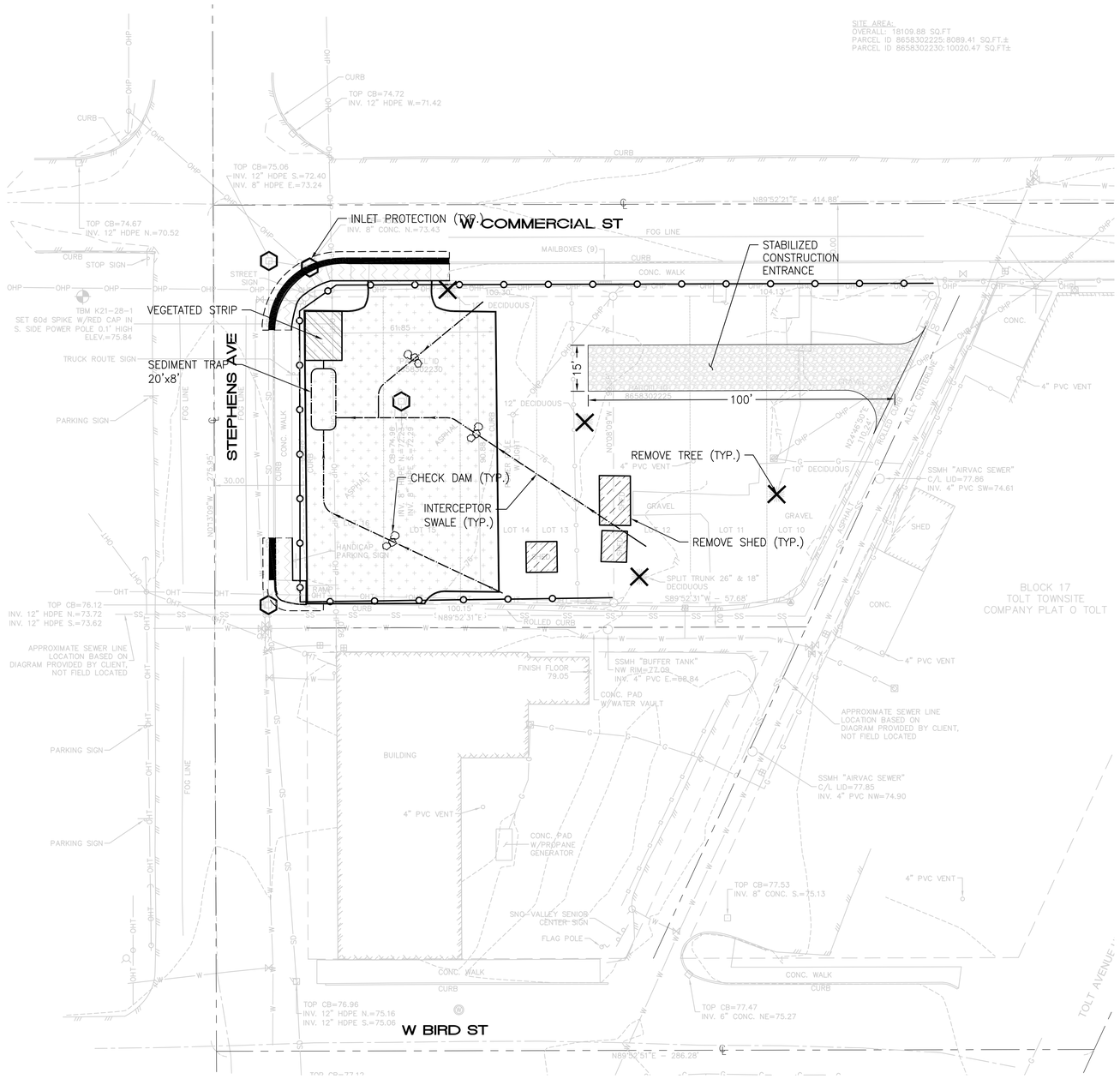
REV. NO.	DATE	DESCRIPTION

PROJECT NUMBER
22008
SUBMITTAL
SD/DR PERMIT

SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

GENERAL WATER NOTES

DESIGN CFG
DRAFT CFG
CHECK CEM
DATE 2022-11-10
SCALE
SHEET C1.3



CONSTRUCTION SEQUENCING

1. PRECONSTRUCTION MEETING.
2. FLAG OR FENCE CLEARING LIMITS.
3. POST SIGN WITH NAME AND PHONE NUMBER OF ESC SUPERVISOR.
4. INSTALL CATCH BASIN PROTECTION.
5. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S).
6. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC).
7. CONSTRUCT SEDIMENT TRAP.
8. GRADE AND STABILIZE CONSTRUCTION ROADS.
9. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, SWALES, ETC. SIMULTANEOUSLY WITH CLEARING AND GRADING.
10. MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH CITY OF CARNATION STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
11. RELOCATE SURFACE WATER CONTROLS AND EROSION CONTROL MEASURES OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE, THE EROSION AND SEDIMENT CONTROL IS ALWAYS IN ACCORDANCE WITH THE CITY OF CARNATION EROSION AND SEDIMENT CONTROL STANDARDS.
12. COVER ALL AREAS THAT WILL BE UNWORKED FOR MORE THAN SEVEN DAYS DURING THE DRY SEASON OR TWO DAYS DURING THE WET SEASON WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING OR EQUIVALENT.
13. STABILIZE ALL AREAS THAT REACH FINAL GRADE WITHIN SEVEN DAYS.
14. SEED OR SOD ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.
15. UPON COMPLETION OF THE PROJECT, ALL DISTURBED AREAS MUST BE STABILIZED AND BMP'S REMOVED IF APPROPRIATE.

GENERAL NOTE - WET WEATHER CONSIDERATIONS

ALTERNATIVE SITE STRIPPING AND GRADE TECHNIQUES MIGHT BE NECESSARY IN WET CONDITIONS. THE GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT TITLED "GEOTECHNICAL ENGINEERING EVALUATION – SNO–VALLEY SENIOR CENTER DEVELOPMENT – 31845 WEST COMMERICAL STREET – CARNATION, WASHINGTON", DATED NOVEMBER 14TH, 2022 SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ALL WORK PERFORMED UNDER THIS PERMIT SHALL BE IN ACCORDANC EWITH THE APPLICABLE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.

LEGEND

- FILTER FABRIC FENCE
- REMOVE TREE
- CATCH BASIN PROTECTION
- INTERCEPTOR SWALE
- CHECK DAM
- CONSTRUCTION ENTRANCE
- EX SHED REMOVAL
- VEGETATED STRIP
- SAWCUT
- EX CURB REMOVAL
- EX CURB & GUTTER REMOVAL
- REMOVE ASPH CONC PAVEMENT
- REMOVE CEM CONC PAVEMENT

N

20 0 20

SCALE: 1" = 20'

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Seattle, WA 98122
206-659-0612

CATHERINE E. MIRKIN
STATE OF WASHINGTON
27000
REGISTERED
PROFESSIONAL ENGINEER

11/16/2022

REV NO	DATE	DESCRIPTION

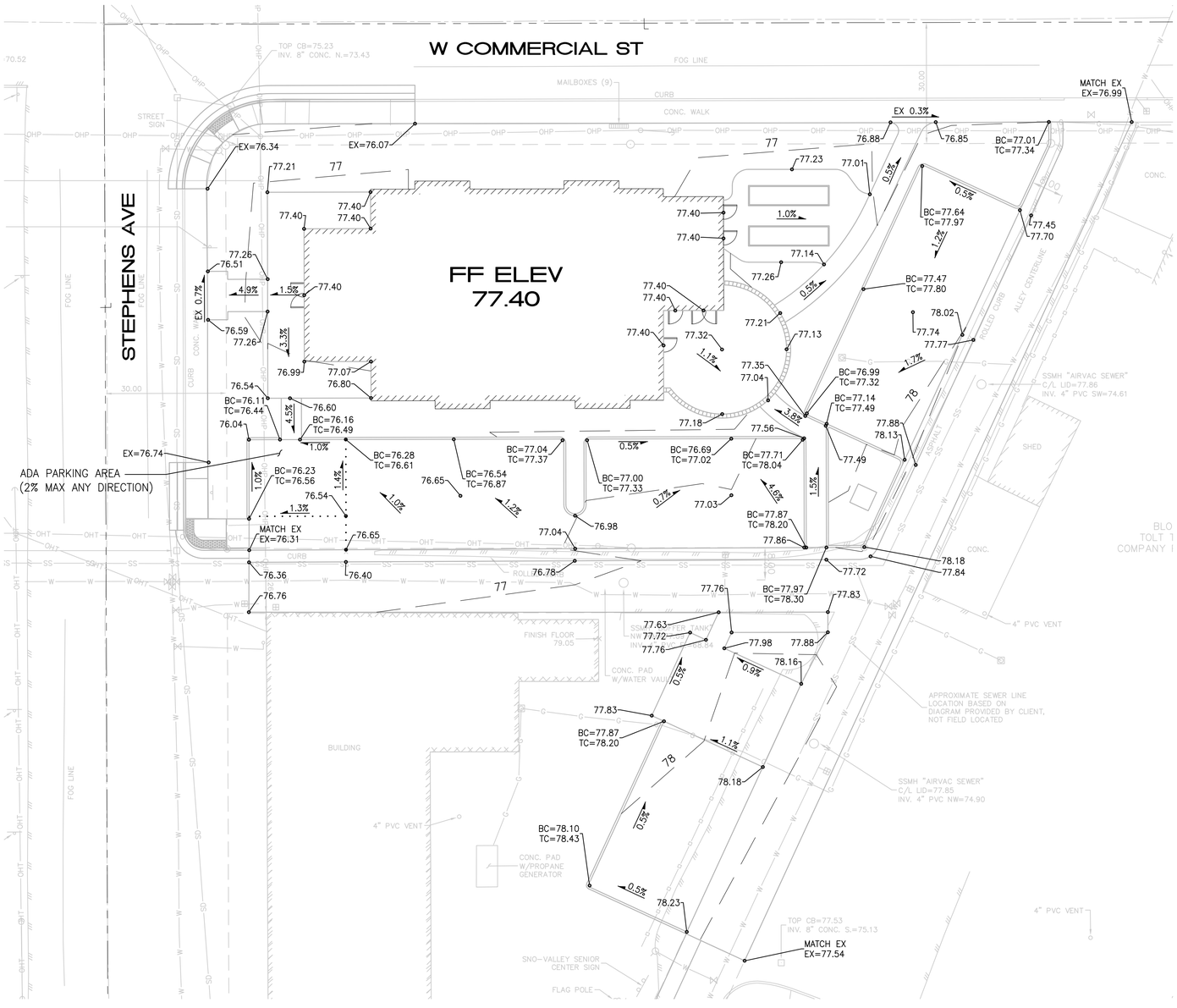
PROJECT NUMBER 22008

SUBMITTAL SD/DR PERMIT

SNO–VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

TEMPORARY EROSION CONTROL PLAN

DESIGN CFG
DRAFT CFG
CHECK CEM
DATE 2022–11–10
SCALE 1"=20'
SHEET C2.0



CONSTRUCTION NOTES

1. REFERENCE IS MADE TO THE DOCUMENT, "GEOTECHNICALENGINEERING EVALUATION–REVISED, SNOW–VALLEY SENIOR CENTER DEVELOPMENT," NOVEMBER 14, 2022. CONTRACTOR SHALL COMPLY WITH ALL RECOMMENDATIONS MADE THEREIN, UNLESS DIRECTED OTHERWISE.

N

15 0 15

SCALE: 1" = 15'

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CATHERINE E. MIRKIN
STATE OF WASHINGTON
37900
REGISTERED
PROFESSIONAL ENGINEER

11/16/2022

REV NO	DATE	DESCRIPTION

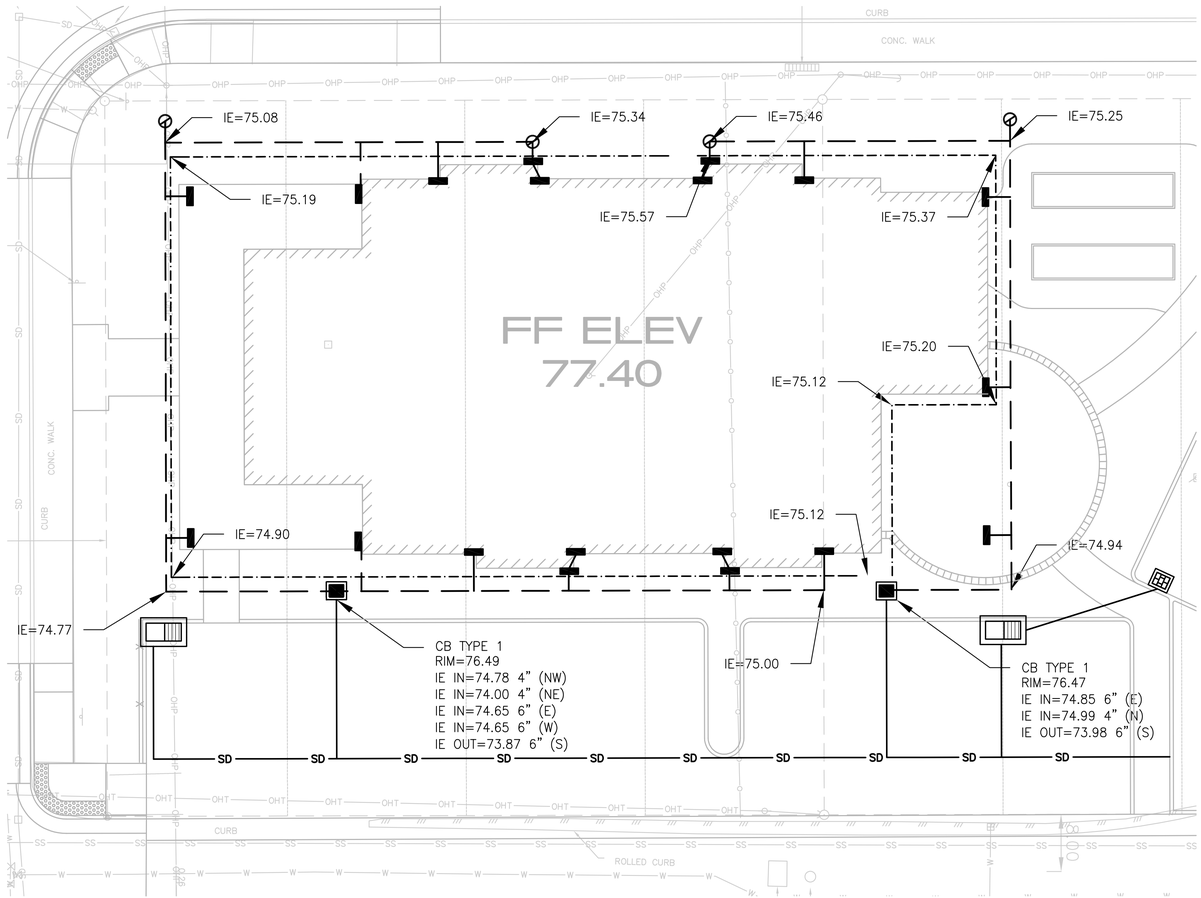
PROJECT NUMBER 22008

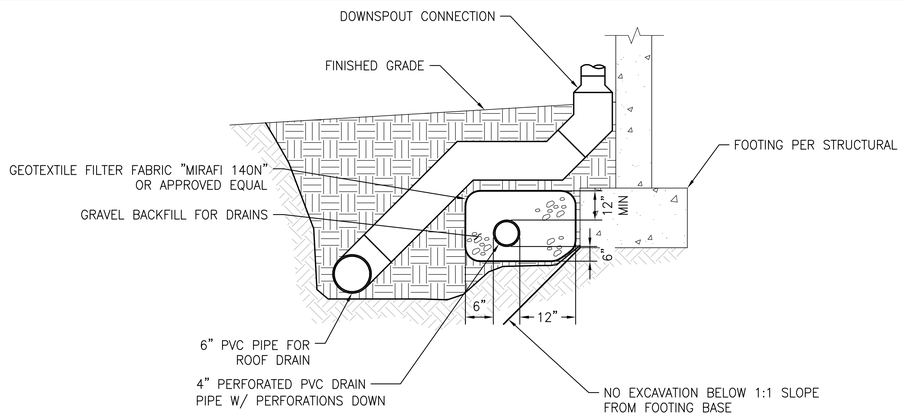
SUBMITTAL SD/DR PERMIT

SNO–VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

GRADING PLAN

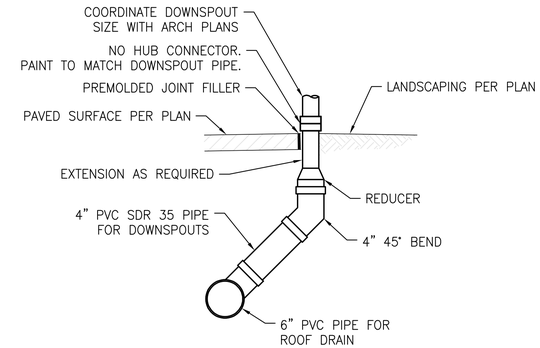
DESIGN CFG
DRAFT CFG
CHECK CEM
DATE 2022–11–10
SCALE 1"=15'
SHEET C3.0





1 / C4.0 ROOF AND FOOTING DRAIN

NTS



2 / C4.0 DOWNSPOUT CONNECTION

NTS

CONSTRUCTION NOTES

1. SEE DRAINAGE PLAN SHEET C5.0 FOR CATCH BASIN CONNECTIONS.
2. FOOTING AND ROOF DRAIN PIPES SHALL BE PLACED WITH 0.5% SLOPE, UNLESS OTHERWISE NOTED.
3. SEE ARCHITECTURAL PLANS FOR ROOF DRAIN DOWNSPOUT CONNECTION LOCATIONS.
4. CLEANOUTS SHALL BE PER DETAIL 5/C8.2

LEGEND

- CLEANOUT
- DOWNSPOUT
- 4" PVC PERFORATED FOOTING DRAIN
- 6" PVC ROOF DRAIN
- STORM DRAIN CONNECTION
- CATCH BASIN TYPE 1 W/ SOLID COVER

N

10 0 10

SCALE: 1" = 10'

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CATHERINE E. MIRKIN
STATE OF WASHINGTON
27900
REGISTERED
PROFESSIONAL ENGINEER

11/16/2022

REV NO	DATE	DESCRIPTION

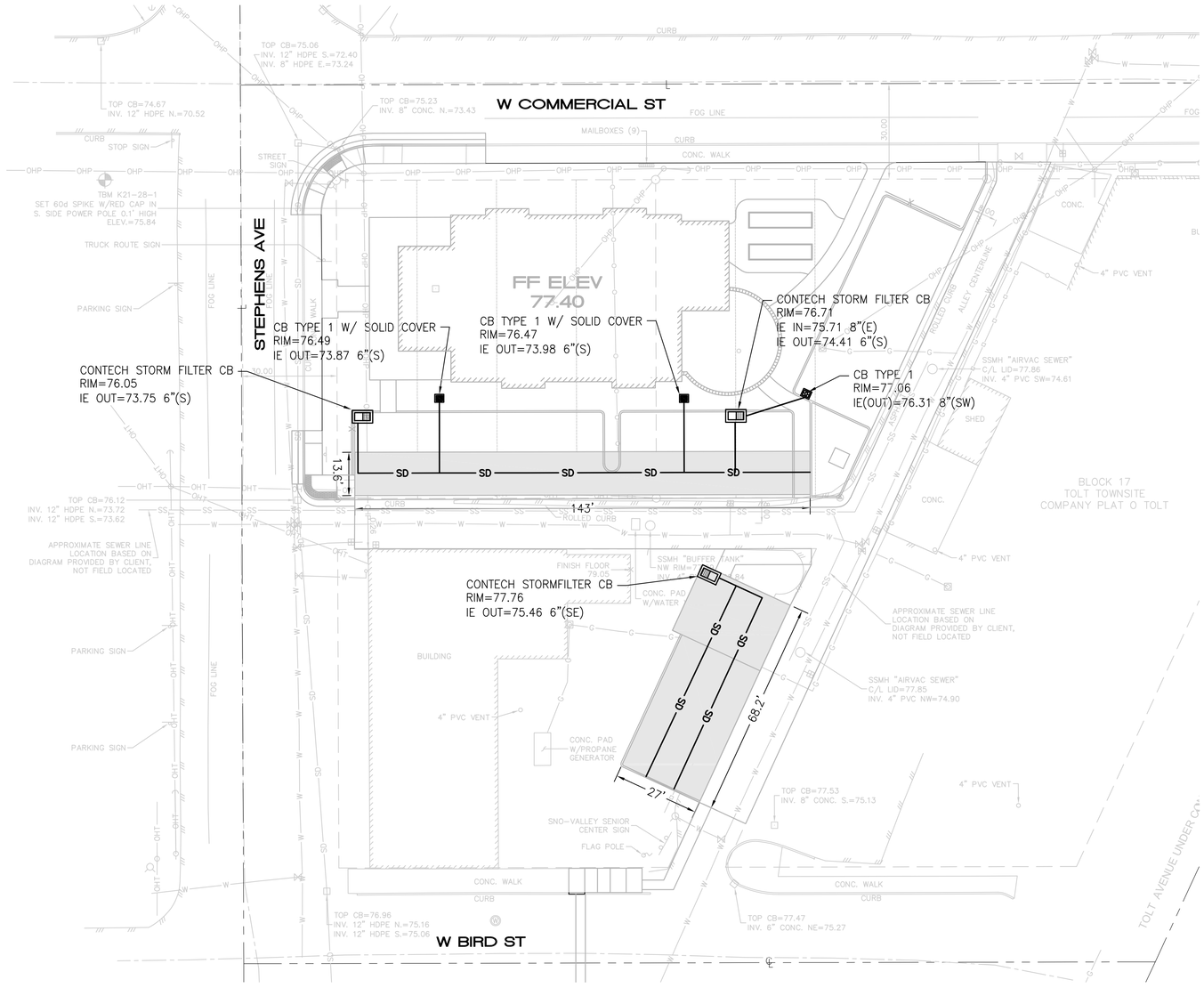
PROJECT NUMBER 22008

SUBMITTAL SD/DR PERMIT

SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

ROOF AND FOOTING DRAIN PLAN

DESIGN CFG
DRAFT CFG
CHECK CEM
DATE 2022-11-10
SCALE 1"=10'
SHEET C4.0



CONSTRUCTION NOTES

1. SEE ROOF AND FOOTING DRAIN PLAN SHEET C4.0 FOR CATCH BASIN INVERTS AND CONNECTIONS FROM ROOF AND FOOTING DRAINS.

LEGEND

- SD — 6" PERFORATED PVC UNDERDRAIN PIPE
- SOLID WALL PVC PIPE
- CATCH BASIN TYPE 1
- INFILTRATION TRENCH
- CONTECH STORMFILTER

N

20 0 20

SCALE: 1" = 20'

PERMIT SUBMITTAL
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CATHERINE E. MICKLIN
STATE OF WASHINGTON
27060
REGISTERED
PROFESSIONAL ENGINEER

11/16/2022

REV NO	DATE	DESCRIPTION

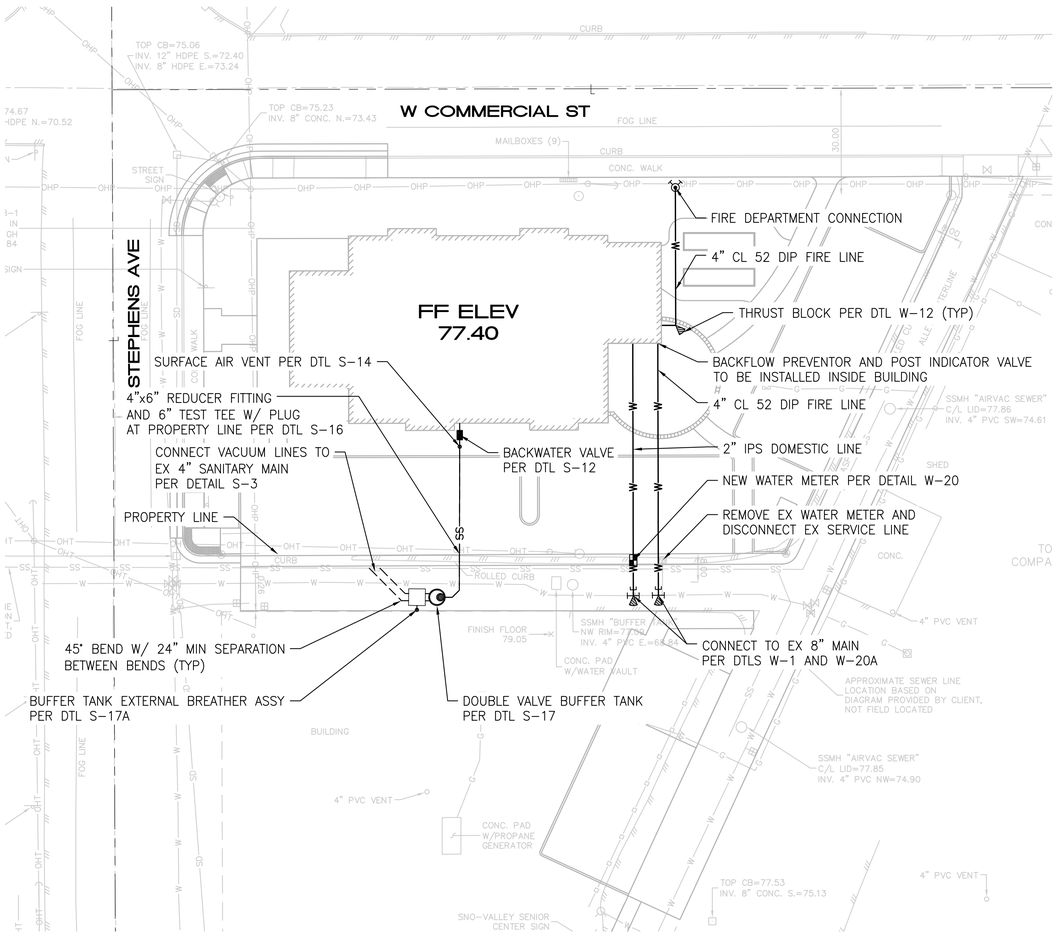
PROJECT NUMBER
22008
SUBMITTAL
SD/DR PERMIT

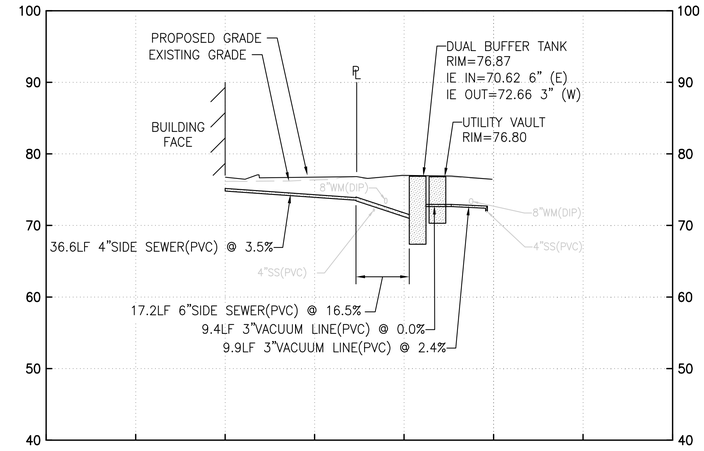
SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

STORM DRAINAGE PLAN

DESIGN
DRAFT CFG
CHECK CFG
DATE CEM
2022-11-10
SCALE 1"=20'

SHEET C5.0





SIDE SEWER CONNECTION PROFILE

SCALE: HOR. 1"=20', VERT. 1"=5'

LEGEND

—ss—	SANITARY SERVICE LINE
▮	BACKWATER VALVE ALTERNATIVE 1
•	SURFACE AIR VENT
	54"ø CONC MH FOR DOUBLE BUFFER TANK
□	UTILITY VAULT
—w—	WATER LINE
	WATER METER
	THRUST BLOCK
	FIRE DEPARTMENT CONNECTION

N

20 0 20

SCALE: 1" = 20'

PERMIT SUBMITTAL
NOT FOR CONSTRUCTION

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Seattle, WA 98122
206-659-0612

CATHERINE E. MIRICH
STATE OF WASHINGTON
27000
REGISTERED
PROFESSIONAL ENGINEER

11/16/2022

REV NO	DATE	DESCRIPTION

PROJECT NUMBER 22008

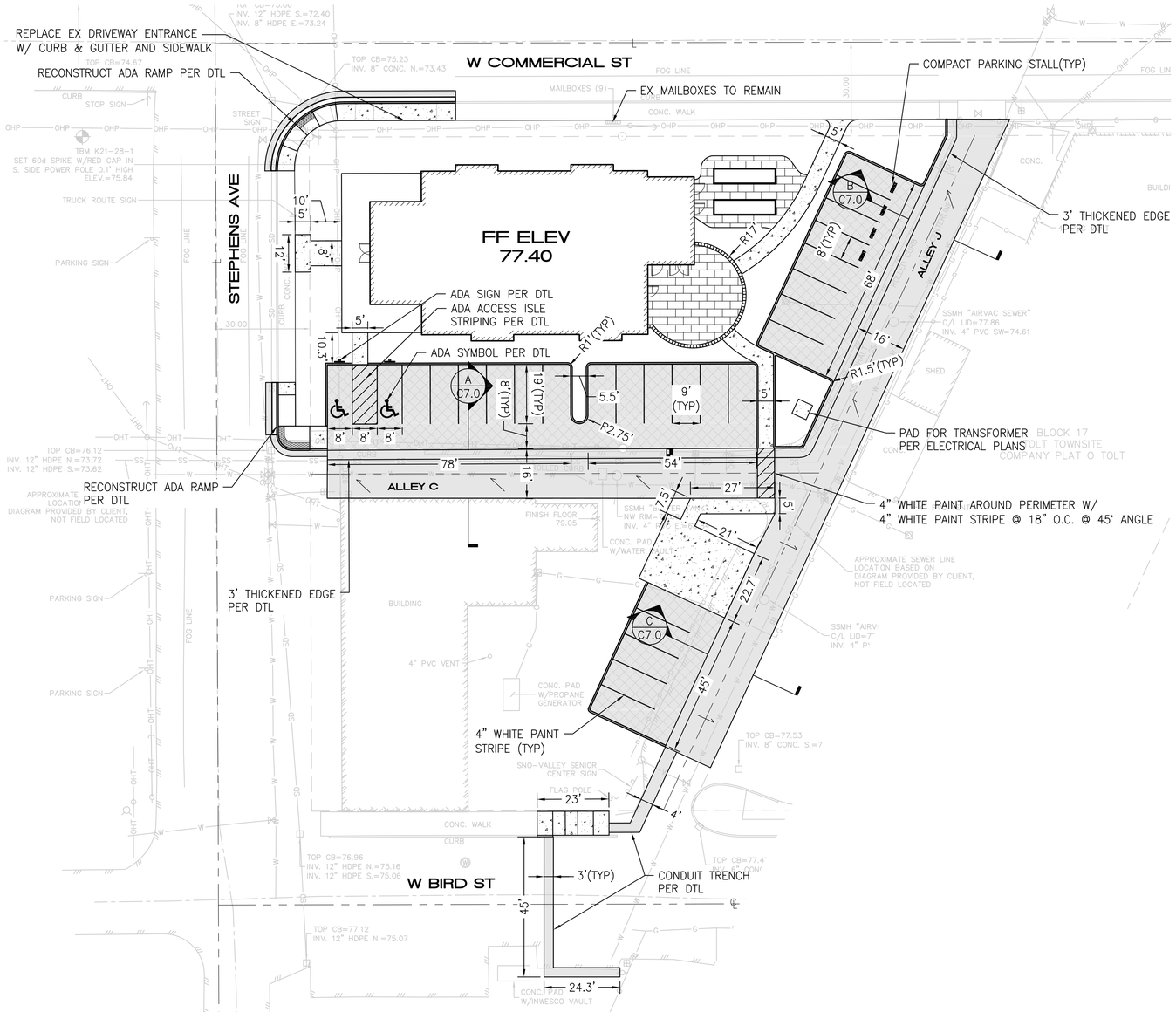
SUBMITTAL SD/DR PERMIT

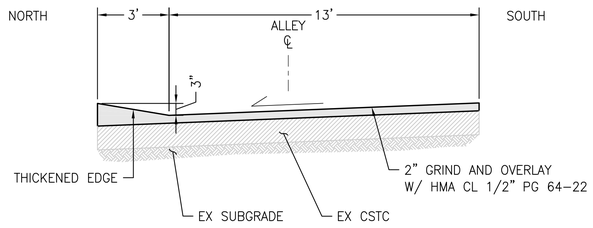
SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

SANITARY SEWER AND WATER PLAN

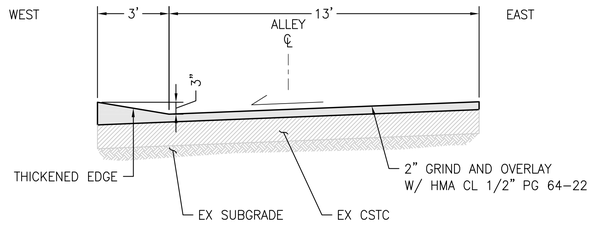
DESIGN
DRAFT CFG
CHECK CFG
DATE CEM
SCALE 2022-11-10
1"=20'

SHEET C6.0

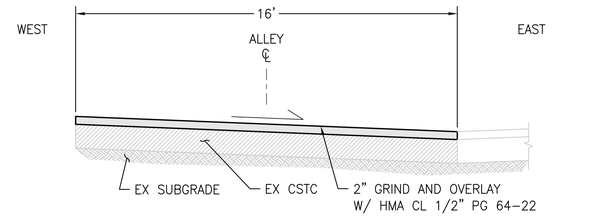




A TYPICAL SECTION - ALLEY C
NTS



B TYPICAL SECTION - ALLEY J (NORTH OF ALLEY C)
NTS



C TYPICAL SECTION - ALLEY J (SOUTH OF ALLEY C)
NTS

CONSTRUCTION NOTES

1. SEE LANDSCAPE PLANS FOR ALL DECORATIVE PAVER SURFACING AND SURFACE OUTSIDE PARKING LOT, ROADS AND SIDEWALKS.
2. PAINT CURBS ON INTERSECTING STREET OF ALLEY FOR A DISTANCE OF 20' ON BOTH DIRECTIONS FROM THE ALLEY INTERSECTION. USE HIGH VISIBILITY INDUSTRIAL ENAMEL SAFETY YELLOW.

LEGEND

- CEM CONC CURB
- PAVERS OUTLINE
- HMA THICKENED EDGE
- 2" HMA GRIND AND OVERLAY
- HMA FULL DEPTH PAVEMENT
- CEM CONC SIDEWALK
- PAVERS

N

20 0 20
SCALE: 1" = 20'

PERMIT SUBMITTAL NOT FOR CONSTRUCTION

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CM DESIGN GROUP
1318 East Pike St.
Seattle, WA 98122
206-659-0612

CATHERINE E. MICKIN
STATE OF WASHINGTON
27500
REGISTERED PROFESSIONAL ENGINEER

11/16/2022

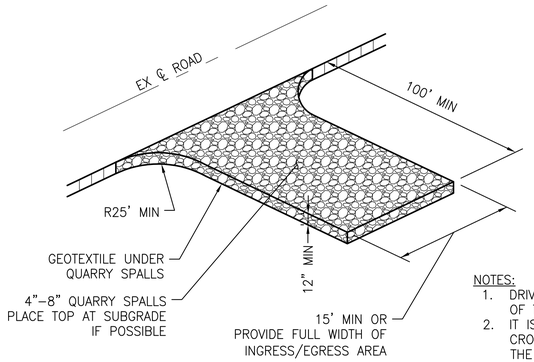
REV NO	DATE	DESCRIPTION

PROJECT NUMBER 22008
SUBMITTAL SD/DR PERMIT

SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

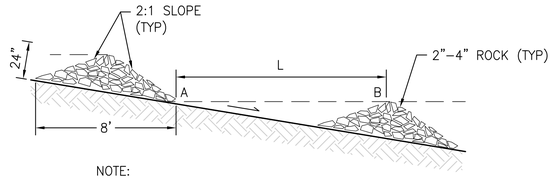
PAVING AND HORIZONTAL CONTROL PLAN

DESIGN	CFG
DRAFT	CFG
CHECK	CEM
DATE	2022-11-10
SCALE	1"=20'
SHEET	C7.0



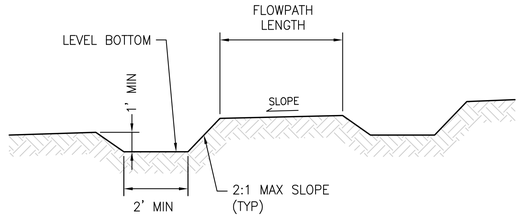
NOTES:
1. DRIVEWAY SHALL MEET THE REQUIREMENTS OF THE PERMITTING AGENCY.
2. IT IS RECOMMENDED THAT THE ACCESS BE CROWNED SO THAT RUNOFF DRAINS OFF THE PAD.

1 C2.0 STABILIZED CONSTRUCTION ENTRANCE
NTS



NOTE:
"L" EQUALS THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

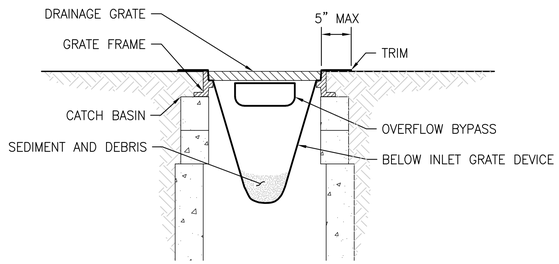
2 C2.0 ROCK CHECK DAM
NTS



HORIZONTAL SPACING

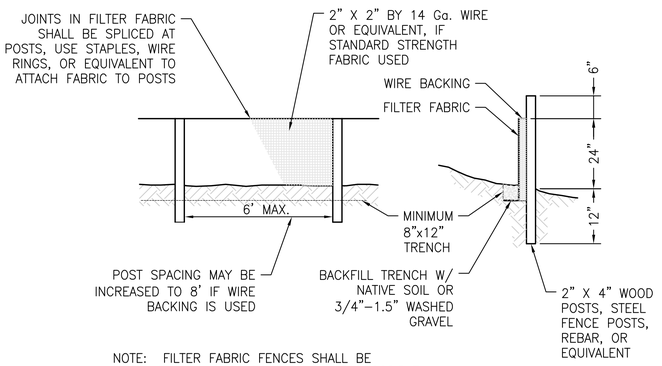
SLOPE	FLOWPATH LENGTH
3–5%	300'
5–10%	200'
10–25%	100'
25–50%	50'

3 C2.0 INTERCEPTOR SWALE
NTS



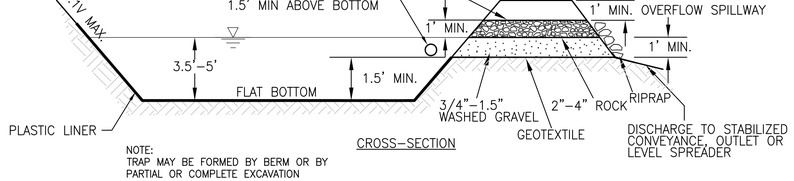
NOTES:
1. SIZE THE BELOW INLET GRATE DEVICE (BIGD) FOR THE STORM WATER STRUCTURE IT WILL SERVICE.
2. THE BIGD SHALL HAVE A BUILT–IN HIGH–FLOW RELIEF SYSTEM (OVERFLOW BYPASS).
3. THE RETRIEVAL SYSTEM MUST ALLOW REMOVAL OF THE BIGD WITHOUT SPILLING THE COLLECTED MATERIAL.

4 C2.0 CATCH BASIN PROTECTION
NTS



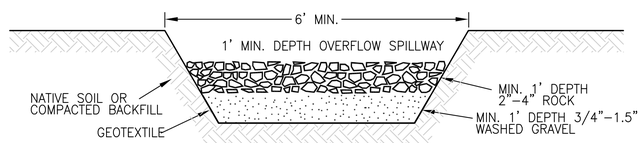
NOTE: FILTER FABRIC FENCES SHALL BE INSTALLED ALONG CONTOUR WHENEVER POSSIBLE

5 C2.0 FILTER FABRIC FENCE
NTS



NOTE:
TRAP MAY BE FORMED BY BERM OR BY PARTIAL OR COMPLETE EXCAVATION

CROSS–SECTION



TRAP OUTLET

NOTES:
1. REMOVE SEDIMENT FROM TRAP WHEN IT REACHES APPROXIMATELY 1 FT IN DEPTH.
2. DISPOSE OF SEDIMENT AT AN APPROVED OFF SITE DUMP OR STABILIZE ON SITE.

6 C2.0 SEDIMENT TRAP
NTS

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1318 East Pike St.
Seattle, WA 98122
206-659-0612

CATHERINE E. MIRKIN
STATE OF WASHINGTON
27900
REGISTERED PROFESSIONAL ENGINEER

11/16/2022

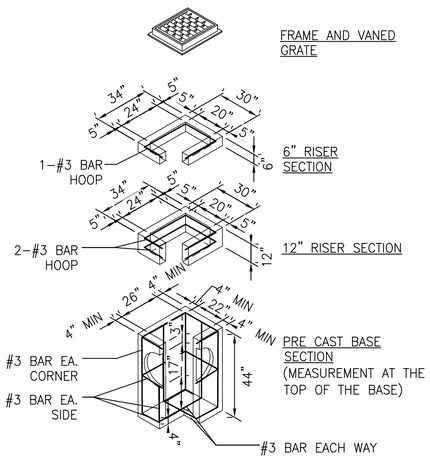
REV NO	DATE	DESCRIPTION

PROJECT NUMBER 22008
SUBMITTAL SD/DR PERMIT

SNO–VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

TEMPORARY EROSION CONTROL DETAILS

DESIGN
DRAFT CFG
CHECK CFG
DATE CEM
SCALE 2022–11–10
NTS
SHEET C8.0

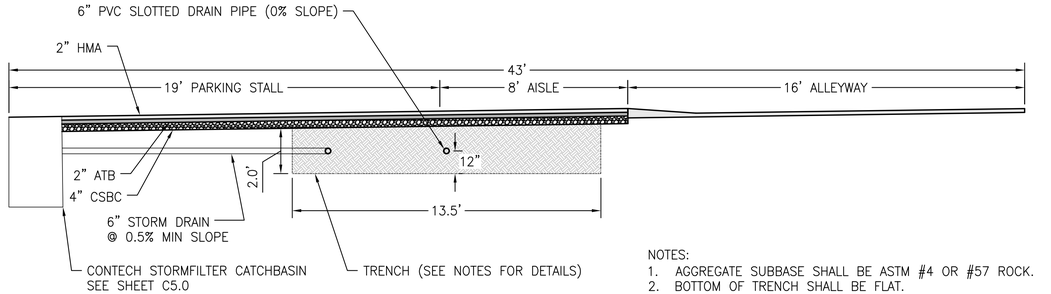


NOTES:

1. CATCH BASIN TO BE IN ACCORDANCE WITH ASTM C 478 (AASHTO M 199) & ASTM C 890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS. AS AN ACCEPTABLE ALTERNATE TO REBAR, WELDED WIRE FABRIC HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A 497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN THE KNOCKOUTS.
2. THE BOTTOM OF THE PRE CAST BASE MAY BE ROUNDED. PRE CAST BASES SHALL BE FURNISHED W/ CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM. KNOCKOUTS MAY BE ON ALL 4 SIDES W/ MAXIMUM DIAMETER OF 20". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE. PIPE TO BE INSTALLED IN FACTORY SUPPLIED KNOCKOUTS. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAMETER PLUS CATCH BASIN WALL THICKNESS.
3. THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'–0". THE TAPER ON THE SIDES OF THE PRE CAST BASE SECTION & RISER SECTION SHALL NOT EXCEED 1/2" PER FT.
4. CATCH BASIN FRAME & GRATE SHALL BE IN ACCORDANCE W/ STANDARD SPECIFICATIONS & MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR–F–621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON–ROCKING FIT. FRAME & GRATE SHALL BE INSTALLED W/ FLANGE DOWN, CATCH BASIN FRAME AND GRATES SHALL BE 18"x24" VANED UNLESS OTHERWISE SHOWN OR INDICATED.

1 C5.0 CATCH BASIN TYPE 1

NTS



NOTES:

1. AGGREGATE SUBBASE SHALL BE ASTM #4 OR #57 ROCK.
2. BOTTOM OF TRENCH SHALL BE FLAT.
3. ALL PIPES WITHIN THE DRYWELL SHALL BE 6" SCHEDULE 40 SLOTTED PIPES LAID FLAT.

2 C5.0 INFILTRATION TRENCH SECTION

NTS

STORMFILTER STEEL CATCHBASIN DESIGN NOTES

STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. 1 CARTRIDGE CATCHBASIN HAS A MAXIMUM OF ONE CARTRIDGE. SYSTEM IS SHOWN WITH A 27" CARTRIDGE, AND IS ALSO AVAILABLE WITH AN 18" CARTRIDGE. STORMFILTER CATCHBASIN CONFIGURATIONS ARE AVAILABLE WITH A DRY INLET BAY FOR VECTOR CONTROL.
PEAK HYDRAULIC CAPACITY PER TABLE BELOW. IF THE SITE CONDITIONS EXCEED PEAK HYDRAULIC CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.

CARTRIDGE SELECTION

CARTRIDGE HEIGHT	27"			18"			18" DEEP		
RECOMMENDED HYDRAULIC DROP (H)	3.05'			2.3'			3.3'		
SPECIFIC FLOW RATE (gpm/sf)	2 gpm/sf	1.67* gpm/sf	1 gpm/sf	2 gpm/sf	1.67* gpm/sf	1 gpm/sf	2 gpm/sf	1.67* gpm/sf	1 gpm/sf
CARTRIDGE FLOW RATE (gpm)	22.5	18.79	11.25	15	12.53	7.5	15	12.53	7.5
PEAK HYDRAULIC CAPACITY	1.0			1.0			1.8		
INLET PERMANENT POOL LEVEL (A)	1'-0"			1'-0"			2'-0"		
OVERALL STRUCTURE HEIGHT (B)	4'-0"			3'-0"			4'-0"		

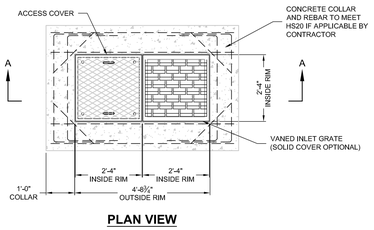
* 1.67 gpm/sf SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

GENERAL NOTES

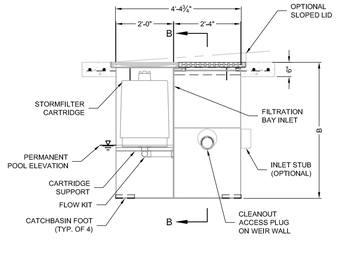
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STORMFILTER CATCHBASIN STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
3. STORMFILTER CATCHBASIN WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
4. INLET SHOULD NOT BE LOWER THAN OUTLET. INLET (IF APPLICABLE) AND OUTLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR.
5. MANUFACTURER TO APPLY A SURFACE BEAD WELD IN THE SHAPE OF THE LETTER "O" ABOVE THE OUTLET PIPE STUB ON THE EXTERIOR SURFACE OF THE STEEL SFCB.
6. STORMFILTER CATCHBASIN EQUIPPED WITH 4 INCH (APPROXIMATE) LONG STUBS FOR INLET (IF APPLICABLE) AND OUTLET PIPING. STANDARD OUTLET STUB IS 8 INCHES IN DIAMETER. MAXIMUM OUTLET STUB IS 15 INCHES IN DIAMETER. CONNECTION TO COLLECTION PIPING CAN BE MADE USING FLEXIBLE COUPLING BY CONTRACTOR.
7. STEEL STRUCTURE TO BE MANUFACTURED OF 1/4 INCH STEEL PLATE. CASTINGS SHALL MEET AASHTO M306 LOAD RATING. TO MEET HS20 LOAD RATING ON STRUCTURE, A CONCRETE COLLAR IS REQUIRED. WHEN REQUIRED, CONCRETE COLLAR WITH #4 REINFORCING BARS TO BE PROVIDED BY CONTRACTOR.
8. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 38 SECONDS.
9. SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (gpm) DIVIDED BY THE FILTER CONTACT SURFACE AREA (sq ft).

INSTALLATION NOTES

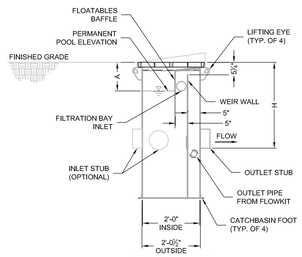
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CATCHBASIN (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.



PLAN VIEW



SECTION A-A



SECTION B-B

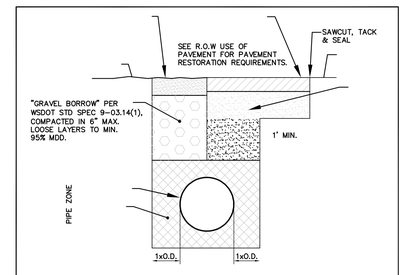
1-CARTRIDGE CATCHBASIN STORMFILTER DATA		
STRUCTURE ID		XXX
WATER QUALITY FLOW RATE (cfs)		X.XX
PEAK FLOW RATE (<1 cfs)		X.XX
RETURN PERIOD OF PEAK FLOW (yrs)		XXX
CARTRIDGE HEIGHT (27", 18", 18" DEEP)		XX
CARTRIDGE FLOW RATE (gpm)		XX
MEDIA TYPE (PERLITE, ZPG, PSORB)		XXXXX
RIM ELEVATION		XXX.XX'
PIPE DATA:	I.E.	DIAMETER
INLET STUB	XXX.XX'	XX"
OUTLET STUB	XXX.XX'	XX"
CONFIGURATION	OUTLET INLET / OUTLET INLET	
SLOPED LID		YES\NO
SOLID COVER		YES\NO
NOTES/SPECIAL REQUIREMENTS:		

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-526-3999 513-645-7000 513-645-7993 FAX

1 CARTRIDGE CATCHBASIN STORMFILTER STANDARD DETAIL

3 C5.0 CONTECH STORM FILTER

NTS



1. PERPENDICULAR, OPEN CUT TRENCH CROSSINGS WITHIN THE RIGHT–OF–WAY SHALL BE BACKFILLED WITH 100% CRUSHED SURFACING TOP COURSE (CSTC) PER WSDOT 9–03.9 (3).
2. MINIMUM COVER FOR STORM PIPE SHALL BE 3'
3. PIPE ZONE MATERIAL PER WSDOT 9–03.12(3).
4. COMPACTION SHALL BE,AT LEAST 95% OF MAXIMUM DENSITY,PER WSDOT STANDARD SPECIFICATION SECTION 2–03.3(14)D.

   BACKFILL COMPACTION ON PRIVATE EASEMENTS WHICH ARE NOT USED FOR DRIVING PURPOSES SHALL BE MINIMUM 90% MAX. DRY DENSITY (MDD).

   IN R.O.W MATCH EXISTING PAVEMENT SECTION PLUS 1", BUT NOT LESS THAN 4" ACP CLASS ½" PG.64–22 OVER 6" CSTC (COMPACTED THICKNESS), TACK & SEAL NEAT LINES.

LOCHNER (425)-454-3160 | TYPICAL TRENCH DETAIL | 11/2018 | DWG. NO. D-4

4 C5.0 STORM PIPE TRENCH

NTS

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CM DESIGN GROUP
1318 East Pike St.
Seattle, WA 98122
206-659-0612

CATHERINE E. MIRKIN — STATE OF WASHINGTON — 37960 — REGISTERED PROFESSIONAL ENGINEER

11/16/2022

REV NO	DATE	DESCRIPTION

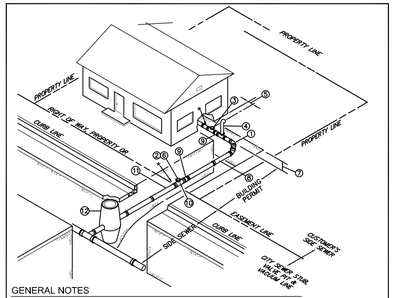
PROJECT NUMBER 22008
SUBMITTAL SD/DR PERMIT

SNO–VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

STORM DRAINAGE DETAILS

DESIGN
DRAFT CFG
CHECK CFG
DATE CEM
SCALE 2022–11–10
NTS

SHEET C8.1



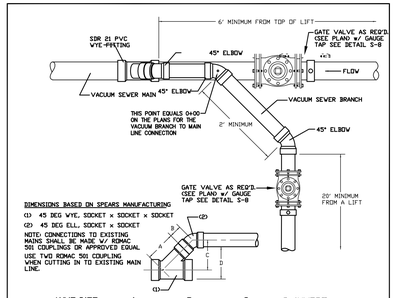
GENERAL NOTES

1. 45° BENDS WITH 24" MIN. SEPARATION BETWEEN BENDS.
2. CONNECT BUILDING SEWER TO SIDE SEWER PER DETAIL S-16.
3. BACKWATER VALVE PER STANDARD DETAIL.
4. SURFACE AIR VENT PER STANDARD DETAIL. THE SURFACE AIR VENT MAY ALSO DOUBLE AS A SECONDARY CLEAN OUT AT OWNER'S OPTION. THE SURFACE AIR VENT MAY BE INSTALLED LATERAL TO THE SIDE SEWER LINE (MAX. 4'). LOCATION OF SURFACE AIR VENT IS AT OWNER'S DISCRETION BUT SHALL BE MIN. 10' UPSTREAM OF THE CITY SIDE SEWER CONNECTION UNLESS OTHERWISE APPROVED.
5. 18" TO 36" RECOMMENDED DISTANCE.
6. PLUG OR CLEANOUT AT OWNER'S OPTION.
7. 18" MIN. COVER.
8. 4" OR 6" SDR 21 PVC SIDE SEWER. SDR 35 PVC & CLASS 50 DUCTILE IRON PIPE ARE ALSO ACCEPTABLE.
9. 4"x 6" REDUCER FITTING AS REQUIRED.
10. 6" TEST TEE WITH PLUG. TEST TEE MAY DOUBLE AS A CLEAN OUT AT OWNER'S OPTION.
11. 6" SIDE SEWER STUB w/ CAP.
12. VALVE PIT

*DURING TESTING, CAP INSTALLED SIDE SEWER AT THIS LOCATION. AFTER SUCCESSFUL TEST, REMOVE CITY-SIDE CAP & CONNECT TO CITY SEWER STUB. TESTING METHODS ARE DESCRIBED IN THE CITY SIDE SEWER STANDARDS.

LOCHNER (425)-454-3160 | TYPICAL BUILDING CONNECTION | 08/2017 | DWG. NO. S-1

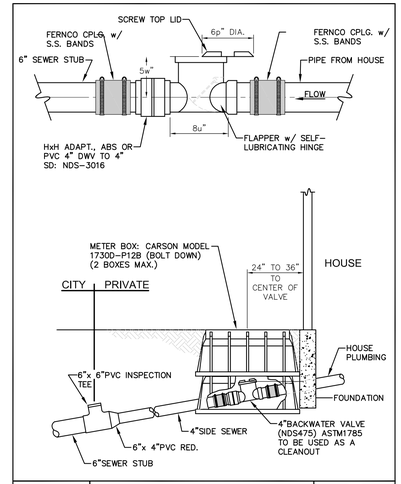
1 C6.0 **TYPICAL BUILDING CONNECTION**
NTS



WYE SIZE	A	B	C	D- INVERT
4 x 4 x 4	8 3/4"	3 5/16"	8.53"	0.71'
4 x 4 x 3	9 1/4"	3 1/16"	8.70"	0.73'
6 x 6 x 6	12 1/8"	5 9/16"	12.5"	1.04'
6 x 6 x 4	10"	3 5/16"	9.41"	0.78'
6 x 6 x 3	10 1/2"	3 1/16"	9.59"	0.80'
8 x 8 x 8	18 3/4"	6 13/16"	18.07"	1.52'
8 x 8 x 6	16 1/4"	5 9/16"	16.42"	1.30'
8 x 8 x 4	14 1/4"	3 5/16"	12.42"	1.05'
8 x 8 x 3	13"	3 1/16"	11.36"	0.99'
10 x 10 x 10	22 3/8"	8 19/32"	21.90"	1.89'
10 x 10 x 8	20 1/4"	6 13/16"	19.13"	1.61'
10 x 10 x 6	17 3/4"	5 9/16"	16.46"	1.42'
10 x 10 x 4	15 3/4"	3 5/16"	13.48"	1.18'
10 x 10 x 3	14 3/4"	3 1/16"	12.33"	1.06'

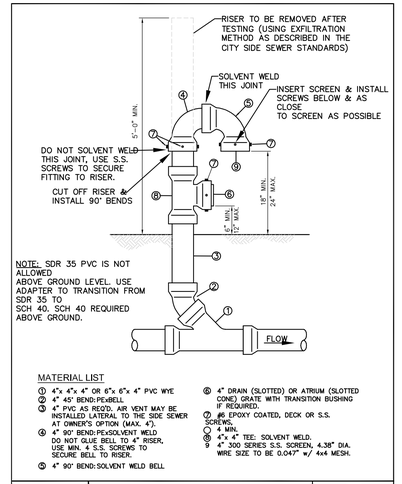
LOCHNER (425)-454-3160 | VACUUM BRANCH TO MAIN CONNECTION | 08/2017 | DWG. NO. S-3

2 C6.0 **VACUUM BRANCH TO MAIN CONNECTION**
NTS



LOCHNER (425)-454-3160 | BACKWATER VALVE DETAIL ALTERNATIVE NO. 1 | 08/2017 | DWG. NO. S-12

3 C6.0 **BACKWATER VALVE ALT 1**
NTS

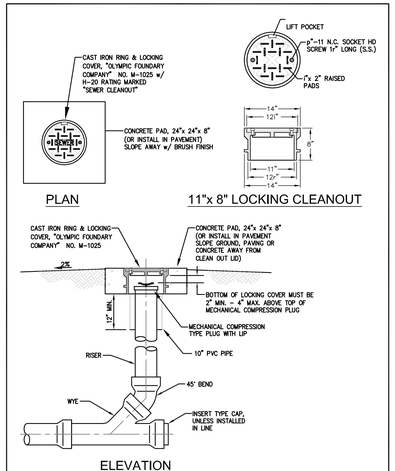


MATERIAL LIST

1. 4"x 4"x 4" OR 6"x 6"x 4" PVC WYE
2. 4" 45° BEND:PE×BELL
3. 4" PVC AS REQ'D. AIR VENT MAY BE INSTALLED LATERAL TO THE SIDE SEWER AT OWNER'S OPTION (MAX. 4').
4. 4" 90° BEND:PE×SOLVENT WELD DO NOT GLUE BELL TO 4" RISER, USE MIN. 4 S.S. SCREWS TO SECURE BELL TO RISER.
5. 4" 90° BEND:SOLVENT WELD BELL
6. 4" DRAIN (SLOTTED) OR ATRIUM (SLOTTED CONE) GRATE WITH TRANSITION BUSHING IF REQUIRED.
7. #6 EPOXY COATED, DECK OR S.S. SCREWS.
8. 4 MIN.
9. 4"x 4" TEE: SOLVENT WELD.
10. 4" 300 SERIES S.S. SCREEN, 4.38" DIA. WIRE SIZE TO BE 0.047" w/ 4x4 MESH.

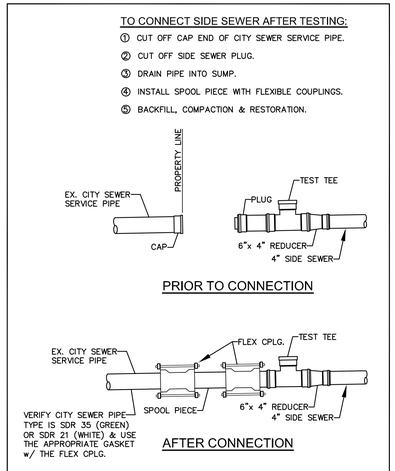
LOCHNER (425)-454-3160 | AIR VENT DETAIL | 08/2017 | DWG. NO. S-14

4 C6.0 **AIR VENT**
NTS



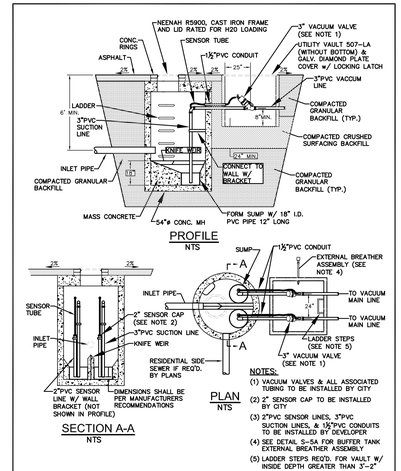
LOCHNER (425)-454-3160 | SURFACE CLEANOUT DETAIL | 08/2017 | DWG. NO. S-15

5 C6.0 **SURFACE CLEANOUT**
NTS



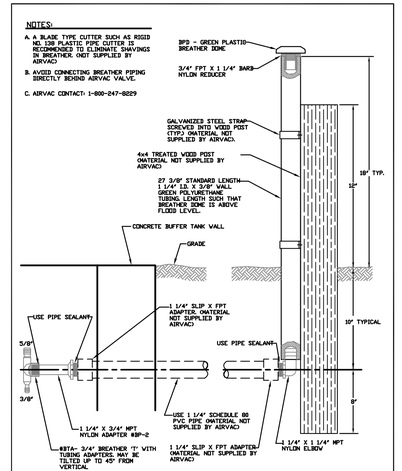
LOCHNER (425)-454-3160 | SIDE SEWER STANDARDS CONNECTION SCHEMATIC-SUPPLEMENT | 08/2017 | DWG. NO. S-16

6 C6.0 **SIDE SEWER STANDARD CONNECTION**
NTS



LOCHNER (425)-454-3160 | DUAL VALVE BUFFER TANK | 08/2017 | DWG. NO. S-17

7 C6.0 **DUAL VALVE BUFFER TANK**
NTS



LOCHNER (425)-454-3160 | BUFFER TANK EXTERNAL BREATHER ASSY | 08/2017 | DWG. NO. S-17A

8 C6.0 **EXTERNAL BREATHER ASSY**
NTS

PERMIT SUBMITTAL
NOT FOR CONSTRUCTION

CALL 2 BUSINESS DAYS BEFORE YOU DIG!
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CM DESIGN GROUP
1318 East Pike St.
Seattle, WA 98122
206-659-0612

CATHERINE E. MIKKELSEN STATE OF WASHINGTON 27900 REGISTERED PROFESSIONAL ENGINEER

11/16/2022

REV NO	DATE	DESCRIPTION

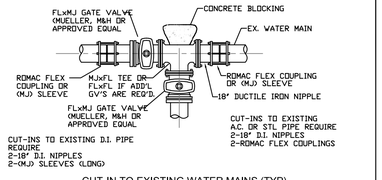
PROJECT NUMBER
22008
SUBMITTAL
SD/DR PERMIT

SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

SEWER DETAILS

DESIGN
DRAFT CFG
CHECK CFG
DATE CEM
SCALE 2022-11-10
NTS

SHEET C8.2



NOTE:
ALL CONNECTIONS TO EXISTING MAINS WILL BE MADE WITH CITY OF CARNATION PERSONNEL PRESENT.

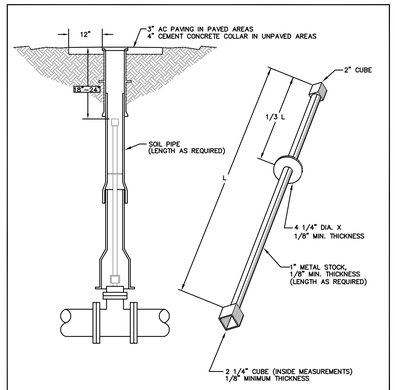
ALL FITTINGS TO BE SWABBED W/CL2 SOLUTION (50 PPM)

STEEL PIPES SHALL BE RECOATED WHERE WRAPPING HAS BEEN DISTURBED.

TAP SHALL BE AT LEAST 2" SMALLER DIAMETER THAN THE EXISTING MAIN

LOCHNER (425)-454-3160 | CUT IN & LIVE TAPS | 08/2017 | DWG. NO. W-1

1 C6.0 **CUT IN AND LIVE TAPS**
NTS



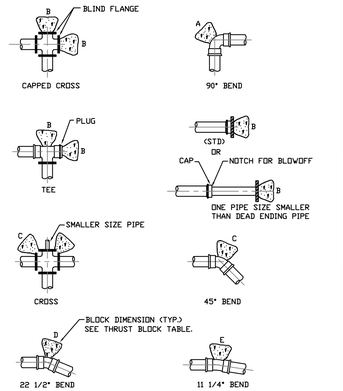
NOTES:

LENGTH AS REQUIRED TO PUT OPERATING NUT BETWEEN 18 AND 24 INCHES FROM SURFACE. EXTENSIONS ARE REQUIRED WHEN THE VALVE NUT IS MORE 30 INCHES BELOW FINISHED GRADE. ONE EXTENSION IS TO BE USED PER VALVE.

ALL EXTENSIONS ARE TO BE MADE OF STEEL, SIZED AS NOTED, AND HOT DIPPED GALVANIZED.

LOCHNER (425)-454-3160 | VALVE OPERATING NUT EXTENSTION DETAIL | 08/2017 | DWG. NO. W-3

2 C6.0 **VALVE OPERATING NUT EXTENSION**
NTS



NOTES:
SEE THRUST BLOCK TABLE FOR ALL NOTES.
PROVIDE POLYETHYLENE SHEETING TO COVER BOLTS AND JOINTS FOR DISMANTLING.

LOCHNER (425)-454-3160 | CONCRETE BLOCKING DETAIL | 08/2017 | DWG. NO. W-12

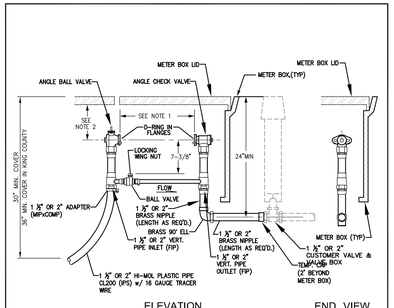
3 C6.0 **CONCRETE BLOCKING**
NTS

THRUST BLOCK - TABLE
MIN. BEARING AREA AGAINST UNDISTURBED SOIL
SQUARE FEET

PIPE SIZE	A (FT²)	B (FT²)	C (FT²)	D (FT²)	E (FT²)
3"	3	2	2	2	2
6"	4	4	2	2	2
8"	7	6	4	2	2
10"	11	10	6	3	2
12"	16	14	9	5	3
14"	22	19	12	6	3
16"	29	25	16	8	4
18"	36	31	20	10	5
20"	45	39	24	13	6
22"	54	47	29	15	8
24"	64	56	35	18	9
28"	87	76	48	24	12
30"	101	87	55	28	14
36"	145	125	78	40	20
42"	197	171	107	55	27
48"	257	223	140	71	36

NOTES:
1. BEARING AREA OF CONC. THRUST BLOCK BASED ON 200 PSI PRESSURE AND SAFE SOIL BEARING LOAD OF 2,000 POUNDS PER SQUARE FOOT.
2. AREAS MUST BE ADJUSTED FOR OTHER PIPE SIZES, PRESSURES AND SOIL CONDITIONS.
3. CONCRETE BLOCKING SHALL BE CAST IN PLACE AND HAVE A MINIMUM BEARING SURFACE OF 6' X 6' SQUARE AGAINST THE FITTING.
4. BLOCK SHALL BEAR AGAINST FITTINGS ONLY AND SHALL BE CLEAR OF JOINTS TO PERMIT TAKING UP OR DISMANTLING OF JOINT.
5. CONTRACTOR SHALL INSTALL BLOCKING ADEQUATE TO WITHSTAND FULL TEST PRESSURE AS WELL AS TO CONTINUOUSLY WITHSTAND OPERATION PRESSURE UNDER ALL CONDITIONS OF SERVICE.
6. ALL BOLTS AND NUTS SHALL BE POLYWRAPPED PRIOR TO POURING CONCRETE.

LOCHNER (425)-454-3160 | THRUST BLOCK TABLE | 08/2017 | DWG. NO. W-13



NOTE 1:
TEMPORARY PVC SPACER FOR 1-1/2" DISC. METER = 13-1/4"
2" DISC. METER = 17-1/4"

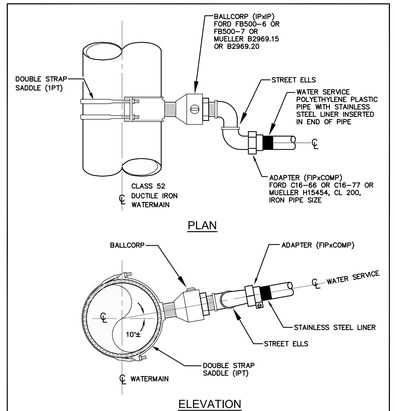
NOTE 2:
CLEARANCE FROM BOTTOM OF METER BOX LID TO CENTER OF ANGLE BALL VALVE.
1-1/2" DISC. METER = 8"-10"
2" DISC. METER = 8"-10"

NOTE 3:
BRASS FITTINGS SHALL BE FORD, MUELLER OR APPROVED EQUAL.

GENERAL NOTES:
1. FORD 80 SERIES COPPERSETTER 1 ½"x 12" #VBH86-128-11-66 2"x 12" #VBH87-128-11-77.
2. METERS TO BE SUPPLIED AND SET BY THE DISTRICT.
4. METER SETTER TO BE APPROVED BY THE DISTRICT PRIOR TO BACKFILL.
5. METER BOX: MID-STATES PLASTIC, INC. HDPE METER BOX NO. BCF1730X28 D.I. METER LID w/READER NO. BCF1730RL
6. IF IN PAVING, DRIVEWAY, SHOULDER OR SIDEWALK A TRAFFIC BOX IS REQUIRED NO. 2 FOOTITE CONCRETE METER BOX w/ STEEL LID & HINGED READER WINDOW.
7. WATER SERVICE PIPING SHALL BE BURIED IN 6" OF COURSE SAND (3" ALL AROUND).

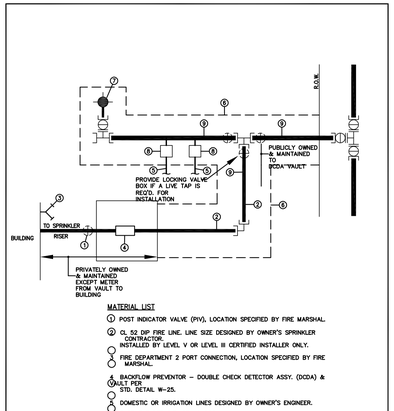
LOCHNER (425)-454-3160 | 1-1/2" & 2" METER SETTERS | 08/2017 | DWG. NO. W-20

4 C6.0 **1-1/2" AND 2" WATER SERVICE**
NTS



NOTES:
1. SERVICE LINE FITTINGS: ALL FITTINGS SHALL BE CAST FROM WATER WORKS BRASS CONFORMING TO C800-89.
2. MUNICIPAL SERVICE PIPE: IRON PIPE SIZE ID ASTM D-2239 -SIDR 7(PE 3408) (HI-MOL PLASTIC) TRACER WIRE 16 GAUGE.
3. BALLCORP VALVE INSTALLED PARALLEL TO WATERMAIN.

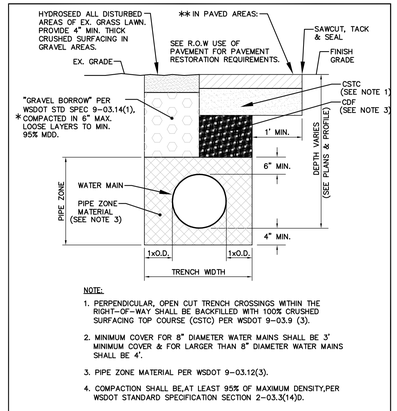
LOCHNER (425)-454-3160 | WATER SERVICE CONNECTION 1-1/2" AND 2" | 08/2017 | DWG. NO. W-20A



MATERIAL LIST
1. POST INDICATOR VALVE (PIV), LOCATION SPECIFIED BY FIRE MARSHAL.
2. CL 52 DIP FIRE LINE. LINE SIZE DESIGNED BY OWNER'S SPRINKLER CONTRACTOR. INSTALLED BY LEVEL V OR LEVEL III CERTIFIED INSTALLER ONLY.
3. FIRE DEPARTMENT 2 PORT CONNECTION, LOCATION SPECIFIED BY FIRE MARSHAL.
4. BACKFLOW PREVENTOR – DOUBLE CHECK DETECTOR ASSY. (DCDA) & VAULT PER STD. DETAIL W-25.
5. DOMESTIC OR IRRIGATION LINES DESIGNED BY OWNER'S ENGINEER.
6. EASEMENT PER CITY STANDARDS.
7. FIRE HYDRANT WITH 5" STORTZ FITTING PER STANDARD DETAIL, LOCATION PER FIRE MARSHAL.
8. DOMESTIC OR IRRIGATION METERS PER STANDARD DETAIL.
9. 8" MINIMUM CL 52 DIP DO NOT COVER UNTIL INSPECTED BY CITY OF CARNATION.

LOCHNER (425)-454-3160 | FIRE DEPARTMENT SPRINKLER UNDERGROUND DETAIL 4" & LARGER | 8/2017 | DWG. NO. W-23

5 C6.0 **FIRE DEPARTMENT SPRINKLER UNDERGROUND**
NTS



NOTE:
1. PERPENDICULAR, OPEN CUT TRENCH CROSSINGS WITHIN THE RIGHT-OF-WAY SHALL BE BACKFILLED WITH 100% CRUSHED SURFACING TOP COURSE (CSTC) PER WSDOT 9-03.9 (3).
2. MINIMUM COVER FOR 8" DIAMETER WATER MAINS SHALL BE 3' MINIMUM COVER & FOR LARGER THAN 8" DIAMETER WATER MAINS SHALL BE 4'.
3. PIPE ZONE MATERIAL PER WSDOT 9-03.12(3).
4. COMPACTION SHALL BE,AT LEAST 95% OF MAXIMUM DENSITY,PER WSDOT STANDARD SPECIFICATION SECTION 2-03.3(14)D.

* BACKFILL COMPACTION ON PRIVATE EASEMENTS WHICH ARE NOT USED FOR DRIVING PURPOSES SHALL BE MINIMUM 90% MAX. DRY DENSITY (MDD).

** IN R.O.W MATCH EXISTING PAVEMENT SECTION PLUS 1", BUT NOT LESS THAN 4" ACP CLASS ½" PG.64-22 OVER 6" CSTC (COMPACTED THICKNESS), TACK & SEAL NEAT LINES.

LOCHNER (425)-454-3160 | TYPICAL TRENCH DETAIL | 08/2017 | DWG. NO. W-32

6 C6.0 **WATER MAIN TRENCH**
NTS

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CM DESIGN GROUP
1318 East Pike St.
Seattle, WA 98122
206-659-0612

CATHERINE E. MIRKIN STATE OF WASHINGTON 27000 REGISTERED PROFESSIONAL ENGINEER

11/16/2022

REV NO	DESCRIPTION	DATE

PROJECT NUMBER 22008

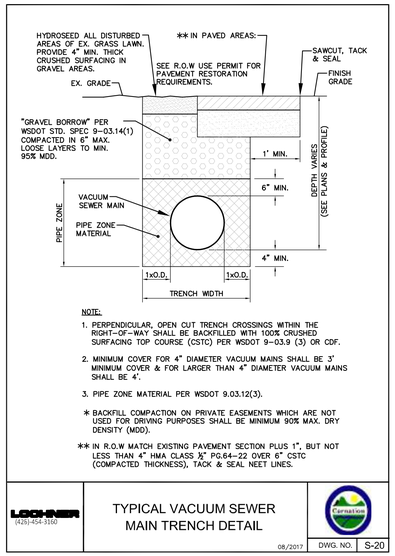
SUBMITTAL
SD/DR PERMIT

SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

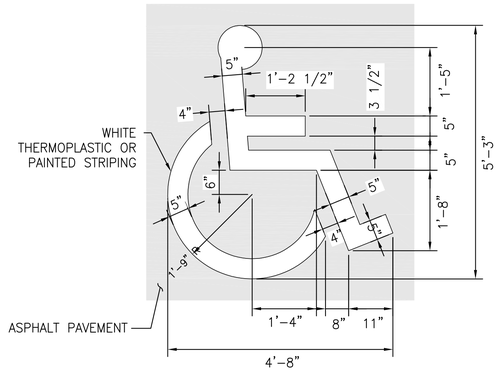
WATER DETAILS

DESIGN
DRAFT CFG
CHECK CFG
DATE CEM
SCALE 2022-11-10
SHEET NTS

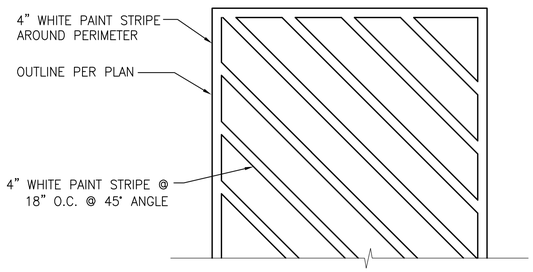
SHEET C8.3



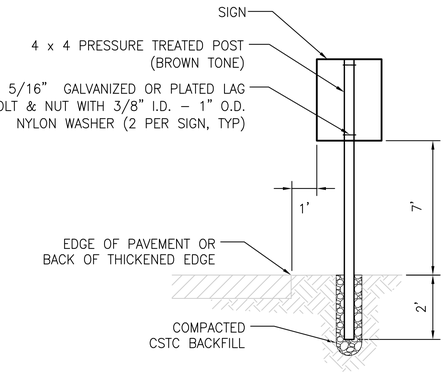
1 C6.0 **VACUUM SEWER MAIN TRENCH**
NTS



2 C7.0 **ADA SYMBOL**
NTS

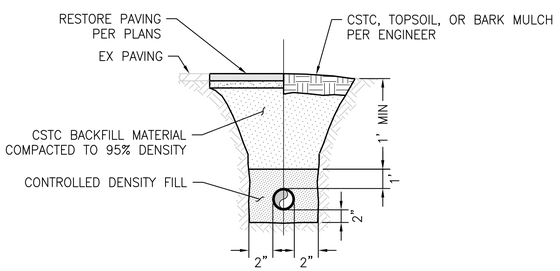


3 C7.0 **ADA ACCESS ISLE STRIPING**
NTS



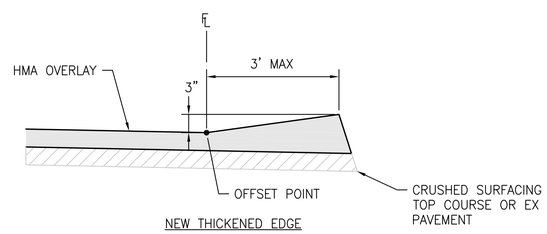
NOTE:
SIGN SHALL BE ATTACHED WITH TOP EDGE OF SIGN FLUSH WITH TOP OF POST.

4 C7.0 **SIGN INSTALLATION**
NTS



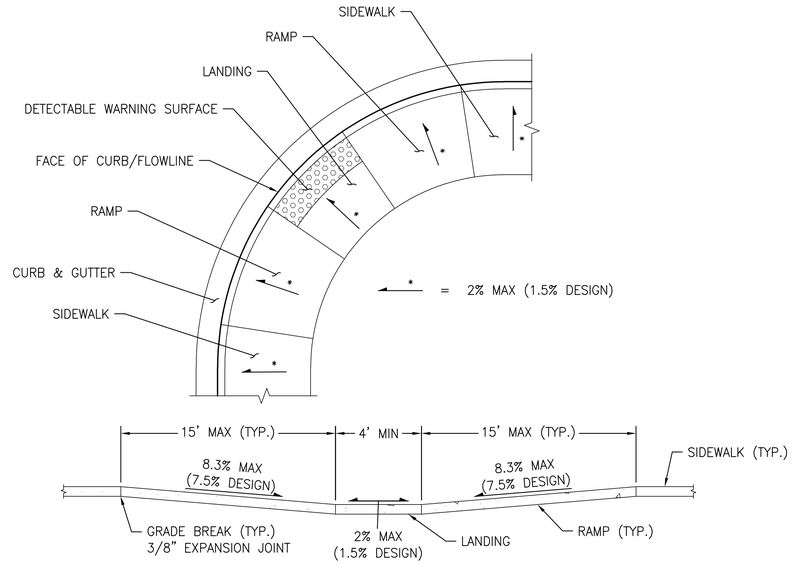
NOTE:
ALL CDF CONDUIT BEDDING AND CSTC BACKFILL PAID FOR PER TON BY CDF AND CSTC BID ITEMS.

4 C7.0 **TYPICAL TRENCH SECTION**
NTS



NEW THICKENED EDGE

5 C7.0 **THICKENED EDGE**
NTS



6 C7.0 **CURB RAMP DESIGN**
NTS

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Seattle, WA 98122
206-659-0612

CATHERINE E. MIRKIN
STATE OF WASHINGTON
27900
REGISTERED PROFESSIONAL ENGINEER

11/16/2022

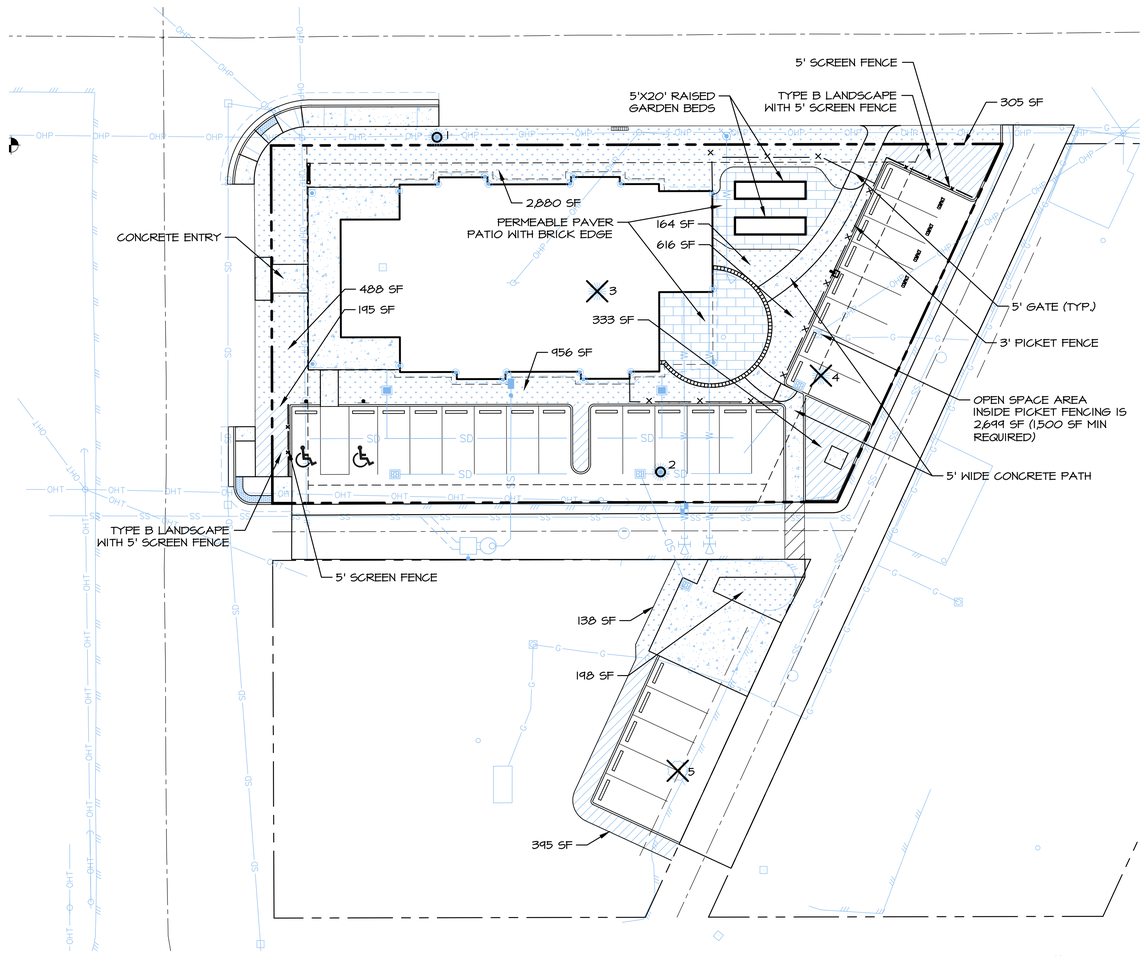
REV NO	DATE	DESCRIPTION

PROJECT NUMBER 22008
SUBMITTAL SD/DR PERMIT

SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

MISCELLANEOUS DETAILS

DESIGN
DRAFT CFG
CHECK CFG
DATE CEM
2022-11-10
SCALE NTS
SHEET C8.4



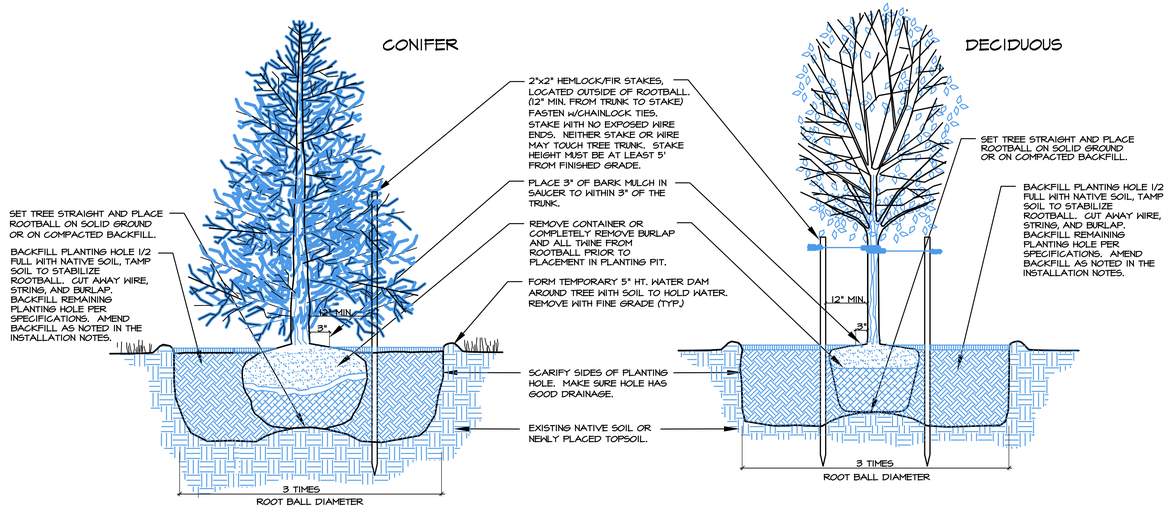
PLAN LEGEND

- PROPERTY LINE
- XX — SIGNIFICANT TREES TO BE REMOVED (3) - REPLACEMENT REQUIRED AT 1:1, SEE PLANT SCHEDULE
- O — NON-VIABLE TREES TO BE REMOVED (2)
- CONCRETE - 2,649 SF
- PAVERS - 1,236 SF
- LANDSCAPE AREA - 5,440 SF
- PARKING LANDSCAPE AREA - 1,312 SF = 48.6 SF/STALL
- 5' SCREEN FENCE
- 3' PICKET FENCE

TREE DATA

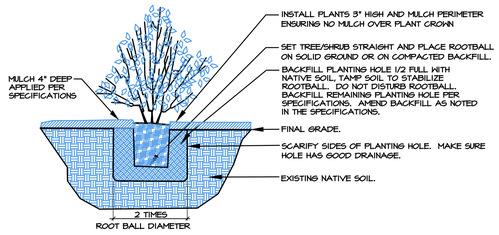
TREE NUMBER	DBH	SPECIES	STATUS
1	12.5"	BRADFORD PEAR	NON-VIABLE
2	24.5", 18.5"	SILVER MAPLE	NON-VIABLE
3	12.7"	WHITE OAK	SIGNIFICANT
4	13"	QUAKING ASPEN	SIGNIFICANT
5	12.5"	KATSURA	SIGNIFICANT

ALL TREES ARE PROPOSED TO BE REMOVED. SEE LETTER FROM ARBORIST ERIK MATTEO OF THE TREE STEWARDS DATED 9-23-2022.



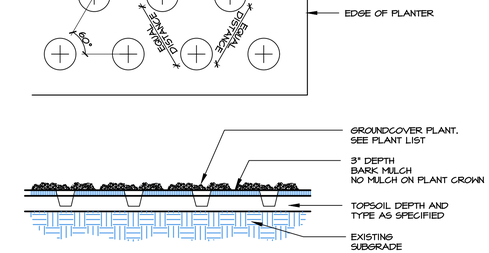
1 B&B TREE PLANTING (TYP.)

SCALE: NTS



2 CONTAINER SHRUB PLANTING (TYP.)

SCALE: NTS



3 GROUNDCOVER PLANTING (TYP.)

SCALE: NTS

SHEET INDEX

Call 2 Working Days Before You Dig
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Utilities Underground Location Center
(ID,MT,ND,OR,WA)

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SUBJECT TO REVISION

NOTES

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2. CIVIL DESIGN BY CM DESIGN GROUP, 1318 E. PIKE ST., SEATTLE, WA 98122, 206. 659.0612.

Altmann Oliver Associates, LLC
AOA
Environmental Planning & Landscape Architecture
PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4599

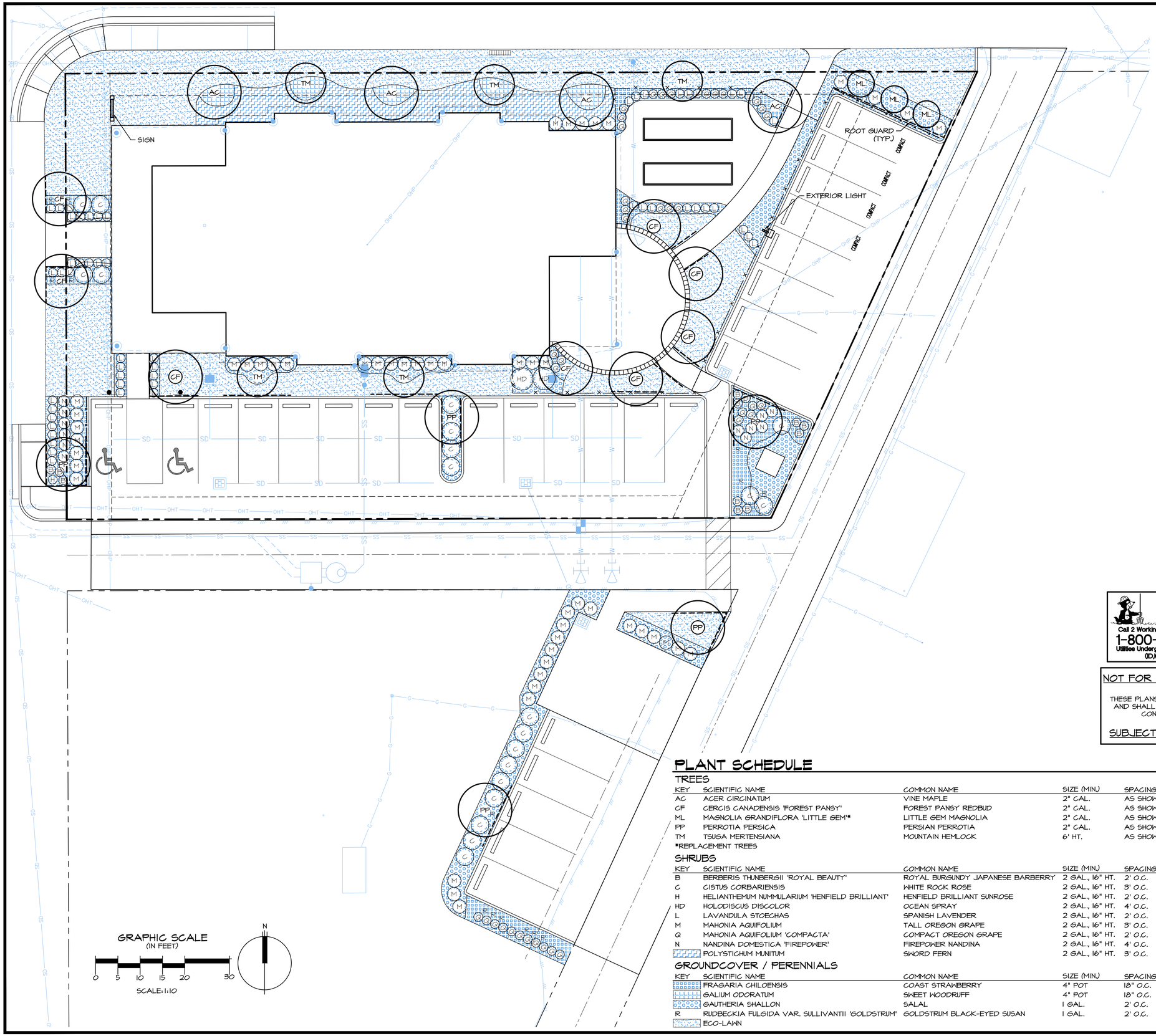
STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
SIMONE CATHERINE OLIVER
CERIFICATE NO. 744
EXPIRES 6/25/23

LANDSCAPE PLAN OVERVIEW PLAN & PLANTING DETAILS SNO-VALLEY SENIOR HOUSING 31845 W. COMMERCIAL ST., CARNATION, WA 98014

Revisions	Date	By

Date 11-15-22
Scale AS NOTED
Project# 6898

Sheet # L1



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PO Box 578 Carnation, WA 98014 Office (425) 333-4535 Fax (425) 333-4599

STATE OF WASHINGTON
REGISTERED
LANDSCAPE ARCHITECT

SIMONE CATHERINE OLIVER
CERIFICATE NO. 744
EXPIRES 6/25/23

PLANT SCHEDULE

TREES

KEY	SCIENTIFIC NAME	COMMON NAME	SIZE (MIN.)	SPACING	QTY.	NOTES	NATIVE	DROUGHT TOLERANT
AC	ACER CIRCINATUM	VINE MAPLE	2" CAL.	AS SHOWN	4	MULTI-TRUNK (3 MIN.)	X	X
CF	CERCIS CANADENSIS 'FOREST PANSY'	FOREST PANSY REDBUD	2" CAL.	AS SHOWN	8	SINGLE TRUNK, WELL BRANCHED		X
ML	MAGNOLIA GRANDIFLORA 'LITTLE GEM'*	LITTLE GEM MAGNOLIA	2" CAL.	AS SHOWN	3	SINGLE TRUNK, WELL BRANCHED		X
PP	PERROTIA PERSICA	PERSIAN PERROTIA	2" CAL.	AS SHOWN	5	SINGLE TRUNK, WELL BRANCHED		X
TM	TSUGA MERTENSIANA	MOUNTAIN HEMLOCK	6' HT.	AS SHOWN	5	FULL & BUSHY	X	X

*REPLACEMENT TREES

SHRUBS

KEY	SCIENTIFIC NAME	COMMON NAME	SIZE (MIN.)	SPACING	QTY.	NOTES	NATIVE	DROUGHT TOLERANT
B	BERBERIS THUNBERGII 'ROYAL BEAUTY'	ROYAL BURGUNDY JAPANESE BARBERRY	2 GAL., 16" HT.	2' O.C.	12	FULL & BUSHY		X
C	CISTUS CORBARIENSIS	WHITE ROCK ROSE	2 GAL., 16" HT.	3' O.C.	20	FULL & BUSHY		X
H	HELIANTHEMUM NUMMULARIUM 'HENFIELD BRILLIANT'	HENFIELD BRILLIANT SUNROSE	2 GAL., 16" HT.	2' O.C.	1	FULL & BUSHY		X
HD	HOLODISCUS DISCOLOR	OCEAN SPRAY	2 GAL., 16" HT.	4' O.C.	2	MULTI-CANE (3 MIN.)	X	X
L	LAVANDULA STOECHAS	SPANISH LAVENDER	2 GAL., 16" HT.	2' O.C.	54	FULL & BUSHY		X
M	MAHONIA AQUIFOLIUM	TALL OREGON GRAPE	2 GAL., 16" HT.	3' O.C.	50	FULL & BUSHY	X	X
Q	MAHONIA AQUIFOLIUM 'COMPACTA'	COMPACT OREGON GRAPE	2 GAL., 16" HT.	2' O.C.	37	FULL & BUSHY	X	X
N	NANDINA DOMESTICA 'FIREPOWER'	FIREPOWER NANDINA	2 GAL., 16" HT.	4' O.C.	12	FULL & BUSHY		X
	POLYSTICHUM MUNITUM	SWORD FERN	2 GAL., 16" HT.	3' O.C.	71	FULL & BUSHY	X	X

GROUNDCOVER / PERENNIALS

KEY	SCIENTIFIC NAME	COMMON NAME	SIZE (MIN.)	SPACING	QTY.	NOTES	NATIVE	DROUGHT TOLERANT
	FRAGARIA CHILOENSIS	COAST STRAWBERRY	4" POT	18" O.C.	304	FULL & BUSHY	X	X
	GALIUM ODORATUM	SWEET WOODRUFF	4" POT	18" O.C.	67	FULL & BUSHY		X
	GAUTHERIA SHALLON	SALAL	1 GAL.	2' O.C.	278	FULL & BUSHY	X	X
R	RUDBECKIA FULGIDA VAR. SULLIVANTII 'GOLDSTRUM'	GOLDSTRUM BLACK-EYED SUSAN	1 GAL.	2' O.C.	14	FULL & BUSHY		X
	ECO-LAWN							X

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(ID,MT,ND,OR,WA)

NOTES

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SUBJECT TO REVISION

LANDSCAPE PLAN
PLANTING PLAN
SNO-VALLEY SENIOR HOUSING
31845 W. COMMERCIAL ST.,
CARNATION, WA 98014

Revisions	Date	By

Date 11-15-22
Scale AS NOTED
Project# 6098

Sheet # L2

First American

Commitment

ALTA Commitment for Title Insurance

ISSUED BY

First American Title Insurance Company

File No: NCS-1078490-WA1

COMMITMENT FOR TITLE INSURANCE

Issued By

FIRST AMERICAN TITLE INSURANCE COMPANY

NOTICE

IMPORTANT-READ CAREFULLY: THIS COMMITMENT IS AN OFFER TO ISSUE ONE OR MORE TITLE INSURANCE POLICIES. ALL CLAIMS OR REMEDIES SOUGHT AGAINST THE COMPANY INVOLVING THE CONTENT OF THIS COMMITMENT OR THE POLICY MUST BE BASED SOLELY IN CONTRACT.

THIS COMMITMENT IS NOT AN ABSTRACT OF TITLE, REPORT OF THE CONDITION OF TITLE, LEGAL OPINION, OPINION OF TITLE, OR OTHER REPRESENTATION OF THE STATUS OF TITLE. THE PROCEDURES USED BY THE COMPANY TO DETERMINE INSURABILITY OF THE TITLE, INCLUDING ANY SEARCH AND EXAMINATION, ARE PROPRIETARY TO THE COMPANY, WERE PERFORMED SOLELY FOR THE BENEFIT OF THE COMPANY, AND CREATE NO EXTRACONTRACTUAL LIABILITY TO ANY PERSON, INCLUDING A PROPOSED INSURED.

THE COMPANY'S OBLIGATION UNDER THIS COMMITMENT IS TO ISSUE A POLICY TO A PROPOSED INSURED IDENTIFIED IN SCHEDULE A IN ACCORDANCE WITH THE TERMS AND PROVISIONS OF THIS COMMITMENT. THE COMPANY HAS NO LIABILITY OR OBLIGATION INVOLVING THE CONTENT OF THIS COMMITMENT TO ANY OTHER PERSON.

COMMITMENT TO ISSUE POLICY

Subject to the Notice; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions; and the Commitment Conditions, ***First American Title Insurance Company***, a Nebraska Corporation (the "Company"), commits to issue the Policy according to the terms and provisions of this Commitment. This Commitment is effective as of the Commitment Date shown in Schedule A for each Policy described in Schedule A, only when the Company has entered in Schedule A both the specified dollar amount as the Proposed Policy Amount and the name of the Proposed Insured.

If all of the Schedule B, Part I-Requirements have not been met within six months after the Commitment Date, this Commitment terminates and the Company's liability and obligation end.

First American Title Insurance Company

Dennis J. Gilmore, President

Greg L. Smith, Secretary

If this jacket was created electronically, it constitutes an original document.

This page is only a part of a 2016 ALTA® Commitment for Title Insurance issued by First American Title Insurance Company. This Commitment is not valid without the Notice; the Commitment to Issue Policy; the Commitment Conditions; Schedule A; Schedule B, Part I-Requirements; Schedule B, Part II-Exceptions.

COMMITMENT CONDITIONS

1. DEFINITIONS

(a) "Knowledge" or "Known": Actual or imputed knowledge, but not constructive notice imparted by the Public Records.
(b) "Land": The land described in Schedule A and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is to be insured by the Policy.
(c) "Mortgage": A mortgage, deed of trust, or other security instrument, including one evidenced by electronic means authorized by law.
(d) "Policy": Each contract of title insurance, in a form adopted by the American Land Title Association, issued or to be issued by the Company pursuant to this Commitment.
(e) "Proposed Insured": Each person identified in Schedule A as the Proposed Insured of each Policy to be issued pursuant to this Commitment.
(f) "Proposed Policy Amount": Each dollar amount specified in Schedule A as the Proposed Policy Amount of each Policy to be issued pursuant to this Commitment.
(g) "Public Records": Records established under state statutes at the Commitment Date for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge.
(h) "Title": The estate or interest described in Schedule A.

2. If all of the Schedule B, Part I—Requirements have not been met within the time period specified in the Commitment to Issue Policy, this Commitment terminates and the Company's liability and obligation end.

3. The Company's liability and obligation is limited by and this Commitment is not valid without:
(a) the Notice;
(b) the Commitment to Issue Policy;
(c) the Commitment Conditions;
(d) Schedule A;
(e) Schedule B, Part I—Requirements; and
(f) Schedule B, Part II—Exceptions.

4. COMPANY'S RIGHT TO AMEND

The Company may amend this Commitment at any time. If the Company amends this Commitment to add a defect, lien, encumbrance, adverse claim, or other matter recorded in the Public Records prior to the Commitment Date, any liability of the Company is limited by Commitment Condition 5. The Company shall not be liable for any other amendment to this Commitment.

5. LIMITATIONS OF LIABILITY

(a) The Company's liability under Commitment Condition 4 is limited to the Proposed Insured's actual expense incurred in the interval between the Company's delivery to the Proposed Insured of the Commitment and the delivery of the amended Commitment, resulting from the Proposed Insured's good faith reliance to:
  (i) comply with the Schedule B, Part I—Requirements;
  (ii) eliminate, with the Company's written consent, any Schedule B, Part II—Exceptions; or
  (iii) acquire the Title or create the Mortgage covered by this Commitment.
(b) The Company shall not be liable under Commitment Condition 5(a) if the Proposed Insured requested the amendment or had Knowledge of the matter and did not notify the Company about it in writing.
(c) The Company will only have liability under Commitment Condition 4 if the Proposed Insured would not have incurred the expense had the Commitment included the added matter when the Commitment was first delivered to the Proposed Insured.
(d) The Company's liability shall not exceed the lesser of the Proposed Insured's actual expense incurred in good faith and described in Commitment Conditions 5(a)(i) through 5(a)(iii) or the Proposed Policy Amount.
(e) The Company shall not be liable for the content of the Transaction Identification Data, if any.
(f) In no event shall the Company be obligated to issue the Policy referred to in this Commitment unless all of the Schedule B, Part I—Requirements have been met to the satisfaction of the Company.
(g) In any event, the Company's liability is limited by the terms and provisions of the Policy.

6. LIABILITY OF THE COMPANY MUST BE BASED ON THIS COMMITMENT

(a) Only a Proposed Insured identified in Schedule A, and no other person, may make a claim under this Commitment.
(b) Any claim must be based in contract and must be restricted solely to the terms and provisions of this Commitment.
(c) Until the Policy is issued, this Commitment, as last revised, is the exclusive and entire agreement between the parties with respect to the subject matter of this Commitment and supersedes all prior commitment negotiations, representations, and proposals of any kind, whether written or oral, express or implied, relating to the subject matter of this Commitment.
(d) The deletion or modification of any Schedule B, Part II—Exception does not constitute an agreement or obligation to provide coverage beyond the terms and provisions of this Commitment or the Policy.
(e) Any amendment or endorsement to this Commitment must be in writing and authenticated by a person authorized by the Company.
(f) When the Policy is issued, all liability and obligation under this Commitment will end and the Company's only liability will be under the Policy.

7. IF THIS COMMITMENT HAS BEEN ISSUED BY AN ISSUING AGENT

The issuing agent is the Company's agent only for the limited purpose of issuing title insurance commitments and policies. The issuing agent is not the Company's agent for the purpose of providing closing or settlement services.

8. PRO-FORMA POLICY

The Company may provide, at the request of a Proposed Insured, a pro-forma policy illustrating the coverage that the Company may provide. A pro-forma policy neither reflects the status of Title at the time that the pro-forma policy is delivered to a Proposed Insured, nor is it a commitment to insure.

9. ARBITRATION

The Policy contains an arbitration clause. All arbitrable matters when the Proposed Policy Amount is $2,000,000 or less shall be arbitrated at the option of either the Company or the Proposed Insured as the exclusive remedy of the parties. A Proposed Insured may review a copy of the arbitration rules at http://www.alta.org/arbitration.

Transaction Identification Data for reference only:

Issuing Agent: First American Title Insurance Company National Commercial Services
Issuing Office's ALTA® Registry ID:
Commitment No.: NCS-1078490-WA1
Property Address: 31845 West Commercial Street, Carnation, WA
Revision No.: 3

Issuing Office: 920 Fifth Avenue, Suite 1200, Seattle, WA 98104
Reference No.: Sno Valley Senior Center/Carnation
Issuing Office File No.: NCS-1078490-WA1
Escrow Officer Name:
Escrow Officer Number:
Escrow Officer Email:
Escrow Assistant Name:
Escrow Assistant Number:
Escrow Assistant Email:
Title Officer Name: Lavonne Bowman
Title Officer Number: (206)615-3269
Title Officer Email: lavbowman@firstam.com

SCHEDULE A

1. Commitment Date: January 19, 2022 at 7:30 AM
2. Policy to be Issued:

	Amount	Premium	Tax
(a) ☒ 2006 ALTA® Extended Owner's Policy Proposed Insured: To Be Determined	$To Be Determined	$To Be Determined	$To Be Determined
(b) ☐ ALTA® Policy Proposed Insured:	$	$	$
(c) ☐ ALTA® Policy Proposed Insured:	$		

3. The estate or interest in the Land described or referred to in this Commitment is Fee Simple
4. The Title is, at the Commitment Date, vested in:

   Sno-Valley Senior Citizens, Inc., a Washington public benefit corporation

5. The Land is described as follows:

   See Exhibit "A" attached hereto and made a part hereof

SCHEDULE B, PART I

Requirements

All of the following Requirements must be met:

1. The Proposed Insured must notify the Company in writing of the name of any party not referred to in this Commitment who will obtain an interest in the Land or who will make a loan on the Land. The Company may then make additional Requirements or Exceptions.

2. Pay the agreed amount for the estate or interest to be insured.

3. Pay the premiums, fees, and charges for the Policy to the Company.

4. Documents satisfactory to the Company that convey the Title or create the Mortgage to be insured, or both, must be properly authorized, executed, delivered, and recorded in the Public Records.

SCHEDULE B, PART II

Exceptions

THIS COMMITMENT DOES NOT REPUBLISH ANY COVENANT, CONDITION, RESTRICTION, OR LIMITATION CONTAINED IN ANY DOCUMENT REFERRED TO IN THIS COMMITMENT TO THE EXTENT THAT THE SPECIFIC COVENANT, CONDITION, RESTRICTION, OR LIMITATION VIOLATES STATE OR FEDERAL LAW BASED ON RACE, COLOR, RELIGION, SEX, SEXUAL ORIENTATION, GENDER IDENTITY, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN.

The Policy will not insure against loss or damage resulting from the terms and provisions of any lease or easement identified in Schedule A, and will include the following Exceptions unless cleared to the satisfaction of the Company:

1. Any defect, lien, encumbrance, adverse claim, or other matter that appears for the first time in the Public Records or is created, attaches, or is disclosed between the Commitment Date and the date on which all of the Schedule B, Part I-Requirements are met.

2. Taxes or assessments which are not shown as existing liens by the records of any taxing authority that levies taxes or assessments on real property or by the Public Records.

3. Any facts, rights, interests, or claims which are not shown by the Public Records but which could be ascertained by an inspection of the Land or by making inquiry of persons in possession thereof.

4. Easements, claims of easement or encumbrances which are not shown by the Public Records.

5. Discrepancies, conflicts in boundary lines, shortage in area, encroachments, or any other facts which a correct survey would disclose, and which are not shown by the Public Records.

6. (A) Unpatented mining claims; (B) Reservations or exceptions in patents or in Acts authorizing the issuance thereof; (C) Water rights, claims or title to water; whether or not the matters excepted under (A), (B) or (C) are shown by the Public Records; (D) Indian Tribal Codes or Regulations, Indian Treaty or Aboriginal Rights, including easements or equitable servitudes.

7. Any lien or right to a lien for services, labor, material or equipment, unless such lien is shown by the Public Records at Date of Policy and not otherwise excepted from coverage herein.

8. Any service, installation, connection, maintenance, construction, tap or reimbursement charges/costs for sewer, water, garbage or electricity.

SCHEDULE B - SECTION 2
(continued)
SPECIAL EXCEPTIONS

9. Lien of Real Estate Excise Tax upon sale of said premises, or transfer of a controlling interest, if unpaid. As of the date herein, the excise tax rates are as follows:
Levy/Area Code:0971

   State Excise Tax for real property classified as Timberland (RCW 84.34 or RCW 84.33) or Agricultural land (RCW 84.34.020):

   1.28% of the selling price

   All other State Excise Tax:
   1.10% of the selling price less than or equal to $500,000.00
   1.28% of the selling price from $500,000.01 to $1,500,000.00
   2.75% of the selling price from $1,500,000.01 to $ 3,000,000.00
   3.00% of the selling price over $3,000,000.00

   Local Excise Tax for Carnation
   .50% of the selling price

   In additional to Excise Tax due, a fee of $5.00 will be charged on all taxable transactions ($10.00 on all exempt transactions)

10. Liability, if any, for pro-rata portion of **Real Property** taxes which are carried on the King County Tax Rolls, as tax account no. 865830-2225-07, are exempt.

    We note Special Charges for the year 2021 in the amount of $11.89, of which $11.89 has been paid. Balance due: $0.00.

    (Affects Lots 10 through 12)

11. Liability, if any, for pro-rata portion of **Real Property** taxes which are carried on the King County Tax Rolls, as tax account no. 865830-2230-00, are exempt.

    We note Special Charges for the year 2021 in the amount of $11.64, of which $11.64 has been paid. Balance due: $0.00.

    (Affects Lots 13 through 16)

12. Potential charges, for the King County Sewage Treatment Capacity Charge, as authorized under RCW 35.58 and King County Code 28.84.050. Said charges could apply for any property that connected to the King County Sewer Service area on or after February 1, 1990.

Note: Properties located in Snohomish County and Pierce County may be subject to the King County Sewage Treatment Capacity Charges. To verify charges contact: (206) 296-1450 or CapChargeEscrow@kingcounty.gov.

13. This item has been intentionally deleted.

14. Evidence of the authority of the officers of Sno-Valley Senior Citizens, a Washington non-profit corporation, to execute the forthcoming instrument. Current Articles of Incorporation and By-Laws should be furnished both for said corporation and for any higher discipline or organization to which it is responsible.

    It should be noted that in the case of a sale or mortgage of all or substantially all of the property and assets of a corporation, regardless of the requirements of the organizations involved, the Washington Non-Profit Corporation Act (RCW 24.03.215) requires a special procedure. If there are not members having voting rights, the act requires a sale or mortgage to be authorized by majority vote of the directors. If there are member having voting rights, the act requires the following:

    1. That the Board of Directors adopt a resolution recommending the sale or mortgage and directing that it be put to a vote of the membership;
    2. That written notice of the meeting stating one of the purposes is to secure approval of the transaction to be given to each member, in accordance with the Articles and By-Laws, but in no case to be delivered less than 10, nor more than 50, days before the meeting;
    3. That authorization at such meeting requires a two-thirds vote of the membership present; and
    4. That after such meeting the Board of Directors approve such transaction by appropriate resolution.

15. Evidence of the authority of the officers of Sound Generations formerly known as Senior Services of Seattle/King County, Inc., a Washington non-profit corporation, to execute the forthcoming instrument. Current Articles of Incorporation and By-Laws should be furnished both for said corporation and for any higher discipline or organization to which it is responsible.

    It should be noted that in the case of a sale or mortgage of all or substantially all of the property and assets of a corporation, regardless of the requirements of the organizations involved, the Washington Non-Profit Corporation Act (RCW 24.03.215) requires a special procedure. If there are not members having voting rights, the act requires a sale or mortgage to be authorized by majority vote of the directors. If there are member having voting rights, the act requires the following:

    1. That the Board of Directors adopt a resolution recommending the sale or mortgage and directing that it be put to a vote of the membership;
    2. That written notice of the meeting stating one of the purposes is to secure approval of the transaction to be given to each member, in accordance with the Articles and By-Laws, but in no case to be delivered less than 10, nor more than 50, days before the meeting;

3. That authorization at such meeting requires a two-thirds vote of the membership present; and
4. That after such meeting the Board of Directors approve such transaction by appropriate resolution.

16. This item has been intentionally deleted.

17. Title to vest in an incoming owner whose name is not disclosed. Such name must be furnished to us so that a name search may be made.

18. This transaction may be subject to a Geographic Targeting Order ("GTO") issued pursuant to the Bank Secrecy Act. Information necessary to comply with the GTO must be provided prior to the closing. This transaction will not be insured until this information is submitted, reviewed and found to be complete.

    (Affects Lots 10 through 12)

19. Matters of extended owner/purchaser coverage which are dependent upon an inspection and an ALTA survey of the property for determination of insurability.

    Please submit a copy of the ALTA Survey at your earliest convenience for review. Our inspection will be held pending our review of the ALTA Survey and the result of said inspection will be furnished by supplemental report.

20. Unrecorded leaseholds, if any, rights of vendors and security agreement on personal property and rights of tenants, and secured parties to remove trade fixtures at the expiration of the term.

21. Prior to issuance of an extended coverage policy, the Company will require an Owner's Affidavit be completed and submitted to the Company for approval prior to closing. The Company reserves the right to make any additional requirement as warranted.

22. Conditions, notes, easements, provisions and/or encroachments contained and/or delineated on the face of the Survey , recorded September 23, 2021 under Recording No. 20210923900002 of surveys, in King County, Washington.

    (Affects All Lots)

23. This item has been intentionally deleted.

INFORMATION NOTES

NOTE to proposed insured lender only: No Private transfer fee covenant, as defined in Federal Housing Finance Agency Final Rule 12 CFR Part 1228, that was created and first appears in the Public Records on or after February 8, 2011, encumbers the Title except as follows: None

NOTE: We don't find any voluntary liens of record affecting subject property. Inquire as to the existence of any unrecorded lien or other indebtedness which could give rise to any security interest in the subject property.

A. Effective January 1, 1997, and pursuant to amendment of Washington State Statutes relating to standardization of recorded documents, the following format and content requirements must be met. Failure to comply may result in rejection of the document by the recorder.

B. Any sketch attached hereto is done so as a courtesy only and is not part of any Title Commitment or Policy. It is furnished solely for the purpose of assisting in locating the Land and First American expressly disclaims any liability which may result from reliance made upon it.

C. The description can be abbreviated as suggested below if necessary to meet standard requirements. The full text of the description must appear in the document (s) to be insured.

Lots 10-16, Blk 17, Tolt Townsite Company Plat of Tolt, Vol. 20, P. 43

APN: 865830-2225-07
APN: 865830-2230-00

D. A fee will be charged upon the cancellation of this Commitment pursuant to the Washington State Insurance Code and the filed Rate Schedule of the Company.

First American Exhibit A	ISSUED BY **First American Title Insurance Company** File No: NCS-1078490-WA1

The Land referred to herein below is situated in the County of King, State of Washington, and is described as follows:

LOTS 10, 11, 12, 13, 14, 15 AND 16 IN BLOCK 17 OF TOLT TOWNSITE COMPANY PLAT OF TOLT, ACCORDING TO THE PLAT RECORDED IN VOLUME 20 OF PLATS AT PAGE 43, IN KING COUNTY, WASHINGTON.

Exhibit 5

NELSON GEOTECHNICAL ASSOCIATES, INC.

17311-135th Ave. N.E. Suite A-500
Woodinville, WA 98072
(425) 486-1669
www.nelsongeotech.com

November 14, 2022

Ms. Lisa Yeager
Sno-Valley Senior Center
4610 Stephens Avenue
P.O. Box 96
Carnation, WA 98014
VIA Email: **lisay@soundgenerations.org**

Geotechnical Engineering Evaluation – **REVISED**
Sno-Valley Senior Center Development
31845 West Commercial Street
Carnation, Washington
NGA Project No. 1361022

Dear Ms. Yeager:

We are pleased to submit the attached report titled **"Geotechnical Engineering Evaluation – Sno-Valley Senior Center Development – 31845 West Commercial Street – Carnation, Washington."** This report summarizes our observations of the existing surface and subsurface conditions within the site and provides general recommendations for the proposed site development. Our services were completed in general accordance with the proposal signed by you on June 10, 2022.

The Sno-Valley Senior Center property comprises four adjacent parcels bound by West Commercial Street to the north, Stephens Avenue to the west, West Bird Street to the south and an alley to the east. The site is currently occupied by an asphalt parking lot and senior center building along the northwest and southwest portions of the property, respectively. Topography within the site is generally level to gently sloping. We understand the proposed development will consist of constructing a new residential building along the northwest corner of the site and a potential future store building along the northeast corner of the site.

We monitored the drilling of two borings and performed one hand tool exploration within the site. Our explorations indicated that the site was underlain by approximately 12- to 18-feet of very loose to loose, silty fine sand to sandy silt with competent gravel and fine to coarse sand deposits at depth.

It is our opinion that the proposed site development is feasible from a geotechnical engineering standpoint, provided that our recommendations for site development are incorporated into project plans. We recommend new foundations be supported on deepened foundations consisting of 4-inch diameter pipe piles driven to refusal, due to the relatively thick layer of loose fine-grained deposits interpreted to mantle the site. Subgrade modification is also recommended for new parking areas associated with the planned site development. After stripping the site of surficial topsoil, fill, and organic-rich areas, asphalt subgrade preparation should consist of over excavating a minimum of 12-inches of the upper fine-grained alluvial deposits and replacing with granular specification material compacted to structural fill standards.

Specific grading and stormwater plans have not been finalized at the time this report was prepared. However, we understand that stormwater from the proposed development may be directed into on-site infiltration systems, if feasible. The City of Carnation uses the 2014 Stormwater Management Manual for Western Washington (2014 SWMMWW) to determine the design infiltration rate and overall system sizing. As a part of our evaluation, we performed four grain size analyses and estimated the infiltration capacity of the upper fine-grained alluvial soils. Based on our observations and laboratory analyses, it is our opinion that infiltration capacity of the onsite soils is relatively low. This is further discussed in the attached report.

In the attached report, we have also provided general recommendations for site grading, slabs-on-grade, structural fill placement, erosion control, and drainage. We should be retained to review and comment on final development plans and observe the earthwork phase of construction. We also recommend that NGA be retained to provide monitoring and consultation services during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during construction differ from those anticipated, and to evaluate whether or not earthwork and foundation installation activities comply with contract plans and specifications.

It has been a pleasure to provide service to you on this project. Please contact us if you have any questions regarding this report or require further information.

Sincerely,

NELSON GEOTECHNICAL ASSOCIATES, INC.

Khaled M. Shawish, PE
Principal

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LIST OF FIGURES

Geotechnical Engineering Evaluation – **REVISED**
Sno-Valley Senior Center Development
31845 West Commercial Street
Carnation, Washington

INTRODUCTION

This report presents the results of our geotechnical engineering investigation and evaluation of the planned development project in Carnation, Washington. The project site is located at **31845 West Commercial Street,** as shown on the Vicinity Map in Figure 1. The overall site includes King County parcel numbers 8658302230, 8658302225, 8658302250, and 8658302260. The purpose of this study is to explore and characterize the site's surface and subsurface conditions and to provide geotechnical recommendations for the planned site development.

We understand the proposed development will consist of constructing a new residential structure within the northwest corner of the site, as well as a small commercial structure within the northeast corner. Through discussion with the project civil designer, we understand stormwater generated from the proposed development may be directed to an onsite infiltration trench with an overflow component directed to an existing storm system within neighboring roadways.

For use in preparing this report we were provided with a preliminary site plan titled "Sno-Valley Senior Center Feasibility," prepared by Red Barn Engineering Inc.

SCOPE

The purpose of this study is to explore and characterize the site surface and subsurface conditions and provide general recommendations for site development.

Specifically, our scope of services included the following:

1. Reviewing available soil and geologic maps of the area as well as other relevant geotechnical information, as provided.

2. Exploring the subsurface soil and groundwater conditions with two geotechnical borings. Drilling services were subcontracted by NGA.

3. Providing Cation Exchange Capacity (CEC) and organics content testing. Testing services were subcontracted by NGA.

4. Performing laboratory grain-size sieve analysis on select soil samples obtained from the explorations.

5. Providing recommendations for earthwork and foundation support.

6. Providing recommendations for temporary and permanent slopes.

7. Providing recommendations for subsurface utilities and pavement subgrade preparation.

8. Providing our opinion on stormwater infiltration feasibility.

9. Providing recommendations for infiltration/bioretention system installation, as warranted.

10. Providing general recommendations for site drainage and erosion control.

11. Documenting the results of our findings, conclusions, and recommendations in a written geotechnical report.

SITE CONDITIONS

Surface Condition

The overall Senior Center property encompasses four parcels covering approximately 0.72 acres. It is currently occupied by a residential building, a parking lot area, and two small outbuildings within the southwest, northwest, and central portions of the site, respectively. Other areas of the site consist of grass lawn areas, landscaping, and gravel surfacing. Topography within the site is generally level to gently sloping. We did not observe surface water throughout the site during our site visit.

Subsurface Conditions

Geology: The site is mapped on the Geologic Map of the Carnation 7.5-Minute Quadrangle, King County, Washington, by Dragovich, J. D., Littke, H. A., Anderson, M. L., Wessel, G. R., Koger, et al., (USGS, 2010). The site is mapped as alluvial fan (Qaf) deposits. The alluvial fan deposits are described as debris-flow diamicton and alluvial sand, gravel, and local boulder gravel. Our explorations generally encountered loose/soft fine-grained deposits underlain by gravel and fine to coarse sand, consistent with the mapped deposits.

Explorations: The subsurface conditions within the site were explored on July 5, 2022, by monitoring the drilling of two geotechnical boring to depths in the range of 14 to 21 feet below the existing ground surface. We also performed one hand tool exploration to a depth of approximately 9 feet below the existing ground surface. The approximate locations of the explorations are shown on the Schematic Site Plan in Figure 2. A geologist from Nelson Geotechnical Associates, Inc. (NGA) was present during the explorations, examined the soils and geologic conditions encountered, obtained samples of the soil, and maintained logs of the explorations.

In the geotechnical borings a Standard Penetration Test (SPT) was performed on each of the samples during drilling to document soil density at depth. The SPT consists of driving a 2-inch outer-diameter, split-spoon sampler 18 inches using a 140-pound hammer with a drop of 30 inches. The number of blows required to drive the sampler the final 12 inches is referred to as the "**N**" value and is presented on the boring logs. The **N** value is used to evaluate the strength and density of the deposit.

The soils were visually classified in general accordance with the Unified Soil Classification System, presented in Figure 3. The logs of our explorations are presented in Figures 4 through 6. We present a brief description of the subsurface conditions in the following paragraph. For a detailed description of the subsurface conditions, the exploration logs should be reviewed.

At the surface of each boring we encountered approximately 2- to 3.5-feet of light brown to dark brown, silty sand to sand with varying amounts of gravel and organics, which we interpreted as undocumented fill and/or topsoil. Underlying the fill soils we encountered light brown, silty fine sand to sandy silt in a very loose to loose condition, which we interpreted as fine-grained alluvial soils. Each boring terminated within medium dense or better, gravelly fine to coarse sand deposits at approximate depths of 14- to 20-feet below the existing ground surface.

Hydrogeologic Conditions

Wet drilling conditions and evidence of potential groundwater seepage was observed within the upper fine-grained deposits. Measurable groundwater at the time of drilling appeared to reside within the gravel deposits at depths of approximately 13- to 18-feet below the ground surface. We would expect this water to be part of the regional groundwater table associated with the nearby Snoqualmie River. If groundwater is encountered during construction within the upper fine-grained alluvial soils, we would interpret this as perched water. Perched water occurs when surface water infiltrates through less dense, more permeable soils and accumulates on top of a relatively low permeability material. Perched water does not represent a regional groundwater "table" within the upper soil horizons. Perched water tends to vary spatially and is dependent upon the amount of rainfall. We would expect the amount of perched groundwater to decrease during drier times of the year and increase during wetter periods.

SENSITIVE AREA EVALUATION

Seismic Hazard

We reviewed the 2018 International Building Code (IBC) for seismic site classification for this project. The site soil conditions best fit the IBC description for Site Class D.

Table 1 below provides seismic design parameters for the site that are in conformance with the 2018 IBC, which specifies a design earthquake having a 2% probability of occurrence in 50 years (return interval of 2,475 years), and the 2008 USGS seismic hazard maps.

Table 1 – 2018 IBC Seismic Design Parameters

Site Class	Spectral Acceleration at 0.2 sec. (g) S_s	Spectral Acceleration at 1.0 sec. (g) S_1	Site Coefficients		Design Spectral Response Parameters	
			F_a	F_v	S_{DS}	S_{D1}
D	1.166	0.442	1.034	1.558	0.803	0.459

The spectral response accelerations were obtained from the USGS Earthquake Hazards Program Interpolated Probabilistic Ground Motion website (2008 data) for the project latitude and longitude. The National Earthquake Hazards Reduction Program map provided by the Department of Natural Resources was reviewed for the site. The map indicates the site contains a moderate to high liquefaction potential. In our opinion the liquefaction potential is low to moderate based on the soils composition and groundwater conditions encountered. Recommendations for foundation pile support should mitigate any potential liquefaction hazards.

Erosion Hazard

The criteria used for determination of the erosion hazard for affected areas include soil type, slope gradient, vegetation cover, and groundwater conditions. The erosion sensitivity is related to vegetative cover and the specific surface soil types, which are related to the underlying geologic soil units. The Natural Resources Conservation Service (NRCS) maps the site as Oridia silt loam, 0 to 2 percent slopes. The erosion hazard rating is designated as slight. Based on our observations and the material encountered, we would interpret this site as having a low to moderate erosion hazard where the surficial soils are exposed. It is our opinion that the erosion hazard for site soils should be low in areas where the site is not disturbed.

LABORATORY ANALYSIS

We performed four gradation analyses on soil samples obtained from the explorations. The samples were obtained from Boring 1 at 5- and 13-feet and Boring 2 at 7.5- and 20-feet below the existing ground surface. The soils analyzed generally meet the USDA textural triangle classification of silt loam and sand for the upper fine-grained and lower gravelly soils, respectively. The results of the sieve analyses are presented as Figures 7 through 10.

Water Quality Chemical Testing

In accordance with the 2014 SWMMWW infiltration facilities that double as treatment facilities will need to be tested for Cation Exchange Capacity (USEPA method 9081) and Organic Content (ASTM D 2974) to determine if the soil is adequate for removing the target pollutants. Cation Exchange Capacity (CEC) and Organic Content tests were conducted by AM Test Laboratories on soil samples obtained from the site as shown on Tables 1 and 2 below, respectively. The 2014 SWMMWW requires soil to be used for treatment to have a CEC greater or equal to 5 milliequivalents (meq) CEC per 100 grams (CEC/100g). The manual also specifies that filtration soils must have a minimum of 1.0 percent organic content. Based on the test results, the native soils meet the minimum organic content and minimum CEC requirements for use as filtration soils. The test results are attached to this report as Appendix A. The test results are also summarized in the following Tables 1 and 2.

Table 1. Cation Exchange Capacity Results

Boring Number	Depth (Feet)	Cation Test Results (CEC/100g)	Suitable for Filtration (Yes/No)
Boring 1	5.0	16	Yes
Boring 1	10.0	17	Yes
Boring 2	5.0	17	Yes
Boring 2	7.5	16	Yes

Table 2. Organic Content Results

Boring Number	Depth (Feet)	Organic Content Results (Percent)	Suitable for Filtration (Yes/No)
Boring 1	5.0	5.2	Yes
Boring 1	10	3.6	Yes
Boring 2	5.0	4.8	Yes
Boring 2	7.5	5.3	Yes

CONCLUSIONS AND RECOMMENDATIONS

General

It is our opinion that the planned development within the site is generally feasible from a geotechnical standpoint. Our explorations indicated that the site was generally underlain by a relatively thick layer of loose fine-grained alluvial deposits with competent gravelly soils at depths in the range of 13- to 18-feet below the existing ground surface. To reduce the potential for structure settlement or liquefaction hazards in the event of seismic activity, we recommend the new planned structures be supported on 4-inch diameter pipe piles to transfer structure loads to the competent gravelly soils at depth. Any paved parking areas planned as part of the development should be supported on a modified subgrade, as described in the **Site Preparation and Grading** subsection of this report.

Based on the results of our on-site infiltration testing, explorations, and grain-size analyses, it is our opinion that the site soils are only marginally conducive to stormwater infiltration, due to their fine-grained nature. We understand stormwater associated with the proposed development may be directed to a shallow infiltration gallery underlying the proposed paved parking lot. We also understand there is no available overflow component for the proposed infiltration system; therefore, all the stormwater generated within the site must be infiltrated or otherwise managed within the site. Due to this requirement, we recommend that the design rates obtained from the grain-size analysis be confirmed through the performance of infiltration testing at the locations and depths of the planned system. This is further discussed in the **Site Drainage** section of this report.

The surficial soils encountered on this site are considered extremely moisture-sensitive and will disturb easily when wet. We recommend that construction take place during the drier summer months, if possible. If construction is to take place during wet weather, the soils may disturb, and additional expenses and delays may be expected due to the wet conditions. Additional expenses could include the need for placing a blanket of rock spalls to protect exposed subgrades and construction traffic areas. Some of the native on-site soils may be suitable for use as structural fill depending on the moisture content of the soil during construction. NGA should be retained to determine if the on-site soils can be used as structural fill material during construction.

Erosion Control

The erosion hazard for the on-site soils is interpreted to be slight for exposed soils, but actual erosion potential will be dependent on how the site is graded and how water is allowed to concentrate. Best Management Practices (BMPs) should be used to control erosion. Areas disturbed during construction should be protected from erosion. Erosion control measures may include diverting surface water away from the stripped or disturbed areas. Silt fences and/or straw bales should be erected to prevent muddy water from leaving the site. Disturbed areas should be planted as soon as practical, and the vegetation should be maintained until it is established. The erosion potential of areas not stripped of vegetation should be low.

Site Preparation and Grading

After erosion control measures are implemented, site preparation should consist of stripping site of topsoil and organic-rich surficial soils and grading to desired subgrade elevations. At this depth, pipe piles can be installed to mitigate any structure settlement issues associated with the relatively loose upper alluvial soils.

For paved parking areas, final subgrade elevation should be overexcavated by a minimum of 12-inches. The base of the overexcavation should be proof-rolled and further evaluated to identify loose areas. Soft areas identified should be further over-excavated and replaced with 2- to 4-inch quarry spalls. We recommend the over excavation be filled with granular crushed rock and compacted to structural fill specifications.

If wet conditions are encountered, alternative site stripping and grading techniques might be necessary. These could include using large excavators equipped with wide tracks and a smooth bucket to complete site grading and covering exposed subgrade with a layer of crushed rock for protection. If wet conditions are encountered or construction is attempted in wet weather, the subgrade should not be compacted as this could cause further subgrade disturbance. In wet conditions it may be necessary to cover the exposed subgrade with a layer of crushed rock as soon as it is exposed to protect the moisture sensitive soils from disturbance by machine or foot traffic during construction. The prepared subgrade should be protected from construction traffic and surface water should be diverted around areas of prepared subgrade.

The site soils are considered to be highly moisture-sensitive and will disturb easily when wet. We recommend that construction take place during the drier summer months if possible. However, if construction takes place during the wet season, additional expenses and delays should be expected due to the wet conditions. Additional expenses could include the need for placing a blanket of rock spalls on exposed subgrades, construction traffic areas, and paved areas prior to placing structural fill. Wet weather grading will also require additional erosion control and site drainage measures. Most of the on-site soils are not suitable for use as structural fill based on their high moisture and silt content. NGA should be retained to evaluate the suitability of all on-site and imported structural fill material during construction.

Temporary and Permanent Slopes

Temporary cut slope stability is a function of many factors, including the type and consistency of soils, depth of the cut, surcharge loads adjacent to the excavation, length of time a cut remains open, and the presence of surface or groundwater. It is exceedingly difficult under these variable conditions to estimate a stable, temporary, cut slope angle. Therefore, it should be the responsibility of the contractor to maintain safe slope configurations at all times as indicated in OSHA guidelines for cut slopes.

The following information is provided solely for the benefit of the owner and other design consultants and should not be construed to imply that Nelson Geotechnical Associates, Inc. assumes responsibility for job site safety. Job site safety is the sole responsibility of the project contractor.

For planning purposes, we recommend that temporary cuts in the upper undocumented fill/surficial soils be no steeper than 2 Horizontal to 1 Vertical (2H:1V). Temporary cuts in the semi-competent fine-grained alluvial soils should be no steeper than 1.5H:1V. If significant groundwater seepage or surface water flow were encountered, we would expect that flatter inclinations would be necessary. We recommend that cut slopes be protected from erosion. The slope protection measures may include covering cut slopes with plastic sheeting and diverting surface runoff away from the top of cut slopes. We do not recommend vertical slopes for cuts deeper than four feet, if worker access is necessary. We recommend that cut slope heights and inclinations conform to appropriate OSHA/WISHA regulations.

Permanent cut and fill slopes should be no steeper than 2H:1V. However, flatter inclinations may be required in areas where loose soils are encountered. Permanent slopes should be vegetated, and the vegetative cover maintained until established.

Deep Foundations

To reduce the risk of structure settlement, we recommend the proposed structures be supported on 4-inch diameter driven pin piles to transfer foundation loads through the upper loose soils down to the underlying competent materials, interpreted to underlie the site at depth. This applies to all foundations and slab-on-grade. Our explorations did not encounter significant debris within the upper soils; however, there is potential that debris within the fill and alluvium could potentially impede some of the piles. There should be contingencies in the budget and design for additional/relocated piles to replace piles that may be obstructed by debris. We also recommend that excavation equipment be available on-site during pile installation so that shallow obstructions can be removed from the planned pile locations.

We recommend that the 4-inch pipe piles be utilized and should be driven using a tractor-mounted hydraulic hammer, with an energy rating of at least 1,100 foot-lb. For this pile and hammer size, we recommend a design capacity of eight tons for each pile driven to refusal. The refusal criterion for this pile and hammer size is defined as less than one-inch of movement during 15 seconds of continuous driving at a rate of 550 blows per minute or higher. We recommend using galvanized schedule 80 pipe for the 4-inch pin piles. Maintaining these recommendations for minimum hammer size and refusal criteria is essential for obtaining successful piles. Final pile depths should be expected to vary and will depend on the depth to competent soils. We recommend that the piles extend a minimum of five feet into the competent native soils, in addition to meeting the refusal criterion. Our explorations performed as a part of this evaluation encountered competent native soils at approximately 10- to 15-feet below the existing ground surface. The piles should be spaced a minimum of two feet apart to avoid a grouping effect on the piles.

Due to the relatively small slenderness ratio of pin piles, maintaining pin pile confinement and lateral support is essential in preventing pile buckling. Pin piles should be suitably embedded into the reinforced concrete. The structural engineer should design the connections of the piles to the foundations.

Vertically driven pin piles do not provide meaningful lateral capacity. Due to the rigid pile support, friction between the foundation and subgrade soil should not be considered as resisting lateral pressures on this structure. We recommend that all lateral loads be resisted on battered pin piles and/or passive resistance on the below-grade portions of the foundations. The upper foot of soil should be neglected when calculating the passive resistance. We recommend using an equivalent fluid density of 150 pcf for calculating the passive resistance.

Structural Fill

General: Fill placed beneath foundations, pavement, or other settlement-sensitive structures should be placed as structural fill. Structural fill, by definition, is placed in accordance with prescribed methods and standards, and is monitored by an experienced geotechnical professional or soils technician. Field monitoring procedures would include the performance of a representative number of in-place density tests to document the attainment of the desired degree of relative compaction. The area to receive the fill should be suitably prepared as described in the **Site Preparation and Grading** subsection prior to beginning fill placement.

Materials: Structural fill should consist of a good quality, granular soil, free of organics and other deleterious material, and be well graded to a maximum size of about three inches. All-weather fill should contain no more than five-percent fines (soil finer than U.S. No. 200 sieve, based on that fraction passing the U.S. 3/4-inch sieve). The on-site soils are not suitable for use as structural fill. We should be retained to evaluate all proposed structural fill material prior to placement.

Fill Placement: Following subgrade preparation, placement of structural fill may proceed. All filling should be accomplished in uniform lifts up to eight inches thick. Each lift should be spread evenly and be thoroughly compacted prior to placement of subsequent lifts. All structural fill underlying building areas and pavement subgrade should be compacted to a minimum of 95 percent of its maximum dry density. Maximum dry density, in this report, refers to that density as determined by the ASTM D-1557 Compaction Test procedure. The moisture content of the soils to be compacted should be within about two percent of optimum so that a readily compactable condition exists. It may be necessary to overexcavate and remove wet soils in cases where drying to a compactable condition is not feasible. All compaction should be accomplished by equipment of a type and size sufficient to attain the desired degree of compaction and should be tested.

Slab-on-Grade

Slab-on-grade should be supported on pin piles as described in the **Deep Foundations** subsection of this report. We recommend that all floor slabs be underlain by at least six inches of free-draining gravel with less than three percent by weight of the material passing Sieve #200 for use as a capillary break. A suitable vapor barrier, such as heavy plastic sheeting (6-mil, minimum), should be placed over the capillary break material. An additional 2-inch-thick moist sand layer may be used to cover the vapor barrier. This sand layer may be used to protect the vapor barrier membrane and to aid in curing the concrete.

Pavements

Pavement subgrade preparation and structural filling where required, should be completed as recommended in the **Site Preparation and Grading** and **Structural Fill** subsections of this report. The pavement subgrade should be proof-rolled with a heavy, rubber-tired piece of equipment, to identify soft or yielding areas that require repair. The pavement section should be underlain by a stable subgrade, overlain by a minimum of 12 inches of crushed rock. We should be retained to observe the proof-rolling and recommend subgrade repairs prior to placement of the crushed rock.

Utilities

We recommend that underground utilities be bedded with a minimum six inches of pea gravel prior to backfilling the trench with on-site or imported material. Trenches within settlement sensitive areas should be compacted to 95 percent of the modified proctor as described in the **Structural Fill** subsection of this report. Trench backfill should be compacted to a minimum of 95 percent of the modified proctor maximum dry density. Trenches located in non-structural areas and five feet below roadway subgrade should be compacted to a minimum 90 percent of the maximum dry density. The trench backfill compaction should be tested.

Site Drainage

The preliminary infiltration capacity of the onsite soils was evaluated through a combination of visual classification and grain-size analyses in accordance with the Department of Ecology's 2014 SWMMWW. Per the stormwater manual design infiltration rates can be determined using the grain size analysis method for soils not consolidated by glacial advance. The soils underlying the site are interpreted to consist of fine-grained alluvial deposits with gravelly soils at depths in the range of 13- to 20-feet below the existing ground surface.

An equation provided in Section 3.3.6 of the 2014 WSDOE Stormwater Management Manual for Western Washington was used to determine the infiltration capabilities of the site soil utilizing data from the grain-size analyses. Based on this equation and information obtained from the grain-size analyses, initial short-term infiltration rates in the range of 1 to 3.8 inches/hour were calculated. We also referenced Table 3.3.1 of the manual to provide an adequate correction factor to infiltration rates obtained from the above equation to calculate a long-term design rate. Correction factors of 0.90, 0.40, and 0.90 were utilized for CFv, CFt, CFm, respectively. We applied the correction factors to the most conservative rate obtained from the grain-size analysis calculations which is 1 inches/hour and computed a long-term design infiltration rate of 0.324 inches per hour.

Since the proposed development includes infiltrating all the stormwater generated from impervious surfaces within the site, we recommend NGA be retained to confirm the provided grain-size analyses infiltration capacity estimates with onsite infiltration testing at the specified depth and location of the proposed infiltration facility. Infiltration systems should be sized and designed using the 2014 DOE SWMMWW and design infiltration rates that are based on actual field testing.

Surface Drainage: The finished ground surface should be graded such that stormwater is directed to an approved stormwater collection system. Water should not be allowed to stand in any areas where footings, slabs, or pavements are to be constructed. Final site grades should allow for drainage away from the residences. We suggest that the finished ground be sloped at a minimum downward gradient of three percent, for a distance of at least 10 feet away from the residences. Surface water should be collected by permanent catch basins and drain lines and be discharged into an approved discharge system.

Subsurface Drainage: If groundwater is encountered during construction, we recommend that the contractor slope the bottom of the excavation and collect the water into ditches and small sump pits where the water can be pumped out and routed into a permanent storm drain. We recommend the use of footing drains around the structures. Footing drains should be installed at least one foot below planned finished floor elevation. The drains should consist of a minimum 4-inch-diameter, rigid, slotted or perforated, PVC pipe surrounded by free-draining material wrapped in a filter fabric. We recommend that the free-draining material consist of an 18-inch-wide zone of clean (less than three-percent fines), granular material placed along the back of walls. Pea gravel is an acceptable drain material. The free-draining material should extend up the wall to one foot below the finished surface. The top foot of backfill should consist of impermeable soil placed over plastic sheeting or building paper to minimize surface water or fines migration into the footing drain. Footing drains should discharge into tightlines leading to an approved collection and discharge point with convenient cleanouts to prolong the useful life of the drains. Roof drains should not be connected to wall or footing drains.

CONSTRUCTION MONITORING

We should be retained to provide construction monitoring services during the earthwork phase of the project to evaluate subgrade conditions, temporary cut conditions, fill compaction, and drainage system installation.

USE OF THIS REPORT

NGA has prepared this report for **Ms. Lisa Yeager** and her agents, for use in the planning and design of the development on this site only. The scope of our work does not include services related to construction safety precautions and our recommendations are not intended to direct the contractors' methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. There are possible variations in subsurface conditions between the explorations and also with time. Our report, conclusions, and interpretations should not be construed as a warranty of subsurface conditions. A contingency for unanticipated conditions should be included in the budget and schedule.

We recommend that NGA be retained to provide monitoring and consultation services during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed differ from those anticipated, and to evaluate whether or not earthwork and foundation installation activities comply with contract plans and specifications. We should be contacted a minimum of one week prior to construction activities and could attend pre-construction meetings if requested.

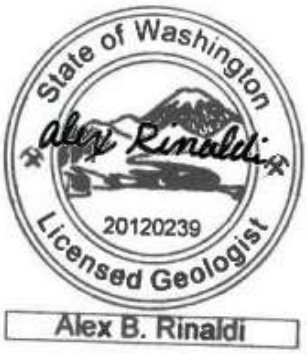
Within the limitations of scope, schedule, and budget, our services have been performed in accordance with generally accepted geotechnical engineering practices in effect in this area at the time this report was prepared. No other warranty, expressed or implied, is made. Our observations, findings, and opinions are a means to identify and reduce the inherent risks to the owner.

o-o-o

It has been a pleasure to provide service to you on this project. If you have any questions or require further information, please call.

Sincerely,

NELSON GEOTECHNICAL ASSOCIATES, INC.



Alex B. Rinaldi, LG
Project Geologist

11.14.2022

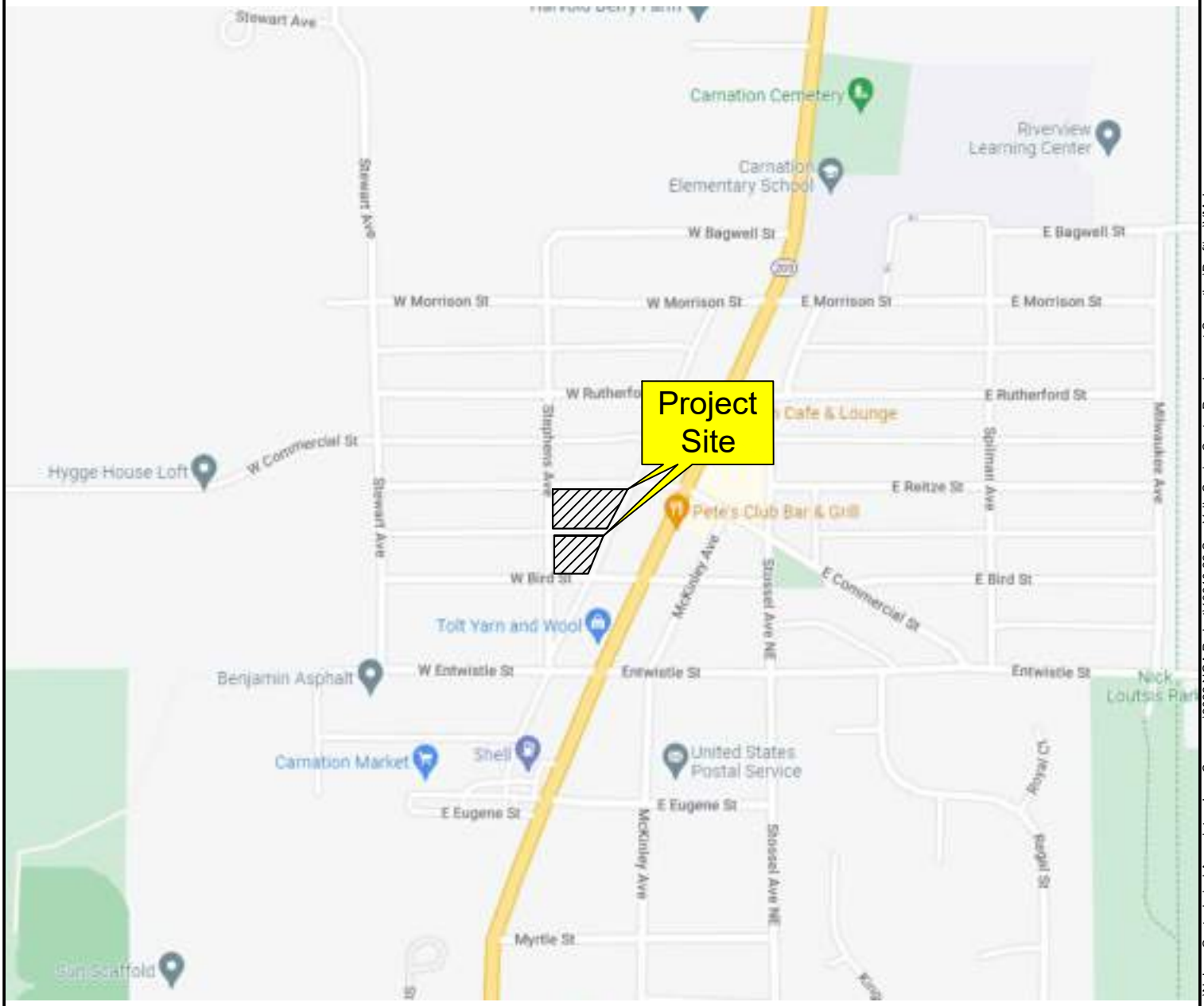
Khaled M. Shawish, PE
Principal

ABR:KMS:dy

Attachments: Ten Figures
Appendix A – Laboratory Testing Results

VICINITY MAP

Not to Scale



Carnation, WA

Project Number 1361022	Sno-Valley Senior Center Development Vicinity Map	NELSON GEOTECHNICAL ASSOCIATES, INC	No.	Date	Revision	By	CK
Figure 1			1	7/20/22	Original	DPN	ABR

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Schematic Site Plan

LEGEND

Property line

B-1 — Number and approximate location of boring

HA-1 — Number and approximate location of hand auger

0 40 80

Approximate Scale: 1 inch = 40 feet

Reference: Site Plan based on a plan dated August 16, 2022 titled "Sno-Valley Senior Housing," prepared by Environmental Works.

Project Number	Sno-Valley Senior Center Development Schematic Site Plan	NELSON GEOTECHNICAL ASSOCIATES, INC
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2	8/24/22	Revision	DPN	ABR

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UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE - GRAINED SOILS MORE THAN 50 % RETAINED ON NO. 200 SIEVE	GRAVEL MORE THAN 50 % OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVEL	GW	WELL-GRADED, FINE TO COARSE GRAVEL
			GP	POORLY-GRADED GRAVEL
		GRAVEL WITH FINES	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	SAND MORE THAN 50 % OF COARSE FRACTION PASSES NO. 4 SIEVE	CLEAN SAND	SW	WELL-GRADED SAND, FINE TO COARSE SAND
			SP	POORLY GRADED SAND
		SAND WITH FINES	SM	SILTY SAND
			SC	CLAYEY SAND
FINE - GRAINED SOILS MORE THAN 50 % PASSES NO. 200 SIEVE	SILT AND CLAY LIQUID LIMIT LESS THAN 50 %	INORGANIC	ML	SILT
			CL	CLAY
		ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY LIQUID LIMIT 50 % OR MORE	INORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
		ORGANIC	OH	ORGANIC CLAY, ORGANIC SILT
HIGHLY ORGANIC SOILS			PT	PEAT

NOTES:

1) Field classification is based on visual examination of soil in general accordance with ASTM D 2488-93.
2) Soil classification using laboratory tests is based on ASTM D 2488-93.
3) Descriptions of soil density or consistency are based on interpretation of blowcount data, visual appearance of soils, and/or test data.

SOIL MOISTURE MODIFIERS:

Dry - Absence of moisture, dusty, dry to the touch

Moist - Damp, but no visible water.

Wet - Visible free water or saturated, usually soil is obtained from below water table

Project Number 1361022	Sno-Valley Senior Center Development Soil Classification Chart	NELSON GEOTECHNICAL ASSOCIATES, INC	No.	Date	Revision	By	CK
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BORING LOG

B-1

Approximate Ground Surface Elevation: ??

Logged by: ABR on 07/05/2022

Soil Profile: Description	Graphic Log	Group Symbol	Sample Data: Blow Count	Sample Location (Depth in feet)	Penetration Resistance (Blows/foot - ●) / Moisture Content (Percent - ■)	Laboratory Testing	Piezometer Installation - Ground Water Data (Depth in Feet)
Light brown, silty fine sand with trace gravel (very loose to loose, moist) (**topsoil** / **FILL**)			4		46%	M	
Light brown, fine sandy silt (medium stiff, moist to wet)		ML	5		44%	M	
Light brown, silty fine sand with organic charcoal fragments (very loose, wet)		SM	3		44%	M	
-becomes loose, with trace gravel			5		43%	G,M	
Gray-brown, gravelly fine to coarse sand with silt (very dense, wet)		SW-SM	90-8		7%	M	
Boring met refusal at 14.1 feet below existing grade on 07/05/2022. Groundwater seepage was encountered at 13.0 feet during drilling.							

10 20 30 40 50 50+ (Penetration Resistance)

10 20 30 40 50 50+ (Moisture Content)

5 10 15 20 25 (Sample Location / Piezometer)

▼ Water Level

LEGEND

- Depth Driven and Amount Recovered with 2-inch O.D. Split-Spoon Sampler
- Depth Driven and Amount Recovered with 3-inch Shelby Tube Sampler
- Solid PVC Pipe
- Slotted PVC Pipe
- Monument/ Cap to Piezometer
- ✱ Liquid Limit
- \+ Plastic Limit
- Concrete
- Bentonite
- Native Soil
- Silica Sand
- ▼ Water Level

M	Moisture Content
A	Atterberg Limits
G	Grain-size Analysis
DS	Direct Shear
PP	Pocket Penetrometer Readings, tons/ft
P	Sample Pushed
T	Triaxial

NOTE: Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgement. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Project Number	Sno-Valley Senior Center Development Boring Log	NELSON GEOTECHNICAL ASSOCIATES, INC
1361022		Woodinville Office: 17311-135th Ave. NE, A-500, Woodinville, WA 98072, (425) 486-1669 / Fax: 481-2510
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BORING LOG

B-2

Approximate Ground Surface Elevation: ??

Logged by: ABR on 07/05/2022

Soil Profile: Description	Graphic Log	Group Symbol	Sample Data: Blow Count	Sample Location (Depth in feet)	Penetration Resistance (Blows/foot - ●) / Moisture Content (Percent - ■)	Laboratory Testing	Piezometer Installation - Ground Water Data (Depth in Feet)
Grass underlain by Fine to medium sand with silt and gravel (loose, moist) (**FILL**)			9		33%	M	
Light brown, silty fine sand with trace roots and charcoal fragments (very loose to loose, moist to wet)			4		49%	M	
-becomes wet			4		42%	M	
		SM	4		49%	M	
-becomes very loose, with trace roots, no charcoal			3		36%	M	
Gray-brown gravel with fine to coarse sand and trace silt (very dense, wet)		GP	50-6		9%	M	
Boring met refusal at 21.0 feet below existing grade on 07/05/2022. Groundwater seepage was encountered at 18.0 feet during drilling.							

Penetration Resistance (Blows/foot - ●): 10 20 30 40 50 50+
Moisture Content (Percent - ■): 10 20 30 40 50 50+
Depth scale: 5, 10, 15, 20, 25

LEGEND

- Depth Driven and Amount Recovered with 2-inch O.D. Split-Spoon Sampler
- Depth Driven and Amount Recovered with 3-inch Shelby Tube Sampler
- Solid PVC Pipe
- Slotted PVC Pipe
- Monument/ Cap to Piezometer
- ✱ Liquid Limit
- \+ Plastic Limit
- Concrete
- Bentonite
- Native Soil
- Silica Sand
- Water Level

M	Moisture Content
A	Atterberg Limits
G	Grain-size Analysis
DS	Direct Shear
PP	Pocket Penetrometer Readings, tons/ft
P	Sample Pushed
T	Triaxial

NOTE: Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgement. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Project Number	Sno-Valley Senior Center Development Boring Log	NELSON GEOTECHNICAL ASSOCIATES, INC
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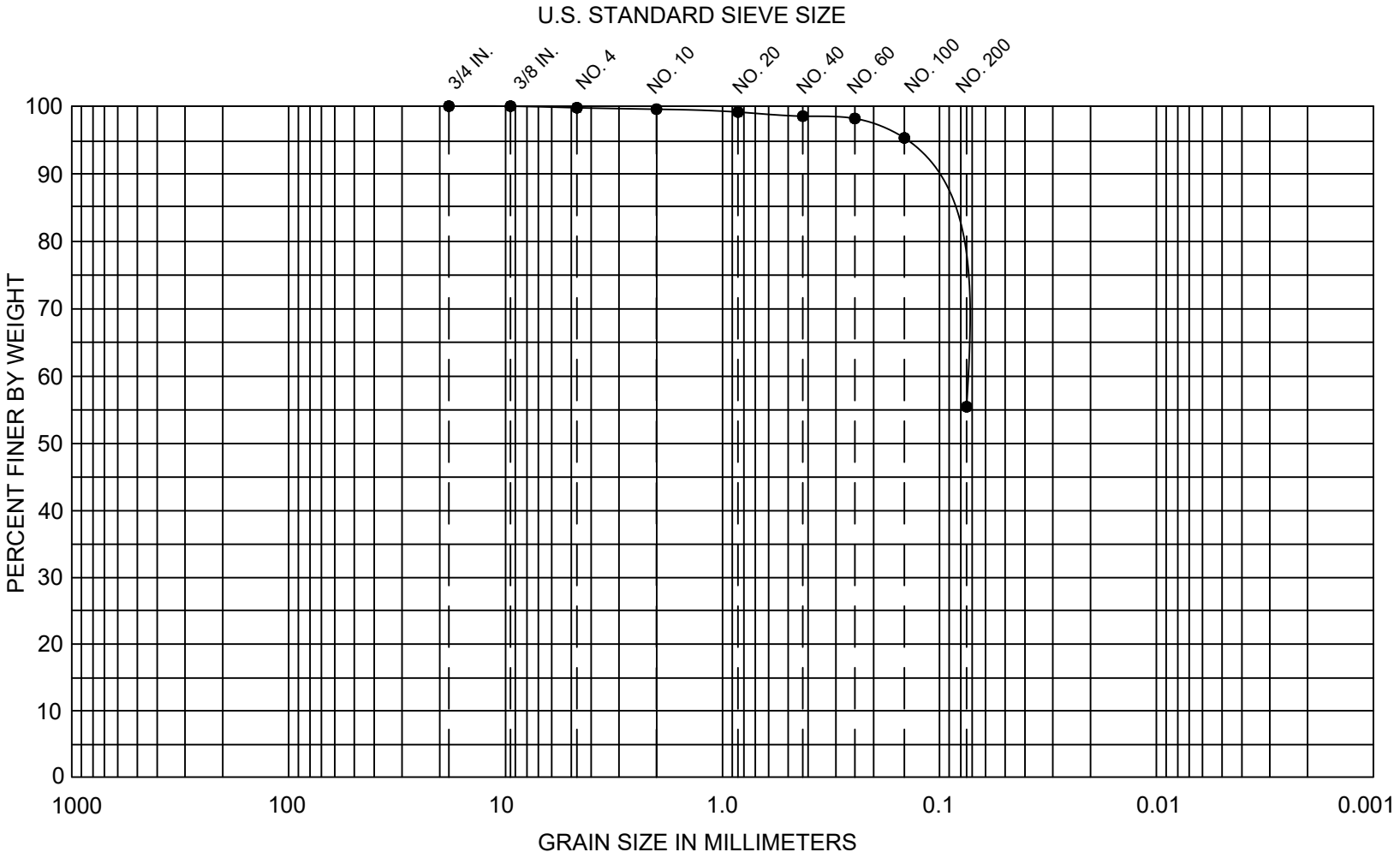
LOG OF EXPLORATION

DEPTH (FEET)	USCS	SOIL DESCRIPTION
HAND AUGER ONE		
0.0 – 2.8		DARK BROWN, ORGANIC-RICH SILTY SAND WITH ROOTS (LOOSE, MOIST) (**TOPSOIL**)
2.8 – 9.0	SM	LIGHT BROWN, SILTY FINE SAND (LOOSE, MOIST TO WET)
		SAMPLES WERE NOT COLLECTED GROUNDWATER SEEPAGE WAS NOT ENCOUNTERED HAND AUGER CAVING WAS NOT ENCOUNTERED HAND AUGER WAS COMPLETED AT 9.0 FEET ON 07/05/2022

Project Number
1361022

Figure 7

Sno-Valley Senior Center
Development
Sieve Analysis



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

U.S.C. SYMBOL	EXPLORATION NUMBER	SAMPLE DEPTH	SOIL DESCRIPTION	SOIL DISTRIBUTION
●ML	B-1	5.0 feet	Fine, sandy silt	Gravel = 0% Sand = 45% Silt/Clay = 55%

No.	Date	Revision	By	CK
1	7/20/22	Original	DPN	ABR

NELSON GEOTECHNICAL ASSOCIATES, INC

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(425) 486-1669 / Fax: 486-2510

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105 Palouse St.
Wenatchee, WA 98801
(509) 665-7696 / Fax: 665-7692

www.nelsongeotech.com

Project Number
1361022

Figure 8

Sno-Valley Senior Center
Development
Sieve Analysis

NELSON GEOTECHNICAL ASSOCIATES, INC

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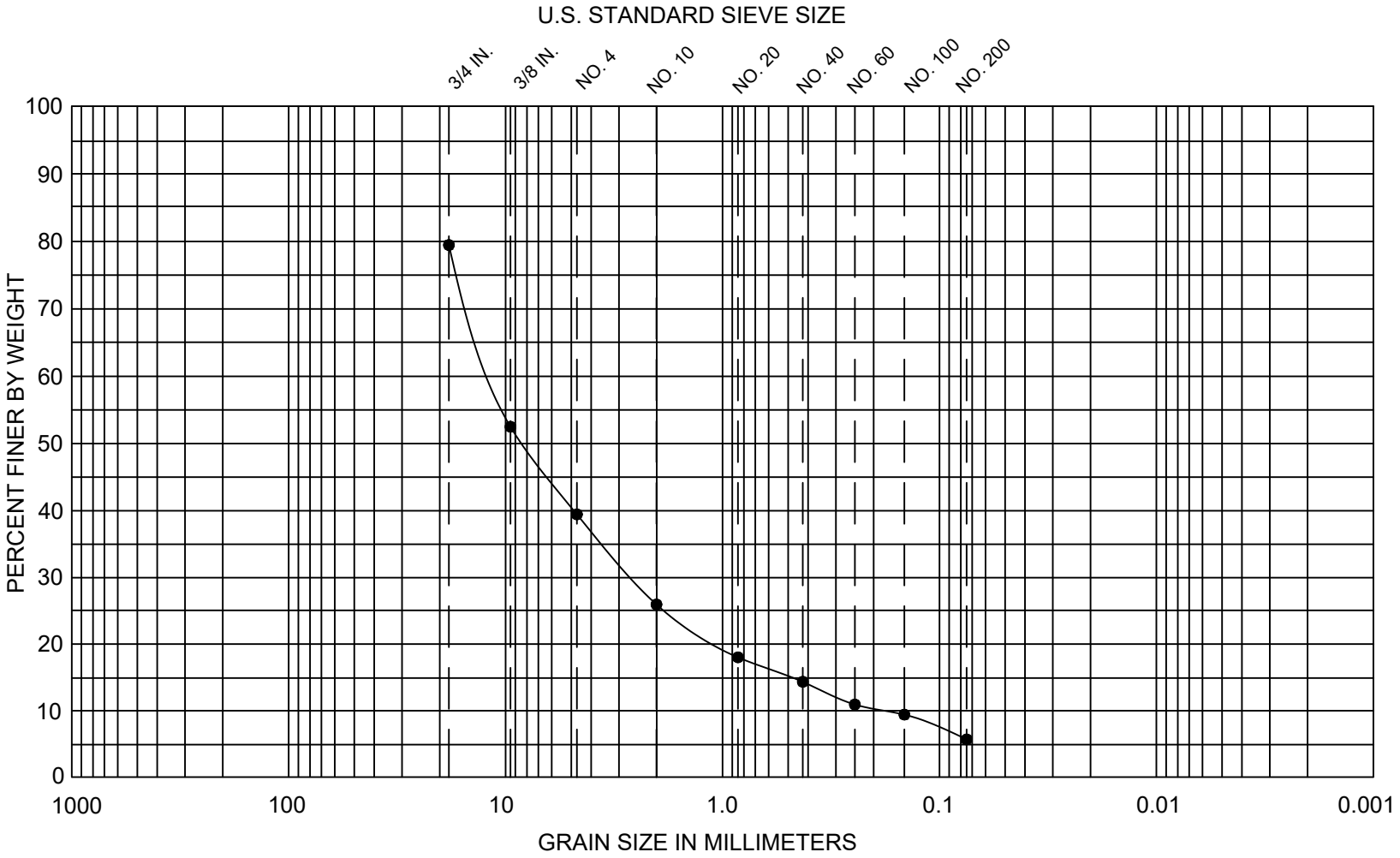
No.	Date	Revision	By	CK
1	8/1/22	Original	DPN	ABR



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

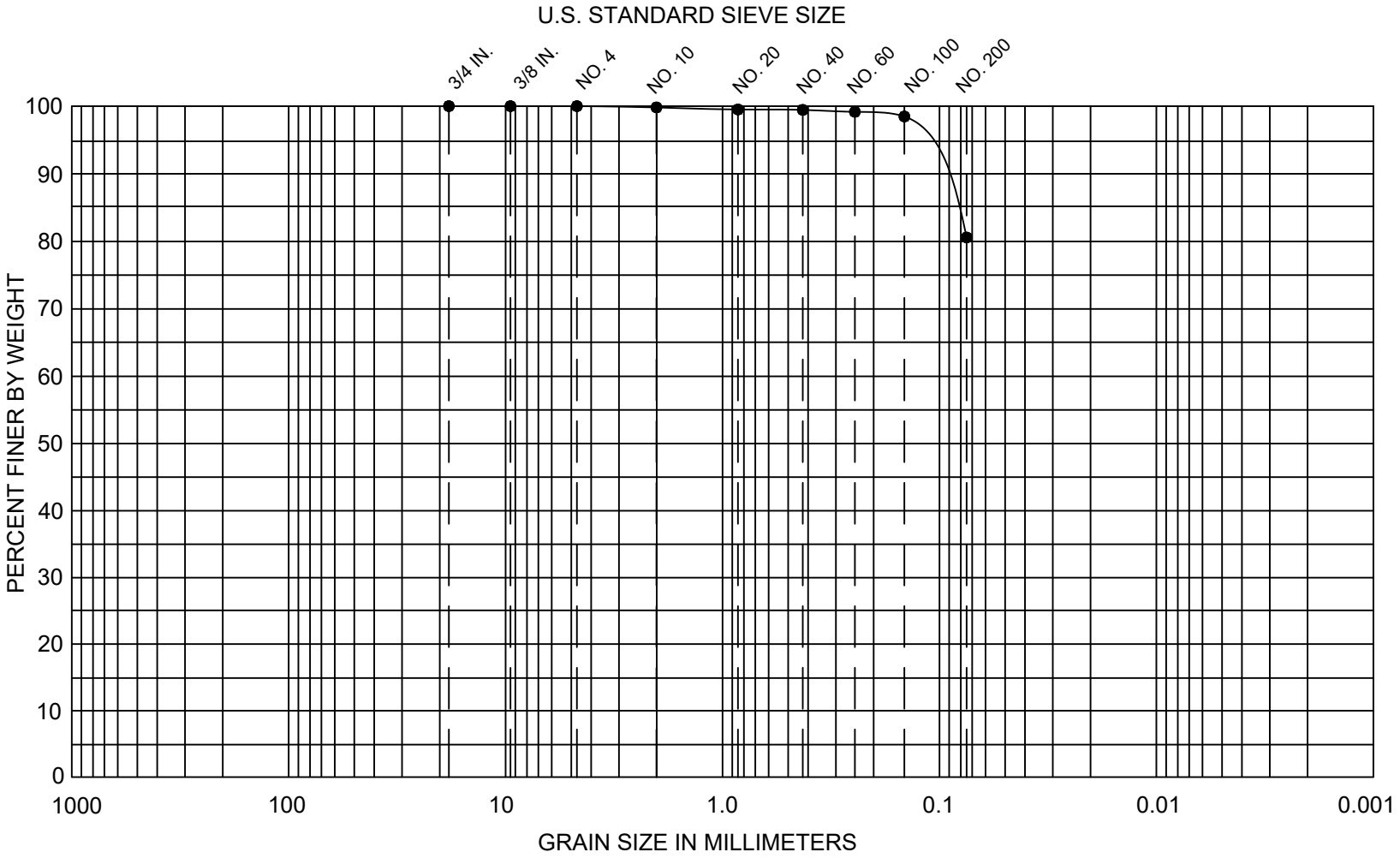
U.S.C. SYMBOL	EXPLORATION NUMBER	SAMPLE DEPTH	SOIL DESCRIPTION	SOIL DISTRIBUTION
●GP-GM	B-1	13.0 feet	Gravel with fine to coarse sand and silt	Gravel = 60% Sand = 34% Silt/Clay = 6%

C:\Users\DannyNelson\Nelson Geotechnical Associates, Inc\Nelson Geotechnical Associates, Inc - Company\2022 NGA Project\13610-22 Sno-Vally Senior Center Development Carnation\Drafting\Sieve.dwg

Project Number
1361022

Figure 9

Sno-Valley Senior Center
Development
Sieve Analysis



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

U.S.C. SYMBOL	EXPLORATION NUMBER	SAMPLE DEPTH	SOIL DESCRIPTION	SOIL DISTRIBUTION
●ML	B-2	7.5 feet	Silt with fine sand	Gravel = 0% Sand = 19% Silt/Clay = 81%

No.	Date	Revision	By	CK
1	8/1/22	Original	DPN	ABR

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Project Number
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Figure 10

Sno-Valley Senior Center
Development
Sieve Analysis

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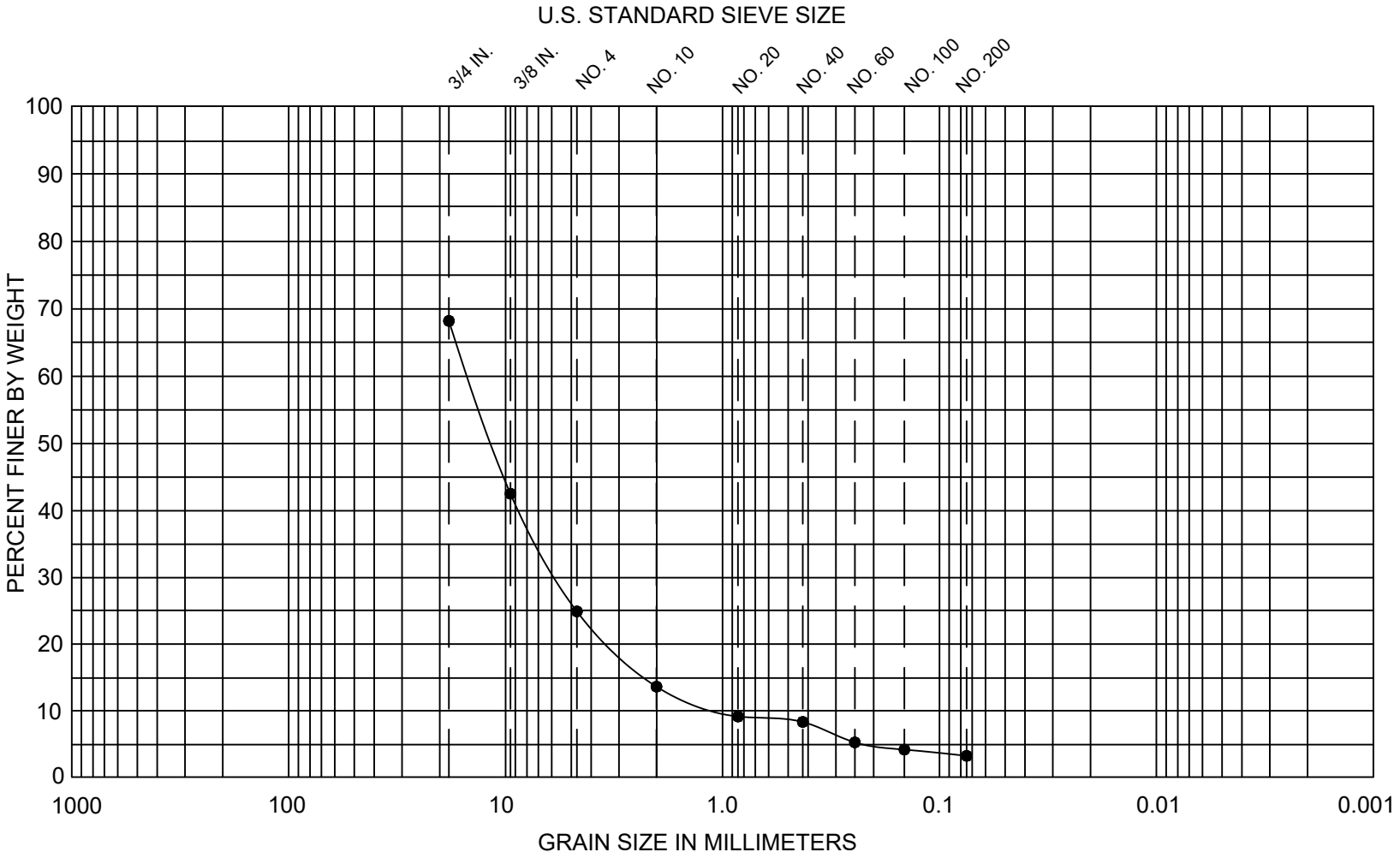
No.	Date	Revision	By	CK
1	8/1/22	Original	DPN	ABR



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

U.S.C. SYMBOL	EXPLORATION NUMBER	SAMPLE DEPTH	SOIL DESCRIPTION	SOIL DISTRIBUTION
●GP	B-2	20.0 feet	Gravel with fine to coarse sand and trace silt	Gravel = 75% Sand = 22% Silt/Clay = 3%

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APPENDIX A

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

NELSON GEOTECH
17311 135TH AVE NE
WOODINVILLE, WA 98072
Attention: ALEX RINALDI
Project Name: SNO-VALLEY SENIOR CENTER
Project #: 1361022
All results reported on an as received basis.

Date Received: 08/18/22
Date Reported: 9/13/22

AMTEST Identification Number	**22-A013961**
Client Identification	**B1 @ 5'**
Sampling Date	**07/05/22**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Cation Exchange Capacity	16.	meq/100g		0.5	SW-846 9081	CM	09/12/22

Miscellaneous

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANLST	DATE
Organic Matter	5.2	%			SM 2540G	FG	08/22/22

NELSON GEOTECH
Project Name: SNO-VALLEY SENIOR CENTER
AmTest ID: 22-A013962

AMTEST Identification Number **22-A013962**
Client Identification **B1 @ 10'**
Sampling Date **07/05/22**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Cation Exchange Capacity	17.	meq/100g		0.5	SW-846 9081	CM	09/12/22

Miscellaneous

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANLST	DATE
Organic Matter	3.6	%			SM 2540G	FG	08/22/22

AMTEST Identification Number **22-A013963**
Client Identification **B2 @ 5'**
Sampling Date **07/05/22**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Cation Exchange Capacity	17.	meq/100g		0.5	SW-846 9081	CM	09/12/22

Miscellaneous

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANLST	DATE
Organic Matter	4.8	%			SM 2540G	FG	08/22/22

NELSON GEOTECH
Project Name: SNO-VALLEY SENIOR CENTER
AmTest ID: 22-A013964

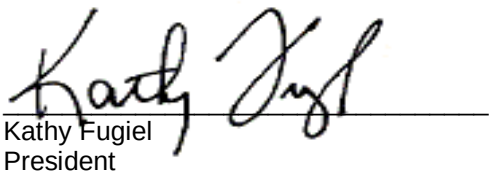
AMTEST Identification Number **22-A013964**
Client Identification **B2 @ 7.5'**
Sampling Date **07/05/22**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Cation Exchange Capacity	16.	meq/100g		0.5	SW-846 9081	CM	09/12/22

Miscellaneous

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANLST	DATE
Organic Matter	5.3	%			SM 2540G	FG	08/22/22



Kathy Fugiel
President

Exhibit 6

CM DESIGN GROUP

DRAINAGE REPORT

Sno-Valley Senior Housing

31845 W Commercial St.
Carnation, WA 98014

November 2022

Prepared by: Catherine Mirkin, PE

CM DESIGN GROUP

CATHERINE E. MIRKIN
STATE OF WASHINGTON
27900
REGISTERED
PROFESSIONAL ENGINEER

11/16/2022

Contents

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1 Project Overview

The Sno-Valley Senior Center project will create affordable housing for seniors and veterans with low income. The project includes a 15-unit three story building with adjacent parking. The site is located 31845 West Commercial Street, Carnation, WA and consists of four adjacent parcels (see Table 1 below) bound by West Commercial Street to the north, Stephens Avenue to the west, West Bird Street to the south and an alley to the east. The existing site includes an asphalt parking lot, a senior center building and grass and gravel where a home and shed have recently been removed. The site is relatively flat and slopes gently to the northwest.

Table 1. Project Site Parcel Information

Parcel Number	Size (AC)	Size (SF)	Assessed Value	Location
865830-2230	0.23	10,000	$125,000	NW Quadrant
865830-2225	0.18	7,800	$198,000	NE Quadrant
865830-2250	0.17	7,500	$569,300	SW Quadrant
865830-2260	0.13	5,880	$73,500	SE Quadrant
Totals	**0.71**	**31,180**	**$965,800**	

The majority of site improvements will take place on the two north parcels and will include the following:

- Remove existing asphalt parking lot
- Remove existing sheds
- Construct new housing facility with walkways and landscaped areas
- Construct 18 new parking stalls

The existing Carnation Senior Center on the SW parcel will remain as-is.

Work on the SE parcel includes:

- Convert a grass area to 9 off-street parking stalls
- Construct a trash enclosure

The drainage system for the existing site includes an infiltration catch basin in the existing parking lot on the NW quadrant of the site. The existing senior center on the south parcel has a roof drain collection system that ties into the City of Carnation storm system.

The City of Carnation has a 12-inch storm drain main in the Stephens Avenue right-of-way that flows south to north. According to the 2003 stormwater comprehensive plan, “the majority of the stormwater is collected and infiltrates through disjoined drainage structures through the city.” The Snoqualmie River, roughly 0.4-miles downstream of the site.

Off-site drainage does not flow onto these parcels from the right-of-way or adjacent property.

The project vicinity map is shown on the following page.

Figure 1. Vicinity map

2 Existing Conditions Summary

The project is located on 0.71 acres in a commercial area of the City of Carnation.

The site is located within the East King County Groundwater Management Area and is in the 500-year floodplain for the Snoqualmie River. There are no sensitive areas identified on or adjacent to the site.

There is an existing asphalt parking lot, two small sheds, gravel parking areas and landscaped/lawn areas on the north parcels. The existing Sno-Valley Senior Center building and landscaping cover the south parcels. Hard surfaces cover 54% of the site.

Table 2. Existing Hard Surface Areas

Area Description	Percent	Area (Ac)
Impervious hard surface	54%	0.38
Pervious	31%	0.32
Total Property		**0.70**

Soils on the site are described in "Geotechnical Engineering Evaluation – Sno-Valley Senior Center Development – 31845 West Commercial Street – Carnation, WA", November 14, 2022, prepared by Nelson Geotechnical Associated, Inc. The document is included in Appendix A.

Figure 2. Local topography

General conclusions and recommendations from the report are as follows:

- The site is mapped as alluvial fan (Qaf) deposits based on the USGS Map, 2010
- Alluvial fan deposits are described as debris-flow diamicton and alluvial sand, gravel, and local boulder gravel.
- Subsurface explorations were explored by monitoring the drilling of two geotechnical borings to depths in the range of 14 to 21 feet
- Site specific explorations indicated the site was generally underlain by a relatively thick layer of loose fine-grained alluvial deposits with competent gravelly soil at depths in the range of 13- to 18-feet below the existing ground surface.
- Based on the results of on-site infiltration testing, explorations, and grain-size analyses, site soils are not conducive to stormwater infiltration, due to their fine-grained nature and relatively high moisture content.
- The surficial soils encountered on this site are considered extremely moisture-sensitive and will disturb easily when wet. Construction is recommended during drier summer months if possible.

3 Off-Site Analysis

An offsite analysis comprised of an upstream and downstream analysis is required.

3.1 Downstream Analysis

The area downstream of the site consists mostly of private vegetated farmland and a few residential properties. The Snoqualmie River, approximately 0.5 miles from the site, serves as the receiving water, although there is no direct outfall as most of the water infiltrates.
Runoff from the site flows to the southwest corner of W Commercial St and Stephens Ave where it is picked up by a catch basin. According to the 2003 stormwater comprehensive plan, "the majority of the stormwater is collected and infiltrates through disjoined drainage structures through the city." King County iMap reports flooding downstream of the site.

3.2 Upstream Analysis

The upstream area consists of residential and commercial developments. Although the site is surrounded by concrete curb and gutter that directs the water around the site, so no water flows through the site.

Figure 3. Surrounding Basin Map

4 Minimum Requirements

This project is defined as a redevelopment project because it has 35% or more of existing hard surface coverage and includes structural development of a building and the creation and replacement of hard surfaces.

A redevelopment project that results in 2,000 SF or more of new plus replaced hard surface is required to comply with Minimum Requirements #1 - #5 for the new and replaced hard surfaces and the land disturbed.

Additional requirements for redevelopment projects outlined in section I-2.4.2 of the DOE Manual states that "Other types of redevelopment projects shall comply with Minimum Requirements #1 through #10 for the new and replaced hard surfaces and the converted vegetation areas if the total of new plus replaced hard surfaces is 5,000 SF or greater, and the valuation of proposed improvements, including interior improvements, exceeds 50% of the assessed value of the existing site improvements.

The total new and replaced hard surface is greater than 5,000 SF and the total assessed value of the four parcels is $965,800, and in all likelihood the proposed improvements will exceed 50% of that.

In summary, when applying the thresholds stated above, the project is required to comply with the following:

- Minimum Requirements #1-#9 for the new and replaced hard surfaces and converted vegetation areas

4.1.1 MR #1: Preparation of Stormwater Site Plans

Stormwater site plans have been prepared for the project and are provided in Appendix C.

4.1.2 MR #2: Construction Stormwater Pollution Prevention

A Construction SWPPP has been prepared and is included in Appendix D.

4.1.3 MR #3: Source Control of Pollution

All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that does not cause contamination of stormwater. Good housekeeping and preventative measures will be taken to ensure that the site will be kept clean, well-organized, and free of debris.

If required, BMPs to be implemented to control specific sources of pollutants are discussed below.

Vehicles, construction equipment, and/or petroleum product storage/dispensing:

- All vehicles, equipment, and petroleum product storage/dispensing areas will be inspected regularly to detect any leaks or spills, and to identify maintenance needs to prevent leaks or spills.
- On-site fueling tanks and petroleum product storage containers shall include secondary containment.
- Spill prevention measures, such as drip pans, will be used when conducting maintenance and repair of vehicles or equipment.
- In order to perform emergency repairs on site, temporary plastic will be placed beneath and, if raining, over the vehicle.

Contaminated surfaces shall be cleaned immediately following any discharge or spill

4.1.4 MR #4: Preservation of Natural Drainage Systems and Outfalls

Currently the site infiltrates or sheets flows off the site to the catch basin on the corner of W Commercial St and Stephens Ave. The design proposes to continue to infiltrate runoff from the site and minimize outfall to the public storm system.

4.1.5 MR #5: Onsite Stormwater Management

This project will use the List Approach, and List #2 will be used because the project triggers minimum requirements #1-#9.

4.1.6 MR #6: Runoff Treatment

This project is required to provide runoff treatment because there is more than 5,000 SF of pollution-generating new hard surface within the project threshold discharge area (6,920 SF from parking areas).

4.1.7 MR #7: Flow Control

This project is required to provide flow control requirements because there is more than 10,000 SF of effective impervious (16,168 SF of new plus replaced hard surface). This requirement is met by infiltrating all runoff from the site.

4.1.8 MR #8: Wetlands Protection

This project does not discharge stormwater into a wetland, either directly or indirectly through a conveyance system.

4.1.9 MR #9: Operation and Maintenance

See the Operations and Maintenance Manual is included in Appendix E.

5 Developed Site Hydrology

The project is complying with MR #1-#9.

5.1 Summary Section

Hard surface, pervious, and pollution-generating surface areas are shown in the tables below. Exhibits and calculations supporting the results in the table are in Appendix B.

Table 3. Proposed Hard Surface Areas

Description	Area SF
New Hard Surface	7,774
Replaced Hard Surface	8,394
Total New and Replaced	**16,168**
Pervious surface	9,331
Hard surface to remain	5,512
PGHS	6,920

5.2 On-Site Stormwater Management

This project is required to meet Low Impact Development Standard and BMP T5.14 or List #2. This project will follow List #2 implementing the following:

Lawn and Landscaped Areas

Post-Construction Soil Quality and Depth for all lawn and landscaped areas shall implement BMP T5:13.

Roof, Walkways and Parking Areas

Roof runoff will be collected in a tightlined roof drain system and discharge to the infiltration trench located under the parking area adjacent to Alley C. Walkway runoff will flow to adjacent

vegetated areas. Parking lot runoff will be collected and treated in Contech StormFilter Catch Basins before being discharged into the infiltration trench.

5.3 Flow Control

This requirement is met by infiltrating all runoff from the site. There are two infiltration trench areas, one in the south parking area and one in the parking area adjacent to Alley C. The long-term design infiltration rate is 0.32 in/hour per the recommendation from the geotechnical engineer. Both sites are able to infiltrate 100% the runoff for the upstream catchment area. See Appendix B for the stormwater calculations and modeling.

5.4 Water Quality Systems

The runoff from the parking lot will be treated by Contech StormFilters before infiltrating. A StormFilter Catch Basin will be located in the south parking lot and to treat runoff from the south parking lot and garbage area. A second StormFilter Catch Basin will be located in the parking lot adjacent to Alley C and will treat runoff form the parking areas in the north parcel.

Both StormFilter Catch Basins will be one-filter cartridges, sized to treat the water quality treatment flow from the parking areas. Each Contech StormFilter Vault cartridge for the 18" cartridge height is designed to treat a flow of 15 gpm.

Tributary Area	Area (AC)	WQ Flow (cfs)	WQ Flow (gpm)	# of Cartridges (15 gpm each)
North Parking Area (Alley C)	7,774	0.03	13.44	1
South Parking Area	8,394	0.01	4.48	1

6 Special Reports and Studies

The geotechnical report for the project is included as Appendix A.

7 Other Permits

Review processes and application submittal requirements are as follows:

- Site Development Review Application – to construct a new structure and site improvements
- Major Design Review Application – to construct a new structure and site improvements
- Lot Line Adjustment – to merge the two existing parcels (865830-2230 and 865830-2225)
- Development Agreement – required for proposed reduction in parking
- State Environmental Policy Act (SEPA) Checklist

City of Carnation permits likely to be required for the project include:

- Building Permit
- Clear and Grade Permit
- Public Utility Extension

- Right-of-Way Permit
- Storm Drainage Review Permit
- Fire Permit

8 Operation and Maintenance Manual

An operations and maintenance manual for the flow control and treatment facility is included in Appendix E.

Appendix A – Geotechnical Memo

NELSON GEOTECHNICAL ASSOCIATES, INC.

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Woodinville, WA 98072
(425) 486-1669
www.nelsongeotech.com

November 14, 2022

Ms. Lisa Yeager
Sno-Valley Senior Center
4610 Stephens Avenue
P.O. Box 96
Carnation, WA 98014
VIA Email: **lisay@soundgenerations.org**

Geotechnical Engineering Evaluation – **REVISED**
Sno-Valley Senior Center Development
31845 West Commercial Street
Carnation, Washington
NGA Project No. 1361022

Dear Ms. Yeager:

We are pleased to submit the attached report titled **"Geotechnical Engineering Evaluation – Sno-Valley Senior Center Development – 31845 West Commercial Street – Carnation, Washington."** This report summarizes our observations of the existing surface and subsurface conditions within the site and provides general recommendations for the proposed site development. Our services were completed in general accordance with the proposal signed by you on June 10, 2022.

The Sno-Valley Senior Center property comprises four adjacent parcels bound by West Commercial Street to the north, Stephens Avenue to the west, West Bird Street to the south and an alley to the east. The site is currently occupied by an asphalt parking lot and senior center building along the northwest and southwest portions of the property, respectively. Topography within the site is generally level to gently sloping. We understand the proposed development will consist of constructing a new residential building along the northwest corner of the site and a potential future store building along the northeast corner of the site.

We monitored the drilling of two borings and performed one hand tool exploration within the site. Our explorations indicated that the site was underlain by approximately 12- to 18-feet of very loose to loose, silty fine sand to sandy silt with competent gravel and fine to coarse sand deposits at depth.

It is our opinion that the proposed site development is feasible from a geotechnical engineering standpoint, provided that our recommendations for site development are incorporated into project plans. We recommend new foundations be supported on deepened foundations consisting of 4-inch diameter pipe piles driven to refusal, due to the relatively thick layer of loose fine-grained deposits interpreted to mantle the site. Subgrade modification is also recommended for new parking areas associated with the planned site development. After stripping the site of surficial topsoil, fill, and organic-rich areas, asphalt subgrade preparation should consist of over excavating a minimum of 12-inches of the upper fine-grained alluvial deposits and replacing with granular specification material compacted to structural fill standards.

Specific grading and stormwater plans have not been finalized at the time this report was prepared. However, we understand that stormwater from the proposed development may be directed into on-site infiltration systems, if feasible. The City of Carnation uses the 2014 Stormwater Management Manual for Western Washington (2014 SWMMWW) to determine the design infiltration rate and overall system sizing. As a part of our evaluation, we performed four grain size analyses and estimated the infiltration capacity of the upper fine-grained alluvial soils. Based on our observations and laboratory analyses, it is our opinion that infiltration capacity of the onsite soils is relatively low. This is further discussed in the attached report.

In the attached report, we have also provided general recommendations for site grading, slabs-on-grade, structural fill placement, erosion control, and drainage. We should be retained to review and comment on final development plans and observe the earthwork phase of construction. We also recommend that NGA be retained to provide monitoring and consultation services during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed during construction differ from those anticipated, and to evaluate whether or not earthwork and foundation installation activities comply with contract plans and specifications.

It has been a pleasure to provide service to you on this project. Please contact us if you have any questions regarding this report or require further information.

Sincerely,

NELSON GEOTECHNICAL ASSOCIATES, INC.

Khaled M. Shawish, PE
Principal

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LIST OF FIGURES

Geotechnical Engineering Evaluation – **REVISED**
Sno-Valley Senior Center Development
31845 West Commercial Street
Carnation, Washington

INTRODUCTION

This report presents the results of our geotechnical engineering investigation and evaluation of the planned development project in Carnation, Washington. The project site is located at **31845 West Commercial Street,** as shown on the Vicinity Map in Figure 1. The overall site includes King County parcel numbers 8658302230, 8658302225, 8658302250, and 8658302260. The purpose of this study is to explore and characterize the site's surface and subsurface conditions and to provide geotechnical recommendations for the planned site development.

We understand the proposed development will consist of constructing a new residential structure within the northwest corner of the site, as well as a small commercial structure within the northeast corner. Through discussion with the project civil designer, we understand stormwater generated from the proposed development may be directed to an onsite infiltration trench with an overflow component directed to an existing storm system within neighboring roadways.

For use in preparing this report we were provided with a preliminary site plan titled "Sno-Valley Senior Center Feasibility," prepared by Red Barn Engineering Inc.

SCOPE

The purpose of this study is to explore and characterize the site surface and subsurface conditions and provide general recommendations for site development.

Specifically, our scope of services included the following:

1. Reviewing available soil and geologic maps of the area as well as other relevant geotechnical information, as provided.
2. Exploring the subsurface soil and groundwater conditions with two geotechnical borings. Drilling services were subcontracted by NGA.
3. Providing Cation Exchange Capacity (CEC) and organics content testing. Testing services were subcontracted by NGA.
4. Performing laboratory grain-size sieve analysis on select soil samples obtained from the explorations.

5. Providing recommendations for earthwork and foundation support.

6. Providing recommendations for temporary and permanent slopes.

7. Providing recommendations for subsurface utilities and pavement subgrade preparation.

8. Providing our opinion on stormwater infiltration feasibility.

9. Providing recommendations for infiltration/bioretention system installation, as warranted.

10. Providing general recommendations for site drainage and erosion control.

11. Documenting the results of our findings, conclusions, and recommendations in a written geotechnical report.

SITE CONDITIONS

Surface Condition

The overall Senior Center property encompasses four parcels covering approximately 0.72 acres. It is currently occupied by a residential building, a parking lot area, and two small outbuildings within the southwest, northwest, and central portions of the site, respectively. Other areas of the site consist of grass lawn areas, landscaping, and gravel surfacing. Topography within the site is generally level to gently sloping. We did not observe surface water throughout the site during our site visit.

Subsurface Conditions

Geology: The site is mapped on the Geologic Map of the Carnation 7.5-Minute Quadrangle, King County, Washington, by Dragovich, J. D., Littke, H. A., Anderson, M. L., Wessel, G. R., Koger, et al., (USGS, 2010). The site is mapped as alluvial fan (Qaf) deposits. The alluvial fan deposits are described as debris-flow diamicton and alluvial sand, gravel, and local boulder gravel. Our explorations generally encountered loose/soft fine-grained deposits underlain by gravel and fine to coarse sand, consistent with the mapped deposits.

Explorations: The subsurface conditions within the site were explored on July 5, 2022, by monitoring the drilling of two geotechnical boring to depths in the range of 14 to 21 feet below the existing ground surface. We also performed one hand tool exploration to a depth of approximately 9 feet below the existing ground surface. The approximate locations of the explorations are shown on the Schematic Site Plan in Figure 2. A geologist from Nelson Geotechnical Associates, Inc. (NGA) was present during the explorations, examined the soils and geologic conditions encountered, obtained samples of the soil, and maintained logs of the explorations.

In the geotechnical borings a Standard Penetration Test (SPT) was performed on each of the samples during drilling to document soil density at depth. The SPT consists of driving a 2-inch outer-diameter, split-spoon sampler 18 inches using a 140-pound hammer with a drop of 30 inches. The number of blows required to drive the sampler the final 12 inches is referred to as the "**N**" value and is presented on the boring logs. The **N** value is used to evaluate the strength and density of the deposit.

The soils were visually classified in general accordance with the Unified Soil Classification System, presented in Figure 3. The logs of our explorations are presented in Figures 4 through 6. We present a brief description of the subsurface conditions in the following paragraph. For a detailed description of the subsurface conditions, the exploration logs should be reviewed.

At the surface of each boring we encountered approximately 2- to 3.5-feet of light brown to dark brown, silty sand to sand with varying amounts of gravel and organics, which we interpreted as undocumented fill and/or topsoil. Underlying the fill soils we encountered light brown, silty fine sand to sandy silt in a very loose to loose condition, which we interpreted as fine-grained alluvial soils. Each boring terminated within medium dense or better, gravelly fine to coarse sand deposits at approximate depths of 14- to 20-feet below the existing ground surface.

Hydrogeologic Conditions

Wet drilling conditions and evidence of potential groundwater seepage was observed within the upper fine-grained deposits. Measurable groundwater at the time of drilling appeared to reside within the gravel deposits at depths of approximately 13- to 18-feet below the ground surface. We would expect this water to be part of the regional groundwater table associated with the nearby Snoqualmie River. If groundwater is encountered during construction within the upper fine-grained alluvial soils, we would interpret this as perched water. Perched water occurs when surface water infiltrates through less dense, more permeable soils and accumulates on top of a relatively low permeability material. Perched water does not represent a regional groundwater "table" within the upper soil horizons. Perched water tends to vary spatially and is dependent upon the amount of rainfall. We would expect the amount of perched groundwater to decrease during drier times of the year and increase during wetter periods.

SENSITIVE AREA EVALUATION

Seismic Hazard

We reviewed the 2018 International Building Code (IBC) for seismic site classification for this project. The site soil conditions best fit the IBC description for Site Class D.

Table 1 below provides seismic design parameters for the site that are in conformance with the 2018 IBC, which specifies a design earthquake having a 2% probability of occurrence in 50 years (return interval of 2,475 years), and the 2008 USGS seismic hazard maps.

Table 1 – 2018 IBC Seismic Design Parameters

Site Class	Spectral Acceleration at 0.2 sec. (g) S_s	Spectral Acceleration at 1.0 sec. (g) S_1	Site Coefficients		Design Spectral Response Parameters	
			F_a	F_v	S_{DS}	S_{D1}
D	1.166	0.442	1.034	1.558	0.803	0.459

The spectral response accelerations were obtained from the USGS Earthquake Hazards Program Interpolated Probabilistic Ground Motion website (2008 data) for the project latitude and longitude. The National Earthquake Hazards Reduction Program map provided by the Department of Natural Resources was reviewed for the site. The map indicates the site contains a moderate to high liquefaction potential. In our opinion the liquefaction potential is low to moderate based on the soils composition and groundwater conditions encountered. Recommendations for foundation pile support should mitigate any potential liquefaction hazards.

Erosion Hazard

The criteria used for determination of the erosion hazard for affected areas include soil type, slope gradient, vegetation cover, and groundwater conditions. The erosion sensitivity is related to vegetative cover and the specific surface soil types, which are related to the underlying geologic soil units. The Natural Resources Conservation Service (NRCS) maps the site as Oridia silt loam, 0 to 2 percent slopes. The erosion hazard rating is designated as slight. Based on our observations and the material encountered, we would interpret this site as having a low to moderate erosion hazard where the surficial soils are exposed. It is our opinion that the erosion hazard for site soils should be low in areas where the site is not disturbed.

LABORATORY ANALYSIS

We performed four gradation analyses on soil samples obtained from the explorations. The samples were obtained from Boring 1 at 5- and 13-feet and Boring 2 at 7.5- and 20-feet below the existing ground surface. The soils analyzed generally meet the USDA textural triangle classification of silt loam and sand for the upper fine-grained and lower gravelly soils, respectively. The results of the sieve analyses are presented as Figures 7 through 10.

Water Quality Chemical Testing

In accordance with the 2014 SWMMWW infiltration facilities that double as treatment facilities will need to be tested for Cation Exchange Capacity (USEPA method 9081) and Organic Content (ASTM D 2974) to determine if the soil is adequate for removing the target pollutants. Cation Exchange Capacity (CEC) and Organic Content tests were conducted by AM Test Laboratories on soil samples obtained from the site as shown on Tables 1 and 2 below, respectively. The 2014 SWMMWW requires soil to be used for treatment to have a CEC greater or equal to 5 milliequivalents (meq) CEC per 100 grams (CEC/100g). The manual also specifies that filtration soils must have a minimum of 1.0 percent organic content. Based on the test results, the native soils meet the minimum organic content and minimum CEC requirements for use as filtration soils. The test results are attached to this report as Appendix A. The test results are also summarized in the following Tables 1 and 2.

Table 1. Cation Exchange Capacity Results

Boring Number	Depth (Feet)	Cation Test Results (CEC/100g)	Suitable for Filtration (Yes/No)
Boring 1	5.0	16	Yes
Boring 1	10.0	17	Yes
Boring 2	5.0	17	Yes
Boring 2	7.5	16	Yes

Table 2. Organic Content Results

Boring Number	Depth (Feet)	Organic Content Results (Percent)	Suitable for Filtration (Yes/No)
Boring 1	5.0	5.2	Yes
Boring 1	10	3.6	Yes
Boring 2	5.0	4.8	Yes
Boring 2	7.5	5.3	Yes

CONCLUSIONS AND RECOMMENDATIONS

General

It is our opinion that the planned development within the site is generally feasible from a geotechnical standpoint. Our explorations indicated that the site was generally underlain by a relatively thick layer of loose fine-grained alluvial deposits with competent gravelly soils at depths in the range of 13- to 18-feet below the existing ground surface. To reduce the potential for structure settlement or liquefaction hazards in the event of seismic activity, we recommend the new planned structures be supported on 4-inch diameter pipe piles to transfer structure loads to the competent gravelly soils at depth. Any paved parking areas planned as part of the development should be supported on a modified subgrade, as described in the **Site Preparation and Grading** subsection of this report.

Based on the results of our on-site infiltration testing, explorations, and grain-size analyses, it is our opinion that the site soils are only marginally conducive to stormwater infiltration, due to their fine-grained nature. We understand stormwater associated with the proposed development may be directed to a shallow infiltration gallery underlying the proposed paved parking lot. We also understand there is no available overflow component for the proposed infiltration system; therefore, all the stormwater generated within the site must be infiltrated or otherwise managed within the site. Due to this requirement, we recommend that the design rates obtained from the grain-size analysis be confirmed through the performance of infiltration testing at the locations and depths of the planned system. This is further discussed in the **Site Drainage** section of this report.

The surficial soils encountered on this site are considered extremely moisture-sensitive and will disturb easily when wet. We recommend that construction take place during the drier summer months, if possible. If construction is to take place during wet weather, the soils may disturb, and additional expenses and delays may be expected due to the wet conditions. Additional expenses could include the need for placing a blanket of rock spalls to protect exposed subgrades and construction traffic areas. Some of the native on-site soils may be suitable for use as structural fill depending on the moisture content of the soil during construction. NGA should be retained to determine if the on-site soils can be used as structural fill material during construction.

Erosion Control

The erosion hazard for the on-site soils is interpreted to be slight for exposed soils, but actual erosion potential will be dependent on how the site is graded and how water is allowed to concentrate. Best Management Practices (BMPs) should be used to control erosion. Areas disturbed during construction should be protected from erosion. Erosion control measures may include diverting surface water away from the stripped or disturbed areas. Silt fences and/or straw bales should be erected to prevent muddy water from leaving the site. Disturbed areas should be planted as soon as practical, and the vegetation should be maintained until it is established. The erosion potential of areas not stripped of vegetation should be low.

Site Preparation and Grading

After erosion control measures are implemented, site preparation should consist of stripping site of topsoil and organic-rich surficial soils and grading to desired subgrade elevations. At this depth, pipe piles can be installed to mitigate any structure settlement issues associated with the relatively loose upper alluvial soils.

For paved parking areas, final subgrade elevation should be overexcavated by a minimum of 12-inches. The base of the overexcavation should be proof-rolled and further evaluated to identify loose areas. Soft areas identified should be further over-excavated and replaced with 2- to 4-inch quarry spalls. We recommend the over excavation be filled with granular crushed rock and compacted to structural fill specifications.

If wet conditions are encountered, alternative site stripping and grading techniques might be necessary. These could include using large excavators equipped with wide tracks and a smooth bucket to complete site grading and covering exposed subgrade with a layer of crushed rock for protection. If wet conditions are encountered or construction is attempted in wet weather, the subgrade should not be compacted as this could cause further subgrade disturbance. In wet conditions it may be necessary to cover the exposed subgrade with a layer of crushed rock as soon as it is exposed to protect the moisture sensitive soils from disturbance by machine or foot traffic during construction. The prepared subgrade should be protected from construction traffic and surface water should be diverted around areas of prepared subgrade.

The site soils are considered to be highly moisture-sensitive and will disturb easily when wet. We recommend that construction take place during the drier summer months if possible. However, if construction takes place during the wet season, additional expenses and delays should be expected due to the wet conditions. Additional expenses could include the need for placing a blanket of rock spalls on exposed subgrades, construction traffic areas, and paved areas prior to placing structural fill. Wet weather grading will also require additional erosion control and site drainage measures. Most of the on-site soils are not suitable for use as structural fill based on their high moisture and silt content. NGA should be retained to evaluate the suitability of all on-site and imported structural fill material during construction.

Temporary and Permanent Slopes

Temporary cut slope stability is a function of many factors, including the type and consistency of soils, depth of the cut, surcharge loads adjacent to the excavation, length of time a cut remains open, and the presence of surface or groundwater. It is exceedingly difficult under these variable conditions to estimate a stable, temporary, cut slope angle. Therefore, it should be the responsibility of the contractor to maintain safe slope configurations at all times as indicated in OSHA guidelines for cut slopes.

The following information is provided solely for the benefit of the owner and other design consultants and should not be construed to imply that Nelson Geotechnical Associates, Inc. assumes responsibility for job site safety. Job site safety is the sole responsibility of the project contractor.

For planning purposes, we recommend that temporary cuts in the upper undocumented fill/surficial soils be no steeper than 2 Horizontal to 1 Vertical (2H:1V). Temporary cuts in the semi-competent fine-grained alluvial soils should be no steeper than 1.5H:1V. If significant groundwater seepage or surface water flow were encountered, we would expect that flatter inclinations would be necessary. We recommend that cut slopes be protected from erosion. The slope protection measures may include covering cut slopes with plastic sheeting and diverting surface runoff away from the top of cut slopes. We do not recommend vertical slopes for cuts deeper than four feet, if worker access is necessary. We recommend that cut slope heights and inclinations conform to appropriate OSHA/WISHA regulations.

Permanent cut and fill slopes should be no steeper than 2H:1V. However, flatter inclinations may be required in areas where loose soils are encountered. Permanent slopes should be vegetated, and the vegetative cover maintained until established.

Deep Foundations

To reduce the risk of structure settlement, we recommend the proposed structures be supported on 4-inch diameter driven pin piles to transfer foundation loads through the upper loose soils down to the underlying competent materials, interpreted to underlie the site at depth. This applies to all foundations and slab-on-grade. Our explorations did not encounter significant debris within the upper soils; however, there is potential that debris within the fill and alluvium could potentially impede some of the piles. There should be contingencies in the budget and design for additional/relocated piles to replace piles that may be obstructed by debris. We also recommend that excavation equipment be available on-site during pile installation so that shallow obstructions can be removed from the planned pile locations.

We recommend that the 4-inch pipe piles be utilized and should be driven using a tractor-mounted hydraulic hammer, with an energy rating of at least 1,100 foot-lb. For this pile and hammer size, we recommend a design capacity of eight tons for each pile driven to refusal. The refusal criterion for this pile and hammer size is defined as less than one-inch of movement during 15 seconds of continuous driving at a rate of 550 blows per minute or higher. We recommend using galvanized schedule 80 pipe for the 4-inch pin piles. Maintaining these recommendations for minimum hammer size and refusal criteria is essential for obtaining successful piles. Final pile depths should be expected to vary and will depend on the depth to competent soils. We recommend that the piles extend a minimum of five feet into the competent native soils, in addition to meeting the refusal criterion. Our explorations performed as a part of this evaluation encountered competent native soils at approximately 10- to 15-feet below the existing ground surface. The piles should be spaced a minimum of two feet apart to avoid a grouping effect on the piles.

Due to the relatively small slenderness ratio of pin piles, maintaining pin pile confinement and lateral support is essential in preventing pile buckling. Pin piles should be suitably embedded into the reinforced concrete. The structural engineer should design the connections of the piles to the foundations.

Vertically driven pin piles do not provide meaningful lateral capacity. Due to the rigid pile support, friction between the foundation and subgrade soil should not be considered as resisting lateral pressures on this structure. We recommend that all lateral loads be resisted on battered pin piles and/or passive resistance on the below-grade portions of the foundations. The upper foot of soil should be neglected when calculating the passive resistance. We recommend using an equivalent fluid density of 150 pcf for calculating the passive resistance.

Structural Fill

General: Fill placed beneath foundations, pavement, or other settlement-sensitive structures should be placed as structural fill. Structural fill, by definition, is placed in accordance with prescribed methods and standards, and is monitored by an experienced geotechnical professional or soils technician. Field monitoring procedures would include the performance of a representative number of in-place density tests to document the attainment of the desired degree of relative compaction. The area to receive the fill should be suitably prepared as described in the **Site Preparation and Grading** subsection prior to beginning fill placement.

Materials: Structural fill should consist of a good quality, granular soil, free of organics and other deleterious material, and be well graded to a maximum size of about three inches. All-weather fill should contain no more than five-percent fines (soil finer than U.S. No. 200 sieve, based on that fraction passing the U.S. 3/4-inch sieve). The on-site soils are not suitable for use as structural fill. We should be retained to evaluate all proposed structural fill material prior to placement.

Fill Placement: Following subgrade preparation, placement of structural fill may proceed. All filling should be accomplished in uniform lifts up to eight inches thick. Each lift should be spread evenly and be thoroughly compacted prior to placement of subsequent lifts. All structural fill underlying building areas and pavement subgrade should be compacted to a minimum of 95 percent of its maximum dry density. Maximum dry density, in this report, refers to that density as determined by the ASTM D-1557 Compaction Test procedure. The moisture content of the soils to be compacted should be within about two percent of optimum so that a readily compactable condition exists. It may be necessary to overexcavate and remove wet soils in cases where drying to a compactable condition is not feasible. All compaction should be accomplished by equipment of a type and size sufficient to attain the desired degree of compaction and should be tested.

Slab-on-Grade

Slab-on-grade should be supported on pin piles as described in the **Deep Foundations** subsection of this report. We recommend that all floor slabs be underlain by at least six inches of free-draining gravel with less than three percent by weight of the material passing Sieve #200 for use as a capillary break. A suitable vapor barrier, such as heavy plastic sheeting (6-mil, minimum), should be placed over the capillary break material. An additional 2-inch-thick moist sand layer may be used to cover the vapor barrier. This sand layer may be used to protect the vapor barrier membrane and to aid in curing the concrete.

Pavements

Pavement subgrade preparation and structural filling where required, should be completed as recommended in the **Site Preparation and Grading** and **Structural Fill** subsections of this report. The pavement subgrade should be proof-rolled with a heavy, rubber-tired piece of equipment, to identify soft or yielding areas that require repair. The pavement section should be underlain by a stable subgrade, overlain by a minimum of 12 inches of crushed rock. We should be retained to observe the proof-rolling and recommend subgrade repairs prior to placement of the crushed rock.

Utilities

We recommend that underground utilities be bedded with a minimum six inches of pea gravel prior to backfilling the trench with on-site or imported material. Trenches within settlement sensitive areas should be compacted to 95 percent of the modified proctor as described in the **Structural Fill** subsection of this report. Trench backfill should be compacted to a minimum of 95 percent of the modified proctor maximum dry density. Trenches located in non-structural areas and five feet below roadway subgrade should be compacted to a minimum 90 percent of the maximum dry density. The trench backfill compaction should be tested.

Site Drainage

The preliminary infiltration capacity of the onsite soils was evaluated through a combination of visual classification and grain-size analyses in accordance with the Department of Ecology's 2014 SWMMWW. Per the stormwater manual design infiltration rates can be determined using the grain size analysis method for soils not consolidated by glacial advance. The soils underlying the site are interpreted to consist of fine-grained alluvial deposits with gravelly soils at depths in the range of 13- to 20-feet below the existing ground surface.

An equation provided in Section 3.3.6 of the 2014 WSDOE Stormwater Management Manual for Western Washington was used to determine the infiltration capabilities of the site soil utilizing data from the grain-size analyses. Based on this equation and information obtained from the grain-size analyses, initial short-term infiltration rates in the range of 1 to 3.8 inches/hour were calculated. We also referenced Table 3.3.1 of the manual to provide an adequate correction factor to infiltration rates obtained from the above equation to calculate a long-term design rate. Correction factors of 0.90, 0.40, and 0.90 were utilized for CFv, CFt, CFm, respectively. We applied the correction factors to the most conservative rate obtained from the grain-size analysis calculations which is 1 inches/hour and computed a long-term design infiltration rate of 0.324 inches per hour.

Since the proposed development includes infiltrating all the stormwater generated from impervious surfaces within the site, we recommend NGA be retained to confirm the provided grain-size analyses infiltration capacity estimates with onsite infiltration testing at the specified depth and location of the proposed infiltration facility. Infiltration systems should be sized and designed using the 2014 DOE SWMMWW and design infiltration rates that are based on actual field testing.

Surface Drainage: The finished ground surface should be graded such that stormwater is directed to an approved stormwater collection system. Water should not be allowed to stand in any areas where footings, slabs, or pavements are to be constructed. Final site grades should allow for drainage away from the residences. We suggest that the finished ground be sloped at a minimum downward gradient of three percent, for a distance of at least 10 feet away from the residences. Surface water should be collected by permanent catch basins and drain lines and be discharged into an approved discharge system.

Subsurface Drainage: If groundwater is encountered during construction, we recommend that the contractor slope the bottom of the excavation and collect the water into ditches and small sump pits where the water can be pumped out and routed into a permanent storm drain. We recommend the use of footing drains around the structures. Footing drains should be installed at least one foot below planned finished floor elevation. The drains should consist of a minimum 4-inch-diameter, rigid, slotted or perforated, PVC pipe surrounded by free-draining material wrapped in a filter fabric. We recommend that the free-draining material consist of an 18-inch-wide zone of clean (less than three-percent fines), granular material placed along the back of walls. Pea gravel is an acceptable drain material. The free-draining material should extend up the wall to one foot below the finished surface. The top foot of backfill should consist of impermeable soil placed over plastic sheeting or building paper to minimize surface water or fines migration into the footing drain. Footing drains should discharge into tightlines leading to an approved collection and discharge point with convenient cleanouts to prolong the useful life of the drains. Roof drains should not be connected to wall or footing drains.

CONSTRUCTION MONITORING

We should be retained to provide construction monitoring services during the earthwork phase of the project to evaluate subgrade conditions, temporary cut conditions, fill compaction, and drainage system installation.

USE OF THIS REPORT

NGA has prepared this report for **Ms. Lisa Yeager** and her agents, for use in the planning and design of the development on this site only. The scope of our work does not include services related to construction safety precautions and our recommendations are not intended to direct the contractors' methods, techniques, sequences, or procedures, except as specifically described in our report for consideration in design. There are possible variations in subsurface conditions between the explorations and also with time. Our report, conclusions, and interpretations should not be construed as a warranty of subsurface conditions. A contingency for unanticipated conditions should be included in the budget and schedule.

We recommend that NGA be retained to provide monitoring and consultation services during construction to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes should the conditions revealed differ from those anticipated, and to evaluate whether or not earthwork and foundation installation activities comply with contract plans and specifications. We should be contacted a minimum of one week prior to construction activities and could attend pre-construction meetings if requested.

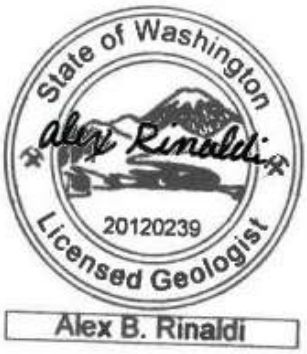
Within the limitations of scope, schedule, and budget, our services have been performed in accordance with generally accepted geotechnical engineering practices in effect in this area at the time this report was prepared. No other warranty, expressed or implied, is made. Our observations, findings, and opinions are a means to identify and reduce the inherent risks to the owner.

o-o-o

It has been a pleasure to provide service to you on this project. If you have any questions or require further information, please call.

Sincerely,

NELSON GEOTECHNICAL ASSOCIATES, INC.



Alex B. Rinaldi, LG
Project Geologist

11.14.2022

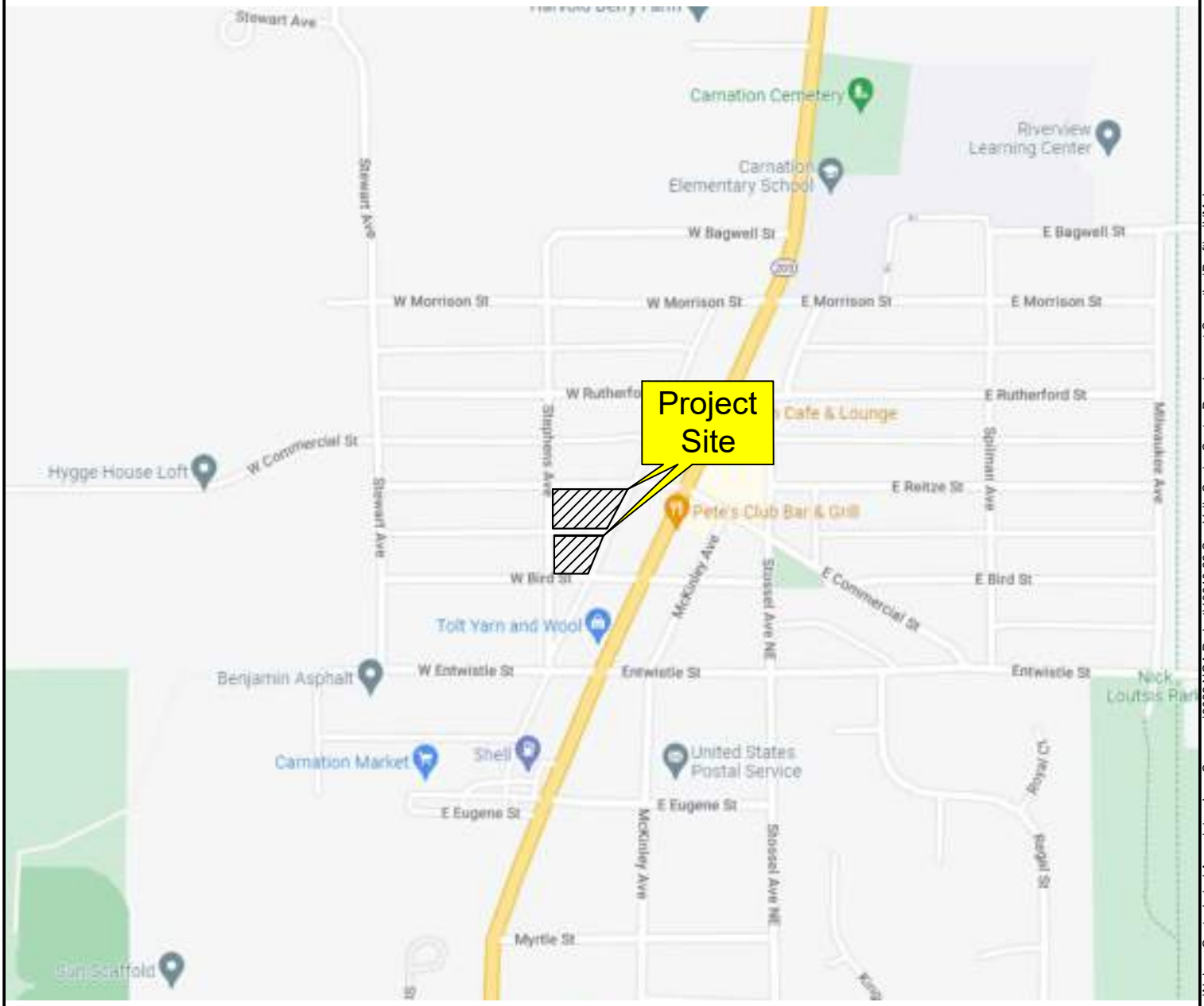
Khaled M. Shawish, PE
Principal

ABR:KMS:dy

Attachments: Ten Figures
Appendix A – Laboratory Testing Results

VICINITY MAP

Not to Scale



Carnation, WA

Project Number 1361022	Sno-Valley Senior Center Development Vicinity Map	NELSON GEOTECHNICAL ASSOCIATES, INC	No.	Date	Revision	By	CK
Figure 1			1	7/20/22	Original	DPN	ABR

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Schematic Site Plan

LEGEND

Property line

B-1 — Number and approximate location of boring

HA-1 — Number and approximate location of hand auger

0 40 80

Approximate Scale: 1 inch = 40 feet

Reference: Site Plan based on a plan dated August 16, 2022 titled "Sno-Valley Senior Housing," prepared by Environmental Works.

Project Number	Sno-Valley Senior Center Development Schematic Site Plan
1361022	
Figure 2	

NELSON GEOTECHNICAL ASSOCIATES, INC
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No.	Date	Revision	By	CK
1	7/20/22	Original	DPN	ABR
2	8/24/22	Revision	DPN	ABR

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UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOL	GROUP NAME
COARSE - GRAINED SOILS MORE THAN 50 % RETAINED ON NO. 200 SIEVE	GRAVEL MORE THAN 50 % OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVEL	GW	WELL-GRADED, FINE TO COARSE GRAVEL
			GP	POORLY-GRADED GRAVEL
		GRAVEL WITH FINES	GM	SILTY GRAVEL
			GC	CLAYEY GRAVEL
	SAND MORE THAN 50 % OF COARSE FRACTION PASSES NO. 4 SIEVE	CLEAN SAND	SW	WELL-GRADED SAND, FINE TO COARSE SAND
			SP	POORLY GRADED SAND
		SAND WITH FINES	SM	SILTY SAND
			SC	CLAYEY SAND
FINE - GRAINED SOILS MORE THAN 50 % PASSES NO. 200 SIEVE	SILT AND CLAY LIQUID LIMIT LESS THAN 50 %	INORGANIC	ML	SILT
			CL	CLAY
		ORGANIC	OL	ORGANIC SILT, ORGANIC CLAY
	SILT AND CLAY LIQUID LIMIT 50 % OR MORE	INORGANIC	MH	SILT OF HIGH PLASTICITY, ELASTIC SILT
			CH	CLAY OF HIGH PLASTICITY, FAT CLAY
		ORGANIC	OH	ORGANIC CLAY, ORGANIC SILT
HIGHLY ORGANIC SOILS			PT	PEAT

NOTES:

1) Field classification is based on visual examination of soil in general accordance with ASTM D 2488-93.
2) Soil classification using laboratory tests is based on ASTM D 2488-93.
3) Descriptions of soil density or consistency are based on interpretation of blowcount data, visual appearance of soils, and/or test data.

SOIL MOISTURE MODIFIERS:

Dry - Absence of moisture, dusty, dry to the touch

Moist - Damp, but no visible water.

Wet - Visible free water or saturated, usually soil is obtained from below water table

Project Number 1361022	Sno-Valley Senior Center Development Soil Classification Chart	NELSON GEOTECHNICAL ASSOCIATES, INC	No.	Date	Revision	By	CK
Figure 3		Woodinville Office: 17311-135th Ave. NE, A-500, Woodinville, WA 98072, (425) 486-1669 / Fax: 481-2510 Wenatchee Office: 105 Palouse St. Wenatchee, WA 98801, (509) 665-7696 / Fax: 665-7692 www.nelsongeotech.com	1	7/20/22	Original	DPN	ABR

BORING LOG

B-1

Approximate Ground Surface Elevation: ??

Soil Profile: Description	Graphic Log	Group Symbol	Sample Data: Blow Count	Sample Data: Sample Location (Depth in feet)	Penetration Resistance (Blows/foot - ●) / Moisture Content (Percent - ■)	Laboratory Testing	Piezometer Installation - Ground Water Data (Depth in Feet)
Light brown, silty fine sand with trace gravel (very loose to loose, moist) (**topsoil** / **FILL**)			4		46%	M	
Light brown, fine sandy silt (medium stiff, moist to wet)		ML	5		44%	M	
Light brown, silty fine sand with organic charcoal fragments (very loose, wet)		SM	3		44%	M	
-becomes loose, with trace gravel			5		43%	G,M	
Gray-brown, gravelly fine to coarse sand with silt (very dense, wet)		SW-SM	90-8		7%	M	
Boring met refusal at 14.1 feet below existing grade on 07/05/2022. Groundwater seepage was encountered at 13.0 feet during drilling.							

Penetration Resistance (Blows/foot - ●): 10 20 30 40 50 50+
Moisture Content (Percent - ■): 10 20 30 40 50 50+
Depth scale: 5, 10, 15, 20, 25

LEGEND

- Depth Driven and Amount Recovered with 2-inch O.D. Split-Spoon Sampler
- Depth Driven and Amount Recovered with 3-inch Shelby Tube Sampler
- Solid PVC Pipe
- Slotted PVC Pipe
- Monument/ Cap to Piezometer
- ✱ Liquid Limit
- \+ Plastic Limit
- Concrete
- Bentonite
- Native Soil
- Silica Sand
- Water Level

M	Moisture Content
A	Atterberg Limits
G	Grain-size Analysis
DS	Direct Shear
PP	Pocket Penetrometer Readings, tons/ft
P	Sample Pushed
T	Triaxial

NOTE: Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgement. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Project Number	Sno-Valley Senior Center Development Boring Log	NELSON GEOTECHNICAL ASSOCIATES, INC
1361022		Woodinville Office: 17311-135th Ave. NE, A-500, Woodinville, WA 98072, (425) 486-1669 / Fax: 481-2510
Figure 4		Wenatchee Office: 105 Palouse St. Wenatchee, WA 98801, (509) 665-7696 / Fax: 665-7692
Page 1 of 1		www.nelsongeotech.com

No.	Date	Revision	By	CK
1	7/20/22	Original	DPN	ABR

Logged by: ABR on 07/05/2022

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BORING LOG

B-2

Approximate Ground Surface Elevation: ??

Logged by: ABR on 07/05/2022

Soil Profile: Description	Graphic Log	Group Symbol	Sample Data: Blow Count	Sample Location (Depth in feet)	Penetration Resistance (Blows/foot - ●) / Moisture Content (Percent - ■)	Laboratory Testing	Piezometer Installation - Ground Water Data (Depth in Feet)
Grass underlain by Fine to medium sand with silt and gravel (loose, moist) (**FILL**)			9		33%	M	
Light brown, silty fine sand with trace roots and charcoal fragments (very loose to loose, moist to wet)			4		49%	M	
-becomes wet			4		42%	M	
		SM	4		49%	M	
-becomes very loose, with trace roots, no charcoal			3		36%	M	
Gray-brown gravel with fine to coarse sand and trace silt (very dense, wet)		GP	50-6		9%	M	
Boring met refusal at 21.0 feet below existing grade on 07/05/2022. Groundwater seepage was encountered at 18.0 feet during drilling.							

Penetration Resistance / Moisture Content scale: 10 20 30 40 50 50+

Depth scale: 5, 10, 15, 20, 25

Water Level ▼ at approximately 18.0 feet

LEGEND

- Depth Driven and Amount Recovered with 2-inch O.D. Split-Spoon Sampler
- Depth Driven and Amount Recovered with 3-inch Shelby Tube Sampler
- Solid PVC Pipe
- Slotted PVC Pipe
- Monument/ Cap to Piezometer
- ✱ Liquid Limit
- \+ Plastic Limit
- Concrete
- Bentonite
- Native Soil
- Silica Sand
- ▼ Water Level

M	Moisture Content
A	Atterberg Limits
G	Grain-size Analysis
DS	Direct Shear
PP	Pocket Penetrometer Readings, tons/ft
P	Sample Pushed
T	Triaxial

NOTE: Subsurface conditions depicted represent our observations at the time and location of this exploratory hole, modified by engineering tests, analysis and judgement. They are not necessarily representative of other times and locations. We cannot accept responsibility for the use or interpretation by others of information presented on this log.

Project Number	Sno-Valley Senior Center Development Boring Log	NELSON GEOTECHNICAL ASSOCIATES, INC
1361022		Woodinville Office: 17311-135th Ave. NE, A-500, Woodinville, WA 98072, (425) 486-1669 / Fax: 481-2510
Figure 5		Wenatchee Office: 105 Palouse St. Wenatchee, WA 98801, (509) 665-7696 / Fax: 665-7692
Page 1 of 1		www.nelsongeotech.com

No.	Date	Revision	By	CK
1	7/20/22	Original	DPN	ABR

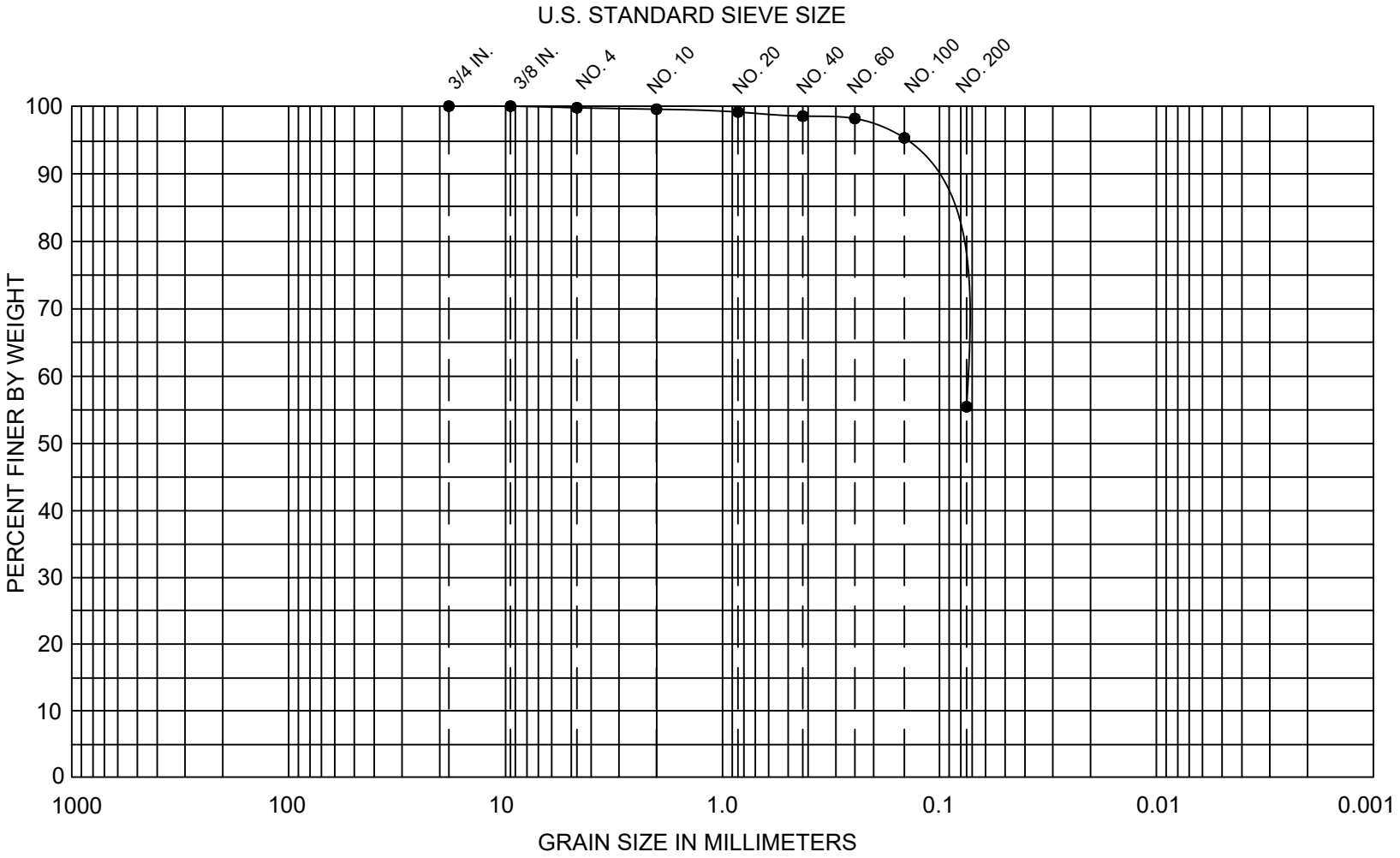
LOG OF EXPLORATION

DEPTH (FEET)	USCS	SOIL DESCRIPTION
HAND AUGER ONE		
0.0 – 2.8		DARK BROWN, ORGANIC-RICH SILTY SAND WITH ROOTS (LOOSE, MOIST) (**TOPSOIL**)
2.8 – 9.0	SM	LIGHT BROWN, SILTY FINE SAND (LOOSE, MOIST TO WET)
		SAMPLES WERE NOT COLLECTED GROUNDWATER SEEPAGE WAS NOT ENCOUNTERED HAND AUGER CAVING WAS NOT ENCOUNTERED HAND AUGER WAS COMPLETED AT 9.0 FEET ON 07/05/2022

Figure 7

Project Number
1361022

Sno-Valley Senior Center
Development
Sieve Analysis



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

U.S.C. SYMBOL	EXPLORATION NUMBER	SAMPLE DEPTH	SOIL DESCRIPTION	SOIL DISTRIBUTION
●ML	B-1	5.0 feet	Fine, sandy silt	Gravel = 0% Sand = 45% Silt/Clay = 55%

No.	Date	Revision	By	CK
1	7/20/22	Original	DPN	ABR

NELSON GEOTECHNICAL ASSOCIATES, INC
www.nelsongeotech.com
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(425) 486-1669 / Fax: 48 -2510
Wenatchee Office
105 Palouse St.
Wenatchee, WA 98801
(509) 665-7696 / Fax: 665-7692

Project Number
1361022

Figure 8

Sno-Valley Senior Center
Development
Sieve Analysis

NELSON GEOTECHNICAL ASSOCIATES, INC
www.nelsongeotech.com
Woodinville Office
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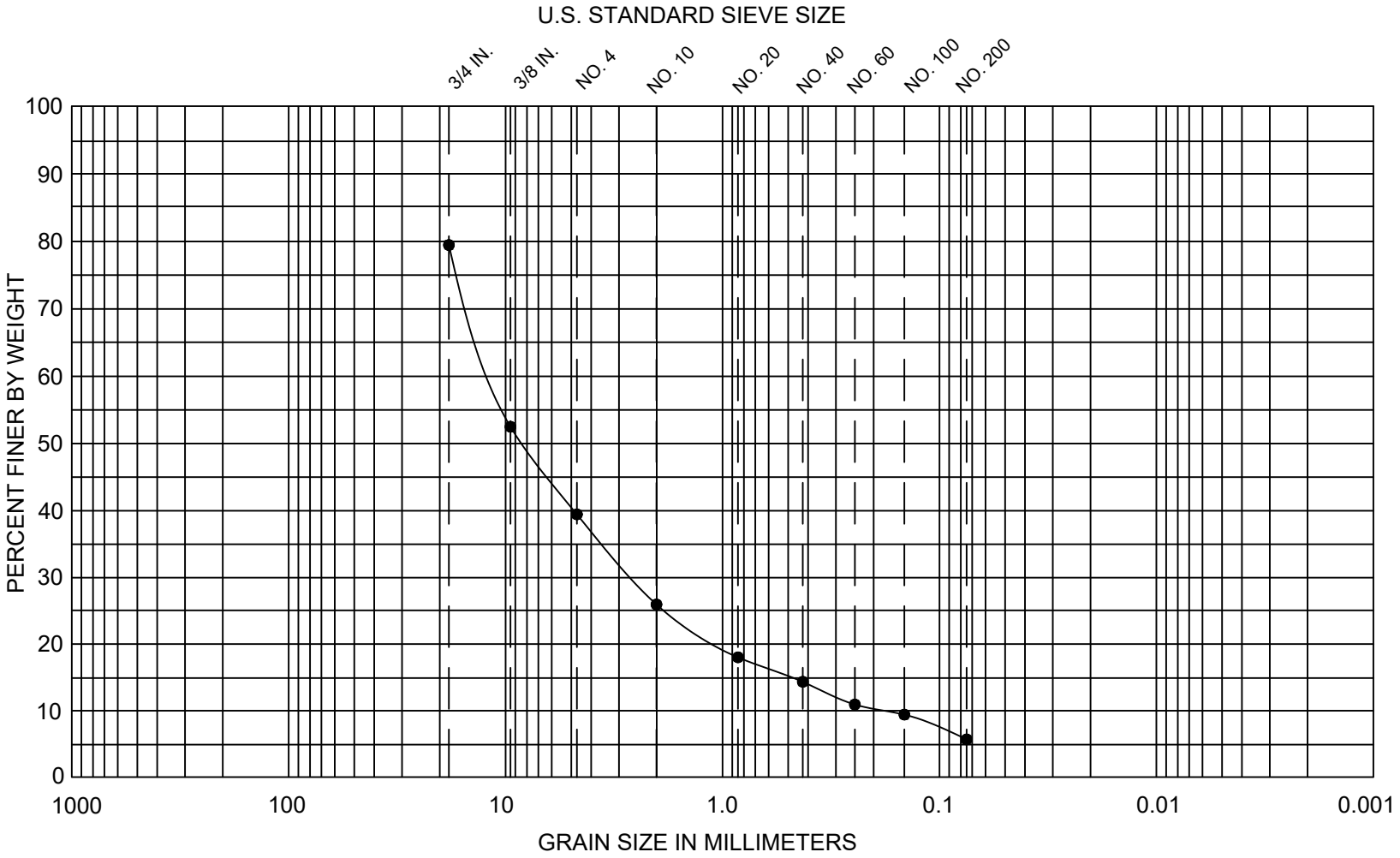
Woodinville, WA 98072
(425) 486-1669 / Fax: 486-2510
Wenatchee Office
105 Palouse St.
Wenatchee, WA 98801
(509) 665-7696 / Fax: 665-7692

No.	Date	Revision	By	CK
1	8/1/22	Original	DPN	ABR



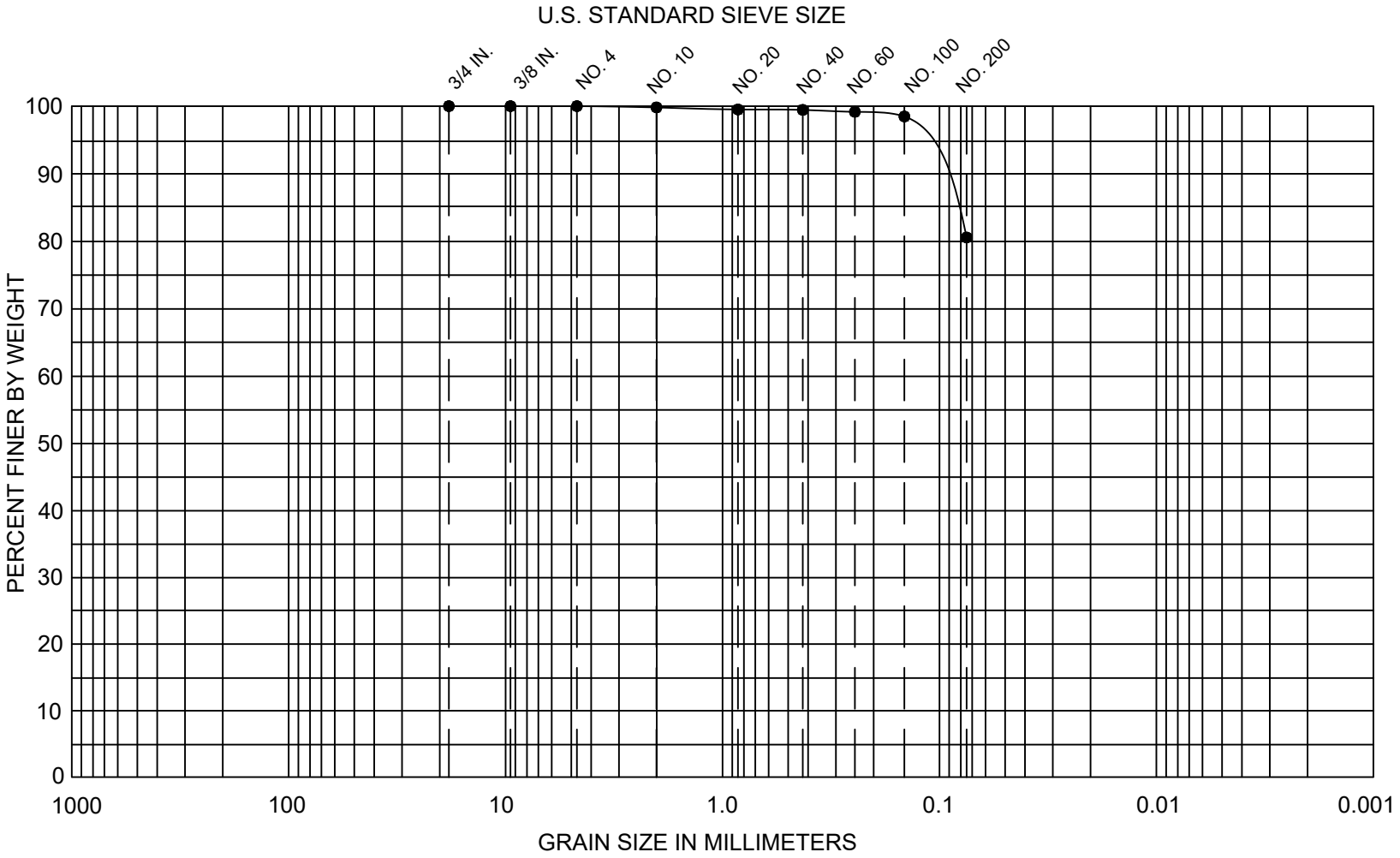
COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

U.S.C. SYMBOL	EXPLORATION NUMBER	SAMPLE DEPTH	SOIL DESCRIPTION	SOIL DISTRIBUTION
●GP-GM	B-1	13.0 feet	Gravel with fine to coarse sand and silt	Gravel = 60% Sand = 34% Silt/Clay = 6%

Project Number
1361022

Figure 9

Sno-Valley Senior Center
Development
Sieve Analysis



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

U.S.C. SYMBOL	EXPLORATION NUMBER	SAMPLE DEPTH	SOIL DESCRIPTION	SOIL DISTRIBUTION
●ML	B-2	7.5 feet	Silt with fine sand	Gravel = 0% Sand = 19% Silt/Clay = 81%

NELSON GEOTECHNICAL ASSOCIATES, INC
www.nelsongeotech.com
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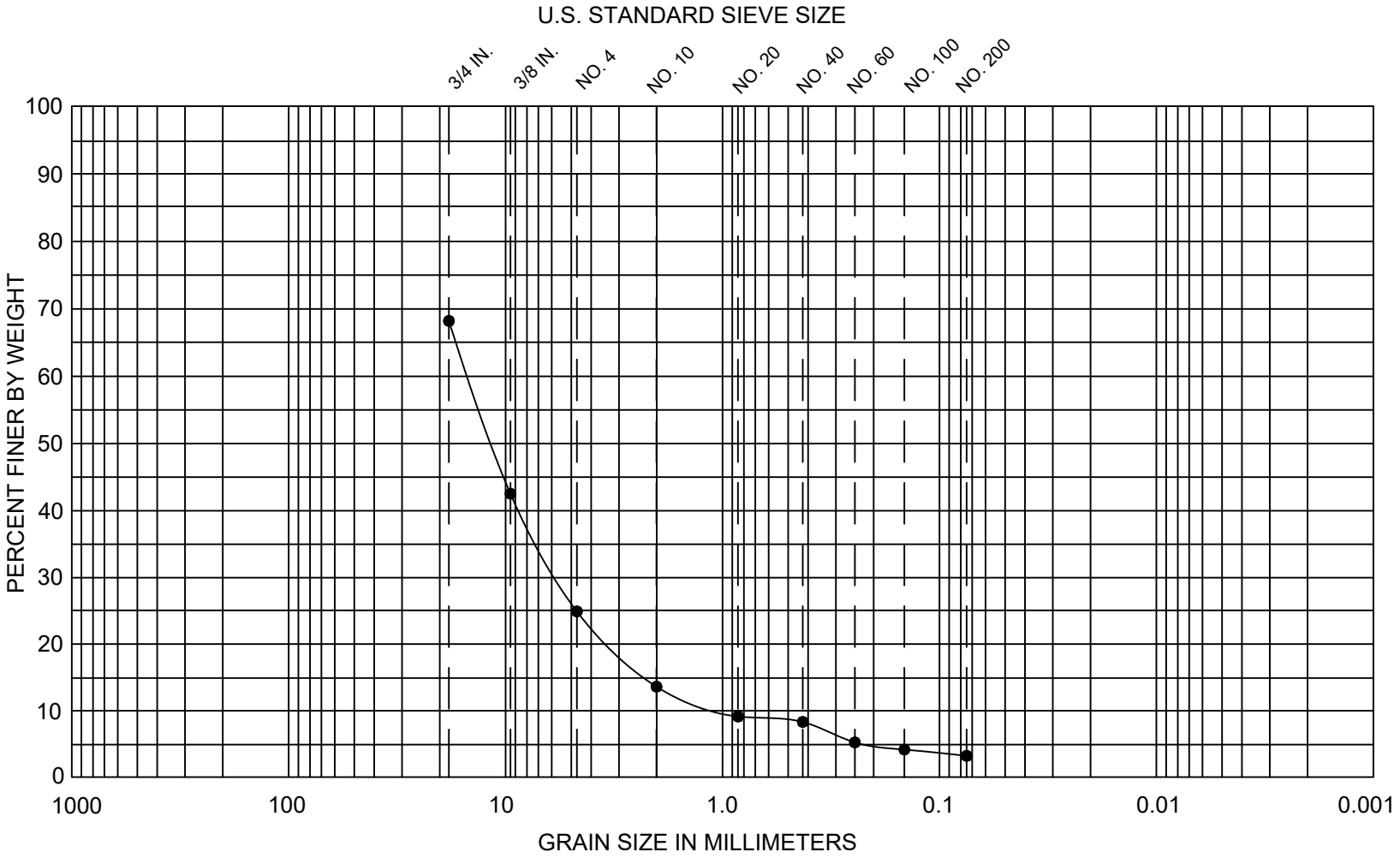
Wenatchee Office
105 Palouse St.
Wenatchee, WA 98801
(509) 665-7696 / Fax: 665-7692

No.	Date	Revision	By	CK
1	8/1/22	Original	DPN	ABR

Project Number 1361022

Figure 10

Sno-Valley Senior Center Development
Sieve Analysis



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

U.S.C. SYMBOL	EXPLORATION NUMBER	SAMPLE DEPTH	SOIL DESCRIPTION	SOIL DISTRIBUTION
●GP	B-2	20.0 feet	Gravel with fine to coarse sand and trace silt	Gravel = 75% Sand = 22% Silt/Clay = 3%

NELSON GEOTECHNICAL ASSOCIATES, INC
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Wenatchee, WA 98801
(509) 665-7696 / Fax: 665-7692

No.	Date	Revision	By	CK
1	8/1/22	Original	DPN	ABR

APPENDIX A

Am Test Inc.
13600 NE 126TH PL
Suite C
Kirkland, WA 98034
(425) 885-1664
www.amtestlab.com

Professional Analytical Services

ANALYSIS REPORT

NELSON GEOTECH
17311 135TH AVE NE
WOODINVILLE, WA 98072
Attention: ALEX RINALDI
Project Name: SNO-VALLEY SENIOR CENTER
Project #: 1361022
All results reported on an as received basis.

Date Received: 08/18/22
Date Reported: 9/13/22

AMTEST Identification Number	**22-A013961**
Client Identification	**B1 @ 5'**
Sampling Date	**07/05/22**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Cation Exchange Capacity	16.	meq/100g		0.5	SW-846 9081	CM	09/12/22

Miscellaneous

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANLST	DATE
Organic Matter	5.2	%			SM 2540G	FG	08/22/22

NELSON GEOTECH
Project Name: SNO-VALLEY SENIOR CENTER
AmTest ID: 22-A013962

AMTEST Identification Number **22-A013962**
Client Identification **B1 @ 10'**
Sampling Date **07/05/22**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Cation Exchange Capacity	17.	meq/100g		0.5	SW-846 9081	CM	09/12/22

Miscellaneous

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANLST	DATE
Organic Matter	3.6	%			SM 2540G	FG	08/22/22

AMTEST Identification Number **22-A013963**
Client Identification **B2 @ 5'**
Sampling Date **07/05/22**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Cation Exchange Capacity	17.	meq/100g		0.5	SW-846 9081	CM	09/12/22

Miscellaneous

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANLST	DATE
Organic Matter	4.8	%			SM 2540G	FG	08/22/22

NELSON GEOTECH
Project Name: SNO-VALLEY SENIOR CENTER
AmTest ID: 22-A013964

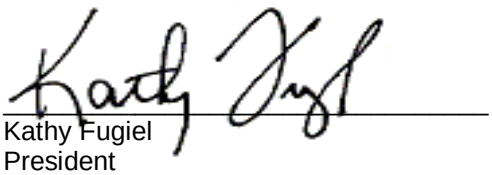
AMTEST Identification Number **22-A013964**
Client Identification **B2 @ 7.5'**
Sampling Date **07/05/22**

Conventionals

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Cation Exchange Capacity	16.	meq/100g		0.5	SW-846 9081	CM	09/12/22

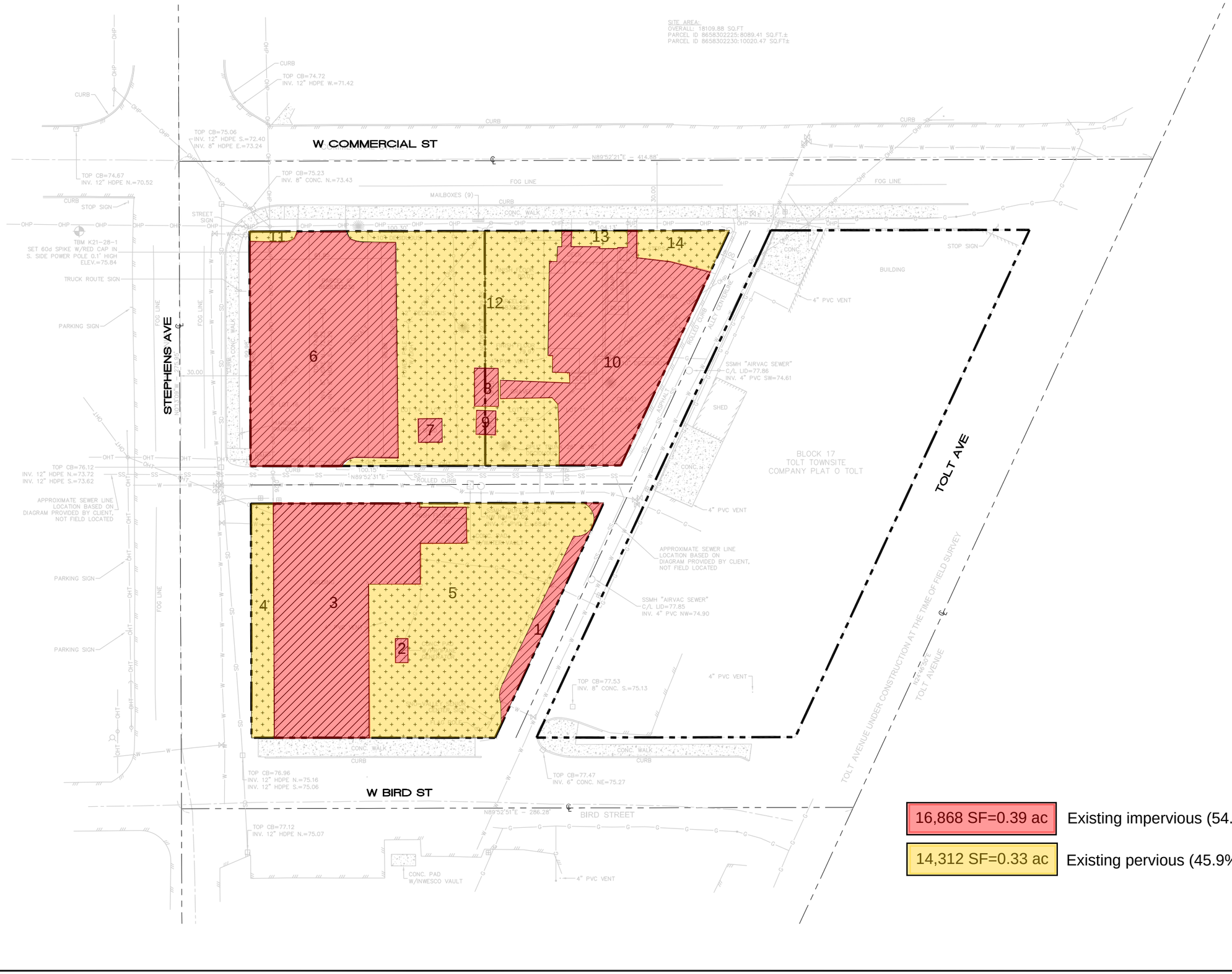
Miscellaneous

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANLST	DATE
Organic Matter	5.3	%			SM 2540G	FG	08/22/22



Kathy Fugiel
President

Appendix B – Stormwater Calculations



16,868 SF=0.39 ac — Existing impervious (54.1%)

14,312 SF=0.33 ac — Existing pervious (45.9%)

CM DESIGN GROUP
1318 East Pike St
Seattle, WA 98122
206-459-0612

CATHERINE E. MARTIN
STATE OF WASHINGTON
27900
REGISTERED
PROFESSIONAL ENGINEER

REV. NO.	DATE	DESCRIPTION

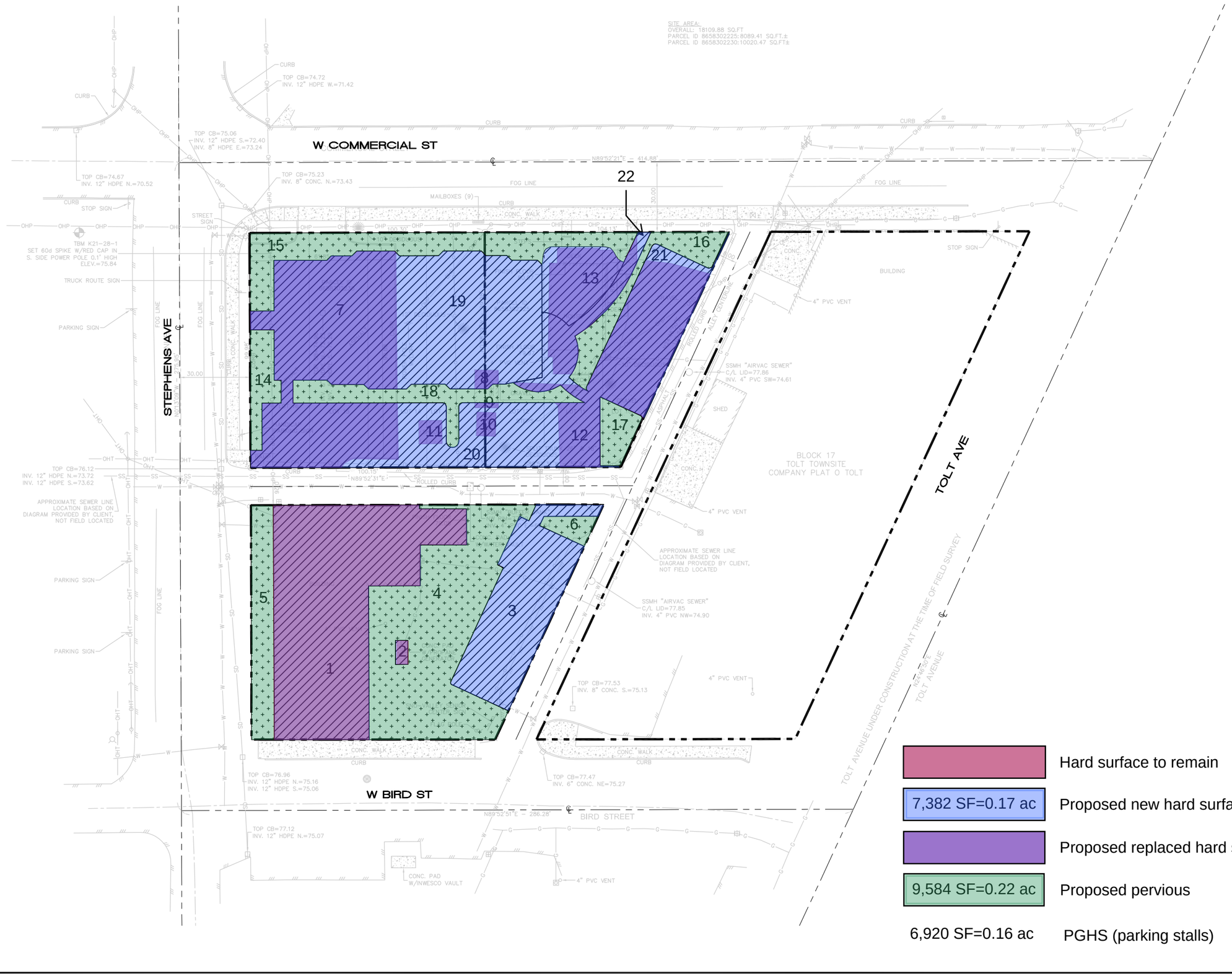
PROJECT NUMBER
22008

SUBMITTAL
BUILDING PERMIT

SNO–VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

EXISTING SURFACES

DESIGN EAS
DRAFT EAS
CHECK CEM
DATE 10–03–2022
SCALE 1"=20'
SHEET
OF



	Hard surface to remain
7,382 SF=0.17 ac	Proposed new hard surface
	Proposed replaced hard surface
9,584 SF=0.22 ac	Proposed pervious
6,920 SF=0.16 ac	PGHS (parking stalls)

CM DESIGN GROUP
1318 East Pike St
Seattle, WA 98122
206-459-0612

CATHERINE E. MARTIN
STATE OF WASHINGTON
27900
REGISTERED
PROFESSIONAL ENGINEER

REV. NO.	DATE	DESCRIPTION

PROJECT NUMBER 22008
SUBMITTAL PERMIT

SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

PROPOSED SURFACES

DESIGN EAS
DRAFT EAS
CHECK CEM
DATE 10-03-2022
SCALE 1"=20'
SHEET
OF

Sno-Valley Senior Housing

11/16/2022

Impervious Surface Area Calculations

South Parcel

Existing		
Sub Area #	Impervious Surface	Pervious Surface
1	532	
2	54	
3	5098	
4		957
5		6045
Total (SF)	5684	7003
Total (AC)	0.13	0.16

Proposed				
Sub Area #	New Hard Surface	Replaced Hard Surface	Pervious Surface	Ex Hard surface to remain
1				5098
2				54
3	2345			
4			4093	
5			957	
6			193	
Total (SF)	2345	0	5050	5152
Total (AC)	0.05	0.00	0.12	0.12

North Parcel

Existing		
Sub Area #	Impervious Surface	Pervious Surface
6	6006	
7	101	
8	164	
9	84	
10	4625	
11		82
12		6363
13		171
14		515
Total (SF)	10980	7130
Total (AC)	0.25	0.16

Proposed				
Sub Area #	New Hard Surface	Replaced Hard Surface	Pervious Surface	Ex Hard surface to remain
7		4513		
8		75		
9		22		
10		84		
11		101		
12		2388		
13		1211		
14			449	
15			1757	
16			762	
17			368	
18			945	
19	3612			
20	1651			
21	126			
22	39			
Total (SF)	5428	8394	4281	0
Total (AC)	0.12	0.19	0.10	0

Total Site

Total (SF)	16664	14133	
Total (AC)	0.38	0.32	

Total (SF)	7774	8394	9331	5152
Total (AC)	0.18	0.19	0.21	0.12

Sno-Valley Senior Housing

11/16/2022

Impervious Surface Area Calculations

South Parking Lot & Garbage Area:

Area includes 3 & 6 from proposed

	SF	AC	
Imp =	2345	0.05	
Per=	193	0.00	(assume 0.01 so areas match)

Area includes 1 and part of 5 from existing

Imp =	532	0.01	
Per=	2006	0.05	

Alley C Parking - includes all of north parcel

	SF	AC	
Existing			
Imp =	10980	0.25	
Per=	7130	0.16	(assume 0.17 so areas match)
Proposed			
Imp =	13823	0.32	
Per=	4281	0.10	

Water Quality Calcs

North Parcel Parking Area	Imp=	2345	SF	0.05 AC
South Parcel Parkig Area	Imp=	5478	SF	0.13 AC

MGS FLOOD
PROJECT REPORT

Program Version: MGSFlood 4.58
Program License Number: 201510004
Project Simulation Performed on: 11/15/2022 2:42 PM
Report Generation Date: 11/15/2022 2:42 PM

Input File Name: Carnation - Alley C Parking Area.fld
Project Name: Carnation - Alley C Parking Area
Analysis Title: Alley C Parking Area
Comments: Alley C Parking Area, Building and Alley J Parking

PRECIPITATION INPUT

Computational Time Step (Minutes): 15

Extended Precipitation Time Series Selected

Full Period of Record Available used for Routing

Climatic Region Number: 5
Precipitation Station : 95004805 Puget West 48 in_5min 10/01/1939-10/01/2097
Evaporation Station : 951048 Puget West 48 in MAP

Evaporation Scale Factor : 0.750

HSPF Parameter Region Number: 3
HSPF Parameter Region Name : USGS Default

********** Default HSPF Parameters Used (Not Modified by User) **********

********** **WATERSHED DEFINITION** **********

Predevelopment/Post Development Tributary Area Summary

	Predeveloped	Post Developed
Total Subbasin Area (acres)	0.420	0.420
Area of Links that Include Precip/Evap (acres)	0.000	0.000
Total (acres)	0.420	0.420

----------SCENARIO: PREDEVELOPED
Number of Subbasins: 1

---------- Subbasin : Alley C Parking - North Parcel ----------

	-------Area (Acres) --------
Outwash Forest	0.170
Impervious	0.250

Subbasin Total 0.420

----------SCENARIO: POSTDEVELOPED
Number of Subbasins: 1

---------- Subbasin : Alley C Parking - Parcel A ----------
-------Area (Acres) --------
Outwash Grass 0.100
Impervious 0.320

Subbasin Total 0.420

********** **LINK DATA** **********

----------SCENARIO: PREDEVELOPED
Number of Links: 0

********** **LINK DATA** **********

----------SCENARIO: POSTDEVELOPED
Number of Links: 1

Link Name: Alley C Parking
Link Type: Infiltration Trench
Downstream Link: None

Trench Type : Trench on Embankment Sideslope
Trench Length (ft) : 1937.00
Trench Width (ft) : 13.00
Trench Depth (ft) : 2.00
Trench Bottom Elev (ft) : 100.00
Trench Rockfill Porosity (%) : 30.00

Constant Infiltration Option Used
Infiltration Rate (in/hr): 0.32

**********FLOOD FREQUENCY AND DURATION STATISTICS**********

----------SCENARIO: PREDEVELOPED
Number of Subbasins: 1
Number of Links: 0

----------SCENARIO: POSTDEVELOPED
Number of Subbasins: 1
Number of Links: 1

********** Link: Alley C Parking ********** Link WSEL Stats
WSEL Frequency Data(ft)
(Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	WSEL Peak (ft)
1.05-Year	100.005
1.11-Year	100.005
1.25-Year	100.006
2.00-Year	100.007
3.33-Year	100.008
5-Year	100.009
10-Year	100.011
25-Year	100.019
50-Year	100.031
100-Year	100.037

*************Groundwater Recharge Summary **************
Recharge is computed as input to Perlnd Groundwater Plus Infiltration in Structures

Total Predeveloped Recharge During Simulation

Model Element	Recharge Amount (ac-ft)
Subbasin: Alley C Parking - No	62.606
Total:	62.606

Total Post Developed Recharge During Simulation

Model Element		Recharge Amount (ac-ft)
Subbasin: Alley C Parking - Pa		43.590
Link:	Alley C Parking	178.657
Total:		222.247

Total Predevelopment Recharge is Less than Post Developed
Average Recharge Per Year, (Number of Years= 158)
Predeveloped: 0.396 ac-ft/year, Post Developed: 1.407 ac-ft/year

*************Water Quality Facility Data **************

----------SCENARIO: PREDEVELOPED

Number of Links: 0

----------SCENARIO: POSTDEVELOPED

Number of Links: 1

********** Link: Alley C Parking **********

2-Year Discharge Rate : 0.000 cfs

15-Minute Timestep, Water Quality Treatment Design Discharge
On-line Design Discharge Rate (91% Exceedance): 0.06 cfs
Off-line Design Discharge Rate (91% Exceedance): 0.03 cfs

Infiltration/Filtration Statistics----------
Inflow Volume (ac-ft): 178.66
Inflow Volume Including PPT-Evap (ac-ft): 178.66
Total Runoff Infiltrated (ac-ft): 178.66, 100.00%
Total Runoff Filtered (ac-ft): 0.00, 0.00%
Primary Outflow To Downstream System (ac-ft): 0.00
Secondary Outflow To Downstream System (ac-ft): 0.00
Volume Lost to ET (ac-ft): 0.00
Percent Treated (Infiltrated+Filtered+ENT)/Total Volume: 100.00%

************Compliance Point Results **************

Scenario Predeveloped Compliance Subbasin: Alley C Parking - North Parcel

Scenario Postdeveloped Compliance Link: Alley C Parking

***** Point of Compliance Flow Frequency Data *****
Recurrence Interval Computed Using Gringorten Plotting Position

Predevelopment Runoff		Postdevelopment Runoff	
Tr (Years)	Discharge (cfs)	Tr (Years)	Discharge (cfs)
2-Year	0.111	2-Year	0.000
5-Year	0.138	5-Year	0.000
10-Year	0.165	10-Year	0.000
25-Year	0.196	25-Year	0.000
50-Year	0.224	50-Year	0.000
100-Year	0.264	100-Year	0.000
200-Year	0.268	200-Year	0.000
500-Year	0.274	500-Year	0.000

** Record too Short to Compute Peak Discharge for These Recurrence Intervals

****** Flow Duration Performance ******

Excursion at Predeveloped 50%Q2 (Must be Less Than or Equal to 0%):	0.0%	PASS
Maximum Excursion from 50%Q2 to Q2 (Must be Less Than or Equal to 0%):	0.0%	PASS
Maximum Excursion from Q2 to Q50 (Must be less than 10%):	0.0%	PASS
Percent Excursion from Q2 to Q50 (Must be less than 50%):	0.0%	PASS

MEETS ALL FLOW DURATION DESIGN CRITERIA: PASS

****** LID Duration Performance ******

Excursion at Predeveloped 8%Q2 (Must be Less Than 0%):	0.0%	PASS
Maximum Excursion from 8%Q2 to 50%Q2 (Must be Less Than 0%):	0.0%	PASS

MEETS ALL LID DURATION DESIGN CRITERIA: PASS

MGS FLOOD
PROJECT REPORT

Program Version: MGSFlood 4.58
Program License Number: 201510004
Project Simulation Performed on: 11/15/2022 2:34 PM
Report Generation Date: 11/15/2022 2:34 PM

Input File Name: Carnation - South Parking Area.fld
Project Name: Carnation - South Parking Area
Analysis Title: South Parking Area
Comments: Area includes south parking area and garbage area

PRECIPITATION INPUT

Computational Time Step (Minutes): 15

Extended Precipitation Time Series Selected

Full Period of Record Available used for Routing

Climatic Region Number: 5
Precipitation Station : 95004805 Puget West 48 in_5min 10/01/1939-10/01/2097
Evaporation Station : 951048 Puget West 48 in MAP

Evaporation Scale Factor : 0.750

HSPF Parameter Region Number: 3
HSPF Parameter Region Name : USGS Default

********** Default HSPF Parameters Used (Not Modified by User) **********

********** WATERSHED DEFINITION **********

Predevelopment/Post Development Tributary Area Summary

	Predeveloped	Post Developed
Total Subbasin Area (acres)	0.060	0.060
Area of Links that Include Precip/Evap (acres)	0.000	0.000
Total (acres)	0.060	0.060

----------SCENARIO: PREDEVELOPED
Number of Subbasins: 1

---------- Subbasin : South Parking & Garbage ----------

	-------Area (Acres) --------
Outwash Forest	0.050
Impervious	0.010

Subbasin Total 0.060

----------SCENARIO: POSTDEVELOPED
Number of Subbasins: 1

---------- Subbasin : South Parking & Garbage ----------
-------Area (Acres) --------
Outwash Grass 0.010
Impervious 0.050

Subbasin Total 0.060

********** **LINK DATA** **********

----------SCENARIO: PREDEVELOPED
Number of Links: 0

********** **LINK DATA** **********

----------SCENARIO: POSTDEVELOPED
Number of Links: 1

Link Name: South Parking Infiltration Trench
Link Type: Infiltration Trench
Downstream Link: None

Trench Type : Trench on Embankment Sideslope
Trench Length (ft) : 78.00
Trench Width (ft) : 24.00
Trench Depth (ft) : 2.00
Trench Bottom Elev (ft) : 100.00
Trench Rockfill Porosity (%) : 30.00

Constant Infiltration Option Used
Infiltration Rate (in/hr): 0.32

**********FLOOD FREQUENCY AND DURATION STATISTICS**********

----------SCENARIO: PREDEVELOPED
Number of Subbasins: 1
Number of Links: 0

----------SCENARIO: POSTDEVELOPED
Number of Subbasins: 1
Number of Links: 1

********** Link: South Parking Infiltration Trench ********** Link WSEL Stats
WSEL Frequency Data(ft)
(Recurrence Interval Computed Using Gringorten Plotting Position)

Tr (yrs)	WSEL Peak (ft)
1.05-Year	100.010
1.11-Year	100.011
1.25-Year	100.018
2.00-Year	100.036
3.33-Year	100.056
5-Year	100.075
10-Year	100.116
25-Year	100.187
50-Year	100.231
100-Year	100.272

*************Groundwater Recharge Summary **************
Recharge is computed as input to Perlnd Groundwater Plus Infiltration in Structures

Total Predeveloped Recharge During Simulation

Model Element	Recharge Amount (ac-ft)
Subbasin: South Parking & Garb	18.413
Total:	18.413

Total Post Developed Recharge During Simulation

Model Element		Recharge Amount (ac-ft)
Subbasin: South Parking & Garb		4.359
Link:	South Parking Infilt	27.898
Total:		32.257

Total Predevelopment Recharge is Less than Post Developed
Average Recharge Per Year, (Number of Years= 158)
Predeveloped: 0.117 ac-ft/year, Post Developed: 0.204 ac-ft/year

*************Water Quality Facility Data ***************

----------SCENARIO: PREDEVELOPED

Number of Links: 0

----------SCENARIO: POSTDEVELOPED

Number of Links: 1

********** Link: South Parking Infiltration Trench **********

2-Year Discharge Rate : 0.000 cfs

15-Minute Timestep, Water Quality Treatment Design Discharge
On-line Design Discharge Rate (91% Exceedance): 0.01 cfs
Off-line Design Discharge Rate (91% Exceedance): 0.01 cfs

Infiltration/Filtration Statistics----------
Inflow Volume (ac-ft): 27.90
Inflow Volume Including PPT-Evap (ac-ft): 27.90
Total Runoff Infiltrated (ac-ft): 27.90, 100.00%
Total Runoff Filtered (ac-ft): 0.00, 0.00%
Primary Outflow To Downstream System (ac-ft): 0.00
Secondary Outflow To Downstream System (ac-ft): 0.00
Volume Lost to ET (ac-ft): 0.00
Percent Treated (Infiltrated+Filtered+ET)/Total Volume: 100.00%

**********Compliance Point Results **********

Scenario Predeveloped Compliance Subbasin: South Parking & Garbage

Scenario Postdeveloped Compliance Link: South Parking Infiltration Trench

*** Point of Compliance Flow Frequency Data ***
Recurrence Interval Computed Using Gringorten Plotting Position

Predevelopment Runoff		Postdevelopment Runoff	
Tr (Years)	Discharge (cfs)	Tr (Years)	Discharge (cfs)
2-Year	4.456E-03	2-Year	0.000
5-Year	5.563E-03	5-Year	0.000
10-Year	6.642E-03	10-Year	0.000
25-Year	7.988E-03	25-Year	0.000
50-Year	8.988E-03	50-Year	0.000
100-Year	1.057E-02	100-Year	0.000
200-Year	1.073E-02	200-Year	0.000
500-Year	1.095E-02	500-Year	0.000

** Record too Short to Compute Peak Discharge for These Recurrence Intervals

**** Flow Duration Performance ****

Excursion at Predeveloped 50%Q2 (Must be Less Than or Equal to 0%):	0.0%	PASS
Maximum Excursion from 50%Q2 to Q2 (Must be Less Than or Equal to 0%):	0.0%	PASS
Maximum Excursion from Q2 to Q50 (Must be less than 10%):	0.0%	PASS
Percent Excursion from Q2 to Q50 (Must be less than 50%):	0.0%	PASS

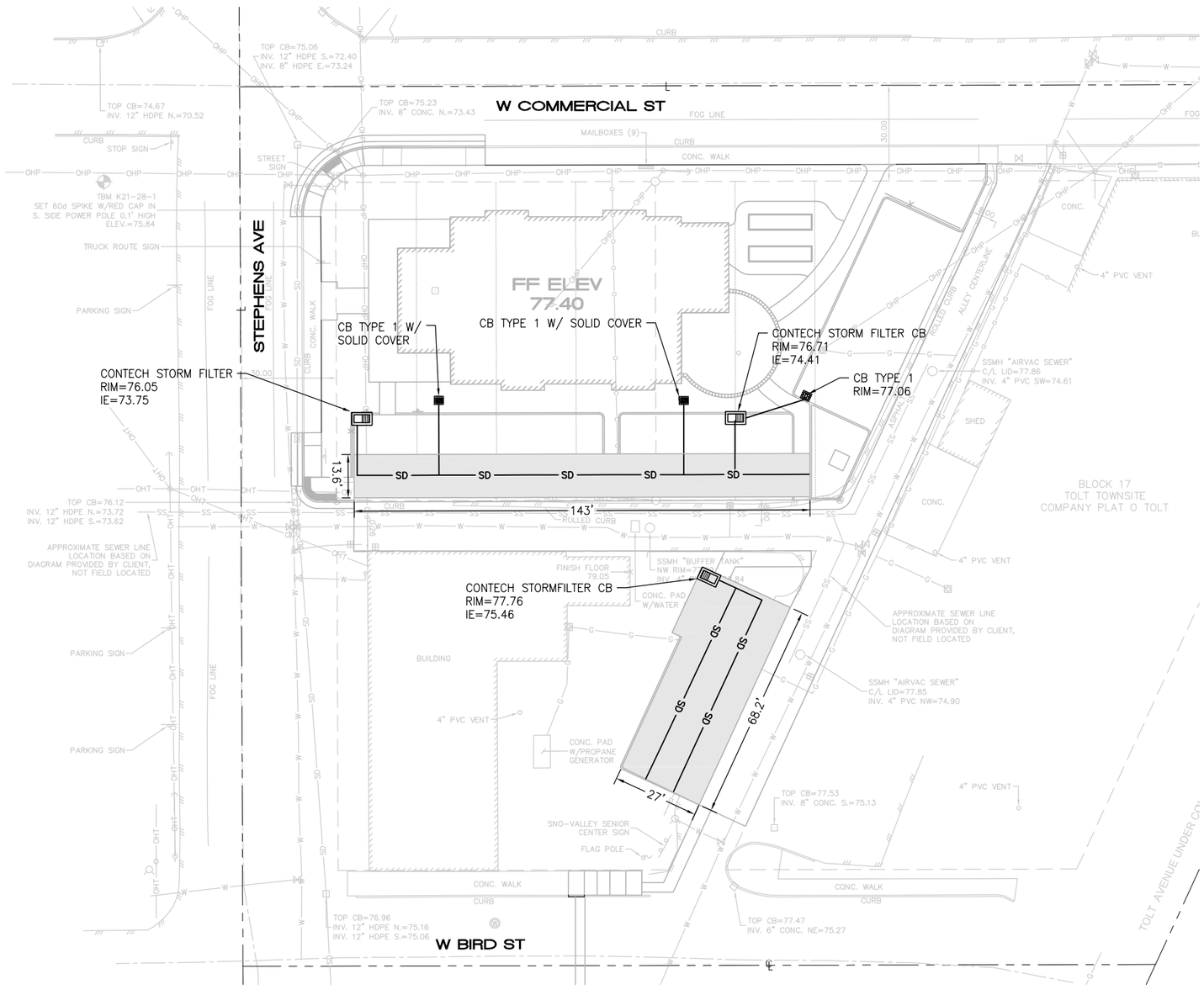
MEETS ALL FLOW DURATION DESIGN CRITERIA: PASS

**** LID Duration Performance ****

Excursion at Predeveloped 8%Q2 (Must be Less Than 0%):	0.0%	PASS
Maximum Excursion from 8%Q2 to 50%Q2 (Must be Less Than 0%):	0.0%	PASS

MEETS ALL LID DURATION DESIGN CRITERIA: PASS

Appendix C – Stormwater Site Plan



LEGEND

- SD — 6" PERFORATED PVC UNDERDRAIN PIPE
- 6" SOLID WALL PVC PIPE
- CATCH BASIN TYPE 1
- INFILTRATION TRENCH
- CONTECH STORMFILTER

N

20 0 20

SCALE: 1" = 20'

PERMIT SUBMITTAL
NOT FOR CONSTRUCTION

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Seattle, WA 98122
206-459-0612

CATHERINE E. MERRIN
STATE OF WASHINGTON
27900
REGISTERED
PROFESSIONAL ENGINEER

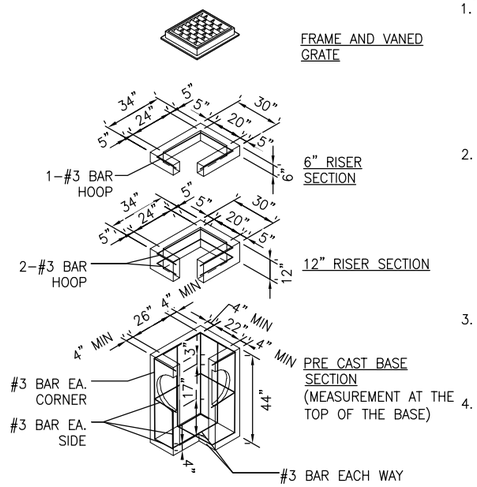
REV. NO.	DATE	DESCRIPTION

PROJECT NUMBER
22008
SUBMITTAL
SD/DR PERMIT

SNO-VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

STORM DRAINAGE PLAN

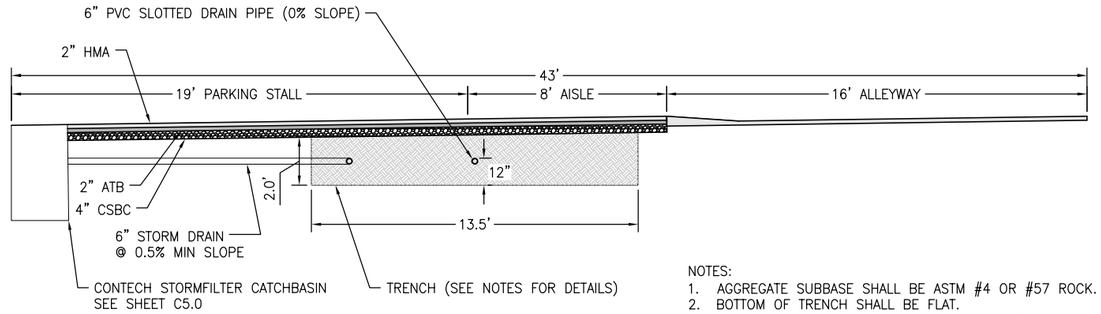
DESIGN
CFG
DRAFT
CFG
CHECK
CEM
DATE
2022-11-10
SCALE
1"=20'
SHEET
C5.0



NOTES:

1. CATCH BASIN TO BE IN ACCORDANCE WITH ASTM C 478 (AASHTO M 199) & ASTM C 890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE STANDARD SPECIFICATIONS. AS AN ACCEPTABLE ALTERNATE TO REBAR, WELDED WIRE FABRIC HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A 497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN THE KNOCKOUTS.
2. THE BOTTOM OF THE PRE CAST BASE MAY BE ROUNDED. PRE CAST BASES SHALL BE FURNISHED W/ CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM. KNOCKOUTS MAY BE ON ALL 4 SIDES W/ MAXIMUM DIAMETER OF 20". KNOCKOUTS MAY BE EITHER ROUND OR "D" SHAPE. PIPE TO BE INSTALLED IN FACTORY SUPPLIED KNOCKOUTS. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAMETER PLUS CATCH BASIN WALL THICKNESS.
3. THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'–0". THE TAPER ON THE SIDES OF THE PRE CAST BASE SECTION & RISER SECTION SHALL NOT EXCEED 1/2" PER FT.
4. CATCH BASIN FRAME & GRATE SHALL BE IN ACCORDANCE W/ STANDARD SPECIFICATIONS & MEET THE STRENGTH REQUIREMENTS OF FEDERAL SPECIFICATION RR–F–621D. MATING SURFACES SHALL BE FINISHED TO ASSURE NON–ROCKING FIT. FRAME & GRATE SHALL BE INSTALLED W/ FLANGE DOWN, CATCH BASIN FRAME AND GRATES SHALL BE 18"x24" VANED UNLESS OTHERWISE SHOWN OR INDICATED.

1 CATCH BASIN TYPE 1
1 / C5.0
NTS



NOTES:
1. AGGREGATE SUBBASE SHALL BE ASTM #4 OR #57 ROCK.
2. BOTTOM OF TRENCH SHALL BE FLAT.
3. ALL PIPES WITHIN THE DRYWELL SHALL BE 6" SCHEDULE 40 SLOTTED PIPES LAID FLAT.

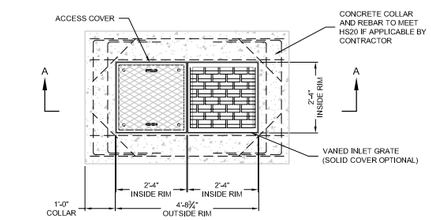
2 INFILTRATION TRENCH SECTION
2 / C5.0
NTS

STORMFILTER STEEL CATCHBASIN DESIGN NOTES			
STORMFILTER TREATMENT CAPACITY IS A FUNCTION OF THE CARTRIDGE SELECTION AND THE NUMBER OF CARTRIDGES. 1 CARTRIDGE CATCHBASIN HAS A MAXIMUM OF ONE CARTRIDGE. SYSTEM IS SHOWN WITH A 27" CARTRIDGE, AND IS ALSO AVAILABLE WITH AN 18" CARTRIDGE. STORMFILTER CATCHBASIN CONFIGURATIONS ARE AVAILABLE WITH A DRY INLET BAY FOR VECTOR CONTROL. PEAK HYDRAULIC CAPACITY PER TABLE BELOW. IF THE SITE CONDITIONS EXCEED PEAK HYDRAULIC CAPACITY, AN UPSTREAM BYPASS STRUCTURE IS REQUIRED.			
18"			
2.3'			
2 gpm/sf	1.67* gpm/sf	1 gpm/sf	
15	12.53	7.5	
1.0			
1'-0"			
3'-9"			

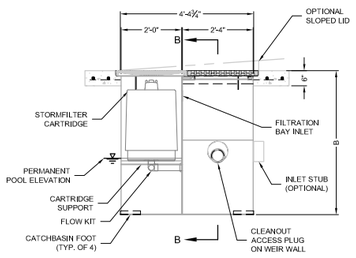
* 1.67 gpm/sf SPECIFIC FLOW RATE IS APPROVED WITH PHOSPHOSORB® (PSORB) MEDIA ONLY

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. FOR SITE SPECIFIC DRAWINGS WITH DETAILED STORMFILTER CATCHBASIN STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
3. STORMFILTER CATCHBASIN WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
4. INLET SHOULD NOT BE LOWER THAN OUTLET. INLET (IF APPLICABLE) AND OUTLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR.
5. MANUFACTURER TO APPLY A SURFACE BEAD WELD IN THE SHAPE OF THE LETTER "O" ABOVE THE OUTLET PIPE STUB ON THE EXTERIOR SURFACE OF THE STEEL SFCB.
6. STORMFILTER CATCHBASIN EQUIPPED WITH 4 INCH (APPROXIMATE) LONG STUBS FOR INLET (IF APPLICABLE) AND OUTLET PIPING. STANDARD OUTLET STUB IS 8 INCHES IN DIAMETER. MAXIMUM OUTLET STUB IS 15 INCHES IN DIAMETER. CONNECTION TO COLLECTION PIPING CAN BE MADE USING FLEXIBLE COUPLING BY CONTRACTOR.
7. STEEL STRUCTURE TO BE MANUFACTURED OF 1/4 INCH STEEL PLATE. CASTINGS SHALL MEET AASHTO M306 LOAD RATING. TO MEET HS20 LOAD RATING ON STRUCTURE, A CONCRETE COLLAR IS REQUIRED. WHEN REQUIRED, CONCRETE COLLAR WITH #4 REINFORCING BARS TO BE PROVIDED BY CONTRACTOR.
8. FILTER CARTRIDGES SHALL BE MEDIA-FILLED, PASSIVE, SIPHON ACTUATED, RADIAL FLOW, AND SELF CLEANING. RADIAL MEDIA DEPTH SHALL BE 7-INCHES. FILTER MEDIA CONTACT TIME SHALL BE AT LEAST 38 SECONDS.
9. SPECIFIC FLOW RATE IS EQUAL TO THE FILTER TREATMENT CAPACITY (gpm) DIVIDED BY THE FILTER CONTACT SURFACE AREA (sq ft).

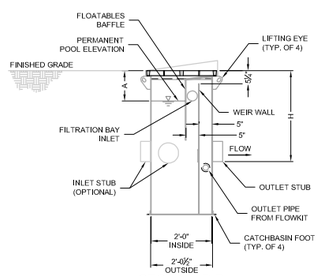
INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CATCHBASIN (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO PROTECT CARTRIDGES FROM CONSTRUCTION-RELATED EROSION RUNOFF.



PLAN VIEW



SECTION A-A



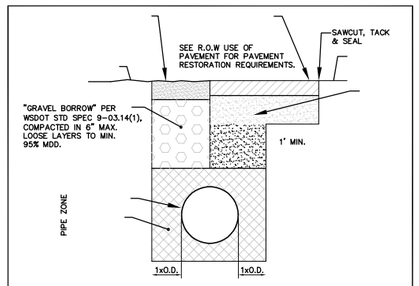
SECTION B-B

1-CARTRIDGE CATCHBASIN STORMFILTER DATA		
STRUCTURE ID		XXX
WATER QUALITY FLOW RATE (cfs)		X.XX
PEAK FLOW RATE (<1 cfs)		X.XX
RETURN PERIOD OF PEAK FLOW (yrs)		XXX
CARTRIDGE HEIGHT (27", 18", 18" DEEP)		XX
CARTRIDGE FLOW RATE (gpm)		XX
MEDIA TYPE (PERLITE, ZPG, PSORB)		XXXXX
RIM ELEVATION		XXX.XX'
PIPE DATA:	I.E.	DIAMETER
INLET STUB	XXX.XX'	XX"
OUTLET STUB	XXX.XX'	XX"
CONFIGURATION	OUTLET / INLET / INLET	OUTLET / INLET / INLET
SLOPED LID		YES\NO
SOLID COVER		YES\NO
NOTES/SPECIAL REQUIREMENTS:		

CONTECH ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-526-3999 513-645-7000 513-645-7993 FAX

1 CARTRIDGE CATCHBASIN STORMFILTER STANDARD DETAIL

3 CONTECH STORM FILTER
3 / C5.0
NTS



1. PERPENDICULAR, OPEN CUT TRENCH CROSSINGS WITHIN THE RIGHT-OF-WAY SHALL BE BACKFILLED WITH 100% CRUSHED SURFACING TOP COURSE (CSTC) PER WSDOT 9-03.9 (3).
2. MINIMUM COVER FOR STORM PIPE SHALL BE 3'
3. PIPE ZONE MATERIAL PER WSDOT 9-03.12(3).
4. COMPACTION SHALL BE,AT LEAST 95% OF MAXIMUM DENSITY,PER WSDOT STANDARD SPECIFICATION SECTION 2-03.3(14)D.

   BACKFILL COMPACTION ON PRIVATE EASEMENTS WHICH ARE NOT USED FOR DRIVING PURPOSES SHALL BE MINIMUM 90% MAX. DRY DENSITY (MDD).

   IN R.O.W MATCH EXISTING PAVEMENT SECTION PLUS 1", BUT NOT LESS THAN 4" ACP CLASS ½" PG.64-22 OVER 6" CSTC (COMPACTED THICKNESS), TACK & SEAL NEAT LINES.

LOCHNER (425)-454-3160 | TYPICAL TRENCH DETAIL | 11/2018 | DWG. NO. D-4

4 STORM PIPE TRENCH
4 / C5.0
NTS

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1318 East Pike St
Seattle, WA 98122
206-459-0612

CATHERINE E. MORGAN STATE OF WASHINGTON 27900 REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DATE	DESCRIPTION

PROJECT NUMBER 22008
SUBMITTAL SD/DR PERMIT

SNO–VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

STORM DRAINAGE DETAILS

DESIGN
DRAFT CFG
CHECK CFG
DATE CEM
SCALE 2022–11–10
SHEET NTS
C8.1

Appendix D – SWPPP Narrative and Plan

STORMWATER POLLUTION PREVENTION PLAN

Sno-Valley Senior Housing

31845 W Commercial St.
Carnation, WA 98014

Prepared by: Catherine Mirkin, PE
November 2022

CM DESIGN GROUP

Contents

List of Figures

1 General Information on the Existing Site and Project

1.1 Project Description

The Sno-Valley Senior Center project will create affordable housing for seniors and veterans with low income. The project includes a 15-unit three story building with adjacent parking. The site is located 31845 West Commercial Street, Carnation, WA and consists of four adjacent parcels bound by West Commercial Street to the north, Stephens Avenue to the west, West Bird Street to the south and an alley to the east. The existing site includes an asphalt parking lot, a senior center building and grass and gravel where a home and shed have recently been removed. The site is relatively flat and slopes gently to the northwest.

Site improvements for this redevelopment project include removing the existing asphalt parking lot and constructing the new three-story building. New parking stalls will be created along the south and east edges of the new building.

The project vicinity map is shown below.

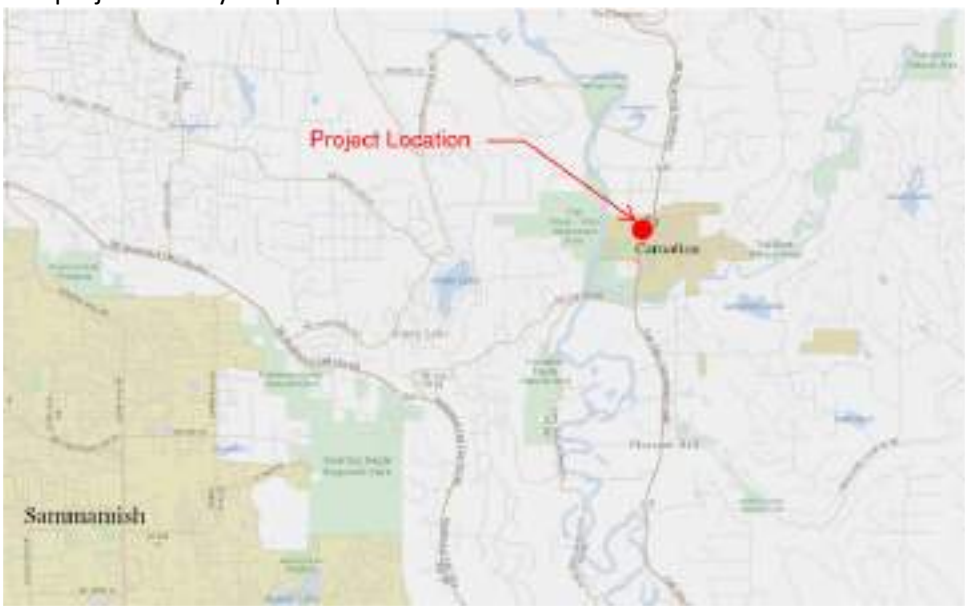


Figure 1. Vicinity map

1.2 Existing Site Conditions

Figure 2. Site Map

Downspout systems on the main building and building 2 are not tightlined and disperse on the ground next to the buildings. The surrounding grading tends to slope towards the buildings which further contributes to water damage and flooding issues.

The existing asphalt driveway on the north end of the site accesses Bliss Cochrane Rd NW and goes to building 2. The pavement is broken up, cracked, and severely heaved by tree roots. Runoff from the driveway disperses through lawn areas that slope southeast towards the main building.

1.3 Adjacent Areas

The site is located in a forested rural area. As noted on the site map above, there is a man-made pond on the project site south of the existing buildings that has been identified by Pierce County as a wetland. Upstream drainage areas are not expected to impact the site. The existing pond receives upstream water, and there is an overflow structure that conveys flow to the storm system on the west side of SR 302. The downstream drainage system is noted in the figure above.

1.4 Critical Areas

According to the King County iMap, there are no critical areas surrounding the site.

1.5 Soil

The site is mapped as alluvial fan (Qaf) deposits based on the USGS Map, 2010. Alluvial fan deposits are described as debris-flow diamicton and alluvial sand, gravel, and local boulder gravel. Subsurface explorations were explored by monitoring the drilling of two geotechnical borings to depths in the range of 14 to 21 feet, Site specific explorations indicated the site was generally underlain by a relatively thick layer of loose fine-grained alluvial deposits with competent gravelly soil at depths in the range of 13- to 18-feet below the existing ground surface. Based on the results of on-site infiltration testing, explorations, and grain-size analyses, site soils are not conducive to stormwater infiltration, due to their fine-grained nature and relatively high moisture content. The surficial soils encountered on this site are considered extremely moisture-sensitive and will disturb easily when wet. Construction is recommended during drier summer months if possible.

Figure 3. Local topography

1.6 Potential Erosion Problem Areas

There are not areas within the site that appear to have much potential for erosion. The site is relatively flat so there are no steep slopes.

1.7 Proposed Conditions

This project proposes to:

- Remove existing asphalt parking lot
- Remove existing sheds

- Construct new housing facility with walkways and landscaped areas
- Construct 18 new parking stalls

2 Thirteen Elements

The project proposes to address the 13 elements required in the SWPPP as detailed below.

2.1 Element #1: Preserve Vegetation/Mark Clearing Limits

To protect adjacent properties and to reduce the area of soil exposed to construction, the limits of construction will be clearly marked before land-disturbing activities begin.

BMP C101: Preserving Natural Vegetation
BMP C102: High Visibility Fence
BMP C233: Silt Fence

2.2 Element #2: Establish Construction Access

A construction access will be installed at the northeast corner of the property.

BMP C105: Stabilized Construction Entrance/Exit
BMP C106: Wheel Wash

2.3 Element #3: Flow Control Rates

All site runoff will flow through a sediment trap prior to being released.

BMP C240: Sediment Trap

2.4 Element #4: Install Sediment Controls

All stormwater runoff from disturbed areas shall pass through an appropriate sediment removal BMP before leaving the construction site including a filter fence at the downstream site border and a sediment trap placed at the downstream end of the site.

BMP C233: Silt Fence
BMP C240: Sediment Trap

2.5 Element #5: Stabilize Soils

Exposed and unworked soils shall be stabilized with the application of effective BMPs to prevent erosion throughout the life of the project. The site specific BMPs for soil stabilization will include clear plastic covering, permanent seeding and planting and dust control.

BMP C120: Temporary and Permanent Seeding
BMP C123: Plastic Covering
BMP C125: Topsoiling/Composting
BMP C140: Dust Control

2.6 Element #6: Protect Slopes

The site is relatively flat but if feasible, check dams will be placed in the interceptor swale to reduce the flow velocity.

BMP C120: Temporary and Permanent Seeding
BMP C123: Plastic Covering
BMP C200: Interceptor Dike and Swale
BMP C207: Check Dams

2.7 Element #7: Protect Drain Inlets

All storm drain inlets and pipes made operable during construction shall be protected to prevent unfiltered or untreated water from entering the drainage system. Storm drain inlet protection will be installed on all drainage inlets and culverts that could potentially be impacted by sediment-laden runoff on and near the project site.

BMP C220: Storm Drain Inlet Protection

2.8 Element #8: Stabilize Channels and Outlets

During construction there will be an interceptor swale located at the downstream end of the site, and check dams will be installed in the swale if needed.

BMP C207: Check Dams

2.9 Element #9: Control Pollutants

All pollutants, including waste materials and demolition debris, that occur onsite shall be handled and disposed of in a manner that does not cause contamination of stormwater. Good housekeeping and preventative measures will be taken to ensure that the site will be kept clean, well-organized and free of debris.

BMP C151: Concrete Handling
BMP C142: Sawcutting and Surfacing Pollution Prevention
BMP C153: Material Delivery, Storage and Containment
BMP C154: Concrete Washout Area

2.10 Element #10: Control Dewatering

During the geotechnical investigation, groundwater was encountered at a depth of 13 to 18 feet. If groundwater is encountered, it may be pumped or scooped to the sediment pond for settling before being discharged.

BMP C240: Sediment Trap

2.11 Element #11: Maintain BMPs

All temporary and permanent erosion and sediment control BMPs shall be maintained and repaired as needed to assume continued performance of their intended function. Maintenance and repair shall be conducted in accordance with each BMP specification.

All temporary erosion and sediment control BMPs shall be removed within 30 days after the final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on site. Disturbed soil resulting from removal of BMPs or vegetation shall be permanently stabilized.

BMP C150: Materials on Hand

2.12 Element #12: Manage the Project

The Contractor will maintain and updated Construction SWPPP. The project manager will ensure the project is built in such a way to comply with all Construction SWPPP Elements and will inspect and monitor all BMPS to assure continued performance of their intended function.

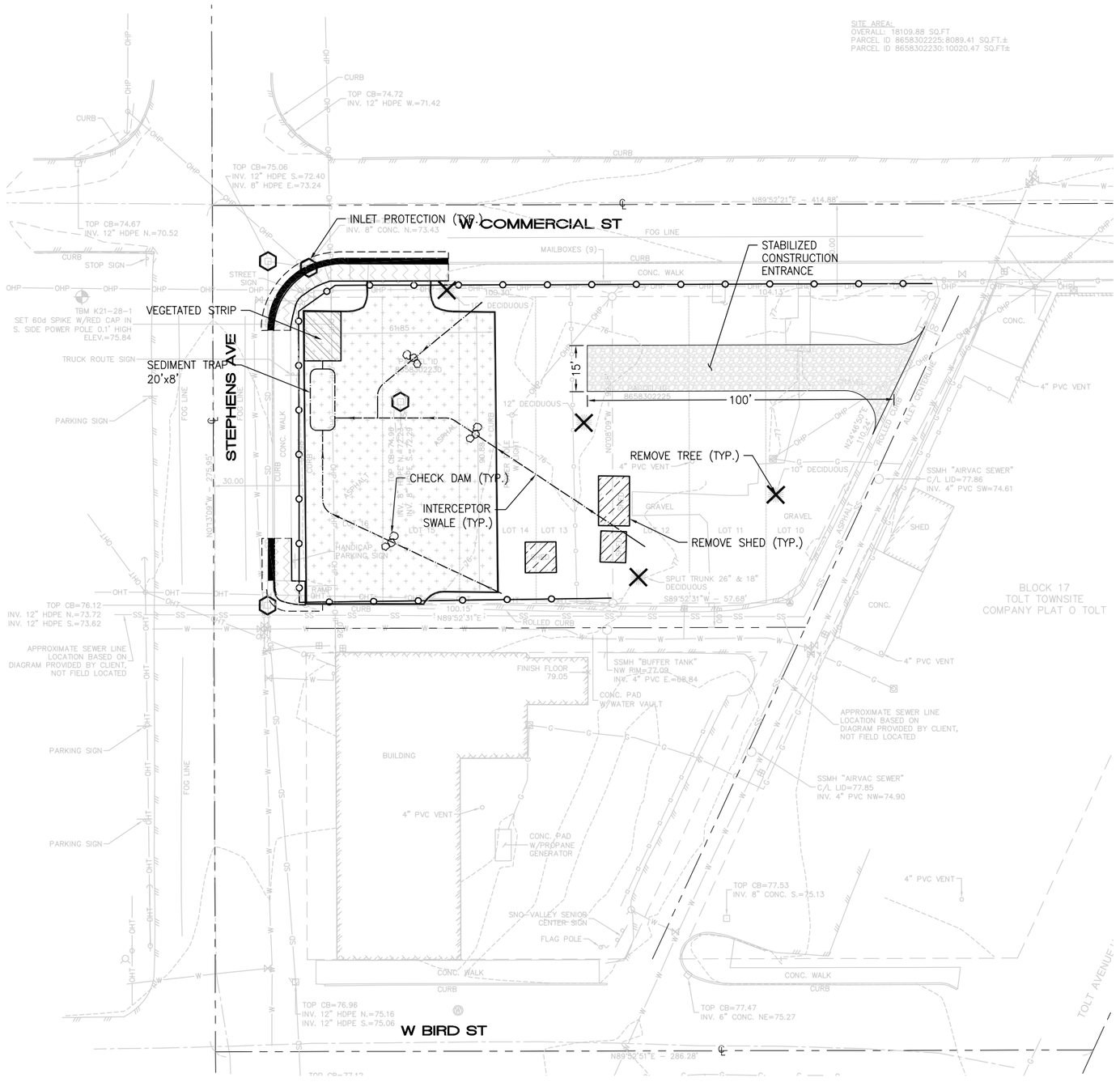
BMP C150: Materials on Hand
BMP C162: Scheduling

2.13 Element #13: Protect Low Impact Development BMPs

BMP C103: High Visibility Fence
BMP C233: Silt Fence

3 Construction Schedule and Phasing

All construction will take place in one phase.



CONSTRUCTION SEQUENCING

1. PRECONSTRUCTION MEETING.
2. FLAG OR FENCE CLEARING LIMITS.
3. POST SIGN WITH NAME AND PHONE NUMBER OF ESC SUPERVISOR.
4. INSTALL CATCH BASIN PROTECTION.
5. GRADE AND INSTALL CONSTRUCTION ENTRANCE(S).
6. INSTALL PERIMETER PROTECTION (SILT FENCE, BRUSH BARRIER, ETC).
7. CONSTRUCT SEDIMENT TRAP.
8. GRADE AND STABILIZE CONSTRUCTION ROADS.
9. CONSTRUCT SURFACE WATER CONTROLS (INTERCEPTOR DIKES, SWALES, ETC. SIMULTANEOUSLY WITH CLEARING AND GRADING.
10. MAINTAIN EROSION CONTROL MEASURES IN ACCORDANCE WITH CITY OF CARNATION STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.
11. RELOCATE SURFACE WATER CONTROLS AND EROSION CONTROL MEASURES OR INSTALL NEW MEASURES SO THAT AS SITE CONDITIONS CHANGE, THE EROSION AND SEDIMENT CONTROL IS ALWAYS IN ACCORDANCE WITH THE CITY OF CARNATION EROSION AND SEDIMENT CONTROL STANDARDS.
12. COVER ALL AREAS THAT WILL BE UNWORKED FOR MORE THAN SEVEN DAYS DURING THE DRY SEASON OR TWO DAYS DURING THE WET SEASON WITH STRAW, WOOD FIBER MULCH, COMPOST, PLASTIC SHEETING OR EQUIVALENT.
13. STABILIZE ALL AREAS THAT REACH FINAL GRADE WITHIN SEVEN DAYS.
14. SEED OR SOD ANY AREAS TO REMAIN UNWORKED FOR MORE THAN 30 DAYS.
15. UPON COMPLETION OF THE PROJECT, ALL DISTURBED AREAS MUST BE STABILIZED AND BMP'S REMOVED IF APPROPRIATE.

GENERAL NOTE - WET WEATHER CONSIDERATIONS

ALTERNATIVE SITE STRIPPING AND GRADE TECHNIQUES MIGHT BE NECESSARY IN WET CONDITIONS. THE GEOTECHNICAL REPORT PREPARED FOR THIS PROJECT TITLED "GEOTECHNICAL ENGINEERING EVALUATION – SNO–VALLEY SENIOR CENTER DEVELOPMENT – 31845 WEST COMMERICAL STREET – CARNATION, WASHINGTON", DATED NOVEMBER 14TH, 2022 SHALL BE REVIEWED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ALL WORK PERFORMED UNDER THIS PERMIT SHALL BE IN ACCORDANC EWITH THE APPLICABLE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT.

LEGEND

- FILTER FABRIC FENCE
- REMOVE TREE
- CATCH BASIN PROTECTION
- INTERCEPTOR SWALE
- CHECK DAM
- CONSTRUCTION ENTRANCE
- EX SHED REMOVAL
- VEGETATED STRIP
- SAWCUT
- EX CURB REMOVAL
- EX CURB & GUTTER REMOVAL
- REMOVE ASPH CONC PAVEMENT
- REMOVE CEM CONC PAVEMENT

N

20 0 20
SCALE: 1" = 20'

PERMIT SUBMITTAL NOT FOR CONSTRUCTION

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CM DESIGN GROUP
1318 East Pike St
Seattle, WA 98122
206-459-0612

CATHERINE E. MORGAN
STATE OF WASHINGTON
27900
REGISTERED
PROFESSIONAL ENGINEER

REV. NO.	DATE	DESCRIPTION

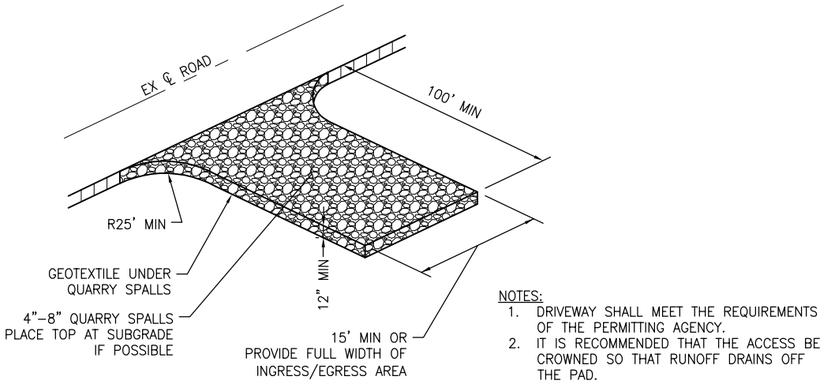
PROJECT NUMBER 22008

SUBMITTAL SD/DR PERMIT

SNO–VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

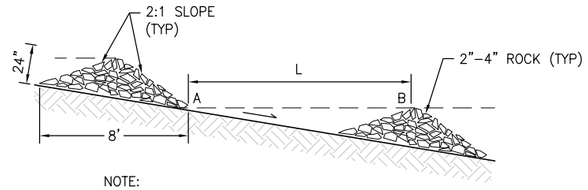
TEMPORARY EROSION CONTROL PLAN

DESIGN	CFG
DRAFT	CFG
CHECK	CEM
DATE	2022–11–10
SCALE	1"=20'
SHEET	C2.0



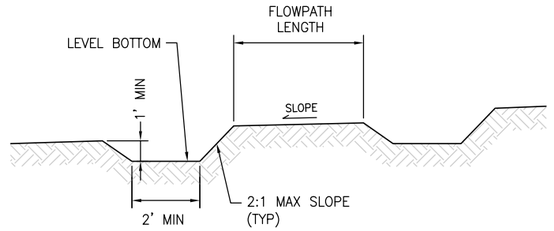
NOTES:
1. DRIVEWAY SHALL MEET THE REQUIREMENTS OF THE PERMITTING AGENCY.
2. IT IS RECOMMENDED THAT THE ACCESS BE CROWNED SO THAT RUNOFF DRAINS OFF THE PAD.

1 C2.0 STABILIZED CONSTRUCTION ENTRANCE
NTS



NOTE:
"L" EQUALS THE DISTANCE SUCH THAT POINTS A AND B ARE OF EQUAL ELEVATION

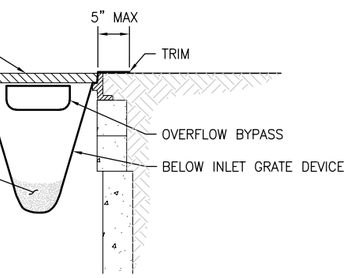
2 C2.0 ROCK CHECK DAM
NTS



HORIZONTAL SPACING

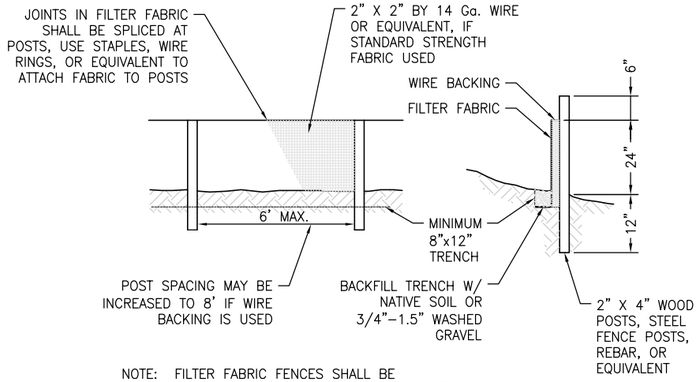
SLOPE	FLOWPATH LENGTH
3–5%	300'
5–10%	200'
10–25%	100'
25–50%	50'

3 C2.0 INTERCEPTOR SWALE
NTS



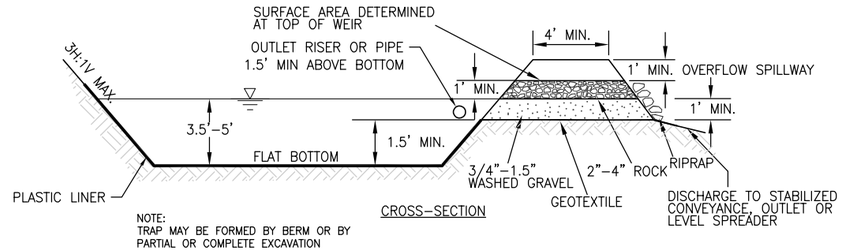
NOTES:
1. SIZE THE BELOW INLET GRATE DEVICE (BIGD) FOR THE STORM WATER STRUCTURE IT WILL SERVICE.
2. THE BIGD SHALL HAVE A BUILT–IN HIGH–FLOW RELIEF SYSTEM (OVERFLOW BYPASS).
3. THE RETRIEVAL SYSTEM MUST ALLOW REMOVAL OF THE BIGD WITHOUT SPILLING THE COLLECTED MATERIAL.

4 C2.0 CATCH BASIN PROTECTION
NTS



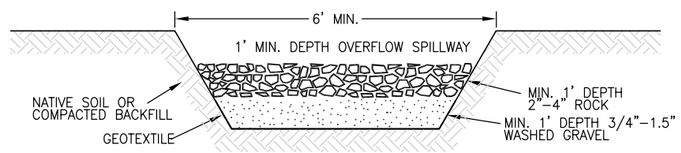
NOTE: FILTER FABRIC FENCES SHALL BE INSTALLED ALONG CONTOUR WHENEVER POSSIBLE

5 C2.0 FILTER FABRIC FENCE
NTS



CROSS–SECTION

NOTE:
TRAP MAY BE FORMED BY BERM OR BY PARTIAL OR COMPLETE EXCAVATION



TRAP OUTLET

NOTES:
1. REMOVE SEDIMENT FROM TRAP WHEN IT REACHES APPROXIMATELY 1 FT IN DEPTH.
2. DISPOSE OF SEDIMENT AT AN APPROVED OFF SITE DUMP OR STABILIZE ON SITE.

6 C2.0 SEDIMENT TRAP
NTS

PERMIT SUBMITTAL NOT FOR CONSTRUCTION

CALL 2 BUSINESS DAYS BEFORE YOU DIG! 1–800–424–5555

CM DESIGN GROUP
1318 East Pike St
Seattle, WA 98122
206-459-0612

CATHERINE E. MARTIN — STATE OF WASHINGTON — 27900 — REGISTERED PROFESSIONAL ENGINEER

REV. NO.	DATE	DESCRIPTION

PROJECT NUMBER 22008
SUBMITTAL SD/DR PERMIT

SNO–VALLEY SENIOR HOUSING
31845 W Commerical St. Carnation, WA 98014

TEMPORARY EROSION CONTROL DETAILS

DESIGN
DRAFT CFG
CHECK CFG
DATE CEM
2022–11–10
SCALE NTS
SHEET C8.0

Appendix E – Operations and Maintenance Manual

Operation and Maintenance of Infiltration Trench

The site contains a stormwater management flow control best management practice (BMP) infiltration trench located below the pavement (see Appendix C - Stormwater Site Plan for location). The infiltration trench was designed to mitigate for runoff control and water quality treatment for the impervious surface areas on the site. Runoff from the site will be conveyed to the infiltration trench where it will infiltrate into the ground below.

Infiltration devices must be inspected annually and after major storm events to identify and repair any physical defects. Maintenance and operations of the system should focus on ensuring the system's viability by preventing sediment-laden flows from entering the infiltration facility. Excessive sedimentation will result in a clogged or non-functioning facility.

Sediment accumulation from upstream catch basins must be removed at least every three months or more frequently during frequent storm events.

Parking lots and areas that drain to the infiltration system should be swept clean to minimize sediment transport.

The roof and gutters should be cleaned twice a year to minimized sediment load to the infiltration system.

Prolonged ponding around a catch basin may indicate a plugged facility. If the facility, or a portion of the facility becomes plugged it must be replaced.

Table V-4.5.2(5) Maintenance Standards - Catch Basins

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
General	Trash & Debris	Trash or debris which is located immediately in front of the catch basin opening or is blocking inletting capacity of the basin by more than 10%. Trash or debris (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of six inches clearance from the debris surface to the invert of the lowest pipe. Trash or debris in any inlet or outlet pipe blocking more than 1/3 of its height. Dead animals or vegetation that could generate odors that could cause complaints or dangerous gases (e.g., methane).	No Trash or debris located immediately in front of catch basin or on grate opening. No trash or debris in the catch basin. Inlet and outlet pipes free of trash or debris. No dead animals or vegetation present within the catch basin.
	Sediment	Sediment (in the basin) that exceeds 60 percent of the sump depth as measured from the bottom of basin to invert of the lowest pipe into or out of the basin, but in no case less than a minimum of 6 inches clearance from the sediment surface to the invert of the lowest pipe.	No sediment in the catch basin
	Structure Damage to Frame and/or Top Slab	Top slab has holes larger than 2 square inches or cracks wider than 1/4 inch. (Intent is to make sure no material is running into basin).	Top slab is free of holes and cracks. Frame is sit-

Table V-4.5.2(5) Maintenance Standards - Catch Basins (continued)

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
		Frame not sitting flush on top slab, i.e., separation of more than 3/4 inch of the frame from the top slab. Frame not securely attached	ting flush on the riser rings or top slab and firmly attached.
	Fractures or Cracks in Basin Walls/ Bottom	Maintenance person judges that structure is unsound. Grout fillet has separated or cracked wider than 1/2 inch and longer than 1 foot at the joint of any inlet/outlet pipe or any evidence of soil particles entering catch basin through cracks.	Basin replaced or repaired to design standards. Pipe is regrouted and secure at basin wall.
	Settlement/ Misalignment	If failure of basin has created a safety, function, or design problem.	Basin replaced or repaired to design standards.
	Vegetation	Vegetation growing across and blocking more than 10% of the basin opening. Vegetation growing in inlet/outlet pipe joints that is more than six inches tall and less than six inches apart.	No vegetation blocking opening to basin. No vegetation or root growth present.
	Contamination and Pollution	See "Detention Ponds" (No. 1).	No pollution present.
Catch Basin Cover	Cover Not in Place	Cover is missing or only partially in place. Any open catch basin requires maintenance.	Catch basin cover is closed
	Locking Mechanism Not	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into	Mechanism opens with

Table V-4.5.2(5) Maintenance Standards - Catch Basins (continued)

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
	Working	frame have less than 1/2 inch of thread.	proper tools.
	Cover Difficult to Remove	One maintenance person cannot remove lid after applying normal lifting pressure. (Intent is keep cover from sealing off access to maintenance.)	Cover can be removed by one maintenance person.
Ladder	Ladder Rungs Unsafe	Ladder is unsafe due to missing rungs, not securely attached to basin wall, misalignment, rust, cracks, or sharp edges.	Ladder meets design standards and allows maintenance person safe access.
Metal Grates (If Applicable)	Grate opening Unsafe	Grate with opening wider than 7/8 inch.	Grate opening meets design standards.
	Trash and Debris	Trash and debris that is blocking more than 20% of grate surface inletting capacity.	Grate free of trash and debris.
	Damaged or Missing.	Grate missing or broken member(s) of the grate.	Grate is in place and meets design standards.

Table V-4.5.2(15) Maintenance Standards - Manufactured Media Filters

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
Below Ground Vault	Sediment Accu-	Sediment depth exceeds 0.25-inches.	No sediment depos-

Table V-4.5.2(15) Maintenance Standards - Manufactured Media Filters (continued)

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
	mulation on Media.		its which would impede permeability of the compost media.
	Sediment Accumulation in Vault	Sediment depth exceeds 6-inches in first chamber.	No sediment deposits in vault bottom of first chamber.
	Trash/Debris Accumulation	Trash and debris accumulated on compost filter bed.	Trash and debris removed from the compost filter bed.
	Sediment in Drain Pipes/Clean-Outs	When drain pipes, clean-outs, become full with sediment and/or debris.	Sediment and debris removed.
	Damaged Pipes	Any part of the pipes that are crushed or damaged due to corrosion and/or settlement.	Pipe repaired and/or replaced.
	Access Cover Damaged/Not Working	Cover cannot be opened; one person cannot open the cover using normal lifting pressure, corrosion/deformation of cover.	Cover repaired to proper working specifications or replaced.
	Vault Structure Includes Cracks in Wall, Bottom, Damage to Frame and/or Top Slab	Cracks wider than 1/2-inch or evidence of soil particles entering the structure through the cracks, or maintenance/inspection personnel determine that the vault is not structurally sound. Cracks wider than 1/2-inch at the joint of any inlet/outlet pipe or evidence of soil particles entering through the cracks.	Vault replaced or repairs made so that vault meets design specifications and is structurally sound. Vault repaired so that no cracks exist wider than 1/4-inch at the joint of the inlet/outlet pipe.
	Baffles	Baffles corroding, cracking warping, and/or showing signs of failure as determined by maintenance/inspection person.	Baffles repaired or replaced to specifications.

Table V-4.5.2(15) Maintenance Standards - Manufactured Media Filters (continued)

Maintenance Component	Defect	Condition When Maintenance is Needed	Results Expected When Maintenance is Performed
	Access Ladder Damaged	Ladder is corroded or deteriorated, not functioning properly, not securely attached to structure wall, missing rungs, cracks, and mis-aligned.	Ladder replaced or repaired and meets specifications, and is safe to use as determ-ined by inspection personnel.
Below Ground Cart-ridge Type	Media	Drawdown of water through the media takes longer than 1 hour, and/or overflow occurs frequently.	Media cartridges replaced.
	Short Circuiting	Flows do not properly enter filter cartridges.	Filter cartridges replaced.

Exhibit 7

CULTURAL RESOURCES REPORT COVER SHEET

DAHP Project Number: 2022-06-03673

Author: Mike Shong and Dave Iversen

Title of Report: Cultural Resources Assessment for the Sno-Valley Senior Center Project, King County, Washington

Date of Report: August 2023

County: King Sections: 16 Township: 25 Range: 7E

Quads: Carnation and Fall City Acres: 0.25

PDF of report submitted (REQUIRED) ☒ Yes

Historic Property Inventory Forms to be Approved Online? ☐ Yes ☒ No

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ☒ No

TCP(s) found? ☐ Yes ☒ No

Replace a draft? ☐ Yes ☒ No

Satisfy a DAHP Archaeological Excavation Permit requirement? ☐ Yes # ☒ No

Were Human Remains Found? ☐ Yes DAHP Case # ☒ No

DAHP Archaeological Site #:

- Submission of PDFs is required.
- Please be sure that any PDF submitted to DAHP has its cover sheet, figures, graphics, appendices, attachments, correspondence, etc., compiled into one single PDF file.
- Please check that the PDF displays correctly when opened.

Cultural Resources Assessment for the Sno-Valley Senior Center Carnation, King County, Washington

September 2022

Prepared for:

Lisa Yaeger, Director
Sno-Valley Senior Center
4610 Stephens Avenue
PO Box 96
Carnation, WA 98014

Prepared by:

Mike Shong, ASM Archaeologist
Dave Iversen, M.A., RPA

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26231 72nd Ave. NW, Suite 201
Stanwood, Washington 98292
(360) 572-4870

ASM Project Number 40610.00

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MANAGEMENT SUMMARY

ASM Affiliates, Inc. (ASM) contracted with Sno-Valley Senior Center to conduct a cultural resources assessment for the Sno-Valley Senior Center Project located in Carnation, King County, Washington. The proposed project will construct a new three-story, 15-unit senior hosing building immediately north of the existing Sno-Valley Senior Center. The purpose of the assessment was to evaluate the project's potential to effect buried archaeological resources per requirements of Washington State Department of Archaeology and Historic Preservation (DAHP). The cultural resources assessment included an archival and literature review, tribal coordination, a field survey of the project, and preparation of this technical report. The DAHP predictive model indicates the project has a "very high risk" for archaeological resources.

Background research indicates no archaeological sites or historic properties are recorded within the proposed project area. The existing Sno-Valley Senior Center (SVSC) will not be affected by the project. Fieldwork consisted of pedestrian survey and shovel/auger probe excavation to a maximum depth of 220 cm (7.2 ft.) below surface. No significant cultural resources were identified. A charcoal-rich soil was encountered in SP1 between 100-120 cm (39-47 inches) below surface. No cultural material was observed with the buried soil; however, the small sample was collected from a 10 cm (4 inch) diameter bucket auger. The buried soil was not observed in shovel/auger probes located 15 m south and east. West of SP 1 is a paved parking lot and unavailable for subsurface inspection. Based on the results of this assessment, ASM recommends archaeological monitoring of excavations exceeding two feet for the western one-third of the parcel (existing parking lot).

1. INTRODUCTION

This report presents the results of a cultural resources assessment conducted by ASM for the Sno-Valley Senior Center Project located in Carnation, King County, Washington (Figures 1 and 2). ASM's assessment consisted of background research, tribal coordination, a field survey of accessible portions of the project area, and preparation of this technical report to document the results of the survey in accordance with DAHP regulations. After the introductory chapter, this report includes chapters on the archaeological context of the project vicinity, briefly describing the environment, culture history, and previous research; on the research design and survey methods; on survey results and cultural resource descriptions; and on management recommendations concerning resource evaluations and further archaeological work associated with the proposed project.

PROJECT DESCRIPTION

The project area is comprised of Lots 10-16 of Block 17 in Section 16 of Township 25 North, Range 7 East, Willamette Meridian. The proposed project will construct a new three-story, 15-unit senior hosing building immediately north of the existing Sno-Valley Senior Center building. The new building footprint will measure 4,833 SF and will require 31 parking spaces south and east of the building (Figure 3). An asphalt-paved parking lot currently occupies most of the western three lots (Lots 14-16) while the eastern three (Lots 10-13) are covered by a manicured lawn and crushed gravel parking areas (Figure 4). Three small outbuildings (sheds) are still present; however, 1930s-era single-story house formerly located in Lot 11 was demolished and removed from the project area in the last several years.

Tribal Coordination

On August 10th, 2022, ASM contacted the Snoqualmie Tribe Archaeology and History Department by email to inform them of the proposed project and provide the Tribe with an opportunity to accompany ASM during the field survey. This communication was a professional courtesy and not formal consultation.

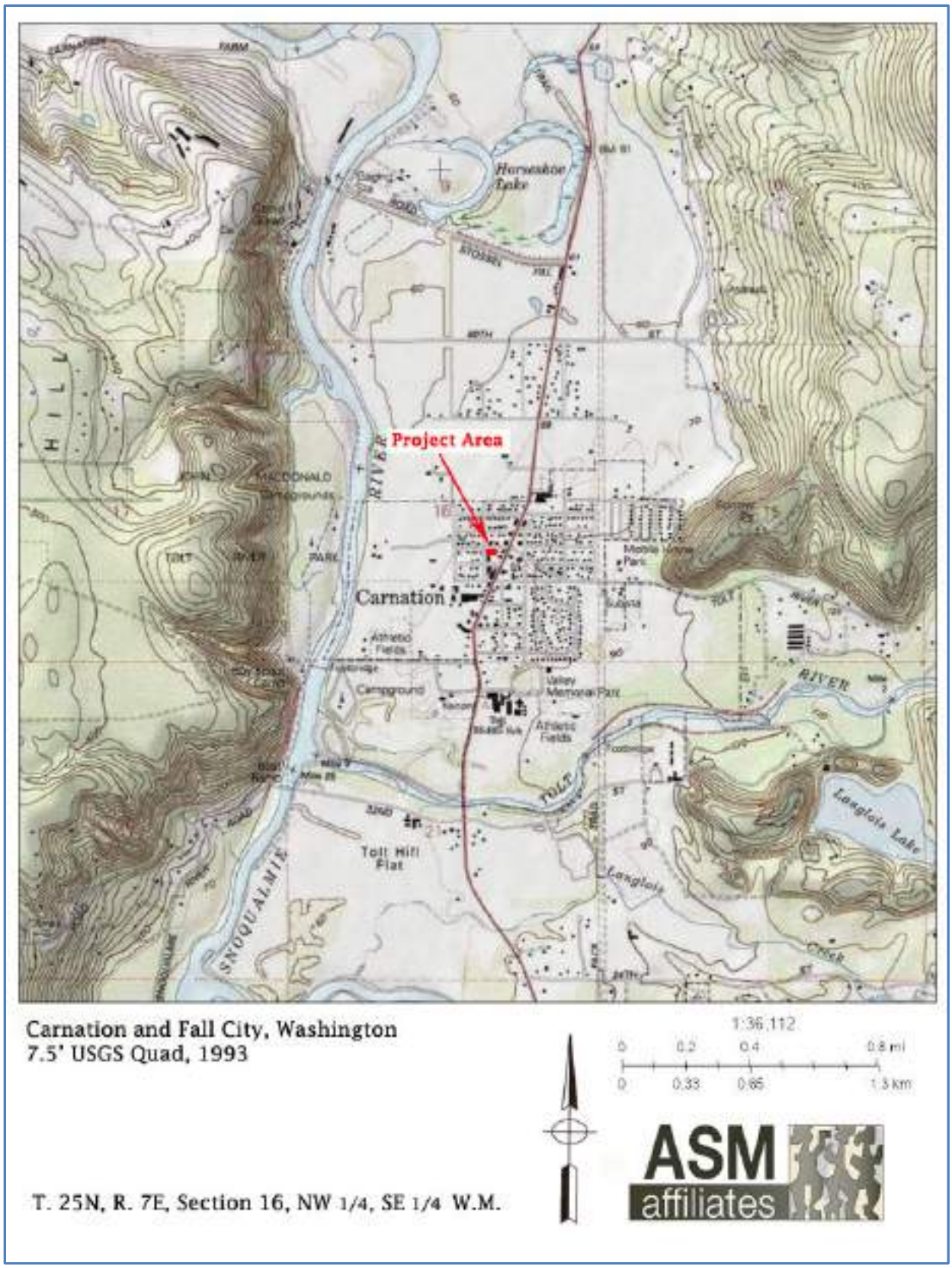

Figure 1. Project area shown on USGS 7.5' topographic map.

Figure 2. Modern aerial photograph showing project area.

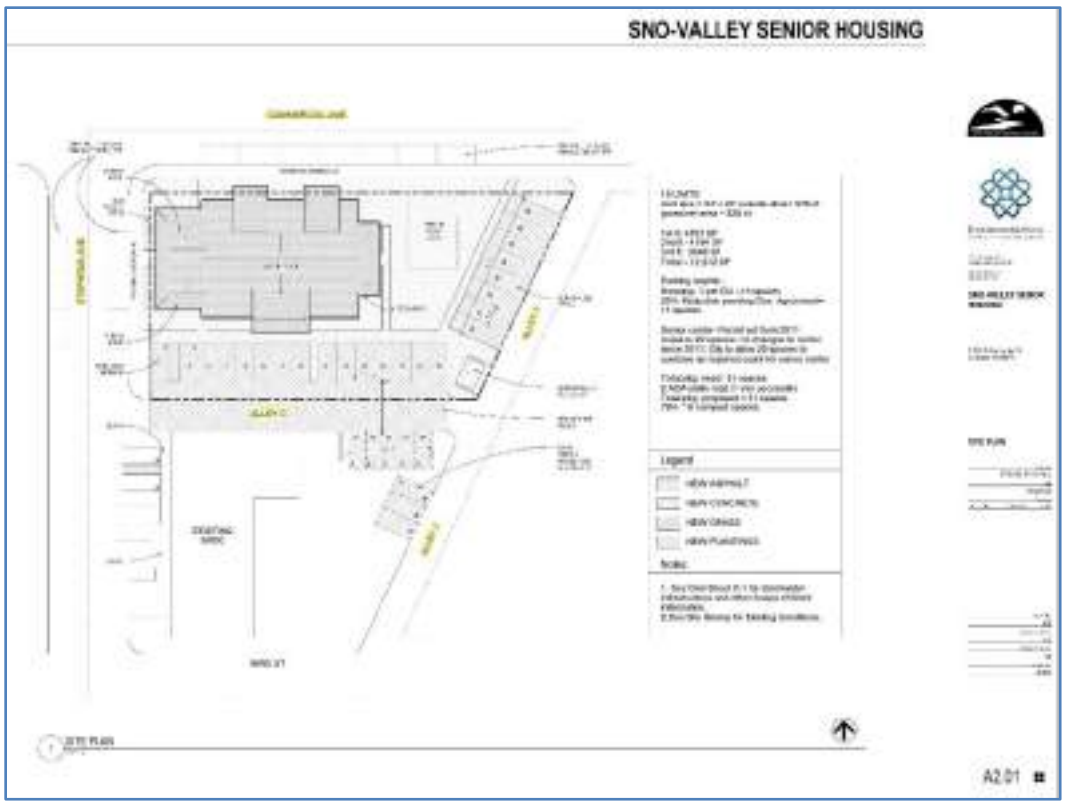

Figure 3. Project plans showing proposed 15-unit Sno-Valley Senior Housing building.

Figure 4. Project plan sheet showing project area and exisisting conditions.

2. ARCHAEOLOGICAL CONTEXT

This chapter reviews the environmental setting of the project vicinity and the prehistoric, ethnohistoric, and historic cultural sequences, and summarizes how pertinent investigations in the general region have contributed to the current constructions of cultural history. Past and present natural and cultural conditions shape our expectations for cultural resources that may be found within the project area. Archaeological evidence indicates that human occupation of the Pacific Northwest occurred as early 13,800 years ago or even earlier (Carlson 1990; Carlson and Dalla Bona 1996; Waters et al. 2011). Changing environmental conditions since the end of the Pleistocene, the last great ice age, have affected the kinds and distributions of resources used by people as well as the suitability of landforms for human occupation. These environmental changes have also had profound consequences for the archaeological record in terms of site visibility and preservation.

ENVIRONMENTAL SETTING

The topography and surficial geology of the Puget Lowland is the result of multiple continental glaciations that extended south from Canada through the Puget Lowlands during the Pleistocene epoch (Easterbrook 1993; Porter and Swanson 1998). Regional surface topography is characterized by rolling hills interrupted by large troughs carved by the ice sheet and subsequently occupied by large freshwater lakes, marine embayments, and drainage networks (Troost and Stein 1995; Yount et al. 1993).

Glacial retreat from the project area around 16,000 years before present (BP) marked the beginning of its modern landscape evolution (Thorson 1989). River morphology would have been braided and unstable in the valley bottom prior to ca. 6,000 BP as a result of shifting equilibrium due to worldwide sea-level rise and local rebound of the land from the weight of glacial ice. Immediately after glacial retreat, sea level in the Puget Sound was approximately 60 m (198 feet) below modern sea level (Dethier et al. 1995). During this time period the Snoqualmie River would have down-cut through glacial deposits in the valley. Sea level rapidly rose to within 5 m (16 feet) of the modern level between 9,000 and 5,000 BP, causing sedimentation and aggradation to occur on the floodplain (Booth et al. 2004; Dethier et al. 1995). Sites dating to the middle Holocene along the riverbanks would be flooded, some eroded, and some preserved buried deeply in the floodplain deposits. A meandering river morphology with adjacent alluvial terraces would have stabilized after about 5000 BP. Heavy logging and historic clearing of the Snoqualmie River valley increased runoff and erosion between the late nineteenth and early twentieth centuries, causing changes in the river system. Today, Holocene alluvium is mapped across the entire surface of the Snoqualmie River floodplain (Dragovich et al. 2010).

The Tolt River joins the Snoqualmie River approximately 0.8 miles southwest of the project. Historic aerial images of the Carnation vicinity show abandoned stream channels throughout the valley bottom illustrating the active floodplain setting. Project area soils are mapped by the Natural Resources Conservation Service (NRCS) as Oridia silt loam. This soil type is composed of poorly-drained alluvium generally found on floodplains and low terraces (NRCS 2022). A typical soil profile is as follows:

- 0 to 11 inches: silt loam
- H2 - 11 to 19 inches: silt loam
- H3 - 19 to 60 inches: very fine sandy loam

Flora and Fauna

The project is within the *Tsuga heterophylla* (western hemlock) vegetation zone, characterized by coniferous forests of western hemlock, western red cedar, and Douglas-fir (Franklin and Dyrness 1973).

Prior to logging and other land clearing events, the project vicinity was likely covered with a mix of fir and deciduous trees with riparian understory dominated by salmonberry and other water-tolerant plant species. Topographically higher landforms such as remnant levees may have been covered with mature cedars with an understory dominated by sword fern and red huckleberry (Leopold et al. 1982). A variety of animals are native to the project vicinity. Most economically important to indigenous people are salmon, which were once enormously abundant in the lower Snoqualmie and Tolt rivers and their tributaries. Large terrestrial mammals including elk, deer, and black bear were once plentiful in the Snoqualmie Valley and adjacent uplands (Larrison 1967). The numerous sloughs, marshes, and oxbow lakes of the Snoqualmie Valley once supported large populations of fur-bearing mammals such as beaver, muskrat, mink, river otter, as well as a large variety of waterfowl, all of which are important to the Snoqualmie people. These resources became even economically important during the fur-trade era between ca. 1830 and 1860. Snoqualmie fur-traders and were regular visitors at Fort Nisqually during the 1840s (Dickey 1989).

CULTURAL SETTING

The cultural history of the project vicinity is marked by utilization of natural resources of the Tolt and Snoqualmie rivers and surrounding territory. Native American communities whose descendants comprise the Snoqualmie Tribe and Tulalip Tribes have occupied the region surrounding the project area for millennia, taking advantage of riverine and terrestrial resources. Euro-American settlement of the region began in the late 19th century and accelerated as the valley became a focus of commercial logging and farming activities in early 20th century.

Pre-Contact Culture History

Archaeological evidence suggests that soon after the land emerged from the last glacial retreat, Paleoindian people inhabited a tundra-like environment, hunting now-extinct megafauna while opportunistically hunting smaller game and gathering plant foods that required minimal processing. Evidence of sites from this time is extremely rare, but they are typically identified by distinctive fluted, or stemmed spear points (Ames and Maschner 1999; Avey 1991; Kopperl et al. 2016; Meltzer and Dunnell 1987). Cultural deposits dating between ca. Cal BP 12,000-10,000 from the Bear Creek Site (45KI839) located north of Lake Sammamish represent an example of the Late Pleistocene-Holocene transition in Western Washington. Artifacts recovered from the site include early-style projectile points, bifaces, scrapers, and retouched flakes comparable to those identified in Western Stemmed Tradition lithic assemblages. Evaluation of the Bear Creek Site lithic assemblage indicates a cultural continuity between the Late Pleistocene and Holocene populations in the region (Kopperl 2016).

Early residential sites, dating between 8000 and 5000 BP, are typically found on older Pleistocene landforms, overlooking lakes, river valleys, or marine shorelines (Carlson 1990; Matson and Coupland 1995). Regionally, these sites are often referred to as "Olcott," named after the type-site identified in Snohomish County (Kidd 1964). Olcott lithic assemblages typically include opportunistic tools derived from local cobbles, large lanceolate and stemmed projectile points, scrapers, flaked cobbles, and debitage (waste flakes). Another defining attribute of Olcott assemblages is chemical weathering, or heavy patination on the surface of metasedimentary lithic materials. Sites dating prior to 5000 BP are rare, probably due to several factors including poor preservation conditions, submersion by sea-level rise, resource preferences, and differences in the distributions of terrestrial, intertidal, and marine resources. The location of Olcott sites on river and stream terraces also infers a fishing competent rarely preserved in the archaeological record (Carlson 1990; Chatters et al. 2011; Mattson 1985; Nelson 1990).

As the regional climate shifted to a drier pattern and sea levels stabilized by 5000 B.P., people living in the Pacific Northwest Coast region increasingly relied on marine intertidal resources for subsistence, gradually shifting to semisedentary subsistence patterns marked by the seasonal round (Carlson and Dalla Bonna

1996; Matson and Coupland 1995). Development of marine-oriented cultures is apparent after 2500 BP evidenced by large shell midden sites (Ames and Maschner 1999:89). Small, notched projectile points indicative of bow-and-arrow technology also appear after ca. 2000 BP (Rorabaugh 2019, Rorabaugh and Fulkerson 2015). Archaeological sites from this later period generally consist of three primary types: residential base camps, temporary camps, and special use sites. Residential base camps are often recognized by large shell middens located near the modern shoreline, or inland at river confluences. Temporary camps represent the exploitation of specific plant and animal resources by small task groups from the residential base camp. Examples of temporary camps include hunting and plant processing sites, represented by lithic debris scatters, projectile points, scraping tools, and fire-modified rock (FMR) features. Special use sites include lithic and mineral quarries, peeled cedars, or spiritual sites.

Ethnohistoric Context

The project is within the traditional territory of the Snoqualmie people. The Snoqualmie are speakers of a Southern Lushootseed dialect in the Coast Salish linguistic family. Their traditional territory includes the Tolt and Snoqualmie river valleys and associated tributaries to the junction of the Skykomish and the Snoqualmie rivers and from the vicinity of Lake Sammamish to the Cascade Range crest to the east. Ethnographic records indicate two distinct divisions, or bands, within the Tribe corresponding to ecological differences above and below Snoqualmie Falls. The lower valley (including the project area) contained salmon and provided canoe access to marine resources. The upper valley had no salmon because of the natural barrier of the Falls but contained open prairies and abundant plant and animal resources (Turner 1976). The Upper and Lower bands were closely related and traded economic resources and exchanged hunting and fishing rights (Tollefson and Abbott 1993).

Snoqualmie winter villages were typically located at river and creek confluences. One of the largest and most important Snoqualmie communities was located at the confluence of the Tolt and Snoqualmie Rivers. The Tolt River village consisted of two or possibly three permanent house clusters and was considered to extend down the Tolt River from Horseshoe Lake and occupy both sides of the Snoqualmie River (Horr 1974; Waterman 2001). A second house cluster (*tcs'ltcalac*) was near the present site of the Tolt High School in the town of Carnation. Subsistence for native people living in the lower Snoqualmie Valley focused on the abundant anadromous fish runs, supplemented with terrestrial mammals, plant foods, and to a lesser extent, marine resources obtained through trade, or excursions downriver (Lane 1975:36). The Snoqualmie also traded extensively with neighboring groups, including the Yakama, Kittitas, and Wenatchi on the east side of the Cascade Range. After the introduction of the horse, the Snoqualmie greatly expanded their hunting range and participated more extensively in the trading network connecting the Puget Sound area with eastern Washington (Ruby and Brown 1986).

The Snoqualmie traditionally followed a seasonal round tied to the availability of plant and animal resources. In winter, people lived in semipermanent villages, or residential base camps, where subsistence generally consisted of preserved and stored foods, primarily salmon. Activities focused on religious ceremonies and tool production and repair. In the spring, people dispersed to temporary campsites to exploit seasonally available resources. Salmon, berries, roots, and other resources collected throughout the spring and summer were dried and brought back to the winter villages (Turner 1976; Haeberlin and Gunther 1930:20). Deer and elk, typically hunted during the late summer and fall, were important sources of meat, as were bear and mountain goats for hides (Haeberlin and Gunther 1930).

The introduction of European diseases in the mid- to late-18th century drastically decreased native populations even before the first Euro-American explorers and fur traders arrived in the area (Boyd 1985; Campbell 1989). In 1855, Washington Territory Governor Isaac Stevens negotiated a treaty with ancestors of the Snohomish, Snoqualmie, Skykomish, Stillaguamish, and others at Point Elliott near present-day Mukilteo. Native American land was ceded in exchange for hunting and fishing rights and exclusive Tribal

use of reservation land, resulting in the establishment of the Tulalip Reservation to the northwest of the project area. In the middle and late 1800s, many Snoqualmie members moved to the Tulalip and Muckleshoot reservations. In 1968, the Snoqualmie were compensated by the Indian Claims Commission, and in 1999 they were awarded federal recognition.

Ethnographic Place Names

The project vicinity has several ethnographically named places, or toponyms, that describe areas associated with Coast Salish tradition, settlements, and subsistence. These locations represent connections between landscape and tradition that embody, define, and reinforce the cultural values of the Snoqualmie Tribe. In the 1920s, ethnographer T.T. Waterman, with the help of Snoqualmie informants, recorded several ethnographic place names in the project vicinity (Waterman 2001:178). The Tolt River was known to the Snoqualmie as *Tuxutolxw* and figures prominently in oral histories and mythologies. Ethnographer Arthur Ballard recorded a creation story for the Tolt River in which the traditional name was *Txwoda'tctLib,* meaning "elk's tallow" for the many elk found in the area (Ballard 1929:90). The name *Tca'ltcalac* was a prominent community in Carnation where the high school is located. Across the Snoqualmie river from Carnation is *TcE'tLa* where a landslide has left a prominent the scar on the hillside. A flat south of *TcE'tLa* was known as *Xal3aLtxw* for an old village site and principal settlement of the Snoqualmie people.

Historic Context

The Carnation vicinity, originally known as Tolt, was settled by non-native people beginning in the 1870s when James Entwistle purchased 169 acres near the confluence of the Snoqualmie and Tolt rivers which included the project area (BLM 2022). Entwistle had visited the area in 1856 when he helped construct Fort Tilton below Snoqualmie Falls as a soldier in the Northern Battalion. Entwistle eventually established a trading post and later became successful in hop farming before his passing in 1902 (Stein 1998). The Town of Tolt was first platted in 1902 by Eugenia and William H. Lord (Bagley 1929). In 1910, the Tolt Townsite Company platted the residential area between Entwistle Street and Bagwell Street that includes the project area. Residential buildings erected in Tolt at this time were all Craftsman style homes, bungalows or vernacular dwellings with a few Queen Anne style structures (Palmer 1995).

During the early 19th century, the town's economy centered on logging, with Tolt serving as a supply point and log shipment center for the Everett sawmills. By the 1890s, the easily accessible forest stands had been depleted, and the local economy broadened to include agricultural pursuits such as hop farming, hay production, and animal husbandry. Transportation during the late 19th century required travel by ferry across Lake Washington and by trail to Carnation. The completion of the Great Northern Railroad line in 1910 and the Chicago, Milwaukee, and St. Paul Railroad in 1911 instigated a small economic boom as logging railroads were extended farther into the forests and finished local products could be transported quickly and easily to regional and national markets. The Carnation Milk Farm was established in the Snoqualmie Valley in 1908, and Tolt changed its name to Carnation in 1917 at the instigation of the owner of the dairy farm, much to the displeasure of the Native American community and early settlers (Kirk and Alexander 1990; Stein 1998).

The arrival of Euro-American settlers in the 1870s prompted the first cadastral surveys of the Snoqualmie Valley. The 1873 General Land Office (GLO) plat map for T. 25N, R. 7E shows wetlands, streams, ponds and oxbow lakes throughout the valley bottom. No buildings or land improvements are shown in the project area although several homesteads are shown nearby. A trail is shown extending north through Griffin Prairie and along the right (east) bank of the Snoqualmie River. The James Entwistle homestead is shown along this trail approximately one-quarter mile west of the project area. Several additional homesteads are shown northeast of the Entwistle house in Section 16 including Morris, G. Hilton and J. Parnatt (Figure 5).

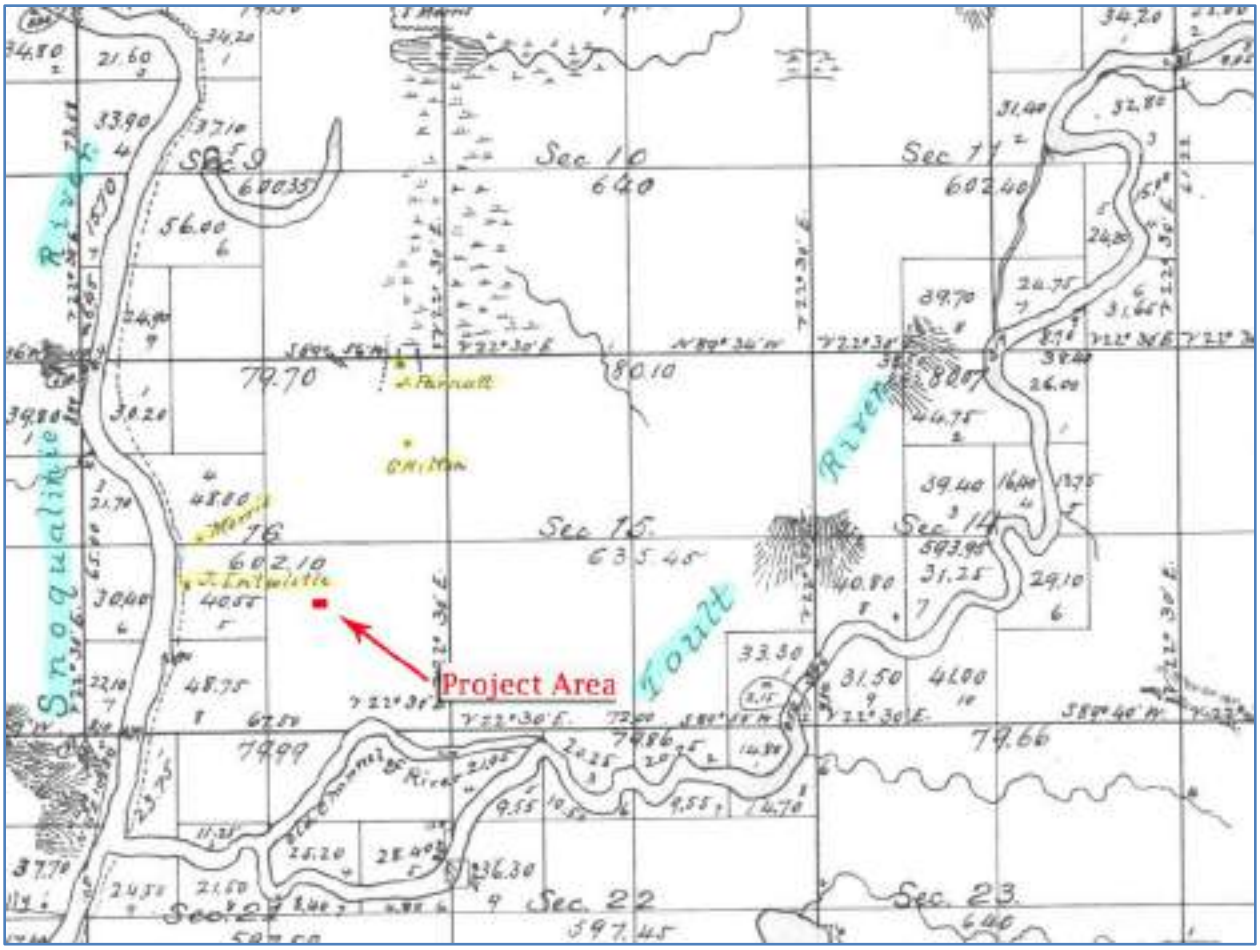

Figure 5. General Land Office (GLO) map (1873) showing project area in relation to early homesteads.

Review of historic maps and aerial photographs suggests the project vicinity was undeveloped until the early 20th century. The 1912 county atlas shows Tolt Avenue in its current alignment and the project vicinity labeled as "Tolt Townsite Co. – Plat of Tolt" (Kroll 1912). The Independent Order of Odd Fellows (IOOF) purchased land from the Tolt Townsite Company sometime after ca. 1912 and completed the Second IOOF Lodge No. 148 (Sno-Valley Senior Center building) in 1926. The building played a significant role in the social life of Carnation for nearly 50 years. The building was purchased in 1971 and heavily remodeled. The Sno-Valley Senior Center purchased the property in 1993. Interior and exterior alterations completed in 1995 include a new roof, vinyl exterior siding and an interior elevator (Whitehead and Palmer 1995).

The 1930 Sanborn Fire Insurance map shows two small dwellings in the northeast quadrant of the project area and a small, square outbuilding directly south in the same parcel (Figure 6). The latter is likely a privy (outhouse) based on the size and distance from the two dwellings. A 1936 aerial photograph shows a different configuration of buildings in the project area. A single house is shown in the northeast quadrant and a slightly larger outbuilding is shown just south of it—in the vicinity of the privy-size structure shown on the 1930 Sanborn map. King County assessor records do not provide a build-date for the house, although it was constructed sometime after 1912 and before 1930 based on the updated Sanborn map. County assessor records reveal the former building was a single-story house with semisubterranean basement. The house measured 40 ft. by 18 ft. No other buildings are shown in the project area on later maps or aerial photos. Records indicate the house was demolished in 2021.

Figure 6. Sanborn Fire Insurance Company map (1912-1930) showing project area and IOOF Lodge Hall.

PREVIOUS ARCHAEOLOGICAL RESEARCH

Review of the WISAARD database identified several previous cultural resource investigations, recorded sites, and historic properties within one-mile of the project area. These resources help gauge the potential and type of cultural resources that may be present within the project area. Seven cultural resource investigations, varying in intensity from shovel probe surveys to construction monitoring efforts, have been conducted within approximately 0.5 mile of the project (Table1). These studies include a historic structures inventory (Palmer 1995), wastewater system improvement projects (LeTourneau et al. 2006; Zuccotti 2007), and transportation-related improvements (Middleton 2018; Kassa and Gardner 2018; Anderson and Anderson 2022). These investigations consisted of background research and field efforts employing pedestrian survey, subsurface investigation, archaeological monitoring, and site testing. A number of these investigations resulted in the identification and documentation of cultural resources. The most intensive study was completed in 1995 by King County Cultural Resources Division staff (Palmer 1995). The survey record 52 historic properties and provided historic overview and context for historic structures in Carnation. Three properties were identified as potentially eligible for the National Register of Historic Place including the Entwistle House, the original Tolt Odd Fellows Hall, and the Grange Hall.

Table 1. Previous Cultural Resources Studies Completed within one-mile of the Project

NADB	Title	Author(s)	Date
1347012	Cultural Resources Investigations for the Proposed City of Carnation Sewer Collection and Conveyance System and the Proposed King County Wastewater Treatment Facility	LeTourneau, Philippe et al.	2006
1349954	Historic Structures Survey, Carnation	Palmer, Christine	1995
1350393	Cultural Resources Monitoring of the City of Carnation Sewer Collection and Conveyance System	Zuccotti, Lucy	2007
1686078	Cultural Resource Survey: Proposed Telecommunications Non-Tower Collocation Site, Site Name: SEA Carnation - New Build, Carnation	Baker, Todd	2015
1690409	Cultural Resources Assessment of the West Morrison Street Project	Middleton, Sherri	2018
1691035	Cultural Resources Assessment for the Carnation Tolt Avenue Project, Carnation, King County, Washington	Kassa, Sonja and Jessica Gardner	2018
1696125	Archaeological Monitoring Report for the SR 203/Tolt Avenue CBD Project, Carnation, King County, Washington	Anderson, Jackey and Eric Anderson	2022

Several previous cultural resource investigations identified historic and pre-contact archaeological materials within one-mile of the project (Table 2). Closest to the project is site 45KI01595 located on Bird St. just south of the Sno-Valley Senior Center. This site consists of historic debris discarded in fill dating to the late 19th and early 20th century. The site was discovered during monitoring for a watermain installation and included fragments of porcelain and stoneware ceramics, beverage, condiment, and medicine bottles, numerous bottle glass fragments, flat glass and cut mammal bone. The deposit dates from ca. 1900 to 1930 and recommended not eligible to heritage registers.

Table 2. Archaeological Sites Recorded within Approximately one-mile of the Project.

Trinomial	Description	References (Date)	NRHP Eligibility
45KI01595	Historic debris	Anderson, Erik (2021)	Not Eligible
45KI00723	Precontact Isolate	LeTourneau, Philippe (2006)	Nominated
45KI00491	Precontact camp	Robbins and Dugas (2000)	Recommended Eligible
45KI00692	Precontact camp	Schalk et al. (2005)	Recommended Eligible
45KI00055	Precontact camp	LeTourneau 2008; Mattson 1980; Williams 2006	Eligible

Site 45KI00723 is a precontact site located one-quarter mile northwest. The site consists of a single lithic artifact associated with a buried A horizon. The artifact is described as a percussion cobble core of chemically weathered black crystalline volcanic rock (LeTourneau et al. 2006). The artifact was found during monitoring of mechanical excavations associated with a wastewater treatment facility. LeTourneau et al. (2006) also investigated portions of sites 45KI00491 and 45KI00692 located in Tolt MacDonald Park. These sites were previously recorded by Robbins and Dugas (2000) and Schalk et al. (2005), respectively. The cultural material extended horizontally for over 40 m (130 feet) and included flaked and ground stone artifacts as well as rock cooking features (Hodges and Carrilho 2008; Schalk et al. 2005).

Another important pre-contact archaeological site is recorded two-miles south of the project. The McDevitt Site (45KI55) is a reported village encompassing a large area on both sides of Griffin Creek near former Griffin Prairie. The site underwent several archaeological test excavations in the 1970s and 1980s that recovered numerous flaked-stone artifacts and historic-era trade items (LeTourneau 2008; Mattson 1980; Williams 2006). A portion of 45KI55 was investigated by Willamette CRA in 2018. Archaeological testing and construction monitoring revealed flaked-stone debris, stone tools, and twelve thermal features containing fire-modified rock and charcoal-rich matrix (unpublished report).

Eight historic properties dating between 1910 and 1972 are recorded within one block of the project area (Table 3). Most notable is the Second IOOF Hall (Sno-Valley Senior Center) described in the previous chapter. None of these properties have been nominated to state or federal heritage registers. The c. 1912 David and Martha Entwistle House (45KI00641) is located one-quarter mile southeast and has been nominated to the National Register and Washington State Heritage Register.

Table 3. Historic Properties Recorded within One-Block of the Project.

Property ID	Property Name	Location	Date	Inventory Status
40611	Second Odd Fellows Hall	4610 Stephens Ave, Carnation	1926	No Determination
40615	Paar's IGA Supermarket	4503 Tolt Ave, Carnation	1949	No Determination
40616	Tolt Hardware Company	4511-4509 Tolt Ave, Carnation	1912	No Determination
40617	Carnation Lumber and Hardware (common name)	4521 Tolt Ave, Carnation	1972	No Determination
40618	Delores Beauty Shop (common name)	4563 Tolt Ave, Carnation	1916	No Determination
40619	H.D. Robertson Grocery	4573 Tolt Ave, Carnation	1910	No Determination
40620	Tolt Leader/ Miller's Dry Goods	4597 Tolt Ave, Carnation	1924	No Determination
40651	Tolt State Bank/ Post Office/ Attorney's Office	4475 Tolt Ave, Carnation	1911	No Determination

3. SURVEY DESIGN AND METHODS

The statewide predictive model created by DAHP uses information on geology, soils, site types, water resources, landforms, and historic maps to predict probabilities for precontact cultural resources. DAHP's model uses five categories for the predictions: Low Risk, Moderately Low Risk, Moderate Risk, High Risk, and Very High Risk. The DAHP predictive model map indicates that the Project is situated in a Very High-Risk probability area due to its proximity to the Snoqualmie River and recorded archaeological sites. This chapter discusses the research design, including expectations for identifying cultural resources within the APE, as well as field methods employed in the cultural resource inventory conducted for the Project.

RESEARCH DESIGN

The confluence of the Tolt and Snoqualmie Rivers has long been an important locality for both the Snoqualmie people and later Euro American settlers. The large native community at the mouth of the Tolt River combined with the presence of several ethnographically named places, mythological sites, and recorded pre-contact archaeological sites in the vicinity are strong indicators the project has a high probability of containing buried archaeological resources. Prior to Euro-American settlement the project setting would have offered valuable plant and animal resources important to native people living in nearby communities along the Tolt and Snoqualmie rivers. Pre-contact and ethnohistoric sites are expected to be related to seasonal resource procurement, particularly hunting and gathering activities. Snoqualmie mythology and historic account speak of abundant elk populations in the Snoqualmie Valley and several important fisheries were located nearby.

If discovered, pre-contact cultural resources may consist of charcoal-stained sediments and concentrations of FMR related to cooking and processing activities. Common pre-contact period materials include flaked-stone tools such as knives and projectile points indicative of hunting, flaked-stone cobbles and other tools used for plant processing, lithic debitage indicative of tool repair and modification, net weights for collecting fish or waterfowl, bone fishing implements and faunal remains including mammal and fish bone. Features such as fire hearths, domestic structures, food storage, and implement caches are also possible. While the probability for discovering pre-contact archaeological resources was considered relatively high, previous ground disturbances related to historic land clearing, agriculture and buried utilities associated with former buildings tempered that probability to some degree.

SURVEY METHODS

ASM archaeologist Mike Shong conducted field reconnaissance of the project area on August 12th, 2022. Sub-surface investigation was completed in accessible areas of the project. A total of five shovel probes were excavated at approximately 15 m (50 ft.) intervals (Figure 7). Shovel probes (SPs) measured approximately 40 cm in diameter and were excavated stratigraphically in 20 cm arbitrary levels to approximately 80 cmbs at which time a 10 cm diameter bucket auger was employed to maximum depth of 220 cm (7.2 ft.) below surface. All excavated sediments were passed through ¼-inch mesh hardware cloth with a standard shaker-screen. Probes were terminated when the desired depth was reached, or if obstructions or geologic context precluded further excavation. The findings of each probe were recorded on standard forms that include information regarding soil color, texture, composition and observed cultural materials. Digital photographs were taken of the project area, each shovel probe, and the historic building. The subject matter of each photograph was recorded on a standard photo log. Appendix A of this report presents the shovel probe results in tabular form.

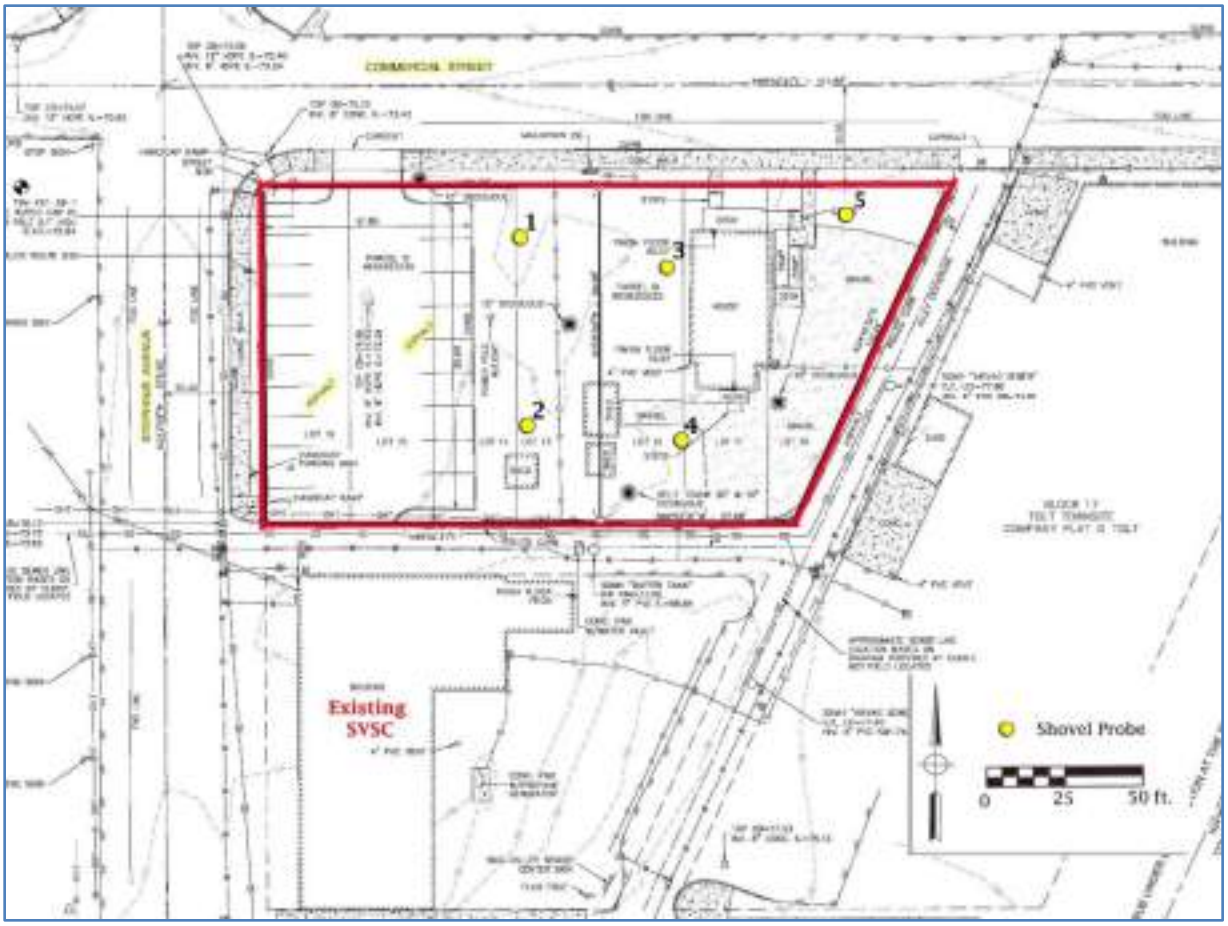

Figure 7. Project plan sheet showing existing conditions and location of shovel probes.

4. SURVEY RESULTS

No significant cultural resources were identified during this assessment. The project area consists of level topography with three small outbuildings in the south-central portion of the parcel. A single-story house formerly located in Lot 11 in the eastern project parcel (31845 West Commercial St.) was demolished and removed prior to this assessment. The footprint of the former house was visible at the time of the survey. Many small fragments of structural debris (concrete, nails, metal hardware etc.) were observed around the perimeter of the former building. On-site vegetation is dominated by ornamental trees and shrubs. The existing Sno-Valley Senior Center building (former IOOF Lodge No. 148) is located immediately south of the project area (Figure 8); however, no physical impacts to this building are anticipated as part of the current project.

Figure 8. Existing Sno-Valley Senior Center (SVSC) building (formerly IOOF lodge), view NE.

The western one-third of the project area (Lots 14-16) is covered by an asphalt-paved parking lot and was not available for subsurface inspection (Figure 9). A relatively small amount of modern and late-historic debris was recovered from the upper 30 cm (12 inches) of all five shovel probes. The debris was dominated by small fragments of metal, glass, plastic, concrete, brick, and asphalt. The cultural material was predominately domestic in nature (mostly vessel glass fragments) and few artifacts were temporally diagnostic. Sediments observed in four of the five probes were relatively consistent and composed of varying amounts of fill over native alluvium (Figure 10). SP 5, located in the northwest corner of the project area encountered a buried concrete drainpipe at approximately 40 cm (16 inches) below surface and was terminated.

Figure 9. Overview at SP 2 showing north side of SVSC building and adjacent parking lot.

Figure 10. SP 4 profile showing imported gravel fill over native alluvium (50 cm scale).

Site sediments were geneally consistent with the Oridia silt loam series mapped by the NRCS soil survey. In sum, native sediments consisted of silty alluvium composed of a dark grayish-brown, organically-rich soil A-horizon averaging approximately 30 cm thick. The soil is somewhat mottled, contains few to common rounded pebbles and exhixbits relatively strong pedogenic structure and few to common charcoal flecks. The A-horizon contained the vast majority of the cultural material recoved from shovel pobes. The A-horizon transitions clearly to abuptly into a homogeneous yellowish-brown soil B-horizon with no gravels and generally weak to moderate pedogenic structure (Figure 11). The upper soil package transitions clearly to gradually into parent alluvium below approximately 120 cm (4 ft.) below surface. The C-horizon is composed of light yellowish-brown to pale-brown clayey silt with no gravels or organic content.

Figure 11. SP 1 profile showing A-horizon over intact native alluvium (50 cm scale).

A buried, charcoal-rich soil was encountered in SP1 between approximately 100-120 cm (39-47 inches) below surface (Figure 12). No cultural material or evidence of cultural activity was observed in association with the charcaol-rich matrix; however, the sample was collected from a small 10 cm (4 inch) diameter bucket auger. The organically-rich soil was not observed in shovel/auger probes located 15 m (50 ft.) south and 15 m east. The area west of SP 1 is a paved parking lot and was not available for subsurface inspection. The charcoal-rich matrix exhibited strong, blocky pedogentic structure sugestive of a buried soil in contrast to root-burn or another naturally-occuring process. No soil oxidation, spalled gravels, or other evidence of in-place burning was observed. The B-horizon above the buried A-horizon appeared intact with no clear evidence of distubance. In sum, it is unclear if the charcoal-rich matrix represents natural burning; burning associated with historic land clearing, or precontact cultural activities.

Figure 12. Organically-rich sediments recovered from SP 1, 100-120 cmbs auger sample.

5. CONCLUSIONS AND RECOMMENDATIONS

ASM conducted a cultural resources assessment for the proposed Sno-Valley Senior Center project under contract to Sno-Valley Senior Center. The proposed project includes construction of a new three-story, 15-unit senior hosing building and associated parking lot. No significant cultural resources or historic properties were identified during this assessment. Two small houses shown on the 1930 Sanborn map within the project area no longer exist. The current project will have no effect of the existing Sno-Valley Senior Center building located immediately south in a separate tax parcel. The former IOOF Lodge No. 148 building was constructed in 1926 and previously recorded as a historic property (ID 40611).

A small amount of modern and late-historic debris was recovered from the upper 30 cm (12 inches) of all five shovel probes. The debris is dominated by small fragments of metal, glass, plastic, concrete, brick, and asphalt. The material was predominately domestic in nature, and few of the items were temporally diagnostic. No significant concentrations of cultural material were encountered. The sparse scatter of fragmented debris is consistent with a residential property occupied since the late 1920s and does not represent an archaeological resource. However, the 1930 Sanborn map shows a small, square outbuilding in the southeast corner of the project area (Lot 10). The structure likely represents a privy (outhouse) based on the size and distance from two dwellings on the same property. Domestic privies often contain discarded food and beverage containers, dinnerware ceramics and other household items that can be temporally diagnostic and provide potentially significant archaeological data. Current project plans propose a new dumpster enclosure in this area and little ground disturbance is expected. Any ground disturbance deeper than 24-inches in the southeast corner of the project area should be proceeded by an archaeological investigation.

A charcoal-rich soil was encountered in SP1 between 100-120 cm (39-47 inches) below surface. No cultural material was observed with the buried soil; however, the sample was collected from a relatively small diameter (10 cm/4-inch) auger. Shovel/auger probes excavated 15 m (50 ft.) south and east of SP 1 did not encounter the same charcoal-rich soil. The area west of SP 1 is a paved parking lot. While inconclusive, the charcoal-rich matrix encountered in SP 1 may represent precontact cultural activities. ASM recommends archaeological monitoring of any excavation exceeding two feet for the western one-third of the project area (under existing parking lot). Alternatively, ASM recommends mechanical investigation (backhoe testing) of the western one-third of the project area prior to construction. It is possible this could be accomplished during ancillary activities such as geotechnical studies or preliminary construction excavations.

In the unlikely event that ground disturbing activities associated with this project result in the inadvertent discovery of archaeological materials, work should be halted in the vicinity of the discovery and DAHP should be contacted immediately for next steps. Historic-period cultural resources are more likely to be encountered than precontact resources based on past ground disturbances to native soils. Potentially significant historic-period cultural materials include temporally diagnostic bottles, dinnerware ceramics, metal and glass food containers and other domestic-related items dating to the late-19th and early 20th century. Precontact archaeological resources are typically represented by shell middens and flaked-stone artifacts such as bifaces (knives), projectile points, spalls, cores, lithic waste flakes and thermal features such as fire hearths and cooking features represented by FMR and charcoal-stained matrix. In the unlikely event that human remains are discovered during construction, work should halt, the discovery area should be secured, and the King County Police Department and the King County Medical Examiner (ME) should be contacted immediately. Contemporaneous with notifying local law enforcement and the ME, the project proponent should also notify the affected Tribes and DAHP of the discovery.

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APPENDICES

APPENDIX A

Shovel Probe Results

Appendix A. Results of Shovel Probes.

Probe (SP-)	DEPTH (cmbs)	SEDIMENT DESCRIPTION	CULTURAL MATERIAL
1	0-5	Grass sod cap, dark brown silty fine to medium-grain sand with many fine roots; **O/A-horizon**	None observed
	5-38	Dark grayish-brown (10YR4/2) silty fine sand with common small to medium size, rounded to sub-rounded pebbles; firm; mottled; organically-rich; few charcoal chunks and unburned woody debris; moderate to strong pedogenic structure; clear lower boundary; soil **A-horizon**	9 clear, 2 green vessel glass frags; 1 wire nail; 1 clear flat glass frag; cellophane frags; asphalt frags
	38-100	Yellowish-brown (10YR5/4) silty fine sand; no gravels; firm; non-organic weak pedogenic structure; homogeneous; soil **B-horizon** *employed 10 cm diameter bucket auger at 80 cmbs	None observed
	100-120	Dark grayish-brown (10YR4/2) silty fine sand; no gravels; firm; organically-rich; many charcoal chunks and flecks; moderate to strong pedogenic structure; buried **A-horizon**	None observed
	120-220	Light yellowish-brown (10YR6/4) silty fine sand; no gravels; transitions to clayey-silt with depth; very firm; homogeneous; non-organic; no pedogenic structure; **C-horizon;** terminated at maximum manual tool limits	None observed
2	0-9	Grass sod cap, dark brown silty fine to medium-grain sand; firm; mottled; common fine roots; **O/A-horizon**	None observed
	9-13	Grayish-brown fine to coarse sand with many small, angular pebbles; firm; abrupt lower boundary; **Fill**	Imported gravel
	13-40	Dark grayish-brown (10YR4/2) silty fine sand with common small to medium size, rounded to sub-rounded pebbles; firm; organically-rich; few charcoal flecks; strong pedogenic structure; clear to abrupt lower boundary; **A-horizon**	2 clear vessel glass frags, 1 brown vessel glass frag, concrete and asphalt frags
	40-120	Yellowish-brown (10YR5/4) silty fine sand; no gravels; firm; lightly organic; weak pedogenic structure; homogeneous; soil **B-horizon** *employed 10 cm diameter bucket auger at 80 cmbs	None observed
	120-220	Light yellowish-brown (10YR6/4) silty fine sand; no gravels; transitions to clayey-silt with depth; very firm; homogeneous; non-organic; no pedogenic structure; parent alluvium; **C-horizon**; terminated at maximum manual tool limits	None observed
3	0-18	Grass sod cap over grayish-brown fine to coarse-grain sand; many small to large, rounded to sub-rounded pebbles; firm; common fine roots; modern O/A-horizon; **Fill**	1 clear vessel glass frag
	18-45	Dark grayish-brown (10YR4/2) silty fine sand with common small to medium size, rounded to sub-rounded pebbles; firm; organically-rich; few charcoal flecks; strong pedogenic structure; clear to abrupt lower boundary; **A-horizon**	Cellophane frags;1 saw-cut large mammal bone; green plastic frag; 1 red brick frag;
	45-120	Yellowish-brown (10YR5/4) silty fine sand; no gravels; firm; lightly organic; weak pedogenic structure; homogeneous; soil **B-horizon** *employed 10 cm diameter bucket auger at 80 cmbs	None observed
	120-220	Light yellowish-brown (10YR6/4) silty fine sand; no gravels; transitions to clayey-silt with depth; very firm; homogeneous; non-organic; no pedogenic structure; parent alluvium; **C-horizon**; terminated at maximum manual tool limits	None observed

Appendix A. Results of Shovel Probes.

Probe (SP-)	DEPTH (cmbs)	SEDIMENT DESCRIPTION	CULTURAL MATERIAL
4	0-5	Grass sod cap, dark brown silty fine to medium-grain sand with many fine roots; **O/A-horizon**	None observed
	5-25	Dark grayish-brown (10YR4/2) silty fine sand with common small to medium size, rounded to sub-rounded pebbles; firm; organically-rich; strong pedogenic structure; clear lower boundary; soil **A-horizon**	3 clear vessel glass frags; 1 lantern mantle glass frag; blue plastic; asphalt frags
	25-45	Light yellowish-brown (10YR6/4) silty fine sand; no gravels; firm; homogeneous; lightly organic; weak pedogenic structure; clear to abrupt lower boundary, soil **B-horizon**	None observed
	45-120	Yellowish-brown (10YR5/4) silty fine sand; no gravels; firm; non-organic weak pedogenic structure; homogeneous; soil **B^2-horizon** *employed 10 cm diameter bucket auger at 80 cmbs	None observed
	120-220	Light yellowish-brown (10YR6/4) silty fine sand; no gravels; transitions to clayey-silt with depth; very firm; homogeneous; non-organic; no pedogenic structure; **C-horizon;** terminated at maximum manual tool limits	None observed
5	0-9	Grass sod cap, dark brown silty fine to medium-grain sand; firm; mottled; common fine roots; **O/A-horizon**	None observed
	9-42	Dark grayish-brown (10YR4/2) silty fine sand with many small to large, rounded to sub-rounded pebbles; firm; mottled; slightly organically-rich; few charcoal flecks; weak pedogenic structure; modern A-horizon (**Fill**); terminated on concrete drainpipe	Few concrete frags; 1 clear flat glass frag; 1 1974 US penny

Exhibit 8

RECEIVED
CITY OF CARNATION
11/18/2022

CITY OF CARNATION
4621 Tolt Avenue • P. O. Box 1238 • Carnation, WA 98014-1238
(425) 333-4192 phone • (425) 333-4336 fax • www.carnationwa.gov

CERTIFICATE OF WATER AVAILABILITY

☐ Building Permit	☐ Short Plat	☐ Preliminary Plat/PUD	☒ Rezone or other: **SITE DEVELOPMENT**

Applicant Name:	Sno-Valley Senior Center / Roger Tucker, Environmental Works		
Address:	402 15th Ave E, Seattle, WA 98112		
Phone:	206-787-1370	Email: rtucker@eworks.org	
Proposed Use:	New 15 unit apartment building (all one bedroom, one bath units)		

Tax Parcel Number and Project Location:

31845 W Commercial St / 865830-2225 and 865830-2230

DO NOT WRITE BELOW THIS LINE

WATER PURVEYOR INFORMATION

1. a. ☒ Water will be provided by service connection only to an existing 8-in Ductile Iron water main Adjacent to ~~feet from~~ the site.

   OR

   b. ☐ Water service will require an improvement to the water system of:
   - ☐ (1) _____ feet of additional water main to reach the site; and/or
   - ☐ (2) the construction of a distribution system on the site; and/or
   - ☐ (3) other (describe) _____

2. (MUST BE COMPLETED IF 1B ABOVE IS CHECKED)

   a. ☒ The water system is in conformance with a County approved water comprehensive plan.

   OR

   b. ☐ The water system improvement will require a water comprehensive plan amendment.

3. a. ☒ The proposed project is within the corporate limits of the district, or has been granted Boundary Review Board (BRB) approval for extension of service outside the city, or is within the County approved service area of a private water purveyor.

   b. ☐ Annexation or BRB approval will be necessary to provide service.

4. a. ☒ Water is/or will be available at the rate of flow and duration indicated below at no less than 20 psi measured at the nearest fire hydrant feet from the building/property (or as marked on the attached map):

   Rate of Flow:
   - ☐ less than 500 gpm (approx. _____ gpm)
   - ☐ 200 to 999 gpm
   - ☒ 1000 gpm or more

   Duration:
   - ☐ less than 1 hour
   - ☐ 1 hour to 2 hours
   - ☒ 2 hours or more
   - ☐ other _____

   COMMERCIAL BUILDING PERMIT REQUIREMENT:
   - ☐ flow test of _____ gpm
   - ☐ calculation of _____ gpm

   b. ☐ Water system is not capable of providing fire flow.

COMMENTS/CONDITIONS: Connection to the eight-in ductile iron main in the alley between W. Bird and W. Commercial Street is required. Service and meter size to be established during design phase. Fire connection shall be as determined by the Fire Marshal.

I hereby certify that the above water purveyor information is true. This certification shall be valid for one year from date of signature.

City of Carnation	Jorge Garcia	
Agency Name	*Signatory Name*	
City Engineer	X _____	8/15/2022
Title	*Signature*	*Date*

Application CWA-22-0007

Exhibit 9

RECEIVED
CITY OF CARNATION
11/18/2022

City of Carnation
4621 Tolt Avenue • P.O. Box 1238 • Carnation, WA 98014
(425) 333-4192 phone • (425) 333-4336 fax
www.carnationwa.gov

Certificate of Sewer Availability

Brief description of project: New 15 unit apartment building (all one bedroom, one bath units)

Applicant's Contact Information: Roger Tucker, Environmental Works

Property Owner: Sno-Valley Senior Center

Mailing Address: 4012 15th Ave E, Seattle, WA 98112

Phone Number: 206-787-1370 Fax Number:

Email Address: rtucker@eworks.org

Project's Address and/or Tax Parcel Number: 31845 W Commercial St / 865830-2225 and 865830-2230

Sewer Purveyor Information:

1. a ☒ Sewer service will be provided by service connection only to an existing sewer main ____ feet from the site and the sewer system has the capacity to serve the proposed area.
   b ☐ Other (describe offsite and/or onsite requirements): See City of Carnation Ordinance No. 743
2. a ☒ The sewer system is in conformance with a County approved sewer comprehensive plan.
   b ☐ The sewer system improvement will require a sewer comprehensive plan amendment.
3. a ☒ The proposed project is within the current City Limits.
   b ☐ Annexation will be necessary to provide service.
4. a ☒ Connection Charge: Connection to the City's Sewer Collection System will be subject to a King County Capacity Charge and a City of Carnation General Facilities Charge.
   b ☐ Easement (s):
   c ☐ Right of Way Permit:

COMMENTS / CONDITIONS:

A sewer connection in the alley between W. Commercial Street and W. Bird Street is required. A dual valve buffer tank will be necessary to serve the proposed development and shall be designed and installed per City of Carnation standards and Airvac recommendations.

Service is subject to the applicant's agreement to comply and perform to make such installation and/or connections to the standards, regulations, requirements and conditions of the City and such other agency or agencies have jurisdiction. The City is not representing that it's facilities will be extended or otherwise modified to make such service available to the applicant. It is the responsibility of the applicant to make any required extension of facilities to serve their property. The City has made their best determination for the conditions of service based upon the information provided, but does not represent that this certificate is a complete and final determination of the requirements for service. Final and full requirements for service will be made during the engineering review of the project.

This certification shall be valid for one year from the date of signature.

City of Carnation	**Jorge Garcia**
	Signatory Name
City Engineer	**8/15/22**
Title	**Signature** **Date**

Application #: CSA-22-0005

Exhibit 10

December6, 2022

Roger Tucker
Environmental Works
402 15th Avenue NE
Seattle, WA 98112

RE: Notice of Complete Application,
Site Development Review Permit Application No. SPR 22-0003
Design Review Application No. DR 22-0003
Assessor's Parcel Nos. 865830-2230 and 865830-2225

Dear Mr. Tucker:

We have received your permit applications for Site Development Review and Design Review and, based on review of the requested application materials, we have determined that all the information necessary has been submitted and the application is determined complete as December 2, 2022, and the processing of your permit has commenced. This notice does not preclude the possibility of submittal of additional information as may be required for final approval of the applications.

The City of Carnation is also required to provide Notice of Application per CMC 15.09.140 within 14 days from the date of completion. These notices are expected to be made soon whereby we will be contacting you.

As required by state law and Carnation Municipal Code, a decision on your application is required to be made no later than 120 days from the date of determining completeness, which is April 1, 2023, provided that no exceptions to this time limit are needed.

Nothing herein shall be construed as approval, review, analysis or substantive comment on the materials submitted for consideration.

I will be processing this application so should you have any questions or comments, please contact me at (425) 333-4192.

Sincerely,

TWL

Tim Woolett, Project Planner

Cc: Project File No. SPR 22-0003 & DR 22-003

Exhibit 11

State Environmental Policy Act (SEPA) WAC 197-11

MITIGATED DETERMINATION OF NON-SIGNIFICANCE

Description of Current Proposal: A proposal to construct a new 3-story affordable senior housing building consisting of 15 one-bedroom residential units with common areas, associated parking for 27 vehicles, and outdoor amenity spaces on 17,800 square feet of property in the Mixed Use (MU) zone.

File Reference: SPR 22-0003, and DR 22-0004

Proponent/Owner: Sno-Valley Senior Center.
Project Contact: Roger Tucker, Environmental Works.

Location of Current Proposal: The subject property is located adjacent to the north side of the Snoqualmie Valley Senior Center at the intersection of Stephens Avenue and Commercial Street in Carnation, Washington, and identified as Assessor's Parcels No. 865830-2230 and 865830-2225.

Lead Agency: City of Carnation

The lead agency for this proposal has determined that it does not have a probable significant adverse impact on the environment. An environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed environmental checklist and other information on file with Clallam County. This information is available to the public on request at the office of the Responsible Official as listed herein.

This **MDNS** is issued under WAC 197-11-350. Comments must be submitted by **August 24, 2018.**

Staff Contact: Jonnie Lan, Planner (425) 333-4192

Responsible Official: Tim Woolett, City Planner/
City of Carnation
4621 Tolt Avenue – P.O. Box 1238
Carnation, WA 98014-1238

Issuance Date: **March 10, 2023.** Signature: _____
Tim Woolett, City Planner/Consultant

Written comments must be submitted to the City of Carnation, Carnation City Hall, 4621 Tolt Avenue, P.O. Box 1238, Carnation, WA, 98014-1238. No determination made pursuant Chapter 14.04 Carnation Municipal Code (SEPA) shall be administratively appealable. Any appeal of a determination made pursuant to said chapter shall be filed in King County Superior Court pursuant to applicable state law. Contact Carnation City Hall at the address and phone number listed above to read or ask about the procedures for SEPA appeals.

cc: State of Washington Department of Ecology (SEPA Register)
Agencies with Jurisdiction
Proponent

Exhibit 11

State Environmental Policy Act (SEPA) WAC 197-11

MITIGATED DETERMINATION OF NON-SIGNIFICANCE

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cc: State of Washington Department of Ecology (SEPA Register)
Agencies with Jurisdiction
Proponent

CITY OF CARNATION
ENVIRONMENTAL REVIEW AND THRESHOLD DETERMINATION

DATE: March 8, 2023

PROPOSAL: A proposal to construct a new 3-story affordable senior housing building consisting of 15 one-bedroom residential units with common areas, associated parking for 27 vehicles, and outdoor amenity spaces on 17,800 square feet of property in the Mixed Use (MU) zone.

LOCATION: The subject property is located adjacent to the north side of the Snoqualmie Valley Senior Center at the intersection of Stephens Avenue and Commercial Street in Carnation, Washington, and identified as Assessor's Parcels No. 865830-2230 and 865830-2225.

PROPONENT: Sno-Valley Senior Center.

CONTACT: Roger Tucker, Senior Architect
Environmental Works
402 15th Avenue East
Seattle, WA 98112
206-787-1370

FILE REFERENCE: SPR 22-0003 and DR 22-0004

RESPONSIBLE OFFICIAL: Tim Woolett, City Planner/Consultant
STAFF CONTACT: Jonnie Lan, Planner (425) 333-4192

THRESHOLD DETERMINATION: This is a Mitigated Determination of Non-Significance (MDNS).

TO: All Permit and Review Authorities

ENVIRONMENTAL RECORD

The environmental review consisted of analysis based on the following documents included in the environmental record.

- Environmental Checklist dated November 10, 2022.
- Site Development Review Application No. SPR 22-0003.
- Design Review Application No. DR 22-0004.
- Geotechnical Engineering Evaluation-Revised; prepared by Nelson Geotechnical Associates, Inc., November 14, 2022.
- Drainage Report, Sno-Valley Senior Housing; prepared by CM Design Group, November 2022.

- Sno-Valley Senior Center Parking Assessment; prepared by Heath and Associates, Inc., Revised November 2022.

The following documents are included in the environmental record by reference.

- City of Carnation Comprehensive Plan
- City of Carnation Municipal Code - Title 15 CMC
- City of Carnation SEPA Ordinance – Chapter 15.04 CMC
- City of Carnation Design Standards and Guidelines, 2018.

Unless otherwise noted, the above information is available at City Hall, (425) 333-4192, and may be accessed under Development Projects at the City of Carnation website by visiting Departments/Planning/Development Projects.

STAFF AMENDMENTS TO THE ENVIRONMENTAL CHECKLIST

THE FOLLOWING SECTIONS CORRESPOND WITH RELATED CATEGORIES OF THE ENVIRONMENTAL CHECKLIST SUBMITTED FOR THE PROPOSAL, AND CLARIFY, AMEND, OR ADD TO THAT DOCUMENT.

I. PROPOSAL DESCRIPTION:

The checklist description is thorough and accurate.

II. PERMITS/APPROVALS REQUIRED:

- Site Development Review
- Design Review
- Certificate of Sewer Availability
- Certificate of Water Availability
- Public Utility Extension
- Right-of-Way Permit
- Clearing, Filling and Grading Permit
- Drainage Permit
- Side Sewer Permit
- Building Permits

III. ENVIRONMENTAL ELEMENTS (CHECKLIST PART B)

1. EARTH

The Checklist description is accurate. Any potential for adverse environmental impacts due to clearing, grading, or filling can be mitigated through the City of Carnation's clearing and grading requirements applied through the clearing and grading permit approval process. As part of the site development review and design review permit application requirements, a geotechnical report has been submitted that includes conclusions and recommendations that will be imposed as conditions for clearing and grading permit approval unless otherwise modified by the City Engineer.

Based on the submitted geotechnical report, the potential for adverse environmental impacts to “earth” can be adequately mitigated through application of the recommendation set forth in the Geotechnical Report prepared by Nelson Geotechnical Associates, Inc. As provided in the checklist, any anticipated impacts due to erosion can be mitigated through the City of Carnation’s requirement for a Stormwater Pollution Prevention Plan (SWPPP) and Temporary Erosion and Sedimentation Plan meeting the requirements of the Department of Ecology (DOE) Stormwater Management Manual for Western Washington, 2012, updated 2014.

2. AIR

In addition to the checklist description, there is always the potential for adverse environmental impacts due to dust emissions during construction. To mitigate this potential, the project proponent and/or their contractor shall control dust emissions during construction with watering or an equally effective non-chemical method that has been approved by the City of Carnation. Watering is the most used alternative, due to its low cost of implementation and excellent results. Water should be applied at least three times a day or more, depending on the atmospheric conditions. Watering should be done in a manner that does not cause erosion problems. This is typically accomplished using a mobile water tanker driven on site spraying water over the affected areas preventing dust from becoming airborne.

To control dust emissions throughout construction, during dry periods the proponent shall employ the use of watering all dust generating surfaces a minimum of three times daily or more as needed during construction phase of the project. Alternative non-chemical methods would be considered for approval by the City of Carnation. This requirement will be imposed as a condition of site development review permit and design review permit approval.

3. WATER

a. Surface Water: The checklist adequately addresses the issues of this section.

b. Ground Water: The checklist description is complete and accurate. Other than stormwater there will be no discharge into the ground.

c. Water Runoff: The checklist description is complete and accurate. City of Carnation standards require that all proposals treat and/or infiltrate stormwater runoff on site consistent with the DOE Stormwater Management Manual for Western Washington. Project development will be required to follow the recommendations and conditions of the drainage report unless otherwise modified by the city engineer.

4. PLANTS

The checklist description is accurate. Landscaping needs will be assessed through the site development permit review process and any requirements will be imposed as conditions of permit approval.

5. ANIMALS

The checklist adequately addresses the issues of this section.

6. ENERGY AND NATURAL RESOURCES

The checklist adequately addresses the issues of this section.

7. ENVIRONMENTAL HEALTH

The checklist adequately addresses the issues of this section. As required in Subsection 15.44.300 CMC, functioning mufflers will be required on construction equipment, and hours of construction will be limited to between 7:00 am to 7:00 pm, Monday through Saturday in order to mitigate the potential for adverse noise impacts to the surrounding properties. These requirements will be imposed as conditions of site development review permit approval.

8. LAND AND SHORELINE USE

The checklist descriptions are accurate with the following comments. The current City of Carnation zoning designation of the property is Mixed Use (MU), which is consistent with the Carnation Comprehensive Plan's "*Medium Intensity Commercial"* land use designation. The proposed development would create fifteen (15) senior housing [multi-family] residential units (apartments) consistent with the standards of the underlying Mixed-Use zone. Adjacent land uses consist of single family residential to the north and west of the property, commercial to the east, and the Sno-Valley Senior Center to the south. All surrounding land uses are consistent with their underlying zoning designation.

City approval of the proposed Site Development Review and Design Review would ensure the proposed development's compatibility with existing and projected land uses and plans.

9. HOUSING

The checklist description is accurate and complete. City approval of the proposed Site Development Review and Design Review would ensure the proposed development's compatibility with the City of Carnation Design Standards and Guidelines.

10. AESTHETICS

The checklist description is accurate and complete.

11. LIGHT AND GLARE

The checklist description is accurate and complete.

12. RECREATION

The checklist description is accurate and complete.

13. HISTORICAL AND CULTURAL PRESERVATION

The checklist description is substantially complete. As with all land use permits in Carnation, as a permit requirement the project proponent and/or their contractors are required to stop work and immediately notify the City of Carnation and the Washington State Office of Archaeology and Historic Preservation if any historical or archaeological artifacts are uncovered during development.

14. TRANSPORTATION

The checklist description is accurate. As provided in the checklist, the project will displace 18 off-street parking spaces while providing 27 new off-street parking spaces, a net gain of 9 off-street parking spaces before considering the fifteen-unit senior housing building. As required in the Carnation Municipal Code [CMC 15.72.130], the off-street parking requirements for senior housing is one space per dwelling unit plus one additional space for every four units in the development. Currently, the Senior Center provides eighteen (18) off-street parking spaces that serve the center along with parking opportunities along the abutting public rights-of-way. The new fifteen (15) unit senior housing facility will require an additional eighteen (18) off-street parking spaces (one per unit plus one additional space for every four spaces). The proposed project will eliminate the existing eighteen (18) off-street parking spaces and provide twenty-seven (27) off-street parking spaces, resulting in a net loss of nine (9) off-street parking spaces. It should be noted that there are eight (8) to nine head in parking (9) spaces in front (west) of the Senior Center that are in the public right-of-way of Stephens Avenue which are not considered in calculating off-street parking requirements.

The Carnation Municipal Code [CMC 15.72.020(B)(2)] provides that the city may allow deviations from the parking requirements set forth in Subsection 15.72.010 (e) when it finds that a "…*residential development is irrevocably oriented toward the elderly or other demographic group which, due to the driving characteristics of the group, requires fewer or more parking stalls than the general populace."*

The submitted parking study provides numbers from similar facilities in other jurisdictions similar to Carnation that may support a reduction in parking requirements, however, those statistics do no consider growth potential that would be proportionate to their respective community's future growth projections. The parking study does make a case for allowing some relief from the off-street parking requirements for the proposed senior housing. The Lead Agency must consider the impacts associated with "spill over" parking during peak times and special events which would result in a higher incidence of on-street parking; thus, displacing public parking opportunities for the city's downtown district.

The City of Carnation's downtown commercial district is a pedestrian oriented district with limited parking in the vicinity of Tolt Avenue which is less than one block from the Senior Center. Given that the provisions for public parking are on the side streets that are parallel and perpendicular to Tolt Avenue, there is the potential for adverse impacts to transportation in the form of reduced public parking opportunities.

The Lead Agency finds that this potential for adverse parking impacts could be mitigated with the provision of additional on-street parking in the immediate vicinity that would

compensate for any displaced parking opportunities adjacent to the project site. This could be done by providing up to eight (8) angled parking spaces on the west side of Stephens Avenue beginning one half block south of the Senior Center and ending at the Entwistle Street right-of-way. Currently, there are eight (8) angled parking spaces on the west side of Stephens Avenue beginning at the intersection with Bird Street and ending mid-block at the alley. This parking area is made of a gravel surface with wheel stops for each angled parking space, and an infiltration trench at the right-of-way edge to handle stormwater runoff.

To mitigate the potential for adverse impacts to public parking, the proponent should provide up to eight (8) angled parking spaces along the west side of Stephens Avenue from the mid-block alley south to Entwistle Street. The parking spaces should be developed to the same standard as the existing eight (8) angled parking spaces beginning at the intersection with Bird Street. The proponent will consult with the City Engineer for details and specifications.

15. PUBLIC SERVICES

The checklist adequately addresses the issues of this section. Other than existing law enforcement and emergency services provided for the area, there is no foreseeable need for special emergency services resulting from the development of the subject proposal.

16. UTILITIES

The checklist adequately addresses the issues of this section.

CONCLUSIONS AND SUBSTANTIVE AUTHORITY

The environmental review indicates that there may be a potential for adverse environmental impacts from the proposal which may not be mitigated through conditions imposed by authority of existing City of Carnation land use regulations. Therefore, a Mitigated Determination of Non-Significance should be required.

This authority is pursuant to Section *14.04.160 B. CMC - Substantive authority—Specific provisions* as follows:

The city may attach conditions to a permit or approval for a proposal so long as:

1. Such conditions are necessary to mitigate specific probable adverse environmental impacts identified in environmental documents prepared pursuant to this chapter; and
2. Such conditions are in writing; and
3. The mitigation measures included in such conditions are reasonable and capable of being accomplished; and
4. The city has considered whether other local, state, or federal mitigation measures applied to the proposal are sufficient to mitigate the identified impacts; and
5. Such conditions are based on one or more policies in subsection D of this section and cited in the license or other decision document.

Potential Significant Environmental Impacts:

Based on review of the Environmental Checklist and other available material provided on the subject proposal, the Responsible Official for the City of Carnation has considered the following as potential significant adverse environmental impacts as a result of the subject development proposal. These impacts cannot be decisively mitigated under the standards in the Carnation Municipal Code and must be mitigated under the substantive authority of SEPA:

- The potential for adverse environmental impacts to motor vehicle parking.

Proposed Mitigation Measures:

The following mitigation measures have been proposed by Development Review Division staff for consideration by the Responsible Official. They are intended to address and mitigate to a point of non-significance the environmental impacts listed above.

1. To mitigate the potential for adverse impacts to public parking, the proponent shall provide up to eight (8) angled parking spaces along the west side of Stephens Avenue from the mid-block alley south to Entwistle Street. The parking spaces should be developed to the same standard as the existing eight (8) angled parking spaces beginning at the intersection with Bird Street. The proponent shall consult with the City Engineer for details and specifications.

Supporting Policies:

City policies which address the aforementioned probable impacts are contained in the specific policies outlined in the City of Carnation SEPA Ordinance under *Section 14.04.160 D.1. a – g CMC* are as follows:

a. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
b. Assure for all people of Washington safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
c. Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
d. Preserve important historic, cultural, and natural aspects of our national heritage;
e. Maintain, wherever possible, an environment which supports diversity and variety of individual choices;
f. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
g. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The City of Carnation has reviewed and considered the referenced proposal, the environmental checklist, agency comments, and other available material. The environmental review indicates any potential adverse environmental impacts from the proposal would not be adequately mitigated through conditions imposed by authority of existing City of Carnation land use regulations. Therefore, a ***Mitigated Determination of Non-Significance*** will be issued for the proposal described herein.

March 8, 2023

Tim Woolett, Responsible Official
City of Carnation

Date

Exhibit 11

Modified State Environmental Policy Act (SEPA) WAC 197-11

MITIGATED DETERMINATION OF NON-SIGNIFICANCE

Description of Current Proposal: A proposal to construct a new 3-story affordable senior housing building consisting of 15 one-bedroom residential units with common areas, associated parking for 27 vehicles, and outdoor amenity spaces on 17,800 square feet of property in the Mixed Use (MU) zone.

File Reference: SPR 22-0003, and DR 22-0004

Proponent/Owner: Sno-Valley Senior Center.
Project Contact: Roger Tucker, Environmental Works.

Location of Current Proposal: The subject property is located adjacent to the north side of the Snoqualmie Valley Senior Center at the intersection of Stephens Avenue and Commercial Street in Carnation, Washington, and identified as Assessor's Parcels No. 865830-2230 and 865830-2225.

Lead Agency: City of Carnation

The Lead Agency for this proposal has considered all timely comments received on the MDNS issued March 10, 2023, and has chosen to issue this **revised MDNS** pursuant to WAC 197-11-340(2)(f). Following review and consideration of clarifications to the environmental checklist the Responsible Official has chosen to issue this **revised MDNS** pursuant to WAC 197-11-340(2)(f).

This Revised **MDNS** is issued under WAC 197-11-340(2)(f). There is no comment period on this Revised MDNS.

Staff Contact: Tim Woolett, Project Planner (425) 333-4192

Responsible Official: Tim Woolett, City Planner
City of Carnation
4621 Tolt Avenue – P.O. Box 1238
Carnation, WA 98014-1238

Issuance Date: **April 26, 2023.**

Signature: _____
Tim Woolett, City Planner/Consultant

Written comments must be submitted to the City of Carnation, Carnation City Hall, 4621 Tolt Avenue, P.O. Box 1238, Carnation, WA, 98014-1238. No determination made pursuant Chapter 14.04 Carnation Municipal Code (SEPA) shall be administratively appealable. Any appeal of a determination made pursuant to said chapter shall be filed in King County Superior Court pursuant to applicable state law. Contact Carnation City Hall at the address and phone number listed above to read or ask about the procedures for SEPA appeals.

cc: State of Washington Department of Ecology
Agencies with Jurisdiction
Proponent

CITY OF CARNATION
ENVIRONMENTAL REVIEW AND THRESHOLD DETERMINATION

DATE: March 8, 2023 Modified April 26, 2023

PROPOSAL: A proposal to construct a new 3-story affordable senior housing building consisting of 15 one-bedroom residential units with common areas, associated parking for 27 vehicles, and outdoor amenity spaces on 17,800 square feet of property in the Mixed Use (MU) zone.

LOCATION: The subject property is located adjacent to the north side of the Snoqualmie Valley Senior Center at the intersection of Stephens Avenue and Commercial Street in Carnation, Washington, and identified as Assessor's Parcels No. 865830-2230 and 865830-2225.

PROPONENT: Sno-Valley Senior Center.

CONTACT: Roger Tucker, Senior Architect
Environmental Works
402 15th Avenue East
Seattle, WA 98112
206-787-1370

FILE REFERENCE: SPR 22-0003 and DR 22-0004

RESPONSIBLE OFFICIAL: Tim Woolett, City Planner/Consultant
STAFF CONTACT: Jonnie Lan, Planner (425) 333-4192

THRESHOLD DETERMINATION: This is a Mitigated Determination of Non-Significance (MDNS).

TO: All Permit and Review Authorities

ENVIRONMENTAL RECORD

The environmental review consisted of analysis based on the following documents included in the environmental record.

- Environmental Checklist dated November 10, 2022.
- Site Development Review Application No. SPR 22-0003.
- Design Review Application No. DR 22-0004.
- Geotechnical Engineering Evaluation-Revised; prepared by Nelson Geotechnical Associates, Inc., November 14, 2022.
- Drainage Report, Sno-Valley Senior Housing; prepared by CM Design Group, November 2022.

- Sno-Valley Senior Center Parking Assessment; prepared by Heath and Associates, Inc., Revised November 2022.

The following documents are included in the environmental record by reference.

- City of Carnation Comprehensive Plan
- City of Carnation Municipal Code - Title 15 CMC
- City of Carnation SEPA Ordinance – Chapter 15.04 CMC
- City of Carnation Design Standards and Guidelines, 2018.

Unless otherwise noted, the above information is available at City Hall, (425) 333-4192, and may be accessed under Development Projects at the City of Carnation website by visiting Departments/Planning/Development Projects.

STAFF AMENDMENTS TO THE ENVIRONMENTAL CHECKLIST

THE FOLLOWING SECTIONS CORRESPOND WITH RELATED CATEGORIES OF THE ENVIRONMENTAL CHECKLIST SUBMITTED FOR THE PROPOSAL, AND CLARIFY, AMEND, OR ADD TO THAT DOCUMENT.

I. PROPOSAL DESCRIPTION:

The checklist description is thorough and accurate.

II. PERMITS/APPROVALS REQUIRED:

- Site Development Review
- Design Review
- Certificate of Sewer Availability
- Certificate of Water Availability
- Public Utility Extension
- Right-of-Way Permit
- Clearing, Filling and Grading Permit
- Drainage Permit
- Side Sewer Permit
- Building Permits

III. ENVIRONMENTAL ELEMENTS (CHECKLIST PART B)

1. EARTH

The Checklist description is accurate. Any potential for adverse environmental impacts due to clearing, grading, or filling can be mitigated through the City of Carnation's clearing and grading requirements applied through the clearing and grading permit approval process. As part of the site development review and design review permit application requirements, a geotechnical report has been submitted that includes conclusions and recommendations that will be imposed as conditions for clearing and grading permit approval unless otherwise modified by the City Engineer.

Based on the submitted geotechnical report, the potential for adverse environmental impacts to “earth” can be adequately mitigated through application of the recommendation set forth in the Geotechnical Report prepared by Nelson Geotechnical Associates, Inc. As provided in the checklist, any anticipated impacts due to erosion can be mitigated through the City of Carnation’s requirement for a Stormwater Pollution Prevention Plan (SWPPP) and Temporary Erosion and Sedimentation Plan meeting the requirements of the Department of Ecology (DOE) Stormwater Management Manual for Western Washington, 2012, updated 2014.

2. AIR

In addition to the checklist description, there is always the potential for adverse environmental impacts due to dust emissions during construction. To mitigate this potential, the project proponent and/or their contractor shall control dust emissions during construction with watering or an equally effective non-chemical method that has been approved by the City of Carnation. Watering is the most used alternative, due to its low cost of implementation and excellent results. Water should be applied at least three times a day or more, depending on the atmospheric conditions. Watering should be done in a manner that does not cause erosion problems. This is typically accomplished using a mobile water tanker driven on site spraying water over the affected areas preventing dust from becoming airborne.

To control dust emissions throughout construction, during dry periods the proponent shall employ the use of watering all dust generating surfaces a minimum of three times daily or more as needed during construction phase of the project. Alternative non-chemical methods would be considered for approval by the City of Carnation. This requirement will be imposed as a condition of site development review permit and design review permit approval.

3. WATER

a. Surface Water: The checklist adequately addresses the issues of this section.

b. Ground Water: The checklist description is complete and accurate. Other than stormwater there will be no discharge into the ground.

c. Water Runoff: The checklist description is complete and accurate. City of Carnation standards require that all proposals treat and/or infiltrate stormwater runoff on site consistent with the DOE Stormwater Management Manual for Western Washington. Project development will be required to follow the recommendations and conditions of the drainage report unless otherwise modified by the city engineer.

4. PLANTS

The checklist description is accurate. Landscaping needs will be assessed through the site development permit review process and any requirements will be imposed as conditions of permit approval.

5. ANIMALS

The checklist adequately addresses the issues of this section.

6. ENERGY AND NATURAL RESOURCES

The checklist adequately addresses the issues of this section.

7. ENVIRONMENTAL HEALTH

The checklist adequately addresses the issues of this section. As required in Subsection 15.44.300 CMC, functioning mufflers will be required on construction equipment, and hours of construction will be limited to between 7:00 am to 7:00 pm, Monday through Saturday in order to mitigate the potential for adverse noise impacts to the surrounding properties. These requirements will be imposed as conditions of site development review permit approval.

8. LAND AND SHORELINE USE

The checklist descriptions are accurate with the following comments. The current City of Carnation zoning designation of the property is Mixed Use (MU), which is consistent with the Carnation Comprehensive Plan's "*Medium Intensity Commercial"* land use designation. The proposed development would create fifteen (15) senior housing [multi-family] residential units (apartments) consistent with the standards of the underlying Mixed-Use zone. Adjacent land uses consist of single family residential to the north and west of the property, commercial to the east, and the Sno-Valley Senior Center to the south. All surrounding land uses are consistent with their underlying zoning designation.

City approval of the proposed Site Development Review and Design Review would ensure the proposed development's compatibility with existing and projected land uses and plans.

9. HOUSING

The checklist description is accurate and complete. City approval of the proposed Site Development Review and Design Review would ensure the proposed development's compatibility with the City of Carnation Design Standards and Guidelines.

10. AESTHETICS

The checklist description is accurate and complete.

11. LIGHT AND GLARE

The checklist description is accurate and complete.

12. RECREATION

The checklist description is accurate and complete.

13. HISTORICAL AND CULTURAL PRESERVATION

The checklist description is substantially complete. As with all land use permits in Carnation, as a permit requirement the project proponent and/or their contractors are required to stop work and immediately notify the City of Carnation and the Washington State Office of Archaeology and Historic Preservation if any historical or archaeological artifacts are uncovered during development.

14. TRANSPORTATION

The checklist description is accurate. As provided in the checklist, the project will displace 18 off-street parking spaces while providing 27 new off-street parking spaces, a net gain of 9 off-street parking spaces before considering the fifteen-unit senior affordable housing building. As required in the Carnation Municipal Code [CMC 15.72.130], the off-street parking requirements for senior housing is one space per dwelling unit plus one additional space for every four units in the development. However, this project is submitted as an "affordable" senior housing development and may be considered under the standards of CMC 15.50, Affordable Housing. Subsection 15.05.060 B. CMC provides that "projects comprised entirely of affordable senior housing shall provide 1.0 parking space(s) per dwelling unit. All other projects shall conform to the parking requirements specified in Chapter 15.72 CMC." Currently, the Senior Center provides eighteen (18) off-street parking spaces that serve the center along with parking opportunities along the abutting public rights-of-way. The new fifteen (15) unit senior housing facility will require an additional ~~eighteen~~ fifteen (~~18~~15) off-street parking spaces (one per unit ~~plus one additional space for every four spaces~~). The proposed project will eliminate the existing eighteen (18) off-street parking spaces and provide twenty-seven (27) off-street parking spaces, fifteen of which are dedicated to the proposed senior housing units, resulting in a net loss of nine (9) off-street parking spaces. It should be noted that there are eight (8) to nine head in parking (9) spaces in front (west) of the Senior Center that are in the public right-of-way of Stephens Avenue which are not considered in calculating off-street parking requirements.

The Carnation Municipal Code [CMC 15.72.020(B)(2)] provides that the city may allow deviations from the parking requirements set forth in Subsection 15.72.010 (e) when it finds that a "…*residential development is irrevocably oriented toward the elderly or other demographic group which, due to the driving characteristics of the group, requires fewer or more parking stalls than the general populace."*

The submitted parking study provides numbers from similar facilities in other jurisdictions similar to Carnation that may support a reduction in parking requirements, however, those statistics do no consider growth potential that would be proportionate to their respective community's future growth projections. The parking study does make a case for allowing some relief from the off-street parking requirements for the proposed senior housing. The Lead Agency must consider the impacts associated with "spill over" parking during peak times and special events which would result in a higher incidence of on-street parking; thus, displacing public parking opportunities for the city's downtown district.

The City of Carnation's downtown commercial district is a pedestrian oriented district with limited parking in the vicinity of Tolt Avenue which is less than one block from the

Senior Center. Given that the provisions for public parking are on the side streets that are parallel and perpendicular to Tolt Avenue, there is the potential for adverse impacts to transportation in the form of reduced public parking opportunities.

The Lead Agency finds that this potential for adverse parking impacts could be mitigated with the provision of additional on-street parking in the immediate vicinity that would compensate for any displaced parking opportunities adjacent to the project site. This could be done by providing up to ~~eight~~ five (~~8~~5) angled parking spaces on the west side of Stephens Avenue beginning one half block south of the Senior Center and ending at the Entwistle Street right-of-way. Currently, there are eight (8) angled parking spaces on the west side of Stephens Avenue beginning at the intersection with Bird Street and ending mid-block at the alley. This parking area is made of a gravel surface with wheel stops for each angled parking space, and an infiltration trench at the right-of-way edge to handle stormwater runoff.

To mitigate the potential for adverse impacts to public parking, the proponent should provide up to ~~eight~~ five (5~~8~~) angled parking spaces along the west side of Stephens Avenue from the mid-block alley south to Entwistle Street. The parking spaces should be developed to the same standard as the existing eight (8) angled parking spaces beginning at the intersection with Bird Street. The proponent will consult with the City Engineer for details and specifications.

15. PUBLIC SERVICES

The checklist adequately addresses the issues of this section. Other than existing law enforcement and emergency services provided for the area, there is no foreseeable need for special emergency services resulting from the development of the subject proposal.

16. UTILITIES

The checklist adequately addresses the issues of this section.

CONCLUSIONS AND SUBSTANTIVE AUTHORITY

The environmental review indicates that there may be a potential for adverse environmental impacts from the proposal which may not be mitigated through conditions imposed by authority of existing City of Carnation land use regulations. Therefore, a Mitigated Determination of Non-Significance should be required.

This authority is pursuant to Section *14.04.160 B. CMC - Substantive authority—Specific provisions* as follows:

The city may attach conditions to a permit or approval for a proposal so long as:

1. Such conditions are necessary to mitigate specific probable adverse environmental impacts identified in environmental documents prepared pursuant to this chapter; and
2. Such conditions are in writing; and
3. The mitigation measures included in such conditions are reasonable and capable of being accomplished; and

4. The city has considered whether other local, state, or federal mitigation measures applied to the proposal are sufficient to mitigate the identified impacts; and
5. Such conditions are based on one or more policies in subsection D of this section and cited in the license or other decision document.

Potential Significant Environmental Impacts:

Based on review of the Environmental Checklist and other available material provided on the subject proposal, the Responsible Official for the City of Carnation has considered the following as potential significant adverse environmental impacts as a result of the subject development proposal. These impacts cannot be decisively mitigated under the standards in the Carnation Municipal Code and must be mitigated under the substantive authority of SEPA:

- The potential for adverse environmental impacts to motor vehicle parking.

Proposed Mitigation Measures:

The following mitigation measures have been proposed by Development Review Division staff for consideration by the Responsible Official. They are intended to address and mitigate to a point of non-significance the environmental impacts listed above.

1. To mitigate the potential for adverse impacts to public parking, the proponent shall provide ~~up to eight~~five (~~8~~5) angled parking spaces along the west side of Stephens Avenue from the mid-block alley south to Entwistle Street. The parking spaces should be developed to the same standard as the existing eight (8) angled parking spaces beginning at the intersection with Bird Street. The proponent shall consult with the City Engineer for details and specifications.

Supporting Policies:

City policies which address the aforementioned probable impacts are contained in the specific policies outlined in the City of Carnation SEPA Ordinance under *Section 14.04.160 D.1. a – g CMC* are as follows:

a. Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
b. Assure for all people of Washington safe, healthful, productive, and aesthetically and culturally pleasing surroundings;
c. Attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences;
d. Preserve important historic, cultural, and natural aspects of our national heritage;
e. Maintain, wherever possible, an environment which supports diversity and variety of individual choices;
f. Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and

g. Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The City of Carnation has reviewed and considered the referenced proposal, the environmental checklist, agency comments, and other available material. The environmental review indicates any potential adverse environmental impacts from the proposal would not be adequately mitigated through conditions imposed by authority of existing City of Carnation land use regulations. Therefore, a ***Mitigated Determination of Non-Significance*** will be issued for the proposal described herein.

April 26, 2023

Tim Woolett, Responsible Official
City of Carnation

Date

SEPA ENVIRONMENTAL CHECKLIST

Purpose of checklist:

Governmental agencies use this checklist to help determine whether the environmental impacts of your proposal are significant. This information is also helpful to determine if available avoidance, minimization or compensatory mitigation measures will address the probable significant impacts or if an environmental impact statement will be prepared to further analyze the proposal.

***Instructions for applicants*:** [help]

This environmental checklist asks you to describe some basic information about your proposal. Please answer each question accurately and carefully, to the best of your knowledge. You may need to consult with an agency specialist or private consultant for some questions. You may use "not applicable" or "does not apply" only when you can explain why it does not apply and not when the answer is unknown. You may also attach or incorporate by reference additional studies reports. Complete and accurate answers to these questions often avoid delays with the SEPA process as well as later in the decision-making process.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on different parcels of land. Attach any additional information that will help describe your proposal or its environmental effects. The agency to which you submit this checklist may ask you to explain your answers or provide additional information reasonably related to determining if there may be significant adverse impact.

Instructions for Lead Agencies:

Additional information may be necessary to evaluate the existing environment, all interrelated aspects of the proposal and an analysis of adverse impacts. The checklist is considered the first but not necessarily the only source of information needed to make an adequate threshold determination. Once a threshold determination is made, the lead agency is responsible for the completeness and accuracy of the checklist and other supporting documents.

Use of checklist for nonproject proposals: [help]

For nonproject proposals (such as ordinances, regulations, plans and programs), complete the applicable parts of sections A and B plus the SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS (part D). Please completely answer all questions that apply and note that the words "project," "applicant," and "property or site" should be read as "proposal," "proponent," and "affected geographic area," respectively. The lead agency may exclude (for non-projects) questions in Part B - Environmental Elements –that do not contribute meaningfully to the analysis of the proposal.

A. BACKGROUND [help]

1. Name of proposed project, if applicable: [help] Sno-Valley Senior Housing

2. Name of applicant: [help] Environmental Works, Architect

3. Address and phone number of applicant and contact person: [help]
   Roger Tucker
   Senior Architect
   Environmental Works
   402 15th Avenue East
   Seattle, WA 98112
   206-787-1370

4. Date checklist prepared: [help] November 10, 2022

5. Agency requesting checklist: [help] City of Carnation

6. Proposed timing or schedule (including phasing, if applicable): [help]
   Construction is estimated to start in late spring 2023 and completed in spring 2024. The project is not phased.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain. [help]
   None.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal. [help]
   Phase I Environmental Site Assessment was completed on 7/20/2021 by Adapt Consulting.

9. Do you know whether applications are pending for governmental approvals of other proposals directly affecting the property covered by your proposal? If yes, explain. [help]
   None.

10. List any government approvals or permits that will be needed for your proposal, if known. [help]
    The project will apply for a Construction permit, a Site Development Permit, Design Review permit, as well as various related permits for elements of construction such as grading, electrical, mechanical, etc. The project will be seeking a parking reduction waiver and permission for shared parking with the adjacent Senior Center.

11. Give brief, complete description of your proposal, including the proposed uses and the size of the project and site. There are several questions later in this checklist that ask you to describe certain aspects of your proposal. You do not need to repeat those answers on this page. (Lead agencies may modify this form to include additional specific information on project description.) [help]
    The project is a three-story building with 15 one-bedroom units that are each approximately 500 sq.ft. The project also provides common outdoor space, offices, sitting room, and laundry rooms on each floor. The total building's heated area is approximately 13,000 s.f. with approximately 1,040 s.f. of covered porches and the site area is 18,109.88.00 s.f.

12. Location of the proposal. Give sufficient information for a person to understand the precise location of your proposed project, including a street address, if any, and section, township, and range, if known. If a proposal would occur over a range of area, provide the range or boundaries of the site(s). Provide a legal description, site plan, vicinity map, and topographic map, if reasonably available. While you should submit any plans required by the agency, you are not required to duplicate maps or detailed plans submitted with any permit applications related to this checklist. [help]
    The site has parcels of land 18,109.88 square feet in size total located at 31845 West Commercial Street, Carnation, WA.:

    Legal Description:
    Lots 10 through 16, inclusive, Block 17, Tolt Townsite Company Plat of Tolt, according to the Plat thereof recorded in Volume 20 of Plats, Page 43, in King County, Washington

B. ENVIRONMENTAL ELEMENTS [help]

1. Earth

a. General description of the site [help]
☒ Flat ☐ Rolling ☐ Hilly ☐ Steep Slopes ☐ Mountainous
☐ Other

b. What is the steepest slope on the site (approximate percent slope)? [help]
The site is relatively flat----at approximately 2%-3% slope. There are some areas at the edges of the site at 6%-10%.

c. What general types of soils are found on the site (for example, clay, sand, gravel, peat, muck)? If you know the classification of agricultural soils, specify them and note any agricultural land of long-term commercial significance and whether the proposal results in removing any of these soils. [help]
Nelson Geotechnical Associates completed a geotechnical report dated 9/13/2022. The site is an infill urban site that has been previously developed, it is not agricultural land. A summary of the soils report finding is:

"At the surface of each boring we encountered approximately 2- to 3.5-feet of light brown to dark brown, silty sand to sand with varying amounts of gravel and organics, which we interpreted as undocumented fill and/or topsoil. Underlying the fill soils we encountered light brown, silty fine sand to sandy silt in a very loose to loose condition, which we interpreted as fine-grained alluvial soils. Each boring terminated within medium dense or better, gravelly fine to coarse sand deposits at approximate depths of 14- to 20-feet below the existing ground surface."

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe. [help]
No.

e. Describe the purpose, type, total area, and approximate quantities and total affected area of any filling, excavation, and grading proposed. Indicate source of fill. [help]
The total affected area to be graded is approximately 20,000 s.f. Parking areas cover approximately 6,800 s.f. and will be excavated 3 feet below finished grade (755 cy) and replaced with free draining fill. Topsoil will be striped in the building areas (6,000 s.f.) and the area will be excavated roughly 1 foot (23 cy) to allow placement of the structural fill.

Source of structural fill and location to deposit excavated non-structural soils are not determined at this time.

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe. [help]
During construction, the contractor will install and maintain erosion and sediment control BMP's as needed to control erosion. After construction, the site will be stabilized by permanent stormwater management facilities and landscaped areas.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)? [help]
Approximately 74% of this urban site will be covered with impervious surfaces (building, parking, walkways).

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any: [help]
Stormwater runoff will be collected from the building roof and pavement surfaces and collected in an on-site underground infiltration area. The infiltration system will be a series of trench drains under paved areas.

2. Air

a. What types of emissions to the air would result from the proposal during construction, operation, and maintenance when the project is completed? If any, generally describe and give approximate quantities if known. [help]
No emissions are expected during operations. Diesel emissions may occur during construction due to the use of construction equipment and earth moving.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe. [help]
None known.

c. Proposed measures to reduce or control emissions or other impacts to air, if any: [help]
There are no known air impacts by this project.

3. Water

a. Surface Water: [help]

1) Is there any surface water body on or in the immediate vicinity of the site (including year-round and seasonal streams, saltwater, lakes, ponds, wetlands)? If yes, describe type and provide names. If appropriate, state what stream or river it flows into. [help]
The Snoqualmie River is approximately .5 miles west of the site and the Tolt River is approximately 1 mile south of the site.

2) Will the project require any work over, in, or adjacent to (within 200 feet) the described waters? If yes, please describe and attach available plans. [help]
No.

3) Estimate the amount of fill and dredge material that would be placed in or removed from surface water or wetlands and indicate the area of the site that would be affected. Indicate the source of fill material. [help]
None.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities if known. [help]
None.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan. [help]
No. It is in a 500-year floodplain.

6) Does the proposal involve any discharges of waste materials to surface waters? If so, describe the type of waste and anticipated volume of discharge. [help]
No.

b. Ground Water:

1) Will groundwater be withdrawn from a well for drinking water or other purposes? If so, give a general description of the well, proposed uses and approximate quantities withdrawn from the well. Will water be discharged to groundwater? Give general description, purpose, and approximate quantities if known. [help]
The project will be served by the City of Carnation municipal water service.

2) Describe waste material that will be discharged into the ground from septic tanks or other sources, if any (for example: Domestic sewage; industrial, containing the following chemicals. . . ; agricultural; etc.). Describe the general size of the system, the number of such systems, the number of houses to be served (if applicable), or the number of animals or humans the system(s) are expected to serve. [help]
None.

c. Water runoff (including stormwater):

1) Describe the source of runoff (including storm water) and method of collection and disposal, if any (include quantities, if known). Where will this water flow? Will this water flow into other waters? If so, describe. [help]
Runoff from the building roofs and paved areas will be collected onsite. Runoff from the alleys and runoff from the site will be infiltrated into the soils. Runoff from paved areas will be treated prior to entering the infiltration system.

2) Could waste materials enter ground or surface waters? If so, generally describe. [help]
No.

3) Does the proposal alter or otherwise affect drainage patterns in the vicinity of the site? If so, describe.
No.

d. Proposed measures to reduce or control surface, ground, and runoff water, and drainage pattern impacts, if any:
Surface runoff water will be infiltrated on-site and treated as required by local regulations. Stormwater treatment cartridges are used for water quality treatment of stormwater from paved areas. No impact is expected.

4. Plants [help]

a. Check the types of vegetation found on the site: [help]

☒ deciduous tree: sweetgum, poplar, big leaf maple, ornamental plum, other
☐ evergreen tree: fir, cedar, pine, other
☐ shrubs
☒ grass
☐ pasture
☐ crop or grain
☐ orchards, vineyards or other permanent crops.
☐ wet soil plants: cattail, buttercup, bullrush, skunk cabbage, other
☐ water plants: water lily, eelgrass, milfoil, other
☐ other types of vegetation

b. What kind and amount of vegetation will be removed or altered? [help]
The site is covered by a parking area, three sheds and grass. There are four trees on site and along the perimeter. Two of the trees are not in good condition. Two trees will be removed because of the footprint of building and the required parking spaces.

c. List threatened and endangered species known to be on or near the site. [help]
None known.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any: [help]
The landscape plan will be submitted to the city as part of the design review process. The project will use appropriate vegetation as approved by the City of Carnation. The plant palette will consist of native and adaptive plants, which will be selected to match the microclimate, drought tolerance, and to be responsive to the community of residents. Some areas within the private outdoor space will be available for gardening.

e. List all noxious weeds and invasive species known to be on or near the site.
None known.

5. Animals

a. List any birds and other animals which have been observed on or near the site or are known to be on or near the site. Examples include: [help]
birds: hawk, heron, eagle, songbirds, other:
mammals: deer, bear, elk, beaver, other:
fish: bass, salmon, trout, herring, shellfish, other _____
Deer and songbirds are known to be near/through the area

b. List any threatened and endangered species known to be on or near the site. [help]
None.

c. Is the site part of a migration route? If so, explain. [help]
Not known.

d. Proposed measures to preserve or enhance wildlife, if any: [help]
None planned.

e. List any invasive animal species known to be on or near the site.
None known

6. Energy and natural resources

a. What kinds of energy (electric, natural gas, oil, wood stove, solar) will be used to meet the completed project's energy needs? Describe whether it will be used for heating, manufacturing, etc. [help]
The project plans on only using electricity and will not have natural gas or other fuel sources installed. The project will be designed to be 'solar ready' to make it easy to retrofit solar panels at the site.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe. [help]
No. The project is only 3 stories at its tallest and immediately to the north of the site is West Commercial Street. The street right of way will ensure that this property does not adversely affect the solar potential of properties to the north. The project also has public rights of way on the east and west ensuring solar access for properties to the east and west.

c. What kinds of energy conservation features are included in the plans of this proposal? List other proposed measures to reduce or control energy impacts, if any: [help]
The project will meet or exceed the Washington State Energy Code and the Evergreen Sustainable Development Standard, a 'green' building standard. Electric ductless heat pumps are proposed for heating and each unit will be exhausted with an energy recovery ventilation system.

7. Environmental health

a. Are there any environmental health hazards, including exposure to toxic chemicals, risk of fire and explosion, spill, or hazardous waste, that could occur as a result of this proposal? If so, describe. [help]
No.

1) Describe any known or possible contamination at the site from present or past uses.
A Phase 1 report was prepared for the site. An existing building identified in the report was removed and cleaned up after the Phase 1 report was completed. The Phase 1 report identifies evidence of an above ground oil tank – that is no longer present. It is possible that soils in that area may have been contaminated. Any contaminated soils will be mitigated according to WA state and local regulations.

2) Describe existing hazardous chemicals/conditions that might affect project development and design. This includes underground hazardous liquid and gas transmission pipelines located within the project area and in the vicinity.
None known.

3) Describe any toxic or hazardous chemicals that might be stored, used, or produced during the project's development or construction, or at any time during the operating life of the project.
None anticipated.

4) Describe special emergency services that might be required.
Senior housing emergency plan

5) Proposed measures to reduce or control environmental health hazards, if any:
The project does not generate any hazardous material, and will use low/no VOC materials, solid surface floors, and other techniques to minimize air pollution for the residents.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)? [help]
The site is in a semi-urban location and has noise from nearby lightly trafficked streets, including West Commercial Street to the north and Stephens Avenue to the west. Tolt Avenue which runs through downtown, is a block east of the site. It is a more trafficked street but is separated from the site by buildings.

2) What types and levels of noise would be created by or associated with the project on a short-term or a long-term basis (for example: traffic, construction, operation, other)? Indicate what hours noise would come from the site. [help]
The operations of the property should be relatively quiet. There is an outdoor garden area. Construction will have noise impacts which will be moderated by city mandated construction schedules.

3) Proposed measures to reduce or control noise impacts, if any: [help]
Communication plan with neighbors about noise impacts and transparent work hours of construction activities.

8. Land and shoreline use

a. What is the current use of the site and adjacent properties? Will the proposal affect current land uses on nearby or adjacent properties? If so, describe. [help]
The site are two parcels developed with asphalted parking area on the western portion of the site and landscape area to the east. There are public right of ways on all four sides of the site. Across these rights of ways are the following uses:
East: parking and commercial buildings; South: senior center (sponsor of this project); West: single family homes; North: apartment buildings.

b. Has the project site been used as working farmlands or working forest lands? If so, describe. How much agricultural or forest land of long-term commercial significance will be converted to other uses as a result of the proposal, if any? If resource lands have not been designated, how many acres in farmland or forest land tax status will be converted to nonfarm or nonforest use? [help]
No. The Phase 1 report identifies past uses as single-family homes since 1914 as well as a small office building. None of these uses are remaining.

1) Will the proposal affect or be affected by surrounding working farm or forest land normal business operations, such as oversize equipment access, the application of pesticides, tilling, and harvesting? If so, how:
No.

c. Describe any structures on the site. [help]
There are three, one story, wood framed sheds. Each approximately 100 s.f. or less.

d. Will any structures be demolished? If so, what? [help]
Yes. The existing improvements will be demolished.

e. What is the current zoning classification of the site? [help]
The site is located within a MU, Mixed Use zone.

f. What is the current comprehensive plan designation of the site? [help]
Medium Intensity Commercial

g. If applicable, what is the current shoreline master program designation of the site? [help]
n/a

h. Has any part of the site been classified as a critical area by the city or county? If so, specify. [help]
No.

i. Approximately how many people would reside or work in the completed project? [help]
15-19 residents in the senior housing
1.5 staff for senior housing

j. Approximately how many people would the completed project displace? [help]
None.

k. Proposed measures to avoid or reduce displacement impacts, if any: [help]
N/A

L. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any: [help]
The project will be reviewed through the City's site development and design review processes and will be designed to ensure compatibility with the City of Carnation's character and design guidelines.

m. Proposed measures to ensure the proposal is compatible with nearby agricultural and forest lands of long-term commercial significance, if any:
N/A

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing. [help]
15 one-bedroom apartments for low-income seniors. Eight of the units will serve 30% AMI, and the remaining are set aside for 50% AMI households.

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing. [help]
None.

c. Proposed measures to reduce or control housing impacts, if any: [help]
There will be no negative housing impact, as the project is adding affordable housing to the city.

10. Aesthetics

a. What is the tallest height of any proposed structure(s), not including antennas; what is the principal exterior building material(s) proposed? [help]
The project will be 3 stories, approximately 41 feet from the ground to the top of the roof ridge. The principal exterior building materials are painted fiber cement siding, vinyl windows, painted wood trim and asphalt shingles.

b. What views in the immediate vicinity would be altered or obstructed? [help]
The project does not represent significant view obstructions from any direction.

c. Proposed measures to reduce or control aesthetic impacts, if any: [help]
Building design is drawn from the City design guidelines and neighboring properties. Specifically, it is designed to relate to the adjacent Senior Center building and create a campus feeling. There is a one-story wrap around porch on the west side to scale down the building to the single-family neighbors to the west.

11. Light and glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur? [help]
The project's south and west facing street façades do not have mirrored glazing to minimize impacts of glare to surrounding properties during mid-day and late afternoon sun periods. Exterior lighting will be shielded and downward facing minimizing light spillage from the property.

b. Could light or glare from the finished project be a safety hazard or interfere with views? [help]
No

c. What existing off-site sources of light or glare may affect your proposal? [help]
There is a public streetlight to the north in the West Commercial Street right of way.

d. Proposed measures to reduce or control light and glare impacts, if any:
The exterior of the building will not be reflective, and any exterior lighting will be aimed downward with appropriate screening.

12. Recreation

a. What designated and informal recreational opportunities areas in the immediate vicinity? [help]
The project is located near Tolt MacDonald Park and campground.

b. Would the proposed project displace any existing recreational uses? If so, describe. [help]
No

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any: [help]
The project is not displacing any recreational facilities. The project will provide interior and exterior common area spaces on-site for the residents.

13. Historic and cultural preservation

a. Are there any buildings, structures, or sites, located on or near the site that are over 45 years old listed in or eligible for listing in national, state, or local preservation registers located on or near the site? If so, specifically describe. [help]
The project will not displace any historic structures.

b. Are there any landmarks, features, or other evidence of Indian or historic use or occupation? This may include human burials or old cemeteries. Are there any material evidence, artifacts, or areas of cultural importance on or near the site? Please list any professional studies conducted at the site to identify such resources. [help]
A cultural assessment of the site was performed by ASM Affiliates in September 2022. No significant cultural resources were identified during the assessment.

c. Describe the methods used to assess the potential impacts to cultural and historic resources on or near the project site. Examples include consultation with tribes and the department of archeology and historic preservation, archaeological surveys, historic maps, GIS data, etc. [help]
The cultural assessment of the site performed by ASM Affiliates included historical research and on-site shovel probes at five locations.

d. Proposed measures to avoid, minimize, or compensate for loss, changes to, and disturbance to resources. Please include plans for the above and any permits that may be required.
No losses are planned. ASM Affiliates recommends archaeological monitoring of any excavation exceeding two feet for the western one-third of the project area (under the existing parking lot). Recommendations also include that ground disturbance deeper than 24-inches in the southeast corner of the project area should be proceeded by an archaeological investigation. Excavations exceeding this depth are not planned for the southeast corner of the site.

14. Transportation

a. Identify public streets and highways serving the site or affected geographic area and describe proposed access to the existing street system. Show on site plans, if any. [help]
The project site abuts city right-of-way on all sides of the site. To the north is West Commercial Street, to the east and south are public alleys and the west is Stephens Avenue. Pedestrian access to the housing will be from the main building entry on Stephens Avenue (also visible from West Commercial Street) and the access to the parking spaces on the south and east of the site will be from the alleys.

b. Is the site or affected geographic area currently served by public transit? If so, generally describe. If not, what is the approximate distance to the nearest transit stop? [help]
The area is served by Snoqualmie Valley Transportation (SVT), there are bus stops on Tolt Avenue, to the east of the site. Low or no cost van services are provided by Sound Generations, the Senior Center as well as Hopelink.

c. How many additional parking spaces would the completed project or non-project proposal have? How many would the project or proposal eliminate? [help]
The project will develop 27 parking spaces for residential portion of the project. The parking will be shared with the Senior Center. The project will install new curb & gutter and repave portions of West Commercial and Stephens Avenue. Portions of both alleys will be improved. The 18 existing on-site parking spaces will be removed.

d. Will the proposal require any new or improvements to existing roads, streets, pedestrian, bicycle or state transportation facilities, not including driveways? If so, generally describe (indicate whether public or private). [help]
The project is being required by the City of Carnation to improve the alleys to the south and east.

e. Will the project or proposal use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe. [help]
No

f. How many vehicular trips per day would be generated by the completed project or proposal? If known, indicate when peak volumes would occur and what percentage of the volume would be trucks (such as commercial and non passenger vehicles). What data or transportation models were used to make these estimates? [help]
Per the parking study prepared by Heath & Associates the estimated peak demand for the new building is 7 spaces. Heath & Associates analysis included on site surveys of parked vehicles as well as comparative models of similar projects.

g. Will the proposal interfere with, affect or be affected by the movement of agricultural and forest products on roads or streets in the area? If so, generally describe.
No

h. Proposed measures to reduce or control transportation impacts, if any: [help]
The project is providing housing to low-income senior residents who have low rates of car ownership. Van services further reduces the need for car trips.

15. Public services

a. Would the project result in an increased need for public services (for example: fire protection, police protection, public transit, health care, schools, other)? If so, generally describe. [help]
This project should not increase the need for public services and is located in an area currently served by public services.

b. Proposed measures to reduce or control direct impacts on public services, if any. [help]
The project will help provide housing to individuals and will connect them with social services at the adjacent senior center.

16. Utilities

a. Check utilities currently available at the site: [help]
☒ electricity ☐ natural gas ☒ water ☒ refuse service ☒ telephone ☒ sanitary sewer
☐ septic system ☐ other Click here to enter text.

b. Describe the utilities that are proposed for the project, the utility providing the service, and the general construction activities on the site or in the immediate vicinity which might be needed. [help]
The project will be primarily using domestic water and sewer from the City of Carnation as well as electricity from Puget Sound Energy. The project does not plan on connecting to or using natural gas.

C. SIGNATURE [HELP]

The above answers are true and complete to the best of my knowledge. I understand that the lead agency is relying on them to make its decision.

Signature: _____

Name of signee Roger Tucker

Position and Agency/Organization Environmental Works

Date Submitted: November 16, 2022

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS [help]

(**IT IS NOT NECESSARY** to use this sheet for project actions)

Because these questions are very general, it may be helpful to read them in conjunction with the list of the elements of the environment.

When answering these questions, be aware of the extent the proposal, or the types of activities likely to result from the proposal, would affect the item at a greater intensity or at a faster rate than if the proposal were not implemented. Respond briefly and in general terms.

1. How would the proposal be likely to increase discharge to water; emissions to air; production, storage, or release of toxic or hazardous substances; or production of noise?
   Click here to enter text.

   Proposed measures to avoid or reduce such increases are:
   Click here to enter text.

2. How would the proposal be likely to affect plants, animals, fish, or marine life?
   Click here to enter text.

   Proposed measures to protect or conserve plants, animals, fish, or marine life are:
   Click here to enter text.

3. How would the proposal be likely to deplete energy or natural resources?
   Click here to enter text.

   Proposed measures to protect or conserve energy and natural resources are:
   Click here to enter text.

4. How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for governmental protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?
   Click here to enter text.

   Proposed measures to protect such resources or to avoid or reduce impacts are:
   Click here to enter text.

5. How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?
   Click here to enter text.

   Proposed measures to avoid or reduce shoreline and land use impacts are:
   Click here to enter text.

6. How would the proposal be likely to increase demands on transportation or public services and utilities?
   Click here to enter text.

   Proposed measures to reduce or respond to such demand(s) are:
   Click here to enter text.

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.
   Click here to enter text.

Exhibit 12

LEGAL NOTICES

CITY OF CARNATION
4621 Tolt Avenue • PO Box 1238 • Carnation, WA 98014-1238
Phone: (425) 333-4192 • Fax: (425) 333-4336 • www.carnationwa.gov

AFFIDAVIT OF POSTING

File #: SPR-22-0003 AND DR- 22- 0004

I, Roger Tucker, hereby affirm that I have posted the following:

☐ **Notice of Permit Application**

☐ **Notice of Public Hearing**

☐ **Notice of Decision**

☒ **Other (specify)** SEPA MDNS

On the 13th day of March 2023, in accordance with Carnation Municipal Code Section 15.09.180. I further affirm that the notice will remain in place and visible during the full required notice period.

Notice was provided at the following location(s):

1) Center of the north property line facing West Commercial Street

2) Center of the west property line facing Stephens Avenue

3)

4)

5)

6)

I hereby affirm that the above is a true and correct statement.

Signature

3/13/2023
Date

This affidavit must be completed and returned to the City of Carnation within 7 days of posting.

CITY OF CARNATION
4621 Tolt Avenue • PO Box 1238 • Carnation, WA 98014-1238
Phone: (425) 333-4192 • Fax: (425) 333-4336 • www.carnationwa.gov

AFFIDAVIT OF POSTING

File #: SPR-22-0003 AND DR- 22- 0004

I, Roger Tucker, hereby affirm that I have posted the following:

☐ **Notice of Permit Application**

☒ **Notice of Public Hearing**

☐ **Notice of Decision**

☐ **Other (specify) _____**

On the 12th day of May 2023, in accordance with Carnation Municipal Code Section 15.09.180. I further affirm that the notice will remain in place and visible during the full required notice period.

Notice was provided at the following location(s):

1) Center of the north property line facing West Commercial Street

2) Center of the west property line facing Stephens Avenue

3)

4)

5)

6)

I hereby affirm that the above is a true and correct statement.

_____ 3/22/2023

Signature Date

This affidavit must be completed and returned to the City of Carnation within 7 days of posting.

Section 15.09.180 CMC: Posting requirements.

For all procedures which require posting of notices, as set forth in Section 15.09.170, the following requirements shall apply:

A. Display Requirements.

1. Notice board(s) shall be placed by the applicant so as to achieve maximum visibility as follows:

a. At the midpoint of each abutting street frontage of the site, or as otherwise directed by the city planner, for maximum visibility to abutting properties and the public;

b. Five feet inside the street property line, except when the board is structurally attached to an existing building, provided that no notice board shall be placed more than five feet from the street property without approval of the planner;

2. When an application pertains to multiple sites within the city, not all of which sites may be known at the time of application (as is the case, for example, with certain types of telecommunications facilities), the city planner shall determine the number and placement of notice boards necessary to ensure widespread exposure to the public;

3. Notice boards shall be constructed and installed in accordance with the following specifications:

a. The readable face of the board shall be at least nine square feet in area with no single edge less than three feet in length;

b. All printing upon the board shall be in black text upon a white background;

c. The board shall contain a title centered at the top which reads "Notice of Proposed Land Use Action" in print type of at least three inches or greater.

d. The following information shall be printed upon the board in print type of at least two inches or greater:

i. City of Carnation, Planning Department;

ii. For Information Call: [current city phone number];

iii. List of all project permit applications [i.e. conditional use permit];

iv. Project Applicant Name: [name of applicant];

v. Project Permit Case Number: [case number];

e. The notice board shall display upon its face a copy of any public notice required by Section 15.09.170 in laminated form, or other means of weather protection approved by the city planner, such that each page of the notice is clearly readable to observers;

f. The notice board shall be securely mounted upon wooden or metal post(s), or secured to a building or structure in such a manner as to ensure that the top of the notice board is between six to eight feet above grade;

4. Notice boards shall be maintained in good condition by the applicant, ensuring that the public notice required by Section 15.09.170 remains clearly visible and readable to observers.

B. Timing Requirements.

1. Notice boards shall be posted upon the property no later than three days following the date of issuance of any public notice required to be posted by Section 15.09.170;

2. Notice of the date, time, and location of any open or closed record hearing shall be displayed upon the notice board no later than ten days prior to the date set for hearing.

3. Notices displayed upon the notice board shall remain displayed until the expiration of the later:

a. For notice of application (Section 15.09.140), until the period for public comment has expired;

b. For notice of public hearing (Section 15.10.030), until the public hearing has been conducted;

c. For notice of decision (Section 15.09.150), until the period for commencing any available administrative or judicial appeal has expired;

4. Notice boards shall be removed within fifteen calendar days after the end of any required notice period set forth in subsection (B)(3) of this section;

5. Removal of the notice board prior to the end of the notice period set forth in this subsection, or failure to maintain the notice board in accordance with subsection (A)(4) of this section shall be sufficient cause for continuance of local project review until the notice board is replaced or repaired and remains in place for sufficient time to provide adequate public notice consistent with this chapter. The timing requirements for issuance of a notice of decision may be suspended for failure to provide adequate public notice. (Ord. 609 § 1 (Exh. A) (part), 2000)

CITY OF CARNATION
4621 Tolt Avenue • PO Box 1238 • Carnation, WA 98014-1238
Phone: (425) 333-4192 • Fax: (425) 333-4336 • www.carnationwa.gov

AFFIDAVIT OF POSTING

File #: SPR-22-0003 AND DR- 22- 0004

I, Roger Tucker, hereby affirm that I have posted the following:

☒ **Notice of Permit Application**

☐ **Notice of Public Hearing**

☐ **Notice of Decision**

☐ **Other (specify)** _____

On the 19th day of December 2022 , in accordance with Carnation Municipal Code Section 15.09.180. I further affirm that the notice will remain in place and visible during the full required notice period.

Notice was provided at the following location(s):

1) Center of the north property line facing West Commercial Street

2) Center of the west property line facing Stephens Avenue

3)

4)

5)

6)

I hereby affirm that the above is a true and correct statement.

_____ 12/19/2022

Signature Date

This affidavit must be completed and returned to the City of Carnation within 7 days of posting.

NOTICE OF APPLICATION
Site Development Application No. SPR-22-0003
Design Review Application DR-22-0004
SNO-VALLEY SENIOR HOUSING

NOTICE IS HEREBY GIVEN that the City of Carnation received the following application on November 18, 2022, and determined the application complete on December 2, 2022.

Application: Application for Site Development Review and Design Review for a new 3-story affordable senior housing building consisting of 15 one-bedroom residential units with common areas, associated parking for 27 vehicles, and outdoor amenity spaces on 17,800 square feet of property in the Mixed Use (MU) zone.

Location: The subject property is located adjacent to the north side of the Snoqualmie Valley Senior Center at the intersection of Stephens Avenue and Commercial Street in Carnation, Washington, and identified as Assessor's Parcels No. 865830-2230 and 865830-2225.

Applicant: Roger Tucker, Environmental Works.

Property Owner: Sno-Valley Senior Center

SEPA: This proposal is subject to the requirements of the State Environmental Policy Act and a mitigated determination of non-significance is anticipated. Additional notice of SEPA threshold determination will be issued at the time of threshold determination issuance.

Other Permits that may be required: Right-of-way permit, building permits, public utility extension permit, filling and grading permit, storm drainage review permit.

Public Comment: The decision on this application will be made no sooner than fourteen (14) days from the date of this notice. Any interested person may submit comments on the proposal within fourteen (14) days of this notice in order for staff to address the comments prior to their decision on the proposal. Any person may also submit a written request to receive a notice of the decision once it is made. This notice is issued effective December 16, 2022, with publication in the Snoqualmie Valley Record, and the comment period runs fourteen (14) calendar days from that date, ending on December 30, 2022. All comments must reference the file number and applicant name. Written comments should be submitted to Tim Woolett, Project Planner at tim.woolett@carnationwa.gov or mailed to Carnation City Hall, 4621 Tolt Avenue, PO Box 1238, Carnation, WA 98014 no later than 5:00 p.m., December 30, 2022.

For more information: Information on this proposal is contained in the official file available at City Hall, (425) 333-4192.

This notice is published pursuant to CMC 15.09.190.

AFFIDAVIT OF MAILING

I, Becky Buelna, hereby affirm

That on December 15, 2022, I mailed true and correct copies of the following documents:

- ☒ Notice of Application
- ☐ Notice of Public Hearing
- ☐ Notice of Decision
- ☐ Other (specify): _____

for the following project file number(s): SPR-22-0003 / DR-22-0004 by depositing in the United States mail, properly addressed and with proper postage affixed to the following addresses:

Please see attachment.

Becky Buelna

_____
Signature of Mailer

ANSCHELL RUSSELL
16430 NE 99TH ST
REDMOND, WA 98052

ATKINS SCOTT+ROBYN
PO BOX 422
CARNATION, WA 98014

BARRON SCOTT
PO BOX 1301
CARNATION, WA 98014

BUCK GLENN I
PO BOX 234
CARNATION, WA 98014

BUCKNAKED INVESTMENTS LLC
PO BOX 995
CARNATION, WA 98014

BUCKNAKED INVESTMENTS LLC
PO BOX 995
CARNATION, WA 98014

CANTWELL ANDREW+VOYTA JENNI
31850 W COMMERCIAL ST
CARNATION, WA 98014

CARNATION CITY OF
PO BOX 1238
CARNATION, WA 98014

CARNATION CITY OF
PO BOX 1238
CARNATION, WA 98014

CARNATION CITY OF
PO BOX 1238
CARNATION, WA 98014

CARNATION STATION LLC
PO BOX 297
CARNATION, WA 98014

COLTOM NANCY J+PRITCHARD WI
PO BOX 253
CARNATION, WA 98014

CORRIVEAU GEOFFRY P+SUSAN L
31734 W COMMERCIAL ST
CARNATION, WA 98014

CORTEZ ARACELY & MAHNKE SAM
PO BOX 824
CARNATION, WA 98014

DENNIS MICHAEL
PO BOX 684
CARNATION, WA 98014

DOS HOMBREZ LLC
PO BOX 995
CARNATION, WA 98014

FALK JASON WALKEN AND WOOD
31741 W COMMERCIAL ST
CARNATION, WA 98014

FEDERSPIEL JACOB M+TOVA C
31722 W COMMERCIAL ST
CARNATION, WA 98014

FIRTH BETTYE
SUSAN DUNHAM
2829 LAKE LANGLOIS RD NE
CARNATION, WA 98014

FIRTHRUTH LLC
9905 181ST AVE NE
REDMOND, WA 98052

GAVIGAN CHRISTOPHER
31741 W COMMERCIAL ST
CARNATION, WA 98014

GIBBS RICHARD C
PO BOX 121
CARNATION, WA 98014

GLADNEY CEOLA
31751 W COMMERCIAL ST
CARNATION, WA 98014

GRIFFIN SANDRA
10520 302ND WAY NE
CARNATION, WA 98014

HALIFAX REAGAN
PO BOX 189
CARNATION, WA 98014

HARGROVE RAUN
PO BOX 605
CARNATION, WA 98014

HUGHES NICHOLAS OLSON & GRE
31815 W RUTHERFORD ST
CARNATION, WA 98014

IXTAPA-CARNATION INC
PO BOX 724
CARNATION, WA 98014

JIM & BRENDA GIORDANO LLC
16828 SE 28TH ST
BELLEVUE, WA 98008

LEES LIVING ROOM LLC
PO BOX 1272
CARNATION, WA 98014

MURRAY JAMES WILLIAM
4751 STEPHENS AVE
CARNATION, WA 98014

ORR ERICA B
PO BOX 58
CARNATION, WA 98014

PIGPEN PROPERTIES LLC
32232 NE 8TH ST
CARNATION, WA 98014

PULLEN TIMOTHY M
PO BOX 832
CARNATION, WA 98014

R C ZEIGLER COMPANY INC
PO BOX 995
CARNATION, WA 98014

R C ZEIGLER COMPANY INC
PO BOX 995
CARNATION, WA 98014

R INVESTMENTS COMPANY
PO BOX 160
CARNATION, WA 98014

R INVESTMENTS COMPANY
PO BOX 160
CARNATION, WA 98014

RICHARDS MICHAEL R & SUSAN
27901 NE REDMOND-FALL CITY HWY
REDMOND, WA 98053

ROMANO VITO F+DEBRA A
PO BOX 609
CARNATION, WA 98014

RUSH DAVID P+SOPHIE M KATHE
32021 NE 60TH ST
CARNATION, WA 98014

SAME INVESTMENT CO LLC
636 120TH AVE NE, SUITE A-200
BELLEVUE, WA 98005

SCANDINAVIA LLC
28901 NE CARNATION FARM RD
CARNATION, WA 98014

SCANDINAVIA LLC
28901 NE CARNATION FARM RD
CARNATION, WA 98014

SNO-VALLEY SENIOR CITIZENS
PO BOX 96
CARNATION, WA 98014

SNO-VALLEY SENIOR CITIZENS
PO BOX 96
CARNATION, WA 98014

SNO-VALLEY SENIOR CITIZENS
PO BOX 96
CARNATION, WA 98014

SNO-VALLEY SENIOR CITIZENS
PO BOX 96
CARNATION, WA 98014

TOLT HALL ASSOC LLC
PO BOX 297
CARNATION, WA 98014

TWIN FIR PROPERTIES LLC
13426 231ST AVE SE
DUVALL, WA 98019

WHIPP A JOY
31740 W COMMERCIAL ST
CARNATION, WA 98014

ZABRISKIE JONATHAN F+RAINWA
31747 W RUTHERFORD ST
CARNATION, WA 98014

ZIEGLER JESSE C
PO BOX 995
CARNATION, WA 98014

KING COUNTY ASSESSOR
King Street Center
201 South Jackson Street, Room 708
Seattle, WA 98104

RIVERVIEW SCHOOL DISTRICT
ATTN: MEISHA ROBERTSON
PO BOX 519
DUVALL, WA 98019

KING COUNTY WWTD
King Street Center
201 S. Jackson St., KSC-NR-5500
Seattle, WA 98104

STATE OF WASHINGTON, COUNTY OF KING }
AFFIDAVIT OF PUBLICATION
PUBLIC NOTICE

Rudi Alcott, being first duly sworn on oath that he is the Vice President of Advertising for Sound Publishing, which publishes the

Snoqualmie Valley Record

a weekly newspaper, which newspaper is a legal newspaper of general circulation and is now and has been for more than six months prior to the date of publication hereinafter referred to, published in the English language continuously as a weekly newspaper in King County, Washington. The Snoqualmie Valley Record has been approved as a Legal Newspaper by order of the Superior Court of the State of Washington for King County.

The notice in the exact form annexed was published in regular issues of the Snoqualmie Valley Recorf (and not in supplement form) which was regularly distributed to its subscribers during the below stated period. The annexed notice, a:

Public Notice #SVR968315

was published on **December 16, 2022**

The full amount of the fee chared for said foregoing publication is the sum of **$157.58**

Rudi Alcott
Vice President, Advertising

Subscribed and sworn to me this **16th day of December, 2022** .

Jennifer Tribbett, Notary Public for the State of Washington, Residing in Orting, Washington

Classified Proof

Client	239607 - City of Lacey	Phone	(425) 333-4192
Address	PO Box 1238	E-Mail	[illegible]
	Carnation, WA, 98014-1238	Fax	(425) 333-4336

Order#	968515	Requested By	BECKY BULLNA	Order Price	$157.68
Classification	8050 - Legal Notices	PO #	SPEC 22-003/DEC-22-ID	Tax 1	$0.00
Start Date	12/15/2022	Created By	4780	Tax 2	$0.00
End Date	12/15/2022	Creation Date	12/09/2022 12:11:04 pm	Total Net	$157.68
Run Dates	1			Payment	$0.00
Publication(s)	Snoqualmie Valley Record				

Sales Rep	9429 - Jennifer Tribbett	Phone	(360) 802-8212
		E-Mail	[illegible]
		Fax	

Classified Proof

NOTICE OF APPLICATION
Site Development Application No. SPR-72-0003
Design Review Application No. DR-72-0004
Sun Valley Senior Housing

NOTICE IS HEREBY GIVEN that the City of Cornelius received the following application on November 15, 2022 and determined the application complete on December 2, 2022.

Application: Application for Site Development Review and Design Review for a new 3-story affordable senior housing building, consisting of 13 one bedroom residential units with common areas, 2859 square parking for 27 vehicles and outdoor amenity spaces on 17,820 square feet of property in the Mixed Use (MU) zone.

Location: The subject property is located approximately in the south-central the Sunvalley Senior Center at the intersection of Stephens Avenue and Council Creek Street in Cornelius, Washington, and identified as Assessor's Map No. 1S203CD 2092 and 1S203CD 2095.

Applicant: Roger Tuttle of Environmental Works

Property Owner: Sun Valley Senior Center

SEPA: This proposal is subject to the requirements of the State Environmental Policy Act and a mitigated determination of non-significance is anticipated. Additional notice of SEPA Deter-

Classified Proof

[illegible] will be issued at the end of threshold determination.

Other Permits that may be required. Right-of-way permit, building permit, public utilities connection point, filling and grading permit, encroachment permit

Public Comment: The decision on this application will be given in writing [illegible] fourteen (14) days from the date of this notice. Any interested person may submit comments on the proposal within fourteen (14) days of this notice in order for staff to address the comments prior to their decision on the proposal. Any person may also submit a written request to receive notice of the decision when it is made.

This notice is issued effective December 16, 2022, with publication in the Sun Publications Valley Record and the comment period runs fourteen (14) calendar days from that date, ending on December 30, 2022. All comments must be in writing by the above stated applicant name. Written comments should be submitted to The Weekly Project Proposal Comment @[illegible]gov or mailed to Carnation City Hall, 4621 Tolt Avenue, PO Box 1238 Carnation, WA 98014 no later than 5:00 p.m. December 30, 2022.

For more information: Comments on the proposal or questions of any official the contact at City Hall (425) 333-4192.

This notice is published pursuant to CMC 16.09.190.

6495314

12/16/22

PUBLIC NOTICE
CITY OF CARNATION NOTICE OF SEPA
MITIGATED DETERMINATION OF NON-SIGNIFICANCE

NOTICE IS HEREBY GIVEN that a SEPA Mitigated Determination of Non-Significance is issued pursuant to Chapter 14.04 CMC and WAC 197-11-350 effective March 10, 2023. The City of Carnation received the following applications on November 18, 2022, and determined the applications complete on December 2, 2022:

- Site Development Review Application No. SPR22-0003
- Development Review Application No. DR 22-0004

A public hearing is not required for this proposal pursuant to CMC 15.09.050.

Applicant: Roger Tucker, Environmental Works.

Property Owner: Sno-Valley Senior Center

Description of proposal: Application for Site Development Review and Design Review for a new 3-story affordable senior housing building consisting of 15 one-bedroom residential units with common areas, associated parking for 27 vehicles, and outdoor amenity spaces on 17,800 square feet of property in the Mixed Use (MU) zone.

Location of the proposal: The subject property is located adjacent to the north side of the Snoqualmie Valley Senior Center at the intersection of Stephens Avenue and Commercial Street in Carnation, Washington, and identified as Assessor's Parcels No. 865830-2230 and 865830-2225.

Requested permits: Site Development Review Application No. SPR22-0003 and Development Review Application No. DR 22-0004.

Identification of existing environmental documents that evaluate the proposed project and location where the application and any studies can be reviewed: None.

Statement of the SEPA threshold determination and comment period: This SEPA threshold determination of non-significance (DNS) pursuant to WAC 197-11-340(2) and WAC 197-11-350 is issued effective March 10, 2023, with a 14-day comment period ending March 24, 2023.

Other permits that may be required: Right-of-way permit, building permits, storm drainage permit.

The decision on this application will be made no sooner than fourteen (14) days from the issuance of this notice of SEPA threshold determination. This notice is issued effective March 10, 2023 with publication in the Snoqualmie Valley Record, and the comment period shall run fourteen (14) calendar days from that date, ending on March 24, 2023. Any interested person may submit comments on this MDNS within the fourteen (14) day comment period. All comments must reference the file number and applicant name and must be submitted to Carnation City Hall, 4621 Tolt Avenue, PO Box 1238, Carnation, WA 98014 no later than 5:00 p.m., March 24, 20239.

These applications and all relevant documents are available for inspection at Carnation City Hall, Monday thru Friday 8:00 a.m. to 5:00 p.m. Any questions regarding this proposal should be directed to the Carnation City Planner, (425) 333-4192.

NOTICE OF PUBLIC HEARING
Site Development Application No. SPR-22-0003
Design Review Application DR-22-0004
SNO-VALLEY SENIOR HOUSING

NOTICE IS HEREBY GIVEN Notice is hereby given that the City of Carnation Hearing Examiner will hold an open record public hearing on Wednesday, May 31, 2023, at 10:00 AM or soon thereafter to receive and consider public testimony regarding the following application:

Application: Application for Site Development Review and Design Review for a new 3-story affordable senior housing building consisting of 15 one-bedroom residential units with common areas, associated parking for 27 vehicles, and outdoor amenity spaces on 17,800 square feet of property in the Mixed Use (MU) zone. In addition to meeting the requirement for Affordable Housing in Chapter 15.50 CMC this proposal will utilize the density incentives offered in Section 15.50.030 CMC and 15.50.040 CMC.

When a primary proposal does not require a public hearing under Title 15 CMC, the utilization of density incentives under Chapter 15.50 CMC (Affordable Housing) shall, in addition to the requirements of this chapter, be subject to the decisional criteria for conditional use permits pursuant to Section 15.18.040 CMC and the Type III application procedures pursuant to Chapter 15.09 CMC.

Project Location: The subject property is located adjacent to the north side of the Snoqualmie Valley Senior Center at the intersection of Stephens Avenue and Commercial Street in Carnation, Washington, and identified as Assessor's Parcels No. 865830-2230 and 865830-2225.

Applicant: Roger Tucker, Environmental Works.
Property Owner: Sno-Valley Senior Center

SEPA: This SEPA threshold mitigated determination of non-significance (MDNS) pursuant to WAC 197-11-340(2) and WAC 197-11-350 was issued effective March 10, 2023, with a 14-day comment period ending March 24, 2023. Following review of comments, a modified MDNS was issued on April 26, 2023.

Public Hearing: An open record public hearing for this proposal pursuant to Chapter 15.10 CMC is scheduled for 10:00 am on May 31, 2023. The hearing is open to the public. All interested persons are encouraged to listen and/or attend the public hearing and to provide oral and/or written comments. The public hearing will be conducted remotely and in person in the Council Chambers at Carnation City Hall located at 4621 Tolt Avenue in Carnation. Members of the public are invited to join the meeting in person in the Council Chambers or join the meeting remotely by visiting https://tinyurl.com/42uch9ub, Meeting ID: 280 899 214 970, Passcode: SSghZE to join the online meeting.

Written comments should be submitted to Tim Woolett, Project Planner at tim.woolett@carnationnwa.gov or mailed to Carnation City Hall, 4621 Tolt Avenue, PO Box 1238, Carnation, WA 98014. Written comments will be accepted up until the close of the open record public hearing. Any person attending online wishing to provide oral testimony at the hearing is encouraged to sign in at least fifteen (15) minutes before the start of the meeting by using the Chat tab in the Teams online meeting application.

For more information: Information on this proposal is contained in the official file available at City Hall, (425) 333-4192, and may be accessed under Development Projects at the City of Carnation website by visiting Departments/Planning/Development Projects.

This notice is issued pursuant to CMC 15.09.200 and 15.10.030, and is mailed to the owners of property within three hundred feet of the subject property.

CITY OF
CARNATION

AFFIDAVIT OF MAILING

I, Barbara Garcia, hereby affirm

That on April 27, 28, 2023, I mailed true and correct copies of the following documents:

- ☐ Notice of Application
- ☒ Notice of Public Hearing
- ☐ Notice of Decision
- ☐ Other (specify) SPR-22-0003 | DR-22-0004

for the following project file number(s): _____ by depositing in the United States mail, properly addressed and with proper postage affixed to the following addresses:

Please see attachment.

Barbara Garcia
Signature of Mailer

CITY OF CARNATION

NOTICE OF PUBLIC HEARING
Site Development Application No. SPR-22-0003
Design Review Application DR-22-0004
SNO-VALLEY SENIOR HOUSING

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When a primary proposal does not require a public hearing under Title 15 CMC, the utilization of density incentives under Chapter 15.50 CMC (Affordable Housing) shall, in addition to the requirements of this chapter, be subject to the decisional criteria for conditional use permits pursuant to Section 15.18.040 CMC and the Type III application procedures pursuant to Chapter 15.09 CMC.

Project Location: The subject property is located adjacent to the north side of the Snoqualmie Valley Senior Center at the intersection of Stephens Avenue and Commercial Street in Carnation, Washington, and identified as Assessor's Parcels No. 865830-2230 and 865830-2225.

Applicant: Roger Tucker, Environmental Works
Property Owner: Sno-Valley Senior Center

SEPA: This SEPA threshold mitigated determination of non-significance (MDNS) pursuant to WAC 197-11-340(2) and WAC 197-11-350 was issued effective March 10, 2023, with a 14-day comment period ending March 24, 2023. Following review of comments, a modified MDNS was issued on April 26, 2023.

Public Hearing: An open record public hearing for this proposal pursuant to Chapter 15.10 CMC is scheduled for 10:00 am on May 31, 2023. The hearing is open to the public. All interested persons are encouraged to listen and/or attend the public hearing and to provide oral and/or written comments. The public hearing will be conducted remotely and in person in the Council Chambers at Carnation City Hall located at 4621 Tolt Avenue in Carnation. Members of the public are invited to join the meeting in person in the Council Chambers or join the meeting remotely by visiting https://tinyurl.com/42uch0ub. Meeting ID: 280 899 214 970, Passcode: SSghZE to join the online meeting.

Written comments should be submitted to Tim Woolett, Project Planner at tim.woolett@carnationwa.gov or mailed to Carnation City Hall, 4621 Tolt Avenue, PO Box 1238, Carnation, WA 98014. Written comments will be accepted up until the close of the open record public hearing. Any person attending online wishing to provide oral testimony at the hearing is encouraged to sign in at least fifteen (15) minutes before the start of the meeting by using the Chat tab in the Teams online meeting application.

For more information: Information on this proposal is contained in the official file available at City Hall, (425) 333-4192, and may be accessed under Development Projects at the City of Carnation website by visiting Departments/Planning/Development Projects.

This notice is issued pursuant to CMC 15.09.200 and 15.10.030, and is mailed to the owners of property within three hundred feet of the subject property.

Parcel number	Taxpayer name	Care Of	Parcel address	Mailing Address	Jurisdiction	State	Zip code
8658000450	ANSCHELL RUSSELL		31711 W BIR	16430 NE 99TH ST	REDMOND	WA	98052
8658000470	ARINS SCOTT+ROBYN		31760 W BIRD ST	PO BOX 422	CARNATION	WA	98014
8658002045	BARRON SCOTT		4534 TOLT AVE	PO BOX 1301	CARNATION	WA	98014
8658002384	BUCK GLENN T		31708 W BIR	PO BOX 294	CARNATION	WA	98014
8658002100	BUCKNAKED INVESTMENTS LLC		4645 TOLT AVE	PO BOX 555	CARNATION	WA	98014
8658002155	BUCKNAKED INVESTMENTS LLC		TOLT AVE	PO BOX 555	CARNATION	WA	98014
8658002085	CANTWELL ANDREW+OGYTA JENNI		31850 W COMMERCIA	31850 W COMMERCIAL ST	CARNATION	WA	98014
8658000810	CARNATION CITY OF		TOLT AVE	PO BOX 1238	CARNATION	WA	98014
8658002030	CARNATION CITY OF		TOLT AVE	PO BOX 1238	CARNATION	WA	98014
8658000000	CARNATION CITY OF		4621 TOLT AVE	PO BOX 1238	CARNATION	WA	98014
8658002205	CARNATION STATION LLC		4721 TOLT AVE	PO BOX 297	CARNATION	WA	98014
8658003350	COLTOMA NANCY J+PRITCHARD W		31752 W BIRD ST	PO BOX 253	CARNATION	WA	98014
8658003320	CORRMEAU GEOFFREY P+SUSAN L		31734 W COMMERCIAL ST	31734 W COMMERCIAL ST	CARNATION	WA	98014
8658003455	CORTEZ ARACELY & WAHNKE SAM		31755 W BIRD ST	PO BOX 924	CARNATION	WA	98014
8658003515	DENNIS MICHAEL		31745 W ENTWISTLE ST	PO BOX 554	CARNATION	WA	98014
8658001725	DOS HOMBRES LLC		4640 TOLT AVE	PO BOX 995	CARNATION	WA	98014
8658003283	FALK JASON WALKEN And WOOD		31741 W COMMERCIAL ST	31741 W COMMERCIAL ST	CARNATION	WA	98014
8658003235	FEDERSPIEL JACOB M+TOVA C		31722 W COMMERCIAL ST	31722 W COMMERCIAL ST	CARNATION	WA	98014
8658003330	FIRTH BETTYE	SAN DUAN	31731 W COMMERCIAL ST	2629 LAKE LANGLOIS RD NE	CARNATION	WA	98014
8658003090	FIRTHRUTH LLC		807 W RUTHERFORD ST	9805 160TH ST AVE NE	REDMOND	WA	98052
8658003275	GAVIGAN CHRISTOPHER		AError	31741 W COMMERCIAL ST	CARNATION	WA	98014
8658003480	GIBBS RICHARD C		31645 W BIRD ST	PO BOX 121	CARNATION	WA	98014
8658003065	GLADNEY CECILA		31751 W COMMERCIAL ST	31751 W COMMERCIAL ST	CARNATION	WA	98014
8658001735	GRIFFIN SANDRA		4650 TOLT AVE	10520 302ND WAY NE	CARNATION	WA	98014
8658002035	HALIFAX REAGAN		31645 W RUTHERFORD ST	PO BOX 189	CARNATION	WA	98014
8658000000	HARGROVE RAUN		31745 W ENTWISTLE ST	PO BOX 605	CARNATION	WA	98014
8658002045	HUGHES NICHOLAS OLSON & GRL		31815 W RUTHERFORD	31815 W RUTHERFORD ST	CARNATION	WA	98014
8658002060	IXTAPA-CARNATION INC		4522 TOLT AVE	PO BOX 724	CARNATION	WA	98014
8658002100	JIM & BRENDA GIORDANO LLC		TOLT AVE	16828 SE 28TH ST	BELLEVUE	WA	98008
8658002130	LEES LIVING ROOM LLC		4507 TOLT AVE	PO BOX 1272	CARNATION	WA	98014
8658003065	MURRAY JAMES WILLIAM		4751 STEPHENS AVE	4751 STEPHENS AVE	CARNATION	WA	98014
8658002355	ORR ERICA B		31933 W RUTHERFORD ST	PO BOX 50	CARNATION	WA	98014
8658002755	PIGFEN PROPERTIES LLC		4509 TOLT AVE	32232 NE 8TH ST	CARNATION	WA	98014
8658002250	PULLEN TIMOTHY M		31821 W RUTHERFORD ST	PO BOX 632	CARNATION	WA	98014
8658002060	R C ZEIGLER COMPANY INC		TOLT AVE	PO BOX 995	CARNATION	WA	98014
8658002065	R C ZEIGLER COMPANY INC		TOLT AVE	PO BOX 995	CARNATION	WA	98014
8658002145	R INVESTMENTS COMPANY		4521 TOLT AVE	PO BOX 150	CARNATION	WA	98014
8658002175	R INVESTMENTS COMPANY		STEPHENS AVE	PO BOX 150	CARNATION	WA	98014
8658003215	RICHARDS MICHAEL R & SUSAN		31713 W COMMERCIAL ST	27501 NE REDMOND-FALL CITY HWY	REDMOND	WA	98053
8658003445	ROMANO VITO C+DEBRA A		31777 W BIRD ST	PO BOX 931	CARNATION	WA	98014
8658003595	RUSH DAVID P+SOPHIE M KATHE		31710 W ENTWISTLE ST	32021 NE 60TH ST	CARNATION	WA	98014
8658001755	SAME INVESTMENT CO LLC		4760 TOLT AVE	500 120TH AVE NE SUITE A-200	BELLEVUE	WA	98005
8658002135	SCANDINAVIA LLC		4572 TOLT AVE	29911 NE CARNATION FARM RD	CARNATION	WA	98014
8658002140	SCANDINAVIA LLC		4562 TOLT AVE	29911 NE CARNATION FARM RD	CARNATION	WA	98014

9663002220	SNO-VALLEY SENIOR CITIZENS	#Error	PO BOX 96	CARNATION	WA	98014
9663002230	SNO-VALLEY SENIOR CITIZENS	#Error	PO BOX 96	CARNATION	WA	98014
9663002250	SNO-VALLEY SENIOR CITIZENS	STEPHENS AVE	PO BOX 96	CARNATION	WA	98014
9663002260	SNO-VALLEY SENIOR CITIZENS	#Error	PO BOX 96	CARNATION	WA	98014
9663002305	TOLT HALL ASSOC LLC	4775 TOLT AVE	PO BOX 907	CARNATION	WA	98014
9663002390	TWIN FIR PROPERTIES LLC	31904 W COMMERCIAL ST	13420 231ST AVE SE	DIMAIF	WA	98019
9663002250	WHIPP A JOY	31740 W COMMERCIAL ST	31740 W COMMERCIAL ST	CARNATION	WA	98014
9663002280	ZARNOSKIE JONATHAN F+ANNWA	31747 W RUTHERFORD ST	31747 W RUTHERFORD ST	CARNATION	WA	98014
9663002215	ZIEGLER JESSE C	4002 TOLT AVE	PO BOX 995	CARNATION	WA	98014

Exhibit 13.a.

December 13, 2022

Mr. Tim Woolett
Senior Planner
4621 Tolt Avenue
P.O. Box 1238
Carnation, WA 98014-1238

Subject: **Sno-Valley Senior Housing**

Dear Tim:

The following comments are based on the building and parking lot layout received November 18, 2022. Design and construction of the Project shall conform to the Construction and Design Standards listed in Carnation Municipal Code 12.06.010. The following is not a detailed review, additional requirements and review comments will be provided during review of the design documents.

General:

1. A topographic survey sealed by a licensed professional land surveyor is required. The survey shall include the entire existing parcel and the adjacent streets and alley.
2. All existing and proposed electric, telephone, cable, and communication lines serving the site shall be placed underground [CMC 15.60.350]. Overhead extensions or service lines are not allowed.
3. A geotechnical report is required and shall include recommendations for: pavement section, earthwork, reuse of existing soils, compaction, temporary and permanent slopes, utility construction, stormwater infiltration capabilities, erosion and sediment control, wet weather work, hazardous material studies, and a level of risk for seismic-induced liquefaction. All geotechnical recommendations shall be included as notes in the design drawings
4. A right-of-way permit is required for all work within the city right-of-way [CMC 15.60.030].
5. An application for Clearing, Filling & Grading is required if the total volume of earth moved including cut, fill, and regrading exceeds 50 cubic yards [CMC 15.44.200 and 15.44.210]. A spill prevention and control plan is also required.
6. A traffic impact study is required and shall include a trip generation analysis and an assessment of appropriate off-site right-of-way traffic mitigation improvements in cases where a reduction of the Level of Services is anticipated.

Water Connections:

7. The proposed lot will be served from an existing eight-inch water main located in Alley “C”. The Developer will tap the water main and install a service line from the mainline to a new water meter. The water meter shall be located within the alley right-of-way. The number and size of the service and fire connections will be determined during design review.
8. The number and size of the service and fire connections will be determined during design review.
9. FDC may be installed on the wall of the structure. Fire Marshal to review FDC with fire sprinkler plans.

Street Reconstruction:

10. ADA compliant curb ramps shall be installed at the southeast corner of Stephens Ave and W. Commercial St at the northeast corner of Stephens Ave and Alley “C” and at the NE and NW corners of the W. Bird St and Alley “J” intersection.

11. An ADA compliant driveway apron shall be installed across Alley “J” at W. Commercial St.
12. Broken or cracked sidewalk panels must be replaced along the Stephens Ave and W. Commercial St. frontage.
13. Alley “C” between Alley “J” and Stephens Ave shall be overlayed after utilities are installed.
14. Alley “J” must be reconstructed to subgrade from W. Commercial St to W. Bird Street. Alley grading shall avoid standing water.
15. Trench patches across streets are not permitted. If trenching across streets, a minimum 30-wide grind and overlay is required. There is a moratorium on cutting across the newly paved sections of Tolt Ave and Bird Street. Cutting of the newly paved streets shall be avoided but may be mitigated per city standards.
16. Parking spaces shall conform to city code requirements, 9-ft x 19-ft and up to 20% of stalls at 8-ft x 16-ft.
17. If project area includes area south of Alley “C”, sidewalk construction along the Stephens Ave frontage is required.
18. Street illumination of Alley intersections with West Bird Street, Stephens Ave and Commercial Ave are required.
19. Parking stalls within or partially within right-of-way cannot be used to meet minimum parking requirements.

Stormwater:

20. A drainage permit is required for the stormwater management systems. [CMC 15.64.230]
21. Stormwater quality and flow-control best management practices are required for the proposed redevelopment. A stormwater hydraulic report is required and shall comply with the 2019 DOE Stormwater Manual for Western Washington. Infiltration stormwater facilities shall be provided to control runoff including rooftops, parking areas and driveways.
22. Flow Control facilities must be designed to include frontage improvements.
23. Temporary Sediment and Erosion Control and grading plans are required, stormwater runoff from impervious surfaces shall not be directed towards City right-of-ways.

Sanitary Sewers:

24. Side sewers shall be constructed per City of Carnation Sewer Standards, a side sewer permit is required prior to commencing side sewer construction. [CMC 13.70.040]
25. A dual buffer tank is required to serve the proposed facility, must be accessible, not in parking area. The size of the buffer tank will be determined during design review phase.

These requirements are subject to change with submittal of additional information. Please contact me if you have any questions.

Sincerely,

Jorge Garcia, P.E.
HNTB Corp.

Exhibit 13.b.

tswoolett@outlook.com

From: Lou Tyler <ltyler@safebuilt.com>
Sent: Wednesday, April 12, 2023 1:53 PM
To: Tim Woolett
Subject: SNO VALLEY SENIOR HOUSING BLUEBEAM SESSION 974-265-700 SAFEBUILT COMMENTS

Hello Tim-

Here were the comments (cut and pasted).

1. **SAFEBUILT COMMENTS- LOU RE: GEOTECH REPORT REMINDER...**

   CONCLUSIONS AND RECOMMENDATIONS
   General
   It is our opinion that the planned development within the site is generally feasible from a geotechnical
   standpoint. Our explorations indicated that the site was generally underlain by a relatively thick layer of
   loose fine-grained alluvial deposits with competent gravelly soils at depths in the range of 13- to 18-feet
   below the existing ground surface. To reduce the potential for structure settlement or liquefaction
   hazards in the event of seismic activity, we recommend the new planned structures be supported on 4-inch
   diameter pipe piles to transfer structure loads to the competent gravelly soils at depth. Any paved
   parking areas planned as part of the development should be supported on a modified subgrade, as described in the Site Preparation and Grading subsection of this report.

2. **SAFEBUILT SUMMARY COMMENTS LOU AND D.S ARE AS FOLLOWS:**

   1.Applicant has requested a reduction in the number of city required parking stalls. Once the required number of stalls is determined by the city on the site, the building code related to the required number of ADA parking stalls will be applied to the site and occupancy type(s) as applicable during plan review(s).

   2.ADA accessibility will be reviewed and applied as applicable during building plan review(s) based on occupancy type(s).

   3.Required setbacks related to fire separation distance based on occupancy and construction type(s) to property lines and/or the public way as applicable to the building code will be reviewed and applied to the building during plan review(s).

   4.General building heights and areas based on occupancy and building construction type(s) will be reviewed as applicable during building plan review(s).

5.Fire alarms and/or fire sprinklers/fire flow as applicable will be reviewed based on occupancy and building construction type(s) as applicable during building plan review(s).

6.Buildings shall not be built over property lines. The proposed project structure will span over multiple underling lots. A lot line elimination and/or lot consolidation should happen through the overall planning process to eliminate the underling lot lines for the overall project.

3. **SAFEBUILT COMMENT - LOU: WATER INTRUSION MITIGATION PER REVISED CODE OF WASHINGTON (RCW).**

   •RCW 64.55.020 requires that any person applying for a building permit for construction of a multiunit residential building or rehabilitative construction shall submit building enclosure design documents to the appropriate building department prior to the start of construction or rehabilitative construction of the building enclosure.

   •Per RCW 64.55.010 (11) Such documents shall be stamped: "Stamped" means bearing the stamp and signature of the responsible licensed architect or engineer on the title page, and on every sheet of the documents, drawings, or specifications, including modifications to the documents, drawings, and specifications that become part of change orders or addenda to alter those documents, drawings, or specifications.

4. **SAFEBUILT COMMENT - LOU - PARKING PER ADOPTED MUNICIPLE CODE 15.72:**

   - 15.72.010 NUMBER OF PARKING SPACES REQUIRED.

5. **SAFEBUILT COMMENT LOU RE: FLOOD PLAIN**

   - VERIFICATION OF FEMA and/or city designated flood zone. The floodplain review and related items would be reviewed as applicable to the project such as elevation

Lou Tyler
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Exhibit 14

To: Lisa Yeager, Sno Valley Senior Center (lisay@soundgenerations.org)

Laura Gardner, Environmental Works (lgardner@eworks.org)

From: Jean Lin, City Planner

Date: October 14, 2021

Re: Sno-Valley Senior Center Housing Pre-Application Review Comments

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The following comments are based on the pre-application materials submitted for a potential affordable senior housing development.

Proposal: The pre-application materials included two proposals for affordable senior housing – a proposal for 15 units and a proposal for 21 units of affordable senior housing. Both proposals include a new future retail store of approximately 1,325 square feet at the northeast corner of the site as well as 24 off-street parking spaces to be shared between the existing senior center and the proposed housing/retail development. At the pre-application conference meeting on May 13, 2021, the applicant indicated that they are interested in proceeding with the proposal for 15 units.

Location: The subject property consists of two parcels (Assessor's Parcel No. 865830-2230 and 865830-2225) located at the southeast corner of Stephens Avenue and W. Commercial Street, and are bounded by public alleys to the east and to the south. While not part of the proposed project, the existing senior center adjacent to the south of the site would rely on the parking provided in the proposed housing development to fulfill its parking requirements.

Requirements: The proposed project will be reviewed for consistency with the following City standards, at a minimum:

- Design Standards and Guidelines
- Street and Storm Sewer System Standards
- Combined Water and Sanitary Sewer Utility Technical Standards and Cross-Connection Control Program
- Design and Development Standards (Carnation Municipal Code (CMC) Section 12.06.010)
- Sewer System – Side Sewer Regulations (CMC Chapter 13.70)
- SEPA (CMC Chapter 14.04)
- Development Agreements (CMC Chapter 15.17)
- Permissible Uses (CMC Chapter 15.40)
- Density and Dimensional Regulations (CMC Chapter 15.48)
- Affordable Housing (CMC Chapter 15.50)
- Streets and Sidewalks (CMC Chapter 15.56)
- Utilities (CMC Chapter 15.60)
- Floodways, Floodplains, Drainage, and Erosion (CMC Chapter 15.64)
- Parking (CMC Chapter 15.72)

- Screening, Landscaping and Trees (CMC Chapter 15.76)

Application Requirements: The review process and application submittal requirements are contained in the CMC sections as follows:

- Site Development Review and Major Design Review applications to construct a new structure and site improvements. The Site Development Review and Major Design Review are both Type II permit review processes in accordance with CMC Chapter 15.09 Local Project Review and will require public notification. The City Planner is the primary decision-maker for a Type II permit and decisions may be subject to appeal and/or reconsideration. Staff highly recommends submitting both Site Development Review and Major Design Review applications for consolidated permit review, where both applications are reviewed simultaneously at one time under a single permit processing review procedure.
- Lot Line Adjustment application to merge the two existing parcels. The Lot Line Adjustment is a Type I permit review process in accordance with CMC Chapter 15.09 Local Project Review and will not require public notification. The City Planner is the primary decision-maker for a Type I permit and decisions may be subject to appeal and/or reconsideration.
- A Development Agreement reviewed in accordance with CMC Chapter 15.17 is required for any proposed reduction to required parking. The Development Agreement
- State Environmental Policy Act (SEPA) Checklist in accordance with CMC Chapter 14.04 SEPA.

Other permits likely to be required, at minimum:

- Building Permit
- Clear and Grade Permit
- Public Utility Extension
- Right-of-Way Permit
- Storm Drainage Review Permit
- Fire Permit

Comprehensive Plan/Zoning Designation: The property is currently zoned MU (Mixed Use) which is consistent with the Comprehensive Plan's "Medium Intensity Commercial" land use designation as shown on the Future Land Use map, and includes properties in the MU zone. The MU zone is intended to "accommodate a mixture of certain, limited residential use, office uses and commercial uses…primarily in areas adjacent to the central business district, or as a transition zone between commercial and residential uses." allow both residential and commercial uses…to create a buffer between the commercial and residential areas." (CMC Section 15.36.020.E)

The property is surrounded by multifamily apartments to the north (R24 zone), commercial uses and Carnation City Hall to the east (CBD zone), the Sno-Valley Senior Center to the south (MU zone), and single-family residences to the west (R6 zone).

Density & Dimensional Standards: The following density and dimensional standards apply to the subject property:

Density:

- Minimum Density: 12 units per acre
- Maximum Density: 24 units per acre

- According to CMC Chapter 15.50 Affordable Housing, the project would be eligible for density incentives for affordable senior rental housing provided it meets the following requirements:
  - Housing units affordable to and reserved for rental occupancy by low-income seniors (i.e. households, at least one member of which is 55 years of age or older, with a combined income no greater than 50% of the median King County family income, adjusted for household size).
  - In order to take advantage of affordable housing incentives in this Chapter, the proposed project would be subject to a restrictive covenant for at least a 50-year period in accordance with CMC Section 15.50.080.

Minimum Lot Size and Width: All lots must be a minimum of 2,500 square feet in size with a minimum lot width of 25 feet.

Maximum Impervious Surface: 80%

Maximum Building Height: 35 feet

- Building(s) must have an upper-level step back of at least 10 feet deep, since single-family zoned property is located 60 feet to the west.

Maximum Floor Area Ratio: none

Minimum Building Setbacks:

- Front: 0 feet
  - Garages, including carports, must be set back 20 feet from the property line.
- Side (interior): 5 feet
- Side (street): 0 feet
  - Garages, including carports, must be set back 20 feet from the property line.
- Rear: 20 feet or 20% of the lot, whichever is smaller
- Eaves, bay windows and chimneys that are permanently incorporated into the building may encroach up to 18 inches into the applicable setback area; provided that such features shall not encroach within any area covered by a public or private easement, and shall not extend over any lot line. Bay windows that encroach into the setback area shall be limited to 2 per building façade and each shall not exceed 8 feet in width.

Parking: The proposed project is subject to parking requirements in CMC Chapter 15.72. In accordance with CMC Section 15.72.010.F, no parking areas on a street or other public right-of-way may be counted towards satisfying the parking requirements. Additionally, since the senior housing component will be comprised entirely of affordable senior housing, CMC Section 15.50.060.B specifies a reduced parking requirement of 1.0 parking space per unit for this use, and that all other uses shall comply with CMC Chapter 15.72.

As part of a 2011 building permit for interior remodel and expansion of 1,548 square feet at the Sno-Valley Senior Center, it was documented that there were 20 parking spaces (including 1 ADA stall) in the existing parking lot on the subject parcel that serves the Senior Center. This is an existing nonconforming situation, as approximately 35 spaces would have been required to comply with the parking requirement of 1 space per 300 gross square feet for a social assistance use.

Given that the proposed senior housing, existing Senior Center, and future retail use will be sharing the same parking facilities, it will be important to fully evaluate the cumulative parking demand for these uses. Staff has reviewed the preliminary proposal to reduce the parking requirement for the proposed project, and comments are provided in the attached document markups.

An up to 25% modification from the required parking is allowed through a Development Agreement. Also see "Pending Code Amendments" section below.

Pending Code Amendments: Please note that the City is currently in the process of amending multiple chapters of the Land Use Code (Title 15). If approved, these changes may potentially impact several aspects of the proposed project. Key changes include, but are not limited to, the following:

- Regulations pertaining to the MU zone, including amendments to required setbacks.
- Clarifying requirements for parking studies.
- Amending the review process for parking modification requests.
- Establishing processes and criteria for the review of modifications to previously approved Site Development Review and Design Review applications.
- Revising permit expiration provisions for Site Development Review and Design Review applications.
- Bonding requirements for site improvements.

The staff reports and draft text changes are available via the following links:

- https://www.carnationwa.gov/vertical/sites/%7BBC2C8B0D-6FDD-43CB-A5E7-03E465DF30E5%7D/uploads/pb210525_agenda_packet.pdf
- https://www.carnationwa.gov/vertical/sites/%7BBC2C8B0D-6FDD-43CB-A5E7-03E465DF30E5%7D/uploads/pb210920_agenda_packet.pdf

These amendments have been presented before the Planning Board through workshops and public hearings, and staff anticipates bringing these items for a public hearing before the City Council in early December, with adoption in early January 2022.

Design Standards and Guidelines: The proposed project must comply with all applicable provisions of the Design Standards and Guidelines. Some key provisions applicable to this proposal are identified in the attached plan markups, but as there was insufficient information provided in the conceptual materials that were submitted, staff did not conduct a detailed review for compliance with the Design Standards and Guidelines.

Environmental Review: The proposed project does not qualify for a categorical exemption under WAC 197-11-080. A SEPA environmental checklist and review fee will be required with the Site Development Review and Major Design Review applications. The City will review the SEPA checklist and issue a threshold determination per CMC Chapter 14.04.

Plan Comments:

General:

1. Please also see attached document markups and associated markup summaries. These comments would need to be addressed as part of the submittal of formal permit applications.

2. The comments provided are based on the early conceptual information provided and do not constitute a detailed review. Additional review comments will be provided with the submittal of formal permit applications.
3. Please note that the City contracts with consultants for planning, engineering, and building services for both plan reviews and inspections. The City may also contract with additional consultants for peer reviews of technical reports, such as parking or transportation studies. Costs associated these services that are not captured in the City's fee schedule will be billed to the project applicant.
4. All existing and proposed electric, telephone, cable, and communication lines shall be placed underground [CMC 15.60.350]. The utility designs shall include a trench detail and continuous underground warning tapes installed 12 inches above each utility line. A utility easement may be necessary. Overhead extensions or overhead service lines are not allowed.
5. A topographic survey sealed by a licensed professional land surveyor is required. The survey shall include the entire existing parcel and the adjacent streets and alley.
6. A geotechnical report is required and shall include recommendations for: pavement section, earthwork, reuse of existing soils, compaction, temporary and permanent slopes, utility construction, stormwater infiltration capabilities, erosion and sediment control, wet weather work, hazardous material studies, and a level of risk for seismic-induced liquefaction.
7. A drainage permit is required for the stormwater management systems. [CMC 15.64.230]
8. Side sewers shall be constructed per City of Carnation Sewer Standards, a side sewer permit is required prior to commencing side sewer construction. [CMC 13.70.040]
9. A right-of-way permit is required for work within the City right-of-way [CMC 15.60.030]. An on-site pre-construction meeting shall be held before commencing work within the right-of-way.
10. An application for Clearing, Filling & Grading is required if the total volume of earth moved including cut, fill, and regrading exceeds 50 cubic yards [CMC 15.44.200 and 15.44.210]. A spill prevention and control plan is also required.
11. The proposed plan shall be prepared by a professional land surveyor or engineer. The proposed site plan shall include items listed in Section 15.16.080.C of the Carnation Municipal Code.
12. 3-phase power availability, currently along Tolt Ave, not allowed to cut into new pavement on Tolt Ave or Bird Street after Tolt Ave project is completed.
13. Safety lighting at entrances and intersections.
14. Water and sewer Certificates of Availability are required. [CMC 13.102.040]
15. A traffic impact study is required and shall include a trip generation analysis and an assessment of appropriate off-site right-of-way traffic mitigation improvements in cases where a reduction of the Level of Services is anticipated.

Frontage Improvements:

16. Sidewalks along Stephens and Commercial do not need to be replaced if they comply with ADA requirements. ADA compliant curb ramps and driveways are required.
17. Illumination of the east-west alley and Commercial Ave is required.
18. East-west alley needs to be overlaid with asphalt after utilities are installed
19. Alley on east side (running north-south) needs to be reconstructed, a requirement for this project. Need to address low spots, grade to avoid standing water. Existing asphalt will need to be removed.

Water Connections:

20. The proposed lot will be served from an existing eight-inch water main located in the alley bisecting the property. The Developer will tap the water main and install a service line from the mainline to the water meter. The new water meter shall be located within the alley right-of-way. The number and size of the service and fire connections will be determined during design review.
21. Pavement patching is not allowed, if cutting the existing pavement is necessary, an overlay, 30-foot in width is required. [Carnation Water Standards]
22. A 15-foot wide water easement may be necessary if water service lines for one lot cross the second lot.

Stormwater:

23. Stormwater quality and flow-control best management practices are required for the proposed redevelopment. A stormwater hydraulic report is required and shall comply with the 2014 DOE Stormwater Manual for Western Washington. Infiltration stormwater facilities shall be provided to control runoff including rooftops, parking areas and driveways. Infiltration systems shall be located a minimum of 10-feet from building foundations or property lines. These infiltration systems may be constructed concurrent with building construction. [WA Department of Ecology Manual]
24. Temporary Sediment and Erosion Control plans are required, stormwater runoff from impervious surfaces shall not be directed towards City right-of-ways or adjacent properties. [CMC 15.64.220]

Sanitary Sewers:

25. The sanitary sewer improvements shall be installed by the Developer per the City of Carnation's Combined Water and Sanitary Sewer Utility Technical Standards and AirVac's design manual.
26. A dual buffer tank connected to the exiting sewer main in the east-west alley is required to serve the proposed facility. The butter tank must be accessible, not in parking stalls. The size of the buffer tank will be determined during design review phase.

Note: These comments are preliminary in nature and are subject to change upon discovery or receipt of new information. This review is to determine whether a use is allowable on a specific property, the standards by which it would be evaluated, and to provide the proponents and/or their agent with the process review requirements of City of Carnation. This review does not provide the scope of outside agency involvement. The content of this review should in no way be construed as an approval or an intent to approve or deny, but merely provides the means by which a proponent may apply for review of a specific proposal and the standards on which a decision would be based.

Attachment:

- Document markups and markup summaries

SNO-VALLEY SENIOR CENTER
PARKING ASSESSMENT

Carnation, WA

11/10/2022

Prepared for: Sno-Valley Senior Center
c/o Ms. Ginger Segel
GS Consulting
ginger@gsaffordablehousing.com

Revised
November 2022

Date: November 10, 2022

To: Sno-Valley Senior Center
c/o Ms. Ginger Segel
GS Consulting
ginger@gsaffordablehousing.com

From: Aaron Van Aken, PE, PTOE

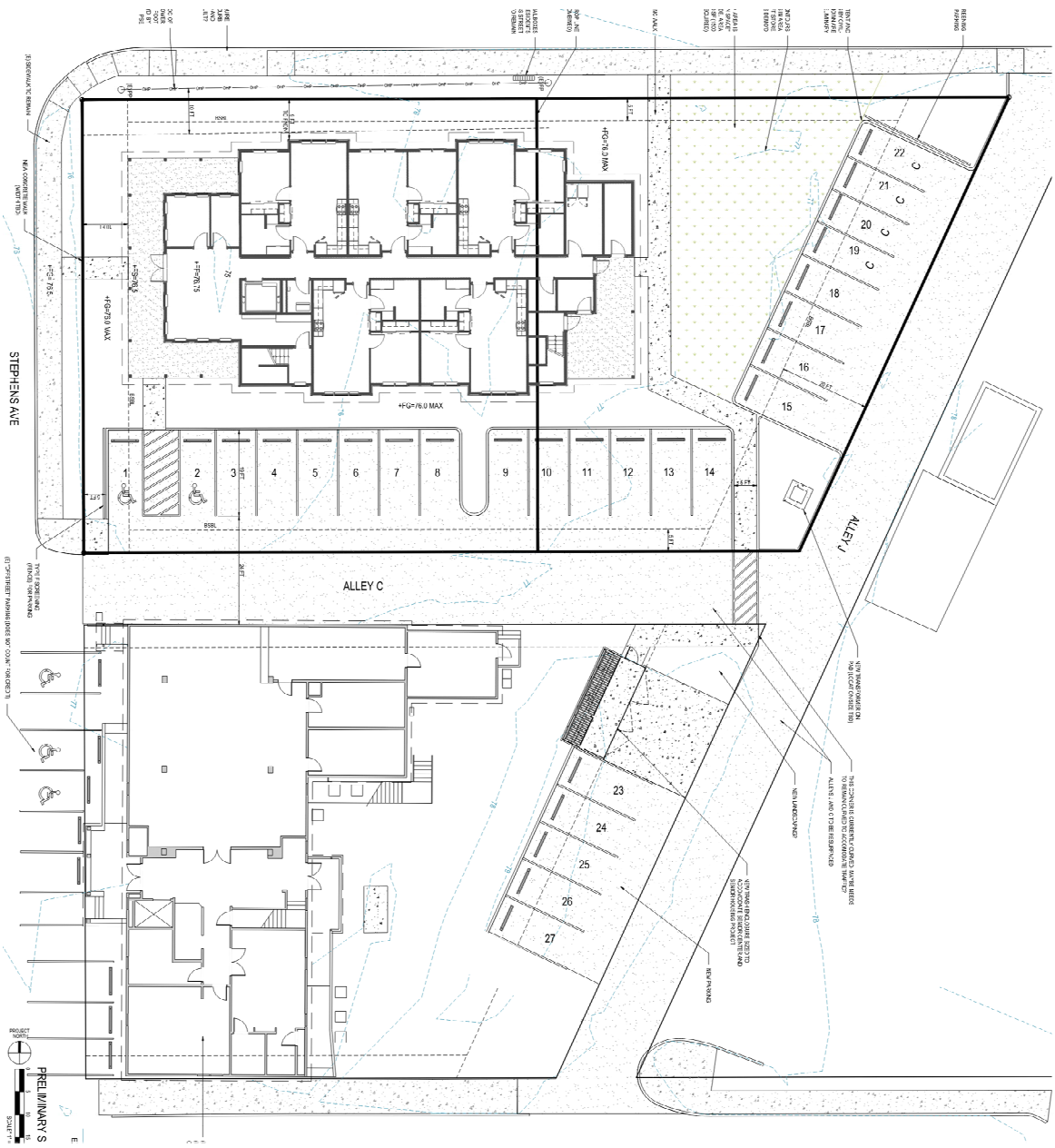
Subject: Sno-Valley Senior Center Parking Assessment

The intent of this memo serves to provide an update to the previous parking assessment (7/27/2021) for the proposed Sno-Valley Senior Center development to reflect changes that have occurred to both the on-site parking count and proposed uses.

PROJECT DESCRIPTION

The project proposes for the construction of a new 3-story, 15-unit affordable senior housing development. The subject property, with a site address of 31845 W Commercial Street, is located on a cumulative 0.71-acres within tax parcel #'s: 865830-2225; -2230; -2250; & -2260. The subject site is bordered to the west by Stephens Avenue, to the east by an alley, to the south by W Bird Street and to the north by W Commercial Street. Sno-Valley Senior Center exists in the southern portion of the subject site, which is to remain. A total of 27 parking stalls are proposed on-site. An aerial vicinity is provided below and a conceptual site plan is provided on the following page.

Figure 1: Conceptual Site Layout



CITY PARKING REQUIREMENTS

The table below is a parking requirement breakdown per land use as prescribed in the City of Carnation Municipal Code.

Table 1: Parking Requirements Per City Carnation

Use	Required Parking	Size	Number of Parking
Existing Senior Center	20 stalls[1]	8,844 sq. ft.	20
Affordable Sr. Housing	1 per DU	15 DUs	15
		Total	**35**
		Proposed	**27**

Based on the proposed uses and associated parking requirements, all on-site development would cumulatively require a total parking supply of 35 stalls. This total is 8 spaces greater than the proposed on-site supply of 27 stalls. It should be noted, however, that these calculations do not include the existing 8-9 head-in parking spaces along the Senior Center's frontage on Stephens Avenue. While these spaces are typically used for the Senior Center, they are located within the right-of-way and are therefore not considered in the on-site determination.

It should also be noted that the proposed development is for affordable senior housing and would have an income restriction to prospective tenants. Approximately 8 dwelling units are to be provided to individuals 30% below the average median income (AMI) and 7 dwelling units to individuals 50% below the AMI. As such, vehicle ownership and parking requirements would therefore likely be lower than general housing/senior housing uses given the socioeconomic factors associated with proposed facility. Furthermore, all unit types consist of single-bedrooms, which generally limits the number of residents and vehicles compared to higher room-count units.

[1] Required from a 2011 permit. No changes have or are proposed to occur to the senior center.

RESIDENTIAL PARKING DEMAND

To identify parking demands associated with affordable senior housing developments located in a similar geographical setting, two sample sites have been located and examined for comparison. Contact was made with the respective property managers to obtain data on resident vehicle ownership rates.

Location 1:

Pacific Place Apartments – 208 Central Ave, South Bend, WA.

Total Units: 24 affordable senior housing

Vehicle Ownership: 10 vehicles

Ownership Rate: 0.42 vehicles/resident

Location 2:

CamBey – 50 N. Main Street, Coupeville, WA

Total Units: 50 affordable senior housing

Resident Parking: 24 vehicles

Vehicle Ownership: 0.48 vehicles/resident

Both locations exhibited a similar vehicle ownership rate for their residents. The average between the two sites was 0.45 vehicles per resident, or approximately half of the residents owned a vehicle. It should also be taken into consideration that both aerial images show approximately half of the parking lot as utilized during the day. For the proposed development, assuming one resident per each single-room dwelling unit yields 15 residents or approximately 7 vehicles on-site (15 residents x 0.45 vehicle/resident) for the proposed project development.

ITE Data

In addition to the two sample locations above, forecast parking demands associated with the proposed affordable housing component were obtained from the Institute of Transportation Engineering publication, *Parking Generation* 5th Edition (2019). The Land Use Code (LUC) *Affordable Housing – Senior (LUC 233)* was reviewed for calculating peak parking demands. Table 2 below summarizes projected rates using the input variable of dwelling units.

Table 2: ITE Parking Demands

Land Use	Peak Period	Size	Avg. (veh/unit)	Parked Veh.	85th %-tile (veh/unit)	Parked Veh.
LUC 233	10 PM – 5 AM	15 dwelling units	0.38	6	0.44	7

ITE data provides a similar parking ratio of 0.44 vehicles per dwelling unit for the 85th percentile demand. The proposed 15 dwelling units could therefore generate parking demands of 6-7 vehicles.

SNO-VALLEY SENIOR CENTER

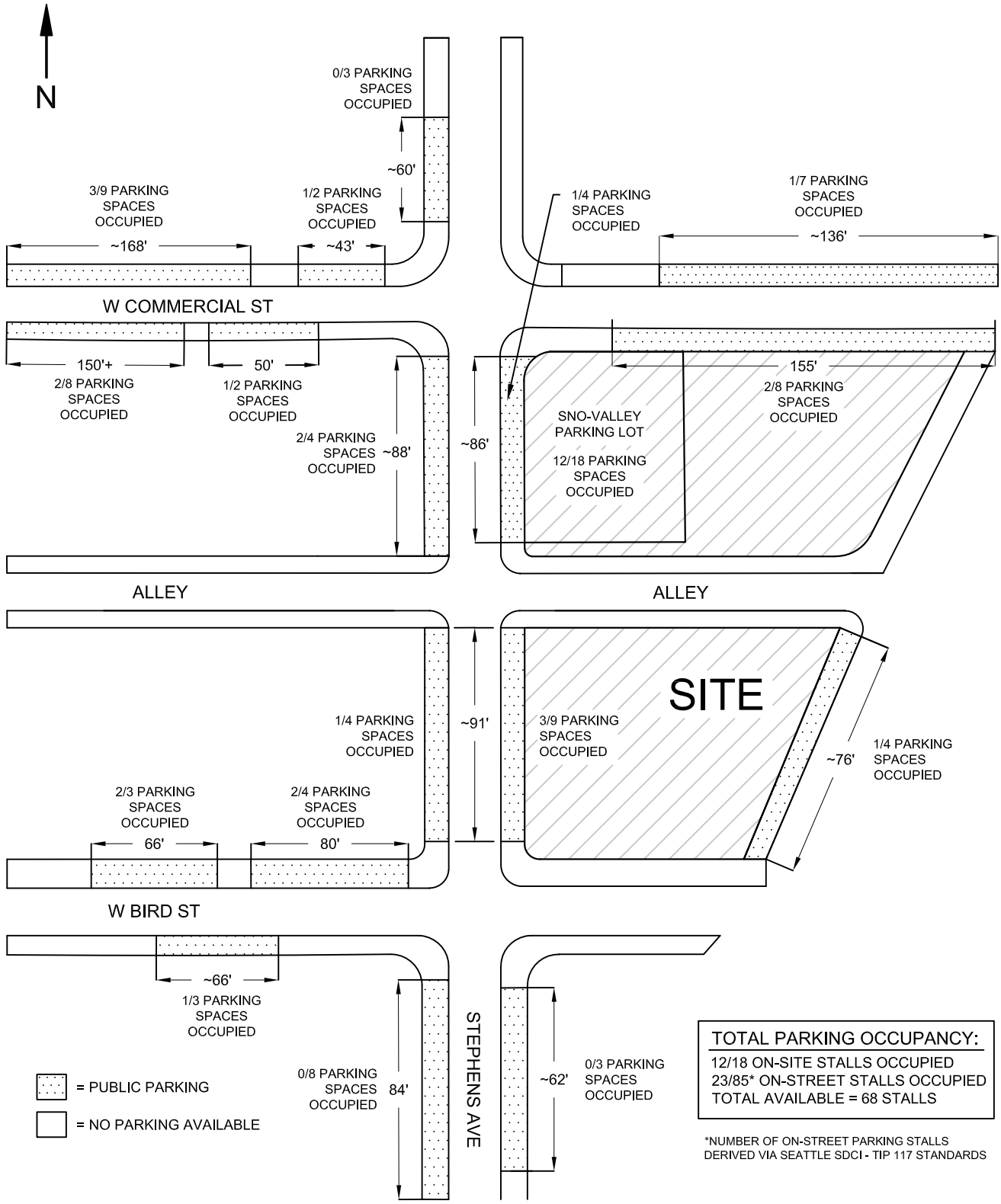
Sno-Valley Senior Center offers recreational activities and dining services for its members. Classes range between fitness, financial services and community lunches. Classes are held Monday through Friday typically between 8:00 AM to 1:00 PM with a few activities occurring slightly later throughout the week. A sample calendar of activities has been attached for reference. Attendance levels and transport modes have been discussed with staff based on pre-pandemic levels. Currently, the parking lot serving the Senior Center accommodates 18 spaces along with the 9 head-in, on-street spaces which has been described to generally meet the Senior Center's parking demands for all but the largest events.

Field observations of the Sno-Valley Senior Center were conducted on Thursday July 15, 2021 between the hours of 11:00 AM to 1:30 PM. This specific time period was selected in review of the Senior Center's weekly program schedule which indicated the highest weekly activity levels. In particular, the 12:00 PM community lunch takes place during this timeframe, which generally attracts the highest levels of activity based on staff comments. While attendance levels have recently varied due to the ongoing pandemic, class participation has been increasing and the Senior Center was scheduled to fully open in August of 2021. The observations would therefore provide a level of baseline parking, travel mode and attendance information. Further detail on observed patterns is discussed in the following section. As parking demands may not be accurately assessed at this time, attendance levels for the varying classes were requested in order to develop estimated parking demands.

As discussed, the 12:00 PM lunch generally attracts the largest crowds averaging between 40-50 people. Approximately 15 people (~30 percent) arrive/depart via the Center's Hyde Shuttle service and few may walk or cycle (~5 percent). This leaves a balance of approximately 32 people using vehicles. Some people also arrive via carpooling so applying a 1.5 person/vehicle yields approximately 22 parking spaces needed to accommodate the community dining service. Add this to the 4 vehicles by on-site staff and other parking from another concurrent activity (RE-in-Carnation ~3 space demand), results in 29 parking spaces. See appendix for parking assumptions and calculations for other provided activities. The community dining represents the peak parking scenario with all other activities resulting in significantly lower attendance and participation and would therefore have less parking needs.

Parking

Parking surveys were conducted on-site and on-street at the Senior Center and along the surrounding streets. See image below for the parking survey limits, which were deemed an acceptable walking distance with respect to the Senior Center. Measurements were performed along the block fronts and after taking into consideration non-parking areas (driveways, intersections, etc.) approximately 85 on-street parking spaces were identified. Figures A & B illustrate the measurements and parking availability in addition to the observed utilization.



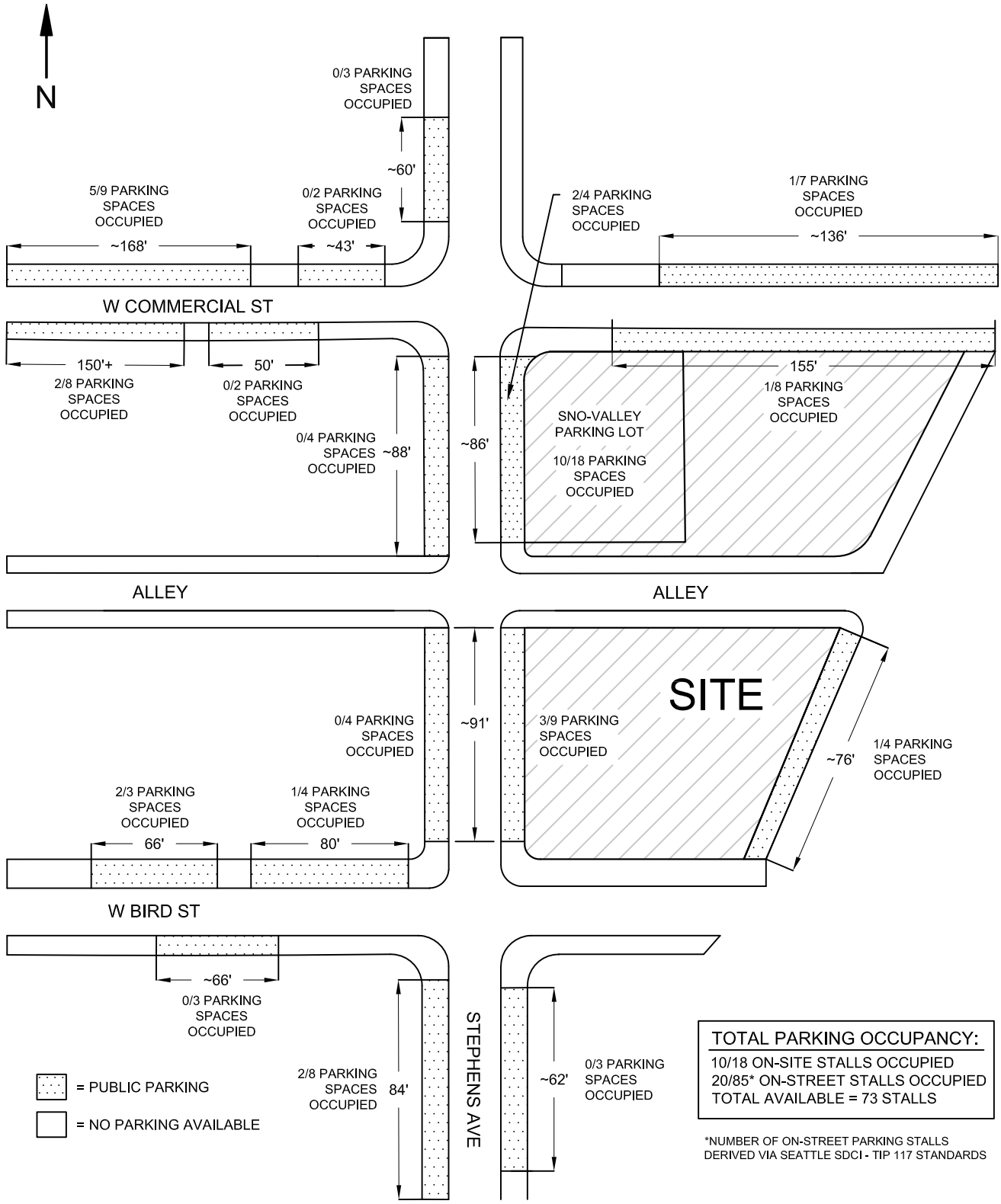
HEATH & ASSOCIATES

TRAFFIC AND CIVIL ENGINEERING

SNO-VALLEY SENIOR CENTER

PARKING COUNT: THURSDAY 7/15/21 - 11:30 AM

FIGURE A



HEATH & ASSOCIATES

TRAFFIC AND CIVIL ENGINEERING

SNO-VALLEY SENIOR CENTER

PARKING COUNT: THURSDAY 7/15/21 - 1:00 PM

FIGURE B

Observations were taken to coincide with the community Thursday peak timeframe dining activity. Shown below are the summaries of the parking observations:

Table 3: Observed Parking Utilization – July 15-2021

Observation	Time	On-Site	Utilization	On-Street	Utilization
1	11:30 AM	12/18 spaces	67%	23/85 spaces	27%
2	1:00 PM	10/18 spaces	56%	20/85 spaces	24%

As shown in the table above, there was open capacity for both on-site and off-site parking. The surrounding streets offer a considerable amount of parallel parking opportunities for short-term, overflow parking needs.

Observations also identified two shuttles offering transport service. See photo (right) taken during the site visit. One bicyclist and two pedestrians were also observed to arrive to the Senior Center indicating use of a variety of transport modes.

TOTAL PARKING DEMAND

The peak demand for the residential component is estimated to be 7 vehicles. Seven vehicles less the on-site supply of 27 equals 20 on-site parking spaces to be used for the Senior Center. This amount is estimated to meet the demands for most of the activity throughout the day which ranges between 8-20 people, or approximately 5-10 parking spaces after accounting for 30 percent members using shuttle service, carpooling and other means of transport.

It should be noted that excess parking would likely be needed during the larger events such as the community dining service which generates demands of approximately 29 vehicles. However, these are short-term stays with dining activity occurring typically over the span of 60 minutes or less. The parking surveys indicate sufficient, immediate on-street capacity to support temporary overflow parking needs for the Senior Center. As activities with the Senior Center primarily occur no later than 1:00 PM, parking supply is expected to be accommodated throughout the remainder of the day.

ADDITIONAL TRANSPORTATION OPPORTUNITIES

Based on information provided by Sno-Valley Senior Center, approximately 50% of the existing members are local to Carnation with 30% from Duvall, 15% from Fall City and the remaining from other nearby areas. To provide additional transport assistance, Sno-Valley Senior Center offers shuttle service to all members. One shuttle currently travels north to Duvall and a second shuttle service runs south to Fall City. Parking demands are thereby reduced as members can utilize services provided by the shuttle transport. Similarly, residents residing in the proposed apartment building could also utilize the shuttles or other nearby transit. Moreover, project residents would also have ability to schedule a shuttle trip in advance for personal travel such as doctor's appointments or shopping. As all units are income-restricted, residents may further not feel the need to own and maintain a vehicle knowing they have shuttle service to meet mobility needs.

In review of King County Metro's/Snoqualmie Tribe's *Snoqualmie Valley Shuttle*, the nearest stops are provided approximately 200 feet east of the subject site at the intersection of SR-203 & W Bird Street. The shuttle provides services between North Bend and Duvall, connecting project residents to commercial, recreational and medical opportunities throughout the Snoqualmie Valley. Weekday service is provided from 5:35 AM – 9:09 PM with approximately 90-minute headways. No weekend service is currently provided. Refer to King County Metro's Schedules & Maps for more detailed information. With transit availability in the immediate vicinity of the site, income-restricted residents could be expected to utilize services as an alternative to private vehicle ownership.

RECOMMENDATION

It is recommended that the Senior Center continually monitor operations and parking demands subsequent to development activity. The Senior Center may also want to educate its members on the benefits of alternative transport modes should parking demands become constrained. Education may consist of encouraging or incentivizing walking, cycling or carpooling. An example may be preferred or guaranteed parking for carpooling arrivals. The Senior Center can also post a community board to facilitate use of shuttle or connect members seeking to share transportation. The site could take advantage of shared parking as the Senior Center's needs peak between 8:00-1:00 PM while residential needs typically peak from 8:00 PM to 6:00 AM.

CONCLUSION

Sno-Valley Senior Housing proposes for the development of a new 3-story, 15-unit affordable senior housing facility. A total on-site parking supply of 27 stalls is proposed to accommodate both the proposed used as well as the existing Senior Center. Per City code, the affordable senior housing component would require one parking space per unit or 15 parking spaces. However, as shown by two comparable sites based on their residents' rate of vehicle ownership and further corroborated using ITE data, approximately half of the residential units would be expected to have a vehicle translating to seven parking spaces.

Per CMC 15.17.030 *Development Standards – Flexibility,* a permissible range of parking modification of up to 25 percent may be considered through a development agreement. The findings presented herein are shown to support a 25 percent reduction with respect to the affordable senior living parking requirements. Assuming said reduction would yield a required on-site parking supply of 11 parking spaces (1 space/unit x 15 units x 75% = 11.25). This equates to 0.73 spaces/unit, which is higher than the >0.5/unit found via local sampling and ITE data. Additional residential parking not used by the estimated 7 spaces taken by residents could then be used for visitor parking or shared with the Senior Center. Visitors typically come in the later afternoon to evening when the Senior Center has few programs that would demand parking.

The total on-site parking supply with the above reduction equals:

Affordable Senior Housing 15 spaces x 75% = 11
Senior Center = 20
Total = 31

With a supply of 27 on-site parking spaces, the proposal is short by 4 spaces. These 4 spaces are recommended to be accommodated via a shared parking agreement as the residential component may not utilize all 11 parking spaces and, conversely, the Senior Center's parking demands peak mid-afternoon and require little to no parking in the evenings/nights. The Senior Center peaks on weekdays around 12:00 PM, which may result in overflow parking to Stephens Avenue, W Bird Street, etc. However, these streets were shown to have plenty of capacity to support short-term parking needs during the critical overflow timeframe. Outside the weekday community lunch offering, classes held at the Senior Center typically range between 8-20 guests, translating to ~5-10 parking spaces after accounting for shuttle transport, carpooling and non-motorist activity. This range, in addition to the proposed affordable housing parking demands, is expected to be accommodated on-site indicating acceptable parking provisions.

However, the Senior Center is recommended to monitor parking arrangements to determine the adequacy of the provided parking. Should parking become an issue, the Senior Center could look into increasing shuttle runs and encouraging member use of the shuttle and/or carpooling as a way to decrease parking demands on-site.

The parking as provided is expected to reasonably accommodate day-to-day needs of all on-site uses while taking into consideration opportunities to share underutilized parking. Over constructing parking leads to increased housing costs and impervious areas while lowering the number of livable dwelling units that are in demand to the area. With income restrictions and on-demand shuttle service opportunities, prospective tenants can forgo the operational and maintenance costs associated with privately owned vehicles and still have access to reliable transportation services.

Based on the analysis above, the following mitigation is recommended:

1. Applicant to complete a development agreement pursuant to CMC 15.17.030 so as to modify and reduce the required minimum on-site parking provisions for the affordable senior living units. A 25% reduction is within the permissible range and shown to be supported herein.

2. Sno-Valley Senior Center is recommended to continually monitor parking usage and demands and, if necessary, educate members on alternative transportation options. The Senior Center could provide preferential parking for carpooling and encourage the use of the shuttle service. The Senior Center could also facilitate carpooling through a community board or member newsletter in order to increase community involvement and reduce single-occupant arrivals.

Please call if you require additional information.

Aaron Van Aken, PE, PTOE

Affordable Housing - Senior
(223)

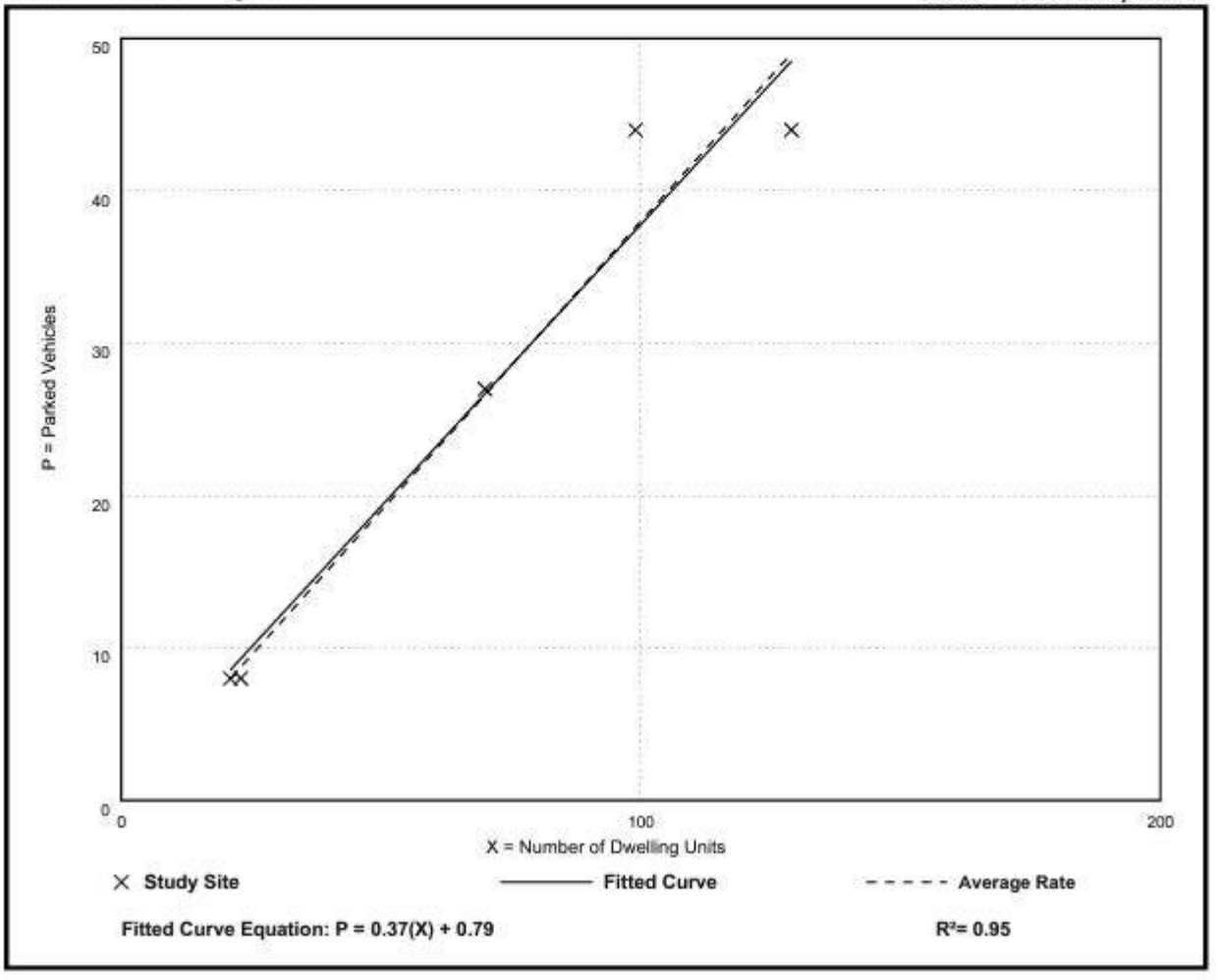
Peak Period Parking Demand vs: Dwelling Units
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban
Peak Period of Parking Demand: 10:00 p.m. - 5:00 a.m.
Number of Studies: 5
Avg. Num. of Dwelling Units: 68

Peak Period Parking Demand per Dwelling Unit

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.38	0.34 - 0.44	0.35 / 0.44	***	0.05 (13%)

Data Plot and Equation

Caution – Small Sample Size



Monthly Calendar

Average Attendance per Activity

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
8:00 AM - Table Tennis	6	0	6	0	0	0	0
8:30 AM - Bastyr Naturopathic Clinic	0	0	0	0	6	0	0
8:45 AM - Online Yoga (Online Only)	0	0	0	0	0	0	0
9:00 AM - Continental Café	0	6	0	0	0	0	0
9:00 AM - Enhance Fitness	20	0	20	0	20	0	0
9:00 AM - Hiking Group	0	0	0	0	6	0	0
10:00 AM - Move it Mondays (Online Only)	0	0	0	0	0	0	0
10:00 AM - Handwork Group	0	0	0	4	0	0	0
10:30 AM - In Person Yoga	15	0	0	0	0	0	0
11:00 AM - Brain Fitness	0	0	0	15	0	0	0
12:00 PM - Re-in-Carnation Open	0	0	8	8	8	8	0
12:00 PM - Community Dining Lunch	50	50	50	50	50	0	0
1:00 PM - Artist Open Studio	4	0	0	0	0	0	0
1:00 PM - Book Club	6	0	0	0	0	0	0
1:00 PM - Kinship Group	0	0	3	0	0	0	0
4:00 PM - Chai & Chat (Online Only)	0	0	0	0	0	0	0

PEAK HOUR							
Total Attendees	50	50	58	58	58	8	0
Shuttle: Attendee Proportion - 30%	15	15	17.4	17.4	17.4	2.4	0
Non-Motorist: Attendee Proportion - 5%	2.5	2.5	2.9	2.9	2.9	0.4	0
Passenger Vehicle: Attendee Proportion - 65%	32.5	32.5	37.7	37.7	37.7	5.2	0
4 Staff Parked - All Day	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Total Vehicles Parked*	25.7	25.7	29.1	29.1	29.1	7.5	4.0

*Assumes a vehicle occupancy rate of 1.5 occupants per vehicle for all attendees

Exhibit 16

Staff Finding

The proposed parking arrangement between the existing senior center and the proposed senior housing project would be defined as satellite parking pursuant to CMC 15.72.080 A. As such, the two uses being on separate abutting properties will need to provide an agreement and acknowledgement that the continuing validity of the Site Development Review and Design review applications with affordable housing density bonus depends upon the continuing ability to provide the requisite number of parking spaces, as does the present level of parking accommodations for the operation of the senior center.

Condition

Prior to final certificate of occupancy, the proponents shall present satisfactory written evidence that the uses for each property have the permission of the owners for the reciprocate use of the satellite parking spaces as described in this development proposal. The parties must also sign an acknowledgment that the continuing validity of these permits and the current level of parking accommodations for the senior center depends upon continuing ability to provide the requisite number of parking spaces collectively provided on both properties. This requirement does not bar the proponents from submitting any other alternative acceptable to the city attorney that would accomplish the desired outcome of assuring adequate parking for both properties.

Code reference-

15.72.080 - Satellite parking.

A. If the number of off-street parking spaces required by this title cannot reasonably be provided on the same lot where the principal use associated with these parking spaces is located, then spaces may be provided on adjacent or nearby lots in accordance with the provisions of this section. These off-site spaces are referred to in this section as satellite parking spaces.

B. All such satellite parking spaces must be located within one thousand feet of the building housing the use associated with such parking. Satellite parking to serve uses in any zones other than the CBD may not be located in the CBD.

C. A party wishing to take advantage of the provisions of this section must present satisfactory written evidence that the party has the permission of the owner or other person in charge of the satellite parking spaces to use such spaces. The party must also sign an acknowledgment that the continuing validity of the permit depends upon continuing ability to provide the requisite number of parking spaces.

D. Persons who obtain satellite parking spaces in accordance with this section shall not be held accountable for ensuring that the satellite parking areas from which they obtain their spaces satisfy the design requirements of this chapter.

Sno-Valley Senior Housing

Affordable Senior Housing

Carnation, WA

Senior Center: Core Programs

Community Dining to-go or dine in

Fitness/Health & Wellness

Transportation

Adult Education, social programs and Trips

Support Groups & Counseling

SVSH Project Background

- There are at least 1,000 householders over the age of 65 living alone in Snoqualmie Valley, representing 4.7% of the total Sno-Valley households.
- There is **no affordable housing** available for seniors and veterans in the Snoqualmie Valley as a result, long-time residents are being displaced from their homes.

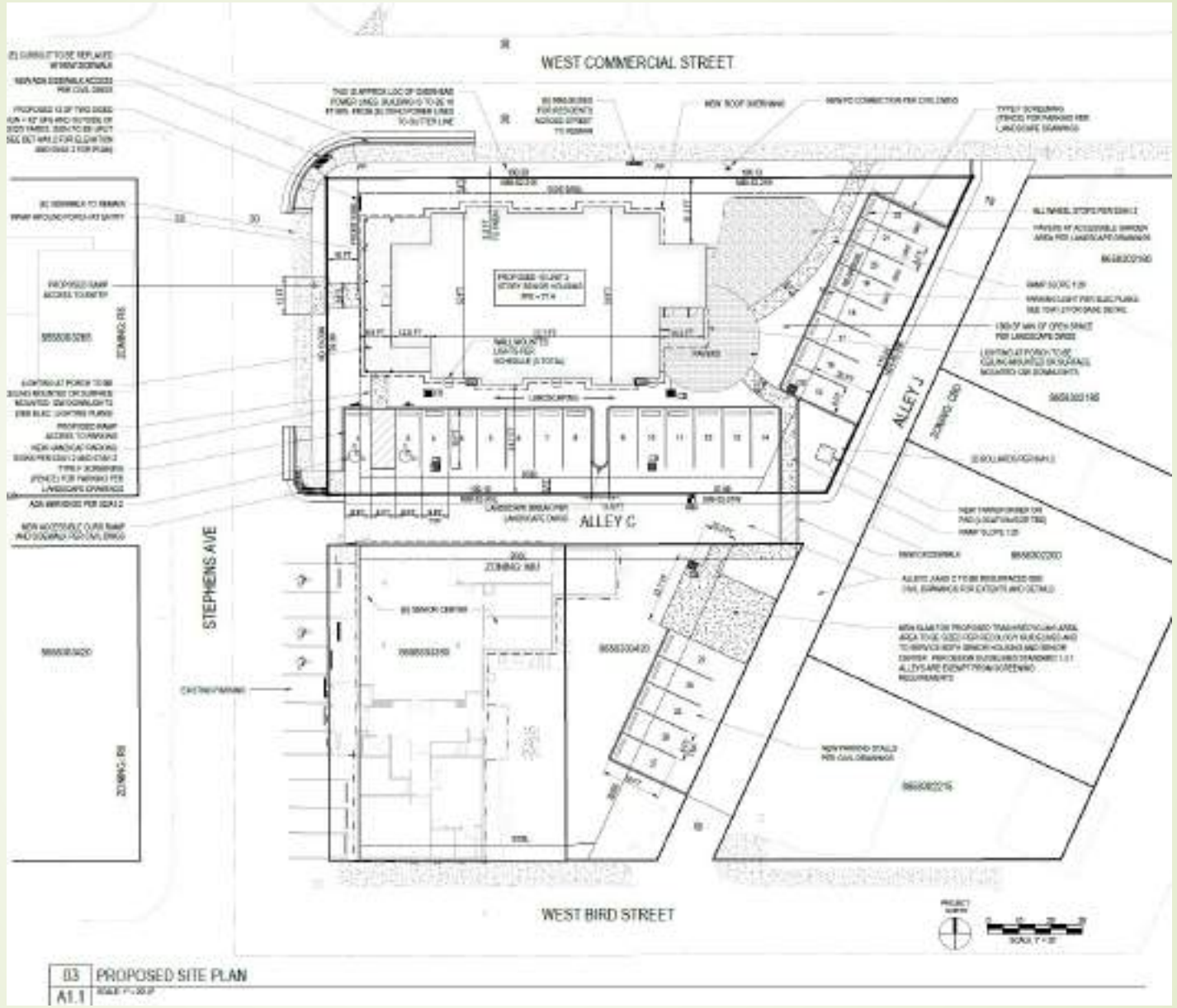
SVSH Project Goals

- Provide stable, affordable independent living for local seniors and veterans
- Improve community health and wellness
- Be sustainable in the long run. The project will *not* require future fundraising or Senior Center financial support once built. Capitalized reserves are built into the budget
- Provide housing close to the Senior Center for easy access to food, transportation, health services.

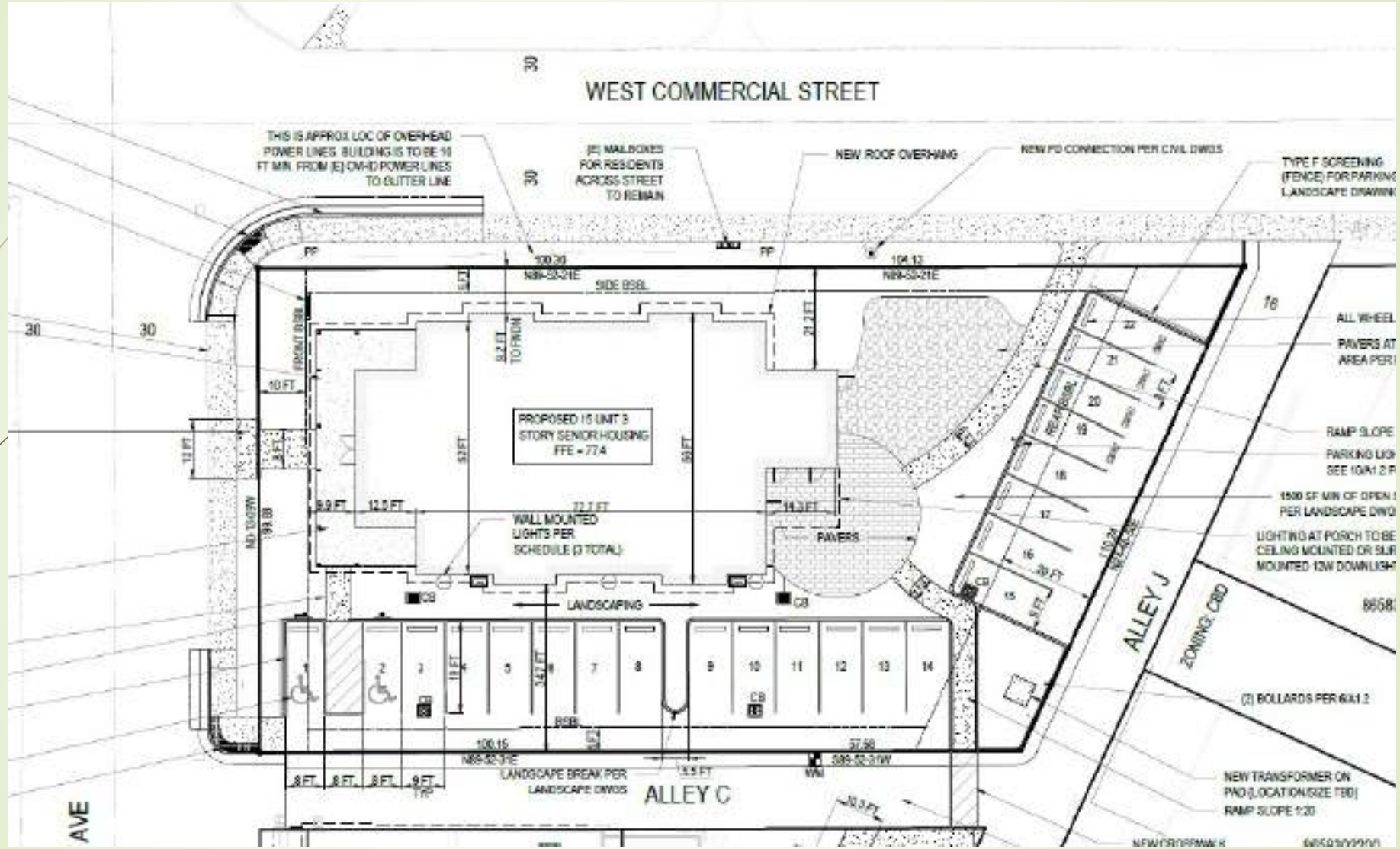
SVSH Program Summary

- Eight of the units will serve seniors with incomes at or below 30% of the area median income (AMI)
- Seven units will serve at or below 50% AMI
- Five of the units are reserved for income-qualified veterans
- Amenities include outdoor garden space, front and back porches, two common lounges, and laundries on every floor.

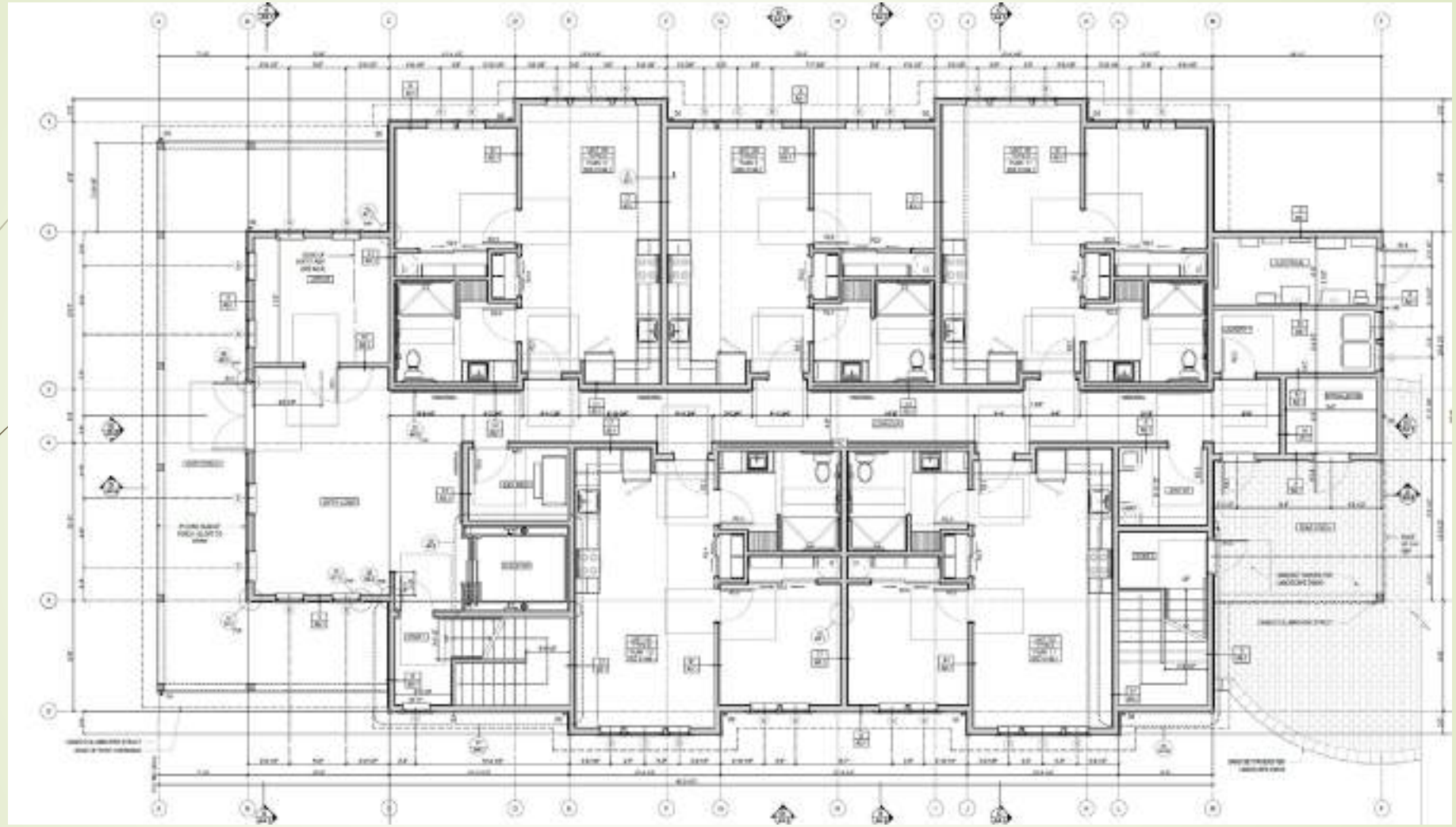
View of Front Porch from Stephens Avenue



Overall Site Plan


WEST COMMERCIAL STREET
THIS IS APPROX LOC OF OVERHEAD POWER LINES. BUILDING IS TO BE 10 FT MIN. FROM (E) OVHD POWER LINES TO GUTTER LINE
(E) MAILBOXES FOR RESIDENTS ACROSS STREET TO REMAIN
NEW ROOF OVERHANG
NEW FD CONNECTION PER CIVIL DWGS
TYPE F SCREENING (FENCE) FOR PARKING
LANDSCAPE DRAWING
PROPOSED 15 UNIT 3 STORY SENIOR HOUSING FFE = 77.4
WALL MOUNTED LIGHTS PER SCHEDULE (3 TOTAL)
PAVERS
LANDSCAPING
ALLEY J
ALLEY C
ZONING: CBD
(2) BOLLARDS PER 6/A1.2
NEW TRANSFORMER ON PAD (LOCATION/SIZE TBD)
RAMP SLOPE 1:20
LANDSCAPE BREAK PER LANDSCAPE DWGS
RAMP SLOPE
PARKING LIGHTS
SEE 10/A1.2
1500 SF MIN OF OPEN
PER LANDSCAPE DWG
LIGHTING AT PORCH TO BE CEILING MOUNTED OR SURFACE MOUNTED 13W DOWN LIGHT
ALL WHEEL
PAVERS AT AREA PER
AVE

Site Plan



First Floor Plan

Aerial View

Thank You!