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CITY OF DUPONT

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PLANNING DIVISION
REPORT AND RECOMMENDATION TO THE DIRECTOR

Project: Minor Site Plan Amendment - Northwest Logistics Center 2
File Number: PLNG 2018-012
Date of Report: May 24, 2018
From: Lisa Klein, AHBL (planning consultant to the City)

SUMMARY OF REQUEST: City approval is required for a Type I Minor Site Plan Amendment

PROJECT DESCRIPTION: The Type I Minor Site Plan Amendment is for a proposed modification to a previously approved site plan. The amendment will reduce building space by approximately 108,975 square feet and add 152 trailer parking spaces to the previously approved plan. Only the changed aspects of the proposal are up for review.

Original Proposal: On March 13, 2015, the following project received Type II Land Use Approval (ADM 13-01):

Construct a warehouse totaling approximately 695,000 square feet, storm drainage, parking spaces and landscaping on a 32 acre site. Access was proposed from three driveways located off International Place and 384 vehicle parking spaces were anticipated.

Current Proposal:

Construct a warehouse totaling approximately 586,025 square feet on a 32 acre site with associated grading activities, asphalt parking, drive aisles and truck loading and maneuvering areas, landscaping, stormwater infiltration facilities, water and sanitary sewer extensions, franchise utility improvements and half-street frontage improvements along International Place. Approximately 384 parking spaces plus 152 truck trailer spaces are proposed. There are no changes to access and there is a slight reduction in impervious surface.

LOCATION: Northeast corner of International Place and Center Drive, Pierce County Assessor's Parcel Number 300039-0011. The project is located within a portion of the Southwest quarter of Section 24, Township 19 North, Range 1 East and the Northwest quarter of Section 25, Township 19 North, Range 1 East.

APPLICANT:
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APPLICANT'S AGENT:
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SUMMARY OF RECOMMENDATION: Type I Minor Site Plan Amendment is recommended for approval subject to the conditions listed in Section E.

A. SUMMARY OF RECORD:

1. The following were submitted with the Minor Site Plan Amendment application:

   a. Cover Letters from Barghausen Engineers Inc. dated March 1, 2018 and April 20, 2018
   b. Land Use Application Form dated March 1, 2018
   c. Vicinity Map dated February 27, 2018
   d. Preliminary Architectural Site Plan dated April 18, 2018 and Building Elevations dated February 26, 2018, prepared by Craft Architects
   e. Preliminary Landscape Plan prepared by WBLA dated February 7, 2018
   f. Preliminary Civil Engineering Design Plans prepared by Barghausen Consulting Engineers stamped April 18, 2018, including tree retention plan
   g. Building Performance Standards Response Letter dated February 27, 2018
   h. Title Report prepared by First American Title Insurance Company dated February 20, 2018
   i. Stormwater Site Plan prepared by Barghausen Consulting Engineers dated February 28, 2018
   j. Request to LeMay, Inc for Refuse Enclosure Location Approval dated February 26, 2018
   k. Department of Ecology No Further Action Memorandum dated June 24, 2016.
   l. Cultural Resource Report prepared by Aqua Terra Cultural Resource Consultants dated October 15, 2015
   m. Archaeology Closing Letter dated November 2, 2015
   n. Tree Retention History Letter dated February 26, 2018
   o. Geotechnical Report prepared by Terra Associates, Inc. dated April 16, 2016
   p. Trip Generation Report prepared by Heath & Associated, Inc. dated February 27, 2018
   q. Request to Pierce County for Sewer Service Availability Planning and Public Works ELobby Receipt and Forms dated February 28, 2018
   r. Water Availability Form
   s. Authorization to Act as Agent Affidavit dated February 1, 2018
   t. Responsible Party for Payment Letter dated February 26, 2018
   u. Revised Environmental Checklist dated February 28, 2018.
   v. Sewer Service Availability from Pierce County Public Works and Utility dated March 20, 2013
   w. LeMay, Inc Refuse Enclosure Location Approval E-mail dated April 13, 2018
   x. Revised Tree Plan prepared by Washington Forestry Consultants, Inc. dated October 23, 2013
   y. Tree Retention Plan prepared by Barghausen Consulting Engineers dated March 25, 2015 and approved by City on March 26, 2015.

2. The following historical plans and documents are relevant to the review and decision for the minor site plan amendment:

   a. Notice of Complete Application dated May 3, 2018 (PLNG2018-012)
   b. Type II Site Plan Approval Staff Report dated March 12, 2015(ADM 13-01)
   c. Type II Site Plan Decision dated March 13, 2015 (ADM 13-01)
   d. SEPA Mitigated Determination of Nonsignificance dated February 10, 2015 (SEPA 13-01)

e. SEPA Adoption Notice dated May 4, 2018 (PLNG2018-012)
f. Gray and Osborne, Inc. comment letter dated May 8, 2018
g. Building Department comment memorandum dated March 20, 2018
h. Fire Department comment memorandum dated March 27, 2018

B. FINDINGS OF FACT:

1. Permit History

a. On March 27, 2015 the City issued a Grading Permit for the site with 24 conditions of approval. The site was subsequently cleared and graded.

b. The City issued a SEPA Mitigated Determination of Nonsignificance (SEPA MDNS) on February 10, 2015 that included 13 mitigation measures intended to minimize many of the potential impacts caused by the development. No comments were received and no appeals were filed. The Traffic Impact Assessment for the 2015 project anticipated a high cube warehouse land use with 1,168 vehicle trips on a typical weekday, 76 during the AM peak and 83 during the PM peak hour (revisions ensued). The project included mitigation for intersection improvements, including a new traffic signal at Center Drive/International Place.

2. Site Plan Amendment Procedures

a. On May 4, 2018 the City SEPA Official adopted the February 2015 SEPA document as being appropriate for the current proposal after independent review. The document meets the environmental review needs for the current proposal. The adoption of previously issued SEPA determinations is not appealable.

b. A Notice of Complete Application for the Type I Minor Site Plan Amendment was issued on May 3, 2018.

c. Pursuant to DMC 25.175.010(7)(b), administrative approvals for which previous environmental review has been completed in connection with other project permits, are excluded from the Notice of Application and Notice of Decision requirements.

d. On May 8, 2018 the City received a comment letter from the Nisqually Indian Tribe indicating that they have no further information or concerns at this time and would like to be informed of the Archaeological study starting date and of any Inadvertent Discoveries of Archaeological Resources/Human Burials. SEPA Mitigation Measures #5-11 address the required study and notification procedures for the archaeological testing and monitoring. New Condition of Approval #9 requires the applicant to coordinate with the Nisqually Tribe.

e. DMC 25.10.190(S) defines Site Plan Amendments as follows:

"Site plan amendment, major" means an amendment to an approved and valid site plan that substantially changes the character, basic design, density, open space or other requirements and conditions of the approved and valid site plan.

"Site plan amendment, minor" means an amendment to an approved and valid site plan that affects only the precise dimensions or siting of building (i.e., lot coverage, height, setbacks) but does not affect the basic character or arrangement and number of buildings approved in the plan, the density of the development or the amount and quality of open space and landscaping. Proposed dimensional amendments shall not vary more than 10 percent from the original, but shall not exceed the standards of the applicable district.

A minor site plan amendment is required because there are no changes to the basic character or arrangement and number of buildings from the approved plan. There is a reduction in building size and there is a small increase in the amount and quality of open space and landscaping. The reduction in building size and (trailer) parking varies from the approved project by more than 10 percent; however, the variance is for a size and impact reduction, not

an increase. The proposed changes are also not consistent with the intended meaning of "substantial change", as required for a major site plan amendment.

Site Plan Amendments are processed in accordance with DMC 25.150.050 and are processed as a Type I procedure as set forth in DMC 25.175.010.

f. DMC Chapter 25.150 Site Plan Review states that in order to obtain site plan approval, all of the development regulations and criteria specified in the district applicable to the property must be satisfied in addition to any general development requirements in DMC Chapters 25.75 through 25.95 and 25.105 through 254.125.

The previous Type II Site Plan Review process approved in March 2015 (ADM 13-01) included review of the project to ensure it is carried out in a manner consistent with the DMC and site plan review criteria. Only the changed aspects of the proposal are up for review with this site plan amendment. The changed aspects of the proposal to be reviewed are regulated by the following chapters shown in bold type:

- **Chapter 25.50 Industrial District**
- Chapter 25.75 Commute Trip Reduction
- Chapter 25.80 Cultural, Historical and Archaeological Resources
- Chapter 25.85 Affordable Housing Incentives Program
- **Chapter 25.90 Landscaping**
- **Chapter 25.95 Off-Street Parking**
- Chapter 25.105 Sensitive Areas
- Chapter 25.110 Setbacks – Street corners
- **Chapter 25.115 Transportation Concurrency Review**
- Chapter 25.116 Sign Code
- **Chapter 25.120 Tree Retention**
- Chapter 25.125 Wireless Communication Facilities

C. CONSISTENCY WITH CITY OF DUPONT DEVELOPMENT REGULATIONS

As described in B.2.f, the proposed Minor Site Plan Amendment is to be reviewed for consistency with Chapters 25.50 Industrial District; Chapter 25.90 Landscaping; Chapter 25.95 Off-Street Parking; Chapter 25.115 Transportation Concurrency Review and Chapter 25.120 Tree Retention. The following presents staff consistency review and analysis with these Chapters.

1. PLANNING DEPARTMENT REVIEW

a. DMC Chapter 25.50 Industrial District

i. The described use of the property is industrial warehouse, which is an allowed use in the Industrial District.

Staff Analysis: The use is allowed.

ii. There is no minimum lot area or maximum lot coverage in the Industrial District.

iii. Building Setbacks: DMC 25.50.030 (3) requires a front yard setback of 25 feet, side setbacks of 15 feet and a rear setback of 15 feet. There are provisions for additional setbacks when building height exceeds 40 feet. The building is setback from Center Drive a distance of 136 feet, from DuPont-Steilacoom Highway a distance of 125

feet, from International Place a distance of 214 feet. The interior setback is 70 feet from the adjacent property lines.

iv. Determination of the front property line is largely based on definitions in City code, however there is no definition provided for "front property line". DMC 25.10.190 defines "street frontage" as "the boundary of a lot separating such lot from an abutting street. For multi-tenant buildings, street frontage shall be the width of the front of the suite. The front of the suite is defined as the wall plane which the suite address is assigned and contains the main customer entrance." DMC 25.10. 250 defines "Yard, front" as "a space extending the full width of the lot between any building and the front property line and measured perpendicular from the front property line to the closest point of any building." The front of the building as proposed by the applicant faces International Place and the City Building Department has established a site address of 3230 International Place, therefore the westerly lot line abutting International Place is the front property line.

Staff Analysis: The building setback requirements are met.

v. Building height: DMC 25.50.030(4) shall not exceed 65 feet. The building height is proposed to be 43 feet.

Staff Analysis: The building height requirement is met.

vi. Parking and loading: Shall be required as provided in Chapter 25.95, see Parking below.

vii. Landscaping: Shall be provided as required by Chapter 25.90. See Landscaping, below.

viii. Exterior Mechanical Devices: All HVAC equipment, pumps, heaters, and other mechanical equipment shall be fully screened from view from all public rights-of-way. No exterior mechanical equipment is shown on the submitted plans.

Staff Analysis: Building permit applications shall be assessed for compliance with the provisions for screening mechanical equipment. (Condition 23)

ix. Outdoor Storage: Outdoor storage shall be screened by a six-foot high solid fence or wall when the outdoor storage is between a building and a street or side of the buildings, and is visible form the street or driveway. No outdoor storage areas are shown on the submitted plans.

Staff Analysis: Building permit applications shall be assessed for compliance with the provisions for size and screening of outdoor storage, if provided. (Condition 54)

x. Trash Enclosures: Trash enclosures are required to comply with DMC Chapter 25.100 Recycling. The applicant submitted an email dated April 13, 2018 indicating that LeMay (the service provider) has reviewed the design of the trash enclosures. The two trash enclosures are approximately 290 square feet each and provide a 20-foot opening. The Trash enclosure are located to the southwest and northeast of the proposed building and are fully gated with no separate pedestrian opening. They are in the same general location as the original site plan approved in March 2015. Condition 6 of the March 13, 2015 Decision states:

"6. DMC 25.50.030(3) states "no structure shall be closer than 15 feet to the property line. Any building wall over 40 feet high shall be set back at least an additional 1 foot for each foot in height over 40 feet." At a proposed 44 foot building height, the refuse enclosure along International Place shall be

relocated to provide a 19 foot (15 feet + 4 feet) clear from the International Place ROW."

The enclosure details provided with the LeMay submittal indicate the enclosures will be 7 feet tall. The LeMay email appears to suggest a requirement to widen the enclosure by 2 feet for a total opening of 22 feet.

Staff Analysis: *DMC 25.100.050.5 states that if the trash enclosure is fully gated and does not include an automated closing assembly, that the applicant must provide a separate three-foot pedestrian opening to the trash enclosures. The applicant does not show a separate three-foot pedestrian access for the two refuse enclosures. Additionally, the LeMay Refuse Enclosure Location Approval requests that the refuse enclosure gate be widened from 20 feet to 22 feet. The enclosures should be redesigned to meet City and LeMay requirements. Condition #6 in the March 2015 Decision is no longer applicable. Any changes to the location or design of the trash enclosure must be re-evaluated for code consistency. (Condition 32, 38)*

xi. Signage: Signage shall comply with the requirements of DMC Chapter 25.115. No signage application or details were submitted for review.

Staff Analysis: *Applications for sign permits shall be assessed for compliance with DMC Chapter 25.115. (Condition 2)*

xii. Noise: Noise levels shall not exceed the maximum allowed in DMC Chapter 9.09 (Sound and Vibration) for Class C (industrial) environmental designations. The SEPA Checklist submitted with the application indicates that noise from vehicular traffic to and from the site will be present from approximately 6 am to 6 pm, Monday through Friday. The SEPA Checklist also states that all construction equipment will be maintained and will comply with state standards.

Staff Analysis: *Each user will be assessed at the time of building permit for compliance with this requirement. (Condition 37)*

xiii. Air emissions: Shall meet applicable regulations of the Puget Sound Air Pollution Control Authority, and no visible, frequent smoke, dust, or gases shall be emitted. The SEPA checklist submitted with the application indicates that long term air emissions will be due to vehicle traffic traveling to and from the site.

Staff Analysis: *Each user will be assessed at the time of building permit for compliance with this requirement. (Condition 3)*

xiv. Outdoor lighting: shall be designed to minimize light escapement beyond the site. The SEPA Checklist submitted with the application indicates that light or glare created by the project will not be a safety hazard.

Staff Analysis: *Each user will be assessed at the time of building permit for compliance with this requirement. (Condition 26)*

xv. Hazardous Substances or Waste Storage: No more than 20,000 pounds of hazardous substances or hazardous wastes may be stored onsite, and no hazardous substances or wastes may be stored onsite, except that which is delivered for onsite operations or produced onsite. The SEPA Checklist submitted with the application did not identify the potential for storage of hazardous substances or waste.

Staff Analysis: *Each user should be assessed at the time of building permit for compliance with this requirement. (Condition 37)*

xvi. Site Plan approval: DMC 25.50.040 requires site plan approval for all development projects following the procedures in DMC 25.175.010. The previous Site Plan Review was processed under the Type II permit process and approved in March 2015. This application for a Minor Amendment will be processed under a Type I permit process.

Staff Analysis: This requirement is met.

b. Chapter 25.90 Landscaping

i. Proportion of landscape areas: DMC 25.90.020(2) requires that 10 percent of the site be landscaped. The Landscape Plan and Civil Plans provide the following calculation demonstrating how the project proposes to exceed the requirement as follows:

- Landscaping required (10% of overall site area) = 140,070 SF
- Landscaping provided (21.5% of overall site area) = 290,697 SF

Staff Analysis: The landscaping area requirement is met.

ii. Street Trees: DMC Section 25.90.030 requires street trees be provided at time of construction or development of adjoining land. They are to be of similar species as existing street trees, be provided at least one per 40 to 50 feet of frontage, be located within the right-of-way, be spaced to accommodate sight distance for driveways and intersections; and be at least two inches caliper measured six inches above the ground with a single-stem and minimum branch height of six feet.

The proposal includes the required street trees. They are of a similar type as existing street trees and are placed at a distance of 40 feet along the frontage. The size of the trees is noted as 2-inch caliper on Landscape Plan Sheet L-9 dated April 18, 2018. There is no notation as to minimum branch height.

Staff Analysis: Street trees are provided. Tree heights should be provided on the planting plan and meet code minimum branch height of six feet. (Condition 16)

iii. Landscaping Interior Parking Lots: DMC 25.90.030(2) requires that the interior of surface parking lots with 10 or more stalls be landscaped with at least one tree per six stalls. The application provides 385 parking spaces, which requires 64 parking spaces. The landscape plans indicate that 69 parking lot trees will be provided.

Staff Analysis: The parking lot tree requirement is met.

iv. Landscaping Buffers: DMC 25.90.030(3) requires that a moderate buffer be provided between parking lots and any adjacent public right-of-way. Standard vehicle parking areas are provided adjacent to two public rights of way: Center Drive (southeast), and DuPont Steilacoom Road. There are also large trailer storage areas located adjacent to DuPont Steilacoom Road and International Place.

A moderate buffer is defined in DMC 25.10.020 as follows:

"Buffer" means a strip of trees, shrubs, and ground cover of sufficient height, width, and density to screen, within three years of planting, an unsightly or nuisance-generating land use from a more sensitive land use, even in the winter months. The minimum visual screening is ...50 percent for moderate buffers....Berms, grade separation, walls, and fences may be incorporated to achieve up to 50 percent of the minimum screening."

The southern landscape area adjacent to the parking lot provides a combination of new plantings in a 10-foot wide buffer meeting the definition of moderate buffer. It

is located adjacent to the existing Center Drive landscaping buffer with meandering sidewalk.

Along Dupont Steilacoom Road the landscaping varies. At the southeast corner a 10-foot wide landscape buffer with a combination of trees, shrubs and groundcover is provided. It is adjacent to a relatively sparsely vegetated area. Heading north on DuPont Steilacoom Road the landscaping transitions to a row of Western red cedar trees. Shrubs and groundcover are not included. A 6-foot chain link fence with slats is provided between the trailer parking area and trees. To the east of the new trees are the existing mature Douglas fir trees. Heading north, the landscaping transitions again to a 10- to 13-foot wide moderate buffer at the northeast where it is adjacent to a standard vehicle parking lot.

The landscape buffer between International Place and proposed trailer parking provides a larger buffer at the south narrowing to a 10-foot buffer with just shrubs and groundcover to the north. The plans indicate a 6-foot tall chain link fence with slats is proposed between the plantings and the trailer parking area.

Staff Analysis: The requirement for a moderate buffer is met along Center Drive and International Place. Landscaping is correctly located outside of fence as viewed from the public right of way. Additional shrubs and groundcover plantings are required to fill in the lower canopy area and screen parking and truck maneuvering from DuPont Steilacoom Road. Supplemental plantings don't need to be dense, however they should be drought tolerant, native plantings and include both evergreen and deciduous shrubs. (Condition 17)

v. Trash receptacles screening: The receptacle located at the southwest is screened by shrubs on three sides. The receptacle in the northeast is screened by shrubs on the north and trees to the east, however no screening is provided on the south. The south side is adjacent to the trailer parking area and not visible to the public.

Staff Analysis: The screening requirement is met.

vi. Irrigation: DMC 25.90.040 requires that the landscaping require minimal irrigation. Irrigation plans were not provided, however water conservation notes were provided on the plans.

Staff Analysis: An irrigation plan meeting the requirements of DMC 25.90.040 will be required at the time of site development permit. (Condition 21)

c. DMC Chapter 25.95 – Off-Street Parking

i. Required Parking: DMC 25.95.030 stipulates the minimum and maximum parking spaces required for the proposed type of use. For warehouse uses, DMC 25.95.030 requires a minimum of 0.3 and a maximum of 1 parking space per worker at maximum shift. The project is providing a total of 384 vehicle parking spaces, which would allow for 384 workers at maximum shift. In addition they are providing 152 trailer parking spaces. The City does not include trailer parking spaces in determining if a site meets the code requirements. The reason is because trailers are often driven by the same driver using a vehicle parking space.

The SEPA checklist provides an estimated employee count of 384 – 400 employees and the civil plans indicate 384 employees. City code requires a range of .3 to 1 spaces per employee at maximum shift, which, at a maximum of 400 employees requires 120 to 400 spaces.

Staff Analysis: The parking quantity requirement is met.

ii. Location of parking: DMC 25.95.040 requires that off-street parking be located within a 500-foot walking distance from an entrance to the building served, and that it not be located in required front yard or within 5 feet of any property line. Entries are provided along each side of the building and in close proximity to the standard vehicle parking areas.

Staff Analysis: The parking distance requirement is met.

iii. Parking dimensions: DMC 25.05.050 provides dimensional requirements for parking lots and spaces. Parking stall and aisle dimensions are provided and appear to meet the code requirements.

Staff Analysis: Parking aisle and stall dimensions will be reviewed for compliance at the time of site development or building permit application. (Condition 15, 22, 24)

iv. High-Occupancy Parking: DMC 25.95.060 requires that at least one of every 20 employee parking spaces be reserved for high-occupancy vehicles. High-occupancy vehicle spaces are not noted on the civil site plan.

Staff Analysis: Quantities and locations of high-occupancy vehicles will be reviewed for compliance with the site development permit. (Condition 25)

v. Loading Area Requirements: The project provides numerous dock loading spaces along the east and west elevations that will clearly not impede the public right of way. They provide 12-foot berth widths and 75-foot aprons with 130-foot offsets.

Staff Analysis: The loading area dimensional and locational requirements appear to be in compliance with DMC 25.95.070; however they should be reviewed for code compliance at the time of site development permit. (Condition 22)

d. Chapter 25.115 Transportation Concurrency Review

i. Projects requiring Site Plan and design review are also required to undergo Transportation Concurrency Review. Per DMC 25.115.020 the city shall not issue a development permit until the test has been completed and a certificate of concurrency has been issued. Per DMC 25.115.040, the finding of concurrency may occur at the building permit application phase.

Staff Analysis: The project will be required to complete the Transportation Concurrency requirements at the time of building permit application. Indications are that the project will meet concurrency requirements. (Condition 53)

e. DMC Chapter 25.120 Tree Retention

i. DMC Chapter 25.120 requires that all landmark Oregon white oak trees be retained, along with any native understory within a protection zone 1.5 times the radius of the oak's canopy. In the Industrial district, landmark trees that are in the building footprint, parking lot, or storm retention area may be removed, provided that tree retention is achieved along street boundaries and when abutting a residential district.

The 2015 project was reviewed and approved subject to Condition #2, which reads:

"2. Full implementation of the Revised Tree Plan dated February 14, 2014."

The applicant submitted a "Revised Tree Plan" prepared by Washington Forestry Consultants, Inc. dated October 23, 2013 (WFC Plan) and a City-approved Tree Retention Plan dated March 26, 2015 (approved prior to initiation of grading

activities). The City-approved Tree Retention Plan depicts two Oak Woodland Protection Areas, one at the southwest corner of the property, located due south of the southwest driveway, which is 67,885 square feet. The other is located due north of the southwest driveway, adjacent to International Place and is 9,022 square feet. Combined they provide 76,907 square feet of Oak Woodland Protection Area. The WCF plan includes Figure 3, which depicts Tree Protection Fence Locations, which are consistent with the Oak Woodland Protection Areas depicted on the City-approved Tree Retention Plan, and also illustrates trees to be retained as green dots. The City-approved Tree Retention Plan and the WCF Plan provide minor differences in the overall quantities of trees to be saved.

The applicant submitted a letter dated February 26, 2018 that describes the activities that occurred during site grading related to tree protection. The letter describes that discrepancies were found between the approved plans and the field conditions along the east and southeast corner. Field changes were approved at that time in that area. The east and southeast corners are outside of the Oak Woodland Protection Areas described above.

The 2018 Civil and Landscape Plans are inconsistent with the approved Tree Retention Plan as follows:

a. The approved Tree Retention Plan identified an Oregon oak tree to be saved that is not identified in the 2018 civil plans or landscape plans as being saved. The Oak is located at the northern boundary of the northern Oak Woodland Protection Area.

b. The April 2018 Civil plans indicate two Oregon white oak trees to be saved in the northern Oak Woodland Protection Area. The April 2018 landscape plans do not show the two Oregon White Oak trees to be saved.

c. The April 2018 Landscape plans do not specifically label or hatch the northerly Oak Woodland Protection Area.

d. The northwestern Oak Woodland Protection Area is planned to be extensively landscaped with a variety of trees, shrubs and groundcover in accordance with the City's requirements for a moderate landscape buffer for screening of parking lots. It is not known if these plantings are suitable or complementary to the habitat requirements for ongoing health and preservation of Oregon white oak trees.

ii. Per DMC 25.120.030(7), the Oak Woodland Protection Areas are to be retained for life with specific notations provided on the plans: "this plan is also subject to an approved tree retention plan which requires that certain trees be preserved. That plan, which is binding on all owners, is on file with the City Planning Department."

<u>*Staff Analysis*</u>: *The 2015 project was approved with specific requirements for tree retention and the same requirements apply to the current amendment application. All Oregon white oak trees within the boundaries of the Oak Woodland Protection Areas depicted on the approved 2015 Tree Retention Plan are to be retained. The 2018 Civil and Landscape Plans shall be revised to include the retention of all trees within the boundaries, unless proof can be provided that field changes required their removal during prior site grading. The landscape plans shall clearly depict the boundaries of both Oak Woodland Protection Areas. Confirmation is needed from a qualified arborist that the plantings depicted for the northerly Oak Woodland Protection Area are suitable and complementary to*

ongoing Oregon white oak tree protection. Per DMC 25.120.030(7) The Oak Woodland Protection Areas are to be protected in the future with a 4-foot tall split rail fence, signage and recording of a conservation easement. (Conditions 1, 4, 5, 10, 11, 12, 13, 14, 15)

2. ENGINEERING DEPARTMENT REVIEW

The City Engineer has reviewed the application and provided comments and conditions in the letter dated May 8, 2018 (as modified by the City Engineer), which has been incorporated in the summary of record and made conditions of approval, where warranted.

3. FIRE DEPARTMENT REVIEW

The City Fire Marshal has reviewed the application and provided comments and condition in the memorandum dated March 27, 2018, which have been incorporated in the summary of record and made conditions of approval, where warranted.

4. BUILDING DEPARTMENT REVIEW

The City Building Official has reviewed the application and provided comments and condition in the memorandum dated March 20, 2018, which have been incorporated in the summary of record and made conditions of approval, where warranted.

D. CONCLUSIONS

In accordance with DMC 25.175.040, staff finds that, subject to the recommended conditions below, the proposal is consistent the DMC and existing ordinances concerning public utilities, traffic, facilities, and services, and provides access, landscaping, screening, building placement, parking lot layout, and protection of sensitive areas, subject to the recommended conditions of approval listed below. The proposal has also been reviewed and found compliant with Site Plan Review criteria in DMC 25.150.

E. RECOMMENDATION

Based on the findings and conclusions in this report, DuPont staff recommends approval of the Minor Site Plan Amendment for the Northwest Logistics Center 2 Project, PLNG 2018-012, subject to the following conditions. The Conditions of Approval listed in the March 13, 2015 Type II Site Plan Review Decision have been reviewed and either restated, modified or deleted as necessary herein for the current proposal.

1. All Mitigation Measures, numbered 1-13, included in the MDNS issued for the proposal on February 10, 2015 (attachment A.2.d and A.2.e), are hereby adopted in full, incorporated by reference, and included as Conditions of Approval for the Site Plan approved by this Decision.
2. Prior to installation of any sign on the property, a sign permit will be required that meets the requirements of DMC 25.116.
3. Per DMC 25.45.030.3(13), air emissions shall meet applicable regulations of the Puget Sound Air Pollution Control Authority, and no visible, frequent smoke, dust, or gases shall be emitted.
4. All existing trees within the tree retention areas depicted on the City-approved Tree Retention Plan dated March 26, 2015 shall be retained on an ongoing basis unless deemed unsafe or unhealthy by an arborist. Any unhealthy or unsafe trees that are removed are to be replaced.
5. A certified arborist shall monitor construction activities in the vicinity of the tree protection areas. The City may elect to also require the City arborist to monitor construction in these areas. The applicant will be responsible for payment of the fees should the City arborist also be onsite to monitor construction activities.

6. Construction of the development proposal must commence within 24 months from the date of the City's final decision on the site plan, otherwise the site plan approval expires.

7. Per DMC 25.75, at the time an individual business meets or exceeds 100 employees, the County Commute Trip Reduction Department is to be notified within 30 days. The employer shall make a good faith effort, as defined in RCW 70.94.534(2) and DMC Chapter 25.75, to develop and implement a CTR program that will encourage their employees to reduce vehicle miles traveled per employee and single occupancy vehicle trips. The requirements of the CTR program are provided in DMC Chapter 25.75.

8. Trucks and vehicles are prohibited from parking on all public rights of way while waiting to access the property, unless temporary approval is granted by the City.

9. The applicant is responsible for coordinating with the Nisqually Tribe for the archaeological testing and monitoring that is required per the MOU dated August 7, 1989 and the SEPA MDNS dated February 10, 2015 (see SEPA Mitigation Measures #5-11).

Prior to issuance of Site Development Permits

10. Per DMC 25.120.030(7), the Oak Woodland Protection Areas are to be retained for life. The site plan shall include the following note: "this plan is also subject to an approved tree retention plan which requires that certain trees be preserved. That plan, which is binding on all owners, is on file with the City Planning Department."

11. The Tree Retention Plan (Sheet C8 dated Feb. 28, 2018), the Civil Plans and the Landscape Plan are to be reconciled to correct the deficiencies described above in item C.1.d.i.

12. The April 2018 Landscape plans are to be revised to clearly label and outline the northerly Oak Woodland Protection Area.

13. Provide confirmation from a qualified arborist that the proposed plantings within the northwesterly Oak Woodland Protection Area are suitable and compatible with the habitat requirements for the ongoing health and preservation of Oregon white oak trees.

14. Per DMC 25.120.030(7) the Oak Woodland Protection Areas are to be protected with a 4-foot tall split rail fence, signage and recording of a conservation easement. The fencing and signage shall be added to the landscape plans. If the documents aren't recorded prior to construction the Oak Woodland Protection Areas shall be protected during construction with a chain link fence.

15. The Landscape Plans shall be amended to add the tree protection requirements described in DMC 25.120.030(5) and the WCF Tree Retention Plan.

16. The Landscape Planting Plan shall be revised to include the code minimum branch height of six feet for the street trees on International Place.

17. The Landscape Plans shall be revised to augment the under-canopy area along DuPont Steilacoom Road. Additional shrubs and groundcover plantings are required to fill in the lower canopy area and screen parking and truck maneuvering from DuPont Steilacoom Road. Supplemental plantings do not need to be densely planted, however they are required to be drought tolerant, native plantings and include both evergreen and deciduous shrubs.

18. The Landscape Plans appears to show trees planted within the 15-foot wide water easement. The final location of these trees will be confirmed dependent on the location of any existing easements.

19. The existing landscaping and drainage swales abutting and parallel to the parcel boundary lines shall be revitalized as part of the landscape plans. During previous grading activities, the clearing and grading work extended into the DuPont-Steilacoom Road right-of-way. All landscaping within the right-of-ways should be revitalized.

20. Landscaping should be extended to the parcel boundary lines. The landscape area calculations on Sheet L-9 should be verified to include all landscaping.

21. Irrigation plans that demonstrate compliance with DuPont PWS shall be submitted for review and approval. The Applicant will be required to demonstrate compliance with the substantive requirements identified in DMC 25.90, Landscaping.

22. Per DMC 25.50.030(5), the project's parking and loading areas shall comply with DMC 25.95. The Plans shall demonstrate compliance with all applicable requirements. Per DMC 25.95.040(6), in industrial areas, parking spaces shall not be located within 20-feet of the front property line. The parking setback distances shall be provided on the plans demonstrating it meets the requirements.

23. All outdoor mechanical equipment shall be screened from view from public rights of way in accordance with DMC 25.50.030(7).

24. Accessible parking spaces shall be provided for each building in conformance with International Building Code (IBC) Section 1106 and accessible routes of travel shall conform to IBC Sections 1104 and 1105. Conformance with the IBC accessible provisions will be reviewed at the final Site configuration.

25. High Occupancy Vehicle parking spaces shall be provided in accordance with DMC 25.95.060(2) and (3).

26. A parking lot lighting plan, including a photometric exhibit showing the lighting levels within the parking lot, will be required for the proposed project.

27. The project activities shall comply with the requirements of the Washington State Department of Ecology National Pollutant Discharge Elimination System (NPDES) general permit for stormwater discharges associated with construction activity.

28. Turning movement drawings will be required to allow the City to determine the feasibility of the site layout. The site plan shall include supplemental exhibits to demonstrate that the City Fire Department's large apparatus can navigate the site (lane width, radius), including access to FDCs and hydrants. The Fire Department will confirm the adequacy of vehicle access points.

29. All easements identified in the Title Report shall be delineated and labeled on the Plans (i.e. width, type, and recording number).

30. As a condition of Land Use approval, the project off-site improvements shall include the installation of a traffic signal at the Center Drive/International Place intersection.

31. The submitted Pierce County Utilities Information Request for Connection to the Pierce County Sanitary Sewer System letter is acceptable for Land Use Application approval. Documentation of Pierce County Public Works and Utilities approval of the Sanitary Sewer Plans for this project will be required prior to issuance of a construction permit.

32. The submitted electronic mail correspondence requesting approval of the refuse enclosure locations and serviceability is acceptable for Land Use Application approval. Documentation demonstrating approval will be required prior to issuance of a construction permit.

33. The Civil Plans shall be revised to address the comments provided in the letter from Gray & Osborne, Inc. dated May 8, 2018 (attachment A.2.g).

34. Any land development abutting and impacting existing roads shall improve the frontage of those roads in accordance with the City of DuPont Standards. The applicable street for this project is International Place, which is classified as an Industrial Access Street. As part of the project requirements, improvements along International Place are required, including extension of the existing sidewalk, revitalization of the existing drainage swale, replacement of existing asphalt to the road, and channelization pavement markings. A sheet demonstrating the International Place improvements should be added to the Plans.

35. The trash enclosure shall be moved outside of the water line easement. Relocation and design changes to the trash enclosure shall be re-evaluated by the City for compliance with City code.

36. Clearances, in accordance with City Standards, will be reviewed for compliance during construction review. A minimum 3-foot clearance and level area is required around fire hydrants.

Prior to issuance of Building Permits

37. Each application for building permit will be required to identify the uses, details and employee forecast to ensure compliance with DMC 25.95.030.

38. Per DMC 25.100, the recycling and refuse enclosure locations shall be approved by the solid waste utility purveyor prior to obtaining a building permit. Elevations and building material details shall be provided at the time of building permit to ensure compliance with DMC 25.100.050.

39. The proposed structure must be designed to meet the requirements of the building construction codes in effect at the time of building permit submittal. The following codes are currently enforced by the City of DuPont: the 2015 International Building Code, the 2015 International Residential Code, the 2015 International Fire Code, the 2015 International Mechanical Code, the 2015 International Fuel Gas Code, the 2015 Uniform Plumbing Code (each as amended and adopted by the State of Washington); the 2015 Washington State Energy Code.

40. The project will be required to receive all land use and civil construction approvals prior to issuance of building permit for the proposed structures.

41. All applicable Fire Impact and Storm System Development Charge fees assessed for the proposed development will be required to be paid prior to the issuance of building permit(s) associated with the proposed project.

42. Also prior to issuance of a building permit for the structure, the applicant shall provide a copy of Pierce County Sewer Service Permits for City record. This permit (and authorization to connect to sewer service) is/may be independent from any sewer system extension that may also apply to the project. All sewer connection and permitting requirements must be coordinated with the utility purveyor. (Please note that Pierce County Sewer Utility requires a pre-treatment review and approval be completed prior to their issuance of sewer extension or sewer service connection permit(s). Each subsequent tenant, for multi-tenant buildings, must also complete a separate pre-treatment review and provide copy of sewer service permitting, where applicable, prior to obtaining a building permit for associated improvements.

43. The project will be required to comply with the requirements for provision of as-built drawings contained in DMC Chapter 24.10, GIS. As-built drawings and submittals must be submitted and approved prior to issuance of a Certificate of Occupancy for the building, or portions thereof.

44. Fire Suppression, Underground Fire supply and Fire Alarm permits associated with the structure must be obtained through DuPont Fire Department prior to initiating any such work. All alarms systems will be required to obtain an alarm registration permit with the city, prior to full activation of the alarm system for operation; forms may be obtained at city hall.

45. Fire flow requirements and requirements for on–site hydrants and site access provisions will be determined by the DuPont Fire Chief or designee. Such requirements may be subject to additional review and requirements as future submittals come forward.

46. Addressing for the building within the project area has been assigned as 3230 International Place, DuPont, WA 98327.

47. Permit forms may be obtained either at city hall or may be downloaded through the city's website. Assistance in completing applications is available by contacting permit staff.

48. A building permit is required when gates are installed on commercial developments. In order for the City to issue the building permit, the following requirements must be met:

a. Gates shall have an Opticom activation system or an equivalent and compatible system that is approved by the Fire Chief.

b. Gates shall have rapid-entry key capabilities compatible with the local fire department per IFC, Section 506.

c. All electrically activated gates shall have default capabilities to the unlocked position.

d. The minimum clear width of a gate shall be compatible with the required street width.

e. Gates that might be obstructed by the accumulation of snow shall not be installed.

f. A vehicular turn-around must be provide in front of the gate.

49. A maintenance agreement, in accordance with Section 3.1.2.4 of the DuPont Public Works Standards, should be provided for the 60-foot wide ingress, egress, and utilities easement for exclusive benefit of Lots 22 through 31. The underlying Northwest Landing Industrial Park Division 1 plat does not appear to specifically address the shared maintenance requirements. The agreement shall be submitted to the City for review and approval and recorded at the Developer's expense prior to issuance of the building permit. The agreement shall specify the shared driveway use and maintenance requirements affecting the subject lots.

50. Proposed site improvements within the easements on the project site shall comply with the conditions of said easements.

51. The Applicant shall furnish meter sizing calculations for domestic and fire water services. The sprinkler system design, including confirmation of the provided sizing for the fire line components shall be reviewed and approved by the City Building Department and Fire Department as part of the building permit process. Each fire line connection to a City water main will require a double detector check valve assembly (DDCVA) in an underground vault and a Fire Department Connection (FDC) within 50 feet of a fire hydrant. The double detector check valve assemblies (DDCVA) shall be located in underground vaults outside of the building to allow direct access by City staff.

52. A minimum of one fire hydrant per 1,250 gallons per minute of required fire flow shall be provided within 150 feet of the proposed building. The Applicant shall confirm the required fire flow with the City Fire Department and identify the existing and proposed fire hydrants to meet this requirement. The fire hydrant within 50 feet of the FDC for the building will not count towards the required hydrants for fire flow.

53. An application for Transportation Concurrency shall be applied for and a transportation concurrency certificate received.

54. If outdoor storage is provided, size and screening shall meet the requirements of DMC 25.50.030(8).

Prior to issuance of Certificate of Occupancy

55. Prior to Fire Department approval for occupancy, an underground fire line shall be installed. The system shall comply with NFPA 24 Standard for Installation of Private Fire Service Mains. Three (3) sets of plans, material specifications sheets for all equipment used in the system shall be submitted by a State of Washington Licensed Contractor for review, approval, and permits issued prior to commencing work. The FDC shall be a minimum of 50 feet or 1&1/2 times the height of the structure away from the building. The FDC shall be within 50 feet of a hydrant and be 5 inch with a locking cap. (Fire Department approval for location) Separate Permit required. The above FDC Location requirement shall be waved for this project. The FDC location on sheet C5 of 9 is approved.

56. All new building shall have approved emergency responder radio coverage per section 510 of the 2015 International Fire Code.

57. Following construction and prior to final acceptance of this project, the Applicant will be required to execute an Agreement for Inspection and Maintenance of Privately Maintained Storm Drainage Facilities. The Agreement should be provided after construction of the storm drainage system to reflect "as-built" conditions. A copy of the form of the agreement is included in the City Public Works Standards.

58. The site is located within the boundary of LID No. 88-1. Prior to finalization of the proposed project, the Applicant will need to document payment of the costs associated with City LID No. 88-1.

59. This project is subject to the Geographic Information System (GIS) requirements as stated in the City of DuPont Municipal Code, Chapter 24.09, and Ordinance No. 97-559.

F. DECISION

Based on the Findings and Analysis summarized above, the City finds that the site plan amendment, as conditioned, is consistent with City development regulations DMC Title 25.75 through 25.95 and 25.105 through 25.125. The City has determined that the site plan amendment meets the standards and criteria necessary to obtain approval by the City. All conditions included in the Recommendation are incorporated herein with this Approval.

Jeffrey S. Wilson, AICP
Director of Community Development, City of DuPont

5/25/18
Date

G. Appeals

Consistent with DMC 25.175.010 and 25.175.060(4), this decision by the director may be appealed to the City hearing examiner. Only parties of record may file an administrative appeal. An appeal must be filed within 14 days after issuance of this decision (**by June 11, 2018**). The instructions for filing an appeal are found in DMC 25.175.060(4).

cc: PLNG2018-012 & 013
Applicant: Nick Griot, NWLC-P2, LLC
Dan Balmelli, Barghausen Consulting Engineers, Inc.

Attachments: Summary of Record

March 1, 2018

City of DuPont
Planning Department
1700 Civic Drive
DuPont, WA 98327

RE: Minor Site Plan Approval and SEPA Review for
Northwest Logistics Center - Site 2 located at
3230 International Place, DuPont, Pierce County, Washington
Our Job No. 15753

On behalf of Nick Griot, NWLC-P2, LLC, Barghausen Consulting Engineers, Inc. is submitting the updated plans and documents for Minor Site Plan Approval and SEPA Review for the proposed Northwest Logistics Center-Site 2 project located on the northeast corner of Center Drive and International Place. The ±32-acre site will be developed with an approximate 586,025 square foot office/warehouse facility along with the associated paved parking and truck maneuvering areas, landscaping, stormwater facilities, water and sanitary sewer extension, utility improvements and half-street roadway improvements along International Place.

The following plans and documents are enclosed for your review.

1. Eight (8) each Preliminary Site Plan
2. Seven (7) sets Preliminary Landscape Plans
3. Seven (7) sets Preliminary Civil Engineering Design Plans
4. Eight (8) each Preliminary Building Elevations
5. One (1) each Preliminary Site Plan, Building Elevations, Landscape and Civil Engineering Design Plans reduced to 8-1/2 x 11
6. Two (2) each Title Report
7. Three (3) each Stormwater Site Plan prepared by Barghausen Consulting Engineers
8. Three (3) each No Further Action Memorandum by Department of Ecology
9. Three (3) each Cultural Resources Report by Aqua Terra
10. Three (3) each Archeological Permit by Department of Archaeology & Historic Preservation
11. Three (3) each Tree Retention History prepared by EDA
12. Three (3) each Geotechnical Engineering Report prepared by Terra Associates
13. Two (2) each Request to Pierce County Utilities for Sewer Availability Letter
14. Two (2) each City of DuPont Water Availability Form
15. One (1) each Request to LeMay, Inc for Refuse Enclosure Location Approval

Attachment 1a - Cover Letters from Barghausen Engineers Inc. dated March and April 2018

16. Two (2) each Updated Environmental Checklist

17. One (1) each Land Use Application

18. One (1) each Authorization to Act as Agent Affidavit

19. One (1) each Check for Minor Site Plan Approval in the Amount of $1,500

We believe that the enclosed plans and documents compile a complete Minor Site Plan Approval and SEPA review application package. Please review at your earliest convenience and please feel free to contact me with any questions or if you need any additional information. Thank you.

Sincerely,

Daniel K. Balmelli

Daniel K. Balmelli, P.E.
Executive Vice President

DKB/dm/bd
15753c.009.doc
enc: As Noted
cc: Nick Griot, NWLC P-2, LLC
Betsy Dyer, Barghausen Consulting Engineers, Inc.

CIVIL ENGINEERING, LAND PLANNING, SURVEYING

April 20, 2018

Jeffrey S. Wilson, AICP
Director
City of DuPont
Department of Community Development
1700 Civic Drive
DuPont, WA 98327

RE: Responses to Type I Minor Amendment to Site Plan and
SEPA Environmental Review Comments
Northwest Logistics Center Phase II
3230 International Place, DuPont, Pierce County, Washington
City's File No. PLNG 2018-012 and -013
Our Job No. 15753

Dear Jeff:

We have revised the plans and technical documents for the above-referenced project in accordance with your comment letter dated March 29, 2018. Enclosed are the following documents for your review and approval:

1. Eight (8) each Revised Architectural Site Plan
2. Seven (7) sets Revised Civil Engineering Design Plans
3. Seven (7) sets Revised Landscape Plans
4. One (1) each Architectural Site Plan, Landscape and Civil Engineering Design Plans reduced to 8-1/2 x 11
5. Two (2) each Pierce County Sewer Availability Certificate
6. One (1) each LeMay, Inc. Trash Enclosure Correspondence and Approval
7. Two (2) each Updated Environmental Checklist
8. Three (3) each Approved Tree Retention Plan
9. Three (3) each Arborist Report

The following outline provides each of your comments in italics exactly as written, along with a narrative response describing how each comment was addressed:

The following items are required to be submitted for the application to be deemed complete:

1. *As indicated on the Land Use Application Checklist an approval with signature from LeMay is required for a complete application.*

Response: Included in this resubmittal is an email from LeMay, Inc. approving the trash enclosure locations and detail. Email approval from LeMay, Inc. has been sufficient for previous submittals within Dupont to meet this requirement of the Land Use Application Checklist.

2. *The copy of the receipt requesting Pierce County for Sewer Service Availability is not sufficient for the land use application. As indicated on the Land Use Application Checklist, the Letter of Sewer Availability from Pierce County is required at the time of land use application submittal.*

   Response: The Letter of Sewer Availability has been received from Pierce County and is included in this resubmittal.

3. *As requested in the City's Pre-application meeting comment letter, provide a copy of the approved Tree Retention Plan (dated February 14, 2014) with a description of the requirements completed to date. We have reviewed the narrative you provided, which details the collaboration that occurred during site clearing and grading activities, however we also need a copy of the original arborist report and tree retention plan prepared for the land use approval. Note that SEPA Mitigation measure #2 requires compliance with the Feb. 2014 tree plan and that can only be verified by comparing the original tree retention plan with the new plans. If there are any additional landmark, historic, and/or specimen trees to be removed, provide the locations and a listing/table including sizes.*

   Response: The approved Tree Retention Plan is included within this resubmittal as well as the original arborist report. The plans have been revised to match the arborist report and approved Tree Retention Plan.

4. *Provide the revised parking quantity including trailer parking spaces on the plans and in the SEPA Checklist. The plans do not provide a quantity and the SEPA checklist indicates that there are no parking changes from the original application, which is not consistent with the plans we reviewed for the pre-application meeting.*

   Response: The parking quantity is now shown on the civil plans and matches the revised SEPA Checklist.

We have the following additional comments on the application that will need to be addressed prior to finalizing approval of the Minor Site Plan Amendment:

1. *The landscape plan and the civil tree retention plan need to be reconciled. The civil plans indicate two Oregon white oak trees located in the landscape north of the southwest driveway. The landscape plans appear to show that the two Oregon White Oak trees either have been or will be removed. The two oak trees are the only oak trees within the 9,022 square foot MO-17A protection area. Unless allowed otherwise through the original tree retention plans, the oak trees will need to be retained or you will need to apply for a Tree Modification, which is a Type III (hearing examiner approval) process. Provide the tree protection zone radius around each tree.*

Response: The landscape and civil plans have been revised in order for the two Oregon White Oak trees to remain per the approved Tree Retention Plan.

2. *The cut and fill quantities in the SEPA Checklist and the civil plans don't match. The Checklist implies that the project cut and fill is a net of 1,000 SF cut. The civil plan says the "new cut & fill is 15,875 CYS Cut", which is consistent with the SEPA Determination issued Feb. 10, 2015. Please reconcile or clarify.*

   Response: The civil plans have been updated to reflect the numbers shown in the SEPA checklist. Overall, the cut and fill over the course of the entire project construction will not exceed the amount estimated in the original SEPA Determination from February 10, 2015.

3. *Other changes between the original and modified site plan are as follows:*

   Building Size: The original building size was planned to be 695,000 SF. The modified site plan reflects a size of 586,025 SF, for a reduction of 108,975 SF. Because this building size is a reduction, it is very likely considered consistent with the original SEPA Determination.

   Response: Comment acknowledged.

   Parking Quantity: Once we receive the parking calculations we can determine if the project may be process with SEPA Modification or Addendum to the original Environmental Determination for the project.

   Response: The parking quantity is now shown on the civil plans and matches what is shown on the SEPA checklist.

4. *Transportation Concurrency. The City has adopted a new process for evaluating concurrency requirements as required by the State Growth Management Act (DMC 25.115). The trip generation data submitted indicates that the project exceeds 50 or more average trips per day, and is therefore required to meet concurrency requirements. The City will forward the trip generation and project information to our traffic consultant for review and determination of concurrency. The determination is required at the time of building application. DMC 25.115.030(1)(b) states that the applicant shall provide the city with all information necessary to complete the concurrency evaluation on the proposed development and it is the responsibility of the applicant to provide studies, surveys, traffic counts, engineering review or any other items determined to be necessary for the concurrency evaluation. If you would prefer to submit additional traffic study or other information to support the concurrency evaluation, include that with your resubmittal items.*

   Response: This comment is acknowledged. At this time an additional traffic study is not included, but may be completed and submitted prior to the building application if required by the city.

We believe that the above responses, together with the enclosed revised plans and technical documents, address all of the comments in your letter dated March 29, 2018. Please review and approve the enclosed at your earliest convenience. If you have questions or need additional information, please do not hesitate to contact me at this office. Thank you.

Sincerely,

Daniel K. Balmelli, P.E.
Executive Vice President

DKB/lb
15753c.010.doc
enc: As Noted
cc: Nick Griot, NWLC P-2, LLC
Betsy Dyer, Barghausen Consulting Engineers, Inc.
Whitney Dunlap, Barghausen Consulting Engineers, Inc.

RECEIVED

MAR 01 2018

CITY OF DUPONT

City of DuPont Planning Division Land Use Application

1700 Civic Drive
DuPont, WA 98327
www.dupontwa.gov

Phone: (253) 912-5393
Fax: (253) 964-1455

City File Number: PLNG 2018-012

All information listed in this application, or by applicable ordinance, must be submitted in order for a land use application to be determined complete. Only a complete land use application will be processed for conformance with adopted policies and requirements.

General Information:

Project name: Northwest Logistics Center - Site 2

Applicant name: NWLC - P2 LLC

Address: P. O. Box 110997, Tacoma, WA 98411

Phone number: (253) 203-1480 Fax number: (253) 203-1493

Applicant's representative: Dan Balmelli / Barghausen Consulting Engineers

Address: 18215 - 72nd Avenue South, Kent, WA 98032

Phone number: (425) 251-6222 Fax number: (425) 251-8782 / dbalmelli@barghausen.com

Description of proposal. Be specific.

Construction of an approximate 586,025 square foot office/warehouse building and associated site work improvements. A minor site plan modification will be processed with this application. The main project change is a reduction in the building from 695,000 sq. ft. to 586,025 sq. ft. The original SEPA determination was issued February 15, 2015 under city file no. ADM 13-01.

Site Information:

Assessor's Parcel Number(s): 300039-0011

Area of site in square feet: approx. 1,400,890

Area of streets and alleys: N/A

Area of storm drainage improvements and conveyance lines: 65,000 lineal feet

Area of open space and neighborhood green tracts: N/A

Area of critical areas and buffers: N/A

Area of building floors: 586,025 square foot

Area of impervious surfaces: 1,110,000 square foot (25.5 acres)

Area of landscaping: 290,697 square foot (6.67 acres)

Building height: approx. 38-foot

Number of dwelling units: N/A

Number of employees: approx. 116

Number of disabled, compact and standard parking stalls: 385

Description and area of all proposed tracts: N/A

Attachment 1b - Land Use Application Form

Required Plans, Information and Fee:

(Quantity and minimum scale of each item or drawing is indicated in parenthesis. Plans shall be no larger than 24 by 36 inch sheet size)

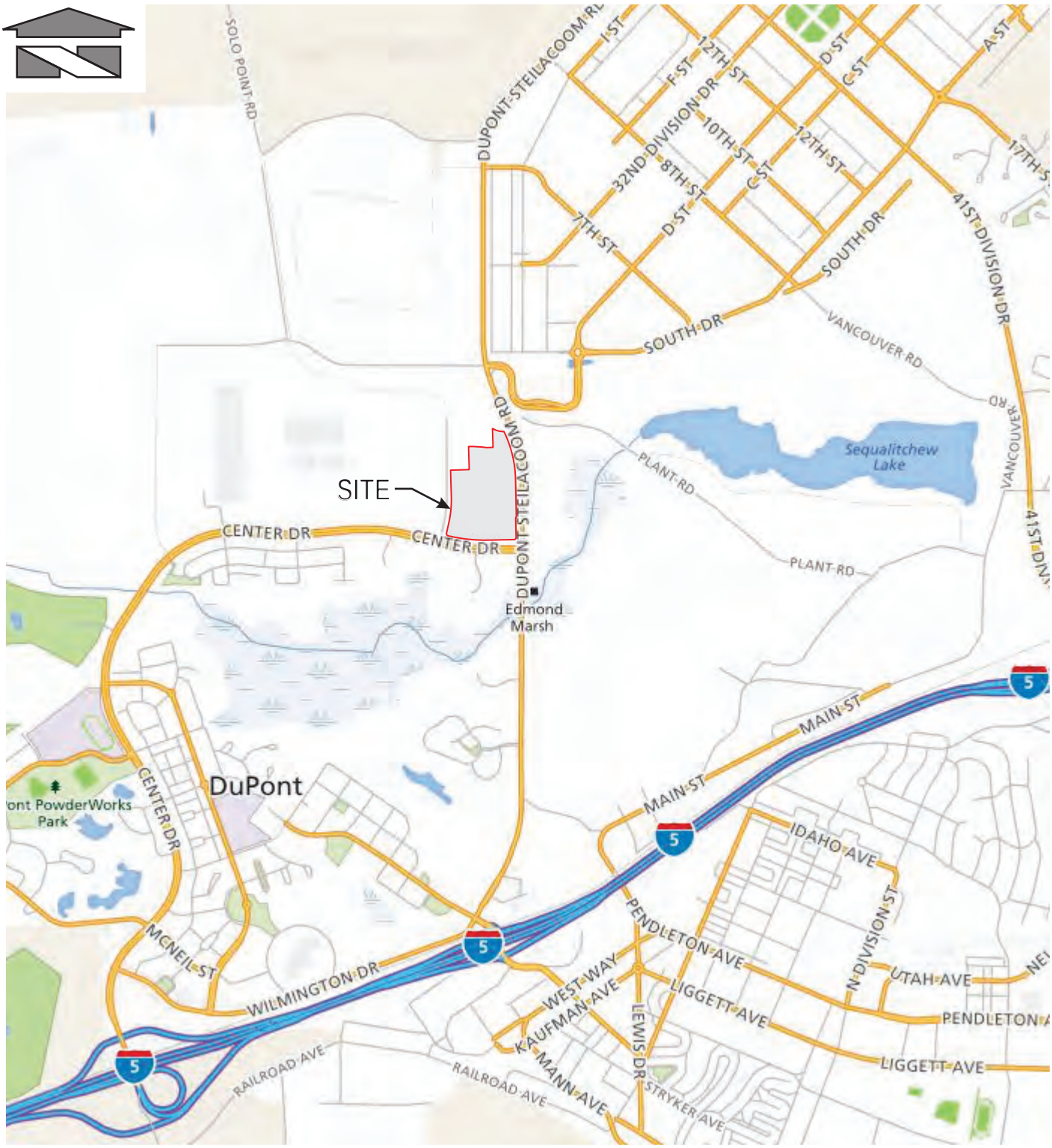
1. [X] Vicinity Map (include as part of site plan).
2. [X] Site Plan drawn at 1 inch = 20 feet extending 100 feet beyond the property lines (eight copies).
3. [X] Landscape Plans identifying: location, size and species of all landmark, historic and specimen trees; trees to be retained, specific tree protection measures drawn at 1 inch = 20 feet (seven copies).
4. [X] Grading Plan with estimated dimensions and quantities of work involved drawn at 1 inch = 20 feet horizontal with 2' contour intervals (seven copies).
5. [X] Storm Drainage and Utility Plan drawn at 1 inch = 20 feet (seven copies).
6. [X] Preliminary Stormwater Management Report and calculations (three copies).
7. [X] Roadway cross sections, (seven copies of single line drawing with dimensions).
8. [X] One each 8 by 11 inch reduction of all drawings.
9. [X] Average daily trips generated by the proposal based on the International Transportation Engineers Trip Generation Manual (two copies).
10. [X] Building Elevations drawn at ¼ inch = 1 foot or larger. Identify building materials and colors (eight copies).
11. [X] Title report of subject lot that is less than 30 days old to identify all encumbrances (two copies).
12. [N/A] Draft of proposed covenants, conditions and restrictions related to the maintenance of open space or commonly owned improvements, if applicable (two copies).
13. [X] Letter of Sewer Availability from Pierce County (two copies).
14. [X] Letter of Water Availability from City of DuPont (two copies).
15. [X] One site drawing showing the refuse enclosure(s) that is approved via signature and date by LeMay, Inc. Contact person is Charlie Maxwell, Public Relations Director, 253-537-8687.
16. [X] Completed Environmental Checklist (two copies).
17. [X] Completed Land Use Application (one copy).
18. [X] Completed Agent Affidavit (one copy).
19. [X] Filing fee(s). - $1,500

Note:

Fill out and return this application with all material listed in the Required Plans, Information and Fee section. Submittal of all required plans, information and fees constitutes a complete application. You will be contacted by the City within 28 days of formal application submittal regarding whether the application is complete. Site work may not start until all necessary permits have been obtained. Paper or electronic drawings of the proposal may be requested for presentation purposes.

Daniel K. Balmelli 3/1/2018 — Dan Balmelli, Agent

(Applicant Signature) (Date) (Print name)



REFERENCE: Rand McNally (2018)

Scale: *Horizontal:* ***N.T.S.*** *Vertical:* ***N/A***	*For:* Griot's International Place DuPont, Washington	Job Number 15753
BARGHAUSEN CONSULTING ENGINEERS, INC. 18215 72ND AVENUE SOUTH KENT, WA 98032 (425) 251-6222 (425) 251-8782 CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES	*Title:* VICINITY MAP	DATE: 02/27/18

P:\15000s\15753\exhibit\graphics\15753 vmap.cdr

Attachment 1c - Vicinity Map

GENERAL NOTES:

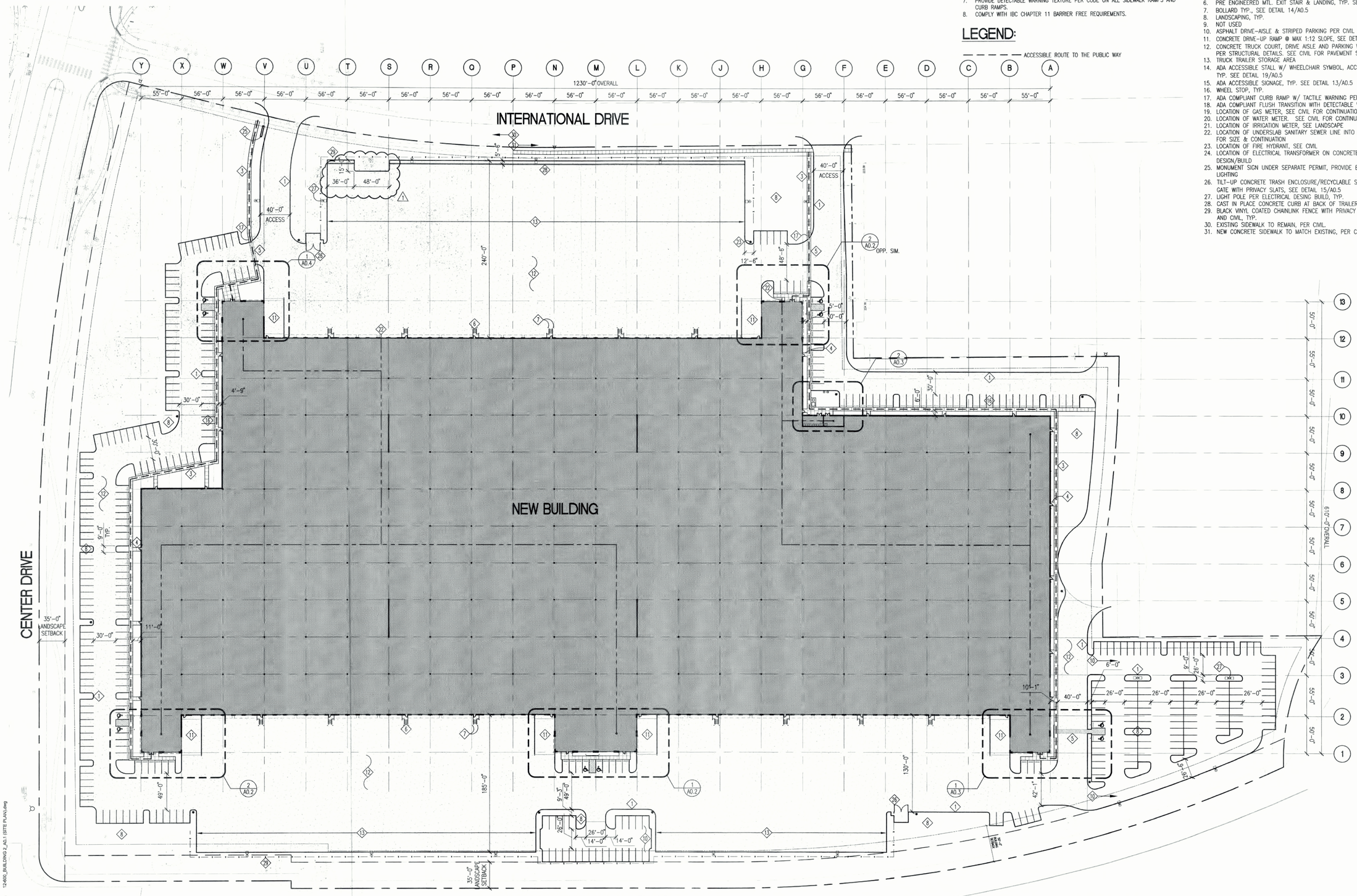
1. ALL PARKING STALLS ARE 9'-0" x 18'-0" U.O.N.
2. ALL SIDEWALKS ARE 5'-0' WIDE CONCRETE WITH BROOM FINISH & 5'-0" O.C. SCORING PATTERN WITH MAX 1:20 SLOPE & 1:48 CROSS SLOPE, U.O.N.
3. SEE CIVIL DRAWINGS FOR LOCATIONS OF CAST-IN-PLACE CURBS AND EXTRUDED CURBS.
4. SEE CIVIL DRAWINGS FOR AREAS OF STANDARD AND HEAVY PAVING SECTIONS.
5. ALL CONCRETE MONUMENT SIGNAGE IS UNDER SEPARATE SIGNAGE PERMIT.
6. SEE ARCHITECTURAL SHEET A0.5 FOR SITE DETAILS.
7. PROVIDE DETECTABLE WARNING TEXTURE PER CODE ON ALL SIDEWALK RAMPS AND CURB RAMPS.
8. COMPLY WITH IBC CHAPTER 11 BARRIER FREE REQUIREMENTS.

LEGEND:

— — — — — ACCESSIBLE ROUTE TO THE PUBLIC WAY

KEY NOTES:

1. CONCRETE CURB, SEE CIVIL DRAWINGS
2. CONCRETE ENTRY W/ BROOM FINISH, MAX 1:20 SLOPE & MAX 1:48 CROSS SLOPE. ALIGN SCORING PATTERN WITH WINDOW MULLIONS
3. CONCRETE SIDEWALK W/ BROOM FINISH, MAX 1:20 SLOPE & MAX 1:48 CROSS SLOPE
4. 5'-0" WIDE CONCRETE LANDING W/ 5'-0" WIDE SIDEWALK AT EXIT/FIRE DEPARTMENT ACCESS DOORS, TYP. SEE DETAIL 3/A0.5
5. 5' WIDE STRIPED DRIVE AISLE CROSSING, TYP.
6. PRE ENGINEERED MTL. EXIT STAIR & LANDING, TYP. SEE DETAIL 2/A0.5
7. BOLLARD TYP., SEE DETAIL 14/A0.5
8. LANDSCAPING, TYP.
9. NOT USED
10. ASPHALT DRIVE-AISLE & STRIPED PARKING PER CIVIL
11. CONCRETE DRIVE-UP RAMP @ MAX 1:12 SLOPE, SEE DETAIL 9/A0.5
12. CONCRETE TRUCK COURT, DRIVE AISLE AND PARKING W/ CONTROL JOINTS PER STRUCTURAL DETAILS. SEE CIVIL FOR PAVEMENT SECTION DETAIL
13. TRUCK TRAILER STORAGE AREA
14. ADA ACCESSIBLE STALL W/ WHEELCHAIR SYMBOL, ACCESS AISLE AND SIGNAGE, TYP. SEE DETAIL 19/A0.5
15. ADA ACCESSIBLE SIGNAGE, TYP. SEE DETAIL 13/A0.5
16. WHEEL STOP, TYP.
17. ADA COMPLIANT CURB RAMP W/ TACTILE WARNING PER T1.2
18. ADA COMPLIANT FLUSH TRANSITION WITH DETECTABLE WARNING PER T1.2
19. LOCATION OF GAS METER, SEE CIVIL FOR CONTINUATION
20. LOCATION OF WATER METER. SEE CIVIL FOR CONTINUATION
21. LOCATION OF IRRIGATION METER, SEE LANDSCAPE
22. LOCATION OF UNDERSLAB SANITARY SEWER LINE INTO BUILDING, SEE CIVIL FOR SIZE & CONTINUATION
23. LOCATION OF FIRE HYDRANT, SEE CIVIL
24. LOCATION OF ELECTRICAL TRANSFORMER ON CONCRETE PAD, PER ELECTRICAL DESIGN/BUILD
25. MONUMENT SIGN UNDER SEPARATE PERMIT, PROVIDE ELECTRICAL FOR FUTURE LIGHTING
26. TILT-UP CONCRETE TRASH ENCLOSURE/RECYCLABLE STORAGE & CHAIN LINK GATE WITH PRIVACY SLATS, SEE DETAIL 15/A0.5
27. LIGHT POLE PER ELECTRICAL DESING BUILD, TYP.
28. CAST IN PLACE CONCRETE CURB AT BACK OF TRAILER STALLS, PER CIVIL,TYP.
29. BLACK VINYL COATED CHAINLINK FENCE WITH PRIVACY SLATS PER LANDSCAPE AND CIVIL, TYP.
30. EXISTING SIDEWALK TO REMAIN, PER CIVIL.
31. NEW CONCRETE SIDEWALK TO MATCH EXISTING, PER CIVIL.



1 ARCHITECTURAL SITE PLAN
1" = 60'

Attachment 1d - Preliminary Architectural Site Plan dated April 18, 2018 and Building Elevations dated February 26, 2018,

NWLC-P2, LLC

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7052 REGISTERED ARCHITECT
KATHRYN M. CRAFT
STATE OF WASHINGTON

Submittals/Revisions:

SITE PLAN REVIEW 02/28/18
FOR PERMIT 03/16/18
1 SITE PLAN REVIEW RESUBMITTAL 04/18/18

Sheet Title: ARCHITECTURAL SITE PLAN
Date: 02/26/18
Design: TES
Drawn: TES
Project No: 12-600
Approved: KMC

BUILDING 2
Sheet No: A0.1

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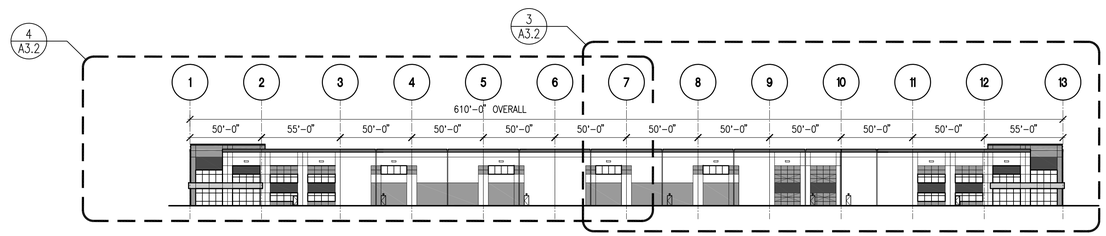
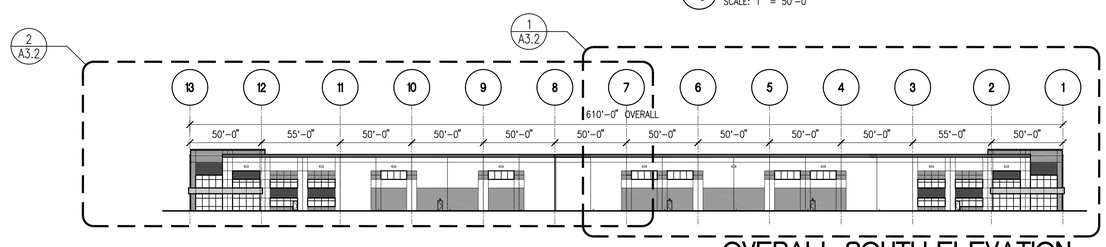
04/18/18 - 8:15am 12-600_BUILDING 2_A0.1 (SITE PLAN).dwg

GENERAL NOTES:

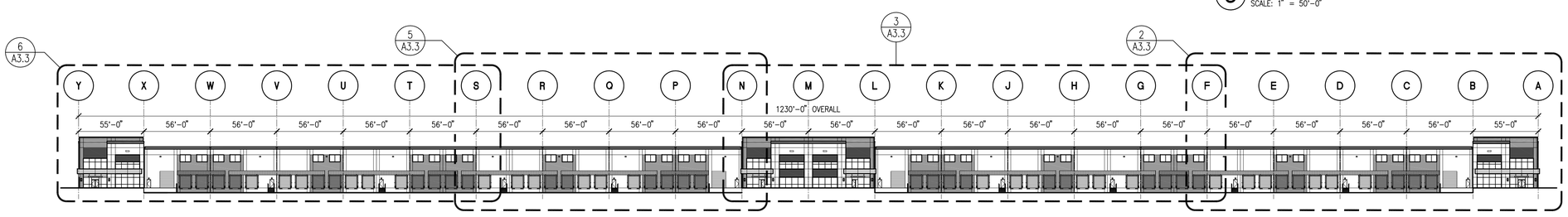
1. * INDICATES TEMPERED, INSULATED GLAZING, TYP.
2. ALL FIXED INSULATED GLAZING SHALL BE CERTIFIED & LABELED WITH ITS MAX. U-FACTOR OF & SOLAR HEAT GAIN COEFFICIENT BY AN INDEPENDENT AGENCY LICENSED BY THE NFRC, IN COMPLIANCE WITH THE VALUES LISTED ON SHEET CS.
3. PJ = PANEL JOINT
4. PROVIDE AND COORDINATE "KNOXBOX: LOCATION WITH FIRE DEPARTMENT AND ARCHITECT PRIOR TO INSTALL
5. ALL VERTICAL DIMENSIONS ARE FROM FINISHED FLOOR, U.N.O.
6. CHANGE IN PAINT COLOR OCCURS AT BACK OF REVEAL, TYP. U.N.O.



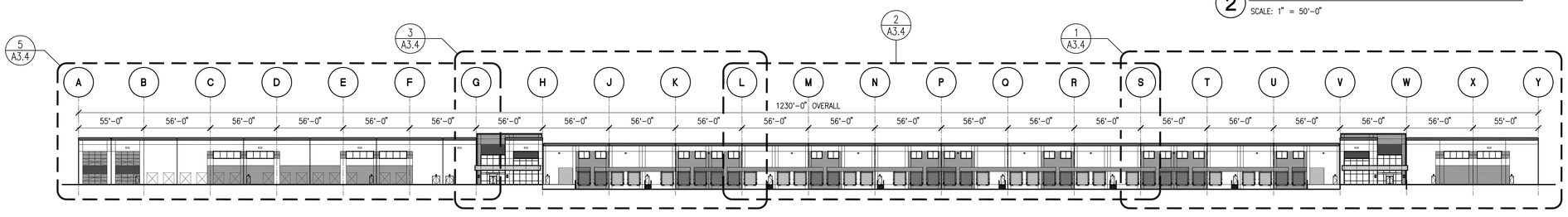
4 OVERALL NORTH ELEVATION
SCALE: 1" = 50'-0"



3 OVERALL SOUTH ELEVATION
SCALE: 1" = 50'-0"



2 OVERALL EAST ELEVATION
SCALE: 1" = 50'-0"



1 OVERALL WEST ELEVATION
SCALE: 1" = 50'-0"

02/26/18 - 4:04pm 12-600_BUILDING 2_A3.1 (EXTERIOR ELEVATIONS).dwg

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Approved: KMC

BUILDING 2
Sheet No: A3.1

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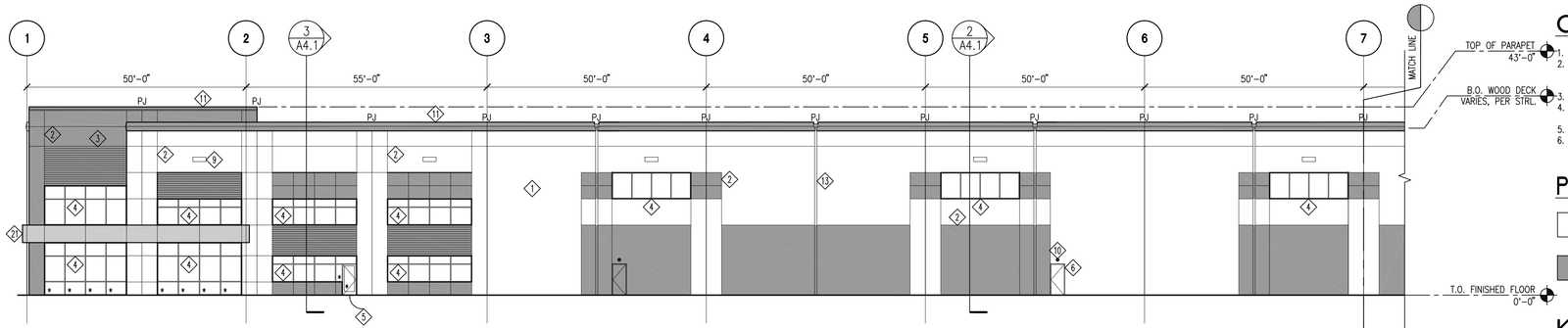
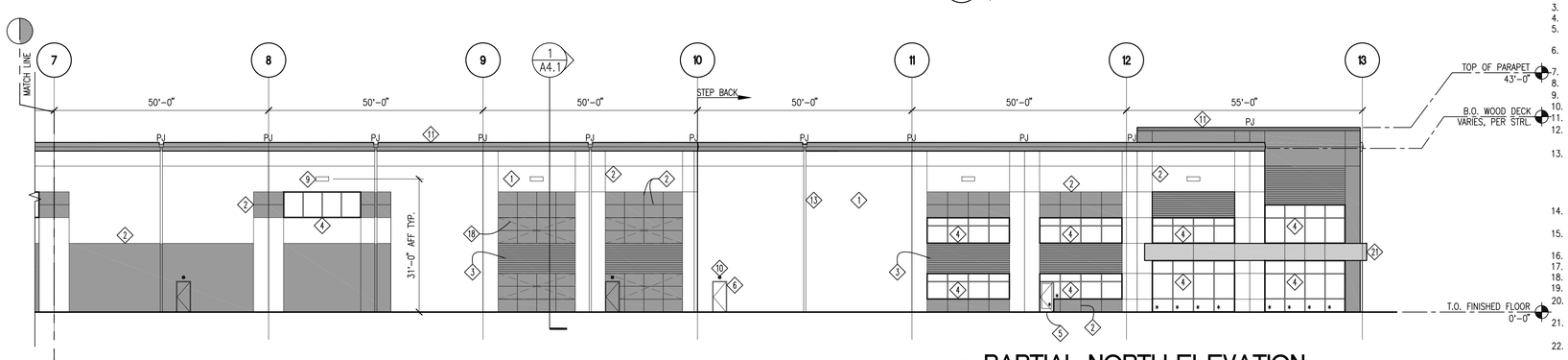


4 PARTIAL NORTH ELEVATION

1/16" = 1'-0"



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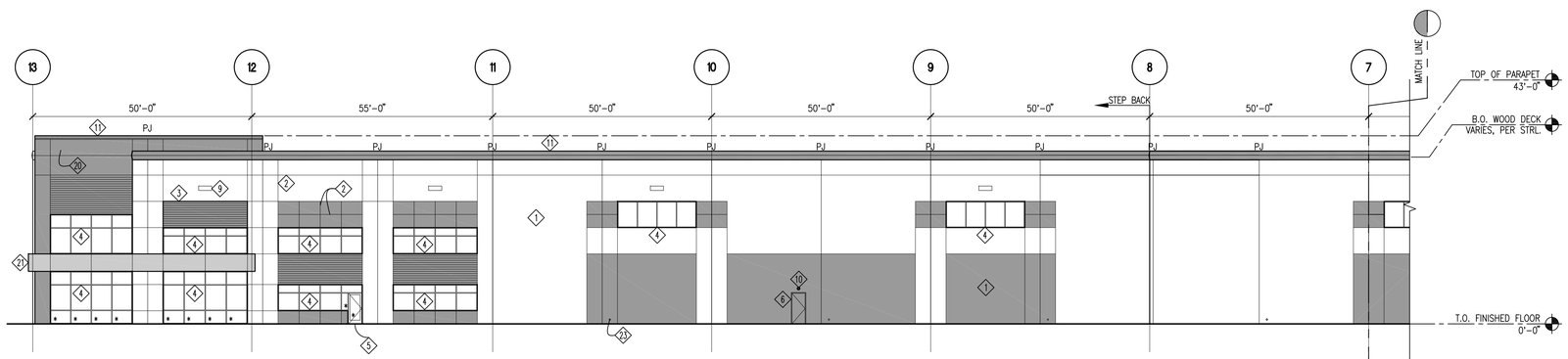
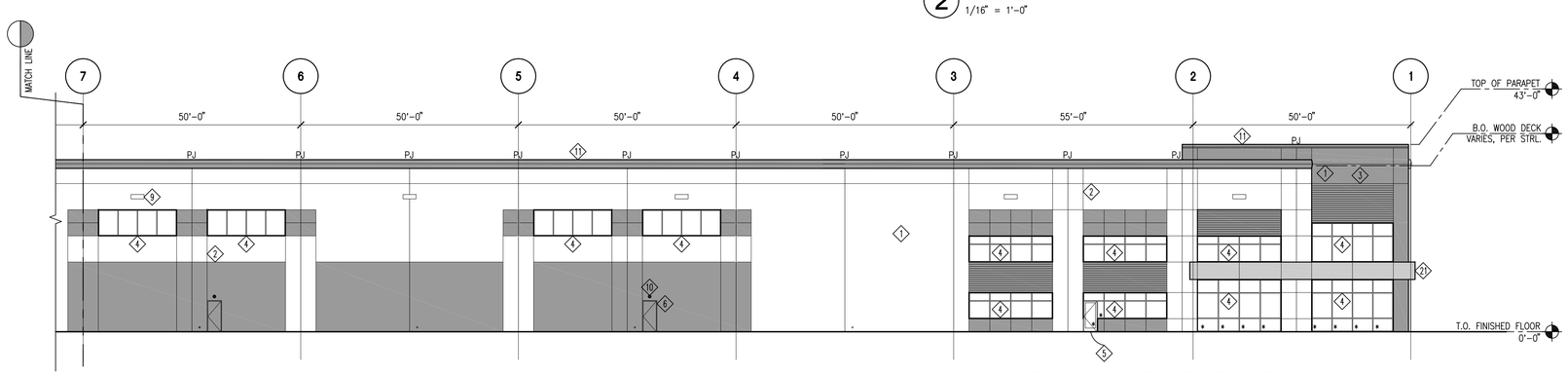


2 PARTIAL SOUTH ELEVATION

1/16" = 1'-0"



1 PARTIAL SOUTH ELEVATION

1/16" = 1'-0"

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6. CHANGE IN PAINT COLOR OCCURS AT BACK OF REVEAL, TYP. U.N.O.

PAINT LEGEND:

PNT-1: TBD – SHERWIN WILLIAMS
MODERNE WHITE (SW6168)

PNT-2: TBD – SHERWIN WILLIAMS
URBANE BRONZE (SW7048)

KEY NOTES:

1. TILT UP CONCRETE PANEL (PAINT FINISH), TYP.
2. PANEL REVEAL, TYP. SEE DETAILS 3/A8.1 AND 4/A8.1
3. FORM LINER: MANUFACTURER– TBD
4. ANODIZED ALUMINUM STOREFRONT SYSTEM, COLOR: BLACK, TYP.
5. ALUMINUM DOOR TO MATCH STOREFRONT SYSTEM, TYP. SEE DOOR SCHEDULE
6. HOLLOW METAL DOOR & FRAME, TYP., PAINT TO MATCH EXISTING ADJACENT WALLS
7. LINE OF ROOF BEYOND
8. EXTERIOR "WALL PACK" WALL MOUNTED LIGHT FIXTURE, TYP.
9. EXTERIOR "SHOE BOX" WALL MOUNTED LIGHT FIXTURE, TYP.
10. SURFACE MOUNTED EMERGENCY LIGHT FIXTURE AT EXIT DOOR, TYP.
11. PRE-FINISHED METAL COPING, COLOR: AEP SPAN "MATTE BLACK"
12. PRE-FINISHED METAL CANOPY, COLORS: AEP SPAN "MATTE BLACK" AND AEP SPAN "COOL BRIGHT RED"
13. PRE-FINISHED METAL SCUPPER: COLOR: AEP SPAN "MATTE BLACK" & PAINTED PVC DOWNSPOUT PER LEGEND, SEE DETAIL X/AX.X, TYP. TIGHT-LINE DOWNSPOUT TO STORM LINE, REFER TO CIVIL DRAWINGS. PROVIDE DOWNSPOUT PROTECTORS AT TRUCK COURT LOCATIONS ONLY, SEE DETAIL X/AX.X
14. SECTIONAL OVERHEAD DRIVE-IN DOOR (INSULATED), PRE-PRIMED, PAINT PER LEGEND, TYP.
15. SECTIONAL OVERHEAD DOCK HIGH DOOR (INSULATED) WITH BUMPERS AND DOCK SEAL, PRE-PRIMED, PAINT PER LEGEND, TYP.
16. PRE-FAB METAL STAIR AT TRUCK COURT, SEE SITE PLAN
17. FOOTINGS PER STRUCTURAL
18. FUTURE KNOCK-OUT, PER STRUCTURAL, TYP.
19. CONCRETE TILT UP RETAINING WALL, SEE SITE PLAN
20. BUILDING ADDRESS: 24" HIGH X ¾" THICK DIMENSIONAL NUMBERS. FONT: TBD. COLOR: WHITE
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22. CUSTOM DESIGNED BLACK ANODIZED ALUMINUM CANOPY INCORPORATED WITHIN WINDOW SYSTEM, SEE DETAIL X A/8.1
23. OVERFLOW COW-TONGUE AT OVERFLOW DRAIN, TYP. DAYLIGHT AT 1'-0" AFF.
24. EXTERIOR WALL SCONCE LIGHT FIXTURE, TYP.

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CONSULTANT

7052 REGISTERED ARCHITECT
KATHRYN M. CRAFT
STATE OF WASHINGTON

Submittals/Revisions:

SITE PLAN REVIEW 02/28/18

Sheet Title: EXTERIOR ELEVATIONS

Date: 02/26/18
Design: TES
Drawn: TES
Project No: 12-600
Approved: KMC

BUILDING 2

Sheet No: A3.2

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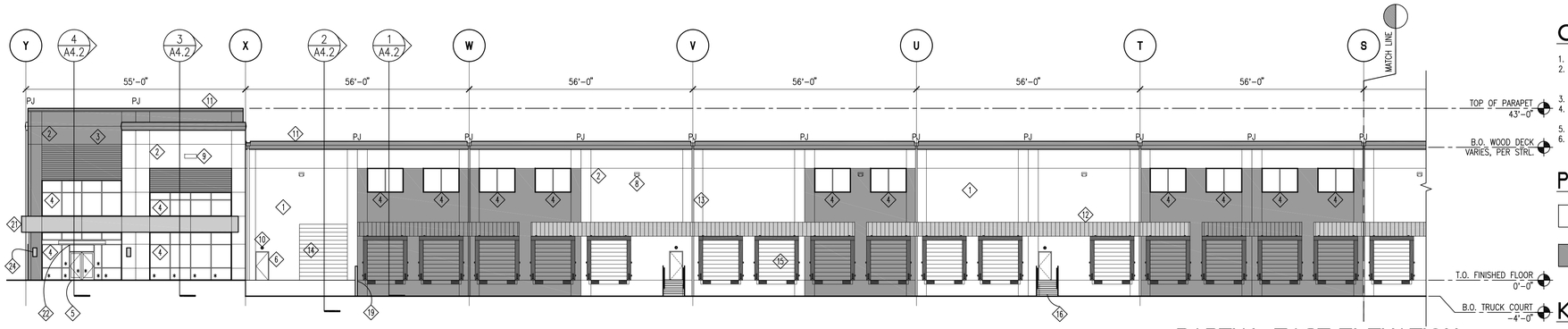
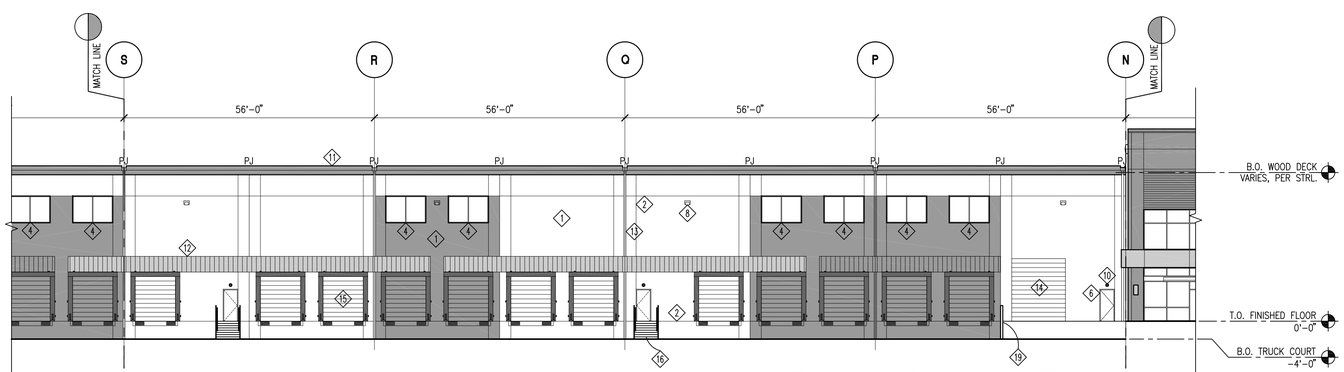
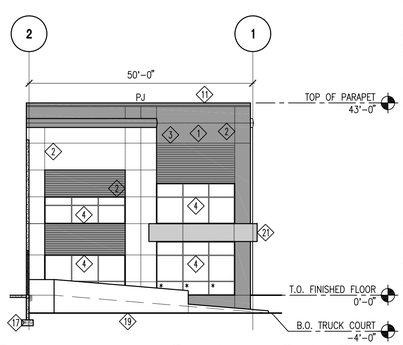


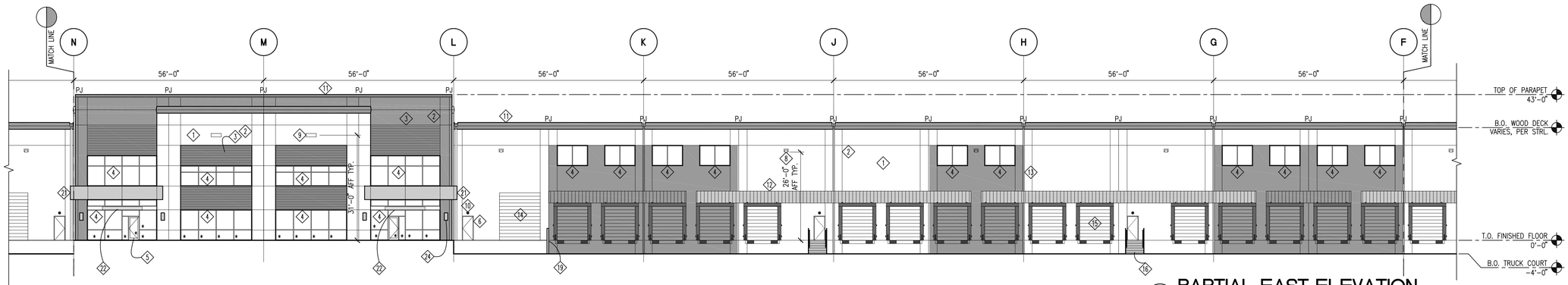
6 PARTIAL EAST ELEVATION
1/16" = 1'-0"



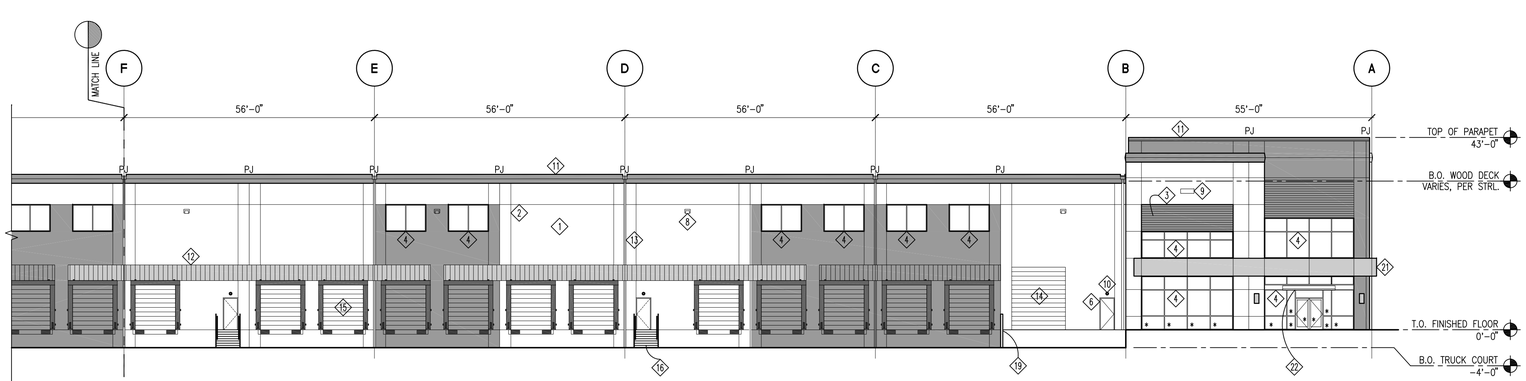
5 PARTIAL EAST ELEVATION
1/16" = 1'-0"



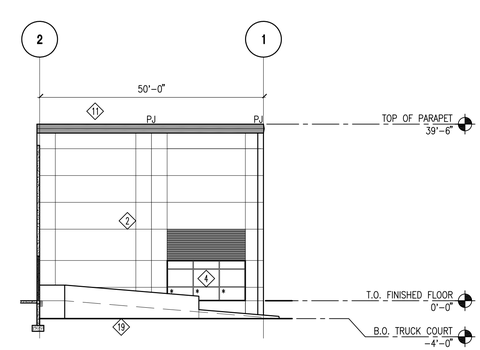
4 SOUTH ELEVATION AT E OFFICE NODE
1/16" = 1'-0"



3 PARTIAL EAST ELEVATION
1/16" = 1'-0"



2 PARTIAL EAST ELEVATION
1/16" = 1'-0"



1 SOUTH ELEVATION AT NE OFFICE NODE
1/16" = 1'-0"

GENERAL NOTES:

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6. CHANGE IN PAINT COLOR OCCURS AT BACK OF REVEAL, TYP. U.N.O.

PAINT LEGEND:

PNT-1: TBD – SHERWIN WILLIAMS MODERNE WHITE (SW6168)

PNT-2: TBD – SHERWIN WILLIAMS URBANE BRONZE (SW7048)

KEY NOTES:

1. TILT UP CONCRETE PANEL (PAINT FINISH), TYP.
2. PANEL REVEAL, TYP. SEE DETAILS 3/A8.1 AND 4/A8.1
3. FORM LINER: MANUFACTURER– TBD
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Submittals/Revisions:
SITE PLAN REVIEW 02/28/18

Sheet Title: EXTERIOR ELEVATIONS

Date: 02/26/18
Design: TES
Drawn: TES
Project No: 12-600
Approved: KMC

BUILDING 2
Sheet No: A3.3

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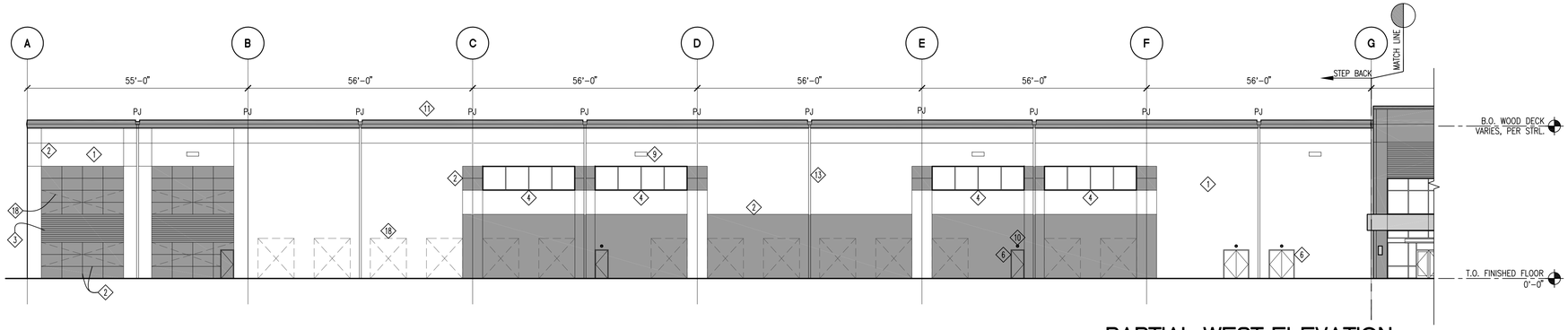
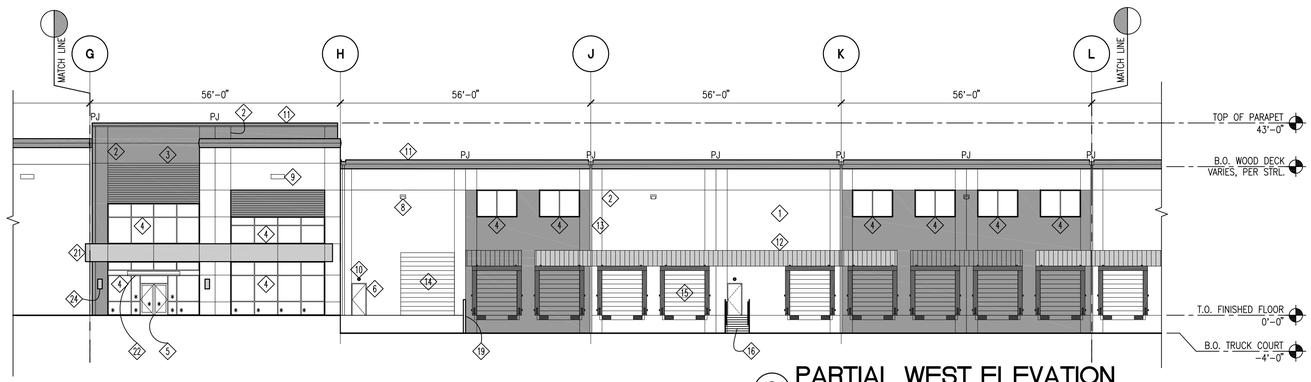
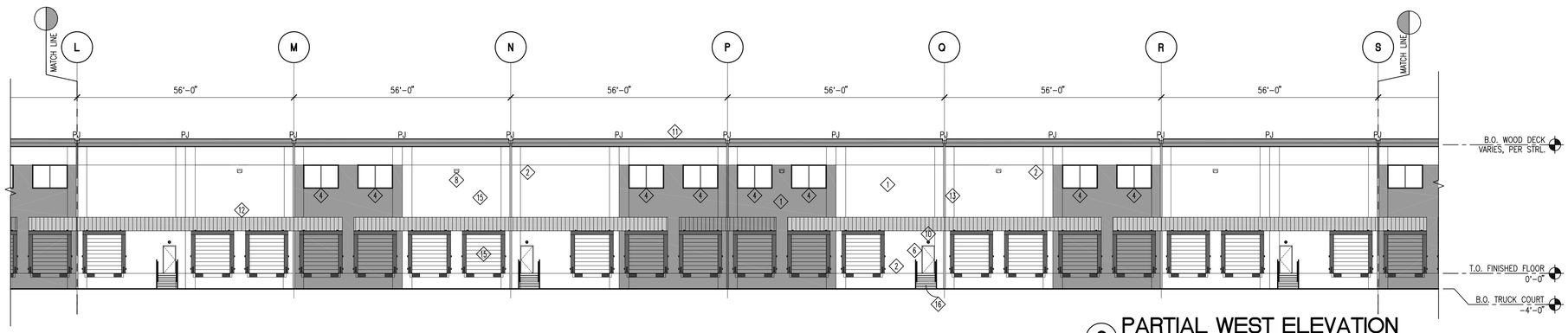


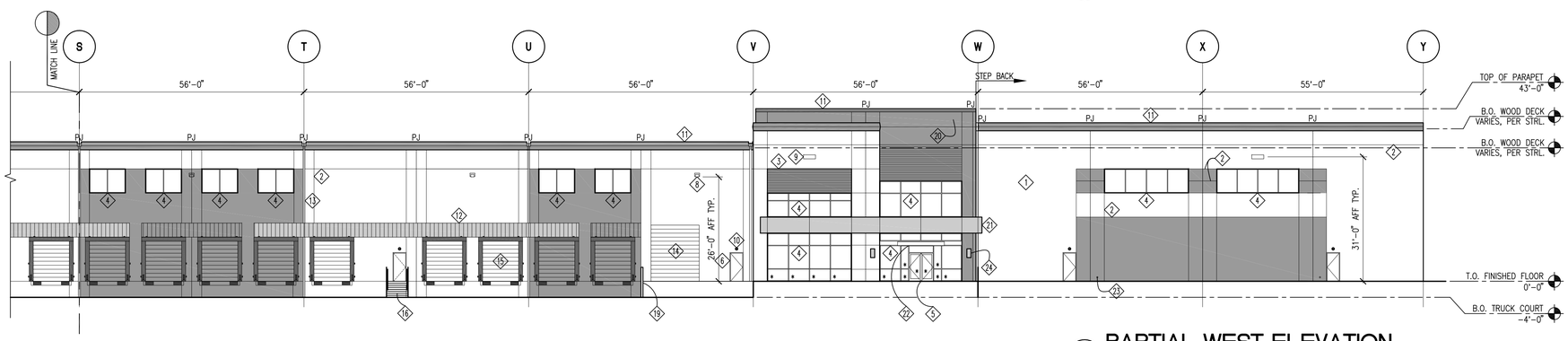
4 PARTIAL WEST ELEVATION
1/16" = 1'-0"



3 PARTIAL WEST ELEVATION
1/16" = 1'-0"



2 PARTIAL WEST ELEVATION
1/16" = 1'-0"



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KATHRYN M. CRAFT
STATE OF WASHINGTON

Submittals/Revisions:
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Sheet Title: EXTERIOR ELEVATIONS

Date: 02/26/18
Design: TES
Drawn: TES
Project No: 12-600
Approved: KMC

BUILDING 2
Sheet No: A3.4

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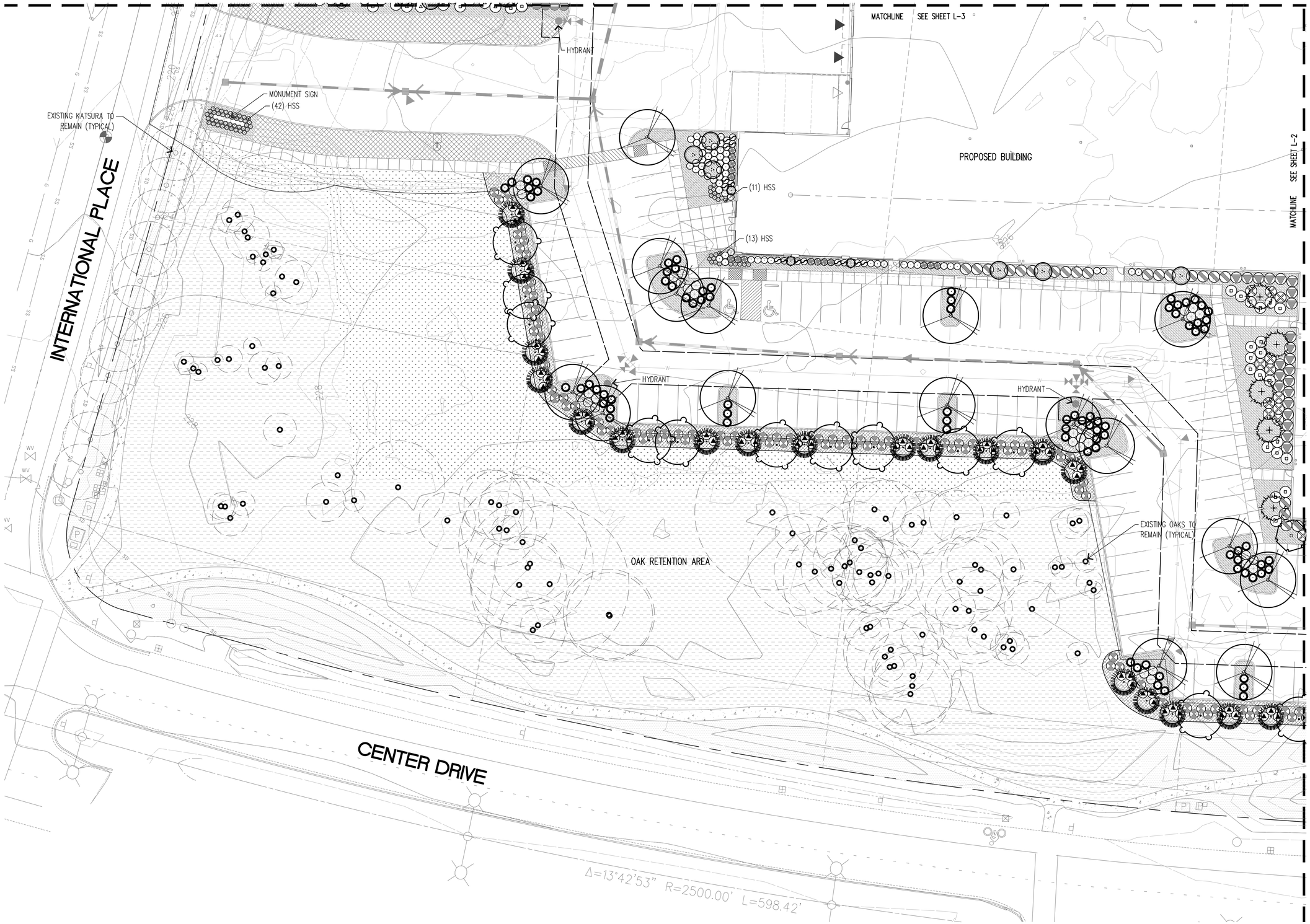

NOTES

1. REFER TO SHEET L-9 FOR PLANT SCHEDULE, AND NOTES.
2. REFER TO SHEET L-10 FOR LANDSCAPE DETAILS.

LANDSCAPE PLAN

0 10' 20' 40' 80'

SCALE: 1" = 20' - 0"

Attachment 1e - Preliminary Landscape Plan dated February 7, 2018

NWLC-P2, LLC

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DUPONT, WASHINGTON

CONSULTANT

WBLA Landscape Architecture Site Planning Irrigation
16630 30th Dr. S.E.
Bothell, WA 98012
phone (425) 417-4609

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
WILLIAM A. BROWN
CERTIFICATE NO. 501

Submittals/Revisions:

SITE PLAN REVIEW 02/28/18

Sheet Title: LANDSCAPE PLAN

Date: 02/07/18
Design: CB
Drawn: CB
Project No: 12-600
Approved: CB

BUILDING 2

Sheet No: L-1

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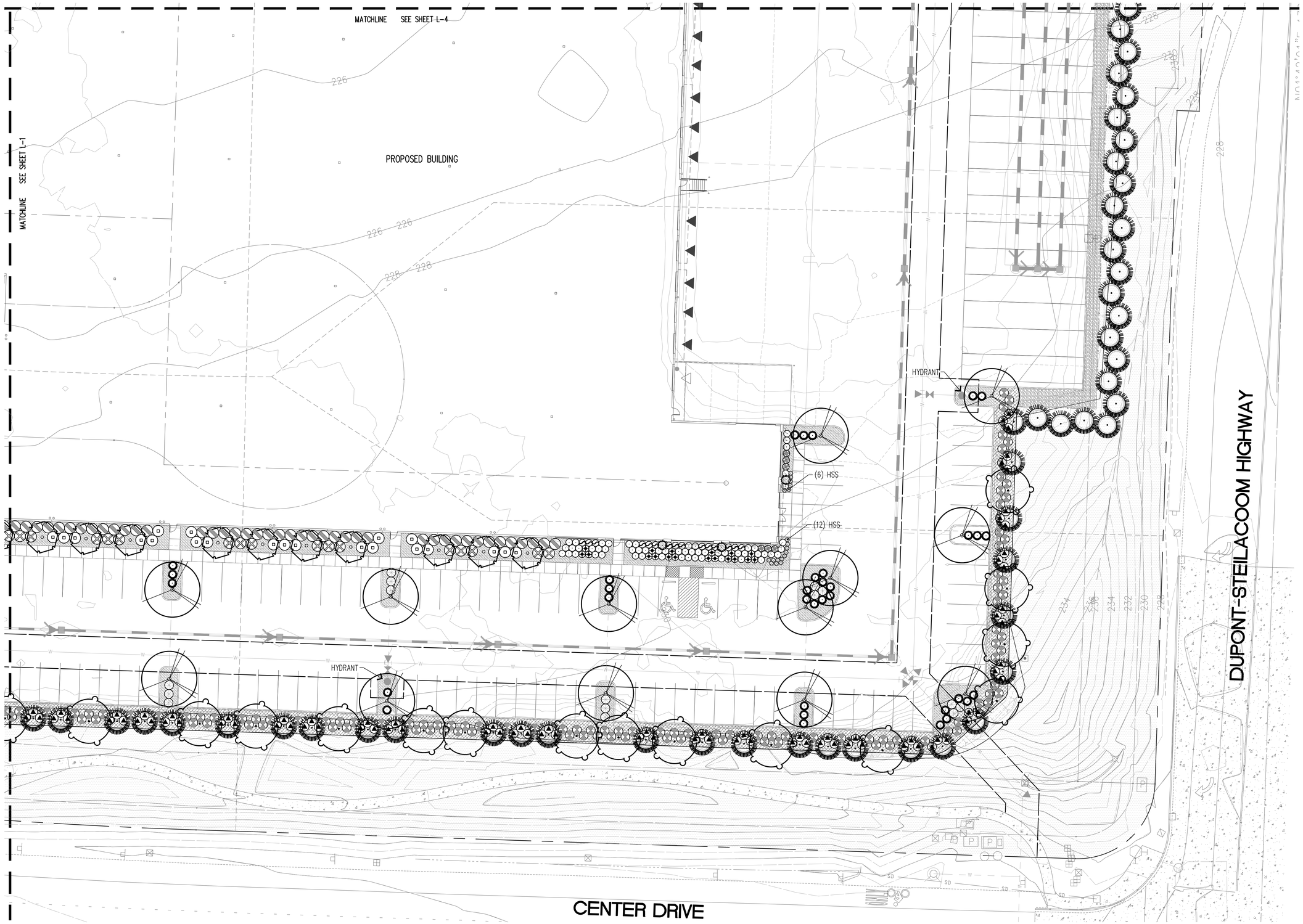

NOTES

1. REFER TO SHEET L-9 FOR PLANT SCHEDULE, AND NOTES.
2. REFER TO SHEET L-10 FOR LANDSCAPE DETAILS.

LANDSCAPE PLAN

0 10' 20' 40' 80'

SCALE: 1" = 20' - 0"

NWLC-P2, LLC

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STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
WILLIAM A. BROWN
CERTIFICATE NO. 501

Submittals/Revisions:

SITE PLAN REVIEW 02/28/18

Sheet Title: LANDSCAPE PLAN

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Project No: 12-600
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BUILDING 2

Sheet No: L-2

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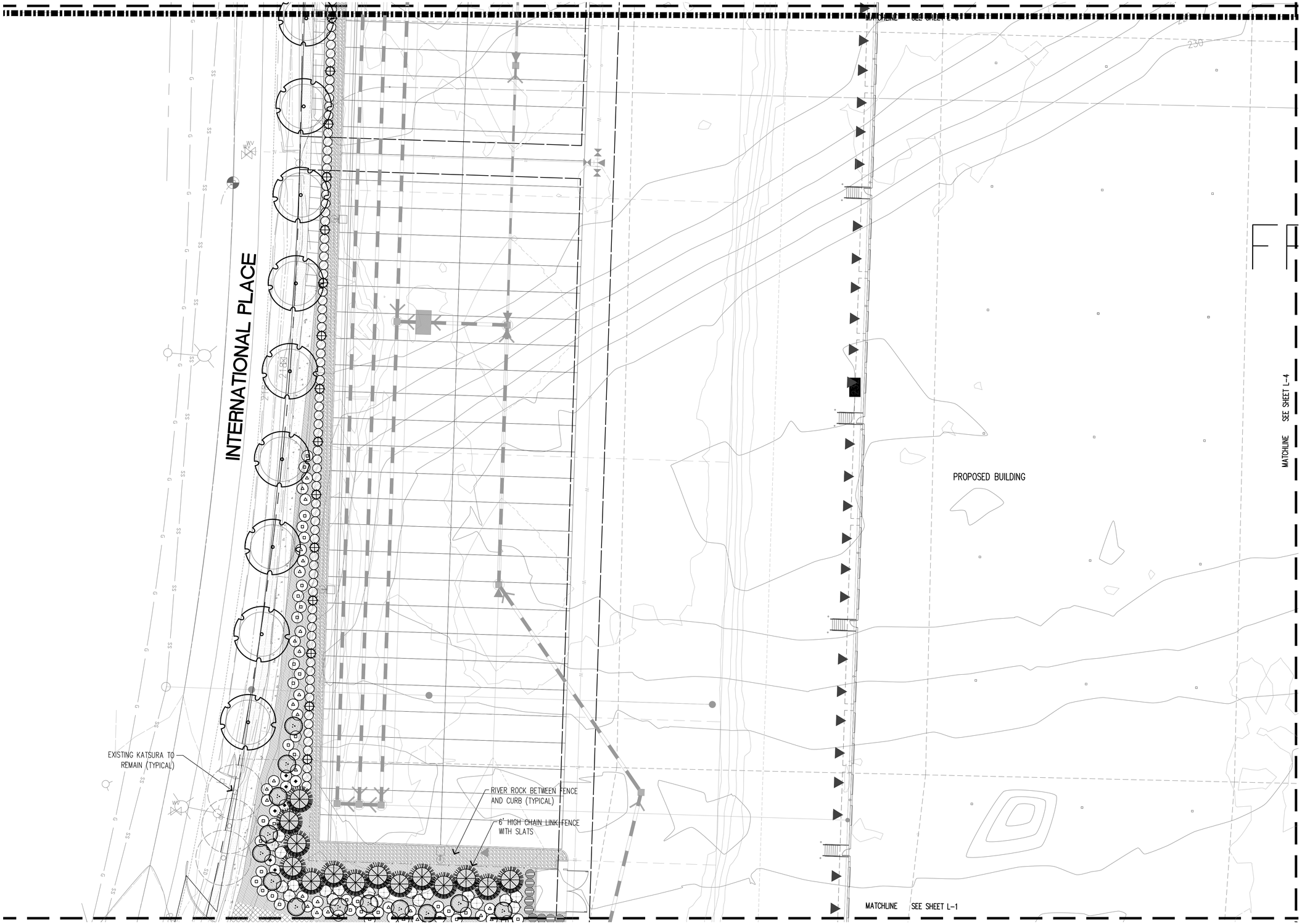

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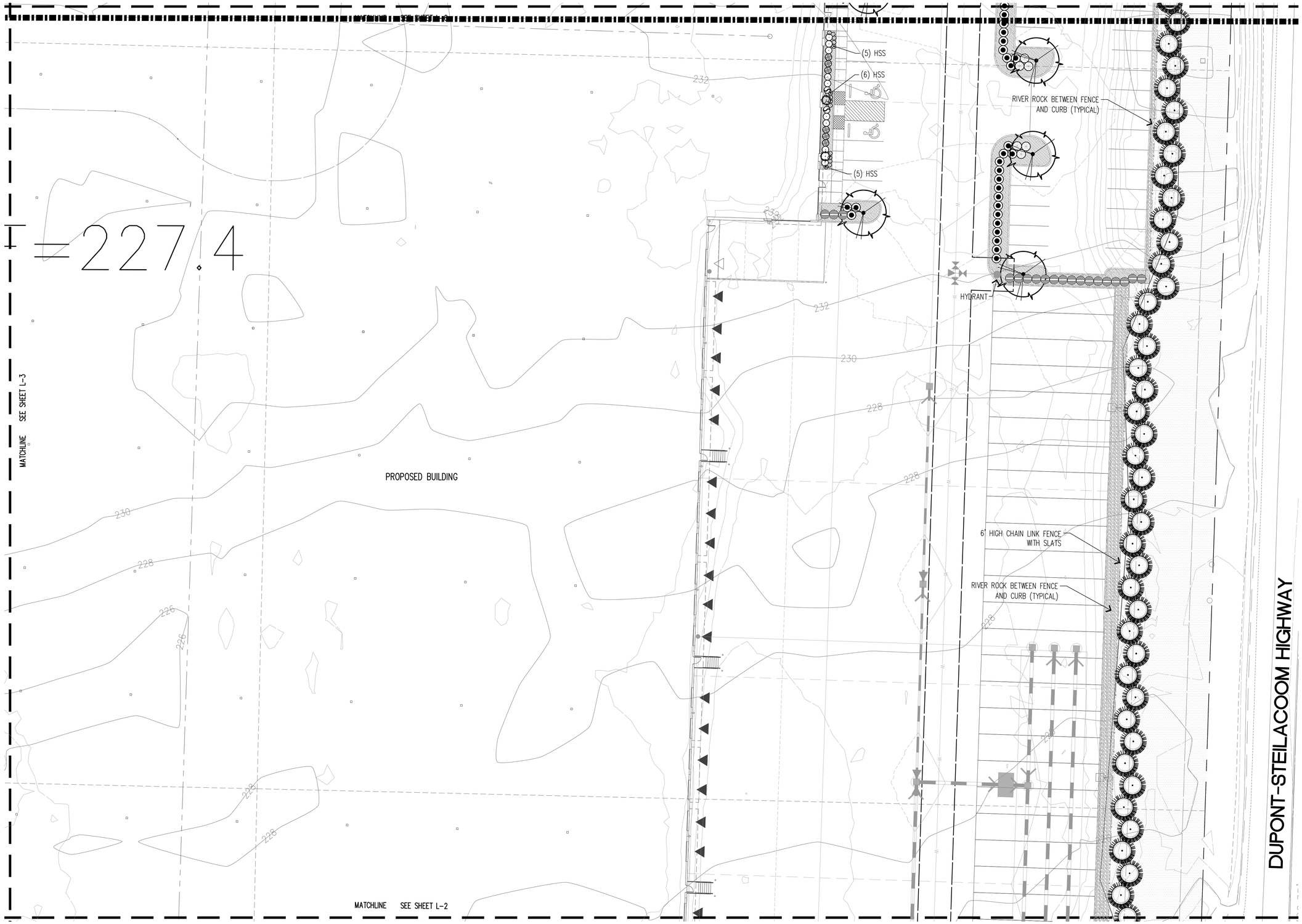

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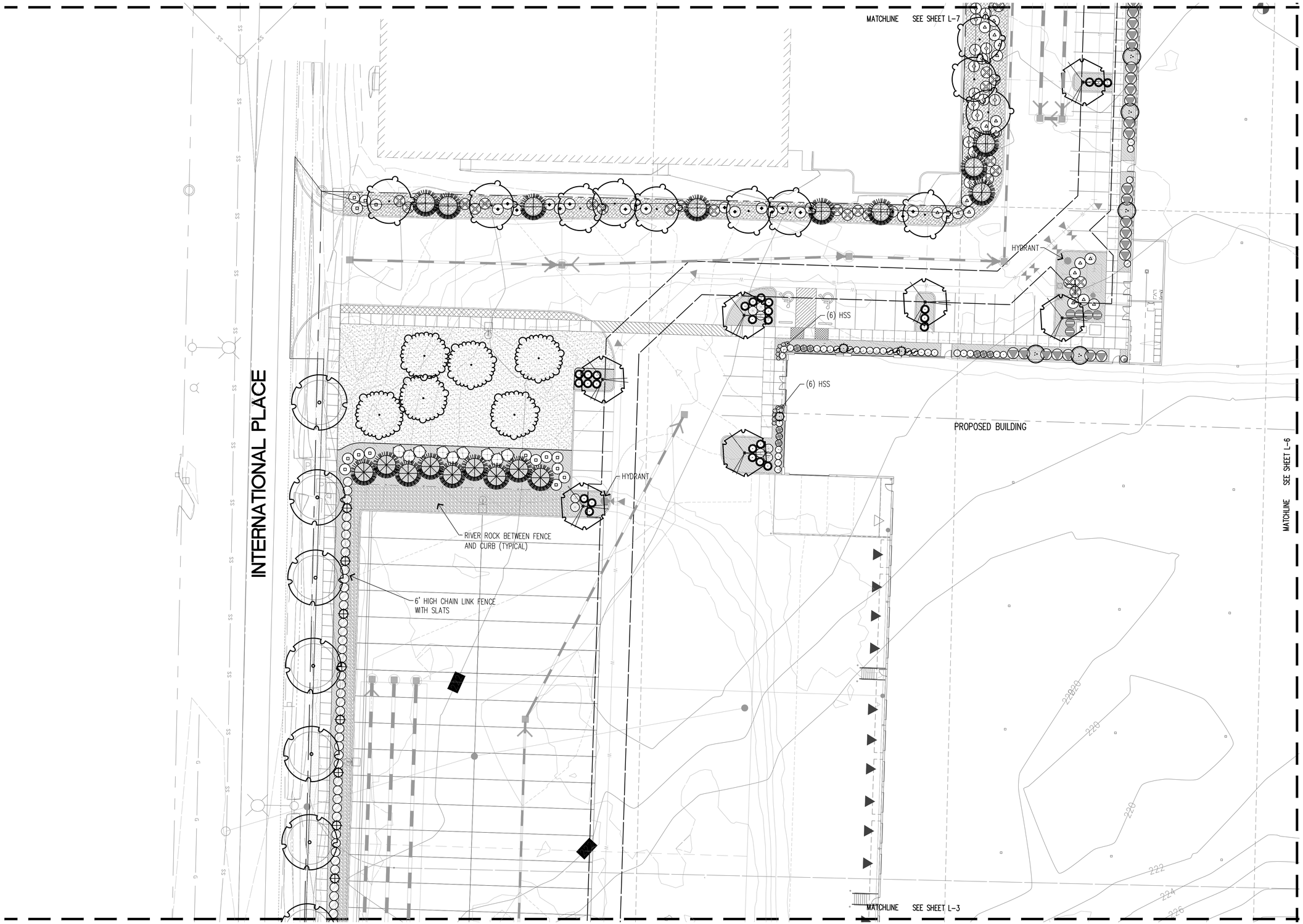

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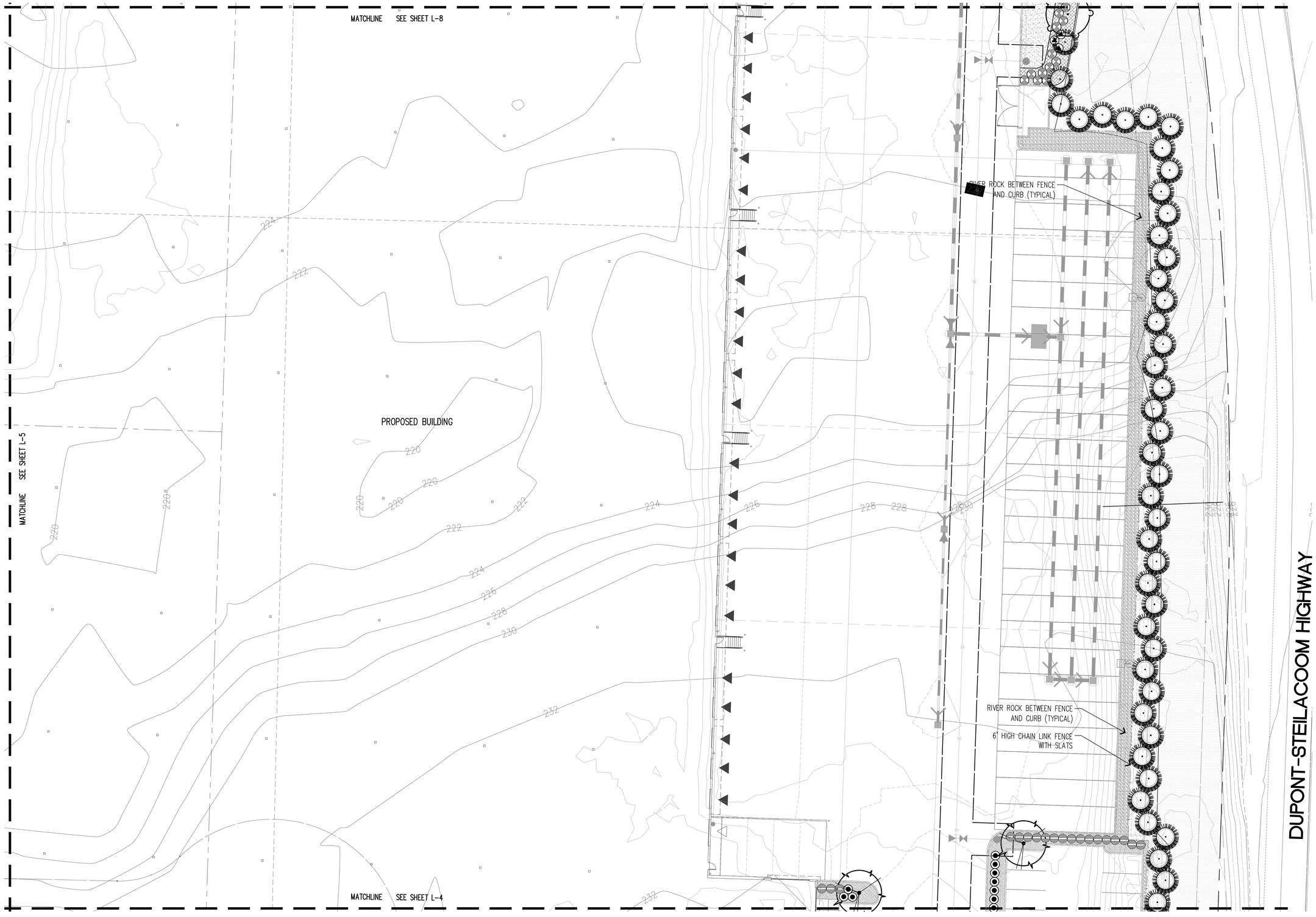

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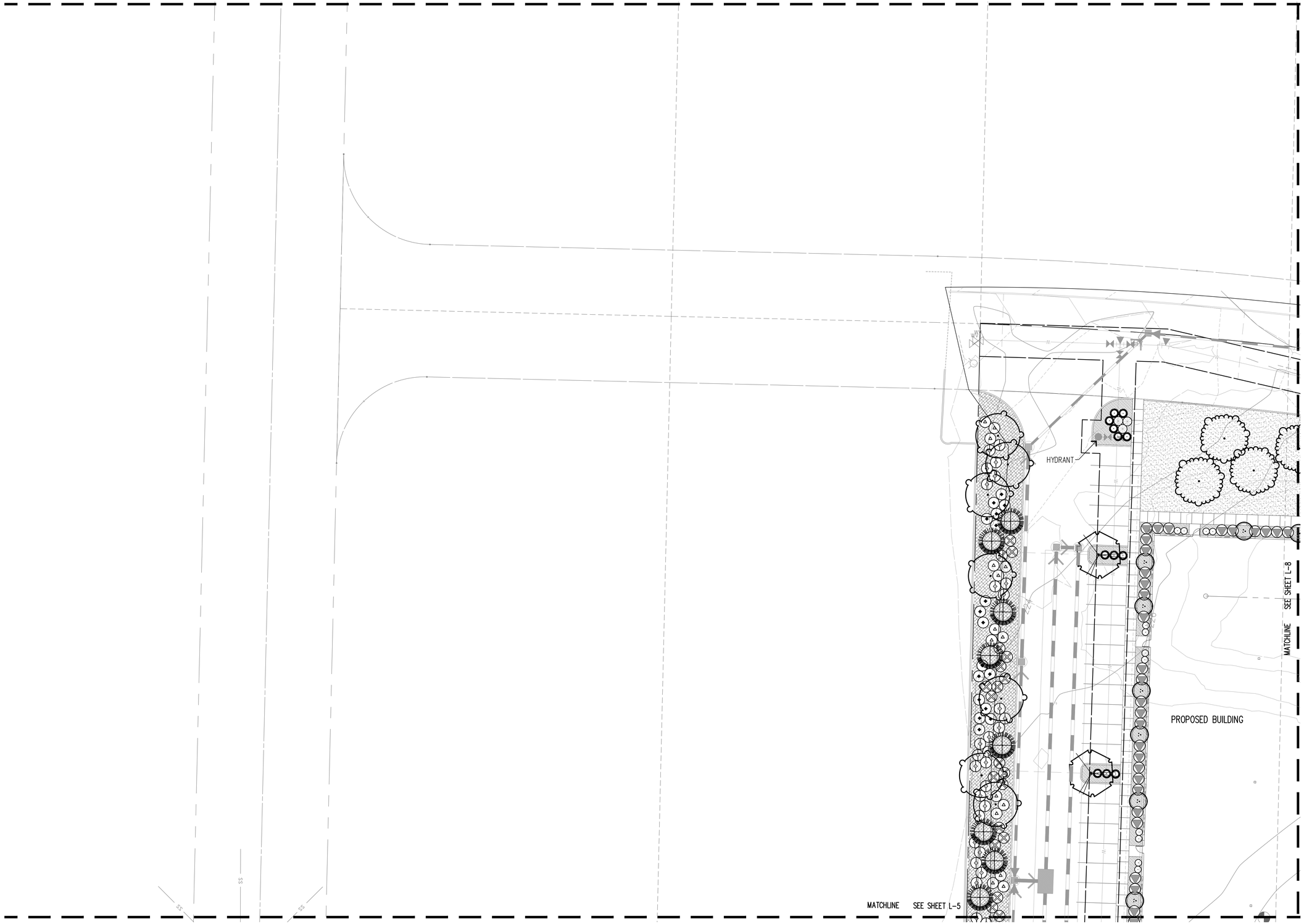

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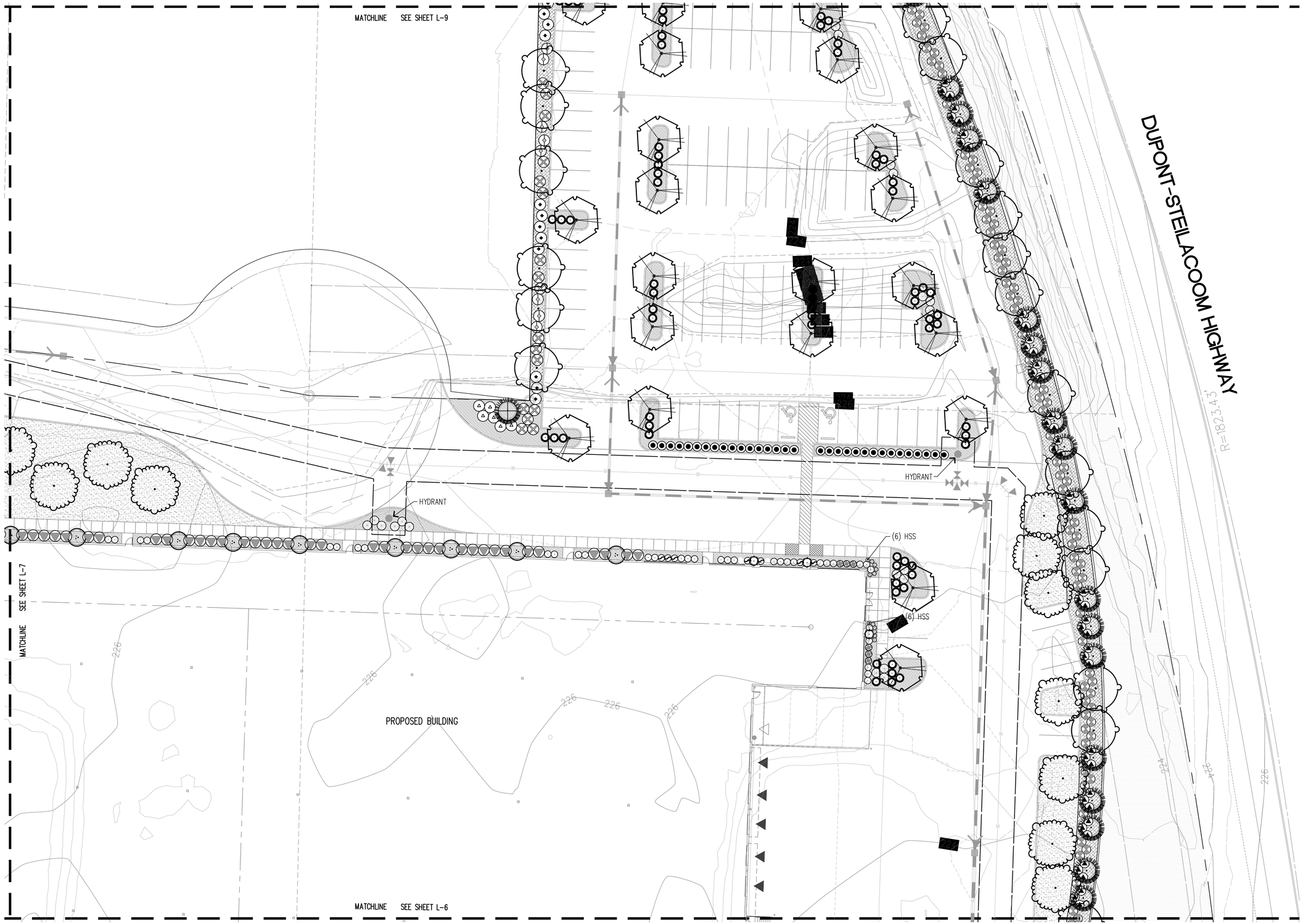

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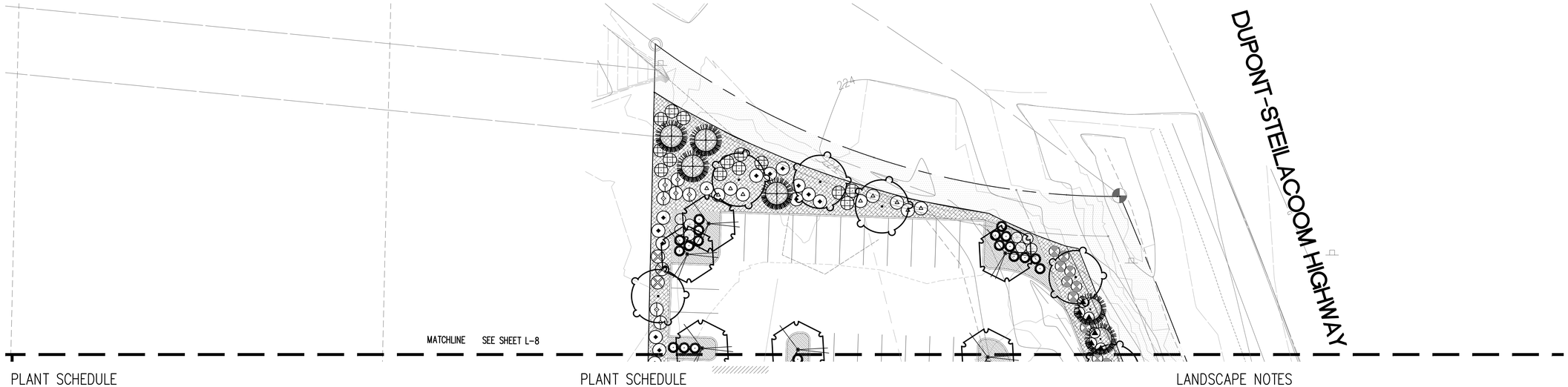


PLANT SCHEDULE

SYMBOL	BOTANICAL NAME / COMMON NAME	QTY.	SIZE	NOTES
	DECIDUOUS TREES			
	ACER CIRCINATUM / VINE MAPLE	37	8–10' HT.	NURSERY GROWN, B&B
	ACER T. X ACER P. 'WARRENRED' / PACIFIC SUNSET	33	1–3/4" CAL.	B&B
	BETULA NIGRA 'CULLY' / HERITAGE RIVER BIRCH	68	1–3/4" CAL.	B&B
	CERCIDIPHYLLUM JAPONICUM / KATSURA TREE	15	2" CAL.	B&B
	CARPINUS BETULUS 'FRANS FONTAINE' / COLUMNAR HORNBEAM	11	1–3/4" CAL.	B&B
	PYRUS CALLERYANA 'ARISTOCRAT' / ARISTOCRAT PEAR	6	1–3/4" CAL.	B&B
	QUERCUS GARRYANA / OREGON WHITE OAK	20	1–3/4" CAL.	B&B
	ZELCOVA SERRATA 'GREEN VASE' / JAPANESE ZELCOVA	30	1–3/4" CAL.	B&B
	EVERGREEN TREES			
	CHAMAECYPARIS NOOTKATENSIS / ALASKA CEDAR	5	6' HT.	B&B
	CHAMAECYPARIS OBTUSA 'GRACILIS' / SLENDER HINOKI	12	6' HT.	B&B
	PINUS NIGRA / AUSTRIAN BLACK PINE	23	6' HT.	B&B
	PSEUDOTSUGA MENZIESII / DOUGLAS FIR	22	6' HT.	B&B
	THUJA PLICATA 'EXCELSA' / EXCELSA WESTERN RED CEDAR	161	8' HT.	B&B
	EVERGREEN SHRUBS			
	AUCUBA JAPONICA 'SERRATIFOLIA' / SAWTOOTHED AUCUBA	112	5 GAL.	FULL & BUSHY, 5' O.C.
	ARBUTUS UNEDO 'COMPACATA' / COMPACT STRAWBERRY BUSH	66	3 GAL.	FULL & BUSHY, 5' O.C.
	CISTUS X HYBRIDUS / WHITE ROCKROSE	92	5 GAL.	FULL & BUSHY, 5' O.C.
	JUNIPERUS SCOLULORUM 'WICHITA BLUE' / WICHITA BLUE JUNIPER	23	MIN.4' HT.	B&B
	LONICERA NITIDA 'BAGGESEN'S GOLD' / BOX HONEYSUCKLE	63	5 GAL.	FULL & BUSHY, 5' O.C.
	MAHONIA AQUIFOLIUM / OREGON GRAPE	204	5 GAL.	FULL & BUSHY, 4' O.C.
	MYRICA CALIFORNICA / PACIFIC WAX LEAF MYRTLE	292	5 GAL.	FULL & BUSHY, 4' O.C.
	NANDINA DOMESTICA 'MOON BAY' / HEAVENLY BAMBOO	42	5 GAL.	FULL & BUSHY, 3' O.C.
	OSMANTHUS HETEROPHYLLUS 'GOSHIKI' / GOSHIKI OSMANTHUS	45	5 GAL.	FULL & BUSHY, 3' O.C.
	PINUS MUGO 'PUMILIO' / DWARF MUGO PINE	79	5 GAL.	FULL & BUSHY, 4' O.C.
	PRUNUS L. 'OTTO LUYKEN' / OTTO LUYKEN LAUREL	68	5 GAL.	FULL & BUSHY, 4' O.C.
	PRUNUS L. 'SCHIPKAENSIS' / SCHIPKA LAUREL	116	5 GAL.	FULL & BUSHY, 4' O.C.
	TAXUS 'DARK GREEN SPREADER' / SPREADING YEW	237	5 GAL.	FULL & BUSHY, 4' O.C.
	TAXUS X MEDIA 'BROWNII'/ BROWN'S YEW	53	30–36" HT.	B&B, 4' O.C.
	VIBURNUM DAVIDII / DAVIDS VIBURNUM	200	5 GAL.	FULL & BUSHY, 4' O.C.
	VIBURNUM TINUS / LAURUSTINUS	63	5 GAL.	FULL & BUSHY, 5' O.C.

ALL PLANT MATERIAL TO BE NATIVE AND/OR DROUGHT TOLERANT

PLANT SCHEDULE

SYMBOL	BOTANICAL NAME / COMMON NAME	QTY.	SIZE	NOTES
	DECIDUOUS SHRUBS			
	HOLODISCUS DISCOLOR / OCEAN SPRAY	14	5 GAL.	FULL & BUSHY, 5' O.C.
	PHYSOCARPUS OPULIFOLIUS 'MINDA' / SUMMER WINE NINEBARK	29	5 GAL.	FULL & BUSHY, 4' O.C.
	SALIX PURPUREA / PURPLE OSIER	91	5 GAL.	FULL & BUSHY, 5' O.C.
	SPIRAEA JAPONICA 'MAGIC CARPET' / MAGIC CARPET SPIREA	18	5 GAL.	FULL & BUSHY, 3' O.C.
	SPIRAEA J. 'ANTHONY WATERER' / ANTHONY WATER SPIREA	91	5 GAL.	FULL & BUSHY, 4' O.C.
	ORNAMENTAL GRASSES / PERENNIALS			
HSS	HELICTOTRICHON S. 'SAPPHIRE' / BLUE OAT GRASS	124	1 GAL.	SPACED 2' O.C.
	GROUNDCOVER			
	ARCTOSTAPHYLOS UVA–URSI / KINNIKINNICK	8,600	4" POT	SPACED 24" O.C.
	ERICA CARNEA 'DECEMBER RED' / DECEMBER RED HEATH	900	1 GAL.	SPACED 24" O.C.
	NATIVE GROUNDCOVER MIX			SPACED 24" O.C.
	40% ARCTOSTAPHYLOS UVA–URSI / KINNIKINNICK	7,500	4" POT	IN RANDOM GROUPINGS
	40% GAULTHERIA SHALLON / SALAL	7,500	4" POT	OF 3–5 PLANTS EACH
	20% MAHONIA REPENS / CREEPING MAHONIA	3,725	4" POT	
	DROUGHT TOLERANT TURF / JB KEVLAR TALL FESCUE SEED MIX			
	33.33% FESTUCA ARUNDINACEA 'FIRECRACKER LS' / FIRECRACKER LS TALL FESCUE			SEED–80 LBS. / ACRE
	33.33% FESTUCA ARUNDINACEA 'SPYDER LS' / SPYDER LS TALL FESCUE			MULCH–1,500 LBS. / ACRE
	33.33% FESTUCA ARUNDINACEA 'RAPTOR II' / RAPTOR II TALL FESCUE			
	EROSION CONTROL SEED MIX			
	45% FESTUCA ARUNDINACEA VAR. / DWARF TALL FESCUE (SEVERAL VARIETIES)			SEED–80 LBS. / ACRE
	30% LOLIUM PERENNE VAR. BARCLAY / DWARF PERENNIAL RYE (BARCLAY)			MULCH–1,500 LBS. / ACRE
	20% FESTUCA RUBRA / RED FESCUE			
	5% AGROSTIS TENUIS 'HIGHLAND STRAIN / COLONIAL BENTGRASS			

ALL PLANT MATERIAL TO BE NATIVE AND/OR DROUGHT TOLERANT

LEGEND

EXISTING LANDSCAPE / NATIVE AREAS TO REMAIN (EXCLUDES R.O.W.)

OREGON OAK RETENTION AREA TO REMAIN

RIVER ROCK MULCH
4–12" DIA. WASHED RIVER ROCK. INSTALLED TO A MINIMUM 6" DEPTH.

EXISTING TREES TO REMAIN

EXISTING KATSURA TO REMAIN

LANDSCAPE NOTES

1. LANDSCAPE CONTRACTOR TO CLEAR AND GRUB ALL PERIMETER LANDSCAPE AREAS SHOWN TO RECEIVE NEW LANDSCAPE.
2. ALL NEW LANDSCAPE AREAS ADJACENT TO BUILDINGS AND WITHIN PARKING LOT TO BE SET AT 18" MINUS FINISH ELEVATION EXCEPT AS NOTED. THESE AREAS TO RECEIVE IMPORTED 3–WAY TOPSOIL TO A MIN. DEPTH OF 24". ALL PERIMETER BEDS THAT ARE SHOWN WITH GROUNDCOVER TO RECEIVE IMPORTED 3–WAY TO A 18" DEPTH. TREES PLANTED INTO EXISTING LANDSCAPE/NATIVE AREAS TO REMAIN TO BE PIT PLANTED WITH IMPORTED 3–WAY TOPSOIL. PLANT PIT TO BE 3X THE DIAMETER OF THE ROOTBALL AND AS DEEP AS ROOTBALL.
3. ALL NEW PLANTING BEDS TO HAVE FINE BARK MULCH TO A MINIMUM DEPTH OF 2".
4. GROUND COVER TO EXTEND UNDER ALL DECIDUOUS TREE CANOPIES AT THE SPECIFIED SPACING TO PROVIDE COMPLETE COVERAGE IN ALL PLANTING BEDS DESIGNATED TO RECEIVE GROUND COVER. GROUNDCOVER BENEATH EVERGREEN TREES TO BE MAINTAIN A 3' CLEARANCE FROM BASE OF TRUNK.
5. ALL LANDSCAPE BEDS SHALL BE PLANTED WITH GROUNDCOVER, PLANTED IN A TRIANGULAR PATTERN, TO ACHIEVE FULL COVERAGE WITHIN TWO YEARS OF PLANTING.
6. LANDSCAPE DRAWINGS ARE BASED ON THE SITE PLANS PREPARED BY CRAFT ARCHITECTS. IMMEDIATELY NOTIFY LANDSCAPE ARCHITECT OF ANY FIELD CHANGES TO THE SITE PLAN WHICH MAY REQUIRE ADJUSTMENT OF DESIGN.
7. REFER TO CIVIL ENGINEERING DRAWINGS FOR GRADING AND DRAINAGE INFORMATION. IMMEDIATELY NOTIFY LANDSCAPE ARCHITECT OF ANY ADVERSE DRAINAGE CONDITIONS WHICH MAY AFFECT THE HEALTH OF PLANT MATERIAL.
8. NO PRE–EMERGENT HERBICIDES TO BE USED ON THE PROJECT SITE DURING THE FIRST YEAR WARRANTY PERIOD.
9. ALL NEW LANDSCAPE AREAS TO BE IRRIGATED WITH A FULLY AUTOMATIC IRRIGATION SYSTEM. IRRIGATION TO BE SUBMITTED FOR BUILDING PERMIT.
10. TREES TO MAINTAIN A MINIMUM CLEARANCE OF 6' FROM WATER, SEWER, AND FIRE HYDRANTS. SHRUBS TO MAINTAIN A MINIMUM CLEARANCE OF 4' FROM FIRE HYDRANTS.
11. FERTILIZE ALL TREES, SHRUBS AND GROUNDCOVER WITH STARTER FERTILIZER 2–4–2. APPLIED AT MANUFACTURES RECOMMENDED RATES. ADDITIONALLY FERTILIZE ALL TREES AND SHRUBS WITH AGRIFROM TABS 20–10–5. APPLIED AT MANUFACTURES RECOMMENDED RATES. FERTILIZE DROUGHT TOLERANT LAWN WITH 10–20–20. APPLIED AT MANUFACTURES RECOMMENDED RATES.

LANDSCAPE IRRIGATION WATER CONSERVATION NOTES

1. IRRIGATION TO BE A HIGH EFFICIENCY EVAPOTRANSPERATION ADJUSTED IRRIGATION SYSTEM. PROVIDED WITH AN ON SITE ET SENSOR.
2. ALL NEW IRRIGATED LANDSCAPE AREAS TO HAVE SOIL AMENDED AND MULCHED TO MINIMIZE EVAPORATION OF IRRIGATED WATER.
3. LAWN AREAS TO BE DROUGHT TOLERANT LAWN SEED ONLY AND WILL ONLY BE TEMPORARLY IRRIGATED UNTIL ESTABLISHED. TREES WITHIN LAWN TO BE IRRIGATED SEPARATELY.
4. NEW TREES PLANTED INTO EXISTING LANDSCAPE/NATIVE AREAS TO BE IRRIGATED WITH ROOT WATERING SYSTEM BUBBLERS OR POINT SOURCE DRIP EMITTERS.
5. ALL PLANTING HAS BEEN SELECTED TO BE NATIVE AND OR DROUGHT TOLERANT PLANT MATERIAL.
6. IRRIGATION ZONES WILL BE SEPARATED BY PLANT MATERIAL TYPE, WATER NEEDS AND EXPOSURE.

LANDSCAPE IRRIGATION CALCULATIONS

TOTAL LANDSCAPE AREA:		231,160 SF
	LOW WATER NEED IRRIGATED LANDSCAPE:	73,784 SF
WATER BUDGET:	WB = 7.2 GALLONS / S.F. PER YEAR WB = 7.2 X 231,160 S.F.	1,664,352 GALLONS
ESTIMATED WATER USE:	EWU = 14.5 X 0.4 X 73,784 X 0.62 / 0.625 EWU = 684,715 GALLONS PER YEAR	684,715 GALLONS
WATER BUDGET:		1,664,352 GALLONS
ESTIMATED WATER USE:		684,715 GALLONS

NOTE:
CALCULATIONS FOR ESTIMATED WATER USE EXCLUDE EXISTING OREGON OAK TREE RETENTION, DROUGHT TOLERANT LAWN (WHICH IS TO BE TEMPORARILY IRRIGATED UNTIL ESTABLISHED) EROSION CONTROL, EXISTING LANDSCAPE/NATIVE AREAS TO REMAIN, AND ROCK MULCH AREAS.

LANDSCAPE AREA CALCULATIONS

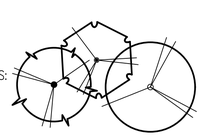
SITE AREA:	1,400,697 SF (32.16 ACRES)
REQUIRED LANDSCAPE AREA:	140,069 (10%)
PROVIDED LANDSCAPE AREA:	*231,160 SF (16.5 ACRES)

*NOTE:
PROVIDED LANDSCAPE AREA INCLUDES; 69,864 S.F. OF NEW IRRIGATED LANDSCAPE, 15,974 S.F OF TEMPORARILY IRRIGATED DROUGHT TOLERANT LAWN, 16,891 S.F. EROSION CONTROL HYDROSEED, 118,331 S.F. EXISTING LANDSCAPE/NATIVE AREAS, AND 10,100 S.F. OF ROCK MULCH BEDS.

LANDSCAPE PARKING LOT CALCULATIONS

PARKING LOT STALL:	383
REQUIRED PARKING LOT TREES:	64 (1 TREE / 6 STALLS)
PROVIDED PARKING LOT TREES:	69

PROVIDED PARKING LOT TREE SYMBOLS:



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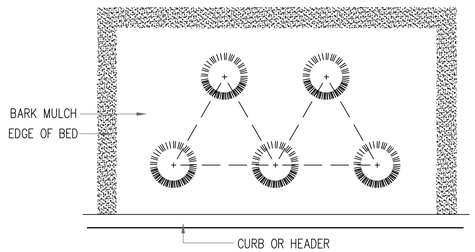
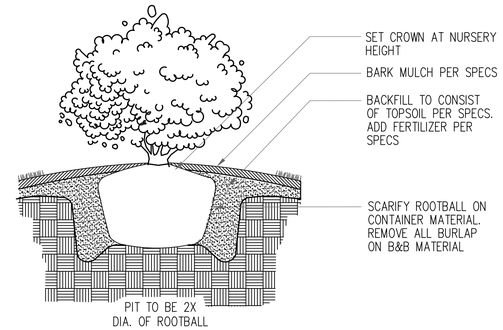
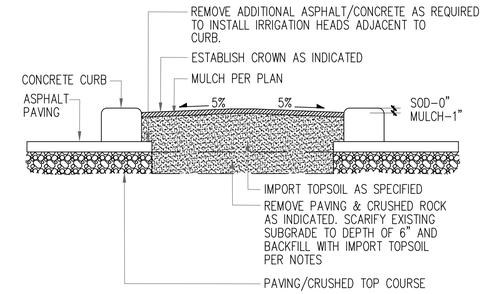


NOTE: SPACING TO BE TRIANG. PER DISTANCE SHOWN ON PLANT SCHEDULE

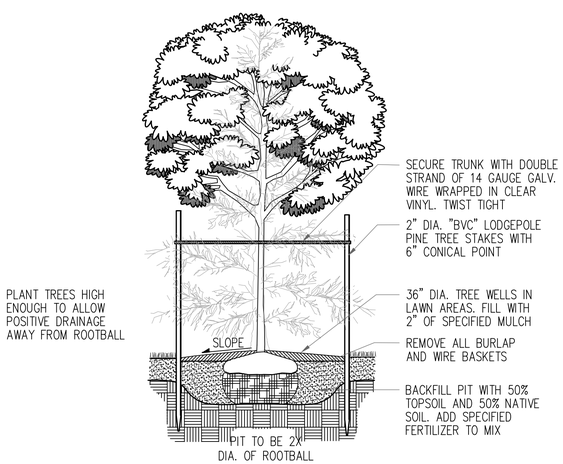
1 GROUND COVER SPACING
NTS



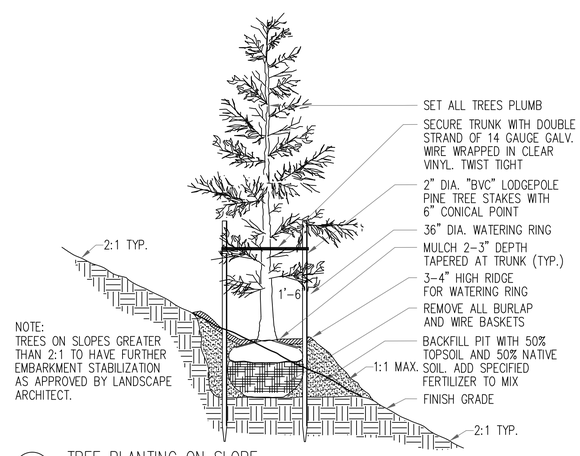
2 SHRUB PLANTING
NTS



3 LANDSCAPE ISLAND
NTS



4 TREE STAKING
NTS



NOTE:
TREES ON SLOPES GREATER THAN 2:1 TO HAVE FURTHER EMBARKMENT STABILIZATION AS APPROVED BY LANDSCAPE ARCHITECT.

5 TREE PLANTING ON SLOPE
NTS

NWLC-P2, LLC

CRAFT architects
2505 Third Avenue
Suite 324
Seattle, WA 98121

206.720.7001 phone
206.720.2949 fax

www.craftarchitects.com

NORTHWEST LOGISTICS CENTER
BUILDING 2
INTERNATIONAL PLACE
DUPONT, WASHINGTON

CONSULTANT

WBLA Landscape Architecture
Site Planning Irrigation
16630 30th Dr. S.E.
Bothell, WA. 98012
phone (425) 417-4609

STATE OF WASHINGTON REGISTERED LANDSCAPE ARCHITECT
WILLIAM A. BROWN
CERTIFICATE NO. 501

Submittals/Revisions:

SITE PLAN REVIEW 02/28/18

Sheet Title:
LANDSCAPE DETAILS

Date: 02/07/18
Design: CB
Drawn: CB
Project No: 12-600
Approved: CB

BUILDING 2
Sheet No: L-10

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COVER SHEET
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=100'

0 50 100 200

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."

SPECIAL NOTES:

1. NO MORE THAN 20,000 POUNDS OF HAZARDOUS SUBSTANCES OR HAZARDOUS WASTES MAY BE STORED ONSITE, AND NO HAZARDOUS SUBSTANCES OR WASTES MAY BE STORED ONSITE EXCEPT THAT WHICH IS DELIVERED FOR ONSITE OPERATIONS OR PRODUCED ONSITE CONSISTENT WITH DMC 25.45.030 (16). DIESEL FUEL FOR ONSITE EMERGENCY GENERATORS IS EXEMPT FROM THE REQUIREMENT.
2. ANY BUSINESS WITH MORE THAN 100 EMPLOYEES SHALL CONTACT PIERCE TRANSIT TO DETERMINE IF COMPLIANCE WITH THE COMMUTE TRIP REDUCTION ACT IS NECESSARY, AND IF SO, PARTICIPATE IN THE PROGRAM AS REQUIRED PER DMC 25.75.
3. A SEPARATE PERMIT SHALL BE REQUIRED FOR UNDERGROUND FIRE LINE INSTALLATION. THE SYSTEM SHALL COMPLY WITH NFPA 24 STANDARD FOR INSTALLATION OF PRIVATE FIRE SERVE MAINS. THREE (3) SETS OF PLANS, MATERIAL SPECIFICATIONS SHEETS FOR ALL EQUIPMENT USED IN THE SYSTEM SHALL BE SUBMITTED BY A STATE OF WASHINGTON LICENSED CONTRACTOR FOR REVIEW, APPROVAL, AND PERMITS ISSUED PRIOR TO COMMENCING WORK.
4. A SEPARATE PERMIT SHALL BE REQUIRED FOR INSTALLATION OF AN AUTOMATIC FIRE ALARM SYSTEM. THE SYSTEM SHALL COMPLY WITH NFPA 72 STANDARD FOR FIRE ALARM SYSTEMS. THREE (3) SETS OF PLANS, MATERIAL SPECIFICATIONS SHEET FOR ALL EQUIPMENT USED IN THE SYSTEM SHALL BE SUBMITTED BY A STATE OF WASHINGTON LICENSED CONTRACTOR FOR REVIEW, APPROVAL AND PERMITS ISSUED PRIOR TO COMMENCING WORK.
5. PRIOR TO FIRE DEPARTMENT APPROVAL FOR OCCUPANCY, PORTABLE FIRE EXTINGUISHERS ARE REQUIRED TO BE INSTALLED AS DIRECTED BY CITY OF DUPONT FIRE DEPARTMENT. PRIOR TO INSTALLATION, APPLICANT IS TO REQUEST A FIRE INSPECTION TO CONFIRM THE LOCATIONS.
6. PRIOR TO FIRE DEPARTMENT APPROVAL FOR OCCUPANCY, A KNOX BOX SYSTEM SHALL BE REQUIRED. KNOX APPLICATIONS MAY BE PICKED UP AT THE LAKEWOOD FIRE DEPARTMENT HEADQUARTERS STATION LOCATED AT 10928 PACIFIC HWY SW.
7. PRIOR TO FIRE DEPARTMENT APPROVAL FOR OCCUPANCY, AN AUTOMATIC FIRE SPRINKLER SYSTEM SHALL BE INSTALLED. THE SYSTEM SHALL COMPLY WITH NFPA 13 STANDARD FOR AUTOMATIC FIRE SPRINKLER SYSTEMS. THREE (3) SETS OF PLANS, HYDRAULIC CALCULATIONS, AND MATERIAL SPECIFICATIONS SHEETS FOR ALL EQUIPMENT USED IN THE SYSTEM SHALL BE SUBMITTED BY A STATE OF WASHINGTON LICENSED CONTRACTOR FOR REVIEW, APPROVAL, AND PERMITS ISSUED PRIOR TO COMMENCING WORK. SEPARATE PERMIT REQUIRED.
8. PRIOR TO FIRE DEPARTMENT APPROVAL FOR OCCUPANCY, A CLASS 1 STANDPIPE SYSTEM SHALL BE INSTALLED. THE SYSTEM SHALL COMPLY WITH NFPA 14 INSTALLATION OF STANDPIPE AND HOSE SYSTEMS. THREE (3) SETS OF PLANS, HYDRAULIC CALCULATIONS, AND MATERIALS SPECIFICATIONS SHEETS FOR ALL EQUIPMENT USED IN THE SYSTEM SHALL BE SUBMITTED BY A WASHINGTON LICENSED CONTRACTOR FOR REVIEW, APPROVAL, AND PERMITS ISSUED PRIOR TO COMMENCING WORK. SEPARATE PERMIT REQUIRED.
9. PRIOR TO FIRE DEPARTMENT APPROVAL FOR OCCUPANCY, MEANS OF EGRESS SHALL BE ILLUMINATED, THE EMERGENCY POWER SYSTEM SHALL PROVIDE POWER FOR A DURATION OF NOT LESS THAN 90 MINUTES AND SHALL CONSIST OF STORAGE BATTERIES, UNIT EQUIPMENT OR AN ON-SITE GENERATOR.
10. PRIOR TO FIRE DEPARTMENT APPROVAL FOR OCCUPANCY, FIRE APPARATUS ACCESS ROADS SHALL HAVE APPROVED STRIPING OR SIGNS. (PRIOR TO INSTALLATION, APPLICANT SHALL REQUEST A FIRE INSPECTION TO CONFIRM THE LOCATIONS.)

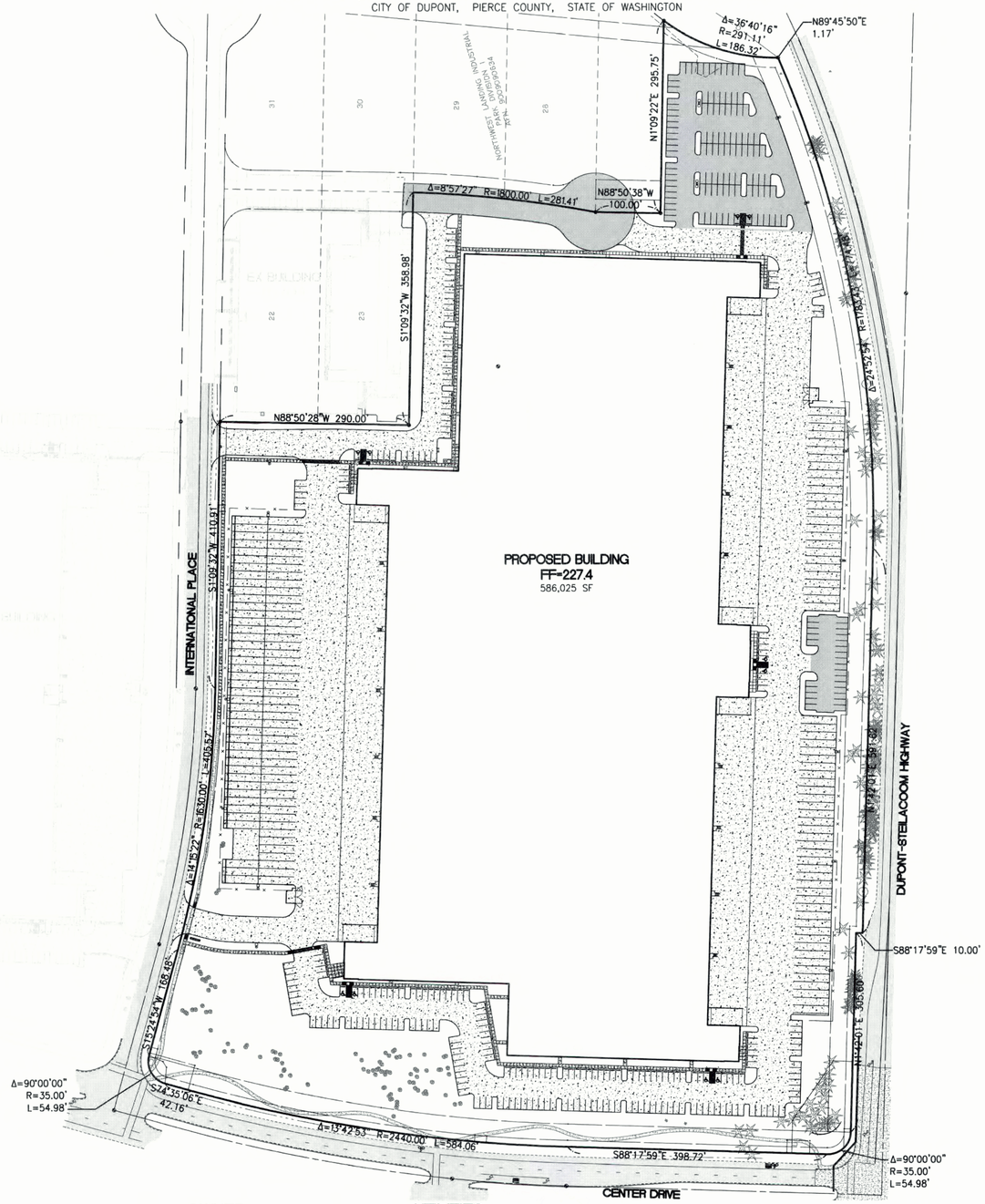
ESTIMATED EARTHWORK QUANTITIES

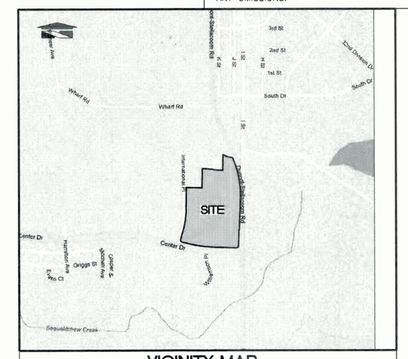
ESTIMATED AMOUNT UNDER ORIGINAL SEPA DETERMINATION
CUT = 81,000 CY
FILL = 65,200 CY

ESTIMATED AMOUNT COMPLETED TO DATE
CUT = 60,000 CY (74.0% OF TOTAL CUT EARTHWORK)
FILL = 46,000 CY (70.1% OF TOTAL FILL EARTHWORK)

ESTIMATED AMOUNT TO BE COMPLETED UNDER THIS PERMIT
CUT = 18,000 CY (22.2% OF TOTAL CUT EARTHWORK)
FILL = 17,000 CY (26.1% OF TOTAL FILL EARTHWORK)

ESTIMATED AMOUNT AT COMPLETION OF CONSTRUCTION
CUT = 18,000 CY + 60,000 CY = 68,000 CY TOTAL CUT < 81,000 CY
FILL = 17,000 CY + 46,000 CY = 63,000 CY TOTAL FILL < 65,200 CY





VICINITY MAP

LEGAL DESCRIPTION

(PER CHICAGO TITLE COMPANY'S SECOND ALTA COMMITMENT (THEIR ORDER NO. 4366563A), DATED JUNE 8, 2012 AT 8:00 A.M.) PARCEL A: LOTS 1 THROUGH 21, INCLUSIVE, AND LOTS 24 THROUGH 26, INCLUSIVE, NORTHWEST LANDING INDUSTRIAL PARK DIVISION 1, ACCORDING TO THE PLAT THEREOF RECORDED SEPTEMBER 9, 1996 UNDER RECORDING NUMBER 9609090634, RECORDS OF PIERCE COUNTY AUDITOR. PARCEL B: LOT 1, BOUNDARY LINE ADJUSTMENT 200703215009, ACCORDING TO THE SURVEY THEREOF RECORDED MARCH 21, 2007, RECORDS OF PIERCE COUNTY AUDITOR. TOGETHER WITH A NON-EXCLUSIVE EASEMENT FOR INGRESS, EGRESS AND UTILITIES AS CREATED BY INSTRUMENT RECORDED UNDER RECORDING NO. 200605170142 AND AS DELINEATED ON SAID BOUNDARY LINE ADJUSTMENT 200703215009. SITUATE IN THE CITY OF DUPONT, COUNTY OF PIERCE, STATE OF WASHINGTON.

SURVEY INFORMATION

HORIZONTAL DATUM - BASIS OF BEARING
THE BASIS OF BEARINGS IS THE BEARING BETWEEN WCCS POINTS 413 (GPS 031) AND 1130 (LEWIS GP 807), TAKEN AS SOUTH 02° 28' 23" EAST, BASED UPON THE NORTH AMERICAN DATUM OF 1983 - NAD 83 (91) - WASHINGTON STATE PLANE COORDINATE SYSTEM, SOUTH ZONE.

VERTICAL DATUM
NATIONAL GEODETIC VERTICAL DATUM OF 1929 - NGVD 29
FROM DATA PROVIDED BY THE CITY OF DUPONT PLANNING DEPARTMENT - THE BENCHMARK IS THE SURFACE MON AT THE CENTERLINE OF THE INTERNATIONAL PLACE CUL-DE-SAC, TAKEN AS 221.82 FEET7

PROJECT INFORMATION

TAX ACCOUNT NUMBERS
300039-0110

CALCULATED LAND AREA
1,400,697± S.F. (32.16± ACRES)

CURRENT OWNER
NWLC-P2, LLC

LAND USE GOVERNING JURISDICTION
CITY OF DUPONT

RECEIVED
APR 19 2018
CITY OF DUPONT

INDEX OF SHEETS

C1 OF 12	COVER SHEET
C2 OF 12	HORIZONTAL CONTROL PLAN
C3 OF 12	GRADING AND STORM DRAINAGE PLAN (NORTH)
C4 OF 12	GRADING AND STORM DRAINAGE PLAN (SOUTH)
C5 OF 12	SANITARY SEWER AND WATER PLAN (NORTH)
C6 OF 12	SANITARY SEWER AND WATER PLAN (SOUTH)
C7 OF 12	CONSTRUCTION NOTES AND DETAILS
C8 OF 12	CONSTRUCTION NOTES AND DETAILS
C9 OF 12	CONSTRUCTION NOTES AND DETAILS
C10 OF 12	TREE RETENTION PLAN
C11 OF 12	BOUNDARY AND TOPO SURVEY EXHIBIT
C12 OF 12	ROAD IMPROVEMENT PLAN

LEGEND

SURVEY MONUMENT	PROPOSED TYPE II CATCH BASIN
EX. POWER VAULT	PROPOSED TYPE I CATCH BASIN
EX. LUMINAIRE (LUM.)	PROPOSED STORM DRAIN FLOW ARROW
EX. LOT LIGHT	PROPOSED STORM DRAINAGE LINE
EX. POWER POLE	PROPOSED TRENCH DRAIN
EX. JUNCTION BOX	PROPOSED SANITARY SEWER LINE
EX. CATCH BASIN (CB)	PROPOSED SANITARY SEWER CLEANOUT
EX. CATCH BASIN (CB) TYPE 2	PROPOSED WATERMAIN — W
EX. SANITARY SEWER MANHOLE (SSMH)	PROPOSED FIRE HYDRANT
EX. GAS METER	PROPOSED WATER VALVE
EX. GAS VALVE	PROPOSED CONCRETE BLOCKING
EX. WATER VALVE (WV)	PROPOSED 90° BEND
EX. FIRE HYDRANT (FH)	PROPOSED SPOT ELEVATIONS — 23.20
EX. WATER METER	EXISTING SPOT ELEVATIONS — + 100.0
EX. SIGN	PROPOSED CONTOURS — 40
EX. WATER LINE	
EX. SANITARY SEWER LINE	PROPOSED LIGHT PAVEMENT
EX. STORM DRAINAGE LINE	
EX. POWER UNDERGROUND — P(UG) —	EXISTING ASPHALT PAVEMENT
EX. POWER OVERHEAD — P(OH) —	PROPOSED CONCRETE
EX. CONTOURS — 470 —	

OWNER
NWLC-P2, LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELTO

ENGINEER/SURVEYOR
BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE S.
KENT, WA 98032
PHONE: (425) 251-6222
CONTACT: DAN BALMELLI

CALL BEFORE YOU DIG:
1-800-424-5555

UTILITIES:

WATER:
CITY OF DUPONT (CITY HALL)
1700 CENTER DRIVE
DUPONT, WA 98327
PHONE: (253) 964-8121

SEWER:
PIERCE COUNTY SEWER
9850 64TH STREET WEST
UNIVERSITY PLACE, WA 98467
PHONE: (253) 798-4020

GAS AND ELECTRICITY:
PUGET SOUND ENERGY
3130 SOUTH 38TH STREET
TACOMA, WA 98409
PHONE: (888) 225-5773

GARBAGE SERVICE:
LEMAY ENTERPRISES
13502 PACIFIC AVENUE
TACOMA, WA 98444
PHONE: (253) 537-8687

TELEPHONE:
QUEST COMMUNICATIONS
PHONE: (800) 244-1111

TELEVISION/CABLE:
AT&T BROADBAND
PHONE: (877) 824-2288

UTILITY CONFLICT NOTE:

CAUTION:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POTHOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE @ 1-800-424-5555 AND THEN POTHOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL CONSULT BARGHAUSEN CONSULTING ENGINEERS, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR OBTAINING PERMITS FROM THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES FOR REMOVING AND REPLACING ALL SURVEY MONUMENTATION THAT MAY BE AFFECTED BY CONSTRUCTION ACTIVITY, PURSUANT TO WAC 332-120. APPLICATIONS MUST BE COMPLETED BY A REGISTERED LAND SURVEYOR. APPLICATIONS FOR PERMITS TO REMOVE MONUMENTS MAY BE OBTAINED FROM THE WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES, OR BY CONTACTING THEIR OFFICE BY TELEPHONE AT (206) 902-1190.

WASHINGTON STATE DEPARTMENT OF NATURAL RESOURCES
PUBLIC LAND SURVEY OFFICE
1111 WASHINGTON STREET S.E.
P.O. BOX 47060
OLYMPIA, WASHINGTON 98504-7060

UPON COMPLETION OF CONSTRUCTION, ALL MONUMENTS DISPLACED, REMOVED, OR DESTROYED SHALL BE REPLACED BY A REGISTERED LAND SURVEYOR, AT THE COST AND AT THE DIRECTION OF THE CONTRACTOR, PURSUANT TO THESE REGULATIONS. THE APPROPRIATE FORMS FOR REPLACEMENT OF SAID MONUMENTATION SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR.

No.	Date	By	Ckd.	Appr.	Revision

Title: COVER SHEET FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

DANIEL K. BALMELLI — STATE OF WASHINGTON — 25672 — REGISTERED PROFESSIONAL ENGINEER — 04/18/2018

Scale: Horizontal 1"=100' Vertical N/A

Designed WED
Drawn WED
Checked DKB
Approved DKB
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX
CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753
Sheet C1 of 12

File:P:\15008\15753\engineering\15753-o.dwg Date/Time:4/19/2018 12:41 PM Scale:1" = 1' WDUNLAP Xref: ----

Attachment 1f - Preliminary Civil Engineering Drawings

HORIZONTAL CONTROL PLAN

NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

GENERAL SITE DATA:

TOTAL SITE AREA:	1,400,697 SF ≈ 32.16 AC.
BLDG. AREA:	586,025 SF ≈ 13.45 AC.
BLDG. COVERAGE:	41.8%
TOTAL IMPERVIOUS SURFACE:	1,110,000 SF ≈ 25.25 AC.
TOTAL IMPERVIOUS COVERAGE:	78.5%
LANDSCAPE AREA REQUIRED:	140,070 SF 10% (IND. ZONE)
LANDSCAPE AREA PROVIDED:	290,697 SF ≈ 6.67 AC
TOTAL PERVIOUS COVERAGE:	21.5%
PARKING RANGE:	0.3 STALL / EMPLOYEE (MIN) 1.0 STALL / EMPLOYEE (MAX)
EMPLOYEE COUNT:	384 EMPLOYEES
CAR PARKING PROVIDED:	384 CAR PARKING STALLS
TRAILER PARKING PROVIDED:	152 TRAILER PARKING STALLS

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

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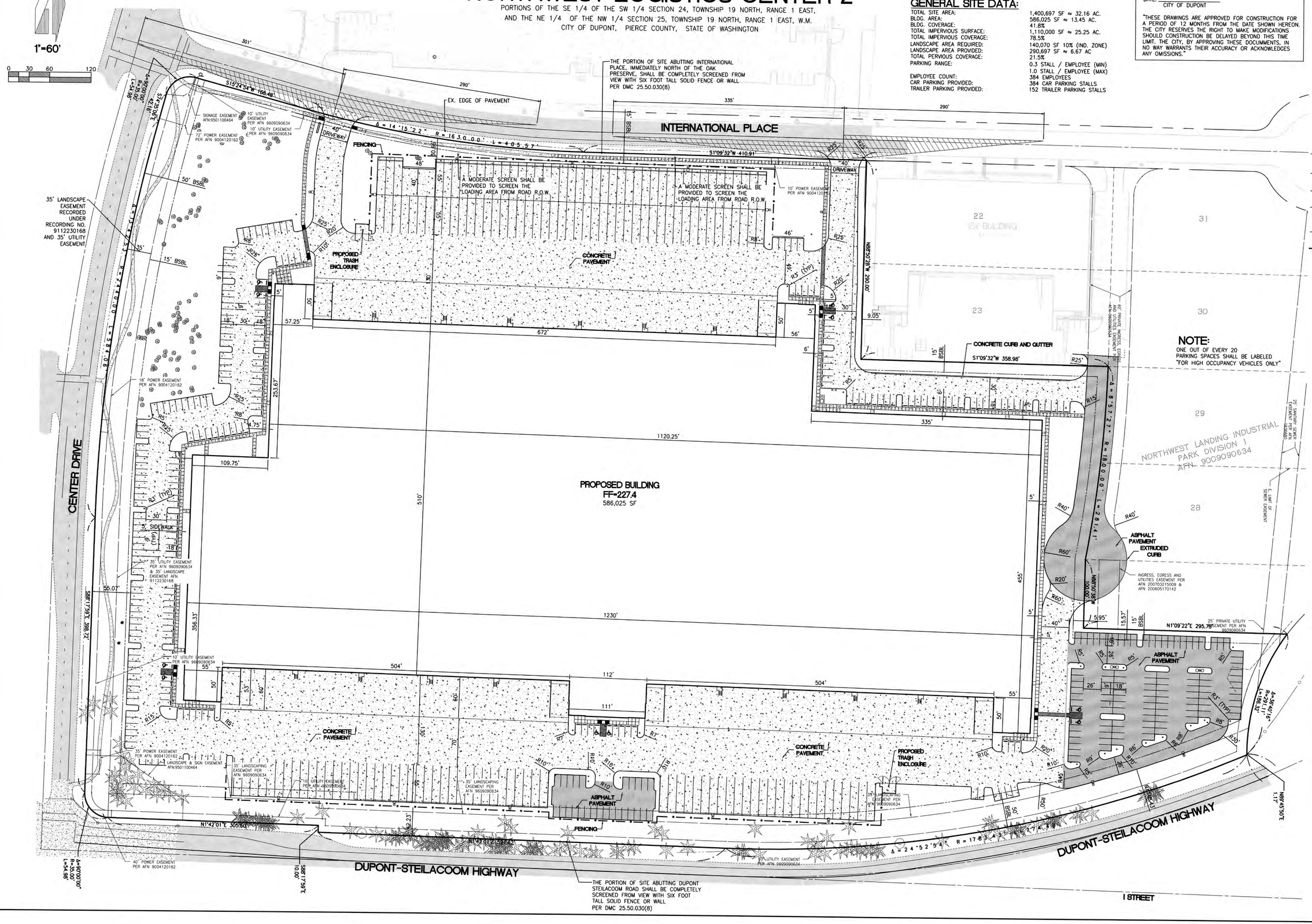

No.	Date	By	Ckd.	Appr.	Revision

Title: HORIZONTAL CONTROL PLAN FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

DANIEL K. BALMELLI, STATE OF WASHINGTON, 25672, REGISTERED PROFESSIONAL ENGINEER, 04/18/2018

Scale: Horizontal 1"=60' Vertical N/A

Designed WED
Drawn WED
Checked DKB
Approved DKB
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX
CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C2 of 12

File:P:\15000s\15753\engineering\15753-c.dwg Date/Time:4/19/2018 9:43 AM Scale:1:1 WDUNLAP Xref: ----

GRADING AND STORM DRAINAGE PLAN (NORTH)
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=50'

0 25 50 100

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

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CATCH BASIN TABLE
CB #12, TYPE 1 w/ STANDARD GRATE RIM = 221.60 IE=218.53 (12" NE) IE=218.53 (12" S)
CB #13, TYPE 1 w/ STANDARD GRATE RIM = 224.40 IE=221.33 (12" SW)
CB #14, TYPE 1 w/ STANDARD GRATE RIM = 220.80 IE=217.40 (12" E)
CB #15, TYPE 2-48"DIA. W/STANDARD GRATE RIM = 224.79 IE=216.96 (15" E) IE=216.96 (12" W) IE=216.96 (15" S)
CB #16, TYPE 2-48" DIA. w/ STANDARD GRATE RIM = 226.00 IE=219.87 (15" E) IE=219.87 (15" W)
CB #17, TYPE 2-48" DIA. w/ STANDARD GRATE RIM = 226.00 IE=220.15 (12" N) IE=220.15 (15" W)
CB #18, TYPE 2-48" DIA. w/ STANDARD GRATE RIM = 225.90 IE=220.68 (12" N) IE=220.68 (12" S)
CB #19, TYPE 1 W/STANDARD GRATE RIM = 226.00 IE=221.08 (12" N) IE=221.08 (12" S)
CB #20, TYPE 1 W/STANDARD GRATE RIM = 224.65 IE=221.47 (12" NE) IE=221.47 (12" S)
CB #21, TYPE 1 w/ STANDARD GRATE RIM = 224.80 IE=221.77 (12" E) IE=221.77 (12" SW)
CB #22, TYPE 1 w/ STANDARD GRATE RIM = 225.00 IE=222.46 (12" W)
CB #23, TYPE 2-48" DIA. w/ STANDARD GRATE RIM = 221.90 IE=218.12 (18" N) IE=218.12 (12" S) IE=218.12 (18" E)
CB #24, TYPE 1L, w/ STANDARD GRATE RIM = 221.90 IE=218.48 (18" N) IE=218.48 (18" S)
CB #25, TYPE 1L, w/ STANDARD GRATE RIM = 221.90 IE=218.84 (15" N) IE=218.84 (18" S)
CB #26, TYPE 1L, w/ STANDARD GRATE RIM = 226.00 IE=221.59 (12" N) IE=221.59 (15" W) IE=221.59 (15" S)
CB #27, TYPE 1 w/ STANDARD GRATE RIM = 225.60 IE=221.82 (12" N) IE=221.82 (12" S)
CB #28, TYPE 1 w/ STANDARD GRATE RIM = 225.60 IE=222.48 (12" S)
CB #29, TYPE 1L w/ STANDARD GRATE RIM = 225.95 IE=222.27 (12" N) IE=222.27 (15" E)
CB #30, TYPE 1 w/ STANDARD GRATE RIM = 225.70 IE=222.50 (12" N) IE=222.50 (12" S)
CB #31, TYPE 1 w/ STANDARD GRATE RIM = 226.00 IE=223.00 (12" S)

CATCH BASIN TABLE
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CB #33, TYPE 1 w/ STANDARD GRATE RIM = 221.90 IE=218.88 (12" N)
SDMH #5, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 222.32 IE=213.00 (18" S) IE=213.00 (18" W)
SDMH #6, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 222.50 IE=213.00 (18" E) IE=213.00 (18" S) IE=213.00 (18" W)
SDMH #7, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 222.70 IE=213.00 (18" S) IE=213.00 (18" E)
SDMH #8, TYPE 2-48" DIA. W/SOLID LOCKING LID RIM = 225.17 IE=214.25 (15" E) IE=214.25 (18" S) IE=214.25 (18" W)
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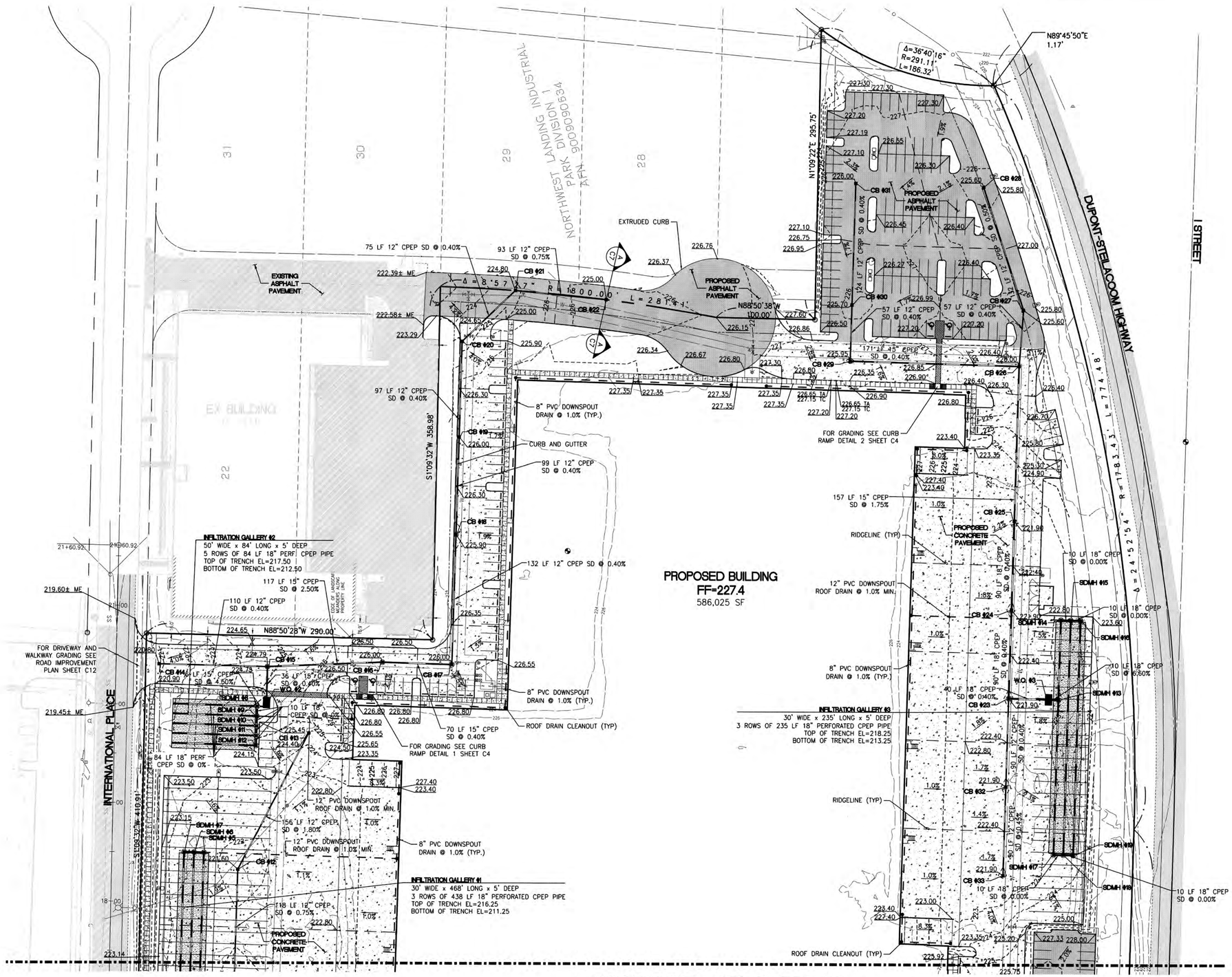
SDMH #10, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 225.76 IE=214.25 (18" W) IE=214.25 (18" N) IE=214.25 (18" S)
SDMH #11, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 225.51 IE=214.25 (18" S) IE=214.25 (18" N) IE=214.25 (18" W)
SDMH #12, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 225.20 IE=214.25 (18" W) IE=214.25 (18" N)
SDMH #13, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 222.94 IE=215.00 (18" W) IE=215.00 (18" N) IE=215.00 (18" S)
SDMH #14, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 223.11 IE=215.00 (18" E) IE=215.00 (18" S)
SDMH #15, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 223.26 IE=215.00 (18" S) IE=215.00 (18" W) IE=215.00 (18" E)
SDMH #16, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 223.41 IE=215.00 (18" S) IE=215.00 (18" W)
SDMH #17, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 223.23 IE=215.00 (18" N) IE=215.00 (18" E)
SDMH #18, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 223.45 IE=215.00 (18" W) IE=215.00 (18" E) IE=215.00 (18" N)
SDMH #19, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 223.67 IE=215.00 (18" W) IE=215.00 (18" N)
W.Q. #2, BAYFILTER W.Q. VAULT MODEL 6-10-4EMC RIM = 225.33 IE=216.81 (15" N) IE=214.51 (15" W)
W.Q. #3, BAYFILTER W.Q. VAULT MODEL 6-10-5EMC RIM = 222.74 IE=217.96 (18" W) IE=215.66 (18" E)



No.	Date	By	Ckd.	Appr.	Revision

Title: GRADING AND STORM DRAINAGE PLAN (NORTH) FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

DANIEL K. BALMELLI — STATE OF WASHINGTON — 25672 — REGISTERED PROFESSIONAL ENGINEER — 04/18/2018

Scale: Horizontal 1"=50' Vertical N/A

Designed WED
Drawn WED
Checked DKB
Approved DKB
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX
CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C3 of 12

File:P:\15000s\15753\engineering\15753-grn.dwg Date/Time:4/18/2018 10:52 AM Scale:1:1 WDUNLAP Xref: ----

GRADING AND STORM DRAINAGE PLAN (SOUTH)
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=50'

0 25 50 100

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."

MATCHLINE - SEE SHEET C3

CATCH BASIN TABLE
CB #1, TYPE 2-48" DIA. w/ STANDARD GRATE RIM = 221.60 IE=215.88 (18" S) IE=215.88 (12" N) IE=215.88 (18" W)
CB #2, TYPE 2-48" DIA. w/ STANDARD GRATE RIM = 221.45 IE=216.35 (18" SE) IE=216.35 (18" N)
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W.Q. #1, BAYFILTER W.Q. VAULT MODEL 6-10-5EMC RIM = 221.96 IE=215.73 (18" E) IE=213.43 (18" W)
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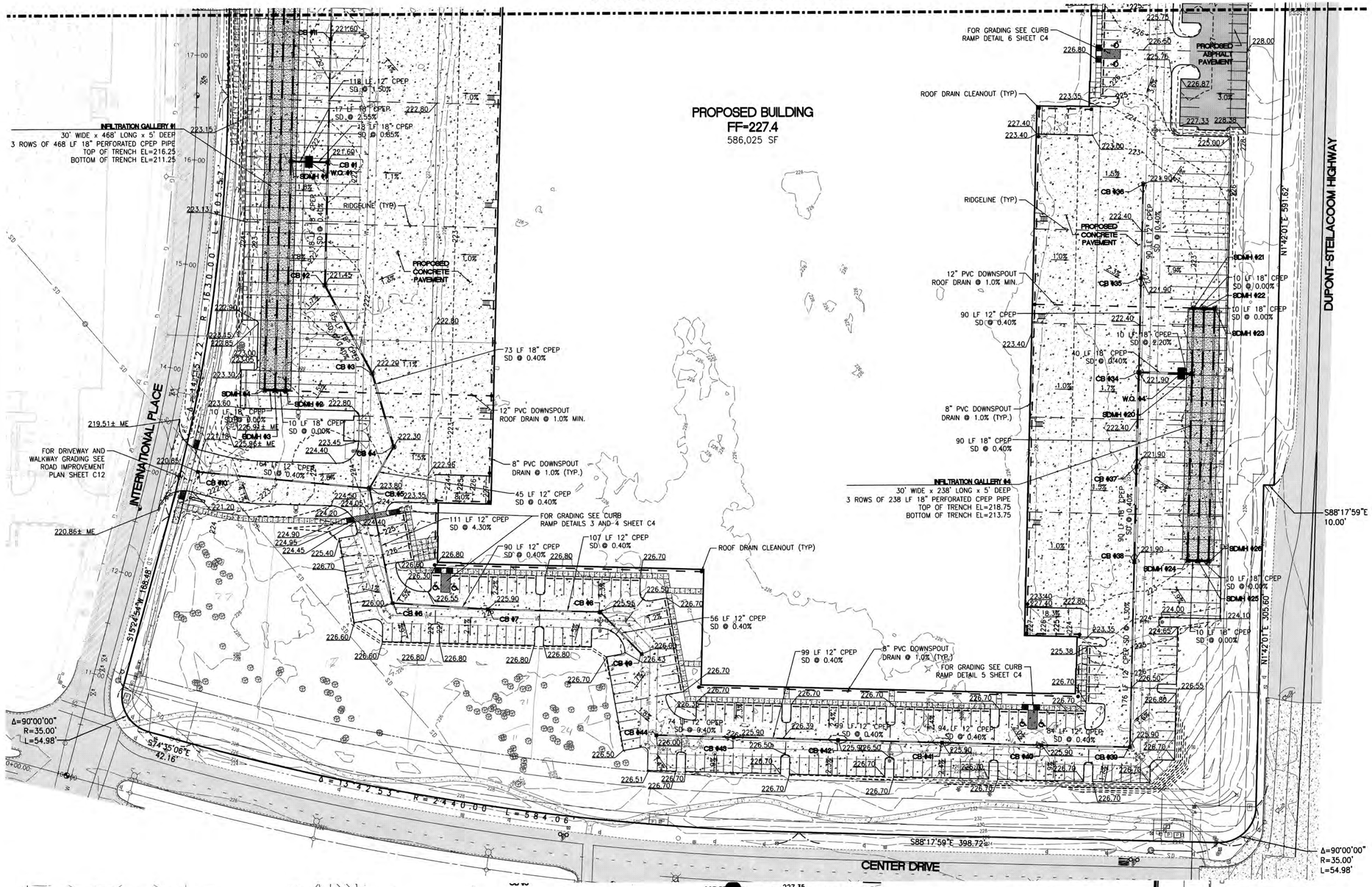

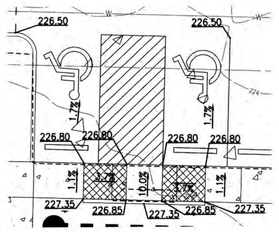

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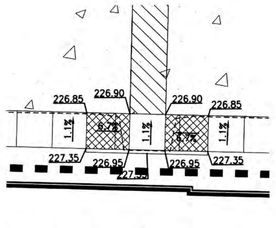

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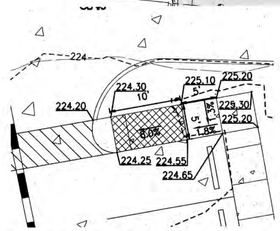

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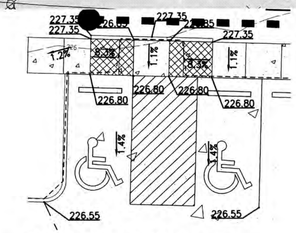

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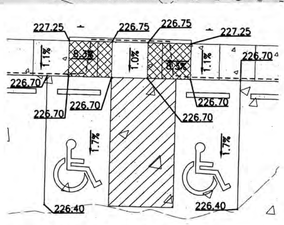

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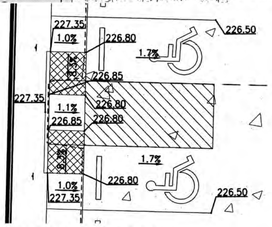

CURB RAMP DETAIL 6

1"=10'

No.	Date	By	Ckd.	Appr.	Revision

Title: GRADING AND STORM DRAINAGE PLAN (SOUTH) FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

DANIEL K. BALKWILL — STATE OF WASHINGTON — 25672 — REGISTERED PROFESSIONAL ENGINEER — 04/18/2018

Scale: Horizontal 1"=50' Vertical N/A

Designed WED
Drawn WED
Checked DKB
Approved DKB
Date 2/19/19

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
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CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C4 of 12

File:P:\15000s\15753\engineering\15753-grn.dwg Date/Time:4/18/2018 10:52 AM Scale:1:1 WDUNLAP Xref: ----

SANITARY SEWER AND WATER PLAN (NORTH)

NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=50'

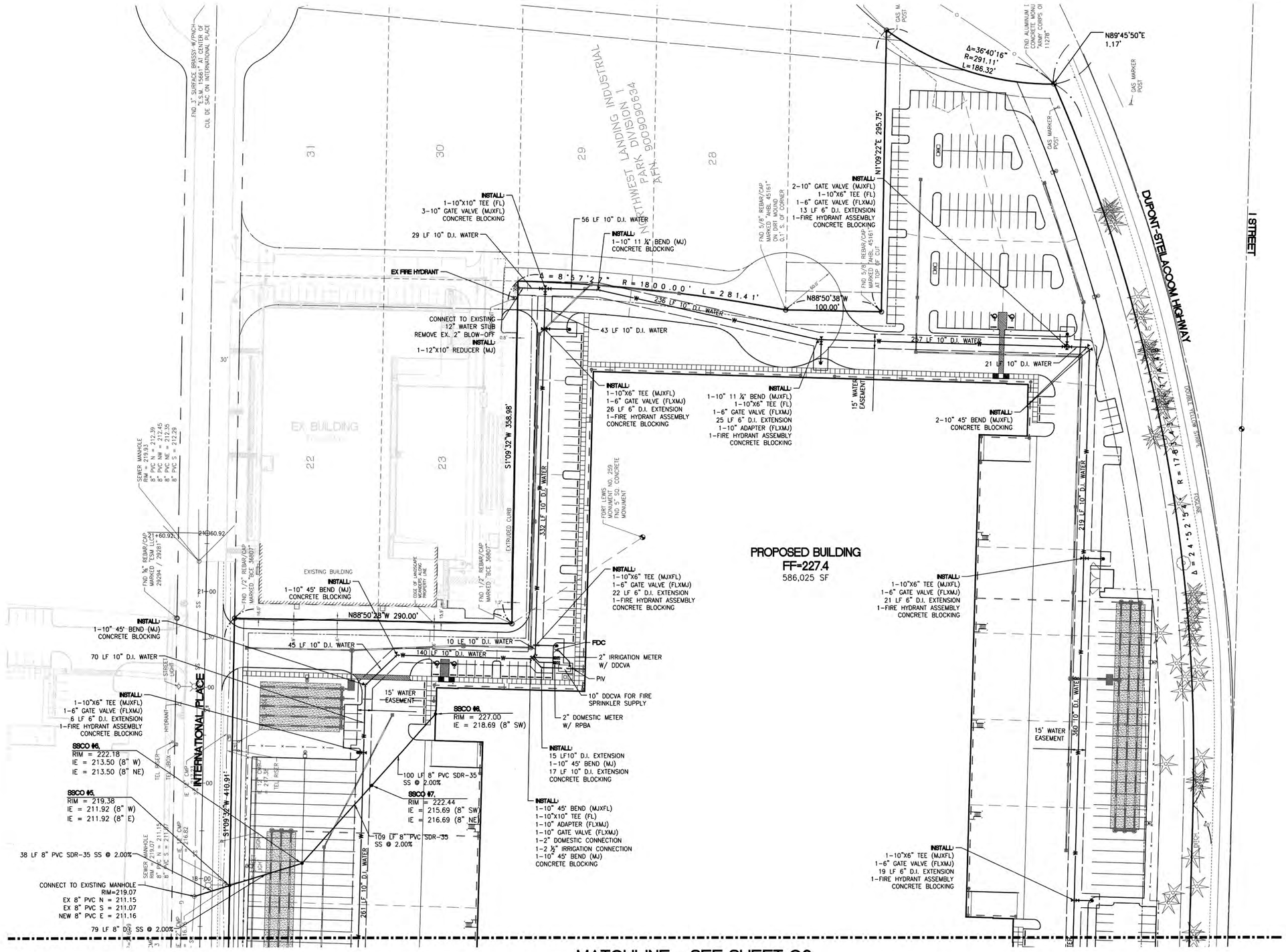
0 25 50 100

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."



No.	Date	By	Chd.	Appr.	Revision

Title: SANITARY SEWER AND WATER PLAN (NORTH) FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

DANIEL K. BALMELLI
STATE OF WASHINGTON
25672
REGISTERED PROFESSIONAL ENGINEER
04/18/2018

Scale: Horizontal 1"=50' Vertical N/A

Designed WED
Drawn WED
Checked DKB
Approved DKB
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
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CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C5 of 12

File:P:\15000s\15753\engineering\15753-ws.dwg Date/Time:3/21/2018 2:26 PM Scale:1:1 WDUNLAP Xref: ----

SANITARY SEWER AND WATER PLAN (SOUTH)
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=50'

0 25 50 100

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

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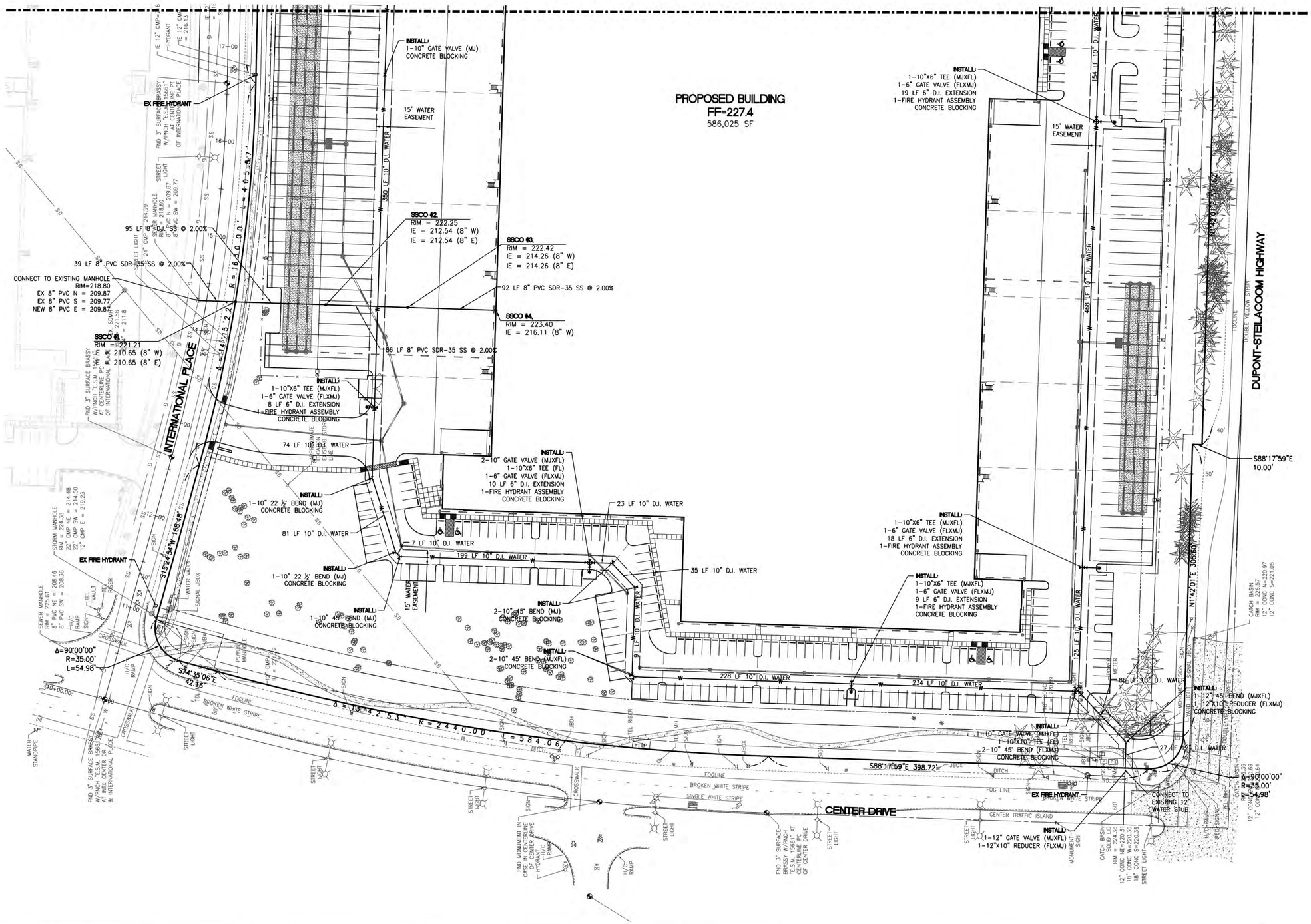
MATCHLINE - SEE SHEET C5



No.	Date	By	Ckd.	Appr.	Revision

Title: SANITARY SEWER AND WATER PLAN (SOUTH) FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

DANIEL K. BALMELLI
STATE OF WASHINGTON
25672
REGISTERED PROFESSIONAL ENGINEER
04/18/2018

Scale: Horizontal 1"=50' Vertical N/A

Designed WEO
Drawn WEO
Checked DKB
Approved DKB
Date 2/19/19

BARGHAUSEN CONSULTING ENGINEERS INC.
18215 72ND AVENUE SOUTH
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CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C6 of 12

File:P:\15000s\15753\engineering\15753-ws.dwg Date/Time:3/21/2018 2:26 PM Scale:1:1 WDUNLAP Xref: ----

CONSTRUCTION NOTES AND DETAILS
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

"APPROVED FOR CONSTRUCTION"

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GENERAL NOTES

10. GENERAL NOTES AND DRAWINGS

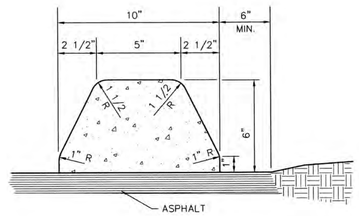
10.1 GENERAL NOTES (STREET CONSTRUCTION)

1. THESE DRAWINGS ARE APPROVED UNTIL _____ _____, _____ [EXPIRATION OF PRELIMINARY PLAT OR SITE PLAN APPROVAL]. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS.
2. A PRECONSTRUCTION CONFERENCE SHALL BE HELD PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL NECESSARY PERMITS PRIOR TO CONSTRUCTION.
3. A COPY OF THE APPROVED ROADWAY PLANS MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
4. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CITY OF DUPONT'S STREET STANDARDS AND STORM WATER MANAGEMENT MANUAL AND THE MOST CURRENT EDITION OF THE STATE OF WASHINGTON STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ADEQUATE TEMPORARY TRAFFIC CONTROL TO ENSURE TRAFFIC SAFETY DURING CONSTRUCTION ACTIVITIES. THEREFORE, THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE PUBLIC WORKS DEPARTMENT AT LEAST 48 HOURS PRIOR TO STARTING ANY WORK IN THE RIGHT-OF-WAY. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).
6. ALL CURB AND GUTTER, STREET GRADES, SIDEWALK GRADES, AND ANY OTHER VERTICAL AND/OR HORIZONTAL ALIGNMENT SHALL BE STAKED BY A PROFESSIONAL ENGINEER OR SURVEYING FIRM CAPABLE OF PERFORMING SUCH WORK.
7. ANY ROADWAY SIGNAGE OR STRIPING REMOVED OR TEMPORARILY MOVED BY THE CONTRACTOR SHALL BE RESTORED SO AS TO MEET THE CURRENT MUTCD STANDARDS.
8. WHERE NEW ASPHALT JOINS EXISTING, THE EXISTING ASPHALT SHALL BE CUT TO A NEAT VERTICAL EDGE AND TACKED WITH ASPHALT EMULSION TYPE CSS-1 IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. THE JOINT SHALL BE SEALED WITH GRADE AR-4000W PAVING ASPHALT.
9. COMPACTION OF SUBGRADE, ROCK, AND ASPHALT SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS. SEE CITY OF DUPONT STREET STANDARDS FOR TESTING AND SAMPLING FREQUENCIES. DENSITY TEST REPORTS WILL BE REQUIRED FOR ALL PUBLIC ROADWAYS.
10. FORM AND SUBGRADE INSPECTION BY THE CITY IS REQUIRED BEFORE PLACING CONCRETE. TWENTY-FOUR HOURS ADVANCE NOTICE IS REQUIRED FOR THE SCHEDULING OF INSPECTION.
11. CALL UNDERGROUND UTILITY LOCATE LINE, 1-800-424-5555, PRIOR TO ANY EXCAVATION.
12. DEAD-END STREETS SHALL BE APPROPRIATELY SIGNED AND BARRICADED.
13. WHERE A SIDEWALK IS TO BE CONSTRUCTED ABOVE A SLOPE OR ADJACENT TO A ROCKERY OR RETAINING WALL, WHERE THE LOWEST FINISHED ELEVATION OF THE SLOPE, ROCKERY, OR RETAINING WALL IS TO BE THIRTY INCHES (30") OR MORE BELOW THE FINISHED ELEVATION OF THE SIDEWALK, A SAFETY RAILING SHALL BE REQUIRED WHEN:
    - (A) THE PLANE OF THE WALL IS LESS THAN 4' IN HORIZONTAL DISTANCE FROM THE OUTSIDE EDGE OF THE SIDEWALK.
    - (B) THE PLANS OF THE WALL FACE IS GREATER THAN 4' HORIZONTAL DISTANCE TO THE OUTSIDE EDGE OF THE SIDEWALK, BUT THE SLOPE DOWN TO THE WALL TOP EXCEEDS THREE TO ONE.
    - (C) THE SLOPES ADJACENT TO THE SIDEWALK AVERAGE GREATER THAN TWO TO ONE.
14. ANY VAULT CONSTRUCTION SHALL HAVE EITHER;
    - (A.) PROVIDED WITH WATER STOPS AT CAST-IN-PLACE CONSTRUCTION JOINTS.
    - (B.) PRE-CAST VAULT SHALL HAVE APPROVED RUBBER GASKET SYSTEM.

10.2 EROSION/SEDIMENTATION CONTROL NOTES.

THE CONTRACTOR SHALL PROVIDE EROSION CONTROL METHODS ACCORDING TO THE WASHINGTON STATE DEPARTMENT OF ECOLOGY'S (WDOE) "STORMWATER MANAGEMENT MANUAL FOR THE PUGET SOUND BASIN". THE FOLLOWING NOTES ARE ONLY A FEW OF THE MINIMUM REQUIREMENTS AND SHOULD NOT BE INTERPRETED TO EXCLUDE ANY EROSION CONTROL PRACTICES AS SPECIFIED IN THE WDOE STORMWATER MANUAL.

1. ALL LIMITS OF CLEARING AND AREAS OF VEGETATION PRESERVATION AS PRESCRIBED ON THE PLAN SHALL BE CLEARLY FLAGGED BY THE ENGINEER IN THE FIELD AND OBSERVED DURING CONSTRUCTION.
2. ALL REQUIRED SEDIMENTATION/EROSION CONTROL FACILITIES MUST BE IN OPERATION PRIOR TO LAND CLEARING AND/OR OTHER CONSTRUCTION TO INSURE THAT SEDIMENT LADEN WATER DOES NOT ENTER THE NATURAL DRAINAGE SYSTEM. ALL EROSION AND SEDIMENT FACILITIES SHALL BE MAINTAINED IN A SATISFACTORY CONDITION UNTIL SUCH TIME THAT CLEARING AND/OR CONSTRUCTION IS COMPLETED AND POTENTIAL FOR ON-SITE EROSION HAS PASSED. THE IMPLEMENTATION, MAINTENANCE, REPLACEMENT AND ADDITIONS TO EROSION/SEDIMENTATION CONTROL SYSTEMS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE EROSION AND SEDIMENTATION CONTROL SYSTEMS DEPICTED ON THIS DRAWING ARE INTENDED TO BE MINIMUM REQUIREMENTS TO MEET ANTICIPATED SITE CONDITIONS. AS CONSTRUCTION PROGRESSES AND AS UNEXPECTED OR SEASONAL CONDITIONS DICTATE, THE CONTRACTOR SHOULD ANTICIPATE THAT MORE EROSION AND SEDIMENTATION CONTROL FACILITIES WILL BE NECESSARY TO INSURE COMPLETE SILTATION CONTROL ON THE PROPOSED SITE. DURING THE COURSE OF CONSTRUCTION, IT SHALL BE THE OBLIGATION AND RESPONSIBILITY OF THE CONTRACTOR TO ADDRESS ANY NEW CONDITIONS THAT MAY BE CREATED BY HIS ACTIVITIES AND TO PROVIDE ADDITIONAL FACILITIES, OVER AND ABOVE MINIMUM REQUIREMENTS, AS MAY BE NEEDED TO PROTECT ADJACENT PROPERTIES AND WATER QUALITY OF THE RECEIVING DRAINAGE SYSTEM.
4. AT NO TIME SHALL MORE THAN ONE FOOT OF SEDIMENT BE ALLOWED TO ACCUMULATE WITHIN A CATCH BASIN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND DISPOSING OF THE SEDIMENT. ALL CATCH BASINS, CONVEYANCE LINES AND DITCHES ALONG [STREET NAMES] SHALL BE CLEANED PRIOR TO PAVING.
5. THE CONTRACTOR SHALL REMOVE MATERIAL DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO THE CITY RIGHT-OF-WAY OR INTO THE STORM DRAINAGE SYSTEM ON [STREET NAMES]. DEBRIS SHALL NOT BE WASHED INTO THE STORM DRAINAGE SYSTEM.
6. TEMPORARY EROSION CONTROL FACILITIES SHALL BE INSPECTED WEEKLY AND MAINTAINED WITH 24 HOURS FOLLOWING A STORM EVENT. SEDIMENT SHALL BE REMOVED TO ENSURE THE FACILITIES WILL FUNCTION PROPERLY. THE FACILITIES SHALL BE SATISFACTORILY MAINTAINED UNTIL CONSTRUCTION IS COMPLETED AND THE POTENTIAL FOR ON-SITE EROSION HAS PASSED.
7. ALL STORM DRAIN INLETS MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT STORMWATER RUNOFF SHALL NOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
8. NO DISTURBED SOIL SHALL REMAIN UNSTABILIZED FOR MOR THAN TWO DAYS.
9. SEDIMENT TRAP/POND BAFFLES SHALL BE EMBEDDED IN SIDE SLOPES.



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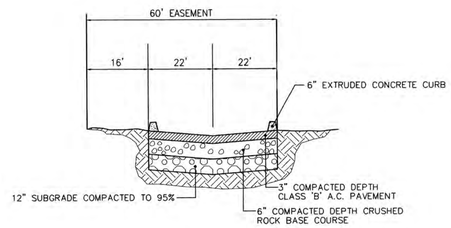
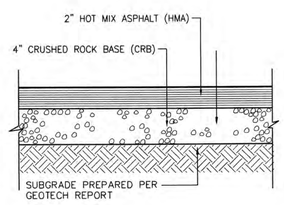


CROSS SECTION A-A PRIVATE ACCESS ROAD

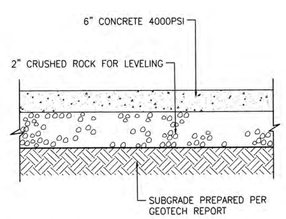
NOT TO SCALE



NOTE:
REFER TO SOIL ENGINEER'S RECOMMENDATIONS
FOR SITE PREPARATION & ALTERNATE PAVEMENT SECTIONS

TYPICAL ON-SITE PAVEMENT SECTION

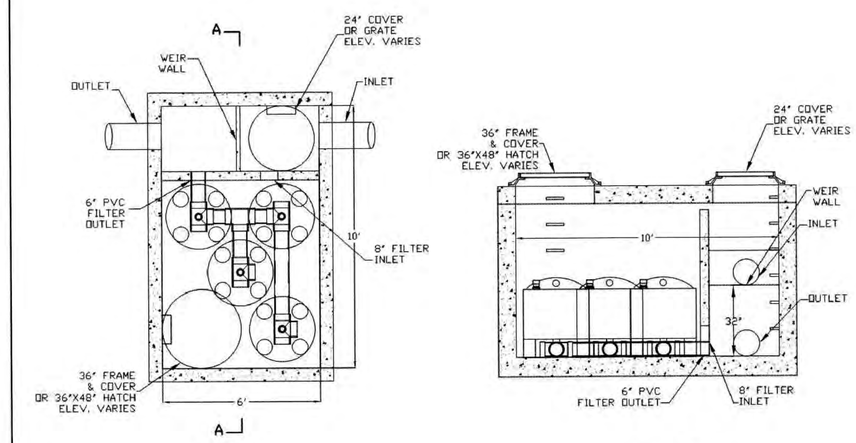
NOT TO SCALE



TYPICAL CONCRETE PAVEMENT SECTION

NOT TO SCALE

BAYFILTER STORMWATER FILTRATION SYSTEM PROTECTED BY U.S. PATENT # 6,869,528



REV	DESCRIPTION	DATE	APPR

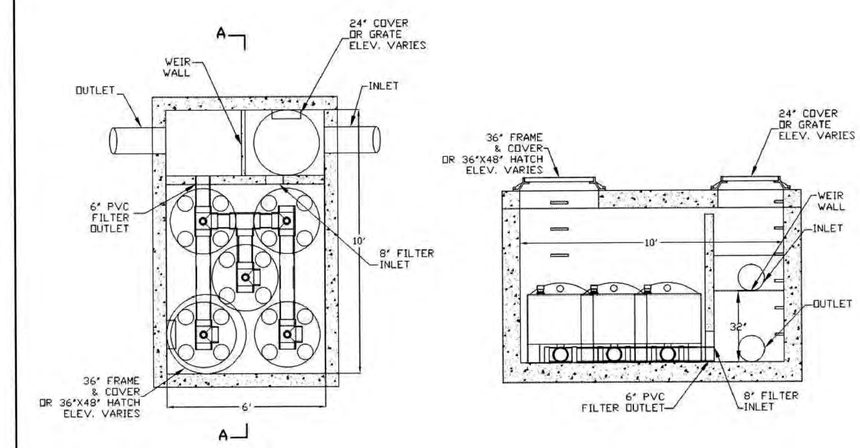
NOTES:
1. BFC REQUIRES 32" OF HEAD TO OPERATE.

BaySaver TECHNOLOGIES, INC.
WWW.BAYSAVER.COM

DESIGNED:	TEP	DATE:	5/13/11
DRAWN:	PR	SCALE:	N.T.S.
CHECKED:	PR	DWG NO:	

BAYFILTER VAULT
MODEL PVF 6-10-4EMC
STANDARD DETAILS

BAYFILTER STORMWATER FILTRATION SYSTEM PROTECTED BY U.S. PATENT # 6,869,528



REV	DESCRIPTION	DATE	APPR

NOTES:
1. BFC REQUIRES 32" OF HEAD TO OPERATE.

BaySaver TECHNOLOGIES, INC.
WWW.BAYSAVER.COM

DESIGNED:	TEP	DATE:	5/13/11
DRAWN:	PR	SCALE:	N.T.S.
CHECKED:	PR	DWG NO:	

BAYFILTER VAULT
MODEL PVF 6-10-5EMC
STANDARD DETAILS

No.	Date	By	Chkd.	Appr.	Revision

Title: CONSTRUCTION NOTES AND DETAILS FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

DANIEL K. BALMELLI, STATE OF WASHINGTON, 25672, REGISTERED PROFESSIONAL ENGINEER
04/18/2018

Scale: Horizontal 1 Vertical 1

Designed WED
Drawn WED
Checked DKB
Approved DKB
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX
CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C7 of 12

File:P:\15000s\15753\engineering\15753-d.dwg Date/Time:4/18/2018 10:30 AM Scale:1" = 1' WDUNLAP Xref: ----

CONSTRUCTION NOTES AND DETAILS
NORTHWEST LOGISTICS CENTER 2

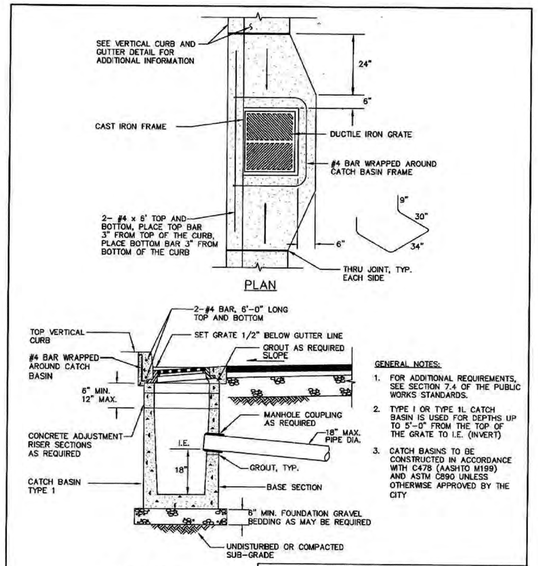
PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

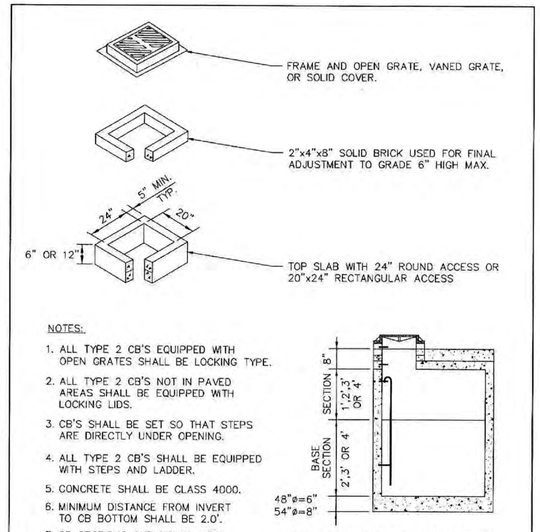
"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."



GENERAL NOTES:

1. FOR ADDITIONAL REQUIREMENTS, SEE SECTION 7.4 OF THE PUBLIC WORKS STANDARDS.
2. TYPE I OR TYPE 1L CATCH BASIN IS USED FOR DEPTHS UP TO 5'-0" FROM THE TOP OF THE GRATE TO I.E. (INVERT)
3. CATCH BASINS TO BE CONSTRUCTED IN ACCORDANCE WITH C478 (AASHTO M199) AND ASTM C890 UNLESS OTHERWISE APPROVED BY THE CITY

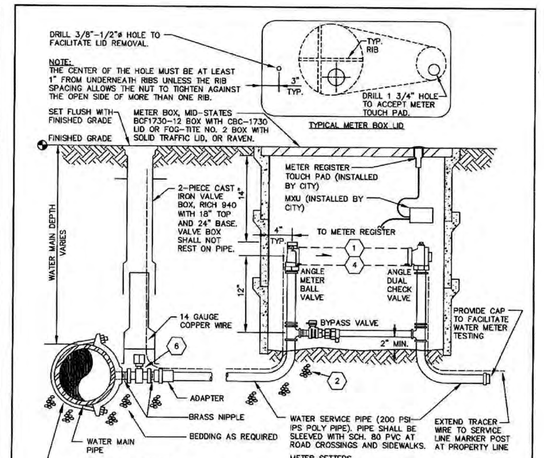
CITY OF DUPONT			
CATCH BASIN TYPE I			
APPROVED: CITY OF DUPONT 9/21/11 DATE			DWG. NO. 7.4-1
DATE: 9/11	DRWN: L.T.	CHKD: T.N.	SCALE: NO SCALE



NOTES:

1. ALL TYPE 2 CB'S EQUIPPED WITH OPEN GRATES SHALL BE LOCKING TYPE.
2. ALL TYPE 2 CB'S NOT IN PAVED AREAS SHALL BE EQUIPPED WITH LOCKING LIDS.
3. CB'S SHALL BE SET SO THAT STEPS ARE DIRECTLY UNDER OPENING.
4. ALL TYPE 2 CB'S SHALL BE EQUIPPED WITH STEPS AND LADDER.
5. CONCRETE SHALL BE CLASS 4000.
6. MINIMUM DISTANCE FROM INVERT TO CB BOTTOM SHALL BE 2.0'.
7. CB SECTIONS AND LID WILL BE HS20 TRAFFIC LOAD CERTIFIED BY MFG.
8. HOLE SIZE – PIPE O.D. + 5" MAX
   MAX HOLE SIZE – 36" (28" CB)
   MAX HOLE SIZE – 42" (54" CB)
9. FOR ADDITIONAL REQUIREMENTS, SEE SECTION 7.4 OF THE PUBLIC WORKS STANDARDS.

CITY OF DUPONT			
CATCH BASIN TYPE 2			
APPROVED: CITY OF DUPONT 9/21/11 DATE			DWG. NO. 7.4-3
DATE: 9/11	DRWN: M.C.	CHKD: D.J.M.	SCALE: NO SCALE

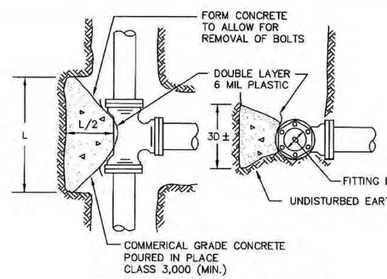


METER SETTERS
1-1/2" – FORD NO. VFH66-12-B
2" – FORD NO. VFH77-12-B
(SPECIFY VERTICAL INLET AND OUTLET WHEN ORDERING.)

NOTES:

1. METER NOT SHOWN FOR CLARITY. REFERENCE SENSUS WATER METER STANDARDS FOR REQUIRED METER. VERIFY METER TYPE AND DIMENSIONS PRIOR TO ORDERING METER SETTER.
2. TRENCH BACKFILL FOR SERVICE PIPE SHALL CONSIST OF SAND AND PEA GRAVEL.
3. ANY METERS DAMAGED OR CLOGGED DURING CONSTRUCTION SHALL BE REPLACED BY THE CITY AND THE COSTS SHALL BE REIMBURSED BY DEVELOPER.
4. "JUMPER" SHALL BE PROVIDED BY THE CITY.
5. THE CITY SHALL INSTALL THE METER TRANSCEIVER UNIT (MXU) AND CONNECT THE MXU WIRING WITHIN THE METER ENCLOSURE.
6. BALL VALVE FOR IRON PIPE, FORD NO. B11-666-B11-777, OR EQUAL WITH 2" OPERATING NUT ADAPTER, FORD NO. QT-67.
7. FOR ADDITIONAL INFORMATION, SEE SECTION 8.4 OF THE PUBLIC WORKS STANDARDS.

CITY OF DUPONT			
1-1/2" & 2" SERVICE CONNECTION			
APPROVED: CITY OF DUPONT 9/21/11 DATE			DWG. NO. 8.4-3
DATE: 9/11	DRWN: J.C.	CHKD: D.M.	SCALE: NO SCALE

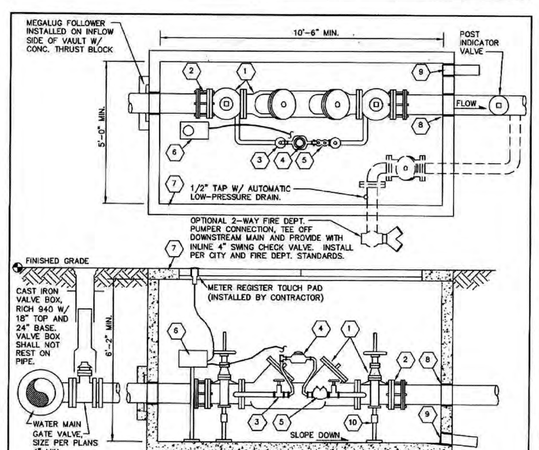


MINIMUM BEARING AREA TABLE					
FITTING D	TEE	90°	45°	22 1/2°	11 1/4°
6"	4 SQ.FT.	6 SQ.FT.	3 SQ.FT.	2 SQ.FT.	2 SQ.FT.
8"	7 SQ.FT.	10 SQ.FT.	6 SQ.FT.	3 SQ.FT.	2 SQ.FT.
10"	10 SQ.FT.	15 SQ.FT.	9 SQ.FT.	5 SQ.FT.	3 SQ.FT.
12"	14 SQ.FT.	22 SQ.FT.	12 SQ.FT.	6 SQ.FT.	4 SQ.FT.
16"	25 SQ.FT.	38 SQ.FT.	21 SQ.FT.	11 SQ.FT.	7 SQ.FT.
18"	32 SQ.FT.	48 SQ.FT.	27 SQ.FT.	14 SQ.FT.	8 SQ.FT.

NOTES:

1) BEARING AREA TABLE BASED ON 250 PSI PRESSURE AND 2000 PSF SOIL BEARING. IF PRESSURE IS GREATER OR SOIL BEARING IS LESS, THE THRUST BLOCK SIZE SHALL BE INCREASED. DESIGN FOR THRUST BLOCK TO BE PROVIDED BY THE DEVELOPER.
2) THIS TABLE REPRESENTS THE "MINIMUM" CONSTRUCTION STANDARDS. THE DEVELOPER'S ENGINEER SHALL BE RESPONSIBLE FOR THE DESIGN AND SIZING OF ALL BLOCKING BASED ON SOIL CONDITIONS, TEST PRESSURES, AND OTHER RELEVENT CONDITIONS, AND SHALL SUBMIT THE PROPOSED DESIGN AND SIZING TO THE CITY FOR REVIEW AND APPROVAL.
3) FOR ADDITIONAL REQUIREMENTS, SEE SECTION 8.3.5 OF THE PUBLIC WORKS STANDARDS.

CITY OF DUPONT			
THRUST BLOCKS			
APPROVED: CITY OF DUPONT 9/21/11 DATE			DWG. NO. 8.3-1
DATE: 9/11	DRWN: L.L.	CHKD: T.N.	SCALE: NO SCALE



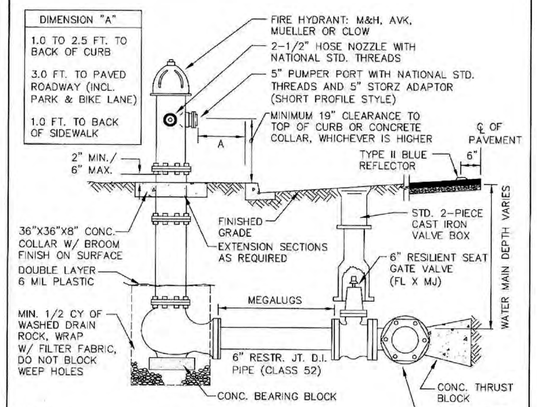
1. STATE DOH APPROVED DOUBLE-CHECK DETECTOR BACKFLOW PREVENTION ASSEMBLY WITH O.S. & Y.V., SIZE AS NOTED ON PLANS.
2. ROMAC STYLE FLANGED COUPLING ADAPTER, 6" MIN. FROM INSIDE VAULT WALL.
3. SHUT-OFF VALVES PER STATE REQUIREMENTS.
4. 5/8"x3/4" SENSUS SRII-TRPL BYPASS METER (PER CITY WATER METER STANDARDS).
5. STATE DOH APPROVED 3/4" DOUBLE CHECK VALVE ASSEMBLY.
6. METER TRANSCEIVER UNIT WITH TOUCH PAD, INSTALLED BY CITY ON CONTRACTOR PROVIDED 1" SCH. 80 PVC SUPPORT.
7. PRE-CAST CONCRETE VAULT, UTILITY VAULT CO., NO. 5106-LA WITH SPRING LOADED, LOCKABLE STEEL PLATE COVER NO. 2-339P TYPICAL. VERIFY VAULT SIZE TO FIT COMPLETE ASSEMBLIES.
8. WATER TIGHT RUBBER SEAL, TYP. ALL PENETRATIONS.
9. 6" PVC DRAIN TO DAYLIGHT OR TO STORM SYSTEM.
10. ADJUSTABLE STANCHIONS (2 TOTAL).

NOTES:

1) PROVIDE FLEXIBLE COUPLINGS ON BOTH INLET AND OUTLET PIPES OUTSIDE VAULT.
2) A CERTIFIED TEST REPORT SHALL BE SUPPLIED TO THE CITY FOR EACH BACKFLOW ASSEMBLY.
3) ALL PIPE SHALL BE DUCTILE IRON EXCEPT FOR BYPASS (BRASS OR TYPE K COPPER).

CITY OF DUPONT			
3" & LARGER DOUBLE CHECK VALVE ASSEMBLY			
APPROVED: CITY OF DUPONT 9/21/11 DATE			DWG. NO. 8.4-8
DATE: 9/11	DRWN: P.E.	CHKD: T.N.	SCALE: NO SCALE

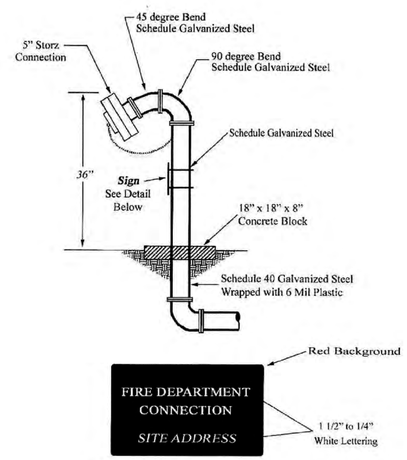
DIMENSION "A"
1.0 TO 2.5 FT. TO BACK OF CURB
3.0 FT. TO PAVED ROADWAY (INCL. PARK & BIKE LANE)
1.0 FT. TO BACK OF SIDEWALK



NOTES:

1) HYDRANT RUN PIPE SHALL BE MIN. 6" DIA.
2) MAXIMUM LENGTH OF 6" DIA. HYDRANT RUNS SHALL BE 50 FT. FOR HYDRANT RUNS GREATER THAN 6" DIA. OR LONGER THAN 50 FT., THE DEVELOPER'S ENGINEER SHALL SUBMIT FLOW CALCS. FOR REVIEW AND APPROVAL BY CITY.
3) ALL JOINTS ON HYDRANT RUN SHALL BE RESTRAINED PER CITY STDS.
4) INSTALL GUARD POSTS AS RQD. BY CITY.
5) PROVIDE MIN. 3 FT. CLR. AND LEVEL AREA AROUND HYDRANT.
6) ORIENT PUMPER PORT AS APPROVED BY CITY.
7) FOR ADDITIONAL REQUIREMENTS, SEE SECTION 8.6 OF THE PUBLIC WORKS STANDARDS.

CITY OF DUPONT			
FIRE HYDRANT INSTALLATION			
APPROVED: CITY OF DUPONT 9/21/11 DATE			DWG. NO. 8.6-1
DATE: 9/11	DRWN: J.C.	CHKD: D.J.M.	SCALE: NO SCALE



CITY OF DUPONT			
FIRE DEPARTMENT CONNECTION			
APPROVED: CITY OF DUPONT 9/21/11 DATE			DWG. NO. 11.3
DATE: 9/11	DRWN: J.C.	CHKD: D.J.M.	SCALE: NO SCALE

No.	Date	By	Ckd.	Appr.	Revision

Title: CONSTRUCTION NOTES AND DETAILS FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

DANIEL K. BALAGHAUSEN, STATE OF WASHINGTON, 25672, REGISTERED PROFESSIONAL ENGINEER, 04/18/2018

Scale: Horizontal - Vertical -

Designed WED
Drawn WED
Checked DKB
Approved DKB
Date 2/19/18

BALAGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX
CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C8 of 12

File:P:\15000s\15753\engineering\15753-d.dwg Date/Time:4/18/2018 10:30 AM Scale:1" = 1' WDUNLAP Xref: ----

CONSTRUCTION NOTES AND DETAILS
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

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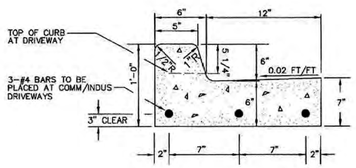
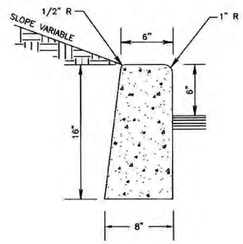
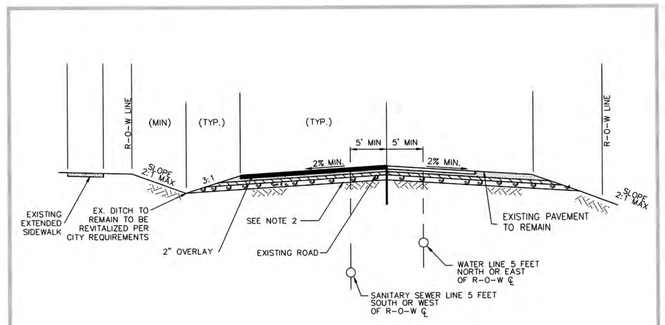
GENERAL NOTES:
1. THE CURBS, GUTTERS AND SIDEWALKS SHALL HAVE CONTRACTION JOINTS (3/8" x 1-1/2") AT INTERVALS OF NOT GREATER THAN 15'-0".
2. CEMENT CONCRETE SHALL BE CLASS 3000.
3. FOR ADDITIONAL REQUIREMENTS, SEE SECTION 3.2 OF THE PUBLIC WORKS STANDARDS.



CITY OF DUPONT			
VERTICAL CURB AND GUTTER			
APPROVED: 9/21/11 CITY OF DUPONT DATE			DWG. NO. 3.2-3
DATE: 9/11	DRWN: L.G.	CHKD: T.N.	SCALE: NO SCALE



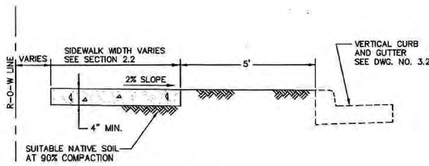
CITY OF DUPONT			
CEMENT CONRETE VERTICAL CURB			
APPROVED: 9/21/11 CITY OF DUPONT DATE			DWG. NO. 3.2-4
DATE: 9/11	DRWN: L.G.	CHKD: T.N.	SCALE: NO SCALE



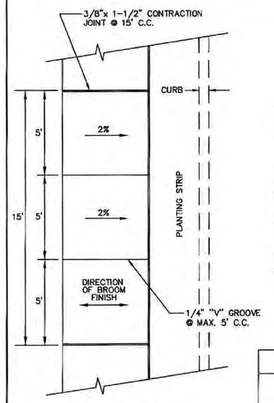
INTERNATIONAL PLACE

GENERAL NOTES:
1. FOR ADDITIONAL REQUIREMENTS, SEE TABLE 2.2-2 OF THE STREET STANDARDS.
2. PAVEMENT DESIGN SHALL BE BY A LICENSED ENGINEER.

CITY OF DUPONT			
INDUSTRIAL MINOR ACCESS			
APPROVED: CITY OF DUPONT DATE			DWG. NO. 2.2-2.4
DATE: 9/99	DRWN: L.G.	CHKD: T.N.	SCALE: NO SCALE



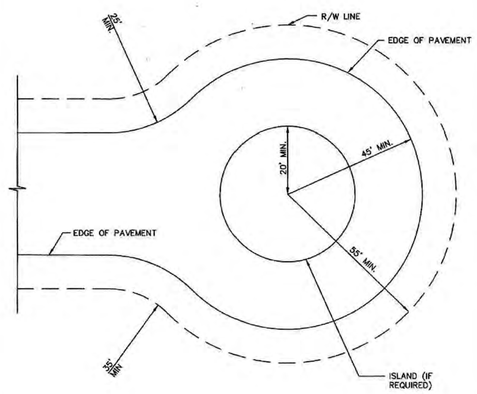
SECTION



PLAN

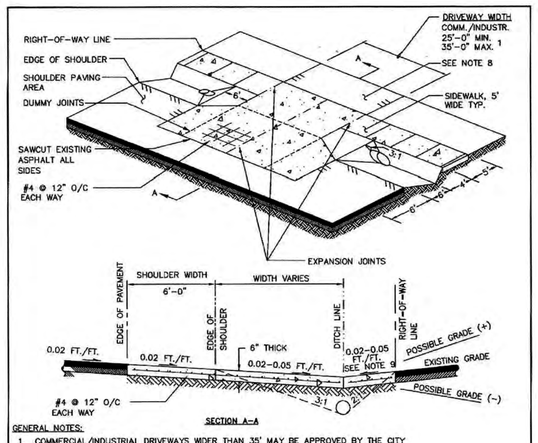
GENERAL NOTES:
1. JOINTS THRU AND DUMMY JOINTS SHALL BE AS SHOWN ABOVE. THRU JOINTS SHALL ALSO BE PLACED IN THE SIDEWALK SECTION AT DRIVEWAY AND ALLEY RETURNS. ALL JOINTS SHALL BE CLEAN AND EDGED WITH AN EDGE HAVING 1/4" RADIUS. JOINTS SHALL BE FLUSH WITH THE FINISHED SURFACE.
2. PREMOLDED JOINT FILLER SHALL BE 3/16" x 2" ASPHALT SATURATED FELT OR PAPER.
3. FORMS SHALL BE EITHER WOOD OR STEEL AND SHALL MEET ALL REQUIREMENTS OF THESE SPECIFICATIONS.
4. CONCRETE SHALL BE CLASS 3000.
5. FOR ADDITIONAL REQUIREMENTS, SEE SECTION 3.2 OF THE PUBLIC WORKS STANDARDS.

CITY OF DUPONT			
SIDEWALK SECTION			
APPROVED: 9/21/11 CITY OF DUPONT DATE			DWG. NO. 3.2-1
DATE: 9/11	DRWN: L.G.	CHKD: T.N.	SCALE: NO SCALE



GENERAL NOTES:
1. FOR ADDITIONAL REQUIREMENTS, SEE SECTION 2.8 OF THE PUBLIC WORKS STANDARDS.
2. ISLAND IS MANDATORY WHEN RADIUS OF PAVED AREA EXCEEDS 45'.
3. ISLAND AT CENTER OF BULB SHALL HAVE A VERTICAL CURB IF ROADWAY SLOPED TO OUTER EDGE. OTHERWISE USE VERTICAL CURB AND GUTTER.

CITY OF DUPONT			
CUL-DE-SAC STREET SECTION			
APPROVED: 9/21/11 CITY OF DUPONT DATE			DWG. NO. 2.8-1
DATE: 9/11	DRWN: L.G.	CHKD: T.N.	SCALE: NO SCALE



SECTION A-A

GENERAL NOTES:
1. COMMERCIAL/INDUSTRIAL DRIVEWAYS WIDER THAN 35' MAY BE APPROVED BY THE CITY CONSIDERING BOTH TRAFFIC SAFETY AND THE ACTIVITY BEING SERVED. ALL COMMERCIAL/INDUSTRIAL DRIVEWAYS AT A MIN. SHALL HAVE AN EXPANSION JOINT LOCATED MID-WIDTH.
2. PIPE SHALL BE:
   A. SIZED TO CONVEY COMPUTED STORM WATER RUNOFF, AND
   B. MIN. 12" DIAM., AND
   C. EQUAL TO OR LARGER THAN EXISTING PIPES WITHIN 500' UPSTREAM.
3. EXPOSED PIPE ENDS SHALL BE BEVELED TO MATCH THE SLOPE FACE AND PROJECT NO MORE THAN 12" BEYOND SLOPE SURFACE. PROJECTING HEADWALLS ARE NOT ACCEPTABLE.
4. PIPES WITH LESS THAN 12" OF COVER SHALL BE DUCTILE IRON.
5. HAND PLACED RIPRAP FOR ENERGY DISIPATION SHALL BE INSTALLED AT BOTH ENDS OF THE STORM PIPE.
6. PIPE SHALL BE INSTALLED IN A STRAIGHT UNIFORM ALIGNMENT AT A MIN. 0.5% SLOPE (0.5' FT. PER 100 FT.) WITH THE DOWNSTREAM END LOWER THAN THE UPSTREAM END.
7. PIPE MAY BE OMITTED IF ROADSIDE DITCH DOES NOT EXIST AND DRIVEWAY DOES NOT BLOCK NATURAL FLOW.
8. DRIVEWAY SLOPE SHALL MATCH TO BACK EDGE OF SHOULDER, BUT SHOULDER SLOPE AND EDGE OF SHOULDER SHALL NOT BE ALTERED AS A RESULT OF DRIVEWAY CONSTRUCTION.
9. DRIVEWAYS LOCATED ON THE PROPERTY SIDE OF THE RIGHT-OF-WAY SHALL BE PAVED.
10. THE DRIVEWAY SHALL NOT HAVE A CROSS SLOPE GREATER THAN 2% WHEN THE DRIVEWAY CROSSES THE SIDEWALK.

CITY OF DUPONT			
DRIVEWAY APPROACH (WITH SHOULDER AND DITCH)			
APPROVED: 9/21/11 CITY OF DUPONT DATE			DWG. NO. 3.1-2
DATE: 9/11	DRWN: K.B.	CHKD: T.N.	SCALE: NO SCALE

No.	Date	By	Ckd.	Appr.	Revision

Title: CONSTRUCTION NOTES AND DETAILS FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

DANIEL K. BALKWILL, STATE OF WASHINGTON, 25672, REGISTERED PROFESSIONAL ENGINEER
04/18/2018

Scale: Horizontal -, Vertical -

Designed WSD
Drawn WSD
Checked DKB
Approved DKB
Date 2/19/19

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Job Number 15753

Sheet C9 of 12

File:P:\15000s\15753\engineering\15753-d.dwg Date/Time:4/18/2018 10:30 AM Scale:1" = 1' WDUNLAP Xref: ----

TREE RETENTION PLAN
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=60'

0 30 60 120

OAK MANAGEMENT MAPPING UNIT AREA

APPROXIMATE MO-17A AREA LOCATED ON SITE = 348,130 SF

MO-17A AREA REQUIRED TO BE RETAINED = 20% = 69,626 SF

MO-17A AREA PROPOSED TO REMAIN = 79,607 SF = 22.9%

TREE RETENTION CALC.

TOTAL EXISTING OAKS = 580

REQUIRED CANOPY RETENTION = 20%

20% x 580 TREES = 116 TREES±

OAK TREES TO BE SAVED = 119

"APPROVED FOR CONSTRUCTION"

BY: _____

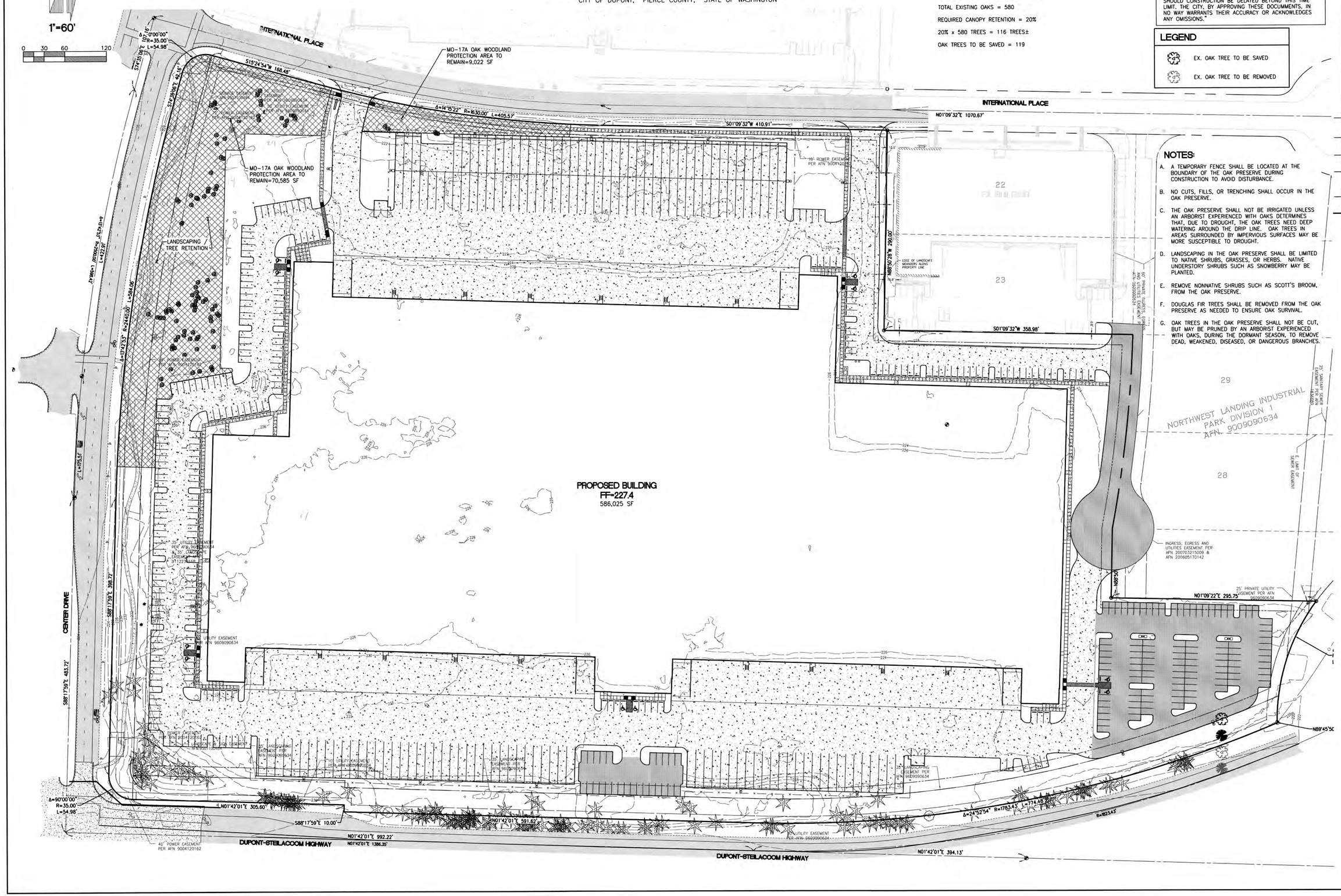
DATE: _____
CITY OF DUPONT

"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."

LEGEND

EX. OAK TREE TO BE SAVED

EX. OAK TREE TO BE REMOVED



NOTES:

A. A TEMPORARY FENCE SHALL BE LOCATED AT THE BOUNDARY OF THE OAK PRESERVE DURING CONSTRUCTION TO AVOID DISTURBANCE.

B. NO CUTS, FILLS, OR TRENCHING SHALL OCCUR IN THE OAK PRESERVE.

C. THE OAK PRESERVE SHALL NOT BE IRRIGATED UNLESS AN ARBORIST EXPERIENCED WITH OAKS DETERMINES THAT, DUE TO DROUGHT, THE OAK TREES NEED DEEP WATERING AROUND THE DRIP LINE. OAK TREES IN AREAS SURROUNDED BY IMPERVIOUS SURFACES MAY BE MORE SUSCEPTIBLE TO DROUGHT.

D. LANDSCAPING IN THE OAK PRESERVE SHALL BE LIMITED TO NATIVE SHRUBS, GRASSES, OR HERBS. NATIVE UNDERSTORY SHRUBS SUCH AS SNOWBERRY MAY BE PLANTED.

E. REMOVE NONNATIVE SHRUBS SUCH AS SCOTT'S BROOM, FROM THE OAK PRESERVE.

F. DOUGLAS FIR TREES SHALL BE REMOVED FROM THE OAK PRESERVE AS NEEDED TO ENSURE OAK SURVIVAL.

G. OAK TREES IN THE OAK PRESERVE SHALL NOT BE CUT, BUT MAY BE PRUNED BY AN ARBORIST EXPERIENCED WITH OAKS, DURING THE DORMANT SEASON, TO REMOVE DEAD, WEAKENED, DISEASED, OR DANGEROUS BRANCHES.

No.	Date	By	Chd.	Appr.	Revision

Title: TREE RETENTION PLAN FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

DANIEL K. BALMELLI, STATE OF WASHINGTON, 25672, REGISTERED PROFESSIONAL ENGINEER
04/18/2018

Scale: Horizontal 1"=60' Vertical N/A

Designed WED
Drawn WED
Checked DKB
Approved DKB
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX
CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C10 of 12

File:P:\15000s\15753\engineering\15753-tree.dwg Date/Time:3/21/2018 2:26 PM Scale:1:1 WDUNLAP Xref: ----

BOUNDARY AND TOPO SURVEY EXHIBIT
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

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1"=60'

0 30 60 120

No.	Date	By	Chk'd.	Appr.	Revision

Title: BOUNDARY AND TOPO SURVEY EXHIBIT FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

DANIEL K. BALMELLI, STATE OF WASHINGTON, 25672, REGISTERED PROFESSIONAL ENGINEER
04/18/2018

Scale: Horizontal 1"=60' Vertical N/A

Designed WED
Drawn WED
Checked DKB
Approved DKB
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
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CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C11 of 12

File:P:\15000s\15753\engineering\15753-topo.dwg Date/Time:3/20/2018 4:46 PM Scale:1:1 WDUNLAP Xref: ----

ROAD IMPROVEMENT PLAN
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

"APPROVED FOR CONSTRUCTION"

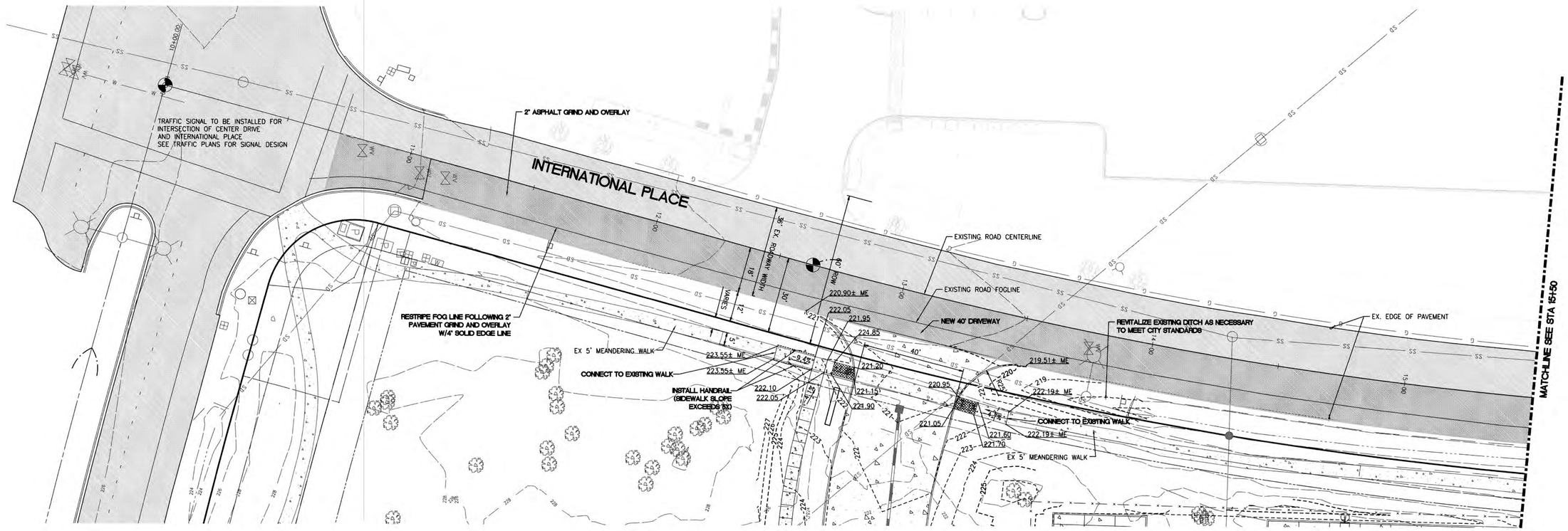
BY: _____

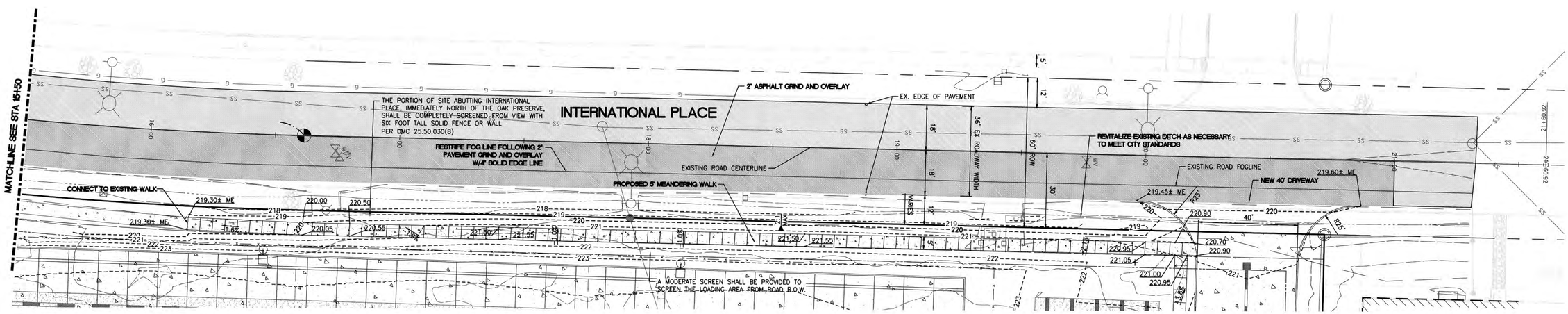
DATE: _____
CITY OF DUPONT

"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."

1"=20'

0 10 20 40





No.	Date	By	Ckd.	Appr.	Revision

Title: ROAD IMPROVEMENT PLAN FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

DANIEL K. BALMER, STATE OF WASHINGTON, 25672, REGISTERED PROFESSIONAL ENGINEER
04/18/2018

Scale: Horizontal 1"=20' Vertical N/A

Designed WED
Drawn WED
Checked DKB
Approved DKB
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX
CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C12 of 12

File:P:\15000s\15753\engineering\15753-r.dwg Date/Time:3/21/2018 2:30 PM Scale:1:1 WDUNLAP Xref: ----

ZONE:	IND – INDUSTRIAL
IMPERVIOUS AREA:	SEE CIVIL PLAN
LOT AREA REQUIRED:	NO MINIMUM LOT AREA REQUIRED
SITE AREA:	1,400,697 SF (32.16 ACRES)
CRITICAL AREA AFFECTED:	NONE
OCCUPANCY TYPE:	S–1 AND B
CONSTRUCTION TYPE:	IIIB – FULLY SPRINKLED
BUILDING CLEAR HEIGHT:	36'–0" CLEAR
LANDSCAPE REQUIREMENTS PER CITY GUIDELINES	10% OF OVERALL SITE AREA = 140,070 SF REQUIRED 231,160 SF (16.5%) PROVIDED
MAXIMUM BUILDING HEIGHT: PER CITY GUIDELINES	65' ALLOWED 43' PROPOSED

BUILDING SETBACKS: PER CITY GUIDELINES	REQUIRED	PROVIDED
FRONT YARD	25'	60+
SIDE YARD	15'	60+
REAR YARD	15'	60+
FROM CENTER DRIVE AND DUPONT STEILACOOM RD.	50'	60+

ALLOWABLE AREA: PER IBC TABLE 504.4 AND 506.2	1 STORY/70,000 SF (BASED ON S–1 OCCUPANCY, IIIB CONST. AND FULLY SPRINKLED)
SPRINKLER INCREASE + 60' YARD INCREASE	1 STORY / UNLIMITED SF (PER IBC SECTION 507.4)
ACTUAL BUILDING AREA:	1 STORY / 568,354 SF (WAREHOUSE 97%) 17,578 SF (OFFICE 3%) 585,932 SF (TOTAL)

PARKING REQUIREMENTS: (PER MUNICIPAL CODE CHAPTER 25.95) (ASSUMES 3% FUTURE OFFICE)

	TOTAL (SF)	RATIO	STALLS REQ.	ADA STALLS REQ.	STALLS PROVIDED	ADA STALLS PROVIDED
OFFICE (3%)	17,578 SF	2:1000	36			
WAREHOUSE (97%)	568,354 SF	.3: EMPLOYEE (1,163 MAX EMPLOYEES)	349			
TOTAL:			385	8	385	10

OCCUPANT LOADS: (PER 2015 IBC TABLE 1004.1.2) (ASSUMES 10% FUTURE OFFICE)

	TOTAL (SF)	RATIO	OCC. LOAD	REQ'D EXITS	EXITS PROVIDED	
OFFICE (3%)	17,578 SF	1:100	176	–	–	
WAREHOUSE (97%)	568,354 SF	1:500	1,137	–	–	
TOTAL:			1,313	4	4+	

= X OCCUPANTS / EXIT

12-600_BUILDING 2_A0.1 (SITE PLAN).dwg

02/27/18 - 2:59pm

CRAFT architects

NORTHWEST LOGISTICS CENTER
BUILDING 2
DUPONT, WA
02/28/18

NWLC-P2, LLC

Attachment 1g -Building Performance Standards Response Letter

COMMITMENT FOR TITLE INSURANCE

Issued by

FIRST AMERICAN TITLE INSURANCE COMPANY

First American Title Insurance Company, herein called the Company, for valuable consideration, hereby commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the proposed Insured named in Schedule A, as owner or mortgagor of the estate or interest covered hereby in the land described or referred to in Schedule A, upon payment of the premiums and charges therefor; all subject to the provisions of Schedules A and B and to the Conditions and Stipulations hereof.

This Commitment shall be effective only when the identity of the proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A hereof by the Company, either at the time of the issuance of the Commitment or by subsequent endorsement.

This Commitment if preliminary to the issuance of such policy or policies of title insurance and all liability and obligations hereunder shall cease and terminate six (6) months after the effective date hereof or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue such policy or policies is not the fault of the Company. This Commitment shall not be valid or binding until countersigned by an authorized officer or agent.

IN WITNESS WHEREOF, the Company has caused this commitment to be signed, to become valid when countersigned by an authorized officer or agent of the Company, all in accordance with its By-Laws. This Commitment is effective as of the date shown in Schedule A as “Effective Date.”

First American Title Insurance Company

Dennis J. Gilmore
President

Jeffrey S. Robinson
Secretary

First American Title Insurance Company
National Commercial Services
818 Stewart Street, Suite 800, Seattle, WA 98101
(206)728-0400 - (800)526-7544 FAX (206)448-6348

To: **Bayhead Development**
3333 South 38th Street
Tacoma , WA 98409

File No.: **NCS-707292-WA1**
Your Ref No.: **Dupont, WA Property**

Attn: **Nick Griot**

THIRD REPORT
SCHEDULE A

1. Commitment Date: February 20, 2018 at 7:30 A.M.

2. Policy or Policies to be issued:

	AMOUNT	PREMIUM	TAX
Reorganization Rate Extended Mortgagee's Coverage	$ To Be Determined	$ To Be Determined	$ To Be Determined

Proposed Insured:
To Be Determined

3. The estate or interest in the land described on Page 2 herein is **Fee as to Parcel A, an Easement as to Parcel B**, and title thereto is at the effective date hereof vested in:

Islero LLC, a Washington limited liability company

Note: See Exception #19 below, which references Deed conveying subject property to NWLC-P2 LLC.

4. The land referred to in this Commitment is described as follows:

The land referred to in this report is described in Exhibit "A" attached hereto.

EXHIBIT 'A'

LEGAL DESCRIPTION:

PARCEL A:

LOT 1, CITY OF DUPONT BOUNDARY LINE ADJUSTMENT NO. BLA-LEE 06-01, ACCORDING TO THE SURVEY THEREOF RECORDED MARCH 21, 2007, UNDER RECORDING NO. 200703215009, RECORDS OF PIERCE COUNTY, WASHINGTON AND LOTS 1 THROUGH 21, INCLUSIVE, AND LOTS 24 THROUGH 26, INCLUSIVE, OF NORTHWEST LANDING INDUSTRIAL PARK DIVISION 1, AS PER PLAT RECORDED SEPTEMBER 9, 1996 UNDER RECORDING NO. 9609090634, RECORDS OF PIERCE COUNTY, WASHINGTON, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID LOT 21;
THENCE SOUTH 88°50'28" EAST, 290.00 FEET ALONG THE NORTH LINES OF SAID LOTS 21 AND 20;
THENCE NORTH 01°09'32" EAST, 358.98 FEET ALONG THE WEST LINE OF SAID LOT 24 TO A POINT ON A NON-TANGENT CURVE, THE RADIUS OF WHICH BEARS SOUTH 01°47'44" WEST, BEING THE NORTHWEST CORNER OF SAID LOT 24;
THENCE EASTERLY ALONG THE NORTH LINE OF SAID LOTS 24 AND 25, ALONG THE ARC OF A CURVE CONCAVE TO THE SOUTH, HAVING A RADIUS OF 1,800.00 FEET, THROUGH A CENTRAL ANGLE OF 08°57'27", AND AN ARC LENGTH OF 281.41 FEET TO THE NORTHEAST CORNER OF SAID LOT 25;
THENCE SOUTH 88°50'38" EAST, 100.00 FEET ALONG THE NORTH LINE OF SAID LOT 26 TO THE SOUTHWEST CORNER OF SAID LOT 1 OF SAID BOUNDARY LINE ADJUSTMENT;
THENCE NORTH 01°09'22" EAST, 295.75 FEET ALONG THE WEST LINE OF SAID LOT 1 TO THE NORTHWEST CORNER OF SAID LOT 1, BEING A POINT ON A NON-TANGENT CURVE, THE RADIUS OF WHICH BEARS NORTH 36°26'06" EAST;
THENCE EASTERLY ALONG THE NORTH LINE OF SAID LOT 1, ALONG ARC OF A CURVE CONCAVE TO THE NORTH, HAVING A RADIUS OF 291.11 FEET, THROUGH A CENTRAL ANGLE OF 36°40'16", AND AN ARC LENGTH OF 186.32 FEET;
THENCE NORTH 89°45'50" EAST, 1.17 FEET ALONG SAID NORTH LINE TO THE NORTHEAST CORNER OF SAID LOT 1, BEING A POINT ON A NON-TANGENT CURVE, THE RADIUS OF WHICH BEARS SOUTH 66°49'07" WEST;
THENCE SOUTHERLY ALONG THE EAST LINES OF SAID LOTS 1, 26 AND 17, ALONG THE ARC OF A CURVE CONCAVE TO THE WEST, HAVING A RADIUS OF 1,783.43 FEET, THROUGH A CENTRAL ANGLE OF 24°52'54", AND AN ARC LENGTH OF 774.48 FEET;
THENCE SOUTH 01°42'01" WEST, 591.62 FEET ALONG THE EAST LINES OF LOTS 17, 16 AND 7;
THENCE NORTH 88°17'59" WEST, 10.00 FEET ALONG THE EAST LINE OF SAID LOT 7;
THENCE SOUTH 01°42'01" WEST, 305.60 FEET ALONG SAID EAST LINE AND THE EAST LINES OF LOTS 6 AND 5 TO A POINT OF TANGENCY;
THENCE SOUTHWESTERLY ALONG SAID EAST LINE OF LOT 5, ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 35.00 FEET, THROUGH A CENTRAL ANGLE OF 90°00'00", AND AN ARC LENGTH OF 54.98 FEET;
THENCE NORTH 88°17'59" WEST, 398.72 FEET ALONG THE SOUTH LINES OF SAID LOTS 5 AND 4 TO A POINT OF TANGENCY;
THENCE WESTERLY ALONG THE SOUTH LINES OF LOTS 4, 3, 2 AND 1, ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 2,440.00 FEET, THROUGH A CENTRAL ANGLE OF 13°42'53", AND AN ARC LENGTH OF 584.06 FEET;
THENCE NORTH 74°35'06" WEST, 42.16 FEET ALONG THE SOUTH LINE OF SAID LOT 1 TO A POINT OF TANGENCY;
THENCE NORTHWESTERLY ALONG THE ARC OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 35.00 FEET, THROUGH A CENTRAL ANGLE OF 90°00'00", AND AN ARC LENGTH OF 54.98 FEET;
THENCE NORTH 15°24'54" EAST, 168.48 FEET ALONG THE WEST LINES SAID LOTS 1 AND 11 TO A POINT OF

TANGENCY;
THENCE NORTHERLY ALONG THE WEST LINES OF SAID LOTS 11 AND 12, ALONG THE ARC OF A CURVE TO THE LEFT, HAVING A RADIUS OF 1,630.00 FEET, THROUGH A CENTRAL ANGLE OF 14°15'22", AND AN ARC LENGTH OF 405.57 FEET;
THENCE NORTH 01°09'32" EAST, 410.91 FEET ALONG THE WEST LINES OF SAID LOTS 12 AND 21 TO THE POINT OF BEGINNING.

PARCEL B:

A NON-EXCLUSIVE EASEMENT FOR INGRESS, EGRESS AND UTILITIES AS CREATED BY INSTRUMENT RECORDED MAY 17, 2006 UNDER RECORDING NO. 200605170142 AND AS DELINEATED ON SAID BOUNDARY LINE ADJUSTMENT RECORDED MARCH 21, 2007 UNDER RECORDING NO. 200703215009, IN PIERCE COUNTY, WASHINGTON.

SCHEDULE B - SECTION 1
REQUIREMENTS

The following are the Requirements to be complied with:

Item (A) Payment to or for the account of the Grantors or Mortgagors of the full consideration for the estate or interest to be insured.

Item (B) Proper instrument(s) creating the estate or interest to be insured must be executed and duly filed for record.

Item (C) Pay us the premiums, fees and charges for the policy.

Item (D) You must tell us in writing the name of anyone not referred to in this Commitment who will get an interest in the land or who will make a loan on the land. We may then make additional requirements or exceptions

SCHEDULE B - SECTION 2
GENERAL EXCEPTIONS

The Policy or Policies to be issued will contain Exceptions to the following unless the same are disposed of to the satisfaction of the Company.

A. 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.

B. Any facts, rights, interest, or claims which are not shown by the public records but which could be ascertained by an inspection of said land or by making inquiry of person in possession thereof.

C. Easements, claims of easement or encumbrances which are not shown by the public records.

D. 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 public records.

E. (1) Unpatented mining claims; (2) reservations or exceptions in patents or in acts authorizing the issuance thereof; (3) Water rights, claims or title to water; whether or not the matters excepted under (1), (2) or (3) are shown by the public records; (4) Indian Tribal Codes or Regulations, Indian Treaty or Aboriginal Rights, including easements or equitable servitudes.

F. Any lien, or right to a lien, for services, labor, materials or medical assistance theretofore or hereafter furnished, imposed by law and not shown by the public records.

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

H. Defects, liens, encumbrances, adverse claims or other matters, if any, created, first appearing in the public records or attaching subsequent to the effective date hereof but prior to the date the proposed insured acquires of record for value the estate or interest or mortgages thereon covered by this Commitment.

SCHEDULE B - SECTION 2
(continued)
SPECIAL EXCEPTIONS

1. 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.

2. Easement, including terms and provisions contained therein:

Recording Information:	November 21, 1958 under Recording No. 1836680
In Favor of:	United States of America
For:	Sewer Line
Affects:	as described therein.

3. Reservations and exceptions, including the terms and conditions thereof:

Reserving:	Minerals and Right of Way
Reserved By:	Weyerhaeuser Company
Recorded:	January 26, 1989
Recording Information:	8901260100

   Document(s) declaring modifications thereof recorded May 13, 1994 as Recording No. 9405130746 of Official Records.

4. Easement, including terms and provisions contained therein:

Recording Information:	April 12, 1990 under Recording No. 9004120162
In Favor of:	Puget Sound Power & Light Company
For:	Electric Transmission and/or Distribution Line
Affects:	as described therein.

   Said instrument is a re-record of recording no(s). December 18, 1989 under Recording No. 8912180215.

5. Easement, including terms and provisions contained therein:

Recording Information:	December 23, 1991 under Recording No. 9112230168
In Favor of:	City of Dupont
For:	Landscaping
Affects:	as described therein.

6. Covenants, conditions, restrictions and/or easements:

Recorded:	August 24, 1992
Recording No.:	9208240297

Document(s) declaring modifications thereof recorded January 10, 1995, March 15, 1995, January 9, 1996, January 26, 1996, March 12, 1996, September 11, 1996, December 24, 1996, October 17, 1997, March 17, 1998, July 7, 1998, December 20, 1999, November 8, 2000, January 8, 2002, September 18, 2002, April 4, 2003, April 16, 2003, August 25, 2003, December 21, 2007, August 15, 2008, October 6, 2010 and October 27, 2010 as Recording No. 9501100462, 9503150368, 9601090368, 9601260346, 9603120707, 9609110555, 9612240420, 9710170646, 9803170310, 9807070025, 9912200109, 200011080374, 200201080843, 200209180938, 200304041434, 200304160284, 200308250162, 200712210490, 200808150280, 201010060495 and 201010270197 of Official Records.

7. Restrictions, conditions, dedications, notes, easements and provisions, if any, as contained and/or delineated on the face of the Plat of Northwest Landing Industrial Park Division 1 recorded September 9, 1996 under Recording No. 9609090634, in Pierce County, Washington.

8. Terms, covenants, conditions and restrictions as contained in recorded Lot Line Adjustment (Boundary Line Revision) BLA 02-01 :

Recorded:	October 24, 2002
Recording Information:	200210245003

9. The terms and provisions contained in the document entitled "Declaration of Restriction on Self-Storage Consumer Storage Facilities" recorded May 20, 2003 as Recording No. 200305200603 of Official Records.

   Document(s) declaring modifications thereof recorded January 10, 2005 as Recording No. 200501101194 of Official Records.

10. Terms, covenants, conditions and restrictions as contained in recorded Lot Line Adjustment (Boundary Line Revision) BLA- LEE 06-01 :

Recorded:	March 21, 2007
Recording Information:	200703215009

11. Easement, including terms and provisions contained therein:

Recording Information:	June 20, 2008 under Recording No. 200806200647
In Favor of:	Puget Sound Energy, Inc
For:	One or More Utility Systems
Affects:	as described therein.

12. Evidence of the authority of the individual(s) to execute the forthcoming document for Islero LLC, a Washington limited liability company, copies of the current operating agreement should be submitted prior to closing.

13. 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.

14. Potential taxes, penalties and interest incurred by reason of a sale of the land, a change in the use or a withdrawal from the classified use of the property herein described pursuant to RCW 84.26, RCW 84.33 or RCW 84.34. Notice of approval of such classified use as Open Space was given by the Pierce County Assessor on December 21, 1990 under recording no. 9012210434.

Said lands have been classified as Open Space for tax purposes. They will be subject to further taxation and interest thereupon as provided by RCW 84.33 and 84.34 upon withdrawal from such classification or change in use. If the new owners wish to continue the classification or designation of said lands, it will be necessary that said new owners sign the Notice of Continuance section in the State Excise Tax Affidavit. If the new owners do not desire to continue such classification or designation, all compensating or additional tax shall be due and payable at the time of sale. For determination of any compensating or additional tax due, the County Assessor must be consulted prior to sale.

Said instrument is a re-record of recording no(s). 9012110161, recorded December 11, 1990.

15. Easement, including terms and provisions contained therein:

Recording Information:	January 10, 1995 under Recording No. 9501100464
In Favor of:	Northwest Landing Commercial Owners Association
For:	Sign
Affects:	as described therein.

Document(s) declaring modifications thereof recorded February 22, 1999, July 1, 2009 and August 20, 2010 as Recording Nos. 9902220495, 200907010132 and 201008200408 of Official Records.

16. Provisions of the Articles of Incorporation and By-Laws of the **Northwest Landing Commercial Owners Association**, and any tax, fee, assessments or charges as may be levied by said association.

Recorded:	September 9, 1996
Recording No.:	9609090634

17. General Taxes for the year 2018.

Tax Account No.:		300039-001-1
Amount Billed:	$	58,163.26
Amount Paid:	$	0.00
Amount Due:	$	58,163.26
Assessed Land Value:	$	4,994,200.00
Assessed Improvement Value:	$	0.00

18. The terms and provisions contained in the document entitled "Declaration of Lot Combination City of Dupont File No. LLE 15-01" recorded March 13, 2015 as Recording No. 201503130126 of Official Records.

19. The effect of a deed executed by Islero LLC, a Washington limited liability company to NWLC-P2 LLC, a Washington limited liability company, recorded January 14, 2016 as Recording No. 201601140236 of Official Records.

The Company will require satisfactory evidence that the deed was an absolute conveyance for value and that there are no other agreements, oral or written, regarding the ownership or occupancy of the land described in the deed.

20. 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.

INFORMATIONAL NOTES

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 premises 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 standardization requirements. The full text of the description must appear in the document(s) to be insured.

Lot 1, City of Dupont BLA No. BLA-LEE 06-01, Rec. 200703215009 & Lots 1-21 & Lots 24-26, Northwest Landing Industrial Park Div. 1, Rec. 9609090634

APN: 300039-001-1

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.

END OF SCHEDULE B

cc: Will Advise

First American Title Insurance Company
National Commercial Services

COMMITMENT
Conditions and Stipulations

1. The term "mortgage" when used herein shall include deed of trust, trust deed, or other security instrument.

2. If the proposed Insured has or acquires actual knowledge of a defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment, other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to the Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act or reliance hereon to the extent the Company is prejudiced by failure to so disclose such knowledge. If the proposed Insured shall disclosure such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option, may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions and Stipulations.

3. Liability of the Company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of Policy or Policies committed for, and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof, or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the Policy or Policies committed for and such liability is subject to the Insuring provisions, exclusion from coverage, and the Conditions and Stipulations of the form of Policy or Policies committed for in favor of the proposed Insured which are hereby incorporated by references, and are made a part of this Commitment except as expressly modified herein.

4. Any claim of loss or damage, whether or not based on negligence, and which arises out of the status of the title to the estate or interest or the lien of the Insured mortgage covered hereby or any action asserting such claim, shall be restricted to the provisions and Conditions and Stipulations of this Commitment.

The First American Corporation

First American Title Insurance Company
National Commercial Services
PRIVACY POLICY

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our parent company, The First American Corporation, we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information which you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values, a copy of which can be found on our website at www.firstam.com.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and·
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies, and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies, or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

c 2001 The First American Corporation - All Rights Reserved

STORMWATER SITE PLAN

Proposed Northwest Logistics Center No. 2

NEC – Center Drive and International Place
DuPont, Washington

Prepared for:
NWLC-P2 LLC
P.O. Box 110997
Tacoma, WA 98411

COSTA PHILIPPIDES
STATE OF WASHINGTON
38375
REGISTERED
PROFESSIONAL ENGINEER

02/28/2018

February 28, 2018
Our Job No. 15753

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH KENT, WA 98032 (425) 251-6222 (425) 251-8782 FAX
BRANCH OFFICES ♦ TUMWATER, WA ♦ LONG BEACH, CA ♦ ROSEVILLE, CA ♦ SAN DIEGO, CA
www.barghausen.com

Attachment 1i - Stormwater Site Plan dated February 28, 2018

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- B. PERFORMANCE STANDARDS AND GOALS
- C. FLOW CONTROL SYSTEM
- D. WATER QUALITY SYSTEM
- E. CONVEYANCE SYSTEM ANALYSIS AND DESIGN

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Tab 1.0

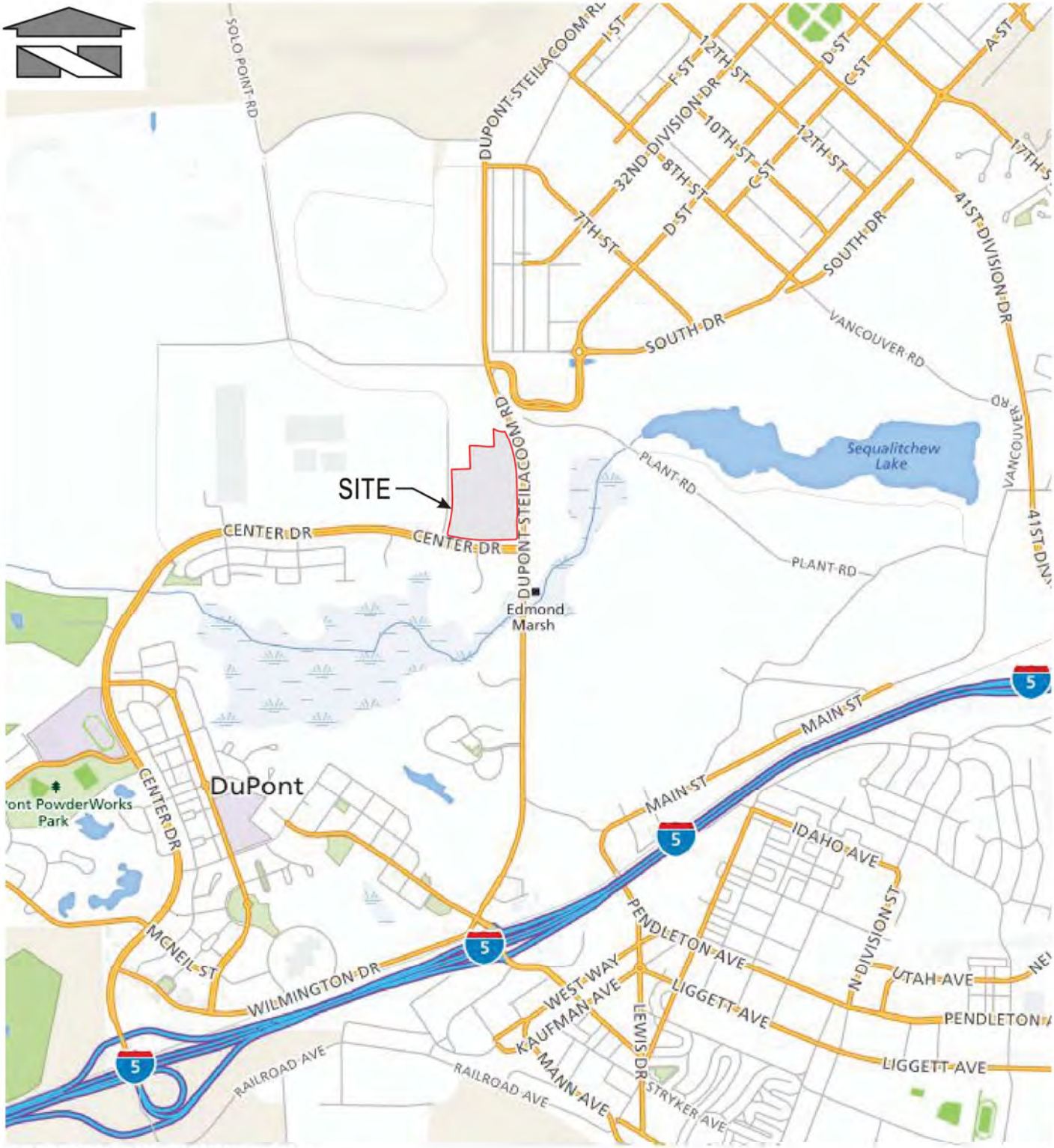
1.0 PROJECT OVERVIEW

The proposed Northwest Logistics Center No. 2 development is located on an approximate 32.16-acre site located on the northeast corner of Center Drive and International Place in the City of DuPont, Washington. Please see the attached Vicinity Map for the exact location of the project site. The proposal for this development is to construct one large 586,025-square-foot building surrounded by appropriate parking, drive aisles, and dock-high loading. Infiltration is the proposed means of flow control for this project. Access to the site will be provided from International Place in two locations. Approximately 20 percent of the site will be considered landscaping, with the remainder of the site composed of impervious surface.

There are four separate drainage basins on the project site, one on each of the four corners of the overall development. The northwest corner basin is approximately 3.62 acres in size. The northeast corner basin is approximately 7.08 acres in size. The southeast corner basin is approximately 7.42 acres in size. The southwest corner basin is approximately 14.04 acres in size, and includes approximately 1.67 acres of oak habitat which will remain undisturbed.

There will be no off-site roadway improvements associated with this development, as the surrounding streets are already fully built. Please see the following pages of this report for the sizing calculations for both flow control and water quality. The proposed means of water quality for this site is to provide Bay Saver filters with a 28-inch drop through the manhole, which will be located online (prior to infiltration) for each basin. The filters are approved for basic water quality treatment by the Department of Ecology.

Figure 1
Vicinity Map



REFERENCE: Rand McNally (2018)

Scale:
Horizontal: N.T.S. Vertical: N/A

BARGHAUSEN CONSULTING ENGINEERS, INC.
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CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

For:
Griot's International Place
DuPont, Washington

Title:
VICINITY MAP

Job Number
15753

DATE: 02/27/18

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Figure 2
Drainage Basins, Subbasins, and Site Characteristics

DEVELOPED BASIN MAP

NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=80'

0 40 80 160

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BY: _____

DATE: _____
CITY OF DUPONT

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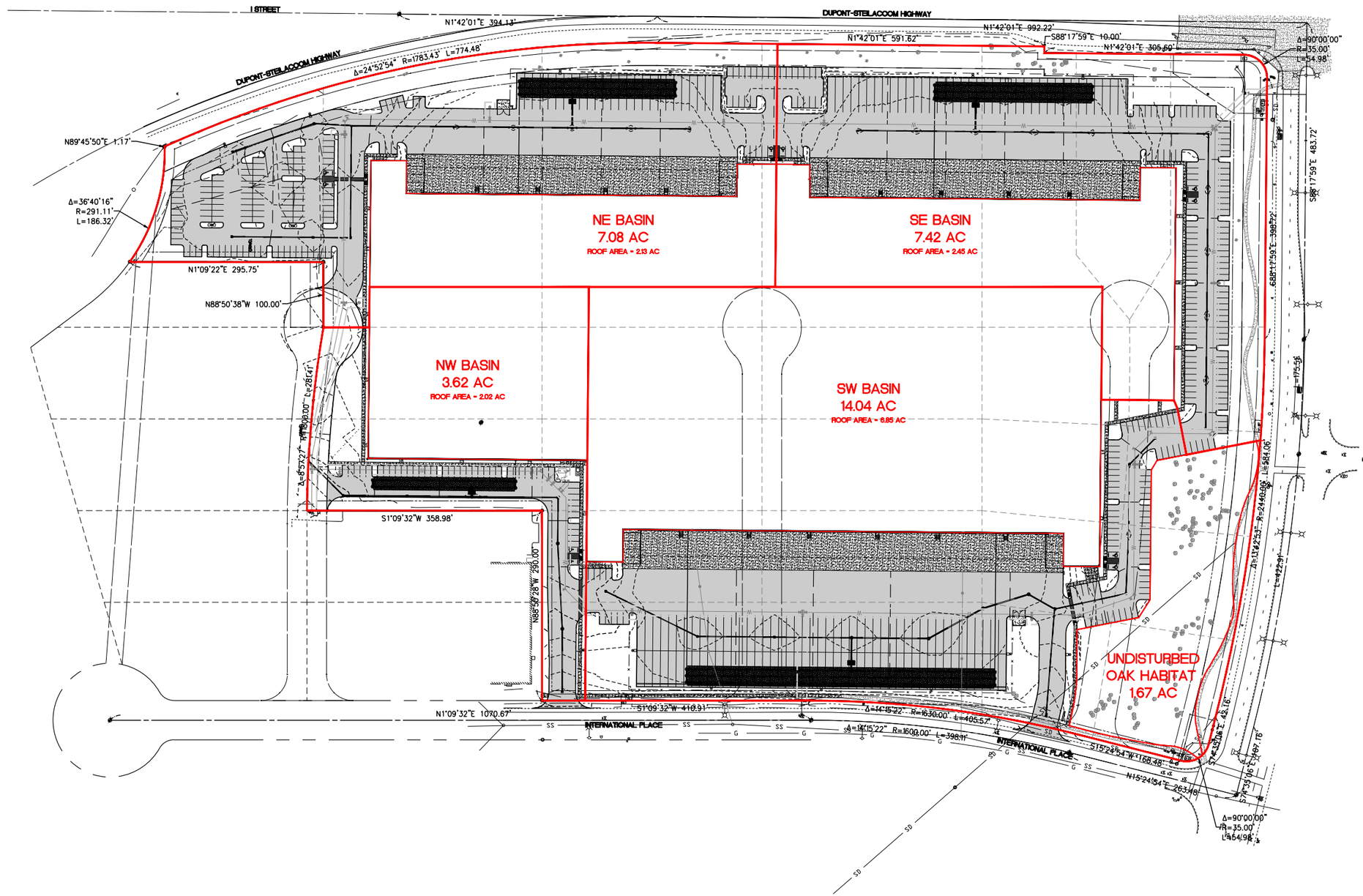

No.	Date	By	Ckd.	Appr.	Revision

Title: DEVELOPED BASIN MAP FOR NORTHWEST LOGISTICS CENTER 2

For: ISLERO, LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

STATE OF WASHINGTON
JOSHUA PHILIPPI LOS
38379
REGISTERED PROFESSIONAL ENGINEER
02/28/2018

Scale: Horizontal 1"=80' Vertical N/A

Designed WEO
Drawn WEO
Checked CP
Approved CP
Date 2/19/18

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Job Number 15753

Sheet 1 of 1

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PRELIMINARY GRADING AND STORM DRAINAGE PLAN (NORTH)
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=50'

0 25 50 100

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CATCH BASIN TABLE
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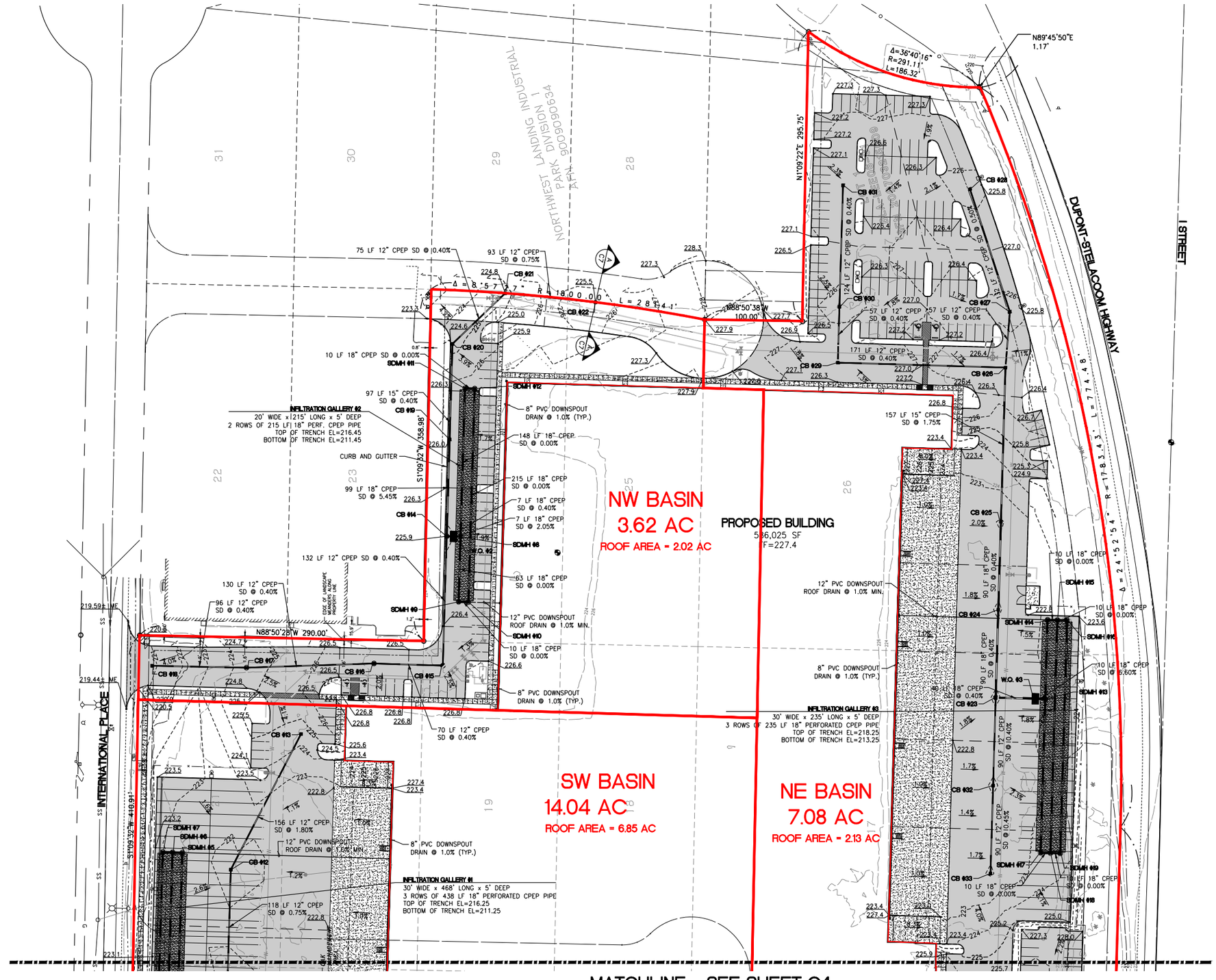

No.	Date	By	Ckd.	Appr.	Revision

Title: PRELIMINARY GRADING AND STORM DRAINAGE PLAN (NORTH) FOR NORTHWEST LOGISTICS CENTER 2

For: ISLERO, LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

COSTA PHILIPPIDES, STATE OF WASHINGTON, 38379, REGISTERED PROFESSIONAL ENGINEER
02/28/2018

Scale: Horizontal 1"=50' Vertical N/A

Designed WED
Drawn WED
Checked CP
Approved CP
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
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KENT, WA 98032
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Job Number 15753

Sheet C3 of 9

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PRELIMINARY GRADING AND STORM DRAINAGE PLAN (SOUTH)
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=50'

0 25 50 100

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CATCH BASIN TABLE

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W/STANDARD GRATE
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w/ SOLID LOCKING LID
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IE=215.50 (18" S)

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w/ SOLID LOCKING LID
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IE=215.50 (18" E)

SDMH #23, TYPE 2-48" DIA
w/ SOLID LOCKING LID
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IE=215.50 (18" W)

SDMH #24, TYPE 2-48" DIA
w/ SOLID LOCKING LID
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IE=215.50 (18" E)

SDMH #25, TYPE 2-48" DIA
w/ SOLID LOCKING LID
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IE=215.50 (18" E)
IE=215.50 (18" N)

SDMH #26, TYPE 2-48" DIA
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IE=215.50 (18" N)

W.Q. #1, BAYFILTER W.Q.
VAULT
MODEL 6-10-5EMC
RIM = 222.67
IE=215.73 (18" E)
IE=213.43 (18" W)

W.Q. #4, BAYFILTER W.Q.
VAULT
MODEL 6-10-4EMC
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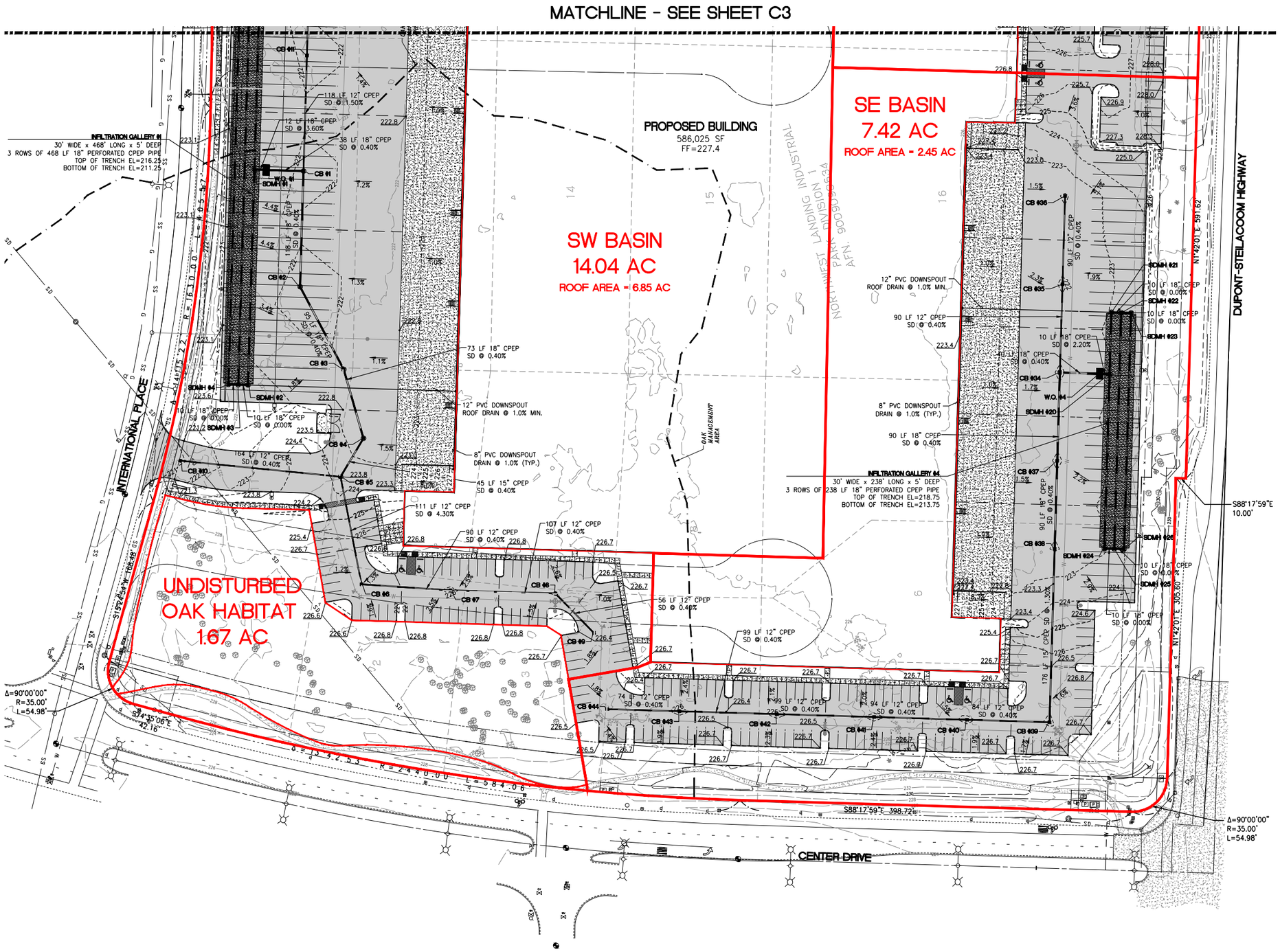

No.	Date	By	Ckd.	Appr.	Revision

Title: PRELIMINARY GRADING AND STORM DRAINAGE PLAN (SOUTH) FOR NORTHWEST LOGISTICS CENTER 2

For: ISLERO, LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

ROSIA PHILIPPI EDIS — STATE OF WASHINGTON — 38375 — REGISTERED PROFESSIONAL ENGINEER — 02/28/2018

Scale: Horizontal 1"=50' Vertical N/A

Designed WED
Drawn WED
Checked CP
Approved CP
Date 2/19/18

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BARGHAUSEN CONSULTING ENGINEERS, INC.

Job Number 15753

Sheet C4 of 9

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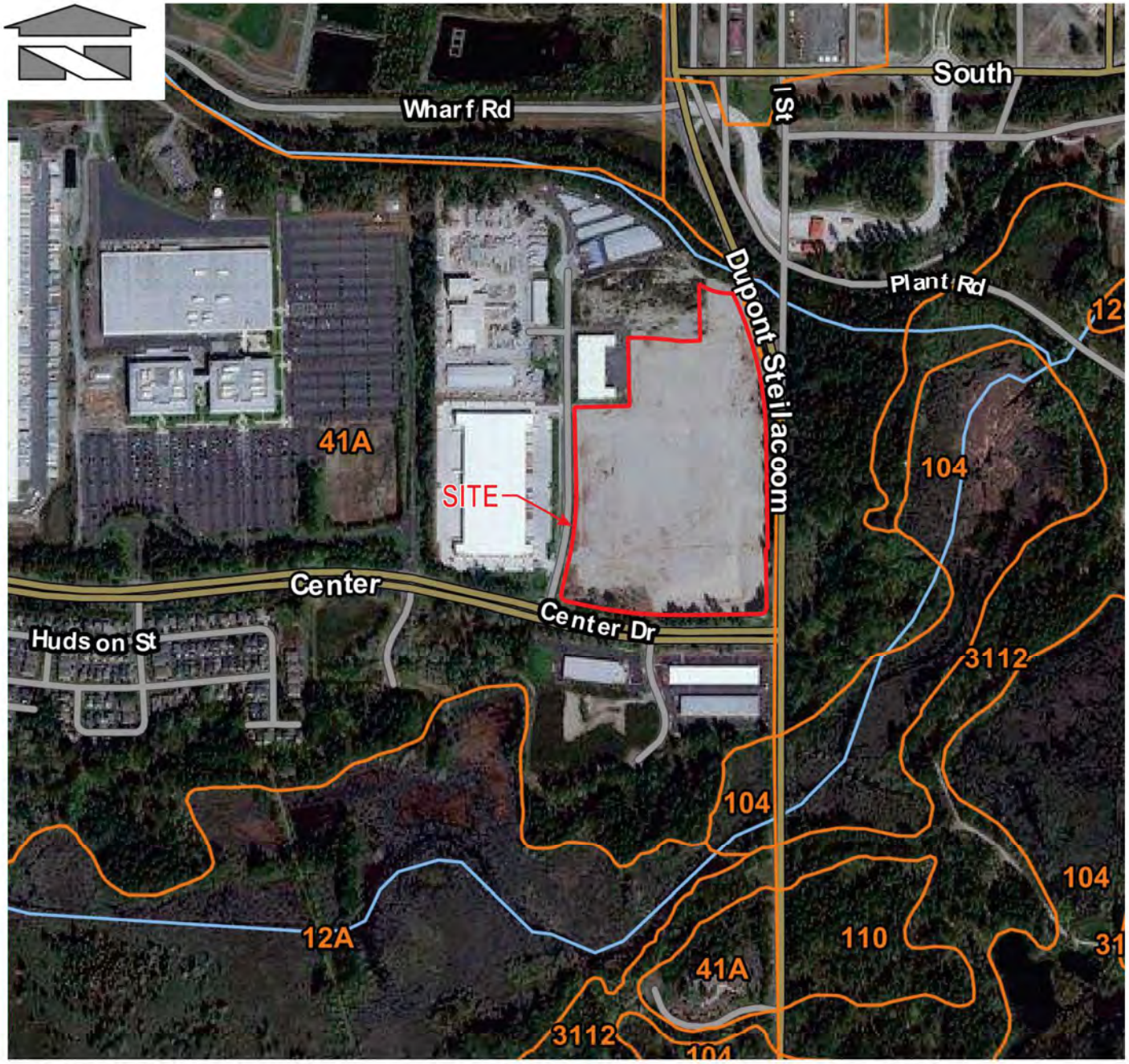
Figure 3
Soils Map



REFERENCE: USDA, Natural Resources Conservation Service

LEGEND:

41A = Spanaway gravelly sandy loam

Scale: Horizontal: N.T.S. Vertical: N/A	For: Griot's International Place DuPont, Washington	Job Number 15753
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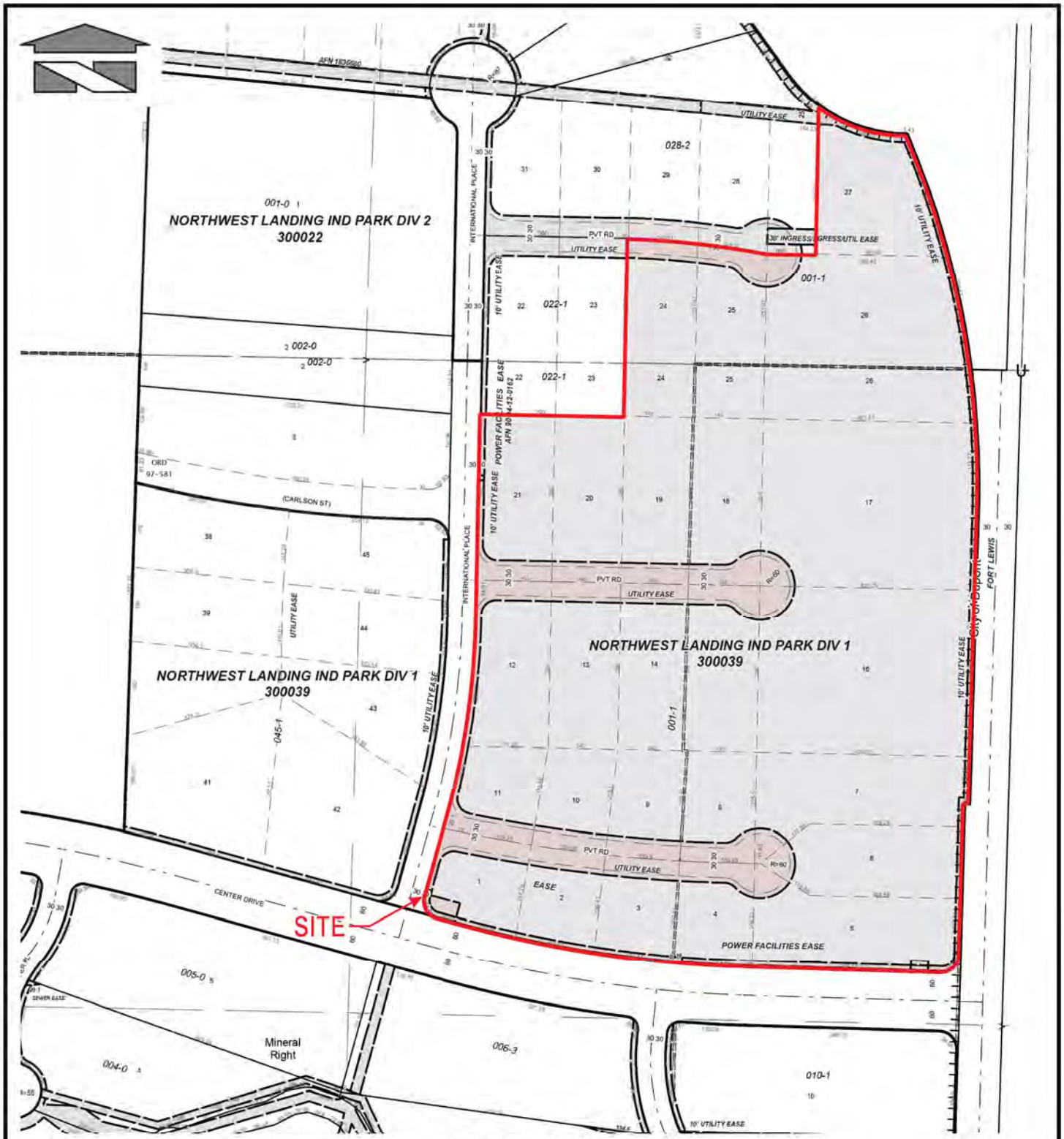
Figure 4
Assessor Map

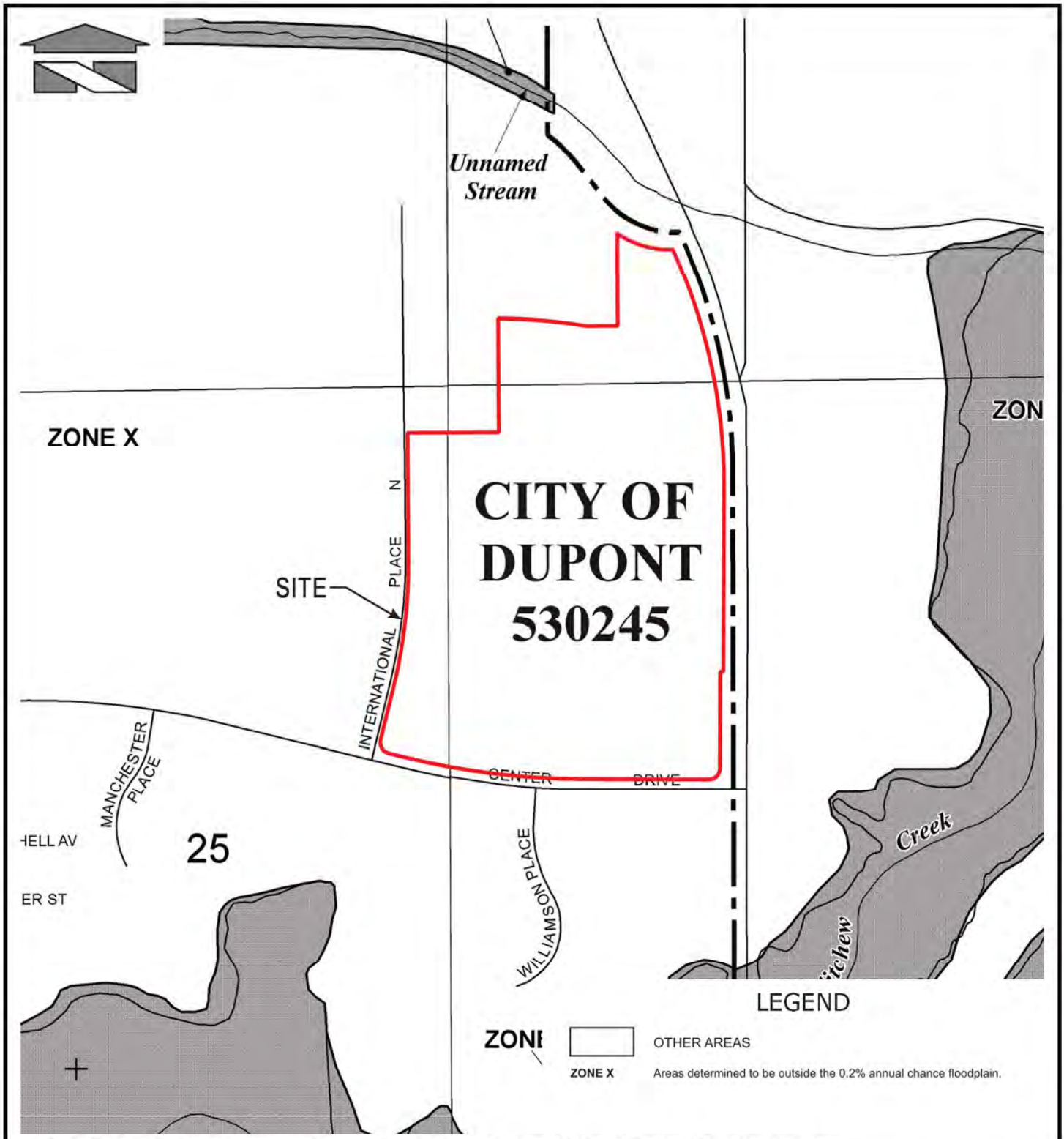


REFERENCE: Pierce County Department of Assessments (Dec. 2015)

Scale: Horizontal: N.T.S. Vertical: N/A	For: Griot's International Place DuPont, Washington	Job Number 15753
BARGHAUSEN CONSULTING ENGINEERS, INC. 18215 72ND AVENUE SOUTH KENT, WA 98032 (425) 251-6222 (425) 251-8782 CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES	Title: ASSESSOR MAP	DATE: 02/27/18

P:\15000s\15753\exhibit\graphics\15753 amap.cdr

Figure 5
FEMA Map



REFERENCE: Federal Emergency Management Agency (Portion of Map 53053C0526E, March 2017)

Scale:
Horizontal: N.T.S. Vertical: N/A

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For:
Griot's International Place
DuPont, Washington

Title:
FEMA MAP

Job Number
15753

DATE: 02/27/18

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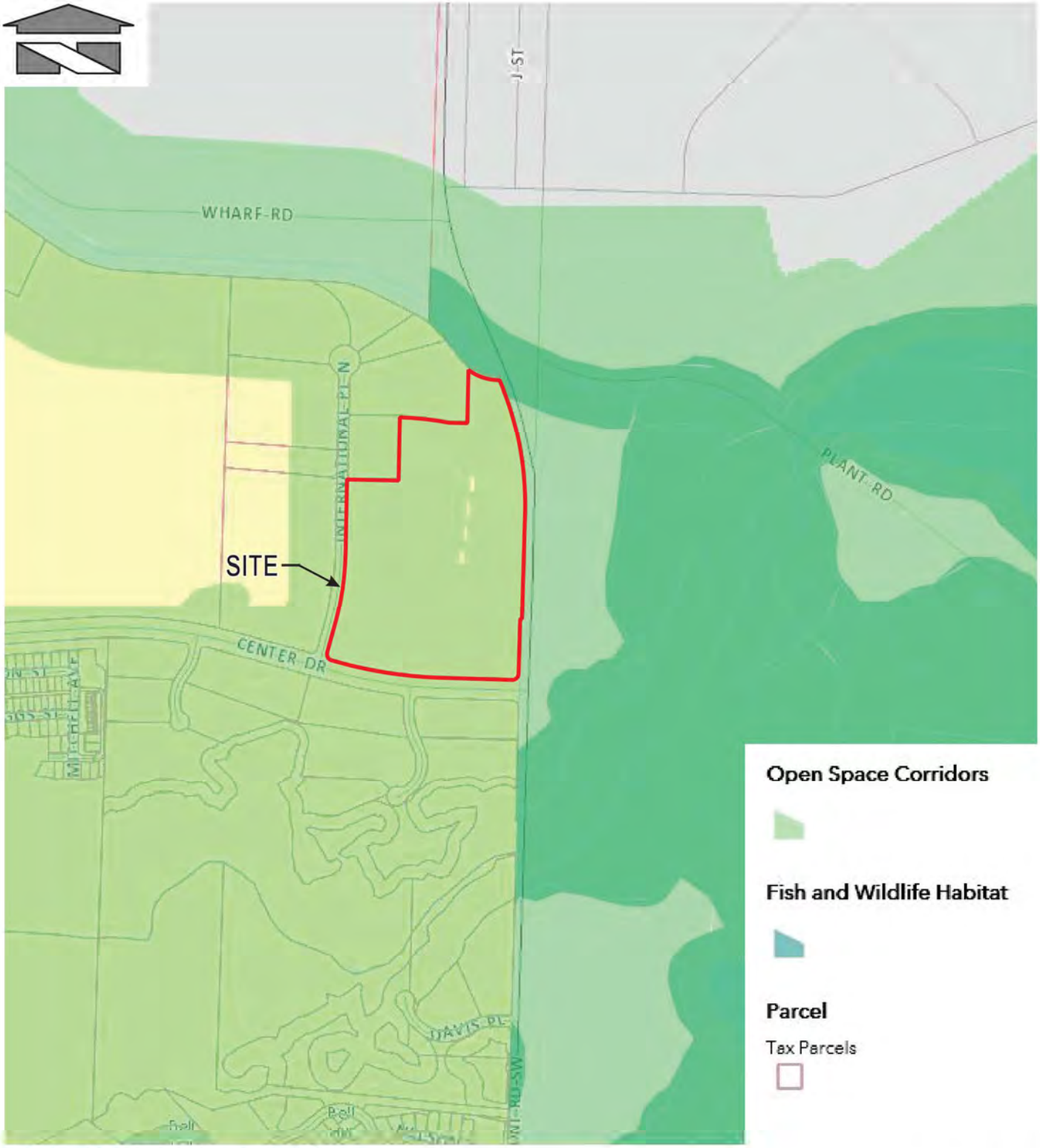
Figure 6
Sensitive Areas Map



REFERENCE: Pierce County PublicGIS

Scale:
Horizontal: N.T.S. Vertical: N/A

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For:
Griot's International Place
DuPont, Washington

Title:
SENSITIVE AREAS MAP

Job Number
15753

DATE: 02/27/18

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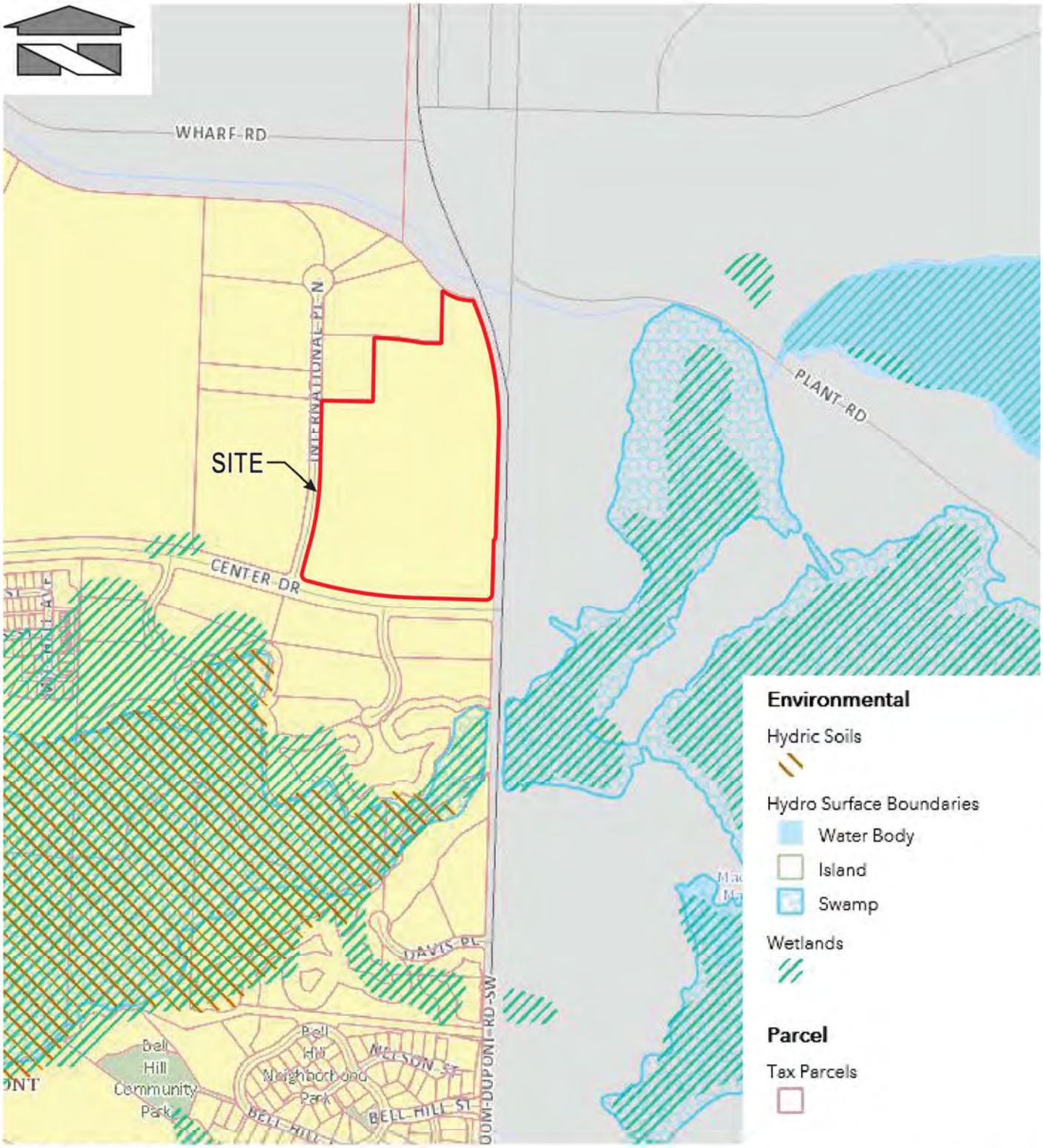
Figure 7
Sensitive Areas Map - Wetlands Related



REFERENCE: Pierce County PublicGIS

Scale: Horizontal: N.T.S. Vertical: N/A	For: Griot's International Place DuPont, Washington	Job Number 15753
BARGHAUSEN CONSULTING ENGINEERS, INC. 18215 72ND AVENUE SOUTH KENT, WA 98032 (425) 251-6222 (425) 251-8782 CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES	Title: SENSITIVE AREAS WETLANDS RELATED	DATE: 02/27/18

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Tab 2.0

2.0 ANALYSIS OF THE MINIMUM REQUIREMENTS

Minimum Requirement No. 1 – Preparation of Stormwater Site Plan:

This document fulfills the requirements of a Stormwater Site Plan.

Minimum Requirement No. 2 – Construction Stormwater Pollution Prevention:

The Construction Stormwater Pollution Prevention Plan is included in section 9.0 of this report.

Minimum Requirement No. 3 – Source Control Prevention:

Source control will be provided on site in the form of regular sweeping of the parking areas, as well as educating the owner about the proper use of fertilizers and pesticides on the landscaping areas.

Minimum Requirement No. 4 – Preservation of Natural Drainage Systems and Outfalls:

This area consists of gravelly, sandy type soils that infiltrate over the entire site. The infiltration rate utilized was 20 inches per hour as allowed by the geotechnical report for long-term infiltration.

Minimum Requirement No. 5 – On-Site Stormwater Management:

This project achieves the Low Impact Development Performance Standard due to full infiltration of runoff from all impervious areas on-site.

Minimum Requirement No. 6 – Runoff Treatment:

All areas requiring runoff treatment will have runoff from those areas routed to four separate Bay Saver filter vaults prior to draining to separate large infiltration galleries. The entire rooftop will also drain to infiltration galleries, bypassing the water quality treatment system.

Minimum Requirement No. 7 – Flow Control:

Flow control for this development will be provided through the use of infiltration galleries. There are four separate basins on this project site and each basin has a portion of the roof, as well as surrounding drive aisles and parking areas contributing.

Minimum Requirement No. 8 – Wetland Protection:

There are no wetlands on this project site.

Minimum Requirement No. 9 – Operations and Maintenance:

An Operations and Maintenance Manual will be prepared and included in the final stormwater site plan prepared for this development.

Tab 3.0

3.0 EXISTING CONDITIONS SUMMARY

The on-site soils are Spanaway gravelly sandy loam type, which is an "A" type soil and exhibits infiltration rates on the order of 60 inches per hour or greater. The rate utilized for design was 20 inches per hour for this development. The existing condition of the site consists of forested land over the entire project site. The site is bound on the west by International Place, on the south by Center Drive, and on the east by DuPont-Steilacoom Road S.W.

Figure 8
Existing Conditions Map

EXISTING CONDITIONS MAP

NORTHWEST LOGISTICS CENTER 2

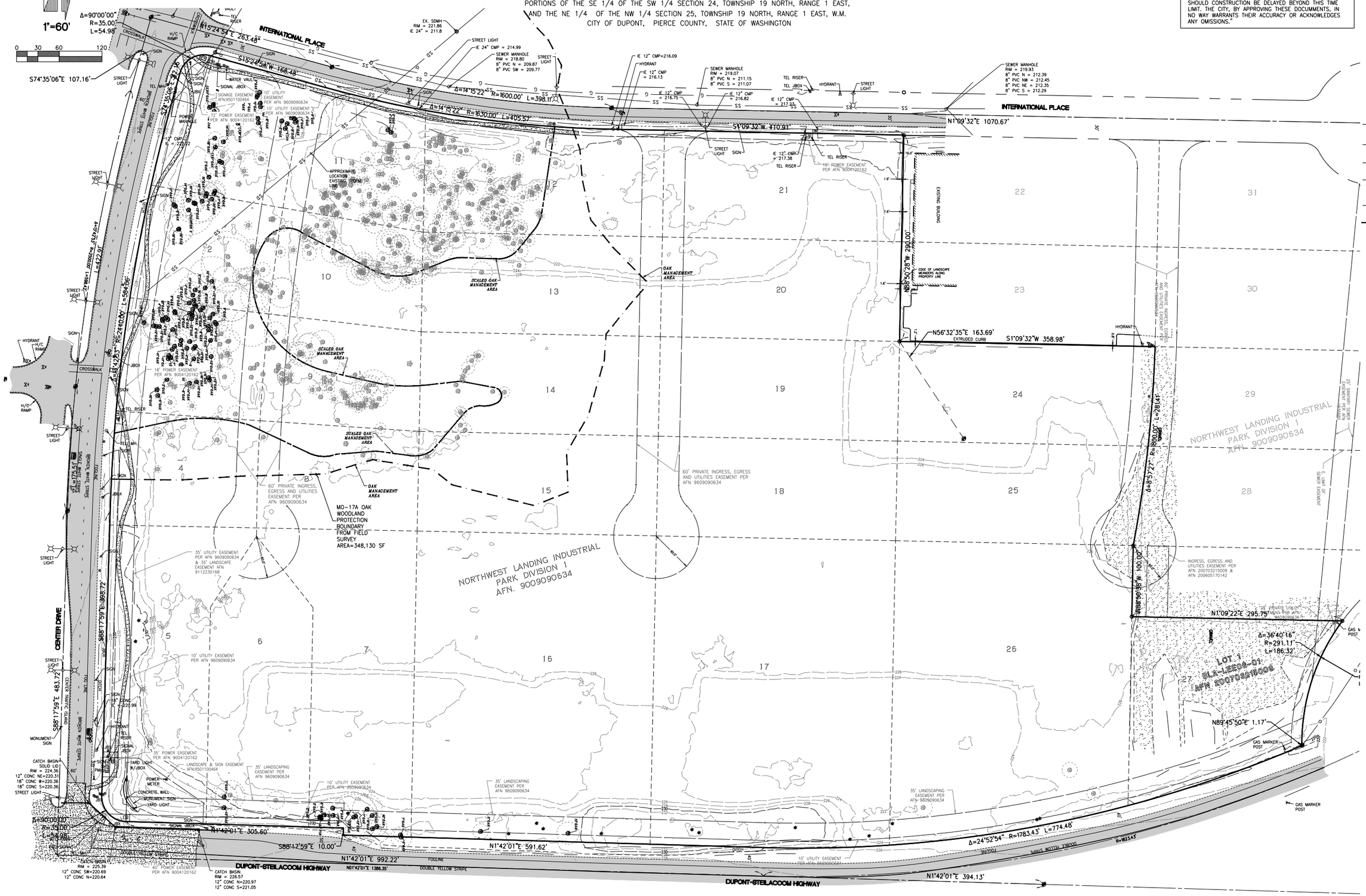
PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."



No.	Date	By	Ckd.	Appr.	Revision

Title: EXISTING CONDITIONS MAP FOR NORTHWEST LOGISTICS CENTER 2

For: ISLERO, LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

COSTA PHILIPPIDIS, STATE OF WASHINGTON, 38379, REGISTERED PROFESSIONAL ENGINEER
02/28/2018

Scale: Horizontal 1"=60' Vertical N/A

Designed WED
Drawn WED
Checked CP
Approved CP
Date 2/19/18

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Job Number 15753

Sheet 1 of 1

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Tab 4.0

4.0 OFF-SITE ANALYSIS REPORT

Since infiltration is proposed as the flow control method for the entire project site, no off-site analysis has been prepared for this development.

Tab 5.0

5.0 PERMANENT STORMWATER CONTROL PLAN

A. **Existing Site Hydrology**: As mentioned previously, most of the site consists of forested land. The on-site soil type is considered Spanaway type soil. This creates a pre-developed condition of no runoff from the site, even in peak storm events. All runoff infiltrates into the ground or evaporates. This will be matched in the developed condition through the use of infiltration galleries.

B. **Developed Site Hydrology**: Please refer to the water quality and flow control sizing criteria on the following pages of this report. There are four basins located on the project site, one on each corner. All runoff from road improvements, sidewalks, drive aisles, and parking areas will be routed through water quality features prior to the infiltration galleries located on site. An infiltration rate of 20 inches per hour was utilized based on the soils report. No water quality features are required for the building rooftop runoff.

C. **Performance Standards and Goals**: Catch basins will be provided in several locations on site to collect runoff from impervious surfaces. Underground conveyance pipe connected to these catch basins will then drain to water quality and flow control facilities. These conveyance facilities will be sized according to the Santa Barbara Urban Hydrograph (SBUH) methodology. The infiltration galleries were sized using the Western Washington Hydrology Model (WWHM), utilizing an infiltration rate of 20 inches per hour. The areas contributing to each infiltration gallery are depicted in the flow control and water quality sizing criteria in this report. The water quality features are Bay Saver filters and the WWHM hydrology model was also utilized in determining the required flow rate to size these filters.

D. **Flow Control System**: Flow control for this development will be provided through the use of infiltration galleries. Refer to the following pages of this report for the grading and drainage plan for this development, along with the sizing calculations for the associated flow control facilities.

E. **Water Quality System**: Four separate Bay Saver filter vaults will treat all runoff from pollution generating impervious surfaces prior to draining to separate large infiltration galleries. Refer to the following pages of this report for the grading and drainage plan for this development, along with the sizing calculations for the associated water quality facilities.

F. **Conveyance System Analysis and Design**: The conveyance system for this project will be sized with the final stormwater site plan. The SBUH methodology will be utilized.

FLOW CONTROL AND WATER QUALITY SIZING CRITERIA

The Landscape area for each basin is estimated to be 20% of the total area of the basin. The SW Basin contains "Undisturbed Oak Habitat" area, which was not considered in the flow control sizing calculations.

Basin 1 – Northwest Corner:

Total Area	=	157,646 SF	≈	3.62 Ac
Building	=	88,160 SF	≈	2.02 Ac
Pavement	=	45,839 SF	≈	1.05 Ac
Landscape	=	23,647 SF	≈	0.54 Ac

Basin 2 – Northeast Corner:

Total Area	=	308,285 SF	≈	7.08 Ac
Building	=	92,785 SF	≈	2.13 Ac
Pavement	=	169,257 SF	≈	3.89 Ac
Landscape	=	46,243 SF	≈	1.06 AC

Basin 3 – Southeast Corner:

Total Area	=	323,322 SF	≈	7.42 Ac
Building	=	106,689 SF	≈	2.45 Ac
Pavement	=	168,135 SF	≈	3.86 Ac
Landscape	=	48,498 SF	≈	1.11 Ac

Basin 4 – Southwest Corner:

Total Area	=	611,425 SF	≈	14.04 Ac
Undisturbed Oak Habitat	=	72676 SF	≈	1.67 Ac
Total Area Minus Undisturbed Oak Habitat	=	538,749 SF	≈	12.37 Ac
Building	=	298,387 SF	≈	6.85 Ac
Pavement	=	159,550 SF	≈	3.66 Ac
Landscape	=	80,812 SF	≈	1.86 Ac

WWHM2012

PROJECT REPORT

General Model Information

Project Name:	15753-WWHM
Site Name:	NW Logistics Center 2
Site Address:	
City:	Dupont
Report Date:	2/26/2018
Gage:	Seatac
Data Start:	10/01/1901
Data End:	09/30/2059
Timestep:	15 Minute
Precip Scale:	1.000
Version Date:	2017/04/14
Version:	4.2.13

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	50 Year
Low Flow Threshold for POC2:	50 Percent of the 2 Year
High Flow Threshold for POC2:	50 Year
Low Flow Threshold for POC3:	50 Percent of the 2 Year
High Flow Threshold for POC3:	50 Year
Low Flow Threshold for POC4:	50 Percent of the 2 Year
High Flow Threshold for POC4:	50 Year

Basin 1
Predeveloped

Landuse Basin Data
Predeveloped Land Use

Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C, Forest, Flat	3.62
Pervious Total	3.62
Impervious Land Use	acre
Impervious Total	0
Basin Total	3.62

Element Flows To:

Surface	Interflow	Groundwater

Basin 1
Developed

Mitigated Land Use

Basin 1

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C, Lawn, Flat	0.54
Pervious Total	0.54
Impervious Land Use	acre
PARKING FLAT	1.05
Impervious Total	1.05
Basin Total	1.59

Element Flows To:

Surface	Interflow	Groundwater
Gravel Trench Bed 1	Gravel Trench Bed 1	

Basin 1 - Roofs

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
Pervious Total	0
Impervious Land Use	acre
ROOF TOPS FLAT	2.02
Impervious Total	2.02
Basin Total	2.02

Element Flows To:

Surface	Interflow	Groundwater
Gravel Trench Bed 1	Gravel Trench Bed 1	

Mitigated Routing

Gravel Trench Bed 1

Bottom Length:	140.00 ft.
Bottom Width:	30.00 ft.
Trench bottom slope 1:	0 To 1
Trench Left side slope 0:	0 To 1
Trench right side slope 2:	0 To 1
Material thickness of first layer:	1.75
Pour Space of material for first layer:	0.3
Material thickness of second layer:	1.5
Pour Space of material for second layer:	0.3825
Material thickness of third layer:	1.75
Pour Space of material for third layer:	0.3
Infiltration On	
Infiltration rate:	20
Infiltration safety factor:	1
Total Volume Infiltrated (ac-ft.):	1412.12
Total Volume Through Riser (ac-ft.):	0
Total Volume Through Facility (ac-ft.):	1412.12
Percent Infiltrated:	100
Total Precip Applied to Facility:	0
Total Evap From Facility:	0
Discharge Structure	
Riser Height:	5 ft.
Riser Diameter:	18 in.
Element Flows To:	
Outlet 1	Outlet 2

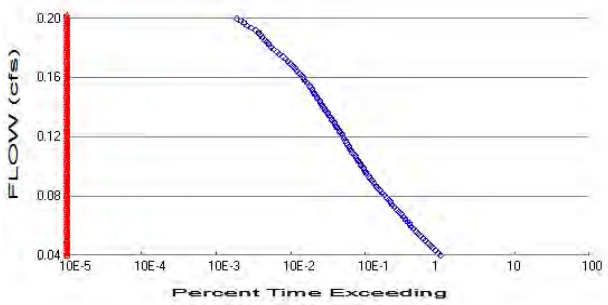
Gravel Trench Bed Hydraulic Table

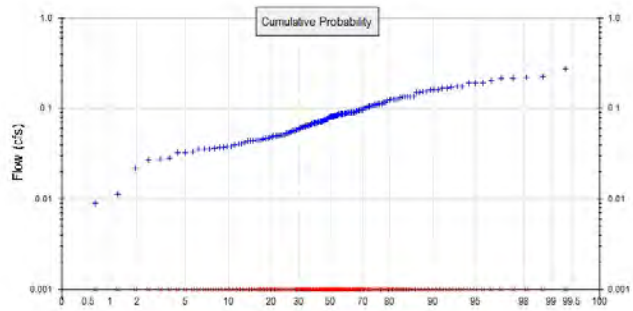
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.096	0.000	0.000	0.000
0.0556	0.096	0.001	0.000	1.944
0.1111	0.096	0.003	0.000	1.944
0.1667	0.096	0.004	0.000	1.944
0.2222	0.096	0.006	0.000	1.944
0.2778	0.096	0.008	0.000	1.944
0.3333	0.096	0.009	0.000	1.944
0.3889	0.096	0.011	0.000	1.944
0.4444	0.096	0.012	0.000	1.944
0.5000	0.096	0.014	0.000	1.944
0.5556	0.096	0.016	0.000	1.944
0.6111	0.096	0.017	0.000	1.944
0.6667	0.096	0.019	0.000	1.944
0.7222	0.096	0.020	0.000	1.944
0.7778	0.096	0.022	0.000	1.944
0.8333	0.096	0.024	0.000	1.944
0.8889	0.096	0.025	0.000	1.944
0.9444	0.096	0.027	0.000	1.944
1.0000	0.096	0.028	0.000	1.944
1.0556	0.096	0.030	0.000	1.944
1.1111	0.096	0.032	0.000	1.944
1.1667	0.096	0.033	0.000	1.944
1.2222	0.096	0.035	0.000	1.944
1.2778	0.096	0.037	0.000	1.944

1.3333	0.096	0.038	0.000	1.944
1.3889	0.096	0.040	0.000	1.944
1.4444	0.096	0.041	0.000	1.944
1.5000	0.096	0.043	0.000	1.944
1.5556	0.096	0.045	0.000	1.944
1.6111	0.096	0.046	0.000	1.944
1.6667	0.096	0.048	0.000	1.944
1.7222	0.096	0.049	0.000	1.944
1.7778	0.096	0.051	0.000	1.944
1.8333	0.096	0.053	0.000	1.944
1.8889	0.096	0.056	0.000	1.944
1.9444	0.096	0.058	0.000	1.944
2.0000	0.096	0.060	0.000	1.944
2.0556	0.096	0.062	0.000	1.944
2.1111	0.096	0.064	0.000	1.944
2.1667	0.096	0.066	0.000	1.944
2.2222	0.096	0.068	0.000	1.944
2.2778	0.096	0.070	0.000	1.944
2.3333	0.096	0.072	0.000	1.944
2.3889	0.096	0.074	0.000	1.944
2.4444	0.096	0.076	0.000	1.944
2.5000	0.096	0.078	0.000	1.944
2.5556	0.096	0.080	0.000	1.944
2.6111	0.096	0.082	0.000	1.944
2.6667	0.096	0.084	0.000	1.944
2.7222	0.096	0.086	0.000	1.944
2.7778	0.096	0.088	0.000	1.944
2.8333	0.096	0.090	0.000	1.944
2.8889	0.096	0.092	0.000	1.944
2.9444	0.096	0.094	0.000	1.944
3.0000	0.096	0.096	0.000	1.944
3.0556	0.096	0.099	0.000	1.944
3.1111	0.096	0.101	0.000	1.944
3.1667	0.096	0.103	0.000	1.944
3.2222	0.096	0.105	0.000	1.944
3.2778	0.096	0.106	0.000	1.944
3.3333	0.096	0.108	0.000	1.944
3.3889	0.096	0.110	0.000	1.944
3.4444	0.096	0.111	0.000	1.944
3.5000	0.096	0.113	0.000	1.944
3.5556	0.096	0.114	0.000	1.944
3.6111	0.096	0.116	0.000	1.944
3.6667	0.096	0.118	0.000	1.944
3.7222	0.096	0.119	0.000	1.944
3.7778	0.096	0.121	0.000	1.944
3.8333	0.096	0.122	0.000	1.944
3.8889	0.096	0.124	0.000	1.944
3.9444	0.096	0.126	0.000	1.944
4.0000	0.096	0.127	0.000	1.944
4.0556	0.096	0.129	0.000	1.944
4.1111	0.096	0.130	0.000	1.944
4.1667	0.096	0.132	0.000	1.944
4.2222	0.096	0.134	0.000	1.944
4.2778	0.096	0.135	0.000	1.944
4.3333	0.096	0.137	0.000	1.944
4.3889	0.096	0.138	0.000	1.944
4.4444	0.096	0.140	0.000	1.944
4.5000	0.096	0.142	0.000	1.944

4.5556	0.096	0.143	0.000	1.944
4.6111	0.096	0.145	0.000	1.944
4.6667	0.096	0.146	0.000	1.944
4.7222	0.096	0.148	0.000	1.944
4.7778	0.096	0.150	0.000	1.944
4.8333	0.096	0.151	0.000	1.944
4.8889	0.096	0.153	0.000	1.944
4.9444	0.096	0.155	0.000	1.944
5.0000	0.096	0.156	0.000	1.944

Analysis Results
POC 1





+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 3.62
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 0.54
Total Impervious Area: 3.07

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	0.081792
5 year	0.125846
10 year	0.15131
25 year	0.178891
50 year	0.196633
100 year	0.212027

Flow Frequency Return Periods for Mitigated. POC #1

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

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	**Predeveloped**	**Mitigated**
1902	0.066	0.000
1903	0.050	0.000
1904	0.086	0.000
1905	0.042	0.000
1906	0.022	0.000
1907	0.127	0.000
1908	0.091	0.000
1909	0.090	0.000
1910	0.127	0.000
1911	0.082	0.000

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0409	56841	0	0	Pass
0.0425	52431	0	0	Pass
0.0440	48359	0	0	Pass
0.0456	44620	0	0	Pass
0.0472	41224	0	0	Pass
0.0488	38226	0	0	Pass
0.0503	35484	0	0	Pass
0.0519	32963	0	0	Pass
0.0535	30515	0	0	Pass
0.0551	28432	0	0	Pass
0.0566	26498	0	0	Pass
0.0582	24742	0	0	Pass
0.0598	23130	0	0	Pass
0.0613	21678	0	0	Pass
0.0629	20326	0	0	Pass
0.0645	19063	0	0	Pass
0.0661	17856	0	0	Pass
0.0676	16720	0	0	Pass
0.0692	15606	0	0	Pass
0.0708	14620	0	0	Pass
0.0724	13717	0	0	Pass
0.0739	12881	0	0	Pass
0.0755	12099	0	0	Pass
0.0771	11385	0	0	Pass
0.0787	10654	0	0	Pass
0.0802	9983	0	0	Pass
0.0818	9357	0	0	Pass
0.0834	8753	0	0	Pass
0.0849	8199	0	0	Pass
0.0865	7723	0	0	Pass
0.0881	7241	0	0	Pass
0.0897	6787	0	0	Pass
0.0912	6415	0	0	Pass
0.0928	6111	0	0	Pass
0.0944	5828	0	0	Pass
0.0960	5551	0	0	Pass
0.0975	5266	0	0	Pass
0.0991	5003	0	0	Pass
0.1007	4790	0	0	Pass
0.1022	4536	0	0	Pass
0.1038	4339	0	0	Pass
0.1054	4168	0	0	Pass
0.1070	3944	0	0	Pass
0.1085	3714	0	0	Pass
0.1101	3537	0	0	Pass
0.1117	3373	0	0	Pass
0.1133	3234	0	0	Pass
0.1148	3088	0	0	Pass
0.1164	2964	0	0	Pass
0.1180	2853	0	0	Pass
0.1196	2741	0	0	Pass
0.1211	2601	0	0	Pass
0.1227	2483	0	0	Pass

0.1243	2361	0	0	Pass
0.1258	2267	0	0	Pass
0.1274	2159	0	0	Pass
0.1290	2061	0	0	Pass
0.1306	1950	0	0	Pass
0.1321	1837	0	0	Pass
0.1337	1748	0	0	Pass
0.1353	1663	0	0	Pass
0.1369	1579	0	0	Pass
0.1384	1510	0	0	Pass
0.1400	1442	0	0	Pass
0.1416	1370	0	0	Pass
0.1431	1297	0	0	Pass
0.1447	1241	0	0	Pass
0.1463	1185	0	0	Pass
0.1479	1131	0	0	Pass
0.1494	1082	0	0	Pass
0.1510	1026	0	0	Pass
0.1526	982	0	0	Pass
0.1542	925	0	0	Pass
0.1557	872	0	0	Pass
0.1573	819	0	0	Pass
0.1589	772	0	0	Pass
0.1605	719	0	0	Pass
0.1620	668	0	0	Pass
0.1636	629	0	0	Pass
0.1652	591	0	0	Pass
0.1667	549	0	0	Pass
0.1683	507	0	0	Pass
0.1699	476	0	0	Pass
0.1715	429	0	0	Pass
0.1730	392	0	0	Pass
0.1746	363	0	0	Pass
0.1762	331	0	0	Pass
0.1778	300	0	0	Pass
0.1793	281	0	0	Pass
0.1809	264	0	0	Pass
0.1825	248	0	0	Pass
0.1840	233	0	0	Pass
0.1856	218	0	0	Pass
0.1872	205	0	0	Pass
0.1888	187	0	0	Pass
0.1903	163	0	0	Pass
0.1919	142	0	0	Pass
0.1935	132	0	0	Pass
0.1951	118	0	0	Pass
0.1966	105	0	0	Pass

Basin 2
Predeveloped

Basin 2

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C, Forest, Flat	7.08
Pervious Total	7.08
Impervious Land Use	acre
Impervious Total	0
Basin Total	7.08

Element Flows To:

Surface	Interflow	Groundwater

Basin 2
Developed

Basin 2

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C, Lawn, Flat	1.06
Pervious Total	1.06
Impervious Land Use	acre
PARKING FLAT	3.89
Impervious Total	3.89
Basin Total	4.95

Element Flows To:

Surface	Interflow	Groundwater
Gravel Trench Bed 2	Gravel Trench Bed 2	

Basin 2 - Roofs

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
Pervious Total	0
Impervious Land Use	acre
ROOF TOPS FLAT	2.13
Impervious Total	2.13
Basin Total	2.13

Element Flows To:

Surface	Interflow	Groundwater
Gravel Trench Bed 2	Gravel Trench Bed 2	

Gravel Trench Bed 2

Bottom Length:	235.00 ft.
Bottom Width:	30.00 ft.
Trench bottom slope 1:	0 To 1
Trench Left side slope 0:	0 To 1
Trench right side slope 2:	0 To 1
Material thickness of first layer:	1.75
Pour Space of material for first layer:	0.3
Material thickness of second layer:	1.5
Pour Space of material for second layer:	0.3825
Material thickness of third layer:	1.75
Pour Space of material for third layer:	0.3
Infiltration On	
Infiltration rate:	20
Infiltration safety factor:	1
Total Volume Infiltrated (ac-ft.):	2771.374
Total Volume Through Riser (ac-ft.):	0
Total Volume Through Facility (ac-ft.):	2771.374
Percent Infiltrated:	100
Total Precip Applied to Facility:	0
Total Evap From Facility:	0
Discharge Structure	
Riser Height:	5 ft.
Riser Diameter:	18 in.
Element Flows To:	
Outlet 1	Outlet 2

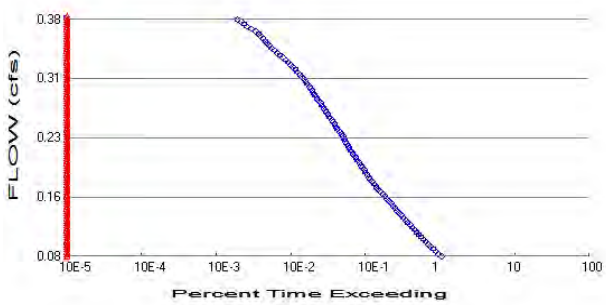
Gravel Trench Bed Hydraulic Table

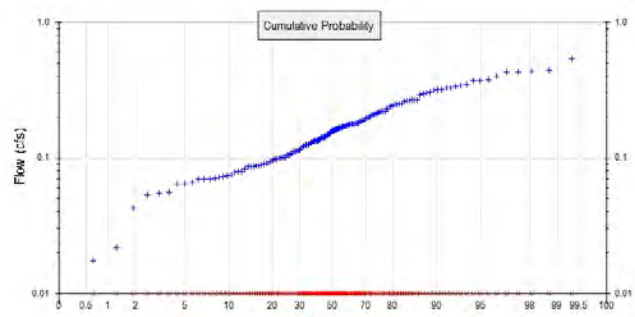
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.161	0.000	0.000	0.000
0.0556	0.161	0.002	0.000	3.263
0.1111	0.161	0.005	0.000	3.263
0.1667	0.161	0.008	0.000	3.263
0.2222	0.161	0.010	0.000	3.263
0.2778	0.161	0.013	0.000	3.263
0.3333	0.161	0.016	0.000	3.263
0.3889	0.161	0.018	0.000	3.263
0.4444	0.161	0.021	0.000	3.263
0.5000	0.161	0.024	0.000	3.263
0.5556	0.161	0.027	0.000	3.263
0.6111	0.161	0.029	0.000	3.263
0.6667	0.161	0.032	0.000	3.263
0.7222	0.161	0.035	0.000	3.263
0.7778	0.161	0.037	0.000	3.263
0.8333	0.161	0.040	0.000	3.263
0.8889	0.161	0.043	0.000	3.263
0.9444	0.161	0.045	0.000	3.263
1.0000	0.161	0.048	0.000	3.263
1.0556	0.161	0.051	0.000	3.263
1.1111	0.161	0.053	0.000	3.263
1.1667	0.161	0.056	0.000	3.263
1.2222	0.161	0.059	0.000	3.263
1.2778	0.161	0.062	0.000	3.263
1.3333	0.161	0.064	0.000	3.263
1.3889	0.161	0.067	0.000	3.263

1.4444	0.161	0.070	0.000	3.263
1.5000	0.161	0.072	0.000	3.263
1.5556	0.161	0.075	0.000	3.263
1.6111	0.161	0.078	0.000	3.263
1.6667	0.161	0.080	0.000	3.263
1.7222	0.161	0.083	0.000	3.263
1.7778	0.161	0.087	0.000	3.263
1.8333	0.161	0.090	0.000	3.263
1.8889	0.161	0.093	0.000	3.263
1.9444	0.161	0.097	0.000	3.263
2.0000	0.161	0.100	0.000	3.263
2.0556	0.161	0.104	0.000	3.263
2.1111	0.161	0.107	0.000	3.263
2.1667	0.161	0.111	0.000	3.263
2.2222	0.161	0.114	0.000	3.263
2.2778	0.161	0.118	0.000	3.263
2.3333	0.161	0.121	0.000	3.263
2.3889	0.161	0.124	0.000	3.263
2.4444	0.161	0.128	0.000	3.263
2.5000	0.161	0.131	0.000	3.263
2.5556	0.161	0.135	0.000	3.263
2.6111	0.161	0.138	0.000	3.263
2.6667	0.161	0.142	0.000	3.263
2.7222	0.161	0.145	0.000	3.263
2.7778	0.161	0.149	0.000	3.263
2.8333	0.161	0.152	0.000	3.263
2.8889	0.161	0.155	0.000	3.263
2.9444	0.161	0.159	0.000	3.263
3.0000	0.161	0.162	0.000	3.263
3.0556	0.161	0.166	0.000	3.263
3.1111	0.161	0.169	0.000	3.263
3.1667	0.161	0.173	0.000	3.263
3.2222	0.161	0.176	0.000	3.263
3.2778	0.161	0.179	0.000	3.263
3.3333	0.161	0.181	0.000	3.263
3.3889	0.161	0.184	0.000	3.263
3.4444	0.161	0.187	0.000	3.263
3.5000	0.161	0.190	0.000	3.263
3.5556	0.161	0.192	0.000	3.263
3.6111	0.161	0.195	0.000	3.263
3.6667	0.161	0.198	0.000	3.263
3.7222	0.161	0.200	0.000	3.263
3.7778	0.161	0.203	0.000	3.263
3.8333	0.161	0.206	0.000	3.263
3.8889	0.161	0.208	0.000	3.263
3.9444	0.161	0.211	0.000	3.263
4.0000	0.161	0.214	0.000	3.263
4.0556	0.161	0.216	0.000	3.263
4.1111	0.161	0.219	0.000	3.263
4.1667	0.161	0.222	0.000	3.263
4.2222	0.161	0.225	0.000	3.263
4.2778	0.161	0.227	0.000	3.263
4.3333	0.161	0.230	0.000	3.263
4.3889	0.161	0.233	0.000	3.263
4.4444	0.161	0.235	0.000	3.263
4.5000	0.161	0.238	0.000	3.263
4.5556	0.161	0.241	0.000	3.263
4.6111	0.161	0.243	0.000	3.263

4.6667	0.161	0.246	0.000	3.263
4.7222	0.161	0.249	0.000	3.263
4.7778	0.161	0.252	0.000	3.263
4.8333	0.161	0.254	0.000	3.263
4.8889	0.161	0.257	0.000	3.263
4.9444	0.161	0.260	0.000	3.263
5.0000	0.161	0.262	0.000	3.263

POC 2





+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #2
Total Pervious Area: 7.08
Total Impervious Area: 0

Mitigated Landuse Totals for POC #2
Total Pervious Area: 1.06
Total Impervious Area: 6.02

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #2

Return Period	**Flow(cfs)**
2 year	0.159969
5 year	0.246129
10 year	0.295932
25 year	0.349875
50 year	0.384574
100 year	0.414683

Flow Frequency Return Periods for Mitigated. POC #2

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

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #2

Year	**Predeveloped**	**Mitigated**
1902	0.130	0.000
1903	0.099	0.000
1904	0.169	0.000
1905	0.082	0.000
1906	0.043	0.000
1907	0.248	0.000
1908	0.179	0.000
1909	0.175	0.000
1910	0.248	0.000
1911	0.160	0.000
1912	0.538	0.000

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0800	58503	0	0	Pass
0.0831	52487	0	0	Pass
0.0861	48531	0	0	Pass
0.0892	44836	0	0	Pass
0.0923	41523	0	0	Pass
0.0954	38531	0	0	Pass
0.0984	35877	0	0	Pass
0.1015	33379	0	0	Pass
0.1046	30958	0	0	Pass
0.1077	28858	0	0	Pass
0.1108	26941	0	0	Pass
0.1138	25202	0	0	Pass
0.1169	23595	0	0	Pass
0.1200	22116	0	0	Pass
0.1231	20343	0	0	Pass
0.1261	19124	0	0	Pass
0.1292	17928	0	0	Pass
0.1323	16820	0	0	Pass
0.1354	15734	0	0	Pass
0.1384	14742	0	0	Pass
0.1415	13861	0	0	Pass
0.1446	13030	0	0	Pass
0.1477	12271	0	0	Pass
0.1507	11557	0	0	Pass
0.1538	10864	0	0	Pass
0.1569	10183	0	0	Pass
0.1600	9551	0	0	Pass
0.1631	8759	0	0	Pass
0.1661	8216	0	0	Pass
0.1692	7751	0	0	Pass
0.1723	7280	0	0	Pass
0.1754	6831	0	0	Pass
0.1784	6460	0	0	Pass
0.1815	6172	0	0	Pass
0.1846	5872	0	0	Pass
0.1877	5612	0	0	Pass
0.1907	5330	0	0	Pass
0.1938	5075	0	0	Pass
0.1969	4847	0	0	Pass
0.2000	4618	0	0	Pass
0.2031	4340	0	0	Pass
0.2061	4166	0	0	Pass
0.2092	3950	0	0	Pass
0.2123	3730	0	0	Pass
0.2154	3553	0	0	Pass
0.2184	3382	0	0	Pass
0.2215	3253	0	0	Pass
0.2246	3107	0	0	Pass
0.2277	2990	0	0	Pass
0.2307	2884	0	0	Pass
0.2338	2769	0	0	Pass
0.2369	2645	0	0	Pass
0.2400	2509	0	0	Pass

0.2430	2359	0	0	Pass
0.2461	2267	0	0	Pass
0.2492	2166	0	0	Pass
0.2523	2062	0	0	Pass
0.2554	1958	0	0	Pass
0.2584	1857	0	0	Pass
0.2615	1756	0	0	Pass
0.2646	1675	0	0	Pass
0.2677	1592	0	0	Pass
0.2707	1521	0	0	Pass
0.2738	1461	0	0	Pass
0.2769	1388	0	0	Pass
0.2800	1318	0	0	Pass
0.2830	1241	0	0	Pass
0.2861	1184	0	0	Pass
0.2892	1133	0	0	Pass
0.2923	1085	0	0	Pass
0.2954	1029	0	0	Pass
0.2984	990	0	0	Pass
0.3015	927	0	0	Pass
0.3046	878	0	0	Pass
0.3077	827	0	0	Pass
0.3107	783	0	0	Pass
0.3138	735	0	0	Pass
0.3169	681	0	0	Pass
0.3200	641	0	0	Pass
0.3230	588	0	0	Pass
0.3261	549	0	0	Pass
0.3292	509	0	0	Pass
0.3323	476	0	0	Pass
0.3353	433	0	0	Pass
0.3384	397	0	0	Pass
0.3415	363	0	0	Pass
0.3446	339	0	0	Pass
0.3477	305	0	0	Pass
0.3507	284	0	0	Pass
0.3538	268	0	0	Pass
0.3569	253	0	0	Pass
0.3600	236	0	0	Pass
0.3630	218	0	0	Pass
0.3661	205	0	0	Pass
0.3692	187	0	0	Pass
0.3723	163	0	0	Pass
0.3753	144	0	0	Pass
0.3784	132	0	0	Pass
0.3815	120	0	0	Pass
0.3846	107	0	0	Pass

Basin 3
Predeveloped

Basin 3

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C, Forest, Flat	7.42
Pervious Total	7.42
Impervious Land Use	acre
Impervious Total	0
Basin Total	7.42

Element Flows To:

Surface	Interflow	Groundwater

Basin 3
Developed

Basin 3

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C, Lawn, Flat	1.11
Pervious Total	1.11
Impervious Land Use	acre
PARKING FLAT	3.86
Impervious Total	3.86
Basin Total	4.97

Element Flows To:

Surface	Interflow	Groundwater
Gravel Trench Bed 3	Gravel Trench Bed 3	

Basin 3 - Roofs

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
Pervious Total	0
Impervious Land Use	acre
ROOF TOPS FLAT	2.45
Impervious Total	2.45
Basin Total	2.45

Element Flows To:

Surface	Interflow	Groundwater
Gravel Trench Bed 3	Gravel Trench Bed 3	

Gravel Trench Bed 3

Bottom Length:	238.00 ft.
Bottom Width:	30.00 ft.
Trench bottom slope 1:	0 To 1
Trench Left side slope 0:	0 To 1
Trench right side slope 2:	0 To 1
Material thickness of first layer:	1.75
Pour Space of material for first layer:	0.3
Material thickness of second layer:	1.5
Pour Space of material for second layer:	0.3825
Material thickness of third layer:	1.75
Pour Space of material for third layer:	0.3
Infiltration On	
Infiltration rate:	20
Infiltration safety factor:	1
Total Volume Infiltrated (ac-ft.):	2904.714
Total Volume Through Riser (ac-ft.):	0
Total Volume Through Facility (ac-ft.):	2904.714
Percent Infiltrated:	100
Total Precip Applied to Facility:	0
Total Evap From Facility:	0
Discharge Structure	
Riser Height:	5 ft.
Riser Diameter:	18 in.
Element Flows To:	
Outlet 1	Outlet 2

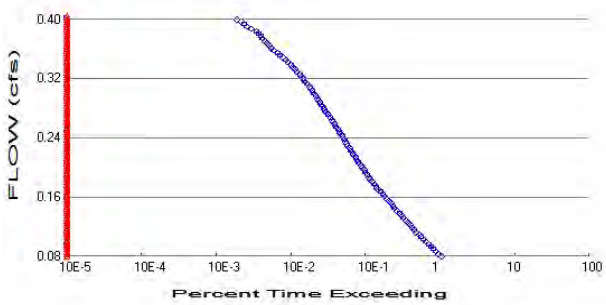
Gravel Trench Bed Hydraulic Table

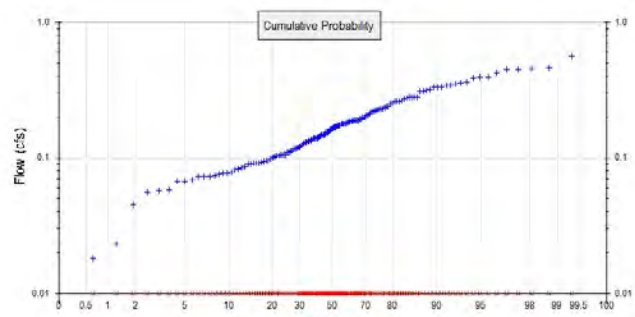
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.163	0.000	0.000	0.000
0.0556	0.163	0.002	0.000	3.305
0.1111	0.163	0.005	0.000	3.305
0.1667	0.163	0.008	0.000	3.305
0.2222	0.163	0.010	0.000	3.305
0.2778	0.163	0.013	0.000	3.305
0.3333	0.163	0.016	0.000	3.305
0.3889	0.163	0.019	0.000	3.305
0.4444	0.163	0.021	0.000	3.305
0.5000	0.163	0.024	0.000	3.305
0.5556	0.163	0.027	0.000	3.305
0.6111	0.163	0.030	0.000	3.305
0.6667	0.163	0.032	0.000	3.305
0.7222	0.163	0.035	0.000	3.305
0.7778	0.163	0.038	0.000	3.305
0.8333	0.163	0.041	0.000	3.305
0.8889	0.163	0.043	0.000	3.305
0.9444	0.163	0.046	0.000	3.305
1.0000	0.163	0.049	0.000	3.305
1.0556	0.163	0.051	0.000	3.305
1.1111	0.163	0.054	0.000	3.305
1.1667	0.163	0.057	0.000	3.305
1.2222	0.163	0.060	0.000	3.305
1.2778	0.163	0.062	0.000	3.305
1.3333	0.163	0.065	0.000	3.305
1.3889	0.163	0.068	0.000	3.305

1.4444	0.163	0.071	0.000	3.305
1.5000	0.163	0.073	0.000	3.305
1.5556	0.163	0.076	0.000	3.305
1.6111	0.163	0.079	0.000	3.305
1.6667	0.163	0.082	0.000	3.305
1.7222	0.163	0.084	0.000	3.305
1.7778	0.163	0.088	0.000	3.305
1.8333	0.163	0.091	0.000	3.305
1.8889	0.163	0.095	0.000	3.305
1.9444	0.163	0.098	0.000	3.305
2.0000	0.163	0.102	0.000	3.305
2.0556	0.163	0.105	0.000	3.305
2.1111	0.163	0.109	0.000	3.305
2.1667	0.163	0.112	0.000	3.305
2.2222	0.163	0.116	0.000	3.305
2.2778	0.163	0.119	0.000	3.305
2.3333	0.163	0.123	0.000	3.305
2.3889	0.163	0.126	0.000	3.305
2.4444	0.163	0.130	0.000	3.305
2.5000	0.163	0.133	0.000	3.305
2.5556	0.163	0.136	0.000	3.305
2.6111	0.163	0.140	0.000	3.305
2.6667	0.163	0.143	0.000	3.305
2.7222	0.163	0.147	0.000	3.305
2.7778	0.163	0.150	0.000	3.305
2.8333	0.163	0.154	0.000	3.305
2.8889	0.163	0.157	0.000	3.305
2.9444	0.163	0.161	0.000	3.305
3.0000	0.163	0.164	0.000	3.305
3.0556	0.163	0.168	0.000	3.305
3.1111	0.163	0.171	0.000	3.305
3.1667	0.163	0.175	0.000	3.305
3.2222	0.163	0.178	0.000	3.305
3.2778	0.163	0.181	0.000	3.305
3.3333	0.163	0.184	0.000	3.305
3.3889	0.163	0.186	0.000	3.305
3.4444	0.163	0.189	0.000	3.305
3.5000	0.163	0.192	0.000	3.305
3.5556	0.163	0.195	0.000	3.305
3.6111	0.163	0.197	0.000	3.305
3.6667	0.163	0.200	0.000	3.305
3.7222	0.163	0.203	0.000	3.305
3.7778	0.163	0.206	0.000	3.305
3.8333	0.163	0.208	0.000	3.305
3.8889	0.163	0.211	0.000	3.305
3.9444	0.163	0.214	0.000	3.305
4.0000	0.163	0.217	0.000	3.305
4.0556	0.163	0.219	0.000	3.305
4.1111	0.163	0.222	0.000	3.305
4.1667	0.163	0.225	0.000	3.305
4.2222	0.163	0.227	0.000	3.305
4.2778	0.163	0.230	0.000	3.305
4.3333	0.163	0.233	0.000	3.305
4.3889	0.163	0.236	0.000	3.305
4.4444	0.163	0.238	0.000	3.305
4.5000	0.163	0.241	0.000	3.305
4.5556	0.163	0.244	0.000	3.305
4.6111	0.163	0.247	0.000	3.305

4.6667	0.163	0.249	0.000	3.305
4.7222	0.163	0.252	0.000	3.305
4.7778	0.163	0.255	0.000	3.305
4.8333	0.163	0.258	0.000	3.305
4.8889	0.163	0.260	0.000	3.305
4.9444	0.163	0.263	0.000	3.305
5.0000	0.163	0.266	0.000	3.305

POC 3





+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #3
Total Pervious Area: 7.42
Total Impervious Area: 0

Mitigated Landuse Totals for POC #3
Total Pervious Area: 1.11
Total Impervious Area: 6.31

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #3

Return Period	**Flow(cfs)**
2 year	0.167651
5 year	0.257949
10 year	0.310143
25 year	0.366677
50 year	0.403043
100 year	0.434597

Flow Frequency Return Periods for Mitigated. POC #3

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

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #3

Year	**Predeveloped**	**Mitigated**
1902	0.136	0.000
1903	0.103	0.000
1904	0.177	0.000
1905	0.086	0.000
1906	0.045	0.000
1907	0.260	0.000
1908	0.187	0.000
1909	0.184	0.000
1910	0.260	0.000
1911	0.168	0.000
1912	0.564	0.000

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.0838	58115	0	0	Pass
0.0870	52470	0	0	Pass
0.0903	48681	0	0	Pass
0.0935	45157	0	0	Pass
0.0967	41933	0	0	Pass
0.0999	39069	0	0	Pass
0.1032	35612	0	0	Pass
0.1064	33251	0	0	Pass
0.1096	30952	0	0	Pass
0.1128	28941	0	0	Pass
0.1161	26520	0	0	Pass
0.1193	24914	0	0	Pass
0.1225	23374	0	0	Pass
0.1257	21989	0	0	Pass
0.1290	20725	0	0	Pass
0.1322	19141	0	0	Pass
0.1354	18000	0	0	Pass
0.1386	16930	0	0	Pass
0.1419	15894	0	0	Pass
0.1451	14642	0	0	Pass
0.1483	13800	0	0	Pass
0.1515	13014	0	0	Pass
0.1548	12288	0	0	Pass
0.1580	11601	0	0	Pass
0.1612	10709	0	0	Pass
0.1644	10077	0	0	Pass
0.1677	9474	0	0	Pass
0.1709	8914	0	0	Pass
0.1741	8210	0	0	Pass
0.1773	7773	0	0	Pass
0.1806	7313	0	0	Pass
0.1838	6881	0	0	Pass
0.1870	6415	0	0	Pass
0.1902	6133	0	0	Pass
0.1935	5861	0	0	Pass
0.1967	5607	0	0	Pass
0.1999	5345	0	0	Pass
0.2031	5011	0	0	Pass
0.2064	4803	0	0	Pass
0.2096	4572	0	0	Pass
0.2128	4378	0	0	Pass
0.2160	4155	0	0	Pass
0.2193	3952	0	0	Pass
0.2225	3742	0	0	Pass
0.2257	3567	0	0	Pass
0.2289	3408	0	0	Pass
0.2321	3236	0	0	Pass
0.2354	3103	0	0	Pass
0.2386	2988	0	0	Pass
0.2418	2885	0	0	Pass
0.2450	2739	0	0	Pass
0.2483	2617	0	0	Pass
0.2515	2488	0	0	Pass

0.2547	2383	0	0	Pass
0.2579	2288	0	0	Pass
0.2612	2165	0	0	Pass
0.2644	2068	0	0	Pass
0.2676	1963	0	0	Pass
0.2708	1868	0	0	Pass
0.2741	1749	0	0	Pass
0.2773	1666	0	0	Pass
0.2805	1588	0	0	Pass
0.2837	1520	0	0	Pass
0.2870	1462	0	0	Pass
0.2902	1373	0	0	Pass
0.2934	1306	0	0	Pass
0.2966	1252	0	0	Pass
0.2999	1198	0	0	Pass
0.3031	1130	0	0	Pass
0.3063	1085	0	0	Pass
0.3095	1032	0	0	Pass
0.3128	992	0	0	Pass
0.3160	932	0	0	Pass
0.3192	873	0	0	Pass
0.3224	823	0	0	Pass
0.3257	783	0	0	Pass
0.3289	736	0	0	Pass
0.3321	668	0	0	Pass
0.3353	631	0	0	Pass
0.3386	597	0	0	Pass
0.3418	563	0	0	Pass
0.3450	507	0	0	Pass
0.3482	476	0	0	Pass
0.3515	437	0	0	Pass
0.3547	399	0	0	Pass
0.3579	369	0	0	Pass
0.3611	330	0	0	Pass
0.3643	300	0	0	Pass
0.3676	284	0	0	Pass
0.3708	267	0	0	Pass
0.3740	248	0	0	Pass
0.3772	233	0	0	Pass
0.3805	220	0	0	Pass
0.3837	207	0	0	Pass
0.3869	193	0	0	Pass
0.3901	163	0	0	Pass
0.3934	144	0	0	Pass
0.3966	132	0	0	Pass
0.3998	121	0	0	Pass
0.4030	105	0	0	Pass

Basin 4
Predeveloped

Basin 4

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C, Forest, Flat	12.37
Pervious Total	12.37
Impervious Land Use	acre
Impervious Total	0
Basin Total	12.37

Element Flows To:

Surface	Interflow	Groundwater

Basin 4
Developed

Basin 4

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C, Lawn, Flat	1.86
Pervious Total	1.86
Impervious Land Use	acre
PARKING FLAT	3.66
Impervious Total	3.66
Basin Total	5.52

Element Flows To:

Surface	Interflow	Groundwater
Gravel Trench Bed 4	Gravel Trench Bed 4	

Basin 4 - Roofs

Bypass:	No
GroundWater:	No
Pervious Land Use	acre
Pervious Total	0
Impervious Land Use	acre
ROOF TOPS FLAT	6.85
Impervious Total	6.85
Basin Total	6.85

Element Flows To:

Surface	Interflow	Groundwater
Gravel Trench Bed 4	Gravel Trench Bed 4	

Gravel Trench Bed 4

Bottom Length:	468.00 ft.
Bottom Width:	30.00 ft.
Trench bottom slope 1:	0 To 1
Trench Left side slope 0:	0 To 1
Trench right side slope 2:	0 To 1
Material thickness of first layer:	1.75
Pour Space of material for first layer:	0.3
Material thickness of second layer:	1.5
Pour Space of material for second layer:	0.3825
Material thickness of third layer:	1.75
Pour Space of material for third layer:	0.3
Infiltration On	
Infiltration rate:	20
Infiltration safety factor:	1
Total Volume Infiltrated (ac-ft.):	4842.13
Total Volume Through Riser (ac-ft.):	0
Total Volume Through Facility (ac-ft.):	4842.13
Percent Infiltrated:	100
Total Precip Applied to Facility:	0
Total Evap From Facility:	0
Discharge Structure	
Riser Height:	5 ft.
Riser Diameter:	18 in.
Element Flows To:	
Outlet 1	Outlet 2

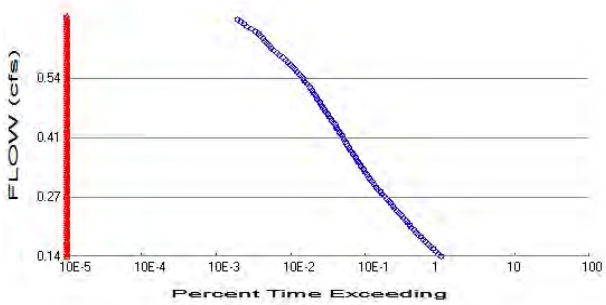
Gravel Trench Bed Hydraulic Table

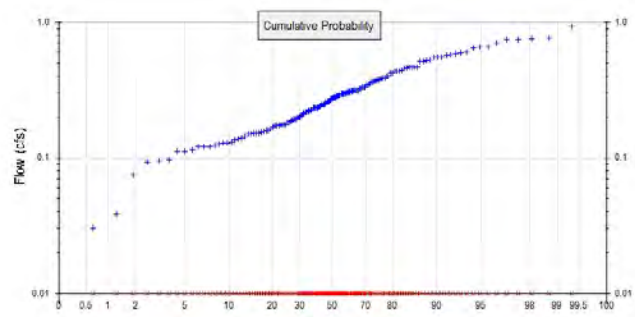
Stage(feet)	Area(ac.)	Volume(ac-ft.)	Discharge(cfs)	Infilt(cfs)
0.0000	0.322	0.000	0.000	0.000
0.0556	0.322	0.005	0.000	6.500
0.1111	0.322	0.010	0.000	6.500
0.1667	0.322	0.016	0.000	6.500
0.2222	0.322	0.021	0.000	6.500
0.2778	0.322	0.026	0.000	6.500
0.3333	0.322	0.032	0.000	6.500
0.3889	0.322	0.037	0.000	6.500
0.4444	0.322	0.043	0.000	6.500
0.5000	0.322	0.048	0.000	6.500
0.5556	0.322	0.053	0.000	6.500
0.6111	0.322	0.059	0.000	6.500
0.6667	0.322	0.064	0.000	6.500
0.7222	0.322	0.069	0.000	6.500
0.7778	0.322	0.075	0.000	6.500
0.8333	0.322	0.080	0.000	6.500
0.8889	0.322	0.086	0.000	6.500
0.9444	0.322	0.091	0.000	6.500
1.0000	0.322	0.096	0.000	6.500
1.0556	0.322	0.102	0.000	6.500
1.1111	0.322	0.107	0.000	6.500
1.1667	0.322	0.112	0.000	6.500
1.2222	0.322	0.118	0.000	6.500
1.2778	0.322	0.123	0.000	6.500
1.3333	0.322	0.128	0.000	6.500
1.3889	0.322	0.134	0.000	6.500

1.4444	0.322	0.139	0.000	6.500
1.5000	0.322	0.145	0.000	6.500
1.5556	0.322	0.150	0.000	6.500
1.6111	0.322	0.155	0.000	6.500
1.6667	0.322	0.161	0.000	6.500
1.7222	0.322	0.166	0.000	6.500
1.7778	0.322	0.173	0.000	6.500
1.8333	0.322	0.180	0.000	6.500
1.8889	0.322	0.187	0.000	6.500
1.9444	0.322	0.193	0.000	6.500
2.0000	0.322	0.200	0.000	6.500
2.0556	0.322	0.207	0.000	6.500
2.1111	0.322	0.214	0.000	6.500
2.1667	0.322	0.221	0.000	6.500
2.2222	0.322	0.228	0.000	6.500
2.2778	0.322	0.235	0.000	6.500
2.3333	0.322	0.241	0.000	6.500
2.3889	0.322	0.248	0.000	6.500
2.4444	0.322	0.255	0.000	6.500
2.5000	0.322	0.262	0.000	6.500
2.5556	0.322	0.269	0.000	6.500
2.6111	0.322	0.276	0.000	6.500
2.6667	0.322	0.283	0.000	6.500
2.7222	0.322	0.289	0.000	6.500
2.7778	0.322	0.296	0.000	6.500
2.8333	0.322	0.303	0.000	6.500
2.8889	0.322	0.310	0.000	6.500
2.9444	0.322	0.317	0.000	6.500
3.0000	0.322	0.324	0.000	6.500
3.0556	0.322	0.330	0.000	6.500
3.1111	0.322	0.337	0.000	6.500
3.1667	0.322	0.344	0.000	6.500
3.2222	0.322	0.351	0.000	6.500
3.2778	0.322	0.356	0.000	6.500
3.3333	0.322	0.362	0.000	6.500
3.3889	0.322	0.367	0.000	6.500
3.4444	0.322	0.372	0.000	6.500
3.5000	0.322	0.378	0.000	6.500
3.5556	0.322	0.383	0.000	6.500
3.6111	0.322	0.389	0.000	6.500
3.6667	0.322	0.394	0.000	6.500
3.7222	0.322	0.399	0.000	6.500
3.7778	0.322	0.405	0.000	6.500
3.8333	0.322	0.410	0.000	6.500
3.8889	0.322	0.415	0.000	6.500
3.9444	0.322	0.421	0.000	6.500
4.0000	0.322	0.426	0.000	6.500
4.0556	0.322	0.432	0.000	6.500
4.1111	0.322	0.437	0.000	6.500
4.1667	0.322	0.442	0.000	6.500
4.2222	0.322	0.448	0.000	6.500
4.2778	0.322	0.453	0.000	6.500
4.3333	0.322	0.458	0.000	6.500
4.3889	0.322	0.464	0.000	6.500
4.4444	0.322	0.469	0.000	6.500
4.5000	0.322	0.475	0.000	6.500
4.5556	0.322	0.480	0.000	6.500
4.6111	0.322	0.485	0.000	6.500

4.6667	0.322	0.491	0.000	6.500
4.7222	0.322	0.496	0.000	6.500
4.7778	0.322	0.501	0.000	6.500
4.8333	0.322	0.507	0.000	6.500
4.8889	0.322	0.512	0.000	6.500
4.9444	0.322	0.518	0.000	6.500
5.0000	0.322	0.523	0.000	6.500

POC 4





+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #4
Total Pervious Area: 12.37
Total Impervious Area: 0

Mitigated Landuse Totals for POC #4
Total Pervious Area: 1.86
Total Impervious Area: 10.51

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #4

Return Period	**Flow(cfs)**
2 year	0.279494
5 year	0.43003
10 year	0.517045
25 year	0.611293
50 year	0.671919
100 year	0.724524

Flow Frequency Return Periods for Mitigated. POC #4

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

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #4

Year	**Predeveloped**	**Mitigated**
1902	0.227	0.000
1903	0.172	0.000
1904	0.295	0.000
1905	0.143	0.000
1906	0.074	0.000
1907	0.433	0.000
1908	0.312	0.000
1909	0.306	0.000
1910	0.433	0.000
1911	0.280	0.000
1912	0.940	0.000

Duration Flows

The Facility PASSED

Flow(cfs)	Predev	Mit	Percentage	Pass/Fail
0.1397	57561	0	0	Pass
0.1451	52503	0	0	Pass
0.1505	48714	0	0	Pass
0.1559	45190	0	0	Pass
0.1612	41384	0	0	Pass
0.1666	38520	0	0	Pass
0.1720	35473	0	0	Pass
0.1774	33119	0	0	Pass
0.1828	30814	0	0	Pass
0.1881	28470	0	0	Pass
0.1935	26653	0	0	Pass
0.1989	25036	0	0	Pass
0.2043	23191	0	0	Pass
0.2096	21828	0	0	Pass
0.2150	20315	0	0	Pass
0.2204	19146	0	0	Pass
0.2258	18011	0	0	Pass
0.2311	16742	0	0	Pass
0.2365	15712	0	0	Pass
0.2419	14753	0	0	Pass
0.2473	13756	0	0	Pass
0.2526	12969	0	0	Pass
0.2580	12099	0	0	Pass
0.2634	11429	0	0	Pass
0.2688	10775	0	0	Pass
0.2741	10005	0	0	Pass
0.2795	9413	0	0	Pass
0.2849	8847	0	0	Pass
0.2903	8221	0	0	Pass
0.2956	7778	0	0	Pass
0.3010	7241	0	0	Pass
0.3064	6809	0	0	Pass
0.3118	6460	0	0	Pass
0.3171	6116	0	0	Pass
0.3225	5850	0	0	Pass
0.3279	5595	0	0	Pass
0.3333	5281	0	0	Pass
0.3386	5032	0	0	Pass
0.3440	4782	0	0	Pass
0.3494	4551	0	0	Pass
0.3548	4362	0	0	Pass
0.3601	4160	0	0	Pass
0.3655	3959	0	0	Pass
0.3709	3749	0	0	Pass
0.3763	3539	0	0	Pass
0.3816	3381	0	0	Pass
0.3870	3227	0	0	Pass
0.3924	3097	0	0	Pass
0.3978	2985	0	0	Pass
0.4031	2852	0	0	Pass
0.4085	2746	0	0	Pass
0.4139	2629	0	0	Pass
0.4193	2482	0	0	Pass

0.4246	2375	0	0	Pass
0.4300	2264	0	0	Pass
0.4354	2170	0	0	Pass
0.4408	2068	0	0	Pass
0.4461	1950	0	0	Pass
0.4515	1851	0	0	Pass
0.4569	1756	0	0	Pass
0.4623	1663	0	0	Pass
0.4677	1586	0	0	Pass
0.4730	1510	0	0	Pass
0.4784	1451	0	0	Pass
0.4838	1380	0	0	Pass
0.4892	1297	0	0	Pass
0.4945	1244	0	0	Pass
0.4999	1193	0	0	Pass
0.5053	1133	0	0	Pass
0.5107	1086	0	0	Pass
0.5160	1026	0	0	Pass
0.5214	985	0	0	Pass
0.5268	927	0	0	Pass
0.5322	872	0	0	Pass
0.5375	822	0	0	Pass
0.5429	782	0	0	Pass
0.5483	722	0	0	Pass
0.5537	672	0	0	Pass
0.5590	629	0	0	Pass
0.5644	592	0	0	Pass
0.5698	554	0	0	Pass
0.5752	507	0	0	Pass
0.5805	477	0	0	Pass
0.5859	437	0	0	Pass
0.5913	393	0	0	Pass
0.5967	363	0	0	Pass
0.6020	329	0	0	Pass
0.6074	300	0	0	Pass
0.6128	284	0	0	Pass
0.6182	264	0	0	Pass
0.6235	249	0	0	Pass
0.6289	235	0	0	Pass
0.6343	219	0	0	Pass
0.6397	206	0	0	Pass
0.6450	186	0	0	Pass
0.6504	163	0	0	Pass
0.6558	144	0	0	Pass
0.6612	131	0	0	Pass
0.6665	119	0	0	Pass
0.6719	107	0	0	Pass

BAYSAVER TECHNOLOGIES, INC.
Engineering Stormwater Solutions

1030 Deer Hollow Drive
Mount Airy, MD 21771
Phone: 301-829-6470 Fax: 301-829-3747
Info@BaySaver.com

BUDGETARY ESTIMATE

Quoted To: *Jake Jacobs* **Date:** 2/27/2013
Company : *Barghausen Consulting Engineers, Inc.*
Phone: *(425) 251-6222*
Email: jjacobs@barghausen.com

PROJECT NAME
Griot International Place - Olympia, WA

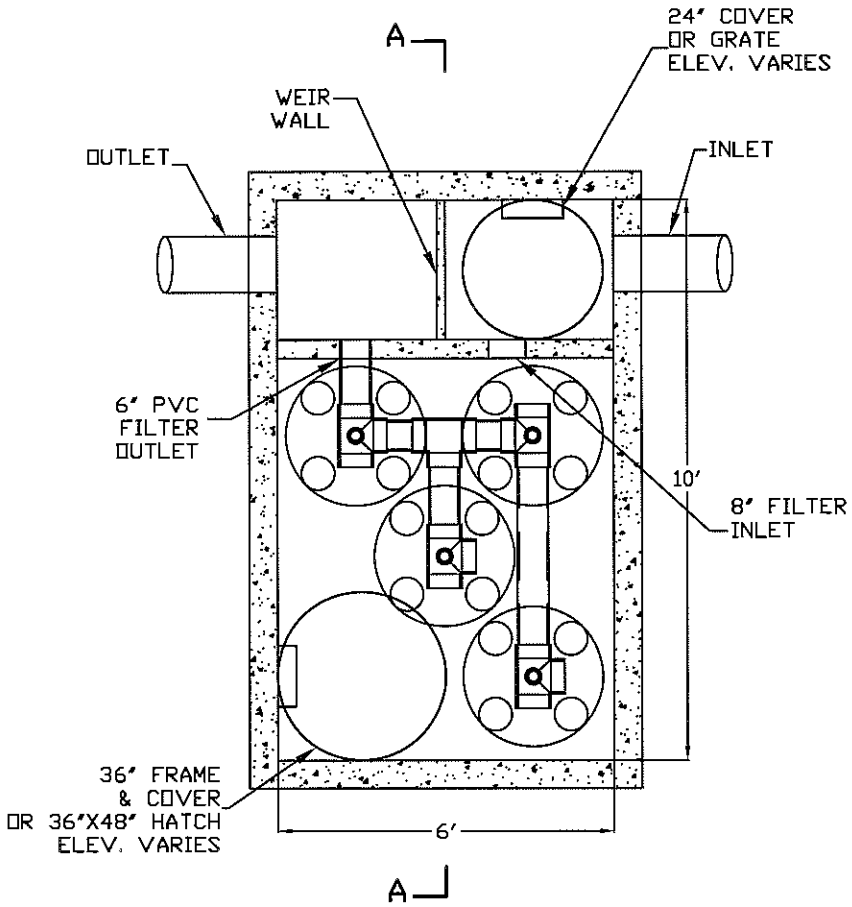
QTY	DESCRIPTION	UNIT PRICE	SUBTOTAL
	NW and SE Systems:		
2	**BayFilter™ Stormwater Filtration System Model 6-10-4EMC**	$ 33,150.00	$ 66,300.00
	Includes:		
	(4) BayFilter™ EMC Cartridges - 0.40 cfs treatment capacity		
	(1) Internal Manifold System		
	(1) 6'x10' Precast Vault		
	NE and SW Systems:		
2	**BayFilter™ Stormwater Filtration System Model 6-10-5EMC**	$ 39,270.00	$ 78,540.00
	Includes:		
	(5) BayFilter™ EMC Cartridges - 0.50 cfs treatment capacity		
	(1) Internal Manifold System		
	(1) 6'x10' Precast Vault		
		TOTAL	**$ 144,840.00**

*Above pricing does not include freight, installation or any applicable sales taxes.
*This quote is a budgetary estimate and prices are subject to change.
*BayFilter systems require an average lead time of 6 weeks from the date on which BaySaver Technologies receives a signed PO.
*Please contact us toll free at 800-229-7283 for a formal quotation.

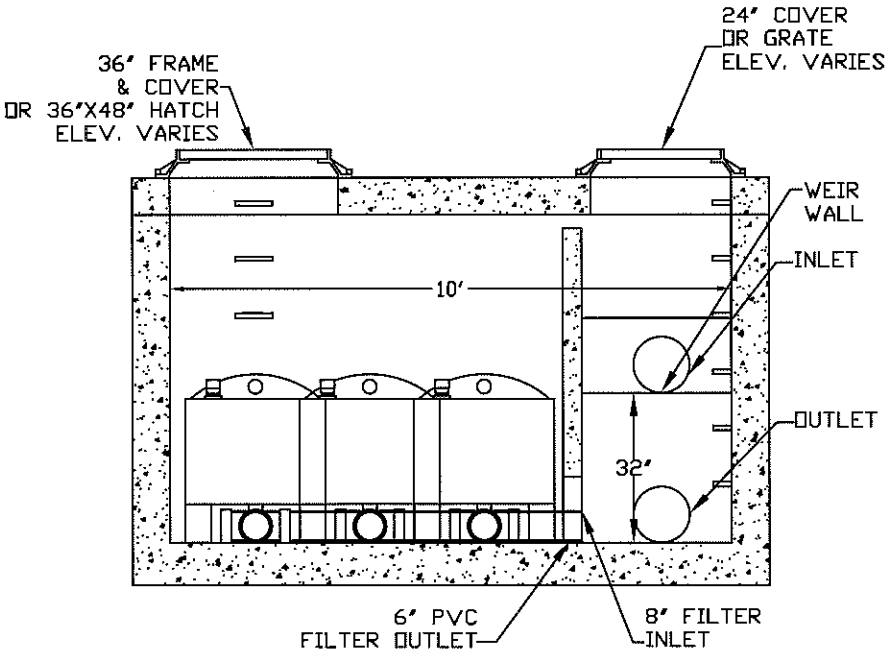
Budgetary Estimate Prepared By: *Paola Rodríguez, Applications Engineer* **Date:** 2/27/2013

THANK YOU FOR YOUR BUSINESS!

BAYFILTER STORMWATER FILTRATION SYSTEM PROTECTED BY U.S. PATENT # 6,869,528



PLAN VIEW



SECTION VIEW

REV	DESCRIPTION	DATE	APPR

NOTES:

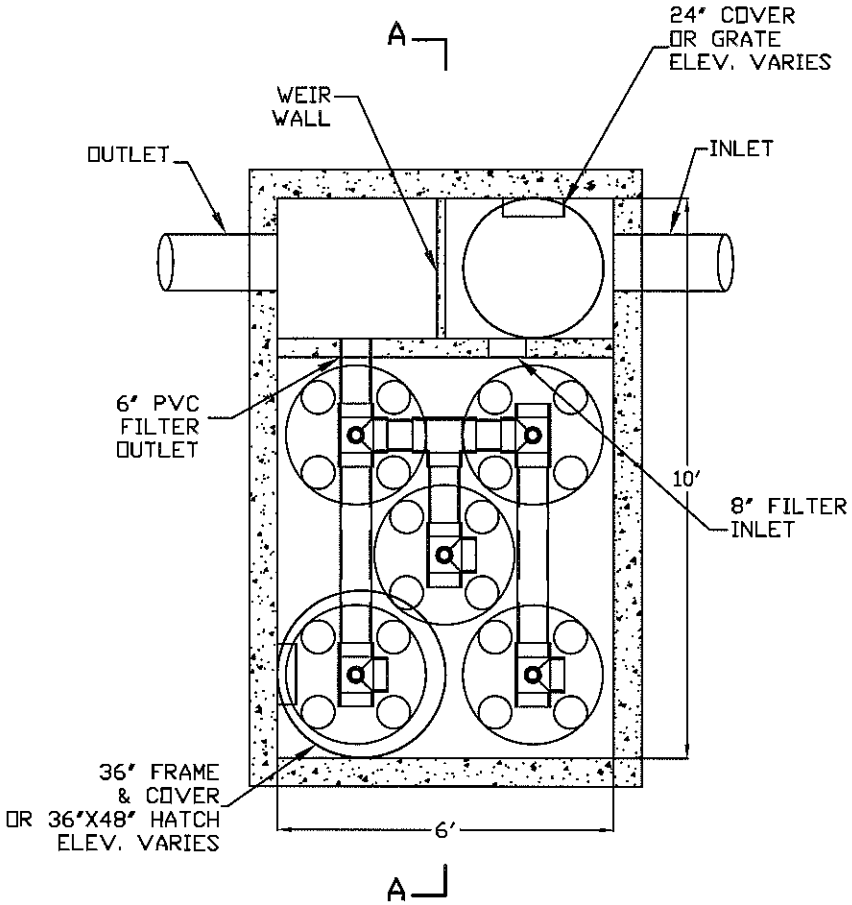
1. BFC REQUIRES 32" OF HEAD TO OPERATE.

BAYSAVER
TECHNOLOGIES, INC.
ENGINEERING STORMWATER SOLUTIONS
WWW.BAYSAVER.COM

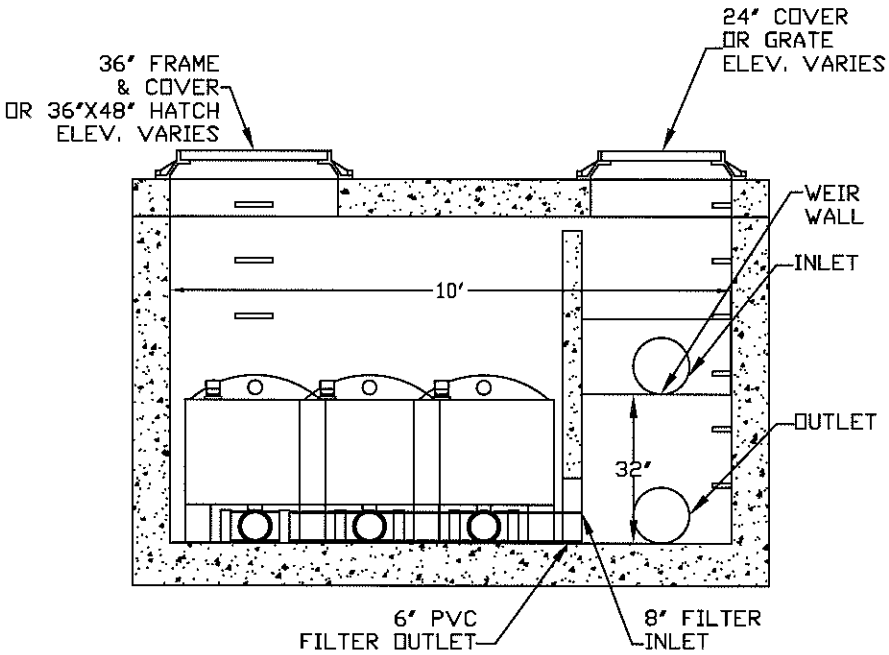
DESIGNED:	TEP	DATE:	5/13/11
DRAWN:	PR	SCALE:	N.T.S.
CHECKED:	PR	DWG NO:	

BAYFILTER VAULT
MODEL PVF 6-10-4EMC
STANDARD DETAILS

BAYFILTER STORMWATER FILTRATION SYSTEM PROTECTED BY U.S. PATENT # 6,869,528



PLAN VIEW



SECTION VIEW

REV	DESCRIPTION	DATE	APPR

NOTES:

1. BFC REQUIRES 32" OF HEAD TO OPERATE.

BAYSAVER
TECHNOLOGIES, INC.
ENGINEERING STORMWATER SOLUTIONS
WWW.BAYSAVER.COM

DESIGNED:	TEP	DATE:	5/13/11
DRAWN:	PR	SCALE:	N.T.S.
CHECKED:	PR	DWG NO:	

BAYFILTER VAULT
MODEL PVF 6-10-5EMC
STANDARD DETAILS

0.4246	2375	0	0	Pass
0.4300	2264	0	0	Pass
0.4354	2170	0	0	Pass
0.4408	2068	0	0	Pass
0.4461	1950	0	0	Pass
0.4515	1851	0	0	Pass
0.4569	1756	0	0	Pass
0.4623	1663	0	0	Pass
0.4677	1586	0	0	Pass
0.4730	1510	0	0	Pass
0.4784	1451	0	0	Pass
0.4838	1380	0	0	Pass
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0.4999	1193	0	0	Pass
0.5053	1133	0	0	Pass
0.5107	1086	0	0	Pass
0.5160	1026	0	0	Pass
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0.5268	927	0	0	Pass
0.5322	872	0	0	Pass
0.5375	822	0	0	Pass
0.5429	782	0	0	Pass
0.5483	722	0	0	Pass
0.5537	672	0	0	Pass
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0.5644	592	0	0	Pass
0.5698	554	0	0	Pass
0.5752	507	0	0	Pass
0.5805	477	0	0	Pass
0.5859	437	0	0	Pass
0.5913	393	0	0	Pass
0.5967	363	0	0	Pass
0.6020	329	0	0	Pass
0.6074	300	0	0	Pass
0.6128	284	0	0	Pass
0.6182	264	0	0	Pass
0.6235	249	0	0	Pass
0.6289	235	0	0	Pass
0.6343	219	0	0	Pass
0.6397	206	0	0	Pass
0.6450	186	0	0	Pass
0.6504	163	0	0	Pass
0.6558	144	0	0	Pass
0.6612	131	0	0	Pass
0.6665	119	0	0	Pass
0.6719	107	0	0	Pass

Tab 6.0

6.0 CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN

Construction Stormwater General Permit

Stormwater Pollution Prevention Plan (SWPPP)

for

Northwest Logistics Center Phase 2

Prepared for:

The Washington State Department of Ecology

Northwest Region, Bellevue

Permittee / Owner	Developer	Operator / Contractor
Islero, LLC P. O. Box 110997 Tacoma, WA 98411	Islero, LLC P. O. Box 110997 Tacoma, WA 98411	Sierra Construction Company 19900 - 144th Avenue S.E. Woodinville, WA 98072

Northeast Corner of Center Drive and International Place

DuPont, Washington

Certified Erosion and Sediment Control Lead (CESCL)

Name	Organization	Contact Phone Number
To Be Determined	Sierra Construction Company 19900 - 144th Avenue S.E. Woodinville, WA 98072	(425) 487-5200

SWPPP Prepared By

Name	Organization	Contact Phone Number
Micco Emeson	Barghausen Consulting Engineers	(425) 251-6222

SWPPP Preparation Date

December 23, 2014

Revised February 26, 2018

Project Construction Dates

Activity / Phase	Start Date	End Date
To be Determined	4/1/2020	4/1/2022

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Appendix/Glossary

A. Site Map

B. BMP Detail

C. Correspondence

D. Site Inspection Form

E. Construction Stormwater General Permit (CSWGP)

F. 303(d) List Waterbodies / TMDL Waterbodies Information

G. Contaminated Site Information

H. Engineering Calculations

List of Acronyms and Abbreviations

Acronym / Abbreviation	Explanation
303(d)	Section of the Clean Water Act pertaining to Impaired Waterbodies
BFO	Bellingham Field Office of the Department of Ecology
BMP(s)	Best Management Practice(s)
CESCL	Certified Erosion and Sediment Control Lead
CO_2	Carbon Dioxide
CRO	Central Regional Office of the Department of Ecology
CSWGP	Construction Stormwater General Permit
CWA	Clean Water Act
DMR	Discharge Monitoring Report
DO	Dissolved Oxygen
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
ERO	Eastern Regional Office of the Department of Ecology
ERTS	Environmental Report Tracking System
ESC	Erosion and Sediment Control
GULD	General Use Level Designation
NPDES	National Pollutant Discharge Elimination System
NTU	Nephelometric Turbidity Units
NWRO	Northwest Regional Office of the Department of Ecology
pH	Power of Hydrogen
RCW	Revised Code of Washington
SPCC	Spill Prevention, Control, and Countermeasure
su	Standard Units
SWMMEW	Stormwater Management Manual for Eastern Washington
SWMMWW	Stormwater Management Manual for Western Washington
SWPPP	Stormwater Pollution Prevention Plan
TESC	Temporary Erosion and Sediment Control
SWRO	Southwest Regional Office of the Department of Ecology
TMDL	Total Maximum Daily Load
VFO	Vancouver Field Office of the Department of Ecology
WAC	Washington Administrative Code
WSDOT	Washington Department of Transportation
WWHM	Western Washington Hydrology Model

1 Project Information

Project/Site Name: Northwest Logistics Center Phase 2
Street/Location: NEC Center Drive and International Place
City: Dupont **State:** WA **Zip code:** 98327
Subdivision:
Receiving waterbody: None / Infiltration

1.1 Existing Conditions

Total acreage (including support activities such as off-site equipment staging yards, material storage areas, borrow areas).

Total acreage:	32.16
Disturbed acreage:	30.49 ac
Existing structures:	None
Landscape topography:	11.79 ac with minimal vegetation, primarily grass. Very flat across the site.
Drainage patterns:	There are no obvious drainage patterns due to topography, since the site is relatively level. The only storm drainage line on the site cuts through the SouthWest corner of the site, which also contains the Oak Management area.
Existing Vegetation:	The existing vegetation is composed of small trees, shrubs and field grass.
Critical Areas	There is a 1.67 acre oak management area on the SouthWest portion of the site. This area will remain undisturbed.

List of known impairments for 303(d) listed or Total Maximum Daily Load (TMDL) for the receiving waterbody: None.

Table 1 includes a list of suspected and/or known contaminants associated with the construction activity.

Table 1 – Summary of Site Pollutant Constituents

Constituent (Pollutant)	Location	Depth	Concentration
NA			

1.2 Proposed Construction Activities

Description of site development (example: subdivision):

The proposal for this development is to construct one approximately 695,000 square foot warehouse building along with the associated grading activities, paved parking, drive aisles and dock-high loading, landscaping, storm drainage facility and utility connections. Infiltration is the proposed means of flow control for the project. Access to the site will be via two driveways to

International Place. Approximately 15 percent of the site will be considered landscaping, with the remainder of the site impervious surface proposed for the overall development.

Description of construction activities (example: site preparation, demolition, excavation):

Construction activities will include site preparation, TESC installation, building construction, stormwater and utility appurtenance installation, and asphalt paving. The schedule and phasing of BMPs during construction is provided in Section 4.0.

Description of site drainage including flow from and onto adjacent properties. Must be consistent with Site Map in Appendix A:

There are no obvious drainage patterns due to topography, since the site is relatively level. The only storm drainage line on the site cuts through the SouthWest corner of the site, which also contains the Oak Management area.

Description of final stabilization (example: extent of revegetation, paving, landscaping):

The following summarizes details regarding site areas:

- Total site area: 32.16 acres
- Percent impervious area before construction: 0%
- Percent impervious area after construction: 85%
- Disturbed area during construction: 30.49 acres
- Disturbed area that is characterized as impervious (i.e., access roads, staging, parking): 0 acres
- Total impervious area: 25.92 acres
- Total landscape area: 4.57 acres

***Contaminated Site Information*:**
Proposed activities regarding contaminated soils or groundwater (example: on-site treatment system, authorized sanitary sewer discharge):

No known contaminants on site.

2 Construction Stormwater Best Management Practices (BMPs)

2.1 The 13 Elements

2.1.1 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. Trees that are to be preserved, as well as all sensitive areas and their buffers, shall be clearly delineated, both in the field and on the plans. In general, natural vegetation and native top shall be retained in an undisturbed state to the maximum extent possible. The BMP relevant to marking the clearing limits that will be applied for this project include the following:

List and describe BMPs:

- High Visibility Fence (BMP C103)

  Install colored orange fence to protect areas that are not to be disturbed, and mark trees to be preserved.

- Silt Fence (BMP C233)

  Silt fencing shall be used to control sediment flow offsite throughout the construction process.

Installation Schedules: All BMPs to preserve vegetation and mark clearing limits are to be installed prior to clearing and grading.

Inspection and Maintenance plan: All fencing is to be inspected at the end of each day's work and repaired if found to noncompliant with BMP specifications.

Responsible Staff: Certified Erosion and Sediment Control Lead.

2.1.2 Element 2: Establish Construction Access

Construction access or activities occurring on unpaved areas shall be minimized, yet where necessary, access points shall be stabilized to minimize the tracking of sediment onto public roads. Street sweeping and street cleaning shall be employed where necessary to prevent sediment from entering state waters. All wash wastewater shall be controlled onsite. The specific BMPs related to establishing construction access hat will be used on this project are as follows:

List and describe BMPs:

- Stabilized Construction Entrance (BMP C105)

A stabilized construction entrance will be used to minimize the amount of sediment transported off site onto the existing roadway by construction traffic.

- Construction Road/Parking Area Stabilization (BMP C107)

  Proposed roads shall be stabilized immediately after grading to reduce erosion by construction traffic or surface water runoff. During vertical construction, apply quarry spall base on drive approaches for buildings lot/pad access or in other high traffic areas such as material equipment storage and concrete washout areas.

- Concrete Washout Area (BMP C154)

  Conduct washout off-site, or perform on-site concrete washout in a designated area. This is done to prevent pollutants from entering surface or ground water.

If sediment is tracked off site, clean the affected roadway thoroughly at the end of each day or more frequently, as necessary. Remove sediment from roads by shoveling, sweeping, or pickup and transport of the sediment to a controlled sediment disposal area.

Conduct street washing only after sediment removal in accordance with special condition S9.D.2.d. Control street wash wastewater by pumping back on site or otherwise preventing it from discharging off site into catch basins, stormwater conveyance systems, creek, or rivers that connect to waters of the State.

Installation Schedules: Installation schedule to be determined by the General Contractor.

Inspection and Maintenance plan: Inspection and maintenance is to take place at the end of each day's work.

Responsible Staff: Certified Erosion and Sediment Control Lead.

2.1.3 Element 3: Control Flow Rates

In order to protect the properties and waterways downstream of the project site, stormwater discharges from the site will be controlled. The Specific BMPs for the flow control that shall be used on this project include the following:

Will you construct stormwater retention and/or detention facilities?
☒ Yes ☐ No

Will you use permanent infiltration ponds or other low impact development (example: rain gardens, bio-retention, porous pavement) to control flow during construction?
☒ Yes ☐ No

List and describe BMPs:

- Temporary Sediment Pond (BMP C241)

The project site is located west of the Cascade Mountain Crest. As a result, the project must comply with the Minimum Requirement 7 (Ecology 2012). Minimum Requirement 7 states that projects must provide flow control to reduce the impacts of stormwater runoff from impervious surfaces and land cover conversions.

Essentially, discharge rates of stormwater from the site will be controlled where increases in impervious area or soil compaction during construction could lead to downstream erosion, or where necessary to meet local agency stormwater discharge requirements (e.g. discharge to combined sewer systems).

Installation Schedules: Installation schedule to be determined by the General Contractor.

Inspection and Maintenance plan: Inspection and maintenance is to take place at the end of each day's work.

Responsible Staff: Certified Erosion and Sediment Control Lead.

2.1.4 Element 4: Install Sediment Controls

All stormwater runoff from disturbed areas shall pass through an appropriate sediment removal BMP before leaving the construction site or prior to being discharge to a detention facility. The specific BMPs to be used for controlling sediment on this project are as follows:

List and describe BMPs:

- Silt Fence (BMP C233)

  During site development phase, silt fence will be used along the downhill perimeter of the project to prevent sediment from leaving the site.

  During the building/vertical phase, sediment control will not be necessary on all building bearing pads, as many are flat with well established grass cover. The rest of the landscaped areas and onsite parks will drain to the parking lots or have runoff collected by yard drains. Temporary stabilized lots with slope, or less well established grass cover will be inspected during wet weather conditions and, if required, silt fence may be used as a sediment control. Before removing vegetation on the lots, silt fence will be installed as a sediment control behind curb.

- Storm Drain Inlet Protection (BMP C220)

  Catch basins and storm drain inlets within the project boundary and downstream will have an approved form of inlet protection installed. This will prevent coarse sediment from entering the drainage system prior to permanent stabilization of the disturbed drainage area.

In addition, sediment will be removed from paved areas in and adjacent to construction work areas manually or using a mechanical sweepers, as needed to minimize tracking of sediments on vehicle tires away from the site and to minimize the transmission of sediments from adjacent streets in runoff.

The following BMPs will be implemented as end-of-pipe sediment controls as required to meet permitted turbidity limits in the site discharge(s). Prior to the implementation of these methods, sediment sources and erosion control and soil stabilization BMP efforts will be maximized to reduce the need for end-of-pipe sediment controls.

- Temporary Sediment Pond (BMP C241)
- Construction Stormwater Filtration (BMP C251)
- Construction Stormwater Chemical Treatment (BMP C250) (Implemented only with prior written approval from Ecology.)

Implement BMP C250/251 above end-of-pipe measures only if sediment sources and erosion control and soil stabilization BMP efforts are not sufficient to reduce sedimentation.

Installation Schedules: Installation schedule to be determined by the General Contractor

Inspection and Maintenance plan: Inspection and maintenance is to take place at the end of each day's work.

Responsible Staff: Certified Erosion and Sediment Control Lead

2.1.5 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 specific BMPs for soil stabilization that shall be used in this project are as follows:

West of the Cascade Mountains Crest

Season	Dates	Number of Days Soils Can be Left Exposed
During the Dry Season	May 1 – September 30	7 days
During the Wet Season	October 1 – April 30	2 days

Soils must be stabilized at the end of the shift before a holiday or weekend if needed based on the weather forecast.

Anticipated project dates: Start date: TBD End date: TBD

Will you construct during the wet season?
☒ Yes ☐ No

List and describe BMPs:

- Temporary and Permanent Seeding (BMP C120)
  Following final or fine grading activity in the rear and side yards, permanent seeding shall be placed on exposed soil to provide permanent erosion protection.

- Mulching (BMP C121)

  During the site development phase, mulching will be used for areas that will be unworked for more than 2 days. Temporary seeding will be applied to areas that will be unworked for more than 7 days. During the home building phase, the construction area will be significantly stabilized through well established grass cover. Proposed driveways will receive base course materials as described under Element #2 above. Areas cleared for building foundations or utility and irrigation placement will be temporarily stabilized by one of the following methods which are based on the period exposed soils are left unworked:

  - If exposed soils are left unworked for more than 7 days during the dry season and 2 days during the wet season but less than 30 days, mulching shall be applied.

  - If exposed soils are left unworked for more than 30 days, temporary or permanent seeding shall be applied.

- Nets and Blankets (BMP C122)

  Once final or fine grading activity has been completed, install Jute Matting on slopes prior to planting.

- Sodding (BMP C124)

  Following final or fine grading activity in the front yard, sod shall be placed on exposed soil to provide permanent and immediate erosion protection.

- Plastic Covering (BMP C123)

- Topsoiling (BMP C125)

  Utilize stockpile management during all phases of construction per BMP. Cover stockpiles with plastic covering to prevent erosion during rain events.

- Wattles (BMP C235)

  Install wattles downslope of newly landscaped areas to control sediment runoff until stabilization.

  Cement or Calcium Chloride may be used for soil stabilization and dewatering. See section 4.2.2 for pH Sampling Requirements.

  The project site is located west of the Cascade Mountain Crest. As such, no soils shall remain exposed and unworked for more than 7 days during the dry season (May 1 to September 30) and 2 days during the wet season (October 1 to April 30). Regardless of the time of year, all soils shall be stabilized at the end of the shift before a holiday or weekend if needed based on weather forecasts.

  Cut and fill slopes will be stabilized as soon as possible and soil stockpiles will be temporarily covered with plastic sheeting. All stockpiled soils shall be stabilized from erosion, protected with sediment trapping measures, and where possible, be located away from storm drain inlets, waterways, and drainage channels.

Installation Schedules: Installation schedule to be determined by the General Contractor

Inspection and Maintenance plan: Inspection and maintenance is to take place at the end of each day's work.

Responsible Staff: Certified Erosion and Sediment Control Lead

2.1.6 Element 6: Protect Slopes

All cut and fill slopes will be designed, constructed, and protected in a manner that minimizes erosion. The following specific BMPs will be used to protect slopes for this project:

West of the Cascade Mountains Crest

Describe how slopes will be designed, constructed, and protected to minimize erosion.

Temporary pipe slope drains must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used.

The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits.

For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates.

If using the Western Washington Hydrology Model (WWHM) to predict flows, bare soil areas should be modeled as "landscaped area".

Describe how you will reduce scouring within constructed channels that are cut down a slope.

Will steep slopes be present at the site during construction?
☐ Yes ☒ No

List and describe BMPs:

- Temporary and Permanent Seeding (BMP C120)

  The site is moderately sloped (less than 15%). Sloping areas will be treated as described under Element 5 above.

Installation Schedules: Installation schedule to be determined by the General Contractor

Inspection and Maintenance plan: Inspection and maintenance is to take place at the end of each day's work.

Responsible Staff: Certified Erosion and Sediment Control Lead

2.1.7 Element 7: Protect Drain Inlets

Purpose: protect all operable storm drain inlets so that stormwater runoff does not enter the stormwater conveyance system. Remove sediment that enters the stormwater conveyance system (i.e., filtration, treatment, etc.).

Keep in mind inlet protection may function well for coarse sediment but is less effective in filtering finer particles and dissolved constituents. Inlet protection is the last component of a treatment train and protection of drain inlets include additional sediment and erosion control measures. Inlet protection devices will be cleaned (or removed and replaced), when sediment has filled the device by one third (1/3) or as specified by the manufacturer.

Inlets will be inspected weekly at a minimum and daily during storm events.

Drain inlets will be protected using the following BMP methods:

List and describe BMPs:

- Storm Drain Inlet Protection (BMP C220)

  Prior to construction, storm drain inlet protection will be utilized on all catch basins in the roadway along the frontage of any areas receiving stormwater from construction activities within the permitted area. Install inlet protection once permanent storm drain inlets on site are constructed.

Installation Schedules: Installation schedule to be determined by the General Contractor.

Inspection and Maintenance plan: Inspection and maintenance is to take place at the end of each day's work.

Responsible Staff: Certified Erosion and Sediment Control Lead.

2.1.8 Element 8: Stabilize Channels and Outlets

Where site runoff is to be conveyed in channels, or discharged to a stream or some other natural drainage point, efforts will be made to prevent downstream erosion. The specific BMPs for channel and outlet stabilization that shall be used on this project include:

West of the Cascade Mountains Crest

On-site conveyance channels must handle the peak 10-minute flow rate from a Type 1A, 10-year, 24-hour frequency storm for the developed condition. Alternatively, the 10-year, 1-hour flow rate predicted by an approved continuous runoff model, increased by a factor of 1.6, may be used.

The hydrologic analysis must use the existing land cover condition for predicting flow rates from tributary areas outside the project limits.

For tributary areas on the project site, the analysis must use the temporary or permanent project land cover condition, whichever will produce the highest flow rates.

If using the WWHM to predict flows, bare soil areas should be modeled as “landscaped area”.

Provide stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes, and downstream reaches, will be installed at the outlets of all conveyance systems.

List and describe BMPs:

- Interceptor Dike and Swale (BMP C200)

  During the site development phase, interceptor dikes and swales shall be constructed down slope and on site of the construction site to convey stormwater to an erosion control facility.

- Check Dams (BMP C207)

  Check dams shall be used to reduce the velocity and energy of concentrated flow in swales or ditches.

- Outlet Protection (BMP C209)

Installation Schedules: Installation schedule to be determined by the General Contractor

Inspection and Maintenance plan: Inspection and maintenance is to take place at the end of each day's work.

Responsible Staff: Certified Erosion and Sediment Control Lead

2.1.9 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. If required, BMPs to be implemented to control specific sources of pollutants are discussed below.

The following pollutants are anticipated to be present on-site:

Table 2 – Pollutants

Pollutant (List pollutants and source, if applicable)
Installation of sediment and erosion controls
Installation of stabilized exits
Vehicle tracking
Clearing and grubbing operations
Grading operations
Exposed soils and slopes
Import/export operations
Utility excavation operations
Landscapeing operations
Topsoil stripping and stockpiling

Fine grading of home sites
Vertical Construction
Concrete

List and describe BMPs:

- Housekeeping BMPs

The following sections describe the controls, including storage practices to minimize exposure of the materials to stormwater as well as spill prevention and response practices. 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.

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. Secondary containment such as drip pans will be placed under any leaking vehicles or equipment. All petroleum product storage containers will be placed in secondary containment (see spill prevention and control below).

- 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 or when vehicle/equipment leaks are observed.

- 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 incident.

Chemical storage:

- Any chemicals stored in the construction areas will conform to the appropriate source control BMPs listed in Volume IV of the Ecology stormwater manual. In Western WA, all chemicals shall have cover, containment, and protection provided on site, per BMP C153 for Material Delivery, Storage and Containment in SWMMWW 2012.

- Application of agricultural chemicals, including fertilizers and pesticides, shall be conducted in a manner and at application rates that will not result in loss of chemical to stormwater runoff. Manufacturers' recommendations for application procedures and rates shall be followed.

Concrete and grout:

- Process water and slurry resulting from concrete work will be prevented from entering the waters of the State by implementing Concrete Handling measures (BMP C151) and Sawcutting and Surfacing Pollution Prevention (BMP C152).

Sanitary wastewater:

- Proper sanitary and septic waste management are waste management and material pollution controls that prevent the discharge of pollutants to stormwater from sanitary and septic waste by providing convenient, well-maintained facilities, and arranging for regular service and disposal. Implement as follows:
    - Facilities should be located away from drainage facilities, watercourses, and from traffic circulation.
    - Provide a sufficient quantity of facilities to accommodate the workforce.
    - Temporary sanitary facilities must be equipped with containment to prevent discharge of pollutants to the stormwater drainage system of the receiving water.
    - When subjected to high winds or risk of high winds, temporary sanitary facilities should be secured to prevent overturning.
    - Sanitary facilities should be located in a convenient location.
    - Sanitary or septic wastes should be treated or disposed of in accordance with state and local requirements.
    - Sanitary facilities should be maintained in good working order by a licensed service.

Solid and Liquid Waste:

- Solid and liquid waste generated during construction such as construction materials, contaminated materials, and waste materials from maintenance activities will be prevented from entering the waters of the State. Solid and liquid waste shall be handled in accordance with BMPs for Storage of Liquid, Food Waste, or Dangerous Waste Containers and BMPs for Loading and Unloading Areas for Liquid or Solid Materials.
    - Solid waste will be stored in secure, clearly marked containers.
    - Promptly contain and clean up solid and liquid pollutant leaks and spills including oils, solvents, fuels, and dust from manufacturing operations on any exposed soil, vegetation, or paved area.
    - Sweep paved material handling and storage areas regularly as needed, for the collection and disposal of dust and debris that could contaminate stormwater. Do not hose down pollutants from any area to the ground, storm drain, conveyance ditch, or receiving water unless necessary for dust control purposes to meet air quality regulations.

Installation Schedules: The described BMPs will be implemented while all pollution generating materials are onsite.

Inspection and Maintenance plan: Inspection and maintenance is to take place at the end of each day's work.

Responsible Staff: Certified Erosion and Sediment Control Lead

Will maintenance, fueling, and/or repair of heavy equipment and vehicles occur on-site?
☐ Yes ☒ No

List and describe BMPs:

Spill Prevention and Control BMPs

Prevent or reduce the discharge of pollutants to drainage systems or watercourses from leaks and spills by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees. This best management practice covers only spill prevention and control. However, Materials Delivery and Storage (BMP C153), also contains useful information, particularly on spill prevention.

- To the extent that the work can be accomplished safely, spills of oil, petroleum products, and substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately.
- Store hazardous materials and wastes in covered containers and protect from vandalism.
- Place a stockpile of spill cleanup materials where it will be readily accessible.
- Train employees in spill prevention and cleanup.
- Designate responsible individuals to oversee and enforce control measures.
- Spills should be covered and protected from stormwater runon during rainfall to the
- extent that it doesn't compromise clean up activities.
- Do not bury or wash spills with water.
- Store and dispose of used clean up materials, contaminated materials, and recovered spill material that is no longer suitable for the intended purpose in conformance with the provisions in applicable BMPs.
- Do not allow water used for cleaning and decontamination to enter storm drains or watercourses. Collect and dispose of contaminated water in accordance WSDOE regulations.
- Contain water overflow or minor water spillage and do not allow it to discharge into drainage facilities or watercourses.
- Place proper storage, cleanup, and spill reporting instructions for hazardous materials stored or used on the project site in an open, conspicuous, and accessible location.
- Keep waste storage areas clean, well organized, and equipped with ample clean supplies as appropriate for the materials being stored. Perimeter controls, containment structures, covers, and liners should be repaired or replaced as needed to maintain proper function.

Cleanup:

- Clean up leaks and spills immediately.
- Use a rag for small spills on paved surfaces, a damp mop for general cleanup, and absorbent material for larger spills. If the spilled material is hazardous, then the used cleanup materials are also hazardous and must be sent to either a certified laundry (rags) or disposed of as hazardous waste.
- Never hose down or bury dry material spills. Clean up as much of the material as possible and dispose of properly.
- The spill kit should include, at a minimum:
    - 1-Water Resistant Nylon Bag
    - 3-Oil Absorbent Socks 3"x 4'
    - 2-Oil Absorbent Socks 3"x 10'
    - 12-Oil Absorbent Pads 17"x19"
    - 1-Pair Splash Resistant Goggles
    - 3-Pair Nitrile Gloves

    - 10-Disposable Bags with Ties
    - Instructions
- Spill kits will be located in areas with a high potential for spills and deployed in a manner that allows rapid access and use by contractors. Some heavy equipment may have on-board spill kits for small spills. Spill control kits will be inspected and inventoried each construction season to confirm all required items are present. Spill control kits will be inventoried after each emergency event and restocked as needed.

Minor Spills:

- Minor spills typically involve small quantities of oil, gasoline, paint, etc. which can be controlled at the discovery of the spill.
- Contain the spread of the spill.
- Use absorbent materials on small spills rather than hosing down or burying the spill.
- Notify the project foreman immediately
- Recover spilled materials.
- Clean the contaminated area and properly dispose of contaminated materials.
- If the spill occurs on paved or impermeable surfaces, clean up using "dry" methods (absorbent materials, cat litter and/or rags). Contain the spill by encircling with absorbent materials and do not let the spill spread widely.
- If the spill occurs in dirt areas, immediately contain the spill by constructing an earthen dike. Dig up and properly dispose of contaminated soil.
- If the spill occurs during rain, cover spill with tarps or other material to prevent contaminating runoff.

Semi-Significant Spills:

- Semi-significant spills still can be controlled by the first responder along with the aid of other personnel such as laborers and the foreman, etc. This response may require the cessation of all other activities. Spills should be cleaned up immediately.

Significant/Hazardous Spills

- For significant or hazardous spills that cannot be controlled by personnel in the immediate vicinity, the following steps should be taken:
    - Notify the local emergency response by dialing 911. In addition to 911, the contractor will notify the proper City or County officials. All emergency phone numbers will be posted at the construction site.
    - Contact your Supervisor and the Divisional Environmental Manager. For spills of federal reportable quantities, (examples are listed below) in conformance with the requirements in 40 CFR parts 110,119, and 302, the Division Environmental Manager (DEM) will notify the National Response Center at (800) 424-8802. The DEM will notify the Department of Ecology and any other applicable agencies.
- The services of a spills contractor or a Haz-Mat team should be obtained immediately. Construction personnel should not attempt to clean up until the appropriate and qualified staffs have arrived at the job site.
- Notification should first be made by telephone and followed up with a written report. Other agencies which may need to be consulted include, but are not limited to, the Public Works

Department, the Coast Guard, the Highway Patrol, the City/County Police Department and Department of Ecology.

- Federal regulations require that any significant oil spill into a water body or onto an adjoining shoreline be reported to the National Response Center (NRC) at 800-424-8802 (24 hours).

Installation Schedules: The described BMPs will be implemented while all pollution generating materials are onsite.

Inspection and Maintenance plan: Inspection and maintenance is to take place at the end of each day's work.

Responsible Staff: Certified Erosion and Sediment Control Lead.

Will wheel wash or tire bath system BMPs be used during construction?
☒ Yes ☐ No

List and describe BMPs:

- Wheel Wash (BMP C106)

Discharge wheel wash or tire bath wastewater to a separate on-site treatment system that prevents discharge to surface water, such as closed-loop recirculation or upland land application, or to the sanitary sewer with local sewer district approval.

Installation Schedules: The described BMPs will be implemented while all pollution generating materials are onsite.

Inspection and Maintenance plan: Inspection and maintenance is to take place at the end of each day's work.

Responsible Staff: Certified Erosion and Sediment Control Lead.

Will pH-modifying sources be present on-site?
☒ Yes ☐ No

Table 3 – pH-Modifying Sources

☐	None
☒	Bulk cement
☐	Cement kiln dust
☐	Fly ash
☒	Other cementitious materials
☒	New concrete washing or curing waters
☒	Waste streams generated from concrete grinding and sawing
☐	Exposed aggregate processes
☐	Dewatering concrete vaults
☐	Concrete pumping and mixer washout waters
☐	Recycled concrete
☐	Other (i.e., calcium lignosulfate) [please describe:]

List and describe BMPs:

- pH Control for High pH Water (BMP C253)
- High pH Neutralization using CO_2 (BMP C252) (Implemented only after notifying the local Jurisdiction.)
- Sawcutting and Surfacing Pollution Prevention

Installation Schedules: The described BMPs will be implemented while all pollution generating materials are onsite.

Inspection and Maintenance plan: Inspection and maintenance is to take place at the end of each day's work.

Responsible Staff: Certified Erosion and Sediment Control Lead.

Adjust pH of stormwater if outside the range of 6.5 to 8.5 su.
Obtain written approval from Ecology before using chemical treatment with the exception of CO_2 or dry ice to modify pH.

Concrete trucks must not be washed out onto the ground, or into storm drains, open ditches, streets, or streams. Excess concrete must not be dumped on-site, except in designated concrete washout areas with appropriate BMPs installed.

2.1.10 Element 10: Control Dewatering

There will be no dewatering as part of this construction project.

Table 4 – Dewatering BMPs

☐	Infiltration
☐	Transport off-site in a vehicle (vacuum truck for legal disposal)
☐	Ecology-approved on-site chemical treatment or other suitable treatment technologies
☐	Sanitary or combined sewer discharge with local sewer district approval (last resort)
☐	Use of sedimentation bag with discharge to ditch or swale (small volumes of localized dewatering)

List and describe BMPs: None.

Installation Schedules: None.

Inspection and Maintenance plan: None.

Responsible Staff: None.

2.1.11 Element 11: Maintain BMPs

All temporary and permanent Erosion and Sediment Control (ESC) BMPs shall be maintained and repaired as needed to ensure continued performance of their intended function.

Maintenance and repair shall be conducted in accordance with each particular BMP specification (see *Volume II of the SWMMWW or Chapter 7 of the SWMMEW*).

Visual monitoring of all BMPs installed at the site will be conducted at least once every calendar week and within 24 hours of any stormwater or non-stormwater discharge from the site. If the site becomes inactive and is temporarily stabilized, the inspection frequency may be reduced to once every calendar month.

All temporary ESC BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed.

Trapped sediment shall be stabilized on-site or removed. Disturbed soil resulting from removal of either BMPs or vegetation shall be permanently stabilized.

Additionally, protection must be provided for all BMPs installed for the permanent control of stormwater from sediment and compaction. BMPs that are to remain in place following completion of construction shall be examined and restored to full operating condition. If sediment enters these BMPs during construction, the sediment shall be removed and the facility shall be returned to conditions specified in the construction documents.

2.1.12 Element 12: Manage the Project

The project will be managed based on the following principles:

- Projects will be phased to the maximum extent practicable and seasonal work limitations will be taken into account.
- Inspection and monitoring:
  - Inspection, maintenance and repair of all BMPs will occur as needed to ensure performance of their intended function.
  - Site inspections and monitoring will be conducted in accordance with Special Condition S4 of the CSWGP. Sampling locations are indicated on the Site Map. Sampling station(s) are located in accordance with applicable requirements of the CSWGP.
- Maintain an updated SWPPP.
  - The SWPPP will be updated, maintained, and implemented in accordance with Special Conditions S3, S4, and S9 of the CSWGP.

As site work progresses the SWPPP will be modified routinely to reflect changing site conditions. The SWPPP will be reviewed monthly to ensure the content is current.

Table 5 – Management

☒	Design the project to fit the existing topography, soils, and drainage patterns
☒	Emphasize erosion control rather than sediment control
☒	Minimize the extent and duration of the area exposed
☒	Keep runoff velocities low
☒	Retain sediment on-site
☒	Thoroughly monitor site and maintain all ESC measures
☒	Schedule major earthwork during the dry season
☐	Other (please describe)

Optional: Fill out Table 6 by listing the BMP associated with specific construction activities. Identify the phase of the project (if applicable). To increase awareness of seasonal requirements, indicate if the activity falls within the wet or dry season.

Table 6 – BMP Implementation Schedule

Phase of Construction Project	**Stormwater BMPs**	**Date**	**Wet/Dry Season**
[Insert construction activity]	[Insert BMP]	[MM/DD/YYYY]	[Insert Season]

Phase of Construction Project	**Stormwater BMPs**	**Date**	**Wet/Dry Season**
[Insert construction activity]	[Insert BMP]	[MM/DD/YYYY]	[Insert Season]

2.1.13 Element 13: Protect Low Impact Development (LID) BMPs

There are no LIDs proposed for this development.

3 Pollution Prevention Team

Table 7 – Team Information

Title	Name(s)	Phone Number
Certified Erosion and Sediment Control Lead (CESCL)	To be determined	N/A
Resident Engineer	To be determined	N/A
Emergency Ecology Contact	To be determined	N/A
Emergency Permittee/ Owner Contact	To be determined	N/A
Non-Emergency Owner Contact	To be determined	N/A
Monitoring Personnel	To be determined	N/A
Ecology Regional Office	3190 160th Ave SE, Bellevue, WA	(425) 649-7000

4 Monitoring and Sampling Requirements

Monitoring includes visual inspection, sampling for water quality parameters of concern, and documentation of the inspection and sampling findings in a site log book. A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- Site inspections
- Stormwater sampling data

The site log book must be maintained on-site within reasonable access to the site and be made available upon request to Ecology or the local jurisdiction.

Numeric effluent limits may be required for certain discharges to 303(d) listed waterbodies. See CSWGP Special Condition S8 and Section 5 of this template.

4.1 Site Inspection

Site inspections will be conducted at least once every calendar week and within 24 hours following any discharge from the site. For sites that are temporarily stabilized and inactive, the required frequency is reduced to once per calendar month.

The discharge point(s) are indicated on the Site Map (see Appendix A) and in accordance with the applicable requirements of the CSWGP.

4.2 Stormwater Quality Sampling

4.2.1 Turbidity Sampling

Requirements include calibrated turbidity meter or transparency tube to sample site discharges for compliance with the CSWGP. Sampling will be conducted at all discharge points at least once per calendar week.

Method for sampling turbidity:

Check the analysis method you will use:

Table 8 – Turbidity Sampling Method

☐	Turbidity Meter/Turbidimeter (required for disturbances 5 acres or greater in size)
☐	Transparency Tube (option for disturbances less than 1 acre and up to 5 acres in size)

The benchmark for turbidity value is 25 nephelometric turbidity units (NTU) and a transparency less than 33 centimeters.

If the discharge's turbidity is 26 to 249 NTU **or** the transparency is less than 33 cm but equal to or greater than 6 cm, the following steps will be conducted:

1. Review the SWPPP for compliance with Special Condition S9. Make appropriate revisions within 7 days of the date the discharge exceeded the benchmark.
2. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible. Address the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period.
3. Document BMP implementation and maintenance in the site log book.

If the turbidity exceeds 250 NTU **or** the transparency is 6 cm or less at any time, the following steps will be conducted:

1. Telephone or submit an electronic report to the applicable Ecology Region's Environmental Report Tracking System (ERTS) within 24 hours.
    - **Central Region** (Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima): (509) 575-2490 or http://www.ecy.wa.gov/programs/spills/forms/nerts_online/CRO_nerts_online.html
    - **Eastern Region** (Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman): (509) 329-3400 or http://www.ecy.wa.gov/programs/spills/forms/nerts_online/ERO_nerts_online.html
    - **Northwest Region** (King, Kitsap, Island, San Juan, Skagit, Snohomish, Whatcom): (425) 649-7000 or http://www.ecy.wa.gov/programs/spills/forms/nerts_online/NWRO_nerts_online.html
    - **Southwest Region** (Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, Wahkiakum,): (360) 407-6300 or http://www.ecy.wa.gov/programs/spills/forms/nerts_online/SWRO_nerts_online.html
2. Immediately begin the process to fully implement and maintain appropriate source control and/or treatment BMPs as soon as possible. Address the problems within 10 days of the date the discharge exceeded the benchmark. If installation of necessary treatment BMPs is not feasible within 10 days, Ecology may approve additional time when the Permittee requests an extension within the initial 10-day response period
3. Document BMP implementation and maintenance in the site log book.
4. Continue to sample discharges daily until one of the following is true:
    - Turbidity is 25 NTU (or lower).
    - Transparency is 33 cm (or greater).
    - Compliance with the water quality limit for turbidity is achieved.
        - 1 - 5 NTU over background turbidity, if background is less than 50 NTU
        - 1% - 10% over background turbidity, if background is 50 NTU or greater
    - The discharge stops or is eliminated.

4.2.2 pH Sampling

pH monitoring is required for “Significant concrete work” (i.e., greater than 1000 cubic yards poured concrete over the life of the project). The use of recycled concrete or engineered soils (soil amendments including but not limited to Portland cement-treated base [CTB], cement kiln dust [CKD] or fly ash) also requires pH monitoring.

For significant concrete work, pH sampling will start the first day concrete is poured and continue until it is cured, typically three (3) weeks after the last pour.

For engineered soils and recycled concrete, pH sampling begins when engineered soils or recycled concrete are first exposed to precipitation and continues until the area is fully stabilized.

If the measured pH is 8.5 or greater, the following measures will be taken:

1. Prevent high pH water from entering storm sewer systems or surface water.
2. Adjust or neutralize the high pH water to the range of 6.5 to 8.5 su using appropriate technology such as carbon dioxide (CO_2) sparging (liquid or dry ice).
3. Written approval will be obtained from Ecology prior to the use of chemical treatment other than CO_2 sparging or dry ice.

Method for sampling pH:

Check the analysis method you will use:

Table 9 – pH Sampling Method

☐	pH meter
☐	pH test kit
☐	Wide range pH indicator paper

5 Discharges to 303(d) or Total Maximum Daily Load (TMDL) Waterbodies

5.1 303(d) Listed Waterbodies

Is the receiving water 303(d) (Category 5) listed for turbidity, fine sediment, phosphorus, or pH?

☐ Yes ☒ No

List the impairment(s):

N/A

5.2 TMDL Waterbodies

Waste Load Allocation for CWSGP discharges:

N/A

Describe the method(s) for TMDL compliance:

List and describe BMPs:

N/A

Discharges to TMDL receiving waterbodies will meet in-stream water quality criteria at the point of discharge.

The Construction Stormwater General Permit Proposed New Discharge to an Impaired Water Body form is included in Appendix F.

6 Reporting and Record Keeping

6.1 Record Keeping

6.1.1 Site Log Book

A site log book will be maintained for all on-site construction activities and will include:

- A record of the implementation of the SWPPP and other permit requirements
- Site inspections
- Sample logs

6.1.2 Records Retention

Records will be retained during the life of the project and for a minimum of three (3) years following the termination of permit coverage in accordance with Special Condition S5.C of the CSWGP.

Permit documentation to be retained on-site:

- CSWGP
- Permit Coverage Letter
- SWPPP
- Site Log Book

Permit documentation will be provided within 14 days of receipt of a written request from Ecology. A copy of the SWPPP or access to the SWPPP will be provided to the public when requested in writing in accordance with Special Condition S5.G.2.b of the CSWGP.

6.1.3 Updating the SWPPP

The SWPPP will be modified if:

- Found ineffective in eliminating or significantly minimizing pollutants in stormwater discharges from the site.
- There is a change in design, construction, operation, or maintenance at the construction site that has, or could have, a significant effect on the discharge of pollutants to waters of the State.

The SWPPP will be modified within seven (7) days if inspection(s) or investigation(s) determine additional or modified BMPs are necessary for compliance. An updated timeline for BMP implementation will be prepared.

6.2 Reporting

6.2.1 Discharge Monitoring Reports

Cumulative soil disturbance is one (1) acre or larger; therefore, Discharge Monitoring Reports (DMRs) will be submitted to Ecology monthly. If there was no discharge during a given monitoring period the DMR will be submitted as required, reporting "No Discharge". The DMR due date is fifteen (15) days following the end of each calendar month.

DMRs will be reported online through Ecology's WQWebDMR System.

To sign up for WQWebDMR go to:
http://www.ecy.wa.gov/programs/wq/permits/paris/webdmr.html

6.2.2 Notification of Noncompliance

If any of the terms and conditions of the permit is not met, and the resulting noncompliance may cause a threat to human health or the environment, the following actions will be taken:

1. Ecology will be notified within 24-hours of the failure to comply by calling the applicable Regional office ERTS phone number (Regional office numbers listed below).
2. Immediate action will be taken to prevent the discharge/pollution or otherwise stop or correct the noncompliance. If applicable, sampling and analysis of any noncompliance will be repeated immediately and the results submitted to Ecology within five (5) days of becoming aware of the violation.
3. A detailed written report describing the noncompliance will be submitted to Ecology within five (5) days, unless requested earlier by Ecology.

Specific information to be included in the noncompliance report is found in Special Condition S5.F.3 of the CSWGP.

Anytime turbidity sampling indicates turbidity is 250 NTUs or greater, or water transparency is 6 cm or less, the Ecology Regional office will be notified by phone within 24 hours of analysis as required by Special Condition S5.A of the CSWGP.

- **Central Region** at (509) 575-2490 for Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, or Yakima County
- **Eastern Region** at (509) 329-3400 for Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, or Whitman County
- **Northwest Region** at (425) 649-7000 for Island, King, Kitsap, San Juan, Skagit, Snohomish, or Whatcom County

- **Southwest Region** at (360) 407-6300 for Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Lewis, Mason, Pacific, Pierce, Skamania, Thurston, or Wahkiakum

Include the following information:

1. Your name and / Phone number
2. Permit number
3. City / County of project
4. Sample results
5. Date / Time of call
6. Date / Time of sample
7. Project name

In accordance with Special Condition S4.D.5.b of the CSWGP, the Ecology Regional office will be notified if chemical treatment other than CO_2 sparging is planned for adjustment of high pH water.

A. Site Map
B. BMP Detail
C. Correspondence
D. Site Inspection Form
E. Construction Stormwater General Permit (CSWGP)
F. 303(d) List Waterbodies / TMDL Waterbodies Information
G. Contaminated Site Information
H. Engineering Calculations

Appendix A
Site Map

PRELIMINARY HORIZONTAL CONTROL PLAN
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=60'

0 30 60 120

GENERAL SITE DATA:

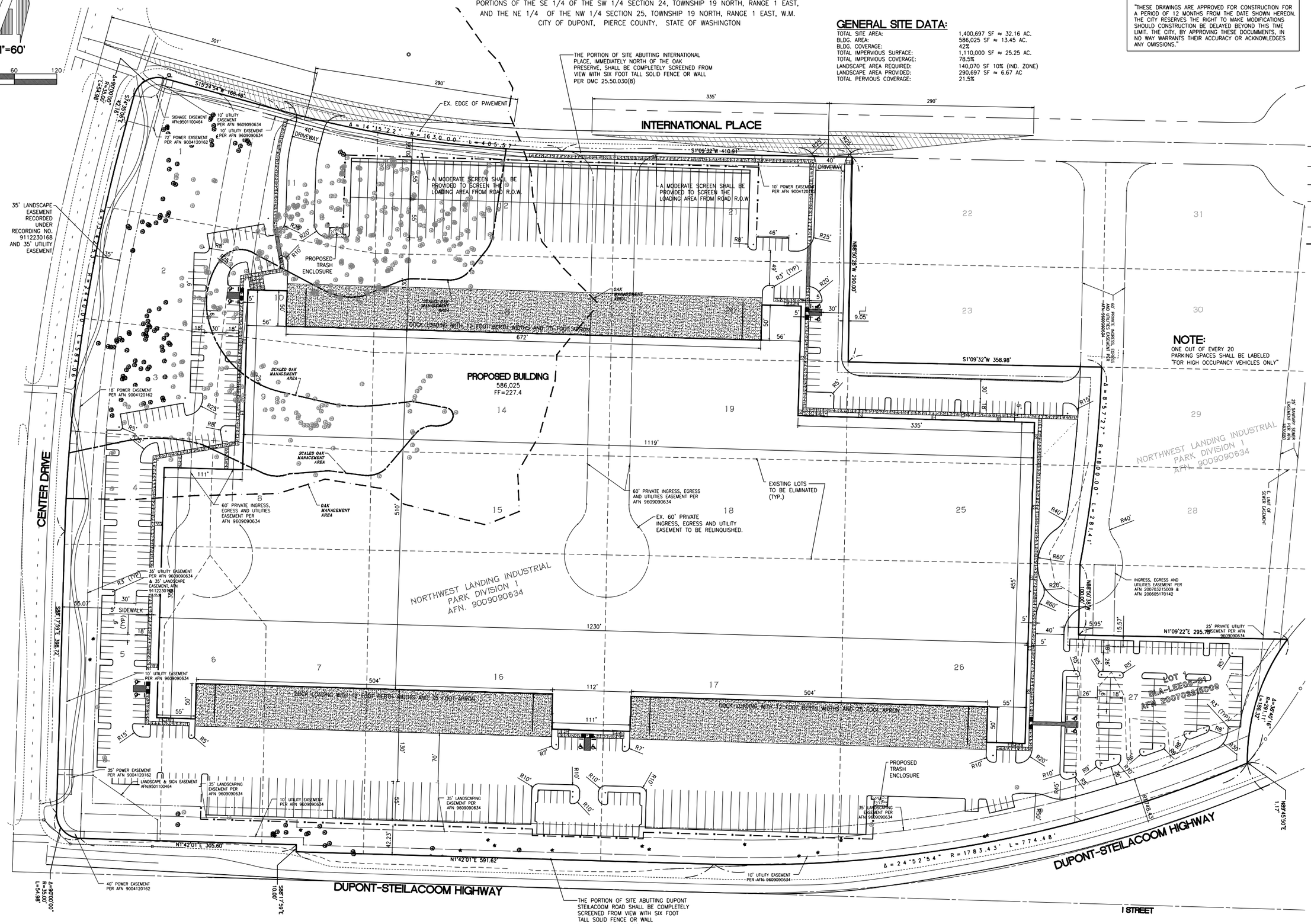
TOTAL SITE AREA:	1,400,697 SF ≈ 32.16 AC.
BLDG. AREA:	586,025 SF ≈ 13.45 AC.
BLDG. COVERAGE:	42%
TOTAL IMPERVIOUS SURFACE:	1,110,000 SF ≈ 25.25 AC.
TOTAL IMPERVIOUS COVERAGE:	78.5%
LANDSCAPE AREA REQUIRED:	140,070 SF 10% (IND. ZONE)
LANDSCAPE AREA PROVIDED:	290,697 SF ≈ 6.67 AC
TOTAL PERVIOUS COVERAGE:	21.5%

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."



No.	Date	By	Ckd.	Appr.	Revision

Title: PRELIMINARY HORIZONTAL CONTROL PLAN FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

AASIA PHILIPPIDES STATE OF WASHINGTON 38375 REGISTERED PROFESSIONAL ENGINEER
02/28/2018

Scale: Horizontal 1"=60' Vertical N/A

Designed WED
Drawn WED
Checked CP
Approved CP
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX
CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C2 of 9

File:P:\15000s\15753\preliminary\15753-o.dwg Date/Time:2/27/2018 2:27 PM Scale:1:1 WOUNLAP Xref: ----

PRELIMINARY GRADING AND STORM DRAINAGE PLAN (NORTH)
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."

1"=50'

0 25 50 100

CATCH BASIN TABLE
CB #12, TYPE 1 w/ STANDARD GRATE RIM = 221.60 IE=218.53 (12" NE) IE=218.53 (12" S)
CB #13, TYPE 1 w/ STANDARD GRATE RIM = 224.40 IE=221.33 (12" SW)
CB #14, TYPE 2-48" DIA. w/ STANDARD GRATE RIM = 225.90 IE=215.68 (12" S) IE=215.68 (18" N) IE=215.68 (18" E)
CB #15, TYPE 2-48" DIA. w/ STANDARD GRATE RIM = 226.00 IE=216.21 (12" W) IE=216.21 (12" N)
CB #16, TYPE 2-48" DIA. w/ STANDARD GRATE RIM = 226.00 IE=216.49 (12" W) IE=216.49 (12" E)
CB #17, TYPE 2-48" W/STANDARD GRATE RIM = 224.50 IE=217.01 (12" W) IE=217.01 (12" E)
CB #18, TYPE 1 w/ STANDARD GRATE RIM = 220.80 IE=217.40 (12" E)
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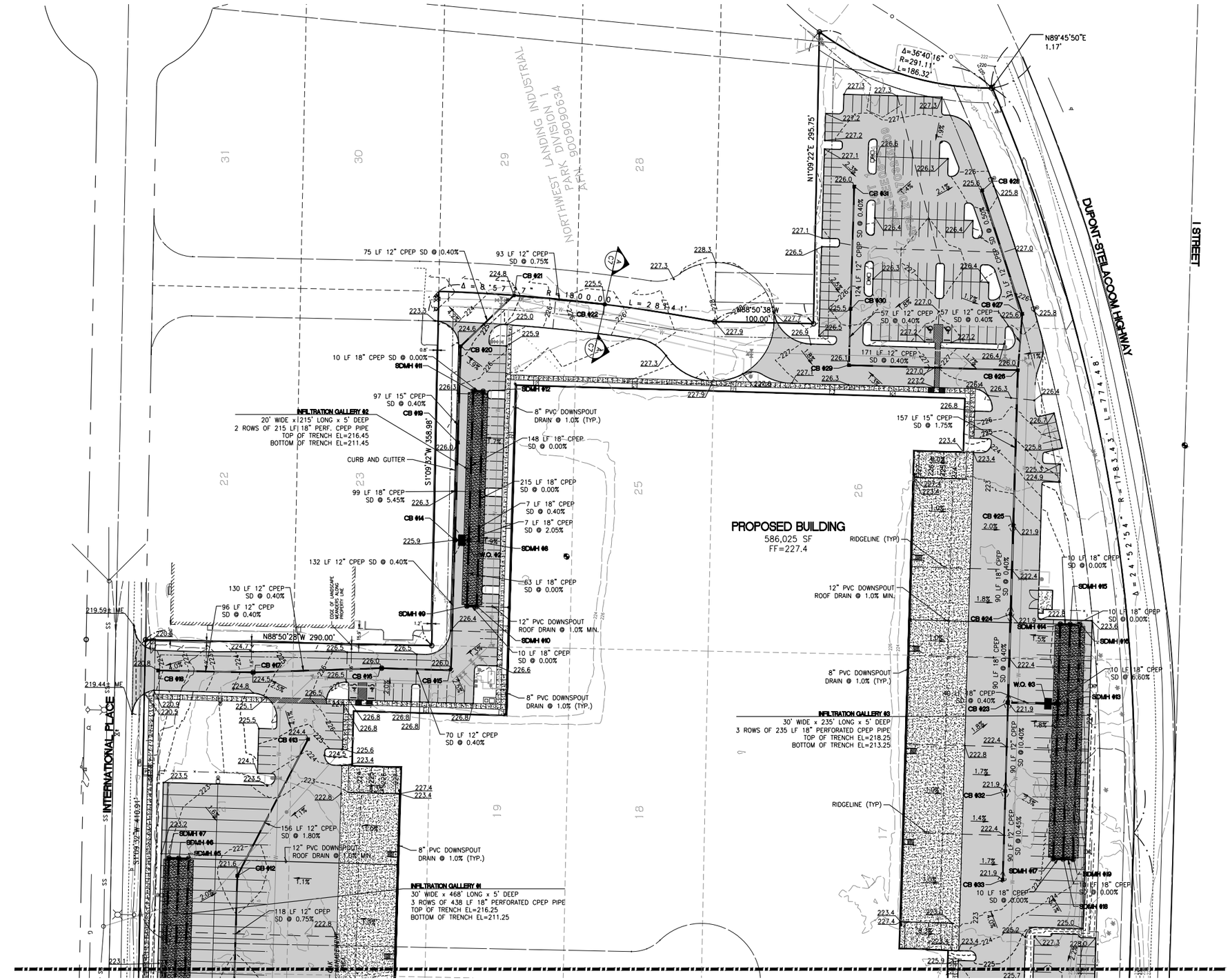

MATCHLINE - SEE SHEET C4

No.	Date	By	Ckd.	Appr.	Revision

Title: PRELIMINARY GRADING AND STORM DRAINAGE PLAN (NORTH) FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

COSTA PHILIPPIDIS
STATE OF WASHINGTON
38375
REGISTERED PROFESSIONAL ENGINEER
02/28/2018

Scale: Horizontal 1"=50' Vertical N/A

Designed WED
Drawn WED
Checked CP
Approved CP
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX
CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C3 of 9

File:P:\15000s\15753\preliminary\15753-gm.dwg Date/Time:2/27/2018 2:45 PM Scale:1:1 WDUNLAP Xref: ----

PRELIMINARY GRADING AND STORM DRAINAGE PLAN (SOUTH)
NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=50'

0 25 50 100

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."

CATCH BASIN TABLE
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SDMH #3, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 223.32 IE=213.00 (18" E) IE=213.00 (18" N) IE=213.00 (18" W)
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SDMH #23, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 223.40 IE=215.50 (18" S) IE=215.50 (18" W)
SDMH #24, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 222.95 IE=215.50 (18" N) IE=215.50 (18" E)
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SDMH #26, TYPE 2-48" DIA w/ SOLID LOCKING LID RIM = 223.36 IE=215.50 (18" W) IE=215.50 (18" N)
W.Q. #1, BAYFILTER W.Q. VAULT MODEL 6-10-5EMC RIM = 222.36 IE=215.73 (18" E) IE=213.43 (18" W)
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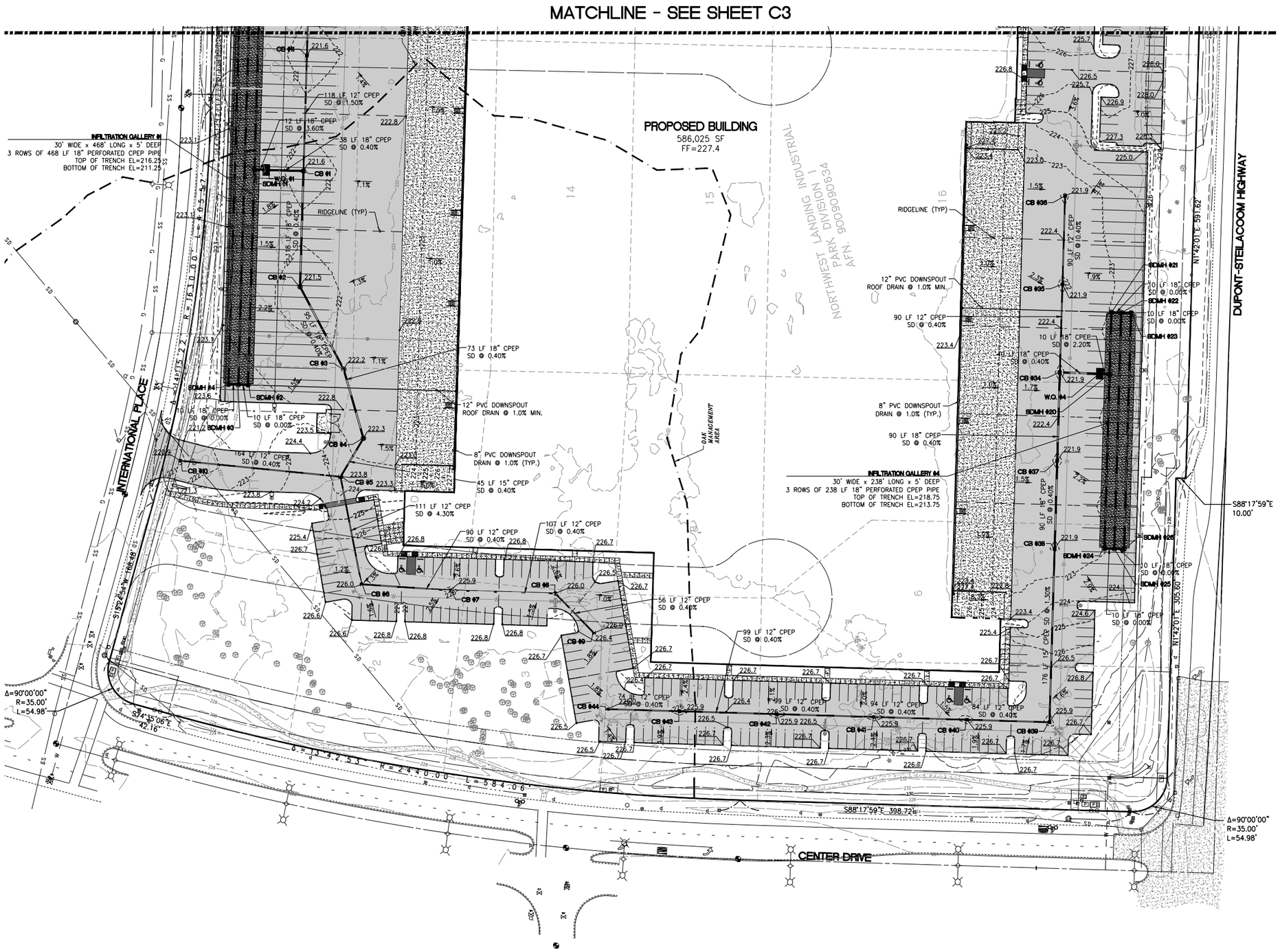

No.	Date	By	Ckd.	Appr.	Revision

Title: PRELIMINARY GRADING AND STORM DRAINAGE PLAN (SOUTH) FOR NORTHWEST LOGISTICS CENTER 2

For: NWLC-P2 LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

ROSIA PHILIPPI LOIS, STATE OF WASHINGTON, 38375, REGISTERED PROFESSIONAL ENGINEER
02/28/2019

Scale: Horizontal 1"=50' Vertical N/A

Designed WED
Drawn WED
Checked CP
Approved CP
Date 2/19/19

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
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CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C4 of 9

File:P:\15000s\15753\preliminary\15753-grn.dwg Date/Time:2/27/2018 2:45 PM Scale:1:1 WDUNLAP Xref: ----

Appendix B
BMP Detail

Appendix C
Correspondence

Appendix D
Site Inspection Form

Construction Stormwater Site Inspection Form

Project Name _____ Permit # _____ Inspection Date _____ Time _____

Name of Certified Erosion Sediment Control Lead (CESCL) or qualified inspector if *less than one acre*
Print Name: _____

Approximate rainfall amount since the last inspection (in inches): _____

Approximate rainfall amount in the last 24 hours (in inches): _____

Current Weather Clear ☐ Cloudy ☐ Mist ☐ Rain ☐ Wind ☐ Fog ☐

A. Type of inspection: Weekly ☐ Post Storm Event ☐ Other ☐

B. Phase of Active Construction (*check all that apply*):

Pre Construction/installation of erosion/sediment controls	☐	Clearing/Demo/Grading	☐	Infrastructure/storm/roads	☐
Concrete pours	☐	Vertical Construction/buildings	☐	Utilities	☐
Offsite improvements	☐	Site temporary stabilized	☐	Final stabilization	☐

C. Questions:

1. Were all areas of construction and discharge points inspected? Yes ___ No ___
2. Did you observe the presence of suspended sediment, turbidity, discoloration, or oil sheen Yes ___ No ___
3. Was a water quality sample taken during inspection? (*refer to permit conditions S4 & S5*) Yes ___ No ___
4. Was there a turbid discharge 250 NTU or greater, or Transparency 6 cm or less?* Yes ___ No ___
5. If yes to #4 was it reported to Ecology? Yes ___ No ___
6. Is pH sampling required? pH range required is 6.5 to 8.5. Yes ___ No ___

If answering yes to a discharge, describe the event. Include when, where, and why it happened; what action was taken, and when.

_____

_____

_____

*If answering yes to # 4 record NTU/Transparency with continual sampling daily until turbidity is 25 NTU or less/ transparency is 33 cm or greater.

Sampling Results: Date: _____

Parameter	Method (circle one)	Result			Other/Note
		NTU	cm	pH	
Turbidity	tube, meter, laboratory				
pH	Paper, kit, meter				

D. Check the observed status of all items. Provide "Action Required "details and dates.

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
1 Clearing Limits	Before beginning land disturbing activities are all clearing limits, natural resource areas (streams, wetlands, buffers, trees) protected with barriers or similar BMPs? (high visibility recommended)						
2 Construction Access	Construction access is stabilized with quarry spalls or equivalent BMP to prevent sediment from being tracked onto roads?						
	Sediment tracked onto the road way was cleaned thoroughly at the end of the day or more frequent as necessary.						
3 Control Flow Rates	Are flow control measures installed to control stormwater volumes and velocity during construction and do they protect downstream properties and waterways from erosion?						
	If permanent infiltration ponds are used for flow control during construction, are they protected from siltation?						
4 Sediment Controls	All perimeter sediment controls (e.g. silt fence, wattles, compost socks, berms, etc.) installed, and maintained in accordance with the Stormwater Pollution Prevention Plan (SWPPP).						
	Sediment control BMPs (sediment ponds, traps, filters etc.) have been constructed and functional as the first step of grading.						
	Stormwater runoff from disturbed areas is directed to sediment removal BMP.						
5 Stabilize Soils	Have exposed un-worked soils been stabilized with effective BMP to prevent erosion and sediment deposition?						

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
5 Stabilize Soils Cont.	Are stockpiles stabilized from erosion, protected with sediment trapping measures and located away from drain inlet, waterways, and drainage channels?						
	Have soils been stabilized at the end of the shift, before a holiday or weekend if needed based on the weather forecast?						
6 Protect Slopes	Has stormwater and ground water been diverted away from slopes and disturbed areas with interceptor dikes, pipes and or swales?						
	Is off-site storm water managed separately from stormwater generated on the site?						
	Is excavated material placed on uphill side of trenches consistent with safety and space considerations?						
	Have check dams been placed at regular intervals within constructed channels that are cut down a slope?						
7 Drain Inlets	Storm drain inlets made operable during construction are protected.						
	Are existing storm drains within the influence of the project protected?						
8 Stabilize Channel and Outlets	Have all on-site conveyance channels been designed, constructed and stabilized to prevent erosion from expected peak flows?						
	Is stabilization, including armoring material, adequate to prevent erosion of outlets, adjacent stream banks, slopes and downstream conveyance systems?						
9 Control Pollutants	Are waste materials and demolition debris handled and disposed of to prevent contamination of stormwater?						
	Has cover been provided for all chemicals, liquid products, petroleum products, and other material?						
	Has secondary containment been provided capable of containing 110% of the volume?						
	Were contaminated surfaces cleaned immediately after a spill incident?						
	Were BMPs used to prevent contamination of stormwater by a pH modifying sources?						

Construction Stormwater Site Inspection Form

Element #	Inspection	BMPs Inspected			BMP needs maintenance	BMP failed	Action required (describe in section F)
		yes	no	n/a			
9 Cont.	Wheel wash wastewater is handled and disposed of properly.						
10 Control Dewatering	Concrete washout in designated areas. No washout or excess concrete on the ground.						
	Dewatering has been done to an approved source and in compliance with the SWPPP.						
	Were there any clean non turbid dewatering discharges?						
11 Maintain BMP	Are all temporary and permanent erosion and sediment control BMPs maintained to perform as intended?						
12 Manage the Project	Has the project been phased to the maximum degree practicable?						
	Has regular inspection, monitoring and maintenance been performed as required by the permit?						
	Has the SWPPP been updated, implemented and records maintained?						
13 Protect LID	Is all Bioretention and Rain Garden Facilities protected from sedimentation with appropriate BMPs?						
	Is the Bioretention and Rain Garden protected against over compaction of construction equipment and foot traffic to retain its infiltration capabilities?						
	Permeable pavements are clean and free of sediment and sediment laden-water runoff. Muddy construction equipment has not been on the base material or pavement.						
	Have soiled permeable pavements been cleaned of sediments and pass infiltration test as required by stormwater manual methodology?						
	Heavy equipment has been kept off existing soils under LID facilities to retain infiltration rate.						

E. Check all areas that have been inspected. ✔

All in place BMPs ☐ All disturbed soils ☐ All concrete wash out area ☐ All material storage areas ☐
All discharge locations ☐ All equipment storage areas ☐ All construction entrances/exits ☐

F. Elements checked "Action Required" (section D) describe corrective action to be taken. List the element number; be specific on location and work needed. Document, initial, and date when the corrective action has been completed and inspected.

Element #	Description and Location	Action Required	Completion Date	Initials

Attach additional page if needed

Sign the following certification:

"I certify that this report is true, accurate, and complete, to the best of my knowledge and belief"

Inspected by: (print) _____ (Signature) _____ Date: _____

Title/Qualification of Inspector: _____

Appendix E Construction Stormwater General Permit (CSWGP)

Appendix F
303(d) List Waterbodies/ TMDL Waterbodies Information

Appendix G
Contaminated Site Information

Appendix H
Engineering Calculations

WWHM2012

PROJECT REPORT

General Model Information

Project Name:	15753-WWHM TESC
Site Name:	NW Logistics Center 2
Site Address:	
City:	Dupont
Report Date:	2/26/2018
Gage:	Seatac
Data Start:	10/01/1901
Data End:	09/30/2059
Timestep:	15 Minute
Precip Scale:	1.000
Version Date:	2017/04/14
Version:	4.2.13

POC Thresholds

Low Flow Threshold for POC1:	50 Percent of the 2 Year
High Flow Threshold for POC1:	50 Year

Mitigated Land Use

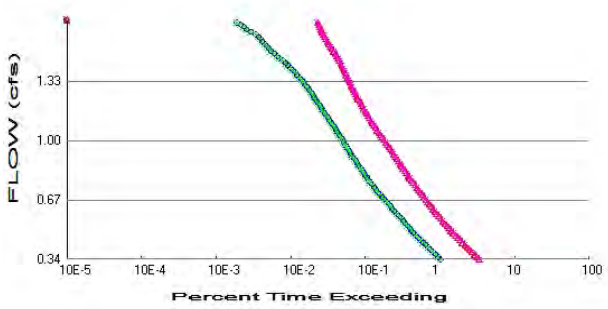
Basin 1

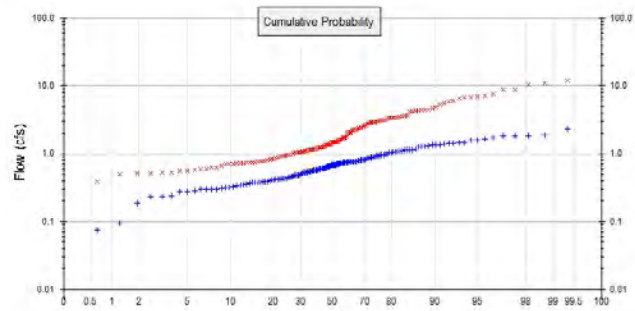
Bypass:	No
GroundWater:	No
Pervious Land Use	acre
C, Lawn, Flat	30.49
Pervious Total	30.49
Impervious Land Use	acre
Impervious Total	0
Basin Total	30.49

Element Flows To:

Surface	Interflow	Groundwater

Analysis Results
POC 1





+ Predeveloped x Mitigated

Predeveloped Landuse Totals for POC #1
Total Pervious Area: 30.49
Total Impervious Area: 0

Mitigated Landuse Totals for POC #1
Total Pervious Area: 30.49
Total Impervious Area: 0

Flow Frequency Method: Log Pearson Type III 17B

Flow Frequency Return Periods for Predeveloped. POC #1

Return Period	**Flow(cfs)**
2 year	0.688906
5 year	1.059954
10 year	1.27443
25 year	1.506735
50 year	1.656169
100 year	1.785831

Flow Frequency Return Periods for Mitigated. POC #1

Return Period	**Flow(cfs)**
2 year	1.593231
5 year	3.146458
10 year	4.627058
25 year	7.144866
50 year	9.583229
100 year	12.590175

Annual Peaks

Annual Peaks for Predeveloped and Mitigated. POC #1

Year	**Predeveloped**	**Mitigated**
1902	0.558	1.036
1903	0.425	0.776
1904	0.727	5.597
1905	0.353	0.959
1906	0.183	0.363
1907	1.069	2.875
1908	0.769	1.150
1909	0.754	1.523
1910	1.066	3.325
1911	0.690	2.204

TESC Calculations

Project: NW Logistics Center - Phase 2

BCE #: 15753

Developed Site Runoff

Flow	cfs
Q2*	1.59
Q10	4.63
Q100	12.59

KEY

INPUT
OUTPUT
CHECK
SPECS

REQUIRED SURFACE AREA

SA = (2,080)(Q_{10})	=	9630	SF
∴ USE SURFACE AREA	=	9600	SF
		0.22	AC

PRINCIPAL SPILLWAY SIZING

D = [(Q_{10}) / (3.782)$(H)^{0.5}]^{0.5}$	=	13.277	FT
**H MIN (DEFAULT 1)*	=	*1*	*FT*
∴ USE RISER DIAMETER	=	13 1/4	IN

EMERGENCY OVERFLOW SPILLWAY

L = [Q_{100} / (3.21)$(H)^{1.5}$] - 2.4H	=	9.89	FT
**H MIN (DEFAULT .5)*	=	*0.5*	*FT*
∴ USE SPILLWAY LENGTH	=	10	FT

DEWATERING ORIFICE

A_0 = (S.A.)$(2H)^{0.5}$/(0.6)(3,600)(T)$(g)^{0.5}$	=	0.086	SF
DIAM. = 13.54 $(A_0)^{0.5}$	=	3.98	IN
**H MIN (DEFAULT 3.5')*	=	*3.5*	*FT*
∴ USE ORIFICE DIAMETER	=	4	IN

*IF CONSTRUCTION TAKES PLACE OUTSIDE THE WET SEASON IN SUMMER MONTHS, Q2 IS ALLOWED TO SIZE POND S.A.

Tab 7.0

7.0 SPECIAL REPORTS AND STUDIES

GEOTECHNICAL REPORT

NW Logistics Center II
International Place and Center Drive
DuPont, Washington

Project No. T-6897-2

Terra Associates, Inc.

Prepared for:

NWLC – P2, LLC
Tacoma, Washington

April 19, 2016

TERRA ASSOCIATES, Inc.
Consultants in Geotechnical Engineering, Geology
and
Environmental Earth Sciences

April 19, 2016
Project No. T-6897-2

Mr. Angelo Ianello
NWLC – P2, LLC
P.O. Box 110997
Tacoma, Washington 98411

Subject: Geotechnical Report
NW Logistics Center II
International Place and Center Drive
DuPont, Washington

Dear Mr. Ianello:

As requested, we have conducted a geotechnical engineering study for the subject project. The attached report presents our findings and recommendations for the geotechnical aspects of project design and construction.

The site soils generally consist of previously compacted sand and gravel structural fill overlying native sands and gravels. Native soils at the site predominantly consist of gravels with variable sand and cobbles content. Heavy to very heavy groundwater seepage was observed in 8 of the 9 test pits excavated at the site at depths ranging from 13 feet to 15 feet below site grades.

In our opinion, there are no geotechnical conditions that would preclude the planned development. The building can be supported on conventional spread footings bearing on competent native soils or previously placed and compacted structural fills. Additional structural fills as needed to establish finish floor elevations can also be used to support building foundations and floor slabs. Pavements can be similarly supported.

Detailed recommendations addressing these issues and other geotechnical design considerations are presented in the attached report. We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Sincerely yours,
TERRA ASSOCIATES, INC.

Kevin P. Roberts, P.E.
Geotechnical Engineer

Theodore J. Schepper, P.E.
President

4-19-16

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Geotechnical Report
NW Logistics Center II
International Place and Center Drive
DuPont, Washington

1.0 PROJECT DESCRIPTION

The project consists of the construction of a 601,416 square-foot industrial building with associated paved surfaces and utility improvements on a 32-acre parcel. Building design information is currently unavailable; however, we expect the building will be constructed with conventional precast tilt-up perimeter wall panels with isolated interior columns supporting the roof structure. Structural loading is expected to be relatively light, with isolated columns carrying loads of 100 to 125 kips, and bearing walls carrying 4 to 8 kips per foot.

At this time, rough grading to establish approximate building and parking lot elevations has been completed at the site. Review of the Preliminary Grading and Storm Drainage Plan indicates the building's floor slab will be constructed at Elev. 227.5. Dock high access for trucks will be provided on the building's west and east sides. Site stormwater will be directed to four infiltration galleries located along the western and eastern site perimeters. Infiltration trenches will be constructed with bottom elevations ranging from Elev. 210.65 at the northwest perimeter, to Elev. 213.10 at the site's southeast perimeter.

The recommendations in the following sections of this report are based on our understanding of the design features outlined above. We should review design drawings as they become available to verify that our recommendations have been properly interpreted and to supplement them, if required.

2.0 SCOPE OF WORK

Our work was completed in accordance with our authorized proposal dated January 22, 2016, and revised March 9, 2016. Using the information obtained from our subsurface exploration and information from previous explorations completed by others, we performed analyses to develop geotechnical recommendations for project design and construction. Specifically, this report addresses the following:

- Soil and groundwater conditions
- Geologic Hazards per the DuPont Municipal Code
- Seismic design parameters per 2012 International Building Code (IBC)
- Site preparation and grading
- Excavations
- Foundations
- Slab-on-grade floors
- Stormwater infiltration
- Utilities
- Pavements

It should be noted that recommendations outlined in this report regarding drainage are associated with soil strength, design earth pressures, erosion, and stability. Design and performance issues with respect to moisture as it relates to the structure environment (i.e., humidity, mildew, mold) is beyond Terra Associates' purview. A building envelope specialist or contactor should be consulted to address these issues, as needed.

2.1 Previous Work

Terra Associates recently observed suitability of subgrades, as well as placement and compaction of structural fill at the site. Our observations and testing were performed during construction to establish rough planned grades at the site.

3.0 SITE CONDITIONS

3.1 Surface

The site is an approximately 32-acre parcel located at the northeastern corner of the intersection of International Place and Center Drive in DuPont, Washington. The site is bounded to the north by undeveloped parcels and a commercial property. DuPont-Steilacoom Highway bounds the site to the east. The approximate location of the site is shown on Figure 1.

Site topography is flat due to recent grading activities to establish the project's planned rough grades. An approximately two-foot rise in grades to form a level pad for building construction is located in the major central site area. Graded areas surrounding the building pad approximately match street and neighboring property elevations. Site vegetation beyond the edges of the graded areas consist of brush and grasses and, additionally, mature conifers along Center Drive and DuPont-Steilacoom Highway. No ponded surface water was observed at the site.

3.2 Soils

The site soils generally consist of 1.5 to 7 feet of sand and gravel fill overlying native sands and gravels. The fill was not present at Test Pits TP-3 through TP-5, and TP-8. A 1.5-foot thick layer of buried topsoil was found beneath the fill in Test Pit TP-7. With the exception of loose, organic surface fill in Test Pit TP-1, the fills were generally observed to be in a compacted, medium dense condition.

Native soils at the site predominantly consist of gravels with variable sand and cobble content. Medium to coarse-grained sands were also observed beneath the gravels in Test Pits TP-1 and T-8 at a depth of 9 feet. In Test Pit TP-4, the sand was found above the gravel to a depth of 5 feet. Caving of test pit walls was noted at depths ranging from 2 to 14.5 feet.

The *Geologic Map of the Nisqually 7.5-Minute Quadrangle, Thurston and Pierce Counties, Washington,* by T.J. Walsh, R.L. Logan, Michael Polenz, and H.W. Schasse (2003) maps the site as Vashon recessional outwash gravel (Steilacoom Gravel). This map unit is consistent with the native soils observed in the test pits.

The preceding discussion is intended to be a brief review of the soil conditions encountered on the site. Detailed descriptions can be found on the Test Pit Logs attached in Appendix A.

3.3 Groundwater

We observed heavy to very heavy groundwater seepage in eight of the nine test pit excavated at the site. The seepage was encountered at depths ranging from 13 feet to 15 feet below site grades. The high seepage volumes and relatively consistent observed depths indicate it represents the local groundwater table.

3.4 Geologic Hazards

We reviewed Chapter 25.105 "Sensitive Areas" of DuPont Municipal Code. Geologic sensitive areas and development standards are codified for landslide hazards in areas of "ravine sidewalls, bluffs, and slopes greater than 40 percent." Landslide, erosion, and seismic hazard considerations are addressed below.

3.4.1 Erosion Hazard

We did not observe any indication of erosion or sediment deposition at the site. The site soils are mapped as Spanaway gravelly sandy loam by the United States Department of Agriculture Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service. The NRCS describes the erosion hazard of Spanaway gravelly sandy loam as slight. Based on our observations and this reported soil characteristic, it is our opinion that erosion hazards do not exist at the site. Regardless, erosion protection measures as required by the City of DuPont will need to be in place during grading activities on the site.

3.4.2 Landslide Hazard

The site is relatively flat and is underlain by well drained outwash sand and gravel. As such, landslide hazards do not exist at the site.

3.4.3 Seismic Hazard

Based on the soil and groundwater conditions we observed at the site, it is our opinion that there is no risk for damage resulting from seismically induced landslides, settlement, or soil liquefaction. Therefore, in our opinion, unusual seismic hazard areas do not exist at the site, and design in accordance with building codes for determining seismic forces would adequately mitigate impacts associated with ground shaking.

3.5 Seismic Design Parameters

Based on soil conditions observed in the test pits and our knowledge of the area geology, per Chapter 16 of the 2012 International Building Code (IBC), site class "C" should be used in structural design. Based on this site class, in accordance with the 2012 IBC, the following parameters should be used in computing seismic forces:

Seismic Design Parameters (IBC 2012)

Spectral response acceleration (Short Period), S_{Ms}	1.300g
Spectral response acceleration (1 – Second Period), S_{M1}	0.672g
Five percent damped .2 second period, S_{Ds}	0.866g
Five percent damped 1.0 second period, S_{D1}	0.448g

The above values were determined using the online map-based United States Geological Survey (USGS) Ground Motion Parameter Calculator accessed on April 13, 2016.

4.0 DISCUSSION AND RECOMMENDATIONS

4.1 General

In our opinion, there are no geotechnical conditions that would preclude the planned development. The building can be supported on conventional spread footings bearing on competent native soils or previously placed and compacted structural fills. Additional structural fills as needed to establish finish floor elevations can also be used to support building foundations and floor slabs. Pavements can be similarly supported.

Stormwater infiltration trench design will need to consider the observed groundwater as a potential barrier layer to stormwater infiltration. A review of groundwater depths noted in our test pits relative to preliminary design infiltration trench bottom elevations indicates trench bottoms may need to be raised to provide a minimum required separation distance of three feet from the trench bottom to the groundwater table.

The outwash sands and gravels observed at the site have a low percentage of soil fines and should be suitable for use as structural fill in most weather conditions. In the event that soils need to be imported to the site, the contractor should be prepared to import free-draining granular material for use as structural fill and backfill during the wet season.

Detailed recommendations regarding these issues and other geotechnical design considerations are provided in the following sections. These recommendations should be incorporated into the final design drawings and construction specifications.

4.2 Site Preparation and Grading

As noted, the site has been subject to previous grading to establish current site elevations. Compaction tests of the fills at select locations met or exceeded geotechnical requirements. There is, however, a potential for isolated areas to have been disturbed or de-stabilized since our earthwork observations at the site. Prior to building and pavement construction, we recommend that all exposed bearing surfaces be observed by a representative of Terra Associates, Inc. to verify that soil conditions are as expected and suitable for support for structural support. Our representative may request proofrolling the exposed subgrade for pavement and floor slab support with a loaded 10 yard dump truck. If unstable soils are observed and cannot be stabilized in place by compaction, the affected soils should be excavated and removed to firm bearing and grade restored with new structural fill.

As noted above, the outwash sands and gravels observed at the site contain a low percentage of fines and should be suitable for use as structural fill in most weather conditions. If fill is imported to the site during the wet winter months, the contractor should be prepared to import wet weather structural fill. For this purpose, we recommend importing a granular soil that meets the following grading requirements:

U.S. Sieve Size	Percent Passing
6 inches	100
No. 4	75 maximum
No. 200	5 maximum*

*Based on the 3/4-inch fraction.

Prior to use, Terra Associates, Inc. should examine and test all materials imported to the site for use as structural fill.

Structural fill should be placed in uniform loose layers not exceeding 12 inches and compacted to a minimum of 95 percent of the soil's maximum dry density, as determined by American Society for Testing and Materials (ASTM) Test Designation D-698 (Standard Proctor). The moisture content of the soil at the time of compaction should be within two percent of its optimum, as determined by this ASTM standard. In nonstructural areas, the degree of compaction can be reduced to 90 percent.

4.3 Excavations

All excavations at the site associated with confined spaces, such as utility trenches, must be completed in accordance with local, state, and federal requirements. Based on regulations outlined in the Washington Industrial Safety and Health Act (WISHA), the site soils would be classified as Type C soils. Accordingly, temporary excavations in Type C soils should be sloped at an inclination of 1.5:1 or flatter. If there is insufficient room to complete the excavations in this manner or if excavations greater than 20 feet deep are planned, you may need to use temporary shoring to support the excavations. For utility trenches, properly designed and installed trench boxes may be used.

We observed heavy to very heavy seepage volumes emanating from the gravels at depths of 13 to 15 feet in our test pits. Deep excavations such as for utility construction below the water table will require installation of a dewatering system to maintain relatively drained conditions in trenches. The dewatering system will require deep pump wells or closely spaced well points installed in advance of trenching activities. Special consideration should be given to adequately sizing well points, pumps, and piping systems to effectively dewater relatively high seepage volumes.

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

4.4 Foundations

The industrial building may be supported on conventional spread footing foundations bearing on competent native soils or on structural fill placed above competent native soils. Foundation subgrades should be prepared as recommended in Section 4.2 of this report. Perimeter foundations exposed to the weather should bear at a minimum depth of 1.5 feet below final exterior grades for frost protection. Interior foundations can be constructed at any convenient depth below the floor slab.

Foundations supported on undisturbed bearing surfaces consisting of the native outwash sand and gravel or structural fill that is placed as recommended in Section 4.2 can be dimensioned for a net allowable bearing capacity of 4,000 pounds per square foot (psf). For short-term loads, such as wind and seismic, a one-third increase in this allowable capacity can be used. With structural loading as anticipated and this bearing stress applied, estimated total settlements are less than one-inch.

For designing foundations to resist lateral loads, a base friction coefficient of 0.35 can be used. Passive earth pressures acting on the side of the footing can also be considered. We recommend calculating this lateral resistance using an equivalent fluid weight of 350 pounds per cubic foot (pcf). We recommend not including the upper 12 inches of soil in this computation because it can be affected by weather or disturbed by future grading activity. This value assumes the foundation will be constructed neat against competent native soil or backfilled with structural fill as described in Section 4.2 of this report. The recommended lateral resistance values include a safety factor of 1.5.

4.5 Slab-on-Grade Floors

Slabs on grade may be supported on subgrades prepared as recommended in Section 4.2 of this report. Immediately below the floor slabs, we recommend placing a four-inch thick capillary break layer of clean, free-draining, coarse sand or fine gravel that has less than three percent passing the No. 200 sieve. This material will reduce the potential for upward capillary movement of water through the underlying soil and subsequent wetting of the floor slabs. Installation of a capillary break layer will not be necessary where the floor subgrade consists of clean native outwash or structural fill constructed using the clean outwash soils. A representative of Terra Associates should observe the subgrade at the time of construction to verify this condition and determine if an imported capillary break layer is required.

The capillary break layer will not prevent moisture intrusion through the slab caused by water vapor transmission. Where moisture by vapor transmission is undesirable, such as covered floor areas, a common practice is to place a durable plastic membrane on the capillary break layer and then cover the membrane with a layer of clean sand or fine gravel to protect it from damage during construction, and aid in uniform curing of the concrete slab. It should be noted that if the sand or gravel layer overlying the membrane is saturated prior to pouring the slab, it will be ineffective in assisting in uniform curing of the slab, and can actually serve as a water supply for moisture transmission through the slab and affecting floor coverings. Therefore, in our opinion, covering the membrane with a layer of sand or gravel should be avoided if floor slab construction occurs during the wet winter months and the layer cannot be effectively drained. We recommend floor designers and contractors refer to the 2003 American Concrete Institute (ACI) Manual of Concrete Practice, Part 2, 302.1R-96, for further information regarding vapor barrier installation below slab-on-grade floors.

We recommend the floors be designed using a subgrade modulus (k_s) of 250 pounds per cubic inch (pci).

4.6 Drainage

Surface

Final exterior grades should promote free and positive drainage away from the site at all times. Water must not be allowed to pond or collect adjacent to foundations, or within the immediate building areas. If a positive drainage gradient cannot be provided, surface water should be collected adjacent to the structures and disposed to appropriate storm facilities.

Subsurface

Considering the well-drained nature of the site soils, provided the finish floor grade is at or above the adjacent exterior grade and positive drainage away from the structure is maintained, in our opinion, perimeter foundation drains would not be required.

Stormwater Infiltration

Based on our observations, the outwash sands and gravels at the site will support infiltration of project stormwater. An average long-term design infiltration rate of 20 inches per hour can be used for design of the site's infiltration trenches. This design infiltration rate was derived using correlations with grain size distribution as outlined in the 2012 Washington State Department of Ecology (DOE) *Stormwater Management Manual for Western Washington (SMMWW)*. In addition, as provided in Section 3.3.8 in Vol. III of the SMMWW, our calculation of the infiltration rate incorporates trench size, and is based on a the allowable minimum separation distance of 3 feet between the base of the infiltration trench and the water table.

With rough grading completed at the site, approximate groundwater elevations appear to be near the preliminary design elevations of the bottoms of the infiltration trenches. As discussed above, for final design, trench bottoms may need to be constructed at higher elevations in order to provide the minimum required separation distance of three feet from the trench bottom to the groundwater table.

In their storage zones, we recommend backfilling the infiltration trenches with 1 ½- to 3-inch washed aggregate per the 2012 SMMWW. The aggregate should have a minimum porosity of 30 percent. In our opinion, the optional sand filter or geotextile filter fabric discussed in the SMMWW for placement at the base of the trench should not be used, due to the potential for clogging over time.

4.7 Utilities

Utility pipes should be bedded and backfilled in accordance with American Public Works Association (APWA), or City of DuPont specifications. As a minimum, trench backfill should be placed and compacted as structural fill, as described in Section 4.2 of this report. As noted, the relatively clean outwash sand and gravel should be suitable for use as trench backfill in most weather conditions.

4.8 Pavements

Pavement subgrades should be prepared as described in Section 4.2 of this report. Regardless of the degree of relative compaction achieved, the subgrade must be firm and relatively unyielding before paving. The subgrade should be proofrolled with heavy rubber tired construction equipment such as a loaded 10 yard dump truck to verify this condition.

The pavement design section is dependent upon the supporting capability of the subgrade soils and the traffic conditions to which it will be subjected. We expect traffic at the facility will consist of cars and light trucks, along with heavy traffic in the form of tractor-trailer rigs. For design considerations, we have assumed traffic in parking and in car/light truck access pavement areas can be represented by an 18-kip Equivalent Single Axle Loading (ESAL) of 50,000 over a 20-year design life. For heavy traffic pavement areas, we have assumed an ESAL of 300,000 would be representative of the expected loading. These ESALs represent loading approximately equivalent to 3 and 18, loaded (80,000 pound GVW) tractor-trailer rigs traversing the pavement daily in each area, respectively.

With a stable subgrade composed of the existing on-site granular fill prepared as recommended, we recommend the following pavement sections:

Light Traffic and Parking:

- Two inches of hot mix asphalt (HMA) over four inches of crushed rock base (CRB)
- Full depth HMA – 3 ½ inches

Heavy Traffic:

- Three inches of HMA over six inches of CRB
- Full depth HMA – 5 inches

The paving materials used should conform to the Washington State Department of Transportation (WSDOT) specifications for ½-inch class HMA and CRB.

If site pavement will be constructed using Portland cement concrete (PCC) the section should have a minimum thickness of six inches. The concrete should be air entrained with a design air content of 5 percent with a minimum 28-day compressive strength of 4,000 pounds per square inch (psi). Transverse and longitudinal contraction joints should be spaced at 15-foot intervals. Joints should be saw cut in accordance with WSDOT specifications.

Long-term pavement performance will depend on surface drainage. A poorly-drained pavement section will be subject to premature failure as a result of surface water infiltrating the subgrade soils and reducing their supporting capability. For optimum performance, we recommend surface drainage gradients of at least two percent. Some degree of longitudinal and transverse cracking of the pavement surface should be expected over time. Regular maintenance should be planned to seal cracks as they occur.

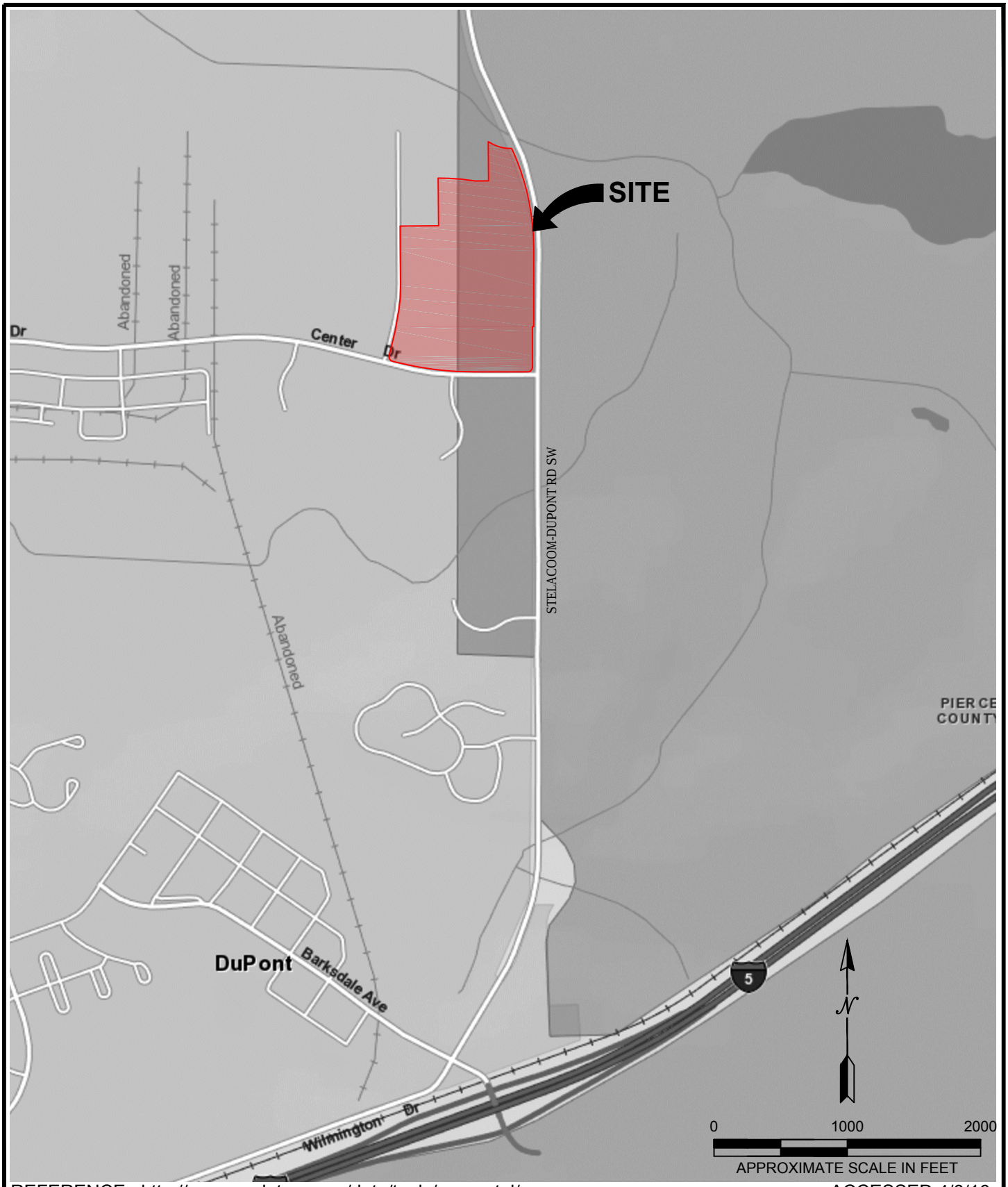
5.0 ADDITIONAL SERVICES

Terra Associates, Inc. should review the final design drawings and specifications in order to verify that earthwork and foundation recommendations have been properly interpreted and implemented in project design. We should also provide geotechnical services during construction to observe compliance with our design concepts, specifications, and recommendations. This will allow for design changes if subsurface conditions differ from those anticipated prior to the start of construction.

6.0 LIMITATIONS

We prepared this report in accordance with generally accepted geotechnical engineering practices. No other warranty, expressed or implied, is made. This report is the copyrighted property of Terra Associates, Inc. and is intended for specific application to the NW Logistics Center II project. This report is for the exclusive use of NWLC – P2, LLC and their authorized representatives.

The analyses and recommendations presented in this report are based on data obtained from the test pits excavated on the site. Variations in soil conditions can occur, the nature and extent of which may not become evident until construction. If variations appear evident, Terra Associates, Inc. should be requested to reevaluate the recommendations in this report prior to proceeding with construction.



REFERENCE: http://www.wsdot.wa.gov/data/tools/geoportal/ ACCESSED 4/8/16

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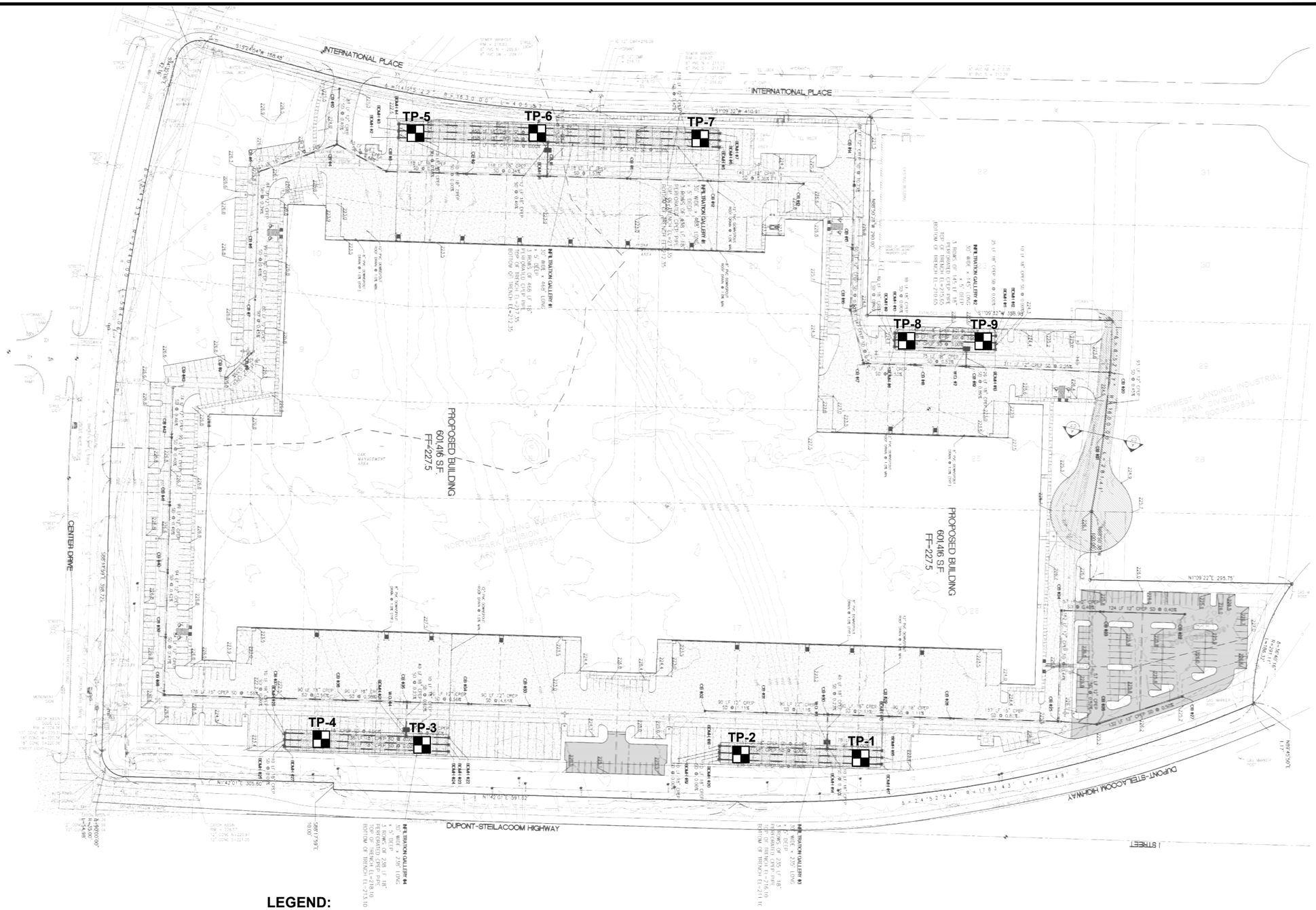
Geology and
Environmental Earth Sciences

VICINITY MAP
NW LOGISTICS CENTER 2
DUPONT, WASHINGTON

Proj. No.T-6897-2	Date APRIL 2016	Figure 1



NOTE:

THIS SITE PLAN IS SCHEMATIC. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE. IT IS INTENDED FOR REFERENCE ONLY AND SHOULD NOT BE USED FOR DESIGN OR CONSTRUCTION PURPOSES.

REFERENCE: SITE PLAN PROVIDED BY BARGHAUSEN CONSULTING ENGINEERS.

LEGEND:

APPROXIMATE TEST PIT LOCATION

0 150 300

APPROXIMATE SCALE IN FEET

Terra Associates, Inc.

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Geology and
Environmental Earth Sciences

EXPLORATION LOCATION PLAN
NW LOGISTICS CENTER 2
DUPONT, WASHINGTON

Proj. No.T-6897-2	Date APRIL 2016	Figure 2

APPENDIX A
FIELD EXPLORATION AND LABORATORY TESTING

NW Logistics Center II
DuPont, Washington

On April 5, 2016, we investigated subsurface conditions at the site by excavating 9 test pits to maximum depths of about 14 to 15.5 feet below existing surface grades using an excavator. The test pit locations are shown on Figure 2. The test pit locations were approximately determined in the field by pacing and sighting relative to existing surface features. The Test Pit Logs are presented on Figures A-2 through A-10.

A geotechnical engineer from our office maintained a log of each test pit as it was excavated, classified the soil conditions encountered, and obtained representative soil samples. All soil samples were visually classified in the field in accordance with the Unified Soil Classification System. A copy of this classification is presented as Figure A-1.

Representative soil samples obtained from the test pits were placed in sealed plastic bags and taken to our laboratory for further examination and testing. The moisture content of each sample was measured and is reported on the Test Pit Logs. Grain size analyses were performed on nine of the soil samples. The results are shown on Figures A-11 through A-13.

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTION
COARSE GRAINED SOILS More than 50% material larger than No. 200 sieve size	**GRAVELS** More than 50% of coarse fraction is larger than No. 4 sieve	Clean Gravels (less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines.
		Gravels with fines	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS More than 50% of coarse fraction is smaller than No. 4 sieve	Clean Sands (less than 5% fines)	SW	Well-graded sands, sands with gravel, little or no fines.
			SP	Poorly-graded sands, sands with gravel, little or no fines.
		Sands with fines	SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS More than 50% material smaller than No. 200 sieve size	**SILTS AND CLAYS** Liquid Limit is less than 50%		ML	Inorganic silts, rock flour, clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity. (Lean clay)
			OL	Organic silts and organic clays of low plasticity.
	SILTS AND CLAYS Liquid Limit is greater than 50%		MH	Inorganic silts, elastic.
			CH	Inorganic clays of high plasticity. (Fat clay)
			OH	Organic clays of high plasticity.
HIGHLY ORGANIC SOILS			PT	Peat.

DEFINITION OF TERMS AND SYMBOLS

COHESIONLESS

Density	Standard Penetration Resistance in Blows/Foot
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	>50

COHESIVE

Consistancy	Standard Penetration Resistance in Blows/Foot
Very Soft	0-2
Soft	2-4
Medium Stiff	4-8
Stiff	8-16
Very Stiff	16-32
Hard	>32

I	2" OUTSIDE DIAMETER SPILT SPOON SAMPLER
‖	2.4" INSIDE DIAMETER RING SAMPLER OR SHELBY TUBE SAMPLER
▼	WATER LEVEL (Date)
Tr	TORVANE READINGS, tsf
Pp	PENETROMETER READING, tsf
DD	DRY DENSITY, pounds per cubic foot
LL	LIQUID LIMIT, percent
PI	PLASTIC INDEX
N	STANDARD PENETRATION, blows per foot

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UNIFIED SOIL CLASSIFICATION SYSTEM
NW LOGISTICS CENTER 2
DUPONT, WASHINGTON

Proj. No.T-6897-2	Date APRIL 2016	Figure A-1

LOG OF TEST PIT NO. TP-1

FIGURE A-2

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 13.5 Feet **DEPTH TO CAVING:** 13 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1		FILL: black organic silty sand with some gravel, moist. (SM)	Loose			
2, 3, 4, 5, 6, 7, 8, 9		Gray-brown GRAVEL with some sand, medium to coarse sand, moist. (GP)	Medium Dense	3.1		
10, 11, 12, 13, 14		Gray-brown SAND, few gravels, medium sand, moist to wet. (SP) Becomes wet.		6.9 15.7		
15		Test pit terminated at 14 feet due to caving. Very heavy seepage at 13.5 feet. Caving at 13 feet.				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-2

FIGURE A-3

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 14.5 Feet **DEPTH TO CAVING:** 14.5 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1		FILL: brown-gray sand, few gravels, medium sand, moist. (SP)				
2						
3						
4			Medium Dense	4.8		
5		Gray-brown GRAVEL with some sand, few cobbles, medium to coarse sand, moist. (GW)				
6						
7						
8						
9				4.3		
10		Becomes dense and orange stained (oxidation).				
11						
12			Dense			
13						
14		Becomes wet.		7.0		
15						
16		Test pit terminated at 15 feet. Very heavy seepage at 14.5 feet. Caving at 14.5 feet.				
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-3

FIGURE A-4

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 13.5 Feet **DEPTH TO CAVING:** 13.5 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1		Gray-brown GRAVEL with some sand, few cobbles, medium to coarse sand, moist. (GP)				
2						
3						
4						
5						
6			Medium Dense			
7						
8						
9						
10						
11						
12		Become orange (oxidation) stained,		3.4		
13		Becomes wet.				
14				5.2		
15		Test pit terminated at 15 feet. Heavy seepage at 13.5 feet. Caving at 13.5 feet.				
16						
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

Terra Associates, Inc.
Consultants in Geotechnical Engineering Geology and Environmental Earth Sciences

LOG OF TEST PIT NO. TP-4

FIGURE A-5

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 13 Feet **DEPTH TO CAVING:** 13 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1						
2		Brown-gray SAND, few gravels, medium sand, moist. (SP)				
3				5.3		
4						
5						
6			Medium Dense			
7						
8		Gray-brown GRAVEL with some sand, few cobbles, medium sand, moist. (GW)				
9						
10						
11		Becomes orange stained.				
12		Becomes wet.				
13						
14			Dense	11.4		
15						
16		Test pit terminated at 15 feet. Heavy seepage at 13 feet. Caving at 13 feet.				
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

Terra Associates, Inc.
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Geology and
Environmental Earth Sciences

LOG OF TEST PIT NO. TP-5

FIGURE A-6

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 14 Feet **DEPTH TO CAVING:** 13 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
		(7 inches TOPSOIL)				
1						
2						
3		Gray-brown GRAVEL with sand and cobbles, medium to coarse sand, most. (GP)				
4				4.2		
5		Increasing gravel and coarse sand.				
6			Medium Dense			
7						
8						
9						
10						
11		Orange staining.		2.8		
12						
13		Becomes wet.				
▼ 14				2.8		
15						
16		Test pit terminated at 15 feet. Heavy seepage at 14 feet. Caving at 13 feet.				
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

Terra Associates, Inc.
Consultants in Geotechnical Engineering
Geology and
Environmental Earth Sciences

LOG OF TEST PIT NO. TP-6

FIGURE A-7

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 15 Feet **DEPTH TO CAVING:** 2 to 8 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1, 2, 3, 4, 5, 6, 7		FILL: dark gray to brown silty gravel with some sand, few organics (wood), moist. (GM)	Medium Dense			
8, 9, 10, 11, 12, 13, 14		Gray-brown GRAVEL with some sand, few cobbles, rare boulder, moist. (GP)		6.4		
		Becomes orange (oxidation) staining.		4.6		
15		Test pit terminated at 15 feet. Heavy seepage at 15 feet. Caving from 2 to 8 feet.				
16, 17, 18, 19, 20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

Terra Associates, Inc.
Consultants in Geotechnical Engineering
Geology and
Environmental Earth Sciences

LOG OF TEST PIT NO. TP-7

FIGURE A-8

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 14.5 Feet **DEPTH TO CAVING:** 2 to 10 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1		FILL: brown-gray sand with some gravel, medium sand, moist. (SP)	Medium Dense			
2		TOPSOIL: dark brown organic silt, moist. (OL)	Soft			
3						
4		Gray-brown GRAVEL with some sand, few cobbles, medium to coarse sand, moist. (GW)				
5						
6				2.4		
7			Medium Dense			
8						
9						
10						
11						
12						
13						
14		Becomes wet and orange stained.		4.7		
15						
16		Test pit terminated at 15 feet. Heavy seepage at 14.5 feet. Caving from 2 to 10 feet.				
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

Terra Associates, Inc.
Consultants in Geotechnical Engineering
Geology and
Environmental Earth Sciences

LOG OF TEST PIT NO. TP-8

FIGURE A-9

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 14.5 Feet **DEPTH TO CAVING:** N/A

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1		Brown-gray GRAVEL, some sand, fine to medium gravel, medium sand, moist. (GP)				
2						
3				3.7		
4						
5		Brown-gray GRAVEL, some sand, medium to coarse gravel, medium sand, moist. (GP)				
6						
7			Medium Dense	4.5		
8						
9						
10		Brown-gray SAND with few gravels, medium sand, moist. (SP)				
11						
12				5.4		
13						
14		Becomes wet. Orange staining.				
15						
16		Test pit terminated at 15 feet. Heavy seepage at 14.5 feet. No caving.				
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

Terra Associates, Inc.
Consultants in Geotechnical Engineering
Geology and
Environmental Earth Sciences

LOG OF TEST PIT NO. TP-9

FIGURE A-10

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

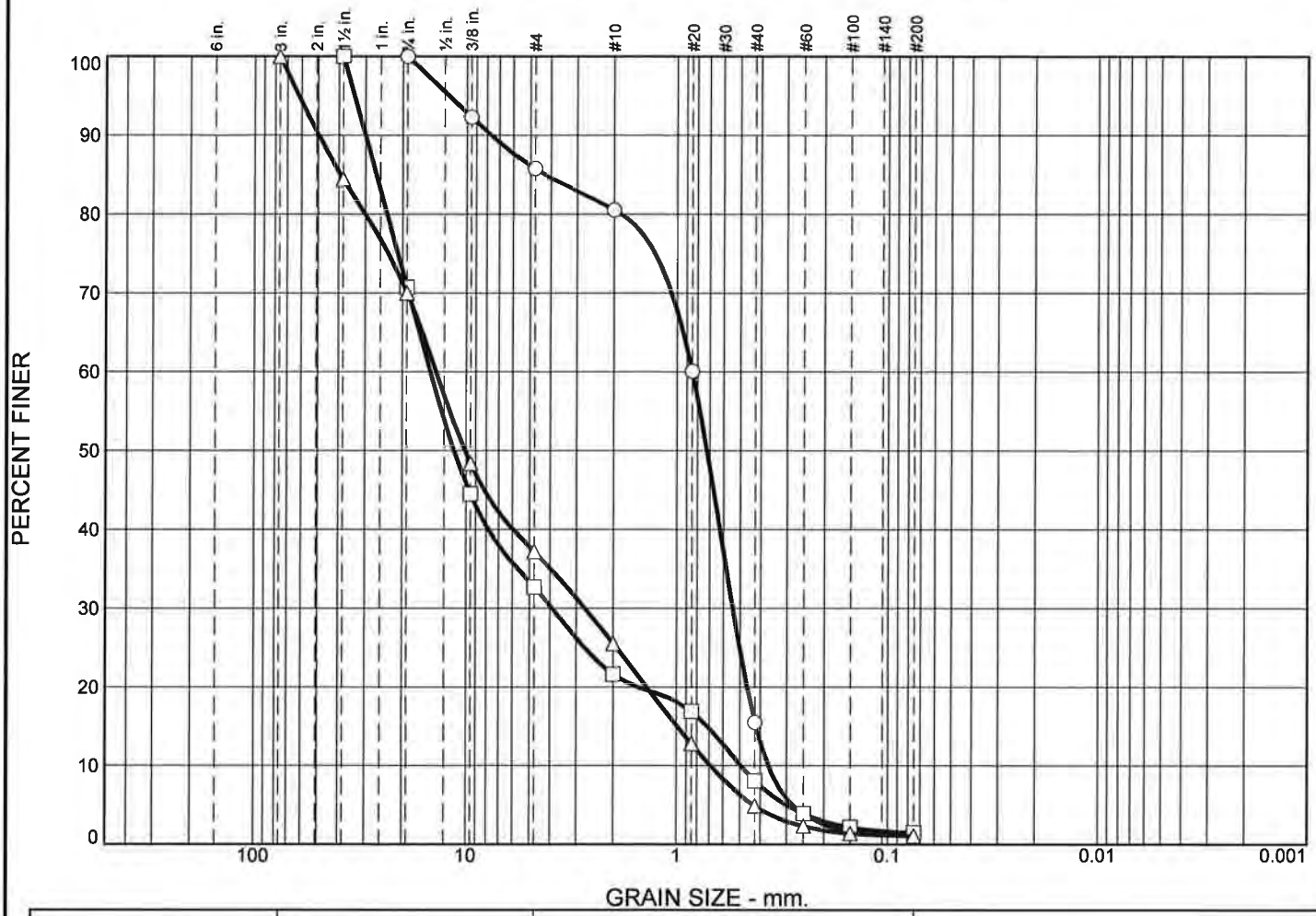
DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1						
2						
3						
4						
5		Brown-gray GRAVEL with sand, few cobbles, medium sand, moist. (GP)		3.7		
6						
7			Medium Dense			
8						
9						
10						
11						
12						
13						
14		Becomes moist to wet.				
15				3.8		
16		Test pit terminated at 15.5 feet. No groundwater. No caving.				
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

Terra Associates, Inc.
Consultants in Geotechnical Engineering
Geology and
Environmental Earth Sciences

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	14.3	5.2	65.0	14.3	1.2	
□	0.0	29.3	38.0	11.1	13.5	6.6	1.5	
△	0.0	30.0	32.8	11.7	20.6	3.8	1.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.2993	0.8485	0.7224	0.5434	0.4204	0.3671	0.95	2.31
□			26.6757	14.7928	11.3804	3.9165	0.7146	0.4942	2.10	29.93
△			39.2762	13.8738	10.1126	2.7353	0.9918	0.6899	0.78	20.11

Material Description	USCS	AASHTO
○ SAND	SP	
□ GRAVEL with some sand	GW	
△ GRAVEL with some sand	GP	

Project No. T-6897-2 **Client:** NWLC - P2, LLC

Project: NW Logistics Center II

○ **Location:** TP-1 **Depth:** -13 feet

□ **Location:** TP-2 **Depth:** -14 feet

△ **Location:** TP-3 **Depth:** -11 feet

Remarks:

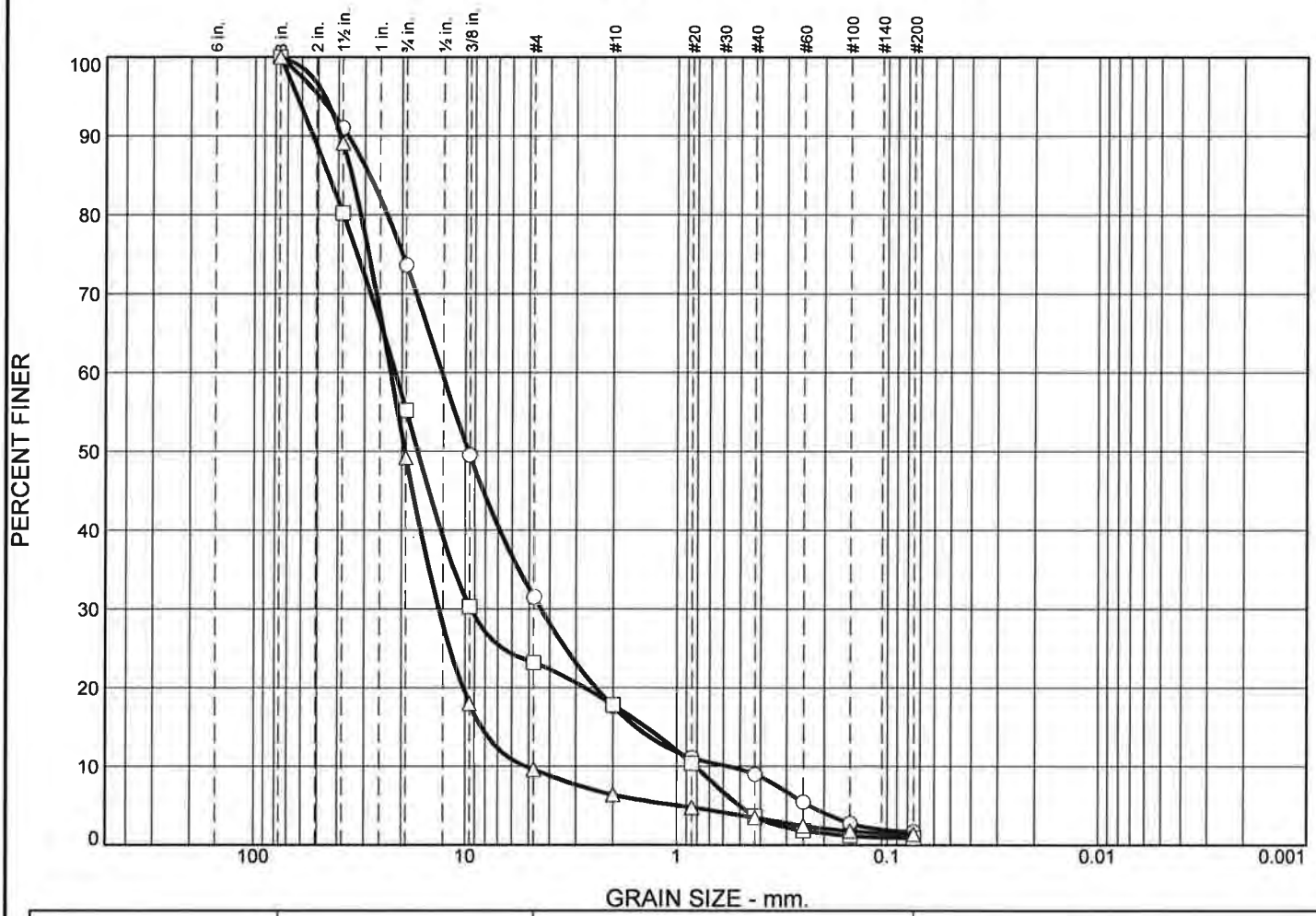
Terra Associates, Inc.

Kirkland, WA

Figure A-11

Tested By: FQ

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	26.4	42.1	13.9	8.6	7.3	1.7	
□	0.0	44.8	32.0	5.4	14.1	2.8	0.9	
△	0.0	50.8	39.6	3.2	2.9	2.1	1.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			28.5700	12.9084	9.6733	4.4120	1.5590	0.5653	2.67	22.83
□			44.5489	21.5097	16.7629	9.4018	1.3983	0.8181	5.02	26.29
△			34.6503	22.6252	19.3021	13.2793	8.3469	5.1681	1.51	4.38

Material Description	USCS	AASHTO
○ GRAVEL	GW	
□ GRAVEL	GP	
△ GRAVEL	GW	

Project No. T-6897-2 **Client:** NWLC - P2, LLC

Project: NW Logistics Center II

○ **Location:** TP-4 **Depth:** -14 feet

□ **Location:** TP-5 **Depth:** -11 feet

△ **Location:** TP-7 **Depth:** -14 feet

Remarks:

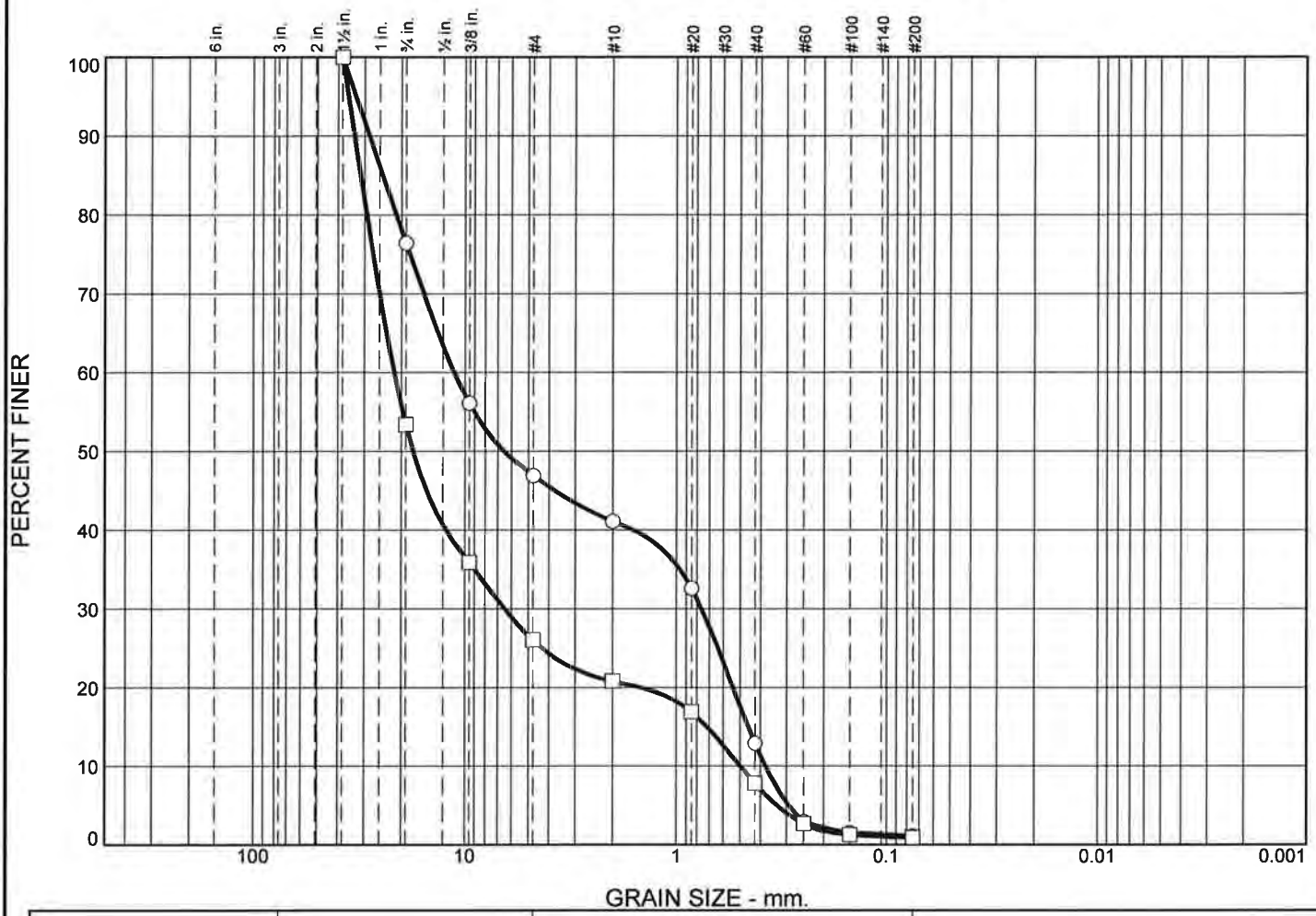
Terra Associates, Inc.

Kirkland, WA

Figure A-12

Tested By: FQ

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	23.6	29.5	5.8	28.2	11.8	1.1	
□	0.0	46.6	27.4	5.2	13.0	6.9	0.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			24.5679	11.2137	6.5211	0.7621	0.4582	0.3791	0.14	29.58
□			31.3540	21.6510	17.5872	6.4688	0.7176	0.4994	3.87	43.35

Material Description	USCS	AASHTO
○ GRAVEL with some sand	GP	
□ GRAVEL	GP	

Project No. T-6897-2 **Client:** NWLC - P2, LLC

Project: NW Logistics Center II

○ **Location:** TP-8 **Depth:** -7 feet

□ **Location:** TP-9 **Depth:** -15 feet

Remarks:

Terra Associates, Inc.

Kirkland, WA

Figure A-13

Tested By: FQ

Tab 8.0

8.0 OTHER PERMITS

Other permits for this project include:

- Site Development Permit
- Building Permit
- Water Main Extension Permit
- Sanitary Sewer Extension Permit
- Forest Practices Permit (FPA)
- Hydrology Project Approval (HPA)
- Right-of-Way Use Permit
- Construction Stormwater General Permit (NPDES)

Tab 9.0

9.0 OPERATION AND MAINTENANCE MANUAL

No. 2 – Infiltration

Maintenance Component	Defect	Conditions When Maintenance Is Needed	Results Expected When Maintenance Is Performed
General	Trash & Debris	See "Detention Ponds" (No. 1).	See "Detention Ponds" (No. 1).
	Poisonous/Noxious Vegetation	See "Detention Ponds" (No. 1).	See "Detention Ponds" (No. 1).
	Contaminants and Pollution	See "Detention Ponds" (No. 1).	See "Detention Ponds" (No. 1).
	Rodent Holes	See "Detention Ponds" (No. 1).	See "Detention Ponds" (No. 1)
Storage Area	Sediment	Water ponding in infiltration pond after rainfall ceases and appropriate time allowed for infiltration. Treatment basins should infiltrate Water Quality Design Storm Volume within 48 hours, and empty within 24 hours after cessation of most rain events. (A percolation test pit or test of facility indicates facility is only working at 90% of its designed capabilities. Test every 2 to 5 years. If two inches or more sediment is present, remove).	Sediment is removed and/or facility is cleaned so that infiltration system works according to design.
Filter Bags (if applicable)	Filled with Sediment and Debris	Sediment and debris fill bag more than 1/2 full.	Filter bag is replaced or system is redesigned.
Rock Filters	Sediment and Debris	By visual inspection, little or no water flows through filter during heavy rain storms.	Gravel in rock filter is replaced.
Side Slopes of Pond	Erosion	See "Detention Ponds" (No. 1).	See "Detention Ponds" (No. 1).
Emergency Overflow Spillway and Berms over 4 feet in height.	Tree Growth	See "Detention Ponds" (No. 1).	See "Detention Ponds" (No. 1).
	Piping	See "Detention Ponds" (No. 1).	See "Detention Ponds" (No. 1).
Emergency Overflow Spillway	Rock Missing	See "Detention Ponds" (No. 1).	See "Detention Ponds" (No. 1).
	Erosion	See "Detention Ponds" (No. 1).	See "Detention Ponds" (No. 1).
Pre-settling Ponds and Vaults	Facility or sump filled with Sediment and/or debris	6" or designed sediment trap depth of sediment.	Sediment is removed.

No. 5 – Catch Basins

Maintenance Component	Defect	Conditions When Maintenance is Needed	Results Expected When Maintenance is performed
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 Working	Mechanism cannot be opened by one maintenance person with proper tools. Bolts into frame have less than 1/2 inch of thread.	Mechanism opens with 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.

Tab 10.0

10.0 BOND QUANTITIES WORKSHEET

Performance bonding or other appropriate financial instruments shall be provided as determined necessary by the City of Dupont.

CIVIL ENGINEERING, LAND PLANNING, SURVEYING

LETTER OF TRANSMITTAL

DATE: February 26, 2018

TO: Rick Thompson
LeMay, Inc.
4111 - 192nd Street East
Tacoma, WA 98444

SENT VIA: *Courier Delivery*

PHONE NO.:

OUR JOB: 15753

RE: Northwest Logistics Center - Site 2

Quantity	Date	Description
2 each		Architectural Site Plan
2 each		Trash Enclosure Detail

Enclosed is the proposed site plan for the Northwest Logistics Center – Site 2 project located in DuPont. As part of the land use review process through the city of DuPont, we are requesting your review of the proposed locations of the trash enclosures and the return of one of the site plans with your approval. A details provided by the architect of the proposed trash enclosure is also enclosed for your reference. Please feel free to contact me or Whitney Dunlap of our office with any questions or review comments. Thanks.

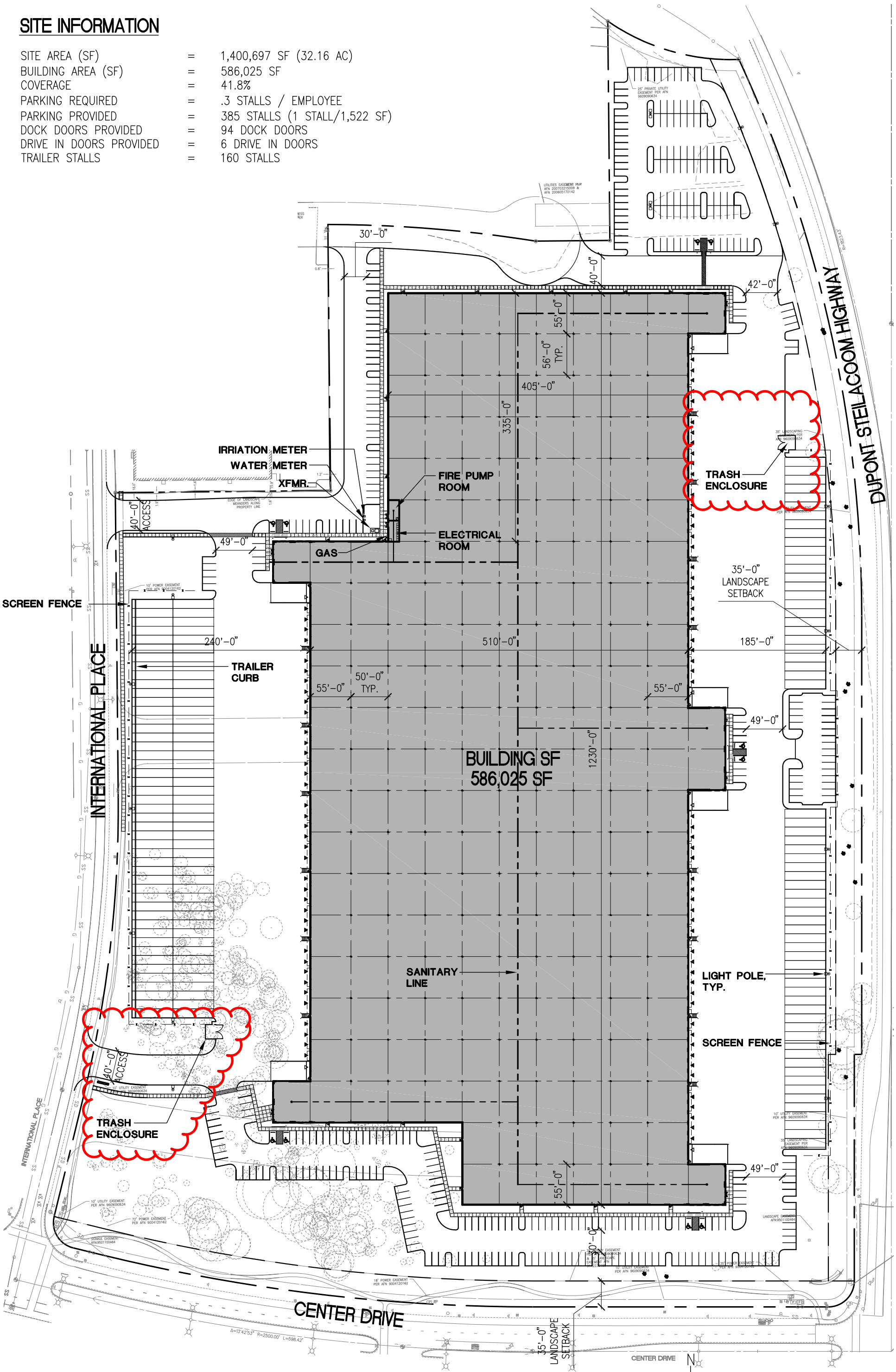
cc: Angelo Ianello, Bayhead Management, LLC
Kathy Craft, Craft Architects
Whitney Dunlap, Barghausen Consulting Engineers, Inc.
Daniel K. Balmelli, Barghausen Consulting Engineers

Signed: Betsy Dyer
Betsy Dyer
Project Administrator

Attachment 1j - Request to LeMay for Refuse Location Approval

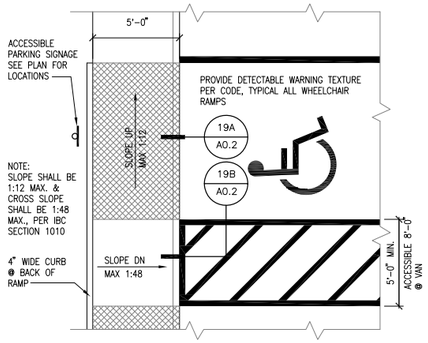
SITE INFORMATION

SITE AREA (SF)	=	1,400,697 SF (32.16 AC)
BUILDING AREA (SF)	=	586,025 SF
COVERAGE	=	41.8%
PARKING REQUIRED	=	.3 STALLS / EMPLOYEE
PARKING PROVIDED	=	385 STALLS (1 STALL/1,522 SF)
DOCK DOORS PROVIDED	=	94 DOCK DOORS
DRIVE IN DOORS PROVIDED	=	6 DRIVE IN DOORS
TRAILER STALLS	=	160 STALLS

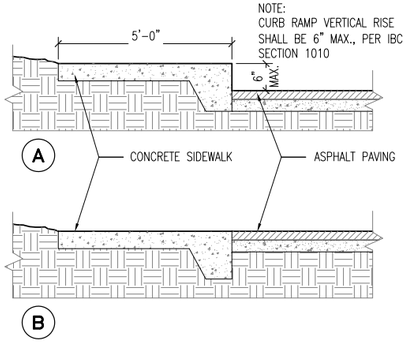


CRAFT architects

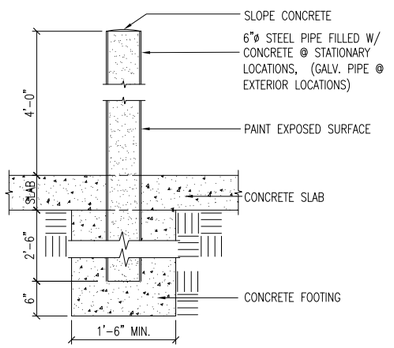
NORTHWEST LOGISTICS CENTER (SITE 2) - OPTION 1
PRELIMINARY SITE PLAN
DUPONT, WASHINGTON
1"=120' **02/02/18**



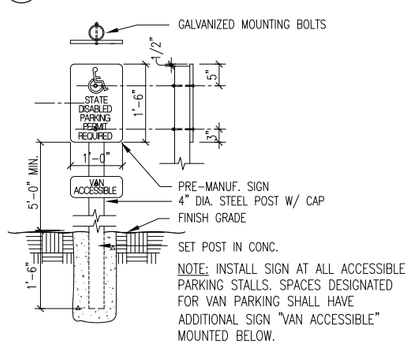
20 ACCESSIBLE RAMP
1/4"=1'-0"



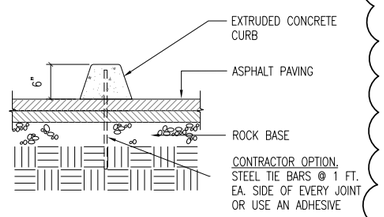
19 ACCESSIBLE RAMP
1/2"=1'-0"



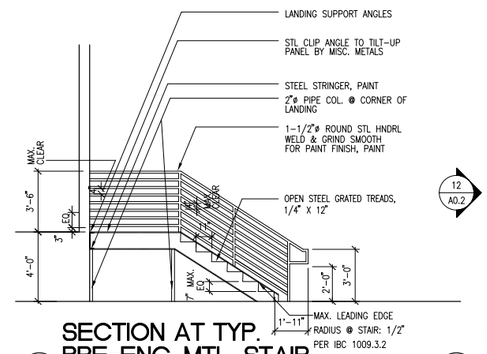
18 PIPE BOLLARD
1"=1'-0"



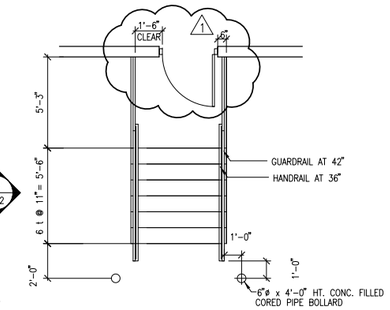
17 ACCESSIBLE PARKING SIGN
3/4"=1'-0"



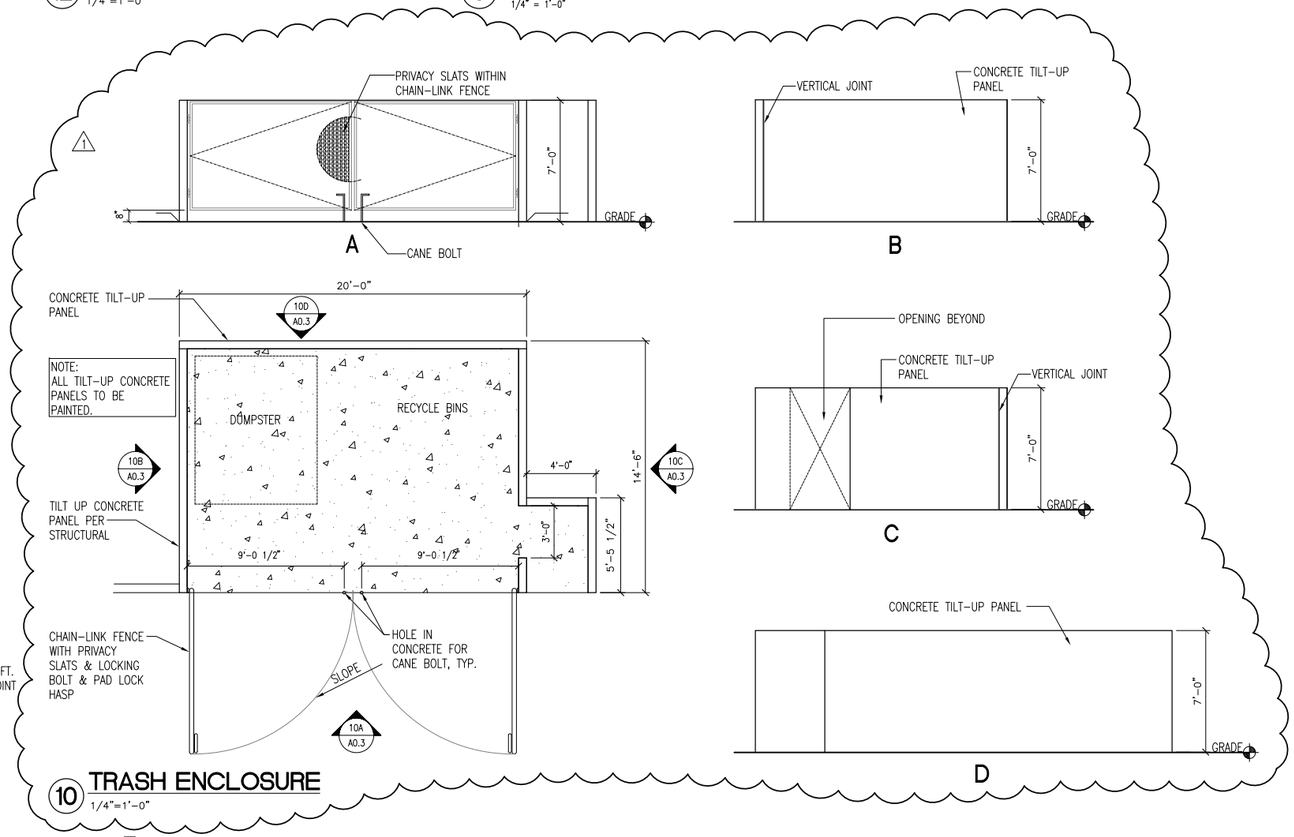
14 EXTRUDED CURB
1"=1'-0"



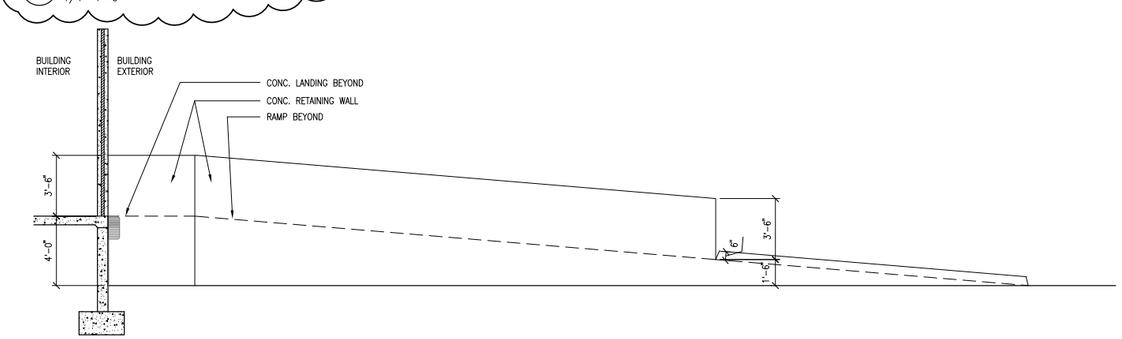
12 SECTION AT TYP. PRE-ENG. MTL. STAIR
1/4"=1'-0"



8 PLAN AT TYP. PRE-ENG. MTL. STAIR
1/4" = 1'-0"



10 TRASH ENCLOSURE
1/4"=1'-0"



9 DRIVE-UP RAMP
1/4"=1'-0"

CRAFT architects
2505 Third Avenue
Suite 324
Seattle, WA 98121

206.720.7001 phone
206.720.2949 fax

www.craftarchitects.com

NORTHWEST LOGISTICS CENTER
BUILDING 1
3025 INTERNATIONAL PLACE
DUPONT, WASHINGTON

CONSULTANT

Submittals/Revisions:
PRICING SET 1/22/13
PERMIT SET 4/24/13
BID SET 5/31/13
1 CONSTRUCTION SET 3/17/14

Sheet Title: EXTERIOR DETAILS

Date: 03/17/2014
Design: TES
Drawn: TES
Project No: 12-549
Approved: KMC

BUILDING 1
Sheet No: A0.3

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03/17/14 - 10:14am 12-549_BUILDING 1_A0.3 (SITE DETAILS).dwg

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

Angelo Ianello, President
Bayhead Management LLC
P.O. Box 110997
Tacoma, WA 98411

7/11/2016

MEMORANDUM–ERRATA

Re: Changes to the Legal Description and to the Parcel Numbers for the NW Logistic Center No. 2, located at 3230, International Place DuPont, WA

Dear Mr. Ianello,

On June 24, 2016, Department of Ecology (Ecology) issued a No Further Action (NFA) letter at a Logistic Center No.2. To define the Property in the NFA, Ecology used the legal description and parcel numbers for the property from the Cleanup Action Closure Report, dated April 12, 2016, provided by Farallon Consulting, LLC (Farallon). At the time of the issuance of the NFA letter, Ecology was not aware of recent boundary adjustments to the Property affecting its legal description and parcel numbers. Donald Lance, Senior Geologist (Farallon), notified Ecology of the error on June 28, 2016. The following errors were found in the NFA and are corrected with this memo:

1. On Page 2 of the NFA letter, in the Description of the Property section, change: "The Property includes the following tax parcels in Pierce County that were affected by the Asarco Site and addressed by your cleanup:

3000390010	3000390100	3000390180
3000390020	3000390110	3000390190
3000390030	3000390120	3000390200
3000390040	3000390130	3000390210
3000390050	3000390140	3000390240
3000390060	3000390150	3000390250
3000390070	3000390160	3000390260
3000390080	3000390170	3000390272
3000390090"		

to: "The Property includes the following tax parcel in Pierce County that was affected by the Asarco Site and addressed by your cleanup: 3000390011. The Property consisted of 25

Attachment 1k - Department of Ecology
No Further Action Memorandum

parcels. In 2015, during a lot line elimination process, the Property is described by one parcel."

2. On Page 2 of the NFA letter, second paragraph, the second sentence states that "The Property consists of 25 parcels…" Change to: "The Property consists of one parcel…"

3. On Page 21 of the NFA letter, change the following Legal Description:

   LOTS 1 THROUGH 21, INCLUSIVE, AND LOTS 24 THROUGH 26, INCLUSIVE, NORTHWEST LANDING INDUSTRIAL PARK DIVISION 1, ACCORDING TO THE PLAT THEREOF RECORDED SEPTEMBER 9, 1996 UNDER RECORDING NUMBER 9609090634, RECORDS OF PIERCE COUNTY AUDITOR;

   SITUATE IN THE CITY OF DUPONT, COUNTY OF PEIRCE, STATE OF WASHINGTON.

   EXHIBIT A
   LEGAL DESCRIPTION
   LOT 1, BOUNDARY LINE ADJUSTMENT 200703215009, ACCORDING TO THE SURVEY THEREOF RECORDED MARCH 21, 2007, RECORDS OF PIERCE COUNTY AUDITOR. TOGETHER WITH A NON-EXCLUSIVE EASEMENT FOR INGRESS, EGRESS AND UTILITIES AS CREATED BY INSTRUMENT RECORDED UNDER RECORDING NO. 200605170142 AND AS DELINEATED ON SAID BOUNDARY LINE ADJUSTMENT 200703215009.
   SITUATE IN THE CITY OF DUPONT, COUNTY OF PIERCE, STATE OF WASHINGTON

   to:

"Lot 1, City of DuPont Boundary Line Adjustment No. BLA-LEE 0601, according to the survey thereof recorded March 21, 2007, under recording No. 200703215009, records of Pierce County, Washington and Lots 1 through 21, Inclusive, and Lots 24 through 26, inclusive, of Northwest Landing Industrial Park Division 1, as per Plat recorded September 9, 1996 under recording No. 9609090634, records of Pierce County, Washington, described as follows:

BEGINNING at the Northwest corner of said Lot 21; THENCE South 88°50'28" East, 290.00 feet along the North lines of said Lots 21 and 20; THENCE North 01°09'32" East, 358.98 feet along the West line of said Lot 24 to a point on a non-tangent curve, the radius of which bears South 01°47'44" West, being the Northwest corner of said Lot 24; THENCE Easterly along the North line of said Lots 24 and 25, along the arc of a curve concave to the South, having a radius of 1,800.00 feet, through a central angle of 08°57'27", and an arc length of 281.41 feet to the Northeast corner of said Lot 25; THENCE South 88°50'38" East, 100.00 feet along the North line of said Lot 26 to the Southwest corner of said Lot 1 of said Boundary Line Adjustment; THENCE North 01°09'22" East, 295.75 feet along the West line of said Lot 1 to the Northwest corner of said Lot 1, being a point on a non-tangent curve, the radius of which bears North 36°26'06" East; THENCE Easterly along the North line of said Lot 1, along arc of a curve concave to the North, having a radius of 291.11 feet, through a central angle of 36°40'16", and an arc length of 186.32 feet; THENCE North 89°45'50" East, 1.17 feet along said North line to the Northeast corner of said Lot 1, being a point on a non-tangent curve, the radius of which bears South 66°49'07" West; THENCE Southerly along the East lines of said Lots 1, 26 and 17, along the arc of a curve concave to the West, having a radius of 1,783.43 feet, through a central angle of 24°52'54", and an arc length of 774.48 feet; THENCE South 01°42'01" West, 591.62 feet along the East lines of Lots 17, 16 and 7;

THENCE North 88°17'59" West, 10.00 feet along the East line of said Lot 7; THENCE South 01°42'01" West, 305.60 feet along said East line and the East lines of Lots 6 and 5 to a point of tangency; THENCE Southwesterly along said East line of Lot 5, along the arc of a curve to the right, having a radius of 35.00 feet, through a central angle of 90°00'00", and an arc length of 54.98 feet; THENCE North 88°17'59" West, 398.72 feet along the South lines of said Lots 5 and 4 to a point of tangency; THENCE Westerly along the South lines of Lots 4, 3, 2 and 1, along the arc of a curve to the right, having a radius of 2,440.00 feet, through a central angle of 13°42'53", and an arc length of 584.06 feet; THENCE North 74°35'06" West, 42.16 feet along the South line of said Lot 1 to a point of tangency; THENCE Northwesterly along the arc of a curve to the right, having a radius of 35.00 feet, through a central angle of 90°00'00", and an arc length of 54.98 feet; THENCE North 15°24'54" East, 168.48 feet along the West lines said Lots 1 and 11 to a point of tangency; THENCE Northerly along the West lines of said Lots 11 and 12, along the arc of a curve to the left, having a radius of 1,630.00 feet, through a central angle of 14°15'22", and an arc length of 405.57 feet; THENCE North 01°09'32" East, 410.91 feet along the West lines of said Lots 12 and 21 to the POINT OF BEGINNING. TOGETHER WITH a non-exclusive easement for Ingress, Egress and Utilities as created by instrument recorded May 17, 2006 under recording No. 200605170142 and as delineated on said Boundary Line Adjustment 200703215009, in Pierce County, Washington."

Best regards,

Eva Barber
Technical Assistance Coordinator
Toxics Cleanup Program, Southwest Regional Office
Washington State Department of Ecology
360-407-7094

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47775 · Olympia, Washington 98504-7775 · (360) 407-6300
711 for Washington Relay Service · Persons with a speech disability can call 877-833-6341

June 24, 2016

Mr. Angelo Ianellom President
Bayhead Management LLC
P.O. Box 110997
Tacoma, WA 98411

Re: No Further Action at a Property associated with the Asarco Tacoma Smelter Site:

- Name: NW Logistics Center No. 2
- Property Address: Northwest corner of the intersection of DuPont-Steilacoom Highway and Center Drive, DuPont, WA
- Facility/Site No.: 17767
- Cleanup Site ID: 11994
- VCP Project No.: SW1255

Dear Mr. Ianello:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your independent cleanup of a Property associated with the Asarco Tacoma Smelter Site (**Asarco Site**). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

Issues Presented and Opinion

1. Is further remedial action necessary at the Property to clean up contamination associated with the Asarco Site?

   NO. Ecology has determined that no further remedial action is necessary at the Property to clean up contamination associated with the Asarco Site.

2. Is further remedial action still necessary elsewhere at the Asarco Site?

   YES. Ecology has determined that further remedial action is still necessary elsewhere at the Asarco Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70.105D RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Property and the Asarco Site
This opinion applies only to the Property and the Site described below. This opinion does not apply to any other sites that may affect the Property. Any such sites, if known, are identified separately below.

1. **Description of the Property.**

The Property includes the following tax parcels in Pierce County that were affected by the Asarco Site and addressed by your cleanup:

3000390010	3000390100	3000390180
3000390020	3000390110	3000390190
3000390030	3000390120	3000390200
3000390040	3000390130	3000390210
3000390050	3000390140	3000390240
3000390060	3000390150	3000390250
3000390070	3000390160	3000390260
3000390080	3000390170	3000390272
3000390090		

Enclosure A includes a legal description of the Property and details of the Property as currently known to Ecology.

2. **Description of the Asarco Site.**

The Asarco Site is defined by the nature and extent of contamination associated with the following releases:

- Arsenic into the Soil.
- Lead into the Soil.

Those releases have affected more than one parcel of real property, including the parcels identified above.

Enclosure B includes a detailed description and diagram of the Asarco Site, as currently known to Ecology.

3. **Identification of other sites that may affect the Property.**

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the Property is affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. Farallon Consulting, L.L.C. (Farallon), Cleanup Action Closure Report – NW Logistic Center No. 2, DuPont-Steilacoom Highway and Center Drive, DuPont, Washington, dated April 12, 2016.

2. Opinion on the Proposed Cleanup of a Property associated with the Asarco Tacoma Smelter Site, NW Logistic Center No. 2, dated November 24, 2016.

3. Farallon Consulting, LLC (Farallon), Cleanup Action Plan (CAP) – NW Logistics Center No. 2, dated August 28, 2014.

4. Revised Tree Plan, Northwest Logistics Center Oak Preserve Sites 1 and 2, dated February 14, 2014.

5. Donald Lance (Farallon), e-mail correspondence with Elizabeth Weldin (Ecology) about questions on the CAP, dated November 8, 2012.

These documents are kept in the Central Files of the Southwest Regional Office of Ecology (SWRO) for review by appointment only. You can make an appointment by calling the SWRO resource contact at (360) 407-6365.

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

1. Cleanup of the Property located within the Asarco Site.

Ecology has concluded that **no further remedial action** is necessary at the Property to clean up contamination associated with the Asarco Site. That conclusion is based on the following analysis:

a. Characterization of the Asarco Site.

The Asarco Site is described in **Enclosure B**.

For almost 100 years, the Asarco Company operated a copper smelter in Tacoma, Washington. Air pollution from the smelter settled on the surface soil over a vast region -- more than 1,000 square miles of the Puget Sound basin. Arsenic, lead, and other heavy metals are still in the soil as a result of this pollution. Ecology has found

elevated levels of arsenic and lead as far south as Lacey and as far north as Seattle (West Seattle), and as far west as the Kitsap Peninsula and as far east as Kent and Bellevue.

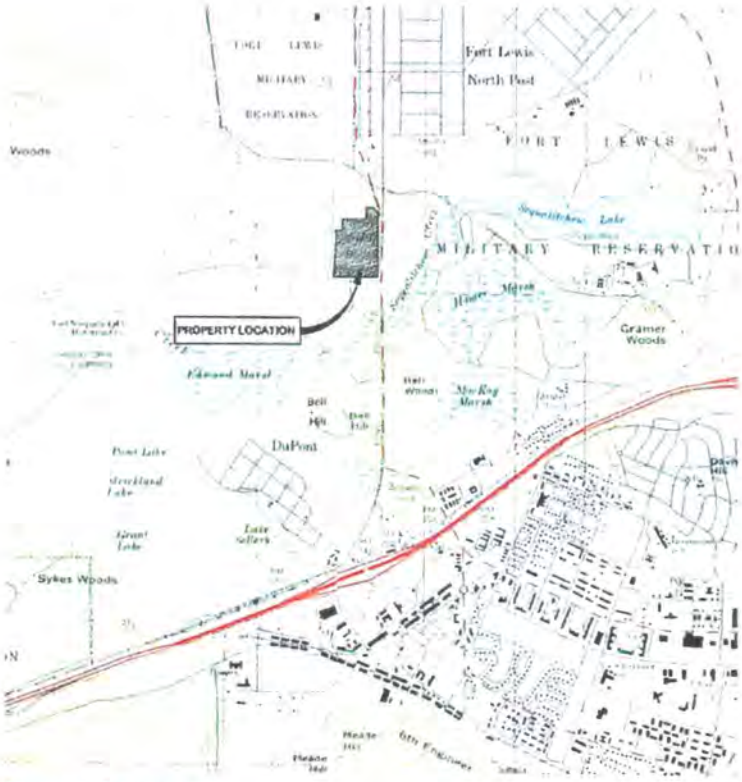


Figure 1. Vicinity map

NW Logistics Center No. 2 is located in a semi-rural area of DuPont, Pierce County, Washington. The Property consists of 25 parcels that together total approximately 32 acres covered by mature forest. Adjacent properties include the NW Logistic Center No.1 facility to the west, the Basalite Concrete Products facility to the northwest, an industrial building and cleared undeveloped land to the north, vacant forested land to the east, and warehouse buildings with parking areas to the south. Please see Enclosure A and Figure 1 for more information about the Property.

Farallon completed a Phase I Environmental Site Assessment (ESA) for the Property in June 2012. The Phase I ESA identified the potential presence of arsenic and lead in soil at the Property resulting from deposition of air emissions from the Asarco Tacoma Smelter. In addition, arsenic-containing herbicide may have been used to control vegetation along the railroad lines of the former explosive works facility located west adjacent to the Property.

Farallon collected characterization soil samples at the Property in June 2012 for analysis of lead and arsenic. They collected 88 soil samples from 70 sample locations (Figure 2) from 0 to 6 inches below ground surface (bgs) and from 6 to 12 inches bgs and analyzed them for arsenic and lead content. Arsenic concentrations exceeded the MTCA Method A cleanup level in 33 soil samples collected from the 0 to 6 inches bgs depth interval and in six soil samples from the 6 to 12 inches bgs depth interval. Arsenic levels ranged from 43 milligrams per kilogram (mg/kg) to 85 mg/kg. The average arsenic concentration in the 0 to 6 inches bgs depth interval was 22.37 mg/kg and above the cleanup level. The concentration of arsenic in the lower, 6 to 12 inches bgs depth interval was 16.67 mg/kg. The concentrations of lead did not exceed the MTCA Method A cleanup level; lead levels ranged from not detected to 190 mg/kg (See Table 1).

Table 1. Soil Characterization Sampling

Location	Sample Identification	Sample Date	Sample Depth (feet bgs)	Analytical Results Method 6010B (mg/kg)		Average Arsenic (mg/kg)	
				Arsenic	Lead	Depth 0-6"	Depth 6-12"
A7	A7-1	06/25/2012	0 - 0.5	< 10	7.2	5	–
	A7-2	06/25/2012	0.5 - 1	< 10	9.5	–	5
B8	B8-1	06/22/2012	0 - 0.5	**50**	120	**50**	–
	B8-2	06/22/2012	0.5 - 1	**40**	130	–	**40**
C4	C4	06/22/2012	0 - 0.5	**30**	57	**30**	–
C5	C5-1	06/22/2012	0 - 0.5	< 10	< 5.7	5	–
	C5-2	06/22/2012	0.5 - 1	< 10	5.8	–	5
C7	C7	06/25/2012	0 - 0.5	< 10	15	5	–
D4	D4	06/22/2012	0 - 0.5	**40**	25	**40**	–
D6	D6	06/25/2012	0 - 0.5	20	26	20	–
D8	D8-1	06/25/2012	0 - 0.5	10	16	10	–
	D8-2	06/25/2012	0.5 - 1	< 10	17	–	5
E2	E2-1	06/25/2012	0 - 0.5	**60**	54	**60**	–
	E2-2	06/25/2012	0.5 - 1	20	24	–	20
E3	E3	06/25/2012	0 - 0.5	20	34	20	–
E5	E5	06/25/2012	0 - 0.5	< 10	7.2	5	–
E7	E7	06/25/2012	0 - 0.5	**30**	9.0	**30**	–
F2	F2	06/22/2012	0 - 0.5	10	16	10	–
F4	F4	06/25/2012	0 - 0.5	< 10	14	5	–
F6	F6-1	06/25/2012	0 - 0.5	< 10	< 6.4	5	–
	F6-2	06/25/2012	0.5 - 1	< 10	< 6.5	–	5
F8	F8	06/22/2012	0 - 0.5	**40**	83	**40**	
G3	G3-1	06/25/2012	0 - 0.5	**40**	49	**40**	
	G3-2	06/25/2012	0.5 - 1	**40**	58	–	**40**
G5	G5	06/25/2012	0 - 0.5	< 10	13	5	–
G7	G7	06/25/2012	0 - 0.5	< 10	< 6.4	5	–
H2	H2	06/22/2012	0 - 0.5	**70**	190	**70**	–
H4	H4	06/25/2012	0 - 0.5	**30**	70	**30**	–
H6	H6	06/25/2012	0 - 0.5	< 10	8.2	5	–
H8	H8-1	06/22/2012	0 - 0.5	**40**	95	**40**	–
	H8-2	06/22/2012	0.5 - 1	20	47	–	20
I3	I3	06/25/2012	0 - 0.5	20	7.2	20	–
I5	I5-1	06/25/2012	0 - 0.5	< 10	9.3	5	–

	I5-2	06/25/2012	0.5 - 1	< 10	7.1	—	5
I7	I7	06/25/2012	0 - 0.5	**40**	160	**40**	—
J2	J2-1	06/22/2012	0 - 0.5	20	20	—	—
	J2-2	06/22/2012	0.5 - 1	20	24		20
J4	J4	06/25/2012	0 - 0.5	**30**	33	**30**	—
J6	J6	06/25/2012	0 - 0.5	< 10	8.0	5	—
J8	J8	06/22/2012	0 - 0.5	**50**	150	**50**	—
K3	K3	06/25/2012	0 - 0.5	< 10	6.9	5	—
K5	K5	06/25/2012	0 - 0.5	20	150	20	—
K7	K7-1	06/25/2012	0 - 0.5	< 10	11	5	—
	K7-2	06/25/2012	0.5 - 1	< 10	19	—	5
L1	L1	06/22/2012	0 - 0.5	< 10	6.0	5	—
L2	L2	06/22/2012	0 - 0.5	20	28	20	—
L4	L4-1	06/22/2012	0 - 0.5	**40**	72	**40**	—
	L4-2	06/22/2012	0.5 - 1	**30**	66	—	**30**
L6	L6	06/22/2012	0 - 0.5	20	44	20	—
L8	L8	06/22/2012	0 - 0.5	**50**	98	**50**	—
MTCA Cleanup Levels for Soil				**20**	**250**	—	—
Average Arsenic Concentration by Depth Interval:						**22.37**	**16.67**
Total Average Arsenic Concentration:						**21.00**	

Bold values represent concentrations above the MTCA Method A cleanup levels
< denotes analyte not detected

Figure 3. Soil Characterization Sampling Locations

In April 2013, Farallon collected 20 duff samples at the Property for analysis for arsenic and lead (Figure 3). Arsenic concentrations ranged from 11 to 62 mg/kg, averaging at 26.13 mg/kg. Eleven out of the 20 samples exceeded the MTCA Method A cleanup level (See Table 2). Lead concentrations ranged from 14 mg/kg to 200 mg/kg with an average concentration of 98.90 mg/kg. None of the lead concentrations exceeded the MTCA Method A soil cleanup level (Table 2).

Table 2. Summary of Duff Sampling

Sample Location/ Identification	Sample Date	Analytical Results[1] (mg/kg)		Average Arsenic and Lead Concentrations[2] (mg/kg)	
		Arsenic	Lead	Arsenic	Lead
B8	4/11/2013	18	31	18	31
C5	4/11/2013	**21**	62	21	62

Sample Location/ Identification	Sample Date	Analytical Results[1] (mg/kg)		Average Arsenic and Lead Concentrations[2] (mg/kg)	
		Arsenic	Lead	Arsenic	Lead
C7	4/11/2013	20	93	20	93
D8	4/11/2013	**30**	160	30	160
E2	4/11/2013	**28**	110	28	110
E4	4/11/2013	14	38	8	38
E6	4/11/2013	**24**	160	24	160
F3	4/11/2013	<15	49	7.5	49
F6	4/11/2013	**36**	140	36	140
G3	4/11/2013	**30**	87	30	87
G5	4/11/2013	<13	42	6.5	42
G8	4/11/2013	**46**	110	46	110
H4	4/11/2013	**34**	180	34	180
H6	4/11/2013	<16	14	8	14
H8	4/11/2013	**62**	200	62	200
I5	4/11/2013	18	62	18	62
J2	4/11/2013	11	31	11	31
K4	4/11/2013	**46**	180	46	180
K7	4/11/2013	17	130	17	130
L5	4/11/2013	**52**	99	52	99
MTCA Cleanup Levels for Soil:		20	250	—	—
Average Concentrations:				**26.13**	**98.90**

Bold values represent concentrations above the MTCA Method A cleanup levels
< denotes analyte not detected

Figure 4. Duff Sampling Locations

b. Establishment of cleanup standards for the Asarco Site.

Ecology has determined the cleanup levels and points of compliance established for the Asarco Site meet the substantive requirements of MTCA.

As part of the Interim Action Plan for the Asarco Site (June 2012) (IAP), Ecology completed a terrestrial ecological evaluation for properties with only Tacoma Smelter Plume contamination. Ecology determined the MTCA Method A cleanup levels for both arsenic and lead were protective of both human health and the environment. The MTCA Method A cleanup levels for soil are as follows:

- Arsenic is 20 mg/kg.
- Lead is 250 mg/kg.

The IAP determined the following cleanup levels were protective of human health and the environment for properties within the Asarco Site:

- Average arsenic concentration detected in the soil less than 20 mg/kg.
- Average lead concentration detected in the soil less than 250 mg/kg.

OR

- No single soil sample has arsenic concentration above 40 mg/kg.
- No single soil sample has lead concentration above 500 mg/kg.

c. Selection of cleanup for the Property.

In 2014, Farallon developed a Cleanup Action Plan (CAP) for the NW Logistic Center No. 2 development. Islero, LLC (Islero) decided to use two model remedies on their Property: 1) Excavation and removal and 2) Mixing.

Islero conducted the cleanup action at the Property in two phases in conjunction with Property development. During the first phase, Islero removed duff and organic topsoil and stored it in 55 temporary stockpiles on the Property. They sampled the stockpiles and analyzed the samples for arsenic and lead concentrations.

Islero hauled off duff and topsoil with concentrations of arsenic exceeding 20 mg/kg for landfill disposal. Meanwhile, they removed soil in the protection zones of the tree retention areas by vacuum excavation. They transported the excavated soil to mixing areas on the Property outside of the tree retention areas. They backfilled the excavated areas with clean soil and mulching.

During the second phase, Islero mechanically mixed the upper soil containing concentrations of arsenic greater than 20 mg/kg with deeper cleaner soil to achieve concentrations of arsenic less than 20 mg/kg throughout the Property.

d. Cleanup of the Property.

Ecology has determined the cleanup you performed meets the applicable Asarco Site cleanup standards within the Property.

First Phase:

<u>Duff Removal</u>

Hos Bros. Construction Inc. (Hos) conducted the clearing and grading of the Property. Hos used heavy equipment to skim the top 2 to 6 inches of duff covering the ground surface of the Property. They dug out approximately 1,200 cubic yards of duff and organic topsoil from the Property and distributed it into 55 stockpiles for temporary storage on the Property.

At the conclusion of duff stripping, Farallon sampled the duff/topsoil stockpiles according to the procedures presented the Tacoma Smelter Plume Model Remedies Guidance (MR Guidance). Farallon collected four composite samples from each stockpile. They analyzed each composite sample for total arsenic and lead by U.S. Environmental Protection Agency (EPA) Method 6010C.

None of the lead concentrations exceeded the Method A cleanup level in all the stockpile samples. Arsenic concentrations were above the MTCA Method A cleanup levels in six out of the 55 stockpiles (2, 3, 4, 23, 24, and 27). Hos remixed the six stockpiles with other stockpiles of duff/topsoil and sampled the remixed stockpiles again. Farallon labeled the remixed and resampled stockpiles as 2A, 3A, 4A, 10A, and 12A. The concentrations of arsenic in lead were below the cleanup level in all of the re-mixed stockpiles (See Enclosure C).

The analytical results for these stockpiles were provided for review to Environmental Restoration Project Manager at Joint Base Lewis-McChord (JBLM); Landfill 9 Project Manager for Ecology, and JBLM representative for the Tacoma-Pierce County Health Department for consideration for using the duff/topsoil as cover for the permanent closure of JBLM Landfill 9. Consequently, in May 2015, Hos transported the duff/topsoil to Landfill 9 for use as a cover. Farallon documented the loading of approximately 62,000 cubic yards of duff/topsoil and transport to JBLM.

Hos retained approximately 3,000 cubic yards of the mixed duff/topsoil for landscaping and other uses on the Property.

Hos loaded the stockpiled duff/topsoil onto trucks for transport to the landfill minimizing the need for dust control. They covered the loaded duff/topsoil with a tarp to secure the duff/topsoil and prevent it from blowing out of the trailer during transport. They swept off loose duff/topsoil on the sides, tires, wheels, and/or dump gates of the trucks before the trucks left the Property.

Soil Removal in the Tree Retention Area

In accordance to stipulations presented in Chapter 25.120, Tree Retention, of the City of DuPont Municipal Code (the Code), selected oak and fir remained protected within the tree retention areas on the Property as shown in Figure 4. The total extent of the protection zones within the tree retention areas was approximately 42,300 square feet. Special cleanup methods were required to remove duff and soil containing concentrations of arsenic greater than 20 mg/kg from beneath and around these trees. Washington Forestry Consultants, Inc., the project arborist, prepared a cleanup approach approved by the City of DuPont and documented in Revised Tree Plan, Northwest Logistics Center Oak Preserve Sites 1 and 2, dated February 14, 2014 (the Tree Plan). The Tree Plan approach allowed for removal of the affected duff and excavation of soil while preventing or minimizing potential damage to shallow tree roots. A copy of the Tree Plan is in Appendix C in the Cleanup Action Work Plan.

Within the 13 root protection zones, Hos removed the understory shrub layer by light mechanical raking using an excavator. They lightly pruned specific trees to facilitate access to the understory areas for vacuum excavation. In November and December

2015, they removed the duff and soil in consecutive operations by application of negative pressure (vacuum) supplied by a vacuum truck. The materials were drawn into a suction nuzzle, conveyed through a vacuum hose, and dropped into a holding tank on the vacuum truck and transported to separate duff and soil stockpiles on the Property. Approximately 800 cubic yards of duff/topsoil and shallow soil were vacuum excavated from the 13 root protection zones.

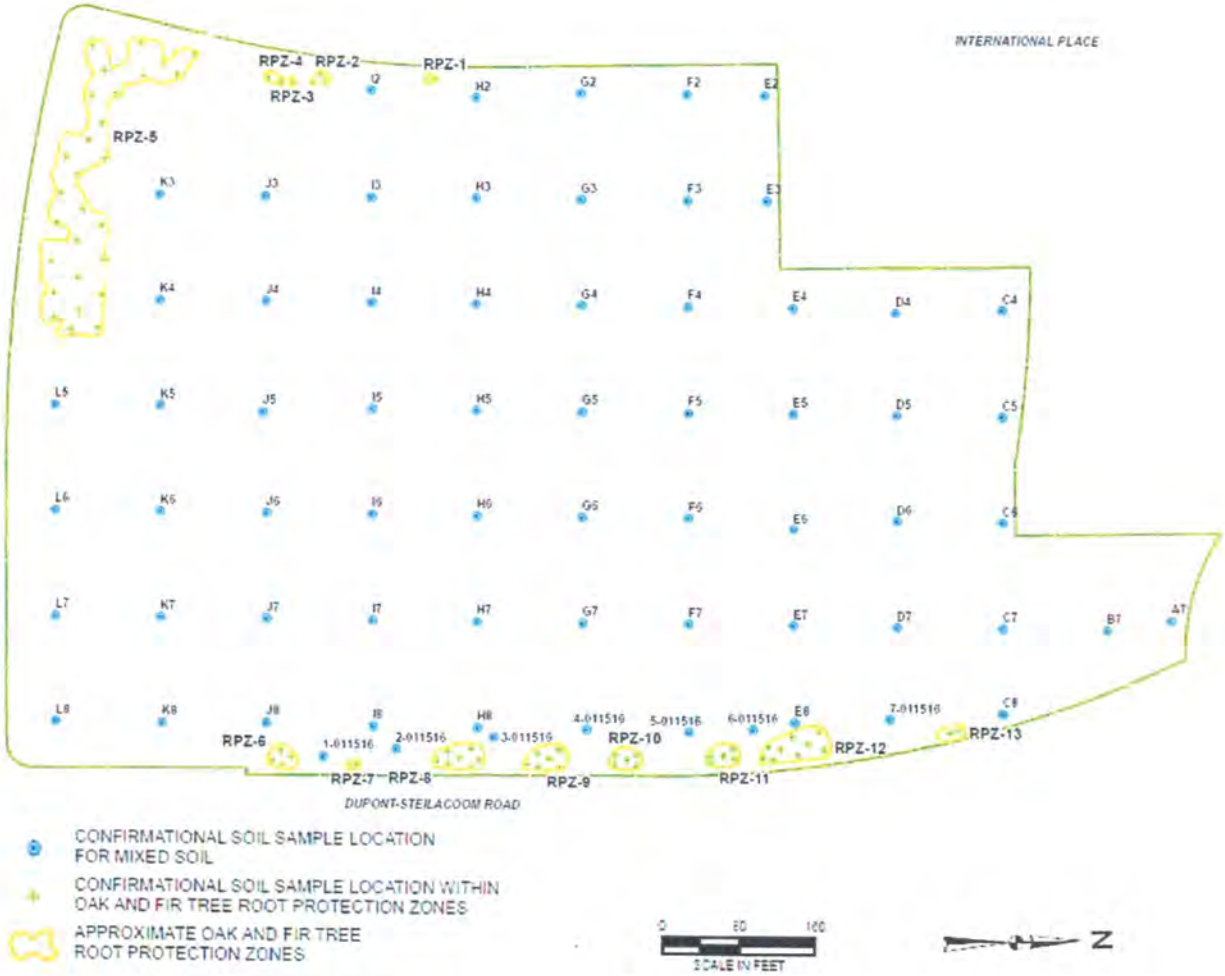


Figure 5. Tree Root Protection Zones

After reaching the planned soil excavation depth of approximately 0.5 to 1.0 feet bgs in the protection zones of the tree retention areas, Farallon collected confirmational soil samples from the excavation bottom. They collected the samples from three to eight locations within each excavated area, depending upon the area size (Figures 4

through 8). Farallon screened each confirmational sample using a field-portable x-ray fluoroscope (XRF) to measure the approximate concentration of arsenic in each soil sample. If the arsenic concentration for a screening sample, as measured by the XRF, was greater than 20 mg/kg, Hos conducted additional soil removal in an approximate 10- to 15-foot radius, as practicable, around the sample location. Farallon screened the areas of additional soil removal with an XRF. If the screening sample measured by the XRF was less than 20 mg/kg, they submitted the soil sample to the project analytical laboratory. The samples were analyzed for arsenic and lead by EPA Method 6010C. Farallon collected 76 confirmational soil samples from the 13 root protection zones for laboratory analysis (Enclosure D).

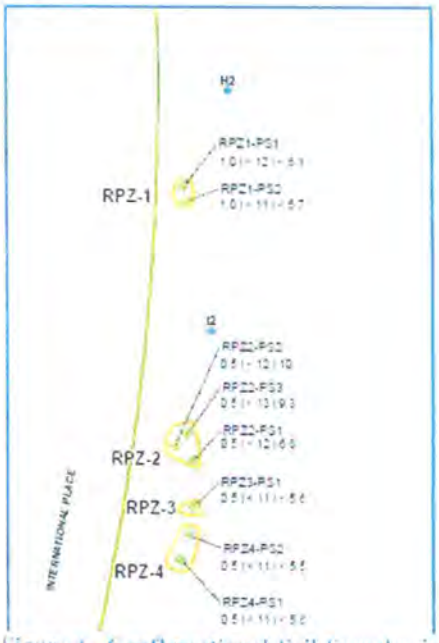


Figure 6. Confirmational Soil Samples in Zones 1 through 4

Following completion of the vacuum excavation, each excavation was backfilled with duff/topsoil with arsenic and lead concentrations below the laboratory reporting limits. Hos top-dressed the backfilled areas with composted mulch.

Second Phase:

The Second Phase involved blending surficial soil containing arsenic concentrations greater than 20 mg/kg with cleaner underlying soil to reduce arsenic concentrations to less than 20 mg/kg throughout the Property. Hos conducted soil mixing at the Property in conjunction with Property

development. They worked the soil back and forth using heavy equipment during the cutting and filling required to establish the pad elevation grade

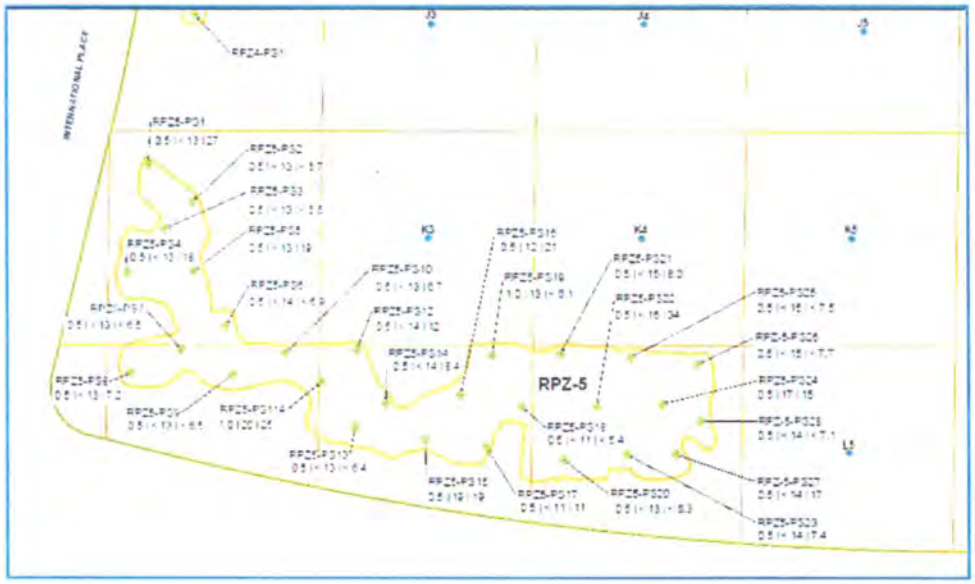


Figure 7. Confirmational Soil Samples in Zone 5

for development construction.

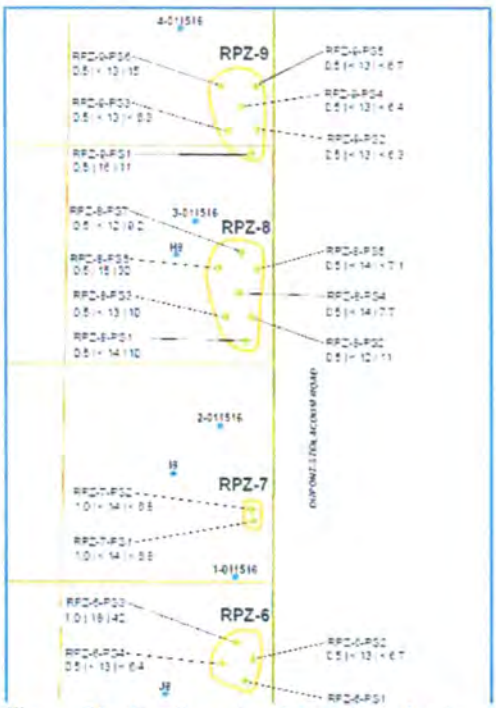


Figure 7A. Confirmational Soil Samples in Zones 6 through 9

Farallon collected the confirmational samples to determine if the soil mixing was effective in reducing arsenic concentrations to below the cleanup level of 20 mg/kg for arsenic and 250 mg/kg for lead, respectively. They collected the soil samples once Hos completed the final grading elevations for the Property Farallon conducted confirmational soil sampling as follows:

- Farallon selected 68 locations on the Property (Figure 4) positioned using a grid spacing of approximately 150 by 150 feet to meet the MR Guidance requirements for compliance sampling.
- They collected the samples from 0 to 0.5 foot bgs at each of the 68 sample locations. In those sample locations where soil mixing was greater than 0.5- to 1.0-foot bgs, Farallon collected an additional soil sample to represent each 0.5-foot interval through the depth profile of the mixed soil.
- Farallon screened each confirmational sample using a field-portable XRF.
- They submitted samples to the laboratory if the arsenic concentration for a screening sample as measured by the XRF was less than 20 mg/kg. The samples were analyzed for arsenic and lead content by EPA Method 6010C.

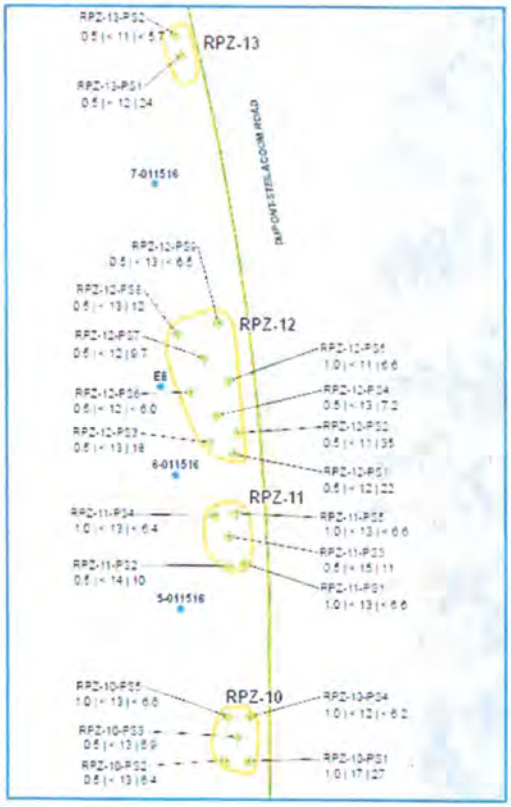


Figure 8. Confirmational Soil Samples in Zones 10 through 13

- Farallon collected 247 confirmational soil samples at grade through the mixed in-place areas on the Property (Figures 9 and 10).

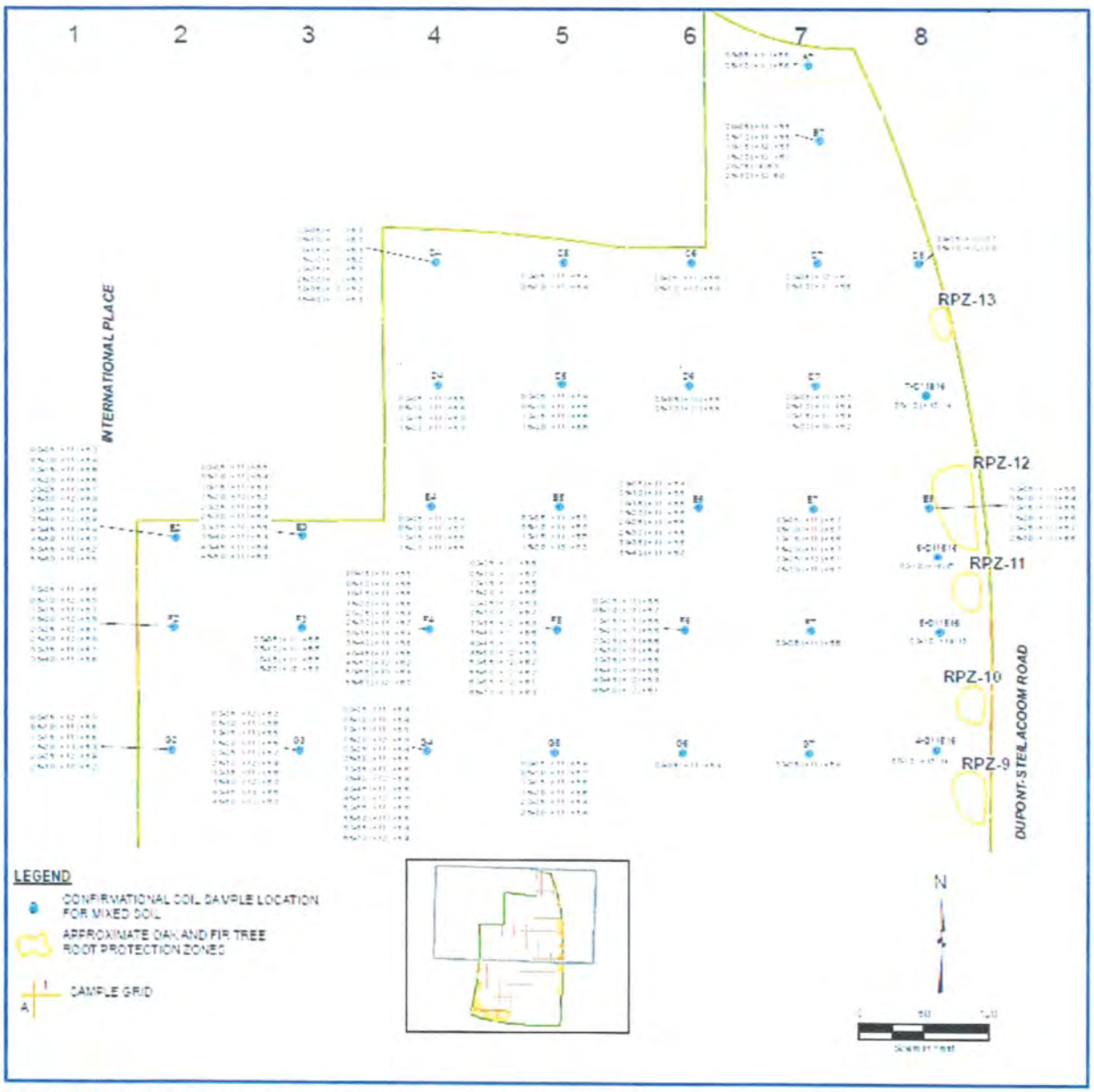


Figure 9. Final Confirmational Sampling in the northern part of the Property

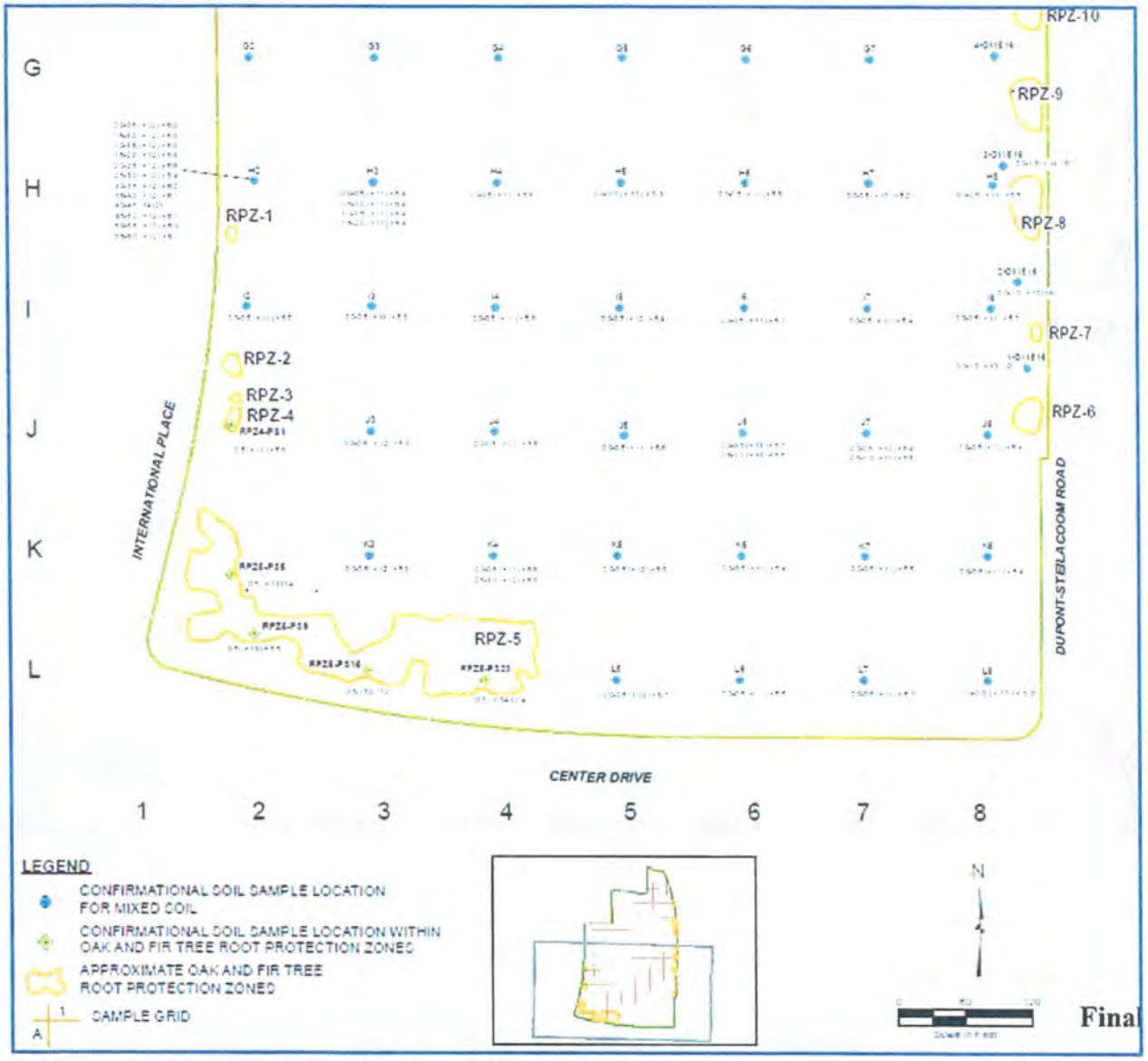


Figure 10. Final Confirmational Samples in the southern part of the Property

confirmational sampling:

Root Protection Zones: Farallon collected 76 confirmational soils samples from the base of the excavated areas. All the arsenic and lead concentrations were below the MTCA Method A soil cleanup levels for unrestricted land use of 20 mg/kg and 250 mg/kg, respectively. The arsenic concentrations ranged from 11 mg/kg to 20 mg/kg and averaged 13.4 mg/kg. The lead concentrations ranged from 5.4 mg/kg to 42 mg/kg and averaged 11 mg/kg (Enclosure D).

Stockpiles: Following mixing of the five stockpiles that exceeded the cleanup level with clean, imported soil, Farallon collected 272 confirmational duff/topsoil samples from the 55 stockpiles on the Property. Six stockpiles (2, 3, 4, 23, 24, and 27) exceeded the cleanup level for arsenic and were remixed with other stockpiles and then resampled. The remixed stockpiles were relabeled as 2A, 3A, 4A, 23A, 24A, and 27A. None of the arsenic or lead concentrations exceeded the MTCA Method A soil cleanup level for unrestricted land use in the second round stockpile sampling (Enclosure C).

Soil Mixing: Farallon collected 247 confirmational soil samples from 63 grid locations, following in-situ soil mixing and after attaining subgrade elevations during development grading at the Property. All the arsenic and lead concentrations were below the MTCA Method A soil cleanup levels for unrestricted land use. The levels of arsenic ranged from non-detect to 19 mg/kg while lead levels ranged from 6.0 mg/kg to 83 mg/kg (Enclosure D).

2. Cleanup of the Asarco Site as a whole.

Ecology has concluded that **further remedial action** under MTCA is still necessary elsewhere at the Asarco Site. In other words, while your cleanup constitutes the final action for the Property, it is only an **"interim action"** for the Asarco Site as a whole.

Listing of the Site

Based on this opinion, Ecology will update the status of remedial action at the Asarco Site on our database of hazardous waste sites. However, because further remedial action is still necessary elsewhere at the Asarco Site, we will not remove the Asarco Site from our lists of hazardous waste sites. Furthermore, the Property will remain listed as part of the Asarco Site because the cleanup of the Property does not change the boundaries of the Asarco Site.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Property. This opinion **does not**:

- Change the boundaries of the Asarco Site.
- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70.105D.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you proposed will be substantially equivalent. Courts make that determination. *See* RCW 70.105D.080 and WAC 173-340-545.

3. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70.105D.030(1)(i).

Termination of Agreement

Thank you for cleaning up your Property under the Voluntary Cleanup Program (VCP). This opinion terminates the VCP Agreement governing this project (#SW1255).

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion or the termination of the Agreement, please contact me by phone at 360-407-7094 or by e-mail at Eva.Barber@ecy.wa.gov.

Sincerely,

E L Barber

Eva L. Barber
SWRO Toxics Cleanup Program

EB/NFA Log Center 2

Enclosures: Enclosure A: Legal Description and general description of the Property
Enclosure B: Site description of Asarco Tacoma Smelter Site
Enclosure C: Duff/Topsoil Stockpile Sample Analytical Results for Arsenic and Lead
Enclosure D: Confirmational Sample Duff/Topsoil Analytical Results for Arsenic and Lead

By certified mail: (91 7108 2133 3939 7793 1006

EB/ksc:NFA Log Center 2

cc: Nick Griot, Bayhead Management LLC
Donald Lance, Farallon Consulting, LLC
Bill Kingman, City of DuPont, Planning and Economic Development Department
Sharon Bell, Tacoma-Pierce County Health Department
Marian Abbett – Ecology
Nick Acklam – Ecology
Matthew Alexander– Ecology w/o enclosures
Carol Serdar, SWRO WQ - Ecology
Amy Moon, HQ WQ – Ecology

Enclosure A
Legal Description of the Property

EXHIBIT A

LEGAL DESCRIPTION

LOTS 1 THROUGH 21, INCLUSIVE, AND LOTS 24 THROUGH 26, INCLUSIVE, NORTHWEST LANDING INDUSTRIAL PARK DIVISION 1, ACCORDING TO THE PLAT THEREOF RECORDED SEPTEMBER 9, 1996 UNDER RECORDING NUMBER 9609090634, RECORDS OF PIERCE COUNTY AUDITOR;

SITUATE IN THE CITY OF DUPONT, COUNTY OF PEIRCE, STATE OF WASHINGTON.

EXHIBIT A
LEGAL DESCRIPTION
LOT 1, BOUNDARY LINE ADJUSTMENT 200703215009, ACCORDING TO THE SURVEY THEREOF RECORDED MARCH 21, 2007, RECORDS OF PIERCE COUNTY AUDITOR. TOGETHER WITH A NON-EXCLUSIVE EASEMENT FOR INGRESS, EGRESS AND UTILITIES AS CREATED BY INSTRUMENT RECORDED UNDER RECORDING NO. 200605170142 AND AS DELINEATED ON SAID BOUNDARY LINE ADJUSTMENT 200703215009.
SITUATE IN THE CITY OF DUPONT, COUNTY OF PIERCE, STATE OF WASHINGTON

Property Description

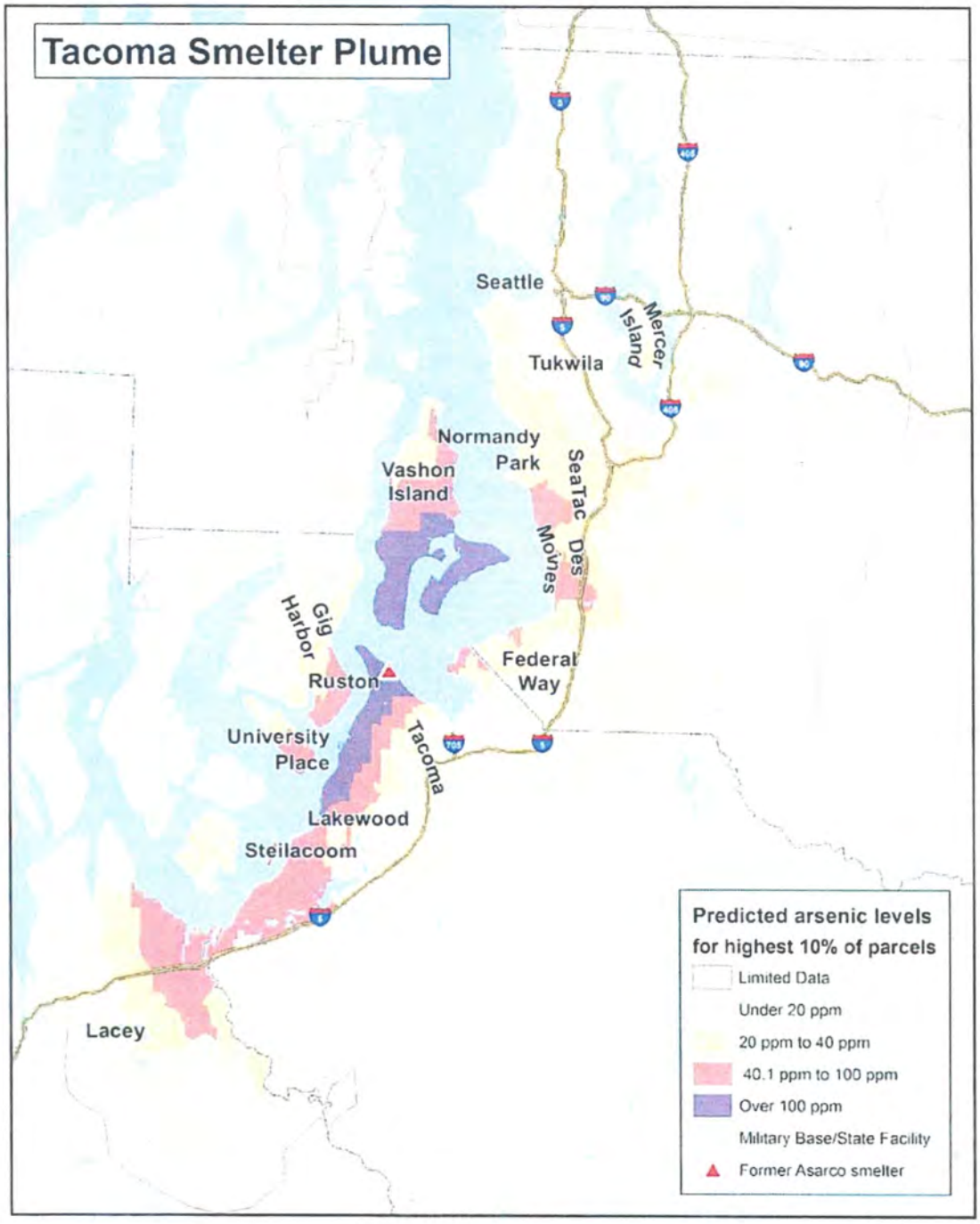
The Property is at the northwestern corner of the intersection of the DuPont-Steilacoom Highway and Center Drive in a semi-rural area of DuPont, Pierce County, Washington (Figure 1), and is zoned "IND" for industrial use. The Property consists of Pierce County Tax Parcel No. 3000390011, which totals approximately 32.16 acres. Access to the Property is gained from International Place, which adjoins the western side of the Property. Adjacent properties are the NW Logistics Center No. 1 facility across International Place to the west, the Basalite Concrete Products facility across International Place to the northwest, an industrial building and cleared undeveloped land to the north, vacant forested land across the DuPont-Steilacoom Highway to the east, and warehouse/office buildings and associated paved parking areas across Center Drive to the south. The Property currently is under construction for development of a 600,000-square-foot commercial/industrial building enclosed by large areas of asphaltic pavement for vehicle parking, truck access, and outdoor operations. Construction is anticipated to be completed in mid-2016.

The geology of the DuPont vicinity consists of Vashon outwash gravel, recessional and pro-glacial stratified pebble, cobble, and boulder gravel deposited by meltwater streams. On the Property, an approximately 3 to 6-inch thick layer of organic-rich soil mantles sandy gravel with abundant cobbles to approximately 1 foot below ground surface (bgs). Depth to groundwater at the Property is not known.

According to Farallon's historical research, the Property was an undeveloped part of an area labeled "Campbell Woods" in 1944. Other than the presence of dirt roads or tracks crossing part of the Property as noted on historical maps and aerial photographs, the Property has been undeveloped to the present.

Enclosure B

Asarco Tacoma Smelter Site



An interactive color map can be found at https://fortress.wa.gov/ecy/smeltersearch/

For almost 100 years the Asarco Company operated a copper smelter in Tacoma, Washington. Air pollution from the smelter settled on the surface soil over a vast region -- more than 1,000 square miles of the Puget Sound basin. Arsenic, lead, and other heavy metals are still in the soil as a result of this pollution. Ecology has found elevated levels of arsenic and lead as far south as Lacey and as far north as Seattle (West Seattle), and as far west as the Kitsap Peninsula and as far east as Kent and Bellevue.

Enclosure C
Duff/Topsoil Stockpile Sample Analytical Results for Arsenic and Lead

Sample Location	Sample Identification	Sample Date	Analytical Results[1] (milligrams per kilogram)	
			Arsenic	Lead
Stockpile 1	STK1-COMP 1-042415	4/24/2015	16	23
	STK1-COMP 2-042415	4/24/2015	13	20
	STK1-COMP 3-042415	4/24/2015	< 13	13
	STK1-COMP 4-042415	4/24/2015	24	38
Stockpile 2	STK2-COMP 1-042415	4/24/2015	14	29
	STK2-COMP 2-042415	4/24/2015	21	39
	STK2-COMP 3-042415	4/24/2015	21	40
	STK2-COMP 4-042415	4/24/2015	29	43
Stockpile 2A	STK2A-COMP1-051315	5/13/2015	< 12	15
	STK2A-COMP2-051315	5/13/2015	< 12	14
	STK2A-COMP3-051315	5/13/2015	< 12	19
	STK2A-COMP4-051315	5/13/2015	< 13	18
	STK2A-COMP5-051315	5/13/2015	< 13	13
	STK2A-COMP6-051315	5/13/2015	< 12	9.1
	STK2A-COMP7-051315	5/13/2015	< 12	12
	STK2A-COMP8-051315	5/13/2015	< 12	12
	STK2A-COMP9-051315	5/13/2015	< 12	15
	STK2A-COMP10-051315	5/13/2015	< 12	9.5
	STK2A-COMP11-051315	5/13/2015	< 12	9.8
	STK2A-COMP12-051315	5/13/2015	< 12	10
Stockpile 3	STK3-COMP 1-042415	4/24/2015	26	52
	STK3-COMP 2-042415	4/24/2015	28	54
	STK3-COMP 3-042415	4/24/2015	26	39
	STK3-COMP 4-042415	4/24/2015	24	38
Stockpile 3A	STK3A-COMP1-051415	5/14/2015	15	26
	STK3A-COMP2-051415	5/14/2015	14	22
	STK3A-COMP3-051415	5/14/2015	16	26
	STK3A-COMP4-051415	5/14/2015	16	27
	STK3A-COMP5-051415	5/14/2015	14	26
	STK3A-COMP6-051415	5/14/2015	16	28
	STK3A-COMP7-051415	5/14/2015	< 13	13
	STK3A-COMP8-051415	5/14/2015	15	24
	STK3A-COMP9-051415	5/14/2015	17	36
	STK3A-COMP10-051415	5/14/2015	24	44

Sample Location	Sample Identification	Sample Date	Analytical Results[1] (milligrams per kilogram)	
			Arsenic	Lead
	STK3A-COMP11-051415	5/14/2015	17	33
	STK3A-COMP12-051415	5/14/2015	21	32
	STK4-COMP 1-042415	4/24/2015	24	47
	STK4-COMP 2-042415	4/24/2015	28	55
	STK4-COMP 3-042415	4/24/2015	18	28
Stockpile 4	STK4-COMP 4-042415	4/24/2015	31	60
	STK4A-COMP1-051415	5/14/2015	13	24
	STK4A-COMP2-051415	5/14/2015	17	29
	STK4A-COMP3-051415	5/14/2015	15	28
	STK4A-COMP4-051415	5/14/2015	16	29
	STK4A-COMP5-051415	5/14/2015	< 12	22
	STK4A-COMP6-051415	5/14/2015	< 13	20
	STK4A-COMP7-051415	5/14/2015	< 13	15
Stockpile 4A	STK4A-COMP8-051415	5/14/2015	< 12	20
	STK5-COMP 1-042415	4/24/2015	18	45
	STK5-COMP 2-042415	4/24/2015	14	26
	STK5-COMP 3-042415	4/24/2015	< 15	14
Stockpile 5	STK5-COMP 4-042415	4/24/2015	< 14	22
	STK6-COMP 1-042415	4/24/2015	15	22
	STK6-COMP 2-042415	4/24/2015	< 13	14
	STK6-COMP 3-042415	4/24/2015	< 12	9.6
Stockpile 6	STK6-COMP 4-042415	4/24/2015	< 13	13
	STK 7-COMP1-042715	4/27/2015	19	48
	STK 7-COMP2-042715	4/27/2015	< 13	15
	STK 7-COMP3-042715	4/27/2015	< 12	15
Stockpile 7	STK 7-COMP4-042715	4/27/2015	< 13	11
	STK 8-COMP1-042715	4/27/2015	13	23
	STK 8-COMP2-042715	4/27/2015	< 13	8.8
	STK 8-COMP3-042715	4/27/2015	14	20
Stockpile 8	STK 8-COMP4-042715	4/27/2015	16	28
	STK 9-COMP1-042715	4/27/2015	16	18
	STK 9-COMP2-042715	4/27/2015	< 12	18
	STK 9-COMP3-042715	4/27/2015	< 11	< 5.7
Stockpile 9	STK 9-COMP4-042715	4/27/2015	< 11	< 5.7
	STK 10-COMP1-042715	4/27/2015	< 14	25
	STK 10-COMP2-042715	4/27/2015	< 13	31
	STK 10-COMP3-042715	4/27/2015	17	44
Stockpile 10	STK 10-COMP4-042715	4/27/2015	< 13	21
	STK 11-COMP1-042715	4/27/2015	33	64
Stockpile 11	STK 11-COMP2-042715	4/27/2015	23	73

Sample Location	Sample Identification	Sample Date	Analytical Results[1] (milligrams per kilogram)	
			Arsenic	Lead
	STK 11-COMP3-042715	4/27/2015	16	26
	STK 11-COMP4-042715	4/27/2015	< 13	21
	STK 12-COMP1-042715	4/27/2015	< 14	21
	STK 12-COMP2-042715	4/27/2015	14	20
	STK 12-COMP3-042715	4/27/2015	< 13	15
Stockpile 12	STK 12-COMP4-042715	4/27/2015	< 14	17
	STK 13-COMP1-042715	4/27/2015	22	44
	STK 13-COMP2-042715	4/27/2015	17	27
	STK 13-COMP3-042715	4/27/2015	20	33
Stockpile 13	STK 13-COMP4-042715	4/27/2015	19	31
	STK 14-COMP1-042715	4/27/2015	< 13	17
	STK 14-COMP2-042715	4/27/2015	< 14	18
	STK 14-COMP3-042715	4/27/2015	29	48
Stockpile 14	STK 14-COMP4-042715	4/27/2015	31	56
	STK 15-COMP1-042715	4/27/2015	18	27
	STK 15-COMP2-042715	4/27/2015	25	45
	STK 15-COMP3-042715	4/27/2015	17	23
Stockpile 15	STK 15-COMP4-042715	4/27/2015	15	22
	STK16-COMP1-042915	4/29/2015	< 12	12
	STK16-COMP2-042915	4/29/2015	< 12	8.9
	STK16-COMP3-042915	4/29/2015	< 12	8.5
Stockpile 16	STK16-COMP4-042915	4/29/2015	< 11	< 5.7
	STK17-COMP1-042915	4/29/2015	< 11	< 5.5
	STK17-COMP2-042915	4/29/2015	16	26
	STK17-COMP3-042915	4/29/2015	18	32
Stockpile 17	STK17-COMP4-042915	4/29/2015	18	32
	STK18-COMP1-042915	4/29/2015	26	38
	STK18-COMP2-042915	4/29/2015	17	21
	STK18-COMP3-042915	4/29/2015	< 13	15
Stockpile 18	STK18-COMP4-042915	4/29/2015	20	39
	STK19-COMP1-042915	4/29/2015	< 13	17
	STK19-COMP2-042915	4/29/2015	16	22
	STK19-COMP3-042915	4/29/2015	18	25
Stockpile 19	STK19-COMP4-042915	4/29/2015	< 12	13
	STK20-COMP1-042915	4/29/2015	16	30
	STK20-COMP2-042915	4/29/2015	< 13	19
	STK20-COMP3-042915	4/29/2015	< 13	15
Stockpile 20	STK20-COMP4-042915	4/29/2015	18	34
	STK21-COMP1-042915	4/29/2015	17	24
Stockpile 21	STK21-COMP2-042915	4/29/2015	20	36

Sample Location	Sample Identification	Sample Date	Analytical Results[1] (milligrams per kilogram)	
			Arsenic	Lead
	STK21-COMP3-042915	4/29/2015	< 13	17
	STK21-COMP4-042915	4/29/2015	19	30
	STK22-COMP1-042915	4/29/2015	20	26
	STK22-COMP2-042915	4/29/2015	< 12	6.8
	STK22-COMP3-042915	4/29/2015	23	35
Stockpile 22	STK22-COMP4-042915	4/29/2015	27	47
	STK23-COMP1-042915	4/29/2015	24	51
	STK23-COMP2-042915	4/29/2015	29	57
	STK23-COMP3-042915	4/29/2015	20	37
Stockpile 23	STK23-COMP4-042915	4/29/2015	28	62
	STK23A-COMP1-051415	5/14/2015	< 12	17
	STK23A-COMP2-051415	5/14/2015	< 11	10
	STK23A-COMP3-051415	5/14/2015	< 12	14
	STK23A-COMP4-051415	5/14/2015	< 12	21
	STK23A-COMP5-051415	5/14/2015	< 12	12
	STK23A-COMP6-051415	5/14/2015	< 12	18
Stockpile	STK23A-COMP7-051415	5/14/2015	< 12	12
23A	STK23A-COMP8-051415	5/14/2015	< 12	17
	STK24-COMP1-042915	4/29/2015	29	57
	STK24-COMP2-042915	4/29/2015	24	48
	STK24-COMP3-042915	4/29/2015	27	41
Stockpile 24	STK24-COMP4-042915	4/29/2015	30	50
	STK24A-COMP1-051415	5/14/2015	14	25
	STK24A-COMP2-051415	5/14/2015	< 11	14
	STK24A-COMP3-051415	5/14/2015	< 12	15
	STK24A-COMP4-051415	5/14/2015	< 12	17
	STK24A-COMP5-051415	5/14/2015	14	25
	STK24A-COMP6-051415	5/14/2015	< 12	20
Stockpile	STK24A-COMP7-051415	5/14/2015	< 12	17
24A	STK24A-COMP8-051415	5/14/2015	< 12	15
	STK25-COMP1-042915	4/29/2015	< 13	16
	STK25-COMP2-042915	4/29/2015	17	31
	STK25-COMP3-042915	4/29/2015	14	19
Stockpile 25	STK25-COMP4-042915	4/29/2015	21	33
	STK26-COMP 1-043015	4/30/2015	17	34
	STK26-COMP 2-043015	4/30/2015	19	36
	STK26-COMP 3-043015	4/30/2015	25	35
Stockpile 26	STK26-COMP 4-043015	4/30/2015	< 15	17
	STK27-COMP 1-043015	4/30/2015	22	30
Stockpile 27	STK27-COMP 2-043015	4/30/2015	22	24

Sample Location	Sample Identification	Sample Date	Analytical Results[1] (milligrams per kilogram)	
			Arsenic	Lead
	STK27-COMP 3-043015	4/30/2015	18	36
	STK27-COMP 4-043015	4/30/2015	21	43
Stockpile 27A	STK27A-COMP1-051415	5/14/2015	< 12	9.7
	STK27A-COMP2-051415	5/14/2015	< 11	14
	STK27A-COMP3-051415	5/14/2015	< 11	17
	STK27A-COMP4-051415	5/14/2015	< 12	13
Stockpile 28	STK28-COMP 1-043015	4/30/2015	21	40
	STK28-COMP 2-043015	4/30/2015	17	29
	STK28-COMP 3-043015	4/30/2015	17	28
	STK28-COMP 4-043015	4/30/2015	23	48
Stockpile 29	STK29-COMP 1-043015	4/30/2015	17	32
	STK29-COMP 2-043015	4/30/2015	25	43
	STK29-COMP 3-043015	4/30/2015	19	34
	STK29-COMP 4-043015	4/30/2015	15	23
Stockpile 30	STK30-COMP 1-043015	4/30/2015	18	34
	STK30-COMP 2-043015	4/30/2015	18	31
	STK30-COMP 3-043015	4/30/2015	17	27
	STK30-COMP 4-043015	4/30/2015	22	31
Stockpile 31	STK31-COMP 1-043015	4/30/2015	23	21
	STK31-COMP 2-043015	4/30/2015	18	20
	STK31-COMP 3-043015	4/30/2015	< 13	15
	STK31-COMP 4-043015	4/30/2015	14	19
Stockpile 32	STK32-COMP1-050115	5/1/2015	20	26
	STK32-COMP2-050115	5/1/2015	23	50
	STK32-COMP3-050115	5/1/2015	< 13	17
	STK32-COMP4-050115	5/1/2015	16	28
Stockpile 33	STK33-COMP1-050115	5/1/2015	< 14	16
	STK33-COMP2-050115	5/1/2015	< 13	22
	STK33-COMP3-050115	5/1/2015	18	30
	STK33-COMP4-050115	5/1/2015	< 14	26
Stockpile 34	STK34-COMP1-050115	5/1/2015	18	39
	STK34-COMP2-050115	5/1/2015	< 13	24
	STK34-COMP3-050115	5/1/2015	< 15	34
	STK34-COMP4-050115	5/1/2015	16	30
Stockpile 35	STK35-COMP1-050115	5/1/2015	< 13	17
	STK35-COMP2-050115	5/1/2015	< 12	17
	STK35-COMP3-050115	5/1/2015	< 13	12
	STK35-COMP4-050115	5/1/2015	< 14	19
Stockpile 36	STK36-COMP 1-050415	5/4/2015	< 13	19
	STK36-COMP 2-050415	5/4/2015	< 13	21

Sample Location	Sample Identification	Sample Date	Analytical Results[1] (milligrams per kilogram)	
			Arsenic	Lead
	STK36-COMP 3-050415	5/4/2015	< 13	21
	STK36-COMP 4-050415	5/4/2015	20	28
	STK37-COMP 1-050415	5/4/2015	< 12	22
	STK37-COMP 2-050415	5/4/2015	18	31
	STK37-COMP 3-050415	5/4/2015	< 12	58
Stockpile 37	STK37-COMP 4-050415	5/4/2015	17	37
	STK38-COMP 1-050715	5/7/2015	< 13	17
	STK38-COMP 2-050715	5/7/2015	14	20
	STK38-COMP 3-050715	5/7/2015	< 12	16
Stockpile 38	STK38-COMP 4-050715	5/7/2015	< 12	11
	STK39-COMP 1-050815	5/8/2015	< 12	9.2
	STK39-COMP 2-050815	5/8/2015	< 12	13
	STK39-COMP 3-050815	5/8/2015	< 12	< 6.1
Stockpile 39	STK39-COMP 4-050815	5/8/2015	< 12	11
	STK40-COMP 1-050715	5/7/2015	16	34
	STK40-COMP 2-050715	5/7/2015	< 13	21
	STK40-COMP 3-050715	5/7/2015	< 13	17
Stockpile 40	STK40-COMP 4-050715	5/7/2015	< 13	20
	STK41-COMP 1-050815	5/8/2015	< 13	14
	STK41-COMP 2-050815	5/8/2015	< 13	9.1
	STK41-COMP 3-050815	5/8/2015	17	30
Stockpile 41	STK41-COMP 4-050815	5/8/2015	< 13	12
	STK42-COMP 1-050815	5/8/2015	< 13	11
	STK42-COMP 2-050815	5/8/2015	< 14	16
	STK42-COMP 3-050815	5/8/2015	< 13	8.4
Stockpile 42	STK42-COMP 4-050815	5/8/2015	< 14	11
	STK43-COMP1-051415	5/14/2015	< 14	23
	STK43-COMP2-051415	5/14/2015	< 13	8.8
	STK43-COMP3-051415	5/14/2015	< 13	20
Stockpile 43	STK43-COMP4-051415	5/14/2015	< 14	21
	STK44-COMP1-051415	5/14/2015	< 12	< 6.0
	STK44-COMP2-051415	5/14/2015	< 12	6.1
	STK44-COMP3-051415	5/14/2015	< 13	< 6.3
Stockpile 44	STK44-COMP4-051415	5/14/2015	< 12	6.6
	STK45-COMP1-051415	5/14/2015	< 13	< 6.3
	STK45-COMP2-051415	5/14/2015	< 12	6.2
	STK45-COMP3-051415	5/14/2015	< 12	< 5.8
Stockpile 45	STK45-COMP4-051415	5/14/2015	< 13	7.4
	STK46-COMP1-051415	5/14/2015	< 13	< 6.4
Stockpile 46	STK46-COMP2-051415	5/14/2015	< 12	8.8

Sample Location	Sample Identification	Sample Date	Analytical Results[1] (milligrams per kilogram)	
			Arsenic	Lead
	STK46-COMP3-051415	5/14/2015	16	35
	STK46-COMP4-051415	5/14/2015	< 13	15
	STK47-COMP 1-111115	11/11/2015	< 12	14
	STK47-COMP 2-111115	11/11/2015	< 14	21
	STK47-COMP 3-111115	11/11/2015	13	17
Stockpile 47	STK47-COMP 4-111115	11/11/2015	< 13	14
	STK48-COMP 1-111115	11/11/2015	< 13	17
	STK48-COMP 2-111115	11/11/2015	< 13	16
	STK48-COMP 3-111115	11/11/2015	< 13	15
Stockpile 48	STK48-COMP 4-111115	11/11/2015	< 14	17
	STK49-COMP 1-111115	11/11/2015	< 14	25
	STK49-COMP 2-111115	11/11/2015	< 14	11
	STK49-COMP 3-111115	11/11/2015	< 14	14
Stockpile 49	STK49-COMP 4-111115	11/11/2015	< 13	7.7
	STK50-COMP 1-111115	11/11/2015	< 13	< 6.7
	STK50-COMP 2-111115	11/11/2015	< 14	7.0
	STK50-COMP 3-111115	11/11/2015	< 12	7.7
Stockpile 50	STK50-COMP 4-111115	11/11/2015	< 12	9.5
	STK51-COMP1-111915	11/19/2015	14	22
	STK51-COMP2-111915	11/19/2015	< 13	12
	STK51-COMP3-111915	11/19/2015	17	28
Stockpile 51	STK51-COMP4-111915	11/19/2015	< 13	8.3
	STK52-COMP1-111915	11/19/2015	14	27
	STK52-COMP2-111915	11/19/2015	< 15	22
	STK52-COMP3-111915	11/19/2015	< 14	12
Stockpile 52	STK52-COMP4-111915	11/19/2015	< 14	20
	STK53-COMP1-120315	12/3/2015	14	23
	STK53-COMP2-120315	12/3/2015	< 13	21
	STK53-COMP3-120315	12/3/2015	17	34
Stockpile 53	STK53-COMP4-120315	12/3/2015	< 17	26
	STK-54-121615-COMP 1	12/16/2015	< 16	48
	STK-54-121615-COMP 2	12/16/2015	< 14	22
	STK-54-121615-COMP 3	12/16/2015	< 12	10
Stockpile 54	STK-54-121615-COMP 4	12/16/2015	< 14	10
	STK-55-121615-COMP 1	12/16/2015	20	54
	STK-55-121615-COMP 2	12/16/2015	27	83
	STK-55-121615-COMP 3	12/16/2015	< 13	16
Stockpile 55	STK-55-121615-COMP 4	12/16/2015	16	30
Average Concentration[2]			**12.4**	**24.5**
MTCA Cleanup Levels for Soil[3]			**20**	**250**

< denotes analyte not detected at or exceeding the laboratory practical quantitation limit (PQL) listed.
[1]Analyzed by U.S. Environmental Protection Agency Method 6010C.
[2]Results at or less than the laboratory PQL are listed at one-half the PQL value for calculating average arsenic and lead concentrations.
[3]Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as amended 2013

Enclosure D
Confirmational Duff/Topsoil Sample Analytical Results for Arsenic and Lead

Grid Location	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytical Results (milligrams per kilogram)	
				Arsenic	Lead
A7	A7-022916-0.0-0.5	0 - 0.5	2/29/2016	< 11	< 5.6
	A7-022916-0.5-1.0	0.5 - 1	2/29/2016	< 11	< 5.6
	B7-022916-0.0-0.5	0 - 0.5	2/29/2016	< 11	< 5.5
	B7-022916-0.5-1.0	0.5 - 1	2/29/2016	< 11	< 5.5
	B7-022916-1.0-1.5	1 - 1.5	2/29/2016	< 12	< 5.8
	B7-022916-1.5-2.0	1.5 - 2	2/29/2016	< 12	< 6.1
	B7-022916-2.0-2.5	2 - 2.5	2/29/2016	14	6.3
B7	B7-022916-2.5-3.0	2.5 - 3	2/29/2016	< 12	6.0
	C4-022916-0.0-0.5	0 - 0.5	2/29/2016	< 11	< 5.3
	C4-022916-0.5-1.0	0.5 - 1	2/29/2016	< 11	< 5.3
	C4-022916-1.0-1.5	1 - 1.5	2/29/2016	< 11	< 5.3
	C4-022916-1.5-2.0	1.5 - 2	2/29/2016	< 10	< 5.2
	C4-022916-2.0-2.5	2 - 2.5	2/29/2016	< 11	< 5.3
	C4-022916-2.5-3.0	2.5 - 3	2/29/2016	< 11	< 5.3
	C4-022916-3.0-3.5	3 - 3.5	2/29/2016	< 10	< 5.2
C4	C4-022916-3.5-4.0	3.5 - 4	2/29/2016	< 11	< 5.3
C5	C5-022916-0.0-0.5	0 - 0.5	2/29/2016	< 11	< 5.4
	C5-022916-0.5-1.0	0.5 - 1	2/29/2016	< 11	< 5.4
C6	C6-022916-0.0-0.5	0 - 0.5	2/29/2016	< 11	< 5.6
	C6-022916-0.5-1.0	0.5 - 1	2/29/2016	< 12	< 5.8
C7	C7-022916-0.0-0.5	0 - 0.5	2/29/2016	< 12	< 6.1
	C7-022916-0.5-1.0	0.5 - 1	2/29/2016	< 11	< 5.6
	C8-022916-0.0-0.5	0 - 0.5	2/29/2016	< 13	8.7
	C8-022916-0.5-1.0	0.5 - 1	2/29/2016	< 12	7.8
	RPZ-13-PS1-121515-0.5	0.5	12/15/2015	< 12	24
C8	RPZ-13-PS2-121515-0.5	0.5	12/15/2015	< 11	< 5.7
	D4-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.5
	D4-030216-0.5-1.0	0.5 - 1	3/2/2016	< 11	< 5.4
	D4-030216-1.0-1.5	1 - 1.5	3/2/2016	< 11	< 5.3
D4	D4-030216-1.5-2.0	1.5 - 2	3/2/2016	< 11	< 5.3
	D5-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.4
	D5-030216-0.5-1.0	0.5 - 1	3/2/2016	< 11	< 5.5
	D5-030216-1.0-1.5	1 - 1.5	3/2/2016	< 11	< 5.6
D5	D5-030216-1.5-2.0	1.5 - 2	3/2/2016	< 11	< 5.6

Grid Location	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytical Results (milligrams per kilogram)	
				Arsenic	Lead
	D6-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.5
	D6-030216-0.5-1.0	0.5 - 1	3/2/2016	< 11	< 5.5
D6	D6-030216-0.5-1.0 D *	0.5 - 1	3/2/2016	< 11	< 5.5
	D7-022916-0.0-0.5	0 - 0.5	2/29/2016	< 11	< 5.7
	D7-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.5
	D7-022916-0.5-1.0	0.5 - 1	2/29/2016	< 11	< 5.4
	D7-022916-1.0-1.5	1 - 1.5	2/29/2016	< 11	< 5.4
D7	D7-022916-1.5-2.0	1.5 - 2	2/29/2016	< 10	< 5.2
D8	7-011516	0 - 1	1/15/2016	< 13	14
	E2-022916-0.0-0.5	0 - 0.5	2/29/2016	< 11	< 5.3
	E2-022916-0.5-1.0	0.5 - 1	2/29/2016	< 11	< 5.4
	E2-022916-1.0-1.5	1 - 1.5	2/29/2016	< 11	< 5.6
	E2-022916-1.5-2.0	1.5 - 2	2/29/2016	< 11	< 5.5
	E2-022916-2.0-2.5	2 - 2.5	2/29/2016	< 11	< 5.7
	E2-022916-2.5-3.0	2.5 - 3	2/29/2016	< 12	< 6.0
	E2-022916-3.0-3.5	3 - 3.5	2/29/2016	< 12	< 5.9
	E2-022916-3.5-4.0	3.5 - 4	2/29/2016	< 12	< 5.9
	E2-022916-4.0-4.5	4 - 4.5	2/29/2016	< 11	< 5.4
	E2-022916-4.5-5.0	4.5 - 5	2/29/2016	< 11	< 5.3
	E2-022916-5.0-5.5	5 - 5.5	2/29/2016	< 10	< 5.2
E2	E2-022916-5.5-6.0	5.5 - 6	2/29/2016	< 11	< 5.5
	E3-022916-0.0-0.5	0 - 0.5	2/29/2016	< 11	< 5.5
	E3-022916-0.5-1.0	0.5 - 1	2/29/2016	< 11	< 5.4
	E3-022916-1.0-1.5	1 - 1.5	2/29/2016	< 11	< 5.3
	E3-022916-1.5-2.0	1.5 - 2	2/29/2016	< 10	< 5.2
	E3-022916-2.0-2.5	2 - 2.5	2/29/2016	< 11	< 5.3
	E3-022916-2.5-3.0	2.5 - 3	2/29/2016	< 11	< 5.4
	E3-022916-3.0-3.5	3 - 3.5	2/29/2016	< 11	< 5.5
	E3-022916-3.5-4.0	3.5 - 4	2/29/2016	< 11	< 5.4
	E3-022916-4.0-4.5	4 - 4.5	2/29/2016	< 11	< 5.4
E3	E3-022916-4.5-5.0	4.5 - 5	2/29/2016	< 11	< 5.3
	E4-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.4
	E4-030216-0.5-1.0	0.5 - 1	3/2/2016	< 11	< 5.7
	E4-030216-1.0-1.5	1 - 1.5	3/2/2016	< 11	< 5.5
	E4-030216-1.0-1.5 D *	1 - 1.5	3/2/2016	< 11	< 5.3
E4	E4-030216-1.5-2.0	1.5 - 2	3/2/2016	< 11	< 5.5
	E5-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.6
	E5-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.7
	E5-030216-0.5-1.0	0.5 - 1	3/2/2016	< 11	< 5.6
E5	E5-030216-1.0-1.5	1 - 1.5	3/2/2016	< 11	< 5.7

Grid Location	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytical Results (milligrams per kilogram)	
				Arsenic	Lead
	E5-030216-1.5-2.0	1.5 - 2	3/2/2016	< 13	< 6.3
	E5-030216-1.5-2.0 D *	1.5 - 2	3/2/2016	< 12	< 5.8
	E6-022916-0.0-0.5	0 - 0.5	2/29/2016	< 11	< 5.4
	E6-022916-0.5-1.0	0.5 - 1	2/29/2016	< 11	< 5.5
	E6-022916-1.0-1.5	1 - 1.5	2/29/2016	< 11	< 5.5
	E6-022916-1.5-2.0	1.5 - 2	2/29/2016	< 11	< 5.6
	E6-022916-2.0-2.5	2 - 2.5	2/29/2016	< 11	< 5.5
	E6-022916-2.5-3.0	2.5 - 3	2/29/2016	< 11	< 5.6
	E6-022916-3.0-3.5	3 - 3.5	2/29/2016	< 11	< 5.6
E6	E6-022916-3.5-4.0	3.5 - 4	2/29/2016	< 11	< 5.7
	E7-022916-0.0-0.5	0 - 0.5	2/29/2016	< 11	< 5.7
	E7-022916-0.5-1.0	0.5 - 1	2/29/2016	< 11	< 5.7
	E7-022916-1.0-1.5	1 - 1.5	2/29/2016	< 11	< 5.6
	E7-022916-1.5-2.0	1.5 - 2	2/29/2016	< 11	< 5.7
	E7-022916-2.0-2.5	2 - 2.5	2/29/2016	< 12	< 6.1
E7	E7-022916-2.5-3.0	2.5 - 3	2/29/2016	< 11	< 5.7
	E8-022916-0.0-0.5	0 - 0.5	2/29/2016	< 11	< 5.6
	E8-022916-0.5-1.0	0.5 - 1	2/29/2016	< 11	< 5.4
	E8-022916-1.0-1.5	1 - 1.5	2/29/2016	< 11	< 5.5
	E8-022916-1.5-2.0	1.5 - 2	2/29/2016	< 11	< 5.6
	E8-022916-2.0-2.5	2 - 2.5	2/29/2016	< 11	< 5.7
	E8-022916-2.5-3.0	2.5 - 3	2/29/2016	< 13	< 6.6
	6-011516	0 - 1	1/15/2016	< 14	17
	RPZ-12-PS1-121515-0.5	0.5	12/15/2015	< 12	22
	RPZ-12-PS2-121515-0.5	0.5	12/15/2015	< 11	35
	RPZ-12-PS3-121515-0.5	0.5	12/15/2015	< 13	18
	RPZ-12-PS4-121515-0.5	0.5	12/15/2015	< 13	7.2
	RPZ-12-PS5-121515-1.0	1	12/15/2015	< 11	6.6
	RPZ-12-PS6-121515-0.5	0.5	12/15/2015	< 12	< 6.0
	RPZ-12-PS7-121515-0.5	0.5	12/15/2015	< 12	9.7
	RPZ-12-PS8-121515-0.5	0.5	12/15/2015	< 13	12
E8	RPZ-12-PS9-121515-0.5	0.5	12/15/2015	< 13	< 6.5
	F2-030116-0.0-0.5	0 - 0.5	3/1/2016	< 11	< 5.6
	F2-030116-0.5-1.0	0.5 - 1	3/1/2016	< 12	< 5.8
	F2-030116-1.0-1.5	1 - 1.5	3/1/2016	< 11	< 5.7
	F2-030116-1.5-2.0	1.5 - 2	3/1/2016	< 12	< 5.8
	F2-030116-2.0-2.5	2 - 2.5	3/1/2016	< 12	< 6.1
	F2-030116-2.5-3.0	2.5 - 3	3/1/2016	< 12	< 5.8
	F2-030116-3.0-3.5	3 - 3.5	3/1/2016	< 11	< 5.7
F2	F2-030116-3.5-4.0	3.5 - 4	3/1/2016	< 11	< 5.6

Grid Location	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytical Results (milligrams per kilogram)	
				Arsenic	Lead
	F3-030116-0.0-0.5	0 - 0.5	3/1/2016	< 11	< 5.5
	F3-030116-0.5-1.0	0.5 - 1	3/1/2016	< 11	< 5.7
	F3-030116-1.0-1.5	1 - 1.5	3/1/2016	< 11	< 5.5
F3	F3-030116-1.5-2.0	1.5 - 2	3/1/2016	< 12	< 5.8
	F4-030116-0.0-0.5	0 - 0.5	3/1/2016	< 11	< 5.5
	F4-030116-0.5-1.0	0.5 - 1	3/1/2016	< 11	< 5.5
	F4-030116-1.0-1.5	1 - 1.5	3/1/2016	< 11	< 5.5
	F4-030116-1.5-2.0	1.5 - 2	3/1/2016	< 11	< 5.5
	F4-030116-2.0-2.5	2 - 2.5	3/1/2016	< 11	< 5.4
	F4-030116-2.5-3.0	2.5 - 3	3/1/2016	< 11	< 5.7
	F4-030116-3.0-3.5	3 - 3.5	3/1/2016	< 11	< 5.4
	F4-030116-3.5-4.0	3.5 - 4	3/1/2016	< 11	< 5.6
	F4-030116-4.0-4.5	4 - 4.5	3/1/2016	< 11	< 5.6
	F4-030116-4.5-5.0	4.5 - 5	3/1/2016	< 12	< 6.2
	F4-030116-5.0-5.5	5 - 5.5	3/1/2016	< 13	< 6.4
F4	F4-030116-5.5-6.0	5.5 - 6	3/1/2016	< 12	< 6.0
	F5-030116-0.0-0.5	0 - 0.5	3/1/2016	< 11	< 5.5
	F5-030116-0.5-1.0	0.5 - 1	3/1/2016	< 11	< 5.7
	F5-030116-1.0-1.5	1 - 1.5	3/1/2016	< 11	< 5.5
	F5-030116-1.5-2.0	1.5 - 2	3/1/2016	< 11	< 5.6
	F5-030116-2.0-2.5	2 - 2.5	3/1/2016	< 12	< 5.8
	F5-030116-2.5-3.0	2.5 - 3	3/1/2016	< 11	< 5.7
	F5-030116-3.0-3.5	3 - 3.5	3/1/2016	< 12	< 5.8
	F5-030116-3.5-4.0	3.5 - 4	3/1/2016	< 11	< 5.6
	F5-030116-4.0-4.5	4 - 4.5	3/1/2016	< 11	< 5.5
	F5-030116-4.5-5.0	4.5 - 5	3/1/2016	< 12	< 5.8
	F5-030116-5.0-5.5	5 - 5.5	3/1/2016	< 12	< 6.2
	F5-030116-5.5-6.0	5.5 - 6	3/1/2016	< 12	< 6.2
	F5-030116-6.0-6.5	6 - 6.5	3/1/2016	< 12	< 6.1
F5	F5-030116-6.5-7.0	6.5 - 7	3/1/2016	< 13	< 6.3
	F6-030116-0.0-0.5	0 - 0.5	3/1/2016	< 11	< 5.5
	F6-030116-0.5-1.0	0.5 - 1	3/1/2016	< 11	< 5.7
	F6-030116-1.0-1.5	1 - 1.5	3/1/2016	< 11	< 5.5
	F6-030116-1.5-2.0	1.5 - 2	3/1/2016	< 11	< 5.6
	F6-030116-2.0-2.5	2 - 2.5	3/1/2016	< 11	< 5.6
	F6-030116-2.5-3.0	2.5 - 3	3/1/2016	< 11	< 5.4
	F6-030116-3.0-3.5	3 - 3.5	3/1/2016	< 11	< 5.5
	F6-030116-3.5-4.0	3.5 - 4	3/1/2016	< 11	< 5.6
	F6-030116-4.0-4.5	4 - 4.5	3/1/2016	< 12	< 5.8
F6	F6-030116-4.5-5.0	4.5 - 5	3/1/2016	< 12	< 6.1

Grid Location	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytical Results (milligrams per kilogram)	
				Arsenic	Lead
F7	F7-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.5
	F7-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.4
	5-011516	0 - 1	1/15/2016	< 14	13
	RPZ-11-PS1-121415-1.0	1	12/14/2015	< 13	< 6.6
	RPZ-11-PS2-121415-0.5	0.5	12/14/2015	< 14	10
	RPZ-11-PS3-121415-0.5	0.5	12/14/2015	< 15	11
	RPZ-11-PS4-121415-1.0	1	12/14/2015	< 13	< 6.4
F8	RPZ-11-PS5-121415-1.0	1	12/14/2015	< 13	< 6.6
	G2-030116-0.0-0.5	0 - 0.5	3/1/2016	< 12	< 5.8
	G2-030116-0.5-1.0	0.5 - 1	3/1/2016	< 11	< 5.6
	G2-030116-1.0-1.5	1 - 1.5	3/1/2016	< 11	< 5.6
	G2-030116-1.5-2.0	1.5 - 2	3/1/2016	< 13	< 6.3
	G2-030116-2.0-2.5	2 - 2.5	3/1/2016	< 12	< 5.9
G2	G2-030116-2.5-3.0	2.5 - 3	3/1/2016	< 10	< 5.2
	G3-030116-0.0-0.5	0 - 0.5	3/1/2016	< 12	< 6.2
	G3-030116-0.5-1.0	0.5 - 1	3/1/2016	< 11	< 5.6
	G3-030116-1.0-1.5	1 - 1.5	3/1/2016	< 11	< 5.5
	G3-030116-1.5-2.0	1.5 - 2	3/1/2016	< 11	< 5.5
	G3-030116-2.0-2.5	2 - 2.5	3/1/2016	< 11	< 5.7
	G3-030116-2.5-3.0	2.5 - 3	3/1/2016	< 12	< 5.9
	G3-030116-3.0-3.5	3 - 3.5	3/1/2016	< 11	< 5.6
	G3-030116-3.5-4.0	3.5 - 4	3/1/2016	< 12	< 6.0
	G3-030116-4.0-4.5	4 - 4.5	3/1/2016	< 13	< 6.6
G3	G3-030116-4.5-5.0	4.5 - 5	3/1/2016	< 12	< 6.0
	G4-030116-0.0-0.5	0 - 0.5	3/1/2016	< 11	< 5.4
	G4-030116-0.5-1.0	0.5 - 1	3/1/2016	< 11	< 5.4
	G4-030116-1.0-1.5	1 - 1.5	3/1/2016	< 11	< 5.5
	G4-030116-1.5-2.0	1.5 - 2	3/1/2016	< 12	< 5.8
	G4-030116-2.0-2.5	2 - 2.5	3/1/2016	< 11	< 5.4
	G4-030116-2.5-3.0	2.5 - 3	3/1/2016	< 11	< 5.5
	G4-030116-3.0-3.5	3 - 3.5	3/1/2016	< 11	< 5.6
	G4-030116-3.5-4.0	3.5 - 4	3/1/2016	< 12	< 5.9
	G4-030116-4.0-4.5	4 - 4.5	3/1/2016	< 11	< 5.5
	G4-030116-4.5-5.0	4.5 - 5	3/1/2016	< 12	< 5.8
	G4-030116-5.0-5.5	5 - 5.5	3/1/2016	< 11	< 5.6
	G4-030116-5.5-6.0	5.5 - 6	3/1/2016	< 11	< 5.5
	G4-030116-6.0-6.5	6 - 6.5	3/1/2016	< 11	< 5.4
G4	G4-030116-6.5-7.0	6.5 - 7	3/1/2016	< 12	< 5.9
	G5-030116-0.0-0.5	0 - 0.5	3/1/2016	< 11	< 5.4
G5	G5-030116-0.5-1.0	0.5 - 1	3/1/2016	< 11	< 5.7

Grid Location	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytical Results (milligrams per kilogram)	
				Arsenic	Lead
	G5-030116-1.0-1.5	1 - 1.5	3/1/2016	< 11	< 5.6
	G5-030116-1.5-2.0	1.5 - 2	3/1/2016	< 11	< 5.6
	G5-030116-2.0-2.5	2 - 2.5	3/1/2016	< 11	< 5.4
	G5-030116-2.5-3.0	2.5 - 3	3/1/2016	< 11	< 5.4
G6	G6-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.4
G7	G7-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.4
	4-011516	0 - 1	1/15/2016	< 13	14
	RPZ-10-PS1-121415-1.0	1	12/14/2015	17	27
	RPZ-10-PS2-121415-0.5	0.5	12/14/2015	< 13	6.4
	RPZ-10-PS3-121415-0.5	0.5	12/14/2015	< 13	6.9
	RPZ-10-PS4-121415-1.0	1	12/14/2015	< 12	< 6.2
	RPZ-10-PS5-121415-1.0	1	12/14/2015	< 13	< 6.6
	RPZ-9-PS2-121115-0.5	0.5	12/11/2015	< 13	< 6.3
	RPZ-9-PS3-121115-0.5	0.5	12/11/2015	< 13	< 6.3
	RPZ-9-PS4-122815-0.5	0.5	12/28/2015	< 13	< 6.4
	RPZ-9-PS5-121115-0.5	0.5	12/11/2015	< 13	< 6.7
G8	RPZ-9-PS6-122815-0.5	0.5	12/28/2015	< 13	15
	H2-030116-0.0-0.5	0 - 0.5	3/1/2016	< 12	< 6.0
	H2-030116-0.5-1.0	0.5 - 1	3/1/2016	< 12	< 5.8
	H2-030116-1.0-1.5	1 - 1.5	3/1/2016	< 12	< 5.8
	H2-030116-1.5-2.0	1.5 - 2	3/1/2016	< 12	< 5.8
	H2-030116-2.0-2.5	2 - 2.5	3/1/2016	< 12	< 5.8
	H2-030116-2.5-3.0	2.5 - 3	3/1/2016	< 12	< 5.9
	H2-030116-3.0-3.5	3 - 3.5	3/1/2016	< 12	< 6.2
	H2-030116-3.5-4.0	3.5 - 4	3/1/2016	< 12	< 6.1
	H2-030116-4.0-4.5	4 - 4.5	3/1/2016	19	21
	H2-030116-4.5-5.0	4.5 - 5	3/1/2016	< 12	< 6.1
	H2-030116-5.0-5.5	5 - 5.5	3/1/2016	< 13	< 6.3
	H2-030116-5.5-6.0	5.5 - 6	3/1/2016	< 12	< 6.1
	RPZ1-PS1-111915-1.0	1	11/19/2015	< 12	< 6.1
H2	RPZ1-PS2-111915-1.0	1	11/19/2015	< 11	< 5.7
	H3-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.4
	H3-030216-0.5-1.0	0.5 - 1	3/2/2016	< 11	< 5.4
	H3-030216-1.0-1.5	1 - 1.5	3/2/2016	< 11	< 5.4
	H3-030216-1.0-1.5 D *	1 - 1.5	3/2/2016	< 11	< 5.3
H3	H3-030216-1.5-2.0	1.5 - 2	3/2/2016	< 11	< 5.4
H4	H4-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.6
H5	H5-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.3
H6	H6-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.5
	H6-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.5

Grid Location	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytical Results (milligrams per kilogram)	
				Arsenic	Lead
H7	H7-030216-0.0-0.5	0 - 0.5	3/2/2016	< 10	< 5.2
	H8-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.5
	H8-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.4
	3-011516	0 - 1	1/15/2016	< 14	18
	RPZ-8-PS1-121115-0.5	0.5	12/11/2015	< 14	10
	RPZ-8-PS1D-121115-0.5 *	0.5	12/11/2015	< 14	15
	RPZ-8-PS2-121115-0.5	0.5	12/11/2015	< 12	11
	RPZ-8-PS3-121115-0.5	0.5	12/11/2015	< 13	10
	RPZ-8-PS4-121115-0.5	0.5	12/11/2015	< 14	7.7
	RPZ-8-PS5-121115-0.5	0.5	12/11/2015	< 14	< 7.1
	RPZ-8-PS6-121115-0.5	0.5	12/11/2015	15	30
	RPZ-8-PS7-121115-0.5	0.5	12/11/2015	< 12	9.2
H8	RPZ-9-PS1-121115-0.5	0.5	12/11/2015	16	11
	I2-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.7
	RPZ2-PS1-111915-0.5	0.5	11/19/2015	< 12	6.6
	RPZ2-PS2-111915-0.5	0.5	11/19/2015	< 12	10
I2	RPZ2-PS3-111915-0.5	0.5	11/19/2015	< 13	9.3
I3	I3-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.3
I4	I4-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.6
	I4-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.4
I5	I5-030216-0.0-0.5	0 - 0.5	3/2/2016	< 12	< 5.9
	I5-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.7
I6	I6-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.7
I7	I7-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.4
	I8-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.3
	I8-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.3
	1-011516	0 - 1	1/15/2016	< 13	12
	2-011516	0 - 1	1/15/2016	< 13	14
	RPZ-7-PS1-121015-1.0	1	12/10/2015	< 14	< 6.8
I8	RPZ-7-PS2-121015-1.0	1	12/10/2015	< 14	< 6.8
	RPZ3-PS1-112015-0.5	0.5	11/20/2015	< 11	< 5.6
	RPZ4-PS1-112015-0.5	0.5	11/20/2015	< 11	< 5.6
J2	RPZ4-PS2-112015-0.5	0.5	11/20/2015	< 11	< 5.5
J3	J3-030216-0.0-0.5	0 - 0.5	3/2/2016	< 12	< 5.8
	J3-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.7
J4	J4-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.6
J5	J5-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.6
	J6-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.7
	J6-030216-0.5-1.0	0.5 - 1	3/2/2016	< 11	< 5.6
J6	J6-030216-0.5-1.0 D *	0.5 - 1	3/2/2016	< 11	< 5.5

Grid Location	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytical Results (milligrams per kilogram)	
				Arsenic	Lead
	J7-030216-0.0-0.5	0 - 0.5	3/2/2016	< 12	< 5.9
	J7-030216-0.5-1.0	0.5 - 1	3/2/2016	< 11	< 5.6
J7	J7-030216-0.5-1.0 D *	0.5 - 1	3/2/2016	< 11	< 5.6
	J8-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.4
	RPZ-6-PS1-121015-0.5	0.5	12/10/2015	< 14	8.1
	RPZ-6-PS2-121015-0.5	0.5	12/10/2015	< 13	< 6.7
	RPZ-6-PS3-121015-1.0	1	12/10/2015	18	42
J8	RPZ-6-PS4-121015-0.5	0.5	12/10/2015	< 13	< 6.4
	RPZ5-PS1-112015-0.5	0.5	11/20/2015	< 13	27
	RPZ5-PS2-112315-0.5	0.5	11/23/2015	< 13	< 6.7
	RPZ5-PS3-112415-0.5	0.5	11/24/2015	< 13	< 6.5
	RPZ5-PS4-112415-0.5	0.5	11/24/2015	< 13	18
	RPZ5-PS5-112515-0.5	0.5	11/25/2015	< 13	19
K2	RPZ5-PS6-113015-0.5	0.5	11/30/2015	< 14	< 6.9
K3	K3-030216-0.0-0.5	0 - 0.5	3/2/2016	< 12	< 5.8
	K4-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.6
	K4-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.5
K4	K4-030216-0.5-1.0	0.5 - 1	3/2/2016	< 12	< 5.8
K5	K5-030216-0.0-0.5	0 - 0.5	3/2/2016	< 12	< 5.8
K6	K6-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.4
	K6-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.4
K7	K7-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.5
K8	K8-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.4
	RPZ5-PS7-113015-0.5	0.5	11/30/2015	< 13	< 6.5
	RPZ5-PS8-120115-0.5	0.5	12/1/2015	< 13	7.2
	RPZ5-PS9-120215-0.5	0.5	12/2/2015	< 13	< 6.5
L2	RPZ5-PS10-120215-0.5	0.5	12/2/2015	< 13	6.7
	RPZ5-PS11A-120915-1.0	1	12/9/2015	20	25
	RPZ5-PS12-120215-0.5	0.5	12/2/2015	< 14	12
	RPZ5-PS13-120315-0.5	0.5	12/3/2015	< 13	< 6.4
	RPZ5-PS14-120215-0.5	0.5	12/2/2015	< 14	8.4
	RPZ5-PS15-120215-0.5	0.5	12/2/2015	19	19
	RPZ5-PS16-120315-0.5	0.5	12/3/2015	12	21
	RPZ5-PS17-120415-0.5	0.5	12/4/2015	< 11	11
	RPZ5-PS18-120415-0.5	0.5	12/4/2015	< 11	< 5.4
L3	RPZ5-PS19-120415-1.0	1	12/4/2015	13	< 6.1
	RPZ5-PS20-120815-0.5	0.5	12/8/2015	< 13	< 6.3
	RPZ5-PS21-120815-0.5	0.5	12/8/2015	< 15	8.0
	RPZ5-PS22-120815-0.5	0.5	12/8/2015	< 16	34
L4	RPZ5-PS23-120915-0.5	0.5	12/9/2015	< 14	7.4

Grid Location	Sample Identification	Sample Depth (feet bgs)	Sample Date	Analytical Results (milligrams per kilogram)	
				Arsenic	Lead
	RPZ5-PS24-120915-0.5	0.5	12/9/2015	17	15
	RPZ5-PS25-120915-0.5	0.5	12/9/2015	< 15	< 7.5
	RPZ-5-PS26-121015-0.5	0.5	12/10/2015	< 15	< 7.7
	RPZ-5-PS27-121015-0.5	0.5	12/10/2015	< 14	17
	RPZ-5-PS28-121015-0.5	0.5	12/10/2015	< 14	< 7.1
L5	L5-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.7
L6	L6-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.5
L7	L7-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.3
L8	L8-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.3
	L8-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.4
L5	L5-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.7
L6	L6-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.5
L7	L7-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.3
L8	L8-030216-0.0-0.5	0 - 0.5	3/2/2016	< 11	< 5.3
	L8-030216-0.0-0.5 D *	0 - 0.5	3/2/2016	< 11	< 5.4
Average Concentrations3				**6.2**	**4.9**
MTCA Cleanup Levels for Soil4				**20**	**250**

NOTES:
< denotes analyte not detected at or exceeding the laboratory practical quantitation limit (PQL) listed.
— denotes sample not analyzed.
* denotes sample is a field duplicate sample. Duplicate results are not included in the averaging calculation.
U = results not detected at concentrations exceeding laboratory PQL listed.
1 Depth in feet below ground surface (bgs).
2 Analyzed by U.S. Environmental Protection Agency Method 6010B.
3 Results at or less than the laboratory PQL are at one-half the PQL value for calculating average arsenic and lead concentrations.
4 Washington State Model Toxics Control Act Cleanup Regulation (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses, Table 740-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, as amended 2013.

#15753

CULTURAL RESOURCES REPORT COVER SHEET

Author: Allie Rae Taylor, Bethany Mathews, and Sarah Amell

Title of Report: Assessment of Site 45PI01358 for the Northwest Logistics Building 2 Project, City of DuPont, Pierce County, WA

Date of Report: 15 October 2015

County(ies): Pierce Section: 25 Township: 19N Range: 1E

Quad: Nisqually 7.5 min Acres: 2

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 # 2015-19 ☐ No

Were Human Remains Found? ☐ Yes DAHP Case # ☒ No

DAHP Archaeological Site #: 45PI001358

- 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.

Assessment of Site 45PI01358 for the Northwest Logistics Building 2 Project, City of DuPont, Pierce County, WA

Prepared for:

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15 October 2015

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Assessment of Site 45PI01358 for the Northwest Logistics Building 2 Project, City of DuPont, Pierce County, WA

Executive Summary

Aqua Terra Cultural Resource Consultants (ATCRC) was contracted by Islero, LLC to conduct archaeological monitoring and historic register eligibility assessment of site 45PI01358 for the NW Logistics Center Building 2 Project (the project). Islero, LLC is constructing the Northwest Logistics Center Building 2 near the intersection of Center Drive and International Place in DuPont, Washington (parcels 3000039-001-0 to 300039-021-0, 300039-024 to 300039-026-0, and 300039-027-2). Islero is planning to construct a 695,000 square foot warehouse distribution center with associated parking facilities and loading docks in the project area. The project requires a State Environmental Policy Act (SEPA) permit, and as such is subject to a cultural resources review. During the cultural resources review for the project, Historical Research Associates (HRA) recorded site 45PI01358, and recommended further testing to determine the historic register eligibility of the site. The Department of Archaeology and Historic Preservation (DAHP) issued excavation permit #2015-19 to ATCRC for testing of site 45PI01358. ATCRC's assessment of the site included background research, site survey and testing, artifact cataloguing, preparation of this report, and an updated site for form site 45PI01358. ATCRC recommends site 45PI01358 is not eligible for nomination to local, state and national historic registers because the site is unlikely to yield additional information important in history. Therefore ATCRC recommends the project is unlikely to have a significant adverse impact at site 45PI01358.

Regulatory Compliance

This project is subject to a State Environmental Policy Act (SEPA) review. Under SEPA, cultural resources should be evaluated for their eligibility to be listed on local, state, and national historic property registers. Question 13 of the SEPA checklist provides guidance on discovering eligible historic and cultural properties that might be impacted by the proposed project. If eligible historic properties are identified within the area of potential impacts (API), the lead agency will require the preparation of an Environmental Impact Statement. Potential adverse effects to historic properties must be assessed through the EIS, and a resolution of adverse effects recommended. Under a 1983 Memorandum of Agreement between the City of DuPont, DAHP, the Nisqually Indian Tribe, and the United States Army Corps of Engineers for Weyerhaeuser Company property, the City is responsible for issuing permits within its jurisdiction, as well as associated consultation. SEPA reviews are distributed to relevant agencies, tribes, and the public for comment. Consultation correspondence relevant to the assessment of this site is attached in Appendix A.

Relevant Washington State laws also address archeological sites and Native American burials. The Archaeological Sites and Resources Act [RCW 27.53] prohibits disturbance of known prehistoric and historic archaeological sites on public or private lands. The Indian Graves and Records Act [RCW 27.44] prohibits disturbance of American Indian graves and provides that

inadvertent disturbance through construction or other activity requires re-interment under supervision of the appropriate Indian tribe.

Evaluation of Historic Properties

Historic properties, defined by the National Park Service (NPS) as "a district, site, building, structure or object significant in American history, architecture, engineering, archeology or culture at the national, state, or local level," typically are evaluated in terms of historic significance, integrity, and the general stipulation that the property be 50 years old or older (for exceptions see 36 CFR 60.4, Criteria Considerations [a–g]).

National Register Bulletin Guidelines state that to be eligible for listing in the NRHP, a historic property must be significant in American history, architecture, archaeology, engineering, or culture and possess integrity of location, design, materials, workmanship, feeling, and association (Little et al. 2000; Shrimpton 1990). Additionally, to be considered eligible, a historic property must meet one or more of the four NRHP criteria:

> a) be associated with events that have made a significant contribution to the broad patterns of our history; or
> b) be associated with the lives of persons significant in our past; or
> c) embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
> d) have yielded, or may be likely to yield, information important in prehistory or history.

Most cultural resources, historic and prehistoric alike, are evaluated under Criterion (d), their potential to yield important information. This objective is accomplished by developing historic contexts. An historic context is a body of information about the past and the tangible expressions of past events organized by the elements of theme, place, and time (NPS 1986, 1991).

To qualify for listing on the Washington Heritage Register a property must:

1. be 50 years old or of exceptional significance to local or state history, architecture, archaeology, engineering or culture,
2. have high to medium level of integrity of character-defining features, and
3. have documented historical significance at the local, state, or federal level.

Properties are eligible for listing on the Pierce County Register of Historic Places if they:

1. are 50 years old or of exceptional significance,
2. possess the quality of significance in American history, architecture, archaeology, culture,
3. have integrity of location, design, setting, materials, workmanship, feeling, and association,

4. and either
    a. is associated with events that have made a significant contribution to the broad patterns of our history; or
    b. is associated with the lives of persons significant in Pierce County's past; or
    c. an embodiment of the distinctive characteristics of a type, period, or method of construction or that represents the distinguishable entity whose components may lack individual distinction; or
    d. has yielded or may be likely to yield information important in prehistory or history.

Integrity of Historic Properties

Degree of integrity should be taken into consideration when evaluating resources under historic register criteria. Integrity is the ability of an historic property to convey its significance. Integrity must be evident through historic qualities that include location, design, setting, materials, workmanship, feeling, and association (NPS 1991:1):

1. If eligible for its historic associations under Criterion (a), then the resource should retain substantial aspects of its overall integrity, although design and workmanship may not weigh as heavily as those aspects related directly to its historic associations.
2. To be eligible for its association with a prominent person under Criterion (b), the resource should retain some aspects of integrity, although design and workmanship may not be as important as the others.
3. To be eligible for its architectural merits under Criterion (c), a resource must retain its physical features that constitute a significant construction technique or architectural style. Critical aspects of integrity for such properties are design, workmanship, and materials. Location and setting will also be important for those resources whose design reflects their immediate environment.
4. Resources significant under Criterion (d) may not have the type of integrity described under the other criterion. Of the seven aspects of integrity, location, design, materials, and possibly workmanship are the most important.

Project Description

The API for the NW Logistics Building 2 project covers approximately 32 acres near the intersection of Center Drive and International Place (parcels 3000039-001-0 to 300039-021-0, 300039-024 to 300039-026-0, and 300039-027-2; NW ¼ Section 25 Township 19N Range 1E; Figure 1). The project will consist of a 695,000 square foot warehouse distribution center with associated parking facilities and loading docks in the project area. Proposed project actions within site 45PI01358 include excavation and tree removal (Figure 2).

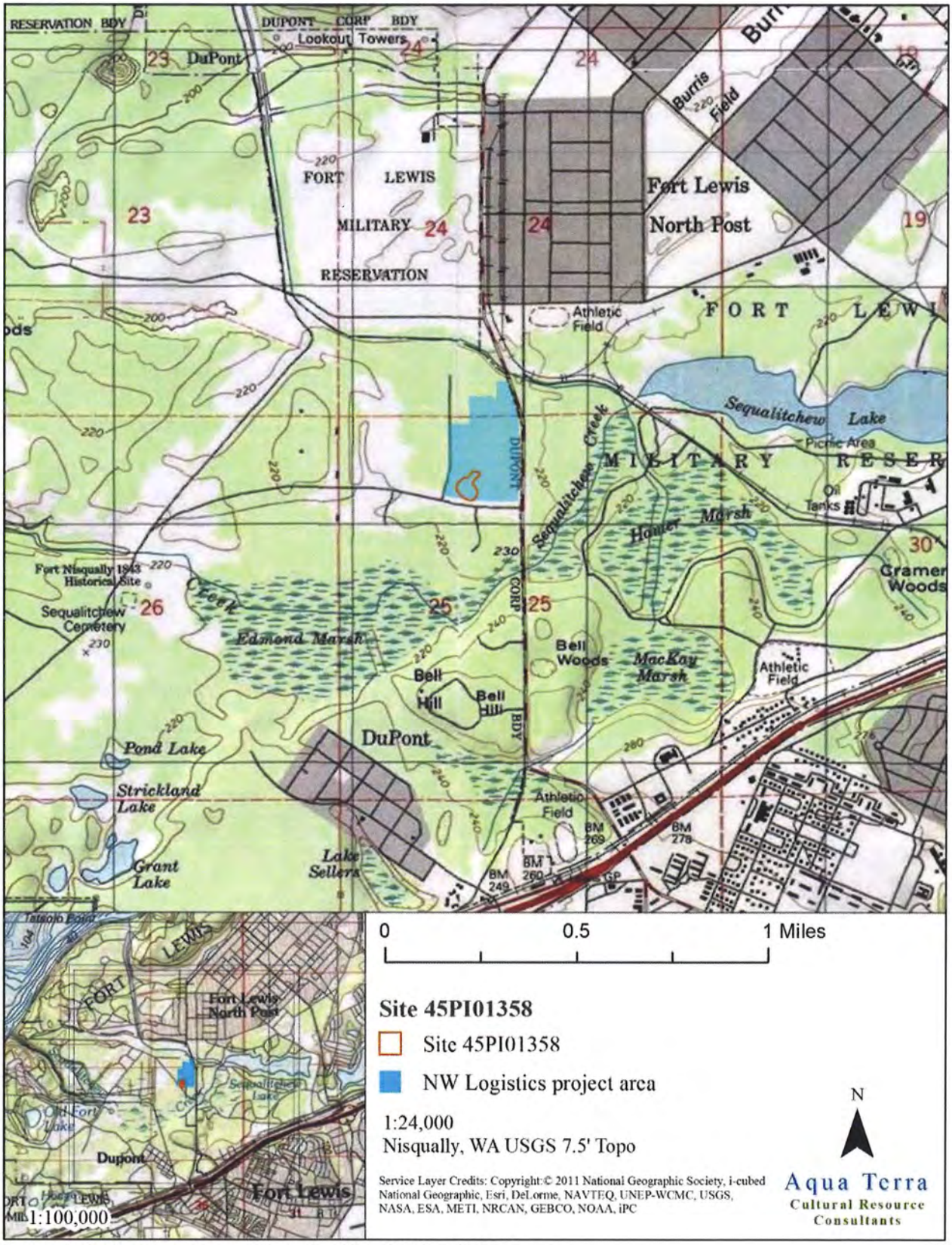

Figure 1. Project location on Nisqually, WA USGS 7.5' topo map.

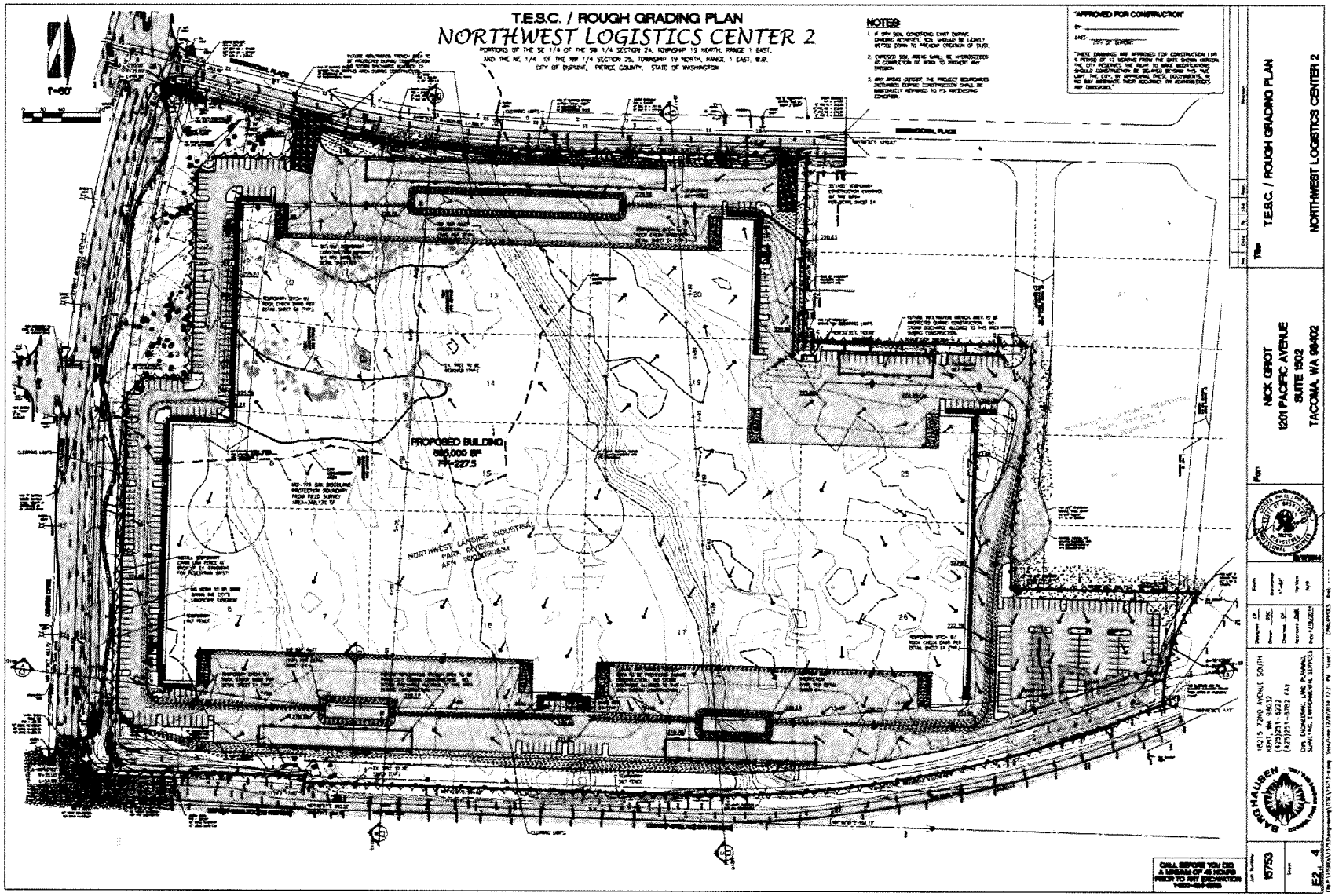

Figure 2. Project plans provided by Islero, LLC.

Site 45PI01358 Research History

During a cultural resources inventory for the project HRA identified site 45PI01358 during a pedestrian and subsurface survey (Schultze et al. 2015). The entire project area was surveyed at 20 meter intervals, with shovel probes spaced 30 meters apart on 20 meter transects. The pedestrian survey resulted in the recordation of two historic-era artifact scatters: sites 45PI01358 and 45PI01359 (Figure 3).

Site 45PI01359, located 160 meters north of site 45PI01358, consists of a scatter of artifacts associated with Fort Lewis training activities, dated from 1940-1960. Following pedestrian survey and shovel probe testing, the site was determined not eligible for nomination to the NRHP. Artifacts at the site were considered common, and HRA determined that further investigation would not "add to our understanding of history beyond that which is immediately apparent or has already been documented (Schultze et al. 2015)." DAHP concurred that site 45PI01359 was not eligible for listing in the NRHP (Log # 070114-30-PI).

Site 45PI1358 is a scatter of historic-age artifacts and two pit features located on what HRA identified as a cleared trail. Artifacts in the northern portion of the site appear to be associated with military training around 1940-1960. Given the spatial, temporal, and material similarities with 45PI01358, portions of this scatter are likely associated with ineligible site 45PI01359. Based on the preliminary survey, the southern portion of the site appeared to consist of two clusters of domestic artifacts, including a bottle base dated to 1915-1929. Tests within the site included 15 shovel probes (Figure 4). Six of these tests contained cultural materials up to 30 centimeters below surface (cmbs). All artifacts encountered below the ground surface were non-diagnostic metal fragments and wire nails (Table 1). HRA observed that Holocene-aged soils were disturbed across the site. It appeared that disturbance and pit features present on the site were associated with military training exercises. HRA obtained a 1908 assessor's map which shows a strong spatial association between early 1900s artifacts and recorded structure locations (see Figure 4; PCA 1908).

Site 45PI01358 Consultation

Due to the spatial and temporal association of these artifacts with known early 1900s structures, HRA recommended additional testing of the site. During consultation, the Nisqually Tribe concurred with HRA's recommendation to further test site 45PI01358, and requested selective monitoring around the site and nearby oak woodland. DAHP concurred with Nisqually's recommendation for monitoring, and recommended formal archaeological testing of the site to determine NRHP eligibility (Log # 070114-30-PI). DAHP recommended the site may be eligible under Criterion A for information on early settlement and subsistence as well as Criterion D, but suggested the site might lack integrity due to historic military training activities.

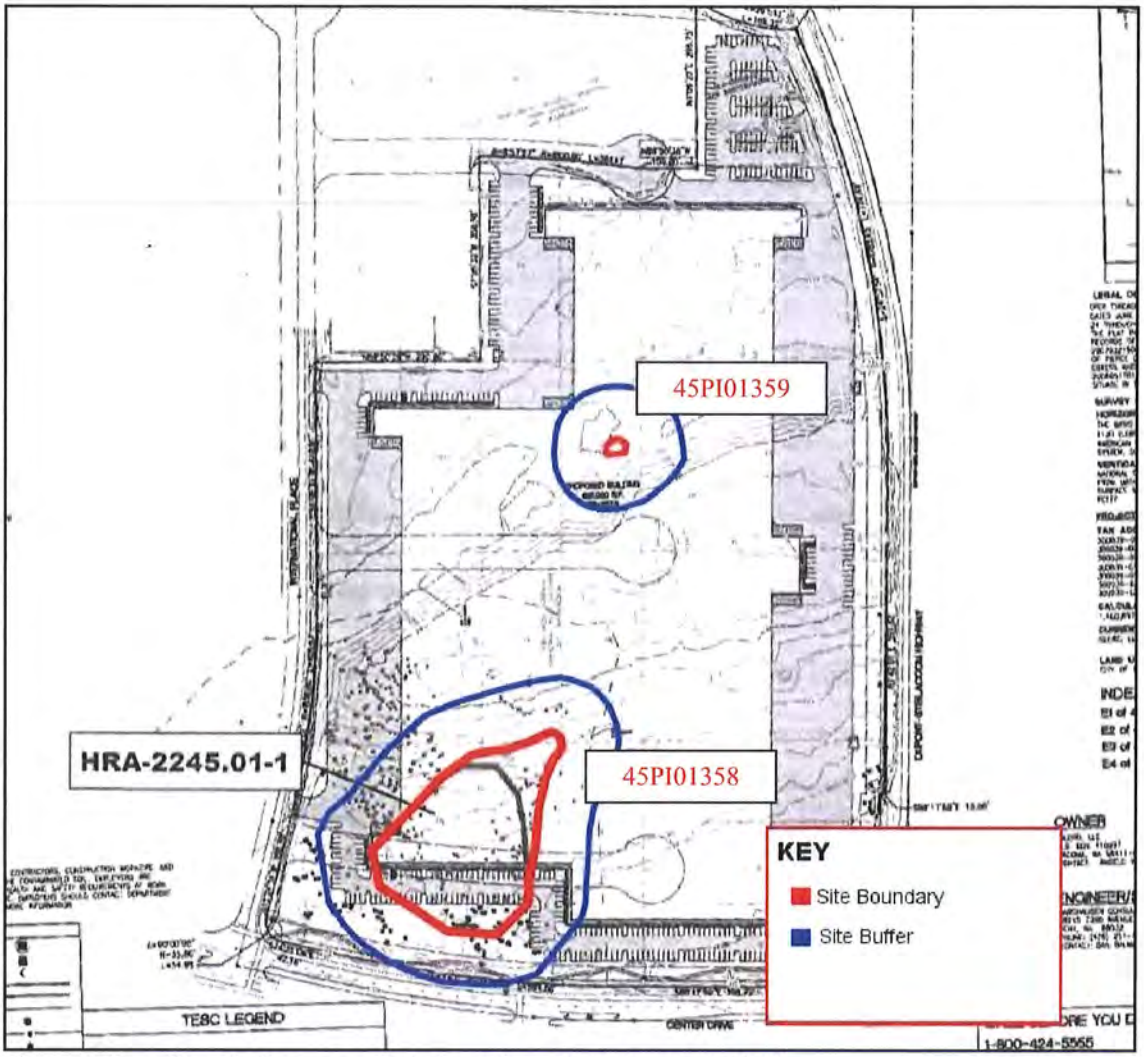

Figure 3. Location of sites on project plans (from Schultze et al. 2015).

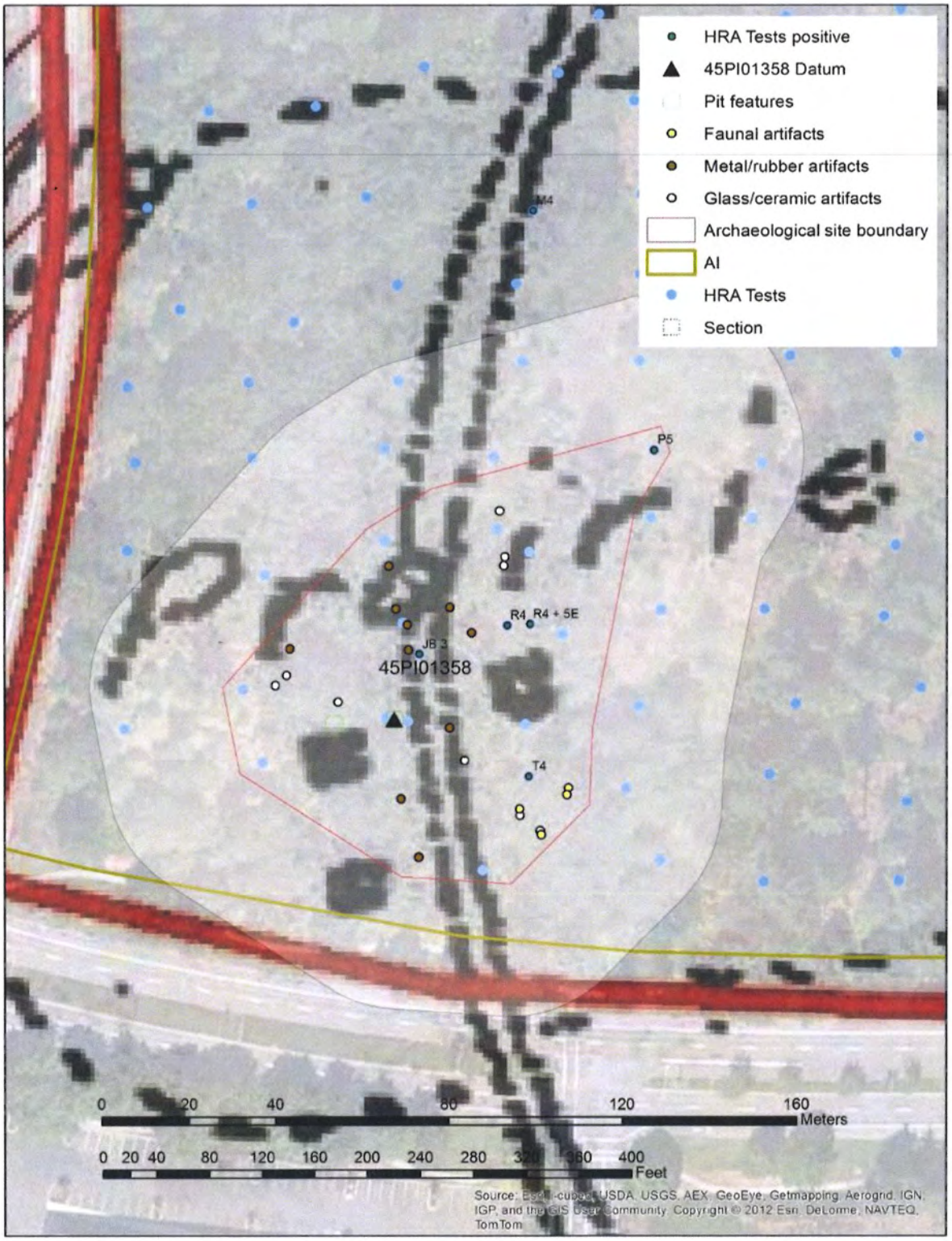

Figure 4. Site 45PI01358 survey data collected by HRA overlaid on 1908 Pierce County Assessor's Map and 2012 Aerial map.

Table 1. HRA shovel probe results at site 45PI01358.

Shovel Probe	Cultural Materials	Context
P5	6 wire nails	Disturbed
Q3	None	Disturbed
Q4	None	Disturbed
Q4+5E	None	Disturbed
JB3	Unknown	Unknown
JB4	None	Unknown
R4	1 wire nail, 1 clear bottle glass fragment, 2 green bottle glass fragments 0-20cmbs	Disturbed
S4+5E	Unknown	Unknown
S6+10E	None	Disturbed
S2	None	Unknown
JB1	None	Disturbed
JB2	None	Disturbed
U2	None	Disturbed
U4	1 glazed white ceramic fragment 0-15cmbs	Disturbed
R4+5E	3 wire nails, 2 metal fragments, 1 clear bottle glass fragment	Disturbed

Background Research

ATCRC's review of background information on site 45PI01358 includes project files, local geologic data, historic maps, and cultural resources records available on DAHP's Washington Information System for Architectural and Archaeological Records Data (WISAARD) database. HRA provided ATCRC with data collected during the preliminary inventory of site 45PI01358. Additional background information on the project is available in the cultural resources inventory created for the project by HRA (Schultze 2015; Schultze et al. 2015).

Environmental Setting

The site is located in Pierce County, WA, at the southern end of the Puget Lowland. The Puget Lowland is a physiographic province that was shaped by several periods of extensive glaciation during the Pleistocene (Lasmanis 1991). The Vashon Stade of the Fraser Glaciation began around 18,000 BP with an advance of the Cordilleran ice sheet into the lowlands (Porter and Swanson 1998). The Puget Lobe of the ice sheet flowed down into the Puget Lowland and reached its terminus just south of Olympia between 14,500 and 14,000 BP (Clague and James 2002). The Puget Lobe began to retreat shortly after reaching its terminus. Marine waters entered the lowlands that had been carved out by the glacier and filled Puget Sound. The remaining ice was floated and wasted away rapidly. Glaciomarine drift deposits were released from the melting

glacial ice and deposited on the sea floor across the northern and central Puget Lowland causing the land to rebound and relative sea levels to fall and expose glacial outwash deposits (Clague and James 2002). About 11,600 to 10,000 RCYBP, the Cordilleran ice sheet advanced once again leaving glacial till and outwash deposits in much of northwestern Washington (Easterbrook 2003). Sediments were deposited and often reworked as glaciers advanced and retreated and glacial till and outwash deposits were left across much of the region at the end of the last glacial period (Snyder et al. 1973).

The project is located in mature oak woodland with encroaching conifers, on a gently sloping (0-6%) glacial outwash plain. The Natural Resource Conservation Service web soil survey records glacial outwash deposits from the Spanaway gravelly sandy loam series throughout the project area (NRCS 2015). Spanaway gravelly sandy loam is a somewhat excessively drained soil composed of volcanic ash over gravelly outwash materials. ATCRC anticipated encountering gravelly medial sandy loam to 35 centimeters, followed by very gravelly medial sandy loam to 46 centimeters, followed by extremely gravelly sand to 150 centimeters.

Cultural Setting

The project area is located within the traditional territory of the Nisqually (*sué‹bî*), a subgroup of the Southern Coast Salish (Haeberlin and Gunther 1930; Suttles and Lane 1990). Nisqually's traditionally lived in at least forty villages along the Nisqually River. People in this region maintained strong social ties to neighboring peoples in the precontact period. Precontact settlements of Coast Salish groups were often located along major waterways and at heads of bays or inlets, where abundant resources of coastal, riverine and inland environments supported a relatively rich, diverse, and reliable subsistence base. During winter months Coast Salish lived in large villages of cedar plank houses while the spring and summer months were spent at seasonal encampments often constructed of reed mats while fishing, hunting, and plant and berry collecting.

The first continued contact between Native and non-Native peoples in the vicinity of the API occurred during the establishment and operation of the Hudson Bay Company (HBC) in the early 1820s (Schultze 2015). HBC Fort Nisqually, located about 2 miles west of the API, was established near the Nisqually village at Sequalitchew Creek in 1832. Fort Nisqually was later relocated (1843) to a new location 0.8 miles west of the API in order to enlarge the fort and move it closer to a fresh water source (Munyan 1972). The fort served as the headquarters for the Puget Sound Agricultural Company (PSAC), an agricultural subsidiary of the HBC (Crooks 2007). The fort served as an important center of commerce, encouraging an influx of Euroamericans and increased trade to neighboring Coast Salish. The influx of non-natives to the Puget Sound was steady by the mid-1850s, and tribal groups were forced to cede their territories to the U.S. Government in 1854 (Ruby et al. 2010). Nisqually's were assigned to the Nisqually Reservation near Seaman Creek, despite their leaderships' refusal to sign the Medicine Creek Treaty of 1854. British-run Fort Nisqually remained in operation until approximately 1869 following The Treaty of Washington (1846) which ended Great Britain rule over that region (Suttles and Lane 1990).

In 1862, the United States government passed the Homestead Act, which granted 160 acres to individual U.S. citizens, as an effort to encourage non-native settlement following the Indian War of 1855-1856. The site is located on land that was granted to William H. Mastin in 1875, by authority of the 1855 Scrip-Warrant Act (BLM 2015). This act awarded federal land to soldiers for their service in the Mexican War. A search of historic records was unable to place a William H. Mastin in local history. Nearby land grants include 1872 cash sale grants to John H. O'Neal and Edward Huggins, 1873 Morill Act grants to Henry Williamson, Omar White and Mason Guess for an agricultural college, an 1878 homestead grant to John W. Huggins, an 1894 homestead grant to John W. Huggins, and an 1896 grant to the Northern Pacific Railroad Company (BLM 2015). An 1889 Plummer map also records these properties, as well as a wagon road located on the south and east boundaries of site 45PI01358 (Figure 5). The 1908 Assessor's Map of the area records the presence of three structures and a road running through a prairie at the Mastin property (see Figure 4).

Camp Lewis was founded in 1917, following the purchase of 70,000 acres by Pierce County and subsequent donation to the Army, as well as condemnation of Nisqually Reservation land (Kirk and Alexander 1990). The camp served as a mobilization, training and supply station in anticipation of the U.S. entry into the Great War. Following WWI, Fort Lewis developed into a permanent Army Post. A 1924 Metsker map of the site location indicates the land was owned by the DuPont Powder Company and was adjacent to land owned by the US military (Metsker 1924). DuPont was incorporated as a town in 1951, and land ownership remained constant for the project area (Figure 6). The DuPont Powder Company stopped operation in the year of 1976, following decommission, all buildings were burned (Thompson 2006). The Weyerhaeuser Company purchased the property in order to develop a residential/commercial/light industry project called Northwest Landing (Shultze 2015).

Previously Recorded Cultural Resources Studies and Sites

During the cultural resources inventory for the project, HRA identified 12 previously recorded archaeological sites within a half mile of the project area (Schultze et al. 2015). Nearby sites cover the historic period, from early settlement to the 1960s. Sites 45PI01361 and 45PI01333, located from 60-250 meters west, are public works features associated with a mid-1900s road. Railroad line PI01242, which connected WWII-era Fort Lewis warehouses to the Burlington Northern Railway, is located 1500 meters north of the site 45PI01359. A cluster of historic-era sites and isolates is located immediately south of Center Drive. The Henry Williamson homestead (45PI00454), which was occupied from the mid to late 1800s, is an unevaluated homestead site. Daugherty (1998) noted the site was limited to the upper 30cmbs, and because it had been disturbed through logging activities or Fort Lewis tank maneuvers, any structural remains or site limits could not be determined. Several other small historic-era artifact surface scatters have been recorded south of Center Drive. A circa-1900 glass bottle isolate was identified about 60 meters south of the site. The isolate was thought to be a small discard event associated with activities at DuPont, and recommended not eligible for the NRHP. Site 45PI0921 is an historic artifact surface scatter located 140 meters south, dated to DuPont use of area around 1925. Finally, site 45PI00921, located 150 meters south of the site, is an historic artifact scatter dated to DuPont use of the area before 1917.

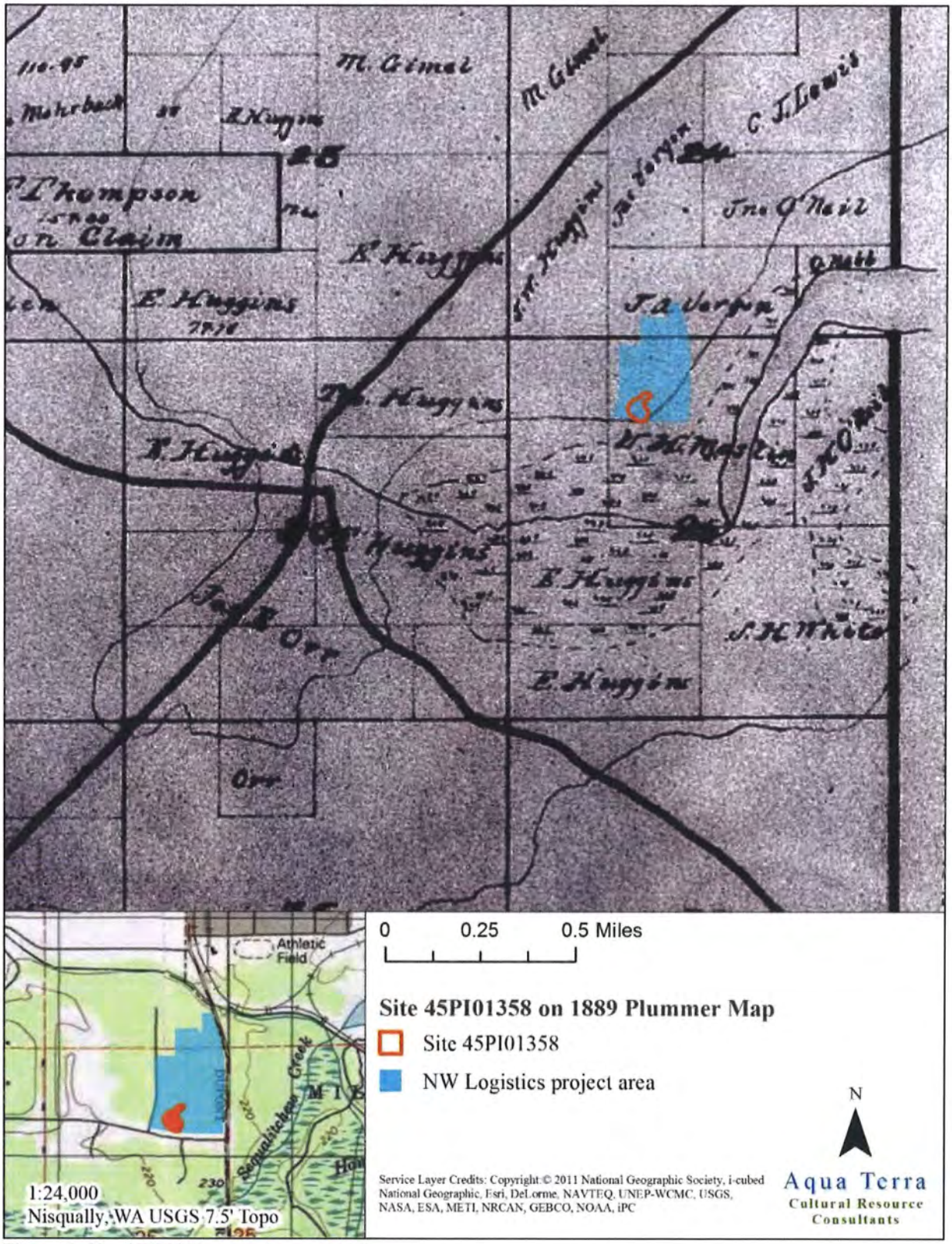

Figure 5. Site 45PI1358 overlaid on 1889 Plummer Map.

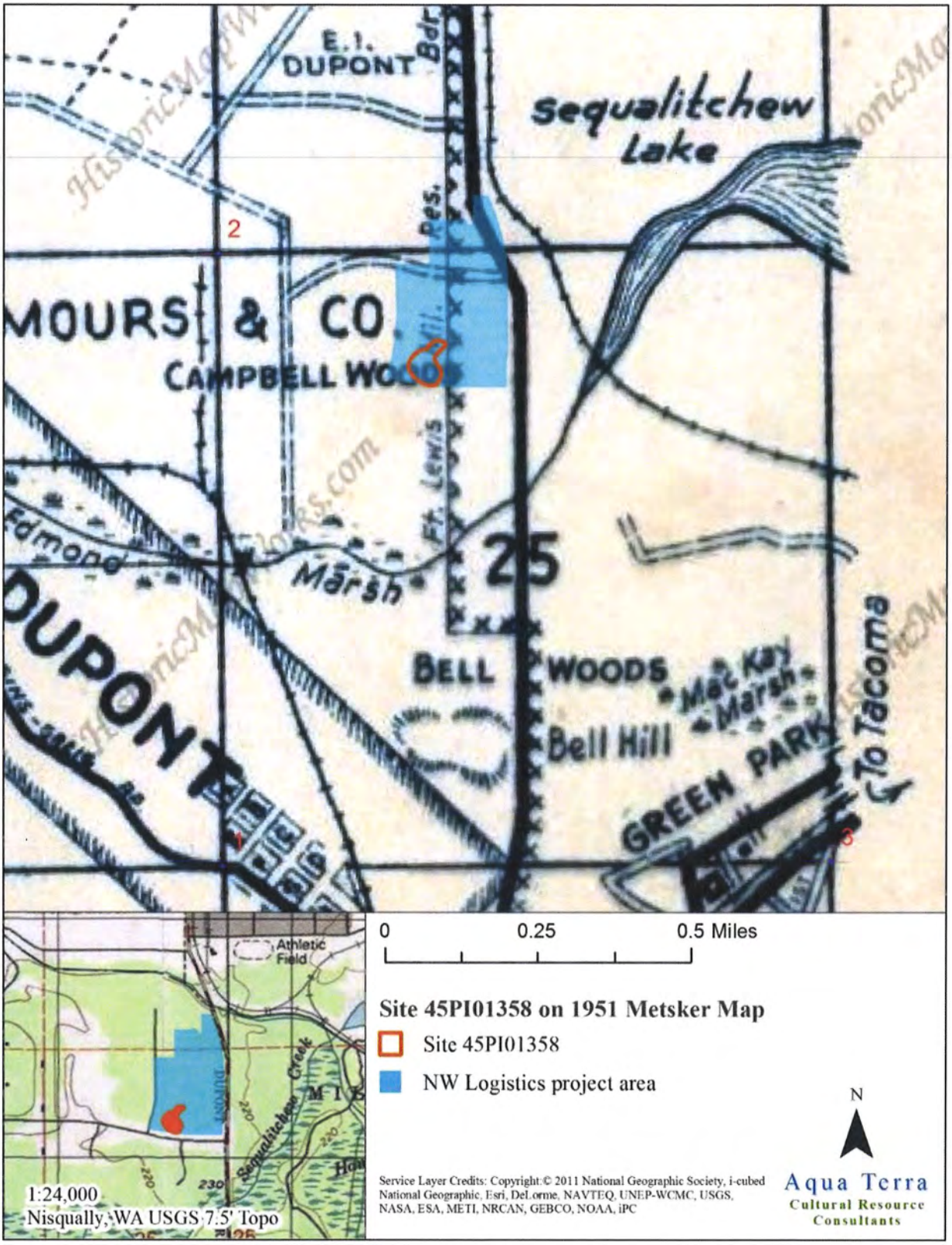

Figure 6. Site 45PI1358 overlaid on 1951 Metsker Map.

Archaeological Fieldwork

ATCRC conducted archaeological monitoring and testing at site 45PI01358 from April-July 2015. ATCRC assumed the project area had high potential for encountering cultural resources, and had an archaeological monitor on site during all excavation activities in this area. No additional cultural resources were identified during ATCRC's archaeological monitoring.

With assistance from the Nisqually Cultural Resources Department, ATCRC completed testing of site 45PI01358 from 15-17 July 2015. Personnel onsite included ATCRC Principal Investigator Sarah Amell; Project Archaeologist Bethany Mathews; and Archaeological Technicians Andrew Frierson and Allie Taylor. Nisqually cultural resource technicians Carol Dittbenner and John Petri were on site 16-17 July 2015 and the site was visited by THPO Jackie Wall on 17 July 17 2015. Artifacts recovered from the site were housed at ATCRC during analysis, and deposited at the DuPont Historical Museum following drafting of this report.

Archaeological Monitoring

ATCRC was contracted to provide archaeological monitoring during excavation activities outside of site 45PI01358 (Figure 7). Washington State requires that archaeological monitors meet the definition of a "professional archaeologist" under RCW 27.53.030(8). If the monitor does not meet this definition, they can be supervised by a Principal Investigator who meets the qualification requirements. According to the Secretary of the Interior's standards for a professional archaeologist, the minimum qualifications include a graduate degree in archaeology, anthropology, or a closely related field, plus:

- At least 1 year of full time professional experience or equivalent specialized training in archaeological research, administration or management;
- At least 4 months of supervised field and analytic experience in general North American archaeology.
- Demonstrated ability to carry research to completion. In addition to the minimum qualifications, a professional archaeologist shall have at least 1 year of full time professional experience at a supervisory level in the study of archaeological resources of the prehistoric and/or historic period.

Prior to project excavation activities near the site, HRA flagged a 100-foot buffer around site 45PI01358. Project work was conducted outside of this site buffer. ATCRC monitors were present during excavation activities from 9-21 April 2015. Monitors examined excavation profiles and substrate castings during excavation activities. ATCRC maintained daily logs and detailed photographic records of excavation. Ineligible site 45PI01359 was excavated during this project work. No additional archaeological materials were observed during archaeological monitoring of project excavation activities.

Figure 7. Site location overview facing east with completed project excavation in foreground.

Research Design

Following initial testing of site 45PI01358, HRA and DAHP concurred that site 45PI01358 was potentially eligible for nomination to the NRHP under Criteria A and D, as the site may have the potential to yield information on early Euromerican settlement and subsistence. The shovel probe survey conducted by HRA provided a site boundary and record of an assemblage indicative of early 1900s residential activities and WWII-era military training activities. ATCRC's research design for excavations at site 45PI01358 included further delineation of site boundaries, inventory of site features, assessment of the geoarchaeological context of the site, and a determination of historic register eligibility.

Following the research design developed in Daugherty (1998) for a nearby homestead site, ATCRC assumed there was potential to encounter subsurface artifacts or features within site 45PI01358. In order to study the depositional context and the potential to encounter intact features within the site, ATCRC anticipated excavating up to five 50cm x 50cm test units (TUs) in concentrations of artifacts, and within or adjacent to depression features. Preference was to be given to locations that appeared to have the potential to yield the greatest amount of geoarchaeological information. Given that all subsurface materials excavated by HRA were non-diagnostic metal located at a maximum depth of 30 cmbs in a disturbed context, a Ground Trak-enabled metal detector was to be used to detect coin-sized or larger metal objects up to 30 cmbs within the site. If metal detecting indicated a potential for subsurface, and thus potentially *in situ*, concentrations of artifacts, a maximum of three TUs were to be excavated at these locations. Two TUs were to be placed near the large depression feature associated with a concentration of

historic-era artifacts. In addition to the TUs, a maximum of 10 shovel probes (SPs) were to be excavated around the apparent boundaries of the site to confirm the extent of historic-era materials within the site.

It was understood that the proposed excavations were likely to result in the recovery of glass, ceramic, and metal artifacts dated from the early to mid-1900s. The horizontal and vertical location of artifacts was to be recorded, and artifacts would receive a preliminary analysis in the field and be catalogued on site excavation forms. Excavated artifacts and excavation forms were to be removed to the ATCRC facility for further analysis and temporary storage. Any surface artifacts not identified previously by HRA were to be analyzed in the field, and left in place. The test excavations were designed to generate sufficient data to identify the extent and depositional environment of the site, in order to study the site integrity and likelihood to yield additional scientific data. Following fieldwork, all artifacts were to be categorized by type and age. Spatial associations within the site were to be analyzed via a geographic information system. Any information resulting from the analysis of site features or artifacts was designed to determine the site's association with the local historic-era settlements, economies, and military activities discussed in the project background section of this report.

Metal-Detector Survey

On 15 July 2015 ATCRC conducted a 100-percent pedestrian survey of the project area. A Bounty Hunter Time Ranger metal detector was used during this survey to determine subsurface metal concentrations and the presence of metal near the site boundary. All surface artifacts were flagged and recorded by ATCRC staff. Positive metal detector readings were surface scraped, and metal objects were recorded if they were found immediately on the surface of the site, beneath duff and moss. Metal detector survey recordation included GPS locations (UTM NAD 1983 Zone 10), photographs, and descriptions. Diagnostic artifacts were collected for further analysis and preservation.

Sub-Surface Testing

Following the metal-detector survey, ATCRC excavated 10 SPs and 6 TUs within site 45PI01358. During the survey it was discovered that the greatest concentration of sub-surface metal artifacts was located in the western portion of the site. Shovel probes 1-6 were placed in this area in order to uncover any subsurface objects that were identified by the metal detector, and gain an understanding of the geoarchaeological context of the objects at these locations. Shovel probes 7-10 were placed around the southern periphery of the site. While the concentration of metal items decreased significantly outside the center of the site, some diagnostic historic artifacts were identified on the surface in the periphery. Shovel probes were excavated at these locations to study the geoarchaeological context of this portion of the site and to understand the likelihood of encountering sub-surface artifacts on the site periphery. SPs were terminated at 100cm or when gravels were greater than 50% of the matrix. Excavated materials were screened through ¼" hardware mesh, and returned to the SP. All artifacts recovered from SPs were collected for analysis and preservation.

Following survey and SP testing, TUs were placed in areas of the site that appeared to have moderate to high-potential to yield geoarchaeological data and *in situ* artifacts. TUs were terminated when two 10cm levels did not contain cultural materials, or when levels extended below 100cm. Excavated materials were screened through ¼" hardware mesh, and returned to the TU. Artifacts recovered from TUs were collected for analysis and preservation, with the exception of non-diagnostic metal fragments smaller than 1cm. All site artifacts are listed in Appendix C.

Metal-Detector Survey Results

Approximately 140 surface artifacts were recorded during the metal-detector survey (Table 2; Figure 8). Surface artifact material types included metal, glass, leather, faunal bone, ceramics, concrete, shell, and rubber. Many historic-age diagnostic artifacts were identified during the surface survey (Table 3). ATCRC identified two distinct historic-era loci within the site. A northern concentration, measuring 60m x 35m, of large metal items is associated with WWII-era Army training activities (Appendix C Figures 25-28). These include a slugging wrench, galvanized metal barrel, fuel cans, and a first aid kit tin. The central and southern portions of the site consist of two pit depressions and glass and metal artifacts which appear to be associated with early 20th Century domestic activities. The largest pit feature, which was recorded by HRA as the site datum, measures 10ft across at 350 degrees and is 4.9ft deep (Figure 29). The smaller of the two pits measures 60cm at 120 degrees and 40cm deep. A 50m x 50 m area of scattered ceramics and bone was identified in the southeastern portion of the site. The assemblage from this southern locus is consistent in age with the artifacts associated with the site datum, but appears to be associated with different domestic activities.

ATCRC navigated to the three structure locations recorded on the 1908 Pierce County Assessor's map to identify any remnants of structure foundations, land clearing or leveling, roads, or artifact concentrations that might indicate associations between early structure locations and surface artifact scatters. The northwestern structure location is associated with the two pit features located in an overgrown clearing at the center of the site (Figures 30-32). Artifacts are most dense here and exhibit more diversity. The northeastern structure location is associated with what appears to be another overgrown clearing, a line of mature non-native holly bushes, and a saw cut fir stump, although few artifacts are found near this location (Figures 33-34). The southwestern structure location is located near the sidewalk adjacent to Center Drive. The area appears disturbed, is heavily overgrown with native shrubs, but is the closes structure associated with the southern bone and ceramic artifact scatter (Figures 35-36). The only possible structural remnant observed at this location was a fragment of concrete, though the proximity to Center Drive and disturbed materials near this location suggest it is the remnant of modern activities.

Subsurface Testing Results

Data recovery consisted of 10 SPs and 6 TUs in areas of high probability within the site (Figure 9). Subsurface test results are summarized in Tables 4-6. SPs were placed to identify the potential for subsurface artifacts or features within the site. SPs 1-6 successfully identified

Table 2. Historic-era diagnostic surface artifacts.

Age	Description	Quantity	Figure
Early 1900s	White ceramic plate made by Chester Hotel China dated to the early 1900s. The manufacturer went out of business in 1920 (Laurel 2009)	1	10
1869-1950	Boyd's milk glass liner in a zinc canning jar lid (Whitten 2015)	1	11
1923-1982	Hazel-Atlas Glass Company bottle	1	n/a
1901-1920	Western Bottle Mfg. Co. bottle	1	12-13
1931-1960	Northwestern Glass Co. bottle	5	14
1929-1960	Owens Illinois Glass Co. bottle	2	15-16
1850-1929	Owens Illinois Glass Co. bottle	1	17
Early 1900s	Milk glass cosmetic cream jar "Ingrams Milk Weed Cream." This product had a patent date of 6 September 6 1892 (gov) and was used as a cream to "Preserve good complexions" and "Improve bad complexions" according to a 1916 ad. (Morris 2011)	1	18-19
1942-1957+	Military-issued aluminum side seam canteen made by Mirro Aluminum Company (M.A.CO) previously named Aluminum Goods Company (A.G.C.O)	1	20-21
1901+	Fuel cans made by the United States Steel Corporation in Alameda, California. The company was founded in 1901.	11	22-23
1944	Galvanized steel 24 gallon trash can lid made by Reeves	1	24

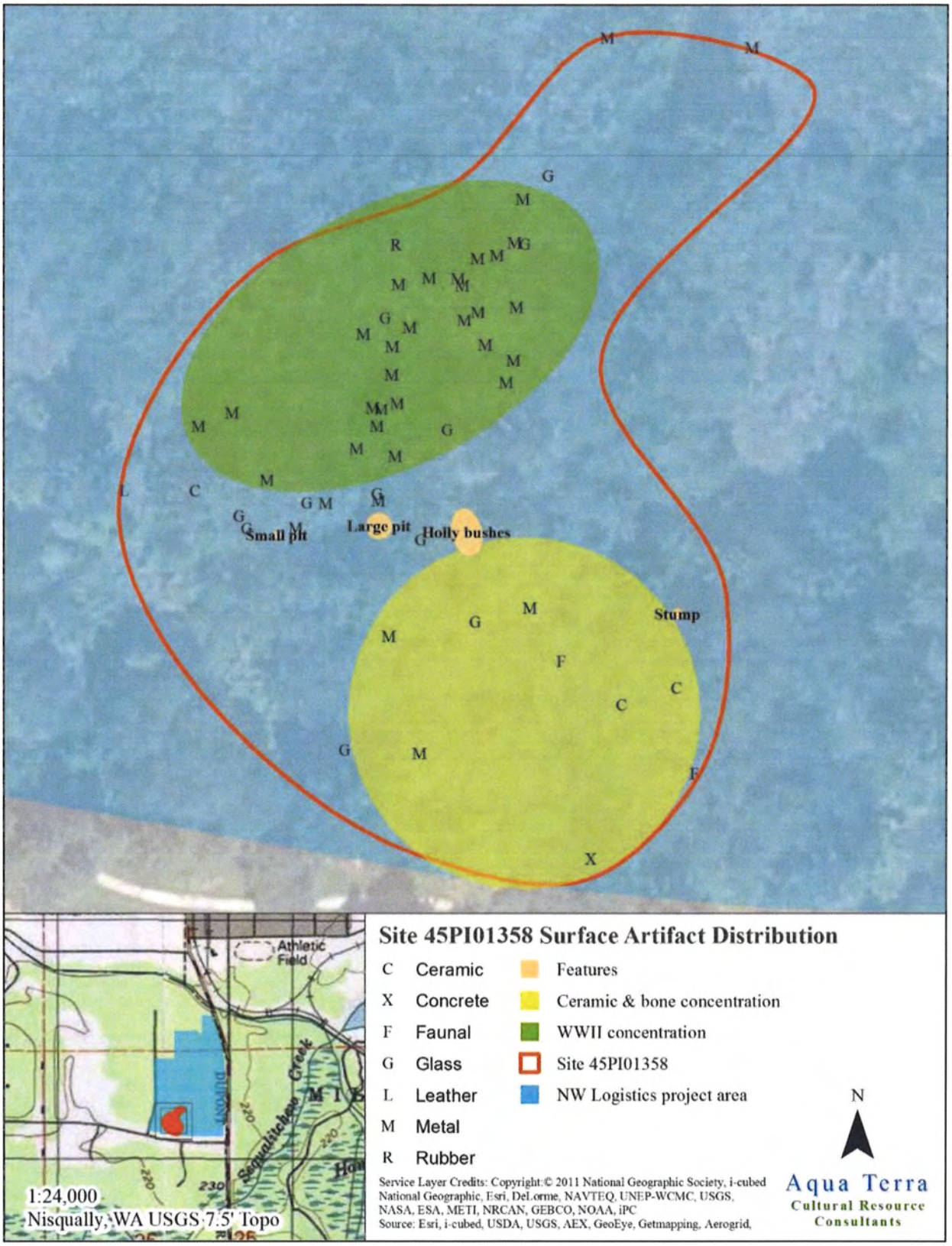

Figure 8. Site 45PI1358 surface artifact distribution.

Table 3. Project area surface artifact locations and descriptions.

ID	Concentration	Northing	Easting	Description	Length	Width	Height
Metal 1	#1	5217384	528395	Complete, top carry, cylindrical, metal fuel canister, handle present, no cap. Bottom maker's mark reads "JCC…/STC/24-5/45". Opening measures: 1 ½ inches wide, handle measures 4 ½ inches in length	13 ¾ in	11 ½ in	NA
Metal 2	# 1	5217385	528399	Fragmented, cylindrical fuel can, rounded at the bottom, has decorated edges, area for a handle to be attached on both sides, different closure type. Center of Concentration. #1	14 in	11 ½ in	NA
Metal 3	#1	5217376	528394	Same description as Metal 1 except there is a puncture on top. Opening is 2 inches wide.	14 in	11 in	NA
Glass 1	#1	5217380	528393	Complete amber glass bottle that reads "NO DEPOSIT*NO RETURN/ NOT TO BE REFILLED" on the lower body of the bottle and "660 NW 69/ 68" on the base of the bottle. Opening is ¾ inch wide.	6 ¼ in	2 ¼ in	NA
Metal 4	#1	5217378	528396	Fragmented metal fuel canister that reads "24-545/ICC-17E/STC"	12 in	11 ½ in	NA
Metal 5	#1	5217385	528403	Fragmented metal pale, folded seams	11 in	12 ¾ in	NA
Metal 6	#1	5217384	528404	Complete metal fuel canister, folded seam, top carry, same design as Metal 1. There was a maker's mark but it was not legible. Opening was 1 ½ in wide.	13 ¾ in	11 ½ in	NA
Metal 7	#1	5217379	528404	Complete metal fuel canister, top carry, folded seam, similar design to Metal 1. Puncture on opposite side on opening, handle present, covered in moss, no legible stamp. Opening measures 1 ¾ in, handle measures 3 ¾ in.	NA	11 in	NA
Metal 8	#1	5217380	528406	Fragmented, metal fuel canister, top carry, similar to Metal 1, seam alongside, handle present. Writing on bottom present but not visible. Opening 1 ½ in wide.	13 ½ in	11 ¼ in	NA
Metal 9	# 2	5217374	528411	Datum for Concentration #2. Fragmented metal fuel canister, similar to Metal 1, folded seam, top carry, handle missing, writing not the same as Metal 1 it reads " ALEMEDA-CALF-USA/ USS/STC/ UNITED ST…". Opening measures 1 ½ in	13 ½ in	11 in	NA
Metal 10	#2	5217381	528411	Metal Fuel canister, top carry, handle present, folded seam, similar writing as Metal 9, mouth measures 1 ½ in. Reads " UNITED STATES ST"	13 ½ in	11 ½ in	NA

ID	Concentration	Northing	Easting	Description	Length	Width	Height
Metal 11	#2	5217376	528407	Fragmented, metal fuel canister, folded seam, similar to Metal 9 and Metal 10. Writing not visible	13 ½ in	12 in	NA
Metal 12	#2	5217371	528410	Complete, metal fuel canister, top carry, square punctured on bottom, similar writing to metal 9, handle present but not attached, bottom reads "ALEMEDA CALF. U.S.A/ USS/ ST CO." Opening measures 1 ½ inch.	13 ½ in	11 in	NA
Metal 13	NA	5217367	528392	Complete metal fuel canister, top carry, similar to Metal 9, handle present, seams on sides, top part is annealed; writing reads "ALEMEDA CALF. U.S.A/ 245…5/ STC/ USS/ UNITED STATES STEEL PRODUCTS CO. Opening measures 1 ½ in.	13 ¾ in	11 ½ in	NA
Metal 14	NA	5217367	528391	Same Designs and writing as Metal 13, side seam, top is annealed and has a puncture, handle missing. Opening measures 1 ½ inch.	13 ¾ in	11 ¼ in	NA
Metal 15	NA	5217364	528392	Complete metal can lid, hole in top center, tin	NA	10 ½ in	NA
Metal 16	NA	5217372	528394	Fragmented large metal cylindrical corrugated barrel.	12 in	22 in	NA
Metal 17	NA	5217368	528395	Fragmented large rectangular fuel can, folded seam, opening similar to jerry can/pressurized. Top measured 8 ½ in, opening measured 2 ¼ in	18 ¾ in	17 in	NA
Metal 18	#3	5217377	528390	Datum for Concentration 3. 1 Complete galvanized trash can lid, metal not rusted, handle present, corrugated, that reads "REEVES/U S/ 24 GAL/ 1944" 1 Paint can, folded seam, corrugated, rounded bottom. 1 Fragmented paint can seam alongside, red in color. 3 large semi-complete paint cans 1 small paint can. 1 fuel can.	NA	20 in	NA
Tire 1	NA	5217390	528394	Complete Goodyear Tire with poor tread that reads "Goodyear/All Weather/ Heavy Duty/ Truck and Bus/ Saloon/ 750-2"	NA	NA	NA
Glass 2	NA	5217400	528416	Complete amber glass bottle, large, seams along sides, reads "20 Owens Illinois symbol 2/ 1"	10 in	3 ¼ in	NA
Glass 3	NA	5217357	528384	Complete colorless glass bottle, seams on the sides. Reads "7381/ Hazel-Atlas Glass Co Symbol/ 0 17"	NA	NA	NA

ID	Concentration	Northing	Easting	Description	Length	Width	Height
Glass 4	NA	5217390	528412	Complete amber glass bottle. That reads " PLEASE DON'T LITTER" on lower body of the bottle and "C/T 14/83" Budweiser Anheuser-Bush Inc.	NA	NA	NA
Metal 19	NA	5217419	528424	Metal band/ possible barrel belt in a cylindrical shape with nails every 8 inches, wire nails are 1 ½ in long. A Douglas fir has grew over a part of the band, could be hand forged	NA	44 ¼ in	1 ½ in
Metal 20	NA	5217417	528444	Broken metal shovel head with wooden handle reads "USA TEMPERED 2" "S6H" Handle is 20 in long	11 ½ in	5 1/5 in	NA
Glass 5	NA	5217436	528472	Complete amber bottle with seams. Reads "21 (Owens Illinois Symbol) 63/2J/2245-GX"	10 in	NA	NA
n/a	#4	5217326	528426	10 white ceramic sherds (plate, bowl, or shallow dish). 1 cow sized femur saw cut 4 ¾ inch, weathered. 3 cow sized rib fragments. 1 cow sized axis vertebra. 1 shell.	NA	NA	NA
n/a	#5	5217328	528434	2 cow sized femurs 1 cow sized radius 2 cow sized tibia 1 cow sized humerus 1 chester motel china ceramic plate fragment 2 white ceramic sherds 1 smaller sized humerus, deer sized 1 cow sized flat bone 2 cow sized scapula fragment with rodent gnawing 1 cow sized astragalus 1 cow sized metapodial 1 cow sized sacrum fragment 2 white ceramic plate sherds 1 white ceramic bowl sherd reads "j.a.r." Some bones are saw cut.	NA	NA	NA
n/a	#6	5217337	528405	1 cow sized rib fragment (saw cut) 1 colorless medicine bottle fragment 1 colorless apothecary bottle fragment 1 colorless bottle base that reads "(Owens Illinois symbol) 84"	NA	NA	NA

ID	Concentration	Northing	Easting	Description	Length	Width	Height
				1orange ceramic cup/mug 1 colorless glass shard 1 head of a pick axe Possible HRA shovel probe?			
Metal 21	NA	5217339	528413	10 metal fragments, Metal band fragment with nail hole on one side.	NA	NA	NA
Metal 22	NA	Not Recorded	Not Recorded	Complete metal fuel canister, top carry, with handle, puncture, opening with cap, folding seam	13 ¾ in	11 ½ in	NA
n/a	#7	5217350	528380	1 metal shell cup with puncture on the bottom 2 metal canning jar lid frag 1 piece of coal Possible shovel probe.	NA	NA	NA
Glass 6	NA	5217352	528372	Colorless medicine bottle base and side "S. 67. CHA…" 2 Colorless vessel glass shards, medicine bottle? 3 Different colorless vessel glass	NA	NA	NA
Glass 7	NA	5217319	528387	Milk glass cylindrical container with tin lid fragmented	2 in	2 ¼ in	NA
n/a	#8	5217366	528371	Subsurface metal, large metal braded wire, metal pipe elbow or connecter	NA	NA	NA
n/a	#9	5217355	528366	1 metal canning jar lid 3 white ceramic sherds (cup?) 1 colorless glass shard that reads "extra" 1 milk glass canning jar lid liner sherd reads "line…"	NA	NA	NA
Shoe 1	NA	5217355	528356	10 Leather shoe sole fragment with shoe nails.	6 in	3 in	NA
Metal 23	NA	5217319	528398	Complete metal canteen with no cap, base reads "U.S./ M.A.C.O/1942" There is a place to hook the cap onto	NA	NA	NA
Glass 8	TU 5	5217350	528373	Light aqua vessel glass shard with some bubbles	2.5 cm	NA	NA
n/a	#10	5217364	528402	3 complete amber glass bottles "PLEASE DON'T LITTER/ NO DEPOSIT" on lower body of all bottles and "660 NW 70/A2" on the base of all bottles	NA	NA	NA
Metal 24	NA	5217364	528367	Complete large metal slugging wrench 3 ½ in gage	26 in	1 ½ in	NA
Metal 25	NA	5217357	528376	Small metal door? That has 6 stars on it , heavy	NA	NA	NA
Metal 32	NA	5217354	528392	Metal strap	18 in	NA	NA
Glass 9	NA	5217355	528392	Colorless glass medicine bottle that reads "3viii" just below	7 in	2 ½ in	NA

ID	Concentration	Northing	Easting	Description	Length	Width	Height
				the neck of the bottle. Base reads "W.B.M. CO", 7 centimeter measurement along the side			
Glass 10	NA	5217349	528398	Small glass shard	NA	NA	NA
Metal 33	NA	5217361	528389	Small metal fragments	NA	NA	NA
Metal 26	NA	5217335	528393	1 Complete metal paint can with broken handle, barely rusted, seams on sides 2 Rubber tires also near paint bucket no markings	26cm	23 cm	NA
n/a	#12	5217360	528394	29 Metal sheet fragments 10 colorless glass shards (7 flat glass, 3 vessel glass) 11 terracotta plant pot sherds 1 wire nail 1 saw cut deer to cow sized long bone shaft fragment, shank cut	NA	NA	NA
Metal 27	NA	5217396	528412	Metal gear/piston with 16 teeth	NA	NA	NA
Metal 28	NA	5217388	528408	1 Cotter pin 1 Cap for a nut	NA	NA	NA
Metal 29	NA	5217390	528411	Metal cover, latch on edge, has a green colored paint on top.	28 in	15 in	NA
Metal 30	NA	5217388	528406	Metal band or strap with holes for nails on the end	NA	1 ¾ in	NA
Metal 31	NA	5217354	528385	Metal strap with two rivets holding it together.	24 in	1 in	NA
Glass 10	NA	5217349	528398	Amber complete glass bottle , seams on either side going from top to bottom, reads "PLEASE HELP FIGHT LITTER/ NO DEPOSIT" on lower body of the bottle and "660 NW 70/ A10" on the base	6 ½ in	3 in	NA
Glass 11	NA	5217354	528382	Milk glass, milk weed cream jar that reads "milk weed cream Ingrams" along the neck and possibly reads "bottle patd/ H.481953" on bottom	NA	NA	NA
Concrete 1	NA	5217304	528422	1 foot long concrete structure fragment	NA	NA	NA
Shell 1	NA	5217332	528417	2 Littleneck and unidentifiable clam	NA	NA	NA

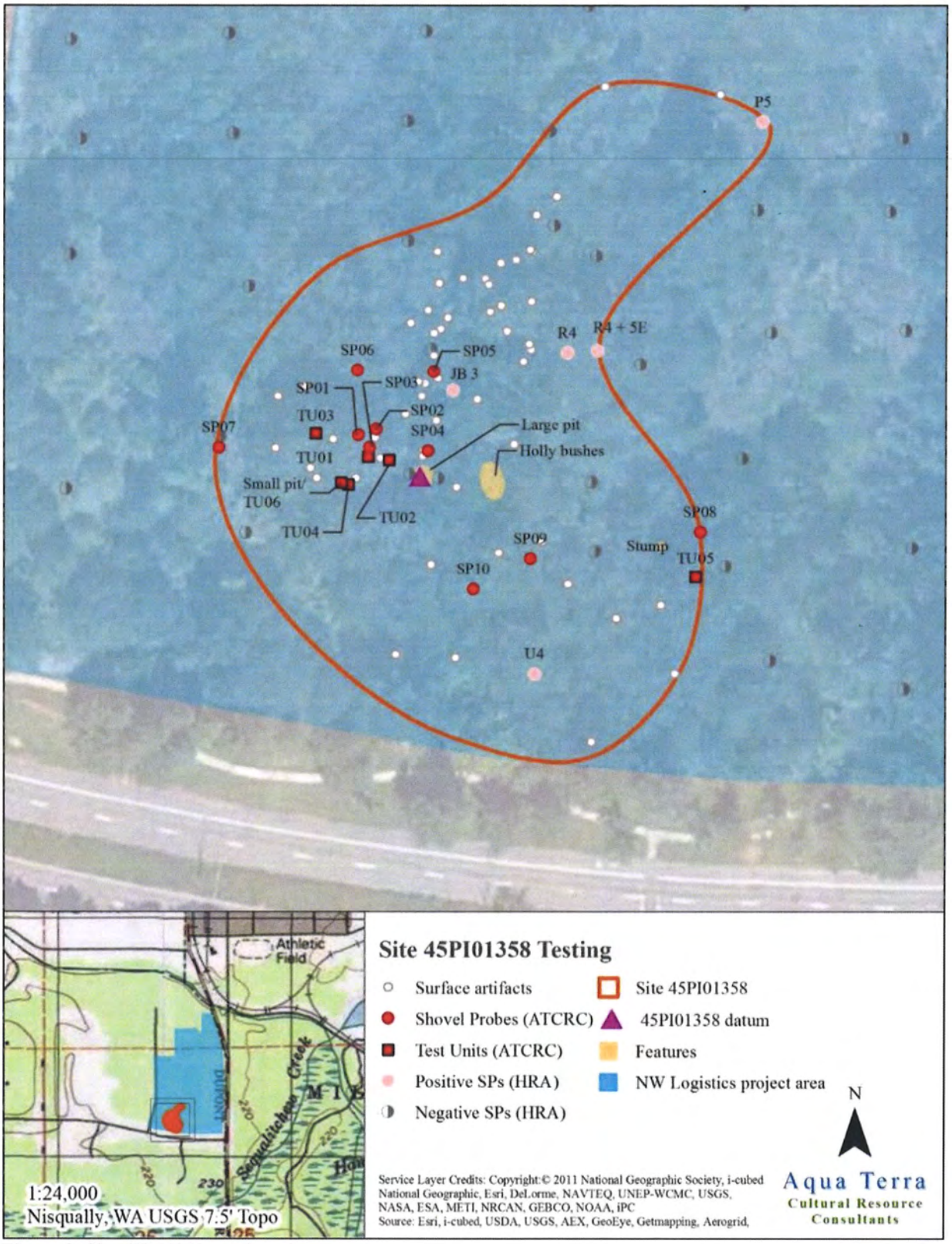

Figure 9. Site 45PI1358 test locations.

Table 4. Site 45PI1358 SP descriptions.

SP	Northing	Easting	Depth (cmbs)	Soil Description	Cultural Materials
SP1	5217358	528381	82	0-51cmbs: Grayish Brown, gravelly silt loam, many small pebbles >40% with artifacts. 51-82cmbs: light brown, loose sandy loam, many large cobbles (>50%)	Amber glass (n=6), metal eyelet (n=1), colorless glass (n=11), corroded nail fragment (n=5), metal button (n=1), metal nut (n=1), unidentified metal fragments (n=5)
SP 2	5217356	528383	60	0-40cmbs: Dark brown, Spanaway Gravelly silt loam with artifacts. 40-60cmbs: Dark brown, Spanaway gravelly sandy loam, with large cobbles and naturally modified FMR.	0-10cm: amber bottle glass fragment (n=1), colorless window/flat glass fragment (n=1)
SP 3	5217359	528384	70	0-70cmbs: Dark Brown, Spanaway gravelly silt loam, very many small and medium sized roots, pebble and granule sized gravels (40%), few cobbles. Gravel percentage increased with depth. Terminated due to large root.	Leather shoe fragments (n=10), faunal bone fragments (n=4), metal partially braided wire (n=1), twisted metal wire with two washers (n=1), white ceramic lid fragments (n=2), amber bottle finish and partial neck fragment (n=1), canning lid with milk glass liner (n=1), mechanic metal unidentified machine piece (n=1), metal stake (n=1), wire nails (n=21), wood screw (n=1), staple (n=1), unidentified metal fragment (n=7), colorless vessel glass shards (n=3), amber vessel glass shards (n=2), Natural FMR (not cultural, n=5)
SP 4	5217355	528393	76	0-52cmbs: Grayish brown, loose silt loam. 52-76cmbs: brown, loose sandy loam, many large cobbles (>70%). Terminated due to wall collapse.	Nails (n=11), brown tile fragments (n=5), unidentified metal (n=2), bone fragments (n=2), white ceramic fragment (n=1), colorless glass shard (n=1),
SP 5	5217369	528394	65	0-15cmbs: Spanaway gravelly silt loam with artifacts. 15-45cmbs: Spanaway gravelly silt loam with large cobbles. 45-65cmbs: Loose yellowish brown, sandy silt loam with small gravels.	0-15 cm: saw cut ungulate vertebra (n=2), wire nail (n=1), unidentified metal fragments
SP 6	5217369	528381	72	0-53cmbs: Grayish brown, gravelly silt loam, loose, many small pebbles (>40%)	Tin fragments (n=11), nails (n=4), leather fragments (n=2), button (n=1)

SP	Northing	Easting	Depth (cmbs)	Soil Description	Cultural Materials
				53-72cmbs: Brown, loose sandy loam, many large cobbles (>80%). Terminated due to wall collapse.	
7	5217356	5283567	25	0-25cmbs: Spanaway very gravelly silt loam with 50% cobbles.	Shoe sole at surface of SP location, shoe sole had shoe nails in it.
8	5217341	528441	60	0-50cmbs: Dark brown, silt loam, 40% pebble sized gravels, very many small roots. 50-60cmbs: Light Grayish Brown, sandy loam, few roots, 90% gravels. Terminated due to rocks. *SP dug east of Bone and Ceramic Concentration 5.	None Identified
9	5217336	528411	42	0-42cmbs: Dark brown, silt loam, very many small and medium sized roots, 40% pebble sized gravels. Terminated due to rocks. *SP dug southwest of Bone and Ceramic Concentration 5.	None Identified
10	5217331	528401	55	0-45cmbs: Dark brown, silt loam, very many small roots, 45% gravels. 45-55cmbs: cobble lens. Terminated due to impenetrable cobble layer. *SP dug at the 1908 NE structure location.	Colorless vessel glass shard (n=1).

Table 5. TU locations.

TU	Northing	Easting	Depth (cmbd)
1	5217354	528383	80
2	5217353	528387	40
3	5217358	528374	40
4	5217349	528379	30
5	5217333	528440	40
6	5217349	528378	100

Table 6. Test Unit soil and cultural material descriptions.

TU	Depth (cmbd)	Soil Description	Cultural Materials
TU1	0-20	Dark Brown, Sandy Loam, 40% sub rounded pebble sized gravels, very many small roots, some coal fragments throughout the level. Surface was 0-10cmbd, resulting in the first level extending to 20cmbd.	Blue glass bead (n=1), ceramic handle to a possible lid found in SP2 (n=1), colorless vessel glass (n=7), amber vessel glass (n=2), white ceramic sherds (n=5), nails (n=13), wood screw (n=1), possible FCR (n=4).
TU1	20-30	Dark Brown, Sandy Loam, 45% sub rounded pebble sized gravels, very many small roots, charcoal and coal flaking throughout.	Colorless glass shard (n=1)
TU1	30-40	Dark Brown, Sandy Loam, 30% sub rounded pebble sized gravels, very many small roots with one large root through the middle of the test unit.	White ceramic sherd (n=1)
TU1	40-50	Dark Brown, Sandy Loam, 35% sub rounded pebble sized gravels, very many small roots with large root still present from previous level.	Rubber fragments (n=3)
TU1	50-60	Dark Brown, Sandy Loam, 40% sub rounded pebble and cobble sized gravels, very many small roots and medium sized roots.	Rubber fragments (n=3)
TU1	60-70	Dark Brown, Sandy Loam, 40% sub rounded pebbles and 15% cobble sized gravels, very many small and medium sized roots.	Metal fragments (n=3), Ceramic Sherds (n=1) Wall fall?
TU1	70-80	Dark Brown, Sandy Loam, 40% sub rounded pebble sized gravels, 20% cobble sized gravels, very many small and medium sized roots. *Test unit was terminated at this level due to the likeliness of the artifacts from the lower levels originating from wall fall.	Colorless vessel glass (n=1), metal fragments (n=3), Wall fall?
TU2	0-10	Grayish Brown, very loose silt loam, many small roots, many small pebbles, some coal throughout the level.	Nails (n=10)
TU2	10-20	Grayish brown, very loose silt loam, many small roots and pebbles, few coal fragments throughout level.	Nail (n=1)
TU2	20-30	Grayish brown, very loose silt loam, few small pebbles (<20%).	Unidentified metal fragments (n=1)
TU2	30-40	Grayish Brown, very loose silt loam, many medium sized cobbles (>40%)	None
TU3	0-10	Dark brown, loose silt loam	Clear glass base (n=1, writing reads "WFDS/ D/ MIL"), amber glass (n=3), metal first aid packet (n=1, writing reads "First Aid Packet, US Gov't"), colorless glass shard (n=1), unidentified metal fragments (n=7)
TU3	10-20	Grayish Brown, loose silt loam, few small pebbles.	Nail (n=2), unidentified metal fragments (=1)

TU	Depth (cmbd)	Soil Description	Cultural Materials
TU3	20-30	Grayish brown, loose silt loam, few small pebbles (<20%).	None
TU3	30-40	Grayish Brown, loose silt loam	None
TU4	0-10	Brown, loose silt loam, many small roots, few small pebbles (<20%)	Glass # 8 (n=1) surface find
TU4	10-20	Brown, loose silt loam, few small pebbles (<20%)	None
TU4	20-30	Brown, loose silt loam, few pebbles.	None
TU5	0-20	Organic duff for the first 5 cm below datum, 10-20 cmbd: Dark brown, sandy loam, 35% pebble sized gravels, 5% cobble sized gravels, very many small roots, one large root throughout center of unit.	Bent nail (n=1), colorless vessel glass shard (n=1), head of nearby size class six humerus found on surface (n=1).
TU5	20-30	Dark brown, sandy loam, 40% pebble sized gravels, 10% cobble sized gravels, very many large roots along the southern wall of the unit.	None
TU5	30-40	Dark brown, sandy loam, 10% cobble sized gravels, 40% pebble sized gravels, very many small roots throughout the level	None
TU6	0-10	Loose organic duff with gravelly sand Spanaway	Bone (n=5), colorless glass vessel shard (n=1), wood (n=4), nail (n=1)
TU6	10-20	Loose organic duff and more compact colluvial Spanaway sandy loam.	Bone (n=1), unidentified metal (n=1), wire nails (n=3), wood (n=5),
TU6	20-30	More compact colluvial Spanaway sandy loam and organic duff.	Few Charcoal, bone (n=4), colorless glass vessel shard (n=2), wood (n=4), unidentified metal (n=3), wire nails (n=7),
TU6	30-40	More compact colluvial Spanaway sandy loam and duff, many small and medium sized roots, cobbles at 35 cmbd.	
TU6	40-50	Transition to gravelly sand in southern half of the unit, some large cobbles.	Few Charcoal, bone (n=14), wire nails (n=43)
TU6	50-60	Gravelly Spanaway sandy loam, sand in southern half of unit	Few Charcoal, wood (n=29), bone (n=11), wire nails (n=7), unidentified metal (n=1)
TU6	60-70	Gravelly Spanaway sandy loam	Few Charcoal, tin can fragments (n=97), wood (n=1), wire nails (n=2), bone (n=1)
TU6	70-80	Gravelly Spanaway sandy loam	Few charcoal, tin can fragments (n=580), tin can lid or base (n=2), wood (n=4), colorless glass vessel shard (n=1), bone (n=2), top carry fuel can (n=1)

TU	Depth (cmbd)	Soil Description	Cultural Materials
TU6	80-90	Gravelly Spanaway sandy loam	Few charcoal, tin can fragments (n=466, 2 bags), bone (n=2), colorless glass vessel (n=3)
TU6	90-100	Gravelly Spanaway sandy loam	Few charcoal, tin can fragments (n=485, 3 bags), ceramic (n=5), colorless glass vessel (n=6), bone (n=6)

artifacts up to 40cmbs near the center of the site. Although SPs 7-10 were placed near surface artifacts, these portions of the site proved to be sterile beneath the surface (Figure 37).

TUs were placed after artifact concentrations and site features were identified. A total of 1,970 artifacts were found in the screened sediment of the test units. These materials were consistent with the date and function of materials identified in the surface survey. TU 5 was placed on the eastern boundary of the site in order to study the depositional context of the artifact scatter in the southeastern portion of the site. TU 5 was sterile below 20cm and confirmed artifacts were sparsely scattered in this portion of the site, despite a lack of disturbance in this area. The remainder of the TUs were placed near the pit features and clearing at the 1908 northwestern structure location (Figures 38-40). TU2, TU3, and TU4 findings were consistent with the metal-detector survey and shovel probe findings, indicating that a relatively dense concentration of glass and metal artifacts extends from the surface to roughly 20cmbs. TU2 was placed adjacent to the large datum pit, but provided no additional information on the function of the pit. The large pit is believed to be the foundation for a cold storage structure, as it is more closely associated with early 1900s artifacts at the northwestern structure location than it is with artifacts related to Army use of the site. TU1 was placed adjacent to the most productive shovel probe (SP3) in this portion of the site. A leather shoe was encountered on the southern wall of TU1, and was excavated for analysis. TU1 contained a few artifacts per level to 60 cmbs, suggesting bioturbation may be redepositing artifacts in portions of the site. Finally, TU6 was excavated in the small pit identified at the northwestern structure location. The pit was suspected to be a privy or trash pile. After excavating about 40cm of slump from the feature, the concentration of metal, ceramic and glass artifacts increased substantially around 60cmbs. During excavation the matrix collapsed at 70cmbs to reveal a very dense concentration of metal cans, fragmented household ceramics and glass. TU6 was excavated to 100cm but was abandoned due to inaccessibility, as the surface of the pit feature was already recessed 50cm below the ground surface. It is unknown how much deeper this feature extends.

Site stratigraphy closely matches the Spanaway gravelly loam soil series, with cultural materials confined to the upper 37cm on average across the site (Table 7). Portions of the site are covered in thick duff and moss, while others are sparsely vegetated, which is consistent with the excessively drained soil/sediment and forest type of the site. There is no evidence of the type of disturbance or associated refuse that might result from military training that would necessitate the two site pit features. The fringes of the site, along Center Drive and International Drive, were probably disturbed during road and sidewalk construction. The site matrix consists of two beds of very poorly sorted glacial sediments and gravels capped by a gradational contact with archaeosediment. With the exception of pit features, the archaeological stratum (I) is texturally homogenous with the upper glacial stratum (II). While much of the cultural material encountered on the site is surficial, small artifact concentrations were observed up to 80 centimeters below the surface. Homogenous site sediments and weak soil formation complicate interpretation of these materials; however these relatively deep deposits may be the result of bioturbation or site deconstruction activities during abandonment.

Table 7. Site stratigraphy.

Stratum	Depth (cm)	Description	Cultural Materials
I	0-37	Texturally homogenous fine sandy loam with moderate unsorted sub-rounded gravel with artifacts	Present
II	37-51	Gradation to texturally homogenous fine sandy loam with a high unsorted sub-rounded gravel content without artifacts	Not present
III	51-82	Abrupt transition to texturally homogenous medial sandy loam with a high unsorted sub-rounded gravel content	Not present

Site 45PI01358 Summary and Recommendations

Site 45PI1358 is located in the southwest quarter of the project API. The site is about 2 acres with dimensions of 120 meters northeast to southwest, and 95 meters northwest to southeast. The site contains two historic-era loci: artifact scatters associated with early 1900s domestic structures and a WWII-era Army training artifact scatter. The preliminary testing of the site by HRA identified these loci and associated features. ATCRC's testing supports the site dates and functions HRA provided in their initial site form with the exception of the function of the pit features, which ATCRC concludes were associated with early 1900s domestic structures and activities. It appears the site was occupied from the 1920s to the 1930s, and then used by the U.S. Army in the 1940s for training or as a location to discard equipment used on the adjacent Fort Lewis property. In sum, the site is a palimpsest representing historic-era activities from approximately 1900-1945.

Integrity

To be eligible for the NRHP a property must have integrity. In regards to the integrity of the site, the WWII component of the site does not appear to have been disturbed from original surface scatter locations and was likely never associated with any other permanent site features. However site 45PI01359, which was located to the northeast on the property and was likely a portion of this site, was determined ineligible and has been excavated. The early 1900s domestic refuse scatters, trash pit feature, and structure-sized pit were most likely associated with transportation features and structures that are no longer present on the site. However, the *in situ* trash pit feature does have the potential to yield information.

Eligibility Criteria

In addition to having integrity, a site must be significant in one or more of the four Criteria for Evaluation to be eligible for the NRHP. Under Criterion A, properties may be eligible based on their association with events that have made a significant contribution to the broad patterns of our history. WWII-era Army training activities are important to local and national history, but site 45PI01358 does not represent a discrete significant event in either local or national Army training activities.

Likewise, the early settlement history of DuPont is important to local history generally, but no significant persons or events could be connected to this site through background or site research. Criterion B requires that a site be associated with the lives of persons significant in our past. No significant persons or groups were identified in the background context of the site. Under Criterion C a property is eligible for the NRHP if they embody distinctive characteristics of a type, period, or method of construction, represent the work of a master, possesses high artistic values, or represent significant and distinguishable entity whose components lack individual distinction. As the site does not contain any standing or ruined structures, and all artifacts and features are commonplace in local history, the site is not eligible under Criterion C. Criterion D advises that a site may be eligible if it has yielded, or has the potential to yield, information important in prehistory or history. The two site loci consist of artifacts and features common to their respective historic contexts. Further investigation is not expected to produce additional data on early 1900s domestic activities or WWII-era Army training activities. Based on the results of archaeological testing, ATCRC recommends that archaeological site 45PI01358 is not eligible for the NRHP. Likewise, the site components cannot be associated with events or persons significant to local or state history, and are recommended not eligible for the Pierce County and Washington State registers. ATCRC recommends the project is unlikely to have a significant adverse impact at site 45PI01358.

No cultural resources study can wholly eliminate uncertainty regarding the potential for prehistoric sites, historic properties or TCPs associated with a project. The information presented in this report is based on professional opinions derived from our analysis and interpretation of available documents, records, literature and information identified in this report, and on our reconnaissance-level field investigation and observations as described herein. Conclusions and recommendations presented apply to project conditions existing at the time of our study and those reasonably foreseeable. The data, conclusions and interpretations in this report should not be construed as a warranty of subsurface conditions described in this report. They cannot necessarily apply to site changes of which ATCRC is not aware and has not had the opportunity to evaluate.

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Appendix A: Consultation Correspondence

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

April 22, 2015

Ms. Jennifer Gilpin
Project Archaeologist
Historical Research Associates
1904 Third Ave., Suite 240
Seattle, WA 98101

In future correspondence please refer to:
Log: 070114-30-PI
Property: NW Logistics Center, *Cultural Resources Inventory, Phase II Development Northwest Logistics Center, City of DuPont, Pierce County, Washington.*

Re: Archaeology- Review Comments

Dear Ms. Gilpin:

Thank you for contacting the Washington State Department of Archaeology and Historic Preservation (DAHP). We have the following comments:

- We agree that historic archaeological site 45PI1359 is not eligible for listing in the NRHP.
- We agree with your recommendations for monitoring and buffering of arch site 45PI1358.
- We also agree that formal archaeological testing of 45PI11358 should take place to determine NRHP eligibility. This should be done under a permit from DAHP because when eligibility is undetermined we assume the resource is eligible. This site may be eligible under Criterion A for information on early settlement and subsistence as well as Criterion D. Integrity might be the biggest factor because those military training exercises with the foxholes etc. can be very disturbing.
- We also agree with archaeological monitoring in the portions of the project area contains mature oaks based on information from the Nisqually Tribe regarding potential human burial areas.

Nisqually Indian Tribe
4820 She-Nah-Num Dr. S.E.
Olympia, WA 98513
(360) 456-5221

March 26, 2015

Jennifer Gilpin
HRA
11904 Third Ave. Suite 240
Seattle, WA 98101

Dear Ms. Gilpin,

The Nisqually Indian Tribe thanks you for the opportunity to comment on:

Re: Cultural Resource Inventory Report: Phase II Development Northwest Logistics Center Project, Dupont, WA

The Nisqually Indian Tribe has reviewed the report you provided for the above-named project. The Nisqually Indian Tribe concurs with your determination that the historical site 45PI1359 is not eligible. We also agree that site 45PI1358 needs further archaeological testing. The Nisqually Indian Tribe agrees with the selective monitoring plan around site 45PI1358 and the area containing mature oak trees. I appreciate you keeping me current with the activities going on with this project. Please keep me informed if there are any Inadvertent Discoveries of Archaeological Resources/Human Burials.

Sincerely,

Jackie Wall
THPO
Nisqually Indian Tribe
(360)456-5221 Ext. 2180
wall.jackie@nisqually-nsn.gov

Appendix B: Archaeological Excavation Permit No. 2015-19

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

ARCHAEOLOGICAL EXCAVATION
PERMIT NO: 2015-19

Archaeological sites:	45WPI358
Individual Responsible for carrying out the terms and conditions of the permit:	Ianello Angelo, Islero, LLC Property Owner
Individual responsible for field investigations:	Sarah Amell Archaeology
Nature of work:	Aqua Terra Cultural Resources Consultants
Repository in which collected records and data shall be deposited:	Dupont Historical Museum
Date fieldwork to begin:	July 16, 2015
Date fieldwork shall end:	July 23, 2015
Period of analysis:	Concurrent through July 31, 2015
Date final report due:	August 31, 2015

Special Conditions:

1. Follow protocols stated in permit application of 5/19/2015
2. Archaeologist must be on site for all activity
3. Give DAHP and Tribes notice before field work start
4. Allow for on-site visits from Tribal representatives
5. Provide pdf copy of report and updated site form to consulted Tribes and DAHP
6. Reference permit number in report or on cover sheet
7. Report must meet DAHP's Survey & Inventory Standards; include catalog & radiocarbon lab sheets, if applicable
8. If human remains are encountered, stop work, secure the area, notify the county medical examiner, sheriff, and State Physical Anthropologist

Issued this 16th day of July 2015.

Gretchen Kaehler
Assistant State Archaeologist

Appendix C: Site 45PI01358 Artifact Catalog

Catalog Number	TU/SP	Depth	Material Type	Count	Notes
45PI1358.2015.1	TU1	0-20cmbd	ceramic	5	
45PI1358.2015.2	TU1	0-20cmbd	Ceramic	1	white ceramic lid handle with flower decoration
45PI1358.2015.3	TU1	0-20cmbd	Glass	1	blue glass ceramic bead
45PI1358.2015.4	TU1	0-20cmbd	Glass	9	colorless and amber glass vessel shards, one colorless vessel shard has a design on the outer side.
45PI1358.2015.5	TU1	0-20cmbd	Wire Nail	14	7 bent rusted nails, 3 unaltered rusted nails, 3 nail fragments, 1 clinched nail
45PI1358.2015.6	TU1	20-30 cmbd	Glass	1	colorless flat glass
45PI1358.2015.7	TU1	30-40 cmbd	Ceramic	1	white ceramic sherd
45PI1358.2015.8	TU1	40-50cmbd	Leather	3	Shoe fragments?
45PI1358.2015.9	TU1	50-60cmbd	Leather	3	Shoe fragments?
45PI1358.2015.10	TU1	60-70cmbd	Ceramic	1	white ceramic sherd
45PI1358.2015.11	TU1	60-70cmbd	Unidentified Metal	6	
45PI1358.2015.12	TU1	70-80cmbd	Glass	1	colorless vessel glass shard
45PI1358.2015.13	TU1	70-80 cmbd	Unidentified Metal	3	
45PI1358.2015.14	TU1/SP 2	8-14cmbs	Bone	1	saw cut, size 6 (cattle sized) long bone shaft fragment.
45PI1358.2015.15	TU1/SP 2	8-14cmbs	Glass	3	2 amber vessel glass, 1 colorless vessel glass
45PI1358.2015.16	TU1/SP 2	8-14cmbs	Unidentified Metal	16	
45PI1358.2015.17	TU1/SP 2	8-14cmbs	Wire Nail	3	1 bent nail rusted, 1 clinched nail rusted, 1 nail frag rusted
45PI1358.2015.18	TU1/SP 2	8-14cmbs	Leather Shoe Fragment	7	leather lace up shoe with metal eyelets
45PI1358.2015.19	TU2	0-10cmbd	Wire Nails	11	2 bent nails, 7 fragmented, 2 clinched nails, all rusted
45PI1358.2015.20	TU2	10-20cmbd	Wire Nail	1	fragmented unaltered rusted nail

Catalog Number	TU/SP	Depth	Material Type	Count	Notes
45PI1358.2015.21	TU2	20-30cmbd	Unidentified Metal	1	
45PI1358.2015.22	TU3	0-10cmbd	Glass	4	3 amber vessel shards, 1 colorless vessel shard
45PI1358.2015.23	TU3	0-10cmbd	Unidentified Metal	10	possible nail or braded wire (5)
45PI1358.2015.24	TU3	0-10cmbd	Bottle Base	1	colorless bottle base frag, that reads "WF & S/ D/ MIL"
45PI1358.2015.25	TU3	0-10cmbd	Metal lid	1	First Aid Packet metal lid that reads "First Aid Packet. U.S. Gov't/ Carlisle Model/ to open pull tab/ Red Color indicates/ back of dressing. Po/ Other side next to wound./ bauer & black/ Div of the Kendall CO.- Chicago" All caps
45PI1358.2015.26	TU3	10-20cmbd	Wire Nail	4	wire nail fragments rusted
45PI1358.2015.27	TU3	Wallfall	Glass	3	amber vessel shards
45PI1358.2015.28	TU4	0-10 cmbd	Staple	1	metal staple
45PI1358.2015.29	TU4	0-10cmbd	Glass Bottle	1	colorless complete glass medicine bottle that reads "W.B.M.CO" on base and "3viii" on neck. Has a measurements on the side" 1-7"
45PI1358.2015.30	TU5	Surface-20cmbd	Bone	1	articular surface fragment of a size class 6 animal (cattle sized) possible saw cut.
45PI1358.2015.31	TU5	Surface-20cmbd	Glass	1	colorless vessel glass shard
45PI1358.2015.32	TU5	Surface-20cmbd	Wire Nail	1	bent and rusted
45PI1358.2015.33	TU6	0-10cmbd	Bone	5	calcined bone fragments
45PI1358.2015.34	TU6	0-10cmbd	Glass	1	colorless vessel glass shard
45PI1358.2015.35	TU6	0-10cmbd	Wood	4	
45PI1358.2015.36	TU6	0-10cmbd	Nail	1	bent rusted nail
45PI1358.2015.37	TU6	10-20cmbd	Bone	1	calcined bone fragments
45PI1358.2015.38	TU6	10-20cmbd	Unidentified Metal	1	
45PI1358.2015.39	TU6	10-20cmbd	Wire Nails	3	2 bent and rusted nails, one clinched and rusted
45PI1358.2015.40	TU6	10-20cmbd	wood	5	
45PI1358.2015.41	TU6	20-30cmbd	bone	4	calcined bone fragments
45PI1358.2015.42	TU6	20-30cmbd	glass	2	colorless vessel glass shard
45PI1358.2015.43	TU6	20-30cmbd	wood	4	

Catalog Number	TU/SP	Depth	Material Type	Count	Notes
45PI1358.2015.44	TU6	20-30cmbd	Unidentified Metal	3	
45PI1358.2015.45	TU6	20-30cmbd	Wire Nails	7	2 clinched, 5 bent
45PI1358.2015.46	TU6	30-40cmbd	Bone	9	calcined bone fragments
45PI1358.2015.47	TU6	30-40cmbd	Unidentified Metal	2	
45PI1358.2015.48	TU6	30-40cmbd	Wire Nails	29	10 clinched, 5 unaltered, 14 bent
45PI1358.2015.49	TU6	40-50cmbd	Bone	14	calcined bone fragments
45PI1358.2015.50	TU6	40-50cmbd	wire nails	43	6 unaltered rusted, 10 clinched and rusted, 1 clinched and annealed, 26 bent and rusted
45PI1358.2015.51	TU6	50-60cmbd	wood	29	
45PI1358.2015.52	TU6	50-60cmbd	bone	11	calcined bone fragments
45PI1358.2015.53	TU6	50-60cmbd	wire nails	7	1 unaltered and rusted, 2 bent, 4 fragments
45PI1358.2015.54	TU6	50-60cmbd	Unidentified Metal	1	
45PI1358.2015.55	TU6	60-70cmbd	tin can fragments	97	
45PI1358.2015.56	TU6	60-70cmbd	wood	1	
45PI1358.2015.57	TU6	60-70cmbd	wire nails	2	1 clinched and rusted, 1 unaltered and rusted
45PI1358.2015.58	TU6	60-70cmbd	bone	1	calcined bone fragments
45PI1358.2015.59	TU6	70-80cmbd	tin can fragments	580	
45PI1358.2015.60	TU6	70-80cmbd	tin can lid or base	2	
45PI1358.2015.61	TU6	70-80cmbd	wood	4	
45PI1358.2015.62	TU6	70-80cmbd	glass	1	colorless glass vessel
45PI1358.2015.63	TU6	70-80cmbd	bone	2	calcined bone fragments
45PI1358.2015.64	TU6	70-80cmbd	top to top-carry fuel can	1	cap and handle still present, topcarry fuel can
45PI1358.2015.65	TU6	80-90cmbd	tin can fragments	50	bag 1 of 2, one (mostly complete) can has a puncture in the lid, 2 mostly complete cans.
45PI1358.2015.66	TU6	80-90cmbd	tin can fragments	416	bag 2 of 2, 4 tin can round bases, 1 rectangular tin can base
45PI1358.2015.67	TU6	80-90cmbd	bone	2	calcined bone fragments
45PI1358.2015.68	TU6	80-90cmbd	glass	3	colorless glass vessel
45PI1358.2015.69	TU6	90-100cmbd	Tin can fragments	5	bag 1 of , one rectangular can base, 3 round can bases

Catalog Number	TU/SP	Depth	Material Type	Count	Notes
					one with punctures, 1 large can frag
45PI1358.2015.70	TU6	90-100cmbd	tin can fragments	110	bag 2 of 3, one large semi complete can round, punctures on base.
45PI1358.2015.71	TU6	90-100cmbd	tin can fragments	370	bag 3 of 3
45PI1358.2015.72	TU6	90-100cmbd	Ceramic	5	two fragments of a ceramic pot lid with light blue glaze/paint and design, 3 fragments of a white colored bowl with a ribbed design and a yellow paint/glaze at the rim of the bowl.
45PI1358.2015.73	TU6	90-100cmbd	Glass	6	colorless vessel glass shards and partial colorless glass with ribbed design.
45PI1358.2015.74	TU6	90-100cmbd	Bone	6	size 6 saw cut vert (T-bone steak?), size 6 rib or frag saw cut, size 6 bone frag partially saw cut then snapped off, size 456 saw cut articular surface.
45PI1358.2015.75	SP 1	0-82cmbs	Wire nails	5	fragmented nails
45PI1358.2015.76	SP 1	0-82cmbs	Unidentified Metal	5	
45PI1358.2015.77	SP 1	0-82cmbs	Glass	18	6 amber glass vessel shards, 11 colorless flat glass, 1 colorless vessel glass shard
45PI1358.2015.78	SP 1	0-82cmbs	metal nut	1	
45PI1358.2015.79	SP 1	0-82cmbs	screw eyelet	1	
45PI1358.2015.80	SP 1	0-82cmbs	metal button	1	
45PI1358.2015.81	SP2	0-70cmbs	glass	6	3 colorless glass vessel shards, 3 amber vessel glass shards
45PI1358.2015.82	SP2	0-70cmbs	Unidentified Metal	4	
45PI1358.2015.83	SP2	0-70cmbs	metal tool	1	screw driver?
45PI1358.2015.84	SP2	0-70cmbs	Wire Nails, Wood Screw, and Staple	22	6 bent, 1 clinched, 12 fragments, 1 screw, 1 staple
45PI1358.2015.85	SP2	0-70cmbs	Bone	4	
45PI1358.2015.86	SP2	0-70cmbs	glass bottle finish	1	amber glass bottle finish
45PI1358.2015.87	SP2	0-70cmbs	Unidentifiable metal	1	metal button or cover for a nail
45PI1358.2015.88	SP2	0-70cmbs	Ceramic	3	2 white ceramic sherds of a pot lid, 1 possible terracotta pot vessel sherd

Catalog Number	TU/SP	Depth	Material Type	Count	Notes
45PI1358.2015.89	SP2	0-70cmbs	Metal Rack	1	machine rack
45PI1358.2015.90	SP2	0-70cmbs	canning jar lid	1	complete canning jar lid with milk glass liner that reads "genuine porcelain cap boyd's" in all caps
45PI1358.2015.91	SP2	0-70cmbs	Leather Shoe Fragment	13	
45PI1358.2015.92	SP2	0-70cmbs	metal wire	2	1 partially twisted, 1 bent with two washers on it
45PI1358.2015.93	SP3	0-60cmbs	glass	2	amber vessel shard, colorless vessel shard
45PI1358.2015.94	SP4	0-76cmbs	wire nails	11	2 bent, 11 unaltered all rusted
45PI1358.2015.95	SP4	0-76cmbs	Ceramic	7	2 white ceramic sherds, 5 possible terracotta vessel sherds
45PI1358.2015.96	SP4	0-76cmbs	glass	2	colorless flat glass
45PI1358.2015.97	SP5	0-65cmbs	bone	5	size 5 vertebra saw cut, possible pork chop?
45PI1358.2015.98	SP5	0-65cmbs	wire nail	1	bent and rusted
45PI1358.2015.99	SP6	0-72cmbs	Unidentified Metal	13	12 not rusted tin
45PI1358.2015.100	SP6	0-72cmbs	glass	1	colorless flat glass
45PI1358.2015.101	SP6	0-72cmbs	leather	2	
45PI1358.2015.102	SP6	0-72cmbs	wire nails	4	2 bent, 2 unaltered
45PI1358.2015.103	SP7	0-25cmbs	Leather Shoe Fragment	23	sole fragment has shoe nails
45PI1358.2015.104	SP10	0-55cmbs	glass	1	colorless vessel glass
45PI1358.2015.105	Surface Artifact	NA	Glass #7	5	milk glass container with tin lid
45PI1358.2015.106	Surface Artifact	NA	Metal # 23	1	metal canteen that reads "U.S./ M.A. CO/ 1942", no lid but there is a place to hook the cap on
45PI1358.2015.107	Surface Artifact	NA	Metal # 24	1	slugging wrench 3 1/2 inch gage, heavy about 50 lbs.
45PI1358.2015.108	Surface Artifact	NA	Metal # 25	1	small metal door? That has 6 stars on it , heavy
45PI1358.2015.109	Surface Artifact	NA	Metal #32	7	metal belt
45PI1358.2015.110	Surface	NA	Metal # 27	1	metal gear/piston

Catalog Number	TU/SP	Depth	Material Type	Count	Notes
	Artifact				
45PI1358.2015.111	Surface Artifact	NA	Glass #11	1	milk glass, milk weed cream jar that reads "milk weed cream Ingram's" along the neck and possibly reads "bottle patd/ H.481953" on bottom
45PI1358.2015.112	Surface Artifact	NA	Concentration #4	2	white ceramic bowl and plate fragment, bowl makers mark reads partially "J.A.R."
45PI1358.2015.113	Surface Artifact	NA	Concentration # 5	1	white ceramic plate that reads "chester hotel china" in all caps.
45PI1358.2015.114	Surface Artifact	NA	Concentration # 6, Ceramic	1	white ceramic shallow bowl or serving platter with flower decoration
45PI1358.2015.115	Surface Artifact	NA	Concentration #6, Glass	2	colorless glass medicine bottles one could read "3iii" just under neck
45PI1358.2015.116	Surface Artifact	NA	Concentration # 7, Metal	1	metal decorated shell cup with punctures on bottom
45PI1358.2015.117	Surface Artifact	NA	Concentration #12, Bone	1	saw cut size 5 long bone shaft, shank meat cut
45PI1358.2015.118	Surface Artifact	NA	Concentration # 12, wire nail	1	unaltered but rusted
45PI1358.2015.119	Surface Artifact	NA	Concentration #12, Terracotta	11	plant pot fragments
45PI1358.2015.120	Surface Artifact	NA	Concentration #12, Glass	10	7, flat colorless glass, 3 colorless vessel glass (one read "ONE Q…"
45PI1358.2015.121	Surface Artifact	NA	Concentration #12, Metal	29	Metal plate/sheet fragments

Appendix D: Site 45PI01358 Photographs

Figure 10. Chester Hotel China white ceramic plate fragment dating to early 1900s.

Figure 11. Milk glass lined zinc canning jar lid, Boyd's Genuine Porcelain Lined cap dating from early 1900s-1950s.

Figure 12. Glass 8, found on the surface of TU5, colorless glass 8 oz. medicine vessel with measurements along the left side.

Figure 13. Glass 8, found on the surface of TU5, colorless 8 oz. medicine bottle dating early 1901 to 1920.

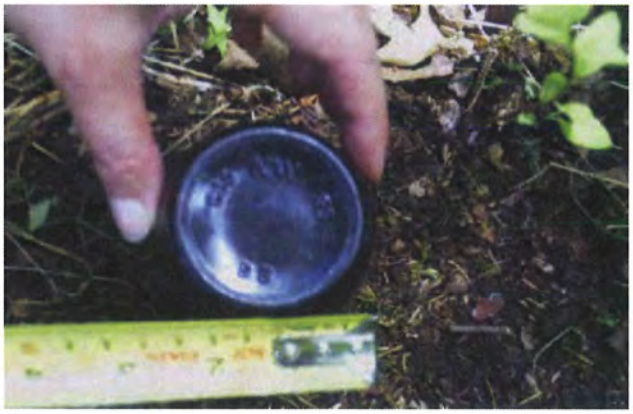


Figure 14. Northwestern Glass Company complete bottle dating to 1931-1960.

Figure 15. Owens Illinois makers mark dating to 1929-1960.

Figure 16. Owens Illinois makers mark dating to 1954-present.

Figure 17. Colorless glass medicine vessel bases, Owens Illinois maker's mark dating from 1850-1929.

Figure 18. Ingrams Milkweed Cream milk glass jar.

Figure 19. Ingrams Milkweed Cream 1916 ad.

Figure 20. Aluminum US military issued canteen dating from 1942-1957+.

Figure 21. Aluminum US military issued canteen makers mark, M.A. CO dating from 1942-1957+.

Figure 22. United States Steel Corporation makers mark on a top carry fuel canister.

Figure 23. Surface artifact, Metal 13, United States Steel Corporation fuel canister.

Figure 24. Surface artifact metal 18, inside of Reeves galvanized steel 24 gal trash can lid dating 1944.

Figure 25. Surface artifact Metal 23, 3 1/2 inch gauge slugging wrench.

Figure 26. Surface artifact, Metal 25, small metal door/cover.

Figure 27. Surface artifact, Metal 29, metal cover.

Figure 28. Surface artifact, Metal 16, corrugated barrel fragment.

Figure 29. Datum pit overview facing north.

Figure 30. NW structure location overview facing north.

Figure 31. NW structure location overview facing east. Large pit feature in foreground left.

Figure 32. NW structure location overview facing west. Testing near small pit feature at left.

Figure 33. NE structure location clearing with mature holly bushes, view west.

Figure 34. Stump near NE structure site.

Figure 35. SW structure location overview facing southwest.

Figure 36. Surface artifact, concrete 1, at SW structure location.

Figure 37. Example of surface artifact at sterile shovel probe, shoe 1, SP 7.

Figure 38. TU 2 overview.

Figure 39. TU 5 overview facing southeast with small pit in background right.

Figure 40. TU6 overview facing west.

Appendix E: 45PI01358 Site Form

STATE OF WASHINGTON
ARCHAEOLOGICAL SITE INVENTORY FORM

DEPT OF ARCHAEOLOGY + HISTORIC PRESERVATION

Smithsonian No.: 45PI01358

***County:** Pierce

***Date:** 18 August 2015 ***Compiler:** Bethany Mathews

Human Remains? ☐ **DAHP Case No.:** Permit 2015-19

"Archaeological sites are exempt from public disclosure per RCW 42.56.300"

SITE DESIGNATION

Site Name:

Field/ Temporary ID: HRA-2245.01-1

***Site Type(s)** *(Refer to the DAHP Survey and Inventory Guidelines Page 19)*: Historic debris scatter/concentration

SITE LOCATION

***USGS Quad Map Name(s):** Nisqually, WA 7.5 min

***Legal Description: T**19N **R** 1 **E/W:** E **Section(s):** 25

Quarter Section(s): NE 1/4 NW 1/4

***UTM: Zone** 10 **Easting** 528481 **Northing** 5217505

Latitude: 47.109990° **Longitude:**-122.621502° **Elevation (ft/m):** 224ft/68m

Other Maps: **Type:**

Scale: **Source:**

Drainage, Major: Sequalitchew Creek **Drainage, Minor:** **River Mile:**

Aspect: Southwest **Slope:** <5%

***Location Description** *(General to Specific)*: The site is located in the Nisqually Basin, 2 miles southeast of the Puget Sound and 0.5 mi west of Sequalitchew Lake. It is located in a forested parcel in the Northwest Landing community of the city of DuPont. This parcel, which is slated for development as a logistics center, is bordered by Center Drive to the south, International Place to the west.

***Directions** *(For Relocation Purposes)*: From Interstate 5 take exit 119 toward Steilacoom-DuPont Road. Travel northwest on DuPont-Steilacoom Road for 250ft, then turn northeast onto Wilmington Drive at the intersection. Follow Wilmington Drive for 1 mi as it curves to the north and becomes DuPont-Steilacoom Road. At the intersection, turn west onto Center Drive. Follow Center Drive west for 0.22 mi until the intersection with International Place. The site is at the northeast corner of the intersection of International Place and Center Drive.

SITE DESCRIPTION

***Narrative Description** *(Overall Site Observations)*:

Site 45PI01358 covers about 2 acres with dimensions of 120 meters northeast to southwest, and 95 meters northwest to southeast. The site contains two historic-era loci: artifact scatters associated with early 1900s domestic structures and a WWII-era Army training artifact scatter. The preliminary testing of the site by HRA identified these loci and associated features. ATCRC's testing supports the site dates and functions HRA provided in their initial site form with the exception of the function of the pit features, which ATCRC concludes were associated with early 1900s domestic structures and activities. It appears the site was occupied from the 1920s to the 1930s, and then used by the U.S. Army in the 1940s for training or as a location to discard equipment used on the adjacent Fort Lewis property. In sum, the site is a palimpsest representing historic-era activities from approximately 1900-1945.

***Site Dimensions** *(Overall Site Dimensions)*:

***Length:** 120 m ***Direction:** NE - SW x ***Width:** 95 m ***Direction:** NW - SE

***Method of Horizontal Measurement:** GIS

***Depth:** 1+ meter * **Method of Vertical Measurement:** Test excavation

***Vegetation** *(On Site)*: Oregon white oak, Douglas fir, Oregon grape, hazelnut, spirea, mosses, scotch broom

Local: Quercus garryana (Oregon white oak) woodland **Regional:** Tsuga heterophylla (Western hemlock) vegetation zone

Landforms *(On Site)*: glacial outwash plain

Local: Nisqually flood plain

Water Resources *(Type)*: Sequalitchew Lake **Distance:** 0.5mi

Permanence: Permanent

CULTURAL MATERIALS AND FEATURES

***Narrative Description** *(Specific Inventory Details)*:

Surface artifact material types include metal, glass, leather, faunal bone, ceramics, concrete, shell, and rubber. Many historic-age diagnostic artifacts were identified during the surface survey (Figure 1). ATCRC identified two distinct historic-era loci within the site (Figure 2). A northern concentration, measuring 60m x 35m, of large metal items is associated with WWII-era Army training activities (Figures 3-4). These include a slugging wrench, galvanized metal barrel, fuel cans, and a first aid kit tin. The central and southern portions of the site consist of two pit depressions and glass and metal artifacts which appear to be associated with early 20th Century domestic activities (Figures 5-6). Testing at the site confirmed that the early domestic refuse scatter is associated with several pit features, while the WWII concentration is surficial (Figures 7-8). The largest pit feature, which was recorded by HRA as the site datum, measures 3m across at 350 degrees and is 1.5m deep (Figure 9). The feature is more closely associated with domestic refuse scatters than the military refuse to the north, and may be the remains of a subsurface root cellar. The smaller of the two pits measures 60cm at 120 degrees and is 40cm deep (Figure 10). During test excavation it was discovered this feature was a trash pit extending more than 1 meter below surface. A 50m x 50 m area of scattered ceramics and bone was identified in the southeastern portion of the site. The assemblage from this southern loci is consistent in age with the artifacts associated with the site datum, but appears to be associated with different domestic activities.

Figure 1. Diagnostic surface artifacts.

Age	Description	Quantity	Figure
Early 1900s	White ceramic plate made by Chester Hotel China dated to the early 1900s. The manufacturer went out of business in 1920 (Laurel 2009)	1	10
1869-1950	Boyd's milk glass liner in a zinc canning jar lid (Whitten 2015)	1	11
1923-1982	Hazel-Atlas Glass Company bottle	1	n/a
1901-1920	Western Bottle Mfg. Co. bottle	1	12-13
1931-1960	Northwestern Glass Co. bottle	5	14
1929-1960	Owens Illinois Glass Co. bottle	2	15-16
1850-1929	Owens Illinois Glass Co. bottle	1	17
Early 1900s	Milk glass cosmetic cream jar "Ingrams Milk Weed Cream." This product had a patent date of 6 September 6 1892 (gov) and was used as a cream to "Preserve good complexions" and "Improve bad complexions" according to a 1916 ad. (Morris 2011)	1	18-19
1942-1957+	Military-issued aluminum side seam canteen made by Mirro Aluminum Company (M.A.CO) previously named Aluminum Goods Company (A.G.C.O)	1	20-21

1901+	Fuel cans made by the United States Steel Corporation in Alameda, California. The company was founded in 1901.	11	22-23
1944	Galvanized steel 24 gallon trash can lid made by Reeves	1	24

***Method of Collection:** Metal detector survey, shovel probes (10), 50cm test units (6)

***Location of Artifacts** *(Temporary/Permanent)*: Aqua Terra Cultural Resource Consultants/DuPont Historical Museum

SITE AGE

***Component:** Historic ***Dates** *(Overall Site Age Approximation)*: 1920-1930s; circa 1945

***Dating Method:** Maker's marks **Phase:** Early settlement/WWII **Basis for Phase Designation:** Artifact type and age

(Only those historic sites that meet the minimum National Register (36CFR60) age threshold (50 years of age or older) will be retained as historic archaeological records and assigned Smithsonian Trinomials by DAHP.)

SITE RECORDERS

Observed by: Bethany Mathews, Allie Taylor, Andrew Frierson **Address:**

***Date Recorded:** 15-17 July 2015

***Recorded by** *(Professional Archaeologist)*: Sarah Amell

***Organization:** Aqua Terra Cultural Resource Consultants ***Organization Phone Number:** 360.359.6701

***Organization Address:** 5518 Trosper Lake St SW, Tumwater, WA 98512

***Organization E-mail:** Sarah@AquaTerraCRC.com

Date Revisited: **Revisited By:**

SITE HISTORY

***Previous Archaeological Work** *(Specify the previous archaeological work done at this location. / If none, please put N/A here.)*: Historical Research Associates identified site 45PI01358 during a pedestrian and subsurface survey for a cultural resources inventory (Schultze et al. 2015). The entire project area was surveyed at 20 meter intervals, with shovel probes spaced 30 meters apart on 20 meter transects. The original

site record was dated 4 February 2015. The shovel probe survey conducted by HRA provided a site boundary and data on the surface assemblage which was indicative of early 1900s residential activities and WWII-era military training activities.

ATCRC's research design for excavations at site 45PI01358 included further delineation of site or activity boundaries, inventory of site features, assessment of the geoarchaeological context of the site, and a determination of historic register eligibility. On 15 July 2015 ATCRC conducted a 100-percent pedestrian survey of the project area. A Bounty Hunter Time Ranger metal detector was used during this survey to determine subsurface metal concentrations and the presence of metal near the site boundary. Approximately 140 surface artifacts were recorded during the metal-detector survey. Following the metal-detector survey, ATCRC excavated 10 SPs and 6 TUs within high probability areas of site 45PI01358. A total of 1,970 artifacts were found in the screened sediment of the test units, and 128 artifacts were identified in shovel probes.

LAND OWNERSHIP

***Owner:** Islero, LLC

***Address:** PO Box 110997, Tacoma, WA 98411-0997

***Tax Lot/ Parcel No:** 3000390010

RESEARCH REFERENCES

***Items/Documents Used In Research** *(Specify the documents used in research/ If no research was conducted, please put N/A here.)*:

Laurel Hollow Park
2009 Chester Hotel China. Electronic Document, http://www.laurelhollowpark.net/tst/tst-p33.html, accessed July 2015.

Morris, Lisa
2011 The ARLO Update. Volume I, Issue 9. Electronic Document, http://idahoarchaeology.org/wp-content/uploads/2011/04/Vol-1-Issue-9.pdf, accessed July 2015.

Schultze, Carol, Jennifer Gilpin, Adam Fruge, and Jordan Pickrell
2015 *Cultural Resource Inventory, Phase II Development Northwest Logistic Center, City of DuPont, Pierce County, Washington.* Historical Research Associates, Inc., Seattle, Washington. Prepared for Islero, LCC. On file at DAHP, Olympia, Washington.

Whitten, David
2015 History of Glass Manufacturing Industry. Electronic document, http://www.glassbottlemarks.com accessed July 2015.

USGS MAP

***Quad Name(s):** Nisqually, WA 7.5

***Series:** 7.5 minute

***Date(s):** 2011

***Legend:** **Known Boundary Symbology:** Red line

Possible Boundary Symbology:

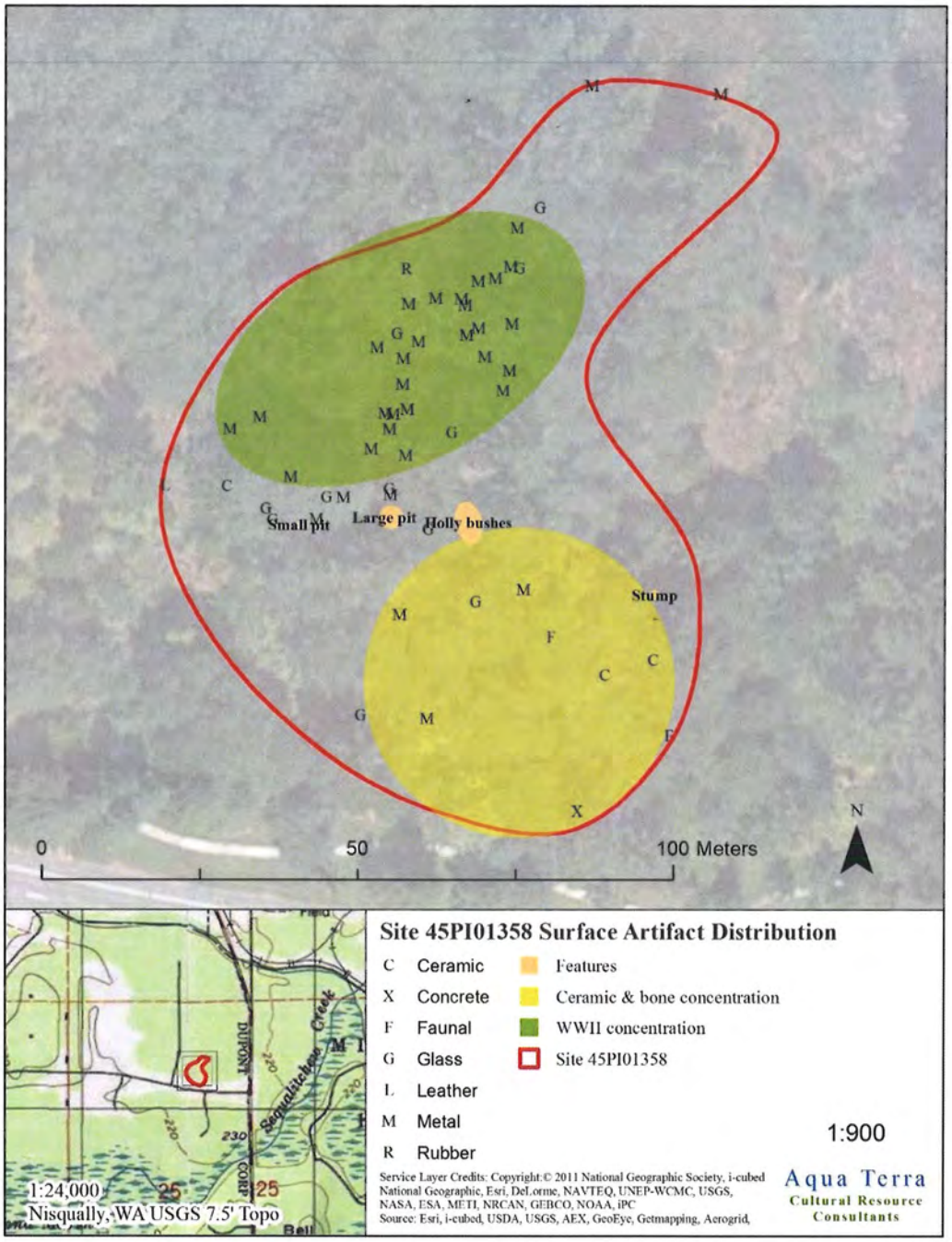
Other Symbols *(Other Than USGS)*:

***Scale:** 1:24,000

***North Arrow** *(Magnetic/True North)*: True

SKETCH MAP

***Sketch Map Description:** GPS coordinates of artifact and feature distribution



***Legend:** **Known Boundary Symbology:** Red line

Possible Boundary Symbology:

Other Symbols *(Other Than USGS)*: legend provided on map

***Scale:** 1:900

***North Arrow** *(Magnetic/True North)*: True

PHOTOGRAPH(S)

***Photograph Description(s)** *(Include a representative sample of inventoried archaeological material and features, site location overviews, etc)*:

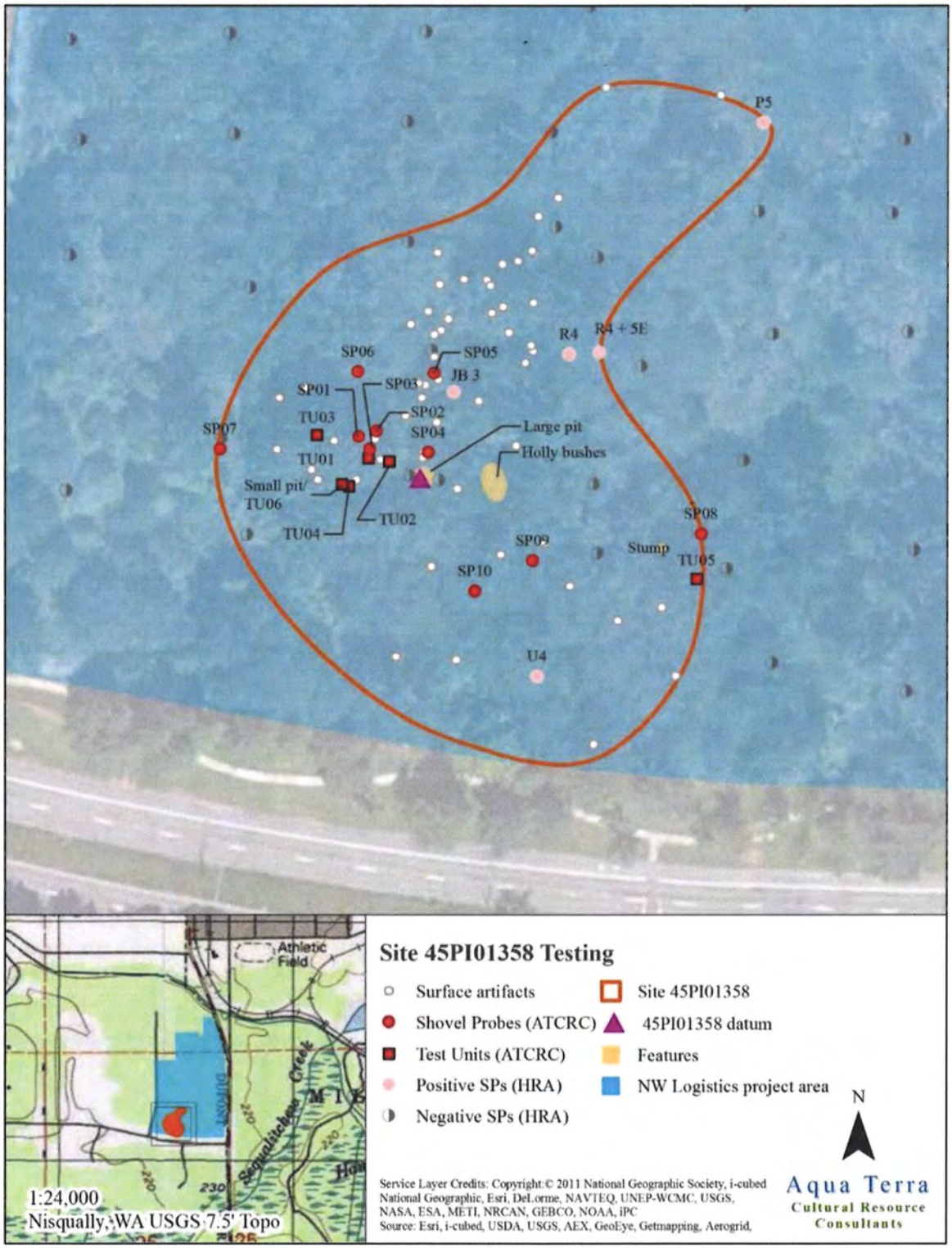


Figure 2. Site 45PI01358 test locations.

Figure 3. Reeves galvanized steel 24 gal trash can lid dating 1944.

Figure 4. United States Steel Corporation makers mark on fuel canister.

Figure 5. Surface artifact colorless glass medicine vessel base, Owens Illinois maker's mark dating from 1850-1929.

Figure 6. Surface artifact milk glass lined zinc canning jar lid, Boyd's Genuine Porcelain Lined cap dating from early 1900s- 1950s.

Figure 7. Site location overview facing east with completed project excavation in foreground.

Figure 8. Test unit excavation in progress near site datum, view north.

Figure 9. Datum pit, view north.

Figure 10. Small refuse pit, view west.

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

November 2, 2015

Mr. Angelo Ianello
Property Owner
Islero, LLC
PO Box 110997
Tacoma, WA 98411

Re: Archaeological Excavation Permit No. 2015-19

Dear Mr. Ianello:

On July 16, 2015, the Department of Archaeology and Historic Preservation issued a permit to you to conduct excavations at 45PI01358. We received the final excavation report for archaeological permit number 2015-19 on November 2nd, 2015.

We concur with the findings of the report. Once recovered artifacts have been curated, the stipulations of your permit will be fulfilled.

If you have any questions, please contact me by e-mail at lance.wollwage@dahp.wa.gov.

Sincerely,

Lance Wollwage

Lance Wollwage, Ph.D.
Assistant State Archaeologist
(360) 586-3536
Email: lance.wollwage@dahp.wa.gov

Enclosure

Attachment 1m - Archaeology Closing Letter

DuPont Museum
[illegible]

DEED OF GIFT

Property owner

Name: Isiero LLC
Address: P.O. Box 110997
City: Tacoma State: WA Zip: 98411
Phone: 253-203-7406
Email: aianello@me.com
Description: - Artifact Spreadsheet attached.

The gift is given in memory of —

I hereby unconditionally give, donate, bestow and set over to the DuPont Museum, DuPont Washington, my property described on this sheet, the reverse side of this sheet, or on any attached sheets, to be received as an unconditional gift by the Museum and used by the Museum at its unrestricted discretion; and for myself, my successors, and my personal representatives, I waive all present or future rights in or over said property and its use.

I hereby affirm that the materials contained in this gift were, to the best of my knowledge, acquired legally and are free from encumbrance, and that I have the proper legal authority to transfer ownership.

Donor: [signature] Date: 12/15/15

Name: Sal Amello Date: 11/3/15

THE GIFT DESCRIBED ABOVE IS ACCEPTED FOR THE DUPONT MUSEUM

Name: _____ Title: _____ Date: _____

EDA

EDWARDS DEVELOPMENT & ADVISORS, LLC

February 26, 2018

Jeffery S. Wilson, AICP
Community Development Director
City of DuPont
1700 Civic Drive
DuPont, WA 98327

Tree Retention History During TESC and Site Rough Grading
Northwest Logistics Center Phase 2, DuPont, WA

Dear Mr. Wilson –

As requested in your 2/6/18 Pre-App Comment Letter item C.3.b, the following process to preserve existing trees and landscaping was followed during the TESC and Site Rough Grading permit work. The tree retention work completed to date has been reviewed and approved by the City of DuPont arborist.

Before construction began, Bayhead Management/NWLC-P2 LLC hired Galen Wright of WA Forestry Consultants, Inc. as a consulting arborist to assist the general contractor – Sierra Construction – during the site clearing to identify the trees to be retained.

Sierra Construction began work using the Tree Protection Plan from the city approved TESC and Rough Grading permit plans. The Tree Retention Plan showed the two tree protection areas at the SW corner of the site requiring fencing and arborist assessment.

From start to completion of the site clearing and grading work, tree protection was coordinated with the city arborist as follows. Sierra Construction would contact Bayhead's arborist, Galen Wright, to come to the site and mark the trees to be saved or removed. Then, the city arborist, Kevin McFarland, would come out and confirm the markings. In several instances, the two arborists would require other trees to be saved and/or removed. Sierra did not move forward to save/remove trees until receiving face-to-face and email approvals from the city arborist.

During the clearing work, Sierra Construction discovered that there were discrepancies between the approved plans and the field conditions along the east and SE corner. There were trees within the clearing limits that the city arborist wanted saved. Work was stopped, those areas were reviewed in the field by both arborists, additional trees were marked to be saved in the same process explained above, and then clearing areas were adjusted accordingly.

As a result of the collaboration, Sierra Construction holds numerous emails containing the city arborist's approvals and identifies the trees retained and the areas protected, including the additional areas along the east and SE corner of the property. If requested by the city, the emails can be provided but gathering the emails would take a little while.

As the building and site construction moves forward, Bayhead/NWLC-P2 LLC and Sierra will continue to work closely with the city and its arborist to preserve trees on the property.

If you have questions, please don't hesitate to call or email.

Most sincerely –

Jay Pickering

Development Manager
Edwards Development and Advisors, LLC
206-310-6100
jay.pickering@edwardsdev.com

CC: Bayhead Management, LLC
CC: Barghausen Consulting Engineers, Inc.
CC: Sierra Construction

GEOTECHNICAL REPORT

NW Logistics Center II
International Place and Center Drive
DuPont, Washington

Project No. T-6897-2

Terra Associates, Inc.

Prepared for:

NWLC – P2, LLC
Tacoma, Washington

April 19, 2016

Attachment 1o - Geotechnical Report dated April 16, 2016

TERRA ASSOCIATES, Inc.
Consultants in Geotechnical Engineering, Geology
and
Environmental Earth Sciences

April 19, 2016
Project No. T-6897-2

Mr. Angelo Ianello
NWLC – P2, LLC
P.O. Box 110997
Tacoma, Washington 98411

Subject: Geotechnical Report
NW Logistics Center II
International Place and Center Drive
DuPont, Washington

Dear Mr. Ianello:

As requested, we have conducted a geotechnical engineering study for the subject project. The attached report presents our findings and recommendations for the geotechnical aspects of project design and construction.

The site soils generally consist of previously compacted sand and gravel structural fill overlying native sands and gravels. Native soils at the site predominantly consist of gravels with variable sand and cobbles content. Heavy to very heavy groundwater seepage was observed in 8 of the 9 test pits excavated at the site at depths ranging from 13 feet to 15 feet below site grades.

In our opinion, there are no geotechnical conditions that would preclude the planned development. The building can be supported on conventional spread footings bearing on competent native soils or previously placed and compacted structural fills. Additional structural fills as needed to establish finish floor elevations can also be used to support building foundations and floor slabs. Pavements can be similarly supported.

Detailed recommendations addressing these issues and other geotechnical design considerations are presented in the attached report. We trust the information presented is sufficient for your current needs. If you have any questions or require additional information, please call.

Sincerely yours,
TERRA ASSOCIATES, INC.

Kevin P. Roberts, P.E.
Geotechnical Engineer

Theodore J. Schepper, P.E.
President

4-19-16

12220 113th Avenue NE, Ste. 130, Kirkland, Washington 98034
Phone (425) 821-7777 • Fax (425) 821-4334

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Geotechnical Report
NW Logistics Center II
International Place and Center Drive
DuPont, Washington

1.0 PROJECT DESCRIPTION

The project consists of the construction of a 601,416 square-foot industrial building with associated paved surfaces and utility improvements on a 32-acre parcel. Building design information is currently unavailable; however, we expect the building will be constructed with conventional precast tilt-up perimeter wall panels with isolated interior columns supporting the roof structure. Structural loading is expected to be relatively light, with isolated columns carrying loads of 100 to 125 kips, and bearing walls carrying 4 to 8 kips per foot.

At this time, rough grading to establish approximate building and parking lot elevations has been completed at the site. Review of the Preliminary Grading and Storm Drainage Plan indicates the building's floor slab will be constructed at Elev. 227.5. Dock high access for trucks will be provided on the building's west and east sides. Site stormwater will be directed to four infiltration galleries located along the western and eastern site perimeters. Infiltration trenches will be constructed with bottom elevations ranging from Elev. 210.65 at the northwest perimeter, to Elev. 213.10 at the site's southeast perimeter.

The recommendations in the following sections of this report are based on our understanding of the design features outlined above. We should review design drawings as they become available to verify that our recommendations have been properly interpreted and to supplement them, if required.

2.0 SCOPE OF WORK

Our work was completed in accordance with our authorized proposal dated January 22, 2016, and revised March 9, 2016. Using the information obtained from our subsurface exploration and information from previous explorations completed by others, we performed analyses to develop geotechnical recommendations for project design and construction. Specifically, this report addresses the following:

- Soil and groundwater conditions
- Geologic Hazards per the DuPont Municipal Code
- Seismic design parameters per 2012 International Building Code (IBC)
- Site preparation and grading
- Excavations
- Foundations
- Slab-on-grade floors
- Stormwater infiltration
- Utilities
- Pavements

It should be noted that recommendations outlined in this report regarding drainage are associated with soil strength, design earth pressures, erosion, and stability. Design and performance issues with respect to moisture as it relates to the structure environment (i.e., humidity, mildew, mold) is beyond Terra Associates' purview. A building envelope specialist or contactor should be consulted to address these issues, as needed.

2.1 Previous Work

Terra Associates recently observed suitability of subgrades, as well as placement and compaction of structural fill at the site. Our observations and testing were performed during construction to establish rough planned grades at the site.

3.0 SITE CONDITIONS

3.1 Surface

The site is an approximately 32-acre parcel located at the northeastern corner of the intersection of International Place and Center Drive in DuPont, Washington. The site is bounded to the north by undeveloped parcels and a commercial property. DuPont-Steilacoom Highway bounds the site to the east. The approximate location of the site is shown on Figure 1.

Site topography is flat due to recent grading activities to establish the project's planned rough grades. An approximately two-foot rise in grades to form a level pad for building construction is located in the major central site area. Graded areas surrounding the building pad approximately match street and neighboring property elevations. Site vegetation beyond the edges of the graded areas consist of brush and grasses and, additionally, mature conifers along Center Drive and DuPont-Steilacoom Highway. No ponded surface water was observed at the site.

3.2 Soils

The site soils generally consist of 1.5 to 7 feet of sand and gravel fill overlying native sands and gravels. The fill was not present at Test Pits TP-3 through TP-5, and TP-8. A 1.5-foot thick layer of buried topsoil was found beneath the fill in Test Pit TP-7. With the exception of loose, organic surface fill in Test Pit TP-1, the fills were generally observed to be in a compacted, medium dense condition.

Native soils at the site predominantly consist of gravels with variable sand and cobble content. Medium to coarse-grained sands were also observed beneath the gravels in Test Pits TP-1 and T-8 at a depth of 9 feet. In Test Pit TP-4, the sand was found above the gravel to a depth of 5 feet. Caving of test pit walls was noted at depths ranging from 2 to 14.5 feet.

The *Geologic Map of the Nisqually 7.5-Minute Quadrangle, Thurston and Pierce Counties, Washington,* by T.J. Walsh, R.L. Logan, Michael Polenz, and H.W. Schasse (2003) maps the site as Vashon recessional outwash gravel (Steilacoom Gravel). This map unit is consistent with the native soils observed in the test pits.

The preceding discussion is intended to be a brief review of the soil conditions encountered on the site. Detailed descriptions can be found on the Test Pit Logs attached in Appendix A.

3.3 Groundwater

We observed heavy to very heavy groundwater seepage in eight of the nine test pit excavated at the site. The seepage was encountered at depths ranging from 13 feet to 15 feet below site grades. The high seepage volumes and relatively consistent observed depths indicate it represents the local groundwater table.

3.4 Geologic Hazards

We reviewed Chapter 25.105 "Sensitive Areas" of DuPont Municipal Code. Geologic sensitive areas and development standards are codified for landslide hazards in areas of "ravine sidewalls, bluffs, and slopes greater than 40 percent." Landslide, erosion, and seismic hazard considerations are addressed below.

3.4.1 Erosion Hazard

We did not observe any indication of erosion or sediment deposition at the site. The site soils are mapped as Spanaway gravelly sandy loam by the United States Department of Agriculture Natural Resources Conservation Service (NRCS), formerly the Soil Conservation Service. The NRCS describes the erosion hazard of Spanaway gravelly sandy loam as slight. Based on our observations and this reported soil characteristic, it is our opinion that erosion hazards do not exist at the site. Regardless, erosion protection measures as required by the City of DuPont will need to be in place during grading activities on the site.

3.4.2 Landslide Hazard

The site is relatively flat and is underlain by well drained outwash sand and gravel. As such, landslide hazards do not exist at the site.

3.4.3 Seismic Hazard

Based on the soil and groundwater conditions we observed at the site, it is our opinion that there is no risk for damage resulting from seismically induced landslides, settlement, or soil liquefaction. Therefore, in our opinion, unusual seismic hazard areas do not exist at the site, and design in accordance with building codes for determining seismic forces would adequately mitigate impacts associated with ground shaking.

3.5 Seismic Design Parameters

Based on soil conditions observed in the test pits and our knowledge of the area geology, per Chapter 16 of the 2012 International Building Code (IBC), site class "C" should be used in structural design. Based on this site class, in accordance with the 2012 IBC, the following parameters should be used in computing seismic forces:

Seismic Design Parameters (IBC 2012)

Spectral response acceleration (Short Period), S_{Ms}	1.300g
Spectral response acceleration (1 – Second Period), S_{M1}	0.672g
Five percent damped .2 second period, S_{Ds}	0.866g
Five percent damped 1.0 second period, S_{D1}	0.448g

The above values were determined using the online map-based United States Geological Survey (USGS) Ground Motion Parameter Calculator accessed on April 13, 2016.

4.0 DISCUSSION AND RECOMMENDATIONS

4.1 General

In our opinion, there are no geotechnical conditions that would preclude the planned development. The building can be supported on conventional spread footings bearing on competent native soils or previously placed and compacted structural fills. Additional structural fills as needed to establish finish floor elevations can also be used to support building foundations and floor slabs. Pavements can be similarly supported.

Stormwater infiltration trench design will need to consider the observed groundwater as a potential barrier layer to stormwater infiltration. A review of groundwater depths noted in our test pits relative to preliminary design infiltration trench bottom elevations indicates trench bottoms may need to be raised to provide a minimum required separation distance of three feet from the trench bottom to the groundwater table.

The outwash sands and gravels observed at the site have a low percentage of soil fines and should be suitable for use as structural fill in most weather conditions. In the event that soils need to be imported to the site, the contractor should be prepared to import free-draining granular material for use as structural fill and backfill during the wet season.

Detailed recommendations regarding these issues and other geotechnical design considerations are provided in the following sections. These recommendations should be incorporated into the final design drawings and construction specifications.

4.2 Site Preparation and Grading

As noted, the site has been subject to previous grading to establish current site elevations. Compaction tests of the fills at select locations met or exceeded geotechnical requirements. There is, however, a potential for isolated areas to have been disturbed or de-stabilized since our earthwork observations at the site. Prior to building and pavement construction, we recommend that all exposed bearing surfaces be observed by a representative of Terra Associates, Inc. to verify that soil conditions are as expected and suitable for support for structural support. Our representative may request proofrolling the exposed subgrade for pavement and floor slab support with a loaded 10 yard dump truck. If unstable soils are observed and cannot be stabilized in place by compaction, the affected soils should be excavated and removed to firm bearing and grade restored with new structural fill.

As noted above, the outwash sands and gravels observed at the site contain a low percentage of fines and should be suitable for use as structural fill in most weather conditions. If fill is imported to the site during the wet winter months, the contractor should be prepared to import wet weather structural fill. For this purpose, we recommend importing a granular soil that meets the following grading requirements:

U.S. Sieve Size	Percent Passing
6 inches	100
No. 4	75 maximum
No. 200	5 maximum*

*Based on the 3/4-inch fraction.

Prior to use, Terra Associates, Inc. should examine and test all materials imported to the site for use as structural fill.

Structural fill should be placed in uniform loose layers not exceeding 12 inches and compacted to a minimum of 95 percent of the soil's maximum dry density, as determined by American Society for Testing and Materials (ASTM) Test Designation D-698 (Standard Proctor). The moisture content of the soil at the time of compaction should be within two percent of its optimum, as determined by this ASTM standard. In nonstructural areas, the degree of compaction can be reduced to 90 percent.

4.3 Excavations

All excavations at the site associated with confined spaces, such as utility trenches, must be completed in accordance with local, state, and federal requirements. Based on regulations outlined in the Washington Industrial Safety and Health Act (WISHA), the site soils would be classified as Type C soils. Accordingly, temporary excavations in Type C soils should be sloped at an inclination of 1.5:1 or flatter. If there is insufficient room to complete the excavations in this manner or if excavations greater than 20 feet deep are planned, you may need to use temporary shoring to support the excavations. For utility trenches, properly designed and installed trench boxes may be used.

We observed heavy to very heavy seepage volumes emanating from the gravels at depths of 13 to 15 feet in our test pits. Deep excavations such as for utility construction below the water table will require installation of a dewatering system to maintain relatively drained conditions in trenches. The dewatering system will require deep pump wells or closely spaced well points installed in advance of trenching activities. Special consideration should be given to adequately sizing well points, pumps, and piping systems to effectively dewater relatively high seepage volumes.

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

4.4 Foundations

The industrial building may be supported on conventional spread footing foundations bearing on competent native soils or on structural fill placed above competent native soils. Foundation subgrades should be prepared as recommended in Section 4.2 of this report. Perimeter foundations exposed to the weather should bear at a minimum depth of 1.5 feet below final exterior grades for frost protection. Interior foundations can be constructed at any convenient depth below the floor slab.

Foundations supported on undisturbed bearing surfaces consisting of the native outwash sand and gravel or structural fill that is placed as recommended in Section 4.2 can be dimensioned for a net allowable bearing capacity of 4,000 pounds per square foot (psf). For short-term loads, such as wind and seismic, a one-third increase in this allowable capacity can be used. With structural loading as anticipated and this bearing stress applied, estimated total settlements are less than one-inch.

For designing foundations to resist lateral loads, a base friction coefficient of 0.35 can be used. Passive earth pressures acting on the side of the footing can also be considered. We recommend calculating this lateral resistance using an equivalent fluid weight of 350 pounds per cubic foot (pcf). We recommend not including the upper 12 inches of soil in this computation because it can be affected by weather or disturbed by future grading activity. This value assumes the foundation will be constructed neat against competent native soil or backfilled with structural fill as described in Section 4.2 of this report. The recommended lateral resistance values include a safety factor of 1.5.

4.5 Slab-on-Grade Floors

Slabs on grade may be supported on subgrades prepared as recommended in Section 4.2 of this report. Immediately below the floor slabs, we recommend placing a four-inch thick capillary break layer of clean, free-draining, coarse sand or fine gravel that has less than three percent passing the No. 200 sieve. This material will reduce the potential for upward capillary movement of water through the underlying soil and subsequent wetting of the floor slabs. Installation of a capillary break layer will not be necessary where the floor subgrade consists of clean native outwash or structural fill constructed using the clean outwash soils. A representative of Terra Associates should observe the subgrade at the time of construction to verify this condition and determine if an imported capillary break layer is required.

The capillary break layer will not prevent moisture intrusion through the slab caused by water vapor transmission. Where moisture by vapor transmission is undesirable, such as covered floor areas, a common practice is to place a durable plastic membrane on the capillary break layer and then cover the membrane with a layer of clean sand or fine gravel to protect it from damage during construction, and aid in uniform curing of the concrete slab. It should be noted that if the sand or gravel layer overlying the membrane is saturated prior to pouring the slab, it will be ineffective in assisting in uniform curing of the slab, and can actually serve as a water supply for moisture transmission through the slab and affecting floor coverings. Therefore, in our opinion, covering the membrane with a layer of sand or gravel should be avoided if floor slab construction occurs during the wet winter months and the layer cannot be effectively drained. We recommend floor designers and contractors refer to the 2003 American Concrete Institute (ACI) Manual of Concrete Practice, Part 2, 302.1R-96, for further information regarding vapor barrier installation below slab-on-grade floors.

We recommend the floors be designed using a subgrade modulus (k_s) of 250 pounds per cubic inch (pci).

4.6 Drainage

Surface

Final exterior grades should promote free and positive drainage away from the site at all times. Water must not be allowed to pond or collect adjacent to foundations, or within the immediate building areas. If a positive drainage gradient cannot be provided, surface water should be collected adjacent to the structures and disposed to appropriate storm facilities.

Subsurface

Considering the well-drained nature of the site soils, provided the finish floor grade is at or above the adjacent exterior grade and positive drainage away from the structure is maintained, in our opinion, perimeter foundation drains would not be required.

Stormwater Infiltration

Based on our observations, the outwash sands and gravels at the site will support infiltration of project stormwater. An average long-term design infiltration rate of 20 inches per hour can be used for design of the site's infiltration trenches. This design infiltration rate was derived using correlations with grain size distribution as outlined in the 2012 Washington State Department of Ecology (DOE) *Stormwater Management Manual for Western Washington (SMMWW)*. In addition, as provided in Section 3.3.8 in Vol. III of the SMMWW, our calculation of the infiltration rate incorporates trench size, and is based on a the allowable minimum separation distance of 3 feet between the base of the infiltration trench and the water table.

With rough grading completed at the site, approximate groundwater elevations appear to be near the preliminary design elevations of the bottoms of the infiltration trenches. As discussed above, for final design, trench bottoms may need to be constructed at higher elevations in order to provide the minimum required separation distance of three feet from the trench bottom to the groundwater table.

In their storage zones, we recommend backfilling the infiltration trenches with 1 ½- to 3-inch washed aggregate per the 2012 SMMWW. The aggregate should have a minimum porosity of 30 percent. In our opinion, the optional sand filter or geotextile filter fabric discussed in the SMMWW for placement at the base of the trench should not be used, due to the potential for clogging over time.

4.7 Utilities

Utility pipes should be bedded and backfilled in accordance with American Public Works Association (APWA), or City of DuPont specifications. As a minimum, trench backfill should be placed and compacted as structural fill, as described in Section 4.2 of this report. As noted, the relatively clean outwash sand and gravel should be suitable for use as trench backfill in most weather conditions.

4.8 Pavements

Pavement subgrades should be prepared as described in Section 4.2 of this report. Regardless of the degree of relative compaction achieved, the subgrade must be firm and relatively unyielding before paving. The subgrade should be proofrolled with heavy rubber tired construction equipment such as a loaded 10 yard dump truck to verify this condition.

The pavement design section is dependent upon the supporting capability of the subgrade soils and the traffic conditions to which it will be subjected. We expect traffic at the facility will consist of cars and light trucks, along with heavy traffic in the form of tractor-trailer rigs. For design considerations, we have assumed traffic in parking and in car/light truck access pavement areas can be represented by an 18-kip Equivalent Single Axle Loading (ESAL) of 50,000 over a 20-year design life. For heavy traffic pavement areas, we have assumed an ESAL of 300,000 would be representative of the expected loading. These ESALs represent loading approximately equivalent to 3 and 18, loaded (80,000 pound GVW) tractor-trailer rigs traversing the pavement daily in each area, respectively.

With a stable subgrade composed of the existing on-site granular fill prepared as recommended, we recommend the following pavement sections:

Light Traffic and Parking:

- Two inches of hot mix asphalt (HMA) over four inches of crushed rock base (CRB)
- Full depth HMA – 3 ½ inches

Heavy Traffic:

- Three inches of HMA over six inches of CRB
- Full depth HMA – 5 inches

The paving materials used should conform to the Washington State Department of Transportation (WSDOT) specifications for ½-inch class HMA and CRB.

If site pavement will be constructed using Portland cement concrete (PCC) the section should have a minimum thickness of six inches. The concrete should be air entrained with a design air content of 5 percent with a minimum 28-day compressive strength of 4,000 pounds per square inch (psi). Transverse and longitudinal contraction joints should be spaced at 15-foot intervals. Joints should be saw cut in accordance with WSDOT specifications.

Long-term pavement performance will depend on surface drainage. A poorly-drained pavement section will be subject to premature failure as a result of surface water infiltrating the subgrade soils and reducing their supporting capability. For optimum performance, we recommend surface drainage gradients of at least two percent. Some degree of longitudinal and transverse cracking of the pavement surface should be expected over time. Regular maintenance should be planned to seal cracks as they occur.

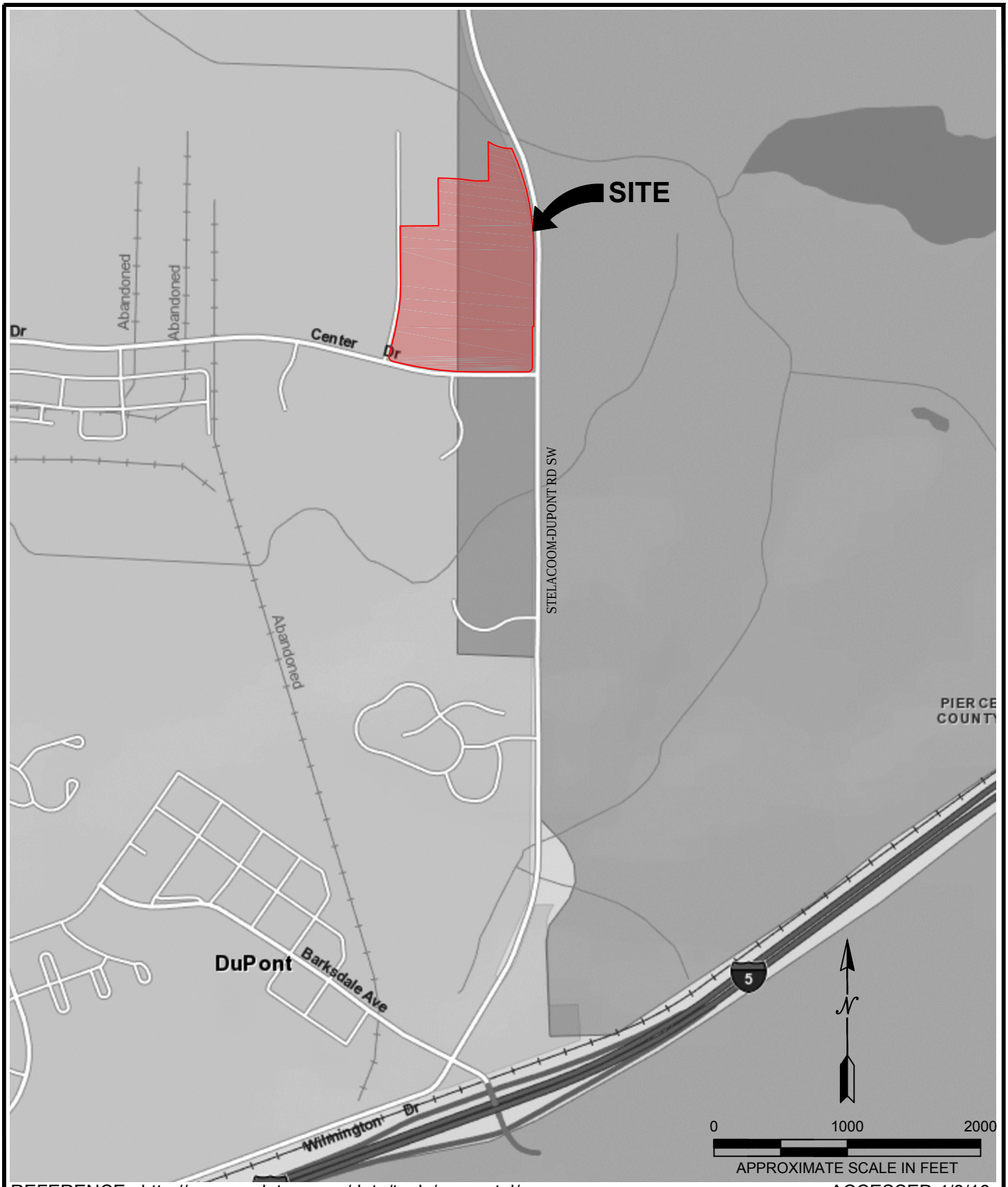
5.0 ADDITIONAL SERVICES

Terra Associates, Inc. should review the final design drawings and specifications in order to verify that earthwork and foundation recommendations have been properly interpreted and implemented in project design. We should also provide geotechnical services during construction to observe compliance with our design concepts, specifications, and recommendations. This will allow for design changes if subsurface conditions differ from those anticipated prior to the start of construction.

6.0 LIMITATIONS

We prepared this report in accordance with generally accepted geotechnical engineering practices. No other warranty, expressed or implied, is made. This report is the copyrighted property of Terra Associates, Inc. and is intended for specific application to the NW Logistics Center II project. This report is for the exclusive use of NWLC – P2, LLC and their authorized representatives.

The analyses and recommendations presented in this report are based on data obtained from the test pits excavated on the site. Variations in soil conditions can occur, the nature and extent of which may not become evident until construction. If variations appear evident, Terra Associates, Inc. should be requested to reevaluate the recommendations in this report prior to proceeding with construction.



REFERENCE: http://www.wsdot.wa.gov/data/tools/geoportal/ ACCESSED 4/8/16

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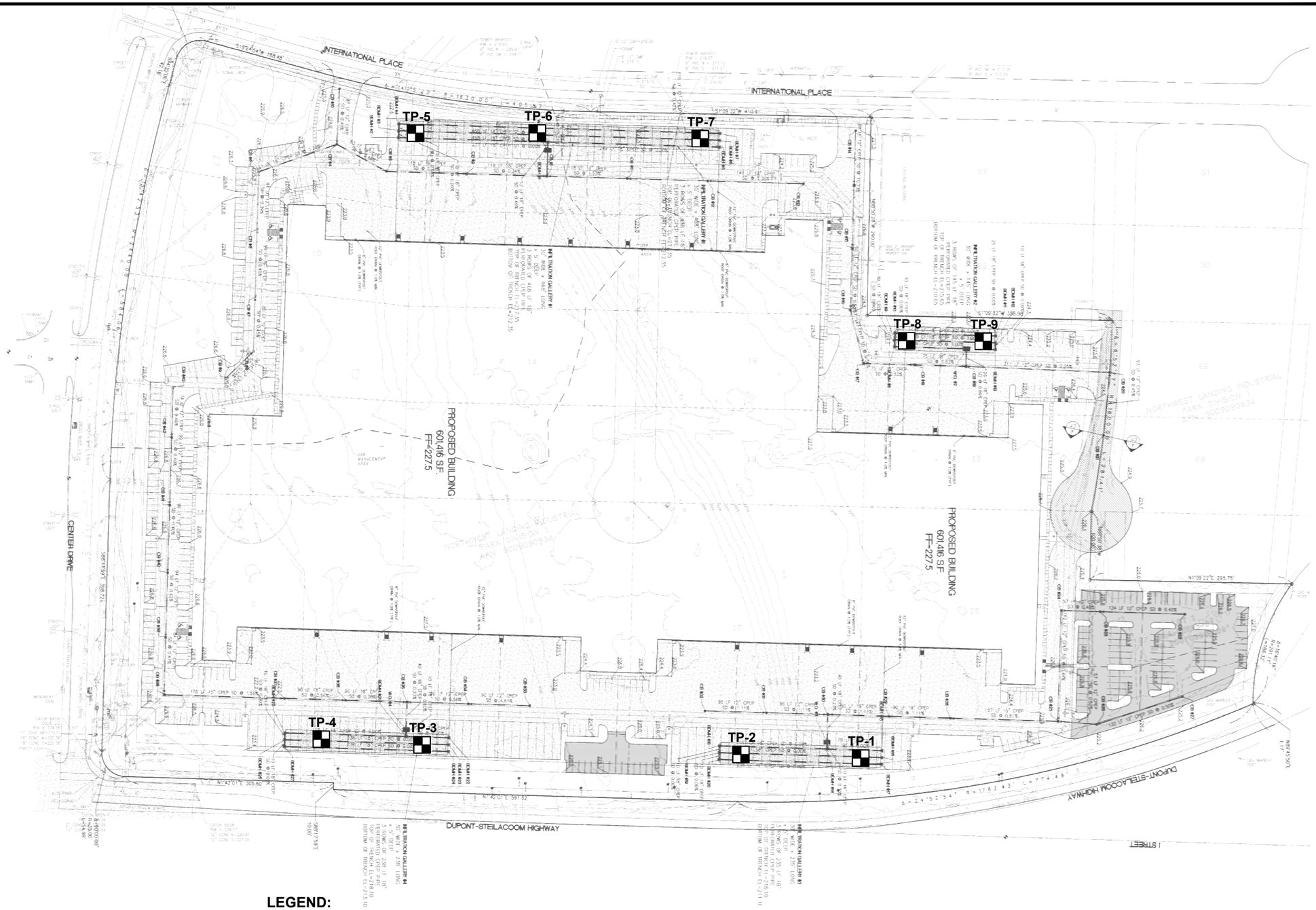
VICINITY MAP
NW LOGISTICS CENTER 2
DUPONT, WASHINGTON

Proj. No.T-6897-2	Date APRIL 2016	Figure 1



NOTE:

THIS SITE PLAN IS SCHEMATIC. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE. IT IS INTENDED FOR REFERENCE ONLY AND SHOULD NOT BE USED FOR DESIGN OR CONSTRUCTION PURPOSES.

REFERENCE: SITE PLAN PROVIDED BY BARGHAUSEN CONSULTING ENGINEERS.

LEGEND:

APPROXIMATE TEST PIT LOCATION

0 150 300

APPROXIMATE SCALE IN FEET

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EXPLORATION LOCATION PLAN
NW LOGISTICS CENTER 2
DUPONT, WASHINGTON

Proj. No.T-6897-2	Date APRIL 2016	Figure 2

APPENDIX A
FIELD EXPLORATION AND LABORATORY TESTING

NW Logistics Center II
DuPont, Washington

On April 5, 2016, we investigated subsurface conditions at the site by excavating 9 test pits to maximum depths of about 14 to 15.5 feet below existing surface grades using an excavator. The test pit locations are shown on Figure 2. The test pit locations were approximately determined in the field by pacing and sighting relative to existing surface features. The Test Pit Logs are presented on Figures A-2 through A-10.

A geotechnical engineer from our office maintained a log of each test pit as it was excavated, classified the soil conditions encountered, and obtained representative soil samples. All soil samples were visually classified in the field in accordance with the Unified Soil Classification System. A copy of this classification is presented as Figure A-1.

Representative soil samples obtained from the test pits were placed in sealed plastic bags and taken to our laboratory for further examination and testing. The moisture content of each sample was measured and is reported on the Test Pit Logs. Grain size analyses were performed on nine of the soil samples. The results are shown on Figures A-11 through A-13.

MAJOR DIVISIONS			LETTER SYMBOL	TYPICAL DESCRIPTION
COARSE GRAINED SOILS More than 50% material larger than No. 200 sieve size	**GRAVELS** More than 50% of coarse fraction is larger than No. 4 sieve	Clean Gravels (less than 5% fines)	GW	Well-graded gravels, gravel-sand mixtures, little or no fines.
			GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines.
		Gravels with fines	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines.
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines.
	SANDS More than 50% of coarse fraction is smaller than No. 4 sieve	Clean Sands (less than 5% fines)	SW	Well-graded sands, sands with gravel, little or no fines.
			SP	Poorly-graded sands, sands with gravel, little or no fines.
		Sands with fines	SM	Silty sands, sand-silt mixtures, non-plastic fines.
			SC	Clayey sands, sand-clay mixtures, plastic fines.
FINE GRAINED SOILS More than 50% material smaller than No. 200 sieve size	**SILTS AND CLAYS** Liquid Limit is less than 50%		ML	Inorganic silts, rock flour, clayey silts with slight plasticity.
			CL	Inorganic clays of low to medium plasticity. (Lean clay)
			OL	Organic silts and organic clays of low plasticity.
	SILTS AND CLAYS Liquid Limit is greater than 50%		MH	Inorganic silts, elastic.
			CH	Inorganic clays of high plasticity. (Fat clay)
			OH	Organic clays of high plasticity.
HIGHLY ORGANIC SOILS			PT	Peat.

DEFINITION OF TERMS AND SYMBOLS

COHESIONLESS

Density	Standard Penetration Resistance in Blows/Foot
Very Loose	0-4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	>50

COHESIVE

Consistancy	Standard Penetration Resistance in Blows/Foot
Very Soft	0-2
Soft	2-4
Medium Stiff	4-8
Stiff	8-16
Very Stiff	16-32
Hard	>32

I	2" OUTSIDE DIAMETER SPILT SPOON SAMPLER
‖	2.4" INSIDE DIAMETER RING SAMPLER OR SHELBY TUBE SAMPLER
▼	WATER LEVEL (Date)
Tr	TORVANE READINGS, tsf
Pp	PENETROMETER READING, tsf
DD	DRY DENSITY, pounds per cubic foot
LL	LIQUID LIMIT, percent
PI	PLASTIC INDEX
N	STANDARD PENETRATION, blows per foot

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UNIFIED SOIL CLASSIFICATION SYSTEM
NW LOGISTICS CENTER 2
DUPONT, WASHINGTON

Proj. No.T-6897-2	Date APRIL 2016	Figure A-1

LOG OF TEST PIT NO. TP-1

FIGURE A-2

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 13.5 Feet **DEPTH TO CAVING:** 13 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1		FILL: black organic silty sand with some gravel, moist. (SM)	Loose			
2, 3, 4, 5, 6, 7, 8, 9		Gray-brown GRAVEL with some sand, medium to coarse sand, moist. (GP)	Medium Dense	3.1		
10, 11, 12, 13, 14		Gray-brown SAND, few gravels, medium sand, moist to wet. (SP) Becomes wet.		6.9 15.7		
15		Test pit terminated at 14 feet due to caving. Very heavy seepage at 13.5 feet. Caving at 13 feet.				

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-2

FIGURE A-3

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 14.5 Feet **DEPTH TO CAVING:** 14.5 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1		FILL: brown-gray sand, few gravels, medium sand, moist. (SP)				
2						
3						
4			Medium Dense	4.8		
5		Gray-brown GRAVEL with some sand, few cobbles, medium to coarse sand, moist. (GW)				
6						
7						
8						
9				4.3		
10		Becomes dense and orange stained (oxidation).				
11						
12			Dense			
13						
14		Becomes wet.		7.0		
15						
16		Test pit terminated at 15 feet. Very heavy seepage at 14.5 feet. Caving at 14.5 feet.				
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-3

FIGURE A-4

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 13.5 Feet **DEPTH TO CAVING:** 13.5 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1		Gray-brown GRAVEL with some sand, few cobbles, medium to coarse sand, moist. (GP)				
2						
3						
4						
5						
6			Medium Dense			
7						
8						
9						
10						
11						
12		Become orange (oxidation) stained,		3.4		
13		Becomes wet.				
14				5.2		
15		Test pit terminated at 15 feet. Heavy seepage at 13.5 feet. Caving at 13.5 feet.				
16						
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-4

FIGURE A-5

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 13 Feet **DEPTH TO CAVING:** 13 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1						
2		Brown-gray SAND, few gravels, medium sand, moist. (SP)				
3				5.3		
4						
5						
6			Medium Dense			
7						
8		Gray-brown GRAVEL with some sand, few cobbles, medium sand, moist. (GW)				
9						
10						
11		Becomes orange stained.				
12		Becomes wet.				
13						
14			Dense	11.4		
15						
16		Test pit terminated at 15 feet. Heavy seepage at 13 feet. Caving at 13 feet.				
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-5

FIGURE A-6

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 14 Feet **DEPTH TO CAVING:** 13 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
		(7 inches TOPSOIL)				
1						
2						
3		Gray-brown GRAVEL with sand and cobbles, medium to coarse sand, most. (GP)				
4				4.2		
5		Increasing gravel and coarse sand.				
6			Medium Dense			
7						
8						
9						
10						
11		Orange staining.		2.8		
12						
13		Becomes wet.				
▼ 14				2.8		
15						
16		Test pit terminated at 15 feet. Heavy seepage at 14 feet. Caving at 13 feet.				
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-6

FIGURE A-7

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 15 Feet **DEPTH TO CAVING:** 2 to 8 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1, 2, 3, 4, 5, 6, 7		FILL: dark gray to brown silty gravel with some sand, few organics (wood), moist. (GM)	Medium Dense			
8, 9, 10, 11, 12, 13, 14		Gray-brown GRAVEL with some sand, few cobbles, rare boulder, moist. (GP)		6.4		
		Becomes orange (oxidation) staining.		4.6		
15		Test pit terminated at 15 feet. Heavy seepage at 15 feet. Caving from 2 to 8 feet.				
16, 17, 18, 19, 20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-7

FIGURE A-8

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 14.5 Feet **DEPTH TO CAVING:** 2 to 10 Feet

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1		FILL: brown-gray sand with some gravel, medium sand, moist. (SP)	Medium Dense			
2		TOPSOIL: dark brown organic silt, moist. (OL)	Soft			
3						
4		Gray-brown GRAVEL with some sand, few cobbles, medium to coarse sand, moist. (GW)				
5						
6				2.4		
7			Medium Dense			
8						
9						
10						
11						
12						
13						
14		Becomes wet and orange stained.		4.7		
15						
16		Test pit terminated at 15 feet. Heavy seepage at 14.5 feet. Caving from 2 to 10 feet.				
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-8

FIGURE A-9

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** 14.5 Feet **DEPTH TO CAVING:** N/A

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1		Brown-gray GRAVEL, some sand, fine to medium gravel, medium sand, moist. (GP)				
2						
3				3.7		
4						
5		Brown-gray GRAVEL, some sand, medium to coarse gravel, medium sand, moist. (GP)				
6						
7			Medium Dense	4.5		
8						
9						
10		Brown-gray SAND with few gravels, medium sand, moist. (SP)				
11						
12				5.4		
13						
14		Becomes wet. Orange staining.				
15						
16		Test pit terminated at 15 feet. Heavy seepage at 14.5 feet. No caving.				
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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LOG OF TEST PIT NO. TP-9

FIGURE A-10

PROJECT NAME: NW Logistics Center II **PROJ. NO:** T-6897-2 **LOGGED BY:** KR

LOCATION: DuPont, Washington **SURFACE CONDS:** Bare Soil **APPROX. ELEV:**

DATE LOGGED: April 5, 2016 **DEPTH TO GROUNDWATER:** N/A **DEPTH TO CAVING:** N/A

DEPTH (FT.)	SAMPLE NO.	DESCRIPTION	CONSISTENCY/ RELATIVE DENSITY	W (%)	POCKET PEN. (TSF)	REMARKS
1						
2						
3						
4						
5		Brown-gray GRAVEL with sand, few cobbles, medium sand, moist. (GP)		3.7		
6						
7			Medium Dense			
8						
9						
10						
11						
12						
13						
14		Becomes moist to wet.				
15				3.8		
16		Test pit terminated at 15.5 feet. No groundwater. No caving.				
17						
18						
19						
20						

NOTE: This subsurface information pertains only to this test pit location and should not be interpreted as being indicative of other locations at the site.

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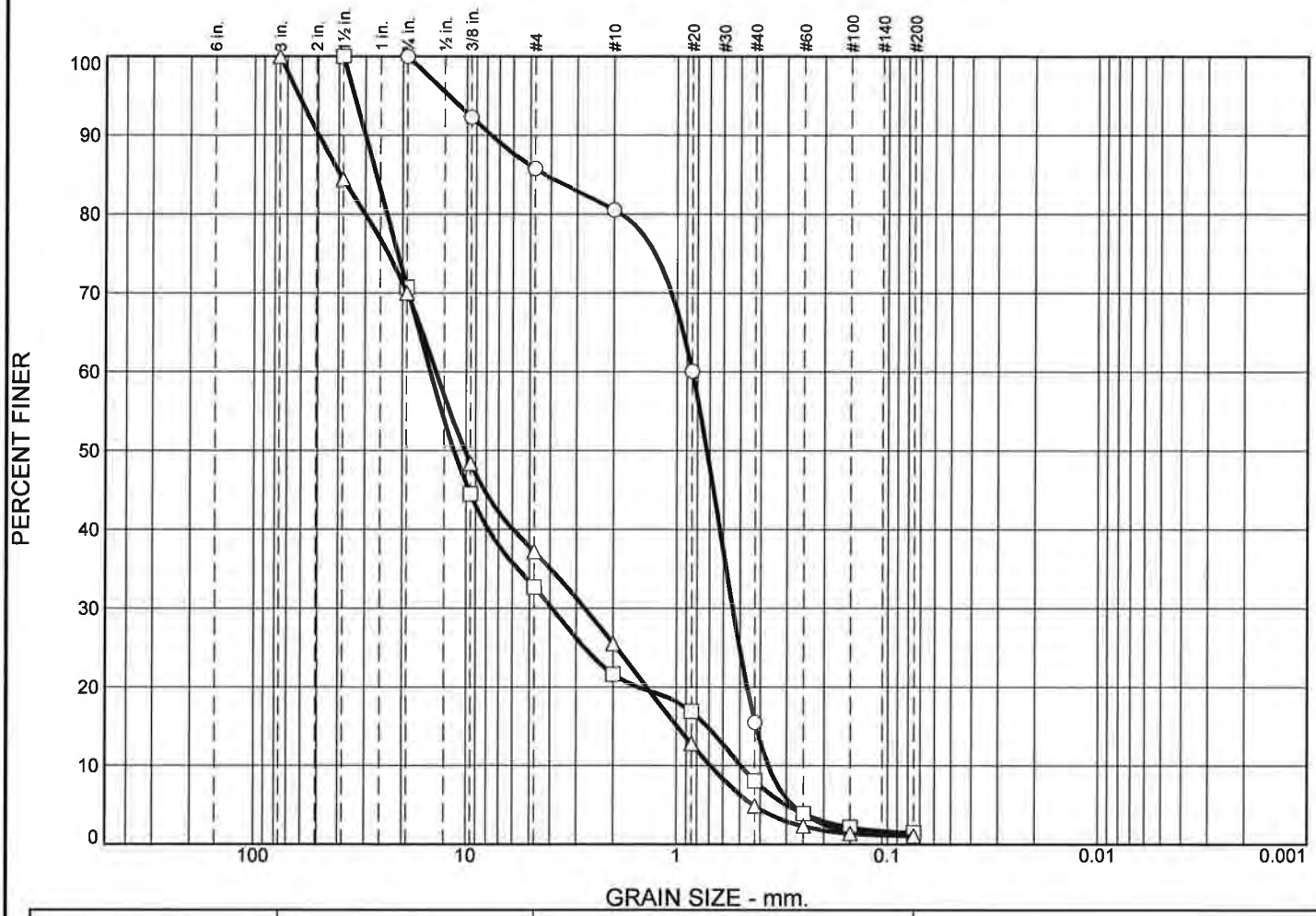
Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	14.3	5.2	65.0	14.3	1.2	
□	0.0	29.3	38.0	11.1	13.5	6.6	1.5	
△	0.0	30.0	32.8	11.7	20.6	3.8	1.1	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			4.2993	0.8485	0.7224	0.5434	0.4204	0.3671	0.95	2.31
□			26.6757	14.7928	11.3804	3.9165	0.7146	0.4942	2.10	29.93
△			39.2762	13.8738	10.1126	2.7353	0.9918	0.6899	0.78	20.11

Material Description	USCS	AASHTO
○ SAND	SP	
□ GRAVEL with some sand	GW	
△ GRAVEL with some sand	GP	

Project No. T-6897-2 **Client:** NWLC - P2, LLC

Project: NW Logistics Center II

○ **Location:** TP-1 **Depth:** -13 feet

□ **Location:** TP-2 **Depth:** -14 feet

△ **Location:** TP-3 **Depth:** -11 feet

Remarks:

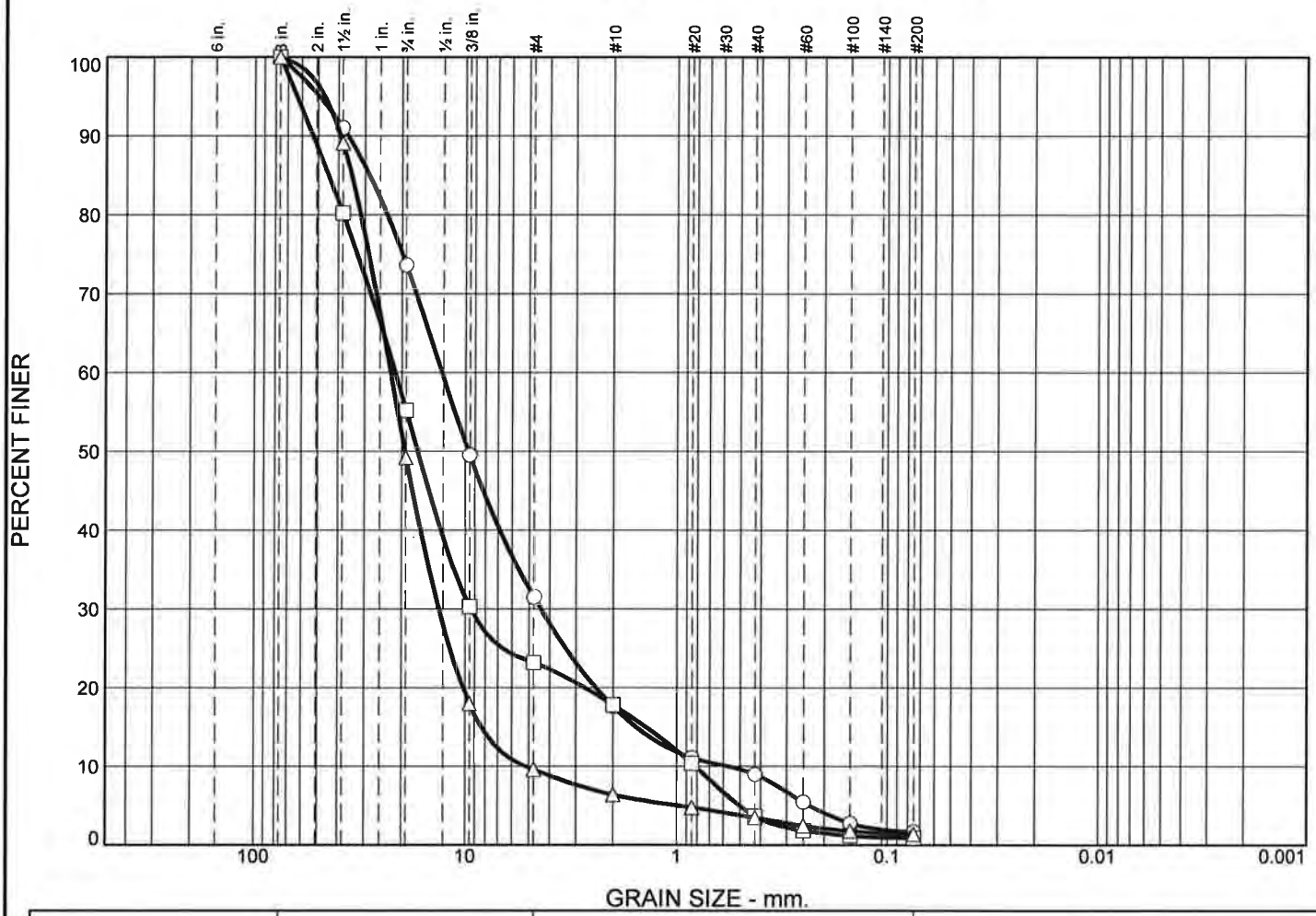
Terra Associates, Inc.

Kirkland, WA

Figure A-11

Tested By: FQ

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	26.4	42.1	13.9	8.6	7.3	1.7	
□	0.0	44.8	32.0	5.4	14.1	2.8	0.9	
△	0.0	50.8	39.6	3.2	2.9	2.1	1.4	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			28.5700	12.9084	9.6733	4.4120	1.5590	0.5653	2.67	22.83
□			44.5489	21.5097	16.7629	9.4018	1.3983	0.8181	5.02	26.29
△			34.6503	22.6252	19.3021	13.2793	8.3469	5.1681	1.51	4.38

Material Description	USCS	AASHTO
○ GRAVEL	GW	
□ GRAVEL	GP	
△ GRAVEL	GW	

Project No. T-6897-2 **Client:** NWLC - P2, LLC

Project: NW Logistics Center II

○ **Location:** TP-4 **Depth:** -14 feet

□ **Location:** TP-5 **Depth:** -11 feet

△ **Location:** TP-7 **Depth:** -14 feet

Remarks:

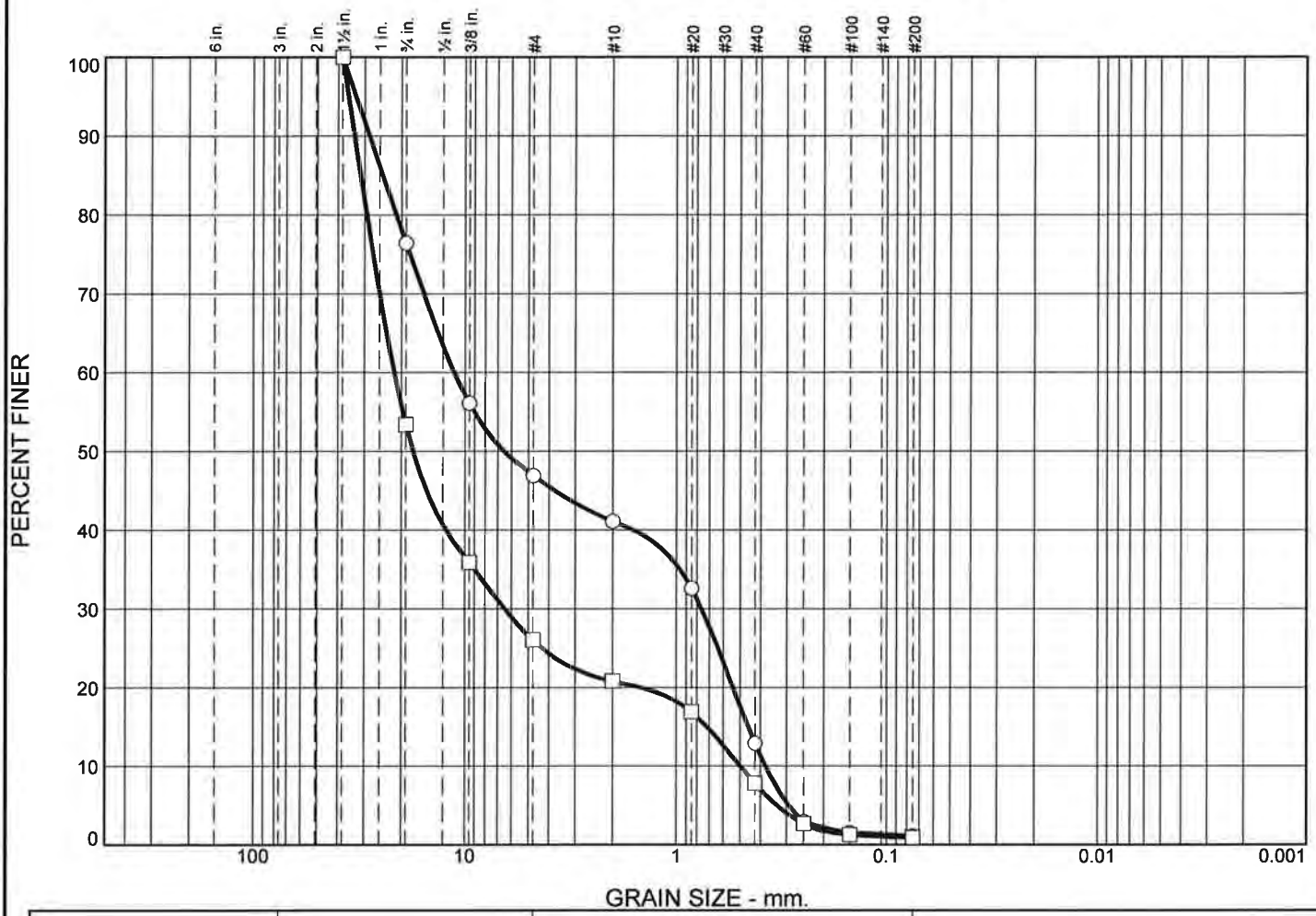
Terra Associates, Inc.

Kirkland, WA

Figure A-12

Tested By: FQ

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	23.6	29.5	5.8	28.2	11.8	1.1	
□	0.0	46.6	27.4	5.2	13.0	6.9	0.9	

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
○			24.5679	11.2137	6.5211	0.7621	0.4582	0.3791	0.14	29.58
□			31.3540	21.6510	17.5872	6.4688	0.7176	0.4994	3.87	43.35

Material Description	USCS	AASHTO
○ GRAVEL with some sand	GP	
□ GRAVEL	GP	

Project No. T-6897-2 **Client:** NWLC - P2, LLC

Project: NW Logistics Center II

○ **Location:** TP-8 **Depth:** -7 feet

□ **Location:** TP-9 **Depth:** -15 feet

Remarks:

Terra Associates, Inc.

Kirkland, WA

Figure A-13

Tested By: FQ

February 27, 2018

Mr. Dan Balmelli, P.E.
Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South
Kent, WA 98032

Subject: Trip Generation and Assignment for Northwest Logistics Phase 2

This letter compares the original trip generation and assignment for the subject project analyzed in the original traffic impact study versus the revised proposal now being presented to the city.

The original study assumed 695,000 square feet of High Cube Warehouse LUC 152 under the ITE Trip Generation Manual, 8th Edition. The current proposal is defined under the Trip Generation Manual 10th Edition as 601,500 square feet of High Cube Transload and Short Term Storage Warehouse LUC 154. Excerpts from the ITE Trip Generation Manuals are added to this letter.

The following Table 1 compares the trip generation for the current and previous scenarios.

Table 1
Trip Generation Comparison - All Traffic

Land Use	Size	ADT	AM Peak-Hour Trips			PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
LUC 152 Prev	695 KSF	1168	52	24	76	25	58	83
LUC 154 Curr	602 KSF	842	37	11	48	17	43	60
Difference		**-326**	**-15**	**-13**	**-28**	**-8**	**-15**	**-23**

Table 2 isolates the track traffic for each of the given scenarios. The original report stated that truck percentages constituted 23 to 27 percent. An average of 25 percent is used below for comparison purposes.

A 2016 study called High-Cube Warehouse Vehicle Trip Generation Analysis was prepared by ITE detailing more complete information on High Cube uses. Attached are excerpts from the document. The truck percentages found for LUC 154 in this document found truck percentages to be 0.024 trucks per 1,000 square feet for the AM and 0.023 trucks per 1,000 square feet for the PM peak hour.

Attachment 1p - Trip Generation Report

Table 2
Trip Generation Comparison - Trucks Only

Land Use	Size	TrADT	Tr. AM Peak-Hour Trips			Tr. PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
LUC 152 Prev	695 KSF	-	13	6	19	6	15	21
LUC 154 Curr	602 KSF	-	10	4	14	4	10	14
Truck Difference			**-3**	**-2**	**-5**	**-2**	**-5**	**-7**

Conclusions

Based on the reduction on all aspects of the trip generation between the previous proposal and the current proposal in terms of both overall traffic and truck traffic, no additional analysis is proposed.

Please call if you require anything further. It is my understanding that the city will review this letter and determine whether any additional information is needed.

Sincerely,

Gregary B. Heath, P.E., P.T.O.E.

APPENDIX

DATA FROM ORIGINAL APRIL 2013 STUDY

NORTHWEST LOGISTICSCENTER DUPONT BUILDING 2

NORTHWEST LOGISTICS CENTER DUPONT
BUILDING 2
TRAFFIC IMPACT ANALYSIS

CITY OF DUPONT, WA

Prepared for: Dan Balmelli
Barghausen Consulting Engineers, Inc.
18215 72nd Avenue S
Kent, WA 98032

APRIL 2013

IV. FUTURE TRAFFIC CONDITIONS

A. Trip Generation

Trip generation is used to determine the magnitude of project impacts on the surrounding street system. This is usually denoted by the quantity or specific number of new trips that enter and exit a project during a designated time period, such as a specific peak hour or an entire day. Data presented in this report was taken from the Institute of Transportation Engineers publication, *Trip Generation*, 8th Edition. The designated land use for this project is defined as High Cube Warehouse/Distribution Center (LUC 152) for the 695,000 square feet of building space. ITE average rates were used. Shown in Table 2 are the trip generation values used for this study. Included are the average daily trips, AM peak hour volumes, and PM peak hour volumes.

TABLE 2
Project Trip Generation
695 ksf High Cube/Distribution (LUC 152)

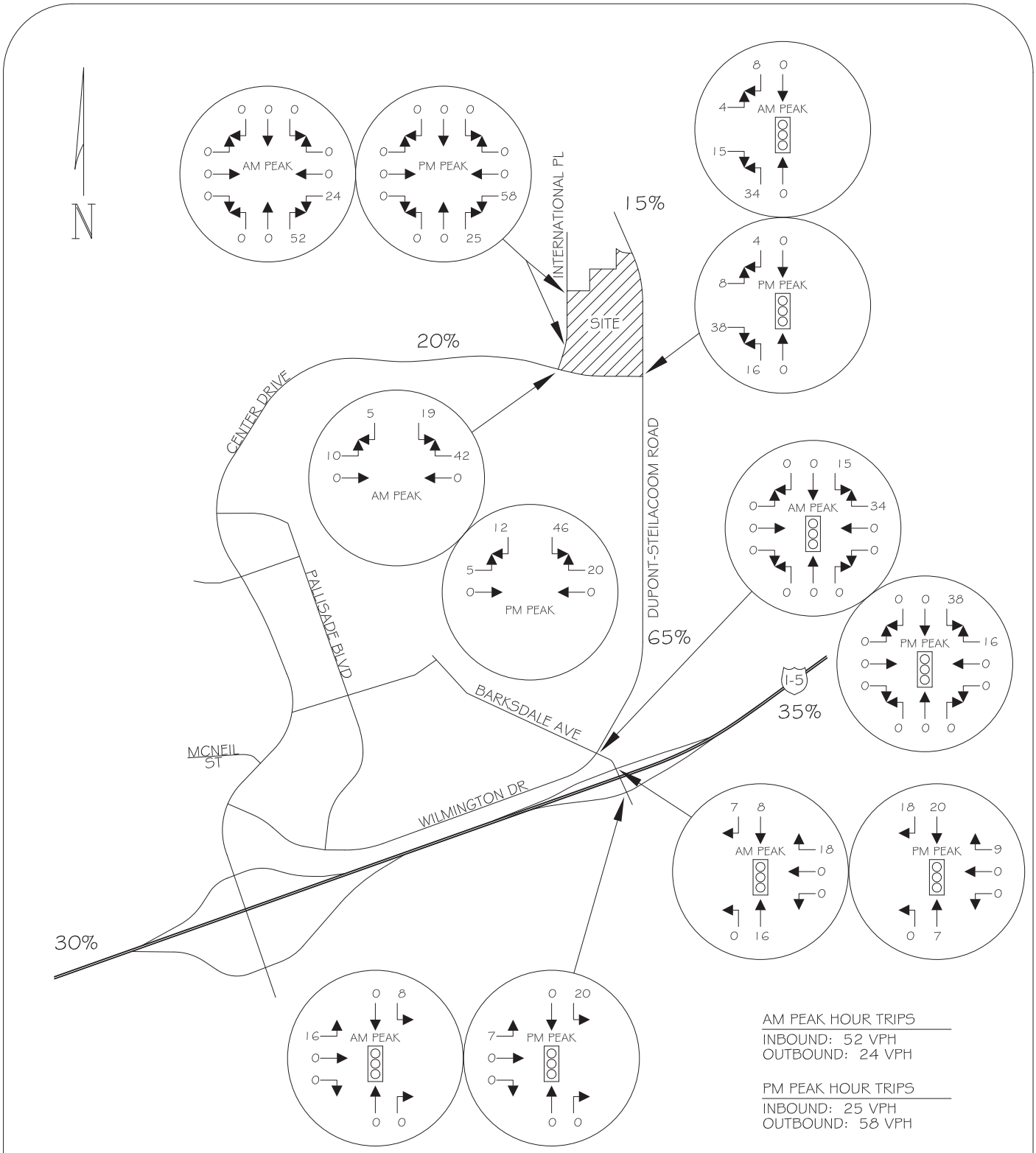
Time Period	*Volume*
AWDT	1168 vpd
AM Peak Inbound	52 vph
AM Peak Outbound	24 vph
AM Peak Total	76 vph
PM Peak Inbound	25 vph
PM Peak Outbound	58 vph
PM Peak Total	83 vph

Data from the ITE Trip Generation Manual indicates that daily, AM, and PM peak hour heavy vehicle percentages may be in the 23 to 27 percent range. Truck percentages were incorporated into the analysis, primarily affecting the project entrances and the intersection of International Place & Center Drive.

As shown in the table, the project trip generation for the PM peak hour is slightly higher than for the AM peak hour. The inbound/outbound split for this site is estimated at 68 percent/32 percent for the AM peak and 30 percent/70 percent for the PM peak.

B. Trip Assignment and Distribution

The destination and origination of future project traffic primarily dictates how trips will disperse at nearby intersections. AM & PM peak trips generated by the project are expected to follow the general patterns identified in Figure 4. As shown in the figure, approximately 20 percent of project traffic is expected to distribute southwesterly on Center Drive, 15 percent northerly on Dupont-Steilacoom Road, and 65 percent towards I-5. Percentages are based on comments from the City of Dupont and earlier studies.



NORTHWEST LOGISTICS CENTER BUILDING 2

HEATH & ASSOCIATES, INC
Transportation and Civil Engineering

TRIP DISTRIBUTION & ASSIGNMENT

FIGURE 4

Period Setting

Analysis Name:	Weekday		
Project Name:	Northwest Logistics Center 2	No:	
Date:	4/9/2013	City:	
State/Province:		Zip/Postal Code:	
Country:		Client Name:	
Analyst's Name:		Edition:	9th

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
152 - High-Cube Warehouse/Distribution Center	1000 Sq. Feet Gross Floor Area	695	Weekday	Average	584	584	1168

Traffic Reductions

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
152 - High-Cube Warehouse/Distribution Center	0 %	584	0 %	584

External Trips

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
152 - High-Cube Warehouse/Distribution Center	1168	0 %	0	1168

ITE Deviation Details

Weekday

Landuse	No deviations from ITE.
Methods	No deviations from ITE.
External Trips	152 - High-Cube Warehouse/Distribution Center ITE does not recommend a particular pass-by% for this case.

Summary

Total Entering	584
Total Exiting	584
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	584
Total Exiting Non-Pass-by Trips	584

Period Setting

Analysis Name:	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.		
Project Name:	Northwest Logistics Center 2	No:	
Date:	4/9/2013	City:	
State/Province:		Zip/Postal Code:	
Country:		Client Name:	
Analyst's Name:		Edition:	9th

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
152 - High-Cube Warehouse/Distribution Center	1000 Sq. Feet Gross Floor Area	695	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average	52	24	76

Traffic Reductions

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
152 - High-Cube Warehouse/Distribution Center	0 %	52	0 %	24

External Trips

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
152 - High-Cube Warehouse/Distribution Center	76	0 %	0	76

ITE Deviation Details

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.

Landuse	No deviations from ITE.
Methods	152 - High-Cube Warehouse/Distribution Center The chosen method (Average) is not recommended by ITE. ITE recommends LIN based on the criterion.
External Trips	152 - High-Cube Warehouse/Distribution Center ITE does not recommend a particular pass-by% for this case.

Summary

Total Entering	52
Total Exiting	24
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	52
Total Exiting Non-Pass-by Trips	24

Period Setting

Analysis Name:	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.		
Project Name:	Northwest Logistics Center 2	No:	
Date:	4/9/2013	City:	
State/Province:		Zip/Postal Code:	
Country:		Client Name:	
Analyst's Name:		Edition:	9th

Land Use	Independent Variable	Size	Time Period	Method	Entry	Exit	Total
152 - High-Cube Warehouse/Distribution Center	1000 Sq. Feet Gross Floor Area	695	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Average	25	58	83

Traffic Reductions

Land Use	Entry Reduction	Adjusted Entry	Exit Reduction	Adjusted Exit
152 - High-Cube Warehouse/Distribution Center	0 %	25	0 %	58

External Trips

Land Use	External Trips	Pass-by%	Pass-by Trips	Non-pass-by Trips
152 - High-Cube Warehouse/Distribution Center	83	0 %	0	83

ITE Deviation Details

Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Landuse	No deviations from ITE.
Methods	152 - High-Cube Warehouse/Distribution Center The chosen method (Average) is not recommended by ITE. ITE recommends LIN based on the criterion.
External Trips	152 - High-Cube Warehouse/Distribution Center ITE does not recommend a particular pass-by% for this case.

Summary

Total Entering	25
Total Exiting	58
Total Entering Reduction	0
Total Exiting Reduction	0
Total Entering Internal Capture Reduction	0
Total Exiting Internal Capture Reduction	0
Total Entering Pass-by Reduction	0
Total Exiting Pass-by Reduction	0
Total Entering Non-Pass-by Trips	25
Total Exiting Non-Pass-by Trips	58

APPENDIX
DATA FROM ITE TRIP GENERATION 10TH EDITION
FOR LUC 154

High-Cube Transload and Short-Term Storage Warehouse (154)

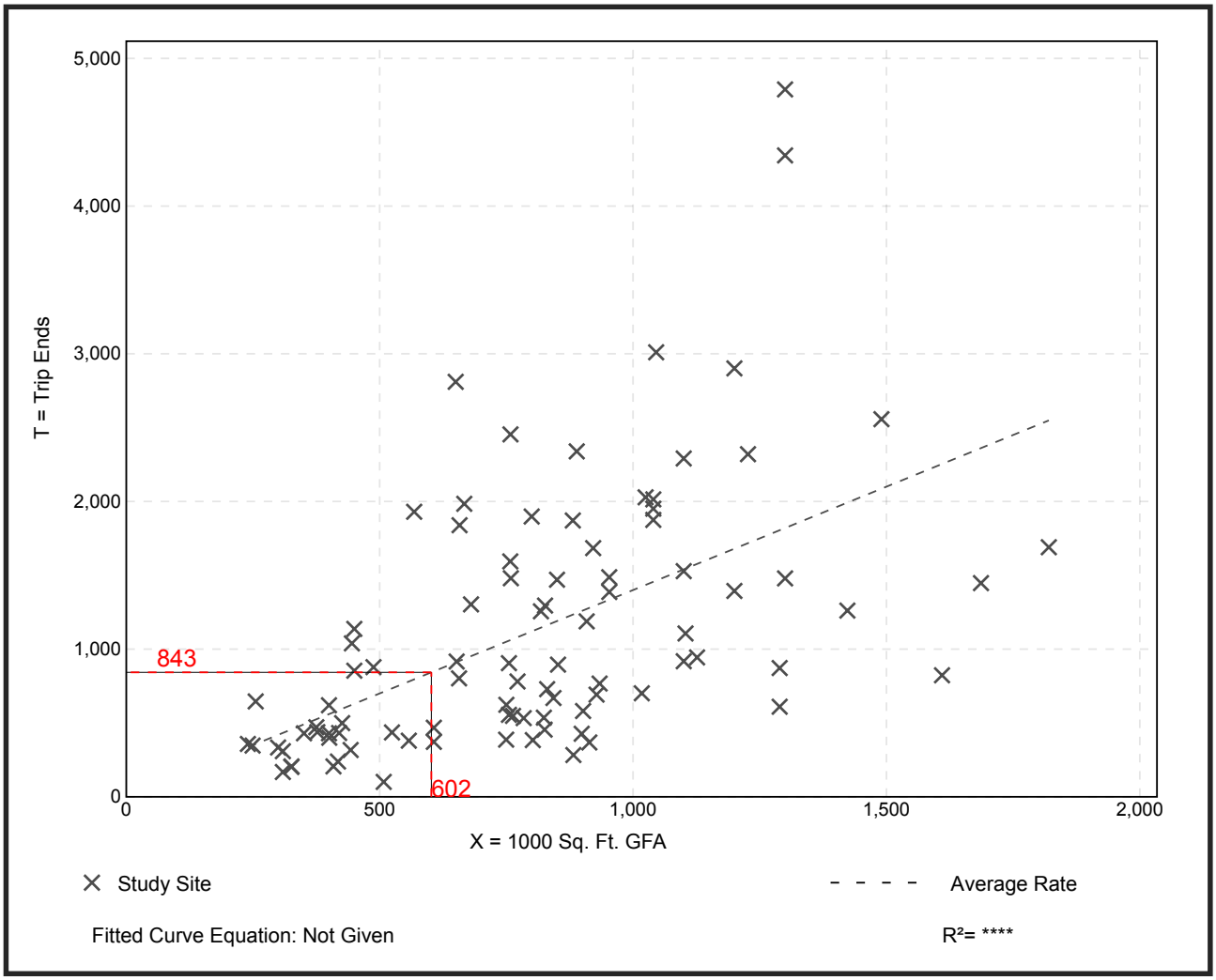
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 91
Avg. 1000 Sq. Ft. GFA: 798
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.40	0.20 - 4.32	0.86

Data Plot and Equation



Trip Generation Manual, 10th Edition ● Institute of Transportation Engineers

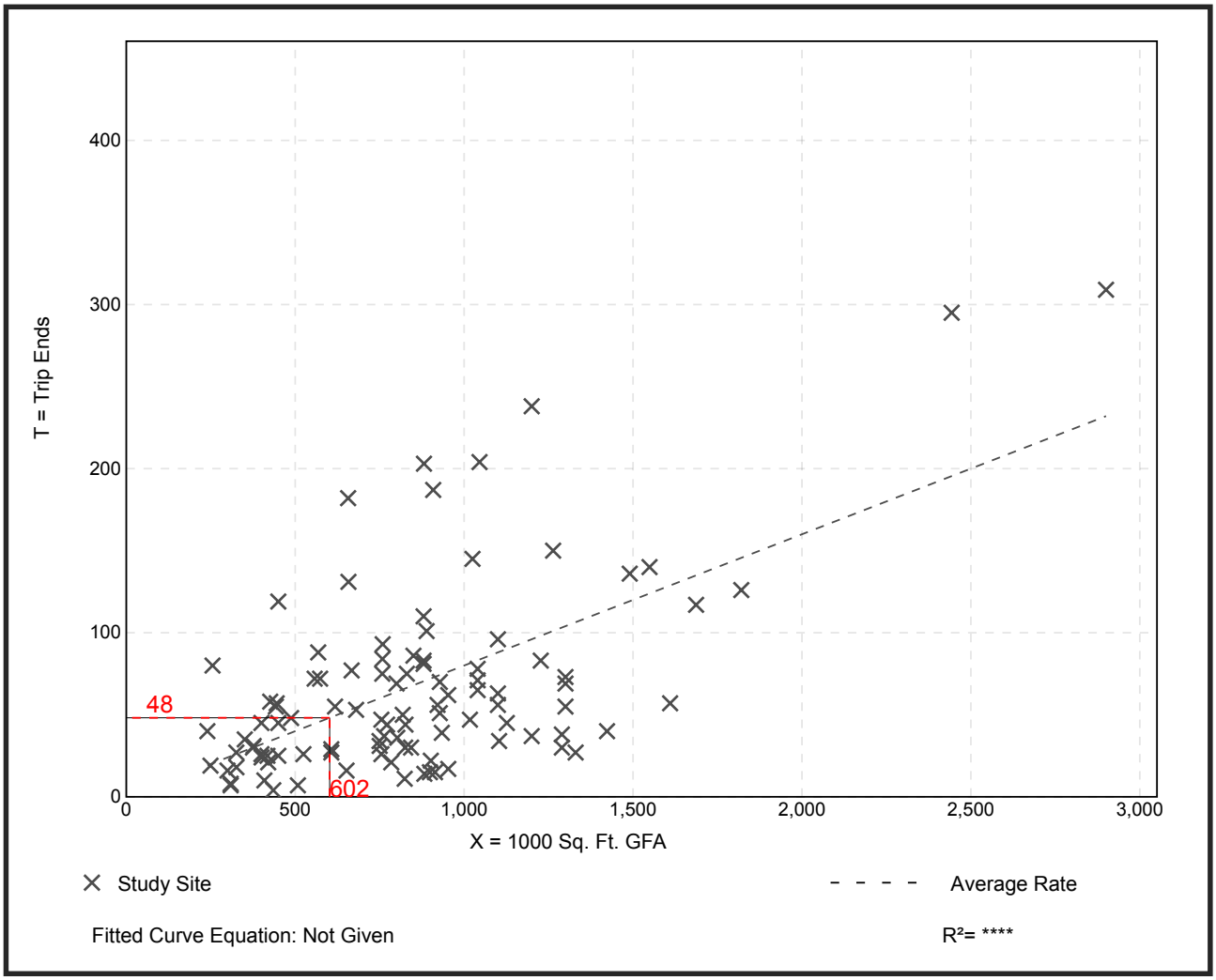
High-Cube Transload and Short-Term Storage Warehouse (154)

Vehicle Trip Ends vs:	1000 Sq. Ft. GFA
On a:	Weekday,
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	General Urban/Suburban
Number of Studies:	102
Avg. 1000 Sq. Ft. GFA:	846
Directional Distribution:	77% entering, 23% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.08	0.01 - 0.31	0.05

Data Plot and Equation



Trip Generation Manual, 10th Edition ● Institute of Transportation Engineers

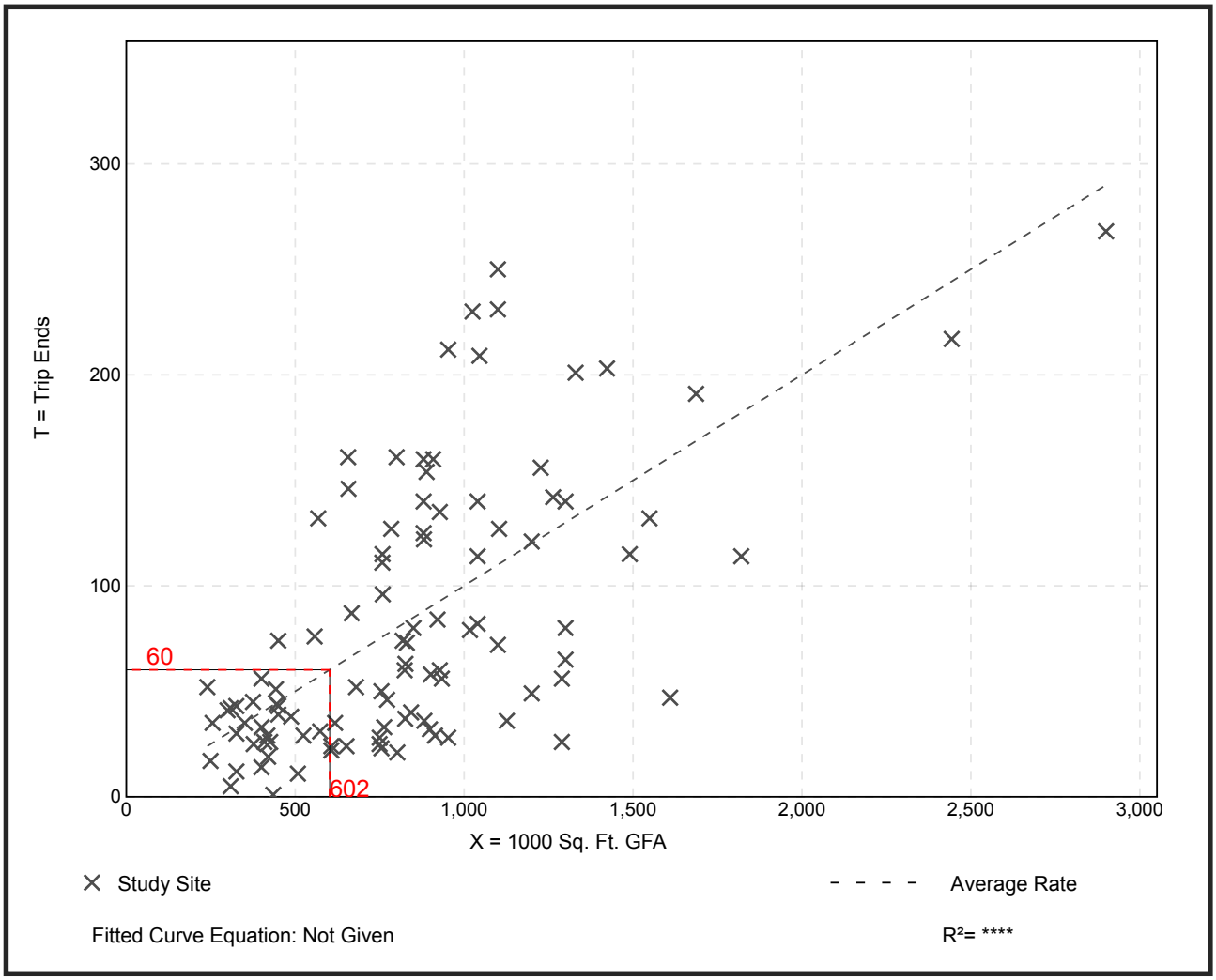
High-Cube Transload and Short-Term Storage Warehouse (154)

Vehicle Trip Ends vs:	1000 Sq. Ft. GFA
On a:	Weekday,
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	General Urban/Suburban
Number of Studies:	103
Avg. 1000 Sq. Ft. GFA:	840
Directional Distribution:	28% entering, 72% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.10	0.00 - 0.25	0.06

Data Plot and Equation



Trip Generation Manual, 10th Edition ● Institute of Transportation Engineers

APPENDIX

DATA FROM HIGH CUBE WAREHOUSE VEHICLE TRIP GENERATION ANALYSIS

OCTOBER 2016 FROM ITE

HIGH-CUBE WAREHOUSE VEHICLE TRIP GENERATION ANALYSIS

PREPARED FOR

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

AND

NATIONAL ASSOCIATION OF INDUSTRIAL AND OFFICE PROPERTIES

PREPARED BY

INSTITUTE OF TRANSPORTATION ENGINEERS

WASHINGTON, DC

OCTOBER 2016

HIGH-CUBE WAREHOUSE TRIP GENERATION DATA ANALYSIS[8]

Classification of Individual Data Records

Each record in the database of HCW sites was classified as one of five building types, defined earlier in this report. The criteria used to classify the sites represent information that is likely to be available at the time of site development review.

The database includes one fulfillment center, one parcel hub, and nine HCWs with a significant cold storage component[9]. The remaining 95 HCWs were separated into transload and short-term storage HCW based on two building configuration criteria:

- A transload building is assumed to have a length-to-depth ratio of at least 2:1 and has loading docks on at least two sides (either opposite or adjacent); there are 56 transload data points
- The remaining HCW sites (i.e., those that are not considered transload, cold storage, fulfillment center, or parcel hub) are classified as short-term storage HCWs; they total 39 sites

Building configuration is known at the time of site development review but has the limitation of not necessarily being indicative of the function of the HCW activities. If additional characteristics can be identified that (1) are predictive of the HCW function and (2) are available at the time of site development review, the database can be reexamined and potentially reclassified and reanalyzed.

Key Findings – Cars vs. Total Vehicles

There is a significant correlation between the number of cars that enter and exit a HCW site and the total number of vehicles that enter and exit a HCW site.

Table 4 lists the weighted averages for cars as a percentage of the total site-generated traffic at the five types of HCW. At short-term storage, transload, and cold storage HCWs, nearly 68 percent of the total daily site-generated vehicle trips are cars. During the AM peak hour, the measured percentage of cars is markedly similar (69 percent) to the daily (68 percent). During the PM peak hour, the measured percentage of cars is significantly higher (78 percent) than the daily value. The higher car percentage (and therefore, the lower truck percentage) is likely due to truck operations avoiding the afternoon peak period.

The fulfillment center has a significantly higher percentage of cars during the AM and PM peak hours and daily (due largely to the significantly higher number of employees at a fulfillment center compared to the other types of HCWs). The parcel hub has a significantly lower percentage of cars (and therefore a higher percentage of trucks) during the AM and PM peak hours and daily.

Table 4. Weighted Averages for Percentage of Total Daily Vehicles that are Cars, by Type of HCW

Type of High-Cube Warehouse	Cars as Percentage of Total Vehicles		
	Daily	AM Peak Hour	PM Peak Hour
Short-Term Storage, Transload & Cold Storage (100)	67.8%	69.2%	78.3%
Fulfillment Center (1)	91.2	97.2	98.2
Parcel Hub (1)	62.3	50.3	70.7

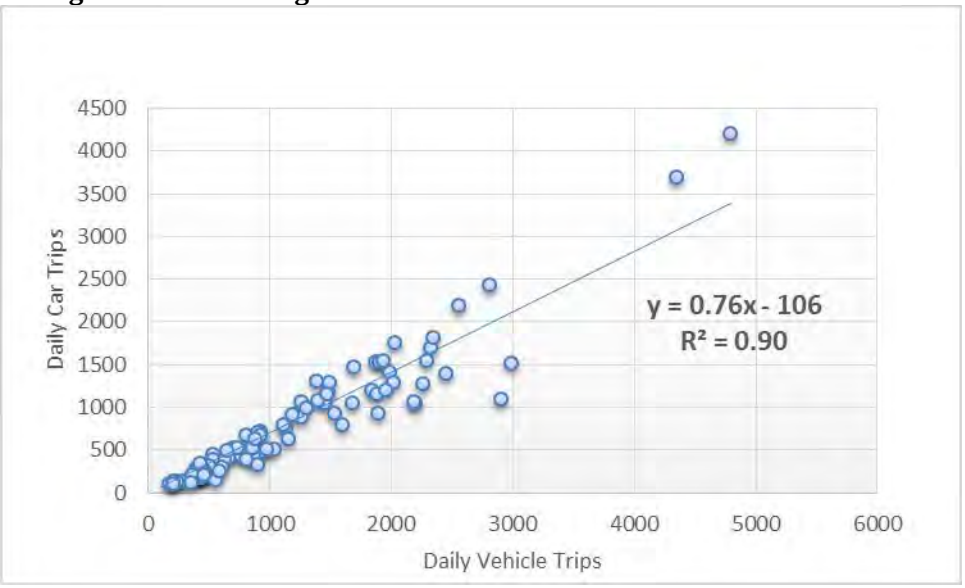
Note: The values in parentheses represent the number of data collection sites for HCW type.

[8] This section presents key analysis findings. Appendix A presents additional analyses of the HCW data.

[9] Sites were classified as cold storage either through self-categorization by data submitter (e.g., Walmart), by type of tenant (e.g., Ralphs, Publix), or by online site description (e.g., Americold, Millard Refrigeration Services).

Figure 2 is a plot of daily car trips versus daily vehicle trips generated at transload, short-term storage, and cold storage HCWs. The plot demonstrates strong correlation between the two trip-making characteristics of HCW sites. The data yields a linear fitted curve equation with an R^2 value of 0.90. The correlation between the daily truck trips and daily vehicle trips is not as strong and yields a linear fitted curve equation R^2 value that is less than the ITE acceptability threshold of 0.50.

Figure 2. Correlation between Daily Cars and Total Daily Traffic at Transload, Short-Term Storage and Cold Storage HCW Sites



Key Findings – Daily Trip Generation

Table 5 compares daily trip rates for the five different types of HCWs. The table includes weighted average rates for all vehicles, cars, trucks, and 5-or-more-axle trucks. The table also includes the weighted average rate for daily vehicle trips contained in ITE *Trip Generation Manual* 9th Edition, for high-cube warehouses (land use code 152). The single fulfillment center count was taken during a holiday shopping season when activity would be expected to be higher than an annual average.

Table 5. Weighted Average Rates for Daily Trips at High-Cube Warehouses

Type of High-Cube Warehouse	Weighted Average for Daily Trips per 1,000 GSF[10]			
	All Vehicles	Cars	Trucks	5+ Axle Trucks
Transload & Short-Term Storage (91)	1.432	1.000	0.454	0.233
Cold Storage (9)	2.115	1.282	0.836	0.749
Fulfillment Center (1)	8.178	7.461	0.717	0.242
Parcel Hub (1)	10.638	6.631	4.007	0.982
ITE *Trip Generation Manual* – 9th Edition	1.68	--	--	--

Note: The values in parentheses represent the number of data collection sites for HCW type.

[10] The weighted average rates for cars and trucks may not sum to match the "all vehicle" rates because some data sources collected total vehicle trips and did not separate cars and trucks.

Transload and Short-Term Storage

Data plots for the AM and PM peak hours (not presented in this report) are comparable to the daily plot in terms of data scatter and little correlation. The weighted average rates for the AM and PM peak hours are:

- 0.082 total vehicles per 1,000 GSF during the AM peak hour
- 0.108 total vehicles per 1,000 GSF during the PM peak hour

As points of comparison, these rates are lower than the AM and PM weighted average rates of 0.11 and 0.12, respectively, provided in ITE *Trip Generation Manual* 9th Edition for the High-Cube Warehouse land use.

The weighted average rates for truck trips at transload and short-term storage HCWs during the AM and PM peak hours are:

- 0.024 trucks per 1,000 GSF during the AM peak hour
- 0.023 trucks per 1,000 GSF during the PM peak hour

Betsy Dyer

From: automailer@co.pierce.wa.us
Sent: Wednesday, February 28, 2018 9:14 AM
To: Betsy Dyer
Subject: Planning and Public Works eNotification

Pierce County

You're getting this message because you signed up on our eNotification to be notified if a Review was entered or modified on the following:

Application/Permit: 881162

Site Address: 3230 INTERNATIONAL PL N

Work Description: Construction of new approx. 586,000 sq. ft. office/warehouse building.

Use the Reviews tab when using the above link to see this change and the complete Review history.

Please Note:

Please do not reply to this email, if you have questions please contact the Development Center at pcpermits@co.pierce.wa.us or
Pierce County Planning and Public Works
2401 S. 35th Street #2
Tacoma, WA 98409

(Hours: Monday - Friday 9:00-2:00), or (253) 798-2769 (Hours: M, T, TH, F 8:00-11:30 and 12:30-4:00, W 9:00-11:30 and 12:30-4:00).

Attachment 1q - Request to Pierce County for Sewer Service Availability

APPLICATION
A8
Revised
5/2/2016

Sewer Development Review Application For
Site Specific Sewer Information Letter

Pierce County
Public Works

Complete and submit this form and any supplemental information or documents to: https://palsonline.co.pierce.wa.us/palsonline/#/dashboard. All documents must be uploaded in PDF format.

If you have any questions, please contact our office at (253) 798-4050. **A Site Plan must be submitted with this request** (see Bulletin B17, Site Plans, for examples). A blank grid is included for your use

A. Property Information

1. Parcel No(s): _____

2. Site Address(es): _____
Street Building/Suite/Tenant Space City Zip

B. Applicant Information (☐ Check here if same as Property Owner Information listed above)

1. Applicant Name: _____

Mailing Address: _____
Street Suite City Zip

Office or Cell Phone: _____ Alternate Number: _____

E-mail Address: _____

C. Existing Uses (List all the existing uses on all the parcels listed above)

Existing Uses	Number of Dwelling Units or Tenant Spaces	Number of Existing Buildings	Number of Existing Buildings to Remain	Number of Existing Buildings to be Demolished
Single-family Residences				
Duplexes				
Accessory Dwelling Units				
Apartment Units				
Condos				
Commercial				

List all existing commercial businesses and tenants:

_____

_____

_____

D. Proposed Uses: (☐ Check here if there are no proposed changes or expansions of use)

Existing Uses	Number of Dwelling Units or Tenant Spaces	Number of Existing Buildings	Number of Existing Buildings to Remain	Number of Existing Buildings to be Demolished
Single-family Residences				
Duplexes				
Accessory Dwelling Units				
Apartment Units				
Condos				
Commercial				

List all existing commercial businesses and tenants:

_____

_____

_____

E. Water Use Data (Required for commercial uses only)

1. **New Connections** (Existing or Proposed Development):

   What is the estimated sewer discharge or water use* in gallons per day (gpd) or hundred cubic feet per month (ccf/mo) from all the existing and proposed buildings on the property to be connected?

   _____ gpd _____ ccf/mo

2. **Proposed Development on Previously Connected Property:**

   Will the proposed development or change in business require an **increase** in water use on the property?

   Yes No

   If yes, then please submit documented Water Use Data* for the existing and proposed uses so the Sewer Division can determine what additional connection charges must be paid, if any.

***Please read Bulletin #B5 Documented Water Use Data, to see what type of water use data is required to be submitted.**

F. Site Specific Sewer Information Letter Application Fee

1. Base Fee $50.00

2. Additional Fees (Check all that apply):

   Existing Single Family Residences or Duplexes (to remain) ..... add $0.00

   Existing Apartments, Condos, or Mobile Home Parks (to remain) ..... add $50.00

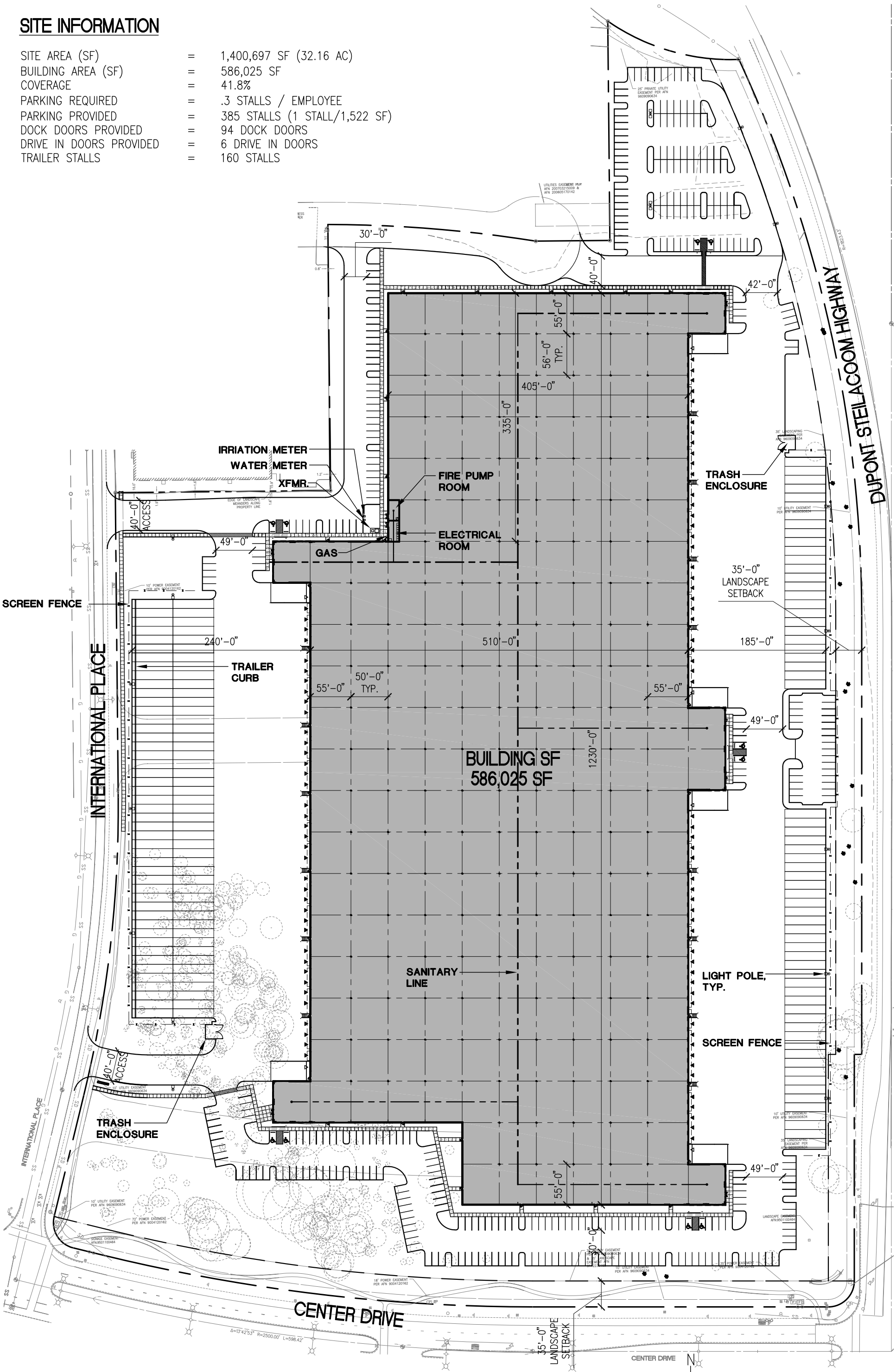
   Existing Commercial Buildings (to remain) ..... add $50.00

   Proposed Residential or Commercial Development ..... add $100.00

SITE PLAN MAP

SITE INFORMATION

SITE AREA (SF)	=	1,400,697 SF (32.16 AC)
BUILDING AREA (SF)	=	586,025 SF
COVERAGE	=	41.8%
PARKING REQUIRED	=	.3 STALLS / EMPLOYEE
PARKING PROVIDED	=	385 STALLS (1 STALL/1,522 SF)
DOCK DOORS PROVIDED	=	94 DOCK DOORS
DRIVE IN DOORS PROVIDED	=	6 DRIVE IN DOORS
TRAILER STALLS	=	160 STALLS



CRAFT architects

NORTHWEST LOGISTICS CENTER (SITE 2) - OPTION 1
PRELIMINARY SITE PLAN
DUPONT, WASHINGTON
1"=120' **02/02/18**

PRELIMINARY SANITARY SEWER AND WATER PLAN (NORTH)

NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=50'

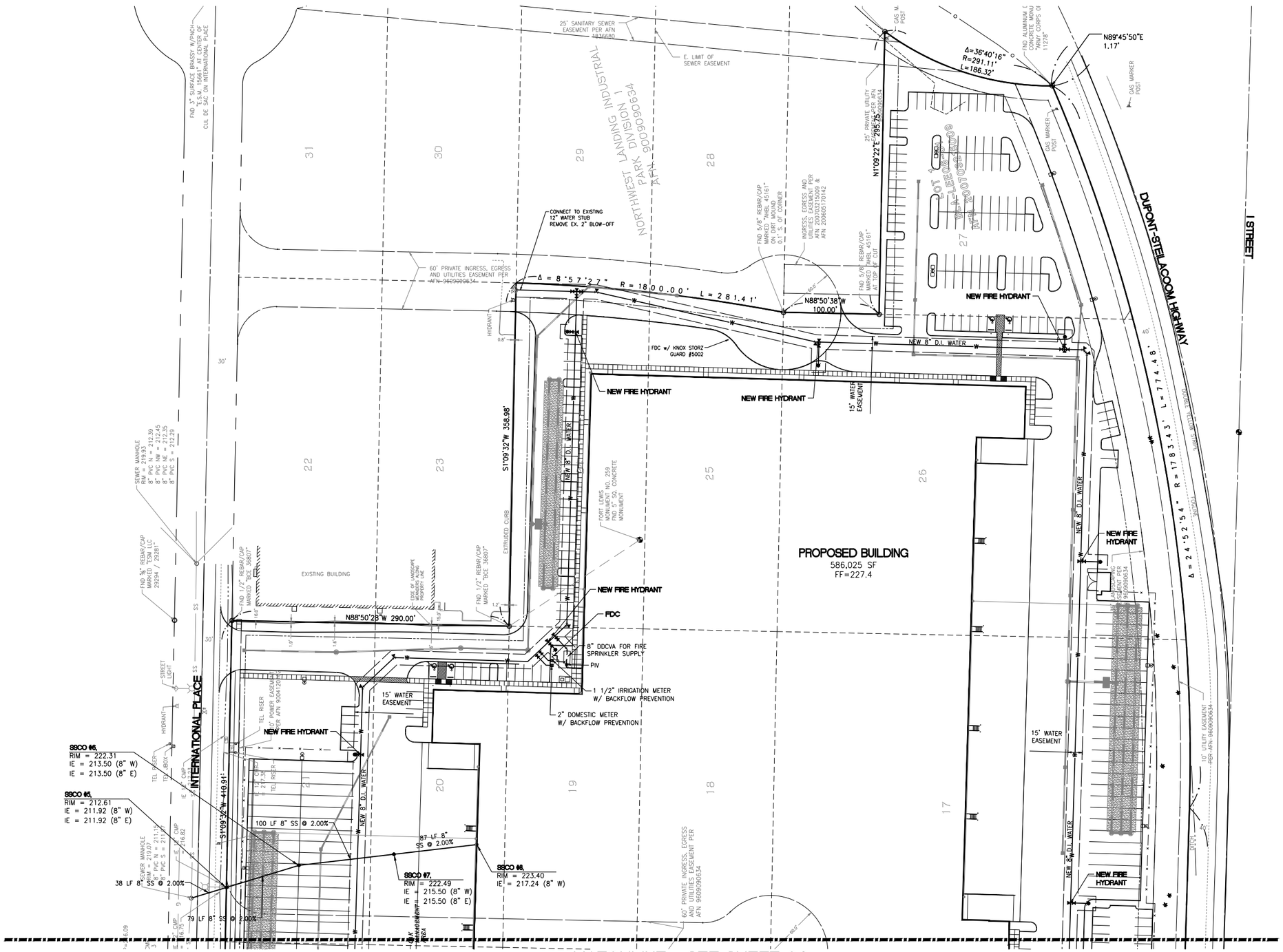
0 25 50 100

"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."



MATCHLINE - SEE SHEET C6

No.	Date	By	Ckd.	Appr.	Revision

Title: PRELIMINARY SANITARY SEWER AND WATER PLAN (NORTH) FOR NORTHWEST LOGISTICS CENTER 2

For: ISLERO, LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

SOFIA PHILIPPIDES STATE OF WASHINGTON 38372 REGISTERED PROFESSIONAL ENGINEER
02/28/2018

Scale: Horizontal 1"=50' Vertical N/A

Designed WSD
Drawn WSD
Checked CP
Approved CP
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX
CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C5 of 9

File:P:\15000s\15753\preliminary\15753-ws.dwg Date/Time:2/27/2018 11:12 AM Scale:1:1 WDUNLAP Xref: ----

PRELIMINARY SANITARY SEWER AND WATER PLAN (SOUTH)

NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=50'

0 25 50 100

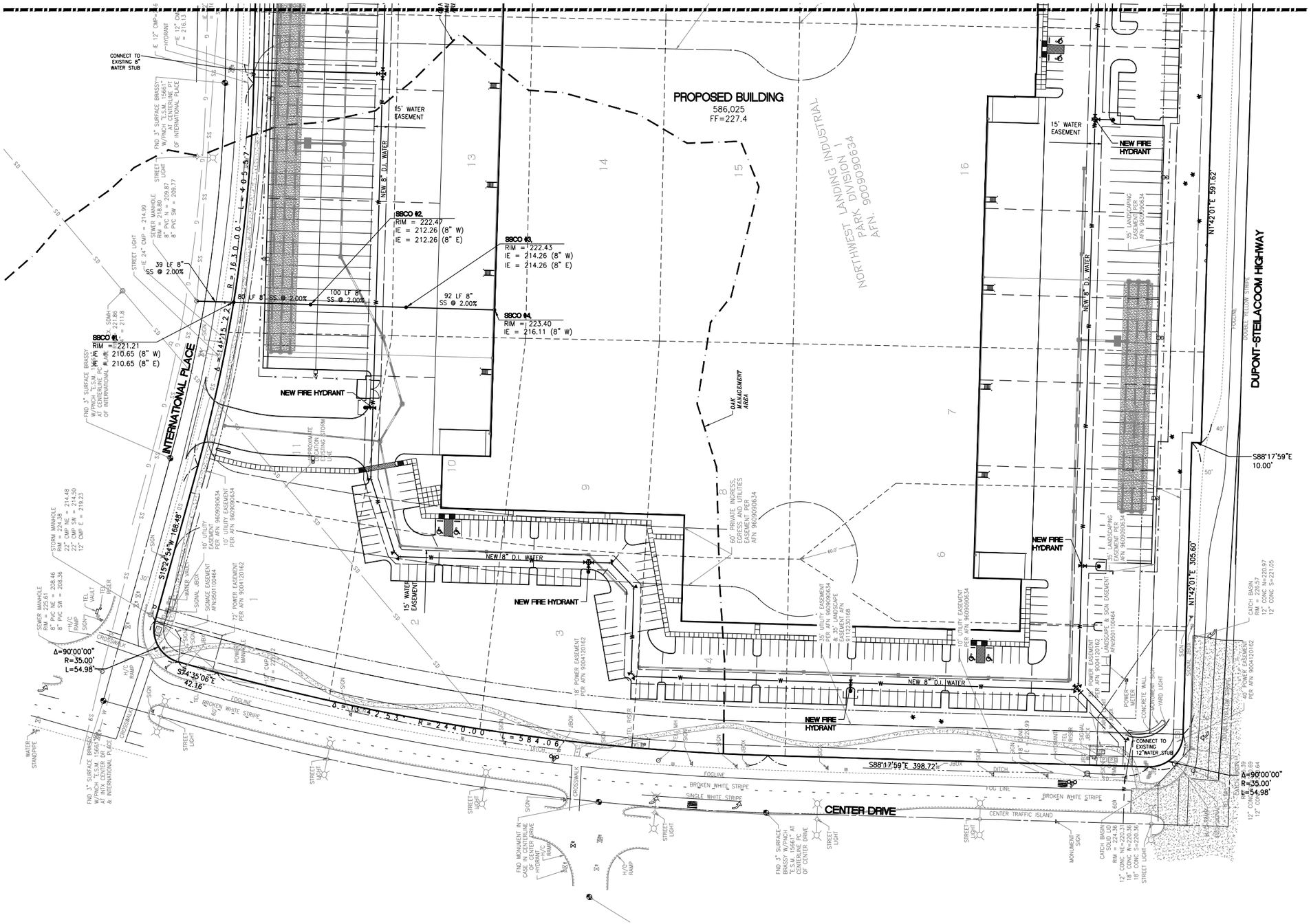
"APPROVED FOR CONSTRUCTION"

BY: _____

DATE: _____
CITY OF DUPONT

"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."

MATCHLINE - SEE SHEET C5



No.	Date	By	Ckd.	Appr.	Revision

Title: PRELIMINARY SANITARY SEWER AND WATER PLAN (SOUTH) FOR NORTHWEST LOGISTICS CENTER 2

For: ISLERO, LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

STATE OF WASHINGTON — CASSIE PHILIPPI JONES — 38379 — REGISTERED PROFESSIONAL ENGINEER — 02/26/2018

Scale: Horizontal 1"=50' Vertical N/A

Designed WED
Drawn WED
Checked CP
Approved CP
Date 2/19/18

BARGHAUSEN CONSULTING ENGINEERS, INC.
18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX
CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES

Job Number 15753

Sheet C6 of 9

File:P:\15000s\15753\preliminary\15753-ws.dwg Date/Time:2/27/2018 11:12 AM Scale:1:1 WDUNLAP Xref: ----

CITY OF DuPONT

1700 Civic Drive • DuPont, WA 98327
Phone: (253) 912-5381 • Fax: (253) 964-1455
www.dupontwa.gov

Water Availability Form

Part A
To Be Completed By Applicant

Project Address 3230 International Place Application Number _____

Subdivision/Project Name Northwest Logistics Center - Site II Parcel 300039-0011

Proposed Water Usage approx. 1,400 gal/day ☒ Commercial ☐ Residential # of Units _____

Customer Type (circle one) Rural Residential Residential Multi-family Commercial Industrial

I, the undersigned, or my appointed representative have requested the following purveyor to certify willingness and ability to provide the indicated service. I have read and understand the information provided by the water purveyor on this Certificate, and acknowledge that the proposed project may require improvements to the water system which would incur my financial obligation. Prior to final approval for water service, operational responsibility, and financial obligation may be required.

Printed Name Daniel K. Balmelli, Agent Signature Daniel K. Balmelli

Address 18215-72nd Avenue South City Kent State WA Zip 98032

Part B
To Be Completed by Water Purveyor

Water system to provide service: City of DuPont State ID#: 20500P

The proposed development is / is not within our approved service area (circle one).

This water utility will / will not be providing service (circle one).

Approved number of connections _____ Existing Source Capacity _____

Number of current/existing users _____ Existing Storage _____

Water service will be provided by:

☐ Direct connection to approved, existing water main

☐ Extension of existing water main(s)

☐ New water system in accordance with WAC 246-290

Water Purveyor Signature Printed Name Date

*****NOTE: Completion of page 2 and water purveyor signature are required*****

Attachment 1r - Water Availability Form

CITY OF DuPONT
1700 Civic Drive · DuPont, WA 98327
Phone: (253) 912-5381 · Fax: (253) 964-1455
www.dupontwa.gov

FLOW AND PRESSURE FOR FIRE SUPPRESSION DESIGN

Project Name:_____

Project Location:_____

Developer's Engineer:_____

Telephone:_____

Date:_____

Minimum Fire Flow per Ordinance No 10-905:_____

Required Fire Flow per I.F.C. 2012:_____

2011 Water System Model (see notes 2, 3 and 4 below):

Street Intersection:_____

Node Number:_____

Static Pressure:_____

Fire Flow:_____

Residual Pressure:_____

Fire Suppression System Design Criteria (see note 5 below):

Street Intersection:_____

Static Pressure:_____

Fire Flow:_____

Residual Pressure:_____

Notes:

1. Actual fire flow will be based on building construction type and building square footage with credits for fire sprinklers.
2. The 2011 Water System Model results are based on the build out condition using the land use indicated in the 2011 Water System Comprehensive Plan.
3. Available fire suppression storage is based on the criteria presented in the 2011 Water System Comprehensive Plan, which is defined as 4,000 gpm for 4 hours, or 960,000 gallons.
4. Pipe velocities are limited to 10 feet/second in pipes used for fire flow runs.
5. The model results have been adjusted per City policy. The policy reduces the model results as follows:
   - Static pressure is reduced by 10 psi
   - Available fire flow is reduced by 10% at a minimum allowable pressure of 20 psi

Cc: Public Works Department, Building Department, Fire Department

City of DuPont
1700 Civic Drive • DuPont, WA 98327
Phone: (253) 964-8121 / Fax: (253) 964-1455

AUTHORIZATION TO ACT AS AGENT AFFIDAVIT

I, NWLC-P2 LLC, as property owner of the following described property

Northwest Logistics Center Phase II - 3230 International Place, DuPont, WA 98327
(Property Address)

300039011
(Parcel Number)

hereby authorize
Dan Balmelli/Barghausen Consulting Engineers, Inc.
(Name)

18215 72nd Avenue South, Kent, WA 98032
(Address)

(425) 251-6222/dbalmelli@barghausen.com
(Phone/Email)

to act as agent on my behalf before the City of DuPont regarding the application to
process SEPA and land use applications and construction permit applications

Property Owner Signature

2/1/2018
Date

Angelo Ianello, Manager, Bayhead Management LLC the Manager of NWLC-P2 LLC
Print Name

STATE OF WASHINGTON }
COUNTY OF PIERCE }

On this 1st day of February, 20 18, personally appeared before me Angelo Ianello known to be the individual(s) described in and who executed the within and foregoing instrument and acknowledged that he/she signed the same as given, as his/her free and voluntary act and deed, for the uses and purposes therein mentioned, and under oath stated that he/she was authorized to execute said instrument.

IN WITNESS WHEREOF, I have hereto set my hand and affixed my official seal the day and year first above written.

CARLA A WILLARD
Notary Public
State of Washington
My Commission Expires
October 28, 2021

Carla A Willard
Notary Public
Carla A. Willard
Print Name
NOTARY PUBLIC in and for the State of Washington
Residing at Tacoma, WA
My Commission expires: October 28, 2021

Attachment 1s - Authorization to Act as Agent Affidavit

EDA

EDWARDS DEVELOPMENT & ADVISORS, LLC

February 26, 2018

Jeffery S. Wilson, AICP
Community Development Director
City of DuPont
1700 Civic Drive
DuPont, WA 98327

Responsible Party for Payment
Northwest Logistics Center Phase 2, DuPont, WA

Dear Mr. Wilson –

As requested in your 2/6/18 Pre-App Comment Letter item C.3.g, the following party is responsible for payment of all invoices for contractual services.

NWLC-P2 LLC
P.O. Box 110997
Tacoma, WA 98411

Represented by:
Angelo Ianello, President
Bayhead Management LLC
P.O. Box 110997
Tacoma, WA 98411
253-203-1406

If you have questions, please don't hesitate to call or email.

Most sincerely –

Jay Pickering
Development Manager
Edwards Development and Advisors, LLC
206-310-6100
jay.pickering@edwardsdev.com

Attachment 1t - Responsible Part for Payment Letter

RECEIVED
APR 19 2018
CITY OF DUPONT

City of DuPont
SEPA Checklist

303 Barksdale Avenue
DuPont, WA 98327

phone 253-912-5393
fax 253-964-1455

City File Number: _____

STATE ENVIRONMENTAL POLICY ACT
ENVIRONMENTAL CHECKLIST

Purpose of Checklist:

The State Environmental Policy Act (SEPA), chapter 43.21 C, RCW, requires all governmental agencies to consider the environmental impacts of a proposal before making decisions. An environmental impact statement (EIS) must be prepared for all proposals with probable significant adverse impacts on the quality of the environment. The purpose of this checklist is to provide information to help you and the agency identify impacts from your proposal (and to reduce or avoid impacts from the proposal, if it can be done) and to help the agency decide whether an EIS is required.

Instructions to Applicants:

This environmental checklist asks you to describe some basic information about your proposal. Governmental agencies use this checklist to determine whether the environmental impacts of your proposal are significant, requiring preparation of an EIS. Answer the questions briefly, with the most precise information known, or give the best description you can.

You must answer each question accurately and carefully, to the best of your knowledge. In most cases, you should be able to answer the questions from your own observations or project plans without the need to hire experts. If you really do not know the answer, or if a question does not apply to your proposal, write "do not know" or "does not apply." Complete answers to the questions now may avoid unnecessary delays later.

Some questions ask about governmental regulations, such as zoning, shoreline, and landmark designations. Answer these questions if you can. If you have problems, the governmental agencies can assist you.

The checklist questions apply to all parts of your proposal, even if you plan to do them over a period of time or on difference 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.

Attachment 1u - Revised Environmental Checklist

A BACKGROUND

1. Name of proposed project, if applicable:

Northwest Logistics Center 2

2. Name of applicant:

Nick Griot

3. Address and phone number of applicant and contact person:

Applicant:
Nick Griot
NWLC-P2, LLC
P. O. Box 110997
Tacoma, WA 98411
(253) 203-1480

Contact:
Daniel K. Balmelli
Barghausen Consulting Engineers
18215-72nd Avenue South
Kent, WA 98032
(425) 251-6222

4. Date checklist prepared:

March 20, 2013
Revised September 13, 2013
Revised February 28, 2018

5. Agency requesting checklist:

City of DuPont

6. Proposed timing or schedule (including phasing, if applicable):

Construction to start late summer of 2013 or as soon as applicable permits are issued.

7. Do you have any plans for future additions, expansion, or further activity related to or connected with this proposal? If yes, explain.

There are no future additions or expansions associated with this proposal.

8. List any environmental information you know about that has been prepared, or will be prepared, directly related to this proposal.

Environmental Checklist prepared by Barghausen Consulting Engineers, Inc., *dated March 20, 2013, revised September 13, 2013,* ***Revised February 28, 2018***
Phase I Environmental Site Assessment prepared by Farallon Consulting, *Dated July 26, 2012*
Soils Sampling Results Letter prepared by Farallon Consulting, *dated July 3, 2012*
Geotechnical Engineering Report prepared by GeoResources, *June 20, 2012*
Stormwater Site Plan prepared by Barghausen Consulting Engineers, Inc., *March 5, 2013*
Environmental Mitigation Plan prepared by Barghausen Consulting Engineers, Inc., *January 4, 2013*
Geotech Report by Terra Associated dated April 2016
Tree Retention History Memo by EDA dated February 2018
Cultural Resource Report by Aqua Terra dated October 2015

Archaeological Excavation Permit dated November 2015
NFA Letter by Department of Ecology dated June 2016
Updated Stormwater Site Plan by Barghausen Consulting Engineers dated February 2018

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.

A grading permit has been **issued** by the City of DuPont and cleanup of specific areas of contaminated soil on the site **has been completed.**

10. List any government approvals or permits that will be needed for your proposal, if known.

Environment Determination by City of DuPont
Site Work Construction Permit by City of DuPont
Type II Administrative Approval by City of DuPont
Minor Site Plan Modification by City of DuPont
Lot Line Adjustment by City of DuPont
Building Permit by City of DuPont
Plumbing/Electrical Mechanical Permits by City of DuPont
Fire Suppression/Underground Fire Supply and Fire Alarm Permits by City of DuPont
Right-of Way Use Permit by City of DuPont
Pre-Treatment Review by Pierce County Public Works and Utilities
Sanitary Sewer Permits by Pierce County Public Works and Utilities
NFA by Department of Ecology

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.

The proposed project will construct a **586,025±** square foot warehouse building on an approximately **32** acre site with the associated grading activities, asphalt parking, drive aisles and truck loading and maneuvering areas, landscaping, stormwater infiltration facilities, water and sanitary sewer extensions, franchise utilities improvements and half-street frontage improvements to include sidewalk extension along International Place. A lot line adjustment will also be processed as part of the project.

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. 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.

The site is located on the northeast corner of International Place and Center Drive in DuPont, Pierce County, Washington and includes tax parcel numbers 300039-0010 through 0210 and 300039-0240 through 0270 within the Northwest Landing Industrial Park Division I Plat. The project is located within a portion of the Southwest quarter of Section 24, Township 19 North, Range 1 East and the Northwest quarter of Section 25, Township 19 North, Range 1 East.

B. ENVIRONMENTAL ELEMENTS

1. Earth

a. General description of the site:

The site is generally flat.

b. What is the steepest slope on the site (approximate percent slope)?

The steepest slope on site is approximately 8 percent.

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 prime farmland.

According to the Soil Survey of Pierce County Area, Washington, the soil type is classified as 41A-Spanaway gravelly sandy loam.

d. Are there surface indications or history of unstable soils in the immediate vicinity? If so, describe.

There is no known history of unstable soils to our knowledge.

e. Describe the purpose, type, and approximate quantities of any filling or grading proposed. Indicate source of fill.

Approximately 81,100 cubic yards of cut material and 65,200 cubic yards of fill material will be used to prepare the site for construction of the proposed building. **Approximately 60,000 cubic yards of cut and 46,000 cubic yards of fill work has been completed on the site. Approximately 18,000 cubic yards of cut and 17,000 cubic yards of fill work will be completed for completion of the project.**

f. Could erosion occur as a result of clearing, construction, or use? If so, generally describe.

Depending on weather conditions, erosion could occur as a result of construction activities.

g. About what percent of the site will be covered with impervious surfaces after project construction (for example, asphalt or buildings)?

Approximately 82% of the site will be impervious surface upon completion of the project.

h. Proposed measures to reduce or control erosion, or other impacts to the earth, if any:

A temporary erosion and sedimentation control plan **has been** designed and constructed to meet City of DuPont standards to control erosion impacts.

2. Air

a. What types of emissions to the air would result from the proposal (i.e. dust, automobile, odors, industrial wood smoke) during construction and when the project is completed? If any, generally describe and give approximate quantities, if known.

Emissions from construction equipment would be present from approximately 7 am to 6 pm, Monday through Friday during the construction phase of the project. Emissions from vehicular traffic to and from the site would be present upon project completion.

b. Are there any off-site sources of emissions or odor that may affect your proposal? If so, generally describe.

Emissions from vehicular traffic traveling the surrounding roadways may be present but would not be anticipated to affect the proposal.

c. Proposed measures to reduce or control emissions or other impacts to air, if any:

Construction equipment will meet state and federal emission standards. No other specific measures are proposed.

3. Water

a. Surface:

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.

There are no surface water bodies on or in the immediate vicinity 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.

No work will be done in or adjacent to any waters.

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.

No fill or dredge material will be placed in or removed from surface water.

4) Will the proposal require surface water withdrawals or diversions? Give general description, purpose, and approximate quantities, if known.

No surface water withdrawals or diversions are proposed.

5) Does the proposal lie within a 100-year floodplain? If so, note location on the site plan.

The site is not within a 100-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.

No waste materials will be discharged to surface waters.

b. Ground:

1) Will ground water be withdrawn, or will water be discharged to ground water? Give general description, purpose, and approximate quantities, if known.

No groundwater will be withdrawn however, water will be discharged into the ground from storm drainage infiltration facilities.

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.

No waste materials will be discharged into the ground under this proposal. All sanitary sewer effluent will be routed via tightlined pipe to the existing sanitary sewer system.

c. Water Runoff (including storm water):

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.

The source of runoff will be from the building roof top and pavement areas. All runoff will be routed via storm pipes and catch basins into infiltration galleries for water quality treatment and infiltration.

2) Could waste materials enter ground or surface waters? If so, generally describe.

No waste material will enter ground or surface waters. All stormwater runoff will be routed for treatment into the infiltration system prior to discharge and all sanitary sewer discharge will be routed to the existing sanitary sewer system.

d. Proposed measures to reduce or control surface, ground, and runoff water impacts, if any:

Temporary erosion and sedimentation control measures will be implemented per City of DuPont standards for the construction phase of the project and the storm drainage infiltration system will be designed and constructed per City of DuPont standards to control stormwater runoff from the completed project.

4. Plants

a. Check or circle types of vegetation found on the site:

__X__ deciduous tree: Alder, Maple, Oregon White Oaks, Apple, Plum, Pear
__X__ evergreen tree: Fir, Cedar, Pine

_____
__X__shrubs
__X__grass
_____pasture
_____crop or grain
_____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?

Most of the vegetation **has been** removed from the site for development of the proposed project. **Also, the project has complied** with the City of DuPont Oak Management Mapping Criteria for tree retention.

c. List threatened or endangered species known to be on or near the site.

None are known to exist to our knowledge.

d. Proposed landscaping, use of native plants, or other measures to preserve or enhance vegetation on the site, if any:

Landscaping will be designed and implemented to meet City of DuPont standards and trees will be retained where possible to meet with City code.

5. Animals

a. Circle any birds and animals which have been observed on or near the site or are known to be on or near the site:

birds: Hawk, Heron, Eagle, Songbirds, Waterfowl, Ruffed Grouse, California Quail, Mallard Ducks, Canada Geese, American Widgeon, Northern Shoveled, Gulls, etc.
mammals: Deer, Beaver, Raccoon, Opossum, Eastern Gray Squirrel, Masked Shrew
fish: Salmon, Trout, Bass, Shellfish, Crustaceans, Cottids, Stickleback

b. List any threatened or endangered species known to be on or near the site.

None are known to exist to our knowledge.

c. Is the site part of a migration route? If so, explain.

Yes, the site is part of the Pacific Flyway for Migratory Birds.

d. Proposed measures to preserve or enhance wildlife, if any:

On-site landscaping and tree retention will help to preserve wildlife in the area.

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.

Electricity will be used for lighting and natural gas will be used for heating.

b. Would your project affect the potential use of solar energy by adjacent properties? If so, generally describe:

It is not anticipated that the project would affect potential use of solar energy by adjacent properties.

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:

The building will comply with all current energy code requirements.

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.

No environmental hazards are expected to occur as a result of this project.

1) Describe special emergency services that might be required.

Other than fire, medical and police services already available in the area, no other specific services are anticipated.

2) Proposed measures to reduce or control environmental health hazards, if any:

No specific measures are proposed.

b. Noise

1) What types of noise exist in the area which may affect your project (for example: traffic, equipment, operation, other)?

Noise from vehicular traffic along Center Drive and International Place exist but would not be anticipated to affect the project.

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.

On a short-term basis, noise from construction equipment will be present from approximately 7 am to 6 pm, Monday – Friday. On a long-term basis, noise from vehicular traffic to and from the site will be present from approximately 6 am to 6 pm, Monday – Friday.

3) Proposed measures to reduce or control noise impacts, if any:

Construction equipment will be maintained and will comply with state standards. No other specific measures are proposed.

8. Land and Shoreline Use

a. What is the current use of the site and adjacent properties?

The site is undeveloped. Property to the north contains a warehouse facility and areas of undeveloped land which will be used for the future Steilacoom Historical School District Bus Barn. Steilacoom-DuPont Road and JBLM is located to the east and Northwest Logistics Center Phase I is under development to the west. The property to the south contains office use developments.

b. Has the site been used for agriculture? Is so, describe.

Historically, the site may have been used for agriculture but specific details are not known.

c. Describe any structures on the site.

There are no structures on site.

d. Will any structures be demolished? If so, what?

No structures will be demolished.

e. What is the current zoning classification of the site?

The current zoning classification is Industrial (IND).

f. What is the current comprehensive plan designation of the site?

The current comprehensive plan designation is Industrial.

g. If applicable, what is the current shoreline master program designation of the site?

N/A

h. Has any part of the site been classified as an "environmentally sensitive" area? If so, specify.

Yes. The Department of Ecology indicates that the site and vicinity have a known or suspected presence of metals in the soil from the Tacoma Asarco Smelter plume, including lead and arsenic. A Soils Sampling Report has been prepared by Farallon Consulting to locate areas of contaminated soil and a grading permit to remove the soil in these areas has been **approved by** the City of DuPont. **Clearing and grading work has been completed and NFA letters from the Department of Ecology have been issued.**

i. Approximately how many people would reside or work in the completed project?

Approximately 384 to 400 persons could work at the completed project depending on the tenants.

j. Approximately how many people would the completed project displace?

No persons will be displaced.

k. Proposed measures to avoid or reduce displacement impacts, if any:

No specific measures are proposed.

l. Proposed measures to ensure the proposal is compatible with existing and projected land uses and plans, if any:

The proposed warehouse use is compatible with the City of DuPont zoning code and the project will be designed to meet City standards.

9. Housing

a. Approximately how many units would be provided, if any? Indicate whether high, middle, or low-income housing.

N/A

b. Approximately how many units, if any, would be eliminated? Indicate whether high, middle, or low-income housing.

N/A

c. Proposed measures to reduce or control housing impacts, if any:

N/A

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?

The tallest height of the building will be approximately 38-foot and the principal building materials will be concrete and glass.

b. What views in the immediate vicinity would be altered or obstructed?

Some views from adjacent properties are expected to be altered with completion of the project but no views are anticipated to be obstructed.

c. Proposed measures to reduce or control aesthetic impacts, if any:

No specific measures are proposed.

11. Light and Glare

a. What type of light or glare will the proposal produce? What time of day would it mainly occur?

Glare from building window glass could occur during daylight hours and light and glare from parking lot lighting could be present during evening hours.

b. Could light or glare from the finished project be a safety hazard or interfere with views?

It is not anticipated that light or glare created by the project would be a safety hazard.

c. What existing off-site sources of light or glare may affect your proposal?

Headlights from vehicular traffic on nearby roadways could be present but would not be anticipated to affect the project.

d. Proposed measures to reduce or control light and glare impacts, if any:

The building will use non-glare window glass and the parking lot lighting will be shielded. Perimeter landscaping will also help to control light or glare impacts. No other specific measures are proposed.

12. Recreation

a. What designated and informal recreational opportunities are in the immediate vicinity?

No recreational areas are in the immediate vicinity of the site.

b. Would the proposed project displace any existing recreational uses? If so, describe.

No recreational uses will be displaced.

c. Proposed measures to reduce or control impacts on recreation, including recreation opportunities to be provided by the project or applicant, if any:

No specific measures are proposed.

13. Historic and Cultural Preservation

a. Are there any places or objects listed on, or proposed for, national, state, or local preservation registers known to be on or next to the site? If so, generally describe.

None are known to exist on the site to our knowledge.

b. Generally describe any landmarks or evidence of historic, archaeological, scientific, or cultural importance known to be on or next to the site.

None are known to exist on the site to our knowledge.

c. Proposed measures to reduce or control impacts, if any:

No specific measures are proposed however, the Memorandum of Agreement will be implemented and if cultural artifacts are found during construction, the proper agencies will be notified.

14. Transportation

a. Identify public streets and highways serving the site, and describe proposed access to the existing street system. Show on site plans, if any.

International Place is to the west of the site and Center Drive is to the south. Two driveways are proposed on International Place for access. Access will also be obtained from the existing cul-de-sak to the north that is part of the Northwest Landing Industrial Park Division I Plat.

b. Is the site currently served by public transit? If not, what is the approximate distance to the nearest transit stop?

Transit service is not available to the site. The closest transit route is Route 592 with a stop at the park and ride located at Wilmington Drive and Palisades Drive.

c. How many parking spaces would the completed project have? How many would the project eliminate?

The completed project will provide **384 car parking stalls and 152 trailer parking stalls**. No parking stalls will be eliminated.

d. Will the proposal require any new roads or streets, or improvements to existing roads or streets, not including driveways? If so, generally describe (indicate whether public or private).

Yes, half-street improvements along International Place will be required **as well as completion of the cul-de-sac access on the north end and construction of a new traffic signal at Center Drive and International Place**.

e. Will the project use (or occur in the immediate vicinity of) water, rail, or air transportation? If so, generally describe.

No.

f. How many vehicular trips per day would be generated by the completed project? If known, indicate when peak volumes would occur.

It is anticipated that, based on high-cube warehousing use, the proposed project could generate **approximately 842 average daily trips** upon completion. **(Please refer to the updated Traffic Impact Analysis by Heath and Associates.)**

g. Proposed measures to reduce or control transportation impacts, if any:

Construction of roadway improvements and payment of traffic mitigation fees, if required will reduce transportation impacts.

15. Public Services

a. Would the project result in an increase need for public services (for example, fire protection, police protection, health care, schools, other)? If so, generally describe.

Yes, the project will result in an increased need for public services.

b. Proposed measures to reduce or control direct impacts on public services, if any.

Roadway improvements, construction of water line with the addition of fire hydrants and payment of traffic and fire mitigation fees will reduce impacts to public services.

16. Utilities

a. Circle utilities currently available at the site: electricity, natural gas, water, refuse service, telephone, sanitary sewer, septic system, other.

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.

Electricity:	Puget Sound Energy
Natural Gas:	Puget Sound Energy
Water:	City of DuPont
Sanitary Sewer:	Pierce County Public Works and Utilities
Refuse:	LeMay
Telephone:	CenturyLink
Cable:	Comcast

C. SIGNATURE

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: Daniel K. Balmelli

Print your name: Daniel K. Balmelli

Date Submitted: September 17, 2013 / **Revised February 28, 2018**

(Issued 4/6/01)

D. SUPPLEMENTAL SHEET FOR NONPROJECT ACTIONS

(Evaluation for Agency Use Only. Do not 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 of 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?

   Proposed measures to avoid or reduce such increases are:

2. How would the proposal be likely to affect plants, animals, fish, or marine life?

   Proposed measures to protect or conserve plants, animals, fish, or marine life are:

3. How would the proposal be likely to deplete energy or natural resources? Proposed measures to protect or conserve energy and natural resources are:

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?

   Proposed measures to protect such resources or to avoid or reduce impacts are:

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?

   Proposed measures to avoid or reduce shoreline and land use impacts are:

6. How would the proposal be likely to increase demands on transportation or public services and utilities?

Proposed measures to reduce or respond to such demand(s) are:

7. Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.

Pierce County
Public Works and Utilities

9850 64th Street West
University Place, Washington 98467-1078
(253) 798-4050 Fax (253) 798-4637

15753

Brian J. Ziegler, P.E.
Director
Brian.Ziegler@co.pierce.wa.us

Betsy D

RECEIVED
APR 19 2018
CITY OF DUPONT

March 20, 2013
U-107238

Betsy Dyer
Barghausen Consulting Engineers
18215 – 72nd Avenue South
Kent, WA 98032

Subject: Information Request for Connection to the Pierce County Sanitary Sewer System
Project Description: International Place Distribution Center – A Proposed 695,000 SF Warehouse Building
Site Address: NEC of Center Drive and International Place North
Parcel Number: 300039-001-0 through 021-0 and 024-0 through 027-0

Dear Ms. Dyer:

Our office has researched the information regarding the subject request and has the following comments.

Pierce County Public Works and Utilities will not provide a commitment, or guarantee, of sewer availability for the subject proposal until payment of connection charges has been received by the Sewer Utility. This letter shall be used for informational purposes only <u>in support of a Land Use Application</u> and <u>shall not</u> be misconstrued by the proponent or reviewing agency as a commitment on behalf of the Sewer Utility.

This letter does not convey any vested rights or any exclusive privileges. It does not authorize any construction. It does not eliminate the need to comply with any County, State, Federal or local standards or regulations or the need to obtain all necessary permits. This letter is not a waiver of any departmental requirements. The information presented in this letter is general in nature and is based on estimates; therefore, it should not be relied upon as completely accurate.

CONNECTION POINT:

1. The subject property is located within the Pierce County Sewer Service area and is within the Comprehensive Urban Growth Area (CUGA).

2. The subject property is within 300 feet of an existing accessible sanitary sewer which has sufficient capacity to accommodate the subject property.

Attachment 1v - Sewer Availability from Pierce County

3. The subject property is required to connect to sanitary sewer.

4. The points of permanent connection to the public sanitary sewer system (as proposed on the Preliminary Sanitary Sewer and Water Plan submitted) are SSMH#10137 and SSMH#10138 located in International Place North.

5. Record drawings show that there are existing 8-inch diameter sewer main stub extending approximately 30 feet east of sanitary sewer manhole SSMH#10137 and SSMH#10138. It must be noted that the sewer main stub out of manhole SSMH#10138 shown on the Preliminary Sanitary Sewer and Water Plan is aligned differently from the one shown on the sanitary sewer as-built drawings. Both points of connection must be field verified and the field verified information shown on all subsequent submittals.

6. Record drawings are enclosed.

CONNECTION REQUIREMENTS

1. The proponents of this project must design and construct sanitary sewer facilities, at their expense, and comply with the following requirements.
   a. Pay the sanitary sewer connection charge listed below. Additional information regarding this proposal is needed before the final connection charge can be calculated.
   b. The Preliminary Sanitary Sewer and Water Plan shows 8-inch diameter pipe and cleanouts being used for the building sewer lines to connect the building. Installation of 8-inch diameter pipe requires the installation of manholes at every change in *grade and direction* and a sewer line extension application. 6-inch diameter pipe may be used without applying for a sewer line extension if calculations can be submitted to this office indicating that the pipe can handle the proposed discharge. If a sewer line extension permit is required.
      i. Submit three (3) sets of sanitary sewer plans stamped and signed by a WA State licensed professional engineer and a properly completed Sewer Line Extension Design Checklist per County standards for review and approval, including required easements, if applicable.
      ii. Pay the plan review and inspection deposit ($500.00 non-refundable deposit) at the time of submittal. The owner/proponent must also pay for any plan review and inspection costs over and above the deposit when they occur.
      iii. Submit a complete, itemized, stamped and signed Engineer's Construction Cost Estimate for all the sanitary sewage facilities to be constructed within the existing public right-of-way and public sanitary sewer easements.
      iv. Submit a properly completed Time and Materials Account Information Form with the sewer line extension package.

c. One (1) sewer service permit (the current fee is $185.00) is required to connect the proposed commercial/industrial building to the existing sanitary sewer system.
d. The building sewer must be constructed at least ten (10) feet from any property line, sewer line, or easement line. If the minimum distance cannot be met, then an easement is required.
e. The proposed project is being developed across 25 active parcels of land. Will these parcels be processed as a Lot Combination? A Perpetual Reciprocal Easement, Mutual Maintenance Agreement and Covenant Running with the Land may be required. Submit the completed form for our review before it is executed and recorded by all owners of record.
f. A Pretreatment Review is required. The proponent must comply with all Pierce County pretreatment requirements.
    i. Submit a properly completed Pretreatment Review Form and required supplementary information for review.
    ii. Pay the non-refundable review fee of $50.00 (current fee) per application.
    iii. Submit a properly completed Time and Materials Account Information Form with this application.
g. The proponent's side sewer contractor must be listed on the Sewer Utility Division's current Registered Side Sewer Contractors List and complete the following:
    i. Prior to the issuance of the sewer permit, the contractor must obtain the necessary right-of-way permit(s) from the City of DuPont. It is the responsibility of the applicant to provide copies of the approved sewer plans to the right-of-way office, which is retained by the right-of-way permit office, at the time of the permit application or a right-of-way permit will not be issued.
    ii. The contractor must obtain the sewer line extension permit and the sewer service permit from the Sewer Utility Representative at the Pierce County Development Center.

2. Sewer Utility Division Standard Plans and Forms can be downloaded in PDF format from the following webpage: www.piercecountywa.org/sewer.

3. Initial application submittals and all connection charge and permit fee payments must be submitted to the Sewer Utility Representative at the Pierce County Development Center, 2401 South 35th Street, Room 150, Tacoma, WA 98409, (253) 798-2737.

CONNECTION CHARGE

1. Based on information provided, outlined below is the total estimated sanitary sewer connection charge.

Prior to or at the time of issuance of each Sewer Service Permit for the proposed building, the connection charges outlined below must be paid in full.

The owner was originally assessed or charged for Area ($180,022.09) Charge. Since the proposed usage will exceed that for which the property was originally assessed and/or charged, the owner must pay the connection charge noted below prior to Sewer Service Permit issuance.

ULID: 90-4

Capacity Charge: 8.96 RE X $1,250.00/RE	=$ 11,200.00
Total Estimated Connection Charge:	**=$ 11,200.00**

2. The Connection Charges for commercial uses in incorporated areas and all residential uses must be paid prior to issuance of Sewer Service Permits.

3. The total estimated connection charge will be recalculated at the time the owner purchases it based on the rates in effect at that time.

4. **Once paid, connection charges are credited against the parcel and are only refundable to the person(s) or entity that is the owner of record at the time of refund.**

If you have any questions, please contact me by phone: (253) 798-4134, by fax: (253) 798-2570 or via email: mauricio.brizuela@co.pierce.wa.us. My office is located at the Environmental Services Building (9850 – 64th Street West, University Place, WA 98467).

Sincerely,

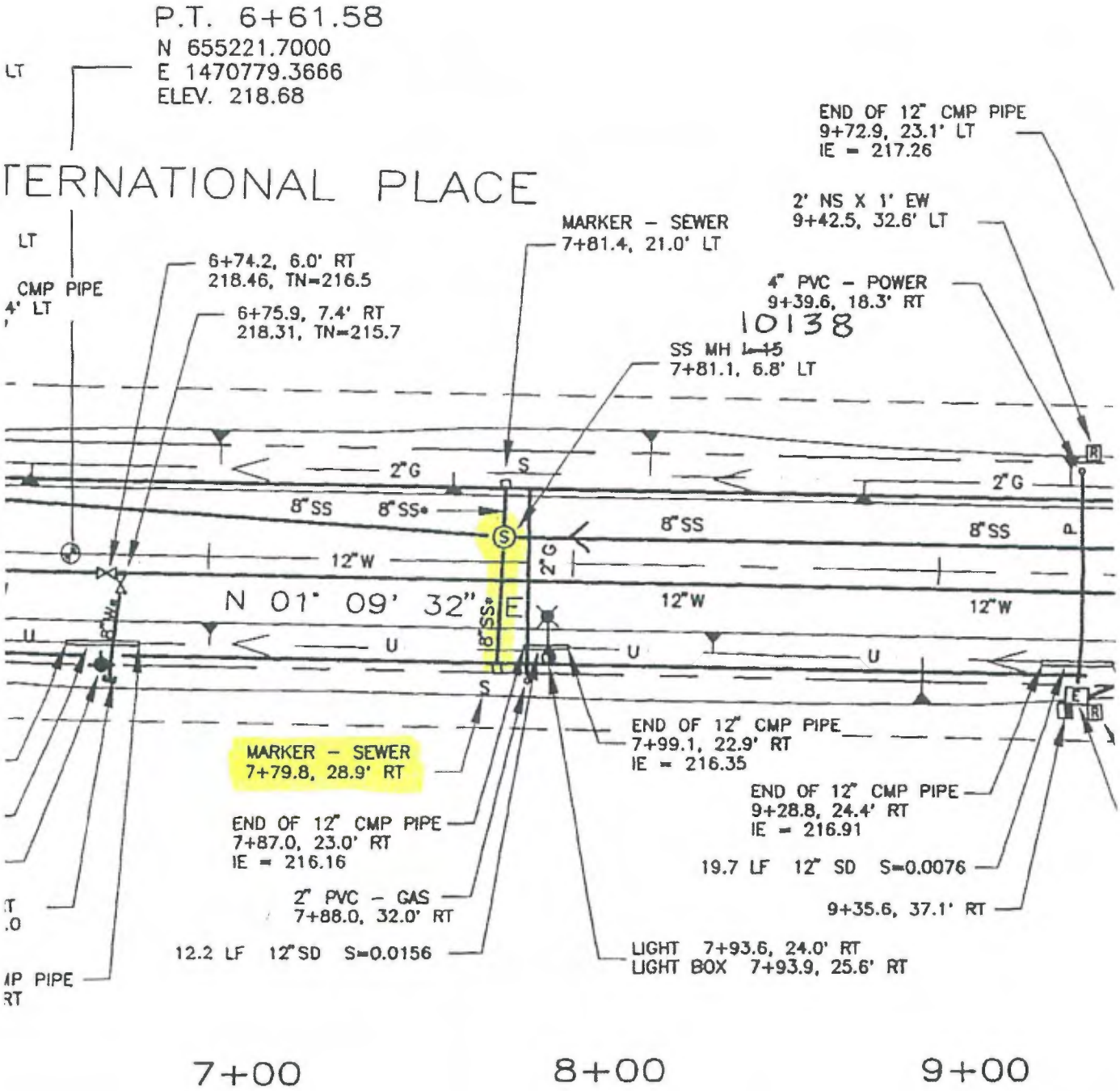
Mauricio Brizuela
Civil Engineer 1

MB:srd
Cors\U107238-MB

Enclosures: Record drawings

FOR OFFICE USE ONLY
ULID #90-4 BASIN DUPT CUGA y RA n SSA pc 300' y DRY(UGA) n DRY(CIP) n

REVII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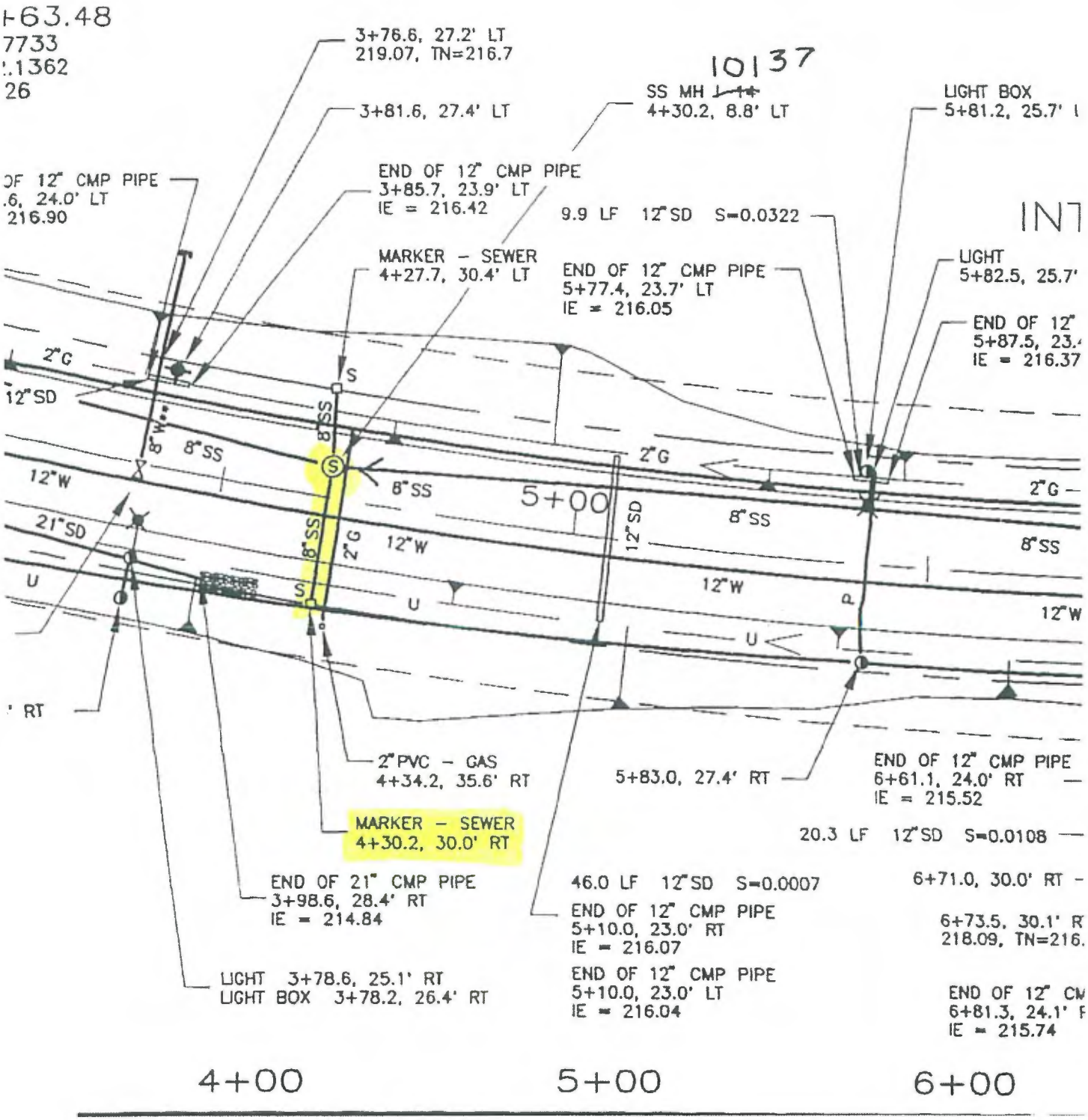
N 655221.7000
E 1470779.3666
ELEV. 218.68
LT
TERNATIONAL PLACE
LT
CMP PIPE
4' LT
6+74.2, 6.0' RT
218.46, TN=216.5
6+75.9, 7.4' RT
218.31, TN=215.7
MARKER – SEWER
7+81.4, 21.0' LT
END OF 12" CMP PIPE
9+72.9, 23.1' LT
IE = 217.26
2' NS X 1' EW
9+42.5, 32.6' LT
4" PVC – POWER
9+39.6, 18.3' RT
10138
SS MH
7+81.1, 6.8' LT
2"G
S
8"SS
8"SS
8"SS
8"SS
12"W
2"G
N 01° 09' 32" E
12"W
12"W
U
U
U
U
S
MARKER – SEWER
7+79.8, 28.9' RT
END OF 12" CMP PIPE
7+99.1, 22.9' RT
IE = 216.35
END OF 12" CMP PIPE
9+28.8, 24.4' RT
IE = 216.91
END OF 12" CMP PIPE
7+87.0, 23.0' RT
IE = 216.16
19.7 LF 12" SD S=0.0076
2" PVC – GAS
7+88.0, 32.0' RT
9+35.6, 37.1' RT
12.2 LF 12"SD S=0.0156
LIGHT 7+93.6, 24.0' RT
LIGHT BOX 7+93.9, 25.6' RT
7+00
8+00
9+00

Δ = 14° 15' 22"
R = 1600'
L = 398.10
T = 200.08



RECEIVED
APR 10 2018
CITY OF DUPONT

Whitney Dunlap

From: Ric Thompson <Harold.Thompson@WasteConnections.com>
Sent: Friday, April 13, 2018 12:03 PM
To: Whitney Dunlap
Cc: Betsy Dyer
Subject: RE: Northwest Logistics Center Dumpster Enclosure / BCE#15753
Attachments: 15753-D-SITE-Dumpster Location-MKUP-LeMay-2018-04-11.pdf; Truck width Mirrir to Mirror Outside edge & bottom of Mirror to ground heigth.pdf; Enclosure Draft Front Load on Skids & 2 yard Recycle on wheels.pdf

Good Morning Whitney,

My apology for the delay in response to your email. I have been out in the field all week and trying to catch up on emails. Trying to look at the attachments from a Blackberry doesn't work too well. So I need to make sure I'm able to get a good view at what I'm needing to look at. It looks like with no posts in the center it gives our trucks a little bit more room to safely maneuver and empty both the refuse and recycle containers that will be in this enclosure. We will make it work.

As you can see I have attached a picture of one of our trucks that gives you the total width from mirror to mirror outside edges, 9 ft. 2 in., and from the ground to the bottom edge of the mirrors, 5 ft. 6 in. The extra 2 feet, total of 22 ft., that our enclosure reflects gives us that extra safe wriggle room.

Please feel free to contact me should there be any further questions or concerns.

Respectfully,

Ric Thompson
LeMay Inc., Pierce County Refuse
A Waste Connections Company
Community Outreach
4111 192nd St E
Tacoma, WA 98446
Cell# 253-606-8869
Office# 253-875-5882

From: Whitney Dunlap [mailto:wdunlap@barghausen.com]
Sent: Friday, April 13, 2018 11:06 AM
To: Ric Thompson
Cc: Betsy Dyer; Ric Thompson
Subject: RE: Northwest Logistics Center Dumpster Enclosure / BCE#15753

Hi Ric,
Just wanted to follow up on the trash enclosure locations and details for the Northwest Logistic Center so we can get this project resubmitted. Please see the attachment and email below. Let me know if you have any questions.
Thanks,

Attachment 1w - LeMay, In Refuse Enclosure Location Approval E-mail

Whitney Dunlap | Design Engineer
Office: 425-251-6222
Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South, Kent WA 98032
www.barghausen.com

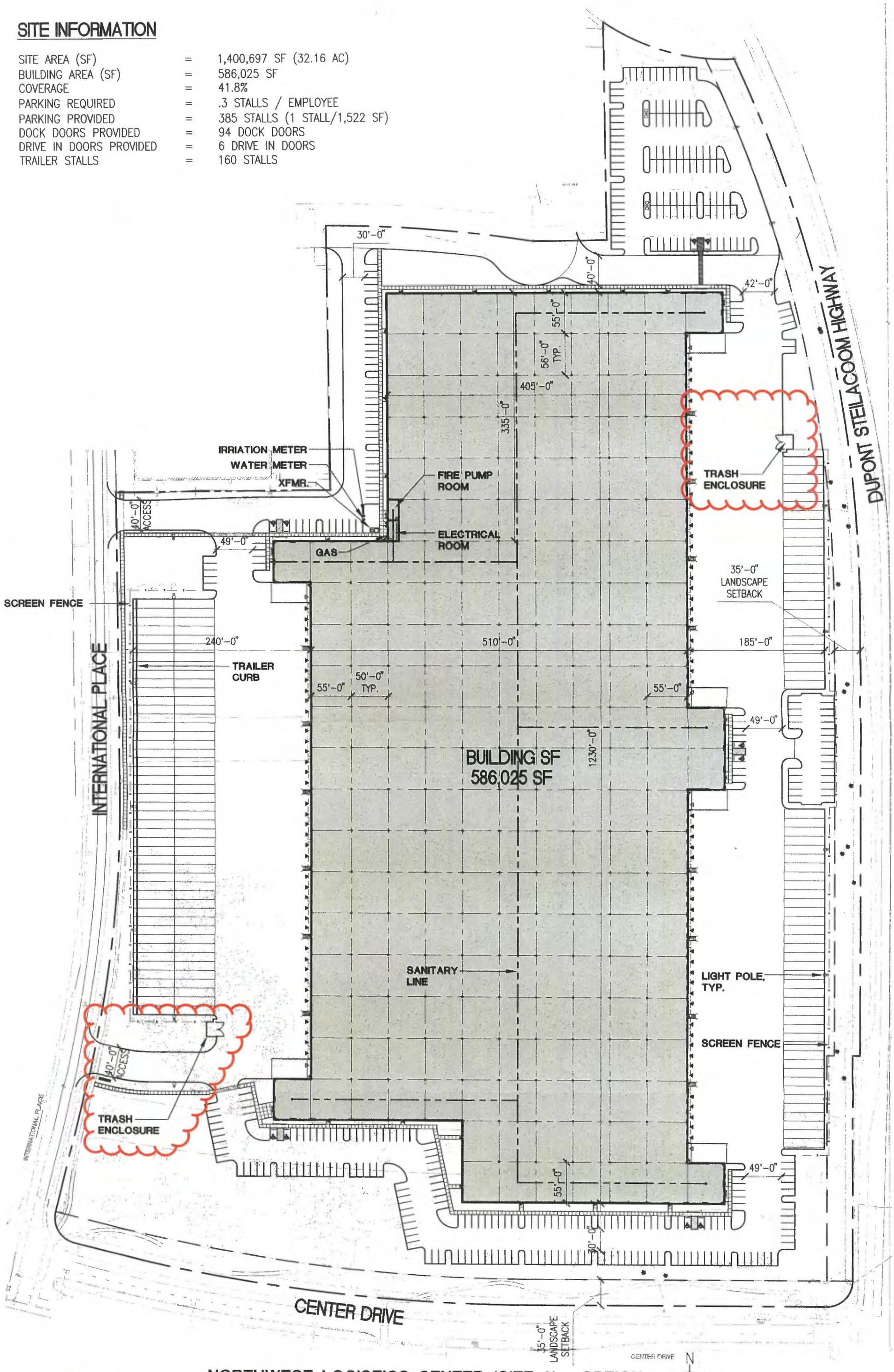
From: Whitney Dunlap
Sent: Wednesday, April 11, 2018 11:41 AM
To: Ric Thompson (Harold.Thompson@WasteConnections.com) <Harold.Thompson@WasteConnections.com>
Subject: Northwest Logistics Center Dumpster Enclosure / BCE#15753

Hi Ric,
Hope things are going well.
Attached is a PDF of the site plan and dumpster enclosure detail for the Northwest Logistics Center Site off International Place in Dupont. We had talked on the phone previously about these dumpster locations and had revised the detail in order for the gate posts to be placed where they won't hit the mirrors on your trucks. However, I don't believe we ever got the information submitted back to you for your approval.
On another project, your email approval of dumpster locations and detail was sufficient for the City to sign off on this requirement for submittal. Do you think we could do that again for this project?
Let me know if you have any questions.
Thanks,

Whitney Dunlap | Design Engineer
Office: 425-251-6222
Barghausen Consulting Engineers, Inc.
18215 72nd Avenue South, Kent WA 98032
www.barghausen.com

SITE INFORMATION

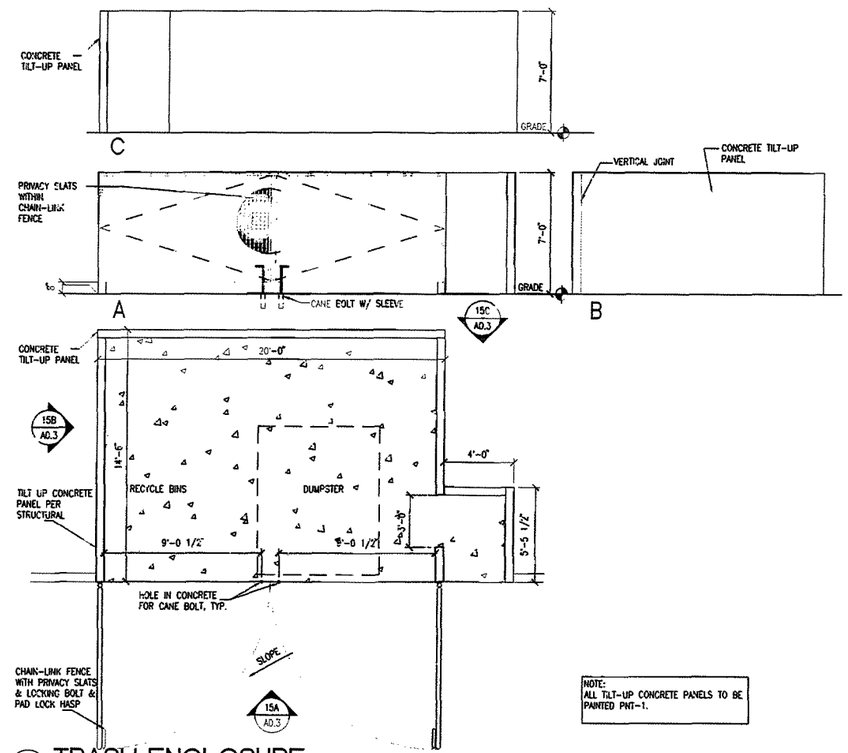
SITE AREA (SF)	=	1,400,697 SF (32.16 AC)
BUILDING AREA (SF)	=	586,025 SF
COVERAGE	=	41.8%
PARKING REQUIRED	=	.3 STALLS / EMPLOYEE
PARKING PROVIDED	=	385 STALLS (1 STALL/1,522 SF)
DOCK DOORS PROVIDED	=	94 DOCK DOORS
DRIVE IN DOORS PROVIDED	=	6 DRIVE IN DOORS
TRAILER STALLS	=	160 STALLS



CRAFT architects

NORTHWEST LOGISTICS CENTER (SITE 2) - OPTION 1
PRELIMINARY SITE PLAN
DUPONT, WASHINGTON
1"=120' **02/02/18**

Email Attachment: 15753-D-SITE-Dumpster Location-MKUP-LeMay-2018-04-11.pc
Sheet 1 of 2



NOTE:
ALL TILT-UP CONCRETE PANELS TO BE PAINTED PNT-1.

15 TRASH ENCLOSURE

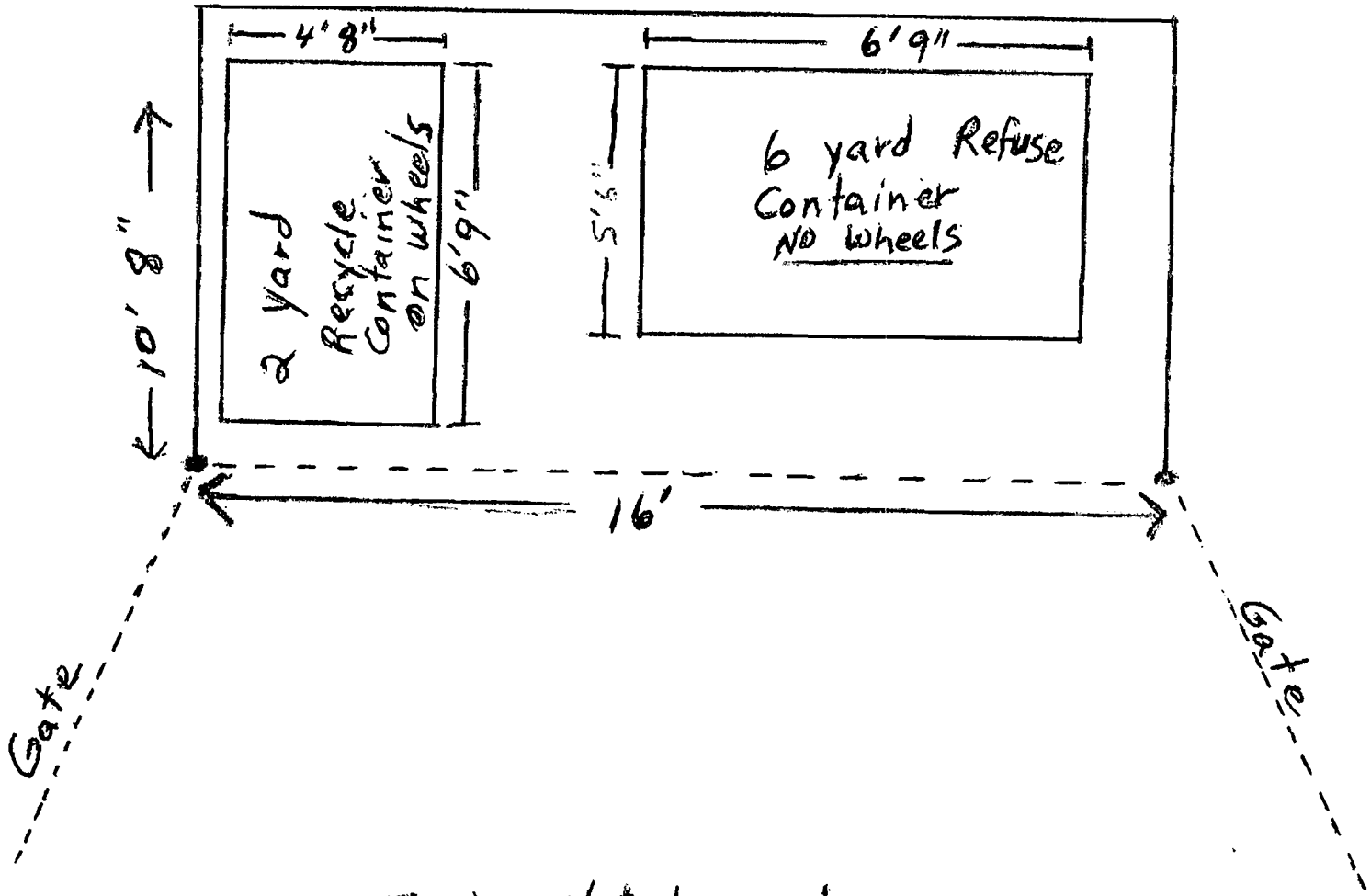
1/4" = 1'-0"

From mirror to Mirror Outside Edge
9'2"

5'6" From Bottom of mirror to Ground

Email Attachment: Truck width Mirror to Mirror Outside edge & bottom of Mirror to ground height.pdf

Enclosure



This is Not to scale

Email Attachment: Enclosure Draft Front Load on Skids & 2 yard Recycle on wheels.pdf

#15345

WASHINGTON FORESTRY CONSULTANTS, INC.

FORESTRY AND VEGETATION MANAGEMENT SPECIALISTS

W F C I

360/943-1723
FAX 360/943-4128

1919 Yelm Hwy SE, Suite C
Olympia, WA 98501

RECEIVED
APR 19 2018
CITY OF DUPONT

- Revised Tree Plan -

NORTHWEST LOGISTICS CENTER OAK PRESERVE SITES 1 AND 2

Center Drive and International Place
Dupont, WA

Prepared for: Angelo Ianello
Bayhead Management LLC

Prepared by: Washington Forestry Consultants, Inc.

Date: October 23, 2013

Note: All changes/additions made as requested by Bill Kingman in his letter of Sept. 16, 2013.

Introduction

We have completed an evaluation of all significant Oregon White oak trees in the designated oak preserve areas on the Northwest Logistics Center. They will be called Sites 1 and 2. Site 1 is the tract west of International Place and Site 2 is the tract east of International Place. The evaluation includes a description of necessary cultural care for each tree and a prescription for contaminated soil removal and tree protection. We have also completed an analysis of the remaining forested area on the 2 parcels.

Scope of Services

The purpose of the evaluation was to:

- Make recommendations for retention, removal, protection, and/or cultural care of individual Oregon white oak trees in the 2 tree retention areas (Oak Preserves).
- Prepare a description of the necessary soil removal techniques and prescribe all activity that is required to protect tree health during soil removal.
- Make other recommendations for stand management for long-term tree health improvement and survival.

Attachment 1x - Revised Tree Plan dated October 23, 2013

Methodology

All trees within the 2 designated oak preserve areas east and west of International Place were evaluated[1]. All significant Oregon white oak trees were numbered. **It is important to note that all of the tree numbering is not sequential since some trees already had numbers on them.**

Trees recommended to be removed were marked with an orange dot at eye level and a number at its base. Trees to be retained were marked the same way with blue paint.

Information on these trees including data on the species, size, condition, crown position, root protection zone and required work were recorded. The trees are shown on the 2 attached site plans and described in the corresponding tree list with all tree parameters, conditions, and recommendations (Appendix I). This will facilitate finding the trees during the review process and for subsequent arboricultural work.

The recommended locations of tree protection fences were placed on the tree protection plan map. Rather than draw circles around individual trees, only the edge tree root protection zone was delineated and shown on the plan. This is the edge between the oak preserve and the limits of construction. All interior trees will be protected 360 degrees, so delineating root protection zones on these trees is unnecessary.

A glossary of terms is provided in Appendix III.

Observations

Site Description

The project site includes 2 parcels both stocked with second-growth conifer forest. The southerly portion of both parcels includes individual and clusters of Oregon white oaks. These clusters of oak were previously mapped by Dupont as Oak Mapping Unit 17A. There are no structures or other developments on the site.

Soils. – According to the Pierce County Soil Survey, the soil type on the site is the Spanaway gravelly sandy loam. This is classified as a very deep, somewhat excessively drained soil found on terraces. It is formed in glacial outwash and volcanic ash. Permeability is moderately rapid in the subsoil and very rapid in the substratum. Available water capacity is low. The effective rooting depth for trees is 48 inches or more. The potential for windthrow of trees is slight under normal conditions. New trees require irrigation for establishment.

This is the soil type that Oregon white oak commonly occurs on in western Washington.

[1] Matheny, Nelda and James R. Clark. *Trees and Development: A Technical Guide to Preservation of Trees During Land Development.* International Society of Arboriculture, Champaign. IL 1998

Existing Tree Conditions in Tree Tracts

One hundred and fifteen significant Oregon white oak (*Quercus garryana*) trees occur in the 2 oak preserves. The trees range from 2 to 30 inches DBH (diameter measured 4.5 ft. above the groundline). These trees are all predominantly healthy, long-term trees. There are some intermixed (approximately 20) second-growth Douglas-firs (*Pseudotsuga menziesii*) scattered around sites 1 and 2 as well. These 115 proposed oak save trees were all in fair and above condition that will be long term trees if protected. The age of the larger dominant and co-dominant oak trees is projected to be 40-50 years old.

Figure 1. Aerial image of the 2 tree tracts (Google). Area is vicinity only.

Existing Trees on Remainder of the Site

The remainder of the site north of the oak preserves are stocked with Douglas-fir ranging from 6 to 24 inches DBH. The stand was high-grade harvested around 1994, similar to the other areas of Northwest Landing. Stocking is light and tree quality is fair to poor, due to structurally defective stems and poor live-crown ratio's, though scattered healthy trees exist. Few oaks occur in the areas north of the tree tract for Site 1, but a large number of oaks, that are in fair to good condition occur north of the tree tract for Site 2. All trees in these areas will be removed due to the extensive site utilization and soil clean-up required.

Recommendations

Pruning for Access to the Oregon White Oaks

Approximately 52 Oregon white oak trees in the 2 oak preserves will need to have their crowns raised to provide access around the base of the tree for soil removal and replacement. This pruning should occur prior to plant and organic debris and soil removal. The pruning should be minimal to achieve access for soil removal and should not exceed more than 20% of the live branches on any one tree.

Photo A. View of typical large oak in the oak preserve site 2 tree protection area. Note shrub layer.

The pruning should be done by, or supervised by an International Society of Arboriculture Certified Arborist® and done according to ANSI A300 standards for proper pruning. A more detailed summary of individual trees is provided in Appendix I.

Soil Remediation

Soils contaminated with arsenic are to be removed from around the proposed Oregon white oak save trees. The following are the alternatives for soil removal and our recommendations as to which is the preferred method of soil removal to protect oak tree health.

1. **Vacuum truck -** organic debris and plants to be removed from the soils surface by hand or gently with an excavator sitting outside the critical root zone, followed by use of the vacuum truck to pneumatically remove the soils from over the tree root system and load the soils onto the truck.

   This is our preferred method and will cause the least damage to the roots of the oak trees. The contaminated soils will be contained as they are removed, limiting exposure to workers and the environment. Movement of the excavator (if used) around and under the tree crowns will require care to minimize root disturbance.

   The exposed roots of the trees should be irrigated daily in the absence of rainfall, until the topsoil can be replaced. Topsoil replacement should be done as soon after contaminated topsoil removal as possible.

Clean soils of a sandy loam or loamy fine sand texture should be topdressed over the tree root systems to a depth of 3-4 inches, followed by mulching with 2-3 inches of composted mulch. These topdressings should be irrigated after placement to settle soils around the roots. No additional irrigation should be done.

2. **Air Spade -** organic debris and plants would be removed similarly to item 1. Then an air spade which uses air under pressure to 'blow' soil from around the roots and then load onto a truck would be used to separate the soil from around the roots of the trees.

   This method is not preferred due to the potential for exposure of workers and the environment to soil particles blown into the air.

3. **Mechanical removal with Back-hoe or Excavator -** This method would use an excavator or back-hoe to 'rake' the soil and plant debris from over the top of the root system. The soils and plant debris would then be loaded onto a truck.

   This method would cause major loss of fine roots and cause damage to the coarse roots of the trees that we are trying to protect.

Monitoring of Plant and Soil Removal from the Oaks

It is recommended that WFCI monitor the plant and soil removal from under the oaks to insure that significant root damage does not occur. The highest potential for root damage is during the plant and debris removal with the excavator.

Stand Management

The 2 oak preserve areas are dominated by Oregon white oaks with a small number of larger Douglas firs interspersed. Some of the Douglas fir trees overtop the oaks and will be detrimental to the long-term survival and development of the oaks.

We are recommending that all overtopping and intermixed Douglas-firs (large and small) be removed (cut only - leave stumps) from the 2 save tree areas to provide more light and growing space to the remaining oaks. There are 17 Douglas-firs to be removed from the 2 oak preserves. These trees are marked for removal with an orange dot at eye level and an orange number at the base. These trees will need to be directionally felled to the north, taking care to avoid damage to the Oregon oaks. The firs can then be yarded by the logging shovel that is sitting outside of the tree tract. The shovel should suspend the leading (top) of the tree while yarding, and should suspend the entire tree if possible to minimize soil disturbance. If a fir cannot be directionally felled without damaged to the oaks, then the tree will need to be topped out and then directionally felled.

Douglas fir that do not affect any significant Oregon White Oaks within oak preserves 1 and 2 will be retained. More info about each Douglas fir to be removed can be found on Table 2 and 4 in the Appendix I.

Photo B. View of smaller oaks in the interior of the stand in oak preserve site 1.

The understory shrub layer in the save tree areas is very dense with common snowberry, oceanspray, Scotchbroom, and western hazelnut. The shrubs will need to be removed for the soil remediation.

Photo C. View of more open-grown oak trees in oak preserve site 2.

Summary

We have evaluated 116 Oregon white oak trees proposed to be saved in two oak preserves at the Northwest Logistics Center. All were found to be long term trees. Fifty two oak trees will need to have their crowns raised to provide access to their base for soil removal.

We are proposing that a small excavator or back-hoe, coupled with hand work, be used to remove plants and debris from over the root systems of the Oregon white oaks, followed by use of a vacuum truck to remove the contaminated soils from over the root system. It is possible that an air spade may need to be used to loosen some of the soils for the vac truck. Clean soils and mulch will need to be replaced over the critical root zones of the oaks and irrigated. No additional irrigation should be done.

The 17 marked Douglas fir trees in the oak preserves should be removed to provide more light and growing space for the remaining Oregon white oaks.

The proposed method will minimize disturbance of the Oregon white oak tree root systems while contaminated soils are removed.

Respectfully submitted,

Washington Forestry Consultants, Inc.

Galen M. Wright

Galen M. Wright, ACF, ASCA
ISA Board Certified Master Arborist No. PN-129BU
Certified Forester No. 44

attachments: appendices

APPENDIX I

Table 1. List of significant retained Oregon White Oak trees on NW Logistics Center Oak Preserve Site 1 (West of International Place)

Tree #	Species	DBH (in.)	Condition	Save/ Remove	Minimum Root Protection Zone (RPZ)	Notes	Work	Land-mark Tree?	Speci-men Tree?
1	OR White Oak	6-18	Fair	Save	12	7 stems	Crown Raise	Yes	Yes
2	OR White Oak	6-16	Fair	Save	11	3 stems	Crown Raise	No	Yes
3	OR White Oak	14	Fair	Save	8		None	No	Yes
4	OR White Oak	6-10	Fair	Save	8	3 stems	None	No	Yes
5	OR White Oak	16	Good	Save	10		None	No	Yes
6	OR White Oak	6,15	Fair	Save	11		Crown Raise	No	Yes
7	OR White Oak	6-12	Fair	Save	10	3 stems	Crown Raise	No	Yes
8	OR White Oak	12	Fair	Save	8		None	No	Yes
9	OR White Oak	14	Good	Save	9		None	No	Yes
10	OR White Oak	14, 16	Good	Save	12		None	Yes	Yes
11	OR White Oak	4	Fair	Save	5		None	No	No
12	OR White Oak	6	Fair	Save	5		None	No	No
13	OR White Oak	4	Fair	Save	5		None	No	No
14	OR White Oak	13	Fair	Save	12		Crown Raise	No	Yes
15	OR White Oak	13	Fair	Save	9		Crown Raise, Crown Clean	No	Yes
16	OR White Oak	17	Fair	Save	13		Crown Raise, Crown Clean	No	Yes
17	OR White Oak	14	Fair	Save	11		Crown Raise	No	Yes
18	OR White Oak	14	Fair	Save	12		None	No	Yes
19	OR White Oak	7,3	Fair	Save	5		Crown Raise	No	No
20	OR White Oak	5	Fair	Save	5		None	No	No
21	OR White Oak	21	Fair	Save	13		None	No	Yes
22	OR White Oak	7	Good	Save	10		None	No	No
23	OR White Oak	9	Good	Save	9		Crown Raise	No	No
24	OR White Oak	4	Good	Save	7		None	No	No
25	OR White Oak	13	Good	Save	12		Crown Raise	No	Yes
26	OR White Oak	16	Good	Save	12		None	No	Yes
27	OR White Oak	14	Fair	Save	12		Crown Raise	No	Yes
28	OR White Oak	7,9	Fair	Save	10		Crown Raise	No	Yes

**RPZ is the minimum radius in feet to be protected around 'all' or part of the save tree. All interior trees will have 100% of their RPZ protected anyway.*

Table 2. List of Douglas fir trees requiring removal on NW Logistics Center Oak Preserve Site 1 (West of International Place)

Tree #	Species	DBH (in.)	Height (ft)	Condition	Crown Position	Save/ Remove	Work	Landmark Tree?	Specimen Tree?
201	Douglas fir	34	100	Good	Dominant	Remove	Remove	Yes	Yes
202	Douglas fir	27	100	Good	Co-dominant	Remove	Remove	No	Yes
203	Douglas fir	23	90	Good	Co-dominant	Remove	Remove	No	Yes
204	Douglas fir	24	95	Good	Co-dominant	Remove	Remove	No	Yes
205	Douglas fir	24	95	Good	Co-dominant	Remove	Remove	No	**Yes**
206	Douglas fir	28	100	Good	Dominant	Remove	Remove	No	Yes
207	Douglas fir	24	90	Good	Dominant	Remove	Remove	No	Yes

Table 3. List of significant retained Oregon White Oak trees on NW Logistics Center Oak Preserve Site 2 (East of International Place)

Tree #	Species	DBH (in.)	Condition	Save/ Remove	Minimum Root Protection Zone (RPZ)	Notes	Work	Land-mark Tree?	Speci-men Tree?
3	OR White Oak	17	Good	Save	9		Crown Raise	No	Yes
4	OR White Oak	6-16	Fair	Save	8	4 stems	Crown Raise	No	Yes
5	OR White Oak	4,9	Fair	Save	6		Crown Raise	No	Yes
6	OR White Oak	15	Fair	Save	8		Crown Raise	No	Yes
7	OR White Oak	9,14	Fair	Save	8		Crown Raise	No	Yes
8	OR White Oak	15	Good	Save	8		Crown Raise	No	Yes
9	OR White Oak	12	Fair	Save	7		Crown Raise	No	Yes
10	OR White Oak	6	Fair	Save	5		Crown Raise	No	No
11	OR White Oak	7	Fair	Save	5		Crown Raise	No	No
12	OR White Oak	**17**	Good	Save	**9**		Crown Raise	No	Yes
13	OR White Oak	12	Fair	Save	**7**		Crown Raise	No	Yes
14	OR White Oak	9	Fair	Save	6		Crown Raise	No	No
17	OR White Oak	7	Fair	Save	5		Crown Raise	No	No
18	OR White Oak	17	Good	Save	9		Crown Raise	No	Yes
20	OR White Oak	7	Fair	Save	5		Crown Raise	No	No
21	OR White Oak	4	Fair	Save	4		Crown Raise	No	No
22	OR White Oak	14	Fair	Save	8		Crown Raise	No	Yes
23	OR White Oak	6-9	**Fair**	Save	8	3 stems	Crown Raise	No	Yes
24	OR White Oak	14	Fair	Save	8		Crown Raise	No	Yes
25	OR White Oak	17,18	Fair	Save	10		Crown Raise	Yes	Yes
26	OR White Oak	6,8	Good	Save	6		Crown Raise	No	Yes
27	OR White Oak	8,11	Good	Save	7		Crown Raise	No	Yes
28	OR White Oak	6	Fair	Save	5		Crown Raise	No	No
29	OR White Oak	9	Fair	Save	6		Crown Raise	No	No
30	OR White Oak	7	Fair	Save	5		Crown Raise	No	No

Tree #	Species	DBH (in.)	Condition	Save/ Remove	Minimum Root Protection Zone (RPZ)	Notes	Work	Land-mark Tree?	Speci-men Tree?
31	OR White Oak	3	Fair	Save	4		Crown Raise	No	No
32	OR White Oak	7	Fair	Save	5		Crown Raise	No	No
33	OR White Oak	7	Fair	Save	5		Crown Raise	No	No
34	OR White Oak	4	Fair	Save	4		Crown Raise	No	No
35	OR White Oak	6	Fair	Save	4		Crown Raise	No	No
38	OR White Oak	8,9	Fair	Save	6		Crown Raise	No	Yes
39	OR White Oak	8	Fair	Save	5		Crown Raise	No	No
40	OR White Oak	4,7	Fair	Save	5		Crown Raise	No	No
41	OR White Oak	6	Good	Save	4		Crown Raise	No	No
42	OR White Oak	6	Fair	Save	4		Crown Raise	No	No
43	OR White Oak	4	Fair	Save	4		Crown Raise	No	No
44	OR White Oak	12	Fair	Save	7		Crown Raise	No	Yes
45	OR White Oak	8	Fair	Save	6		Crown Raise	No	No
46	OR White Oak	6	Fair	Save	4		Crown Raise	No	No
48	OR White Oak	13	Fair	Save	7		None	No	Yes
49	OR White Oak	14	Fair	Save	8		None	No	Yes
50	OR White Oak	9	Fair	Save	5		None	No	No
51	OR White Oak	16	Fair	Save	9		None	No	Yes
52	OR White Oak	14,18	Fair	Save	10		None	Yes	Yes
53	OR White Oak	14	Fair	Save	8		None	No	Yes
54	OR White Oak	6	Fair	Save	4		None	No	No
55	OR White Oak	6-15	Fair	Save	8	3 stems	None	No	Yes
56	OR White Oak	14	Fair	Save	8		None	No	Yes
57	OR White Oak	6	Fair	Save	4		None	No	No
58	OR White Oak	6-16	Fair	Save	9	3 stems	None	No	Yes
59	OR White Oak	8	Fair	Save	5		None	No	No
60	OR White Oak	4	Fair	Save	4		None	No	No
61	OR White Oak	8	Fair	Save	5		None	No	No
62	OR White Oak	6	Fair	Save	4		None	No	No
63	OR White Oak	9	Fair	Save	5		None	No	No
64	OR White Oak	18	Fair	Save	10		None	No	Yes
65	OR White Oak	10	Fair	Save	6		None	No	No
67	OR White Oak	17	Fair	Save	9		None	No	Yes
70	OR White Oak	16	Fair	Save	9		None	No	Yes
71	OR White Oak	9	Fair	Save	5		None	No	No
72	OR White Oak	7	Fair	Save	4		None	No	No
74	OR White Oak	24	Fair	Save	14		None	Yes	Yes
75	OR White Oak	6,13	Fair	Save	8		None	No	Yes
76	OR White Oak	12	Fair	Save	7		None	No	Yes
77	OR White Oak	12	Fair	Save	7		None	No	Yes

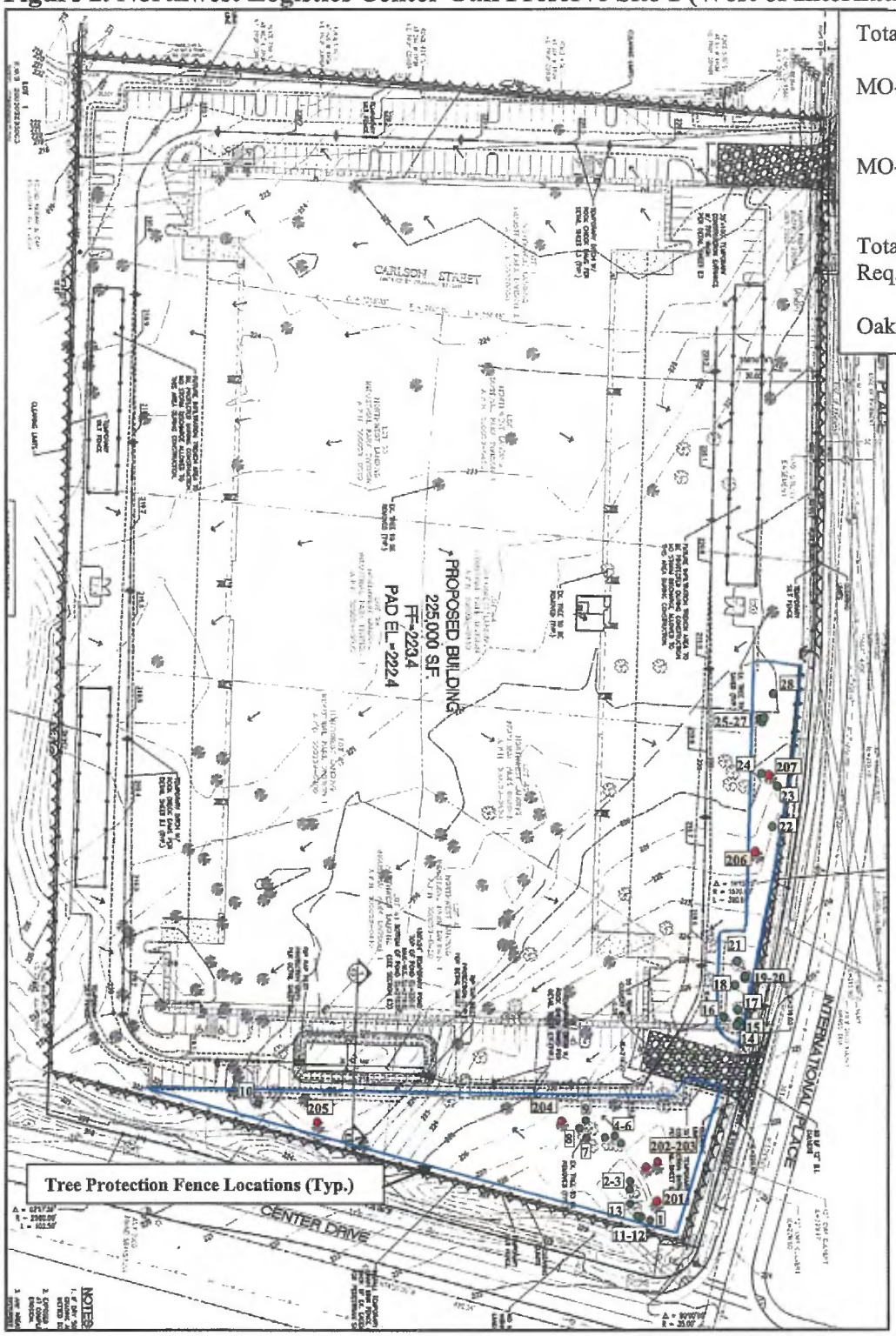
Tree #	Species	DBH (in.)	Condition	Save/ Remove	Minimum Root Protection Zone (RPZ)	Notes	Work	Land-mark Tree?	Speci-men Tree?
78	OR White Oak	13	Fair	Save	7		None	No	Yes
93	OR White Oak	15	Fair	Save	8		None	No	Yes
94	OR White Oak	10,19	Fair	Save	11		None	No	Yes
95	OR White Oak	6,9	Fair	Save	8		None	No	Yes
96	OR White Oak	12	Good	Save	6		None	No	Yes
97	OR White Oak	9	Good	Save	5		None	No	No
98	OR White Oak	13	Good	Save	7		None	No	Yes
99	OR White Oak	16	Good	Save	8		None	No	Yes
100	OR White Oak	10	Fair	Save	5		None	No	No
101	OR White Oak	14,16	Good	Save	9		None	Yes	Yes
102	OR White Oak	12	Fair	Save	6		None	No	Yes
103	OR White Oak	13	Good	Save	7		None	No	Yes
104	OR White Oak	8	Fair	Save	4		None	No	No
105	OR White Oak	8	Fair	Save	4		None	No	No
106	OR White Oak	10,17	Good	Save	9		None	No	Yes
107	OR White Oak	5	Good	Save	4		None	No	No
108	OR White Oak	8	Good	Save	8		None	No	No
109	OR White Oak	3,3	Fair	Save	5		None	No	No
110	OR White Oak	3	Fair	Save	5		None	No	No
111	OR White Oak	3	Fair	Save	5		None	No	No
112	OR White Oak	3	Fair	Save	5		None	No	No
113	OR White Oak	4	Fair	Save	7		None	No	No
114	OR White Oak	3-7	Poor	Save	5		None	No	No
115	OR White Oak	3	Fair	Save	5		None	No	No
116	OR White Oak	3	Fair	Save	5		None	No	No

Table 4. List of Douglas fir trees requiring removal on NW Logistics Center Oak Preserve Site 2 (East of International Place)

Tree #	Species	DBH (in.)	Height (ft)	Condition	Crown Position	Save/ Remove	Work	Landmark Tree?	Specimen Tree?
200	Douglas fir	25	100	Good	Dominant	Remove	Remove	No	Yes
201	Douglas fir	14	40	Good	Intermediate	Remove	Remove	No	No
202	Douglas fir	17	75	Good	Intermediate	Remove	Remove	No	Yes
203	Douglas fir	25	100	Good	Dominant	Remove	Remove	No	Yes
204	Douglas fir	18	85	Good	Co-dominant	Remove	Remove	No	Yes
205	Douglas fir	29	130	Good	Dominant	Remove	Remove	No	Yes
206	Douglas fir	26	70	Poor	Co-dominant	Remove	Remove	No	Yes
207	Douglas fir	12	40	Good	Intermediate	Remove	Remove	No	No
208	Douglas fir	29	125	Fair	Dominant	Remove	Remove	No	Yes
209	Douglas fir	20	80	Fair	Co-dominant	Remove	Remove	No	Yes

APPENDIX II

Figure 2. Northwest Logistics Center Oak Preserve Site 1 (West of International Center)



Total Area MO-17A: 135,998 ft^2

MO-17A Required to be Retained: 27,200 ft^2

MO-17A Planned to Retain: 54,241 ft^2

Total Existing Oaks: 56

Req. Canopy Retention: 20% (11 trees)

Oaks to be Saved: 28

Figure 3. Northwest Logistics Center Oak Preserve Site 2 (East of International Pl.)

APPENDIX III

Glossary of Forestry and Arboricultural Terminology

Critical Root Protection Zone (RPZ): Area within the dripline of the subject tree plus 5 feet.

Dripline: Tips of the outer most branches of the subject tree. In the case of a cluster or grove of oaks with crown intermingled, use the tips of the outer most trees of the edge trees to determine the dripline.

DBH: Diameter at Breast Height (measured 4.5 ft. above the ground line on the high side of the tree).

Live Crown Ratio: Ratio of live foliage on the stem of the tree. Example: A 100' tall tree with 40 feet of live crown would have a 40% live crown ratio. Conifers with less than 30% live crown ratio are generally not considered to be long-term trees in forestry.

Crown: Portion of a trees stem covered by live foliage.

Crown Position: Position of the crown with respect to other trees in the stand.

Dominant Crown Position: Receives light from above and from the sides.

Codominant Crown Position: Receives light from above and some from the sides.

Intermediate Crown Position: Receives little light from above and none from the sides. Trees tend to be slender with poor live crown ratios.

Suppressed Crown Position: Receives no light from above and none from the sides. Trees tend to be slender with poor live crown ratios.

Individual Tree Condition Ratings Key

RATING	DEFINITION
Very Good	• Balanced crown that is characteristic of the species • Normal lateral and terminal branch growth rates for the species and soil type • Stem sound, normal bark vigor • No root problems • No insect or disease problems • Long-term, attractive tree
Good	• Crown lacking symmetry but nearly balanced • Normal lateral and terminal branch growth rates for the species and soil type • Minor twig dieback O.K. • Stem sound, normal bark vigor • No root problems • No or minor insect or disease problems – insignificant • Long-term tree
Fair	• Crown lacking symmetry due to branch loss • Slow lateral and terminal branch growth rates for the species and soil type • Minor and major twig dieback – starting to decline • Stem partly unsound, slow diameter growth and low bark vigor • Minor root problems • Minor insect or disease problems • Life expectancy of 15-30 years
Poor	• Major branch loss – unsymmetrical crown • Greatly reduced growth • Several structurally import dead or branch scaffold branches • Stem has bark loss and significant decay with poor bark vigor • Root damage • Insect or disease problems – remedy required • Short-term tree 1-15 years
Very Poor	• Lacking adequate live crown for survival and growth • Severe decline • Minor and major twig dieback • Stem unsound, bark sloughing, previous stem or large branch failures, very poor bark vigor • Severe root problems or disease • No or minor insect or disease problems • Mortality expected within the next few years
Dead	• Dead

Cultural Care Needs Descriptions

ACTIVITY	DESCRIPTION
Crown Cleaning	Pruning of dead, dying, diseased, damaged, or defective branches over 1/2 inch in diameter – includes removal of dead tops
Crown Thinning	Pruning of branches described in crown cleaning, plus thinning of up to 20% of the live branches over ½ inch diameter. Branch should be 1/3 to ½ the diameter of the lateral branch. Thinning should be well distributed throughout crown of tree, and should release healthy, long-term branches.
Crown Reduction	Reduction of the crown of a tree by pruning to lateral branches. Generally used to remove declining branches or to lighten end weight on long branches.
Crown Raising	Pruning of lower branches to remove deadwood or to provide ground or building clearances.
Remove	Remove tree due to decline or hazardous conditions that cannot be mitigated by pruning.
Remove Sprouts	Remove basal sprouts from stem of tree.
Replace	Tree is small – is in decline or dead. Replace with suitable tree species.
Hazard Tree	Tree is hazardous and cannot be mitigated by pruning. Recommendation is to remove tree.
None	No work necessary at this time.

APPENDIX IV

Assumptions and Limiting Conditions

1) Any legal description provided to the Washington Forestry Consultants, Inc. is assumed to be correct. Any titles and ownership's to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

2) It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations, unless otherwise stated.

3) Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, Washington Forestry Consultants, Inc. can neither guarantee nor be responsible for the accuracy of information.

4) Washington Forestry Consultants, Inc. shall not be required to give testimony or to attend court by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services as described in the fee schedule and contract of engagement.

5) Loss or alteration of any part of this report invalidated the entire report.

6) Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of Washington Forestry Consultants, Inc..

7) Neither all or any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales or other media, without the prior expressed written or verbal consent of Washington Forestry Consultants, Inc. -- particularly as to value conclusions, identity of Washington Forestry Consultants, Inc., or any reference to any professional society or to any initialed designation conferred upon Washington Forestry Consultants, Inc. as stated in its qualifications.

8) This report and any values expressed herein represent the opinion of Washington Forestry Consultants, Inc., and the fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding in to reported.

9) Sketches, diagrams, graphs, and photographs in this report, being intended as visual aids, are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.

10) Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed of implied, that problems or deficiencies of the tree or other plant or property in question may not arise in the future.

Note: Even healthy trees can fail under normal or storm conditions. The only way to eliminate all risk is to remove all trees within reach of all targets. Annual monitoring by an ISA Certified Arborist or Certified Forester will reduce the potential of tree failures. It is impossible to predict with certainty that a tree will stand or fail, or the timing of the failure. It is considered an 'Act of God' when a tree fails, unless it is directly felled or pushed over by man's actions.

TREE RETENTION PLAN

NORTHWEST LOGISTICS CENTER 2

PORTIONS OF THE SE 1/4 OF THE SW 1/4 SECTION 24, TOWNSHIP 19 NORTH, RANGE 1 EAST,
AND THE NE 1/4 OF THE NW 1/4 SECTION 25, TOWNSHIP 19 NORTH, RANGE 1 EAST, W.M.
CITY OF DUPONT, PIERCE COUNTY, STATE OF WASHINGTON

1"=60'

0 30 60 120

OAK MANAGEMENT MAPPING UNIT AREA

APPROXIMATE MO-17A AREA LOCATED ON SITE = 348,130 SF

MO-17A AREA REQUIRED TO BE RETAINED = 20% = 69,626 SF

MO-17A AREA PROPOSED TO REMAIN = 79,607 SF = 22.9%

TREE RETENTION CALC.

TOTAL EXISTING OAKS = 580

REQUIRED CANOPY RETENTION = 20%

20% x 580 TREES = 116 TREES±

OAK TREES TO BE SAVED = 119

RECEIVED
APR 19 2018
CITY OF DUPONT

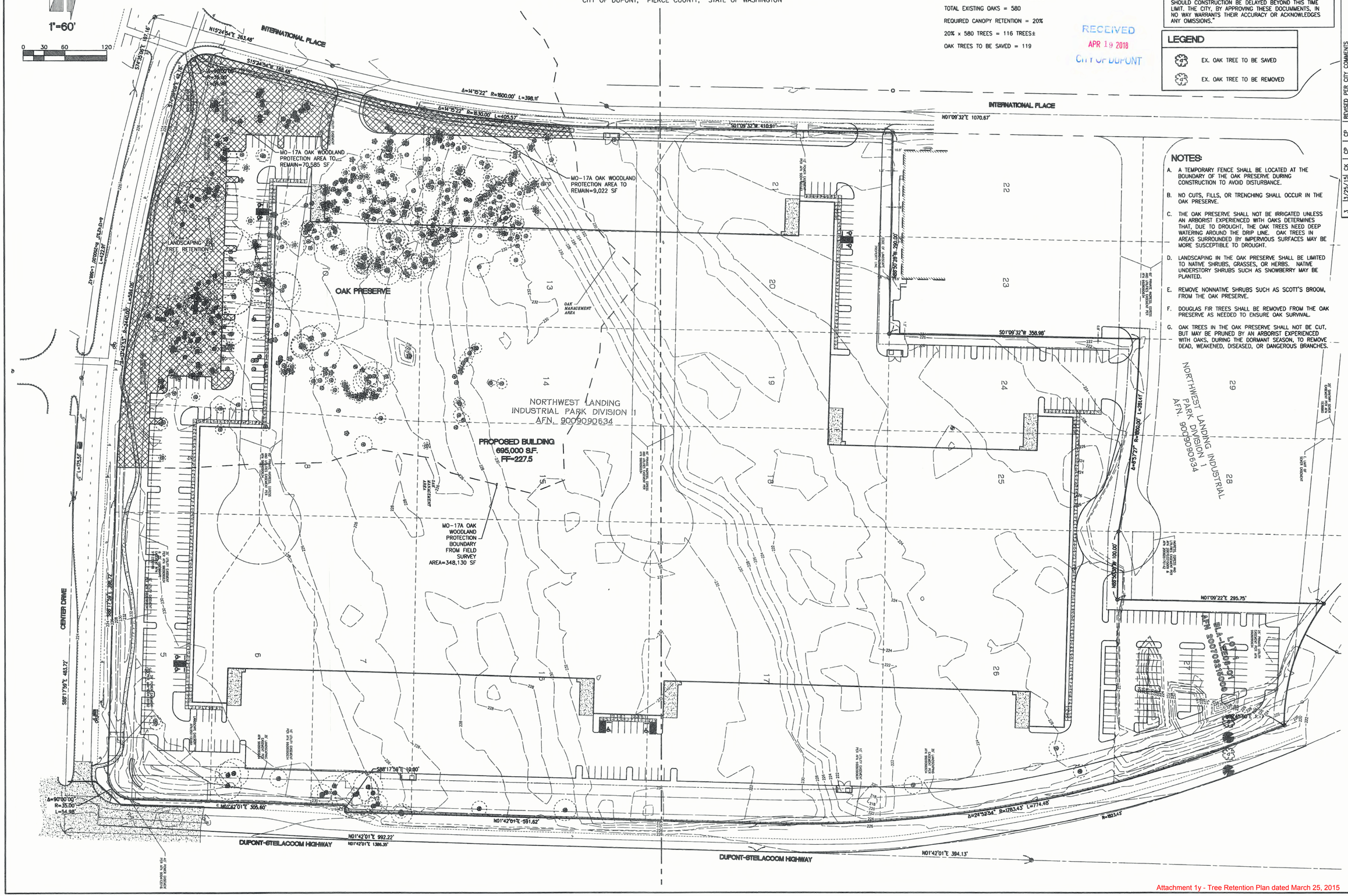
"APPROVED FOR CONSTRUCTION"
BY: [signature]
DATE: 3/26/15
CITY OF DUPONT

"THESE DRAWINGS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12 MONTHS FROM THE DATE SHOWN HEREON. THE CITY RESERVES THE RIGHT TO MAKE MODIFICATIONS SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT. THE CITY, BY APPROVING THESE DOCUMENTS, IN NO WAY WARRANTS THEIR ACCURACY OR ACKNOWLEDGES ANY OMISSIONS."

LEGEND

EX. OAK TREE TO BE SAVED

EX. OAK TREE TO BE REMOVED



NOTES:

A. A TEMPORARY FENCE SHALL BE LOCATED AT THE BOUNDARY OF THE OAK PRESERVE DURING CONSTRUCTION TO AVOID DISTURBANCE.

B. NO CUTS, FILLS, OR TRENCHING SHALL OCCUR IN THE OAK PRESERVE.

C. THE OAK PRESERVE SHALL NOT BE IRRIGATED UNLESS AN ARBORIST EXPERIENCED WITH OAKS DETERMINES THAT, DUE TO DROUGHT, THE OAK TREES NEED DEEP WATERING AROUND THE DRIP LINE. OAK TREES IN AREAS SURROUNDED BY IMPERVIOUS SURFACES MAY BE MORE SUSCEPTIBLE TO DROUGHT.

D. LANDSCAPING IN THE OAK PRESERVE SHALL BE LIMITED TO NATIVE SHRUBS, GRASSES, OR HERBS. NATIVE UNDERSTORY SHRUBS SUCH AS SNOWBERRY MAY BE PLANTED.

E. REMOVE NONNATIVE SHRUBS SUCH AS SCOTT'S BROOM, FROM THE OAK PRESERVE.

F. DOUGLAS FIR TREES SHALL BE REMOVED FROM THE OAK PRESERVE AS NEEDED TO ENSURE OAK SURVIVAL.

G. OAK TREES IN THE OAK PRESERVE SHALL NOT BE CUT, BUT MAY BE PRUNED BY AN ARBORIST EXPERIENCED WITH OAKS, DURING THE DORMANT SEASON, TO REMOVE DEAD, WEAKENED, DISEASED, OR DANGEROUS BRANCHES.

No.	Date	By	Cked.	Appr.	Revision
3	3/25/15	CK	CP	CP	REVISED PER CITY COMMENTS

Title: TREE RETENTION PLAN
NORTHWEST LOGISTICS CENTER 2

For:
ISLERO, LLC
P.O. BOX 110997
TACOMA, WA 98411-0997
CONTACT: ANGELO IANELLO

COSTA PHILIPPIDES
STATE OF WASHINGTON
38375
REGISTERED PROFESSIONAL ENGINEER
3/25/2015

Scale: Horizontal 1"=60' Vertical N/A

Designed CP
Drawn CK
Checked CP
Approved DKB
Date 01/10/13

18215 72ND AVENUE SOUTH
KENT, WA 98032
(425)251-6222
(425)251-8782 FAX
CIVIL ENGINEERING, LAND PLANNING, SURVEYING, ENVIRONMENTAL SERVICES
BARGHAUSEN CONSULTING ENGINEERS, INC.

Job Number 15753

Sheet E5 of 5

File:P:\15000s\15753\engineering\TESC\15753-etree.dwg Date/Time:3/23/2015 10:58 AM Scale:1:1 CPHILIPPIDES Xref: ----

Attachment 1y - Tree Retention Plan dated March 25, 2015

Unique History … Vibrant Future

CITY OF DUPONT

Department of Community Development
1700 Civic Drive, DuPont, WA 98327
Telephone: (253) 964-8121
www.dupontwa.gov

May 3, 2018

Dan Balmelli
Barghausen Consulting Engineers
18215 72nd Avenue South
Kent, WA 98032

Subject: Northwest Logistics Center Phase II
Type I Minor Amendment to Site Plan and Environmental Determination (PLNG 2018-012 and -013)
Notice of Complete Application

Dear Mr. Balmelli,

On April 19, 2018 the City received the following additional plans and documents to be included in your March 13, 2018 Type I Minor Amendment to Site Plan and SEPA Environmental Review Application:

- Revised Environmental Checklist dated February 28, 2018
- Sewer Service Availability from Pierce County Public Works and Utility dated March 20, 2013
- LeMay, Inc Refuse Enclosure Location Approval E-mail dated April 13, 2018
- Revised Tree Plan prepared by Washington Forestry Consultants, Inc. dated October 23, 2013
- Tree Retention Plan prepared by Barghausen Consulting Engineers dated March 25, 2015 and approved by City on March 26, 2015

The application has been deemed complete for processing. We have evaluated your proposal against the prior 2015 SEPA Determination issued in 2015:

NW Logistics SEPA Analysis of Current vs. Previous Proposal			
	2015 SEPA	**Current SEPA Checklist***	**Notes**
Bldg size	695,000 SF	586,025 SF	Reduction
Cut/fill quantities	81,137 CY cut65,262 CY fil	68,000 CY cut 63,000 CY fill Includes previously graded quantities	Within the range
Parking quantities	384	384 vehicles plus 152 trailers	Same vehicles but 152 trailers added
Impervious surface	82%	78.5%	Reduction

The differences in the proposal will not require issuance of a new or modified SEPA Determination. Accordingly, per DMC 25.175.010.7(b), publication of a Notice of Application is not required.

Attachment 2a - Notice of Complete Application

We will notify you through the review process if we require additional information. If you have any questions, please call me at 253.912.5393, or email me at jwilson@dupontwa.gov.

Sincerely,

Jeffrey S. Wilson

Jeffrey S. Wilson, AICP
Director of Community Development

Cc: File No. PLNG2018-012
DuPont Real Estate, LLC
Bill Anderson, City of DuPont Building Official
Mike Turner, City of DuPont Fire Marshal
Fred Foreman, City of DuPont Public Works
Scott Hein, City of DuPont Public Works
Dominic Miller, Gray & Osborne, Inc. (representing the City of DuPont)
Lisa Klein, AHBL, Inc. (representing the City of DuPont)

NW Logistics Center II Warehouse Land Use Application
DuPont File No. ADM 13-01
Staff Report
March 12, 2015

I. FINDINGS

A. REQUEST

On March 20, 2013, Barghausen Consulting Engineers, on behalf of Mr. Nick Griot, filed a Type II administrative land use application with the City of DuPont to construct a 695,000 square foot (SF) warehouse on a 32 acre site (**Exhibit 1**).

B. LOCATION OF PROJECT

The vacant site is located at the northeast corner of Center Drive and International Place, Pierce County Assessor's Parcel Numbers 300039-0010 through 0210 and 300039-0240 through 0270.

C. LAND USE PROCESS

The site is designated Industrial by the DuPont Comprehensive Plan and zoned Industrial by the DuPont Zoning Map. Warehouses are a permitted use in the Industrial zone per DuPont Municipal Code (DMC) 25.50.020(1)(f) with a Type II administrative land use process per DMC 25.50.040. The Applicant submitted Type II land use application March 20, 2013, which was determined complete for processing March 25, 2013

D. PUBLIC NOTICES

Notice of the land use application was issued March 27, 2013, with close of the comment period on April 26, 2013. No comments were submitted.

E. STATE ENVIRONMENTAL POLICY ACT (SEPA)

The City of DuPont SEPA Responsible Official issued an environmental decision for the application February 10, 2015 (**Exhibit 2**). The comment period closed February 24, 2015**. No comments were received.** The appeal period closed March 11, 2015. **No appeals were filed.**

F. CONSISTENCY WITH DuPONT COMPREHENSIVE PLAN GOALS AND POLICIES

The DuPont Comprehensive Plan designates the property as Industrial. The DuPont Zoning Map zones the property as Industrial Applicable Comprehensive Plan policies are stated below.

CF-1: "Concurrency for the provision of roads, water system extensions, waste water system extensions, schools, fire protection, and parks shall mean that they are in place at the time of occupancy of the housing and/or businesses to be served."

In response, public facilities and services necessary to serve the development will be provided by the Developer in order to meet adopted lever of service standards.

CF-3: “Require all development projects, both public and private, to demonstrate that there are adequate public facilities and infrastructure to support the project or to demonstrate how such facilities will be provided as part of the project.”

In response, adequate public facilities and infrastructure are either presently installed or will be installed by the Developer as part of the project.

CF-5: “Require wastewater system extensions to continue to connect to the County’s treatment facility to accommodate all new development.”

In response, wastewater from the subject site is proposed to connect to Pierce County’s sewer treatment facility. The Applicant shall provide proof of Pierce County Utility permits for sewer service prior to issuance of DuPont building and civil construction permits for the subject project per SEPA Mitigation Measure #13.

CF-6: “Require new developments to incorporate appropriate on-site storm-water facilities or connect to regional facilities in order to prevent pollution, siltation, erosion, flooding and other surface water degradation.”

In response, development proposes four onsite drainage basins. Each will collect, treat, and infiltrate all stormwater consistent with the 2005 Department of Ecology Stormwater Management Manual for Western Washington, Volume III, which was adopted by DuPont. No storm drainage will be directed off the site.

U-3.3: “Require all new development to have sanitary sewer service.”

In response, the Applicant shall provide proof of Pierce County Utility permits for sewer service prior to issuance of DuPont building permit for the project.

U-4.4: “New construction should be designed so that peak storm water discharge is no greater than the discharge was prior to any previous or supposed development.”

In response, the submitted Preliminary Stormwater Site Plan states the site will not release any stormwater off the site, matching the pre-development conditions, consistent with the applicable regulatory document, the 2005 Department of Ecology Stormwater Management Manual for Western Washington, Volume III.

G. PLANNING COMMENTS

Planning reviewed the land use applications and recommend the application be approved with the following conditions:

1. Full implementation of the project SEPA decision dated February 10, 2015.

2. Full implementation of the Revised Tree Plan dated February 14, 2014.

3. All interior lot lines shall be eliminated prior to issuance of the building permit.

4. All unused private access easements shall be extinguished prior to issuance of the building permit.

5. Signs require separate permits.

H. ENGINEERING COMMENTS

Engineering reviewed the land use and recommend:

1. DMC 25.50.030(3) states “no structure shall be closer than 15 feet to the property line. Any building wall over 40 feet high shall be set back at least an additional 1 foot for each foot in height over 40 feet.” At a proposed 44 foot building height, the refuse enclosure along International Place shall be relocated to provide a 19 foot (15 feet + 4 feet) clear from the International Place ROW.

I. FIRE DEPARTMENT COMMENTS

Fire reviewed the land use application recommend it be approved as submitted without conditions.

J. BUILDING DEPARTMENT COMMENTS

Building reviewed the land use application and recommend:

1. The project will be required to receive land use and grading/civil construction approvals prior to issuance of building permit for the proposed structure.

2. The structure will be required to comply with the requirements of the building construction codes that are in effect at the time of building permit application submittal. The following codes are currently enforced by the City of DuPont: the 2009 International Building Code, the 2009 International Residential Code, the 2009 International Fire Code, the 2009 International Mechanical Code, the 2009 International Fuel Gas Code, the 2009 Uniform Plumbing Code (each as amended and adopted by the State of Washington); and the 2009 Washington State Energy Code. Be advised the 2012 editions of the aforementioned Codes are expected be in effect July 1, 2013. Permit applications received after June 30, 2013 will be required to adhere to the Editions of the Codes as amended and adopted by the State of Washington.

3. The accessibility requirements of WAC 51-50-005 (or State adopted edition at permit submittal date) must be incorporated into the construction plans for the site and related structure, to include, but not be limited to the provision for accessible parking spaces, and provisions for accessible route(s) of travel within the site and providing connectivity with adjacent improvements.

4. Separate Building, Plumbing, and Mechanical Permits will be required for the structure associated with the development project. Plans showing the details for construction for each shall be submitted to the city for review and approval

prior to permit issuance. (Note: Electrical permits may be obtained through Wa. St. L&I.; sewer service and permitting through Pierce County Utilities.)

5. Separate Fire Suppression, Fire Alarm and Underground Fire service permits for the proposed structure will be required, review and inspection by the Dupont Fire Department.
6. The project will be required to comply with the DuPont Fire Departments requirements for emergency service access, fire-flow requirements, etc., as may be identified.

7. Prior to issuance of a building permit for the structure, the applicant will be required to provide a copy of Pierce County Sewer Service Permit for city record. (Please note that Pierce County Sewer Utility requires a pre-treatment review and approval be completed prior to their issuance of service connection permit. Additionally, where sewer connection is provided to a shell building, each subsequent tenant must also complete a pre-treatment review with the utility, and must provide copy of sewer service permitting, where applicable, prior to obtaining a building permit for associated improvements.)

8. The local fire suppression requirements contained in the DMC shall not reduce the ability to utilize available fire-resistive substitution provisions contained in the Building Code.

9. Permit forms and other information may be obtained either at city hall or may be downloaded through the city's website. Assistance in completing applications is available by calling the permitting staff.

10. The project must comply with the requirements for GIS as-built drawings contained in DMC Chapter 24.09. As-built drawings and submittals shall be submitted and approved prior to issuance of a Certificate of Occupancy for the building, or portions thereof.

11. Building addressing will be assigned as the project scope and planning progress.

12. Per WAC 51-50-009, Recyclable Materials and Solid Waste Storage, (code citation included in the Washington State Amendments to the IBC) " All local jurisdictions shall require that space be provided for storage of recycled materials and solid waste for all new buildings" that is "designed to meet the needs of the occupancy, efficiency of pick-up, and shall be available to occupants and haulers." The trash enclosure shown on Sheet C2 shall be sized to include containers for storage of refuse and recyclable waste.

13. Interior Lot lines and easements are to be eliminated and recorded prior to Building Permit approval.

14. Pursuant to RCW 19.122.033, the applicant shall consult with all utility and pipeline companies.

K. CONSISTENCY WITH DUPONT MUNICIPAL CODE DECISIONAL CRITERIA FOR TYPE II LAND USE APPLICATIONS

The application is processed with a Type II procedure as discussed in this report. Type II decisional criteria are contained in DMC 25.175.040. Each criteria and staff response is listed below.

1. The type of land use permitted at the site, including uses that may be allowed if the criteria for their approval have been satisfied.

   Staff Response: The proposed use, warehouse, is a permitted use in the Industrial zone per DMC 25.50.020(1)(f).

2. The level of development, such as units per acre, density of residential development in urban growth areas, or other measures of density.

   Staff Response: The proposed level of development is consistent with applicable development requirements including building setback, building height, lot coverage, oak tree preserve, landscaping, parking, right-of-way improvements, and drainage.

3. Availability and adequacy of infrastructure and public facilities identified in the comprehensive plan.

   Staff Response: The City Engineer examined the application and determined the proposed infrastructure improvements adequately address infrastructure demands generated by the proposal. No school impacts are anticipated as no children will reside in the warehouse.

4. Whether the plan or development regulations provide for funding of these facilities as required by Chapter 36.70A RCW.

   Staff Response: The Developer will submit construction permits, pay all applicable fees and construct all necessary utility extensions to serve the development at their cost. City funds will not be used to construct the project.

5. The character of the proposed development, as authorized by development standards.

   Staff Response: The project complies with zoning and development regulations stated in Title 25, Land Use.

II. CONCLUSIONS

Any findings that may be deemed to be conclusions are incorporated herein by reference. The application will be consistent with the DuPont Municipal Code if approved with the recommended conditions contained in this report.

III. RECOMMENDATION

Based on the findings and conclusions in this report, DuPont recommends approval of the Northwest Logistics Center II Warehouse land use application, DuPont File No. ADM 13-01, with the following conditions:

1. Full implementation of the project SEPA decision dated February 10, 2015.

2. Full implementation of the Revised Tree Plan dated February 14, 2014.

3. All interior lot lines shall be eliminated prior to issuance of the building permit.

4. All unused private access easements shall be extinguished prior to issuance of the building permit.

5. Signs require separate permits.

6. DMC 25.50.030(3) states "no structure shall be closer than 15 feet to the property line. Any building wall over 40 feet high shall be set back at least an additional 1 foot for each foot in height over 40 feet." At a proposed 44 foot building height, the refuse enclosure along International Place shall be relocated to provide a 19 foot (15 feet + 4 feet) clear from the International Place ROW.

7. The project will be required to receive land use and grading/civil construction approvals prior to issuance of building permit for the proposed structure.

8. The structure will be required to comply with the requirements of the building construction codes that are in effect at the time of building permit application submittal. The following codes are currently enforced by the City of DuPont: the 2009 International Building Code, the 2009 International Residential Code, the 2009 International Fire Code, the 2009 International Mechanical Code, the 2009 International Fuel Gas Code, the 2009 Uniform Plumbing Code (each as amended and adopted by the State of Washington); and the 2009 Washington State Energy Code. Be advised the 2012 editions of the aforementioned Codes are expected be in effect July 1, 2013. Permit applications received after June 30, 2013 will be required to adhere to the Editions of the Codes as amended and adopted by the State of Washington.

9. The accessibility requirements of WAC 51-50-005 (or State adopted edition at permit submittal date) must be incorporated into the construction plans for the site and related structure, to include, but not be limited to the provision for accessible parking spaces, and provisions for accessible route(s) of travel within the site and providing connectivity with adjacent improvements.

10. Separate Building, Plumbing, and Mechanical Permits will be required for the structure associated with the development project. Plans showing the details for construction for each shall be submitted to the city for review and approval

prior to permit issuance. (Note: Electrical permits may be obtained through Wa. St. L&I.; sewer service and permitting through Pierce County Utilities.)

11. Separate Fire Suppression, Fire Alarm and Underground Fire service permits for the proposed structure will be required, review and inspection by the Dupont Fire Department.

12. The project will be required to comply with the DuPont Fire Departments requirements for emergency service access, fire-flow requirements, etc., as may be identified.

13. Prior to issuance of a building permit for the structure, the applicant will be required to provide a copy of Pierce County Sewer Service Permit for city record. (Please note that Pierce County Sewer Utility requires a pre-treatment review and approval be completed prior to their issuance of service connection permit. Additionally, where sewer connection is provided to a shell building, each subsequent tenant must also complete a pre-treatment review with the utility, and must provide copy of sewer service permitting, where applicable, prior to obtaining a building permit for associated improvements.)

14. The local fire suppression requirements contained in the DMC shall not reduce the ability to utilize available fire-resistive substitution provisions contained in the Building Code.

15. Permit forms and other information may be obtained either at city hall or may be downloaded through the city's website. Assistance in completing applications is available by calling the permitting staff.

16. The project must comply with the requirements for GIS as-built drawings contained in DMC Chapter 24.09. As-built drawings and submittals shall be submitted and approved prior to issuance of a Certificate of Occupancy for the building, or portions thereof.

17. Building addressing will be assigned as the project scope and planning progress.

18. Per WAC 51-50-009, Recyclable Materials and Solid Waste Storage, (code citation included in the Washington State Amendments to the IBC) " All local jurisdictions shall require that space be provided for storage of recycled materials and solid waste for all new buildings" that is "designed to meet the needs of the occupancy, efficiency of pick-up, and shall be available to occupants and haulers." The trash enclosure shown on Sheet C2 shall be sized to include containers for storage of refuse and recyclable waste.

19. Interior Lot lines and easements are to be eliminated and recorded prior to Building Permit approval.

20. Pursuant to RCW 19.122.033, the applicant shall consult with all utility and pipeline companies.

Northwest Logistics Center II Warehouse Land Use Application Exhibit List

1. Land Use Application, File No. ADM 13-01
2. SEPA decision dated February 10, 2015

NW Logistics Center II
Type II Land Use Decision
DuPont File No. ADM 13-01

I. Summary of Decision

On March 20, 2013, Barghausen Consulting Engineers, on behalf of Mr. Nick Griot, filed a Type II land use application with the City of DuPont to construct a warehouse totaling approximately 695,000 square feet, storm drainage, parking, and landscaping on a 32 acre site. On march 25, 2013, the application was determined complete for processing. The application is hereby approved with the conditions noted below.

II. Summary of Procedure

a. DuPont Municipal Code (DMC) 25.210.030 requires a Notice of Application be issued for the application. On March 27, 2013, DuPont issued a Notice of Application with close of the comment period on April 26, 2013. No comments were received.

b. The City's Technical Review Committee reviewed the application. Comments were received from the City Engineer, Fire Department, Planning Division and Building Division.

c. State Environmental Policy Act review is required because the project is not categorically exempt from environmental review per WAC 197-11-800. The City of DuPont SEPA Responsible Official issued an environmental decision for the application February 10, 2015. The comment period closed February 24, 2015. **No comments were received.** The appeal period closed March 11, 2015. **No appeals were filed.**

d. The DuPont Planning Division issued a Staff Report dated March 12, 2015, which integrated relevant comments of City departments and recommends the land use application be approved with conditions.

f. The DuPont City Administrator reviewed the Staff Report dated March 12, 2015, and hereby adopts the Staff Report by reference.

III. Conclusions

g. The City Administrator has jurisdiction to rule on the Type II land use application pursuant to DMC 25.175.010(4).

h. The criteria for the City Administrator to consider in making a final deciding on a land use application are set forth in DMC 25.175.040.

i. The City Administrator concludes that the application will meet all applicable design and decisional criteria if the conditions recommended in the Staff Report are fully implemented.

IV. Decision

Based on the Staff Report dated March 12, 2015, related SEPA decision dated February 10, 2015, and the above conclusions, the NW Logistics Center II Type II land use application, City File Number ADM 13-01, is hereby APPROVED, subject to the following conditions:

1. Full implementation of the project SEPA decision dated February 10, 2015.

2. Full implementation of the Revised Tree Plan dated February 14, 2014.

3. All interior lot lines shall be eliminated prior to issuance of the building permit.

4. All unused private access easements shall be extinguished prior to issuance of the building permit.

5. Signs require separate permits.

6. DMC 25.50.030(3) states “no structure shall be closer than 15 feet to the property line. Any building wall over 40 feet high shall be set back at least an additional 1 foot for each foot in height over 40 feet.” At a proposed 44 foot building height, the refuse enclosure along International Place shall be relocated to provide a 19 foot (15 feet + 4 feet) clear from the International Place ROW.

7. The project will be required to receive land use and grading/civil construction approvals prior to issuance of building permit for the proposed structure.

8. The structure will be required to comply with the requirements of the building construction codes that are in effect at the time of building permit application submittal. The following codes are currently enforced by the City of DuPont: the 2009 International Building Code, the 2009 International Residential Code, the 2009 International Fire Code, the 2009 International Mechanical Code, the 2009 International Fuel Gas Code, the 2009 Uniform Plumbing Code (each as amended and adopted by the State of Washington); and the 2009 Washington State Energy Code. Be advised the 2012 editions of the aforementioned Codes are expected be in effect July 1, 2013. Permit applications received after June 30, 2013 will be required to adhere to the Editions of the Codes as amended and adopted by the State of Washington.

9. The accessibility requirements of WAC 51-50-005 (or State adopted edition at permit submittal date) must be incorporated into the construction plans for the site and related structure, to include, but not be limited to the provision for

accessible parking spaces, and provisions for accessible route(s) of travel within the site and providing connectivity with adjacent improvements.

10. Separate Building, Plumbing, and Mechanical Permits will be required for the structure associated with the development project. Plans showing the details for construction for each shall be submitted to the city for review and approval prior to permit issuance. (Note: Electrical permits may be obtained through Wa. St. L&I.; sewer service and permitting through Pierce County Utilities.)

11. Separate Fire Suppression, Fire Alarm and Underground Fire service permits for the proposed structure will be required, review and inspection by the Dupont Fire Department.

12. The project will be required to comply with the DuPont Fire Departments requirements for emergency service access, fire-flow requirements, etc., as may be identified.

13. Prior to issuance of a building permit for the structure, the applicant will be required to provide a copy of Pierce County Sewer Service Permit for city record. (Please note that Pierce County Sewer Utility requires a pre-treatment review and approval be completed prior to their issuance of service connection permit. Additionally, where sewer connection is provided to a shell building, each subsequent tenant must also complete a pre-treatment review with the utility, and must provide copy of sewer service permitting, where applicable, prior to obtaining a building permit for associated improvements.)

14. The local fire suppression requirements contained in the DMC shall not reduce the ability to utilize available fire-resistive substitution provisions contained in the Building Code.

15. Permit forms and other information may be obtained either at city hall or may be downloaded through the city's website. Assistance in completing applications is available by calling the permitting staff.

16. The project must comply with the requirements for GIS as-built drawings contained in DMC Chapter 24.09. As-built drawings and submittals shall be submitted and approved prior to issuance of a Certificate of Occupancy for the building, or portions thereof.

17. Building addressing will be assigned as the project scope and planning progress.

18. Per WAC 51-50-009, Recyclable Materials and Solid Waste Storage, (code citation included in the Washington State Amendments to the IBC) " All local jurisdictions shall require that space be provided for storage of recycled materials and solid waste for all new buildings" that is "designed to meet the needs of the occupancy, efficiency of pick-up, and shall be available to

occupants and haulers." The trash enclosure shown on Sheet C2 shall be sized to include containers for storage of refuse and recyclable waste.

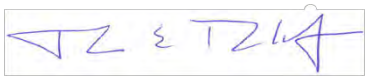
19. Interior Lot lines and easements are to be eliminated and recorded prior to Building Permit approval.

20. Pursuant to RCW 19.122.033, the applicant shall consult with all utility and pipeline companies.

V. Appeal of Decision

This final decision may be appealed to the DuPont Hearing Examiner by a party of record with standing per DMC 25.175.060(4). Such appeal shall be filed within 14 days of issuance of the decision per DMC 25.175.060(4).

Dated this 13 day of March, 2015



Thomas E. Danek, Jr., City Administrator

City of DuPont
State Environmental Policy Act
Mitigated Determination of Non-Significance

Northwest Logistics Center II
DuPont File No. SEPA 13-01

Description
Construct one warehouse totaling approximately 695,000 square feet, storm drainage, parking, and landscaping on a 32 acre site.

Applicant/Proponent
Dan Balmelli, Barghausen Consulting Engineers, Inc., 18215 72nd Avenue South, Kent, WA 98032, Agent for Nick Griot, Tacoma, WA.

Location
Northeast corner of International Place and Center Drive, Pierce County Assessor's Parcel Numbers 300039-0010 through 0210 and 300039-0240 through 0270.

Lead Agency
City of DuPont.

Findings

1. The Applicant submitted:
   a. Land Use Application received March 20, 2013,
   b. Revised SEPA Checklist signed September 17, 2013,
   c. Phase I Environmental Site Assessment Report dated June 26, 2012,
   d. Geotechnical Engineering Report dated June 19, 2012,
   e. Soil Sampling Results dated July 3, 2012,
   f. Preliminary Stormwater Site Plan dated March 5, 2013,
   g. Geotechnical Report dated May 27, 1999,
   h. Geotechnical Report dated June 19, 2012
   i. Revised Oak Tree Plan dated February 14, 2014,
   j. Traffic Impact Analysis dated April 2013,
   k. Traffic Impact Analysis revisions dated July 16, 2013,
   l. DuPont Water Availability Form,
   m. Title Report dated December 22, 2014,
   n. LeMay, Inc. email regarding refuse service dated December 4, 2014, and
   o. Pierce County Public Works and Utilities letter regarding Sewer Service Information dated March 20, 2013.

2. The subject site is composed of 25 separate and abutting parcels at the northeast corner of International Place and Center Drive, Pierce County Assessor's Parcel Numbers 300039-0010 through 0210 and 300039-0240 through 0270. All parcels are designated Industrial by the DuPont Comprehensive Plan and zoned Industrial by the DuPont Zoning Map. Warehouses are permitted in the Industrial zone per DuPont Municipal Code (DMC) 25.50.020. The Applicant will eliminate all interior property lines and shared access/utility easements prior to issuance of a building permit.

3. The Checklist states the steepest slopes on the site are approximately 8 percent, onsite soils are Spanaway gravelly sandy loam, there are no indications of unstable soils in the

immediate vicinity, approximately 81,137 cubic yards (CY) of cut material and 65,262 CY of fill material will be used to prepare the site for construction of site, and approximately 82 percent of the site will be covered with impervious surfaces upon completion of the project.

The Applicant submitted a document titled, *Phase I Environmental Site Assessment Report*, dated June 26, 2012.

In response, environmentally sensitive areas, as defined by the DuPont Municipal Code, have not been identified on or within 100 feet of the subject site. A grading permit will be required and a haul route provided to DuPont. DuPont requirements and best available management practices will be implemented with the grading permit, including testing all imported soils for arsenic and lead prior to arrival on the subject site following the directions of Chapter 10 of the Tacoma Smelter Plume *Model Remedies Guidance*.

4. The Applicant submitted a report titled, *Geotechnical Engineering Report*, dated June 19, 2012. The report states 12 test pits were dug between 8.5 and 12.5 feet deep, soil was categorized and determined suitable for proposed grading and light industrial structures. No groundwater was observed.

5. The Applicant submitted a report titled, *Soil Sampling Results*, dated July 3, 2012. The report stated 38 test pits were dug 0.5 feet deep and 12 pits were dug 1.0 feet deep. Soil samples were collected and sent to a laboratory for analysis of lead and arsenic. The report concludes concentrations of arsenic exceeding the MTCA Method A soil cleanup level were detected in soil samples collected at depths of 0 to 1 foot deep at 20 sample locations. Lead was not detected at concentrations above the MTCA Method A soil cleanup level.

   Ecology reviewed the SEPA Checklist and proposed cleanup plan, which was submitted directly to Ecology, and issued a letter dated November 24, 2014.

   In summary, the letter concludes:
   a. No further remedial action will likely be necessary at the property to clean up contamination associated with the site.
   b. Further remedial action will likely still be necessary elsewhere at the site, but no further remediation will be necessary for the property.

6. Sheet C1, Special Note #3 contains the following note, consistent with DMC 25.45.030(16), "No more than 20,000 pounds of hazardous substances or hazardous wastes may be stored onsite, and no hazardous substances or wastes may be stored onsite except that which is delivered for onsite operations or produced onsite consistent with DMC 25.45.030(16). Diesel fuel for onsite emergency generators is exempt from the requirement."

7. The Checklist states air emissions will occur from construction equipment and vehicles during operation of the facility. The Applicant is responsible for complying with all applicable federal, state and local standards governing air quality during construction and operation of the facility.

8. The Checklist states there are no surface water bodies on or in the immediate vicinity of the site, no work will be required in or adjacent to any waters, no fill or dredge material

will be placed in or removed from any surface waters, no surface water withdrawals or diversions are required, and the proposal is not within a 100-year flood plain.

In response, the Puget Sound Outfall, a man-made surface water conveyance feature, is located 100 feet north of the north property line of the subject site. No withdrawals or diversions of surface water are proposed. National Flood Insurance Program Flood Insurance Rate Map Community Panel No. 530245 0001 B, effective September 15, 1983, shows the subject site is located in Zone C. Zone C is an area of minimal flooding.

DuPont incorporated the FIRM map data into Figure 1-4, FEMA 100 Years Flood Plain Map, of the DuPont Water Comprehensive Plan. This map shows the subject site lying outside the 100 year flood plain.

9. The Checklist states no groundwater will be withdrawn, and water will be discharged into the ground via the proposed storm drainage infiltration facilities.

   The Applicant submitted a document titled, *Preliminary Stormwater Site Plan*, dated March 5, 2013. The document states there are four separate drainage basins on the site, following construction of the project there will be four underground infiltration systems on the site, and water quality will be provided via onsite filters. The storm drainage system is designed and will be constructed to the requirements of the DuPont Street Standards/DuPont Public Works Standards and 2005 Ecology Stormwater Management Manual for Western Washington Volume III.

   DuPont reviewed the application and recommend the following mitigation measure:

   a. The Applicant shall submit a Final Stormwater Site Plan to DuPont for the project for review and approval prior to issuance of a DuPont grading or civil construction permit.

10. The Checklist states trees are located on the site, a majority of vegetation will be removed for construction of the project and DuPont tree retention and landscape requirements will be met.

11. In response, the site contains evergreen and deciduous trees and native shrubs and groundcover. Total proposed landscape area is approximately 17% of the site. DuPont Municipal Code 25.90.020(2)(d) requires a minimum of 10% of the site be landscaped.

12. Sheet C9 indicates the site contains 580 oak trees. 119 oak trees are proposed to be saved. Landmark class trees on a parcel zoned Industrial, which this site is zoned, that are located inside a building footprint, parking lot or storm retention area may be removed provided tree retention is achieved along street boundaries, which the site abuts on two sides per DMC 25.120.030(2). The requirement is met.

    A 7.99 acre portion of Oak Management Mapping Unit MO-17a is located on southwest corner of the site. DMC 25.120.040 requires 20 percent of the 7.99 acres, or 1.59 acres minimum, be retained. Sheet C9 indicates 22.9 percent (1.82 acres) of the onsite portion of Unit MO-17a will be retained. The requirement is met.

    The Applicant submitted a Revised Tree Plan dated February 14, 2014 to demonstrate compliance with DMC 25.120.040 regarding applicable Oak Management Mapping Unit requirements. The submitted Plan was reviewed by the City's oak tree consultant.

DuPont reviewed the revised Tree Plan dated February 14, 2014, and recommend the following mitigation measure:

a. The Revised Tree Plan dated February 14, 2014, shall be fully implemented with construction of the site and the City Oak Tree Consultant shall monitor implementation of said plan at the Applicant's expense.

13. The Checklist states songbirds are located on the site, endangered species are not known to exist on the site and the site is part of the Pacific Flyway for migratory birds, and landscaping and tree retention will help preserve wildlife in the area.

    In response, Washington Department of Fish and Wildlife data indicates the site contains no priority habitats or species. The site is located within the Pacific Flyway, a major migratory bird route.

14. The Checklist states electricity will be used for lighting, natural gas will be used for heating and the building will meet all current energy code requirements.

15. The Checklist states the project will not create environmental health hazards other than fire, medical and police are already available in the area, and no specific mitigation measures are proposed.

    DuPont reviewed the application and recommend the following mitigation measure:

    a. The Applicant shall pay the City of DuPont fire impact fee totaling $86,732.62 at time of building permit issuance as required by DMC 26.05 ($2,696.91 per acre impact fee X 32.16 acre site size).

16. The Checklist states noise will occur from construction and operation of the facility. The Applicant is responsible for complying with all applicable federal, state and local standards governing air quality during construction and operation of the facility.

17. The Checklist states the project will provide jobs for approximately 100 to 200 people. Any business with more than 100 employees shall contact Pierce Transit to determine if compliance with the Commute Trip Reduction Act is necessary, and if so, shall participate in the program as required by DMC 25.75. A note to consistent with this requirement is shown on Sheet C1, Special Note #4.

18. The Checklist states the building will be approximately 38 feet tall and constructed of concrete and glass. Maximum building height is limited to 65 feet per DMC 25.50.030(4).

19. Exterior building illumination and parking lot lighting are not shown on the submitted drawings. Full cut-offs are necessary for all lighting to reduce off site glare consistent with DMC 25.45.010.

    DuPont reviewed the application and recommend the following mitigation measure:

    a. Full cut-offs shall be provided for all exterior lighting to reduce off site glare consistent with DMC 25.45.010.

20. The Checklist states there are no known archaeological or culturally important sites on or next to the site. A Cultural Resource Assessment was not submitted for the site.

In response, it is well documented that DuPont contains a wide variety of historic and prehistoric cultural resources. It is possible that not all cultural resources have been found. Weyerhaeuser Real Estate entered into two Memorandums of Agreement (MOA). The first MOA, dated August 7, 1989, is between Weyerhaeuser Real Estate Company (WRECO), the City of DuPont and the Washington State Historic Preservation Officer regarding the discovery of cultural resources within the City of DuPont. The second MOA, dated October 20, 1988, is between WRECO and the Nisqually Tribe to provide for the establishment of a cemetery for reburial of Native American remains.

DuPont reviewed the application and recommend the following mitigation measures:

a. The Applicant shall fully implement the Memo of Agreement dated August 7, 1989, between Weyerhaeuser Real Estate Company (WRECO), the City of DuPont and the Washington State Historic Preservation Officer regarding the discovery of cultural resources within the City of DuPont, customary professional standards for archaeology, and applicable state and federal laws.
b. The Applicant shall provide a professional archaeologist from the State Historic Preservation list to monitor onsite soil disturbance activities.
c. The Project Archaeologist shall notify and allow a Nisqually Indian Tribe representative to be present during soil disturbance activities.
d. The Project Archaeologist shall notify the Nisqually Indian Tribal representative if Native American cultural resources are discovered during any soil disturbance activities. Construction activities that may disturb or affect such resources are to stop until the Tribal representative has had the opportunity to examine the find.
e. If the Tribal representative cannot be reached through reasonable efforts or does not come to the construction site within a reasonable period of time after being notified, construction does not need to stop. However, archaeological work shall follow the 1989 Memo of Agreement, customary professional standards for archaeology, and applicable state and federal laws.
f. The City of DuPont requests Native American artifacts recovered during construction activities be donated to the Nisqually Indian Tribe. Hudson's Bay Company-era artifacts shall be donated to the Fort Nisqually Living History Museum, located in the City of Tacoma's Point Defiance Park. DuPont-era artifacts shall be donated to the DuPont Historical Museum.
g. The Project Archaeologist shall forward a closing report to the City of DuPont. The report shall discuss contact with the Nisqually Indian Tribe, implemented procedures and observed conditions and be submitted prior to the permanent Certificate of Occupancy.

21. The Checklist states: vehicular access will be provided by two driveways from abutting International Place, a public street; approximately 384 parking stalls will be provided, and approximately 1,000 to 2,000 vehicle trips per day will be generated by the project.

The Applicant submitted a document titled, *Northwest Logistics Center DuPont Building 2 Traffic Impact Analysis, prepared by Heath & Associates,* dated April 2013. The Traffic Impact Analysis (TIA) states project vehicle trip generation is based on a high cube warehouse land use with roughly 1,168 vehicle trips on a typical weekday, 76 trips during the AM peak, and 83 trips during the PM peak hour.

The TIA concludes pedestrian/bicyclist traffic along the area roadways is presently mild, with possible increases during warmer seasons. Sight distance at the project entrances should be adequate. Some increases in delay may be expected due to the addition of project traffic.

The TIA concludes the intersection of DuPont-Steilacoom Road & Center Drive may reach approach delays of LOS F during the AM peak hour without or with project traffic included under existing signal cycle lengths. Future AM delays with the project could be reduced to LOS D overall assuming cycle length optimization to account for the heavy pipeline volume increase.

The TIA concludes DuPont-Steilacoom Road & Barksdale Avenue may have some approach delays of LOS E during the AM peak hour due to difficult volume balancing.

The TIA concludes some delays at the Barksdale/I-5 interchange could be expected to reach LOS F levels by 2015 without project traffic included. Improvements at this interchange are planned by WSDOT as part of regional I-5 corridor improvements generally outlined in the I-5 Fort Lewis/McCord Transportation Analysis.

The TIA recommend proposed mitigation at this time including installation of a signal at the Center Drive & International Place intersection. Installation and costs should be coordinated among developers of new projects on International Place.

The TIA revisions letter dated July 16, 2013 from Heath and Associates, Inc., provided a revised signalized AM peak LOS analysis for the Center Drive/DuPont Steilacoom Road intersection. The revised LOS analysis indicates eastbound peak hour factors to 0.89 and optimizes timing, results in LOS D for overall delays.

The TIA revisions letter dated July 16, 2013, provided a revised AM peak LOS analysis for the Barksdale Avenue/DuPont Steilacoom Road intersection. The revised LOS indicates increased peak hour factors of 0.89 for the westbound and northbound approaches, a free westbound to northbound right turn movement, and optimized timing while trying to limit westbound queues. The results under these assumptions are LOS C overall.

The TIA revisions letter dated July 16, 2013, analyzed Manual of Uniform Traffic Control Devices Signal Warrants 1 & 2 for future 2015 conditions of the Center Drive/international Place intersection with the project but without JBLM pipeline traffic. Assumptions were made for the 4th and 8th hour based on their proportions to the PM peak hours as taken from the hourly tube count volumes on Center Drive provided by the City. Based on the tube count data of Center Drive, the 4th highest hour has approximately 77% of the peak hour volumes, while the 8th highest hour has approximately 50% of the peak hour volumes. These values were used to approximate 4th and 8th hour volumes for the Center Drive/International Place intersection, and applied to the analysis of Warrants 1 & 2. The volumes would be met for Condition A and minor street volumes met for Condition B. Warrant 2 (2 hour volume) would be met. In addition, Warrant 3 is met for the PM peak hour.

The TIA and revision analyzed the LOS at the Center Drive/International Place, DuPont-Steilacoom Road/Center Drive and DuPont Steilacoom Road/Barksdale Avenue intersections with and without the pipeline trips generated from the proposed JBLM

Wharf Road Gate. The proposed project, a 695,000 square foot High Cube Warehouse/Distribution Center, will generate 1,168 trips per day and 83 trips during the pm peak hour. The table below summarizes the LOS and the mitigation recommended in the TIA.

Intersection	LOS without JBLM trips	LOS with JBLM trips	Recommended Mitigation
Center Drive/International Place	F	F	Signal
DuPont Steilacoom Road/Center Drive	D	F	None
DuPont Steilacoom Road/Barksdale Ave.	D	F	None

The Traffic Impact Analysis Guidelines in City's Public Works Standards state

"The City of DuPont considers level of service "D" to be acceptable. Appropriate mitigation should be proposed to maintain this level of service upon completion of the development. Exceptions to level of service "D" will be considered by the City at locations where the potential mitigation (such as a traffic signal) is not reasonable or desirable."

Based on the City of DuPont Standards, mitigation should be proposed at all three intersections noted in the above table; however, the City issued a variance on November 5, 2013, to not require the applicant to provide mitigation at the DuPont-Steilacoom/Center Drive and DuPont Steilacoom/Barksdale Ave. intersections to achieve an LOS of D since it is not reasonable for a project of this size due to the following:

- The project's traffic mitigation includes installation of a traffic signal at the Center Drive/International Place intersection. The estimated cost of this signal is $350,000.

- The improvements needed at the DuPont Steilacoom/Center Drive intersection to achieve a LOS of D would require the installation of a second northbound left turn lane on DuPont Steilacoom Road. The left turn lane would require a new mast arm pole to be installed to accommodate the additional lane and additional widening on the north leg of the intersection. These improvements, estimated at $700,000, would also require concurrence with JBLM and therefore not a reasonable mitigation measure for the magnitude of the project.

- Potential improvements at the Barksdale Avenue/DuPont-Steilacoom Road intersection are limited at this time due to right of way constraints, current interchange configuration for Exit 119, and the existing rail line. This intersection is adjacent to Exit 119 and is included in the I-5 JBLM Corridor Interchange Justification Report (IJR) Study that is currently underway by WSDOT, which is intended to identify long-term improvements to this corridor.

DuPont reviewed the above-referenced documents, issued an administrative variance to the DuPont Street Standards regarding traffic mitigation dated November 5, 2013, concur the analyses are acceptable and recommend the following mitigation measure:

a. The Applicant shall, at their sole expense, install a traffic signal at the Center Drive/International Place intersection consistent with the City of DuPont Standards to mitigate traffic impacts from the subject development. Said signal shall be fully operational to the satisfaction of the City of DuPont prior to issuance of the building Temporary Certificate of Occupancy. The Applicant may coordinate with the Steilacoom Historical School District regarding cost sharing of the signal.

22. Sheet C2 indicates the developed site will contain 385 onsite parking stalls are proposed for the approximately 384 to 400 employees indicated in the SEPA Checklist. DMC 25.95.030 requires a minimum stall count of 120 stalls based on a ratio of 0.3 stalls per 400 workers at maximum shift, and a maximum stall count of 400 stalls based on a ratio of 1.0 stall per 400 workers at maximum shift. The requirement is met.

23. The submitted DuPont Water Availability Form indicates the development will use 1,392 gallons of water per day. DuPont reviewed and completed the Water Availability Form as Water Purveyor on April 30, 2013, noting the site is within the approved City of DuPont Water Service Area and DuPont has adequate water source and storage capacity to provide 1,392 gallons of water to the development.

24. Refuse service is provided by Lemay, Inc. The Applicant provided an email from LeMay, Inc., dated December 4, 2014, stating the location of the proposed refuse enclosure is acceptable.

25. The Applicant submitted a letter from Pierce County Public Works and Utilities, the sewer provider. Pierce County reviewed the request for connection, noting the site is within the approved Pierce County Sewer Service Area, within the Comprehensive Urban Growth Area, within 300 feet of an existing accessible sanitary sewer which has sufficient capacity to accommodate the development and the development shall be required to connect to the sanitary sewer.

DuPont reviewed the application and recommend the following mitigation measure:

a. The Applicant shall forward a copy of the Pierce County Sewer permit to the City of DuPont prior to issuance of the DuPont civil construction permit.

Conclusions

The lead agency has determined that the proposal 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 the lead agency. This information is available to the public on request. The file may be examined during regular City business hours at DuPont City Hall, 1700 Civic Drive, DuPont WA, 98327. The full decision is posted on the City of DuPont website under Planning Division/Development Projects/Decisions.

Mitigation Measures

As required by the City of DuPont, the following mitigation measures must be implemented concurrent with the project in order to mitigate potential adverse impacts resulting from the project:

1. The Applicant shall submit a Final Stormwater Site Plan to DuPont for the project for review and approval prior to issuance of a DuPont grading or civil construction permit.

2. The Revised Tree Plan dated February 14, 2014, shall be fully implemented with construction of the site and the City Oak Tree Consultant shall monitor implementation of said plan at the Applicant's expense.

3. The Applicant shall pay the City of DuPont fire impact fee totaling $86,732.62 at time of building permit issuance as required by DMC 26.05 ($2,696.91 per acre impact fee X 32.16 acre site size).

4. Full cut-offs shall be provided for all exterior lighting to reduce off site glare consistent with DMC 25.45.010.

5. The Applicant shall fully implement the Memo of Agreement dated August 7, 1989, between Weyerhaeuser Real Estate Company (WRECO), the City of DuPont and the Washington State Historic Preservation Officer regarding the discovery of cultural resources within the City of DuPont, customary professional standards for archaeology, and applicable state and federal laws.

6. The Applicant shall provide a professional archaeologist from the State Historic Preservation list to monitor onsite soil disturbance activities.

7. The Project Archaeologist shall notify and allow a Nisqually Indian Tribe representative to be present during soil disturbance activities.

8. The Project Archaeologist shall notify the Nisqually Indian Tribal representative if Native American cultural resources are discovered during any soil disturbance activities. Construction activities that may disturb or affect such resources are to stop until the Tribal representative has had the opportunity to examine the find.

9. If the Tribal representative cannot be reached through reasonable efforts or does not come to the construction site within a reasonable period of time after being notified, construction does not need to stop. However, archaeological work shall follow the 1989 Memo of Agreement, customary professional standards for archaeology, and applicable state and federal laws.

10. The City of DuPont requests Native American artifacts recovered during construction activities be donated to the Nisqually Indian Tribe. Hudson's Bay Company-era artifacts shall be donated to the Fort Nisqually Living History Museum, located in the City of Tacoma's Point Defiance Park. DuPont-era artifacts shall be donated to the DuPont Historical Museum.

11. The Project Archaeologist shall forward a closing report to the City of DuPont. The report shall discuss contact with the Nisqually Indian Tribe, implemented procedures and observed conditions and be submitted prior to the permanent Certificate of Occupancy.

12. The Applicant shall, at their sole expense, install a traffic signal at the Center Drive/International Place intersection consistent with the City of DuPont Standards to mitigate traffic impacts from the subject development. Said signal shall be fully operational to the satisfaction of the City of DuPont prior to issuance of the building Temporary

Certificate of Occupancy. The Applicant may coordinate with the Steilacoom Historical School District regarding cost sharing of the signal.

13. The Applicant shall forward a copy of the Pierce County Sewer permit to the City of DuPont prior to issuance of the DuPont civil construction permit.

Comment Period

This decision is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by 5:00 PM, February 24, 2015. Appeals must be filed with the DuPont Hearing Examiner between 8:00 AM, February 25, 2015, and no later than 5:00 PM, March 11, 2015, in the manner more specifically set forth in DMC 25.175.060. You should be prepared to make specific factual objections.

February 10, 2015

Thomas E. Danek, Jr.
City Administrator
DuPont SEPA Responsible Official

Unique History … Vibrant Future

CITY OF DUPONT

Department of Community Development
1700 Civic Drive, DuPont, WA 98327
Telephone: (253) 964-8121
www.dupontwa.gov

ADOPTION OF EXISTING ENVIRONMENTAL DOCUMENT (WAC 197-11-630)

Northwest Logistics Center II

City File No: PLNG2018-012

Adoption of SEPA Mitigated Determination of Non-Significance and Addendum

Description of current proposal: A proposed modification to a previously approved site plan to reduce building space and add trailer parking. The change requires approval of a Type I Minor Site Plan Amendment. Only the changed aspects of the proposal are up for review. Construct one warehouse totaling approximately 586,025 square feet on a 32 acre site with associated grading activities, asphalt parking, drive aisles and truck loading and maneuvering areas, landscaping, stormwater infiltration facilities, water and sanitary sewer extensions, franchise utility improvements and half-street frontage improvements to include sidewalk extension along International Place. A lot line adjustment will be required. Approximately 384 parking spaces plus 152 truck trailer spaces are proposed.

Description of February 10, 2015 Proposal (SEPA 13-01): Construct one warehouse totaling approximately 695,000 square feet, storm drainage, 384 parking spaces and landscaping on a 32 acre site.

Proponent: Nick Griot
NWLC-P2, LLC
PO Box 110997
Tacoma, WA 98411

Location of proposal: Northeast corner of International Place and Center Drive, Pierce County Assessor's Parcel Number 300039-0011. The project is located within a portion of the Southwest quarter of Section 24, Township 19 North, Range 1 East and the Northwest quarter of Section 25, Township 19 North, Range 1 East.

Title of Document Being Adopted: SEPA Mitigated Determination of Non-Significance

Agency that prepared document being adopted: City of DuPont

Date adopted documents were prepared: February 10, 2015 (issued date)

Description of document (or portion) being adopted: A SEPA Mitigated Determination of Nonsignificance (MDNS) was issued for the proposal described above on Feb. 10, 2015. The MDNS included 13 Mitigation Measures. No comments were received.

The adopted documents have not been challenged (WAC 197-11-630). The documents are available for review at City Hall (see address and contact information below).

The City SEPA Official has identified and adopted this document as being appropriate for this proposal after independent review. The document meets our environmental review needs for the current proposal and will accompany the proposal to the decision maker (Community Development Director). The adoption of previously issued SEPA determinations is not appealable.

Agency adopting document: City of DuPont

SEPA Responsible Official: Jeffrey S. Wilson, AICP
Director of Community Development and City SEPA Official
City of DuPont
1700 Civic Drive
DuPont, WA 98327
(253) 912-5393 / jwilson@dupontwa.gov

For questions on the adoption, contact Jeff Wilson, AICP, Director of Community Development / Responsible Official for the City of DuPont, at (253) 912-5393 or jwilson@dupontwa.gov.

SEPA Responsible Official Signature: _____ 5/4/2018
Jeffrey S. Wilson, AICP — Date
Director of Community Development
SEPA Responsible Official

Date of Adoption: May 4, 2018

SEPA Distribution List

XX Indicates notice mailed to the following:

Dist.	Agency/Contact		Dist.	Agency/Contact
XX	WA State Dept. of Archaeology & Historic Preservation Gretchen Kaehler Gretchen.Kaehler@DAHP.wa.gov			WA State Dept. of Labor and Industries PO Box 44000 Olympia, WA 98504
	WA State Dept. of Commerce Anne Fritzel, AICP Anne.fritzel@commerce.wa.gov			WA State Dept. of Natural Resources SEPA Center SEPACENTER@dnr.wa.gov
XX	WA State Dept. of Ecology SEPA Unit Separegister@ecy.wa.gov			WA State Dept. of Natural Resources South Puget Sound Region Southpuget.region@dnr.wa.gov
XX	WA State Dept. of Ecology Environmental Review Section SEPAunit@ecy.wa.gov		XX	WA State Dept. of Social and Health Services Lands & Bldg Div Elizabeth McNagny PO Box 45848 Olympia, WA 98504-5848
				WA State Dept. of Social and Health Services Robert J. Hubenthal hubenbj@dshs.wa.gov
XX	WA State Dept. of Ecology SW Regional Office Toxic Clean-up Program Marian Abbett Marian.abbett@ecy.wa.gov			WA State Dept. of Transportation OR-SEPA-REVIEW@wsdot.wa.gov
XX	WA. State Dept. of Ecology SW Regional Office Toxic Clean-up Program Eva Barber Eva.barber@ECY.WA.GOV			WA State Parks and Recreation Commission PO Box 42650 Olympia, WA 98504
	WA State Dept. of Ecology SW Regional Office Shorelands & Environmental Assistance Zachary Meyer ZMEY461@ECY.WA.GOV			Puget Sound Partnership Heather Saunders Benson Environmental Planner Heather.benson@psp.wa.gov
	WA State Dept. of Ecology SW Regional Office Shorelands & Environmental Assistance Donna Joblonski dmca461@ECY.WA.GOV		XX	Puget Sound Clean Air Agency 1904 3rd Ave #105 Seattle, WA 98101 SEPA@pscleanair.org
	WA State Dept. of Fish & Wildlife(WDFW) SEPA Coordinator SEPAdesk@dfw.wa.gov			BNSF Railway General Manager 2454 Occidental Ave. South, Ste 1A Seattle, WA 98134-1451
	WA State Dept. of Fish & Wildlife (WDFW) Michele Culver Regional Director Teammontesano@dfw.wa.gov			FEMA John Graves John.graves1@dhs.gov
	WA State Dept. of Health Division of Drinking Water PO Box 47822 Olympia, WA 98504-7822			

XX	JBLM Public Works Charles Markham Deputy for Programs and Operations Charles.s.markham2.civ@mail.mil		**XX**	DuPont City Clerk Karri Muir Kmuir@dupontwa.gov
XX	JBLM Steven Perrenot Director Public Works Steven.t.perrenot.civ@mail.mil		**XX**	Lakewood Community & Economic Development Frank Fiori Planning Manager ffiori@cityoflakewood.us
XX	US Army Corps of Engineers (Regulatory Branch) Suzanne Anderson Suzanne.l.anderson@usace.army.mil		**XX**	Steilacoom Community Development Doug Fortner Town Planner Doug.fortner@ci.steilacoom.wa.us
	USDA-Natural Resources Conservation Service 941 Powell Ave SW. Ste 102 Renton, WA 98057			
	DuPont Post Office Attn: Post Master 1313 Thompson Circle DuPont, WA 98327		**XX**	Nisqually Indian Tribe Joe Cushman Cushman.joe@nisqually-nsn.gov
	National Marine Fisheries Service Northwest Regional Office 7600 Sand Point Way NE Seattle, WA 98115-0070		**XX**	Yakama Nation Elizabeth Sanchey Elizabeth_sanchey@yakama.com
	Nisqually Nat'l Wildlife Refuge Glynnis Nakai Glynnis Nakai@fws.gov			Clover Park School District 10903 Gravelly Lake Dr. SW Lakewood, WA 98499
XX	Environmental Official-Pierce County Kathleen Larrabee Klarrab@co.pierce.wa.us			Steilacoom Historical School District Celeste Johnston cjohnston@steilacoom.k12.wa.us
XX	Land Use Review Capital Development-Pierce Transit PO Box 99070 Lakewood, WA 98499-0070		**XX**	LeMay Cust2180@wcnx.org
XX	Pierce Co. Assessor/Treasurer-Commercial Dept. Darci Brandvold dbrand@co.pierce.wa.us		**XX**	PSE Jeff Payne Jeff.payne@pse.com
XX	Pierce Co. Environmental Services Bldg Public Works Kip Julin 9850 64th St. West University Place, WA 98467		**XX**	AHBL Lisa Klein Lklein@AHBL.com
XX	Pierce Co. PALS Adonais Clark aclark@co.pierce.wa.us		**XX**	Gray & Osborne Dominic Miller, PE dmiller@g-o.com
XX	Pierce Co. Public Works Debbie Germer dgermer@co.pierce.wa.us		**XX**	Geri Reinart, P.E. greinart@msn.com
XX	Tacoma Pierce Co. Health Dept. Sara Bird SEPA@tpchd.org		**XX**	CalPortland Pete Stoltz Pstoltz@calportland.com

XX	NWL Associates Larry Ackerman nwldirector@reachone.com		**XX**	NWL Association Emily Griffith nwlassistdirector@reachone.com
XX	Nisqually Indian Tribe Annette Bullchild, THPO Bullchild.annette@nisqually-nsn.gov		**XX**	Nisqually Indian Tribe Jackie Wall, THPO Wall.jackie@nisqually-nsn.gov
	Name Title Address Address Email			Name Title Address Address Email

Permit Applicant Information

xx	Dan Balmelli Barghausen Consulting Engineers, Inc dbalmelli@barghausen.com		**xx**	Nick Griot Bayhead Development ngriot@bayheaddevelopment.com
xx	Angelo Ianello Bayhead Development ai@bayhead.us			

City of DuPont
State Environmental Policy Act
Mitigated Determination of Non-Significance

Northwest Logistics Center II
DuPont File No. SEPA 13-01

Description
Construct one warehouse totaling approximately 695,000 square feet, storm drainage, parking, and landscaping on a 32 acre site.

Applicant/Proponent
Dan Balmelli, Barghausen Consulting Engineers, Inc., 18215 72nd Avenue South, Kent, WA 98032, Agent for Nick Griot, Tacoma, WA.

Location
Northeast corner of International Place and Center Drive, Pierce County Assessor's Parcel Numbers 300039-0010 through 0210 and 300039-0240 through 0270.

Lead Agency
City of DuPont.

Findings

1. The Applicant submitted:
   a. Land Use Application received March 20, 2013,
   b. Revised SEPA Checklist signed September 17, 2013,
   c. Phase I Environmental Site Assessment Report dated June 26, 2012,
   d. Geotechnical Engineering Report dated June 19, 2012,
   e. Soil Sampling Results dated July 3, 2012,
   f. Preliminary Stormwater Site Plan dated March 5, 2013,
   g. Geotechnical Report dated May 27, 1999,
   h. Geotechnical Report dated June 19, 2012
   i. Revised Oak Tree Plan dated February 14, 2014,
   j. Traffic Impact Analysis dated April 2013,
   k. Traffic Impact Analysis revisions dated July 16, 2013,
   l. DuPont Water Availability Form,
   m. Title Report dated December 22, 2014,
   n. LeMay, Inc. email regarding refuse service dated December 4, 2014, and
   o. Pierce County Public Works and Utilities letter regarding Sewer Service Information dated March 20, 2013.

2. The subject site is composed of 25 separate and abutting parcels at the northeast corner of International Place and Center Drive, Pierce County Assessor's Parcel Numbers 300039-0010 through 0210 and 300039-0240 through 0270. All parcels are designated Industrial by the DuPont Comprehensive Plan and zoned Industrial by the DuPont Zoning Map. Warehouses are permitted in the Industrial zone per DuPont Municipal Code (DMC) 25.50.020. The Applicant will eliminate all interior property lines and shared access/utility easements prior to issuance of a building permit.

3. The Checklist states the steepest slopes on the site are approximately 8 percent, onsite soils are Spanaway gravelly sandy loam, there are no indications of unstable soils in the

immediate vicinity, approximately 81,137 cubic yards (CY) of cut material and 65,262 CY of fill material will be used to prepare the site for construction of site, and approximately 82 percent of the site will be covered with impervious surfaces upon completion of the project.

The Applicant submitted a document titled, *Phase I Environmental Site Assessment Report*, dated June 26, 2012.

In response, environmentally sensitive areas, as defined by the DuPont Municipal Code, have not been identified on or within 100 feet of the subject site. A grading permit will be required and a haul route provided to DuPont. DuPont requirements and best available management practices will be implemented with the grading permit, including testing all imported soils for arsenic and lead prior to arrival on the subject site following the directions of Chapter 10 of the Tacoma Smelter Plume *Model Remedies Guidance*.

4. The Applicant submitted a report titled, *Geotechnical Engineering Report*, dated June 19, 2012. The report states 12 test pits were dug between 8.5 and 12.5 feet deep, soil was categorized and determined suitable for proposed grading and light industrial structures. No groundwater was observed.

5. The Applicant submitted a report titled, *Soil Sampling Results*, dated July 3, 2012. The report stated 38 test pits were dug 0.5 feet deep and 12 pits were dug 1.0 feet deep. Soil samples were collected and sent to a laboratory for analysis of lead and arsenic. The report concludes concentrations of arsenic exceeding the MTCA Method A soil cleanup level were detected in soil samples collected at depths of 0 to 1 foot deep at 20 sample locations. Lead was not detected at concentrations above the MTCA Method A soil cleanup level.

   Ecology reviewed the SEPA Checklist and proposed cleanup plan, which was submitted directly to Ecology, and issued a letter dated November 24, 2014.

   In summary, the letter concludes:
   a. No further remedial action will likely be necessary at the property to clean up contamination associated with the site.
   b. Further remedial action will likely still be necessary elsewhere at the site, but no further remediation will be necessary for the property.

6. Sheet C1, Special Note #3 contains the following note, consistent with DMC 25.45.030(16), "No more than 20,000 pounds of hazardous substances or hazardous wastes may be stored onsite, and no hazardous substances or wastes may be stored onsite except that which is delivered for onsite operations or produced onsite consistent with DMC 25.45.030(16). Diesel fuel for onsite emergency generators is exempt from the requirement."

7. The Checklist states air emissions will occur from construction equipment and vehicles during operation of the facility. The Applicant is responsible for complying with all applicable federal, state and local standards governing air quality during construction and operation of the facility.

8. The Checklist states there are no surface water bodies on or in the immediate vicinity of the site, no work will be required in or adjacent to any waters, no fill or dredge material

will be placed in or removed from any surface waters, no surface water withdrawals or diversions are required, and the proposal is not within a 100-year flood plain.

In response, the Puget Sound Outfall, a man-made surface water conveyance feature, is located 100 feet north of the north property line of the subject site. No withdrawals or diversions of surface water are proposed. National Flood Insurance Program Flood Insurance Rate Map Community Panel No. 530245 0001 B, effective September 15, 1983, shows the subject site is located in Zone C. Zone C is an area of minimal flooding.

DuPont incorporated the FIRM map data into Figure 1-4, FEMA 100 Years Flood Plain Map, of the DuPont Water Comprehensive Plan. This map shows the subject site lying outside the 100 year flood plain.

9. The Checklist states no groundwater will be withdrawn, and water will be discharged into the ground via the proposed storm drainage infiltration facilities.

   The Applicant submitted a document titled, *Preliminary Stormwater Site Plan*, dated March 5, 2013. The document states there are four separate drainage basins on the site, following construction of the project there will be four underground infiltration systems on the site, and water quality will be provided via onsite filters. The storm drainage system is designed and will be constructed to the requirements of the DuPont Street Standards/DuPont Public Works Standards and 2005 Ecology Stormwater Management Manual for Western Washington Volume III.

   DuPont reviewed the application and recommend the following mitigation measure:

   a. The Applicant shall submit a Final Stormwater Site Plan to DuPont for the project for review and approval prior to issuance of a DuPont grading or civil construction permit.

10. The Checklist states trees are located on the site, a majority of vegetation will be removed for construction of the project and DuPont tree retention and landscape requirements will be met.

11. In response, the site contains evergreen and deciduous trees and native shrubs and groundcover. Total proposed landscape area is approximately 17% of the site. DuPont Municipal Code 25.90.020(2)(d) requires a minimum of 10% of the site be landscaped.

12. Sheet C9 indicates the site contains 580 oak trees. 119 oak trees are proposed to be saved. Landmark class trees on a parcel zoned Industrial, which this site is zoned, that are located inside a building footprint, parking lot or storm retention area may be removed provided tree retention is achieved along street boundaries, which the site abuts on two sides per DMC 25.120.030(2). The requirement is met.

    A 7.99 acre portion of Oak Management Mapping Unit MO-17a is located on southwest corner of the site. DMC 25.120.040 requires 20 percent of the 7.99 acres, or 1.59 acres minimum, be retained. Sheet C9 indicates 22.9 percent (1.82 acres) of the onsite portion of Unit MO-17a will be retained. The requirement is met.

    The Applicant submitted a Revised Tree Plan dated February 14, 2014 to demonstrate compliance with DMC 25.120.040 regarding applicable Oak Management Mapping Unit requirements. The submitted Plan was reviewed by the City's oak tree consultant.

DuPont reviewed the revised Tree Plan dated February 14, 2014, and recommend the following mitigation measure:

a. The Revised Tree Plan dated February 14, 2014, shall be fully implemented with construction of the site and the City Oak Tree Consultant shall monitor implementation of said plan at the Applicant's expense.

13. The Checklist states songbirds are located on the site, endangered species are not known to exist on the site and the site is part of the Pacific Flyway for migratory birds, and landscaping and tree retention will help preserve wildlife in the area.

    In response, Washington Department of Fish and Wildlife data indicates the site contains no priority habitats or species. The site is located within the Pacific Flyway, a major migratory bird route.

14. The Checklist states electricity will be used for lighting, natural gas will be used for heating and the building will meet all current energy code requirements.

15. The Checklist states the project will not create environmental health hazards other than fire, medical and police are already available in the area, and no specific mitigation measures are proposed.

    DuPont reviewed the application and recommend the following mitigation measure:

    a. The Applicant shall pay the City of DuPont fire impact fee totaling $86,732.62 at time of building permit issuance as required by DMC 26.05 ($2,696.91 per acre impact fee X 32.16 acre site size).

16. The Checklist states noise will occur from construction and operation of the facility. The Applicant is responsible for complying with all applicable federal, state and local standards governing air quality during construction and operation of the facility.

17. The Checklist states the project will provide jobs for approximately 100 to 200 people. Any business with more than 100 employees shall contact Pierce Transit to determine if compliance with the Commute Trip Reduction Act is necessary, and if so, shall participate in the program as required by DMC 25.75. A note to consistent with this requirement is shown on Sheet C1, Special Note #4.

18. The Checklist states the building will be approximately 38 feet tall and constructed of concrete and glass. Maximum building height is limited to 65 feet per DMC 25.50.030(4).

19. Exterior building illumination and parking lot lighting are not shown on the submitted drawings. Full cut-offs are necessary for all lighting to reduce off site glare consistent with DMC 25.45.010.

    DuPont reviewed the application and recommend the following mitigation measure:

    a. Full cut-offs shall be provided for all exterior lighting to reduce off site glare consistent with DMC 25.45.010.

20. The Checklist states there are no known archaeological or culturally important sites on or next to the site. A Cultural Resource Assessment was not submitted for the site.

In response, it is well documented that DuPont contains a wide variety of historic and prehistoric cultural resources. It is possible that not all cultural resources have been found. Weyerhaeuser Real Estate entered into two Memorandums of Agreement (MOA). The first MOA, dated August 7, 1989, is between Weyerhaeuser Real Estate Company (WRECO), the City of DuPont and the Washington State Historic Preservation Officer regarding the discovery of cultural resources within the City of DuPont. The second MOA, dated October 20, 1988, is between WRECO and the Nisqually Tribe to provide for the establishment of a cemetery for reburial of Native American remains.

DuPont reviewed the application and recommend the following mitigation measures:

a. The Applicant shall fully implement the Memo of Agreement dated August 7, 1989, between Weyerhaeuser Real Estate Company (WRECO), the City of DuPont and the Washington State Historic Preservation Officer regarding the discovery of cultural resources within the City of DuPont, customary professional standards for archaeology, and applicable state and federal laws.
b. The Applicant shall provide a professional archaeologist from the State Historic Preservation list to monitor onsite soil disturbance activities.
c. The Project Archaeologist shall notify and allow a Nisqually Indian Tribe representative to be present during soil disturbance activities.
d. The Project Archaeologist shall notify the Nisqually Indian Tribal representative if Native American cultural resources are discovered during any soil disturbance activities. Construction activities that may disturb or affect such resources are to stop until the Tribal representative has had the opportunity to examine the find.
e. If the Tribal representative cannot be reached through reasonable efforts or does not come to the construction site within a reasonable period of time after being notified, construction does not need to stop. However, archaeological work shall follow the 1989 Memo of Agreement, customary professional standards for archaeology, and applicable state and federal laws.
f. The City of DuPont requests Native American artifacts recovered during construction activities be donated to the Nisqually Indian Tribe. Hudson's Bay Company-era artifacts shall be donated to the Fort Nisqually Living History Museum, located in the City of Tacoma's Point Defiance Park. DuPont-era artifacts shall be donated to the DuPont Historical Museum.
g. The Project Archaeologist shall forward a closing report to the City of DuPont. The report shall discuss contact with the Nisqually Indian Tribe, implemented procedures and observed conditions and be submitted prior to the permanent Certificate of Occupancy.

21. The Checklist states: vehicular access will be provided by two driveways from abutting International Place, a public street; approximately 384 parking stalls will be provided, and approximately 1,000 to 2,000 vehicle trips per day will be generated by the project.

The Applicant submitted a document titled, *Northwest Logistics Center DuPont Building 2 Traffic Impact Analysis, prepared by Heath & Associates,* dated April 2013. The Traffic Impact Analysis (TIA) states project vehicle trip generation is based on a high cube warehouse land use with roughly 1,168 vehicle trips on a typical weekday, 76 trips during the AM peak, and 83 trips during the PM peak hour.

The TIA concludes pedestrian/bicyclist traffic along the area roadways is presently mild, with possible increases during warmer seasons. Sight distance at the project entrances should be adequate. Some increases in delay may be expected due to the addition of project traffic.

The TIA concludes the intersection of DuPont-Steilacoom Road & Center Drive may reach approach delays of LOS F during the AM peak hour without or with project traffic included under existing signal cycle lengths. Future AM delays with the project could be reduced to LOS D overall assuming cycle length optimization to account for the heavy pipeline volume increase.

The TIA concludes DuPont-Steilacoom Road & Barksdale Avenue may have some approach delays of LOS E during the AM peak hour due to difficult volume balancing.

The TIA concludes some delays at the Barksdale/I-5 interchange could be expected to reach LOS F levels by 2015 without project traffic included. Improvements at this interchange are planned by WSDOT as part of regional I-5 corridor improvements generally outlined in the I-5 Fort Lewis/McCord Transportation Analysis.

The TIA recommend proposed mitigation at this time including installation of a signal at the Center Drive & International Place intersection. Installation and costs should be coordinated among developers of new projects on International Place.

The TIA revisions letter dated July 16, 2013 from Heath and Associates, Inc., provided a revised signalized AM peak LOS analysis for the Center Drive/DuPont Steilacoom Road intersection. The revised LOS analysis indicates eastbound peak hour factors to 0.89 and optimizes timing, results in LOS D for overall delays.

The TIA revisions letter dated July 16, 2013, provided a revised AM peak LOS analysis for the Barksdale Avenue/DuPont Steilacoom Road intersection. The revised LOS indicates increased peak hour factors of 0.89 for the westbound and northbound approaches, a free westbound to northbound right turn movement, and optimized timing while trying to limit westbound queues. The results under these assumptions are LOS C overall.

The TIA revisions letter dated July 16, 2013, analyzed Manual of Uniform Traffic Control Devices Signal Warrants 1 & 2 for future 2015 conditions of the Center Drive/international Place intersection with the project but without JBLM pipeline traffic. Assumptions were made for the 4th and 8th hour based on their proportions to the PM peak hours as taken from the hourly tube count volumes on Center Drive provided by the City. Based on the tube count data of Center Drive, the 4th highest hour has approximately 77% of the peak hour volumes, while the 8th highest hour has approximately 50% of the peak hour volumes. These values were used to approximate 4th and 8th hour volumes for the Center Drive/International Place intersection, and applied to the analysis of Warrants 1 & 2. The volumes would be met for Condition A and minor street volumes met for Condition B. Warrant 2 (2 hour volume) would be met. In addition, Warrant 3 is met for the PM peak hour.

The TIA and revision analyzed the LOS at the Center Drive/International Place, DuPont-Steilacoom Road/Center Drive and DuPont Steilacoom Road/Barksdale Avenue intersections with and without the pipeline trips generated from the proposed JBLM

Wharf Road Gate. The proposed project, a 695,000 square foot High Cube Warehouse/Distribution Center, will generate 1,168 trips per day and 83 trips during the pm peak hour. The table below summarizes the LOS and the mitigation recommended in the TIA.

Intersection	LOS without JBLM trips	LOS with JBLM trips	Recommended Mitigation
Center Drive/International Place	F	F	Signal
DuPont Steilacoom Road/Center Drive	D	F	None
DuPont Steilacoom Road/Barksdale Ave.	D	F	None

The Traffic Impact Analysis Guidelines in City's Public Works Standards state

"The City of DuPont considers level of service "D" to be acceptable. Appropriate mitigation should be proposed to maintain this level of service upon completion of the development. Exceptions to level of service "D" will be considered by the City at locations where the potential mitigation (such as a traffic signal) is not reasonable or desirable."

Based on the City of DuPont Standards, mitigation should be proposed at all three intersections noted in the above table; however, the City issued a variance on November 5, 2013, to not require the applicant to provide mitigation at the DuPont-Steilacoom/Center Drive and DuPont Steilacoom/Barksdale Ave. intersections to achieve an LOS of D since it is not reasonable for a project of this size due to the following:

- The project's traffic mitigation includes installation of a traffic signal at the Center Drive/International Place intersection. The estimated cost of this signal is $350,000.

- The improvements needed at the DuPont Steilacoom/Center Drive intersection to achieve a LOS of D would require the installation of a second northbound left turn lane on DuPont Steilacoom Road. The left turn lane would require a new mast arm pole to be installed to accommodate the additional lane and additional widening on the north leg of the intersection. These improvements, estimated at $700,000, would also require concurrence with JBLM and therefore not a reasonable mitigation measure for the magnitude of the project.

- Potential improvements at the Barksdale Avenue/DuPont-Steilacoom Road intersection are limited at this time due to right of way constraints, current interchange configuration for Exit 119, and the existing rail line. This intersection is adjacent to Exit 119 and is included in the I-5 JBLM Corridor Interchange Justification Report (IJR) Study that is currently underway by WSDOT, which is intended to identify long-term improvements to this corridor.

DuPont reviewed the above-referenced documents, issued an administrative variance to the DuPont Street Standards regarding traffic mitigation dated November 5, 2013, concur the analyses are acceptable and recommend the following mitigation measure:

a. The Applicant shall, at their sole expense, install a traffic signal at the Center Drive/International Place intersection consistent with the City of DuPont Standards to mitigate traffic impacts from the subject development. Said signal shall be fully operational to the satisfaction of the City of DuPont prior to issuance of the building Temporary Certificate of Occupancy. The Applicant may coordinate with the Steilacoom Historical School District regarding cost sharing of the signal.

22. Sheet C2 indicates the developed site will contain 385 onsite parking stalls are proposed for the approximately 384 to 400 employees indicated in the SEPA Checklist. DMC 25.95.030 requires a minimum stall count of 120 stalls based on a ratio of 0.3 stalls per 400 workers at maximum shift, and a maximum stall count of 400 stalls based on a ratio of 1.0 stall per 400 workers at maximum shift. The requirement is met.

23. The submitted DuPont Water Availability Form indicates the development will use 1,392 gallons of water per day. DuPont reviewed and completed the Water Availability Form as Water Purveyor on April 30, 2013, noting the site is within the approved City of DuPont Water Service Area and DuPont has adequate water source and storage capacity to provide 1,392 gallons of water to the development.

24. Refuse service is provided by Lemay, Inc. The Applicant provided an email from LeMay, Inc., dated December 4, 2014, stating the location of the proposed refuse enclosure is acceptable.

25. The Applicant submitted a letter from Pierce County Public Works and Utilities, the sewer provider. Pierce County reviewed the request for connection, noting the site is within the approved Pierce County Sewer Service Area, within the Comprehensive Urban Growth Area, within 300 feet of an existing accessible sanitary sewer which has sufficient capacity to accommodate the development and the development shall be required to connect to the sanitary sewer.

DuPont reviewed the application and recommend the following mitigation measure:

a. The Applicant shall forward a copy of the Pierce County Sewer permit to the City of DuPont prior to issuance of the DuPont civil construction permit.

Conclusions

The lead agency has determined that the proposal 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 the lead agency. This information is available to the public on request. The file may be examined during regular City business hours at DuPont City Hall, 1700 Civic Drive, DuPont WA, 98327. The full decision is posted on the City of DuPont website under Planning Division/Development Projects/Decisions.

Mitigation Measures

As required by the City of DuPont, the following mitigation measures must be implemented concurrent with the project in order to mitigate potential adverse impacts resulting from the project:

1. The Applicant shall submit a Final Stormwater Site Plan to DuPont for the project for review and approval prior to issuance of a DuPont grading or civil construction permit.

2. The Revised Tree Plan dated February 14, 2014, shall be fully implemented with construction of the site and the City Oak Tree Consultant shall monitor implementation of said plan at the Applicant's expense.

3. The Applicant shall pay the City of DuPont fire impact fee totaling $86,732.62 at time of building permit issuance as required by DMC 26.05 ($2,696.91 per acre impact fee X 32.16 acre site size).

4. Full cut-offs shall be provided for all exterior lighting to reduce off site glare consistent with DMC 25.45.010.

5. The Applicant shall fully implement the Memo of Agreement dated August 7, 1989, between Weyerhaeuser Real Estate Company (WRECO), the City of DuPont and the Washington State Historic Preservation Officer regarding the discovery of cultural resources within the City of DuPont, customary professional standards for archaeology, and applicable state and federal laws.

6. The Applicant shall provide a professional archaeologist from the State Historic Preservation list to monitor onsite soil disturbance activities.

7. The Project Archaeologist shall notify and allow a Nisqually Indian Tribe representative to be present during soil disturbance activities.

8. The Project Archaeologist shall notify the Nisqually Indian Tribal representative if Native American cultural resources are discovered during any soil disturbance activities. Construction activities that may disturb or affect such resources are to stop until the Tribal representative has had the opportunity to examine the find.

9. If the Tribal representative cannot be reached through reasonable efforts or does not come to the construction site within a reasonable period of time after being notified, construction does not need to stop. However, archaeological work shall follow the 1989 Memo of Agreement, customary professional standards for archaeology, and applicable state and federal laws.

10. The City of DuPont requests Native American artifacts recovered during construction activities be donated to the Nisqually Indian Tribe. Hudson's Bay Company-era artifacts shall be donated to the Fort Nisqually Living History Museum, located in the City of Tacoma's Point Defiance Park. DuPont-era artifacts shall be donated to the DuPont Historical Museum.

11. The Project Archaeologist shall forward a closing report to the City of DuPont. The report shall discuss contact with the Nisqually Indian Tribe, implemented procedures and observed conditions and be submitted prior to the permanent Certificate of Occupancy.

12. The Applicant shall, at their sole expense, install a traffic signal at the Center Drive/International Place intersection consistent with the City of DuPont Standards to mitigate traffic impacts from the subject development. Said signal shall be fully operational to the satisfaction of the City of DuPont prior to issuance of the building Temporary

Certificate of Occupancy. The Applicant may coordinate with the Steilacoom Historical School District regarding cost sharing of the signal.

13. The Applicant shall forward a copy of the Pierce County Sewer permit to the City of DuPont prior to issuance of the DuPont civil construction permit.

Comment Period

This decision is issued under WAC 197-11-340(2); the lead agency will not act on this proposal for 14 days from the date below. Comments must be submitted by 5:00 PM, February 24, 2015. Appeals must be filed with the DuPont Hearing Examiner between 8:00 AM, February 25, 2015, and no later than 5:00 PM, March 11, 2015, in the manner more specifically set forth in DMC 25.175.060. You should be prepared to make specific factual objections.

February 10, 2015

Thomas E. Danek, Jr.
City Administrator
DuPont SEPA Responsible Official

Gray & Osborne, Inc.
CONSULTING ENGINEERS

May 8, 2018

Mr. Jeff Wilson
City of DuPont
1700 Civic Drive
DuPont, Washington 98327

SUBJECT: NORTHWEST LOGISTICS CENTER II, LAND USE APPLICATION
CITY FILE NO. PLNG2018-012
CITY OF DUPONT, PIERCE COUNTY, WASHINGTON
G&O #18231.00

Dear Mr. Wilson:

On March 14, 2018, Gray & Osborne, Inc. received an initial submittal package for the above-subject project. The package included the following:

- City of DuPont Land Use Application dated March 1, 2018;
- SEPA Checklist dated February 28, 2018;
- Title Report by Chicago Title Company dated February 20, 2018;
- Trip Generation by Heath & Associates, Inc. dated February 27, 2018;
- Water Availability Form;
- Pierce County Public Works and Utilities Sanitary Sewer Letter dated February 28, 2018;
- Letter to LeMay dated February 26, 2018;
- Preliminary Stormwater Site Plan by Barghausen Consulting Engineers, Inc. dated February 28, 2018;
- Department of Ecology Letter regarding No Further Action dated July 11, 2016;
- Cultural Resource Report by Aqua Terra Cultural Resources Consultants dated October 15, 2015;
- Archaeology & Historic Preservation Letter dated November 2, 2015;
- Geotechnical Engineering Report by Terra Associates, Inc. dated April 19, 2016;
- Tree Retention Report by Edwards Development & Advisors, LLC dated February 26, 2018;
- Architectural Site Plan by Craft Architects (5 sheets dated February 26, 2018;

Attachment 2f - Gray and Osborne Comment Letter

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- Civil Plans by Barghausen Consulting Engineers, Inc. (9 sheets dated February 19, 2018;
- Landscape Plans by Craft Architects (10 sheets dated February 7, 2018.

Subsequently on April 24, 2018, Gray & Osborne, Inc. received a submittal package for the above-subject project. The package included the following:

- Pierce County Information Request for Connection Letter dated March 20, 2018;
- LeMay Dumpster Enclosure email dated April 13, 2018;
- Tree Retention Plan by Barghausen Consulting Engineers, Inc. (Sheet E5 approved March 26, 2015);
- Architectural Site Plan by Craft Architects (Sheet A0.1 dated April 18, 2018);
- Civil Plans by Barghausen Consulting Engineers, Inc. (12 sheets dated April 18, 2018;
- Landscape Plans by Craft Architects (20 sheets dated April 18, 2018).

We have reviewed this information for compliance with the current City of DuPont Public Work Standards (City Standards), codes, policies, and the DuPont Municipal Code (DMC), and have the following comments:

GENERAL

1. The Developer shall demonstrate compliance with any conditions or mitigations stated in any previously issued official documents associated with the parcel and project referenced above.

2. Following construction and prior to final acceptance of this project, the Applicant will be required to execute an Agreement for Inspection and Maintenance of Privately Maintained Storm Drainage Facilities. The Agreement should be provided after construction of the storm drainage system to reflect "as-built" conditions. A copy of the form of the agreement is included in the City Public Works Standards.

3. A parking lot lighting plan, including a photometric exhibit showing the lighting levels within the parking lot, will be required for the proposed project.

4. The Applicant shall furnish meter sizing calculations for domestic and fire water services. The sprinkler system design, including confirmation of the

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provided sizing for the fire line components shall be reviewed and approved by the City Building Department and Fire Department as part of the building permit process. Each fire line connection to a City water main will require a double detector check valve assembly (DDCVA) in an underground vault and a Fire Department Connection (FDC) within 50 feet of a fire hydrant. The double detector check valve assemblies (DDCVA) shall be located in underground vaults outside of the building to allow direct access by City staff.

5. A minimum of one fire hydrant per 1,250 gallons per minute of required fire flow shall be provided within 150 feet of the proposed building. The Applicant shall confirm the required fire flow with the City Fire Department and identify the existing and proposed fire hydrants to meet this requirement. The fire hydrant within 50 feet of the FDC for the building will not count towards the required hydrants for fire flow.

6. A maintenance agreement, in accordance with Section 3.1.2.4 of the DuPont Public Works Standards, should be provided for the 60-foot wide ingress, egress, and utilities easement for exclusive benefit of Lots 22 through 31. The underlying Northwest Landing Industrial Park Division 1 plat does not appear to specifically address the shared maintenance requirements. The agreement shall be submitted to the City for review and approval and recorded at the Developer's expense prior to issuance of the building permit. The agreement shall specify the shared driveway use and maintenance requirements affecting the subject lots.

7. Proposed site improvements within the easements on the project site shall comply with the conditions of said easements.

8. The project activities shall comply with the requirements of the Washington State Department of Ecology National Pollutant Discharge Elimination System (NPDES) general permit for stormwater discharges associated with construction activity.

9. Turning movement drawings will be required to allow the City to determine the feasibility of the site layout. The site plan shall include supplemental exhibits to demonstrate that the City Fire Department's large apparatus can navigate the site (lane width, radius), including access to FDCs and hydrants. The Fire Department will confirm the adequacy of vehicle access points.

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10. The site is located within the boundary of LID No. 88-1. Prior to finalization of the proposed project, the Applicant will need to document payment of the costs associated with City LID No. 88-1.

11. This project is subject to the Geographic Information System (GIS) requirements as stated in the City of DuPont Municipal Code, Chapter 24.09, and Ordinance No. 97-559.

LAND USE APPLICATION

We have no comment for the Land Use Application at this time.

SEPA

12. Item No. B.8.a. should be updated to reflect the current use of the adjacent properties.

TITLE REPORT

13. All easements identified in the Title Report shall be delineated and labeled on the Plans (i.e. width, type, and recording number).

TRAFFIC IMPACT ANALYSIS

~~14. The TIA shall be in conformance with Pierce County requirements and be submitted to the County and Fort Lewis since the traffic generated from this project in all probability will impact DuPont-Steilacoom Road. DuPont-Steilacoom Road is owned by Fort Lewis and maintained by Pierce County.~~

15. As a condition of Land Use approval, the project off-site improvements shall include the installation of a traffic signal at the Center Drive/International Place intersection.

~~16. The City should consider issuance of a Traffic Mitigation Variance. Previously, we provided a draft letter that the City may wish to issue to the Applicant regarding the traffic level of service associated with the project.~~

~~17. The scope of the traffic study shall be coordinated with the City's Transportation Engineer, Ms. Geri Reinart at (206) 285-9035.~~

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WATER AVAILABILITY FORM

18. The City-approved Water Availability form dated March 19, 2018, has been provided to the City.

SEWER AVAILABILITY

19. The submitted Pierce County Utilities Information Request for Connection to the Pierce County Sanitary Sewer System letter is acceptable for Land Use Application approval. Documentation of Pierce County Public Works and Utilities approval of the Sanitary Sewer Plans for this project will be required prior to issuance of a construction permit.

REFUSE APPROVAL

20. The submitted electronic mail correspondence requesting approval of the refuse enclosure locations and serviceability is acceptable for Land Use Application approval. Documentation demonstrating approval will be required prior to issuance of a construction permit.

STORMWATER SITE PLAN

21. Section 1.0 should state the method of flow control treatment to be used for the project.

22. Section 1.0 states no off-site roadway improvements are associated with the development. Half-street roadway improvements will be required along International Place.

23. Section 2: Identify the party responsible for maintenance of the stormwater facilities.

24. Section 4: Determine whether any runoff from adjacent roads or properties could be discharged to the project site.

25. Section 5: The water quality flow rate for each basin as determined using WWHM should be clearly stated.

26. Section 5: The geotechnical report indicates a groundwater level between 13 and 15 feet below ground surface. A separation of 3 feet or more must be provided between the bottom of the infiltration facilities and the high

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groundwater level (Volume III, Section 3.3.7 of the Manual). Depending on the depth of the infiltration trenches, it is unclear if this separation is achieved. Provide a discussion of this in the report.

27. Section 5: Describe the overflow route for the infiltration facilities and the impact overflows may have on the property or adjacent areas.

28. Section 5: The predeveloped land cover condition in the model should be Forested, Type A soils, not Type C soils, to reflect the highly permeable native Spanaway soil.

29. Operations and Maintenance information for the infiltration trenches and the BaySaver cartridge vaults must be provided.

30. An analysis of the conveyance system must be provided to demonstrate that the pipes are sufficient to convey runoff with no adverse impact on buildings or adjacent property.

31. Details/sections of the infiltration trenches and water quality vaults must be provided in the Plans.

DEPARMENT OF ECOLOGY NO FURTHER ACTION LETTER

We have no comments on the Department of Ecology letter at this time.

CULTURAL RESOURCE REPORT

We have no comments on the Cultural Resource Report at this time.

ARCHAEOLOGY & HISTORIC PRESERVATION LETTER

We have no comments on the Archaeology & Historic Preservation letter at this time.

GEOTECHNICAL REPORT

We have no comments on the Geotechnical Report at this time.

TREE RETENTION REPORT

We have no comments on the Tree Retention Report at this time.

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ARCHITECTURAL SITE PLAN

We have no comments on the Architectural Site Plan at this time.

CIVIL PLANS

GENERAL

32. The Plans shall be updated to note the Lot Line Elimination, as approved under Declaration of Lot Combination City of DuPont File No. LLE 15-01, recorded under 201503130126, and stated in the legal description of the title report (dated February 20, 2018).

33. The site address shall be added to Sheet C1.

34. The Site Plan should show the existing utilities and easements.

35. Improvements shall be made outside of the 35-foot landscape easement (Recording No. 9112230168) along Center Drive.

36. Show and label the building setbacks to demonstrate compliance with the Industrial zoning DMC 25.50.030(3).

37. The legend should be verified to be consistent with the Plan sheets.

TESC

38. Include the Construction Sequence to the Plans per City Standards Section 11.2.

STREET

39. Any land development abutting and impacting existing roads shall improve the frontage of those roads in accordance with the City of DuPont Standards. The applicable street for this project is International Place, which is classified as an Industrial Access Street. As part of the project requirements, improvements along International Place are required, including extension of the existing sidewalk, revitalization of the existing drainage swale, replacement of existing asphalt to the road, and

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channelization pavement markings. A sheet demonstrating the International Place improvements should be added to the Plans.

40. Add or replace the following City Standard Details to the Plans:

- Industrial Access Streets Major (Drawing No. 2.4-2.5)
- Driveway Approach (With Shoulder and Ditch) (Drawing No. 3.1-2)
- Sidewalk Section (Drawing No. 3.2-1)
- Curb Ramp (Drawing No. 3.3-2)
- Detectable Warning Pattern Detail (Truncated Domes) (Drawing No. 3.3-3)
- Crosswalk Detail (Drawing No. 4.5-3)

41. On Sheet 7 under General Notes (4), add International Place and Center Drive for the street names.

42. On Sheet 7 under General Notes (5), add International Place, Center Drive, and DuPont-Steilacoom Highway for the street names.

43. The site plan proposes two 40-foot wide driveways. The two driveway approaches shall be constructed in accordance with City Standard Driveway Approach (with shoulder and ditch), Drawing No. 3.1-2, which includes culverts sized to convey storm water runoff. The maximum driveway width allowed is 35 feet. Industrial driveways wider than 35 feet may be approved by the City considering both traffic safety and the activity being served. If the Applicant proposes to keep the driveways greater than 35 feet in width, written justification shall be provided to the City.

44. The northerly ingress and egress access road shall be constructed in conjunction with this project. A road cross section shall be provided on the Plans. The cul-de-sac shall be constructed in accordance with the City Standard Cul-De-Sac Street Section Detail (Drawing No. 2.8-1).

45. Identify the detectable warning pattern locations at curb ramps and interfaces between pedestrian and vehicle areas. As part of the frontage improvements, the existing curb ramps within the right-of-way adjacent to the project site and opposite side of the road shall be improved to current meet current City and ADA Standards.

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46. Parking stalls and pedestrian ramps shall meet current building code and ADA requirements. The existing curb ramp at the northwest corner of the Center Drive/International Place intersection will need to be retrofitted with detectable warning patterns.

47. The proposed development shall be provided with fire lanes, as required by the City of DuPont Fire Department.

48. Per City Standards Section 3.1.1.4, for driveways crossing an open ditch section, callouts shall be adequately sized to carry anticipated stormwater flows and in no case be less than 12 inches in diameter.

49. Per City Standards Section 3.1.2.1, driveways that serve any use other than detached dwelling untis may not be closer than 150 feet to any street intersection or to any other driveway, whether on or off the subject property.

50. The locations of the driveway approaches on the westerly side of the International Place right-of-way should be shown.

51. Per DMC 25.95.050(8)(a), when any parking space uses a raised sidewalk for the wheel stop a minimum additional sidewalk width of 3-feet is required. Parking stall wheel stops at 2-feet clear from face of curb or the additional 3-foot sidewalk width should be provided.

52. Per DMC 25.50.030(5), the project's parking and loading areas shall comply with DMC 25.95. The Plans shall demonstrate compliance with all applicable requirements. Per DMC 25.95.040(6), in industrial areas, parking spaces shall not be located within 20-feet of the front property line. In this case, the front of property is assumed to be off of International Place. The building/planning department should verify front of property. It appears that the parking spaces, which front International Place, do not meet the spacing requirement.

STORMWATER

53. Add the following City Standard Details to the Plans:

- Catch Basin Type I (Drawing No. 7.4-1)
- Catch Basin Type 2 (Drawing No. 7.4-3)

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54. Stormwater runoff within the easement road shall be incorporated into the stormwater design.

55. Add directional flow arrows to the stormwater pipes.

WATER

56. Add the General Notes (Water System Construction) per City Standards Section 11.3.

57. Indicate the length, size, type and class of the water main and hydrant runs.

58. Label the fire hydrants (FH#1, FH#2, etc).

59. The existing 12-inch water main within International Place shall be shown and labeled.

60. The number and location of hydrants shall be coordinated with the City Fire Department.

61. Cross connection control, in accordance with WAC 246-290-490, shall be provided by installation of an approved backflow preventer commensurate with the degree of hazard for protection of the public water system. The level of protection is dependent on the building use. The Applicant should state the building use type, if known, and provide the appropriate premises isolation backflow preventers. In the event the warehouse use type is classified as a severe or high health cross connection hazard as defined in WAC 246-290-490 Table 9, above ground Reduced Pressure (RP) type backflow prevention will be required.

62. The City's Cross Control Specialist (CCCS) shall be granted access for plumbing and fixture inspection during construction and annual hazard evaluations thereafter. The CCCS is the approving authority for evaluation on the premises hazard protection for the building official (e.g., items such as water used for fork lift battery maintenance).

63. On Sheet C6, the proposed water alignment, north of the point of connection to the Center Drive existing water stub, appears to potentially have a conflict with an existing yard light and junction box. Based on City Public Works, the end of the existing 12-inch water stub may be in

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close vicinity of the existing monument sign over the landscape mound. The water main alignment should be revised so that the utilities are located outside of the 15-foot wide water easement. The point of connection may need

64. On Sheet C6, the existing water stub out to the site at the Center Drive/Williamson Place intersection shall be shown and labeled. The Applicant's engineer should evaluate the potential use of this stub out and removal of the existing stub out at the Center Drive/DuPont-Steilacoom Road intersection.

65. Due to the age of the existing water stub outs to the site, inline gate valve connections to each stub used should be installed for testing purposes. All unused stub outs shall be removed and blind flanges with thrust blocking installed.

66. On Sheet C6, the proposed water line to the existing water stub-out from International Place traverses through the proposed stormwater facility. Typically, structures are not allowed within water easements dedicated to the City. The proposed stormwater facility should be revised to be outside of the water easement or the plans will need to sufficiently demonstrate that the proposed stormwater facility will not impede City access to the water main for maintenance and/or repair.

67. Drains to daylight, infiltration sump, or to the onsite storm system shall be provided for the water service vaults and meter boxes as required per City Standard Details.

68. The construction plans shall include profiles for storm drains and for water mains to include proposed utility crossings. The water main profile shall include air-vac assemblies at high points and blowoff assemblies at low points.

69. The utility crossings of the water, storm, and sewer systems shall be provided to demonstrate compliance with the City's 1-foot minimum vertical clearance requirement.

70. Add a thrust block southwest of the 2″ domestic meter on the 8-inch D.I. waterline.

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71. Per City Standards Section 8.6.1.1, fire hydrants shall be installed at intervals not to exceed 300 feet or as required by the City Fire Chief. Spacing shall be revised to comply with said standard. Fire department approval shall be obtained.

72. The trash enclosure shall be moved outside of the water line easement.

73. Water service connections to the building shall be perpendicular to the water main (i.e. no bends between the water meters and main).

74. Add the following City Standard Details to the Plans:

- Water Main Trench Section (Drawing No. 8.2-1)
- Typical Utility Crossing (Drawing No. 8.2-3)
- Thrust Blocks (Drawing No. 8.3-1)
- Thrust Restraint for Ductile Iron Pipe (Drawing No. 8.3-3)
- 1-1/2″ & 2″ Service Connection (Drawing No. 8.4-3)
- 3″ & Larger Double Check Valve Assembly (Drawing No. 8.4-8)
- Water Valve Stem Extension (Drawing No. 8.5)
- Fire Hydrant Installation (Drawing No. 8.6-1)
- Wet Tap Main Connection (Drawing No. 8.10-1)
- Testing Connection (Drawing No. 8.11)
- Fire Department Connection (Drawing No. 11.3)

LANDSCAPE AND IRRIGATION PLANS

75. Clearances, in accordance with City Standards, will be reviewed for compliance during construction review. A minimum 3-foot clearance and level area is required around fire hydrants.

76. The Landscape Plans show trees planted within the 15-foot wide water easement. Trees shall be located outside of the water main easement.

77. The existing landscaping and drainage swales abutting and parallel to the parcel boundary lines shall be revitalized as part of the landscape plans. During previous grading activities, the clearing and grading work extended into the DuPont-Steilcoom Road right-of-way. All landscaping within the right-of-ways should be revitalized.

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78. Landscaping should be extended to the parcel boundary lines. The landscape area calculations on Sheet L-9 should be verified to include all landscaping.

Thank you for the opportunity to provide these comments. Please contact the undersigned if you have any questions or comments regarding this review.

Sincerely,

GRAY & OSBORNE, INC.

Dominic J. Miller, P.E.

DJM/sp

cc: Mr. Gus Lim, P.E., Public Works Director, City of DuPont
Mr. Bill Anderson, Building Official, City of DuPont
Mr. Scott Hein, Public Works Supervisor, City of DuPont
Mr. Mike Turner, City of DuPont
Ms. Lisa Klein, AHBL, Inc.

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COMMUNITY DEVELOPMENT DEPARTMENT
BUILDING SERVICES DIVISION

1700 Civic Drive
DuPont, WA 98327
Ph 253.964.5387 Fax 253.964.1455

MEMORANDUM

TO: **Jeff Wilson**

FROM: **Bill Anderson**

RE: **Northwest Logistics Center 2 Site Plan Review comments**
3230 International Place, DuPont, WA 98327
City No. PLNG2018-012 & 013

DATE: **March 20, 2018**

The Building Services Division has reviewed the Site Plan application submitted on March 1, 2018 for the proposed 586,025 square foot warehouse development at the referenced location. The following comments are provided for the applicant's use in progressing with planning and design of their project:

1. The proposed structure must be designed to meet the requirements of the building construction codes **in effect at the time of building permit submittal**. The following codes are currently enforced by the City of DuPont: the 2015 International Building Code, the 2015 International Residential Code, the 2015 International Fire Code, the 2015 International Mechanical Code, the 2015 International Fuel Gas Code, the 2015 Uniform Plumbing Code (each as amended and adopted by the State of Washington); the 2015 Washington State Energy Code.
2. The project will be required to receive all land use and civil construction approvals prior to issuance of building permit for the proposed structures.
3. All applicable Fire Impact and Storm System Development Charge fees assessed for the proposed development will be required to be paid prior to the issuance of building permit(s) associated with the proposed project.
4. Also prior to issuance of a building permit for the structure, the applicant shall provide a copy of Pierce County Sewer Service Permits for City record. This permit (and authorization to connect to sewer service) is/may be independent from any sewer system extension that may also apply to the project. All sewer connection and permitting requirements must be coordinated with the utility purveyor. (Please note that Pierce

County Sewer Utility requires a pre-treatment review and approval be completed prior to their issuance of sewer extension or sewer service connection permit(s). Each subsequent tenant, for multi-tenant buildings, must also complete a separate pre-treatment review and provide copy of sewer service permitting, where applicable, prior to obtaining a building permit for associated improvements.)

5. The project will be required to comply with the requirements for provision of as-built drawings contained in DMC Chapter 24.10, GIS. As-built drawings and submittals must be submitted and approved prior to issuance of a Certificate of Occupancy for the building, or portions thereof.
6. Fire Suppression, Underground Fire supply and Fire Alarm permits associated with the structure must be obtained through DuPont Fire Department prior to initiating any such work. All alarms systems will be required to obtain an alarm registration permit with the city, prior to full activation of the alarm system for operation; forms may be obtained at city hall.
7. Fire flow requirements and requirements for on –site hydrants and site access provisions will be determined by the DuPont Fire Chief or designee. Such requirements may be subject to additional review and requirements as future submittals come forward.
8. Addressing for the building within the project area has been assigned as 3230 International Place, DuPont, WA 98327.
9. Permit forms may be obtained either at city hall or may be downloaded through the city's website. Assistance in completing applications is available by contacting permit staff.

As the project proceeds, more specific requirements may be discussed with our department. If there are any questions or clarifications needed, please contact me.

City of DuPont Fire Department

Proudly serving the community of DuPont

1780 Civic Drive, DuPont, WA, 98327

Phone 253.964.8414 ▪ Fax 253.912.5240 ▪ www.ci.dupont.wa.us

March 27, 2018

TO: Jeff Wilson

FROM: Mike Turner Fire Marshal

RE: Northwest Logistics Center II Land Use Application PLNG2018-012 & 013

The DuPont Fire Department Prevention Division reviewed the above project and has the following comments.

1. Prior to Fire Department approval for occupancy, an underground fire line shall be installed. The system shall comply with NFPA 24 Standard for Installation of Private Fire Service Mains. Three (3) sets of plans, material specifications sheets for all equipment used in the system shall be submitted by a State of Washington Licensed Contractor for review, approval, and permits issued prior to commencing work. The FDC shall be a minimum of 50 feet or 1&1/2 times the height of the structure away from the building. The FDC shall be within 50 feet of a hydrant and be 5 inch with a locking cap. (Fire Department approval for location) **Separate Permit required**. ***The above FDC Location requirement shall be waved for this project. The FDC location on sheet C5 of 9 is approved.***

2. A building permit issued by the City is required when gates are installed on commercial developments. In order for the City to issue the building permit, the following requirements must be met:

   a. Gates shall have an Opticom activation system or an equivalent and compatible system that is approved by the Fire Chief.
   b. Gates shall have rapid-entry key capabilities compatible with the local fire department per IFC, Section 506.
   c. All electrically activated gates shall have default capabilities to the unlocked position.
   d. The minimum clear width of a gate shall be compatible with the required street width.
   e. Gates that might be obstructed by the accumulation of snow shall not be installed.
   f. A vehicular turn-around must be provide in front of the gate.

3. All new building shall have approved emergency responder radio coverage per section 510 of the 2015 International Fire Code.

Attachment 2h - Fire Department Comment Memorandum

City of DuPont Fire Department

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If you have any questions, you may call Fire Marshal Mike Turner at (253) 666-2760 or e-mail mturner@dupontwa.gov.

Sincerely,

Fire Marshal

Mike Turner