CITY OF TUALATIN
Planning Division

Applicant's Consultant:
Chris Goodell, AICP, LEED AP
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
chrisg@aks-eng.com (503) 563-6151

Land Use Application

Project Information

Project Title: Lam Research Building D Chemical Management System Addition

Brief Description:
±6,500 square foot addition to Building D North on the Lam Research industrial campus.

Property Information

Address: 11361 SW Leveton Drive

Assessor's Map Number and Tax Lots: 2S 1 22AB Tax Lot 100

Applicant/Primary Contact

Name: Bob Spendle	Company Name: JE Dunn	
Address: 424 NW 14th Avenue		
City: Portland	State: OR	ZIP: 97209
Phone: Contact Applicant's Consultant	Email: Contact Applicant's Consultant	

Property Owner

Name: Lam Research Corporation		
Address: 2025 Gateway Place #228		
City: San Jose	State: CA	ZIP: 95110
Phone: Contact Applicant's Consultant	Email: Contact Applicant's Consultant	
Property Owner's Signature:		Date: 2/18/20

(Note: Letter of authorization is required if not signed by owner)

AS THE PERSON RESPONSIBLE FOR THIS APPLICATION, I HEREBY ACKNOWLEDGE THAT I HAVE READ THIS APPLICATION AND STATE THAT THE INFORMATION IN AND INCLUDED WITH THIS APPLICATION IN ITS ENTIRETY IS CORRECT. I AGREE TO COMPLY WITH ALL APPLICABLE CITY AND COUNTY ORDINANCES AND STATE LAWS REGARDING BUILDING CONSTRUCTION AND LAND USE.

Applicant's Signature: Robert A Spendle	Date: 2/18/20

Land Use Application Type:

- ☐ Annexation (ANN)
- ■ Architectural Review (AR)
- ☐ Architectural Review—Single Family (ARSF)
- ☐ Architectural Review—ADU (ARADU)
- ☐ Conditional Use (CUP)
- ☐ Historic Landmark (HIST)
- ☐ Industrial Master Plan (IMP)
- ☐ Plan Map Amendment (PMA)
- ☐ Plan Text Amendment (PTA)
- ☐ Tree Removal/Review (TCP)
- ☐ Minor Architectural Review (MAR)
- ☐ Minor Variance (MVAR)
- ☐ Sign Variance (SVAR)
- ☐ Variance (VAR)

Office Use

Case No:	Date Received:	Received by:
Fee:	Receipt No:	

City of Tualatin
www.tualatinoregon.gov

Hydraulic Modeling Fee

Water supply modeling is necessary for larger projects to determine the impact of the project's water demand on the water supply system. Water supply modeling will be performed by a consulting engineer based on the most recent version of the Tualatin Water System Master Plan.

Due to possible impacts to the water supply system, the following projects in Tualatin require hydraulic modeling based on the size and type of the project and projected water use for the finished project. The outcome of modeling could require offsite improvements to the water supply system in order to ensure that adequate water supply is available to serve the project and reduce impacts to the overall system.

Hydraulic modeling of the water supply system is required for the following project type/sizes/demand:

Project Type	Criteria	Permit Fee
Commercial or Industrial Building	Building floor area greater than 48,300 square feet **or** Anticipated daily water demand greater than 870 gallons per acre per day	$ 300 per building
Residential development	More than 49 dwelling units	$ 1,000
Multi-family development	More than 49 dwelling units **or** a combined building floor area greater than 48,300 square feet	$ 300 per building

Please complete this form and submit the form and required fee (if applicable) with your land-use application (architectural review, subdivision, etc.).

☒ Commercial or Industrial Development

- Building floor area ±6,500 square feet
- Anticipated water demand (if known) 150 gallons per day
- Described planned building use Delivery, storage, and dispensing of chemicals used in existing manufacturing use.

☐ Residential Development

- Number of dwelling units or single family home lots _____

☐ Multi-Family Residential Development

- Number of dwelling units_____
- Building floor area (sum of all building) _____
- Number of multi-family buildings_____

Permit fee required based on the information provided above $ 0

- If no fee is required, enter $0.

NOTE: Water Supply Modeling does not replace the requirement for fire hydrant flow testing. Flow testing of fire hydrants will still be required to verify adequate fire flow of finished system

FIRST AMERICAN TITLE

Property Research Report

SUBJECT PROPERTY
11355 SW Leveton Dr
R2107971,R2180033
2S122AB00100
Washington

OWNER
Lam Research Corporation
Dba: Novellus Systems C/O Dsi - David Lerner

DATE PREPARED
01/31/2020

PREPARED BY
ereyes-garcia@firstam.com

First American Title

Customer Service 503.219.8746
cs.oregon@firstam.com

First American Title™

Customer Service Department
Phone: 503.219.TRIO (8746)
Fax: 503.790.7872
Email: cs.oregon@firstam.com
Date: 1/31/2020

OWNERSHIP INFORMATION

Owner: Lam Research Corporation
CoOwner: Dba: Novellus Systems C/O Dsi - David Lerner
Site: 11355 SW Leveton Dr Tualatin OR 97062
Mail: 2025 Gateway Pl #228 San Jose CA 95110

Parcel #: R2107971
Ref Parcel #: 2S122AB00100
TRS: 02S / 01W / 22 / NE
County: Washington

PROPERTY DESCRIPTION

Map Grid: 685-C3
Census Tract: 032001 Block: 1029
Neightborhood: Cpo 5 Sherwood-Tualatin N
School Dist: 23J Tigard-Tualatin
Impr Type: I2 - Special Use
Subdiv/Plat:
Land Use: 3030 - Industrial - State Assessed Manufacturing
Std Land Use: MGOV - Governmental, Public
Zoning: Tualatin-MP - Park Manufacturing
Lat/Lon: 45.38784586 / -122.79360917
Watershed: Fanno Creek-Tualatin River
Legal: 2001-058 PARTITION PLAT, LOT PTS 1 & 3, ACRES 27.23, SEE ASSOCIATED ACCOUNT(S)

ASSESSMENT AND TAXATION

Market Land: $9,515,720.00
Market Impr: $24,290,820.00
Market Special: $0.00
Market Total: $33,806,540.00 (2019)
% Improved: 72.00%
Assessed Total: $33,806,540.00 (2019)
Levy Code: 23.76
Tax: $541,050.01 (2019)
Millage Rate: 17.4301
Exemption:
Exemption Type:

PROPERTY CHARACTERISTICS

Bedrooms:	Total SqFt:	Year Built:
Baths, Total:	First Floor:	Eff Year Built:
Baths, Full:	Second Floor:	Lot Size Ac: 27.23 Acres
Baths, Half:	Basement Fin:	Lot Size SF: 1,186,139 SqFt
Total Units:	Basement Unfin:	Lot Width:
# Stories:	Basement Total:	Lot Depth:
# Fireplaces:	Attic Fin:	Roof Material:
Cooling:	Attic Unfin:	Roof Shape:
Heating:	Attic Total:	Ext Walls: Wood
Building Style:	Garage:	Const Type:

SALES AND LOAN INFORMATION

Owner	Date	Doc #	Sale Price	Deed Type	Loan Amt	Loan Type
LAM RESEARCH CORP	7/23/2014	0000045333		Quit Claim		
LAM RESEARCH CORPORATION		2014045333		DS		

First American Title™

Customer Service Department
Phone: 503.219.TRIO (8746)
Fax: 503.790.7872
Email: cs.oregon@firstam.com
Date: 1/31/2020

OWNERSHIP INFORMATION

Owner: Lam Research Corporation
CoOwner: Dba: Novellus Systems C/O Dsi - David Lerner
Site: 11355 SW Leveton Dr Tualatin OR 97062
Mail: 2025 Gateway Pl #228 San Jose CA 95110

Parcel #: R2180033
Ref Parcel #: 2S122AB00100
TRS: 02S / 01W / 22 / NE
County: Washington

PROPERTY DESCRIPTION

Map Grid: 685-C3
Census Tract: 032001 Block: 1029
Neightborhood: Cpo 5 Sherwood-Tualatin N
School Dist: 23J Tigard-Tualatin
Impr Type: ME - Machinery & Equipment
Subdiv/Plat:
Land Use: 330
Std Land Use: CMSC - Commercial Miscellaneous
Zoning: Tualatin-MP - Park Manufacturing
Lat/Lon: 45.38784586 / -122.79360917
Watershed: Fanno Creek-Tualatin River
Legal: 2001-058 PARTITION PLAT, LOT 1, ASSOCIATED MACHINERY/EQUIPMENT

ASSESSMENT AND TAXATION

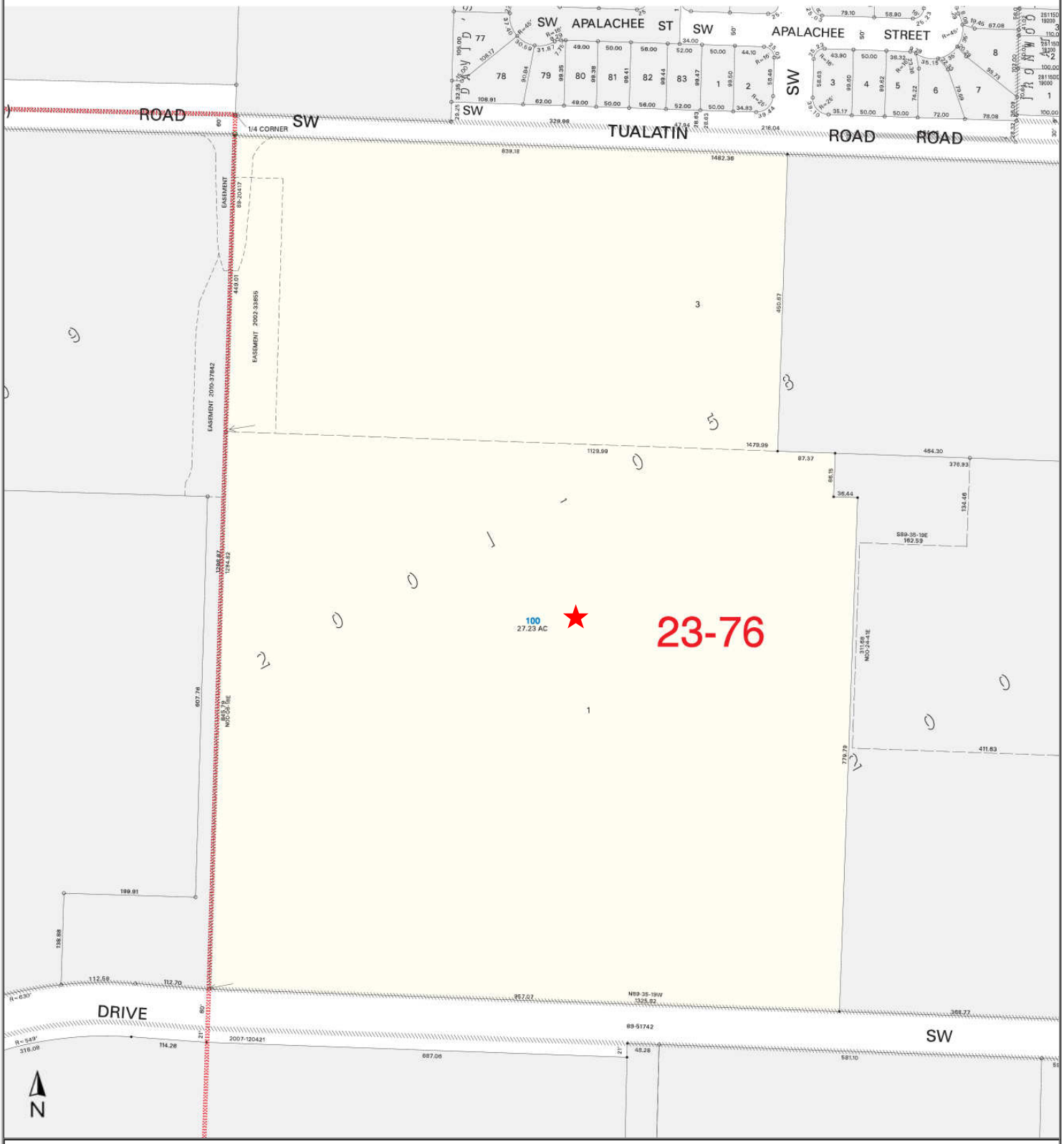
Market Land: $0.00
Market Impr: $138,069,890.00
Market Special: $0.00
Market Total: $138,069,890.00 (2019)
% Improved: 100.00%
Assessed Total: $138,069,890.00 (2019)
Levy Code: 23.76
Tax: $2,209,711.95 (2019)
Millage Rate: 17.4301
Exemption:
Exemption Type:

PROPERTY CHARACTERISTICS

Bedrooms:	Total SqFt:	Year Built:
Baths, Total:	First Floor:	Eff Year Built:
Baths, Full:	Second Floor:	Lot Size Ac: 27.23 Acres
Baths, Half:	Basement Fin:	Lot Size SF: 1,186,235 SqFt
Total Units:	Basement Unfin:	Lot Width:
# Stories:	Basement Total:	Lot Depth:
# Fireplaces:	Attic Fin:	Roof Material:
Cooling:	Attic Unfin:	Roof Shape:
Heating:	Attic Total:	Ext Walls:
Building Style:	Garage:	Const Type:

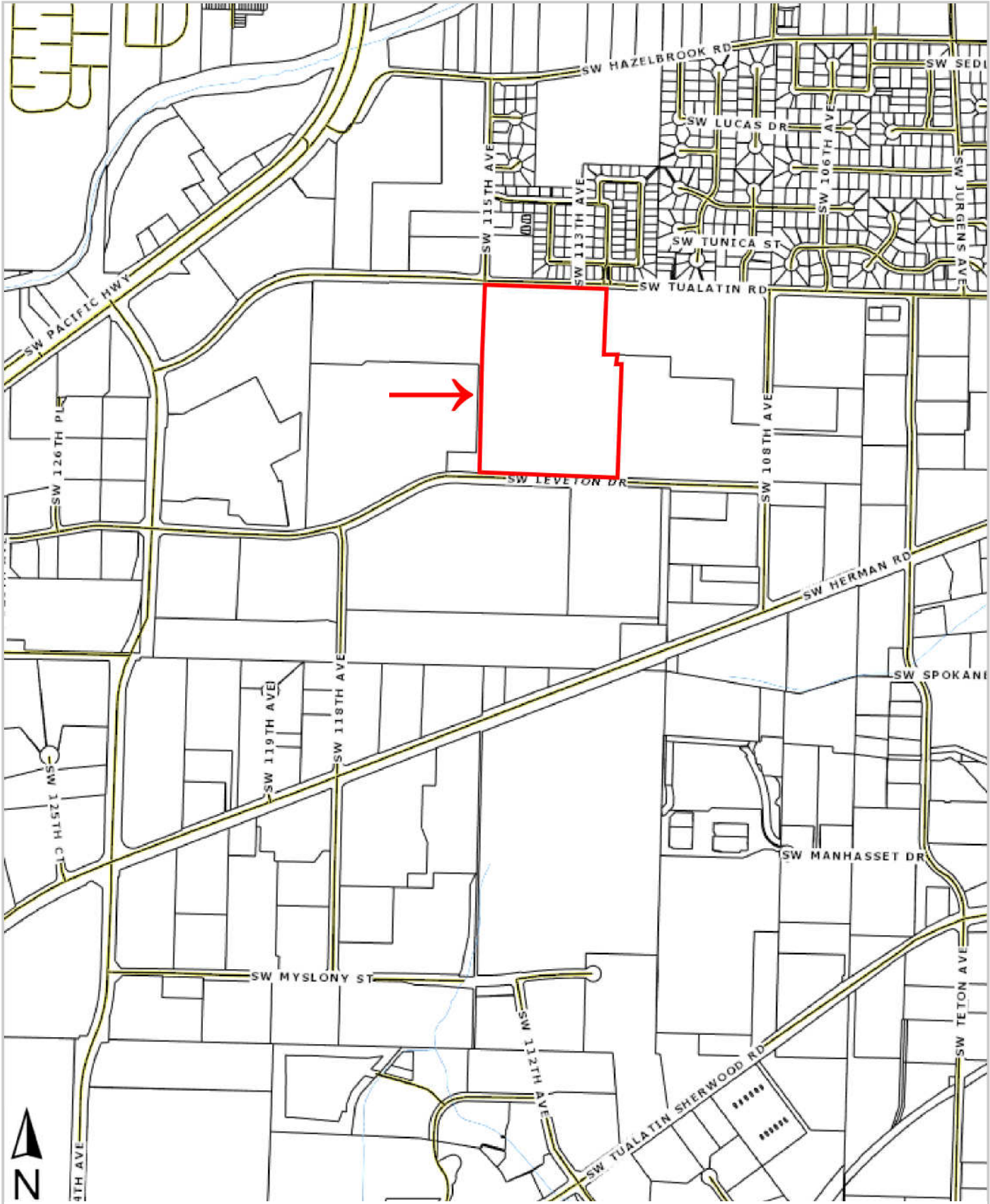
SALES AND LOAN INFORMATION

Owner	Date	Doc #	Sale Price	Deed Type	Loan Amt	Loan Type



ParcelID: R2107971
11355 SW Leveton Dr
Tualatin, OR 97062

This map/plat is being furnished as an aid in locating the herein described land in relation to adjoining streets, natural boundaries and other land, and is not a survey of the land depicted. Except to the extent a policy of title insurance is expressly modified by endorsement, if any, the company does not insure dimensions, distances, location of easements, acreage or other matters shown thereon.



First American Title™

5
36

Washington County, Oregon 2014-045333
07/23/2014 02:41:05 PM
D-DG Cnt=1 Stn=12 S PFEIFER
$5.00 $5.00 $11.00 $20.00 - Total =$41.00

01958579201400453330010015

I, Richard Hobernicht, Director of Assessment and Taxation and Ex-Officio County Clerk for Washington County, Oregon, do hereby certify that the within instrument of writing was received and recorded in the book of records of said county.

Richard Hobernicht, Director of Assessment and Taxation, Ex-Officio County Clerk

RECORDING REQUESTED BY AND WHEN RECORDED RETURN TO:
Scott Scowden
Lam Research Corporation
11155 SW Leveton Drive
Tualatin, OR 97062

MAIL TAX STATEMENTS TO:
Christie Gemmet
Lam Research Corporation
4650 Cushing Parkway
Fremont, CA 94538

A.P.N.: R2107971 SPACE ABOVE THIS LINE FOR RECORDER'S USE

GRANT DEED

The undersigned Grantor declares under penalty of perjury that the following is true and correct:
The Grantors and the Grantees in this conveyance are comprised of the same parties who continue to hold the same proportionate interest in the property.
☑ Unincorporated area: ☑ City of Tualatin, OR.

FOR TRUE AND ACTUAL CONSIDERATION OF $0.00, receipt of which is hereby acknowledged,
GRANTOR: Lam Research Corporation, a Delaware Corporation, successor by merger to Novellus Systems Inc., a California Corporation

HEREBY GRANTS TO: Lam Research Corporation, a Delaware Corporation
Real Property in the City of Tualatin, County of Washington, State of Oregon, described as follows:

Partition Plat No. 2001-058. Recorded as Document No. 2001082729. A portion being a replat of Lots 3, 4, 5, 6, 9, and part of Lot 10 of Glenmorag Park in the NE 1/4 of Section 22, T 2 S, R 1 W, W.M., City of Tualatin, Washington County, Oregon. 2001 – 058 Partition Plat, Lot 1, Acres 20.02.

Commonly known as: 11355 SW Leveton Dr. Tualatin, OR 97062
A.P.N.: R2107971

Dated: July 21, 2014

Carter Lake

ACKNOWLEDGMENT

STATE OF CALIFORNIA)

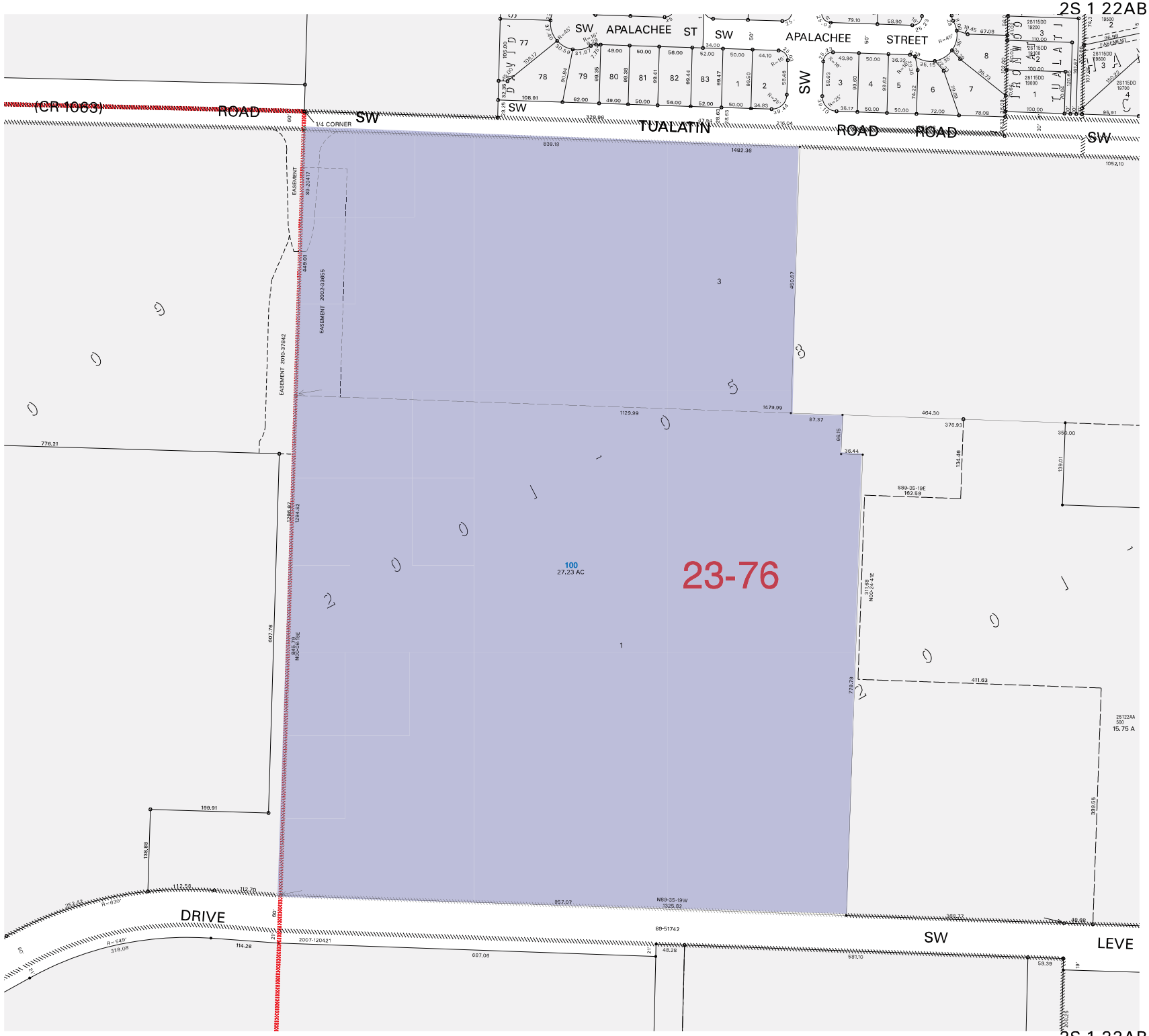
COUNTY OF ALAMEDA)

On July 21, 2014, before me, Nancy Anne Paperno Notary Public, personally appeared Carter Lake who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that he/~~she~~ executed the same in his/~~her~~ authorized capacity, and that by his/~~her~~ signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

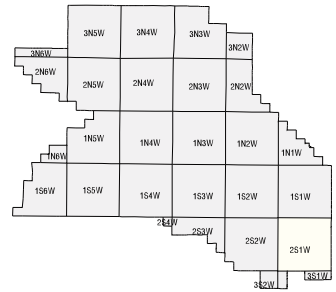
I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

NANCY ANNE PAPERNO
Commission # 1999321
Notary Public - California
Alameda County
My Comm. Expires Dec 23, 2016

WITNESS my hand and official seal.
Signature: Nancy Anne Paperno
Signature of Notary Public



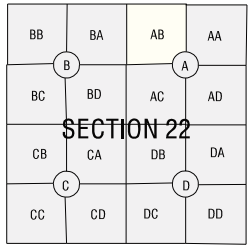
2S 1 22AB



WASHINGTON COUNTY OREGON
NW1/4 NE1/4 SECTION 22 T2S R1W W.M.
SCALE 1" = 100'

25	31	32	33	34	35	36	31
1	6	5	4	3	2	1	6
12	7	8	9	10	11	12	7
13	18	17	16	15	14	13	18
24	19	20	21	22	23	24	19
25	30	29	28	27	26	25	30
36	31	32	33	34	35	36	31
1	6	5	4	3	2	1	6

FOR ADDITIONAL MAPS VISIT OUR WEBSITE AT www.co.washington.or.us



Cancelled Taxlots For: 2S122AB
200,

SCALE 1" = 100'
0 50 100 200 300

Assessment
CARTOGRAPHY
Taxation

PLOT DATE: May 25, 2017

FOR ASSESSMENT PURPOSES ONLY - DO NOT RELY ON FOR OTHER USE

Map areas delineated by either gray shading or a cross-hatched pattern are for reference only and may not indicate the most current property boundaries. Please consult the appropriate map for the most current information.

TUALATIN
2S 1 22AB

dig2s1w22

Clean Water Services File Number: 20-000286

Sensitive Area Pre-Screening Site Assessment

1. **Jurisdiction:** Tualatin

2. **Property Information** *(example 1S234AB01400)*
Tax lot ID(s): 2S122AB00100
2S122AB00100

OR **Site Address:** 11361 SW Leveton Drive
City, State, Zip: Tualatin, OR 97062
Nearest Cross Street: SW 108th Avenue

3. **Owner Information**
Name:
Company: Lam Research
Address: 2025 Gateway Place
City, State, Zip: San Jose, CA 95110
Phone/Fax:
E-Mail: Contact Consultant

4. **Development Activity** *(check **all** that apply)*
- ☐ Addition to Single Family Residence (rooms, deck, garage)
- ☐ Lot Line Adjustment
- ☐ Minor Land Partition
- ☐ Residential Condominium
- ☐ Commercial Condominium
- ☐ Residential Subdivision
- ☐ Commercial Subdivision
- ☑ Single Lot Commercial
- ☐ Multi Lot Commercial

Other: Addition to existing manufacturing building

5. **Applicant Information**
Name: Stacey Reed (Consultant)
Company: AKS Engineering and Forestry, LLC
Address: 12965 SW Herman Road
City, State, Zip: Tualatin, OR, 97062
Phone/Fax: 503-563-6151
E-Mail: staceyr@aks-eng.com

6. **Will the project involve any off-site work?** ☐ Yes ☑ No ☐ Unknown
Location and description of off-site work

7. **Additional comments or information that may be needed to understand your project**

This application does NOT replace Grading and Erosion Control Permits, Connection Permits, Building Permits, Site Development Permits, DEQ 1200-C Permit or other permits as issued by the Department of Environmental Quality, Department of State Lands and/or Department of the Army COE. All required permits and approvals must be obtained and completed under applicable local, state, and federal law.

By signing this form, the Owner or Owner's authorized agent or representative, acknowledges and agrees that employees of Clean Water Services have authority to enter the project site at all reasonable times for the purpose of inspecting project site conditions and gathering information related to the project site. I certify that I am familiar with the information contained in this document, and to the best of my knowledge and belief, this information is true, complete, and accurate.

Print/Type Name Stacey Reed **Print/Type Title** PWS

Signature **Date** 01/02/2020

FOR DISTRICT USE ONLY

- ☐ Sensitive areas potentially exist on site or within 200' of the site. **THE APPLICANT MUST PERFORM A SITE ASSESSMENT PRIOR TO ISSUANCE OF A SERVICE PROVIDER LETTER.** If Sensitive Areas exist on the site or within 200 feet on adjacent properties, a Natural Resources Assessment Report may also be required.
- ☐ Based on review of the submitted materials and best available information Sensitive areas do not appear to exist on site or within 200' of the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider letter as required by Resolution and Order 19-05, Section 3.02.1, as amended by Resolution and Order 19-22. All required permits and approvals must be obtained and completed under applicable local, State, and federal law.
- ☒ Based on review of the submitted materials and best available information the above referenced project will not significantly impact the existing or potentially sensitive area(s) found near the site. This Sensitive Area Pre-Screening Site Assessment does NOT eliminate the need to evaluate and protect additional water quality sensitive areas if they are subsequently discovered. This document will serve as your Service Provider letter as required by Resolution and Order 19-05, Section 3.02.1, as amended by Resolution and Order 19-22. All required permits and approvals must be obtained and completed under applicable local, state and federal law.
- ☒ **This Service Provider Letter is not valid unless** 1 **CWS approved site plan(s) are attached.**
- ☐ The proposed activity does not meet the definition of development or the lot was platted after 9/9/95 ORS 92.040(2). NO SITE ASSESSMENT OR SERVICE PROVIDER LETTER IS REQUIRED.

Reviewed by Date 1/28/2020

Once complete, email to: **SPLReview@cleanwaterservices.org** • Fax: **(503) 681-4439**
OR mail to: SPL Review, Clean Water Services, 2550 SW Hillsboro Highway, Hillsboro, Oregon 97123

TAX LOT 100
TAX MAP 2S122BA

TAX LOT 800
TAX MAP 2S122AA

CWS FILE NO. 20-000286
Approved
Clean Water Services
FOR ENVIRONMENTAL REVIEW
By CB Date 1-28-2020
SPL ATTACHMENT 1 OF 1

BUILDING F

PROJECT AREA BOUNDARY

PROPOSED BUILDING D NORTH ADD.

SKY BRIDGE

BUILDING E

TAX LOT 500
TAX MAP 2S122AA

TAX LOT 200
TAX MAP 2S122BA

BUILDING D NORTH

TAX LOT 100
TAX MAP 2S122AB

BUILDING D

BUILDING C

TAX LOT 100
TAX MAP 2S122BA

POND A

POND B

POND C

SAN

SW LEVETON DRIVE

N

SCALE: 1"=100 FEET

100 0 20 50 100

ORIGINAL PAGE SIZE: 11" x 17"

TAX LOT 300
TAX MAP 2S12200

TAX LOT 400
TAX MAP 2S12200

DATE: 01/02/2020

LAM RESEARCH
BUILDING D NORTH - ADDITION

EXHIBIT

FAC-1084 CHEM OPS BUILDING

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: JDS
CHKD:
AKS JOB: 7860

DWG: 7860 SPL SITE PLAN | SITE MAP

REPUBLIC SERVICES

10295 Southwest Ridder Road Wilsonville, OR 97070
o 503.570.0626 f 503.582.9307 republicservices.com

February 18, 2020

Jeff Sublet
AKS Engineering and Forestry, LLC

Re: Lam Research
11361 Leveton Dr.
Tualatin, OR 97062

Dear Jeff,

Thank you, for sending us the site plan for this proposed development in Tualatin OR.

My Company: Republic Services of Clackamas and Washington Counties has the franchise agreement to service this area with the City of Tualatin. We will provide complete commercial waste removal and recycling services as needed on a weekly basis for this location

I have reviewed the development plan sent 2/12/2020, for the Building D expansion project. My understanding, based on our conversation, is that all waste and recycle (excluding hazardous waste as defined by Tualatin City Ordinance) generated in the area of this expansion will be transported internally by Lam Research staff, to the existing trash and recycle receptacles on campus. Any future increase in trash and recycle volume as a result of this expansion, should be manageable through increased service levels of existing receptacles as needed. Should there be a need for additional Republic Services equipment at this site, a more extensive design review will be required by my Company prior to the implementation of construction.

Thank you, Jeff for your help and concerns for our services prior to this project being developed.

Sincerely,

Kelly Herrod
Operations Supervisor
Republic Services Inc.

TAX LOT 100
TAX MAP 2S122BA

TAX LOT 800
TAX MAP 2S122AA

Location for roll-off containers (not currently

Existing Trash Enclosure

BUILDING F

BUILDING B

TAX LOT 500
TAX MAP 2S122AA

+/-6,500 SF Addition

BUILDING E

SKY BRIDGE

TAX LOT 200
TAX MAP 2S122BA

BUILDING D NORTH

Former +/-18,000 SF Building D Expansion (2016)

TAX LOT 100
TAX MAP 2S122AB

BUILDING D

Existing roll-off container

Existing Trash Enclosures

BUILDING C

TAX LOT 100
TAX MAP 2S122BA

POND A

POND B

SW LEVETON DRIVE

TAX LOT 300
TAX MAP 2S12200

TAX LOT 400
TAX MAP 2S12200

NOTE:

CIVIL INFRASTRUCTURE AND BUILDINGS SHOWN ARE BASED ON RECORD DRAWINGS WHICH HAVE NOT BEEN FIELD VERIFIED.

N

SCALE: 1"=100 FEET

100 0 20 50 100

ORIGINAL PAGE SIZE: 11" x 17"

DATE: 01/03/2020

SITE MAP	EXHIBIT
TUD CMS ADDITION	

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: JDS
CHKD:
AKS JOB: 7860

February 21, 2020

Mike McCarthy, PE
Principal Transportation Engineer
City of Tualatin | Public Works
1880 SW Martinazzi Avenue
Tualatin, OR 97062

RE: Lam Research Building D Chemical Management System Addition – Trip Generation Letter

Dear Mr. McCarthy:

Thank you for your time and initial correspondence in assisting our project team with preparing an Architectural Review submittal for the Lam Research Building D Chemical Management System Addition project. The following provides a brief description of the project and summarizes our correspondence prior to this submittal.

The building addition will be located at the Lam Research industrial campus at 11361 SW Leveton Drive. The addition will be single-story, adding approximately 6,900 square feet to the north of the existing Building D manufacturing building. The new space will contain a chemical delivery and waste collection system to support existing manufacturing equipment located in Building D. The chemical management system will be operated by current employees and will not require additional staff.

Per your request, an estimate of trip generation was provided by AKS on February 10, 2020. Trip generation estimates were provided based on Lam Research's current projection and for specific building uses based on The Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, for a building with 6,500 square feet of gross floor area:

1. Lam Research Corporation's projection
    a. Three delivery trucks per day
2. Estimate based on ITE 110 General Light Industrial
    a. 33 Average Daily Traffic (ADT)
    b. 6 am peak hour trips
    c. 6 pm peak hour trips
3. Estimate based on ITE 140 Manufacturing
    a. 26 ADT
    b. 6 am peak hour trips
    c. 6 pm peak hour trips

Based on the low trip generation estimates, it was determined that a more detailed traffic analysis would not be required for the project at that time.

Since then, the building square footage has increased approximately 400 square feet. Therefore, trip generation estimates for the same ITE land use codes have been updated accordingly:

1. Estimate based on ITE 110 General Light Industrial
    a. 35 Average Daily Traffic (ADT)
    b. 7 am peak hour trips

    c. 6 pm peak hour trips
2. Estimate based on ITE 140 Manufacturing
    a. 28 ADT
    b. 6 am peak hour trips
    c. 6 pm peak hour trips

For the Manufacturing land use code, the additional building area has increased the estimated ADT from 26 to 28, and the morning and evening peak hour trips remain unchanged. Therefore, it is anticipated that a more detailed traffic analysis is still not required.

Please feel free to contact me if there are any additional questions or information needs regarding traffic related aspects of the project.

Sincerely,

AKS ENGINEERING & FORESTRY, LLC

Jeff Sublet, PE
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
503.563.6151 | jeffs@aks-eng.com

Enclosures:

- Email correspondence between Mike McCarthy (City of Tualatin) and Jeff Sublet (AKS Engineering)

AFFIDAVIT OF MAILING NOTICE

STATE OF OREGON)
) SS
COUNTY OF WASHINGTON)

I, Livil Werhane being first duly sworn, depose and say:

That on the 4th day of February, 2020, I served upon the persons shown on Exhibit "A" (Mailing Area List), attached hereto and by this reference incorporated herein, a copy of the Notice of Neighborhood/Developer Meeting marked Exhibit "B," attached hereto and by this reference incorporated herein, by mailing to them a true and correct copy of the original hereof. I further certify that the addresses shown on said Exhibit "A" are their regular addresses as determined from the books and records of the Washington County and/or Clackamas County Departments of Assessment and Taxation Tax Rolls, and that said envelopes were placed in the United States Mail with postage fully prepared thereon.

Signature

SUBSCRIBED AND SWORN to before me this 4th day of February, 2020.

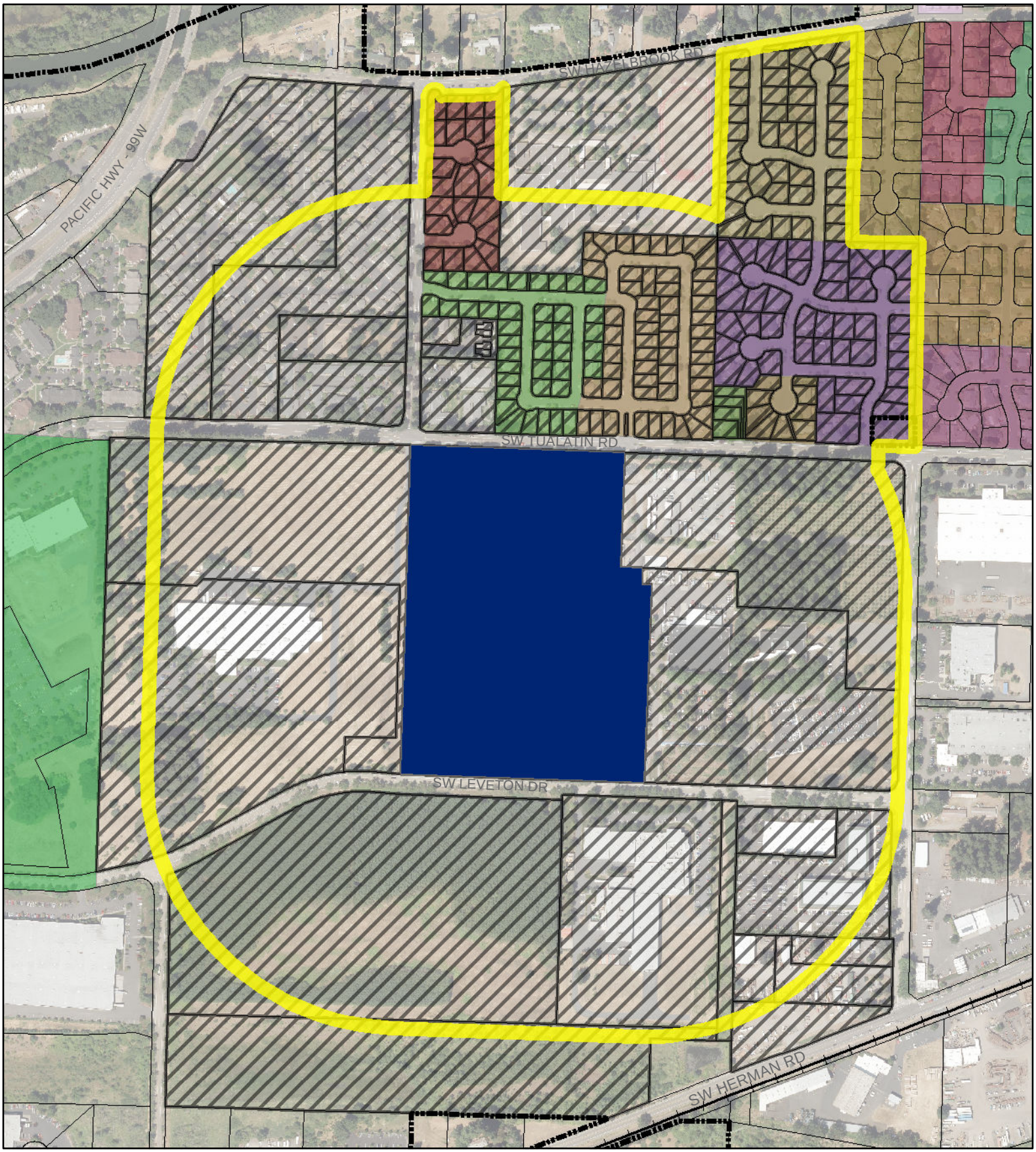
OFFICIAL STAMP
GOLDIE MARIE HAMILTON
NOTARY PUBLIC-OREGON
COMMISSION NO. 950615
MY COMMISSION EXPIRES MAY 17, 2020

Notary Public for Oregon
My commission expires: May 17, 2020

RE: _____

Mailing List - TLID 2S122AB00100

TUALGIS



1000' Buffer

1000' Buffer with Subdivisions

Selected Taxlots

N
W
E
S

From:	Stacey Morrill
To:	stan.jernberg@outlook.com; Sheri_Esser@outlook.com; dan@danhardyproperties.com; daniel@bachhuber.co; jasuwi7@gmail.com; charlie5915@hotmail.com; hgeorge@gmail.com; SHashberger@msn.com; meloyi@gmail.com; doug_ulmer@comcast.net; tualatinmidwestcio@gmail.com; chaserd2003@gmail.com; tualatinmidwestcio@gmail.com; tmpgarden@comcast.net; talykn@gmail.com; martinazziwoodsCIO@gmail.com; delmoore@frontier.com; Jeremiah.baldwin@lamresearch.com; ardyth@comcast.net; jigilkey@gmail.com; patrickcrowell79@gmail.com; edkcnw@comcast.net; jmakarowsky@comcast.net; edkcnw@comcast.net; s.caporale85@gmail.com; robikelly@earthlink.net; tualatincommercialcio@gmail.com; scottm@capacitycommercial.com; tricia.wilson@cushwake.com
Cc:	Melissa Slotemaker
Subject:	Notice of Neighborhood Review Meeting
Date:	Wednesday, February 5, 2020 8:15:50 AM
Attachments:	7860 20200203 Nhood Mtg. Letter and Map- Final.pdf

---

Attached is a notice of a neighborhood review meeting for an architectural review.

Regards,

Stacey Morrill

Project Assistant

AKS ENGINEERING & FORESTRY, LLC

12965 SW Herman Road, Suite 100 | Tualatin, OR 97062

P: 503.563.6151 Ext. 250 | F: 503.563.6152 | www.aks-eng.com | MorrillS@aks-eng.com

Offices in: Bend, OR | Keizer, OR | Tualatin, OR | Vancouver, WA

February 4, 2020

RE: Neighborhood Review Meeting
Architectural Review

Dear Property Owner/Neighbor:

AKS Engineering & Forestry, LLC, is holding a neighborhood meeting regarding the property located at 11361 SW Leveton Drive in Tualatin, Oregon, which is Tax Lot 100 of Washington County Assessor's Map 2S122AB and is zoned Manufacturing Park (MP). A map of the location is shown on the back of this letter. The project involves an architectural review application for an addition to an existing building and associated site improvements. Prior to submitting a land use application to the City of Tualatin, we would like to discuss the project with you in more detail.

The purpose of this meeting is to provide a forum for surrounding property owners/residents to review and discuss the project before the application is submitted to the City. This meeting will give you the opportunity to share any special information about the property involved. We will attempt to answer questions that may be relevant to meeting development standards consistent with the City of Tualatin Land Development Code. This neighborhood meeting is scheduled for:

February 19, at 6:00 p.m.
Tualatin Public Library
18878 SW Martinazzi Avenue
Tualatin, OR 97062

Please note that this meeting will be an informational meeting on preliminary plans. These plans may be altered prior to submittal of the application to the City. Depending upon the type of land use action required, you may receive official notice from the City of Tualatin requesting that you participate with written comments and/or you may have the opportunity to attend a public hearing.

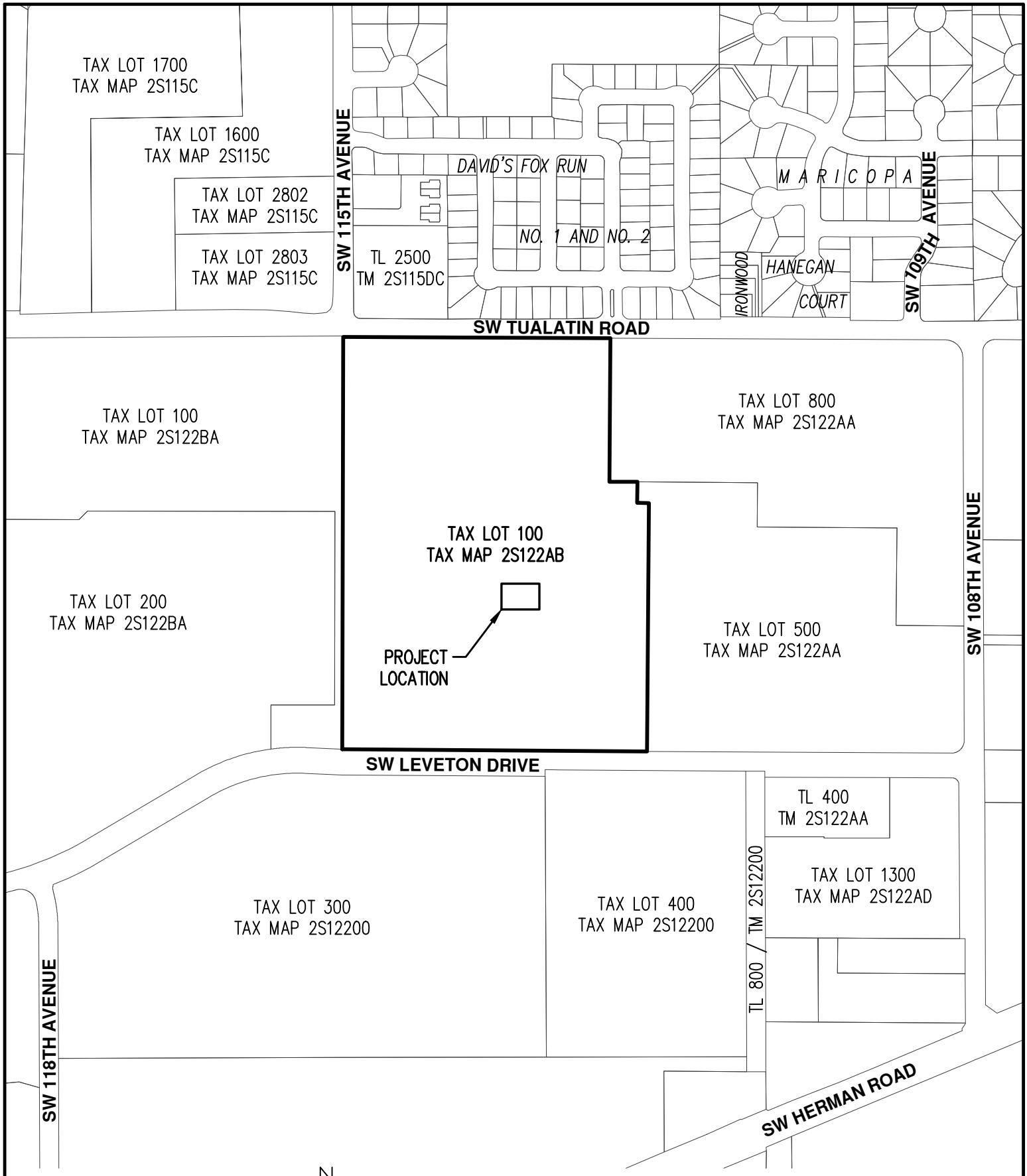
I look forward to discussing this project with you. If you have questions but will be unable to attend, please feel free to contact me at 503-563-6151 or by email at slotemakerm@aks-eng.com.

Sincerely,
AKS ENGINEERING & FORESTRY, LLC

Melissa Slotemaker, AICP
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
(503) 563-6151 | slotemakerm@aks-eng.com

Enclosure: Vicinity Map

cc: Lynette Sanford, City of Tualatin Community Development Department
Tualatin Citizen Involvement Organizations (CIOs) by email



DATE: 02/03/2020

VICINITY MAP

SHEET
1 OF 1

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: JDS
CHKD:
AKS JOB: 7860

DWG: 7860 VICINITY | SITE MAP

CERTIFICATION OF SIGN POSTING

NOTICE

NEIGHBORHOOD / DEVELOPER MEETING

2/19/2020 6:00 .m.

18878 SW Martinazzi Ave

503-563-6151

In addition to the requirements of TDC 31.064(2), the 18" x 24" sign must display the meeting date, time, and address as well as a contact phone number. The block around the word "NOTICE" must remain **orange** composed of the **RGB color values Red 254, Green 127, and Blue 0**. Staff has a Microsoft PowerPoint 2007 template of this sign design available through the Planning Division homepage at:
https://www.tualatinoregon.gov/planning/land-use-application-sign-templates

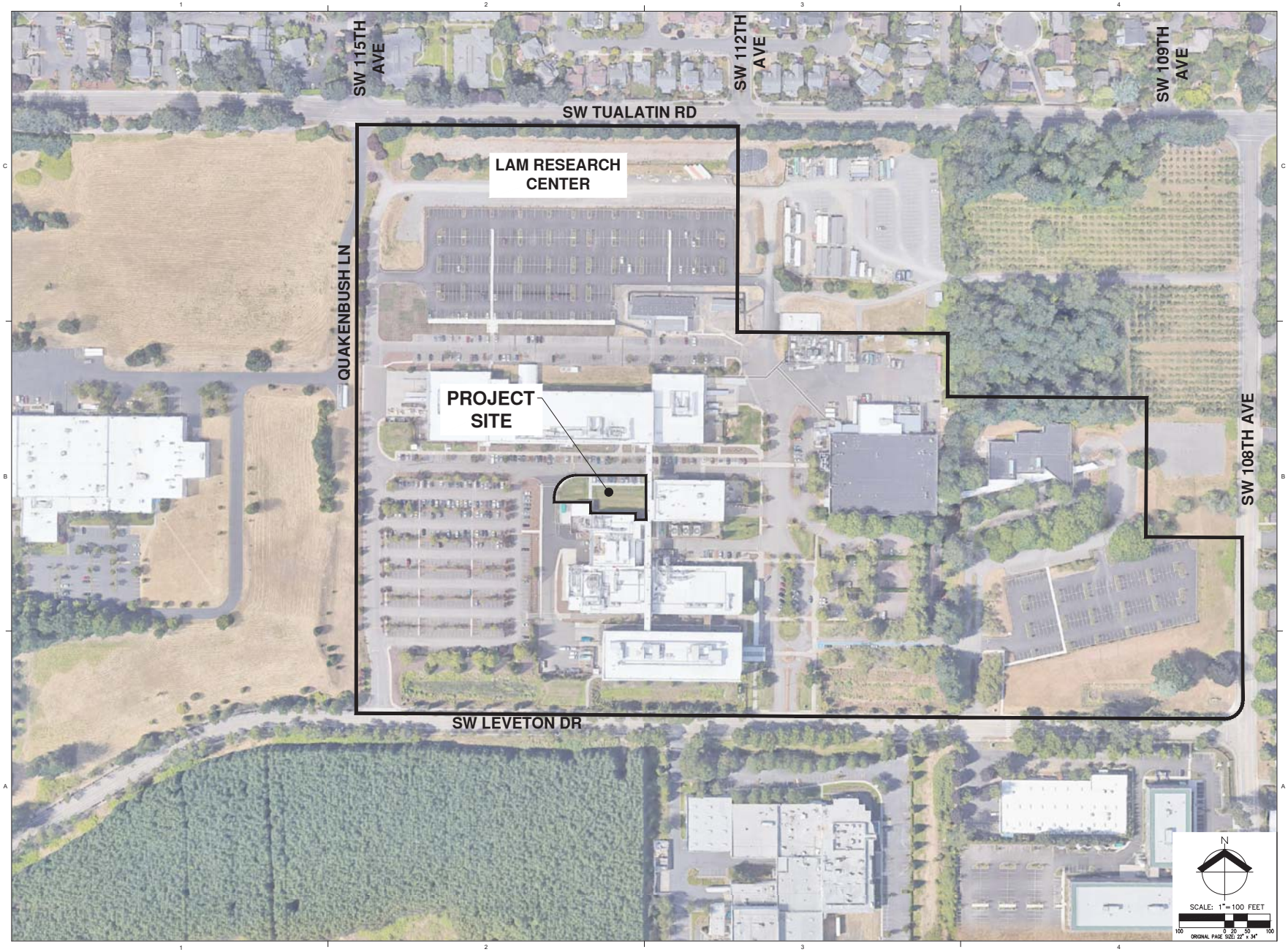
---

As the ~~applicant~~ Applicant's Consultant for the Lam Research Building D Addition Architectural Review project, I hereby certify that on this day, 2/5/2020 sign(s) was/were posted on the subject property in accordance with the requirements of the Tualatin Development Code and the Community Development Division.

Applicant's Consultant Name: Kirk Warhane
(Please Print)

Applicant's Consultant Signature: [signature]

Date: 2/5/2020



SSOE

JE DUNN CONSTRUCTION

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

AKS

ENGINEERING • SURVEYING • NATURAL RESOURCES
FORESTRY • PLANNING • LANDSCAPE ARCHITECTURE

SEAL ON THIS DOCUMENT AUTHORIZED BY:

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT INFORMATION:

FAC-1084
BUILDING TU-D
CMS ADDITION

OWNER INFORMATION:

Lam RESEARCH

LAM RESEARCH
11361 SW LEVETON DR
TUALATIN, OR 97062

NO.	DATE	SUBJECT
REVISION OR ISSUE		

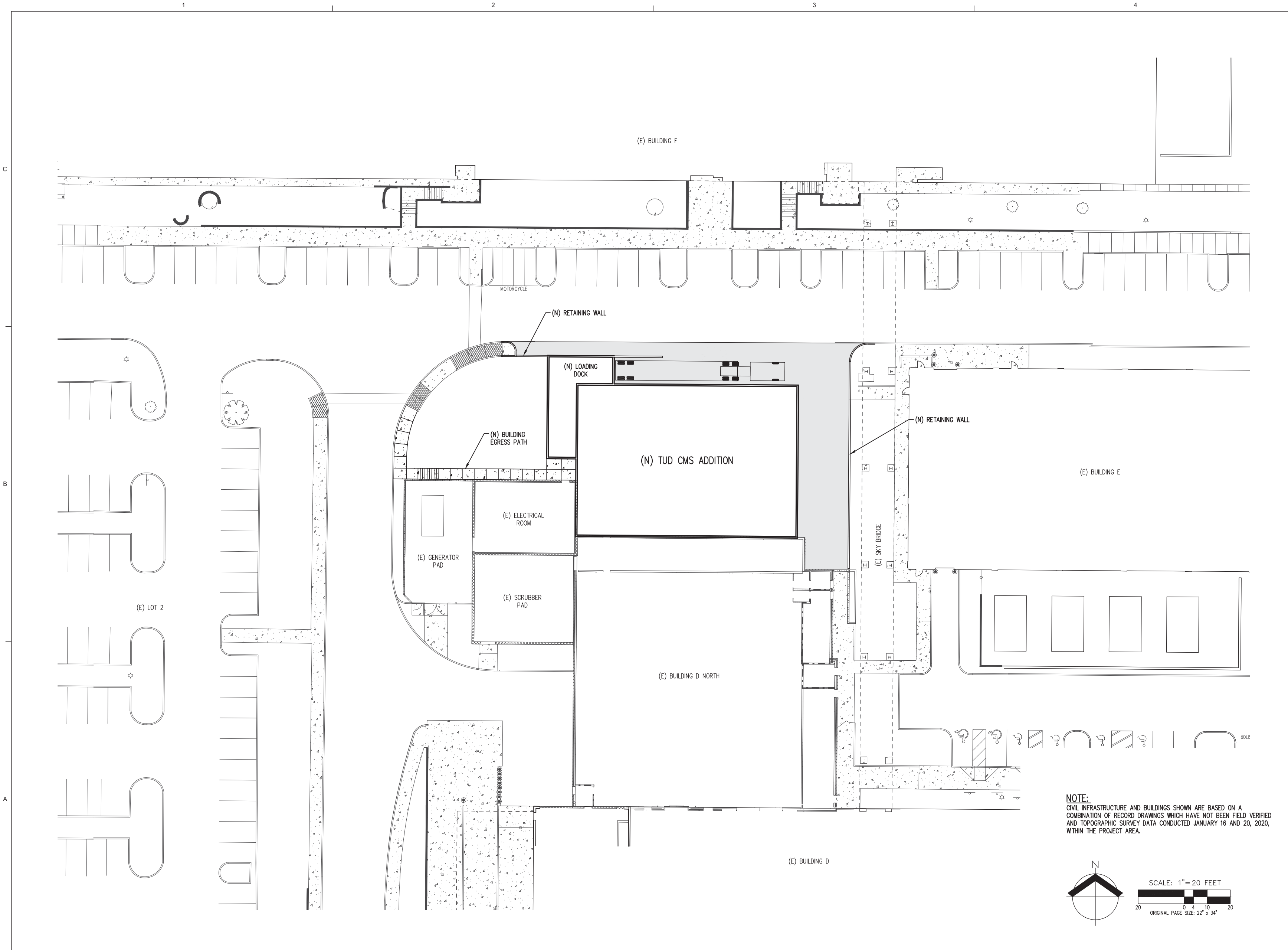
AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151

PROJECT NO: 7860
PROJECT MANAGER:
DESIGNED: C.STREET
CHECKED: J.SUBLET

DRAWING TITLE:
VICINITY MAP

DRAWING NO:
P0053-TUD-AR-P1

Q:\jobs\7800-7899\7860 Lam Tualatin - Bldg D Chemical Storage\CAD\Exhibits\7860 VICINITY MAP.dwg
DATE: Feb 14, 2020 - 10:17am USER: lsanders



ssoe

JE DUNN CONSTRUCTION

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151
WWW.AKS-ENG.COM

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FORESTRY • PLANNING • LANDSCAPE ARCHITECTURE

SEAL ON THIS DOCUMENT AUTHORIZED BY:

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT INFORMATION:

FAC-1084
BUILDING TU-D
CMS ADDITION

OWNER INFORMATION:

Lam RESEARCH

LAM RESEARCH
11361 SW LEVETON DR
TUALATIN, OR 97062

NO.	DATE	SUBJECT

REVISION OR ISSUE

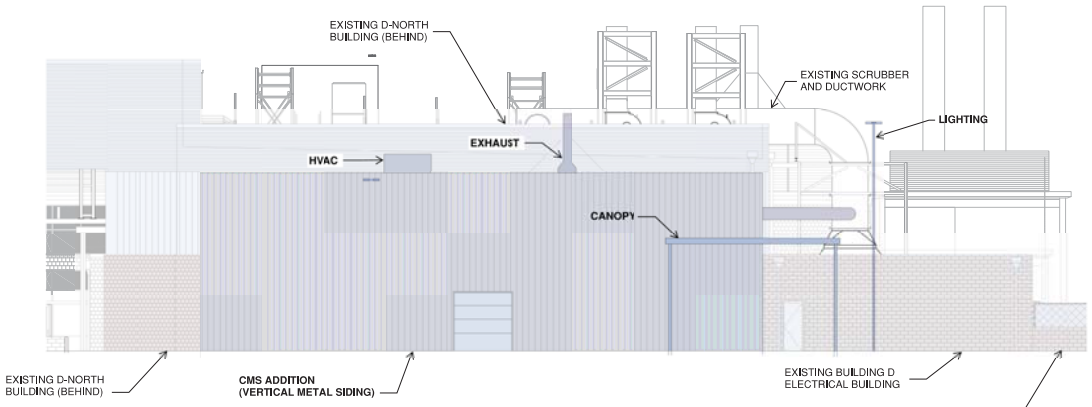
AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151

PROJECT NO: 7860
PROJECT MANAGER:
DESIGNED: C.STREET
CHECKED: J.SUBLET

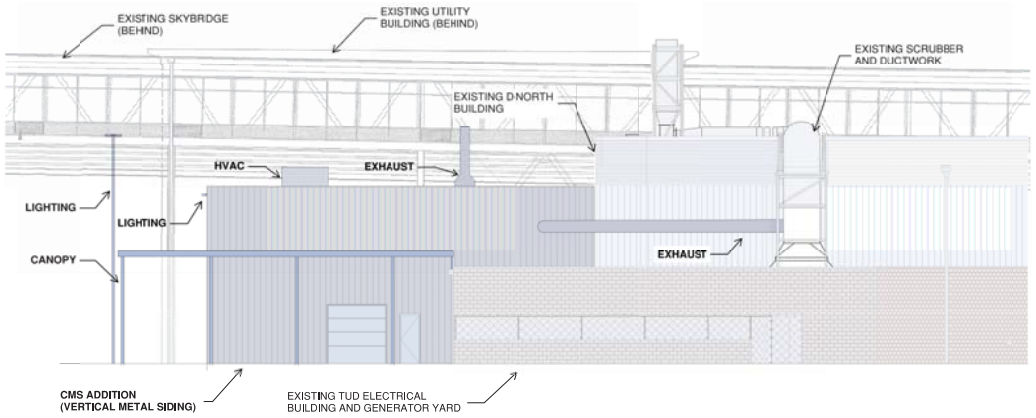
DRAWING TITLE:
PRELIMINARY SITE PLAN

DRAWING NO:
P0053-TUD-AR-P2

Q:\jobs\7800-7899\7860 Lam Tualatin - Bldg D Chemical Storage\CAD\Exhibits\7860 SITE PLAN CONCEPT.dwg
DATE: Feb 14, 2020 - 10:24am USER: lambertb



NORTH ELEVATION
NOT TO SCALE



WEST ELEVATION
NOT TO SCALE

SSOE

JE DUNN CONSTRUCTION

SEAL ON THIS DOCUMENT AUTHORIZED BY:

PRELIMINARY
NOT FOR CONSTRUCTION

PROJECT INFORMATION:

FAC-1084
BUILDING TU-D
CMS ADDITION

CLIENT INFORMATION:

Lam RESEARCH

LAM Research
11361 SW LEVELTON DR
TUALATIN, OR 97062

CLIENT PROJECT NO:

NO.	DATE	SUBJECT
REVISION OR ISSUE		

SSOE, Inc.

PROJECT NO:	019-00362-00
PROJECT MANAGER:	JOEY KRAGT
DESIGNED:	CHRIS HANSON
CHECKED:	XIAOYING ZHANG

DRAWING TITLE:
ARCHITECTURAL
EXTERIOR
ELEVATIONS

DRAWING NO:
P0053-TUD-AR-100

USER:

DATE:

AKS ENGINEERING & FORESTRY

BEND, OR
3052 NW Merchant Way, Suite 100
Bend, OR 97703
(503) 317-8429

KEIZER, OR
4300 Cherry Avenue NE
Keizer, OR 97303
(503) 400-6028

TUALATIN, OR
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
(503) 563-6151

VANCOUVER, WA
9600 NE 126th Avenue, Suite 2520
Vancouver, WA 98682
(360) 882-0419

www.aks-eng.com

Lam Research – Building D Addition
February 19, 2020
6:00 p.m.

Tualatin Public Library
18878 SW Martinazzi Ave, Tualatin, OR 97062

PLEASE PRINT CLEARLY

Printed Name	Full Mailing Address	Email Address	Zip Code	Phone #
CHAIR CHITZUM				
Joan Hamilton				
ARLAN STERPA	ST 2			503 3 2-

February 20, 2020

Neighborhood Meeting Minutes: Lam Research Building D Addition Architectural Review

Meeting Date: February 19, 2020
Time: 6:00 p.m.
Location: Tualatin Public Library, 18878 SW Martinazzi Avenue, Tualatin OR 97062

In preparation for the submission of an architectural review land use application, the applicant conducted a neighborhood meeting in accordance with applicable City regulations. Arlan Sterpa, representing JE Dunn, and Melissa Slotemaker and Jeff Sublet from AKS Engineering & Forestry, LLC were present. Sign-in sheets and business cards were provided. The meeting began with a presentation which included an overview of the property, the project location, details about the planned project, and an approximate timeframe of the land use application submittal, City's review process, and construction.

Attendees asked questions and/or provided general comments about the project. The following topics were discussed:

- Questions about the location of the improvements
  - Will it be visible from SW Tualatin Road?
- Questions about construction
  - Will there be vibration?
  - How long will the construction process take?
- Questions about traffic
  - Will there be an increase in employees?
  - Will traffic increase on SW 115th Avenue?

The meeting concluded at approximately 6:20 pm.

Sincerely,
AKS ENGINEERING & FORESTRY, LLC

Melissa Slotemaker, AICP
12965 SW Herman Road, Suite 100
Tualatin, OR 97062
(503) 563-6151 | slotemakerm@aks-eng.com

CERTIFICATION OF SIGN POSTING

NOTICE

ARCHITECTURAL REVIEW AR- 20 -__

For more information call 503-691-3026 or visit www.tualatinoregon.gov

The applicant must provide and post a sign pursuant to Tualatin Development Code (TDC 32.150). The block around the word "NOTICE" must remain yellow composed of the RGB color values Red 255, Green 255, and Blue 0. A template is available at: https://www.tualatinoregon.gov/planning/land-use-application-sign-templates

NOTE: For larger projects, the Community Development Department may require the posting of additional signs in conspicuous locations.

As the applicant for the Lam Research Building D Chemical Management System Addition project, I hereby certify that on this day, 2 sign(s) was/were posted on the subject property in accordance with the requirements of the Tualatin Development Code and the Community Development Division.

Representative Applicant's Name: Kim Werhane
(Please Print)

Representative Applicant's Signature: _____

Date: 2/28/20


STOP
NOTICE
ARCHITECTURAL
REVIEW AR-20-0001
For more information call
503-691-3026 or visit
www.tualatinoregon.gov

NOTICE

ARCHITECTURAL REVIEW AR-20-0001

For more information call 503-691-3026 or visit www.tualatinoregon.gov

Lam Research Corporation
TUD CMS Addition
Tualatin, Oregon

Preliminary Stormwater Report

Date:	February 21, 2020
Owner:	Lam Research Corporation 2025 Gateway Place, Suite 228 San Jose, California 95110
Client:	SSOE Group 7431 NW Evergreen Parkway, Suite 110 Hillsboro, Oregon 97124
Engineering Contact:	John P. Christiansen, PE (503) 563-6151 | johnc@aks-eng.com
Engineering Firm:	AKS Engineering & Forestry, LLC 12965 SW Herman Road, Suite 100 Tualatin, Oregon 97062
AKS Job Number:	7860

AKS ENGINEERING & FORESTRY
www.aks-eng.com

Lam Research Corporation
TUD CMS Addition
Tualatin, Oregon

Preliminary Stormwater Report

Date:	February 21, 2020
Owner:	Lam Research Corporation 2025 Gateway Place, Suite 228 San Jose, California 95110
Client:	SSOE Group 7431 NW Evergreen Parkway, Suite 110 Hillsboro, Oregon 97124
Engineering Contact:	John P. Christiansen, PE (503) 563-6151 | johnc@aks-eng.com
Engineering Firm:	AKS Engineering & Forestry, LLC 12965 SW Herman Road, Suite 100 Tualatin, Oregon 97062
AKS Job Number:	7860

AKS ENGINEERING & FORESTRY
www.aks-eng.com

REGISTERED PROFESSIONAL ENGINEER
76382PE
PRELIMINARY
OREGON
JUNE 29, 2009
JOHN P. CHRISTIANSEN
RENEWAL DATE: 12/31/21

Table of Contents

Tables

Exhibits

Appendices

Preliminary Stormwater Report
LAM RESEARCH – TUD CMS ADDITION
TUALATIN, OREGON

1.0 Purpose of Report
The purpose of this report is to analyze the effects the proposed development will have on the existing stormwater conveyance system; document the criteria, methodology, and informational sources used to design the proposed stormwater system; and present the results of the hydraulic analysis.

2.0 Project Location/Description
The project is located in the central region of the Lam Research Industrial Campus, approximately 1,500-feet northwest of the intersection of Leveton Drive and SW 108th Avenue. The site address is 11361 Leveton Drive, Tualatin, Oregon, 97062 (Tax Lot 100, Tax Map 2S 1 22AB).

The project consists of a ±6,900-square-foot building addition, paved side yards, and relocation of existing private underground utilities. Stormwater runoff generated by the project will use available capacity within an existing stormwater facility for water quantity and quality management. The existing facility is an extended dry basin pond, identified as "Pond B" in prior stormwater management reports prepared for former projects on-site. The project's hydromodification impacts will be mitigated through a Hydromodification Fee-In-Leu, in accordance with newly adopted Clean Water Services (CWS) stormwater requirements for hydromodification.

The results of this stormwater analysis are based on similar assumptions and the available capacity documented in a former drainage report, titled *Stormwater Management Report,* prepared for the Lam Research Parking Master Plan project (City of Tualatin AR-16-0010), by Mackenzie, with a final revision date of August 10, 2017.

Additional information used in the preparation of this report also references the drainage report prepared for the original site development, titled *Storm Calculations – Novellus Tualatin, Oregon,* by Mackenzie, with a final revision date of March 6, 2001.

3.0 Regulatory Design Criteria
3.1 STORMWATER QUANTITY
Per CWS *Design and Construction Standards* (R&O 19-5), Section 4.02 – Water Quantity Control Requirements for Conveyance Capacity, on-site detention is required when any of the following conditions exist:

1. *There is an identified downstream deficiency and the District or City determines that detention rather than conveyance system enlargement is the more effective solution.*

2. *There is an identified regional detention site within the boundary of the development.*

3. *Water quantity facilities are required by District-adopted watershed management plans or adopted subbasin master plans or District-approved subbasin strategy.*

An existing on-site stormwater facility will be used for stormwater quantity management and no modifications to the facility are proposed.

3.2 HYDROMODIFICATION

Per CWS R&O 19-5, Section 4.03 – Hydromodification Approach Requirements, the implementation or funding of techniques to reduce impacts to the downstream receiving water body is required when a new development, or other activities, creates or modifies 1,000 square feet or more of impervious surfaces or increases the amount or rate of surface water leaving the site. The following techniques may be used to mitigate impacts to the downstream receiving water body:

a. Construction of permanent LIDA designed in accordance with this Chapter; or

b. Construction of a permanent stormwater detention facility designed in accordance with this Chapter; or

c. Construction or funding of a hydromodification approach that is consistent with a District-approved subbasin strategy; or

d. Payment of a Hydromodification Fee-In-Lieu.

Per Section 4.03.2, unless specifically waived in writing by the District, a Hydromodification Assessment is required of all activities described in Section 4.03.1, unless the activity meets any of the following criteria:

a. The project results in the addition and/or modification of less than 12,000 square feet of impervious surface.

b. The project is located within a District-approved subbasin strategy with an identified regional stormwater management approach for hydromodification.

This project will result in the addition and/or modification of 11,997 square feet of impervious surface. Therefore, per Section 4.03.2.a, a hydromodification assessment is not required. Hydromodification will be addressed by a payment of a Hydromodification Fee-In-Lieu in accordance with District rates and charges.

3.3 STORMWATER QUALITY

Per CWS R&O 19-5, Section 4.04 Water Quality Treatment Requirements, an on-site water quality approach is required when a new development or other activities create or modify 1,000 square feet or greater of impervious surfaces, or increase the amount of stormwater runoff or pollution leaving the site.

An existing on-site stormwater facility will be used for stormwater quality management and no modifications to the facility are proposed.

4.0 Design Methodology

Per the 2001 Novellus Storm Calculations, existing storm drainage piping and detention volumes were sized using Soil Conservation Service (SCS) methodology. This method utilizes the SCS Type 1A 24-hour design storm. The former stormwater calculation procedures used for the original design are still applicable under current CWS standards. Representative curve numbers (CNs) obtained from *Technical Release 55* (TR-55) for the project area are included in Appendix C.

5.0 Design Parameters

5.1 DESIGN STORMS

Per CWS requirements, design storms used in peak flow hydrologic analyses shall utilize a 24-hour duration. The original 2001 Novellus Storm Calculations used SCS calculation methods to size storm drainage piping and detention ponds. The rainfall intensities used in the prior analysis are still current with present-day standards and are summarized in the table below:

Table 5-1: Rainfall Intensities

Recurrence Interval (Years)	Total Precipitation Depth (Inches)
2	2.5
10	3.45
25	3.90

5.2 PRE-DEVELOPED SITE CONDITIONS

5.2.1 Site Topography

This project is located within the central region of a developed industrial campus with localized topography that varies from the overall site. Existing on-site grades are generally flat and drain to the central portion of the project area with slopes up to ±5 percent. Small landscaped embankments exist in the northwest and eastern portions of the project area with slopes up to a ratio of 3:1, horizontal to vertical. On-site runoff is managed by a private stormwater drainage network that discharges to a private stormwater facility located on the south side of the property near Leveton Drive. The project area has a high point of ±167 feet around the project boundary and a low point of ±161 feet near the central region.

5.2.2 Land Use

The project area consists of a grass lawn area bordered by existing buildings and paved parking and private drive aisles.

5.3 SOIL TYPE

Subsurface soils at the project site are classified as Hillsboro Loam according to the Natural Resources Conservation Service (NRCS) Soil Survey for Washington County. The following table lists the Hydrologic Soil Group rating for each soil type:

Table 5-2: Hydrologic Soil Group Ratings

NRCS Map Unit Identification	NRCS Soil Classification	Hydrologic Soil Group Rating
21B	Hillsboro Loam	B

A Soil Group Map and additional information can be found in the NRCS Soil Resource Report included in Appendix B.

5.4 POST-DEVELOPED SITE CONDITIONS

5.4.1 Site Topography

On-site slopes will remain similar to the existing condition.

5.4.2 Land Use

The project will add ±6,900 square feet of building area and ±5,097 square feet of paved side yards.

5.4.3 Post-Developed Input Parameters

Refer to the HydroCAD Analysis in Appendix A.

5.4.4 Description of Off-Site Contributing Basins

This project will modify existing private storm drains within the localized project area to accommodate the building addition. Off-site basins are not evaluated in this analysis.

6.0 Stormwater Analyses

6.1 PROPOSED STORMWATER CONDUIT SIZING AND INLET SPACING

New stormwater drainage piping and inlets will be sized and spaced to properly convey stormwater runoff to the existing private storm drainage network. New storm drainage piping was designed using Manning's equation and sized to convey peak flows generated by the 25-year design storm event. Per the 2001 Novellus Storm Calculations, existing storm drainage piping was designed to convey the 25-year design storm using the SCS methodology. The former design rainfall depths are consistent with present-day standards.

6.2 PROPOSED STORMWATER QUALITY CONTROL FACILITY

Stormwater quality treatment for newly created impervious surfaces will be addressed by utilizing excess capacity of an existing stormwater facility that was designed and sized during the initial development to accommodate future improvements on-site. Per the impervious area summary table in the 2017 Parking Master Plan Stormwater Management Report, there are 2.07 acres of unused impervious area capacity within Pond B. The following table summarizes the newly added treatment area and remaining capacity within Pond B after completion of this project:

Table 6-1: Pond B Treatment Area Summary

Sizing Parameter	Area
Design Impervious Area	11.66 acres
Constructed Impervious Area	9.59 acres
Existing Excess Capacity	2.07 acres
TUD CMS Addition Impervious Area	0.275 acres
Unutilized Capacity (after TUD CMS Addition)	1.79 acres

6.3 HYDROMODIFICATION

This project will result in the addition and/or modification of less than 12,000 square feet of impervious surface. Therefore, per Section 4.03.2.a, a hydromodification assessment is not required. Hydromodification will be addressed by a payment of a Hydromodification Fee-In-Lieu in accordance with District rates and charges.

6.4 PROPOSED STORMWATER QUANTITY CONTROL FACILITY

Stormwater quantity management for the project will be provided by existing Pond B. The pond was originally designed to detain post-development peak runoff to levels equal to or below pre-development

peak rates for the 2-year, 10-year, and 25-year design rainfall events, for a total of 23.32 acres of impervious area. The following table summarizes the newly added impervious area and remaining capacity within Pond B after completion of this project:

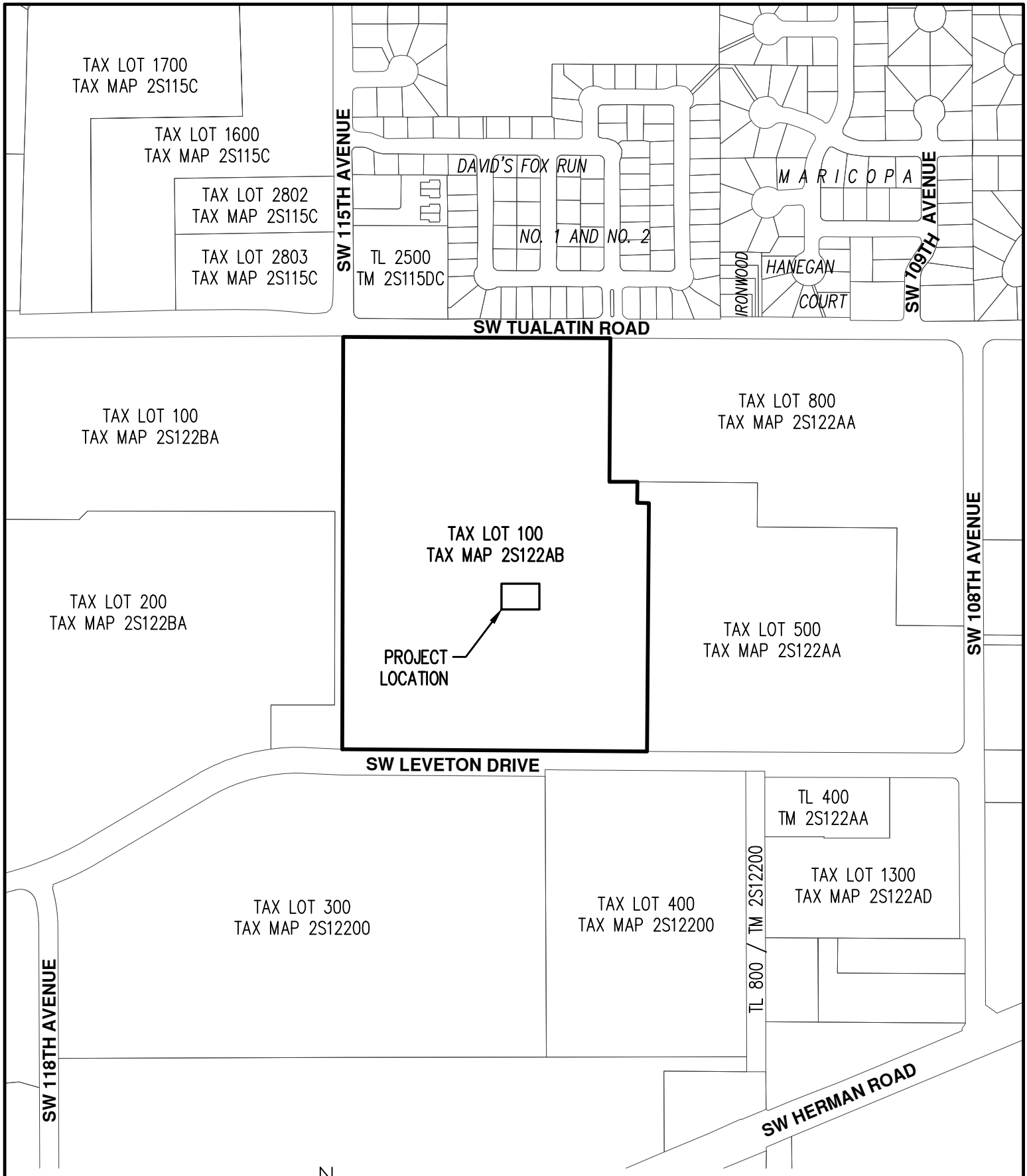
Table 6-2: Pond B Impervious Area Summary

Sizing Parameter	Area
Design Impervious Area	23.32 acres
Constructed Impervious Area	18.35 acres
Existing Excess Capacity	4.97 acres
TUD CMS Addition Impervious Area	0.275 acres
Unused Capacity (after TUD CMS Addition)	4.69 acres

6.5 DOWNSTREAM ANALYSIS

Increased runoff generated by the project will be managed by existing Pond B, which was designed to accommodate full build-out conditions of the Lam Research campus. Post-developed peak runoff rates will not exceed the rates determined in the original 2001 Novellus Storm Calculations; therefore, the public conveyance system downstream of the site was not reviewed.

Exhibit A:
Vicinity Map



DATE: 02/21/2020

VICINITY MAP	SHEET A
AKS ENGINEERING & FORESTRY, LLC 12965 SW HERMAN RD, STE 100 TUALATIN, OR 97062 503.563.6151 WWW.AKS-ENG.COM	DRWN: JDS CHKD: AKS JOB: 7860

DWG: 7860 VICINITY MAP 8_5X11 | VICINITY MAP

Exhibit B:
Storm Drain Facilities Map

CONNECT TO EXISTING STORM DRAIN PIPE

(N) TUD CMS ADDITION

ELECTRICAL ROOM

SCRUBBER PAD

SKY BRIDGE

BUILDING E

BUILDING D NORTH

BUILDING D

BUILDING C

EXISTING PRIVATE STORM MAIN

EXISTING STORM DRAIN OUTLET TO POND B

POND B

N

SCALE: 1"= 60 FEET

60 0 12 30 60

ORIGINAL PAGE SIZE: 11" x 17"

DATE: 02/21/2020

STORM DRAIN FACILITIES MAP	EXHIBIT
TUD CMS ADDITION	B

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: BDL
CHKD: JDS
AKS JOB: 7860

Exhibit C:
Project Area Stormwater Catchment Map

BUILDING F

SUBCATCHMENT "1S" BOUNDARY

EXISTING ASPHALT DRIVE AISLE AND PARKING

CONNECT TO EXISTING STORM DRAIN PIPE

EXISTING STORM PIPE #59 PER 2001 NOVELLUS STORM CALCULATIONS REPORT

(N) TUD CMS ADDITION

ELECTRICAL ROOM

GENERATOR PAD

SCRUBBER PAD

SKY BRIDGE

EXISTING ASPHALT DRIVE AISLE

BUILDING D NORTH

STM

169 168 167 166 165 164 163 162

LEGEND

EXISTING GROUND CONTOUR (1 FT)

EXISTING GROUND CONTOUR (5 FT) 350

FINISHED GRADE CONTOUR (1 FT)

FINISHED GRADE CONTOUR (5 FT) 345

N

SCALE: 1"= 30 FEET

30 0 6 15 30

ORIGINAL PAGE SIZE: 11" x 17"

DATE: 02/21/2020

PROJECT AREA STORMWATER CATCHMENT MAP

EXHIBIT C

TUD CMS ADDITION

AKS ENGINEERING & FORESTRY, LLC
12965 SW HERMAN RD, STE 100
TUALATIN, OR 97062
503.563.6151 WWW.AKS-ENG.COM

DRWN: BDL
CHKD: JDS
AKS JOB: 7860

Appendix A:
Peak Flow Calculations – HydroCAD Analysis

Post-Developed 25-yr Storm Event Peak Flow Calculations

Summary for Subcatchment 1S: TUD CMS Addition

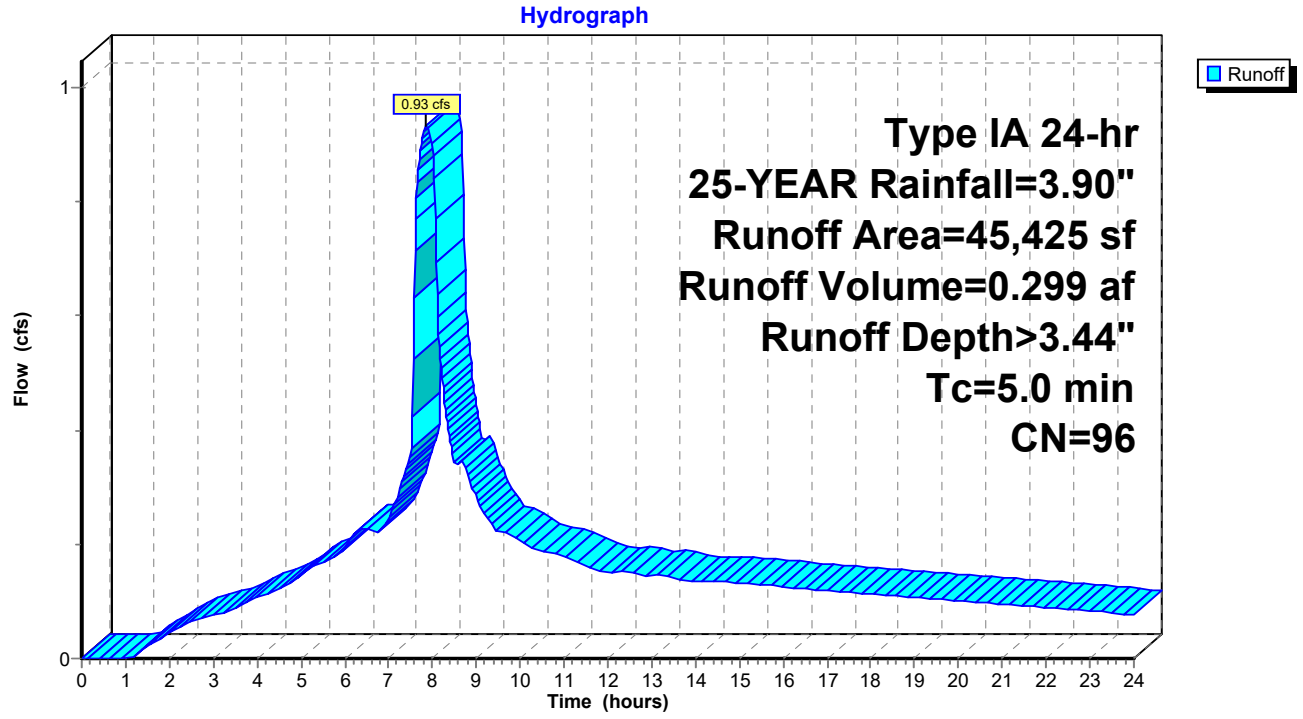
Runoff = 0.93 cfs @ 7.87 hrs, Volume= 0.299 af, Depth> 3.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.02 hrs
Type IA 24-hr 25-YEAR Rainfall=3.90"

	Area (sf)	CN	Description
*	40,541	98	Paved/roof area
	4,884	79	<50% Grass cover, Poor, HSG B
	45,425	96	Weighted Average
	4,884		10.75% Pervious Area
	40,541		89.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 1S: TUD CMS Addition



Appendix B:
USDA – NRCS Soil Resource Report

Hydrologic Soil Group—Washington County, Oregon
(Lam Research - TU D CMS Addition)

Map Scale: 1:510 if printed on A landscape (11" x 8.5") sheet.

N

Meters
0 5 10 20 30

Feet
0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 10N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Washington County, Oregon
Survey Area Data: Version 17, Sep 10, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 1, 2019—Sep 12, 2019

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
21B	Hillsboro loam, 3 to 7 percent slopes	B	1.0	100.0%
Totals for Area of Interest			**1.0**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix C:
TR-55 Runoff Curve Numbers

Table 2-2a Runoff curve numbers for urban areas [1/]

Cover description: Cover type and hydrologic condition	Average percent impervious area [2/]	Curve numbers for hydrologic soil group: A	B	C	D
Fully developed urban areas (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.) [3/]:					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50% to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only) [4/]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious areas only, no vegetation) [5/]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

[1] Average runoff condition, and $I_a = 0.2S$.

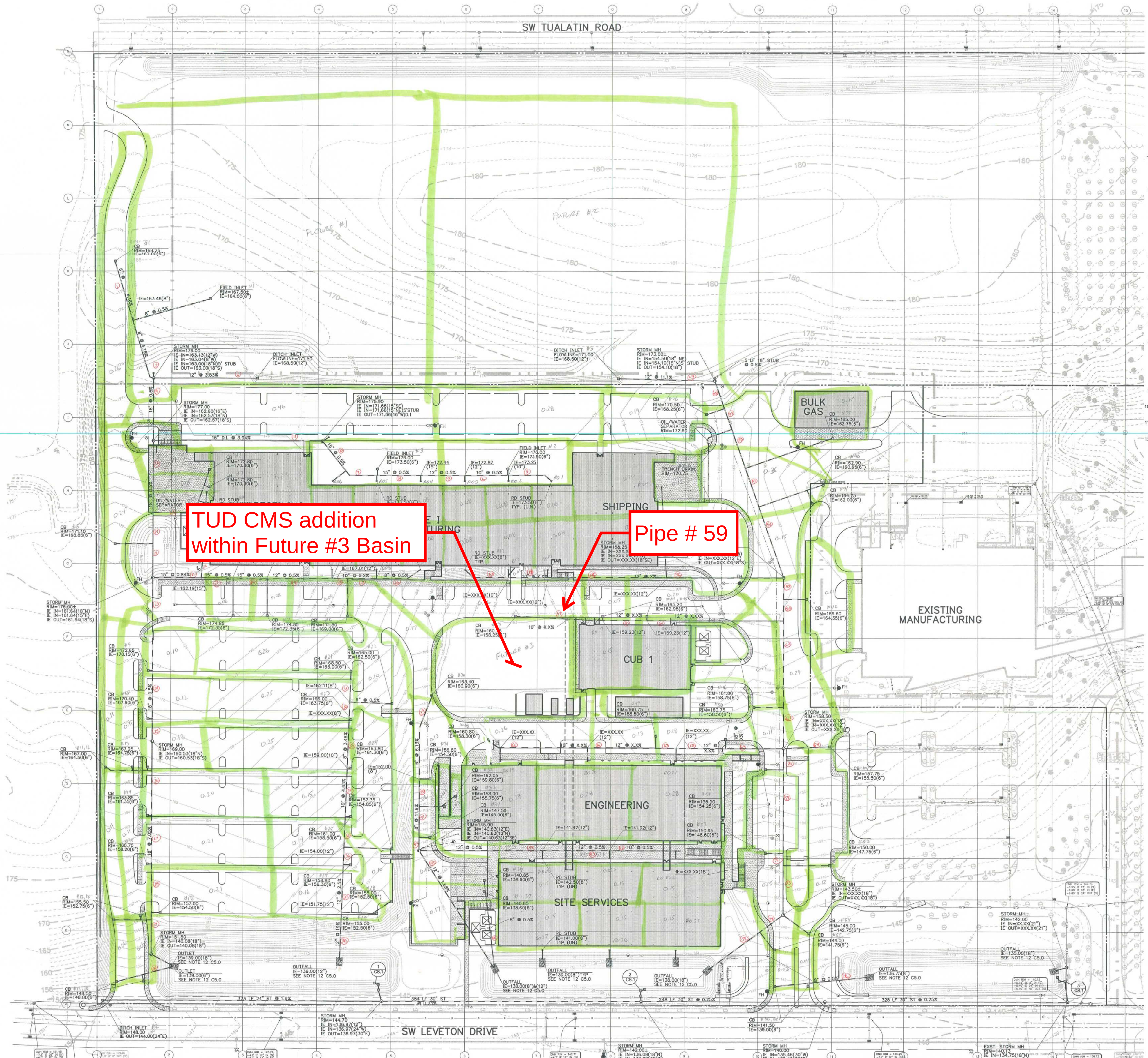
[2] The average percent impervious area shown was used to develop the composite CN's. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

[3] CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

[4] Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

[5] Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

Appendix D:
Pipe Sizing Capacities from 2001 Novellus Storm Calculations



GRAPHIC SCALE

(IN FEET)
1 inch = 50 ft.

NOVELLUS

SWINERTON BUILDERS

UTILITY NOTES

1. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF TUALATIN, THE UNIFIED SEWAGE AGENCY, AND THE CURRENT EDITION OF THE UNIFORM PLUMBING CODE AND THE UNIFORM BUILDING CODE. ALL WORK WITHIN THE PUBLIC R.O.W. REQUIRES A PUBLIC WORKS PERMIT.
2. THE WORKING DRAWINGS ARE GENERALLY DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW REQUIRED FOR INSTALLATION IN THE SPACE PROVIDED. THEY DO NOT SHOW EVERY DIMENSION, COMPONENT PIECE, SECTION, JOINT OR FITTING REQUIRED TO COMPLETE THE PROJECT. ALL LOCATIONS FOR WORK SHALL BE CHECKED AND COORDINATED WITH EXISTING CONDITIONS IN THE FIELD BEFORE BEGINNING CONSTRUCTION. EXISTING UNDERGROUND UTILITIES LAYING WITHIN THE LIMITS OF EXCAVATION SHALL BE VERIFIED AS TO CONDITION, SIZE AND LOCATION BY UNCOVERING, PROVIDING SUCH IS PERMITTED BY LOCAL PUBLIC AUTHORITIES WITH JURISDICTION, BEFORE BEGINNING CONSTRUCTION. CONTRACTOR TO NOTIFY ENGINEER IF THERE ARE ANY DISCREPANCIES.
3. PROVIDE CLEANOUTS AS REQUIRED IN THE CURRENT UNIFORM PLUMBING CODE CHAPTER 7, SECTIONS 707 AND 719, AND CHAPTER 11, SECTION 1103.04. NOTE: NOT ALL REQUIRED CLEANOUTS ARE SHOWN ON THE PLANS.
4. ALL STORM PIPING IS SIZED FOR A MANNING'S "N" VALUE = 0.013. ALL STORM PIPING IS DESIGNED USING CONCENTRIC PIPE TO PIPE AND WYE FITTINGS.
5. SEE MECHANICAL DRAWINGS FOR UTILITIES LOCATED WITHIN THE BUILDING AND TO 5' OUTSIDE THE BUILDING.
6. ALL ROOF DRAIN LEADERS TO BE 8" AT 2.0% MIN. UNLESS NOTED OTHERWISE.
7. VERIFY LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES BY POTHOLING PRIOR TO CONSTRUCTION. NOTIFY ENGINEER OF DISCREPANCIES.
8. PROVIDE 2" PVC DRAIN LINE FROM DOMESTIC WATER METER VAULT AND BACKFLOW PREVENTER VAULT TO THE DOUBLE DETECTOR CHECK VALVE (FIRE) VAULT. PROVIDE 1/3 HP SUMP PUMP AT BASE OF FIRE VAULT AND INSTALL 2" PVC DRAIN LINE WITH BACKFLOW VALVE FROM SUMP PUMP TO DAYLIGHT AT NEAREST CURB. FURNISH ¾ INCH DIAMETER CONDUIT FROM BUILDING ELECTRICAL ROOM TO FIRE VAULT FOR SUMP PUMP ELECTRICAL SERVICE. NOTE: COORDINATE WITH FIRE PROTECTION CONTRACTOR FOR FLOW SENSOR INSTALLATION AND CONDUIT REQUIREMENTS.
9. THE SURVEY INFORMATION SHOWN AS A BACKGROUND SCREEN ON THIS SHEET IS BASED ON A SURVEY PREPARED BY HICKMAN AND ASSOCIATES.
10. CONTRACTOR TO PROVIDE POWER TO IRRIGATION CONTROLLER. SEE SPECIFICATIONS AND LANDSCAPE PLANS.
11. SEE BUILDING PLUMBING DRAWINGS FOR PIPING WITHIN THE BUILDING AND UP TO 5' OUTSIDE THE BUILDING, INCLUDING ANY FOUNDATION DRAINAGE PIPING.
12. PROVIDE MINIMUM 12'x8'x12" THICK TYPE II RIP-RAP AT 12" AND LARGER STORM OUTFALLS. PROVIDE MINIMUM 8'x6'x12" THICK TYPE II RIP-RAP AT 10" AND SMALLER OUTFALLS.

PROPOSED UTILITY LEGEND

STORM SEWER LINE
SANITARY SEWER LINE
FIRE WATER LINE — FW
WATER METER
MANHOLE
CATCH BASIN/DITCH INLET
FIELD INLET
FIRE HYDRANT ASSEMBLY
UNLESS NOTED — U.N.

EXISTING UTILITY LEGEND

SITE BOUNDARY
ADJOINING OR INTERIOR PROPERTY LINE
RIGHT-OF-WAY CENTERLINE
WATER LINE
GAS LINE
SANITARY SEWER LINE
UNDERGROUND TELEPHONE LINE (GTE)
STORM DRAINAGE LINE
UNDERGROUND POWER LINE
OVERHEAD POWER LINE
FIRE HYDRANT
WATER VALVE
WATER METER
GAS VALVE
CATCH BASIN
CURB LINE
EDGE OF PAVEMENT
STREET SIGN
SANITARY SEWER MANHOLE
EVERGREEN TREE WITH DIAMETER
DECIDUOUS TREE WITH DIAMETER
CHAIN LINK FENCE LINE
LIGHT POLE
6" BOLLARD
ROOF DRAIN (SHOOT ON ROOF)
GAS METER
POWER TRANSFORMER
CAMERA TOWER
POWER POLE
GUY ANCHOR
SIDE INLET CATCH BASIN
MAIL BOX
STORM SEWER MANHOLE

Project
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REGISTERED PROFESSIONAL ENGINEER #19178
OREGON JULY 15, 1997
ROBERT L FRENTRESS JR
EXPIRES: 12/31/01

REVISIONS:

REVISION EDITION	LAST REVISION THIS SHEET	REVISION EDITION CLOSING DATE

SHEET TITLE:
SITE STORM SEWER PLAN PHASE I

FIRST ISSUED:
LAST ISSUED:
DRAWN BY:
CHECKED BY:

SHEET C5.0

JOB NO. 000366

UTILITY PERMIT REVIEW SUBMITTAL 2/14/01

STORM SEWERS

By: _____
Date: _____
Ck'd _____
Date: _____

SEWER LOCATION: STREET	M.H. #	TO M.H. #	TIME (Min): INCR. TIME	TIME (Min): TOTAL TIME (To Upper End)	In./Hr.: INTENSITY (I)	AREA (Acres): INCR. AREA	AREA (Acres): COEF. OF RUNOFF (c)	AREA (Acres): INCR. EQUIV. (c·A)	AREA (Acres): TOTAL EQUIV. AREA (Increm. Sheet) cf.	RUNOFF (C.F.S.) (I) W (c·A)	SEWER DESIGN: SLOPE (%)	SEWER DESIGN: DIAMETER (IN.)	SEWER DESIGN: CAPACITY (C.F.S.)	SEWER DESIGN: VELOCITY (F.P.S.), n = 0.012	PROFILE: LENGTH (Ft.)	PROFILE: GROUND ELEV. / INVERT ELEV. UPPER	PROFILE: GROUND ELEV. / INVERT ELEV. LOWER
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
RO #12 (53)									0.07	0.07	2.0	6"	0.86				
RO #13 (54)									0.07	0.21	0.5	12"	2.73				
RO #14 (55)									0.07	0.21	0.5	12"	2.73				
RO # 15,16 (56)									0.32	0.53	0.5	12"	2.73				
(52) + (56) = (57)										4.36	2.65	18"	18.53				
CB #42 (58)									0.17	4.53	2.65	18"	18.53				
CB #43 Ext #3 (59)									0.58	0.58	0.75	10"	2.06				
CB # 41, RO # 17 (60)									0.18	0.76	0.75	10"	2.06				
CB # 45, RO #18 (61)									0.28	1.04	0.49	12"	2.70				
(58) + (61) = (62)										5.57	2.65	12"	6.28				
CB #46 (63)									0.20	5.77	2.65	12"	6.28				
CB # 47 (64)									0.24	0.24	2%	6"	0.86				

Pipe # 59

Pipe Capacity = 2.06 cfs