

# Floodplain Analysis

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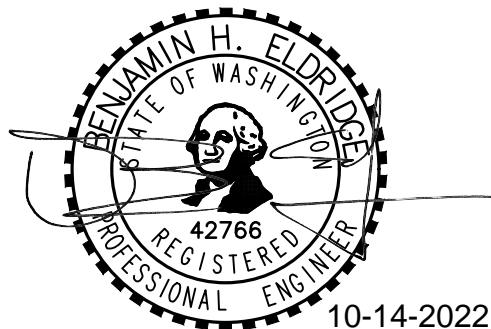
## **Freeman Logistics**

22nd Ave NW and 82nd Ave E  
Puyallup, WA

Prepared for:  
Vector Development Company  
11411 NE 124<sup>th</sup> Street, Suite 190  
Kirkland, WA 98034

October 14<sup>th</sup>, 2022  
Our Job No. 21585


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10-14-2022

### PROJECT ENGINEER'S CERTIFICATION

"I hereby state that this Floodplain Analysis for Freeman Logistics has been prepared by me or under my supervision and meets the standards of care and expertise that is usual and customary in this community for professional engineers. I understand that the City of Puyallup does not and will not assume liability for the sufficiency, suitability, or performance of drainage facilities prepared by me."

  
Ben Eldridge, PE, Senior Project Engineer

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- 2.0 EXISTING CONDITIONS SUMMARY
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Tab 1.0



## **1.0 PROJECT OVERVIEW**

## 1.0 PROJECT OVERVIEW

The proposed Freeman Logistics is an approximately 24.05-acre site located in the northeast and southeast corners of the 22<sup>nd</sup> Ave NW and 82<sup>nd</sup> Ave E intersection, Puyallup, Washington, within a portion of Section 17, Township 20 North, Range 4 East, and a portion of section 20, Township 20 North, Range 4 East, Willamette Meridian, City of Puyallup, Pierce County, Washington. The site is comprised of 15 parcels plus the right-of-way dedication to improve 22nd Ave NW to the east of 82nd Ave E. Please see the attached Vicinity Map on the following pages of the report.

### Project Parcel List

SITE ADDRESS	ASSESSOR'S PARCEL NUMBER	PARCEL AREA
4723 FREEMAN ROAD E.	042017-4075	223,187± SQ. FT. OR 5.123± ACRES
4801 FREEMAN ROAD E.	042020-1039	73,861± SQ. FT. OR 1.696± ACRES
4815 FREEMAN ROAD E.	042020-1066	16,128± SQ. FT. OR 0.370± ACRES
4823 FREEMAN ROAD E.	042020-1034	22,055± SQ. FT. OR 0.506± ACRES
4827 FREEMAN ROAD E.	042020-1052	19,821± SQ. FT. OR 0.455± ACRES
4917 FREEMAN ROAD E.	042020-1045	NO TITLE REPORT
4923 FREEMAN ROAD E.	042020-1027	49,753± SQ. FT. OR 1.142± ACRES
5117 FREEMAN ROAD E.	042020-5003	74,635± SQ. FT. OR 1.713± ACRES
5005 FREEMAN ROAD E.	042020-1036	83,200± SQ. FT. OR 1.9100± ACRES
5109 FREEMAN ROAD E.	042020-5004	30,928± SQ. FT. OR 0.7100± ACRES
8307 52ND STREET E.	042020-1101	217,704± SQ. FT. OR 4.998± ACRES
8305 49TH STREET E.	042020-1040	45,227± SQ. FT. OR 1.038± ACRES
8315 49TH STREET E.	042020-5016	43,118± SQ. FT. OR 0.990± ACRES
8218 49TH STREET E.	042020-1042	56,740± SQ. FT. OR 1.303± ACRES
8319 49TH STREET E.	042020-5017	47,539± SQ. FT. OR 1.091± ACRES

The developed site will include two commercial warehouse buildings with dock high loading, associated parking, storm drainage facilities, and frontage improvements.

The frontage improvements along the entirety of Freeman Road East are proposed to provide sufficient travel lanes for the anticipated traffic. Proposed improvements include widening the road pavement and installing curb & gutter, planter strip, sidewalk, street trees, and lights per City of Fife standards. Right-of-way dedication is proposed to create a 35-ft wide half street on the project side. Full grind and overlay improvements to the existing 2 lanes are proposed to facilitate truck loading from the site. Public stormwater infrastructure is proposed along Freeman Road East to maintain the natural flow paths.

In total the site plus frontage area is 26.89 acres. The impervious coverage after development will be approximately 80%. The proposed stormwater management system is designed to collect the full proposed conditions and meet the flow control duration standards up to the 100-year storm event.

### **Summary of Land Coverage Areas**

Land Use Category	Area (square feet)	Area (acres)
New Asphalt/Concrete	446,789	10.26
New buildings	491,336	11.28
New landscape/undisturbed area	223,320	5.36
Total	1,171,445	26.89

## **VICINITY MAP**



REFERENCE: MapQuest (2022)

Scale:

Horizontal: N.T.S.

Vertical: N/A



**Barghausen  
Consulting Engineers, Inc.**

18215 72nd Avenue South

Kent, WA 98032

425.251.6222

**barghausen.com**

*For:*

**Freeman Road Logistics  
Fife, Washington**

*Title:*

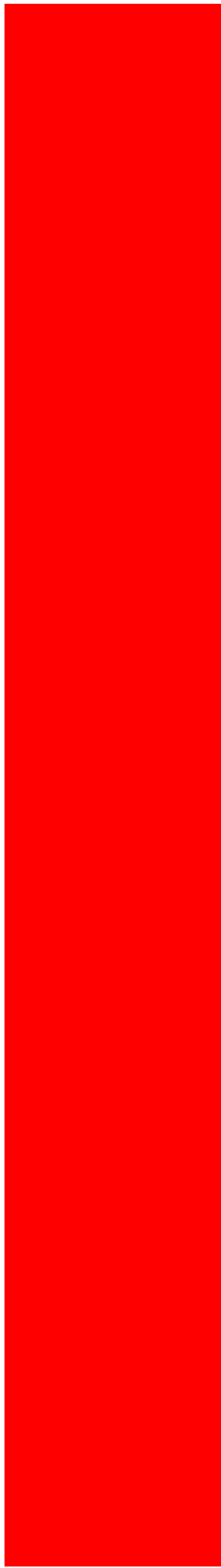
**VICINITY MAP**

Job Number

**21585**

DATE: 09/01/22

# Tab 2.0



## **2.0 EXISTING CONDITIONS SUMMARY**

## **2.0 EXISTING CONDITIONS SUMMARY**

Under existing conditions, the project site consists of farmland and scattered single-family houses. The site is generally flat and gradually sheet flow to the northwest corner. Per the USSC Soil Survey, the underlying soils are mainly comprised of Sultan silt loam and Puyallup fine sandy loam, see attached exhibit within this section.

A wetland is located on an adjacent parcel (0420201008) to the south. A riparian corridor has been indicated to the east of the site, with associated buffers extending to the project. The project is not anticipated to impact the existing wetland or riparian corridor.

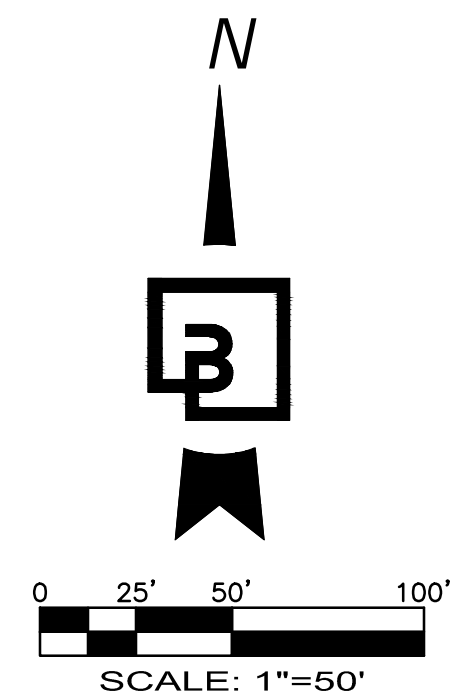
The project site is shown on FEMA Flood Insurance Rate Map (FIRM), map number 53053C0329E panel 0329E, effective March 7<sup>th</sup>, 2017. The project area is considered Zone X, which indicates that the area is, "determined to be outside of the 0.2% annual chance floodplain." See exhibits within this section for more details.

The City of Puyallup has indicated that there is historic evidence of flooding at this site and requires proposed buildings to be designed as "reasonably safe from flooding" in accordance with PMC 21.07 flood plain regulations. The regulatory flood elevation governing protection shall be the Base Flood Elevation designated on the floodplain maps adopted by Pierce County.

Pierce County has determined that the project area is within a regulatory flood plain, zone AE, which indicates that the base flood elevation is determined. The discrepancy between the FEMA FIRM mapping and Pierce County can be attributed to the seclusion of a non-accredited levee during the FEMA map update in 2017. Pierce County Public GIS information indicates that the project site is within a regulatory flood plain, with base flood elevations ranging from 33.7 along the southern extent of the site to 32.0' near the northwest corner of the project. See exhibit Base Flood Elevation Exhibit included within this section for more information. The flood boundary and elevation information were determined directly from the Pierce County Open Geospatial Data Portal.

## **EXISTING CONDITIONS MAP**





LEGEND

(NOTE: NOT ALL SYMBOLS MAY APPEAR ON THE MAP)

- SURVEY MONUMENT (AS NOTED)
- SECTION CORNER (AS NOTED)
- SET REBAR/CAP (LS#45789 OR #41282)
- FOUND REBAR/CAP (AS NOTED)
- SET 2"x2" HUB/TACK LINE STAKE
- MAG/WASHER OR LEAD/TACK (AS NOTED)
- LUMINAIRE (LUM.)
- YARD LIGHT
- ORNAMENTAL LIGHT
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- POWER POLE (PP)
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ABBREVIATIONS

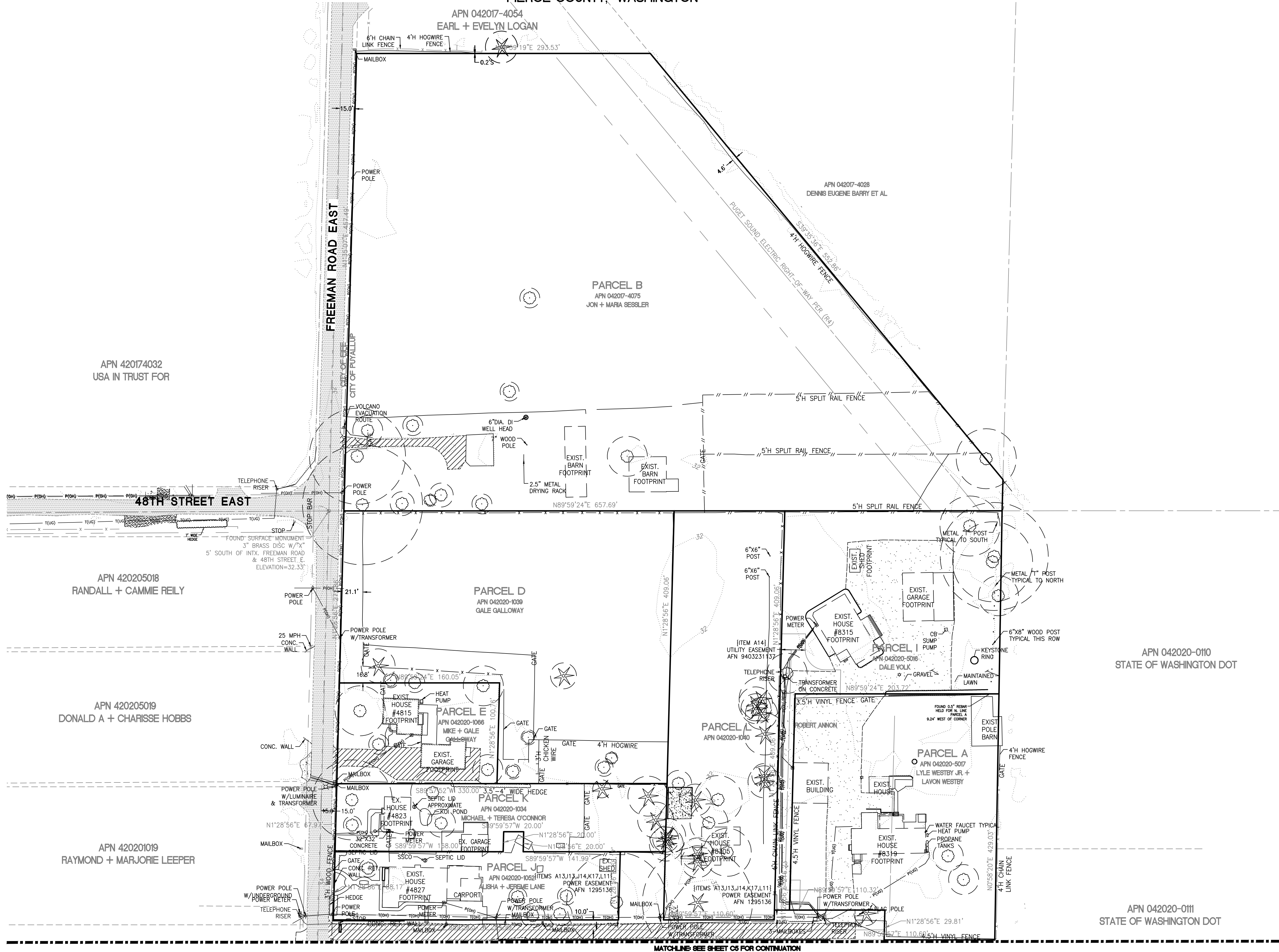
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- (V) IRRIGATION VALVE

EXISTING CONDITIONS

OF

FREEMAN LOGISTICS

PTNS. OF THE SE1/4, OF SEC. 17, TWP. 20 N., RGE 4 EAST, W. M.  
AND PTNS. OF THE NE1/4, OF SEC. 20, TWP. 20 N., RGE 4 EAST, W. M.  
PIERCE COUNTY, WASHINGTON



APPROVED

BY \_\_\_\_\_  
CITY OF PUYALLUP  
DEVELOPMENT ENGINEERING

DATE \_\_\_\_\_

NOTE: THIS APPROVAL IS VOID AFTER  
180 DAYS FROM APPROVAL DATE.  
THE CITY WILL NOT BE RESPONSIBLE  
FOR ERRORS AND/OR OMISSIONS ON  
THESE PLANS.  
FIELD CONDITIONS MAY DICTATE  
CHANGES TO THESE PLANS AS  
DETERMINED BY THE DEVELOPMENT  
ENGINEERING MANAGER.

Revision

Appr.

By

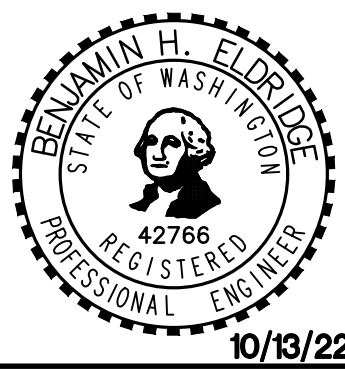
Date

No.

EXISTING CONDITIONS

FOR  
FREEMAN LOGISTICS

For: VECTOR DEVELOPMENT COMPANY  
11411 NE 124TH STREET  
SUITE 190  
KIRKLAND, WA 98034

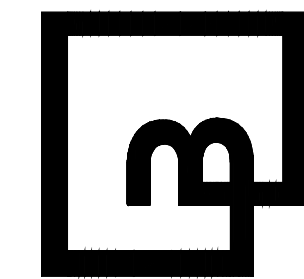


10/13/22

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

Designed JSM  
Drawn DTC  
Checked JSM  
Approved BHE  
Date 10/13/22

Barghausen  
Consulting Engineers, Inc.  
18215 72nd Avenue South  
Kent, WA 98032  
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21585

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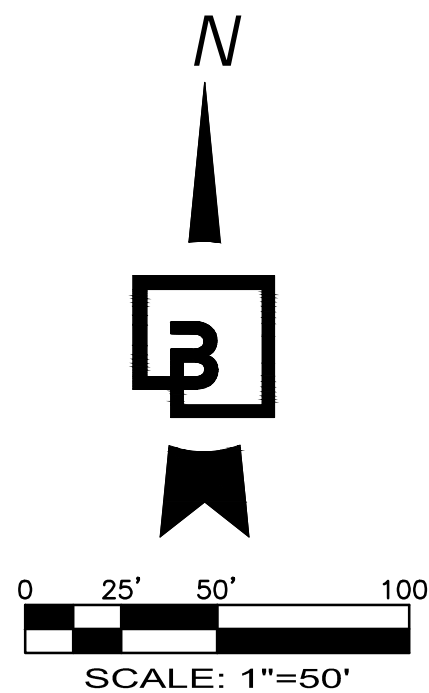
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EXISTING CONDITIONS

OF

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PTNS. OF THE SE1/4, OF SEC. 17, TWP. 20 N., RGE 4 EAST, W. M.  
AND PTNS. OF THE NE1/4, OF SEC. 20, TWP. 20 N., RGE 4 EAST, W. M.  
PIERCE COUNTY, WASHINGTON



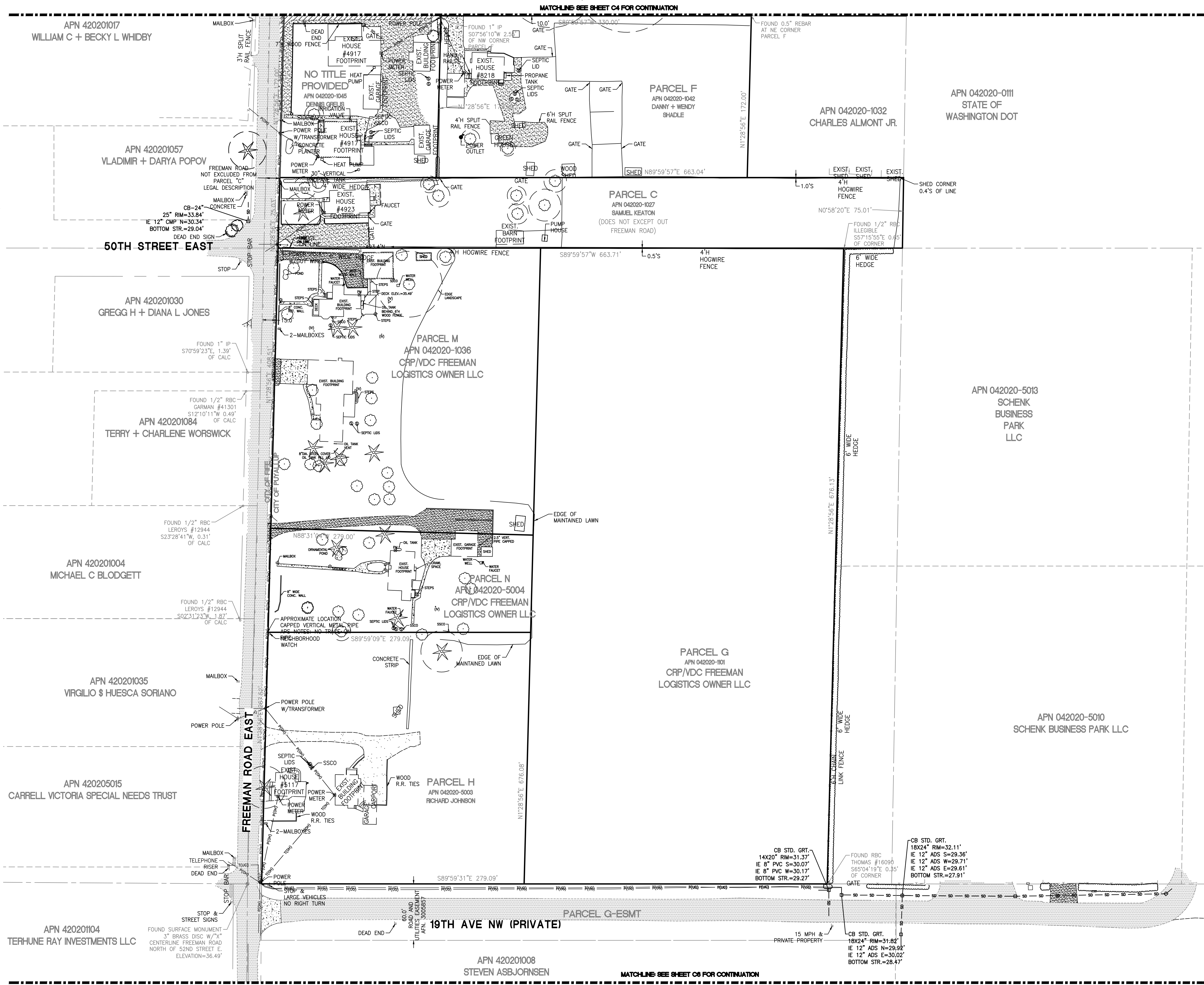
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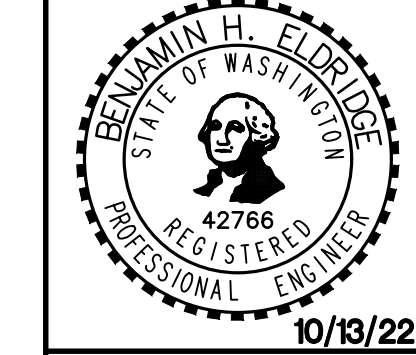
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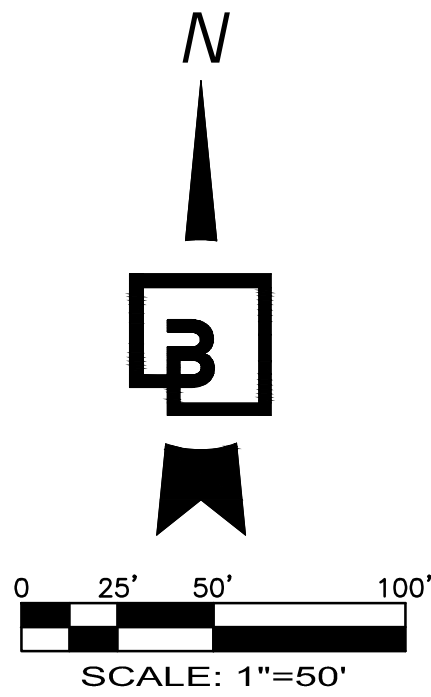
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Designed	JSM	
Drawn	DTC	
Checked	JSM	
Approved	BHE	
Date	10/13/22	

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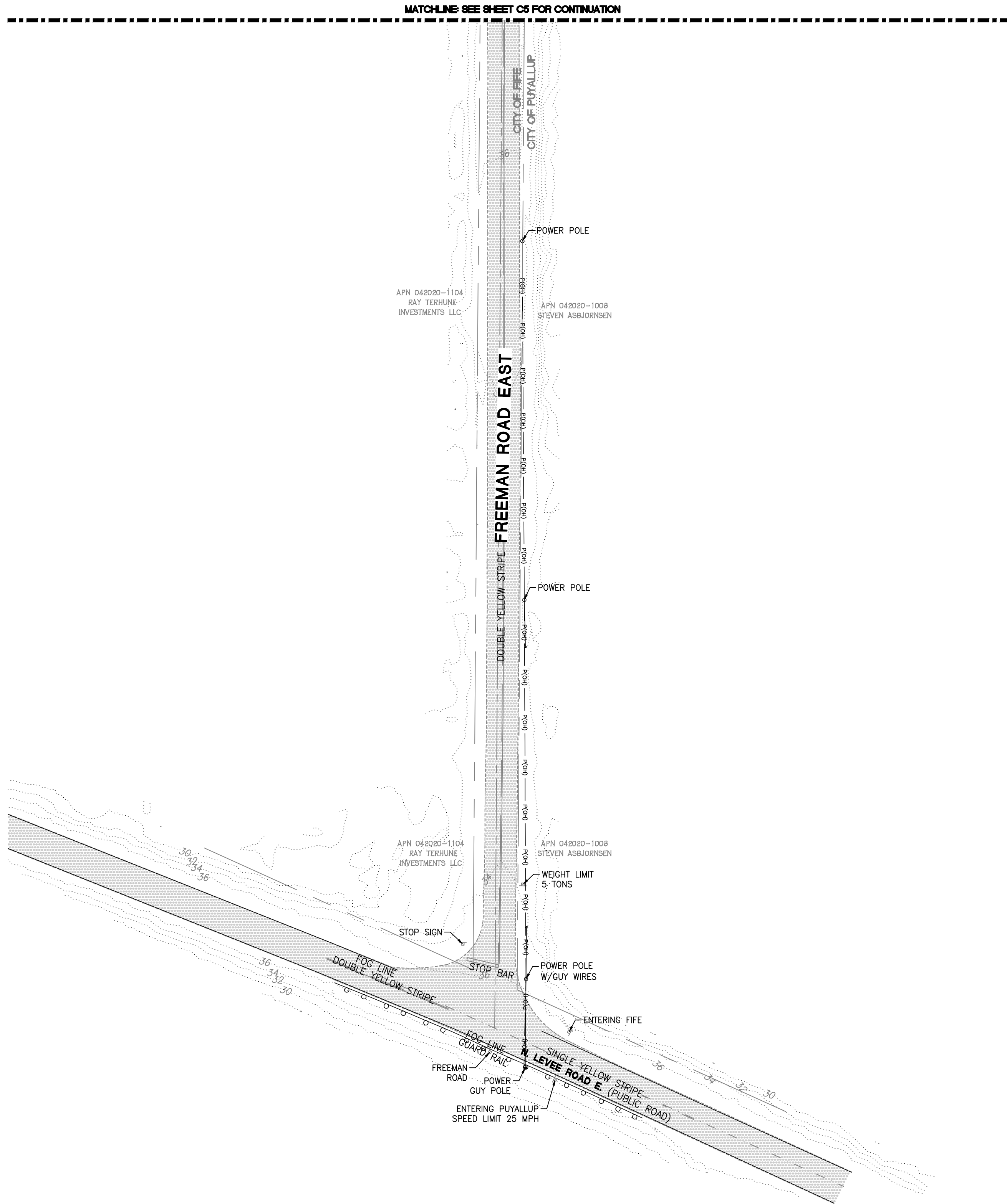
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21585  
Sheet  
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APPROVED  
BY: CITY OF PUYALLUP  
DEVELOPMENT ENGINEERING  
DATE:  
NOTE: THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE. THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS. FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE DEVELOPMENT ENGINEERING MANAGER.





**EXISTING CONDITIONS**  
OF  
**FREEMAN LOGISTICS**  
PTNS. OF THE SE1/4, OF SEC. 17, TWP. 20 N., RGE 4 EAST, W. M.  
AND PTNS. OF THE NE1/4, OF SEC. 20, TWP. 20 N., RGE 4 EAST, W. M.  
PIERCE COUNTY, WASHINGTON



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**APPROVED**

BY \_\_\_\_\_  
CITY OF PUYALLUP  
DEVELOPMENT ENGINEERING

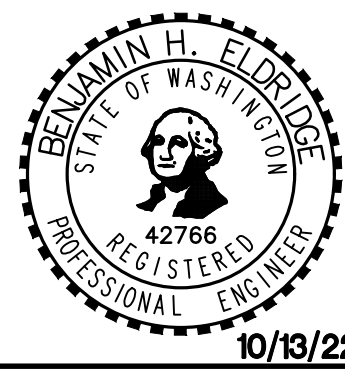
DATE \_\_\_\_\_

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Job Number  
**21585**

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**Barghausen Consulting Engineers, Inc.**  
18215 72nd Avenue South  
Kent, WA 98032  
425.251.6222 [barghausen.com](http://barghausen.com)



For: **VECTOR DEVELOPMENT COMPANY**  
11411 NE 124TH STREET  
SUITE 190  
KIRKLAND, WA 98034

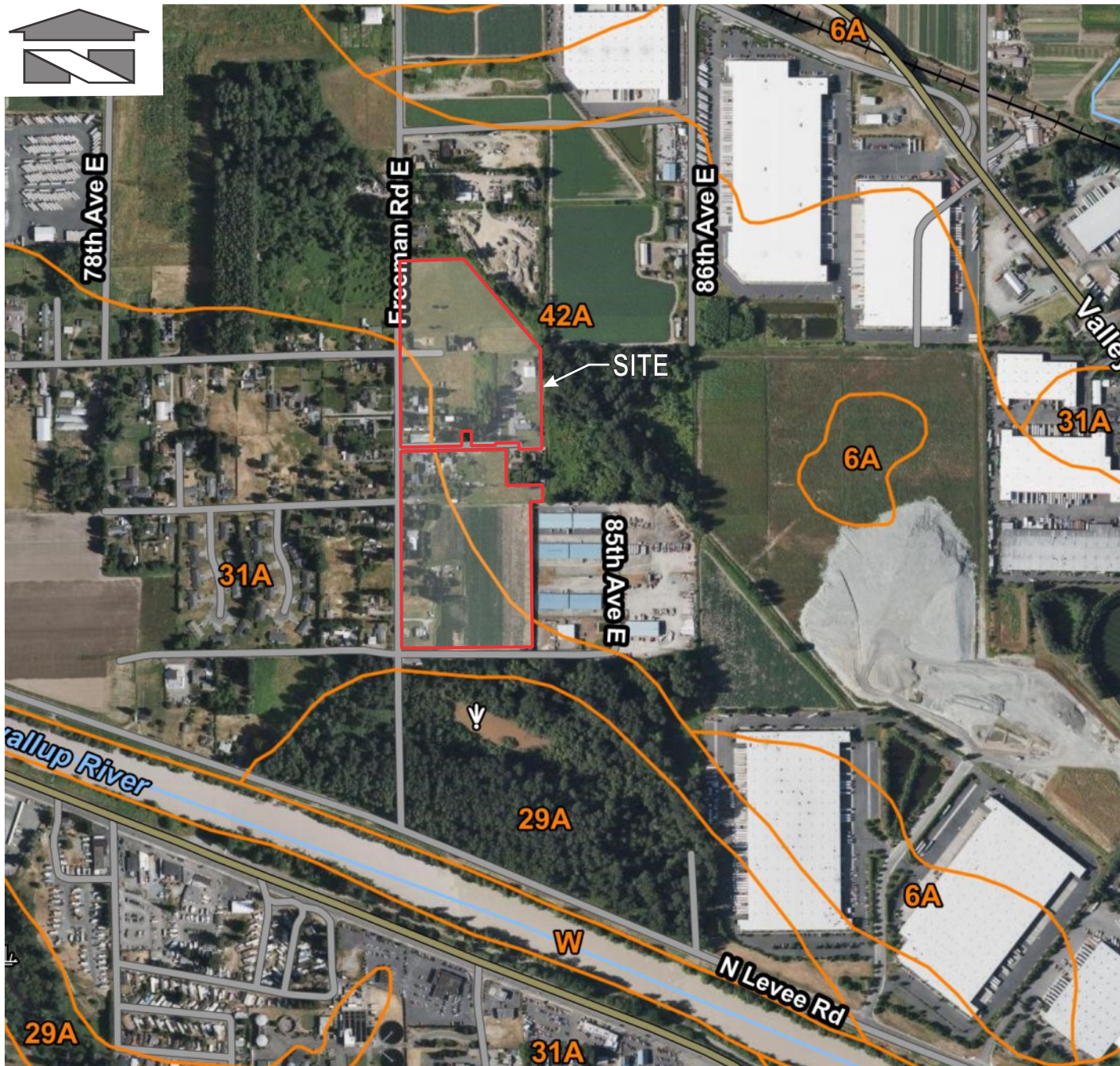
Title: **EXISTING CONDITIONS**  
FOR  
**FREEMAN LOGISTICS**

No.	Date	By	Ckd.	Appr.	Revision

Designed	_____	DTC	_____	_____
Drawn	_____	JSM	_____	_____
Checked	_____	BHE	_____	_____
Approved	_____	_____	_____	_____
Date	10/13/22	_____	_____	_____

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

# **SOIL SURVEY MAP**



REFERENCE: USDA, Natural Resources Conservation Service

**LEGEND:**

42A = Sultan silt loam  
31A = Puyallup fine sandy loam

**HSG**

C/D  
A

Scale:

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



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Kent, WA 98032  
425.251.6222 **barghausen.com**

**For:**

Freeman Road Logistics  
Fife, Washington

**Title:**

**SOIL SURVEY MAP**

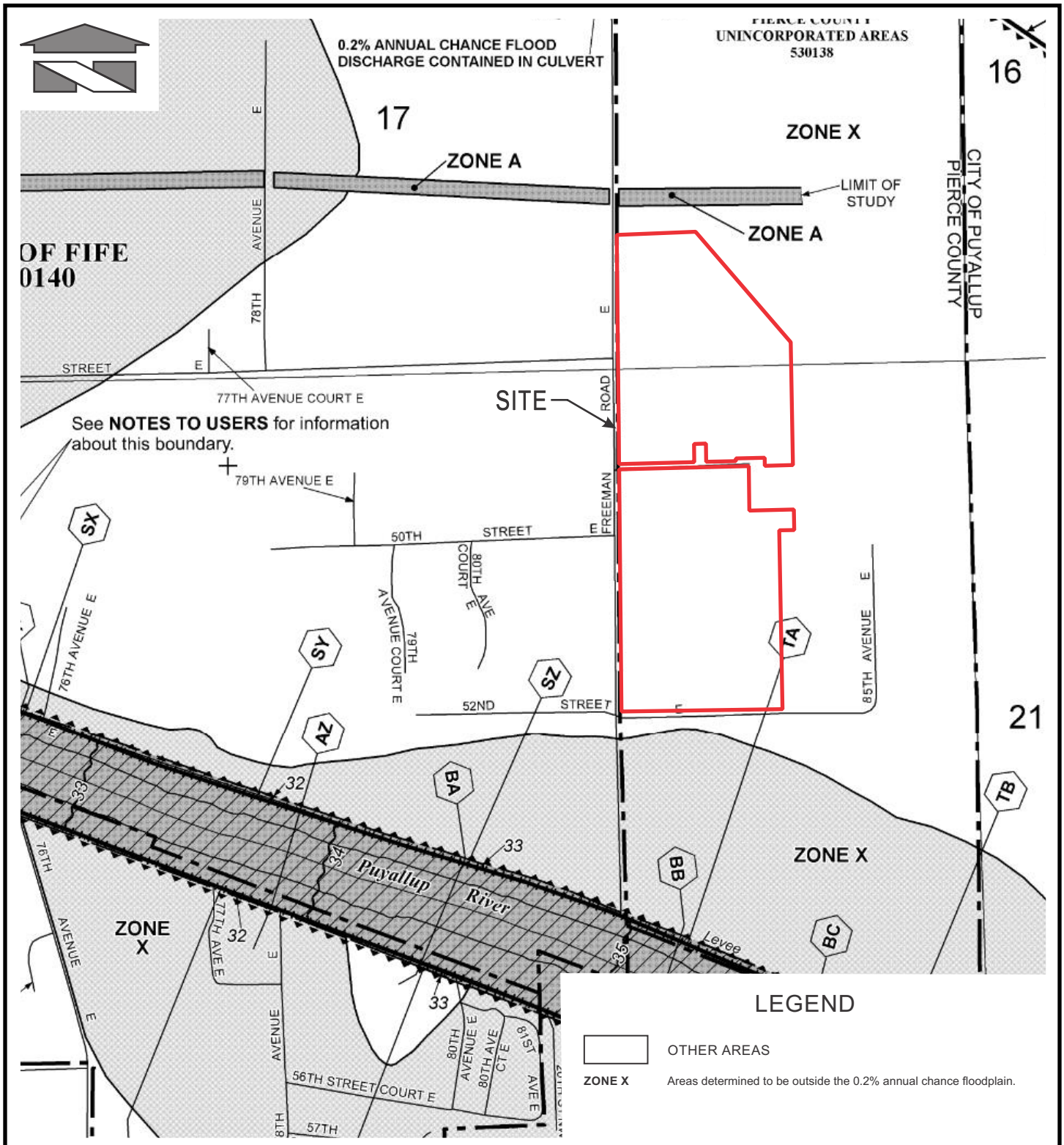
Job Number

**21585**

DATE: 09/01/22

## **FEMA FIRM MAP**





REFERENCE: Federal Emergency Management Agency (Portion of Map 53053C0329E, March 2017)

Scale:

Horizontal: N.T.S.

Vertical: N/A



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For:

**Freeman Road Logistics  
Fife, Washington**

Title:

**FEMA MAP**

Job Number

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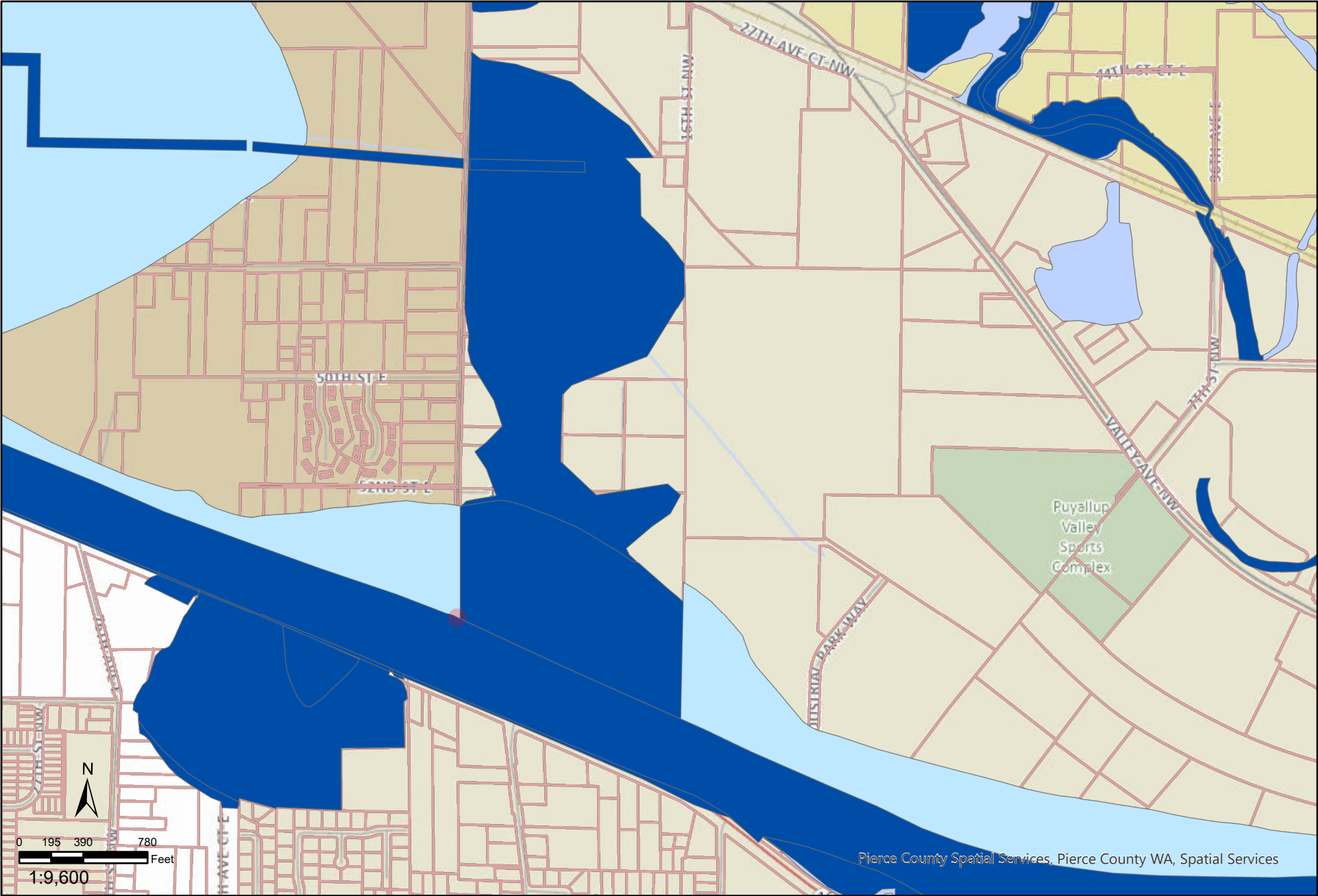
DATE: 09/01/22







**PIERCE COUNTY REGULATED  
FLOODPLAIN 2017 MAP**

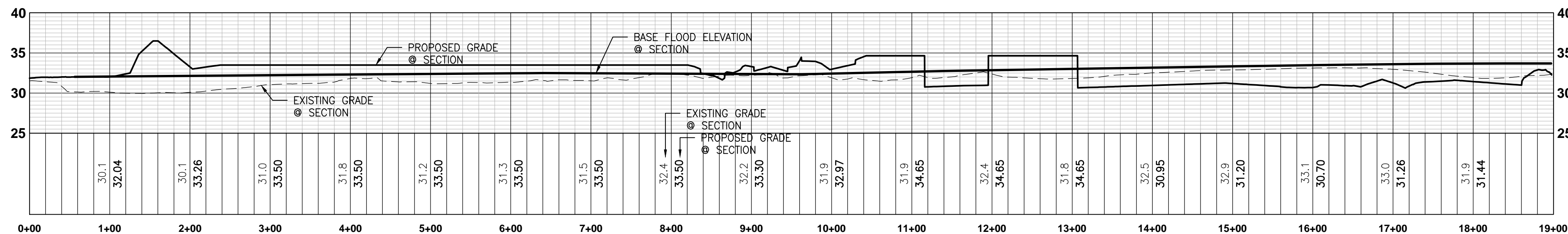
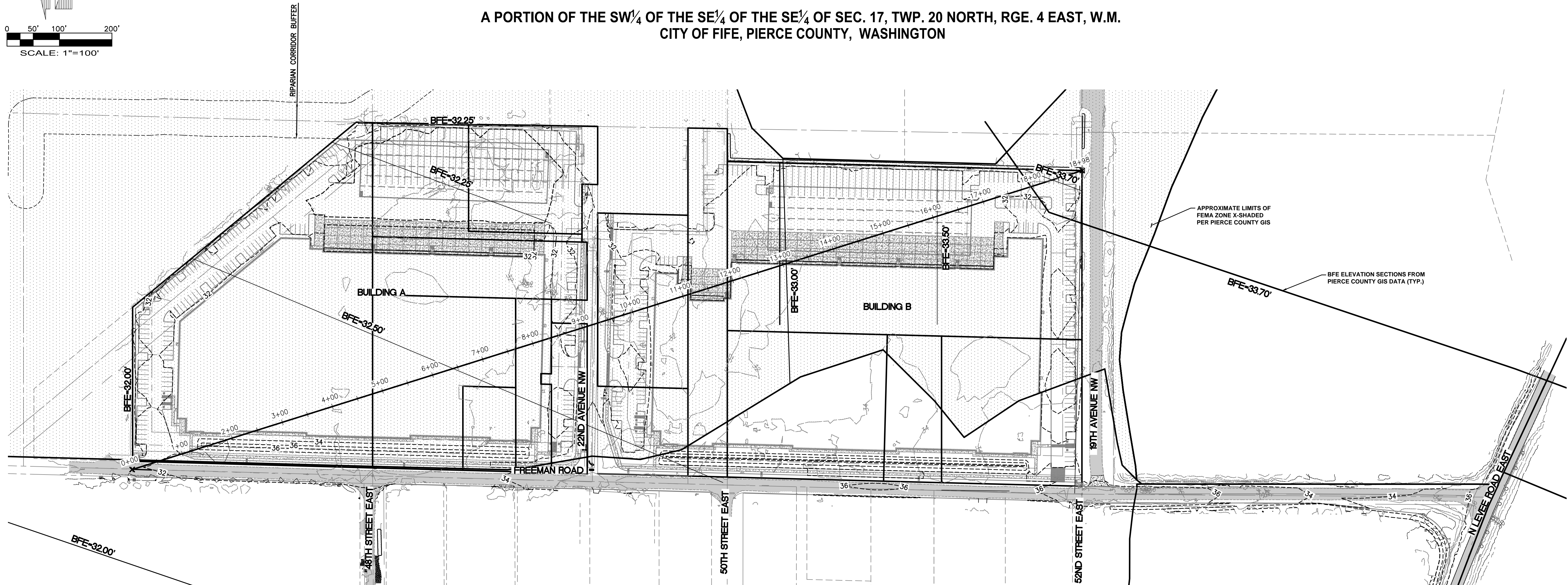


Disclaimer: The map features are approximate and have not been surveyed. Additional features not yet mapped may be present.  
Pierce County assumes no liability for variations ascertained by formal survey.

## **BASE FLOOD ELEVATION EXHIBIT**

**FOR**

**A PORTION OF THE SW<sup>1</sup>/<sub>4</sub> OF THE SE<sup>1</sup>/<sub>4</sub> OF THE SE<sup>1</sup>/<sub>4</sub> OF SEC. 17, TWP. 20 NORTH, RGE. 4 EAST, W.M.  
CITY OF FIFE, PIERCE COUNTY, WASHINGTON**



 **BFE PROFILE SECTION**  
SCALE: HORIZ. 1"=100' VERT. 1"=5'

BASIS NAD83(2011) DATUM PER WASHINGTON STATE REFERENCE NETWORK(WSRN)  
BASIS NAD83(2011) DATUM WAS ESTABLISHED BY HOLDING WSRN OBSERVATIONS ON MONUMENTS, SAID DIMENSIONS AS SHOWN

VERTICAL DATUM IS NAVD88 PER WSRN TIED TO GEOID18

### FLOOD INFORMATION

PARCEL IS LOCATED IN ZONE "X" - AREA OF MINIMAL FLOOD HAZARD.  
PER FEMA PANEL NUMBER 53053C0329E, DATED 3/7/2017.

PER PIERCE COUNTY GIS: AREA WITHIN AREA OF REGULATED FLOODPLAIN 2017  
FLOOD INSURANCE ZONE: X SHADED  
REGULATORY FLOOD ZONE: AE

### FLOOD PLAIN COMPENSATION CALCULATION

100 YR. FLOOD PLAIN EL. RANGES FROM 33.7 TO 32.0 (NAVD 88).  
ESTIMATED EXISTING 100 YR. FLOOD PLAIN STORAGE ON SITE = 22,317 CY  
ESTIMATED FLOOD PLAIN STORAGE PROVIDED UNDER DEVELOPED CONDITIONS = 24,612 CY

No.	Date	By	Ckd.	Appr.	Revision
-----	------	----	------	-------	----------

**Title:**

BASE FLOOD ELEVATION EXHIBIT

**FOR**

## FREEMAN ROAD FRONTAGE IMPROVEMENTS

For: VECTOR DEVELOPMENT COMPANY

NE 122ND WAY, SUITE 105  
KIRKLAND, WA 98034

Designed JSM

Drawn DTC Horizontal

Checked JSM  $1'' = 100'$

Approved BHE

Date 10/11/22

**Barghausen  
Consulting Engineers, Inc.**

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Kent, WA 98032

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Job Number 21585

Sheet

1 of 1

# Tab 3.0



### **3.0 COMPENSATORY FLOOD STORAGE PLAN**

### **3.0 Compensatory Flood Storage Plan**

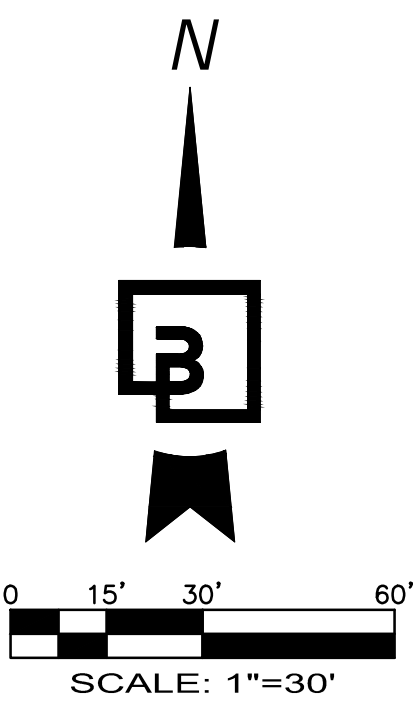
In developed conditions, the proposed project implements specific measures to avoid a negative impact to the regulatory flood plain. Following Puyallup Municipal Code (PMC Chapter 21.07) and standards created by the American Society of Civil Engineers (ASCE) within the publication of *Flood Resistant Design and Construction*, all proposed building elevations are proposed a minimum of 1 foot above the known base flood elevation. Onsite grades are proposed to be as low as functionally possible, to provide maximum storage in the developed condition.

An analysis of the flood storage under proposed conditions is required to determine the impact of the project. Using a volume comparison of surfaces in CAD, one surface representing the existing grade as surveyed and one surface representing the base flood elevation (BFE) as mapped on Pierce County GIS, the existing 100-year flood plain storage onsite was determined to be 22,317 cubic yards (CY). Using a similar method, volume comparisons of the proposed condition versus the BFE shows 24,612 CY of storage provided.

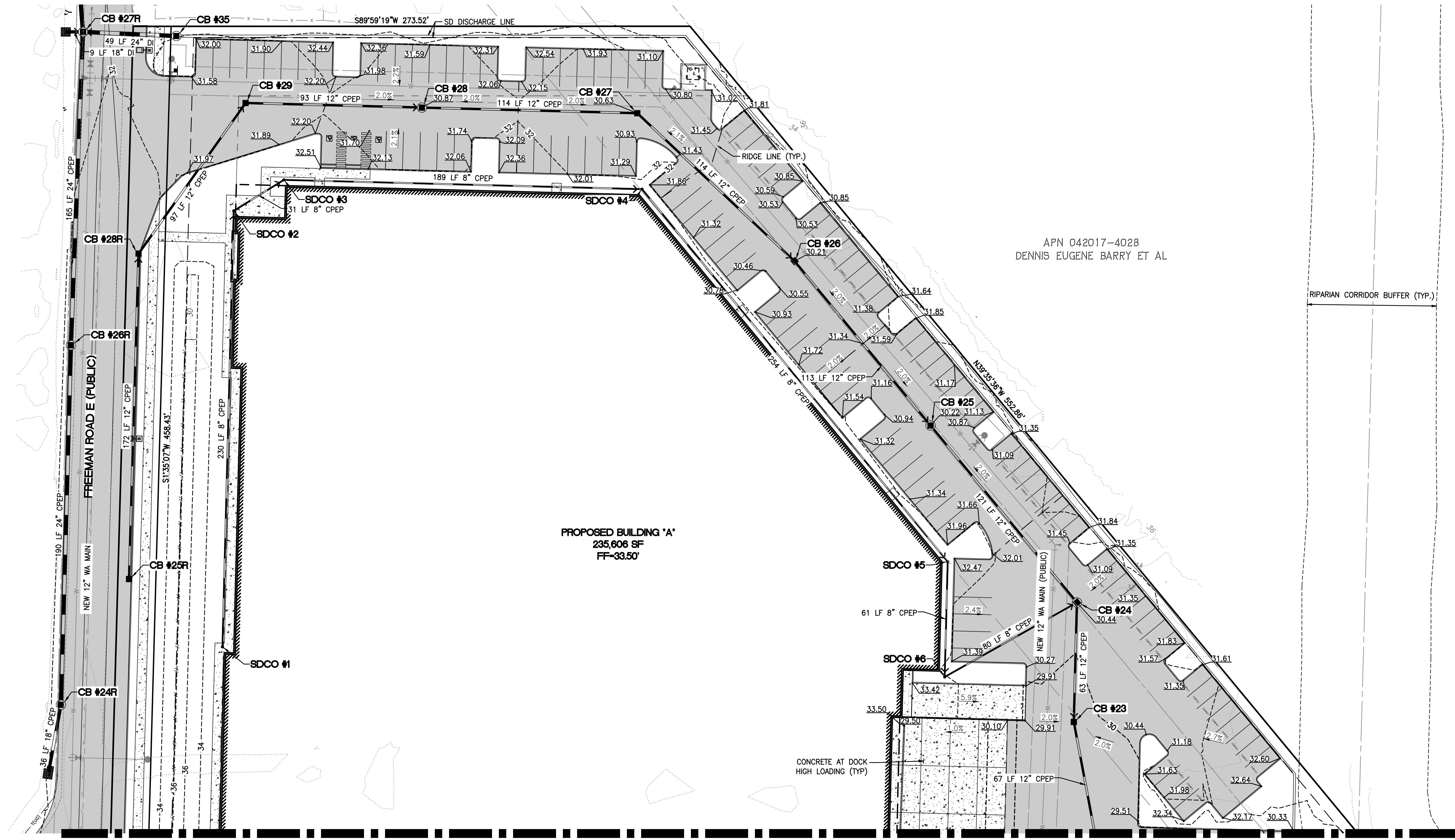
The proposed site grading provides greater storage versus the existing site. Adequate compensatory flood volume is provided by the proposal to offset the fill at the building locations. Additionally, every effort has been made to provide a relatively level and efficient flow path around the east and north sides of the proposed industrial buildings, such that flood flows discharge to the natural location in the northwest site corner. In our opinion, the proposal provides adequate mitigation to avoid increases in local flooding.

# **GRADING AND DRAINAGE PLAN**





**GRADING AND DRAINAGE PLAN**  
OF  
**FREEMAN LOGISTICS**  
PTNS. OF THE SE1/4, OF SEC. 17, TWP. 20 N., RGE 4 EAST, W. M.  
AND PTNS. OF THE NE1/4, OF SEC. 20, TWP. 20 N., RGE 4 EAST, W. M.  
PIERCE COUNTY, WASHINGTON

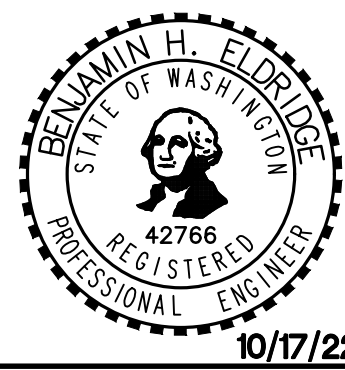


CATCH BASINS	
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CB #24, TYPE 2 - 48" RIM=30.44 IE=25.21 (12" NW) IE=25.55 (8" SW) IE=25.21 (12" S)	
CB #24R, TYPE 2 - 48" RIM=32.60 IE=28.72 (18" S) IE=28.22 (24" N)	
CB #25, TYPE 1, W/STANDARD GRATE RIM=30.22 IE=25.82 (12" NW) IE=25.82 (12" SE)	
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CB #26R, TYPE 2 - 48" RIM=32.14 IE=27.75 (24" S) IE=27.75 (24" N)	
CB #27, TYPE 1, W/STANDARD GRATE RIM=30.63 IE=26.95 (12" W) IE=26.95 (12" SE)	
CB #27R, TYPE 2 - 48" RIM=31.71 IE=27.34 (24" S) IE=27.34 (24" E) IE=27.84 (18" W) IE=27.34 (24" N)	
CB #28, TYPE 1, W/STANDARD GRATE RIM=30.87 IE=27.52 (12" W) IE=27.52 (12" E)	
CB #29, TYPE 1, W/STANDARD GRATE RIM=31.05 IE=27.98 (12" SW) IE=27.98 (12" E)	
CB #35, TYPE 2 - 48" RIM=31.83 IE=27.50 (24" W)	
SDCO #1, 8" SDCO RIM=33.43 IE=31.00 (8" N)	
SDCO #2, 8" SDCO RIM=33.37 IE=29.85 (8" S) IE=29.85 (8" NE)	
SDCO #3, 8" SDCO RIM=33.33 IE=29.69 (8" SW) IE=29.69 (8" E)	
SDCO #4, 8" SDCO RIM=32.91 IE=28.75 (8" W) IE=28.75 (8" SE)	
SDCO #5, 8" SDCO RIM=33.23 IE=27.48 (8" NW) IE=27.48 (8" S)	
SDCO #6, 8" SDCO RIM=32.10 IE=27.18 (8" N) IE=27.18 (8" NE)	

Revision				
No.	Date	By	Chd.	Appr.

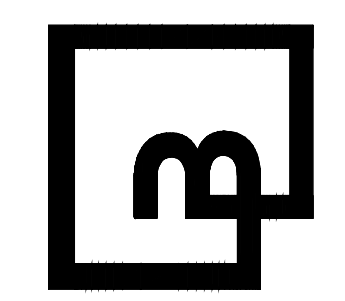
Title: **GRADING AND DRAINAGE PLAN**  
FOR  
**FREEMAN LOGISTICS**

For: **VECTOR DEVELOPMENT COMPANY**  
**11411 NE 124TH STREET**  
**SUITE 190**  
**KIRKLAND, WA 98034**



Scale:		Horizontal	1"=30'	Vertical	N/A
Designed	JSM	Drawn	DTC	Checked	JSM
				Approved	BHE
				Date	10/17/22

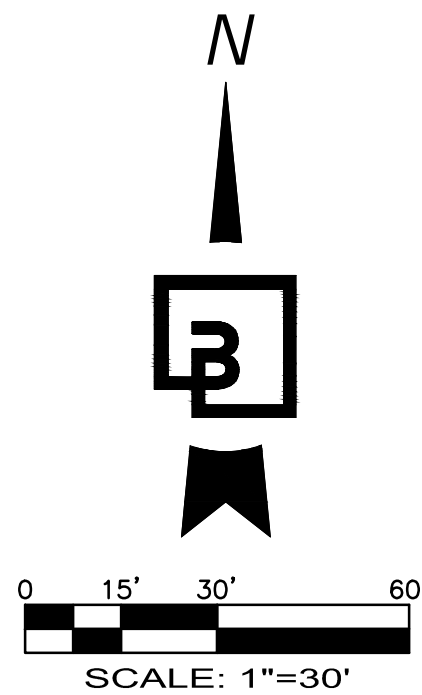
**Barghausen Consulting Engineers, Inc.**  
18215 72nd Avenue South  
Kent, WA 98032  
425.251.6222 [barghausen.com](http://barghausen.com)



Job Number  
**21585**  
Sheet  
**C7** of **35**

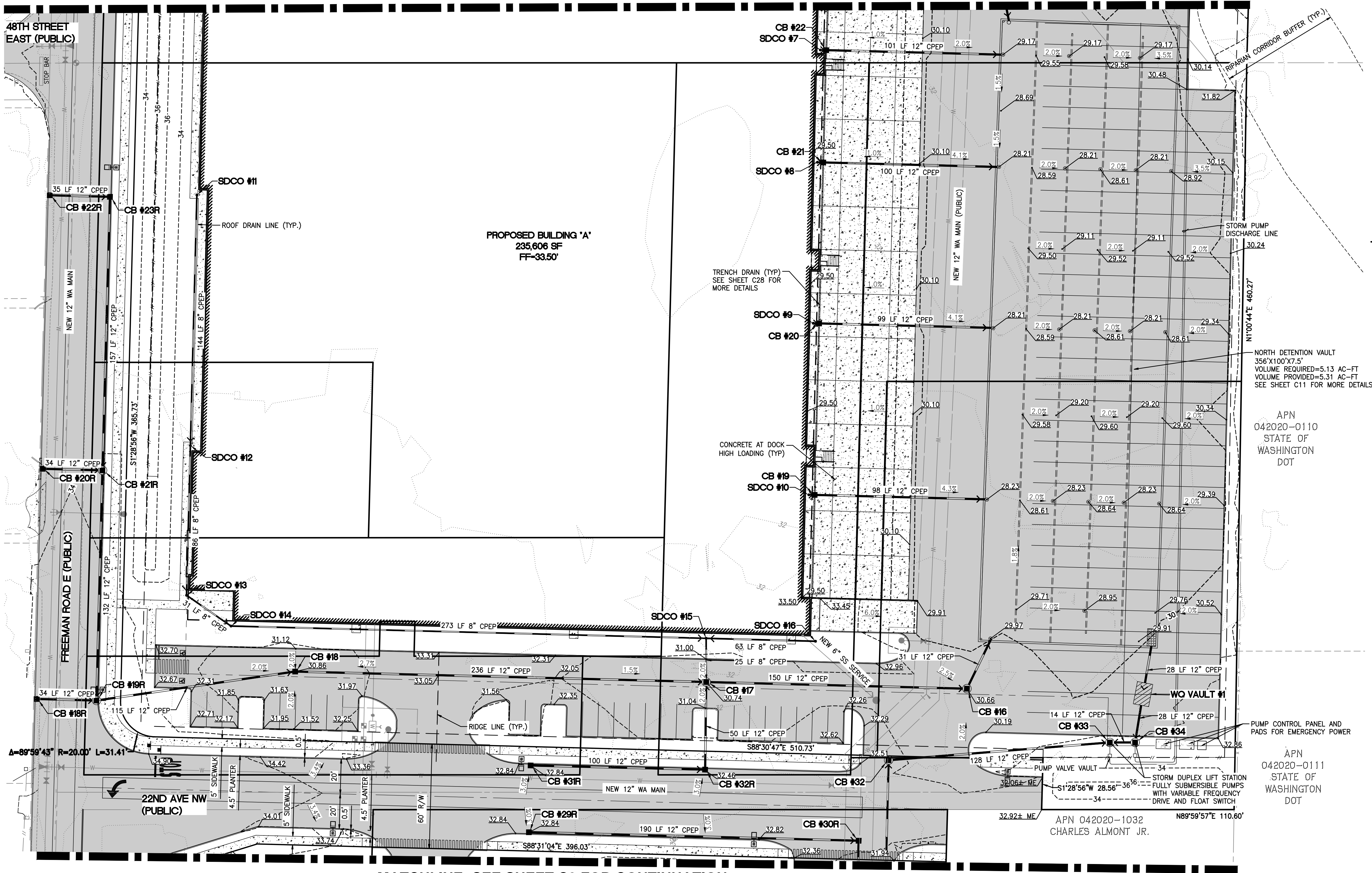
**APPROVED**  
BY: \_\_\_\_\_  
CITY OF PUYALLUP  
DEVELOPMENT ENGINEERING  
DATE: \_\_\_\_\_  
NOTE: THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE.  
THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS.  
FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE DEVELOPMENT ENGINEERING MANAGER.

CATCH BASINS
CB #16, TYPE 2 - 48" RIM=30.66 IE=24.82 (12" W) IE=24.82 (12" NE)
CB #17, TYPE 2 - 48" RIM=30.74 IE=25.57 (12" W) IE=25.57 (12" S) IE=25.90 (8" N) IE=25.57 (12" E)
CB #18, TYPE 1, W/STANDARD GRATE RIM=30.86 IE=26.75 (12" W) IE=26.75 (12" E)
CB #18R, TYPE 1, W/STANDARD GRATE RIM=34.62 IE=31.50 (12" E)
CB #19, TYPE 1, W/STANDARD GRATE RIM=29.55 IE=27.33 (8" W) IE=27.00 (12" E)
CB #20, TYPE 1, W/STANDARD GRATE RIM=29.55 IE=27.33 (8" W) IE=27.00 (12" E)
CB #20R, TYPE 1, W/STANDARD GRATE RIM=33.57 IE=30.50 (12" E)
CB #21, TYPE 1, W/STANDARD GRATE RIM=29.55 IE=27.33 (8" W) IE=27.00 (12" E)
CB #22, TYPE 1, W/STANDARD GRATE RIM=29.55 IE=27.33 (8" W) IE=27.00 (12" E)
CB #22R, TYPE 1, W/STANDARD GRATE RIM=32.53 IE=29.50 (12" E)
CB #29R, TYPE 1, W/STANDARD GRATE RIM=32.84 IE=30.00 (12" E)
CB #30R, TYPE 1, W/STANDARD GRATE RIM=32.11 IE=27.66 (12" W) IE=27.66 (12" S)
CB #31R, TYPE 1, W/STANDARD GRATE RIM=33.63 IE=31.75 (12" E)
CB #32, TYPE 2 - 48" RIM=32.07 IE=15.91 (12" S) IE=15.91 (12" E)
CB #32R, TYPE 1, W/STANDARD GRATE RIM=32.46 IE=27.63 (12" W) IE=27.63 (12" N)
CB #33, TYPE 2 - 48" RIM=32.47 IE=15.44 (12" E) IE=15.44 (12" W)
CB #34, TYPE 2 - 48" RIM=32.72 IE=15.44 (12" N) IE=15.44 (12" W)
SDCO #7, 8" SDCO RIM=29.52 IE=27.50 (8" E)
SDCO #8, 8" SDCO RIM=29.52 IE=27.50 (8" E)
SDCO #9, 8" SDCO RIM=29.52 IE=27.50 (8" E)
SDCO #10, 8" SDCO RIM=29.52 IE=27.50 (8" E)
SDCO #11, 8" SDCO RIM=33.43 IE=31.00 (8" S)
SDCO #12, 8" SDCO RIM=33.43 IE=30.28 (8" N) IE=30.28 (8" S)
SDCO #13, 8" SDCO RIM=33.47 IE=29.85 (8" N) IE=29.85 (8" SE)
SDCO #14, 8" SDCO RIM=33.28 IE=29.69 (8" NW) IE=29.69 (8" E)
SDCO #15, 8" SDCO RIM=33.36 IE=28.33 (8" W) IE=28.33 (8" E) IE=28.33 (8" S)
SDCO #16, 8" SDCO RIM=33.39 IE=29.00 (8" W)
WQ VAULT #1, 8'X12' VAULT RIM=31.23 IE=18.79 (12" N) IE=16.62 (12" S)

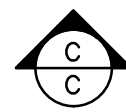
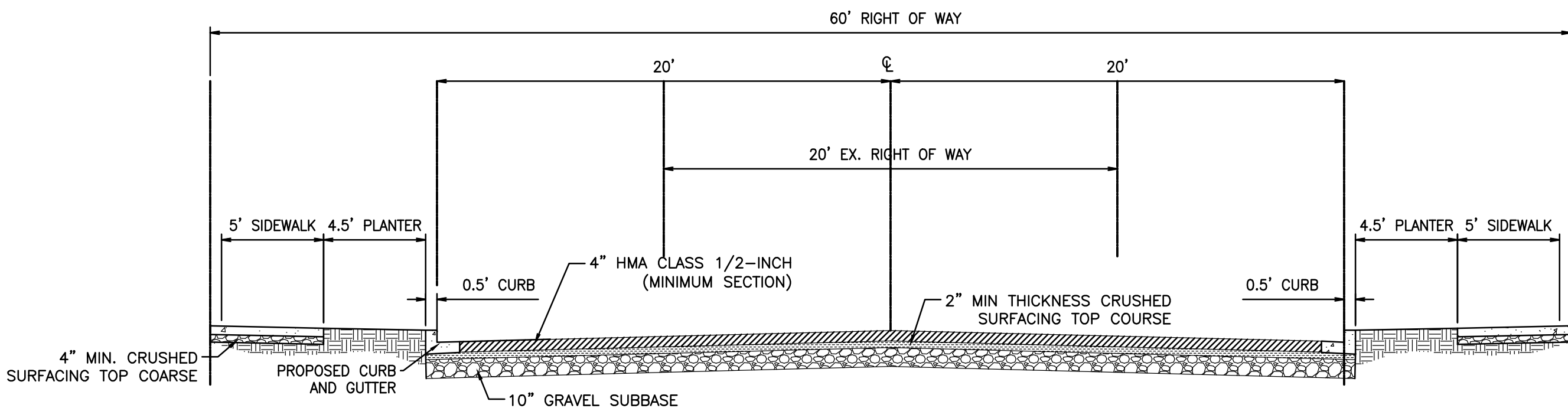


**GRADING AND DRAINAGE PLAN**  
OF  
**FREEMAN LOGISTICS**  
PTNS. OF THE SE1/4, OF SEC. 17, TWP. 20 N., RGE 4 EAST, W. M.  
AND PTNS. OF THE NE1/4, OF SEC. 20, TWP. 20 N., RGE 4 EAST, W. M.  
PIERCE COUNTY, WASHINGTON

MATCHLINE- SEE SHEET C7 FOR CONTINUATION



MATCHLINE- SEE SHEET C9 FOR CONTINUATION



**22ND AVE NW SECTION C**

NOT TO SCALE

**APPROVED**  
  
BY \_\_\_\_\_  
CITY OF PUYALLUP  
DEVELOPMENT ENGINEERING  
  
DATE \_\_\_\_\_  
  
NOTE: THIS APPROVAL IS VOID AFTER 180 DAYS FROM APPROVAL DATE. THE CITY WILL NOT BE RESPONSIBLE FOR ERRORS AND/OR OMISSIONS ON THESE PLANS. FIELD CONDITIONS MAY DICTATE CHANGES TO THESE PLANS AS DETERMINED BY THE DEVELOPMENT ENGINEERING MANAGER.

Title: <b>GRADING AND DRAINAGE PLAN</b>	
For: <b>VECTOR DEVELOPMENT COMPANY</b> 11411 NE 124TH STREET SUITE 190 KIRKLAND, WA 98034	
Scale:	Horizontal 1"=30' Vertical N/A
Designed: JSM	Drawn: DTC
Checked: JSM	Approved: BHE
Date: 10/17/22	
<b>Barghausen Consulting Engineers, Inc.</b> 18215 72nd Avenue South Kent, WA 98032 425.251.6222 <a href="http://barghausen.com">barghausen.com</a>	
Job Number <b>21585</b>	Sheet <b>C8</b> of <b>35</b>



## GRADING AND DRAINAGE PLAN

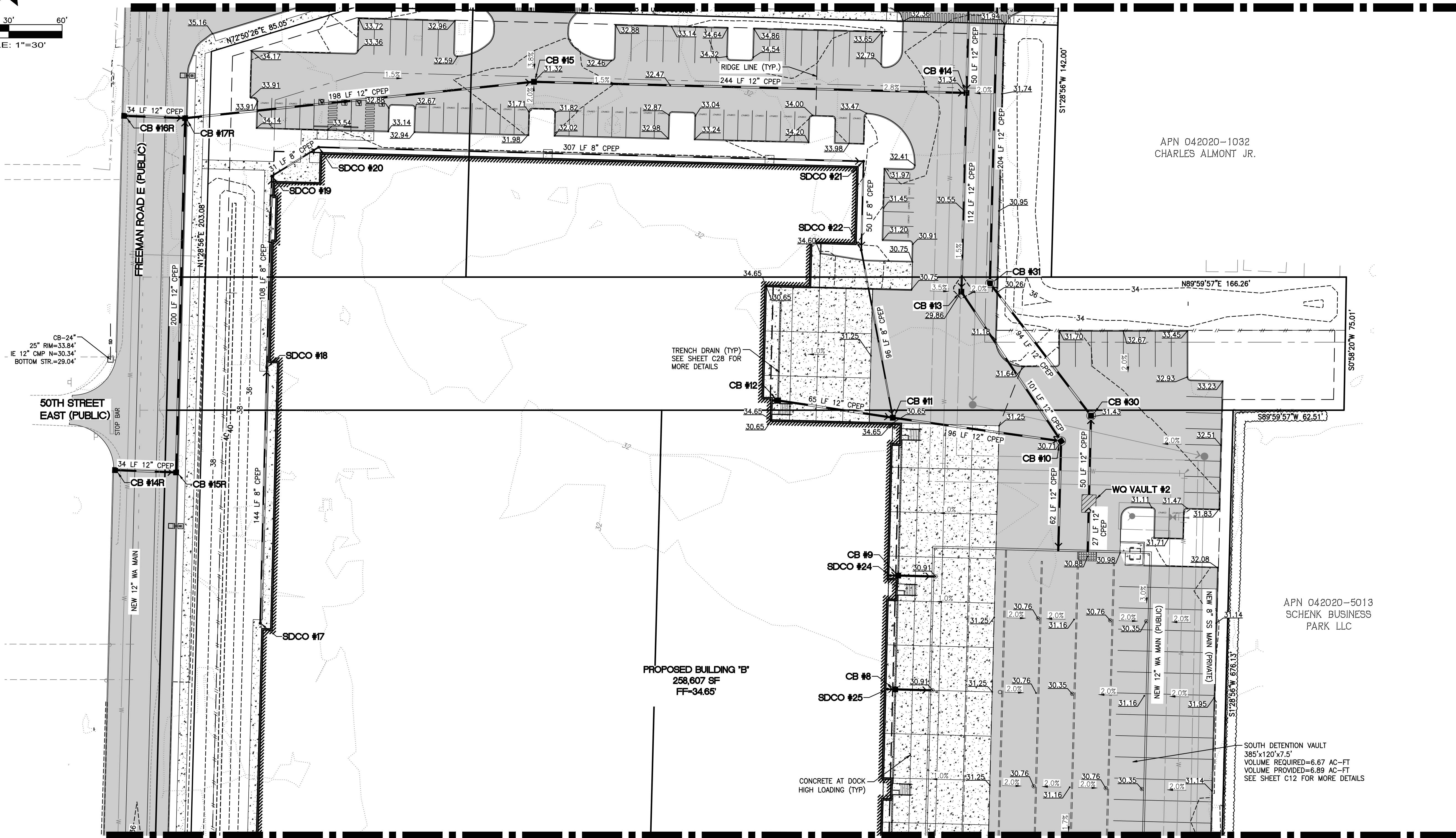
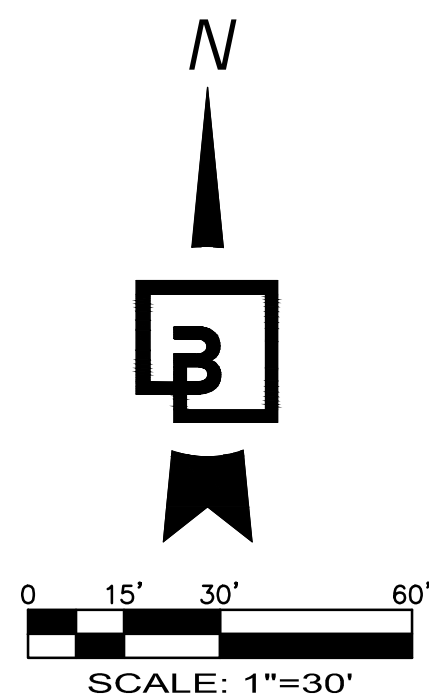
OF

## FREEMAN LOGISTICS

PTNS. OF THE SE1/4, OF SEC. 17, TWP. 20 N., RGE 4 EAST, W. M.  
AND PTNS. OF THE NE1/4, OF SEC. 20, TWP. 20 N., RGE 4 EAST, W. M.  
PIERCE COUNTY, WASHINGTON

MATCHLINE- SEE SHEET C8FOR CONTINUATION

MATCHLINE- SEE SHEET C10 FOR CONTINUATION



CATCH BASINS	
CB #8, TYPE 1, W/STANDARD GRATE RIM=30.70 IE=28.33 (8" W) IE=28.00 (12" E)	
CB #9, TYPE 1, W/STANDARD GRATE RIM=30.70 IE=28.33 (8" W) IE=28.00 (12" E)	
CB #10, TYPE 2 - 48" RIM=30.71 IE=25.98 (12" NW) IE=25.98 (12" W) IE=25.98 (12" S)	
CB #11, TYPE 1, W/STANDARD GRATE RIM=30.66 IE=27.98 (8" N) IE=27.65 (12" W) IE=27.65 (12" E)	
CB #12, TYPE 1, W/STANDARD GRATE RIM=30.68 IE=28.33 (8" W) IE=28.00 (12" E)	
CB #13, TYPE 1, W/STANDARD GRATE RIM=29.86 IE=26.48 (12" N) IE=26.48 (12" SE)	
CB #14, TYPE 1, W/STANDARD GRATE RIM=31.34 IE=27.04 (12" W) IE=27.04 (12" N) IE=27.04 (12" S)	
CB #14R, TYPE 1, W/STANDARD GRATE RIM=35.27 IE=32.39 (12" E)	
CB #15, TYPE 1, W/STANDARD GRATE RIM=31.32 IE=28.26 (12" W) IE=28.26 (12" E)	
CB #16R, TYPE 1, W/STANDARD GRATE RIM=35.14 IE=32.25 (12" E)	
CB #30, TYPE 2 - 48" RIM=31.43 IE=17.40 (12" S) IE=17.40 (12" NW)	
CB #31, TYPE 2 - 48" RIM=30.26 IE=16.93 (12" SE) IE=16.93 (12" N)	
SDCO #17, 8" SDCO RIM=34.63 IE=32.00 (8" N)	
SDCO #18, 8" SDCO RIM=34.63 IE=31.28 (8" S) IE=31.28 (8" N)	
SDCO #19, 8" SDCO RIM=34.65 IE=30.74 (8" S) IE=30.74 (8" NE)	
SDCO #20, 8" SDCO RIM=34.53 IE=30.58 (8" SW) IE=30.58 (8" E)	
SDCO #21, 8" SDCO RIM=34.23 IE=29.05 (8" W) IE=29.05 (8" S)	
SDCO #22, 8" SDCO RIM=32.28 IE=28.80 (8" N) IE=28.80 (8" S)	
SDCO #24, 8" SDCO RIM=30.66 IE=28.50 (8" E)	
SDCO #25, 8" SDCO RIM=30.66 IE=28.50 (8" E)	
WQ VAULT #2, 6'x12' VAULT RIM=30.82 IE=19.82 (12" S) IE=17.65 (12" N)	

Revision

Appr.

By

Date

No.

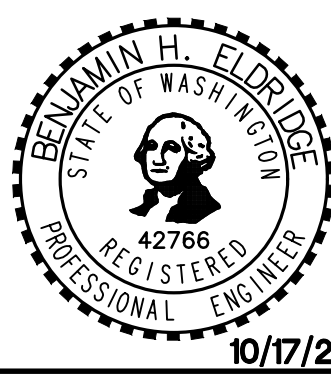
Title:

For: VECTOR DEVELOPMENT COMPANY

11411 NE 124TH STREET

SUITE 190

KIRKLAND, WA 98034



Scale:

Horizontal

1"=30'

Vertical

N/A

Designed JSM

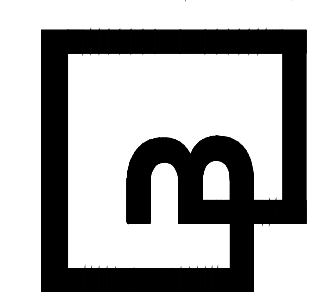
Drawn DTC

Checked JSM

Approved BHE

Date 10/17/22

**Barghausen Consulting Engineers, Inc.**  
18215 72nd Avenue South  
Kent, WA 98032  
425.251.6222 [barghausen.com](http://barghausen.com)

Job Number  
21585

Sheet

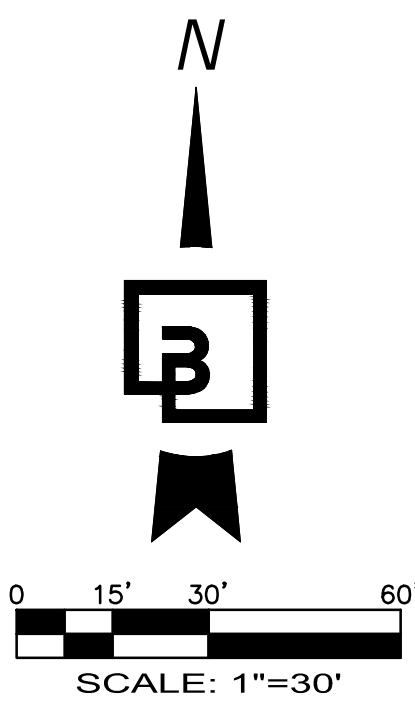
C9 of 35

APPROVED

BY \_\_\_\_\_  
CITY OF PUYALLUP  
DEVELOPMENT ENGINEERING

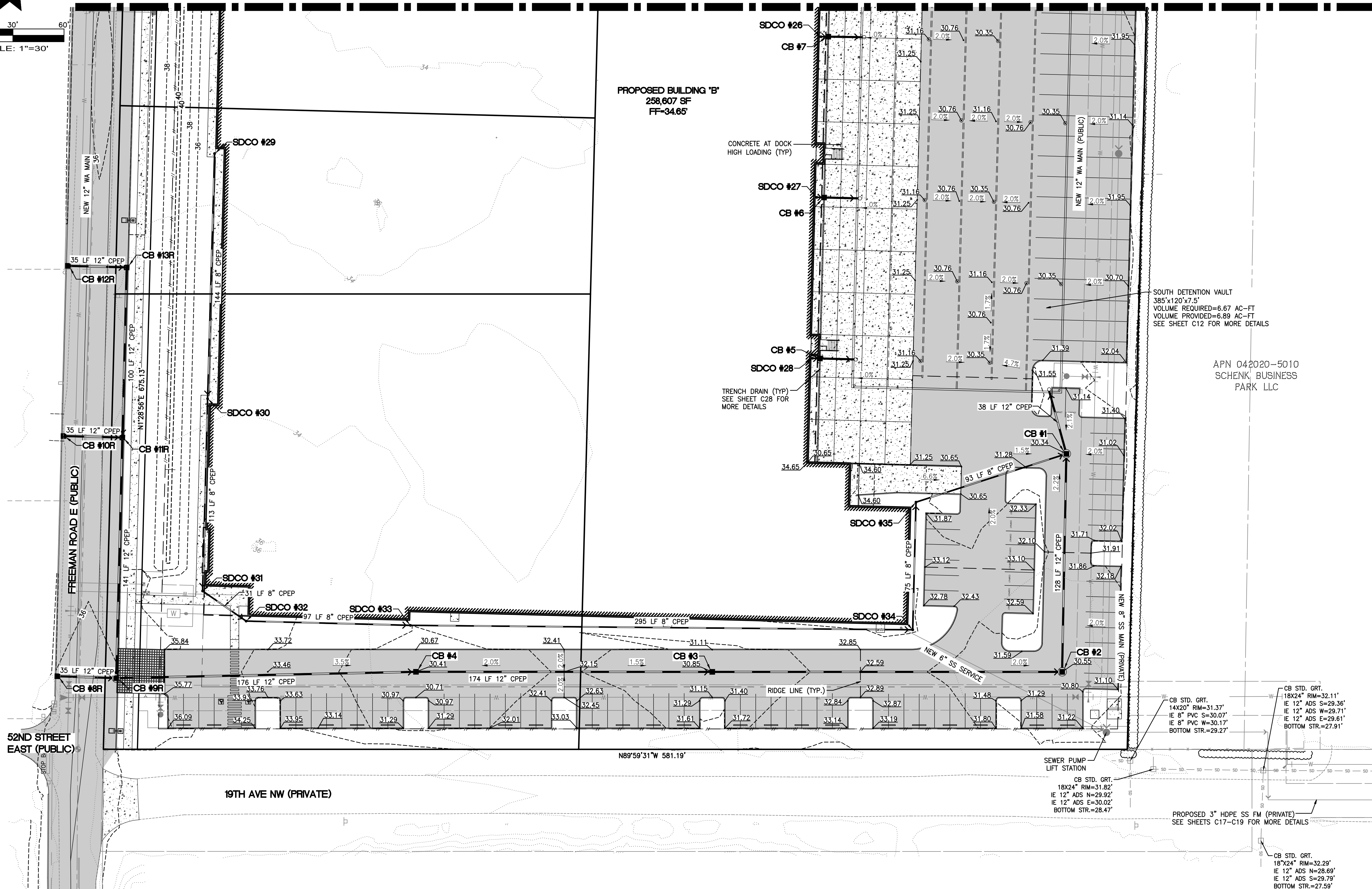
DATE \_\_\_\_\_

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ENGINEERING MANAGER.



**GRADING AND DRAINAGE PLAN**  
OF  
**FREEMAN LOGISTICS**  
PTNS. OF THE SE1/4, OF SEC. 17, TWP. 20 N., RGE 4 EAST, W. M.  
AND PTNS. OF THE NE1/4, OF SEC. 20, TWP. 20 N., RGE 4 EAST, W. M.  
PIERCE COUNTY, WASHINGTON

MATCHLINE- SEE SHEET C9 FOR CONTINUATION



CATCH BASINS			
CB #1, TYPE 2 - 48"			
RIM=30.34			
IE=24.77 (12" S)			
IE=25.11 (8" W)			
IE=24.77 (12" N)			
CB #2, TYPE 2 - 48"			
RIM=30.55			
IE=25.41 (12" W)			
IE=25.41 (12" N)			
CB #3, TYPE 1, W/STANDARD GRATE			
RIM=30.85			
IE=26.44 (12" W)			
IE=26.44 (12" E)			
CB #4, TYPE 1, W/STANDARD GRATE			
RIM=30.41			
IE=27.31 (12" W)			
IE=27.31 (12" E)			
CB #5, TYPE 1, W/STANDARD GRATE			
RIM=30.70			
IE=28.33 (8" W)			
IE=28.00 (12" E)			
CB #6, TYPE 1, W/STANDARD GRATE			
RIM=30.70			
IE=28.33 (8" W)			
IE=28.00 (12" E)			
CB #7, TYPE 1, W/STANDARD GRATE			
RIM=30.70			
IE=28.33 (8" W)			
IE=28.00 (12" E)			
CB #8R, TYPE 1, W/STANDARD GRATE			
RIM=36.05			
IE=33.08 (12" E)			
CB #10R, TYPE 1, W/STANDARD GRATE			
RIM=34.97			
IE=31.90 (12" E)			
CB #12R, TYPE 1, W/STANDARD GRATE			
RIM=35.38			
IE=32.30 (12" E)			
SDCO #26, 8" SDCO			
RIM=30.66			
IE=28.50 (8" E)			
SDCO #27, 8" SDCO			
RIM=30.66			
IE=28.50 (8" E)			
SDCO #28, 8" SDCO			
RIM=30.66			
IE=28.50 (8" E)			
SDCO #29, 8" SDCO			
RIM=34.64			
IE=32.00 (8" S)			
SDCO #30, 8" SDCO			
RIM=34.63			
IE=31.28 (8" N)			
IE=31.28 (8" S)			
SDCO #31, 8" SDCO			
RIM=34.77			
IE=30.71 (8" N)			
IE=30.71 (8" SE)			
SDCO #32, 8" SDCO			
RIM=34.68			
IE=30.56 (8" NW)			
IE=30.56 (8" E)			
SDCO #33, 8" SDCO			
RIM=32.27			
IE=30.08 (8" W)			
IE=30.08 (8" E)			
SDCO #34, 8" SDCO			
RIM=32.27			
IE=28.60 (8" W)			
IE=28.60 (8" N)			
SDCO #35, 8" SDCO			
RIM=32.40			
IE=28.23 (8" S)			
IE=28.23 (8" E)			

**APPROVED**

BY \_\_\_\_\_  
CITY OF PUYALLUP  
DEVELOPMENT ENGINEERING

DATE \_\_\_\_\_

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Revision

No.	Date	By	Chd.	Appr.

Title:

**GRADING AND DRAINAGE PLAN**

FOR  
**FREEMAN LOGISTICS**

For:

**VECTOR DEVELOPMENT COMPANY**  
11411 NE 124TH STREET  
SUITE 190  
KIRKLAND, WA 98034

10/17/22

Scale:

Horizontal	1"=30'
Vertical	N/A

Designed: JSM  
Drawn: DTC  
Checked: JSM  
Approved: BHE  
Date: 10/17/22

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Sheet

**C10** of **35**