

Development Review Committee Agenda

Chehalis Building and Planning Department

February 23, 2022, at 9 A.M.

Meeting Location: Chehalis Airport Conference Room

I. Meeting Agenda for Action Items

9:00 AM

Applicant Conference:

AC-22-002: 2510, 2520 NE Kresky Ave. RB Engineering is proposing the construction of a commercial building with the potential for professional or out-patient medical services. LC Parcels: 00560639001, 005606039002. The site is zoned CG, General Commercial, and either use is permitted in this zone. The site is adjacent to NWI wetlands and is partially within the FEMA Flood Hazard Zone. The applicant has submitted a list of questions that they would like to have answered during their conference.

9:30 AM

Applicant Conference:

AC-22-003: 0 Bishop Rd. Fuller Designs is proposing the construction of an aquaculture facility for shrimp production. The proposal is a phased project, with one warehouse that houses offices and labs initially, reaching project conclusion within 5 years. The applicant is planning to initiate a boundary line adjustment to meet property needs. LC Parcel: 017857002002. The site is zoned IL. Research laboratory and agricultural building over 1000 sq ft are conditional uses in this zone, while distribution center and professional service office are considered permitted uses.

10:00 AM

Site Plan Recommendation:

CU-21-002: 0 Washington Ave. Fuller Designs is proposing a multi-family housing project with 4 two-story duplexes and 4 two-story fourplexes. The project area is zoned R1, so the applicants are applying for a Conditional Use permit. LC Parcels: 005490001000, 005490000000, 005492002000, 005604192001, 005853001000. The project has received an MDNS (attached) with an appeal period end date of 3/1/22.

10:30 AM

II. Inter-department staff meeting

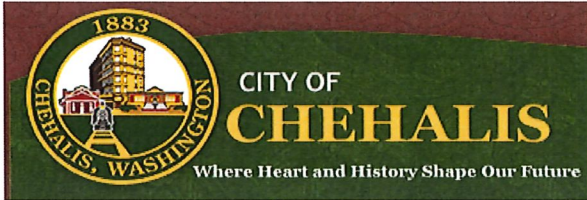
Join Zoom Meeting

<https://us06web.zoom.us/j/84060599843> Meeting ID: 840 6059 9843

Find your local number: <https://us06web.zoom.us/u/kbUTCBLiq>



Vicinity Map for AC-22-002



Return your conference application to Community Development Department
 1321 S Market Blvd. Chehalis, WA 98532
 (360) 345-2229
www.ci.chehalis.wa.us email: comdev@ci.chehalis.wa.us

JOB SITE ADDRESS: 2510 & 2520 Kresky Ave NE

PARCEL #: 005606039001 & 005606039002

APPLICANT / CONTACT PERSON:

NAME: Chris Aldrich, RLA - RB Engineering
 ADDRESS: PO Box 923
 CITY/ST/ZIP: Chehalis, WA 98532
 PHONE#: 360.740.8919
 EMAIL: chrisa@rbengineers.com

CONTRACTOR / ENGINEER / SURVEYOR:


COMPANY NAME: RB Engineering
 CONTACT NAME: Robert Balmelli, PE
 ADDRESS: PO Box 923, Chehalis WA 98532
 PHONE #: 360.740.8919
 EMAIL: robertb@rbengineers.com
 CONTRACTORS L&I #: _____

Is the property owner the same as the contact person? Yes No

DETAILED PROJECT DESCRIPTION:

See attached project narrative.

Verbal comments made during discovery are not binding. Only the plan(s) submitted will be reviewed for compliance with applicable codes. By signing below, I grant permission for City of Chehalis employees to enter and remain on the property for the purpose of review and approval of this proposal and to conduct inspections related to this proposal.

<u>Signature:</u> 	<u>Date:</u> 2.14.22
<u>Name (print):</u> Chris Aldrich, RLA	<u>Telephone #:</u> 360.740.8919

Office use only	
Received by: LF	Date Received: 02/14/2022
Parcel #: 005606039001 & 005606039002	
Permit #: AC-22-002	
Zoning: CG	
Flood Zone: Yes No	
Zone Classification:	



DESIGN → PERMIT → MANAGE

February 14, 2022

Tammy Baraconi
City of Chehalis Community Development
1321 S Market Blvd
Chehalis, WA 98532
tbaraconi@ci.chehalis.wa.us

Re: Wilson Commercial Building– Pre-Application Request and Narrative
RBE NO. 21116

Dear Tammy:

Attached is an application for DRC Meeting request. The project is proposing a Commercial Building housing professional services or out-patient medical services approximately 11,232 square feet. The site is currently vacant. The new building would have two accesses, one off Kresky Ave and one off Hampe Way. The plan involves two parcels that were short platted in 2016. New utility connections are proposed. The former wetland delineation line, buffer and 100-year flood limit used for the short plat is shown along with a stormwater facility.

1. Will this project require a flood development permit? Can the original wetland report be utilized? Is shoreline development permit review required?
2. Both Kresky Ave and Hampe Way pavement sections appear to meet City standards. Are there any other frontage improvements required?
3. Will the building permit require a geotechnical report for the foundation design review?
4. Please advise as to the stormwater design requirements
5. Will we need treatment for the runoff from Hampe Way and Kresky Ave.?
6. Do we need a landscape and irrigation plan for this project?
7. Will a traffic trip generation report be needed for this project?
8. Will a BLA or Lot Consolidation be required if the building on Lot 3 meets setbacks?

Sincerely,

A handwritten signature in black ink, appearing to read 'Chris Aldrich', written over a light blue horizontal line.

Chris Aldrich, RLA
Planning Manager

cc: Project file

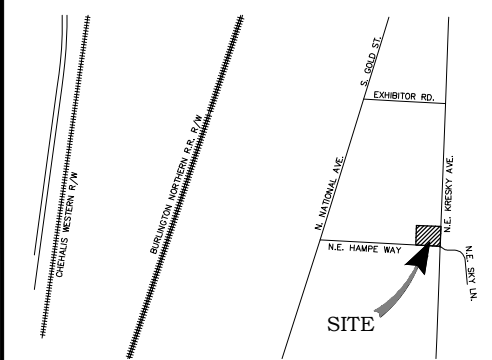
Enclosure: Preliminary Site Plan
City Master Application

WILSON COMMERCIAL BUILDING

SECTION 20, TOWNSHIP 14 NORTH, RANGE 02 WEST, W.M.
CHEHALIS, WASHINGTON

SCALE: 1"=20 FEET
0 10 20 40

VICINITY MAP
N.T.S.



PROJECT INFORMATION

APPLICANT: WILSON REAL ESTATE LLC
KIM & AARON WILSON
(360) 269-3982

PARCEL NOS: 005606039-001, 002

SITE ADDRESS: 2510 & 2520 KRESKY AVE NE
CENTRALIA, WA 98531

ZONING: CG - GENERAL COMMERCIAL

SITE AREA: 2.21

GRADING: XX± CY FILL

SOIL TYPE (RATING): MELBORNE LOAM

SANITARY SEWER: CITY OF CHEHALIS (HAMPE WAY)

WATER: CITY OF CHEHALIS (KRESKY)

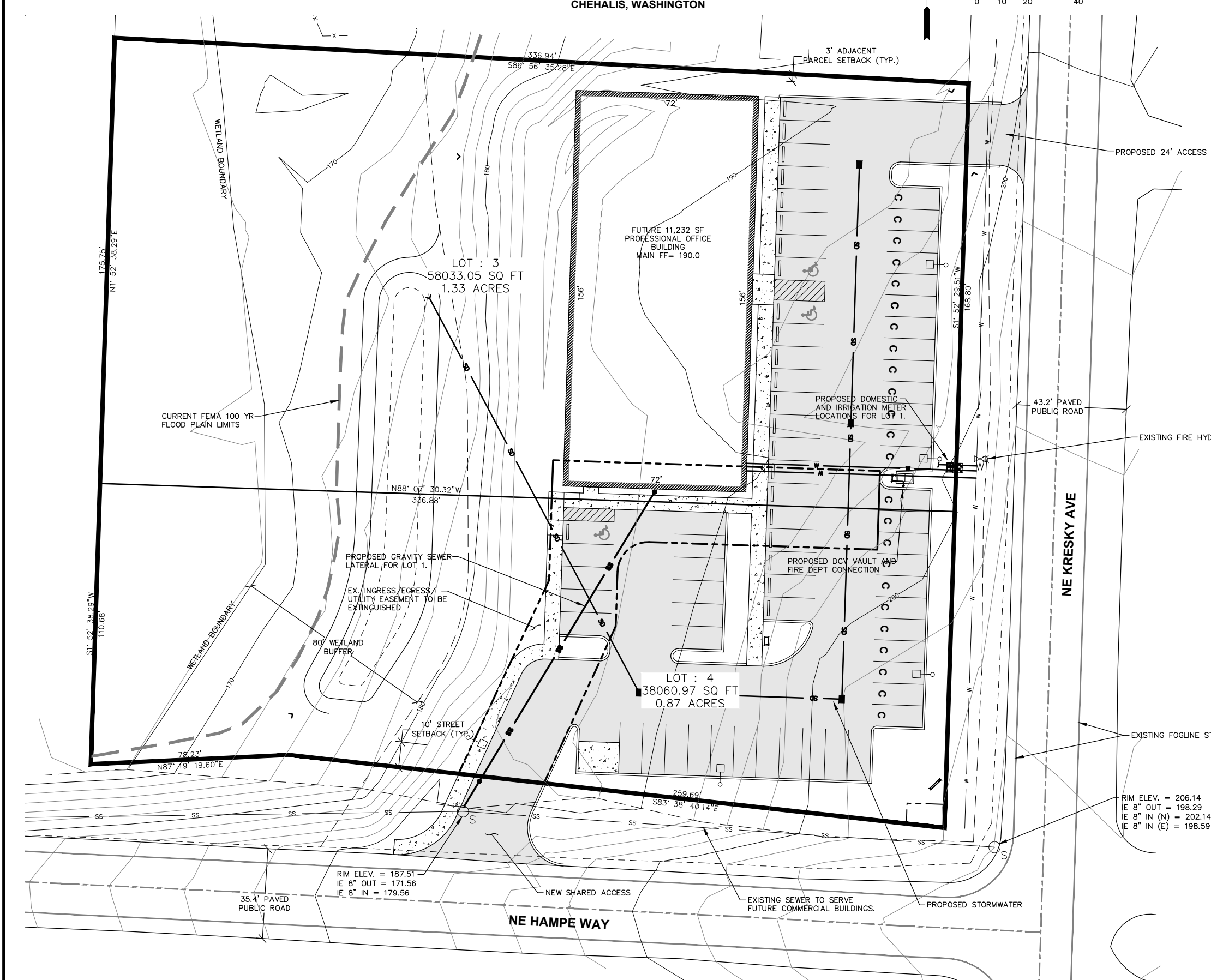
FIRE DISTRICT: LEWIS COUNTY

PROPOSED BLDG: 11,232 GROSS FLOOR AREA

PARKING REQ'D: 5 STALLS / 1000 SF
(CMC 17.76.020 B080/B191)
56 STALLS

PARKING PROPOSED: 69 STALLS
42 STANDARD
24 COMPACT
3 ACCESSIBLE
6.1 STALLS / 1000 SF

DESIGNED BY: CLM	REVISION
DRAWN BY: XXX	NO. DATE
CHECKED BY: RWB	
DATE: 2/15/22	
SCALE:	
WILSON COMMERCIAL BUILDING	
PRELIMINARY SITE PLAN	
RB Engineering CIVIL ENGINEERING - LAND PLANNING - UTILITIES P.O. Box 923 CHEHALIS, WA 98532 OFF: (360) 746-8919 FAX: (360) 746-8912	
JOB NUMBER 21116 DRAWING NAME 21116_PSP1 P1.0 OF x	





Vicinity Map for AC-22-003



Return your conference application to Community Development Department

1321 S Market Blvd. Chehalis, WA 98532

(360) 345-2229

www.ci.chehalis.wa.us email: comdev@ci.chehalis.wa.us

JOB SITE ADDRESS: 0 Bishop Rd

PARCEL #: 017857002002

APPLICANT / CONTACT PERSON:

NAME: Fuller Designs - Cassie Fuller

ADDRESS: 1101 Kresky Avenue

CITY/ST/ZIP: Centralia, WA 98531

PHONE#: (360) 807-4420

EMAIL: admin@fullerdesigns.org

CONTRACTOR / ENGINEER / SURVEYOR:

COMPANY NAME: _____

CONTACT NAME: _____

ADDRESS: _____

PHONE #: _____

EMAIL: _____


CONTRACTORS L&I #: _____

Is the property owner the same as the contact person? Yes No

DETAILED PROJECT DESCRIPTION:

See narrative attached.

Verbal comments made during discovery are not binding. Only the plan(s) submitted will be reviewed for compliance with applicable codes. By signing below, I grant permission for City of Chehalis employees to enter and remain on the property for the purpose of review and approval of this proposal and to conduct inspections related to this proposal.

<u>Signature:</u> 	<u>Date:</u> 2/14/22
<u>Name (print):</u> Cassie Fuller	<u>Telephone #:</u> (360) 807-4420

Office use only	
Received by: LF	Date Received: 02/15/2022
Parcel #: 017857002002	
Permit #: AC-22-003	
Zoning: UGA	
Flood Zone: Yes No	
Zone Classification:	



2/14/22

To: City of Chehalis Community Development and Public Works
1321 S Market Blvd.
Chehalis, WA 98532

RE: ECOShrimp Farm
Project: Aquaculture facility.
Parcel #: 017857002002

City of Chehalis Staff,

Please accept this narrative, preliminary site plans, pre submission conference application, anticipated staff projections, and typical phase 1 facility discharge water quality documents. The following narrative is intended to provide an overall direction of the development and help address any issues that might arise over the course of the project.

Existing Conditions

This project consists of one 20.13-acre parcel located in Chehalis, WA. The site currently is undeveloped land in the port of Chehalis and has recently been used for hay production. The property is zoned IL – Light Industrial.

Wet utilities- (water and sewer) There is currently no sewer on site. A City of Chehalis water main runs diagonal across the southern half of this property.

Dry utilities- (electric and communications) Overhead services are located on Bishop Road and along Jackson Highway. Lewis County PUD is electric provider and Comcast is communications.

Proposed Improvements

The proposed project is a commercial warehouse that will be used for aquaculture of shrimp. Shrimp will be grown in onsite tanks through a propriety process before being packaged and sent to further distribution. The project initially proposes a smaller warehouse which will produce up to 100 tons of shrimp per year. Future phases of the project are also anticipated which may bring the full production to 1000 tons per year. Phasing of the project is expected to take 3-5 years for full buildout. The front portion of the warehouse will be a 2-story office/laboratory. The site will only utilize the southern 10 acres of the current 20.13 acres. A BLA is expected to be prepared to address this property line concern.

Zoning

IL- Light Industrial is the current zoning of the property. The proposed project has number of uses expected including Distribution Center (use code S101), Office Space (use code B192) and Research Laboratory (use code B140). All three of these uses are permitted in this zoning. An agricultural designation (use code U113) is a conditional use.

Water

The proposed project will be serviced by City of Chehalis water system. During full build out phase the diagonal line running through the current site will be realigned along the property line to ensure it is not below the buildings. A new standard water lateral and fire service lines (if needed) will be constructed from city mains in Bishop Road to the new buildings. Hydrants will be placed onsite as needed. Please also advise if a well may be drilled onsite for process water use only.

Sewer

The proposed project is currently in the City of Chehalis sewer service area. The closest Chehalis sewer main terminates in Rush Road just north of the Rush/Bishop Road intersection which is approximately 4300' from the project site. Initial evaluation indicated a gravity extension "may" be possible from this termination point to the project site. Further survey is needed to fully evaluate this potential. If a city main is extended to the site it would progress south along Rush and then east along Bishop and terminate at the far east property line of the project site. Since this run is so long the project team would be looking to implement a long-term latecomer's agreement for this improvement.

Also, this length of gravity sewer would be difficult to financially bear and as such the project team is interested in exploring other sewerage options.

While the site is in Chehalis' service area, Lewis County Sewer District #4 is just on the other side of Bishop and Jackson Highway. Sewer from the site could be pumped to a LCSD#4 manhole located at the intersection of Bishop/Jackson Highway/Yates Road. This route would include the installation of a sewer pump station however would be approximately 1300' of shallower force main pipe than the 4300' of gravity pipe in the initial option. This option would presumably also need an agreement to discharge waste to LCSD#4. Please indicate the validity of this option.

Documentation on expected sewer flow and water quality for the phase one facility has been included for your evaluation.

Stormwater

A pond or other type of stormwater facility is expected to be in the south portion of the site in a position that will not affect the full buildout of the site. Full details of these facilities will be provided in the final civil construction plans. We are anticipating meeting all 9 minimum stormwater requirements including treatment and flow control. The initial storm facility is expected to be built to phase 1 size requirements only however enough space is being maintained so an expansion can occur in later phases.

Dry Utilities – Power/Communication

Power will be connected to the Lewis County PUD. Telecommunications will be provided by Comcast/Century Link. These services are currently located adjacent to the current site in both Jackson Highway and Bishop Road. We expect to work directly with Lewis County PUD to bring necessary service onsite.

Roads/Access/Parking

The site is between Jackson Highway and Bishop Road. After the intended BLA, access will come off Bishop Road. A wider commercial loop around the proposed building is expected to bring larger trucks to the loading docks near the rear (north) and west of the proposed buildings. The loop will also serve as fire access to all sides of the building. A 25-unit parking area will be located near the front of the building in phase 1. Full buildout is expected to include 43 stalls. Please note that Chehalis code requires 1 space per 1000sf of distribution area and more for office/laboratory space. Due to the size of equipment and number of staff needed we feel that a larger parking lot would not be necessary. We have submitted a list which details the number of expected employees and vehicles to justify this size of parking lot. While Chehalis' code required much larger parking based on overall square footage, we are hoping for parking requirements which consider project needs. As such we investigated Centralia's municipal code for similar light industrial parking areas and found the below requirement.

Centralia Municipal Code 20.72.030.C

Industrial uses - manufacturing/assembly/distribution/warehousing/wholesale

1 space for each: employee on the highest shift; plus, one sq. ft. parking per sq. ft. of display/retail gross floor area; plus, one space for each vehicle owned, leased, or operated by the company.

Looking at the number of employees and space types expected, we feel that a 25 and 43-unit parking area for phase 1 and full buildout respectively, meets the needs of the proposed development. Please advise if this parking arrangement is something that may be considered.

Critical Areas

There are no critical areas on this site. A geotechnical analysis is expected to be performed to confirm soil type, groundwater depth, and infiltration rates. No other special studies are anticipated.

Building

Building permits will be applied for and approved before building construction begins. Please advise of any special fire requirements interior to the building.

Thank you for accepting this application for review. We look forward to receiving your comments and going forward for approval and completion of this project. Feel free to call or email if you have any questions.

Sincerely,



Aaron Fuller, PE/Owner

Fuller Designs

360-807-4420

admin@fullerdesigns.org

Expected Space Distribution

The main space should be designated as agricultural.

Distribution space in our case would be very limited (up to 2-3K sqft).

Office space should be up to 2K sqft, while rest of the front building will be designated to support laboratory needs of the farming facility.

Food product processing/packaging facility up to 500 sqft.

Employee Numbers Expected

Title	Description	Phase One	Full Ramp
Site manager	Production manager, biological manager, site manager	1	1
Technical manager	Maintaining the equipment, repairs	1	1
Technician	Carrying out farm works	6 (up to 2 per shift)	60 (15 per shift)
Security	Off hours security guard	1	3
Driver	Produce distribution	1	5
Administration	Office worker	1	3
Total		11	73

In case of phase one facility, we are expecting up to 7 employees being present at the same time. With those numbers, we believe that 20-30 parking spaces should be acceptable target.

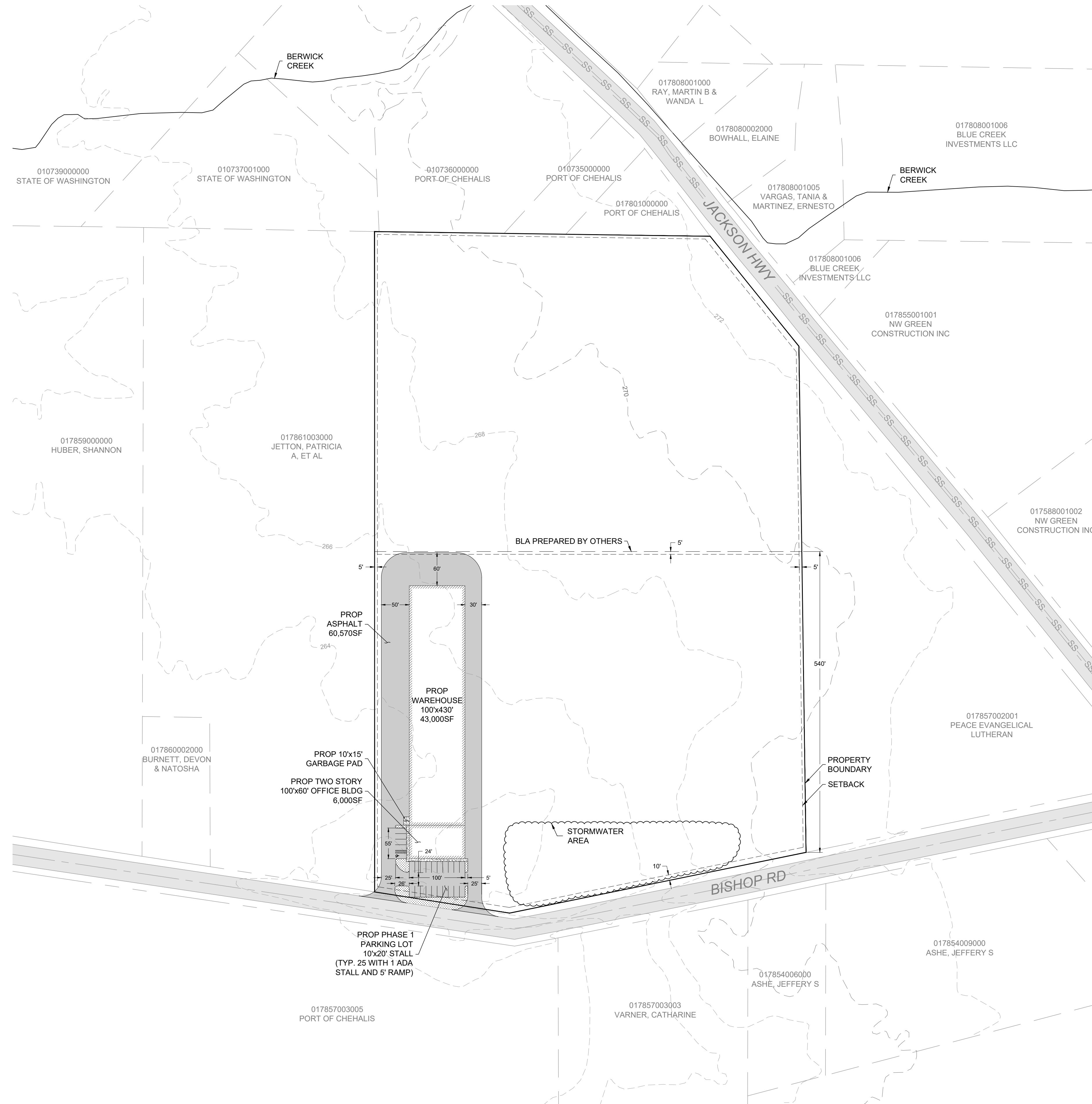
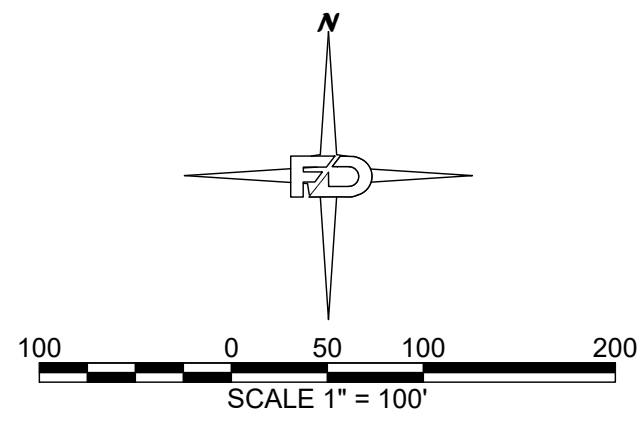
With the full build out we are expecting 25 employees on the highest shift so 40-50 stalls should be sufficient.

Water quality parameters

Following your request, for regulatory preliminary examination purposes only, the following table of estimated maximum limits of water quality parameters in effluent water from shrimp culture system constructed and designed by ECOshrimp:

Parameter	Unit	Max. value	Remarks
Maximum daily discharge	m ³ /d	15	For a production unit of 100t/y For steady state plant, until operational stability there may be higher quantities, which may require external disposal
Total suspended solids (TSS)	mg/L	60	
pH		8.1	Not less than 6.7
Biological oxygen demand (BOD)	mgO ₂ /L	100	Soluble
Chemical oxygen demand (COD)	mgO ₂ /L	200	Soluble
Total nitrogen	mg/L	50	
Total nitrate (NO ₃ -)	mg/L	40	As N
Total ammonia nitrogen (TAN)	mg/L	10	
Total P	mg/L	15	
Mineral oil (FTIR)	mg/L	1.5	
Total dissolved solids (TDS)	mg/L	25,000	
Conductivity (EC)	mS/cm	35	
Dissolved oxygen	mg/L	10	

SECTION 14 TOWNSHIP 13N RANGE 02W



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PROJECT NAME: ECOSHRIMP FARM			

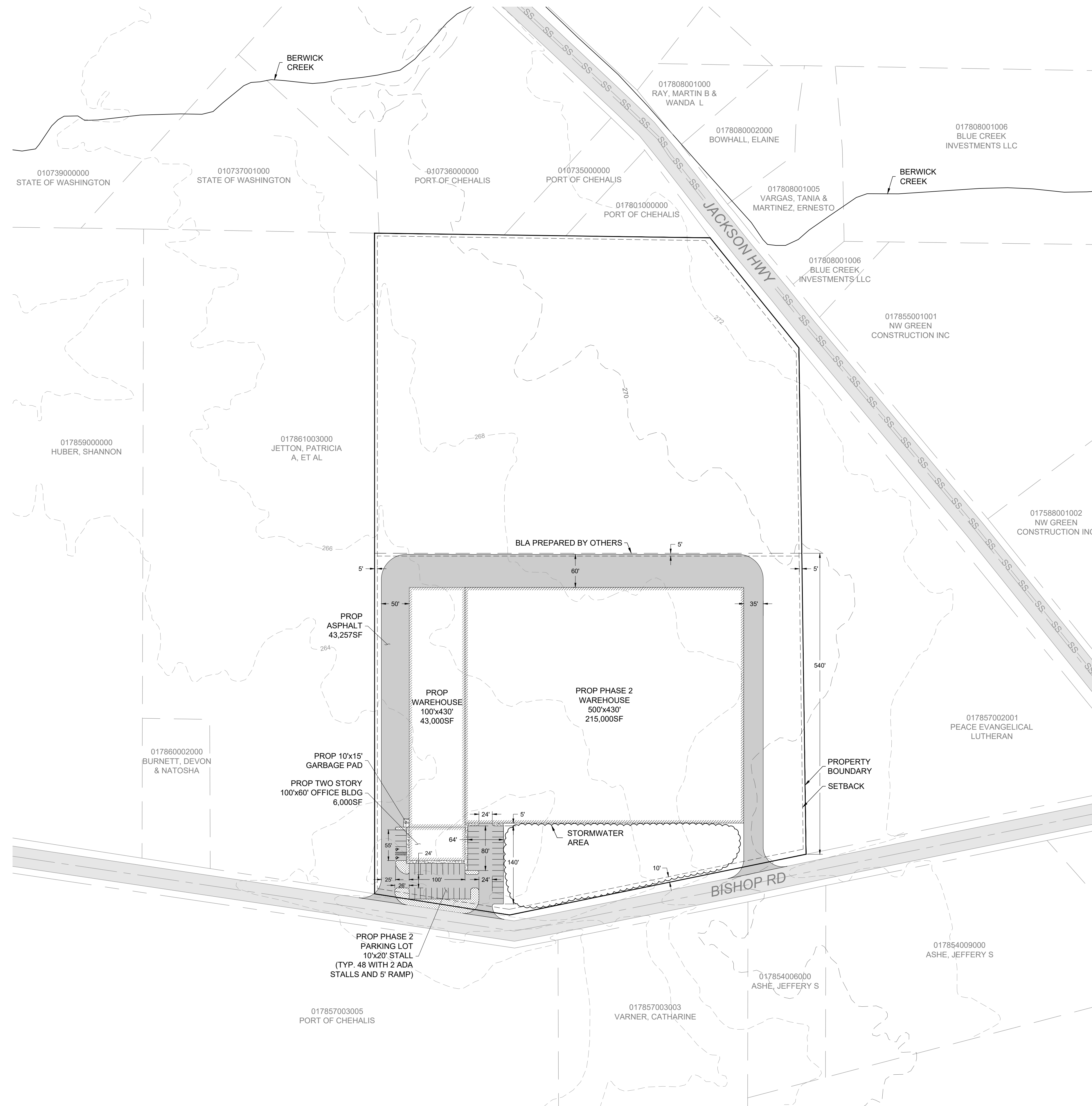
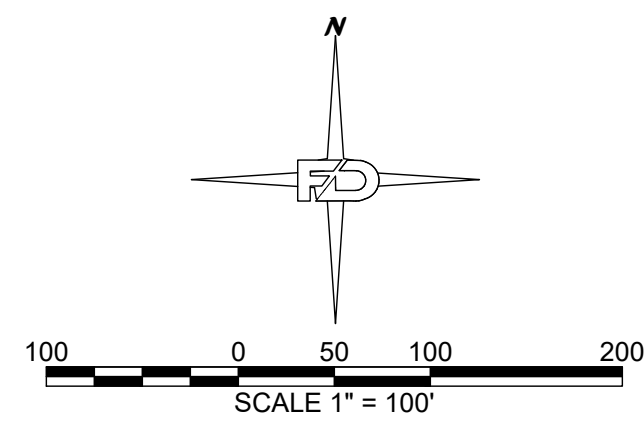


FULLER DESIGNS
 1101 KRESKY AVE
 CENTRALIA, WA 98531
 (360) 807-4420

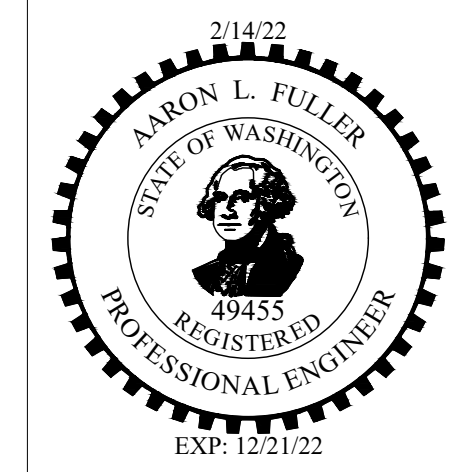
REV.	DESCRIPTION	DATE

CONCEPT ONLY NOT APPROVED FOR CONSTRUCTION

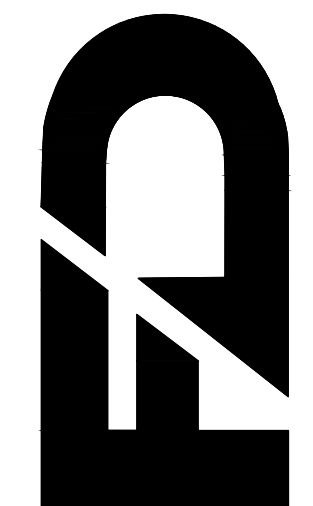
SECTION 14 TOWNSHIP 13N RANGE 02W



DRAWING TITLE: CONCEPT PHASE 2 SITE PLAN			
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PROJECT NAME: ECOSHRIMP FARM			



FULLER DESIGNS
 1101 KRESKY AVE
 CENTRALIA, WA 98531
 (360) 807-4420

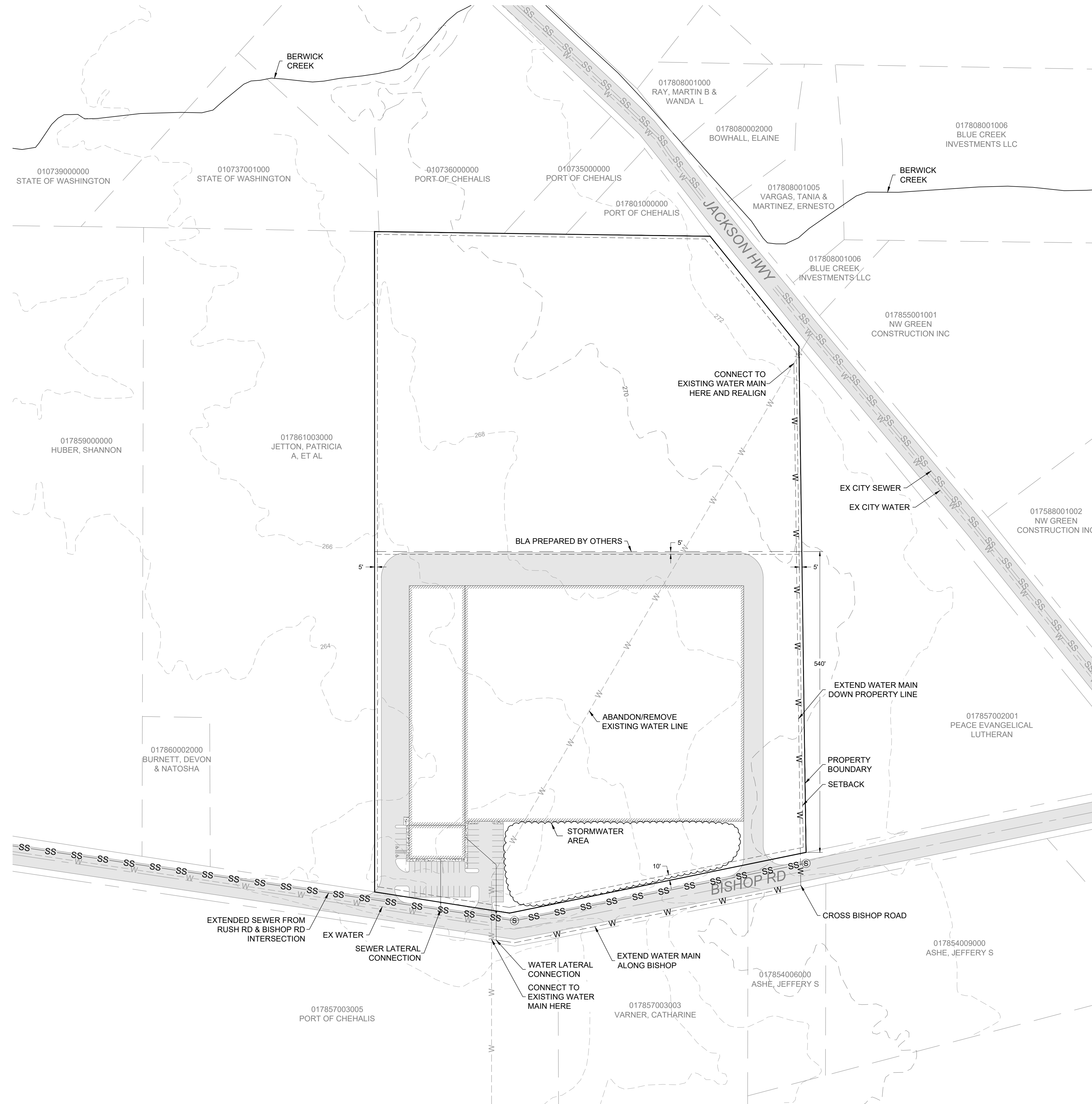
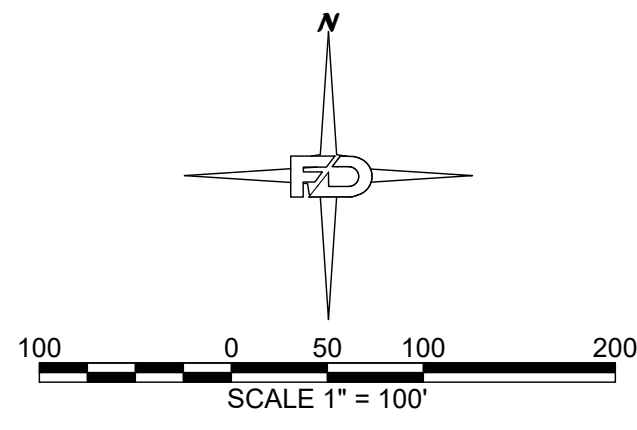


REV.	DESCRIPTION	DATE

CONCEPT ONLY NOT APPROVED
 FOR CONSTRUCTION

C1.2
 3 OF 4

SECTION 14 TOWNSHIP 13N RANGE 02W



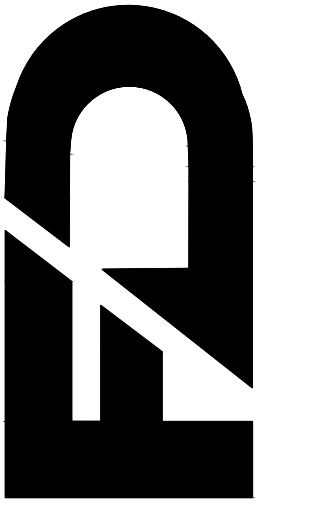
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CONCEPT UTILITY PLAN

SCALE: **1"=100'**
DATE: **2/14/22**
DRAWN: **BW**
CHECKED: **AF**

PROJECT NAME:
ECOSHRIMP FARM

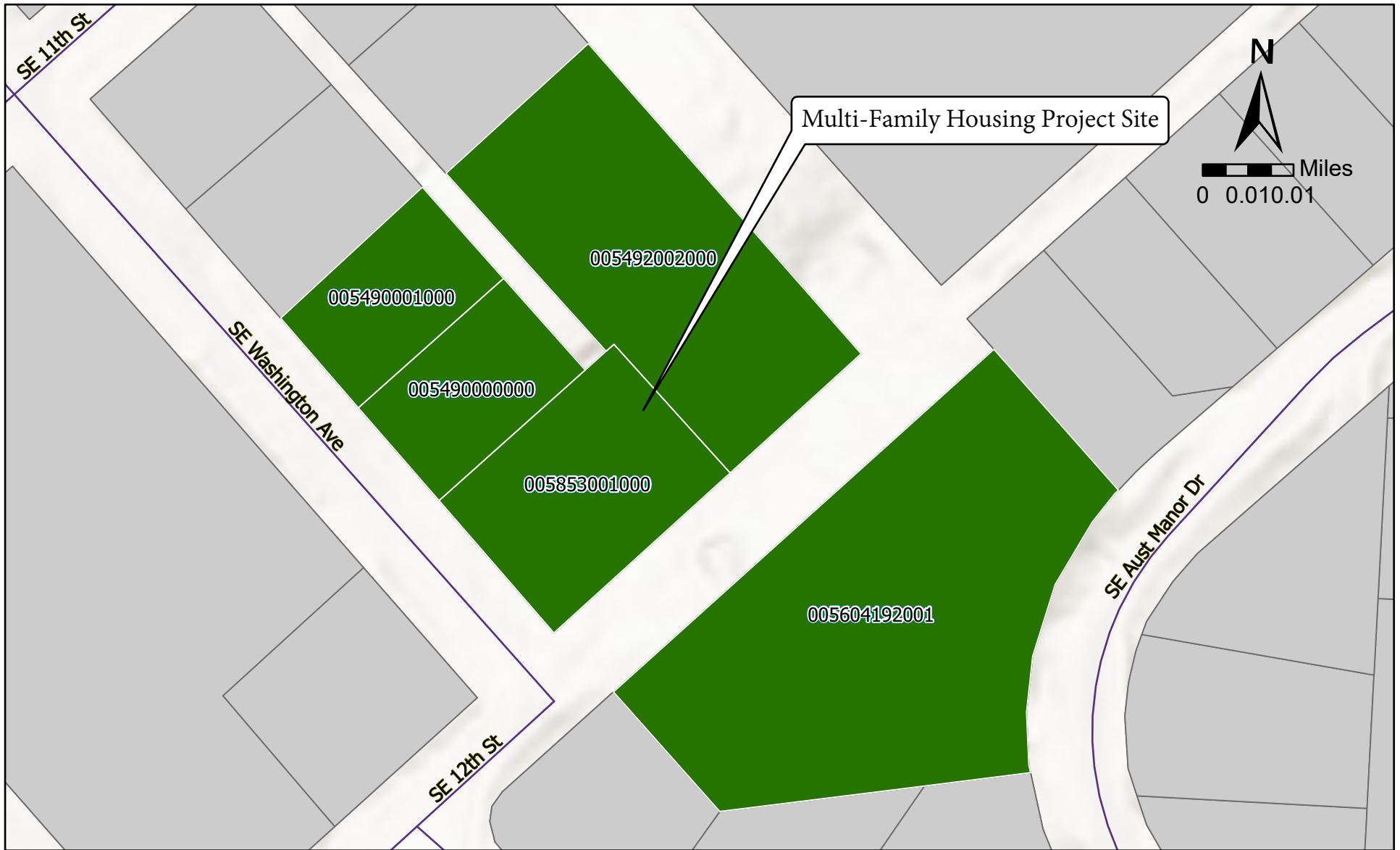


FULLER DESIGNS
1101 KRESKY AVE
CENTRALIA, WA 98531
(360) 807-4420



REV.	DESCRIPTION	DATE

CONCEPT ONLY NOT APPROVED FOR CONSTRUCTION



Vicinity Map for CU-21-002

Permit Application

Submit this form and any required attachments to:

**City of Chehalis
Community Development Department
1321 S. MARKET BLVD.
CHEHALIS WA 98532
(360) 345-2229**

APPLICANT FILL OUT AND SIGN UPPER SECTION:

JOB ADDRESS: 1137 SW Washington Ave

APPLICANT:

NAME: Samantha San Souci/Fuller Designs
 ADDRESS: 1101 Kresky Ave
 CITY/ST/ZIP: Centralia, Wa 98531
 PHONE#: 360-807-4420
 EMAIL: ssansouci@fullerdesigns.org

PROPERTY OWNER (Same as Applicant? Yes No)

NAME: Tom and Cara Nicholas
 ADDRESS: 103 Macronovic Road
 CITY/ST/ZIP: Chehalis, Wa 98531
 PHONE#: 360-269-0914
 EMAIL: caraleenicholas@msn.com

CONTACT PERSON (Same as Applicant? Yes No)

COMPANY NAME: _____
 NAME _____
 ADDRESS: _____
 CITY/STATE/ZIP _____
 PHONE # _____
 EMAIL: _____

CONTRACTOR (Same as Property Owner? Yes No)

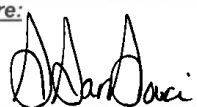
COMPANY: TBD
 CONTRACTOR REGISTRATION # _____
 ADDRESS: _____
 CITY/STATE/ZIP _____
 PHONE # _____
 EMAIL: _____

DETAILED PROJECT DESCRIPTION:

This project proposes 4 two story fourplexes and 4 two story duplexes with a centralized grassy common area and stormwater system.

PROJECT VALUE: \$3,000,000

Verbal comments made during discovery are not binding. Only the plan(s) submitted will be reviewed for compliance with applicable codes. By signing below, I grant permission for City of Chehalis employees to enter and remain on the property for the purpose of review and approval of this proposal and to conduct inspections related to this proposal.

<p><u>Signature:</u> </p>	<p><u>Date:</u> 06/07/2021</p>
<p><u>Name (print):</u> Samantha San Souci</p>	<p><u>Telephone #:</u> 360-807-4420</p>

OFFICE USE ONLY:

Date Received: _____ By: _____ Date Reviewed: _____ By: _____
 Parcel #: _____ Zoning: _____ Flood Zone: _____
 Permit #: _____

ANSWER ALL OF THE FOLLOWING QUESTIONS IN COMPLETE DETAIL:

1. WHAT IS THE USAGE OF OTHER SURROUNDING PROPERTIES IN THE VICINITY OF THIS PROPOSAL?

Residential and commercial.

2. IS THERE A UNIQUE CIRCUMSTANCE RELATIVE TO YOUR PROPERTY, BUT NOT THE REST OF THE NEIGHBORHOOD, THAT MAKES THE CONDITIONAL USE OR VARIANCE NECESSARY? Such as, size, shape, topography, location, surroundings, etc.

This project does not require a conditional use or variance.

3. WILL THIS PROPOSAL, IF GRANTED, AFFECT ANY OTHER ADJACENT PRIVATE OR PUBLIC PROPERTY IN ANY PHYSICAL MANNER OR BE MATERIALLY DETRIMENTAL? This proposal will not affect other adjacent

properties.

4. WILL THIS PROPOSAL, IF GRANTED, AFFECT THE VISUAL CHARACTERISTICS OF THE NEIGHBORHOOD? A development of mid-scale, multi-family housing, on currently undeveloped and unmaintained land in the middle of commercial properties and a residential neighborhood will give a clean, cohesive appearance to the area.

5. WILL THIS PROPOSAL, IF GRANTED, AFFECT THE COMPREHENSIVE PLAN FOR THE ZONE, VICINITY, OR NEIGHBORHOOD? As stated above, this project is currently in the approval process to be rezoned to R3-multi-family.

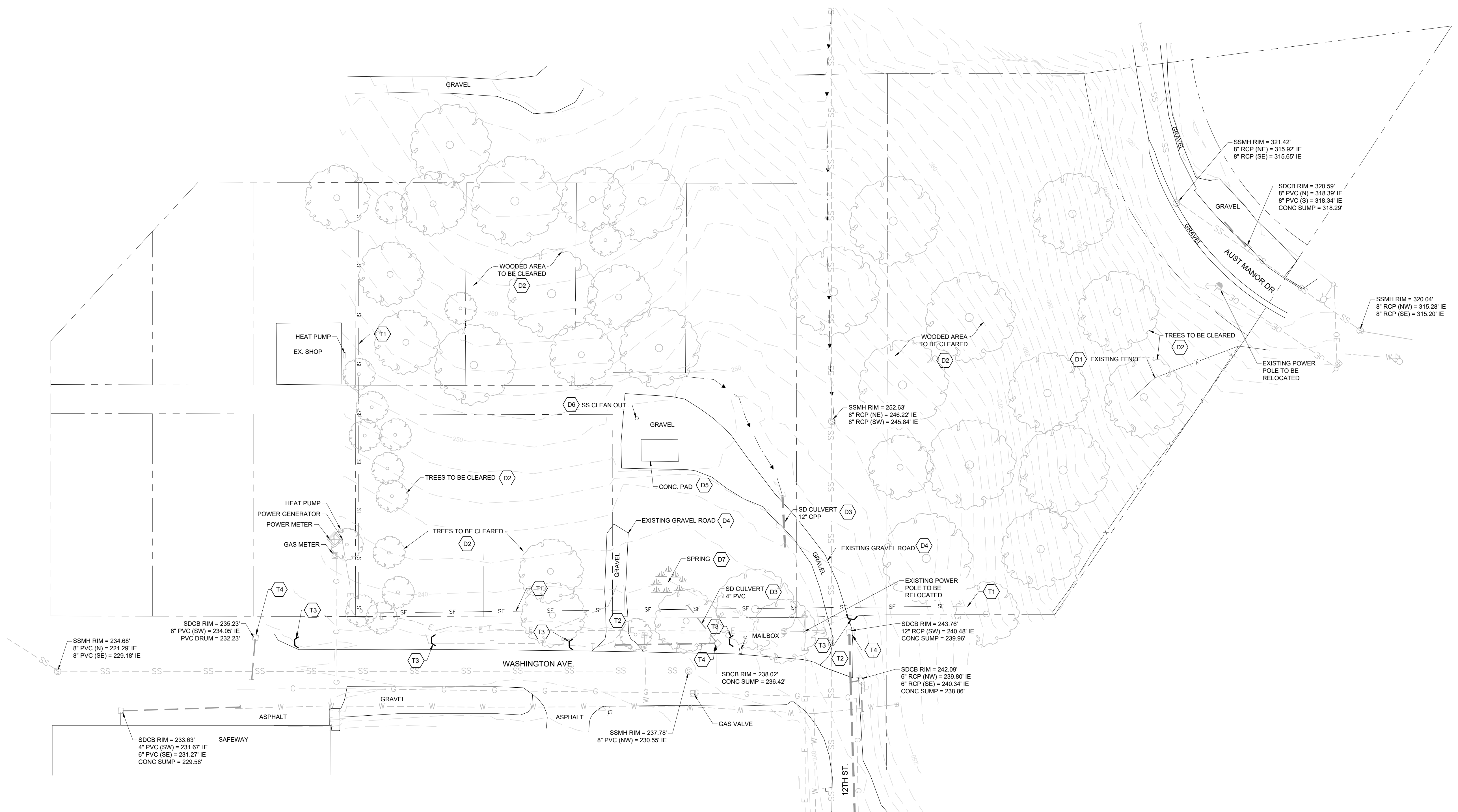
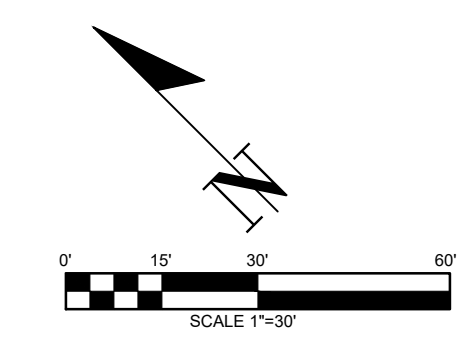
6. IS THIS PROPOSAL A CONTINUANCE OR RE-ESTABLISHMENT OF A PRE-EXISTING NONCONFORMING USE? PLEASE EXPLAIN: No.

7. WILL A SUBSTANTIAL HARDSHIP BE CREATED IF THIS PROPOSAL IS DENIED? This will not create a substantial hardship if denied.

8. WILL THIS PROPOSAL, IF GRANTED, CREATE A VIOLATION OF THE CHEHALIS MUNICIPAL CODE OR A PUBLIC NUISANCE AS DEFINED BY TITLE 7? This proposal with not violate municipal code or title 7.

ADDITIONAL COMMENTS: _____

The city may require additional information to explain the nature and scope of the proposal and its impact on the vicinity or neighborhood in sufficient detail to perform the required analysis.



TEMPORARY EROSION AND SEDIMENTATION CONTROL (TESC) NOTES:

- (T1) INSTALL SILT FENCE.
- (T2) USE EXISTING GRAVEL ROAD AS CONSTRUCTION ENTRANCE.
- (T3) INSTALL STRAW BALE BARRIER AS SHOWN. BALES TO BE INSTALLED ALONG EXISTING DITCH SHOWN ON THIS SHEET. BALES WILL BE REMOVED ONCE SITE IS STABILIZED.
- (T4) INSTALL TWO LAYERS OF WATTLES AND A SWATH OF SILT FENCE AROUND THE INLET FOR CULVERT INLET PROTECTION.

DEMOLITION NOTES:

- (D1) EXISTING FENCE TO BE REMOVED.
- (D2) EXISTING TREES TO BE REMOVED.
- (D3) EXISTING PIPES UNDER EXISTING ENTRANCE ROAD TO BE REMOVED.
- (D4) EXISTING ENTRANCE ROAD TO BE REMOVED.
- (D5) EXISTING CONCRETE PAD TO BE REMOVED.
- (D6) EXISTING SANITARY CLEANOUT TO BE REMOVED.
- (D7) EXISTING SPRING TO BE FILLED.

EROSION CONTROL NOTES:

1. ALL EXPOSED SOIL SURFACES SHALL BE SEEDED WITH AN EROSION CONTROL SEED MIX OR HYDROSEEDED IF NOT WORKED WITHIN 7 CALENDAR DAYS FROM MAY 1 TO SEPTEMBER 30. SOIL SHALL BE COVERED WITHIN 2 DAYS FROM OCTOBER 1 TO APRIL 30.
2. SEEDED AREAS WILL BE COVERED WITH MULCH, HAY OR OTHER PROTECTIVE COVERING APPROVED BY THE ENGINEER TO PREVENT WASHOUT DURING RAIN EVENTS.
3. CONTRACTOR SHALL APPLY WATER TO GRAVEL SURFACES DURING CONSTRUCTION TO MINIMIZE FUGITIVE DUST.
4. ROUTINE INSPECTION AND MAINTENANCE OF ALL INSTALLED EROSION AND SEDIMENT CONTROL BMPs, ESPECIALLY AFTER STORMS, IS REQUIRED.
5. PERIODIC STREET CLEANING MAY BE NECESSARY TO REMOVE ANY SEDIMENT TRACKED OFF SITE.
6. IN THE EVENT PROPOSED BMPs FAIL, APPROPRIATE MEASURES MUST BE TAKEN TO STOP SEDIMENTS FROM ENTERING WATERWAYS.

PRELIMINARY
FOR PERMIT ONLY

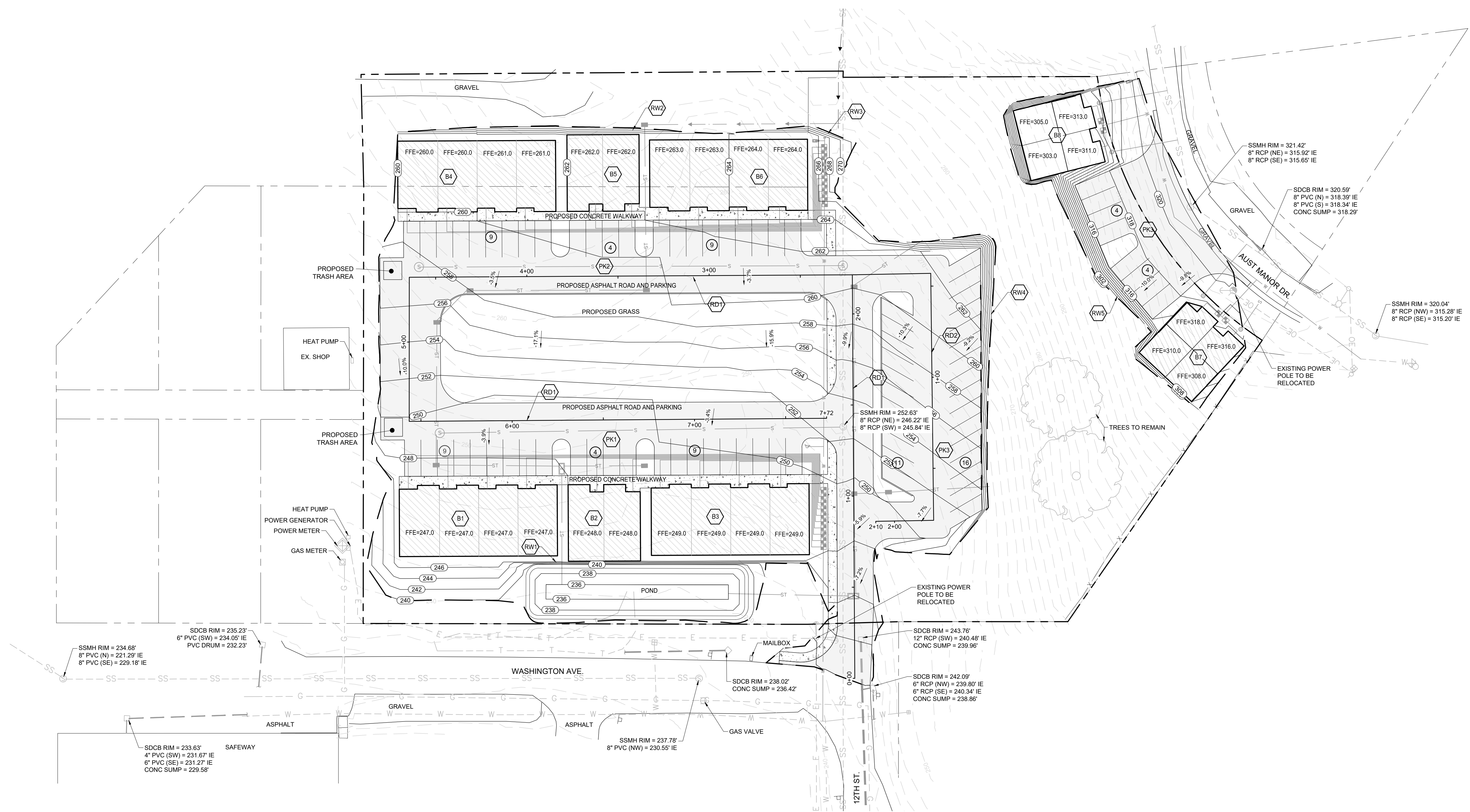
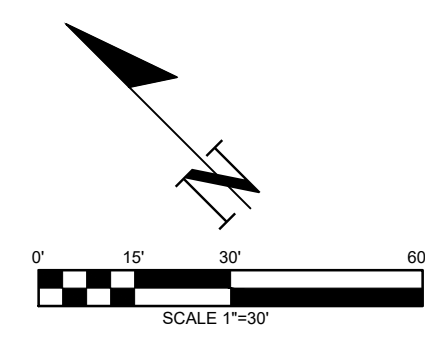
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SCALE: 1" = 30'	DATE: 06/07/21
PROJECT NAME: NICHOLAS WASHINGTON AVE.	DRAWN: MM

06/08/2021

12/21/2022

FULLER DESIGNS
1101 KRESKY AVE
CENTRALIA, WA 98531
(360) 807-4420

REV.	DESCRIPTION	DATE	FOR PERMIT	
0	PRELIMINARY - FOR PERMIT	06/07/21		



ROAD AND GRADING NOTES:

- RD1 982 L.F. OF ASPHALT ROAD
20' WIDE
 - RD2 236 L.F. OF ASPHALT ROAD
20' WIDE
 - PK1 ASPHALT PARKING LOT
22 SPACES
 - PK2 ASPHALT PARKING LOT
22 SPACES
 - PK3 ASPHALT PARKING LOT
27 SPACES
 - PK4 ASPHALT PARKING LOT
8 SPACES
 - RW1 ±158' RETAINING WALL
 - RW2 ±153' RETAINING WALL
 - RW3 ±46' RETAINING WALL
 - RW4 ±206' RETAINING WALL
 - RW5 ±287' RETAINING WALL
- ASPHALT ROAD AND PARKING
TOTAL AREA= 0.74 ACRES
TOTAL PARKING SPACES = 79

DEVELOPMENT CONCEPT NOTES:

- PROPOSED PROPERTY BOUNDARY = 3.02 ACRES
TOTAL 2 STORY UNITS = 24
- B1 MULTIFAMILY BUILDING
2 STORY
4 UNITS
 - B2 DUPLEX BUILDING
2 STORY
2 UNITS
 - B3 MULTIFAMILY BUILDING
2 STORY
4 UNITS
 - B4 MULTIFAMILY BUILDING
2 STORY
4 UNITS
 - B5 DUPLEX BUILDING
2 STORY
2 UNITS
 - B6 MULTIFAMILY BUILDING
2 STORY
4 UNITS
 - B7 DUPLEX BUILDING
2 STORY
2 UNITS
 - B8 DUPLEX BUILDING
2 STORY
2 UNITS

EARTHCUT VOLUME

Name	2d Area(Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Main Area Volume	82,014.53	5,652.94	2,873.46	2,779.48 cut

Name	2d Area(Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
East Area Volume	11,521.51	30.95	2,112.21	(2,081.26) fill

DRAWING TITLE:
ROADWAY AND GRADING PLAN

SCALE: 1" = 30'

DATE: 06/07/21

CHECKED: ALF

DRAWN: MM

PROJECT NAME:
NICHOLAS WASHINGTON AVE.

06/08/2021

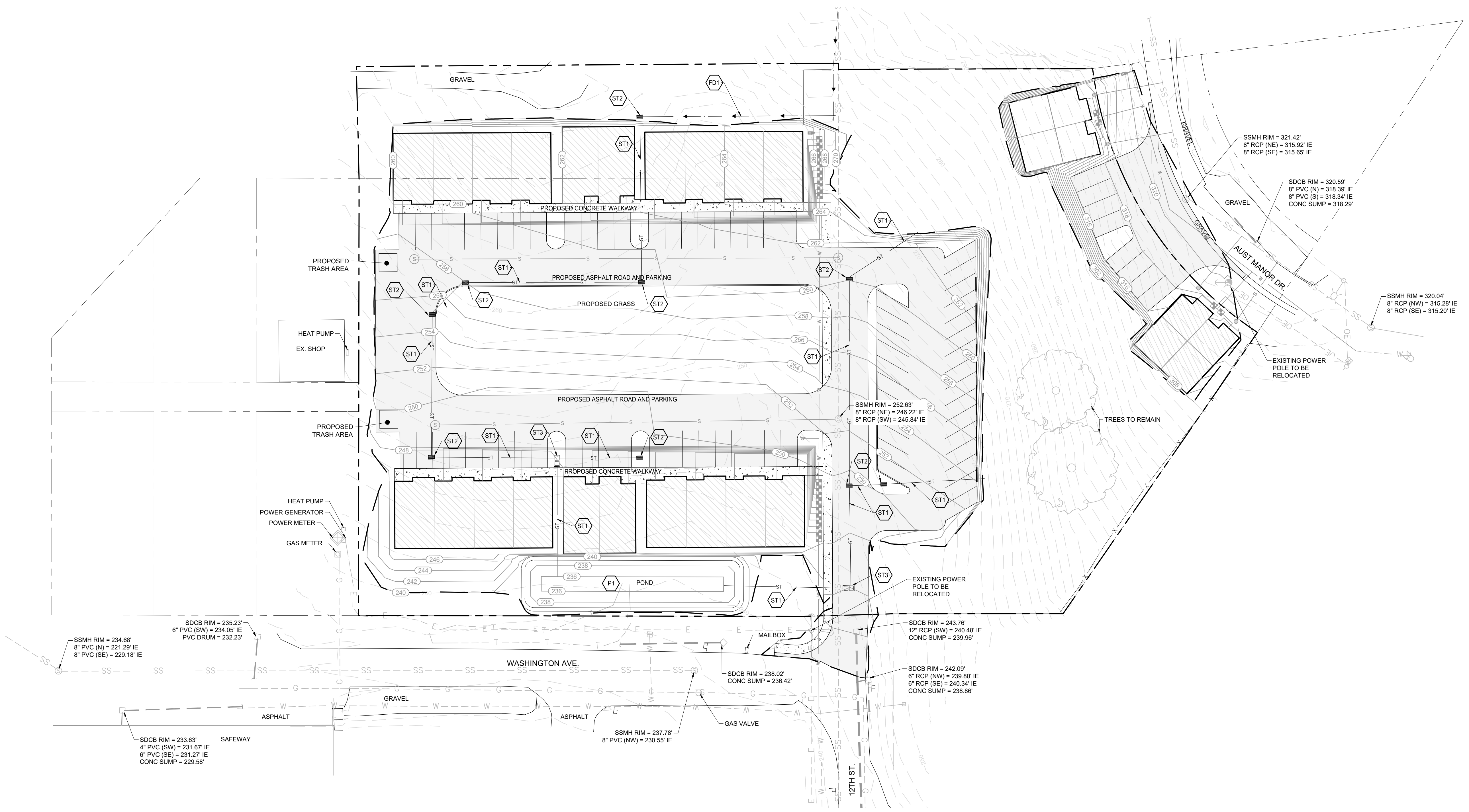
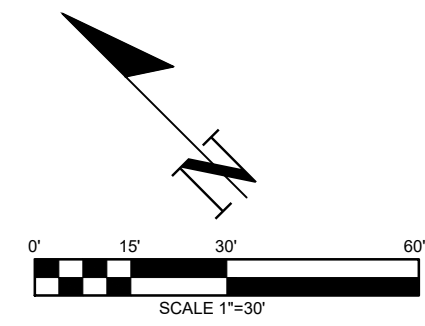
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C2.1
3 OF 6



- STORMWATER NOTES:**
- (ST1) INSTALL STORM PIPE
 - (ST2) INSTALL CB GRATE LID
 - (ST2) INSTALL 1-CARTRIDGE 27" CATCH BASIN STORM FILTER
 - (FD1) INSTALL ±100' FRENCH DRAIN
 - (P1) DETENTION POND
3' DEPTH (INCLUDED 1' FREEBOARD)
3:1 SIDE SLOPES
800 S.F. BOTTOM AREA

DRAWING TITLE: STORM DRAINAGE PLAN		CHECKED: ALF
SCALE: #####	DATE: 06/07/21	DRAWN: MM
PROJECT NAME: NICHOLAS WASHINGTON AVE.		

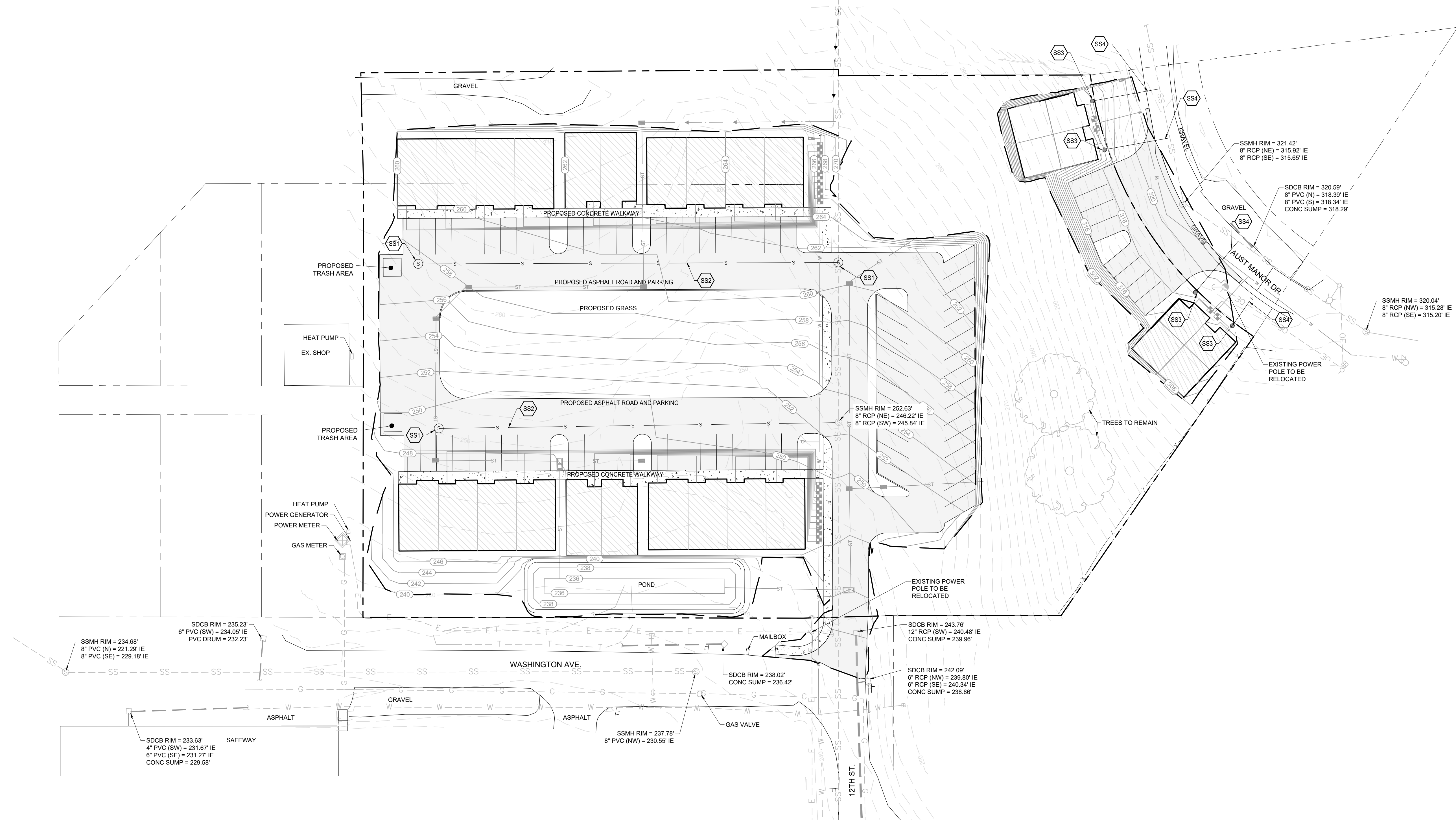
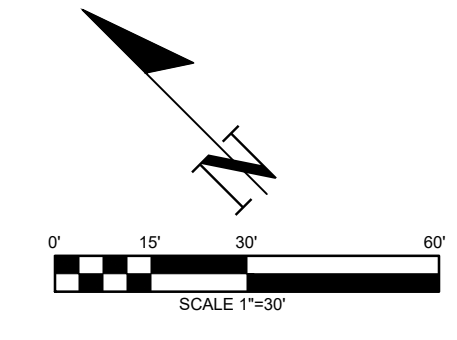
06/08/2021

12/21/2022

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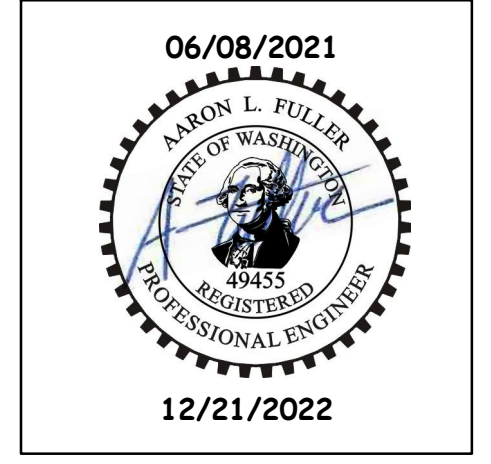


SANITARY SEWER NOTES:

- SS1 INSTALL SANITARY SEWER MANHOLE
- SS2 INSTALL SANITARY SEWER MAIN
- SS3 INSTALL GRINDER PUMP
- SS4 INSTALL LATERAL SERVICE

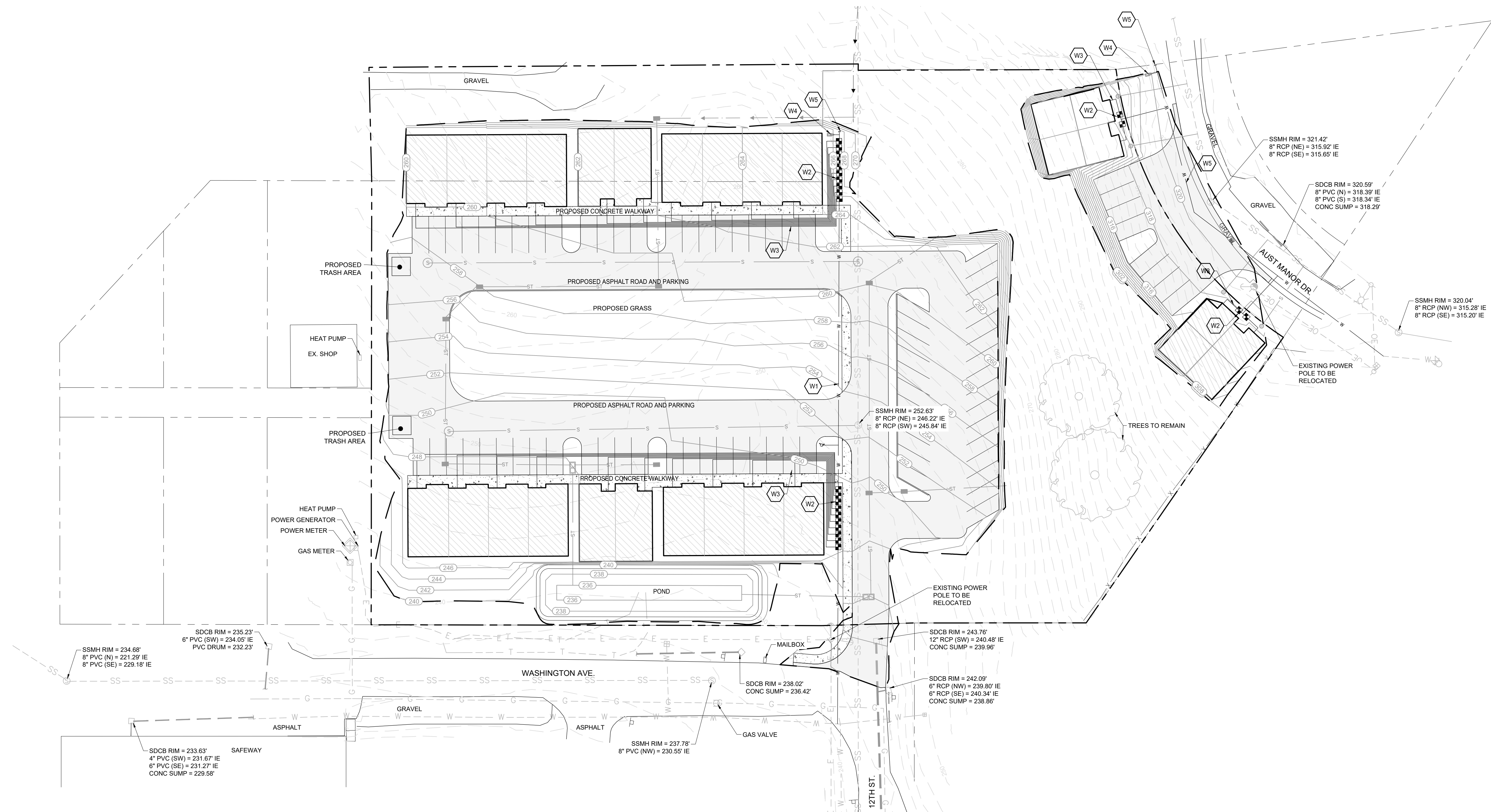
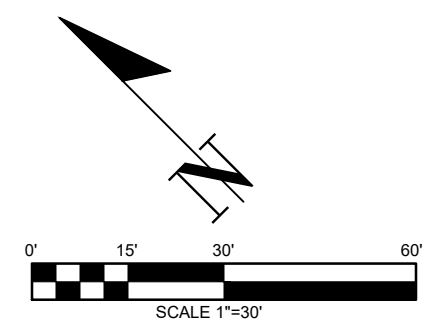
PRELIMINARY
FOR PERMIT ONLY

DRAWING TITLE: SEWER PLAN		CHECKED: ALF
SCALE: ###/###/###	DATE: 06/07/21	DRAWN: MM
PROJECT NAME: NICHOLAS WASHINGTON AVE.		



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CENTRALIA, WA 98531
(360) 807-4420

REV.	DESCRIPTION	DATE
0	PRELIMINARY - FOR PERMIT	06/07/21



WATER NOTES:

- W1 INSTALL WATER MAIN LINE
- W2 INSTALL WATER METERS FOR ALL UNITS
- W3 INSTALL WATER SERVICE FOR ALL UNITS
- W4 INSTALL 2" BLOW-OFF VALVE ASSEMBLY
- W5 INSTALL END CAP AND THRUSTBLOCKING

PRELIMINARY
FOR PERMIT ONLY

DRAWING TITLE:	WATER PLAN		
SCALE:	1" = 30'	DRAWN:	MM
DATE:	06/07/21	CHECKED:	ALF
PROJECT NAME: NICHOLAS WASHINGTON AVE.			



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CENTRALIA, WA 98531
(360) 807-4420

REV.	DESCRIPTION	DATE	FOR PERMIT	DATE	FOR PERMIT	DATE	FOR PERMIT
0	PRELIMINARY - FOR PERMIT	06/07/21					



WASHINGTON AVENUE TOWNHOMES
TRAFFIC IMPACT ANALYSIS

Chehalis, WA



01/25/2022

Prepared for: Mr. Aaron Fuller, P.E.
Fuller Designs
1101 Kresky Avenue
Centralia, WA 98531

January 2022

WASHINGTON AVENUE TOWNHOMES
TRAFFIC IMPACT ANALYSIS

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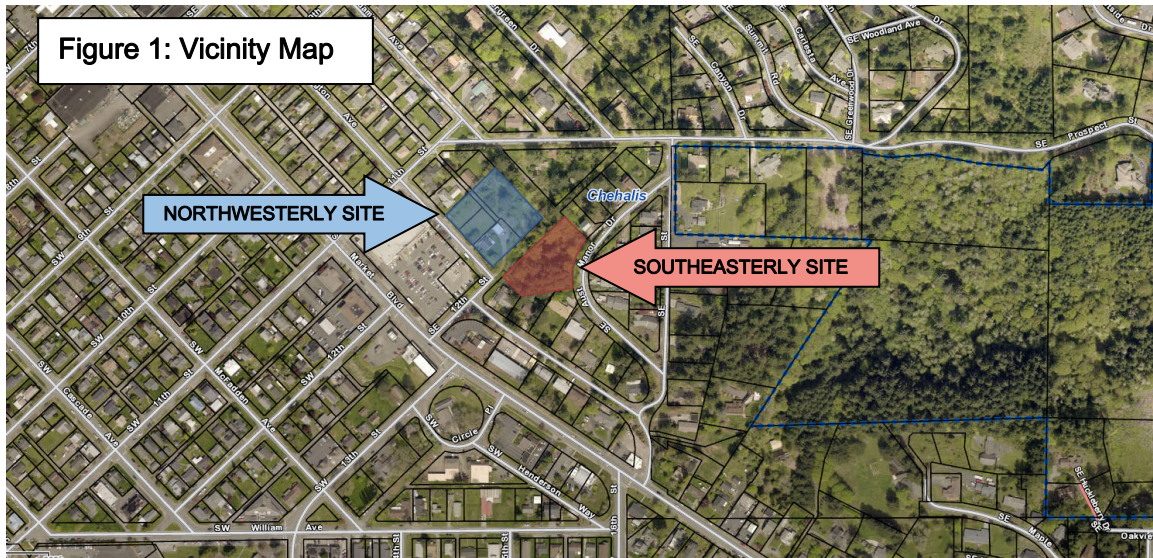
WASHINGTON AVENUE TOWNHOMES TRAFFIC IMPACT ANALYSIS

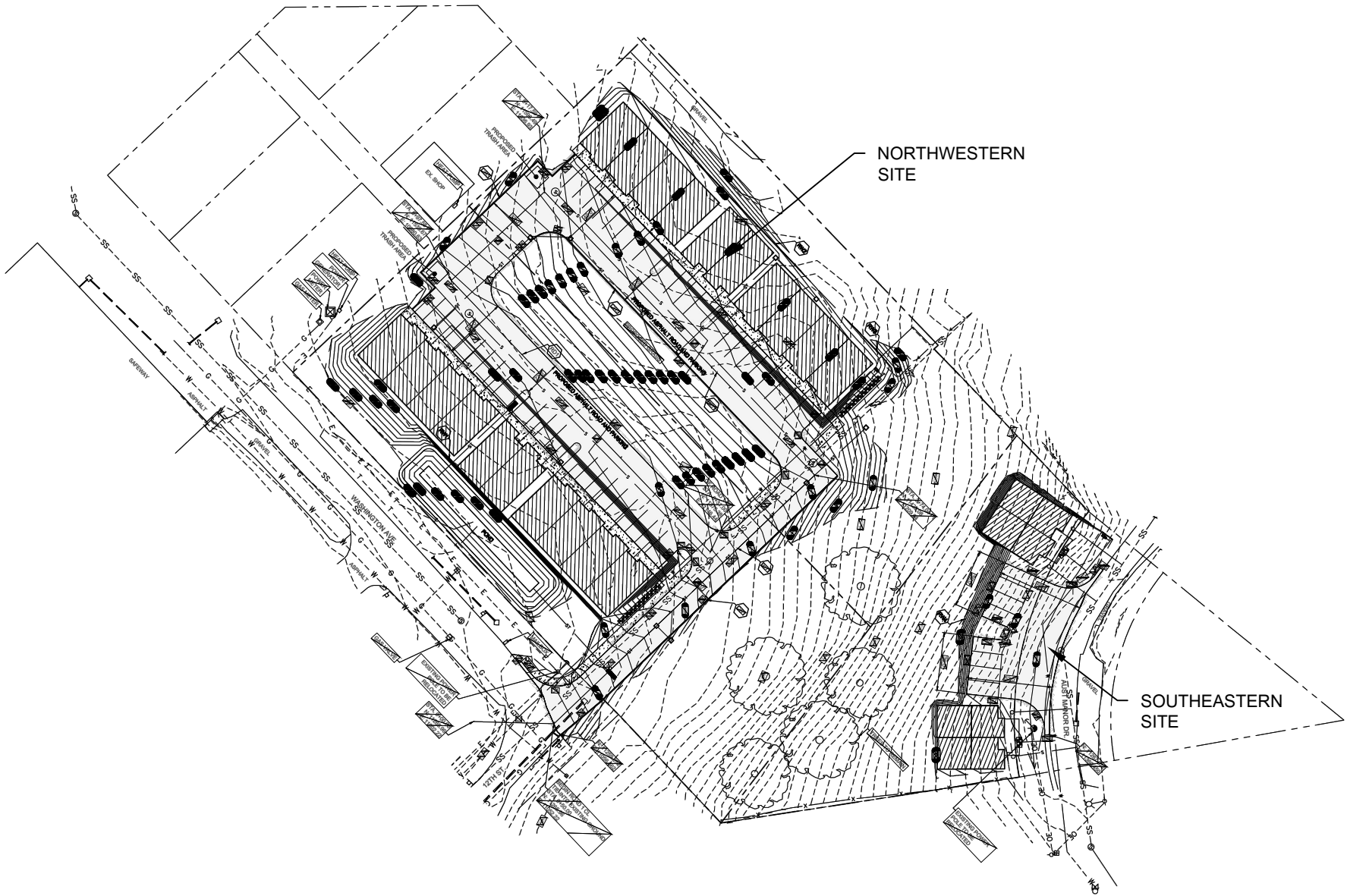
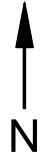
1. INTRODUCTION

The main goals of this study focus on the analysis of existing roadway conditions and forecasts of newly generated project traffic. The first task includes the review of general roadway information on the adjacent street system, baseline vehicular volumes, and entering sight distance data. Forecasts of future traffic and dispersion patterns on the street system are then determined using established trip generation and distribution techniques. As a final step, appropriate conclusions and mitigation measures are defined.

2. PROJECT DESCRIPTION

Washington Avenue Townhomes is a proposed residential project comprising 24 two-story townhomes located in the city of Chehalis. The northwestern portion of the subject site (tax parcel #'s: 00549000-0000; -1000; -2000; & 00585300-1000) is to encompass 20 townhomes and is bordered to the southwest by SE Washington Avenue. A single-family structure exists within this portion of the subject site, which is to be demolished prior to new construction. Access to these 20 townhomes is proposed via a northeasterly extension of SE 12th Street from SE Washington Avenue. The southeastern portion of the subject site (undeveloped tax parcel #: 00560419-2001) is to encompass 4 townhomes and is bordered to the east by SE Aust Manor Drive. Access to these 4 townhomes is proposed via one driveway extending west from SE Aust Manor Drive. The total subject site encompasses 2.26-acres. Figure 1 below depicts the boundaries of the northwest (blue) and southeast (red) portions of the subject site and an aerial vicinity of the surrounding roadway network. Figure 2 illustrates a conceptual site plan.





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TRAFFIC AND CIVIL ENGINEERING

WASHINGTON AVENUE TOWNHOMES

SITE PLAN
FIGURE 2

PO Box 397 Puyallup, WA 98371 (253) 770 1401 heathtraffic.com

3. EXISTING CONDITIONS

3.1 Existing Street System

The street network serving the proposed project consists of a variety of roadways. The major roadways and arterials defined in the study area are listed and described below.

Table 1: Roadway Network

Functional Classification	Roadway	Speed Limit	Lanes	Street Parking	Sidewalk	Bike Facilities
Principal Arterial	S Market Blvd	25-30 mph	2-3	Some	Yes	No
	SE Washington Ave	15-25* mph	2	Yes	NW/o SE 11th	No
Local	SE Aust Manor Dr	15-25* mph	2	No	No	No
	SE 11th St	25* mph	2	Some	Yes	No
	SE 12th St	25* mph	2	Some	Some	No
	SE 16th St	15-25* mph	2	No	No	No

*No posted speed limit—25mph assumed.

3.2 Public Transit

A review of the Twin Transit regional bus schedule indicates that transit service is provided within walking distance of the subject site. The nearest bus stops are located at the Chehalis Safeway (0.1-miles walking distance from the northwest portion of the subject site) and at 16th Street & S Market Boulevard (0.2-miles walking distance from the southeast portion), servicing the Red Line. The Red Line provides service north of I-5 throughout the city of Chehalis. Weekday service is provided from 6:00 AM – 7:00 PM and weekend service is provided from 7:00 AM – 4:00 PM. Refer to Twin Transit’s Routes & Schedules for more detailed information.

3.3 Pedestrian and Bicycle Activity

Pedestrian and bicycle activity were observed on the nearby street segments. Observations were made during routine peak hour movement counts at all study intersections. No pedestrians or bicyclists were observed during the PM peak hour at either SE 16th Street & SE Aust Manor Drive Approximately or SE 12th Street & Market Boulevard. Approximately 2 pedestrians and 2 bicyclists were observed at SE 11th Street & SE Washington Avenue and 2 pedestrians and no bicyclists were observed at SE 11th Street & S Market Boulevard during the PM peak hour.

Sidewalk internal to the northwesterly portion of the subject site is proposed with connection to SE Washington Avenue. Moreover, planned City improvements outlined in the proposed TIP indicate pedestrian infrastructure projects that will increase non-motorist accessibility in the vicinity of the subject site.

3.4 Roadway Improvements

A review of the City of Chehalis Six-Year (2022-2027) Transportation Improvement Program indicates the following planned projects in the general area.

S Market Boulevard - Park Street to N National Avenue: This project entails renaissance streetscape planning. The project has a total cost of \$3,050,000 with a start date of 2021 and an end date of 2024.

S Market Boulevard - Park Street to SE City Limits: This project entails reconstructing the roadway and installing pedestrian improvements from 13th to the SE City limits. The project has a total cost of \$9,800,000 with a start date of 2023 and an end date of 2026.

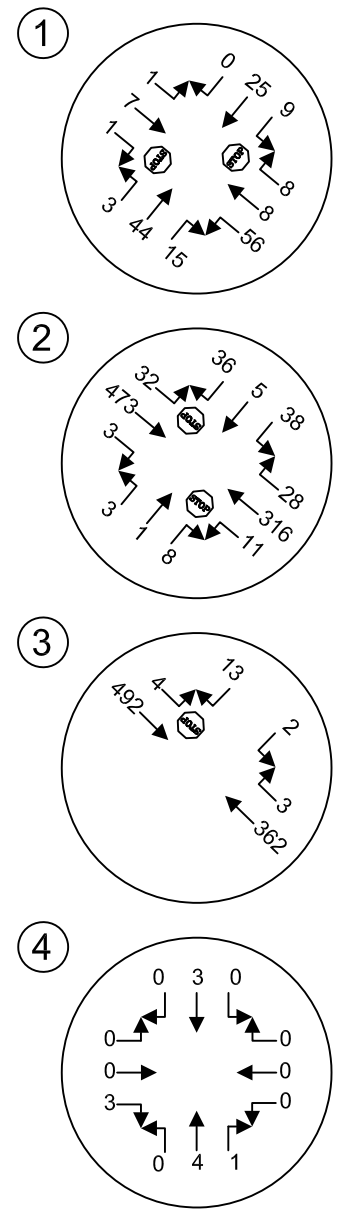
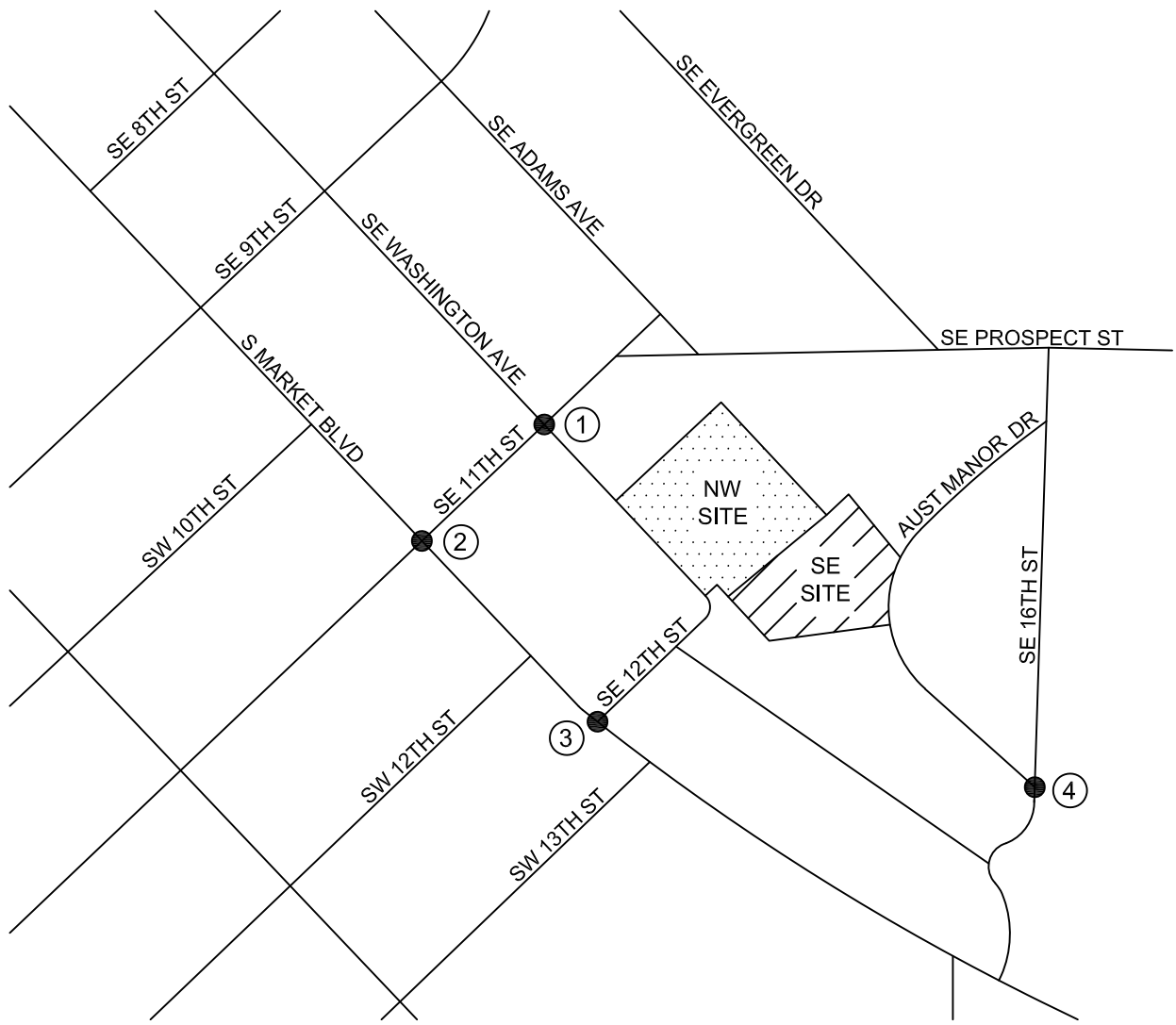
13th Street SW – S Market Boulevard to I-5: This project entails a grind and overlay in addition to ADA compliant upgrades. The project has a total cost of \$600,000 with a start date of 2027.

3.5 Existing Peak Hour Volumes and Patterns

Field data for this study was collected in January of 2022. Traffic counts were administered at the listed intersections below, which would receive the bulk of the anticipated vehicular demands.

- SE 11th St & SE Washington Ave
- S Market Blvd & SE 12th St
- S Market Blvd & SE 11th St
- SE 16th St & SE Aust Manor Dr

Data was obtained during the evening peak period between the hours of 3:00 PM – 6:00 PM, which generally translates to highest overall roadway volumes in a given 24-hour period. The one hour reflecting highest overall roadway volumes (peak hour) was then derived from these counts. Figure 3 illustrates existing PM peak hour volumes at the study intersections. Full count sheets have been attached in the appendix.



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WASHINGTON AVENUE TOWNHOMES
EXISTING PM PEAK HOUR VOLUMES
FIGURE 3

3.6 Level of Service

Existing intersection delays were determined through the use of the *Highway Capacity Manual* 6th Edition. Capacity analysis is used to determine level of service (LOS) which is an established measure of congestion for transportation facilities. The range¹ for intersection level of service is LOS A to LOS F with the former indicating the best operating conditions with low control delays and the latter indicating the worst conditions with heavy control delays. Detailed descriptions of intersection LOS are given in the 2016 Highway Capacity Manual. Level of service calculations were made through the use of the *Synchro 11* analysis program. For side-street stop-controlled intersections, LOS is determined by the approach with the highest delay. For uncontrolled intersections, LOS is determined by the intersection's overall weighted average delay for each approaching leg. Table 2 below presents existing PM peak hour LOS delays for the key intersection of study.

Table 2: Existing PM Peak Hour Level of Service

Delays given in seconds per vehicle

Intersection	Control	Movement	LOS	Delay
SE Washington Ave & SE 11th S	Stop	WB	A	9.6
S Market Blvd & SE 12th St	Stop	SB	C	19.5
S Market Blvd & S 11th St t	Stop	SB	B	11.6
SE 16th St & SE Aust Manor Dr	Unsig.	Overall	A	6.8

Existing PM peak hour conditions are shown to operate with minimal delays at LOS C indicating stable operations during the critical PM peak hour of travel.

¹ *Signalized Intersections - Level of Service*

Level of Service	Control Delay per Vehicle (sec)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Stop Controlled Intersections – Level of Service

Level of Service	Control Delay per Vehicle (sec)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Highway Capacity Manual, 6th Edition

4. FUTURE TRAFFIC CONDITIONS

4.1 Trip Generation

Trip generation is used to determine the magnitude of project impacts on the surrounding street system. This is usually denoted by the quantity or specific number of new trips that enter and exit a project during a designated time period, such as a specific peak hour (AM or PM) or an entire day. Data presented in this report was taken from the Institute of Transportation Engineer's publication *Trip Generation*, 11th Edition. The designated land use for this project is defined as Single-Family Attached Housing – LUC 215. Table 3 below summarizes the estimated project trip generation using ITE average rates to determine trips ends with dwelling units as the input variable. Included are the average weekday daily traffic (AWDT) and the AM and PM peak hours. Refer to the appendix for trip generation output.

Table 3: Project Trip Generation

Land Use	Size	AWDT	AM Peak-Hour Trips			PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
Single-Family Attached – LUC 215	24 dwelling units	173	4	8	12	8	6	14

Based on ITE data, the project is anticipated to generate 173 new daily weekday trips with 12 trips (4 inbound / 8 outbound) occurring in the AM peak hour and 14 trips (8 inbound / 6 outbound) in the PM peak hour.

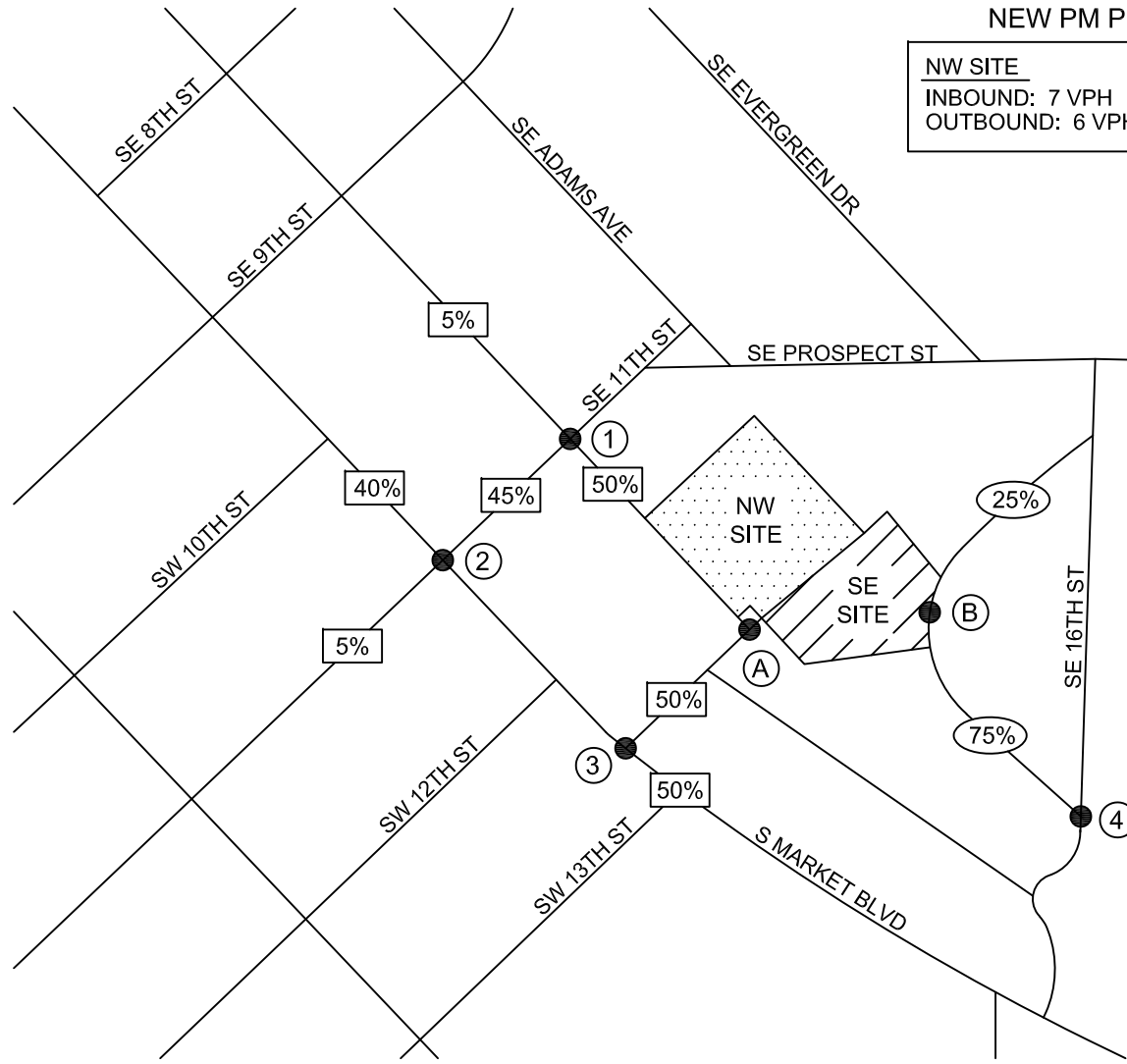
4.2 Trip Distribution and Assignment

Trip distribution describes the process by which project generated trips are dispersed on the roadway network surrounding the site. Trip distribution percentages are illustrated in Figure 4 for the PM peak travel hour and are primarily based on existing travel patterns identified from the field counts.

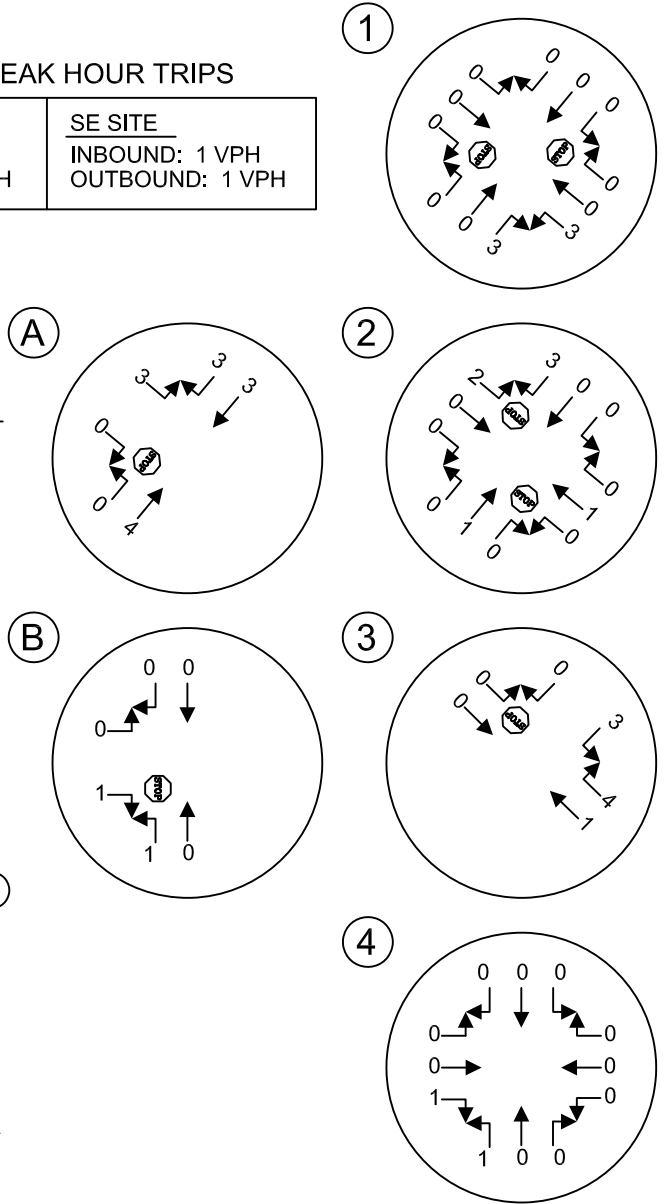
4.3 Future Peak Hour Volumes

A 5-year horizon of 2027 was used to assess future conditions with project-buildout. The proposed development is located within the Chehalis city limits. The City is forecasted to grow at an annual rate of 1.50%² according to the Chehalis Comprehensive Plan (2017). A compound annual growth rate of 2.0% was utilized to present a conservative analysis. Additionally, pipeline volumes associated with the nearby Jackson Meadows, Smith Medical, Jackson Highway Warehouse, Jackson Villa's 4, Jackson Tiny Homes, and Jackson Heights projects were added to the roadway network and included in forecast analysis. PM peak hour pipeline volumes are illustrated in Figure 5. Forecast 2027 PM peak hour volumes without project are shown in Figure 6 while Figure 7 illustrates forecast 2027 volumes with the addition of project-generated traffic.

² Chehalis Comprehensive Plan 2017: Chapter 3 Land Use, pg. 4

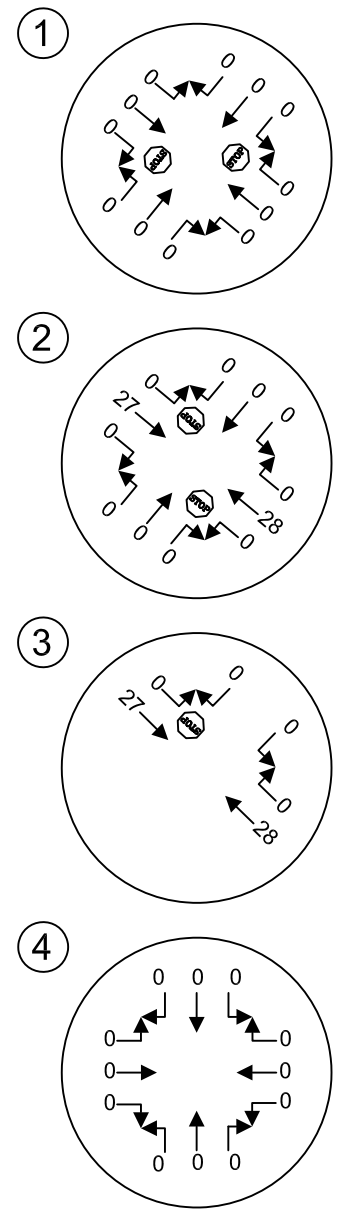
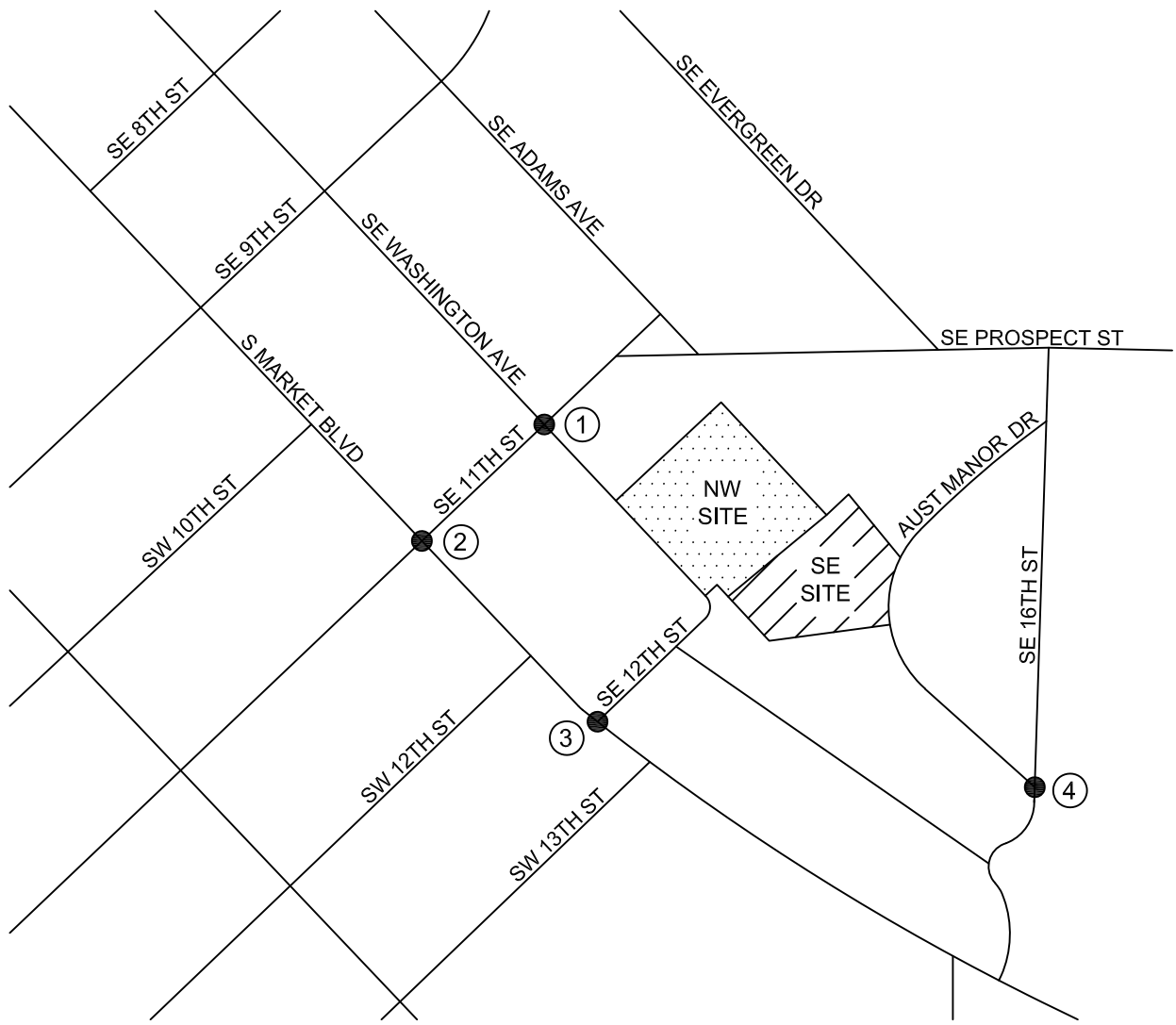


NEW PM PEAK HOUR TRIPS	
<u>NW SITE</u>	<u>SE SITE</u>
INBOUND: 7 VPH	INBOUND: 1 VPH
OUTBOUND: 6 VPH	OUTBOUND: 1 VPH



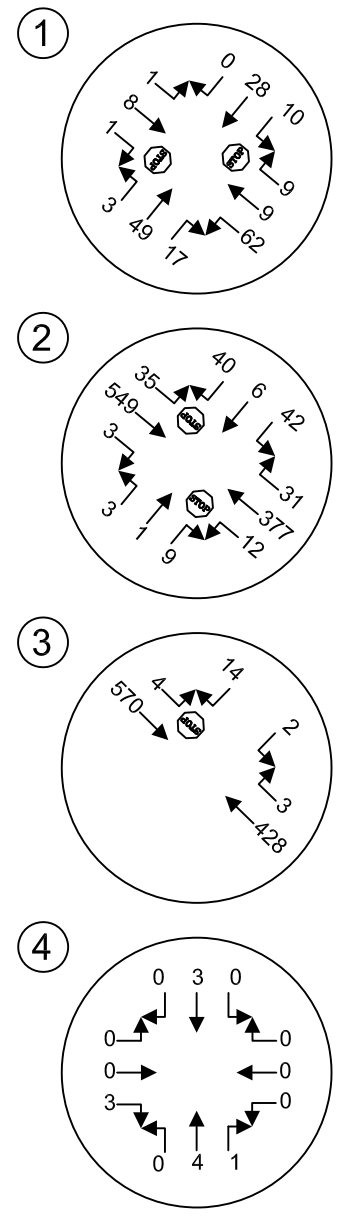
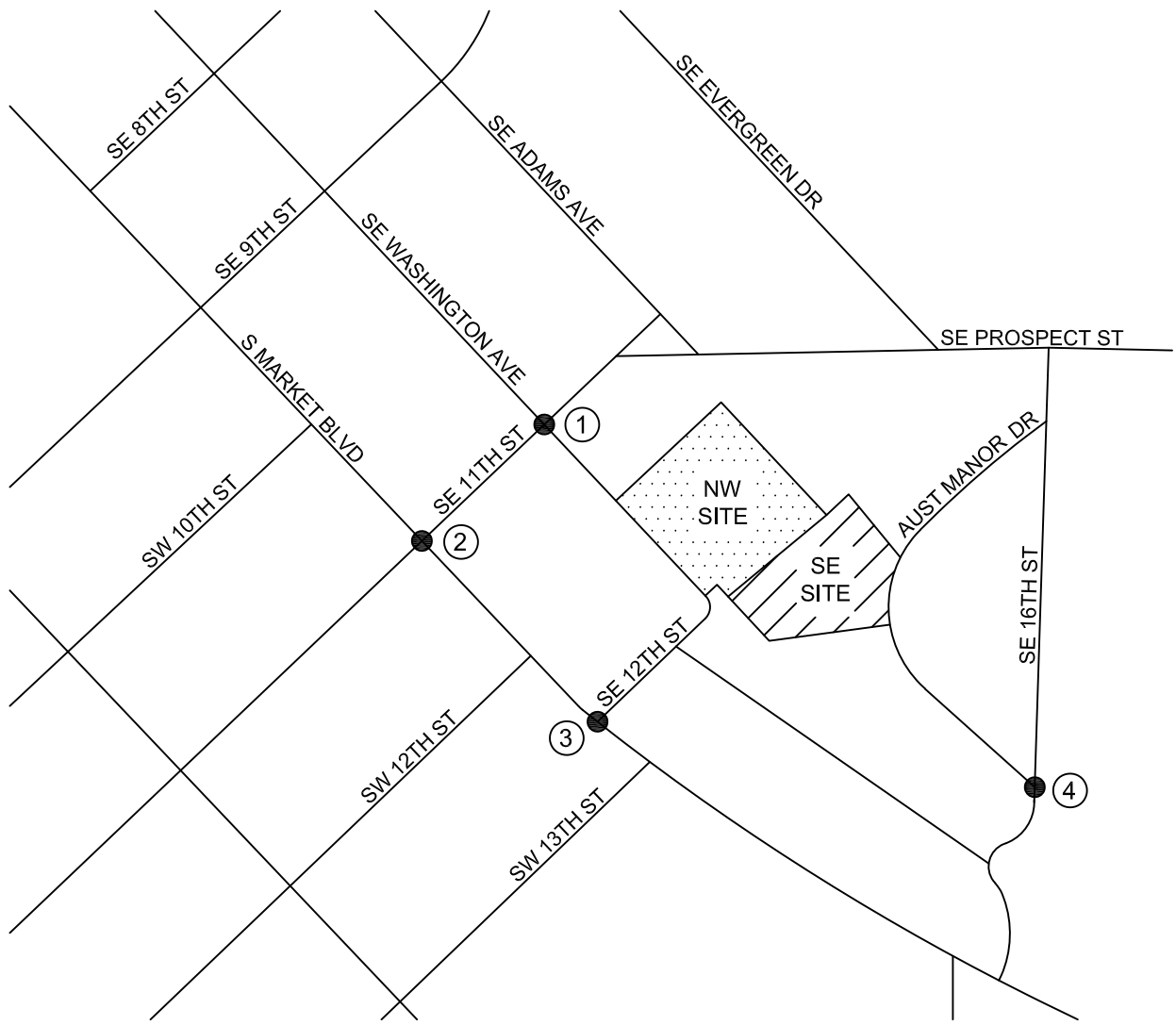
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TRAFFIC AND CIVIL ENGINEERING

WASHINGTON AVENUE TOWNHOMES
PM PEAK HOUR TRIP DISTRIBUTION & ASSIGNMENT
FIGURE 4



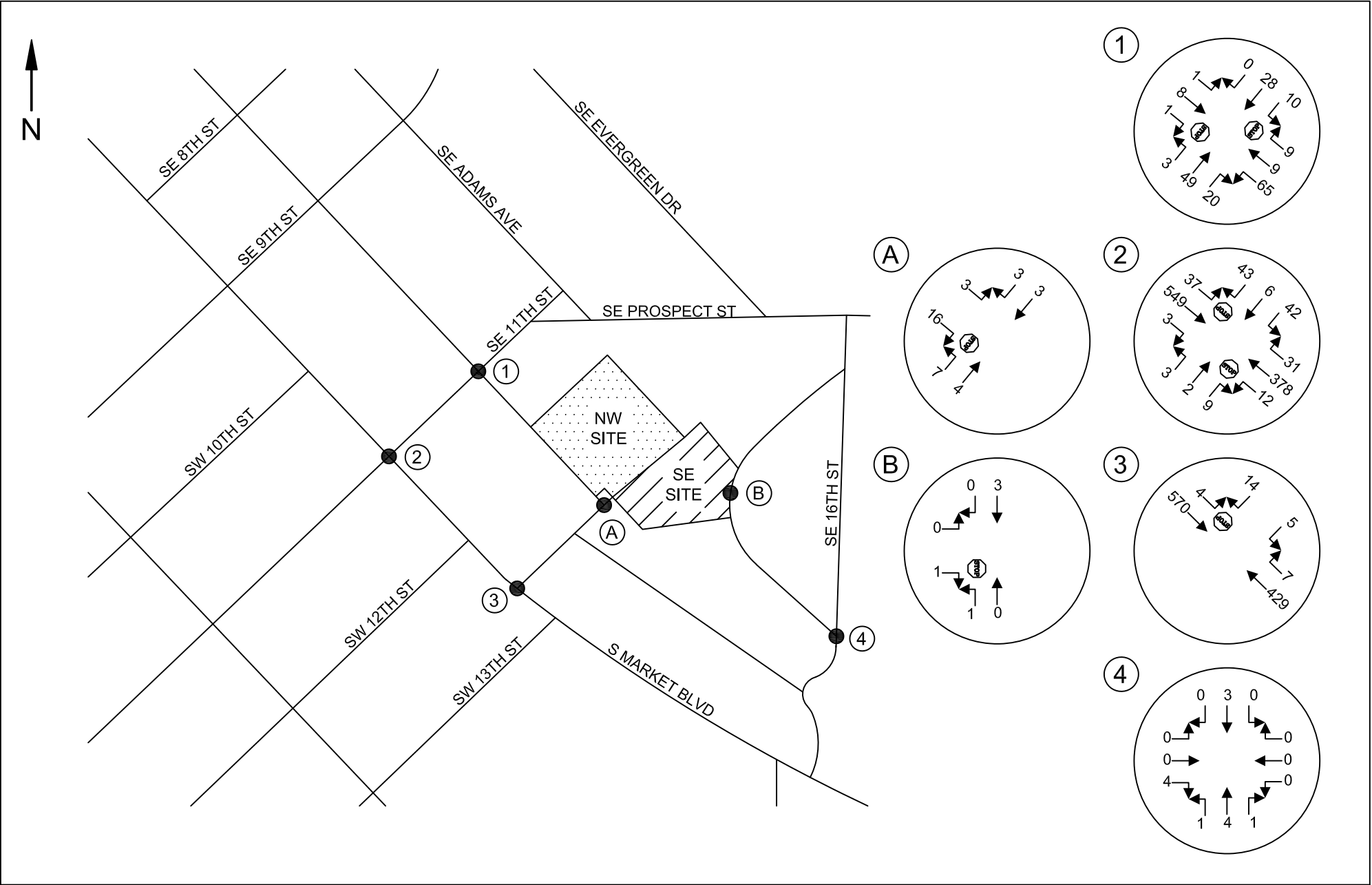
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WASHINGTON AVENUE TOWNHOMES
PM PEAK HOUR PIPELINE VOLUMES
FIGURE 5



HEATH & ASSOCIATES
TRAFFIC AND CIVIL ENGINEERING

WASHINGTON AVENUE TOWNHOMES
FORECAST 2027 PM PEAK HOUR BACKGROUND VOLUMES
FIGURE 6



4.4 Future Level of Service

Level of service analyses were made of the future PM peak hour volumes without (background) and with project related trips added to the key roadways and intersections. This analysis once again involved the use of the *Synchro 11* analysis program. Delays for the study intersections and proposed accesses under future conditions are shown below in Table 4.

Table 4: Forecast 2027 PM Peak Hour Level of Service

Delays given in seconds per vehicle

Intersection	Control	Movement	<i>Background</i>		<i>With Project</i>	
			LOS	Delay	LOS	Delay
SE Washington Ave & SE 11th St	Stop	WB	A	9.7	A	9.7
S Market Blvd & SE 12th St	Stop	SB	D	25.6	D	25.8
S Market Blvd & S 11th St t	Stop	SB	B	12.4	B	13.9
SE 16th St & SE Aust Manor Dr	Unsig.	Overall	A	6.8	A	6.8
SE Washington Ave & SE 12th St	Stop	SEB	-	-	A	8.5
Access & SE Aust Manor Dr	Stop	EB	-	-	A	8.3

Forecast 2027 PM peak hour Level of Service at the outlying study intersections are shown to operate with LOS D or better conditions. Moreover, the proposed accesses are shown to operate with LOS A conditions. No operational deficiencies are identified as a result of the proposed development.

According to the Chapter 12.04.330 of the City's Engineering Development Code, non-signalized intersections that operate at less than LOS C should be analyzed for traffic signal improvements. S Market Boulevard & SE 12th Street is shown to operate with LOS D conditions both without and with the proposed development. As such, a peak hour signal warrant analysis (Warrant 3) was conducted, which indicated that a signal is not warranted at the intersection under forecast PM peak hour conditions with project. As such, no mitigation is recommended at the intersection at this time.

Moreover, it should be noted that the intersection of SE Washington Avenue & SE 12th Street was modeled to comprise a stop-control at the northwesterly leg (SE Washington Avenue). The proposed northeasterly extension of SE 12th Street providing access to the subject site is located within City ROW. The roadway extension has the potential for a

future northeasterly extension beyond the subject site frontage providing an additional southwest-northeast roadway connection. Moreover, stop-control at the northwesterly approach of the intersection is consistent with adjacent intersections along SE Washington Avenue.

It should also be noted that sight distance is limited at SE Washington Avenue & SE 12th Street. Existing vegetation at the western side of the intersection impairs sight distance for southeastern-bound vehicles. Implementing a stop-control at the northwesterly leg of the intersection could help to mitigate turning maneuver conflicts caused by sight distance impairments and may improve safety. Ultimately, final intersection control design should be discussed and coordinated with the City.

4.5 Site Access & Roadway Design

Site access for the proposed Washington Ave Townhomes is proposed via a northeasterly extension of SE 12th Street into the northwest portion of the subject site and via one new driveway extending west from SE Aust Manor Drive into the southeast portion of the development. As previously discussed, sight distance is currently limited at SE Washington Avenue & SE 12th Street. However, traffic volumes are light and the implementation of a stop-control at a leg deemed appropriate by the City is anticipated to improve sight lines and safety operations. Moreover, only 3 PM peak hour through-volumes are anticipated under forecast conditions along proposed SE Aust Manor Drive access. As such, no sight deficiencies are identified at this time. Ultimately, discussion should be made with the City regarding final access requirements and design.

5. SUMMARY

Washington Avenue Townhomes is a proposed residential development encompassing 24 townhomes located in the city of Chehalis. The subject site is located on a cumulative 2.26-acres within tax parcel #'s: 00549000-0000; -1000; -2000; & 00585300-1000; & 00560419-2001. Access to the northwestern portion of the site comprising 20 townhomes is proposed via a northeasterly extension of SE 12th Street. Access to the southeasterly portion of the subject site comprising 4 townhomes is proposed via one driveway extending west from SE Aust Manor Drive. A conceptual site plan is illustrated in Figure 2. Existing level of service (LOS) is summarized in Table 1 and indicates the outlying study intersections operating with delays of LOS C or better during the critical PM peak hour.

Based on ITE data the project would be anticipated to generate 12 new AM peak hour trips (4 inbound / 8 outbound) and 14 new PM peak hour trips (8 inbound / 6 outbound). For forecast analyses, a five-year horizon was evaluated to assess impacts under future conditions. Table 3 summarizes forecast 2027 PM peak hour LOS delays without and with the project. Forecast 2027 conditions are shown to operate satisfactorily with LOS D or better conditions at the outlying study intersections. The proposed accesses are shown to operate with LOS A conditions. Overall, no operational deficiencies are identified as a result of the proposed development.

Based on the above analysis, recommended mitigation is as follows:

1. With the creation of a new northeast leg at the intersection of SE Washington Avenue & SE 12th Street, it is recommended to formalize the intersection with a STOP control for SE Washington Avenue. Currently there is limited sight distance available for drivers advancing southeast when looking southwest due to existing vegetation which may or may not be located within the public right-of-way. Based on review and location, vegetation may need to be trimmed and/or eliminated. Alternative intersection scenarios could be explored based on City review. Actual intersection control and design shall be coordinated and approved by the City.



No other mitigation is identified at this time.

SMITH MEDICAL
TRAFFIC IMPACT ANALYSIS

APPENDIX

Heath & Associates

PO Box 397
Puyallup, WA 98371

File Name : 4814d
Site Code : 00004814
Start Date : 1/6/2022
Page No : 1

Groups Printed- Passenger + - Heavy

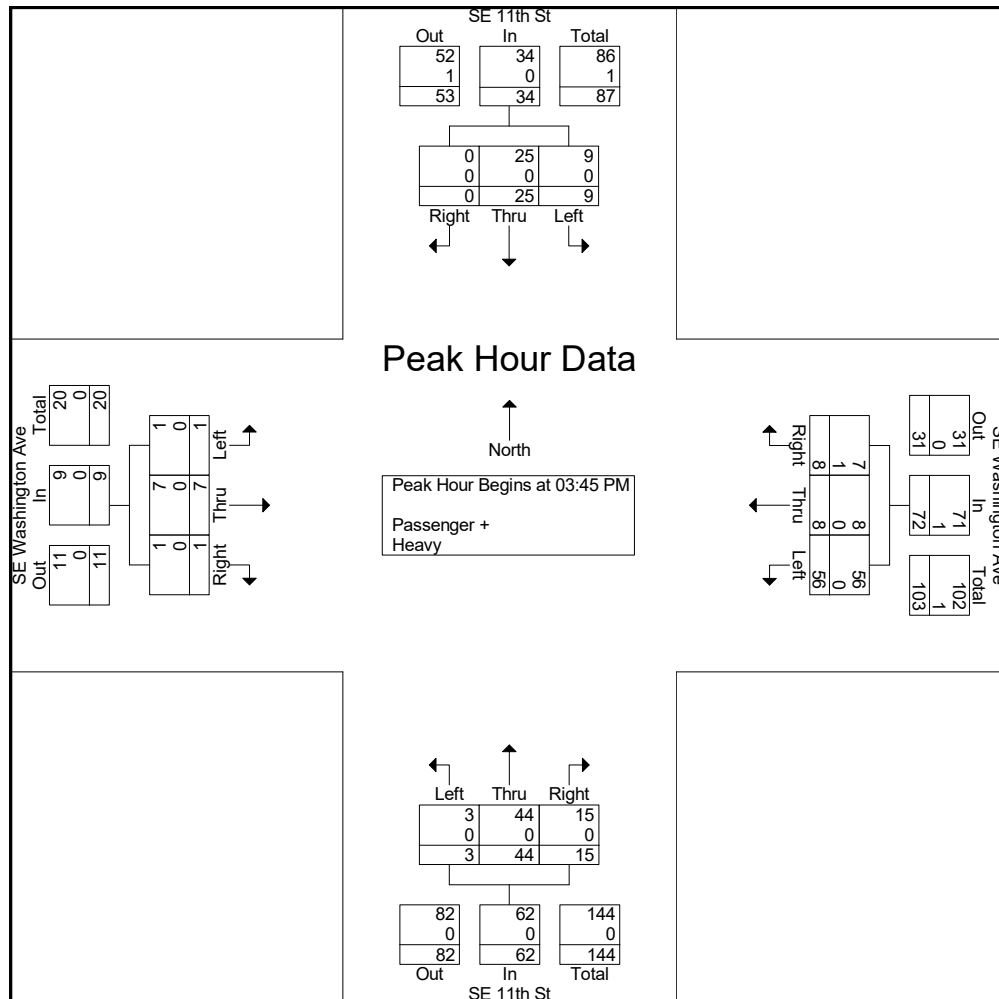
Start Time	SE 11th St Southbound				SE Washington Ave Westbound				SE 11th St Northbound				SE Washington Ave Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
03:00 PM	1	5	1	7	2	4	13	19	5	9	0	14	1	2	1	4	44
03:15 PM	2	7	0	9	6	1	18	25	1	12	2	15	0	2	1	3	52
03:30 PM	0	3	0	3	1	0	15	16	3	8	1	12	0	1	0	1	32
03:45 PM	0	2	1	3	0	1	16	17	5	12	3	20	1	2	0	3	43
Total	3	17	2	22	9	6	62	77	14	41	6	61	2	7	2	11	171
04:00 PM	0	11	3	14	2	2	17	21	1	7	0	8	0	1	1	2	45
04:15 PM	0	8	3	11	4	3	6	13	7	11	0	18	0	1	0	1	43
04:30 PM	0	4	2	6	2	2	17	21	2	14	0	16	0	3	0	3	46
04:45 PM	0	6	1	7	2	2	16	20	4	7	0	11	1	0	0	1	39
Total	0	29	9	38	10	9	56	75	14	39	0	53	1	5	1	7	173
05:00 PM	0	7	2	9	3	1	7	11	3	14	0	17	0	2	0	2	39
05:15 PM	0	3	0	3	2	3	6	11	3	12	0	15	0	5	0	5	34
05:30 PM	0	4	1	5	2	2	5	9	0	4	1	5	1	1	0	2	21
05:45 PM	0	2	1	3	3	0	9	12	1	1	0	2	0	1	0	1	18
Total	0	16	4	20	10	6	27	43	7	31	1	39	1	9	0	10	112
Grand Total	3	62	15	80	29	21	145	195	35	111	7	153	4	21	3	28	456
Apprch %	3.8	77.5	18.8		14.9	10.8	74.4		22.9	72.5	4.6		14.3	75	10.7		
Total %	0.7	13.6	3.3	17.5	6.4	4.6	31.8	42.8	7.7	24.3	1.5	33.6	0.9	4.6	0.7	6.1	
Passenger +	3	61	15	79	28	21	145	194	35	111	7	153	4	21	3	28	454
% Passenger +	100	98.4	100	98.8	96.6	100	100	99.5	100	100	100	100	100	100	100	100	99.6
Heavy	0	1	0	1	1	0	0	1	0	0	0	0	0	0	0	0	2
% Heavy	0	1.6	0	1.2	3.4	0	0	0.5	0	0	0	0	0	0	0	0	0.4

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Start Time	SE 11th St Southbound				SE Washington Ave Westbound				SE 11th St Northbound				SE Washington Ave Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:45 PM																	
03:45 PM	0	2	1	3	0	1	16	17	5	12	3	20	1	2	0	3	43
04:00 PM	0	11	3	14	2	2	17	21	1	7	0	8	0	1	1	2	45
04:15 PM	0	8	3	11	4	3	6	13	7	11	0	18	0	1	0	1	43
04:30 PM	0	4	2	6	2	2	17	21	2	14	0	16	0	3	0	3	46
Total Volume	0	25	9	34	8	8	56	72	15	44	3	62	1	7	1	9	177
% App. Total	0	73.5	26.5		11.1	11.1	77.8		24.2	71	4.8		11.1	77.8	11.1		
PHF	.000	.568	.750	.607	.500	.667	.824	.857	.536	.786	.250	.775	.250	.583	.250	.750	.962
Passenger +	0	25	9	34	7	8	56	71	15	44	3	62	1	7	1	9	176
% Passenger +	0	100	100	100	87.5	100	100	98.6	100	100	100	100	100	100	100	100	99.4
Heavy	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	1
% Heavy	0	0	0	0	12.5	0	0	1.4	0	0	0	0	0	0	0	0	0.6



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Site Code : 00004814
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Groups Printed- Passenger + - Heavy

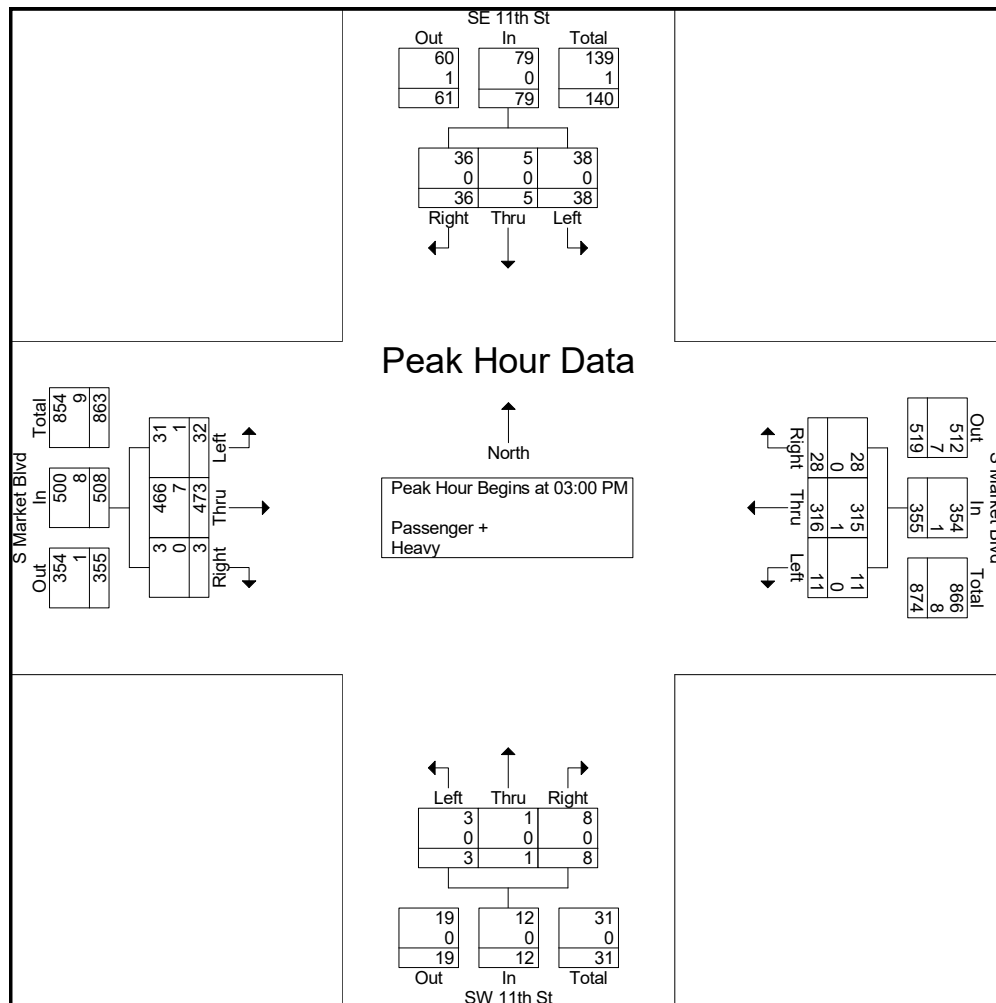
Start Time	SE 11th St Southbound				S Market Blvd Westbound				SW 11th St Northbound				S Market Blvd Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
03:00 PM	9	2	3	14	6	91	2	99	2	0	1	3	0	128	9	137	253
03:15 PM	16	0	9	25	7	71	5	83	0	1	1	2	1	120	7	128	238
03:30 PM	8	2	9	19	9	87	3	99	2	0	0	2	2	111	6	119	239
03:45 PM	3	1	17	21	6	67	1	74	4	0	1	5	0	114	10	124	224
Total	36	5	38	79	28	316	11	355	8	1	3	12	3	473	32	508	954
04:00 PM	10	1	17	28	7	65	5	77	0	0	0	0	2	107	4	113	218
04:15 PM	10	0	3	13	7	56	0	63	3	1	1	5	1	110	9	120	201
04:30 PM	8	0	12	20	5	60	3	68	2	0	1	3	0	79	11	90	181
04:45 PM	11	0	14	25	8	50	2	60	3	0	0	3	0	74	4	78	166
Total	39	1	46	86	27	231	10	268	8	1	2	11	3	370	28	401	766
05:00 PM	7	0	9	16	9	60	1	70	1	0	0	1	1	81	7	89	176
05:15 PM	4	0	5	9	3	52	7	62	0	0	0	0	0	67	10	77	148
05:30 PM	5	0	5	10	3	52	1	56	0	0	0	0	1	61	3	65	131
05:45 PM	3	1	7	11	0	41	1	42	2	0	0	2	0	46	3	49	104
Total	19	1	26	46	15	205	10	230	3	0	0	3	2	255	23	280	559
Grand Total	94	7	110	211	70	752	31	853	19	2	5	26	8	1098	83	1189	2279
Apprch %	44.5	3.3	52.1		8.2	88.2	3.6		73.1	7.7	19.2		0.7	92.3	7		
Total %	4.1	0.3	4.8	9.3	3.1	33	1.4	37.4	0.8	0.1	0.2	1.1	0.4	48.2	3.6	52.2	
Passenger +	94	7	108	209	70	750	31	851	19	2	5	26	8	1087	82	1177	2263
% Passenger +	100	100	98.2	99.1	100	99.7	100	99.8	100	100	100	100	100	99	98.8	99	99.3
Heavy	0	0	2	2	0	2	0	2	0	0	0	0	0	11	1	12	16
% Heavy	0	0	1.8	0.9	0	0.3	0	0.2	0	0	0	0	0	1	1.2	1	0.7

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Start Time	SE 11th St Southbound				S Market Blvd Westbound				SW 11th St Northbound				S Market Blvd Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	9	2	3	14	6	91	2	99	2	0	1	3	0	128	9	137	253
03:15 PM	16	0	9	25	7	71	5	83	0	1	1	2	1	120	7	128	238
03:30 PM	8	2	9	19	9	87	3	99	2	0	0	2	2	111	6	119	239
03:45 PM	3	1	17	21	6	67	1	74	4	0	1	5	0	114	10	124	224
Total Volume	36	5	38	79	28	316	11	355	8	1	3	12	3	473	32	508	954
% App. Total	45.6	6.3	48.1		7.9	89	3.1		66.7	8.3	25		0.6	93.1	6.3		
PHF	.563	.625	.559	.790	.778	.868	.550	.896	.500	.250	.750	.600	.375	.924	.800	.927	.943
Passenger +	36	5	38	79	28	315	11	354	8	1	3	12	3	466	31	500	945
% Passenger +	100	100	100	100	100	99.7	100	99.7	100	100	100	100	100	98.5	96.9	98.4	99.1
Heavy	0	0	0	0	0	1	0	1	0	0	0	0	0	7	1	8	9
% Heavy	0	0	0	0	0	0.3	0	0.3	0	0	0	0	0	1.5	3.1	1.6	0.9



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Groups Printed- Passenger + - Heavy

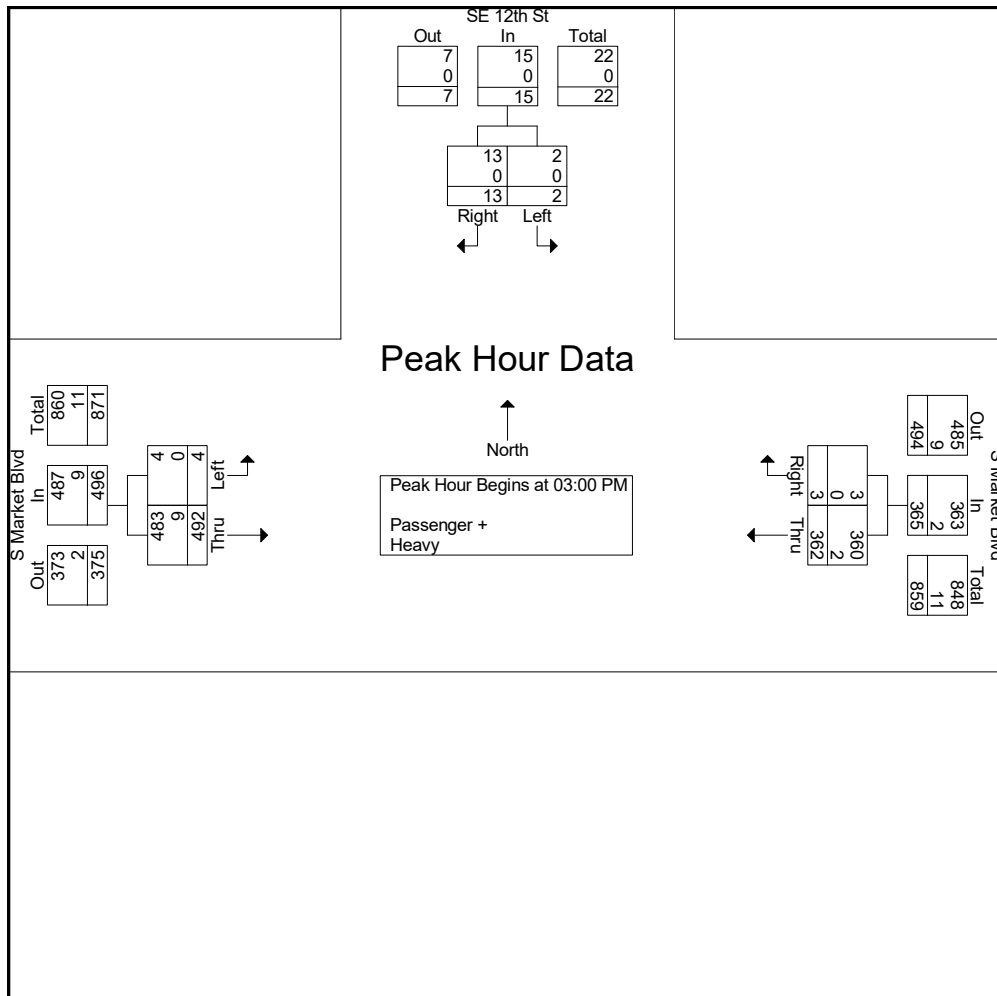
Start Time	SE 12th St Southbound			S Market Blvd Westbound			S Market Blvd Eastbound			Int. Total
	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	
03:00 PM	4	0	4	0	98	98	120	0	120	222
03:15 PM	4	0	4	0	85	85	123	2	125	214
03:30 PM	3	1	4	2	102	104	130	0	130	238
03:45 PM	2	1	3	1	77	78	119	2	121	202
Total	13	2	15	3	362	365	492	4	496	876
04:00 PM	4	2	6	2	79	81	118	1	119	206
04:15 PM	4	1	5	3	65	68	111	0	111	184
04:30 PM	1	4	5	1	80	81	95	1	96	182
04:45 PM	0	0	0	0	63	63	86	0	86	149
Total	9	7	16	6	287	293	410	2	412	721
05:00 PM	1	0	1	1	70	71	95	1	96	168
05:15 PM	2	1	3	4	67	71	82	0	82	156
05:30 PM	1	1	2	1	55	56	80	0	80	138
05:45 PM	1	1	2	0	38	38	67	0	67	107
Total	5	3	8	6	230	236	324	1	325	569
Grand Total	27	12	39	15	879	894	1226	7	1233	2166
Apprch %	69.2	30.8		1.7	98.3		99.4	0.6		
Total %	1.2	0.6	1.8	0.7	40.6	41.3	56.6	0.3	56.9	
Passenger +	27	12	39	14	874	888	1213	7	1220	2147
% Passenger +	100	100	100	93.3	99.4	99.3	98.9	100	98.9	99.1
Heavy	0	0	0	1	5	6	13	0	13	19
% Heavy	0	0	0	6.7	0.6	0.7	1.1	0	1.1	0.9

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File Name : 4814c
Site Code : 00004814
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Start Time	SE 12th St Southbound			S Market Blvd Westbound			S Market Blvd Eastbound			Int. Total
	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 03:00 PM										
03:00 PM	4	0	4	0	98	98	120	0	120	222
03:15 PM	4	0	4	0	85	85	123	2	125	214
03:30 PM	3	1	4	2	102	104	130	0	130	238
03:45 PM	2	1	3	1	77	78	119	2	121	202
Total Volume	13	2	15	3	362	365	492	4	496	876
% App. Total	86.7	13.3		0.8	99.2		99.2	0.8		
PHF	.813	.500	.938	.375	.887	.877	.946	.500	.954	.920
Passenger +	13	2	15	3	360	363	483	4	487	865
% Passenger +	100	100	100	100	99.4	99.5	98.2	100	98.2	98.7
Heavy	0	0	0	0	2	2	9	0	9	11
% Heavy	0	0	0	0	0.6	0.5	1.8	0	1.8	1.3



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Groups Printed- Passenger + - Heavy

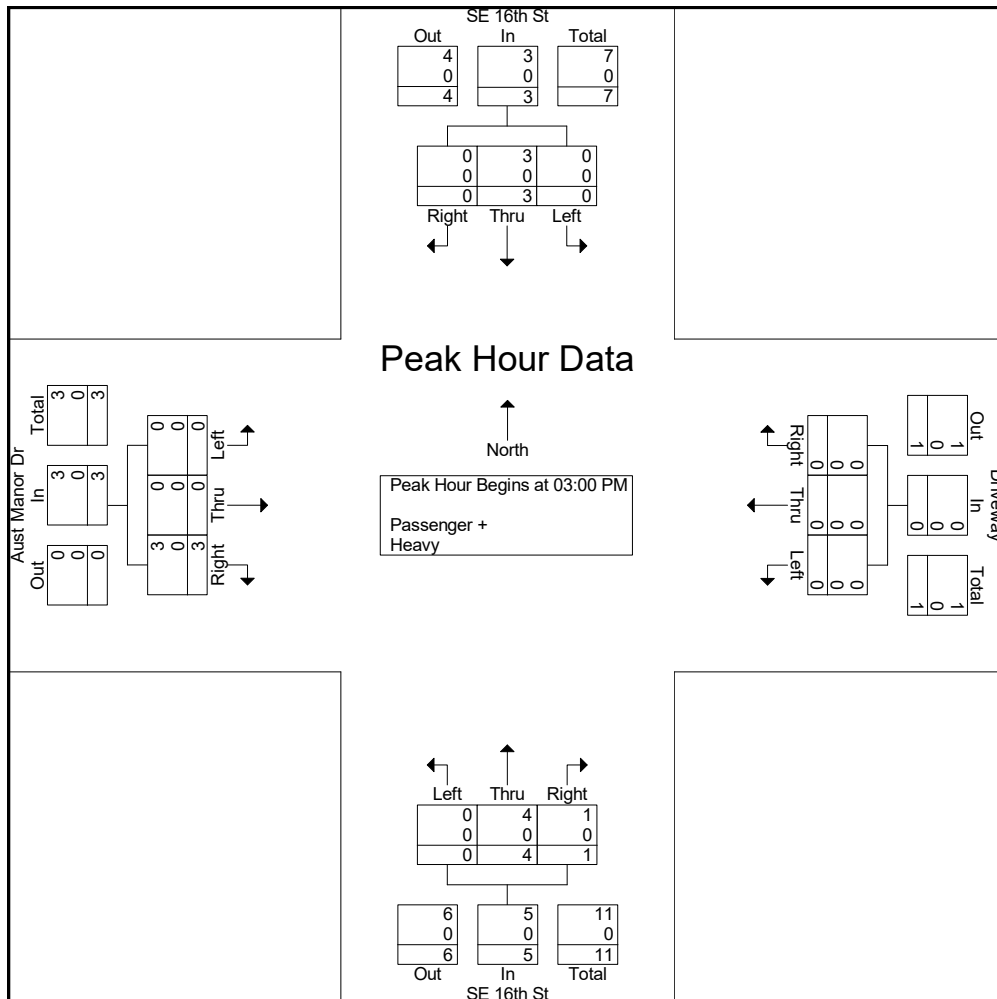
Start Time	SE 16th St Southbound				Driveway Westbound				SE 16th St Northbound				Aust Manor Dr Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
03:00 PM	0	2	0	2	0	0	0	0	0	1	0	1	1	0	0	1	4
03:15 PM	0	1	0	1	0	0	0	0	0	2	0	2	1	0	0	1	4
03:30 PM	0	0	0	0	0	0	0	0	0	1	0	2	0	0	0	0	2
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	3	0	3	0	0	0	0	0	1	4	5	3	0	0	3	11
04:00 PM	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	2
04:30 PM	0	0	0	0	0	0	1	1	0	1	0	1	1	0	0	1	3
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	2	0	2	0	0	1	1	0	3	0	3	1	0	1	2	8
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	2	0	2	0	0	0	0	2	0	0	2	0	0	0	0	4
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1
Total	0	2	0	2	0	0	0	0	2	1	0	3	0	0	0	0	5
Grand Total	0	7	0	7	0	0	1	1	3	8	0	11	4	0	1	5	24
Apprch %	0	100	0		0	0	100		27.3	72.7	0		80	0	20		
Total %	0	29.2	0	29.2	0	0	4.2	4.2	12.5	33.3	0	45.8	16.7	0	4.2	20.8	
Passenger +	0	7	0	7	0	0	1	1	3	8	0	11	4	0	1	5	24
% Passenger +	0	100	0	100	0	0	100	100	100	100	0	100	100	0	100	100	100
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Start Time	SE 16th St Southbound				Driveway Westbound				SE 16th St Northbound				Aust Manor Dr Eastbound				Int. Total
	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	
Peak Hour Analysis From 03:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 03:00 PM																	
03:00 PM	0	2	0	2	0	0	0	0	0	1	0	1	1	0	0	1	4
03:15 PM	0	1	0	1	0	0	0	0	0	2	0	2	1	0	0	1	4
03:30 PM	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	2
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	3	0	3	0	0	0	0	1	4	0	5	3	0	0	3	11
% App. Total	0	100	0		0	0	0		20	80	0		100	0	0		
PHF	.000	.375	.000	.375	.000	.000	.000	.000	.250	.500	.000	.625	.750	.000	.000	.750	.688
Passenger +	0	3	0	3	0	0	0	0	1	4	0	5	3	0	0	3	11
% Passenger +	0	100	0	100	0	0	0	0	100	100	0	100	100	0	0	100	100
Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Single-Family Attached Housing (215)

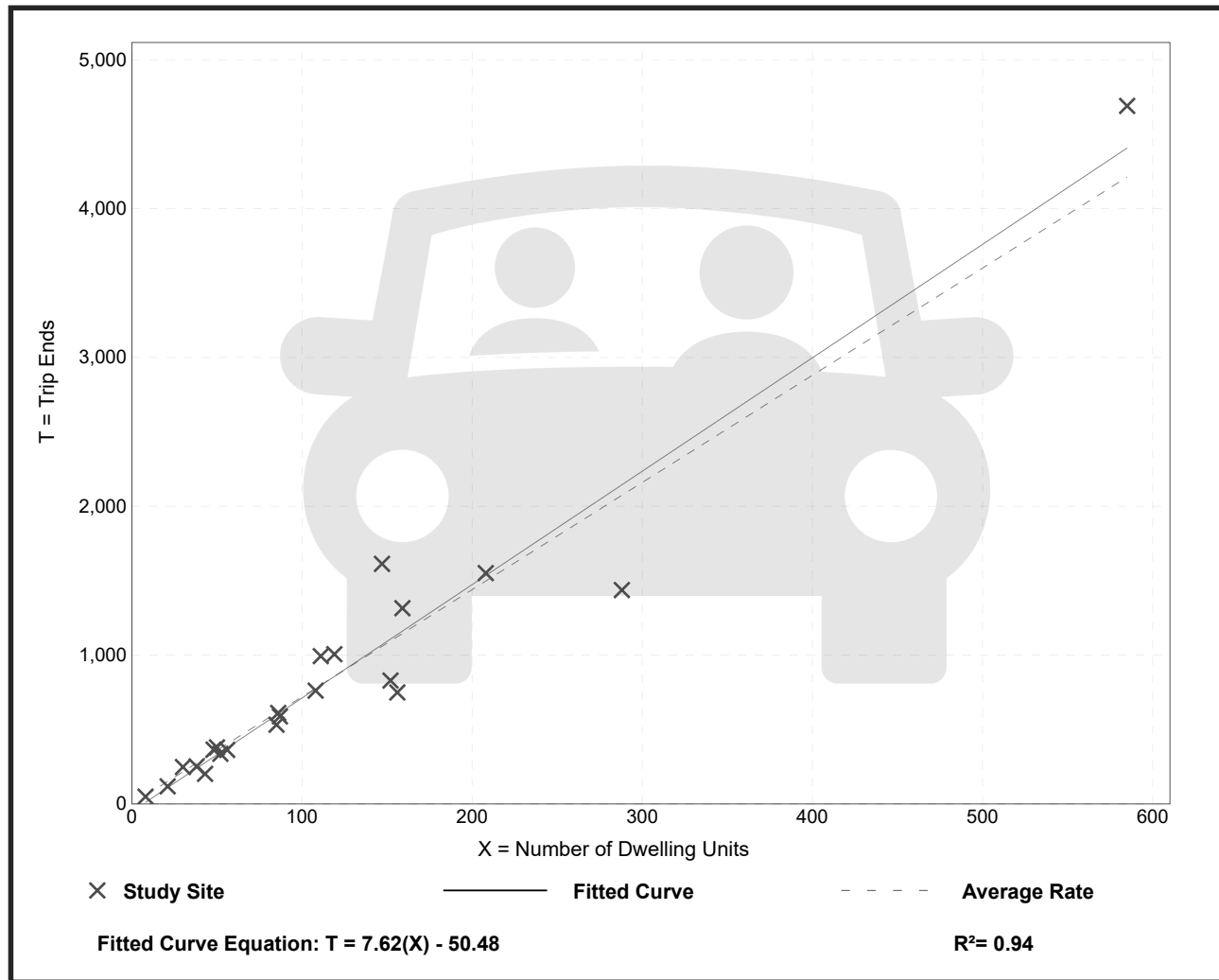
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 22
Avg. Num. of Dwelling Units: 120
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.20	4.70 - 10.97	1.61

Data Plot and Equation



Single-Family Attached Housing (215)

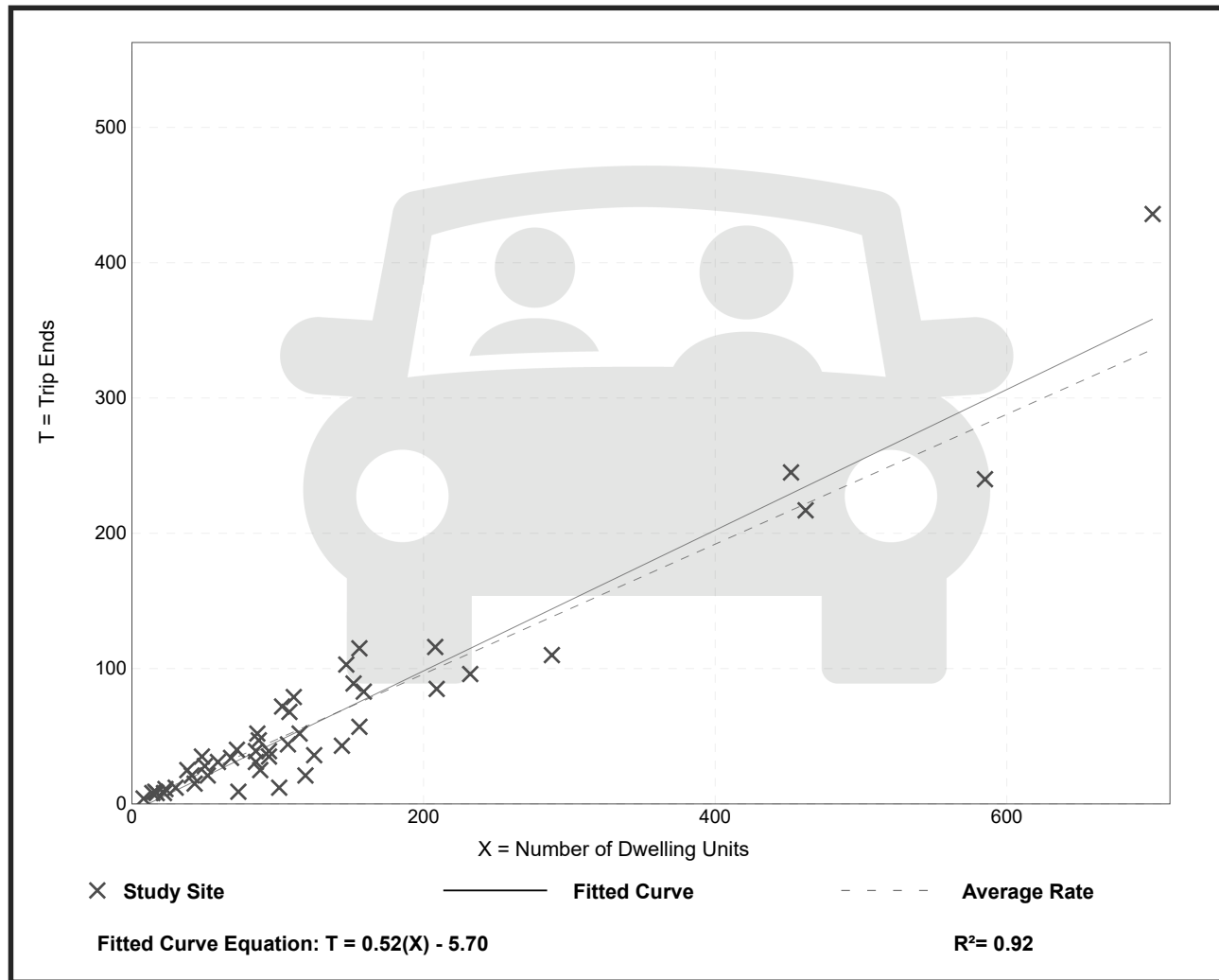
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban
 Number of Studies: 46
 Avg. Num. of Dwelling Units: 135
 Directional Distribution: 31% entering, 69% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.48	0.12 - 0.74	0.14

Data Plot and Equation



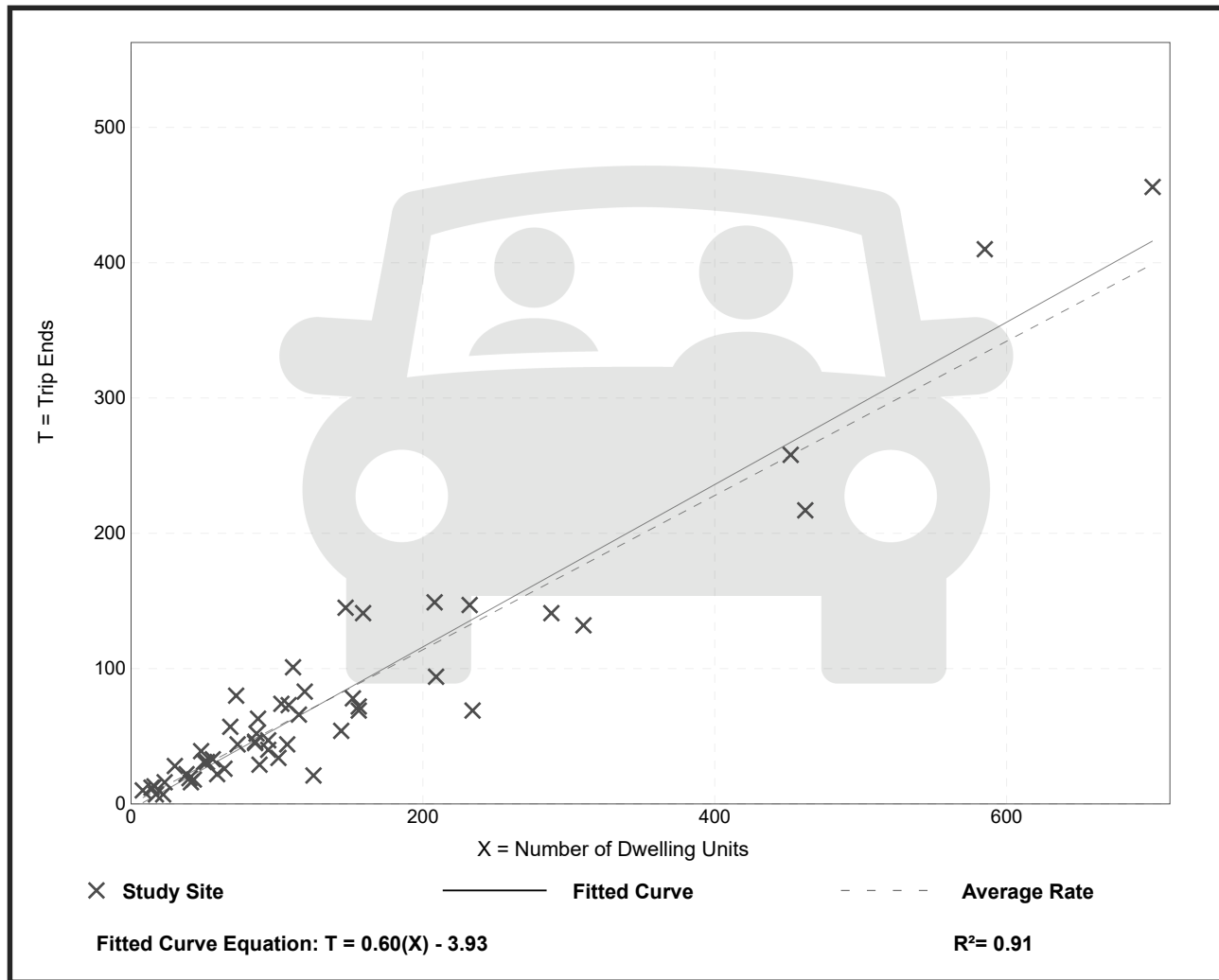
Single-Family Attached Housing (215)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: General Urban/Suburban
 Number of Studies: 51
 Avg. Num. of Dwelling Units: 136
 Directional Distribution: 57% entering, 43% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.57	0.17 - 1.25	0.18

Data Plot and Equation



Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	7	1	56	8	8	3	44	15	9	25	0
Future Vol, veh/h	1	7	1	56	8	8	3	44	15	9	25	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	13	1	1	1	1	1	1
Mvmt Flow	1	7	1	58	8	8	3	46	16	9	26	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	112	112	26	108	104	54	26	0	0	62	0	0
Stage 1	44	44	-	60	60	-	-	-	-	-	-	-
Stage 2	68	68	-	48	44	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.33	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.417	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	868	780	1053	873	788	983	1595	-	-	1547	-	-
Stage 1	973	860	-	954	847	-	-	-	-	-	-	-
Stage 2	945	840	-	968	860	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	848	774	1053	861	782	983	1595	-	-	1547	-	-
Mov Cap-2 Maneuver	848	774	-	861	782	-	-	-	-	-	-	-
Stage 1	971	855	-	952	845	-	-	-	-	-	-	-
Stage 2	926	838	-	953	855	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	9.6	0.4	1.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1595	-	-	806	863	1547	-
HCM Lane V/C Ratio	0.002	-	-	0.012	0.087	0.006	-
HCM Control Delay (s)	7.3	0	-	9.5	9.6	7.3	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-

Intersection												
Int Delay, s/veh	2.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	32	473	3	11	316	28	3	1	8	38	5	36
Future Vol, veh/h	32	473	3	11	316	28	3	1	8	38	5	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	110	-	-	220	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	2	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	34	503	3	12	336	30	3	1	9	40	5	38

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	366	0	0	506	0	0	970	963	505	953	949	351
Stage 1	-	-	-	-	-	-	573	573	-	375	375	-
Stage 2	-	-	-	-	-	-	397	390	-	578	574	-
Critical Hdwy	4.13	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.227	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1187	-	-	1064	-	-	234	257	569	240	261	695
Stage 1	-	-	-	-	-	-	506	505	-	648	619	-
Stage 2	-	-	-	-	-	-	631	609	-	503	505	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1187	-	-	1064	-	-	211	247	569	228	251	695
Mov Cap-2 Maneuver	-	-	-	-	-	-	211	247	-	228	251	-
Stage 1	-	-	-	-	-	-	491	490	-	629	612	-
Stage 2	-	-	-	-	-	-	584	602	-	480	490	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.5	0.3	15	19.5
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	371	1187	-	-	1064	-	-	331
HCM Lane V/C Ratio	0.034	0.029	-	-	0.011	-	-	0.254
HCM Control Delay (s)	15	8.1	-	-	8.4	-	-	19.5
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	1

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	4	492	362	3	2	13
Future Vol, veh/h	4	492	362	3	2	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	2	1	1	1	1
Mvmt Flow	4	535	393	3	2	14

















Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	396	0	-	0	938 395
Stage 1	-	-	-	-	395 -
Stage 2	-	-	-	-	543 -
Critical Hdwy	4.11	-	-	-	6.41 6.21
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.209	-	-	-	3.509 3.309
Pot Cap-1 Maneuver	1168	-	-	-	295 656
Stage 1	-	-	-	-	683 -
Stage 2	-	-	-	-	584 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1168	-	-	-	294 656
Mov Cap-2 Maneuver	-	-	-	-	294 -
Stage 1	-	-	-	-	680 -
Stage 2	-	-	-	-	584 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	11.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1168	-	-	-	563
HCM Lane V/C Ratio	0.004	-	-	-	0.029
HCM Control Delay (s)	8.1	0	-	-	11.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1

HCM Unsignalized Intersection Capacity Analysis
4: SE 16th St & SE Aust Manor Dr

Existing PM Peak Hour
01/25/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	0	3	0	0	0	0	4	1	0	3	0
Future Volume (vph)	0	0	3	0	0	0	0	4	1	0	3	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	0	0	4	0	0	0	0	6	1	0	4	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	4	0	7	4								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	4	0	1	0								
Hadj (s)	-0.57	0.00	-0.05	0.03								
Departure Headway (s)	3.4	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.01	0.00								
Capacity (veh/h)	1061	911	928	905								
Control Delay (s)	6.4	6.9	6.9	7.0								
Approach Delay (s)	6.4	0.0	6.9	7.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			6.8									
Level of Service			A									
Intersection Capacity Utilization			13.3%	ICU Level of Service	A							
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	8	1	62	9	9	3	49	17	10	28	0
Future Vol, veh/h	1	8	1	62	9	9	3	49	17	10	28	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	13	1	1	1	1	1	1
Mvmt Flow	1	8	1	65	9	9	3	51	18	10	29	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	124	124	29	120	115	60	29	0	0	69	0	0
Stage 1	49	49	-	66	66	-	-	-	-	-	-	-
Stage 2	75	75	-	54	49	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.33	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.417	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	853	768	1049	858	777	975	1591	-	-	1538	-	-
Stage 1	967	856	-	947	842	-	-	-	-	-	-	-
Stage 2	937	834	-	961	856	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	831	761	1049	844	770	975	1591	-	-	1538	-	-
Mov Cap-2 Maneuver	831	761	-	844	770	-	-	-	-	-	-	-
Stage 1	965	850	-	945	840	-	-	-	-	-	-	-
Stage 2	916	832	-	944	850	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.6		9.7		0.3		1.9	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1591	-	-	789	848	1538	-
HCM Lane V/C Ratio	0.002	-	-	0.013	0.098	0.007	-
HCM Control Delay (s)	7.3	0	-	9.6	9.7	7.4	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	35	549	3	12	377	31	3	1	9	42	6	40
Future Vol, veh/h	35	549	3	12	377	31	3	1	9	42	6	40
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	110	-	-	220	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	2	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	37	584	3	13	401	33	3	1	10	45	6	43

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	434	0	0	587	0	0	1128	1120	586	1109	1105	418
Stage 1	-	-	-	-	-	-	660	660	-	444	444	-
Stage 2	-	-	-	-	-	-	468	460	-	665	661	-
Critical Hdwy	4.13	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.227	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1120	-	-	993	-	-	182	207	512	188	212	637
Stage 1	-	-	-	-	-	-	454	462	-	595	577	-
Stage 2	-	-	-	-	-	-	577	568	-	451	461	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1120	-	-	993	-	-	160	197	512	177	202	637
Mov Cap-2 Maneuver	-	-	-	-	-	-	160	197	-	177	202	-
Stage 1	-	-	-	-	-	-	439	447	-	575	569	-
Stage 2	-	-	-	-	-	-	525	561	-	427	446	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.5			0.2			17			25.6		
HCM LOS							C			D		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	314	1120	-	-	993	-	-	267
HCM Lane V/C Ratio	0.044	0.033	-	-	0.013	-	-	0.351
HCM Control Delay (s)	17	8.3	-	-	8.7	-	-	25.6
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	1.5

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	4	570	428	3	2	14
Future Vol, veh/h	4	570	428	3	2	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	2	1	1	1	1
Mvmt Flow	4	620	465	3	2	15

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	468	0	-	0	1095 467
Stage 1	-	-	-	-	467 -
Stage 2	-	-	-	-	628 -
Critical Hdwy	4.11	-	-	-	6.41 6.21
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.209	-	-	-	3.509 3.309
Pot Cap-1 Maneuver	1099	-	-	-	238 598
Stage 1	-	-	-	-	633 -
Stage 2	-	-	-	-	534 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1099	-	-	-	237 598
Mov Cap-2 Maneuver	-	-	-	-	237 -
Stage 1	-	-	-	-	629 -
Stage 2	-	-	-	-	534 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	12.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1099	-	-	-	502
HCM Lane V/C Ratio	0.004	-	-	-	0.035
HCM Control Delay (s)	8.3	0	-	-	12.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	0	3	0	0	0	0	4	1	0	3	0
Future Volume (vph)	0	0	3	0	0	0	0	4	1	0	3	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	0	0	4	0	0	0	0	6	1	0	4	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	4	0	7	4								
Volume Left (vph)	0	0	0	0								
Volume Right (vph)	4	0	1	0								
Hadj (s)	-0.57	0.00	-0.05	0.03								
Departure Headway (s)	3.4	3.9	3.9	3.9								
Degree Utilization, x	0.00	0.00	0.01	0.00								
Capacity (veh/h)	1061	911	928	905								
Control Delay (s)	6.4	6.9	6.9	7.0								
Approach Delay (s)	6.4	0.0	6.9	7.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			6.8									
Level of Service			A									
Intersection Capacity Utilization			13.3%	ICU Level of Service	A							
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	4.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	8	1	65	9	9	3	49	20	10	28	0
Future Vol, veh/h	1	8	1	65	9	9	3	49	20	10	28	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	96	96	96	96	96	96	96	96	96	96	96	96
Heavy Vehicles, %	1	1	1	1	1	13	1	1	1	1	1	1
Mvmt Flow	1	8	1	68	9	9	3	51	21	10	29	0

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	126	127	29	122	117	62	29	0	0	72	0	0
Stage 1	49	49	-	68	68	-	-	-	-	-	-	-
Stage 2	77	78	-	54	49	-	-	-	-	-	-	-
Critical Hdwy	7.11	6.51	6.21	7.11	6.51	6.33	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.11	5.51	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.509	4.009	3.309	3.509	4.009	3.417	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	850	765	1049	855	775	973	1591	-	-	1534	-	-
Stage 1	967	856	-	945	840	-	-	-	-	-	-	-
Stage 2	934	832	-	961	856	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	828	758	1049	841	768	973	1591	-	-	1534	-	-
Mov Cap-2 Maneuver	828	758	-	841	768	-	-	-	-	-	-	-
Stage 1	965	850	-	943	838	-	-	-	-	-	-	-
Stage 2	913	830	-	944	850	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	9.7	0.3	1.9
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1591	-	-	786	845	1534	-
HCM Lane V/C Ratio	0.002	-	-	0.013	0.102	0.007	-
HCM Control Delay (s)	7.3	0	-	9.6	9.7	7.4	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↗		↖	↗			↕			↕	
Traffic Vol, veh/h	37	549	3	12	378	31	3	2	9	42	6	43
Future Vol, veh/h	37	549	3	12	378	31	3	2	9	42	6	43
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	110	-	-	220	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	3	2	1	1	1	1	1	1	1	1	1	1
Mvmt Flow	39	584	3	13	402	33	3	2	10	45	6	46

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	435	0	0	587	0	0	1135	1125	586	1115	1110	419
Stage 1	-	-	-	-	-	-	664	664	-	445	445	-
Stage 2	-	-	-	-	-	-	471	461	-	670	665	-
Critical Hdwy	4.13	-	-	4.11	-	-	7.11	6.51	6.21	7.11	6.51	6.21
Critical Hdwy Stg 1	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.11	5.51	-	6.11	5.51	-
Follow-up Hdwy	2.227	-	-	2.209	-	-	3.509	4.009	3.309	3.509	4.009	3.309
Pot Cap-1 Maneuver	1119	-	-	993	-	-	180	206	512	186	210	636
Stage 1	-	-	-	-	-	-	452	460	-	594	576	-
Stage 2	-	-	-	-	-	-	575	567	-	448	459	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1119	-	-	993	-	-	157	196	512	174	200	636
Mov Cap-2 Maneuver	-	-	-	-	-	-	157	196	-	174	200	-
Stage 1	-	-	-	-	-	-	436	444	-	573	569	-
Stage 2	-	-	-	-	-	-	521	560	-	422	443	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	0.5		0.2		17.7		25.8	
HCM LOS					C		D	

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	299	1119	-	-	993	-	-	268
HCM Lane V/C Ratio	0.05	0.035	-	-	0.013	-	-	0.361
HCM Control Delay (s)	17.7	8.3	-	-	8.7	-	-	25.8
HCM Lane LOS	C	A	-	-	A	-	-	D
HCM 95th %tile Q(veh)	0.2	0.1	-	-	0	-	-	1.6

















Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	4	570	429	7	5	14
Future Vol, veh/h	4	570	429	7	5	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	2	1	1	1	1
Mvmt Flow	4	620	466	8	5	15

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	474	0	-	0	1098 470
Stage 1	-	-	-	-	470 -
Stage 2	-	-	-	-	628 -
Critical Hdwy	4.11	-	-	-	6.41 6.21
Critical Hdwy Stg 1	-	-	-	-	5.41 -
Critical Hdwy Stg 2	-	-	-	-	5.41 -
Follow-up Hdwy	2.209	-	-	-	3.509 3.309
Pot Cap-1 Maneuver	1093	-	-	-	237 596
Stage 1	-	-	-	-	631 -
Stage 2	-	-	-	-	534 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1093	-	-	-	236 596
Mov Cap-2 Maneuver	-	-	-	-	236 -
Stage 1	-	-	-	-	627 -
Stage 2	-	-	-	-	534 -

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	13.9
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1093	-	-	-	425
HCM Lane V/C Ratio	0.004	-	-	-	0.049
HCM Control Delay (s)	8.3	0	-	-	13.9
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2

HCM Unsignalized Intersection Capacity Analysis Forecast 2027 PM Peak Hour With Project
 4: SE 16th St & SE Aust Manor Dr 01/25/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Yield			Yield			Yield			Yield	
Traffic Volume (vph)	0	0	4	0	0	0	1	4	1	0	3	0
Future Volume (vph)	0	0	4	0	0	0	1	4	1	0	3	0
Peak Hour Factor	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69	0.69
Hourly flow rate (vph)	0	0	6	0	0	0	1	6	1	0	4	0
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total (vph)	6	0	8	4								
Volume Left (vph)	0	0	1	0								
Volume Right (vph)	6	0	1	0								
Hadj (s)	-0.57	0.00	-0.02	0.03								
Departure Headway (s)	3.4	3.9	3.9	4.0								
Degree Utilization, x	0.01	0.00	0.01	0.00								
Capacity (veh/h)	1060	900	918	904								
Control Delay (s)	6.4	6.9	6.9	7.0								
Approach Delay (s)	6.4	0.0	6.9	7.0								
Approach LOS	A	A	A	A								
Intersection Summary												
Delay			6.8									
Level of Service			A									
Intersection Capacity Utilization			13.3%	ICU Level of Service	A							
Analysis Period (min)			15									

Intersection						
Int Delay, s/veh	5.9					
Movement	SEL	SER	NEL	NET	SWT	SWR
Lane Configurations						
Traffic Vol, veh/h	3	16	7	4	3	3
Future Vol, veh/h	3	16	7	4	3	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	17	8	4	3	3

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	25	5	6	0	-	0
Stage 1	5	-	-	-	-	-
Stage 2	20	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	991	1078	1615	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	986	1078	1615	-	-	-
Mov Cap-2 Maneuver	986	-	-	-	-	-
Stage 1	1013	-	-	-	-	-
Stage 2	1003	-	-	-	-	-

Approach	SE	NE	SW
HCM Control Delay, s	8.5	4.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NEL	NET SELn1	SWT	SWR
Capacity (veh/h)	1615	- 1062	-	-
HCM Lane V/C Ratio	0.005	- 0.019	-	-
HCM Control Delay (s)	7.2	0 8.5	-	-
HCM Lane LOS	A	A A	-	-
HCM 95th %tile Q(veh)	0	- 0.1	-	-

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	1	0	3	0
Future Vol, veh/h	0	1	1	0	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	1	0	3	0

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	5	3	3	0	-	0
Stage 1	3	-	-	-	-	-
Stage 2	2	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	1017	1081	1619	-	-	-
Stage 1	1020	-	-	-	-	-
Stage 2	1021	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	1016	1081	1619	-	-	-
Mov Cap-2 Maneuver	1016	-	-	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	1021	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.3	7.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1619	-	1081	-	-
HCM Lane V/C Ratio	0.001	-	0.001	-	-
HCM Control Delay (s)	7.2	0	8.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

SIGNAL WARRANT ANALYSIS, WARRANT 3 – PEAK HOUR

S Market Blvd & SE 11th St Forecast 2027 PM Peak Hour Volumes With Project

Warrant met if criteria in either of the following two categories A and B are met:

A. If ALL 3 of the following conditions exist for the same 1 hour of an average day: **NOT MET**

1. The total stopped time delay for the minor-street approach equals or exceeds 4 vehicle-hours for a one-lane approach (5 veh-hrs for a two-lane approach).

SB Approach: $((42+6+43)*25.8)/3600 = 0.65 < 4.0$ **NOT MET**

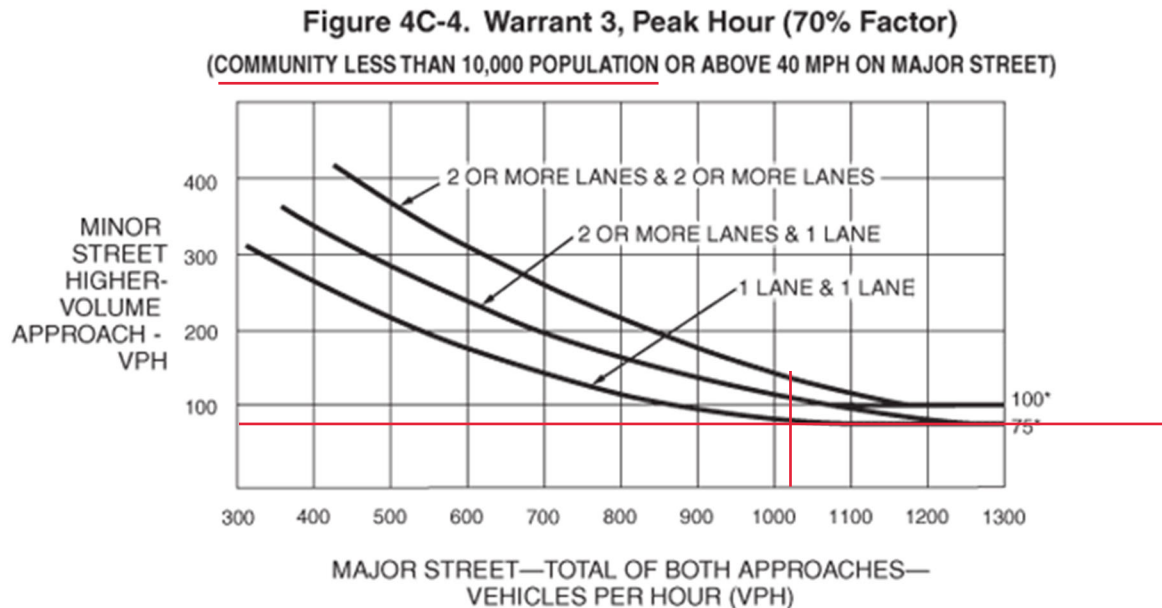
2. The volume on the same minor street approach equals or exceeds 100 vehicles per hour for one moving lane of traffic (150 veh/hr for two moving lanes).

WB Approach: $91 < 100$ **NOT MET**

3. The total entering volume serviced during the hour equals or exceeds 650 vehicles per hour for intersections with 3 approaches (800 veh/hr for 4 approaches).

$1,115 > 800$ **MET**

B. The plotted point in Figure 4C-2 falls above the applicable curve for the existing combination of approach lanes. **NOT MET**



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.