

HEATH&ASSOCIATES

Transportation Planning & Engineering

Date: May 31, 2023

To: Kerry Doss
AMH Development
6811 S 204th St, Ste 270
Kent, WA 98032

THURSTON COUNTY
RECEIVED

JUN 02 2023

BUILDING DEVELOPMENT CENTER

Subject: Trip Generation Assessment for Sienna 1 Plat.

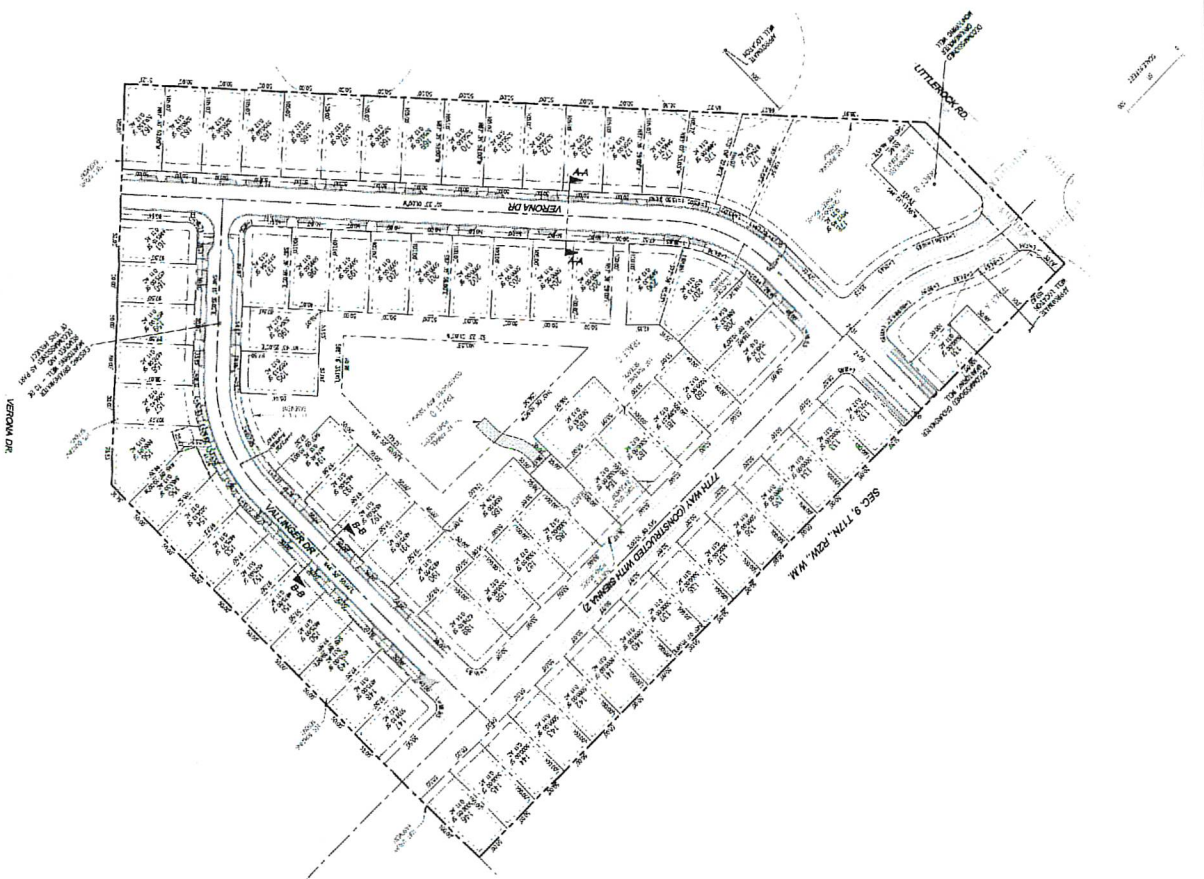
The intent of this assessment is to provide Thurston County with a trip generation summary and site characteristics for the proposed project herein referred to as Sienna 1 Plat. A project description is provided below.

PROJECT DESCRIPTION

Sienna 1 Plat is a proposed residential development consisting of 77 single-family homes located within the Tumwater Urban Growth Area (UGA) of Thurston County. The subject site is comprised within 16.28-acres on tax parcel #: 09090009000. The subject property is bordered to the northwest by Littlerock Road SW with a site address of 7731 Littlerock Road SW. Access to the project is proposed via one new roadway aligned opposite the AG West Black Hill High School access along Littlerock Road SW whereby a fourth leg (77th Way SW) would be created at the signalized intersection. Internal connectivity for future development is also proposed via 77th Way SW and Verona Drive SW (see site plan). An aerial vicinity depicting the location of the subject site and the surrounding roadways is provided on the following page. A conceptual site plan illustrating the project configuration is shown in Figure 2.







TRIP GENERATION

Trip generation is defined by the number of vehicular movements that enter or exit a site during a particular timeframe such as a specific peak hour or an entire day. Trip generation estimates are based on data from the ITE *Trip Generation Manual*, 11th Edition. The proposed land use is classified as Single-Family Detached Housing (LUC 210). Dwelling units were used as the input variable with ITE average rates to determine trip ends. ITE Trip Generation sheets have been attached to the appendix for reference. Table 1 below summarizes the estimated trip volumes.

Table 1: Project Trip Generation

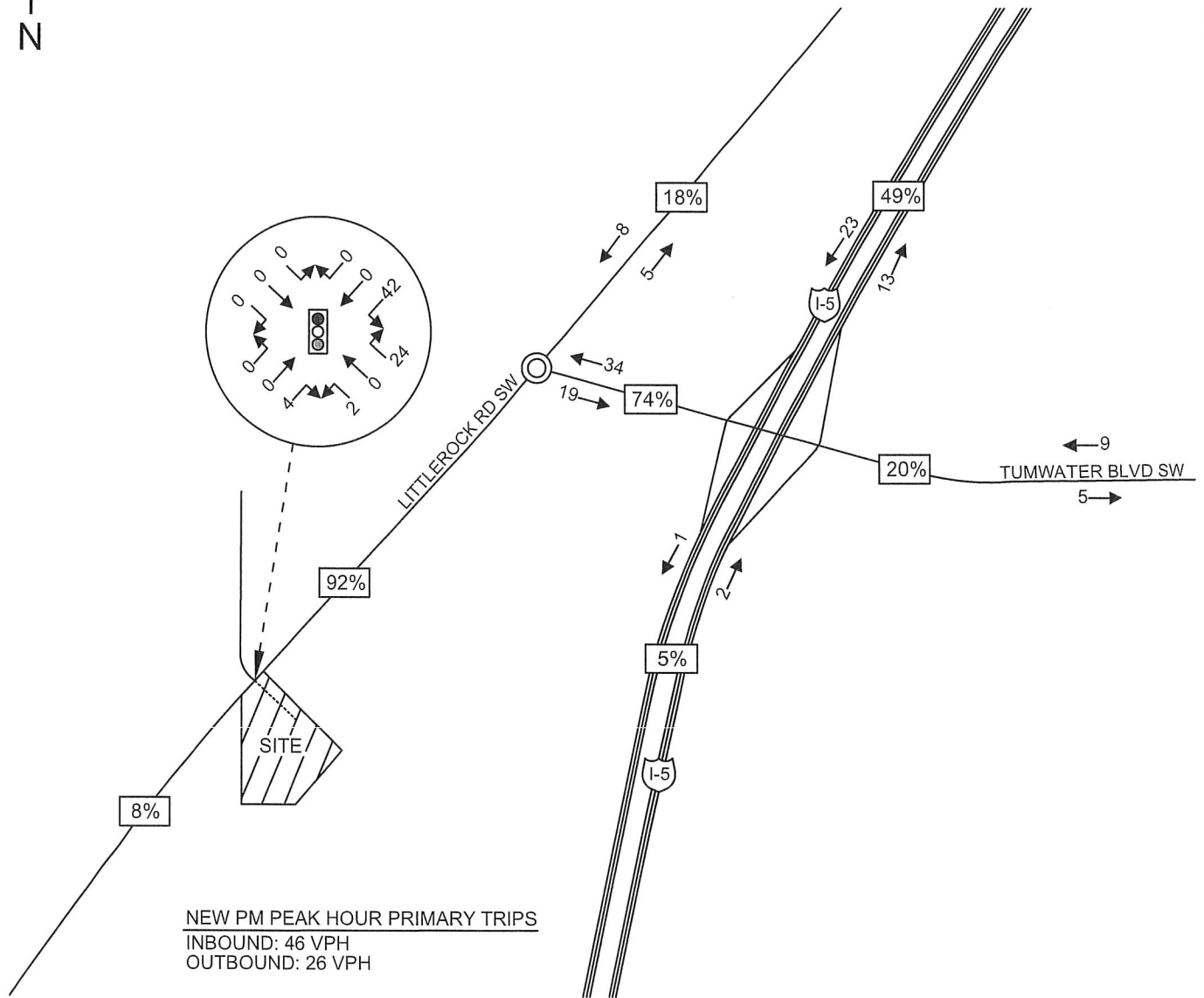
Land Use	Dwelling Units	AWDT	AM Peak-Hour Trips			PM Peak-Hour Trips		
			In	Out	Total	In	Out	Total
Single-Family (LUC 210)	77	726	13	41	54	46	26	72

The proposed development of 77 single-family dwelling units is estimated to generate 726 average weekday daily trips with 54 trips (13 inbound / 41 outbound) occurring in the AM peak hour and 72 trips (46 inbound / 26 outbound) occurring in the PM peak hour.

TRIP DISTRIBUTION

Trip distribution describes the anticipated travel routes for inbound and outbound project traffic during the peak hour study period. The specific destinations and origins of the generated traffic primarily influences the key intersections, which will effectively receive the bulk of project impacts. Anticipated distribution percentages and travel routes for the PM peak hour are illustrated in Figure 3 on the following page. Percentages are based on Thurston Regional Planning Council (TRPC) TAZ 948 Distribution Map. See appendix for complete TAZ map.

Moreover, project-generated trips anticipated to travel through the Tumwater I-5 Interchange to the north as identified from the TAZ 948 map are outlined in Figure 3. Approximately 34 inbound trips and 19 outbound trips are identified to travel through the aforementioned interchanges during the critical PM peak hour.



SUMMARY

Sienna 1 Plat proposes for the construction of 77 single-family units located within the Tumwater UGA of Thurston County. The subject site is located at 7731 Littlerock Road SW within 16.28-acre tax parcel #: 09090009000. Access to and from the Sienna 1 Plat is proposed to extend southeast from Littlerock Road SW by way of 77th Way SW and opposite AG West Black Hill High School. Future connectivity is provided via internal roadways to the southeast. A conceptual site plan is provided in Figure 2 illustrating the lot layout and access configuration.

Based on ITE data, the project is estimated to generate approximately 726 average weekday daily trips with 54 trips (13 inbound / 41 outbound) occurring during the AM peak hour and 72 trips (46 inbound / 26 outbound) occurring during the PM peak hour.

The project would be subject to Thurston County Traffic Impact Fees (TIF). Pay Traffic Impact Fees (TIF) as required by Thurston County and/or the city of Tumwater. Final fee calculations are to be determined by the respective jurisdictions and based on the final lot count.

Moreover, TIF fees are required by the SEPA Mitigation Fee. Impact fees are collected at \$4,219.00 per trip that travels through the I-5 Tumwater Interchanges located north of the subject site. Trip ends, as illustrated in Figure 3, were derived via the TRPC TAZ 948 Distribution Map. The estimated SEPA Mitigation Fee is collected at:

$$53 \text{ trips} \times \$4,219.00 = \$223,607.00$$

Exact fees and calculations will be determined by the County/City based on current fee schedules at the time of building permit issuance.

Please call if you require further information

Sincerely,
Aaron Van Aken, PE, PTOE

SIENNA 1 PLAT TRIP GENERATION ASSESSMENT

APPENDIX

Single-Family Detached Housing (210)

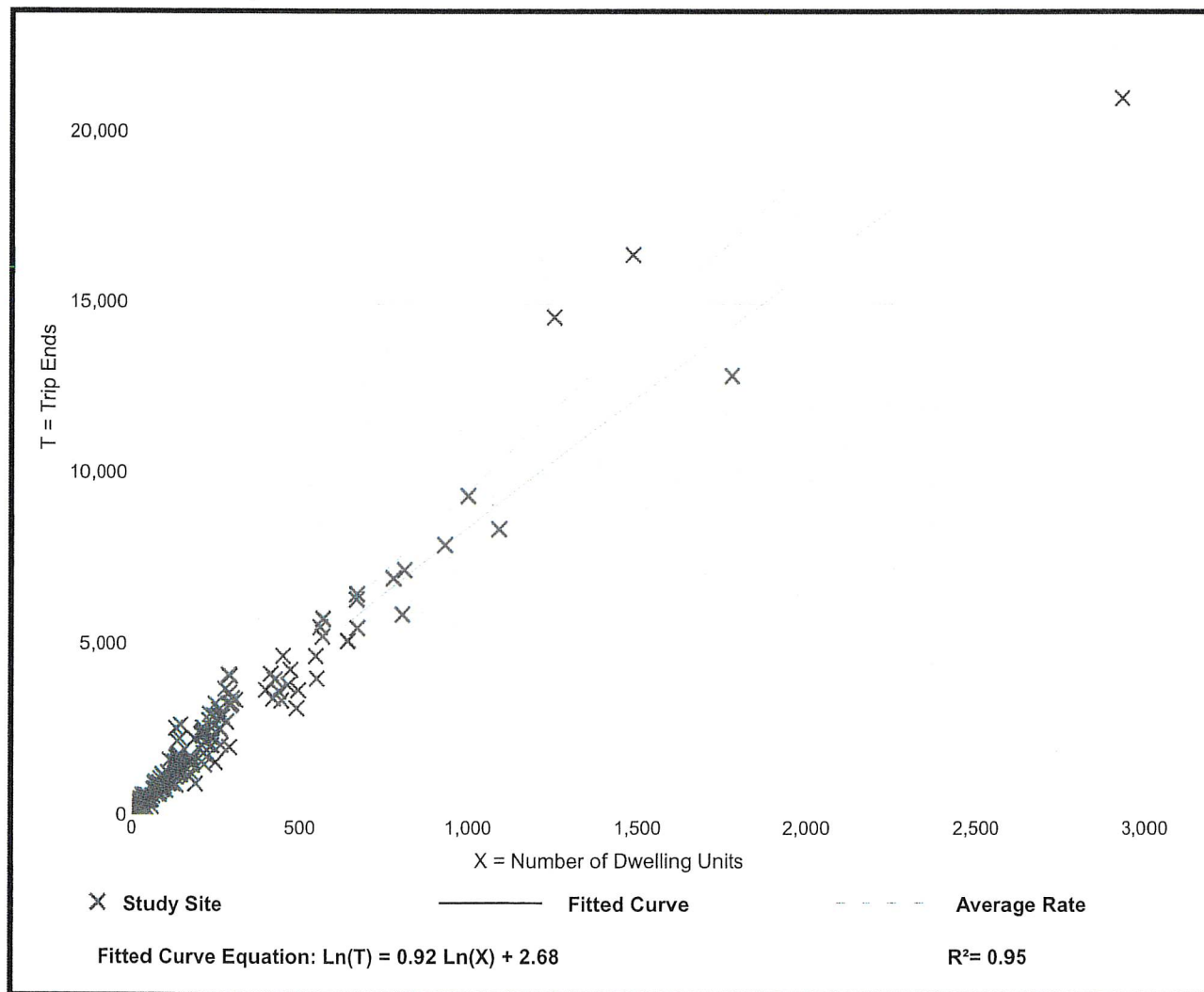
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



Trip Gen Manual, 11th Edition

• Institute of Transportation Engineers

Single-Family Detached Housing (210)

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: 192

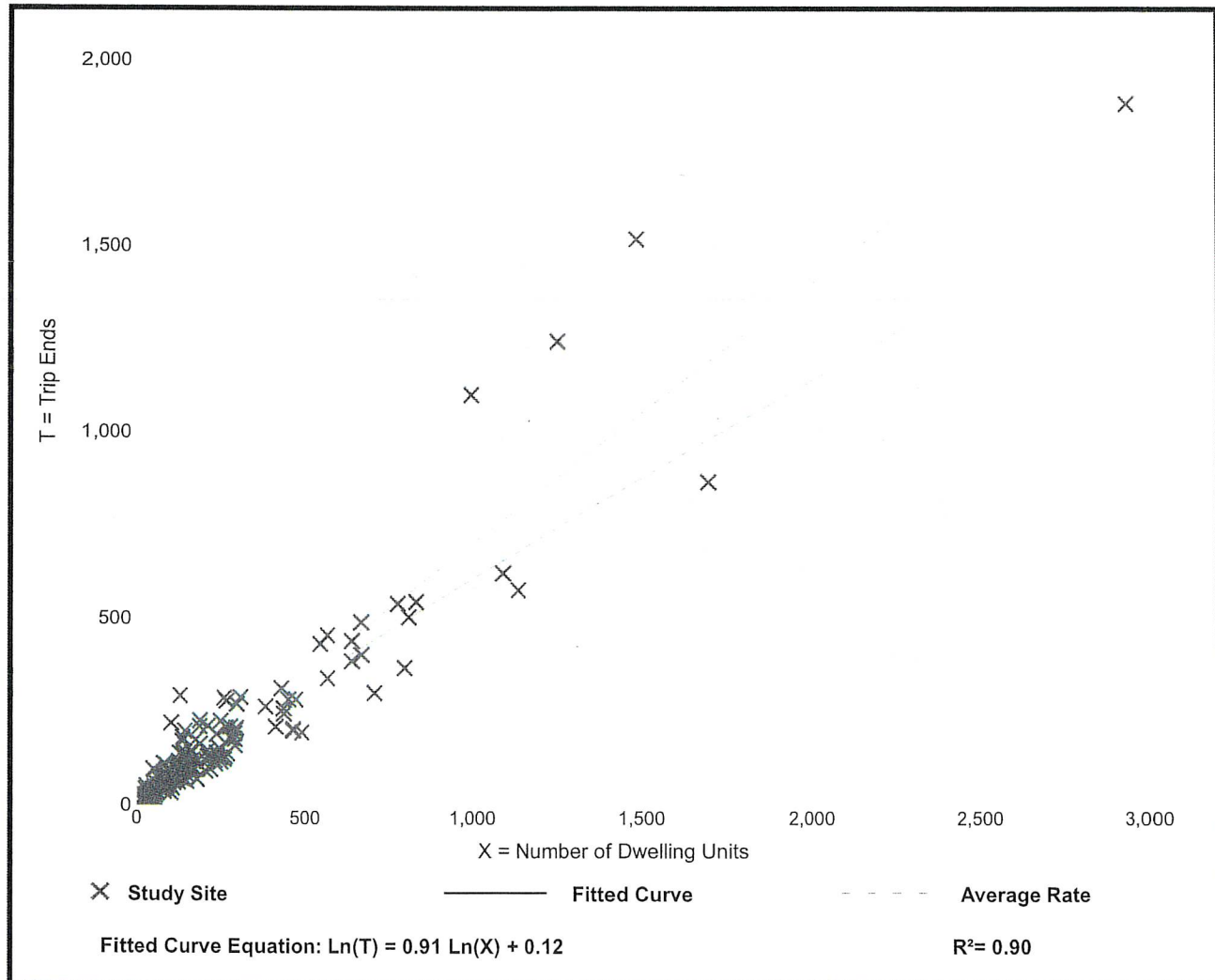
Avg. Num. of Dwelling Units: 226

Directional Distribution: 26% entering, 74% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



Trip Gen Manual, 11th Edition

● Institute of Transportation Engineers

Single-Family Detached Housing (210)

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: 208

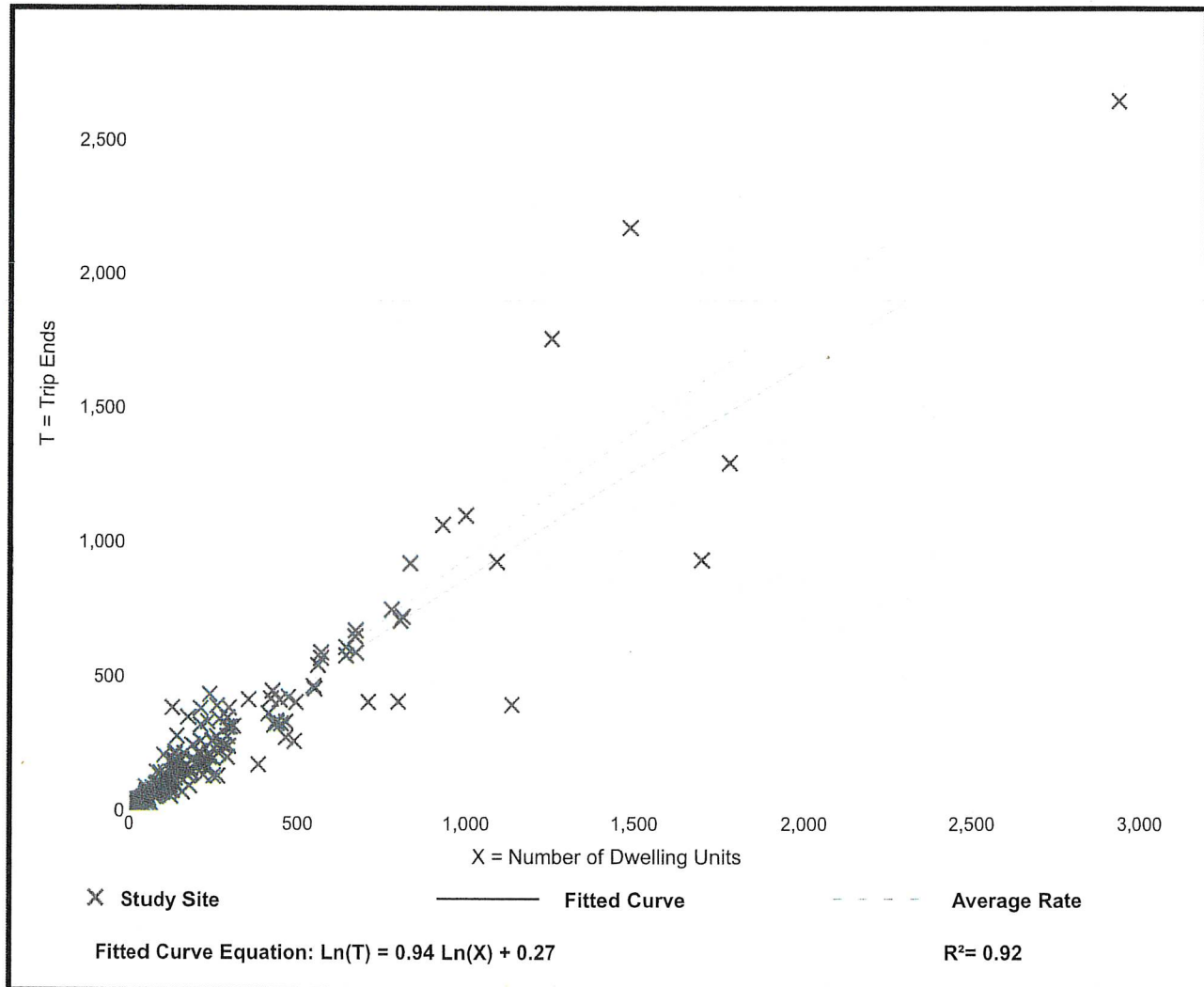
Avg. Num. of Dwelling Units: 248

Directional Distribution: 63% entering, 37% exiting

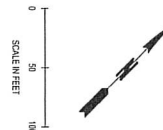
Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

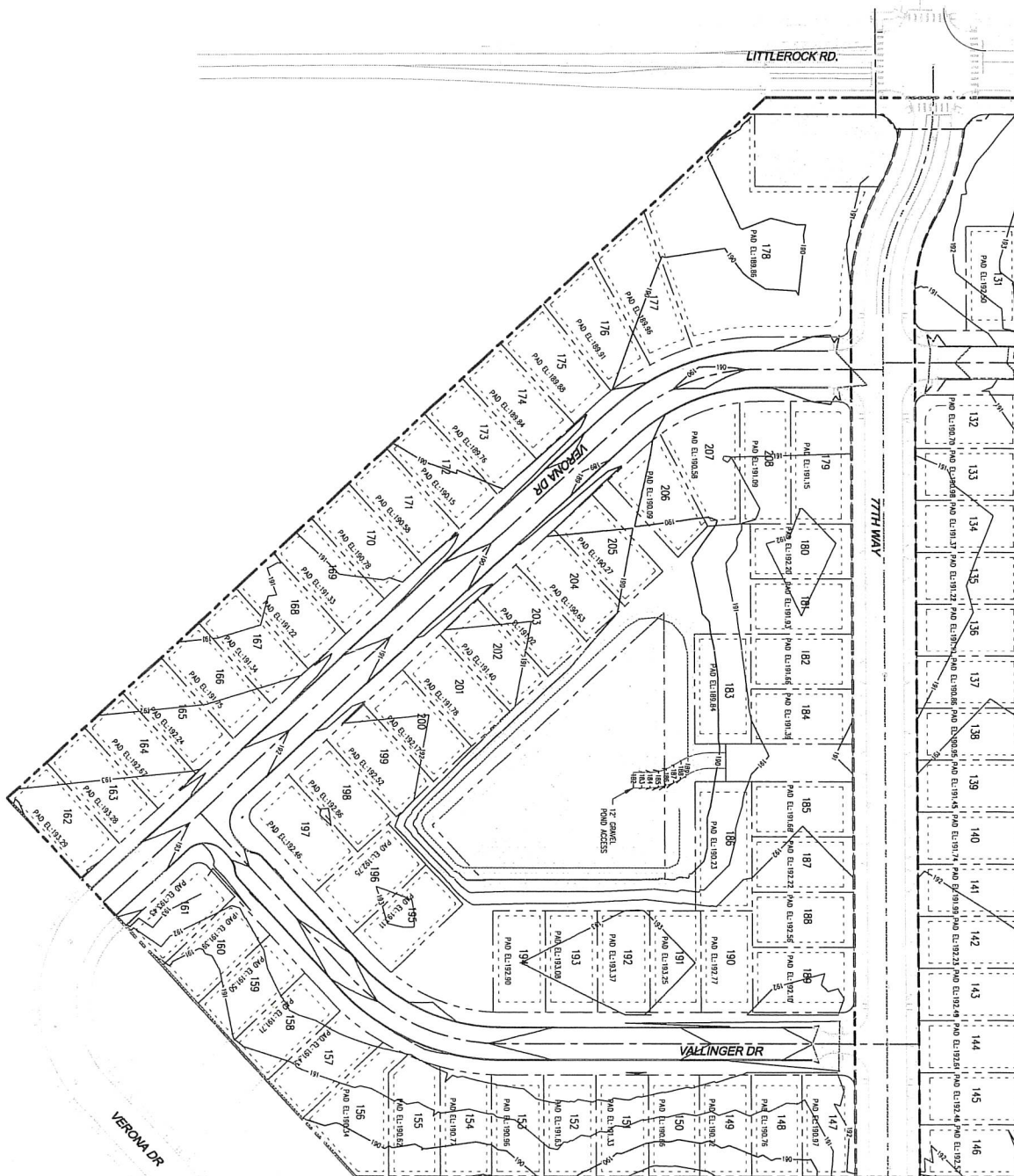
Data Plot and Equation







SEC. 9, T7N, R2W, W.M.



UTILITY NOTE

VERIFY THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. ANY CHANGES TO THE SHOWN LOCATIONS SHALL BE NOTED ON THE SHOWN LOCATIONS.

DISCLAIMER

THIS PRELIMINARY GRADING PLAN IS BASED ON THE INFORMATION PROVIDED BY THE CLIENT. THE ENGINEER HAS CONDUCTED A VISUAL INSPECTION OF THE SITE AND HAS FOUND NO APPARENT DISCREPANCIES. THE CLIENT SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED.



Call 2 Business Days Before You Dig
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Utility Underground Location Center

ACCEPTING AS NOTED
THIS PRELIMINARY GRADING PLAN
HAS BEEN REVIEWED AND
APPROVED FOR THE
SUBMITTER'S USE.



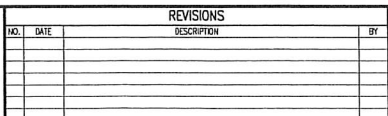
AMH DEVELOPMENT
SIENNA 1 SUBDIVISION
PRELIMINARY PLAT
PRELIMINARY GRADING PLAN

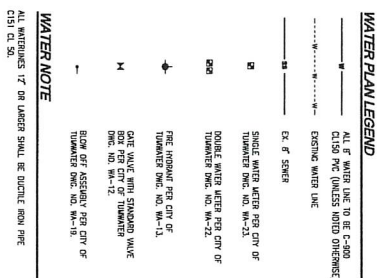


Surveying
Engineering
Planning

REVISIONS		BY
NO.	DATE	DESCRIPTION

PP-02
SHEET 2 OF 6





WATER NOTE

ALL WATERLINES 17" OR LARGER SHALL BE DUCTILE IRON PIPE
C151 CL 50.

DISCLAIMER

TOPOGRAPHIC SURVEY INFORMATION CONTAINED ON THESE PLANS HAS BEEN PROVIDED BY WINGCOAST, LLC, INC. (LAND DEVELOPMENT CONSULTANTS, INC.) ASSUMES NO LIABILITY AS TO THE ACCURACY AND COMPLETENESS OF THIS DATA. ANY DISCREPANCIES FOUND BETWEEN WHAT IS SHOWN ON THE PLANS AND WHAT IS NOTED IN THE FIELD SHOULD BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER.



ACCEPTED AS NOTED
THURSTON COUNTY PUBLIC WORKS
SWS. COUNTY ENGINEER

BY _____
ACCEPTING:

BY _____
Custody 2 Years from Acceptance Date

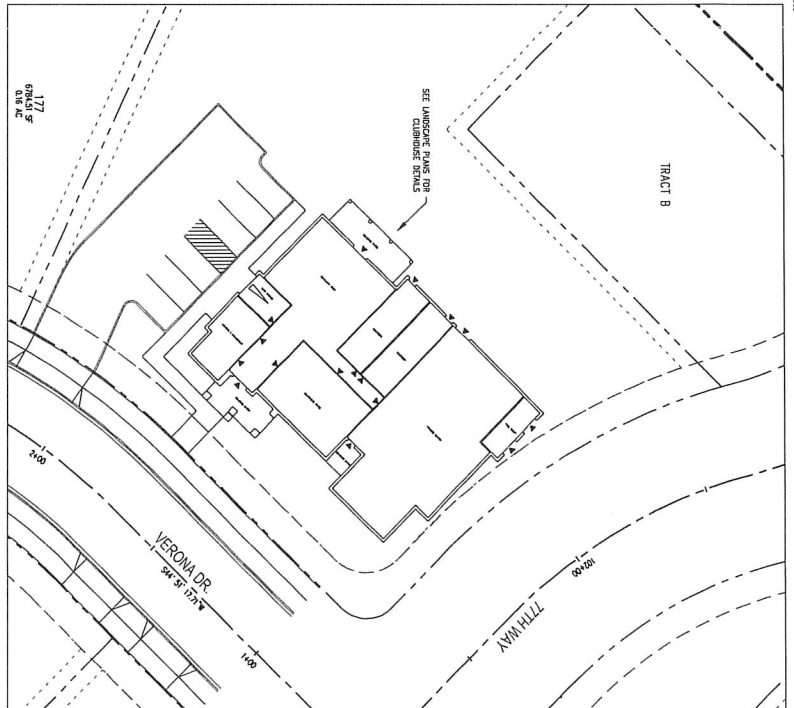
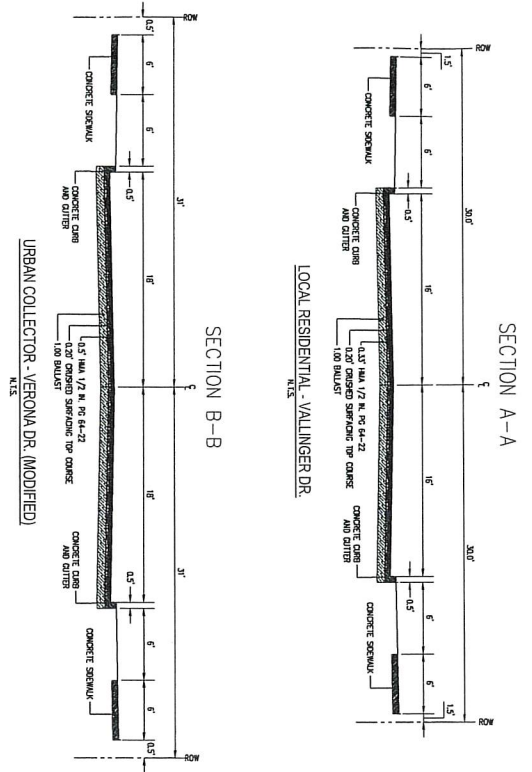


AMH DEVELOPMENT
SIENNA 1 SUBDIVISION
PRELIMINARY PLAT
PRELIMINARY PLAT WATER & SEWER PLAN

Woodinville Olympia Ken
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Olympia, WA 98506
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[illegible]

SEC. 9, T7TH, R2W, W.M.



UTILITY NOTE

THE CONSTRUCTION SHALL VERIFY THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO ANY CONSTRUCTION. ANY AGENTS INVOLVED SHALL BE NOTIFIED OF ANY DISCREPANCIES FOUND BETWEEN WHAT IS SHOWN ON THE PLAT AND THE ACTUAL LOCATION OF UTILITIES.

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AMH DEVELOPMENT
SIENNA 1 SUBDIVISION
PRELIMINARY PLAT
PRELIMINARY DETAILS & NOTES

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NO.	DATE	DESCRIPTION

PP-05
SHEET 5 OF 5



77TH WAY (CONSTRUCTED WITH SIENNA 2,

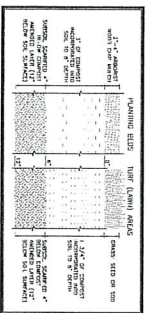
LEGEND

	SOIL MANAGEMENT OPTION 2
	PROJECT DISTURBANCE LIMIT

② OPTION 2 - AMEND SOIL

[illegible]

Figure 6.1. Cross-Section of Soil Amendment



FOR ROAD SECTIONS
REFER TO SHEET PP-05

UTILITY NOTE

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BY: _____
ACCEPTANCE _____
BY: _____
Expires 2 Years From Acceptance Date

SMP-01
SHEET 6 OF 6

AMH DEVELOPMENT
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RELIMINARY PLAT
SOILS MANAGEMENT PLAN



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