Whipple Consulting Engineers, Inc.

November 4, 2020
W.O. No. 2020-2695

City of Spokane
Department of Engineering Services
801 W. Spokane Falls Boulevard
Spokane, WA 99201

Attn: Inga Note, P.E.

Re: **Qualchan View Estates**
5708 S. Meadow Lane
Trip Generation and Distribution Letter.

Dear Inga,

The purpose of this document is to provide a Trip Generation and Distribution letter (TGDL) for the proposed Qualchan View Estates located at 5708 South Meadow Lane, as shown on Figure 1, Vicinity Map and Figure 2, Preliminary Site Plan. This letter will follow the standards for doing Trip Distribution Letters as required by the City of Spokane and the Institute of Transportation Engineers (ITE).

PROJECT DESCRIPTION

The project proposes the development of 7 parcels totaling 57.66 ± acres into 160 Single-Family Residential lots. The property is currently undeveloped and covered in trees, field grass, and weeds. The project is within the Latah/Hangman neighborhood, located between the Overlook Village PUD and the Talon Ridge Plats. The project proposes to extend Summerwood Street, and Talon Drive north and northwest through the project. The project proposes to extend Bolan Avenue south to intersect with Talon Drive. From the extension of these roads spur roads are proposed off of these main roads and completes a connection between the two existing neighborhoods for both vehicular and pedestrian travel. Please see Figure 2 preliminary site plan.

VICINITY / SITE PLAN

The project site is listed as Residential Single Family on the Comprehensive Plan and zoned as RSF. The site lies on the SE 1/4 of Section 6, T. 24N., R. 43 E., W.M. within the City of Spokane, Washington. The parcel numbers for the site are 34061.0036, 34061.0038, 34061.0045, 34061.0050, 34064.0031, 34064.0041, and 34064.0046. A vicinity map is included as Figure 1, along with a preliminary site plan as Figure 2.

TRIP GENERATION AND DISTRIBUTION

Trip Types

The proposed land use is single family residential; ITE has developed data regarding various trip types that all developments experience. These are found in several places, however, for this analysis the *Trip Generation Manual 10th Edition* as well as the Institute of transportation Engineers (ITE) *Trip Generation Handbook* were used to develop the criteria for this analysis.

Generally, all existing and proposed developments will be made up of one or more of the following four trip types: new (destination) trips, pass-by trips, diverted trips, and shared (internal trips). In order to better understand the trip types available for land access a description of each specific trip type follows.

New (Destination) Trips - These types of trips occur only to access a specific land use such as a new retail development or a new residential subdivision. These types of trips will travel to and from the new site and a single other destination such as home or work. This is the only trip type that will result in a net increase in the total amount of traffic within the study area. The reason primarily is that these trips represent planned trips to a specific destination that never took trips to that part of the City prior to the development being constructed and occupied. This project will develop new trips.

Pass-by Trips - These trips represent vehicles which currently use adjacent roadways providing primary access to new land uses or projects and are trips of convenience. These trips, however, have an ultimate destination other than the project in question. They should be viewed as customers who stop in on their way home from work. An example would be on payday, where an individual generally drives by their bank every day without stopping, except on payday. On that day, this driver would drive into the bank, perform the prerequisite banking and then continue on home. In this example, the trip started from work with a destination of home, however on the way, the driver stopped at the grocery store/latte stand and/or bank directly adjacent to their path. Pass-by trips are most always associated with commercial/retail types of development along major roadways. Therefore, for this project pass-by trips will not be considered.

Diverted (Linked) Trips - These trips occur when a vehicle takes a different route than normal to access a specific facility. Diverted trips are similar to pass-by trips, but diverted trips occur from roadways, which do not provide direct access to the site. Instead, one or more streets must be utilized to get to and from the site. For this project, no diverted trips are anticipated.

Shared / Internal / Trips - These are trips which occur on the site where a vehicle/ consumer/ tenant will stop at more than one place on the site. For example, someone destined for a certain shop at a commercial site may stop at a bank just before or after they visit the shop that they went to the site to visit. This trip type reduces the number of new trips generated on the public road system and is most commonly used for commercial developments. For this project, no internal trips are anticipated.

Trip Generation Characteristics for Proposed Land Uses

As noted earlier, trip generation rates for the AM and PM peak hours are determined by the use of the *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE). The purpose of the *Trip Generation Manual* is to compile and quantify empirical data into trip generation rates for specific land uses within the US, UK and Canada.

Proposed Land Use
For the proposed 160 units of single family residential development, Land Use Code (LUC) #210, Single Family Detached Housing was used to establish the number of potential trips generated by the proposed land use for the single family residential lots. The trip generation rates and the anticipated number of AM and PM peak hour trips for the single family residential land use are shown on Table 1.

Table 1-Trip Generation Rates for LUC # 210 – Single Family Detached Housing

Dwelling Units	AM Peak Hour Trips			PM Peak Hour Trips		
	Vol. @ 0.74 trips per Unit	Directional Distribution		Vol. @ 0.99 trips per Unit	Directional Distribution	
		25% In	75% Out		63% In	37% Out
160	119	30	89	159	100	59
Average Daily Trip Ends (ADT)						
Units	Average Rate		ADT			
160	9.44		1,511			

As shown in Table 1, the proposed land use is anticipated to generate a total of 119 new trips in the AM peak hour with 30 trips entering the site and 89 trips exiting the site. In the PM peak hour, the proposed land use is anticipated to generate a total of 159 new trips in the PM peak hour with 100 trips entering the site and 59 trips exiting the site. The proposed land use is anticipated to generate 1,511 average daily trips to/from the project. Please see Figure 3 for Trip Distribution.

TRIP DISTRIBUTION

As shown on the preliminary site plan, the site will be accessed via Eagle Ridge and Qualchan Routes (Please see Figure 2, Site Plan). Descriptions of the anticipated roadways used by the development are provided here.

Eagle Ridge Route is an access route to/from the site. The route extends south from the site on Talon Drive and Summerwood Street to the intersection of Talon Drive and Summerwood Street. The route then extends south on Summerwood Street to the intersection of Summerwood Street and Eagle Ridge Boulevard. From the intersection of Summerwood Street and Eagle Ridge Boulevard, the trips can either continue to go to/from the west on Eagle Ridge Boulevard to Cedar Road or go to/from the east on Eagle Ridge Boulevard to State Route 195. Please see the highlighted routes on Figure 2-1.

Qualchan Route is an access route to/from the site. The route extends north from the site on Bolan Avenue to the intersection of Bolan Avenue and Lincoln Boulevard. The route then extends east on Lincoln Boulevard to the intersection of Lincoln Boulevard and Qualchan Drive. From the intersection of Lincoln Boulevard and Qualchan Drive, the trips can either continue to go to/from the west on Qualchan Drive to Cheney Spokane Drive or go to/from the east on Qualchan Drive to State Route 195. Please see the highlighted routes on Figure 2-1.

Talon Drive is generally an east/west two-way, 2-lane, local access road that extends east from Summerwood Street through Chicha Court before terminating with a cul-de-sac at the southern boundary of the project site. The project proposes to extend Talon Drive north and northwest through Summerwood Street and Bolan Avenue before turning north and terminating with a cul-de-sac at the northern boundary of the project site. Talon Drive primarily serves residential land uses. The speed limit on Talon Drive is 25 MPH.

Summerwood Street is a north/south two-way, 2-lane, local access road that extends north from Shelby Ridge Street through Trail Ridge Court and Talon Drive before terminating with a hammerhead at the southern boundary of the project site. The project proposes to extend Summerwood Street north and northeast through Talon Drive and terminating with a hammerhead at the northern boundary of the project site. Summerwood Street primarily serves residential land uses. The speed limit on Summerwood Street is 25MPH.

Shelby Ridge Street is a north/south, two-way, 2-lane, local access road that extends north from Eagle Ridge Boulevard through Latah Hills Court and Summerwood Street before terminating with a cul-de-sac. Shelby Ridge Street primarily serves residential land uses. The speed limit on Shelby Ridge Street is 25 MPH.

Bolan Avenue is an east/west, two-way, 2-lane, local access road that extends east from Lincoln Boulevard through Pender Lane and Willapa Court before terminating with a cul-de-sac at the northern boundary of the project site. The project proposes to extend Bolan Avenue south to Talon Drive. Bolan Avenue primarily serves residential land uses. The speed limit on Bolan Avenue is 25 MPH. It has been noted by local residents that areas of Bolan Avenue are in distress due to natural springs under the roadway.

Lincoln Boulevard is an east/west, two-way, 2-lane, local access road that extends southwest and west from Qualchan Drive through Kip Lane, Keyes Court, and Dandy Court before transition to Lincoln Way at Bolan Avenue. Lincoln Boulevard primarily serves residential land uses. The speed limit on Lincoln Boulevard is 25 MPH.

Qualchan Drive is an east/west, two-way, local access road that extends west from State Route 195 through Lincoln Boulevard and Sunny Creek Drive before intersecting with Cheney-Spokane Road. Qualchan Drive primarily serves residential land uses. The posted speed limit on Qualchan Drive is 25 MPH.

Cheney-Spokane Road is a north/south, two-way, 2-lane, minor arterial and rural major collector that extends south as a minor arterial from State Route 195 through Qualchan Drive, Cedar Road, and Marshall Road before continuing as a rural major collector through Sherman Road, Gardner Road, Spotted Road, and Andrus Road before terminating at State Route 904. Cheney-Spokane Road functions as a route between the City of Cheney and City of Spokane. The posted speed limits on Cheney-Spokane Road within the study area are 35 MPH north of Qualchan Drive and 45 MPH south of Qualchan Drive.

Cedar Road is a north/south, two-way, 2-lane collector road that extends north from Gibbs Road through Taylor Road, White Road, and Eagle Ridge Boulevard before continuing north and then intersecting with Cheney-Spokane Road. Cedar Road primarily serves residential land uses in rural area. The speed limit on Cedar Road is 30 MPH.

Meadow Lane Road is a north-south, two-way, 2-lane collector and local access road that crosses Highway 195 as a collector and while climbing the hillside intersects with Eagle Ridge Boulevard. Meadow Lane Road continues as a local access road and proceeds south while climbing the hill and serving residential land uses. The Speed limit on Meadow Lane Road within the study area is 30 MPH.

Eagle Ridge Boulevard is an east-west, two-way, 2-lane collector road that extends east from Cedar Road through Parkridge Boulevard, Shelby Ridge Street, and Browne Street before terminating at Meadow Lane Road. Eagle Ridge Boulevard primarily serves residential land uses. The speed limit on Eagle Ridge Boulevard is 30 MPH.

State Route 195 is a north/south, two-way, 4-lane highway that extends south from Interstate 90 at Exit 279 and goes through 16th Avenue, Thorpe Road and Cities of Spangle, Freedom, Plaza, Rosalia, Thornton, Cashup, Steptoe, Colfax, Pullman, Johnson, Colton, and Uniontown before merging with State Route 95. The speed limit on State Route 195 is 55 MPH within the study area.

Trip Distribution

Considering many factors such as the surrounding transportation facilities, typical commuting patterns, existing development in the area, and Average Daily Traffic counts, traffic for the proposed development is anticipated as follows: It is anticipated that 72% of the inbound and 67% of the outbound trips will utilize the Eagle Ridge Route, and 28% of the inbound trips and 33% of the outbound trips will utilize the Qualchan Route. Of the 72% of the inbound trips and 67% of the outbound trips on the Eagle Ridge Route, 47% of the trips are anticipated to go to/from the north via State Route 195, 5% of the trips are anticipated to go to/from the south via Cedar Road, 5% of the trips are anticipated to go to/from the southwest via Cedar Road and Cheney Spokane Road, and 15% of the inbound trips and 10% of the outbound trips are anticipated to go to/from the south via State Route 195. This distribution may be affected due to congestion at Meadowlane and 195, which may leave drivers with a desire to use Cedar to Cheney Spokane Road and the 195 interchange. Of the 28% of the inbound trips and 33% of the outbound trips on the Qualchan Route, 13% are anticipated to go to/from the north via Cheney Spokane Road and State Route 195, 5% of the trips are anticipated go to/from the southwest via Cheney Spokane Road, and 10% of the trips are anticipated to go to/from the commercial area on Cheney Spokane Road, and 5% of the outbound trips are anticipated to go to the State Route 195. Please see Figures 3 & 4 for a visual representation of the project trip distribution.

Traffic Impact Fee

The City of Spokane municipal code has established transportation impact fees under Spokane Municipal Code Title 17 Chapter 17D.030. The proposed project is within the South Service Area and as such is subject to the current Impact Fee Schedule. Table 2 calculates the anticipated impact fee for the proposed project.

Table 2 – Proposed Land Use Impact Fee

Land Use	LUC	Quantity	Unit of Measure	Fee per unit	Fee
LUC # 210 Single Family Detached Housing	210	160	Dwelling Units	$1,160.64	$185,702.4

As shown in Table 2, the proposed project under the current fee schedule is anticipated to generate an impact fee of $185,702.4. This fee as allowed will be paid at the time of building permit.

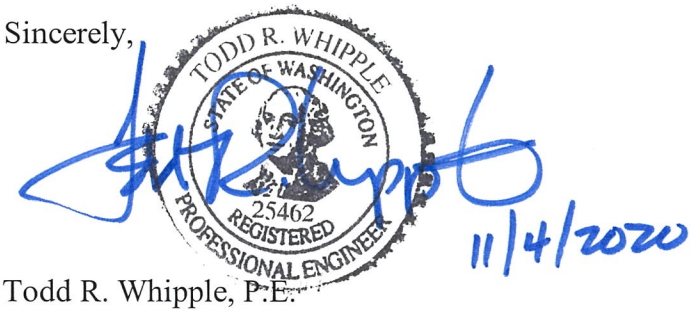
CONCLUSIONS AND RECOMMENDATIONS

It is anticipated that the proposed project will generate 119 trips in the AM peak hour and 159 trips in the PM peak hour trips. Based upon the number of anticipated trips, the distribution of those trips on city collectors, and recent traffic studies in the area we believe that while the proposed project will generate trips on the local transportation system, that those trips will have a minimal impact on the local transportation system.

There is anticipated to be an impact from the project trips on SR 195 at Meadowlane Road and at the I-90/SR195 northbound to eastbound ramp. Therefore, we recommend that the project contribute to planned SR 195 improvements in the form of matched funds at the time of grading permit and pay the City of Spokane Traffic Impact Fee of $185,702.40 as allowed by the current code at the time of building permit, and that the project should be allowed to move forward without further traffic analysis.

Should you have any questions related to this document please do not hesitate to contact us at (509) 893-2617.

Sincerely,



Todd R. Whipple, P.E.

TRW/kmk

encl. Appendix (Vicinity Map, Site Plan, Trip Dist %, Photos)

cc:
Sponsor
File

APPENDIX

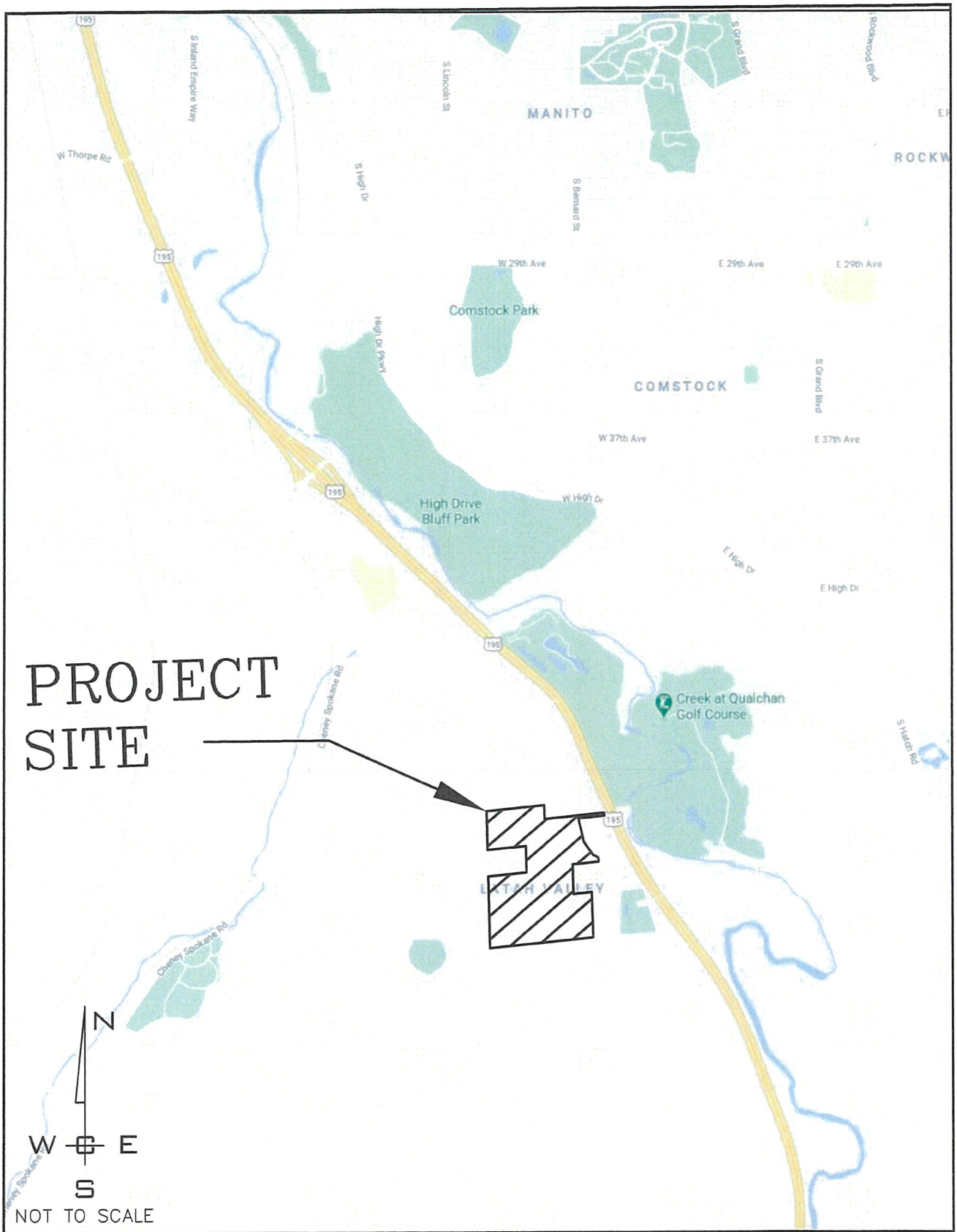
1.Vicinity Map

2.Site Plan

2-1.Qualchan & Eagle Ridge Routes

3. AM Trip Distribution by Percent

4. PM Trip Distribution by Percent



PROJ #: 20-2695 DATE: 08/10/20 DRAWN: KMK APPROVED: TRW	TRIP GENERATION AND DISTRIBUTION **MEADOWLANE TERRACE** 5708 SOUTH MEADOW LANE SPOKANE, WASHINGTON	WCE WHIPPLE CONSULTING ENGINEERS CIVIL AND TRANSPORTATION ENGINEERING 21 SOUTH PINES ROAD SPOKANE VALLEY, WASHINGTON 99206 PH: 509-893-2617 FAX: 509-926-0227
FIGURE 1	VICINITY MAP	

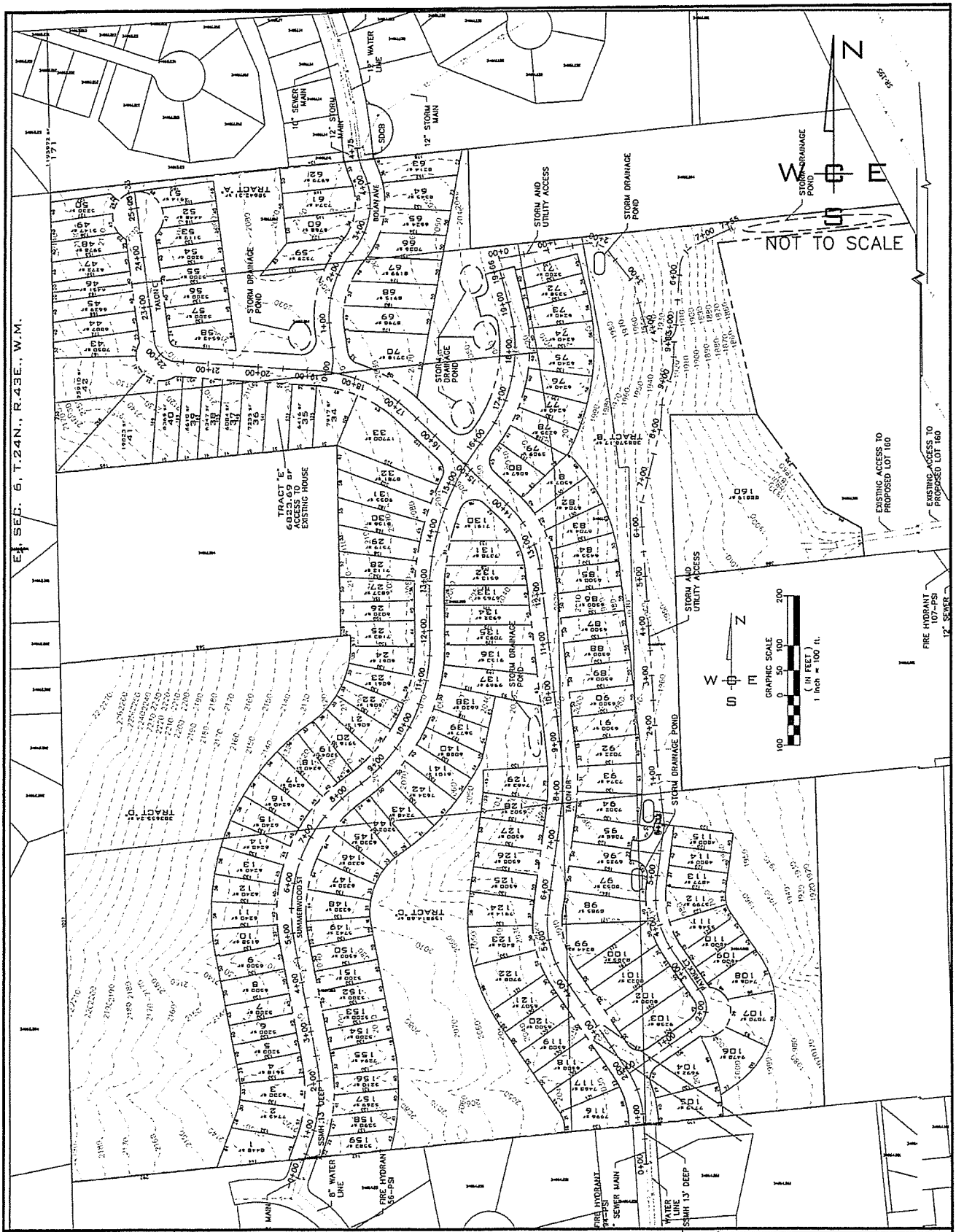


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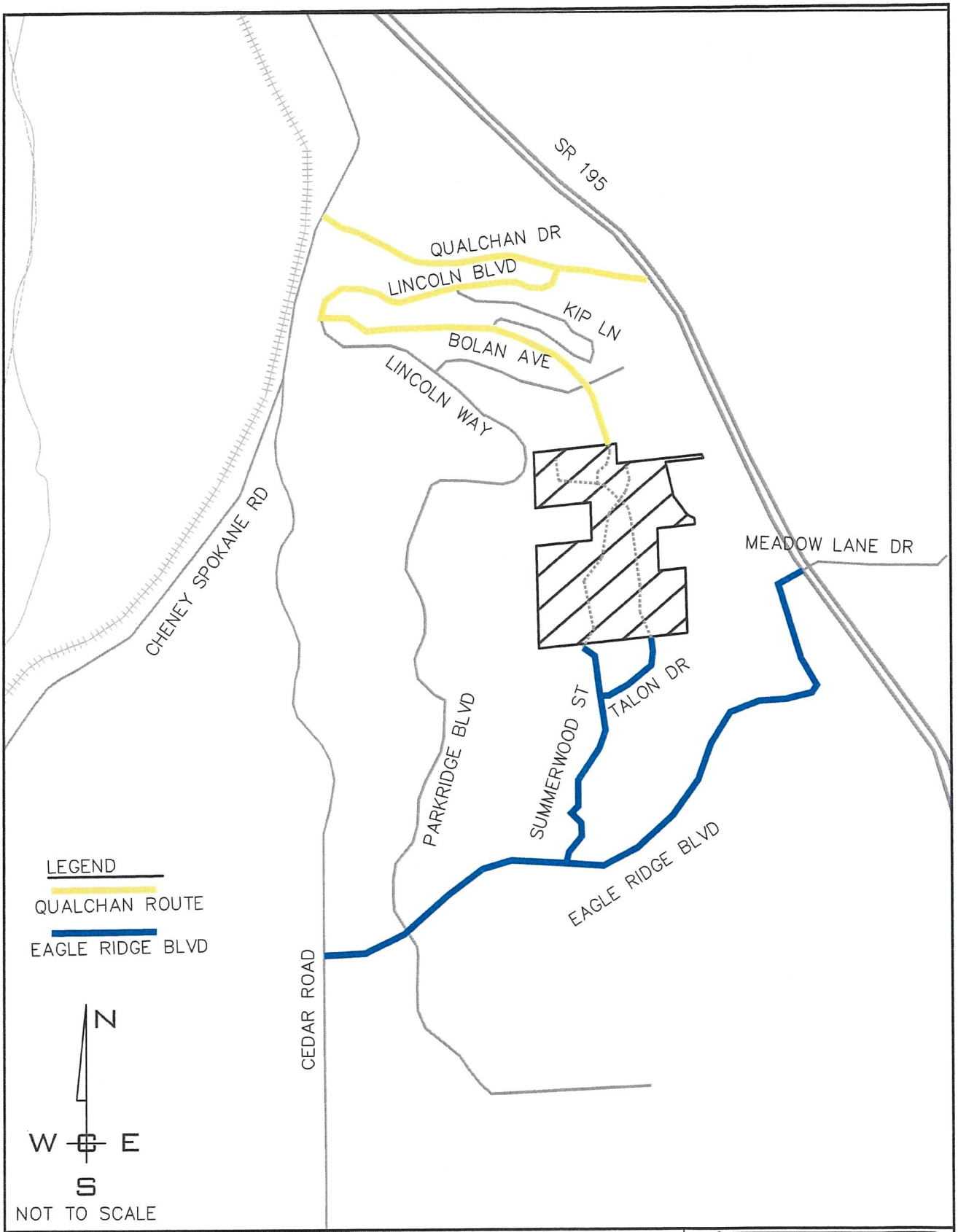
FIGURE 2	PRELIMINARY SITE PLAN	



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TRIP GENERATION AND DISTRIBUTION
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SPOKANE, WASHINGTON

FIGURE 2-1

QUALCHAN & EAGLE RIDGE ROUTES

WCE
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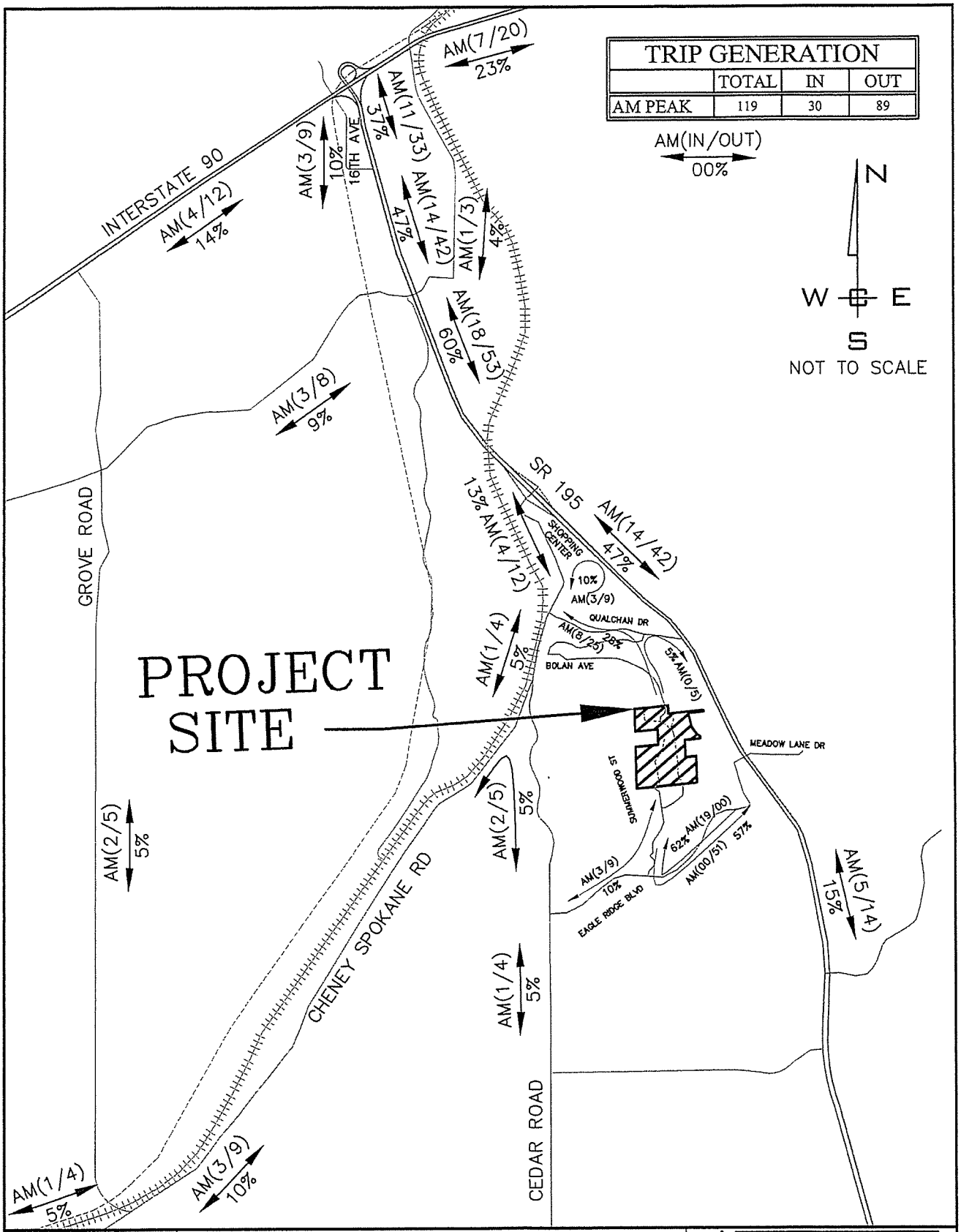
CIVIL AND TRANSPORTATION ENGINEERING
21 SOUTH PINES ROAD
SPOKANE VALLEY, WASHINGTON 99206
PH: 509-893-2617 FAX: 509-926-0227



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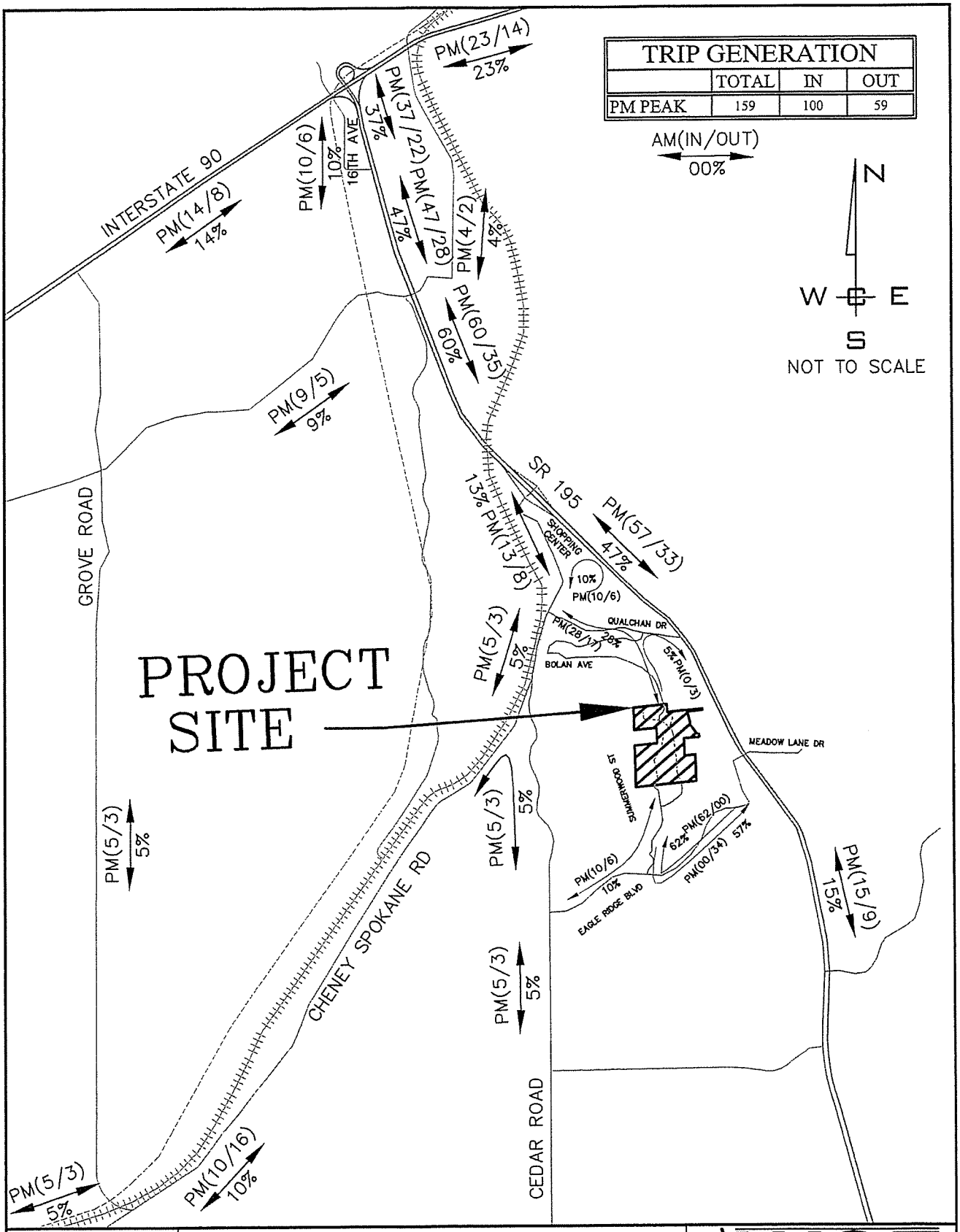
TRIP GENERATION AND DISTRIBUTION
MEADOWLANE TERRACE
5708 SOUTH MEADOW LANE
SPOKANE, WASHINGTON

FIGURE 3

AM PROJECT TRIP DISTRIBUTION

WCE
WHIPPLE CONSULTING ENGINEERS
CIVIL AND TRANSPORTATION ENGINEERING
21 SOUTH PINES ROAD
SPOKANE VALLEY, WASHINGTON 99206
PH: 509-893-2617 FAX: 509-926-0227



PROJ #: 20-2695
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TRIP GENERATION AND DISTRIBUTION
MEADOWLANE TERRACE
5708 SOUTH MEADOW LANE
SPOKANE, WASHINGTON

FIGURE 4

PM PROJECT TRIP DISTRIBUTION

WCE
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CIVIL AND TRANSPORTATION ENGINEERING
21 SOUTH PINES ROAD
SPOKANE VALLEY, WASHINGTON 99206
PH: 509-893-2617 FAX: 509-926-0227