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To:	City of Spokane Planning Department	From:	Zak Sargent, PE Spokane, WA
Reference:	Deep Pine Overlook - PUD Trip Generation and Distribution	Date:	September 30, 2016

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This memorandum summarizes the trip generation and distribution analysis performed for the Pilcher Latah Creek Residential Development located within the City of Spokane. The analysis was requested by the *Public Works Department* to help provide a traffic/trip assessment of the project, and to address the effect the change on traffic that the updated site plan will have.

### **Project Description**

Located on an approximately 47.7 acre site, the project entails the creation of a 94 lot planned unit development utilizing only 12.5-acres of the overall site. The site is zoned RA Residential Agricultural, and is located generally south of Interstate 90. The site is more specifically east of US 195 on South Inland Empire Way; across the intersection from South Cheney-Spokane Road. See Figure 1 for Site Vicinity map.

The project will maintain the current South Inland Empire Way access point at US 195 and tie this access to four interior streets. Traffic will enter and exit the development on a continuation of US-195 on/off ramp running north-south and terminating in cul-de-sacs on the north and south end of the site. This analysis was done within present parameters assuming a start date for this development to be within the next year.

### **Trip Generation**

Site generated trip projections were developed for the site based upon the methodologies of the Institute of Transportation Engineers (ITE), *Trip Generation Manual* (9<sup>th</sup> Edition, 2012). The ITE Manual is a nationally recognized and locally accepted method for forecasting trip generation for a range of commercial, retail, and residential land uses. The methodological assumptions are developed based upon the observed traffic conditions of other similar developments located throughout the United States. The layout of the proposed site is shown in attached Figure 2.

Trip generation was determined for the typical weekday, AM peak hour, and PM peak hour based upon ITE Land Use 210 for Single-Family Detached Housing. This defined land use describes the trip generation characteristics as, *"Single-Family detached housing includes all single-family detached homes on individual lots. A typical site surveyed is a suburban subdivision."*

Trip generation was calculated using rates that correlate trip generation to the number of units within the development. A summary of trip generation is provided within Table 1 for the typical weekday, and weekday AM and PM peak hours.

Reference: Deep Pine Overlook - PUD

Table 1

Trip Generation Summary								
Description	Units	Weekday Trips	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
Single-Family Detached Housing (Land Use 210)	94	987	19	58	77	63	37	100
Source: ITE Manual								

As shown, the proposed project is expected to generate a total of 987 trips during the typical weekday. Approximately 77 trips (7.8-percent) are expected during the AM peak hour, and approximately 100 trips (10.1-percent) are expected to occur during the PM peak hour.

### Trip Distribution and Assignment

Due to the location of the site, more specifically a site having at this time one access, all generated traffic in the near future will utilize the new US 195 interchange, with project distributions based on the available movements provided at US 195 interchange. Based on the nature of the single access point, the following summarizes the possible movements at the intersection:

- Northbound US 195:** The majority of local work centers are located to the northeast within the City of Spokane. However, significant commercial and business development is proposed and is being constructed along US 2 and I-90 to the west. This development, in addition to Spokane International Airport, Fairchild Air Force Base, correctional facility and the casino, will split traffic to the west. Overall the majority of trips are assumed to travel to/from the Spokane area (again located to the north and east of the site) via US 195, going to the east on I-90. This route is expected to attract 80-percent of generated trips. It can be reasonably assumed that 75-percent of these trips will be directed to the east along I-90.
- Southbound US 195:** Hatch Road, approximately 2.5-miles to the south, offers access to the south hill area of Spokane. This is a reasonable route to access the businesses/attractions in that part of town. US 195 also serves as the main north-south route through the Palouse region serving Pullman and Lewiston/Clarkston. This route is expected to attract 18-percent of generated trips. It can be reasonably assumed that 80-percent of these trips will turn onto Hatch Road.
- South Cheney-Spokane Road:** This road is the western leg of the subject intersection. The route provides access to businesses, including a grocery store, on the west side of US 195. The road is also a more direct route to Cheney from this part of Spokane. This route is expected to attract 2-percent of generated trips.

Project trips were then assigned to study roadways based upon the distribution patterns identified above. Figure 3 summarizes approach trip assignments for the AM and PM peak hours.



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**Reference: Deep Pine Overlook - PUD**

The WSDOT PM peak hour data for the recent intersection improvements was used to correlate the movements shown in Figure 3.

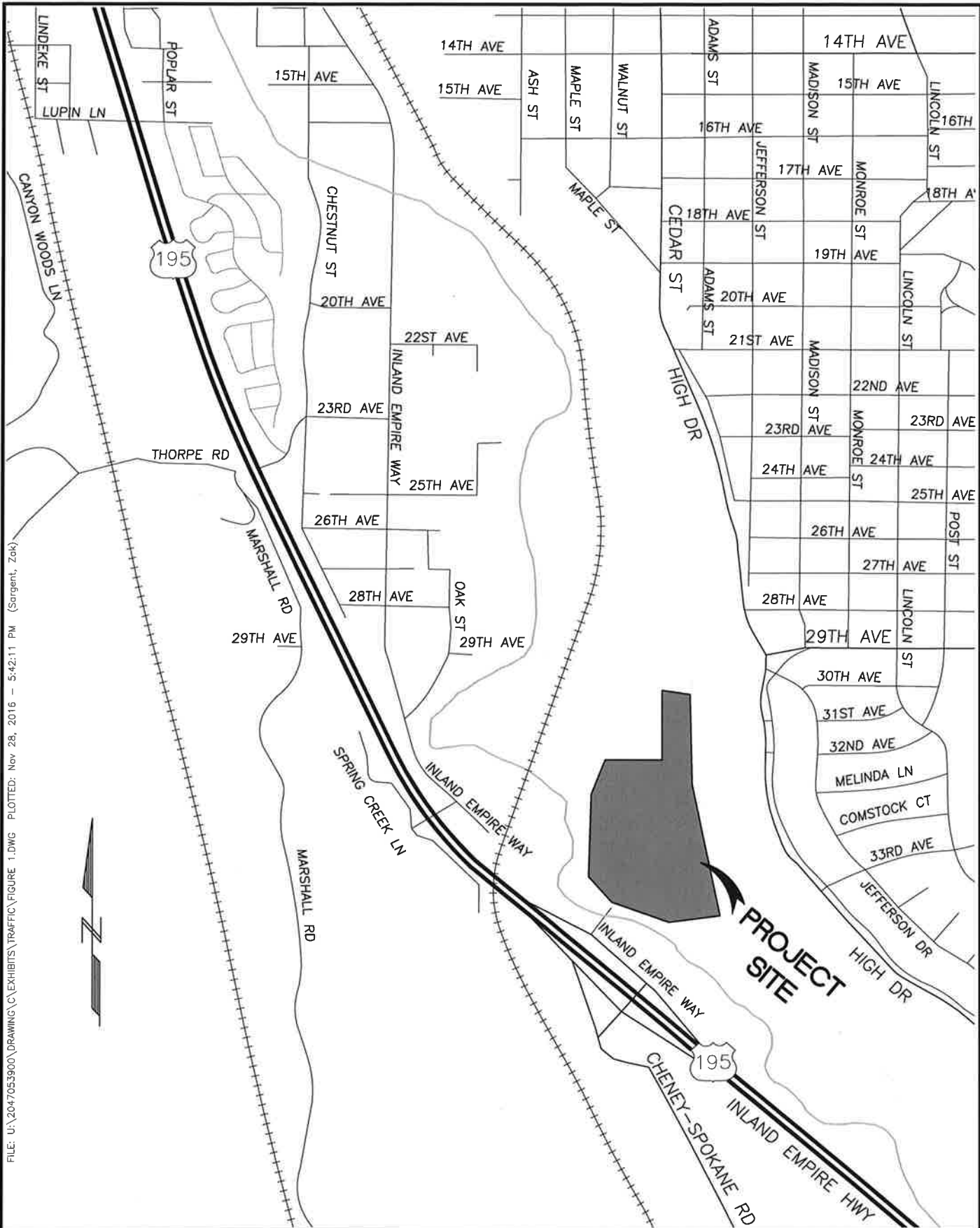
### **Summary and Conclusions**

The project includes the construction of 94 residential units proposed within the City of Spokane. Based on the Institute of Transportation Engineers (ITE), *Trip Generation Manual* (9<sup>th</sup> Edition, 2012) calculations were done to determine the number of anticipated trips generated. Weekday generation was estimated to be 987 trips. Estimated AM and PM trips were found to be 77 trips and 100 trips respectively. Additional information can be provided upon request.

**STANTEC CONSULTING SERVICES INC.**

A handwritten signature in blue ink that reads "Zak Sargent".

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FILE: U:\2047053900\DRAWING\C\EXHIBITS\TRAFFIC\FIGURE 1.DWG PLOTTED: Nov 28, 2016 - 5:42:11 PM (Sorgent, Zak)



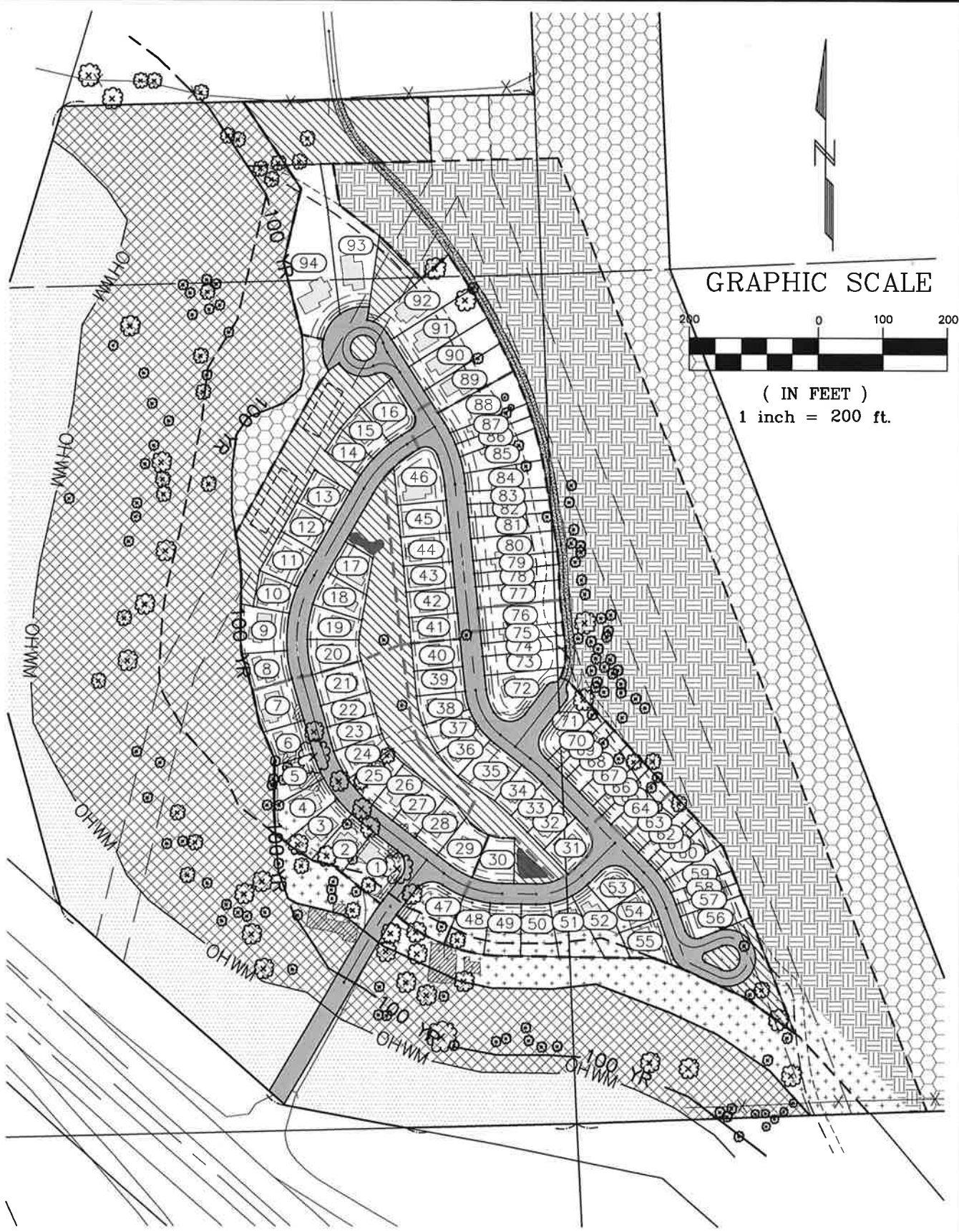
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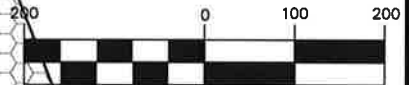
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**Fig1**

FILE: U:\2047053900\DRAWING\C\EXHIBITS\TRAFFIC\FIGURE 2.DWG PLOTTED: Nov 28, 2016 - 5:41:39 PM (Sorgent, Zck)



GRAPHIC SCALE



( IN FEET )  
1 inch = 200 ft.



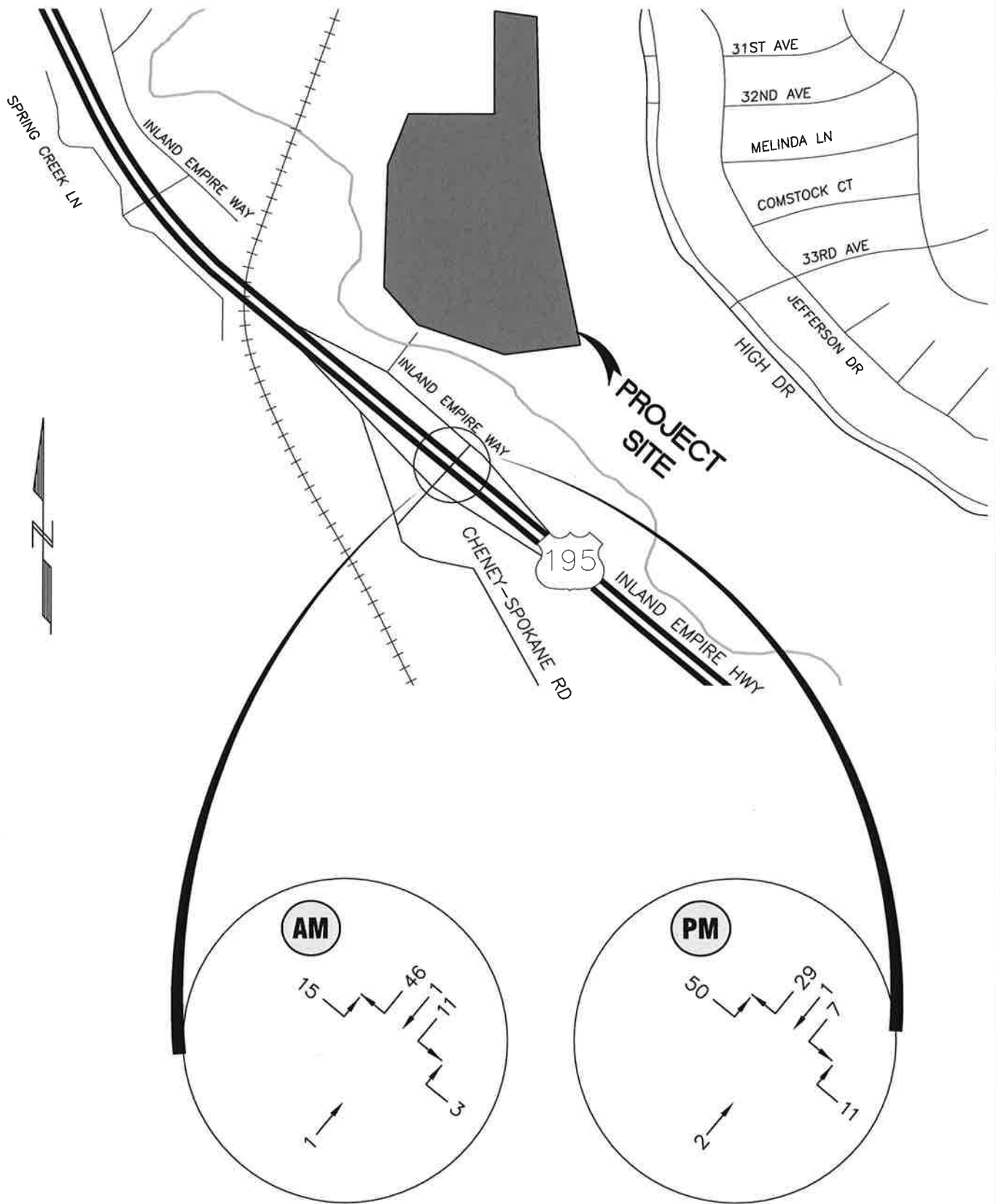
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**Fig2**

FILE: U:\2047053900\DRAWING\C\EXHIBITS\TRAFFIC\FIGURE 3.DWG PLOTTED: Nov 28, 2016 - 5:59:44 PM (Sorgent, zck)



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**Fig3**