

TECHNICAL MEMORANDUM

Project: City Heights
Phase 1

Subject: Transportation Assessment

Date: March 8, 2021

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In November of 2011 the Cle Elum City Council approved a Master Site Plan, an Annexation and Development Agreement, and a Planned Action Ordinance for City Heights. This planned mixed-use development was for up to 962 dwelling units on 358 acres in the City of Cle Elum, generally located north of W 6th Street.¹ Transportation impacts for the full City Heights development were evaluated in the *City Heights Planned Mixed-Use Development Draft and Final Environmental Impact Statements*.²

Application for the first subdivision under that Master Site Plan was submitted in September 2020. It proposes to create 68 residential lots in Phase 1, the location of which is shown on Figure 1. The subdivision also plans to improve Summit View Road, construct several local streets and alleys, construct trails and a park, and implement water, sewer and stormwater improvements, as well as private amenities for the residents of the subdivision.¹

This *Technical Memorandum* details the trip generation for this Phase 1 plat. It also describes how traffic conditions, have changed since the EIS was prepared, including changes in traffic volumes and growth forecasts. Finally, it evaluates the specific mitigation measures that should be implemented for this Phase based on the *City Heights Annexation and Development Agreement*.³

¹ Per City of Cle Elum website, <http://cityofcleelum.com/city-services/planning/city-heights/>, accessed October 4, 2020.

² City of Cle Elum, Draft EIS, April 2010; Final EIS, November 2010.

³ City of Cle Elum Ordinance No. 1355, November 8, 2011.

Figure 1. City Heights Phase 1



Source: GCH and BlueLine, October 2020. Preliminary Site Plan.

1. Trip Generation

1.1. Trips for City Heights Full Build

Trip generation for full build-out of the City Heights Master Plan was estimated in the *City Heights EIS*. That analysis applied trip generation rates from the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 8th Edition*.⁴ The program for the EIS's Preferred Alternative (Alternative 1) assumed about 985 residential units, with a mix of approximately 30 percent attached and 70 percent detached dwelling units. It was also assumed that about 10 percent would be occupied by seasonal residents as second homes or vacation homes per input from the City. The Preferred Alternative also assumed construction of two 10,000-square foot neighborhood commercial centers, for a total of approximately 20,000 square feet (sf) of commercial development. The resulting trip generation for this full-build condition is summarized in Table 1. It was expected to generate an estimated 8,650 vehicle trips per day (4,325 trips in and 4,325 trips out) with about 840 trips in the PM peak hour.

⁴ Institute of Transportation Engineers, 2008.

Table 1. Trip Generation for Full-Build City Heights (Preferred Alternative in EIS)

Land Use Type (ITE Land Use Code)	Size	Daily Trips	AM Peak Hour Trips ^a			PM Peak Hour Trips ^b		
			In	Out	Total	In	Out	Total
Single Family Residential (210)	515 Units	4,930	97	290	387	328	194	522
Multifamily Residential (220)	374 Units	2,520	43	150	193	151	81	232
Recreational Home (260)	100 Units	310	11	2	13	7	24	31
Neighborhood Commercial (814)	20,000 sf	890	9	5	14	24	30	54
Total Trips for Full-Build		8,650	160	447	607	510	329	839

Source: Heffron Transportation, Inc. August 2009. As derived for the City Heights Planned Mixed-Use Development Draft Environmental Impact Statement (Table 3.6-7), April 2010.

^a AM peak hour trips are defined as the highest volumes during a one-hour period between 7:00 AM and 9:00 AM on weekdays.

^b PM peak hour trips are defined as the highest volumes during a one-hour period between 4:00 PM and 6:00 PM on weekdays.

1.2. Trips for Phase 1

Phase 1 proposes 68 residential units. As a worst-case condition for trip generation, all are assumed to be first homes (not vacation homes), and all are assumed to be single-family units even though some could be duplexes. In the decade since the *City Heights EIS* was completed, two new editions of ITE's *Trip Generation Manual* have been published. The current (10th Edition) manual has slightly lower trip rates for a single-family residential use than has been listed in the 8th Edition.⁵ However, to provide a consistent comparison, the previous rates were applied to Phase 1. This phase is estimated to generate 650 vehicle trips per day (325 trips in and 325 trips out) with 51 trips during the AM peak hour and 69 trips during the PM peak hour. The Phase 1 PM peak hour trips reflect about 8% of the full-build trips for all of City Heights.

Table 2. Trip Generation for City Heights Phase 1

Land Use Type (ITE Land Use Code)	Size	Daily Trips	AM Peak Hour Trips ^a			PM Peak Hour Trips ^b		
			In	Out	Total	In	Out	Total
Single Family Residential (210)	68 Units	650	13	38	51	43	36	69

Source: Heffron Transportation, Inc. October 2020. Derived using rates from *Trip Generation Manual*, 8th Edition (Institute of Transportation Engineers, 2008) to be consistent with analysis in the *City Heights Planned Mixed-Use Development Draft Environmental Impact Statement* (Table 3.6-7), April 2010.

^a AM peak hour trips are defined as the highest volumes during a one-hour period between 7:00 AM and 9:00 AM on weekdays.

^b PM peak hour trips are defined as the highest volumes during a one-hour period between 4:00 PM and 6:00 PM on weekdays.

⁵ Trip generation rates for a Single-Family Residence are 0.99 trips/unit in the 10th Edition *Trip Generation Manual* (ITE, September 2017) compared to 1.01 trips/unit in the 8th Edition *Trip Generation Manual* (ITE, 2008).

2. Changes in Traffic Conditions since City Heights EIS

2.1. Traffic Volumes and Forecasts in EIS

The *City Heights EIS* had performed detailed traffic analysis of 13 intersections for the weekday PM peak hour during the summer peak. Traffic volumes for those intersections had originally been compiled for the year 2009 from several sources including new counts, counts from other studies, and traffic volumes from the City of Cle Elum's *Draft Transportation Plan*.⁶ Future traffic volume forecasts were then developed for the Year 2022 without any development on the City Heights site assuming planned growth associated with other development projects. At the time of analysis, development was booming in Cle Elum, and it was estimated that 2,000 residential units (not including City Heights), 644,000 square feet of industrial use, and 220,000 sf of commercial (retail) use would have been constructed between 2009 and 2022. Tables 3.16-2 and 3.16-3 from the EIS itemized the expected background development projects and change in PM peak hour trips.

2.2. Updated Conditions and Future Forecasts

The "Great Recession" between 2008 and 2010 substantially slowed growth compared to what had previously been forecast. New traffic volume forecasts were prepared for the *47° North Draft SEIS Transportation Analysis*⁷ which built upon traffic models developed for Kittitas County and the City of Cle Elum.⁸ To show how growth has changed since the *City Heights EIS* was prepared, PM peak hour traffic volumes for the W 2nd Street (State Route 903)/N Stafford Avenue intersection were compiled from both documents. This intersection is the primary access connection to and from the state highway for the Phase 1 City Heights plat. The total traffic entering that intersection (sum of all movements) is shown on Figure 2.

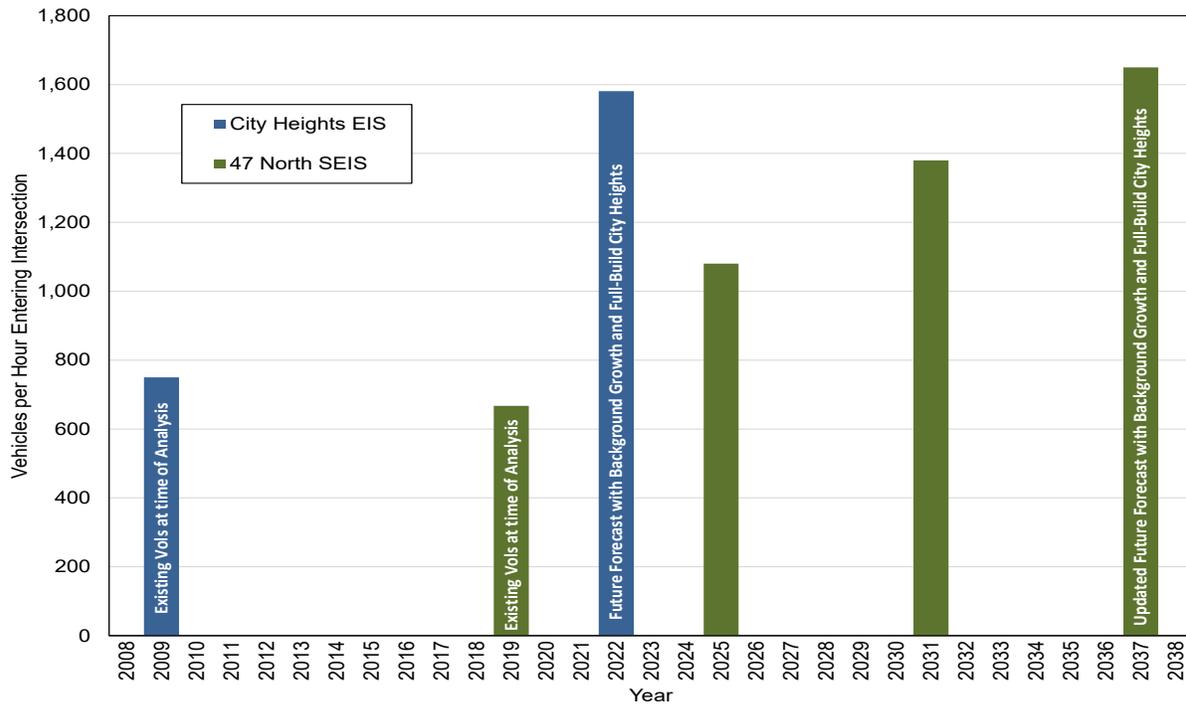
The traffic volume comparison shows that the Year 2019 traffic volumes (reflecting pre-COVID-19 conditions) were slightly lower at the W 2nd Street/N Stafford Avenue intersection than they were in 2009. The *City Heights EIS* had forecast that traffic entering this intersection would more than double by the year 2022. The new forecasts from the 47° North project now show that the anticipated traffic volumes will not meet those levels until the year 2037. Those growth forecasts appear to include nearly the full-build condition for City Heights.

⁶ City of Cle Elum, May 2009.

⁷ Transportation Engineering Northwest, September 2020.

⁸ Fehr & Peers, July 2, 2020.

**Figure 2. Comparison of PM Peak Hour Traffic Volume Forecasts
Total Traffic Entering W 2nd Street / N Stafford Avenue Intersection**



Sources: Traffic volumes in blue are from the City Heights EIS (City of Cle Elum, Draft EIS, April 2010). Traffic volumes in green are from the 47° North Draft SEIS Transportation Analysis (TENW, September 2020). Both reflect the weekday PM peak hour conditions during the summer peak.

The 47° North Draft SEIS assessed intersection operations at many intersections, including the intersection at W 2nd Street / N Stafford Avenue. This intersection, which is controlled by stop signs on the side streets currently operates at LOS C (16.6 seconds of delay) during the weekday PM peak hour. This reflects the peak summer season. By the year 2025, weekday PM peak hour operations are expected to degrade to LOS E (46.7 seconds of day) without the 47° North project and to the LOS F (> 100 seconds) with the 47° North project. The degradation in intersection operations is primary due to a substantial increase in the northbound left turn movement; a movement that would not be affected by the City Heights Phase 1 project. The original Development Agreement for the 47° North project (known as the “Bullfrog UGA”)⁹ had included signalizing the W 2nd Street / N Stafford Avenue intersection when warranted. The SEIS now recommends that the 47° North project pay a proportionate share of that signal, estimated at about a 20% share.

City Heights Phase 1 would have a relatively small impact to the intersection at W 2nd Street/N Stafford Avenue, and would add traffic to the lowest-volume movements at the intersection. It is not expected to degrade intersection operations or trigger traffic signal warrants. As described in the next section, the City Heights Development Agreement included a \$750 per unit traffic impact fee instead of proportionate share values of individual intersection improvements. The Phase 1 fee would be \$51,000, which the City of Cle Elum could allocate as it deems necessary.

⁹ October 30, 2002.

3. City Heights Mitigation

Specific mitigation requirements for City Heights were detailed in the *City Heights Annexation and Development Agreement, Appendix I – Transportation Standards and Improvements*.¹⁰ These are summarized in Table 3 below as a mechanism to track those requirements and applicability to the Phase 1 project.

4. Summary

Transportation impacts for the full City Heights development were evaluated in the *City Heights Planned Mixed-Use Development Draft and Final Environmental Impact Statements*, and the transportation-related mitigation was then detailed in the *City Heights Annexation and Development Agreement*.

Although nearly a decade has passed since the *City Heights EIS* was completed, traffic volumes have changed very little, and at key locations have decreased. Future traffic volume forecasts in that EIS are not expected to be reached until about the year 2037, 15 years beyond when the EIS anticipated the growth to occur.

Phase 1 is planned to have 68 residential units. It is estimated to generate 650 vehicle trips per day (325 trips in and 325 trips out) with 51 trips during the AM peak hour and 69 trips during the PM peak hour. The Phase 1 PM peak hour trips reflect about 8% of the full-build trips for all of City Heights.

Phase 1 would implement many of the mitigation measures detailed in the Development Agreement, including front-loading improvements to N Stafford Avenue to upgrade the corner and pavement near W 4th Street that will serve this phase and future phases. It will also pay a Development Mitigation Fee of \$51,000. The measures would fully mitigate the impacts of Phase 1.

MCH/mmb

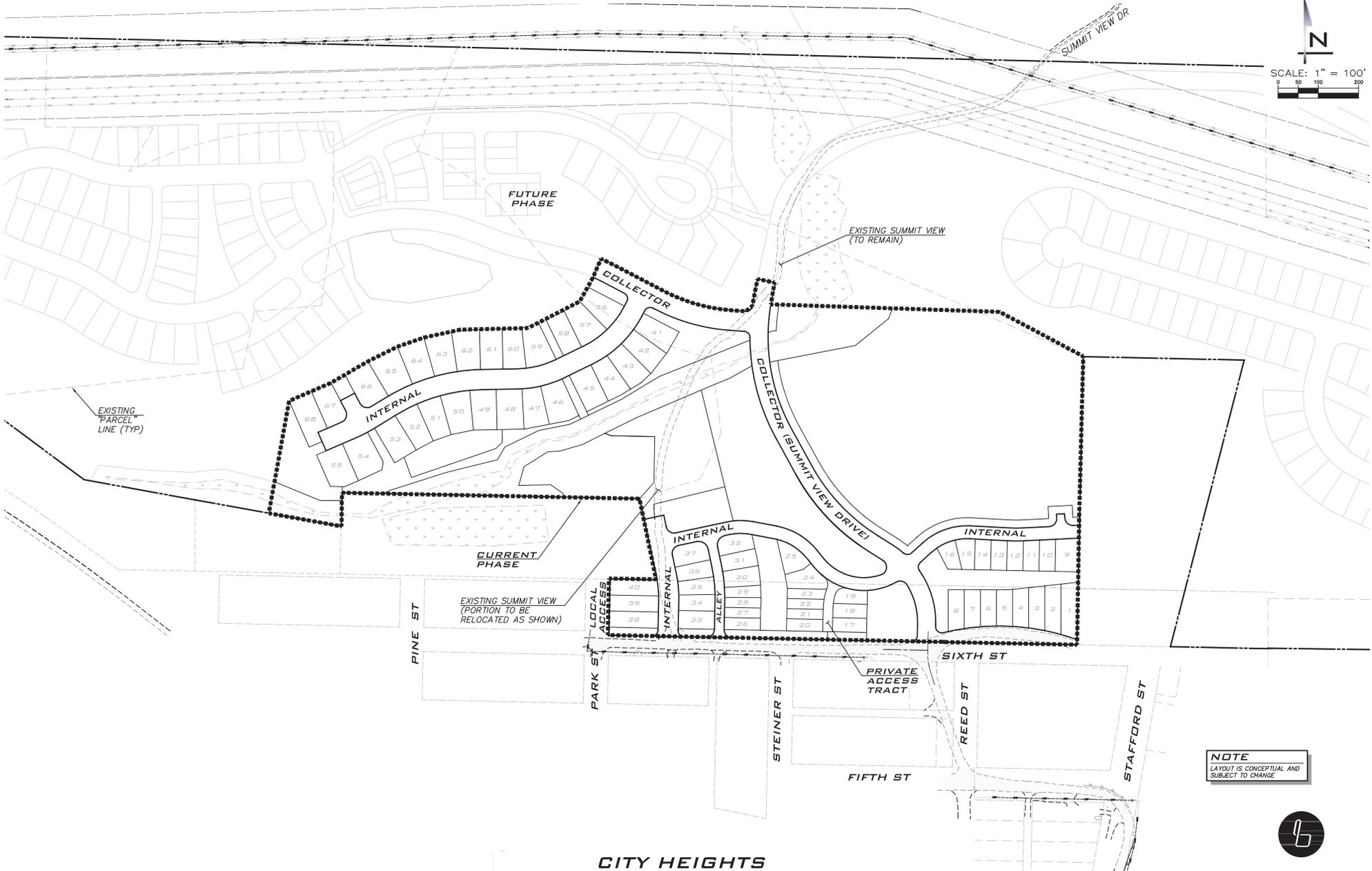
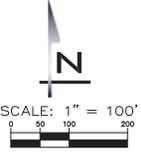
Attachments: Table 3 - City Heights Transportation Mitigation Requirements
Exhibit A – Internal and Collector Roads
Exhibit B – Conceptual Options for Stafford Street Improvements

¹⁰ City of Cle Elum Ordinance No. 1355, November 8, 2011.

Table 3. City Heights Transportation Mitigation Requirements

Summary of Improvement Measures	Previously Completed	Applicable to Proposed Plat?	Description of Improvement to be Made with Proposed Project
1. Road Construction – Dedicate Internal and Collector Roads to City.	No	No	Dedication of right-of-way will occur in later phases or when full project complete.
2. Road Standards			
2.1 - Internal Roads	Ongoing	Yes	Project will construct internal roads as shown on Exhibit A (attached).
2.2 - Collector Roads	Ongoing	Yes	Project will construct Collector Roads as shown on Exhibit A (attached). This includes a portion of Summit View Drive.
3. Road Maintenance and Snowplowing	No	Yes	“Ridge Entities” will maintain and plow roads until they are dedicated to the City.
4. N Stafford Avenue - Modify the corner of N Stafford Avenue, just north of W 4 th Street, improving the guard rail and resurfacing the pavement.	No	Yes	Project will construct new roadway to modify this corner condition. Two conceptual options are being discussed with the City and shown on Exhibit B (attached).
5. N Columbia Avenue – City to negotiate Interlocal Agreement with Kittitas County to maintain and snowplow the portion of that road that lies within the County’s jurisdiction.	No	Not Applicable	Project will not require access from N Columbia Avenue.
6. Western Access to/from SR 903 – With assistance from City, negotiate a “common access intersection” on SR 903 that would serve Suncadia/Bullfrog UGA on the west side of SR 903 and City Heights on the east side of SR 903.	No	Not Applicable	Plat will not require west access.
7. Intersection of SR 903 / SR 970 – Perform traffic engineering studies to monitor need for a left-turn lane from SR 970 northbound to westbound SR 903. Monitoring to be performed up to four times upon issuance of building permits for ERU limits of 100, 300, 500 and 700.	No	Not Applicable	Cumulative development is below threshold of 100 ERUs.
8. Haul Routes – Prior to commencement of any construction activity, Ridge Entities shall propose the access route for construction traffic.	Ongoing	Yes	Haul plan to be prepared.
9. Traffic Development Mitigation Fees – Pay \$750 per ERU to offset impacts to City roads.	Ongoing	Yes	Impact fee to be paid in the amount of \$51,000 for 68 ERUs.

Source: Summary of improvements required per *City Heights Annexation and Development Agreement, Appendix I – Transportation Standards and Improvements*, November 8, 2011.



**CITY HEIGHTS
PHASE 1 CONCEPTUAL ROAD LAYOUT
OCTOBER 20, 2020**

NOTE
LAYOUT IS CONCEPTUAL AND
SUBJECT TO CHANGE



BLUELINE

EXHIBIT A

Oct 20, 2020 - 4:20pm - User: calicomb
E:\Projects\19349 (Uwg)\Prain\Site - West\Unbln\Traffic Report Exhibit.dwg

SCALE:
 AS NOTED
 PROJECT MANAGER:
BRETT K. PUDISTS, PE
 PROJECT ENGINEER:
MICHELLE ROBERGE
 DESIGNER:
CHRIS WSCOMB
 ISSUE DATE:
 10/13/2020

REVISIONS

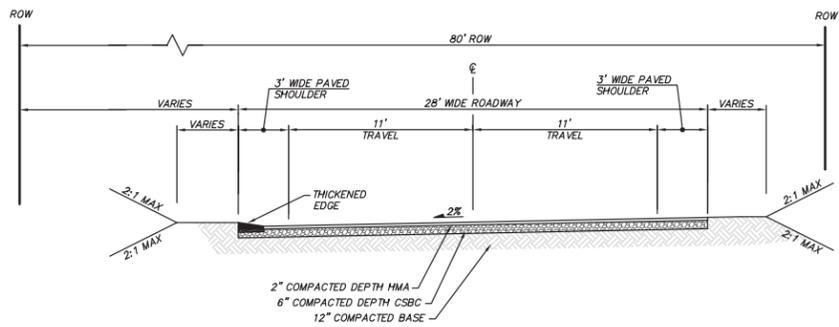
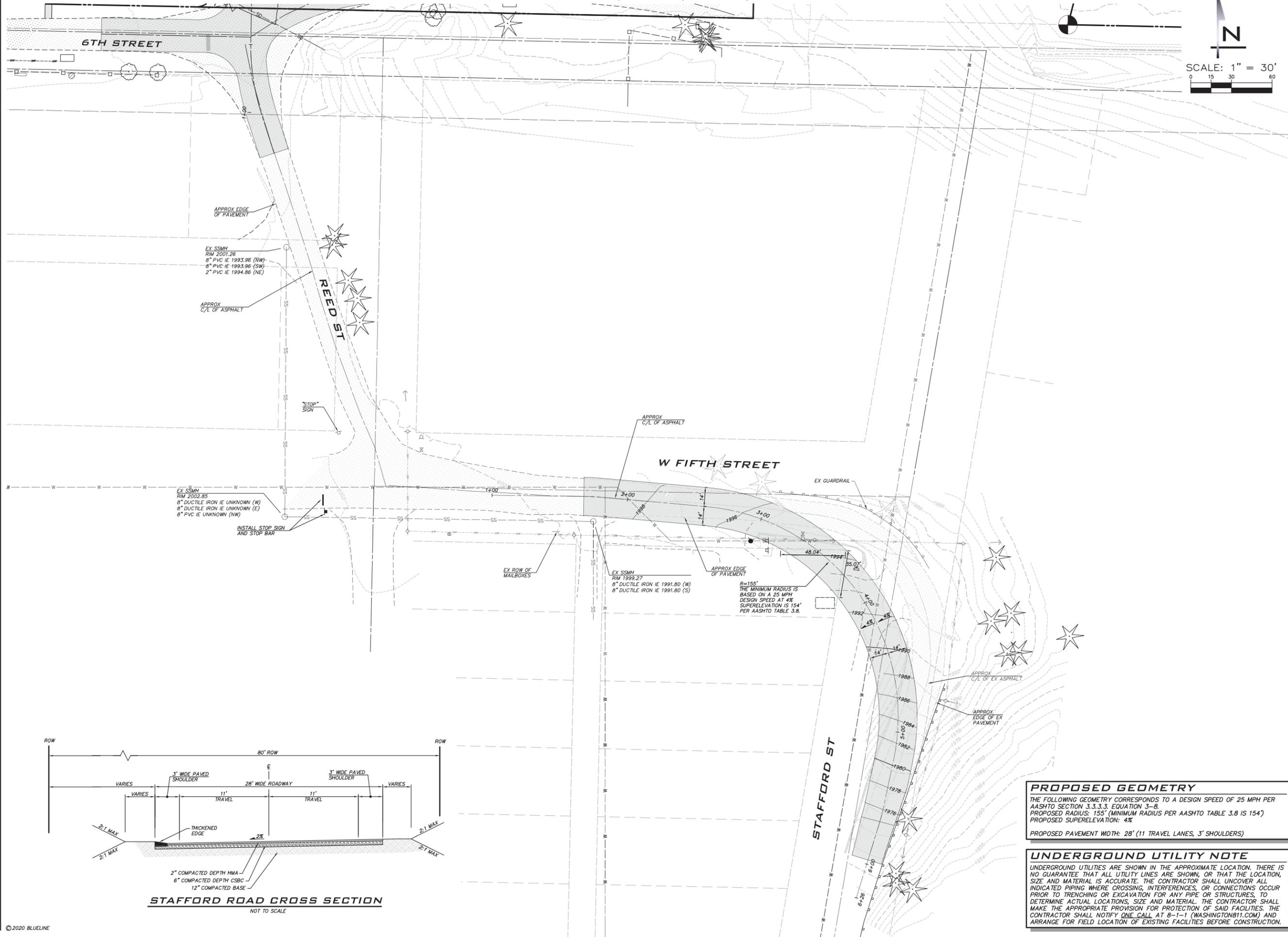
NO. DATE BY

ROAD & ALIGNMENT PLAN
CITY HEIGHTS
 CONCEPTUAL DESIGN:
 STAFFORD ALTERNATIVE 1
 CITY OF GLE ELUM WASHINGTON

DRAFT COPY

JOB NUMBER:
19-349
 SHEET NAME:
RA-01

SHT **6** OF **9**



PROPOSED GEOMETRY
 THE FOLLOWING GEOMETRY CORRESPONDS TO A DESIGN SPEED OF 25 MPH PER AASHTO SECTION 3.3.3.3, EQUATION 3-8.
 PROPOSED RADIUS: 155' (MINIMUM RADIUS PER AASHTO TABLE 3.8 IS 154')
 PROPOSED SUPERELEVATION: 4%
 PROPOSED PAVEMENT WIDTH: 28' (11 TRAVEL LANES, 3' SHOULDERS)

UNDERGROUND UTILITY NOTE
 UNDERGROUND UTILITIES ARE SHOWN IN THE APPROXIMATE LOCATION. THERE IS NO GUARANTEE THAT ALL UTILITY LINES ARE SHOWN, OR THAT THE LOCATION, SIZE AND MATERIAL IS ACCURATE. THE CONTRACTOR SHALL UNCOVER ALL INDICATED PIPING WHERE CROSSING, INTERFERENCES, OR CONNECTIONS OCCUR PRIOR TO TRENCHING OR EXCAVATION FOR ANY PIPE OR STRUCTURES, TO DETERMINE ACTUAL LOCATIONS, SIZE AND MATERIAL. THE CONTRACTOR SHALL MAKE THE APPROPRIATE PROVISION FOR PROTECTION OF SAID FACILITIES. THE CONTRACTOR SHALL NOTIFY ONE CALL AT 8-1-1 (WASHINGTON811.COM) AND ARRANGE FOR FIELD LOCATION OF EXISTING FACILITIES BEFORE CONSTRUCTION.

