

**Sheridan City Planning Commission
Meeting Agenda
July 25, 2022
7:00 PM, City Council Chamber, City Hall**

1. Call to Order and Roll Call of Members

2. Approval of Agenda as Presented

Motion by:

Second:

Vote:

3. Review, correction, and approval of minutes of the July 11, 2022 meeting.

Motion by:

Second:

Vote:

Old Business

New Business

4. Consideration of PL-21-35; Bender Subdivision preliminary plat. The applicant, Hartland Enterprises, LLC and Scott Berber and Ayme Ahrens, are requesting to subdivide 1.71 acres of unplatted land into 7 lots and 4 outlets, zoned R-3 Residence District. Located at 1700 Bender Ln. PIN 56843530001933.

Motion by:

Second:

Vote:

5. Comments from commissioners and staff.

6. Adjourn



MEMO

TO: Planning Commission
FROM: Wade Sanner, Community Development Director
RE: Consideration of PL-21-35; Bender Subdivision preliminary plat. The applicant, Hartland Enterprises, LLC and Scott Berber and Ayme Ahrens, are requesting to subdivide 1.71 acres of unplatted land into 7 lots and 4 outlets, zoned R-3 Residence District. Located at 1700 Bender Ln. PIN 56843530001933.

Staff Recommendation

Staff recommends the Planning Commission approve PL-21-35, the Bender Subdivision preliminary plat. The applicant, Hartland Enterprises, LLC and Scott Berber and Ayme Ahrens, is requesting to subdivide 1.71 acres of unplatted land into 7 lots and 4 outlets, zoned R-3 Residence District, located at 1700 Bender Lane (PIN 56843530001933).

Findings of Fact

Prior to approving the final plat, the Planning Commission will need to make the following findings per Sheridan City Code Appendix B §202, staff offers the following comments on the required findings:

The City shall not approve any proposed subdivision of land which, by itself, or as a part of a larger tract, is contiguous to or completely surrounded by the boundaries of the City, unless the application is accompanied by a properly-acknowledged petition for annexation to the City.

This property falls completely within the City limits, so this condition does not apply.

The City shall not approve any proposed subdivision of land which is within one mile of the corporate limits of Sheridan but not, at the time of submittal, eligible for annexation, unless the application is accompanied by a properly-acknowledged agreement not to contest future annexation proceedings.

Again, not applicable in this case, the property is within the city limits.

Every plat shall conform to the Zoning Ordinance currently adopted at the time of final plat approval.

The proposed subdivision conforms to the Zoning Ordinance.

All new subdivision developments within the Airport Influence Area within the city limits of the City of Sheridan shall grant an Avigation Easement to the Sheridan County Airport.

This proposed subdivision is outside the Airport influence area.

No subdivision shall be approved within the corporate limits of the City of Sheridan, or one mile thereof, unless City Public Works staff concludes that an adequate long-term water supply exists to support the

proposed use and density of the subdivision In accordance with City adopted policy. City elected officials acting as Council representatives on other boards or committees that review development shall likewise consider long-range water supply in making any determination.

Water and sewer lines exist in the Turner Lane and Sheridan Avenue right-of-way. The applicant will extend the water and sewer lines up Bender Lane to service the properties.

Staff has no further comments at this time.

Background

The applicants, Hartland Enterprises, LLC and Scott Gerber and Ayme Ahrens, are requesting the subdivision of 1.71 acres of unplatted land into 10 lots on the property located at 1700 Bender Lane (PIN 56843530001933).

The property is located west of Sheridan Avenue, just south of Little Goose Creek. The property was recently rezoned from M-1 to R-3. The surrounding properties are large lot single-family homes zoned M-1. The subject property has not been platted.

The applicant is proposing a 7 lot subdivision, with 4 outlots. The average lot size is 6,782 square feet.

Lot #	Size (Sq. Ft.)	Size (Acres)	Lot #	Size (Sq. Ft.)	Size (Acres)
1	6,687	0.15	Outlot 1	11,536	0.26
2	5,768	0.13	Outlot 2	7,859	0.18
3	6,468	0.15	Outlot 3	3,564	0.08
4	6,743	0.15	Outlot 4	9,152	0.21
5	5,894	0.14			
6	5,129	0.12			
7	5,806	0.13			

OUTLOTS

Outlot 1 is proposed to be the interior private drive, with Outlot 4 being a private portion of Bender Lane. Outlots 2 and 3 will be designated as open space, with a portion of the Little Goose Creek floodway.

SETBACK

Per Appendix A, Section 6(C) of the Sheridan Municipal Code, the following setbacks apply:

1. Front yard. The minimum front yard depth shall be fifteen (15) feet. In the case of a corner lot, the primary front yard shall be the yard in which the principal entrance to the building faces as established per the building permit, and the depth shall be at least fifteen (15) feet.
2. Rear yard. The minimum rear yard depth shall be fifteen (15) feet.
3. Side yard. If the building height is not greater than thirty-five (35) feet, the minimum width of the side yard on each side of the building shall be five (5) feet, except in the case of a common or party wall shared between two single-family attached units. For each additional foot of height where the building exceeds thirty-five (35) feet, each side yard shall be increased one (1) foot in width.

UTILITIES

Utilities are located in the Turner Lane right-of-way to the south, and in the Sheridan Avenue right-of-way to the east. The applicant is proposing to extend utilities up Bender Lane to service the properties from the east. Water and sewer are proposed to be extended into the Outlot 1 right-of-way.

EASEMENTS

The applicant is proposing the following easements: A 10-foot utility easement along the western portions of Lots 1-3. A 2-foot access and utility easement on the southern portion of Lots 1 and 7, on the eastern portions of Lots 1-3, and on the western portion of Lots 5-7. A 5-foot utility easement along the southern portion of Lot 4, and along the northern portion of Lot 5. A 10-foot by 10-foot (100 square foot) fire hydrant easement on the southeast corner of Lot 7.

STORMWATER DETENTION

The applicant is proposing a stormwater detention pond on the southeast corner of Outlot 2 to accommodate stormwater runoff.

STREETS

The applicant is proposing to access the property on Bender Lane, via Sheridan Avenue. Bender Lane runs in a north/south direction. Bender Lane is proposed to terminate to the north approximately 87 feet from Little Goose Creek. Approximately 200 feet north of the bend in Turner Lane and Bender Lane, Private Road is proposed to intersect and provide access to the site and the property to the west. A second private road intersects to provide north/south access through the site.

RIGHT-OF-WAY

The property is accessed via Bender Lane via Sheridan Avenue and Turner Lane. The applicant is proposing a 30-foot T-shaped right-of-way that accesses the southern and central portion of the property. The southern private road will provide access to the property to the west. In addition to the paved road network, the applicant is also constructing the curb, gutter and sidewalk along Bender Lane.

SLOPE

The property has a 10-foot grade change with a 5% slope. The most significant grade change is adjacent to Little Goose Creek, which constitutes the creek bank. Overall the property is relatively flat with a gentle slope to the north with approximately a 2-4 foot grade change.

OPEN SPACE

The applicant proposing that the northern portion of the property be designated as open space. Per Appendix B, Section 507 of the Sheridan Municipal Code, the open space required for the Bender Subdivision will be 17% of the overall land. 17% of the total open space required for this subdivision of 1.71 acres (74,488 square feet) would be 12,663 square feet. The applicant is proposing the open space requirements be met by Outlot, 2 Outlot 3 and a major portion of Lot 4. The total of Outlot 2, Outlot 3, and Lot 4 would exceed the open space requirements at 18,196 square feet.

NOTICES

In addition to posting of the property and noticing in the newspaper, staff sent 10 notices to the nearest neighbors. Staff received 3 inquiries by phone calls.

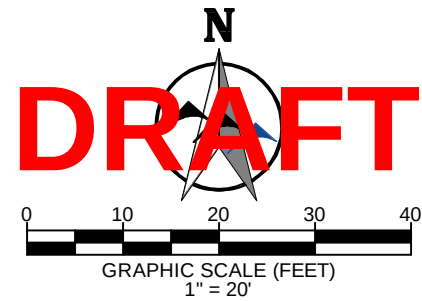
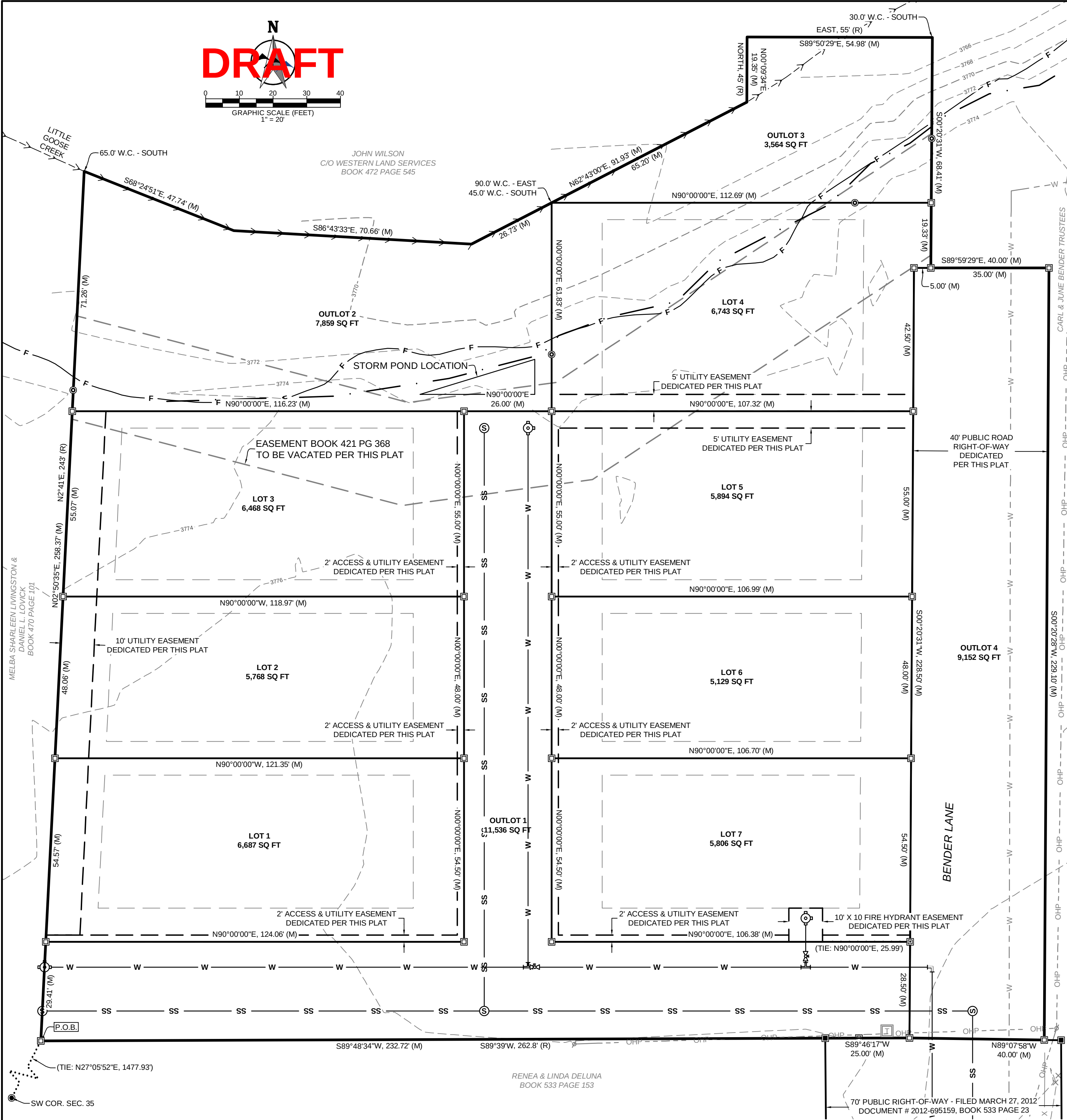
Attachments

preliminary plat

aerial

Parking Capacity

Preliminary Traffic Plan



- LEGEND**
- Recovered Aluminum Cap
 - Brass Cap
 - Set W.C. = Witness Corner
 - Set Rebar with Aluminum Cap PLS #13346
 - Measured Distance
 - Record Distance per Certificate of Title
 - Subdivision Boundary
 - Lot Line
 - Proposed Easement
 - Existing Easement
 - Setback Boundary
 - Approximate Creek Centerline
 - Special Flood Hazard Area
 - Number 56033C0762E Panel 0762E
 - Effective Date 1/16/2014
 - Approximate Little Goose Creek South Bank
 - Proposed Water Pipe
 - Proposed Sanitary Pipe
 - Proposed Sanitary Manhole
 - Proposed Water Valve
 - Existing Overhead Power
 - Existing Water Pipe
- REGULATORY NOTES**
- BUILDING SETBACK ARE AS FOLLOWS
-FRONT YARD SETBACK = 15'
-REAR YARD SETBACK = 15'
-SIDE YARD SETBACK = 5'
 - MAXIMUM BUILDING HEIGHT 35'
 - PUBLIC OPEN SPACE REQUIREMENTS OF 17% OF SUBDIVISION AREA FOR R-3 RESIDENTIAL DISTRICT IS SHOWN ABOVE. MINIMUM AREA = 10,368 SQ FT. AREA DEDICATED = 11,423 SQ FT. PROPOSED DEVELOPMENT AND MAINTENANCE OF ANY PRIVATE OPEN SPACES WILL BE REGULATED BY A HOA AGREEMENT.
 - ALL ADJACENT PROPERTIES ARE ZONED M-1 INDUSTRIAL DISTRICT.
 - OUTLOT 1 IS A PRIVATE ROAD THAT GRANTS ACCESS TO PARCELS CONTAINED WITHIN SUBDIVISION AND PARCEL DESCRIBED IN BOOK 470 PAGE 101. OUTLOT 1 IS ALSO UTILITY AND DRAINAGE EASEMENT AND SHALL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION (HOA).
 - OUTLOTS 2 & 3 WILL BE DESIGNATED AS OPEN SPACE AND WILL BE OWNED AND MAINTAINED BY THE HOMEOWNERS ASSOCIATION (HOA).
 - TOTAL PARKING SPACES = 26, 6 OF WHICH ARE ADA.
 - PREVIOUSLY UNPLATTED LANDS.
- SURVEYORS NOTES**
- TOTAL ACREAGE OF SUBDIVISION = 1.71 ACRES.
TOTAL NUMBER OF LOTS = 11
AREAS OF LOTS = 1.71 ACRES

BENDER SUBDIVISION

WITHIN THE NW1/4SW1/4 OF SECTION 35, T56N, R84W, 6TH P.M.
COUNTY OF SHERIDAN, WYOMING
ZONE: R-3

PREPARED FOR OWNERS: HARTLAND ENTERPRISES, LLC,
SCOTT GERBER, AND Ayme ARHENS
DATE SURVEYED: MAY 2021
PREPARED BY: WWC ENGINEERING
DATE OF PREPARATION: JUNE 2022

LEGAL DESCRIPTION AND PROPERTY OWNERS CERTIFICATE OF DEDICATION

Know all men by these presents that the undersigned Hartland Enterprises, LLC, Scott Gerber, Ayme Arhens, and Carl R. Bender as trustee of Bender Living Trust Dated October 25, 2004, being the owner, proprietor or parties of interest in the land shown on this plat, do hereby certify:
That the foregoing plat designated as Bender is located in the NW1/4SW1/4 of Section 35, Township 56 North, Range 84 West of the 6th Principal Meridian, Sheridan County Wyoming, more particularly described as follows:
A tract of land in the NW1/4SW1/4 of Section 35, Township 56 North, Range 84 West of the 6th Principal Meridian, Sheridan County Wyoming, more particularly described as follows:
Beginning at a point which bears N27°05'52"E, 1477.93 feet from the southwest corner of said Section 35.
Thence N02°50'35"E, 258.37 feet; thence S88°24'51"E, 47.74 feet; thence S88°43'33"E, 70.66 feet; thence N62°43'00"E, 91.93 feet; thence N00°19'34"E, 19.35 feet; thence S89°50'25"W, 54.98 feet; thence S00°20'31"W, 68.43 feet; thence S89°52'27"E, 35.00 feet; thence S00°20'25"W, 239.10 feet; thence N89°10'58"W, 40.00 feet; thence S89°46'17"W, 25.00 feet; thence S89°46'17"E, 250.71 feet to the point of beginning.
Containing 1.71 acres more or less.

That this subdivision, as it is described and as it appears on this plat, is made with the free consent and in accordance with the desires of the undersigned owner(s) and proprietor(s); and that this is a correct plat of the area as it is divided into lots, blocks, streets and easements, and that the undersigned owner(s) of the land shown and described on this plat does (do) hereby dedicate to the City of Sheridan and its licensees for public use for the indicated purposes, all streets, alleys, easements and other public lands within the boundary lines of the plat, as indicated, and not already otherwise dedicated for public use.

Utility easements, as designated on this plat, are hereby dedicated to the City of Sheridan and its licensees for public use for the purpose of installing, repairing, reinstalling, replacing and maintaining sewers, water lines, gas lines, electric lines, telephone lines, cable TV lines and other forms and types of public utilities now or hereafter generally utilized by the public.

Drainage easements, as designated on this plat, are hereby dedicated to the City of Sheridan and its licensees for public use, to accommodate the flow or storage of storm waters and shall be kept free of all structures or other impediments not related to drainage.

CERTIFICATE OF CITY OF SHERIDAN PLANNING COMMISSION

Reviewed by this City of Sheridan Planning Commissioners this _____ day of _____, 20____.

Attest:

Vice-Chairman

Chairman

CERTIFICATE OF CITY COUNCIL OF SHERIDAN

Approved by the City Council of the City of Sheridan, Wyoming, this _____ day of _____, 20____.

Attest:

City Clerk

Mayor

CERTIFICATE OF SHERIDAN COUNTY CLERK

STATE OF WYOMING)
COUNTY OF SHERIDAN) SS

This plat was filed for record in the Office of the Clerk and Recorder at _____ o'clock this _____ day of _____, 20____, and is duly recorded in Book _____ Page No. _____ (or as Plat No. _____)

County Clerk

HOMESTEAD EXEMPTION

All rights under and by virtue of the homestead exemption laws of the State of Wyoming are hereby waived and released.

Executed this _____ day of _____, 20____.

by _____

CERTIFICATE OF SURVEYOR

I, Paul A. Heinz, do hereby certify that I am a Registered Land Surveyor, licensed under the laws of the State of Wyoming, that this plat is a true, correct and complete plat of Bender Subdivision, as laid out, platted, dedicated and shown hereon, that this plat was made from an accurate survey of said property conducted by me or under my supervision and correctly shows the location and dimensions of all lots, easements and streets of said subdivision in compliance with City of Sheridan regulations governing the subdivision of land.

Land Surveyor _____ No. _____

STATE OF WYOMING)

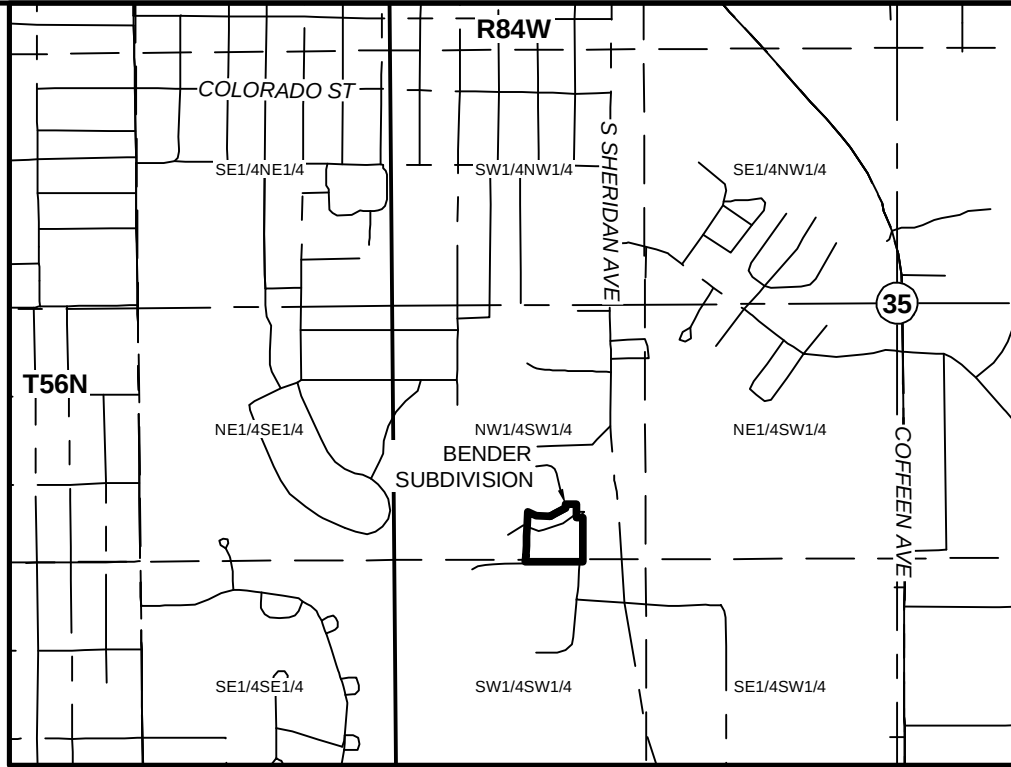
COUNTY OF NATRONA) SS

The foregoing instrument was acknowledged before me on this _____ day of _____, 20____.

Witness my hand and official seal.

Notary Public

My commission expires: _____



VICINITY MAP
1"=1000'

Executed this _____ day of _____, 20____, by:

Hartland Enterprises, LLC, Owner

STATE OF WYOMING)

COUNTY OF SHERIDAN) SS

The foregoing instrument was acknowledged before me on this _____ day of _____, 20____, by _____
Witness my hand and official seal.

My commission expires: _____ Notary Public

Executed this _____ day of _____, 20____, by:

Scott Gerber, Owner

STATE OF WYOMING)

COUNTY OF SHERIDAN) SS

The foregoing instrument was acknowledged before me on this _____ day of _____, 20____, by _____
Witness my hand and official seal.

My commission expires: _____ Notary Public

Executed this _____ day of _____, 20____, by:

Ayme Arhens, Owner

STATE OF WYOMING)

COUNTY OF SHERIDAN) SS

The foregoing instrument was acknowledged before me on this _____ day of _____, 20____, by _____
Witness my hand and official seal.

My commission expires: _____ Notary Public

Executed this _____ day of _____, 20____, by:

Melba Sharleen Livingston

STATE OF WYOMING)

COUNTY OF SHERIDAN) SS

The foregoing instrument was acknowledged before me on this _____ day of _____, 20____, by _____
Witness my hand and official seal.

My commission expires: _____ Notary Public

Executed this _____ day of _____, 20____, by:

Carl R. Bender as trustee of Bender Living Trust Dated October 25, 2004

STATE OF WYOMING)

COUNTY OF SHERIDAN) SS

The foregoing instrument was acknowledged before me on this _____ day of _____, 20____, by _____
Witness my hand and official seal.

My commission expires: _____ Notary Public

PRELIMINARY PLAT

BASIS OF BEARING
WYOMING STATE PLANE COORDINATE SYSTEM
EAST CENTRAL ZONE
DISTANCES ARE U.S. SURVEY FEET, GRID

VERTICAL DATUM
NAVD83 GEOID 18

BENDER SUBDIVISION

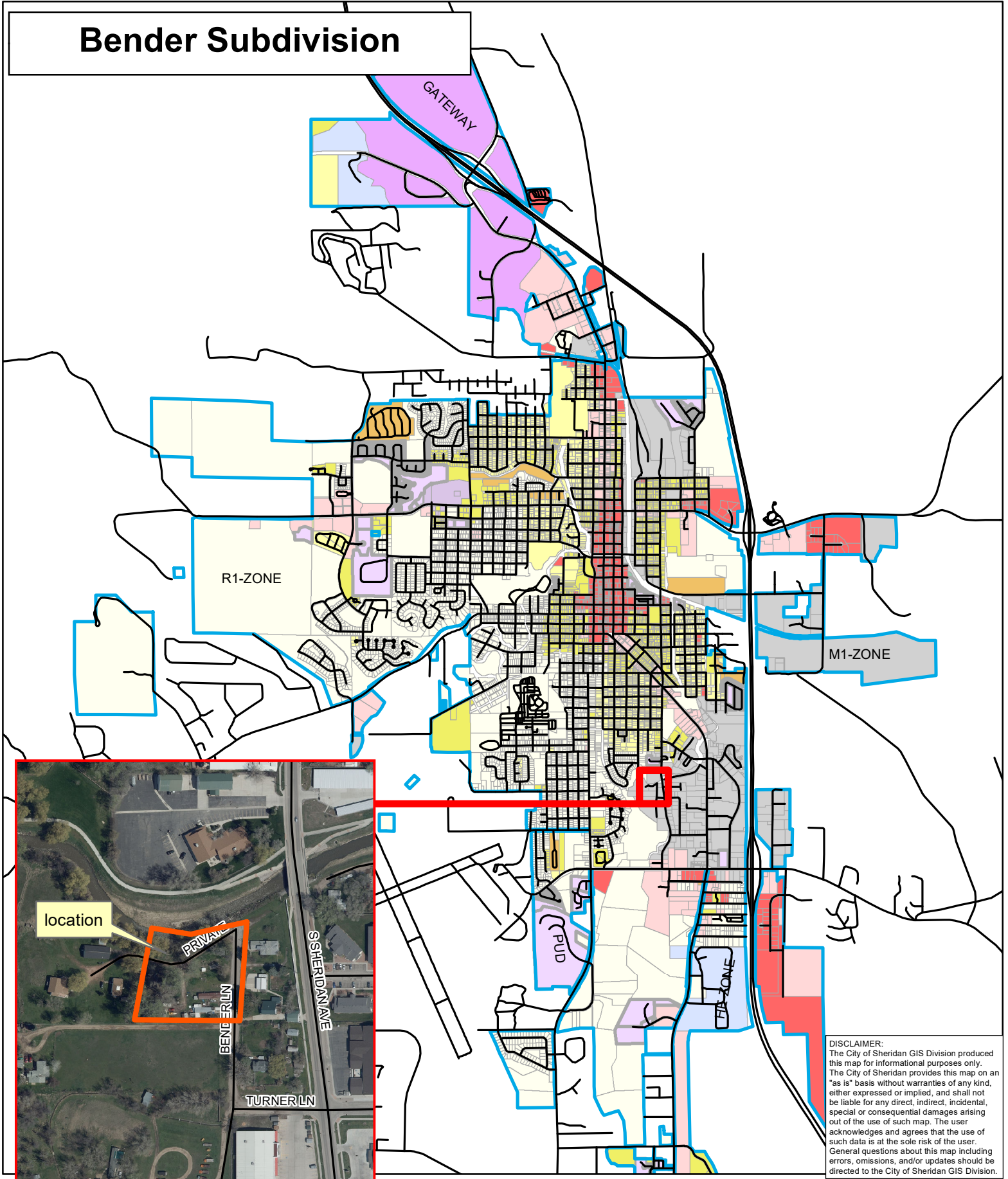
PREPARED FOR:
HARTLAND ENTERPRISES, LLC
PO BOX 95
UPTON, WY 82730

SCOTT GERBER AND Ayme ARHENS
820 SOUTH THURMOND ST
SHERIDAN, WY 82801

PREPARED BY:
WWC ENGINEERING
1849 TERRA AVENUE
SHERIDAN, WY 82801
(307) 672-0761
www.wwcengineering.com

NO.	REVISION	BY	DATE	DESIGNED BY:
				CIG
				JPC
				6/10/2022
				SHEET
				1 of 1

Bender Subdivision



DISCLAIMER:
The City of Sheridan GIS Division produced this map for informational purposes only. The City of Sheridan provides this map on an "as is" basis without warranties of any kind, either expressed or implied, and shall not be liable for any direct, indirect, incidental, special or consequential damages arising out of the use of such map. The user acknowledges and agrees that the use of such data is at the sole risk of the user. General questions about this map including errors, omissions, and/or updates should be directed to the City of Sheridan GIS Division.

Legend	
— Roads	B2 - Business District
City of Sheridan Boundary	M1 - Industrial District
R1 - Residence District	MA - Medical Arts District
R2 - Residence District	HE - Higher Education District
R3 - Residence District	RUCA - Restricted Use Control Area
R4 - Residence District	PUD - Planned Unit Development
B1 - Business District	GATEWAY - Gateway District



0 0.25 0.5 1 Miles

BENDER SUBDIVISION PARKING CAPACITY ANALYSIS

PREPARED FOR:

SCOTT GERBER
NoCoast, LLC
P.O. Box 7183
SHERIDAN, WY 82801



June 2022

BENDER SUBDIVISION PARKING CAPACITY ANALYSIS

Prepared for: Scott Gerber
NoCoast, LLC
820 South Thurmond St.
Sheridan, WY 82801

Prepared by: WWC Engineering
1849 Terra Avenue
Sheridan, WY 82801
(307) 672-0761

Principal Author: Michael Powers, P.G., E.I., Associate Engineer and Geologist

Reviewed by: Jack Fritz, P.E., Director of Operations

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Appendix B. ProUCL Statistical Results

1.0 INTRODUCTION

WWC Engineering (WWC) performed a parking capacity analysis to evaluate parking capacity at developments in the Sheridan area. This project included an assessment of the total number of available on-street and off-street parking spaces and the total number of dwellings at each of the apartment complexes. Parked car counts were then performed to evaluate the utilization rate of these parking lots during peak usage.

2.0 PURPOSE

This analysis has been performed for the Bender Subdivision development. The purpose of this report is to determine parking capacity and utilization rate in similar developments and to ascertain how many parking spaces are available during peak usage hours. From these data, WWC was able to calculate the optimum number of parking spaces per dwelling necessary for similar developments such as the Bender Subdivision.

3.0 PARKING CAPACITY ANALYSIS

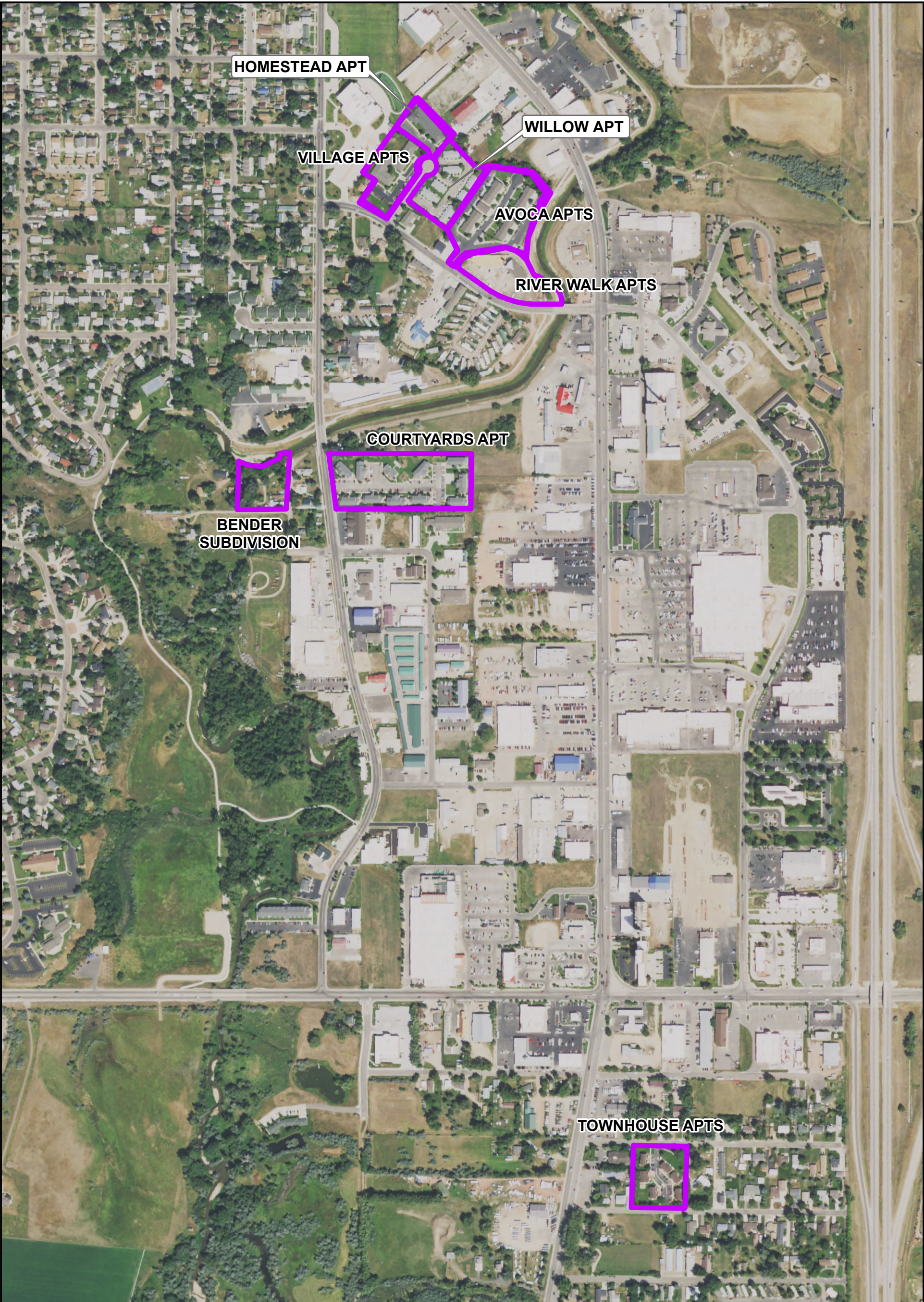
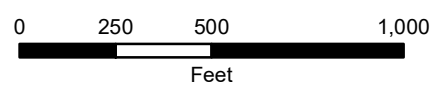
3.1 METHODS

Seven developments were chosen for this analysis due to their proximity and similarity to the Bender Subdivision. These complexes are shown on Figure 1. All sites analyzed were within 0.75 mile of the Bender Subdivision. Out of the seven locations, the Townhouse Apartments to the southeast are the most similar in size and capacity to the Bender Subdivision development.

After locations were selected, the total number of parking spots and dwellings in each development were tallied. The spots counted include on-street parking (parallel) within the complex (regular and handicap), off-street parking (regular and handicap, perpendicular parking spots), and on-street parking (parallel) along the perimeter of the property. Table 1 lists the parking characteristics of each development in this analysis.

Parked car counts were conducted at approximately 6 a.m. and 9 p.m. Parked car counts were conducted in the early morning and evening to ensure that the maximum number of parked cars were counted. On April 23 (Saturday), a count was also conducted around midnight to determine if more cars were parked in the lots in the middle of the night.

Count sheets were used to tabulate the number of parked cars in each lot. A summation of the data collected during the counts is provided in Appendix A.



**SCOTT GERBER BENDER
SUBDIVISION**

**PARKING CAPACITY
ANALYSIS LOCATION MAP**

WWC ENGINEERING
1849 TERRA AVE
SHERIDAN, WY 82801
(307) 672-0761

Table 1. Parking Capacity Data

Location	City Zone	Dwellings	Street Spaces (Parallel Park)		Street Handicap Parking Spaces	Off-Street Parking Spaces	Off-Street Handicap Parking Spaces	Road Parking (perimeter of property)		Total Regular Spaces	Total Handicap Spaces	Regular Spaces Per Dwelling	Handicap Spaces Per Dwelling
			Footage	Spaces	Spaces	Spaces	Spaces	Footage	Spaces	Spaces	Spaces	Spaces	Spaces
Village Apartments	R-3	24	260	13	0	36	3	140	7	56	3	2.333	0.125
Homestead Apartments	R-3	16	0	0	0	20	2	0	0	20	2	1.250	0.125
Willows	R-3	31	120	6	0	46	3	0	0	52	3	1.677	0.097
Avoca Apartments	M-1	72	700	35	0	64	4	0	0	99	4	1.375	0.056
River Walk Apartments	M-1	63	0	0	0	49	10	320	16	65	10	1.032	0.159
Courtyards at Sheridan	M-1	62	0	0	0	119	4	240	12	131	4	2.113	0.065
Townhouse Apartments	R-3	24	0	0	0	32	3	500	25	57	3	2.375	0.125

4.0 RESULTS

Table 2 lists the results from the parking capacity and utilization analysis. The highest utilization recorded during any of the counts was 66% for normal parked cars and 100% for handicap parked cars. The average percent full ranged from 9% to 59% full. This means that, on average, more than 40% of the parking spaces in every lot included in this analysis are empty during peak usage hours of the day.

Table 2. Parking Capacity and Utilization Analysis Results

Location	Average Parked Cars	Average Parked Cars (handicap)	Total Regular Spaces	Total Handicap Spaces	Average Percent Full	Average Percent Full (handicap)	Number of Regular Spaces Used Per Dwelling	Number of Spaces Used Per Dwelling (handicap)
Village Apartments	4.8	1.2	56	3	9%	40%	0.200	0.050
Homestead Apartments	2.4	0.5	20	2	12%	25%	0.150	0.031
Willows	19.5	0.9	52	3	38%	30%	0.629	0.029
Avoca Apartments	42.5	0.0	99	4	43%	0%	0.590	0.000
River Walk Apartments	36.5	8.8	65	10	56%	88%	0.579	0.140
Courtyards at Sheridan	76.7	0.9	131	4	59%	23%	1.237	0.015
Townhouse Apartments	19.9	1.6	57	3	35%	53%	0.829	0.067

Note: Shading denotes the apartment complexes for people with disabilities.

5.0 STATISTICAL ANALYSIS

A statistical analysis was performed on the average parking utilization rate per dwelling for all complexes. Village Apartments and Homestead Apartments were not used in the statistical analysis because they are apartment complexes for people with disabilities and have significantly less utilization that is not representative of the parking needed for the Bender Subdivision. ProUCL (developed by U.S. EPA) was used to calculate the 95% upper confidence limit (UCL) of the mean of the data set. ProUCL provides distribution testing capabilities and is a comprehensive statistical software package with methods and graphical tools to address many statistical issues. The average number of spots used per dwelling was calculated for each parking complex. These data were then entered into ProUCL. The resulting mean number of utilized regular spaces per dwelling is 0.77, and the 95% UCL of the mean value is 1.0. This means that with 95% confidence, the average utilization rate of regular spaces (as a ratio to the number of dwelling units) is less than or equal to 1.0. The statistical analysis results are provided in Appendix B.

6.0 CONCLUSION AND RECOMMENDATIONS

Every parking lot in this analysis is underutilized. In all cases, the number of regular and handicap spaces per dwelling (Table 1) was less than the number used per dwelling (Table 2).

Due to the abundance of available parking in the apartment complexes studies, it can be assumed that the total number of parking spots for the Bender Subdivision can be reduced from its current M-1 zone requirement. Based on the statistical analysis of the 5 representative apartment complexes (excluding the two for people with disabilities), WWC recommends constructing one regular parking space per dwelling and 0.1 handicap space per dwelling in the Bender Subdivision.

7.0 LIMITATIONS

This analysis was conducted in the morning and night during an average week. These traffic statistics do not include any considerations for parking during large events in the area. More parking could be utilized during such events.

This report has been prepared for and applies to the Bender Subdivision. It has been prepared in accordance with generally accepted traffic engineering practices. No warranty or representation, expressed or implied, is included or intended. In the event that changes in the nature of the design or location of the project as outlined in this report are planned, the recommendations contained in this report shall not be considered valid unless WWC reviews the changes and either verifies or modifies the conclusions of this report in writing.

APPENDIX A

Parked Car Counts Data

Parked Car Counts

Date	Location	Time	Street (Parallel Park in Complex)	Street Handicap (Parallel Park in Complex)	Off-Street (Perpendicular Parking in Complex)	Off-Street Handicap (Perpendicular Parking in Complex)	Road Parking (Perimeter of Property)	Total Parked Cars	Total Parked Cars (Handicap)	Percent Full	Percent Full (Handicap)	Notes
4/23/2022 SATURDAY	Village Apartments	12:05-12:35 a.m.	0	0	7	1	0	7	1	13%	33%	Blizzard
	Homestead Apartments		0	0	3	0	0	3	0	15%	0%	
	Willows		0	0	20	1	0	20	1	38%	33%	
	Avoca Apartments		19	0	25	0	0	44	0	44%	0%	
	River Walk Apartments		0	0	38	7	0	38	7	58%	70%	
	Courtyards at Sheridan		0	0	74	2	0	74	2	56%	50%	
	Townhouse Apartments		0	0	16	1	4	20	1	35%	33%	
	Village Apartments	9:13-9:45 p.m.	0	0	6	1	0	6	1	11%	33%	
	Homestead Apartments		0	0	2	1	0	2	1	10%	50%	
	Willows		0	0	20	1	0	20	1	38%	33%	
	Avoca Apartments		17	0	30	0	0	47	0	47%	0%	
	River Walk Apartments		0	0	33	10	0	33	10	51%	100%	
	Courtyards at Sheridan		0	0	69	1	0	69	1	53%	25%	
	Townhouse Apartments		0	0	17	1	3	20	1	35%	33%	
4/26/2022 TUESDAY	Village Apartments	6:06-6:37 a.m.	0	0	2	1	0	2	1	4%	33%	
	Homestead Apartments		0	0	3	0	0	3	0	15%	0%	
	Willows		0	0	20	0	0	20	0	38%	0%	
	Avoca Apartments		18	0	24	0	0	42	0	42%	0%	
	River Walk Apartments		0	0	39	8	0	39	8	60%	80%	
	Courtyards at Sheridan		0	0	87	4	0	87	4	66%	100%	
	Townhouse Apartments		0	0	21	2	4	25	2	44%	67%	
	Village Apartments	9:00-9:32 p.m.	0	0	3	1	0	3	1	5%	33%	
	Homestead Apartments		0	0	2	0	0	2	0	10%	0%	
	Willows		0	0	19	1	0	19	1	37%	33%	
	Avoca Apartments		15	0	22	0	0	37	0	37%	0%	
	River Walk Apartments		0	0	40	10	0	40	10	62%	100%	
	Courtyards at Sheridan		0	0	87	1	0	87	1	66%	25%	
	Townhouse Apartments		0	0	19	1	2	21	1	37%	33%	

Parked Car Counts (Continued)

Date	Location	Time	Street (Parallel Park in Complex)	Street Handicap (Parallel Park in Complex)	Off-Street (Perpendicular Parking in Complex)	Off-Street Handicap (Perpendicular Parking in Complex)	Road Parking (Perimeter of Property)	Total Parked Cars	Total Parked Cars (Handicap)	Percent Full	Percent Full (Handicap)	Notes
4/27/2022 WEDNESDAY	Village Apartments	5:52-6:20 a.m.	0	0	2	1	0	2	1	4%	33%	
	Homestead Apartments		0	0	2	1	0	2	1	10%	50%	
	Willows		0	0	17	1	0	17	1	33%	33%	
	Avoca Apartments		17	0	27	0	0	44	0	44%	0%	
	River Walk Apartments		0	0	37	10	0	37	10	57%	100%	
	Courtyards at Sheridan		0	0	79	0	0	79	0	60%	0%	
	Townhouse Apartments		0	0	14	2	4	18	2	32%	67%	
	Village Apartments	9:14-9:45 p.m.	0	0	5	1	0	5	1	9%	33%	
	Homestead Apartments		0	0	3	0	0	3	0	15%	0%	
	Willows		0	0	20	1	0	20	1	38%	33%	
	Avoca Apartments		15	0	27	0	0	42	0	42%	0%	
	River Walk Apartments		0	0	36	9	0	36	9	55%	90%	
	Courtyards at Sheridan		0	0	74	0	0	74	0	56%	0%	
	Townhouse Apartments		0	0	16	1	3	19	1	33%	33%	
4/28/2022 THURSDAY	Village Apartments	6:01-6:34 a.m.	1	0	4	1	0	5	1	9%	33%	
	Homestead Apartments		0	0	2	1	0	2	1	10%	50%	
	Willows		0	0	20	1	0	20	1	38%	33%	
	Avoca Apartments		18	0	25	0	0	43	0	43%	0%	
	River Walk Apartments		0	0	35	9	0	35	9	54%	90%	
	Courtyards at Sheridan		0	0	76	0	0	76	0	58%	0%	
	Townhouse Apartments		0	0	15	2	4	19	2	33%	67%	
	Village Apartments	9:26-9:59 p.m.	0	0	6	1	0	6	1	11%	33%	Rain
	Homestead Apartments		0	0	2	0	0	2	0	10%	0%	
	Willows		0	0	19	1	0	19	1	37%	33%	
	Avoca Apartments		15	0	26	0	0	41	0	41%	0%	
	River Walk Apartments		0	0	36	8	0	36	8	55%	80%	
	Courtyards at Sheridan		0	0	73	0	0	73	0	56%	0%	
	Townhouse Apartments		0	0	17	2	3	20	2	35%	67%	

Parked Car Counts (Continued)

Date	Location	Time	Street (Parallel Park in Complex)	Street Handicap (Parallel Park in Complex)	Off-Street (Perpendicular Parking in Complex)	Off-Street Handicap (Perpendicular Parking in Complex)	Road Parking (Perimeter of Property)	Total Parked Cars	Total Parked Cars (Handicap)	Percent Full	Percent Full (Handicap)	Notes
4/29/2022 FRIDAY	Village Apartments	6:00-6:29 a.m.	1	0	6	2	0	7	2	13%	67%	Rain
	Homestead Apartments		0	0	3	1	0	3	1	15%	50%	
	Willows		0	0	21	1	0	21	1	40%	33%	
	Avoca Apartments		17	0	27	0	0	44	0	44%	0%	
	River Walk Apartments		0	0	36	8	0	36	8	55%	80%	
	Courtyards at Sheridan		0	0	75	1	0	75	1	57%	25%	
	Townhouse Apartments		0	0	16	2	4	20	2	35%	67%	
	Village Apartments	9:20-9:51 p.m.	1	0	4	2	0	5	2	9%	67%	Rain
	Homestead Apartments		0	0	2	1	0	2	1	10%	50%	
	Willows		0	0	19	1	0	19	1	37%	33%	
	Avoca Apartments		16	0	25	0	0	41	0	41%	0%	
	River Walk Apartments		0	0	35	9	0	35	9	54%	90%	
	Courtyards at Sheridan		0	0	73	0	0	73	0	56%	0%	
	Townhouse Apartments		0	0	14	2	3	17	2	30%	67%	

APPENDIX B

ProUCL Statistical Results

Normal UCL Statistics for Uncensored Full Data Sets

User Selected Options

Date/Time of Computation 5/5/2022 15:23
 From File WorkSheet.xls
 Full Precision OFF
 Confidence Coefficient 95%

Cars per dwelling

General Statistics			
Total Number of Observations	5	Number of Distinct Observations	5
		Number of Missing Observations	0
Minimum	0.579	Mean	0.773
Maximum	1.237	Median	0.629
SD	0.279	SD of logged Data	0.322
Coefficient of Variation	0.36	Skewness	1.617

Note: Sample size is small (e.g., <10), if data are collected using ISM approach, you should use guidance provided in ITRC Tech Reg Guide on ISM (ITRC, 2012) to compute statistics of interest.

For example, you may want to use Chebyshev UCL to estimate EPC (ITRC, 2012).

Chebyshev UCL can be computed using the Nonparametric and All UCL Options of ProUCL 5.0

Normal GOF Test			
Shapiro Wilk Test Statistic	0.79	Shapiro Wilk GOF Test	
5% Shapiro Wilk Critical Value	0.762	Data appear Normal at 5% Significance Level	
Lilliefors Test Statistic	0.297	Lilliefors GOF Test	
5% Lilliefors Critical Value	0.396	Data appear Normal at 5% Significance Level	

Data appear Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL	
95% Student's-t UCL	1.0

Suggested UCL to Use	
95% Student's-t UCL	1.0

: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL. These recommendations are based upon the results of the simulation studies summarized in Singh, Singh, and Iaci (2003) and Singh and Singh (2003). However, simulation results will not cover all Real World data sets.

For additional insight the user may want to consult a statistician.

PRELIMINARY TRAFFIC PLAN BENDER SUBDIVISION

PREPARED FOR:

CITY OF SHERIDAN
PO Box 848
SHERIDAN, WY 82801

ON BEHALF OF: SCOTT GERBER



June 2022

PRELIMINARY TRAFFIC PLAN BENDER SUBDIVISION

Prepared for: City of Sheridan
55 Grinnell Plaza
Sheridan, WY 82801

On behalf of: Scott Gerber

Prepared by: WWC Engineering
1849 Terra Avenue
Sheridan, WY 82801
(307) 672-0761

Principal Authors: Sarah Rawlings, E.I.

Reviewed by: Chad Reed, P.E., Branch Manager

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1.0 INTRODUCTION

This Preliminary Traffic Plan (PTP) has been prepared for the Bender Subdivision, (the Project). The proposed Bender Subdivision consists of a total of 7 lots, six of which are each proposed to construct 4-plexes, one single family house, and adjacent parking areas. The purpose of this PTP is to assess the impacts of developing the subdivision may have on the City of Sheridan (City) transportation system and to provide recommendations to mitigate impacts if identified.

1.1 LOCATION

The Project is situated in the northwest quarter of the southwest quarter of Section 35, Township 56N, Range 84W in Sheridan, Wyoming. The site is generally located west of Bender Lane and north of Turner Lane within the City limits. Little Goose Creek borders the property to the north. The site location is identified on Figure 1 located in Appendix A.

1.2 DESCRIPTION OF PROPERTY & PROPOSED IMPROVEMENTS

The total Project area is approximately 1.53 acres and will be subdivided into seven developable lots with minimum and maximum sizes of 0.12 acre and 0.15 acres, respectively. Six 4-plexes are proposed to be placed on Lots 1-3 & 5-7 and one single family home is proposed to be placed on Lot 4 with all associated infrastructure (water, sewer, storm, roadway, sidewalks, etc.). Access to the property is from Bender Lane off Turner Lane.

Interior streets would have a 60-foot dedicated right-of-way and 35-foot developed street width (BOC-BOC) in accordance with Section 503 of the City Public Infrastructure Design Standards (City, 2017). The proposed site layout is identified on Figure 2 in Appendix A.

2.0 EXISTING CONDITIONS

2.1 SITE USE

The property is owned by Scott Gerber and is zoned M1 - Industrial District, however, a rezone request to R-3 Residential has been submitted to better conform to the proposed development. A vacant house and two vacant mobile home trailers were previously on the property and have since been removed leaving the entire area undeveloped. A private residential access road runs through the property and will be maintained to provide access to the neighboring property to the west. There are no major vacant properties around the proposed subdivision to include build-out projections in the study.

2.2 STREET CHARACTERISTICS & VOLUMES

Turner Lane is classified as a local road that extends from Bender Lane to Terra Avenue. It includes 60 feet of right-of-way and approximately 40 feet of pavement. South Sheridan Avenue (S. Sheridan Ave.) is classified as a collector street extending from Brundage Lane to Coffeen Avenue. It includes 80 feet of right-of-way and approximately 40 feet of pavement. Parking is permitted on both sides of each street. The roads are striped to include one travel lane in each direction. The entrance to the Bender Subdivision is along Bender Lane, accessed through Turner Lane. According to Wyoming Department of Transportation, (WYDOT), the 2019 annual average daily traffic (AADT) on S. Sheridan Ave., south of Blue Sky Court is 3,974.

Existing traffic conditions were determined by performing manual intersection counts. Weekday AM (6:30 to 9:30) and PM (3:30 to 6:30) peak period traffic counts were conducted at the intersection of Turner Lane and S. Sheridan Avenue. The AM peak hour was determined to be from 7:45 - 8:45 AM and the PM peak hour 3:45 - 4:45 PM. The counts were 338 vehicles during the AM peak hour and 407 vehicles during the PM peak hour on Tuesday, 6/8/2021. This four-way intersection has two stop signs on each side of Turner Lane. Traffic count graphics are included in Figures 3-5, found in Appendix A, with individual field count sheets included in Appendix B.

2.3 TRAFFIC OPERATIONS & CAPACITY ANALYSIS

Unsignalized intersection capacity calculations were performed using Synchro® Intersection Capacity Utilization Worksheets. Level of service (LOS) is generally described as a weighted average control delay for an intersection. LOS considers the design characteristics and capacity of a given roadway and the road's ability to handle traffic based on the average daily traffic volumes and typical peak hour traffic volumes. LOS "A" and LOS "B" are generally very good, LOS "C" and LOS "D" are generally good to fair, while LOS "E" and LOS "F" indicate much higher levels of congestion.

Approaches to the intersection of Turner Lane and S. Sheridan Ave. currently operate at LOS A. With the addition of traffic from the proposed development, the intersection is still expected to operate at LOS A. Intersection capacity utilization calculation results for existing conditions are included in Appendix C.

3.0 TRIP GENERATION

Trip generation is an estimate of site generated traffic by the subdivision. This PTP utilized trip generation rates from the 8th Edition ITE Manual. Vehicular trips generated by the proposed Bender Subdivision were estimated using ITE Land Use No. 230 (Residential Condo/Townhouse) and 210 (Single Family Homes). It was assumed that all trips to and from the proposed Bender Subdivision would be vehicular trips rather than other modes (pedestrian, bicycle, and transit). Assuming 24 residential condo/townhouse units (4-plex units on Lots 1-3 & 5-7), and one single family home (one unit on Lot 4) the average weekday generated 149 total trips with the AM and PM peak hour both generating 13 trips. Trip generation rates are provided in Table 1 and show on Figure 4 in included in Appendix A.

Table 1. ITE Trip Generation

Land Use	Average Weekday	AM Peak Hour	PM Peak Hour
Residential Condo/Townhouse (20 units)	149	Enter: 4 Exit: 9 Total: 13	Enter: 9 Exit: 4 Total: 13

4.0 TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

For this study manual traffic counts at the intersection of Turner Lane and S. Sheridan Ave. were conducted for the purpose of splitting traffic from the proposed development. These counts split the traffic flows from the only access leaving the proposed subdivision onto the northbound and southbound S. Sheridan Ave. The traffic counts suggest a near equal distribution of traffic travelling northbound and southbound on S. Sheridan Ave. For the intersection of Turner Lane and S. Sheridan Ave., the WYDOT 2019 AADT of 3,974 plus the 75 total weekday site trips (50% of 149) determined by ITE calculations would represent a total traffic of 4,049 AADT.

Assignment of site traffic to the street system and site access points is dependent upon several factors. In this case, directional distribution or primary purpose trips and the physical attributes of the surrounding street system were considered to arrive at the total site traffic assignment. Existing condition traffic graphics are included in Figure 3 while the Traffic Assignment/Site Traffic from the proposed development is depicted on Figure 4, and the total traffic count data is summarized in Table 2 and provided in Figure 5.

Table 2. Peak Total Traffic

ITE Trip Generation (Site) + Existing (Counts) = Total Traffic (AM & PM)	
AM Peak: Enter: $16 + 9 = 25$ Exit: $10 + 15 = 25$	
PM Peak: Enter: $14 + 9 = 23$ Exit: $18 + 4 = 22$	

5.0 TRAFFIC IMPACTS

Capacity calculations for the intersection of Turner Lane and S. Sheridan Ave. would continue to operate at LOS A, even with the addition of traffic generated by the proposed development.

6.0 ACCESS CONDITIONS

The increased development of the proposed Bender Subdivision does not directly impact the streets adjacent to the subdivision; more specifically the likelihood of the proposed development affecting the operations at the intersection of Turner Lane and S. Sheridan Ave. is minimal.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Analysis of trip generation estimates, traffic assignments, and capacity calculations show that the complete development of Bender Subdivision would have minimal impacts on traffic operations on the surrounding street system. Conclusions and recommendations regarding traffic impacts from the proposed development include:

- Adequate site distance is available at the intersection of Turner Lane and S. Sheridan Ave.
- The queue does not conflict with traffic operations or site circulation at nearby developments.

- A southbound right-turn lane is not warranted along S. Sheridan Ave.
- Intersections of internal local streets should operate as uncontrolled intersections.
- All traffic control improvements should be designed and constructed in accordance with City of Sheridan standards.

Provided the recommendations are implemented, impacts resulting from the Bender Subdivision are expected to be mitigated and traffic would be expected to continue operating efficiently and safely.

8.0 REFERENCES

City of Sheridan Public Works Dept. (2017) “Public Infrastructure Design Standards”. City of Sheridan, 55 Grinnell Plaza, Sheridan WY.

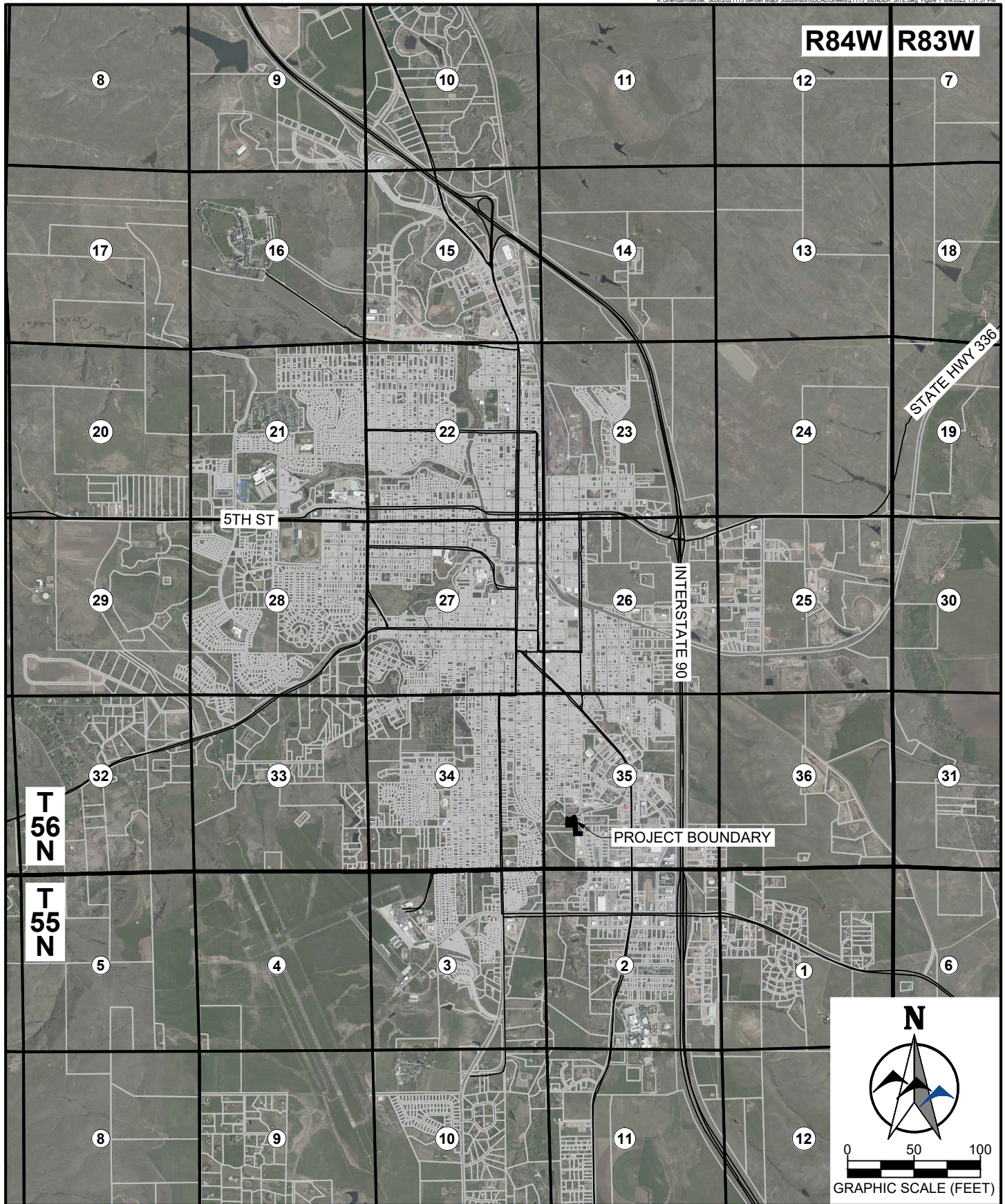
Institute of Traffic Engineers Manual. 2016. Trip generation rates from the 8th Edition, provided by the Florida Department of Transportation.

Synchro® Intersection Capacity Utilization Worksheet. 2003. [Microsoft Word - ICU 8_21_2003_RJ.doc \(trafficware.com\)](#), accessed June 18, 2021.

Wyoming Department of Transportation, 2019. Traffic Counts. <https://apps.wyoroad.info/itsm/map.html>, accessed June 18, 2021.

APPENDIX A

Figures



PRELIMINARY TRAFFIC PLAN

BENDER SUBDIVISION

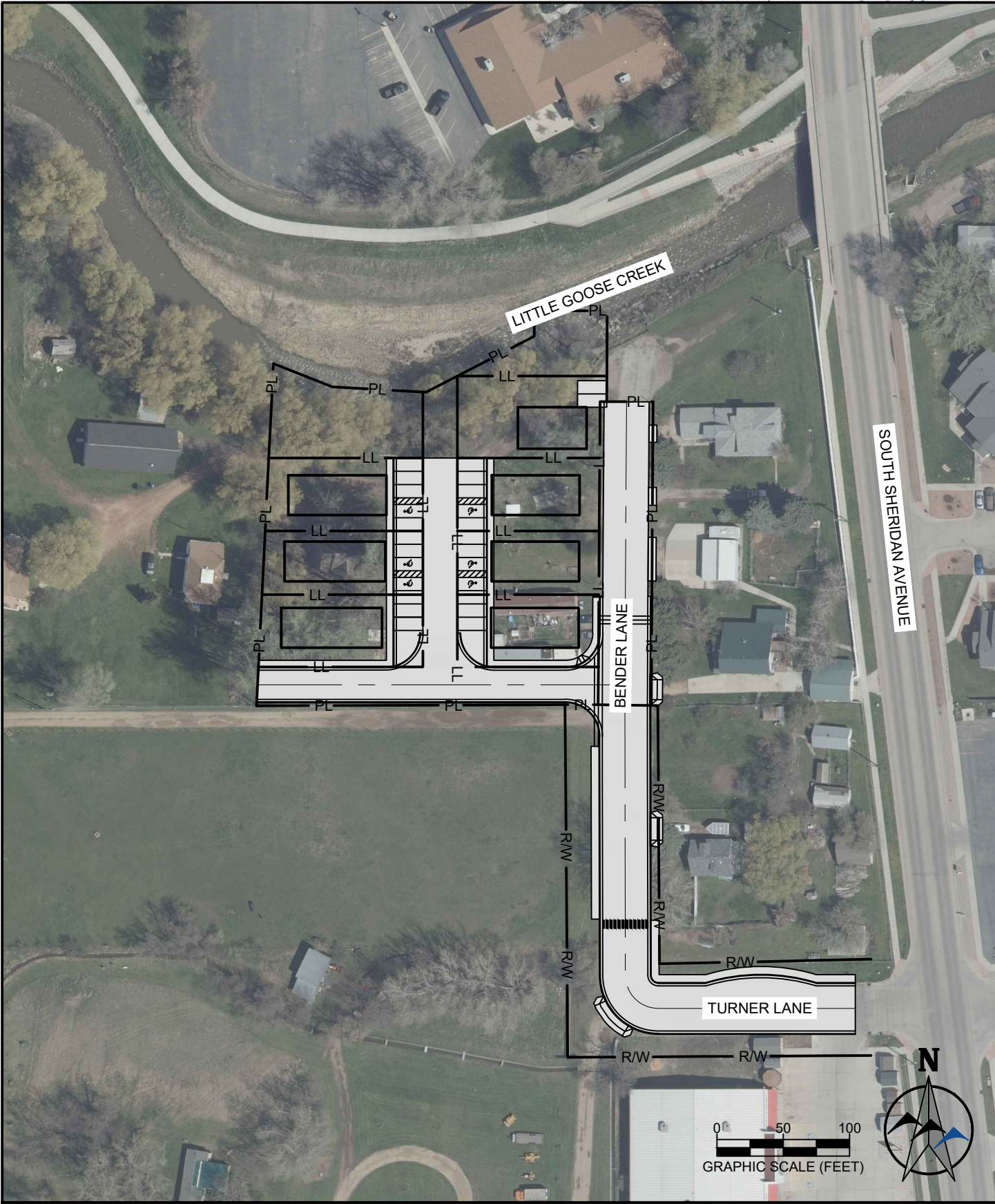
DESIGNED BY: SER
DRAWN BY: RAV
CHECKED BY: SER
DATE: 6/9/2022

GENERAL LOCATION



1849 TERRA AVENUE
SHERIDAN, WY 82801
(307) 672-0761

FIGURE
1



PRELIMINARY TRAFFIC PLAN

SITE LAYOUT

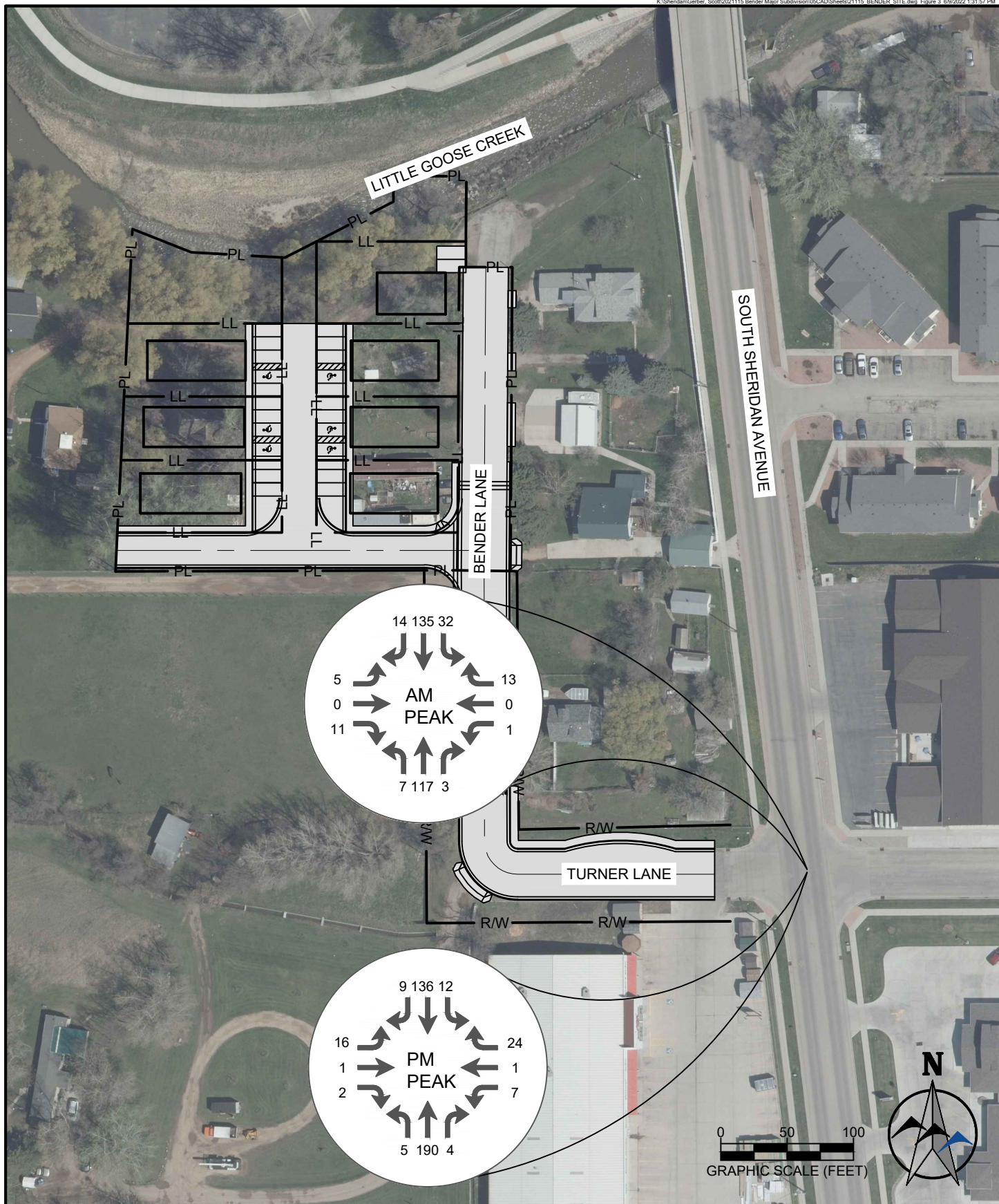
BENDER SUBDIVISION

PREPARED BY
 **WWC** ENGINEERING

1849 TERRA AVENUE
SHERIDAN, WY 82801
(307) 672-0761

DESIGNED BY: SER
DRAWN BY: RAV
CHECKED BY: SER
DATE: 6/9/2022

FIGURE
2



PRELIMINARY TRAFFIC PLAN

EXISTING TRAFFIC VOLUMES
TURNER LANE & SOUTH SHERIDAN AVENUE

BENDER SUBDIVISION

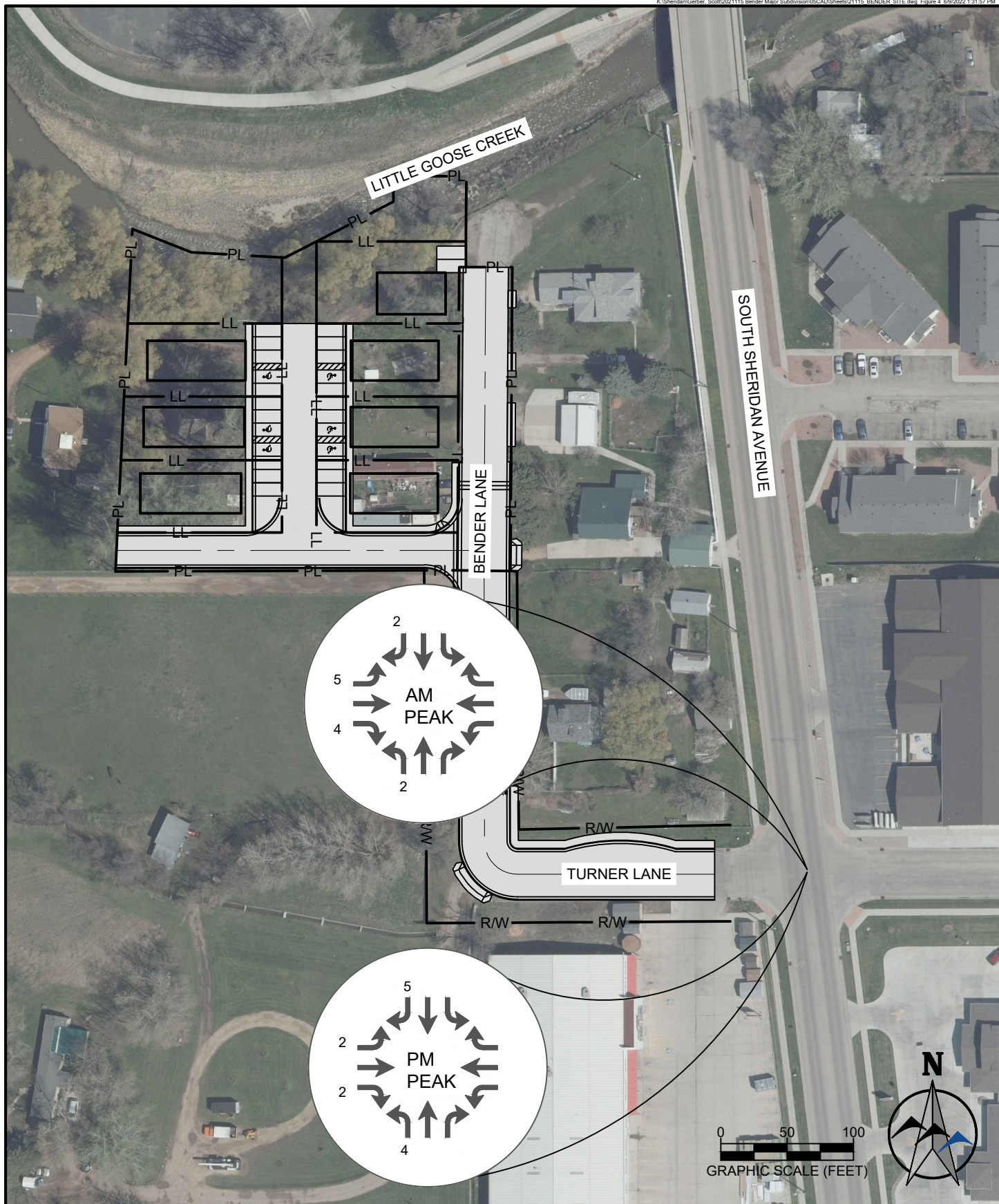
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(307) 672-0761

DESIGNED BY: SER
DRAWN BY: RAV
CHECKED BY: SER
DATE: 6/9/2022

**FIGURE
3**



PRELIMINARY TRAFFIC PLAN

TRAFFIC ASSIGNMENT
TURNER LANE & SOUTH SHERIDAN AVENUE

BENDER SUBDIVISION

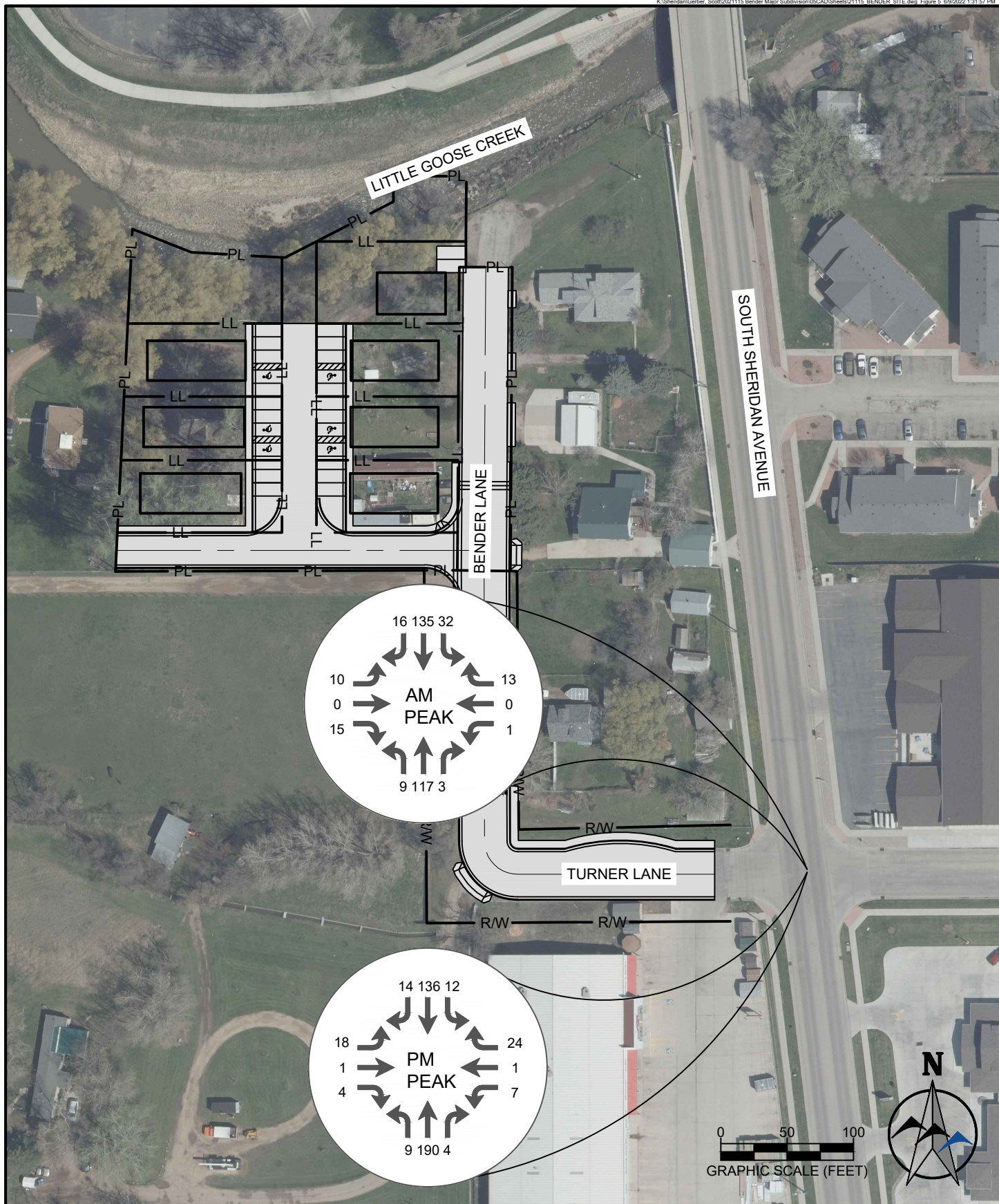
PREPARED BY



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SHERIDAN, WY 82801
(307) 672-0761

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CHECKED BY: SER
DATE: 6/9/2022

FIGURE
4



PRELIMINARY TRAFFIC PLAN

BENDER SUBDIVISION

DESIGNED BY: SER
DRAWN BY: RAV
CHECKED BY: SER
DATE: 6/9/2022

TRAFFIC ASSIGNMENT EXISTING AND PROPOSED
TURNER LANE & SOUTH SHERIDAN AVENUE

PREPARED BY
 **WWC** ENGINEERING

1849 TERRA AVENUE
SHERIDAN, WY 82801
(307) 672-0761

FIGURE
5

APPENDIX B

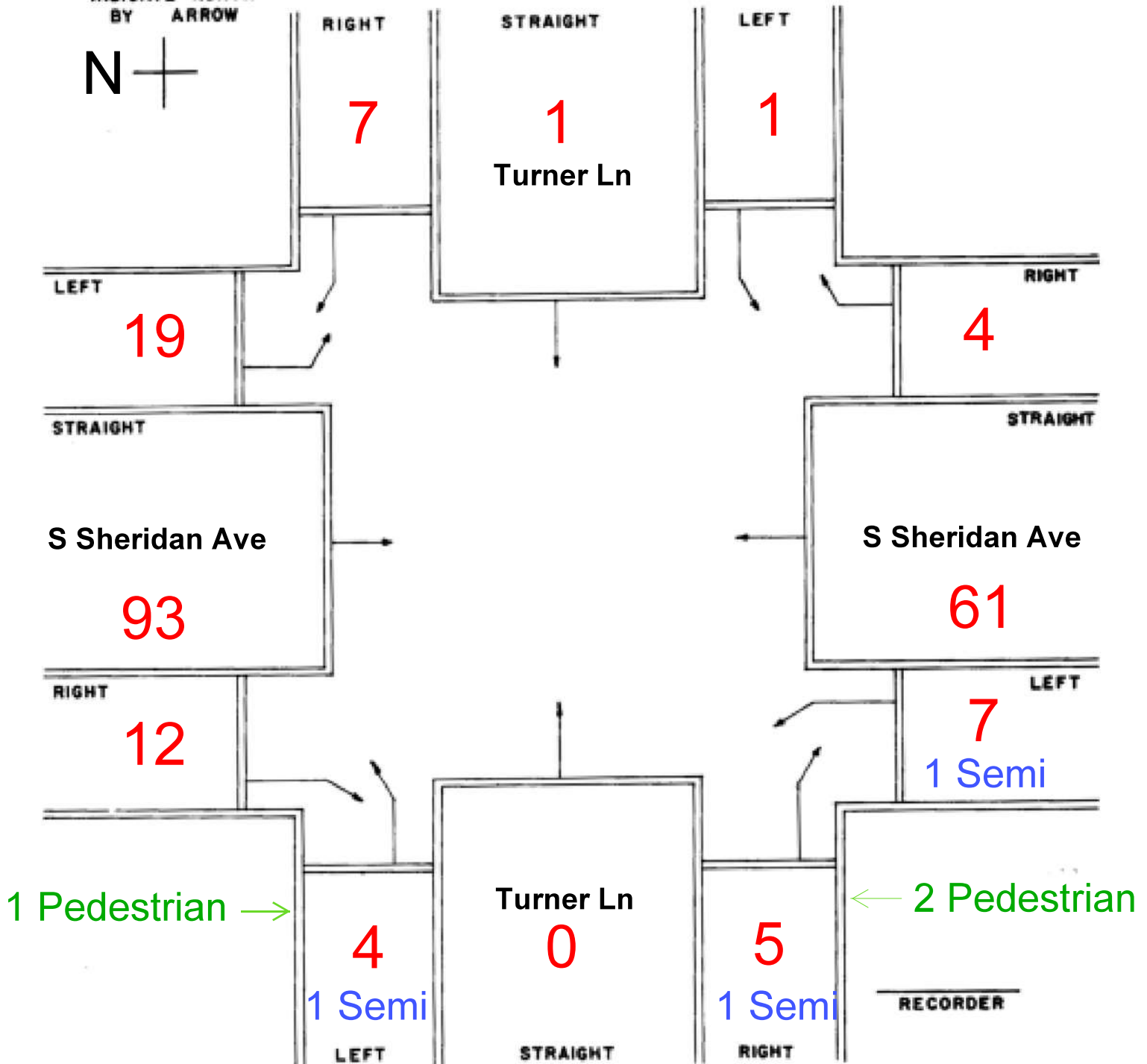
Field Data

FIELD SHEET

DATE 6/8/2021 LOCATION Intersection of Sheridan and Turner

WEATHER Partly Cloudy ROAD SURFACE CONDITIONS Dry TIME TO 6:30am - 7:30am

INDICATE NORTH
BY ARROW



FIELD SHEET

DATE 6/8/2021

LOCATION Intersection of Sheridan and Turner

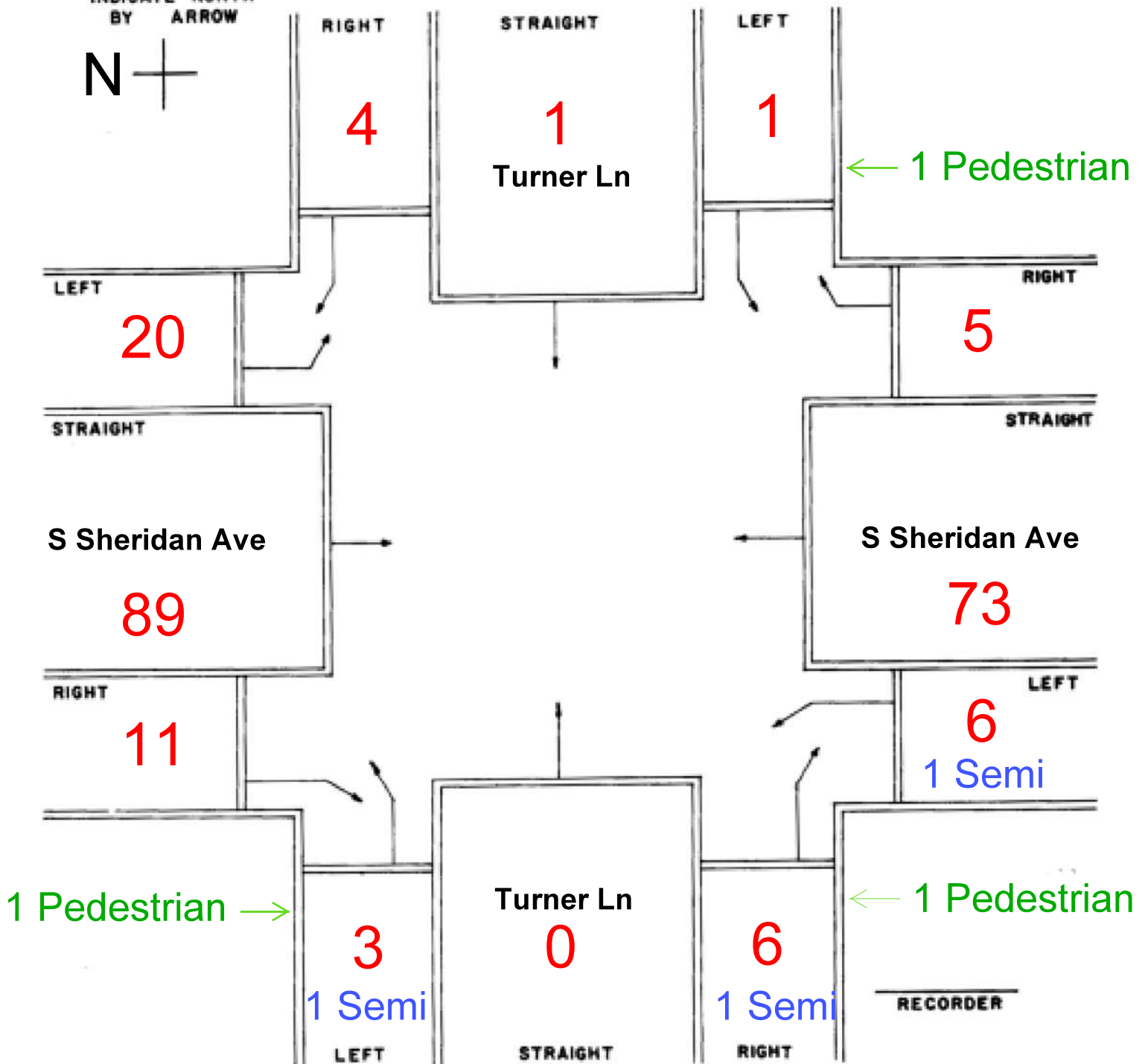
WEATHER Partly Cloudy

ROAD SURFACE CONDITIONS Dry

FROM 6:45am - 7:45am

TIME TO

INDICATE NORTH
BY ARROW



FIELD SHEET

DATE 6/8/2021 LOCATION Intersection of Sheridan and Turner

WEATHER Partly Cloudy ROAD SURFACE CONDITIONS Dry TIME TO 7:00am - 8:00am

INDICATE NORTH
BY ARROW



1 Pedestrian →

6

0

Turner Ln

1

← 1 Pedestrian

↘ 1 Pedestrian

LEFT

28

RIGHT

5

STRAIGHT

S Sheridan Ave

101

STRAIGHT

S Sheridan Ave

91

RIGHT

8

LEFT

9

1 Semi

1 Pedestrian →

3

1 Semi

Turner Ln

0

STRAIGHT

4

1 Semi

← 1 Pedestrian

RECORDER

FIELD SHEET

DATE 6/8/2021

LOCATION Intersection of Sheridan and Turner

WEATHER Partly Cloudy

ROAD SURFACE CONDITIONS Dry

TIME TO 7:15am - 8:15am

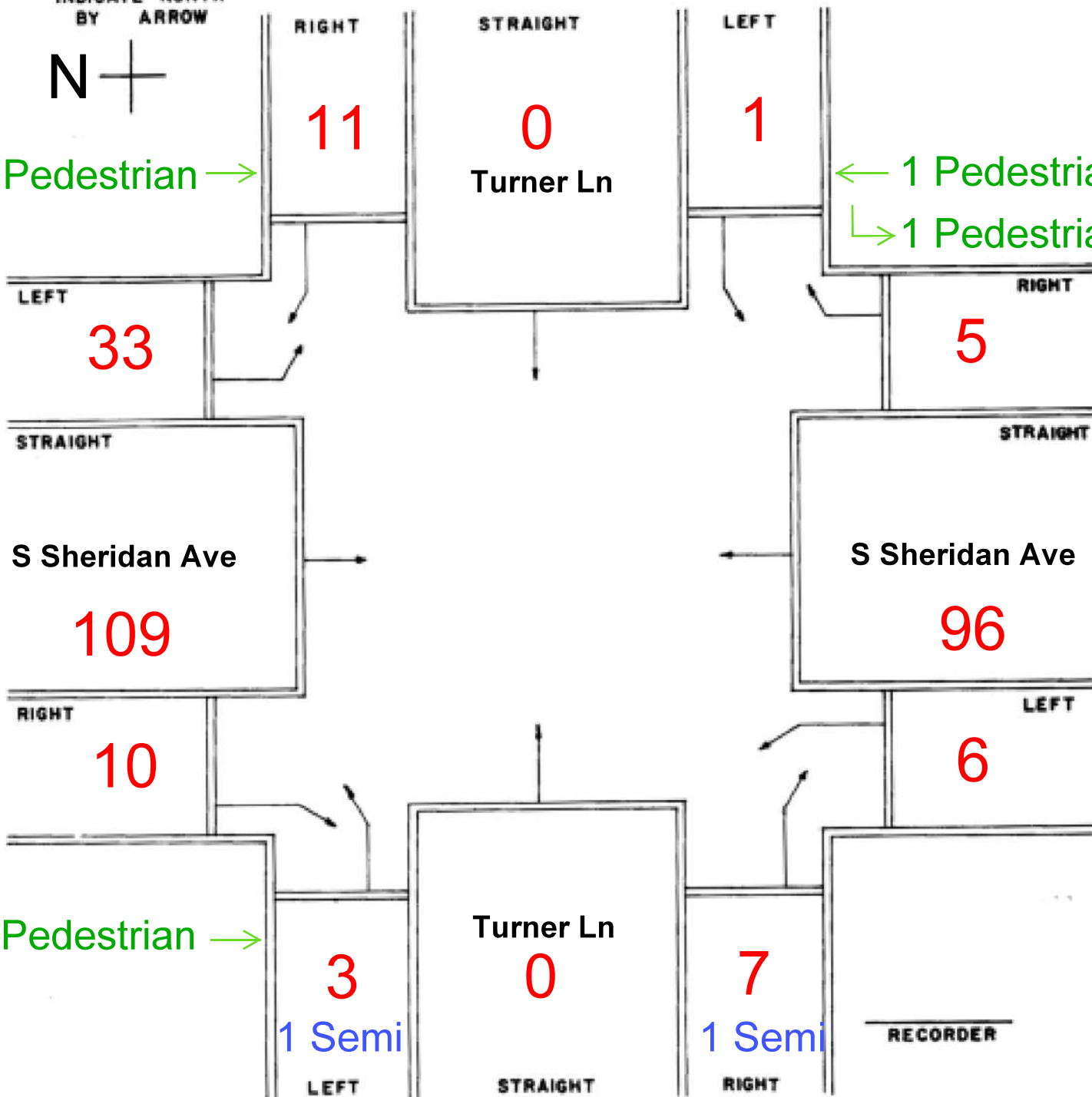
INDICATE NORTH
BY ARROW



1 Pedestrian →

← 1 Pedestrian

↘ 1 Pedestrian



RECORDER

FIELD SHEET

DATE 6/8/2021 LOCATION Intersection of Sheridan and Turner

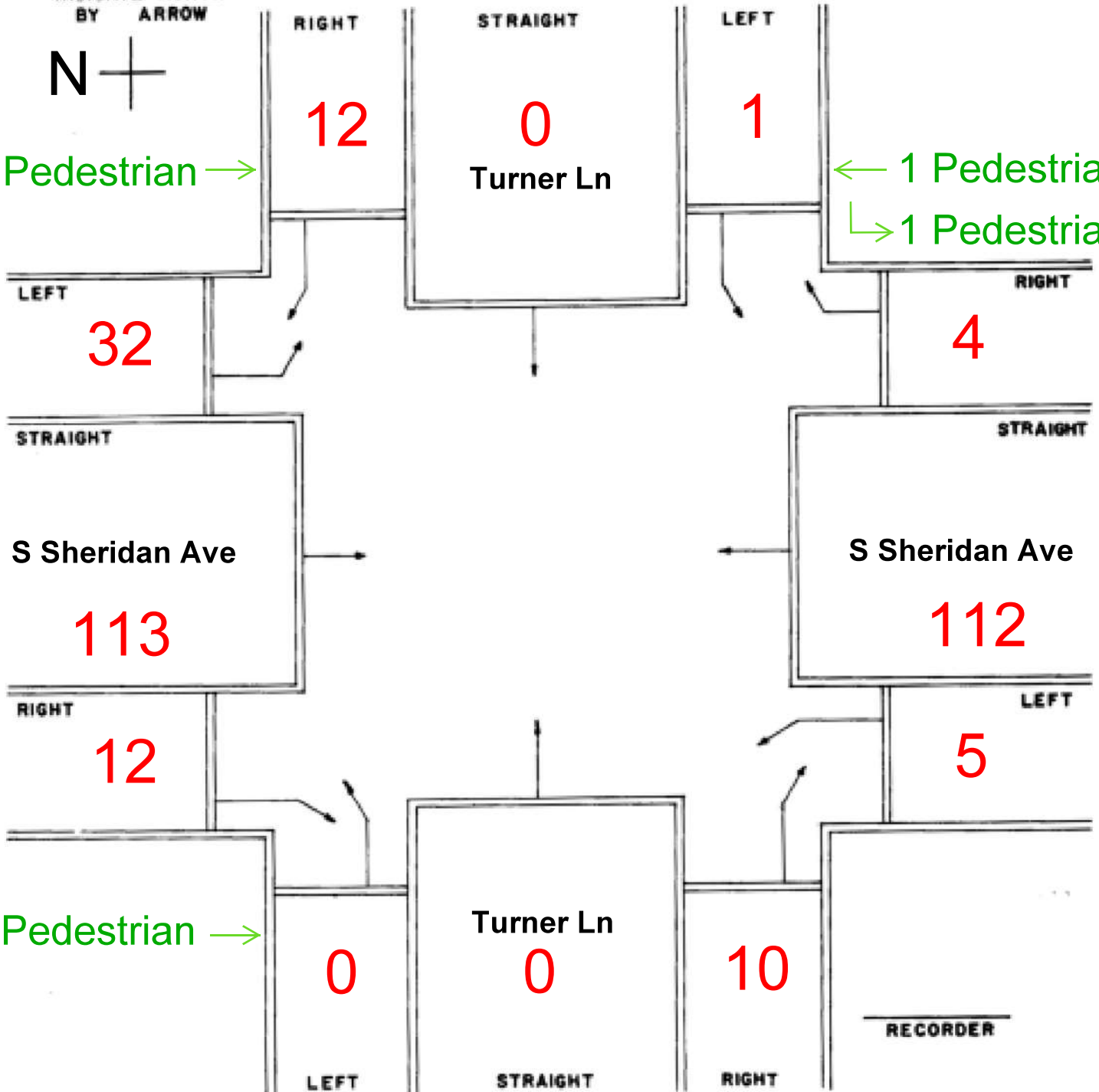
WEATHER Partly Cloudy ROAD SURFACE CONDITIONS Dry TIME TO 7:30am - 8:30am

INDICATE NORTH
BY ARROW



1 Pedestrian →

← 1 Pedestrian
↳ 1 Pedestrian



FIELD SHEET

DATE 6/8/2021

LOCATION Intersection of Sheridan and Turner

WEATHER Partly Cloudy

ROAD SURFACE CONDITIONS Dry

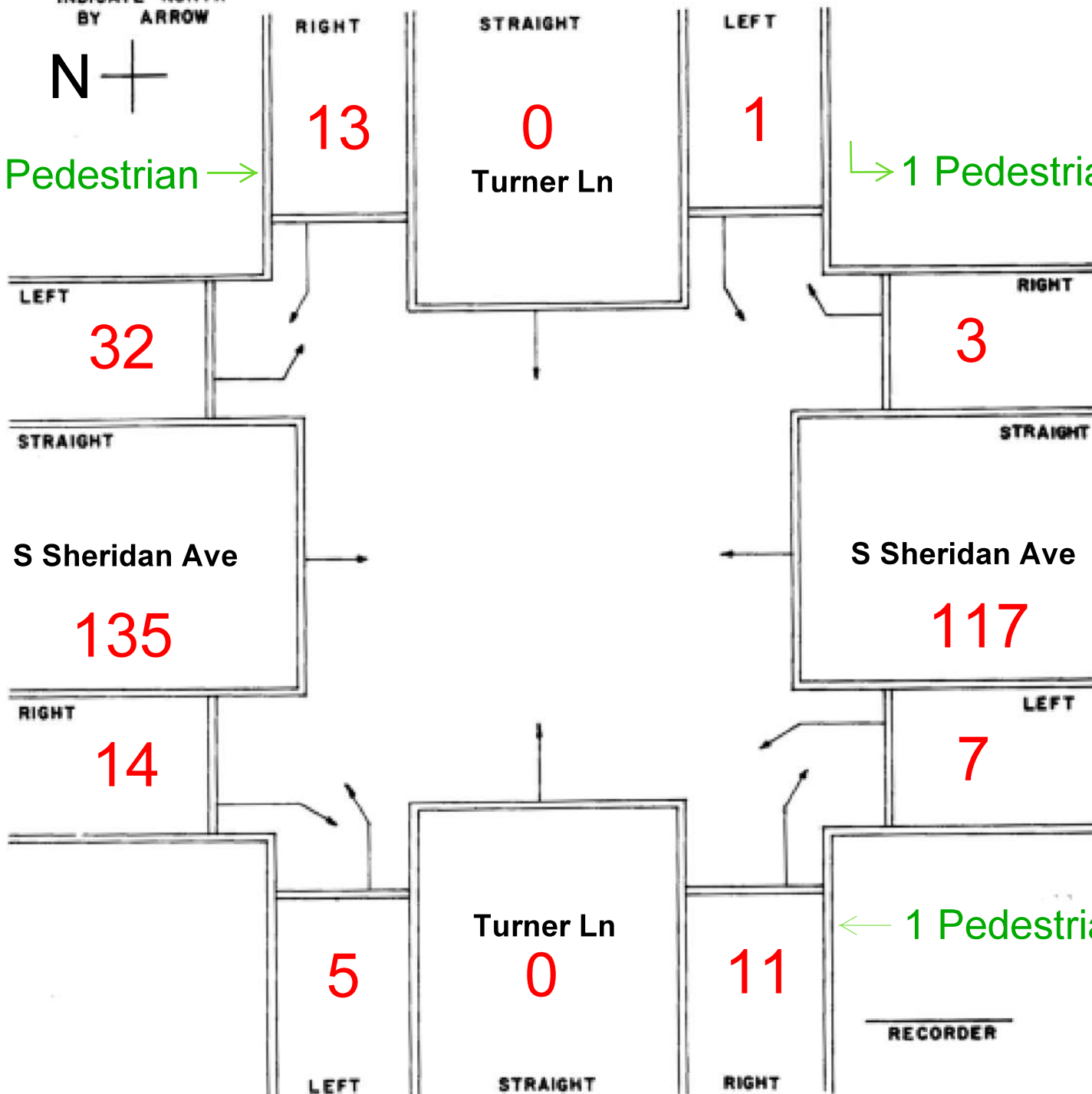
TIME TO 7:45am - 8:45am

INDICATE NORTH
BY ARROW



1 Pedestrian →

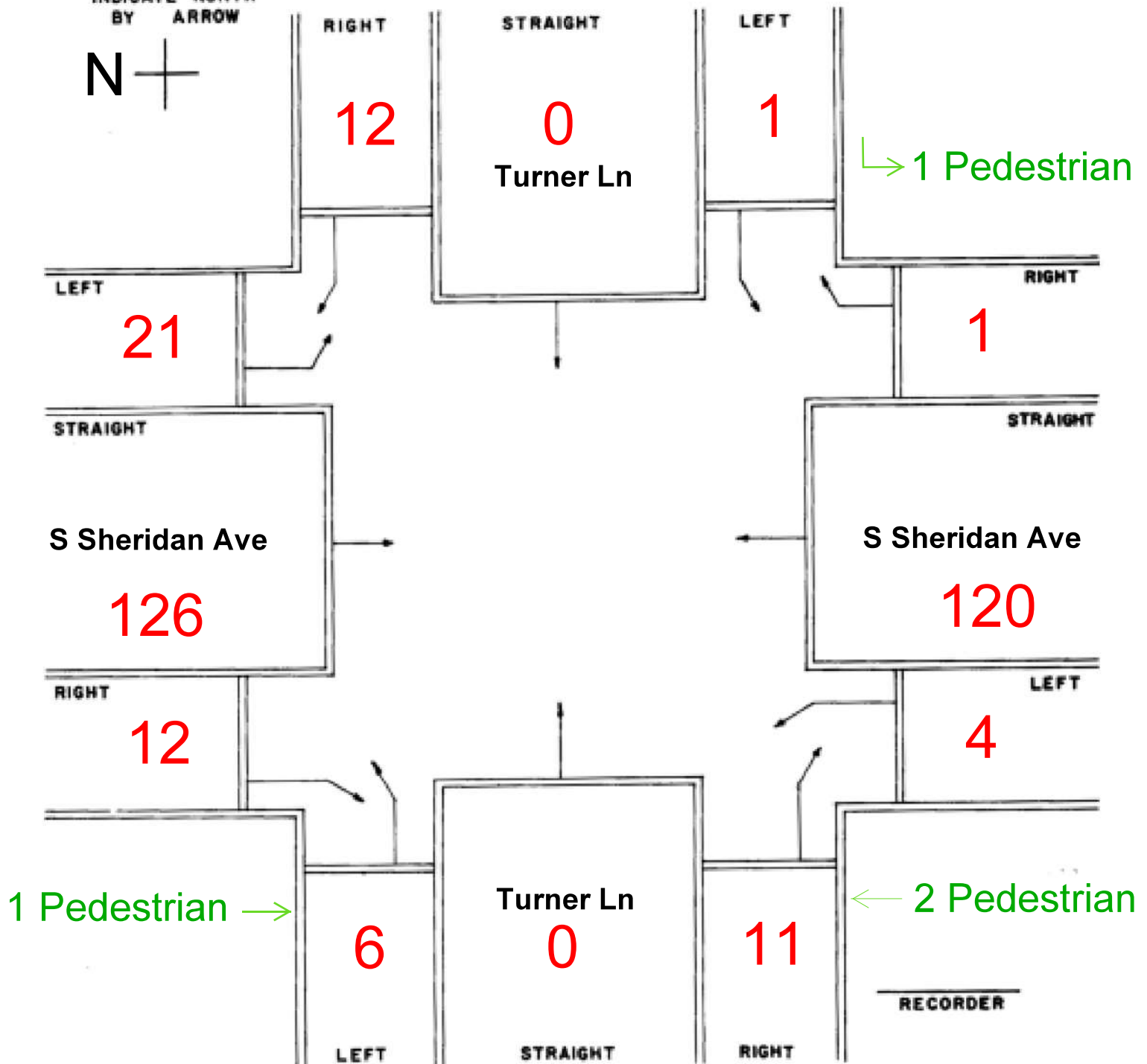
↳ 1 Pedestrian



RECORDER

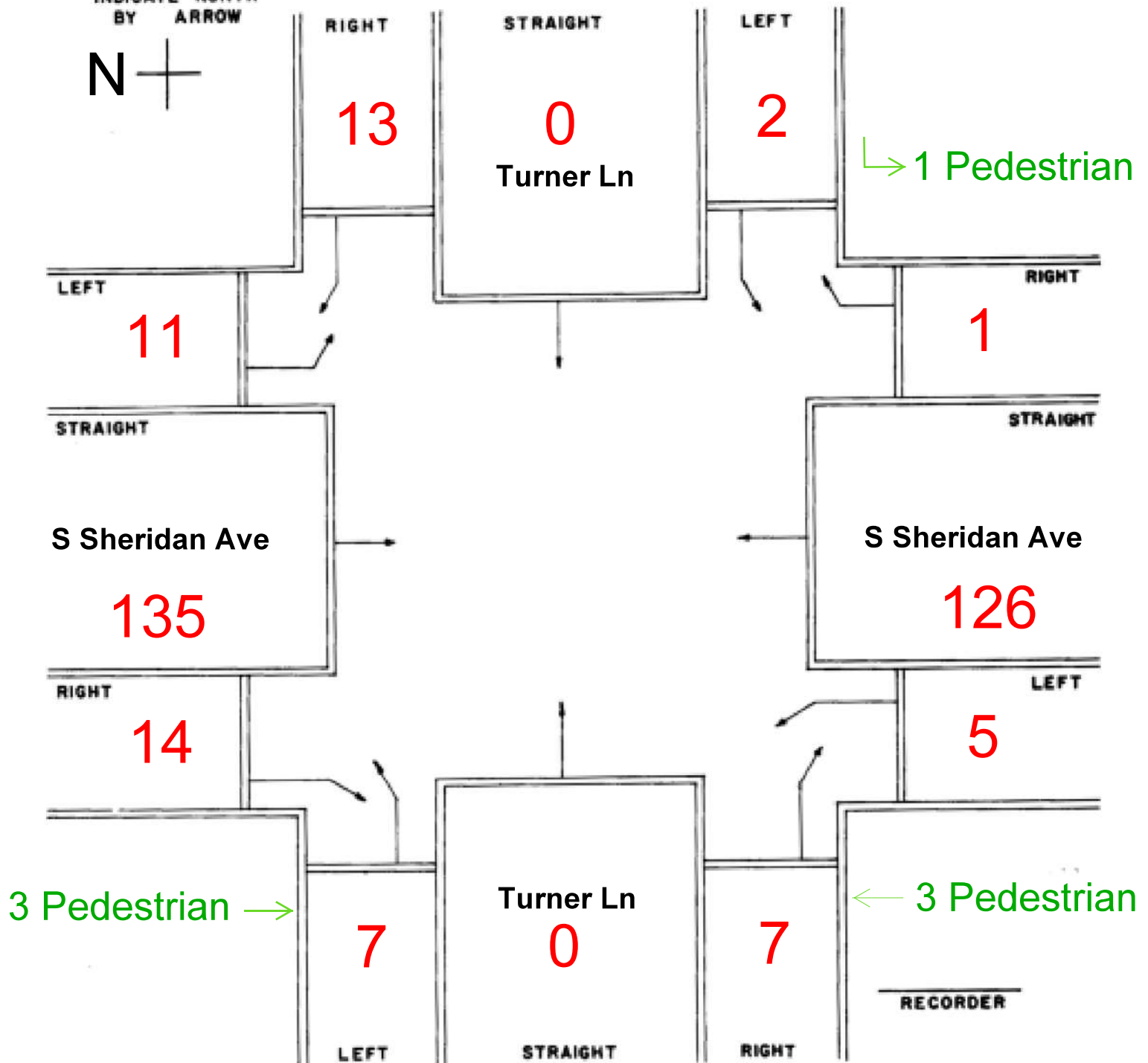
FIELD SHEET
DATE 6/8/2021 LOCATION Intersection of Sheridan and Turner
WEATHER Partly Cloudy ROAD SURFACE CONDITIONS Dry TIME TO 8:00am - 9:00am

INDICATE NORTH
BY ARROW



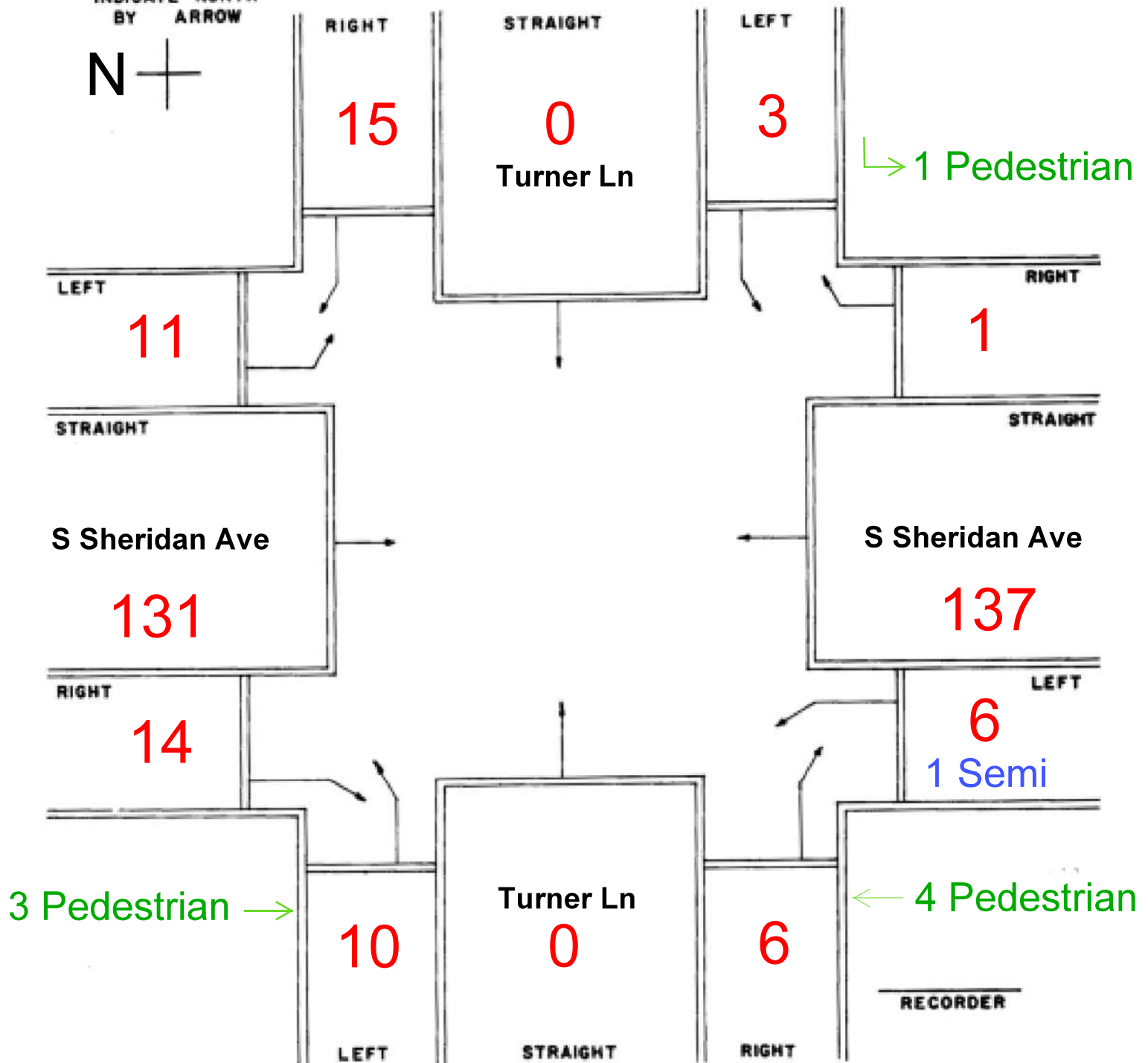
FIELD SHEET
DATE 6/8/2021 LOCATION Intersection of Sheridan and Turner
WEATHER Partly Cloudy ROAD SURFACE CONDITIONS Dry TIME TO 8:15am - 9:15am

INDICATE NORTH
BY ARROW



FIELD SHEET
DATE 6/8/2021 LOCATION Intersection of Sheridan and Turner
WEATHER Partly Cloudy ROAD SURFACE CONDITIONS Dry TIME TO 8:30am - 9:30am

INDICATE NORTH
BY ARROW



FIELD SHEET

DATE 6/8/2021

LOCATION Intersection of Sheridan and Turner

WEATHER Partly Cloudy

ROAD SURFACE CONDITIONS Dry

TIME TO 3:30pm - 4:30pm

INDICATE NORTH
BY ARROW



1 Pedestrian →

21

1

Turner Ln

7

1 Semi

← 2 Pedestrian

LEFT

17

RIGHT

2

1 Semi

STRAIGHT

S Sheridan Ave

140

STRAIGHT

S Sheridan Ave

189

RIGHT

9

LEFT

4

1 Pedestrian ↑

1 Pedestrian ↓

13

Turner Ln

1

2

↑ 1 Pedestrian

LEFT

STRAIGHT

RIGHT

RECORDER

FIELD SHEET

DATE 6/8/2021

LOCATION Intersection of Sheridan and Turner

WEATHER Partly Cloudy

ROAD SURFACE CONDITIONS Dry

TIME TO 3:45pm - 4:45pm

INDICATE NORTH
BY ARROW



1 Pedestrian ←

24

1

Turner Ln

7

1 Semi

← 2 Pedestrian

LEFT

12

RIGHT

4

1 Semi

STRAIGHT

S Sheridan Ave

136

STRAIGHT

S Sheridan Ave

190

RIGHT

9

LEFT

5

1 Pedestrian ↘

16

Turner Ln

1

2

↑ 1 Pedestrian

LEFT

STRAIGHT

RIGHT

RECORDER

FIELD SHEET

DATE 6/8/2021 LOCATION Intersection of Sheridan and Turner

WEATHER Partly Cloudy ROAD SURFACE CONDITIONS Dry TIME TO 4:00pm - 5:00pm

INDICATE NORTH
BY ARROW



1 Pedestrian ←

24

1

Turner Ln

7

← 2 Pedestrian

LEFT

8

RIGHT

3

1 Semi

STRAIGHT

S Sheridan Ave

136

STRAIGHT

S Sheridan Ave

192

RIGHT

10

LEFT

5

Turner Ln

1

↑ 1 Pedestrian

15

2

LEFT

STRAIGHT

RIGHT

RECORDER

FIELD SHEET

DATE 6/8/2021

LOCATION Intersection of Sheridan and Turner

WEATHER Partly Cloudy

ROAD SURFACE CONDITIONS Dry

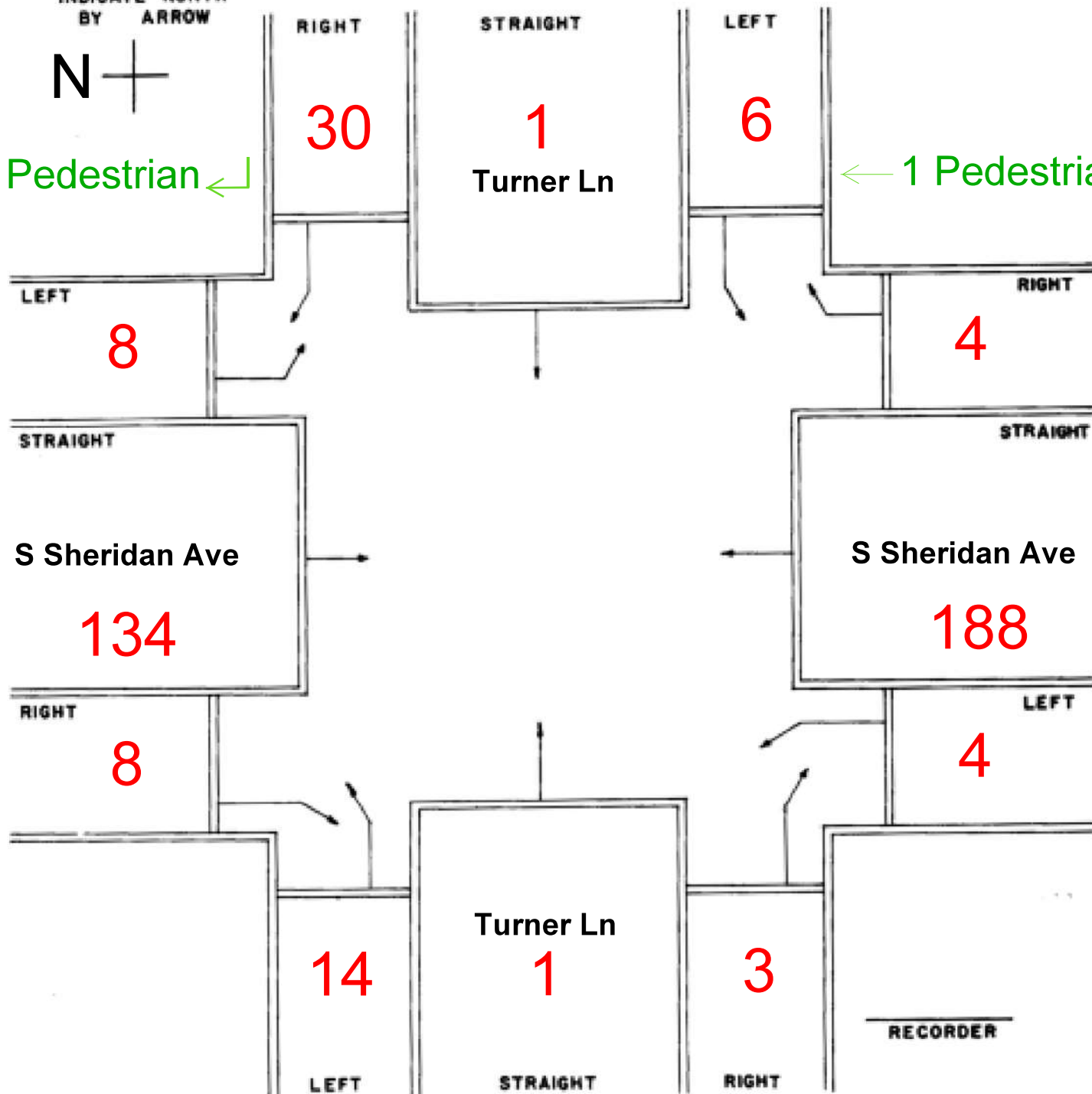
TIME TO 4:15pm - 5:15pm

INDICATE NORTH
BY ARROW



1 Pedestrian ←

← 1 Pedestrian



FIELD SHEET

DATE 6/8/2021

LOCATION Intersection of Sheridan and Turner

WEATHER Partly Cloudy

ROAD SURFACE CONDITIONS Dry

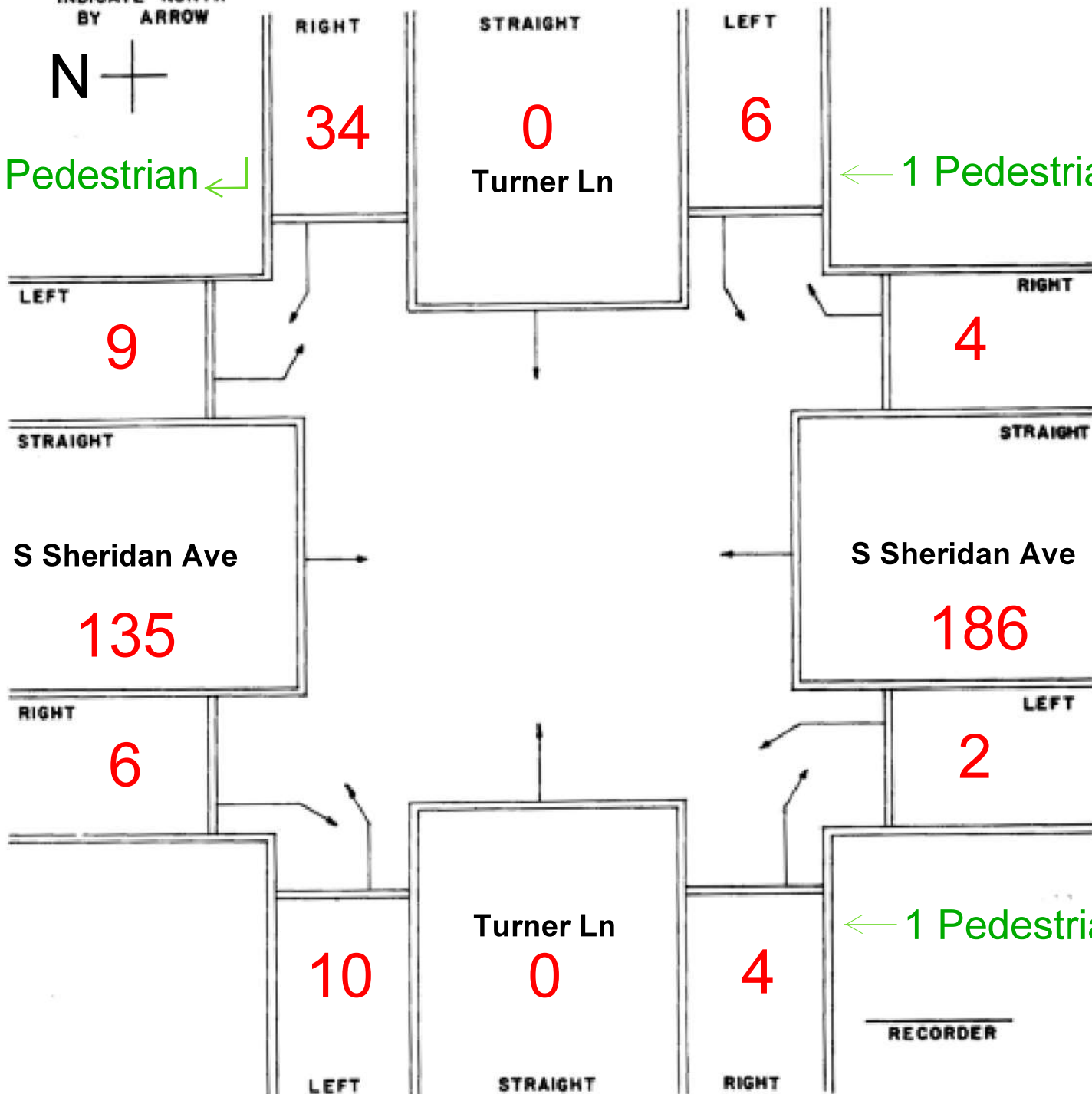
TIME TO 4:30pm - 5:30pm

INDICATE NORTH
BY ARROW

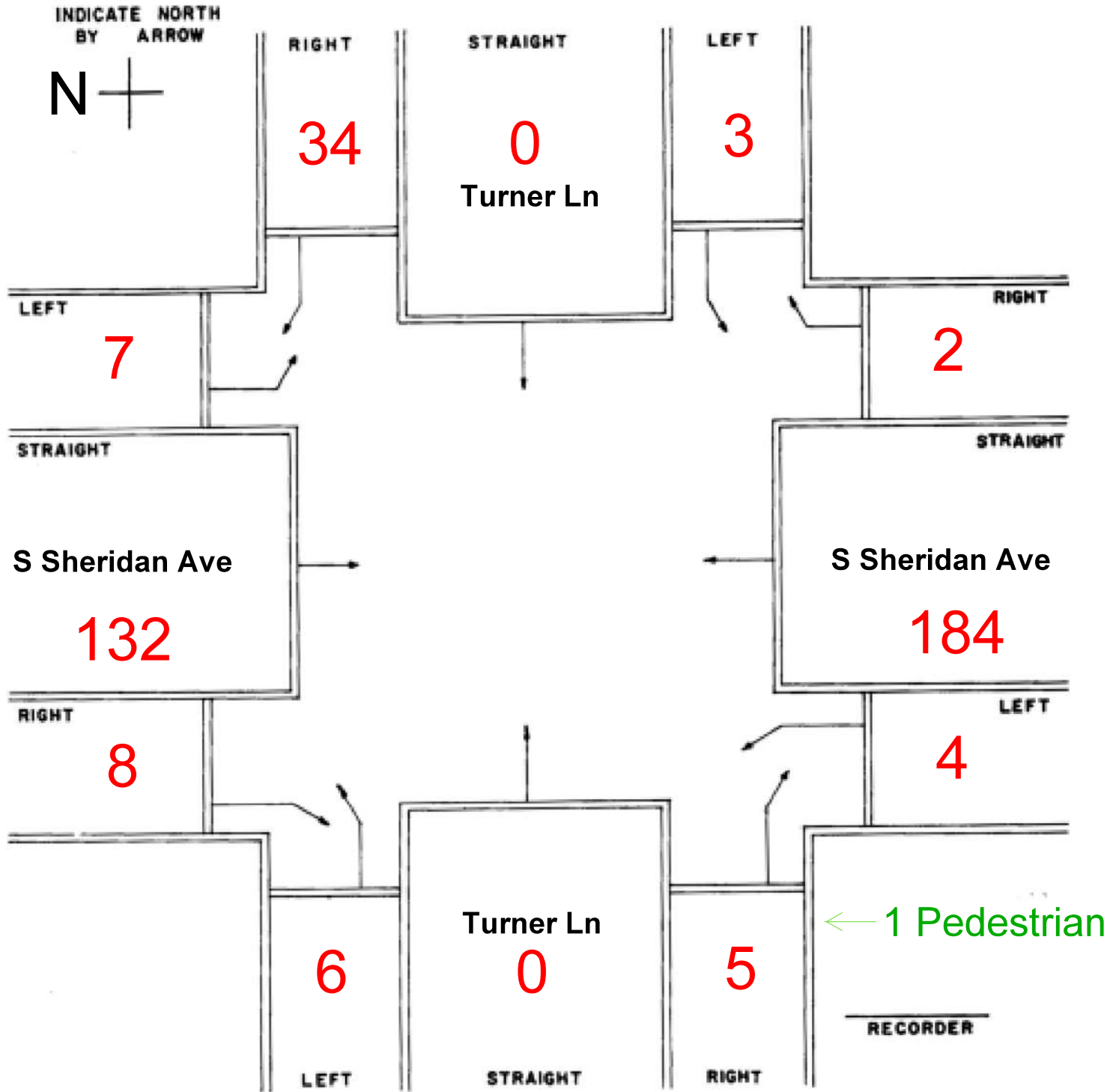


1 Pedestrian ←

← 1 Pedestrian



FIELD SHEET
DATE 6/8/2021 LOCATION Intersection of Sheridan and Turner
WEATHER Partly Cloudy ROAD SURFACE CONDITIONS Dry TIME FROM 4:45pm TO 5:45pm



FIELD SHEET

DATE 6/8/2021

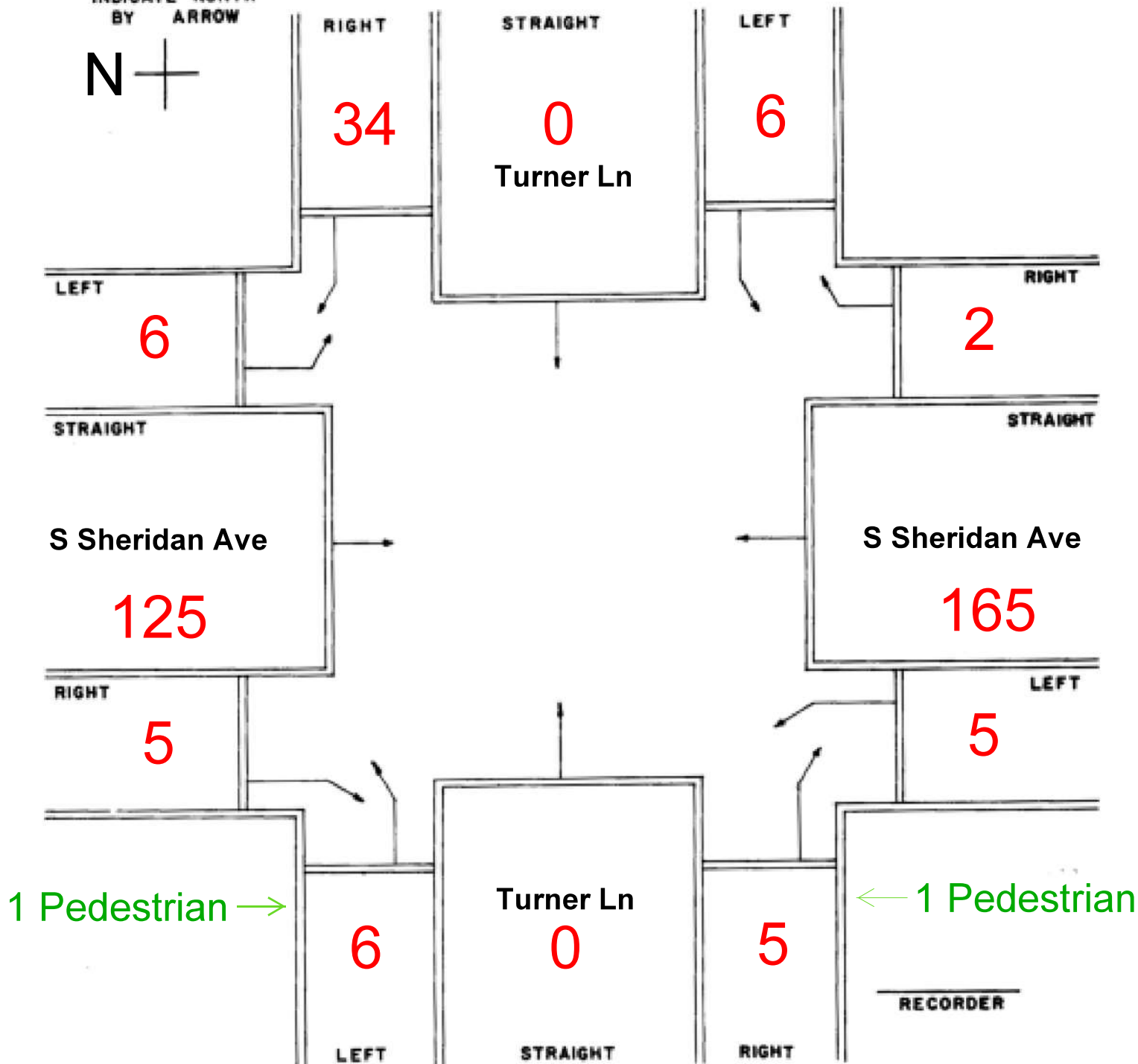
LOCATION Intersection of Sheridan and Turner

WEATHER Partly Cloudy

ROAD SURFACE CONDITIONS Dry

FROM 5:00pm - 6:00pm

INDICATE NORTH
BY ARROW



FIELD SHEET

DATE 6/8/2021

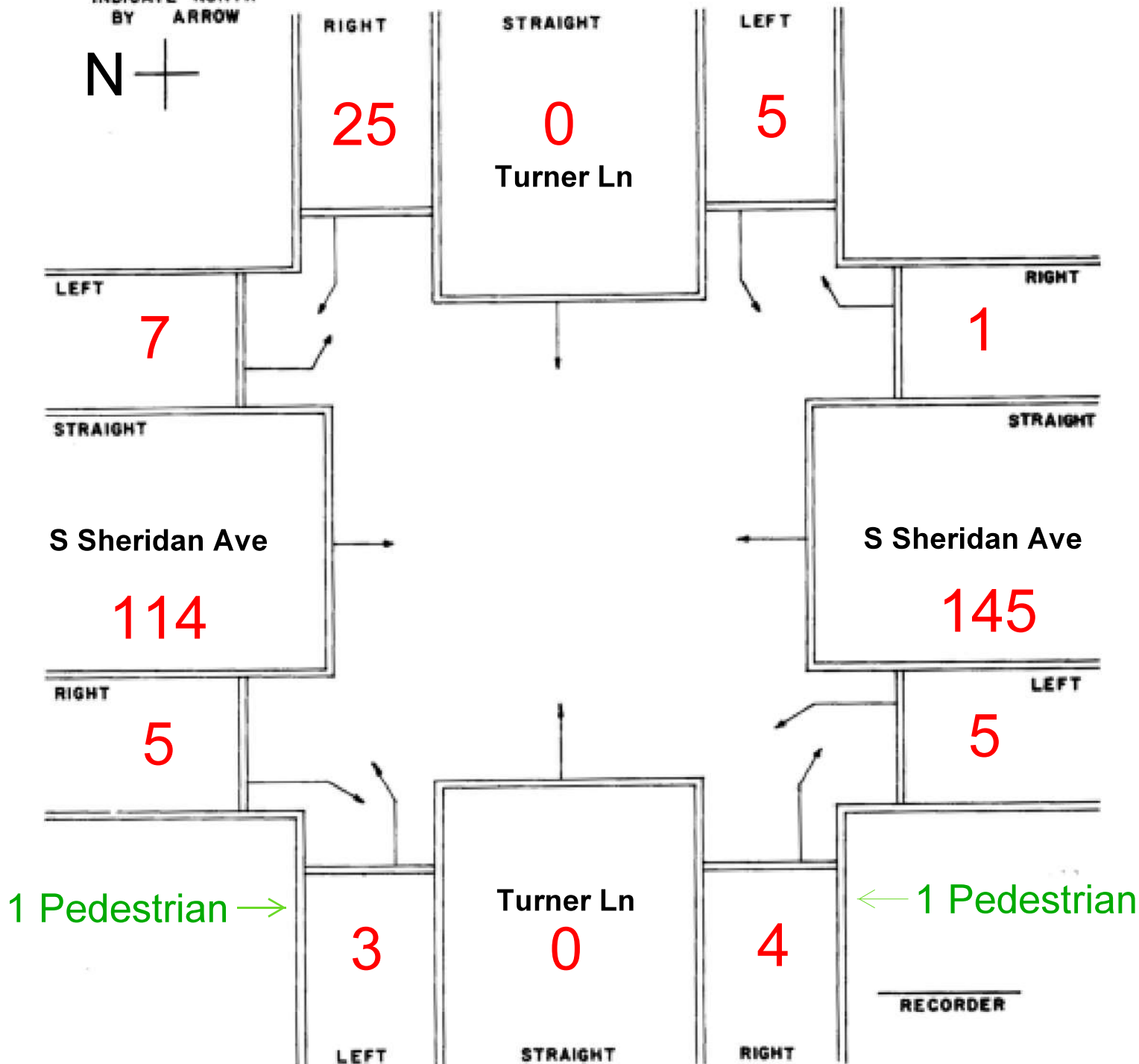
LOCATION Intersection of Sheridan and Turner

WEATHER Partly Cloudy

ROAD SURFACE CONDITIONS Dry

TIME TO 5:15pm - 6:15pm

INDICATE NORTH
BY ARROW



FIELD SHEET

DATE 6/8/2021

LOCATION Intersection of Sheridan and Turner

WEATHER Partly Cloudy

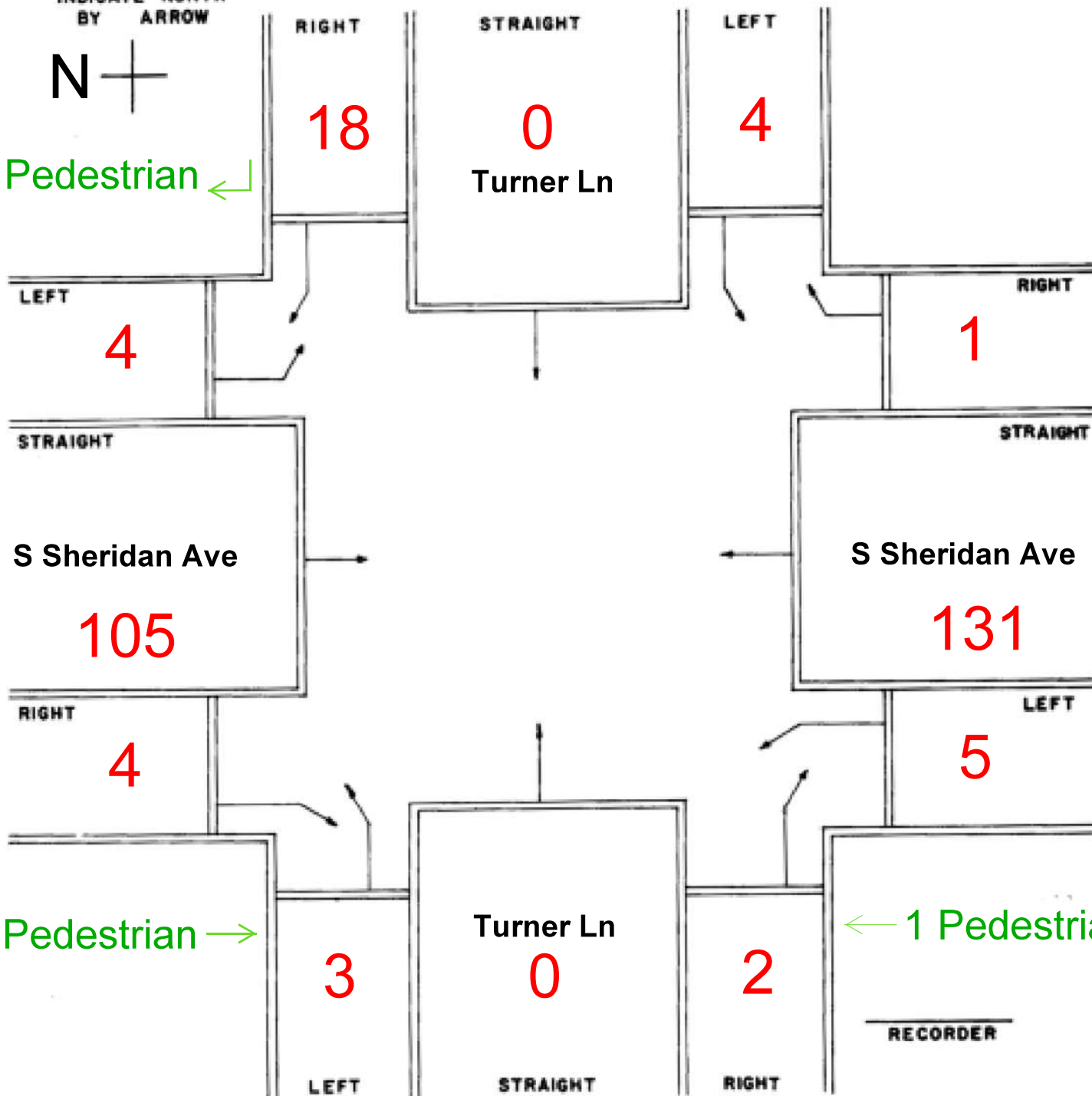
ROAD SURFACE CONDITIONS Dry

TIME TO 5:30pm - 6:30pm

INDICATE NORTH
BY ARROW



1 Pedestrian ←



RECORDER

APPENDIX C

Calculations

Intersection Capacity Utilization Worksheet

Intersection Location: Turner Lane & S. Sheridan Avenue

Analyzed by: Sarah Rawlings

Date and Time of Data: 3:30 PM 6/8/2021

City: Sheridan, WY

Alternative: AM Existing

Project: Bender Subdivision

1	Movement												
2	Lanes	0	1	0	0	1	0	0	1	0	0	1	0
3	Shared LT Lane (y/n)	☒ Yes			☒ Yes			☒ Yes			☒ Yes		
4	Volume	5	0	11	1	0	13	7	117	3	32	135	14
5	Pedestrians			1			1			1			0
6	Ped Button (y/n)	☐ Yes			☐ Yes				☐ Yes			☐ Yes	
7	Pedestrian Timing Required		12			12			12			12	
8	Free Right (y/n)			☐ Yes			☐ Yes			☐ Yes			☐ Yes
9	Ideal Flow	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
10	Lost Time												
11	Minimum Green												
12	Reference Cycle Length	120											
13	Volume Combined	0.0	16.0	0.0	0.0	14.0	0.0	0.0	127.0	0.0	0.0	181.0	0.0
14	Volume Separate Left	5.0	11.0		1.0	13.0		7.0	120.0		32.0	149.0	
15	Lane Utilization Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
16	Turning Factor Adjust	0.950	0.883	0.850	0.950	0.858	0.850	0.950	0.994	0.850	0.950	0.980	0.850
17	Saturated Flow Combined	0.0	1500.9	0.0	0.0	1458.0	0.0	0.0	1689.3	0.0	0.0	1665.4	0.0
18	Saturated Flow Separate	1615.0	1445.0		1615.0	1445.0		1615.0	1693.6		1615.0	1676.0	
19	Pedestrian Interference Time		0.1	0.1		0.1	0.1		0.0	0.1		0.0	0.0
20	Pedestrian Frequency		100.0%			100.0%			100.0%			0.0%	
21	Protected Option Allowed		FALSE			FALSE			FALSE			FALSE	
22	Reference Time	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0
23	Adjusted Reference Time	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0
	Permitted Option												
24	Proportion Lefts	1	0.31		1	0.07		1	0.06		1	0.18	
25	Volume Left Lane	0	16		0	14		0	127		0	181	
26	Proportion Lefts Left	1	0.31		1	0.07		1	0.06		1	0.18	
27	Left turn Equivalents	1.0	6.3		6.2	6.1		11.9	2.6		0.9	16.1	
28	Left turn Factor	0.98	0.38		0.16	0.73		0.08	0.92		1.07	0.27	
29	Permitted Sat Flow	0.0	567.9		0.0	1067.7		0.0	1555.4		0.0	453.6	
30	Reference Time A	0.0	3.5		0.0	1.7		0.0	9.8		0.0	47.9	
31	Adjusted Saturation B		0.0			0.0			0.0			0.0	
32	Reference Time B		9.4			9.3			NA			NA	
33	Reference Time Lefts	8.4			8.1			NA			NA		
34	Reference Time		3.5			1.7			9.8			47.9	
35	Adjusted Reference Time		12.0			12.0			12.0			47.9	
	Split Timing												
36	Ref Time Combined		1.4			1.3			9.0			13.0	
37	Ref Time By Movement	0.4	1.0		0.1	1.2		0.5	8.5		2.4	10.7	
38	Reference Time		1.4			1.3			9.0			13.0	
39	Adjusted Reference Time	12.0	12.0		12.0	12.0		12.0	12.0		13.0	13.0	
	Summary	East West		North South									
40	Protected Option	NA		NA									
41	Permitted Option	12.0		47.9									
42	Split Option	24.0		25.0									
43	Minimum	12.0		25.0									
44	Combined	37.0											
	Right Turns	EBR	WBR	NBR	SBR								
45	Adjusted Reference Time	0.0	0.0	0.0	0.0								
46	Cross Through Direction	NBT	SBT	WBT	EBT								
47	Cross Through Adj Ref Time	12.0	13.0	12.0	12.0								
48	Oncoming Left Direction	WBL	EBL	SBL	NBL								
49	Oncoming Left Adj Ref Time	12.0	12.0	13.0	12.0								
50	Combined	24.0	25.0	25.0	24.0								
51	Intersection Capacity Utilization	30.9%											
52	Level Of Service	A											

Intersection Capacity Utilization Worksheet

Intersection Location: Turner Lane & S. Sheridan Avenue

Analyzed by: Sarah Rawlings

Date and Time of Data: 3:30 PM 6/8/2021

City: Sheridan, WY

Alternative: AM Existing + Proposed

Project: Bender Subdivision

1	Movement												
2	Lanes	0	1	0	0	1	0	0	1	0	0	1	0
3	Shared LT Lane (y/n)	☒ Yes			☒ Yes			☒ Yes			☒ Yes		
4	Volume	10	0	15	1	0	13	9	117	3	32	135	16
5	Pedestrians			1			1			1			0
6	Ped Button (y/n)		☐ Yes			☐ Yes			☐ Yes			☐ Yes	
7	Pedestrian Timing Required		12			12			12			12	
8	Free Right (y/n)			☐ Yes			☐ Yes			☐ Yes			☐ Yes
9	Ideal Flow	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
10	Lost Time												
11	Minimum Green												
12	Reference Cycle Length	120											
13	Volume Combined	0.0	25.0	0.0	0.0	14.0	0.0	0.0	129.0	0.0	0.0	183.0	0.0
14	Volume Separate Left	10.0	15.0		1.0	13.0		9.0	120.0		32.0	151.0	
15	Lane Utilization Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
16	Turning Factor Adjust	0.950	0.892	0.850	0.950	0.858	0.850	0.950	0.993	0.850	0.950	0.978	0.850
17	Saturated Flow Combined	0.0	1516.1	0.0	0.0	1458.0	0.0	0.0	1688.2	0.0	0.0	1663.0	0.0
18	Saturated Flow Separate	1615.0	1445.0		1615.0	1445.0		1615.0	1693.6		1615.0	1673.0	
19	Pedestrian Interference Time		0.1	0.1		0.1	0.1		0.0	0.1		0.0	0.0
20	Pedestrian Frequency		100.0%			100.0%			100.0%			0.0%	
21	Protected Option Allowed		FALSE			FALSE			FALSE			FALSE	
22	Reference Time	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0
23	Adjusted Reference Time	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0
	Permitted Option												
24	Proportion Lefts	1	0.40		1	0.07		1	0.07		1	0.17	
25	Volume Left Lane	0	25		0	14		0	129		0	183	
26	Proportion Lefts Left	1	0.40		1	0.07		1	0.07		1	0.17	
27	Left turn Equivalents	1.0	6.5		6.2	5.3		11.9	2.6		0.9	16.1	
28	Left turn Factor	1.00	0.31		0.16	0.77		0.08	0.90		1.07	0.27	
29	Permitted Sat Flow	0.0	471.6		0.0	1117.4		0.0	1515.5		0.0	456.7	
30	Reference Time A	0.0	6.4		0.0	1.6		0.0	10.2		0.0	48.1	
31	Adjusted Saturation B		0.0			0.0			0.0			0.0	
32	Reference Time B		10.1			9.3			NA			NA	
33	Reference Time Lefts	8.7			8.1			NA			NA		
34	Reference Time		6.4			1.6			10.2			48.1	
35	Adjusted Reference Time		12.0			12.0			12.0			48.1	
	Split Timing												
36	Ref Time Combined		2.1			1.3			9.2			13.2	
37	Ref Time By Movement	0.7	1.3		0.1	1.2		0.7	8.5		2.4	10.8	
38	Reference Time		2.1			1.3			9.2			13.2	
39	Adjusted Reference Time	12.0	12.0		12.0	12.0		12.0	12.0		13.2	13.2	
	Summary	East West		North South									
40	Protected Option	NA		NA									
41	Permitted Option	12.0		48.1									
42	Split Option	24.0		25.2									
43	Minimum	12.0		25.2									
44	Combined	37.2											
	Right Turns	EBR	WBR	NBR	SBR								
45	Adjusted Reference Time	0.0	0.0	0.0	0.0								
46	Cross Through Direction	NBT	SBT	WBT	EBT								
47	Cross Through Adj Ref Time	12.0	13.2	12.0	12.0								
48	Oncoming Left Direction	WBL	EBL	SBL	NBL								
49	Oncoming Left Adj Ref Time	12.0	12.0	13.2	12.0								
50	Combined	24.0	25.2	25.2	24.0								
51	Intersection Capacity Utilization	31.0%											
52	Level Of Service	A											

Intersection Capacity Utilization Worksheet

Intersection Location: Turner Lane & S. Sheridan Avenue

Analyzed by: Sarah Rawlings

Date and Time of Data: 3:30 PM 6/8/2021

City: Sheridan, WY

Alternative: PM Existing

Project: Bender Subdivision

1 Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2 Lanes	0	1	0	0	1	0	0	1	0	0	1	0
3 Shared LT Lane (y/n)	☒ Yes			☒ Yes			☒ Yes			☒ Yes		
4 Volume	16	1	2	7	1	24	5	190	4	12	136	9
5 Pedestrians			1			1			1			0
6 Ped Button (y/n)		☐ Yes			☐ Yes			☐ Yes			☐ Yes	
7 Pedestrian Timing Required		12			12			12			12	
8 Free Right (y/n)			☐ Yes			☐ Yes			☐ Yes			☐ Yes
9 Ideal Flow	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
10 Lost Time												
11 Minimum Green												
12 Reference Cycle Length	120											
13 Volume Combined	0.0	19.0	0.0	0.0	32.0	0.0	0.0	199.0	0.0	0.0	157.0	0.0
14 Volume Separate Left	16.0	3.0		7.0	25.0		5.0	194.0		12.0	145.0	
15 Lane Utilization Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
16 Turning Factor Adjust	0.950	0.943	0.850	0.950	0.878	0.850	0.950	0.996	0.850	0.950	0.988	0.850
17 Saturated Flow Combined	0.0	1602.7	0.0	0.0	1492.2	0.0	0.0	1692.7	0.0	0.0	1678.9	0.0
18 Saturated Flow Separate	1615.0	1530.0		1615.0	1455.2		1615.0	1694.7		1615.0	1684.2	
19 Pedestrian Interference Time		0.0	0.1		0.1	0.1		0.0	0.1		0.0	0.0
20 Pedestrian Frequency		100.0%			100.0%			100.0%			0.0%	
21 Protected Option Allowed		FALSE			FALSE			FALSE			FALSE	
22 Reference Time	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0
23 Adjusted Reference Time	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0
Permitted Option												
24 Proportion Lefts	1	0.84		1	0.22		1	0.03		1	0.08	
25 Volume Left Lane	0	19		0	32		0	199		0	157	
26 Proportion Lefts Left	1	0.84		1	0.22		1	0.03		1	0.08	
27 Left turn Equivalents	3.8	3.4		5.7	10.0		10.8	4.7		0.9	15.6	
28 Left turn Factor	0.27	0.33		0.18	0.34		0.09	0.91		1.07	0.47	
29 Permitted Sat Flow	0.0	526.1		0.0	500.9		0.0	1548.7		0.0	793.8	
30 Reference Time A	0.0	4.3		0.0	7.8		0.0	15.4		0.0	23.7	
31 Adjusted Saturation B		0.0			0.0			0.0			0.0	
32 Reference Time B		9.4			10.7			NA			NA	
33 Reference Time Lefts	9.2			8.5			NA			NA		
34 Reference Time		4.3			7.8			15.4			23.7	
35 Adjusted Reference Time		12.0			12.0			15.4			23.7	
Split Timing												
36 Ref Time Combined		1.4			2.7			14.1			11.2	
37 Ref Time By Movement	1.2	0.2		0.5	2.2		0.4	13.7		0.9	10.3	
38 Reference Time		1.4			2.7			14.1			11.2	
39 Adjusted Reference Time	12.0	12.0		12.0	12.0		14.1	14.1		11.2	11.2	
Summary	East West		North South									
40 Protected Option	NA		NA									
41 Permitted Option	12.0		23.7									
42 Split Option	24.0		25.3									
43 Minimum	12.0		23.7									
44 Combined	35.7											
Right Turns	EBR	WBR	NBR	SBR								
45 Adjusted Reference Time	0.0	0.0	0.0	0.0								
46 Cross Through Direction	NBT	SBT	WBT	EBT								
47 Cross Through Adj Ref Time	14.1	11.2	12.0	12.0								
48 Oncoming Left Direction	WBL	EBL	SBL	NBL								
49 Oncoming Left Adj Ref Time	12.0	12.0	11.2	14.1								
50 Combined	26.1	23.2	23.2	26.1								
51 Intersection Capacity Utilization	29.8%											
52 Level Of Service	A											

Intersection Capacity Utilization Worksheet

Intersection Location: Turner Lane & S. Sheridan Avenue

Analyzed by: Sarah Rawlings

Date and Time of Data: 3:30 PM 6/8/2021

City: Sheridan, WY

Alternative: PM Existing + Proposed

Project: Bender Subdivision

1 Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
2 Lanes	0	1	0	0	1	0	0	1	0	0	1	0
3 Shared LT Lane (y/n)	☒ Yes			☒ Yes			☒ Yes			☒ Yes		
4 Volume	18	1	4	7	1	24	9	190	4	12	136	14
5 Pedestrians			1			1			1			0
6 Ped Button (y/n)		☐ Yes			☐ Yes			☐ Yes			☐ Yes	
7 Pedestrian Timing Required		12			12			12			12	
8 Free Right (y/n)			☐ Yes			☐ Yes			☐ Yes			☐ Yes
9 Ideal Flow	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700	1700
10 Lost Time												
11 Minimum Green												
12 Reference Cycle Length	120											
13 Volume Combined	0.0	23.0	0.0	0.0	32.0	0.0	0.0	203.0	0.0	0.0	162.0	0.0
14 Volume Separate Left	18.0	5.0		7.0	25.0		9.0	194.0		12.0	150.0	
15 Lane Utilization Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
16 Turning Factor Adjust	0.950	0.936	0.850	0.950	0.878	0.850	0.950	0.995	0.850	0.950	0.983	0.850
17 Saturated Flow Combined	0.0	1590.9	0.0	0.0	1492.2	0.0	0.0	1691.2	0.0	0.0	1671.7	0.0
18 Saturated Flow Separate	1615.0	1496.0		1615.0	1455.2		1615.0	1694.7		1615.0	1676.2	
19 Pedestrian Interference Time		0.0	0.1		0.1	0.1		0.0	0.1		0.0	0.0
20 Pedestrian Frequency		100.0%			100.0%			100.0%			0.0%	
21 Protected Option Allowed		FALSE			FALSE			FALSE			FALSE	
22 Reference Time	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0
23 Adjusted Reference Time	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0	NA	NA	0.0
Permitted Option												
24 Proportion Lefts	1	0.78		1	0.22		1	0.04		1	0.07	
25 Volume Left Lane	0	23		0	32		0	203		0	162	
26 Proportion Lefts Left	1	0.78		1	0.22		1	0.04		1	0.07	
27 Left turn Equivalents	2.5	3.4		5.7	7.8		10.8	4.9		0.9	15.6	
28 Left turn Factor	0.40	0.35		0.17	0.40		0.09	0.85		1.07	0.48	
29 Permitted Sat Flow	0.0	554.6		0.0	601.2		0.0	1441.2		0.0	803.9	
30 Reference Time A	0.0	5.0		0.0	6.5		0.0	16.9		0.0	24.2	
31 Adjusted Saturation B		0.0			0.0			0.0			0.0	
32 Reference Time B		9.8			10.7			NA			NA	
33 Reference Time Lefts	9.3			8.5			NA			NA		
34 Reference Time		5.0			6.5			16.9			24.2	
35 Adjusted Reference Time		12.0			12.0			16.9			24.2	
Split Timing												
36 Ref Time Combined		1.8			2.7			14.4			11.6	
37 Ref Time By Movement	1.3	0.4		0.5	2.2		0.7	13.7		0.9	10.7	
38 Reference Time		1.8			2.7			14.4			11.6	
39 Adjusted Reference Time	12.0	12.0		12.0	12.0		14.4	14.4		11.6	11.6	
Summary	East West		North South									
40 Protected Option	NA		NA									
41 Permitted Option	12.0		24.2									
42 Split Option	24.0		26.0									
43 Minimum	12.0		24.2									
44 Combined	36.2											
Right Turns	EBR	WBR	NBR	SBR								
45 Adjusted Reference Time	0.0	0.0	0.0	0.0								
46 Cross Through Direction	NBT	SBT	WBT	EBT								
47 Cross Through Adj Ref Time	14.4	11.6	12.0	12.0								
48 Oncoming Left Direction	WBL	EBL	SBL	NBL								
49 Oncoming Left Adj Ref Time	12.0	12.0	11.6	14.4								
50 Combined	26.4	23.6	23.6	26.4								
51 Intersection Capacity Utilization	30.2%											
52 Level Of Service	A											