

# Spokane Traffic Calming Master Plan

<b>District:</b>	2
<b>Neighborhood:</b>	Cliff-Cannon
<b>Project Extent:</b>	Cedar Street – 12 <sup>th</sup> to 21 <sup>st</sup> Avenue
	Estimate: \$1,094,000

**Problem Statement:** Residents of the Cliff-Cannon neighborhood raised concerns over speeding on Cedar Street through the neighborhood. The study corridor includes Cedar Street from 12<sup>th</sup> to 21<sup>st</sup> Avenue.

## Traffic Analysis

Cedar Street within the study area is classified as a local street with a posted speed limit of 30 miles per hour. The study segment provides two lanes with a center turn lane (north of 14<sup>th</sup> Avenue), sidewalks and bike lanes. Pockets of on-street parking is allowed south of 15<sup>th</sup> Avenue. There is a marked pedestrian crossing at 14<sup>th</sup> Avenue.

The table below shows the 2022 daily traffic volumes and 85<sup>th</sup> percentile speeds on Cedar Street within the study area. The highest daily volume on Cedar Street was 12,975 vehicles at 12<sup>th</sup> Avenue. The highest 85<sup>th</sup> percentile speed was 45 miles per hour in the southbound direction near 16<sup>th</sup> Avenue (15 miles per hour greater than the posted speed limit). The data indicates there is a significant speeding concern.

**2022 Estimated Daily Traffic and 85<sup>th</sup> Percentile Speeds on Cedar Street**

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day) <sup>a</sup>	85 <sup>th</sup> Percentile Speed (mph)	Posted Speed (mph)
North of 12 <sup>th</sup> Avenue				
NB	1	8,835	42	30
SB	1	8,008	41	
Both Dir.	2	16,843	42	
North of 16 <sup>th</sup> Avenue				
NB	1	5,676	40	30
SB	1	4,907	45	
Both Dir.	2	10,583	43	

<sup>a</sup> Traffic data collected in May 2018. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions. Speed data collected in 2022.

The need for enhanced pedestrian crossing treatments across Cedar Street using the highest daily volume and 85<sup>th</sup> percentile speed along the study segment was analyzed based on the National Cooperative Highway Research Program (NCHRP) Report 562.1 Based on the finding, red treatments (e.g., HAWK signal beacon, midblock pedestrian signal) are the preferred treatment if there are 20 or

<sup>1</sup> NCHRP Report 562: *Improving Pedestrian Safety and Unsignalized Crossings*. National Cooperative Highway Research Program, 2006. <https://nacto.org/wp-content/uploads/2010/08/NCHRP-562-Improving-Pedestrian-Safety-at-Unsignalized-Crossings.pdf>

# Spokane Traffic Calming Master Plan

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more pedestrian crossings during the peak hour. Although pedestrian data is not available, it is assumed the 20 or more pedestrian crossing threshold is met due to surrounding urban neighborhoods.

The table below shows the severity and types of crashes occurring on Cedar Street between 12<sup>th</sup> Avenue and 21<sup>st</sup> Avenue from 2017 through 2021. There were 15 total crashes and included two minor injury crashes, indicating there is a minor safety concern along the segment.

**Crashes on Cedar Street between 5<sup>th</sup> Avenue and 11<sup>th</sup> Avenue (2017 to 2021)**

Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Possible Injury	Property Damage Only	
Angle	-	-	-	-	4	4
Head On					1	1
Fixed Object			1		4	5
Rear End	-	-	1	-	4	5
Total	0	0	2	0	13	15

The speeding issue on Cedar Street is a concern. The roadway provides a direct connection through the neighborhood with uncontrolled intersections. There are bike lanes and pockets of on-street parking that limit the opportunity to narrow the roadway. There are segments near intersections where on-street parking is restricted and curb extensions could be added for traffic calming.

## **Recommended Solution:**

Conditions on Cedar Street could benefit from the addition of traffic calming elements to manage driver speeds and improve pedestrian crossing safety. The following improvements are recommended.

- Install a rectangular rapid flashing beacon at the existing marked crosswalk at 14<sup>th</sup> Avenue to increase the visibility of the crossing.
- Install raised curb extensions on Cedar Street at key locations to narrow the roadway, locations to consider include:
  - North and south side of 17<sup>th</sup> Avenue
  - North and south side of 19<sup>th</sup> Avenue



**LEGEND**

————— PROPERTY LINE

**CONSTRUCTION NOTES**

1 REMOVE EXISTING AND INSTALL NEW BIKE LANE LINE. APPLY TO CEDAR STREET FROM 12TH AVENUE TO 21ST AVENUE.



**PRELIMINARY  
NOT FOR CONSTRUCTION**

1  
1 OF 12

RIGHT OF WAY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY

DATE	BY	PROJ	DESCRIPTION	DATE	BY	PROJ	E.F.N. / U.S.N.	FROM	TO	COUNCIL ACCEPT DATE
REVISIONS										
AS BUILT										

**GRADE ORDINANCE LIST**

FROM	TO	ORD. NO.	DATE	FILE NO.
GRADE ORDINANCE LIST				

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NAV88 ELE	NONE GIVEN
CBM NO.	NONE GIVEN
BAR IS ONE INCH ON ORIGINAL DRAWING:	HORIZONTAL PLAN/PROFILE 1" = 4'
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	VERTICAL PROFILE ONLY N/A
SCALE	
NAV88 DATUM	

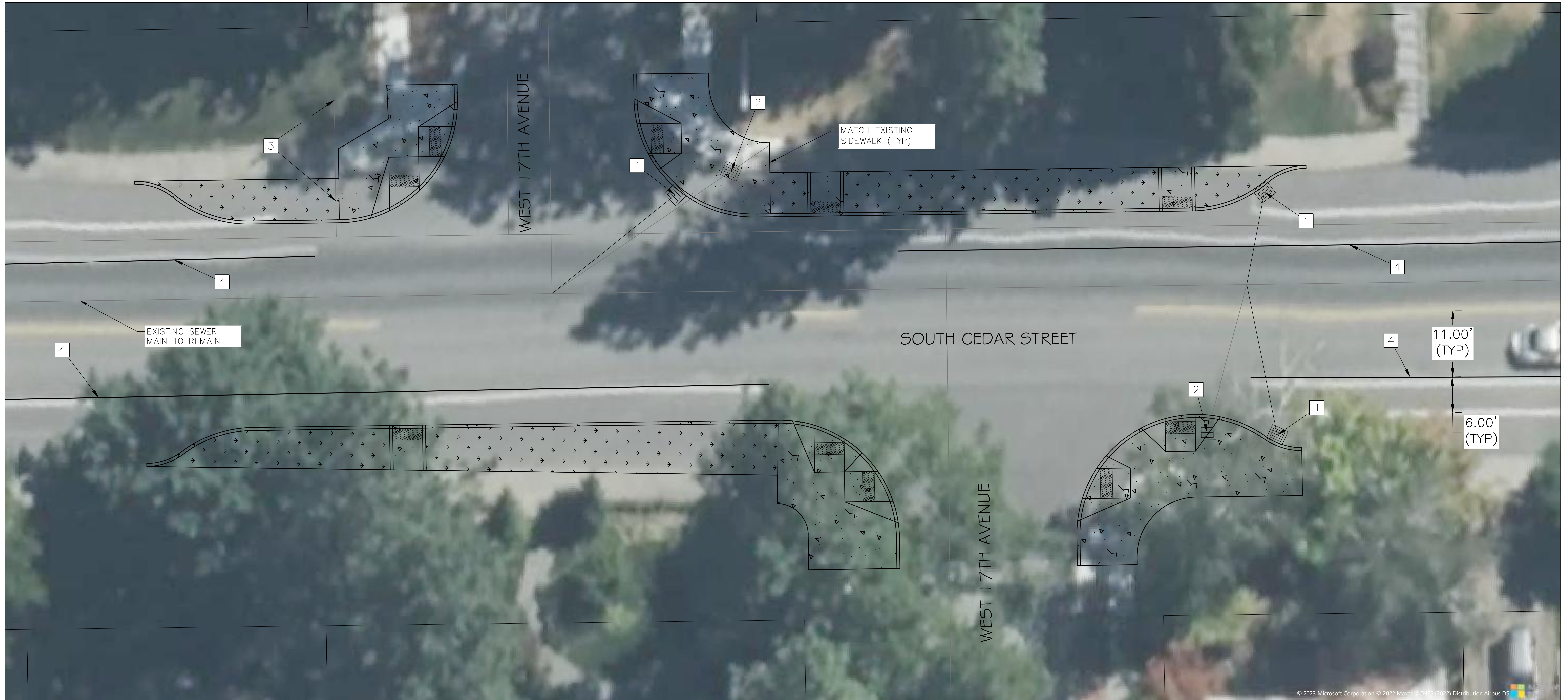
CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007	
BY	DATES
DRAWN: KL	03/2023
REVISED: KL	05/2023
CHECKED: SP	03/2023
APPROVED: AM	03/2023

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DEPARTMENT OF ENGINEERING SERVICES  
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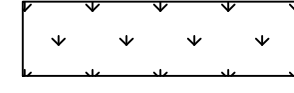
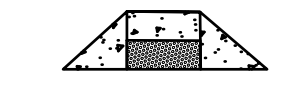


PROJECT NAME:	SPOKANE TRAFFIC CALMING MASTER PLAN	
SEGMENT LIMITS:	CEDAR STREET 14TH AVENUE TO 19TH AVENUE	
PROJECT LIMITS:	CLIFF-CANNON NEIGHBORHOOD	
TYPE OF IMPROVEMENT:	TRAFFIC	
CITY PROJECT NUMBER	CITY PLAN NUMBER	

Plotted On May 15, 2023 - 3:24pm





**LEGEND**

-  INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
-  INSTALL LANDSCAPING, NATIVE PLANTINGS
-  INSTALL CURB RAMP PER COS STD PLAN F-105
-  INSTALL CROSSWALK PER COS STD PLAN G-61
-  PROPERTY LINE

**CONSTRUCTION NOTES**

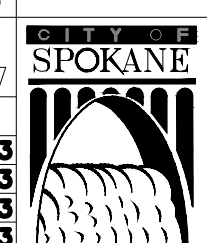
- 1 INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO EXISTING PIPE WHERE SHOWN.
- 2 REMOVE EXISTING INLET. PLUG AND ABANDON EXISTING PIPE.
- 3 RELOCATE EXISTING FIRE HYDRANT AS SHOWN.
- 4 REMOVE EXISTING AND INSTALL NEW BIKE LANE LINE. APPLY TO CEDAR STREET FROM 12TH AVENUE TO 21ST AVENUE.

RIGHT OF WAY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY

DATE	BY	PROJ.	DESCRIPTION	DATE	BY	PROJ.	E.F.N. / U.S.N.	FROM	TO	COUNCIL ACCEPT DATE
REVISIONS										
AS BUILT										

FROM	TO	ORD. NO.	DATE	FILE NO.
GRADE ORDINANCE LIST				

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CBM NO.	NONE GIVEN	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	VERTICAL PROFILE ONLY N/A
NAV88 DATUM			SCALE



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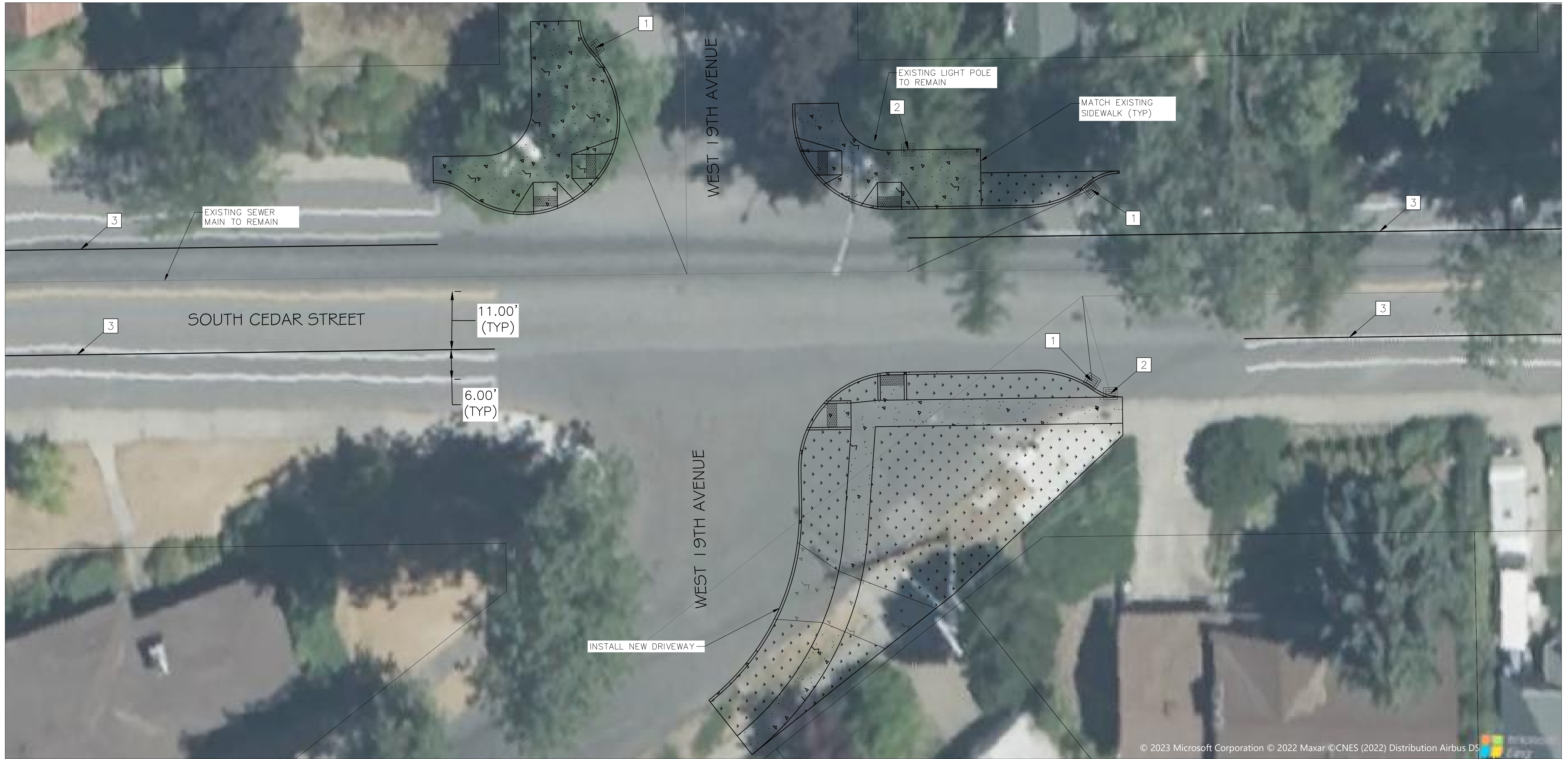
**PRELIMINARY  
 NOT FOR CONSTRUCTION**

2  
 2 OF 12

PROJECT NAME:	SPOKANE TRAFFIC CALMING MASTER PLAN	
SEGMENT LIMITS:	CEDAR STREET 14TH AVENUE TO 19TH AVENUE	
PROJECT LIMITS:	CLIFF-CANNON NEIGHBORHOOD	TYPE OF IMPROVEMENT: TRAFFIC
		CITY PROJECT NUMBER
		CITY PLAN NUMBER


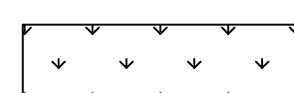
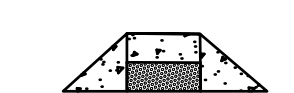
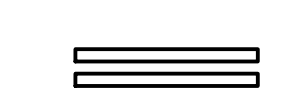

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**LEGEND**

-  INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
-  INSTALL LANDSCAPING, NATIVE PLANTINGS
-  INSTALL CURB RAMP PER COS STD PLAN F-105
-  INSTALL CROSSWALK PER COS STD PLAN G-61
-  PROPERTY LINE

**CONSTRUCTION NOTES**

- 1 INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO EXISTING PIPE WHERE SHOWN.
- 2 REMOVE EXISTING INLET. PLUG AND ABANDON EXISTING PIPE.
- 3 REMOVE EXISTING AND INSTALL NEW BIKE LANE LINE. APPLY TO CEDAR STREET FROM 12TH AVENUE TO 21ST AVENUE.



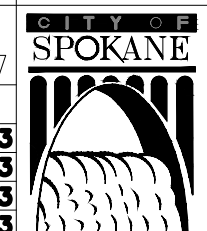
**PRELIMINARY  
NOT FOR CONSTRUCTION**

3  
3 OF 12

RIGHT OF WAY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY

DATE	BY	PROJ.	DESCRIPTION	DATE	BY	PROJ.	E.F.N.	U.S.N.	FROM	TO	COUNCIL ACCEPT DATE	FROM	TO	ORD. NO.	DATE	FILE NO.
REVISIONS												AS BUILT				
GRADE												ORDINANCE LIST				

NAV88 = (OLD CBM ELEV.) - (13.13) AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88)	BENCH MARK LOCATION	NONE GIVEN	CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007
NAV88 ELE	NONE GIVEN	BAR IS ONE INCH ON ORIGINAL DRAWING	HORIZONTAL PLAN/PROFILE 1" = 10'
CBM NO.	NONE GIVEN	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	VERTICAL PROFILE ONLY N/A
NAV88 DATUM			SCALE



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PROJECT NAME:	SPOKANE TRAFFIC CALMING MASTER PLAN	
SEGMENT LIMITS:	CEDAR STREET 14TH AVENUE TO 19TH AVENUE	
PROJECT LIMITS:	CLIFF-CANNON NEIGHBORHOOD	
TYPE OF IMPROVEMENT:	TRAFFIC	
CITY PROJECT NUMBER	CITY PLAN NUMBER	

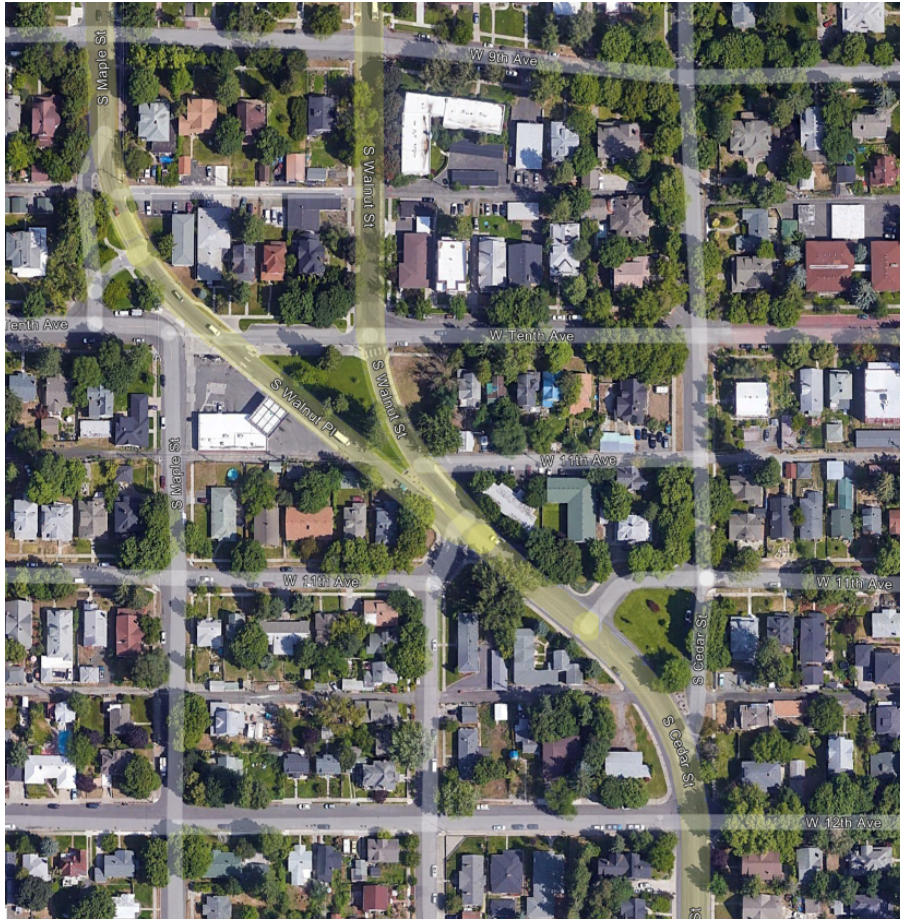
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# Spokane Traffic Calming Master Plan

**District:** 2  
**Neighborhood:** Cliff-Cannon  
**Project Extent:** Walnut Street/Maple Street and Cedar Street  
Estimate: \$749,000

**Problem Statement:** Residents of the Cliff-Cannon neighborhood raised concerns over speeding, congestion, and difficult pedestrian crossings due to the wide streets at the Walnut Street/Maple Street and Cedar Street intersection. Figure below shows the study area.



**Walnut Street/Maple Street and Cedar Street Intersection**

## **Traffic Analysis**

Walnut Street, Maple Street, Walnut Place and Cedar Street (south of 11<sup>th</sup> Avenue) are classified as an urban principal arterial with a posted speed limit of 30 miles per hour. North of 11<sup>th</sup> Avenue, Cedar Street transitions into Walnut Place then Walnut Street and Walnut Place-Maple Street split into a north-south couplet facility. Walnut Street operates one-way northbound and Walnut Place-Maple Street operates one-way southbound. Both streets provide two lanes with bike lanes. Walnut Place provides two lanes and a two-way-left-turn lane. Marked crosswalk and warning signs are provided at Walnut Place at 10<sup>th</sup> Avenue and sidewalks are provided within the study area. Transit Route 42 and 43

# Spokane Traffic Calming Master Plan

travels on Walnut Place/Cedar Street, where 11<sup>th</sup> Avenue has stops for route 43 and 12<sup>th</sup> Avenue has stops for Route 42 and 43.

The table below shows the estimated 2022 daily traffic volumes and 85<sup>th</sup> percentile speeds on Walnut Place and Cedar Street within the study area. The highest daily volume within the study area was 16,843 vehicles on Cedar Street north of 12<sup>th</sup> Avenue. The highest 85<sup>th</sup> percentile speed was 42 miles per hour (12 miles per hour greater than the posted speed limit) on Cedar Street north of 12<sup>th</sup> Avenue. The data indicates there is a significant speeding issue.

**2022 Estimated Daily Traffic and 85<sup>th</sup> Percentile Speeds within Study Area**

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day)	85 <sup>th</sup> Percentile Speed (mph)	Posted Speed (mph)
Walnut Place North of 11 <sup>th</sup> Avenue <sup>a</sup>				
NB	1	7,930		
SB	1	7,625		30
Both Dir.	3	15,555	35	
Cedar Street North of 12 <sup>th</sup> Avenue <sup>b</sup>				
NB	1	8,835	42	
SB	1	8,008	41	30
Both Dir.	2	16,843	42	

<sup>a</sup> Traffic data collected in March 2015. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions.

<sup>b</sup> Traffic data collected in May 2018. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions. Speed data collected in 2022.

The table below shows the severity and types of crashes occurring within the study area from 2017 through 2021. There were eight total crashes, including one injury crash. Fixed objects related collisions were the most common crash type, representing 50 percent of all crashes.

**Crashes on Walnut Street/Maple Street and Cedar Street (2017 to 2021)**

Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Possible Injury	Property Damage Only	
Rear End	-	-	-	-	2	2
Sideswipe	-	-	-	-	1	1
Fixed Objects	-	-	-	1	3	4
Others	-	-	-	-	1	1
Total	0	0	0	1	7	8

The need for enhanced pedestrian crossing treatments was analyzed for Walnut Street/Maple Street and Cedar Street based on NCHRP Report 562. Based on the findings, red treatment (e.g., HAWK signal beacon, midblock pedestrian signal) is the preferred treatment if there are 20 or more pedestrian



# Spokane Traffic Calming Master Plan

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crossings during the peak hour. It was assumed the pedestrian crossing is met given the surrounding urban neighborhood, bus stops and commercial uses.

The speeding issue on the arterials is a major concern. The roadways appear to have wide lane widths (more than 12 feet) along several segments. Speeds could be better managed with narrower vehicle lanes and the extra width could be allocated to provide wider bike lanes (currently 5 feet). Installing a raised median on specific segments could also manage speeds, reduce turning conflicts and improve safety for all users.

## **Recommended Solution:**

Conditions on the study corridor could benefit from the addition of traffic calming elements to manage driver speeds and improve pedestrian crossing safety. The following improvements are recommended.

- Close the Cedar Street slip lane north of 12<sup>th</sup> Avenue by expanding the existing median (see red area below). The slip lane encourages vehicles travelling north on Cedar Street to enter the neighborhood at higher speeds. Access to Cedar Street would be provided by the 11<sup>th</sup> Avenue intersection one block north.



- Restripe Cedar Street, Walnut Place, Walnut Street, and Maple Street with 11-foot vehicle lanes and 6-foot bike lanes.
- Install a marked crossing with a rectangular rapid flashing beacon across 12<sup>th</sup> Avenue to increase pedestrian crossing safety.

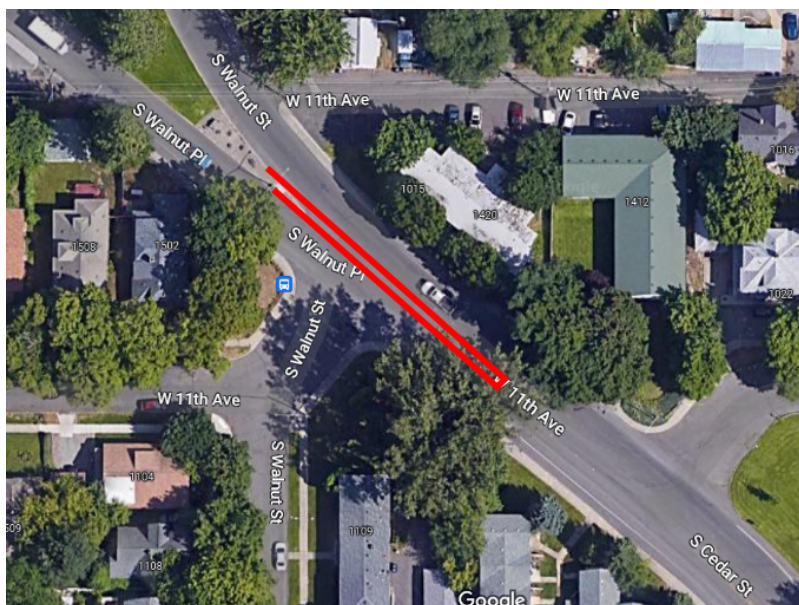
# Spokane Traffic Calming Master Plan

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- Install a raised median on Cedar Street between 11<sup>th</sup> and 12<sup>th</sup> Avenue, retain the existing southbound left turn lane to 12<sup>th</sup> Avenue with minimal storage (approximately 75 feet). The alley intersection on the west side of Cedar Street would be restricted to right-in/right-out movements.



- Extend the existing center raised median on Walnut Place and Walnut Street to the south, retain the existing southbound left turn lane to 11<sup>th</sup> Avenue with minimal storage (approximately 75 feet). The Walnut Street intersection on the west side of Cedar Street would be restricted to right-in/right-out movements.


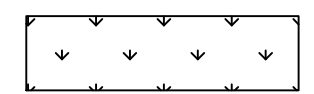
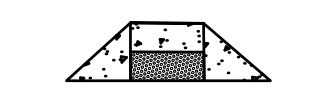
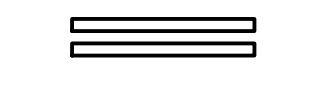
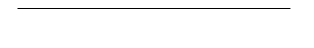






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**LEGEND**

-  INSTALL NEW TRAFFIC ISLAND CONCRETE PER COS STD PLANS SECTION F
-  INSTALL LANDSCAPING, NATIVE PLANTINGS
-  INSTALL CURB RAMP PER COS STD PLAN F-105
-  INSTALL CROSSWALK PER COS STD PLAN G-61
-  PROPERTY LINE

**CONSTRUCTION NOTES**

- 1 INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO EXISTING PIPE WHERE SHOWN.
- 2 REMOVE EXISTING INLET. PLUG AND ABANDON EXISTING PIPE.
- 3 EXISTING MANHOLE TO REMAIN IN PLACE.
- 4 RELOCATE EXISTING STREET NAME SIGN.

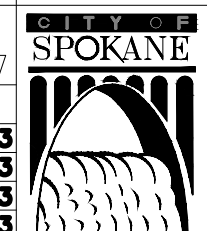
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DATE	BY	PROJ	DESCRIPTION	DATE	BY	PROJ	E.F.N.	U.S.N.	FROM	TO	COUNCIL ACCEPT DATE
REVISIONS											
AS BUILT											

FROM	TO	ORD. NO.	DATE	FILE NO.
GRADE ORDINANCE LIST				

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NAV888 ELE: NONE GIVEN	REVISOR: KL 05/2023
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IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	
NAV888 DATUM	SCALE



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**PRELIMINARY  
NOT FOR CONSTRUCTION**

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN	TYPE OF IMPROVEMENT: TRAFFIC
SEGMENT LIMITS: WALNUT STREET/MAPLE STREET CEDAR STREET	CITY PROJECT NUMBER: CITY PLAN NUMBER
PROJECT LIMITS: CLIFF-CANNON NEIGHBORHOOD	

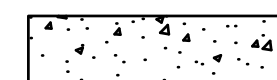
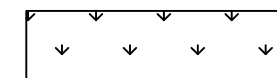
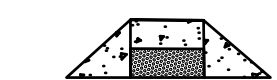
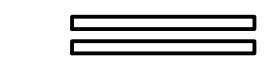



MATCH PREVIOUS SHEET



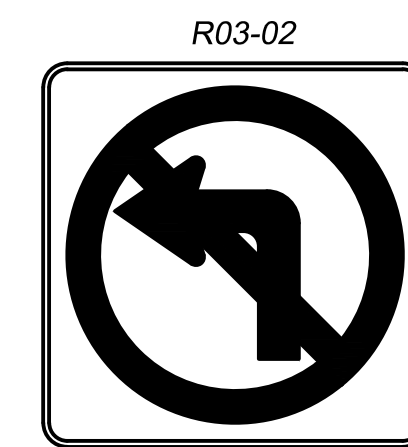
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**LEGEND**

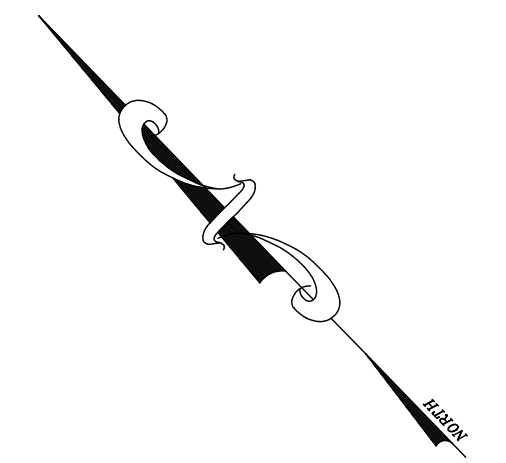
-  INSTALL NEW TRAFFIC ISLAND CONCRETE PER COS STD PLANS SECTION F
-  INSTALL LANDSCAPING, NATIVE PLANTINGS
-  INSTALL CURB RAMP PER COS STD PLAN F-105
-  INSTALL CROSSWALK PER COS STD PLAN G-61
-  PROPERTY LINE

**CONSTRUCTION NOTES**

- 1 RELOCATE EXISTING LIGHT POLE AS SHOWN.
- 2 INSTALL PROPOSED NO LEFT TURN SIGN.
- 3 INSTALL END OF ROAD BARRICADE AND SIGNS PER COS STANDARD PLAN G-92A.



PROPOSED NO LEFT TURN SIGN



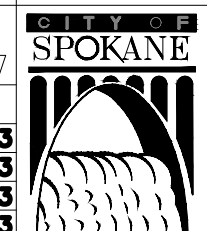
**PRELIMINARY  
NOT FOR CONSTRUCTION**

5  
5 OF 12

RIGHT OF WAY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY

DATE	BY	PROJ.	DESCRIPTION	DATE	BY	PROJ.	E.F.N. / U.S.N.	FROM	TO	COUNCIL ACCEPT DATE	FROM	TO	ORD. NO.	DATE	FILE NO.
REVISIONS											AS BUILT				
GRADE											ORDINANCE LIST				

NAV88 = (OLD CBM ELEV.) - (13.13) AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88)		CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007	
BENCH MARK LOCATION: NONE GIVEN		BY: [Signature]	
NAV88 ELE: NONE GIVEN	BAR IS ONE INCH ON ORIGINAL DRAWING:	HORIZONTAL PLAN/PROFILE: 1" = 30'	DATE: 03/2023
CBM NO: NONE GIVEN	VERTICAL PROFILE ONLY: N/A	SCALE:	CHECKED: SP 03/2023
NAV88 DATUM:	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY		APPROVED: AM 03/2023



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PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN		TYPE OF IMPROVEMENT: TRAFFIC	
SEGMENT LIMITS: WALNUT STREET/MAPLE STREET CEDAR STREET		CITY PROJECT NUMBER: [Blank] CITY PLAN NUMBER: [Blank]	
PROJECT LIMITS: CLIFF-CANNON NEIGHBORHOOD		EFT: [Blank]	

Plotted On May 15, 2023 - 3:25pm





# Spokane Traffic Calming Master Plan

The table below shows the estimated 2022 daily traffic volumes on Cliff Drive within the study area. The daily volume on Cliff Drive was 738 vehicles west of Grove Street. Speed data was not available for the study corridor.

**2022 Estimated Daily Traffic on Cliff Drive**

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day) <sup>a</sup>
West of Grove Street		
EB	1	258
WB	1	480
Both Dir.	2	738

<sup>a</sup> Traffic data collected in June 2018. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions.

The table below shows the severity and types of crashes occurring on Cliff Drive at Edwidge Woldson Park from 2017 through 2021. There were five total crashes with no injury crashes. Two of the fixed object related collisions involved parked vehicles. On-street parking is not provided on the study corridor indicating illegal parking may be a safety concern.

**Crashes on Cliff Drive near Edwidge Woldson Park (2017 to 2021)**

Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Property Damage Only	Unknown	
Sideswipe	-	-	-	-	1	1
Fixed Object	-	-	-	4	-	4
Total	0	0	0	4	1	5

The pavement on Cliff Drive ranges from 20 to 25-foot wide. Providing a consistent 20-foot-wide pavement section would restrict vehicle speeds and calm traffic. There is additional available right-of-way but the north side of the street has topography constraints, especially the west end. The north side of the street provides an informal gravel walking path and boulders to prevent on-street parking. A sidewalk on the north side of the roadway would improve safety for pedestrians and replace the boulders to prevent on-street parking.

Cliff Drive within the study area is currently classified as a bike friendly route per the Spokane Bicycle Master Plan, people biking need to share a lane with auto vehicles. The study corridor has a future plan of neighborhood greenway per the Plan. The low volumes on Cliff Drive indicate bicycles can share the roadway with vehicles.

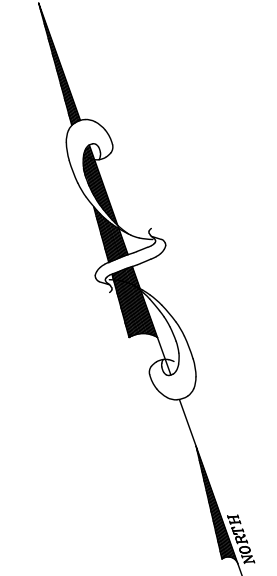
**Recommended Solution:**

- Pending civil review, install a curb-tight sidewalk on the north side of the roadway and provide a 20-foot-wide pavement section.
- Pending civil review, construct a parking lot at the viewpoint. An initial review indicates up to 6 parking spaces could be provided to reduce demand for on-street parking.

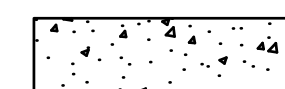
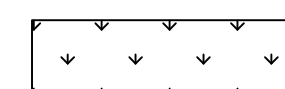
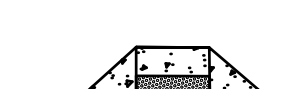





MATCH NEXT SHEET



**LEGEND**

-  INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
-  INSTALL LANDSCAPING, NATIVE PLANTINGS AND/OR NEIGHBORHOOD GATEWAY SIGNAGE
-  INSTALL CURB RAMP PER COS STD PLAN F-105
-  PROPERTY LINE

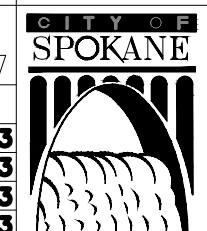
**CONSTRUCTION NOTES**

- 1** INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO NEW DRYWELL OR EXISTING PIPE WHERE SHOWN.
- 2** INSTALL NEW DRYWELL TYPE 1 PER COS STD PLAN B-102C.

RIGHT OF WAY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY

REVISIONS				AS BUILT				GRADE ORDINANCE LIST				
DATE	BY	PROJ	DESCRIPTION	DATE	BY	PROJ	E.F.N. / U.S.N.	FROM	TO	ORD. NO.	DATE	FILE NO.

NAV88 = (OLD CBM ELEV.) - (13.13) AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88)		CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007	
BENCH MARK LOCATION: <b>NONE GIVEN</b>		BY: <b>KL</b> 03/2023	
NAV88 ELE: <b>NONE GIVEN</b>		REVISED: <b>KL</b> 05/2023	
CBM NO: <b>NONE GIVEN</b>		CHECKED: <b>SF</b> 03/2023	
BAR IS ONE INCH ON ORIGINAL DRAWING: <b>NONE GIVEN</b>		APPROVED: <b>AM</b> 03/2023	
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY		SCALE: <b>1" = 10'</b>	



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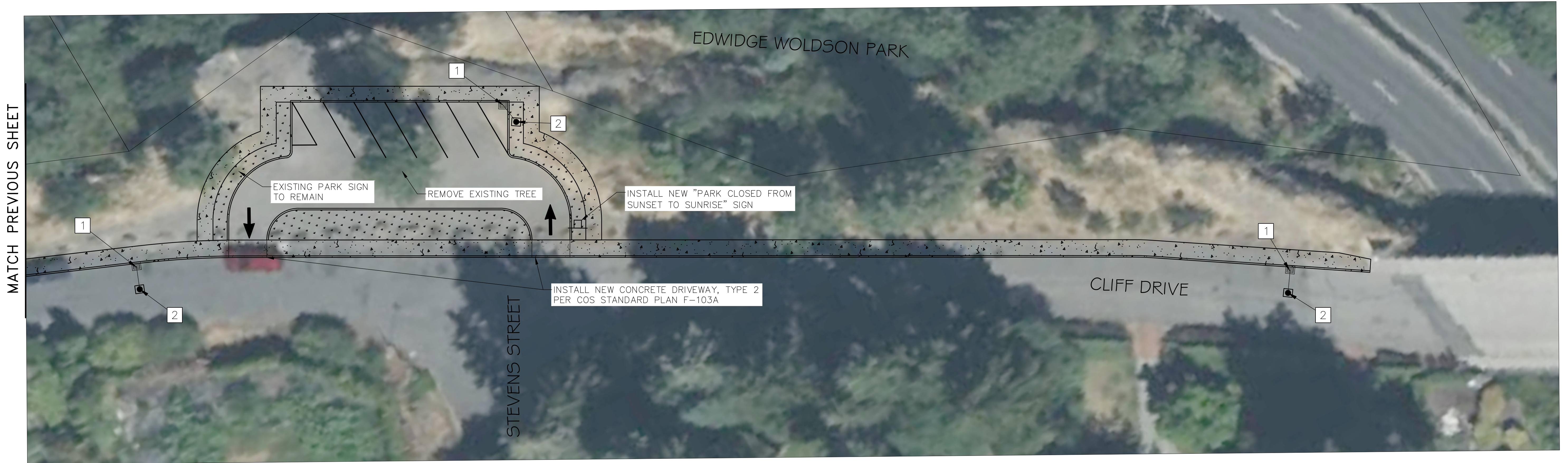
**PRELIMINARY**  
**NOT FOR CONSTRUCTION**

6  
6 OF 12

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN		TYPE OF IMPROVEMENT: TRAFFIC	
SEGMENT LIMITS: CLIFF DRIVE EDWIDGE WOLDSON PARK		CITY PROJECT NUMBER:      CITY PLAN NUMBER:	
PROJECT LIMITS: CLIFF-CANNON NEIGHBORHOOD		E.F.N./U.S.N. DESIGN:	

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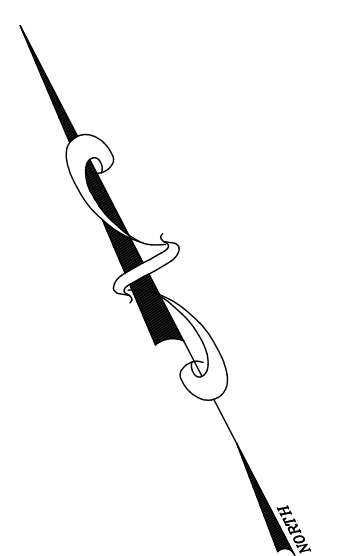
MATCH PREVIOUS SHEET

**LEGEND**

- INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
- INSTALL LANDSCAPING, NATIVE PLANTINGS AND/OR NEIGHBORHOOD GATEWAY SIGNAGE
- INSTALL CURB RAMP PER COS STD PLAN F-105
- PROPERTY LINE

**CONSTRUCTION NOTES**

- 1** INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO NEW DRYWELL OR EXISTING PIPE WHERE SHOWN.
- 2** INSTALL NEW DRYWELL TYPE 1 PER COS STD PLAN B-102C.



**PRELIMINARY  
NOT FOR CONSTRUCTION**

7  
7 OF 12

RIGHT OF WAY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY

REVISIONS				AS BUILT				GRADE ORDINANCE LIST				
DATE	BY	PROJ	DESCRIPTION	DATE	BY	PROJ	DESCRIPTION	FROM	TO	ORD. NO.	DATE	FILE NO.

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BENCH MARK LOCATION: <b>NONE GIVEN</b>		BY: <b>KL</b> 03/2023	
NAV88 ELE: <b>NONE GIVEN</b>	BAR IS ONE INCH ON ORIGINAL DRAWING:	HORIZONTAL PLAN/PROFILE: <b>1" = 10'</b>	REVISED: <b>KL</b> 05/2023
CBM NO: <b>NONE GIVEN</b>	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	VERTICAL PROFILE ONLY: <b>N/A</b>	CHECKED: <b>SP</b> 03/2023
NAV88 DATUM	SCALE	APPROVED: <b>AM</b> 03/2023	



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SPOKANE, WASHINGTON 99201-3343  
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PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN		TYPE OF IMPROVEMENT: TRAFFIC	
SEGMENT LIMITS: CLIFF DRIVE EDWIDGE WOLDSON PARK		CITY PROJECT NUMBER:      CITY PLAN NUMBER:	
PROJECT LIMITS: CLIFF-CANNON NEIGHBORHOOD		EPA TRAFFIC DESIGN	

Plotted On May 15, 2023 - 3:25pm



# Spokane Traffic Calming Master Plan

<b>District:</b>	2
<b>Neighborhood:</b>	Cliff-Cannon
<b>Project Extent:</b>	5 <sup>th</sup> Avenue Intersections at Lincoln Street and Monroe Street
	Estimate: \$379,000

**Problem Statement:** Residents of the Cliff-Cannon neighborhood raised concerns over pedestrian crossing safety on 5<sup>th</sup> Avenue at Lincoln Street and Monroe Street. Figure below shows the study intersections.



5<sup>th</sup> Avenue at Lincoln Street (Right) and Monroe Street (Left)

## **Traffic Analysis**

Lincoln Street and Monroe Street are classified as an urban principal arterial, and 5<sup>th</sup> Avenue is classified as an urban major collector east of Monroe Street and a local street west of Monroe Street, all with a posted speed limit of 25 miles per hour. Monroe Street operates one-way southbound, Lincoln Street operates one-way northbound, both streets provide two lanes. 5<sup>th</sup> Avenue west of Monroe Street and east of Lincoln Street provides two lanes with on-street parking. 5<sup>th</sup> Avenue in between Monroe Street and Lincoln Street provides two lanes and a center two-way-left-turn lane. Sidewalks are provided but no bike facilities are provided. Both intersections are two-way-stop controlled with stop signs on the 5<sup>th</sup> Avenue approaches. Marked crosswalk with warning sign are provided on the north leg of 5<sup>th</sup> Avenue and Monroe Street. Marked crosswalks are provided on all approaches at 5<sup>th</sup> Avenue and Lincoln Street with warning sign on the south leg. Transit Route 42 travels on 5<sup>th</sup> Avenue and has bus stops at both intersections.



# Spokane Traffic Calming Master Plan

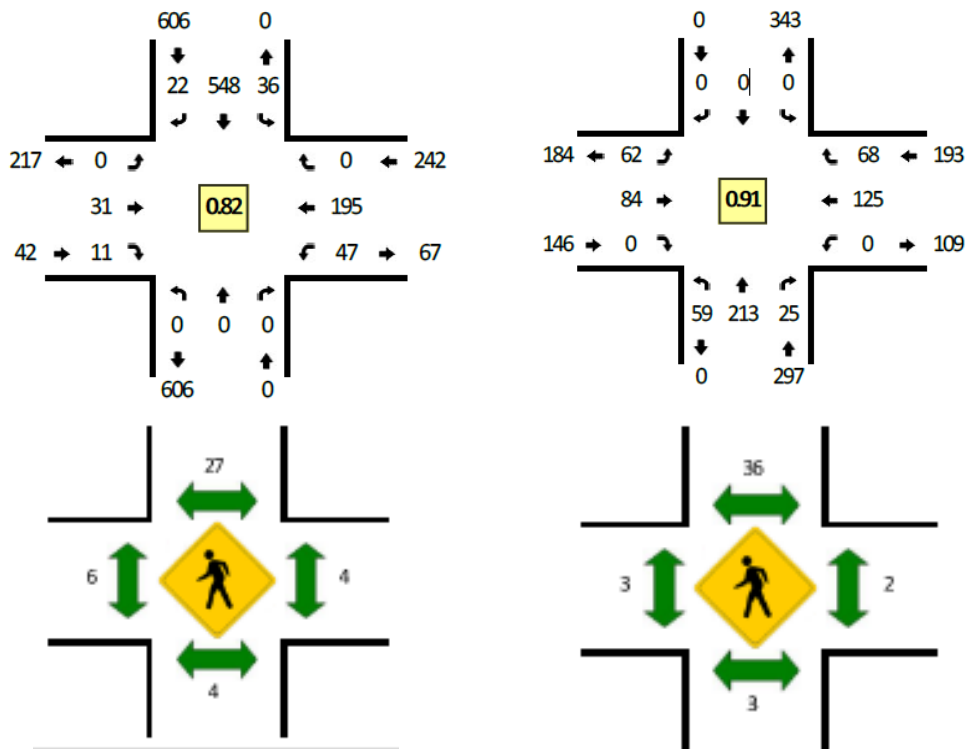
The table below shows the estimated 2022 daily traffic volumes and 85<sup>th</sup> percentile speeds on 5<sup>th</sup> Avenue. The highest daily volume within the study area was 4,635 vehicles east of Lincoln Street. The highest 85<sup>th</sup> percentile speed was 24 miles per hour indicating there is not a speeding issue.

**2022 Estimated Daily Traffic and 85<sup>th</sup> Percentile Speeds on 5<sup>th</sup> Avenue**

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day) <sup>a</sup>	85 <sup>th</sup> Percentile Speed (mph)	Posted Speed (mph)
East of Monroe Street				
EB	1	2,063		
WB	1	2,133		25
Both Dir.	3	4,196	22	
East of Lincoln Street				
EB	1	1,604		
WB	1	3,031		25
Both Dir.	2	4,635	24	

<sup>a</sup> Traffic data collected in May 2018. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions.

The figures below show the existing PM peak hour traffic volumes and pedestrian crossing volumes at the study intersections, based on a traffic count from November 1, 2022. Pedestrian crossing volumes are highest on the north leg of both intersections.



**PM Peak Hour Traffic and Pedestrian Volume at 5<sup>th</sup> Avenue/Monroe St (Left) and Lincoln St (Right)**

# Spokane Traffic Calming Master Plan

The table below shows the severity and types of crashes occurring at 5<sup>th</sup> Avenue and Monroe Street from 2017 through 2021. There were 12 total crashes, including six injury crashes. Angle collisions were the most common crash type (representing 58 percent of all crashes).

**Crashes at 5<sup>th</sup> Avenue/Monroe Street (2017 to 2021)**

Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Possible Injury	Property Damage Only	
Angle	-	1	1	4	1	7
Turning	-	-	-	-	4	4
Sideswipe	-	-	-	-	1	1
Total	0	1	1	4	6	12

The table below shows the severity and types of crashes occurring at 5<sup>th</sup> Avenue and Lincoln Street over the last five years. There were 27 total crashes, including seven injury crashes. Angle collisions were the most common crash type (representing 74 percent of all crashes).

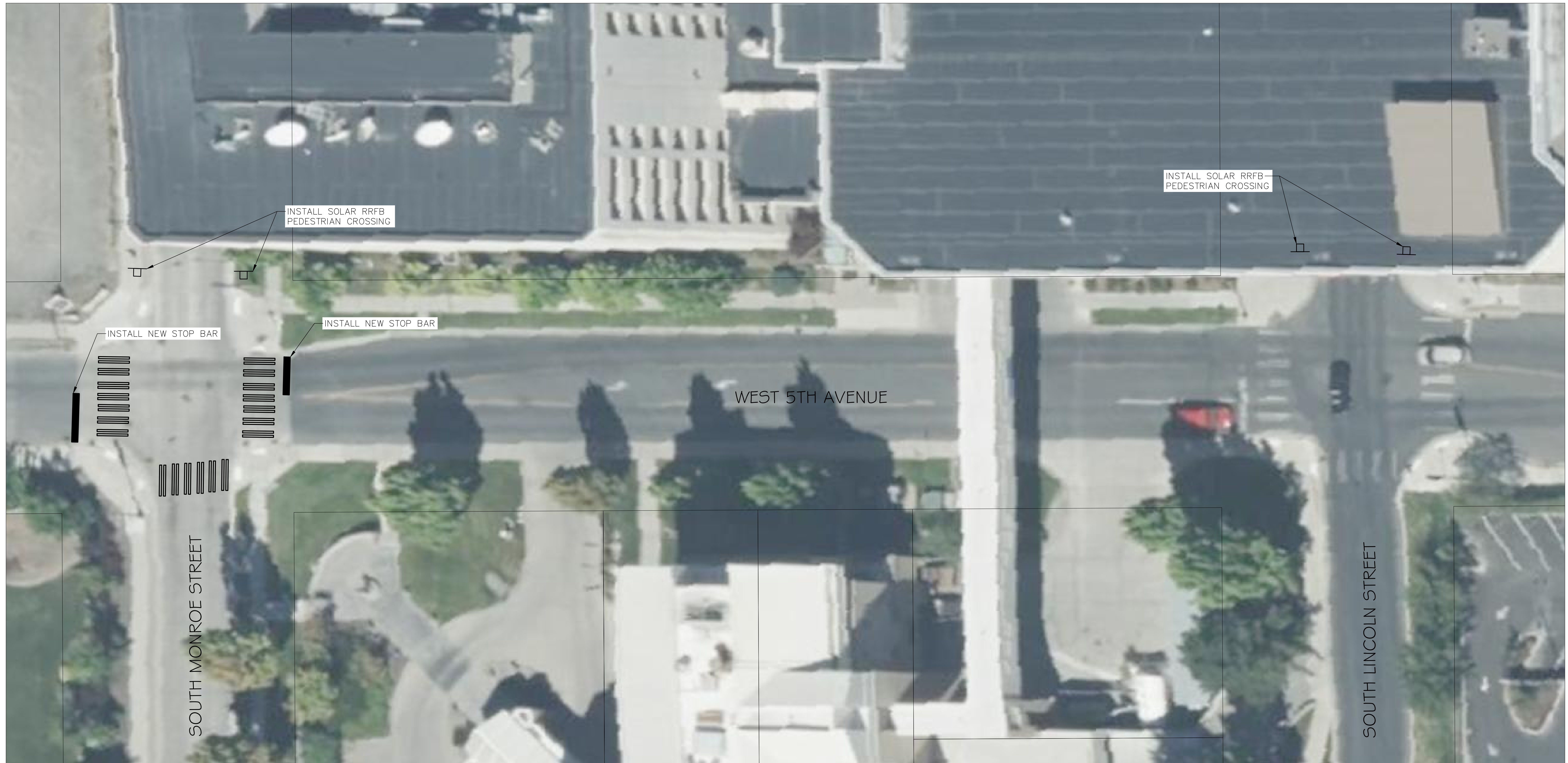
**Crashes at 5<sup>th</sup> Avenue/Lincoln Street (2017 to 2021)**

Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Possible Injury	Property Damage Only	
Angle	-	-	2	2	16	20
Rear End	-	-	-	-	1	1
Fixed Object	-	-	1	1	3	5
Ped/Bike	-	-	-	1	-	1
Total	0	0	3	4	20	27

## **Recommended Solution:**

The following improvements are recommended to increase pedestrian safety at the study intersections:

- Install a rectangular rapid flashing beacon on the north leg of the Monroe Street/5<sup>th</sup> Avenue intersection to increase the visibility of the crossing.
- Install a rectangular rapid flashing beacon on the north leg of the Lincoln Street/5<sup>th</sup> Avenue intersection to increase the visibility of the crossing.
- Install marked crossings at the east, west and south legs of the Monroe Street/5<sup>th</sup> Avenue intersection to increase the visibility of the crossing, similar to Lincoln Street/5<sup>th</sup> Avenue.
- Install stop bars on the 5<sup>th</sup> Avenue approaches to Monroe Street, similar to Lincoln Street.



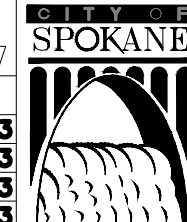
**LEGEND**

-  INSTALL CROSSWALK PER COS STD PLAN G-61
-  PROPERTY LINE

RIGHT OF WAY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY

DATE	BY	PROJ	DESCRIPTION	DATE	BY	PROJ	E.F.N. / U.S.N.	FROM	TO	COUNCIL ACCEPT DATE	FROM	TO	ORD. NO.	DATE	FILE NO.
REVISIONS											AS BUILT				
											GRADE ORDINANCE LIST				

NAV88 = (OLD CBM ELEV.) - (13.13) AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88)	CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007
BENCH MARK LOCATION: <b>NONE GIVEN</b>	BY: <b>KL</b> 03/2023
NAV88 ELE: <b>NONE GIVEN</b>	REVISED: <b>KL</b> 05/2023
CBM NO: <b>NONE GIVEN</b>	CHECKED: <b>SP</b> 03/2023
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HORIZONTAL PLAN/PROFILE: <b>1" = 10'</b>	SCALE
VERTICAL PROFILE ONLY: <b>N/A</b>	



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**PRELIMINARY**  
**NOT FOR CONSTRUCTION**

8  
8 OF 12

PROJECT NAME: SPOKANE TRAFFIC CALMING MASTER PLAN	TYPE OF IMPROVEMENT: TRAFFIC
SEGMENT LIMITS: 5TH AVENUE MONROE STREET TO LINCOLN STREET	CITY PROJECT NUMBER: CITY PLAN NUMBER
PROJECT LIMITS: CLIFF-CANNON NEIGHBORHOOD	

Plotted On May 15, 2023 - 3:25pm



# Spokane Traffic Calming Master Plan

<b>District:</b>	2
<b>Neighborhood:</b>	Cliff-Cannon, Rockwood
<b>Project Extent:</b>	14 <sup>th</sup> Avenue/Grand Blvd, Grand Blvd from Sumner Avenue to 14 <sup>th</sup> Avenue
	Estimate: \$1,510,000

**Problem Statement:** Residents of the Cliff-Cannon neighborhood raised concerns over lack of a left turn lane, confusing intersection geometry, increased speeds, and narrow lanes at 14<sup>th</sup> Avenue and Grand Boulevard. Residents of the Rockwood neighborhood raised concerns over pedestrian crossing safety on Grand Boulevard – difficult to cross a high-volume street. Figure below shows the study area.



Grand Boulevard from Sumner Street to 14<sup>th</sup> Avenue

## Traffic Analysis

Grand Boulevard within the study area is classified as an urban principal arterial with a posted speed limit of 30 miles per hour. 14<sup>th</sup> Avenue is classified as an urban major collector west of Grand Boulevard and a local access street east of Grand Boulevard, both with a posted speed limit of 25 miles per hour. Grand Boulevard provides four lanes and 14<sup>th</sup> Avenue provides two lanes. There is a marked pedestrian

# Spokane Traffic Calming Master Plan

crossing with a raised median on Grand Boulevard at 13<sup>th</sup> Avenue. The intersection is signalized with marked crosswalks. Sidewalks are provided but no bike facilities are provided. Transit Route 4 serves Grand Boulevard and has bus stops at 14<sup>th</sup> Avenue.

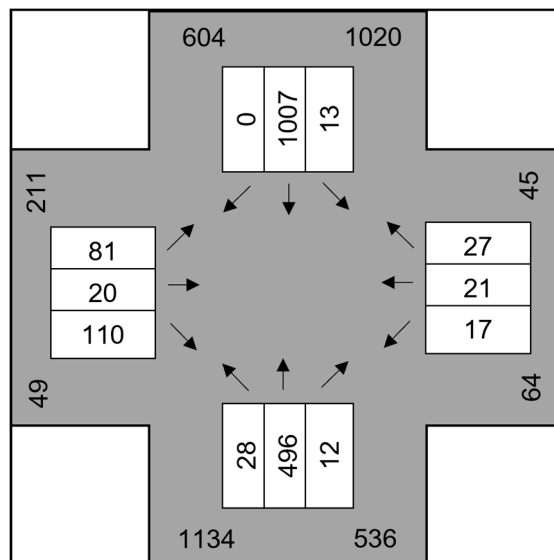
The table below shows the estimated 2022 daily traffic volumes on Grand Boulevard within the study area. The highest daily volume within the study area was 17,948 vehicles north of 12<sup>th</sup> Avenue. The highest 85<sup>th</sup> percentile speed was 38 miles per hour (eight miles per hour greater than the posted speed limit), indicating there is a speeding issue near 12<sup>th</sup> Avenue but not 14<sup>th</sup> Avenue.

**2022 Estimated Daily Traffic and 85<sup>th</sup> Percentile Speeds on Grand Boulevard at 14<sup>th</sup>**

Direction	# Lanes	2022 Estimated Daily Traffic (Vehicles per day) <sup>a</sup>	85 <sup>th</sup> Percentile Speed (mph)	Posted Speed (mph)
North of 12 <sup>th</sup> Avenue				
EB	1	9,108	39	
WB	1	8,840	37	30
Both Dir.	2	17,948	38	
South of 14 <sup>th</sup> Avenue				
EB	1	8,665	31	
WB	1	8,802	30	30
Both Dir.	2	17,467	31	

<sup>a</sup> Traffic data collected in May 2018. Traffic volumes were grown at a 1.0% annual growth rate, to estimate 2022 traffic conditions.

The figure below shows the existing PM peak hour traffic volumes at the study intersection, based on a traffic count from April 24, 2018, factored up to 2022.



**PM Peak Hour Traffic at 14<sup>th</sup> Avenue/Grand Boulevard**

# Spokane Traffic Calming Master Plan

The table below shows the severity and types of crashes occurring at the study intersection from 2017 through 2021. There were 16 total crashes, including nine injury crashes. Left turning collisions were the most common crash type (representing 50 percent of all crashes). Additionally, there were two pedestrian related crashes involving left turning vehicles.

**Crashes at 14<sup>th</sup> Avenue/Grand Boulevard (2017 to 2021)**

Crash Type	Crash Severity					Total
	Fatal	Major Injury	Minor Injury	Possible Injury	Property Damage Only	
Turning	-	-	2	1	5	8
Angle	-	-	-	-	1	1
Rear End	-	2	-	1	-	3
Fixed Objects	-	-	-	-	1	1
Ped/Bike	-	1	-	2	-	3
Total	0	3	2	4	7	16

Given the relatively high 85<sup>th</sup> percentile speeds and the turning crash trend, a road diet was considered as means to reduce travel speeds and enhance safety on the study segment. With an estimated 18,000 vehicles per day, Grand Boulevard could be reduced to a three-lane cross section with a center two-way left-turn lane. As a point of reference, the planning level capacity of a two-lane urban arterial is 18,300 vehicles per day (assuming left-turn lanes are provided on the mainline at signalized intersections).<sup>1</sup>

A road diet is expected to reduce crashes by 29%, per the Crash Modification Factors Clearinghouse.<sup>2</sup> A road diet on Grand Boulevard may also result in more uniform travel speeds on the corridor and is expected to reduce the average travel speed by 3 mph.<sup>3</sup> Road diets are more successful when implemented on longer stretches of roadway; therefore, it is recommended that the lane reduction continue beyond the study area. When analyzing the cross section and daily traffic volumes on Grand Boulevard, it is recommended that the road diet extend 1.7 miles, from 9<sup>th</sup> Avenue/McClellan Street (at the north end) to 33<sup>rd</sup> Avenue (at the south end). The 9<sup>th</sup> Avenue/McClellan Street intersection is a logical terminus on the north end because Grand Boulevard ends and provides opportunity to drop and add lanes at intersection roadways. 33<sup>rd</sup> Avenue was recommended as the south terminus because Grand Boulevard transitions to a three-lane cross section.

Grand Boulevard in the study area is designated as a “moderate traffic (shared)” route in the Spokane Bike and Pedestrian Master Plan. If the cross-section on Grand Boulevard is reduced to three lanes, there is an opportunity to add bike facilities. The existing curb-to-curb width would allow buffered bike lanes to be added to the corridor segments from 9<sup>th</sup> to 17<sup>th</sup> Avenue and 27<sup>th</sup> to 33<sup>rd</sup> Avenue. The corridor segment between 17<sup>th</sup> and 27<sup>th</sup> Avenue is constrained, allowing a buffered bike lane in the uphill

<sup>1</sup> *Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis*. Page 16-30, Exhibit 16-16. Washington, DC: The National Academies Press.

<sup>2</sup> *Crash Modification Factors Clearinghouse*, <https://www.cmfclearinghouse.org/detail.cfm?facid=199>

<sup>3</sup> *Engineering Speed Management Countermeasures: A Desktop Reference of Potential Effectiveness in Reducing Speed*. Federal Highway Administration. July 2014.



# Spokane Traffic Calming Master Plan

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(southbound) direction and shared lane treatment in the downhill (northbound) direction. Bicyclists are anticipated to travel at higher speeds in the downhill direction and more comfortably share a lane with vehicles.

The need for enhanced pedestrian crossing treatments was analyzed for Grand Boulevard based on NCHRP Report 562. The analysis considered both the existing four-lane section and the proposed three-lane section. Based on the findings for both cross-sections, a red treatment (e.g., HAWK signal beacon, midblock pedestrian signal) is the preferred treatment if there are 20 or more pedestrian crossings during the peak hour. It was assumed the pedestrian crossing is met given the surrounding urban neighborhood, bus stops and commercial uses. There is an existing marked crosswalk at 13<sup>th</sup> Avenue and 14<sup>th</sup> Avenue is a signalized intersection. A new crossing at Sumner Street was considered to improve crossing improvements however is not recommended due the roadway grade and limited sight distance in that location.

The 14<sup>th</sup> Avenue/Grand Boulevard intersection has several design features that may contribute to driver confusion and safety concerns. The east and west 14<sup>th</sup> Avenue approaches have a significant offset. The south curb on 14<sup>th</sup> Avenue just west of the intersection is angled and widens towards Grand Boulevard. The north side of 14<sup>th</sup> Avenue just west of the intersection provides an on-street parking pocket that appears to have low demand. Due to the skewed north leg, there is a channelized southbound right turn lane to accommodate turns movements.

## **Recommended Solution:**

It is recommended that a road diet be considered on Grand Boulevard, reducing the current four-lane cross section to a three-lane cross section with a center turn-lane. The addition of a center turn-lane is expected to reduce crashes, while the lane reduction is expected to reduce vehicle speeds. It is recommended that the City of Spokane further study the expected impacts of the road diet. The road diet can be considered along the 1.7-mile segment from 9<sup>th</sup> Avenue/McClellan Street (at the north end) to 33<sup>rd</sup> Avenue (at the south end).

Buffered bike lanes in both directions are recommended from 9<sup>th</sup> to 17<sup>th</sup> Avenue and 27<sup>th</sup> to 33<sup>rd</sup> Avenue. A buffered bike lane in the uphill direction and shared lane treatment in the downhill direction are recommended between 17<sup>th</sup> and 27<sup>th</sup> Avenue.

The following improvements are recommended to reduce driver confusion and increase safety at the study intersection:

- Install a rectangular rapid flashing beacon at the existing marked crosswalk on the north leg of the Grand Boulevard/13<sup>th</sup> Avenue intersection to increase the visibility of the crossing. Adding a raised median would be recommended if Grand Boulevard is reconfigured to a three-lane section.
- Reconstruct the west leg of the intersection (see figure below).

# Spokane Traffic Calming Master Plan

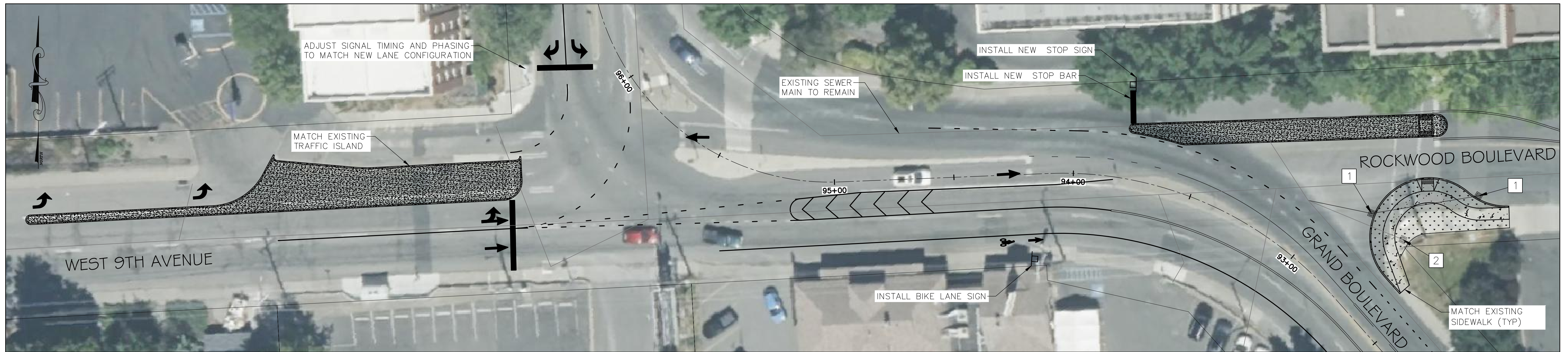
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- Relocate the curbs to be parallel and match the curbs on the east leg to remove the approach offset.
- Fill in the on-street parking pocket on the north side.
- Remove the raised center median.
- Expand the separated southbound right turn lane island to narrow the westbound lane.

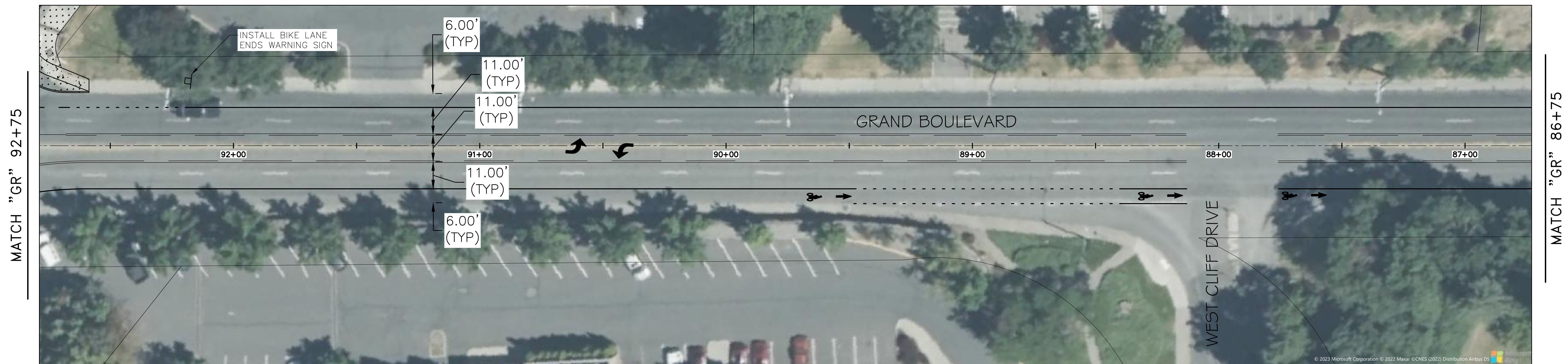


- Angle collisions at the intersection could be mitigated by upgrading the traffic signal timing with split phasing for the east and westbound approaches.





MATCH "GR" 92+75

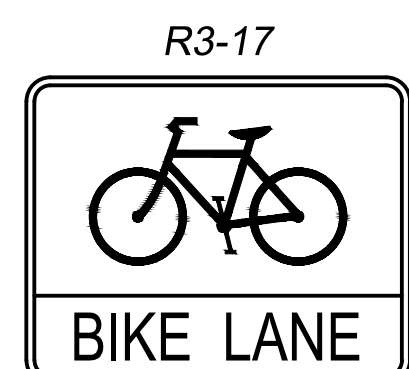


**LEGEND**

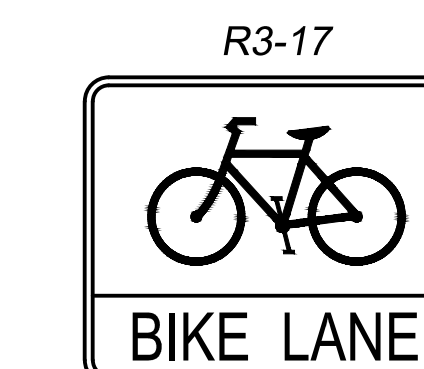
- INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
- INSTALL NEW TRAFFIC ISLAND CONCRETE PER COS STD PLANS SECTION F
- INSTALL LANDSCAPING, NATIVE PLANTINGS
- INSTALL CURB RAMP PER COS STD PLAN F-105
- PROPERTY LINE

**CONSTRUCTION NOTES**

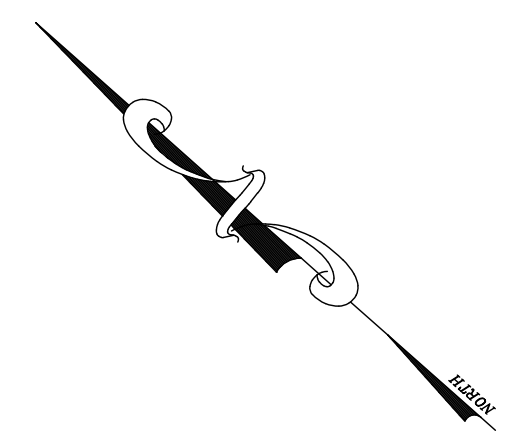
1. INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO EXISTING PIPE WHERE SHOWN.
2. REMOVE EXISTING INLET. PLUG AND ABANDON EXISTING PIPE.



PROPOSED BIKE LANE SIGN



PROPOSED BIKE LANE ENDS WARNING SIGN



**PRELIMINARY  
NOT FOR CONSTRUCTION**

9  
9 OF 12

RIGHT OF WAY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY

Plotted On: May 15, 2023 - 3:25pm

REVISIONS				AS BUILT				GRADE ORDINANCE LIST				
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BENCH MARK LOCATION	NONE GIVEN
CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007	
NAV88 ELE	NONE GIVEN
CBM NO.	NONE GIVEN
BAR IS ONE INCH ON ORIGINAL DRAWING	
HORIZONTAL PLAN/PROFILE	1" = 10'
VERTICAL PROFILE ONLY	N/A
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	
SCALE	
NAV88 DATUM	

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DEPARTMENT OF ENGINEERING SERVICES  
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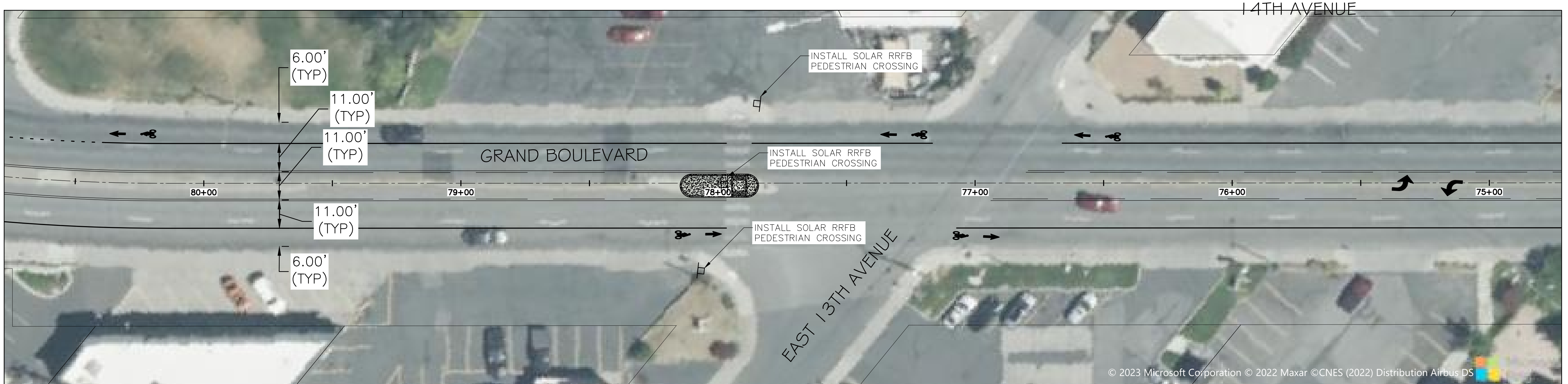
PROJECT NAME:	SPOKANE TRAFFIC CALMING MASTER PLAN	
SEGMENT LIMITS:	GRAND BOULEVARD 9TH AVENUE TO 16TH AVENUE	
PROJECT LIMITS:	CLIFF-CANNON NEIGHBORHOOD	
TYPE OF IMPROVEMENT:	TRAFFIC	
CITY PROJECT NUMBER		
CITY PLAN NUMBER		





MATCH "GR" 86+75

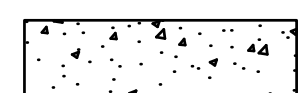
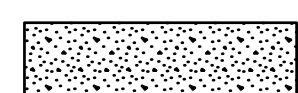
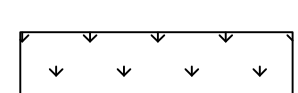
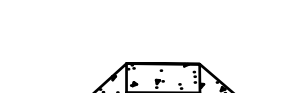

MATCH "GR" 80+75



MATCH "GR" 80+75

MATCH "GR" 74+75

**LEGEND**

-  INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
-  INSTALL NEW TRAFFIC ISLAND CONCRETE PER COS STD PLANS SECTION F
-  INSTALL LANDSCAPING, NATIVE PLANTINGS
-  INSTALL CURB RAMP PER COS STD PLAN F-105
-  PROPERTY LINE

RIGHT OF WAY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY

Plotted On May 15, 2023 - 3:25pm

REVISIONS		AS BUILT		GRADE ORDINANCE LIST								
DATE	BY	PROJ.	DESCRIPTION	DATE	BY	PROJ.	E.F.N. / U.S.N.	FROM	TO	ORD. NO.	DATE	FILE NO.

NAV88 = (OLD CBM ELEV.) - (13.13) AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88)		CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007	
BENCH MARK LOCATION	NONE GIVEN	BY	DATES
NAV88 ELE	NONE GIVEN	DRAWN: KL	03/2023
CBM NO.	NONE GIVEN	REVISED: KL	05/2023
		CHECKED: SP	03/2023
		APPROVED: AM	03/2023



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**PRELIMINARY**  
**NOT FOR CONSTRUCTION**

10  
10 OF 12

PROJECT NAME:	SPOKANE TRAFFIC CALMING MASTER PLAN	
SEGMENT LIMITS:	GRAND BOULEVARD 9TH AVENUE TO 16TH AVENUE	TYPE OF IMPROVEMENT: TRAFFIC
PROJECT LIMITS:	CLIFF-CANNON NEIGHBORHOOD	CITY PROJECT NUMBER
		CITY PLAN NUMBER


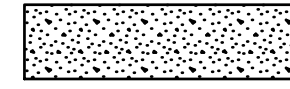
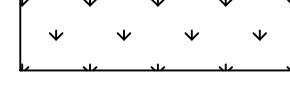
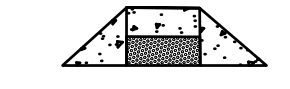



MATCH "GR" 74+75



MATCH "GR" 68+50

**LEGEND**

-  INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
-  INSTALL NEW TRAFFIC ISLAND CONCRETE PER COS STD PLANS SECTION F
-  INSTALL LANDSCAPING, NATIVE PLANTINGS
-  INSTALL CURB RAMP PER COS STD PLAN F-105
-  PROPERTY LINE

**CONSTRUCTION NOTES**

- 1 INSTALL NEW CATCH BASIN TYPE 1 AND 8" DIAM. PIPE AS NECESSARY. CONNECT TO EXISTING PIPE WHERE SHOWN.
- 2 REMOVE EXISTING INLET. PLUG AND ABANDON EXISTING PIPE.

RIGHT OF WAY LINES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY

DATE	BY	PROJ.	DESCRIPTION	DATE	BY	PROJ.	E.F.N. / U.S.N.	FROM	TO	COUNCIL ACCEPT DATE	FROM	TO	ORD. NO.	DATE	FILE NO.
REVISIONS															
AS BUILT															
GRADE ORDINANCE LIST															

NAV88 = (OLD CBM ELEV.) - (13.13) AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88)	BENCH MARK LOCATION	NONE GIVEN	CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007
NAV88 ELE	NONE GIVEN	BAR IS ONE INCH ON ORIGINAL DRAWING	HORIZONTAL PLAN/PROFILE 1" = 10'
CBM NO.	NONE GIVEN	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	VERTICAL PROFILE ONLY N/A
NAV88 DATUM			SCALE
			BY: KL 03/2023
			REVISOR: KL 05/2023
			CHECKED: SP 03/2023
			APPROVED: AM 03/2023



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**PRELIMINARY  
NOT FOR CONSTRUCTION**

11  
11 OF 12

PROJECT NAME:	SPOKANE TRAFFIC CALMING MASTER PLAN		
SEGMENT LIMITS:	GRAND BOULEVARD 9TH AVENUE TO 16TH AVENUE		TYPE OF IMPROVEMENT: TRAFFIC
PROJECT LIMITS:	CLIFF-CANNON NEIGHBORHOOD		CITY PROJECT NUMBER
			CITY PLAN NUMBER

Plotted On May 15, 2023 - 3:26pm


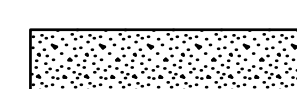
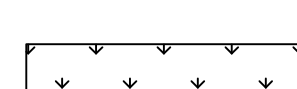
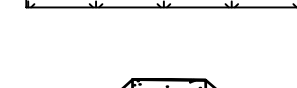



MATCH "GR" 68+50



SEE MANITO-CANNON HILL  
NEIGHBORHOOD SHEETS

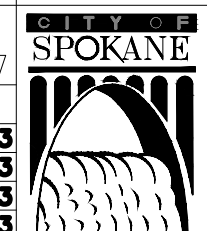
**LEGEND**

-  INSTALL NEW CONCRETE SIDEWALK PER COS STD PLAN F-102B
-  INSTALL NEW TRAFFIC ISLAND CONCRETE PER COS STD PLAN 5 SECTION F
-  INSTALL LANDSCAPING, NATIVE PLANTINGS
-  INSTALL CURB RAMP PER COS STD PLAN F-105
-  PROPERTY LINE

RIGHT OF WAY LINES ARE SHOWN FOR  
INFORMATIONAL PURPOSES ONLY

DATE	BY	PROJ.	DESCRIPTION	DATE	BY	PROJ.	E.F.N. / U.S.N.	FROM	TO	COUNCIL ACCEPT DATE	FROM	TO	ORD. NO.	DATE	FILE NO.
REVISIONS															
AS BUILT															
GRADE ORDINANCE LIST															

NAV88 = (OLD CBM ELEV.) - (13.13) AS OF JANUARY, 2000 USE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88)		CURRENT C.O.S. DESIGN STANDARDS ADOPTED FEB. 2007	
BENCH MARK LOCATION	NONE GIVEN		
NAV88 ELE	NONE GIVEN	BAR IS ONE INCH ON ORIGINAL DRAWING	HORIZONTAL PLAN/PROFILE 1" = 10'
CBM NO.	NONE GIVEN	IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	VERTICAL PROFILE ONLY N/A
NAV88 DATUM	SCALE		
DRAWN: KL	03/2023	CHECKED: SF	03/2023
APPROVED: AM	03/2023		



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**PRELIMINARY**  
**NOT FOR CONSTRUCTION**

12  
12 OF 12

PROJECT NAME:	SPOKANE TRAFFIC CALMING MASTER PLAN		
SEGMENT LIMITS:	GRAND BOULEVARD 9TH AVENUE TO 16TH AVENUE		TYPE OF IMPROVEMENT: TRAFFIC
PROJECT LIMITS:	CLIFF-CANNON NEIGHBORHOOD		CITY PROJECT NUMBER
			CITY PLAN NUMBER

Plotted On May 15, 2023 - 3:26pm