

3/20/2025

Jeff Hintz, Public Works Director
City of Sidney
115 2nd St SE
Sidney, MT 59270

Re: Anderson Drainage Improvements Phase 2 Proposal

Dear Jeff,

This proposal provides the scope and fee for development of construction drawings for storm drain improvements near the Anderson Subdivision as requested during a phone call on March 3, 2025. Work for this proposal will be completed as part of the Sidney Stormwater On Call Project, Morrison-Maierle Project Number 0717.029.

Project Scope

Morrison-Maierle will develop construction drawings for a new storm drain to convey runoff that is collected on lot 003, Block 5 of the Anderson Subdivision to Anderson Park. The assumed storm drain alignment is shown on Attachment 1. The construction drawings are expected to consist of one cover, one notes/abbreviations/legend sheet, one survey control point plan, one plan and profile sheet, and one grading plan. Construction drawings will be submitted at 75% completion and 100% completion. One round of comments will be accepted from the Owner and discussed during a virtual 75% review meeting.

Morrison-Maierle will design improvements for Anderson Park to increase stormwater storage so neither 5th Street NW nor 22nd Avenue NW overtop for the 1.0% AEP (100-year) event. The proposed storm drain will match the existing storm drain size of 24 inches. We will update the attached Anderson H&H Investigation Memo dated 11/7/24 (Attachment 2) with the proposed Anderson Park improvements, which will serve as the basis of design for the construction drawings.

Morrison-Maierle will utilize topographic survey from the Anderson Subdivision Drainage Improvements project supplemented with publicly available lidar outside of the existing survey for approximate existing grade elevations. The City of Sidney (City) will provide additional survey of existing pipe inverts and structure locations of the storm drain system that will be tied into. The City will also provide information on existing pipe sizes and materials. Existing utility locations shown by the topographic survey should be considered approximate and may not be complete outside of Anderson Park. Morrison-Maierle cannot guarantee plan accuracy for existing infrastructure surveyed by others.

We create solutions that build better communities.

Exclusions

- 1) Additional topographic survey.
- 2) Construction specifications and project manual.
- 3) Opinion of probable cost.
- 4) Bidding services.
- 5) Construction services.
- 6) Construction staking.
- 7) Record drawings.

Schedule

We propose to complete the scope of work within six weeks from receiving survey information of the existing storm drain system.

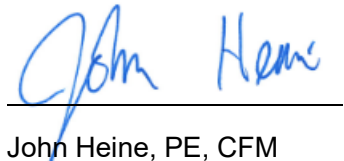
Fee

We propose to perform the scope of work on an hourly rate basis not to exceed the estimate of \$19,900.00.

Please review and let me know if you have any questions.

Sincerely,

MORRISON-MAIERLE



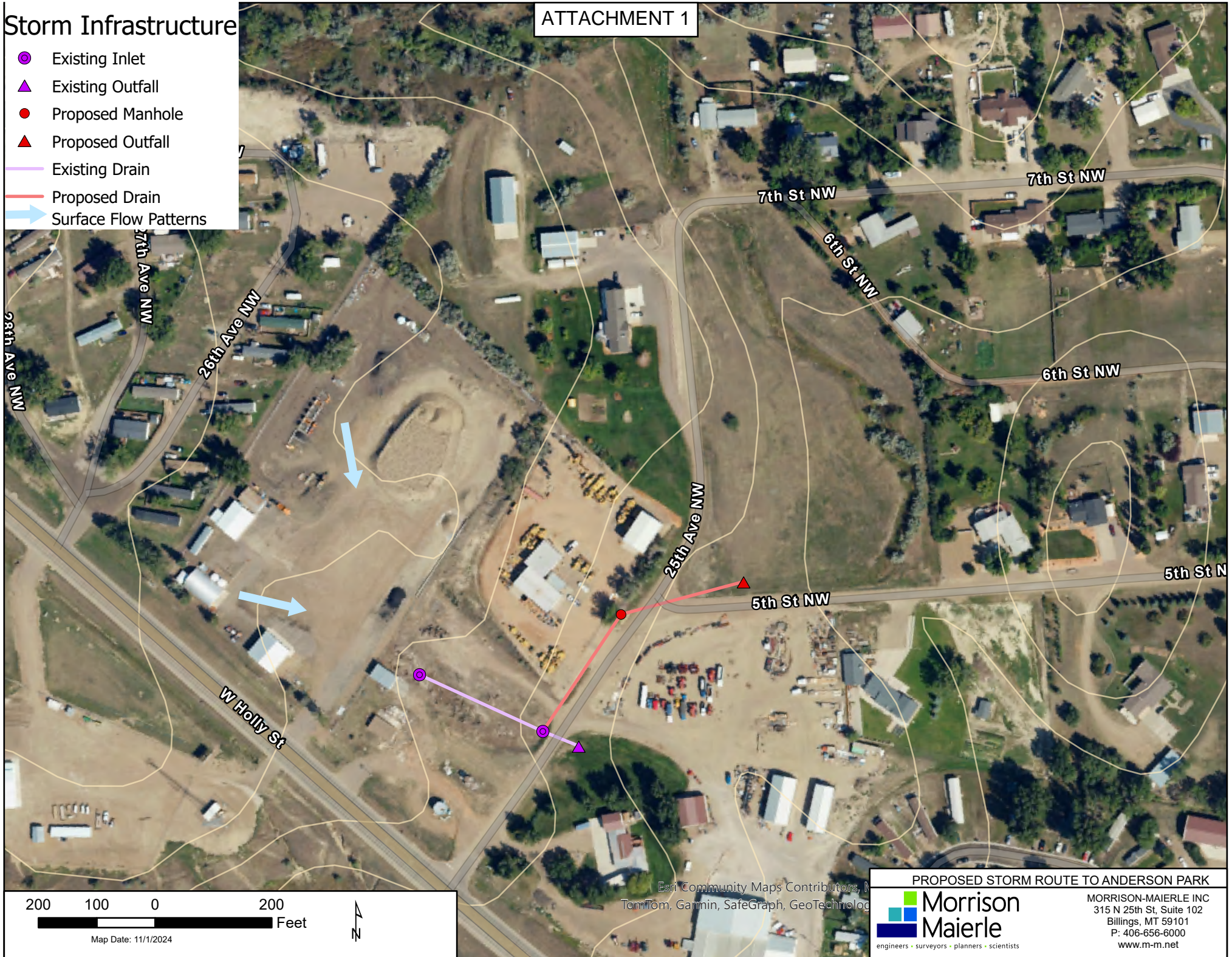
John Heine, PE, CFM

Water Resources Engineer

Storm Infrastructure

ATTACHMENT 1

- Existing Inlet
- ▲ Existing Outfall
- Proposed Manhole
- ▲ Proposed Outfall
- Existing Drain
- Proposed Drain
- ➔ Surface Flow Patterns

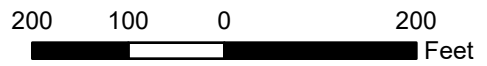


Esri Community Maps Contributors, N
TomTom, Garmin, SafeGraph, GeoTechnology

PROPOSED STORM ROUTE TO ANDERSON PARK



MORRISON-MAIERLE INC
315 N 25th St, Suite 102
Billings, MT 59101
P: 406-656-6000
www.m-m.net



Map Date: 11/1/2024

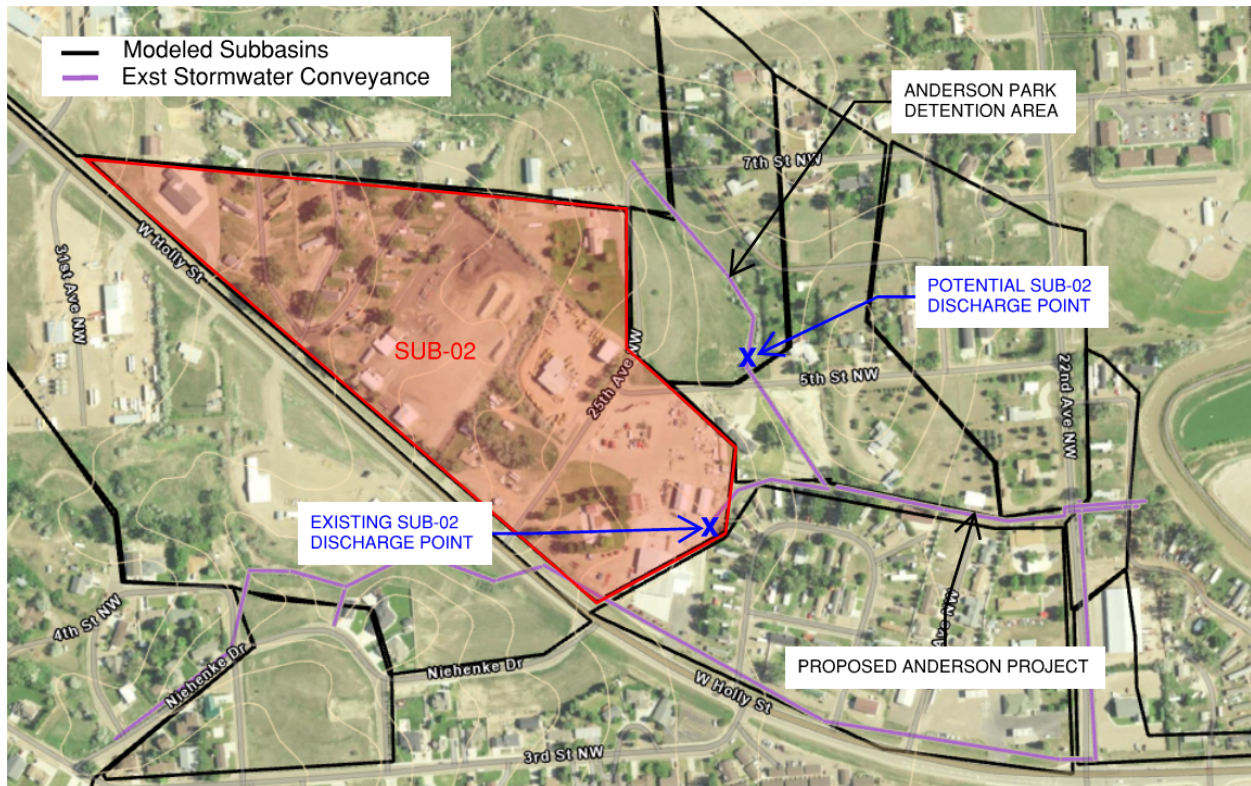


TO: Jeff Hintz, City of Sidney Public Works
FROM: John Heine, PE
 Carly Kittleson, PE
DATE: 11/7/2024
JOB NO.: 0717.029.05
RE: Anderson H&H Investigation: Basin Rerouting & 5th Ave Crest Elevation
CC:

Urgent For Review Please Comment Please Reply For Your Use

This hydraulics investigation analyzes the impacts of rerouting runoff from Subbasin-02, from discharging to the open channel upstream of the Anderson Stormwater Improvements Project, to the Anderson Park Detention Area. Subbasin-02 is about 30 acres and contains several industrial properties east and west of 25th Ave NW. The Montana Dept of Transportation property is approximately 6 acres.

Figure 1: Anderson Vicinity



Hydraulic analysis of rerouting Sub-02 discharge to the Anderson Park detention area results in the following:

Anderson Park Detention Area: Peak flows increase for all storm events. The detention area will overtop 5th Street NW near the 50-year event for the proposed condition of sub-basin 2 rerouted to the area. Overtopping will occur sooner than for existing conditions, which is estimated to occur between the 50- and 100-year event.

Newly Constructed Anderson Storm Pipe: Peak flows decrease to the Proposed Anderson Stormwater Improvements Project for all storm events except the 100-year. The new pipe will overtop between the 50- and 100-year events for both existing and proposed conditions.

22nd Avenue NW: Overtopping of 22nd Ave NW is estimated only for the proposed scenario near the 100-year event.

Table 1: Hydraulic Model Results Summary

Anderson Subbasin H&H Investigation							
Recurrence Interval	Park Inflow (cfs)	Park Pipe Outflow (cfs)	5th Street NW Overtopping (cfs)	Peak Flow to Anderson Open Channel (cfs)	Transition Inlet Inflow (cfs)	Transition Inlet Overtopping (cfs)	22nd Ave NW Overtopping
10-Year Existing	26	7	-	17	17	-	No
10-Year Proposed	32	7	-	7	7	-	No
25-Year Existing	48	8	-	29	29	-	No
25-Year Proposed	59	8	-	8	8	-	No
50-Year Existing	68	8	-	38	38	-	No
50-Year Proposed	84	8	11	19	19	-	No
100-Year Existing	139	8	74	97	45	53	No
100-Year Proposed	188	8	117	128	46	83	Yes

Rerouting runoff from Subbasin 02 to the Anderson Park Detention Area results in decreased peak flows through the new Anderson storm pipe and outfall for events up to and including the 50-year. During events greater than 50-year, significant overtopping at 5th Street Northwest and Anderson Park, will occur, resulting in greater peak flows at this large event.

Increasing Roadway Elevation at 5th Avenue

The current roadway elevation of 5th Avenue is 1989.5 ft, which overtops at a 50-year event with the additional flow from Sub-02. If the City chooses to raise 5th Avenue to prevent overtopping during large events, the road elevation must be raised a total of 3.8 feet. This adjusts the elevation to 1993.3, and includes 1 foot of freeboard for the 100-year event. This analysis includes runoff from sub-basin 02 directed to Anderson Park.

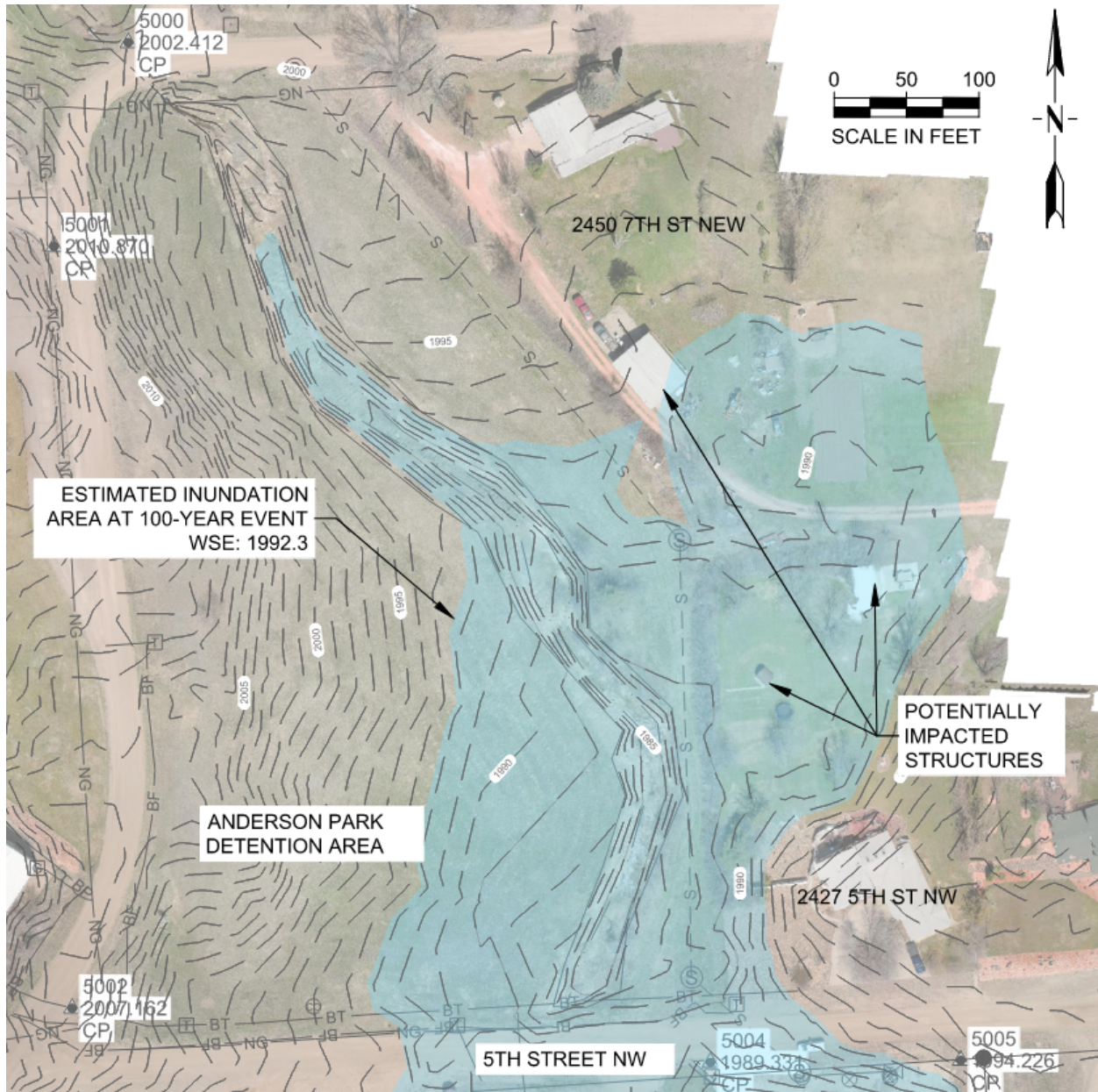


Figure 2: 100-YEAR INUNDATION LIMITS

Anderson H&H Investigation: Basin Rerouting & 5th Ave Crest Elevation

Prior to increasing the road crest elevation, potential impacts to adjacent properties should be further investigated. It appears that three outbuildings shown in Figure 2 may be impacted by the increased headwater at 5th Street NW.

Hydraulic Summary:

With 5th Avenue raised to prevent overtopping through the 100-year event, the hydraulic analysis results in the following:

Anderson Park Detention Area: Receives runoff from Sub-basin 02. Maximum water surface during 100-year event is 1992.3. No overtopping up to the 100-year event.

Newly Constructed Anderson Storm Pipe: No overtopping at the new transition structure up to the 100-year event.

22nd Avenue NW: Both the existing culvert and new pipe under 22nd Ave NW are surcharged, but no overtopping is anticipated. No structure impacts are estimated based on modeled ponding elevation and lowest adjacent structure elevation, as noted in the table below.

100-YEAR EVENT – HYDRAULIC RESULTS SUMMARY							
5 th St NW Elevation (ft)	Park Outflow (cfs)	5th St NW Overtopping (cfs)	Peak Flow to Anderson Open Channel (cfs)	Transition Inlet Overtopping (cfs)	22nd Ave NW Overtopping	Ponding WSE at 22 nd Ave NW (ft)	*Structure Impacts near 22 nd Ave*
1989.5	8	117	128	83	Yes	1964.5	Yes
1993.3	9	N/A	18	N/A	No	1963.4	No

*Lowest adjacent structure elevation is 1964 ft.