Exhibit 20



February 22, 2019

Washoe County School District Mr. Adam Searcy, P.E. 14101 Old Virginia Road Reno, NV 89521

RECEIVED-CITY OF SPARKS FEB 2 2 2019 COMMUNITY SERVICES ADMINISTRATION

Job Number: 8052.015

Re: Preliminary Offsite Drainage Mitigations (Revision 2) Proposed High School at Wildcreek Campus

Dear Adam;

The following letter represents preliminary drainage calculations and planned mitigations to accommodate existing offsite drainage conveyed through the project area. In addition, the project will include an onsite drainage system to collect runoff from the proposed site. This preliminary analysis is intended to be utilized for preliminary entitlements, specifically the Washoe County School District's Development Agreement with the City of Sparks. As you are aware, site development is continuously developing and as a result the calculations included below are subject to change as final design progresses. Final drainage calculations and reports will be prepared as part of the final design process and provided with future building permit applications.

Project Area

The proposed high school campus is planned to be constructed on an $87\pm$ acre parcel (APN 027-011-08) within the City of Sparks. The existing parcel consists of northern portion of the existing Wildcreek Golf Course. The southern portion of the existing Wildcreek Golf Course, proposed to remain, borders the site to the south; Sullivan Lane borders the site on the west; single family residential, buffered by open space, borders the site on the east; and open space and the existing Sun Valley Dam border the site on the north.

The project area is proposed to be developed into a high school campus including a high school building(s), necessary parking and site access facilities, and various athletic facilities.

Sun Valley Dam

The Sun Valley Dam (NV ID # J-272) is a regional detention facility for the Sun Valley watershed and is directly upstream of the project area. Discharge from the dam is currently conveyed through the project area. Our team has evaluated record reports for the Sun Valley Dam and the following reports were found to be relevant to the proposed project area:

- Design Report for the Sun Valley Flood Control Detention Dam prepared by SEA, Inc., dated August 1987.
- Sun Valley Dam Emergency Action Plan prepared by HDR, Inc., dated January 2007
- Drainage Letter Report Sparks Reach 9 Regional Flood Control Channel Hydrograph Development & North Truckee Drain Watershed Study (SR9RFC-NTD) prepared by House Moran Consulting Inc., dated February 2018

Corporate Office: 3301 C Street, Bldg. 100-B • Sacramento, CA 95816 • 916.341.7760 • Fax: 916.341.7767 Reno Office: 1361 Corporate Boulevard, Reno, NV 89502 • 775.823.4068 • Fax: 775.823.4066 www.woodrodgers.com The SR9RFC-NTD study is the most recent report to be prepared and accepted by the City of Sparks and therefore is being utilized to determine design discharge rates from the Sun Valley Dam. The SR9RFC-NTD study amended the discharge calculations from the Design Report for the Sun Valley Dam. Based on the SR9RFC-NTD study, the 100-year discharge from the Sun Valley Dam is approximately 140 cfs and will be utilized in sizing the offsite drainage bypass through the project site.

The Emergency Action Plan (EAP) includes a spillway and breach flow analysis to evaluate downstream inundation during a spillway overtopping or breach event. The EAP flow analyses will be amended during the building permit process, as necessary, to update inundation areas below the dam to reflect the post-construction condition below the dam.

Adjacent Offsite Drainage

In addition to the offsite contribution from the Sun Valley Dam, there are two offsite flows entering the project area from the west. The first, shown as Basin B-4, includes an undeveloped area draining to the project area via a culvert under El Rancho Drive. The second includes the Wildcreek Villas Subdivision, shown as Basin OF-1, which currently discharges under Sullivan Lane to a detention facility within the project area prior to discharging to the Orr Ditch.

Please refer to Appendix A for a detailed discussion on these offsite contributions.

Existing Drainage Patterns

The existing drainage patterns include overland flow throughout the golf course concentrating in a small creek which meanders through the golf course and flows in and out of existing irrigation ponds throughout the golf course. During large storm events the channeled flow exceeds the depth of the creek and spreads out across the golf course. Discharge from the Sun Valley Dam is conveyed through the project area in this same creek/overland flow condition. The peak discharge in the existing condition below the project area (Confluence Point C) is approximately 144 cfs during the 100-year event. Please refer to Appendix A for detailed discussion and calculations.

Orr Ditch

The Orr Ditch currently meanders through the project area entering on the southwest corner of the project area and exiting on the southeast corner. For the purposes of analyzing historic flow patterns it is assumed that the Orr Ditch is full during the 100-year event. While the Orr Ditch is not intended to convey storm water, it is well known that stormwater throughout the region enters the ditch. It is anticipated, at the time to peak for the project area, the existing Orr Ditch is full from upstream drainage areas being convey through the project area. Given this assumption, the Orr Ditch is not shown to convey the 100-year flow for the upstream basins for the project area.

In the proposed condition, the Orr Ditch within the project area will be removed and realigned south of the project. This realignment will not alter the Orr Ditch's ability to serve downstream customers and will be completed under approval from the Orr Ditch Company. The existing residential drainage which is discharged into the Orr Ditch will be routed to the project's proposed detention pond and detained as necessary.

Proposed Mitigation Summary

Upstream offsite flow entering the project area is estimated to be approximately 140 cfs, refer to confluence points A in Appendix A, during the 100-year event. Offsite flow from confluence point A is proposed to be conveyed through the project area in a pipe which will carry flow through the site and discharge south of

the project area. This offsite, through drainage will be discharged to an existing golf course pond to disperse water to historical depths of flow and velocities. This is consistent with existing drainage patterns where runoff is conveyed from pond to pond via small channels and overland flow. Grading and reshaping of the existing pond may be necessary to ensure the post-development overland flow south of the project site meets pre-development flow conditions.

Offsite drainage from Basin B-2, will be routed around the proposed site and will combine with the through drainage, and discharge into an existing golf course pond to disperse water to historical drainage patterns.

Offsite drainage from Basin OF-1 currently enters a detention pond west of Sullivan Lane ultimately discharging to the Orr Ditch. As noted, the Orr Ditch is proposed to be re-routed south of the project area and the detention facility eliminated as part of the proposed improvements. The offsite drainage from Basin OF-1 will be incorporated into the future onsite detention pond.

Onsite drainage will be collected and detained onsite to limit post-development flow to the pre-development flow conditions as represented by Basin B-3 (refer to Appendix A). Similar to the offsite through drainage, onsite discharge will enter the existing golf course pond to disperse runoff to predevelopment flow conditions. When combined with the offsite through drainage, the proposed discharge from the golf course pond will be limited to approximately162 cfs (refer to Point C from Appendix A) to match the predevelopment condition.

In summary, the project site has been preliminarily reviewed for existing flow conditions and it is determined that the proposed project can limit the post-development flow to the pre-development conditions discussed above and presented in Appendix A. This will be accomplished by isolating upstream offsite drainage and conveying through the site. Onsite drainage will be collected in a separate system and will include the necessary detention facilities to meet code requirements. Lastly, these preliminary calculations will be validated throughout final design and will be submitted for review and approval during the building permit application stage of the project.

Please let us know if you have any questions or require any additional information.

Sincerely, Wood Rodgers, Inc.

BMAS

Brian Martinezmoles, P.E. Associate Engineer



Attachments: Appendix A – Technical Runoff Calculations.

Appendix A Technical Runoff Calculations

Hydrologic Methodology

The Soil Conservation Service (SCS) method was used in conjunction with HEC-HMS to model the runoff contributing to the Wild Creek Golf Course below the Sun Valley Dam. The SCS Unit Hydrograph method uses the unit hydrograph theory as a basis for runoff computations. The unit hydrograph theory computes rainfall excess hydrographs for a unit amount of rainfall excess applied uniformly over a sub-basin for a given unit of time (or unit duration). The rainfall excess hydrographs are then transformed to a sub-basin hydrograph by superimposing each excess hydrograph lagged by the unit duration. Input values include lag time, curve number, and precipitation data. A runoff curve number (CN) was developed based on the hydrologic soil group, cover type, the hydrologic condition and antecedent moisture conditions seen in Appendix E. The CN values were obtained from the Truckee Meadows Regional Drainage Manual dated April 30, 2009 also shown below in Table 1. Average velocities for estimating travel time for overland flow were used to develop a time of concentration and ultimately a lag time. The overall site hydrologic soil group spread can be seen in Appendix B.

Precipitation depths were obtained from Table 601 of the Truckee Meadows Regional Drainage manual as per Figure 601 of the Truckee Meadows Regional Drainage Manual.

HEC-HMS, a hydrologic modeling software developed by the US Army Corps of Engineers, was utilized to analyze the runoff from the onsite contributing drainage area to assure that flow rates generated from the sub-basins are not increased in the design peak flow storm.

Land Cover Classification	Curve Number Soil Group A	Curve Number Soil Group B	Curve Number Soil Group C	Curve Number Soil Group D
Open Space (Golf Course, Good Condition)	39	61	74	80
Open Space (Golf Course, Fair Condition)	49	69	79	84
Impervious Areas	98	98	98	98
Western Dessert Urban Area (Natural)	63	77	85	88
Ponds and Standing water	100	100	100	100
Paved Areas	98	98	98	98

Table 1 - Runoff Curve Number (CN values)

The 5-year (minor) storm event was not considered as part of this preliminary analysis and will be evaluated during final design. This preliminary analysis was limited to the 100-year storm events as the major event will have the greatest impact with regards to offsite discharges entering the site. The 5-year event will be analyzed with final design and submitted for review with future building permit applications.

For the purposes of this analysis, all ponds are considered to be full during the given storm events and therefore do not offer storage capacity. This is a reasonable assumption as the ponds are utilized for golf course irrigation and water features and are typically maintained with some volume of water.

Previous Studies

The following, agency approved, studies were obtained and utilized as a reference for the determining the existing offsite flow patterns.

- Design Report for the Sun Valley Flood Control Detention Dam prepared by SEA, Inc., dated August 1987.
- Sun Valley Dam Emergency Action Plan prepared by HDR, Inc., dated January 2007
- Conceptual Drainage Report for Pyramid Highway & US 395 Connector Project prepared by Jacobs, dated September 2011.
- Drainage Letter Report Sparks Reach 9 Regional Flood Control Channel Hydrograph Development & North Truckee Drain Watershed Study prepared by House Moran Consulting Inc., dated February 2018
- Hydrology Report of Wildcreek Subdivision Unit One prepared by Fricke Engineering, Inc., dated June 2, 1995.
- Wildcreek Golf Villas Unit 1 Hydrology prepared by Jeff Codega Planning/Design, Inc., dated April 24, 1998.

Existing Drainage Patterns

The existing runoff within the project area is comprised primarily of upstream offsite flow from the Sun Valley Dam, adjacent offsite runoff, and onsite runoff. The Sun Valley Dam discharges to the project area through an outlet pipe and/or emergency spillway. Stormwater enters the project area, combines with the onsite runoff, and is conveyed through a series of small channels and overland flow, and ultimately enters the public storm drain network at McCarran Boulevard. The existing peak discharge rates from the Sun Valley Dam, as reported by the *Sparks Reach 9 Regional Flood Control Channel Hydrograph Development and North Truckee Drain Watershed Study (SR9RFC-NTD)*, are shown below in Table 2. In addition, the hydrograph for Confluence Point A is shown in Figure 1.

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Storm Event	Emergency Spillway Discharge	Net Downstream Discharge
100 Year	0 cfs	140 cfs

Table 2 - Summary of Existing Flow



Figure 1 - Existing Hydrograph at Confluence Point A

The existing runoff from the neighboring Wildcreek Golf Villa development (Basin OF-1) currently enters the site from across Sullivan Lane on Niblick Drive. Storm water is conveyed in a pipe and released into an existing detention basin which outlets to the Orr Ditch. Drainage patterns and discharge rates were obtained from the Wildcreek Golf Villas Unit 1 and Wildcreek Subdivision Unit One reports and are shown below in Table 3.

Storm Event	Net Discharge to Detention Pond	Net Discharge to the Orr Ditch
100 Year	46 cfs	1 cfs

Table 3 - Existing	Peak Flows from th	e Wildcreek Golf	Villas Development	(OF-1)
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Confluence point C represents the confluence of flow from the Sun Valley Dam, the existing golf course/ upstream hillside (Basin A-1), and the offsite drainage from a future development on the west of Sullivan/El Rancho (Basin A-2) which outlets to the project area via an existing culvert under El Rancho Drive. The existing peak flow at confluence point C is approximately 144 cfs. The existing hydrograph at Confluence Point C is shown below in Figure 2.



Figure 2 - Existing Hydrograph at Confluence Point C

A summary of all the existing flows for each basin and confluence point are shown below in Table 4.

Basin / Confluence Point	Discharge	Time of Peak (hours)
Sun Valley Dam	140 cfs	21:27
Confluence Point A	140 cfs	21:27
Basin A-1	108 cfs	12:27
Basin A-2	7 cfs	12:19
Confluence Point C	162 cfs	12:25

Fable 4 – Summar	y of Existing	Flow	(100-)	year)
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Proposed Condition

In the proposed condition, the area downstream of the dam is broken into four basins which include a basin to the north of the project area, basin B-1; a basin to the east which drains toward the project area, basin B-2; a basin which includes the proposed project area, basin B-3; and basin B-4 which represents an undeveloped area to west which outlets under El Rancho Drive and enters the project area.

Basin B-1 will be isolated based on anticipated site grading. This basin will be routed in a cutoff ditch which will be combined, at confluence point A, with the Sun Valley Dam outlet flow and runoff from Basin B-4. Runoff from confluence point A will be passed through the site in a pipe or box culvert. This offsite, through drainage will be discharged to an existing golf course pond to disperse water to historical depths of flow and velocities. This is consistent with existing drainage patterns where runoff is conveyed from pond to pond via small channels and overland flow. Grading and reshaping of the existing pond may be necessary to ensure the post-development overland flow south of the project site meets pre-development flow conditions.

Similarly, Basin B-2 will be intercepted in a cutoff ditch and routed adjacent to the proposed site and discharged into an existing golf course pond similar to the discharge from the through drainage pipe from confluence point A.

All onsite flow, Basin B-3, will be intercepted within a private storm drain system and will be detained as necessary to limit the proposed peak discharge to the existing peak of 161.6 cfs. In addition to intercepting and detaining the onsite flow, the system will be sized to accommodate discharge from basin OF-1 which historically was detained and discharged into the Orr Ditch. The final detention pond will be sized and submitted for approval during building permit process however a preliminary pond has been incorporated into the provided calculations to verify the necessary detention can occur onsite. Peak flows during the proposed condition are shown in Table 5 and illustrated in the proposed watershed map.

Three confluence points were identified for the purposes of this preliminary analysis. Confluence point A, which includes the summation of flows from the Sun Valley Dam, Basin B-1, and Basin B-4. The peak flow at confluence point A represents the critical design flow for the pipe or box culvert which will pass upstream drainage through the project area. The hydrograph for confluence point A is shown in Figure 2.



Figure 2 - Proposed Hydrograph at Confluence Point A

As illustrated in Figure 2, the localized peak flow occurs before the peak discharge of the Sun Valley Dam at confluence point A. As such, the design flow for the through drainage is represented by the peak discharge from the Sun Valley dam.

Confluence point B includes what will become the developed project area. As a result of relocating the Orr Ditch, the neighboring Wildcreek Golf Villa development (basin OF-1) to west will be routed to point B and combined with basin B-3 in a future detention pond.

Confluence point C represents the total flow from confluence points A, B, and basin B-2. The hydrograph for Confluence Point C is shown below in Figure 3. Peak flows for each confluence point are shown in Table 5.



Figure 3 - Proposed Hydrograph at Confluence Point C

Basin / Confluence Point	Discharge	Time of Peak (hours)
Basin B-1	26 cfs	12:17
Basin B-2 / Confluence Point B	44 cfs (w/ detention)	12:18
Basin B-3	76 cfs	12:22
Basin B-4	23 cfs	12:12
Confluence Point A	141 cfs	21:30
Detention Pond	41 cfs	12:41
Confluence Point C	160 cfs	12:20

Table 5 - Existing	Peak Flows from	Basins (100-year)
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Summary

In summary, the project site has been preliminarily reviewed for existing flow conditions and it is determined that the proposed project can limit the post-development flow to the pre-development conditions discussed above and presented in Appendix A. This will be accomplished by isolating upstream offsite drainage and conveying through the site. Onsite drainage will be collected in a separate system and will include the necessary detention facilities to meet code requirements. Lastly, these preliminary calculations will be validated throughout final design and will be submitted for review and approval during the building permit application stage of the project.

The following supporting figures and calculations are included for reference. Please note that these calculations are preliminary, based on current site plans, and are subject to change with final design. These calculations were prepared in the context of preliminary planning efforts to be included with entitlement packages and identify potential mitigations and solutions for offsite drainage. Final technical drainage studies will be provided for agency review during the building permit application process.

General

Vicinity Map

Existing

Existing Watershed Map Existing NRCS Hydrologic Soil Group Existing Basin Flow Calculations (HEC-HMS Output) Existing Basin Time of Concentration Calculations Existing Land Use / Curve Number Calculations. Existing Hydrographs for Confluence Point A and C

Proposed

Proposed Watershed Map NRCS Hydrologic Soil Group Proposed Basin Flow Calculations (HEC-HMS Output) Proposed Basin Time of Concentration Calculations Proposed Land Use / Curve Number Calculations. Proposed Hydrographs for Confluence Point A and C



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Project: Wildcreek_OA Simulation Run: Existing_100year

 Start of Run:
 01Jan2017, 00:00

 End of Run:
 03Jan2017, 00:00

 Compute Time:
 22Feb2019, 11:32:12

Basin Model: ExistingBasin Meteorologic Model: 100-year Sparks Control Specifications:Control 1

Hydrologic Element	Drainage Are (MI2)	aPeak Discha (CFS)	r g ieme of Peak	Volume (IN)
A-1	0.3640	108.4	01Jan2017, 12:27	0.60
OF-1	0.1000	44.7	01Jan2017, 12:19	0.69
R_OF-1	0.1000	44.7	01Jan2017, 12:23	0.69
A-2	0.0235	6.9	01Jan2017, 12:19	0.49
Sun Valley Dam	Not Specified	139.7	01Jan2017, 21:27	n/a
PointA	Not Specified	139.9	01Jan2017, 21:27	n/a
R_SVD	Not Specified	139.9	01Jan2017, 21:30	n/a
PointC	Not Specified	161.6	01Jan2017, 12:25	n/a

Time of Concentration Existing Basins

					TIME O	F CONCENT	RATION						
			Initial Flov	v Time, T			Travel Tir	ne, T _t		Total	Urbanized		
Drainage Basin	Drainage Area (AC)		Overlan	id Flow			Channelize	d Flow		(T _i +T _i)	Basins Check	Fin	hal
		L, (ft)	S (ft/ft)	ᆔ	T _i (min)	Ls(ft)	S (ft/ft)	V(ft/s)	T _{t1} (min)	T _c (min)	T _c *(min)	T _c (min)	TLAG
E-1	233.11	451.6	0.13	0.61	7.9	4333.0	0.087	2.5	28.9	36.8	36.6	36.6	21.95
E-2	15.10	327.1	0.32	0.57	5.5	2930.0	0.07	2.7	18.1	23.6	28.1	23.6	14.14

Curve Number Calculations Existing Basins

E-2	Ţ	Watershed	
15,10	233.11	(ac)	
0.024	0.364	(sq. mi.)	
68	89	Hydro Soll Group D	
0	1.6	Group D Area (ac)	lin
69	69	Hydro Soll Group B	
0	9.7	Group B Area (ac)	G
79	79	Hydro Soll Group C	olf Course - f
0	13.0	Hydro Soll Group C Area (ac)	air condition
84	84	Hydro Soll Group D	
0	72.3	Hydro Soll Group D Area (ac)	
91	91	Hydro Soll Group D	Grav
0	2.5	Hydro Soll Group D Area (ac)	19/
88	86	All Soll Groups	Pa
1.5	0.5	All Soll Group Area (ac)	ved
51	51	Hydro Soll Group B	Sagebru
0.0	0.2	Hydro Soll Group B Area (ac)	sh with gras
70	70	Hydro Soll Group D	ss understor
13.6	131.9	Hydro Soll Group D Area (ac)	y - fair
100	100	All Soll Groups	W
0.0	2.7	All Soil Group Area (ac)	ater
73	76	CN combined	



---- Run:Existing_100year Element:A-2 Result:Outflow

Junction "PointA" Results for Run "Existing_100year"

Run:Existing_100year Element:PointA Result:Outflow
 Run:Existing_100year Element:Sun Valley Dam Result:Outflow



Junction "PointC" Results for Run "Existing_100year"





Project: Wildcreek_OA Simulation Run: Proposed_100year

 Start of Run:
 01Jan2017, 00:00

 End of Run:
 03Jan2017, 00:00

 Compute Time:
 21Feb2019, 16:01:44

Basin Model: ProBasin_2019011! Meteorologic Model: 100-year Sparks Control Specifications:Control 1

Hydrologic Element	Drainage Are (MI2)	aPeak Discha (CFS)	r g ieme of Peak	Volume (IN)
B-3	0.1430	76.1	01Jan2017, 12:22	0.89
Res1	0.1430	40.6	01Jan2017, 12:41	0.89
B-2	0.1210	43.9	01Jan2017, 12:18	0.56
B-1	0.0930	26.0	01Jan2017, 12:17	0.45
B-4	0.0235	22.7	01Jan2017, 12:12	1.12
Sun Valley Dam	Not Specified	139.7	01Jan2017, 21:27	n/a
PointA	Not Specified	140.9	01Jan2017, 21:27	n/a
R_B-1	Not Specified	140.9	01Jan2017, 21:30	n/a
OF-1	0.1000	44.7	01Jan2017, 12:19	0.69
R_OF-1	0.1000	44.7	01Jan2017, 12:23	0.69
PointC	Not Specified	160.1	01Jan2017, 12:20	n/a



Time of Concentration Proposed Basins

B-4	B-3	B-2	B-1	Drainage Basin			
15.10	91.36	77.67	59.65	Drainage Area (AC)			
270.0	348.7	327.1	451.6	Li (ft)	Overland Flow	Initial Flow Time, T _i	TIME OF CONCENTRATION
0.21	0.32	0.32	0.13	S (ft/ft)			
0.48	0.69	0.61	0.56	R			
6.7	4.4	5.1	8.8	T, (min)			
523.0	3426.0	2930.0	2701.0	Ls(ft)	Channelize	Travel Time, T _t	
0.16	0.03	0.07	0.12	S (ft/ft)			
4.7	1.8	2.7	3.5	V(ft/s)	d Flow		
1.9	31.7	18.1	12.9	T _{t1} (min)			
10.0	36.1	23.2	21.6	T _c (min)	Total (T _i +T _t)		
14.4	31.0	28.1	27.5	T _c *(min)	Urbanized Basins Check		
10.0	31.0	23.2	21.6	T _c (min)	Fir		
6.00	18.58	13.92	12.97	TLAG			

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88888 (0.0) 2 0.093 89 0.121 85 0.143 89 0.024 89 -NI) 2222 Group D Area (ac) 48.7 58.9 29.6 0.0 88 82 73 72 Mar

Curve Number Calculations Proposed Basins

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Junction "PointA" Results for Run "Proposed_100year"



Junction "PointC" Results for Run "Proposed_100year"