

April 25, 2023



City of Lee's Summit, Missouri

220 SE Green Street

Lee's Summit, MO 64063

RE: PL2023011 – Discovery Park Stream Buffer Waiver

Dear Mr. Binger:

We are submitting this memorandum to support the attached waiver request for the Discovery Park Zone 1 & 2 development to remove 10.3 acres of stream buffer which falls at the upper-most reach of the existing native channel.

As part of the due diligence performed for the development, review of existing FEMA floodplains was completed and determined no regulated floodplains exist within the impacted creek channel, and a jurisdictional determination was requested by the United States Army Corps of Engineers (USACE) and a determination letter was received that states the affected creek channel and attached wetlands are not jurisdictional waters of the US.

Along with the above listed reviews, a macro and first phase micro stormwater study, covering Zones 1 and 2, was completed to establish peak allowable flowrates and provide design of a detention basin within the development to meet those allowable flowrates. The table below, excerpted from the stormwater study, demonstrates that at Points of Interest A1 and A2, with removal of the stream buffer and construction of a permanent pool detention basin, peak flowrates are lower than the allowable flowrates for the channel. The location of the Points of Interest can be seen on the attached exhibit.

Table 5-2. Macro-Fully Developed- Peak Flowrate Comparison

Location:	Event:	Existing Flowrate (cfs):	ARR (cfs):	Proposed Flowrate (cfs):	Difference (Existing vs. Proposed) (cfs):	Difference (ARR vs. Proposed) (cfs):
Point A1	2-Year:	948.96	857.17	846.59	-102.37	-12.79
	10-Year:	1,748.23	1702.66	1539.67	-208.56	-164.40
	100-Year:	2,754.84	2621.34	2309.68	-445.16	-314.06
Point A2	2-Year:	909.05	823.14	803.35	-105.70	-19.79
	10-Year:	1,691.73	1607.68	1451.96	-239.77	-155.72
	100-Year:	2,566.59	2436.65	2169.95	-396.64	-266.70
Point A3	2-Year:	628.64	612.5	627.78	-0.86	15.28
	10-Year:	1,107.67	1092.23	1103.02	-4.65	10.79
	100-Year:	1,595.56	1574.71	1588.55	-7.01	13.84
Point A4	2-Year:	260.92	200.55	163.90	-97.02	-36.65
	10-Year:	539.49	471.95	325.28	-214.21	-146.67
	100-Year:	906.56	771.67	534.89	-371.67	-236.78
Point A6	2-Year:	37.98	16.57	54.75	16.77	38.18
	10-Year:	70.54	40.65	87.16	16.62	46.45
	100-Year:	113.19	63.3	128.41	15.22	65.11

In addition to peak rate reductions, the city requires that 40-hour extended dry detention of the water quality storm event, or equivalent on-site water quality treatment be provided per the MARC BMP Manual. The proposed development will provide an equivalent, or greater, level of service than 40-hr extended dry detention through a mix of 40-hr extended dry detention of the water quality storm and individual best management practices (BMPs) constructed upstream of the proposed detention basin. BMPs will be constructed internally to the project pad sites, closer to the source point of the pollutant. Water quality analysis treatment measures and calculations will be provided in future micro stormwater studies as each phase of the project is finalized through the Final Development Plan process.

Furthermore, with the culvert discharging into the wet-bottom detention basin with approximately 680 feet of travel length through a permanent pool of water, suspended solids and floatables that are conveyed into the basin from upstream (offsite) areas, not required to be treated by this development, will have an opportunity to settle out or be collected and disposed of through the development's maintenance program. Discharging the culvert extension directly into the permanent pool basin will also provide scour and erosion protection that is a common problem at pipe outlets into dry basins or creek channels. Permanent pool detention basins also promote wildlife and aquatic habitats where dry basins are typically mowed and maintained to prevent vegetation, often deemed as 'unsightly' by landowners, from growing.

To improve the aesthetics and quality of the proposed wet detention basin, landscape design guidelines are being established for the development. The proposed guidelines require a 15-ft buffer of native plantings in areas not encumbered by retaining walls around the perimeter of the pond, restricting the use of turf grass in that zone. The taller native plantings and grasses provide wildlife habitat and refuse while filtering physical and chemical pollutants. Native planted buffer zones in conjunction with the existing old growth tree preservation (when possible) will enhance wildlife habitat and connectivity.

In addition to the water quality treatment being provided for the development prior to discharging runoff into the creek, 5.2 acres of enhanced stream buffer is being proposed to be set aside downstream of the impacted creek channel to further offset any environmental/wildlife impact caused by removing stream buffer described.

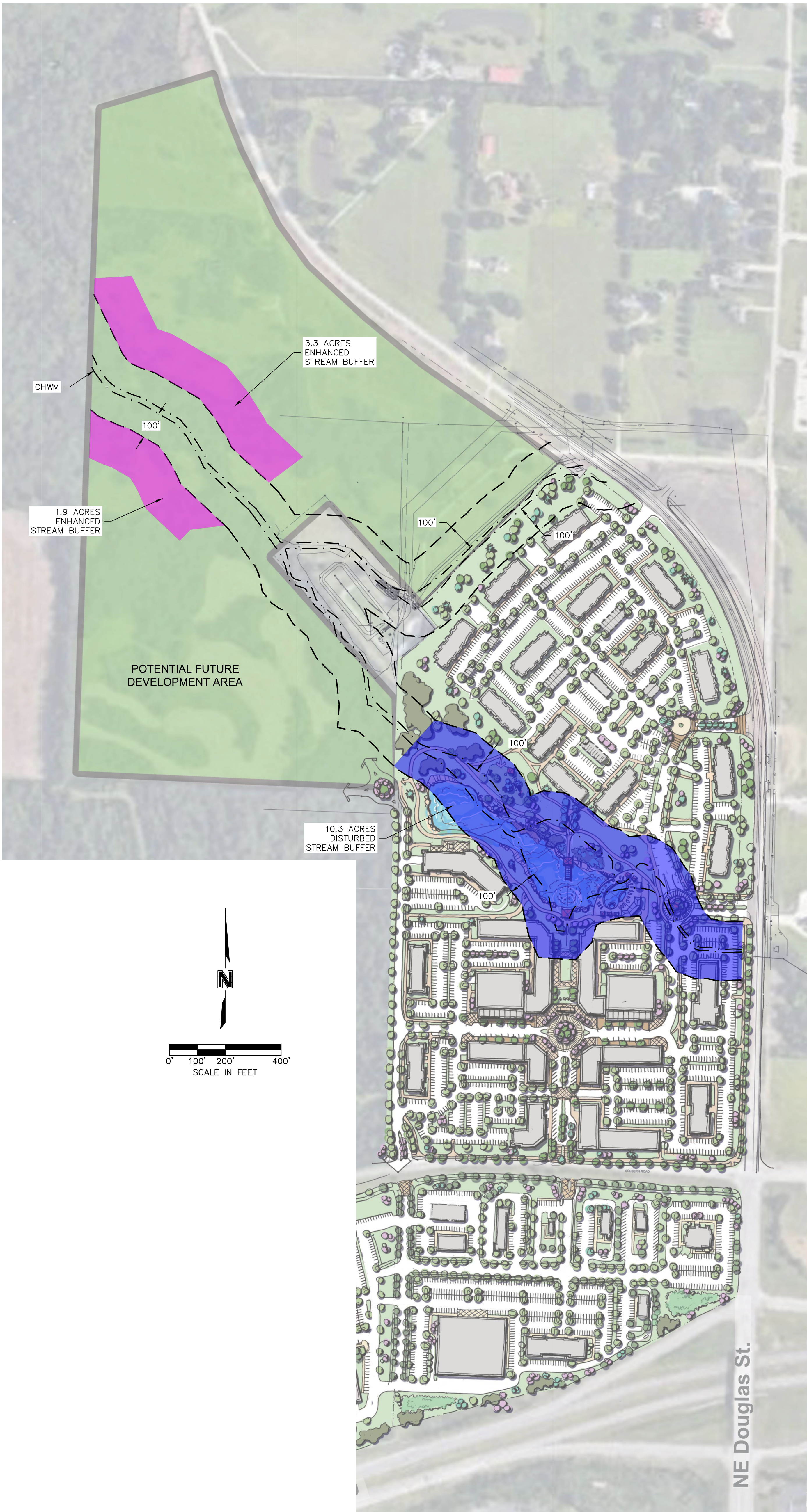
With the support of Unity Village, due diligence performed on the project site, and increased level of water quality being provided to on- and off-site discharges with separate water quality treatment measures and a wet detention basin, we request this waiver be approved.

Should you have any questions, please contact me at (816) 442-6056 or nheiser@olsson.com.

Sincerely,



Nicholas D. Heiser, PE
Senior Civil Engineer



SHEET EX-005A	ZONE 1 STREAM BUFFER EXHIBIT		REV. NO.	DATE	REVISIONS DESCRIPTION	BY	olsson Olsson - Civil Engineering Missouri Certificate of Authority #001592 1301 Burlington Street North Kansas City, MO 64116 TEL 816.361.1177 www.olsson.com
	DISCOVERY PARK						
	LEE'S SUMMIT, MO						
	2022		REVISIONS				
	drawing by: CJH						
	checked by: JFE						
	approved by: CJH						
	QA/QC by: JFE						
	project no.: A21-04643						
	drawing no.: EX-005A_A2104643						
date: 2023.01.09							

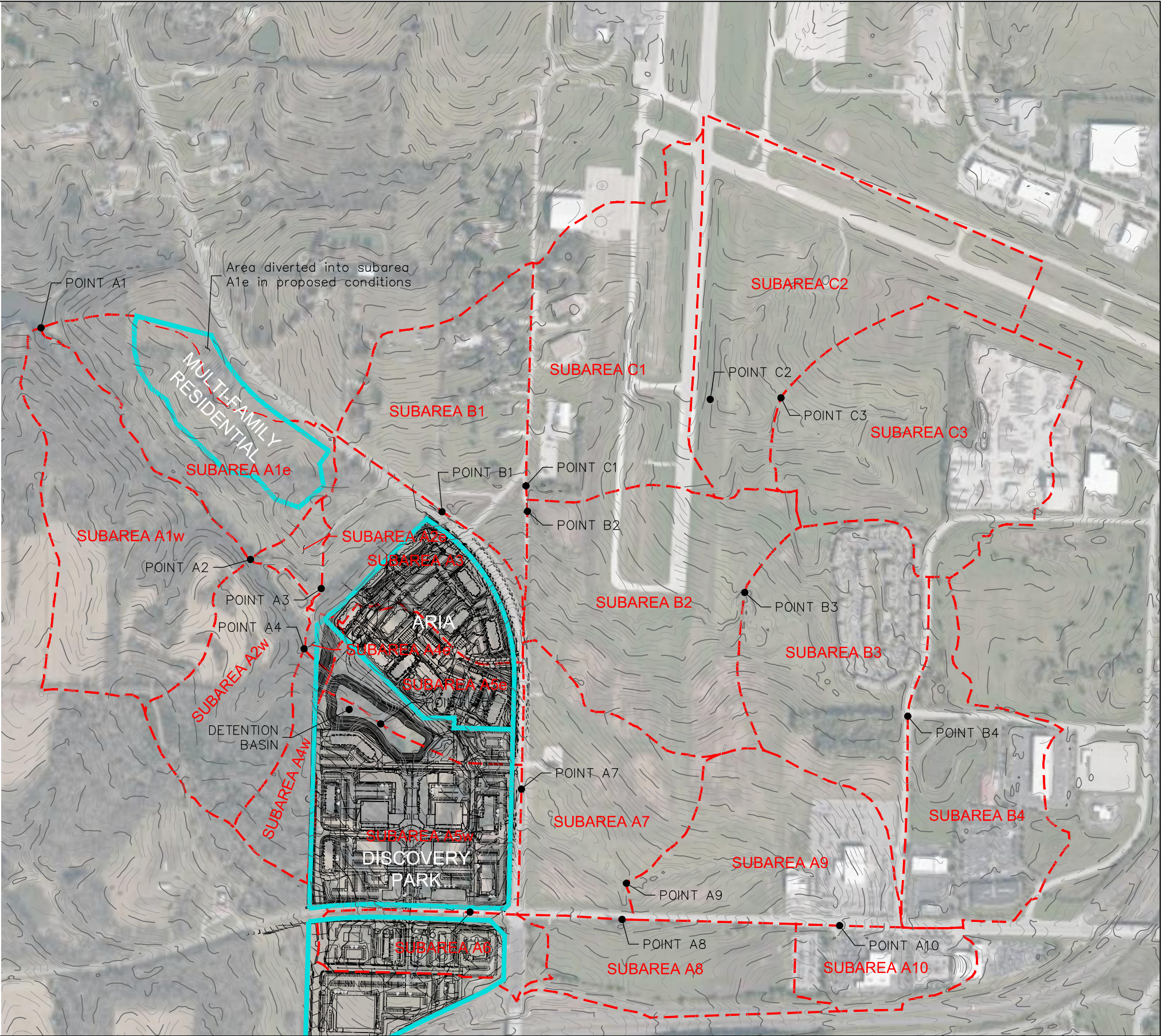
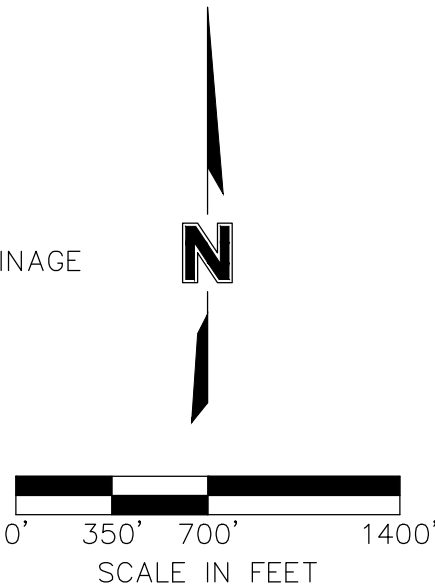
DWG: F:\2021\04501-05000\021-04643-A\40-Design\Reports\GNC\Macro_Stormwater_Study_A2104643\Rev_2\Exhibits\EX-302_Macro_Conditions\EX-302_Macro_Conditions_A2104643.dwg

Location ID:	Total Area (ac):	Aria Onsite Area (ac):	Discovery Park Onsite Area (ac):	Onsite Area Macro-Study (ac):	Weighted NRCS CN:
Subarea A1(e):	30.57			14.96	85
Subarea A1(w):	43.14				76
Subarea A2(e):	3.08				80
Subarea A2(w):	23.41				73
Subarea A3:	24.06	11.07		11.07	87
Subarea A4(e):	1.48	0.14	0.84	0.98	89
Subarea A4(w):	8.75		0.59	0.59	72
Subarea A5(e):	19.12	11.29	6.92	18.20	92
Subarea A5(w):	33.42		31.08	31.08	95
Subarea A6:	13.42			9.88	94
Subarea A7:	30.60				76
Subarea A8:	21.56				81
Subarea A9:	31.84				84
Subarea A10:	12.23				94
Subtotal:	296.68	22.50	39.43	86.76	
Subarea B1:	31.94				79
Subarea B2:	48.54				78
Subarea B3:	40.69				83
Subarea B4-DET:	25.05				94
Subarea B4-BYP:	7.42				94
Subtotal:	153.64				
Subarea C1:	45.21				90
Subarea C2:	57.13				81
Subarea C3:	52.36				83
Subtotal:	154.70				

Sub-W'Shed A Subtotal:	296.68	22.50	39.43	86.76
Sub-W'Shed B Subtotal:	153.64	0.00	0.00	0.00
Sub-W'Shed C Subtotal:	154.70	0.00	0.00	0.00
Modeled Total:	605.02	22.50	39.43	86.76

BOUNDARY LEGEND

- SITE BOUNDARY
- TRIBUTARY DRAINAGE BOUNDARY



PROJECT NO:	A21-04643
DRAWN BY:	DFG
DATE:	01/18/2023

MACRO FULLY-DEVELOPED CONDITIONS

olsson

1301 Burlington Street
North Kansas City, MO 64116
TEL 816.361.1177

EXHIBIT

EX-302