



February 11, 2020

City of Smyrna
2800 King Street
Smyrna Ga 30080

Re: Preliminary Post-Developed Stormwater Management Memo for Hearthside - Smyrna

Dear Mayor and Council:

This memo is being provided as required per item 14 of the zoning amendment application for the proposed Hearthside – Smyrna development, a senior living community comprised of age-restricted apartments, to summarize the measures that will be utilized to provide flow attenuation and treatment of the post-developed stormwater runoff generated as a result of the proposed development. All proposed improvements will be designed in accordance with Chapter 46, Article V – Stormwater Mangement of the City of Smyrna's Code of Ordinances.

The site is currently divided into three basins. The smallest basin is comprised of a small portion of the site that drains to grassed swale located on the north side of the East-West Connector, the second largest basin drains to the existing stream in the northeast corner of the site and the largest basin drains west to the Creekside at Vinnings townhome development. The proposed stormwater management plan will be designed to maintain the existing drainage basins as much as possible in the post-developed condition and any headwalls will be designed with outlet protection per the green book. Attached to this letter for reference are the vicinity map, FEMA FIRM panel, pre- and post-developed drainage exhibits and hydraflow hydrograph summary reports for the 1, 2, 5, 10, 25, 50 and 100-year 24-hour return frequency storm events.

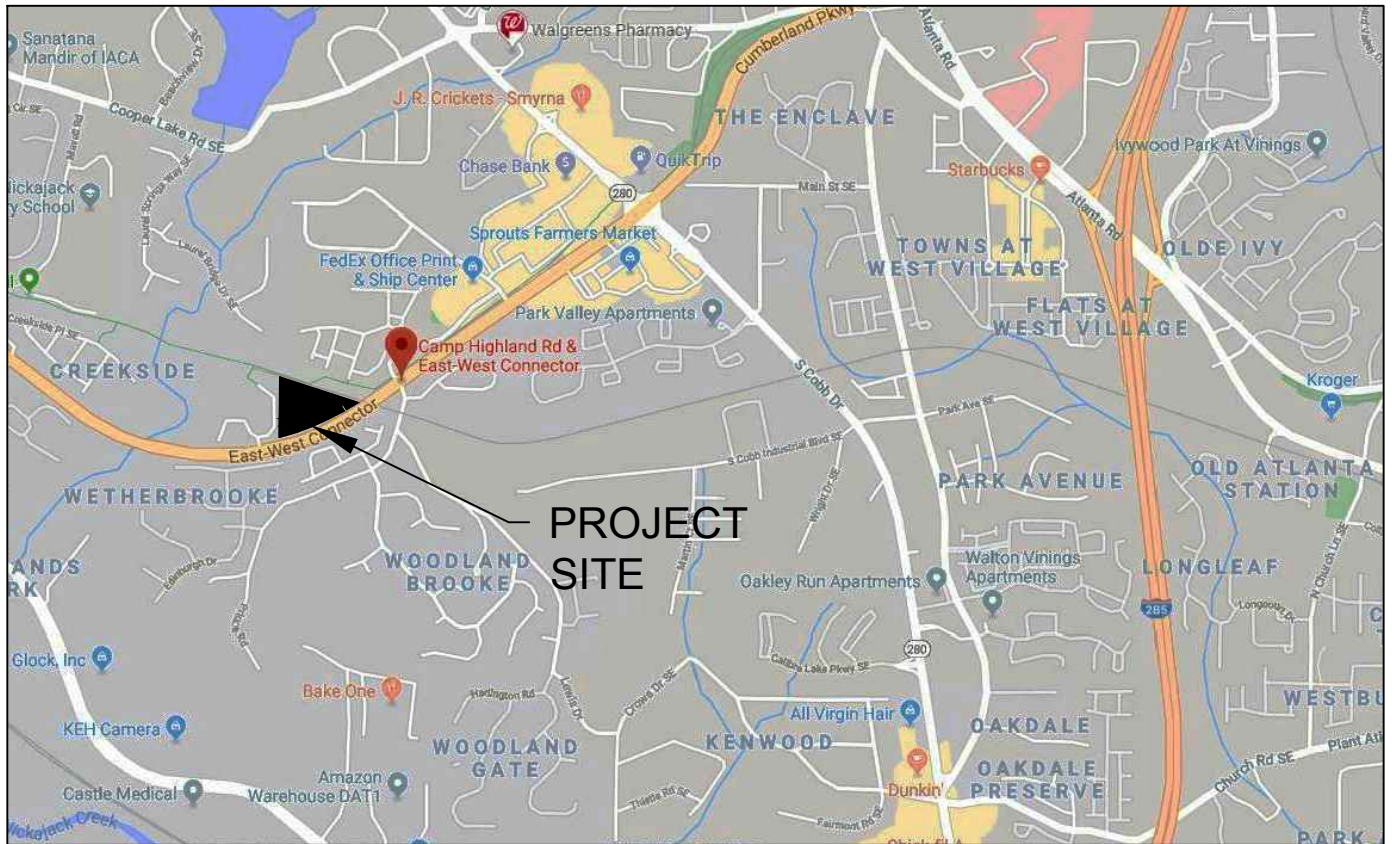
Due to the shape and size of the existing site, the majority of stormwater runoff from the disturbed area will be collected via surface drains and conveyed via a series of underground pipes to one of two underground ponds which will be located under the proposed parking lot along the north side of the site. The perimeter portions of the site and a portion of the proposed driveway will bypass the underground ponds and be discharged into the existing grass swale along the north side of the East-West Connector. The proposed underground detention ponds will be designed with an outlet control structure to attenuate the post-developed peak flow rate below the pre-developed and/or allowable flow rate for the 1, 2, 5, 10, 25, 50 and 100-year 24-hour return frequency storm events thus meeting the City's requirements for overbank and extreme flood protection. In addition to flow attenuation, the outlet control structure and pond will also be designed to provide channel protection per the City's criteria and water quality will be provided via a proprietary treatment device downstream of the ponds. The selected device will be taken from the current ARC approved device list as allowed by the GSMM. A post-development downstream analysis will also be provided and special attention will be given to the point at which the site area is equal to or less than 10% of the overall basin used for the downstream analysis.

All of these measures will be combined together to provide a treatment train for the proposed development and the owner of the facility will provide an inspection and maintenance agreement in accordance with the City's criteria. Feel free to contact me should you have any questions or concerns.

Sincerely,

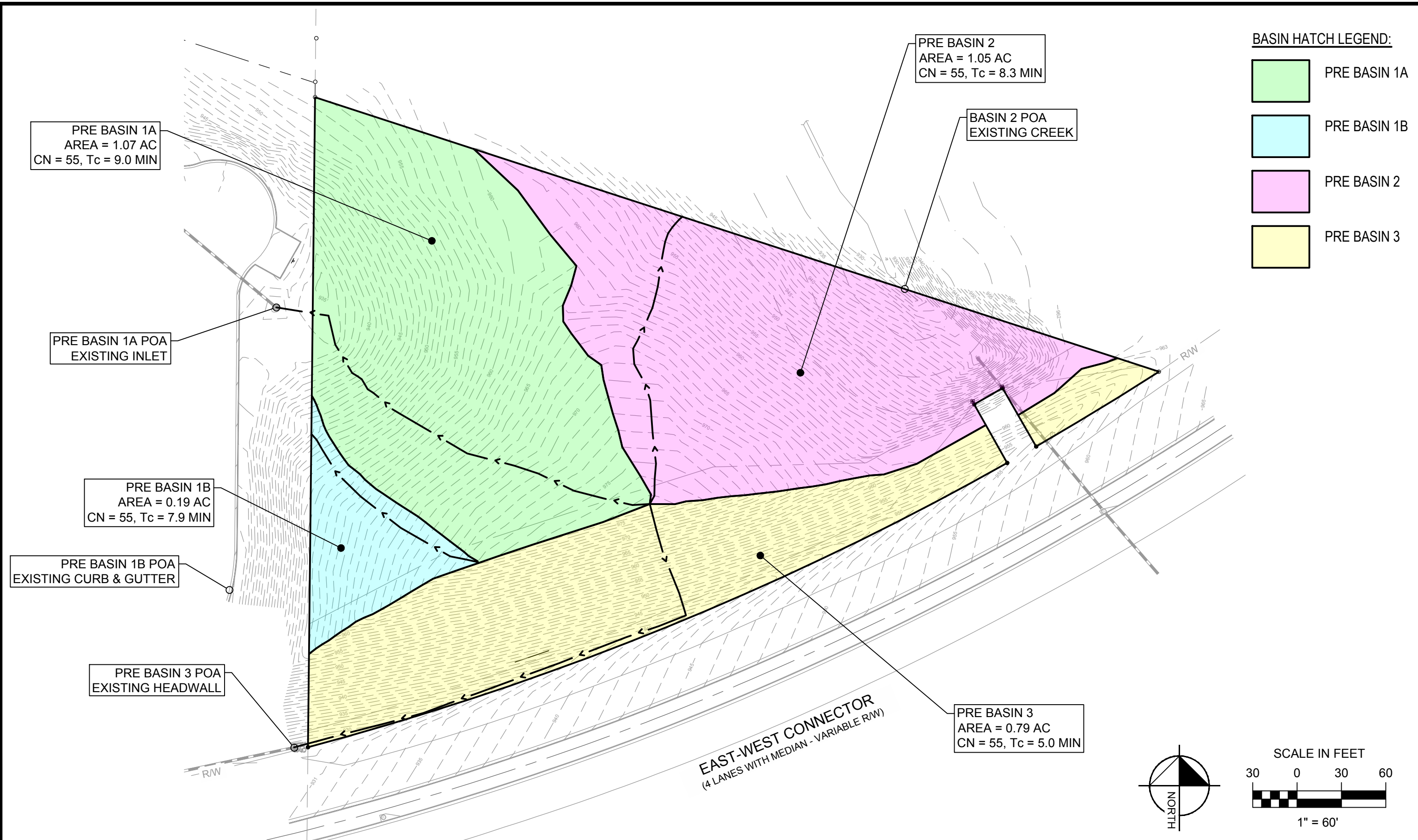
A handwritten signature in blue ink, appearing to read "KJ Sharpe", with a stylized flourish at the end.

Kyle Sharpe, PE
Project Manager



LOCATION MAP
NOT TO SCALE





BASIN HATCH LEGEND:

- PRE BASIN 1A
- PRE BASIN 1B
- PRE BASIN 2
- PRE BASIN 3

PRE BASIN 1A
AREA = 1.07 AC
CN = 55, Tc = 9.0 MIN

PRE BASIN 2
AREA = 1.05 AC
CN = 55, Tc = 8.3 MIN

BASIN 2 POA
EXISTING CREEK

PRE BASIN 1A POA
EXISTING INLET

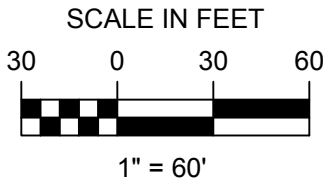
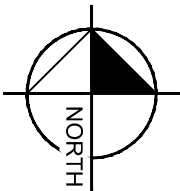
PRE BASIN 1B
AREA = 0.19 AC
CN = 55, Tc = 7.9 MIN

PRE BASIN 1B POA
EXISTING CURB & GUTTER

PRE BASIN 3 POA
EXISTING HEADWALL

PRE BASIN 3
AREA = 0.79 AC
CN = 55, Tc = 5.0 MIN

EAST-WEST CONNECTOR
(4 LANES WITH MEDIAN - VARIABLE RW)



REV.	NO.	DATE	DRAWN BY	CHECKED BY
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PREPARED IN THE OFFICE OF:



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WWW.LECRAWENGINEERING.COM PEF005768

CLIENT:

ONESTREET RESIDENTIAL
2000 RIVEREDGE PARKWAY, SUITE 450, ATLANTA, GA 30328

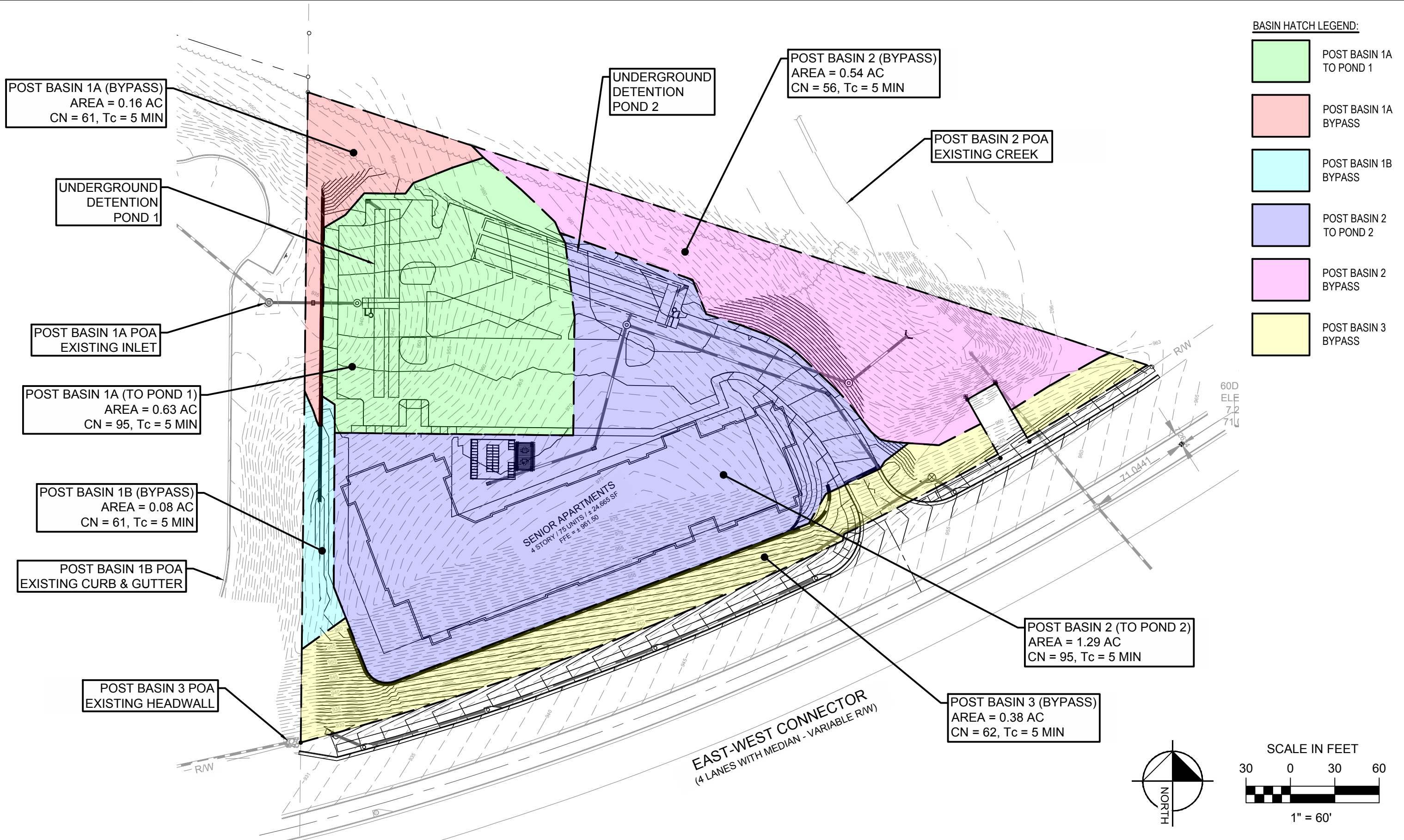
TITLE:

PRE-DEVELOPMENT EXHIBIT

HORIZONTAL SCALE	AS NOTED
VERTICAL SCALE	N/A
DRAWN BY	TKS
DESIGNED BY	TKS
CHECKED BY	TKS

HEARTHSIDE - SMYRNA
EAST-WEST CONNECTOR
SMYRNA, COBB COUNTY, GEORGIA

DATE	February 11, 2020	JOB NUMBER	087009	EXHIBIT NUMBER	2
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CLIENT: **ONESTREET RESIDENTIAL**
2000 RIVEREDGE PARKWAY, SUITE 450, ATLANTA, GA 30328

TITLE: **POST-DEVELOPMENT EXHIBIT**

HORIZONTAL SCALE: AS NOTED
VERTICAL SCALE: N/A
DRAWN BY: TKS
DESIGNED BY: TKS
CHECKED BY: TKS

HEARTHSIDE - SMYRNA
EAST-WEST CONNECTOR
SMYRNA, COBB COUNTY, GEORGIA

DATE: February 11, 2020
JOB NUMBER: 087009
EXHIBIT NUMBER: 3

Hydrograph Return Period Recap

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Inflow hyd(s)	Peak Outflow (cfs)								Hydrograph Description
			1-yr	2-yr	3-yr	5-yr	10-yr	25-yr	50-yr	100-yr	
1	SCS Runoff	-----	0.259	0.718	-----	1.303	1.981	2.982	3.790	4.639	PRE BASIN 1A
2	SCS Runoff	-----	0.051	0.138	-----	0.247	0.373	0.559	0.708	0.865	PRE BASIN 1B
3	SCS Runoff	-----	0.282	0.764	-----	1.368	2.064	3.089	3.915	4.782	PRE BASIN 2
4	SCS Runoff	-----	0.245	0.650	-----	1.150	1.731	2.587	3.277	4.000	PRE BASIN 3
6	SCS Runoff	-----	2.965	3.660	-----	4.351	5.039	5.953	6.636	7.318	POST BASIN 1A (TO POND)
7	Reservoir	6	0.137	0.500	-----	1.151	1.580	2.028	2.323	2.993	UG POND 1 DISCHARGE
8	SCS Runoff	-----	0.126	0.235	-----	0.360	0.498	0.694	0.849	1.009	POST BASIN 1A (BYPASS)
9	Combine	7, 8	0.216	0.548	-----	1.308	1.855	2.471	2.894	3.558	POST BASIN 1A
11	SCS Runoff	-----	0.063	0.117	-----	0.180	0.249	0.347	0.425	0.505	POST BASIN 1B
13	SCS Runoff	-----	6.071	7.495	-----	8.910	10.32	12.19	13.59	14.98	POST BASIN 2 (TO POND)
14	Reservoir	13	0.102	0.193	-----	0.513	0.845	1.187	1.604	2.608	POND 2 DISCHARGE
15	SCS Runoff	-----	0.206	0.499	-----	0.856	1.265	1.864	2.345	2.848	POST BASIN 2 (BYPASS)
16	Combine	14, 15	0.293	0.593	-----	0.957	1.532	2.620	3.338	4.044	POST BASIN 2
18	SCS Runoff	-----	0.332	0.602	-----	0.908	1.241	1.716	2.089	2.474	POST BASIN 3
Proj. file: HS-Smyrna.gpw									Tuesday, 02 / 11 / 2020		

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.259	1	722	1,165	-----	-----	-----	PRE BASIN 1A
2	SCS Runoff	0.051	1	721	202	-----	-----	-----	PRE BASIN 1B
3	SCS Runoff	0.282	1	721	1,115	-----	-----	-----	PRE BASIN 2
4	SCS Runoff	0.245	1	720	887	-----	-----	-----	PRE BASIN 3
6	SCS Runoff	2.965	1	717	6,607	-----	-----	-----	POST BASIN 1A (TO POND)
7	Reservoir	0.137	1	781	6,602	6	948.09	3,691	UG POND 1 DISCHARGE
8	SCS Runoff	0.126	1	719	306	-----	-----	-----	POST BASIN 1A (BYPASS)
9	Combine	0.216	1	719	6,908	7, 8	-----	-----	POST BASIN 1A
11	SCS Runoff	0.063	1	719	153	-----	-----	-----	POST BASIN 1B
13	SCS Runoff	6.071	1	717	13,529	-----	-----	-----	POST BASIN 2 (TO POND)
14	Reservoir	0.102	1	964	11,243	13	948.10	9,735	POND 2 DISCHARGE
15	SCS Runoff	0.206	1	720	670	-----	-----	-----	POST BASIN 2 (BYPASS)
16	Combine	0.293	1	720	11,914	14, 15	-----	-----	POST BASIN 2
18	SCS Runoff	0.332	1	719	784	-----	-----	-----	POST BASIN 3
HS-Smyrna.gpw					Return Period: 1 Year			Tuesday, 02 / 11 / 2020	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	0.718	1	721	2,183	-----	-----	-----	PRE BASIN 1A
2	SCS Runoff	0.138	1	720	378	-----	-----	-----	PRE BASIN 1B
3	SCS Runoff	0.764	1	720	2,088	-----	-----	-----	PRE BASIN 2
4	SCS Runoff	0.650	1	719	1,662	-----	-----	-----	PRE BASIN 3
6	SCS Runoff	3.660	1	717	8,278	-----	-----	-----	POST BASIN 1A (TO POND)
7	Reservoir	0.500	1	729	8,272	6	948.36	4,139	UG POND 1 DISCHARGE
8	SCS Runoff	0.235	1	718	511	-----	-----	-----	POST BASIN 1A (BYPASS)
9	Combine	0.548	1	727	8,784	7, 8	-----	-----	POST BASIN 1A
11	SCS Runoff	0.117	1	718	256	-----	-----	-----	POST BASIN 1B
13	SCS Runoff	7.495	1	717	16,950	-----	-----	-----	POST BASIN 2 (TO POND)
14	Reservoir	0.193	1	853	13,641	13	948.67	11,816	POND 2 DISCHARGE
15	SCS Runoff	0.499	1	719	1,227	-----	-----	-----	POST BASIN 2 (BYPASS)
16	Combine	0.593	1	719	14,868	14, 15	-----	-----	POST BASIN 2
18	SCS Runoff	0.602	1	718	1,290	-----	-----	-----	POST BASIN 3
HS-Smyrna.gpw					Return Period: 2 Year			Tuesday, 02 / 11 / 2020	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1.303	1	720	3,426	-----	-----	-----	PRE BASIN 1A
2	SCS Runoff	0.247	1	719	593	-----	-----	-----	PRE BASIN 1B
3	SCS Runoff	1.368	1	719	3,278	-----	-----	-----	PRE BASIN 2
4	SCS Runoff	1.150	1	718	2,609	-----	-----	-----	PRE BASIN 3
6	SCS Runoff	4.351	1	717	9,956	-----	-----	-----	POST BASIN 1A (TO POND)
7	Reservoir	1.151	1	725	9,950	6	948.72	4,736	UG POND 1 DISCHARGE
8	SCS Runoff	0.360	1	718	749	-----	-----	-----	POST BASIN 1A (BYPASS)
9	Combine	1.308	1	723	10,700	7, 8	-----	-----	POST BASIN 1A
11	SCS Runoff	0.180	1	718	375	-----	-----	-----	POST BASIN 1B
13	SCS Runoff	8.910	1	717	20,386	-----	-----	-----	POST BASIN 2 (TO POND)
14	Reservoir	0.513	1	761	16,911	13	948.93	12,793	POND 2 DISCHARGE
15	SCS Runoff	0.856	1	718	1,901	-----	-----	-----	POST BASIN 2 (BYPASS)
16	Combine	0.957	1	718	18,812	14, 15	-----	-----	POST BASIN 2
18	SCS Runoff	0.908	1	718	1,873	-----	-----	-----	POST BASIN 3
HS-Smyrna.gpw					Return Period: 5 Year			Tuesday, 02 / 11 / 2020	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	1.981	1	720	4,855	-----	-----	-----	PRE BASIN 1A
2	SCS Runoff	0.373	1	719	841	-----	-----	-----	PRE BASIN 1B
3	SCS Runoff	2.064	1	719	4,646	-----	-----	-----	PRE BASIN 2
4	SCS Runoff	1.731	1	718	3,697	-----	-----	-----	PRE BASIN 3
6	SCS Runoff	5.039	1	717	11,639	-----	-----	-----	POST BASIN 1A (TO POND)
7	Reservoir	1.580	1	724	11,633	6	949.10	5,367	UG POND 1 DISCHARGE
8	SCS Runoff	0.498	1	718	1,013	-----	-----	-----	POST BASIN 1A (BYPASS)
9	Combine	1.855	1	722	12,646	7, 8	-----	-----	POST BASIN 1A
11	SCS Runoff	0.249	1	718	507	-----	-----	-----	POST BASIN 1B
13	SCS Runoff	10.32	1	717	23,832	-----	-----	-----	POST BASIN 2 (TO POND)
14	Reservoir	0.845	1	747	20,232	13	949.34	14,297	POND 2 DISCHARGE
15	SCS Runoff	1.265	1	718	2,670	-----	-----	-----	POST BASIN 2 (BYPASS)
16	Combine	1.532	1	721	22,902	14, 15	-----	-----	POST BASIN 2
18	SCS Runoff	1.241	1	718	2,517	-----	-----	-----	POST BASIN 3
HS-Smyrna.gpw					Return Period: 10 Year			Tuesday, 02 / 11 / 2020	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	2.982	1	720	6,996	-----	-----	-----	PRE BASIN 1A
2	SCS Runoff	0.559	1	719	1,211	-----	-----	-----	PRE BASIN 1B
3	SCS Runoff	3.089	1	719	6,693	-----	-----	-----	PRE BASIN 2
4	SCS Runoff	2.587	1	718	5,327	-----	-----	-----	PRE BASIN 3
6	SCS Runoff	5.953	1	717	13,887	-----	-----	-----	POST BASIN 1A (TO POND)
7	Reservoir	2.028	1	724	13,882	6	949.63	6,229	UG POND 1 DISCHARGE
8	SCS Runoff	0.694	1	718	1,398	-----	-----	-----	POST BASIN 1A (BYPASS)
9	Combine	2.471	1	721	15,280	7, 8	-----	-----	POST BASIN 1A
11	SCS Runoff	0.347	1	718	699	-----	-----	-----	POST BASIN 1B
13	SCS Runoff	12.19	1	717	28,436	-----	-----	-----	POST BASIN 2 (TO POND)
14	Reservoir	1.187	1	741	24,719	13	950.01	16,710	POND 2 DISCHARGE
15	SCS Runoff	1.864	1	718	3,815	-----	-----	-----	POST BASIN 2 (BYPASS)
16	Combine	2.620	1	719	28,534	14, 15	-----	-----	POST BASIN 2
18	SCS Runoff	1.716	1	718	3,450	-----	-----	-----	POST BASIN 3
HS-Smyrna.gpw					Return Period: 25 Year			Tuesday, 02 / 11 / 2020	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	3.790	1	720	8,747	-----	-----	-----	PRE BASIN 1A
2	SCS Runoff	0.708	1	719	1,514	-----	-----	-----	PRE BASIN 1B
3	SCS Runoff	3.915	1	719	8,369	-----	-----	-----	PRE BASIN 2
4	SCS Runoff	3.277	1	718	6,660	-----	-----	-----	PRE BASIN 3
6	SCS Runoff	6.636	1	717	15,576	-----	-----	-----	POST BASIN 1A (TO POND)
7	Reservoir	2.323	1	724	15,571	6	950.03	6,872	UG POND 1 DISCHARGE
8	SCS Runoff	0.849	1	718	1,705	-----	-----	-----	POST BASIN 1A (BYPASS)
9	Combine	2.894	1	720	17,276	7, 8	-----	-----	POST BASIN 1A
11	SCS Runoff	0.425	1	718	853	-----	-----	-----	POST BASIN 1B
13	SCS Runoff	13.59	1	717	31,895	-----	-----	-----	POST BASIN 2 (TO POND)
14	Reservoir	1.604	1	733	28,113	13	950.51	18,469	POND 2 DISCHARGE
15	SCS Runoff	2.345	1	718	4,749	-----	-----	-----	POST BASIN 2 (BYPASS)
16	Combine	3.338	1	719	32,861	14, 15	-----	-----	POST BASIN 2
18	SCS Runoff	2.089	1	718	4,195	-----	-----	-----	POST BASIN 3
HS-Smyrna.gpw					Return Period: 50 Year			Tuesday, 02 / 11 / 2020	

Hydrograph Summary Report

Hydraflow Hydrographs Extension for Autodesk® Civil 3D® by Autodesk, Inc. v2020

Hyd. No.	Hydrograph type (origin)	Peak flow (cfs)	Time interval (min)	Time to Peak (min)	Hyd. volume (cuft)	Inflow hyd(s)	Maximum elevation (ft)	Total strge used (cuft)	Hydrograph Description
1	SCS Runoff	4.639	1	720	10,602	-----	-----	-----	PRE BASIN 1A
2	SCS Runoff	0.865	1	719	1,836	-----	-----	-----	PRE BASIN 1B
3	SCS Runoff	4.782	1	719	10,144	-----	-----	-----	PRE BASIN 2
4	SCS Runoff	4.000	1	718	8,072	-----	-----	-----	PRE BASIN 3
6	SCS Runoff	7.318	1	717	17,267	-----	-----	-----	POST BASIN 1A (TO POND)
7	Reservoir	2.993	1	723	17,262	6	950.41	7,432	UG POND 1 DISCHARGE
8	SCS Runoff	1.009	1	718	2,027	-----	-----	-----	POST BASIN 1A (BYPASS)
9	Combine	3.558	1	722	19,288	7, 8	-----	-----	POST BASIN 1A
11	SCS Runoff	0.505	1	718	1,013	-----	-----	-----	POST BASIN 1B
13	SCS Runoff	14.98	1	717	35,356	-----	-----	-----	POST BASIN 2 (TO POND)
14	Reservoir	2.608	1	727	31,533	13	950.99	20,057	POND 2 DISCHARGE
15	SCS Runoff	2.848	1	718	5,735	-----	-----	-----	POST BASIN 2 (BYPASS)
16	Combine	4.044	1	718	37,268	14, 15	-----	-----	POST BASIN 2
18	SCS Runoff	2.474	1	718	4,971	-----	-----	-----	POST BASIN 3
HS-Smyrna.gpw					Return Period: 100 Year			Tuesday, 02 / 11 / 2020	