

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE DIAMETER	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			3.000															
CD	2	4	1			6.000															
CD	4	4	1			4.500															
CD	5	4	1			4.000															
CD	6	4	1			2.500															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

RMV PA3

HEADING LINE NO 2 IS -

A Offsite

HEADING LINE NO 3 IS -

25-YR HC JANUARY 2019 CCHIU

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
ELEMENT NO 1	IS	A	SYSTEM	OUTLET	U/S DATA	1000.000	367.150	2	365.000				
ELEMENT NO 2	IS	A	REACH		U/S DATA	1010.000	367.150	2		6.366	-90.000	.000	10
ELEMENT NO 3	IS	A	REACH		U/S DATA	6010.000	540.000	2		4774.648	60.000	.000	10
ELEMENT NO 4	IS	A	REACH		U/S DATA	6010.000	540.000	2		.000	.000	-90.000	10
ELEMENT NO 5	IS	A	REACH		U/S DATA	7000.000	599.000	2		.000	.000	-90.000	2
ELEMENT NO 6	IS	A	REACH		U/S DATA	7194.000	600.000	2		.000	.000	.000	0
ELEMENT NO 7	IS	A	JUNCTION		U/S DATA	7200.000	601.000	2					
ELEMENT NO 8	IS	A	REACH		U/S DATA	7993.000	618.000	2		.000	.000	.000	2
ELEMENT NO 9	IS	A	TRANSITION		U/S DATA	8897.000	619.000	2		.000	.000		
ELEMENT NO 10	IS	A	REACH		U/S DATA	8900.000	620.000	2		.000	.000	.000	2
ELEMENT NO 11	IS	A	JUNCTION		U/S DATA	8906.000	621.000	2					

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

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ELEMENT NO 12 IS A REACH          *      *      *
      U/S DATA  STATION  INVERT  SECT          N          RADIUS  ANGLE  ANG PT  MAN H
                    9611.000 620.000 2          .013          .000   .000   .000   2
THE ABOVE ELEMENT CONTAINED AN INVERT ELEV WHICH WAS NOT GREATER THAN THE PREVIOUS INVERT ELEV -WARNING
ELEMENT NO 13 IS A JUNCTION      *      *      *      *      *
      U/S DATA  STATION  INVERT  SECT  LAT-1  LAT-2  N      Q3      Q4      INVERT-3  INVERT-4  PHI 3  PHI 4
                    9617.000 621.000 2      2      0  .014  21.120  .000  622.000  .000  45.000  .000
                                          RADIUS  ANGLE
                                          .000   .000
WARNING - ADJACENT SECTIONS ARE NOT IDENTICAL - SEE SECTION NUMBERS AND CHANNEL DEFINITIONS
ELEMENT NO 14 IS A REACH          *      *      *
      U/S DATA  STATION  INVERT  SECT          N          RADIUS  ANGLE  ANG PT  MAN H
                    10116.000 625.000 4          .013          .000   .000   .000   1
ELEMENT NO 15 IS A SYSTEM HEADWORKS
      U/S DATA  STATION  INVERT  SECT          W S ELEV
                    10116.000 625.000 4          .000

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002: H:\pdata\134519\Calcs\Strmwater\PA-3 & PA-4\Hydraulics\WSPGW\100yrHC\RMV-PA3-AOffsite.EDT

RMV PA3  
A Offsite  
25-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	367.150	1.470	368.620	98.77	18.39	5.25	373.87	6.00	2.67	5.16	6.000	.000	.00	1 .0
10.000	.0000					.0330	.33	6.00	3.18	.00	.013	.00	.00	PIPE
1010.000	367.150	1.435	368.585	98.77	19.02	5.62	374.20	.01	2.67	5.12	6.000	.000	.00	1 .0
4450.376	.0346					.0346	153.85	1.45	3.33	1.43	.013	.00	.00	PIPE
5460.376	521.000	1.435	522.435	98.77	19.02	5.62	528.05	.01	2.67	5.12	6.000	.000	.00	1 .0
209.519	.0346					.0347	7.27	1.45	3.33	1.43	.013	.00	.00	PIPE
5669.895	528.243	1.433	529.675	98.77	19.06	5.64	535.32	.01	2.67	5.12	6.000	.000	.00	1 .0
190.591	.0346					.0373	7.11	1.44	3.34	1.43	.013	.00	.00	PIPE
5860.486	534.831	1.385	536.217	98.77	19.99	6.21	542.42	.01	2.67	5.06	6.000	.000	.00	1 .0
71.225	.0346					.0426	3.04	1.40	3.57	1.43	.013	.00	.00	PIPE
5931.710	537.294	1.340	538.633	98.77	20.97	6.83	545.46	.01	2.67	5.00	6.000	.000	.00	1 .0
44.938	.0346					.0488	2.19	1.35	3.81	1.43	.013	.00	.00	PIPE
5976.648	538.847	1.296	540.143	98.77	21.99	7.51	547.65	.02	2.67	4.94	6.000	.000	.00	1 .0
33.352	.0346					.0558	1.86	1.31	4.06	1.43	.013	.00	.00	PIPE
6010.000	540.000	1.253	541.253	98.77	23.07	8.27	549.52	.00	2.67	4.88	6.000	.000	.00	1 .0
458.506	.0596					.0596	27.33	1.25	4.34	1.25	.013	.00	.00	PIPE
6468.506	567.325	1.253	568.578	98.77	23.07	8.27	576.84	.00	2.67	4.88	6.000	.000	.00	1 .0
185.920	.0596					.0592	11.00	1.25	4.34	1.25	.013	.00	.00	PIPE

RMV PA3  
A Offsite  
25-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	ZL	No Wth Prs/Pip
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L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
6654.426	578.405	1.257	579.662	98.77	22.96	8.19	587.85	.00	2.67	4.88	6.000	.000	.00	1 .0
155.421	.0596					.0551	8.56	1.26	4.31	1.25	.013	.00	.00	PIPE
6809.847	587.668	1.300	588.967	98.77	21.89	7.44	596.41	.00	2.67	4.94	6.000	.000	.00	1 .0
55.209	.0596					.0481	2.66	1.30	4.04	1.25	.013	.00	.00	PIPE
6865.057	590.958	1.344	592.302	98.77	20.87	6.77	599.07	.00	2.67	5.00	6.000	.000	.00	1 .0
32.503	.0596					.0421	1.37	1.34	3.78	1.25	.013	.00	.00	PIPE
6897.560	592.895	1.390	594.285	98.77	19.90	6.15	600.44	.00	2.67	5.06	6.000	.000	.00	1 .0
22.438	.0596					.0368	.83	1.39	3.54	1.25	.013	.00	.00	PIPE
6919.998	594.232	1.437	595.670	98.77	18.98	5.59	601.26	.00	2.67	5.12	6.000	.000	.00	1 .0
16.734	.0596					.0322	.54	1.44	3.32	1.25	.013	.00	.00	PIPE
6936.732	595.229	1.487	596.716	98.77	18.09	5.08	601.80	.00	2.67	5.18	6.000	.000	.00	1 .0
13.064	.0596					.0281	.37	1.49	3.11	1.25	.013	.00	.00	PIPE
6949.796	596.008	1.538	597.546	98.77	17.25	4.62	602.17	.00	2.67	5.24	6.000	.000	.00	1 .0
10.492	.0596					.0246	.26	1.54	2.91	1.25	.013	.00	.00	PIPE
6960.288	596.633	1.591	598.224	98.77	16.45	4.20	602.42	.00	2.67	5.30	6.000	.000	.00	1 .0
8.585	.0596					.0215	.18	1.59	2.72	1.25	.013	.00	.00	PIPE
6968.873	597.145	1.646	598.791	98.77	15.68	3.82	602.61	.00	2.67	5.35	6.000	.000	.00	1 .0
7.117	.0596					.0188	.13	1.65	2.55	1.25	.013	.00	.00	PIPE

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WATER SURFACE PROFILE LISTING

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RMV PA3  
A Offsite  
25-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/ I.D.	ZL	No Wth Prs/Pip
6975.990	597.569	1.703	599.272	98.77	14.95	3.47	602.74	.00	2.67	5.41	6.000	.000	.00	1 .0
5.946	.0596					.0165	.10	1.70	2.38	1.25	.013	.00	.00	PIPE
6981.936	597.923	1.762	599.686	98.77	14.26	3.16	602.84	.00	2.67	5.47	6.000	.000	.00	1 .0

4.991	.0596					.0144	.07	1.76	2.23	1.25	.013	.00	.00	PIPE
6986.927	598.221	1.824	600.045	98.77	13.59	2.87	602.91	.00	2.67	5.52	6.000	.000	.00	1 .0
4.191	.0596					.0126	.05	1.82	2.09	1.25	.013	.00	.00	PIPE
6991.119	598.471	1.888	600.359	98.77	12.96	2.61	602.97	.00	2.67	5.57	6.000	.000	.00	1 .0
3.518	.0596					.0111	.04	1.89	1.95	1.25	.013	.00	.00	PIPE
6994.636	598.680	1.954	600.635	98.77	12.36	2.37	603.01	.00	2.67	5.62	6.000	.000	.00	1 .0
2.935	.0596					.0097	.03	1.95	1.83	1.25	.013	.00	.00	PIPE
6997.571	598.855	2.023	600.879	98.77	11.78	2.16	603.03	.00	2.67	5.67	6.000	.000	.00	1 .0
2.429	.0596					.0085	.02	2.02	1.71	1.25	.013	.00	.00	PIPE
7000.000	599.000	2.095	601.095	98.77	11.23	1.96	603.05	.00	2.67	5.72	6.000	.000	.00	1 .0
2.449	.0052					.0080	.02	2.10	1.60	2.35	.013	.00	.00	PIPE
7002.448	599.013	2.091	601.104	98.77	11.27	1.97	603.07	.00	2.67	5.72	6.000	.000	.00	1 .0
36.830	.0052					.0086	.32	2.09	1.60	2.35	.013	.00	.00	PIPE
7039.278	599.203	2.019	601.222	98.77	11.82	2.17	603.39	.00	2.67	5.67	6.000	.000	.00	1 .0
32.033	.0052					.0098	.31	2.02	1.72	2.35	.013	.00	.00	PIPE

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WATER SURFACE PROFILE LISTING

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RMV PA3

A Offsite

25-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
7071.312	599.368	1.950	601.318	98.77	12.39	2.38	603.70	.00	2.67	5.62	6.000	.000	.00	1 .0
28.693	.0052					.0112	.32	1.95	1.83	2.35	.013	.00	.00	PIPE
7100.004	599.516	1.884	601.400	98.77	13.00	2.62	604.02	.00	2.67	5.57	6.000	.000	.00	1 .0
26.178	.0052					.0127	.33	1.88	1.96	2.35	.013	.00	.00	PIPE
7126.183	599.650	1.820	601.471	98.77	13.63	2.89	604.36	.00	2.67	5.52	6.000	.000	.00	1 .0
24.180	.0052					.0145	.35	1.82	2.10	2.35	.013	.00	.00	PIPE
7150.363	599.775	1.759	601.534	98.77	14.30	3.17	604.71	.00	2.67	5.46	6.000	.000	.00	1 .0
22.520	.0052					.0166	.37	1.76	2.24	2.35	.013	.00	.00	PIPE

7172.882	599.891	1.700	601.591	98.77	15.00	3.49	605.08	.00	2.67	5.41	6.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
21.118	.0052					.0190	.40	1.70	2.39	2.35	.013	.00	.00	PIPE	
7194.000	600.000	1.643	601.643	98.77	15.73	3.84	605.48	.00	2.67	5.35	6.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
JUNCT STR	.1667					.0242	.15	1.64	2.56		.014	.00	.00	PIPE	
7200.001	601.000	1.357	602.357	69.59	14.50	3.27	605.62	.00	2.23	5.02	6.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
373.589	.0214					.0214	8.01	1.36	2.61	1.36	.013	.00	.00	PIPE	
7573.590	609.009	1.357	610.366	69.59	14.50	3.27	613.63	.00	2.23	5.02	6.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
185.227	.0214					.0208	3.86	1.36	2.61	1.36	.013	.00	.00	PIPE	
7758.817	612.980	1.377	614.357	69.59	14.20	3.13	617.49	.00	2.23	5.05	6.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
94.932	.0214					.0189	1.80	1.38	2.54	1.36	.013	.00	.00	PIPE	

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WATER SURFACE PROFILE LISTING

Date: 2- 7-2019 Time: 2:54:33

RMV PA3  
A Offsite  
25-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
7853.750	615.015	1.425	616.439	69.59	13.54	2.85	619.29	.00	2.23	5.11	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
43.007	.0214					.0166	.71	1.42	2.38	1.36	.013	.00	.00	PIPE
7896.756	615.937	1.473	617.410	69.59	12.91	2.59	620.00	.00	2.23	5.17	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
26.542	.0214					.0145	.38	1.47	2.23	1.36	.013	.00	.00	PIPE
7923.298	616.506	1.524	618.030	69.59	12.31	2.35	620.38	.00	2.23	5.22	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
18.397	.0214					.0127	.23	1.52	2.09	1.36	.013	.00	.00	PIPE
7941.695	616.900	1.577	618.477	69.59	11.74	2.14	620.62	.00	2.23	5.28	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
13.511	.0214					.0111	.15	1.58	1.95	1.36	.013	.00	.00	PIPE
7955.207	617.190	1.631	618.821	69.59	11.19	1.94	620.77	.00	2.23	5.34	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
10.233	.0214					.0097	.10	1.63	1.83	1.36	.013	.00	.00	PIPE
7965.440	617.409	1.688	619.097	69.59	10.67	1.77	620.86	.00	2.23	5.40	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
7.875	.0214					.0085	.07	1.69	1.71	1.36	.013	.00	.00	PIPE
7973.315	617.578	1.746	619.324	69.59	10.17	1.61	620.93	.00	2.23	5.45	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

6.081	.0214					.0074	.05	1.75	1.60	1.36	.013	.00	.00	PIPE
7979.396	617.708	1.807	619.516	69.59	9.70	1.46	620.98	.00	2.23	5.51	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4.654	.0214					.0065	.03	1.81	1.50	1.36	.013	.00	.00	PIPE
7984.050	617.808	1.871	619.679	69.59	9.25	1.33	621.01	.00	2.23	5.56	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3.490	.0214					.0057	.02	1.87	1.40	1.36	.013	.00	.00	PIPE

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 WATER SURFACE PROFILE LISTING Date: 2- 7-2019 Time: 2:54:33

RMV PA3  
 A Offsite  
 25-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT or I.D.	Base Wt	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
7987.540	617.883	1.936	619.819	69.59	8.82	1.21	621.03	.00	2.23	5.61	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2.521	.0214					.0050	.01	1.94	1.31	1.36	.013	.00	.00	PIPE
7990.061	617.937	2.005	619.942	69.59	8.41	1.10	621.04	.00	2.23	5.66	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1.681	.0214					.0044	.01	2.00	1.23	1.36	.013	.00	.00	PIPE
7991.742	617.973	2.076	620.049	69.59	8.02	1.00	621.05	.00	2.23	5.71	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
.955	.0214					.0038	.00	2.08	1.15	1.36	.013	.00	.00	PIPE
7992.697	617.993	2.150	620.143	69.59	7.64	.91	621.05	.00	2.23	5.75	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
.303	.0214					.0034	.00	2.15	1.07	1.36	.013	.00	.00	PIPE
7993.000	618.000	2.228	620.228	69.59	7.28	.82	621.05	.00	2.23	5.80	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
TRANS STR	.0011					.0021	1.91	2.23	1.00		.014	.00	.00	PIPE
8897.000	619.000	3.810	622.810	69.59	3.68	.21	623.02	.00	2.23	5.78	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
.393	.3333					.0005	.00	3.81	.36	.70	.013	.00	.00	PIPE
8897.393	619.131	3.658	622.789	69.59	3.85	.23	623.02	.00	2.23	5.85	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
.359	.3333					.0006	.00	3.66	.39	.70	.013	.00	.00	PIPE
8897.752	619.251	3.515	622.766	69.59	4.04	.25	623.02	.00	2.23	5.91	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
.330	.3333					.0007	.00	3.52	.42	.70	.013	.00	.00	PIPE
8898.082	619.361	3.380	622.741	69.59	4.24	.28	623.02	.00	2.23	5.95	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
.301	.3333					.0008	.00	3.38	.45	.70	.013	.00	.00	PIPE

RMV PA3  
A Offsite  
25-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
8898.383	619.461	3.252	622.713	69.59	4.45	.31	623.02	.00	2.23	5.98	6.000	.000	.00	1 .0
.273	.3333					.0009	.00	3.25	.48	.70	.013	.00	.00	PIPE
8898.656	619.552	3.131	622.683	69.59	4.66	.34	623.02	.00	2.23	5.99	6.000	.000	.00	1 .0
.052	.3333					.0009	.00	3.13	.52	.70	.013	.00	.00	PIPE
8898.708	619.569	3.106	622.676	69.59	4.71	.34	623.02	.00	2.23	6.00	6.000	.000	.00	1 .0
HYDRAULIC JUMP														
8898.708	619.569	1.542	621.112	69.59	12.11	2.28	623.39	.00	2.23	5.24	6.000	.000	.00	1 .0
.106	.3333					.0126	.00	1.54	2.04	.70	.013	.00	.00	PIPE
8898.814	619.605	1.557	621.162	69.59	11.94	2.21	623.38	.00	2.23	5.26	6.000	.000	.00	1 .0
.458	.3333					.0116	.01	1.56	2.00	.70	.013	.00	.00	PIPE
8899.272	619.757	1.611	621.369	69.59	11.39	2.01	623.38	.00	2.23	5.32	6.000	.000	.00	1 .0
.394	.3333					.0102	.00	1.61	1.87	.70	.013	.00	.00	PIPE
8899.666	619.889	1.667	621.556	69.59	10.86	1.83	623.39	.00	2.23	5.38	6.000	.000	.00	1 .0
.334	.3333					.0089	.00	1.67	1.75	.70	.013	.00	.00	PIPE
8900.000	620.000	1.725	621.725	69.59	10.35	1.66	623.39	.00	2.23	5.43	6.000	.000	.00	1 .0
JUNCT STR														
.1667						.0066	.04	1.72	1.64		.014	.00	.00	PIPE
8906.000	621.000	1.786	622.786	45.43	6.44	.64	623.43	.00	1.79	5.49	6.000	.000	.00	1 .0
1.873	-.0014					.0028	.01	1.79	1.00	.00	.013	.00	.00	PIPE

RMV PA3  
A Offsite  
25-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	ZL	No Wth Prs/Pip



L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
8907.873	620.997	1.875	622.873	45.43	6.02	.56	623.43	.00	1.79	5.56	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6.129	-.0014					.0023	.01	1.88	.91	.00	.013	.00	.00	PIPE
8914.002	620.989	1.969	622.958	45.43	5.63	.49	623.45	.00	1.79	5.63	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.991	-.0014					.0019	.02	1.97	.83	.00	.013	.00	.00	PIPE
8924.993	620.973	2.068	623.041	45.43	5.26	.43	623.47	.00	1.79	5.70	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16.438	-.0014					.0016	.03	2.07	.75	.00	.013	.00	.00	PIPE
8941.432	620.950	2.171	623.121	45.43	4.92	.38	623.50	.00	1.79	5.77	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
22.426	-.0014					.0013	.03	2.17	.69	.00	.013	.00	.00	PIPE
8963.857	620.918	2.279	623.197	45.43	4.61	.33	623.53	.00	1.79	5.82	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28.898	-.0014					.0011	.03	2.28	.62	.00	.013	.00	.00	PIPE
8992.756	620.877	2.393	623.270	45.43	4.32	.29	623.56	.00	1.79	5.88	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
35.792	-.0014					.0009	.03	2.39	.57	.00	.013	.00	.00	PIPE
9028.548	620.826	2.513	623.339	45.43	4.05	.25	623.59	.00	1.79	5.92	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
43.032	-.0014					.0008	.03	2.51	.52	.00	.013	.00	.00	PIPE
9071.580	620.765	2.639	623.404	45.43	3.79	.22	623.63	.00	1.79	5.96	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
50.554	-.0014					.0007	.03	2.64	.47	.00	.013	.00	.00	PIPE
9122.134	620.693	2.771	623.464	45.43	3.56	.20	623.66	.00	1.79	5.98	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58.295	-.0014					.0006	.03	2.77	.43	.00	.013	.00	.00	PIPE

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WATER SURFACE PROFILE LISTING

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RMV PA3  
A Offsite  
25-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.EL.	Super Elev	Critical Depth	Flow Width	Top Dia.-FT	Height/ or I.D.	Base Wt	ZL	No Wth Prs/Pip
9180.429	620.611	2.909	623.520	45.43	3.34	.17	623.69	.00	1.79	6.00	6.000	.000	.00	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
66.205	-.0014					.0005	.03	2.91	.39	.00	.013	.00	.00	.00	PIPE
9246.634	620.517	3.055	623.572	45.43	3.14	.15	623.72	.00	1.79	6.00	6.000	.000	.00	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74.242	-.0014					.0004	.03	3.05	.36	.00	.013	.00	.00	.00	PIPE

9320.876	620.411	3.207	623.619	45.43	2.95	.14	623.75	.00	1.79	5.99	6.000	.000	.00	1	.0
82.381	-.0014					.0003	.03	3.21	.32	.00	.013	.00	.00	PIPE	
9403.257	620.295	3.368	623.662	45.43	2.78	.12	623.78	.00	1.79	5.95	6.000	.000	.00	1	.0
90.607	-.0014					.0003	.03	3.37	.30	.00	.013	.00	.00	PIPE	
9493.864	620.166	3.536	623.702	45.43	2.62	.11	623.81	.00	1.79	5.90	6.000	.000	.00	1	.0
98.913	-.0014					.0003	.02	3.54	.27	.00	.013	.00	.00	PIPE	
9592.777	620.026	3.713	623.739	45.43	2.47	.09	623.83	.00	1.79	5.83	6.000	.000	.00	1	.0
18.223	-.0014					.0002	.00	3.71	.25	.00	.013	.00	.00	PIPE	
9611.000	620.000	3.745	623.745	45.43	2.45	.09	623.84	.00	1.79	5.81	6.000	.000	.00	1	.0
JUNCT STR	.1667					.0002	.00	3.75	.24		.014	.00	.00	PIPE	
9617.000	621.000	2.785	623.785	24.31	2.35	.09	623.87	.00	1.41	4.37	4.500	.000	.00	1	.0
13.124	.0080					.0003	.00	2.79	.27	1.13	.013	.00	.00	PIPE	
9630.124	621.105	2.676	623.781	24.31	2.47	.09	623.88	.00	1.41	4.42	4.500	.000	.00	1	.0
12.289	.0080					.0004	.00	2.68	.29	1.13	.013	.00	.00	PIPE	

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WATER SURFACE PROFILE LISTING

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RMV PA3  
A Offsite  
25-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.EL.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT or I.D.	Base Wt	No ZL	Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
9642.413	621.204	2.572	623.776	24.31	2.59	.10	623.88	.00	1.41	4.45	4.500	.000	.00	1 .0
11.521	.0080					.0004	.00	2.57	.31	1.13	.013	.00	.00	PIPE
9653.934	621.296	2.475	623.771	24.31	2.71	.11	623.88	.00	1.41	4.48	4.500	.000	.00	1 .0
10.817	.0080					.0005	.01	2.47	.34	1.13	.013	.00	.00	PIPE
9664.751	621.383	2.382	623.764	24.31	2.85	.13	623.89	.00	1.41	4.49	4.500	.000	.00	1 .0
10.142	.0080					.0005	.01	2.38	.36	1.13	.013	.00	.00	PIPE
9674.893	621.464	2.293	623.757	24.31	2.98	.14	623.90	.00	1.41	4.50	4.500	.000	.00	1 .0
9.519	.0080					.0006	.01	2.29	.39	1.13	.013	.00	.00	PIPE
9684.411	621.540	2.209	623.749	24.31	3.13	.15	623.90	.00	1.41	4.50	4.500	.000	.00	1 .0

8.891	.0080						.0007	.01	2.21	.42	1.13	.013	.00	.00	PIPE
9693.302	621.612	2.129	623.740	24.31	3.28	.17	623.91	.00	1.41	4.49	4.500	.000	.00	1	.0
8.313	.0080						.0008	.01	2.13	.45	1.13	.013	.00	.00	PIPE
9701.615	621.678	2.052	623.730	24.31	3.44	.18	623.91	.00	1.41	4.48	4.500	.000	.00	1	.0
7.741	.0080						.0009	.01	2.05	.48	1.13	.013	.00	.00	PIPE
9709.356	621.740	1.978	623.719	24.31	3.61	.20	623.92	.00	1.41	4.47	4.500	.000	.00	1	.0
7.144	.0080						.0010	.01	1.98	.52	1.13	.013	.00	.00	PIPE
9716.500	621.798	1.908	623.706	24.31	3.79	.22	623.93	.00	1.41	4.45	4.500	.000	.00	1	.0
6.587	.0080						.0012	.01	1.91	.56	1.13	.013	.00	.00	PIPE

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RMV PA3  
 A Offsite  
 25-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip	
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch	
9723.087	621.850	1.841	623.691	24.31	3.97	.24	623.94	.00	1.41	4.42	4.500	.000	.00	1 .0	
5.980	.0080					.0013	.01	1.84	.60	1.13	.013	.00	.00	PIPE	
9729.067	621.898	1.776	623.674	24.31	4.17	.27	623.94	.00	1.41	4.40	4.500	.000	.00	1 .0	
4.209	.0080					.0015	.01	1.78	.64	1.13	.013	.00	.00	PIPE	
9733.276	621.932	1.714	623.646	24.31	4.37	.30	623.94	.00	1.41	4.37	4.500	.000	.00	1 .0	
HYDRAULIC JUMP															
9733.276	621.932	1.130	623.062	24.31	7.77	.94	624.00	.00	1.41	3.90	4.500	.000	.00	1 .0	
202.669	.0080					.0080	1.62	1.13	1.53	1.13	.013	.00	.00	PIPE	
9935.945	623.557	1.130	624.686	24.31	7.77	.94	625.62	.00	1.41	3.90	4.500	.000	.00	1 .0	
94.674	.0080					.0078	.74	1.13	1.53	1.13	.013	.00	.00	PIPE	
10030.620	624.316	1.145	625.460	24.31	7.63	.90	626.36	.00	1.41	3.92	4.500	.000	.00	1 .0	
47.690	.0080					.0071	.34	1.14	1.49	1.13	.013	.00	.00	PIPE	
10078.310	624.698	1.184	625.882	24.31	7.27	.82	626.70	.00	1.41	3.96	4.500	.000	.00	1 .0	
18.910	.0080					.0062	.12	1.18	1.40	1.13	.013	.00	.00	PIPE	

10097.220	624.849	1.225	626.075	24.31	6.93	.75	626.82	.00	1.41	4.01	4.500	.000	.00	1	.0
9.896	.0080					.0055	.05	1.23	1.31	1.13	.013	.00	.00	PIPE	
10107.120	624.929	1.268	626.196	24.31	6.61	.68	626.88	.00	1.41	4.05	4.500	.000	.00	1	.0
5.426	.0080					.0048	.03	1.27	1.22	1.13	.013	.00	.00	PIPE	

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WATER SURFACE PROFILE LISTING

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RMV PA3

A Offsite

25-YR HC JANUARY 2019 CCHIU

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope | | | | | SF Ave| HF |SE Dpth|Froude N|Norm Dp | "N" | X-Fall| ZR |Type Ch
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
10112.540 | 624.972 | 1.312 | 626.284 | 24.31 | 6.30 | .62 | 626.90 | .00 | 1.41 | 4.09 | 4.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |
2.682 | .0080 | | | | | .0042 | .01 | 1.31 | 1.14 | 1.13 | .013 | .00 | .00 | PIPE
10115.220 | 624.994 | 1.358 | 626.351 | 24.31 | 6.01 | .56 | 626.91 | .00 | 1.41 | 4.13 | 4.500 | .000 | .00 | 1 | .0
| | | | | | | | | | | | | | | | |

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002: H:\pdata\134519\Calcs\Strmwater\PA-3 & PA-4\Hydraulics\WSPGW\100yrHC\RMV-PA3-AOffsite.OUT

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE PIER WIDTH	HEIGHT 1 DIAMETER	BASE WIDTH	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	2	4	1		3.000															
CD	3	4	1		8.000															
CD	4	4	1		6.000															
CD	5	4	1		1.000															
CD	6	4	1		4.000															
CD	7	2	0	1.000	8.000	8.000								.00						

W S P G W  
WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS - RMV PA3

HEADING LINE NO 2 IS - LINE A

HEADING LINE NO 3 IS - 100-YR HC JANUARY 2019 CCHIU

W S P G W  
WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM	OUTLET	STATION	INVERT	SECT	W S ELEV	RADIUS	ANGLE	ANG PT	MAN H
1	IS	A	SYSTEM	OUTLET	1000.000	360.000	3	365.000				
2	IS	A	REACH		1143.000	367.150	3		91.037	-90.000	.000	1
3	IS	A	REACH		2783.000	445.000	3		4176.226	-22.500	.000	3
4	IS	A	JUNCTION		2789.000	446.000	3					
5	IS	A	REACH		4279.000	463.000	3		3794.254	22.500	.000	3
6	IS	A	REACH		4280.000	463.000	3		1.273	-45.000	.000	0
7	IS	A	JUNCTION		4298.000	464.000	3					
8	IS	A	REACH		5000.000	469.000	3		1787.628	22.500	.000	0
9	IS	A	REACH		5070.000	469.000	3		44.563	-90.000	.000	0
10	IS	A	REACH		5191.000	470.000	3		.000	.000	.000	2

W S P G W  
WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	JUNCTION	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
11	IS	A	JUNCTION												



RMV PA3  
LINE A  
100-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	360.000	4.552	364.552	1238.61	41.94	27.31	391.86	8.00	7.78	7.92	8.000	.000	.00	1 .0
143.000	.0500					.0478	6.84	8.00	3.83	4.50	.013	.00	.00	PIPE
1143.000	367.150	4.574	371.724	1238.61	41.69	26.98	398.71	.10	7.78	7.92	8.000	.000	.00	1 .0
823.333	.0475					.0450	37.09	4.68	3.79	4.57	.013	.00	.00	PIPE
1966.333	406.233	4.734	410.967	1238.61	39.99	24.83	435.80	.09	7.78	7.86	8.000	.000	.00	1 .0
283.393	.0475					.0402	11.39	4.83	3.55	4.57	.013	.00	.00	PIPE
2249.726	419.686	4.927	424.613	1238.61	38.13	22.57	447.19	.08	7.78	7.78	8.000	.000	.00	1 .0
155.653	.0475					.0356	5.54	5.01	3.29	4.57	.013	.00	.00	PIPE
2405.378	427.074	5.133	432.207	1238.61	36.35	20.52	452.73	.08	7.78	7.67	8.000	.000	.00	1 .0
103.787	.0475					.0316	3.28	5.21	3.04	4.57	.013	.00	.00	PIPE
2509.166	432.001	5.351	437.352	1238.61	34.66	18.66	456.01	.07	7.78	7.53	8.000	.000	.00	1 .0
75.507	.0475					.0281	2.12	5.42	2.80	4.57	.013	.00	.00	PIPE
2584.672	435.585	5.586	441.171	1238.61	33.05	16.96	458.13	.06	7.78	7.34	8.000	.000	.00	1 .0
57.562	.0475					.0251	1.44	5.65	2.58	4.57	.013	.00	.00	PIPE
2642.234	438.318	5.839	444.157	1238.61	31.51	15.42	459.58	.05	7.78	7.10	8.000	.000	.00	1 .0
45.005	.0475					.0225	1.01	5.89	2.36	4.57	.013	.00	.00	PIPE
2687.239	440.454	6.115	446.569	1238.61	30.05	14.02	460.59	.05	7.78	6.79	8.000	.000	.00	1 .0
35.544	.0475					.0202	.72	6.16	2.15	4.57	.013	.00	.00	PIPE

RMV PA3  
LINE A  
100-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	ZL	No Wth Prs/Pip
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L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type	Ch
2722.783	442.142	6.420	448.562	1238.61	28.65	12.74	461.30	.04	7.78	6.37	8.000	.000	.00	1	.0
27.864	.0475					.0183	.51	6.46	1.94	4.57	.013	.00	.00	PIPE	
2750.647	443.464	6.767	450.231	1238.61	27.31	11.58	461.82	.03	7.78	5.78	8.000	.000	.00	1	.0
20.873	.0475					.0169	.35	6.80	1.72	4.57	.013	.00	.00	PIPE	
2771.521	444.455	7.182	451.637	1238.61	26.04	10.53	462.17	.02	7.78	4.85	8.000	.000	.00	1	.0
11.479	.0475					.0163	.19	7.21	1.47	4.57	.013	.00	.00	PIPE	
2783.000	445.000	7.782	452.782	1238.61	24.83	9.57	462.35	.00	7.78	2.60	8.000	.000	.00	1	.0
JUNCT STR	.1667					.0185	.11	7.80	1.00		.014	.00	.00	PIPE	
2789.000	446.000	9.291	455.291	1142.32	22.73	8.02	463.31	.00	7.70	.00	8.000	.000	.00	1	.0
1490.000	.0114					.0157	23.37	.00	.00	8.00	.013	.00	.00	PIPE	
4279.000	463.000	17.668	480.668	1142.32	22.73	8.02	488.69	.00	7.70	.00	8.000	.000	.00	1	.0
1.000	.0000					.0157	.02	.00	.00	.00	.013	.00	.00	PIPE	
4280.000	463.000	18.818	481.818	1142.32	22.73	8.02	489.84	.00	7.70	.00	8.000	.000	.00	1	.0
JUNCT STR	.0556					.0118	.21	.00	.00		.014	.00	.00	PIPE	
4298.000	464.000	25.129	489.129	619.77	12.33	2.36	491.49	.00	6.33	.00	8.000	.000	.00	1	.0
702.000	.0071					.0046	3.24	.00	.00	5.44	.013	.00	.00	PIPE	
5000.000	469.000	23.606	492.606	619.77	12.33	2.36	494.97	.00	6.33	.00	8.000	.000	.00	1	.0
70.000	.0000					.0046	.32	.00	.00	.00	.013	.00	.00	PIPE	

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Program Package Serial Number: 7172

WATER SURFACE PROFILE LISTING

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RMV PA3  
LINE A  
100-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/ I.D.	ZL	No Prs/Pip	Wth
5070.000	469.000	24.401	493.401	619.77	12.33	2.36	495.76	.00	6.33	.00	8.000	.000	.00	1	.0
121.000	.0083					.0046	.56	24.40	.00	5.16	.013	.00	.00	PIPE	
5191.000	470.000	24.196	494.196	619.77	12.33	2.36	496.56	.00	6.33	.00	8.000	.000	.00	1	.0



JUNCT STR	.1667					.0034	.02	24.20	.00		.014	.00	.00	PIPE
5197.000	471.000	25.169	496.169	323.26	6.43	.64	496.81	.00	4.55	.00	8.000	.000	.00	1 .0
843.850	.0047					.0013	1.06	25.17	.00	4.07	.013	.00	.00	PIPE
6040.850	475.000	22.293	497.293	323.26	6.43	.64	497.94	.00	4.55	.00	8.000	.000	.00	1 .0
3.000	.0000					.0013	.00	.00	.00	.00	.013	.00	.00	PIPE
6043.850	475.000	22.425	497.425	323.26	6.43	.64	498.07	.00	4.55	.00	8.000	.000	.00	1 .0
83.250	.0000					.0013	.10	22.43	.00	.00	.013	.00	.00	PIPE
6127.100	475.000	22.594	497.594	323.26	6.43	.64	498.24	.00	4.55	.00	8.000	.000	.00	1 .0
JUNCT STR	.1695					.0011	.01	22.59	.00		.014	.00	.00	PIPE
6133.000	476.000	22.092	498.092	233.03	4.64	.33	498.43	.00	3.83	.00	8.000	.000	.00	1 .0
684.656	.0213					.0006	.44	22.09	.00	2.27	.013	.00	.00	PIPE
6817.656	490.567	8.000	498.567	233.03	4.64	.33	498.90	.00	3.83	.00	8.000	.000	.00	1 .0
34.208	.0213					.0006	.02	8.00	.00	2.27	.013	.00	.00	PIPE
6851.865	491.295	7.259	498.554	233.03	4.86	.37	498.92	.00	3.83	4.64	8.000	.000	.00	1 .0
19.052	.0213					.0006	.01	7.26	.27	2.27	.013	.00	.00	PIPE

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Program Package Serial Number: 7172

WATER SURFACE PROFILE LISTING

Date: 2-13-2019 Time: 5: 7:25

RMV PA3  
LINE A

100-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
6870.917	491.700	6.828	498.528	233.03	5.10	.40	498.93	.00	3.83	5.66	8.000	.000	.00	1 .0
15.260	.0213					.0006	.01	6.83	.32	2.27	.013	.00	.00	PIPE
6886.176	492.025	6.473	498.498	233.03	5.35	.44	498.94	.00	3.83	6.29	8.000	.000	.00	1 .0
12.963	.0213					.0007	.01	6.47	.36	2.27	.013	.00	.00	PIPE
6899.139	492.301	6.161	498.462	233.03	5.61	.49	498.95	.00	3.83	6.73	8.000	.000	.00	1 .0
11.282	.0213					.0008	.01	6.16	.40	2.27	.013	.00	.00	PIPE
6910.421	492.541	5.881	498.422	233.03	5.88	.54	498.96	.00	3.83	7.06	8.000	.000	.00	1 .0
9.932	.0213					.0009	.01	5.88	.44	2.27	.013	.00	.00	PIPE

6920.353	492.752	5.625	498.377	233.03	6.17	.59	498.97	.00	3.83	7.31	8.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
8.772	.0213					.0010	.01	5.62	.48	2.27	.013	.00	.00	PIPE	
6929.125	492.939	5.388	498.327	233.03	6.47	.65	498.98	.00	3.83	7.50	8.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2.875	.0213					.0011	.00	5.39	.52	2.27	.013	.00	.00	PIPE	
6932.000	493.000	5.307	498.307	233.03	6.58	.67	498.98	.00	3.83	7.56	8.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
JUNCT STR	.1667					.0010	.01	5.31	.54		.014	.00	.00	PIPE	
6938.000	494.000	4.722	498.722	100.88	4.23	.28	499.00	.00	2.70	4.91	6.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
9.876	.0201					.0006	.01	4.72	.34	1.66	.013	.00	.00	PIPE	
6947.876	494.198	4.502	498.700	100.88	4.43	.31	499.01	.00	2.70	5.19	6.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
8.742	.0201					.0007	.01	4.50	.37	1.66	.013	.00	.00	PIPE	

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WATER SURFACE PROFILE LISTING

Date: 2-13-2019 Time: 5: 7:25

RMV PA3  
LINE A  
100-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/ or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
6956.618	494.374	4.302	498.676	100.88	4.65	.34	499.01	.00	2.70	5.41	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
5.365	.0201					.0008	.00	4.30	.41	1.66	.013	.00	.00	PIPE
6961.983	494.481	4.177	498.659	100.88	4.80	.36	499.02	.00	2.70	5.52	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
HYDRAULIC JUMP														
6961.983	494.481	1.664	496.146	100.88	15.77	3.86	500.01	.00	2.70	5.37	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
260.419	.0201					.0201	5.23	1.66	2.55	1.66	.013	.00	.00	PIPE
7222.402	499.709	1.664	501.374	100.88	15.77	3.86	505.24	.00	2.70	5.37	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
232.919	.0201					.0198	4.61	1.66	2.55	1.66	.013	.00	.00	PIPE
7455.322	504.385	1.677	506.063	100.88	15.60	3.78	509.84	.00	2.70	5.39	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
157.155	.0201					.0183	2.87	1.68	2.51	1.66	.013	.00	.00	PIPE
7612.477	507.540	1.736	509.276	100.88	14.88	3.44	512.71	.00	2.70	5.44	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
61.536	.0201					.0160	.98	1.74	2.35	1.66	.013	.00	.00	PIPE
7674.013	508.776	1.796	510.572	100.88	14.18	3.12	513.70	.00	2.70	5.50	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

36.340	.0201					.0140	.51	1.80	2.20	1.66	.013	.00	.00	PIPE
7710.353	509.505	1.859	511.364	100.88	13.52	2.84	514.20	.00	2.70	5.55	6.000	.000	.00	1 .0
24.647	.0201					.0123	.30	1.86	2.06	1.66	.013	.00	.00	PIPE
7735.000	510.000	1.924	511.924	100.88	12.89	2.58	514.51	6.00	2.70	5.60	6.000	.000	.00	1 .0
3.450	.0000					.0116	.04	6.00	1.92	.00	.013	.00	.00	PIPE

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 WATER SURFACE PROFILE LISTING Date: 2-13-2019 Time: 5: 7:25

RMV PA3  
 LINE A  
 100-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT or I.D.	Base Wt	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
7738.450	510.000	1.909	511.909	100.88	13.03	2.64	514.55	.00	2.70	5.59	6.000	.000	.00	1 .0
JUNCT STR	.1325					.0166	.13	1.91	1.95		.014	.00	.00	PIPE
7745.999	511.000	1.278	512.278	54.70	15.82	3.89	516.16	.00	2.22	3.73	4.000	.000	.00	1 .0
1042.622	.0297					.0297	30.96	1.28	2.90	1.28	.013	.00	.00	PIPE
8788.621	541.962	1.278	543.240	54.70	15.82	3.89	547.13	.00	2.22	3.73	4.000	.000	.00	1 .0
166.262	.0297					.0291	4.84	1.28	2.90	1.28	.013	.00	.00	PIPE
8954.883	546.899	1.291	548.191	54.70	15.59	3.77	551.96	.00	2.22	3.74	4.000	.000	.00	1 .0
101.043	.0297					.0268	2.70	1.29	2.84	1.28	.013	.00	.00	PIPE
9055.926	549.900	1.337	551.237	54.70	14.86	3.43	554.67	.00	2.22	3.77	4.000	.000	.00	1 .0
42.284	.0297					.0234	.99	1.34	2.65	1.28	.013	.00	.00	PIPE
9098.210	551.156	1.384	552.540	54.70	14.17	3.12	555.66	.00	2.22	3.81	4.000	.000	.00	1 .0
25.587	.0297					.0205	.53	1.38	2.48	1.28	.013	.00	.00	PIPE
9123.797	551.915	1.433	553.349	54.70	13.51	2.84	556.18	.00	2.22	3.84	4.000	.000	.00	1 .0
17.665	.0297					.0180	.32	1.43	2.32	1.28	.013	.00	.00	PIPE
9141.462	552.440	1.485	553.925	54.70	12.88	2.58	556.50	.00	2.22	3.86	4.000	.000	.00	1 .0
13.007	.0297					.0158	.21	1.48	2.17	1.28	.013	.00	.00	PIPE
9154.469	552.826	1.538	554.364	54.70	12.28	2.34	556.71	.00	2.22	3.89	4.000	.000	.00	1 .0
9.938	.0297					.0139	.14	1.54	2.02	1.28	.013	.00	.00	PIPE

RMV PA3  
LINE A  
100-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	No ZL	Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
9164.407	553.121	1.594	554.715	54.70	11.71	2.13	556.85	.00	2.22	3.92	4.000	.000	.00	1 .0
7.730	.0297					.0122	.09	1.59	1.89	1.28	.013	.00	.00	PIPE
9172.138	553.351	1.652	555.003	54.70	11.17	1.94	556.94	.00	2.22	3.94	4.000	.000	.00	1 .0
6.076	.0297					.0107	.06	1.65	1.76	1.28	.013	.00	.00	PIPE
9178.214	553.531	1.712	555.244	54.70	10.65	1.76	557.00	.00	2.22	3.96	4.000	.000	.00	1 .0
4.767	.0297					.0094	.04	1.71	1.65	1.28	.013	.00	.00	PIPE
9182.980	553.673	1.776	555.448	54.70	10.15	1.60	557.05	.00	2.22	3.97	4.000	.000	.00	1 .0
3.706	.0297					.0082	.03	1.78	1.54	1.28	.013	.00	.00	PIPE
9186.687	553.783	1.842	555.625	54.70	9.68	1.46	557.08	.00	2.22	3.99	4.000	.000	.00	1 .0
2.814	.0297					.0072	.02	1.84	1.43	1.28	.013	.00	.00	PIPE
9189.501	553.866	1.911	555.777	54.70	9.23	1.32	557.10	.00	2.22	4.00	4.000	.000	.00	1 .0
2.052	.0297					.0064	.01	1.91	1.34	1.28	.013	.00	.00	PIPE
9191.553	553.927	1.983	555.910	54.70	8.80	1.20	557.11	.00	2.22	4.00	4.000	.000	.00	1 .0
1.393	.0297					.0056	.01	1.98	1.24	1.28	.013	.00	.00	PIPE
9192.945	553.969	2.059	556.028	54.70	8.39	1.09	557.12	.00	2.22	4.00	4.000	.000	.00	1 .0
.796	.0297					.0049	.00	2.06	1.16	1.28	.013	.00	.00	PIPE
9193.741	553.992	2.139	556.131	54.70	8.00	.99	557.12	.00	2.22	3.99	4.000	.000	.00	1 .0
.259	.0297					.0044	.00	2.14	1.08	1.28	.013	.00	.00	PIPE

RMV PA3  
LINE A  
100-YR HC JANUARY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	No ZL	Wth Prs/Pip

L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type	Ch
*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****	*****
9194.000	554.000	2.223	556.223	54.70	7.62	.90	557.13	.00	2.22	3.97	4.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

002: H:\pdata\134519\Calcs\Strmwater\PA-3 & PA-4\Hydraulics\WSPGW\100yrHC\RMV-PA3-LineA.OUT

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD	SECT	CHN	NO OF	AVE PIER	HEIGHT 1	BASE	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)
CODE	NO	TYPE	PIER/PIP	WIDTH	DIAMETER	WIDTH			DROP										

CD	2	4	1		6.000														
----	---	---	---	--	-------	--	--	--	--	--	--	--	--	--	--	--	--	--	--

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

RMV PA3

HEADING LINE NO 2 IS -

LINE A1

HEADING LINE NO 3 IS -

100-YR HC JANAUARY 2019 CCHIU

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS A	SYSTEM OUTLET	U/S DATA	STATION	INVERT	SECT														
1				1000.000	475.933	2														
2				2107.000	525.000	2														
3				2113.000	526.000	2														
4				3127.000	555.000	2														
5				3133.000	556.000	2														
6				3153.000	556.000	2														
7				3829.000	575.000	2														
8				3829.000	575.000	2														

002: H:\pdata\134519\Calcs\Strmwater\PA-3 & PA-4\Hydraulics\WSPGW\100yrHC\RMV-PA3-LineA1.EDT

RMV PA3  
LINE A1  
100-YR HC JANAURY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
1000.000	475.933	2.204	478.137	256.76	27.26	11.54	489.67	.00	4.39	5.79	6.000	.000	.00	1 .0
454.797	.0443					.0443	20.16	2.20	3.76	2.20	.013	.00	.00	PIPE
1454.797	496.092	2.204	498.296	256.76	27.26	11.54	509.83	.00	4.39	5.79	6.000	.000	.00	1 .0
354.342	.0443					.0424	15.02	2.20	3.76	2.20	.013	.00	.00	PIPE
1809.138	511.798	2.259	514.056	256.76	26.37	10.80	524.86	.00	4.39	5.81	6.000	.000	.00	1 .0
141.893	.0443					.0380	5.39	2.26	3.59	2.20	.013	.00	.00	PIPE
1951.031	518.087	2.340	520.427	256.76	25.14	9.82	530.24	.00	4.39	5.85	6.000	.000	.00	1 .0
73.407	.0443					.0333	2.45	2.34	3.35	2.20	.013	.00	.00	PIPE
2024.438	521.341	2.425	523.766	256.76	23.97	8.92	532.69	.00	4.39	5.89	6.000	.000	.00	1 .0
47.945	.0443					.0293	1.40	2.43	3.13	2.20	.013	.00	.00	PIPE
2072.383	523.466	2.514	525.979	256.76	22.86	8.11	534.09	.00	4.39	5.92	6.000	.000	.00	1 .0
34.617	.0443					.0257	.89	2.51	2.92	2.20	.013	.00	.00	PIPE
2107.000	525.000	2.606	527.606	256.76	21.79	7.38	534.98	.00	4.39	5.95	6.000	.000	.00	1 .0
JUNCT STR	.1667					.0305	.18	2.61	2.73		.014	.00	.00	PIPE
2113.000	526.000	2.097	528.097	187.77	21.34	7.07	535.17	.00	3.74	5.72	6.000	.000	.00	1 .0
318.032	.0286					.0286	9.10	2.10	3.03	2.10	.013	.00	.00	PIPE
2431.031	535.096	2.097	537.192	187.77	21.34	7.07	544.26	.00	3.74	5.72	6.000	.000	.00	1 .0
320.595	.0286					.0275	8.81	2.10	3.03	2.10	.013	.00	.00	PIPE

RMV PA3  
LINE A1  
100-YR HC JANAURY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/I.D.	ZL	No Wth Prs/Pip
---------	-------------	------------	------------	---------	-----------	----------	----------------	------------	----------------	----------------	----------------	--------------	----	----------------

L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
2751.627	544.265	2.143	546.407	187.77	20.72	6.66	553.07	.00	3.74	5.75	6.000	.000	.00	1 .0
136.893	.0286					.0247	3.39	2.14	2.91	2.10	.013	.00	.00	PIPE
2888.520	548.180	2.219	550.399	187.77	19.75	6.06	556.46	.00	3.74	5.79	6.000	.000	.00	1 .0
68.149	.0286					.0217	1.48	2.22	2.72	2.10	.013	.00	.00	PIPE
2956.668	550.129	2.299	552.428	187.77	18.83	5.51	557.93	.00	3.74	5.83	6.000	.000	.00	1 .0
43.609	.0286					.0190	.83	2.30	2.54	2.10	.013	.00	.00	PIPE
3000.277	551.376	2.382	553.758	187.77	17.96	5.01	558.76	.00	3.74	5.87	6.000	.000	.00	1 .0
30.964	.0286					.0167	.52	2.38	2.37	2.10	.013	.00	.00	PIPE
3031.241	552.261	2.469	554.730	187.77	17.12	4.55	559.28	.00	3.74	5.91	6.000	.000	.00	1 .0
23.189	.0286					.0147	.34	2.47	2.21	2.10	.013	.00	.00	PIPE
3054.430	552.925	2.559	555.484	187.77	16.32	4.14	559.62	.00	3.74	5.93	6.000	.000	.00	1 .0
17.919	.0286					.0129	.23	2.56	2.07	2.10	.013	.00	.00	PIPE
3072.349	553.437	2.654	556.091	187.77	15.56	3.76	559.85	.00	3.74	5.96	6.000	.000	.00	1 .0
14.079	.0286					.0113	.16	2.65	1.93	2.10	.013	.00	.00	PIPE
3086.429	553.840	2.752	556.592	187.77	14.84	3.42	560.01	.00	3.74	5.98	6.000	.000	.00	1 .0
11.140	.0286					.0100	.11	2.75	1.80	2.10	.013	.00	.00	PIPE
3097.569	554.158	2.856	557.014	187.77	14.15	3.11	560.12	.00	3.74	5.99	6.000	.000	.00	1 .0
8.793	.0286					.0088	.08	2.86	1.68	2.10	.013	.00	.00	PIPE

FILE: RMV-PA3-LineA1.WSW

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WATER SURFACE PROFILE LISTING

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RMV PA3  
LINE A1  
100-YR HC JANAURY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/ I.D.	ZL	No Wth Prs/Pip
3106.361	554.410	2.964	557.373	187.77	13.49	2.83	560.20	.00	3.74	6.00	6.000	.000	.00	1 .0
6.878	.0286					.0077	.05	2.96	1.56	2.10	.013	.00	.00	PIPE
3113.240	554.607	3.077	557.683	187.77	12.86	2.57	560.25	.00	3.74	6.00	6.000	.000	.00	1 .0



5.257	.0286					.0068	.04	3.08	1.45	2.10	.013	.00	.00	PIPE
3118.497	554.757	3.196	557.953	187.77	12.26	2.34	560.29	.00	3.74	5.99	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.862	.0286					.0060	.02	3.20	1.35	2.10	.013	.00	.00	PIPE
3122.359	554.867	3.321	558.188	187.77	11.69	2.12	560.31	.00	3.74	5.97	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.630	.0286					.0053	.01	3.32	1.26	2.10	.013	.00	.00	PIPE
3124.989	554.943	3.452	558.395	187.77	11.15	1.93	560.33	.00	3.74	5.93	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1.516	.0286					.0047	.01	3.45	1.17	2.10	.013	.00	.00	PIPE
3126.505	554.986	3.592	558.577	187.77	10.63	1.75	560.33	.00	3.74	5.88	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.495	.0286					.0041	.00	3.59	1.08	2.10	.013	.00	.00	PIPE
3127.000	555.000	3.740	558.740	187.77	10.13	1.59	560.33	6.00	3.74	5.81	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
JUNCT STR	.1667							6.00	1.00		.014	.00	.00	PIPE
3133.000	556.000	1.147	557.147	49.51	13.12	2.67	559.82	.00	1.87	4.72	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.177	.0000					.0214	.00	1.15	2.59	.00	.013	.00	.00	PIPE
3133.177	556.000	1.146	557.146	49.51	13.13	2.68	559.82	.00	1.87	4.72	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10.013	.0000					.0230	.23	1.15	2.59	.00	.013	.00	.00	PIPE

FILE: RMV-PA3-LineA1.WSW

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WATER SURFACE PROFILE LISTING

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RMV PA3

LINE A1

100-YR HC JANAURY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt or I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3143.189	556.000	1.109	557.109	49.51	13.77	2.94	560.05	.00	1.87	4.66	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9.811	.0000					.0263	.26	1.11	2.76	.00	.013	.00	.00	PIPE
3153.000	556.000	1.073	557.073	49.51	14.44	3.24	560.31	.00	1.87	4.60	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
339.463	.0281					.0281	9.54	1.07	2.95	1.07	.013	.00	.00	PIPE
3492.464	565.541	1.073	566.614	49.51	14.44	3.24	569.85	.00	1.87	4.60	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
144.487	.0281					.0273	3.95	1.07	2.95	1.07	.013	.00	.00	PIPE
3636.951	569.602	1.088	570.690	49.51	14.15	3.11	573.80	.00	1.87	4.62	6.000	.000	.00	1 .0
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
74.970	.0281					.0248	1.86	1.09	2.87	1.07	.013	.00	.00	PIPE

3711.921	571.709	1.125	572.834	49.51	13.49	2.83	575.66	.00	1.87	4.68	6.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
34.104	.0281					.0217	.74	1.13	2.69	1.07	.013	.00	.00	PIPE	
3746.025	572.668	1.163	573.831	49.51	12.86	2.57	576.40	.00	1.87	4.74	6.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
21.208	.0281					.0190	.40	1.16	2.52	1.07	.013	.00	.00	PIPE	
3767.233	573.264	1.202	574.466	49.51	12.26	2.33	576.80	.00	1.87	4.80	6.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
14.848	.0281					.0166	.25	1.20	2.36	1.07	.013	.00	.00	PIPE	
3782.081	573.681	1.243	574.924	49.51	11.69	2.12	577.05	.00	1.87	4.86	6.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
11.057	.0281					.0145	.16	1.24	2.21	1.07	.013	.00	.00	PIPE	
3793.138	573.992	1.285	575.277	49.51	11.15	1.93	577.21	.00	1.87	4.92	6.000	.000	.00	1	.0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
8.514	.0281					.0126	.11	1.29	2.07	1.07	.013	.00	.00	PIPE	

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WATER SURFACE PROFILE LISTING

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RMV PA3  
LINE A1  
100-YR HC JANAURY 2019 CCHIU

Station	Invert Elev	Depth (FT)	Water Elev	Q (CFS)	Vel (FPS)	Vel Head	Energy Grd.El.	Super Elev	Critical Depth	Flow Top Width	Height/Dia.-FT	Base Wt/ I.D.	ZL	No Wth Prs/Pip
L/Elem	Ch Slope					SF Ave	HF	SE Dpth	Froude N	Norm Dp	"N"	X-Fall	ZR	Type Ch
3801.652	574.231	1.329	575.560	49.51	10.63	1.75	577.31	.00	1.87	4.98	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
6.696	.0281					.0111	.07	1.33	1.94	1.07	.013	.00	.00	PIPE
3808.349	574.419	1.375	575.794	49.51	10.13	1.59	577.39	.00	1.87	5.04	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
5.313	.0281					.0097	.05	1.37	1.81	1.07	.013	.00	.00	PIPE
3813.662	574.569	1.422	575.990	49.51	9.66	1.45	577.44	.00	1.87	5.10	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
4.223	.0281					.0085	.04	1.42	1.70	1.07	.013	.00	.00	PIPE
3817.884	574.688	1.470	576.158	49.51	9.21	1.32	577.48	.00	1.87	5.16	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
3.346	.0281					.0074	.02	1.47	1.59	1.07	.013	.00	.00	PIPE
3821.230	574.782	1.521	576.302	49.51	8.78	1.20	577.50	.00	1.87	5.22	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
2.612	.0281					.0065	.02	1.52	1.49	1.07	.013	.00	.00	PIPE
3823.842	574.855	1.573	576.428	49.51	8.38	1.09	577.52	.00	1.87	5.28	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
1.988	.0281					.0057	.01	1.57	1.39	1.07	.013	.00	.00	PIPE
3825.830	574.911	1.628	576.538	49.51	7.99	.99	577.53	.00	1.87	5.34	6.000	.000	.00	1 .0
- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

1.452	.0281					.0049	.01	1.63	1.31	1.07	.013	.00	.00	PIPE
3827.281	574.952	1.684	576.636	49.51	7.61	.90	577.54	.00	1.87	5.39	6.000	.000	.00	1 .0
.981	.0281					.0043	.00	1.68	1.22	1.07	.013	.00	.00	PIPE
3828.263	574.979	1.743	576.722	49.51	7.26	.82	577.54	.00	1.87	5.45	6.000	.000	.00	1 .0
.559	.0281					.0038	.00	1.74	1.14	1.07	.013	.00	.00	PIPE

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WATER SURFACE PROFILE LISTING

Date: 4-24-2019 Time:11:19:24

RMV PA3

LINE A1

100-YR HC JANAURY 2019 CCHIU

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*****
Station | Invert | Depth | Water | Q | Vel | Vel | Energy | Super |Critical|Flow Top|Height/|Base Wt| |No Wth
| Elev | (FT) | Elev | (CFS) | (FPS) | Head | Grd.El. | Elev | Depth | Width | Dia.-FT|or I.D.| ZL |Prs/Pip
L/Elem |Ch Slope | | | | | | | | | | | | | | |
*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****
3828.822 | 574.995 | 1.803 | 576.798 | 49.51 | 6.92 | .74 | 577.54 | .00 | 1.87 | 5.50 | 6.000 | .000 | .00 | 1 .0
| | | | | | | | | | | | | | | | |
.178 | .0281 | | | | | | | | | | | | | | | |
3829.000 | 575.000 | 1.868 | 576.868 | 49.51 | 6.59 | .68 | 577.54 | .00 | 1.87 | 5.56 | 6.000 | .000 | .00 | 1 .0
| | | | | | | | | | | | | | | | |

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002: H:\pdata\134519\Calcs\Strmwater\PA-3 & PA-4\Hydraulics\WSPGW\100yrHC\RMV-PA3-LineA1.OUT

WATER SURFACE PROFILE - CHANNEL DEFINITION LISTING

CARD CODE	SECT NO	CHN TYPE	NO OF PIER/PIP	AVE WIDTH	PIER WIDTH	HEIGHT 1	BASE DIAMETER	ZL	ZR	INV	Y(1)	Y(2)	Y(3)	Y(4)	Y(5)	Y(6)	Y(7)	Y(8)	Y(9)	Y(10)	
CD	1	4	1			4.000															
CD	2	4	1			6.000															
CD	3	4	1			2.000															

W S P G W

WATER SURFACE PROFILE - TITLE CARD LISTING

HEADING LINE NO 1 IS -

RMV PA3

HEADING LINE NO 2 IS -

LINE A2

HEADING LINE NO 3 IS -

100-YR HC JANUARY 2019 CCHIU

W S P G W

WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	SYSTEM	OUTLET	U/S DATA	STATION	INVERT	SECT	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	ANG PT	MAN H
1	IS	A	SYSTEM	OUTLET	U/S DATA	1000.000	463.000	2				471.766					
2	IS	A	REACH		U/S DATA	1723.000	504.000	2	.013			.000	.000	.000		2	
3	IS	A	JUNCTION		U/S DATA	1729.000	505.000	2	.014	135.270	.000	506.000	.000	45.000	.000		
4	IS	A	REACH		U/S DATA	2332.000	515.000	2	.013			1535.527	22.500	.000		1	
5	IS	A	JUNCTION		U/S DATA	2338.000	516.000	2	.014	59.430	.000	517.000	.000	45.000	.000		
6	IS	A	REACH		U/S DATA	2894.000	536.000	2	.013			1415.842	22.500	.000		1	
7	IS	A	JUNCTION		U/S DATA	2900.000	537.000	2	.014	103.030	.000	538.000	.000	45.000	.000		
8	IS	A	REACH		U/S DATA	4230.000	594.000	2	.013			3386.817	22.500	.000		3	

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WATER SURFACE PROFILE - ELEMENT CARD LISTING

ELEMENT NO	IS	A	REACH		U/S DATA	STATION	INVERT	SECT	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	ANG PT	MAN H
9	IS	A	REACH		U/S DATA	4235.000	594.000	2	.013			3.183	-90.000	.000		3	
10	IS	A	JUNCTION		U/S DATA	4241.000	595.000	2	.014	16.210	.000	596.000	.000	45.000	.000		
11	IS	A	REACH		U/S DATA				N								

ELEMENT NO	12	IS A	JUNCTION	4388.000	596.000	2			.013			374.332	22.500	.000	1
			U/S DATA	*	*	*	*	*	*	*	*	*	*	*	*
			STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4	
			4394.000	597.000	1	1	0	.013	141.530	.000	598.000	.000	45.000	.000	
											RADIUS	ANGLE			
											.000	.000			
ELEMENT NO	13	IS A	REACH	*	*	*									
			U/S DATA	STATION	INVERT	SECT		N			RADIUS	ANGLE	ANG PT	MAN H	
			5418.000	616.000	1		.013				1303.797	45.000	.000	2	
ELEMENT NO	14	IS A	JUNCTION	*	*	*	*	*	*	*	*	*	*	*	*
			U/S DATA	STATION	INVERT	SECT	LAT-1	LAT-2	N	Q3	Q4	INVERT-3	INVERT-4	PHI 3	PHI 4
			5424.000	617.000	3	3	0	.014	37.680	.000	618.000	.000	45.000	.000	
											RADIUS	ANGLE			
											.000	.000			
ELEMENT NO	15	IS A	REACH	*	*	*									
			U/S DATA	STATION	INVERT	SECT		N			RADIUS	ANGLE	ANG PT	MAN H	
			5846.000	634.000	3		.013				.000	.000	.000	1	
ELEMENT NO	16	IS A	SYSTEM HEADWORKS	*						*					
			U/S DATA	STATION	INVERT	SECT					W S ELEV				
			5846.000	634.000	3						.000				

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WATER SURFACE PROFILE - ELEMENT CARD LISTING

PAGE NO 4

**Circular Pipe (MPD Sizing.fm8)**

Label	Roughness Coefficient	Channel Slope (ft/ft)	Normal Depth (in)	Diameter (in)	Discharge (cfs)	Flow Area (ft <sup>2</sup> )	Wetted Perimeter (ft)	Hydraulic Radius (in)	Top Width (ft)	Critical Depth (in)	Percent Full (%)	Critical Slope (ft/ft)	Velocity (ft/s)	Velocity Head (ft)	Specific Energy (ft)	Froude Number
Line C3 - node 303	0.013	0.007	24.8	24.8	20.60	3.3	6.5	6.2	0.00	19.4	100.0	0.008	6.15	0.59	2.65	(N/A)
Line C3 - node 304	0.013	0.005	35.4	35.4	45.00	6.8	9.3	8.8	0.00	26.3	100.0	0.006	6.59	0.68	3.62	(N/A)
Line C3 - node 305	0.013	0.015	42.0	42.0	123.00	9.6	11.0	10.5	0.00	39.2	100.0	0.013	12.80	2.55	6.04	(N/A)
Line C3 - node 317	0.013	0.040	39.5	39.5	171.00	8.5	10.3	9.9	0.00	39.1	100.0	0.037	20.08	6.27	9.56	(N/A)
Line C2 - node 313	0.013	0.008	22.2	22.2	16.50	2.7	5.8	5.6	0.00	17.8	100.0	0.008	6.12	0.58	2.43	(N/A)
Line C2 - node 314	0.013	0.020	25.3	25.3	37.00	3.5	6.6	6.3	0.00	24.0	100.0	0.017	10.56	1.73	3.85	(N/A)
Line C2 - node 315	0.013	0.030	31.4	31.4	80.00	5.4	8.2	7.8	0.00	30.7	100.0	0.027	14.91	3.45	6.07	(N/A)
Line C2 - node 316	0.013	0.020	41.4	41.4	137.00	9.4	10.8	10.4	0.00	39.8	100.0	0.017	14.65	3.33	6.79	(N/A)
Line C2 - node 317	0.013	0.045	41.1	41.1	202.00	9.2	10.8	10.3	0.00	40.8	100.0	0.042	21.88	7.44	10.87	(N/A)
Line C3 - node 307	0.013	0.042	54.2	54.2	408.00	16.0	14.2	13.5	0.00	53.8	100.0	0.039	25.48	10.09	14.61	(N/A)
Line C3 - node 330	0.013	0.080	53.8	53.8	550.00	15.8	14.1	13.4	0.00	53.7	100.0	0.077	34.87	18.90	23.38	(N/A)
Line C - node 323	0.013	0.005	32.5	32.5	37.00	5.8	8.5	8.1	0.00	24.4	100.0	0.006	6.42	0.64	3.35	(N/A)
Line C - node 324	0.013	0.015	35.7	35.7	80.00	7.0	9.4	8.9	0.00	33.2	100.0	0.013	11.50	2.05	5.03	(N/A)
Line C - node 325	0.013	0.024	38.8	38.8	126.00	8.2	10.2	9.7	0.00	37.6	100.0	0.021	15.36	3.67	6.90	(N/A)
Line C - node 326	0.013	0.068	40.6	40.6	239.00	9.0	10.6	10.1	0.00	40.4	100.0	0.065	26.64	11.03	14.41	(N/A)
Line C - node 327	0.013	0.030	57.0	57.0	394.00	17.7	14.9	14.3	0.00	56.2	100.0	0.027	22.21	7.67	12.42	(N/A)
Line C - node 328	0.013	0.040	66.2	66.2	677.00	23.9	17.3	16.5	0.00	65.7	100.0	0.037	28.32	12.47	17.98	(N/A)
Line C - node 329	0.013	0.013	95.3	95.3	1,019.00	49.5	24.9	23.8	0.00	90.3	100.0	0.011	20.58	6.58	14.52	(N/A)
Line C - node 330	0.013	0.005	116.3	116.3	1,075.00	73.7	30.4	29.1	0.00	95.1	100.0	0.005	14.58	3.30	12.99	(N/A)
C Offsite - node 330	0.013	0.030	46.1	46.1	223.00	11.6	12.1	11.5	0.00	45.3	100.0	0.027	19.26	5.77	9.61	(N/A)
Line C - node 331	0.013	0.005	144.1	144.1	1,904.00	113.2	37.7	36.0	0.00	119.7	100.0	0.005	16.82	4.40	16.40	(N/A)
Line D1 - node 403	0.013	0.008	30.4	30.4	38.00	5.0	8.0	7.6	0.00	25.0	100.0	0.008	7.54	0.88	3.42	(N/A)
Line D1 - node 404	0.013	0.010	45.3	45.3	123.00	11.2	11.9	11.3	0.00	40.0	100.0	0.009	11.00	1.88	5.65	(N/A)
Line D1 - node 405	0.013	0.005	60.6	60.6	189.00	20.0	15.9	15.1	0.00	47.1	100.0	0.006	9.44	1.38	6.43	(N/A)
Line D1 - node 406	0.013	0.020	53.1	53.1	266.00	15.4	13.9	13.3	0.00	51.3	100.0	0.018	17.29	4.65	9.07	(N/A)
Line D1 - node 407	0.013	0.030	61.2	61.2	476.00	20.4	16.0	15.3	0.00	60.4	100.0	0.027	23.28	8.43	13.53	(N/A)

**Circular Pipe (MPD Sizing.fm8)**

Label	Roughness Coefficient	Channel Slope (ft/ft)	Normal Depth (in)	Diameter (in)	Discharge (cfs)	Flow Area (ft <sup>2</sup> )	Wetted Perimeter (ft)	Hydraulic Radius (in)	Top Width (ft)	Critical Depth (in)	Percent Full (%)	Critical Slope (ft/ft)	Velocity (ft/s)	Velocity Head (ft)	Specific Energy (ft)	Froude Number
Line D1 - node 430	0.013	0.030	70.7	70.7	700.00	27.3	18.5	17.7	0.00	69.8	100.0	0.027	25.64	10.22	16.11	(N/A)
Line D2 - node 413	0.013	0.020	16.1	16.1	11.00	1.4	4.2	4.0	0.00	15.0	100.0	0.017	7.80	0.94	2.29	(N/A)
Line D2 - node 414	0.013	0.030	19.3	19.3	22.00	2.0	5.1	4.8	0.00	18.8	100.0	0.026	10.80	1.81	3.42	(N/A)
Line D2 - node 415	0.013	0.050	23.0	23.0	45.00	2.9	6.0	5.7	0.00	22.7	100.0	0.046	15.64	3.80	5.71	(N/A)
Line D2 - node 416	0.013	0.050	29.5	29.5	88.00	4.8	7.7	7.4	0.00	29.3	100.0	0.046	18.49	5.31	7.77	(N/A)
Line D2 - node 417	0.013	0.018	61.4	61.4	371.00	20.5	16.1	15.3	0.00	59.0	100.0	0.016	18.06	5.07	10.18	(N/A)
Line D2 - node 430	0.013	0.015	66.3	66.3	417.00	24.0	17.4	16.6	0.00	63.0	100.0	0.013	17.37	4.69	10.22	(N/A)
Line D2 - node 431	0.013	0.050	76.6	76.6	1,115.00	32.0	20.0	19.1	0.00	76.2	100.0	0.047	34.89	18.91	25.29	(N/A)
Line B1 - node 207	0.013	0.018	36.5	36.5	93.00	7.3	9.6	9.1	0.00	34.6	100.0	0.016	12.78	2.54	5.58	(N/A)
Line B1 - node 208	0.013	0.009	43.5	43.5	105.00	10.3	11.4	10.9	0.00	37.6	100.0	0.008	10.16	1.60	5.23	(N/A)
Line B1 - node 209	0.013	0.003	55.7	55.7	117.00	16.9	14.6	13.9	0.00	37.9	100.0	0.005	6.91	0.74	5.38	(N/A)
Line B1 - node 209.1	0.013	0.010	44.4	44.4	117.00	10.8	11.6	11.1	0.00	39.2	100.0	0.009	10.86	1.83	5.54	(N/A)
Line B - node 212	0.013	0.005	17.6	17.6	7.00	1.7	4.6	4.4	0.00	12.4	100.0	0.007	4.14	0.27	1.73	(N/A)
Line B - node 213	0.013	0.010	24.2	24.2	23.00	3.2	6.3	6.0	0.00	20.5	100.0	0.009	7.23	0.81	2.82	(N/A)
Line B - node 214	0.013	0.008	33.2	33.2	48.00	6.0	8.7	8.3	0.00	27.4	100.0	0.008	7.99	0.99	3.76	(N/A)
Line B - node 215	0.013	0.020	36.4	36.4	97.00	7.2	9.5	9.1	0.00	34.8	100.0	0.017	13.44	2.81	5.84	(N/A)
Line B - node 218	0.013	0.007	57.7	57.7	196.00	18.1	15.1	14.4	0.00	48.2	100.0	0.007	10.81	1.81	6.62	(N/A)
Line B - node 219	0.013	0.010	55.6	55.6	213.00	16.9	14.6	13.9	0.00	49.7	100.0	0.009	12.61	2.47	7.11	(N/A)
Line B - node 230	0.013	0.014	62.3	62.3	340.00	21.1	16.3	15.6	0.00	58.6	100.0	0.012	16.08	4.02	9.21	(N/A)
Line B - node 231	0.013	0.020	65.1	65.1	458.00	23.1	17.0	16.3	0.00	63.2	100.0	0.018	19.81	6.10	11.52	(N/A)