

SUPPLEMENTAL INFORMATION DRIVEWAY DRAINAGE CROSSING

Attached is additional analysis information for the driveway crossing between properties at 68 and 74 Pine Ridge Drive at the cul-de-sac end of the road. This includes a plan view showing the stream channel line and cross sections of the intermittent flow along that channel on the east side of the houses noted.

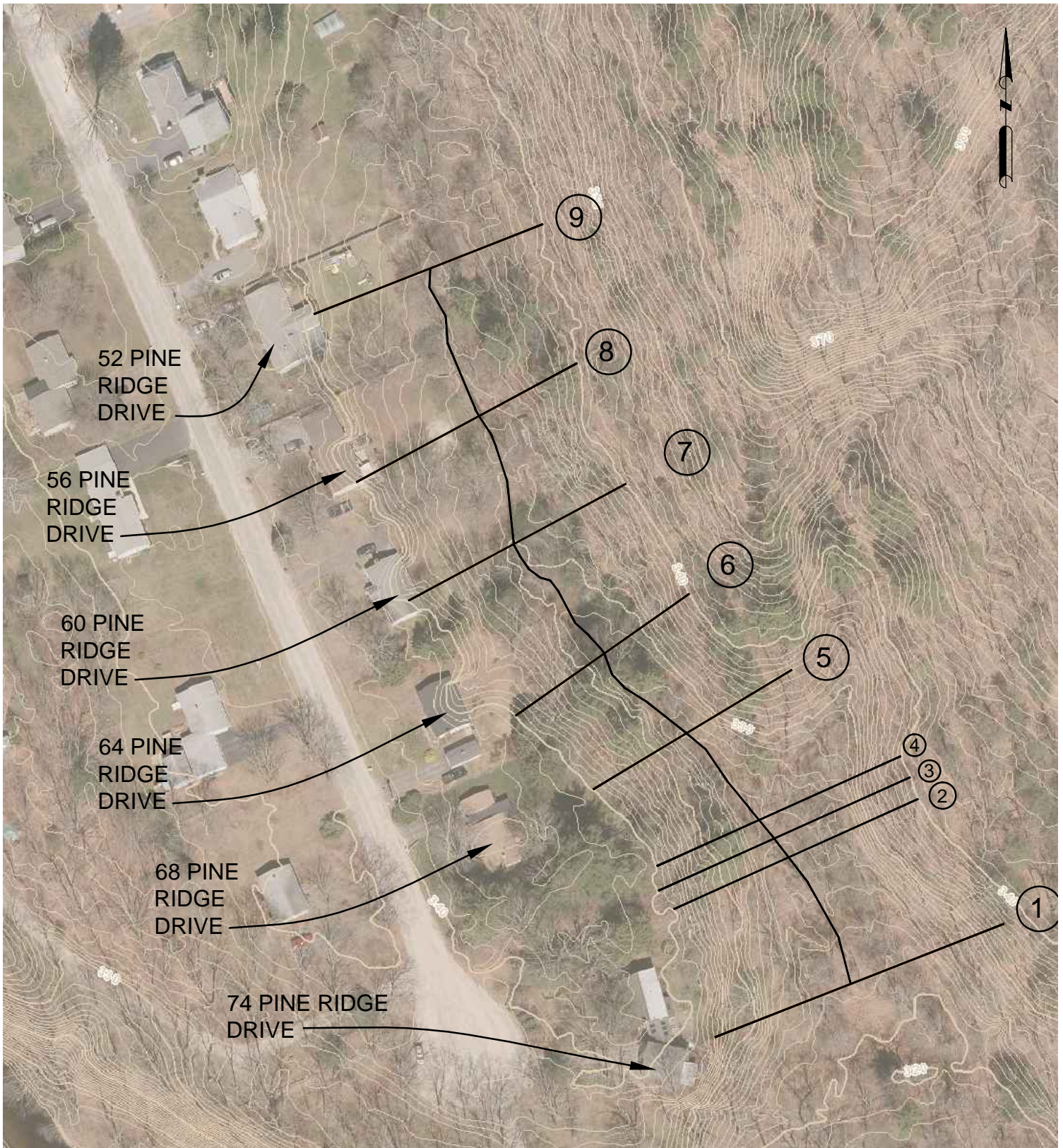
The table on the following pages lists and summarizes the findings for the channel sections evaluated adjacent to the houses numbered in an upstream direction, starting with #74 at the downstream end of the computations.

Profiles included as attachments are for both the existing conditions and the proposed conditions (i.e., with the driveway in place) for the 25-year storm (Profile 1) and 100-year storm (Profile 2) events. Sections 2, 3 and 4 represent, respectively, the section downstream of the culverts, the culvert section and the section directly upstream of the crossing. Exit velocity at the downstream discharge (Section 2) is 4.8 feet / second. As noted in the accompanying table, water surface elevations for both the 25-year and 100-year events are well below the lowest ground surface elevations taken directly adjacent to the easterly side of each of the houses noted. Flows used for analysis include 58.5 cfs for the 25-year and 91.7 cfs for the 100-year, based on the hydrologic analysis previously submitted.

Because of the channel slope, along with its width and ground surface characteristics through a wooded gulley area, there is no impact to any of the houses noted. In fact there is only one section, Section 5 adjacent to 68 Pine Ridge Drive, that shows a noticeable increase of 0.9 ft. in water surface elevation in the event of a 100-year storm. For all other sections, other than at the driveway crossing itself, there is no change due to the proposed installation of the new crossing. For the 25-year storm event, there is no change at all in water surface elevation adjacent to any of the houses.

The difference in water surface level (for the 100-year storm event) between the flow area adjacent to Section 5, where there is a 0.9 ft. increase due to the installation of the new culverts, and the ground elevation adjacent to the east side of the houses, is approximately 14 feet.





CHANNEL & SECTIONS
CORREIA DRIVEWAY CROSSING
PINE RIDGE DRIVE, ANDOVER

SCALE: 1" = 100'

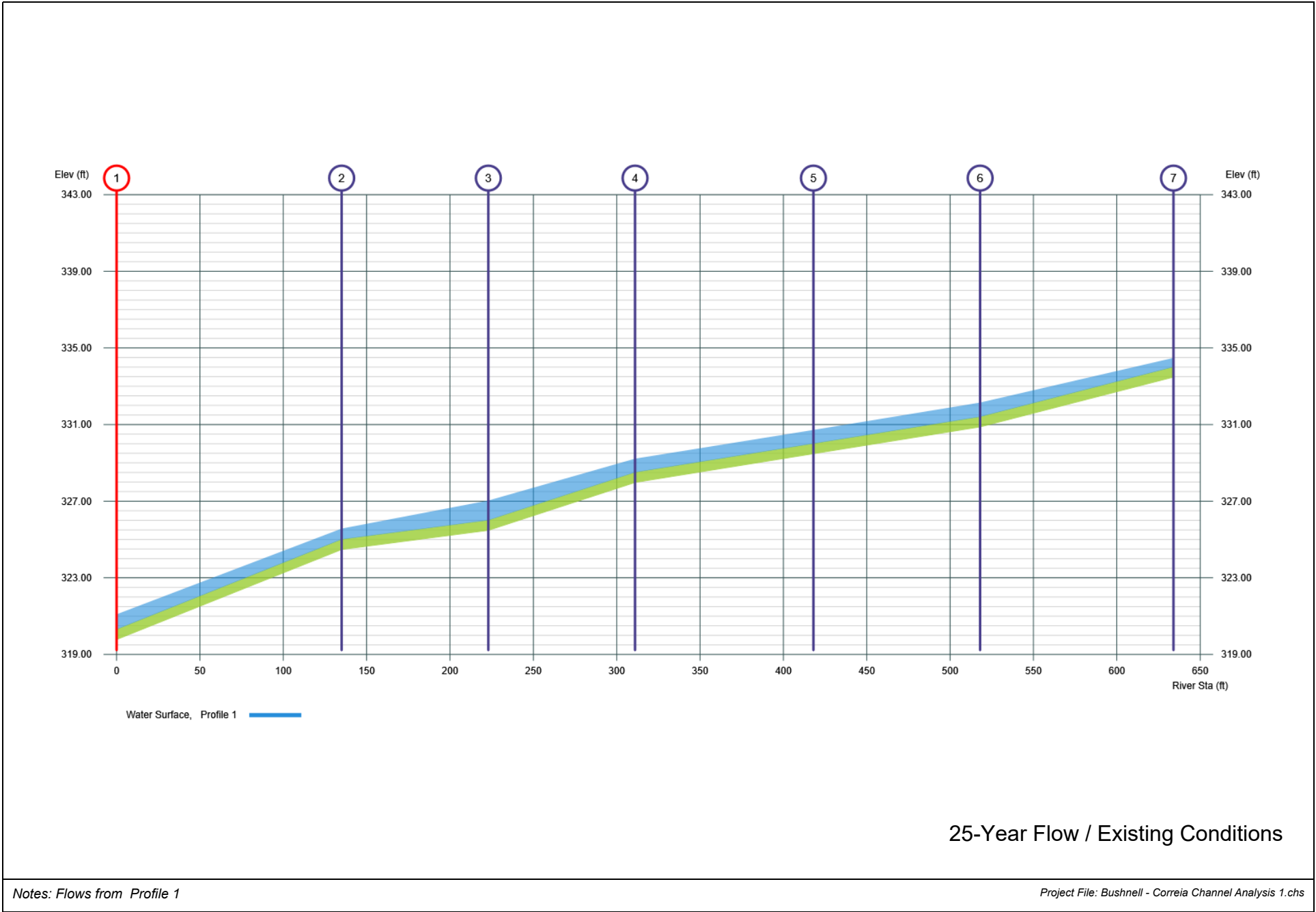
PINE RIDGE DRIVE / CORREIA DRIVEWAY CROSSING / CHANNEL ANALYSIS									
CROSS SECTION	HOUSE NUMBER PINE RIDGE DRIVE	GROUND ELEV. AT HOUSE (FT.)	WATER SURFACE 25- YEAR FLOW EXISTING (FT.)	WATER SURFACE 25- YEAR FLOW W/ CULVERT(FT.)	CHANGE FROM EXISTING 25-YEAR (FT.)	WATER SURFACE 100-YEAR FLOW EXISTING (FT.)	WATER SURFACE 100-YEAR FLOW W/ CULVERT (FT.)	CHANGE FROM EXISTING 100-YEAR (FT.)	VELOCITY AT SECTION (FPS) FOR 100-YEAR FLOW
1	74	338	321.1	321.1	0.0	321.3	321.3	0.0	3.6
5	68	342	327.0	327.0	0.0	327.3	328.2	0.9	4.4
6	64	336	329.2	329.2	0.0	329.4	329.4	0.0	3.6
7	60	336	330.7	330.7	0.0	330.9	330.9	0.0	3.7
8	56	336	332.2	332.2	0.0	332.3	332.3	0.0	3.5
9	52	338	334.5	334.5	0.0	334.6	334.6	0.0	3.4

Open Channel Profile

Channel Studio v 2.0.0.21

Project Name: Bushnell - Correia

05-25-2021

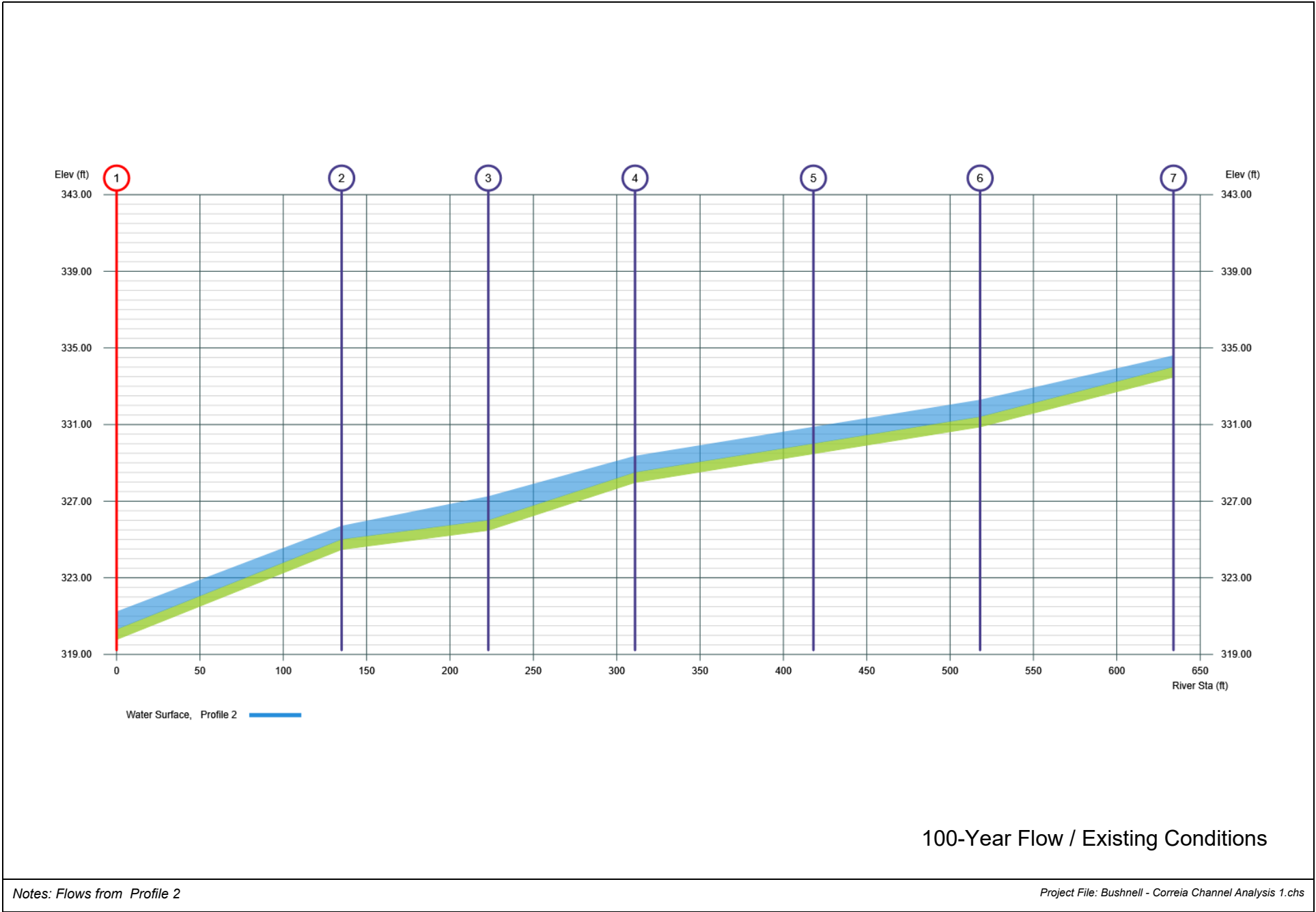


Open Channel Profile

Channel Studio v 2.0.0.21

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05-25-2021

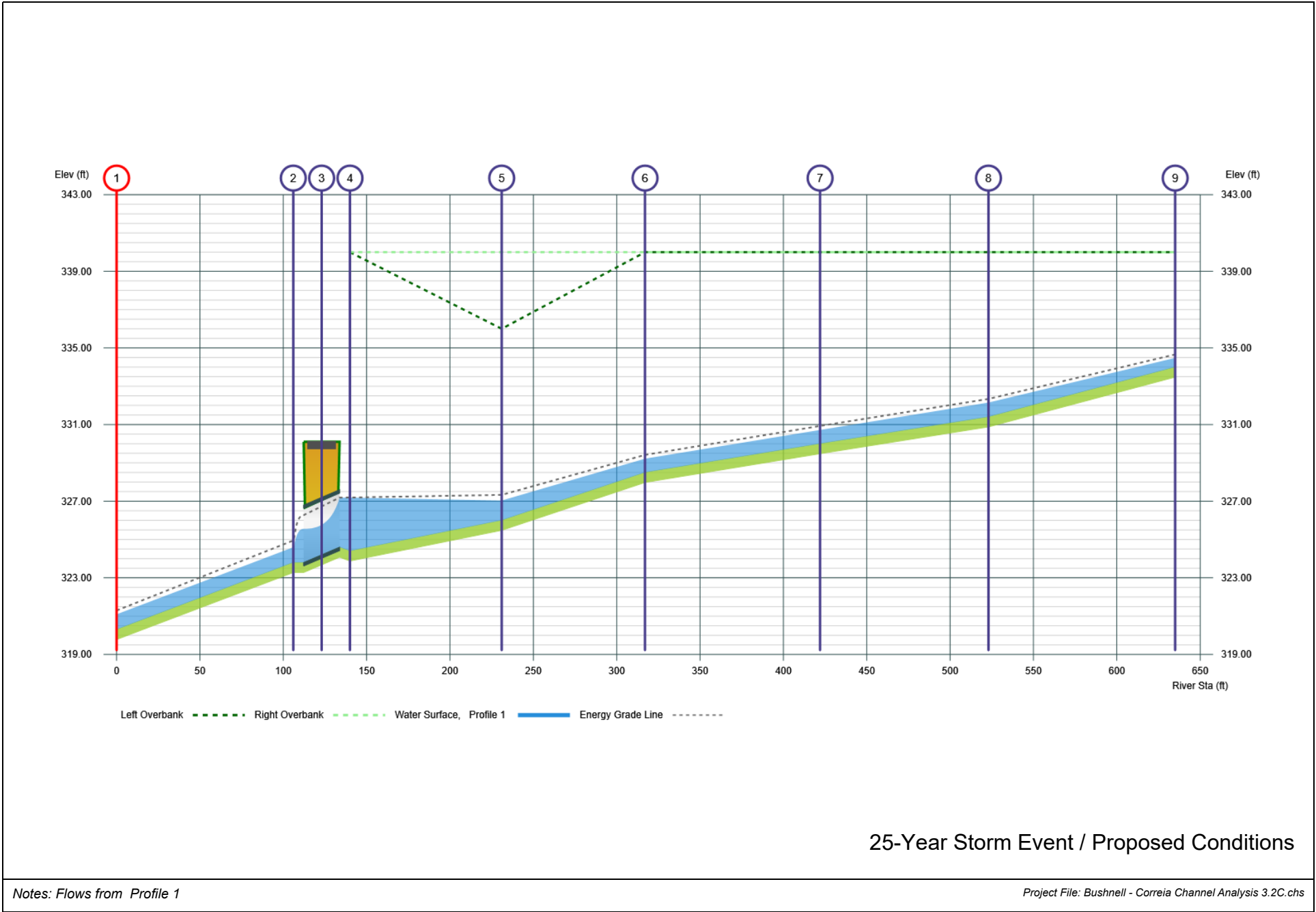


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