



**COUNTY OF ORANGE
OC PUBLIC WORKS DEPARTMENT
SANTA ANA, CALIFORNIA**

JAMES TREADAWAY, DIRECTOR

**2023
BEE CANYON RETARDING BASIN
SCOUR STUDY**

Prepared by:

**KEVIN HILLS, COUNTY SURVEYOR
COUNTY OF ORANGE PUBLIC WORKS
SURVEY FIELD UNIT**

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2023
SCOUR STUDY

BEE CANYON RETARDING BASIN (F16B02)

STATION 17+00 TO a24+87

AS-BUILT PLANS:

F16B02-101-1 STA 04+50 TO a24+87.50

NOTE: THIS BASIN ALIGNMENT CONTAINS A STATION EQUATION. STATION 17+98.08 BK = 17+48.39 AH. ALL CROSS SECTIONS WITH A PRECEDING “a” ARE LOCATED AFTER THIS STATION EQUATION

BASIS OF SPILLWAY CREST WAS DERIVED FROM O&M MANUAL DATED SEPTEMBER 1998. ALL ELEVATIONS HAVE BEEN ADJUSTED FROM NGVD29 DATUM TO NAVD88 DATUM. WITH A +0.15’ ADJUSTMENT FOR MSL (MEAN SEA LEVEL).

VERTICAL DATUM

NAVD 1988/O.C.S. 1995 ADJUSTMENT

Office Check by:	Michael LaFontaine, PLS, Deputy County Surveyor Elliot Medina, PLS, Senior Land Surveyor
Field Data Provided by:	OCS UAV Unit
Field Party Chief:	Kevin Martinez, Surveyor III
Computer processing done by:	Josef D. Pedretti, Surveyor II

COUNTY of ORANGE
OC PUBLIC WORKS

OC SURVEY SERVICE AREA
FIELD UNIT

2023 SCOURS STUDY (AS-BUILT PLAN) - VOLUME REPORT

BEE CANYON RETARDING BASIN (F16B02), STATION 17+00 to a 24+87.50

ALIGNMENT: Bee Canyon Basin Control Line

SURFACE 1: EG_BEE_UAV_LIDAR_2023 (2023 Ground)

SURFACE 2: 95ASBUILT NAVD88 TRANSFORMED (1995 As-Built Topo)

BASELINE STATION NUMBER	STATION CUT AREA	STATION CUT VOLUME	STATION FILL AREA	STATION FILL VOLUME	MASS ORDINATE VOLUME
17+00	67.91	0.00	65.28	0.00	0.00
17+50	21.02	78.22	58.97	115	-36.78
a17+50	333.48	268.83	30.63	81.04	151.01
a18+00	739.03	968.49	26.14	52.51	1066.99
a18+50	1672.8	2175.12	27.30	49.47	3192.64
a19+00	1462.56	2900.94	11.98	35.41	6058.17
a19+50	1888.48	3094.43	7.16	17.53	9135.07
a20+00	2344.71	3912	20.65	24.67	13022.40
a20+50	2506.26	4490.81	61.05	72.35	17440.86
a21+00	2120.9	4279.45	29.73	82.34	21637.97
a21+50	1755.72	3584.15	32.75	57.83	25164.29
a22+00	1656.22	3158.75	101.56	118.51	28204.53
a22+50	829.51	2257.93	17.93	100.09	30362.37
a23+00	693.65	1408.46	0.84	13.97	31756.86
a23+50	578.57	1176.37	13.94	11.23	32922.00
a24+00	395.89	896.94	13.51	25.42	33793.52
a24+50	332.84	673.91	8.75	20.46	34446.97
a24+87	359.96	480.99	5.05	9.47	34918.49

CUT: 35,805.79 Cu. Yds.			FILL: 887.30 Cu. Yds. NET: 34,918.49 Cu. Yds		

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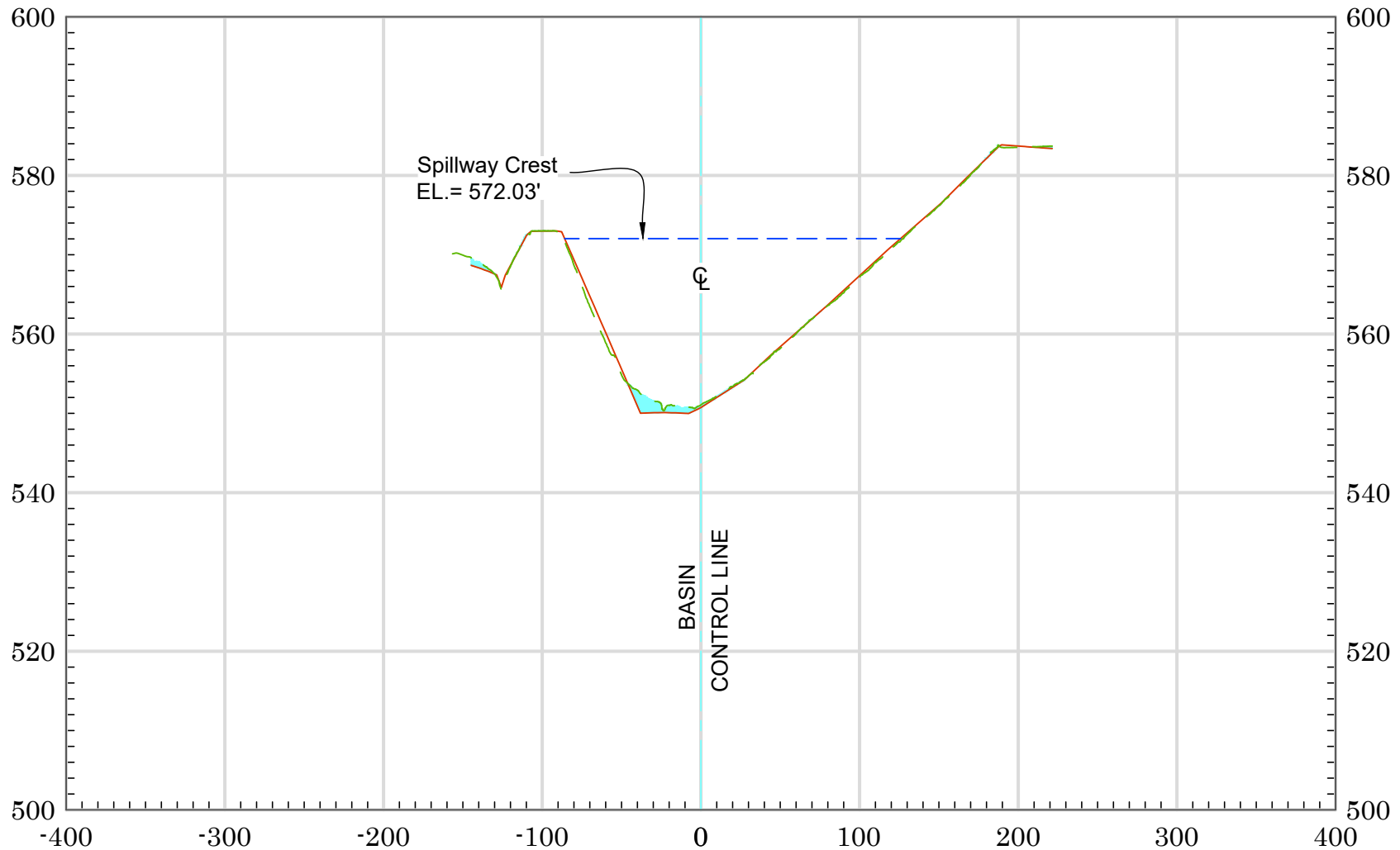
2023 SCOURS STUDY – PERCENTAGE MAXIMUM SEDIMENT CAPACITY -VOLUME REPORT

BEE CANYON RETARDING BASIN, STATION 17+00 to a24+87.50

<u>STATION</u>	<u>CUT AREA</u>	<u>CUT VOLUME</u>	<u>FILL AREA</u>	<u>FILL VOLUME</u>	<u>% OF CAPACITY</u>
17+00	67.91	0.00	567.44	0.00	0.00%
17+50	21.02	78.22	1491.09	6277.37	1.25%
a17+50	333.48	268.83	3202	10163.42	2.65%
a18+00	739.03	968.49	5035.77	16350.7	5.92%
a18+50	1672.8	2175.12	8017.97	22784.76	9.55%
a19+00	1462.56	2900.94	7053.3	24595.4	11.79%
a19+50	1888.48	3094.43	8586.17	25312.83	12.22%
a20+00	2344.71	3912	9714.28	29062.75	13.46%
a20+50	2506.26	4490.81	9337.1	30220.78	14.86%
a21+00	2120.9	4279.45	8351.39	28427.26	15.05%
a21+50	1755.72	3584.15	7388.96	26036.13	13.77%
a22+00	1656.22	3158.75	3935.81	18879.25	16.73%
a22+50	829.51	2257.93	3134.17	12232.8	18.46%
a23+00	693.65	1408.46	2694.48	10590.22	13.30%
a23+50	578.57	1176.37	2392.69	9604.03	12.25%
a24+00	395.89	896.94	2197.84	8950.72	10.02%
a24+50	332.84	673.91	2130.24	8740.21	7.71%
a24+87	359.96	480.99	0	6276.23	7.66%
		TOTAL CUT VOLUME		TOTAL MODIFIED BASIN VOLUME	PERCENT OF CAPACITY
	Cu. Yds.	35,805.79		294,504.86	12.16%

NOTE: NO STATIONS ARE FILLED BEYOND 50% OF THE MAXIMUM SEDIMENT BASIN CAPACITY

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

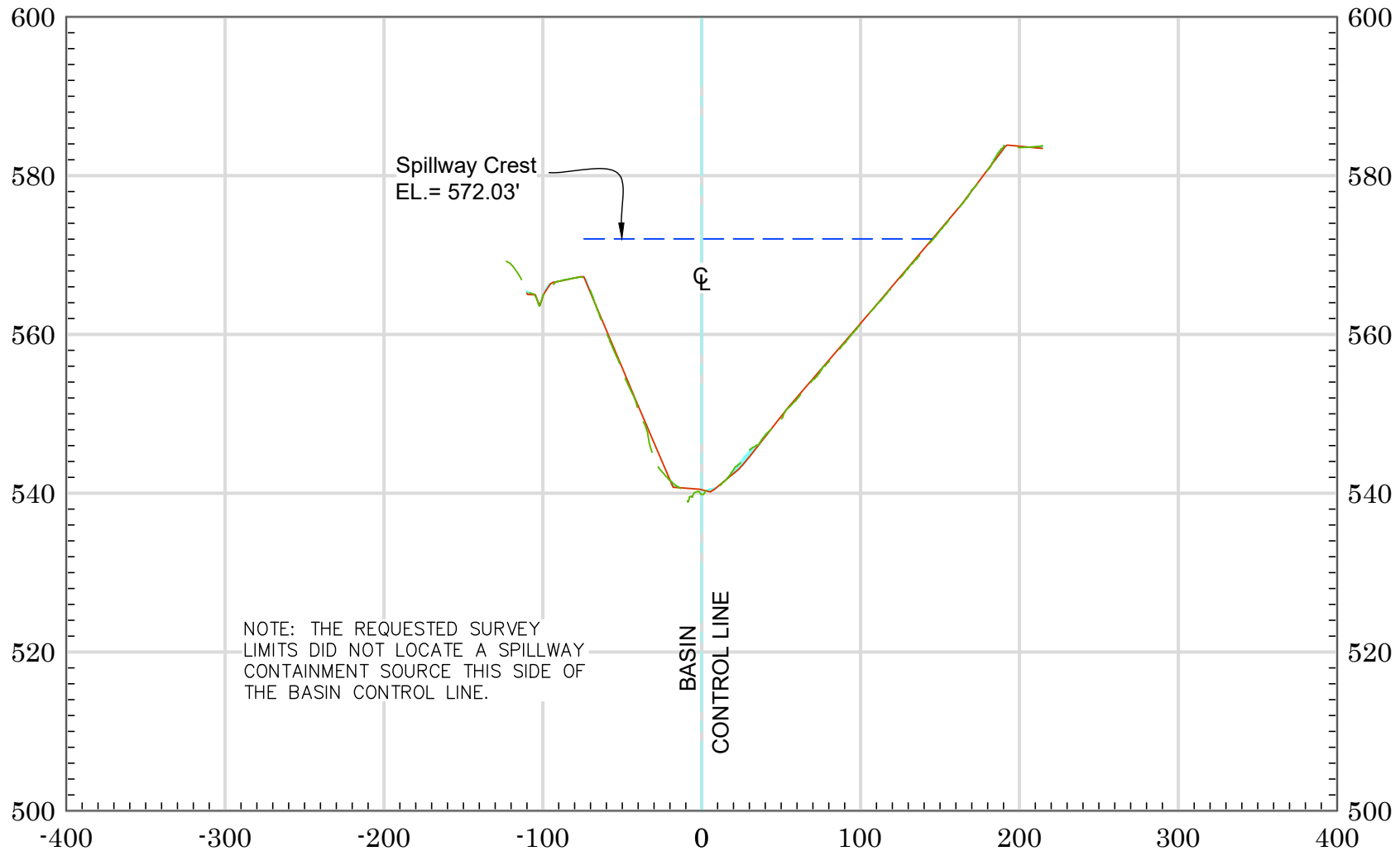


17+00

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment [Cyan Box]

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

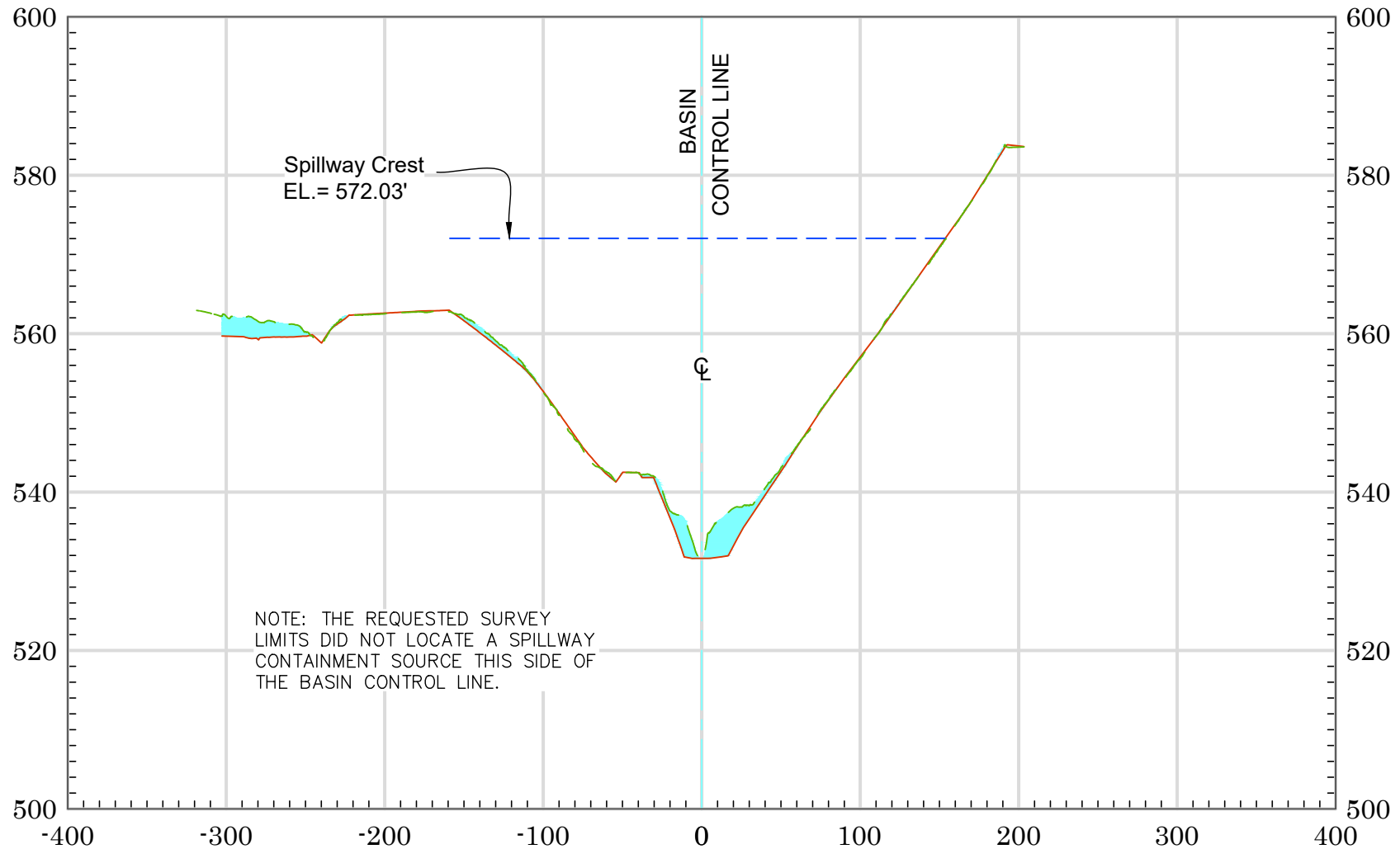
BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS



As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

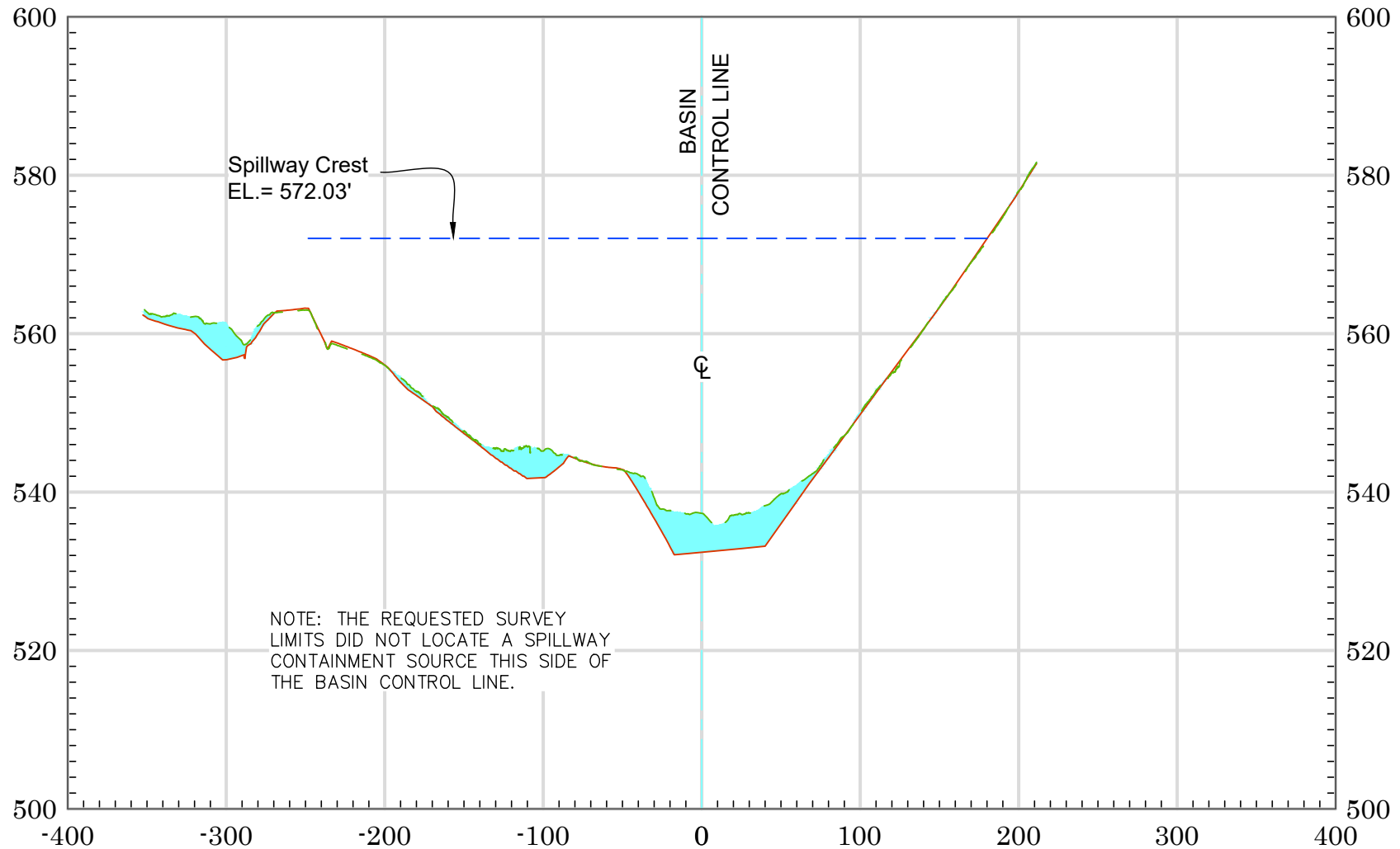


a 17+50

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

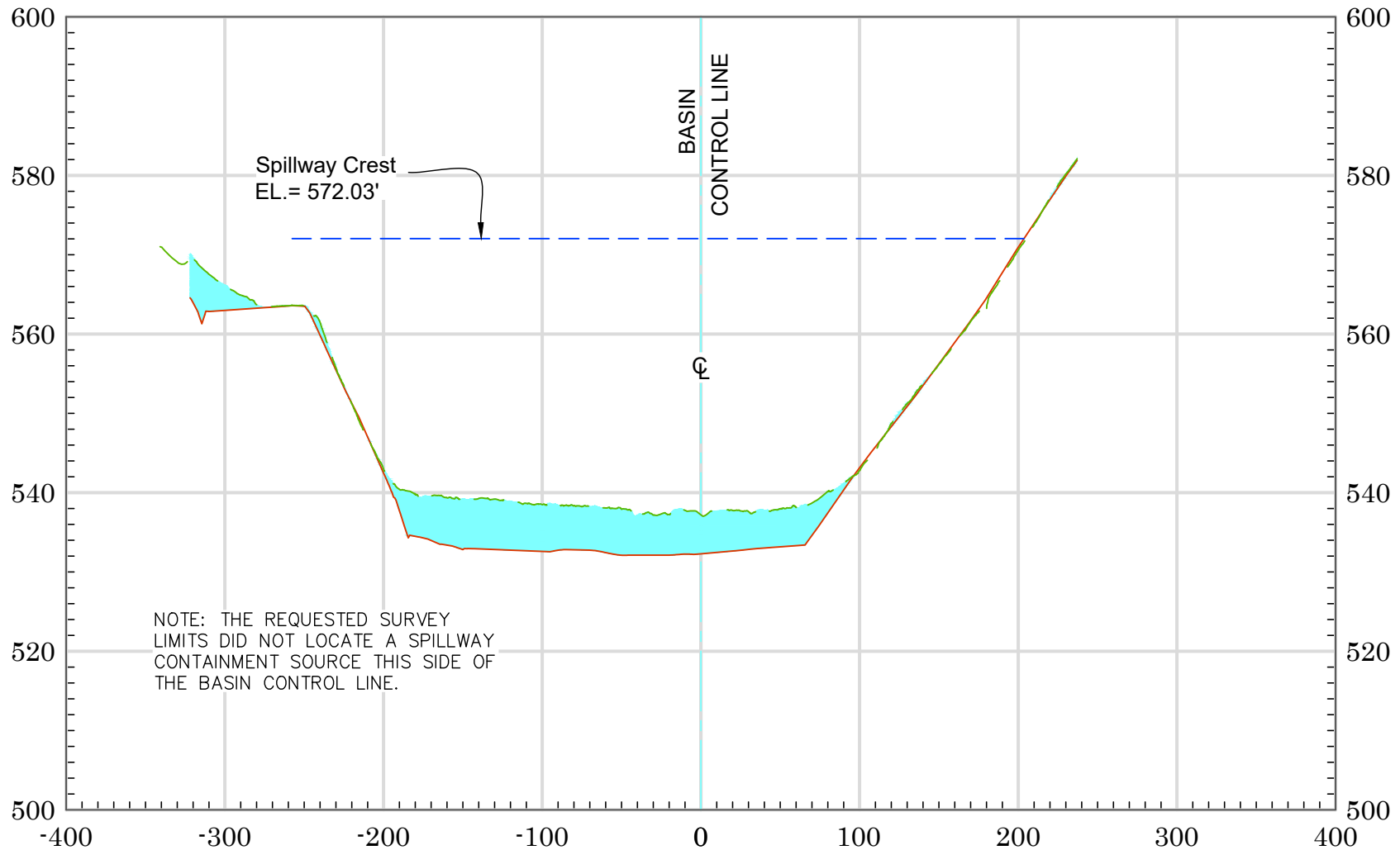


a 18+00

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

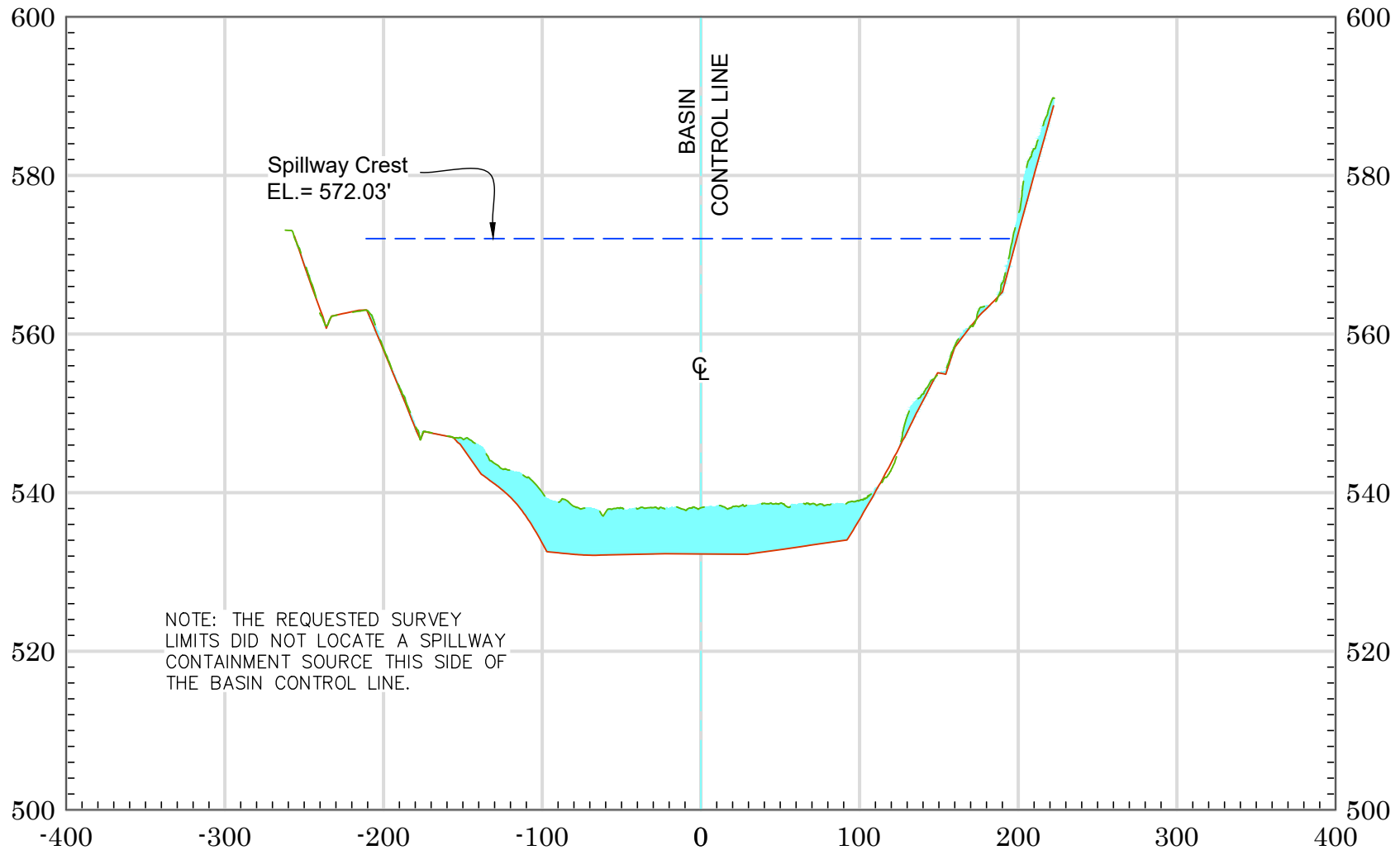


a 18+50

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

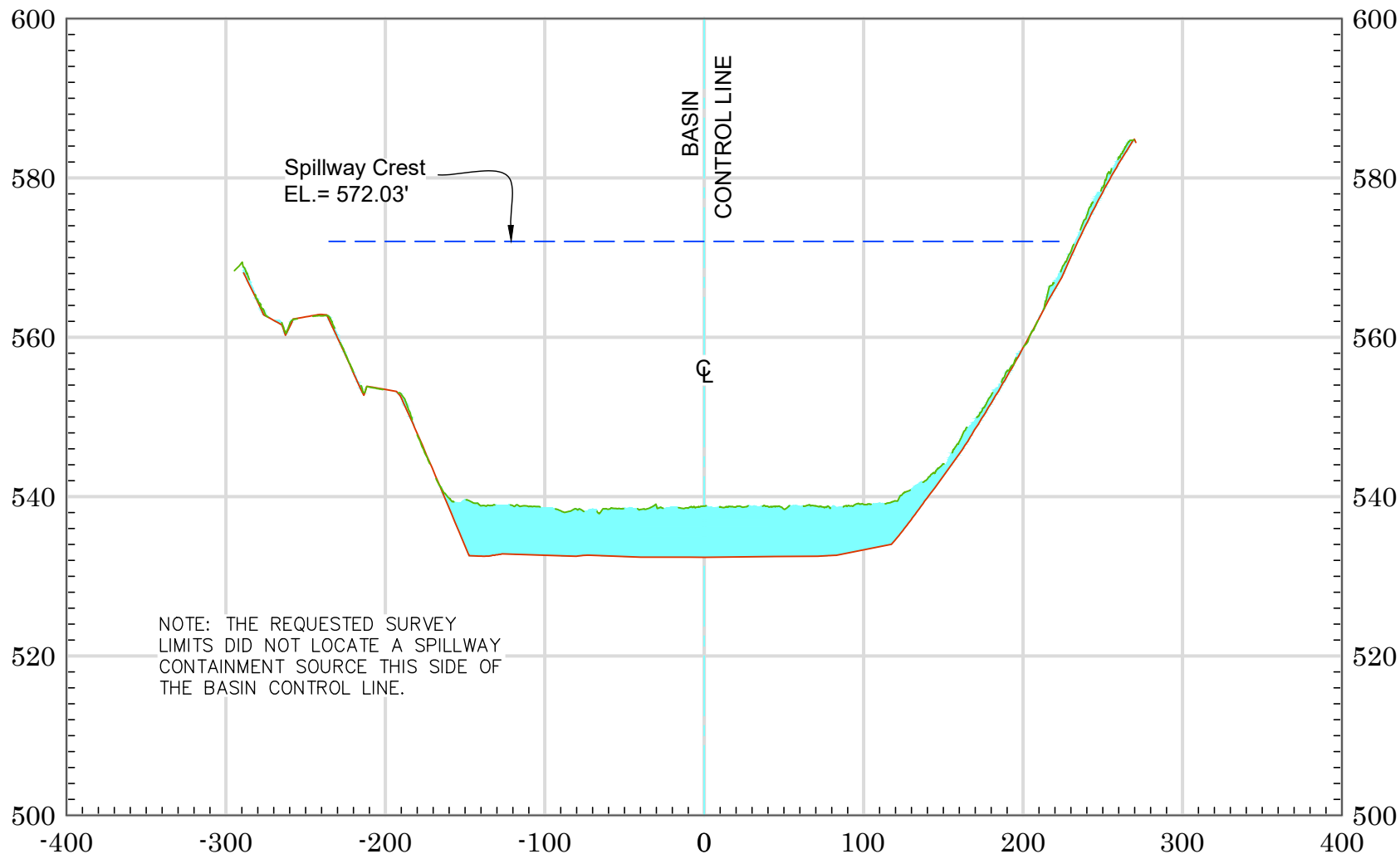


a 19+00

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

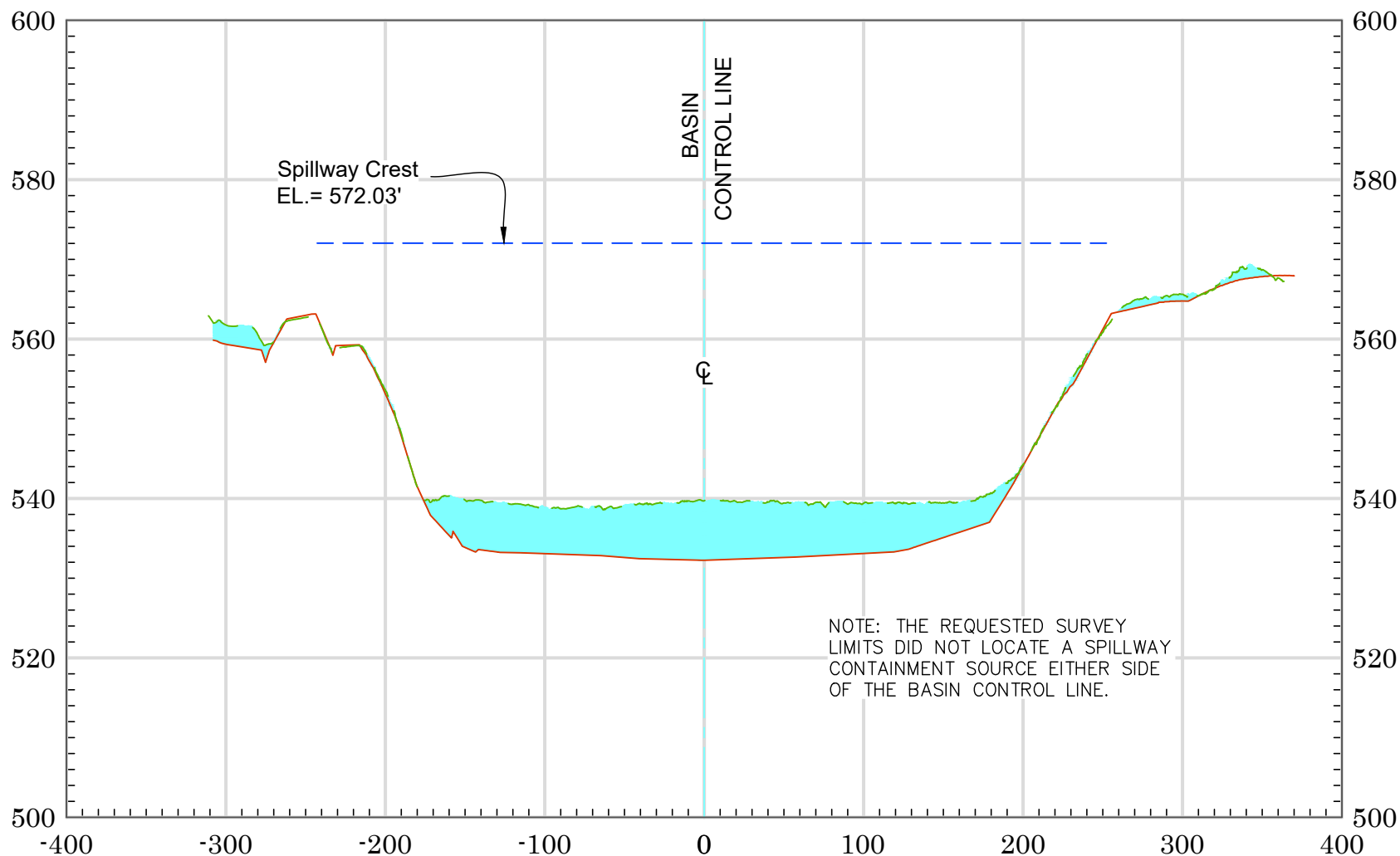


a 19+50

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS



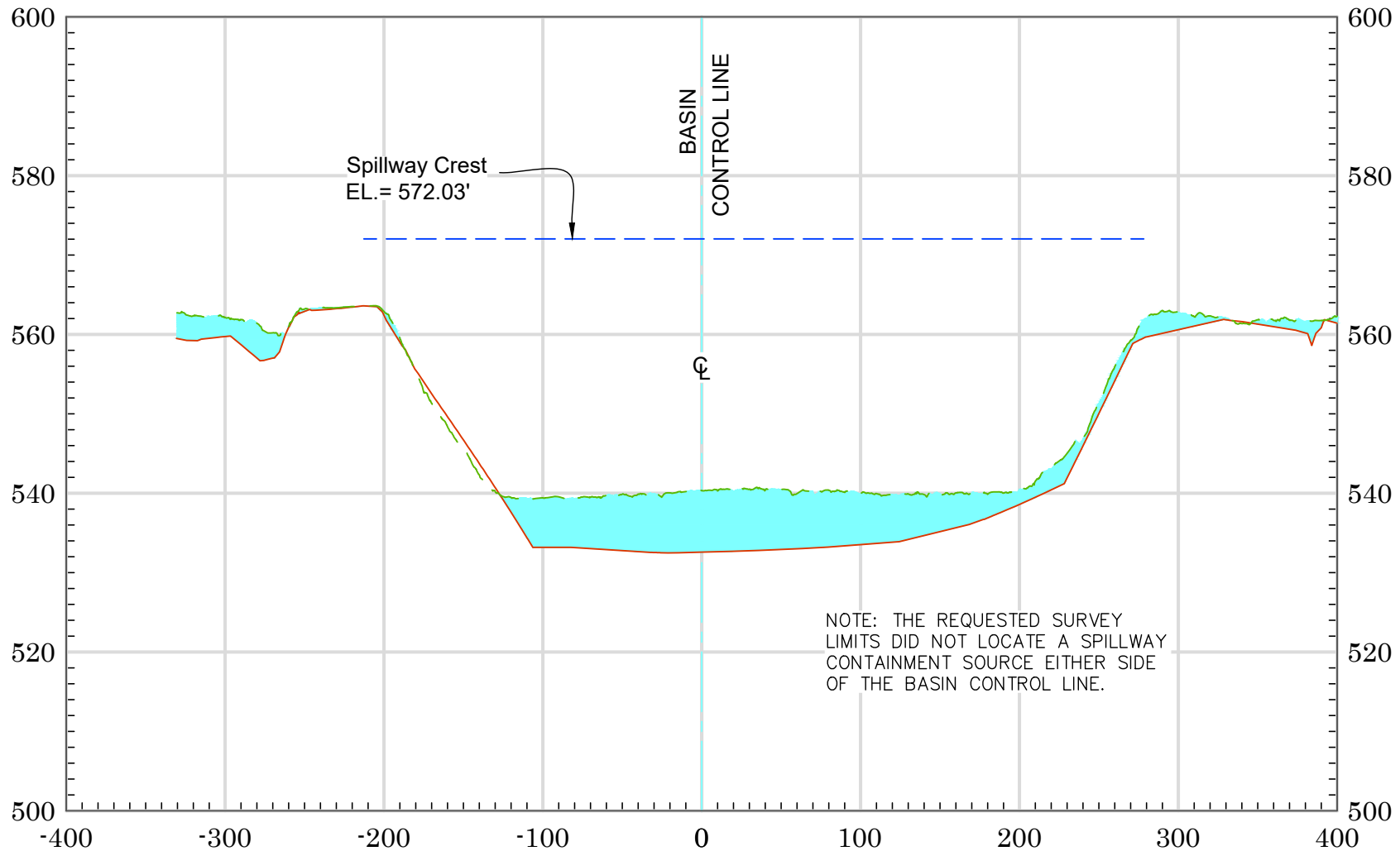
NOTE: THE REQUESTED SURVEY LIMITS DID NOT LOCATE A SPILLWAY CONTAINMENT SOURCE EITHER SIDE OF THE BASIN CONTROL LINE.

a 20+00

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

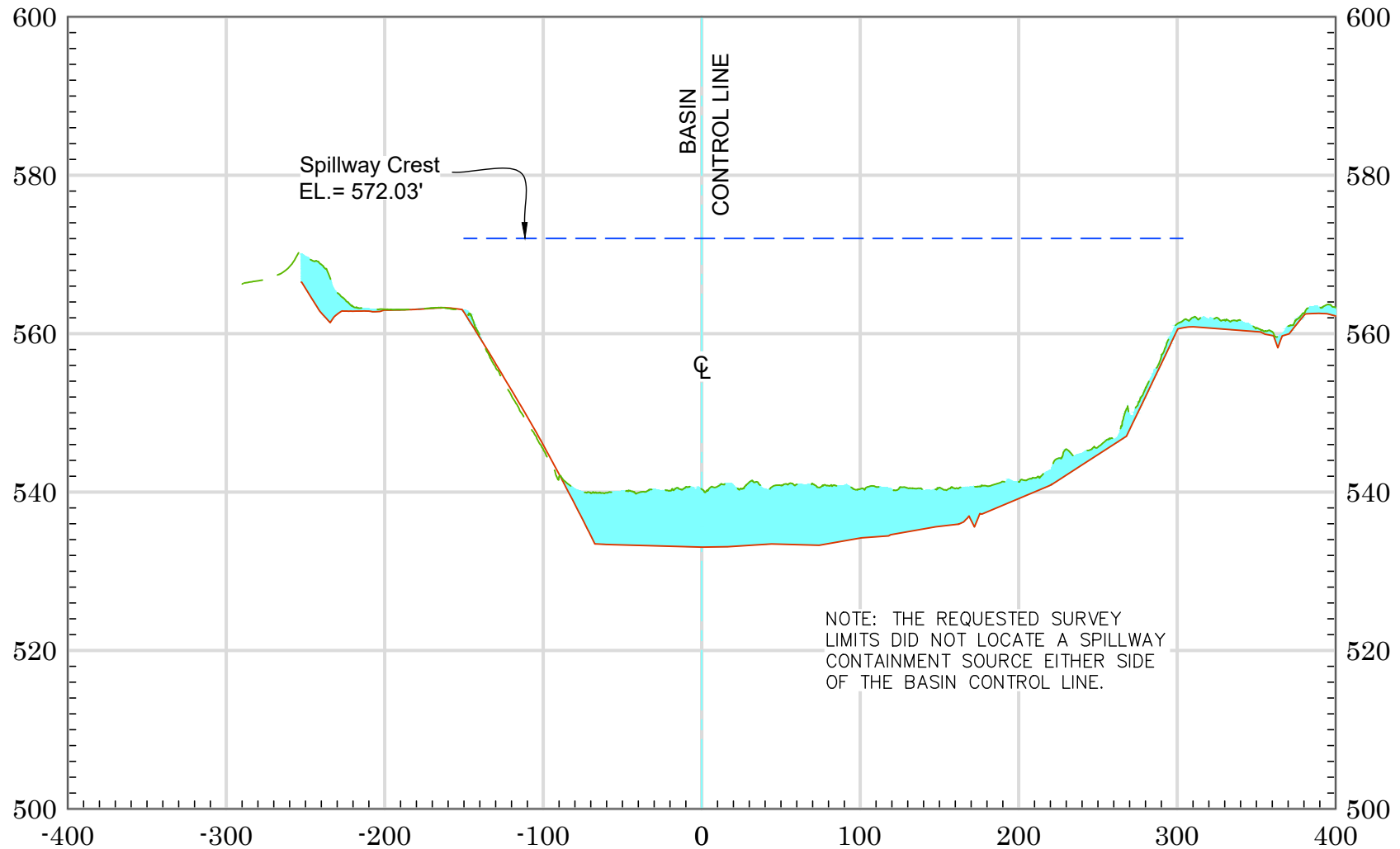


a 20+50

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

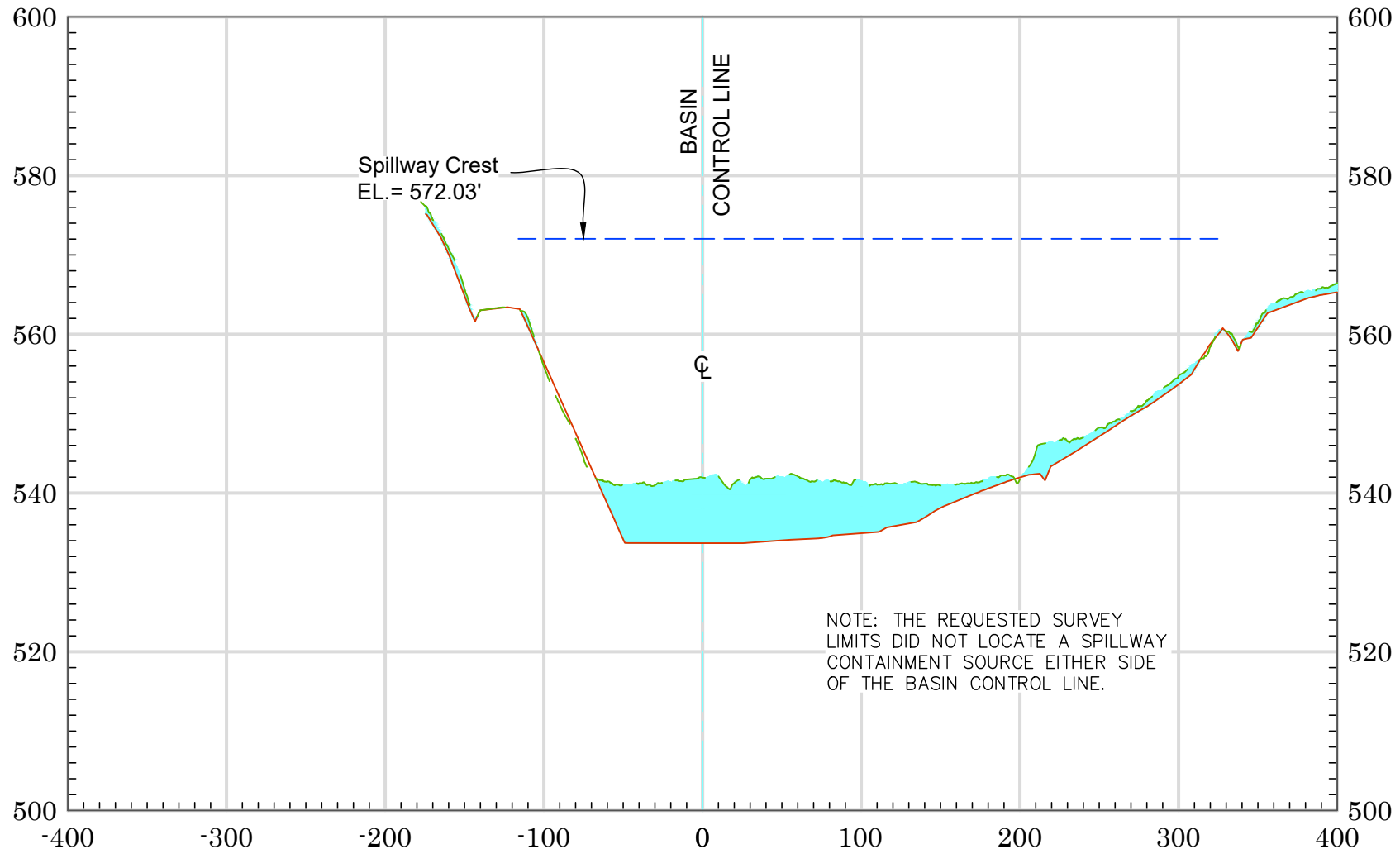
BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS



As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

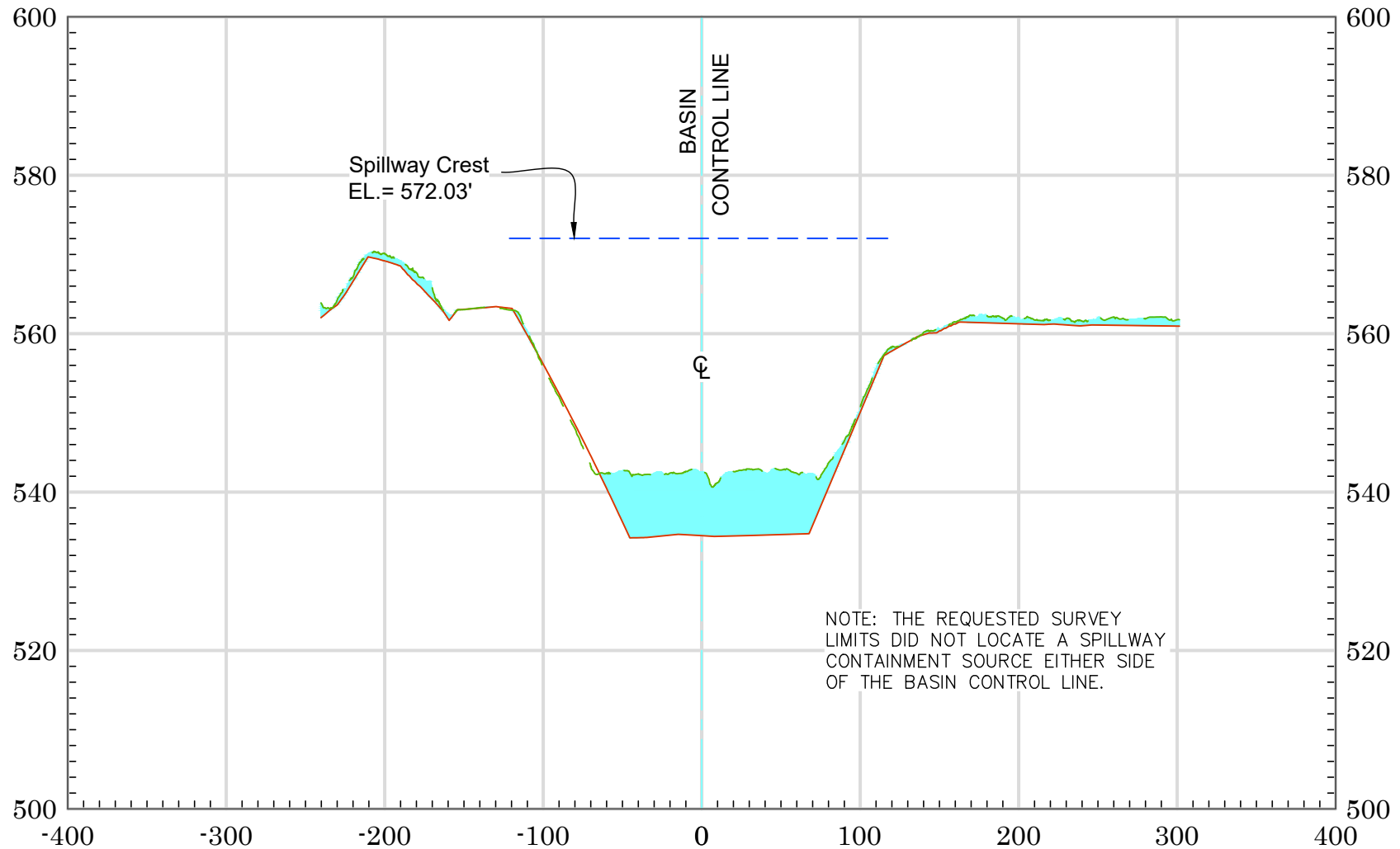


21+50

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

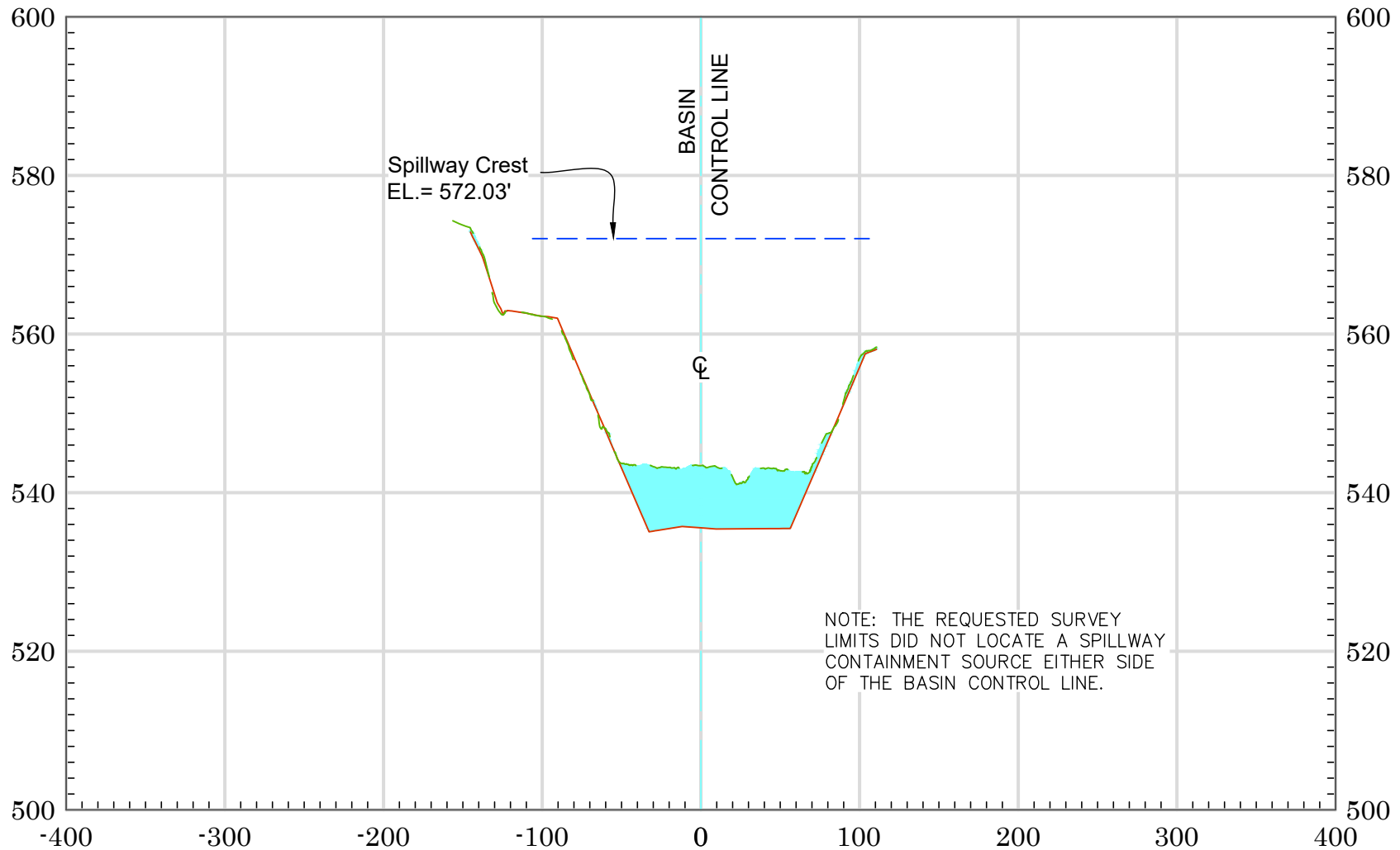


a 22+00

As-Built Plan ——— 2023 Ground - - -
 Max Cap Line - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

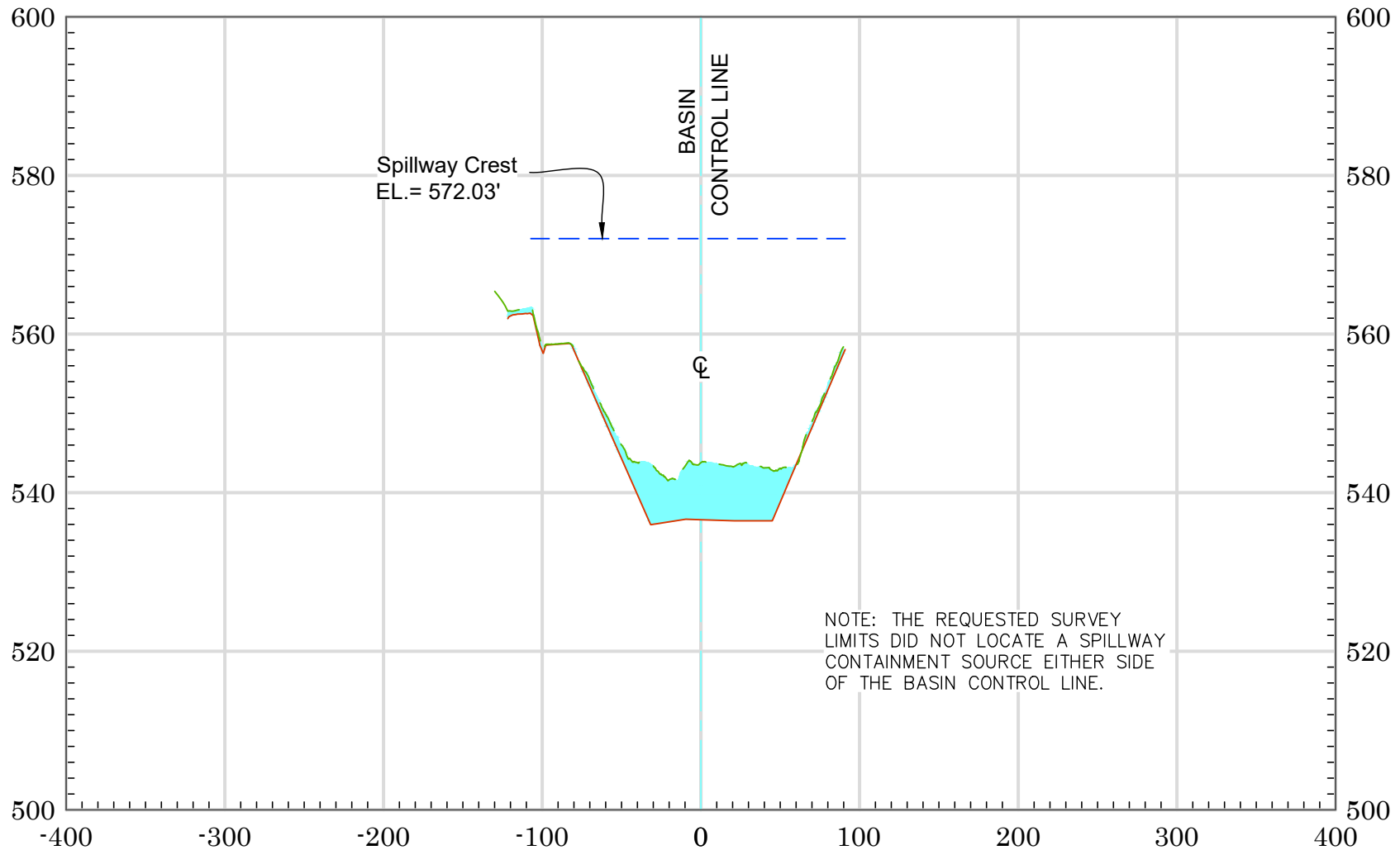


a 22+50

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

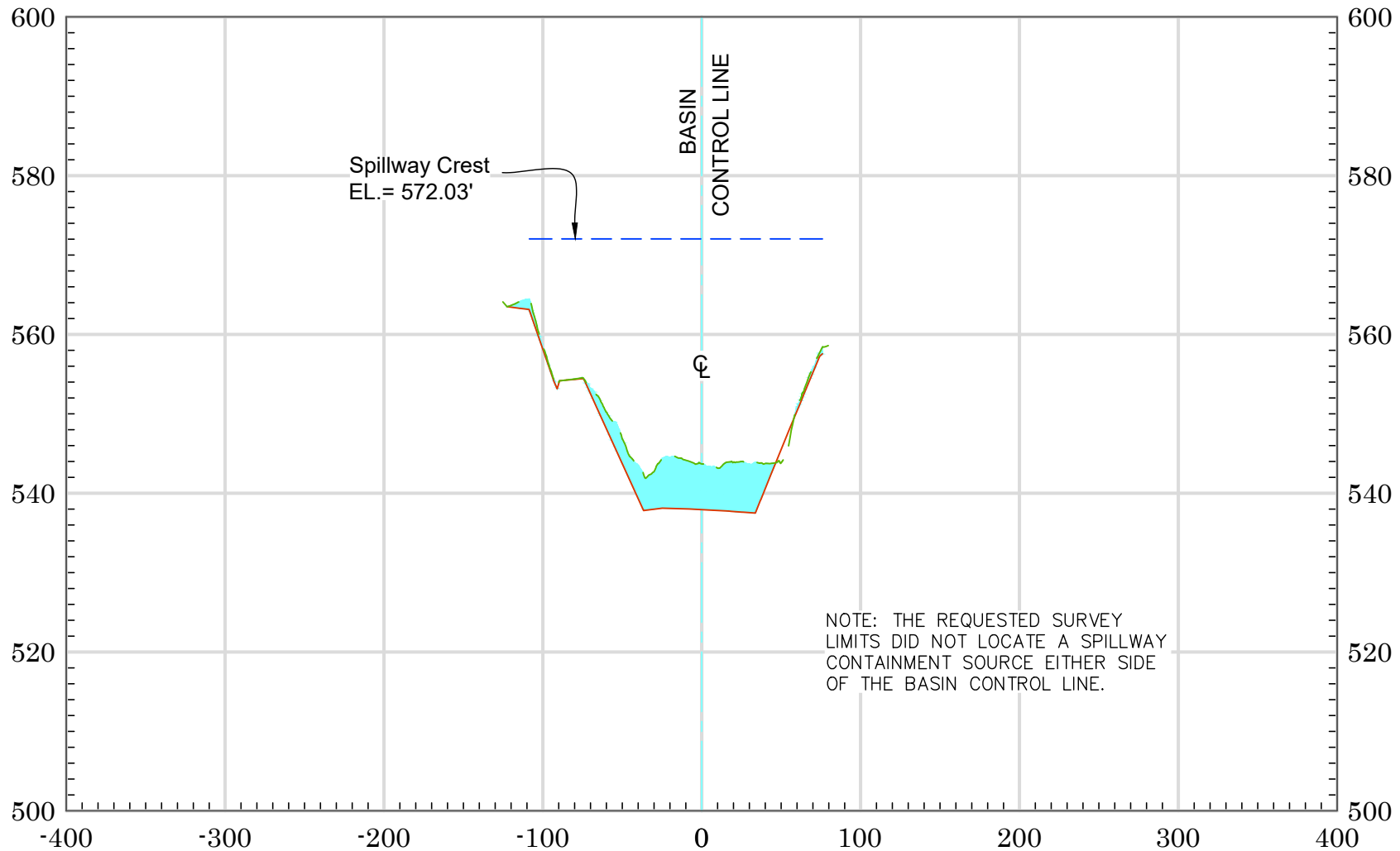


a 23+00

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

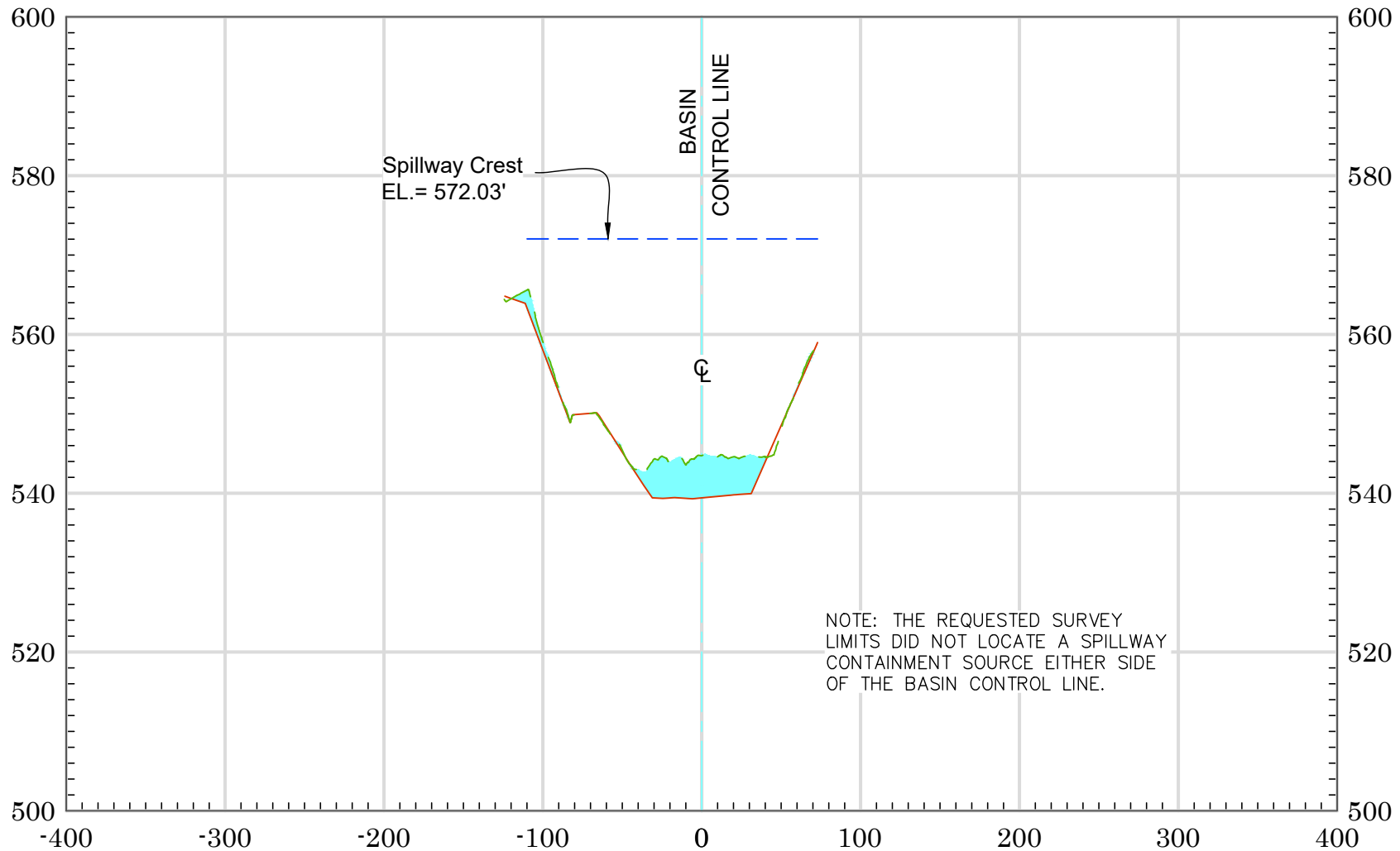


a 23+50

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

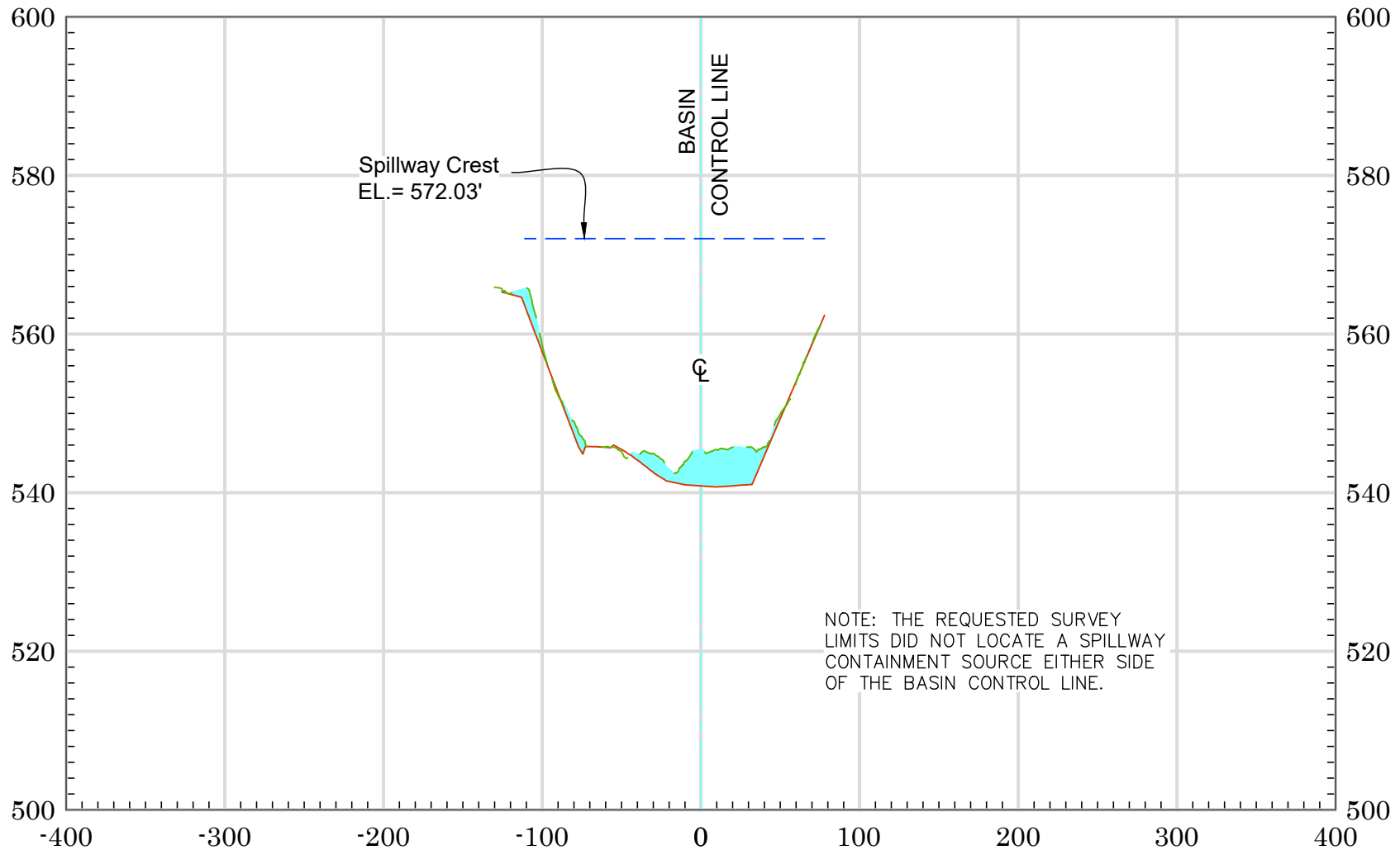


a 24+00

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS

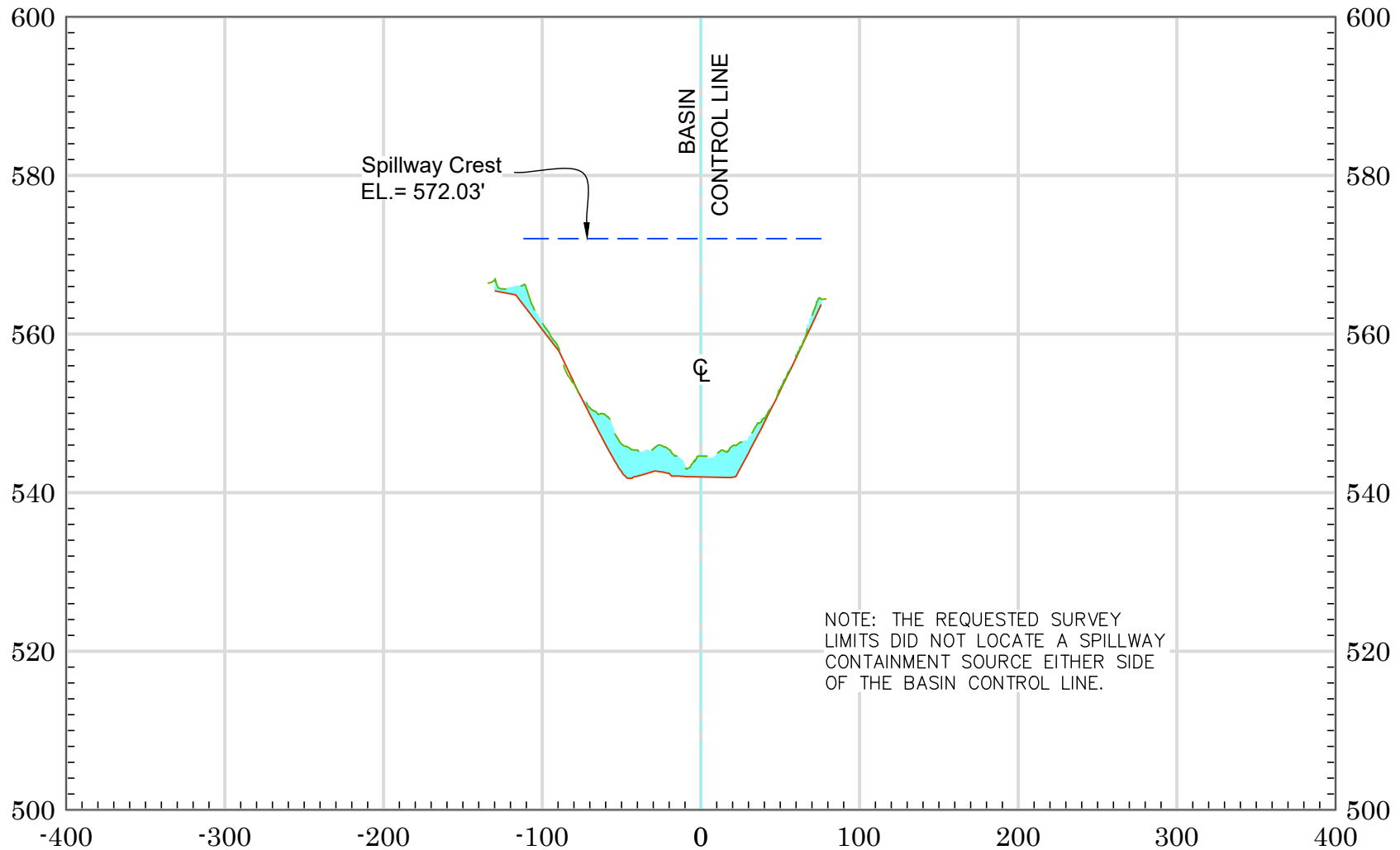


a 24+50

As-Built Plan ——— 2023 Ground - - - - -
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'

BEE CANYON RETARDING BASIN (F16B02) - 2023 SCOURS



a 24+87

As-Built Plan ——— 2023 Ground ———
 Max Cap Line - - - - - Sediment

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 100'