



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

JAMES TREADAWAY, DIRECTOR

**2023
EAST HICKS RETARDING BASIN
SCOUR STUDY**

Prepared by:

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

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Fifth District**

2023
SCOUR STUDY

EAST HICKS CANYON RETARDING BASIN
(F27B02)

STATION 23+00 TO 32+00

AS-BUILT PLANS: F27B02-701-1 STA 19+16.36 TO 45+71.35

REVISED STATIONING FOR SCOURS: STA 10+00.00 TO 33+90.65

NOTE:

STATION 10+00 REVISED STATIONING = 45+71.35 AS-BUILT PLANS. STATIONING WAS REVISED TO MATCH COUNTY STANDARDS. SCOURS STUDY ALIGNMENT WAS CREATED TO BEST FIT THE CENTER OF THE BASIN ACCESS ROAD.

BASIS OF SPILLWAY CREST ELEVATION WAS DERIVED FROM O&M MANUAL DATED APRIL 1997. 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 Elliott Medina, PLS, Senior Land Surveyor
Field Data Provided by:	OCS UAV UNIT
Survey Party Chief:	Kevin Martinez, Surveyor III
Computer processing done by:	Itai Islas, Surveyor II

COUNTY of ORANGE
OC PUBLIC WORKS DEPARTMENT

**OC SURVEY SERVICE AREA
FIELD UNIT**

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

EAST HICKS CANYON RETARDING BASIN (F27B02), STATION 23+00 to 32+00

ALIGNMENT: EAST HICKS BASIN CONTROL LINE

SURFACE 1: East_Hicks_Basin_LIDAR_2023 (2023 Ground Data)

SURFACE 2: East_Hickspln NAVD88 TRANSLATE (As-Built Plan)

BASELINE STATION NUMBER	STATION CUT AREA	STATION CUT VOLUME	STATION FILL AREA	STATION FILL VOLUME	MASS ORDINATE VOLUME
23+00.00	312.4	0	28.72	0	0.00
23+50.00	759.32	962.21	8.56	32.69	929.52
24+00.00	826.88	1468.26	1.25	8.08	2389.70
24+50.00	993.35	1683.05	0.13	1.1	4071.65
25+00.00	829.43	1685.48	14.98	10.2	5746.93
25+50.00	678.12	1393.53	0	9.25	7131.21
26+00.00	701.44	1277.31	69.64	42.99	8365.53
26+50.00	346.49	951.19	39.73	99.99	9216.73
27+00.00	115.68	408.87	17.53	51.64	9573.96
27+50.00	84.54	184.64	0.18	12.03	9746.57
28+00.00	86.29	158.17	3.58	2.82	9901.92
28+50.00	58.05	132.78	11.79	13.5	10021.20
29+00.00	91.21	137.05	17.77	27.19	10131.06
29+50.00	75.33	153.97	48.7	59.19	10225.84
30+00.00	82.28	145.88	5.72	43.9	10327.82
30+50.00	96.45	165.32	4.38	9.33	10483.81

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

EAST HICKS CANYON RETARDING BASIN (F27B02), STATION 23+00 to 32+00

ALIGNMENT: EAST HICKS BASIN CONTROL LINE

SURFACE 1: East_Hicks_Basin_LIDAR_2023 (2023 Ground Data)

SURFACE 2: East_Hickspln NAVD88 TRANSLATE (As-Built Plan)

BASELINE STATION NUMBER	STATION CUT AREA	STATION CUT VOLUME	STATION FILL AREA	STATION FILL VOLUME	MASS ORDINATE VOLUME
31+00.00	109.73	190.77	28.09	26.9	10647.68
31+50.00	91.99	186.54	49.38	70.81	10763.41
32+00.00	38.36	117.14	30.19	72.95	10807.60
<hr/>					
CUT: 11,402.16 Cu. Yds.			FILL: 594.56 Cu. Yds. NET: 10,807.60 Cu. Yds		

COUNTY of ORANGE
OC PUBLIC WORKS DEPARTMENT

OC SERVICE AREA
FIELD UNIT

2023 SCOURS STUDY – PERCENTAGE OF MAXIMUM SEDIMENT CAPACITY – VOLUME REPORT

EAST HICKS CANYON RETARDING BASIN (F27B02), STATION 23+00 to 32+00

STATION	CUT AREA	CUT VOLUME	FILL AREA	FILL VOLUME	% of CAPACITY
23+00	312.4	0	3162.41	0.00	0.00%
23+50	759.32	962.21	7040.12	9210.49	10.45%
24+00	826.88	1468.26	7186.18	13172.27	11.15%
24+50	993.35	1683.05	7044.97	13176.77	12.77%
25+00	829.43	1685.48	6481.84	12521.20	13.46%
25+50	678.12	1393.53	5692.82	11264.93	12.37%
26+00	701.44	1277.31	4366.48	9287.06	13.75%
26+50	346.49	951.19	3118.98	6898.67	13.79%
27+00	115.68	408.87	2504.93	5196.94	7.87%
27+50	84.54	184.64	2379.87	4522.47	4.08%
28+00	86.29	158.17	2216.94	4255.41	3.72%
28+50	58.05	132.78	2048.66	3948.60	3.36%
29+00	91.21	137.05	1877.12	3633.82	3.77%
29+50	75.33	153.97	1732.46	3341.30	4.61%

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FIELD UNIT**

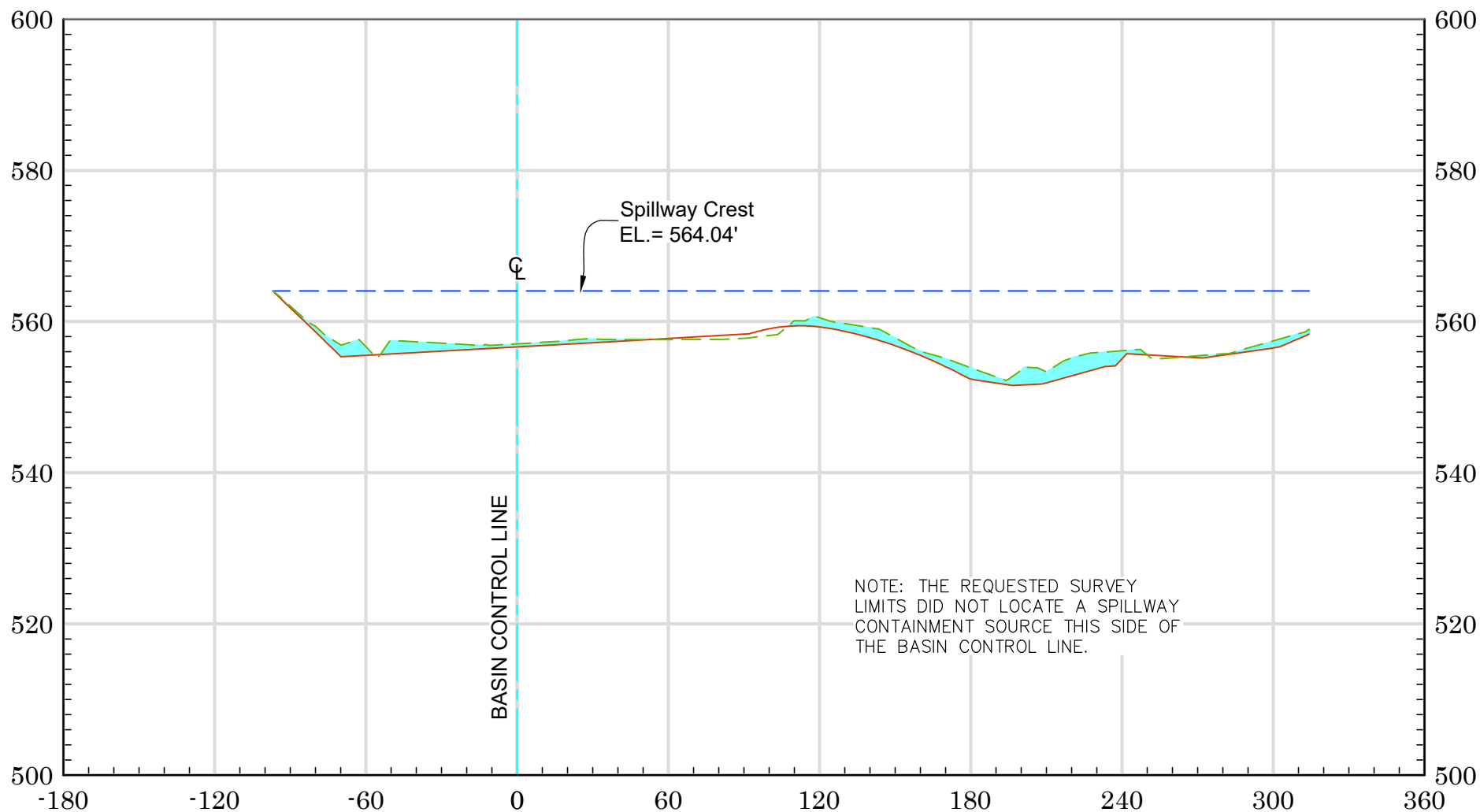
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EAST HICKS CANYON RETARDING BASIN (F27B02), STATION 23+00 to 32+00

STATION	CUT AREA	CUT VOLUME	FILL AREA	FILL VOLUME	% of CAPACITY
30+00	82.28	145.88	1566.10	3052.93	4.78%
30+50	96.45	165.32	1278.74	2629.62	6.29%
31+00	109.73	190.77	1093.54	2194.32	8.69%
31+50	91.99	186.54	773.78	1720.49	10.84%
32+00	38.36	117.14	343.46	1007.88	11.62%
		TOTAL CUT VOLUME		TOTAL MODIFIED BASIN VOLUME	PERCENT OF CAPACITY
Cu.Yds.		11,402.16		111,035.17	10.27%

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

EAST HICKS CANYON RETARDING BASIN (F27B02) - 2023 SCOURS

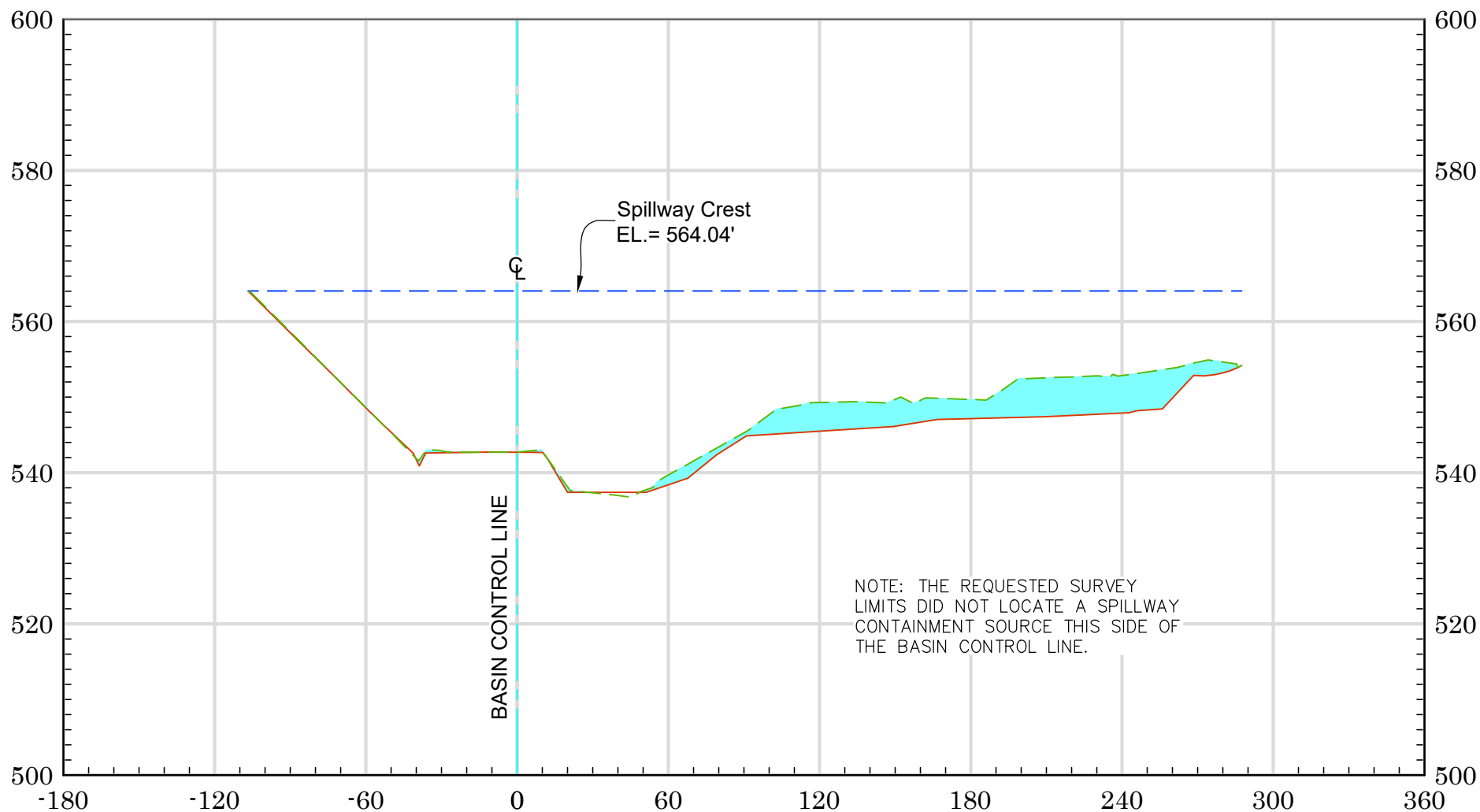


23+00

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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 60'

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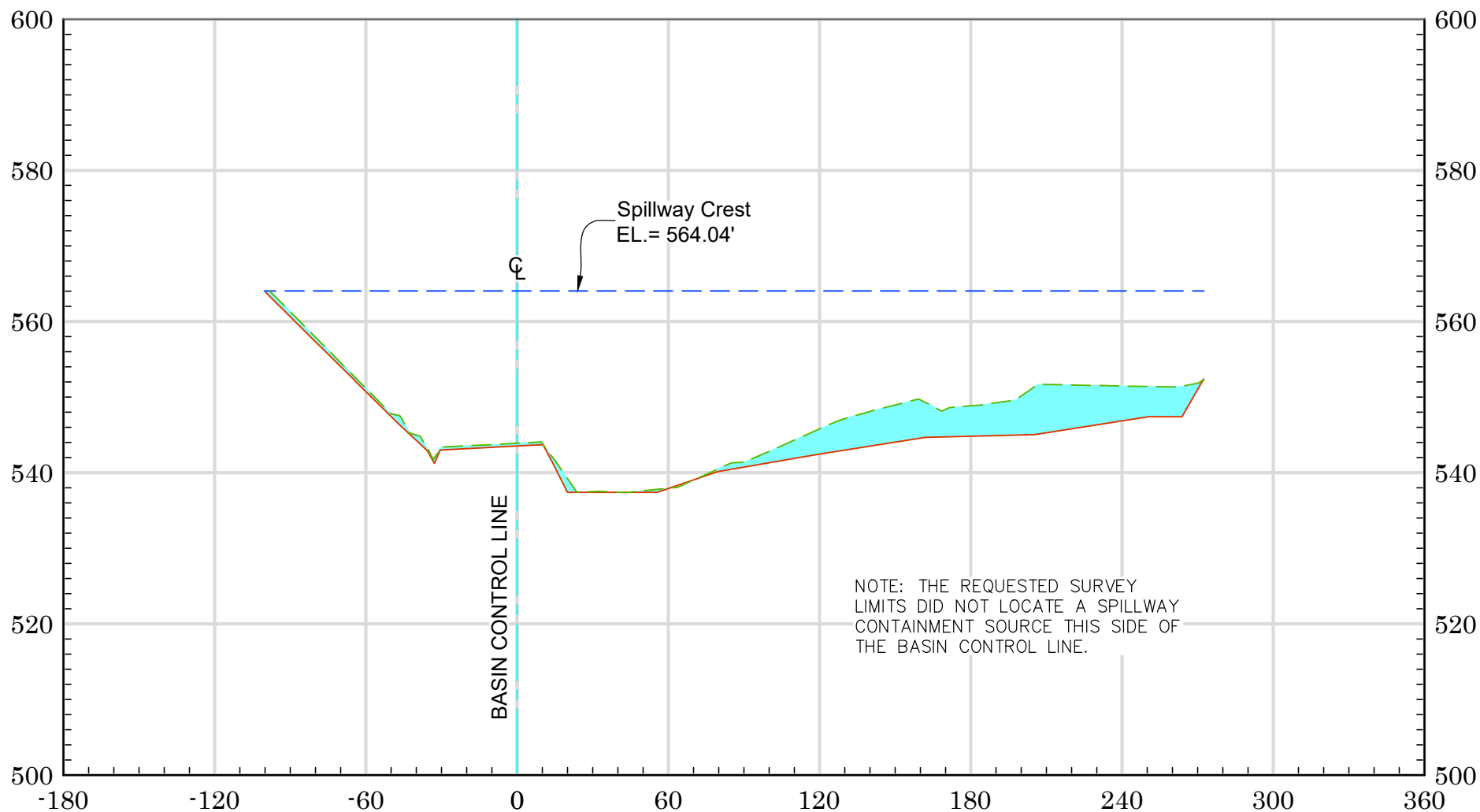


23+50

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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 60'

EAST HICKS CANYON RETARDING BASIN (F27B02) - 2023 SCOURS

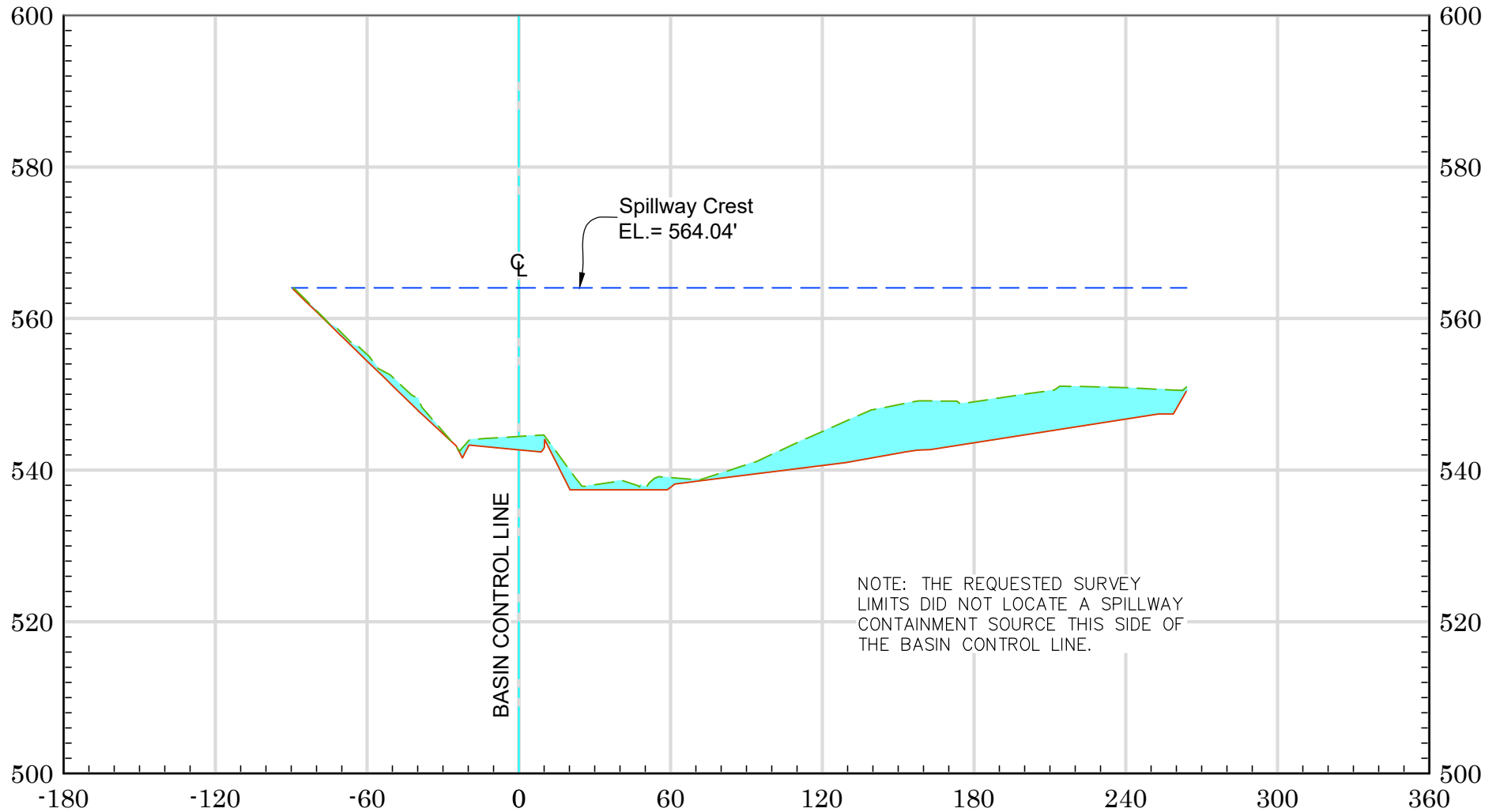


24+00

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

Vert. Scale: 1" = 20'
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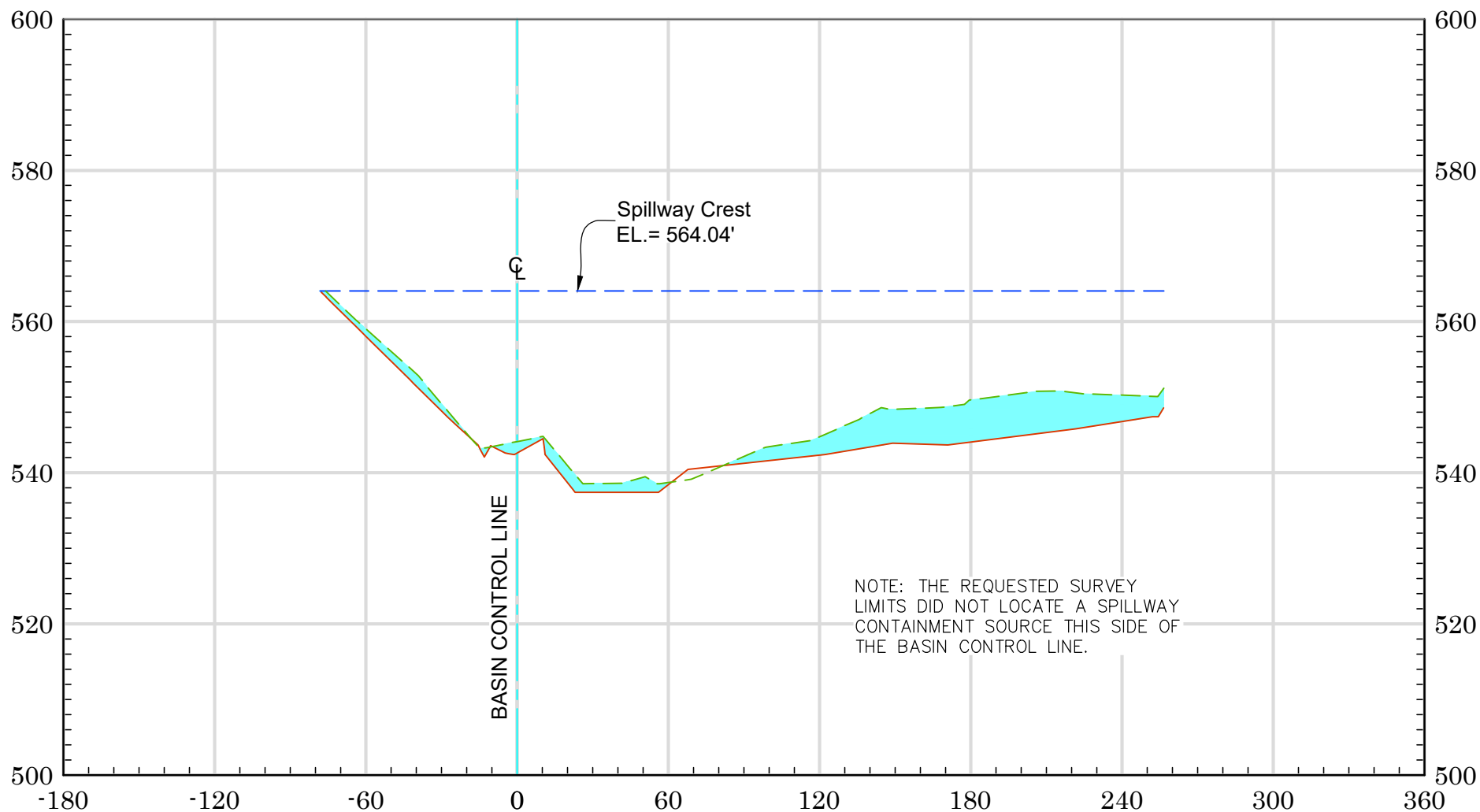


24+50

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

Vert. Scale: 1" = 20'
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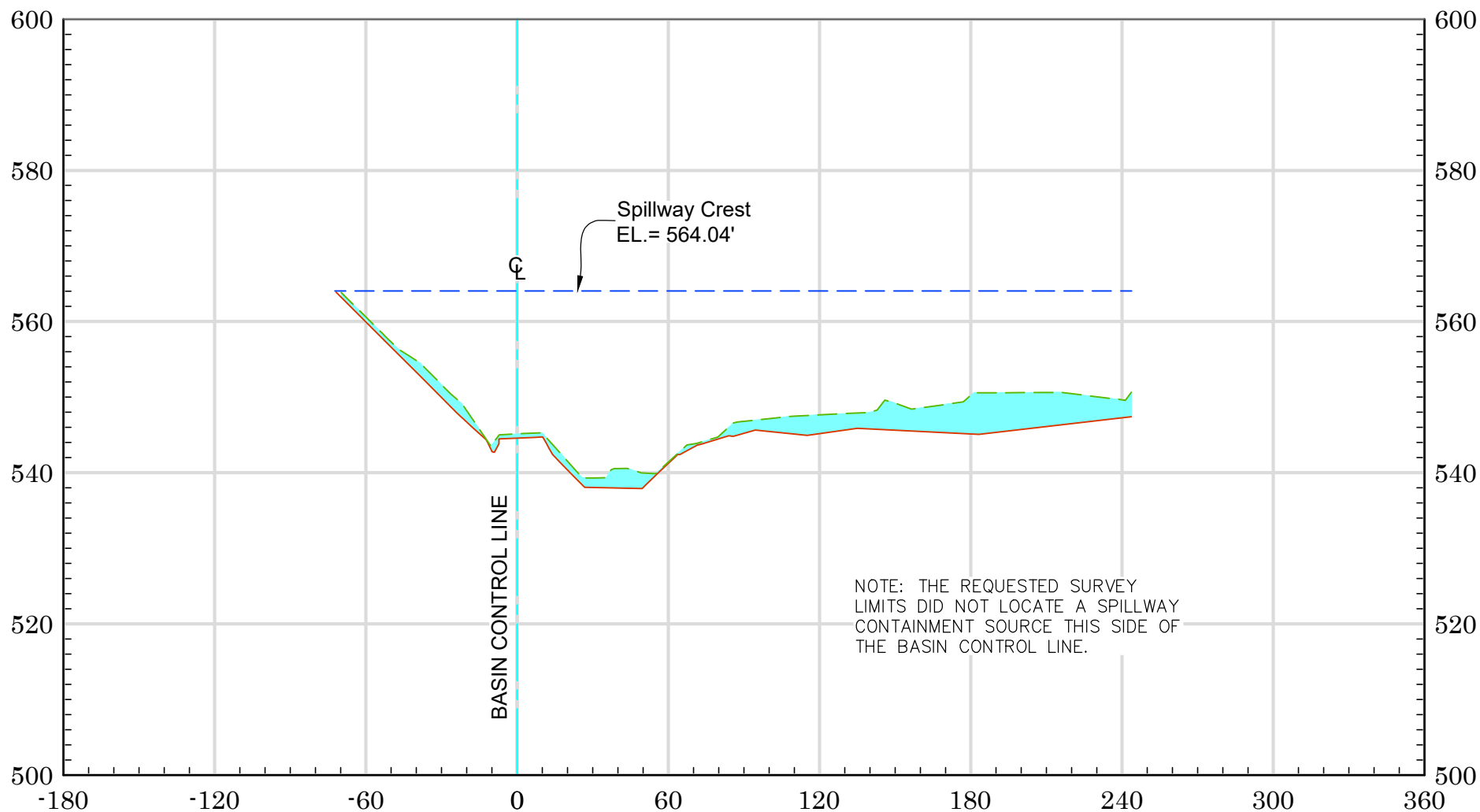


25+00

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

Vert. Scale: 1" = 20'
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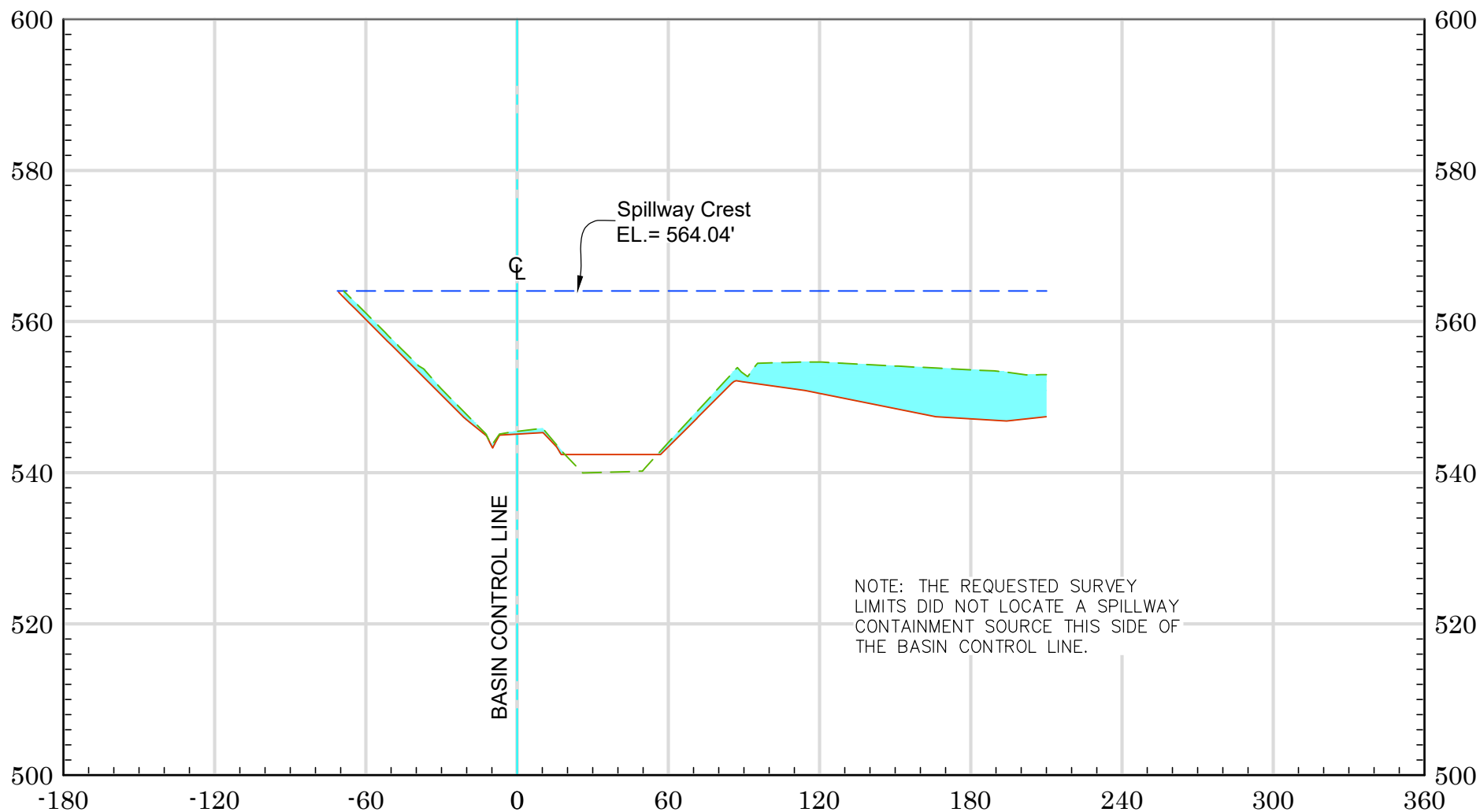


25+50

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

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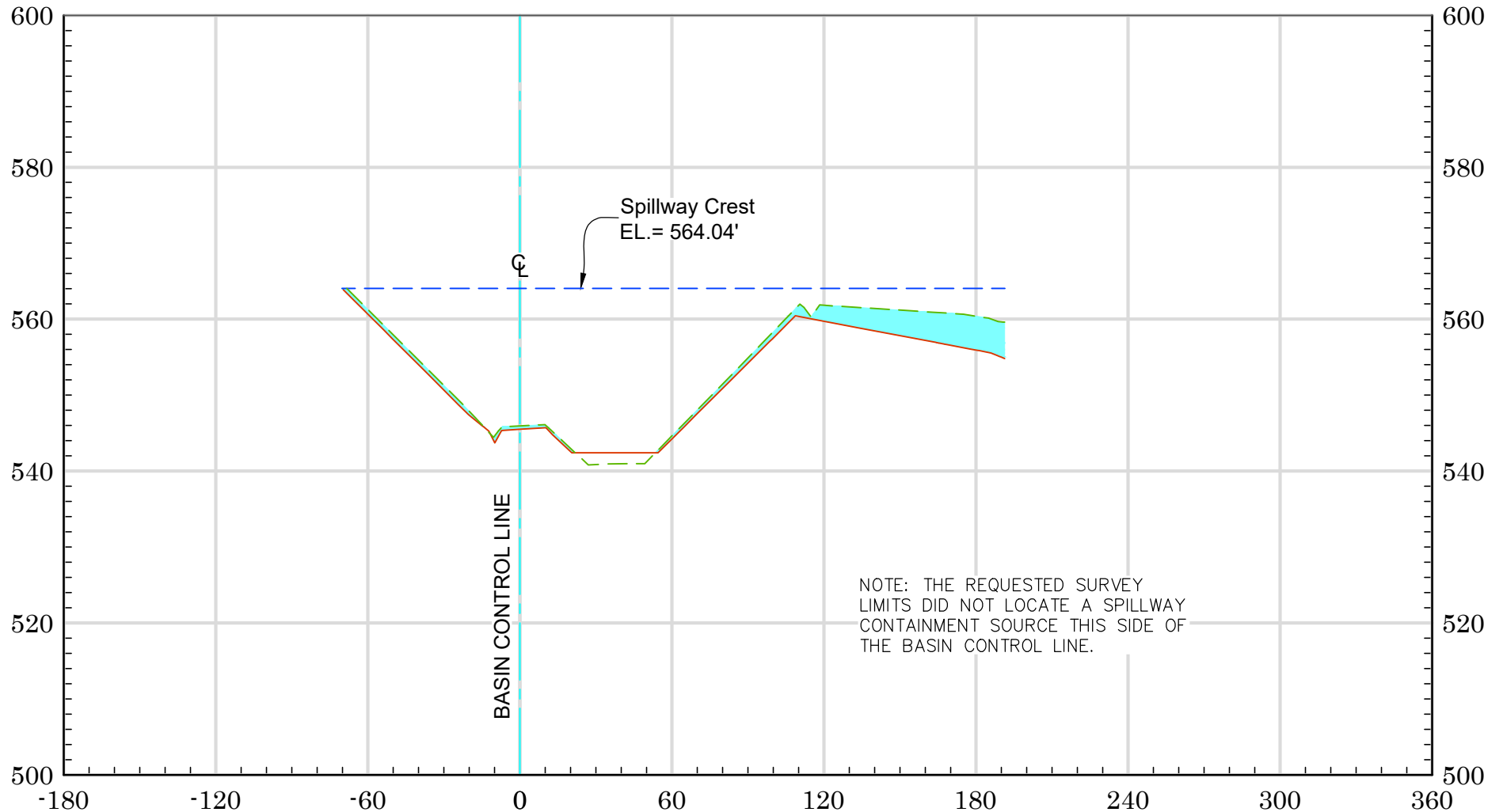


26+00

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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 60'

EAST HICKS CANYON RETARDING BASIN (F27B02) - 2023 SCOURS

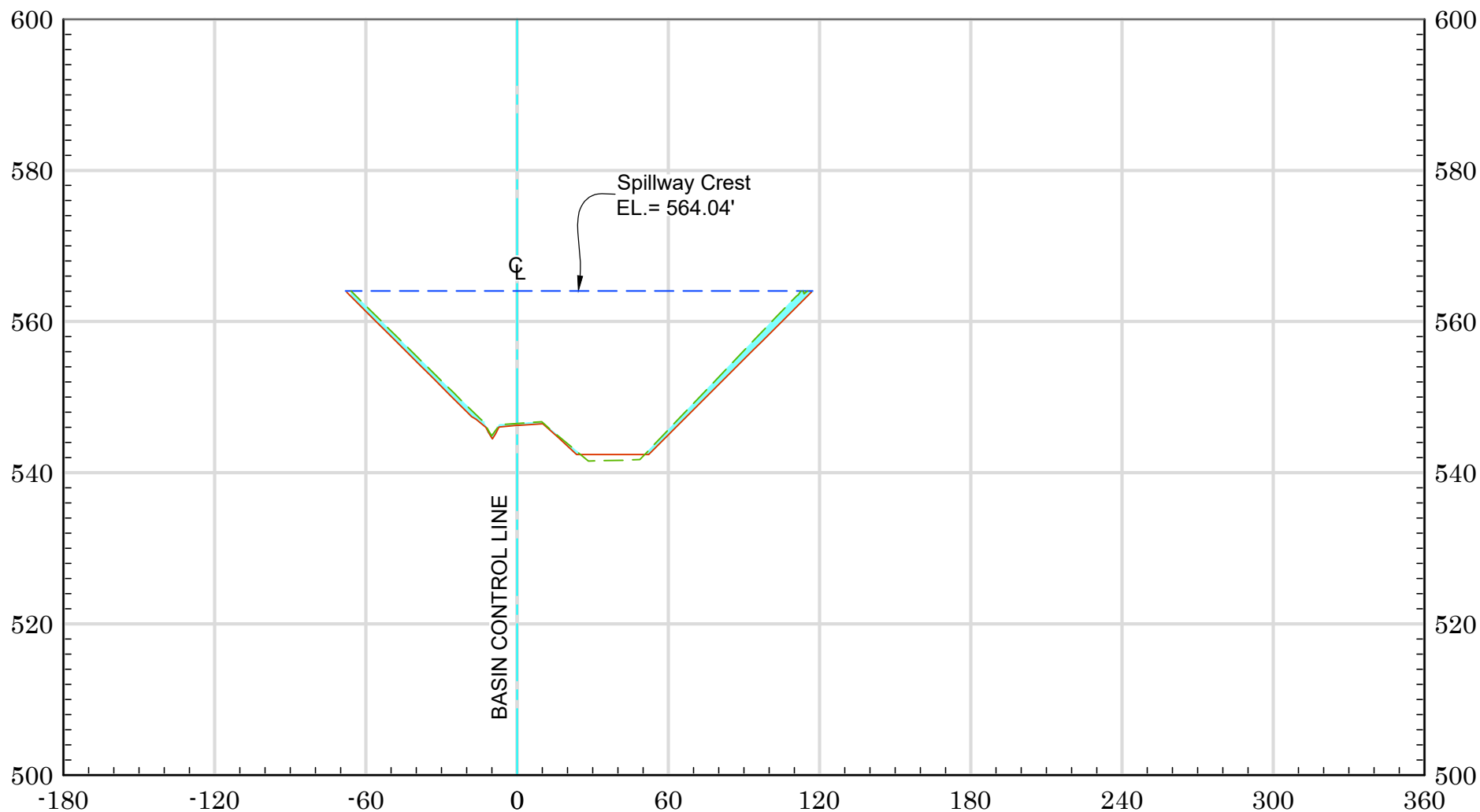


26+50

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 Horiz. Scale: 1" = 60'

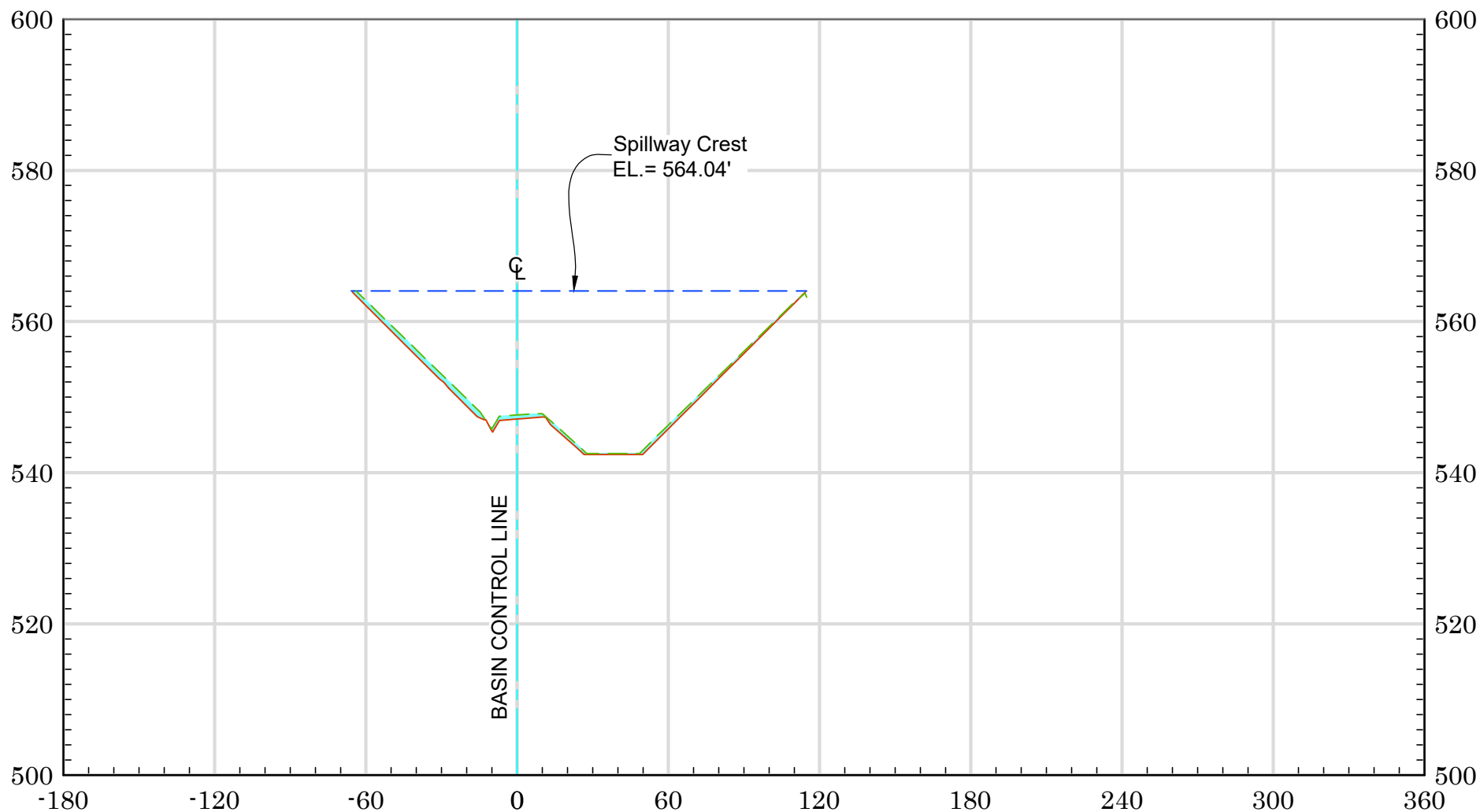
EAST HICKS CANYON RETARDING BASIN (F27B02) - 2023 SCOURS



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

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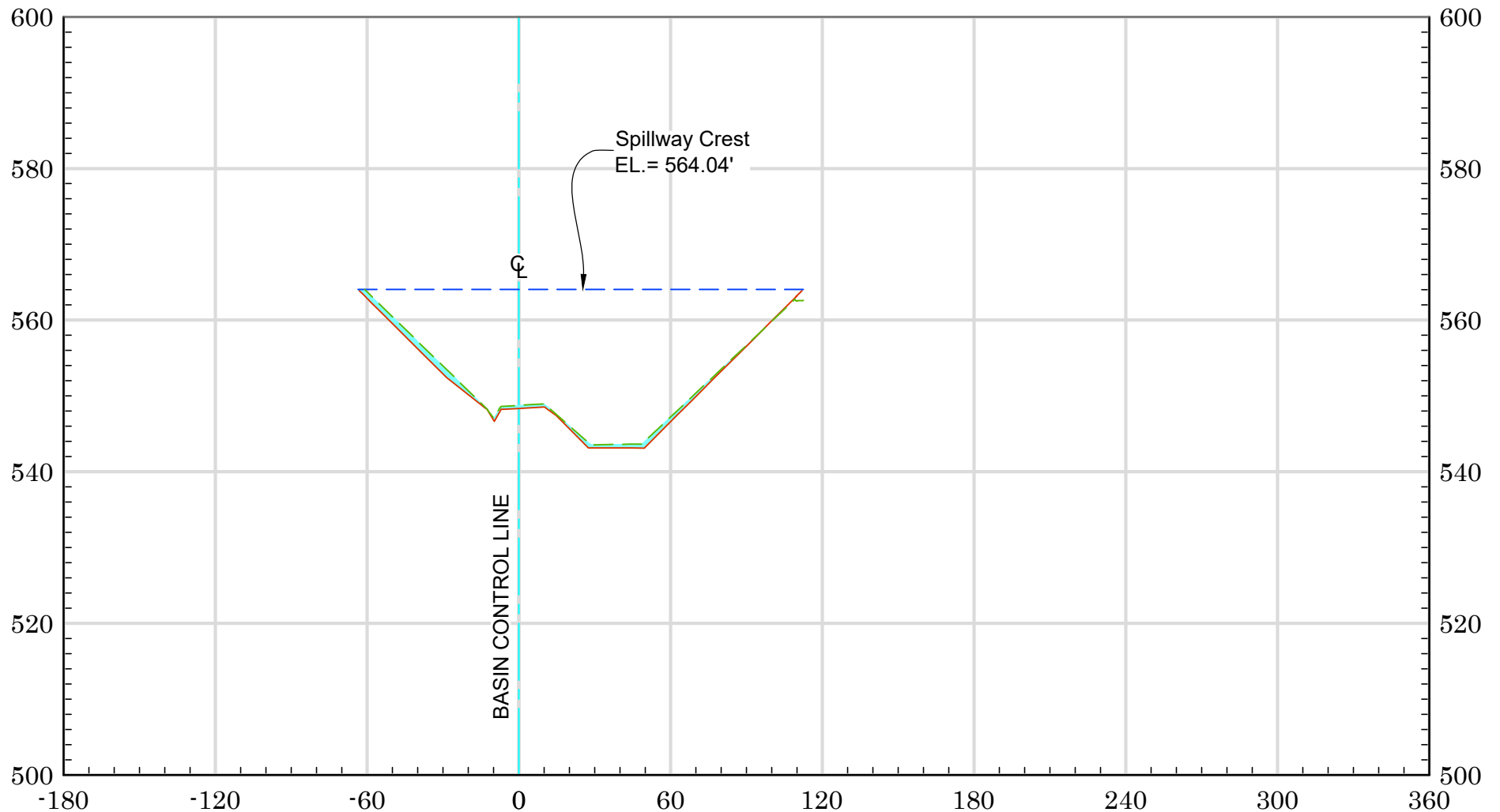
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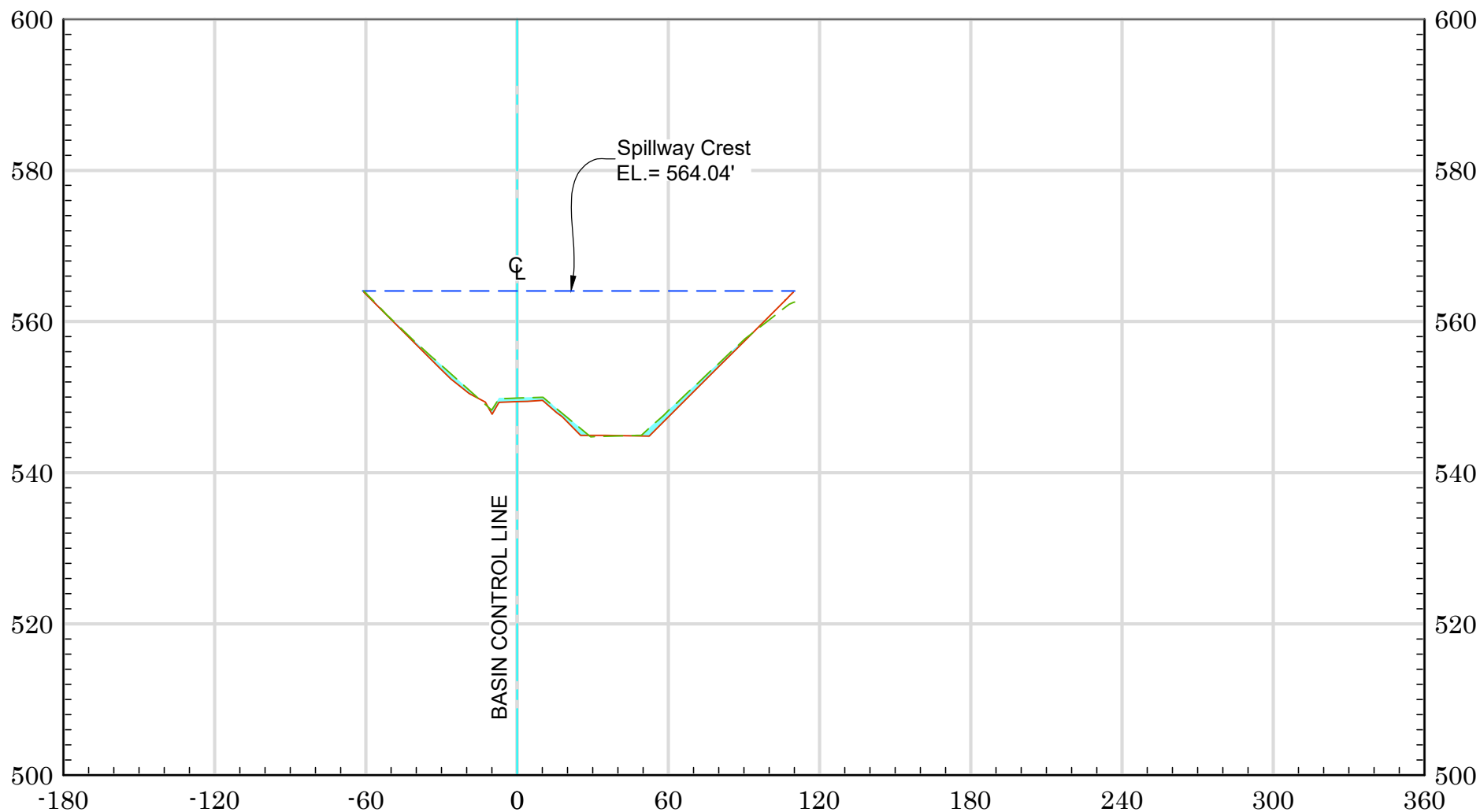


28+00

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

Vert. Scale: 1" = 20'
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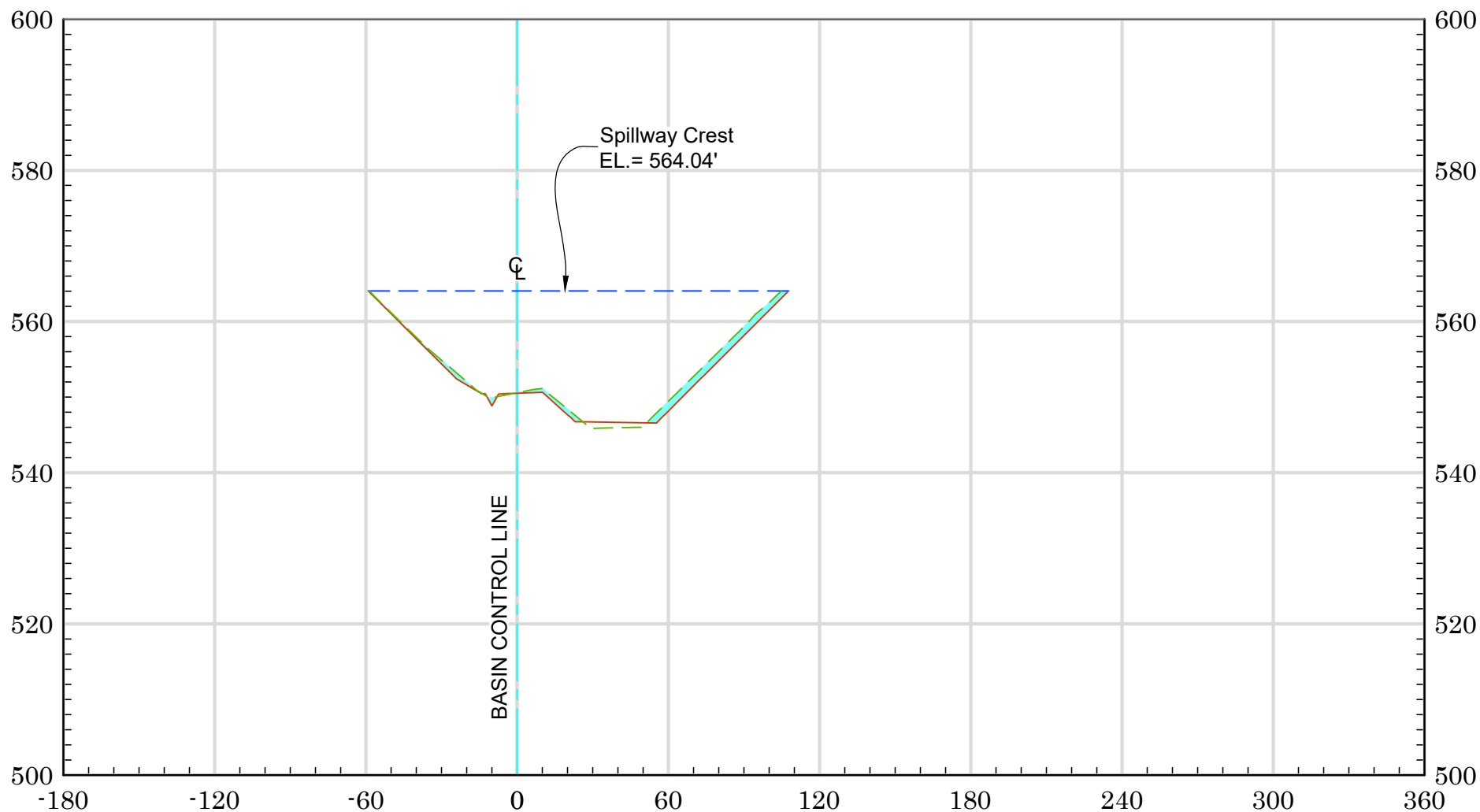


As-Built Plan ——— 2023 Ground ———
 Max Cap Line ——— Sediment

28+50

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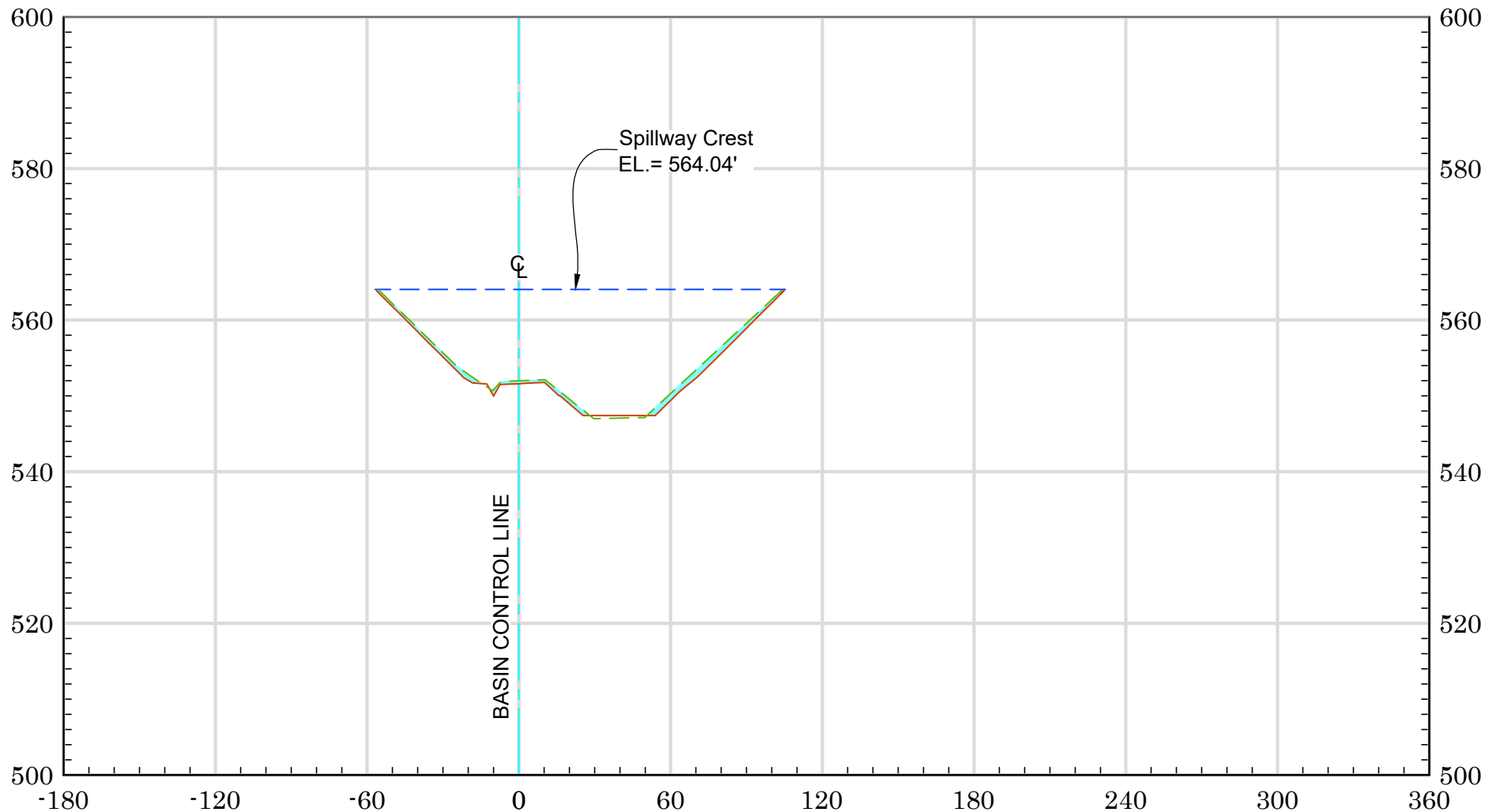


29+00

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 Max Cap Line ——— Sediment ———

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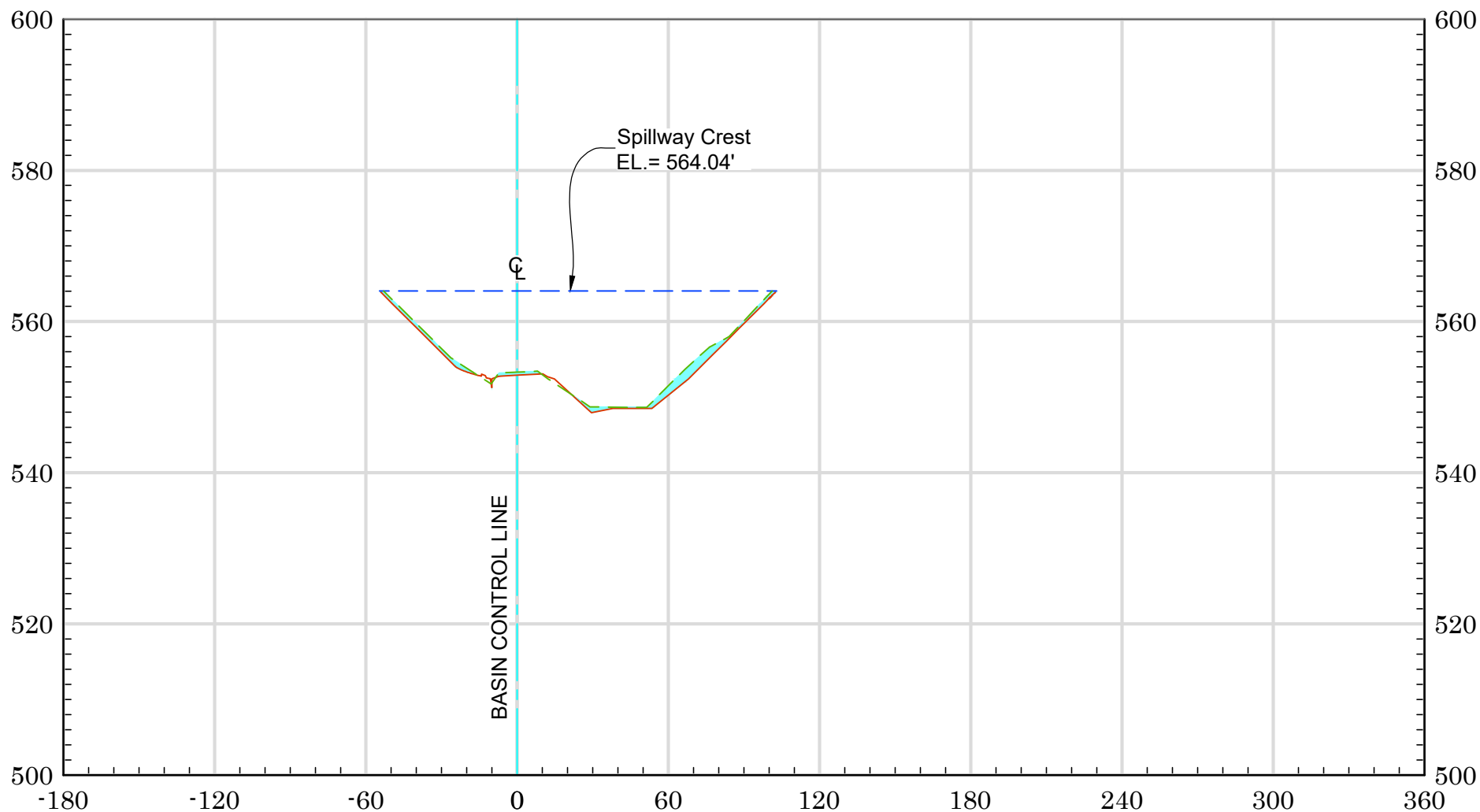
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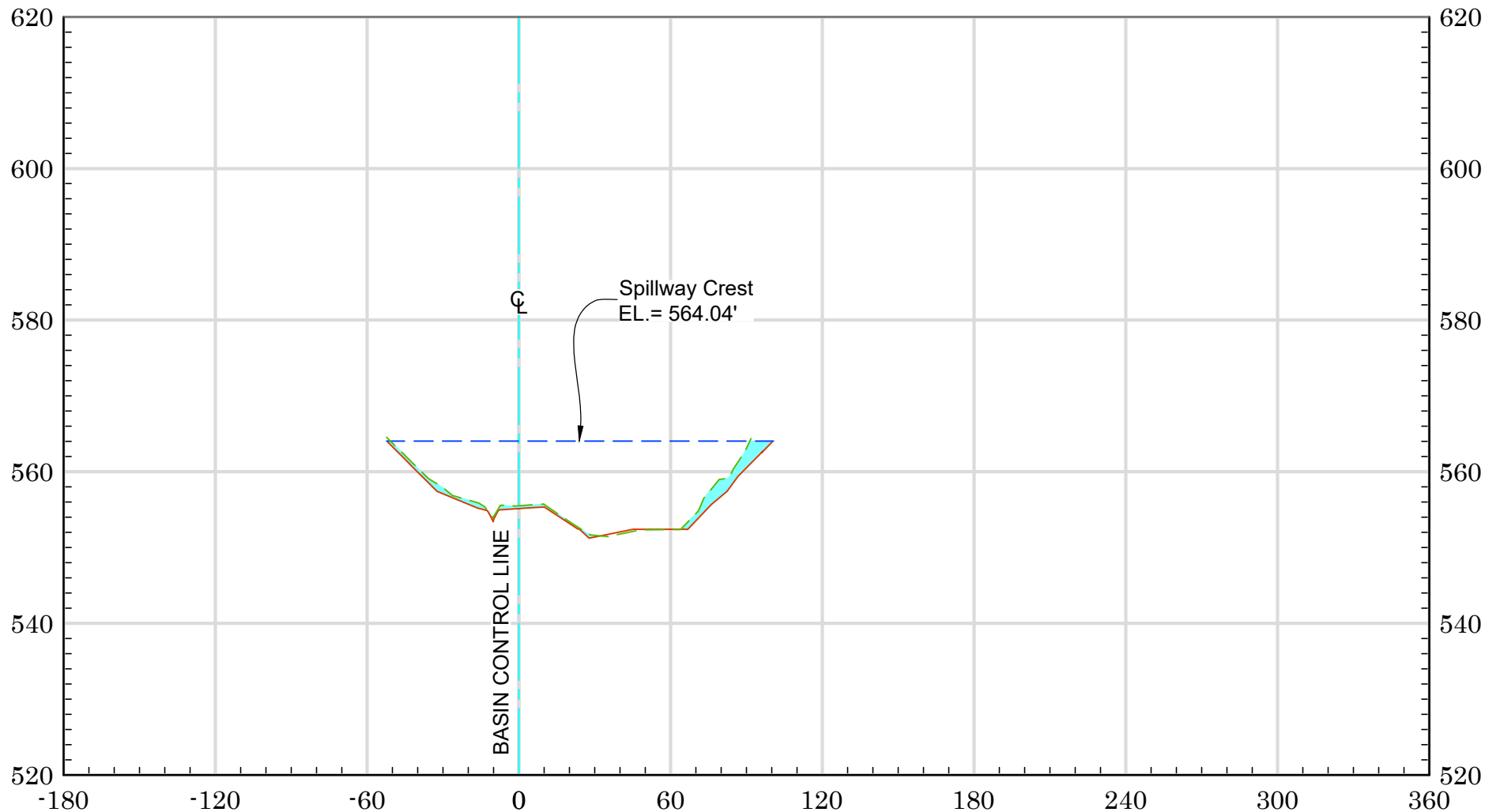
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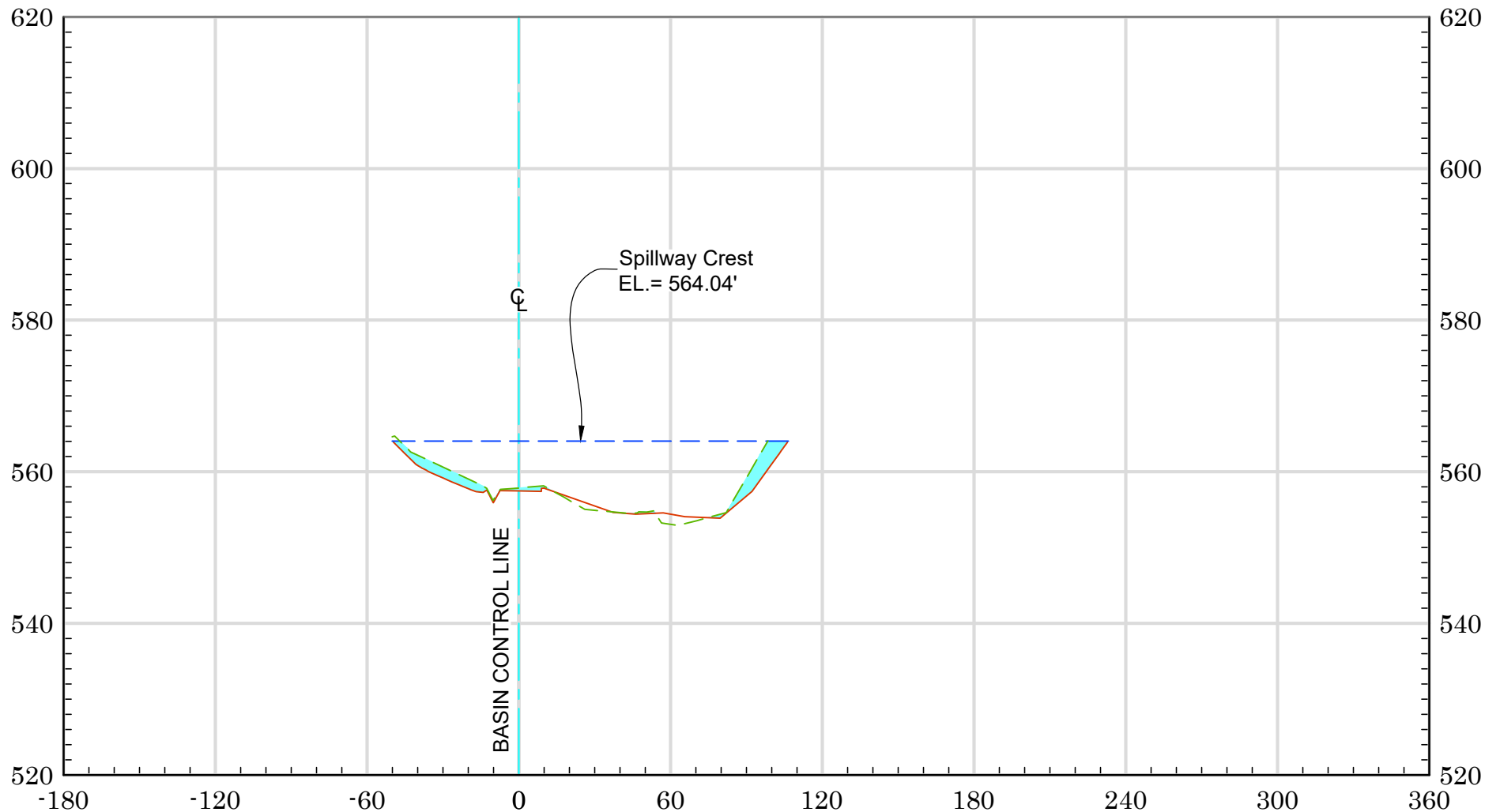
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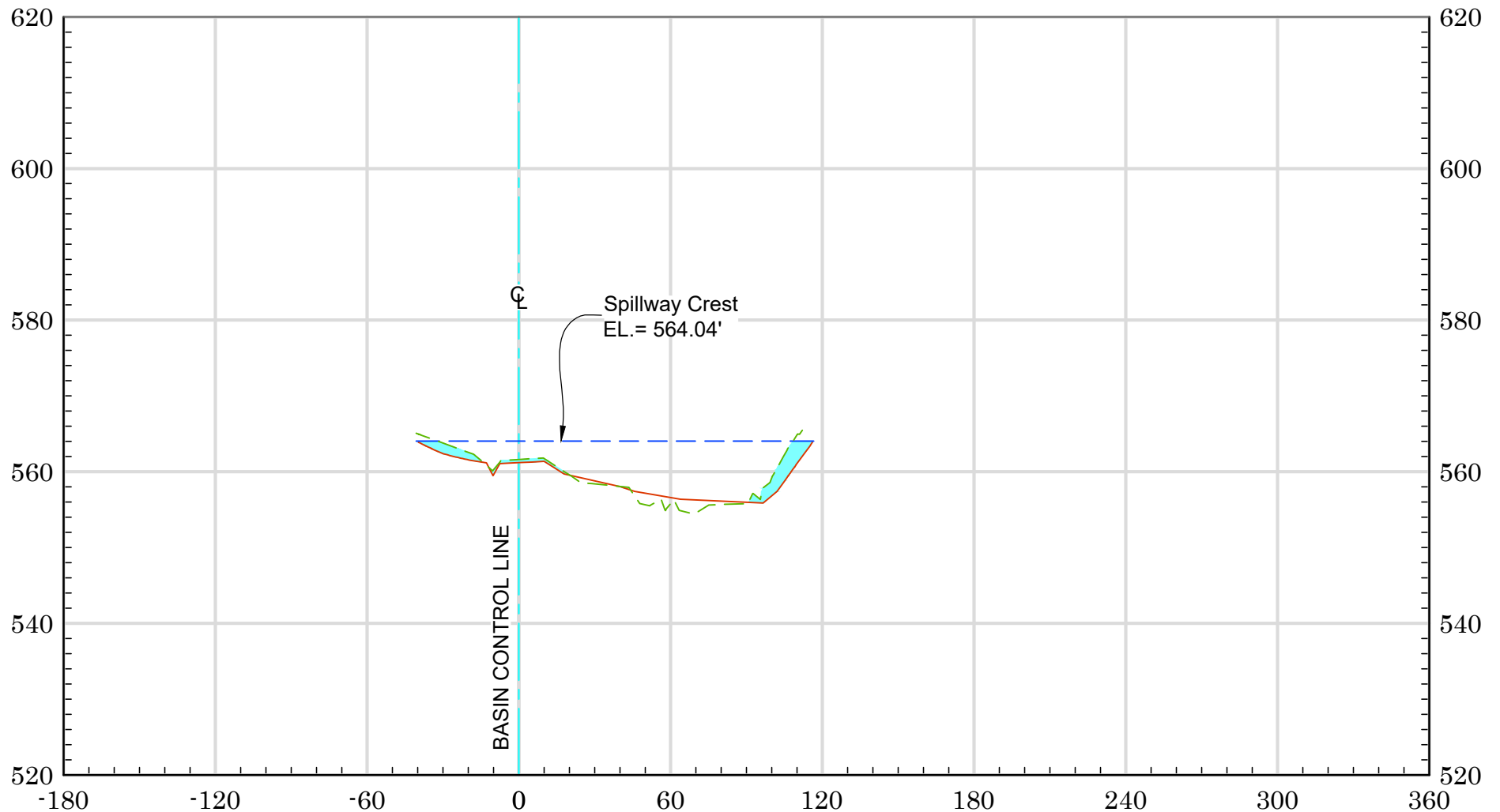


31+00

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

Vert. Scale: 1" = 20'
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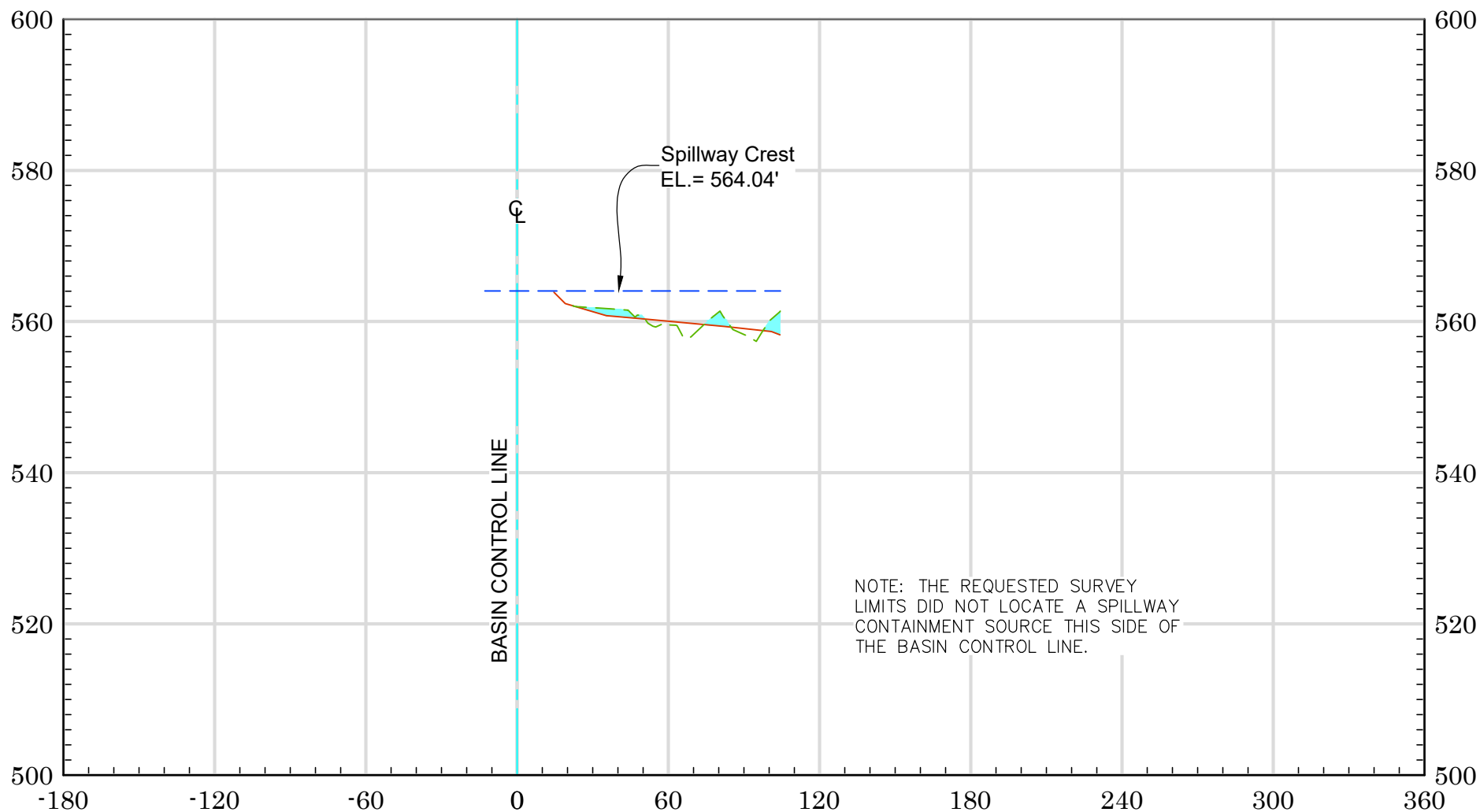


31+50

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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 60'

EAST HICKS CANYON RETARDING BASIN (F27B02) - 2023 SCOURS



32+00

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

Vert. Scale: 1" = 20'
 Horiz. Scale: 1" = 60'